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E.L. 4/73 - STERLING VALLEY

REPORT ON
EXPLORATION TO 6th MARCH, 1988

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1. SUMMARY

Billiton Australia, as Manager and Operator of the Sterling Valley Joint Venture, has completed a programme of detailed exploration in 1987.

Two diamond drill holes intersected the Henty Fault, and tested Farrell Sequence sediments east of the fault. Only minor gold was present associated with vein and disseminated pyrite-pyrrhotite-arsenopyrite in the fault and the tuffaceous siltstones, sandstones and shales adjacent to the fault. Best gold value was in SVD 87-2: 1m @ 0.74 g/t Au.

A relogging and resampling programme of previously drilled holes produced low gold values. Previous assaying was done using aqua regia - AAS, and repeating by fire assay upgraded several intersections. The best value is 1m @ 5.4 g/t Au, adjacent to the Arsenic Resource.

A 100m spaced grid in the north of the Henty Fault area was erected. A detailed gradient array IP survey, and ground magnetometer survey, has been carried out. Drill testing of a conductivity zone in the Farrell Sequence is recommended.

At the south of the Henty Fault, a 200m spaced grid was erected. This has been mapped, and gradient array IP and ground magnetics carried out. Significant chargeability zones are present east of the Henty Fault, requiring drill testing.

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An application is being made for an extension to that part of the EL covering the Arsenic Resource and the Henty Fault, in order to complete exploration.

2. INTRODUCTION

This report describes the work completed on EL 4/73 in the year to March 6th, 1988. The tenement is due for relinquishment on March 6th, 1988, and an application is being made for an extension to part of the EL covering the Henty Fault Zone, in order to drill test several geophysical anomalies recently defined. The area of the EL is 33 km², and 9 km² is being applied for (Fig. 1).

Previous exploration results have been presented in Progress Reports by the various, operating companies. Particular reference is made to the following.

- | | | |
|--------------------------|---|---------------------|
| Asarco (Aust.) Pty. Ltd. | EL 4/73 Sterling Valley Tasmania. | |
| | Progress Report to June 1974. | |
| Cominco Expl. Pty. Ltd. | Progress Report on EL 4/73 Sterling Valley Tasmania for the six months ending 6/3/76 (and summarising work carried out in the previous six months). | |
| " " " " | Report on Diamond Drilling Programme, EL 4/73, Sept. - Nov. 1977. | |
| EZ Co. Report No. 133 | EL 4/73 Progress Report on Activity, July 1979 to June 1980. | STP 217,218
1462 |
| 143 | EL 4/73 Progress Report on Activity, July 1980 to June 1981. | 1736 |
| 146 | EL 4/73 Six Monthly Project Review as at 15th Dec. 1981. | |
| 150 | EL 4/73 Progress Report on Activity, 15th Dec. 1981 to 4th May, 1982. | |
| 154 | EL 4/73 Progress Report on Activity, 4th May 1982 to 24th Aug. 1982. | |

EZ Co. Report No. 161 EL 4/73 Progress Report on Activity,
24th Aug. 1982 to 20th Nov. 1982.

167 EL 4/73 Progress Report on Activity,
31st Nov. 1982 to 3rd May, 1983.

T181 EL 4/73 Progress Report on Activity,
16th Nov. 1983 to 1st May 1984.

T202 EL 4/73 Progress Report on Activity,
2nd May, 1984 to 6th March, 1985.

T214 EL 4/73 Progress Report on Activity,
7th March, 1985 to 6th March, 1986.

T210 A Geological Review of EL 4/73, With
special Emphasis on the Potential for
Gold-Arsenic Mineralization. 1985.

A summary of previous exploration is presented in
Section 4 of this report.

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3. TENEMENT STATUS

The Exploration Licence was originally held by Asarco (Australia) Pty. Ltd., who transferred the tenement to Abminco N.L. on October 13, 1977. The Electrolytic Zinc Company of Australasia Ltd., farmed-in to the EL in 1979, and became the tenement owner in April 1986.

Billiton Australia, the Metals Division of the Shell Company of Australia Ltd., farmed into the EL in November, 1986, on condition that they spend \$400,000 to earn a 50% equity. Billiton took over as managers of the project.

To the end of 1987, Billiton has expended \$130,000 on the EL.

4. PREVIOUS EXPLORATION

The Sterling Valley area is one of the more intensively, and continuously explored areas of the Mt. Read Volcanics. Since modern systematic exploration began in the late 1950's, the area has been subjected to repeated geophysical, geochemical and geological surveys. A total of 28 diamond drillholes have been drilled for a total of 4,650m. However, it is only now after 30 years of effort, that exploration is finally coming to grips with what appears to be the principal mineral potential - gold mineralization associated with the Henty Fault.

At least seven small old workings of vein-style Pb-Ag and Cu-Zn sulphides, mark the earliest known phase of exploration in the Sterling Valley area. Most of these date from the period 1908-1915, with some revival again in 1929-1932.

The largest and best known of these workings is the Sterling Valley Mine*, which comprised a shaft and several levels, excavated on high grade shoots of galena-sphalerite-arsenopyrite in a shear zone within black shales of the Farrell Slate sequence. The scale of all these old workings can be gauged by the fact that recorded production from the Sterling Valley Mine is only 52 tons of 55% Pb, 1500 g/t (Au, Ag²) ore.

* The Sterling Valley Mine is covered by two small Mineral Leases totalling 80 acres, held by EZ within EL 4/73.

The Sterling Valley Mine was drilled by EZ in 1947 (holes STP 74-80) and again in 1960 (holes STP 96, 98 & 100). Although some mineralization was intersected, including low levels of gold (up to 0.9m @ 3.1 g/t Au), results were not considered encouraging enough to continue testing and no drilling has been carried out at the old mine since.

Modern systematic exploration of the Sterling Valley commenced in the late 1950's, when a Joint Venture between EZ and RTAE gridded the main valley area and carried out ground geophysical surveys following a regional airborne TURAM survey. The ground surveys were limited in coverage and comprised magnetics, dip-angle EM, SP, dipole-dipole IP and gravity. Holes STP 101 and 105 were put down in 1960-61 into geophysical responses defined within the Farrell sequence.

Continuous exploration dates from Asarco's pegging of EL 4/73 in early 1973. They stream sediment sampled the EL on a coarse grid with 360m line spacing, with detailed lines at 120m spacing in the main valley area. This work defined a number of basemetal and tin anomalies (the samples were not analysed for gold), and the presence of the tin led to Cominco (later Aberfoyle), becoming involved in a Joint Venture with Asarco.

The JV directed the principal thrust of its exploration towards testing of the tin potential. Further sediment sampling indicated areas of tin mineralization in the Farrell Slate sequence east of the Henty Fault and also in the Mt. Black

Volcanics west of the fault. These indications were followed up by bedrock auger sampling, magnetics, vertical loop EM, dipole-dipole IP surveys, and the drilling of holes SV 1 to 3 within the Farrell sequence.

The best intersection was only 1m @ 0.2% Sn in hole SV 1, which was markedly less than the 3m @ 0.65% Sn obtained from trenching of the mineralization at surface. The holes were not assayed for gold. Following the poor drill results, Asarco withdrew from the JV in late 1977.

Apart from a regional aeromagnetic survey flown by Geoex in 1978, little work was done until the formation of a Joint Venture involving EZ (36% equity and Manager) - Aberfoyle (40% and EL holder) - Getty (24%), in May 1979.

EZ immediately rehabilitated and extended the grid in the main valley area and carried out systematic geological mapping, soil sampling, dipole-dipole IP and ground magnetics. The rugged, ungridded eastern portion of the EL was covered by a programme of stream sediment sampling, rock sampling and mapping (NB: none of the samples were assayed for gold). EZ's stated targets for this exploration were:

1. Volcanogenic massive sulphides in sediment lenses in the Eastern Volcanics (east of the Farrell Slate sequence).

2. Farrell-type Ag-Pb mineralization in the Farrell Slate.
3. Renison-type replacement Sn deposits in both the Farrell Slate and Mt. Black Volcanics (west of the Henty Fault).

The most significant result of the EZ programme was the outlining of coincident magnetic and IP anomalies over a glacially-covered area in the approximate position of the Henty Fault in the NW corner of the EL. Hole STP 217, drilled to test these anomalies, discovered the auriferous pyrrhotite-pyrite-arsenopyrite lenses of the 'arsenic resource' within the Mt. Black Volcanics adjacent to the Henty Fault. An IP response further to the west was drilled by STP 218 which intersected weak vein sulphides in the Mt. Black Volcanics.

The focus of attention in both holes was pyrrhotite-hosted tin mineralization, however results were not good with a best intersection of 1m @ 0.5% Sn in STP 217. The holes were not assayed for gold.

In 1980-81 three further holes were completed - STP 220, 221 and 231. STP 221 was drilled into the 'arsenic resource' and obtained a best intersection of 0.7m @ 0.4% Sn within a 10.7m zone averaging 4.2% As and 0.2% Cu. The core was assayed for gold by the aqua-rega AAS technique which gave a maximum value of 2.98 g/t Au over 1m from rocks adjacent to the sulphide lenses, with several other values in the 0.3-0.7 g/t Au range. However, these results failed to excite any interest in the gold potential of the mineralization.

Hole STP 231 was also drilled into the 'arsenic resource' and gave intersections of 4.5m @ 6% As, and 2.2m @ 0.3% Sn. Gold values (again by aqua-regia AAS) were up to 0.5m @ 0.75 g/t Au, again with the maximum values being in rocks adjacent to the sulphide lenses. The hole was not extended far enough to intersect the Henty Fault - a fact not appreciated at the time.

STP 220 was put down to test for carbonate-replacement tin mineralization beneath IP/EM responses in the Farrell Slate, but intersected only minor mineralization.

In 1981, the drilling continued with STP 232 A1 put in to test the Henty Fault north of the 'arsenic resource', (but failing in this objective due to being collared on top of the fault); and hole STP 234 being the final hole put into the 'arsenic resource'. This hole obtained a maximum intersection of 2m @ 4.35% As, but was not assayed for gold as it was considered by this time, based on the aqua-regia AAS assaying, that the 'arsenic resource' contained only minor gold values (the maximum gold value obtained from the sulphide lenses by aqua-regia AAS was only 0.4 g/t Au).

In late 1981 drilling of the 'arsenic resource' was halted because of the insignificant tin values being encountered. The arsenic possibilities of the mineralization were not seriously considered until 1984 and the gold potential

not until 1985. In the meantime, work was concentrated on completing the grid coverage in the western half of the EL with in-fill mapping, soil geochemistry, magnetic and dipole-dipole IP surveys. Most of the drillholes were also surveyed with downhole IP during this period.

The surface work delineated a soil Sn anomaly over the Mt. Black Volcanics close to the Henty Fault south of the 'arsenic resource', and this was costeamed in 1982. While the tin mineralization was found to be insignificant, samples from the costean of quartz-sulphide veins returned values up to 26.6 g/t Au by fire assay. However, the vein-style mineralization was considered unattractive and little attention was initially paid to the gold results.

In 1984 EZ gave up exploration for tin on EL 4/73 after a major assessment of the exploration results concluded that none of the drillhole intersections to date were of economic widths and grades, and that none of the mineralization was of carbonate-replacement type. It was decided to refocus on the arsenic potential.

An 'informal ore reserve' was calculated for the four sulphide lenses making up the 'arsenic resource'. based on holes STP 217, 221, 231 and 234. The figure obtained was 480,000 tonnes @ 5% As. With the mineralization open to the north and south and at depth, further drilling was recommended but was not carried out.

Part of the arsenic potential assessment involved polished section examination of the drillcore sulphides to determine their possible metallurgical behaviour. Visible gold was noted in three samples from holes STP 217 and STP 234 - the two holes not originally assayed for gold by EZ. This discovery led to a major programme of drillcore resampling for gold in 1985, with analyses by the fire-assay technique.

In 1985, following Texaco's decision to sell off Getty Mining, EZ exercised its option to purchase the Getty equity in the JV. Later that year Aberfoyle elected to withdraw from the JV, leaving EZ as the only party exploring EL 4/73.

After a dighem survey in 1984, which obtained several subdued EM responses, EZ drilled two holes in 1985 - neither into the 'arsenic resource' or through the Henty Fault. STP 283 tested beneath the auriferous veins obtained in the costean 900m south of the 'arsenic resource'. with a best intersection of 0.45m @ 2 g/t Au and up to 11% As. STP 284, targetted at an EM anomaly in a glacially-covered area east of the 'arsenic resource' encountered black shales in the Farrell Slate.

In November 1986 Billiton Australia farmed-in and assumed managership of the exploration programme on the EL, while EZ continued with a programme of advanced metallurgical floatation testwork on the sulphides of the 'arsenic resource' to determine their suitability as an arsenic ore.

Billiton continued and completed the programme of gold sampling of the old drillcore, extending it to include intervals originally assayed by aqua-regia AAS, and to the EZ and Aberfoyle holes within the Farrell sequence.

The Billiton fire assaying showed that the original aqua-regia AAS analyses markedly understated the true gold content. As a result, the true average gold content of the 'arsenic resource' would be higher than the 0.84 g/t Au figure calculated by EZ in 1986, and based on a mixture of a new fire assay and original aqua-regia AAS results.

In early 1987 Billiton began their own programme of drill testing for gold mineralization along the Henty Fault within EL 4/73.

The results of this programme are presented in this report.

5. WORK COMPLETED

Exploration has been confined to the Henty Fault, and the rock units immediately east and west, aimed at the discovery of gold deposits associated with vein sulphides. No further testing of the Arsenic Resource has been done, but it does provide a target for further work to extend the resource, or upgrade the gold content.

No work has been done on the volcanics to the east of the Farrell Sequence, which are thought to have low potential for base metal sulphide mineralization.

5.1 Diamond Drilling

Two diamond drill holes, SVD 87-1A and SVD 87-2, were completed for a total of 471m of drilling.

The primary aim of both holes was to test for gold mineralization associated with the Henty Fault, particularly in the sedimentary rocks of the Farrell Sequence immediately east of the fault.

SVD 87-1A, 3260N, 4737E, (Sterling Valley grid) was designed to complete a fence of holes previously drilled by Aberfoyle and EZ, that had not intersected the Henty Fault, or the units immediately west and east of the Fault.

STP 283 had intersected anomalous Au and As in sulphide veins, in the mafic lavas west of the fault. The hole was also designed to provide the first intersection through the untested 3 km central and southern sectors of the Henty Fault within EL 4/73; all previous drilling had been concentrated on the northern 1 km of the fault in the EL.

SVD 87-2, 4160N, 4707E, was designed to test the Henty Fault at the south end of EZ's Arsenic Resource, where there is an offset in the fault at its intersection with a major cross-structure. A diffuse IP anomaly was present in the postulated fault position.

The hole was on the same section as EZ hole STP 231 which stopped short of the fault but intersected vein gold mineralization in the western lavas.

5.2 Geophysics

5.2.1 Gradient Array Induced Polarization Surveys

Two grid areas were surveyed, 6 lines at the northern end of the EL, and 8 lines at the southern end. The survey was designed to test the rock units either side of the Henty Fault for the presence of sulphides, in order to define drilling targets.

The survey was carried out by Scintrex using potential dipoles of 20m, current electrode separation of 1700m, and an IPR-10 receiver.

The northern survey was completed on lines:

5375100N : 384300E - 384900E

5375000N : 384300E - 384900E

5374900N : 384200E - 384800E

5374800N : 384200E - 384800E

5374700N : 384200E - 384800E

5374600N : 384200E - 384800E

for a total of 3.6 line km, and was a fill-in survey to complete coverage between the Arsenic Resource and the Lakeside mineralization.

The southern survey was completed on lines:

2500N (Local Grid): 4500E - 5100E

2200N : 4500E - 5100E

2000N : 4500E - 5100E

1800N : 4500E - 5100E

1600N : 4400E - 5000E

1400N : 4400E - 5000E

1200N : 4400E - 5000E

1000N : 4400E - 5000E

for a total of 4.8 line km. The current electrode cable was on 1700N.

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5.2.2 Ground Magnetics

All IP grid lines were surveyed using a G-856 digital magnetometer, at a station spacing of 10m. All data was diurnally corrected.

5.2.3 Gravity

A gravity survey was carried out on line 3260N, prior to drilling SVD 87-1A, in order to help determine the position of the Henty Fault. (This drill hole was primarily a stratigraphic test of the Henty Fault). The profile is shown in Figure 7. Station spacing of 10 metres and Bouger density of 2.67 gm/cc was used. The data are somewhat noisy (envelope of less than 0.2 mgals) probably attributable to difficulties in surveying both gravity and elevation in thick bush.

5.3 Sampling & Re-logging of Old Drillholes

The upper portions of the Aberfoyle drillholes SV 2 and SV 3, some 50m north of section 3260N on which Shell hole SVD 87-1A was drilled, represent almost the only exposure of the prospective Farrell sediments close to the Henty Fault in this glacially-covered area. The two holes were collared immediately east of the Henty Fault and drilled eastwards away from it. They are located within a few metres of each other as SV 2 was lost in a fault at 125.4m and SV 3 was the

re-drill beside it. Neither hole was sampled for gold by Aberfoyle (SV 2 had not been sampled at all). Consequently, SV 3 was relogged to 101m and SV 2 was sampled from top to bottom.

Holes STP 217 and 221 into the 'arsenic body' in the northern part of the EL were sampled and fire-assayed for gold. The sampling included intervals in STP 221 that were previously assayed by aqua-regia AAS by EZ. In STP 217 the sampling was of intervals not previously assayed for gold - EZ having already fire-assayed much of the hole.

5.4 Metallurgical Testing: Arsenic Resource

The programme of metallurgical testing on the Arsenic Resource (the zones of gold-arsenic mineralization adjacent to the Henty Fault in the northern part of the EL), was continued. The work was undertaken by the Metallurgical Department at EZ's West Coast Mines, Rosebery.

6.0 RESULTS

6.1 Shell Drilling

Drill logs for holes SVD 87-1, SVD 87-1A and SVD 87-2, appear in Appendix 1.

Hole SVD 87-1, collared at 3260N, 4738E (Sterling Valley Grid), and drilling grid east at an angle of -56° , quickly ran into trouble in highly oxidised mafic volcanics and was terminated at 30m after recovering only 40% of the core.

Hole SVD 87-1A was collared 1m further west at an angle of -76° and obtained almost 100% recovery in the oxidised zone by drilling with triple tube equipment to 75m. The hole was completed at 298.5m (Fig. 3).

The summary log of SVD 87-1A is as follows:

<u>Interval</u>	<u>Rock Type</u>	<u>Alteration/Mineralization</u>
0 -211.25m	<u>MT. BLACK VOLCANICS</u> A confusing, mixed sequence of andesitic lavas; basaltic lavas & dykes; with intercalated volcanoclastics & sediments of the same provenance.	Minor sulphides except: 210-211.25m:3-5% py-po-cp Extensive chlorite alteration.
211.25-212.30m	<u>HENTY FAULT</u> Crushed rock.	10-15% py-asp & fluorite

212.30-298.50m FARRELL SEDIMENTS
Tuffaceous & volcano-
mict sandstones, silt-
stones & shales.

212.30-220m: 3-10% py-po-
aspy in disturbed zone
with fluorite & tourmal-
ine. Below 220m locally
2-3% po-py, assoc. with
weak chlorite alteration.

END OF HOLE

Best intersection: 211-212m: 1m @ 0.15 g/t Au, 0.1% Cu, 0.15%
Sn, 1.88% As.

Because of the need to drill the hole at a steeper angle than planned, it intersected the Henty Fault at 200m below surface - about 75m beneath the original target depth. However, the hole still provided an excellent test of the Henty Fault and the prospective adjacent stratigraphy in this central sector of the EL, and effectively closed the section between hole STP 283 to the west and holes SV 2/3 to the east.

The results of SVD 87-1A are very disappointing with only traces of gold, tin and basemetals intersected despite the presence of a 10m zone of sulphides, accompanied by fluorite and tourmaline, in the fault and the Farrell sediments immediately to the east.

The second Shell hole, SVD 87-2, was collared at 4161N 4707E (Sterling Valley Grid), drilling grid east at -61°. The hole had to be terminated prematurely at 142.5m, (planned depth was 225m), when a collapse at the Henty Fault jammed the rods. However, as the fault had been intersected 20m higher in the hole than anticipated, the hole is a

satisfactory test of both the intended targets - the Henty Fault and the IP anomaly to the east, (Fig. 4).

The summary log of SVD 87-2 is as follows:

<u>Interval</u>	<u>Rock Type</u>	<u>Alteration/Mineralization</u>
0 - 10	m <u>FLUVIO-GLACIAL GRAVELS</u>	
10 - 90	m <u>MT. BLACK VOLCANICS</u> Intercalated mafic and basaltic lavas & dykes; & mafic volcanoclastics Badly broken	V. minor sulphides except 89.2-90m: 3-5% py-po-asy + qtz-fluorite-tourmaline Zones of intense silicification & deformation.
90 - 91.5	m <u>HENTY FAULT</u> Crushed & brecciated rock.	5-10% py-asy + qtz-chlorite-fluorite.
91.5- 94.05m	<u>HIGHLY DEFORMED MT. BLACK VOLCANICS</u> Qtz-sericite-chlorite schist after felsic lava.	7-10% py-po-asy.
94.05-142.5m	<u>FARRELL SEDIMENTS</u> Volcanoclast & tuffaceous partly graphitic and calcareous, shales, siltstones & fine sandstones. Some cherts.	94-113m: 2-5% po-py 129.5-134m: 2-5% po-py Best sulphides in zones of chlorite alteration.
END OF HOLE		

Best intersections:

92.5-93.5m: 1m @ 0.21 g/t Au, 5 g/t Ag, 0.7% As
97.0-98.0m: 1m @ 0.74 g/t Au, 1 g/t Ag, 60 ppm As.

As in SVD 87-1A, the gold results in SVD 87-2 are lower than expected considering the amount of sulphides within the target zone centered on and immediately east of the Henty Fault, (approximately 20m width averaging 3-5% po-py>asy, including 4m @ 5-10%).

The major structure that offsets the Henty Fault in this vicinity is clearly post-mineralization. In SVD 87-2, it causes extensive fracturing, shearing and leaching in the almost-unmineralized Mt. Black Volcanics west of the fault. It may also be associated with the intense silicification of these rocks.

6.2 Geophysics

In the northern grid area the IP clearly indicates the position of the Henty Fault, with the Farrell sequence, containing disseminated sulphides and/or graphite, immediately to the east. A broad resistivity low extends from west of the Fault to the eastern end of the lines. This is caused both by glacial cover and the low resistivity of the graphitic Farrell slates.

A comparison of the IP data on line 5375100N (Fig. 5) compared with gradient array data on the same line recorded (by Scintrex) in 1979 is of interest, and can be summarised as follows:

Chargeability (650-1170ms):	1987 data <u>15msec</u> above 1979 (ie greater)
Resistivity	: 1987 data <u>1/3rd</u> of 1979 (ie less)
Lateral shift	: 1987 data 70m east of 1979 (grids have different locations)

The current electrodes for the 1979 survey were 500 metres north but with similar eastings and in similar geology. The discrepancies between the two surveys are hard to explain, and the IP equipment for 1987 has been check calibrated so instrument malfunction is unlikely. The only other explanation is that the current electrode positions are affecting the resistivity results. If so then the 1987 results may indicate a much more conductive earth at depth south of the Murchison Highway compared with that to north. This increase in conductivity may be linked to the 'arsenic zone' with considerable disseminated pyrite/pyrrhotite where drilled (as in STP 234 on 5374500N).

On the plan of stacked IP profiles (Fig. 9) the interpreted position of the Henty Fault has been plotted. It can be seen that STP 232 (by EZ) was collared about 20 metres east of the Fault and therefore did not test it.

Unless there is a grid problem, there would appear to be a cross-fault between lines 5374600N and 5374700N. (The true position of STP 234 on this grid plan is likely to be further east).

A very broad conductive zone is apparent, which peaks 200-300 metres east of the Henty Fault. This zone has not been well tested within the EL despite being initially detected in 1959. Although it is most likely to be caused by graphitic Farrell slates, there could be a high

proportion of sulphides present with economic gold grades. Drill holes STP 220 and SV 1, 300 and 550 metres respectively south of the Billiton grid, may have tested the trend further south. Both holes had low gold grades. Geological mapping and geochemical sampling are hindered by glacials in this area and give little clue to the cause of the EM and IP responses. Gravity was carried out in 1959 but indicates no clear correlation with the EM. This would appear to confirm the EM/IP anomalies as being due to graphite rather than massive sulphides although variable glacial thickness would create problems in detecting the latter at depth.

The ground magnetic survey indicates the northern end of the pyrite/pyrrhotite 'arsenic zone' with major anomaly amplitudes increasing from about 300nT on 5375100N to about 800nT on 5374600N. The broad magnetic anomalies lie across the position of the Henty Fault. This corresponds with the drilling results which indicate disseminated sulphides both west and east of the Fault as part of a major alteration zone centred on the Fault. It is possible that existing drilling has not tested this alteration zone effectively along or across strike, but further ground magnetics to the south would be required to confirm this.

In general the Farrell sequence has little magnetic response, although weak anomalies within the main conductive zone occur on lines 5375100N, 5374900N and 5374600N, corresponding with a Dighem aeromagnetic trend. These

anomalies indicate an increase in pyrrhotite or possible magnetite content. This weak magnetic trend has not been well drill tested in this EL or to the north.

In the southern grid area, chargeabilities are lower and resistivities are considerably higher than on the north grid. Unless this is due to incorrect equipment calibration (a different transmitter was used for each grid), this implies much less conductive material is present on the southern grid, ie less graphite in the Farrell sequence (?). Nonetheless, strong chargeability and weaker resistivity trends are present on the eastern side of the grid (east of the Henty Fault). No drilling has been done on the Henty Fault on this grid and the Fault position has been interpreted where the chargeability increases from west to east (as is the case on the northern grid). This interpreted position is 100-500 metres east of the previous "geological" position. However, glacial cover over most of the grid means that mapping is of little help. If this geophysically interpreted position is correct then the Farrell slates are not conformable with the Fault but thin or cut out from north to south. This is evident from the convergence of the main Farrell conductive zone with the Fault line (Fig. 11).

South of 2500N the IP contours indicate both faulting and possible thickening of the Farrell sequence. The Sterling Valley mine occurs at the northern end of a strong linear chargeability and resistivity trend. This anomaly gets stronger and bifurcates to the south. The eastern limb is presumably due to graphitic slates ± sulphides as at Sterling Valley. The western limb may have a similar cause but its proximity to the (interpreted) Henty Fault suggests it may be caused more by sulphides than graphite.

At least 4 (shallow) drill holes can be recommended on the following target locations: 1000N/4700E, 1800N/4850E, 2500N/4980E, 1200N/4910E. There are no gravity data over this grid to help elucidate the causes of the IP anomalies. (The 1959 data extended as far south as about 2700N).

The ground magnetic data over this grid indicates 3 anomalous zones:

1. In the north-western part of the grid a strong magnetic source occurs striking north. It is probably due to intrusive dolerite dykes and sills as mapped by EZ (and as drilled by STP 283 on 3260N). There is no strong associated IP response as would be expected from a pyrrhotite source, although minor sulphides (pyrite, arsenopyrite) were intersected in STP 283.

2. In the south-eastern corner of the grid magnetic anomalies occur in the Farrell sequence (?). EZ have previously mapped acid intrusives on line 1050N so these could well be the cause since Cambrian granites are known to be magnetic in this general area. They are clearly delineated on the Dighem data.

3. Deep magnetic sources occur in the western volcanics on lines 1400 and 1600N, perhaps related to that on 2000N at about 4250E. Possibly because of their depth there is no IP correlation so their cause is unknown. Basic dykes could be the cause as in anomaly 1.

The results from the gravity survey on 3260N, indicate that the Henty Fault occurs both at a gravity and elevation low. The gravity expression possibly implies deeper weathering over the Fault although the low is rather broad for such a near surface feature. The gravity high east of the Fault is somewhat unexpected since the Farrell slates could be presumed less dense than the high observed on the RTAE (1959) gravity survey (about 0.5mgals), which has a strike extent of at least 600m. This feature was tested by EZ in 1961 with DDH STP 101. A typical Farrell sequence was intersected, altered tuffs and black slates with minor veins of sulphides (pyrite, galena, sphalerite). There is a coincident strong IP/Resistivity anomaly. The intersected sequence was presumed to explain the gravity anomaly although no density measurements appear to have been made.

030

Base metal assay results were low. Gold results are not known (incidentally there was no gravity anomaly over Sterling Valley).

The decreasing gravity trend on the profile from west to east is an indication of shallowing Devonian granite at depth as shown on the regional Mines Department gravity data. This indicates a steep granite contact beneath the Henty Fault the length of the EL. The granite has possibly been the main cause of the alteration and mineralization along the Henty Fault in the Sterling Valley EL.

6.3 Relogging & Resampling of Old Drillholes

See Appendices 2 and 3.

Only traces of gold were detected in the Farrell sediments sampled in Aberfoyle hole SV 2 close to section 3260N. The best intersection was 2m @ 0.11 g/t Au, 3 g/t Ag, 0.36% Sn, 0.86% As, from 93-95m, which equates with a zone of 5-10% pyrrhotite-pyrite-sphalerite in black shale in hole SV 3. All other gold values were <0.06 g/t Au. The Farrell sediments in the sampled section are dominated by poorly-sulphidic quartzose sandstone.

Gold sampling in EZ holes STP 217 and 221 produced mixed results. The previously unsampled intervals in STP 217 yielded a maximum value of 0.28 g/t Au over 1.6m (122-123.6m), with all other values <0.1 g/t Au, although every one of the 37 samples contained some gold.

Hole STP 221, which had previously only been analysed for gold by aqua-rega AAS, yielded several significant results and some sizeable discrepancies with the earlier assays. Both sets of results appear in Appendix 2. The best intersections are as follows:

HOLE STP 221

<u>Interval</u>	<u>Width</u>	Shell Fire Assay 1987 <u>Au g/t</u>	EZ Aqua Rega AAS 1980 <u>Au g/t</u>	(AAS EZ 1980) <u>As</u>	Geology (ex EZ logs)
28.8-31.6m	2.8m	1.85	<0.008	0.75%	Mass. py in cleaved andesite (adjacent Arsenic Zone 'A')
35.8-37.8m	2m	0.87	0.16	8.25%	Vns po, py, aspy in sil -icified andesite (Arsenic Zone 'A')
51.8-52.8m	1m	5.40	2.08	70ppm	Minor veins po & py in andesitic lithic tuff
57.1-61.6m	4.5m	1.07	0.5(approx)	270ppm	" "

032

All the intersections occur in the Mt. Black Volcanics well west of the Henty Fault, which was intersected at 122.7m in the hole. Note, there was no gold at all either on the fault or in the sediments immediately to the east.

Although it is not known exactly how EZ calculated the reserves of the Arsenic Resource at 480,000 tonnes @ 5% As, 0.84 g/t Au, it would seem that the Shell gold sampling in STP 221 would result in a slight lift in the overall gold grade.

It should be noted that some of the Shell assay values in STP 221 are probably understated due to the removal, prior to sampling, of some of the most-sulphidic sections for metallurgical testing. This particularly applies to samples between 32.6-40.8m. Efforts were made to trace this material and have it assayed, without success.

033

7.0 DISCUSSION OF RESULTS

The results of Shell's work since the Joint Venture commenced in November 1986 have been moderately encouraging and the EL definitely warrants further testing for gold and basemetal mineralization along the Henty Fault.

With the accumulation of knowledge of this style of mineralization, particularly since the discovery of the Lakeside gold body at Murchison River, it is clear that more drilling is warranted to the north of the Arsenic Resource. The Lakeside gold body occurs on the Henty Fault only 300m north of the revised northern boundary of the EL (375,000mN AMG), and only 900m from the northern-most drillhole into the 'Arsenic Resource' (hole STP 234). It has always been understood that the 'Arsenic Resource' was not closed off to the north, but this mineralization lies mainly in the Mt. Black Volcanics west of the Henty Fault whereas the Lakeside gold body is hosted by chloritic quartz sandstone immediately east of the fault. The eastern side of the fault is clearly the more-prospective. This confirms Shell's original rationale for taking up the Sterling Valley JV - that the previous drilling had concentrated on mineralization west of the fault, leaving the eastern side under-tested.

Both the western and eastern mineralized positions warrant drilling north of STP 234, especially since the only hole further north, STP 232A-1, was not a wholly effective test

034

being collared essentially on top of the fault. It is interesting here to note a comment made by Ian McDonald of EZ in 1985 (EZ Report T210, p.21), that STP 234 "contains more +1 g/t Au and +0.1 g/t Au assays than any other hole so far analysed suggesting that gold may be increasing to the north of this zone".

The Shell drillholes SVD 87-1A and SVD 87-2 were disappointing in that, while they intersected altered sulphidic zones on and immediately east of the fault, these did not contain any significant gold or basemetal values. However, the holes demonstrate how necessary it is to systematically test along the fault as there appears to be sulphides along most of its length in this area, and economic gold values could occur anywhere. Notwithstanding the complications caused by the patchy graphitic content of the sediments to the east, the IP results can be used to find areas of greater sulphide concentration along the fault. All our experience to date has shown that the best gold values tend to be in areas of greatest sulphide accumulation, although as to be expected with gold, there are numerous exceptions - with some high gold values in zones of low sulphides and some high-sulphide zones devoid of gold.

It is interesting to note that there is no IP response over the fault on section 3260N, drilled by SVD 87-1A, whereas the hole did intersect a reasonable amount of sulphides in this position (200m below surface) - a 10m zone averaging 4% py-po

with minor aspy-cp. This may suggest that in this central sector of the EL the amount of sulphides along the fault is increasing with depth.

Interpretation of geophysical data over the Sterling Valley EL is hampered by the various vintages, especially of IP surveys. Unfortunately the precise position of the old RTAE imperial grid is uncertain, so some useful data sets have possible positioning errors. (McPhar IP, gravity, ground mag, dip angle EM and SP). There have also been a variety of IP surveys with different receivers, different dipole-spacings and different line spacings, so comparison of these creates problems for interpretation.

Bishop (1980) has previously summarised the geophysical data in the Sterling Valley. At the time of his report the emphasis was primarily on tin-exploration, so particular interest was shown in the various magnetic anomalies. They still remain of interest for gold exploration if they indicate a concentration of sulphide or help elucidate structure. The main anomalies are indicated on the 1:10,000 geophysical compilation map (Fig. 8). Some have been drill tested.

Anomaly A. Probably tested by RED 86-1 (Rosebery East EL).
Appears to be due to pyrrhotite in Farrell volcaniclastics.

- Anomaly B. Tested by several holes (EZ's Arsenic Resource). Due to disseminated pyrrhotite immediately west and east of the Henty Fault. Associated with moderate IP/Resistivity anomalies.
- Anomaly C. Tested by STP 220. The anomaly is probably due to pyrrhotite in the Farrell volcanoclastics as for A, which is along strike. Gold grades are low.
- Anomaly D. Similar geophysical situation to A and C immediately west of the Farrell graphitic slates. The main source of the magnetic anomaly may not have been tested by DDH's SV 3 and STP 105 (too shallow). The coincident gravity anomaly (RTAE 1959) might imply a larger concentration of sulphides at depth, since the shales are not expected to be the cause, although a significant increase in sulphide content could be.
- Anomaly E. Although not drill tested this magnetic anomaly has been attributed in the past to a magnetite-bearing basic intrusive (?) in the volcanics west of the Henty Fault. It is downgraded as an economic prospect since it has no IP correlation (see comments for Sterling Valley South).

The geophysical compilation map (Fig. 8) indicates the position of the graphitic Farrell slate unit by virtue of its very low resistivity and high chargeability. It is very strike extensive and linear, extending over at least 10 km from north of Farrell mine to south of Sterling Valley mine. The unit is sub-parallel to the Henty Fault, but the separation of Fault and slate does vary suggesting the Farrell volcanoclastics may be cut out or increased in thickness in certain areas. Cross-cutting faults are evident which further complicates matters. Three such faults are evident in the Sterling Valley EL as indicated on the compilation plan.

1. The northern (SW-NE) fault coincides with a photo-linear plotted by EZ. Its existence is supported by various geophysical data, in particular the resistivity pseudo-sections of 4280N and 4160N (EZ data) which show a lateral shift of the resistivity low (sinistral). The two magnetic anomalies (B & C) in the same area may be due to hydrothermal alteration (including pyrrhotite) adjacent to the junction of the Henty Fault and this cross fault. Background chargeabilities north of the fault indicate an increase in disseminated sulphides as verified by the drill holes into anomaly B.

2. Although not as clear as the northern fault, another (parallel?) fault appears to occur 4-500 metres south. This too has adjacent magnetic anomalies, of which the most interesting, D, has been already discussed and mention has already been made that it may not have been conclusively tested.

3. A fault at the southern end of the EL is possible from both the original EZ and the recent Billiton IP data. A prominent and coincident Dighem resistivity low suggesting regional alteration, and the proximity of the Sterling Valley mine, which carries high gold values (+6 g/t), upgrades this area.

It is unclear whether the Henty Fault displaces these cross-faults, or vice-versa. Outcrop position, especially of the "western" (Mt. Sale) volcanics, suggest the cross-faults may post-date the Henty Fault, thus displacing it. These faults may be related to the underlying Devonian granite(s) which could have caused the alteration and vein-type mineralization.

8.0 CONCLUSIONS & RECOMMENDATIONS

The Arsenic Resource, outlined by EZ diamond drilling, still has potential to be expanded, with an increase in gold content. As the only mineralization that has been discovered in the intermediate volcanics to the west of the Henty Fault it increases the prospectivity of these units along strike.

Detailed geophysical surveys at the north end of the Henty Fault have delineated a chargeability anomaly adjacent to the fault. The northern boundary of the EL is only 300m south of the southernmost drill hole at the Lakeside prospect that intersected gold mineralization.

Detailed geophysical surveys in the southern part of the Sterling River valley, have delineated significant linear zones of low-resistivity, high-chargeability, in the sediments east of the fault. These anomalies require drilling to show whether the response is caused by sulphides, or graphitic shales. There are also three magnetic anomalies which may reflect pyrrhotite sulphides, which may be host to further arsenic and gold mineralization.

The drilling completed in 1987 successfully located the Henty Fault, and produced low gold values. However, given the low density of drilling, the presence of gold bearing sulphides, structural features and anomalous geophysical responses, the area has good potential for the discovery of economic gold bearing sulphides.

040

It is recommended that a diamond drilling programme be carried out to test the geophysical anomalies. A minimum programme of four holes will be required.

An application should be made to the Tasmanian Department of Mines for an extension to part of the licence beyond its normal expiry date, to enable the drilling programme to be completed. An area of 9km² is outlined for the extension.

It is recommended that the remainder of the licence be relinquished in line with the Licence conditions.

041

9.0 EXPENDITURE

From the commencement of the Joint Venture in November 1986, when Billiton Australia took over management of the EL, to the end of 1987, a total of \$129,232 was spent on exploration.

APPENDIX 1

DIAMOND DRILL LOGS: SVD 87-1, 1A, 2

04A

SHELLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION
DRILL LOG SHEET

PROJECT **STERLING VALLEY** HOLE NAME **SVD 37-1**
LOGGED BY **J.G. PURVIS** TOTAL DEPTH **30m**

CONTINUATION SHEET

DISTANCE FROM COLLAR		CORRECTION	DEPTH	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
TO TOP	TO BOTTOM									
1.25	0.15		24.07							0-6.0m: MAFIC LAVA Green, R-med gr Mostly unoxidized with numerous badly broken oxidized zones & limonite and MnOx coatings on fract. Strongly chloritized. Zones of diffuse bleaching and staining with sericite & qtz and sulphides, up to 100mm 40% LCA. Overall: 1-2% py > sp-gr (as lim. after steps), as stringers to 10mm & qtz, also in small patches. Some qtz-chlor veins to 50cm. Abrupt change at 6m.
										6.0-30.0m: HIGHLY OXIDISED MAFIC LAVA Yellowish-brown to pale red. Very soft and clayey with numerous puggy broken zones & sulphidated vein qtz frags to 50mm. These zones are 2' depth - from 21-27m recovered core mostly just frags of vein qtz. Some limonite and MnOx with qtz. Numerous veinlets of MnOx at all angles. Frags 6-9m, centered at 7.5m, shadow zone with frags of bleached coarse sericitic schist 60% LCA & MnOx stringers. Some qtz-chlor limonite veins in lava adjacent to the shadow zone. Hole stopped at 30m due to poor recoveries. END OF HOLE.

ASSAY INFORMATION

817045

SHL MET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

Note: Analyses by Conlabs, Adelaide, April-May 1987.
Shell Despatch Order Nos 11539-11541.
Gold determined by 30gm Fire Assay.

The Shell Company of Australia Limited
METALS DIVISION

DRILL LOG SHEET

CONTINUATION SHEET

PROJECT STERLING VALLEY HOLE NAME SVD 87-1A
LOGGED BY J.G. PURVIS TOTAL DEPTH 298.5m

DISTANCE FROM COLLAR	TO TOP		Au	Cu	Pb	Zn	Ag	Sn	As	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
	TO TOP	TO BOTTOM														
1.00	3.00	0.04	95	22	270			6	116	14267						<p>0-12.6m: OXIDISED MAFIC LAVA Yellow-brown. Strongly oxidised - core mostly soft, clayey and v. blocky broken. Numerous fractured zones. Gen massive, with a weak schistosity - this inc at base. Relict feld falls to 4mm, av 1-2mm. Some variations in rock text esp in size and abundance of felds. Rare 1° banding below 7m (20% LCA @ 7.9m). Ox lens 4-7m: - rock w/ green chloritised & chloritised feld or terrigenous, & diffuse qtz-py veins and patches, assoc & local silif, locally up to 5-10% py, minor hematite. Some leached and bleached perititic and schistose near zones. (Common veins of Mn Ox and lignite - rarely to 25mm. Some crushed gossanous qtz - limonite veins.</p>
3.00	5.00	<0.01	210	200	1000			46	600	14268						
5.00	7.00	0.08	350	1100	890			180	680	14269						
7.00	9.00	0.09	320	500	1350			65	920	14270						
9.00	11.00	0.03	210	510	1650			10	810	14271						
11.00	13.00	0.03	165	90	1150			<4	240	14272						
13.00	15.00	0.04	105	50	990			<4	135	14273						
15.00	17.00	<0.01	85	20	960			<4	90	14274						
17.00	19.00	<0.01	28	28	930			<4	40	14275						
19.00	21.00	<0.01	16	18	460			<4	26	14276						
21.00	23.00	<0.01	12	16	350			<4	26	14277						
23.00	25.00	<0.01	42	16	480			4	112	14278						
25.00	27.00	<0.01	125	22	480			4	90	14279						
27.00	29.00	<0.01	110	24	330			<4	18	14280						
																<p>12.6-14.0m: SERICITIC SCHIST AFTER TUFFACEOUS VOLCANIC (?) Possibly just a deformed version of the mafic volcanic. Strongly oxidised/leached and bleached. Soft and broken. Generally altered. Fg gr. Sl sericitic. Mod schistosity 20% LCA. Some Fe and Mn ox on fract's and schistosity. Both contacts broken.</p>
																<p>14.0-36.0m: OXIDISED INTERMEDIATE-MAFIC LAVA WITH INTERCALATED BASALT DYKES AND/OR FLOWS Brown, soft, clayey and highly broken. Mainly a massive, med gr, fibrous-perthitic lava & abundant felds to 3mm, av 1-2mm. 1° banding noted at 35.8m 50% LCA. Basalt in 1/2 gr, from 50mm to 3m wide. Contacts with feld-patch lava are at varying angles. Prob 1° banding noted in basalt @ 34.9m 50% LCA. In lead-ox remnants both rock types are chloritised. Numerous veins of Mn + Fe oxides, also larger qtz-limonite veins (av 5-20mm). Some qtz veins to 100mm at low angle to LCA - some karstedted and filled, within clay seams. Lower contact 55% LCA.</p>
																<p>36.0-53.3m: OXIDISED MAFIC LAVA Same rock type as above 12.6m. Brownish-grey. Moderately oxidised, with numerous highly-oxidized zones with clay seams - 85mm aspec & qtz-limonite veins 10-30mm, at all angles. Core, badly broken in rock zones, but gen rock condition greatly improved over rocks above. Med gr, massive, even-text chloritised green terrigenous laths to 4mm, av 2mm, evenly distrib in fibric granoblastic zones of epidote-chlorite-carbonate-bleaching zone & qtz veining. Also fibrous sericitous mineral.</p>
38.00	40.00	0.02	40	14	300			<4	28	14281						
40.00	42.00	<0.01	55	18	210			<4	18	14282						
42.00	44.00	0.02	38	16	200			<4	22	14283						
44.00	46.00	0.02	85	20	360			<4	36	14284						

ASSAY INFORMATION

036

817047

SMLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION

DRILL LOG SHEET

CONTINUATION SHEET

PROJECT **STERLING VALLEY** HOLE NAME **SVD 87-1A**
LOGGED BY **J.G. HURVIS** TOTAL DEPTH **298.5m**

DISTANCE FROM COLLAR		Au	Cu	Pb	Zn	Ag	Sn	As	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DEEC CODE	GRAPHIC LOG	DESCRIPTIVE LOG	
TO TOP	TO BOTTOM															
55.80	57.00	<0.01	110	520	640	2	12	50	14285							Gen. not schistose but occ schistose zones towards base. 40% LCA @ 46m + 53m. Thick MnOx and limonite stains with some boxworks on fracture - some likely to be due to sulphide min. Basal contact 43% LCA.
57.00	59.00	<0.01	110	36	230	1	220	32	14286							
73.75		PETROLOGICAL SAMPLE							14061							53.3 - 88.7m: MAFIC LAVA Similar to above except finer gr. Fi-red gr, green, massive. Composed of fine feld and lesser hornblende from 60-70m grain size is consistent with felds at 1-2mm, suggesting unit is single lava flow. At 78-80m breccia text and vague banding may indicate flow margin. Some coarse-grained leucocrone. Mud chloritized, carbonized with weak oxidation. Ubiquitous patches + vein-like zones of bleaching with carbonate-chlorite-epidote ± Qtz, some of pyrope. Much of this alt-veining is in schistose zone 40% LCA, containing v minor disten py. Common barren Qtz - calc veins to 60mm. Mud oxidized and broken to clon, becoming hard and more brittle than and pyro interbed. Some leaching of calc to 80m. 55.75 - 56m: fault 40% LCA - puffy sericitic zone ± 5-7% py. 72m: puffy shear 10% LCA. Common Mn + Fe oxide stains and boxworks on fracture. Dec. ± depth - only a small amount prob due to sulph. 53.3 - 79.5m: Veinlet py, trace cp, po, hem (silphs best in zones of stronger alt). Calc not magnetic. 79.5 - 80m: 1-2% py - po > cp disten + veinlets. 80 - 88.7m: v minor disten cp > py. Basal contact 35% LCA.
94.30	95.80	0.03	70	28	180	<1	<4	36	14287							88.7 - 104.65m: VARIABLE MAFIC VOLCANICLASTICS Common. Tuffaceous - feld xyl - lithic mafic volcanoclastics varying from f. or bands of reworked tuff to lithic lava breccia. Serpentine appears at least partly reworked. Abundant feld xyls as seen in vitric mafic tuffaceous matrix containing leucocrone. Gen lithic at <10mm, composite mafic lava, some fine basalt, tuff (some v. siliceous). Lithics have irreg + angular margins. Below fault at 97m, to 101.15m, (unit 3) mafic lava breccia with cherts to + common, some amygdaloidal, in tuffaceous matrix ± feld xyls. 1° leucation: 91.7m: 25% LCA; 98m 20% LCA; 102m 30% LCA. Mud - strong chlorite-epidote-carbonate - Qtz all. Partly silty. Calc ± Qtz veins. 94.3 - 97m: distributed strongly alt zone centered on fault at 95.3m 70% LCA. Intensely silty, ± chlorite-epidote - f. feld
95.80	97.00	0.02	65	18	75	1	<4	20	14288							
100.80	101.00	0.03	2600	18	165	3	<4	3	14289							

ASSAY INFORMATION

027

817048

SHLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION
DRILL LOG SHEET
CONTINUATION SHEET

PROJECT **STERLING VALLEY** HOLE NAME **SVD 87-1A**
LOGGED BY **J.G. PURVIS** TOTAL DEPTH **298.5m**

DISTANCE FROM COLLAR		SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG																
TO TOP	TO BOTTOM																							
14061	73.75m	14061						<p><i>-carbonate - bleaching. Nucleus qtz - K feld veins. Brecciation. V. broken & leaching and ox 95-96.3m.</i></p> <p><i>88.7-94.3m: V minor dissem py - cp > po.</i></p> <p><i>94.3-97.0m: 5-10% dissem py (in fault zone).</i></p> <p><i>97-104.65m: Minor py/cp dissem & veratol; except: 100-101m: 1-2% dissem cp & py.</i></p> <p><i>Irreg basal contact.</i></p> <p>104.65-106.95m: BASALT</p> <p><i>Green. fi - med gr.</i></p> <p><i>Med chloritized and carbonatized. Minor patchy silic.</i></p> <p><i>Calc veins, some ± qtz.</i></p> <p><i>Minor dissem py - cp.</i></p> <p><i>Basal contact a shear 35°/LCA.</i></p> <p>106.95-108.60m: MAFIC TUFF (SEDIMENT?)</p> <p><i>Green. fi gr.</i></p> <p><i>Med - shaly schistose and chloritic, with banding (bedding?) in places (42°/LCA @ 108m)</i></p> <p><i>Common calc veins. Broken in places.</i></p> <p><i>V minor dissem py.</i></p> <p><i>Basal contact 58°/LCA.</i></p> <p>108.60-113.30m: BASALTIC VOLCANIC BRECCIA</p> <p><i>6-8cm. Hard. Variable clay and texture.</i></p> <p><i>Most clasts basalt lava (10 + 100mm), others mafic tuff and silic tuff. Most clasts < 30mm. In matrix of fine silic tuff, red xyls and tuffaceous matrix.</i></p> <p><i>Clasts gen have irrg margins, some smooth.</i></p> <p><i>Strong chlorite - epidote - carbonate alt. Patchy silic ± pale pink homogenisation (these zones contain dissem py).</i></p> <p><i>Abund irreg carb & qtz veins.</i></p> <p><i>Rock has horizontal lamination (bedding?) accentuated by med schistosity. (1° lineation 38°/LCA @ 111.5m)</i></p> <p><i>No clear evidence of reworking although clasts are of variable rock types.</i></p> <p><i>Minor dissem py - cp.</i></p> <p><i>Irreg basal contact 30°/LCA.</i></p> <p>113.3-122.80m: INTERMEDIATE-MAFIC LAVA</p> <p><i>Green. Med gr. Some textural variations.</i></p> <p><i>Channel white feld xyls to 4mm, av 2mm, often in groups. Abund leucocrone.</i></p> <p><i>Med - shaly altered (chlorite - carb - epidote) and deformed.</i></p> <p><i>Schistosity 1° AS/LCA @ 118m.</i></p> <p><i>Abund carb veins ± qtz ± chlor. Some large irreg qtz - carb - chlor veins below 118.5m up to 300um. Some silic.</i></p> <p><i>V minor py - cp > po.</i></p> <p><i>Basal contact 36°/LCA.</i></p>																
14062	120.1m	14062						<p>120.10 PETROLOGICAL SAMPLE 14062</p>																
14061	73.75m	14061						<p>Sample Number: 14061 (SVD 87-1A 73.75m)</p> <p>Identification: Greenstone (metabasalt) with porous, crenulated veins of epidote</p> <p>Description:</p> <p>The sample is a drill core specimen of fine-grained, greenish grey rock with some crenulated, thin, porous, very light olive grey veins.</p> <p>Cobaltinitrite stain gave some diffuse reaction but did not indicate any definite K-feldspar.</p> <p>In thin section the sample displays abundantly porphyritic, volcanic textures, modified by metamorphic recrystallisation, veining and incipient foliation. The phenocrysts are about 0.2 to 1mm in size and groundmass laths were about 0.1mm long.</p> <p>The main phenocrysts have prismatic shapes of pyroxene style: they now consist of chlorite with minor actinolite and fine sphene. Less abundant tabular phenocrysts are partly recrystallized plagioclase. The groundmass consists of abundant actinolite and subordinate albite, epidote, sphene and chlorite. There is a large inclusion (tens of millimetres) of coarser grained, richly feldspathic andesite porphyry with mafic components altered to chlorite, actinolite and sphene.</p> <p>The main crenulated veins (up to 1mm wide) contain fine epidote, minor chlorite, quartz, pores and rare specks of goethite. A few veins are more chloritic and carry some albite.</p> <p>An approximate mode is:</p> <table border="1"> <tr><td>10-15%</td><td>chloritized phenocrysts</td></tr> <tr><td>3-4%</td><td>plagioclase phenocrysts</td></tr> <tr><td>40-50%</td><td>groundmass actinolite</td></tr> <tr><td>15-20%</td><td>groundmass plagioclase</td></tr> <tr><td>10-15%</td><td>groundmass epidote</td></tr> <tr><td>2-3%</td><td>groundmass sphene</td></tr> <tr><td>1-2%</td><td>groundmass chlorite</td></tr> <tr><td>4-6%</td><td>veins, carrying epidote and some chlorite, albite, quartz, pores and rare goethite</td></tr> </table> <p>Comments and Interpretations:</p> <p>This rock is interpreted to have originated as an abundantly porphyritic mafic lava. Its high inferred mafic index is consistent with basalt, but it does not seem to have carried any olivine.</p> <p>It has been converted to a "greenstone" mineral assemblage of actinolite-chlorite-albite-epidote sphene, probably by low grade metamorphic processes. Fissure veins dominated by epidote developed before or during incipient shearing. Pores in the epidote veins may reflect dissolution of carbonates (none preserved) perhaps facilitated by the presence of a few grains of sulphide (inferred from rare goethite).</p> <p>I am inclined towards the volcaniclastic interpretation.</p>	10-15%	chloritized phenocrysts	3-4%	plagioclase phenocrysts	40-50%	groundmass actinolite	15-20%	groundmass plagioclase	10-15%	groundmass epidote	2-3%	groundmass sphene	1-2%	groundmass chlorite	4-6%	veins, carrying epidote and some chlorite, albite, quartz, pores and rare goethite
10-15%	chloritized phenocrysts																							
3-4%	plagioclase phenocrysts																							
40-50%	groundmass actinolite																							
15-20%	groundmass plagioclase																							
10-15%	groundmass epidote																							
2-3%	groundmass sphene																							
1-2%	groundmass chlorite																							
4-6%	veins, carrying epidote and some chlorite, albite, quartz, pores and rare goethite																							
14062	120.1m	14062						<p>Sample Number: 14062 (SVD 87-1A 120.1m)</p> <p>Identification: Foliated, chloritic, possible finely volcaniclastic arenite of andesitic composition</p> <p>Description:</p> <p>The sample is a drill core specimen of evenly fine-grained, greenish grey rock with subtle foliation and some disturbed light olive grey epidote veining.</p> <p>A staining test revealed no K-feldspar.</p> <p>In thin section the sample is seen to consist of small, equant to prismatic grains of twinned, lightly chloritized and carbonated plagioclase (about 0.1 to 0.2mm in size) and cloudy sphene pseudomorphs of inferred oxide grains (0.1 to 0.3mm) set in a foliated matrix of chlorite and streaks of sphene. There are no structures which resemble phenocrysts of phenocrysts.</p> <p>Strongly crenulated and foliated vein structures contain fine-grained epidote group minerals, chlorite and calcite. An irregular, but less obviously deformed thick vein carries coarser epidote and calcite and calcite has replaced chlorite as the matrix mineral in nearby host rock.</p> <p>An approximate mode of the section is:</p> <table border="1"> <tr><td>50-60%</td><td>plagioclase</td></tr> <tr><td>20-25%</td><td>chlorite</td></tr> <tr><td>4-6%</td><td>calcite</td></tr> <tr><td>4-6%</td><td>sphene</td></tr> <tr><td>12-18%</td><td>veins carrying epidote, chlorite, calcite and rare pyrite</td></tr> </table> <p>Comments and Interpretations:</p> <p>The bulk composition of this rock was andesitic, but its textures are not able to be interpreted with confidence. It is chloritized, distinctly foliated and lacking in phenocrystal or phenoclastic textures. Perhaps it was a finely sandy textured volcaniclastic rock prior to chloritization, veining and deformation or perhaps it was a lava which has been chloritized then severely sheared.</p>	50-60%	plagioclase	20-25%	chlorite	4-6%	calcite	4-6%	sphene	12-18%	veins carrying epidote, chlorite, calcite and rare pyrite						
50-60%	plagioclase																							
20-25%	chlorite																							
4-6%	calcite																							
4-6%	sphene																							
12-18%	veins carrying epidote, chlorite, calcite and rare pyrite																							

ASSAY INFORMATION

028

817049

SILMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION
DRILL LOG SHEET

PROJECT **STERLING VALLEY** HOLE NAME **SVD 87-1A**
LOGGED BY **J.G. PURVIS** TOTAL DEPTH **298.5m**

CONTINUATION SHEET

DISTANCE FROM COLLAR	TO TOP		Au	Cu	Pb	Zn	Ag	Sn	As	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG	
	TO TOP	TO BOTTOM															
130.80	131.45	0.06	76.0	11.0	34.0	4	300	44.50	14290								122.80-159.70m: REWORKED MAFIC VOLCANICLASTICS AND TUFFACEOUS SEDIMENTS Variable sequence of fine mafic feld xyl - lithic volcanoclastics intercalated with zones of fine bedded tuffaceous sediments. Minor basalt lava and fabric intermediate mafic lava intercalations, (blocks?). Green, ft-med gr. Lithic clasts up to 10mm, max 30mm, angular < 1mm. Include mafic lenses (most abundant), also rhyolite tuffs, siliceous tuffs and carbonate tuffs. Clasts are variably all-same size and silt. Clasts sorted into fine and coarse zones but not bedded. Matrix strongly schistose and chlorinated & abundant feld xyls as 2mm and small streaked-out lithic tuffaceous beds most common below 140m. Include feld xyl tuff and tuffaceous silt and sandstone. Gen strongly schistose (in places just chlorite schist). Bedding visible in places: 25% LCA @ 130m, 40% LCA @ 140m, 40% LCA @ 145m; 32% LCA @ 154.7m. Much soft-sediment deformation of bedding. Rocks med-strongly chloritized and carbonated (below 140m). Minor carbonization and silt cap around the common veins and patches of qtz-carb (& chlor). Strong shear @ 129.05m (30% LCA) - core broken 128.95-131.20m. Strong fault 133.95-134.35m, 40% LCA & purple basalt zone. 131.1m: 50mm qtz-sulph (py-cp-asp-py) - chlorite-carbonate vein 30% LCA. Minor patchy py > cp, trace go. Dissem. Except: 129.7-130.8m: 1% py > cp-asp-go. Dissem. 130.8-131.45m: 3-5% py & asp - cp - po 133.9-134.6m: 2% sp, minor py (ARAC & fault). 134.6-136m: 1-2% py-cp, trace sp-an. Assoc & at carb veins. Some laminae of v. f. at top in top sed below 140m. Basal contact gradational.
133.90	136.00	<0.01	11.00	4.20	28.00	3	18	3.6	14291								
159.80	161.35	0.06	30.00	11.0	29.0	5	64.0	1.792	14292								159.70-174.70m: SCHISTOSE MAFIC LAVA(S?) Dk green, med gr, med-strongly schistose. None disrupted zone 165.7-167.1m rock so massive, fi-med gr with small felds in strongly chloritized and carbonated matrix, with ubiquitous leucocera below this rock similar but & py-ph falls to 3mm, as 2mm (possibly two flows?). Strong chlorite-carbonate alt & minor carbonization. Minor carb veins & patches - some & minor qtz and patchy silt. Schistosity and alignment of carb veins becoming more marked & deep (40% LCA @ 177m). Minor py > po - cp dissem & variable. Except: 159.7-161.35m: 1-3% dissem & vein (qtz) py-sp-an-py-cp-asp-wid. 159.95-160.15m: Qtz & carbonate vein 40% LCA & 25% asp-py-po-cp; 161-161.2m: qtz & chlor & trace vein 50% LCA & 5% py-po-asp-cp. 165.3-167.1m: 2-3% py-pd-zsp-cp dissem & sample
165.30	167.10	<0.01	1.00	4.2	3.00	2	1.2	6.5	14293								
172.25			PETROLOGICAL SAMPLE							14063							

ABRAT INFORMATION

023

877050

SHELLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION
DRILL LOG SHEET

PROJECT **STERLINS VALLEY** HOLE NAME **SVD 87-1A**
LOGGED BY **J.G. PURVIS** TOTAL DEPTH **298.5m**

DISTANCE FROM COLLAR TO TOP	DISTANCE FROM COLLAR TO BOTTOM	Au	Cu	Pb	Zn	Ag	Sn	As	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG	
																1
																174.70 - 196.75m: MAFIC VOLCANIC BANDED TUFFS AND FINE FELDSPAR CRYSTAL-LITHIC VOLCANICLASTICS. Possibly a pyroclastic/epidolite hybrid. Green, variable texture and grain size. Comprises fine lappaceous sands and sandy-textured soft-lithic volcaniclastics (lithics) matrix, with 10% silic tuffs, an < 5mm max (5mm); folds an 1-2mm. All deformed by strong schistosity, but bedding visible in places (1.5% lca D175.4m; 35% lca D 184m). Gem veining appears minimal. Occ. interstratifications 0.2 - 0.5m of mafic lava (flats or blocks?). Rock strongly chlorite-carbonate all, abund carb veins, patches and bands ± qtz. Also alteration and deformation (includes a chlorite-carbonate schist) matrix. Mineral and compositional details impossible to determine completely - this applies throughout this sequence west of the Henty Fault. Minor dissemin py-cp > po, and e. druse. 178.6m: 50% qtz vein, 40% lca (schistosity) / 10% Shep 20% po. basal contact 45% lca.
																196.75 - 211.25m: SCHISTOSE, DEFORMED, MAFIC LAVA? Green, b-mat qtz. Texture v. deformed by increasingly strong schistosity and strong chlorite-carbonate all. Sericitization, bleaching, and patchy silt, inc. below 196.5m. Essentially a chlor-carbonate schist below 196.5m. Schistosity 40% lca D 197.2m. One but visible towards top of interval - shows some radiolites and banding (1.5% lca D 192m) Deformed fold xyls 1-2mm fine leucocrone. Carb-filled amygdules to 4mm D 193.3m. Much veining: carb > qtz to 195m, then qtz > carb. Below 200m rock brecciated & breccia matrix of vein. qtz-carb & assoc silt. Below 208m comp phosom. Aluminite and rock is broken up. Minor thin tourmaline veins below 208.3m. 210 - 211.25m: Intense silt (rock composed of qtz-chlor-aluminite) heavily fractured & brecciated with thin tourmaline and purple fluorite veins & patches. Trace schistosity, etc to minor below 20m. (Dissem py-cp - as py - sp). Except: 196.2 - 197.45m: 1-2% cp, hem-mag. 193.2 - 193.35m: cp > py, dissemin sparats. 210 - 211.25m: 3-5% py > po - cp & much purple fluorite.
																211.25 - 212.30m: HENTY FAULT Main fault plane 211.25 - 211.35m: 50% lca - a 100mm zone of pug & crushed rock. 211.35 - 212.30m: Highly silt, brecciated rock & qtz-chlorite and fluorite (green & purple). Minor crushed black graphitic, chloritic and sericitic shales.
201.00	203.00	<0.01	85	12	130		100	170	14294							
203.00	205.00	<0.01	7	22	105		20	8	14295							
205.00	207.00	<0.01	9	16	165		46	70	14296							
207.00	209.00	<0.01	22	40	185		270	14	14297							
209.00	210.00	0.05	18	18	175		400	16	14298							
210.00	211.00	0.04	1200	12	165		1200	38	14299							
211.00	212.00	0.15	1050	60	110	2	1500	1	842	14300						

ASSAY INFORMATION

Sample Number: 14063 (SVD 87-1A 172.25m)
Identification: chloritized, abundantly porphyritic andesite with veins of calcite-chlorite-quartz and mild deformation
Description:
The sample is a drill core specimen of fine-grained, dark greenish grey rock with many small, light grey phenocrysts of feldspar.
A staining test revealed no K-feldspar.
In thin section the sample plainly displays abundantly porphyritic, hydromorphic, holocrystalline volcanic texture. The phenocrysts are about 0.5 to 1mm in size and the groundmass is dominated by randomly orientated laths of plagioclase about 0.2mm long.
The phenocrysts are mainly tabular, twinned plagioclase, showing minor deformation. There are a few deformed, chloritized mafic phenocrysts. Apart from plagioclase the groundmass carries prominent interstitial chlorite and many specks of sphene after inferred titaniferous oxides.
A thick (7mm), mildly deformed fissure vein carries a narrow marginal zone of chlorite and a core of calcite and quartz. Other thinner fissure veins also carry chlorite, quartz and calcite in various proportions and with some deformation obvious. One of the veins carries patches of pyrite.
An approximate mode is:
15-20% plagioclase phenocrysts
1-2% chloritized mafic phenocrysts
40-50% groundmass plagioclase
20-25% groundmass chlorite
0-10% groundmass sphene
8-10% veins of calcite-chlorite-quartz and rare pyrite

Comments and Interpretations:
This sample has primary textures consistent with abundantly porphyritic lava and its primary composition was apparently andesitic.
The rock has been chloritized, fissure-veined by calcite-chlorite-quartz, then mildly deformed. At least one of the veins carried some pyrite.

010

817051

BHMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION
DRILL LOG SHEET

PROJECT **STERLING VALLEY** HOLE NAME **SVD 87-1A**
LOGGED BY **J.G. PURVIS** TOTAL DEPTH **298.5m**

CONTINUATION SHEET

DISTANCE FROM COLLAR		Au	Cu	Pb	Zn	Ag	Sn	As	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
TO TOP	TO BOTTOM														
212.40	213.00	<0.01	260	36	50	1	460	1200	13701						10-15% dissemin. semi-radiant py-asp? cp-sp.
213.00	214.10	<0.03	510	46	70	1	1900	1400	13702						212.30 - 255.50m: INTERBEDDED GREY QUARTZOSE AND SERICITIC FINE SANDSTONES, SILTSTONES AND DARK GREY SHALES.
214.10	215.00	<0.01	830	16	75	1	1250	250	13703						It grey to pale green, fi-mud or. Phacopit and tuffaceous (fay sericitic) highly argillitic. Mod chloritization, called sericitization to 220m. No calcite. weak. Occ. silif zones. Chlvt all assoc. & qtz-sulphide, veining (+ fluorite - tourmaline - dolomite), these stronger in intervals of shaltered ss.
215.00	216.00	<0.01	490	18	50	<1	1200	600	13704						Small, red-brown brown fine gr. more argillitic and calcareous with deep. Common calcite veinlets & qtz.
216.00	217.00	<0.01	980	28	85	1	870	660	13705						213-218m: shaltered zone - bedded, crystalline and brecciated sedimentary with sulphides and fluorite in matrix and veins, along with qtz-chlorite-dolomite. Some thin tourmaline veins. Slightly green weak, most pronounced at top of unit. 45/LCM @ 217.3m. 40/LCM @ 218.35m.
217.00	218.35	<0.01	710	20	80	1	910	330	13706						Bedding: 36/LCM @ 223m; 53/LCM @ 231m; 40/LCM @ 255m.
218.35	220.00	<0.01	50	75	195	<1	300	18	13707						223-244.7m: 7-10% py-asp? cp-sp dissemin. + usual. Common fluorite.
220.00	222.00	<0.01	16	165	450	<1	<4	14	13708						244.7-248.35m: 5% py-asp? cp-sp. Common fluorite.
222.00	224.00	<0.01	36	85	290	<1	55	16	13709						248.35-250m: 2-3% py-po, minor cp-asp-sp.
224.00	226.00	<0.01	230	110	290	<1	640	440	13708						250-254m: 1% py-po. Trace cp.
249.00	251.25	<0.01	32	70	180	<1	42	30	13711						254-256m: 2-3% py-po. Minor cp-asp. 0.5-sulph-fluorite-tourmaline veins.
251.25	253.50	<0.01	34	60	160	1	22	26	13712						Below 256m: Minor py-po-sp, trace cp. Except 263-264m: 2% po-sp-py; 269-253.5m: 1-3% po-sp-py-cp-sp dissemin. + in veinlets & chlor within chlor-tourmaline-qtz-carb zones near base, av 1/m, with chloritoid. 269-270m: 50mm qtz-fluorite-tourmaline-dolomite-po-py vein. 270-275.1m: 10mm qtz-fluorite-dolomite-tourmaline-py-cp vein. 50/LCM. 249.5-249.3m: zone of chlor-tourmaline-carb-po-py-cp veining. 252.7m: 65mm qtz-chlor-carb-po vein. basal contact bedding 40/LCM.

ASSAY INFORMATION

255.5 - 270.45m: TUFFACEOUS SILTY LITHIC SANDSTONE AND BRECCIA
 Zones of lithic sedimentary breccia and coarse sandstone with deformed & or lithic to 5mm, av 2-3mm, in argillitic and sericitic (tuffaceous) silty matrix. Light grey with some black argillitic zones near top. Diagonal. Mod schistose. Generally lacking bedding. Much dispersed carb but decrease in carb veinlets with depth. Some small lithic of carb. Some larger of carb veins. Much of dispersed carb appears due to mag. of carbonation. Feldspar.
 255.5-257m: 2% dissemin po-sp-py.
 257-266m: 1% dissemin po-sp-py-cp, trace asp. Weak chlorite all assoc. & in sulph.
 266-270.45m: Major po-py, trace sp-cp.
 basal contact bedding 60/LCM.

052

SILMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION

DRILL LOG SHEET

PROJECT **STERLING VALLEY** HOLE NAME **SVD 87-1A**
LOGGED BY **J.G. PURVIS** TOTAL DEPTH **298.5m**

CONTINUATION SHEET

DISTANCE FROM COLLAR		Au	Cu	Pb	Zn	Ag	Sn	As	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIA	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
TO TOP	TO BOTTOM														
282.00	284.00	<0.01	24	4.40	370		1	4	K2	13713					270.45 - 284.0m: INTERBEDDED TUFFACEOUS SILTSTONES, SHALES AND QUARTZOSE SANDSTONES. Well bedded grey and sericitic (tuffaceous) sediments as above 255.5m. Pale grey to dk grey. Partly graphitic. uk - Mod. Schistose. 281-284m: Partly silt and/or clayey pale grey sericitic siltstone (look like Rosebery host rocks). 2 large (0.2 x 0.25m) graded beds @ 274 + 275m are dominantly facings (to top to East) bedding 270 to 274m. Much fine calcareous mica 275.25 - 278m assoc = broken zones around sin shear + barren qt-carb veins to 40cm. Main shear TO/LCA @ 276.2m. 270.45 - 277.5m: 1% py+po dissem. 277.5 - 284m: Minor py+po-cp-sp-ga, 1-2% sp-ga. 282.7 - 283m. Basal contact bedding TO/LCA.
284.00	286.00	<0.01	32	4.8	200		1	10	18	13714					284 - 298.5m: GRAPHITIC AND CALCAREOUS SANDSTONES SILTSTONES AND SHALES. Shale is non-calcareous, rocks much more graphitic than before, silty sandstone basically similar to above. Dk grey to black. Well bedded (65/LCA @ 284m; 60/LCA @ 296.5m). Abund fine calcite veinlets (veinlets - mts). Numerous elongate veins ± hematite (?). Some w/ chlorite at base & sulphides. Broken 270.5 - 297m. Contacted around graphitic shears 85/LCA @ 295.25 + 296.65m, & several large qt-carb veins 45/LCA up 550mm. V. minor sulph in veins. 284 - 286m: 1% dissem py-po-sp. 286 - 290.2m: 2-3% po-py-cp-sp, trace spg. Dissem + in veinlets + chlor. - formed in qtz. 290.2 - 298.5m: 1% py+po. Trace cp-sp. Heavily dissem.
286.00	288.00	<0.01	210	75	300		2	105	60	13715					
288.00	290.20	<0.01	180	30	155		2	125	75	13716					

ASSAY INFORMATION

END OF HOLE

817053

SILMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION

DRILL LOG SHEET

HEADING SHEET

COLLAR CO-ORDINATES	COLLAR CO-ORDINATES			COLLAR SURVEY		HOLE NAME	TOTAL DEPTH	HOLE TYPE	DESC CODE	REMARKS
	EASTING	NORTHING	ELEVATION	AZIMUTH	DIP					
8	384295	374243	1177.50	1106	-57	H-61 SVD 87-2	142.50			

STERLING VALLEY GRID: 4707E 4161N

SURVEY INFORMATION	DISTANCE FROM COLLAR		AZIMUTH	DIP	REMARKS
	TO TOP	TO BOTTOM			
8	100.00		1106.58	-57	AZIMUTH IN AMG (= MAG + 12°)
	140.00		1107.20	-54	

PLOTTING KEY					
SYMBOL	INTERVAL	SYMBOL		INTERVAL	
		DR. CODE	G/LOG	DR. CODE	G/LOG
	FROM	TO		FROM	TO

PROJECT	STERLING VALLEY	HOLE NAME	SVD 87-2		
LOGGED BY	J.G. PURVIS	TOTAL DEPTH	142.50M		
CONTRACTOR	DIAMOND DRILLING TJS.	RIG	LONGYEAR 38		
CREW	P. ARCHER	DATE STARTED	3.4.87		
		FINISHED	16.4.87		
CORE STORAGE					
NO. OF TRAYS	25	LOCATION	DEVONPORT, TAS (DEPOSITED 15.4.87)		
M&P LAB	GEOCHEMET, BRISBANE	ASSAY LAB	COALLABS, ADELAIDE		
DESC.	SIZE	FROM	TO	TOTAL	REMARKS
NON CORE	HQ	0	12	12	CASING ADVANCED
CORE	HQ	12	142.5	130	HOLE SITE AND COLLAR DESTROYED BY ATTEMPTS TO RECOVER CASING.
CASING	HQ	85	136	51	16 HQ ADS + BARREL LOST IN HOLE.
CASING LEFT	HQ	6	12	6	(6) steel (9) plastic

SURVEY INFORMATION	DISTANCE FROM COLLAR		Au	Cu	Ag	Sn	As	SAMPLE NO	CORE ANGLE	ROCK TYPE	DMM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
	TO TOP	TO BOTTOM												
	92.5	93.5	0.21	430		5	490	7050						0-10M: FLUVIO-GLACIAL GRAVELS
	97.0	98.0	0.74	80		1	12	60						10-32.70M: MAFIC VOLCANICLASTIC
														32.70-77.50M: INTERMEDIATE-MAFIC LAVAS
														77.50-90.0M: DEFORMED MAFIC LAVAS Zone of 1-5% py, po, aspy below 83.5m.
														90.0-91.5M: HENTY FAULT 5-10% py-aspy in py.
														91.5-94.05M: MINERALISED, BRECCIATED SCHIST AFTER MAFIC LAVA 7-10% py-po-aspy-cr.
														94.05-117.7M: SILTSTONES, SHALES + SANDSTONES 24.05-113m: 2-5% po-py
														117.7-142.5M: PARTLY-GRAPHITIC, SHALES, SILTSTONES + SANDSTONES 129.5-139m: 1-5% po-py.
														END OF HOLE

DRILLING OBJECTIVES / SUMMARY: HOLE DESIGNED TO TEST THE HENTY FAULT IN AN AREA WHERE IT IS OFFSET BY A CROSS-STRUCTURE. A DIFFUSE BUT STRONG IP ANOMALY IS PRESENT IN THE INFERRED HENTY FAULT POSITION.
SUMMARY: HOLE INTERSECTED WEAKLY SULPHIDIC MAFIC VOLCANICS WEST OF HENTY FAULT AND FARRELL SEDIMENTS CONTAINING SIGNIFICANT PYRITE AND PYRRHOTITE, EAST OF FAULT. ONLY TRACES OF GOLD MINERALISATION.

REPORT REFERENCE: _____
SHEET _____ OF _____

SHLNET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

Note: Analyses by Conlabs, Adelaide, May 1987.
Shell, Dispatch Order N°s 11542-11543.
Gold determined by 30gpm Fire Assay.

The Shell Company of Australia Limited
METALS DIVISION
DRILL LOG SHEET

PROJECT STERLING VALLEY
LOGGED BY J.G. FURVIS
HOLE NAME SVD 87-2
TOTAL DEPTH 142.5m

DISTANCE FROM COLLAR	TO TOP		TO BOTTOM		Au	Cu	Pb	Zn	Ag	Sn	As	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
	1017	1018	1019	1020														
																		0-12m: TRICONED - ND CORE Glacial gravels to 10m, soft bedrock 10-12m
15-25	15	80	0.01	2750	2A	170	4	9600	105	13717								12-32.7m: MAFIC VOLCANICLASTIC. DK green. Coarse grained. Abundant porph. fold laths at 2mm, max 4mm, in fi-gr chloritic matrix. Abundant cranny silt, irreg + angular clasts of mafic fold-porph. (color of same composition as matrix). Also clasts of siliceous fi-gr tuff, angular, up to 5-15mm. Lava clasts at 20-40mm (max 100mm) to 17m, then at <10mm. fi-gr leucocrone in both matrix and lava clasts. Some lava clasts amygdaloidal. Below 20m, intercalations of fi-gr and of small blocks? (large pillows? dikes?) in matrix. Porphyritic granodiorite. 1" clast orientations: 55°/LCA to 15m; 45°/LCA to 17m. Veins have are variations in clast size and matrix texture, the lack of fine layering points to mass-deposition with no clear sign of reworking. Minimal oxidation - lower FeOx stains on tracts and veins after leaching of carb (possibly from the iron veins of gk). Mid-strong patchy silt, dec below 22.8m. Silt conc in the intensely-silted clasts, with less in matrix. Rock badly broken below clayey shear at 22.8m (50°/LCA fault 25.8m - puppy zone). Vegety 25mm gk-leather vein // LCA 19.75-21m. 15.75-15.80m: Ulor - form zone E calcite-gk-fluorite + 3% cassiterite - py to cp-sp-aspy. Euhedral, v minor py-sp-mat. Basal contact / clast orientation 65°/LCA.
																		32.7-36.0m: MAFIC LAVA? DK green. Abundant porph. fold laths at 2mm, max 3mm, in chloritic matrix. Similar to above unit but lacks any lithic clasts. Some gk > carb veins. Slightly 55°/LCA. Mid-diagen and fract-filling py. Basal contact broken.
34-40												14064						36.0-58.8m: MAFIC LAVA Green. Similar to above unit, but appears more-porph and is non-porphritic. Abundant small fields at 1-2mm, in strongly chloritized groundmass. Fine leucocrone throughout. Textures largely obliterated by all mid-strong chloritized patchy crystallization to 45m. Slight sericitization and bleaching below 45m, inc a depth. Patchy silt, inc towards base, gen assoc E gk-carb patches + veins. Carb mostly faceted and Inc broken E depth - badly broken below 45m, due
48-35												14065						
49-50	50	50	0.01	1175	55	180	3	48	1300	13718								

ABSTRACT INFORMATION

Sample Number: 14065 (SVD 87-2 48.35m)
Identification: Chloritized, abundantly porphyritic andesite with sericitization developed in the vicinity of locally intense shearing.
Description:
The sample is a drill core specimen of greenish grey, fine-grained rock with subtle porphyritic textures and a 10um zone of shearing and fine veining.
A staining test revealed no K-feldspar.
In thin section the sample plainly displays abundantly porphyritic, hypidiomorphic, holocrystalline volcanic textures, modified by a variable style of alteration and by some veining and locally intense deformation. The phenocrysts are about 0.5 to 2mm in size and the groundmass is dominated by randomly orientated laths of plagioclase about 0.3 to 0.4um long.
The phenocrysts are tabular plagioclase: in much of the section they are lightly sericitized, but in the most sheared regions they are heavily sericitized. Groundmass plagioclase shows similar variation. The mafic components of the groundmass are chlorite and sphene. There are also anhedral grains of mildly etched quartz.
Deformed veins carry mainly chlorite. Some pores within a sericitized sheared zone seem to occur in a deformed quartz-chlorite vein.
An approximate mode is:
15-20% plagioclase phenocrysts, variously lightly or heavily sericitized
40-50% groundmass plagioclase, variously sericitized
25-30% chlorite
3-4% sphene
2-4% primary quartz
3-4% veins of chlorite (and some quartz and pores)
Comments and Interpretations:
This rock is considered to have originated as an abundantly porphyritic andesitic lava, broadly similar to sample 14063, but coarser and carrying obvious primary quartz as a groundmass component.
The andesite was chloritized, its sparse veins were converted to sphene, and a few chloritic veins (a quartz and possibly calcite) were formed. It was then mildly deformed and sericitization proceeded especially in the vicinity of locally intense shearing.

Sample Number: 14064 (SVD 87-2 34.40m)
Identification: Chloritic, andesitic, volcanoclastic andesite which has been impregnated with pyrite, veined by feldspar with other sulphides and potassium metasomatism.
Description:
The sample is a drill core specimen which displays fairly densely packed clasts of light grey feldspar set in a dark greenish grey matrix. There is a disrupted whitish vein about 2mm wide with some thinner veins. Disseminated brassy sulphides are visible.
Cathodoluminescence revealed that the feldspar clasts and the vein vein carry abundant K-feldspar with replacement style textures.
In this section the sample displays moderately sorted volcanoclastic textures involving densely packed altered, subrounded prismatic grains of feldspar and chloritized lithic clasts. There are fine mm-scale sphene aggregates and sphene-chlorite aggregates after mafic mineral clasts. A chlorite cement is present, but not easily distinguished from the chloritic lithic clasts.
The feldspar clasts have shapes, twinning and sericitic alteration consistent with plagioclase, but they have been largely replaced by poorly twinned microcline. The lithic clasts have poorly preserved primary textures but there are indications of andesitic style with small feldspar phenocrysts commonly sericitized.
Subhedral cubes of pyrite (about 0.01 to 0.4um) are disseminated unevenly as many single grains and aggregates. The disrupted whitish vein consists mainly of anhedral albite and microcline, but with some chlorite, ankerite, translucent reddish brown apatite and possible galena (black in obliquely reflected light). Other thin veins are finely feldspathic.
An approximate mode is:
40-50% plagioclase clasts, lightly sericitized and heavily replaced by microcline
30-40% chloritic lithic clasts of finely andesitic style
2-3% sphene and sphene-chlorite after mafic clasts
5-10% chlorite cement
2-3% disseminated pyrite
4-6% feldspathic veins with fine apatite, possibly galena, and ankerite
Comments and Interpretations:
This rock has primary textures which seem to be consistent with moderately sorted volcanoclastic andesite of andesitic derivation.
Its mafic components have been altered to chlorite and sphene and its plagioclase has been lightly sericitized and largely replaced by microcline. Pyrite has been introduced in disseminated form but apatite and possible galena have entered in finely feldspathic veins, now disrupted by mild deformation.

054

817055

SMLMET SYSTEM METRIC DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited METALS DIVISION DRILL LOG SHEET

PROJECT STERLING VALLEY HOLE NAME SVD 87-2 LOGGED BY J.G. FURVIS TOTAL DEPTH 142.5m

Table with columns for distance from collar, elements (Au, Cu, Pb, Zn, Ag, Sn, As), sample no, core angle, rock type, diam, desc code, graphic log, and descriptive log. Includes detailed petrological descriptions for samples 13719 and 14066.

ASSAY INFORMATION

SHLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION
DRILL LOG SHEET

PROJECT **STERLING VALLEY** HOLE NAME **SVD 87-2**
LOGGED BY **J.G. FURVIS** TOTAL DEPTH **142.5M**

CONTINUATION SHEET

DISTANCE FROM COLLAR		Au	Cu	Pb	Zn	Ag	Sn	As	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG	
TO TOP	TO BOTTOM															
89.65	91.50	0.10	2050	75	250	3	840	7100	13724							<p>Attention primarily silt (inc. depth, intense below 82m), with lower sericitization (inc. depth) and chloritization (dec. depth). Schistosity 45°/LCA @ 80.5m Several 0.1-0.2m wide basal dykes 82.5-90m. No sulphides to 83.5m. 83.5-84.5m: 1-2% py + minor aspy - cp - sp - gn, in gfs - fluorite - chlorite veins 84.5-87.3m: Minor py - po. Dissemin + veinlets. 87.3-87.65m: 5-7% py in act-vein gfs. 87.65-89.2m: 4 minor po - py, dissemin. Some fluorite veins 89.2-90m: 3-5% py - po - aspy - sp - cp - gn. Dissemin + patches in breccia zone impregnated E gfs - fluorite - chlorite - formazine.</p>
																<p>90.0-91.5m: HENTY FAULT Only 0.5m of core. Highly brecciated rock after crushed and milled. Volcanic character throughout 45°/LCA. Dk grey clay frag, soft, brecciated - chlorite schist and frags of chlorite - siliceous volcanics. Also frags and brecciated bands of gfs - fluorite - chlorite. 5-10% patches, dissemin + veinlet py - aspy - cp - sp - gn.</p>
91.50	92.50	0.02	520	26	105	2	630	620	13725							<p>91.5-94.05m: MINERALISED BRECCIATED, QUARTZ - SERICITE - CHLORITE SCHIST AFTER MAFC LAVA Gray-green. Highly deformed rock (schistose and brecciated - but unbroken), with texture largely obliterated but identifiable as the same lava as above the Henty fault. Matrix of hard, brecciated siliceous breccia and softer schistose zones. Schistosity: 60°/LCA @ 93m. 7-10% py - po - aspy - cp. of patches, dissemin + veinlets, partly orientated / schistosity. Basal contact 50mm intensely silt breccia zone + white siliceous frags in matrix of chlorite - formazine E 5-10% po - py - cp. The contact is unconformable - it parallels the schistosity in lava (60°/LCA) but is at an angle to schistosity (deformed bedding) in sands below (30°/LCA) both angles have sense.</p>
92.50	93.50	0.21	430	32	75	5	490	7050	13726							
93.50	94.80	<0.01	130	16	36	1	670	270	13727							
92.15		PETROLOGICAL SAMPLE								14066						
94.80	96.00	0.01	40	50	280	<1	18	24	13728							<p>94.05-113.1m: INTERBEDDED SILTSTONES, SHALES AND SANDSTONES Tuffaceous (non sericitic), grey, partly granitic, with variable carbonate content. Dispersed, dull, up small scale - at patches and veinlets. In some silt carb above sandstones contain small (<1mm) detrital gfs grains - red volc. at 105. Gray. Some chlorite beds, patchy silt also - dec below 100m. Lk. ubiquitous chloritization - locally stronger in zones of siltstone micromylonite. Mod schistosity - deforms bedding, makes rock 3 fissile</p>
96.00	97.00	0.01	70	24	75	1	22	10	13729							
97.00	98.00	0.74	80	14	32	1	12	60	13730							
98.00	99.00	0.02	210	34	30	1	6	14	13731							
99.00	101.00	0.03	18	24	46	<1	10	18	13732							
101.00	103.00	<0.01	24	34	85	<1	8	16	13733							
103.00	105.00	0.03	165	26	65	1	46	85	13734							
105.00	106.00	0.03	300	38	40	3	55	4100	13735							
106.00	108.00	<0.01	80	30	90	2	6	65	13736							
108.00	109.00	<0.01	240	22	50	3	8	46	13737							
109.00	110.00	<0.01	155	16	65	2	12	22	13738							

ASSAY INFORMATION

056

817057

SMLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION
DRILL LOG SHEET

PROJECT **STERLING VALLEY** HOLE NAME **SVD 87-2**
LOGGED BY **J.G. RUVIS** TOTAL DEPTH **142.5m**

CONTINUATION SHEET

DISTANCE FROM COLLAR	TO TOP	TO BOTTOM	Au	Cu	Pb	Zn	Ag	Sn	As	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG			
																	1	2	3
110.00	111.00	111.00	0.01	250	16	165	2	4	42	13739						Zone of steeper schistosity with small crenulations and folds, and increased chlorite act, around possible large fold axis $\approx 104.5m$ - bedding + schistosity // LCA. Bedding: 50°/LCA $\approx 96.7m$; 85°/LCA $\approx 103.7m$. Some bottom zone. 94-95-99m: 2% py-po, trace cp-sp. Mainly dissem. 99-102.5m: Minor po-py. Trace sp. 102.5-113m: 5% po-py. Trace aspy-cp-sp. Dissem + in stringer. Various, but tabular rot - 105.7m: 7-10% py-po - aspy/cp asstoc + veins of pb-bismuthine 60°/LCA, also in bottom zone + strong silt + brecciation. Basal contact - bedding: 48°/LCA, with overprinted schistosity.			
111.00	112.00	112.00	0.01	155	32	100	1	12	100	13740									
112.00	113.00	113.00	0.05	95	38	165	1	6	10	13741									
113.00	115.00	115.00	<0.01	130	32	55	1	46	4	13742						113-117.7m: SERICITE SCHIST AFTER CHERY TUFFACEOUS SILTSTONE / SHALE (Looks similar to the Rosebury West Rocks) Tls creamy-grey. Fr. gr. Mod sericitized, weakly chloritized, patchy chertiness - intense in sample bases. Mod-strong schistosity, overprints + deforms bedding, 40°/LCA $\approx 114m$. Minor drusem py-po. Basal contact bedding 25°/LCA.			
115.00	117.00	117.00	<0.01	10	12	24	<1	8	6	13743									
117.00	119.00	119.00	<0.01	14	16	350	<1	6	<2	13744						117-142.5m: PARTLY-GRAPHITIC TUFFACEOUS SLICES, SILTSTONES AND SANDSTONES Dk grey to black. All rocks variably graphitic - shales locally highly graphitic. Siltstones and sandstones contain gr. and tabular clays in tuffaceous/graphitic matrix. Folds are carbonaceous. Overall rocks are red calcareous, locally highly calcareous. Common fine gr. carb. veinlets; lower gr. tabular carb. veins - trace siliceous + sulphides, up to 150mm av $\approx 25mm$. Lk patchy chloritization, locally mild + asstoc + sulphides. Best sulphides in chloritized siltstones, much in stringers + chert + gr. + carb. Bedding (overprinted by mod schistosity): 67°/LCA $\approx 122m$; 77°/LCA $\approx 129m$; 51°/LCA $\approx 132.2m$; 65°/LCA $\approx 141.5m$. Probably fold axis $\approx 120m$; disturbed zone 117.5-121m + bedding (schistosity) // LCA, and graphitic silt (angle unknown) $\approx 120.7m$. Large gr. + carb vein // LCA 119-120.5m. Shale (large unknown) 119.8m. Core bottom 119.7-142.5m. Dissem + vein sulphides (po-py, with minor cp-sp) throughout. Zones in excess of 1% sulphides as follows: 120-122.5m: 2% po+py. 129.5-131m: 2-3% po, minor cp+py. 132-134m: 3-5% po-py, trace cp-aspy. Best in gr. veins $\approx 25mm$. 134-139m: 1-2% py-po. Minor sp-aspy.			
119.00	121.00	121.00	<0.01	22	42	150	<1	10	28	13745									
121.00	123.00	123.00	<0.01	36	60	150	1	6	42	13746									
127.50	129.50	129.50	<0.01	50	28	105	1	10	40	13747						127-139m: (Continuation of previous zone) 129.5-131m: 2-3% po, minor cp+py. 132-134m: 3-5% po-py, trace cp-aspy. Best in gr. veins $\approx 25mm$. 134-139m: 1-2% py-po. Minor sp-aspy.			
129.50	131.50	131.50	0.11	75	40	195	1	14	14	13748									
131.50	133.50	133.50	<0.01	65	28	115	1	<4	28	13749									
133.50	135.50	135.50	<0.01	105	55	170	1	12	1100	13750									
135.50	137.50	137.50	<0.01	60	38	370	1	10	30	13751									

ASBEST INFORMATION

END OF HOLE

SHEET 4 OF 4

037

817058

APPENDIX 2
GOLD RE-ASSAYING RESULTS: STP 217, 221

SHL MET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

GOLD ASSAYS IN MM.
BY 30 GM FIRE ASSAY
AT COMLABS, ADELAIDE

DESPATCH ORDER NO 15546 The Shell Company of Australia Limited

DRILL LOG SHEET

PROJECT **STERLING VALLEY** HOLE NAME **STP 217**
 LOGGED BY **A. MOLLISON, MAY 1986** TOTAL DEPTH **249.10 m**
 SAMPLED BY: **J.G. FURNIS, MAY 1987**

DISTANCE FROM COLLAR	TO TOP		TO BOTTOM		Au	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
	1	2	3	4								
106.45	108.00	108.00	110.00	0.02	14179							FOR GEOLOGY SEE ORIGINAL EZ LOG
108.00	110.00	110.00		0.08	14180							SPLIT CORE
121.00	122.00	122.00		0.06	14181							QUARTERED CORE
122.00	123.60	123.60		0.28	14182							" "
123.60	124.60	124.60		0.02	14183							" "
124.60	126.00	126.00		0.05	14184							SPLIT CORE
126.00	128.00	128.00		0.05	14185							" "
128.00	130.00	130.00		0.04	14186							" "
130.00	132.00	132.00		0.03	14187							" "
132.00	134.00	134.00		0.04	14188							" "
134.00	136.00	136.00		0.04	14189							" "
136.00	138.00	138.00		0.03	14190							" "
138.00	140.10	140.10		0.03	14191							" "
140.10	141.10	141.10		0.02	14192							QUARTERED CORE
141.10	143.10	143.10		0.03	14193							" "
143.10	145.10	145.10		0.04	14194							" "
145.10	146.60	146.60		0.03	14195							" "
163.10	165.00	165.00		0.02	14196							SPLIT CORE
175.00	177.00	177.00		0.01	14197							SPLIT CORE
177.00	179.30	179.30		0.02	14198							" "
187.30	189.00	189.00		0.02	14199							SPLIT CORE
189.00	191.00	191.00		0.02	14200							" "
191.00	193.00	193.00		0.02	14201							" "
193.00	195.00	195.00		0.02	14202							" "
195.00	197.00	197.00		0.03	14203							" "
197.00	199.00	199.00		0.03	14204							" "
199.00	201.00	201.00		0.03	14205							" "
201.00	203.00	203.00		0.05	14206							" "
203.00	205.00	205.00		0.04	14207							" "
205.00	207.00	207.00		0.05	14208							" "
207.00	209.00	209.00		0.03	14209							" "
209.00	211.00	211.00		0.02	14210							" "
211.00	213.00	213.00		0.02	14211							" "
213.00	215.00	215.00		0.01	14212							" "
215.00	217.00	217.00		0.01	14213							" "
217.00	219.10	219.10		0.02	14214							" "
235.10	236.90	236.90		0.02	14038							SPLIT CORE

ASSEMBLY INFORMATION

060

SHLIMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

GOLD ASSAYS IN PPM
BY 30µm FIRE ASSAY
AT COMLABS, ADELAIDE

DESPATCH ORDER NO. 11544 The Shell Company of Australia Limited
METALS DIVISION

EZ AQUA-REGA ASS
RESULTS (M30)

DRILL LOG SHEET

CONTINUATION SHEET

PROJECT	STERLING VALLEY	HOLE NAME	STP 221
LOGGED BY	A. MOLLISON	TOTAL DEPTH	203.30m
SAMPLED BY	J.G. KUNIS		

DISTANCE FROM COLLAR TO TOP	TO BOTTOM	Au	Au	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
28.80	31.60	1.25	<0.008	13752						FOR GEOLOGY SEE ORIGINAL EZ LOG.
31.60	32.60	0.28	0.032	13753						QUARTERED CORE - POOR RECOVERY
32.60	33.70	0.23	0.222	13754						QUARTERED CORE
33.70	34.70	0.19	0.048	13755						QUARTERED CORE - SOME TAKEN FOR MET WORK
34.70	35.80	0.16	0.070	13756						QUARTERED CORE - SOME TAKEN FOR MET WORK
35.80	36.80	1.10	0.072	13757						" " " " " "
36.80	37.80	0.64	0.240	13758						" " " " " "
37.80	38.50	0.30	0.200	13759						" " " " " "
39.50	40.80	0.04	0.019	13760						" " " " " "
40.80	42.80	<0.01	<0.008	13761						QUARTERED CORE
42.80	44.80	<0.01	0.120	13762						" " " " " "
44.80	46.80	0.12	0.021	13763						" " " " " "
46.80	48.80	0.18	0.040	13764						" " " " " "
48.80	50.80	0.20	0.324	13765						" " " " " "
50.80	51.80	0.36	0.456	13766						" " " " " "
51.80	52.80	5.40	2.080	13767						" " " " " "
52.80	54.40	<0.01	0.016	13768						MOSTLY SPLIT CORE - SOME QUARTERED
54.40	56.80	<0.01	<0.008	13769						QUARTERED CORE
56.80	57.10	<0.01	NOT ANALYSED	13770						SPLIT CORE
57.10	58.10	1.37	0.812	13771						QUARTERED CORE
58.10	59.60	1.40	0.504	13772						" " " " " "
59.60	61.60	8.47	NOT ANALYSED	13773						SPLIT CORE
61.60	63.60	0.29	NOT ANALYSED	13774						" " " " " "
63.60	64.60	0.08	NOT ANALYSED	13775						" " " " " "
67.60	69.00	<0.01	NOT ANALYSED	13776						SPLIT CORE
69.00	71.00	<0.01	"	13777						" " " " " "
71.00	73.00	<0.01	"	13778						" " " " " "
73.00	75.00	0.01	"	13779						" " " " " "
75.00	77.00	<0.01	"	13780						" " " " " "
77.00	79.00	<0.01	"	13781						" " " " " "
79.00	81.00	0.01	"	13782						" " " " " "
81.00	83.00	0.01	"	13783						" " " " " "
83.00	85.00	<0.01	"	13784						" " " " " "
85.00	87.00	<0.01	"	13785						" " " " " "
87.00	89.00	<0.01	"	13786						" " " " " "
89.00	91.00	<0.01	"	13787						" " " " " "
91.00	93.00	<0.01	"	13788						" " " " " "
93.00	95.00	<0.01	"	13789						" " " " " "
95.00	97.00	<0.01	"	13790						" " " " " "
97.00	99.00	<0.01	"	13791						" " " " " "
99.00	101.00	<0.01	"	13792						" " " " " "
101.00	103.00	<0.01	"	13793						" " " " " "
103.00	105.00	<0.01	"	13794						" " " " " "
105.00	107.00	<0.01	"	13795						" " " " " "
107.00	109.00	<0.01	<0.008	13796						QUARTERED CORE - SOME CORE LOSS
109.00	111.50	<0.01	0.008	13797						" " " " " "
111.50	113.50	<0.01	0.028	13798						" " " " " "
113.50	116.50	<0.01	0.008	13799						" " " " " "

ASSAY INFORMATION

817061

061

SHLMEY SYSTEM METRIC DECIMAL POINTS AS REQUIRED		GOLD ASSAYS IN PPM BY 30gm FIRE ASSAY AT COMLABS, ADELAIDE.		DESPATCH ON 11544.		The Shell Company of Australia Limited METALS DIVISION		PROJECT STERLING VALLEY		HOLE NAME STP 221										
				EZ AGO - REGA ASS RESULTS (1980)		DRILL LOG SHEET		LOGGED BY A. HOLLISON, DEC 1980		TOTAL DEPTH 203.30m										
						CONTINUATION SHEET		SAMPLED BY: J.G. ARVIS												
DISTANCE FROM COLLAR		Au		Au		SAMPLE NO		CORE ANGLE		ROCK TYPE		DIAM		DESC CODE		GRAPHIC LOG		DESCRIPTIVE LOG		
TO TOP		TO BOTTOM																		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
118	50	120	50		0.01		0.008													QUARTERED CORE - POOR RECOVERY
120	50	122	50		0.01		0.020													" " " "
122	50	124	50		0.01		0.012													" " " "
124	50	126	50		0.01		0.016													SPLIT CORE
126	50	128	50		0.01		0.016													" "
128	50	130	50		0.01		0.024													" "
130	50	132	80		0.01		0.032													" "
132	80	134	80		0.01		0.032													QUARTERED CORE
134	80	136	80		0.01		0.008													SPLIT CORE
136	80	138	80		0.01		0.008													" "
138	80	140	80		0.01		0.008													" "
140	80	142	80		0.01		0.008													" "
142	80	144	80		0.01		0.008													" "
144	80	146	80		0.01		0.008													" "
146	80	148	80		0.01		0.008													" "
148	80	150	80		0.01		0.012													" "
150	80	152	80		0.01		0.016													" "
152	80	154	80		0.01		0.016													" "
154	80	156	80		0.23		0.032													" "
156	80	158	80		0.01		0.032													" "
158	80	160	80		0.07		0.036													" "
160	80	162	80		0.01		0.040													" "
162	80	164	80		0.01		0.040													" "
164	80	165	80		0.01		0.016													QUARTERED CORE
165	80	166	80		0.01		0.024													" " - POOR RECOVERY
166	80	167	80		0.35		0.072													" " " "
167	80	169	80		0.01		0.016													SPLIT CORE
169	80	171	80		0.30		0.016													" " - SOME CORE LOSS
171	80	173	80		0.15		0.008													" "
173	80	175	80		0.18		0.008													" "
175	80	177	80		0.01		0.008													" "

817062

APPENDIX 3

DIAMOND DRILL RELOG - SV 3
ASSAY REUSLTS - SV 2

063

SHLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION
DRILL LOG SHEET
CONTINUATION SHEET

PROJECT **STERLING VALLEY** HOLE NAME **SV 3**
LOGGED BY **J.G. PURVIS (Relog)** TOTAL DEPTH **292.4m** (Relogged to 101m)

DISTANCE FROM COLLAR		SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
TO TOP	TO BOTTOM							
1	3							0 - 2.6m: NOT CORED
9	10							2.6 - 4.7m: ALLOVIUM - bouldery
16	17							4.7 - 16.0m: PALE RED QUARTZ-MICA SANDSTONE Open sandstone with much mica and black-colored limb-derived material. Some sl carbonaceous shale interbeds. Mica could be either detrital or after service Oxidised and leached with red hematitic staining throughout. Hematite Mn ox and minor limonite, or black (gas derived from oxidation of micas) Minor leached quartz (-carbonate) veining. Y bedding along and schistosity / LCH. Bedding // schistosity bedding 5 1/2 deg at 12.5m Transitional change at base.
22	23							16.0 - 46.0m: CARBONACEOUS QUARTZ-CARBONATE - SERICITE SANDSTONE Massive, grey. Much carbonaceous (gas-graphitic) and limb material. Sericite after replacement component rather than alteration. Minor chlorite. Round dispersed and small-olite crystals of calcite (ankerite?) Some veins also contain qtz. Inc graphitic material and less sericite below 35m. Minor interbeds of grey shale and siltst, also inc below 35m. Texture deteriorated by red schistosity. Bedding 15 deg / LCH to 28.5m; 28 deg / LCH to 38.5m. Badly bedded in places above 24m, also 32-34m, 40-43.5m. Minor dissem py, locally 1% - 2% dissem, & some in carb veins.
28	29							46.0 - 55.0m: DEFORMED QUARTZ-FELDSPAR-LITHIC SANDSTONE Similar to above except darker of and very strongly deformed and schistose (gas & qtz-sericite-chlorite schist) Small patches of diffuse bitit and flanking. 6mm-green. Relict feld xpts to 3mm, with much displaced carb clots after deformation and carbonation folds. Few carb veins. Some qtz & carb-chlor veins 46.3-47.7m. Hyp and garnet (?) color - some post after flattened lithic clots Trace dissem py.
34	35							55.0 - 94.3m: QUARTZ-FELDSPAR SANDSTONE Massive - grey to pink. Greenish, clay-banded, qtz embedded. Deformed thin beds of carbonaceous (graphitic) shale and siltstone esp below 80m. Numerous grey shale lenses in the ss. Schistosity of qtz grains with carbonates after folds and some

ASSAY INFORMATION

817064

064

SMLMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION
DRILL LOG SHEET

PROJECT **STERLINGS VALLEY** HOLE NAME **SV 3**
LOGGED BY **J.G. PURVIS (Relg)** TOTAL DEPTH **292.4m (Relogged to 101m)**

CONTINUATION SHEET

DISTANCE FROM COLLAR	DISTANCE FROM COLLAR		SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG											
	TO TOP	TO BOTTOM																		
1.2	3	9.10	16.17	22.23	28.29	34.35	40.41	46.47	52.53	58.59	64.65	70.71	76.77	82						
carbonaceous material. Sericitic and chloritic at top of interval, dec markedly E dip. Loc carbonate-rich below 75m with patches and variable of calc, alveol near at top of interval. Strongly schistose - dec E dip (40°/LEN @ 60m). Bedding: 30°/LEN @ 5m; 30°/LEN @ 6m; 35°/LEN @ 8m; 50°/LEN @ 87m. Pink silt esp in zones - pink hematization - albification, locally hematized esp 62-64m - hard silt, hematized with slight blocky and chloritization. Brittle - fracturing with filling of calc. mag. Minor distal py, 1% 82-87m.																				
28-3 - 181.0m (at least) - GRANITIC BLACK SHALE Bedding deformed by mid schistosity. Hard carbonate nodules as lenses and veins in schistosity. Schistosity 140°/LEN @ 97.5m (deformed bedding). Dec. small siliceous. 1-2% py dissem in shale and carbonate conc in latter - some semi-remnant patches of py up to 60x15mm.																				
END OF RELOG.																				

ASSAY INFORMATION

817065

065

SPLMET SYSTEM METRIC
DECIMAL POINTS AS REQUIRED

Note: Analyses by Comlabs, March 1987. Comlabs job N° COM 870493; Shell despatch order 11532. Residues held in Shell Despatch Office. Bld determined by 30µm fire assay.

The Shell Company of Australia Limited METALS DIVISION

DRILL LOG SHEET

PROJECT STERLING VALLEY HOLE NAME SV 2
LOGGED BY D.C. SIMPSON (1977) TOTAL DEPTH 125.40m

SAMPLED BY: J.G. PURVIS (1987)

DISTANCE FROM COLLAR		Au	Cu	Pb	Zn	Ag	Sn	As	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
TO TOP	TO BOTTOM														
5.00	7.50	<0.01	16	165	120			64	36	13679					
7.50	10.00	0.02	12	140	135			<1	48	13680					
10.00	12.50	<0.01	16	48	150			<1	46	13681					
12.50	15.00	<0.01	18	24	125			<1	42	13682					
15.00	17.50	0.01	28	30	100			<1	55	13683					
17.50	20.00	0.01	38	32	85			<1	50	13684					
20.00	22.50	<0.01	9	14	42			<1	48	13685					
22.50	25.00	<0.01	8	12	28			<1	40	13686					
25.00	27.00	0.01	7	18	30			<1	6	13687					
27.00	29.00	0.01	8	32	120			<1	4	75	13688				
29.00	31.00	0.01	12	18	60			<1	64	50	13689				
31.00	33.00	0.01	12	24	75			10	65	13690					
33.00	35.00	0.01	12	24	50			<1	55	13691					
35.00	37.00	0.01	18	22	95			6	65	13692					
37.00	39.00	0.01	16	18	90			<1	110	13693					
39.00	41.00	<0.01	18	24	100			<1	60	13694					
41.00	43.00	0.01	12	24	75			<1	24	13695					
43.00	45.00	<0.01	16	18	105			<1	12	13696					
45.00	47.00	0.01	12	16	55			6	12	13697					
47.00	49.00	<0.01	9	20	90			<1	9	13698					
49.00	51.00	0.01	8	60	170			<1	9	13699					
51.00	53.00	0.01	9	50	105			12	6	13700					
53.00	55.00	<0.01	12	75	90			<1	8	14231					
55.00	57.00	0.02	12	24	95			<1	38	14232					
57.00	59.00	<0.01	10	22	80			<1	24	14233					
59.00	61.00	0.01	34	24	135			<1	18	14234					
61.00	63.00	<0.01	16	28	85			<1	22	14235					
63.00	65.00	<0.01	26	32	115			6	22	14236					
65.00	67.00	0.01	16	22	130			<1	4	22	14237				
67.00	69.00	0.01	20	42	155			<1	6	50	14238				
69.00	71.00	<0.01	24	28	85			64	55	14239					
71.00	73.00	<0.01	32	34	85			8	40	14240					
73.00	75.00	<0.01	28	32	70			<1	32	14241					
75.00	77.00	<0.01	50	65	115			6	46	14242					
77.00	79.00	0.01	24	60	280			6	38	14243					
79.00	81.00	<0.01	22	50	140			64	44	14244					
81.00	83.00	<0.01	40	135	280			2	55	14245					
83.00	85.00	0.01	55	150	610			12	40	14246					
85.00	87.00	0.02	55	210	420			8	30	14247					
87.00	89.00	0.02	50	230	750			64	26	14248					
89.00	91.00	0.02	70	175	600			<1	34	14249					
91.00	93.00	<0.01	40	165	750			10	44	14250					
93.00	95.00	0.11	480	310	780			3	3600	8600	14251				
95.00	97.00	0.05	125	210	280			2	135	420	14252				
97.00	99.00	0.01	70	175	610			<1	40	120	14253				
99.00	101.00	<0.01	60	300	1500			6	60	14254					
101.00	103.00	0.01	70	400	2550			1	50	44	14255				
103.00	105.00	0.01	90	330	1450			1	110	34	14256				

See original Abminco log, November 1977.
Sampling by J.G. Purvis, Shell Metals, March 1987

ASSAY INFORMATION

817066

066

SILMET SYSTEM
METRIC
DECIMAL POINTS AS REQUIRED

The Shell Company of Australia Limited
METALS DIVISION
DRILL LOG SHEET

PROJECT **STERLING VALLEY** HOLE NAME **SV 2**
LOGGED BY TOTAL DEPTH

CONTINUATION SHEET

DISTANCE FROM COLLAR		Au	Cu	Pb	Zn	Ag	Sn	As	SAMPLE NO	CORE ANGLE	ROCK TYPE	DIAM	DESC CODE	GRAPHIC LOG	DESCRIPTIVE LOG
TO TOP	TO BOTTOM														
105.00	107.00	0.01	60	175	460	1	10	44	14257						
107.00	109.65	<0.01	60	115	540	1	12	35	14258						
109.65	112.00	0.01	55	320	1150	1	12	120	14259						
112.00	114.00	0.01	60	190	1650	1	28	95	14260						
114.00	116.00	<0.01	65	150	640	1	8	34	14261						
116.00	118.00	<0.01	90	95	290	1	6	28	14262						
118.00	120.00	0.02	80	750	1650	3	16	560	14263						
120.00	122.00	0.01	34	450	920	1	18	175	14264						
122.00	124.00	0.01	65	270	450	2	10	75	14265						
124.00	125.40	0.01	60	400	700	2	8	75	14266						
END OF HOLE															

ASSAY INFORMATION

817067

067

APPENDIX 4
EXPENDITURE STATEMENT

068

EXPLORATION PROJECT EXPENDITURE REPORT
STERLING VALLEY JV-STERLING VALLEY
EXPENDITURE FOR : JAN/DEC 1987

CURRENT MONTH	CURRENT QUARTER		CURRENT HALF YEAR	CURRENT YEAR	PROJECT TO-DATE
1,690	5,434	STAFFING COSTS - LABOUR	7,541	17,552	19,525
0	0	- TRAVEL	0	239	239
0	103	- OTHER	103	110	110
454	828	VEHICLE/EQUIPMENT COSTS	1,355	3,622	3,535
1,545	3,648	FIELD AND OFFICE OPERATING COSTS	4,504	13,788	14,708
3,589	10,115	** SUB-TOTAL ESTABLISHMENT COSTS	13,514	35,320	35,417
0	0	TENEMENT COSTS	0	1,025	1,025
1,741	11,645	GEOCHEMICAL SURVEYS	11,645	11,845	11,845
0	0	GEOPHYSICAL SURVEYS	0	3,748	5,024
0	0	ANALYSIS - DRILLING SAMPLES	-556	0	731
0	0	- OTHER SAMPLES	0	33,122	33,122
0	0	DRILLING - DIAMOND	0	0	0
0	0	- OTHER	0	0	0
0	3,641	AERIAL SURV/PHOTOGRAMMETRY	0	0	0
1,200	1,200	GRIDDING/SURVEY/ACCESS	9,183	11,068	11,068
0	0	GEOLOGICAL STUDIES	1,751	14,360	14,857
0	0	ENVIRONMENTAL/OTHER	0	0	0
0	0	CHARGES EX JV PARTNERS	0	0	0
2,941	16,686	** SUB-TOTAL OPERATING COSTS	22,132	75,170	77,802
6,530	26,800	TOTAL FIELD EXPENDITURE	35,645	110,490	116,219
730	730	GEOLOGY MGT - ADMIN (80,81XX)	730	730	730
-6	122	GEOLOGY RESEARCH (86XX)	255	548	639
0	0	GEO TECHNICAL SERVICES (85XX)	0	0	-1
0	0	ENGINEERING/COMPUTING (83XX)	0	0	0
724	852	AHO DIRECT PROJECT EXPENDITURE	995	1,275	1,365
944	2,790	AHO MAN., ADMIN AND SERVICES (MS00/2)	3,590	11,140	11,545
8,297	30,442	TOTAL EXP. BEFORE RECOVERIES	40,334	122,906	129,232
0	0	RECOVERIES EX JV PARTNERS	0	0	0
8,297	30,442	TOTAL PROJECT EXPENDITURE	40,334	122,906	129,232

R17069

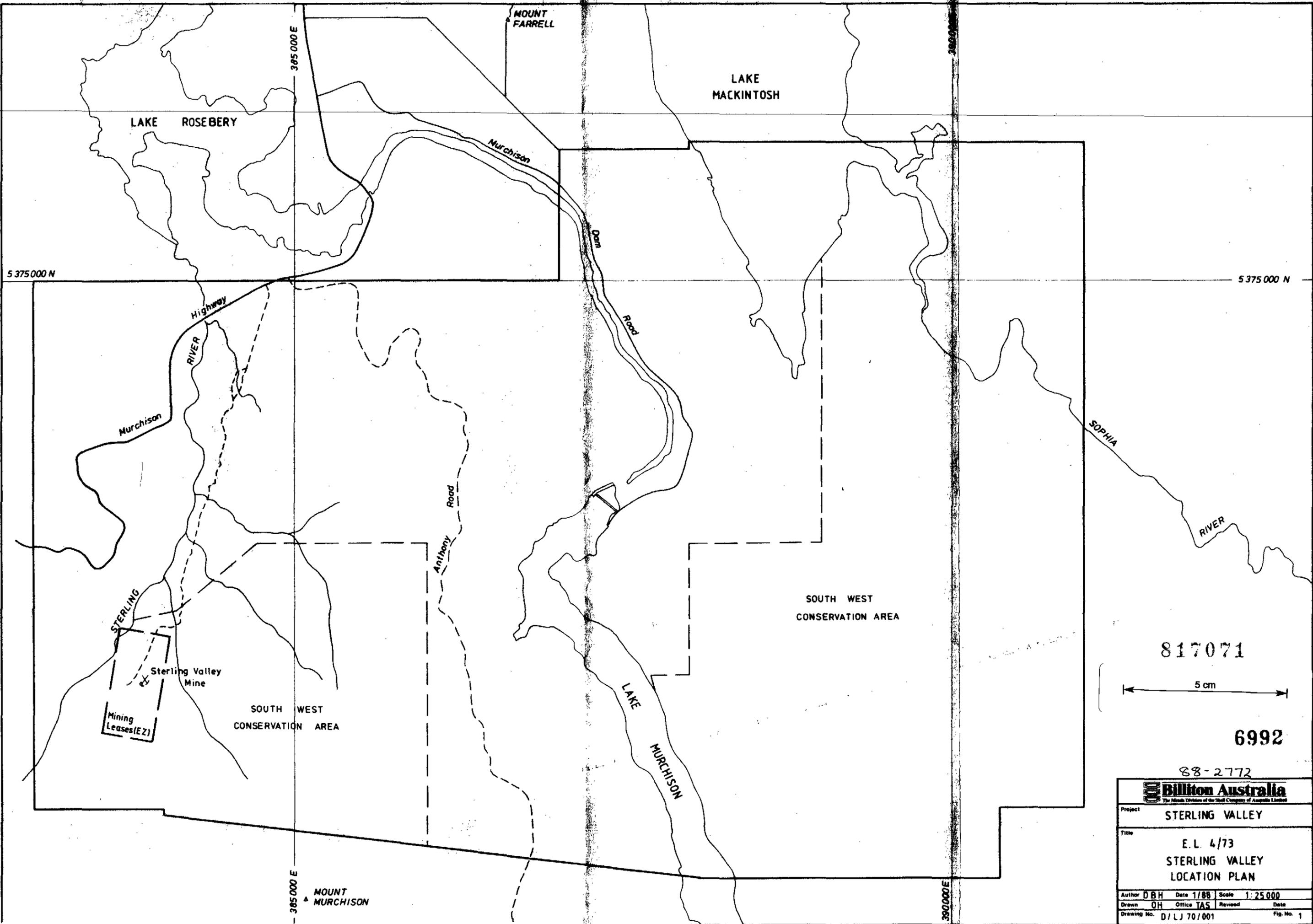
069

Title STERLING VALLEY GRAVITY LINE 3260N, TAS

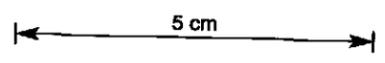
Date=870219 GMT=-10 SC=,09977 GB1=0.0 GB2=0.0 Units=METR BU=2.67 Long=145.3630 Lat=41.47 Ydir=278.0 Close=0.361 Drift=0.105

Line(X)	Stn(Y)	Time	Reading	I.H.	Elev.	TideCor.	Obs.Gr.	Sgr.Gr.
3260.00	5000.00	1304.	500.000	0.00	0.000	0.042	*	*
3260.00	4990.00	1311.	499.200	0.00	0.610	0.040	-0.07	-331.81
3260.00	4980.00	1316.	496.600	0.00	1.460	0.036	-0.32	-331.89
3260.00	4970.00	1320.	499.600	0.00	0.070	0.036	-0.02	-331.86
3260.00	4960.00	1324.	501.200	0.00	-0.980	0.035	0.15	-331.90
3260.00	4950.00	1330.	506.900	0.00	-5.890	0.033	0.72	-332.29
3260.00	4940.00	1338.	507.100	0.00	-5.860	0.030	0.76	-332.25
3260.00	4930.00	1342.	507.300	0.00	-5.620	0.028	0.78	-332.17
3260.00	4920.00	1348.	506.500	0.00	-5.300	0.026	0.71	-332.18
3260.00	4910.00	1352.	508.900	0.00	-7.070	0.024	0.95	-332.28
3260.00	4900.00	1400.	503.400	0.00	-5.540	0.021	0.42	-332.52
3260.00	4890.00	1404.	504.100	0.00	-5.500	0.019	0.49	-332.43
3260.00	4880.00	1408.	503.000	0.00	-5.280	0.018	0.39	-332.49
3260.00	4870.00	1412.	504.200	0.00	-5.750	0.016	0.51	-332.46
3260.00	4860.00	1415.	502.900	0.00	-5.310	0.015	0.39	-332.50
3260.00	4850.00	1420.	504.200	0.00	-5.110	0.013	0.52	-332.32
3260.00	4840.00	1424.	503.300	0.00	-5.000	0.011	0.44	-332.38
3260.00	4830.00	1436.	503.000	0.00	-4.670	0.007	0.43	-332.33
3260.00	4820.00	1440.	502.200	0.00	-4.530	0.005	0.35	-332.38
3260.00	4810.00	1444.	498.000	0.00	-2.176	0.003	-0.06	-332.33
3260.00	4800.00	1448.	495.500	0.00	-0.510	0.002	-0.31	-332.24
3260.00	4790.00	1452.	490.400	0.00	1.810	0.000	-0.81	-332.29
3260.00	4780.00	1457.	488.000	0.00	3.600	-0.002	-1.04	-332.17
3260.00	4770.00	1501.	487.000	0.00	4.500	-0.003	-1.14	-332.08
3260.00	4760.00	1525.	476.200	0.00	9.220	-0.012	-2.18	-332.20
3260.00	4750.00	1529.	480.000	0.00	9.320	-0.013	-1.80	-331.79
3260.00	4740.00	1534.	478.400	0.00	8.740	-0.015	-1.95	-332.06
3260.00	4730.00	1537.	474.600	0.00	11.820	-0.016	-2.32	-331.82
3260.00	4720.00	1541.	467.900	0.00	15.000	-0.017	-2.99	-331.86
3260.00	4710.00	1545.	462.400	0.00	17.970	-0.018	-3.53	-331.82
3260.00	4700.00	1549.	460.800	0.00	19.660	-0.019	-3.68	-331.64
3260.00	4690.00	1552.	451.200	0.00	23.710	-0.020	-4.64	-331.79
3260.00	4680.00	1556.	448.600	0.00	25.390	-0.021	-4.89	-331.72
3260.00	4670.00	1600.	447.100	0.00	27.250	-0.022	-5.03	-331.49
3260.00	4660.00	1603.	442.600	0.00	29.170	-0.023	-5.48	-331.56
3260.00	4650.00	1606.	447.800	0.00	28.360	-0.024	-4.96	-331.19
3260.00	4640.00	1609.	444.800	0.00	30.250	-0.025	-5.25	-331.11
3260.00	4630.00	1612.	441.600	0.00	31.600	-0.026	-5.56	-331.16
3260.00	4620.00	1615.	442.500	0.00	32.570	-0.026	-5.47	-330.88
3260.00	4610.00	1618.	444.700	0.00	32.270	-0.027	-5.25	-330.71
3260.00	4600.00	1622.	445.500	0.00	32.280	-0.028	-5.16	-330.62
3260.00	5000.00	1630.	497.100	0.00	0.000	-0.030	*	*

817070



817071

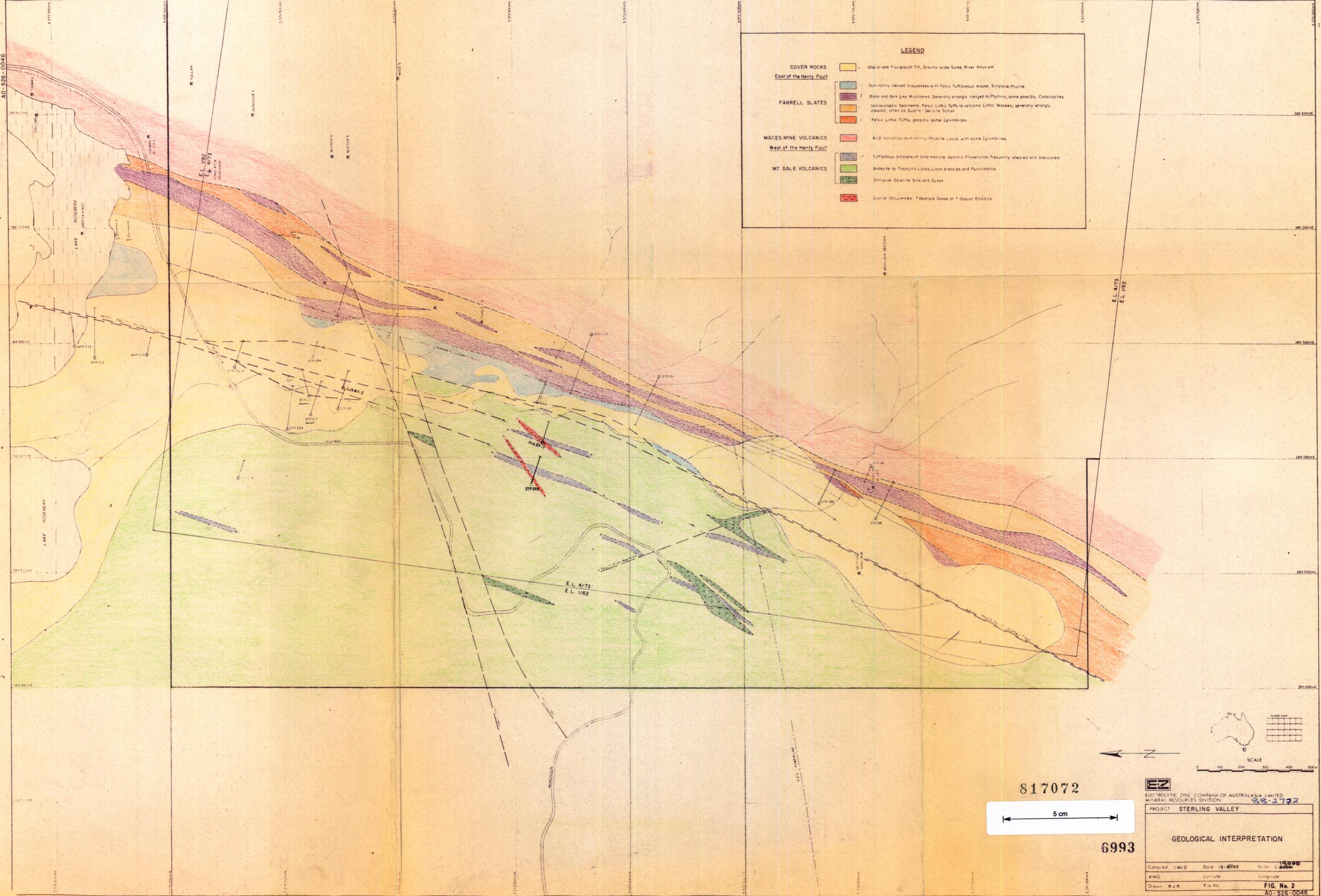


6992

88-2772

Project			
STERLING VALLEY			
Title			
E.L. 4/73			
STERLING VALLEY			
LOCATION PLAN			
Author	DBH	Date	1/88
Scale	1:25 000		
Drawn	OH	Office	TAS
Revised		Date	
Drawing No.	D/LJ 70/001		Fig. No. 1

AO-526-0046



LEGEND

COVER ROCKS
 East of the Henty Fault
 West of the Henty Fault

FARRELL SLATES

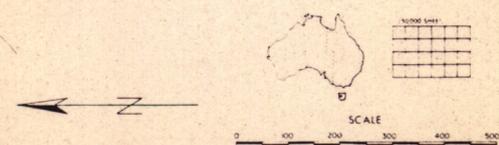
MACES MINE VOLCANICS
 West of the Henty Fault

MT SALE VOLCANICS

- Glacial and Fluvio-glacial Till, Gravity-side Scur, River Alluvium
- Dominantly cleaved Greywackes with Felsic Tuffaceous Wacke, Siltstone, Phyllite
- Black and dark grey Mudstones, Generally strongly cleaved to Phyllitic, some possibly Cataclastites
- Volcanoclastic Sediments, Felsic Lithic Tuffs to volcanic Lithic Wackes, generally strongly cleaved, often as Quartz - Sericite Schist
- Felsic Lithic Tuffs, possibly some Ignimbrites
- Acid Volcanics, dominantly Rhyolite Lavas with some Ignimbrites
- Tuffaceous Siltstone of Intermediate Volcanic Provenance, frequently sheared and brecciated
- Andesite to Trachytic Lavas, Lava breccias and Pyroclastics
- Intrusive Diorite Sills and Dykes
- Granite Occurrences, Felsic Dykes or Felsic Glacial Erratics

817072

5 cm



EZ
 ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED
 MINERAL RESOURCES DIVISION

PROJECT **STERLING VALLEY**

GEOLOGICAL INTERPRETATION

6993

Completed: J.M.D. Date: 19-6-85 Scale: 1:50,000
 AMG: Longitude: Longitude
 Drawn: R.J.R. File No. **88-2722** FIG. No. 2
 AO-526-0046

PLAN

LINE 3260 N

SVD 87-1A

SECTION

R.L.

STP 283

SVD 87-1A

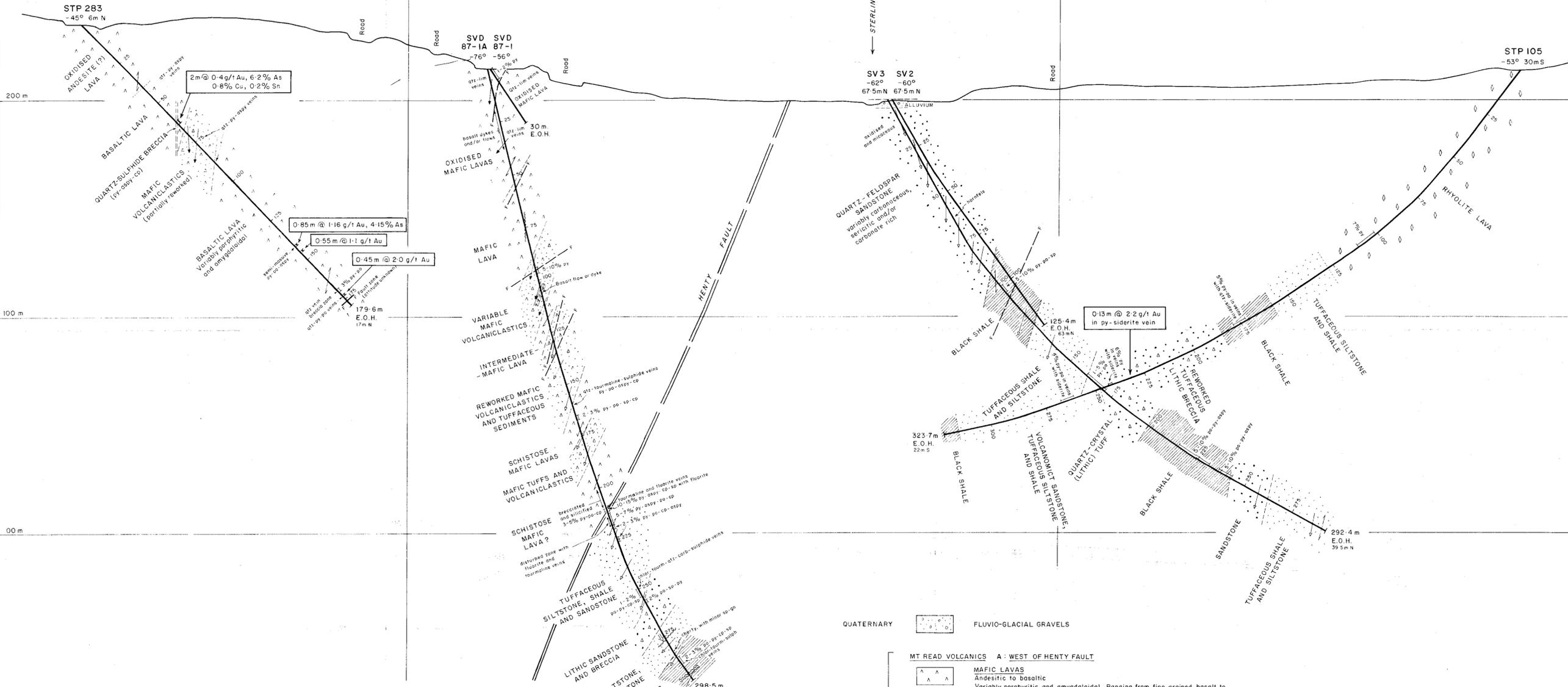
SV3 SV2

STP 105

200 m

100 m

00 m



QUATERNARY FLUVIO-GLACIAL GRAVELS

MT READ VOLCANICS A: WEST OF HENY FAULT

MAFIC LAVAS
Andesitic to basaltic. Variably porphyritic and amygdaloidal. Ranging from fine grained basalt to coarsely feldspar-porphyritic andesite. Some basalts clearly cross-cutting dykes.

MAFIC VOLCANICLASTICS AND TUFFS
Clastic material of the same provenance as the above mafic lavas. Ranges from reworked volcaniclastic breccias and tuffaceous sediments, to volcaniclastics of indeterminate origin. Some thin intercalations of mafic lavas to 2m (possibly large loose blocks?)

B: EAST OF HENY FAULT

VOLCANOMICT AND TUFFACEOUS SEDIMENTS OF THE FARRELL SLATE SEQUENCE

BLACK GRAPHITIC SHALE
Tuffaceous and calcareous siltstone, sandstone and shale. Sandstone generally quartzose.

QUARTZ-FELDSPAR CRYSTAL SANDSTONE / CRYSTAL TUFF
Variably graphitic, sericitic and/or carbonate-rich.

REWORKED LITHIC (-CRYSTAL) BRECCIA
Tuffaceous matrix.

EASTERN VOLCANICS RHYOLITE LAVA Quartz-porphyritic

- Bedding
- Bedding facing
- Primary lineation in lavas, volcaniclastics etc.
- Schistosity
- Fault
- Shear
- Geological contact
- Geological contact - attitude unknown

817073 6994

Billiton Australia
The Metals Division of the Shell Company of Australia Limited

Project: STERLING VALLEY J. V. - E.L. 4 / 73

Title: SECTION 3260N
LOOKING NORTH
(SECTION BEARS 108° AMG)

Author	JGP	Dept.	TAS	Scale	1:1000
Drawn	AS	Date	5/87	Revised	Date
Checked	Date	S'ced	Date		
Sheet No.	FIG. No. 3	Drawing No.	LJ 70 / 1003		

PLAN

LINE 4160N

SECTION

R.L.

200 m

100 m

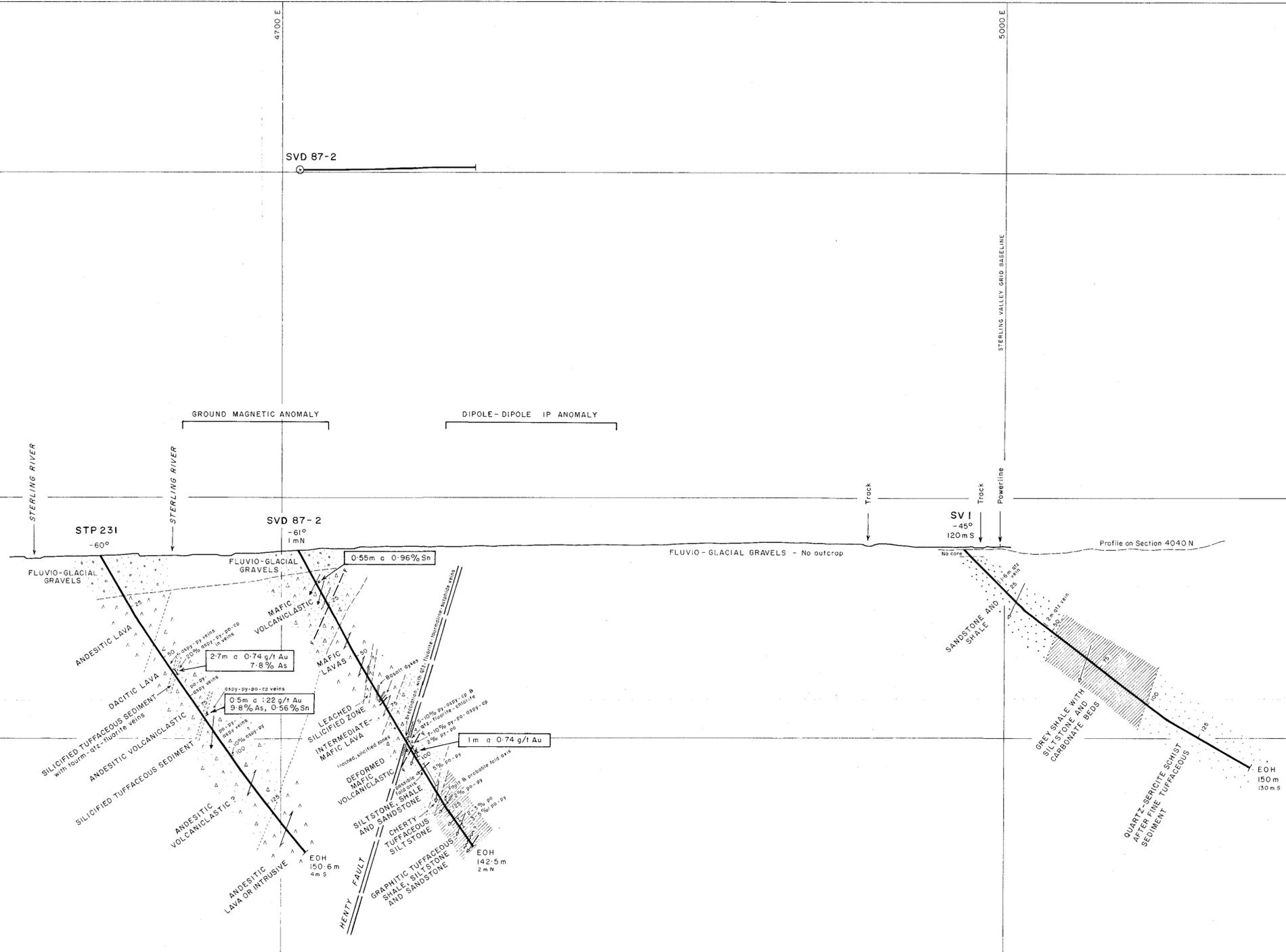
00 m

R.L.

200 m

100 m

00 m



QUATERNARY

FLUVIO-GLACIAL GRAVELS

MT READ VOLCANICS A: WEST OF HENTY FAULT

MAFIC LAVAS

Andesitic to basaltic

Variably porphyritic and amygdaloidal. Ranging from fine grained basalt to coarsely feldspar-porphyritic andesite. Some basalts clearly cross-cutting dykes.

MAFIC VOLCANICLASTICS AND TUFFS

Clastic material of the same provenance as the above mafic lavas.

Ranges from reworked volcanoclastic breccia and tuffaceous sediments, to volcanoclastics of indeterminate origin. Some thin intercalations of mafic lavas to 2m (possibly large loose blocks?)

B: EAST OF HENTY FAULT

VOLCANOMICT AND TUFFACEOUS SEDIMENTS OF THE FARRELL SLATE SEQUENCE

BLACK GRAPHITIC SHALE

TUFFACEOUS AND CALCAREOUS SILTSTONE, SANDSTONE AND SHALE Sandstone generally quartzose

QUARTZ-FELDSPAR CRYSTAL SANDSTONE / CRYSTAL TUFF

Variably graphitic, sericitic and/or carbonate-rich

REWORKED LITHIC (-CRYSTAL) BRECCIA

Tuffaceous matrix

EASTERN VOLCANICS

RHYOLITE LAVA Quartz-porphyritic

- Bedding
- Bedding facing
- Primary lineation in lavas, volcanoclastics etc
- Schistosity
- Fault
- Shear
- Geological contact
- Geological contact - attitude unknown

5 cm

817074

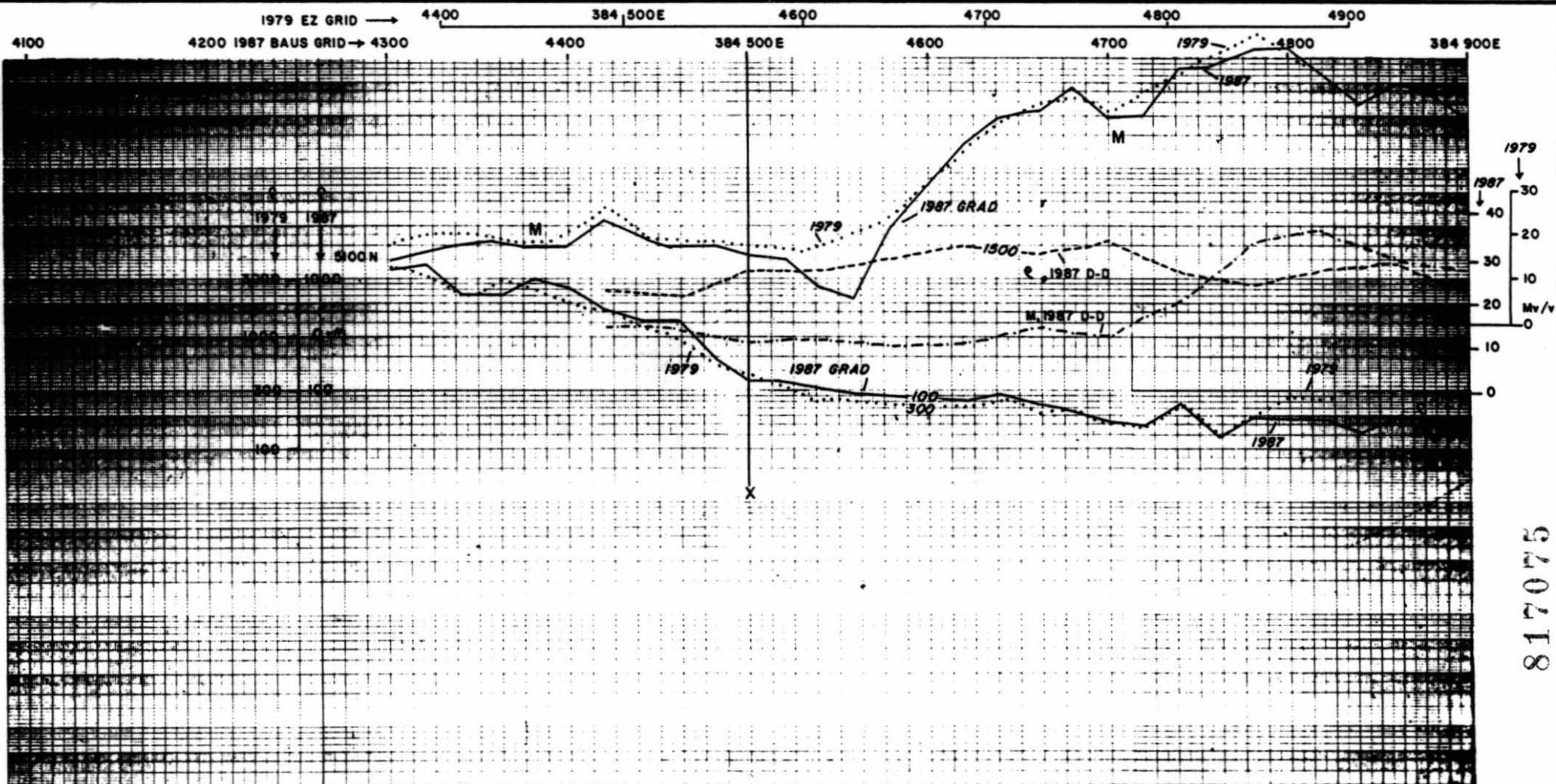
NOTE: Holes projected onto section 6995

Billiton Australia
The Metals Division of the Shell Company of Australia Limited

Project: STERLING VALLEY J. V. - E.L. 4/73

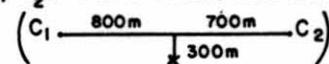
Title: SECTION 4160N
LOOKING NORTH
(SECTION BEARS 108° AMG)

Author	J.G.P.	Dept.	TAS	Scale	1:1000
Drawn	AS	Date	6/87	Revised	Date
Checked		Date		S'ced	Date
Sheet No.	FIG No. 4	Drawing No.	LJ70/1004		

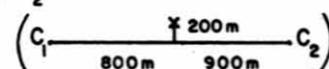


817075

1979 SCINTREX, GRADIENT ARRAY, $a=20m$, IPR-8, M_3 $C_1 @ 5\ 375\ 400\ N/383\ 700\ E$, $C_2 @ 5\ 375\ 400\ N/385\ 200\ E$



1987 a) SCINTREX, GRADIENT ARRAY, $a=20m$, IPR-10, M_3 $C_1 @ 5\ 374\ 900\ N/383\ 700\ E$, $C_2 @ 5\ 374\ 900\ N/385\ 400\ E$



b) SCINTREX, DIPOLE-DIPOLE, $a=40m$, IPR-11, M_6 , $n=1$ plotted --- = ρ resistivity, ---- = M chargeability

88-2772

Billiton Australia <small>The Mining Division of the Shell Company of Australia Limited</small>		
Project	NORTH STERLING VALLEY	
Title	IP SURVEYS LINE 5 375 100 N COMPARATIVE DATA	
Author	N.H.	Date 11-87
Scale		
Drawn	A.J.M.	Office AHO
Revised		
Date		
Drawing No	LJ70/1011	Fig No 5

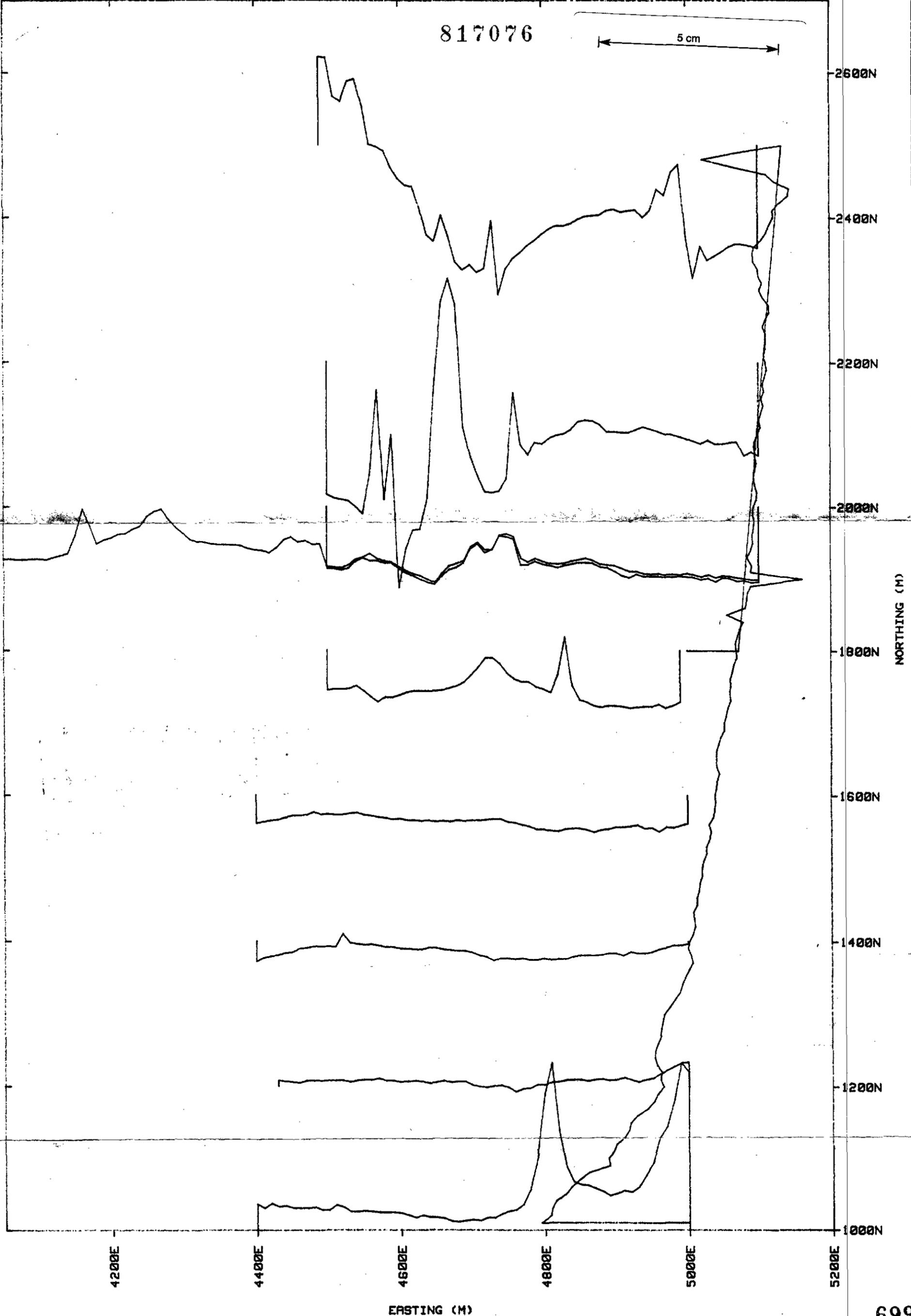
6996



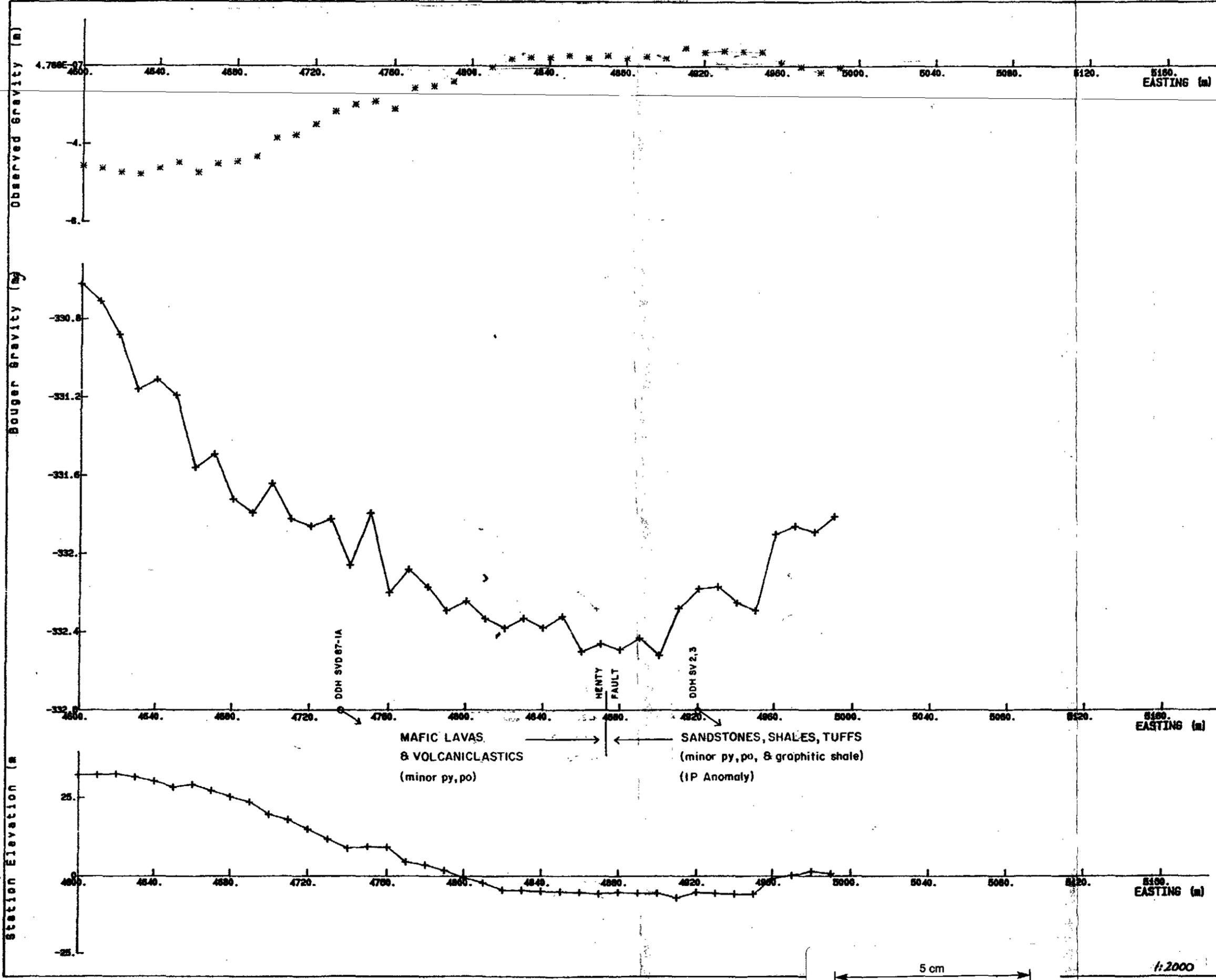
88-2772
 SHELL COMPANY OF AUSTRALIA
 METALS DIVISION
 R.O.C.S. - PROTEM

S. STERLING VALLEY
 GROUND MAG, TMI
 STACKED PROFILES
 BASE 62050, 50nT/CM
 SCALE 1 : 5000

FIG No :	6	LEGEND
DATE :	12/87	2 x G-856
AUTHOR :		
OFFICE :	D'PORT	
DRAWN :	NH/MECB	



GRAVITY PROFILE
 Line: 3260N
 Legend
 + Channel 3: 2.7 g/cc



817077

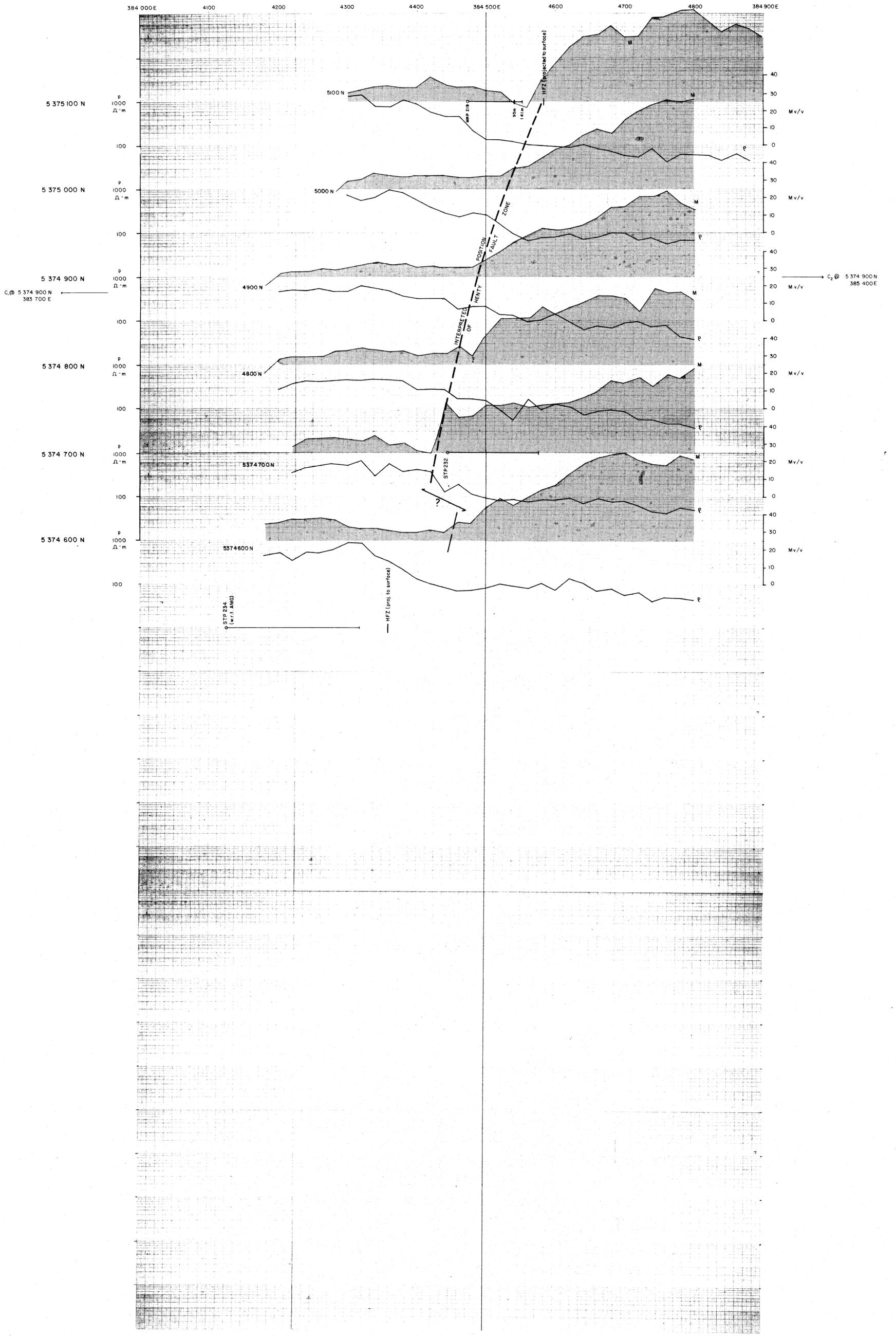


88-2772

SHELL COMPANY OF AUSTRALIA METALS DIVISION	
STERLING VALLEY, TAS	
BOUGUER GRAVITY	
LINE 3260N	
DENSITY=2.67 G/CC	
FIG. NO: 7	REPT. NO:
ENCL. NO:	ENCL. NO: LJ70/1012
DATE: 3/77	APPROV. NR:
DRAWN:	OFFICE: ANO

5 cm

1:2000



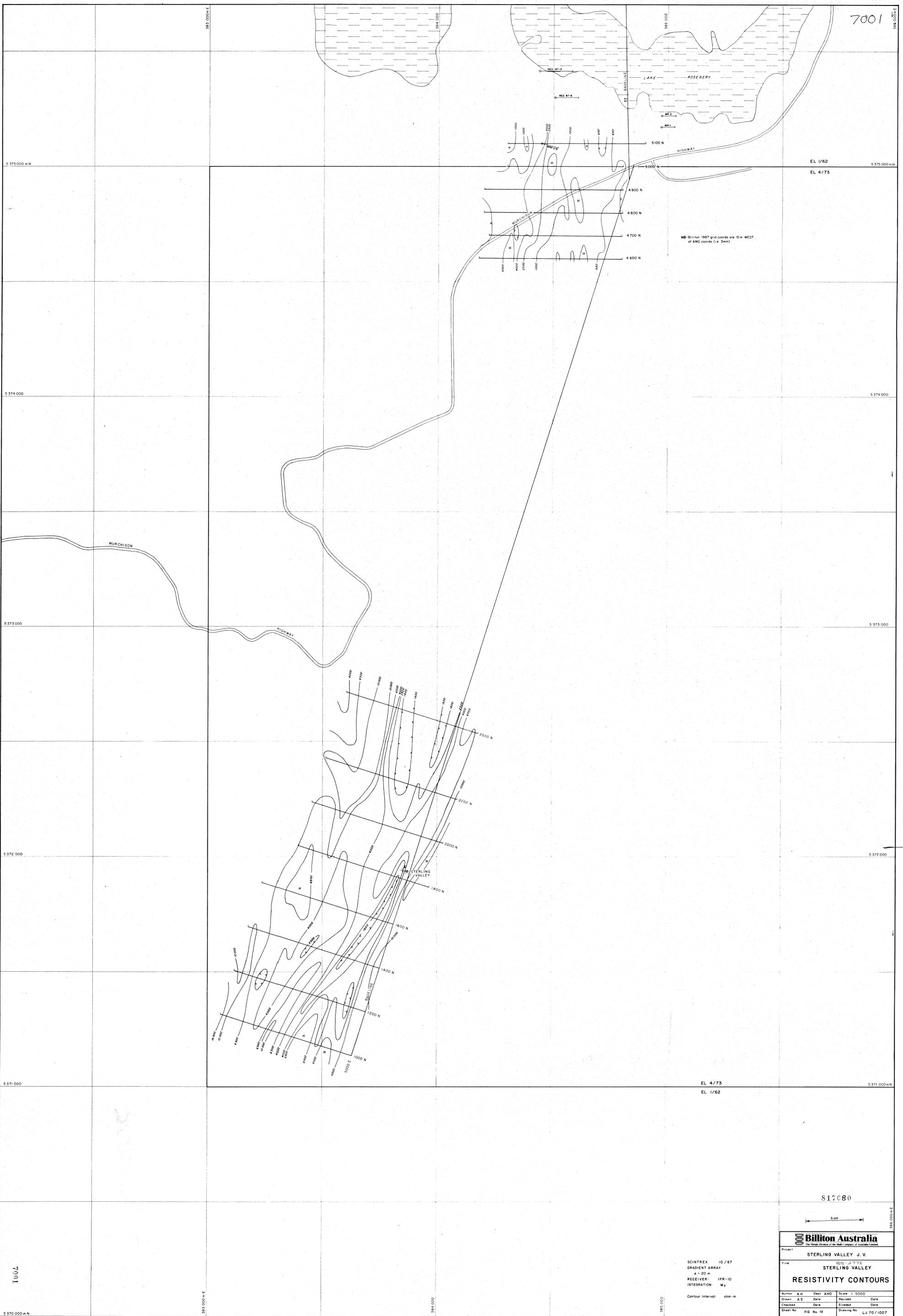
817079

5 cm

7000

CONTRACTOR SCINTREX
 DATE 10/87
 ARRAY GRADIENT, $\sigma=20m$
 RECEIVER IPR-10
 INTEGRATION M_3M_4 (650-1170 ms)

Billiton Australia <small>The World's Best at What We Do</small>		
Project	STERLING VALLEY J.V.	
Title	N.W. TASMANIA 88-2772	
NORTH STERLING VALLEY IP/RESISTIVITY PROFILES		
Author	NH	Date 10/87
Scale	1:2500	
Drawn	KR	Office 10/87
Revised	Date	
Drawing No.	LJ70/1005	Fig No. 9



NB: Billiton 1987 grid coords are 15m WEST of AMG coords (i.e. 5m)

EL 1/62
EL 4/73

EL 4/73
EL 1/62

817080



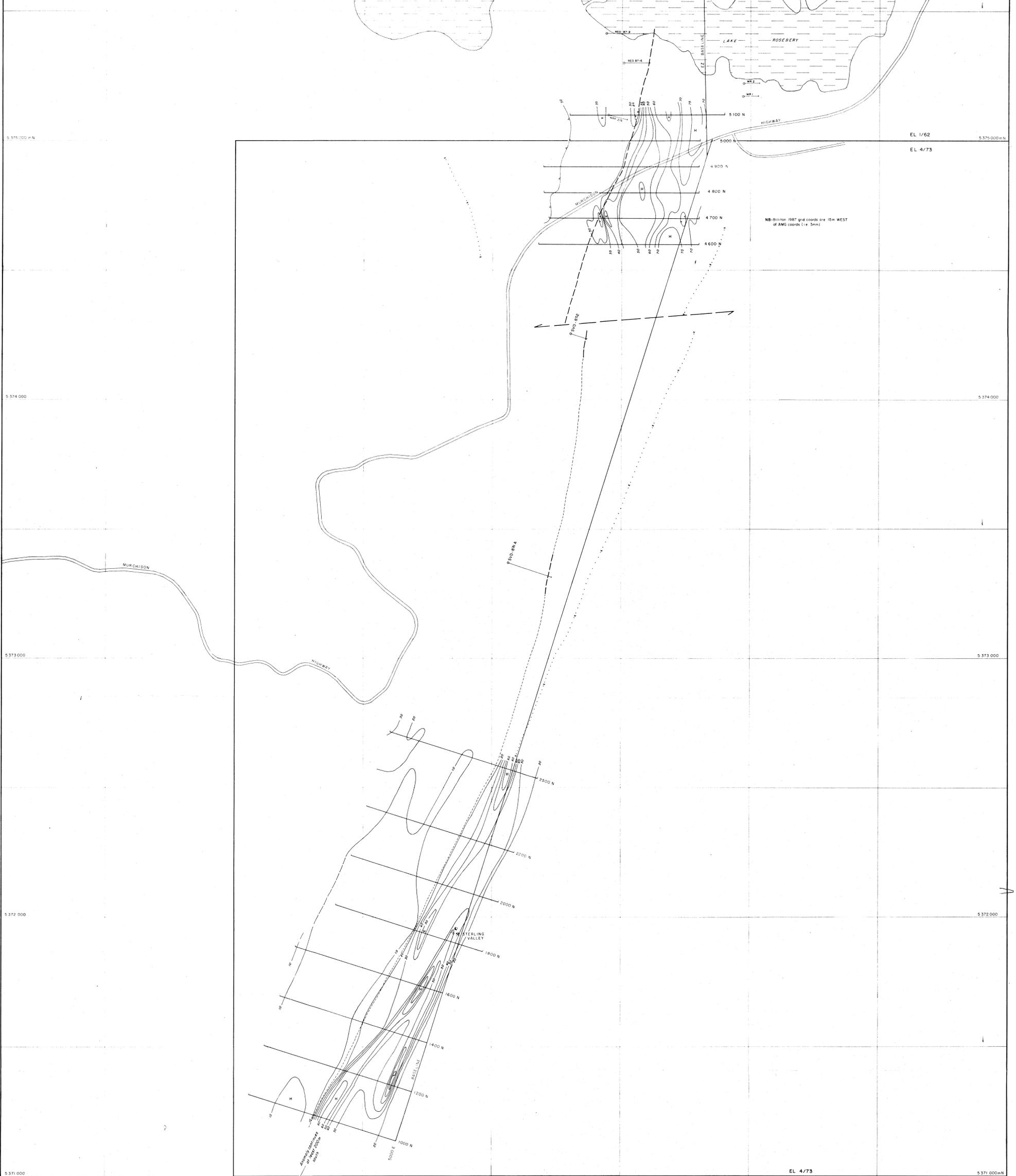
SCINTREX 10/87
GRADIENT ARRAY
a = 20 m
RECEIVER: IPR-10
INTEGRATION: M5
Contour Interval: 20m

Billiton Australia
The Mining Division of the BHP Group of Australia Limited

Project: **STERLING VALLEY J. V.**

Title: **STERLING VALLEY RESISTIVITY CONTOURS**

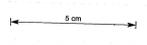
Author: NH	Dept: AHD	Scale: 1:5000
Drawn: AS	Date:	Revised: Date:
Checked: Date:	Stipled: Date:	
Sheet No:	FIG. No. 10	Drawing No. LJ-70/1007



NB: Bilton 1987 grid co-ords are 15m WEST of AMG co-ords (i.e. 5m)

EL 4/73
EL 1/62

817081



..... Trends from previous IP/Resistivity surveys
 --- Known position of Henry Fault (from drilling)
 - - - Interpreted position of Henry Fault (from Bilton & EZ IP Surveys)

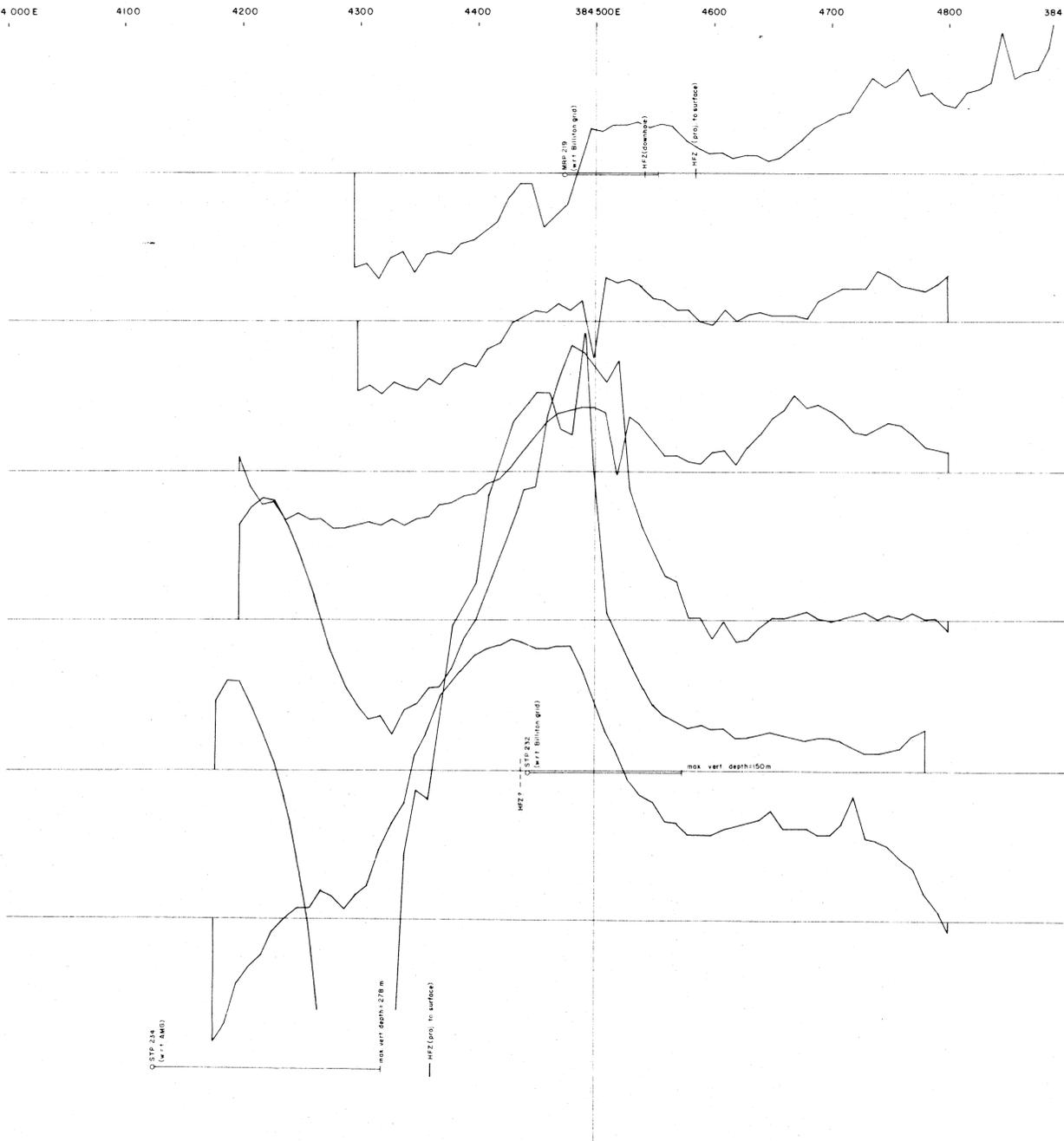
CURRENT ELECTRODES AT:
 SOUTH STERLING VALLEY [1700 N / 3600 E
 [1700 N / 5700 E
 NORTH STERLING VALLEY [5374900 N / 383700E
 [5374900 N / 385400E

SCINTREX 10/87
 GRADIENT ARRAY
 s = 20 m
 RECEIVER IPR-10
 INTEGRATION M₃
 Contour Interval: 10 mv/v

Bilton Australia The National Division of the Hall Company of Australia Limited			
Project: STERLING VALLEY J. V.			
Title: STERLING VALLEY			
CHARGEABILITY CONTOURS			
Author: N.H.	Dept: AHO	Scale: 1:5000	
Drawn: A.S.	Date:	Revised:	Date:
Checked:	Date:	Checked:	Date:
Sheet No:	FIG. No. 11	Drawing No:	LJ 70 / 100B

384 000 E 4100 4200 4300 4400 384 500 E 4600 4700 4800 384 900 E

5 375 100 N
 5 375 000 N
 5 374 900 N
 5 374 800 N
 5 374 700 N
 5 374 600 N
 5 374 500 N



817082



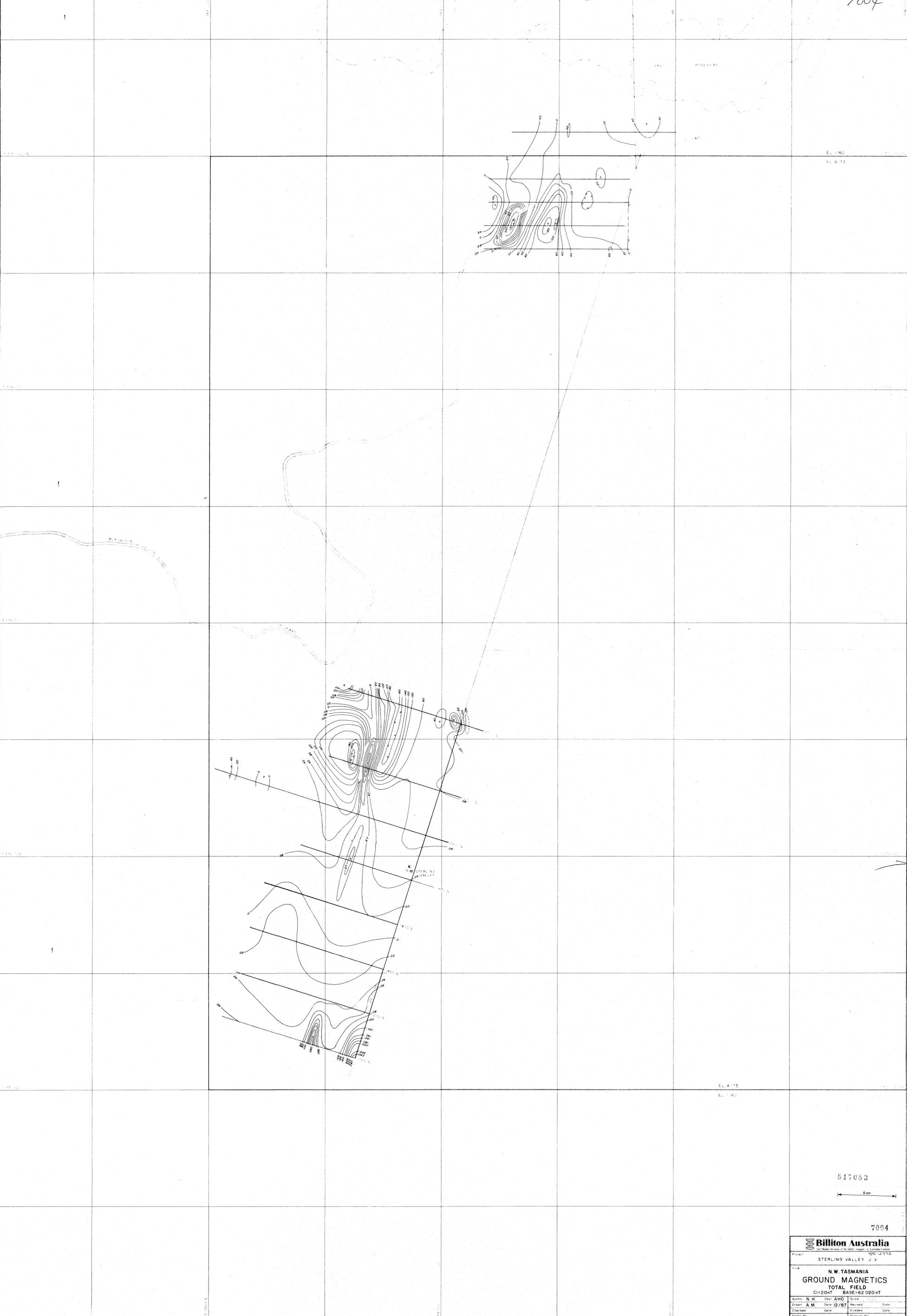
- SURVEY USED 2 x G 856 PROTON MAGNETMETERS
 - DATA DIURNALLY CORRECTED
 - PLOT BASE LEVEL = 62 0204T
 - MAG SCALE 1:104T/cm

NB: 01 THIS PLAN OVERLAYS IP & RESISTIVITY PROFILES (DRG NO. L/J70/005)
 VERTICAL DISTANCE AXIS IS NOT AT 1:2500
 02 GRID COORDS ARE NOT TRUE AMG COORDS, BILLITON GRID IS DISPLACED 15.30m WEST OF AMG

Billiton Australia			
Project: 85-2772		STERLING VALLEY JV.	
N.W. TASMANIA			
NORTH STERLING VALLEY GROUND MAGNETICS STACKED PROFILES			
Author: N.H.	Dept: AHO	Scale: 1:2500	
Drawn: A.M.	Date: 12/87	Revised:	Date:
Checked:	Date:	Checked:	Date:
Sheet: N	FIG No. 12	Drawing No:	LJ70/1009

7003

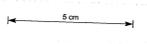
7004



EL 1962
EL 473

EL 473
EL 1962

817083



7004

Billiton Australia
The Magnet Division of the Shell Company of Australia Limited

Project: STERLING VALLEY J V

Title: N.W. TASMANIA
GROUND MAGNETICS
TOTAL FIELD
CI=20nT BASE=62 020 nT

Author: N.H.	Des: A.H.O.	Scale:	Date:
Drawn: A.M.	Date: 12/87	Reviewed:	Date:
Checked:	Date:	Checked:	Date:
Sheet No:	FIG No 13	Drawing No:	LJ70/1010