801001

EXPLORATION LICENCE 10/80

GREAT PYRAMID, TASMANIA

Report on Exploration for the Six Months Ended
21st January, 1982

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FIG. 1

Centre Melbourne	THE BROKEN HILL PROPRIETARY CO. LTD. E.L. 10/80, GREAT PYRAMID, TAS. LOCATION MAP	Project No
Date 31-8-81		Drawing No A4-2255

1. GENERAL

EL 10/80 of 12 square kilometres, which includes the Great Pyramid tin prospect, was applied for on 12th February, 1980 and granted to The Broken Hill Proprietary Company Limited on 21st July, 1980, after the Company had successfully tendered for the right to apply for the area in October, 1979. An application for renewal to 25th January, 1983 has been submitted.

2. EXPLORATION PHILOSOPHY AND OBJECTIVES

The object of exploration at Pyramid Hill was to prove up a bulk low grade, open cut extractable tin deposit. The tin mineralization occurs as cassiterite with minor associated sulphides within a swarm of thin, closely spaced veinlets with a NE trend and a steep NW dip. A minor amount of cassiterite ± sulphides occurs in a through going fault trending NW. Much of the previous testing of the deposit, by underground development and drilling, was such that neither the vein swarms nor the fault were adequately sampled.

3. TENURE, PREVIOUS EXPLORATION

The Great Pyramid tin deposit was first located in 1909 by Mr Charles Chessire who panned cassiterite from streams draining Pyramid Hill. The deposit was explored intermittently by various individuals and companies from 1909 to 1976 when it came under the control of the Tasmanian Mines Department. An area of 12 square kilometres covering the deposit was declared exempt from the Mining Act in 1976. Tenders were called for the right to explore in this area in August, 1979. Previous exploration of the prospect is summarized briefly in Table 1.

TABLE 1

GREAT PYRAMID - SUMMARY OF PREVIOUS EXPLORATION

COMPANY	YEAR	WORK COMPLETED	RESULTS/COMMENTS
Great Pyramid Tin Mines N.L.	1909-11	-Exploratory tunnelling and shaft sinking. -Adit sampling.	-Adit sampling sporadic/ incomplete. -Work halted due to low grades.
Troy Tin Syndicate	1914	-some driving of crosscuts. -sporadic resampling and sampling of adits.	-as above.
Mr H Aulich	1925-36	-minor mining and milling (from North adit and drive).	-production: 1928,-33,-34 and 1936 totalled 331 tons of ore, 5.379 tons of concentrate - equiv to .88%Sn recovery grade (poss 1.5%Sn feed grade).
Tas Mines Dept	1957 and 1963	-small bulk sampling from richer old workings.	-grades from larger samples consistently higher than previous samples.
BHP Co Ltd	1964-65	-geological mapping, surface and underground -ground magnetics -1 DD hole. -26 open holes	-discontinuous, narrow intersections of Sn to 0.56%. -narrow intersection of massive sulphides + 1.3% Sn in DDH. -concluded not economic
Paringa Mining and Exploration Co-Aberfoyle Management	1969-74	-soil sampling (Sn,Cu) -geological mapping -6 DD holes -137 open holes, grid drilled -ore reserve calculation	-incomplete soil data -concluded 4mT at .3%Sn, sub economic
Tas Mines Dept	1976-80	-4 DD holes	-Ministerial Reserve declared (1976) -holes drilled for stratigraphy - parallel to vein set. Sn up to 0.60%. -narrow intersection of massive sulphides + 2.8% Sn in MD3.

COMPANY	YEAR	WORK COMPLETED	RESULTS/COMMENTS
M.Roach & J.S. Robertson	1920-25	Leases were held but no work recorded.	
Mr Espie & Mr Murrison	1925-41		
Mr Mackermott	1957(?)		
E.Z. Co of Aust	?-1962		
Mr L Price & Mr H.D.L. Palmer	1964-68		
Geophoto Resources Ltd	1968-74	-costeaning, rock chip sampling	-Sn range .05-1.18%Sn -held area immediately surrounding deposit - no rights to explore mine itself.

4. SUMMARY OF WORK COMPLETED

a) To 21st July 1981

1. Literature survey and review of available data;

2. Surveying and leveling of all previous workings and establishment of a 600m x 1000m grid, pegged at 50 metre invervals;

3. Soil sampling at 25 metre intervals on 50 metre spaced lines over the grid area; minus 40 mesh fraction analyzed for tin, tungsten, copper, lead, zinc, silver and arsenic

4. Geological mapping at 1:1000 (surface) and 1:200 (underground) including structural and fracture density analysis (figure 3);

5. Drilling programme of 13 holes for a total of 1229 metres including core logging, sampling and assaying, and ore reserve calculations (Appendix 1), and re-evaluation of reserves using a different method and use of sludge assays (Appendices 2a, b);

6. Underground sampling of the 2NLL drive (35 x 2 metre channel samples of 30-40 kg each) (figure 4), and bulk sampling (4 x ½ tonne grab samples) for metallurgical test work (see tables 2 and 3, and Appendices 4b and 5 resp);

7. Petrological study of 30 samples from underground and surface exposures

b) To 21st January 1982

1. Ground magnetic survey at 5 metre intervals on 50 metre spaced lines, and 10 metre spaced lines over selected areas (figure 5);

2. Rock chip and soil sampling along the suspected line of the fault (*figure 6 and Appendix 4a*);

3. Evaluation of techniques for further exploration of the deposit;

4. Petrological study of 70 core samples from the drilling programme (Appendix 3).

5. SUMMARY OF WORK IN PROGRESS

1. Metallurgical testing;

2. Construction of a 1:500 scale model of the deposit.

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6. GEOLOGY AND MINERALIZATION

6.1 Geology

a) Regional Geology:

The Great Pyramid deposit occurs in the Lower (?) Devonian Mathinna Beds, a sequence of sandstones, shales and quartzites displaying evidence of being a turbidite sequence. Folding and faulting of the sequence is common. The general style of folding is one of relatively long planar links, sharp closures and shallow south-easterly plunges. Two dominant lineament directions prevail in the Mathinna Beds in the area: one trends NW-SE, expressed by a line of prospects extending from Scamander, in the SE, where silver/lead shows are present, to the Baden Powell Mo, W prospect 11 kilometres to the north west. This linear feature includes both the Great Pyramid and the North Scamander prospects where NW trending fault/breccia zones are known to occur. Similar NW trending fault zones occur further to the north east and include the Orieco fault zone. The second lineament direction trends ENE-WSW and has a number of surface expressions: 1) narrow diorite/quartz dolerite and quartz feldspar porphyry dykes; 2) regional jointing/fracturing; and 3) a one kilometre wide shear zone, initially indicated by a 20 km long, linear magnetic ridge passing through the north west corner of EL 10/80 and recently confirmed on the surface by structural domain analysis (Viney, P., 1981: Geology and Mineralization in the Upper Scamander Area. B.Sc (Hons) thesis, University of Tasmania). This shear intersects Pyramid Hill immediately to the north west of the known mineralization.

b) Great Pyramid Area:

i) Lithologies: The dominant lithologies in the vicinity of Pyramid Hill comprise an interbedded sequence of quartzite, sandstone and shale. They are gradational to one another in most exposures, caused by variation in the proportions of each rock type, by variations in thickness of bedding, and by the degree of alteration - the quartzite being an alteration product of the sandstone. It is generally difficult therefore to objectively designate rock types, hence rock unit boundaries are somewhat subjective (figure 2).

The quartzite which occupies the ridge top, is generally a hard grey massive rock, with a "vitreous" character on fresh surfaces. It tends to ring when hammered. In the main outcrops, beds are commonly several metres in thickness, separated by very thin (1-2cm) shale beds. Bedding is usually difficult to recognise although it is parallel to a well developed jointing direction. The quartzite may weather to a red-brown or pink colour at surface and underground, and is gradational to rocks mapped as <u>sandstone</u>. These rocks form less prominent outcrops, are softer, grey-brown or pink weathering and more friable. Sandstone is usually thinner bedded (10-50cm) and interbedded with grey shale. It is best observed in underground exposures. Some ambiguity in the separation of quartzite from sandstone in the interpretation will be noted. The thicker sandstone units (>40cm) may form prominent rubbly outcrops on the ridge tops, but where interbedded with shale are generally poorly exposed. The <u>shale</u> interbeds dominate the sandy beds on the south-western side of the ridge comprising an easily mapped thinly laminated pink to red-brown weathered unit, exposed only in the adits or in track cuttings. These rocks probably underlie the ridge slopes. Small scale cross bedding is fairly common. In fresh exposures they are generally grey.

A petrological study of rocks collected from surface and underground exposures, and core indicates the gradational nature of the lithologies ranging from sandstones (some feldspathic), through sandy siltstones, argillaceous siltstones to argillites (shales), with a few minor tuffaceous rocks. Alteration is dominantly silicification with sericitization and/or chloritization (Appendix 3).

A narrow, extremely weathered dyke of intermediate composition transects the deposit on an ENE-WSW trend. Detailed surface mapping, ground magnetic surveying and drilling have shown the dyke to have a variable but generally steep dip to the NW (70-80°) and is locally displaced by faulting (figure 2). Relatively fresh dyke material has been petrologically described as dolerite or quartz dolerite, locally amygdaloidal (Appendix 3). Mineralogical and textural differences exist between this dyke and the Jurassic dolerites suggesting that they are unrelated. Descriptions of altered material have ranged from kaolinized porphyritic rhyolite to microsyenite. Borehole observations in conjunction with petrology indicate a thin, 10-30cm chill margin of andesitic composition along its upper (western) contact; the basal (eastern) contact appears, from drillhole observations, to be fault bounded.

There is no significant metamorphism indicated in any of the lithologies.

ii) Structure: Observations both underground and on surface indicate most bedding strikes approximately north west and dips about 70 degrees south west. Facing determined from sedimentary structures, mainly flame structures, small scale cross bedding and rarely graded bedding, is dominantly upright to the south west. Numerous occurrences of downhole younging were recorded during core logging (refer Appendix 1, figures 8, 10, 12).

A few small folds were observed underground, generally asymmetrical with short north east limbs. No significant development of axial plane cleavage is present, but a prominant cleavage lies parallel to bedding, almost certainly a bedding fissility. Lineation is almost completely absent. Folds where observed plunge about 20 to 30 degrees south east. Hence the evidence suggests the area mapped lies on the upright limb of an anticline with its hinge to the north east. Structural interpretations based on surface, underground and drillhole data are presented in Appendix 1 (figures 3, 4, 6, 8, 10, 12).

The adit mapping shows a greater variability in dip than the surface mapping particularly in those openings on the north east side of the ridge. Flat dipping beds are more difficult to recognise in the surface outcrops.

By inspection of the dip and dip direction of bedding in the area mapped, two structural domains can be defined, separated by a line striking about 330 degrees passing through the centre of the area. To the south of this line bedding strikes approximately north west and dips fairly constantly at 60 to 70 degrees to the south west. To the north of this line dips are variable. When plotted on a stereographic projection, the south-western domain shows a point maximum fabric, while the north western domain shows a girdle fabric, indicating the presence of open folds plunging shallowly south west. The line between the two structural domains so defined was interpreted as a fault. Correlation of underground mapping and drillhole intersections with surface exposures has confirmed the existence of a major fault possessing a steep northerly dip (≥75°) (figure 2). Due to the absence of marker horizons the extent of displacement across the fault is unknown,

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however a large displacement is implied in view of the existence of two structurally distinct zones on either side.

In the north west of the area mapped to the south of the fault, bedding bends to a westerly orientation, and the main quartzite unit trends in the direction of a Sn in soil geochemical anomaly. This fold is a buckle unrelated to the folding described above, and appears to be part of the major ductile shear zone described earlier (section 6.1 a).

iii) Stratigraphy: No stratigraphy can be confidently mapped in lieu of the absence of marker horizons. A thin feldspathic sandstone horizon has been traced on the surface for a limited distance and located in some drillholes on the south side of the hill. It has not been picked up to the north of the fault, so that no correlation can be made across the fault. Reasons given later (section 6.2 b) preclude the mineralized quartzite units from being faulted extensions of one another.

6.2 Mineralization

a) Veinlet Style:

The bulk of the tin mineralization at Great Pyramid comprises an area of cassiterite-bearing close spaced joints. These joints strike about 070 degrees and dip 60 to 70 degrees to the north west, being generally planar, and while being relatively constant in orientation they also reflect the structural domains defined by bedding. Rare warping of mineralized joints is known to occur. No other mineralized joint sets can be systematically mapped, although isolated veins of different orientations can be observed occasionally. Unmineralized joints were mapped in the adits. The mineralized joints are strictly ultra-narrow fissures, 1 to 5mm in width, rarely to 10mm. They are usually lined with white quartz and exhibit open spaces or limonite filling. Cassiterite occurs as grains up to 1.5mm, generally coarser than 0.1mm (100μ) with one or more of the following minerals: muscovite, fluorite, siderite, sulphides (arsenopyrite, pyrite, sphalerite, galena and/or their decomposition products such as scorodite, goethite), tourmaline and wolframite. The joint density is generally greater than 80/metre and up to 140/metre in more intensely mineralized areas, as outlined by drilling (figure 2).

The mineralized joints exhibit quartzite envelopes of variable width (usually 1-2cm). Where the vein density is such that these envelopes coalesce, the quartzites described above are developed. Jointing and veining are best developed in the thicker, more massive sandstone beds, and while present in the interbedded sandstones and shales, mineralization is rare (refer figure 2). The silicification was accompanied by sericitization and/or chloritization, and the alteration processes apparently preceeded mineralization (Appendix 3).

Geometrically the mineralized joints are normal to the fold axes as observed in outcrop and as defined by the girdle fabric of the north east structural domain, strongly implying they are related to the folding. This jointing, whilst occurring elsewhere, is not developed to the same intensity on a regional scale (generally <30/metre).

Drilling by BHP (1965) and Paringa (1969-74) has defined two zones of mineralization, a "north" and a "south" lens. As shown in figure 2, these lenses are interpreted as being truncated by the fault described above. It is possible they are faulted repetitions of one another, but if so, they represent quite different structural levels, i.e. may be the product of a large normal displacement (refer section 6.2 b for further discussion).

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More recent drilling to the west and north west of the "North" Block has indicated the potential for an increased tonnage of lower grade mineralization (Appendix 1, section 3). The south eastern extension of the South Block has not been defined to date, although two Paringa and one BHP drillholes (GPY 1 and 2, BPD 11 resp) indicated the potential for mineralization in this area. It appears however that the most important areas of mineralization are in close proximity to the fault.

Mapping around the margins of the mineralized lenses suggests that their boundaries coincide approximately with a lessening of the density and integrity of mineralized joint system (figure 2). Black quartz veins, which are cut by the mineralized joints are observed and there is a tendency for carbonate vein fillings to take the place of quartz. This may be an indication of a local zoning phenomenon, also suggested by an elemental zonation in the soil and evidence of a silver halo around the tin mineralization, indicated by the recent drilling programme (Appendix 1). Minor copper carbonate staining occurs in calcite veined and sheared grey shale in a number of the adits, particularly those on the extremities of the deposit (Brocks, Magazine adits).

To summarize, the controls of veinlet style mineralization of Great Pyramid appear to be as follows:

1. Thick sandstone/quartzite units;

2. Dense, close-spaced jointing, oriented normal to the local fold axis;

3. Proximity to a throughgoing fault.

The coincidence of all three factors plus the proximity of a major shear zone, perhaps combined with a regional zoning effect related to a buried granite source for the mineralization, have contributed to form the environment for the mineralization. It can be argued that deformation, faulting and intrusion are approximately coeval, and that the controls are a combination of fortuitous stratigraphy (thick quartzite units), structure (folding and ?faulting to produce open spaces) and zoning (appropriate distance from a granitic tin source).

b) <u>Fault-controlled Mineralization:</u>

Rock chip and soil sampling (Appendix 4a) and a few significant drill-hole intersections (Appendix 1, section 5) have indicated the potential for a low tonnage, but reasonably high grade body of tin mineralization in the fault zone. To date, the subsurface continuity of this style of mineralization is uncertain, however surface indications give a strike length in excess of 400 metres along the top of the hill, with possible extensions to the south west.

At present there is little data regarding the fault controlled mineralization. The true width of the fault is uncertain but appears to be in the order of 3-5 metres. The lithologies contained therein comprise strongly ferruginized brecciated quartzite, and sheared sandstones and shales. Silicification, sericitization and chloritization have been noted. Cassiterite occurs as crystals in the range 20-500μ (mainly 100-300μ) with goethite (after sulphides), making up the matrix component of the breccia. In fresher samples chlorite is abundant.

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Two possibilities exist for the presence of the mineralization in the fault: it being either "primary", i.e. deposited in the fault zone from mineralizing fluids, or "secondary", i.e. derived from mineralization previously deposited in the wall rocks and subsequently incorporated as part of the brecciation process. The latter implies major movement, but not necessarily formation of the fault itself, post dating mineralization; this hypothesis would also explain the displacement of the two mineralized lenses. It is however an unlikely mechanism by itself in view of the tin grades involved; since values from drillhole intersections of the fault have been significantly higher than those of the average wall rock.

A "primary" origin for the mineralization is favoured and implies that the fault predated the deposition of the mineralization and hence was most probably the conduit for the fluids. If the mineralized lenses are faulted repetitions of one another, one must invoke a large normal displacement, post-mineralization, on the fault to produce the different structural levels. A large post-mineral movement is not necessary in that a significant pre-mineralization displacement and the occurrence of two favourable areas adjacent to the fault (folds, open fractures), followed by deposition of the mineralization, could also produce the observed pattern of tin mineralization.

The absence of abundant fracturing, mineralization and silicification/sericitization/chloritization in the dyke implies that it post dates the mineralization. The minor offsets along its length, including at the major fault, could result from a regional (or local) tensional adjustment following the major deformation and intrusive episode.

7. 1980/81 DRILL PROGRAMME

A detailed report covering the drill programme is attached (Appendix 1).

8. UNDERGROUND SAMPLING AND METALLURGICAL TESTING

Results of the underground channel sampling are summarized in Table 2a (refer also Appendix 4b). Samples were collected at waist height from both walls of the west trending drive of the 2NLL adit (figure 4) to supply new information regarding grade distribution and comparisons with previous sampling. The influence of lithology on the grade of mineralization is clearly indicated in Table 2b. Samples were taken over 2 metre intervals from a continuous channel 7cms (wide) x 7cms (deep) x 54m along the north wall. Sampling on the south wall was continuous from the 26 to 44 metre marks from the start of the drive. Of the original sample, 761 kilograms of suitable material is presently undergoing metallurgical testing as a composite bulk sample at the Tas Mines Department laboratories, Launceston.

Four ½ tonne grab samples were taken from the North, C, 2SLL and 2NLL adits (designated PBS 1-4 resp) for metallurgical testing at BHP's Laboratories in Whyalla. Locations, head grades (%Sn) and previous assays from the same locations are given in Table 3. Detailed testing was undertaken on the PBS 2 sample. Assays of concentrates available and a flowsheet showing testing performed are attached (Appendix 5). Assays of the high grade recleaner concentrate indicate that Au and Ag, with lesser W and Zr could be significant

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TABLE 2a

2NLL ADIT (DRIVE) - CHANNEL SAMPLE RESULTS

Wall	Sample No	Interval (m)*	Length (m)	Grade (%Sn)
North	PCS 2-3	2.0-6.0	4.0	0.331
"	PCS 9-10	16.0-20.0	4.0	0.382
"	PCS 2-12	2.0-24.0	22.0	0.242
"	PCS 14-17	26.0-34.0	8.0	0.382
"	PCS 19-23	36.0-46.0	10.0	0.349
"	PCS 2-24	2.0-48.0	46.0	0.271
South	PCS 27-29	44.0-38.0	6.0	0.501
"	PCS 33-34	32.0-28.0	4.0	0.181

* distance measured from start of drive.

TABLE 2b

2NLL ADIT (DRIVE) - CHANNEL SAMPLE RESULTS
LITHOLOGY VERSUS GRADE

Channel Lithology (% Quartzite)	No. of Samples	Average Grade (%Sn)	Grade Variations (%Sn)
100	5	0.299	.078, .238, .270, .440, .468
> 75	12	0.328	*.078, .130, .199, .303, .443, .513
> 50	2	0.219	.209, .228
50	3	0.329	.318, .320, .349
<50	3	0.201	.035, .224, .343
<25	3	0.144	.010, .192, .230
0 (100%	7	0.065	.015, .017, .040, .061, .070, .105, .146
Total	35 (=70 metres sampled)	Average 0.226 %Sn	* representative selection of values

TABLE 3

GREAT PYRAMID - BULK SAMPLE GRADES

Sample No	Location	Grade (%Sn)	Previous Assays (%Sn)
PBS 1	North Adit; East Wall, 16-18m*	0.50	0.21-0.75 (1909); 0.774 (1914); 0.47 (1957)
PBS 2	C Adit; West Wall, 34-36m*	0.30	0.2-0.4 (1909); 0.176 (1914)
PBS 3	2SLL; North Wall of drive, 1-3m*	0.65	0.342 (1914)
PBS 4	2NLL; East Wall, 19.21m*	0.35	Not sampled

* measured from portal, approximate sample weight 1 tonne.

by-products from a mining operation at Pyramid.

9. GROUND MAGNETIC SURVEY

Detailed ground magnetic surveying was completed along 50 metre spaced lines, at 10 metre intervals along E-W lines to locate any significant sulphide mineralization associated with cassiterite in the vein swarm, and at 5 metre intervals in the N-S direction to locate any strata - or fault - bound mineralization. Profiles are given in figure 5.

Readings at 5 metre intervals on 10 metre spaced lines running E-W were carried out over the dolerite dyke, and proved to be worthwhile in assisting surface mapping and locating a number of areas in which displacement of the dyke had occurred (figure 2).

A large, deep seated (400 metres?) magnetic anomaly exists to the north west of the known mineralization.

10. ORE RESERVE ESTIMATION

Reserves for the deposit were determined by triangulation, with a 0.1% Sn cutoff, and based on 10 metre level plans from the 210 level down to the 90 level. The reserves indicated for each level, the method of calculation and the assumptions used are given in Appendix 1, section 7.

A reassessment of the calculation using rectangular areas of influence yielded a 20% decrease in tonnage and 20% increase in grade of the 'in situ' reserves (Appendix 2a).

Partial re-evaluation of the reserves was carried out using results derived from sludge samples collected in the drilling programme. The comparison of sludge and assays over the same intervals clearly indicated a significant loss of tin mineralization from the core during drilling. The results of this study are given in Appendix 2b.

The calculated reserves by the various methods used are summarized in Table 4.

11. CONCLUSIONS

The exploration programme undertaken by BHP to date has clearly outlined the deficiencies of previous work on the deposit, and the problems to be encountered thereon.

The drilling programme designed to: 1) indicate the potential for increased tonnage and grade of the deposit; and 2) increase the knowledge about the structural controls on the mineralization achieved both of these aims, as well as confirming the magnitude of some of the previously suspected problems. Data held at present indicates that the reliability of grades from

TABLE 4

GREAT PYRAMID - COMPARISON OF ORE RESERVE CALCULATIONS

Assessment by	In Situ Reserves (indicated)	(indicated + "inferred")	Method of Determination
Paringa-Aberfoyle (1969-74)	4mT at .3%Sn		Based on cross sections
BHP (1981)	4.10mT at .22%Sn	8.29mT at .19%Sn	Triangulation, based on levels (to 90 level)
BHP (1981)	3.3mT at .26%Sn	-	Rectangular, based on 170 level only with correction applied to all levels.
BHP (1981)	*(442,101T at .20% Sn)		
	**(658,527T at .19% Sn)	-	Use of sludge assays in diamond holes (BPD series only)

- tonnage for North Block in "possible" category (*) with correction for estimated increase in grade from sludge assays (**).

both diamond and percussion drilling is questionable due to sampling problems and suggests that diamond drilling may be seriously downgrading the deposit.

The sampling problems encountered during the various drilling programmes inevitably cast doubts on the reliability and accuracy of the various ore reserve grade calculations, since these were based mainly on drillhole data. Recalculation by different methods has demonstrated the variability of calculated grades.

The underground channel sampling confirmed the relationship between grade and lithology, and emphasized the need for good geological control on sampling. The bulk samples either matched or were higher than the grades previously returned from the sample locations and indicated that larger samples will give more reliable grades, since they are less affected by variations in lithology.

Information obtained from the metallurgical testing shows that the cassiterite should be recovered with relative ease and that gold and silver could be significant by-products from a mining operation at Pyramid.

801020 FIG. 2

NORTH BLOCK
SOUTH BLOCK
BROCKS
MAGAZINE
No3 NLL
No1 NLL
No2 NLL
No3 SLL
No2 SLL
No1 SLL
DDS 1
MD1
MD2
MD3
MD4
GPY1
GPY2
GPY3
GPY4
GPY5
GPY6
E 100
E 200
E 300
E 400
E 500
E 600
E 700
E 800
N 500
N 400
N 300
N 200
N 100
N 00
500 m N
400 N
300 N
200 N
100 N
00
E 100 m
E 700 m
Mineralized Block.
MD 3 Mines Dept. diamond drill hole.
DDS1 B.H.P " " " (1965)
GPY2 Aberfoyle " " "
7 B.H.P " " " (1980-1981)
(No prefixed BPD)
B.H.P. Percussion drill hole.
Adit
Shaft
Mainly sandstone with interbedded shale. (locally silicifed)
Shale.
Diorite dyke.
F Fault, with dip direction.
70° Strike and dip of bedding.
65° Jointing.
>5m %
2.5m %
<2m %
Sn metre % in drillholes.
Scale 1:1,000
0 20 40 60 80 100 Metres
5 cm
THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT
E.L. 10/80 GREAT PYRAMID, TAS.
GREAT PYRAMID PROSPECT
GEOLOGY
Revisions
Drawn
Traced
Checked
Date
Project No
Centre
Drawing No
A1-

801021 FIG. 3

E 100
E 200
E 300
E 400
E 500
E 600
E 700
E 800
N 500
N 400
N 300
N 200
N 100
N 00
500 m N
400 N
300 N
200 N
100 N
E 100 m
E 700 m
BROCKS
MAGAZINE
NORTH
Nº3NLL
Nº1NLL
Nº2NLL
Nº2SLL
Nº3SLL
Nº1SLL
DDS1
MD1
MD2
MD3
GPY1
GPY3
GPY4
3000
1000
Sn contours – ppm
95 Fracture / metre contour
Mines Dept. diamond drill hole.
B.H.P " " " (1965)
Aberfoyle " " "
B.H.P " " " (1980-1981)
(Nº prefixed BPD)
B.H.P. Percussion drill hole.
Adit
Shaft
Mainly sandstone with interbedded shale.(locally silicifed)
Shale.
Diorite dyke.
Fault, with dip direction.
Strike and dip of bedding.
Jointing.
>5m %
2.5m %
<2m %
Sn metre % in drillholes.
Scale 1:1,000
0 20 40 60 80 100 Metres
5 cm
THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT
E.L.10/80 GREAT PYRAMID, TAS.
GREAT PYRAMID PROSPECT
Fracture intensity and Sn Geochemistry.
Revisions
Drawn
Traced
Checked
Date
Project Nº
Centre
Drawing Nº
A1-

FIG. 4

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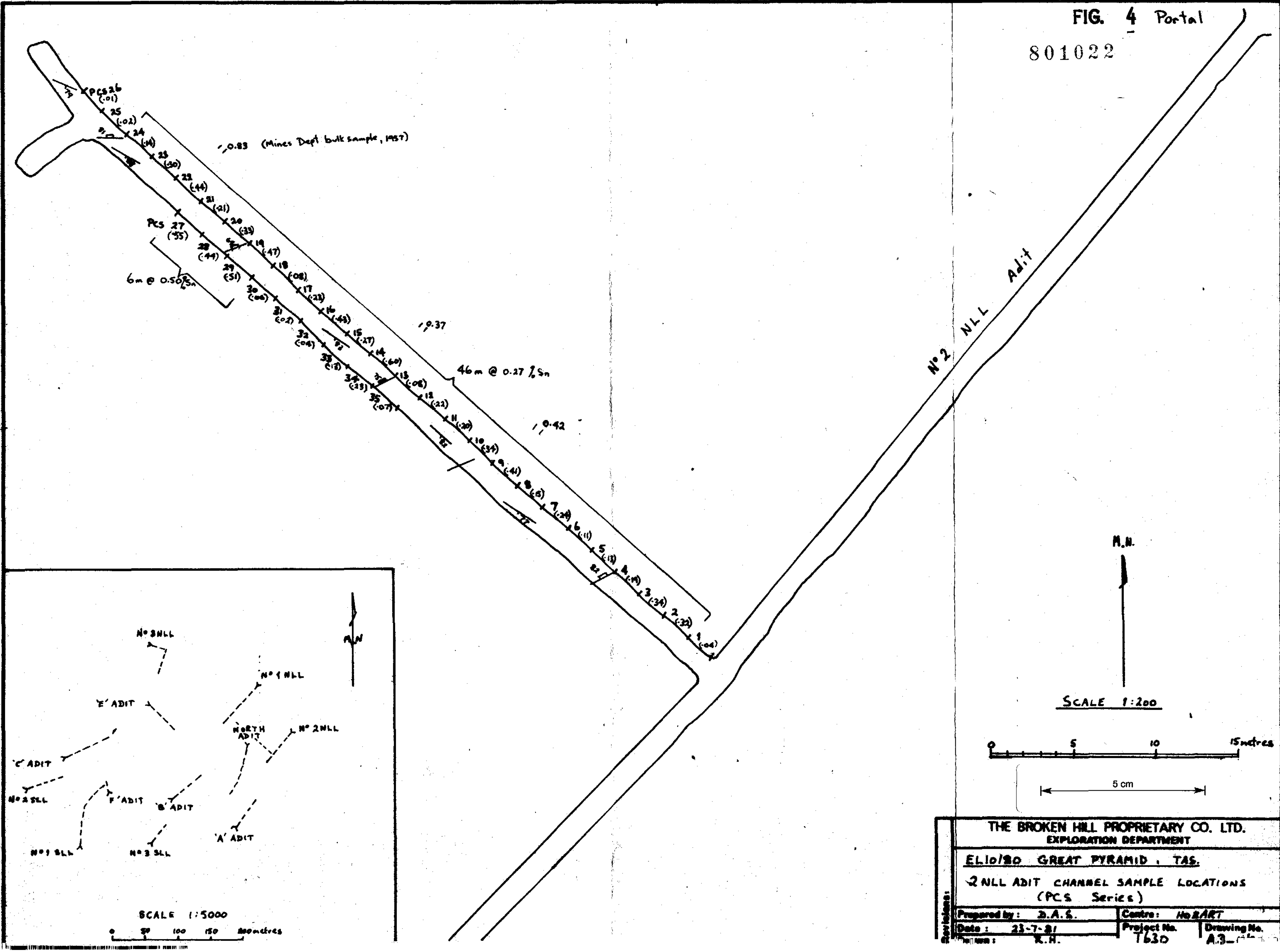
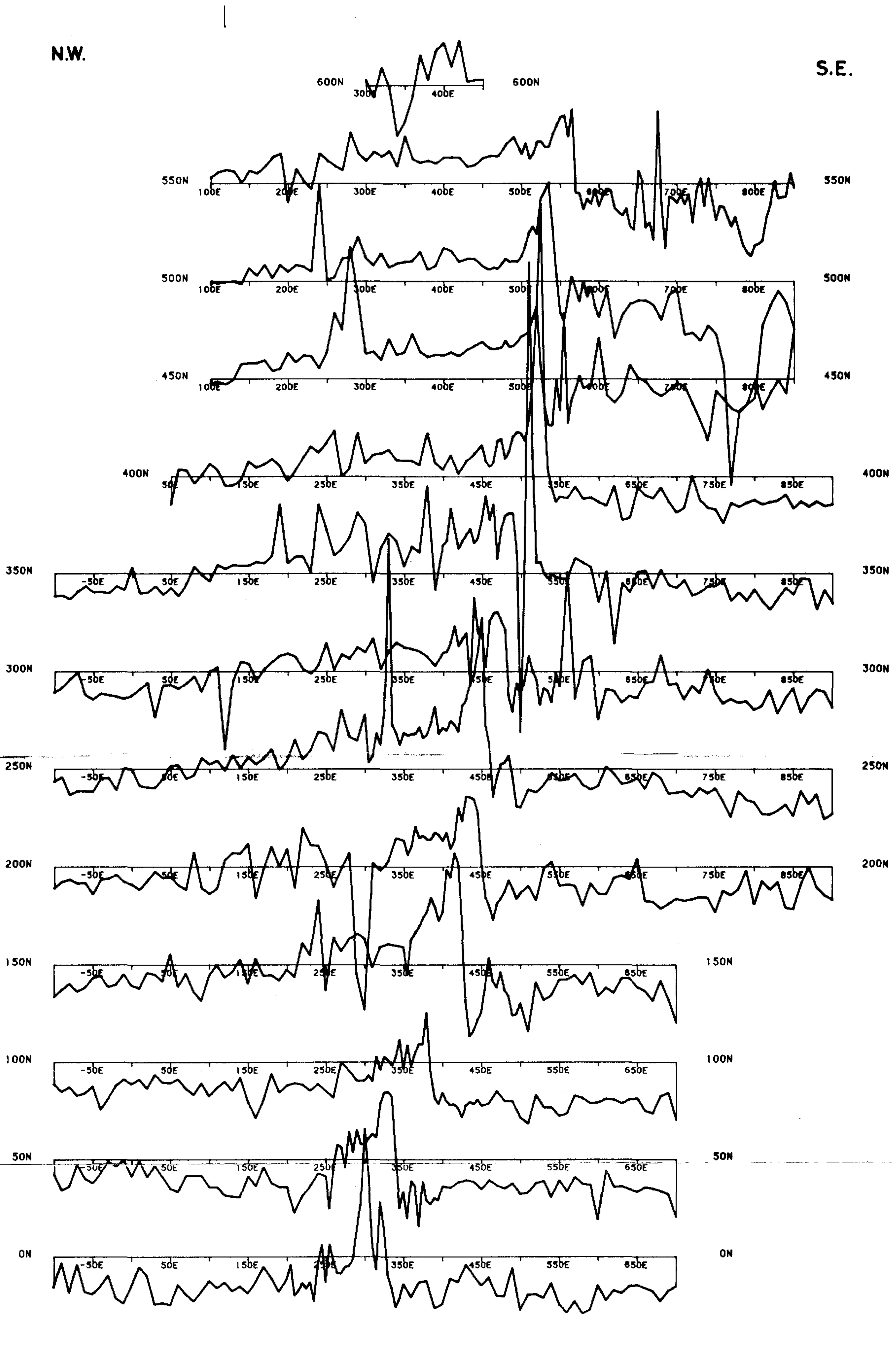


FIG 4



THE BROKEN HILL PROPRIETARY CO. LTD.

GREAT PYRAMID GROUND MAG

MAGNETIC STACKED PROFILES

MAPSCALE 1: 5000
BASE DATA VALUE : 61900.0 GAMMAS DATA SCALE : 50.0 GAMMAS/CM
ALL DATA ON LINES PLOTTED
CUTOFFS APPLIED : MAX VALUE :62300.0 GAMMAS MIN VALUE : 61500.0 GAMMAS

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FIG. 5

801024 FIG. 6

THE BROKEN HILL PROPRIETARY CO. LTD
EXPLORATION DEPARTMENT

E.L. 10/80 GREAT PYRAMID, TAS.
GREAT PYRAMID PROSPECT

GENERAL SAMPLE LOCATIONS

Drawn D.S. /R.H.	Date Feb. '82	Centre Hobart
Traced	Project No T630	Drawing No A1-10/80-17
Checked		

801025

APPENDIX 1

REPORT ON 1980/81 FIRST PHASE
DRILLING PROGRAMME

Vol. 2.

APPENDIX 2

ORE RESERVE RE-CALCULATIONS

SUBJECT: Pyramid Ore Reserve Calculation: Comparison of Methods

In order to demonstrate the effect of varying the method of calculation of ore reserves on tonnage and grade, I have re-calculated reserves for the 170 level (selected at random) by the use of rectangular areas of influence on drillholes rather than by triangles.

Comparison of results in the table below shows that for this level the use of rectangles resulted in a decrease in the calculated tonnage, above the 0.1% cut-off level, of 20% (100,000 tonnes in 500,000) and an increase in calculated grade of 20% - up to 0.25% Sn from 0.20% Sn.

Applying these corrections to the previously calculated total for the deposit (4.10mT at 0.22% Sn) gives a drill indicated reserve of 3.3mT at 0.26% Sn. There is at least a further 5mT of untested ground adjacent to the drilled mineralization.

If bulk underground sampling were to increase the grade by a further 20%, as evidence to date suggests is quite likely, a grade of around 0.30% Sn could be achieved.

SUMMARY OF RESERVES 170 LEVEL:

Method A: Triangles

North Block T	%Sn	South Block T	%Sn	Totals for Level T	%Sn
96,514	.15	199,139	.14	295,653	.14
92,928	.24	98,880	.25	191,808	.25
30,722	.34	43,124	.38	73,846	.36
220,164	.21	341,143	.20	561,307	.20

Method B: Rectangles

North Block T	%Sn	South Block T	%Sn	Totals for Level T	%Sn
72,373	.14	128,605	.13	200,978	.13
40,095	.26	42,640	.23	82,735	.24
60,597	.37	112,043	.39	172,640	.38
173,065	.25	283,288	.25	456,353	.25

SUBJECT : Pyramid - Effect of sludges on grade/tonnage calculations

Serious undervaluing of mineralization at Great Pyramid may result from diamond drilling due to the liberation of cassiterite from the friable vein material. Quantitative analysis of Sn results from sludge samples collected during the 1980-81 drilling programme was undertaken to ascertain the extent of these losses and their possible effects on the grades returned.

Comparison was made of 320 core/sludge assay pairs with a lithological subdivision into shale (logged as shale and/or siltstone) and quartzite (logged as quartzite and/or sandstone, including minor shale interbeds) categories. The weightings of assays was based on the relative volume propertions of sludge to core depending on core size of the hole (ie HQ3 or NQ3). Because of statistical uncertainty (too few data points) in the comparison of sludge to core assays at grades greater than .15%Sn, recalculation of core grades was restricted to those ≤.15%Sn; grades greater than .15%Sn were assumed to be unaffected by weighting of sludge assays.

Recalculation (use of sludge assays) produced the following effect on grades:

Table 1

Effect on Downhole Average

Hole	Previous Average (%Sn)	Recalculated Average (incl sludges)	% Increase in Downhole Average	Hole Length (metres)	No of Core Samples
BPD 1	.10	.13	30	101.20	51
2a	.11	.14	27	19.65	10
3	.10	.13	30	100.03	50
4	.06	.09	-	125.55	63
5	.07	.09	-	100.23	48
7	.13	.16	23	139.55	66
8	.03	.04	-	103.08	52

DEALT WITH

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Hole	Previous Average (%Sn)	Recalculated Average (incl sludges)	% Increase in Downhole Average	Hole Length (metres)	No of Core Samples
BPD 9a	.13	.16	23	82.20	41
10	.15	.18	20	102.95	46
11	.06	.08	-	219.75	110
12	.02	.03	-	61.48	27.

In the light of these increases the contribution of data from BPD 1-7 to the ore reserve calculation was re-evaluated. These holes in the North Block were chosen because of their locations away from other grade/tonnage influences (drillholes, adits, etc) to demonstrate the effect of the recalculation.

Results are summarized in Table 2.

<u>Table 2</u>

<u>Re-evaluation of reserves - Possible Category, North Block</u>

Source	Previous Calculation T	Previous Calculation %Sn	"Sludge-weighted" Calculation T	"Sludge-weighted" Calculation %Sn
BPD 1-7	325,595	.20	(325,595 (216,426	.24 .12
Other	116,506	.20	116,506	.20
TOTAL	442,101	.20	658,527	.19

The weighted inclusion of sludge assays had two obvious effects:

i) 20% increase in grade of tonnage used in the earlier calculation;

ii) Additional contribution of 216,426T at .12%Sn of material previously considered below "cut-off" (.1%Sn).

The net effect was to increase the tonnage of the Possible category by 50% with a marginal decrease (5%) in grade. The decrease in grade is directly related to the inclusion of the large block of very low grade material, but is indirectly related to the method of calculation, in that a larger increase in the grade of the "previously used" material could be obtained if core grades greater than .15%Sn had been weighted.

The recalculation also proved a 20% increase in grade of material from BPD 1-7 included in the Probable Category, viz: 86,075T from .15%Sn to .19%Sn.

If increases of this magnitude were applied to grades returned from the diamond drillholes in the South Block - BPD 8-11, GPY 1-6, MD 1-4 - significant increases in the overall grade and possibly tonnage of this block could occur.

The results presented on the preceding pages clearly indicate a significant loss of cassiterite mineralization from core during drilling, resulting in an undervaluation of grades returned from holes of this type. These losses are apparently greater in the softer (shaley) lithologies. Given the numerous problems encountered during drilling and in the appraisal of drillhole results, it can only be concluded that bulk testing is required to accurately prove the grades of mineralization in this deposit.

APPENDIX 3

PETROLOGICAL REPORTS

REPORT CMS 81/9/25

D.D. Cores PPT 33 - PPT 100 (MRL 13,266-13.333)

Sixty-eight drill core samples were received for petrological examination; thin-sections were prepared of all samples and are very briefly described in the accompanying tables. No polished sections were prepared, and any sulphides present were identified under the stereobinocular microscope, using the thin-sections and offcuts. In the tables, only those rocks are termed "mineralised" if they contain cassiterite.

Summary

Both host rock lithologies and styles of mineralisation were simple and straightforward. The occurrence is a vein-type deposit, in generally weakly altered clastic sediments; cassiterite is clearly the most significant economic mineral present, though sphalerite, galena and copper sulphides also occur sporadically.

Little can be said regarding the vertical sequence of the host rocks, or the distribution of mineralisation, since, as far as is known, each drill hole was represented by only one sample and the relationships of the samples to each other is not known; this somewhat restricts the meaningful comments.

The host rocks are generally fine sandstones, siltstones and argillites, with a few igneous rocks, probably minor intrusives. The sediments, some of which were feldspathic (arkosic), are indurated, stressed, generally sericitised and sometimes chloritised; it is difficult to judgewith certainty what proportion of the sericite is merely recrystallized clay (i.e. clastic) and how much has been added. Those sediments which have been chloritised are much more obvious. It would seem that the process of sericitisation/ chloritisation preceded mineralisation.

The igneous rocks comprise altered microsyenites, dolerites and perhaps one or two volcanics which may well be part of the host rock sequence; the micro-syenites and dolerites are hypabyssal rocks, probably dykes or sills.

Mineralisation

Cassiterite is present in veins, generally with two or more of the following minerals: quartz, muscovite, fluorite, siderite, arsenopyrite and other sulphides (and their dec-omposition-products such as scorodite, goethite) and tourmaline; there is no clear or constant association between cassiterite and any particular mineral, and in fact the most heavily mineralised sample (MRL 13,305) contains veins with cassiterite as virtually the only component.

The cassiterite is generally cloudy and of mottled brown colour; because of its cloudiness, it is not always easily recognised or readily distinguished from leucoxene. Grainsizes vary widely, from 5-10 μ to 300-400 μ, though mostly in the 50-150 μ range. From a metallurgical point of view, upgrading should not be particularly troublesome, and it should be possible to achieve good recoveries and grades using gravity methods; the presence of sulphides (and their oxidation-products), especially galena, and arsenopyrite, would constitute a potential penalty situation in concentrates.

H.W. Fander, M. Sc.

Sample No.	Classification - Brief Petrological Description
MRL 13,266 PPT 33/28.9 m	Mineralised, Sericitised Siltstone. Small uniform quartz grains, sericitised feldspar, sericite matrix/cement. Crosscutting veins of quartz-fluorite-muscovite-cassiterite (good crystals 25-1000 μ, mostly > 100 μ); rare tourmaline needles.
MRL 13,267 PPT 34/48.2 m	Indurated Siltstone. Uniform silt-sized quartz grains, interstitial Fe-stained illite-sericite. Quartz veins with oxidised sulphides (pyrite, ?arsenopyrite, ?chalcopyrite).
MRL 13,268 PPT 35/67.2 m	Indurated Siltstone. Verging on fine sandstone. Rounded quartz grains, interstitial illite-sericite (recrystallized clays). Crosscutting sericite veins, quartz-muscovite veins (barren) with fine, pale tourmaline needles.
MRL 13,269 PPT 36/78.6 m	Rhyolitic Tuff-Lava/Meta-Argillite. Splinters/fragmentary phenocrysts of quartz, argillised feldspar; argillised glassy groundmass; contorted, altered biotite flakes. Chilled margin against spotted meta-argillite. Quartz-chlorite veins.
MRL 13,270 PPT 37/93.7 m	Indurated Fine Sandstone. Subangular-subrounded quartz grains, interstitial fine sericite, chlorite. Crosscutting quartz-chlorite-muscovite veins with traces of fluorite, oxidised sulphides; rare groups of fine cassiterite needles (groups = 150 μ across).
MRL 13, 271 PPT 38/6.0 m	Spotted Meta-Argillite. Homogeneous fine matted illite-sericite with small, shapeless spots of altered ?cordierite and ultrafine tourmaline needles. Most "spots" are limonite-filled. Cp. MRL 13,269.
MRL 13,272 PPT 39/11.8 m	Indurated Sandstone. Poorly sorted/sized, subangular quartz grains in fine quartz-sericite matrix; scattered grains of sericitised feldspar. Quartz-muscovite veins.
MRL 13,273 PPT 40/15.45 m	Ferruginised Meta-Argillite. Fine matted illite-sericite with tourmaline needles, scattered small hematite spots (after ?cordierite) and ultrafine hematite throughout. Quartz-goethite veinlets.
MRL 13,274 PPT 41/32.5 m	Indurated Sandstone-Breccia. Fine sand-sized, subangular quartz grains, quartz-sericite matrix/cement. Brecciated, veined by fine milky quartz. Brecciated quartz veins. Younger goethite veinlets (oxidised ?pyrite).
MRL 13,275 PPT 42/53.2 m	Sericitised Siltstone. Silt-sized quartz, abundant interstitial fine sericite-hydromuscovite. Zones or diffuse veins of matted mus-covite with quartz, traces of ragged cassiterite up to 150 μ.
MRL 13,276 PPT 43/62.7 m	Indurated Sandstone. Poorly-sorted/sized, subangular-subrounded quartz grains, interstitial fine quartz and sericite. Diffuse, replacive quartz-muscovite veins with rosettes of scorodite needles (Fe, Al arsenate).
MRL 13,277 PPT 44/70.5 m	Microsyenite. Random laths of intergrown albite and K-feldspar, with interstitial chlorite, primary magnetite, minor quartz patches (?primary), conspicuous apatite needles. Minor intrusive.

SAMPLE No.	Classification - Brief Petrological Description
MRL 13,278 PPT 45/74.05 m	Altered Dolerite(?). Small random andesine and chloritised ferromagnesian laths, leucoxenised oxide opaques; interstitial secondary quartz, chlorite. Chlorite-carbonate veins.
MRL 13,279 PPT 46/7.7 m	Brecciated, Indurated Sandstone/Argillite. Fine sandstone-quartz framework, recrystallized clay/quartz matrix/cement; sharp contact with argillite of felted illite-sericite flakes. All block-faulted. Quartz-goethite veins.
MRL 13,280 PPT 47/31.1 m	Indurated Argillaceous Siltstone. Gradation from finer, dominantly argillaceous (recrystallized) silt to coarser, more quartzose, less argillaceous rock. Block-faulted, veined with goethite, quartz. ?Sulphide boxworks.
MRL 13,281 PPT 48/41.3 m	Sheared, Indurated Sandstone. Moderately-sized/sorted quartz grains, fine quartz-sericite matrix; in contact with meta-argillite. Incipiently metamorphosed, with subparallel shears containing quartz, trace ? chalcocite. Carbon films.
MRL 13,333 PPT 49/42.8 m	Indurated Sandstone/Siltstone. Interlocking wedges of sericitised fine sandstone and of recrystallized argillaceous siltstone. Sheared, with chlorite veins. Scattered irregular chalcocite, related to shearing and veining.
MRL 13,282 PPT 50/88.3 m	Indurated Quartzite. Subangular-subrounded, sand-sized quartz grains, fine quartz cement; sericite patches, veins. Quartz veins with pyrite and scorodite. Scattered fine chalcocite and/or covellite.
MRL 13,283 PPT 51/106.1 m	Indurated, Sericitised Sandstone. Fine sand-sized quartz grains, sericitised feldspar, interstitial sericite. Scattered pyrite crystals, fine carbonaceous matter and chalcocite (possibly diagenetic).
MRL 13,284 PPT 52/112.7 m	Altered ?Andesite. Exceedingly fine-grained igneous rock with typical quench textures; primary minerals altered. Fabric suggests a chilled margin; relict features and alteration-products suggest intermediate to basic composition.
MRL 13,285 PPT 53/123.7 m	Altered Dolerite. Mostly random laths of oligoclase-andesine, with interstitial magnetite, and ferromagnesian minerals altered to chlorite, siderite. Apatite needles conspicuous. Closely resembles MRL 13,278, and may be related to MRL 13,285.
MRL 13,286 PPT 54/15.55 m	Mineralised Indurated Sandstone. Rounded, stressed quartz grains, interstitial quartz, sericite. Sheared, laced with muscovite-goethite (after sulphides and/or scorodite) veins containing irregular cassiterite grains 20-400 μ, singly and in clusters.
MRL 13,287 PPT 55/27.4 m	Spotted Meta-Argillite. Fine, matted illite-sericite with numerous small tourmaline needles; scattered small cavities (some are limonite-filled) after ?cordierite. Cellular goethite veins (?oxidised sulphides).

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Sample No.	Classification - Brief Petrological Description
MRL 13,288 PPT 56/53.15 m	Chloritised Sandstone. Granular quartz with relict clastic textures, cemented by fine quartz and fine fibrous chlorite. Broad veins of massive, matted chlorite with embedded quartz crystals.
MRL 13,289 PPT 57/63.7 m	Chloritised Sandstone. Rounded, sand-sized quartz grains, interstitial fine chlorite and quartz (cp. MRL 13,288); massive, replacive chlorite veins with quartz crystals, shapeless chalcocite masses, cellular goethite; azurite films.
MRL 13,290 PPT 58/83.6 m	Metasiltstone. Fine clastic quartz, recrystallized clays (now sericite, pale chlorite); brecciated. Pyrite masses and veins, with alunite and Fe sulphates.
MRL 13,291 PPT 59/95.6 m	Sericitised Sandstone. Poorly-sorted/sized, subangular to rounded quartz grains, sericitised feldspar, interstitial quartz and sericite; stressed, indurated. Quartz-siderite-chlorite-pyrite veins; also quartz-fluorite-muscovite veins with trace tourmaline.
MRL 13,292 PPT 60/42.75 m	Kaolinised Porphyritic ?Rhyolite. Kaolinised feldspar laths and originally glassy groundmass; irregular quartz patches, abundant leucoxenised oxide opaques. May have been more dacitic or even trachytic in composition.
MRL 13,293 PPT 61/47.25 m	Kaolinised ?Microsyenite. Small, stubby, random laths of kaolinised feldspar; interstitial quartz, limonite, altered ?glass, leucoxenised opaques. May well be correlatable with MRL 13,277.
MRL 13,294 PPT 62/31.95 m	Sheared, Sericitised Sandstone. Relict clastic quartz, abundant interstitial Fe-stained sericite. Strongly sheared, brecciated in places. Quartz veins with goethite after ?pyrite, ?scorodite.
MRL 13,295 PPT 63/51.8 m	Kaolinised ?Microsyenite. (Dolerite) Kaolinised, random, stubby laths of two different feldspar species; interstitial quartz; conspicuous leucoxenised oxide opaques. Correlatable with MRL 13,293, ?13,277.
MRL 13,296 PPT 64/60.0 m	Sheared Metasiltstone. Silt-sized clastic quartz grains embedded in fine sericite and chlorite, laced with goethite veinlets. Coarser veins of quartz and chlorite.
MRL 13,297 PPT 65/79.85 m	Mineralised, Sheared Sandstone. Some relict clastic quartz, but mostly recrystallized, sheared, brecciated, with sericite. Goethite-quartz-muscovite-cassiterite veins. Good cassiterite crystals, 20-500 μ, mostly 100-300 μ, in conspicuous amount, with goethite.
MRL 13,298 PPT 66/26.55 m	Ferruginised Sandy Siltstone. Fine-sand and silt-sized quartz grains, mica flakes in sericite (recrystallized clay) matrix. Pervaded by goethite. Cut by quartz veins and quartz-chlorite veins (younger).
MRL 13,299 PPT 67/41.5 m	Mineralised, Chloritised Sandstone. Stressed, clastic quartz, with interstitial quartz and chlorite aggregates. VEins of quartz and chlorite rosettes, with embedded cassiterite crystals, 10 μ to 150 μ, poorly-defined and mostly < 70 μ; also goethite patches.

Sample No.	Classification - Brief Petrological Description
MRL 13,300 PPT 68/63.1 m	Mineralised Quartzite/Meta-Argillite. A few relict clastic textures, but mostly recrystallized quartz, sericite. Broad quartz-muscovite-chlorite zones with cassiterite, as cloudy, dark crystals 20 μ - 300 μ, mostly > 70 μ, singly and in clusters up to 1x1.5 mm.
MRL 13, 301 PPT 69/82.75 m	Brecciated Metaquartzite. Clastic quartz, extensively recrystallised, with interstitial sericite and quartz; cut by broad veins of chlorite-muscovite-siderite with bands of coarse sphalerite and galena, traces of pyrite, chalcopyrite.
MRL 13,302 PPT 70/88.3 m	Sericitised Sandstone. Coarse, rounded clastic quartz grains, matrix of smaller quartz grains, quartz-sericite cement; sericitised feldspar grains. Quartz-chlorite-siderite veins with arsenopyrite crystals and chalcopyrite grains, fluorite traces.
MRL 13,303 PPT71/101.3 m	Sericitised Sandstone. Rounded quartz grains, sericitised feldspar, silty quartz matrix, quartz-sericite cement, well-indurated. Replacive siderite patches. Quartz-chlorite-siderite veins with arsenopyrite, chalcopyrite.
MRL 13,304 PPT 72/16.1 m	Mineralised, Sericitised Sandstone. Frame-work of rounded clastic quartz grains, quartz-sericite cement. Narrow, diffuse quartz-muscovite veins with aggregates (30μ - 250μ) of microgranular cassiterite; single grains mostly < 20 μ, also fine ne dles.
MRL 13,305 PPT 73/22.25 m	Mineralised, Sericitised Sandstone. Very conspicuous (6-8 %) cassiterite veins in sericitised sandstone; accompanied only by minor quartz, muscovite. Cassiterite as good crystals 20-300 μ forming aggregates, semi-continuous veins.
MRL 13,306 PPT 74/46.75 m	Sericitised Sandstone/Siltstone. Extensively sericitised fine sandstone grading into silt, with thin parallel laminae, selectively replaced by pale tourmaline needles. Crosscutting goethite veinlets.
MRL 13,307 PPT 75/69.0 m	Metasiltstone/Shale. Incipiently metamorphosed micaceous siltstone passing abruptly into recrystallized shale bands and wedges. Ptygmatic quartz veins, confined to siltstone.
MRL 13,308 PPT 76/12.11 m	Indurated Sandstone. Moderately-sorted/sized, subangular-subrounded quartz grains, interstitial fine quartz, recrystallized clays, small pale tourmaline needles. Quartz-goethite veins.
MRL 13,309 PPT 77/17.5 m	Indurated Sandstone/Shale. Sandstone with framework of moderately-sorted/sized quartz grains, quartz-sericite cement; sharp contact with shale or phyllite (illite-sericite, as matted-parallel flakes). Quartz veins.
MRL 13,310 PPT 78/34.8 m	Mineralised, Indurated Coarse Sandstone. Coarse-sand sized rounded, stressed quartz grains, recrystallized interstitial quartz, sericite aggregates. Quartz veins with goethite, scorodite and isolated cassiterite grains, aggregates, 40μ - 300 μ.

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Sample No.	Classification - Brief Petrological Description
MRL 13,311 PPT 79/45.3 m	Argillised Fine Arkose. Fine-sand-sized quartz grains and many argillised feldspar fragments, chloritised grains, fine quartz-clay cement. Quartz-muscovite veins with arsenopyrite, chalcocite/covellite, siderite.
MRL 13,312 PPT 80/79.4 m	Altered, Amygdaloidal Dolerite. Random plagioclase laths, mostly replaced by siderite, alkali feldspars and quartz; ferromagnesians chloritised; interstitial altered magnetite. Amygdales rimmed with K-feldspar, chlorite, filled with siderite. Cp. MRL 13,285.
MRL 13,313 PPT 81/88.9 m	Mineralised, Tourmalinised Sediment. Banded. Indurated quartzose sandstone alternating with bands of fine, felted tourmaline needles representing argillaceous layers. Chlorite-muscovite-goethite-fluorite veins with isolated cassiterite, 40-200μ grains
MRL 13,314 PPT 82/98.3 m	Metaquartzite. Small, interlocking quartz grains with some relict clastic textures. Cut by complex veins of quartz-chlorite-fluorite-muscovite-siderite with fresh and sericitised topaz, coarse and fine chalcopyrite.
MRL 13,315 PPT 83/12.35 m	Sericitised, Gritty Sandstone. Angular fragments of sericitic siltstone, contorted shale fragments, rounded quartz grains, of grit- and coarse-sand-sizes, interstitial quartz and abundant sericite. Goethite, after pyrite, throughout. Quartz veins.
MRL 13,316 PPT 84/38.4 m	Laminated Shale. Graded bedding from fine argillaceous material (recrystallized clays) into coarser, quartzose silt. Well-indurated, but not really metamorphosed.
MRL 13,317 PPT 85/71.2 m	Mineralised, Sericitised Sandstone. Partly recrystallized, rounded quartz grains in fine quartz-sericite matrix-cement. Wide quartz-fluorite-topaz veins with arsenopyrite, chalcopyrite, tourmaline; narrow muscovite-cassiterite zones, with 20-300 μ cloudy grains, clusters; also scattered grains.
MRL 13,318 PPT 86/80.5 m	Mineralised, Chloritised Sandstone. Quartz grains with relict clastic textures, extensively recrystallized; interstitial chlorite. Quartz-chlorite veins and chlorite-magnetite-siderite-fluorite veins with chalcopyrite, sphalerite, traces of ragged, poorly-defined fine cassiterite.
MRL 13,319 PPT 87/103.1 m	Meta-Argillite. Very uniform, featureless rock, of ultrafine matted recrystallized clays and quartz, with small shapeless carbonate spots and veinlets with pyrite.
MRL 13,320 PPT 88/114.8 m	Sericitised, Feldspathic Sandstone. Rounded grains of quartz and sericitised feldspar, with fine quartz-sericite matrix/cement and small chlorite patches throughout. Quartz-chlorite-fluorite-siderite veins with chalcopyrite, pyrite.
MRL 13,321 PPT 89/135.0 m	Argillaceous Silty Sandstone. Fairly poorly-sorted/sized, sand- and silt-sized quartz grains, with dense argillaceous matrix; shale lenses. Chlorite veins; quartz-siderite-chlorite-muscovite veins with pyrite, chalcopyrite-bornite.

BPD 10

BPD 11

Sample No.	Classification - Brief Petrological Description
MRL 13,322 PPT 90/145.1 m	Indurated, Feldspathic Sandstone. Small subangular quartz grains, scattered feldspar fragments, cemented by fine quartz. Carbonate veinlets; quartz-chlorite veins with patches of dark sphalerite.
MRL 13,323 PPT 91/168.4 m	Sericitised Fine Sandstone. Small clastic quartz grains, abundant sericite as interstitial patches and as veins. Massive tourmaline-fluorite veins with siderite, arsenopyrite and pyrite.
MRL 13,324 PPT 92/172.4 m	Sericitised Fine Sandstone. Clastic textures preserved in places, but rock extensively recrystallized in others. Veins of matted tourmaline needles, with fluorite, traces of arsenopyrite, pyrite, sphalerite.
MRL 13,325 PPT 93/210.6 m	Sericitised, Feldspathic Sandstone. Fine clastic quartz and feldspars, interstitial sericite. Sheared, veined, recrystallized in places, with minor phlogopite. Quartzveins with zoisite, sericite, phlogopite, pyrite, bornite.
MRL 13,326 PPT 94/20.2 m	Ferruginised Sandstone. Moderately-sorted/sized, subrounded quartz grains, ?altered feldspar, interstitial quartz and sericite, all impregnated with earthy goethite. Quartz veins with earthy goethite (after ?scorodite).
MRL 13,327 PPT 95/42.8 m	Sandstone/Argillite. Small clastic quartz grains, sericitised feldspar, matrix/cement of fine quartz, Fe-stained sericite; sharp contact with compact argillite. Quartz-chlorite-zoisite veins, restricted to sandstone.
MRL 13,328 PPT 96/103.1 m	Argillite. Ultrafine recrystallized clay, and quartz; soft-sediment deformation and intraformational brecciation. Chlorite-sericite veins. Quartz-goethite veinlets.
MRL 13,329 PPT 97/104.6 m	Metaquartzite Breccia. Some relict clastic textures, but mostly recrystallized quartz, with chlorite masses, azurite-malachite veins, with sporadic cuprite and chalcocite patches.
MRL 13,330 PPT 98/130.4 m	Sandstone/Shale. Bands and wedges of shale intercalated with Fe-stained silty sandstone, partly recrystallized to massive quartz. Quartz-chlorite veins. Limonite films, veins.
MRL 13, 331 PPT 99/97.8 m	Chloritised Sandstone. Fairly poorly-sorted/sized, sand/silt-grade grains, interstitial replacive fine chlorite. VEins of quartz-chlorite-hydromuscovite with fine cellular goethite.
MRL 13,332 PPT100/25.6 m	Mineralised, Sericitised Sandstone. Poorly-sorted/sized clastic quartz grains, interstitial fine quartz, sericite. Extensive quartz veining, silicification. Scattered cassiterite crystals, dark and cloudy, 10-250 μ, generally < 50 μ, often in clusters.

801039

BHP MELBOURNE RESEARCH LABORATORIES

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Telephone 560-7066

Memo to: R. HINE

Date 18th January, 1982
Our Ref: WHR:WKC
Your Ref:
File: M597
Date:

Subject: E1/15 : PYRAMID TIN PETROLOGY, PPT7 - DISTRIBUTION OF CASSITERITE (MRL 13550).

Sample PPT7 was reported, by Central Mineralogical Services to contain "minor fine cassiterite .... not confined to but dominantly in the (quartz) veins". A polished thin section was therefore examined to determine the approximate percentage distribution of vein and disseminated cassiterite.

Results

Several small grains (5-50 µm in diam) of cassiterite are found scattered through the quartzitic host however over 90% (in terms of grain abundance) occurs in quartz veins. Also, the vein-associated grains are much larger (40-400 µm in diam) and so, in terms of volume %, the quantity of host rock cassiterite is insignificant.

The sericitic alteration is developed uniformly and extensively throughout the fine grained matrix and is not limited to any local feature (eg. the vicinity of veins) on the thin section scale. Coarser white to pale brown (? iron-stained) mica occurs in cassiterite bearing quartz veins as radiating clusters generally confined to the vein edges. This appears to be primary muscovite rather than alteration product.

Traces of zircon and iron oxides were found in addition to the minerals reported by C.M.S.

W.H. RINGENBERGS

c.c. Dr. A. Goode then Mrs. D. Jenkinson,
A. Clarke - Brisbane.

APPENDIX 4

GEOCHEMICAL RESULTS

- for locations of soil samples R40-1 to R40-502 see figure 8-1 of our report on Licence area 10/80 for the six months ended 21st July, 1981.

[illegible] 01/[illegible] VIC

Order No.: R400 - 00627 Sample Type: SOIL, ROCK No. of Samples: [illegible]

SAMPLE NO.	Cu	Pb	Zn	Sn	W	Ta	As	Ag
	m	m	m	m	m	m	m	m
SOIL SAMPLES	1	1	1	XRF 1A	XRF 1A	XRF 1B	S-B	1
R40- 1	20	60	45	20	<10	<10	7	2
R40- 2	20	55	100	5	<10	<10	7	2
R40- 3	20	50	105	<5	<10	<10	7	2
R40- 4	55	50	85	<5	<10	<10	10	3
R40- 5	45	90	180	65	<10	10	10	2
R40- 6	10	35	75	20	<10	<10	4	1
R40- 7	20	145	60	40	<10	10	5	1
R40- 8	30	80	105	15	<10	<10	7	2
R40- 9	35	80	55	30	<10	<10	30	3
R40- 10	20	45	95	90	<10	10	10	2
R40- 11	25	60	70	310	<10	<10	45	2
R40- 12	45	80	195	115	<10	<10	75	2
R40- 13	50	85	190	185	<10	<10	80	2
R40- 14	60	80	85	265	<10	<10	105	2
R40- 15	45	45	155	200	<10	<10	40	2
R40- 16	40	60	85	215	<10	<10	70	2
R40- 17	10	35	75	25	<10	<10	4	1
R40- 18	20	35	40	140	<10	<10	40	2
R40- 19	40	50	30	155	<10	<10	125	3
R40- 20	20	40	30	160	<10	<10	60	2
R40- 21	30	55	50	80	<10	10	140	3
R40- 22	30	45	80	225	<10	20	40	2
R40- 23	20	50	140	55	<10	<10	25	3
R40- 24	60	40	65	150	<10	<10	30	2
R40- 25	30	40	60	175	<10	<10	30	2
R40- 26	30	35	80	75	<10	<10	12	2
R40- 27	35	35	100	40	<10	<10	10	2
R40- 28	30	120	70	30	<10	<10	14	2
R40- 29	20	45	80	20	<10	<10	8	2
R40- 30	25	70	65	65	<10	<10	20	2

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: [signature]

A[illegible] P.[illegible] BOX [illegible]9 A[illegible] C.P [illegible] 14

Date Received 04/11/80 CAMBERWELL HOBART, TAS. 7001.
Date Completed 07/01/81 VIC

Order No.: R400 - 00627 Sample Type: SOIL, ROCK No. of Samples: 400

SAMPLE NO.	Cu	Pb	Zn	Sn	W	Ta	As	Ag
	m	m	m	m	m	m	m	m
	1	1	1	XRF 1A	XRF 1A	XRF 1B	S-B	1
R40- 31	30	70	115	40	<10	<10	18	2
R40- 32	20	60	30	15	<10	<10	8	2
R40- 33	20	50	30	20	<10	<10	8	2
R40- 34	20	120	80	325	<10	<10	14	2
R40- 35	20	60	45	315	<10	10	16	1
R40- 36	20	65	30	265	<10	<10	30	2
R40- 37	20	45	70	25	<10	<10	8	2
R40- 38	30	75	40	165	<10	<10	70	3
R40- 39	30	80	20	715	<10	<10	110	3
R40- 40	15	120	40	0.11 %	<10	<10	100	2
R40- 41	10	60	30	0.28 %	<10	<10	85	1
R40- 42	70	95	90	0.11 %	<10	<10	110	1
R40- 43	70	110	120	0.13 %	<10	<10	125	1
R40- 44	15	150	20	0.16 %	<10	<10	125	1
R40- 45	60	60	35	820	<10	<10	440	2
R40- 46	5	85	35	0.29 %	<10	<10	120	1
R40- 47	55	60	25	0.12 %	<10	<10	560	2
R40- 48	20	30	30	0.26 %	<10	<10	150	1
R40- 49	30	30	55	990	<10	10	135	1
R40- 50	20	30	55	735	<10	<10	70	1
R40- 51	20	30	20	770	<10	<10	75	1
R40- 52	35	30	35	340	<10	<10	70	1
R40- 53	40	30	40	330	<10	<10	55	1
R40- 54	20	30	55	805	<10	<10	60	1
R40- 55	60	45	175	80	<10	<10	100	2
R40- 56	40	60	105	245	<10	<10	55	1
R40- 57	20	35	60	320	<10	<10	16	1
R40- 58	40	60	115	150	<10	<10	30	2
R40- 59	50	75	190	50	<10	<10	30	3
R40- 60	15	35	65	195	<10	<10	7	1

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: A. J. Finlayson.

801044

Date Received 04/11/80 CAMBERWELL HOBART TAS 7001
Date Completed 07/01/81 VIC

Order No.: R400 - 00627 Sample Type: SOIL, ROCK No. of Samples: 480

SAMPLE NO.	Cu	Pb	Zn	Sn	W	Ta	As	Ag
	m	m	m	m	m	m	m	m
	1	1	1	XRF 1A	XRF 1A	XRF 1B	5-B	1
R40- 61	60	150	155	75	<10	<10	20	2
R40- 62	30	90	60	30	<10	<10	30	3
R40- 63	35	85	60	20	<10	10	25	2
R40- 64	20	70	35	130	<10	<10	10	1
R40- 65	20	70	25	90	<10	<10	12	2
R40- 66	25	60	20	20	<10	<10	20	2
R40- 67	30	65	20	15	<10	<10	25	2
R40- 68	10	50	15	30	<10	<10	20	2
R40- 69	15	60	35	35	<10	<10	16	2
R40- 70	10	60	25	370	<10	<10	20	1
R40- 71	20	65	35	230	<10	<10	55	1
R40- 72	10	40	50	580	<10	<10	35	1
R40- 73	10	35	50	580	<10	<10	30	1
R40- 74	10	35	45	875	<10	10	65	1
R40- 75	100	200	30	460	<10	<10	360	3
R40- 76	50	390	30	0.22 %	10	<10	440	1
R40- 77	25	60	50	0.14 %	10	<10	120	1
R40- 78	10	40	65	0.38 %	10	<10	30	1
R40- 79	135	90	260	825	<10	<10	240	2
R40- 80	35	155	30	0.21 %	<10	10	360	1
R40- 81	30	115	70	0.43 %	10	<10	115	1
R40- 82	70	210	30	0.14 %	<10	<10	400	2
R40- 83	90	220	30	0.10 %	<10	<10	520	3
R40- 84	145	380	50	560	<10	<10	880	3
R40- 85	40	350	25	0.24 %	<10	<10	160	1
R40- 86	20	140	30	0.24 %	<10	<10	165	1
R40- 87	30	65	25	95	<10	<10	45	2
R40- 88	20	105	25	0.13 %	<10	<10	75	1
R40- 89	50	100	45	830	<10	<10	160	2
R40- 90	30	35	45	870	<10	<10	100	1

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: A. F. Furlonger

800045

Date Received 04/11/80 CAMBERWELL HOBART TAS. 7001

Date Completed 07/01/81 VIC.

Order No.: R400 - 00627 Sample Type: SOIL, ROCK No. of Samples: 400

SAMPLE NO.	Cu	Pb	Zn	Sn		W	Ta	As	Ag
	m	m	m	m		m	m	m	m
	1	1	1	XRF 1A		XRF 1A	XRF 1B	S-B	1
R40- 91	90	110	85	515		<10	<10	180	2
R40- 92	25	30	75	390		<10	<10	25	1
R40- 93	40	50	210	215		<10	<10	45	2
R40- 94	30	35	220	220		<10	<10	35	1
R40- 95	70	55	140	60		<10	<10	45	2
R40- 96	25	85	30	245		<10	<10	16	1
R40- 97	85	85	115	120		<10	<10	30	1
R40- 98	50	140	165	50		<10	<10	20	1
R40- 99	95	220	210	145		<10	<10	25	1
R40-100	50	180	140	130		<10	<10	20	1
R40-101	80	70	150	65		<10	<10	60	3
R40-102	20	50	95	150		<10	<10	30	1
R40-103	25	55	120	170		<10	<10	30	1
R40-104	30	55	80	20		<10	<10	20	2
R40-105	45	40	55	5		<10	<10	20	2
R40-106	25	65	55	45		<10	<10	20	1
R40-107	50	75	290	35		<10	<10	40	1
R40-108	15	30	15	<5		<10	<10	14	1
R40-109	10	35	20	<5		<10	<10	20	2
R40-110	15	45	70	45		<10	<10	16	2
R40-111	35	150	65	115		<10	<10	130	2
R40-112	20	80	25	145		<10	<10	110	1
R40-113	35	110	40	110		<10	<10	120	2
R40-114	25	110	50	240		<10	<10	80	1
R40-115	25	110	15	990		<10	<10	70	1
R40-116	30	145	15	0.15	%	<10	<10	170	1
R40-117	120	260	40	0.13	%	<10	<10	320	1
R40-118	20	85	20	0.28	%	<10	<10	35	1
R40-119	105	85	45	540		<10	<10	440	2
R40-120	10	30	35	0.37	%	<10	<10	20	1

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent

g - Grams a - Absorbance

Signature: A. J. Finlayson.

This Laboratory is registered by the National Association of Testing Authorities, Australia. The tests [illegible] have been performed [illegible]

8010046

I C lat 07/ /81 UTC

Order No.: R400 - 00627 Sample Type: SOIL, ROCK No. of Samples: 400

SAMPLE NO.	Cu	Pb	Zn	Sn	W	Ta	As	Ag
	m	m	m	m	m	m	m	m
	1	1	1	XRF 1A	XRF 1A	XRF 1B	S-B	1
R40-121	20	45	50	0.19 %	<10	<10	280	2
R40-122	5	40	10	0.27 %	10	<10	100	2
R40-123	15	45	10	0.29 %	<10	<10	200	1
R40-124	20	45	15	0.41 %	10	<10	120	1
R40-125	45	195	25	0.10 %	<10	<10	480	1
R40-126	70	115	75	520	<10	<10	130	2
R40-127	55	125	35	0.12 %	<10	<10	105	1
R40-128	130	160	60	270	<10	<10	520	4
R40-129	90	125	20	875	<10	<10	320	3
R40-130	15	80	10	0.15 %	<10	<10	100	1
R40-131	55	145	35	0.16 %	<10	<10	105	3
R40-132	30	50	15	0.11 %	<10	<10	65	1
R40-133	50	85	20	0.10 %	<10	<10	120	1
R40-134	105	125	25	390	<10	<10	150	2
R40-135	75	105	40	280	<10	<10	105	2
R40-136	20	50	15	0.36 %	10	<10	130	2
R40-137	40	80	30	250	<10	<10	105	3
R40-138	25	50	60	445	<10	<10	55	2
R40-139	40	135	120	255	<10	<10	60	3
R40-140	40	150	50	300	<10	<10	12	2
R40-141	25	85	75	990	<10	<10	45	1
R40-142	25	50	65	110	<10	<10	8	1
R40-143	35	150	210	125	<10	10	9	2
R40-144	30	65	130	50	<10	<10	12	2
R40-145	35	60	100	50	<10	<10	9	2
R40-146	105	470	155	420	<10	<10	160	4
R40-147	55	460	85	365	<10	<10	100	3
R40-148	45	185	55	320	<10	<10	130	2
R40-149	35	100	60	150	<10	<10	55	2
R40-150	45	480	60	420	<10	<10	105	2

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: A. J. Finlayson

80147

[illegible]e R[illegible]iv[illegible] 04[illegible]/8[illegible] [illegible]AMB[illegible]ELL JAR. TA. ZL.

Date Completed 07/01/81 VIC

Order No.: R400 - 00627 Sample Type: SOIL, ROCK No. of Samples: 400

SAMPLE NO.	Cu	Pb	Zn	Sn	W	Ta	As	Ag
	m	m	m	m	m	m	m	m
	1	1	1	XRF 1A	XRF 1A	XRF 1B	S-B	1
R40-151	25	430	35	0.20 %	10	<10	125	2
R40-152	90	0.13 %	85	0.28 %	20	<10	560	3
R40-153	100	0.15 %	100	0.30 %	10	<10	760	3
R40-154	110	0.13 %	55	760	<10	<10	920	3
R40-155	40	760	220	0.19 %	10	<10	35	2
R40-156	55	960	30	0.15 %	10	<10	145	2
R40-157	145	600	340	0.12 %	<10	<10	70	5
R40-158	110	410	250	520	10	<10	60	4
R40-159	230	760	210	990	20	<10	240	10
R40-160	310	680	195	885	10	<10	160	5
R40-161	250	640	120	470	<10	<10	360	6
R40-162	420	760	135	510	<10	<10	280	10
R40-163	230	0.11 %	220	575	20	<10	90	5
R40-164	220	460	140	690	<10	<10	150	2
R40-165	130	560	175	0.16 %	20	<10	160	2
R40-166	185	230	85	0.24 %	10	<10	85	3
R40-167	75	155	35	515	<10	<10	240	2
R40-168	70	150	45	640	<10	<10	80	3
R40-169	60	80	25	395	<10	<10	65	2
R40-170	45	95	10	0.28 %	10	<10	150	1
R40-171	20	180	10	0.15 %	10	<10	50	1
R40-172	85	175	40	0.10 %	<10	<10	70	2
R40-173	90	190	45	980	<10	<10	60	2
R40-174	120	320	95	980	10	<10	60	11
R40-175	40	160	45	295	<10	<10	120	2
R40-176	230	640	40	930	<10	<10	480	6
R40-177	90	270	20	0.12 %	10	<10	140	3
R40-178	125	170	30	780	<10	<10	40	6
R40-179	35	195	15	0.23 %	10	<10	155	1
R40-180	40	175	25	0.26 %	20	10	150	2

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: [signature]

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Date Received 04/11/80 CAMBERWELL REPORT TAB 20[illegible]
Date Completed 07/01/81 VIC

Order No.: R400 - 00627 Sample Type: SOIL, ROCK No. of Samples: 400

SAMPLE NO.	Cu	Pb	Zn	Sn	W	Ta	As	Ag
	m	m	m	m	m	m	m	m
	1	1	1	XRF 1A	XRF 1A	XRF 1B	S-B	1
R40-181	140	400	30	0.13 %	<10	<10	840	4
R40-182	15	75	20	0.27 %	10	<10	40	1
R40-183	25	115	30	0.21 %	10	<10	35	1
R40-184	30	125	35	0.15 %	<10	<10	35	1
R40-185	20	105	70	815	<10	<10	16	1
R40-186	65	115	105	95	<10	<10	9	2
R40-187	25	90	95	95	<10	10	16	1
R40-188	120	350	70	245	<10	<10	240	2
R40-189	70	460	90	830	10	<10	320	2
R40-190	60	250	160	245	<10	20	160	2
R40-191	65	250	200	510	<10	<10	135	1
R40-192	105	250	250	285	<10	<10	160	2
R40-193	130	360	240	260	<10	<10	130	2
R40-194	130	210	145	150	<10	<10	150	1
R40-195	40	55	90	165	<10	<10	65	1
R40-196	115	115	180	200	<10	<10	280	1
R40-197	120	290	100	315	<10	<10	560	2
R40-198	80	270	155	505	10	10	200	2
R40-199	155	360	110	325	<10	10	440	3
R40-200	50	350	50	735	10	<10	400	1
R40-201	65	220	165	615	<10	<10	160	2
R40-202	120	280	40	655	40	<10	0.15 %	2
R40-203	40	105	25	770	10	<10	280	1
R40-204	200	330	40	240	<10	<10	920	3
R40-205	320	460	70	480	10	<10	0.19 %	4
R40-206	320	660	120	320	<10	<10	0.20 %	4
R40-207	140	300	95	620	<10	<10	520	2
R40-208	300	0.24 %	65	0.14 %	20	<10	0.32 %	2
R40-209	30	390	15	0.43 %	30	<10	160	1
R40-210	50	430	10	0.40 %	20	<10	160	1

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: A. F. Finlayson

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801049

Date Completed 07/../81 VIC

Order No.: R400 - 00627 Sample Type: SOIL, ROCK No. of Samples: 400

SAMPLE NO.	Cu	Pb	Zn	Sn	W	Ta	As	Ag
	m	m	m	m	m	m	m	m
	1	1	1	XRF 1A	XRF 1A	XRF 1B	S-B	1
R40-211	85	80	10	580	<10	<10	150	2
R40-212	10	120	<5	0.85 %	40	<10	70	<1
R40-213	15	490	<5	0.94 %	60	<10	0.11 %	1
R40-214	40	380	30	0.19 %	<10	<10	80	2
R40-215	30	580	110	655	<10	<10	50	2
R40-216	75	720	85	850	<10	<10	35	2
R40-217	250	350	85	245	<10	<10	35	2
R40-218	300	450	125	145	<10	<10	200	3
R40-219	80	490	45	0.22 %	20	<10	160	3
R40-220	220	340	45	240	<10	<10	880	3
R40-221	30	300	15	0.13 %	10	<10	160	2
R40-222	30	340	20	0.42 %	10	<10	320	3
R40-223	20	580	15	1.05 %	20	<10	160	1
R40-224	20	125	50	0.59 %	20	<10	30	1
R40-225	40	340	100	0.24 %	10	20	25	1
R40-226	40	135	135	590	<10	<10	25	2
R40-227	20	90	65	505	10	<10	14	2
R40-228	35	50	70	95	10	<10	18	3
R40-229	20	115	40	0.59 %	20	<10	25	1
R40-230	10	35	15	90	<10	<10	5	1
R40-231	35	90	100	190	<10	<10	20	2
R40-232	30	50	85	25	<10	<10	18	2
R40-233	40	55	95	30	<10	<10	45	2
R40-234	70	145	105	25	<10	<10	10	2
R40-235	40	75	85	25	10	<10	14	2
R40-236	65	65	65	45	<10	<10	18	2
R40-237	75	55	30	25	<10	<10	14	2
R40-238	150	120	35	40	<10	<10	90	2
R40-239	110	110	55	365	10	<10	150	1
R40-240	45	95	35	495	<10	<10	160	1

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent

g - Grams a - Absorbance

Signature: A.J. Finlayson.

Date Received 04/[illegible]/80 CAMBERWELL HOBART TAF 700[illegible]
Date Completed 07/01/81 VIC

Order No.: R400 - 00627 Sample Type: SOIL, ROCK No. of Samples: 400

SAMPLE NO.	Cu	Pb	Zn	Sn	W	Ta	As	Ag
	M	M	M	M	M	M	M	M
	1	1	1	XRF 1A	XRF 1A	XRF 1B	S-B	1
R40-241	70	230	75	865	10	<10	140	2
R40-242	100	210	115	470	<10	<10	160	2
R40-243	145	260	130	240	<10	<10	160	3
R40-244	30	50	65	220	<10	<10	130	1
R40-245	40	35	50	75	<10	<10	130	1
R40-246	40	85	35	125	<10	<10	240	2
R40-247	70	135	100	25	<10	<10	40	3
R40-248	100	185	85	610	<10	<10	600	2
R40-249	50	260	35	735	10	<10	240	1
R40-250	110	560	65	0.13 %	10	<10	0.12 %	2
R40-251	290	540	110	715	20	<10	0.20 %	3
R40-252	100	560	40	0.50 %	20	<10	920	2
R40-253	130	360	260	725	<10	<10	600	2
R40-254	100	390	30	0.33 %	10	<10	680	2
R40-255	90	640	40	0.37 %	10	<10	600	1
R40-256	15	190	15	0.52 %	20	<10	130	<1
R40-257	125	0.14 %	95	0.34 %	10	<10	200	2
R40-258	290	0.11 %	65	0.12 %	<10	<10	0.28 %	4
R40-259	100	360	70	305	<10	<10	360	2
R40-260	95	480	160	430	<10	<10	80	3
R40-261	85	240	105	195	<10	<10	40	1
R40-262	65	260	65	160	<10	<10	65	1
R40-263	100	410	75	200	<10	<10	65	2
R40-264	70	320	145	540	<10	<10	110	1
R40-265	50	270	55	70	<10	<10	25	1
R40-266	70	120	25	535	<10	<10	20	1
R40-267	170	0.17 %	65	0.15 %	10	<10	680	5
R40-268	65	840	60	0.51 %	20	<10	125	2
R40-269	15	560	80	0.66 %	20	<10	20	<1
R40-270	25	145	50	675	10	<10	20	1

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: A. F. Finlayson

J R ive 04/ /80 MBE LL ART TAF 20

Date Completed 07/01/81 VIC

Order No.: R400 - 00627 Sample Type: SOIL, ROCK No. of Samples: 400

SAMPLE NO.	Cu	Pb	Zn	Sn	W	Ta	As	Ag
	m	m	m	m	m	m	m	m
	1	1	1	XRF 1A	XRF 1A	XRF 1B	S-B	1
R40-271	75	140	25	450	<10	<10	16	1
R40-272	20	70	35	230	<10	<10	12	1
R40-273	25	60	35	150	<10	<10	16	1
R40-274	45	70	50	60	<10	<10	20	2
R40-275	120	380	115	515	10	<10	240	2
R40-276	45	95	110	300	<10	<10	14	1
R40-277	20	65	100	105	<10	<10	30	2
R40-278	50	105	160	65	<10	<10	65	2
R40-279	45	140	40	105	10	<10	65	2
R40-280	45	55	40	50	<10	<10	50	2
R40-281	135	145	60	90	<10	<10	440	2
R40-282	65	160	40	730	10	<10	360	3
R40-283	80	175	30	480	10	<10	280	1
R40-284	105	310	60	770	<10	<10	440	2
R40-285	85	680	80	0.29 %	10	<10	680	2
R40-286	360	540	110	675	<10	10	0.20 %	4
R40-287	250	350	60	685	<10	<10	0.20 %	4
R40-288	10	35	10	0.74 %	20	<10	65	<1
R40-289	75	400	25	490	<10	<10	540	3
R40-290	240	280	80	295	<10	<10	410	3
R40-291	90	95	190	300	<10	<10	70	3
R40-292	40	80	145	0.14 %	10	<10	65	1
R40-293	45	75	250	535	<10	<10	40	2
R40-294	50	110	250	480	<10	<10	40	1
R40-295	145	400	130	335	<10	10	45	2
R40-296	50	210	90	355	<10	<10	45	2
R40-297	45	110	70	120	<10	<10	18	1
R40-298	50	105	50	70	<10	<10	8	2
R40-299	70	160	35	655	<10	<10	40	1
R40-300	135	145	55	105	<10	<10	320	2

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: A. J. Finlayson

Date Completed 07/01/81 VIC

Order No.: R400 - 00627 Sample Type: SOIL, ROCK No. of Samples: 400

SAMPLE NO.	Cu	Pb	Zn	Sn	W	Ta	As	Ag
	m	m	m	m	m	m	m	m
	1	1	1	XRF 1A	XRF 1A	XRF 1B	S-B	1
R40-301	135	680	95	940	<10	<10	125	5
R40-302	200	880	60	620	10	<10	95	4
R40-303	200	960	80	0.14 %	<10	<10	155	4
R40-304	250	640	90	340	<10	<10	80	5
R40-305	55	510	65	935	<10	<10	18	2
R40-306	20	210	30	90	<10	<10	12	2
R40-307	30	60	60	80	<10	<10	12	2
R40-308	25	60	50	120	<10	<10	16	1
R40-309	25	100	30	90	<10	<10	10	1
R40-310	35	40	85	70	<10	<10	12	1
R40-311	15	30	20	25	<10	<10	12	1
R40-312	55	45	100	30	<10	<10	16	2
R40-313	50	55	95	10	<10	<10	30	2
R40-314	65	45	70	35	<10	<10	75	2
R40-315	50	70	40	185	<10	10	45	1
R40-316	50	65	65	545	<10	<10	160	1
R40-317	190	300	100	0.27 %	10	<10	670	2
R40-318	100	130	80	310	<10	<10	540	2
R40-319	80	85	40	0.19 %	<10	<10	400	1
R40-320	200	190	125	330	<10	<10	0.14 %	3
R40-321	170	270	110	0.13 %	<10	<10	0.14 %	2
R40-322	100	290	140	340	<10	<10	750	2
R40-323	420	200	250	0.14 %	<10	<10	850	2
R40-324	65	130	60	0.14 %	<10	<10	290	1
R40-325	135	80	190	280	<10	<10	140	2
R40-326	90	70	250	115	<10	<10	55	2
R40-327	60	50	160	565	<10	<10	60	2
R40-328	95	130	80	330	<10	<10	590	3
R40-329	120	220	115	125	<10	<10	70	2
R40-330	55	70	80	65	<10	<10	30	2

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: [signature]

[illegible] 04[illegible]/80 [illegible]MBE[illegible]ELL [illegible] JAR TA 70

Date Completed 07/01/81 VIC

Order No.: R400 - 00627 Sample Type: SOIL, ROCK No. of Samples: 400

SAMPLE NO.	Cu	Pb	Zn	Sn	W	Ta	As	Ag
	m	m	m	m	m	m	m	m
	1	1	1	XRF 1A	XRF 1A	XRF 1B	S-B	1
R40-331	40	100	65	30	<10	<10	16	2
R40-332	15	60	45	60	<10	<10	14	2
R40-333	15	60	40	50	<10	<10	12	2
R40-334	45	180	60	170	<10	<10	30	2
R40-335	45	190	50	165	<10	<10	35	2
R40-336	30	165	50	260	<10	<10	12	2
R40-337	45	360	40	435	<10	<10	65	2
R40-338	175	0.12 %	70	855	<10	<10	70	3
R40-339	45	210	60	180	<10	<10	40	2
R40-340	45	360	70	0.32 %	10	<10	65	2
R40-341	60	620	210	0.67 %	30	10	60	3
R40-342	10	25	30	80	<10	<10	14	1
R40-343	10	25	35	90	<10	<10	14	1
R40-344	25	35	50	50	<10	<10	35	2
R40-345	20	25	30	45	<10	<10	35	2
R40-346	45	30	70	20	<10	<10	45	2
R40-347	55	35	120	35	<10	<10	35	3
R40-348	40	30	150	60	<10	<10	55	2
R40-349	60	25	90	90	<10	<10	60	1
R40-350	75	20	125	130	<10	<10	760	1
R40-351	110	120	190	790	<10	<10	270	2
R40-352	45	40	120	530	<10	<10	260	1
R40-353	55	45	110	425	<10	<10	210	1
R40-354	20	30	60	990	<10	<10	280	1
R40-355	20	25	35	0.10 %	<10	<10	145	1
R40-356	45	35	55	570	<10	<10	190	1
R40-357	60	45	220	370	<10	<10	270	1
R40-358	80	40	300	340	<10	<10	90	2
R40-359	60	40	260	455	<10	<10	100	1
R40-360	100	65	260	240	<10	<10	90	2

UNITS LEGEND ----- m - Parts per million   b - Parts per billion   % - percent
g - Grams   a - Absorbance

Signature: S. J. Finlayson

80154

D[illegible] R[illegible]ive[illegible] 04/[illegible]/80 CAMBERWELL HOBART. TAS. 7001

Date Completed 07/01/81 VIC

Order No.: R400 - 00627 Sample Type: SOIL, ROCK No. of Samples: 480

SAMPLE NO.	Cu	Pb	Zn	Sn	W	Ta	As	Ag
	m	m	m	m	m	m	m	m
	1	1	1	XRF 1A	XRF 1A	XRF 1B	S-B	1
R40-361	75	100	150	220	<10	<10	60	2
R40-362	90	155	160	180	<10	<10	160	3
R40-363	90	150	145	160	<10	<10	160	3
R40-364	45	145	100	95	<10	<10	30	2
R40-365	25	45	55	55	<10	<10	25	2
R40-366	20	30	30	25	<10	<10	20	1
R40-367	20	30	30	40	<10	<10	20	1
R40-368	5	25	15	40	<10	<10	20	1
R40-369	15	65	30	40	<10	<10	20	1
R40-370	20	60	35	30	<10	<10	20	1
R40-371	95	60	185	205	<10	<10	50	2
R40-372	45	55	30	145	<10	<10	6	2
R40-373	50	60	40	110	<10	<10	7	1
R40-374	35	135	20	440	<10	<10	8	2
R40-375	55	145	60	375	<10	<10	20	3
PF- 1 Soil	165	480	80	690	<10	<10	260	2
PF- 2	65	480	125	0.10 %	10	<10	200	1
PF- 3	95	105	170	940	10	<10	60	2
PF- 4	115	290	35	770	10	<10	760	2
PF- 5	45	185	30	0.21 %	10	<10	50	2
PF- 6	90	340	145	0.11 %	<10	<10	280	6
PF- 7	45	280	30	430	<10	10	25	2
PF- 8	105	230	70	785	<10	<10	110	4
PF- 9	55	145	20	0.18 %	10	10	150	2
PF-10	220	640	100	425	<10	<10	135	7
PF-11	330	660	160	0.14 %	10	<10	680	3
PF-12	380	420	120	705	<10	<10	760	5
PF-13	90	560	45	600	<10	<10	135	2
PF-14	70	330	30	145	<10	<10	160	2
PRC- 1 Rock	120	420	140	555	<10	<10	140	3

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent

g - Grams a - Absorbance

Signature: [signature]

800155

Date Received 04/11/80 CAMBERWELL HOBART, TAS. 7

Date Completed 07/ /81 VIC.

Order No.: R400 - 00627 Sample Type: SOIL, ROCK No. of Samples: 400

SAMPLE NO.	Cu	Pb	Zn	Sn	W	Ta	As
	m	m	m	m	m	m	m
	1	1	1	XRF 1A	XRF 1A	XRF 1B	S-B
PRC- 2	210	250	150	0.11 %	<10	<10	110
PRC- 3	90	290	90	0.13 %	<10	<10	110
PRC- 4	70	340	50	560	20	<10	0.10 %
PRC- 5	35	330	30	660	<10	<10	135
PRC- 6	130	280	45	0.13 %	<10	<10	640
PRC- 7	145	640	105	0.11 %	<10	<10	160
PRC- 8	200	0.11 %	195	145	<10	<10	760
PRC- 9	80	800	120	375	<10	<10	640
PRC-10	90	230	120	380	<10	<10	600
PRC-11	110	540	190	0.13 %	<10	<10	150

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent

g - Grams a - Absorbance

Signature: [signature]

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Order No.: R700 - 00063B   Sample Type: SOIL   No. of Samples: 75

SAMPLE NO.	Cu	Pb	Zn	Ag	As	Sn	W
	M	M	M	M	M	M	M
	1	1	1	1	S-B	XRF 1A	XRF 1A
R40-376 Soil	25	60	50	2	8	10	<10
R40-377	35	50	85	2	6	10	10
R40-378	15	25	25	2	1	<5	<10
R40-379	20	30	30	2	3	<5	<10
R40-380	30	50	155	2	4	20	10
R40-381	30	90	100	2	3	15	<10
R40-382	40	100	90	3	6	<5	<10
R40-383	30	75	75	1	6	5	<10
R40-384	35	70	85	2	6	10	<10
R40-385	60	220	45	1	120	860	<10
R40-386	35	75	45	1	25	50	<10
R40-387	30	65	95	2	25	40	<10
R40-388	40	220	295	3	25	95	<10
R40-389	30	55	65	2	20	70	<10
R40-390	25	30	45	2	16	60	<10
R40-391	25	25	40	1	16	55	<10
R40-392	20	65	15	2	16	50	<10
R40-393	25	55	15	1	18	20	<10
R40-394	40	35	30	2	16	10	<10
R40-395	30	30	30	2	20	30	<10
R40-396	25	40	30	1	20	95	<10
R40-397	45	45	70	3	35	25	<10
R40-398	45	20	105	1	10	85	<10
R40-399	35	30	160	2	25	20	<10
R40-400	60	30	95	2	25	15	<10
R40-401	45	35	30	2	20	20	<10
R40-402	70	45	115	3	45	10	<10
R40-403	65	60	125	2	35	15	<10
R40-404	100	65	85	3	50	15	<10
R40-405	90	35	50	2	40	20	<10

UNITS LEGEND ----- m - Parts per million   b - Parts per billion   % - percent
g - Grams   a - Absorbance

Signature: A.F. Finlayson.

800157

D[illegible] C[illegible]let[illegible] 02/[illegible]/81

Order No.: R700 - 000638 Sample Type: SOIL No. of Samples: 75

SAMPLE NO.	Cu	Pb	Zn	Ag	As	Sn	W
	M	M	M	M	M	M	M
	1	1	1	1	S-B	XRF 1A	XRF 1A
R40-406	70	125	215	2	60	925	<10
R40-407	20	60	55	1	14	100	<10
R40-408	15	35	30	<1	8	155	<10
R40-409	35	75	40	1	16	145	<10
R40-410	75	220	150	2	35	220	<10
R40-411	85	35	100	2	20	10	<10
R40-412	105	65	80	2	85	45	<10
R40-413	115	65	80	2	100	35	<10
R40-414	15	20	55	1	7	155	<10
R40-415	45	45	110	1	12	100	<10
R40-416	85	40	100	2	25	25	<10
R40-417	15	25	170	<1	3	140	<10
R40-418	25	85	225	2	8	25	<10
R40-419	40	55	100	1	12	60	<10
R40-420	50	65	80	2	25	35	<10
R40-421	70	145	90	2	18	95	<10
R40-422	90	195	115	1	16	175	<10
R40-423	80	205	95	1	5	180	<10
R40-424	20	20	50	1	12	25	<10
R40-425	55	25	75	2	20	15	<10
R40-426	20	15	50	1	10	100	<10
R40-427	20	25	35	1	12	5	<10
R40-428	55	20	80	1	20	20	<10
R40-429	85	25	110	1	85	75	<10
R40-430	120	30	110	2	65	20	<10
R40-431	95	20	115	2	25	15	<10
R40-432	70	25	140	1	18	50	<10
R40-433	95	30	160	1	25	25	<10
R40-434	25	20	30	1	105	775	<10
R40-435	85	25	120	1	80	70	<10

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: A. J. Finlayson

8010058

Date Completed 02/[illegible]/81

Order No.: R700 - 000638 Sample Type: SOIL No. of Samples: 75

SAMPLE NO.	Cu	Pb	Zn	Ag	As	Bn	W
	M	M	M	M	M	M	M
	1	1	1	1	S-B	XRF 1A	XRF 1A
R40-436	20	20	45	1	140	0.13 %	<10
R40-437	70	35	295	1	95	205	<10
R40-438	75	25	70	1	95	515	<10
R40-439	90	40	115	1	75	245	<10
R40-440	65	40	160	1	100	850	<10
R40-441	105	60	205	2	140	455	<10
R40-442	100	270	860	3	105	0.23 %	<10
R40-443	115	320	740	4	160	770	<10
R40-444	20	25	55	1	20	80	<10
R40-445	15	35	50	1	6	65	<10
R40-446	15	25	35	1	6	45	<10
R40-447	15	25	25	1	8	20	<10
R40-448	15	45	30	2	10	10	<10
R40-449	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.
R40-450	15	35	45	1	6	70	<10

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent

g - Grams a - Absorbance

Signature: [signature]

800159

Order No.: T670 - 000645 Sample Type: SOIL No. of Samples: 8

SAMPLE NO.	Cu	Pb	Zn	Ag	As	Sn	W	EL
	m	m	m	m	m	m	m	UN
	1	1	1	1	S-B	XRF 1A	XRF 1A	ME
R40- 449	40	90	40	2	20	20	<10	
R40- 451	30	50	55	2	12	10	<10	
R40- 452	20	50	75	2	8	20	<10	
R40- 453B	20	40	50	2	9	15	<10	
R40- 454	20	50	35	2	4	25	<10	
R40- 455	60	180	70	2	18	45	<10	
R40- 456	40	90	40	1	9	65	<10	
R40- 457	60	130	90	2	16	300	<10	

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: A. F. Finlayson

801060

Date Completed 16/[illegible]/81 UIC

Order No.: R700 - 000648 Sample Type: SOIL No. of Samples: 47

SAMPLE NO.	Cu	Pb	Zn	Ag	As	Sn		W	EL
	m	m	m	m	m	m		m	UN
	1	1	1	1	5-B	XRF 1A		XRF 1A	ME
R40-458	40	50	120	1	40	130		<10	
R40-459	240	170	60	2	105	80		<10	
R40-460	420	200	340	1	70	75		<10	
R40-461	300	260	245	1	60	65		<10	
R40-462	110	410	105	7	85	0.14	%	<10	
R40-463	120	290	75	6	70	0.13	%	<10	
R40-464	95	230	65	2	70	270		<10	
R40-465	55	160	100	1	50	410		<10	
R40-466	35	100	120	<1	12	100		<10	
R40-467	25	90	80	<1	10	0.12	%	<10	
R40-468	65	240	130	1	50	90		<10	
R40-469	400	210	340	2	18	75		<10	
R40-470	30	130	215	1	10	105		<10	
R40-471	25	60	75	1	8	50		<10	
R40-472	40	60	220	1	5	80		<10	
R40-473	20	40	190	1	2	65		<10	
R40-474	15	140	30	<1	2	55		<10	
R40-475	10	60	20	1	8	35		<10	
R40-476	10	40	25	1	18	5		<10	
R40-477	10	40	25	<1	4	50		<10	
R40-478	10	30	25	1	12	35		<10	
R40-479	30	20	60	1	12	25		<10	
R40-480	<2	20	5	<1	9	70		<10	
R40-481	5	30	20	<1	2	55		<10	
R40-482	10	10	30	1	2	45		<10	
R40-483	10	10	25	1	4	50		<10	
R40-484	25	40	70	1	10	40		<10	
R40-485	5	20	20	<1	1	20		<10	
R40-486	30	110	140	1	8	60		<10	
R40-487	20	30	55	1	9	35		<10	

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: A. F. Finlayson

190108

Date Completed 16/07/81

Order No.: R700 - 000648 Sample Type: SOIL No. of Samples: 47

SAMPLE NO.	Cu	Pb	Zn	Ag	As	Sn	W	El
	m	m	m	m	m	m	m	Un
	1	1	1	1	5-B	XRF 1A	XRF 1A	M
R40-488	40	30	80	1	25	40	<10	
R40-489	10	10	20	1	7	20	<10	
R40-490	5	15	45	<1	4	40	<10	
R40-491	2	10	20	<1	1	35	<10	
R40-492	10	60	65	<1	1	60	<10	
R40-493	10	60	55	1	2	55	<10	
R40-494	15	30	20	1	30	30	<10	
R40-495	20	20	55	1	5	45	<10	
R40-496	20	20	60	1	6	45	<10	
R40-497	40	50	115	1	16	45	<10	
R40-498	10	20	20	<1	3	20	<10	
R40-499	55	70	80	1	20	35	<10	
R40-500	30	40	100	<1	8	55	<10	
R40-501	35	50	190	1	10	40	<10	
R40-502	20	40	140	1	7	70	<10	
R40-503	30	50	160	1	12	145	<10	
R40-504	10	20	20	<1	1	25	<10	

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: A. J. Finlayson.

REGION: NE THS PROJECT No.: T630 PROSPECT: PYRAMID GRID CO-ORDS.: LOCAL A.M.G.

DESCRIPTION Sample Type: ROCK Rock Type: IRONSTONE/QTZ/SLATE Soil/Sediment Size Fraction:

PY1 (BPD7 site) brecc'd red slate and massive mottled ironstone, non-magnetic, spongy, orange/red limonite
PY2 (00E 60N) silic'd qtzite breccia minor slate, minor limonite
PY3 (00E 70N) " " " as above minor scorodite staining.
PY4 (50E 160N) " " with mfracs, minor muscovite, gns SnO_2 to 2mm, limonite coated fracs.
PY5 (50E 160N) " " with clay/limon. coated fracs except as above, no SnO_2 seen.
PY6 (70E 135N) brecc'd red slate, minor qtz, vein qtz; red/maroon/orange limonite,

ANALYSIS Laboratory ANALABS Batch No 14/4/08/668 Date Analysed 11/11/81

ppm

Element	Sn	W	Cu	Pb	Zn	Ag	Ni	Co	Cr	As	Mo	Sb	Au				
Method / Sample No	XRF	XRF	AI	"	"	"	"	"	"	"	"	XRF	LG20				
PY1	4100	<10	730	585	220	0.5	55	25	55	520	2.5	9	N.D.				
2	950	<10	70	975	100	24	95	10	75	410	12.5	<3	0.008				
3	2400	30	250	2950	40	63	70	10	70	1500	1.0	3	N.D				
4	2700	10	45	465	75	2.5	120	5	80	39	2.0	4	"				
5	670	10	20	310	45	3.0	100	N.D.	80	15	1.5	<3	"				
6	1250	20	145	580	300	14	75	15	60	100	2.5	<3	"				

REMARKS: samples from fault zone grid west of BPD7 site; all samples wthd.
N.D = below LLD

Logged or Sampled by: R. HINE Date: 25/11/81

8010063

REGION: NE TAS **PROJECT Nº.:** T630 **PROSPECT:** PYRAMID **GRID CO-ORDS.:** LOCAL A.M.G.

DESCRIPTION Sample Type: ROCK Rock Type: Soil/Sediment Size Fraction:

PY7 (70E 125N) Brecc'd red slate with patchy green chlorite? limonite, no fresh S^{2-}

PY8 (70E 125N) as for PY7, ok sample from bottom of pit; limonite, sec Zn?, white clays.

ANALYSIS Laboratory Batch Nº Date Analysed.

Element / Method / Sample Nº	Sn	W	Cu	Pb	Zn	Ag	Ni	Co	Cr	As	Mo	Sb	Au				
PY7	1250	10	290	1600	1350	26	65	15	55	4	1.5	<3	N.D.				
8	4700	20	320	1450	1450	15	75	15	50	2	1.5	<3	N.D.				

REMARKS:

Logged or Sampled by: Date:

REGION: NE TAS   PROJECT Nº.: T630   PROSPECT: East Pinnacles   GRID CO-ORDS.: LOCAL A.M.G.

DESCRIPTION   Sample Type: ROCK   Rock Type: Ironstone, quartzite, slate   Soil/Sediment Size Fraction:

EP1: Wall of East Pinnacles adit, grey/green qte with quartz veinlets, minor frac'd slate, minor biotite? in ...
EP2: Dump at " " ", qte c qtz as above, no fresh S^{2-}; includes slate, minor chlorite, limonite.
EP3: " " " " ", random sample of fines

ANALYSIS   Laboratory ANALABS   Batch Nº 14-4-08-707   Date Analysed 4/12/81

Element / Method / Sample #	Cr	Fe	Co	Ni	Cu	Zn	As	Mo	Ag	Au	Pb	Sb	U	Sn	W		
												AII/1		XRF	XRF		
EP1	90	1.95%	10	150	20	115	42	bld	bld	bld	20	<1		50	<10		
- 2	120	3.10%	10	220	125	230	42	"	4.5	"	150	<1		170	20		
- 3	55	4.60%	30	100	120	385	61	"	3.0	"	100	<1		190	<10		

REMARKS:

Logged or Sampled by: R. HINE   Date: 23/12/81

801065

REGION: NE TAS **PROJECT Nº.:** T630 **PROSPECT:** West Pinnacles **GRID CO-ORDS.:** **LOCAL A.M.G.**

DESCRIPTION **Sample Type:** Rock **Rock Type:** Ironstones, Quartzites, Slates **Soil/Sediment Size Fraction:**

WP1: Outcrop sample, fract'd qte/slate with Fe staining, intense silic^n, mottled "gossan" locally; black-yellow Feox
WP2: Dump sample as above, silic'd bx'd; Fe stained qte/slate, random selection.
WP3: " " from West Pinnacles adit; grey qte c̄ qtz/limonite veinlets, minor limonite after dissem pyrite.
WP4: " " " " " , silic'd qte with minor qtz-muscovite veinlets, hand picked for degree of silic^n.

ANALYSIS **Laboratory** ANALABS **Batch Nº** 14-4-08-707 **Date Analysed** 4/12/81

Element	Cr	Fe	Co	Ni	Cu	Zn	As	Mo	Ag	Au	Pb	Sb	U	Sn	W		
Method / Sample Nº										LG20		A11	Fluor	XRF	XRF		
WP1	100	4.00%	bld	100	35	100	9	bld	<0.5	bld	75	<1		2050	<10		
2	70	3.35%	"	135	20	65	19	"	0.5	"	100	"		1650	10		
3	60	1.80%	15	110	40	25	102	"	1.0	"	20	"		620	<10		
4	75	1.50%	10	120	50	15	420	"	1.5	"	20	"		1700	<10		

REMARKS: WP1 and 2 from trench on ridge SE of West Pinnacles adit. — rel. large structure possibly on extension of Pyramid fault zone

Logged or Sampled by: R. HINE **Date:** 23/12/81

8010066

801067

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Division Copes, Tasmania Phone 316337

Code No. 14.4 08 428
Rack No. R-38 1/12
Page No. 1
Order No.

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Mo		
1	PCS	1	75	890	130	1.0	340	x		
2		2	165	2300	100	1.5	1800	2.5		
3		3	180	3050	70	0.5	940	2.0		
4		4	80	715	45	1.0	360	0.5		
5		5A	155	820	100	1.0	790	6.0		
6		5B	165	805	100	1.5	680	7.0		
7		6	80	440	65	1.0	540	2.0		
8		7	40	385	40	2.0	440	2.5		
9		8	105	505	95	1.0	630	1.5		
10		9	65	735	55	x	650	3.0		
11		10A	65	135	65	0.5	410	2.0		
12		10B	60	135	65	1.0	410	1.5		
13		11	110	160	140	1.0	830	1.5		
14		12	60	100	65	1.5	450	2.0		
15		13	40	55	20	1.5	330	1.0		
16		14	115	1300	125	2.0	570	4.0		
17		15A	95	875	80	3.0	620	4.5		
18		15B	90	880	75	3.0	570	1.0		
19		16	60	55	35	1.0	850	3.5		
20	PCS	17	55	125	25	1.0	440	2.0		
21		18	35	660	25	x	250	1.0		
22		19	80	190	35	3.5	900	5.0		
23		20A	160	1100	50	3.0	950	6.0		
24		20B	160	1100	50	3.0	830	4.0		
25		21	175	925	90	2.0	840	4.5		
26		22	145	1050	90	2.5	670	3.0		
27		23	65	180	25	1.0	410	3.0		
28		24	45	115	35	1.0	450	1.5		
29		25A	25	30	50	1.0	220	x		
30		25B	30	25	45	x	200	x		
31		26	35	25	25	x	190	1.0		
32		27	55	110	30	2.0	650	1.0		
33		28	65	145	55	1.5	550	1.0		
34		29	80	185	25	2.0	820	3.0		
35		30A	65	60	30	x	400	x		
36		30B	65	55	25	0.5	420	x		
37		31	40	45	20	x	250	x		
38		32	15	35	30	x	220	x		
39		33	35	385	50	0.5	250	x		
40	PCS	34	75	1400	60	0.5	370	2.5		
Detection			5	5	5	0.5	1	0.5		

concentration is below detection limit
not determined

801068

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Division Cooee, Tasmania Phone 316837

Code No. 14.4 08 428
Rack No. R – 37 / 1/2 25
Page No. 2
Order No.

RESULT SHEET

TUBE No.	SAMPLE No.		Cu	Pb	Zn	Ag	As	Mo		
1	PCS	35A	70	80	70	x	600	x		
2		35B	70	70	65	0.5	630	x		
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
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29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
Detection			5	5	5	0.5	1	0.5		

RESPONSIBLE OFFICER B. Dore
12.8.81

unless otherwise specified
present; but concentration too low to measure
concentration is below detection limit
not determined

801069

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Division: Cooee, Tasmania
Phone: 316837

Code No.: 14 4 08 428
Rack No.:
Page No.: 3
Order No.:

RESULT SHEET

TUBE No.	SAMPLE No.		Au
1	PCS	1	0.008
2		2	x
3		3	x
4		4	x
5		5A	x
6		5B	x
7		6	0.008
8		7	0.016
9		8	x
10		9	0.024
11		10A	x
12		10B	x
13		11	x
14		12	x
15		13	x
16		14	0.008
17		15A	x
18		15B	x
19		16	x
20	PCS	17	x
21		18	0.008
22		19	x
23		20A	x
24		20B	x
25		21	x
26		22	x
27		23	x
28		24	x
29		25A	x
30		25B	x
31		26	x
32		27	0.008
33		28	x
34		29	x
35		30A	x
36		30B	x
37		31	x
38		32	x
39		33	x
40	PCS	34	x
Detection			0.008

RESPO... LE OFFICER .... 14 / 8 / 81

...ss of ...se sp...d
present; but concentration too low to measure
concentration is below detection limit
not determined

801070

ANALABS

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Division: Copec, Tasmania
Phone: 316837

Code No. 14.4.08 428
Rack No.
Page No. 4
Order No.

RESULT SHEET

TUBE No.	SAMPLE No.		Au							
1	PCS	35A	x							
2		35B	x							
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
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35										
36										
37										
38										
39										
40										
Detection			0.008							

RE... LI... ICER 14/8/81

nt; ... concentration is below detection limit
not determined

CHANNEL SAMPLE RESULTS 801071

ANALABS

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Division: Cooee, Tasmania Phone: 316837

Code No.: 14:4 08 428
Rack No.:
Page No.: 5
Order No.:

RESULT SHEET

TUBE No.	SAMPLE No.		Sn	W						
1	PCS	1	398	11						
2		2	3180	99						
3		3	3430	35						
4		4	1920	8						
5		5A	1290	13						
6		5B	1300	10						
7		6	1050	9						
8		7	2380	10						
9		8	1460	10						
10		9	4140	11						
11		10A	3490	7						
12		10B	3280	6						
13		11	1990	8						
14		12	2240	6						
15		13	780	8						
16		14	6000	17						
17		15A	2600	8						
18		15B	2690	12						
19		16	4310	15						
20	PCS	17	2280	6						
21		18	779	8						
22		19	4680	10						
23		20A	3200	15						
24		20B	3340	13						
25		21	2090	9						
26		22	4430	12						
27		23	3030	10						
28		24	1410	6						
29		25A	171	19						
30		25B	177	5						
31		26	103	x						
32		27	5490	16						
33		28	4400	12						
34		29	5130	9						
35		30A	608	13						
36		30B	632	6						
37		31	150	x						
38		32	347	5						
39		33	1320	5						
40	PCS	34	2300	9						
Detection				4						

RESPONSIBLE OFFICER: B... 21/8/81

... ss oth... se sp... present; but concentration too low to measure
concentration is below detection limit
not determined

801072

ANALABS

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Division Cooee, Tasmania

Phone 316837

Code No. 14.4 08 428
Rack No.
Page No. 6
Order No.

RESULT SHEET

TUBE No.	SAMPLE No.		Sn	W						
1	PCS	35A	673	11						
2	PCS	35B	728	7						
3										
4										
5										
6										
7		(Mean = 0.227 σ = 0.16)								
8										
9										
10										
11										
12										
13										
14										
15										
16										
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35										
36										
37										
38										
39										
40										
Detection				4						

APPENDIX 5

METALLURGICAL TESTING AND CONCENTRATE ASSAYS

PYRAMID TIN INVESTIGATIONS

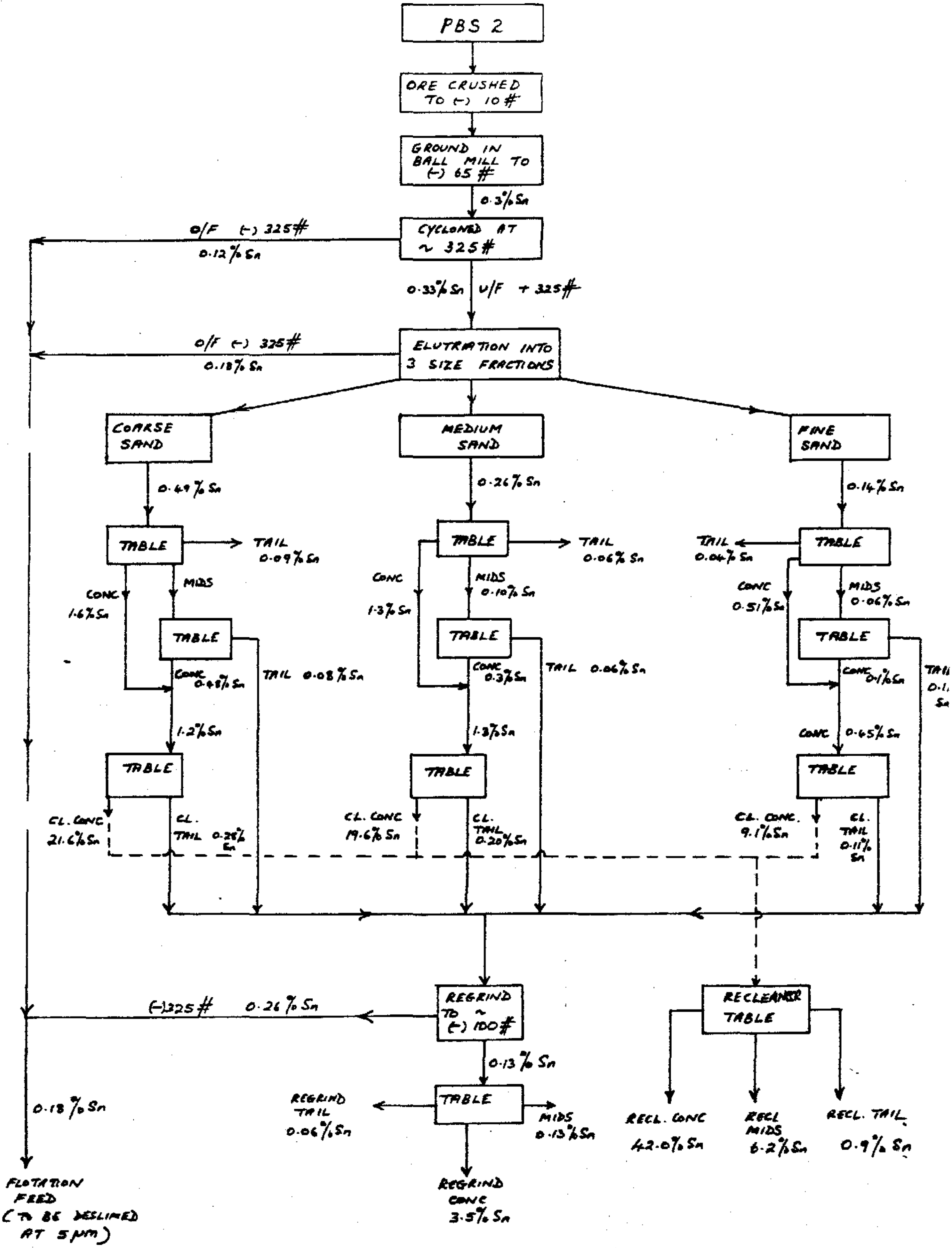
Four samples were received at C.M.D.L., designated PBS 1, 2, 3 and 4. Head samples analyses were as given below.

	% Sn	% Fe	% S
PBS 1	0.50	2.1	0.01
2	0.30	1.6	0.01
3	0.65	2.9	0.02
4	0.35	2.8	0.02

Sample PBS 2 was selected for testwork because the tin grade of 0.30% matched that of the average grade of reserves.

The process flowsheet selected was as given in Figure 1, with product analyses as indicated. The solids weight of many of the pulps was estimated by taking samples from stirred pulps and noting the volume of the total pulp. In other cases, especially tabling tests, small amounts of spillage, and also weights removed for chemical analysis, were not accurately quantified. The result is that the weight of final table recleaner concentrate obtained cannot be accurately corrected to give a reliable tin recovery figure.

A large amount of minus 325 mesh pulp remains to be deslimed for tin flotation tests. It is evident that the initial ball mill grinding to 65 mesh resulted in significant over-grinding of the pulp - instead of the stage grinding and stage recovery of liberated tin which is generally advisable for cassiterite-bearing ores.


PBS 2
ORE CRUSHED TO (-) 10#
GROUND IN BALL MILL TO (-) 65 #
0.3% Sn
CYCLONED AT ~ 325 #
O/F (-) 325#
0.12% Sn
0.33% Sn
U/F + 325#
ELUTRIATION INTO 3 SIZE FRACTIONS
O/F (-) 325#
0.18% Sn
COARSE SAND
MEDIUM SAND
FINE SAND
0.49% Sn
0.26% Sn
0.14% Sn
TABLE
TAIL 0.09% Sn
CONC 1.6% Sn
MIDS
TABLE
CONC 0.48% Sn
TAIL 0.08% Sn
1.2% Sn
TABLE
CL. CONC 21.6% Sn
CL. TAIL 0.28% Sn
TABLE
TAIL 0.06% Sn
CONC 1.3% Sn
MIDS 0.10% Sn
TABLE
CONC 0.3% Sn
TAIL 0.06% Sn
1.3% Sn
TABLE
CL. CONC 19.6% Sn
CL. TAIL 0.20% Sn
TABLE
TAIL 0.04% Sn
CONC 0.51% Sn
MIDS 0.06% Sn
TABLE
CONC 0.1% Sn
CONC 0.65% Sn
TABLE
CL. CONC 9.1% Sn
CL. TAIL 0.11% Sn
REGRIND TO ~ (-) 100#
(-)325# 0.26% Sn
0.13% Sn
TABLE
REGRIND TAIL 0.06% Sn
MIDS 0.13% Sn
REGRIND CONC 3.5% Sn
0.18% Sn
FLOTATION FEED (TO BE DESLIMED AT 5µm)
RECLEANER TABLE
RECL. CONC 42.0% Sn
RECL MIDS 6.2% Sn
RECL. TAIL 0.9% Sn

REGION: NE TAS **PROJECT Nº.:** T630 **PROSPECT:** PYRAMID **GRID CO-ORDS.:** **LOCAL A.M.G.**

DESCRIPTION **Sample Type:** TIN CONCENTRATES **Rock Type:** **Soil/Sediment Size Fraction:**

T630/ 1155 Elutriator coarse sand — table cleaner con.
1174 " medium size fracⁿ — " " "
1176 " fine " " — " " "
1198 Recleaner con.

ANALYSIS Laboratory A.L.S. Batch Nº M069 Date Analysed 17/12/81

ment / Method / ple #	Sn	W	Mo	Bi	As	Au*	Sb	Cu	Pb	Zn	Ag	Ni	Co	Cr	V	Mn	Ti
	wet chem																
1155	21.5%	0.09%	<4	100	0.35%	15	72	890	0.75%	240	8	320	20		20	350	0.30%
1174	19.6%	0.09%	<4	150	0.41%	I.S.	64	1200	0.83%	260	24	320	20		20	290	0.48%
1176	8.83%	0.05%	<4	140	0.37%	3.4	52	940	0.65%	240	20	170	15		20	210	0.59%
1198	42.2%	0.17%	<4	155	0.40%	22.0	72	1400	1.11%	320	10	480	10		20	500	0.34%
						* ppm											

REMARKS: Concentrates ex C.M.D.L. Whyalla (PBS2 treatment)

Logged or Sampled by: R. Hine Date: Nov '81

801076

REGION: NE TAS PROJECT Nº: T630 PROSPECT: PYRAMID GRID CO-ORDS.: LOCAL A.M.G.

DESCRIPTION Sample Type: TIN CONS Rock Type: Soil/Sediment Size Fraction:

ANALYSIS Laboratory Batch Nº Date Analysed

Element / Method / Sample #	U	In	Nb	Ta	Zr	Fe	F	S									
1155	16	<10	140	10	0.71%	7.87%	0.15	0.06									
1174	28	<10	100	10	1.62%	9.43%	0.16	0.08									
1176	32	<10	45	10	1.43%	7.66%	0.18	0.01									
1198	32	<10	240	10	1.88	10.5%	0.13	0.09									

REMARKS:

Logged or Sampled by: Date:

80108

801078

REPORT ON THE 1980-81

FIRST PHASE DRILLING PROGRAMME

GREAT PYRAMID PROSPECT

E.L. 10/80, TASMANIA

OCTOBER, 1981

CONTENTS

FIGURES

FIG. 1

801081

Centre Melbourne	THE BROKEN HILL PROPRIETARY CO. LTD.	Project No
Date 31-8-81	E.L. 10/80, GREAT PYRAMID, TAS. LOCATION MAP	Drawing No. A4-2255

REPORT ON THE 1980-81 FIRST PHASE DRILLING PROGRAMME

GREAT PYRAMID PROSPECT, E.L. 10/80, TASMANIA

801082

1. INTRODUCTION

This report summarizes results of a programme of 12 diamond drill holes drilled at the Great Pyramid prospect between 17th October, 1980 and the 25th May, 1981. In the initially proposed programme, 12 holes for a total of 1,925 metres were planned. However, due to severe ground problems, with concomitant increase in drilling costs, the programme was cut back to 1,229 metres. Of the 12 holes, only 5 were completed to target depth. The most difficult drilling conditions were encountered in areas where the mineralization is best developed.

2. GENERAL

Detailed geological and assay logs for each hole are appended. Analytical results are summarized in Table 1. Technical and related information is summarized in Table 2 and on the header sheets for each hole.

Drill hole orientation and depression angles were determined from a study of measured bedding and mineralized fracture orientations. The holes were designed to intersect both the bedding and mineralized fractures at the optimum angle for drilling, and as such represent a compromise between drilling the mineralized fractures or the bedding at right angles.

Core size was maintained at HQ where possible to ensure the largest practical sample size. In general, overall core recovery was high although the effect of losses in mineralized horizons is difficult to gauge. Sludges were collected over 3 metre intervals where sufficient water return was achieved.

Core was photographed, logged, split by diamond saw and assayed for tin, tungsten, copper, lead, zinc, silver, arsenic and molybdenum by Australian Laboratory Services. Samples with greater than 9 ppm silver were analysed for gold. Samples were at 2 metre intervals except where otherwise dictated by lithological boundaries. Ultraviolet and scintillometer scans of the core were also carried out. Results are, in both instances, negative.

A total of 836 samples, comprising 527 half-core, 74 percussion chip and 235 sludges were obtained from the drilling programme.

3. NORTH BLOCK (BPD 1, 2a, 2b, 3, 4, 5)

Five holes were drilled on 35 metre centres on lines 350N and 400N in the North Block to test possible north-westerly extensions of the mineralization defined by the Aberfoyle-Paringa programme of 1969-71. All holes were inclined at 70° on a magnetic bearing close to 120°.

cont./..

BPD 1 was drilled to 101.20 metres penetrating diorite (10m), oxidized and fractured quartzite with thin shale interbeds (30m) and interbedded sandstone/siltstone/shale with minor quartzite (60m). Low grade cassiterite ± minor sulphide mineralization was encountered.

BPD 3 intersected quartzite and sandstone with minor interbedded shale and siltstone to 100.05 metres. Again, low grade cassiterite with minor sulphides mineralization was penetrated.

Interbedded quartzite and shale were initially encountered in BPD 4 grading into quartzite + sandstone + shale then into shale. Twelve metres of diorite were intersected at the bottom of the hole. Minor sulphides with cassiterite in veinlets were intersected.

100.23 metres of quartzite and shale with occasional interbeds of sandstone + shale and shale were penetrated in BPD 5. Minor cassiterite with minor sulphides was observed in veinlets.

BPD's 1, 3 and 5 were drilled entirely to HQ size. BPD 4 was drilled to 99 metres in HQ size, then decreased to NQ to 125.55 metres. Minor water return problems were encountered in BPD 1 and 3. BPD 2a was drilled to 19.65 metres before it was abandoned due to water loss, rock movements and subsequent rod jamming. The hole penetrated fractured quartzite, grey shale and iron stained sandstone. Sporadic cassiterite in veinlets was encountered. A 30 metre percussion hole, BPD 2b, was drilled adjacent to BPD 2a. Coring at HQ size was to have commenced down to 100 metres, however, lack of time eventually led to abandonment of BPD 2b at this depth. Although BPD 2a and 2b were unsuccessfully drilled, they did provide useful comparative data between diamond drilling and open hole drilling.

Analyses from the six holes indicated the presence of a significant tonnage of low grade tin mineralization (≤0.15% Tin) in the North Block extension. Silver values (up to 47 ppm), previously unreported, from the deposit suggest the presence of a silver halo around the tin mineralization.

4. <u>SOUTH BLOCK (BPD 9a, 9b, 10, 11, 12)</u>

Initially five holes of 200 metres were planned to test mineralization outlined by Aberfoyle-Paringa, together with possible extensions, in the South or C-adit block. The holes were drilled at an inclination of 60° again on a bearing of 120°.

BPD 9a penetrated 82.20 metres of oxidized, strongly fractured quartzite with minor interbedded sandstone and shale. Problems with water return eventually forced abandoment of the hole. Drilling commenced at HQ but was

cont./..

decreased to NQ at 36.4 metres. Cassiterite was more readily observed in this hole than in BPD 1-5. A percussion hole (BPD 9b) was commenced adjacent to the first hole in an effort to drill past the fractured zone, the intention being to recommence core drilling at NQ size to the 200 metre target depth. The percussion hole failed to penetrate deeper than 45 metres due to complete loss of air pressure, and was abandoned.

Drill hole BPD 8 penetrated to a depth of 103.08 metres before water return and rock wedging problems caused its abandonment. It intersected 60 metres of interbedded shale and siltstone with minor sandstone, followed by 43 metres of fractured quartzite. Low grade sulphides ± cassiterite mineralization was encountered. Minor fluorite and rare magnetite were also observed.

Drilling was commenced at HQ size, then decreased to NQ at 86 metres. Due to the amount of cement required to seal the hole below 86 metres, 82 metres of HQ casing were cemented into the hole and could not be removed.

BPD 10 intersected 102.95 metres of fractured quartzite and shale. The diorite dyke was penetrated between 77 and 86.5 metres. Cassiterite sulphide mineralization was observed down the length of the hole. It was abandoned in mineralized quartzite due to loss of water circulation and rod binding.

BPD 11 was the only hole to test the South Block of mineralization that was successfully completed to its target depth of 219 metres. The hole intersected 5 to 20 metre thicknesses of quartzite and sandstone with thin interbeds of shale. Low grade veinlet style sulphide + cassiterite was visible down the hole. Rare pyrrhotite was observed as a breccia filling below 160 metres. The hole was drilled in HQ to 99 metres, then in NQ to 219 metres.

BPD 12 was initially planned to be drilled to 200 metres and was designed to test an inferred quartzite horizon at depth. Due to time constraints, the hole was relocated and shortened to 100 metres. It failed to reach its target depth due to subsidence of part of the drill site. 61.48 metres of shale with minor interbedded sandstone and quartzite were intersected. Only sporadic cassiterite mineralization was encountered.

Holes BPD 9a and 9b intersected significant tin mineralization, however there is a poor correlation of results between the two holes. A similar lack of correlation was observed in values from holes BPD 2a and 2b. Downhole averages over intersections of the same length indicate that the percussion holes could give values approximately 1.5 to 2 times higher than the cored holes. Tin values from BPD 8 were low, however, given relatively high silver values down the hole, higher grade tin mineralization could have been intersected had it been possible to drill to target depth.

cont./..

BPD 10 encountered relatively good tin mineralization in the upper section of the hole, then tin values decreased as silver and copper increased. Had it proceeded to 200 metres, this hole may have intersected more low grade (≤0.2% tin) mineralization.

BPD 11 was drilled on the eastern edge of the South Block and was targeted at a previously untested area. It intersected sporadic low grade tin mineralization (up to 0.24%, generally 0.13-0.15% tin) down the entire length of the hole.

Results from BPD 12 are low for tin and silver, but are relatively high for zinc, suggesting that the hole may have penetrated better tin mineralization either at depth, or closer to the known mineralized blocks.

5. FAULT CONTROLLED MINERALIZATION (BPD 7)

Hole BPD 7 was planned to test the attitude of a north-west trending fault separating the North and South blocks. The hole was inclined at 60^{o} on a bearing of 120^{o}.

It was drilled to 139.55 metres before being abandoned due to rod binding. It penetrated 42 metres of strongly ferruginized, locally brecciated, shale - sandstone - quartzite, 8 metres of diorite, and 50 metres of brecciated quartzite with minor shale which was locally ferruginized and/or chloritized. Below this, 40 metres of locally fractured interbedded sandstone and shale were intersected. The hole remained in the oxide zone over its entire length.

Information from this hole has indicated that the fault probably has a very steep (greater than 70^{o}) north-easterly dip.

Analyses indicate that the fault is mineralized, and if continuous, may connect with similar high grade intersections reported from MD 3 (Tas Mines Department - 1974) and DDS 1 (BHP - 1964/5), thus providing a low tonnage high grade target zone.

6. EXPENDITURE

The programme was completed with an expenditure of $270,142 on direct drilling costs, being composed of $265,750 for diamond drilling and $4,392 for percussion drilling. Average costs were $248/metre for coring and $28/metre for open holing.

7. ORE RESERVE CALCULATION

Estimated reserves for the deposit calculated at a 0.1% tin cut-off are summarized in Table 3. Calculations were based on 10 metre level plans from the 210 level to the 90 level and were determined by triangulation where drilling was on closely spaced centres.

cont./..

The categories of reserves employed were:

A) Probable: mineralization tested by holes on closely spaced centres (less than 20-30 metres). Such mineralization would normally be assigned to the "proven" category were it not for the uncertainties outlined below.

B) Possible: mineralization tested by drilling on widely spaced centres (greater than 20-30 metres). This would normally fall in the "probable" category.

C) Potential: untested ground between or immediately outside drilled blocks. Reserves in this category are considered to be conservative with respect to both tonnage and grade. Such inferred mineralization would normally be assigned to the "possible" category.

All data available at 1st September, 1981 were used in the calculations. These were derived from the BHP percussion programme (1966), the Aberfoyle-Paringa percussion/diamond programme (1970), the Mines Department programme (1976) and the current BPD programme.

Grades were calculated by the percentage method according to the formula:

$$\text{grade} = \frac{\left(\frac{\Sigma y_i x_i}{\Sigma y_i} + \Sigma x_i\right)}{4}$$

where y_i is the length of the intercept in metres and x_i is the grade of the intercept.

Thicknesses of blocks were determined according to the formula:

$$\text{thickness} = \frac{y_1 + y_2 + y_3}{3}$$

Areas were determined by planimeter.

It should be recognised that calculation of grade by the percentage method has had the overall effect of downgrading the mineralization.

The figures in Table 3 do not include intercepts of 10 metres at 0.39% tin, and 30 metres of 0.21% tin recorded in GPY 2 below the 90 level.

The calculations assume:

1) Equal weighting of grades determined from all sources - large uncertainties exist here with respect to sample size, orientation, type (i.e. core, percussion chip, channel, bulk) and analytical method. Good control

cont./..

over the sampling can only be assumed for the BPD and GPY diamond holes. Grades were assumed to be correct in terms of actual tin content even though poor reconciliation between the various types of samples is known to exist.

2) Accurate recovery of the positions of all drill holes - this introduces uncertainties since in general only the collars of the diamond holes were adequately marked on completion of drilling.

3) A specific gravity for the mineralized zone of 2.65 gm/cc - no determinations having yet been carried out.

4) A background value of 0.05% tin in the mineralized blocks - this figure has been empirically determined from results of the current drilling programme. Its use has the effect of increasing the grade of some blocks to just over the 0.1% cut-off.

There has been no attempt to calculate the contribution of elements such as silver, copper and tungsten to the reserves, firstly because this data is only available for the BPD holes and secondly since it is assumed that the deposit must be viable on tin alone.

8. CONCLUSIONS

The 1980/81 drilling programme has indicated the potential for increased tonnages of low grade tin mineralization to the north-west of the North block and the south-east of the South block. It has also indicated the potential for higher grade mineralization in a narrow shear zone which appears to stretch over the entire length of the hill. Several holes had to be abandoned in mineralized ground due to drilling conditions.

The strong lithological control on the occurrence of the mineralized fractures was confirmed by the drilling. Shale rich sections tend to be low in tin although they are not completely barren.

Correlation of sedimentary units from drill hole to drill hole proved difficult since the sequence lacks marker horizons and most holes were drilled sub-parallel to bedding.

Loss of water circulation and movement of loose, fractured rock down the holes provided the most difficult technical problems. Open fractures are present not only in the oxide zone (to 70m) but also in unoxidized rock. Loss of air pressure was confirmed as a potential problem for percussion drill testing of the deposit. Loss of water circulation was the main contributing factor to the slow average daily drilling rates which ranged between 6½ to 8½ metres/day.

cont./..

Comparison of tin values obtained from drill core and shallow percussion drilling suggests that diamond drilling may be downgrading the deposit by as much as 50%. (Such a conclusion assumes approximately the same grades would be obtained from holes drilled approximately 1 metre apart - this is probably not the case given the style of mineralization at Pyramid). Values from sludge samples confirm that tin is being lost during drilling. This is especially evident in shale rich horizons where the tin is probably very fine. The low grade nature of the deposit makes such losses more significant than normal.

TABLE 1

Great Pyramid Prospect - Summary of Drilling

Results to August 1981

BPD1

Sa. No.	Interval (m)	Length (m)	Sn%	Ag (ppm)
BJ001-003	3.0-9.0	6.0	0.13	1.7
010-024	19.8-49.1	29.3	0.18	2.6
027-035	55.1-70.65	17.55	0.07	6.3
041-045	79.0-89.6	10.6	0.12	1.2

Downhole average Sn% : 0.10 (101.2m)

BPD2a

Sa. No.	Interval (m)	Length (m)	Sn%	Ag (ppm)
BJ318-321	9.9-17.2	7.3	0.17	3.4

Downhole average Sn% : 0.11
Ag (ppm) : 2.7 (19.6m)

BPD2b (percussion hole)

Sa. No.	Interval (m)	Length (m)	Sn%	Ag (ppm)
BJ719-732	0.0-28.0	28.0	0.21	2.6

Downhole average Sn% : 0.21
Ag (ppm) : 2.6 (28m)

BPD3

Sa. No.	Interval (m)	Length (m)	Sn%	Ag (ppm)
BJ062-065	0.0-6.8	6.8	0.13	2.5
077-093	29.7-64.2	34.5	0.23*	5.8
099-111	74.5-100.05	25.55	0.05	6.4

*includes 2m at 2.10% Sn
Downhole average Sn% : 0.10 (100.05m)

.../2

BPD4

Sa. No.	Interval (m)	Length (m)	Sn%	Ag (ppm)
BJ136-159	0.0-47.3	47.3	0.10	10.2
136-191	0.0-112.45	112.45	0.07	11.6

Downhole average Sn% : 0.06
Ag (ppm) : 10.6 (125.5m)

BPD5

Sa. No.	Interval (m)	Length (m)	Sn%	Ag (ppm)	Cu%
BJ239-245	0.0-14.8	14.8	0.17	4.8	<0.01
262-282	49.2-93.1	43.9	0.06	15.4	0.12

Downhole average Sn% : 0.07
Ag (ppm) : 10.0 (100.23m)

BPD7

Sa. No.	Interval (m)	Length (m)	Sn%
BJ733-742	0.0-19.0	19.00	0.16
763-767	66.25-76.40	10.15	0.13
768-773	76.40-89.06	12.66	0.63
774-781	89.06-104.86	15.80	0.15

BPD8

Sa. No.	Interval (m)	Length (m)	Sn%	W%	Cu%	Ag (ppm)
BJ413-415	42.25-48.40	6.15	0.06	0.007	0.01	1.5
419-422	55.15-63.15	7.90	0.11	<.001	0.04	4.1
430-436	77.85-91.15	13.30	0.05	0.003	0.15	14.9
441-442	99.15-103.08	3.93	0.02	<.001	0.12	5.0

Downhole average Sn% : 0.03 (103.1m)
Ag (ppm) : 4.5

.../3

BPD9a (cored hole)

Sa. No.	Interval (m)	Length (m)	Sn%	Ag (ppm)	W (ppm)
BJ328-336	0.0-17.0	17.0	0.17	1.8	-
339-351*	21.75-48.4	26.65	0.20	6.2	50
354-357	52.45-60.45	8.0	0.28	8.6	-

*BJ347 missing.

Downhole average Sn% : 0.14 (82.2m)
Ag (ppm) : 5.0

BPD9b (percussion hole)

Sa. No.	Interval (m)	Length (m)	Sn%	Ag (ppm)
BJ371-377	4.0-18.0	14.0	0.53	2.6
381-390	24.0-44.0	20.0	0.14	2.1

Downhole average Sn% : 0.24 (45m)

BPD10

Sa. No.	Interval (m)	Length (m)	Sn%	Ag (ppm)	Cu%	W%
BJ453	4.0-6.3	2.3	0.36	2.0	-	0.006
458-474	14.8-48.10	33.3	0.25	2.8	-	0.007
479-481	56.3-64.0	7.7	0.14	3.7	-	0.019
496-498	96.7-102.95	6.25	0.14	10.8	0.18	0.055

Downhole average* Sn% : 0.15 (93.3m)
(*excluding diorite dyke)

BPD11

Sa. No.	Interval (m)	Length (m)	Sn%	Ag (ppm)
BJ511-522	12.00-37.20	25.20	0.12	<1.0
537-542	64.30-76.00	11.70	0.13	3.0
557-558	103.20-107.20	4.0	0.24	4.5
562-563	113.80-115.80	4.0	0.15	4.0
565-568	119.80-127.55	7.75	0.13	5.2
585-586	162.05-166.05	4.0	0.13	1.5
599-600	190.40-194.40	4.0	0.15	7.5

Downhole average Sn% : 0.06 (219.75m)

BPD12

Sa. No.	Interval (m)	Length (m)	Sn%	Ag (ppm)
BJ699	54.10-55.60	1.5	0.27	1.0

TABLE 2

Summary of 1980-81 Diamond Drill Programme
Great Pyramid

Hole	Commenced	Completed	Completed Depth(m)	Diamond HQ	Diamond NQ	Percussion (m)
BPD1	17/10/80	03/11/80	101.20	90.60	-	9.00
BPD2a	13/12/80	07/01/81	19.65	19.65	-	-
BPD2b*	07/01/81	14/01/81	28.00	-	-	28.00
BPD3	04/11/80	19/11/80	100.05	96.75	-	3.30
BPD4	21/11/80	01/12/80	125.55	99.60	25.95	-
BPD5	04/12/80	12/12/80	100.23	100.23	-	-
BPD6	Not drilled					
BPD7	05/06/81	27/06/81	139.55	87.50	25.36	19.00
BPD8	20/02/81	19/03/81	103.08	77.14	17.05	8.89
BPD9a	15/01/81	15/02/81	82.20	23.40	45.80	13.00
BPD9b*	13/02/81	19/02/81	45.00	-	-	45.00
BPD10	20/03/81	09/04/81	102.95	16.70	82.25	4.00
BPD11	10/04/81	09/05/81	219.75	89.00	120.75	9.00
BPD12	16/05/81	25/05/81	61.48	52.48	-	9.00
BPD13	Not drilled					
	TOTAL:		1228.69m	753.05	317.16	148.00

(Other 10.29 m)

TABLE 3

SUMMARY OF RESERVES

210 LEVEL TO 90 LEVEL

	Probable		Possible		Potential	
NORTH BLOCK	1,012,672	.21	442,101	.20	1,928,964	.15
SOUTH BLOCK	2,219,753	.22	429,229	.25	2,254,541	.17
TOTALS	3,232,425	.22	871,330	.22	4,183,505	.16

- Total calculated from drilling 4.10mT at 0.22% Sn.
- Total for deposit to 90 level 8.29mT at 0.19% Sn.
- Contained tin 15,746 tonnes.

NORTH BLOCK

Level	Probable		Possible		Potential	
	T	%Sn	T	%Sn	T	%Sn
210	9,548	.13	1,855	.10	30,608	.15
	247	.24	-	-	-	-
	2,995	.35	398	.30	-	-
200	46,907	.15	15,980	.16	51,304	.15
	15,088	.25	-	-	12,455	.20
	14,143	.35	11,395	.37	-	-
190	131,352	.15	12,720	.16	114,772	.15
	55,332	.24	-	-	8,586	.20
	24,001	.47	-	-	-	-
	1,590	2.04				
180	153,444	.15	37,630	.12	132,103	.15
	43,822	.23	-	-	5,300	.20
	4,452	.34	-	-	-	-
170	54,697	.16	41,817	.13	297,993	.13
	86,515	.24	6,413	.22	48,495	.21
	30,722	.34				
160	55,279	.14	77,592	.13	328,600	.12
	89,703	.25	21,200	.23	57,240	.20
	6,890	.36				
150	65,086	.14	10,097	.13	233,200	.15
	15,396	.23	33,655	.23		
	5,035	.33				

Level	Probable		Possible		Potential	
	T	%Sn	T	%Sn	T	%Sn
140	49,891	.14	5,750	.13	133,693	.15
	37,472	.24	49,635	.23	63,865	.20
	6,387	.33				
130	4,876	.11	32,065	.14	135,150	.10
	1,802	.20	28,143	.63	41,075	.40
120	-	-	34,503	.15	121,900	.15
110	-	-	5,353	.10	49,025	.15
			15,900	.20		
100	-	-	-	-	-	-
90	-	-	15,688	.21	63,600	.15
TOTALS	571,080	.15	275,362	.13	1,691,948	.14
(North Block)	345,377	.24	126,803	.23	195,941	.20
	94,625	.38	39,936	.55	41,075	.40
	1,590	2.04				
	(1,012,672	.21)	(442,101	.20)	(1,928,964	.15)

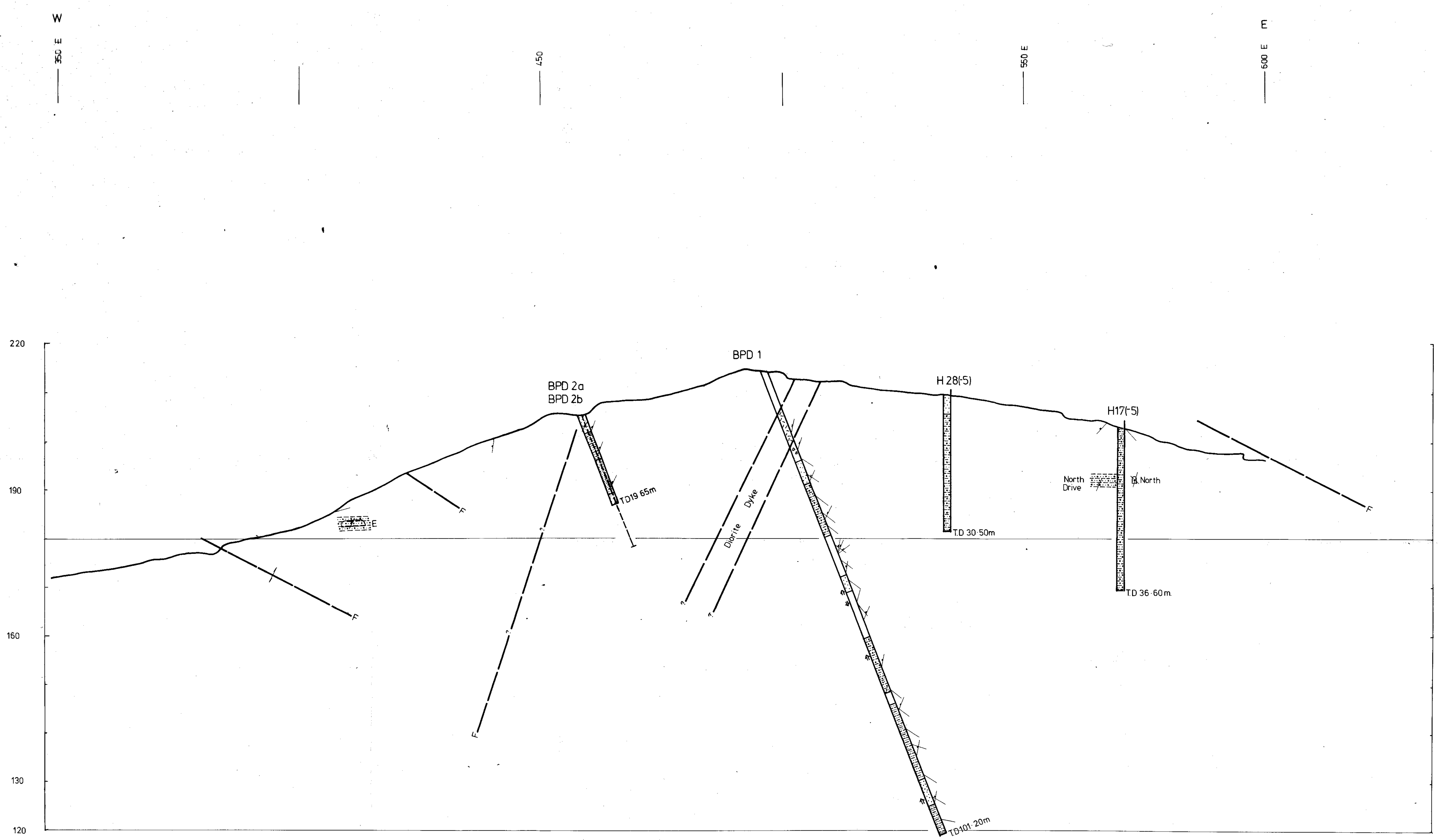
SOUTH BLOCK

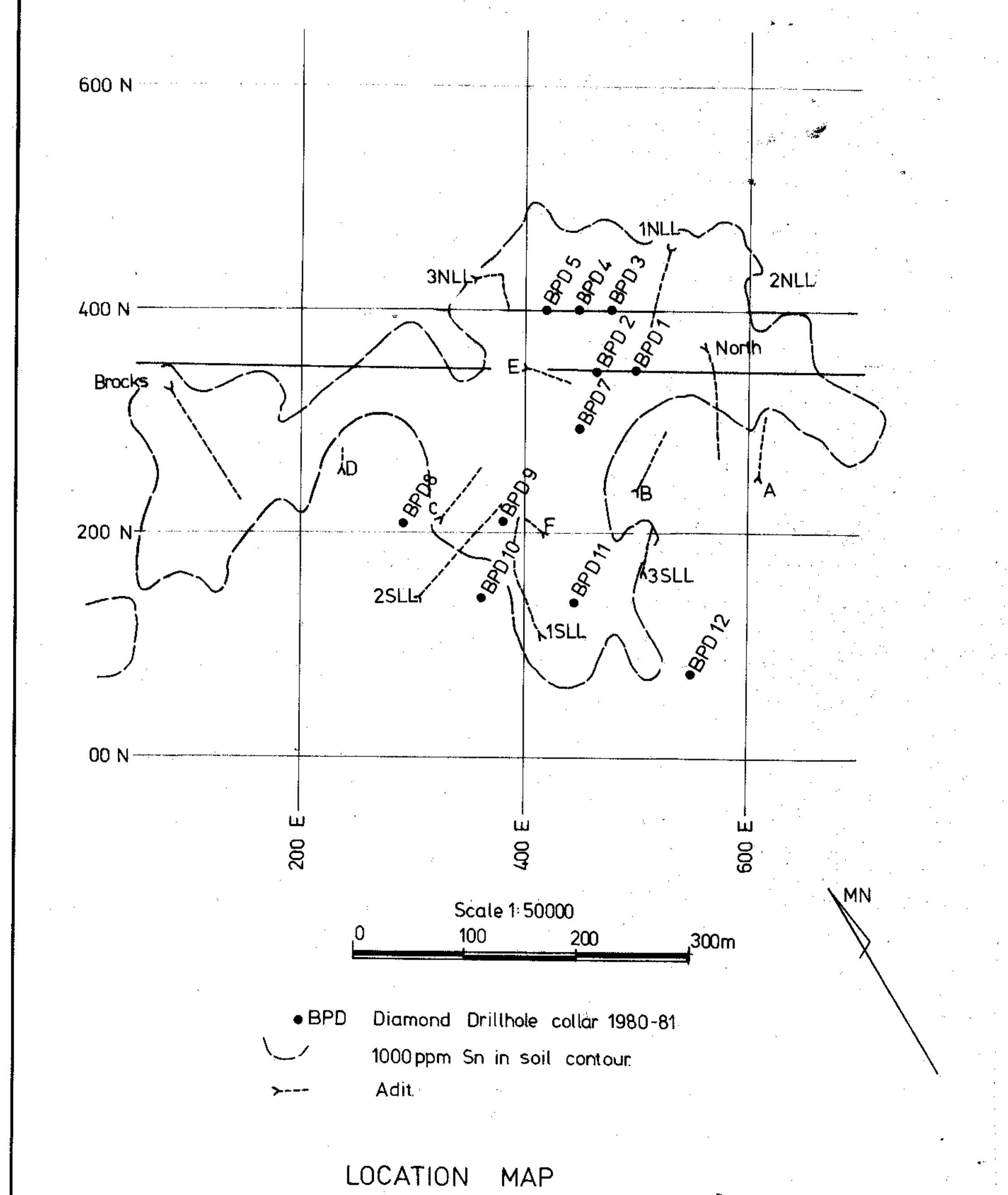
Level	Probable T	Probable %Sn	Possible T	Possible %Sn	Potential T	Potential %Sn
200	22,561	.14	11,395	.20	-	-
	7,659	.23				
	4,929	.30				
190	123,085	.13	-	-	25,149	.15
	22,083	.23				
	795	.30				
180	131,486	.13	-	-	28,832	.15
	54,396	.23			7,818	.20
	108,275	.45			15,635	.30
170	190,129	.14	9,010	.15	3,419	.15
	98,880	.25			64,249	.30
	43,124	.38				
160	200,790	.13	33,792	.15	56,206	.11
	72,825	.24	36,332	.25	17,172	.20
	101,102	.36	14,752	.32	6,148	.30
150	181,171	.14	21,624	.15	12,455	.10
	98,607	.23	7,756	.24	145,538	.20
	84,121	.39	71,179	.37		
	1,961	.97				
140	93,108	.14	24,857	.12	329,130	.14
	57,020	.23	7,155	.26	118,985	.21
	44,486	.38	10,918	.53		
	1,193	1.23				

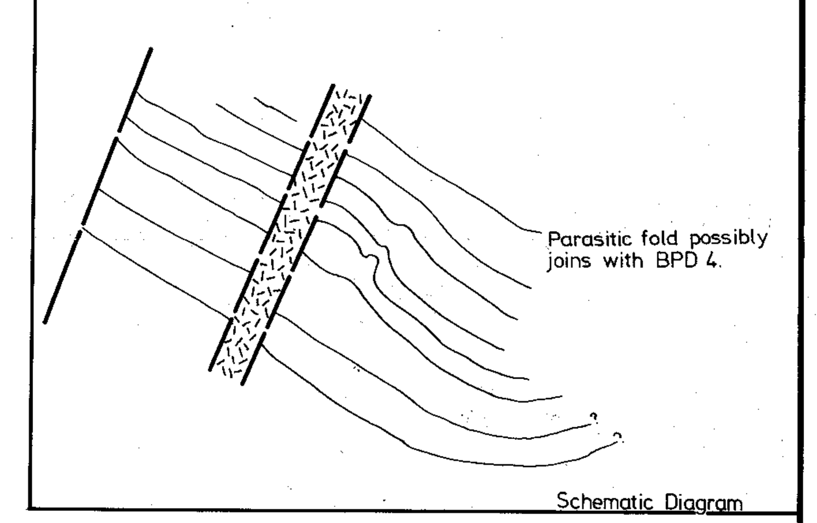
Level	Probable		Possible		Potential	
	T	%Sn	T	%Sn	T	%Sn
130	106,486	.13	19,558	.15	245,655	.15
	50,934	.22	-	-	48,230	.25
	50,032	.41	19,001	.37	66,780	.30
120	101,955	.15	8,374	.16	232,140	.11
	34,053	.23	3,180	.20	65,415	.20
	13,585	.36	2,756	.30		
110	42,602	.14	37,524	.11	164,830	.13
	23,868	.23	16,218	.26	94,870	.20
	4,505	.38	9,275	.38		
100	12,614	.14	34,742	.14	205,905	.15
	1,670	.21	6,175	.25		
	4,770	.38				
90	28,390	.13	3,180	.18	284,080	.15
	3,657	.40	17,826	.21	15,900	.56
			2,650	2.80		
TOTALS	1,234,377	.14	192,661	.14	1,587,801	.14
(South Block)	521,995	.23	106,037	.24	498,028	.21
	463,381	.40	130,531	.43	168,712	.32
	(2.22mT	.22)	(0.43mT	.25)	(2.25mT	.17)

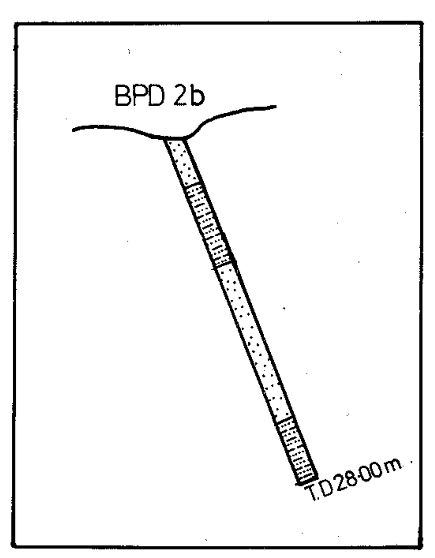
E 100
E 200
E 300
E 400
E 500
E 600
E 700
E 800
N 500
500m N
N 400
400 N
N 300
300 N
N 200
200 N
N 100
100 N
N 00
00
E 100m
E 700 m
BROCKS
MAGAZINE
No3 NLL
No1 NLL
No2 NLL
No2 SLL
No3 SLL
No1 SLL
DDS 1
MD1
MD2
MD3
MD4
GPY1
GPY2
GPY3
GPY4
GPY5
GPY6
M N
G N
MD3 Mines Dept. diamond drill hole.
DDS1 B.H.P " " " (1965)
GPY2 Aberfoyle " " "
7 B.H.P " " " (1980-1981)
(No prefixed BPD)
B.H.P. Percussion drill hole.
Adit
Shaft
Mainly sandstone with interbedded shale.
Shale.
Diorite dyke.
Fault.
70° Strike and dip of bedding.
65° Jointing.
801099
THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT
E.L.10/80 GREAT PYRAMID, TAS.
GREAT PYRAMID PROSPECT
Scale 1:1,000
0 20 40 60 80 100 Metres
5 cm
Fig. 2
Drawn
Traced
Checked
Date
Project No
Centre
Drawing No
A1-
Revisions

FIG. 3









Quartzite.
Quartzite-shale.
Sandstone.
Sandstone-shale.
Diorite.
Breccia.
F Fault.
Fault inferred.
Bedding dip.
Joint dip-mineralized.
Joint dip-barren.
Facing.

5 cm

Scale 1:500

0 10 20 30 40 50

801100

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EXPLORATION DEPARTMENT

E.L10/80 GREAT PYRAMID PROSPECT TASMANIA
350. N LINE GEOLOGICAL SECTION
THROUGH DRILLHOLES BPD 1- BPD 2a-b

Revisions:			
	Drawn: D.A.S.	Date: 6-10-81	Centre: Hobart
	Traced: Hilary	Project No: T630	Drawing No: A1-10/80-43
	Checked:		

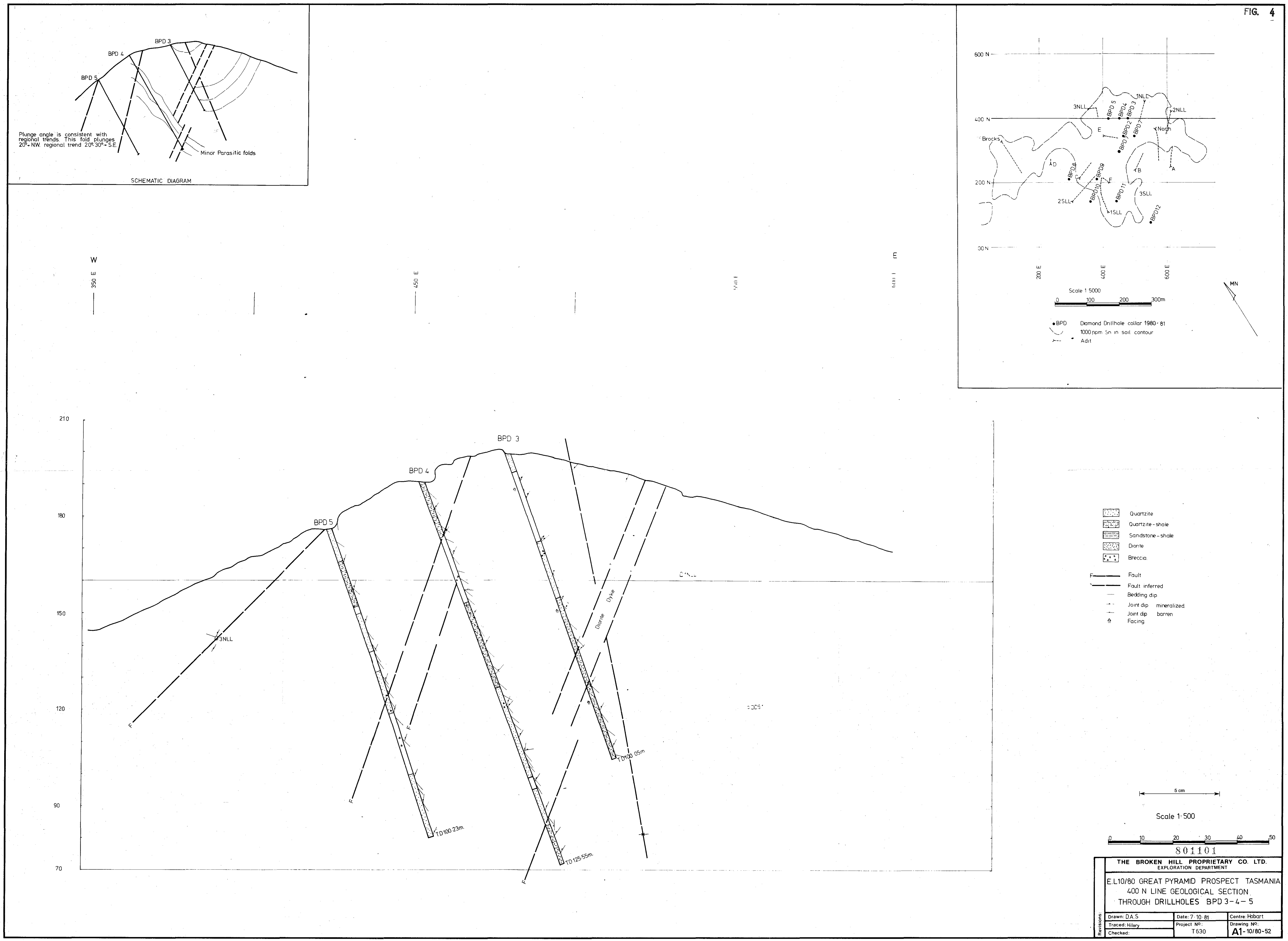
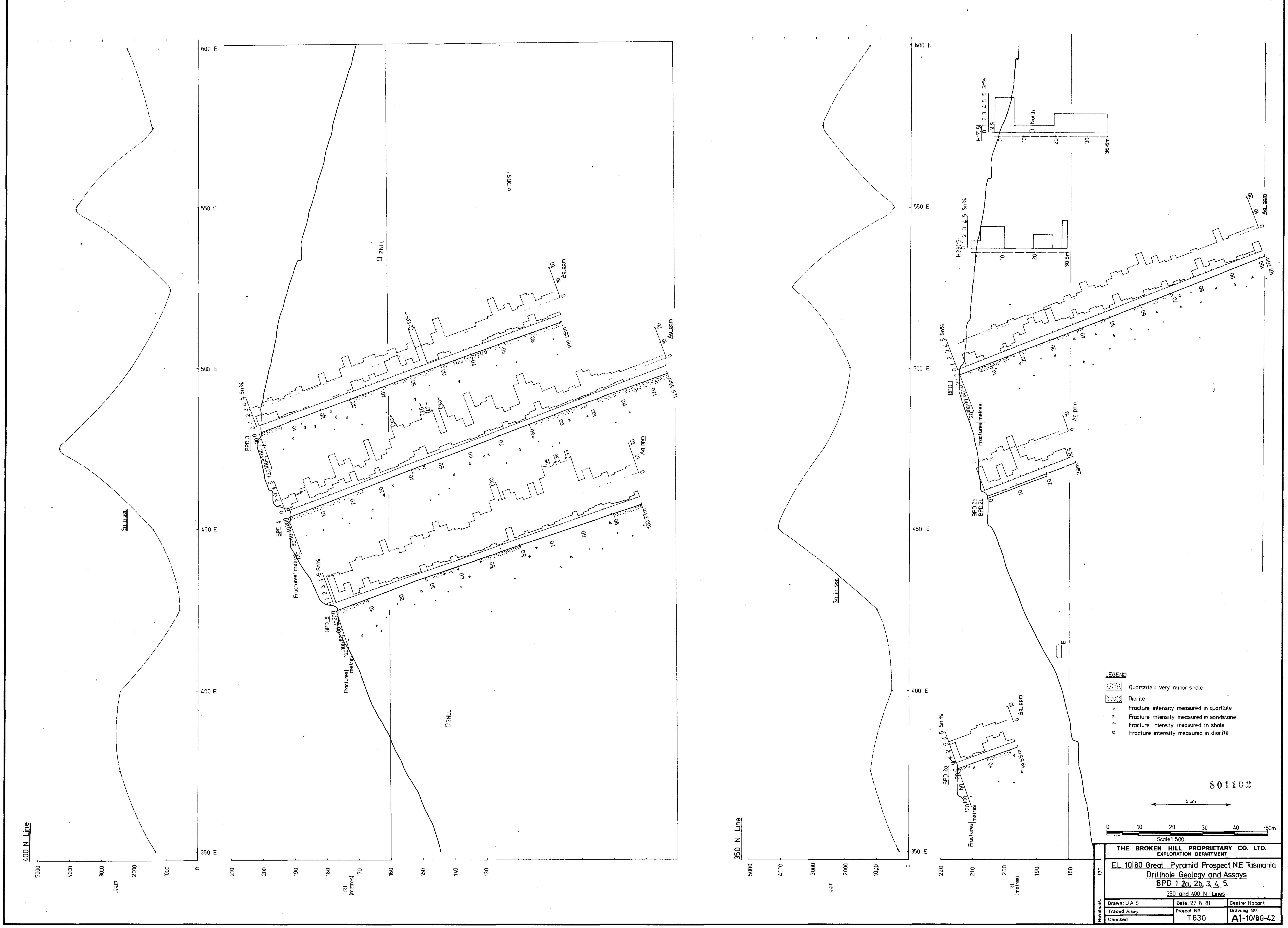


FIG. 4
BPD 3
BPD 4
BPD 5
Plunge angle is consistent with regional trends. This fold plunges 20°- N.W. regional trend 20°-30°- S.E.
Minor Parasitic folds
SCHEMATIC DIAGRAM
600 N
400 N
200 N
3NLL
1NLL
2NLL
BPD 2
BPD 7
North
Brocks
E
D
BPD 8
BPD 9
BPD 10
BPD 11
BPD 12
B
A
F
3SLL
2SLL
1SLL
200 E
400 E
600 E
MN
Scale 1:5000
0
100
200
300m
BPD Diamond Drillhole collar 1980-81
1000 ppm Sn in soil contour
Adit
W
350 E
450 E
E
210
180
150
120
90
70
3NLL
F
Diorite Dyke
TD 100.23m.
TD 125.55m.
TD 100.05m.
Quartzite
Quartzite-shale
Sandstone-shale
Diorite
Breccia
Fault
Fault inferred
Bedding dip
Joint dip mineralized
Joint dip barren
Facing
5 cm
Scale 1:500
0
10
20
30
40
50
801101
THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT
E.L.10/80 GREAT PYRAMID PROSPECT TASMANIA
400 N LINE GEOLOGICAL SECTION
THROUGH DRILLHOLES BPD 3-4-5
Revisions:
Drawn: D.A.S.
Traced: Hilary
Checked:
Date: 7-10-81
Project No: T630
Centre: Hobart
Drawing No: A1-10/80-52

FIG. 5

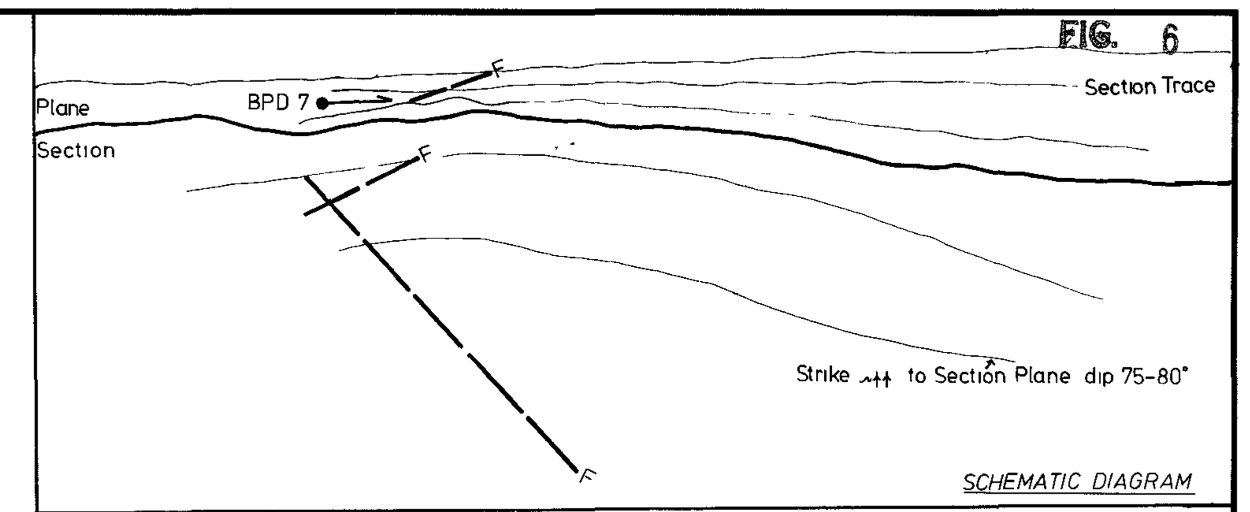


THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT

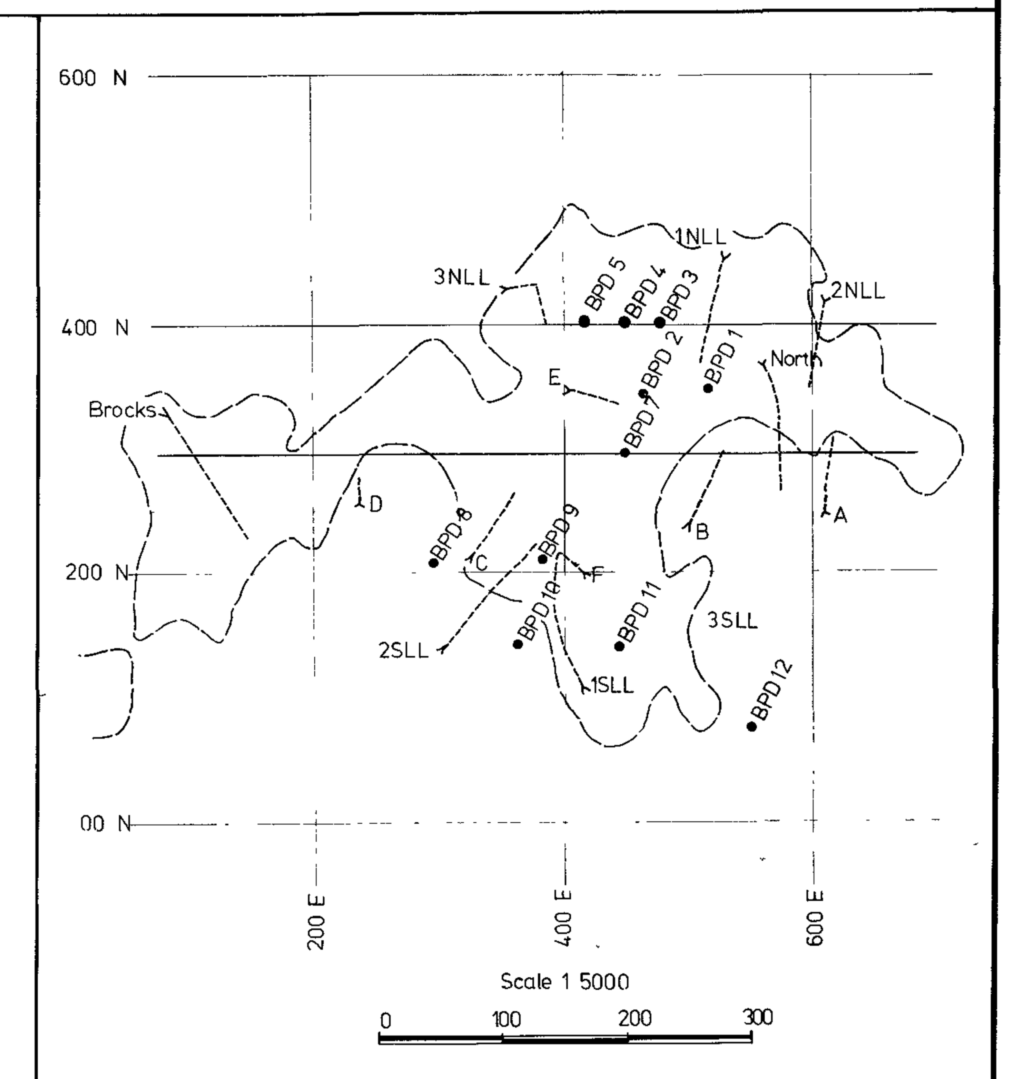
E.L. 10/80 Great Pyramid Prospect N.E. Tasmania
Drillhole Geology and Assays
BPD 1 2a, 2b, 3, 4, 5
350 and 400 N. Lines

Drawn: D A S	Date: 27 8 81	Centre: Hobart
Traced: Hilary	Project No. T630	Drawing No. A1-10/80-42
Checked		

FIG. 6



SCHEMATIC DIAGRAM

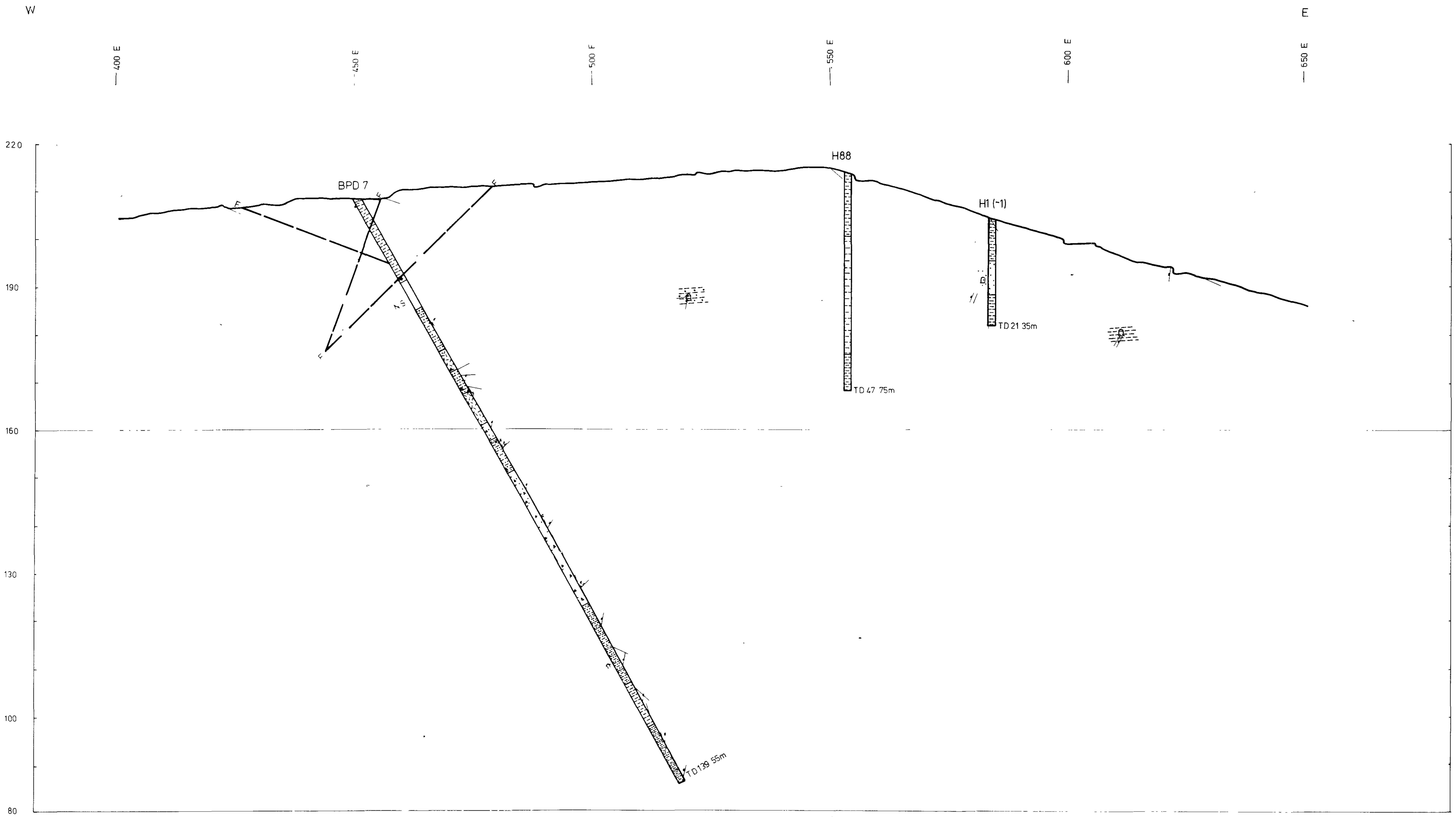


●BPD Diamond Drillhole collar 1980-81

1000 ppm Sn in soil contour

Adit

LOCATION MAP



- Quartzite
- Quartzite-shale
- Quartzite-sandstone-shale
- Sandstone
- Sandstone-shale
- Shale
- Quartzite-breccia
- Diorite
- Breccia

- F Fault
- ? Fault inferred
- Bedding dip
- Joint dip - mineralized
- Joint dip - barren
- Facing
- c Carbonate
- chl Chlorite
- b Black quartz
- Breccia

801103

5 cm

Scale 1 500

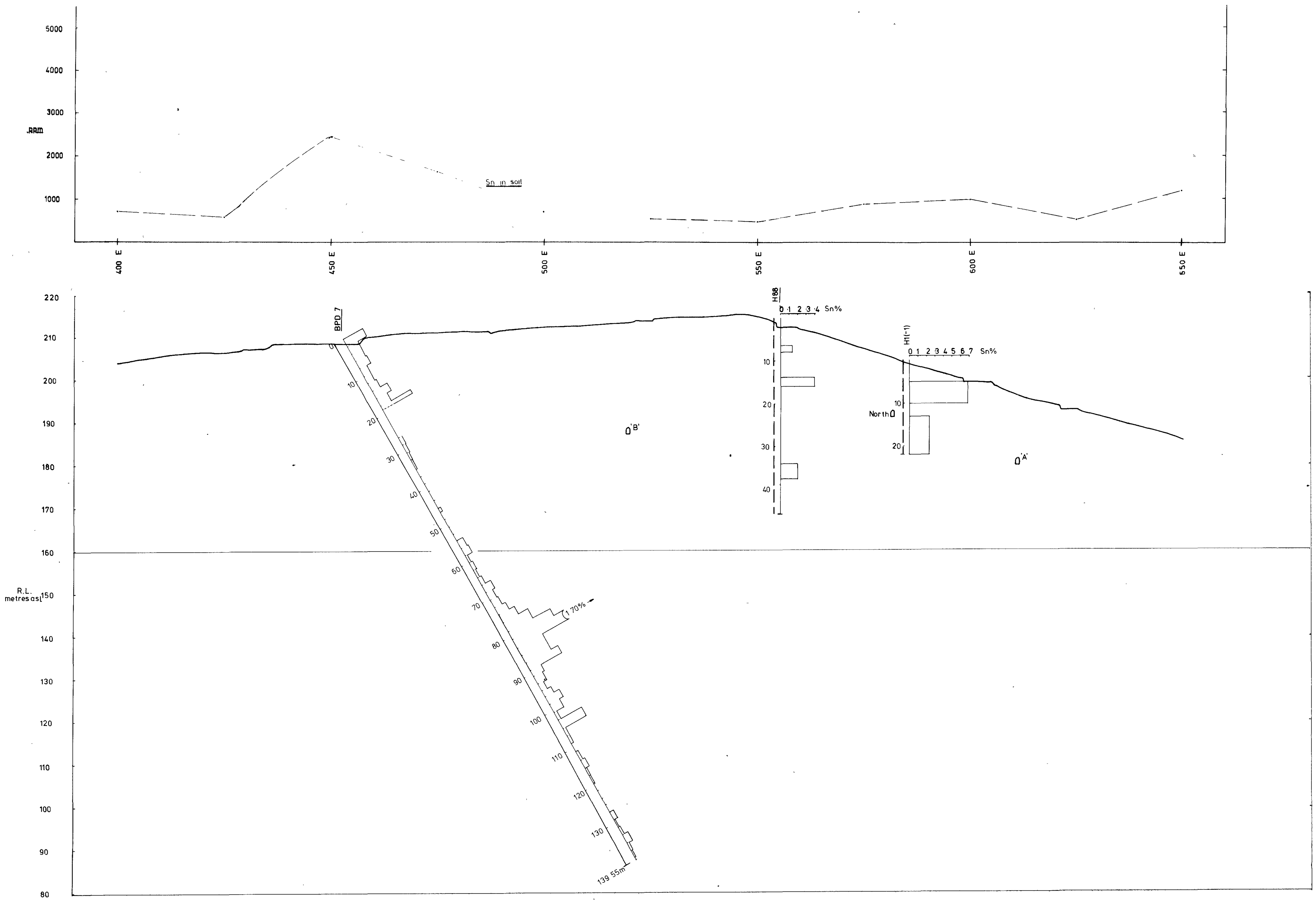
0 10 20 30 40 50

THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT

E.L.10/80 GREAT PYRAMID PROSPECT, TASMANIA
300 N LINE GEOLOGICAL SECTION
THROUGH DRILLHOLE BPD 7

Revisions			
Drawn D.A.S.	Date 4 9 81	Centre Hobart	
Traced Hilary	Project No T 630	Drawing No A1-10/80-45	
Checked			

FIG. 7



801104

5 cm

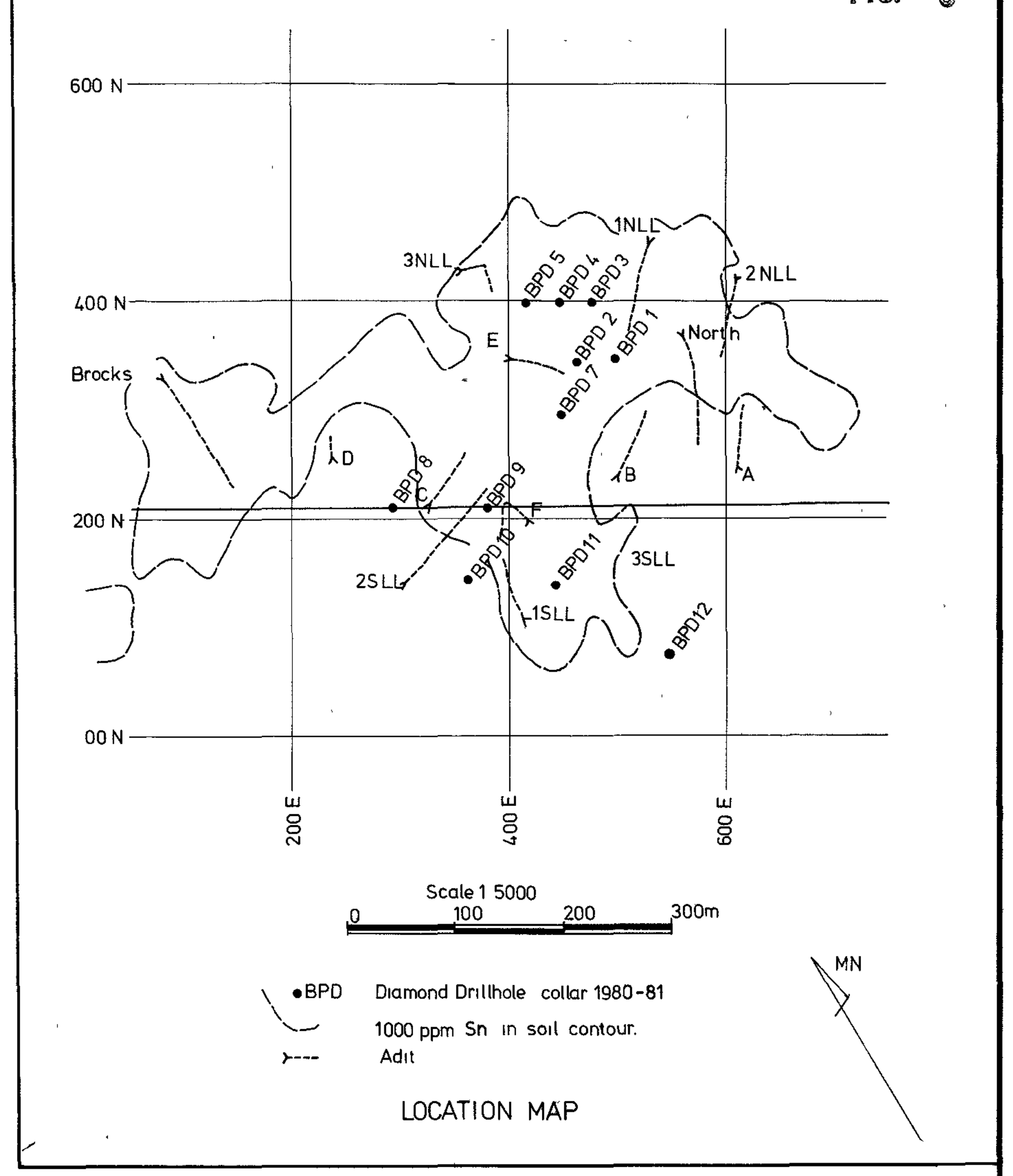
0 10 20 30 40 50

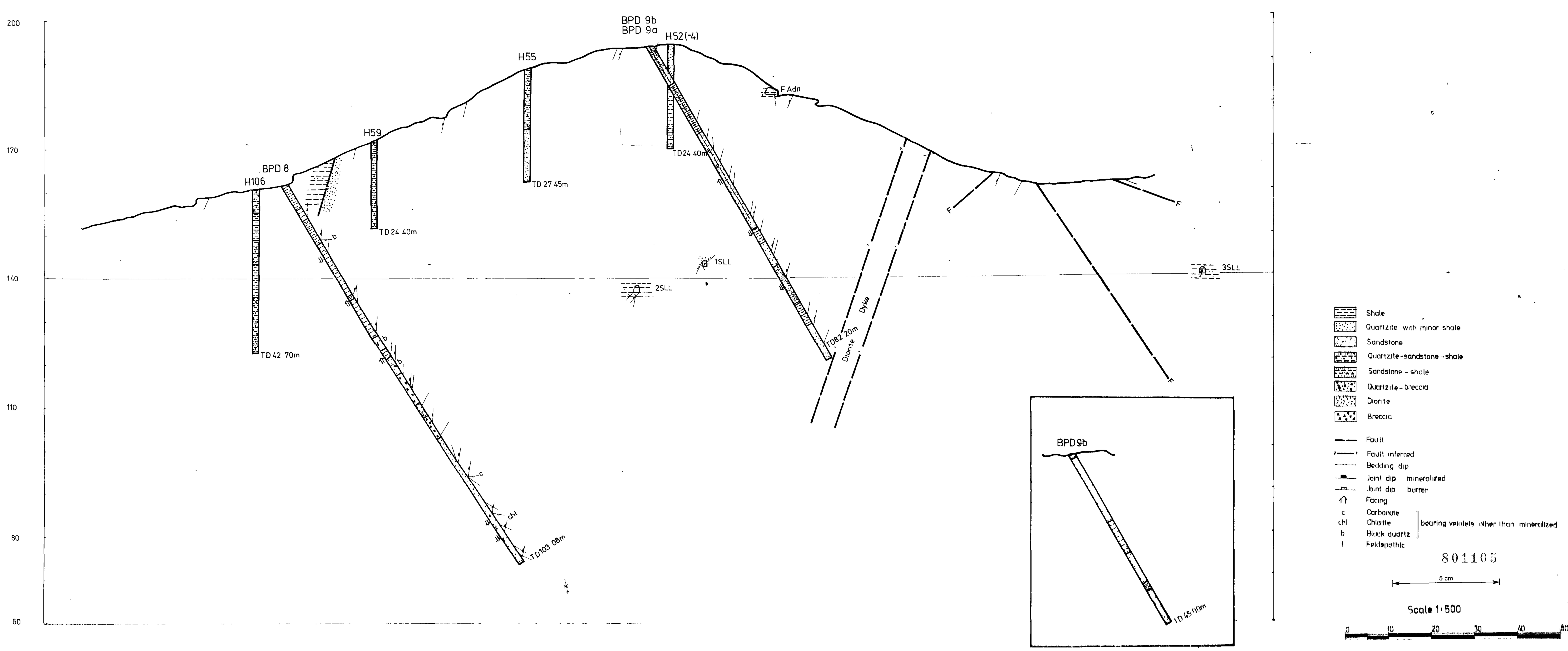
Scale 1:500m

THE BROKEN HILL PROPRIETARY CO. LTD. EXPLORATION DEPARTMENT		
E.L. 10/80 Great Pyramid Prospect N.E. Tasmania 300 N Line - Assay Section BPD 7 Sn (and Ag where available)		
Drawn: DAS	Date 2 9 81	Centre: Hobart
Traced: Hilary + DAS	Project No: T 630	Drawing No: A1-10/80-44
Checked		

Revisions:

FIG. 8





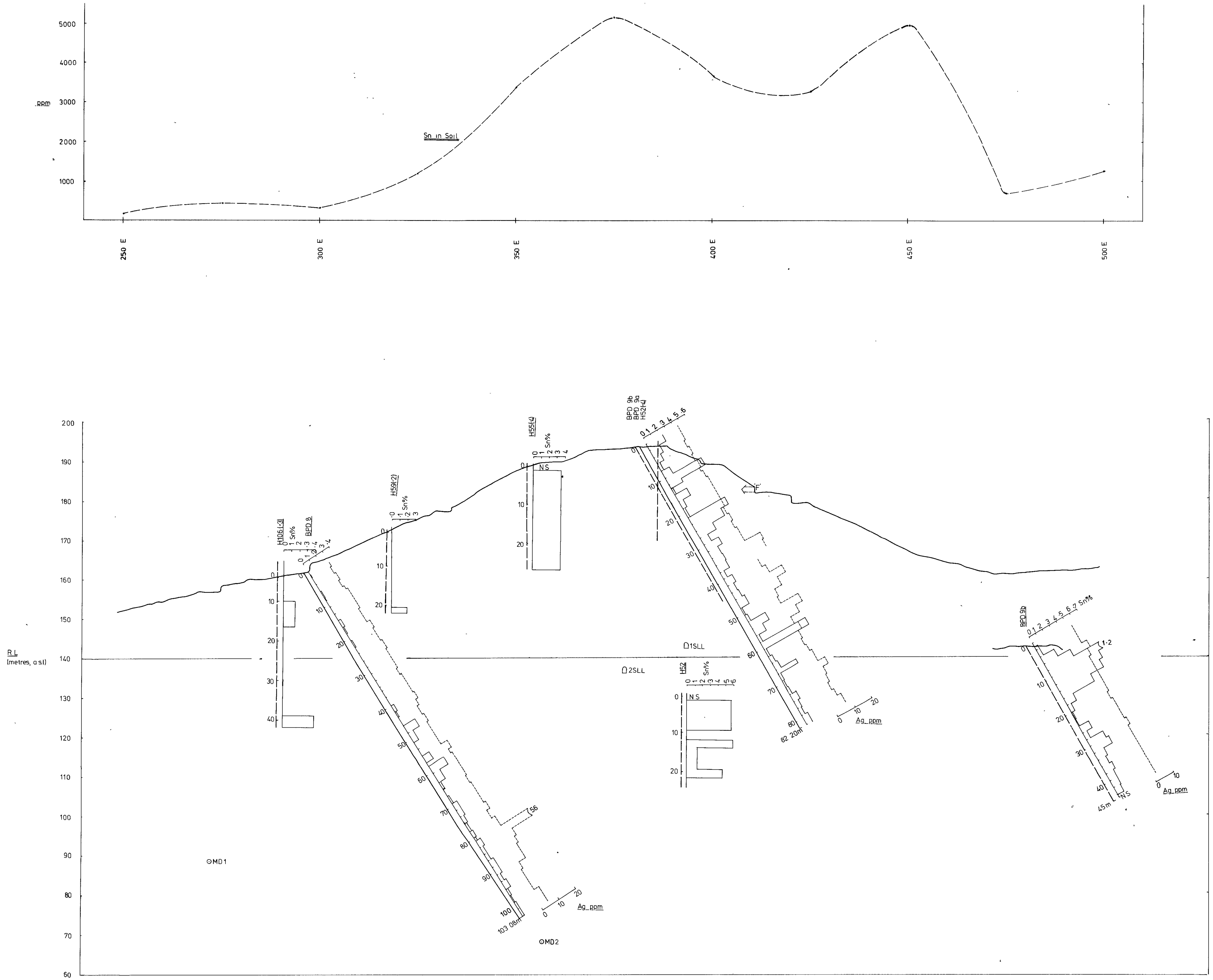
801105

THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT

EL10/80 GREAT PYRAMID PROSPECT - TASMANIA
215 N LINE GEOLOGICAL SECTION
THROUGH DRILLHOLES BPD 8, 9a, 9b.

Revisions:			
	Drawn: D.A.S.	Date: 9·9·81	Centre: Hobart
	Traced: Hilary	Project Nº 1 630	Drawing Nº. A1-10/80-47
	Checked:		

FIG. 9



801106

5 cm

Scale 1: 500

THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT

E.L 10/80 Great Pyramid Prospect N.E Tasmania
215 N Line Assay Section BPD 8, 9a, 9b.
Sn (and Ag where available)

Drawn: D.A.S	Date: 25.8.81	Centre: Hobart
Traced: Hilary	Project No. T 630	Drawing No. A1-10/80-46
Checked:		

Revisions:

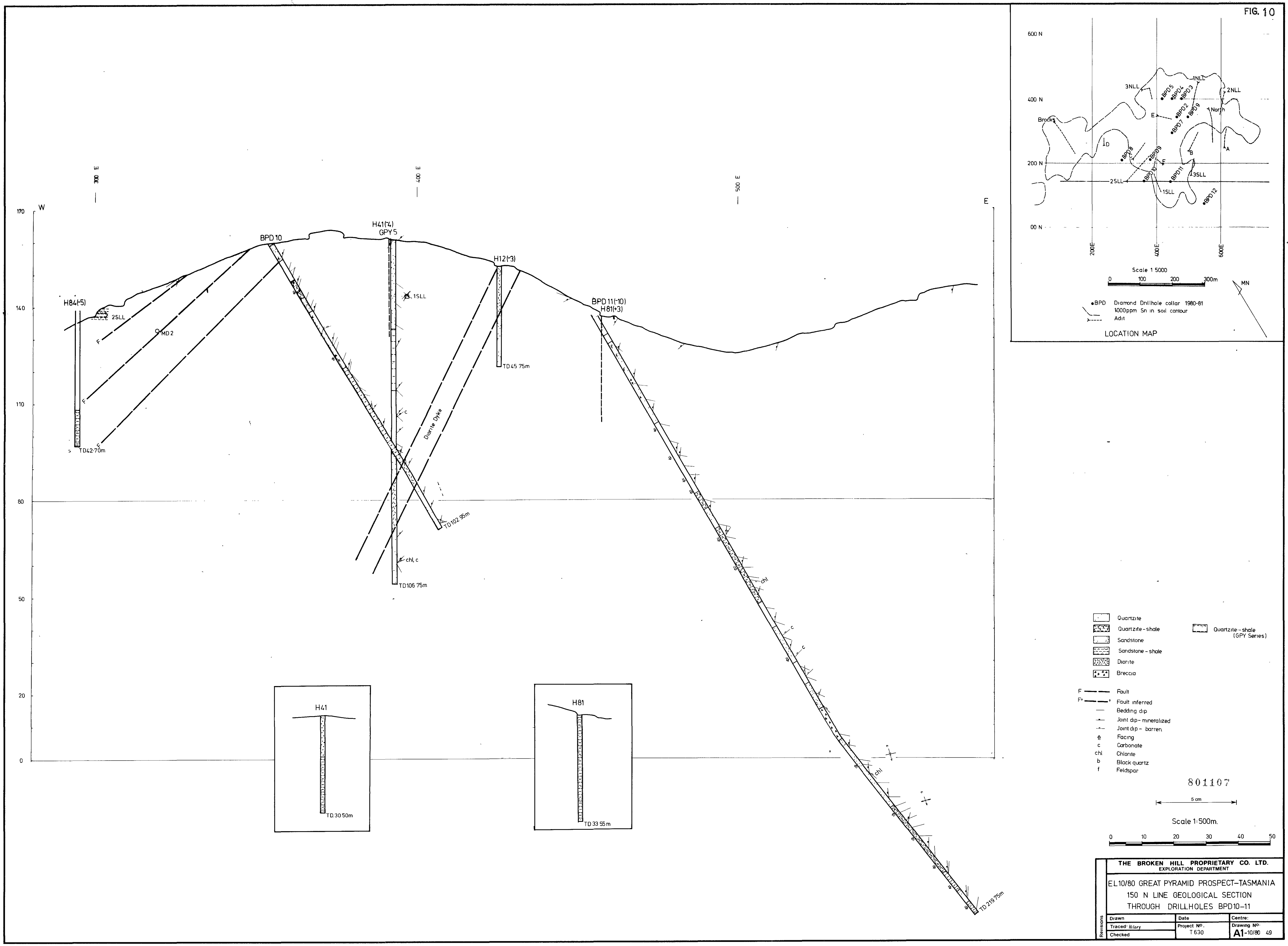
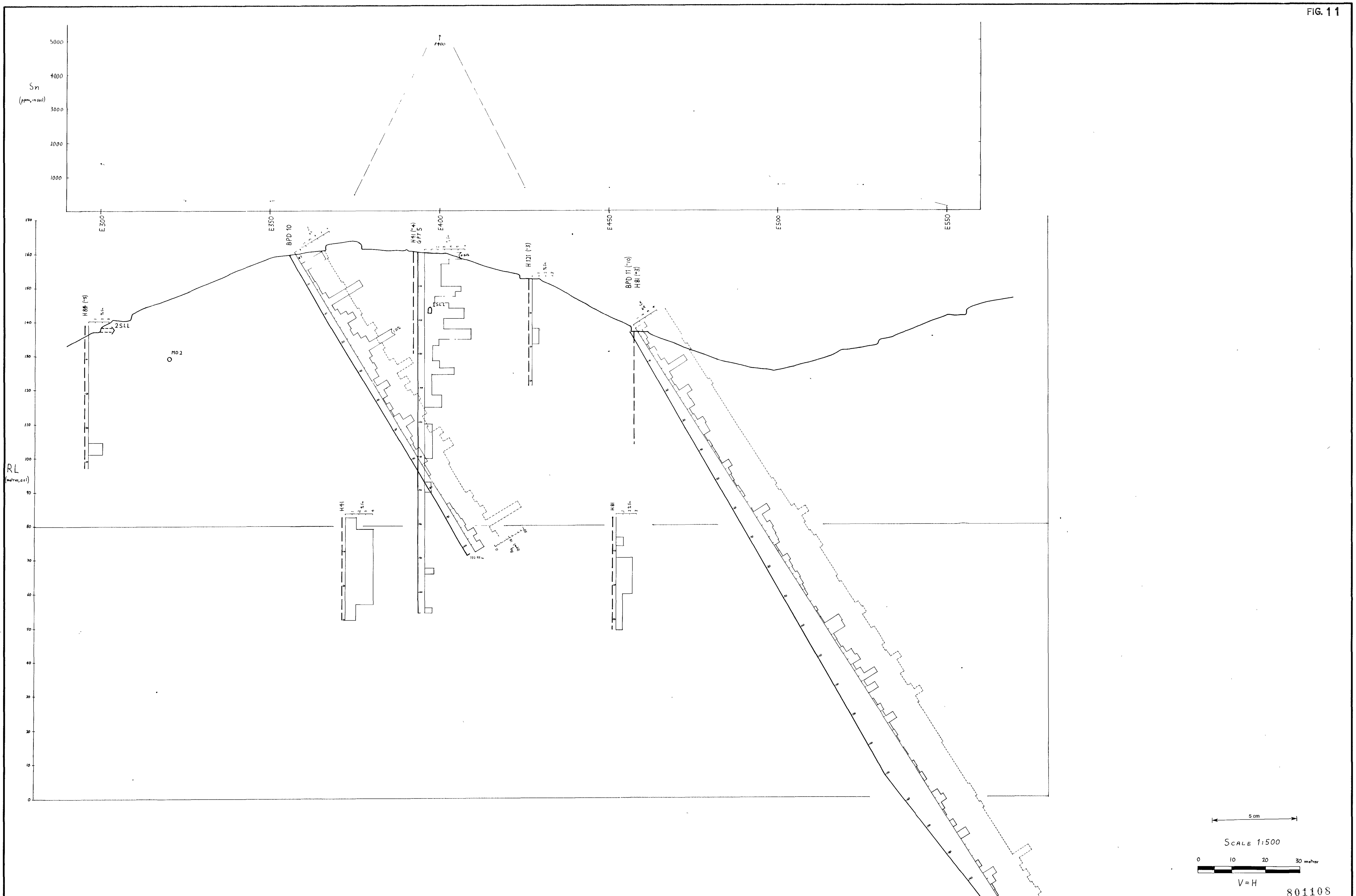


FIG. 10
W
E
300 E
400 E
500 E
170
140
110
80
50
20
0
BPD 10
H41(-4)
GPY 5
H12(-3)
BPD 11(-10)
H81(+3)
H84(-5)
2SLL
MD 2
1SLL
Diorite Dyke
chl, c
chl
TD42·70m
TD45 75m
TD102 95m
TD106 75m
TD219 75m
H41
TD 30 50m
H81
TD 33 55m
600 N
400 N
200 N
00 N
200E
400E
600E
3NLL
1NLL
2NLL
BPD5
BPD4
BPD3
BPD2
BPD9
BPD7
BPD8
BPD10
BPD11
BPD12
North
Brocks
2SLL
1SLL
3SLL
MN
Scale 1 5000
0
100
200
300m
•BPD Diamond Drillhole collar 1980-81
1000ppm Sn in soil contour
Adit
LOCATION MAP
Quartzite
Quartzite-shale
Sandstone
Sandstone-shale
Diorite
Breccia
Quartzite-shale (GPY Series)
Fault
Fault inferred
Bedding dip
Joint dip-mineralized
Joint dip-barren
Facing
c Carbonate
chl Chlorite
b Black quartz
f Feldspar
801107
5 cm
Scale 1:500m.
0
10
20
30
40
50
THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT
EL10/80 GREAT PYRAMID PROSPECT–TASMANIA
150 N LINE GEOLOGICAL SECTION
THROUGH DRILLHOLES BPD10–11
Revisions
Drawn
Traced
Checked
Date
Project No.
T 630
Centre:
Drawing No.
A1-10/80 49



THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT

E.L.10/80 Great Pyramid Prospect N.E. Tasmania.

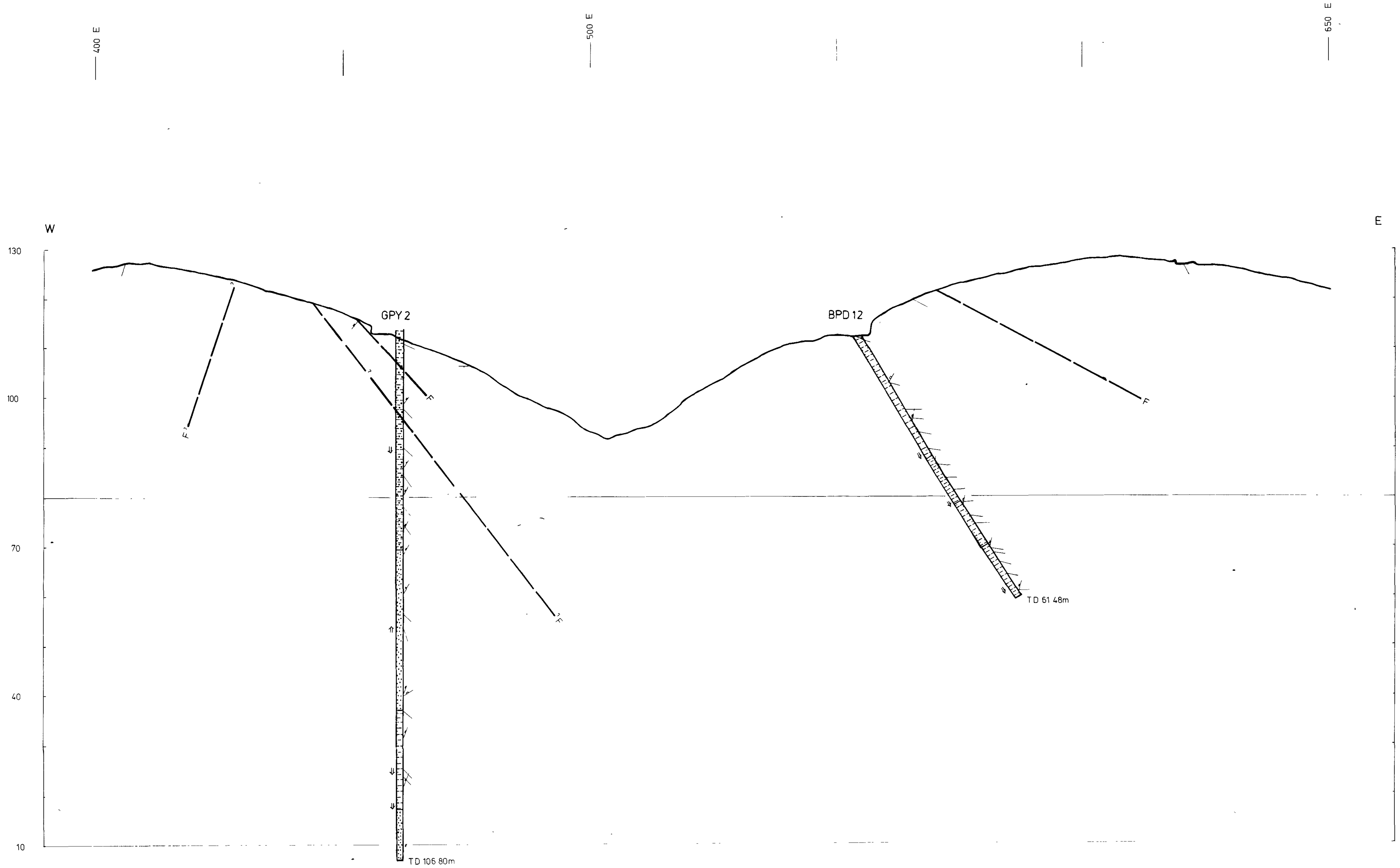
150 N Line Assay Section BPD 10 and 11

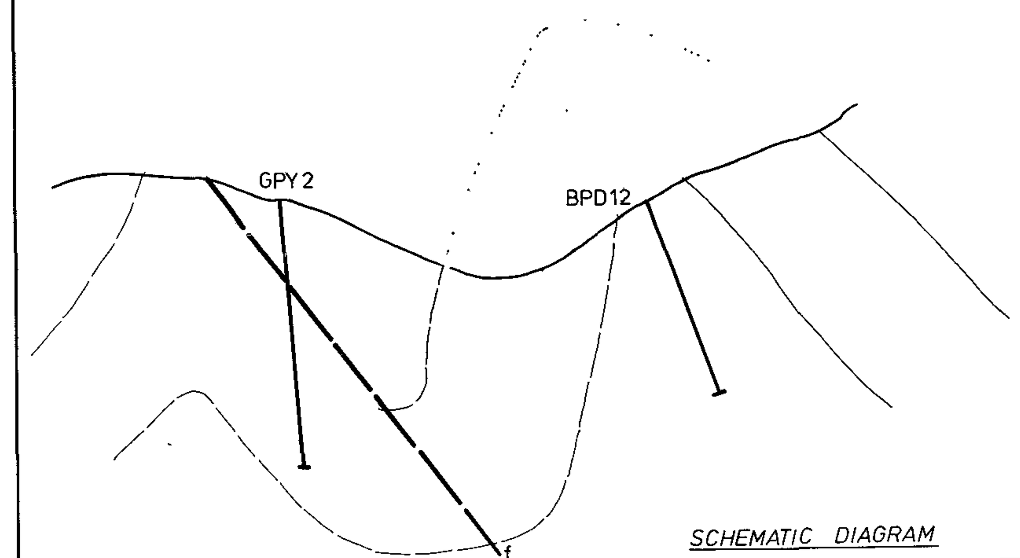
Sn and Ag where available

Drawn. D A S	Date July 81	Centre: Scamander
Traced: D A Steele	Project No. T 630	Drawing No: A1-10/80-48
Checked:		

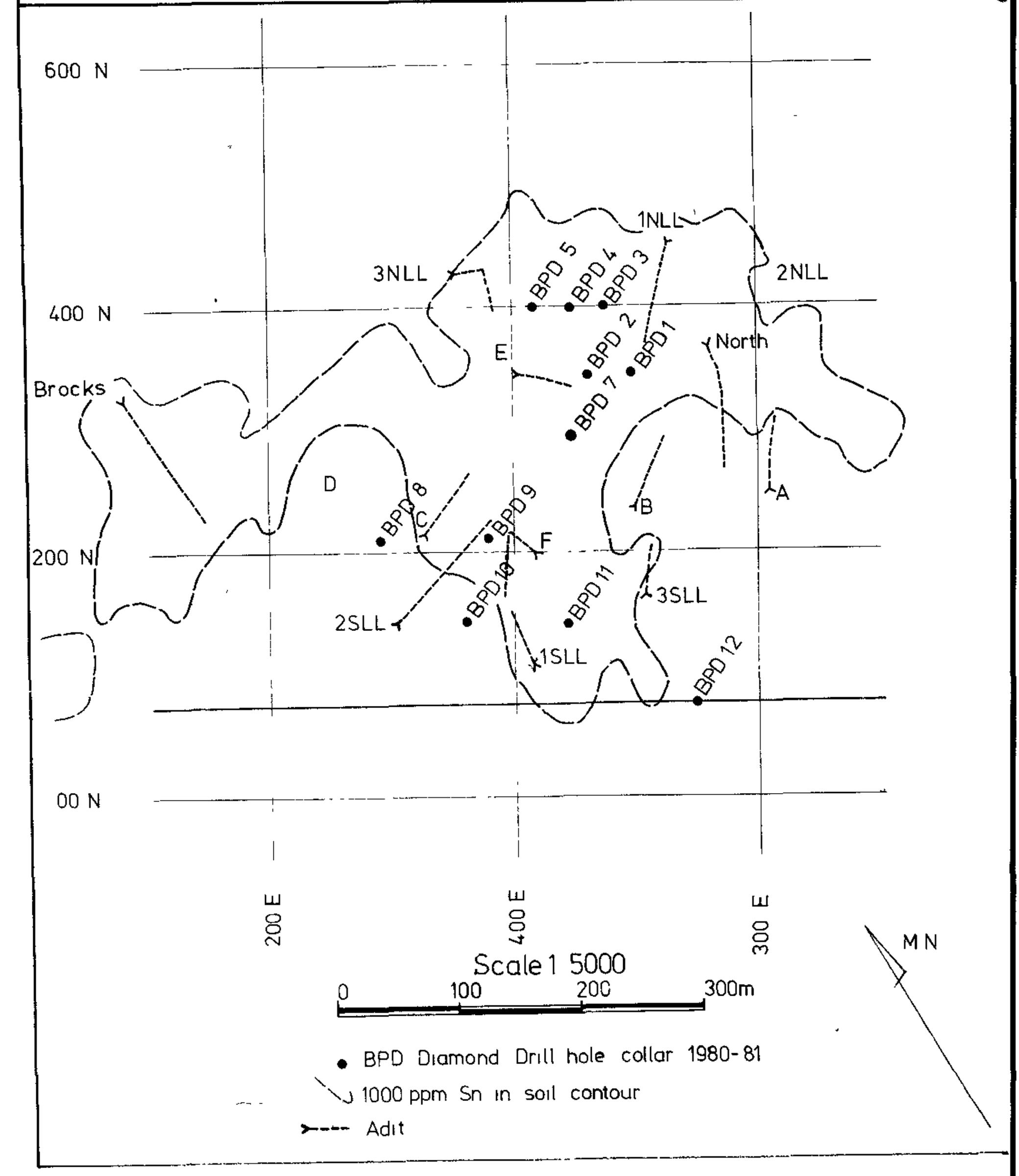
Revisions.

FIG. 12





SCHEMATIC DIAGRAM



- Quartzite
- Quartzite-shale
- Quartzite-sandstone-shale
- Sandstone
- Sandstone-shale
- Shale
- Quartzite-breccia
- Diorite
- Breccia
- Fault
- Fault inferred
- Bedding dip
- Joint dip - mineralized
- Joint dip - barren
- Facing
- c Carbonate
- chl Chlorite
- b Black quartz
- Breccia
- Strike

801109

5 cm

Scale 1:500

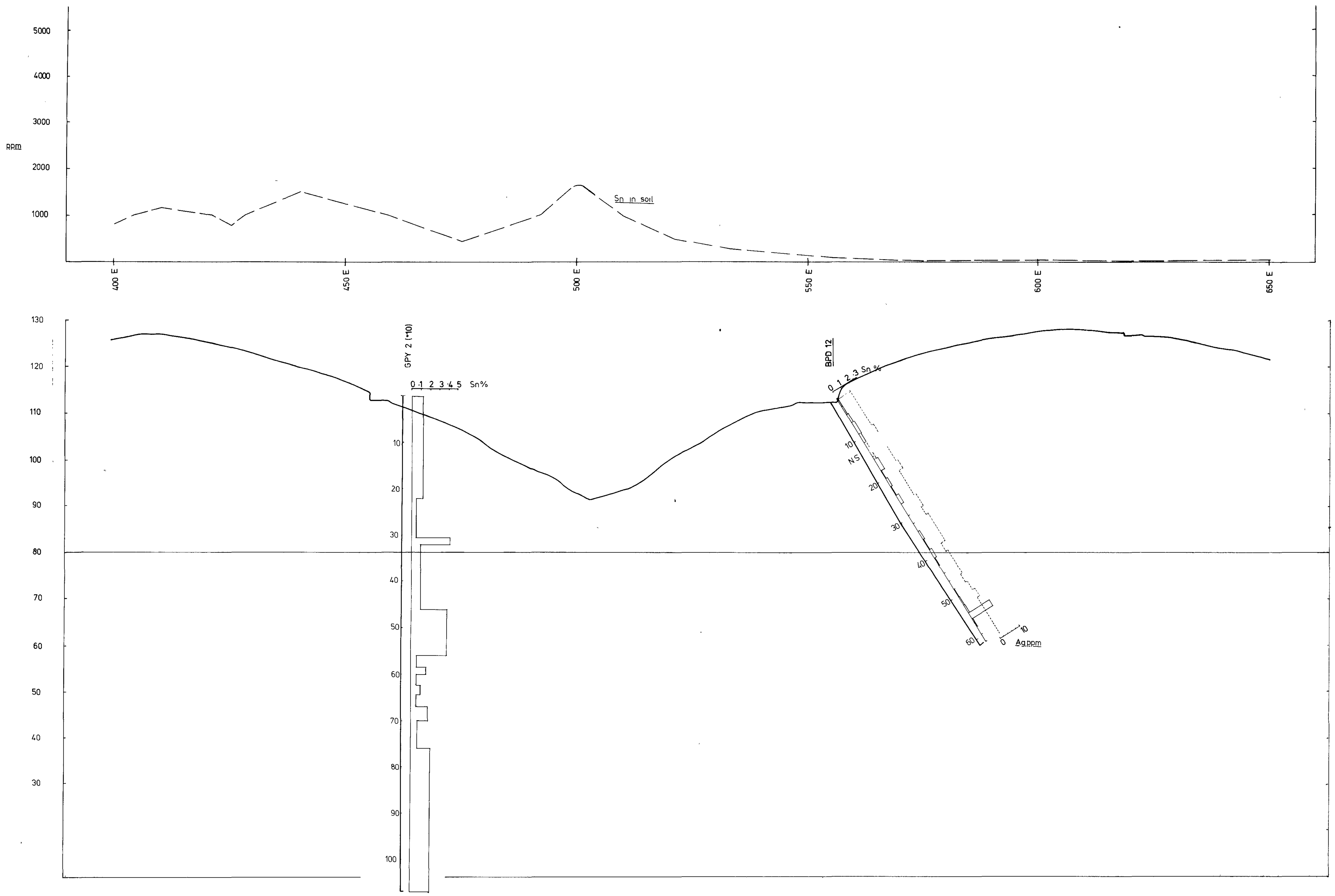
0 10 20 30 40 50m

THE BROKEN HILL PROPRIETARY CO. LTD.
EXPLORATION DEPARTMENT

E.L10/80 GREAT PYRAMID PROSPECT – TASMANIA
80 N LINE GEOLOGICAL SECTION
THROUGH DRILLHOLES: GPY2 – BPD 12

Revisions			
	Drawn DAS	Date 9 8 81	Centre Hobart
	Traced Hilary	Project No T630	Drawing No A1-10/80-51
	Checked		

FIG. 13



801110

5 cm

0 10 20 30 40 50
Scale 1:500m

THE BROKEN HILL PROPRIETARY CO. LTD. EXPLORATION DEPARTMENT		
EL 10/80 Great Pyramid Prospect N.E. Tasmania 080 N Line Assay Section BPD 12 Sn (and Ag where available)		
Drawn DAS	Date 9 9 81	Centre Hobart
Traced DAS + Hilary	Project No T630	Drawing No. A1-10/80-50
Checked		

Revisions

APPENDIX I

DRILL HOLE LOGS

BROKEN HILL PROPRIETARY CO. LTD.

Exploration Department

DRILL HOLE LOG HEADER SHEET

Project:	EL 10/80 Great Pyramid	**Hole No.:**	B.P.D.1
Prospect:	Great Pyramid	**Total Depth:**	101.2m
Local Grid co-ords:	498mE 347mN	**Bearing:**	116°
AMG co-ords:		**Depression:**	69° (0m); 69° (50m); 67.5° (100m)
Drilling Co.:	Walker Drilling	**R.L. Collar:**	215m
Drill Type:	Jacro DB 1000/2		
Core Size:	HQ to 32.9m; HQ3 to 101.2m	**Commenced:**	17/10/80
Driller:	A Walker, I McCallum	**Completed:**	3/11/80
		Logged by:	D A Steele
		Sampled by:	M & P Good

Technical Data:

Overburden:	Loose, broken, severely oxidized quartzite from 0~3m; percussion hammer used to 10.50m; rock roller 10.50 to 10.60m.
Casing:	HW size to 10.5m; removed from hole upon completion of drilling.
Water Return:	Generally poor with complete loss of circulation very common.
Cementation:	At 64.55, 94.00m.
Additives:	Super Gel, Hydropol, Ro-Lube, Mica.
Oxidation:	Approximate depth of total oxidation 63m. Base of oxidation zone not penetrated.
Other:	Downhole survey by acid etch.

THE BROKEN HILL PROPRIETARY CO. LTD

Project EL 10/80 GREAT PYRAMID

Drillhole Nº BPD 1 — 801113

Drill run

METRES	METRES RECOV.	% RECOV.	RQD
PERCUSSION HAMMER 0-9 metres			
1.10	1.02	92.73	85
1.00	1.03	103.00	87
3.00	3.00	100.00	74
2.70	2.55	94.44	53
1.95	2.15	110.26	63
1.35	0.94	69.93	48
3.00	2.85	95.00	38
2.20	1.62	73.64	22
0.80	0.78	97.50	15
3.00	2.86	95.33	54
1.70	1.70	100.00	64
0.50	0.44	88.00	29
1.3	1.17	90.00	21
0.2	0.2	100.00	0
0.5	0.44	88.00	27
1.5	1.48	98.66	42
1.5	1.41	94.00	84
1.5	1.52	101.33	80
1.6	1.48	92.50	44
1.5	1.50	100.00	90
1.5	1.50	100.00	79
1.5	1.39	92.67	81
1.5	1.48	98.67	43
1.5	1.42	94.67	37
1.5	1.47	98.00	91

Description

DESCRIPTION	ANGLE BEDDING TO LCA	SAMPLES
NOT SAMPLED - Mainly overburden and loose fill (drill platform!)		
Percussion chips of qt with minor sh. lim stained fractures, <1mm.		BJ001
Red soil and clayey chips (balls), probably very altered diorite		BJ002
Grey clayey balls - possibly altered diorite		BJ003
NOT CORED; Rock Roller ~ 9 - 10.6m.		N.S.
Medium-fine grained diorite : various stages of alteration and colour (dark green to fawn) dependent on fracture intensity. Fractures commonly possess Fe alteration halo with lim fracture filling; cross-network of fractures generally ⊥. Local clay bands (faults?) 2-4cm wide.		BJ004, BJ005, BJ006
Breccia zone, 20cm, red-br. clay c̄ qt fragments. Ox. Fractured qtz abundant fractures and veinlets, low R.Q.D.		BJ007
Grey sh, finely laminated in places, minor fracturing although severely Fe stained where Pf ↑. Locally brecciated at 18.5m. Flames and graded bedding ⇑. Very minor displacement along some fractures.	35	BJ008, BJ009
Fractured qt with minor, 2-3cm, sh beds. Local grading implies ⇑. So normal to dominant fracturing. Very local development of silicification halos around veinlets - qt locally grades to sst.	30	BJ010, BJ011
Sh/qt interbeds, up to 20-30cm thick, with local grading to slst + sst. Abundant Fe staining in sh + slst. Fracture density maintained throughout qt and sh. Local ↓ in fracture width in sh. Flames ⇑. Contacts generally poorly preserved in core. (low R.Q.D.)	30	BJ012, BJ013
Qt with local severely silicified sst and rare sh horizons. Qt severely fractured and broken, one major fracture orientation, one minor; usually oblique (100-110°) to each other. Abundant Fe staining in fractures and through most of the sh. Rare fractures at very low angles to L.C.A.	28, 29	BJ014, BJ015, BJ016, BJ017
Sh/slst interbeds, generally thin, 2-5cms, with very low occurrences of sst. Anastomizing fractured veinlets. Minor slumping evident. Brecciation locally.	40	BJ018, BJ019
Severely fractured qt/sst; vuggy veinlets; pink tinge to qt.		BJ020
Interbedded grey sh/slst, severely contacted in places (slumped?) So pinches and swells, discontinuous in places. Minor folding and warping. Very irregular wide veinlets. Minor faulting. Graded beds and casts ⇑. Locally reverse grading. Flames ⇑ at 45.0m	28, 12, 0, 30, 20	BJ021, BJ022
Grey qt + sst, very fractured with local sh beds. Minor brecciation.	30(?)	BJ023
Interbedded and slumped grey-green sh and slst. Pinch and swell very common. Way up?? Flames (?) at 51.0m ⇓.	10, 0, 5	BJ024, BJ025

Sample and mineralisation

NUMBER	FROM	TO	INTVL.	FRACT DENS (per m)	% FRACT MIN'SD	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANGLE TO LCA	% BLK ROCK MIN.	CASSIT	WOLF	QTZ	MUSC	SULPH	CARB	OTHER	WALL ROCK ALTERN.
BJ001	3.0	5.0	2.0														
BJ002	5.0	7.0	2.0														
BJ003	7.0	9.0	2.0														
N.S.	9.0	10.60	1.60														
BJ004	10.6	12.6	2.0	gen'ly low 10-25	<5%	<1-3	1	30° dom c̄ minor 55° rarely 10-15°	<1%	×	×	rare	×	×	×	minor Kaol.	Fe staining
BJ005	12.6	14.6	2.0														
BJ006	14.6	15.7	1.1														
BJ007	15.7	16.6	0.9	104	75	<1-2	1.5	45°	4%	×	×	✓	×	×	×	lim. (after sid, S^{2-})	sc (after apy?)
BJ008	16.6	18.6	2.0	35	55	<1-2 rare 3-4	<1	gen'ly 40 loc. 10-30	1%	×	×	only in large 3mm veinlets	×	×	×	Minor MnO_2 Abundant lim.	Fe staining abundant
BJ009	18.6	19.8	1.2														
BJ010	19.8	21.8	2.0														
BJ011	21.8	23.8	2.0	50-80 locally 80+	80	<1-3	1	40-50	2-3%	×	×	✓	✓	×	cal?	lim. sc	
BJ012	23.8	25.8	2.0	40-50 rarely 70+	50	<1-2	<1-1	45 rarely 10-20	1-2%	✓?	×	✓	×	×	cal?	lim. sc	Fe (sh) staining silcfn. (sst)
BJ013	25.8	27.8	2.0														
BJ014	27.8	29.8	2.0												cal?		
BJ015	29.8	31.8	2.0	(sh) 55	50	<1-3	<1	50	<1%	✓ (tr)	×	✓	✓	×	×	lim.	Fe staining
BJ016	31.8	33.8	2.0	(qt) 95 locally 100+	75	<1-5	1	40-50	4-5%	×	×	✓	×	×	×	lim. after S^{2-} (+sid?)	silcfn. local Fe staining
BJ017	33.8	36.4	2.6														
BJ018	36.4	38.4	2.0	20-100 very irreg.	70-80	<1-5	1-2	dom 45 var. bet 0-60	2%	✓ (tr) in very wide veinlets	×	✓	×	×	×	lim. Kaol. locally	Fe staining abundant
BJ019	38.4	39.6	1.2														
BJ020	39.6	40.9	1.3	110+	80	<1-7	1-2	dom 47 var. 30-70	4-5%	✓	×	✓	×	×	×	lim. goeth? MnO_2	silcfn.
BJ021	40.9	42.9	2.0	gen'ly <35 locally 60+	70	<1-10 rare!	1	dom 40 various 10-80	4-5%	×	×	✓	×	×	×	lim. kaol. sc	Fe staining
BJ022	42.9	45.1	2.2														
BJ023	45.1	47.1	2.0	70 locally 100+	90	<1-6	1-2	30° locally 20-50	5%	×	×	✓	×	×	×	lim. sc remnant sid?	local silcfn evident
BJ024	47.1	49.1	2.0														
BJ025	49.1	51.1	2.0	60-80	60-70	<1-5	1	50	2-3%	✓?	×	✓	✓	×	×	lim. sc chl(?)	abundant Fe staining

ASSAYS: Sn (%) | W (%) — no entries.

Sludge

INT	# (BJ)
NOT SAMPLED	
9.7 to 12.7	BJ052
WATER RETURN	
NO	
21.7 to 24.7	BJ053
24.7 to 27.7	BJ054
27.7 to 30.7	BJ055
30.7 to 33.7	BJ056
33.7 to 36.7	BJ057
36.7 to 39.7	BJ058
39.7 to 42.7	BJ059
42.7 to 45.0	BJ060
NO WATER RETURN	BJ061*

Remarks

- Casing down to 10.6m.
- * BJ061 - Sludge is a composite "blank" of drill "additives" - mud, mica, lubricants etc.
- 2° lime green soft mal in irreg. veinlets in deformed dol.
- Fracturing normal to So. Qtz and Fe staining very common in and around large fracs. especially at 19.4m.
- Many veinlets vuggy probably due to removal of S^{2-} and/or siderite. Locally, cubic pits preserved.
- Fe staining in sh commonly extends along So fissility ⊥ to fractures.
- Minor displacement along some cs (?) bearing veinlets.
- Chl. veinlets? 30° L.C.A.
- Abundant very irregular veining. Widespread local disruption of bedding in general very chaotic!
- Larger veinlets vuggy. These cross cut finer lim. filled veinlets.
- Local fracturing along bedding plane. Local Fe staining of rare sst horizons.

THE BROKEN HILL PROPRIETARY CO LTD

Project EL 10/60 GREAT PYRAMID

Drillhole Nº B.P.D. 1 801114

Sheet 2 of 3

Drill Run

METRES	METRES RECOV.	% RECOV.	RQD
50			
1·5	1·43	95·33	61
1·5	1·50	100·00	79
0·65	0·55	84·62	18
1·5	1·43	95·33	74
1·5	1·48	98·67	44
1·5	1·48	98·67	43
1·5	1·49	99·33	70
60			
1·5	1·51	100·67	67
1·0	0·92	92·00	35
1·5	1·49	99·33	67
0·9	0·88	97·78	60
1·5	1·43	95·33	80
0·3	0·29	96·67	52
0·25	0·32	[illegible]	56
1·5	1·50	100·00	71
1·5	1·47	98·00	61
70 0·7	0·80	114·29	81
0·8	0·77	96·25	92
0·45	0·37	82·22	32
1·10	1·01	91·82	66
1·15	1·08	93·91	20
1·2	1·05	87·50	41
1·5	1·51	100·67	74
1·5	1·54	102·67	73
1·5	1·49	99·33	71
80			
1·5	1·47	98·00	87
1·5	1·52	101·33	59
1·5	1·42	94·67	24
1·5	1·56	104·00	51
1·5	1·49	99·33	53
1·5	1·47	98·00	38
1·5	1·52	101·33	43
90			
1·2	1·01	84·17	77
0·4	0·42	105·00	64
1·0	0·98	98·00	31
1·4	1·42	105·00	63
1·0	1·0	100·00	61
0·55	0·55	100·00	42
[illegible]	[illegible]	[illegible]	[illegible]
0·1	0·1	[illegible]	0
1·3	1·34	103·08	69
1·2	1·23	102·50	72
1·3	1·32	101·54	90
100			

Description

Minor fold at 49·0m. So at very low ∠s to L.C.A. Reverse grading (?) very common between 51·5 – 53·0m. Possibly ⇓? Local diffraction of fractures at sh/slst interface.

Severely slumped interbedded grey-green sh + qt + sst. Local brecciation with qtz-chl (?) infilling common. Abundant black qtz + lim. So (?) difficult to determine ~ very low ∠ to L.C.A. ⇑ very questionable on "near vertical" So. Rare anastomose black qtz-kaol. (?) veinlets.

Fractured qt with interbedded, 20-60 cm, sh and local occurrences of silicified sst. Very low R.Q.D. in sh horizons. Local brecciation with incipient Fe staining and silicification. Thick 0·5 – 1·5 cm qtz – S^{2-} veinlets common. Flame structures ⇑. Grey shale commonly grades into grey-white slst. Local silicification of slst adjacent to fractures in lower half of interval. Breccia zones (2-5cms) locally gossanous. 2 dominant sets of fractures (barren). Fractures disrupted and irregular in and near breccia zones.

Minor fracturing parallel to So.

Interbedded sh/slst – finely laminated. Fe stained adjacent to fractures. Graded bedding and flames ⇑. Top So surfaces very irregular in places.

Silicified sst/sh. Sst local brecciated and cut by numerous irregular black qtz veinlets. Grey sh finely laminated, occasionally brown – severely Fe stained. Fracturing erratic in orientation. Local grading ⇑. Rare ptygmatic black qtz vnlts.

Interbedded sst/sh comprising 50-100cm beds with local minor interbeds of slst. Graded bedding, rare flames and load casts indicate ⇑. Sh usually grey to dark grey, occasionally red-brown (Fe staining). Sst usually white-grey, also brown; ½ to 1 cm silicification haloes common. Minor brecciation with qtz infilling. Ff generally low, with irregular anastomose fractures common. Rare qtz-sid tension gashes post date mineralized fractures. Some veinlets truncated at sst/sh contact (movement along contact ?)

Soft "tuffaceous" (?) unit; 10 cms, at 78·6m, graded ⇑. Most fracturing at high ∠s to So. Very local and fine fractures sub ↑↑ to So – only in sh (bedding fissility). Rare irregular lim filled veinlets and fractures ↑↑ to L.C.A.

Interbedded sh/slst rarely sst. Locally slumped and micro-fractured. Cut by numerous though irregular qtz-chl-kaol veinlets; often sub ↑↑ to So. Flames ⇑. Minor graded bedding ⇑. Kaol veinlets especially ↑↑ to So. Large irreg. qtz-py veinlets at 90·05m.

Qt/sst, grey-white, cut by abundant vuggy qtz-chl-sid veinlets. Slumping evident where sst grades to slst. Flames ⇑. Fracturing in slst irregular compare qt, also less abundant.

Fractured sst with rare interbeds of sh. Local Fe staining. Minor slumping of sh horizons.

Interbedded sst/slst, slumped at top of interval, grading into silicified sst/qt at bottom of interval. Flames (especially at 98·4m) ⇑. Wide veinlets in sst, thin and are refracted at sst/slst boundary.

Angle bedding to LCA (in depth order): 32, 12, 13, 0, 5, 31, 20, 35, 40, 32, 35, 47, 36, 37, 40, 40, 47, 55, 35

Sample and Mineralisation

NUMBER	FROM	TO	INTVL.	FRACT DENST (per m)	% FRACT MIN'SD	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANG. TO LCA	% BLK ROCK MIN	CASSIT	WOLF.	QTZ	MUSC	SULPH	CARB.	OTHER	WALL ROCK ALTERN.
BJ026	51·1	53·1	2·0														
BJ027	53·1	55·1	2·0	60-70 locally 90+	70	<1-3	1-2	gen'ly 40 rarely 60-70	2-4%	✓ (tr)	×	✓	✓	×	×	lim. sc MnO_2(?) minor kaol.	local Fe staining at sh/fracture contacts
BJ028	55·1	57·1	2·0														
BJ029	57·1	58·65	1·55														
BJ030	58·65	60·65	2·0														
BJ031	60·65	62·65	2·0	83	80	<1-9	1-2	29	1%	×	×	✓	✓	py	×	lim local kaol.	silcfn Fe staining
BJ032	62·65	64·65	2·0														
BJ033	64·65	66·65	2·0	77	70	<1-17	2-3	30	2%	✓ (tr)	×	✓	✓	py, aspy	×	lim sc	silcfn Fe staining
BJ034	66·65	68·65	2·0														
BJ035	68·65	70·65	2·0	90	60	<1-4	1	37	1-2%	✓ (tr)	×	✓	×	×	×	Abdt. lim.	silcfn Fe staining
BJ036	70·65	72·5	1·85	gen'ly low 20-50	60	<1-2	<1	35, locally steeper	<1%	×	×	✓ black	×	×	×	kaol lim.	Fe staining
BJ037	72·5	74·5	2·0														
BJ038	74·5	76·0	1·5	70	40	<1-1	<1	45 but varies greatly	1%	×	×	✓ black	×	×	sid? cal?	lim. sc	silcfn Fe staining
BJ039	76·0	78·0	2·0														
BJ040	78·0	79·0	1·0														
BJ041	79·0	81·0	2·0	80	75	<1-3	1	35	1-2	×	×	✓	×	×	sid	kaol. chl MnO_2	silcfn Fe staining
BJ042	81·0	83·0	2·0														
BJ043	83·0	85·0	2·0	67	70	<1-3	1	30-35	<1%	×	×	✓	×	py (tr)	sid? cal?	lim. chl. kaol.	silcfn Fe staining
BJ044	85·0	87·0	2·0														
BJ045	87·0	89·6	2·6														
BJ046	89·6	91·6	2·0	40-50	60	<1-5	1	42	1%	×	×	✓	✓	py aspy		chl. kaol.	rare silcfn – local Fe staining
BJ047	91·6	93·6	2·0														
BJ048	93·6	95·6	2·0	60	80	<1-8	2	35-45	5%	×	×	✓	×	py	sid(?) cal?	chl. kaol. (in slst)	Fe (slst) staining silcfn (sst)
BJ049	95·6	97·6	2·0	40-50 locally 70+	75	<1-3	1	28	1%	×	×	✓	×	py (tr)	×	lim. rare chl. Fl.	silcfn Fe staining
BJ050	97·6	99·6	2·0	60 (qt)	75	<1-4	1	33	1%	×	×	✓	×	py	✓	lim. chl. sc. local kaol.	Fe staining esp. in slst & sst

ASSAYS: Sn (%) | W (%) — * (against BJ049, W column)

SLUDGE: RETURN (to c. 70·65 m); WATER; NO (c. 70·65–100 m)

Remarks

Depth interval (m)	Remarks
50–53·1	Large veinlets very vuggy
53·1–60·65	Rare qtz (black) veinlets, irregular, along So surfaces. So generally at high ∠ to fracturing.
60·65–70·65	Mu selvedges on wider qtz veinlets, especially evident in sh/slst horizons. Sh locally severely Fe stained.
60·65–70·65	2° Fe ? mineralization in qtz veinlets – black, very soft, large "crystals" – jarosite ?
70·65–81·0	Fractures somewhat irregular in sh c.f qt
81·0–89·6	Black fracture filling common in sh/slst beds.
89·6–100	Mineralized veinlets post date thinner irregular qtz veinlets (as at 93·25m)
89·6–100	* Fluorescent soft white crystals in veinlets – pink/purple (short λ) often in vuggy areas
89·6–100	Silicification halos 0·5-2 cm wide.
89·6–100	2° pale green mineralization in one veinlet at 99·1m.

Project **EL 10/80 GREAT PYRAMID**

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Drillhole Nº B.P.D. 1 801115
Sheet 3 of 3

METRES -100	DRILL RUN METRES RECOV.	DRILL RUN % RECOV	RQD	DESCRIPTION	VISUAL LOG	ANGLE BEDDING TO LCA	SAMPLE NUMBER	SAMPLE FROM	SAMPLE TO	SAMPLE INTVL.	MINERALISATION FRACT. DENS. (per m)	% FRACT. MIN'SD	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANG. TO LCA	% BLK ROCK MIN	VEIN MINERALOGY CASSIT.	WOLF.	QTZ	MUSC.	SULPH.	CARB.	OTHER	WALL ROCK ALTERN.	ASSAYS Sn (%)	W (%)		SLUDGE
1·55	1·55	100·00	78	Fracturing fairly regular.			BJ051	99·6	101·2	1·6																		no water return
				TOTAL DEPTH 101·20m.																								
Σ 90·60	87·82	96·93	60																									

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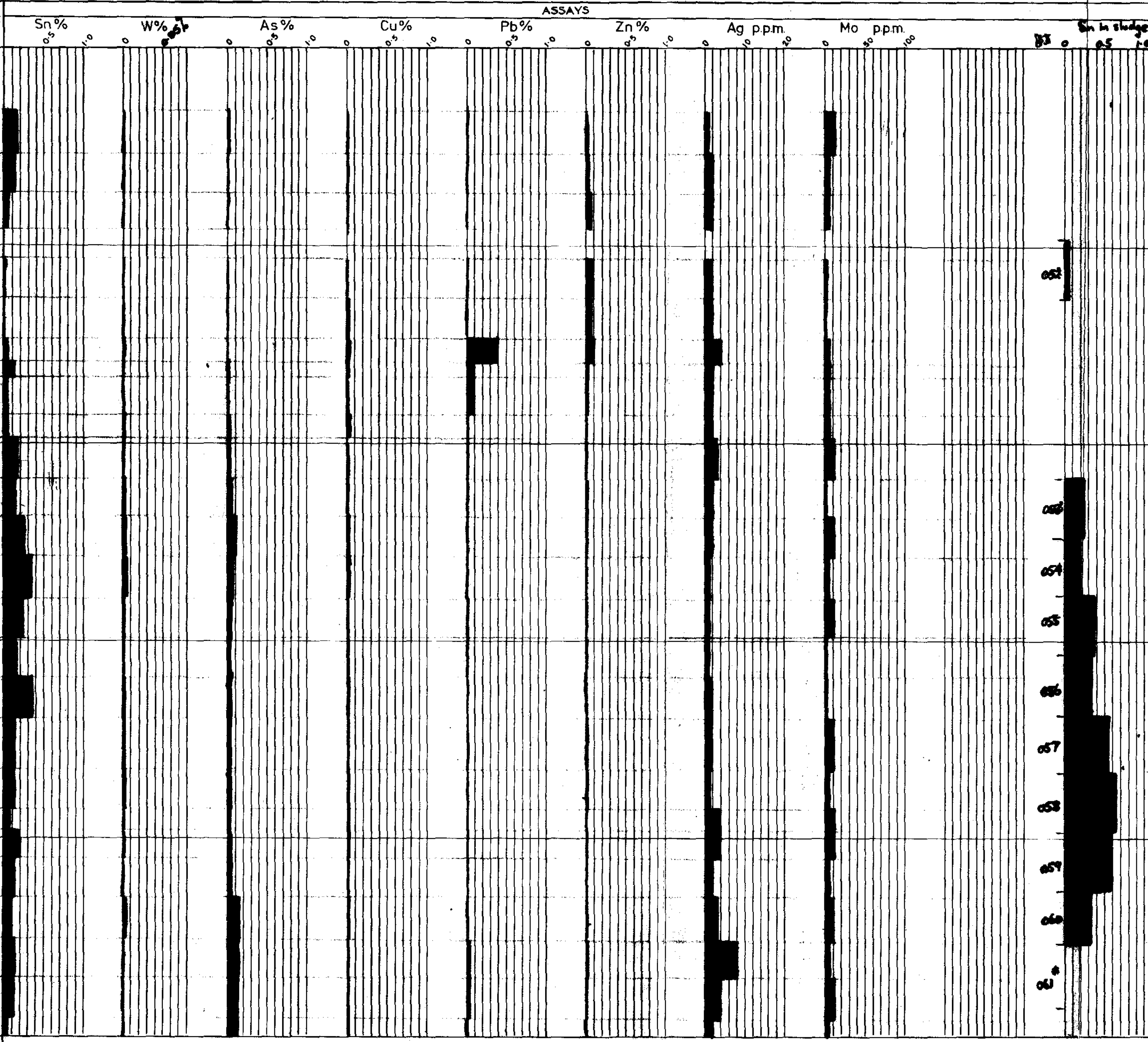
Project: EL 10/80 GREAT PYRAMID

Drillhole Nº: BPD 1 801116

Sheet: 1 of 2

METRES VISUAL LOG m	% RECOV.	SAMPLE Nº
		BJ
	O.H.	001
	O.H.	002
	O.H.	003
10		N.S.
	97	004
	100	005
	100	006
		007
	100	008
	100	009
20	70	010
	96	011
	85	012
	80	013
	95	014
30	100	015
	89	016
	96	017
	94	018
	100	019
40	93	020
	100	021
	96	022
	99	023
	95	024
50	98	025



* 061 drilling additives mud, mica, lubricants etc.

Project EL 10/80 GREAT PYRAMID

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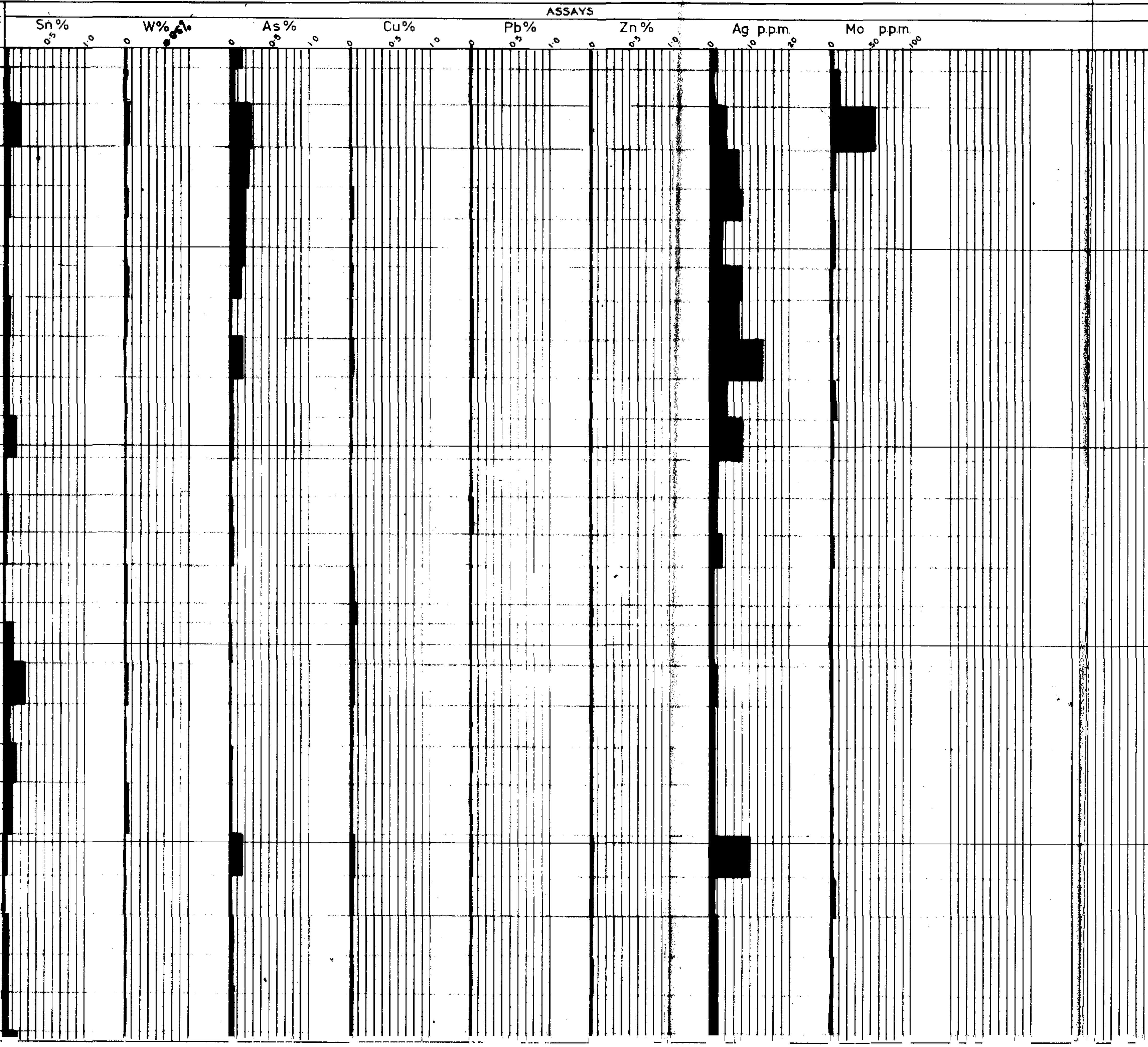
Drillhole No BPD 1 801117

Sheet: 2 of 2

METRES VISUAL LOG m	% RECOV	SAMPLE No BJ
	95	025
	100	026
	90	027
	99	028
	99	029
60	100	030
	96	031
Approx base complete oxidation →	98	032
	100	033
	100	034
70	100	035
	87	036
	90	037
	100	038
	100	039
hyp sil.	99	040
80	99	041
	98	042
	99	043
	99	044
	100	045
90	95	046
	100	047
	100	048
	100	049
	100	050
100		



End of hole 101·2 m

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Exploration Department

DRILL HOLE LOG HEADER SHEET

Project:	EL 10/80 Great Pyramid	**Hole No.:**	B.P.D.2(a)
Prospect:	Great Pyramid Tin Prospect	**Total Depth:**	19.65m
Local Grid co-ords:	459mE 349mN	**Bearing:**	120° (collar)
AMG co-ords:		**Depression:**	70° (collar)
Drilling Co.:	Walker Drilling	**R.L. Collar:**	~207m
Drill Type:	DB 1000/2		
Core Size:	HQ3	**Commenced:**	13/12/80
Driller:	I W McCallum	**Completed:**	7/1/81
		Logged by:	D A Steele
		Sampled by:	P & M Good

Technical Data:

Overburden: Less than 1m; "Tricone" used 0-0.30m; percussion hammer not used.

Casing: Nil

Water Return: Generally good, but lost circulation at 13m.

Cementation: At 13.10, 19.22m.

Additives: Ro-Lube, Super Gel, Hydropol, Mica, Bentonite.

Oxidation: Hole remained in severely oxidized rock.

Other: Hole abandoned at 19.65m due to wedging of drill rods by loose rock at 11.5m, 16.5m, 19.2m. Hole was reamed to 19.3m but rods still became jammed.

No downhole survey carried out.

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Project E.L.10/80 GREAT PYRAMID

Drillhole Nº BPD 2 (a)
Sheet: 1 of 1 0–19·65m.

Box	METRES	DRILL RUN METRES RECOV.	DRILL RUN % RECOV.	RQD
0	1·65	1·23	74·5	41
	0·70	0·71	101·4	14
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	0·95	0·85	89·5	0
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	62·5	0
4·95	0·55	0·58	105·5	0
	[illegible]	[illegible]	[illegible]	0
	1·40	1·23	87·9	9
2	0·80	0·73	91·3	19
	0·40	0·20	50·0	0
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
9	0·95	0·79	83·2	0
	1·35	1·22	90·4	0
	0·55	0·42	76·4	29
	0·75	0·85	113·3	0
	1·05	1·03	98·1	51
13	1·20	1·15	95·8	37
	0·90	0·77	85·6	45
	0·15	0·18	120·0	0
	0·95	0·82	86·3	30
4	0·40	0·35	87·5	0
	0·30	0·29	96·7	35
18·2	1·55	1·49	96·1	64
5	0·55	0·50	90·9	24
	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]
	Σ19·65	Σ17·59	89·52	

DESCRIPTION

Fractured grey qt. locally grading to sst. One dom^t fracture orientat.'n (mineralized) post dated by shallow barren fractures of low F.I. (<10m), 55° ∢ to LCA.

Dominantly light grey sh c̄ grey. Fe stnd sst inbeds (?). Generally poorly fractured, more erratic than qt. Locally brectd. So contacts not observed due to poor quality core. Rare irregular lim - qt vnlts <1-2mm. occur at low ∢ to LCA in sandier lithologies.

Silicified incipiently Fe stnd sst. locally grading to qt. Intensely fractured in places. One dominant mineralized fracture orientation c̄ local, two any x fractures post dating mineralisation. Qt locally pitted possible after S²⁻ (or carb).
Evidence for movement and wedging of core during drilling.

Dominantly light grey sh c̄ minor qt inbeds. Minor fracturing c̄ block qt veinlets ∥ c̄ sub-vertical So fracturing generally erratic. Fe stng + kaolin filling in veinlets.

Hole ceased at 19·65m due to severe wedging of core-barrels by loose rock. Hole (BPD 2(b)) commenced adjacent to (BPD 2(a)).

ANGLE BEDDING TO LCA	SAMPLE NUMBER	FROM	TO	INTVL.	FRACT. DENS. (per m)	% FRACT. MIN'SD	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANGLE TO LCA	% BLK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.		WALL ROCK ALTERN.
	BJ 313	0·00	2·00	2·00	80-110	75-80	<1-5	1	30-35	1-2	✓	×	✓	✓	×	lim. tr Se.	Silcfn
	BJ 314	2·00	3·85	1·85													
	BJ 315	3·85	5·85	2·00	10-20 locally 40⁺	20-30	<1-3 rare	<1	35-45	<<1	×	×	✓ rare	×	×	lim	Fe stng.
	BJ 316	5·85	7·85	2·00													
	BJ 317	7·85	9·90	2·05													
	BJ 318	9·90	11·9	2·0	70-90 locally 105⁺	80	<1-[illegible]	1	35-45	1-2	✓	×	✓	✓	×	lim, Se	Silfcn
	BJ 319	11·9	13·9	2·0													
	BJ 320	13·9	15·9	2·0													
27	BJ 321	15·9	17·2	1·3	90-110	75-85	<1-[illegible]	1	40-50	1	×	×	✓	✓	×	Lim	Silcfn haloes
<10	BJ 322	17·2	19·6	2·4	20-80	40	<1-[illegible]	<1	dominant 30-5 locally 10-80	<<1	×	×	✓ rare	×	×	Lim kaol.	Fe stng.

SAMPLE	ASSAYS Sn (%)	ASSAYS W (%)		SLUDGES INT^VL	SLUDGES Nº (BJ)	SLUDGES ASSAY Sn (%)	
BJ 313	·29			0 to 3	BJ 323	0·20 ·13% Pb	Mu as thin selvedges only apparent in wider veinlets.
BJ 314	·04						
BJ 315	·02			3 to 6	BJ 324	780	
BJ 316	·03			6 to 9	BJ 325	0·31 ·16% Pb	
BJ 317	·02						
BJ 318	·13			9 to 12	BJ 326	0·17	Very obvious ·5-2cm Silcfn haloes around veinlets.
BJ 319	·20			No Water	Return	—	
BJ 320	·16						
BJ 321	·19			15 to 18	BJ 327	405	
BJ 322	·04			N.S.		—	

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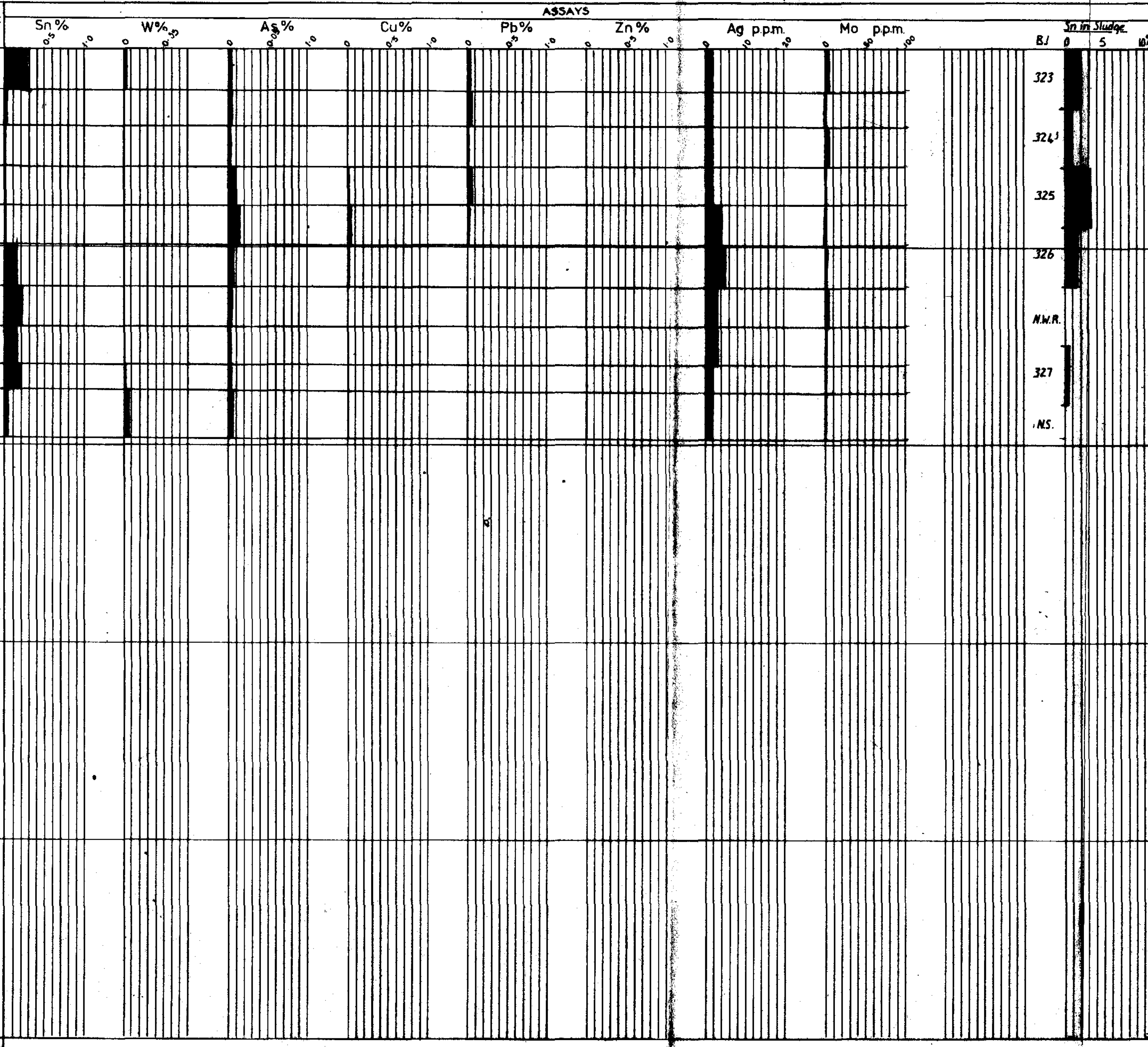
Project E.L.10/80 GREAT PYRAMID

Drillhole Nº BPD 2a 801120

Sheet: 1 of 1

METRES VISUAL LOG	% RECOV.	SAMPLE Nº BJ
0	75	313
	100, 80, 85, 90	314
	84, 100	315
	88, 91	316
	100, 83	317
10	90, 76	318
	100, 96	319
	100, 87	320
		321
	96, 100	322
20		

T.D. 19.65m.



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Exploration Department

DRILL HOLE LOG HEADER SHEET

Project:	EL 10/80 Great Pryamid	Hole No.:	BPD2 b
Prospect:	Great Pyramid Tin Prospect	Total Depth:	28m
Local Grid co-ords:	458.5mE 349mN	Bearing:	120° mag (0m)
AMG co-ords:		Depression:	70° (0m)
Drilling Co.:	Walker Drilling	R.L. Collar:	207m
Drill Type:	DB 1000/2		
Core Size:	Percussion Only	Commenced:	7/1/81
Driller:	I W McCallum	Completed:	14/1/81
		Logged by:	D A Steele
		Sampled by:	-

Technical Data:

Hole drilled to 28m using Halco 4½" percussion hammer. 1.5m of HW casing used to ensure a good seal at the surface.

Hole cemented at 28m prior to commencing coring. However during cleaning the bottom of the hole out with a "Tricone", a coupling broke and left the Tricone and 1.5m of NMLC rod at the bottom of the hole.

Casing was removed on abandonment of the hole.

The Tricone and rod have not been removed from the hole.

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Project E.L. 10/80 Great Pyramid

Drillhole No BPD 2(b)
Sheet 1 of 1 (0.00 - 28.0m)

METRES	DRILL RUN METRES RECOV.	DRILL RUN % RECOV.	RQD	DESCRIPTION	VISUAL LOG	ANGLE BEDDING TO LCA	SAMPLE NUMBER	SAMPLE FROM	SAMPLE TO	SAMPLE INTVL.	MINERALISATION FRACT DENST (per m)	% FRACT MIN'D	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANG TO LCA	% BLK ROCK MIN.	VEIN MINERALOGY CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.			WALL ROCK ALTERN.	ASSAYS Sn (%)	W (%)		SLUDGES Int.	No (BJ)	Assay Sn%
				Percussion chips of grey qt, c̄ minor Fe stng.			BJ 719	0.0	2.0	2.0																				
				Grey qt, brown Fe stnd. sst.			BJ 720	2.0	4.0	2.0																				
				Sst, c̄ minor sh.			BJ 721	4.0	6.0	2.0																				
28.0m				Sst c̄ very dark brown fine dust possibly sh.			BJ 722	6.0	8.0	2.0																				
				Sst/sh			BJ 723	8.0	10.0	2.0																				
				Qt/sst.			BJ 724	10.0	12.0	2.0																				
				Qt c̄ minor sh.			BJ 725	12.0	14.0	2.0																				
	Percussion Hammer			Qt c̄ minor sh			BJ 726	14.0	16.0	2.0																				
				Qt/sst			BJ 727	16.0	18.0	2.0																		Not Applicable		
				Qt-red brown Fe stng			BJ 728	18.0	20.0	2.0																				
				Qt			BJ 729	20.0	22.0	2.0																				
				Qt. sh			BJ 730	22.0	24.0	2.0																				
0.0				Sst.sh			BJ 731	24.0	26.0	2.0																				
				Sst.sh			BJ 732	26.0	28.0	2.0																				

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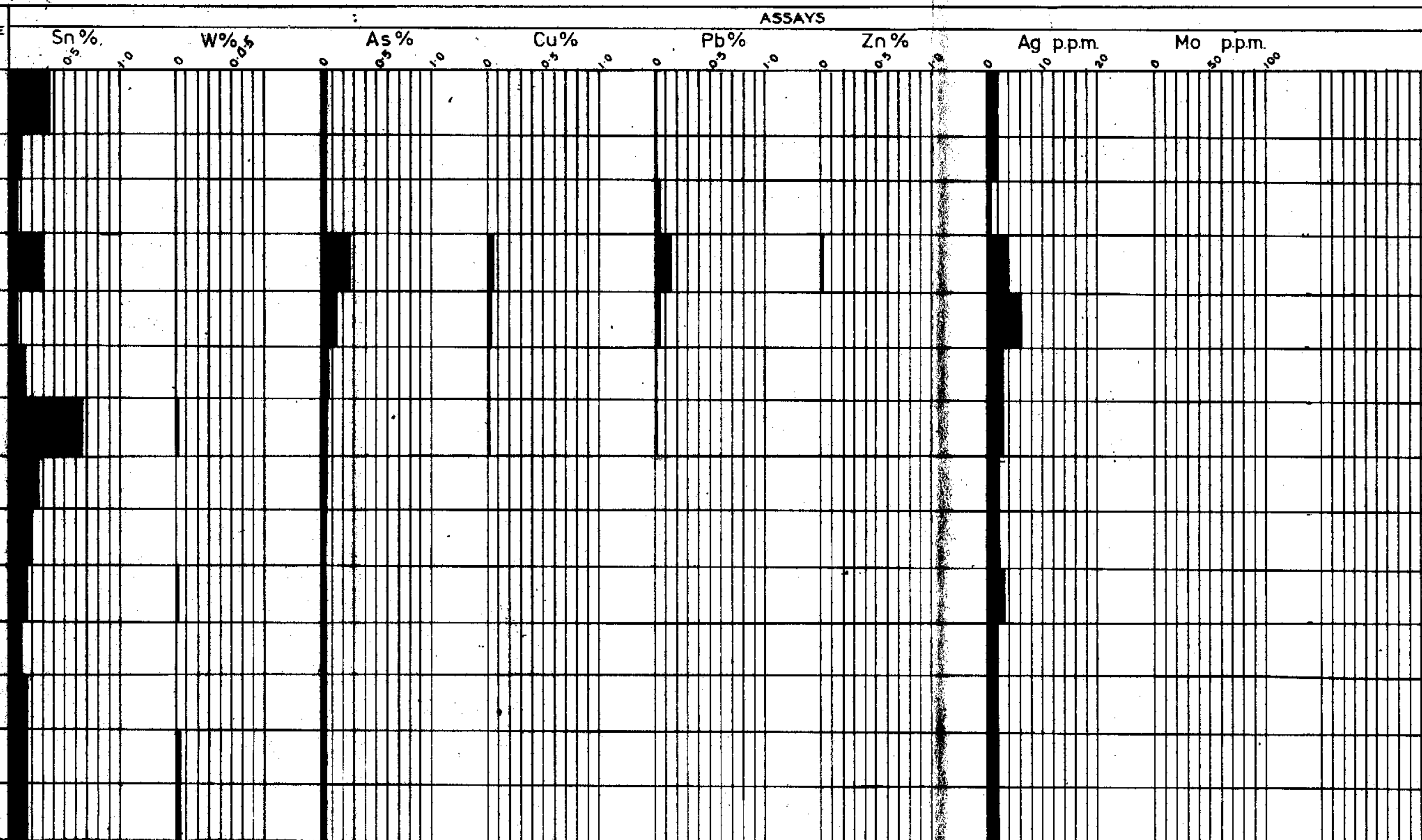
Project E.L 10/80 Great Pyramid

Drillhole Nº BPD 2(b)

Sheet: 1 of 1

METRES VISUAL LOG	% RECOV.	SAMPLE Nº BJ
	Percussion Hammer	719
		720
		721
		722
		723
		724
		725
		726
		727
		728
		729
		730
		731
		732
28 T.D.		



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Exploration Department

DRILL HOLE LOG HEADER SHEET

Project:	EL 10/80 Great Pyramid	Hole No.:	B.P.D.3
Prospect:	Great Pyramid	Total Depth:	100.05m
Local Grid co-ords:	479mE 401mN	Bearing:	120°
AMG co-ords:		Depression:	69.5° (0m), 70° (50m), 71° (100m)
Drilling Co.:	Walker Drilling	R.L. Collar:	200m
Drill Type:	Jacro DB 1000/2		
Core Size:	HQ to 6.8m, HQ3 to 100.05m	Commenced:	4/11/80
Driller:	I McCallum	Completed:	19/11/80
		Logged by:	D A Steele
		Sampled by:	M & P Good

Technical Data:

Overburden:	0 to 2m; percussion hammer used to 3.25m; rock roller 3.25 to 3.30m.
Casing:	HW to 3.30m; removed when drilling completed.
Water Return:	Generally poor, complete loss of circulation common.
Cementation:	At 48.25 (recemented at 45m), 50.95, 54.50m.
Additives:	Ro-Lube, Super Gel, Hydropol, Mica.
Oxidation:	Approximate depth of total oxidation 75m. Base of oxidation zone not penetrated.
Other:	Downhole survey by acid etch.

Project EL 10/80, GREAT PYRAMID

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Drillhole Nº B.P.D.3 801125

Sheet 1 of 2

Drill run

Depth mark	Metres	Metres recov.	% recov.	RQD
	0 - 3·30	Percussion hammer		
3·30	0·95	0·90	94·7	10
	0·85	0·87	102·4	0
	1·25	1·20	96·0	34
	0·45	0·41	91·1	0
	0·82	0·76	92·7	39
7·7	0·53	0·52	98·1	0
	1·25	1·25	100·0	25
2 / 10	1·50	1·47	98·0	63
	1·42	1·42	100·0	53
12·3	0·71	0·73	102·8	75
	1·00	1·00	100·0	27
	1·52	1·54	101·3	85
	1·50	1·48	98·7	67
	1·22	1·22	100·0	71
4	1·50	1·47	98·0	54
20	1·45	1·47	101·4	32
21·2	1·55	1·54	99·4	43
	1·50	1·45	96·7	79
25	1·50	1·46	97·3	71
	1·50	1·53	102·0	82
	1·50	1·47	98·0	61
	2·00	1·99	99·5	60
29·9 / 30	3·00	2·98	99·3	59
	3·05	2·99	98·0	61
8·5	2·95	2·92	99·0	49
40	2·17	2·15	99·1	39
	0·81	0·77	95·1	95
	3·00	2·98	99·3	58
72	2·50	2·54	101·6	89
	0·1	0·1	100·0	0
	1·35	1·00	74·1	13
50				

Description

Description	Visual log	Angle bedding to LCA
Chips of fractured qt with minor sh. Abundant qtz+lim on fracture faces		
Ox, fractured grey qt. Very locally Fe stained. Grades to sst locally. Small (<1mm) voids common in qt. Fractures very regular, vuggy.		
White-grey sh with very minor slst. Local slumping. Widespread Fe staining. Movement apparent along some fractures. Cleavage (So fissility?) at very low ∠ L.C.A.		17, 14
Interbedded grey slst/sh grading rarely to sst. Slumped and contorted in places. Local interfingering of beds. Way up ↑↑?		10-20
Fractured sh/slst - generally grey, but locally maroon. Locally slumped and faulted. Some fractures ↑↑ to So. Abundant Fe staining associated with fractures.		8-15
Grey sh/slst - locally greenish tinge. Poorly fractured. Very little So. Minor soft sediment deformation. Minor silicification around veinlets in slst. Very minor fracturing ↑↑ to L.C.A. (So?)		<5
Grey-maroon sh grading to slst, locally slumped irregularly fractured. So at very low ∠ to L.C.A. - almost ↑↑. Minor fractures ↑↑ to So - generally irregular. Some movement along So surfaces and fracture surfaces. Locally kaol. filled fractures in severely slumped areas.		5, 4
Severely fractured qt with minor interbedded sh - also severely disrupted. Qt breccia between 31·2 - 32·8m - Fault? at 32·1m. Qt cross-cut by numerous irregular fractures. Fault ∠ L.C.A. ~ 40°. Many large veinlets are vuggy.		5-15
Mainly grey-smokey qt with 1-1·5m interbeds of sh locally grading to slst and sst. Generally strongly fractured. Shaley units tend to be slumped, rarely faulted. So commonly at high ∠'s to fracturing. Rare slivers of sh occur in qt (as at 43·15) excepting slumped sh horizons, qt is regularly fractured. Bedding fissility, with barren fractures developed, sub ↑↑, in sh.		19, 10, 39, 32
Interbedded qt/grey sh comprising 1-2m beds of qt and silicified sst with 1-1·5m sh beds. Qt/sst generally intensely fractured.		29

Sample

Number	From	To	Intvl.
BJ062	0·0	2·0	2·0
BJ063	2·0	3·3	1·3
BJ064	3·3	5·3	2·0
BJ065	5·3	6·8	1·5
BJ066	6·8	8·8	2·0
BJ067	8·8	10·8	2·0
BJ068	10·8	12·8	2·0
BJ069	12·8	14·8	2·0
BJ070	14·8	16·8	2·0
BJ071	16·8	18·8	2·0
BJ072	18·8	20·8	2·0
BJ073	20·8	22·8	2·0
BJ074	22·8	24·8	2·0
BJ075	24·8	26·8	2·0
BJ076	26·8	29·7	2·9
BJ077	29·7	31·7	2·0
BJ078	31·7	33·7	2·0
BJ079	33·7	35·7	2·0
BJ080	35·7	37·7	2·0
BJ081	37·7	39·7	2·0
BJ082	39·7	41·7	2·0
BJ083	41·7	43·7	2·0
BJ084	43·7	45·7	2·0
BJ085	45·7	48·25	2·55
BJ086	48·25	50·25	2·0

Mineralisation

Interval (samples)	Fract. dens. (per m)	% fract. min'sd	Vein width mm range	Vein width mm av.	Ang. to LCA	% blk rock min	Cassit	Wolf.	Qtz.	Musc.	Sulph.	Carb.	Other	Wall rock altern.
BJ064–BJ065	68	85	<1–4	1	37	2%	✓ (tr)	×	✓	×	×	×	lim.	silcfn minor Fe staining
BJ066–BJ067	56	40	<1–5 (rare)	<1	40-50	1	×	×	✓	×	×	rare cal	lim.	abundant Fe staining
BJ068–BJ069	50 locally 70+	75	<1–11	2	40-45	2-3	×	×	✓ (black)	×	×	✓?	lim local MnO2	abundant Fe staining local silcfn halos
BJ070	40-50 locally 70+	60	<1–5	1	40-50	1	×	×	✓	✓	×	×	lim Kaol	Fe staining very local silcfn
BJ071–BJ072	20-30	20	<1–2	<1	dom. 50 locally 10-20	<1	×	×	✓	×	×	×	lim	minor Fe staining, silcfn halos in slst.
BJ073–BJ074	20	50	<1–2	<1	var.– 30-70	<<1	×	×	rare	×	×	×	lim local kaol	minor Fe staining
BJ075–BJ076	25	50	<1–1	<1	varies– dom.45 locally 10-70	<1	×	×	✓	×	×	✓?	lim kaol locally MnO2	Fe staining
BJ077–BJ078	gen'ly 80-90 locally 120+	80	<1–4	1	highly variable bet. 10 & 70– dom 40-50	15	×	×	✓	×	×	✓	lim kaol	silcfn c̄ minor Fe staining
BJ079–BJ081	90	80	<1–5	1-2	30 (-60)	2	×	×	✓	✓	×	✓ cal	lim kaol locally sc	Fe staining
BJ082–BJ084	100	85	<1–9	1	40	2-3	×	×	✓	✓	×	✓ cal	lim kaol locally sc	local Fe staining of qt
BJ085–BJ086	98	85	<1–5	1	50	2-3	✓ (tr)	×	✓	✓	×	✓	lim rare kaol	Fe staining in shaley units

Assays: Sn (%), W (%) — no entries.

Sludges

Int.	Nº (BJ)	Assay Sn (%)
NOT SAMPLED		
11 to 14	BJ112	
14 to 17	BJ113	
17 to 20	BJ114	
20 to 23	BJ115	
23 to 26	BJ116	
26 to 29	BJ117	
29 to 32	BJ118	
32 to 38	BJ119	
NO WATER RETURN		

Remarks

Remarks
Casing down to 3·30m.
Some fractures sub ↑↑ to So.
Micaceous selvedge common especially in wider veinlets.

Project EL 10/80 GREAT PYRAMID

THE BROKEN HILL PROPRIETARY CO. LTD.

Drillhole Nº BPD. 3 — Sheet 2 of 2 — 801126

Drill run

METRES (from 50)	METRES RECOV.	% RECOV.	RQD
0.95	0.95	100.0	46
0.36	0.42	116.7	40
0.18	0.18	100.0	0
0.47	0.40	85.1	36
0.15	0.15	100.0	0
0.95	0.92	96.8	16
0.19	0.14	[illegible]	0
0.27	0.23	85.2	37
0.33	0.33	100.0	36
0.75	0.75	100.0	24
0.35	0.32	91.4	0
0.50	0.43	86.0	22
1.25	1.19	95.2	49
0.70	0.69	98.6	64
0.95	0.97	102.1	44
1.30	1.25	96.2	59
0.80	0.76	95.0	45
— 60 —			
1.50	1.46	97.3	43
1.50	1.50	100.0	81
1.50	1.51	100.7	45
0.75	0.74	98.7	83
1.50	1.52	101.3	61
1.50	1.55	103.3	98
0.26	0.21	80.8	0
1.24	1.26	101.6	80
— 70 —			
1.50	1.40	93.3	61
0.55	0.64	116.4	91
0.30	0.28	93.3	63
0.20	0.27	135.0	78
1.20	1.22	101.7	50
0.55	0.55	100.0	53
0.33	0.30	90.9	45
1.32	1.27	96.2	60
0.40	0.34	85.0	0
1.10	1.09	99.1	67
1.50	1.48	98.7	63
1.50	1.53	102.0	91
— 80 —			
1.50	1.50	100.0	72
1.50	1.47	98.0	76
1.50	1.46	97.3	45
1.45	1.50	103.4	52
0.73	0.76	104.1	79
1.50	1.50	100.0	74
0.82	0.91	111.0	76
0.1	0.12	120.0	0
90 1.23	1.18	95.9	51
0.91	0.88	96.7	15
0.13	0.11	84.6	0
0.98	0.98	100.0	48
1.50	1.49	99.3	29
1.50	1.51	100.7	39
1.50	1.47	98.0	41
1.20	1.22	101.7	48
0.30	0.36	120.0	60
1.50	1.43	95.3	24
— 100 —			
Σ 96.75	Σ 95.58	98.79	64

Description

50–60 m: Very minor slumping and brecciation in sh horizons: sh not well bedded. Small fractures sub ↑↑ to bedding in sh, larger veinlets tend to be more irregular compared to those in qt. Fracture intensity lower in sh compared to qt. Sh locally grades to slst. No obvious facing structures. Way up ⇑ (?) on graded So.

60–64.2 m: Interbedded qt/sh. Wider veinlets often severely Fe stained and vuggy.

64.2–70 m: Severely altered diorite – 20cms leached (?) fawn clay followed by pink/red clay/diorite

Golden-brown altered diorite: grading into "fresher" grey-green to green fine grained altered diorite, locally amygdaloidal (px filled ?), also containing rare qtz phenocrysts. Very poorly fractured – F.I. <10. Possibly has a faulted bottom contact with qt. Top contact – "fracture controlled" – 40° to L.C.A. Fault zone? 20cms at 68.51m.

74.5–80 m: Interbedded qt/sst/sh, essentially same as interval preceeding diorite, comprising 1-2m qt/silicified sst units with 1-2m slumped/brecciated shale units interbedded. Slumping more intense and widespread than previous interval.
Qt intensely fractured, locally very irregular, and mineralized – both fractures and host – qt locally pyritic (1-7mm crystals)

80–100 m: Facings (rare flames, graded So) ⇑. Bedding surfaces somewhat erratic and contorted. Sequence generally not well bedded.
Shaley units locally intensely fractured but generally lower than qt and fractures tend to be more erratic.
Chlorite more apparent in veinlets at depth.
Sulphides also becoming apparent, yet still inside "oxidation halo".

Sample and mineralisation

Number	From	To	Intvl.	Fract. dens. (per m)	% fract. min.	Vein width range (mm)	Vein width av. (mm)	Ang. to LCA	% blk rock min.	Cassit.	Wolf.	Qtz.	Musc.	Sulph.	Carb.	Other	Wall rock altern.	Sn (%)	W (%)
BJ087	50.25	52.25	2.0	95 (qt)	80	<1-6	1	40-50 locally 20-30	2-5	✓ tr	×	✓	✓	×	✓	lim kaol	local Fe staining silcfn		
BJ088	52.25	54.25	2.0	(sh) 79 (locally <50)	50	<1-2	<1	dom 40 usually more variable than qt	1	×	×	rare	×	×	rare	lim kaol	abundant Fe staining silcfn of slst		
BJ089	54.25	56.25	2.0																
BJ090	56.25	58.25	2.0																
BJ091	58.25	60.25	2.0																
BJ092	60.25	62.25	2.0	(qt) 75 (locally 90+)	80	<1-13 rare?	1	40	1-5	×	×	✓	✓	×	✓	lim sc kaol	silcfn, Fe staining		
BJ093	62.25	64.2	1.95																
BJ094	64.2	66.2	2.0	<<10		<1-1	<1	60	<<<1	×	×	×	×	×	×	kaol			
BJ095	66.2	68.2	2.0																
BJ096	68.2	70.2	2.0																
BJ097	70.2	72.2	2.3																
BJ098	72.2	74.5	2.0																
BJ099	74.5	76.5	2.0	83	80	<1-9	1	45	2-4	✓ tr	✓ (locally gen'ly in wider vnlts)	✓	✓	py, aspy	✓ sid	lim sc	Fe staining silcfn		
BJ100	76.5	78.5	2.0																
BJ101	78.5	80.5	2.0																
BJ102	80.5	82.5	2.0	95	85	<1-6	1	40-50	5	×	✓ tr	✓	✓	py	remnant sid	lim sc	Fe staining silcfn		
BJ103	82.5	84.5	2.0																
BJ104	84.5	86.5	2.0	87 locally 90+	80	<1-6	1	40-50 locally 70	2-4	×	✓ ?	✓	✓	py, aspy	sid	lim	Fe staining silcfn		
BJ105	86.5	88.5	2.0																
BJ106	88.5	90.5	2.0	80	80	<1-4	1	40-50 but var. 10-70	1-2	×	×	✓	✓	py	sid ?	lim chl kaol	Fe staining silcfn		
BJ107	90.5	92.5	2.0																
BJ108	92.5	94.5	2.0	95+	80	<1-2	<1	very erratic dom. 40	1-2	×	×	✓	×	py	×	lim kaol	very minor Fe staining silcfn		
BJ109	94.5	96.5	2.0																
BJ110	96.5	98.5	2.0	75	80	<1-8 rare?	1	dom 40-50 locally steeper	1	×	×	✓	✓	py, aspy	×	lim kaol	Fe staining esp. sh silcfn		
BJ111	98.5	100.05	1.55																

Sludges

Int.	Nº (BJ)	Assay Sn (%)
NO WATER RETURN		
54 to 57	BJ120	
57 to 60	BJ121	
60 to 63	BJ122	
63 to 66	BJ123	
66 to 69	BJ124	
69 to 72	BJ125	
72 to 75	BJ126	
75 to 78	BJ127	
78 to 81	BJ128	
81 to 84	BJ129	
84 to 87	BJ130	
87 to 90	BJ131	
90 to 93	BJ132	
93 to 96	BJ133	
99 to 99	BJ134	
99 to	BJ135	

Remarks

- Minor movement along shallow (>50 L.C.A.) fractures. Sh locally possesses a greenish tinge.
- Wider veinlets often vuggy.
- Very wide (0.5-1.5cm) irregular veinlets – qtz-lim-py-sid – occur in brecciated sh.
- Some veinlets very gossanous and vuggy in places.
- Rock becoming almost brecciated in appearance due to abundance of fractures and veinlets.

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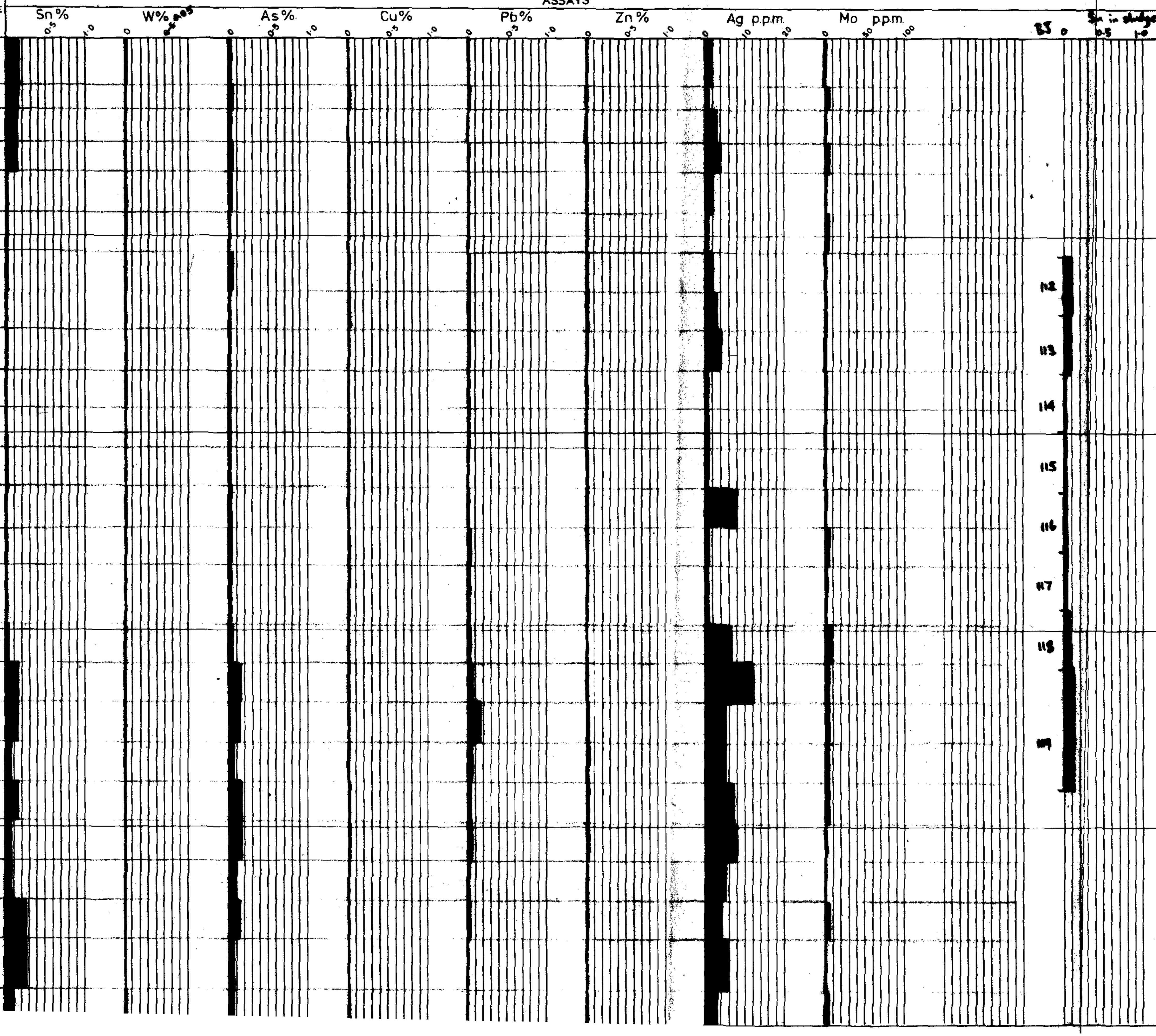
Project: EL10/80 GREAT PYRAMID

Drillhole No: BPD 3 801127

Sheet: 1 of 2

METRES VISUAL LOG	% RECOV.	SAMPLE No
0 m		61
	O.H	62
		63
	98	64
	96	65
	95	66
	99	67
10		
	100	68
	100	69
	100	70
	100	71
	98	72
20		
	100	73
	97	74
	100	75
	98	76
30	99	77
	99	78
		79
	98	80
	99	81
40		
	99	82
	95	83
	100	84
	100	85
		86

ASSAYS



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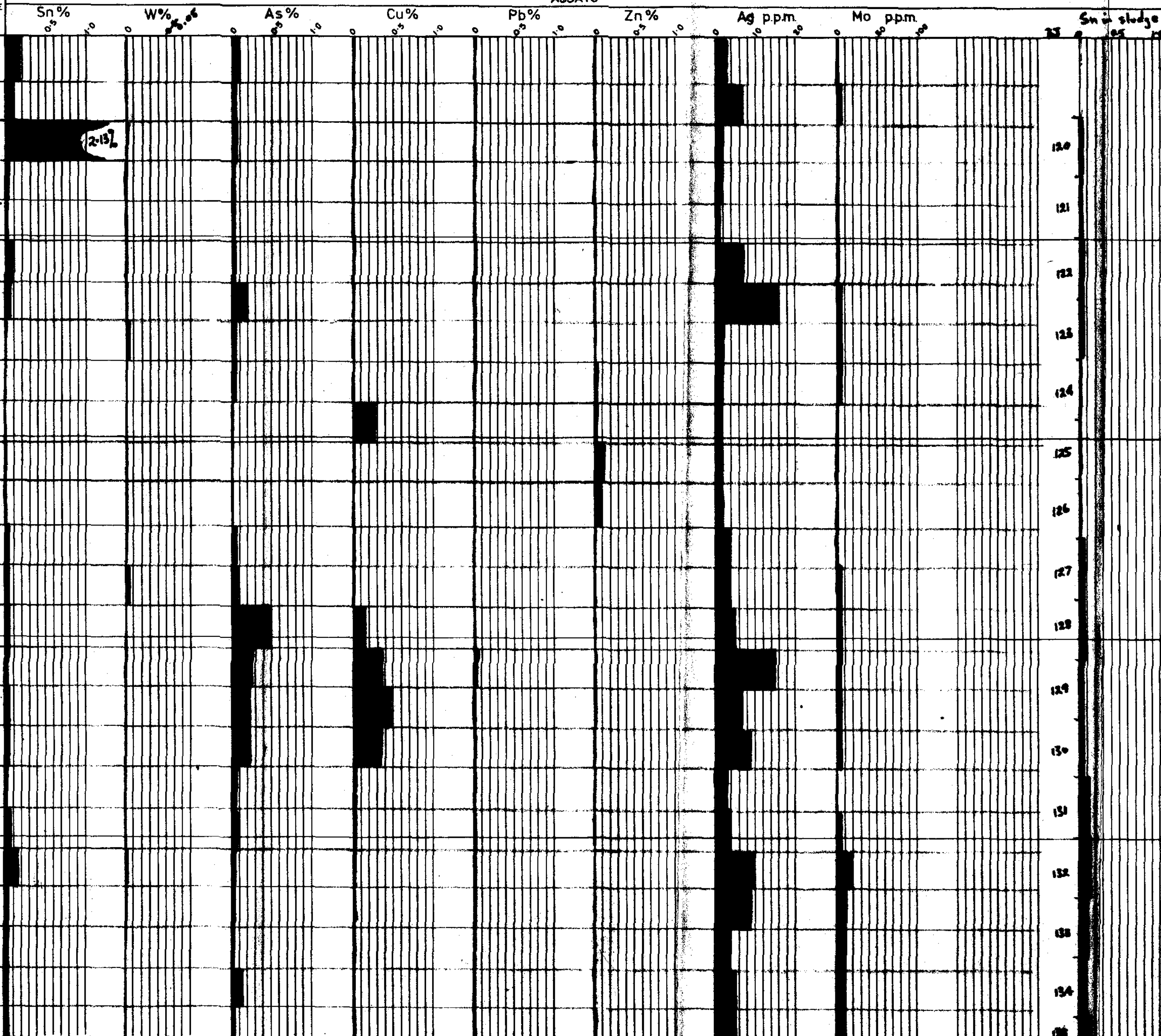
Project: EL10/80 GREAT PYRAMID

Drillhole Nº: BPD 3 801128

Sheet: 2 of 2

ASSAYS

METRES / VISUAL LOG	% RECOV.	SAMPLE Nº RJ	Sn in sludge (RJ)
	100	87	
	99	88	
	91	89	120
	100	90	
60	96	91	121
	97	92	122
	100	93	
	99	94	123
	100	95	
70	90	96	124
	100	97	125
Approx. base of complete oxidation	100	98	126
	90	99	
	99	100	127
80	100	101	128
	100	102	
	98	103	129
	100	104	130
	100	105	
90	100	106	131
	100	107	132
	100	108	
	100	109	133
	100	110	134
100 EOH	95	111	135



BROKEN HILL PROPRIETARY CO. LTD.

Exploration Department

DRILL HOLE LOG HEADER SHEET

Project:	EL 10/80 Great Pyramid	**Hole No.:**	B.P.D.4
Prospect:	Great Pyramid	**Total Depth:**	125.55
Local Grid co-ords:	455mE 394mN	**Bearing:**	120°
AMG co-ords:		**Depression:**	69° (0m), 69° (60m), 70° (125m)
Drilling Co.:	Walker Drilling	**R.L. Collar:**	191m
Drill Type:	Jacro DB 1000/2		
Core Size:	HQ3 to 99.6, NQ to 125.55	**Commenced:**	21/11/80
Driller:	I McCallum	**Completed:**	1/12/80
		Logged by:	D A Steele
		Sampled by:	

Technical Data:

Overburden: Less than 1m; percussion hammer not used.

Casing: HQ to 99.6m; removed upon completion of drilling.

Water Return: Generally good although complete loss of circulation occurred at 69 and 87m.

Cementation: Nil.

Additives: Hydropol, Ro-Lube, Mica, Bentonite.

Oxidation: Approximate depth of total oxidation 36m. Base of oxidation zone not penetrated.

Other: Downhole survey by acid etch.

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Project: EL 10/80 GREAT PYRAMID

Drillhole Nº BPD 4 801130
Sheet: 1 of 3

Drill Run

METRES	METRES RECOV.	% RECOV.	RQD
1·4	1·38	98·6	32
1·4	1·44	102·9	35
1·5	1·44	96·0	53
0·5	0·5	100·0	26
1·15	1·08	93·9	65
0·75	0·77	102·7	48
1·45	1·44	99·3	36
1·55	1·57	101·3	50
3·0	3·08	102·7	70
0·75	0·59	78·6	39
1·0	0·95	95·0	52
1·35	1·31	97·0	40
3·0	3·06	102·0	70
3·0	3·07	102·3	81
2·95	2·89	98·0	31
3·05	3·09	101·3	76
3·0	3·01	100·3	67
3·0	3·03	101·0	94
3·0	3·01	100·3	93
3·0	2·97	99·0	85
3·0	3·05	101·7	89
3·0	3·0	100·0	77
1·2	1·13	94·2	43
1·8	1·82	101·1	65

Description

Interbedded qt and grey sh. Generally 1-2m sh and 2-3m qt. Qt locally grading into sst. Both qt and sh moderately intensely fractured; locally slumped and brecciated. Very minor development of gossanous fault gouges (½-1cm). All fracturing tends to be irregular. Very minor occurrences of later (barren?) black qtz veinlets. Fe staining very common adj. to faults and in breccias.
Fairly "massive" - poorly bedded horizon. Flame structures indicate ⇑. Also local grading from sh ↘ qt indicates ⇑.
Locally intense fracturing gives brecciated appearance to lithologies; vuggy nature of fractures enhances brecciated appearance. Local Fe staining along So fissility in sh adjacent to fractures.

Fractured grey qt, locally sst, with very minor thin 1-2 cm interbeds of sh. In generally regularly fractured, but possibly brecciated between 18·6 and 19·1m. Abundant Fe staining in breccia zone. Minor dislocation of So along wider fractures. Generally high ∡ between So and fractures.

Grey slst/sh, finely interbedded in places, grading to sst/qt with sh interbeds at base of interval. Locally fractured and brecciated. So fissility well developed. Widespread ferruginisation. Very minor slumping. Rare flames and graded So ⇒ ⇑.

Visual log: 'carb'

Dark grey - grey green slst/sh; bedded in places, cut by numerous irregular qtz - chl ? veinlets, locally black qtz in turn cut by fine (<1-1mm) pale green pinite ? veinlets. Chloritization/pinitization of slst/sh widespread down to 40·7m. So very erratic. Fe staining haloes very common adjacent to fractures. Lith. very poorly fractured. Way up ⇑ (?) Unusual and erratic soln. alteration.

Brecciated qt/slst/sh - sh ↓ with depth. Severely ferruginised, locally chloritized. Rare So contorted. Dom. fault orientation 30 - 40° to ∡ L.C.A.

Interbedded qt/sst/slst/sh; intensely fractured in places; So poorly defined - probably due to slumping and minor brecciation especially at lithological contacts. Flame structures indicate ⇑. So ⇈ to L.C.A. at ~ 50·0m. Wide veinlets of qtz-carb-mu ⇈ to J_M more abundant than previously observed.

Sample and Mineralisation

ANGLE BEDDING TO LCA	SAMPLE NUMBER	FROM	TO	INTVL.	FRACT. DENSITY (per m)	% FRACT. MIN'SD	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANGLE TO LCA	% BLK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.	CARB.		WALL ROCK ALTERN.
	BJ136	0·0	2·0	2·0														
24	BJ137	2·0	4·0	2·0	(qt) 73	80	<1–2	<1	40–50	<1	×	×	✓	×	×	×	lim. kaol.	silcfn (sst) + Fe stng; Fe stng (sh)
	BJ138	4·0	6·0	2·0	(qt) 65	80	<1–5	1	dom. 40-60 locally 20-30	1	×	×	✓	×	×	×	lim. kaol.	silcfn/ Fe stng
	BJ139	6·0	8·0	2·0														
10-15	BJ140	8·0	10·0	2·0														
	BJ141	10·0	12·0	2·0	80, locally 90+	80	<1–10 rare?	1	dom 26 locally variable 30-80	gen'ly 1 rarely 2-4	×	×	✓	✓ only in wide veinlets	×	×	lim. kaol.	local Fe stng. silcfn.
	BJ142	12·0	14·0	2·0														
30	BJ143	14·0	16·0	2·0														
40	BJ144	16·0	18·0	2·0	70–90	75	<1–6	1-2	dom. 45 but varies 20-70	2-3	×	×	✓	✓	×	remnant cal ?	lim. kaol.	silcfn.
30	BJ145	18·0	20·0	2·0	60–90	80	<1–7	1	40–50	2-3	✓?	×	✓	✓	×	sid.	lim. kaol.	Fe stng/ silcfn
21	BJ146	20·0	22·0	2·0														
20	BJ147	22·0	23·95	1·95	80–100+	80	<1–10 rare?	1	45–50	2-3	×	×	✓	✓	×	remnant cal?	lim.	Fe stng/ silcfn
31	BJ148	23·95	25·95	2·0	70, loc 90+	60	<1–4 rare?	<1	35–50	<1	×	×	✓	×	×	×	lim. goeth.	Abdt Fe stng.
34	BJ149	25·95	27·95	2·0														
	BJ150	27·95	29·95	2·0	40–50	70	<1–7 *	<1	40–60	1	×	×	✓ rare	×	×	✓	lim. kaol.	Fe stng
53	BJ151	29·95	31·4	1·45													less common	'
40, 38	BJ152	31·4	33·4	2·0	15–30	80	1–5	1	very erratic dom 25 locally 10-60	1-2		×	✓ locally	×	×	×	kaol. chl. locally lim.	Fe stng chltzn (?)
	BJ153	33·4	35·4	2·0														
29	BJ154	35·4	37·4	2·0	<10	100	<1–10	<1	very erratic 5-70	1	×	×	✓	×	py	✓?	kaol. chl/pin lim.	"
~21	BJ155	37·4	39·4	2·0														
	BJ156	39·4	41·4	2·0														
	BJ157	41·4	43·3	1·90														
	BJ158	43·3	45·3	2·0	100+	85	<1–4	1	erratic 40–50	2	×	×	locally	×	py ?	✓	chl. kaol. lim. pinite	silcfn. local Fe stng.
12	BJ159	45·3	47·3	2·0	(qt) 100	80	<1–8	1	40–50	1	×	×	✓	✓	×	remnant	lim.	
9	BJ160	47·3	49·3	2·0														

Assays

Sn (%)	W (%)	

Sludges

INT	Nº (BJ)	ASSAY Sn (%)
0 to 3	BJ199	
3 to 6	BJ200	
6 to 9	BJ201	
9 to 12	BJ202	
12 to 15	BJ203	
15 to 21	BJ204	
21 to 24	BJ205	
24 to 30	BJ206	
30 to 33	BJ207	
33 to 36	BJ208	
36 to 39	BJ209	
39 to 42	BJ210	
42 to 45	BJ211	
45 to 48	BJ212	
48 to 51	BJ213	

Remarks

* Wider fractures more common in sandier horizons.

Fracturing very erratic in orient'n and density. Very unusual blue-gr. colour to rock.
Local py (?) in pinite veinlets (altn?) in slst.

Occurrences of chl. - sporadic in veinlets.
Pinite more common.

Drill run

METRES	METRES RECOV.	% RECOV.	RQD
3·0	3·01	100·3	59
2·7	2·61	96·7	55
3·0	2·98	99·3	58
3·05	2·98	97·7	73
3·05	3·05	100·0	89
2·9	2·86	98·6	52
3·0	3·04	101·3	39
0·3	0·31	103·0	65
0·05	0·05	100·0	0
1·9	1·86	97·9	51
1·05	1·02	97·1	65
1·65	1·60	97·0	76
1·2	1·16	96·7	59
3·0	3·03	101·0	78
0·35	0·34	97·1	38
0·9	0·94	104·4	53
1·9	1·9	100·0	29
3·0	2·97	99·0	76
2·55	2·52	98·8	76
3·0	3·01	100·3	79
3·0	2·97	99·0	67
2·5	2·52	100·8	67
0·68	0·77	113·2	75
1·7	1·64	96·5	38
0·07	0·07	100·0	0
1·4	1·34	95·7	27
0·42	0·42	100·0	67

Description

Bedded grey slst/sh, beds 10-30cms, locally grades to silicified sst. No obvious facings. Graded So ⇒ ⇑, generally poorly fractured. Rare anastomose veinlets, Minor movement along some veinlets. Bedding fissility well developed. Very minor localized slumping at top of interval.

Interbedded qt/sst/slst/sh going to slst/sh dominated sequence at base of interval. Fairly wide beds, locally slumped, very minor brecciation. Flame structures indicate ⇑. "Streaky" (mylonitic ??) appear to shaley beds at 68·4m. Generally only one set of fractures /veinlets developed. Where 2 or more developed, J_M post date barren, "steeper" veinlets. Abundant Fe staining of slst with micro faulting indicated at 73·9m. Minor fracturing along So fissility. Minor "offsetting" of sh beds along some fractures - evidence of brecciation within.

Fractured grey qt, locally grading to sst, with very minor thin interbeds of sh. Generally regularly fractured, although qt occasionally cut by irregular veinlets. Mineralized veinlets post date barren veinlets. Sulphides becoming more evident with ↑ depth, usually partially to totally altered. Abundant very fine anastomose qtz veinlets, locally chl./pinite - kaol. bearing.

Interbedded qt/sst with minor 10-30cm sh beds. So contorted. Qt/sst generally well fractured, sh poorly. Bedding appears to be folded at 93·15 - very difficult to justify due to very low So intersection ∡'s with L.C.A. Abundant kaol. filled fractures in sh (along So fissility). Way up ??? Rare anastomose kaol - sc veinlets, "sub-vertical." Silicification ↓ with depth - silicified sst at base of interval. Minor brecciation observed in some veinlets. Flames ⇑.

Visual log: ΔΔΔΔ (at approx. 73·9 m); ΔΔΔΔ (at base of sheet)

Sample and mineralisation

SAMPLE NUMBER	FROM	TO	INTVL.	ANGLE BEDDING TO LCA	FRACT. DENSITY (per m)	% FRACT. MIN'SD	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANG. TO LCA	% BLK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.	CARB.		WALL ROCK ALTERN.
BJ161	49·3	51·3	2·0		(qt) 90-100+	80	1-6	1	dom. 40-50 erratics 20-60	2-3	×	×	✓	✓	×	✓	lim. kaol.*	local Fe stng Dom. silcfn
BJ162	51·3	53·3	2·0															
BJ163	53·3	55·3	2·0		(slst) 60-70	80	1-6	1	40-55	1-2	×	×	✓	✓	×	✓	lim. kaol	
BJ164	55·3	57·3	2·0	20														
BJ165	57·3	59·3	2·0	21	50	60	1-4 rare?	<1	40	<1	×	×	✓	✓ only in wide fracs.	×	×	lim. kaol.	Fe stng.
BJ166	59·3	61·3	2·0		30-50	70	1-12	1	55	1-2	×	×	✓	✓	×	✓ ?	lim. sc. kaol	Fe stng
BJ167	61·3	64·1	2·8	25														
BJ168	64·1	66·1	2·0		(sst) 40	75	1-5	1	55	1	×	×	✓	×	×	×	lim. kaol.	silcfn. local Fe stng
BJ169	66·1	68·1	2·0	23														
BJ170	68·1	70·1	2·0		(qt/slcfd sst) 85	80	1-7	1-2	35-50	1-2	×	×	✓	✓	×	×	lim. sc. kaol	silcfn c̄ local Fe stng
BJ171	70·1	72·1	2·0	38														
BJ172	72·1	74·1	2·0															
BJ173	74·1	76·1	2·0		(sh) 35	50	1-3	<1	30-60	<1	×	×	rare	×	×	×	lim. kaol.	local Fe stng
BJ174	76·1	78·1	2·0	13														
BJ175	78·1	79·7	1·6	28	(sh/slst) 40-50	70	1-4	<1	50-60	1	×	✓?	✓	✓	×	×	lim. sc.	
BJ176	79·7	81·7	2·0	29	50-60	80	<1-7	1	40-60	1-2	×	×	✓	✓	×	×	lim. sc.	silcfn haloes
BJ177	81·7	83·7	2·0															
BJ178	83·7	85·7	2·0		80-90	80	1-8 (one at 15)	1	dom. 40-50 locally 80	2-3	×	×	✓	✓	py	×	lim sc.	local Fe stng, silcfn
BJ179	85·7	87·7	2·0															
BJ180	87·7	89·9	2·0		70-90	80	1-5	1	dom. 35 locally 20-80	2-4	✓tr	×	✓	✓	py, aspy	×	sc, jar lim.	silcfn
BJ181	89·9	91·9	2·0															
BJ182	91·9	93·9	2·0	11, 0	30-50	70	1-5	1	40	3	✓tr	✓tr	✓	✓	py, aspy	×	sc, jar lim. kaol.	silcfn
BJ183	93·9	95·9	2·0	10, 12														
BJ184	95·9	97·9	2·0		gen. 30-50 locally 80+	70	1-7	1	45-50	1-2	×	×	✓	✓	py, aspy	×	lim. sc.	silcfn local Fe stng of sst.
BJ185	97·9	99·6	1·7	16														
				12														

ASSAYS: Sn (%) / W (%) — no entries.

Sludges

INT	Nº (BJ)	ASSAY Sn (%)	Remarks
51 to 54	BJ214		* more common in shaley horizons
54 to 57	BJ215		
57 to 60	BJ216		Widespread Fe stng along So fissility.
60 to 63	BJ217		
63 to 66	BJ218		
66 to 69	BJ219		
69 to 72	BJ220		
72 to 75	BJ221		
75 to 78	BJ222		
78 to 81	BJ223		
81 to 84	BJ224		
84 to 87	BJ225		
87 to 90	BJ226		jarosite (?) after aspy.
90 to 93	BJ227		
93 to 96	BJ228		
96 to 99	BJ229		

METRES	DRILL RUN METRES RECOV.	DRILL RUN % RECOV.	RQD	DESCRIPTION	VISUAL LOG
1·85	1·87	101·1	38	Massive grey sh, locally graded to slst. So very poorly developed. Very poorly fractured. Cut by rare irregular qtz-mu veinlets. Local occurrences of fine limonitic fractures.	
1·5	1·34	89·3	44		
1·0	0·99	99·0	70	Fractured qt locally grading to sst. Massive sequence – no sh interbeds. Regularly fractured by 1 dom. and 1 secondary set of fractures. "Flatter" barren fracture/veinlets post date J_M. "Pitted qt" between 111·0–111·8m – abundant limonitic pits in host qt. Rare small <1–2 mm pyritic clusters in body of qt.	ΔΔΔΔ
0·33	0·19	57·6	0		
0·65	0·64	98·5	30		
1·33	1·30	96·3	28		
1·12	1·17	104·5	62		
2·9	2·79	96·2	62		
0·15	0·13	86·7	0		
1·85	1·84	99·5	70		
0·88	0·87	98·9	49	Very fine grained dark grey-green clay grading to a fine grained green diorite – over 0·6m. Diorite varies in colour from grey to green, locally to dark green and is locally amygdaloidal. Contact with qt is fracture controlled – ∡ ~ 35–40° to L.C.A. Fracturing poorly developed, and varies greatly in orientation.	
2·22	2·25	101·4	53		
1·8	1·80	100·0	71		
3·0	2·99	99·7	88		
				Some veinlets appear to be chl. bearing. Rare angular inclusions of qt in diorite. Grain size varies slightly with depth – both ↑ and ↓.	
1·95	1·97	101·0	72		
2·90	2·90	100·0	77		
4·85	4·87	100·4	75		
Σ125·55	124·69	99·32	64		

ANGLE BEDDING TO LCA	SAMPLE NUMBER	FROM	TO	INTVL.	FRACT. DENS. (per m)	% FRACT.	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANG. TO LCA	% BLK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.	CARB.		WALL ROCK ALTERN.	Sn (%)	W (%)		Remarks
	BJ 186	99·6	101·6	2·0	gen'ly <20 locally 60+	80	<1–10 rare?	<1	30–50 locally 20–70	<1	×	×	*✓	*✓	*py	×	lim. kaol.	local Fe stng				* only in wide fractures/veinlets.
5–10	BJ 187	101·6	103·6	2·0																		
	BJ 188	103·6	105·6	2·0																		
	BJ 189	105·6	107·6	2·0	var. 80–100+	85	<1–7	1	30–40 locally 10–60	2	✓tr	×	✓	×	py. aspy	×	lim. jar. sc.	silcfn				
	BJ 190	107·6	109·6	2·0																		
10	BJ 191	109·6	112·45	2·85	70	80	<1–5	1	35–50	1–2	×	×	✓	✓	py. aspy	✓	lim. sc.	silcfn				
	BJ 192	112·45	114·45	2·0																		
	BJ 193	114·45	116·45	2·0	<10	80	<1–2	1	20–60	<<1	×	×	×	×	×	?	chl?	—				
	BJ 194	116·45	118·45	2·0																		
	BJ 195	118·45	120·45	2·0																		
	BJ 196	120·45	122·45	2·0	<10	90	<1–8	1–2	20–50	<1	×	×	×	×	×	✓?	chl?	—				
	BJ 197	122·45	124·45	2·0																		
	BJ 198	124·45	125·45	2·0																		

SLUDGES INT	No. (BJ)	ASSAY Sn (%)
99 to 102	BJ 230	
102 to 105	BJ 231	
105 to 108	BJ 232	
108 to 111	BJ 233	
111 to 114	BJ 234	
114 to 117	BJ 235	
117 to 120	BJ 236	
120 to 123	BJ 237	
123 to 125	BJ 238	

Project EL 10/80 GREAT PYRAMID

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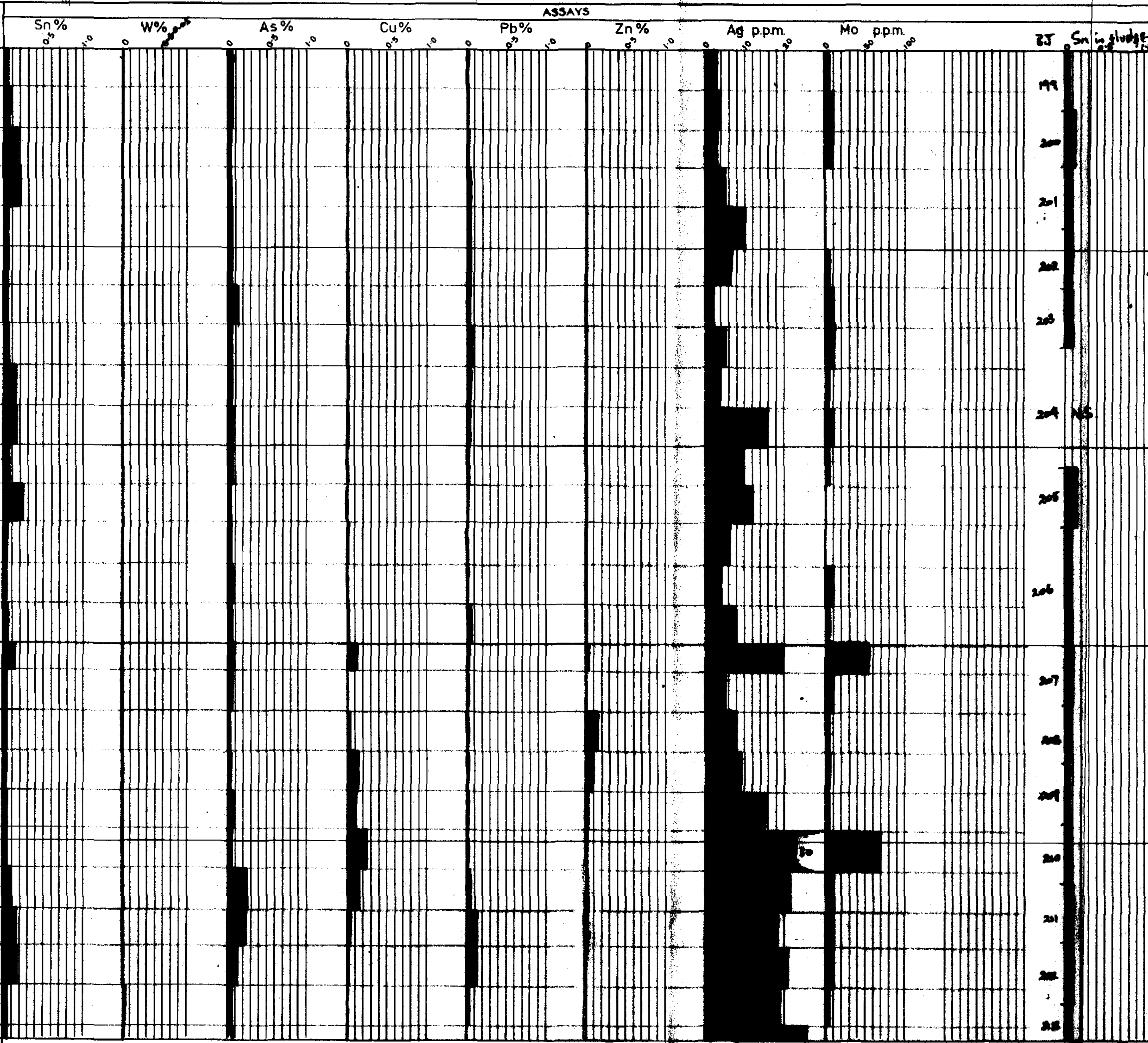
Drillhole Nº BPD 4
Sheet: 1 of 3

801133

METRES VISUAL LOG	% RECOV.	SAMPLE Nº
	99	BJ 136
	99	137
	96	138
	100	139
10	100	140
	100	141
	90	142
	97	143
	100	144
20	100	145
	100	146
	98	147
	100	148
	100	149
30	100	150
	100	151
	100	152
Approx. base complete oxidation	100	153
	100	154
40	99	155
	100	156
	100	157
	100	158
	95	159
50	100	160



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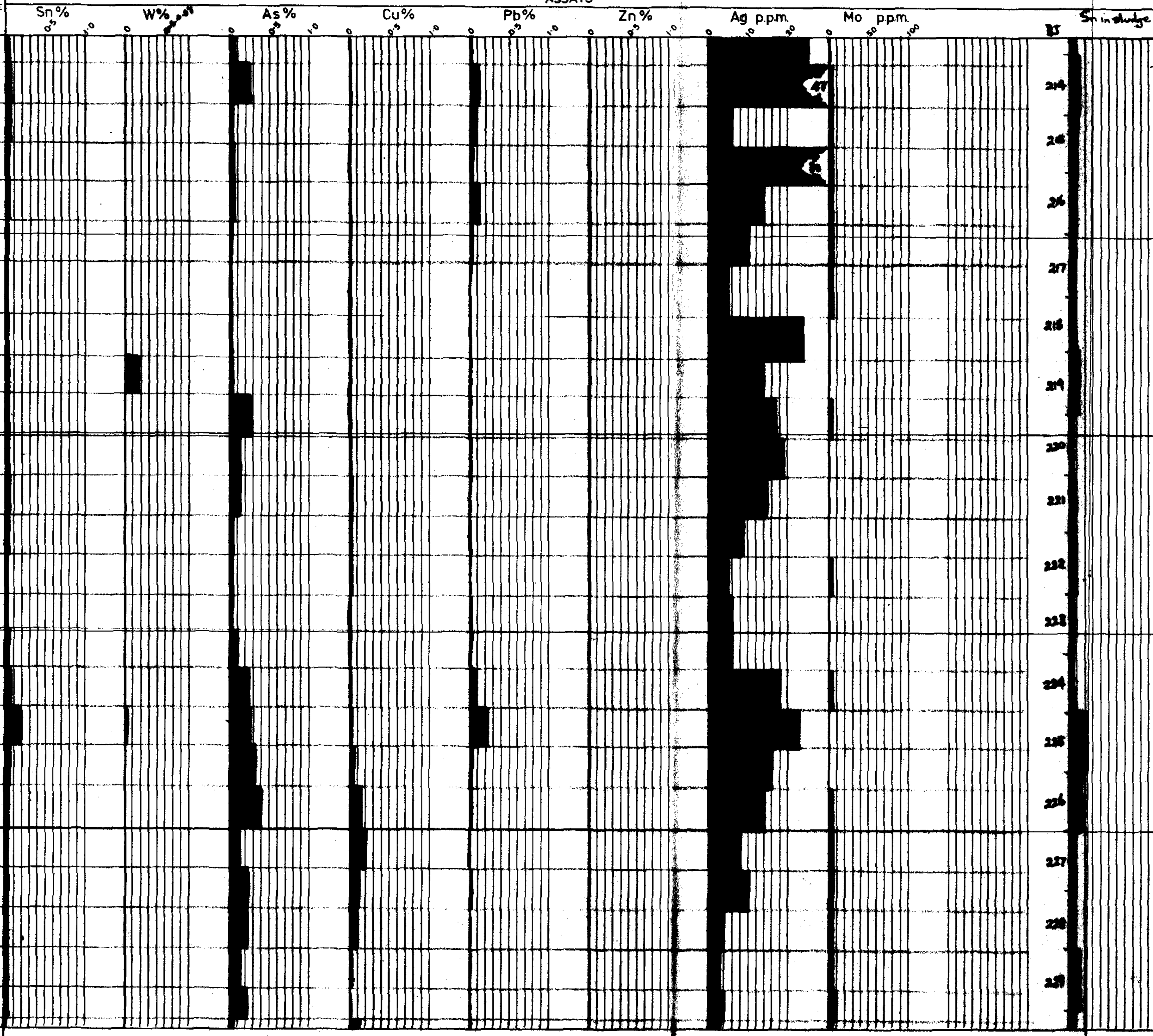
Project EL 10/80 GREAT PYRAMID

Drillhole Nº BPD 4
Sheet: 2 of 3

801134

METRES VISUAL LOG M	% RECOV.	SAMPLE Nº
	100	161
	97	162
	95	163
	99	164
	98	165
60	99	166
	100	167
	99	168
	100	169
	100	170
70	99	171
	97	172
	97	173
	100	174
	100	175
80	100	176
	99	177
	99	178
	99	179
	100	180
90	99	181
	100	182
	100	183
	100	184
	100	185
100		

ASSAYS



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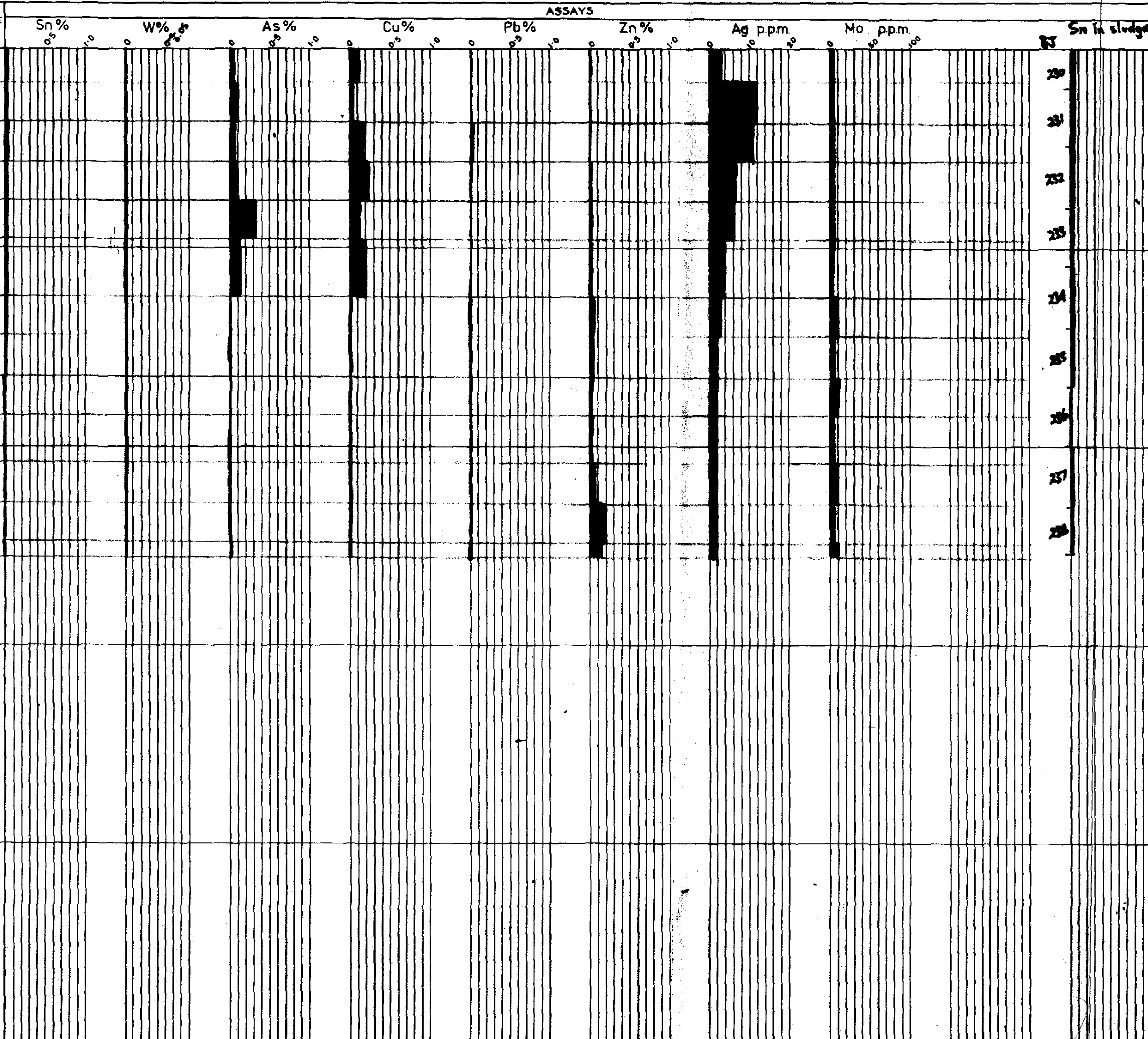
Project EL 10/80 GREAT PYRAMID

Drillhole Nº BPD 4

Sheet: 3 of 3 801135

METRES VISUAL LOG m	% RECOV.	SAMPLE Nº
	100	186
	95	187
	88	188
	100	189
	96	190
110	99	191
	99	192
	100	193
	100	194
	100	195
120	100	196
	100	197
EOH	100	198

ASSAYS



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Exploration Department

DRILL HOLE LOG HEADER SHEET

Project:	EL 10/80 Great Pyramid	**Hole No.:**	B.P.D.5
Prospect:	Great Pyramid	**Total Depth:**	100.23m
Local Grid co-ords:	425mE 395mN	**Bearing:**	118° (collar)
AMG co-ords:		**Depression:**	69½° (collar); 71° (50m); 72° (100m)
Drilling Co.:	Walker Drilling	**R.L. Collar:**	~175m
Drill Type:	DB 1000/2		
Core Size:	HQ3	**Commenced:**	4/12/80
Driller:	I W McCallum	**Completed:**	12/12/80
		Logged by:	D A Steele
		Sampled by:	P & M Good

Technical Data:

Overburden:	Less than 1m; percussion hammer not used.
Casing:	Nil
Water Return:	Generally moderate to good. Circulation lost at 8.70, 22.3, 62.5, and 96.0 metres.
Cementation:	At 8.70m.
Additives:	Ro-Lube, Super Gel, Mica, Bentonite.
Oxidation:	Approximate depth of total oxidation 49m. Base of oxidation zone - 90m.
Other:	Downhole survey by acid etch.

Project E.L. 10/80 GREAT PYRAMID

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Drillhole Nº BPD 5 — 801137

Sheet 1 of 2 00.0 – 50.3m

Drill Run

METRES	METRES RECOV.	% RECOV.	RQD
1.30	1.24	95.4	33
1.70	1.66	97.6	33
1.50	1.50	100.0	31
1.50	1.44	96.0	66
[illegible]	[illegible]	96.9	0°
0.80	0.38	96.0	0°
[illegible]	[illegible]	[illegible]	0°
0.495	0.51	103.6	22.6°
0.40	0.40	100.0	0°
1.35	1.25	92.6	35
0.85	0.82	96.5	
1.20	1.17	97.5	55
.30	0.30	100.0	0°
1.60	1.50	93.8	31
2.15	2.10	97.7	54
2.95	2.96	100.3	78
3.05	3.02	99.0	61
2.25	2.23	99.1	67
2.60	2.49	95.8	84
1.15	1.19	103.5	71
1.60	1.53	95.6	59
1.40	1.34	95.7	49
0.85	0.83	97.7	65
0.65	0.65	100.0	57
0.40	0.37	92.5	35
1.10	1.11	100.9	64
3.00	3.01	100.3	66
0.40	0.40	100.0	30
0.75	0.72	96.0	0
0.75	0.79	105.3	30
1.20	1.16	96.7	56
0.84	0.84	100.0	58
2.0[illegible]	1.94	94.2	90
3.00	2.96	98.7	86
2.75	2.73	99.3	63
2.55	2.51	98.4	41
[illegible]	[illegible]	[illegible]	[illegible]

Description

Description	Visual log	Angle bedding to LCA
Grey qt locally graded to sst c̄ 1-1.5m intb of fawn, locally Fe stnd. sh. Qtz locally brectd as at 1.40m. Fracturing generally regular although locally disrupted. F.I. generally > 80, Fractures in sh. more irregular, less well developed. Rare blk qtz vnlts x cut minlzd. Fracs generally 55° to L.C.A. Fracturing in qt more disrupted at base of interval. So generally poorly developed. Abdt spotting on qtz, small <1-1mm white occasionly Fe stnd.	ΔΔΔΔ	39, 44
Cont. qt/sst c̄ thin strgrs. of grey-bn. sh. Fracturing erratic in distribution and orientation. Local breccᵃ. Minor brecc within larger fracs. So indeterminable. Fracs/vnlts slightly warped 11.85m.	ΔΔΔΔ	
Brectd qtz/sst c̄ ibds. of gn/grey sh. locally severly Fe stnd. locally chltzd. Way up ⇑. Generally poorly fractured. Local offsetting of earlier qtz. vnlts. by later minlzd. fracs. Poss. qtz-chl matrix btn qtz frags. Brectd zones vary from 5-10cm in length usually developed sub ⫴ to ⫴ with dominant fracturing.	ΔΔΔΔ	33
Sh locally silty Flames structures ⇑, fold So ⇑. Local strgrs of qtz. very low ∢ (<20) to LCA.		0, 12
Grey sh. locally grdng. to slst. Evidence for abdt. soft sedt. deform. Way up ⇑ (grad. So) So firstly developed = sh. Fl. q = 40. Anastom. feldsapathic (?) vnlths. local occurrences.		13
Grey qt locally grdng to sst c̄ minor 10-30cm into beds of dark grey to bn. grey shale. At brectd at 28.2m (20cm zone) and 29.2m (10cm)		15
Shaley units. locally slumped and brectd. Fracturing regular in qt but erratic in sh. So ⫴ to sub ⫴ to LCA. Way up ⇑? (grdd. So) Steep (low ∢ to LCA) qt vnlts and strgrs cut by by later minlzd vnlts and fracs. minor disptmt brecc often accompanied by qtz infilling. Locally limonitic.		13, 0, 10, 15
Grey sh/sst locally bedded and grdg to sst. Locally brectd and cut by irregular anastomose qt/carb. vnlts. Locally severely Fe stnd. Generally poorly fractured. F.I. appears to ↑ in sandier units. Evidence for soft sed. slumping and deforming.		20, 14
Fractured grey qt brectd. 54.5 and 58.1m Massive units and locally grading to sst. Two sets of fractures; dominant 30-40° and to LCA, secondary 60-70° to LCA. Secondary generally barren (qt limonitic) and predate minlzd. vnlts.		

Sample / Mineralisation / Assays

Number	From	To	Intvl.	Frac. density (per m)	% Frac.	Vein width mm range	Av.	Angle to LCA	% Blk rock min.	Cassit.	Wolf.	Qtz.	Musc.	Sulph.	Carb.		Wall rock altern.	Sn (%)	W (%)
BJ 239	0.0	2.0	2.0	98	75	4-4	1	30-40	1-2	✓	×	✓	✓	×	×	lim.	Silcfn. local Fe stng of sst	0.41	—
BJ 240	2.0	4.0	2.0															0.13	
BJ 241	4.0	6.0	2.0	sh 99	50	<1-3	<1	variable 20-50	1	×	×	rare	×	×	×	lim.	Local Silcfn Fe stng	0.24	
BJ 242	6.0	8.0	2.0															0.04	
BJ 243	8.0	10.0	2.0	sst 85	60	<1-3	1	35	1-2	×	×	✓	×	×	×	kaol lim Abdt	Silcfn haloes v local Fe stng.	0.08	
BJ 244	10.0	12.0	2.0	105	75	<1-3	1	variable 30-50	1-2 locally 3+	✓tr	×	✓	×	×	✓	kaol. lim		0.21	
BJ 245	12.0	14.8	2.8	70	70	<1-2	1	28-41	<1	×	×	✓	×	×	×	lim	Silcfn haloes Fe haloes	0.11	
BJ 246	14.8	16.8	2.0														abdt Fe stng	0.05	
BJ 247	16.8	18.8	2.0	45	80	<1-2	1	30	<1	×	×	✓	×	×	×	lim kaol.		0.05	
BJ 248	18.8	20.8	2.0															0.05	
BJ 249	20.8	23.7	2.9	63	70	<1-2	1	35-55	<1	×	×	✓	×	×	×	lim kaol.	Fe haloes	0.03	
BJ 250	23.7	25.7	2.0			v. rare												0.02	
BJ 251	25.7	28.2	2.5	30-35 rarely So	40	<1-5	<1	highly variable 20-60	<1	×	×	✓rare	×	×	×	kaol	Fe haloes	0.02	
BJ 252	28.2	30.2	2.0															0.11	
BJ 253	30.7	32.2	2.0	78	70	<1-5	1	30-35	2-3	✓	×	✓	✓	×	×	lim kaol. Sc		0.05	
BJ 254	32.2	34.2	2.0	sh. 63	70	<1-4	1	30-45	1-2	×	×	✓	×	×	✓? remnant	lim kaol.	Local Fe stng	0.08	
BJ 255	34.2	36.2	2.0															0.06	
BJ 256	36.2	38.2	2.0	72	80	<1-5	1	35-45	1-2 locally +4	×	×	✓	✓	×	✓? remnant	lim kaol	Silcfn Fe stng.	0.04	
BJ 257	38.2	40.4	2.2															0.07	
BJ 258	40.4	42.4	2.0	sst 42	60	<1-4	1	35-45	<1	✓	×	✓	✓	×	✓	lim	Silcfn Fe stng esp. sh.	0.03	
BJ 259	42.4	44.4	2.0															0.02	
BJ 260	44.4	47.2	2.8															0.04	
BJ 261	47.2	49.2	2.0															0.02	
BJ 262	49.2	51.2	2.0	30-40	75	<1-3	1	30-40	1-2	×	×	✓	✓	PY	×	chl lim Sc	Silcfn (chltzn?)	0.04	

Sludges

INTVL.	Nº BJ	ASSAY Sn%	Remarks
0.5 to 3.5	BJ 287	0.38	Fracs in sh. tend to be v. tight of qt.
3.5 to 6.5	BJ 288	0.18	
6.5 to 8.7	BJ 289	0.28	
No Water Return		—	
18 to 21.5	BJ 290	540	
21.5 to 26	BJ 291	440	Fe altn. haloes very obvious in silty units.
No Water Return		—	Minor displacement along some fracs.
30.4 to 33.5	BJ 292	0.12	
33.5 to 36.5	BJ 293	0.13	
36.5 to 39.5	BJ 294	0.12	
38.5 to 42.5	BJ 295	855	
42.5 to 45.5	BJ 296	805	
45.5 to 48.5	BJ 297	510	
48.5 to [illegible]	BJ 298	530	Limit of depth of [illegible]

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Project E.L.10 80 GREAT PYRAMID.

Drillhole Nº BPD 5 801138

Sheet 2 of 2 50.3 – 100.23m.

Drill run

METRES	METRES RECOV.	% RECOV.	RQD
3.00	2.98	99.3	65
3.05	2.93	96.1	66
3.05	3.05	100.0	70
3.05	3.05	100.0	81
0.55	0.68	87.2	35
1.15	1.33	115.7	74
1.65	1.35	81.8	85
2.00	2.03	101.5	77
1.00	1.01	101.0	57
3.00	2.90	96.7	64
3.00	2.94	98.0	80
0.08 (struck through)	0.07 (struck through)	112.0 (struck through)	0.0 (struck through)
2.95	*0.50	16.9	22
1.65	1.54	93.3	73
0.60	0.60	100.0	43
2.95	2.96	100.3	48
3.05	3.07	100.7	68
1.80	1.72	95.6	55
1.10	1.18	107.3	32
2.10	2.01	95.7	41
2.08	2.05	98.6	73
3.00	3.04	101.3	71
2.00	1.92	96.0	58
0.45	0.41	91.1	73
1.05	1.06	100.9	100

Description

Samples	DESCRIPTION
BJ 263–BJ 267	Displt. of fractures rare. First sulphides evident Chlorite bearing vnlts becoming very obvious c̄ ↑ depth. Fracturing very regular in orientation but erratic in distribution (F.1.) Fe stng of qt restricted to breccia zone
BJ 268–BJ 269	Brecld sst/slst. Locally sh. comprises 20-30 cm wide sh/slst beds, z̄ severely fractured, brecld sst interspaced. Severely Fe stnd. and silcfn, locally gossanous. Sst chltzd at base of interval. Fracting very erratic.
BJ 270–BJ 276	Grey slst unit locally grading to sst or sh. Poorly bedded and fractured. Generally silcfd. Cut by steep vnlts and stngrs of qt and chl. Incipient chltzd of sst. Flames indicate ↑. Local brecciation at 68.1 - 68.4 m. Possible fault bounded unit. Fractured qt/sst z̄ very minor ibds of grey sh, locally severly Fe stnd. Fracturing often intense leads to brecld appearance. Locally brecld at 71.3 - 78.5m. Slumping common. Displacement of thin shaley units along fractures common. Generally only one dominant fracture orientation, although others, erratic, occur. * 2.45m Core loss
BJ 277–BJ 278	Inbedded qt and sh. severly slumped and contorted sh beds <1-4 cm wide, locally graded to sst ↑ very irregular fractures, minor displacement of S_0 along them. Lithologies possess small (<1mm) irregular pits. poss. after carb? S^2 partially oxidzd.
BJ 279–BJ 280	Grey qt z̄ 50cm slst/sh inbedded at top of interval intensly fractured and mineralizing, locally brecld slumped. Qt locally chltzd and poorly bedded. Two dominant fractures orientation 30 + 40 + 70° to LCA. Shallow (70) barren pass. predate 30-40
BJ 281	Inbedded sh/qt/sst very similar to 80-83.5m interval very irregular fractures locally well bedded flames ↑↑. S_0 locally ⊥ to LCA.
BJ 282–BJ 286	Grey qt, well fractured, z̄ two very minor 10-16 cm sh beds. One dominant fracture orientation, mineralized, irregular qtz vnlts, barren at low (0-10°) to LCA offset and post dated by mineralized vnlts. Main vnlt assblge.:- qt, chl, S^2, more common vnlts. Vnlts very regular in distribution and orientation, locally vuggy, rarely anastamose. Mu occurs often as selvedge on qt_3 vnlts.

Sample, mineralisation and assays

ANGLE BEDDING TO LCA	NUMBER	FROM	TO	INTVL.	FRACT. DENS. (or m)	% FRACT. MIN'S.	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANGL. TO LCA	% BLK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.			WALL ROCK ALTERN.	Sn (%)	W (%)
	BJ 263	51.2	53.2	2.0															0.05	
	BJ 264	53.2	55.2	2.0	85-95	80	<1-5	1	32-46	2-3	√tr	x	√	√	py rare cpy	x		chl. sc lim, jar?	0.02	
	BJ 265	55.2	57.2	2.0															0.03	
	BJ 266	57.2	59.2	2.0	30-50	80	<1-4	1	30-35	<1	x	x	√	x	py	x		chl. lim kaol.(trace)	0.21	
	BJ 267 (struck through)	59.2 (struck through)	60.5 (struck through)	1.3 (struck through)															0.03 (struck through)	
22	BJ 268	60.5	62.5	2.0	30-60	65	<1-1	<1	30-70	2-3	x	x	√	x	x		lim.	Severe Fe stng	0.04	
	BJ 269	62.5	63.9	1.4															0.07	
	BJ 270	63.9	65.9	2.0															0.03	
27	BJ 271	65.9	68.4	2.5	10-25	80	<1-4	1	20-30	<1	x	x	√	x	py sph?	x	Lim Chl	Silcfn	0.04	
	BJ 272	68.4	70.4	2.0															0.06	
	BJ 273	70.4	72.4	2.0	106	75	<1-2	1	30-35	1	x	x	√	√	x	x	lim	silcfn	0.04	
	BJ 274	72.4	74.4	2.0	70-90	80	<1-10	2	30-40	2-3	√	x	√	√	PY	x	jar Sc Lim	Silcfn	0.05	
	BJ 275	74.4*	78.9	2.0															0.06	
	BJ 276	78.9	80.1	1.2															0.12	
18	BJ 277	80.1	82.1	2.0	70-80 locally 90+	70-80	<1-7	1	highly variable 30-60 generally 35-40	3-5	1	x	√	√	py.cpy	sid ?	Lim FL?	Silcfn	0.03	
	BJ 278	82.1	83.9	1.8															0.05	
20	BJ 279	83.9	85.9	2.0	generally 80+	80-	<1-6	<1-1	40	3-5	√	x	√	√	py cpy	sid?	Lim jar Sc	silcfn, patchy chl/zd	0.08	
	BJ 280	85.9	88.3	2.4															0.08	
12-15	BJ 281	88.3	91.1	2.8	v. erratic 20-80	70	rare <1-5	<1	rare 20-70	2-3	x	x	√	√	py	x	Lim Sc	v. thin silcfn haloes	0.07	
	BJ 282	91.1	93.1	2.0	86	80	<1-6	1	40-50	3-4	x	x	√	√	py cpy sph (tr)	sid.	chl jar		0.03	
	BJ 283	93.1	95.1	2.0															0.02	
	BJ 284	95.1	97.1	2.0	79	85	4-7	1-2	40-50	3-4	√	x	√	√	py, cpy. sph, opy.	sid	chl jar	Local Silcfn haloes. Fe stng	0.02	
	BJ 285	97.1	99.1	2.0															0.04	
	BJ 286	99.1	100.23	1.13	80-100+	70-80	<1-7	<1-1	35-50	3-5	x	x	√	√	py, cpy, sph.	sid	chl	silcfn rare Fe stng.	0.08	

Sludges

INT'L	Nº BJ	ASSAY Sn%	Remarks
51.5 to 54.5	BJ 299	445	
54.5 to 57.5	BJ 300	780 .15% Cu	
57.5 to 60.5	BJ 301	0.12 .15% Cu	
60.5 to 63.5	BJ 302	740	
63.5 to 66.5	BJ 303	880	Locally slumped Qt-Chl stngs occasonally plygmatic.
66.5 to 69.5	BJ 304	405	
69.5 to 72.5	BJ 305	745	
72.5 to 75.5	BJ 306	495	
75.5 to 78.5	BJ 307	745 .16% Cu	
78.5 to 81.5	BJ 308	0.17 .16% Cu	Minor chl in vnlts. Interval apparently well mineralized. S_0 very irregular stng locally vuggy.
81.5 to 87.5	BJ 309	0.11	
87.5 to 90.5	BJ 310	0.14 .20% Cu	Approx total depth of oxidation.
90.5 to 93.5	BJ 311	105 .15% Cu	
No Water	Return	—	
96.5 to 100.23	BJ 312	780	Qt v. locally grading to sst.

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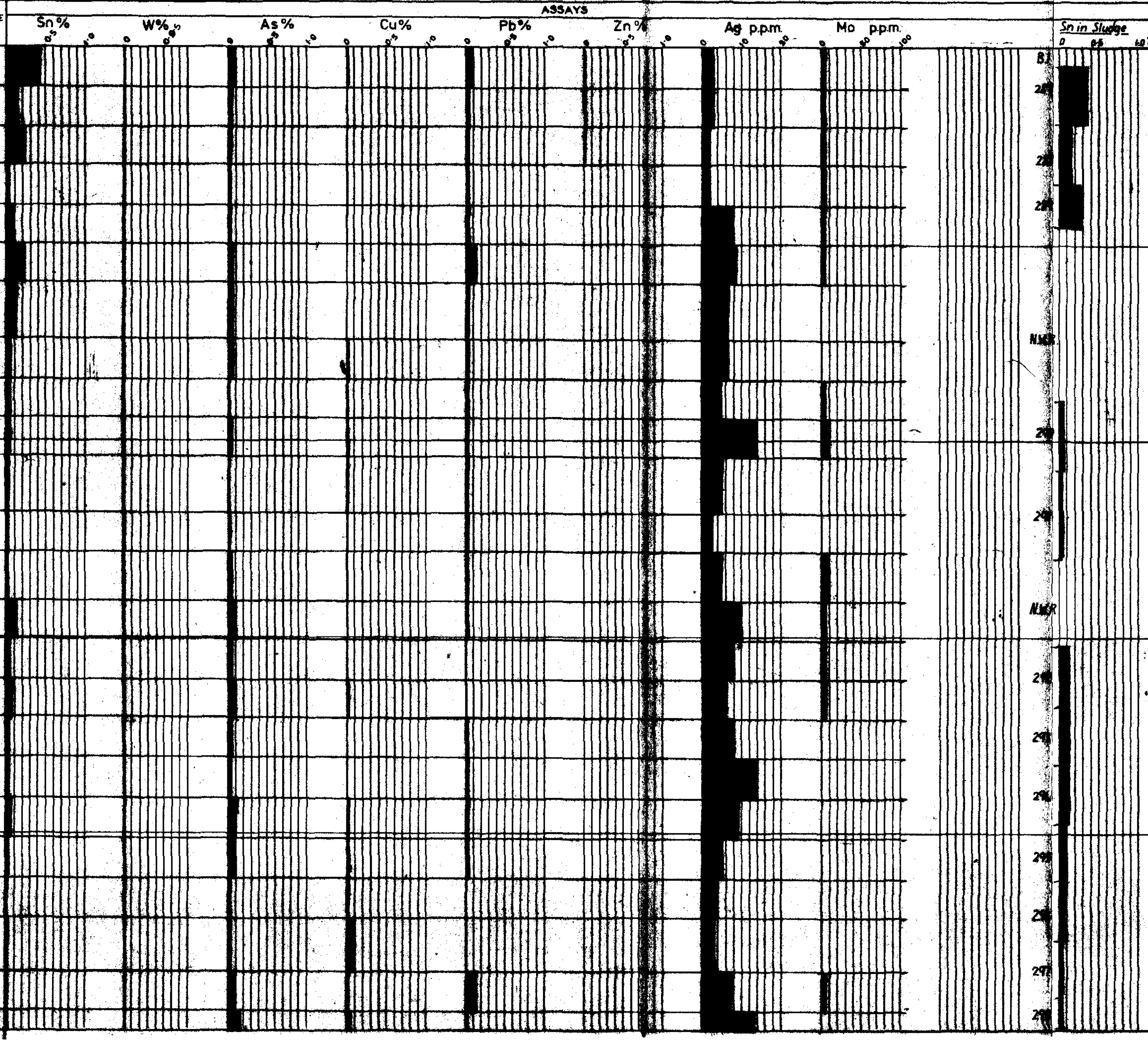
Project E.L. 10 80 GREAT PYRAMID

Drillhole Nº BPD 5 801139

Sheet: 1 of 2

METRES VISUAL LOG M	% RECOV.	SAMPLE B/Nº
	96	239
	99	240
	96	241
	80 / 100	242
10	96	243
	99	244
	96	245
	100	246
	100	247
20	99	248
	99	249
	96	250
	99	251
	96	252
	99 / 82	253
	100	254
	100	255
	100	256
	99	257
	94	258
	99	259
	99	260
	98	261

Depth to complete oxidation 60



Project E.L 10 80 GREAT PYRAMID

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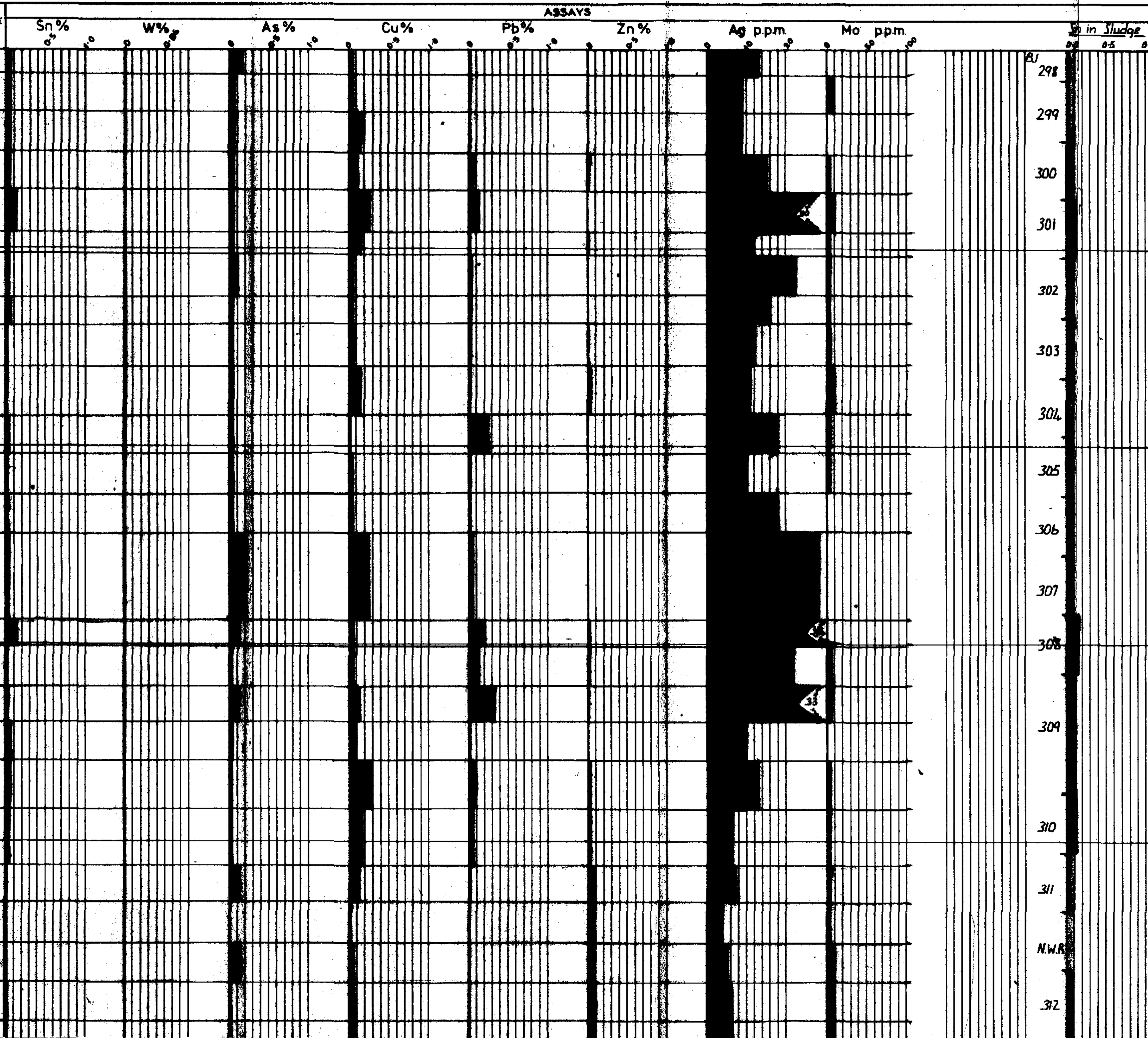
Drillhole Nº BPD 5 801140
Sheet: 2 of 2

Metres visual log	% Recov.	Sample Nº BJ
50	=53=	262
	99	263
	98	264
	96	265
	100	266
60		267
	100	268
	100	269
	100	270
	100	271
70	95	272
	97	273
	98	274
	17	275
80	93	276
	100	277
	100	278
	100	279
	96	280
90	100	281
	100	
	99	282
	100	283
	100	284
	96 / 91	285
100	100	286



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Exploration Department

DRILL HOLE LOG HEADER SHEET

Project: EL10/80 GREAT PYRAMID

Prospect: GREAT PYRAMID TIN PROSPECT

Local Grid co-ords: 451mE 303mN

AMG co-ords:

Drilling Co.: WALKER DRILLING

Drill Type: DB1000/2

Core Size: HQ3 to 114.00, NQ3 114.19 to 139.55

Driller: I.W. McCALLUM, A. WALKER

Hole No.: BPD7

Total Depth: 139.55m

Bearing: 120° mag

Depression: 60°(0m), 60°(50m), 61°(100m), 61°(14

R.L. Collar: 209m

Commenced: 5/6/81

Completed: 27/6/81

Logged by: D.A. STEELE

Sampled by: P.A. DUBBELD

Technical Data:

Overburden:	Nil, however percussion hammer used down to 19.0m due to extremely oxidized nature of surface rock. Tricone used from 19.0 to 25.60m.
Casing:	1m of HW. Remained in hole.
Water Return:	Generally good. Return lost at 78m.
Cementation:	None, however hole was sealed with Gypseal 60 at 26.50, 82.38, 114.00m to stop rods getting jammed down the hole.
Additivies:	Ro-Lube, Super Gel, Hydropol, Gypseal 60, B.P. DD Oil, Bentonite.
Oxidation:	Approximate depth of total oxidation 45-50m. Base of oxide zone not intersected.
Other :	Downhole survey by acid etch (dip only.)

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801142

Project E.L 10/80 Great Pyramid

Drillhole Nº BPD 7
Sheet 1 of 3 (00·00 - 48·95m)

Drill Run

Metres	Metres Recov.	% Recov.	RQD
1·48	1·43	96·62	35
0·58	0·53	91·38	0
1·50	1·54	102·67	76
0·92	0·88	95·65	34
0·97	1·01	104·12	38
1·21	1·11	91·74	11
1·57	1·52	96·82	10
1·03	0·81	78·64	28
1·46	1·20	82·19	36
1·08	1·00	92·59	89
1·40	1·26	90·00	57
1·24	1·17	94·35	26
1·46	1·45	99·32	95
1·26	0·80	63·49	23
1·00	0·84	84·00	83
1·40	1·51	107·86	77
0·75	0·58	77·33	76
1·55	1·53	98·71	39
0·57	0·60	105·26	78
0·57	0·53	92·98	34
1·30	1·24	95·38	91

Description

Description	Visual Log	Angle Bedding to LCA
Red clay c̄ red/bn sh.		
Red Sh		
Dominantly red/bn sh c̄ minor sst/qt		
Grey to red/bn sh		
Red Fe stnd sh		
Red sh		
Red sh		
Red sh		
Red sh		
Red/bn sh c̄ minor qt/sst		
Tricone (Rock Roller) 19·0 - 26·5m		
Severely ferruginized sst/sh/qt. brecciated in 1-3m lengths. Very irregularly fractured. Abundant kaolin fractures. Bedding poorly preserved 10-20cm lengths of severely brecciated rock - qt fragments in very fine red/bn Fe stnd matrix. Localized lengths of regular fracturing, but generally very irregular in orientation. Overall F.I (Total F.I) generally >120. Orientation 10-70° to LCA. Faulted based contact/unit below.		10, ~20
Very soft severely altered clay rich rock finely speckled in appearance. generally off white to light brown in colour. locally deep-red bn c̄ gritty in texture. No obvious sedimentary features preserved. Possible - altered diorite c̄ inclusions of ferruginized sst (deep red bn)? Faulted top and bottom contacts ~30° to LCA.	ΔΔΔΔ	
Deep red bn sandy unit. severely Fe stnd. very soft. very poorly bedded, unfractured.	ΔΔΔΔ	85
Finely bedded (1-3mm) sh/sst. grey to bn. Brecciated 10cm at 45·2m. Faulted bottom contact 40° very irregular in orientation.		60
Diorite in varying degrees of alteration from white to bn at top to dark green grey at base very fine grained at base possible chill margin approx 50cm wide. Rings of weathering (Liesegang?) common between 46·3 - 48·2m. Generally poorly and irregularly fractured. Dominantly chl or kaolin filled.	ΔΔΔ	50

Sample, Mineralisation and Assays

Number	From	To	Intvl.	Fract. Dens. (per m)	% Fract. Min.	Vein Width mm Range	Vein Width mm Av.	Angle to LCA	% Blk Rock Min.	Cassit.	Wolf.	Qtz.	Musc.	Sulph.	Carb.	Other	Wall Rock Altern.	Sn (%)	W (%)	Ag ppm
BJ 733	0·0	2·0	2·0															·26		2
BJ 734	2·0	4·0	2·0															·14		2
BJ 735	4·0	6·0	2·0															·14		2
BJ 736	6·0	8·0	2·0															·15		2
BJ 737	8·0	10·0	2·0															·09		2
BJ 738	10·0	12·0	2·0															·09		3
BJ 739	12·0	14·0	2·0															·11		3
BJ 740	14·0	16·0	2·0															·20		11
BJ 741	16·0	18·0	2·0															·14		16
BJ 742	18·0	19·0	1·0															·40		50
Not Sampled																				
BJ 743	26·50	28·50	2·00															·04		11
BJ 744	28·50	30·50	2·00															·03		18
BJ 745	30·50	32·50	2·00	73	80	<1/1	<1	60	1-2	x	x	rare	x	x	x	limonite kaolin	Fe stng	·02		10
BJ 746	32·50	35·00	2·50															·02		3
BJ 747	35·00	37·00	2·00	generally <<5	100	? (open breaks)	>1	highly	x	x	x	x	x	x	x	limonite (kaolin)	Fe stng	<·01		4
BJ 748	37·00	39·00	2·00															<·01	·008	5
BJ 749	39·00	41·00	2·00															<·01	·013	3
BJ 750	41·00	43·45	2·45															<·01	·010	5
BJ 751	43·45	45·52	2·07															<·02	·010	3
BJ 752	45·52	46·50	0·98															·03	·004	4
BJ 753	46·50	48·50	2·00															<·01	·008	3
BJ 754	48·50	50·50	2·00	<10	90	<1-2	1	20-50	<1	x	x	x	x	x	x	Chl. (Kaolin)		<·01	·008	3

Composite Intervals

Int.	Sample	% Sn
~22 to ~26	BJ 799	·05
30 to 32	BJ 800	·06
32 to 35	BJ 801	·05
35 to 38	BJ 802	·04
38 to 41	BJ 803	·05
41 to 44	BJ 804	·03
44 to 47	BJ 805	·03
47 to 50	BJ 806	·03
50		

Remarks

Depth	Remark
26·50–30·50 (BJ 743–BJ 744)	"Soft" weathered lithologies appear to be unaffected by brecciation apparent in adjacent hard units.

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Project E.L. 10180 Great Pyramid

Drillhole Nº BPD7

Drill run

Depth mark	METRES	METRES RECOV.	% RECOV.	RQD
48.93				
6	1.03	1.05	101.94	90
	1.27	1.20	94.49	92
	1.18	1.13	95.76	69
	0.28	0.30	107.14	[illegible]
	1.50	1.59	106.00	76
	1.40	1.43	102.14	63
53.[illegible]	1.55	1.55	100.00	93
8	1.50	1.50	100.00	61
	1.55	1.55	100.00	57
62.[illegible]	1.40	1.40	100.00	71
	1.55	1.56	100.65	41
66.16	1.15	1.11	96.52	53
	1.25	1.24	99.20	57
	0.94	0.94	100.00	43
10	1.17	1.16	99.15	48
70.[illegible]	1.54	1.50	97.40	16
	1.20	1.15	95.83	10
	0.64	0.62	96.88	0
	1.00	0.94	94.00	11
74.[illegible]	1.20	1.21	100.83	18
	1.14	1.00*	87.72	10
12	0.95	0.81*	85.26	41
	0.75	0.64*	85.33	0
7[illegible]	0.85	0.75*	88.24	0
	0.64	0.63	98.44	29
	0.30	0.29	96.67	[illegible]
	0.93	0.90	96.77	53
	1.03	0.98	95.15	43
	0.45	0.17	37.78	0
	[illegible]	[illegible]	[illegible]	[illegible]
	0.68	0.64	94.12	58
83.06	1.45	1.43	98.62	94
14	1.55	1.51	97.42	66
87.[illegible]	1.50	1.53	102.00	82
	1.45	1.42	97.93	59
	1.55	1.57	101.29	36
91.30	0.97	1.03	106.19	45
	0.98	1.06	108.16	15
16	1.26	1.25	99.21	77
	0.88	0.83	94.32	20
94.[illegible]	1.55	1.46	94.19	62
17	1.00	0.98	98.00	26
	1.36	1.39	102.21	55
99.67	1.50	1.47	98.00	41
	0.32	0.28	87.50	0
	0.65	0.67	9[illegible]	[illegible]

Description

Grey fractured qt more intensely fractured / brecciated towards base of unit. Chltzn of breccia very obvious. No bedding evident. Generally erratic fracturing

Olive green to red bn Fe slnd, chltzd, interbedded qt / sh. severely contorted and / or brecciated. Sh units tend to be red bn in colour, qt / sst more olive green to green. Dominant 'fabric' (foln) tends 45° to LCA. Very erratically fractured no obvious mineralization. Bedding contacts unrecognisable. Very erratically faulted. qtz stringers generally at low ∡ to LCA.

Severely fractured / brecciated qt. grey to bn depending on testing. Lithology comprises mainly qt fragments <2 to 60mm. in a chl / limonite matrix (fracture filling). Locally regular though generally irregular fracture orientation.
Fracture intensity is very difficult to estimate due to the irregular nature of fracturing, however F.I (total) is > 100 (locally > 150). Rare 1-1½ cm veinlets of qtz ± limonite (after py) ± tr cassiterite orientated 60° LCA. Dominant fracture fabric orientated 35-50° LCA. No bedding preserved. No mag. or fresh S^{2-} evident in core.

Breccia comprising ½ - 2cm angular fragments of qt in a very fine siliceous, Fe slnd matrix. In places Fe sltng is not present and matrix is severely chloritized. Very minor local occurrences of anastomose kaolin veinlets (<1mm). No dominant fracture direction - no obvious foln, although locally planar features at 25, 40 and 50° to LCA. No mineralization (v S^{2-}) observed.

Dominantly qt ē minor severely contorted (slumped?) interbeds of grey sh. Locally brecciated. qt locally intensely fractured. Both lithologies cut by irregular and and discontinuous chl ± qtz ± kaolin veinlets and stringers. Minor Fe sltng / limonite in some chltzd fractures. Apparently poorly mineralized. S_0 measurement very questionable.

Brecciated / severely fractured grey qt. Abundant chl infilling fractures and breccia. locally incipiently Fe slnd. Dominant fabric - fracturing - treads 30-40° to LCA. Kaolin bearing veinlets post date chltzn and cut 60-65° to LCA // to chl veinlets.

Angle bedding to LCA: ? (about 60m); ?5°? (about 92m)

Sample, mineralisation and assays

NUMBER	FROM	TO	INTVL.	FRACT. DENSITY (per m)	% FRACT. MINSD	VEIN WIDTH mm RANGE	VEIN WIDTH AV.	ANGLE TO LCA	% BLK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.	CARB.	OTHER	WALL ROCK ALTERN.	Sn (%)	W (%)	Ag ppm
BJ 755	50.50	52.50	2.00															<.01	.004	3
BJ 756	52.50	54.25	1.75															<.01	.006	3
BJ 757	54.25	56.25	2.00	30-60	85	<1-1	<1	25-65	2-3	x	x	✓	x	x	x	chl limonite	chltzn Fe sltng	.03		12
BJ 758	56.25	58.25	2.00	V. difficult to est.														.09		16
BJ 759	58.25	60.25	2.00	70?	80	<1-1	<1	dominant 45 <10-70	?	x	x	✓	x	x	x	chl	Fe sltng chltzn	.02		3
BJ 760	60.25	62.25	2.00															.04		4
BJ 761	62.25	64.25	2.00															.02	.003	18
BJ 762	64.25	66.25	2.00	80+	90	<1-1	<1	very variable	5	x	x	rare	x	x	x	limonite chl kaolin MnO_2	Fe sltng chltzn	.04		17
BJ 763	66.25	68.25	2.00															.12		14
BJ 764	68.25	70.25	2.00															.09		32
BJ 765	70.25	72.25	2.00	110+	90	<1-2	<1-1	variable dominant 35-45	3-4	x	x	x	x	x	x	chl MnO_2 kaolin		.10		15
BJ 766	72.25	74.26	2.00															.14		21
BJ 767	74.25	76.40	2.15															.21		15
BJ 768	76.40	78.79	2.39															.33		4
BJ 769	78.79	80.79	2.00	90	90	<1-12 rare	<1	10-60	4-5	tr	x	✓	x	x	x	limonite after py	Silcfn Fe sltng	.56		5
BJ 770	80.79	83.06	2.27															1.70	.006	>25
BJ 771	83.06	85.06	2.00														Fe sltng to 87.63m	.34		>25
BJ 772	85.06	87.06	2.00						40-50							chl		.34		21
BJ 773	87.06	89.06	2.00														Chltzn Silcfn.	.43		>25
BJ 774	89.06	90.72	1.66															.15		4
BJ 775	90.72	92.72	2.00	90+ locally 120+	85	<1-4	1-2	highly variable <10-70 dominant 35-40	5	x	x	✓	x	x	x	chl limonite kaolin	Silcfn Chltzn	.12		11
BJ 776	92.72	94.72	2.00															.08		4
BJ 777	94.72	96.35	1.63															.12		>25
BJ 778	96.35	98.35	2.00	95	90	1-3	1	dominant 40	5-7	x	x	✓	x	x	x	chl kaolin		.19		4
BJ 779	98.35	100.43	2.13															.14		23

Composite assays

Interval	Sample	% Sn
50 to 53	BJ 807	.04
53 to 56	BJ 808	.03
56 to 59	BJ 809	.06
59 to 62	BJ 810	.07
62 to 65	BJ 811	.05
65 to 68	BJ 812	.10
68 to 71	BJ 813	.09
71 to 74	BJ 814	.11
74 to 77	BJ 815	.14
77 to 83	BJ 816	.41
83 to 86	BJ 817	1.34
86 to 89	BJ 818	.60
89 to 92	BJ 819	.34
92 to 95	BJ 820	.21
95 to 98	BJ 821	.25
98 to 101	BJ 822	.18

801144

THE BROKEN HILL PROPRIETARY CO. LTD.

Project: E.L 1080 Great Pyramid

Drillhole Nº BPD 7
Sheet: 3 of 3 (99.67 - 139.55m E.O.H.)

METRES	DRILL RUN METRES RECOV.	DRILL RUN % RECOV.	RQD
1.50	1.53	102.00	94
1.50	1.52	101.33	48
1.50	1.57	104.67	60
1.13	1.12	99.12	45
1.14	1.06	92.98	39
0.66	0.52	78.79	0
0.60	0.53	88.33	0
0.68	0.68	100.00	21
0.68	0.68	100.00	79
1.18	1.15	97.46	23
0.74	0.60*	81.08	0
0.72	0.60*	83.33	0
0.87	0.53	60.92	19
1.15	1.10	95.65	82
1.66	1.74	104.82	45
0.82	0.77	93.90	30
0.28	0.26	[illegible]	0
2.32	2.34	100.86	75
1.91	1.90	99.48	64
1.04	1.02	98.08	69
1.25	1.25	100.00	23
1.18	1.01	85.59	87
2.05	2.00	97.56	70
1.48	1.52	102.70	61
2.67	2.72	101.87	31
0.87	0.82	94.25	22
0.62	0.51*	82.26	0
[illegible]	[illegible]	[illegible]	[illegible]
0.51	0.54	105.88	19
0.42	0.36	85.71	0
0.72	0.72	100.00	0
0.58	0.59	101.72	0
0.92	0.69*	75.00	20
0.75	0.56*	74.67	0
0.35	0.40	114.29	25
0.52	0.52	100.00	81
0.75	0.73	97.33	38
0.40	0.34	85.00	0
19.14	18.32	95.72	40
Σ 112.78	Σ 108.13	95.88	(48)
+0.19			
+26.50			
Σ 139.47			

DESCRIPTION

Slumped severely contorted sh c̄ minor intermixed qt. Basal 2m brecciated qt. Locally chltzd and/or Fe stnd. Very irregular fractured. Chl ± qtz veinlets/stringers. Anastomosing in occurrence. S₀ orientation indeterminable. Cu stnd filling in breccia. 30cm wide at 104.65m

Qt c̄ minor interbedded sh. Generally poorly fractured, poorly bedded. Chltzn of sst/qt or sh not as common as previously encountered. Minor chl in fractures. Way up ↑. Flames at 110.30m. Qt locally. Fe stnd very locally containing small Fe stnd pits (after py). ∡ between strike of S₀ and strike of Jm ~30°. Dips are ~ 114. Apparently poorly mineralized.

Featureless grey sh locally grading to slst c̄ minor rare inbeds of qt (5-10cms). Moderately well fractured regularly orientated fractures. S₀ poorly defined. Very narrow zones 1-5cms wide. Two generations of fracturing - "steeper" carb (felspar) veinlets. 1mm, post date shallower, finer, more intense, Fe stnd fractures. (Visual log: ΔΔΔ)

Grey-fawn sst/sh locally grading to qt. Moderately well fractured, regular mineralized? fractures post dated by qtz ± chl stringers 0-20° LCA. Bedding poorly developed, and generally where evident, slumping is also evident. Im in general S₀ ∠20 to LCA. Silcfn haloes very obvious adjacent to fractures/veinlets in sst. Haloes are ≤1cm wide (½cm on each side of fracture.) Very low graded mineralization. MnO_2 stng locally in sh horizons. Very local <5 cm brecciation of sst.

VISUAL LOG	ANGLE BEDDING TO LCA	SAMPLE NUMBER	FROM	TO	INTVL.	FRACT. DENSITY (per m)	% FRACT. MIN.	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANG. TO LCA	% BLK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.	CARB.	OTHER	WALL ROCK ALTERN.	Sn (%)	W (%)	Ag ppm
		BJ 780	100.48	102.48	2.00	generally 75+	90	<1-5	1-2	10-60 down 30-40	3-4	x	x	✓	x	x	x	chl	chltzn Silcfn	·04		3
		BJ 781	102.48	104.86	2.38															·32		>25
		BJ 782	104.86	106.86	2.00	30-40	75	<1-3	<1	40-50	1	x	x	✓	x	x		chal. limonite chl	Silcfn Fe stng	·03		3
	38	BJ 783	106.86	108.86	2.00															·03		6
		BJ 784	108.86	110.86	2.00															·01		2
		BJ 785	110.86	113.13	2.27	20-40 loc. 60°	80	<1-2	<1	erratic 35-50	<<1	x	x	✓	x	x	x	chl limonite	silcfn	·04		5
		BJ 786	113.13	115.34	2.21															·05		2
		BJ 787	115.34	117.34	2.00															·02		1
ΔΔΔ	30	BJ 788	117.34	119.34	2.00	40-60	60	<1-2	<1	20-30	<<1	x	x	rare	x	x	x	limonite	Fe stng local	·01		1
		BJ 789	119.34	121.34	2.00															<·01		1
		BJ 790	121.34	123.34	2.00	75-85	65	<1-2	<1	30-50	<1	x	x	rare	x	x	x	kaolin limonite	Local Fe stng.	<·01		1
ΔΔ	7	BJ 791	123.34	125.17	1.83															<·01		1
	8	BJ 792	125.17	127.17	2.00	sh 85	65	<1-2	<1	30-40	<1	x	x	✓	x	x	x	limonite	Fe stng MnO_2 Stng	<·01		1
		BJ 793	127.17	129.17	2.00	60	75	<1-5	1	20-50 dominant 30	1	x	x	✓	tr	x	x	chl limonite	Silcfn Fe stng.	·05		1
	8	BJ 794	129.17	131.17	2.00	sst/sh 50	60	<1-2	<1	25-50	1	x	x	✓	x	x	Sid?	chl limonite kaolin	Silcfn Fe stng	·01		1
ΔΔ		BJ 795	131.17	133.17	2.00															·02		2
		BJ 796	133.17	135.35	2.18															·08		2
		BJ 797	135.35	137.80	2.45*															·02		2
		BJ 798	137.80	139.55	1.75	40-50	70	<1-3	<1	40-45	<1	x	x	✓	x	x	Sid?	chl limonite	local Fe stng	·01		2

SLUDGES

Interval	Sample	% Sn
101 to 104	BJ 823	·24
104 to 107	BJ 824	·20
107 to 110	BJ 825	·29
110 to 113	BJ 826	·12
113 to 116	BJ 827	·09
116 to 119	BJ 828	·07
119 to 122	BJ 829	·10
122 to 125	BJ 830	·05
125 to 128	BJ 831	·06
128 to 131	BJ 832	·04
131 to 134	BJ 833	·09
134 to 137	BJ 834	·08
137 to 139.55	BJ 835	·05

30cm wide Cu filled breccia in qt fragments.

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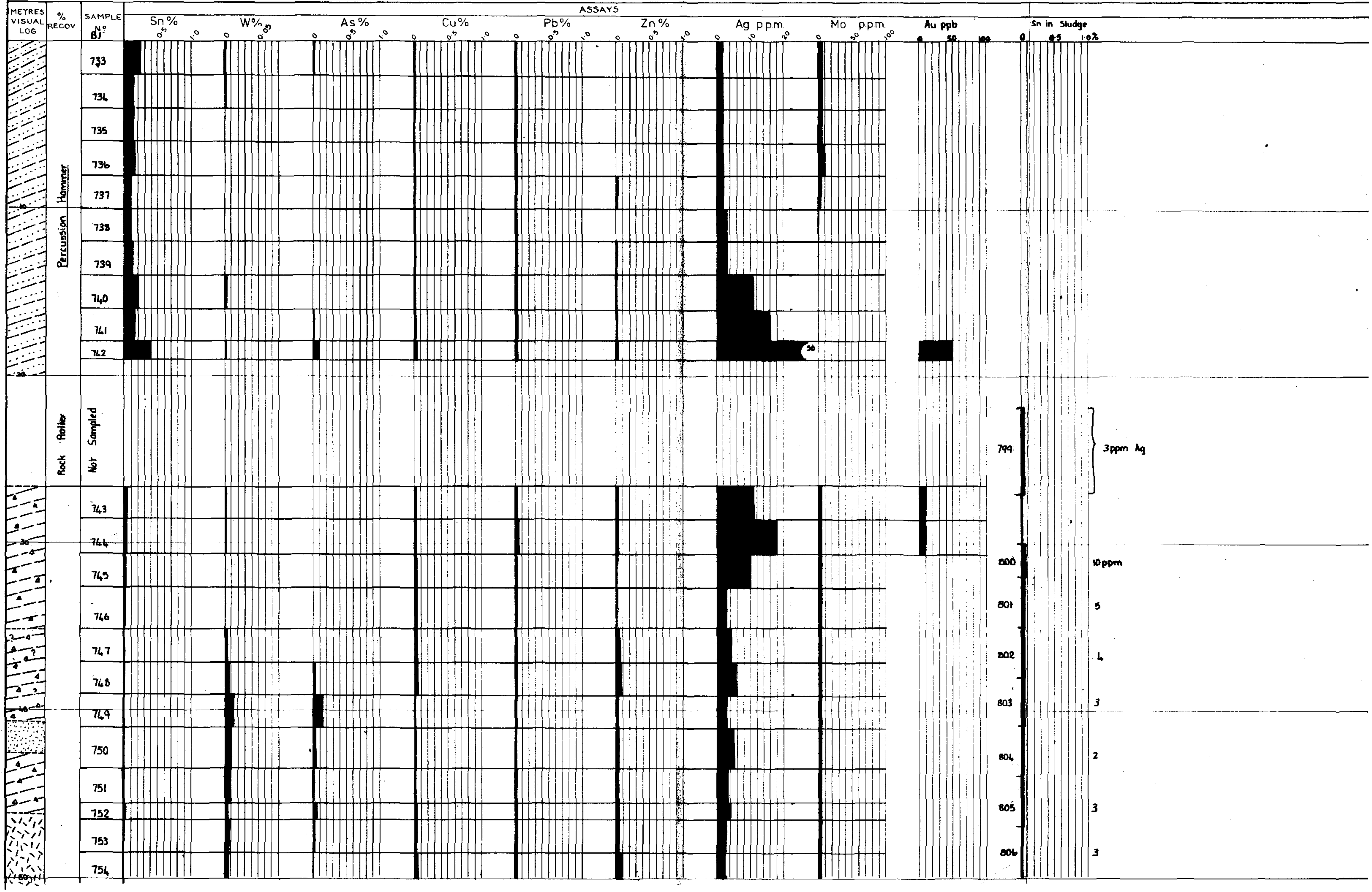
Project E.L.10180 Great Pyramid Prospect

Drillhole Nº BPD7 801145

Sheet: 1 of 3



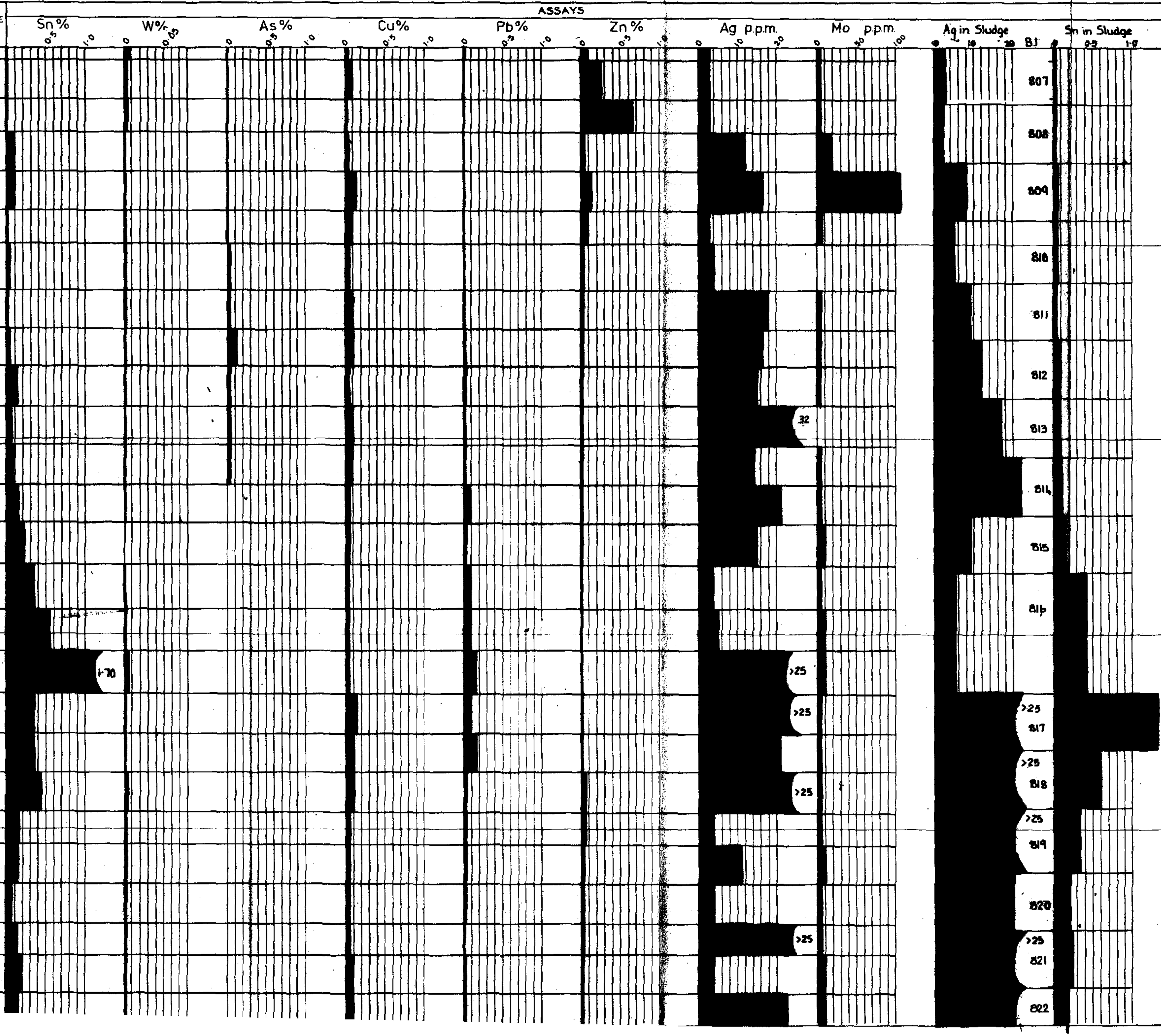
Project E.L 10180 Great Pyramid Prospect

THE BROKEN HILL PROPRIETARY CO. LTD.

Drillhole Nº BPD1 801146

Sheet: 2 of 3

METRES VISUAL LOG	% RECOV.	SAMPLE Nº BJ
	98	755
	95	756
	100	757
	100	758
	100	759
	100	760
	100	761
	97	762
	100	763
10	98	764
	96	765
	96	766
	88	767
	86	768
20	96	769
	38 94	770
	98	771
	100	772
30	98	773
	100	774
	100	775
	97	776
	96	777
	100	778
	98	



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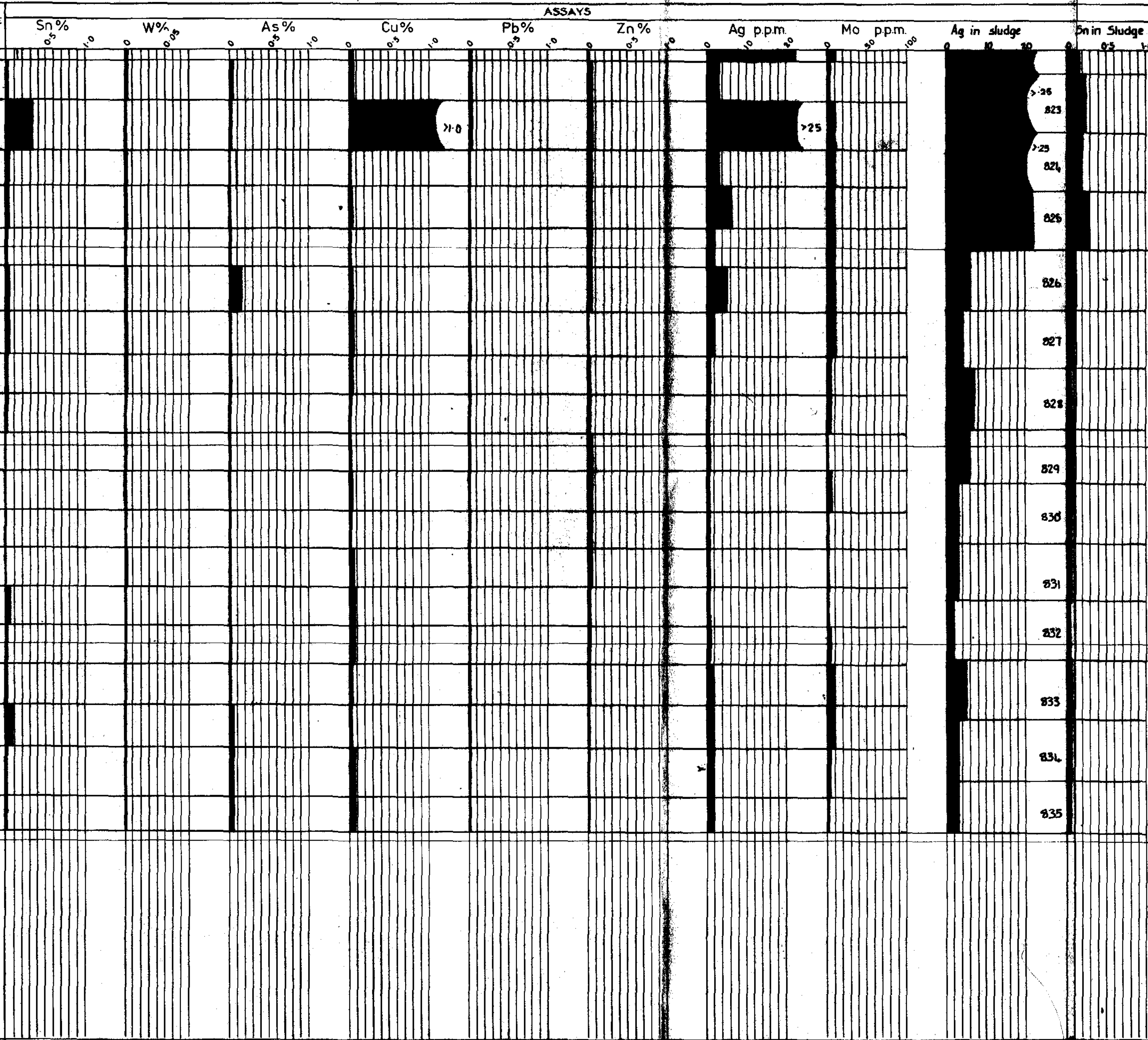
Drillhole Nº BPD 7 801147

Sheet: 3 of 3

Project E.L. 10/80 Great Pyramid

METRES VISUAL LOG	% RECOV.	SAMPLE Nº BJ
	100	780
	100	781
	100	782
	93	
	83	783
	100	784
	97	
	81	785
	83	
	61	
		786
	100	
		787
	94	
	100	788
		789
	99	
		790
	98	
	100	791
	86	
		792
	97	
		793
	100	
	100	794
		795
	94	
	81	
	95	
		796
	100	
	75	
	75	799
	100	
		798
	85	
T.D	≤ 96%	

ASSAYS



801148

BROKEN HILL PROPRIETARY CO. LTD.

Exploration Department

DRILL HOLE LOG HEADER SHEET

Project:	EL 10/80 Great Pyramid	**Hole No.:**	B.P.D.8
Prospect:	Great Pyramid Tin Prospect	**Total Depth:**	103.08m
Local Grid co-ords:	298mE, 216mN	**Bearing:**	122° (mag), (0m)
AMG co-ords:		**Depression:**	60° (0m), 58° (50m), 56° (100m)
Drilling Co.:	Walker Drilling	**R.L. Collar:**	162m
Drill Type:	DB 1000/2		
Core Size:	HQ3 to 86.03; NQ3 to 103.08m	**Commenced:**	20/2/81
Driller:	A Walker, I W McCallum	**Completed:**	19/3/81
		Logged by:	D A Steele
		Sampled by:	P D Good

Technical Data:

Overburden:	Less than 1m, mainly soft shale; percussion hammer used down to 8.89m; "Tricone" used to clean out bottom of percussion hole.
Casing:	HW to 9.0m; HQ to 81m; all casing remained in the hole.
Water Return:	Generally good down to 65m, complete losses of circulation at 47, 54m. Loss of circulation very common below 70m.
Cementation:	At 86, 94.2, 94.4 (recemented),97 (recemented at 97m), 99, 101, 103 (recemented at 103m).
Additives:	Ro-Lube, Hydropol, Mica, Super Gel, Gypseal 60, Calyseal, Bentonite, Ro-Mix Q.S., Ro-Mix XP10.
Oxidation:	Approximate depth of total oxidation 35m. Base of oxide zone approximately 65m.
Other:	A large cavity or fissure(s) encountered at 83m. Evidence for rock movements during drilling is visible on core. Downhole survey by acid etch.

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Project E.L.10/80 GREAT PYRAMID

Drillhole No BPD 8
Sheet 1 of 3 00.0 50.4m

Drill run

METRES	METRES RECOV.	% RECOV.	RQD
0 - 8.89m	Percussion Chips		
0.20	0.20	100.0	0
1.40	1.38	98.6	90
1.57	1.58	100.6	53
1.13	1.10	97.4	49
[illegible]	[illegible]	[illegible]	[illegible]
0.60	0.46	76.7	
0.80	0.77	96.3	61
0.97	1.04	107.2	49
0.95	0.87	91.6	52
1.55	1.53	98.7	67
1.45	1.47	101.4	84
1.69	1.64	97.0	58
2.02	1.99	98.5	73
0.90	0.84	93.3	65
1.29	1.35	104.7	70
0.73	0.71	97.3	79
0.98	0.99	101.0	64
2.54	2.53	99.6	71
2.01	2.04	101.5	80
1.45	1.48	102.1	71
1.51	1.50	99.3	67
1.49	1.47	98.7	78
3.00	2.98	99.3	66
1.44	1.47	102.1	75
1.56	1.50	96.2	68
1.72	1.76	102.3	60
1.28	1.12	87.5	74
1.31	1.30	99.2	52
0.69	0.80	115.9	55
1.00	0.96	96.0	74
2.95	2.99	101.4	48

Description

NOT SAMPLED

Brown sh. c̄ minor sst

Red-brown sh.

Red-brown Slate (to 5.8m) then yellow brown sst/sh

Yellow brown sst/sh (to 7.1m) then sst/qt

Sst/qt (8.3m) then red brown sh.

Massive pink/purple sh. locally grading to yellow bn slst. Poorly bedded. Minor development of So fissility very poorly fractured and mineralized. Very erratic. Rare blk qtz veinlets and strngrs at 50-70 LCA. Dominant fractures variable from <10-60 LCA. Fl ↑ in slst cf sh.

Yellow bn Fe stnd sst c̄ interbedded grey sh, locally laminated. Evidence for soft sediment deformation in places and movement post fracting. Graded So implies correct way up ⇑ however pebbles in sh at 21.30m in scour mark imply ⇓. Sh. locally possesses a pale gn tinge. Sst generally more fractured than sh. Fl. however is very low. Fe stnd haloes common in sst fractures rare in sh.

Featureless grey sh. Locally bedded c̄ thin <1-5cm slst/sst (grey) beds. Local evidence for reworking of beds. In general. So contacts are sharp. Way up ⇑(?) Flames at 31.50 imply ⇑. Lower in unit (32.5↓) sh. inbedded c̄ yellow bn sst. locally moderately fracted. Fe stng common especially in sst. Fracturing sporadic and erratic.

Interbedded grey to grey/bn sh. and fawn sst. Erractically fractured. Intruded by ½-1cm wide qt strngrs <10° LCA c̄ pervasive Fe stng and MnO_2 (?). Local brectn. Sh laminated in places. Poorly fractured. Chl becoming apparent in veinlets.

Grey sst/qt. moderately fractured. Incipiently Fe stnd cut by irregular blk qtz veinlets 10-20° LCA. post date fracturing and mineralizing.

Interbedded grey sst/sh; rarely grading to qt. Poorly fractured cut by irregular <1-2mm blk qtz veinlets. Flames imply ⇑.

Grey silcfd/sst/qt. No sh interbeds. Regularly fracturing post dates blk qtz veinlets. Minor 10cm breccia zone at 48.9m.

Visual log: ⇑ (at c. 31 m); ⇑ (at c. 45 m)

Sample, mineralisation and assays

Angle bedding to LCA	Sample number	From	To	Intvl.	Fract. dens. (per m)	% fract. min.	Vein width mm range	Vein width mm av.	Ang. to LCA	% blk rock min.	Cassit.	Wolf.	Qtz.	Musc.	Sulph.		Wall rock altern.	Sn (%)	W (%)
	BJ391	1.0	2.0	1.0														0.02	
	BJ392	2.0	4.0	2.0														0.02	
	BJ393	4.0	6.0	2.0														0.002	
	BJ394	6.0	8.0	2.0														0.02	
	BJ395	8.0	8.89	0.89														0.006	
	BJ396	8.89	10.89	2.0	<10	40	<1-?	<1	20-40	<<1	x	x	rare	x	x	lim	Fe stng local		
	BJ397	10.89	12.89	2.0															
38	BJ398	12.89	14.89	2.0 (sst)															
35	BJ399	14.89	16.89	2.0	locally 30 60+	50-60	<1-3	<1	35-45	<1	x	x	rare	x	x	lim	Fe stng.		
	BJ400	16.89	18.89	2.0															
35	BJ401	18.89	20.89	2.0 (sh)															
	BJ402	20.89	22.89	2.0	15	60	<1-2	<1	30-40	<<1	x	x	rare blk	x	x	lim	Fe stng		
43	BJ403	22.89	24.89	2.0															
46	BJ404	24.89	26.89	2.0	<10	30	<1-<1	<1	10-30	<<1	x	x	x	x	py rare		—		
37	BJ405	26.89	28.8	1.91															
40	BJ406	28.8	30.8	2.0 (sh)															
37	BJ407	30.8	32.8	2.0	9	20	<1-1	<1	40-60	<<<1	x	x	rare	x	x	Lim	—		
46	BJ408	32.8	34.8	2.0 (sh)	20	40	<1-<1	<1	40	<<1	x	x	x	x	x	lim	local Fe haloes		
	BJ409	34.8	35.95	1.15															
	BJ410	35.95	37.95	2.0															
60	BJ411	37.95	40.25	2.30	50	60	<1-2	<1	40	<1	x	x	✓	x		chl lim	Fe haloes* Silcfn		
57	BJ412	40.25	42.25	2.0	25	65	<1-3	<1	30-50	<1	x	x	✓	✓ tr	py	lim chl	silcfn Fe stng.		
50	BJ413	42.25	43.5	1.25 (qt)															
42	BJ414	43.5	46.4	2.90	30-35	65	<1-2	<1-1	30-45	<1	x	x	✓	x	x	lim kao chl	Fe stng in places		
	BJ415	46.4	48.4	2.0	55-65	70	<1-2	1	40-50	1	x	x	✓	x	py rare cpy	Lim rare chl	silcfn		
	BJ416	48.4	51.15	2.65	25-30	60	<1-2	1	35-50	<1	x	x	✓	x	py	lim	Silcfn*		

Sludges (Int, No, Assay Sn%): Not Applicable (0 - 8.89m); Not Sampled (below 8.89m)

Fe haloes 2-4mm wide.

*Not common

Project E.L 10 80 GREAT PYRAMID

THE BROKEN HILL PROPRIETARY CO. LTD.

Drillhole Nº BPD 8 801150
Sheet: 2 of 3 50·4 101·4m

Drill run

METRES	METRES RECOV.	% RECOV.	RQD
2·17	2·14	98·6	79
0·30	0·30	100·0	57
1·07	1·01	94·4	55
1·00	0·99	99·0	10
1·26	1·28	101·6	38
1·52	1·46	96·0	29
1·48	1·51	102·0	9
0·42	0·38	90·5	0
1·52	1·57	103·3	54
1·06	1·04	98·1	36
1·32	1·22	92·4	26
1·54	1·52	98·7	78
1·97	1·96	99·5	57
0·55	0·51	92·7	71
2·65	2·68	101·1	71
2·90	2·90	100·0	99
3·00	3·01	100·3	95
3·05	3·07	100·7	85
0·67	0·68	101·5	90
1·60	1·65	103·1	100
0·70	0·59	84·3	99
0·91	0·93	102·2	82
1·55	1·47	94·8	88
0·91	0·75*	82·4	79
2·77	2·70	97·5	78
2·49	25·2	101·2	95
1·00	1·01	101·0	93
1·77	1·70	96·1	65
0·70	0·70	100·0	69
0·52	0·39	75·0	0
1·57	1·52	96·8	97
1·26	1·30	103·2	82

Description

DESCRIPTION	VISUAL LOG	ANGLE BEDDING TO LCA
Grey sh c̄ minor interbedded sst/slst, cross cut by numerous blk qtz veinlets at 15-30°LCA. Local greenish tint to grey sh. Severely fractured, brecid? Sst, Fe stnd at 56·1 - 56·8m. Purple sh c̄ interbedded sst, bn, below breccia. This followed by sst cut by black qtz veinlets poorly fractured and mineralized.	ΔΔΔΔ	40, 40, 35
Yellow bn sst grading in alteration to grey qt c̄ minor laminated sh. interbedded		
In general, sst is moderately well fractured although poorly mineralized. Fe stng common especially in sst. Sh interbeds not common. Rare black qtz veinlets pre date fractures. Very minor brecid at 62·9m.	ΔΔΔ	38
Interbedded grey sh. and slst/ssl. Poorly fractured and mineralized. Minor mineralisation in "steep" black qtz veinlets - chl - sid - cpy. Local minor occurrences of erratic qt-sid stngs Base of interval is brecid.	ΔΔΔΔ	58, 65
Grey qt c̄ minor are rare interbeds. 5-10cm of laminated sh/slst. Fracturing low in intensity and erratic in orientation. Erratic qtz stngs cross cut mineralized fractures. There appear to be at least two sets of fractures at high ∠ to LCA. Only one appears to be mineralized. Other is qt sid veinlets. Py crystals locally occur in body of qt.		22, 37, 14
Grey qt c̄ interbedded sh. 10-20cm. Locally well fractured. Abdt low grade Cu mineralization. Qt-sid veinlets post date mineralized veinlets.		25
Dominantly massive grey qt c̄ minor very thin 1-3mm inbeds of shale. Moderately well fractured. Locally brecid (82·7m). Mineralizing mainly qt py - aspy - cpy ± chl ± cc cut by more erratic qt sid veinlets. Very minor localized occurrences of chl/pinite ± sph magnetite in three irregular veinlets at 82·35, 82·45 and 84·23m, all veinlets sub ‖ to mineralized fractures as in breccia 82·7m.	ΔΔΔΔ	20, 30
Massive grey qt c̄ 5-40cm inbeds of grey sh, locally laminated. Qt is locally feldspathic. Minor slumping of soft sediment deformations observed. Graded bedding is downhole facing, rare flames imply ⇓. Dominant mineralized fractures generally regular in orientation rarely movement along fractures. Very minor localized brecln in qt c̄ qtz, chl - cpy - sph assemblage in filling. Very fine regularly orientated qt - sid veinlets pre date mineralized fractures. Mineralized fractures generally chl/pinite bearing rarely muscovite selvedges occur. Chl sheen very common on fractures cross cutting mineralization. Trace of fluorite in fractures (mineralized)	⇓, ΔΔΔ, ⇓	32, 25, 32

Sample and mineralisation

NUMBER	FROM	TO	INTVL.	FRACT. DENS. (per m)	% FRACT. MINS.	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANG. TO LCA	% BLK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.			WALL ROCK ALTERN.
BJ 417	51·15	53·15	2·0	(sh) <5	40	<1-1	<1	40	<<<1	x	x	x	x	py		x	—
BJ 418	53·15	55·15	2·0	(sst)													
BJ 419	55·15	57·15	2·0	40	60	<1-2	<1	35-50	<1	x	x	✓	x	py		rare chl kaol.	Silcfn
BJ 420	57·15	58·4	1·25	20	50	<1-2	<1	45	<<1	x	x	✓ rare	x	x			
BJ 421	58·4	60·4	2·0	20-30	65	<1-4	1	40-45	1	x	x	✓	tr	py		lim	Silcfn Fe stng
BJ 422	60·4	63·15	2·65	20-25	55	<1-1	<1	35-55	<1	x	x	✓	x	x		lim	Silcfn Fe stng
BJ 423	63·15	65·15	2·0														
BJ 424	65·15	67·15	2·0	<10	40	<1-<1	<1	35	<<<1	x	x	x	x	py	sid.	x	—
BJ 425	67·15	69·45	2·30														
BJ 426	69·45	71·45	2·0	45-50	60	<1-7	1	35-40	1	x	x	✓	x	py, aspy	sid	chl	
BJ 427	71·45	73·45	2·0														
BJ 428	73·45	75·45	2·0														
BJ 429	75·45	77·85	2·40	30	75	<1-9	1-2	35-45	1-2	x	x	✓	✓	py, aspy rare cpy ga?	sid	chl	Local Fe stng.
BJ 430	77·85	79·85	2·0	35	80	<1-11	1-2	35-50	2-3	x	x	✓	✓	py aspy cpy	sid	chl (minor)	silcfn
BJ 431	79·85	80·95	1·10														
BJ 432	80·95	82·95	2·0	40	80	<1-7	1	20-60	1-2	x	x	✓	x	py, aspy cpy	sid, mag	pinite chl	
BJ 433	82·95	84·95	2·0	30	85	<1-6	2	30-55	2-3	✓	x	✓	x	cpy py aspy	sid	chl.	
BJ 434	84·95	86·95	2·0														
BJ 435	86·95	88·95	2·0	45-60	85	<1-10	1-2	35-45	2-3	✓ tr	x	✓	✓ tr**	aspy, py cpy, sph.	sid	pinite chl.	
BJ 436	88·95	91·15	2·20	25-35	80	<1-6	1-2	35-50	1	x	x	✓	x	aspy, py cpy, sph	sid	Interbedded chl.	
BJ 437	91·15	93·15	2·0														
BJ 438	93·15	95·15	2·0	42	75	<1-7	1	42-51	1	✓ tr	x	✓	rare	cpy py	sid	chl	silcfn
BJ 439	95·15	97·15	2·0	65	80	<1-4	1	45-50	1	x	x	✓ local black	✓	cpy aspy.	sid mag	Interbedded chl	Silcfn
BJ 440	97·15	99·15	2·0	57	75	<1-5	1	40-50	1	x	x	✓	✓	py, cpy aspy	sid	chl	
BJ 441	99·15	101·15	2·0	53	85	<1-8	2-3	45-50	1-2	✓ tr	x	✓	✓	cpy py	sid	chl [illegible]	Silcfn

Assays

Sn (%)	W (%)

Sample intervals (m): 57·5 to 60·5 BJ 443; 60·5 to 63·5 BJ 444; 63·5 to 66·5 BJ 445; 66·5 to 69·5 BJ 446; 69·5 to 72·5 BJ 447; 72·5 to 75·5 BJ 448; 75·5 to 78·5 BJ 449; 78·5 to 81·5 BJ 450; 81·5 to 84·5 BJ 451; No Water Return; 87·5 to 90·5 BJ 452; No Water Return

Approx limit to depth of oxidation.

* Core loss recorded.

** Only as selvedge on large veinlets.

F.I. apparently ↑ with depth below 90m

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Project E.L10 80 GREAT PYRAMID

Drillhole Nº BPD 8

Sheet 3 of 3 98.9 E.O.H.

Depth	METRES	DRILL RUN METRES RECOV.	DRILL RUN % RECOV.	RQD	DESCRIPTION	VISUAL LOG	ANGLE BEDDING TO LCA	SAMPLE NUMBER	SAMPLE FROM	SAMPLE TO	SAMPLE INTVL.	MINERALISATION FRACT DENST (per m)	% FRACT MIN'SD	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANG TO LCA	% BLK ROCK MIN.	VEIN MINERALOGY CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.	WALL ROCK ALTERN.	ASSAYS Sn (%)	W (%)
98.9																									
	0.08	0.10	125.0	100																					
	1.10	1.06	96.4	92				BJ442	101.15	103.08	1.93														
	0.60	0.51	85.0	61																					
	42.62	41.77	98.00																						
	51.59	51.08	99.01																						
	Σ 94.21	Σ 92.85	98.56																						
6	0.20	0.28	140.0	82	99.48																				
	0.04	0.05	125.0	0																					
8	0.12	0.14	116.7	0																					
	0.05	0.06	120.0	0																					
100.0	0.15	0.12	80.0	0	100.06																				
2																									

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Project EL 10/80 GREAT PYRAMID

Drillhole Nº BPD 8 801152

Sheet: 1 of 3

METRES VISUAL LOG	% RECOV.	SAMPLE Nº B3
		N.S.
	Cored	391
		392
		393
	Not	394
		395
10	99	396
	100	397
	90	398
	100	399
	95	400
20	100	401
	98	402
	93	403
	100	404
	100	405
30	100	406
	100	407
	100	408
	99	409
	99	410
	99	411
40	99	412
	100	413
	88	414
	100	415
	98	416
50		

ASSAYS: Sn % (0, 0.5, 1.0) | W % (0, 0.05) | As % (0, 0.5, 1.0) | Cu % (0, 0.5, 1.0) | Pb % (0, 0.5, 1.0) | Zn % (0, 0.5, 1.0) | Ag p.p.m. (0, 10, 20) | Mo p.p.m. (0, 50, 100) NS

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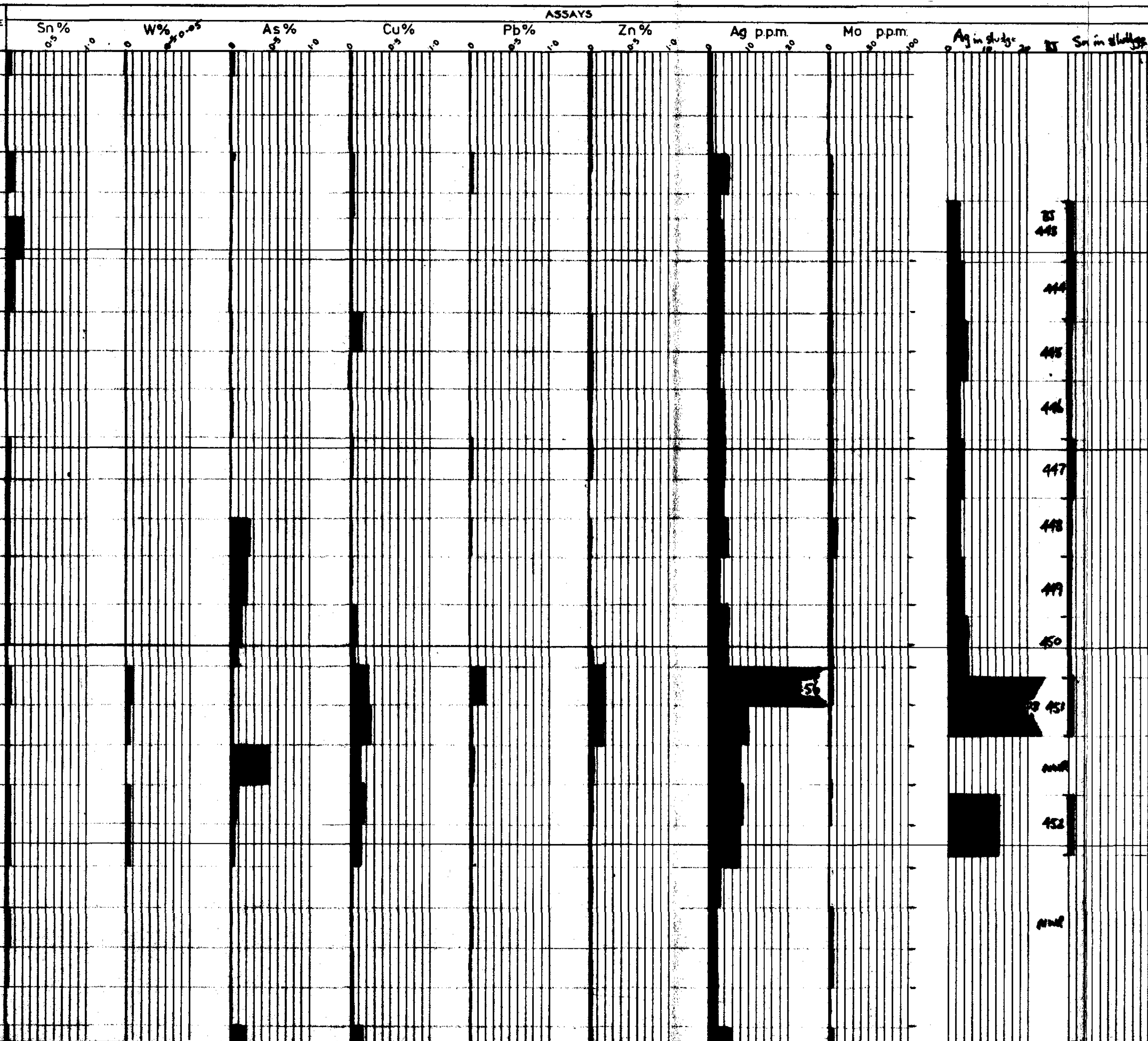
Project: EL 10/80 GREAT PYRAMID

Drillhole Nº BPD 8 801153

Sheet: 2 of 3

Metres (Visual Log)	% Recov.	Sample Nº BJ
50	100	416
	99	417
	97	418
	99	419
	99	420
	99	421
60	90, 100	422
	75, 93	423
	99	424
	95	425
70	100	426
	100	427
	100	428
	100	429
	100	430
80	100	431
	100, 84	432
	100	433
	95, 100, 92	434
	98	435
90	100	436
	100, 80	437
	100, 50	438
	96, 100	439
	75, 97	440
100		441



Project EL 10/80 GREAT PYRAMID

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Drillhole Nº BPD 8

Sheet: 3 of 3

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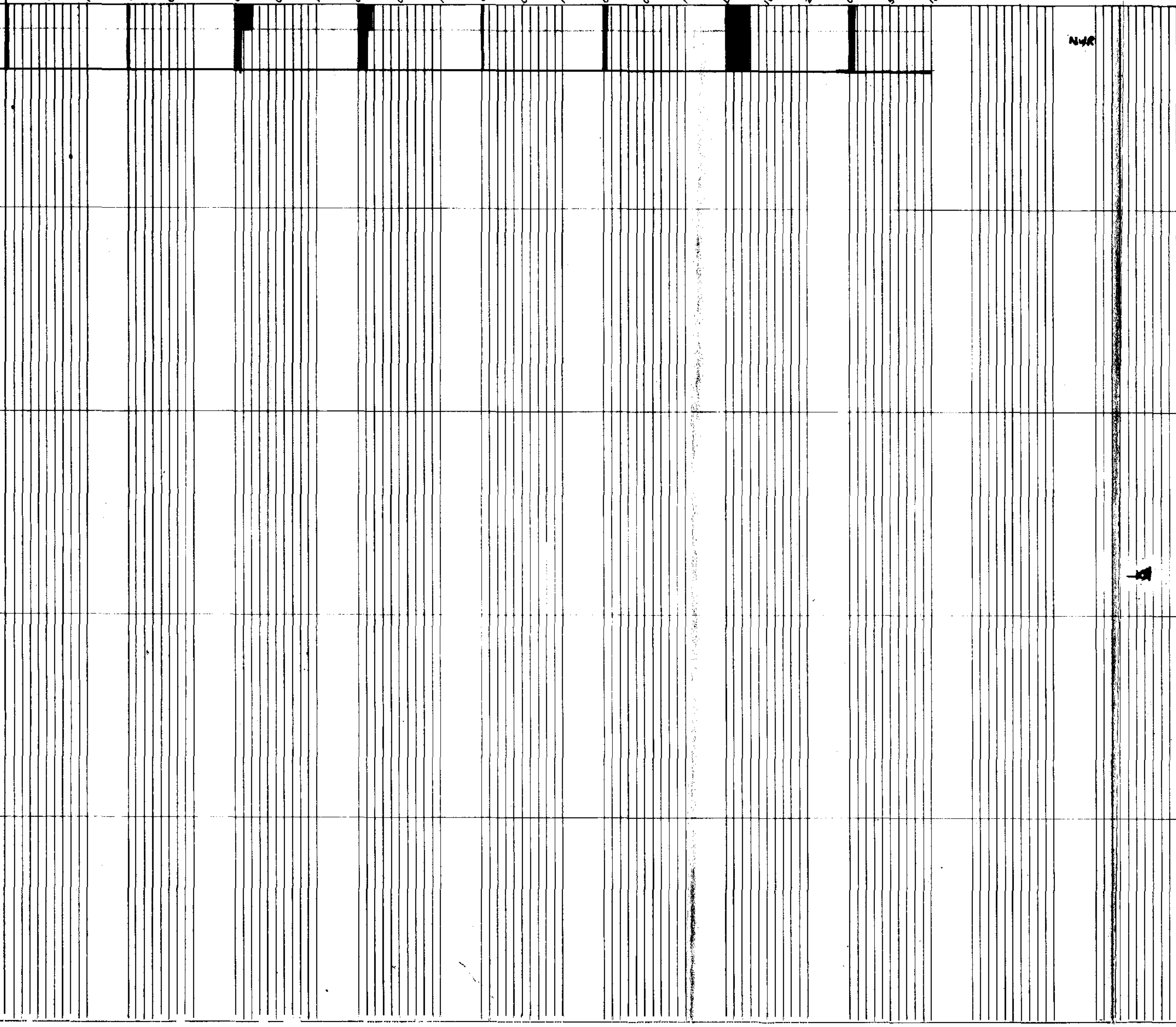
METRES VISUAL LOG	% RECOV.	SAMPLE Nº
100		[illegible]
	100	441
	96	442
	85	

ASSAYS

Sn % (0, 0.5, 1.0) · W % (0, 0.5) · As % (0, 0.5, 1.0) · Cu % (0, 0.5, 1.0) · Pb % (0, 0.5, 1.0) · Zn % (0, 0.5, 1.0) · Ag p.p.m. (0, 10, 20) · Mo p.p.m. (0, 50, 100)



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Exploration Department

DRILL HOLE LOG HEADER SHEET

Project:	EL 10/80 Great Pyramid	**Hole No.:**	B.P.D.9(a)
Prospect:	Great Pyramid Tin Prospect	**Total Depth:**	82.20m
Local Grid co-ords:	383mE 213mN	**Bearing:**	120° (mag)
AMG co-ords:		**Depression:**	60° (0m)
Drilling Co.:	Walker Drilling	**R.L. Collar:**	193m
Drill Type:	DB 1000/2		
Core Size:	HQ3 to 36.4m; NQ to 82.20m	**Commenced:**	15/1/81
Driller:	I W McCallum, A Walker	**Completed:**	15/2/81
		Logged by:	D A Steele
		Sampled by:	P & M Good

Technical Data:

Overburden:	0-3m of broken oxidized fractured quartzite; percussion hammer used to 13.0m.
Casing:	HQ to 36.4m; removed upon completion of the hole.
Water Return:	Generally very poor, complete loss of circulation a very common problem (at 29.5, 30.15, 31.1, 32.0, 32.25, 33.25, 35.2, 36.4, 39.4, 42.0, etc).
Cementation:	At 13.0, 30.15, 36.40 (see below), 57.50, 62.50, 76.92 (recemented at 76.92), 79.5, 80.57m.
Additives:	Ro-Lube, Hydropol, Super Gel, Mica, Bentonite, Ro-Mix Q.S., Gypseal 60, Ro-Mix XP10.
Oxidation:	Approximate depth of total oxidation ~35m; base of oxide zone not penetrated.
Other:	A number of large cavities and fissures were struck during the drilling of this hole (ie at 36.4m). Numerous attempts were made to seal the hole using various combinations of the additives (and cement) listed above. Due to the lack of water circulation, binding and locking of the drill rods was another problem. Local rock movements also caused wedging and jamming of the rods at various depths. This hole was abandoned at 82.20m after various combinations of loss of water circulation and rock movements made continued drilling at NQ size impossible. No downhole survey was carried out.

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Project E.L 10 80 GREAT PYRAMID

Drillhole Nº BPD 9a 801156

Sheet: 1 of 2

DRILL RUN

Depth mark	METRES	METRES RECOV.	% RECOV.	RQD
0.0 – 13.0 m	Percussion Hammer			
13.0	0.75	0.77	102.7	54
	1.50	1.48	98.6	38
	1.50	1.49	99.3	76
	1.50	1.48	98.6	53
	2.35	2.22	94.5	63
	1.00	0.87	87.0	21
21.75	0.70	0.64	91.4	0
	1.80	1.70	94.4	49
	1.13	1.10	97.3	55
	0.32	0.40	125.0	40
	0.40	0.40	100.0	70
	1.30	1.29	99.2	60
	2.75	2.76	100.4	70
30.15	0.95	0.89	93.7	36
	0.75	0.72	96.0	47
	[illegible]	[illegible]	[illegible]	[illegible]
	1.10	0.95	86.4	35
	[illegible]	[illegible]	[illegible]	[illegible]
	1.13	0.98	86.7	68
	2.02	1.66	82.2	20
	2.00	1.92	96.0	77
	1.05	0.99	94.3	49
	1.30	1.30	100.0	54
	0.95	0.94	98.9	64
	0.95	0.86	90.5	13
	0.65	0.51	78.5	0
42	2.15	2.07	96.3	65
	0.60	0.57	95.0	53
	0.80	0.62	77.5	23
	1.30	1.16	89.2	61
	0.55	0.67	121.8	19
	2.50	2.41	96.4	50

DESCRIPTION / SAMPLE / ASSAYS

DESCRIPTION	VISUAL LOG	ANGLE BEDDING TO LCA	SAMPLE NUMBER	FROM	TO	INTVL.	Sn (%)	W (%)
Spotted grey-gn qt c̄ minor sh.			BJ328	0.0	2.0	2.0	0.24	
Red/bn silicfd sst qt c̄ grey/gn sh.			BJ329	2.0	4.0	2.0	0.13	
Sst/sh c̄ minor qt			BJ330	4.0	6.0	2.0		
Sst qt (grey/bn)			BJ331	6.0	8.0	2.0		
Grey qt			BJ332	8.0	10.0	2.0		
Grey qt c̄ minor bn sst.			BJ333	10.0	12.0	2.0		
Grey qt			BJ334	12.0	13.0	1.0		
Incipiently Fe stnd poorly bedded sst and sh. Sst locally feldspathic. Beds up to 3m thick locally brectd. Fracturing generally erratic in orientation. Very minor thin interbeds/strngrs of dark grey sh. So fissility locally developed – sh. Silcfn haloes common adjacent to fractures in sandier units. At least 2 generations of fractures developed; less intense "steep" fractures post date shallow.			BJ335	13.00	15.0	2.0		
			BJ336	15.00	17.0	2.0		
			BJ337	17.00	19.00	2.0		
			BJ338	19.00	21.75	2.75		
Feldspathic sst/qt with rare interbeds, 3-30cm. of grey/gn to the dark grey sh. Well fractured st previous interval. So very poorly developed qt. generally pitted (after carb?). Fractures very variable :- width c̄ 2 dominant orientation; dominant 30-45 LCA. 2° 60-70° LCA. Sporadic development of fractures sub ll to LCA. Fractures tend to be vuggy and limonitized, probably after S²⁻			BJ339	21.75	23.75	2.0		
			BJ340	23.75	25.75	2.0		
			BJ341	25.75	27.75	2.0		
			BJ342	27.75	29.75	2.0		
Dominantly qt and thin 2-5cm dark grey sh interbeds c̄ 1-2m grey/bn sh beds. qt units. Both qt and sh are pitted, irregular, pits ⇒ carb? Way up uncertain, So locally reverse graded flames(?) at 37.0m indicate correct way up (↑) So fissility commonly developed :- dark grey sh. Minor local brecciation. Irregular blk qtveinlets occur in qt, but not sh. (as at 37.4m) Fractures very irregular in qt, poorly developed and erratic in sh.			BJ343	29.75	31.75	2.0		
			BJ344	31.75	33.75	2.0		
			BJ345	33.75	35.90	2.15		
			BJ346	35.90	37.90	2.0		
			BJ347	37.90	39.90	2.0		
			BJ348	39.9	41.9	2.0		
			BJ349	41.9	43.9	2.0		
			BJ350	43.9	45.9	2.0		
			BJ351	45.9	48.4	2.5		
Irregularly fractured interbedded sh/slst/sst, pale grey to pink bn. Reverse(?) graded So common. Fracturing erratic and orientated. Very rarely mineralized			BJ352	48.4	50.4	2.0		

MINERALISATION

Samples	FRACT. DENSITY (per m)	% FRACT. MINSD	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANG. TO LCA	% BLK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.	CARB.		WALL ROCK ALTERN.	Remarks
BJ335–BJ336	20	40	<1-[illegible]	<1	40-60	1	x	x	✓	x	x	x	kaol. Fe	Silcfn, Fe stng	No sludge samples collected due to extremely poor water return.
BJ337–BJ338	60	50	<1-2	<1	10-40	1	x	x	✓	rare	x	x	lim kaol	Fe stng	
BJ339	25	50	<1-2	1	40	<1	✓	x	✓	rare	x	x	lim	Silcfn, Fe	
BJ340	60														
BJ341–BJ342	15	70	<1-2	1	35-45	<<1	x	x	✓	x	remanent py	x	abdt lim	Silcfn, Fe	Partially oxidized cubic forms:- veinlets - possible py.
BJ343–BJ344	53	80	<1-[illegible]	1	35-50	1-2	tr	✓(?)	✓	rare	x	x	lim Sc	Silcfn, Fe	
BJ345	80-90	80	<1-[illegible]	1-2	40-50	1-3	x	✓?	✓	✓	x	x	lim, Sc jar(?)	Silcfn	(34.9m. - black minerals for petrology)
BJ346–BJ347	67	80	<1-[illegible]	1	40-50	1-2	tr	x	✓	✓	✓ Py(?)	x	Lim. Sc kaol.	Silcfn. Fe (in Sh)	
BJ348–BJ349	80	75	<1-2	<1	35-55	1	x	x	✓	✓	x	x	lim. Sc	Silcfn, Fe	
BJ350–BJ351	50-80	80	<1-[illegible]	1	30-60	2	x	✓? rare	✓	✓	x	✓?	lim Sc	Silcfn, Fe	
BJ352	30-110	20	<1-3	<1	20-70	<<1	x	x	✓	x	x	x	kaol. Lim.	Fe	

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Project E.L.10 80 GREAT PYRAMID

Drillhole Nº BPD 9a 801157
Sheet 2 of 2

48.9

METRES	DRILL RUN METRES RECOV.	DRILL RUN % RECOV.	RQD
0.55	0.51	92.7	59
0.60	0.62	103.3	0
1.25	0.88	70.4	0
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
1.45	1.39	95.9	45
1.30	1.38	106.2	27
0.10	0.06	60.0	0
1.35	1.24	91.9	0
1.70	1.60	94.1	52
0.35	0.35	100.0	37
0.40	0.40	100.0	30
1.10	1.12	101.8	50
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
0.55	0.51	92.7	29
1.30	1.26	96.9	31
1.35	1.25	96.2	56
1.60	1.60	100.0	94
0.35	0.27	77.1	0
0.35	0.37	105.7	0
1.74	1.77	101.7	70
1.56	1.53	98.1	39
0.85	0.90	105.9	28
0.35	0.40	114.3	0
1.28	1.16	90.6	57
1.37	1.50	109.5	83
1.47	1.50	102.0	87
1.58	1.53	96.8	92
[illegible]	[illegible]	[illegible]	[illegible]
0.58	0.61	105.2	0
1.09	0.07	79.8	72
0.70	0.66	94.3	38
0.40	0.39	97.5	0
0.53	0.47	88.7	34
Σ 21.65	Σ 21.12	97.55	
Σ 47.55	Σ 44.69	93.99	
Σ 69.20	65.81	95.10	

DESCRIPTION	VISUAL LOG	ANGLE BEDDING TO LCA
Sst lqt, irregularly fractured, brectd in places. Rare sh interbeds, dark grey. Flame at 55.2 ↓. Qt locally gossanous appearances. Appears to be relatively well mineralized. Two fractures orientated both ~ 40° to LCA, ~ normal to each other.	⇓	40
Grey/bn sst locally grading to qt (silcfn) and slst (grain size). Pervasive Fe stng.		32?
Regularly fractured although locally brectd. Cross cut by irregular blk qt veinlets and stngs at low ∡ to LCA. Mineralized fractures post date blk qtz veinlets in some places. So fissility apparent in slst beds.		55, 55, 57
Grey bn sh c̄ interbedded grey slst. interbeds vary <1-70cm thick. Brectd at 72.4m. So generally regular although varies in orientation. Way up uncertain, normal grade and reverse grade. So both occur probably ⇓. Incipient Fe stng along So fissility. F.I. variable, <10-100. Mineralized fractures post date blk qt veinlets, sub ‖L to LCA.	⇓(?)	55, 22, <5, 52
Grey qt c̄ 2m grey sh. interbedd. Very minor grey sh stringrs scattered throughout qt. Sequence is very poorly bedded. Very regularly fractured. Minor qt kaol stngrs. sub ‖L to LCA sh.		40, 50
Hole abandoned at 82.20m due to complete loss of circulation. Circulation was not regained after numerous attempts at sealing the hole.		

60.45

SAMPLE NUMBER	FROM	TO	INTVL.	FRACT. DENSITY (per m)	% FRACT. MIN'D	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANG. TO LCA	% BLK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.			WALL ROCK ALTERN.	Sn (%)	W (%)
BJ353	50.4	52.45	2.05	80	75	<1-3	1	30-50	1-2	×	×	✓	✓	×	×	Lim	Silcfn/Fe		
BJ354	52.45	54.45	2.0																
BJ355	54.45	56.45	2.0	80-110	80	<1-5	1	40-50	2-3	✓	×	✓	×	×	×	Lim	Silcfn/Fe		
BJ356	56.45	58.45	2.0																
BJ357	58.45	60.45	2.0	85-95	75	<1-3	1	30-50	1-2	✓ tr	×	✓	✓	×	py	Lim Sc	Silcfn/Fe		
BJ358	60.45	62.45	2.0	30-50	70	<1-3	1	40-55	<1	×	×	✓	×	×	×	kaol. lim	Silcfn Fe		
BJ359	62.45	64.45	2.0																
BJ360	64.45	66.45	2.0	100	80	<1-2	<1-1	35-45	1	✓ tr	×	✓	✓	×	×	Lim	Silcfn Fe		
BJ361	66.45	67.60	1.15																
BJ362	67.6	69.6	2.0	30-100	70	<1-2	<1	40	<1	×	×	✓ rare	×	×	×	Lim	Fe		
BJ363	69.6	71.6	2.0																
BJ364	71.6	73.6	2.0	50	60	<1-2	<1	30-50	<1	×	×	✓	×	×	×	lim	Fe		
BJ365	73.6	75.6	2.0	80-110	85	<1-2	1	40	1-2	✓	×	✓	✓	×	×	lim	Silcfn Fe		
BJ366	75.6	77.6	2.0																
BJ367	77.6	79.6	2.0	110	85	<1-3	1	45	1-2	×	×	✓	×	×	×	kaol. Lim			
BJ368	79.6	82.20	2.6	85	75	<1-4	1	43	2-3	✓	×	✓	rare	×	×	lim	Silcfn.		

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Project GREAT PYRAMID EL 10/80

Drillhole Nº BPD 9a

Sheet: 1 of 2

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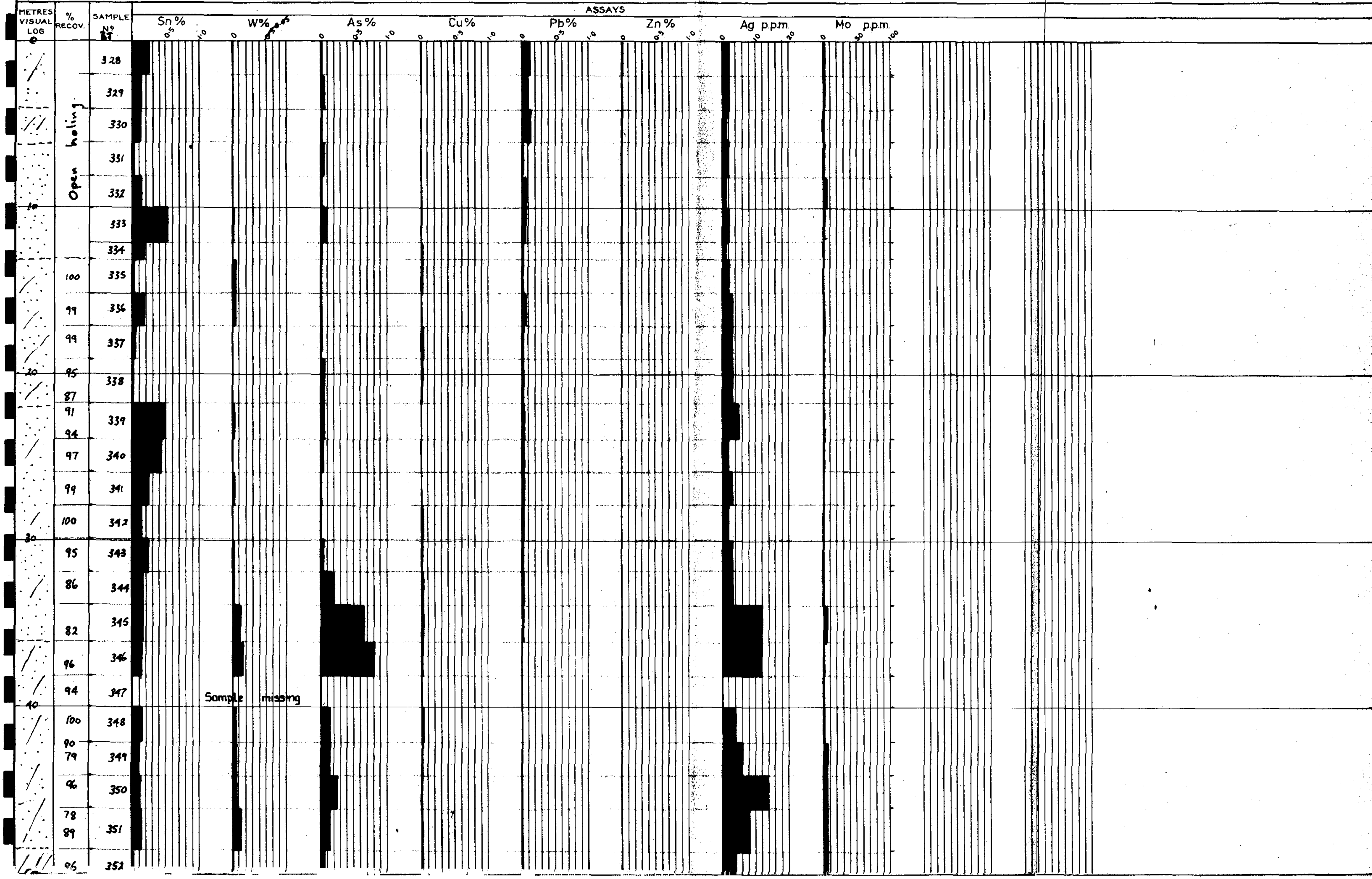

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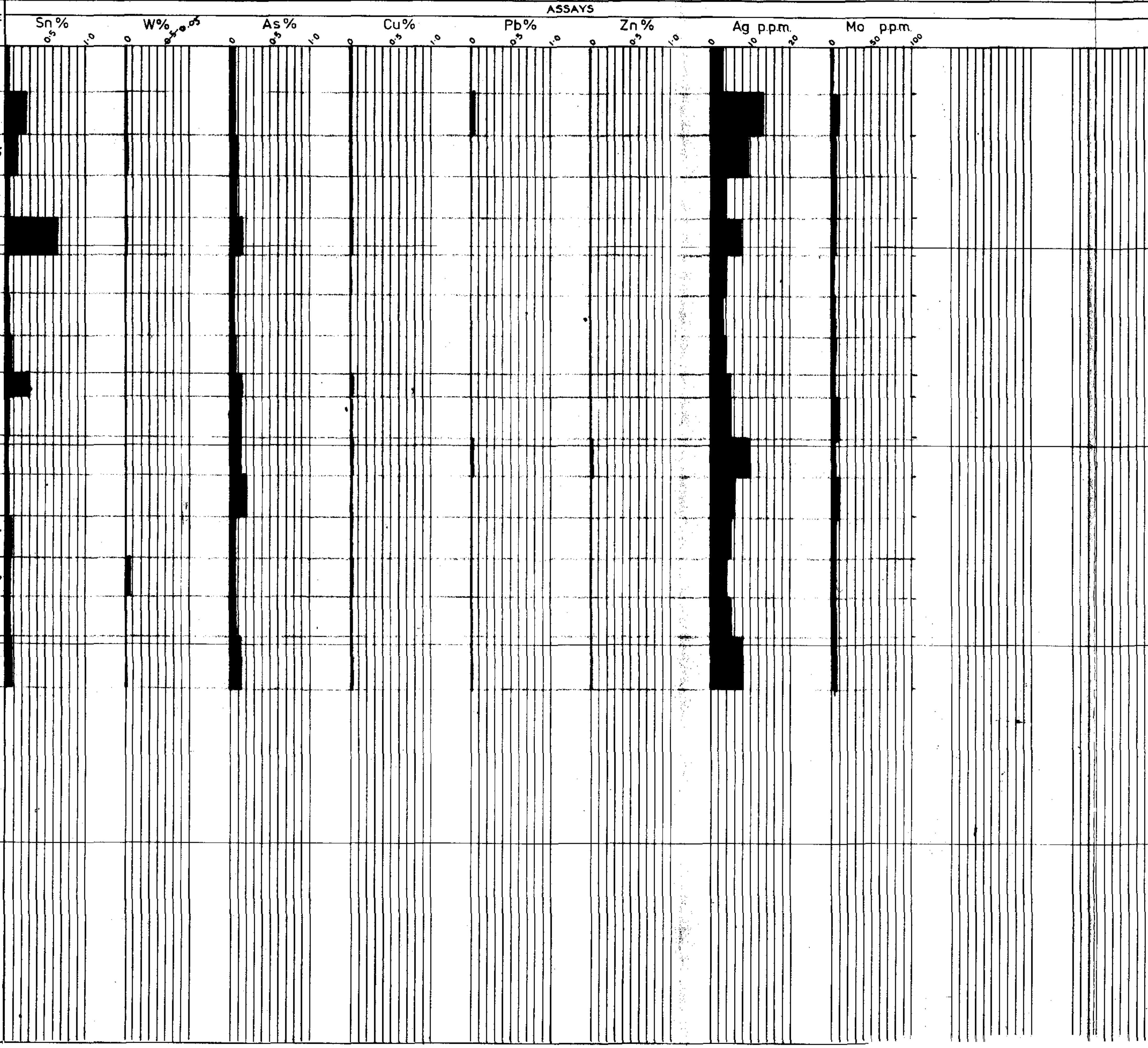
Project: EL 10/80 GREAT PYRAMID

Drillhole Nº: BPD 9a

Sheet: 2 of 2

801159

METRES VISUAL LOG	% RECOV.	SAMPLE Nº BS
50		
	98	353
	70, 50, 90	354
	96	355
	100, 92	356
60	94	357
	100	358
	93, 97	359
	96	360
	100	361
	77, 100	362
70	98	363
	100	364
	100	365
	100	366
	97, 90, 100	367
80	80, 94, 96, 89	368



BROKEN HILL PROPRIETARY CO. LTD.

Exploration Department

DRILL HOLE LOG HEADER SHEET

Project:	EL 10/80 Great Pyramid	**Hole No.:**	B.P.D.9(b)
Prospect:	Great Pyramid Tin Prospect	**Total Depth:**	45m
Local Grid co-ords:	382mE 213mN	**Bearing:**	120° (mag)
AMG co-ords:		**Depression:**	60° (0m)
Drilling Co.:	Walker Drilling	**R.L. Collar:**	193m
Drill Type:	DB 1000/2		
Core Size:	Percussion Only	**Commenced:**	15/2/81
Driller:	A Walker	**Completed:**	19/2/81
		Logged by:	D A Steele
		Sampled by:	-

Technical Data:

This hole was drilled to 45m using a Halco 4½" percussion hammer. 1.5m of HW casing was used at the surface to ensure a good seal during the percussion stage of this hole (0-90m).

Air circulation was completely lost at 32.5m, 34.0m, and at 38m. The use of Ro-Foam regained circulation but another loss of air ciruclation at 44m forced the abandonment of the hole at 45m depth.

The hole was cemented at 34m.

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Project

Drillhole Nº BPD 9(b)
Sheet 1 of 1 10 - 45m

METRES	DRILL RUN	DESCRIPTION	SAMPLE NUMBER	FROM	TO	INTVL.	ASSAYS Sn (%)	W (%)
	PERCUSSION CHIPS 0 — 45m	NOT SAMPLED	—					
		Purple sh. and v. minor qt.	BJ 369	1.0	2.0	1.0	0.06	
		Qt and purple sh.	BJ 370	2.0	4.0	2.0	0.06	
		Fractured qt.	BJ 371	4.0	6.0	2.0	0.21	
		Fractd qt c̄ vis s + bn (Fe stnd) sst.	BJ 372	6.0	8.0	2.0	0.38	
10m.		Qt + bn sst	BJ 373	8.0	10.0	2.0	1.20	
		Qt c̄ Fe stnd fracs.	BJ 374	10.0	12.0	2.0	0.68	
		Qt c̄ Fe stnd fracs.	BJ 375	12.0	14.0	2.0	0.64	
		Qt c̄ Fe stnd fracs.	BJ 376	14.0	16.0	2.0	0.46	
		Qt + grey sh.	BJ 377	16.0	18.0	2.0	0.13	
20m.		Sst + grey purple sh.	BJ 378	18.0	20.0	2.0	0.06	
		Sst + qt + grey sh.	BJ 379	20.0	22.0	2.0	0.02	
		Sst + sh.	BJ 380	22.0	24.0	2.0	0.01	
		Sst + sh. c̄ minor qt	BJ 381	24.0	26.0	2.0	0.14	
		Qt + grey sh.	BJ 382	26.0	28.0	2.0	0.06	
30m.		Fractd. qt + sh.	BJ 383	28.0	30.0	2.0	0.23	
		Qt c̄ Fe stnd. fracs.	BJ 384	30.0	32.0	2.0	0.26	
		Qt + bn sst.	BJ 385	32.0	34.0	2.0	0.14	
		Grey sh c̄ minor qt	BJ 386	34.0	36.0	2.0	0.10	
		Qt c̄ minor sh.	BJ 387	36.0	38.0	2.0	0.14	
40m		Qt + grey sh.	BJ 388	38.0	40.0	2.0	0.11	
		Qt + grey sh.	BJ 389	40.0	42.0	2.0	0.11	
		Qt + grey sh.	BJ 390	42.0	44.0	2.0	0.08	
		NOT SAMPLED	—					
		0 – 45m percussion chips. Hole abandoned at 45m due to air Loss — problem analogous to loss of water circulation in BPD 9(a).						

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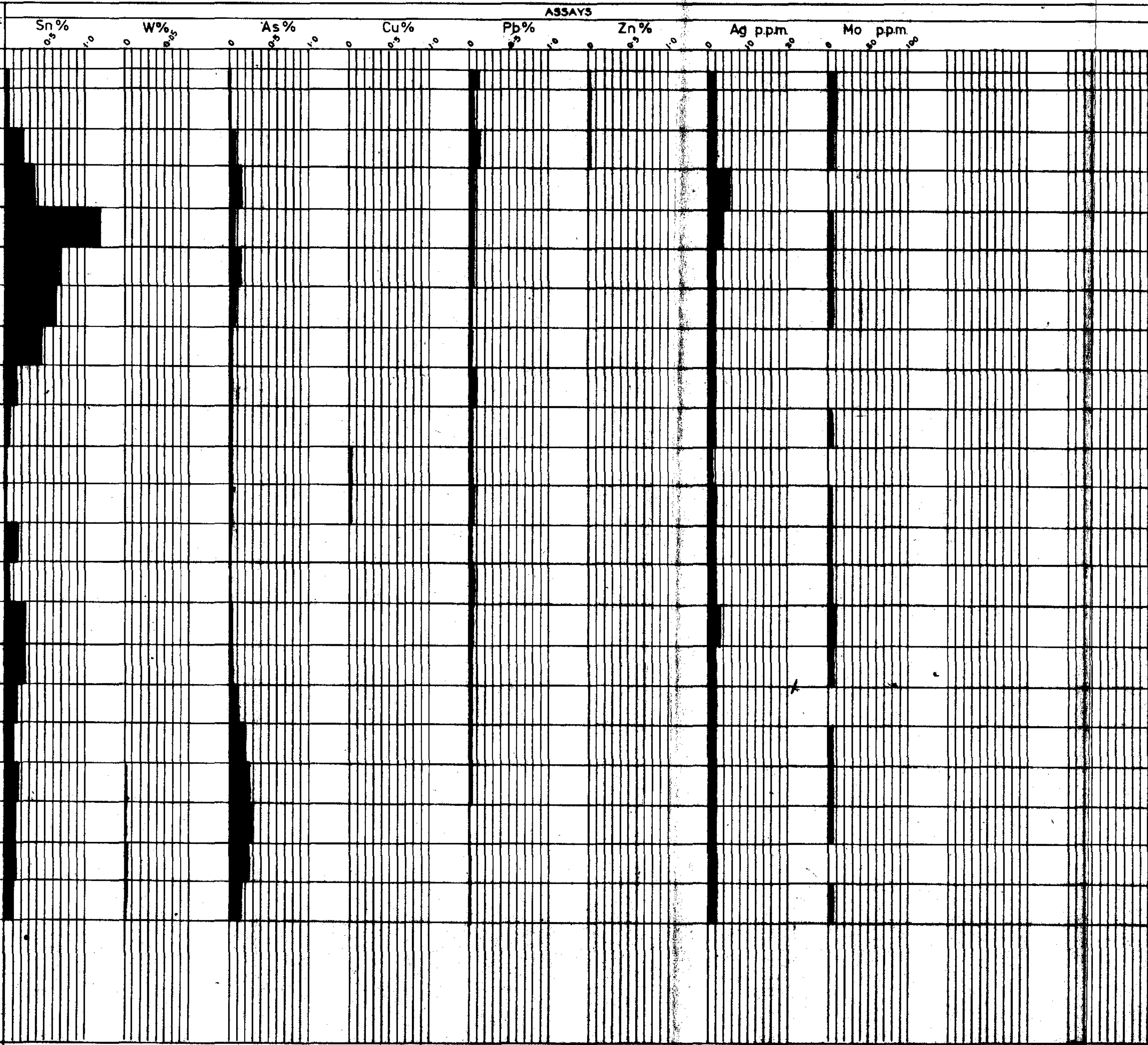
Project E.L.10/80 GREAT PYRAMID

Drillhole Nº BPD 9b

Sheet: 1 of 1

METRES VISUAL LOG	% RECOV.	SAMPLE Nº
0		N.S
		369
		370
		371
		372
		373
10		374
		375
		376
		377
	Open Holding	378
20		379
		380
		381
		382
		383
30		384
		385
		386
		387
		388
40		389
		390
		N.S.
	T.D.	45m



BROKEN HILL PROPRIETARY CO. LTD.

Exploration Department

DRILL HOLE LOG HEADER SHEET

Project:	EL 10/80 Great Pyramid	Hole No.:	BPD10
Prospect:	Great Pyramid Tin Prospect	Total Depth:	102.95m
Local Grid co-ords:	355mE 156mN	Bearing:	120° mag (0m)
AMG co-ords:		Depression:	60° (0m), 58½° (50m), 60° (100m)
Drilling Co.:	Walker Drilling	R.L. Collar:	162m
Drill Type:	DB 1000/2		
Core Size:	HQ3 to 20.70m, NQ3 to 102.95m	Commenced:	20/3/81
Driller:	A Walker, I.W. McCallum	Completed:	9/4/81
		Logged by:	D A Steele
		Sampled by:	P Spivey

Technical Data:

Overburden:	1-2m of quartzite/shale scree; percussion hammer used down to 4.00m.
Casing:	HW to 1.0m.
Water Return:	Generally good down to 21m, complete losses of circulation at ~30m, 39.4m, and virtually no water return below 40m.
Cementation:	At 39.4 (recemented), 102.75m.
Additives:	Ro-Lube, Hydropol, Mica, Super Gel, Gypseal 60, Bentonite, Ro-Lite, Ro-Mix XP10.
Oxidation:	Depth of total oxidation approximately 70m, base of oxidation zone is at approximately 98m.
Other:	Problems encountered with rods continually binding in the hole due to lack of lubrication (water return), and drill platform subsiding on one side of the rig. Downhole survey by acid etch.

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Project E.L. 10/80 Great Pyramid

Drillhole Nº BPD 10

Sheet 1 of 3

Box / depth	METRES	DRILL RUN METRES RECOV.	DRILL RUN % RECOV.	RQD
4.00	0.04	0.04	100.00	0
1	1.69	1.69	100.00	66
	1.29	1.25	96.90	18
	0.29	0.26	89.66	0
2	0.87	0.77	88.51	43
	1.53	1.33	86.93	31
	0.66	0.68	103.03	59
	0.90	0.46*	51.11	0
	0.35	0.25	71.43	0
	0.44	0.30	68.18	0
13.35	1.00	0.90	90.00	27
	[illegible]	[illegible]	[illegible]	0
	[illegible]	[illegible]	[illegible]	0
	0.48	0.38	79.17	11
3	1.31	1.21	92.37	50
	1.93	1.93	100.00	46
17	1.00	1.07	107.00	23
	1.17	1.14	97.44	22
	0.43	0.47	109.30	43
	0.77	0.68	88.31	19
	1.88	1.77	94.15	62
	1.02	0.95	93.14	31
5	1.88	1.63	86.70	63
	1.17	1.00	85.47	76
27.00	1.52	1.70	111.84	84
	1.75	1.70	97.14	82
	1.08	1.07	99.07	63
31	1.72	1.72	100.00	61
	2.35	2.35	100.00	62
	0.42	0.39	92.86	56
35.8	1.73	1.43	82.66	68
8	2.18	2.27	104.13	77
40	2.11	2.08	98.58	88
	1.09	1.09	100.00	48
	0.75	0.72	96.00	51.7
	1.55	1.49	96.13	48
44	0.52	0.52	100.00	23
	0.91	0.89	97.80	38
10	0.77	0.77	100.00	18
	1.25	1.25	100.00	74
	0.86	0.90	104.65	70
49.13	1.01	1.01	100.00	30
11	0.38	0.28	73.68	39

DESCRIPTION	VISUAL LOG
Silcfied sst/qt. Fe stnd well fractured. Very minor brecciation at 5.4 m. Very locally feldspathic, or "pitted". Very minor/cutting black qtz veinlets 1-2mm. post date mineralization.	ΔΔΔ
Massive grey sh c̄ greenish tint. very poorly bedded, locally well fractured although BRM very low. Where fractured intensity ↑, Fe stng common. Minor developments of black qtz veinlets post dated by qtz - carb? veinlets. So fissility commonly developed. Way up ??? Locally brecciated, and Fe stnd. Fracturing somewhat erratic in orientation commonly more than 1 preferred orientation.	ΔΔΔ
Poorly interbedded qt/sst/slst/sh. Sh locally laminated. Strong development of very irregular network of black qtz veinlets especially in sst/slst/qtz. Black qtz ins. post date more regularly orientated mineralized. fractures. Flames indicate ⇊	⇊
Silcfied sst c̄ locally interbedded grey to grey/bn sh. Moderately well fractured Silcfn haloes adjacent to veinlets very obvious 2-10mm. wide. Rare black veinlets pre date mineralized fractures.	
Feldspathic qt. Very strongly and regularly fractured One dominant dimension although others common. Bottom contact graduation.	F F F F
Massive grey qt. well fratured. locally feldspathic Grades locally to sst. Rare grey sh stringers ≤1cm wide Flame at 38.77m implies ⇈. Strong evidence for slumping and/or brecciation c̄ subsequent qtz + bed? at 34.8 ~ 37.0m. One dominent mineralized fracture orientation. Predate in some cases by 5mm wide qtz veins at very high ∡ to LEA (70-90). Some evidence suggests barren veinlets post date mineralized fractures. Wide ≤ rich (~50%) veinlet. 6-8mm at 36.16m.	F F F; F F ΔΔΔ?; ΔΔ?; ⇈
Dominently qt locally grading to sst c̄ interbedded slst/sh. Qt generally regularly fractured. slst/sh more erratic c̄ abdt cross cutting black qt veinlets So poorly developed. Bedding orientation erratic Boudinage (pinch and swell) locally developed. Flame structure at 44.75 ⇑ Flame at 46.30 ⇓. In general fracturing ⊥ to So. Local Fe stnd fractures ⊥ to mineralized fractures developed - sh. Minor movement 1-2mm developed along some fractures.	⇈; ⇊?

ANGLE BEDDING TO LCA	SAMPLE NUMBER	FROM	TO	INTVL.	FRACT. DENS. (per m)	% FRACT. MIN'SED	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANGLE TO LCA	% BLK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.			WALL ROCK ALTERN.	Sn (%)	W (%)		SLUDGES Wt	SLUDGES BJ	SLUDGES Assay Sn %	
																						Not Sampled			
	BJ 453	4.00	6.30	2.30	50-60	80	<1-3	1	40-45	≥1	vis-av.	x	✓	tr	ov	x	Limonite	Silcfn				40 to 70	BJ 499		Most veinlets / fractures vuggy. Fe stng - after sed.? and/or S^{2-} Py partially oxided.
	BJ 454	6.30	8.30	2.00	30-60 variable	30-40	<1-2	<1	10-60 generally ~45	<1	x	x	rare	x	x	x	limonite	Fe stng				70 to 100	BJ 500		
50	BJ 455	8.30	10.30	2.00																					
~85 45	BJ 456	10.30	12.80	*2.50 2.0	60-70	30	<1-3	<1	erratic b/n 20°-40°	<<1	x	x	✓	x	x	x	Limonite Mnla	Fe stng *Rare Silcfn.				100 to 130	BJ 501		* Only in sandier horizons.
	BJ 457	12.80	14.80	2.00																		130 to 160	BJ 502		
50 40	BJ 458	14.80	16.80	2.00	60	60	<1-3	1	Erratic generally ~45	<1	x	x	✓	tr	x	x	limonite	Silcfn Fe stnd							
48	BJ 459	16.80	19.00	2.20	30-70	65	<1-2	<1	"	<1-1	tr	x	✓	x	x	x	Limonite	Silcfn Fe stnd.				160 to 190	BJ 503		Silcfn only observed in sandier lithologies
50	BJ 460	19.00	20.70	1.70																		Insufficient Water Return			
	BJ 461	20.70	22.70	2.00	35-50	70	<1-3	1	40-50	1	x	x	✓	✓	remanant py?	x	limonite	Silcfn local Fe stng.							
50	BJ 462	22.70	23.90	1.20																					
	BJ 463	23.90	25.90	2.00	50-70 locally 80+	70	<1-5	1	35-50	1	x	x	✓	✓	x	x	Sc limonite	Fe stng Silcfn							
	BJ 464	25.90	27.90	2.00	50-90	70	<1-2	1	35-40	1	x	x	✓	✓	x	x	limonite Sc*	Local Fe stng				↓ to 102.95			* Only in larger veinlet
	BJ 465	27.90	29.90	2.00																					
	BJ 466	29.90	31.90	2.00	92	80	<1-3	1	35-45	1-2	x	x	✓	x	x	x	limonite	Fe stng							
	BJ 467	31.90	33.90	2.00	Erratic 30-90+	80+	<1-7	1-2	30-60	3	x (av. Δ gd)	x	✓	x	x	x	limonite Sc Kaolin	Silcfn							
	BJ 468	33.90	35.90	2.00																					
56	BJ 469	35.90	37.90	2.00	70-80	70+	<1-2	1	35-45	1	x	x	✓	tr	remanant py	x	limonite	Silcfn Fe stng							
50	BJ 470	37.90	39.90	2.00	30-40	75	<1-2	<1	35-50	<1	x	x	✓	rare	x	x	limonite	Silcfn Fe stng							
	BJ 471	39.90	41.90	2.00																					
53	BJ 472	41.90	44.10	2.20	45	80	<1-4	1	30-60	1	✓	x	✓	✓	x	x	limonite	Fe stng Silcfn							
40	BJ 473	44.10	46.10	2.00	*86	85	<1-3	1	40-50	1-2	✓	x	✓	tr	x	x	limonite	local Fe stng Silcfn.				* More obvious in sst/slst			
10 16	BJ 474	46.10	48.10	2.00																					
	BJ 475	48.10	50.10	2.00	sh/sst erratic 20-50	~50	<1-1	<1	erratic; dom 30-50	<<1	x	x	rare	x	x	x	limonite kaolin	Fe stng Silcfn							
62																									

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Project *E.L. 10/80 Great Pyramid*

Drillhole Nº *BPD 10*

Sheet: *2* of *3* *(49·13 - 99·93m)*

Drill run

METRES	METRES RECOV.	% RECOV.	RQD
0·63	60·0	95·24	15
1·18	1·20	101·69	57
0·25	0·21	84·00	0
0·80	0·72	90·00	0
0·33	0·37	112·12	0
0·92	0·95	103·26	24
0·42	0·40	95·24	0
0·53	0·49	92·45	0
0·46	0·25	55·56	0
0·35	0·35	100·00	0
[illegible]	[illegible]	[illegible]	10
[illegible]	[illegible]	[illegible]	0
0·71	0·71	100·00	0
0·53	0·42	79·25	0
1·03	1·03	100·00	12
0·67	0·70	111·11	0
56·27	53·34	94·79	
0·73	0·71	95·35	0
1·30	0·10	7·69	0
[illegible]	[illegible]	[illegible]	0
1·07	1·04	97·20	13
0·93	0·90	96·77	23
1·46	1·46	100·00	47
0·62	0·59	95·16	0
1·84	1·71	92·93	6·3
1·33	1·33	100·00	37
1·53	1·53	100·00	61
1·37	1·37	100·00	20
1·16	0·92	79·31	14
1·38	0·56	40·58	23
0·63	0·60	95·24	30
[illegible]	[illegible]	[illegible]	0
0·51	0·15	29·41	0
0·96	0·63	65·63	33
1·20	1·13	94·17	63
1·80	1·85	102·78	94
1·35	1·30	96·30	72
1·23	1·25	101·62	68
1·82	1·90	104·40	75
1·32	1·32	100·00	58
1·48	1·55	104·73	165
1·80	1·87	103·89	47
1·50	1·40	93·33	52
1·52	1·50	98·68	100
3·00	3·08	102·67	84
3·00	3·02	100·67	85
2·18	2·18	100·00	65

Description

Dominantly grey to red/bn Fe stnd sh locally grading to slst and sst. poorly bedded. S_0 fissility well developed - sh. Small Fe stnd fractures Sub 11/ to S_0 fissility. Generally low F.I <20. Minor zones of brecciation occur at 66·5, 68·7 and between 71·0 ≃ 72·7m.

Common breccia infilling is qtz. chl. aspy and py. Aspy and py observable below ~ 70m. Btn 70 - 73m fracturing is somewhat erratic in orientation producing brecciated appearance local chltzn of slst/sh common. Aspy very common together c̄ py.

Massive grey sh locally grading to slst greenish. Not bedded, very poorly fractured. Very soft altered? Severly silified at ~1m wide at base - severely fractured mineralized. Possibly hornfels'd.

Medium to fine ground green grey to green black dolerite. Generally severely altered. Very soft at upper contact Very fine gradual soft black horizon at base - very sharp contact c̄ underlying. Generally very poorly fractured - FI <10. Local concentrations of CO_3 filled amygdales. Fractures generally variable in orientation.

Irregularly fractured grey qt c̄ minor sh inbeds. Locally brecciated - movement along fractures very obvious. Fracturing generally high in intensity, locally very intense. brecciated btn 90 - 91m. % BRM very high cf c̄ other intervals in hole. S_0 orientation difficult to measure due to faulting. Graded S_0 at 85-65°. Mineralized veinlets fractures tend to post date barren veinlets.

Generally massive regularly fractured qt c̄ very minor sh inbeds. Fractures rare anastomose generally barren qtz ± py assemblage. Mineralized fractures very regular in orientation. Fairly well mineralized horizon. First appearance of cpy sph. 2cm wide cpy - qtz veinlet at 98·45 cm.

Samples, mineralisation and assays

VISUAL LOG	ANGLE BEDDING TO LCA	NUMBER	FROM	TO	INTVL.	FRACT. DENSITY (per m)	% FRACT. MIN'D	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANGLE TO LCA	% BLK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.			WALL ROCK ALTERN.	Sn (%)	W (%)		REMARKS
	28	BJ 477	52·10	54·10	2·00	sh/sst <10- 50	40																
	31	BJ 478	54·10	56·30	1·80	~45	60	<1-6 rare	<1-1	40-65	<1	✓	×	✓	×	×	×	limonite	Silcfn Fe stng				
		BJ 479	56·30	58·55	2·25																		
		BJ 480	58·55	60·55	2·00	~40	70	<1-6	1	20-70 variable	1	×	×	✓	✓	×	×	limonite	Silcfn Fe stng.				
		BJ 481	60·55	64·00	3·45	57	75	<1-3	<1	30-50	<1-1	×	×	✓	×	×	×	limonite	Fe stng				
△△△	40 / 30	BJ 482	64·00	66·00	2·00	~20	80	<1-8	2	30-45	1-2	×	✓?	✓	✓	py	×	limonite chl	Fe stng chltzn. (local)				
		BJ 483	66·00	68·00	2·00																		
△△		BJ 484	68·00	70·00	2·00																		Approx base of total oxidation.
△△ △△△ △△	22	BJ 485	70·00	72·68	2·68	~80	85	<1-7	1	20-70 variable	3	×	×	✓	✓	aspy py	×	limonite chl Sc kaolin	Fe stng Chltzn				
	32	BJ 486	72·68	76·88	4·20	<10	50	<1-1	<1	25-30	<<1	×	×	×	×	×	×	chl kaolin					
						~60	80	<1-7 rare.	1	30-60 variable	1	×	×	✓	×	py, aspy	×	chl kaolin	Silcfn				
		BJ 487	76·88	79·30	2·42																		Haloes rarely seen adjacent to fractures in dolerite.
		BJ 488	79·30	81·30	2·00	<10	90	<1-1	<1	25-60	<<1	×	×	×	×	×	✓	chl	Silcfn (rare)				
		BJ 489	81·30	83·30	2·00																		
		BJ 490	83·30	86·50	3·20																		
u?	19 / 30	BJ 491	86·50	88·50	2·00	80+	80	<1-15	1-2	20-70	5	×	×	✓	✓	py	sid	chl limonite Mnl₂	Silcfn				Appears to be 2 sets of mineralized fractures approx.- normal to each other.
		BJ 492	88·50	90·50	2·00																		
△△ △△	18	BJ 493	90·50	92·50	2·00	90+	85	<1-8	1-2	30-40	3	×	×	✓	×	py	×	limonite kaolin chl.	Silcfn				
	34	BJ 494	92·50	94·70	2·20	sh 56	80	<1-5	1	40-50	1-2	✓	×	✓	×	py aspy	×	limonite chl	Silcfn				
		BJ 495	94·70	96·70	2·00	65	80	<1-4	1	40-60	2	✓	×	✓	✓	py aspy	sid Fl	chl limonite	Silcfn				
	20 / 25	BJ 496	96·70	98·70	2·00	55-75	80	<1-6	2	40-55	2-3	✓	×	✓	✓	py, cpy aspy Sph (tr)	sid	chl pinite kaolin	Silcfn				Approx depth of partial oxidation.
		BJ 497	98·70	100·70	2·00																		
						65	85	<1-8	2	30-70	2	×	×	✓	×	py cpy	Sid	chl	Silcfn				

Project E.L. 10/80 Great Pyramid

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Drillhole Nº BPD 10 801166
Sheet: 3 of 3 (99.98 - 102.95m)

METRES	DRILL RUN: METRES RECOV.	DRILL RUN: % RECOV.	RQD	DESCRIPTION	VISUAL LOG	ANGLE BEDDING TO LCA	SAMPLE: NUMBER	SAMPLE: FROM	SAMPLE: TO	SAMPLE: INTVL.	MINERALISATION: FRACT. DENSITY (per m)	% FRACT.	VEIN WIDTH mm: RANGE	VEIN WIDTH mm: AV.	ANG. TO LCA	% BLK ROCK MIN.	VEIN MINERALOGY: CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.			WALL ROCK ALTERN.	ASSAYS: Sn (%)	W (%)	
0.82	0.86	104.88	49			45	BJ 498	100.70	102.95	2.25	70	80	<1-6	1	40-70	1	✓	x	✓	✓	py, cpy	x	chl kaolin	Sil'n			
[illegible]	[illegible]	[illegible]	[illegible]																								
42.68	39.55	92.67																									
56.27	53.34	94.79																									
Σ98.95	Σ92.89	93.88																									

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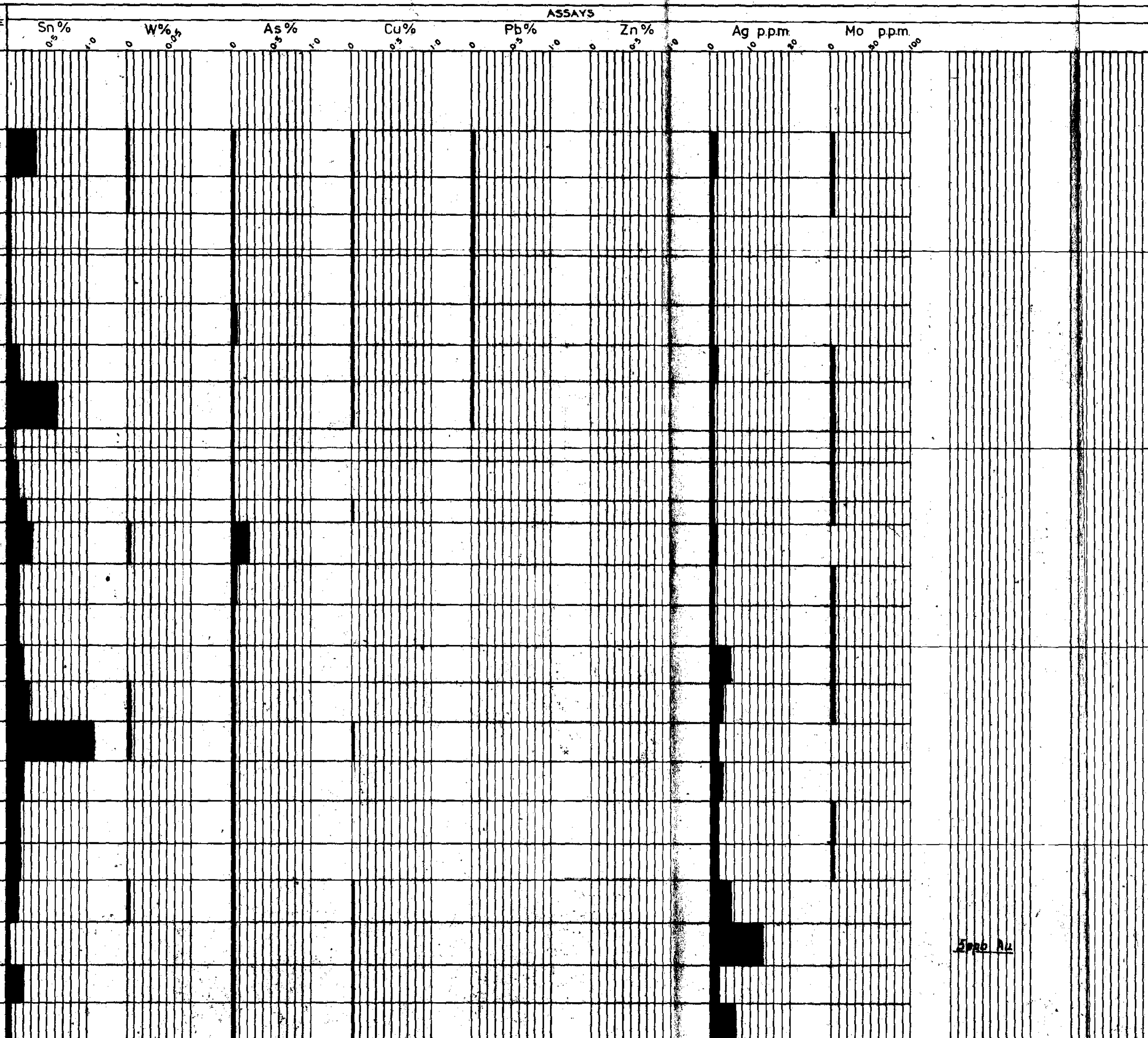
Project *E.L. 10/80 Great Pyramid*

Drillhole Nº *BPD 10* **801167**

Sheet: *1* of *3*

METRES VISUAL LOG	% RECOV.	SAMPLE Nº 61	Notes
	99	453	
	89	454	
	87	455	
10	60	456	
	98	457	
	100	458	
	100	459	
20	99	460	
	96	461	
	93	462	
F F	87	463	
F	98	464	
	97	465	
30	99	466	
	100	467	
F F	95	468	
	83	469	
	100	470	
40	100	471	
	97	472	
	99	473	5ppb Au
	100	474	
50	100	475	



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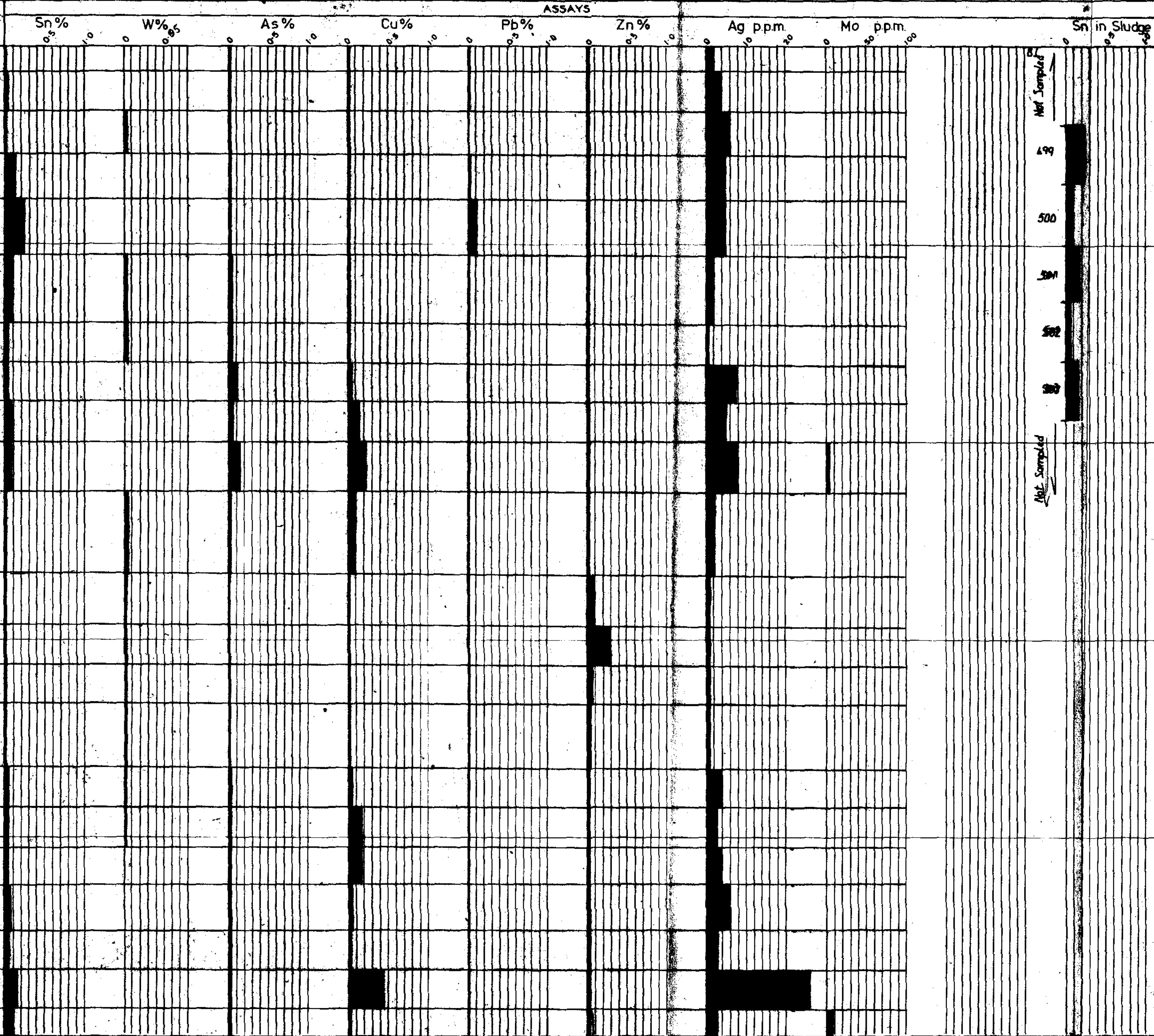
Project E.L 10/80 Great Pyramid

Drillhole Nº BPD 10 801168

Sheet: 2 of 3

METRES VISUAL LOG	% RECOV.	SAMPLE Nº
		476
	90	477
	95 / 55	478
	44 / 90	479
	100	480
	96 / 100 / 97	481
	98	482
	94	483
70	100	484
	100	485
	80 / 40 / 100	486
	29 / 80	487
80	100	488
	96	489
	100	490
	100	491
90	100	492
	93 / 95	493
	99	494
	100	495
	100	496
100	100	497



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Project E.L 10/80 Great Pyramid

Drillhole Nº BPD 10 801169

Sheet: 3 of 3

METRES VISUAL LOG	% RECOV.	SAMPLE Nº	ASSAYS Sn%	W%	As%	Cu%	Pb%	Zn%	Ag p.p.m.	Mo p.p.m.
	90	498								

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Exploration Department

DRILL HOLE LOG HEADER SHEET

Project:	EL 10/80 Great Pyramid	Hole No.:	BPD11
Prospect:	Great Pyramid Tin Prospect	Total Depth:	219.75 m
Local Grid co-ords:	450mE 140mN	Bearing:	120° mag (0m)
AMG co-ords:		Depression:	60° (0m), 60° (100m), 53° (219m)
Drilling Co.:	Walker Drilling	R.L. Collar:	137m
Drill Type:	DB 1000/2		
Core Size:	HQ3 to 99.0m, NQ3 to 219.75m	Commenced:	10/4/81
Driller:	I W McCallum, A Walker	Completed:	9/5/81
		Logged by:	D A Steele
		Sampled by:	P Dubbeld, P Spivey.

Technical Data:

Overburden:	Less than 1m of loose quartzite; 0-9m percussion hammer; Tricone used to clean out hole (9-10m), and again from 10.5 to 13.00m.
Casing:	HW to 10.50m; HQ to 99.0m; all casing removed upon completion of hole.
Water Return:	Generally good down entire length of hole. Losses of circulation at approximately 70m, 90m, 122m.
Cementation:	At 18m, 122m.
Additives:	Ro-Lube, Hydropol, Mica, Bentonite, Gypseal 60, Ro-Lite.
Oxidation:	Approximate depth of total oxidation 55m. Base of oxide zone is approximately 80m.
Other:	Downhole survey by acid etch.

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Project E.L.10/80 Great Pyramid

Drillhole Nº BPD 11

Sheet : 1 of 5 (0·00 - 51·15m)

Drill run

METRES	DRILL RUN METRES RECOV.	DRILL RUN % RECOV.	RQD
00 - 9·00m (Percussion Hammer)			
0·47	0·45	95·74	0
0·39	0·39	100·00	26
0·29	0·14	48·27	0
0·58	0·55	94·83	0
0·70	0·70	100·00	0
0·35	0·34	97·14	35
0·37	0·37	100·00	0
0·36	0·36	100·00	0
0·43	0·36	83·72	40
0·38	0·38	100·00	40
0·33	0·33	100·00	33
0·34	0·34	100·00	44
0·32	0·30	93·75	45
0·68	0·62	91·18	34
0·21	0·21	100·00	43
1·84	1·88	102·17	73
0·95	0·87	91·58	0
0·43	0·43	100·00	47
0·97	1·05	108·25	31
1·13	1·13	100·00	61
2·08	2·08	100·00	46
0·72	0·72	100·00	17
0·27	0·40	148·15	0
0·93	0·73	78·49	32
0·46	0·58	127·00	0
0·70	0·70	100·00	36
[illegible]	[illegible]	[illegible]	[illegible]
0·46	0·38	82·61	32
0·40	0·40	100·00	26
0·62	0·60	96·77	0
0·67	0·65	97·01	31
0·39	0·39	100·00	0
0·80	0·82	102·50	56
0·40	0·70	175·00	0
0·72	0·45	62·50	22
1·89	1·99	105·29	73
0·98	0·96	97·96	21
1·19	1·19	100·00	45
0·57	0·57	100·00	18
0·45	0·42	93·33	24
0·94	0·96	102·13	58
0·55	0·55	100·00	46
0·41	0·41	100·00	95
1·20	1·20	100·00	53
0·59	0·58	98·31	52
1·27	1·25	98·43	70
0·69	0·75	108·70	37
1·10	1·10	100·00	56
0·68	0·68	100·00	49
1·38	1·42	102·90	58
2·01	1·97	98·01	76
0·95	1·00	105·26	82
1·11	1·10	99·10	43
0·87	0·84	96·55	64
0·55	0·25	45·45	0

Description

Grey qt and minor bn sh

Grey qt and bn silcfied sst

Grey qt and bn silcfied sst

Grey qt and bn sst.

Light Bn sh c̄ minor sst/qt

Grey qt

Not Sampled.

(10·00 m) Grey qt locally grading in alt" to sst c̄ minor interbedded grey - grey bn sh - two sh beds ½ - 1m thick at ~16·2 and 29·8m. Qt locally feldspathic at 11-13m and 18-19m. No sharp contacts between feldspathic and non feldspathic qt. So very poorly developed in qt. Fractures & intensity very erratic in orientation and distribution. Irregular black qtz veinlets and stringers generally pre date more regular mineralized (?) veinlets and fractures. 1-2cm silicfied and ferruginization haloes commonly observed in sandstone horizons. Minor brecciation of sh and sst/qt at 26·2 - 27·0 c̄ accompanying Silcfn and Fe stng. Very irregular barren white qt veinlets/stringers pre date "regular" mineralized fractures/veinlets and produce brecciated appearance between 22·3 - 24·1m. Veinlets of white qtz are vuggy and Fe stnd where very (>1cm) also very minor pale green Scorodite (?) Very limited information on So and way up, however very small 1-2mm flames at 10·6m indicate ↓. Only very minor movement located on a few fractures/veinlets generally <½ cm.

Finely bedded sequence of slst and sh beds ½ - 2cm thick. locally grading to sst/qt up to 1m thick. Coarse graded beds tend to be fe stnd. Shales are grey. Graded So very common indicates ↓. Flames indicate ↓. The sandier lithologies tend to be moderately well fractured, however the sh's are not fractured. An So fissility is only weakly developed. Local evidence for soft sediment deformation reworking etc. Very poorly mineralized horizon. Occasionly black qtz veinlets/stringers often truncated, at sh/sst interface - discontinuous into sh from sst/qt.
Aspy crystals occur in body of qt at 57·85m - possible during silcfn.

Samples and mineralisation

ANGLE BEDDING TO LCA	SAMPLE NUMBER	FROM	TO	INTVL.	FRACT. DENSITY (per m)	% FRACT. MIN'D	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANGLE TO LCA	% BULK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.	CARB. Fe	OTHER	WALL ROCK ALTERN.	Sn (%)	W (%)		Remarks
	BJ 0504	0·0	1·5	1·5																		
	BJ 0505	1·5	3·0	1·5																		
	BJ 0506	3·0	4·5	1·5																		
	BJ 507	4·5	6·0	1·5																		
	BJ 508	6·0	7·5	1·5																		
	BJ 509	7·5	9·0	1·5																		
17	BJ 510	10·00	12·00	2·00																		
	BJ 511	12·00	14·20	2·00*	~30	60	<1-5	1-2	35-45	1?	tr	×	✓	×	×	×	limonite	Silcfn Fe stng.				
	BJ 512	14·20	16·20	2·00																		
	BJ 513	16·20	18·20	2·00																		
70?	BJ 514	18·20	20·36	2·00*	10-15 locally 30+	50-60	<1-3	1	28-48	<<1	×	×	✓	×	×	remanant Sid?	limonite rare Sc	Silcfn				
	BJ 515	20·36	22·36	2·00																		* as thin selvedges
	BJ 516	22·36	24·36	2·00	50-70	70	<1-7	1	30-40	2-4	✓	×	✓	✓	remanant py	×	limonite Sc					
55	BJ 517	24·36	26·36	2·00																		
	BJ 518	26·36	28·36	2·00	15-30	60	<1-3	1	35	<1	✓	×	✓	×	×	×	limonite	Silcfn				
	BJ 519	28·36	30·36	2·00																		
49	BJ 520	30·36	32·36	2·00	25	70	<1-2	<1	35-45	<1	×	×	✓	×	×	×	limonite	Silcfn Fe stng				
	BJ 521	32·36	34·36	2·00																		
	BJ 522	34·36	37·20	2·00	10-20	80	<1-4	<1	30-40	<1	×	×	✓	×	remanant py	×	limonite	Silcfn				
50	BJ 523	37·20	39·20	2·00																		
	BJ 524	39·20	41·20	2·00																		
45	BJ 525	41·20	43·20	2·00																		
	BJ 526	43·20	45·20	2·00																		
50	BJ 527	45·20	47·20	2·00																		Silcfn haloes observable 2cm wide.
	BJ 528	47·20	49·20	2·00	sst 53	75	<1-4	<1	25-40	<1	×	×	✓	tr	×	×	limonite	Silcfn				
50	BJ 529	49·20	51·20	2·00																		

Sludges

INT.	BJ	ASSAY Sn%
Not Applicable		
Not Sampled		
21 to 24	BJ 614	
24 to 27	BJ 615	
27 to 30	BJ 616	
30 to 33	BJ 617	
33 to 36	BJ 618	
36 to 39	BJ 619	
39 to 42	BJ 620	
42 to 45	BJ 621	
45 to 48	BJ 622	
48 to	BJ 623	

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801172

Project *E.L 10/80 Great Pyramid*

Drillhole Nº *BPD 11*

Sheet : *2* of *5* *(51·15 - 100·62m)*

METRES	DRILL RUN METRES RECOV.	DRILL RUN % RECOV.	RQD
0·43	0·41	95·35	24
1·27	1·27	100·00	37
0·34	0·33	97·06	30
0·96	0·96	100·00	56
0·87	0·87	100·00	43
2·00	2·00	100·00	73
0·87	0·87	100·00	39
1·77	1·75	98·87	59
1·41	1·41	100·00	86
2·08	2·04	98·08	76
0·95	0·86	90·53	80
2·05	2·14	104·39	61
2·81	2·84	101·07	83
3·10	3·07	99·03	86
3·03	3·03	100·00	96
2·15	2·14	99·53	54
2·04	2·04	100·00	79
0·36	0·48	133·33	32
1·51	1·40	92·72	92
1·07	1·07	100·00	77
1·71	1·78	104·09	70
3·02	3·09	102·32	66
1·68	1·68	100·00	36
1·52	1·59	104·61	76
2·73	2·72	99·63	79
2·38	2·38	100·00	84
0·89	0·89	100·00	47
0·44	0·41	93·18	34
1·18	1·25	105·93	66
0·84	0·81	96·43	33
0·33	0·12	36·36	0
0·40	0·70	175·00	36
1·05	[illegible]	[illegible]	71

DESCRIPTION

DESCRIPTION	VISUAL LOG
Featureless grey sh very poorly bedded and locally grading to sst. Minor soft sediment deformation. Graded So and Flames indicate ⇓. Very poorly fractured FI<10 kaolin very common on some fractured faces. Minor qtz - py mineralization in veinlets in sst horizons.	⇓ ⇓ ⇓
Coarsely interbedded qt/sh. Poorly bedded sh grades to sst in places downhole facing ⇓. Sh very poorly fractured. Qt well fractured and brecciated at 65·2m. ~3cm wide zone. ~50°∠CA. sub ∥∠ to mineralized fractures. First appearances of chl/pin as fracture filling phases.	ΔΔΔΔ
Massive well mineralized qt c̄ occassional. 5cm interbeds of lamenated grey sh. Bulk of mineralization is fracture controlled but aspy and py sometimes occur in large clusters in body of qt. Fracturing is locally contorted. Truncation of So observed at 73·75m c̄ ~10cm displacement - however no structure (fault) is observable. FI is erratic, however fractures tend to be very wide.	
Coarsely bedded qt/sh comprising 1-2m interbeds of qt c̄ 1-2m interbeds of grey sh. locally grading to slst. Flames c̄ graded So indicate ⇓. Sh is very poorly fractured. F.I generally ≪10 qt moderately well fractured. Fairly well mineralized. Slumping and minor brecciation occur on very small scale. Very irregular ptygmatic veinlet at 79·45m. Very fine sid ± py films occur on some fractures faces in sh. Aspy very common wide veinlets in qt. Mag/pin/cpy assemblage occurs in very minor 3-5cm breccia zone at 80·50m.	⇓ ΔΔΔ ⇓
Coarsely bedded sh/qt. 1-2m sh beds c̄ 10-40cm qt interbeds - sh dominant. Sh grades locally to to slst/sst. Generally well bedded. poorly fractured Very minor slumping evident. Minor brecciation possible syn° mineralization evident at 96·6m Way up ?? graded So ⇓. F.I. generally low (<30) in qt and tends to be rather erratic in orientation F.I. ≪10 in sh. Very fine fractures. chl/py assemblage I sid. often ∥∠ to So in sh.	

SAMPLE / MINERALISATION

ANGLE BEDDING TO LCA	NUMBER	FROM	TO	INTVL.	FRACT. DENSITY (per m)	% FRACT. MIN.	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANGLE TO LCA	% BLK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.	CARB. FE	OTHER	WALL ROCK ALTERN.
	BJ 530	51·20	53·20	2·00	qt 65	80	<1-3	1	30-40	<1	x	x	✓	x	x	x	limonite kaolin	
55	BJ 531	53·20	55·20	2·00														
	BJ 532	55·20	57·20	2·00	qt 70	80	<1-4	1	30	<1	x	x	✓	x	py	x	limonite	Silcfn
60	BJ 533	57·20	59·00	1·80														
	BJ 534	59·00	61·00	2·00														
57	BJ 535	61·00	63·00	2·00	qt 42	75	<1-3	1	25-35	<1	x	x	✓	tr	py	x	kaolin	-
	BJ 536	63·00	64·30	1·30														
45	BJ 537	64·30	66·30	2·00	qt 60	80	<1-5	1	30-50	1	x	x	✓	x	py	x	kaolin pin	Silcfn
50	BJ 538	66·30	69·04	2·74														
	BJ 539	69·04	71·04	2·00	65	75	<1-8	1	25-35	3-5	x	x	✓	x	py. aspy	sid	x	
50(?)	BJ 540	71·04	73·04	2·00														
50	BJ 541	73·04	75·04	2·00	75	80	<1-7	1-2	25-40	3-5	✓	x	✓	x	py. cpy. aspy	sid	limonite	
57	BJ 542	75·04	76·00	0·96														
	BJ 543	76·00	78·00	2·00														
55	BJ 544	78·00	80·00	2·00														
	BJ 545	80·00	82·00	2·00	qt 70	75	<1-8	1	25-50	2	tr	x	✓	x	aspy, py cpy, sph	sid	pin	Silcfn
50	BJ 546	82·00	84·00	2·00														
					45	80	<1-4	2	30-45	2	tr	x	✓	x	aspy cpy py	sid	pin	
50	BJ 547	84·00	86·00	2·00														
	BJ 548	86·00	88·00	2·00														
	BJ 549	88·00	90·00	2·00	15-50	80	<1-4	1	25-40	1	x	x	✓	✓	aspy, py	sid	chl/pin	
62	BJ 550	90·00	91·65	1·65														
52	BJ 551	91·65	13·65	2·00	sh <5	100	<1-3	<1	50-55	≪1	x	x	✓	x	py	sid	chl	
	BJ 552	93·65	98·65	2·00														
45	BJ 553	95·65	97·65	2·00														
	BJ 554	97·65	98·97	1·32	32	80	<1-4	1	25-50	<1	x	x	✓	✓*	py aspy	sid	kaolin chl	
	BJ 565	98·97	100·97	2·00														
45																		

ASSAYS

Sn (%)	W (%)

SLUDGES

INT.	BJ	Assay Sn %	Remarks
51 to 54	BJ 624		
54 to 57	BJ 625		Approx depth of total oxidation.
57 to 60	BJ 626		
60 to 63	BJ 627		
63 to 66	BJ 628		
66 to 69	BJ 629		
69 to 72	BJ 630		
72 to 75	BJ 631		
75 to 78	BJ 632		
78 to 81	BJ 633		Approx base of oxide zone.
81 to 84	BJ 634		
84 to 87	BJ 635		
87 to 90	BJ 636		
90 to 93	BJ 637		
93 to 96	BJ 638		
Not Sampled	—		*thin <1mm selvedges on qtz - S²⁻ - chl veinlets.
99 to 102	BJ 639		

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801173

Project *E.L 10/80 Great Pyramid*

Drillhole Nº BPD 11
Sheet 3 of 5 (100·52 - 151·20m)

Drill run

METRES	METRES RECOV.	% RECOV.	RQD
[illegible]	[illegible]	[illegible]	[illegible]
1·42	1·41	99·30	38
[illegible]	[illegible]	[illegible]	[illegible]
1·00	0·98	98·00	54
0·55	0·51	92·73	0
0·85	1·05	123·53	21
1·05	1·05	100·00	40
0·60	0·60	100·00	18
0·91	0·91	100·00	58
[illegible]	[illegible]	[illegible]	[illegible]
1·42	1·42	100·00	51
0·94	0·94	100·00	38
0·52	0·52	100·00	48
1·79	1·75	97·77	38
2·32	2·32	100·00	86
1·11	1·16	104·50	28
0·45	0·45	100·00	0
1·04	1·04	100·00	12
59·35	59·34	99·98	
2·58	2·64	102·33	83
0·64	0·68	106·25	85
1·44	1·44	100·00	71
1·15	1·15	100·00	53
1·28	1·28	100·00	61
1·21	1·21	100·00	74
0·65	0·64	98·46	80
0·36	0·34	94·44	56
0·42	0·45	107·14	100
1·31	1·24	94·66	74
1·05	1·10	104·76	54
0·49	0·49	100·00	29
3·05	3·10	101·64	79
2·07	2·18	105·31	62
1·38	1·35	97·83	70
2·62	2·70	103·05	61
1·58	1·56	98·73	58
1·80	1·87	103·89	70
3·00	3·00	100·00	60
1·23	1·21	98·37	31
1·77	1·81	102·26	56

Description

Dominantly grey-black sh ̄c minor ½-1m interbeds of qt/sst. Slumping evident. graded S₀ indicates ⇓. Fracturing in sh very fine (<<1mm) and locally anastomosing fracturing in qt generally more regular in orientation. incipient Fe stngs of qt adjacent to fractures common. Minor movement 1-3cms along few fractures 10-15° LCA. Chl/sph (up to ~5% in veinlets) veinlets occur sporadically (2-4m). Generally poorly mineralized horizon.

Fractured mineralized grey qt locally, rarely grading to black sh, 2-10cm thick. Bulk of mineralization occurs in chl-qtz veinlets, which tend to post-date barren? qtz/sid ± py veinlets. generally at very high ∠ to LCA (>60). Rare flames indicate ⇓ (ie at 121·99m). Two fractures sets evident - dominant chl/qtz mineralization and 2° barren qtz ± sid. rather more erratic in orientation than chl/qtz assemblages 20-80° to LCA, and sub-normal to chl/qtz veinlets. Very rare occurence of magnetite in chl/sid/py/cpy veinlets at 2cms wide 40° to LCA at 123·3m. Tr ga in chl/sph veinlets at 123·20m.

Interbedded grey-black to grey-bn sh/sst/slst ̄c occassional 20-40cm inbeds of qt. Generally poorly mineralized and irregularly fractured. Chl qtz veinlets only occur in qt, sh apparently barren. Evidence for contortion and brecciation of S₀. Movement evident along shallow dipping fractures (∠ to LCA >60). Way up?? scour marks imply ⇓. Some mineralized veinlets are sub ||ℓ to S₀. qt locally chlted. Severely slumped/brecciated between 129·8 - 136·6m.

Generally massive grey qt. ̄c very minor 2-5cm interbeds of grey black sh. Severely slumped in places, locally brecciated. Very erratic network of veinlets - barren and mineralized - cross cuts qt. Some mineralization post dates brecciation. Wide chl-mag-qtz veinlets at 135·00m. locally mineralized especially in brecciated in areas. Wide barren? qtz stringers sub ||ℓ to LCA. Bulk of mineralization in veinlets/fractures at 30-60° to LCA. locally sub ||ℓ to S₀. 10cm shear zone? at 136·25m dip ~40° LCA.

Shear breccia zone comprising :- ~3·5m of sheared mylonitized shale with angular qt fragments intermixed approx. 1m of fractured qt. and 2m of brecciated qt ̄c minor "smeared" sh. At the base of the interval is a 1·5m sst/qt/sh interbedded sequence, locally slumped and relatively poorly fractured. Prevailing shear direction is ~20-40° to LCA, normal (?) to dominant mineralized fractures direction. Shears are apparently unmineralized qtz/chl/py assemblage common in shears.

Sample and mineralisation

Angle bedding to LCA	Sample number	From	To	Intvl.	Fract. dens.	% fract. min.	Vein width range mm	Vein width av.	Angle to LCA	% blk rock min.	Cassit.	Wolf.	Qtz.	Musc.	Sulph.	Carb. Fe	Other	Wall rock altern.
	BJ 556	100·97	103·20	2·23	20-25	80	<1-5	1	20-40	<1	x	x	✓	x	py	sid	chl	
	BJ 557	103·20	105·20	2·00	qt 35-local 60°	80	<1-4	1	30-50	<1	x	x	✓	x	sph. py	sid	chl	Silcfn Fe stng
47	BJ 558	105·20	107·20	2·00														
	BJ 559	107·20	109·20	2·00	qt 35 local 50°	65	<1-3 rare	<1	25-50	<<1	x	x	✓	x	py	sid	chl	Fe stng
41	BJ 560	109·20	111·80	2·60														
	BJ 561	111·80	113·80	2·00	qt 40	70	<1-5	1	30-50	1-2	x	x	✓	tr	py. sph	sid	chl	Fe stng. local.
32	BJ 562	113·80	115·80	2·00														
	BJ 563	115·80	117·80	2·00														
	BJ 564	117·80	119·80	2·00	60-70	80	<1-4	1	25-55	1-3	x	x	✓	x	py. sph	sid	chl/pin	–
	BJ 565	119·80	121·80	2·00	50-70	75	<1-5	1	30-50 local 70+	2-3	x	x	✓	x	py. sph	sid	chl. mag	–
32	BJ 566	121·80	123·55	1·75														
43	BJ 567	123·55	125·55	2·00	sh 10-15	85	1-2	1	25-60	<1	x	x	✓	✓	py	sid	chl.	
38	BJ 568	125·55	127·55	2·00														
	BJ 569	127·55	129·55	2·00	qt 30-50	80	<1-4	1	20-70	<1	x	x	✓	x	py. aspy	sid	chl	
40	BJ 570	129·55	131·95	2·40														
	BJ 571	131·95	133·95	2·00	60-80	85	<1-5	<1	20-50	2	x	x	✓	✓	py. aspy po? ga	sid	chl	
35	BJ 572	133·95	135·95	2·00														
	BJ 573	135·95	137·95	2·00	70-90	80	<1-2	<1	20-65	1-2	x	x	✓	x	py. sph	sid	chl	
	BJ 574	137·95	140·55	2·60														
	BJ 575	140·55	142·55	2·00														
	BJ 576	142·55	144·55	2·00	80-110	85	<1-2	<1	very erratic dom. 20-60	1	x	x	✓	x	py to sph	x	abdt chl	
	BJ 577	144·55	146·55	2·00														
	BJ 578	146·55	149·20	2·65														
					60	90	<1-2	1	30-45	<1	x	x	✓	x	py sph	sid	chl	
47	BJ 579	149·20	151·20	2·00														

Assays: Sn (%) | W (%) — no entries

Sludges

Int.	BJ	Assays Sn %
99 to 102	BJ 639	
102 to 105	BJ 640	
105 to 108	BJ 641	
108 to 111	BJ 642	
111 to 114	BJ 643	
114 to 117	BJ 644	
117 to 120	BJ 645	
120 to 126	BJ 646	
126 to 132	BJ 647	
132 to 135	BJ 648	
135 to 138	BJ 649	
138 to 141	BJ 650	
141 to 144	BJ 651	
144 to 147	BJ 652	
147 to 150	BJ 653	

Although FI is generally >70. Fractures/veinlets tend to be fine (<1mm wid

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Project *E.L. 10/80 Great Pyramid*

Drillhole Nº *BPD 11* 801174

Sheet: *4* of *5* *(151·20 - 201·10m)*

Drill run

METRES	METRES RECOV.	% RECOV.	RQD
3·00	3·00	100·00	8
3·00	3·00	100·00	87
2·06	2·06	100·00	66
[illegible]	[illegible]	[illegible]	[illegible]
2·75	2·75	100·00	82
3·08	3·04	98·70	89
2·09	2·17	103·83	84
0·60	0·53	[illegible]·33	0
1·45	1·41	97·24	75
1·57	1·37	87·26	71
3·06	3·03	99·02	92
3·05	3·05	100·00	89
3·05	3·06	100·33	75
3·05	3·02	99·02	76
0·65	0·60	92·31	93
0·78	0·77	98·72	86
1·23	1·22	99·19	54
[illegible]	[illegible]	[illegible]	[illegible]
0·3[illegible]	0·36	[illegible]	0
1·09	1·09	100·00	77
3·00	2·95	98·33	85
3·00	2·93	97·67	70
3·00	2·92	97·33	65
1·43	1·46	102·10	46
1·57	1·55	98·73	65
[illegible]	[illegible]	[illegible]	[illegible]
0·98	0·97	98·98	86

Description

Massive grey qt ± very minor thin 1-5mm strivers of sh. Well fractured although apparently poorly mineralized. Fractures / veinlets orientation rather erratic. ½-1cm wide qtz veinlets 0-15° LCA pre date mineralization. Qt generally cut by network of apparently barren qt veinlets (<1mm) which pre date mineralized veinlets. Facings indeterminable.

Dominantly grey qt ± frequent 10-20cm interbeds of grey black sh grading to grey sst. Graded S₀ and Flames indicate ⇈. Qt generally well fractured and cut by anastomose qtz veinlets. Mineralization tends to be patchily developed. Sst mineralized to a lesser extent cf qt/sh, apparently unfractured and barren. Qt locally brecciated ± on abdt S° (py-po) filling. Slumping and other soft sediment deformation features evident in sh/sst horizons. Locally small tension gashes, mineralized, are developed normal to mineralized fractures. Occassionally mineralized qtz/chl.sph stringers occur sub ∥ to LCA. ½cm wide sph bearing stringer (≈20% sph) at 165·1m. 25° to LCA. 1-1½cm wide aspy/py/qtz veinlet at 167·6m. 35° to LCA. Local occurences of cpy and po in mineralized veinlets. Sid bearing less abdt as a veinlet mineral.

Coarsely interbedded grey black sh and grey qt consisting of 1-2m qt beds and ½-1m sh beds. Sh beds locally grade into sst. Flames and S₀ indicates up hole younging ⇈ above 192m. below ~194, facings indicate downhole younging ⇊. S₀ gets contorted and orientated sub ∥ to LCA at 193·10m. Shale poorly fractured and mineralized, cut by occassional anastomosing qtz veinlets or stringers, mainly orientated ∥ to S₀. FL is moderately high and mineralization widespread in qt. More irregular, locally anastomosing qt veinlets pre date mineralized veinlets. Evidence for slumping in sh/sst units. Minor movement along some fractures indicated by displacement and/or truncation of some beds. 4cm-1cm wide silcfn haloes evident adjacent to fractures in sst.

Samples and mineralisation

VISUAL LOG	ANGLE BEDDING TO LCA	NUMBER	FROM	TO	INTVL.	FRACT. DENS. (per m)	% FRACT. MINER.	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANGLE TO LCA	% BLK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.	CARB. FE	OTHER	WALL ROCK ALTERN.
		BJ580	151·20	153·20	2·00														
	47	BJ581	153·20	155·20	2·00	45-65	80	<1-1	<1	35-45	<1	x	x	✓	x	py	x	chl	
		BJ582	155·20	158·05	2·85	60-70	85	<1-10 very rare	1	35-60	<1	x	x	✓	x	py	sid	chl.	
	45	BJ583	158·05	160·05	2·00														
⇈	48	BJ584	160·05	162·05	2·00	40	90	<1-3	1	25-35	<1	x	x	✓	x	py.sph	x	chl locally	
		BJ585	162·05	164·05	2·00														
		BJ586	164·05	166·05	2·00	50-60	85	<1-3	1	30-40	<1	x	x	✓	x	py.cpy sph.aspy	x	chl. mag	local Silcfn haloes.
		BJ587	166·05	168·05	2·00														
⇈	51	BJ588	168·05	170·05	2·00														
	50	BJ589	170·05	172·05	2·00	70-80	80	<1-4	1	20-40	<1	x	x	✓	x	py.sph? po?	sid	chl	
		BJ590	172·05	174·05	2·00														
	50	BJ591	174·05	176·05	2·00	50-70 local 90°	80	<1-3	1	variable 10-60 dominant 20-40	1	x	x	✓	x	py po?	sid	chl	
	69	BJ592	176·05	178·40	2·35														
⇈	63	BJ593	178·05	180·40	2·00														
⇈	70	BJ594	180·40	182·40	2·00	sst/sh 10-15	100	<1-4	1	20-60	<1	x	x	✓	x	py.sph?	x	chl	
	75	BJ595	182·40	184·40	2·00														
	66	BJ596	184·40	186·40	2·00	sh <10	100	2-4	2	40-60	<<1	x	x	✓	✓	x	x	x	
		BJ597	186·40	188·40	2·00														
⇈		BJ598	188·40	190·40	2·00														
	57	BJ599	190·40	192·40	2·00	qt 50-60	85	<1-3	1	30-50	1	x	x	✓	x	py.sph, cpy	x	chl	
	0	BJ600	192·40	194·40	2·00														
		BJ601	194·40	196·40	2·00	qt 20-40	85	<1-6	1	10-40	<1	✓tr	x	✓	x	py	sid	chl	
	35	BJ602	196·40	198·40	2·00														
		BJ603	198·40	200·40	2·00														

ASSAYS: Sn (%) — W (%) — (no entries)

Sludges

Intvl.	BJ	Assays Sn %
150 to 153	BJ654	
153 to 156	BJ655	
156 to 159	BJ656	
159 to 162	BJ657	
162 to 165	BJ658	
165 to 168	BJ659	
168 to 171	BJ660	
171 to 174	BJ661	
174 to 177	BJ662	
Not Sampled	—	
180 to 183	BJ663	
183 to 186	BJ664	
186 to 189	BJ665	
189 to 192	BJ666	
192 to 195	BJ667	
195 to 198	BJ668	
198 to	BJ669	

Remarks: Brecciation and S° filling very similar in style to North Scamander Prospect.

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801175

Project EL10/80 Great Pyramid

Drillhole Nº BPD II

Sheet 5 of 5 (201·10 - 219·75m E.O.H)

METRES	DRILL RUN METRES RECOV.	DRILL RUN % RECOV.	RQD
3·00	3·00	100·00	91
1·77	1·76	99·44	97
0·62	0·68	109·68	97
2·74	2·77	101·84	99
2·86	2·77	96·85	98
0·69	0·71	102·90	56
3·00	3·00	100·00	81
2·20	2·08	94·55	63
~~0·42~~	~~0·44~~	~~104·76~~	[illegible]
0·98	1·06	108·16	64
4064	4012	98·72	
5994	6003		
5935	5934		
4966	4825		
209.59	208.34	99·40	

Rock Roller used over 2 intervals of 13·00 - 13·20 (0·20) and 19·47 - 19·53 (0·16) = 0·36m
209·85

DESCRIPTION

Interbedded sh/sst beds vary from 5 - 30cms. thick normal graded contacts from sst → sh common. Flames indicate ⇓. Very minor slumping at 205·70m. In an otherwise uniform bedded sequence. Very poorly fractured and mineralized. Rare irregular qt veinlets occur in sh. Sst essentially barren. (Visual log: ⇓)

Massive grey qt. moderately well fractured although erratic in orientation. Large mineralized stringer sub ‖ to LCA at 210·6m carries py/cpy/chl/sid

Interbedded sst/sh c̄ minor occurences of qt. Generally very poorly fractured and mineralized. Overturned graded. S_0 frequently observed. Flames indicate ⇓ (Visual log: ⇓)

ANGLE BEDDING TO LCA	SAMPLE NUMBER	FROM	TO	INTVL.	FRACT. DENS. (per m)	% FRACT. MIN'SD	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANG. TO LCA	% BLK ROCK MIN.	CASSIT	WOLF.	QTZ	MUSC.	SULPH.	CARB. FE	OTHER	WALL ROCK ALTERN.
34	BJ605	202·40	204·47	2·07	qt 60·80	85	<1-3	1	20-40	1	x	x	✓	x	py.cpy tr	Sid	chl	
42	BJ606	204·47	206·47	2·00	sst 20	50	<1-1	<1	40·65	<<1	x	x	✓	x	x	x	x	
	BJ607	206·47	208·47	2·00														
33	BJ608	208·47	210·40	1·93	sst 10	80	<1-3	<1	30-50	<<1	x	x	✓	x	tr.py	x	chl	
	BJ609	210·40	212·40	2·00														
					qt 40-90	80	<1-5 rare	1	30-40	<1	✓tr	x	✓	x	py.aspy cpy	sid	chl	
	BJ610	212·40	214·75	2·35														
40	BJ611	214·75	216·75	2·00	sst/sh 10-15	90	<1-4	1-2	20-40	<<1	x	x	✓	x	py	sid	chl	
	BJ612	216·75	218·75	2·00														
48	BJ613	218·75	219·75	1·00														

ASSAYS Sn (%)	ASSAYS W (%)		SLUDGES Intvl.	SLUDGES BJ	SLUDGES Sn%
			201 to 204	BJ670	
			204 to 207	BJ671	
			207 to 210	BJ672	
			210 to 213	BJ673	
			213 to 216	BJ674	
			216 to 219·75	BJ675	

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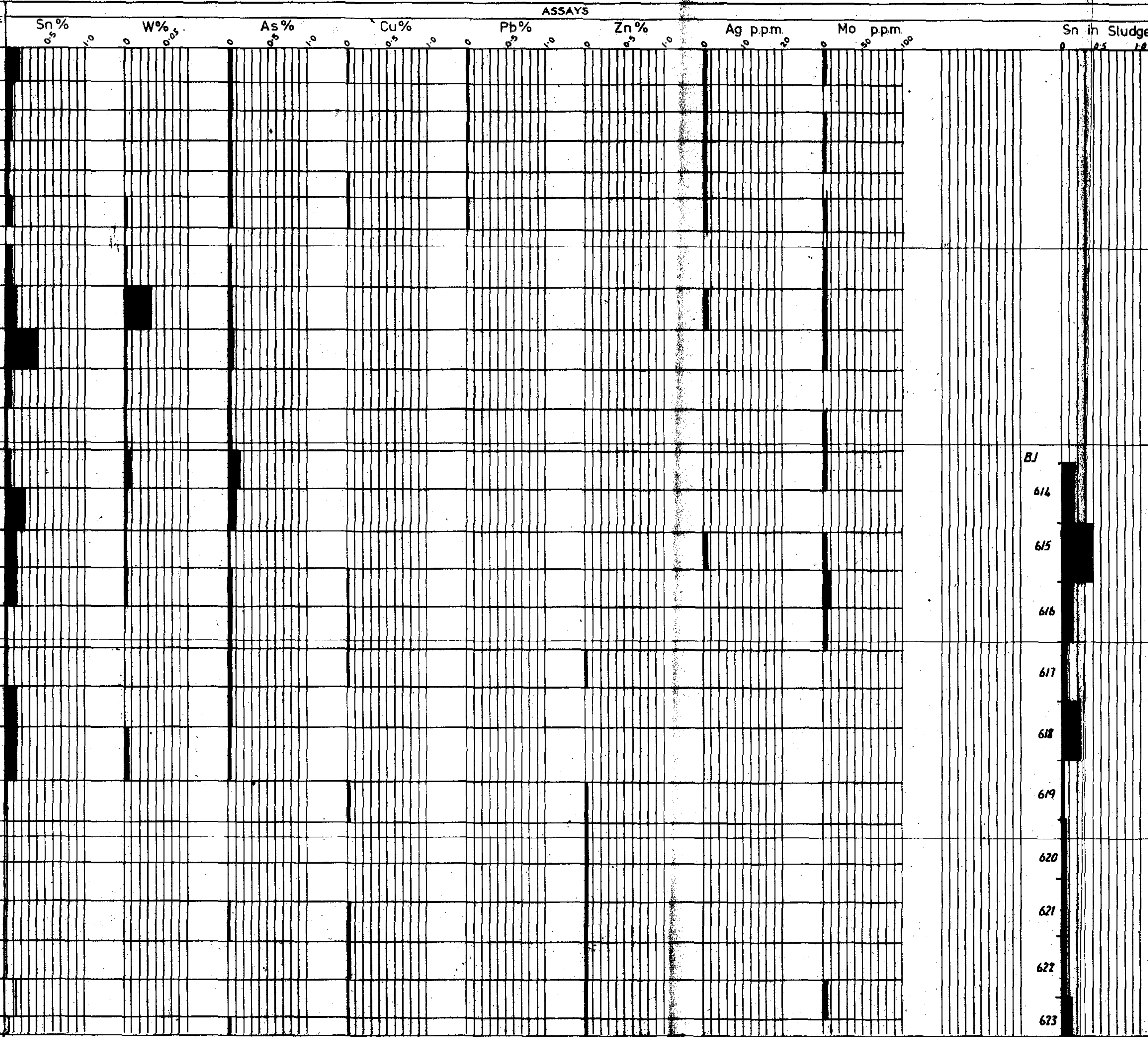
Project: E.L.10/180 Great Pyramid

Drillhole Nº BPD 11 801176

Sheet: 1 of 5

METRES VISUAL LOG	% RECOV.	SAMPLE Nº 83	Sn in Sludge
		504	
		505	
		506	
		507	
		508	
		509	
10		N.S	
	90	510	
	100	511	
	100	512	
	100	513	
	92	514	
20	100	515	BJ
	100	516	614
	100	517	615
	90	518	
	98	519	616
30	100	520	617
	100	521	
	100	522	618
	100	523	619
40	98	524	
	100	525	620
	100	526	621
	98	527	622
	100	528	
50	96	529	623

ASSAYS



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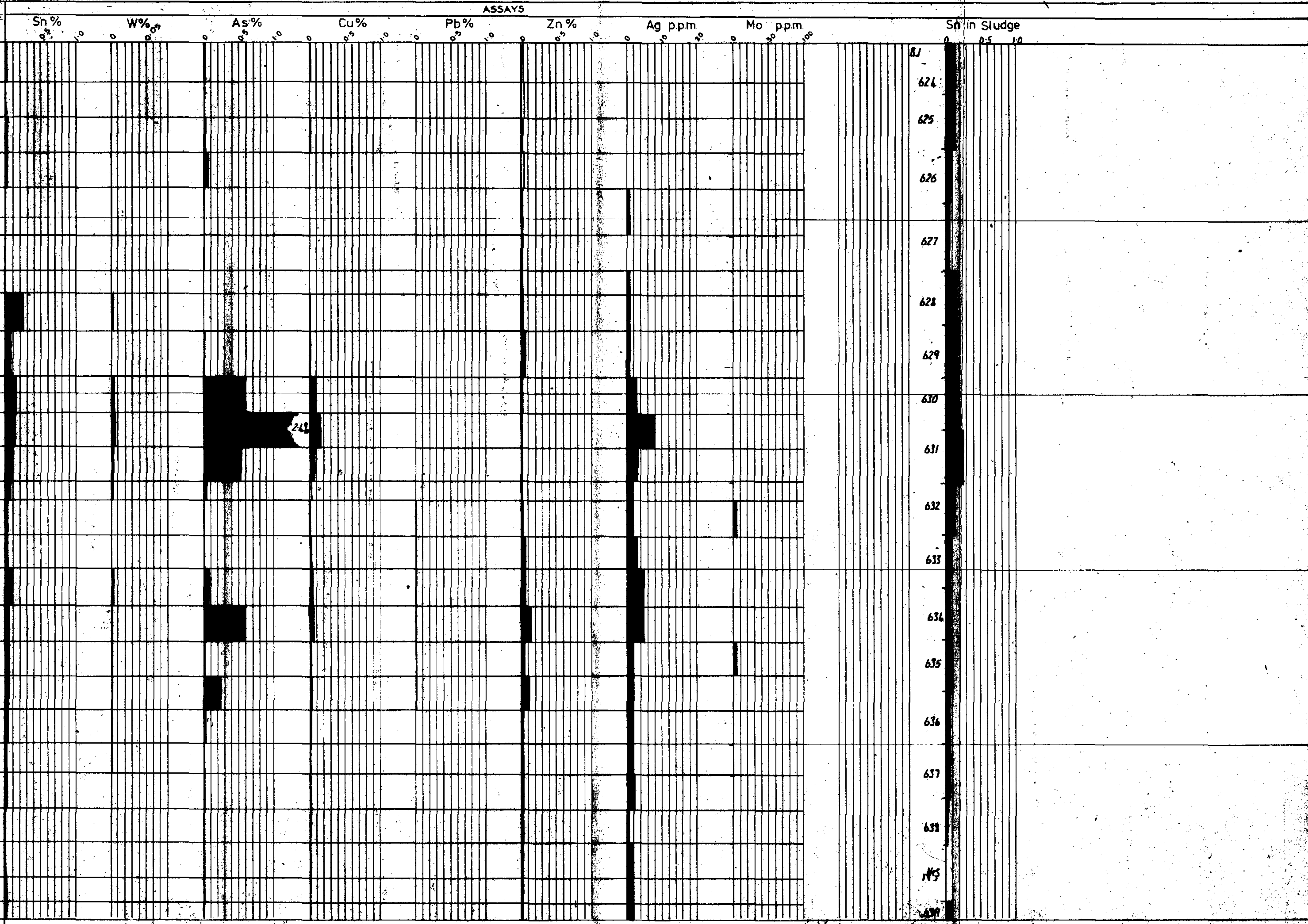
Project E.L. 10/80 Great Pyramid

Drillhole Nº BPD 11 801177
Sheet: 2 of 5

METRES VISUAL LOG	% RECOV.	SAMPLE Nº BJ
	100 / 95	530
	100	531
	100	532
	100	533
60	99	534
	100	535
	95 / 98	536
	90	537
	100	538
70	100	539
	99	540
	100	541
		542
	100	543
80	100	544
	100	545
	100	546
	100	547
	100	548
	100	549
90	100	550
	100	551
	100	552
	100	553
	100	554
100	95	556



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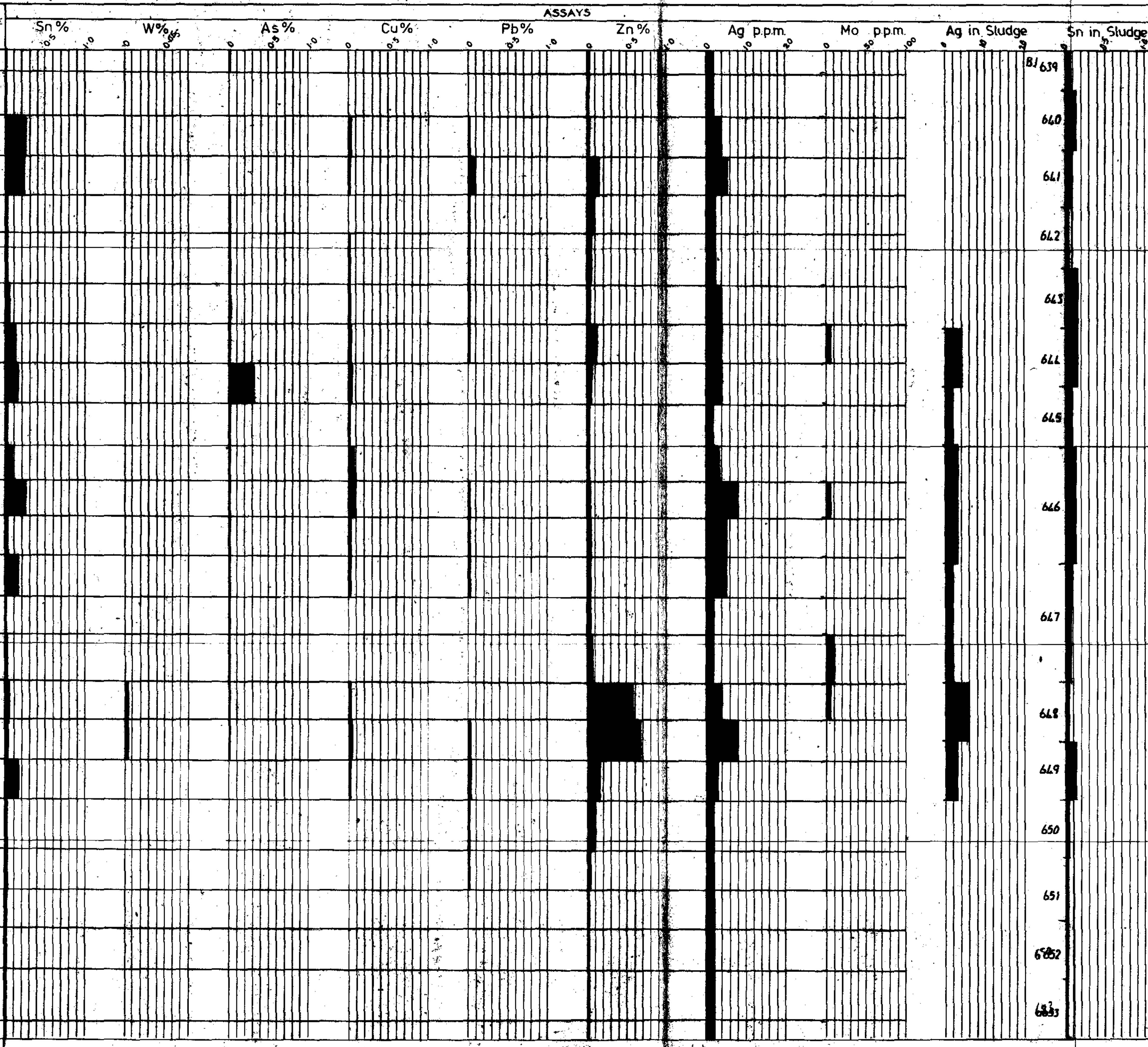
Project E.L 10180 Great Pyramid

Drillhole Nº BPD 11 C011.8

Sheet: 3 of 5

METRES VISUAL LOG	% RECOV.	SAMPLE Nº
	88 99	556
	70 95	557
	100	558
	100	559
110	100	560
	100	561
	99	562
	100	563
	100	564
120	100	565
	100	566
	100	567
	100	568
	100	569
130	99	570
	100	571
	100	572
	100	573
	100	574
140	98	575
	100	576
	100	577
	98	578
150	100	



Project E.L 10180 Great Pyramid

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Drillhole Nº BPD 11 801179
Sheet: 4 of 5

METRES VISUAL LOG	% RECOV.	SAMPLE Nº
	1	579
	100	580
	100	581
	100	582
	100	583
160	100	584
	99	585
	100	586
	88 97	587
	87	588
170	99	589
	99	590
	100	591
	100	592
180	100	593
	99	594
	97	595
	80 100	596
	98	597
	98	598
190	98	599
	97	600
	100	601
	99	602
	99	603

ASSAYS: Sn % (0, 0.5, 1.0) | W % (0, 0.5) | As % (0, 0.5, 1.0) | Cu % (0, 0.5, 1.0) | Pb % (0, 0.5, 1.0) | Zn % (0, 0.5, 1.0) | Ag p.p.m. (0, 10, 20) | Mo p.p.m. (0, 50, 100)

Sn in Sludge (0, 0.5, 1.0)

BJ 654, 655, 656, 657, 658, 659, 660, 661, 662, N.S, 663, 664, 665, 666, 667, 668, 669

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Project E.L 10/80 Great Pyramid

Drillhole Nº BPD 11 801180

Sheet: 5 of 5

METRES VISUAL LOG	% RECOV.	SAMPLE Nº
	100	604
	100	605
	99	606
	100	607
		608
210	97	609
	100	610
	100	611
	99	612
220	100	613

ASSAYS

Sn% 0 0.5 1.0 | W% 0 0.05 | As% 0 0.5 1.0 | Cu% 0 0.5 1.0 | Pb% 0 0.5 1.0 | Zn% 0 0.5 1.0 | Ag p.p.m. 0 10 20 | Mo p.p.m. 0 50 100

Sn in Sludge 0 0.5 1.0

BJ

670

671

672

673

674

675

801181

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Exploration Department

DRILL HOLE LOG HEADER SHEET

Project:	EL 10/80 Great Pyramid	Hole No.:	BPD12
Prospect:	Great Pyramid Tin Prospect	Total Depth:	61.48m
Local Grid co-ords:	550mE 77mN	Bearing:	120° mag (0m)
AMG co-ords:		Depression:	59½° (0m), 57° (61m)
Drilling Co.:	Walker Drilling	R.L. Collar:	112m
Drill Type:	DB 1000/2		
Core Size:	HQ3 to 61.48m	Commenced:	16/5/81
Driller:	I W McCallum	Completed:	25/5/81
		Logged by:	D A Steele
		Sampled by:	P Dubbeld

Technical Data:

Overburden:	Less than 1m of loose, broken shale/sandstone. Percussion hammer used down to 9.25m.
Casing:	HW to 1.5m. Casing removed upon completion of hole.
Water Return:	Generally good down length of hole.
Cementation:	Used at 11.05, 50.20, 54.73m to stop rods binding due to loose rock.
Additives:	Ro-Lube, Hydropol, Gypseal 60, Ro-Lite, Super Gel.
Oxidation:	Approximate depth of total oxidation 40m. Hole did not penetrate base of oxide zone.
Other:	"Tricone" used between 11.05 and 14.75m to overcome problems of broken loose rock in the hole. Evidence for rock movements during drilling is visible on core. Problems encountered with rods binding down the hole.
	Hole abandoned due to severe subsidence of rig after extremely heavy rain.
	Downhole survey by acid etch.

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801182

Project: E.L10/80 Great Pyramid

Drillhole Nº BPD 12

Sheet: 1 of 2 (00 to 51.84m)

Description

0–9m Percussion

- 0.00–2.00: Fe stnd sh/sst c̄ abdt black qtz bearing veinlets
- 2.00–4.00: Fe stnd sst+qt; black qtz on fractures.
- 4.00–6.00: Fe stnd sst c̄ minor sh; black qtz on fractured faces.
- 6.00–9.00: Sst/qt. Fe stnd.

Interbedded sst/slst/sh, bedding varies from <1 to 150cms thick. Sh locally grades to slst. Way up ⇃? - No flames visible. Local evidence of reworking of bedding in slst/sh units. Generally well bedded c̄ sharp contacts. Sh/slst very poorly fractured (FI << 10). sst locally grades to qt (rare) FI rarely >35 fractures/metre. All lithologies incipiently Fe stnd especially adjacent to fractures. Unit as as a whole is very poorly mineralized. Core is of very poor quality - very low RQD - and tends to be broken ⊥ to So, although occasionally along fractures. Qt/sst locally vuggy (after py?) especially at 15.7m. Black qt veinlets at low ∢5 LCA occur sporadically locally post date mineralized fractures, pre date barren qtz veinlets. At from 15-17 and 20-21m. Some veinlets appear more as tension gashes than continuous veinlets of uniform thickness.

Olive - grey/bn sh locally grading to slst. locally well bedded. Very poorly fractured and mineralized. Severely Fe stnd adjacent to rare fractures. Local MnO_2 stng.

Grey/bn sh c̄ minor interbeds of sst/qt. locally slumped. Flames indicate ⇃. Sst/qt beds average 10-15 cms in thickness. Thin qt veinlets moderately well mineralized.

Mainly grey to grey/bn. sst/qt c̄ minor ½-1 m interbeds of grey/bn sh. Sst/qt locally well fractured and mineralized. Minor breccia zone <10cm wide at 51m. Minor reworking of sediments evident at 49-52m. Flames at 50.3 indicate downhole younging. Black qtz veinlets and stngs locally abundant in qt/sst horizons. These generally pre date mineralized fractures/veinlets and occur at low ∢5 to LCA (<20°). Mineralized veinlets somewhat variable in orientation 15°-60° to LCA. generally 30 to 40°.

Drill Run

Margin marks: 7, 1, 1, 2, 21.50, 2, 4, 29.20, 3, 6, 38.52, 4, 9, 47.78, 9

Metres	Metres Recov.	% Recov.	RQD
0-9m Percussion			
0.30	0.29	[illegible]	0
1.00	0.85	85.00	0
0.55	0.45	81.82	0
11.05 – 14.75	Rock	Roller.	
	0.0	0.0	
[illegible]	[illegible]	[illegible]	0
0.80	0.67	83.75	52
0.75	0.58	77.33	0
0.45	0.44	97.78	0
0.44	0.29	65.91	38
0.86	0.77	89.53	30
[illegible]	[illegible]	[illegible]	0
0.70	0.68	97.14	38
0.43	0.45	104.65	72
0.40	0.29	72.50	0
1.22	1.15	94.26	64
[illegible]	[illegible]	[illegible]	0
0.50	0.51	102.00	24
0.63	0.63	100.00	0
[illegible]	0.31	71.50	0
[illegible]	[illegible]	[illegible]	0
0.55	0.44	80.00	0
0.62	0.36	56.86	0
0.32	0.29	90.63	0
0.48	0.53	110.42	49
1.11	0.95	85.59	28
[illegible]	0.19	78.95	0
0.52	0.32	61.54	0
0.46	0.44	95.65	84
1.55	1.51	97.42	74
0.50	0.51	102.00	51
1.22	1.17	95.90	62
1.17	1.21	103.42	87
1.50	1.41	94.00	87
1.40	1.32	94.29	41
1.25	1.28	102.40	52
1.50	1.47	98.00	73
1.55	1.52	98.06	42
1.30	1.20	92.31	46
1.53	1.51	98.69	34
0.92	0.92	100.00	52
1.10	1.08	98.18	35
0.90	0.89	98.89	73
0.85	0.52	61.18	0
1.21	1.16	95.87	22
1.03	1.09	105.83	67
0.86	0.87	101.16	33
1.06	1.00	94.34	63
[illegible]	[illegible]	[illegible]	0
1.15	1.10	95.65	21

Sample and Mineralisation

Visual Log	Angle Bedding to LCA	Number	From	To	Intvl.	Fract. Density (per m)	% Fract.	Vein Width mm Range	Av.	Ang. to LCA	% Bulk Rock Min.	Cassit.	Wolf.	Qtz.	Musc.	Sulph.	Carb. Fl.	Other	Wall Rock Altern.
		BJ 676	0.00	2.00	2.00														
		BJ 677	2.00	4.00	2.00														
		BJ 678	4.00	6.00	2.00														
		BJ 679	6.00	9.00	3.00														
		BJ 680 (N.S. 11.05–14.75)	9.00	11.05	6.30	sh													
	47					<10-15	20	<1-1	<1	20-60	<<1	x	x	x	x	x	x	limonite	Fe stng.
			14.75	15.30		stlqt ogly variable	20-50	<1-2		30-55	<1	x	x	✓	x	x	x	limonite kaolin	Fe stng c̄ Silcfn.
		BJ 681	15.30	18.00	2.70														
	60																		
	54	BJ 682	18.00	20.00	2.00														
		BJ 683	20.00	22.00	2.00	sst/qt 50-70	75	<1-3	1	25-40	1	x	x	✓	x	x	x	Limonite Kaolin Sc.	Fe stng silcfn.
	50	BJ 684	22.00	24.30	2.30														
		BJ 685	24.30	26.40	2.10	slst/sh 8-12	80	<1-1	<1	25-35	<<1	x	x	✓	x	x	x	limonite chl?	Fe stng
⇃?	50																		
	56	BJ 686	26.40	29.43	3.03														
						sst 30	50	<1-1	<1	25-40	<<1	x	x	✓	x	x	x	limonite	Fe stng Silcfn
	55	BJ 687	29.43	31.43	2.00														
		BJ 688	31.43	33.43	2.00	sh. 4-8	100	<1-1	<1	25-45	<<1	x	x	x	x	x	x	limonite kaolin	Fe stng
	57																		
		BJ 689	33.43	35.43	2.00	qt 25	80	<1-2	1	25-35	<1	tr	x	✓	x	remanant py	x	limonite kaolin	
⇃	60	BJ 690	35.43	38.10	2.67	sh. <10	60	<1-1	<1	25-45	<<1	x	x	tr	x	x	x	limonite kaolin	Fe stng
	65																		
		BJ 691	38.10	40.10	2.00	qt 50	75	<1-6	1-2	50	1	tr	x	✓	x	py sph?	x	limonite	local Fe stng
	50	BJ 692	40.10	42.10	2.00														
	60	BJ 693	42.10	44.10	2.00	sst <10	80	<1-2	<1	25-45	<<1	x	x	✓	x	x	x	tr chl	—
		BJ 694	44.10	46.10	2.00														
						qt 60-70	80	<1-?	1	10-45	1	tr	x	✓	✓	py	x	chl, Sc. limonite	Fe stng
		BJ 695	46.10	48.10	2.00	qt 55	85	1-?	1	25-48	1	✓	x	✓	x	x	x	limonite chl	Fe stng. Silcfn.
	49	BJ 696	48.10	50.10	2.00														
⇃⇃	52	BJ 697	50.10	52.10	2.00														

Assays / Sludges

Assays (Sn (%), W (%)): no entries.

Sludges Int[m]	BJ	Assay % Sn.
Not Applicable	—	
N.S.	—	
11 to 14.75	BJ 703	
14.75 to 18	BJ 704	
18 to 21	BJ 705	
21 to 24	BJ 706	
24 to 27	BJ 707	
27 to 29	BJ 708	
29 to 32	BJ 709	
32 to 35	BJ 710	
35 to 38	BJ 711	
38 to 41	BJ 712	
41 to 44	BJ 713	
44 to 47	BJ 714	
47 to 50	BJ 715	
50		

Approx base of total oxidation. (at c. 41m)

THE BROKEN HILL PROPRIETARY CO. LTD.

Drillhole Nº BPD 12 801183

Sheet : 2 of 2 (51.84 to 61.48m)

Project E.L 10/80 Great Pyramid

METRES	DRILL RUN METRES RECOV.	DRILL RUN % RECOV.	RQD
0.22	0.18	81.82	0
0.27	0.29	107.41	8
0.48	0.34	70.83	32
0.56	0.55	98.21	47
0.44	0.40	90.91	63
1.41	1.44	102.13	70
0.87	0.92	105.75	66
1.40	1.40	100.00	51
0.35	0.31	88.57	36
1.00	0.95	95.00	14
0.62	0.51	82.26	61
0.95	0.86	90.53	58
0.76	0.75	98.68	51
0.80	0.81	101.25	56
Σ48.78	45.33	92.93	
(+3.70	- Rock	Roller)	
(+ 9.00	- Percussion)		
Σ 61.48			

DESCRIPTION: Dark grey to black sh interbedded ē and locally grading to sist. ē a 1m qt bed between 58.9 and 59.9m. Generally very poorly fractured and barren c̄ exceptions of qt veinlet. Sh is very locally erratically fractured. Small flame structures. indicate downhole younging

VISUAL LOG: ⇓

ANGLE BEDDING TO LCA	SAMPLE NUMBER	FROM	TO	INTVL.	FRACT. DENST. (per m)	% FRACT. MIN'SD.	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANG. TO LCA	% BLK ROCK MIN.	CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.	CARB. FE	OTHER	WALL ROCK ALTERN.	Sn (%)	W (%)	
	BJ 698	52.10	54.10	2.00																	
44					qt 70	80	<1-5	1	25-45	1	✓	×	✓	✓	py	tr Sid.	limonite kaolin chl.	Fe stng Silcfn			
	BJ 699	54.10	55.60	1.50																	
48	BJ 700	56.60	57.60	2.00																	
	BJ 701	57.60	59.60	2.00	qt																
57					55	80	<1-4	1	25-50	<1	×	×	✓	×	PY	×	limonite kaolin Chl.	Silcfn			
58	BJ 702	59.60	61.48	1.88	sist 5	100	<1-1	<1	40-60	<<<1	×	×	✓	×	×	×	×	–			

SLUDGES IN.ᴹ	BJ	Assay % Sn.
50 to 56	BJ 716	
56 to 59	BJ 717	
59 to 61.48	BJ 718	

THE BROKEN HILL PROPRIETARY CO. LTD.

Project E.L 10/80 Great Pyramid

Drillhole Nº BPD 12 801184

Sheet: 1 of 2

METRES VISUAL LOG	% RECOV.	SAMPLE Nº	ASSAYS: Sn% (0, 0.5, 1.0)	W% (0, 0.05)	As% (0, 0.5, 1.0)	Cu% (0, 0.5, 1.0)	Pb% (0, 0.5, 1.0)	Zn% (0, 0.5, 1.0)	Ag p.p.m. (0, 10, 20)	Mo p.p.m. (0, 50, 100)	Sn in Sludge (0, 0.5, 1.0)
	Percussion Hammer	676									
		677									
		678									
		679									
10		680									
		N.S									703
		680									
		681									704
20		682									705
		683									
		684									706
		685									707
		686									708
30		687									709
		688									
		689									710
		690									711
		691									712
40		692									
		693									713
		694									714
		695									
50		696									715

THE BROKEN HILL PROPRIETARY CO. LTD.

Project: E.L. 10/80 Great Pyramid

Drillhole Nº BPD 12 801185

Sheet: 2 of 2

METRES VISUAL LOG	% RECOV.	SAMPLE Nº	ASSAYS: Sn % (0–0.5–1.0)	W % (0–0.05)	As % (0–0.5–1.0)	Cu % (0–0.5–1.0)	Pb % (0–0.5–1.0)	Zn % (0–0.5–1.0)	Ag p.p.m. (0–10–20)	Mo p.p.m. (0–50–100)		Sn in Sludge (0–0.5–1.0)
	90											
	98	698										
	99	699									716	
	100											
	89	700									717	
	82	701										
	99	702									718	
											719	

APPENDIX 2

ANALYTICAL RESULTS

Batch No.: M177	Client: BHP COMPANY LIMITED,	Area Contact: DR. R. HINE
	Address: P.O. BOX 559	Address: G.P.O. BOX 1140 L,
Date Received 22/12/80	CAMBERWELL	HOBART TAS 7001
Date Completed 11/02/81	VIC	

Order No.: R700 - 000630   Sample Type: DRILL CORE,SLUDG   No. of Samples: 59

Dr. A. Goode

SAMPLE NO.		Cu	Pb	Zn	Ag	Mo	Sn	W	As	ELE
		M	M	M	M	M	M	M	M	UNI
		1	1	1	1	2	XRF 1A	XRF 1A	S-B	MET
(R700) BJ 001	2.0	40	115	25	1	10	0.18 %	<10	200	
(R700) BJ 002	2.0	95	95	365	2	5	0.16 %	<10	100	
(R700) BJ 003	2.0	135	50	730	2	5	640	<10	40	
(R700) BJ 004	2.0	95	75	970	2	2	35	<10	12	
(R700) BJ 005	2.0	175	20	790	2	2	5	<10	8	
(R700) BJ 006	1.1	315	0.38 %	960	4	5	505	<10	16	
(R700) BJ 007	0.9	165	780	175	2	5	0.11 %	<10	55	
(R700) BJ 008	2.0	150	85	155	2	5	405	<10	75	
(R700) BJ 009	1.2	300	40	180	2	5	580	<10	170	
(R700) BJ 010	2.0	105	40	50	3	10	0.18 %	<10	280	
(R700) BJ 011	2.0	85	25	45	2	2	0.14 %	<10	500	
(R700) BJ 012	2.0	270	15	110	2	10	0.26 %	20	0.10 %	
(R700) BJ 013	2.0	195	30	75	1	5	0.32 %	50	700	
(R700) BJ 014	2.0	125	15	50	1	10	0.22 %	10	400	
(R700) BJ 015	2.0	140	10	65	1	2	0.16 %	<10	280	
(R700) BJ 016	2.0	240	45	65	2	2	0.37 %	<10	380	
(R700) BJ 017	2.60	155	30	90	2	10	0.13 %	<10	360	
(R700) BJ 018	2.0	130	10	115	1	5	0.12 %	20	520	
(R700) BJ 019	1.2	85	15	70	4	10	970	<10	360	
(R700) BJ 020	1.3	110	15	105	4	10	0.20 %	10	500	
(R700) BJ 021	2.0	130	30	55	2	5	0.12 %	<10	500	
(R700) BJ 022	2.2	120	25	65	3	10	900	30	0.15 %	
(R700) BJ 023	2.6	75	100	40	8	5	0.12 %	<10	0.13 %	
(R700) BJ 024	2.0	90	205	80	4	10	0.11 %	<10	0.12 %	
(R700) BJ 025	2.0	70	25	35	2	5	370	<10	0.13 %	
(R700) BJ 026	2.0	65	15	50	1	10	510	<10	640	
(R700) BJ 052	3.0	195	285	690	3	10	365	<10	100	
(R700) BJ 053	2.0	210	85	150	2	10	0.24 %	30	520	
(R700) BJ 054	3.0	185	100	290	4	10	0.19 %	20	400	
(R700) BJ 055	3.0	165	110	150	1	10	0.38 %	30	420	

UNITS LEGEND ----- M - Parts per Million   b - Parts per billion   % - percent
g - Grams   a - Absorbance

Signature: [signature]

Ba[redacted] N[redacted] M[redacted] [redacted]lient: BH[redacted] COMPANY LIMITED, | Area Contact: DR. R. HINE
Address: P.O. BOX 559 | Address: G.P.O. BOX 1140 L,
Date Received 22/12/80 CAMBERWELL | HOBART TAS 7001
Date Completed 11/02/81 VIC

Order No.: R700 - 000630 Sample Type: DRILL CORE,SLUDG No. of Samples: 59

SAMPLE NO.	Cu	Pb	Zn	Ag	Mo	Sn	W	As	Au	ELE
	M	M	M	M	M	M	M	M	B	UNI
	1	1	1	1	2	XRF 1A	XRF 1A	S-B	120-A	MET
(R700) BJ 056 3.0	200	105	130	1	5	0.32 %	30	420		
(R700) BJ 057 3.0	235	50	70	1	10	0.56 %	20	440		
(R700) BJ 058 3.0	165	55	75	1	10	0.64 %	40	420		
(R700) BJ 059 3.0	170	55	70	1	10	0.58 %	20	560		
(R700) BJ 060 3.0	135	105	65	4	5	0.33 %	30	0.12 %		
(R700) BJ 112 3.0	110	105	85	1	5	880	<10	480		
(R700) BJ 113 3.0	85	65	70	2	10	455	<10	260		
(R700) BJ 114 3.0	120	115	50	4	5	365	<10	250		
(R700) BJ 115 3.0	30	40	35	1	10	110	<10	120		
(R700) BJ 116 3.0	95	200	115	2	5	180	<10	160		
(R700) BJ 117 3.0	110	130	85	2	10	250	<10	500		
(R700) BJ 118 3.0	105	445	100	7	5	635	<10	760		
(R700) BJ 119 6.0	190	0.10 %	110	9	2	0.12 %	<10	0.13 %		
(R700) BJ 120 3.0	110	55	105	3	2	210	20	380		
(R700) BJ 121 "	110	65	105	1	5	220	20	380		
(R700) BJ 122 "	125	85	75	4	5	705	30	660		
(R700) BJ 123 "	155	150	95	7	10	550	70	0.13 %		
(R700) BJ 124 "	445	100	165	3	5	120	<10	560		
(R700) BJ 125 "	0.12 %	75	620	3	<2	140	<10	220		
(R700) BJ 126 "	455	135	930	2	2	145	<10	170		
(R700) BJ 127 "	415	130	225	3	5	690	70	820		
(R700) BJ 128 "	0.16 %	305	180	5	10	700	20	0.44 %		
(R700) BJ 129 "	0.66 %	215	95	9	5	595	<10	0.40 %	30	
(R700) BJ 130 "	0.42 %	130	140	7	2	555	20	0.28 %		
(R700) BJ 131 "	0.13 %	195	155	5	10	0.12 %	10	0.16 %		
(R700) BJ 132 "	800	185	175	7	10	0.14 %	60	0.10 %		
(R700) BJ 133 "	390	105	115	6	10	0.10 %	10	540		
(R700) BJ 134 "	290	90	160	5	5	660	10	760		
(R700) BJ 135 "	520	110	160	9	10	0.14 %	<10	0.10 %		

UNITS LEGEND ----- M - Parts per Million B - Parts per billion % - percent
g - Grams a - Absorbance

Signature: J. J. Finlayson.

[redacted]

Batch No.: B008 Client: BHP COMPANY LIMITED, Area Contact: DR. R. HINE
Address: P.O. BOX 559 Address: G.P.O. BOX 1140 L,
Date Received 02/02/81 CAMBERWELL HOBART TAS 7001
Date Completed 24/02/81 VIC

Order No.: R720-000634 Sample Type: P/CHIPS,SLUDGE No. of Samples: 119

SAMPLE NO.	Cu	Pb	Zn	Ag	Mo	Sn	W	As	Au	ELE
	M	M	M	M	M	M	M	M	B	UNI
	1	1	1	1	2	XRF-1A	XRF-1A	S-B	120-A	MET
BJ 027	85	30	60	4	55	0.18 %	50	0.28 %		
BJ 028	90	50	70	7	5	585	<10	0.22 %		
BJ 029	270	20	45	6	2	495	20	0.19 %		
BJ 030	80	30	55	3	5	210	<10	0.19 %		
BJ 031	185	95	120	6	<2	230	40	0.12 %		
BJ 032	130	150	105	6	2	885	10	65		
BJ 033	420	250	80	12	2	590	<10	0.15 %	15	
BJ 034	65	35	60	4	5	450	<10	360		
BJ 035	75	20	50	7	2	0.1	<10	440		
BJ 036	30	20	50	2	<2	120	<10	120		
BJ 037	60	25	60	1	<2	420	<10	200		
BJ 038	150	25	85	3	2	255	<10	520		
BJ 039	380	30	140	1	<2	35	<10	70		
BJ 040	800	30	135	1	<2	25	<10	20		
BJ 041	580	30	140	1	<2	990	<10	70		
BJ 042	540	35	120	2	<2	0.23 %	10	40		
BJ 043	300	25	60	1	<2	780	<10	95		
BJ 044	170	35	65	1	<2	0.13 %	<10	220		
BJ 045	250	40	100	1	2	920	50	190		
BJ 046	530	60	320	9	2	205	<10	0.14 %		
BJ 047	290	30	260	1	5	145	<10	190		
BJ 048	185	40	130	2	<2	480	<10	380		
BJ 049	300	40	200	2	2	420	<10	410		
BJ 050	270	30	150	2	<2	435	<10	520		
BJ 051	170	45	65	2	2	0.15 %	<10	400		
BJ 061 ?	5	40	60	1	<2	75	<10	130 Blank		
BJ 062	35	40	40	2	2	0.15 %	10	320		
BJ 063	90	50	30	1	5	0.14 %	<10	600		
BJ 064	40	70	50	3	2	0.12 %	<10	380		
BJ 065	50	75	55	4	5	0.12 %	<10	480		

UNITS LEGEND ----- M - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Batch No.: B008 Client: BHP COMPANY LIMITED, Area Contact: DR. R. HINE

Address: P.O. BOX 559 Address: G.P.O. BOX 1140 L,

Date Received 02/02/81 CAMBERWELL HOBART TAS 7001

Date Completed 24/02/81 VIC

Order No.: R720-000634 Sample Type: P/CHIPS,SLUDGE No. of Samples: 119

SAMPLE NO.		Cu	Pb	Zn	Ag	Mo	Sn	W	As	Au	EL
		M	M	M	M	M	M	M	M	B	UN
		1	1	1	1	2	XRF-1A	XRF-1A	5-B	120-A	ME
BJ 066	2.0	65	65	95	2	2	175	<10	420		
BJ 067	2.0	60	80	105	1	5	215	<10	500		
BJ 068	2.0	65	80	90	2	<2	185	<10	500		
BJ 069	2.0	45	70	65	3	<2	85	<10	110		
BJ 070	2.0	50	30	40	4	<2	135	<10	100		
BJ 071	2.0	25	20	45	1	2	60	<10	95		
BJ 072	2.0	10	20	50	1	<2	50	<10	50		
BJ 073	2.0	10	30	30	1	<2	25	<10	40		
BJ 074	2.0	50	25	30	7 8	2	30	<10	85		
BJ 075	2.0	60	330	50	1	5	235	<10	100		
BJ 076	2.0	30	120	50	1	2	95	<10	140		
BJ 328		50	0.13 %	85	2	2	0.24 %	<10	80		
BJ 329		40	0.10 %	50	2	2	0.13 %	<10	145		
BJ 330		N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
BJ 331		N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
BJ 332		N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
BJ 333		N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
BJ 334		N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
BJ 199	3.0	125	220	55	3	2	630	<10	480		
BJ 200	"	130	240	60	3	5	0.13 %	<10	540		
BJ 201	"	85	290	50	3	2	945	<10	380		
BJ 202	"	130	500	50	4	2	0.10 %	60	720		
BJ 203	"	140	0.10 %	50	3	2	0.11 %	<10	0.10 %		
BJ 204	6.0	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.		
BJ 205	3.0	100	430	40	7	5	0.14 %	<10	760		
BJ 206	6.0	110	360	50	5	<2	810	<10	700		
BJ 207	3.0	450	430	100	8	5	995	<10	760		
BJ 208	"	420	300	0.10 %	6	<2	665	<10	500		
BJ 209	"	820	250	530	10	55	555	<10	760	5	
BJ 210		0.15 %	240	340	23	<2	715	<10	760	10	

BJ 330–334: lost – duplicates despatched (see batch D091)

UNITS LEGEND ----- M - Parts per million b - Parts per billion % - percent

g - Grams a - Absorbance

Signature: B.J. Finlayson.

Batch No.: B008 | Client: BHP COMPANY LIMITED, | Area Contact: DR. R. HINE
Address: P.O. BOX 559 | Address: G.P.O. BOX 1140 L,
Date Received 02/02/81 | CAMBERWELL | HOBART TAS 7001
Date Completed 24/02/81 | VIC

Order No.: R720-000634 | Sample Type: P/CHIPS,SLUDGE | No. of Samples: 119

SAMPLE NO.	Cu	Pb	Zn	Ag	Mo	Sn	W	As	Au	ELE
	M	M	M	M	M	M	M	M	B	UNI
	1	1	1	1	2	XRF-1A	XRF-1A	S-B	120-A	MET
BJ 211 3.0	620	700	170	12	<2	0.10 %	<10	0.12 %	10	
BJ 212 "	350	920	160	11	5	0.10 %	<10	0.10 %	15	
BJ 213 "	250	540	155	18	5	970	<10	720	5	
BJ 214 "	200	700	85	18	2	0.12 %	<10	0.13 %	10	
BJ 215	180	570	80	10	<2	0.10 %	<10	760		
BJ 216	165	580	80	9	<2	815	<10	660	15	
BJ 217	190	420	85	10	<2	775	<10	600	10	
BJ 218	180	310	100	10	2	825	<10	520		
BJ 219	250	530	145	14	<2	0.11 %	<10	840	5	
BJ 220	155	370	90	8	2	690	<10	0.11 %		
BJ 221	240	410	80	7	2	955	<10	0.13 %		
BJ 222	200	300	60	7	2	875	<10	980		
BJ 223	175	290	70	7	2	605	<10	840		
BJ 224	155	300	50	8	2	615	<10	0.13 %		
BJ 225	270	0.14 %	55	11	2	0.20 %	<10	0.28 %	210	
BJ 226	450	800	80	11	<2	0.16 %	<10	0.26 %	20	
BJ 227	450	250	70	5	<2	435	<10	0.20 %		
BJ 228	480	230	65	6	<2	460	<10	0.19 %		
BJ 229	330	380	85	7	<2	0.13 %	<10	0.20 %		
BJ 230	590	480	600	5	<2	590	10	0.14 %		
BJ 231	840	720	550	12	<2	590	10	0.20 %	90	
BJ 232	0.12 %	500	600	8	<2	430	<10	0.19 %		
BJ 233	0.12 %	270	460	5	<2	345	<10	0.15 %		
BJ 234	0.11 %	300	470	5	<2	300	<10	0.16 %		
BJ 235	800	270	600	5	<2	280	<10	0.15 %		
BJ 236	270	125	480	3	<2	95	<10	540		
BJ 237	300	270	800	4	<2	200	<10	0.12 %		
BJ 238 1.0	260	200	0.14 %	3	<2	170	<10	360		
BJ 287 3.0	165	350	125	3	<2	0.38 %	<10	700		
BJ 288 3.0	180	330	100	3	<2	0.18 %	<10	540		

UNITS LEGEND ----- M - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature:

[redacted] TELEX ALSEV 42344

Batch No.: B008	Client: BHP COMPANY LIMITED,	Area Contact:	DR. R. HINE
	Address: P.O. BOX 559	Address:	G.P.O. BOX 1140 L,
Date Received 02/02/81	CAMBERWELL		HOBART TAS 7001
Date Completed 24/02/81	VIC		

Order No.: R720-000634 Sample Type: P/CHIPS,SLUDGE No. of Samples: 119

SAMPLE NO.		Cu	Pb	Zn	Ag	Mo	Sn	W	As	Au	ELEMENT
		M	M	M	M	M	M	M	M	B	UNIT
		1	1	1	1	2	XRF-1A	XRF-1A	5-B	120-M	METH
BJ 289	2.1	145	200	70	3	<2	0.28 %	<10	460		
BJ 290	3.5	95	250	55	7	<2	540	<10	240		
BJ 291	4.5	125	250	135	5	2	440	<10	240		
BJ 292	2.9	70	200	85	4	<2	0.12 %	<10	540		
BJ 293	3.0	80	230	75	4	2	0.13 %	<10	540		
BJ 294	"	100	200	50	4	<2	0.12 %	<10	900		
BJ 295	"	25	440	55	7	2	855	<10	0.10 %		
BJ 296	"	230	520	105	8	2	805	<10	0.13 %		
BJ 297	"	170	200	75	5	<2	510	<10	520		
BJ 298	"	470	270	115	4	<2	530	<10	620		
BJ 299	"	390	260	90	6	<2	445	<10	0.12 %		
BJ 300	"	0.15 %	800	70	15	<2	780	<10	0.10 %	10	
BJ 301	"	0.15 %	350	75	11	2	0.12 %	<10	540	45	
BJ 302	"	410	290	50	5	<2	740	<10	680		
BJ 303	"	530	250	60	5	<2	880	<10	460		
BJ 304	"	280	145	45	3	<2	405	<10	190		
BJ 305	"	450	550	60	6	<2	745	<10	420		
BJ 306	"	340	380	90	6	2	495	<10	380		
BJ 307	"	0.16 %	480	50	9	2	745	<10	0.20 %		
BJ 308	"	0.16 %	450	65	9	<2	0.17 %	<10	0.17 %		
BJ 309	6.0	920	600	75	8	2	0.11 %	<10	0.11 %		
BJ 310	3.0	0.20 %	600	170	8	<2	0.14 %	<10	900		
BJ 311	3.0	0.15 %	530	200	7	2	105	<10	860		
BJ 312	3.7	640	300	185	5	5	780	<10	760		
BJ 323	3.0	155	0.13 %	55	4	5	0.20 %	<10	0.11 %		
BJ 324	"	95	680	40	4	2	780	20	520		
BJ 325	"	360	0.16 %	100	4	2	0.31 %	<10	0.17 %		
BJ 326	"	260	900	80	5	2	0.17 %	<10	0.14 %		
BJ 327	"	75	170	40	3	2	405	<10	190		

5 sludges

Zn sludges

UNITS LEGEND ===== M = Parts per million b - Parts per billion % - percent

Batch No.: C082 Client: BHP COMPANY LIMITED, Area Contact: DR. R. HINE

Address: P.O. BOX 559 Address: G.P.O. BOX 1140 L,

Date Received 11/03/81 CAMBERWELL HOBART TAS.

Date Completed 06/04/81 VIC

Order No.: R7007500 - 000637 Sample Type: CORE,PERC.CHIPS No. of Samples: 182

SAMPLE NO.	Cu	Pb	Zn	Ag	As	Mo	Sn	W	Au	ELE
	M	M	M	M	M	M	M	M	B	UN
	1	1	1	1	5	2	XRF 1A	XRF 1A	120-A	ME
BJ 77	65	440	65	6	660	10	410	<10		
BJ 78	85	800	50	12	0.15 %	5	0.14 %	<10	35	
BJ 79	115	0.16 %	60	5	0.14 %	5	0.13 %	<10		
BJ 80	85	600	120	5	740	5	700	<10		
BJ 81	160	250	170	7	0.17 %	5	0.14 %	<10		
BJ 82	230	640	100	7	0.17 %	<5	820	<10		
BJ 83	80	95	60	5	920	<5	830	<10		
BJ 84	105	145	70	4	0.11 %	5	0.26 %	<10		
BJ 85	55	30	35	6	880	<5	0.27 %	10		
BJ 86	90	25	60	3	740	5	0.10 %	10		
BJ 87	105	40	70	3	860	<5	0.16 %	<10		
BJ 88	65	100	80	6	480	5	810	<10		
BJ 89	70	50	80	2	540	<5	2.13 %	10		
BJ 90	55	30	55	2	380	<5	130	<10		
BJ 91	50	25	50	1	320	<5	130	<10		
BJ 92	55	45	50	7	580	<5	850	<10		
BJ 93	65	70	35	15	0.20 %	5	620	10	85	
BJ 94	80	55	90	2	560	5	35	50		
BJ 95	260	60	165	2	600	5	15	<10		
BJ 96	0.28 %	50	240	2	80	<5	15	<10		
BJ 97	110	50	0.11 %	2	60	<5	15	<10		
BJ 98	55	55	920	2	60	<5	20	<10		
BJ 99	180	35	60	4	760	<5	375	<10		
BJ 100	240	40	55	4	940	5	530	40		
BJ 101	0.16 %	60	30	5	0.50 %	5	560	<10		
BJ 102	0.36 %	420	50	15	0.26 %	5	405	<10	40	
BJ 103	0.44 %	45	40	6	0.22 %	5	630	<10		
BJ 104	0.34 %	60	25	8	0.22 %	5	490	<10		
BJ 105	350	55	30	3	820	<5	190	<10		
BJ 106	290	100	15	4	980	5	850	<10		

UNITS LEGEND ===== m = Parts per million b = Parts per billion % = percent
g = Grams a = Absorbance

Signature: [illegible]

[redacted] Client: BHP COMPANY LIMITED, Area Contact: DR. R. HINE
Address: P.O. BOX 559 Address: G.P.O. BOX 1140 L,
Date Received 11/03/81 CAMBERWELL HOBART TAS.
Date Completed 06/04/81 VIC

Order No.: R700/500 - 000637 Sample Type: CORE,PERC.CHIPS No. of Samples: 182

SAMPLE NO.		Cu	Pb	Zn	Ag	As	Mo	Sn	W	Au	ELE
		M	M	M	M	M	M	M	M	B	UNI
		1	1	1	1	5	2	XRF 1A	XRF 1A		MET
BJ 107	2.0	210	150	40	10 10	500	15	0.15 .15 %	10		
BJ 108	"	120	45	35	9 9	300	10	300	<10		
BJ 109	"	110	50	55	4	290	10	260	<10		
BJ 110	"	90	65	50	5	0.11 %	10	400	<10		
BJ 111	1.55	185	40	100	5	300	10	460	<10		
BJ 136	2.0	75	120	40	3	460	5	410	<10		
BJ 137	"	100	150	35	4	620	10	840	<10		
BJ 138	"	60	220	45	3	420	10	0.18 .17 %	<10		
BJ 139	"	85	640	70	5	400	<5	0.20 .20 %	<10		
BJ 140	"	80	380	70	10 11	560	<5	650	<10	20	
BJ 141	"	110	490	40	6 7	680	5	690	<10		
BJ 142	"	110	420	35	2	0.12 %	10	600	<10		
BJ 143	"	55	720	50	5	540	10	835	<10		
BJ 144	"	60	500	40	4	480	5	0.13 .14 %	<10		
BJ 145	"	110	560	55	18 18	780	10	0.16 .16 %	<10	25	
BJ 146	"	70	270	50	10 12	720	5	910	<10		
BJ 147	1.95	45	145	25	12 12	340	<5	0.21 .21 %	<10	45	
BJ 148	2.0	95	140	50	6 7	660	<5	490	<10		
BJ 149	"	110	320	50	4	720	10	315	<10		
BJ 150	"	80	680	70	7 5	660	5	605	<10		
BJ 151	1.95	0.12 .14 %	360	175	19 20	820	55	0.13 .13 %	<10	125	
BJ 152	2.0	110	180	80	5 5	520	10	430	<10		
BJ 153	"	460	220	0.15 %	7 8	240	5	440	<10		
BJ 154	"	0.12 .13 %	175	940	9 9	340	5	370	<10		
BJ 155	"	0.10 .10 %	190	210	14 15	840	5	520	<10	55	
BJ 156		0.22 .25 %	210	90	>25 30	660	70	615	<10	5	
BJ 157	1.90	0.15 .15 %	450	135	20 22	0.24 %	10	980	<10	55	
BJ 158	2.0	300	0.12 %	145	18 15	0.22 %	10	0.17 .17 %	<10	50	
BJ 159	"	140	0.12 %	70	19 21	0.11 %	10	0.18 .18 %	<10	30	
BJ 160	"	90	290	30	19 17	640	5	530	40	30	

UNITS LEGEND ----- M - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: A. J. Finlayson

atch No.: C082 Client: BHP COMPANY LIMITED, Area Contact: DR. R. HINE
Address: P.O. BOX 559 Address: G.P.O. BOX 1140 L,
ate Received 11/03/81 CAMBERWELL HOBART TAS.
ate Completed 06/04/81 VIC

rder No.: R700/500 - 000637 Sample Type: CORE,PERC,CHIPS No. of Samples: 182

AMPLE NO.		Cu	Pb	Zn	Ag	As	Mo	Sn	W	Au	ELEMEN
		M	M	M	M	M	M	M	M	B	UNITS
		1	1	1	1	5	2	XRF 1A	XRF 1A		METHOD
J 161 2.0		45	240	30	>25 26	860	<5	520	<10	30	
J 162		80	0.11 %	30	>25 47	0.28 %	5	830	<10	35	
J 163		70	960	50	6 6	660	5	820	<10		
J 164		55	380	50	>25 30	700	5	350	<10	30	
J 165		65	0.12 %	60	14 14	460	5	360	<10	25	
J 166		50	240	40	10 15	340	5	345	<10		
J 167 2.8		80	40	75	5	300	5	210	<10		
J 168 2.0		45	60	30	24 25	400	<5	265	<10	15	
J 169		55	90	40	14 14	440	<5	610	160 170	10	
J 170		75	35	30	15 17	0.28 %	5	460	<10	10	
J 171		45	190	20	17 19	0.14 %	<5	395	<10	5	
J 172		185	250	20	14 15	0.14 %	<5	760	<10	10	
J 173		180	135	30	8 9	640	<5	280	<10		
J 174		185	115	30	5	300	5	120	<10		
J 175 ht		55	75	35	6 67	480	<5	220	<10		
J 176 2.0		90	240	35	6 6	0.10 %	<5	660	<10		
J 177		125	680	20	18 18	0.26 %	5	930	<10	50	
J 178		300	0.22 %	20	23 21	0.28 %	<5	0.20 .20 %	10	25	
J 179	.08	760	230	20	16 16	0.32 %	<5	670	<10	25	
J 180	.18	0.17 %	260	20	14 14	0.40 %	5	380	<10	10	
J 181	.21	0.20 %	55	25	8 9	0.11 %	5	300	<10		
J 182	.13	0.12 %	115	30	8 10	0.24 %	5	300	<10		
J 183	.11	0.10 %	40	55	4	0.24 %	5	350	<10		
J 184		260	45	45	3	0.14 %	5	180	<10		
J 185 1.7		180	20	40	4	0.22 %	10	210	<10		
J 186 2.0	.13	0.12 %	25	75	3	480	5	160	<10		
J 187	.06	500	80	20	12 12	0.10 %	5	210	<10	10	
J 188	.19	0.18 %	280	30	10 12	760	5	420	<10	10	
J 189	.26	0.24 %	150	230	6 7	0.10 %	5	225	<10		
J 190	.14	0.13 %	50	270	5 6	0.32 %	5	270	<10		

NITS LEGEND ===== m = Parts per million b = Parts per billion % = percent
g = Grams a = Absorbance

Signature: [signature]

Da[redacted]Rec[redacted]ed [redacted]/0[redacted] [redacted] [redacted] C[redacted]ERW[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted] H[redacted]T [redacted] TA[redacted]
Date Completed 06/04/81 VIC

Order No.: R700/500 - 000637 Sample Type: CORE,PERC.CHIPS No. of Samples: 182

SAMPLE NO.	Cu	Pb	Zn	Ag	As	Mo	Sn	W	Au	ELEMENT
	M	M	M	M	M	M	M	M	B	UNITS
	1	1	1	1	5	2	XRF 1A	XRF 1A		METHOD
BJ 191	0.20 %	40	280	4	0.13 %	5	300	<10		
BJ 192	75	75	550	3	160	10	20	<10		
BJ 193	30	80	510	2	100	5	15	<10		
BJ 194	15	50	310	2	40	10	10	<10		
BJ 195	15	45	400	2	20	5	10	<10		
BJ 196	15	50	920	2	20	10	15	<10		
BJ 197	15	50	0.18 %	2	20	5	10	<10		
BJ 198	15	50	0.16 %	2	<20	10	5	<10		
BJ 239	120	480	110	3	800	5	0.42 %	<10		
BJ 240	50	180	150	3	400	5	0.13 %	<10		
BJ 241	95	120	120	2	360	5	0.23 %	<10		
BJ 242	95	300	50	2	220	5	370	<10		
BJ 243	50	600	75	7	440	5	810	<10		
BJ 244	80	0.13 %	95	8	580	5	0.21 %	<10		
BJ 245	90	330	80	6	540	<5	0.11 %	<10		
BJ 246	180	190	65	6	700	<5	530	<10		
BJ 247	115	280	50	5	180	5	470	<10		
BJ 248	155	310	80	13	460	10	530	<10	5	
BJ 249	110	250	90	5	120	<5	290	<10		
BJ 250	70	80	95	2	300	<5	240	<10		
BJ 251	70	270	40	5	540	10	210	<10		
BJ 252	75	230	30	9	980	<5	0.11 %	<10		
BJ 253	40	80	50	8	440	5	530	<10		
BJ 254	100	65	30	6	960	5	790	<10		
BJ 255	45	190	40	8	600	5	555	<10		
BJ 256	35	370	40	13	440	<5	430	<10	5	
BJ 257	125	320	35	9	0.10 %	<5	725	<10		
BJ 258	145	170	50	5	700	<5	290	<10		
BJ 259	100	55	80	4	200	<5	165	<10		
BJ 260	800	90	80	3	280	<5	370	<10		

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: [signature]

Batch No.: C082 Client: BHP COMPANY LIMITED, Area Contact: DR. R. HINE
Address: P.O. BOX 559 Address: G.P.O. BOX 1140 L,
Date Received 11/03/81 CAMBERWELL HOBART TAS.
Date Completed 06/04/81 VIC

Order No.: R7007500 - 000637 Sample Type: CORE,PERC.CHIPS No. of Samples: 182

SAMPLE NO.	Cu	Pb	Zn	Ag	As	Mo	Sn	W	Au	EL
	M	M	M	M	M	M	M	M	6	UN
	1	1	1	1	5	2	XRF 1A	XRF 1A		ME
BJ 261	150	0.12 %	70	6	920	5	235	<10		
BJ 262	560	220	45	10	0.16 %	<5	365	<10	10	
BJ 263	430	210	60	8	500	10	480	<10		
BJ 264	0.16 %	145	75	8	740	<5	185	<10		
BJ 265	0.12 %	680	105	14	600	5	285	<10	5	
BJ 266	0.28 %	0.13 %	65	>25	640	10	0.21 %	<10	3	
BJ 267	0.18 %	135	100	12	360	5	325	<10	5	
BJ 268	410	350	45	17	0.10 %	5	440	<10	25	
BJ 269	260	280	40	14	380	5	730	<10	20	
BJ 270	880	250	100	9	300	5	345	<10	15	
BJ 271	0.16 %	175	330	8	280	10	360	<10		
BJ 272	200	0.26 %	35	16	600	5	550	<10	20	
BJ 273	420	240	95	8	540	5	355	<10		
BJ 274	250	165	55	17	380	<5	545	<10	25	
BJ 275	0.24 %	760	50	>25	0.20 %	<5	645	<10	20	
BJ 276	760	0.20 %	110	>25	0.11 %	<5	0.12 %	<10	5	
BJ 277	840	0.12 %	195	22	280	5	330	<10	20	
BJ 278	0.11 %	0.32 %	180	>25	0.12 %	5	515	<10	25	
BJ 279	880	260	75	8	440	<5	760	<10	25	
BJ 280	0.28 %	0.10 %	115	13	300	5	840	<10	150	
BJ 281	0.18 %	720	340	6	440	5	735	<10		
BJ 282	0.11 %	260	500	7	0.12 %	5	315	<10		
BJ 283	300	115	560	4	140	5	205	<10		
BJ 284	680	45	880	5	0.14 %	10	175	<10		
BJ 285	680	85	0.10 %	5	200	10	405	<10		
BJ 286	800	75	720	6	260	<5	780	<10		
BJ 369	85	0.11 %	175	2	80	10	565	<10		
BJ 370	70	640	165	2	100	10	570	<10		
BJ 371	70	0.12 %	155	2	760	5	0.20 %	<10		
BJ 372	75	680	70	5	0.18 %	<5	0.39 %	<10		

UNITS LEGEND ----- M - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: [signature]

Batch No.: C082 Client: BHP COMPANY LIMITED, Area Contact: DR. R. HINE

Address: P.O. BOX 559 Address: G.P.O. BOX 1140 L,

Date Received 11/03/81 CAMBERWELL HOBART TAS.

Date Completed 06/04/81 VIC

Order No.: R700/500 - 000637 Sample Type: CORE,PERC.CHIPS No. of Samples: 182

SAMPLE NO.	Cu	Pb	Zn	Ag	As	Mo	Sn	W	EL…
	M	M	M	M	M	M	M	M	UN…
	1	1	1	1	5	2	XRF 1A	XRF 1A	ME…
BJ 373	115	640	70	3	920	5	1.21 %	<10	
BJ 374	80	480	70	2	0.16 %	5	0.68 %	10	
BJ 375	65	270	60	2	800	5	0.64 %	<10	
BJ 376	110	350	40	2	260	<5	0.47 %	<10	
BJ 377	115	600	90	2	100	<5	0.13 %	<10	
BJ 378	105	300	110	2	100	5	585	<10	
BJ 379	210	340	65	1	360	<5	235	<10	
BJ 380	170	480	35	2	420	5	105	<10	
BJ 381	135	210	40	2	260	5	0.14 %	<10	
BJ 382	115	760	55	2	100	5	575	<10	
BJ 383	100	280	50	3	200	10	0.22 %	<10	
BJ 384	95	190	45	2	480	5	0.26 %	<10	
BJ 385	135	330	40	2	0.10 %	<5	0.14 %	<10	
BJ 386	120	280	30	2	0.20 %	5	0.10 %	<10	
BJ 387	85	190	25	2	0.24 %	5	0.14 %	20	
BJ 388	95	140	30	2	0.30 %	5	0.11 %	20	
BJ 389	115	115	25	2	0.26 %	<5	0.11 %	40	
BJ 390	95	100	25	2	0.14 %	5	840	20	
BJ 391	50	150	210	2	0.10 %	<5	195	<10	
BJ 392	45	95	195	1	80	10	20	<10	
BJ 393	50	100	180	2	20	<5	20	<10	
BJ 394	60	110	180	1	<20	10	200	<10	
BJ 395	50	140	390	2	20	10	60	60	
PSS 6	190	120	100	5	420	5	575	<10	
PSS 7	300	560	110	8	0.12 %	15	0.20 %	10	
PSS 8	0.18 %	210	300	>25	0.19 %	5	495	<10	
PSS 9	0.12 %	150	105	>25	0.16 %	10	995	10	
PSS 10	410	680	80	20	0.10 %	10	0.17 %	10	
PSS 11	680	800	80	>25	0.16 %	10	0.13 %	20	
PSS 12	0.17 %	560	270	>25	0.42 %	<5	900	20	

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent

g - Grams a - Absorbance

Signature: [signature]

Batch No.: E026 | Client: BHP COMPANY LIMITED, | Area Contact: DR. R. HINE
Address: P.O. BOX 559 | Address: G.P.O. BOX 1140 L,
Date Received 05/05/81 | CAMBERWELL | HOBART TAS.
Date Completed 03/06/81 | VIC

Order No.: TLX. 4/5/81 PM | Sample Type: PULPS EX BATCHES | No. of Samples: 71

SAMPLE NO.	Au	ELI
	b	UN
	120-A	MET
(EX M177) BJ 129	20	
(EX B008) BJ 033	15	
(EX B008) BJ 209	5	
(EX B008) BJ 210	10	
(EX B008) BJ 211	10	
(EX B008) BJ 212	15	
(EX B008) BJ 213	5	
(EX B008) BJ 214	10	
(EX B008) BJ 216	15	
(EX B008) BJ 217	10	
(EX B008) BJ 219	5	
(EX B008) BJ 225	210	
(EX B008) BJ 226	20	
(EX B008) BJ 231	90	
(EX B008) BJ 300	10	
(EX B008) BJ 301	45	
(EX C082) BJ 078	35	
(EX C082) BJ 093	85	
(EX C082) BJ 102	40	
(EX C082) BJ 140	20	
(EX C082) BJ 145	25	
(EX C082) BJ 147	45	
(EX C082) BJ 151	125	
(EX C082) BJ 155	55	
(EX C082) BJ 156	5	
(EX C082) BJ 157	55	
(EX C082) BJ 158	50	
(EX C082) BJ 159	30	
(EX C082) BJ 160	30	
(EX C082) BJ 161	30	

UNITS LEGEND ----- m - Parts per million | b - Parts per billion | % - percent
g - Grams | a - Absorbance

Batch No.: E026 Client: BHP COMPANY LIMITED, Area Contact: DR. R. HINE

Address: P.O. BOX 559 Address: G.P.O. BOX 1140 L,

Date Received 05/05/81 CAMBERWELL HOBART TAS.

Date Completed 03/06/81 VIC

Order No.: TLX. 4/5/81 PM Sample Type: PULPS EX BATCHES No. of Samples: 71

SAMPLE NO.	Au	ELE
	b	UNI
	120-A	MET
(EX C082) BJ 162	35	
(EX C082) BJ 164	30	
(EX C082) BJ 165	25	
(EX C082) BJ 168	15	
(EX C082) BJ 169	10	
(EX C082) BJ 170	10	
(EX C082) BJ 171	5	
(EX C082) BJ 172	10	
(EX C082) BJ 177	50	
(EX C082) BJ 178	25	
(EX C082) BJ 179	25	
(EX C082) BJ 180	10	
(EX C082) BJ 187	10	
(EX C082) BJ 188	10	
(EX C082) BJ 248	5	
(EX C082) BJ 256	5	
(EX C082) BJ 262	10	
(EX C082) BJ 265	5	
(EX C082) BJ 266	3	
(EX C082) BJ 267	5	
(EX C082) BJ 268	25	
(EX C082) BJ 269	20	
(EX C082) BJ 270	15	
(EX C082) BJ 272	20	
(EX C082) BJ 273	25	
(EX C082) BJ 274	25	
(EX C082) BJ 275	20	
(EX C082) BJ 276	5	
(EX C082) BJ 277	20	
(EX C082) BJ 278	25	

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent

g - Grams a - Absorbance

[redacted] X [redacted]EV[redacted]344

Batch No.: E026 | Client: BHP COMPANY LIMITED, | Area Contact: DR. R. HINE
Address: P.O. BOX 559 | Address: G.P.O. BOX 1140 L, HOBART TAS.
CAMBERWELL
VIC

Date Received 05/05/81
Date Completed 03/06/81

Order No.: TLX. 4/5/81 PM | Sample Type: PULPS EX BATCHES | No. of Samples: 71

SAMPLE NO.	Au
	b
	120-A
(EX C082) BJ 279	25 ✓
(EX C082) BJ 280	150 ✓
(EX D005) BJ 345	20 ✓
(EX D005) BJ 346	40 ✓
(EX D005) BJ 350	5 ✓
(EX D005) BJ 354	5 ✓
(EX D005) BJ 363	<3 ✓
(EX D005) BJ 451	10 ✓
(EX D005) BJ 452	<3 ✓
(EX D091) BJ 432	10 ✓
(EX D091) BJ 433	<3 ✓

EL
UN
ME

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

[redacted] EX [redacted] SE [redacted] 2344

ALS

Batch No.: D0V1 | Client: BHP COMPANY LIMITED, | Area Contact: DR. R. HINE
Address: P.O. BOX 559 CAMBERWELL VIC | Address: G.P.O. BOX 1140 L, HOBART TAS.

Date Received 14/04/81
Date Completed 29/04/81

Order No.: R700 - 000644 | Sample Type: PERC.CHIP; CORE | No. of Samples: 16

SAMPLE NO.	Cu	Pb	Zn	Ag	Mo	As	Sn	W	Au	E
	m	m	m	m	m	m	m	m	b	U
	1	1	1	1	2	5-B	XRF 1A	XRF 1A		M
BJ 330 [2.0, 40-]	50	0.11 %	60	1	<2	90	0.10 [.10] %	<10		
BJ 331	70	235	50	2	2	600	300	<10		
BJ 332 [9a dp]	50	900	40	1	5	55	0.11 [.11] %	<10		
BJ 333	50	660	30	2	2	640	0.52 [.51] %	10		
BJ 334 [1.0, -13.0]	95	225	25	1	<2	130	0.17 [.17] %	<10		
BJ 432 [2.0]	0.21 [.21] %	0.19 %	0.18 %	>25 [56]	5	180	585	90	[10]	
BJ 433	0.26 [.26] %	105	0.17 %	9 [11]	<2	180	355	40	[<3]	
BJ 434	0.11 [.12] %	560	480	8 [8]	2	0.50 %	345	<10		
BJ 435	0.10 [.19] %	215	340	7 [10]	2	880	650	40		
BJ 436 [2.2, 8am]	0.12 [.12] %	190	270	7 [9]	<2	560	675	50		
BJ 437 [2.0]	300	150	370	3	<2	55	295	<10		
BJ 438	95	90	280	2	5	16	565	<10		
BJ 439	165	50	210	2	5	60	175	<10		
BJ 440	240	20	180	2	2	65	60	<10		
BJ 441	0.15 [.15] %	55	390	5 [6]	5	0.20 %	225	<10		
BJ 442 [1.93]	0.10 [.09] %	50	350	5 [6]	5	460	225	<10		
[328 2.0 40- 9a]	[50]	[.13%]	[85]	[2]	[2]	[80]	[.24%]	[<10]		
[329 2.0 40 dp]	[40]	[.10%]	[50]	[2]	[2]	[540]	[.13]	[<10]		

UNITS LEGEND ----- m - Parts per million   b - Parts per billion   % - percent
g - Grams   a - Absorbance

Batch No.: D005 | Client: BHP COMPANY LIMITED, | Area Contact: DR. R. HINE
Address: P.O. BOX 559 | Address: G.P.O. BOX 1140 L,
Date Received 02/04/81 | CAMBERWELL | HOBART TAS.
Date Completed 24/04/81 | VIC

Order No.: R700 - 000643 | Sample Type: CRSHD CORE,SLUDG | No. of Samples: 78

SAMPLE NO.	Cu	Pb	Zn	Ag	Mo	As	Sn	W	Au	EUM
	M	M	M	M	M	M	M	M	B	
	1	1	1	1	2	5	XRF 1A	XRF 1A		
BJ 313	50	450	20	2	5	340	0.29 %	30		
BJ 314	75	475	30	2	<2	480	360	<10		
BJ 315	45	120	15	2	5	280	150	<10		
BJ 316	145	640	65	2	2	820	270	<10		
BJ 317	300	270	65	4	<2	0.11 %	235	<10		
BJ 318	130	30	40	5	2	800	0.13 %	<10		
BJ 319	80	65	30	3	5	520	0.20 %	<10		
BJ 320	50	40	45	3	<2	220	0.16 %	<10		
BJ 321	70	20	95	2	<2	320	0.19 %	10		
BJ 322	80	20	50	2	<2	500	440	60		
BJ 335	240	260	25	2	<2	60	225	60		
BJ 336	80	720	50	3	2	60	0.17 %	30		
BJ 337	230	195	80	3	2	280	585	<10		
BJ 338	160	250	55	3	2	520	225	<10		
BJ 339	80	420	50	5	2	560	0.48 %	10		
BJ 340	85	310	30	2	2	340	0.42 %	<10		
BJ 341	60	400	45	3	<2	80	0.24 %	20		
BJ 342	150	280	40	2	<2	100	0.11 %	<10		
BJ 343	100	140	65	3	<2	400	0.22 %	10		
BJ 344	100	200	60	3	<2	0.20 %	0.14 %	10		
BJ 345	260	110	45	12	5	0.66 %	0.15 %	130	20	
BJ 346	150	80	25	11	2	0.80 %	0.14 %	170	40	
BJ 348	140	30	45	4	<2	0.13 %	0.13 %	30		
BJ 349	90	30	15	6	5	0.12 %	845	70		
BJ 350	65	25	40	13	5	0.24 %	0.10 %	70	5	
BJ 351	70	25	10	8	5	0.11 %	0.13 %	120		
BJ 352	120	25	35	4	5	640	210	<10		
BJ 353	90	50	15	3	2	500	380	<10		
BJ 354	100	380	15	13	10	760	0.25 %	10	5	
BJ 355	110	50	10	9	5	860	0.15 %	20		

347 missing

UNITS LEGEND ----- M - Parts per million | b - Parts per billion | % - percent
g - Grams | a - Absorbance

Batch No.: D005 Client: BHP COMPANY LIMITED.
Address: P.O. BOX 559
CAMBERWELL
VIC

Date Received 02/04/81
Date Completed 24/04/81

Area Contact: DR. R. HINE
Address: G.P.O. BOX 1140 L.
HOBART TAS.

Order No.: R700 - 000643 Sample Type: CRSHD CORE,SLUDG No. of Samples: 78

SAMPLE NO.		Cu	Pb	Zn	Ag	Mo	As	Sn	W	Au	ELEM
		m	m	m	m	m	m	m	m	b	UNIT
		1	1	1	1	2	5	XRF 1A	XRF 1A		METH
BJ 356	2.0	100	30	55	4	5	760	485	<10		
BJ 357	-60.45	170	25	20	6 9	5	0.15 %	0.66 .67 %	10		
BJ 358	"	70	20	10	4	2	420	320	<10		
BJ 359	"	50	50	15	3	5	320	580	<10		
BJ 360	" 9a	40	25	10	4	5	840	755	<10		
BJ 361	1.15	280	40	35	5	5	0.15 %	0.29 .28 %	<10		
BJ 362	2.0	190	30	70	5	10	0.12 %	350	<10		
BJ 363	"	240	270	120	9 "	5	0.11 %	265	<10	<3	
BJ 364	"	210	35	60	6 6	10	0.20 %	300	<10		
BJ 365	"	100	20	50	5	5	580	900	<10		
BJ 366	"	70	20	25	4	5	560	670	60		
BJ 367	"	110	30	35	5	5	720	530	<10		
BJ 368	2.6 EOH	200	45	45	7 9	5	0.13 %	850	<10		
BJ 396	2.0	60	120	300	3	5	20	40	<10		
BJ 397	2.0	70	100	330	3	5	20	10	<10		
BJ 398	2.0	100	220	270	3	5	20	50	<10		
BJ 399	2.0	60	300	150	2	5	<20	225	<10		
BJ 400	2.0	80	130	260	2	5	20	30	<10		
BJ 401	2.0	80	80	360	4	2	20	5	<10		
BJ 402	"	45	100	360	3	2	20	60	<10		
BJ 403	" 8	70	70	400	3	5	20	10	<10		
BJ 404	" cores	80	50	560	4	10	20	25	<10		
BJ 405	1.91	100	40	560	3	10	20	<5	<10		
BJ 406	2.0	40	40	600	3	5	<20	<5	<10		
BJ 407	"	40	35	560	3	5	20	5	<10		
BJ 408	"	40	25	520	2	5	20	15	<10		
BJ 409	1.15	70	40	600	3	5	20	25	<10		
BJ 410	2.0	55	60	560	3	5	40	15	<10		
BJ 411	2.3	40	220	480	3	10	20	45	20		
BJ 412	2.0	100	400	270	4	10	20	290	20		

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

80 1204

Batch No.: D005	Client: BHP COMPANY LIMITED,		Area Contact: DR. R. HINE
	Address: P.O. BOX 559		Address: G.P.O. BOX 1140 L,
Date Received 02/04/81	CAMBERWELL		HOBART TAS.
Date Completed 24/04/81	VIC		
Order No.: R700 - 000643	Sample Type: CRSHD CORE,SLUDG		No. of Samples: 78

SAMPLE NO.		Cu	Pb	Zn	Ag	Mo	As	Sn	W
		M	M	M	M	M	M	M	M
		1	1	1	1	2	5	XRF 1A	XRF 1A
BJ 413	1.25	90	220	240	2	5	20	120	200 200
BJ 414	2.7	30	30	220	1	5	20	40	<10
BJ 415	2.0	240	40	320	2	2	100	0.17 .45 %	100 100
BJ 416	2.65	200	30	300	1	2	400	595	<10
BJ 417	2.0	30	30	330	1	2	20	35	20
BJ 418		20	30	360	1	<2	20	10	<10
BJ 419	-	460	340	250	5	5	100	970	<10
BJ 420	1.25	480	70	145	3	5	40	15	10
BJ 421	2.0	310	50	90	4	5	80	0.21 .20 %	<10
BJ 422	2.65	300	45	135	4	5	40	890	<10
BJ 423	2.0	0.15 .15 %	40	320	4	5	100	230	<10
BJ 424	2.0	50	40	480	3	5	40	10	<10
BJ 425	2.3	95	30	310	4	5	60	130	<10
BJ 426	2.0	220	160	440	4	5	20	520	<10
BJ 428	2.0	150	105	220	5	10	0.26 %	325	<10
BJ 429	2.4	190	40	145	3	5	0.20 %	245	<10
BJ 430	2.0	870 870	70	190	5	5	0.14 %	300	<10
BJ 431	1.1	490	30	560	5	5	940	145	<10
427	2.0	200	-	-	4	5	-	515	<10

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: [signature]

Batch No.: D005-1 Client: BHP COMPANY LIMITED, Area Contact: DR. R. HINE

Address: P.O. BOX 559 Address: G.P.O. BOX 1140 L,

Date Received 02/04/81 CAMBERWELL HOBART TAS.

Date Completed 24/04/81 VIC

Order No.: R700 - 000643 Sample Type: SLUDGE No. of Samples: 11

SAMPLE NO.	Cu	Ag	Mo	Sn	W	Au
	m	m	m	m	m	B
	1	1	2	XRF 1A	XRF 1A	
BJ 443	170	3	10	635	<10	
BJ 444	400	4	10	800	<10	
BJ 445	450	5	10	170	<10	
BJ 446	130	3	10	120	<10	
BJ 447	250	4	10	740	<10	
BJ 448	165	3	5	310	20	
BJ 449	185	4	10	300	<10	
BJ 450	300	5	10	225	30	
BJ 451	0.11 %	>25	20	540	100	10
BJ 452	0.18 %	11	10	805	80	<3
BJ 247	200	4	5	515	<10	

Read as 427

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent

g - Grams a - Absorbance

Signature: [signature]

Batch No.: E158

Client: BHP COMPANY LIMITED,
Address: P.O. BOX 559
CAMBERWELL
VIC

Area Contact: DR. R. HINE
Address: G.P.O. BOX 1140 L,
HOBART TAS.

Date Received 20/05/81
Date Completed 23/07/81

Order No.: R700 - 000647

Sample Type: DRILL CORE

No. of Samples: 58

SAMPLE NO.		Cu	Pb	Zn	Ag	Mo	As	Sn	W	Au	E U M
		m	m	m	m	m	m	m	m	b	
		1	1	1	1	2	5-B	XRF 1A	XRF 1A	120-A	
BJ 453	2.10	140	215	50	2	5	580	0.36 %	30		
BJ 454	1.0	120	120	60	1	5	400	455	20		
BJ 455	2.0	100	220	55	1	<2	420	440	30		
BJ 456	2.5	90	140	50	1	2	300	505	10		
BJ 457	2.0	145	210	30	1	2	700	450	20		
BJ 458	2.0	75	170	30	2	5	240	0.14 %	10		
BJ 459	2.7	105	100	30	1	5	220	0.61 %	30		
BJ 460	1.7	55	80	15	1	5	220	770	20		
BJ 461	2.0	40	40	40	1	5	240	0.12 %	20		
BJ 462	1.2	135	95	50	1	5	400	0.21 %	10		
BJ 463	2.0	55	30	25	2	2	0.22 %	0.29 %	40		
BJ 464	"	65	40	20	1	5	880	0.14 %	30		
BJ 465	"	70	30	10	1	5	340	0.12 %	30		
BJ 466	"	70	50	25	5	5	280	0.19 %	20		
BJ 467	"	55	40	25	3	5	300	0.27 %	40		
BJ 468	"	105	45	20	2	2	340	1.13 %	60		
BJ 469	"	85	70	25	3	2	260	0.20 %	20		
BJ 470	"	65	80	10	2	5	260	0.15 %	20		
BJ 471	"	50	35	20	2	5	220	0.17 %	20		
BJ 472	2.20	95	40	25	5	2	480	0.13 %	40		
BJ 473	2.0	110	30	70	13 10	2	380	365	10	5	
BJ 474	"	120	75	45	2	2	360	0.20 %	30		
BJ 475	"	85	55	85	6	2	300	835	20		
BJ 476	"	145	85	90	2	2	200	175	10		
BJ 477	"	100	140	55	4	2	200	615	10		
BJ 478	1.80	170	45	120	6	2	420	185	50		
BJ 479	2.25	165	470	150	5	2	420	0.11 %	20		
BJ 480	2.0	200	0.10 %	120	5	2	420	0.24 %	30		
BJ 481	3.45	280	125	145	2	2	620	0.10 %	40		
BJ 482	2.0	290	55	150	1	<2	640	540	60		

UNITS LEGEND ----- m - Parts per million   b - Parts per billion   % - percent
g - Grams   a - Absorbance

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ALS

Batch No.: E158 Client: BHP COMPANY LIMITED,
Address: P.O. BOX 559
CAMBERWELL
VIC

Date Received 20/05/81
Date Completed 23/07/81

Area Contact: DR. R. HINE
Address: G.P.O. BOX 1140 L,
HOBART TAS.

Order No.: R700 - 000647 Sample Type: DRILL CORE No. of Samples: 58

SAMPLE NO.	Cu	Pb	Zn	Ag	Mo	As	Sn	W	Au	ELE
	m	m	m	m	m	m	m	m	b	UNI
	1	1	1	1	2	5-B	XRF 1A	XRF 1A	120-A	MET
BJ 483	640	230	140	8	<2	0.11 %	470	30		
BJ 484	0.14 %	190	180	5	<2	800	995	10		
BJ 485	0.22 %	260	320	9	5	0.14 %	990	20		
BJ 486	0.10 %	80	340	2	<2	400	295	50		
BJ 487	45	30	0.10 %	1	2	25	50	30		
BJ 488	20	25	0.30 %	1	<2	15	<5	30		
BJ 489	15	20	900	1	<2	10	5	<10		
BJ 490	15	20	480	1	2	8	5	10		
BJ 491	660	45	310	4	<2	560	505	20		
BJ 492	0.18 %	40	160	3	<2	420	570	30		
BJ 493	0.19 %	80	150	4	2	540	670	10		
BJ 494	960	155	225	6	2	115	815	30		
BJ 495	300	150	520	3	2	320	690	20		
BJ 496	0.44 %	105	580	>25	5	65	0.17 %	30	25	
BJ 497	200	75	840	3	10	10	0.10 %	20		
BJ 498	920	90	0.16 %	5	25	400	0.15 %	30		
BJ 499	175	270	85	2	5	520	0.24 %	30		
BJ 500	70	75	35	1	<2	400	765	20		
BJ 501	195	280	40	1	2	520	0.19 %	40		
BJ 502	190	395	50	1	<2	760	735	20		
BJ 503	95	60	20	1	5	540	0.16 %	20		
BJ 504	105	175	20	1	5	540	0.16 %	20		
BJ 505	60	100	30	1	2	360	670	10		
BJ 506	50	105	30	1	5	320	735	20		
BJ 507	90	110	45	1	5	440	500	<10		
BJ 508	110	95	60	1	2	380	160	<10		
BJ 509	175	325	50	1	5	480	790	30		
BJ 043	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	N.R.	

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

[redacted] Client: [redacted]
Address: P.O. BOX 559 CAMBERWELL VIC
[redacted] Address: G.P.O. BOX 1140 L, HOBART TAS.

Date Received 27/05/81
Date Completed 16/07/81

Order No.: R700 - 000648   Sample Type: CORE, SOIL, SLUDGE   No. of Samples: 37

SAMPLE NO.		Cu	Pb	Zn	Ag	Mo	As	Sn	W
		m	m	m	m	m	m	m	m
		1	1	1	1	2	S-B	XRF-1A	XRF-1A
BJ 510	2.00 10-12.00	40	30	30	<1	5	160	735	20
BJ 511	2.20 12.00	70	30	30	1	5	560	0.13 %	330
BJ 512	2.00	50	30	15	<1	5	480	0.39 %	30
BJ 513	--	30	40	10	<1	<2	160	740	30
BJ 514	2.16	30	60	20	<1	5	280	395	20
BJ 515	2.00	50	30	20	<1	5	0.14 %	500	80
BJ 516	"	65	60	10	<1	2	800	0.21 %	20
BJ 517	"	65	50	25	1	5	240	0.12 %	20
BJ 518	"	110	90	40	<1	10	560	0.13 %	40
BJ 519	"	125	40	70	<1	5	180	335	10
BJ 520	"	105	30	95	<1	<2	180	445	<10
BJ 521	"	80	30	50	<1	2	360	0.13 %	10
BJ 522	2.44 -37.20	95	40	30	<1	2	360	0.12 %	30
BJ 523	2.0	250	30	290	<1	<2	40	50	10
BJ 524	"	70	20	310	<1	2	50	245	<10
BJ 525	"	55	20	310	<1	2	65	205	<10
BJ 526	"	100	20	220	<1	<2	110	215	10
BJ 527	"	200	30	350	<1	<2	45	35	<10
BJ 528	"	145	30	185	<1	5	180	0.12 %	10
BJ 529	"	100	60	160	<1	2	300	470	10
BJ 530	"	130	90	270	<1	2	240	255	10
BJ 531	"	80	30	560	<1	10	95	50	10
BJ 532	"	145	30	250	<1	5	260	330	10
BJ 533	"	95	30	700	<1	5	840	370	10
BJ 534	"	40	40	370	1	10	10	10	<10
BJ 535	"	35	30	315	<1	10	16	30	<10
BJ 536	1.30	25	30	260	1	2	10	40	<10
BJ 537	2.0 64.30	110	40	540	1	2	10	0.24 %	30
BJ 538	2.74	125	30	940	1	5	75	810	10
BJ 539	2.0	900	80	285	3	10	0.60 %	0.14 %	60

UNITS LEGEND ----- m - Parts per million   b - Parts per billion   % - percent
g - Grams   a - Absorbance

Signature: A. J. Finlayson

Batch No.: E236 | Client: BHP COMPANY LIMITED, | Area Contact: DR. R. HINE
Address: P.O. BOX 559 CAMBERWELL VIC | Address: G.P.O. BOX 1140 L, HOBART TAS.

Date Received 27/05/81
Date Completed 16/07/81

Order No.: R700 - 000648 | Sample Type: CORE,SOIL,SLUDGE | No. of Samples: 37

SAMPLE NO.		Cu	Pb	Zn	Ag	Mo	As	Sn	W
		M	M	M	M	M	M	M	M
		1	1	1	1	2	5-B	XRF-1A	XRF-1A
BJ 540 2.0	BPD11 Cores	0.15	% 110	135	8	10	2.40	% 0.12	% 70
BJ 541 ..		820	70	60	3	2	0.52	% 0.10	% 30
BJ 542 0.96	-760m	410	60	200	2	2	440	850	40
BJ 676 2.0	0.00-	95	40	55	1	2	360	40	<10
BJ 677 2.0	BPD12 chips	110	40	65	1	5	340	100	<10
BJ 678 2.0		160	40	25	1	<2	180	170	<10
BJ 679 3.0	-9.00	40	30	20	1	2	16	290	<10

UNITS LEGEND ----- m - Parts per million   b - Parts per billion   % - percent
g - Grams   a - Absorbance

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TELEX ALSEV 42344

Batch No.: G017 | Client: BHP COMPANY LIMITED, | Area Contact: DR. R. HINE
Address: P.O. BOX 559, CAMBERWELL, VIC | Address: G.P.O. BOX 1140 L, HOBART TAS.

Date Received 02/07/81
Date Completed 17/08/81

Order No.: T630/500 - 005052 | Sample Type: CORE | No. of Samples: 23

SAMPLE NO.		Sn	W	Cu	Pb	Zn	Ag	Mo	As	Au if	ELE UNI MET
		m	m	m	m	m	m	m	m		
		XRF 1A	XRF 1A	1	1	1	1	2	5-B	Ag>10m	
BJ 680	90- 6.3	240	<10	60	20	180	2	5	30		
BJ 681	2.7	435	<10	80	15	95	2	5	170		
BJ 682	2.0	15	<10	75	20	190	3	2	20		
BJ 683	2.0	160	<10	70	10	200	1	2	25		
BJ 684	2.2	80	<10	80	15	340	1	5	20		
BJ 685	2.1	205	<10	60	10	220	1	5	15		
BJ 686	2.03	15	<10	65	15	260	2	2	20		
BJ 687	2.0	10	<10	40	25	330	1	10	7		
BJ 688	"	10	<10	40	25	320	2	10	9		
BJ 689	"	150	<10	70	20	360	2	5	45		
BJ 690	2.67	15	<10	40	15	200	2	5	16		
BJ 691	2.0	210	<10	50	10	280	<1	<2	10		
BJ 692	" 12	30	<10	70	15	240	1	5	18		
BJ 693	" cont	15	<10	70	15	210	1	2	25		
BJ 694	"	35	<10	55	15	170	1	2	10		
BJ 695	"	35	<10	50	15	140	<1	5	25		
BJ 696	"	50	<10	75	20	200	1	5	15		
BJ 697	"	110	<10	45	35	270	2	2	10		
BJ 698	"	100	<10	90	95	560	1	5	35		
BJ 699	1.5	0.27 %	<10	80	60	300	1	5	20		
BJ 700	2.0	65	<10	35	10	250	1	5	35		
BJ 701	"	35	<10	35	20	200	1	2	25		
BJ 702	-448 1.86 T.D.	10	<10	20	20	190	1	5	10		

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UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams

[redacted]EX[redacted]LSE[redacted]2344

Batch No.: F103-1 | Client: BHP COMPANY LIMITED, | Area Contact: DR. R. HINE

Address: P.O. BOX 559 CAMBERWELL VIC | Address: G.P.O. BOX 1140 L, HOBART TAS.

Date Received 17/06/81

Date Completed 03/08/81

Order No.: R700 - 000649 | Sample Type: SLUDGE | No. of Samples: 16

SAMPLE NO.		Cu	Ag	Sn
		m	m	m
		1	1	XRF 1A
BJ 703	11.00- 3.75	65	1	60
BJ 704	3.25	65	1	45
BJ 705	3.0	85	1	140
BJ 706	..	85	1	120
BJ 707	..	70	1	120
BJ 708	2.0	60	1	60
BJ 709	3.0	60	1	55
BJ 710	..	60	1	65
BJ 711	..	65	1	65
BJ 712	..	100	1	145
BJ 713	..	70	1	115
BJ 714	..	90	1	125
BJ 715	..	105	1	145
BJ 716	6.0	160	2	505
BJ 717	3.0	130	2	140
BJ 718	-4.48 2.48	250	3	110

Sludge

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Batch No.: F103 Client: BHP COMPANY LIMITED, Area Contact: DR. R. HINE
Address: P.O. BOX 559 Address: G.P.O. BOX 1140 L,
Date Received 10/06/81 CAMBERWELL HOBART TAS.
Date Completed 03/08/81 VIC

Order No.: R700 - 000649 Sample Type: D/CORE,SLDG,P/CH No. of Samples: 72

SAMPLE NO.	Cu	Pb	Zn	Ag	Mo	Sn	W	As	ELE
	m	m	m	m	m	m	m	m	UNI
	1	1	1	1	2	XRF 1A	XRF 1A	5-B	MET
BJ 543	75	30	310	2	5	120	10	75	
BJ 544	195	70	895	3	2	150	10	260	
BJ 545	380	140	760	5	<2	980	30	840	
BJ 546	730	75	0.14 %	5	2	580	20	0.60 %	
BJ 547	100	15	640	2	5	470	30	200	
BJ 548	360	25	0.11 %	2	2	775	20	0.24 %	
BJ 549	195	20	520	2	2	535	10	240	
BJ 550	75	20	380	2	2	225	10	35	
BJ 551	65	20	425	2	<2	255	10	60	
BJ 552	40	50	310	1	2	35	<10	20	
BJ 553	55	25	240	2	2	95	<10	200	
BJ 554	65	25	250	2	<2	210	10	25	
BJ 555	30	75	200	2	<2	40	<10	70	
BJ 556	30	20	100	2	2	40	<10	14	
BJ 557	295	140	310	4	2	0.25 %	<10	4	
BJ 558	125	0.10 %	0.14 %	5	2	0.23 %	10	4	
BJ 559	40	305	960	2	<2	225	<10	4	
BJ 560	90	210	520	2	2	205	<10	6	
BJ 561	245	195	400	4	2	495	<10	70	
BJ 562	490	100	0.11 %	4	5	0.13 %	10	6	
BJ 563	560	50	570	4	2	0.17 %	<10	0.32 %	
BJ 564	55	25	90	2	2	265	<10	35	
BJ 565	685	55	130	3	2	910	10	120	
BJ 566	865	180	480	8	5	0.26 %	10	25	
BJ 567	130	150	225	5	<2	310	<10	60	
BJ 568	230	320	495	5	2	0.16 %	<10	10	
BJ 569	25	45	475	2	<2	75	<10	6	
BJ 570	30	90	780	2	10	170	<10	2	
BJ 571	170	65	0.59 %	4	5	595	40	10	
BJ 572	390	240	0.67 %	8	<2	290	40	3	

UNITS LEGEND ------ m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Batch No.: F103 | Client: BHP COMPANY LIMITED, | Area Contact: DR. R. HINE
Address: P.O. BOX 559 | Address: G.P.O. BOX 1140 L,
Date Received 10/06/81 | CAMBERWELL | HOBART TAS.
Date Completed 03/08/81 | VIC

Order No.: R700 - 000649 | Sample Type: D/CORE,SLDG,P/CH | No. of Samples: 72

SAMPLE NO.	Cu	Pb	Zn	Ag	Mo	Sn	W	As	Au	EL UN ME
	m	m	m	m	m	m	m	m	b	
	1	1	1	1	2	XRF 1A	XRF 1A	5-B	120-A	
BJ 573	90	510	0.14 %	3	2	0.15 %	<10	15		
BJ 574	45	300	0.10 %	2	2	215	<10	2		
BJ 575	30	140	450	2	2	280	<10	8		
BJ 576	30	55	185	2	2	80	<10	4		
BJ 577	25	35	200	2	<2	55	<10	6		
BJ 578	30	25	135	2	2	85	<10	12		
BJ 579	30	25	130	2	<2	75	<10	16		
BJ 580	75	25	40	1	<2	410	<10	100		
BJ 581	25	10	25	1	2	95	<10	30		
BJ 582	70	5	25	1	<2	525	<10	65		
BJ 583	25	20	50	1	2	65	<10	20		
BJ 584	20	20	40	1	<2	70	<10	30		
BJ 585	40	215	0.16 %	1	<2	0.11 %	<10	25		
BJ 586	80	65	165	1	2	0.15 %	<10	120		
BJ 587	75	35	775	2	2	490	<10	0.62 %		
BJ 588	55	25	265	2	2	235	<10	260		
BJ 589	25	20	60	1	<2	80	<10	18		
BJ 590	100	55	100	2	<2	665	<10	140		
BJ 591	30	15	35	1	2	105	<10	7		
BJ 592	185	30	60	1	2	0.15 %	<10	160		
BJ 593	25	15	50	1	2	45	<10	14		
BJ 594	90	5	135	1	2	160	<10	75		
BJ 595	25	5	40	1	5	35	<10	12		
BJ 596	25	10	55	1	<2	25	<10	10		
BJ 597	75	10	40	1	<2	560	<10	25		
BJ 598	50	10	50	1	5	85	<10	8		
BJ 599	0.28 %	20	90	12	5	0.18 %	<10	100	25 ppb	
BJ 600	255	20	430	3	5	0.11 %	<10	200		
BJ 719	50	300	35	2	2	0.36 %	<10	540		
BJ 720	50	410	30	2	2	910	<10	400		

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Batch No.: E236-1 Client: BHP COMPANY LIMITED, Address: P.O. BOX 559 CAMBERWELL VIC

Area Contact: DR. R. HINE Address: G.P.O. BOX 1140 L, HOBART TAS.

Date Received 27/05/81
Date Completed 16/07/81

Order No.: R700 - 000648 Sample Type: SLUDGE No. of Samples: 62

SAMPLE NO.	Cu m 1	Ag m 1	Sn m XRF 1A		EL UN ME
BJ 614 21-24	135	1	0.18	%	
BJ 615	150	1	0.39	%	
BJ 616	150	2	0.16	%	
BJ 617	130	1	920		
BJ 618	210	1	0.23	%	
BJ 619	270	1	600		
BJ 620	130	<1	765		
BJ 621	160	1	650		
BJ 622	200	1	720		
BJ 623	190	2	0.12	%	
BJ 624	195	2	0.13	%	
BJ 625	175	1	0.12	%	
BJ 626 BPD11	125	1	825		
BJ 627 Sludges	100	2	685		
BJ 628	110	2	0.14	%	
BJ 629	540	3	0.16	%	
BJ 630	640	4	0.17	%	
BJ 631	0.10 %	4	0.24	%	
BJ 632	280	1	0.12	%	
BJ 633	400	3	790		
BJ 634	350	3	810		
BJ 635	280	2	0.10	%	
BJ 636	170	2	705		
BJ 637	165	2	590		
BJ 638	100	1	260		
BJ 639	230	2	835		
BJ 640	270	3	0.14	%	
BJ 641	120	2	975		
BJ 642	105	2	445		
BJ 643	480	2	0.15	%	

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: [signature]

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Batch No.: E236-1

Date Received 27/05/81
Date Completed 16/07/81

Client: BHP COMPANY LIMITED,
Address: P.O. BOX 559
CAMBERWELL
VIC

Area Contact: DR. R. HINE
Address: G.P.O. BOX 1140 L,
HOBART TAS.

Order No.: R700 - 000648 Sample Type: SLUDGE No. of Samples: 62

SAMPLE NO.	Cu	Ag	Sn	
	m	m	m	
	1	1	XRF 1A	
BJ 644	370	4	0.14	%
BJ 645	300	2	905	
BJ 646 12-126	360	3	0.12	%
BJ 647 126-132	140	2	875	
BJ 648	330	6	655	
BJ 649 11 Sludges	150	3	0.11	%
BJ 650	65	1	460	
BJ 651	80	1	285	
BJ 652	115	1	435	
BJ 653	110	1	470	
BJ 654	70	1	585	
BJ 655	80	<1	510	
BJ 656	90	1	445	
BJ 657	65	1	475	
BJ 658	80	1	515	
BJ 659	100	2	675	
BJ 660	70	1	265	
BJ 661	105	1	590	
BJ 662	360	2	0.14	%
BJ 663	85	1	284	
BJ 664	90	1	380	
BJ 665	380	2	600	
BJ 666	820	3	0.10	%
BJ 667	250	2	0.12	%
BJ 668	280	1	645	
BJ 669	100	<1	725	
BJ 670	110	1	665	
BJ 671	90	<1	370	
BJ 672	105	<1	240	
BJ 673	70	<1	305	

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

[redacted] FR76-1 [redacted] li[redacted] CO[redacted]NY [redacted]MIT[redacted] ea[redacted]ta[redacted] R.[redacted]NE [redacted]

Address: P.O. BOX 559
CAMBERWELL
VIC

Address: G.P.O. BOX 1140 L,
HOBART TAS.

Date Received 27/05/81
Date Completed 16/07/81

Order No.: R700 - 000648   Sample Type: SLUDGE   No. of Samples: 62

SAMPLE NO.	Cu	Ag	Sn	EL
	m	m	m	UN
	1	1	XRF 1A	ME
BJ 674	95	<1	745	
BJ 675 216-219.75	60	<1	235	

UNITS LEGEND ----- m - Parts per million   b - Parts per billion   % - percent
g - Grams   a - Absorbance

Signature: A.J. Finlayson

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[redacted] TELEX ALSEV 42344

ALS

Batch No.: F103 | Client: BHP COMPANY LIMITED, | Area Contact: DR. R. HINE
Address: P.O. BOX 559, CAMBERWELL, VIC | Address: G.P.O. BOX 1140 L, HOBART TAS.

Date Received 10/06/81

Date Completed 03/08/81

Order No.: R700 - 000649 | Sample Type: D/CORE,SLDG,P/CH | No. of Samples: 72

SAMPLE NO.	Cu	Pb	Zn	Ag	Mo	Sn	W	As	ELE
	m	m	m	m	m	m	m	m	UNI
	1	1	1	1	2	XRF 1A	XRF 1A	5-B	MET
BJ 721 [2.0]	55	640	25	1	2	730	<10	360	
BJ 722	470	0.14 %	95	4	2	0.29 %	10	0.24 %	
BJ 723	205	375	50	6	2	700	<10	0.11 %	
BJ 724	70	80	95	3	2	0.13 %	<10	840	
BJ 725 [26]	85	105	45	3	<2	0.65 %	20	560	
BJ 726 [dips]	65	65	35	2	<2	0.27 %	10	420	
BJ 727	60	40	45	2	<2	0.20 %	<10	400	
BJ 728	65	35	45	3	2	0.15 %	20	440	
BJ 729	50	20	70	2	<2	0.10 %	10	400	
BJ 730	40	25	40	2	2	0.15 %	<10	320	
BJ 731	50	40	30	2	<2	0.17 %	50	300	
BJ 732 [-28.0 TD]	50	30	35	2	2	0.17 %	40	480	

UNITS LEGEND ----- m - Parts per million   b - Parts per billion   % - percent [redacted] TELEX [redacted]

Batch No.: F173 | Client: BHP COMPANY LIMITED, | Area Contact: DR. R. HINE
Address: P.O. BOX 559 | Address: G.P.O. BOX 1140 L,
Date Received 23/06/81 | CAMBERWELL | HOBART TAS.
Date Completed 05/08/81 | VIC

Order No.: R700 - 005051 | Sample Type: PERC.CHIP,CORE | No. of Samples: 23

SAMPLE NO.	Cu	Pb	Zn	Ag	Mo	As	Sn	W	Au if	Au	ELEMENT
	m	m	m	m	m	m	m	m		b	UNITS
	1	1	1	1	2	5-B	XRF-1A	XRF-1A	Ag >10	120A	METHOD
BJ 733 0.0- 2.0	190	135	60	2	5	100	0.26 %	10			
BJ 734	100	220	50	2	5	25	0.14 %	20			
BJ 735	120	300	40	2	5	80	0.14 %	<10			
BJ 736	125	220	70	2	10	70	0.15 %	<10			
BJ 737	135	200	100	2	5	40 0.16	910	<10			
BJ 738	175	200	90	3	2	25	915	<10			
BJ 739	150	210	110	3	2	75	0.11 %	<10			
BJ 740	230	320	120	11	2	40	0.20 %	20	<0.1		
BJ 741	250	280	220	16	<2	385	0.14 %	<10	<0.1		
BJ 742 -19.0	300	175	350	>25 50	2	905	0.40 %	20	<0.1	50ppb	
BJ 601 194.4- 200	60	20	55	1	<2	70	365	10			
BJ 602	180	90	260	3	10	165	255	10			
BJ 603	30	30	115	1	2	30	55	10			
BJ 604	190	50	100	2	5	30	790	10			
BJ 605	110	130	270	3	5	10	330	30			
BJ 606	50	30	110	1	5	12	45	<10			
BJ 607	70	30	430	2	5	16	50	<10			
BJ 608	30	30	85	2	5	16	15	<10			
BJ 609	100	50	230	2	2	110	155	20			
BJ 610	40	30	340	1	2	150	175	<10			
BJ 611	60	25	80	2	<2	55	70	<10			
BJ 612	20	20	70	1	2	16	30	<10			
BJ 613	20	20	50	1	2	60	35	<10			

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

A [redacted]

tch No.: G096

te Received 13/07/81

te Completed 16/09/81

Client: BHP COMPANY LIMITED,
Address: P.O. BOX 559
CAMBERWELL
VIC

Area Contact: DR. R. HINE
Address: G.P.O. BOX 1140 L,
HOBART TAS.

der No.: T630 005057

Sample Type: CORE

No. of Samples: 23

MPLE NO.	Cu	Pb	Zn	Ag	Mo	As	Sn	W	Au	ELEMENT
	m	m	m	m	m	m	m	m	b	UNITS
	1	1	1	1	2	5-B	XRF 1A	XRF 1A	120-A	METHODS
743	185	260	260	10	5	35	415	30	10	
744	140	400	300	17	5	18	325	20	10	
745	110	270	155	9	5	35	255	10		
746	110	200	120	3	5	55	160	<10		
747	340	90	640	4	5	35	10	40		
748	290	190	680	5	5	275	5	80		
749	115	170	165	3	5	0.15 %	5	130		
750	100	75	390	5	5	435	5	100		
751	115	100	320	3	5	165	20	100		
752	220	120	300	4	5	405	280	40		
753	250	110	420	3	5	50	20	80		
754	580	130	900	3	5	50	5	80		
755	940	30	0.26 %	3	5	9	<5	40		
756	165	25	0.64 %	3	5	18	50	60		
757	420	20	580	12	20	18	820	10	5	
758	0.14 %	55	0.13 %	13	110	55	890	10	5	
759	900	90	960	3	5	50	185	20		
760	680	80	500	4	<5	210	425	20		
761	0.10 %	170	400	18	5	380	245	30	5	
762	960	240	260	16	5	0.11 %	415	20	<3	
763	700	175	160	12	5	415	0.12 %	20	3	
764	0.10 %	260	155	>25	<5	530	850	10	5	
765	960	230	155	13	5	335	960	10	3	

ITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature:

ALS [redacted]

atch No.: G151 Client: BHP COMPANY LIMITED, Area Contact: DR. R. HINE
Address: P.O. BOX 559 Address: G.P.O. BOX 1140 L,
ate Received 21/07/81 CAMBERWELL HOBART TAS. 7001
ate Completed 12/10/81 VIC 3124

rder No.: T630 - 005058 Sample Type: CORE,SLUDGE No. of Samples: 34

AMPLE NO.	Cu	Pb	Zn	Ag	Mo	As	Sn	W	Au	ELEMENT
	m	m	m	m	m	m	m	m	b	UNITS
	1	1	1	1	2	5-B	XRF 1A	XRF 1A	120-A	METHODS
J 766	720	720	150	21 26	5	390	0.14 %	20	3	
J 767	740	290	120	15 14	10	285	0.21 %	10	3	
J 768	560	820	65	4 5	5	410	0.33 %	20		
J 769	520	740	70	5	10	355	0.56 %	30		
J 770	580	0.14 %	150	>25 35	10	180	1.70 %	60	115	
J 771	0.14 .17 %	0.10 %	290	>25 32	5	935	0.34 %	30	3	
J 772	0.11 .13 %	0.17 %	230	21	5	190	0.34 %	20	35	
J 773	0.11 .14 %	370	500	>25 39	5	90	0.43 %	40	3	
J 774	740	320	620	4	5	85	0.15 %	20		
J 775	600	145	360	11 14	10	16	0.12 %	20	3	
J 776	680	55	420	4	5	180	790	30		
J 777	600	20	430	>25 32	5	40	0.12 %	20	3	
J 778	880	270	270	4	10	85	0.19 %	30		
J 779	800	240	210	23 25	10	395	0.14 %	20	135	
J 780	760	250	700	3	5	30	370	20		
J 781	>1.0 1.97 %	300	720	>25 53	10	490	0.32 %	10	10	
J 782	310	95	540	3	10	190	345	20		
J 783	580	75	560	6	10	0.10 %	310	20		
J 784	290	50	640	2	10	65	110	10		
J 785	600	200	600	5	10	195	390	20		
J 786	720	75	90	2	10	0.17 %	515	30		
J 787	660	70	70	1	5	330	185	10		
J 788	320	60	270	1	5	265	145	10		
J 789	260	100	480	1	2	25	20	<10		
J 790	640	60	740	1	5	40	50	10		
J 791	280	40	680	1	2	60	15	10		
J 792	700	35	460	1	2	55	75	20		
J 793	800	55	340	1	2	55	525	10		
J 794	780	100	250	1	5	185	130	10		
J 795	400	175	270	2	10	165	235	10		

801221

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

LABORATORY REPORT

07 255

TELEX ALSEV 42344

ALS

atch No.: G151 Client: BHP COMPANY LIMITED, Area Contact: DR. R. HINE

Address: P.O. BOX 559 Address: G.P.O. BOX 1140 L,

ate Received 21/07/81 CAMBERWELL HOBART TAS. 7001

ate Completed 12/10/81 VIC 3124

rder No.: T630 - 005058 Sample Type: CORE,SLUDGE No. of Samples: 34

AMPLE NO.	Cu	Pb	Zn	Ag	Mo	As	Sn	W	Au	ELEMENT
	m	m	m	m	m	m	m	m	b	UNITS
	1	1	1	1	2	5-B	XRF 1A	XRF 1A	120-A	METHODS
J 796	350	155	165	2	10	625	760	10		
J 797	660	60	140	2	5	655	200	10		
J 798	600	70	100	2	2	490	140	10		
J 347	70	30	45	3	5	805	740	30		

801222

JNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent

ALS TELEX ALSEV 42...

Batch No.: G151-1 Client: BHP COMPANY LIMITED, Area Contact: MR.D.A.CLARKE.
Address: P.O. BOX 559 Address:
Date Received 22/07/81 CAMBERWELL
Date Completed 12/10/81 VIC 3124

Order No.: 005058 Sample Type: SLUDGES No. of Samples: 46

SAMPLE NO.	Cu	Ag	Sn		ELEMENT
	m	m	m		UNITS
	1	1	XRF 1A		METHOD
BJ 799	85	3	455		
BJ 800	165	10	630		
BJ 801	160	5	465		
BJ 802	240	4	440		
BJ 803	240	3	450		
BJ 804	180	2	300		
BJ 805	190	3	280		
BJ 806	290	3	280		
BJ 807	640	3	385		
BJ 808	680	2	270		
BJ 809	840	8	645		
BJ 810	700	5	680		
BJ 811	680	9	525		
BJ 812	860	12	0.10 %		
BJ 813	940	17	910		
BJ 814	800	23	0.11 %		
BJ 815	760	9	0.14 %		
BJ 816	640	5	0.41 %		
BJ 817	960	>25 37	1.34 %		
BJ 818	880	>25 44	0.60 %		
BJ 819	660	>25 27	0.34 %		
BJ 820	720	20	0.21 %		
BJ 821	680	>25 54	0.25 %		
BJ 822	840	>25 32	0.18 %		
BJ 823	800	>25 29	0.24 %		
BJ 824	0.65 %	>25 31	0.20 %		
BJ 825	0.22 %	23	0.29 %		
BJ 826	920	6	0.12 %		
BJ 827	760	4	880		
BJ 828	600	7	675		

UNITS LEGEND ----- m - Parts per million b - Parts per billion % - percent
a - Absorbance

Batch No.: G151-1 | Client: BHP COMPANY LIMITED. | Area Contact: MR.D.A.CLARKE.

Address: P.O. BOX 559
CAMBERWELL
VIC 3124

Address:

Date Received 22/07/81
Date Completed 12/10/81

Order No.: 005058 | Sample Type: SLUDGES | No. of Samples: 46

SAMPLE NO.	Cu		Ag	Sn		ELEMENT
	m		m	m		UNITS
	1		1	XRF 1A		METHOD
BJ 829	680		6	980		
BJ 830	660		3	480		
BJ 831	480		3	600		
BJ 832	480		2	420		
BJ 833	540		5	850		
BJ 834	560		3	785		
BJ 835	520		3	470		
PSS 19	N.R.		N.R.	N.R.		
PSS 20	880		6	0.15	%	
PSS 21	680		7	0.12	%	
PSS 22 (diamond	0.34	%	>25 220	0.13	%	
PSS 23 saw sludge)	560		>25 62	420		
PSS 24	270		14	920		
PSS 25	380		10	280		
PSS 26	0.13	%	23	0.31	%	
PSS 27	800		8	670		

8011224

1 UNITS LEGEND ------ m - Parts per million b - Parts per billion % - percent
g - Grams a - Absorbance

Signature: [illegible]

[redacted]TE[redacted]V[redacted]44

Batch No.: C082 | Client: BHP COMPANY LIMITED, | Address: P.O. BOX 559 CAMBERWELL VIC

Area Contact: DR. R. HINE | Address: G.P.O. BOX 1140 L, HOBART TAS.

Date Received 11/03/81
Date Completed 06/04/81

Order No.: R700/500 - 000637 Sample Type: CORE,PERC.CHIPS No. of Samples: 182

SAMPLE NO.	Cu	Pb	Zn	Ag	As	Mo	Sn	W	ELE
	M	M	M	M	M	M	M	M	UNI
	1	1	1	1	5	2	XRF 1A	XRF 1A	METH
PSS 13	410	560	70	14 15	880	5	0.17 %	20	
PSS 14	49 0.48 %	0.18 %	240	>25 41	0.20 %	10	0.28 %	20	

UNITS LEGEND ----- m - Parts per million   b - Parts per billion   % - percent
g - Grams   a - Absorbance