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**ANNUAL REPORT OCEAN BEACH
STRAHAN TASMANIA**

EL 1/86

29.5.1988 TO 31.3.1989

REPORT No. : 307/113/89

TITLE : Annual Report Ocean Beach,
Strahan Tasmania

REPORTING PERIOD : 29.5.88 to 31.3.89

TENEMENT(S) : Exploration Licence 1/86

TENEMENT HOLDER : Aztec Mining Company Limited
99 Shepperton Road
Victoria Park WA 6100

LAND DISTRICT : Montague

MAPS : Sk 55-5 Queenstown 1:250,000
7913N Strahan 1:50,000

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DATE : March 1989

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1. SUMMARY

During the year data from the previous year's drilling were analysed and an attempt made to define the mineralogy of the deposit on Ocean Beach. Five composite samples, made up from the heavy mineral (HM) fractions obtained along the full length of the Ocean Beach deposit, were prepared and forwarded to Westralian Sands Ltd and to Analabs for mineralogical analysis. As a result, an Indicated Resource, in the order of 2.1 million tonnes grading around 9% HM (1.81% chromite, 0.80% ilmenite, 0.25% leucoxene, 0.50% leucoxene/rutile, 0.68% zircon and 0.03% monazite with 5% unsaleable species) has been defined along the beach and beneath the immediately adjacent dunes. As yet the composition of the ilmenite has not been determined. Based on present day spot prices the in ground value of the beach sands containing HMs is in the order of \$7.00/tonne.

A further 107 selected samples from the previous drilling in the dune sequence behind the beach were analysed for HM content. Results indicate that the Ocean Beach dunes average 0.5-1.5% HM with a possible enriched horizon several metres thick and grading over 2% HM intersected along the Old Lighthouse Road. These dunes therefore constitute a large volume of sand containing low grade HM (i.e. over 75 million tonnes at say 1% HM) with potential for higher grades in places.

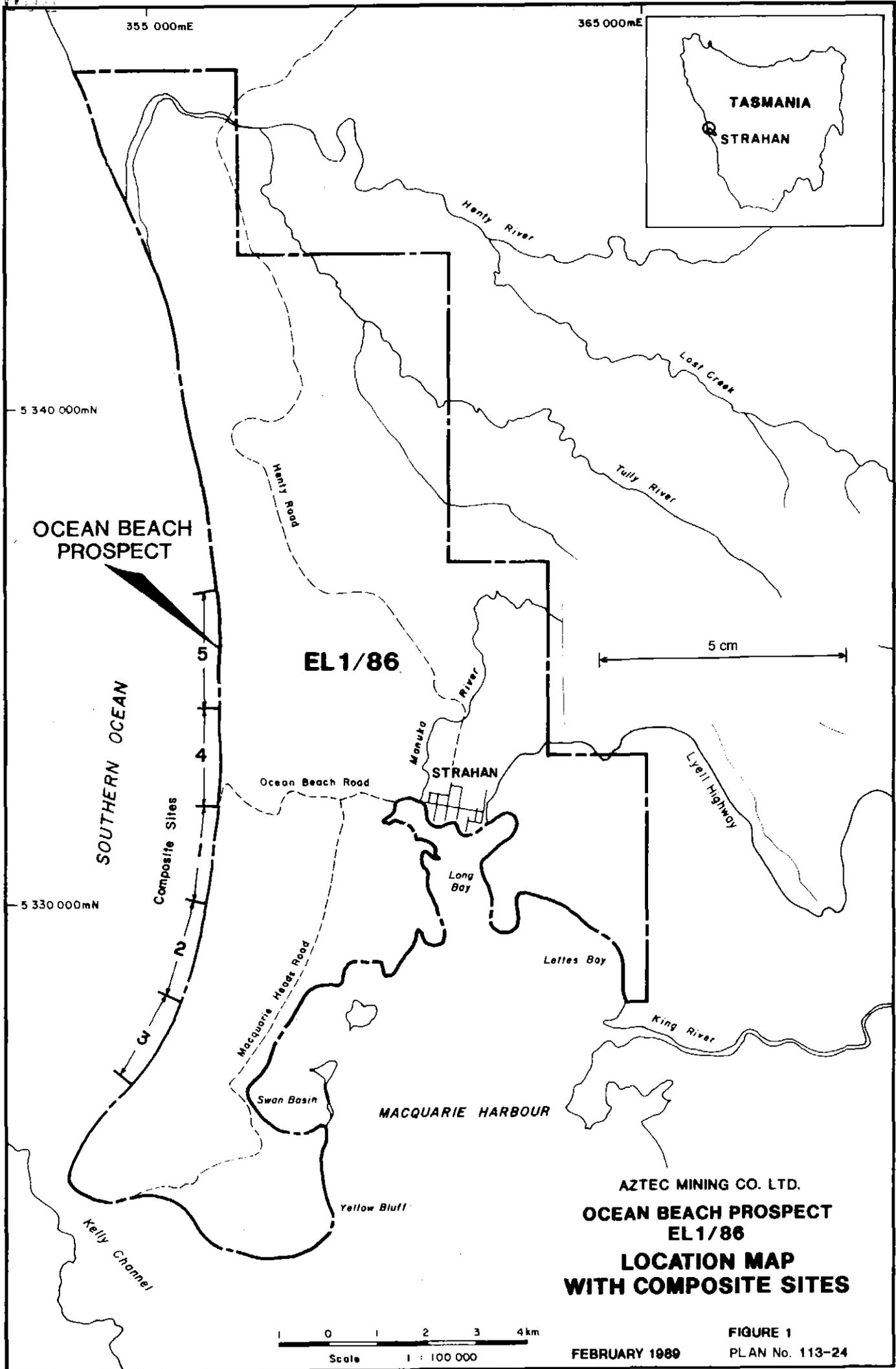
2. INTRODUCTION

The heavy mineral (HM) deposit on Ocean Beach has been explored by a number of companies over the past 20 years (see Woods 1987a). Following a review of colour air photography and a reconnaissance field trip in 1987 (Woods, 1987b) a drilling program was carried out in February 1988. A total of 180 holes and 2,632 metres were drilled with an air core rig and selected samples analysed for HM content.

Preliminary analysis of drill samples (Woods, 1988) indicates that there is potential for a HM deposit beneath the beach and immediately adjacent dunes of between 2.1 million tonnes (Mt) at 12.3% HM and 2.8 Mt at 9.6% HM. In addition, there appears to be potential for buried strand lines near Hole 163 on the Ocean Beach North Track, and near Holes 167 - 173 on the Old Lighthouse Road (see Plan No. 113-16). Drilling also indicates that the dunes behind the mineralised beach consistently grade over 0.5% HM and up to 1.5% HM.

The aim of work during the current year has been to analyse more data from previous drilling in an attempt to understand the mineralogy and stratigraphy of the area and in particular to:

- a. establish the mineralogy of the deposit on Ocean Beach; and
- b. determine the extent and grade of mineralisation inland from the beach.



AZTEC MINING CO. LTD.
OCEAN BEACH PROSPECT
EL1/86
LOCATION MAP
WITH COMPOSITE SITES

0 1 2 3 4km
 Scale 1 : 100 000

FIGURE 1
FEBRUARY 1989 PLAN No. 113-24

3. WORK UNDERTAKEN

3.1 Mineralogy of Ocean Beach Deposit

Five composites made up from the HM fractions obtained along the full length of the Ocean Beach deposit were prepared and forwarded to Westralian Sands Ltd and to Analabs. Each composite contained the HM fraction from the top two metres of 5 holes spaced 400 metres apart. Thus each sample represented a 2 kilometre stretch of beach (see Table 1 and Figure 1).

The composite samples sent to Westralian Sands Ltd were analysed in their laboratory at Capel. The results provide a clear picture of the HM species present, however, the Rapid Mineralization Analysis which utilises magnetic separation, heavy media separation, grain counting and XRF analysis was unable to distinguish between the more common HMs in the first magnetic fraction, notably ilmenite and garnet. XRF analysis of this fraction does not give a true idea of the composition of the ilmenite. Results of magnetic separation and grain counts are shown in Appendix 1 and in Table 2.

The first, second and non-magnetic fractions for each composite were returned by Westralian Sands and subsequently forwarded to Analabs for an estimate of mineral composition. This was done using a grain mount with determination of opaque minerals by SEM. Results are contained in Appendix 2.

3.2 Analysis

A further 107 selected samples were sent to Analabs at Burnie for drying and splitting. Splits were sent to Perth and analysed for % slimes and % HM. These samples were selected to test:

- a. the HM detected at depth in Hole 40 on Ocean Beach.
- b. the HM content of the Tully River Flat sands (i.e. Holes 70, 71).
- c. the extent of the HM intersection in Hole 163 on Ocean Beach North Track (i.e. Hole 164).
- d. the grade of the dunes inland on Ocean Beach Track (i.e. Hole 18).
- e. the inland extent of the HM intersection made in Holes 2, 26, 27 on Rubbish Tip Track (i.e. Hole 166).
- f. whether the HM intersected in Hole 167 on Old Lighthouse Road continued to the west (i.e. Hole 169, 171).
- g. the HM content of the dunes on Firebreak Track (i.e. Hole 43, 49).
- h. whether there was an enriched horizon at sea level beneath the dunes on Forestry Track (i.e. Holes 55, 57, 58).

The results are contained in Appendix 3 and displayed on Plans 113-17A to 113-20A-F.

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3.3 Environmental Considerations

Environmental considerations are important in this highly sensitive coastal strip and every effort was made during the approved exploration programme to minimise the impact of the activities on the environment.

A brief inspection of the dune around Hole 166, where a track had to be constructed to allow the drill rig to gain position, was made in January 1989. The track was constructed across a steep frontal dune with a rubber-tyred end loader and involved removing and stockpiling vegetation and topsoil before commencing earthworks. After the hole was drilled the dune surface was remoulded and the topsoil and vegetation replaced. The inspection, which was nearly 12 months after the rehabilitation, revealed that the disturbed area has:

- a. not blown out;
- b. started to revegetate, with bracken and groundcover establishing;
- c. not been subject to disturbance by foot or vehicle.

4. DISCUSSION

4.1 Mineralogy of the Ocean Beach Deposit

The results of the Rapid Mineralogical Analysis carried out by Westralian Sands, whilst giving an indication of the mineral species present, do not provide an indication of the content or composition of the ilmenite, due to contamination of the first magnetic fraction with chromite, garnet and pyroxenes. The grain count analyses carried out by Westralian Sands and Analabs do, however, confirm to a large extent the Rapid Mineralogical Analyses.

Results which are summarised in Tables 2 and 3 confirm that approximately 50-60% of the HM fraction, comprising mainly pyroxenes, garnets, tourmaline, and alunite and kyanite, is of no economic interest. Of the economic species, the major minerals in the magnetic fraction are ilmenite and chromite, with chromite dominant over ilmenite. The dominant mineral in the second magnetics is leucoxene, with the dominant non-magnetic minerals being leucoxene/rutile and zircon with minor monazite.

Table 4 combines the various results with the aim of providing a guide to the average grade, composition and hence "inground value" of the HM material along Ocean Beach. Based on this table the overall deposit grades around 9% HM and contains the following species:

1.81% chromite, 0.80% ilmenite, 0.25% leucoxene,
0.50% leucoxene/rutile, 0.68% zircon and 0.03% monazite.

Based on present day spot prices of ilmenite at \$80/tonne, leucoxene at \$80/tonne, leucoxene/rutile at \$500/tonne and zircon at \$500/tonne, the inground value of the HM material is in the order of \$7.00/tonne.

The deposit, as drilled, is 9,600 metres long, between 1 and 3 metres deep (to 3% HM cut off) and in the order of 50-100 metres wide. The deposit is exposed along the beach which averages 50 metres across. It is also evident from drilling (e.g. Plan 113-18) that the deposit extends at least 50 metres inland in places beneath low foredunes.

Based on dimensions of 9,600m x 2m x 75m the Indicated Resource along Ocean Beach is therefore in the order of 1.4 million cubic metres (or 2.1 million tonnes using an SG of 1.55) grading around 9% HM.

On the basis of work to date, it is clear that the actual width of the deposit needs to be established and the mineralogy and composition of the various mineral species confirmed.

4.2 Ocean Beach Dunes

Additional assaying of the dune sequence confirms that the dunes consistently grade between 0.5% HM and 1.5% HM (Plans 113-20A-F). Assaying also indicates that there are zones within the dune sequence that average over 2%.

On Ocean Beach Track North (Plan 113-20A), 3m at 2.6% HM was intersected in Hole 164, 200m in from the beach. This intersection probably correlates with the HM on the modern beach, but not with the intersection in Hole 163 at -8m RL*. Analyses confirm that the dunes average between 0.5-1.5% HM from the surface to 14m depth.

On Ocean Beach Road (Plan 113-20B) analyses merely confirm the grade of the dunes at between 0.3 and 1.9% HM from the surface to 14m depth. The intersection at -5m RL of 1m at 3% HM in Hole 18 does not correlate with the HM on the beach. There is no evidence therefore that the HM associated with the modern beach extends to Hole 17.

On Rubbish Tip Track (Plan 113-20D) 4m at 2.8% was intersected in Hole 166 at -5m RL. This also does not correlate with the HM on Ocean Beach. The upper part of this hole has, however, not been analysed. The dunes here grade 0.5-1.3% HM from the surface to 20m depth.

On the Old Lighthouse Road (Plan 113-20D) 2m at 2.5% HM was intersected in Hole 169 at +8m RL. This intersection may correlate with that in Hole 167 (i.e. 6m @ 2.5% at +12m RL) raising the possibility that an enriched horizon several metres thick and grading +2% HM lies beneath the dunes in this area. The dunes here grade consistently around 0.5-1.8% HM from the surface to 15-20m depth.

On Firebreak Track (Plan 113-20E) 4m at 10% HM was intersected in Hole 52, 25m in from the beach. This correlates with the HM on the beach, however, there is no evidence of a similar correlation in Hole 51. A 3m intersection at 2.3% HM was made in Hole 43 at +10m RL. Possibly this correlates with intersections made on the Old Lighthouse Road? The dunes here grade 0.5-1.4% HM from the surface to 10-16m depth.

On Forestry Track (Plan 113-20F) there is no evidence of an enriched horizon around present sea level though the dunes consistently grade 0.5-1.1% HM from the surface down to 20m depth.

* Note: RL means Relative Level and refers to levels, above and below approximate sea level which is 0.00m RL.

The results to date indicate that the Ocean Beach dune sequence contains an Inferred Resource in the order of 50 million cubic metres (5,000 metres long, 500-1,000 wide and 10-15 metres thick) of sand grading around 1% HM (0.5-1.5%). In addition, there is potential for higher grades (i.e. >2% HM) material within the sequence, particularly around the Old Lighthouse Road at an elevation of 8-12m RL.

4.3 Other Areas

The intersection at depth in Hole 40 on Ocean Beach proved disappointing with a maximum grade of 1.9% HM. Additional assaying confirmed the lack of significant HM concentrations in the Henty River flat sands.

4.4 Environmental Considerations

The disturbed frontal dune near Hole 166 is revegetating, indicating that the rehabilitation method is appropriate to the area, and that if any future tracks are required, successful rehabilitation of disturbed areas is possible.

5. CONCLUSIONS

The work done to date reveals the following:

a. Ocean Beach

An Indicated Resource in the order of 2.1 M t grading 9% HM has been defined along the beach and beneath the immediately adjacent dunes. As yet the actual width of the deposit and the composition of the ilmenite have not been determined. Further work is recommended.

b. Ocean Beach Dunes

Selected sampling indicates that the dunes average 0.5-1.5% HMs with a possible enriched horizon several metres thick and grading over 2% HM intersected along the Old Lighthouse Road. These dunes, therefore, constitute a large volume of sand containing low grade HM (i.e. around 75 million tonnes @ say 1%), with potential for higher grade material around the Old Lighthouse Road. Further work is recommended.

6. RECOMMENDATIONS

Ocean Beach

On the basis of results to date, work should be directed towards establishing:

- a. the width of the deposit. This will involve drilling transverse sections inland from the beach along cleared lines. An attempt should also be made to drill some holes as far west as possible to establish whether the HM layer continues beneath the swash zone.
- b. the mineralogy of the deposit and the composition of the various mineral species. The assistance of CSIRO, AMDEL or Mineral Deposits Ltd (Southport) or other similar organisations could be utilized to establish a method for obtaining clean separates of the various HM species so that the composition of each can be determined.

Ocean Beach Dunes

On the basis of results to date, work should be directed towards confirming the average grade of the dune sequence and delineating the enriched horizon along the Old Lighthouse Road. This will involve:

- i. submitting for analysis samples from Holes 157, 160, 165, 166, 168, 170, 172 & 174;
- ii. drilling intermediate holes along the track and on cleared cross lines.

Henty River

Samples from Hole 70 should be analysed for gold and other credit minerals in order to determine whether or not this area has any potential.

7. STATEMENT OF EXPENDITURE

The expenditure incurred during the period was \$25,983.

8. REFERENCES

SUMMONS, T.G. and OFFENBERG, A.C., 1985, First and Final Report, Exploration Licence 4/34, Strahan, Tasmania: Report for Newmont Holdings Pty Ltd, Melbourne, Victoria.

WOODS, P.J. 1987a, Annual Report for Department of Mines, Exploration Licence 1/86, Ocean Beach Strahan: Report for Aztec Exploration Ltd, Perth, WA.

WOODS, P.J. 1987b, Recommendation for Exploration Targets at Ocean Beach, Tasmania, Exploration Licence 1/86: Report for Aztec Exploration Ltd, Perth, WA.

WOODS, P.J. 1988, Annual Report - Ocean Beach, Strahan, Tasmania, EL 1/86: Report for Aztec Exploration Ltd, Perth, WA.

TABLE 1

OCEAN BEACH COMPOSITES

The five composites comprised the top 2 metres from the following holes. See Plan No. 113-17 and Figure 113-22 for locations.

		Average Grade HM
Composite 1	Holes 1-5	12.2%
Composite 2	Holes 6-10	12.5%
Composite 3	Holes 11-15	3.9%
Composite 4	Holes 30-34	9.0%
Composite 5	Holes 35-40	7.3%

TABLE 2

RAPID MINERALOGICAL ANALYSIS OF THE COMPOSITES
(SUMMARY FROM ANALYSIS DATA IN APPENDIX 1)
 (Westralian Sands Ltd preliminary only)

A. % HM Species in the HM Concentrates

Composite	1st Magnetic		2nd Magnetic mL%	Non-Magnetic			Others%
	*Cr%	Il%		nmL%	Zr%	Mon%	
1	17.1	10.3	3.6	4.4	5.7	.2	58
2	44.1	14.1	3.5	7.4	11.3	.5	19
3	18.8	11.2	4.3	7.1	8.3	.4	50
4	10.6	7.1	4.6	4.9	3.7	.3	67
5	12.4	5.7	3.8	4.0	3.6	.2	70
Average	20.6	9.7	4.0	5.6	7.6	0.3	53

B. % HM Species in the Original Sample

Composite	% HM in							
	Composite	Cr%	Il%	mL%	nmL%	Zr%	Mon%	Others%
1	12.2	2.08	1.26	.44	.54	.70	.02	7.1
2	12.1	5.51	1.76	.44	.93	1.41	.06	2.4
3	3.9	.73	.44	.17	.28	.32	.02	2.0
4	9.0	.95	.63	.41	.44	.33	.03	6.0
5	7.3	.91	.42	.28	.29	.26	.01	5.1
Average	8.9	2.04	0.90	0.35	0.50	0.60	0.03	4.5

*Note: Cr - Chromite
 Il = Ilmenite
 mL = magnetic Leucoxene
 nmL = non magnetic Leucoxene (and rutile)
 Zr = Zircon
 Mon = Monazite

TABLE 3

MINERALOGICAL ANALYSIS OF HM CONCENTRATES
(SUMMARY FROM ANALYSIS DATA IN APPENDIX 1)
 (Westralian Sands Ltd)

A. % HM Species in the HM Concentrates

Composite	Il/Cr%	mL%	nmL%	Ru%	Zr%	Mon%	Others%
1	21.2	2.4	2.6	2.3	8.0	.3	63
2	32.4	1.1	2.9	3.4	13.6	.5	49
3	29.7	2.0	2.6	4.0	9.8	.4	53
4	24.1	1.7	3.2	2.2	4.6	.3	66
5	19.0	1.6	2.7	1.7	4.5	.3	74
Average	25.3	1.8	2.8	2.7	8.1	.36	60

B. % HM Species in the Original Sample

Composite	% HM in Composite	Il/Cr%	mL%	nmL%	Ru%	Zr%	Mon%	Others%
1	12.2	2.58	.29	.32	.28	.98	.04	7.7
2	12.5	4.05	.14	.36	.43	1.70	.06	6.1
3	3.9	1.16	.08	.10	.16	.38	.02	2.1
4	9.0	2.17	.15	.29	.20	.41	.03	6.0
5	7.3	1.39	.12	.20	.12	.33	.02	5.4
Average	8.9	2.27	0.16	0.25	0.24	0.76	0.03	5.5

TABLE 4

COLLATION OF RESULTS AND ESTIMATE OF INGROUND VALUE

The average grade of HM from Rapid Mineralogical Analysis (from Table 2B) is:

	Cr%	Il%	mL%	nmL%	Ru%	Zr%	Mon%	Others%
A.	2.04	0.90	0.35	---0.5---		0.6	0.03	4.5

The average grade of HM from Mineralogical Analysis (from Table 3B) is:

B.	---2.27---		0.16	0.25	0.24	0.76	0.03	5.5
----	------------	--	------	------	------	------	------	-----

Using the Cr:Il ratio in A above, this equates to:

C.	1.58	0.69	0.16	0.25	0.24	0.76	0.03	5.5
----	------	------	------	------	------	------	------	-----

Combining A & C gives an average grade of HM species in the 5 composites as:

D.	1.81	0.80	0.25	0.25	0.25	.068	0.03	5.0
----	------	------	------	------	------	------	------	-----

Based on present day spot prices/tonne (in AUS\$) of:

E.		80	80	---500---		500	800	
----	--	----	----	-----------	--	-----	-----	--

The value of the HM species/tonne is:

F.		0.64	0.20	---2.50---		3.40	0.24	
----	--	------	------	------------	--	------	------	--

Combining D & F gives a total inground value of the HM material as \$6.98/tonne.

APPENDIX 1
MINERALOGICAL ANALYSES BY WESTRALIAN SANDS LTD

013
Comfoute 1

MINERALOGICAL BREAKUP

Sample: ASMANIA - STRAHAN Hm. Prospect 93288

Date: 8th JUNE 88

	Wt	% Wt	MAGNETIC	Ilm	Mag Leuc	N/Mag Leuc	Zirc	Mon	Others	Quartz	% Wt	
RAPID												
Magnetite		0.2	0.2								0.2	
1st Magnetics		72.3		42.6			0.1	0.1	29.5		72.3	
2nd Magnetics		2.8										
Non Magnetics		24.7										
		100.0										
HM SEPARATION												
Sinks		17.2										
Floats		7.5								7.5	7.5	
Und Magnetics		24.7										
		7.6			3.6		Trace	Trace	4.0		7.6	
COOK												
Magnetics 1.lamps		4.8										
Non Magnetics		12.4				4.4	5.6	0.1	2.3		12.4	
		17.2										
			0.2	42.6	3.6	4.4	5.7	0.2	35.8	7.5	100.0	
					ANALYSIS							
					TiO2	ZrO2	ZrSiO4	P2O5	Mon	Al2O3	SiO2	
					Magnetite							
					1st Mags ^{1st}	6.9	0.10	0.15	0.06	0.18	10.7	30.2
					Conductors							
					2nd Mags ^{2nd}	2.5	0.30	0.45	0.14	0.57	13.8	38.2
					Non Mags ^{3rd}	35.2	30.6	45.5	0.17	0.51	6.9	26.2
Magnetite	0.2											
Ilmenite												
Mag Leuc	3.6											
Non/Mag Leuc	4.4											
Zircon	5.7											
Monazite	0.2											
Others												
Quartz	7.5											
Total	100.0											
					COMMENTS							
					X.R.F Fe2O3 Nb2O5 Y2O3 ThO2 Cr2O3 CaO K MnO 20.6 0.08 0.01 0.01 11.6 4.0 0.01 0.72							

CHROMITE 17.1
TITANIFEROUS ? 10.2
OTHERS 51.0

P. 21

016 Composite 2

MINERALOGICAL BREAKUP

657017

Sample: TASMANIA - STRAHAN HM Prospect 93289

Date: 8th June 88.

	Wt	% Wt	Magnetite	Ilm	Mag Leuc	N/Mag Leuc	Zirc	Mon	Others	Quartz	% Wt
RAPID											
Magnetite		0.1	0.1								0.1
1st Magnetics		68.8		40.8			0.2	0.2	27.6		68.8
2nd Magnetics		2.5									
Non Magnetics		28.6									
		100.0									
HM SEPARATION											
Sinks		26.3									
Floats		3.3								3.3	3.3
		28.6									
2nd Magnetics		7.1			3.5		0.1	0.1	3.4		7.1
COOK											
Magnetics 1. lamps		4.6									
Non Magnetics		20.7				7.4	11.0	0.2	2.1		20.7
			0.1	40.8	3.5	7.4	11.3	0.5	33.1	3.3	100.0
ANALYSIS											
					TiO2	ZrO2	ZrSiO4	P2O5	Mon	Al2O3	SiO2
Magnetite											
1st Mags					8.2	0.21	0.31	0.08	0.24	12.2	28.0
Conductors											
Magnetite	0.1				2.8	0.60	0.89	0.36	1.1	12.8	36.1
Ilmenite					32.4	35.8	53.2	0.23	0.69	3.9	23.7
Mag Leuc	3.5										
Non/Mag Leuc	7.4										
Zircon											
Monazite											
Others											
Quartz										3.3	
Total										100.0	
COMMENTS											
<p>XXXX K_{203} Nb_{205} Y_{203} Th_{02} Ca_{203} Co K MnO 23.0 0.08 0.22 0.01 30.0 3.6 0.22 1.1</p>											

CHAONITE 44.1
 Ti - ? 14.1
 OTHERS 15.7

106.68

017. Composite 3

MINERALOGICAL BREAKUP

657018

Sample: TASMANIA - STRAHAN HM PROSPECT 92290

Date: 8th June 88.

	Wt	% Wt	measure	Ilm	Mag Leuc	N/Mag Leuc	Zirc	Mon	Others	Quartz	% Wt	
RAPID												
Magnetite		0.2	0.2								0.2	
1st Magnetics		70.7		42.7			0.1	0.2	27.7		70.7	
2nd Magnetics		2.9										
Non Magnetics		26.2										
		100.0										
HM SEPARATION												
Sinks		24.3										
Floats		1.9								1.9	1.9	
		26.2										
2nd Magnetics		9.3			4.3		0.1	0.1	4.8		9.3	
COOK												
Magnetics 1.lamps		6.4										
Non Magnetics		17.9				7.1	8.1	0.1	2.6		17.9	
		24.3										
			0.2	42.7	4.3	7.1	8.3	0.4	35.1	1.9	100.0	
ANALYSIS												
					TiO2	ZrO2	ZrSiO4	P2O5	Mon	Al2O3	SiO2	
Magnetite												
1st Mags					6.5	0.10	0.15	0.09	0.27	9.8	29.5	
Conductors												
Magnetite	0.2			2nd Mags	4.2	2.9	0.51	0.76	0.36	1.1	12.2	39.9
Ilmenite				Non Mags	17.7	34.5	3.4	45.2	0.27	0.81	5.2	23.8
Mag Leuc	4.3			COMMENTS X.R.F Fe2O3 Nb2O5 Y2O3 ThO2 Cr2O3 CaO K MnO 20.4 0.08 0.02 0.01 12.8 4.3 0.02 0.79 24.59								
Non/Mag Leuc	7.1											
Zircon	8.3											
Monazite	0.4											
Others												
Quartz	1.9											
Total	100.0											

CHROMITE 19.8
Ti-? 11.2
OTHERS 47.8

018

Composite 4

MINERALOGICAL BREAKUP

657019

Sample: TASMANIA - STRAHAN HM Prospect 93291

Date: 8th June 88

	Wt	% Wt	Magnetite	Ilm	Mag Leuc	N/Mag Leuc	Zirc	Mon	Others	Quartz	% Wt
RAPID											
Magnetite		0.1	0.1								0.1
1st Magnetics		75.0		39.7			0.1	0.1	35.1		75.0
2nd Magnetics		3.6									
Non Magnetics		21.3									
		100.0									
HM SEPARATION											
Sinks		18.7									
Floats		2.6								2.6	2.6
		21.3									
2nd Magnetics		10.5			4.6		0.1	0.1	5.7		10.5
COOK											
Magnetics 1.1amps		6.9									
Non Magnetics		11.8				4.9	3.5	0.1	3.3		11.8
		18.7									
			0.1	39.7	4.6	4.9	3.7	0.3	44.1	2.6	100.0
ANALYSIS											
					TiO2	ZrO2	ZrSiO4	P2O5	Mon	Al2O3	SiO2
			Magnetite								
			1st Mags ^{53.9}		4.1	0.04	0.06	0.06	0.18	10.8	36.0
			Conductors								
			2nd Mags ^{43.8}		2.5	0.37	0.55	0.21	0.62	14.1	41.5
			Non Mags ^{4.1}		38.9	20.2	30.0	0.25	0.75	11.6	25.7
			Magnetite		0.1						
			Ilmenite								
			Mag Leuc		4.6						
			Non/Mag Leuc		4.9						
			Zircon		3.7						
			Monazite		0.3						
			Others								
			Quartz		2.6						
			Total		100.0						
COMMENTS											
<p>Fe₂O₃ Nb₂O₅ Y₂O₃ ThO₂ P₂O₅ CaO K₂O MnO 20.2 0.08 0.01 0.01 7.2 4.8 0.22 0.67</p>											

CHROME 10.6
 Ti-? 7.1
 OTHERS 66.1

019 Composite S.

MINERALOGICAL BREAKUP

657020

Sample: TASMANIA - STRAHAN HM PROSPECT 93292

Date: 8TH JUNE 88.

	Wt	% Wt	MAGNETITE	Ilm	Mag Leuc	N/Mag Leuc	Zirc	Mon	Others	Quartz	% Wt	
RAPID												
Magnetite		0.1	0.1								0.1	
1st Magnetics		76.3		46.3			16	0.1	35.9		76.3	
2nd Magnetics		2.8										
Non Magnetics		20.8										
		100.0										
HM SEPARATION												
Sinks		17.0										
Floats		3.8								3.8	3.8	
		20.8										
2nd Magnetics		8.8			3.8		16	16	5.0		8.8	
COOK												
Magnetics 1.1amps		6.0										
Non Magnetics		11.0				4.0	3.6	0.1	3.3		11.0	
		17.0										
			0.1	40.3	3.8	4.0	3.6	0.2	44.2	3.8	100.0	
						ANALYSIS						
						TiO2	ZrO2	ZrSiO4	P2O5	Mon	Al2O3	SiO2
			Magnetite									
			1st Mags ^{52.2}		3.3	0.02	0.03	0.05	0.15	10.8	36.2	
			Conductors									
			Magnetite									
			2nd Mags ^{43.2}		1.9	0.19	0.28	0.18	0.54	14.4	42.1	
			Ilmenite									
			Non Mags ^{26.4}		33.5	22.1	32.9	0.29	0.87	12.7	27.7	
			Mag Leuc		3.8							
			Non/Mag Leuc			4.0						
			Zircon				3.6					
			Monazite					0.2				
			Others									
			Quartz							3.8		
			Total								100.0	
						COMMENTS						
						Fe ₂ O ₃ 19.4 Nb ₂ O ₅ 0.08 Y ₂ O ₃ 0.01 ThO ₂ 0.01 P ₂ O ₅ 8.4 CaO 4.9 K ₂ O 0.22 MnO 0.58						

CHROMITE 12.4
 Ti-? 5.7
 OTHERS 66.4

8387

WESTRALIAN SANDS LIMITED

MINERALOGICAL ANALYSIS OF HEAVY MINERAL

Date 6.5.88

Signed [Signature]

Brentt

SAMPLE DESCRIPTION 43288 STRAHAN HM PROJECT - TASMANIA

413

NETITE 0.3%

Rapid Magnetic Breakup 78.2 % 1st Mags 8.2 % 2nd Mags 13.4 % N/Mags

92.5 % H.M.

Cook Magnetic Breakup % 1st Mags % 2nd Mags % N/Mags

Size Fraction	Wt. %	Weight %										Distribution %											
		ILLMENITE		Mag. Leuc.	Non Mag. Leuc.	Rutile	Zircon	Mon.	Others			ILLMENITE		Mag. Leuc.	Non Mag. Leuc.	Rutile	Zircon	Mon.	Others				
		Clean	Coated						1st Mags.	2nd Mags.	Non Mags.	Clean	Coated						1st Mags.	2nd Mags.	Non Mags.		
+ 212	0.4	Tr							0.4			Tr							1.0				
212 + 180	1.0	0.1		Tr	Tr	Tr	Tr		0.7	0.1	0.1	Tr		Tr	Tr	Tr	Tr		1.0	2.0	6.0		
180 + 150	7.1	0.3		0.1	0.3	0.1	0.1	Tr	5.3	0.7	0.2	2.0		4.0	12.0	4.0	1.0		9.0	12.0	12.0		
150 + 125	19.9	0.6		0.7	0.7	0.1	0.2	Tr	14.9	2.1	0.6	3.0		29.0	27.0	5.0	3.0		25.0	37.0	35.0		
125 + 106	37.2	4.3		0.9	1.0	0.8	1.0	Tr	26.4	2.2	0.6	23.0		38.0	38.0	36.0	15.0		44.0	38.0	35.0		
106 + 75 75	34.2	13.6		0.7	0.6	1.2	5.5	0.2	11.6	0.6	0.2	72.0		29.0	23.0	55.0	81.0		20.0	11.0	12.0		
HEAD (Calc.)	99.8	18.9	Tr	2.4	2.6	2.2	6.8	0.2	59.3	5.7	1.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		
NERAL S.G.'s USED		4.4	4.4	4.0	3.9	4.2	4.6	5.3	3.7	3.7	3.7	Quartz As Weighed											
CORRECTED SAMPLE		21.2	Tr	2.4	2.6	2.3	8.0	0.3	56.0	5.4	1.6	7.5											

REMARKS: 1ST Mags: Coatings - minor Fe Oxide staining, trace leucorene. Others - pyroxenes, garnet, tourmaline, spinel, staurolite, laterite, traces of epidote and hornblende.

2ND Mags: Coatings - common Fe Oxide staining and rare patches. Others - pyroxenes, tourmaline, spinel, garnet, laterite and traces of rutile.

Non Mags: Coatings - trace Fe Oxide staining. Others - andalusite, traces of tourmaline, kyanite and cassiterite.

657021

WESTRALIAN SANDS LIMITED

MINERALOGICAL ANALYSIS OF HEAVY MINERAL

Date 19 07 88

Signed [Signature]

SAMPLE DESCRIPTION 93289 STRAHAN HM PROSPECT - TASMANIA

415

MAGNETITE 0.1%

Rapid Magnetic Breakup 71.2 % 1st Mags 7.3 % 2nd Mags 21.4 % N/Mags

Cook Magnetic Breakup % 1st Mags % 2nd Mags % N/Mags

96.6 % H.M.

0
②

Size Fraction	Wt. %	Weight %										Distribution %										
		ILMENITE / CHROMITE		Mag. Leuc.	Non Mag. Leuc.	Rutile	Zircon	Mon.	Others			ILMENITE / CHROMITE		Mag. Leuc.	Non Mag. Leuc.	Rutile	Zircon	Mon.	Others			
		Clean	Coated						1st Mags.	2nd Mags.	Non Mags.	Clean	Coated						1st Mags.	2nd Mags.	Non Mags.	
+ 212	0.2	0.1							0.1			Tr							Tr			
- 212 + 180	0.6	0.1			Tr	Tr	Tr		0.3		Tr	Tr		Tr	Tr	Tr			1.0		Tr	
- 180 + 150	4.3	0.3		Tr	0.2	0.1	0.1	Tr	2.9	0.6	0.2	1.0		Tr	7.0	3.0	1.0		7.0	10.0	7.0	
- 150 + 125	15.3	2.0		0.1	0.6	0.2	0.1	Tr	9.8	2.0	0.5	7.0		9.0	20.0	6.0	1.0		24.0	33.0	17.0	
- 125 + 106	34.5	7.3		0.3	1.4	0.6	2.1	Tr	18.9	2.7	1.2	25.0		27.0	47.0	18.0	17.0		46.0	44.0	41.0	
- 106 + 75 - 75	45.1	20.0		0.7	0.8	2.4	9.6	0.4	9.2	0.8	1.0	67.0		64.0	26.0	73.0	81.0		22.0	13.0	35.0	
HEAD (Calc.)	99.9	29.8		1.1	3.0	3.3	11.9	0.4	41.2	6.1	2.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
MINERAL S.G.'s USED		4.4	4.4	4.0	3.9	4.2	4.6	5.3	3.7	3.7	3.7	Quartz As Weighed										
CORRECTED SAMPLE		32.4		1.1	2.9	3.4	13.6	0.5	37.7	5.6	2.7	3.4										

REMARKS: 1st Mags: Coatings - minor Fe Oxide, trace clay. Others - pyroxenes, garnet, spinel, tourmaline, traces of epidote, monazite (0.1%) and Zircon

2nd Mags: Coatings - rare Fe Oxide. Others - pyroxenes, tourmaline, garnet, spinel, traces of epidote and andalusite.

Non Mags: Coatings - trace Fe Oxide staining. Others - andalusite, pyrite, kyanite, leucite, monazite (0.2%), traces of tourmaline and cassiterite.

657022

WESTRALIAN SANDS LIMITED

MINERALOGICAL ANALYSIS OF HEAVY MINERAL

Date 12-07-86

Signed [Signature]

SAMPLE DESCRIPTION 93290 STRAHAN HM PROSPECT - TASMANIA

410



MALNETITE 0.2%

Rapid Magnetic Breakup 72.1 % 1st Mags 9.5 % 2nd Mags 18.2 % N/Mags 98.1 % H.M.
 Cook Magnetic Breakup % 1st Mags % 2nd Mags % N/Mags

Size Fraction	Wt. %	Weight %									Distribution %												
		ILMENITE / CHROMITE		Mag. Leuc.	Non Mag. Leuc.	Rutile	Zircon	Mon.	Others			ILMENITE / CHROMITE		Mag. Leuc.	Non Mag. Leuc.	Rutile	Zircon	Mon.	Others				
									1st Mags	2nd Mags	Non Mags.	Clean	Coated						1st Mags	2nd Mags	Non Mags.		
+ 212	0.7	Tr		Tr	Tr		Tr			0.2	0.1	0.4	Tr		Tr	Tr		Tr			Tr	2.0	13.0
- 212 + 180	0.3	Tr		Tr	Tr	Tr	Tr			0.2	Tr	0.1	Tr		Tr	Tr	Tr	Tr			Tr	Tr	3.0
- 180 + 150	2.5	0.2		0.1	0.2	Tr	Tr			1.6	0.3	0.1	1.0		5.0	7.0	Tr	Tr			4.0	4.0	3.0
- 150 + 125	11.0	1.3		0.3	0.5	Tr	0.1	Tr		6.6	1.7	0.5	5.0		15.0	19.0	Tr	1.0			15.0	23.0	16.0
- 125 + 106	33.4	4.4		0.5	1.3	0.4	0.4	Tr		21.2	4.1	1.1	16.0		25.0	48.0	11.0	5.0			47.0	55.0	36.0
- 106 + 75 - 75	51.9	21.1		1.1	0.7	3.4	8.0	0.3		15.3	1.2	0.9	78.0		55.0	26.0	89.0	94.0			34.0	16.0	29.0
HEAD (Calc.)	99.8	27.0		2.0	2.7	3.8	8.5	0.3		45.0	7.4	3.1	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
MINERAL S.G.'s USED		4.4	4.4	4.0	3.9	4.2	4.6	5.3	3.7	3.7	3.7	Quartz As Weighed											
CORRECTED SAMPLE		29.7		2.0	2.6	4.0	9.8	0.4	41.6	6.8	2.9	1.9											

REMARKS: 1st Mags: Coatings - minor Fe Oxide staining and patches. Others - pyroxenes, garnet, spinel, tourmaline and trace muscovite (0.1%).
2nd Mags: Coatings - minor Fe Oxide staining and patches. Others - pyroxenes, tourmaline, garnet, spinel, traces of kyanite and epidote.
Non Mags: Coatings - rare Fe Oxide staining. Others - andalusite, sulphides, laterite, tourmaline, traces of kyanite, biotite and cassiterite.

657023

WESTRALIAN SANDS LIMITED

MINERALOGICAL ANALYSIS OF HEAVY MINERAL

Date 8.07.88

Signed [Signature]

SAMPLE DESCRIPTION 93291 STRAHAN 11M PROJECT - TASMANIA

411

MAGNETITE 0.1% Rapid Magnetic Breakup 77.0 % 1st Mags 10.8 % 2nd Mags 12.1 % N/Mags
 Cook Magnetic Breakup % 1st Mags % 2nd Mags % N/Mags 97.4 % H.M.

Size Fraction	Wt %	Weight %										Distribution %									
		ILMENITE / CHROMITE		Mag. Leuc.	Non Mag. Leuc.	Rutile	Zircon	Mon.	Others			ILMENITE / CHROMITE		Mag. Leuc.	Non Mag. Leuc.	Rutile	Zircon	Mon.	Others		
		Clean	Coated						1st Mags.	2nd Mags.	Non Mags.	Clean	Coated						1st Mags.	2nd Mags.	Non Mags.
+ 212	0.2	Tr							0.2			Tr							Tr		
- 212 + 180	1.0	0.1		Tr	Tr	Tr	Tr		0.7	0.1	0.1	Tr		Tr	Tr	Tr	Tr		1.0	1.0	3.0
- 180 + 150	10.1	0.8		0.2	0.4	Tr	Tr		7.0	1.3	0.3	4.0		12.0	13.0	Tr	Tr		13.0	15.0	10.0
- 150 + 125	27.5	3.1		0.5	0.8	0.1	0.1	Tr	18.8	3.3	0.9	14.0		24.0	25.0	5.0	3.0		34.0	37.0	24.0
- 125 + 106	36.2	5.7		0.5	1.6	0.4	0.4	Tr	22.9	3.7	1.0	27.0		24.0	50.0	20.0	10.0		41.0	42.0	32.0
- 106 + 75 - 75	24.9	11.7		0.5	0.4	1.5	3.4	0.1	6.0	0.5	0.8	55.0		30.0	12.0	75.0	87.0		11.0	5.0	26.0
HEAD (Calc.)	99.9	21.4		1.7	3.2	2.0	3.9	0.2	55.6	8.8	3.1	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
MINERAL S.G.'s USED		4.4	4.4	4.0	3.9	4.2	4.6	5.3	3.7	3.7	3.7	Quartz As Weighed									
CORRECTED SAMPLE		24.1		1.7	3.2	2.2	4.6	0.3	52.6	8.3	2.9	2.6									

REMARKS: 1st Mags: Coatings - trace Fe Oxide staining Others - pyroxenes, tourmaline, garnet, spinel, laterite, traces of muscovite and zircon.
2nd Mags: Coatings - trace Fe Oxide staining Others - pyroxenes, tourmaline, garnet, spinel and laterite.
Non Mags: Coatings - minor Fe Oxide staining Others - andalusite, tourmaline, laterite, spinel, traces of kyanite, muscovite and cassiterite.

657024

WESTRALIAN SANDS LIMITED

MINERALOGICAL ANALYSIS OF HEAVY MINERAL

Date 7-07-80

Signed [Signature]

SAMPLE DESCRIPTION 93292 STRAHAN HM PROSPECT - TASMANIA

412

MINERALS: TRACE

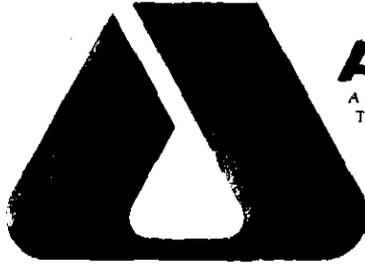
Rapid Magnetic Breakup 79.3 % 1st Mags 4.2 % 2nd Mags 11.4 % N/Mags 90.2 % H.M.
 Cook Magnetic Breakup % 1st Mags % 2nd Mags % N/Mags

Size Fraction	Wt %	Weight %										Distribution %									
		ILMENITE / LABRADORITE		Mag. Leuc.	Non Mag. Leuc.	Rutile	Zircon	Mon.	Others			ILMENITE / LABRADORITE		Mag. Leuc.	Non Mag. Leuc.	Rutile	Zircon	Mon.	Others		
									1st Mags.	2nd Mags.	Non Mags.								1st Mags.	2nd Mags.	Non Mags.
Microns		Clean	Coated								Clean	Coated									
+ 212	1.0	0.1	Tr		Tr	Tr	Tr		0.8		0.1	Tr			Tr	Tr	Tr		1.0		3.0
- 212 + 180	2.5	0.3	Tr	Tr	0.1	Tr	Tr		1.8	0.2	0.1	2.0		Tr	4.0	Tr	Tr		3.0	3.0	3.0
- 180 + 150	16.0	1.5	0.1	0.2	0.4	0.1	0.1		11.6	1.5	0.5	4.0		12.0	15.0	6.0	3.0		19.0	20.0	16.0
- 150 + 125	30.3	3.0	Tr	0.6	1.0	0.2	0.2	Tr	21.6	3.0	0.7	18.0		38.0	37.0	13.0	5.0		35.0	39.0	22.0
- 125 + 106	32.0	6.5	Tr	0.5	0.9	0.4	0.7	Tr	19.3	2.5	1.2	39.0		31.0	33.0	25.0	18.0		31.0	33.0	37.0
- 106 + 75 - 75	18.1	5.3	Tr	0.3	0.3	0.9	2.8	0.2	7.3	0.4	0.6	32.0		14.0	11.0	56.0	74.0		11.0	5.0	19.0
HEAD (Calc.)	99.9	16.7	0.1	1.6	2.7	1.6	3.8	0.2	62.4	7.6	3.2	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
MINERAL S.G.'s USED		4.4	4.4	4.0	3.9	4.2	4.6	5.3	3.7	3.7	3.7	Quartz As Weighed									
CORRECTED SAMPLE		19.0	0.1	1.6	2.7	1.7	4.5	0.3	59.6	7.3	3.1	3.8									

REMARKS: 1st Mags: Coatings - common Fe Oxide staining. Others - pyroxenes, garnet, spinel, tourmaline, staurolite, laterite and monazite (0.1%).
2nd Mags: Coatings - occasional Fe Oxide staining. Others - pyroxenes, tourmaline, garnet, spinel, traces of zircon, staurolite, epidote and xenotime.
Non Mags: Coatings - rare Fe Oxide staining. Others - andalusite, kyanite, traces of monazite (0.1%), tourmaline and laterite.

657025

APPENDIX 2
GRAIN COUNT ANALYSES BY ANALABS

**ANALABS**

A division of Incharge Inspection and
Testing Services, Australia, Pty. Ltd.

Perth Head Office:

52 Murray Road, Welshpool, Western Australia 6106.
Tel: (09) 458 7999. Telex: AA92560. Fax: (09) 458 2922.
P.O. Box 210 Bentley, W.A. 6102.

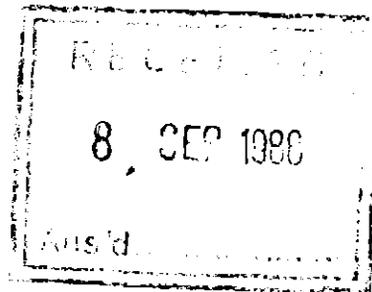
6 September 1988

Bryan Smith
Aztec Exploration Ltd
99 Shepperton Road
PO Box 585
VICTORIA PARK WA 6100

OUR REF : 1000.0.07.529
YOUR REF : 2201/113

Estimated Weight Percentage Distribution of Minerals in
Fifteen Samples of Tasmanian Heavy Mineral Sands.

MARGARET HALL



1. INTRODUCTION

Fifteen fractions from magnetic separation of heavy mineral sands from Tasmania were submitted for an estimate of mineral composition. This was done using a grain mount with determination of opaque minerals by S.E.M. The weight of each fraction was also requested.

2. Results2.1 Weight of Samples Submitted

<u>Composite</u>	<u>Sample No. & Description</u>	<u>Weight</u>	<u>%</u>
93288 Composite 1. <i>Notes</i> 1-5 17.2% HM	1st Magnetics	56.75 g	37.4
	2nd Magnetics	31.60 g	20.0
	Non - Magnetics	63.25 g	41.7
93289 Composite 2. 6-10 25.3% HM	6129 1st Magnetics	57.85 g	34.4
	6130 2nd Magnetics	24.10 g	14.3
	6131 Non - Magnetics	86.19 g	51.3
93290 Composite 3. 11-15 24.3% HM	6132 1st Magnetics	11.73 g	26.7
	6133 2nd Magnetics	8.88 g	20.2
	6134 Non - Magnetics	23.26 g	53.0
93291 Composite 4. 30-34 18.7% HM	6135 1st Magnetics	37.51 g	42.0
	6136 2nd Magnetics	23.21 g	26.0
	6137 Non - Magnetics	28.60 g	32.0
93292 Composite 5. 35-40 17.0% HM	6138 1st Magnetics	35.40 g	44.2
	6139 2nd Magnetics	18.57 g	23.2
	6140 Non - Magnetics	26.05 g	32.6

08

17.2% HM.2.2 Estimated Weight Percentage Distribution of Minerals93288 Composite 1. 1st Magnetics

37.4%

37%

Opagues	40 - 50%	(Chromite > Ilmenite)
Pyroxene	30 - 40%	(Orthopyroxene > Clinopyroxene)
Garnet	15 - 20%	(Almandine)
Tourmaline	2 - 4 %	
Epidote	tr - <1	
Zircon	tr	

93288 Composite 1. 2nd Magnetics~~37.4%~~ 20.8%

20%

Opagues	20 - 25%	(Ilmenite/Leucoxene > Chromite)
Pyroxene	30 - 40%	(Clinopyroxene > Orthopyroxene)
Tourmaline	~ 25%	
Garnet	~ 10%	
Staurolite	< 5%	
Epidote	~ 1%	
Monazite	~ 1%	
Clinozoiwite	< 1	
Actinolite	< 1	
Andalusite	tr	
Zircon	tr	
Quartz	tr	

93288 Composite 1. Non - Magnetics

41.7%

41%

Opagues	50 - 60%	(Leucoxene *)
Zircon	~ 25%	
Topaz	5 - 10%	
Andalusite	< 5%	
Rutile	2 - 4%	
Kyanite	2 - 4%	
Quartz/feldspar	2 - 4%	
Monazite	< 1%	
Tourmaline	tr- <1%	
Diopside	<1%	

079

93289 Composite 2 - 6129 1st Magnetics

Opagues	~50%	(Ilmenite/Leucoxene>Chromite)
Garnet	20 - 25%	
Pyroxene	15 - 20%	(Mainly orthopyroxene)
Tourmaline	<5%	
Spinel	<5%	
Epidote	<1%	
Hornblende	<2%	
Clinozoisite	<2%	
Feldspar	<1%	
Zircon	tr	

93289 Composite 2 - 6130 2nd Magnetics

Opagues	~20%	(Ilmenite ~ chromite>leucoxene)
Pyroxene	~40%	(Clinopyroxene>Orthopyroxene)
Tourmaline	~25%	
Garnet	~10%	
Epidote	<1%	
Actinolite	<1%	
Topaz	tr	
Zircon	tr	

93289 Composite 2 - 6131 Non Magnetics

Opagues	25 ~ 30%	(Leucoxene *)
Zircon	50 - 60%	
Andalusite	4 - 6%	
Topaz	2 - 4%	
Rutile	2 - 4%	
Monazite	< 3%	
Tourmaline	~ 1%	
Kyanite	< 1%	
Sillimanite	< 1%	
Corundum	< 1%	

93290 Composite 3 - 6132 1st Magnetics

Opagues	50 ~ 60%	(Chromite>Ilmenite>Leucoxene)
Pyroxene	10 - 15%	
Garnet	20 - 25%	
Tourmaline	< 5%	
Spinel	~ 2%	
Staurolite	~ 1%	
Monazite	< 1%	
Epidote	tr	

93290 Composite 3 - 6133 2nd Magnetics

Opagues	35 - 40%	(Ilmenite and Chromite)
Pyroxene	25 - 35%	(Orthopyroxene ~ Clinopyroxene)
Tourmaline	~ 10%	
Garnet	5 - 10%	
Monazite	3 - 5 %	
Spinel	< 5 %	
Zircon	~ 2 %	
Sillimanite	~ 1 %	
Epidote	< 1 %	
Corundum	< 1 %	

93290 Composite 3 - 6134 Non - Magnetics

Opagues	40 - 50%	(Leucoxene * tr FeS ₂)
Zircon	40 - 50%	
Rutile	<5%	
Topaz	<5%	
Tourmaline	~2%	
Andalusite	~2%	
Feldspar	1 - 2 %	
Sillimanite	1 - 2 %	
Kyanite	<1%	
Monazite	<1%	
Quartz	<1%	
Corundum	tr	

93291 Composite 4 - 6135 1st Magnetic

Opagues	~ 20%	(Chromite>Ilmenite>Leucoxene)
Pyroxene	30 - 40%	(Orthopyroxene>Clinopyroxene)
Garnet	~ 20%	
Tourmaline	10 - 15%	
Staurolite	1 - 2 %	
Monazite	< 1 %	
Epidote	tr	

93291 Composite 4 - 6136 2nd Magnetics

Opagues	~ 15%	(Ilmenite > Chromite)
Pyroxene	40 - 50%	(Clinopyroxene >Orthopyroxene)
Tourmaline	~ 25%	
Garnet	< 5%	
Staurolite	1 - 2%	
Kyanite	1 - 2%	
Actinolite	1 - 2%	
Monazite	1 - 2%	
Epidote	~ 1%	
Quartz	< 1%	
Zircon	tr	

93291 Composite 4 - 6137 Non - Magnetics

Opagues	~ 50 %	(Mainly Leucoxene * but a little ilmenite)
Zircon	~ 40 %	
Topaz	~ 5 %	
Sillimanite	2 - 3%	
Kyanite	< 2%	
Andalusite	< 2%	
Tourmaline	~ 1%	
Feldspar	< 1%	
Rutile	< 1%	

93292 Composite 5 - 6138 1st Magnetica

Opagues	20 - 25%	(Chromite>Ilmenite>Iron oxide)
Pyroxene	~ 40%	(Orthopyroxene>Clinopyroxene)
Garnet	15 - 20%	
Tourmaline	~ 15%	
Andalusite	< 2%	
Staurolite	< 2%	
Epidote	< 1%	
Quartz	< 1%	

93292 Composite 5 - 6139 2nd Magnetica

Opagues	10 - 15%	(Leucoxene/ilmenite, a little iron oxide).
Pyroxene	~ 40%	(Clinopyroxene>Orthopyroxene)
Tourmaline	~ 30%	
Garnet	2 - 4 %	
Staurolite	~ 2 %	
Sillimanite	~ 2 %	
Andalusite	~ 2 %	
Monazite	< 1 %	
Epidote	1 - 2 %	
Hornblende	< 1 %	
Zircon	tr	

93292 Composite 5 - 6140 Non - Magnetica

Opagues	~ 60%	(Leucoxene *)
Zircon	~ 25%	
Topaz	~ 5%	
Rutile	~ 2%	
Tourmaline	~ 2%	
Monazite	~ 2%	
Pyroxene	~ 2%	
Andalusite	1 - 2%	
Sillimanite	1 - 2%	
Kyanite	~ 1%	
Garnet	< 1%	

0

* N.B. In the non - magnetic fractions large amounts of TiO_2 were detected, yet only minor amounts of rutile and major amounts of opaques were noted during examination in transmitted light. Investigation under the binocular microscope revealed typical leucoxene grains, and so, all opaques in the non - magnetic fractions are assumed to be leucoxene and only those which are brown and transparent to be rutile. This method does not allow for the possibility of opaque rutile.

APPENDIX 3
HEAVY MINERAL ANALYSES

035

HEAVY MEDIA SEPARATION - STATICJob Number : 908.0.01.59945

Sample Number	-75um Weight (g)	Total Weight (g)	Sinks		Floats	
			Weight (g)	Weight (%)	Weight (g)	Weight (%)
27231	9.40	471.99	1.49	0.3	461.10	97.7
27232	6.62	447.90	1.25	0.3	440.03	98.2
27233	3.17	514.67	4.50	0.9	507.00	98.5
27234	2.52	406.99	3.87	1.0	400.60	98.4
27235	2.94	506.91	8.96	1.8	495.01	97.7
27236	3.32	488.61	9.19	1.9	476.10	97.4
27237		503.73	1.91	0.4	501.82	99.6
27238		494.73	3.40	0.7	491.33	99.3
27239		502.59	5.11	1.0	497.48	99.0
27240		490.85	2.98	0.6	487.87	99.4
27241		505.05	2.07	0.4	502.98	99.6
27242		507.76	2.84	0.6	504.92	99.4
27243	30.05	418.90	1.62	0.4	387.23	92.4
27244	122.10	492.33	2.20	0.5	368.03	74.8
27245	104.14	495.95	2.12	0.4	389.69	78.6
27246		491.29	2.29	0.5	489.00	99.5
27247		454.00	389.00	0.9	450.11	99.1
27248		325.64	9.84	3.0	315.80	97.0
27522		570.22	8.90	1.6	561.32	98.4
27523		581.91	6.71	1.2	575.20	98.8
27524		505.10	9.53	1.9	495.57	98.1
27525		532.60	5.20	1.0	527.40	99.0
27534		462.08	4.56	1.0	457.52	99.0
27535		523.13	7.43	1.4	515.70	98.6
27536		559.17	13.09	2.3	546.08	97.7
27537		407.51	6.40	1.6	401.17	98.4
27538		523.67	5.23	1.0	518.44	99.0
27539		568.30	4.30	0.8	564.00	99.2
27574		576.59	2.45	0.4	574.14	99.6
27575		555.87	5.12	0.9	550.75	99.1
27576		570.17	5.86	1.0	564.31	99.0
27577	14.03	399.26	0.69	0.2	384.54	96.6
27578		520.17	2.15	0.4	518.02	99.6
27579		576.27	0.32	0.1	575.95	99.9
27580	29.38	509.06	1.22	0.2	478.46	94.0
27689		522.42	0.33	0.1	522.09	99.9
27690		523.91	0.39	0.1	523.52	99.9
27691	1.91	530.31	0.20	0.04	528.20	99.60
27696	2.18	519.67	0.40	0.08	517.09	99.50
27693	2.12	568.79	0.44	0.08	566.23	99.55
27694	4.48	543.19	0.47	0.09	538.24	99.09
27695	1.12	558.98	0.73	0.1	557.13	99.7
27696	0.89	533.23	0.20	0.04	532.14	99.80



A Member of the Inchcape Group

HEAVY MEDIA SEPARATION - STATICJob Number : 908.0.01.59945

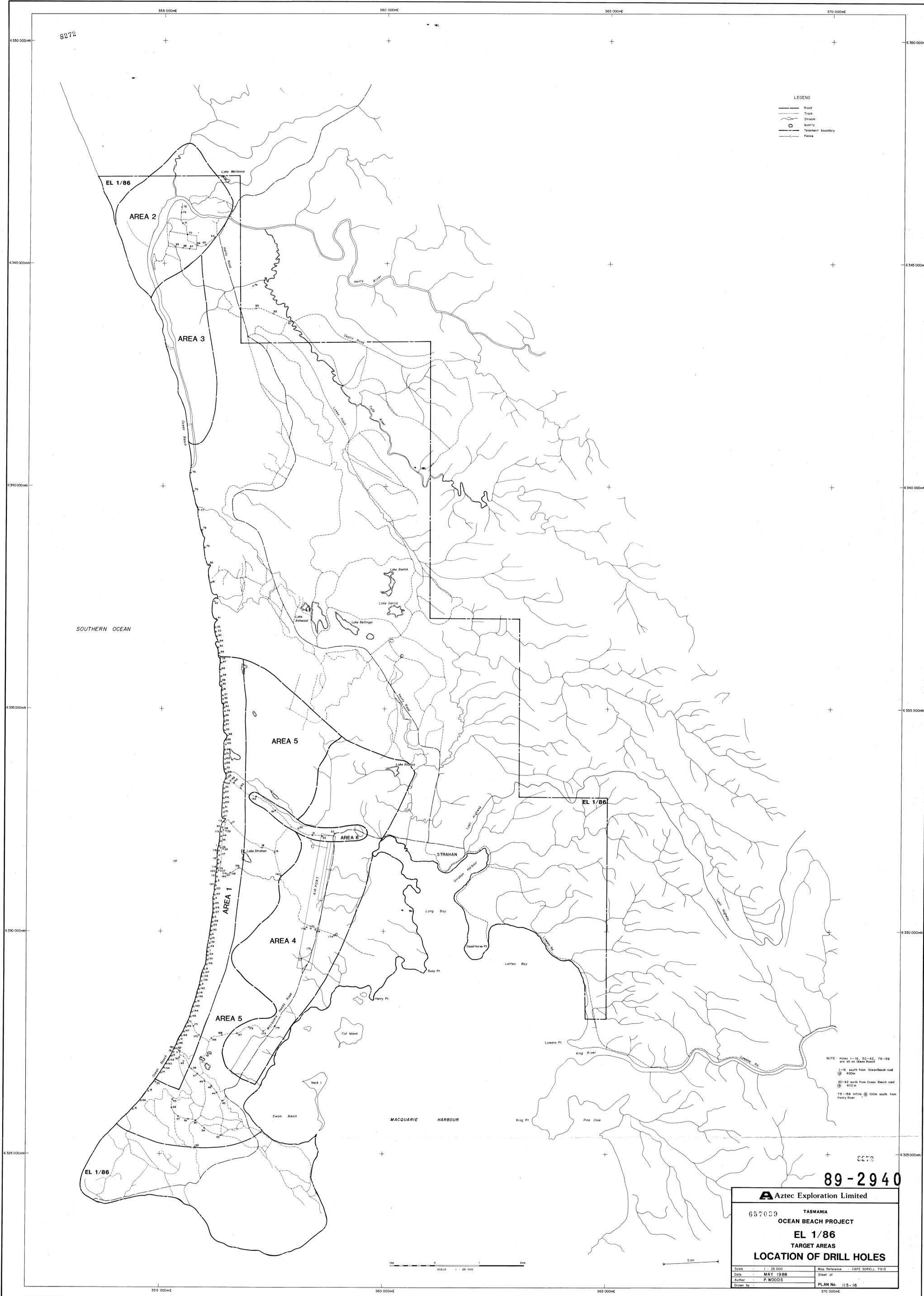
Sample Number	-75um Weight (g)	Total Weight (g)	Sinks Weight (g)	Sinks Weight (%)	Floats Weight (g)	Floats Weight (%)
27697	2.51	540.58	0.22	0.04	537.85	99.49
27698		494.09	1.04	0.2	493.86	99.2
27699	2.08	520.46	1.01	0.2	517.37	99.4
27700	3.85	473.79	2.11	0.5	467.83	98.7
28119		511.66	15.75	3.1	495.91	96.9
28120		512.08	14.89	2.9	497.19	97.1
28121		504.96	9.85	2.0	495.11	98.0
28122		507.34	4.09	0.8	503.25	99.2
28123		513.85	3.45	0.7	510.40	99.3
28124		505.96	3.74	0.7	502.22	99.3
28125		503.65	4.62	0.9	499.03	99.1
28126		498.66	4.98	1.0	493.68	99.0
28127		525.30	6.68	1.3	518.62	98.7
28128		505.85	7.11	1.4	498.74	98.6
28129		527.97	7.74	1.5	520.23	98.5
28130		586.68	6.72	1.3	499.96	98.7
28131	13.62	493.38	3.96	0.8	475.80	96.4
28132	11.80	463.45	0.87	0.2	451.50	97.4
28133	17.02	493.10	2.42	0.5	473.66	96.1
28134	18.60	506.03	1.73	0.3	485.70	96.0
28135	14.98	509.36	1.44	0.3	492.94	96.8
28158		516.98	3.86	0.7	513.12	99.3
28159	10.83	511.56	2.05	0.4	498.68	97.5
28160	10.36	487.46	0.75	0.2	476.35	97.7
28161	18.89	253.52	2.71	1.1	231.99	91.5
28162	14.24	154.85	4.71	3.0	135.90	87.8
28163	26.90	206.05	3.14	1.5	176.01	85.4
28164	28.80	198.61	8.38	4.2	161.43	81.3
28165	31.70	294.06	7.33	2.5	255.03	86.7
28166	21.21	496.64	6.08	1.2	469.35	94.5
28167	28.01	473.61	2.86	0.6	442.74	93.5
28168	27.94	420.18	3.21	0.8	389.03	92.6
28183		514.65	4.58	0.9	510.07	99.1
28184		510.81	3.53	0.7	507.28	99.3
28185		470.08	4.04	0.9	466.04	99.1
28186		504.65	9.15	1.8	495.50	98.2
28187		544.05	7.65	1.4	536.40	98.6
28188		521.18	7.06	1.4	514.12	98.6
28189		506.35	11.88	2.3	494.47	97.7
28190		514.90	14.42	2.8	500.48	97.2
28191		521.72	6.55	1.3	515.17	98.7
28192		422.53	2.89	0.7	419.64	99.3
28193	24.55	431.06	1.17	0.3	405.34	94.0
28194	31.53	289.44	2.08	0.7	255.83	99.3



HEAVY MEDIA SEPARATION - STATICJob Number : 908.0.01.59945

Sample Number	-75um Weight (g)	Total Weight (g)	Sinks		Floats	
			Weight (g)	Weight (%)	Weight (g)	Weight (%)
28244		520.52	2.10	0.4	518.42	99.6
28245		522.09	7.79	1.5	514.30	98.5
28246		531.38	7.20	1.4	524.18	98.6
28247		525.20	6.85	1.3	518.35	98.7
28248		533.28	5.58	1.0	527.70	99.0
28249		533.62	3.72	0.7	529.90	99.3
28250		528.40	4.80	0.9	523.60	99.1
28251		523.68	4.29	0.8	519.39	99.2
28252		512.22	3.57	0.7	508.65	99.3
28253		518.76	2.62	0.5	516.14	99.5
28254		491.07	3.50	0.7	487.57	99.3
28255		419.81	1.71	0.4	418.10	99.6
28300		544.61	6.30	1.2	538.31	98.8
28301		549.23	6.23	1.1	543.00	98.9
28302		528.67	6.08	1.2	522.59	98.8
28303		532.68	3.11	0.6	529.57	99.4
28304		534.75	1.02	0.2	533.73	99.8
28305		541.03	1.37	0.3	539.66	99.7
28306		557.88	1.10	0.2	556.78	99.8
28307		552.37	0.79	0.01	551.58	99.99



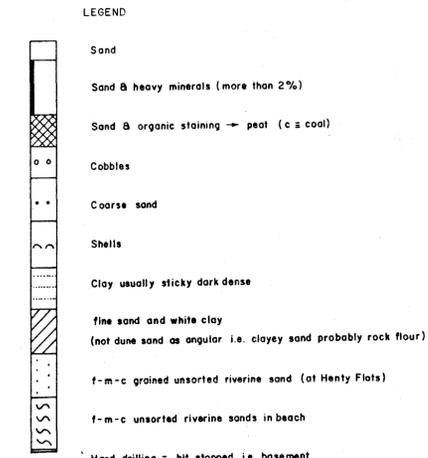
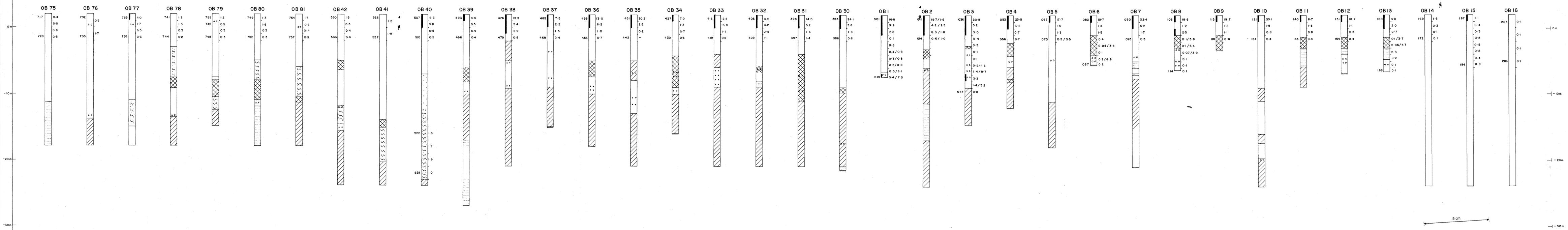


NOTE: Holes 1-16, 30-42, 75-156 are all on Ocean Beach
 1-16 south from Ocean Beach road @ 400m
 30-42 north from Ocean Beach road @ 400m
 75-156 on hills @ 100m south from Henry River

89-2940

Aztec Exploration Limited	
TASMANIA OCEAN BEACH PROJECT	
EL 1/86 TARGET AREAS	
LOCATION OF DRILL HOLES	
Scale: 1:25 000	Map Reference: CAPE SORELL 7915
Date: MAY 1988	Sheet of:
Author: P. WOODS	Drawn by:
PLAN No. 113-16	370 000mE

8273



5 cm

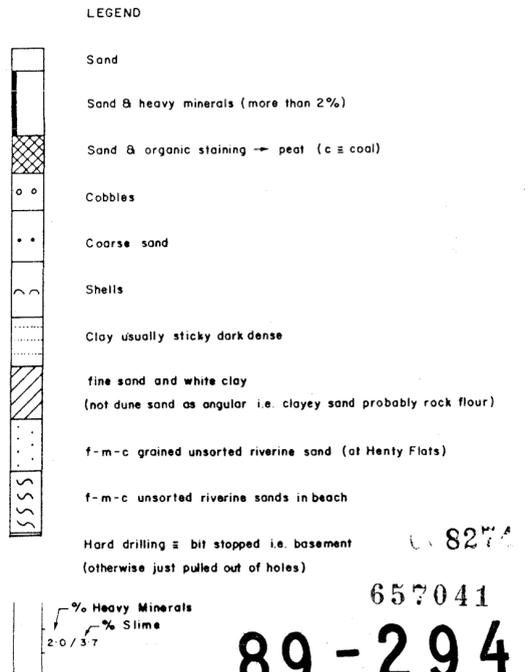
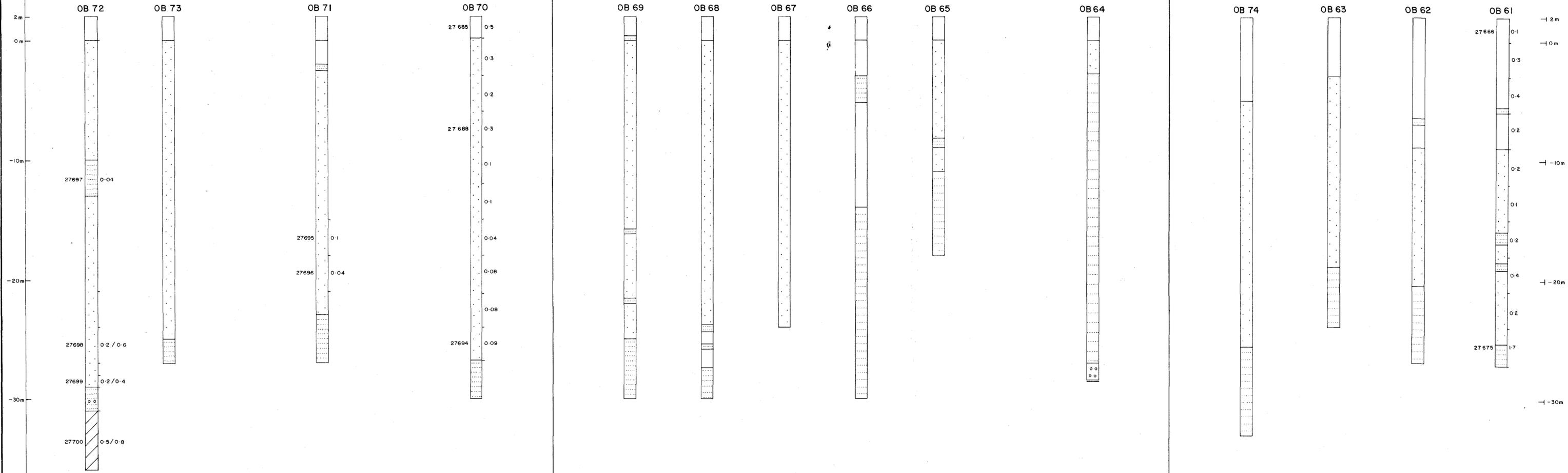
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APPROXIMATE SCALE 1 : 12 500

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89-2940

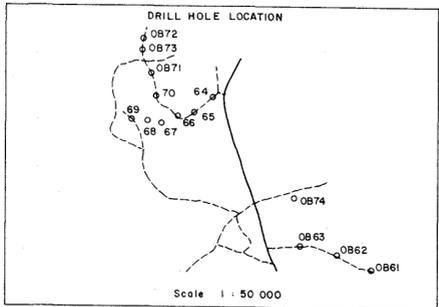
AZTEC MINING COMPANY LIMITED
TASMANIA
OCEAN BEACH PROJECT
EL 1/86
DRILL SECTION
ALONG OCEAN BEACH

AUTHOR: P.WOODS
DATE: FEBRUARY 1989
PLAN No. 113-17

8274



5 cm



657041

89-2940

AZTEC MINING COMPANY LIMITED

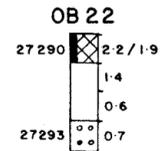
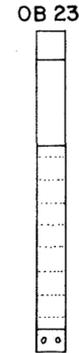
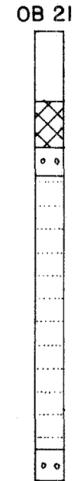
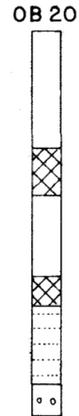
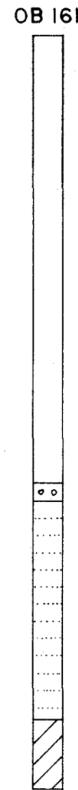
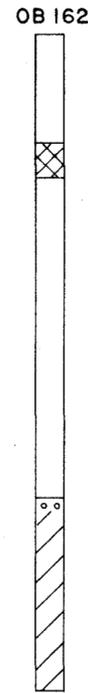
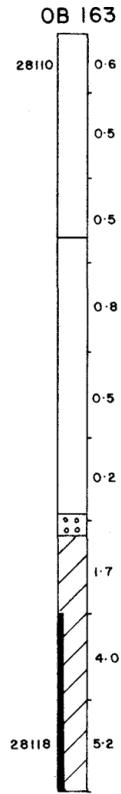
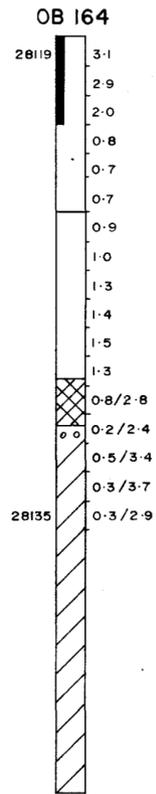
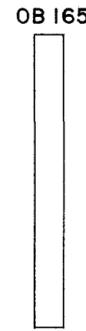
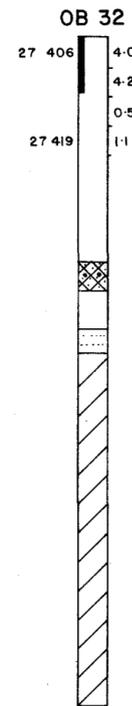
TASMANIA
OCEAN BEACH PROJECT
EL 1/86
DRILL SECTION
HENTY & TULLY RIVER FLATS

AUTHOR: P. WOODS
DATE: FEBRUARY 1989

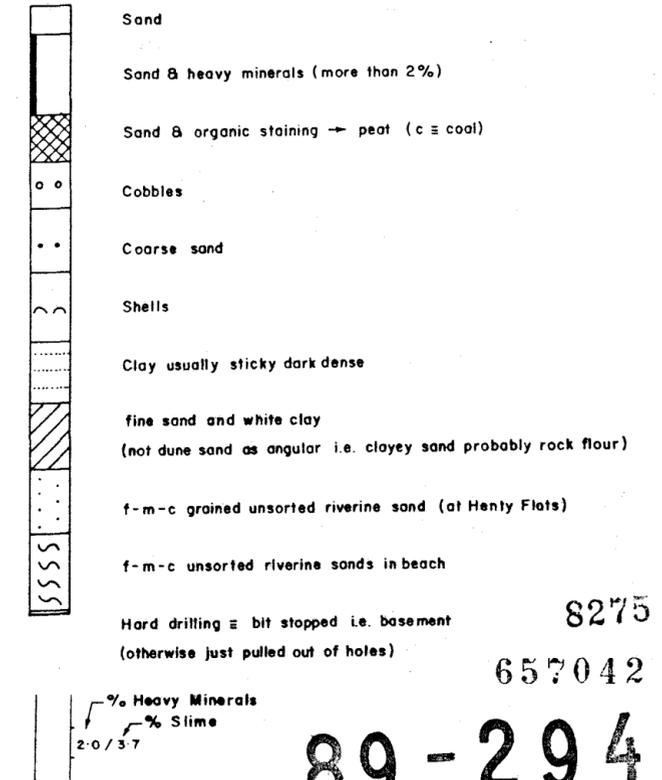
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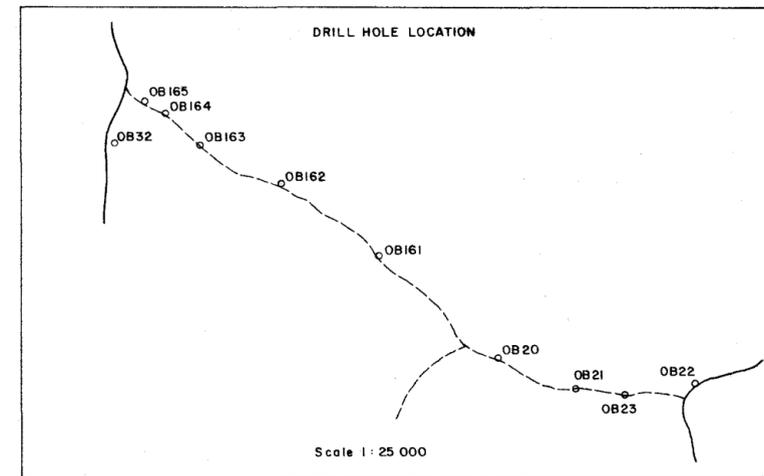
20m
10m
0m
-10m
-20m



LEGEND



5 cm



8275

657042

89-2940

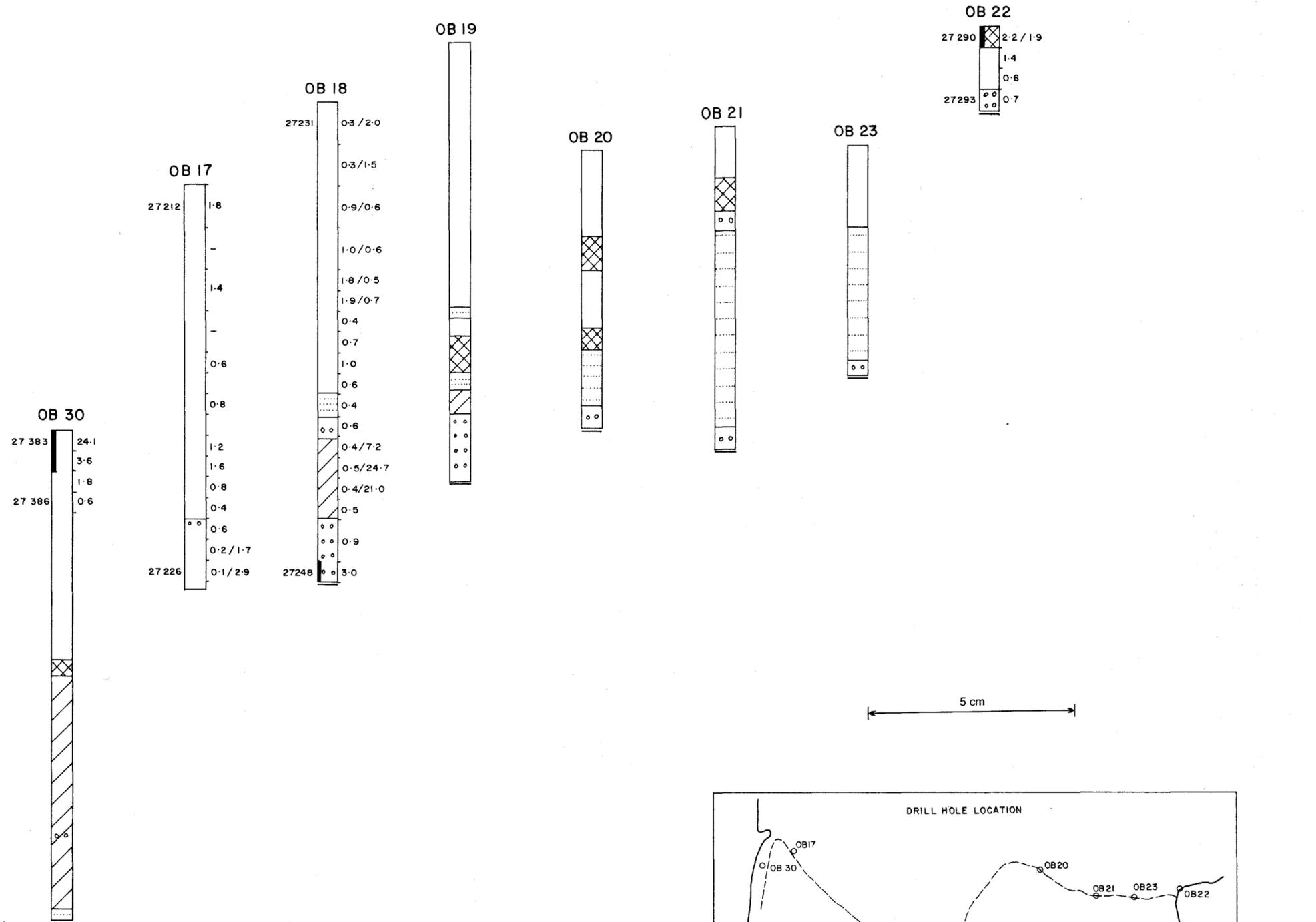
AZTEC MINING COMPANY LIMITED

TASMANIA
OCEAN BEACH PROJECT
EL 1/86
DRILL SECTION
OCEAN BEACH NORTH TRACK

AUTHOR: P.WOODS
DATE: FEBRUARY 1988
PLAN No. 113-20A

8276

20m
10m
0m
-10m
20m

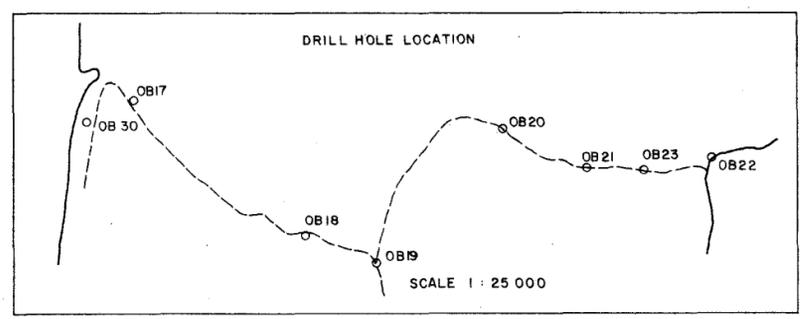


- LEGEND
- Sand
 - Sand & heavy minerals (more than 2%)
 - Sand & organic staining → peat (c ≡ coal)
 - Cobbles
 - Coarse sand
 - Shells
 - Clay usually sticky dark dense
 - fine sand and white clay
(not dune sand as angular i.e. clayey sand probably rock flour)
 - f-m-c grained unsorted riverine sand (at Henty Flats)
 - f-m-c unsorted riverine sands in beach
 - Hard drilling ≡ bit stopped i.e. basement
(otherwise just pulled out of holes)

2.0/3.7
% Heavy Minerals
% Slime

8276
657043
89-2940

5 cm

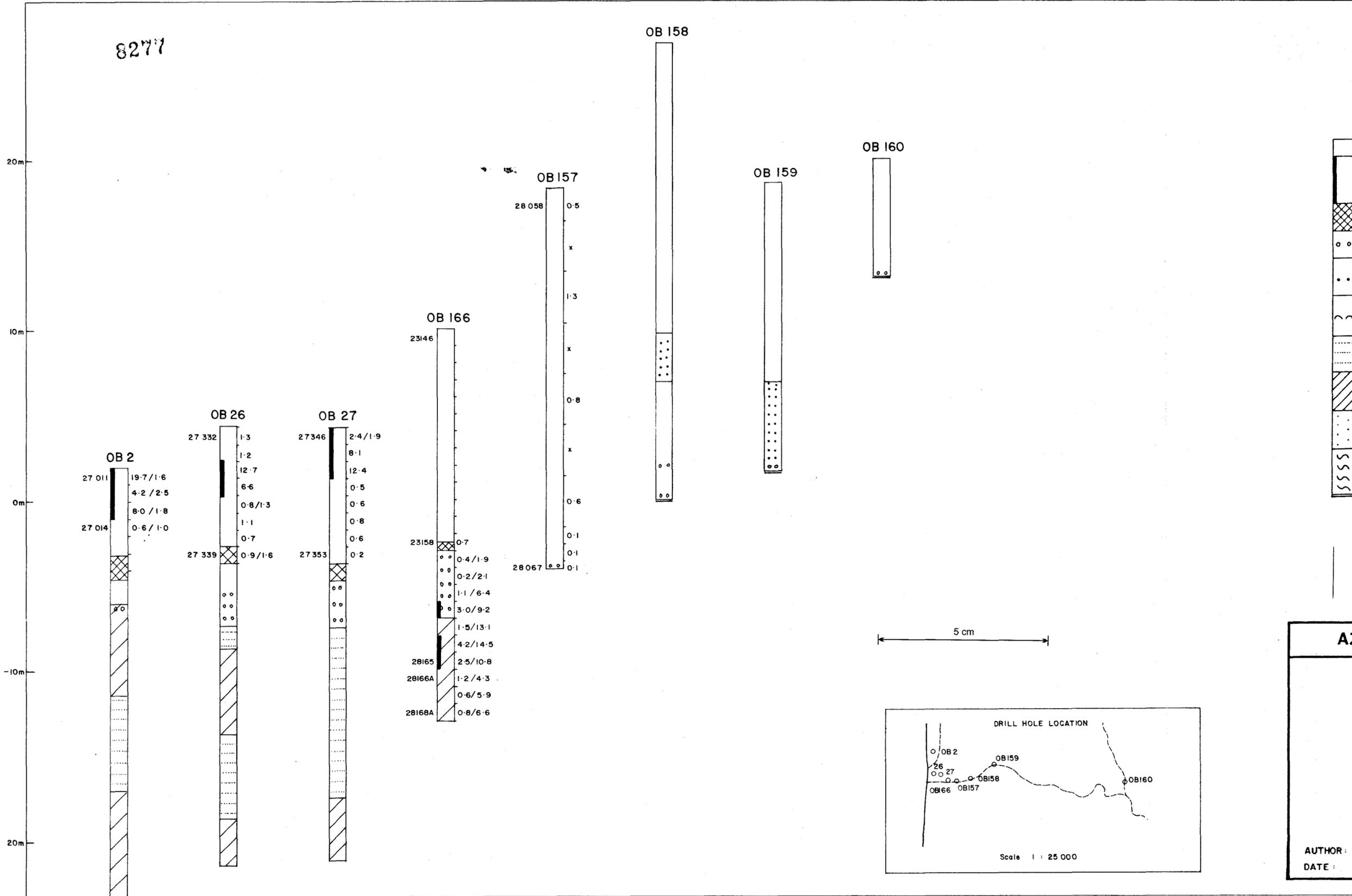


AZTEC MINING COMPANY LIMITED

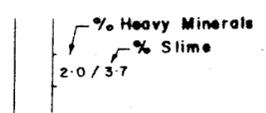
TASMANIA
OCEAN BEACH PROJECT
EL 1/86
DRILL SECTION
OCEAN BEACH ROAD

AUTHOR: P. WOODS
DATE: FEBRUARY 1989
PLAN No. 113-208

8277

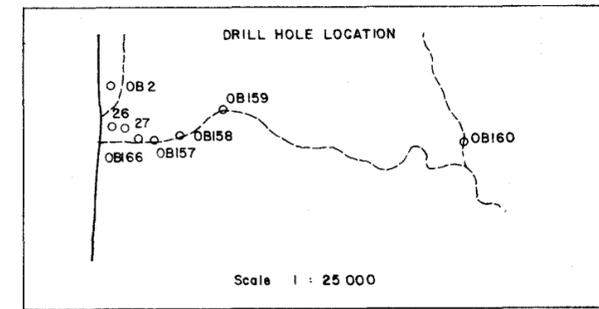


- LEGEND
- Sand
 - Sand & heavy minerals (more than 2%)
 - Sand & organic staining → peat (c ≡ coal)
 - Cobbles
 - Coarse sand
 - Shells
 - Clay usually sticky dark dense
 - fine sand and white clay (not dune sand as angular i.e. clayey sand probably rock flour)
 - f-m-c grained unsorted riverine sand (at Henty Flats)
 - f-m-c unsorted riverine sands in beach
 - Hard drilling ≡ bit stopped i.e. basement (otherwise just pulled out of holes)



8277
657044
89-2940

5 cm



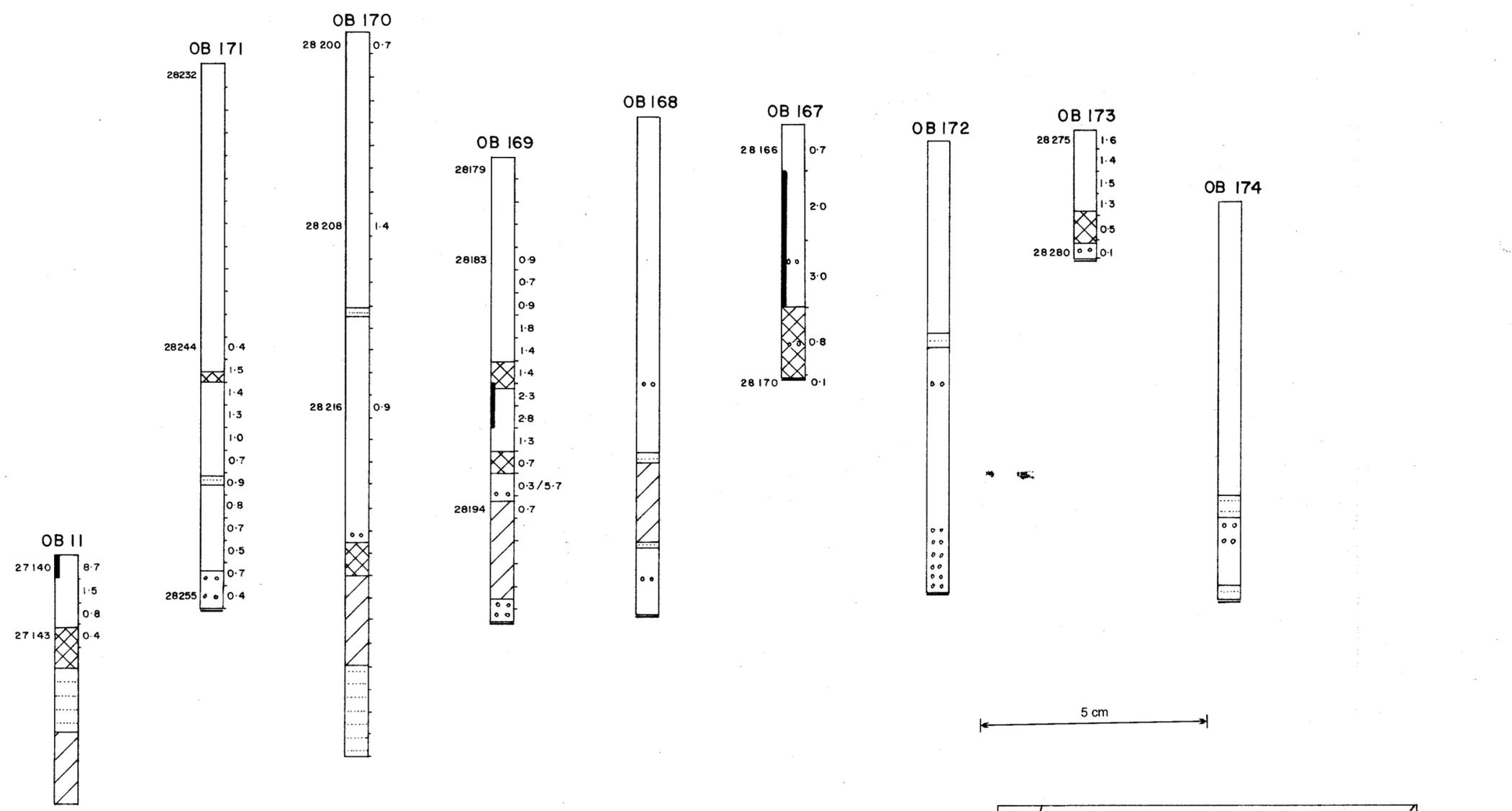
AZTEC MINING COMPANY LIMITED

TASMANIA
OCEAN BEACH PROJECT
EL 1/86
**DRILL SECTION
RUBBISH TIP TRACK**

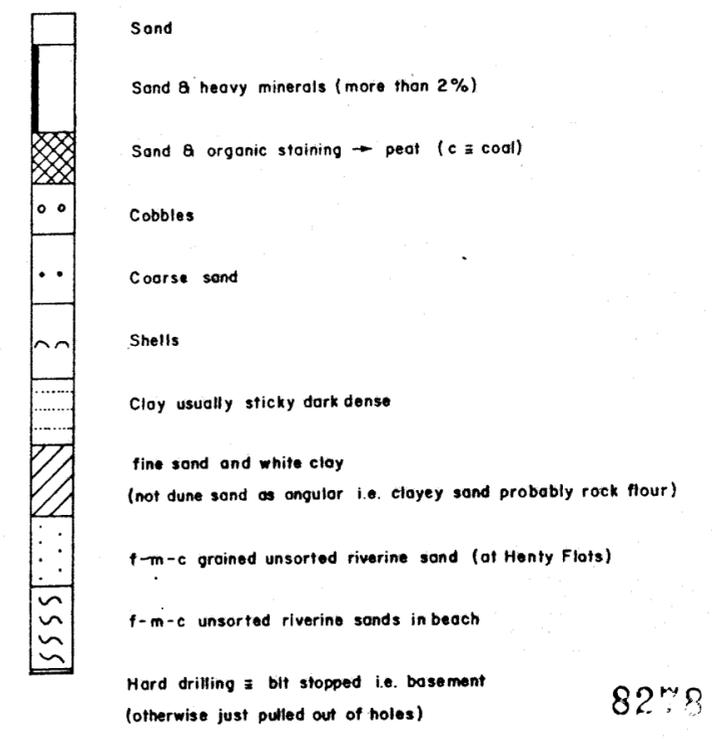
AUTHOR: P.WOODS
DATE: FEBRUARY 1989
PLAN No. 113- 20C

8278

30m
20m
10m
0m
10m



LEGEND



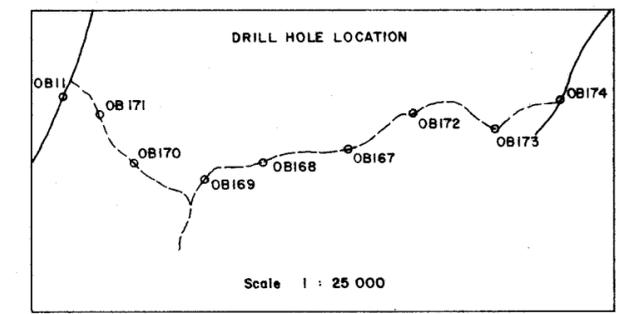
8278

% Heavy Minerals
% Slime
2.0 / 3.7

89-2940

657045

5 cm



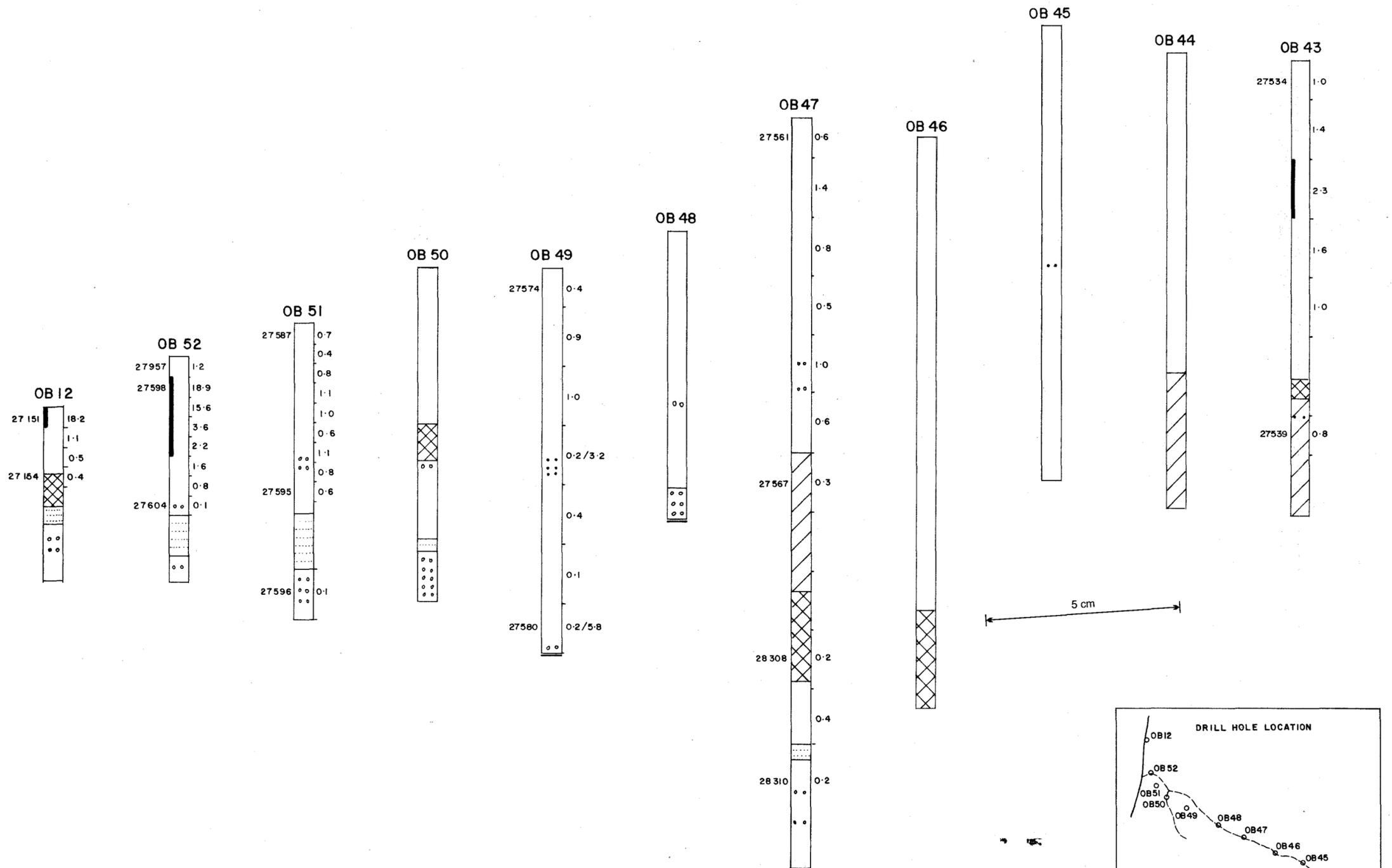
AZTEC MINING COMPANY LIMITED

TASMANIA
OCEAN BEACH PROJECT
EL 1/86
DRILL SECTION
OLD LIGHTHOUSE ROAD

AUTHOR: P. WOODS
DATE: FEBRUARY 1989
PLAN No. 113-20D

8279

20m
10m
0 m
-10m
-20m



LEGEND

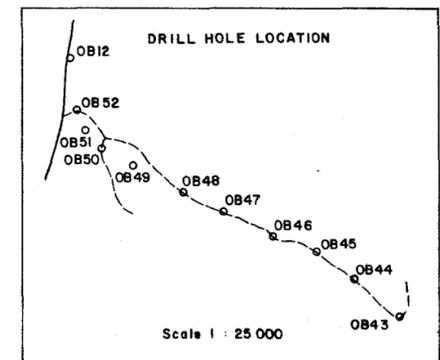
- Sand
- Sand & heavy minerals (more than 2%)
- Sand & organic staining → peat (c ≡ coal)
- Cobbles
- Coarse sand
- Shells
- Clay usually sticky dark dense
- fine sand and white clay
(not dune sand as angular i.e. clayey sand probably rock flour)
- f-m-c grained unsorted riverine sand (at Henty Flats)
- f-m-c unsorted riverine sands in beach
- Hard drilling = bit stopped i.e. basement
(otherwise just pulled out of holes)

↖ % Heavy Minerals
↗ % Slime
2.0 / 3.7

8279

89-2940

657046

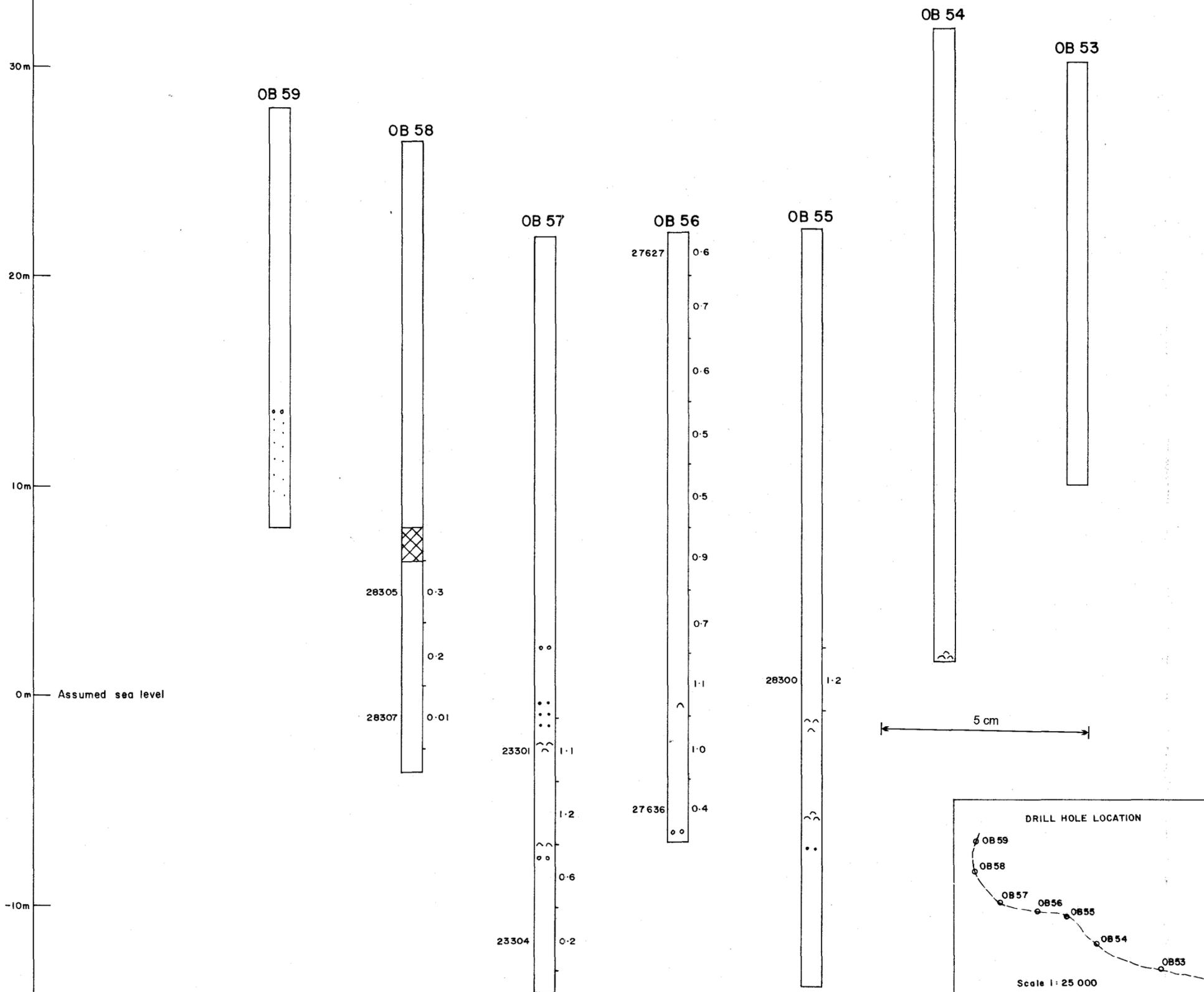


AZTEC MINING COMPANY LIMITED

TASMANIA
OCEAN BEACH PROJECT
EL 1/86
**DRILL SECTION
FIREBREAK TRACK**

AUTHOR: P. WOODS
DATE: FEBRUARY 1989
PLAN No. 113-20E

8280



LEGEND

- Sand
- Sand & heavy minerals (more than 2%)
- Sand & organic staining → peat (c ≡ coal)
- Cobbles
- Coarse sand
- Shells
- Clay usually sticky dark dense
- fine sand and white clay
(not dune sand as angular i.e. clayey sand probably rock flour)
- f-m-c graded unsorted riverine sand (at Henty Flats)
- f-m-c unsorted riverine sands in beach
- Hard drilling = bit stopped i.e. basement
(otherwise just pulled out of holes)

8280

% Heavy Minerals
2-0 / 5-7
% Slime

89-2940

657047

AZTEC MINING COMPANY LIMITED

TASMANIA
OCEAN BEACH PROJECT

EL 1/86

**DRILL SECTION
FORESTRY TRACK
(O'Blockey Track)**

AUTHOR: P.WOODS
DATE: FEBRUARY 1989

PLAN No. 113-20F

