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EL 28/85

88-2885

Evaluation of Mineral Sand Resources

at

Naracoopa

King Island

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G. Lee

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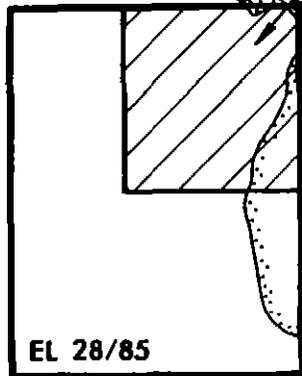
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KING ISLAND

AREA EXCLUDED DUE TO
KINGS PARADISE PROPOSAL



Point Cowper

Sea

Elephant

Bay

Naracoopa

EL 28/85

Currie

Grassy

**NATIONAL
MINERAL SANDS**

EL 28/85

LOCATION MAP

Author: A.DOVE

Date: JULY 1988

Fig.No.: 1

5 cm

1. AIM

To determine the overall reserves of economic mineral sands at Naracoopa.

At the same time to assess the reliability of the previously obtained geological records, and to obtain samples for mineralogy studies and metallurgical work.

2. REASON

National Mineral Sands Pty. Ltd., as operators of a joint venture with Peko Wallsend Ltd and Sanidine N.L. are evaluating the feasibility of recovering known heavy mineral sand resources at Naracoopa on King Island. The principal economic minerals comprising these sands are rutile and zircon which are currently undergoing buoyant market conditions.

3. SUMMARY & CONCLUSIONS

- 3.1 The Naracoopa mineral sands were previously subjected to mining between 1969 and 1977 by Naracoopa Rutile and subsequently by Kibuka; however mining did not completely exhaust the resource.
- 3.2 The mineralised area comprises an older series of beach deposits known as Lanherne Beach which contains the bulk of the mineralisation, Milford Beach and Sea Beach which are modern day accumulations. Lanherne Beach comprises old tailings with significant mineral values and virgin sand.
- 3.3 A surveyed drill grid base line was established.
- 3.4 A programme of hand drilling and reverse circulation (R.C.) rig drilling formed the basis of this evaluation. Details are set out in Section 10.
- 3.5 Laboratory testing of drill hole samples focussed on determining % heavy mineral, with mineralogical study of heavy mineral composites. Details are set out in Section 11.

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- 3.6 For five (5) drill hole sites a programme of check drilling and heavy mineral determination was carried out. Details are set out in Section 12 with results tabulated in Figures 13a - 13e.
- 3.7 The check drilling showed excellent agreement between RHF Laboratories in Smithton and Readings of Lismore.
- 3.8 The R.C. drilling showed a down grading when compared to hand boring in the order of 20%.
- 3.9 On two check drill hole sites comparison was made against old Kibuka results. The current programme gave higher results.
- 3.10 Indicated resource estimates at 1.5% heavy mineral cut-off are detailed in Section 13 along with figures 3 to 12.
- 3.11 Lanherne Beach raw sand contains an indicated 3.2 million tonnes of sand containing 156,000t of heavy mineral, and has the greatest potential for locating additional resources to the north and west of the area drilled.
- 3.12 Milford Beach contains an indicated 196,000 t of raw sand with 31,000 t of heavy mineral and Sea Beach an indicated 146,000 t of raw sand with 32,000 t of heavy mineral. There is potential for additional resources on the north end of both these areas.
- 3.13 Sand tailings from the Kibuka operation on Lanherne Beach contain an indicated 2.7 million t with 214,000 t of heavy mineral.
- 3.14 Heavy mineral tailings from Kibuka comprise an inferred 245,000 t buried containing 116,000 t of heavy mineral and an indicated 139,000 t above surface containing 115,000 t of heavy mineral.

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3.15 Total indicated and inferred mineralisation at 1.5% heavy mineral cut-off is summarised in Table 8 as:

Sand	= 6.6 million tonnes
Heavy mineral	= 660,000 tonnes
Rutile	= 37,000 tonnes
Zircon	= 43,000 tonnes
Leucoxene	= 20,000 tonnes

3.16 Resource estimates at 2.5% heavy mineral cut-off is summarised in Table 9 as:

Sand	= 5.3 million tonnes
Heavy mineral	= 640,000 tonnes

The increase of cut-off grade from 1.5% to 2.5% heavy mineral results in a 1.3 million tonne decrease in sand with only 30,000 t decrease in contained heavy mineral. Average grade increases from 10.1% (at 1.5% cut-off) to 12.0% heavy mineral.

3.17 Direct comparison with the results available from Kibuka is not possible. However an examination of mineral contained in a block between 800N and 1450N on the present drill grid shows for a 2.5% heavy mineral cut-off an increase in the order of 20% when compared to a similar area on the old Kibuka grid.

3.18 Clay underlying the sand deposit will form a natural base for mining where heavy mineral grades persist to this depth. Figure 16 shows this clay is not flat lying rising to an elevation of +15 m. and may present some difficulty for a dredge mining proposal.

3.19 Mineralogical studies have shown that the heavy mineral suite contains

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25 - 30% by weight non-magnetics which contain 60 - 75% by volume rutile, zircon and leucoxene.

3.20 Pyrite was noted in some samples, ranging up to 4% of the total heavy mineral suite.

4. RECOMMENDATIONS

As a result of this investigation the following recommendations are made:

4.1 Sampling for metallurgical trials should be designed to enhance drill hole resource estimation, with particular respect to:

- . determining recoverable economic mineral content.
- . determining the extent of down grading due to R.C. drilling.
- . oversize content of sands.

4.2 That further drilling investigation be undertaken to define the western and northern limits of mineralisation. Details are set out in Section 16 and Figure 18 of this report.

R E P O R T

5. INTRODUCTION

Exploration Licence 28/85 covers an area of 78 km² on the east coast of King Island, Tasmania. Mining operations for heavy mineral sands (rutile and zircon) have been carried out in the past within the licence area, at Naracoopa.

During the past two years the world market has been dominated by a short fall in supply, particularly for the TiO₂ pigment minerals, zircon and rare earth heavy minerals. As a consequence the price for these minerals has risen to historically high levels. Predictions for the future supply and price of titanium and zirconium raw materials is one of buoyancy. As a result a re-evaluation of the licence area is being undertaken.

Exploration was directed at the old Naracoopa deposit, with a work programme which aims:

1. To make an assessment as to the reliability of the previously obtained geological records, particularly with respect to the extent and grades of mineralization.
2. To obtain some indication of the extent and depth of previous mining and to examine possible mineralization on the sides of the old mine area.
3. To obtain samples of:
 - . virgin mineralization
 - . heavy mineral tailings
 - . sand tailings

for mineralogy studies and metallurgical work.

4. To determine the overall reserves of economic mineral sand available and to quantify the various resource types.

6. TENEMENT INFORMATION

Exploration Licence 28/85 was applied for by Sanidine N.L. (a wholly owned subsidiary of Technomin Australia N.L.) in September, 1985. It covered an area of 108 square kilometres along the coast and inland from Sea Elephant Bay, between Naracoopa and Cowper Point on the east coast of King Island.

Following objections lodged by parties involved with a proposed resort development (the Kings Paradise Project) which lay within the area covered by the application, an area of 30 square kilometres was excised from the north-eastern corner of the application.

Exploration Licence 28/85 was subsequently granted over a reduced area of 78 square kilometres until 30th January, 1989. Figure 1 is a map of King Island showing the licence area.

The licence constitutes approximately:

- 12 km² Crown Land
- 10 km² State Forest
- 55 km² Private Property
- 1 km² Crown Reserves

Sanidine N.L. entered a joint venture with National Mineral Sands Pty. Ltd. (formerly Butlers No. 27 Pty. Ltd.), who hold other mineral sands exploration interests on King Island and in other parts of Tasmania. Subsequently National Mineral Sands Pty. Ltd. entered into a joint venture with Peko-Wallsend Ltd.

7. BRIEF HISTORY OF PAST EXPLORATION AND MINING

During 1965-66, Mount Costigan Mines carried out an evaluation of the heavy mineral deposits at Naracoopa and in 1968 this company formed a subsidiary company, Naracoopa Rutile Ltd., to mine the proven reserve. Mining commenced on Sea and Milford Beaches in February, 1969.

From 1967 to 1970 Kenneth McMahon and Partners conducted a hand drilling programme of check and test drilling at Naracoopa. An area approximately 1220 metres N-S by 610 metres E-W was covered. The holes were drilled at 30 metre intervals along lines 120 metres apart and running at right angles to the beach. Lanherne Beach ore reserves were based on the results from this programme.

By late 1970 the reserves of Sea and Milford Beaches were almost exhausted and mining of Lanherne Beach was commenced.

In February 1972 Naracoopa Rutile Ltd. went into receivership and in May 1972 the operations were taken over by Buka Minerals N.L. A subsidiary company, Kibuka Mines Pty. Ltd. was formed to manage the operations.

From mid-1973 onwards work was directed towards establishing tonnages and grades of areas indicated by previous exploration. The Lanherne Beach deposit was outlined using a 50 by 25 metre grid and ore reserves calculated.

In 1975 Salway calculated the remaining reserves. Using a 2.5% cut-off grade he stated reserves in the proven category as 28,000 tonnes of rutile and 46,000 tonnes of zircon. These reserves were contained on both Lanherne and Sea Beaches.

After April 1975 approximately 10,500 tonnes of Rutile and 12,200 tonnes of zircon was mined.

On February 28, 1977, mining operations were suspended.

8. BRIEF REVIEW OF GEOLOGY

8.1 General Geology

The basement rocks of King Island consist of Pre-Cambrian Metamorphics, and Palaeozoic sediments and volcanics. Granitic rocks of two ages have intruded the above sequences - Devonian potassic granites confined to the west coast of the island and Carboniferous granodiorites and adamellites confined mainly to the east coast of the island.

The majority of the basement, however, is covered by Pleistocene and Recent superficial deposits.

8.2 Formation of Mineral Sand Deposit

Previous workers (Neale & Salway, 1975) have suggested that the deposit at Naracoopa can be attributed to three different sea levels - Lanherne Beach (11m), Milford Beach (2m) and the present Sea Beach (0m).

The writers of this report consider Lanherne Beach to be an accumulation of beaches with at least three (3) vertically stacked beaches visible on the eastern scarp as evidenced by pebble and cobble horizons. Milford Beach is considered to be the accreting storm barrier to the present day Sea Beach. Large timbers from the nearby Naracoopa wharf which were deposited by a storm on Milford Beach attest this fact.

The heavy minerals were distributed by means of ocean tides and currents after being carried in suspension by the rivers to the sea from a point or points inland. They were subsequently deposited by wave action to the beach.

After the deposition of the highest Lanherne Beach level and subsequent lowerings of sea level, the resulting downcutting of the Frazer River reworked some of the initial deposits. This reworking contributed to

the high grade Milford Beach and Sea Beach deposits.

8.3 Nature of the Beach Deposits

The Sea and Milford Beach deposits consist of fresh sand that is not iron-stained or coated with organic deposits. Wave action is actively regenerating these deposits and concentration of rich mineral sand is still taking place. After storms have stripped back the Sea Beach, older indurated sands are exposed on parts of the Beach. These are probably of similar age to Lanherne deposits.

The Lanherne deposit was formed by strong wave action, as is evident by cross bedding and the well stratified nature of the deposit. The significant feature of the Lanherne Beach deposit is that the sand is partially indurated with iron and/or organic deposits. Occurring within this semi-consolidated sand are compact cemented bands of iron and organic-rich material. Old soil horizons and pebble layers are observed in both natural and artificial exposures, indicating a vertical accumulation of beaches. It is the plant growth on the soil horizons which has contributed most of the organic cementing material and caused mobilisation of iron.

9. SURVEY AND MAPPING

9.1 Preamble

A survey was carried out to establish a baseline and to provide photogrammetric control for an orthophoto mapping programme by Geospectrum (Aust) Pty. Ltd. The area covered, extended from Naracoopa approximately 12 kms north to Cowper Point, and generally inland to include the Sea Elephant Road.

The survey was established from existing Tasmanian landmarks, with the co-ordinates being related horizontally to Australian Map grid (AMG) and vertically to mean sea level. The survey programme was carried out using Wild T2 single second theodolites, AGA Model 16 electronic distance measuring equipment and Fuji-Koh precise level.

9.2 Baseline Survey

The baseline was commenced from the origin point (OE ON) a few metres to the east of the old mine entrance gate, and pegged at 100 metre intervals from ON to 1500N. The baseline is oriented to run generally parallel to the coastline.

A permanent Bench Mark (BM) was established at the old mine site. The BM is a white painted sawn off bolt on a disused concrete footing.

Along Traverse Lines 100N, 300N, 500N, 600N, 700N, 1000N, 1200N and 1400N holes were pegged every 20 metres by tape and range pole to low water mark in the east and the Frazer River or swamp in the west.

9.3 Photo-Control Survey

Photogrammetric survey control was established at 12 targeted locations within the mapping area. A closed survey traverse was undertaken based on survey marks found at Naracoopa and Cowper Point with azimuth checks

on to Councillor Island Light and Council Hill Trig Station. All elevations were established by trigonometrical heighting.

9.4 Results

From the survey information and aerial photography, eight (8) orthophoto map sheets covering the area from Naracoopa to Cowper Point were produced. Figure 2 is the portion of the orthophoto map which shows the area of investigation.

Appendix 1 is a copy of the surveyor's report, which includes bench mark elevations and a plan showing locations.

10. DRILLING

10.1 Preamble

Drilling operations were carried out using both hand augering/cased sludging and reverse circulation techniques.* Holes spaced 20m. apart were drilled on east-west traverse lines. Figure 2 shows the traverse lines plotted on the orthophoto map, while Figure 3 is a plan which shows drill hole locations on each line.

A brief descriptive log for each drill hole is presented in Appendix 2.

10.2 Hand Drilling

Hand augering was carried out by a Tasmanian field crew on the Sea and Milford Beaches and in other areas thought inaccessible for a drilling rig. Holes were hand augered to water-table using 50 mm diameter hand auger. When water-table was reached 50 mm casing was inserted into the hole and was advanced by sludging using a whistle top sludger on aluminium extension rods.

All drilling was terminated at rock basement, pebbles or thick clay. Samples from the Sea Beach drilling were bagged at 1 metre intervals, as rapid changes in mineral were expected. The rest of the drilling was bagged at 2 metre intervals. A total of 210.8 m. from 48 holes was drilled.

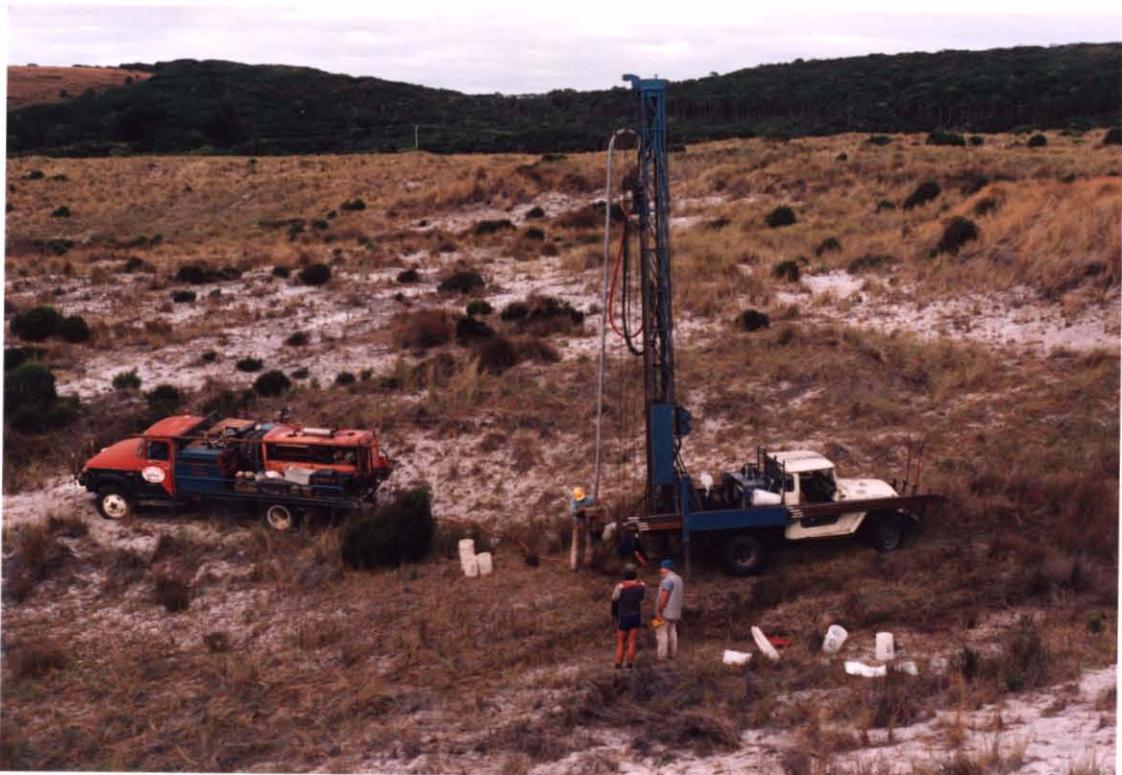
10.3 Reverse Circulation Drilling

Reverse circulation drilling was carried out within Lanherne Beach, using a reverse circulation drilling rig mounted on a Toyota Landcruiser. The hole size was BQ (56mm diameter), and the drill rod lengths were 6 metres. The advantage of this type of drilling compared to hand augering, is greater depth penetration and clay and gravel layers can also be penetrated.

* Photographs showing both hand drilling and R.C. rig drilling are included as photos 1 and 2 respectively.



PHOTOGRAPH 1: Hand-auger drill hole 100E 100N, Naracoopa, King Island.



PHOTOGRAPH 2: Sparkes Reverse Circulation drill hole 40E 300N, Naracoopa, King Island.

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All drilling was terminated at rock basement or thick clay. The first sample taken from the hole represented the top 1.5 metres, with successive samples representing 2 metre increments. Samples were successfully obtained from above and below the water table and from indurated layers. A total of 1730.8 m. from 193 holes was drilled.

In order to maintain a check on reliability of sampling, weights/volumes of recovered samples were monitored. The sample weight specifications applied were:

- * Sample weight recovered not to vary by more than 25% from the mean theoretical for hole diameter, for 95% of the samples recovered.

For 56mm diameter hole:

Volume per 2 metre interval is

$$(56)^2/2 * \pi * 2000 = 4,926,017 \text{ mm}^3$$

Sand has a density of 1,600 kg/m³ = 7.88 kg

Applying 25% weight variation, range is:

Dry sand 5.9 to 9.9 kg

95% of the samples recovered should be within the above weight range.

10.4 Drillhole Sample Weight Variations

Reverse circulation drillhole samples were subject to a weight check as a means of establishing sampling consistency. According to the criteria stated in Section 10.3 above, 95% of 2m samples should fall within the weight range 5.9 to 9.9 kg.

An analysis of dry sample weight was carried out for all results despatched up to and including those dated 16th June, 1988. In carrying out this

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analysis only complete 2.0m. intervals were included; i.e. top and bottom samples representing less than 2.0m. were excluded. In all 406 samples were included in the analysis of sample weights. Results are shown in Table 1.

TABLE 1

Analysis of R.C. Drill Sample Weight Variations for 2.0m. Samples

Weight	<5.9 kg	5.9 - 9.9 kg	>9.9 kg	Total
No Samples	66	325	15	406
% of Samples	16.3	80.0	3.7	100.0

Comments on the weight variations are:

- . Overweight samples are mostly due to the high heavy mineral content of samples from the heavy tailings dump on the 500N line.
- . Underweight samples are influenced by the peat rich samples from the 1000N line.
- . Underweight samples often follow pebble bands and appear to be due to a partial blockage of the sample recovery system by a pebble(s).
- . Most of the unexplained underweight samples just fail to meet the 5.9 kg lower limit and fall into the range 5.5 to 5.9 kg; i.e. within 30% of the theoretical 7.88 kg weight.
- . The reverse circulation drilling tends to produce samples weighing slightly less than the theoretical weight which contrasts with the hand operated auger and cased sludging where sample weights tend to be higher than theoretical.

11. LABORATORY TESTING11.1 Heavy Mineral Determination Procedure

All samples that were assayed for heavy minerals on a routine basis during the main programme were treated by R.H.F. Laboratories, Smithton, using the procedure outlined below:

1. Dry sample as received.
2. Weigh and record dry weight.
3. Screen on a 2 mm coarse sieve to break up lumps. (It was realised later that after disaggregation any remaining +2mm particles were discarded without weighing.)
4. Riffle split approximately 100 gm working sample.
5. Re-pack balance of sample.
6. Weigh working sample.
7. Screen on 1000 micron sieve and weigh plus 1000 micron fraction.
8. Caustic wash using a 2 percent NaOH solution, agitate and allow sand to settle.
 - 8.1 Decant NaOH solution, wash and decant with clean water in repeated steps until all NaOH is removed.
 - 8.2 Dry washed sample.
 - 8.3 Weigh washed and dried sample and calculate percentage lost as slimes during washing.
9. Using TBE, separate heavy minerals.
10. Dry and weigh heavy minerals.
11. Calculate heavy minerals as a percentage of the sample weighed in step 6 above.
12. Package heavies for despatch.
13. Record results for:
 - . dry weight of sample as received.
 - . weight % of +1mm. material.
 - . weight % slimes.
 - weight % heavy minerals

11.2 Results of Heavy Mineral Determination

Heavy mineral contents for individual samples are recorded against drill-hole descriptive logs in Appendix 2. Also recorded on the drillhole logs are % slimes and % + 1mm.

Copies of laboratory result certificates are included as Appendix 3 of this report.

Figures 4 to 12 are cross-sections showing heavy mineral grades for each drillhole interval.

11.3 Bulk Density Determinations

Bulk density was determined for a range of heavy mineral contents. Samples used were from drill hole 80W, 500N; 0 - 7.5m. which contained a range of heavy mineral from high to low. The assay certificate is included in Appendix 3 of this report.

The raw dry sand samples were lightly damped down prior to measuring volume and weight.

Results are:

Hole	Sample Interval	% Heavy Mineral	Bulk Density
80W, 500N	0 - 1.5	86.76	2.38 g/cm ³
	1.5 - 3.5	97.64	2.55
	3.5 - 5.5	50.16	1.96
	5.5 - 7.5	1.79	1.67

11.4 Mineralogical Investigation

Mineralogical studies were carried out on bulk composites of heavy mineral. Composites were prepared by combining intervals both vertically and horizontally for a number of adjoining drill holes for areas containing plus 1.5% heavy mineral.

For most composites the 1.2 amp non-magnetic fraction was examined with selected samples being subject to examination of all magnetic fractions.

The method adopted for mineralogical study was:

1. Magnetically separate the heavy concentrate into:
 - . hand magnetics
 - . 0.5 amp Frantz magnetics
 - . 1.0 amp Frantz magnetics
 - . 1.2 amp Frantz magnetics
 - . 1.2 amp Frantz non-magneticsusing a Frantz magnetic separator with forward slope of 25° and side tilt of 18° .
2. Weigh each magnetic fraction.
3. Optically identify mineral grains and point count a minimum 500 points for the relevant magnetic fraction.

Mineralogical examinations were carried out by Applied Petrographic Services, Sydney.

Results are included as Appendix 4 and shown on the cross sections, Figures 4 to 12.

Mineralogical results as reported are weight percent for magnetic fractions and volume percent for the optically identified point counted grains. The total percentage for the whole sample is a combination of weight and volume, as reported by Applied Petrographic Services.

Before using mineralogical results in resource assessment, a number of check calculations were made to adjust the volume % for the rutile and zircon rich non magnetics to weight % on the basis of specific gravity for the contained mineral species. It was found that such a correction would increase rutile and zircon content of the total sample by a maximum of 1% and for most samples the increase was less than 1%. The variation is considered to be within the limits of error.

Before applying a specific gravity correction some additional testwork should be undertaken in order to more precisely determine a factor rather than applying a text book figure. A method frequently applied is to produce clean weighed rutile and zircon fractions by high intensity magnetic roll separation with further density separation of the non magnetics using Clerici solution at densities of 4.05 and 4.22. If necessary the clean rutile and zircon fractions can be chemically analysed after weighing. The rutile and zircon fractions recovered relate to the recoveries expected from production.

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12. CHECK, DRILLING AND HEAVY MINERAL DETERMINATIONS

12.1 Preamble

At five locations (100E, 100N; 60E, 500N; 200E, 800N (Kibuka Grid): 275E, 800N (Kibuka Grid) and 000, 1000N) check drilling was carried out using both hand augering and reverse circulation techniques. At each location four holes spaced onemetre apart in a north-south orientation were drilled in the following sequence:

Hand Drill Rig Drill Hand Drill Rig Drill

The samples were then tested using two laboratories, RHF Laboratories, Smithton, Tasmania and Readings of Lismore, New South Wales. For each drillhole site, samples from one of the hand augered and one of the rig drilled holes were forwarded to RHF Laboratories. Samples from the other two (2) holes were forwarded to Readings. Upon completion of testing the samples from each laboratory were swapped, so that each sample was analysed by each laboratory for comparison and check purposes.

12.2 Results

Results are set out on Figures 13 a, b, c, d and e which show grades plotted against each drillhole. Average grades to the shallowest depth are set out for comparative purposes. Drillhole logs with results are also included in Appendix 2 where all data is tabulated against lithological descriptions.

Appendix 5 is a copy of all laboratory reports pertaining to the check testing programme.

12.3 Discussion

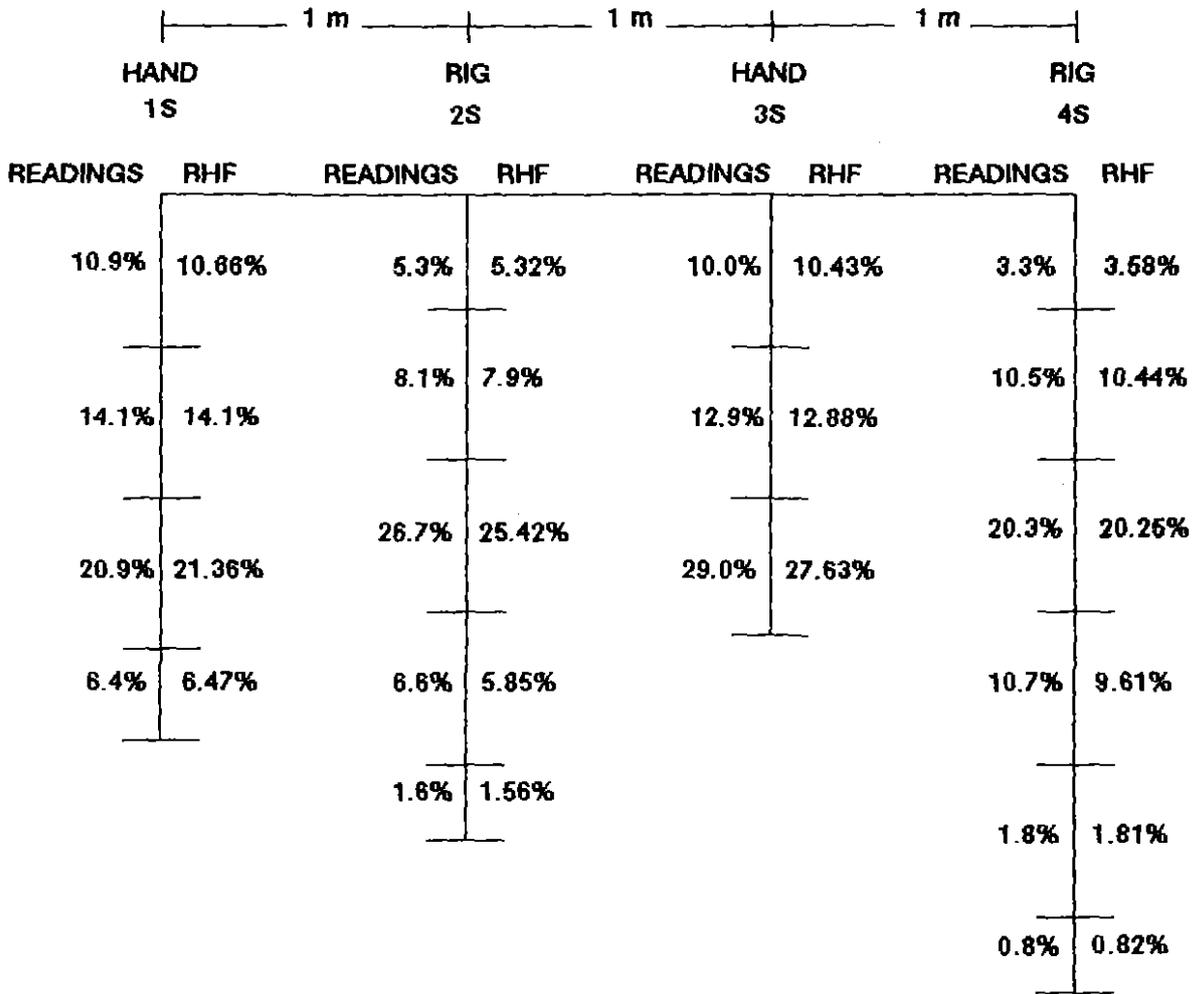
A detailed analysis of the comparative data has not been made, however the following observations are apparent:

- . There is excellent agreement between results obtained from the two laboratories i.e. R.H.F. and Readings.
- . Reverse circulation drilling on average down grades the contained heavy mineral content when compared to the hand augured holes.
- . A comparison between average heavy mineral grades for check drill holes shows that the RC drilling down grades by approximately 20% when compared to hand drilling. However there is not sufficient check holes to obtain a statistically accurate figure for down grading.
- . Down grading due to RC drilling is a well known fact in the mineral sand industry. The extent of down grading varies from deposit to deposit and ultimately needs to be quantified against mine recovery, in the same manner as would be applied to resource estimates obtained by any drilling method.
- . Reverse circulation is less sensitive to changing ground conditions compared to hand boring.

The drilling programme was organised so that hand drilling was completed prior to commencement of reverse circulation drilling. All the check hand drilled holes were finished with the top interval bagged as 0 - 2.0m. When rig drilling commenced it was realised that from a practical viewpoint the first interval would be bagged as 0 - 1.5m. Unfortunately this has made direct comparison between samples from the two drilling methods less reliable.

Two holes, 200E, 800N and 275E, 800N were drilled beside old Kibuka pegs, with the Kibuka results included on Figures 13c and 13d. Average grades for each

site are higher for holes drilled in the current programme, when compared with the Kibuka results. Unfortunately the grades for these two holes are relatively low, therefore it is not possible to project the comparison to higher values obtained by Kibuka.



*15.1% / *15.17%

*13.71% / *13.19%

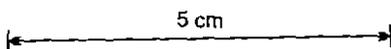
*16.9% / *16.61%

*12.03% / *12.01%

* Average grade to 5.8 metres

Vertical scale : 1:100

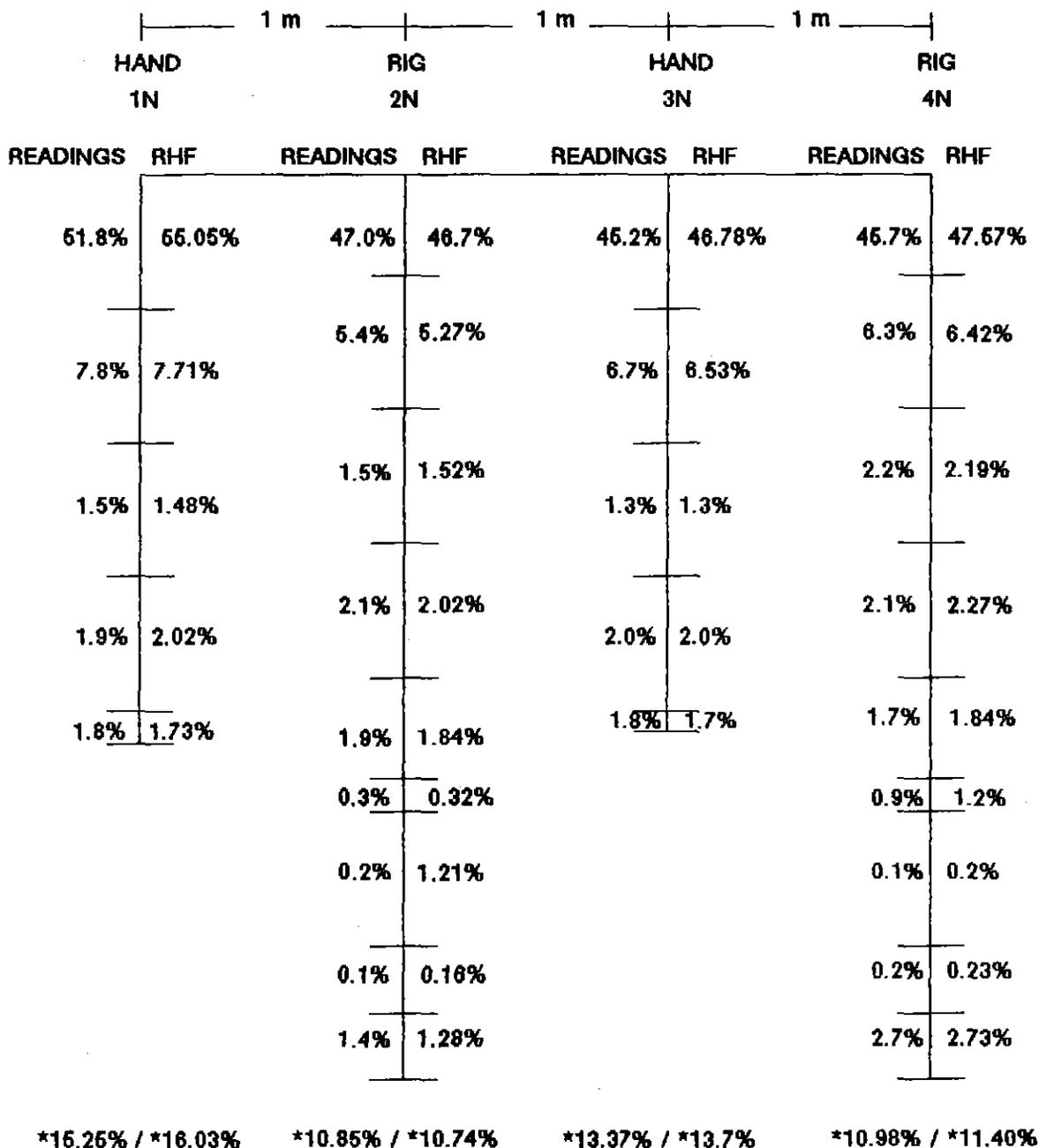
Horizontal scale : 1:25



NATIONAL MINERAL SANDS	
CHECK DRILL HOLE ASSAYS 100E, 100N	
JULY 1988	FIG: 13a

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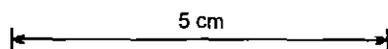
029



* Average grade to 8.3 metres

Vertical scale: 1:100

Horizontal scale 1:25

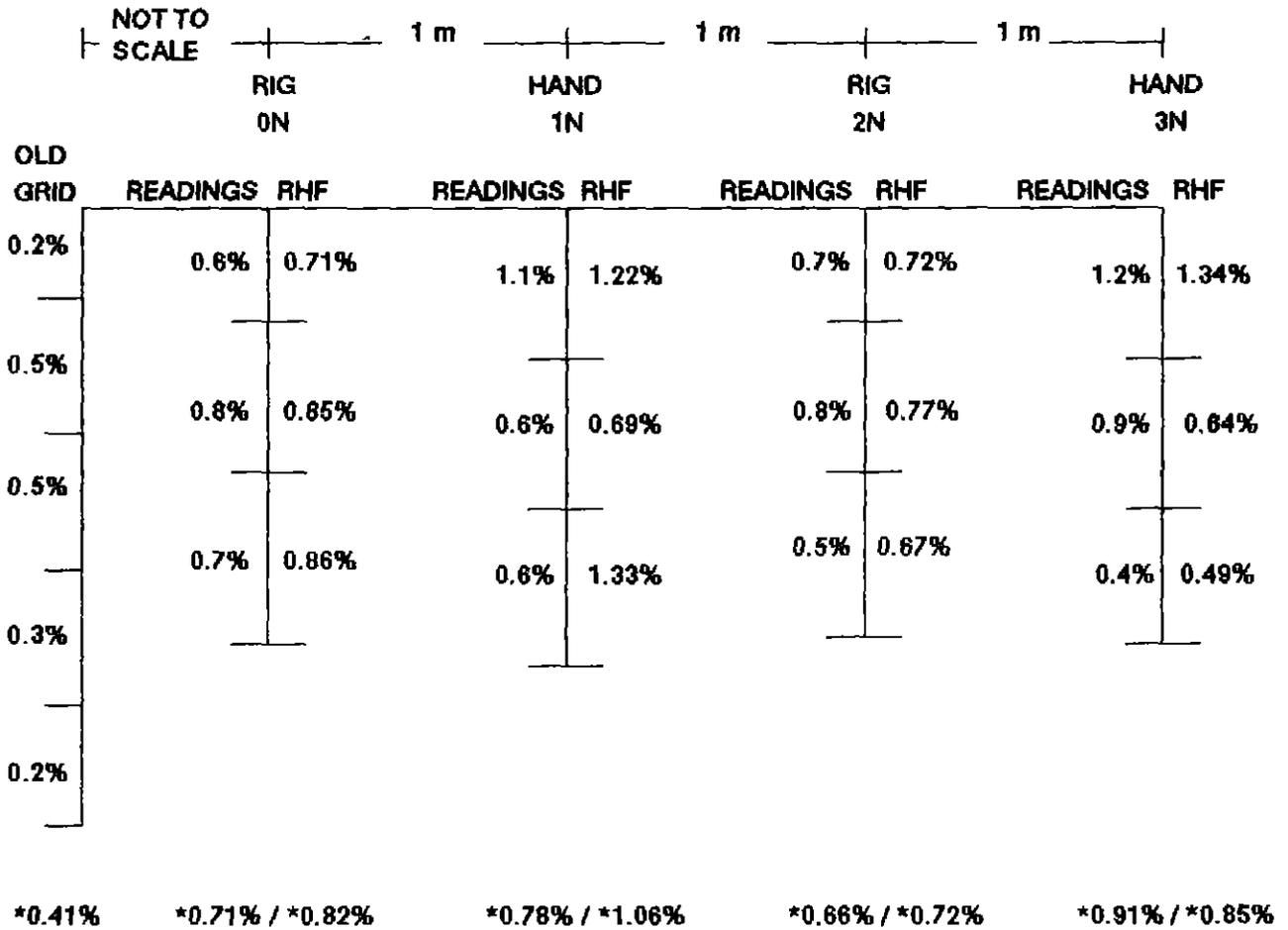


NATIONAL MINERAL SANDS		
CHECK DRILL HOLE ASSAYS 60E, 500N		
	JULY 1988	FIG: 13b

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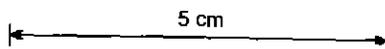
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* Average grade to 5.5 metres

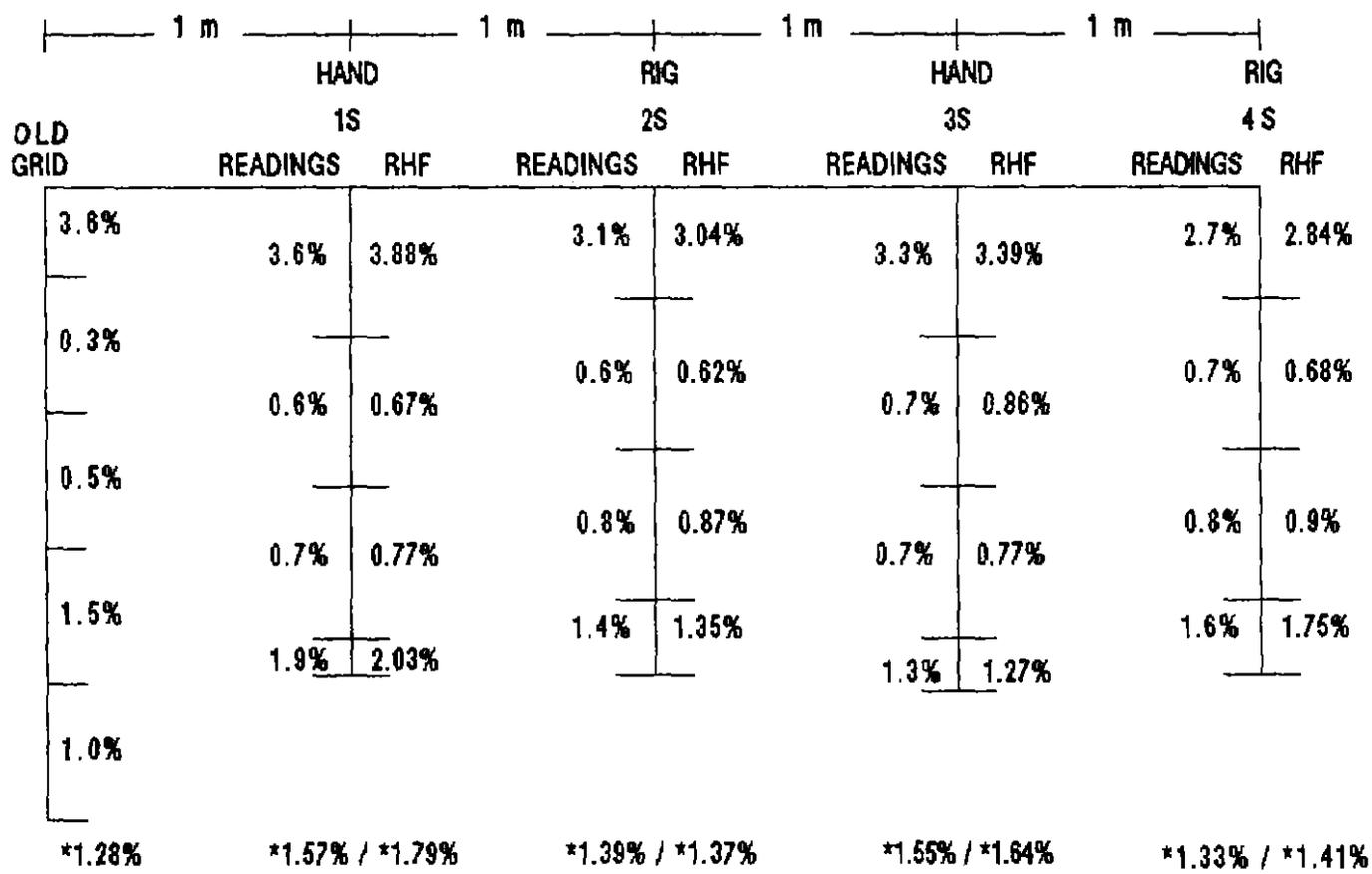
Vertical scale : 1:100

Horizontal scale : 1:25

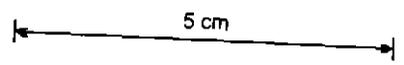


NATONAL MINERAL SANDS	
CHECK DRILL HOLE ASSAYS 200E, 800N (KIBUKA GRID)	
JULY 1988	FIG: 13c

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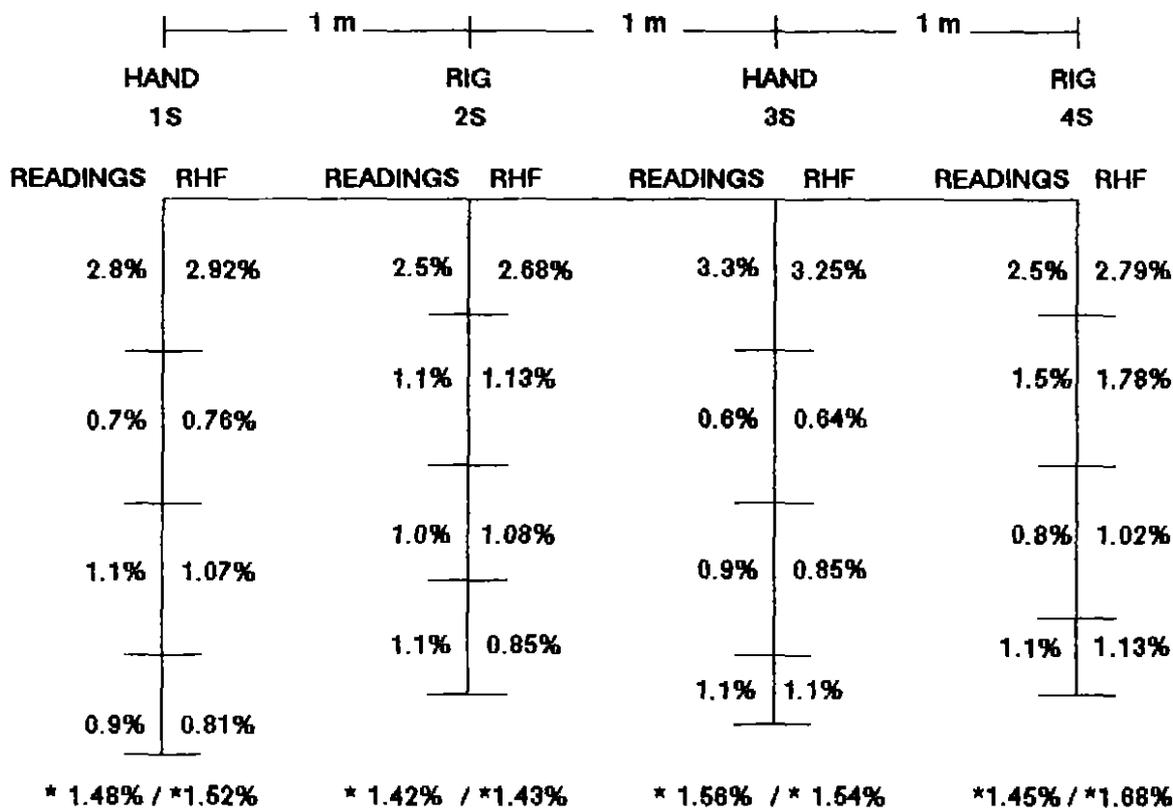


* Average grade to 6.5 metres
 Vertical scale: 1:100
 Horizontal scale: 1:25



NATIONAL MINERAL SANDS		
CHECK DRILL HOLE ASSAYS		
275E, 800N (KIBUKA GRID)		
JULY 1988	FIG:	13d

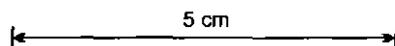
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* Average grade to 6.5 metres.

Vertical Scale : 1:100

Horizontal Scale : 1:25



NATIONAL MINERAL SANDS	
CHECK DRILL HOLE ASSAYS 000, 1000N	
JULY 1988	FIG: 13e

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13. RESOURCE ESTIMATES AT 1.5% CUT-OFF13.1 Preamble

Estimates of contained resources have been made on the basis of data obtained from the drilling, testing and mineralogical work programmes. These resource estimates have been prepared in accordance with the Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves, a copy of which is included in Appendix 6.

Resource estimates have been calculated initially at 1.5% heavy mineral cut-off, and also at 2.5% cut-off for comparison purposes. Limits at 1.5% cut-off are shown on the cross-sections, Figures 4 to 12 and are also plotted on plan in Figure 3. A 1.5% heavy mineral cut-off was selected as being near the lower end of the ultimately selected economic cut-off limit. This decision was made prior to detailed mineralogical results in order that samples for mineralogical determination would relate more closely to the finally selected cut-off limit.

The method of calculation was:

- i) Calculate average heavy mineral grade for each drill hole down to 1.5% cut-off.
- ii) Determine cross-sectional area of influence for each drillhole. Each drillhole represents a block extending half way to the adjoining drillhole i.e. in most cases 10m. either side.
- iii) Calculate cross-sectional area and average grade for each mineralised block.
- iv) Calculate contained volumes on the basis that each cross-section has an area of influence half way to next cross-section line.

The following have also been used:

- . Tonnage conversion factor 1.6 t/m³ based on bulk density determination of 1.67 t/m³ for sand containing 1.79% heavy mineral.

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- . Projections outside known defined limits of mineralisation are consistent with internal subdivision i.e.

10m. E - W along cross-sections

100m. N - S along strike of mineral deposition

- . All resources are considered as "Indicated" or "Inferred" and totals have been rounded to 2 significant figures as set out in Table 8 .

Resource estimates for Lanherne Beach raw sand, Milford Beach, Sea Beach and sand tailings have been determined in accordance with the above procedure. Heavy mineral tailings have been treated differently as discussed in Section 13.6.

Figure 14 is a plan showing the resource blocks with the boundaries as calculated. The plan distinguishes and quantifies the individual types of mineralisation as well as showing the contained rutile, zircon, % slimes and % oversize (-2 +1mm) contents. The outline of the above ground heavy tailings dump is also shown without any quantities.

Figure 15 shows the same data as does Figure 14 but projects the boundaries of resource blocks so that they more nearly represent the actual area over which the mineralisation will occur. For the most part the surface areas are the same.

As an example Figure 14 shows mineralisation to extend west of the Fraser River, on lines 100N and 300N, where in fact it does not occur, Figure 15 removes this anomaly by fully representing the extent of mineralisation to the east of the river.

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13.2 Lanherne Beach Raw Sand

The Lanherne Beach represents a stacked accumulation of old beaches. Extraction has previously been carried out on the area south of approximately 800N, although not all the available resource has been mined. Sand tailings from the previously mined area have been considered separately in Section 13.5 of this report.

Typically the Lanherne Beach sand has a higher slimes content and layers of coarse sand with gravel. Organic and minor iron rich induration is common although rarely did it prevent drill penetration and then only when hand drilling. The heavy mineral suite shows a greater variation than for any other feed type with rutile 6 - 10% and zircon 6 - 15%. Leucoxene is higher, ranging from 4 - 8%.

To the north of approximately 800N the Lanherne Beach mineralisation splits into two separate bodies. Drilling completed previously by Kibuka also showed this split. Kibuka called the two bodies "Lanherne Beach Northern Extension" and "Minor Eastern Lense". Results obtained from the current study show that the equivalent to the Minor Eastern Lense contains a higher content of rutile (10%), zircon (15%) and leucoxene (8%) than does the main body of mineralisation. Although the thickness of mineralisation is shallow and total tonnage of contained mineral is not great, the increased content of economically recoverable mineral may make this area attractive.

Resources of Lanherne Beach raw sand are set out in Table 2 and shown on plan in Figures 14 and 15. The 3.2 million tonnes of raw sand represents 48% of the deposit at 1.5% mineral cut-off. Contained heavy mineral is 156,000 tonnes which is 23% of the resource outlined to date.

The full extent of Lanherne Beach raw sand has not been fully defined.

On the Tip Road line holes should be drilled to reduce the present 40m. spacing to 20m. and extend so as to define the eastern limit of mineralisation. To the north of the Tip Road line, mineralisation has not been defined and for resource calculation purposes a 100m. northern extension has been applied. Additional drilling on the 1700N and 1900N lines is suggested with further drilling depending on the results obtained from these lines.

TABLE 2

RAW SAND - LANHERNE BEACH INDICATED RESOURCES AT 1.5% CUT-OFF

LINE	EXTENSION			t/m EXTENSION		% H.M.	MINERALOGY %			TONNES				
	North (m)	South (m)	Total (m)	Raw Sand	H.M.		Rutile	Zircon	Leucoxene	Sand	H.M.	Rutile	Zircon	Leucoxene
100N (180E-20E)	100	100	200	1,948	119	6.1	8	10	4	389,600	23,800	1,900	2,380	950
300N (140E-60W)	100	100	200	1,723	62	3.6	9	12	4	344,600	12,400	1,120	1,490	500
500N (120E-120W)	50	100	150	2,752	162	5.9	5.7	9.7	4	412,800	24,300	1,390	2,360	970
600N	-	-	-											
700N (120E-60E)	150	50	200	784	125	16.0	6	6	2	156,800	25,000	1,500	1,500	500
1000N (160W-540W) (60E-120W)	100	150	250	2,363 832	109 22	4.6 2.6	7 10	7 15	6 8	590,750 208,000	27,250 5,500	1,910 550	1,910 830	1,640 440
1200N (180W-340W)	100	100	200	1,392	61	4.4	8	9	5	287,400	12,200	980	1,100	610
1400N (240W-360W)	50	100	200	1,744	73	4.2	9	12	7	348,800	14,600	1,310	1,750	1,020
TIP ROAD (TR28-TR45)	100	50	150	3,072	71	2.3	6	6	6	460,800	10,650	630	630	630
						4.9	TOTAL TONNES			3,199,550	155,700	11,290	13,950	7,260
							TOTAL ROUNDED TONNES			3,200,000	156,000	11,300	14,000	7,260

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13.3 Milford Beach

Milford Beach is the barrier inland from Sea Beach. It represents a narrow strip approximately 30m. wide, but tends to be wider to the north. The southern end of Milford Beach appears to have been previously worked. In the vicinity of the 600N line old sand tailings cover Milford Beach.

The sand is typically clean with low slimes contents. The heavy mineral suite contains higher rutile and zircon values (each 9 - 11%) than does Sea Beach. Leucoxene is low.

Resources are set out in Table 3 and shown on plan in Figures 14 and 15. The raw sand at 196,000 tonnes represents 3% of the deposit at 1.5% mineral cut-off. Contained heavy mineral is 31,000 tonnes which is 5% of the resource outlined to date.

Further drilling is required to define the northern limits of mineralisation. It is suggested that initially holes be drilled on the 1600N and 1800N lines in order to define the extent of mineralisation.

TABLE 3

MILFORD BEACH INDICATED RESOURCES AT 1.5% CUT-OFF

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LINE	EXTENSION			t/m EXTENSION		% H.M.	MINERALOGY %				TONNES						
	North (m)	South (m)	Total (m)	Raw Sand	H.M.		Rutile	Zircon	Leucoxene	Ilmenite	Sand	H.M.	Rutile	Zircon	Leucoxene	Ilmenite	
100N	100	100	200	76.8	29.8	38.8	9	11	2	37	15,360	5,690	536	626	114	2,105	
300N	100	100	200	73.6	23.6	32.1	9	11	2	37	14,720	4,720	425	519	94	1,746	
500N	50	100	150	89.6	24.7	27.5	9	11	2	37	13,440	3,705	333	408	74	1,371	
600N	-	-	-														
700N	-	-	-														
1000N	100	150	250	250	44.2	17.8	11	9	2	38	62,500	11,050	1,215	995	221	4,774	
1200N	100	100	200	278	22.2	8.0	11	9	2	38	55,600	4,440	488	400	89	1,687	
1400N	100	100	200	171	7.8	4.5	11	9	2	38	34,200	1,560	172	140	31	593	
							15.9	TOTAL TONNES				195,820	31,165	3,169	3,088	623	12,276
								TOTAL ROUNDED TONNES				196,000	31,000	3,200	3,100	620	12,000

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13.4 Sea Beach

Sea Beach is the present day beach which contains visible concentrations of heavy mineral, some of which is high grade. The beach represents a narrow strip approximately 30m. wide. Since this is an active beach, it is a resource which has potential to replenish with time.

The sand is typically clean, being low in slimes. The heavy mineral suite contains 7 - 8% rutile and 6 - 9% zircon. Leucoxene at 1 - 2% is lower than for the other parts of the deposit.

Resources are set out in Table 4 and shown on plan in Figures 14 and 15. The raw sand at 146,000 tonnes represents 2% of the deposit at 1.5% mineral cut-off. Contained heavy mineral is 32,000 tonnes which is 5% of the resource outlined to date.

Further drilling is required to define the northern limits of mineralisation. It is suggested that initially holes be drilled on the 1600N and 1800N lines in order to define the extent of mineralisation.

TABLE 4

SEA BEACH INDICATED RESOURCES AT 1.5% CUT-OFF

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LINE	EXTENSION			t/m EXTENSION		% H.M.	MINERALOGY %				TONNES						
	North (m)	South (m)	Total (m)	Raw Sand	H.M.		Rutile	Zircon	Leucoxene	Ilmenite	Sand	H.M.	Rutile	Zircon	Leucoxene	Ilmenite	
100N	100	100	200	93.6	46.7	49.9	8	8	1	33	18,700	9,340	747	747	93	3,080	
300N	100	100	200	176.0	33.6	19.1	8	8	1	33	35,200	6,720	538	538	67	2,220	
500N	50	100	150	92.8	22.2	23.9	7	6	2	32	13,900	3,330	233	200	66	1,070	
600N	50	50	100	48.0	7.8	16.3	7	6	2	32	4,800	780	55	47	16	250	
700N	150	50	200	94.4	20.7	21.9	7	6	2	32	18,900	4,140	290	248	82	1,320	
1000N	100	150	250	70.4	13.6	19.4	7	9	2	29	17,600	3,400	238	306	68	990	
1200N	100	100	200	70.4	10.8	15.3	7	9	2	29	14,100	1,980	139	178	40	570	
1400N	100	100	200	112.0	12.2	10.9	7	9	2	29	22,400	2,440	171	220	49	710	
							22.1	TOTAL TONNES				145,600	32,130	2,411	2,484	481	10,691
								TOTAL ROUNDED TONNES				146,000	32,000	2,400	2,500	480	11,000

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13.5 Sand Tailings

Sand tailings from the operations of Naracoopa Rutile and Kibuka have been placed on the southern half of Lanherne Beach. For the most part this material is tailings from the richer parts of the deposit which was worked by Kibuka. Although this material is tailings it does contain a significant heavy mineral content including rutile and zircon. In some areas it overlies previously unmined sand with appreciable mineral contents, which for simplicity have been included as tailings.

Typically sand tailings have lower slimes and oversize content. The heavy mineral suite consistently contains approximately 5 - 6% each of rutile and zircon and does not show the variations that the raw sand does.

Resources of sand tailings are set out in Table 5 and shown on plan in Figures 14 and 15. The 2.71 million tonnes of sand tailings represents 40% of the deposit at 1.5% mineral cut-off. Contained heavy mineral is 214,000 tonnes which is 32% of the resource outlined to date.

To define the sand tailings resource more precisely, it is recommended that additional drilling be carried out on the 800N and 900N lines to infill between 700N and 1000N.

TABLE 5
SAND TAILINGS LANHERNE BEACH INDICATES RESOURCES AT 1.5% CUT-OFF

LINE	EXTENSION			t/m EXTENSION		% H.M.	MINERALOGY %			TONNES				
	North (m)	South (m)	Total (m)	Raw Sand	H.M.		Rutile	Zircon	Leucoxene	Sand	H.M.	Rutile	Zircon	Leucoxene
100N (000-140W)	100	100	200	1,630	106	6.5	6	6	3	326,000	21,200	1,270	1,270	640
300N (80W-240W)	100	100	200	2,824	277	9.8	5	6	3	564,800	55,400	2,770	3,320	1,660
500N (220W-380W)	50	100	150	2,544	221	8.7	4.5	5	5	381,600	33,150	1,490	1,660	1,660
600N (140E-380W)	50	50	100	8,086	671	8.3	5.2	6	3.5	808,600	67,100	3,490	4,030	2,350
700N (80W-320W)	150	50	200	3,160	187	5.9	6	6	5	632,000	37,400	2,240	2,240	1,870
1000N														
1200N														
1400N														
TIP ROAD														
7.9% TOTAL TONNES										2,713,000	214,250	11,260	12,520	8,180
TOTAL ROUNDED TONNES										2,710,000	214,000	11,300	12,500	8,180

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13.6 Heavy Mineral Tailings

Heavy mineral tailings occur as two (2) separate bodies, buried heavy mineral tailings and above (natural) surface tailings. In the case of the buried heavy mineral tailings resource calculations have been made using the projection of cross-sectional area method applied to all other types of mineralisation. A bulk density of 1.9 t/m has been applied. It is likely that the resource estimates quoted are not very reliable and may be higher than those resulting from further follow-up information. They have therefore been categorised as Inferred Resources. If these estimates are high, then they will be at the expense of sand tailings, with the net result of an overall reduction in total contained mineral. An estimate of 245,000 tonnes of buried heavy tailings, containing 116,000 tonnes of heavy mineral is inferred from data presently to hand.

For heavy mineral tailings above surface, resources have been estimated from measurement of volume within the contours on the orthophoto map. Additionally grades determined from drill holes have been utilised along with a bulk density of 2.3 t/m³. Estimates for the above surface heavy tailings are considered to be reliable. An estimate of 139,000 tonnes containing 115,000 tonnes of heavy mineral, is indicated.

The heavy mineral tailings for the most part comprise magnetic heavy mineral (ilmenite + others) but includes rutile (4%), zircon (4-5%) and leucoxene (1-2%). They comprise 6% of the raw sand feed and 36% of the total heavy mineral. It is not known at the present time how much of the rutile, zircon and ilmenite is recoverable or whether the ilmenite can be treated to produce a saleable product.

It is recommended that further drilling be undertaken in order to more accurately define the buried heavy mineral tailings resources. This additional drilling should be on lines 450N and 650N with holes between 60W and 140W on each of these two lines.

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14. RESOURCE ESTIMATE AT 2.5% CUT-OFF

For comparative purposes resource estimates have been calculated at 2.5% heavy mineral cut-off. Calculations were performed in a similar manner to those for 1.5% cut-off.

Tables 6 and 7 set out the resources for Lanherne Beach raw sand and sand tailings. The resources for Milford Beach and Sea Beach remain the same as those for 1.5% cut-off as set out in Tables 3 and 4 respectively. Heavy mineral tailings are the same as stated in Section 13.6.

In preparing Tables 6 and 7 only sand and contained heavy minerals have been considered, individual economic mineral species have not been considered as such.

Figure 16 shows the average drill hole grades for working sections down to a 2.5% heavy mineral cut-off.

TABLE 6
RAW SAND - LANHERNE BEACH INDICATED RESOURCES AT 2.5% CUT-OFF

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LINE	EXTENSION			t/m EXTENSION		% H.M.	TONNES		
	North (m)	South (m)	Total (m)	Raw Sand	H.M.		Sand	H.M.	
100N (180E-20E)	100	100	200	1,421	106	7.5	284,200	21,200	
300N (140E-60W)	100	100	200	1,003	51	5.1	200,600	10,200	
500N (120E-120W)	50	100	150	1,552	137	8.8	232,800	20,550	
600N	-	-	-						
700N (120E-60E)	150	50	200	720	124	17.2	144,000	24,800	
1000N (160W-380W) (20E-120W)	100	150	250	1,219 672	84 18	6.9 2.7	304,750 168,000	21,000 4,500	
1200N (220W-340W)	100	100	200	1,040	54	5.2	208,000	10,800	
1400 (240W-360W)	50	100	150	1,232	64	5.2	184,800	9,600	
TIP ROAD (TR28-TR45)	100	50	150	1,792	56	3.1	268,800	8,400	
						6.6	TOTAL TONNES	1,995,950	131,050
							TOTAL ROUNDED TONNES	2,000,000	131,000

TABLE 7
SAND TAILINGS INDICATED RESOURCES AT 2.5% CUT-OFF

LINE	EXTENSION			t/m EXTENSION		% H.M.	TONNES		
	North (m)	South (m)	Total (m)	Raw Sand	H.M.		Sand	H.M.	
100N (000-140W)	100	100	200	1,630	106	6.5	326,000	21,200	
300N (80W-240W)	100	100	200	2,824	277	9.8	564,800	55,400	
500N 220W-380W	50	100	150	2,544	221	8.7	381,600	33,150	
600N (140E-380W)	50	50	100	7,158	651	9.1	715,800	65,100	
700N (80W-320W)	150	50	200	3,048	186	6.1	609,600	37,200	
						8.2	TOTAL TONNES	2,597,800	212,050
							TOTAL ROUNDED TONNES	2,600,000	212,000

15. GENERAL DISCUSSION15.1 Summary of Resources

A summary of the Indicated and Inferred resources is shown in Table 8 at a 1.5% heavy mineral cut-off. From this Table, contained heavy mineral is 670,000 t containing rutile 37,000 t, zircon 43,000 t and leucoxene 20,000 t.

For comparative purposes the Indicated resources at 2.5% heavy mineral cut-off are shown in Table 9. At this higher cut-off contained heavy mineral is 640,000 t.

The reduction in resources by raising cut-off from 1.5% to 2.5% heavy mineral is 27,000 t of heavy mineral. This increases average heavy mineral from 10.0% to 12.0%, while mineral bearing sand drops from 6.6 million t to 5.3 million t, a decrease of 1.3 million t.

TABLE 8

RESOURCE SUMMARY

RESOURCES STATED AS INDICATED EXCEPT FOR *BURIED HEAVY TAILINGS
AT 1.5% HEAVY MINERAL CUT-OFF

CATEGORY	IN-SITU CONTENT			TONNES				
	% H.M.	% R	% Z	SAND	H.M.	R	Z	Leu
<u>RAW SAND</u>								
LANHERNE BEACH	4.9	0.35	0.44	3,200,000	156,000	11,300	14,000	7,260
MILFORD BEACH	15.9	1.50	1.44	196,000	31,000	3,200	3,100	620
SEA BEACH	22.10	1.66	1.71	146,000	32,000	2,400	2,500	480
<u>SAND TAILINGS</u>	7.9	0.42	0.46	2,710,000	214,000	11,300	12,500	8,180
<u>HEAVY TAILINGS</u>								
ABOVE SURFACE	82.90	3.31	4.13	139,000	115,000	4,600	5,800	1,200
BURIED*	47.30	1.90	1.90	245,000*	116,000*	4,600*	4,600*	2,300*
TOTAL				6,636,000	664,000	37,400	42,500	20,040
ROUNDED TONNES				6,600,000	660,000	37,000	43,000	20,000

- * . Less certain that quantities stated are reliable since lateral extent is not known. Further drilling would be required to quantify this resource. This resource is stated as INFERRED.
- . It is possible that part of this resource is replaced by an equivalent quantity of sand tailings of an untested heavy mineral grade.

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TABLE 9

RESOURCE SUMMARY

RESOURCES FOR 2.5% H.M. CUT-OFF
Resources stated as indicated except for * buried heavy tailings

CATEGORY	IN-SITU CONTENT		TONNES	
	% H.M.	SAND	H.M.	
<u>RAW SAND</u>				
LANHERNE BEACH	6.6	2,000,000	131,000	
MILFORD BEACH	15.9	196,000	31,000	
SEA BEACH	22.10	146,000	32,000	
<u>SAND TAILINGS</u>				
	8.2	2,600,000	212,000	
<u>HEAVY TAILINGS</u>				
ABOVE SURFACE	82.90	139,000	115,000	
BURIED*	47.30	245,000*	116,000*	
TOTAL		5,326,000	637,000	
ROUNDED TOTAL		5,300,000	640,000	

- * . Less certain that quantities stated are reliable since lateral extent is not known. Further drilling would be required to quantify this resource. This resource is stated as Inferred.
- . It is possible that part of this resource is replaced by an equivalent quantity of sand tailings of an untested heavy mineral grade.

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15.2 Comparison with Kibuka Resources

Using a 2.5% cut-off grade, a comparison between the Kibuka resources and the present programme's resources has been carried out for Lanherne Beach. Due to the different orientations of the two survey grids only certain lines of the two grids were comparable (see table below). The comparison between the resource is not meant to be in terms of overall tonnages, but whether or not there is a significant increasing or decreasing trend between the two resource estimates.

TABLE 10
Comparison of Lanherne Beach Resources

Kibuka Resource Estimate			Present Resource Estimate		
Line	Extension N-S (m)	H.M. Tonnes	Line	Extension (m)	H.M. Tonnes
			800N*	50N	6,200
900	100	11,200	1000N	150S) 100N)	25,500
1000	100	7,100			
1100	100	7,200			
1200	100	9,000	1200N	100S) 100N)	10,800
1300	100	4,800			
1400	150	4,875	1400N	100S) 50N)	9,600
Total	650	44,175		650	52,100

* Calculation made from 800N to 1450N. Results for 700N drill holes included for area from 800 - 850N.

From Table 10 generally speaking there is an increase of approximately 20% from the Kibuka to the present drilling programme. This increasing trend was also noted in the check drilling programme.

As previously mentioned in Section 12.3, two check drill holes, 200E, 800N and 275E, 800N were drilled beside old Kibuka pegs. As shown in figures 13c and 13d, the holes in the current programme have higher

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grades than those of Kibuka. Due to the relatively low grades intersected within these check holes, and the differences between hand auger and rig drilled holes (see section 12.3) the actual percentage increase is unimportant. However the evidence from Table 10 and the check drill hole data suggest that there is an overall upgrading of the resource from the current exploration programme.

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15.3 Mining

From the investigations undertaken in this programme the following points are made with respect to mining of the mineralisation outlined:

- i) Where heavy mineral grades persist the natural base for mining is the clay layer underlying the sand.
- ii) This clay floor is not a flat lying horizon. The cross sections show it undulates, while a structural contour plan prepared from the information is presented as Figure 17.
- iii) The top surface of the clay rises to an elevation of +15m. on the 1000N line. In most other areas it is less than +10m.
- iv) While the general trend for the top of the clay is a slope towards the modern shore line there are high and low areas which do not fit the overall trend. On the western side of Lanherne Beach the slope is to the west and possibly the Palaeo Frazer River. Further drilling will more precisely define the clay basement topography.
- v) From a mining viewpoint the clay basement topography may present some difficulty for any dredge mining proposal, particularly with respect to maintaining adequate pond levels over the higher areas.

15.4 Mineralogy

From the investigation undertaken in this programme the following points are made with respect to the metallurgical treatment of the heavy mineral:

- i) The mineralogical examination of heavy mineral composites has shown that the 1.2 amp Frantz magnetic fractions generally comprise 25 - 30% by weight of the total heavy mineral and range from 10.8% for heavy tailings to 43.8% for raw Lanherne Beach sand in the eastern lens. Generally Lanherne Beach raw sands contain a higher level of non-magnetics than do other feed types. Details of results are set out in Appendix 4.
- ii) The 1.2 amp frantz non magnetic fractions generally contain 60-75% by volume, rutile, zircon and leucoxene.
- iii) An examination of rutile from 15 samples showed it to comprise 57% red and 43% black rutile. The results of this study are included in Appendix 4.
- iv) Pyrite did occur in many samples, mostly at levels of <1% of the total heavy minerals. However one sample, being a composite from Tip Road, contained 4% pyrite in the total heavy mineral and 11% in the 1.2 amp non magnetics.
- v) Pyrite was noted during field investigations, in one case as a cement to sand grains in an aggregate approx. 0.20m. diameter. H₂S gas was given off from a number of drill hole samples.
- vi) The presence of pyrite is likely to present problems associated with acid water during mining and pyrite contamination of rutile products.

- vii) Monazite was noted at levels of <1% of the total heavy mineral suite. However there are problems associated with optical identification and quantification of monazite. The only reliable way to accurately quantify the monazite content in small samples is to identify the grains using an electron microprobe. Additionally for most samples the magnetic fractions which would be expected to contain monazite were not optically examined.
- viii) Traces of scheelite were noted in some samples.
- ix) Quantification of the trace economic minerals chiefly monazite, cassiterite and scheelite, would best be undertaken using the larger samples to be processed during metallurgical trials.
- x) In the 1.2 amp non-magnetics the main non-economic minerals were tourmaline and aluminosilicates. These minerals with specific gravities of less than 3.4 have sufficient difference in S.G. to be readily separable from rutile-zircon (S.G. + 4.0) by gravity techniques.
- xi) The mineralogical results as received have been included in the resource estimates without applying a specific gravity correction. As outlined in Section 11.4 of this report, it has a slight downgrading effect on the contained rutile-zircon, but is within the expected error limits.

056

15.5 Other Points

There are several other significant points arising from the study.

These are:

- i) No attempt has been made to quantify the +2 mm content of the samples. Like the minor economic minerals the most reliable method is to use larger samples, such as the metallurgical test samples, for this. When an overall + 2mm. content is determined resource estimates would need to be adjusted to make allowance for this.
- ii) From information currently available the -2 mm + 1 mm content of sands are:

Lanherne Beach	raw sand	1.2%
Lanherne Beach	sand tailings	0.9%
Sea Beach	raw sand	1.7%
Milford Beach	raw sand	0.4%

Details of this are shown along with reserves blocks on Figures 14 and 15.

- iii) Slimes content of sands are:

Lanherne Beach	raw sand	4.3%
Lanherne Beach	sand tailings	2.5%
Sea Beach	raw sand	1.1%
Milford beach	raw sand	2.1%

As expected the Lanherne Beach raw sand contains the highest level of slimes.

057

- iv) Both slimes and oversize content show an overall increase with depth.

- v) One test hole was drilled in the middle of the abandoned Kibuka slimes dam. Results are shown with the drill hole logs in Appendix 2. Measured slimes depth was 3.8m. overlying coarse sand. Reprocessing of this material would be undesirable and provision should be made to either mine around or relocate this material.

- vi) Sampling for metallurgical trials should be designed to enhance the drillhole resource estimation, with particular respect to:
 - . determining recoverable economic mineral content.
 - . determining the extent of down-grading due to drilling, particularly R.C. drilling.
 - . oversize (+1.0mm.) content of sands.

16. FUTURE PROGRAMME

Further investigations are required to fully identify the resource of heavy mineral sands at Naracoopa. In order that resources be brought to fully measured status, it would be necessary to drill on lines more closely spaced than at present. It is likely that the line spacing required will be 100m. with the possibility of 50m. lines in some critical areas. At the current status of the project it is suggested that a measured resource status is not required. Drilling at this stage should be directed firstly towards extending the indicated resources and secondly towards firming up in areas where further information at this time would be desirable.

Detailed below is the suggested additional drilling required in order of priority. Figure 18 shows locations of drill holes.

16.1 Hand Drilling

- i) On Sea and Milford Beaches extend to the north by drilling 5 holes on each of the 1600N, 1800N, 2000N lines.

Total 15 holes @ 4m. each = 60m.

- ii) On Lanherne Beach extend existing lines to the west in swampy areas not accessible to a rig.

700N Line	2 holes @ 8m.	16m.
1000N Line	5 holes @ 6m each	30m.
1200N Line	10 holes @ 8m each	80m.
1400N Line	10 holes @ 8m each	80m.
	Total	<hr/> 206m.

16.2 Rig Drilling

i) On Lanherne Beach - Northern Extension.

To the north of the Tip Road line, drill two step-out lines at 1700N and 1900N. These are areas containing deeper sand with mineralisation to approx. 15m. likely in some holes.

1700N	15 holes @ 15m.	225m.
1900N	15 holes @ 15m.	225m.
Tip road (1500N) infill to 20m. hole spacing and extend to east		
	10 holes @ 15m.	150m.
	Total	600m.

ii) On Lanherne Beach 700N to 1000N.

Infill between lines 700N and 1000N in order to more accurately define the northern limit of sand tailings and the southern extent of raw sand. Drill only to the west of the base line.

800N	19 holes @ 10m.	190m.
900N	24 holes @ 8m.	192m.
	Total	382m.

iii) Lanherne Beach - Buried Heavy Tailings

To more precisely quantify the buried heavy tailings located between 200W and 140W on 500N line.

Drill holes as follows on lines

450N:	220W to 120W = 6 holes @ 12m. = 72m.
550N:	220W to 120W = 6 holes @ 12m. = 72m.
	Total
	144m.

060

16.3 Estimated Cost Hand Drilling

i)	Presentation of programme details to Tasmanian Department of Mines for hand and rig drilling work	\$330
ii)	Drilling	
	Survey lines and peg holes	
	4 days for 3 man team @ \$375/day	\$1,500
	Drill 266m. @ \$11.00/m.	\$2,926
		<hr/>
		\$4,426
iii)	Field Supervision	
	8 days @ \$330/day	\$2,640
iv)	Analysis	
	170 samples @ \$20	\$3,460
v)	Report and liaison	
	Prepare revised plans and sections	
	Up-date resource estimates	
	Allow 5 days @ \$330	\$3,300
	Drafting	\$500
		<hr/>
		\$3,800
vi)	Sundry Costs	
	Sample bags	\$250
	Survey pegs	\$50
	Transport equipment to King Island	\$500
	Transport samples to Smithton	\$200
	Air fares - Hand drill crew Wyn-K.I.	\$500
	Geologist Syd-K.I.-Wyn	\$700
	Car rental 8 days @ \$70/day	\$560
	Fuel	\$200
	B. Marshall 4 W.D. transport	\$200
	Accommodation K.I. - 32 man days @ \$10	\$320

Meals - 32 man days @ \$20	\$640
Accommodation & meals en route	\$200
Charge on hand boring equipment	\$200
	<hr/>
	\$4,520
vii) Contingencies 10%	\$1,910
	<hr/>
Total	\$21,086

062

16.4 Estimated Cost Rig Drilling

i)	Survey	
	Doze lines allow 20 hrs @ \$60/hr	\$1,200
	Peg holes and hand trim access	
	3 days for field crew @ \$375	\$1,125
		<hr/>
		\$2,325
ii)	Drilling	
	R.C. rig for 10 days @ \$1500/day	\$15,000
	Establishment	\$6,000
	Shipping	\$6,200
	Air fares	\$500
	Bits and Miscellaneous	\$500
		<hr/>
		\$28,200
iii)	Sampling field hand - 10 days @ \$125/day	\$1,250
iv)	Analyses - 600 @ \$20.00/sample	\$12,000
v)	Mineralogy	
	Allow 12 samples for R & Z only	\$720
vi)	Field supervision, liaison, report	
	Prepare additional cross sections	
	Revise and up-date plans and sections	
	to incorporate new data.	
	Revise resource estimates	
	20 days	\$6,600
	Drafting	\$700
		<hr/>
		\$7,300
vii)	Sundry Costs	
	Sample bags	\$750
	Survey pegs	\$100
	Transport samples to Smithton	\$1,000
	Air fare - Geologist, Syd-K.I.-Wyn	\$700
	Field hand Wyn-K.I.	\$200

Car rental 15 days @ \$70/day	\$1,050
B. Marshall 4 W.D. transport	\$600
Fuel for rig and vehicle	\$1,000
Accommodation K.I. 62 man days @ \$10	\$620
Meals - 62 man days @ \$20	\$1,240
Accommodation & meals en route	\$200
	<hr/>
	\$7,460
viii) Contingency 10%	\$5,930
	<hr/>
Total	\$65,185



5579500mN
5579000mN
5578500mN
5578000mN
5577500mN
5577000mN



SCALE 1:5000
0 50 100 150 200 250m.

711065
NATIONAL MINERAL SANDS
EL 28/85
ORTHOPHOTO MAP
NARACOOPA AREA
Author: _____ Date: JULY '88 Fig.No: 2

88 - 2885

064

5 cm

SEA
ELEPHANT BAY
ROAD
NARACOOPA

600W
500W
400W
300W
200W
100W
0
100E
200E
300E

FRAZER RIVER

SEA ELEPHANT BAY

27/14.68%
15/4.52%
36/6.81%
55/7.15%
50/5.54%
30/5.75%
110/7.28%
100/5.75%
50/3.76%
110/2.56%
105/2.73%
105/8.84%
85/10.86%
75/8.96%
0.4/6.19%
20/5.02%
15/8.26%
2.4/21.51%
2.8/51.62%
0.25/12.05%

55/25.41%
55/6.10%
60/8.89%
85/8.23%
12.6/5.97%
14.5/7.94%
14.0/8.00%
130/7.70%
115/14.65%
100/5.24%
100/2.71%
35/3.01%
20/4.21%
55/1.85%
4.75/5.47%
4.8/3.47%
2.3/3.16%
2.5/3.61%
115/12.08
- / -
2.3/32.11%
4.0/15.55%
3.0/28.07%

80/8.54%
110/7.75%
85/7.64%
85/8.53%
90/8.97%
95/10.03%
95/8.72%
55/3.81%
100/8.15%
10.5/24.82%
110/30.50%
110/62.81%
10.5/61.53%
14.5/16.51%
153/30.22%
170/20.75%
75/70.55%
75/74.07%
75/59.85%
75/14.02%
75/6.03%
115/5.75%
9.0/10.05%
75/4.85%
4.0/2.76%
30/10.65%
2.8/27.52%
2.2/20.84%
1.4/14.77%

40/8.42%
40/11.2%
1125/7.33%
75/6.06%
55/4.76%
115/6.40%
145/7.34%
145/8.05%
155/7.35%
115/10.05%
85/10.64%
95/7.33%
10.5/10.84%
110/7.68%
10.5/5.25%
10.5/3.16%
115/25.2%
55/7.52%
6.5/16.5%
15/25.2%
55/6.82%
10.5/4.34%
115/7.5%
MISSING SAMPLES
10.0/11.43%
6.0/17.15%
1.5/10.25%

65/5.06%
75/5.26%
85/10.72%
1025/5.52%
115/6.02%
105/6.07%
85/5.45%
80/4.93%
70/3.85%
75/5.20%
80/6.55%
35/2.85%
15/1.76%
- / -
15/2.17%
- / -
15/3.47%
- / -
35/5.14%
35/7.16%
55/12.15%
80/25.13%
2.3/24.22%
13/10.80%

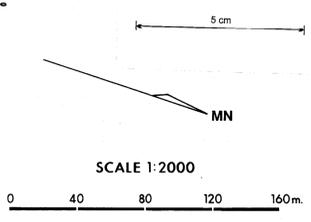
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45/2.46%
35/3.14%
35/3.40%
35/2.39%
35/5.3%
55/14.2%
36/26.12%
35/5.22%
35/5.05%
35/2.57%
40/1.93%
45/3.93%
- / -
65/2.61%
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15/2.5%
15/2.60%
15/1.94%
15/1.87%
35/37.77%
60/11.64%
17/18.6%
10/22.31%

- / -
15/3.00%
35/3.87%
55/8.11%
75/6.96%
75/4.99%
75/3.77%
75/2.91%
15/1.69%
15/2.18%
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- / -
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- / -
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- / -
- / -
- / -
30/14.68%
4.2/8.05%
30/4.65%
30/12.25%
2.2/15.3%

15/3.71%
75/4.62%
75/4.68%
55/3.98%
115/4.36%
75/4.77%
55/3.07%
- / -
- / -
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- / -
- / -
- / -
- / -
- / -
- / -
- / -
- / -
2.9/4.63%
3.9/4.65%
30/12.25%
10/2.67%

TR0 - / -
TR4 - / -
TR8 - / -
TR12 - / -
TR16 - / -
TR22 - / -
TR24 - / -
TR28 130/2.82%
TR32 145/2.77%
TR36 75/1.55%
TR40 75/0.82%
TR45 55/3.09%

LEGEND
30/12.25%
Depth in m. Grade to Depth.



711066
NATIONAL MINERAL SANDS
EL 28/85
NARACOOPA GRID
GRADES AT 1.5% H.M.
CUTOFF
Author: G. LEE Date: JUNE '88 Fig. No: 3

88-2885

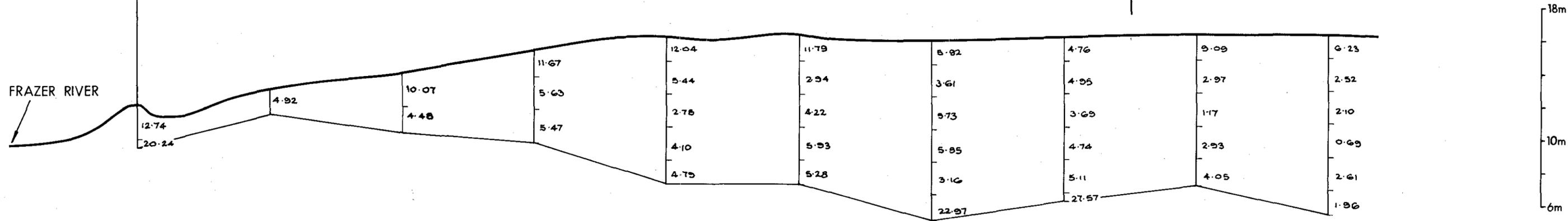
WEST

EAST

13

R=6
Z=6

FRAZER RIVER



Rock	Rock	Rock	Rock	Rock	Clay	Clay	Clay	Clay	Clay	Clay	Descr ⁿ end hole
14.0W	12.0W	10.0W	8.0W	6.0W	4.0W	2.0W	0.0W	2.0E	4.0E		Drill hole no.
2.7m	1.5m	3.6m	5.5m	9.0m	5.0m	11.0m	10.0m	9.0m	11.0m		Depth to 1.5% H.M. Cutoff
14.68%	4.92%	6.81%	7.15%	5.54%	5.75%	7.28%	5.79%	3.76%	2.56%		Ave. Grade to 1.5% Cutoff

88-2885

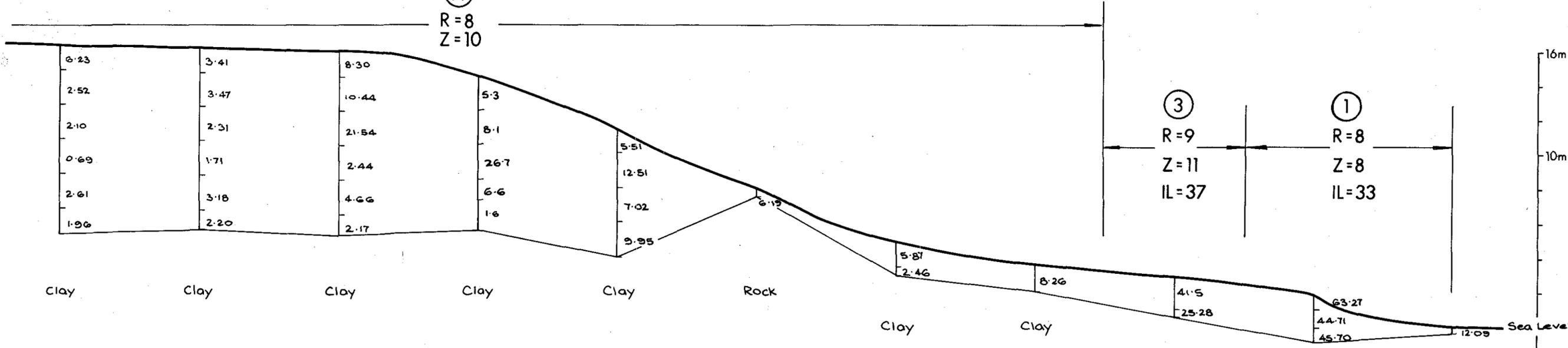
066

LEGEND

- ① Mineralogical Sample No.
- R=8 % Rutile
- Z=8 % Zircon
- IL=33 % Ilmenite

14

R=8
Z=10



Clay	Clay	Clay	Clay	Clay	Rock	Clay	Clay	Clay	Rock	Rock	Rock
4.0E	6.0E	8.0E	10.0E	12.0E	14.0E	16.0E	18.0E	20.0E	22.0E	24.0E	
11.0m	10.5m	10.5m	8.5m	7.5m	0.4m	2.0m	1.5m	2.4m	2.8m	0.25m	
2.56%	2.73%	8.84%	10.86%	8.96%	8.19%	5.02%	8.26%	38.8%	51.62%	12.09%	

SCALE 711067

HORIZONTAL 1:500
VERTICAL 1:200

NATIONAL MINERAL SANDS

EL 28/85

LINE 100N
CROSS SECTION

Author: G. LEE Date: JUNE '88 Figure No. 4

WEST

EAST

⑩

R = 4
Z = 5

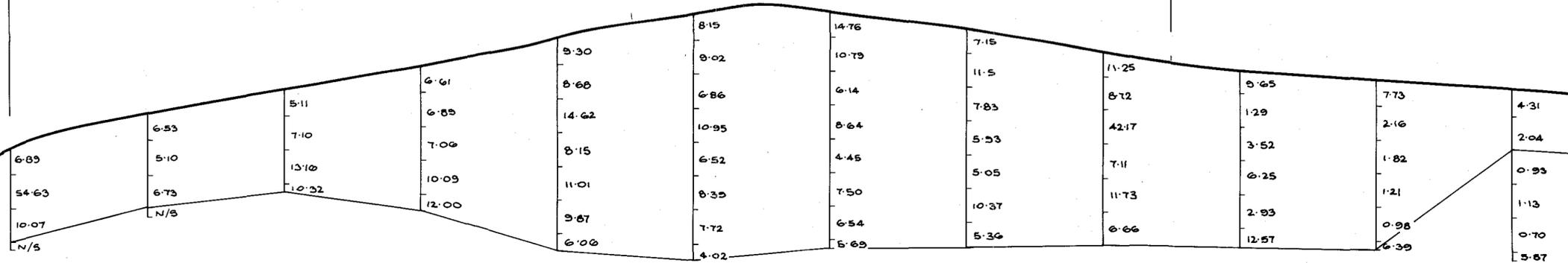
⑫

R = 5
Z = 6

⑪

R = 9
Z = 14

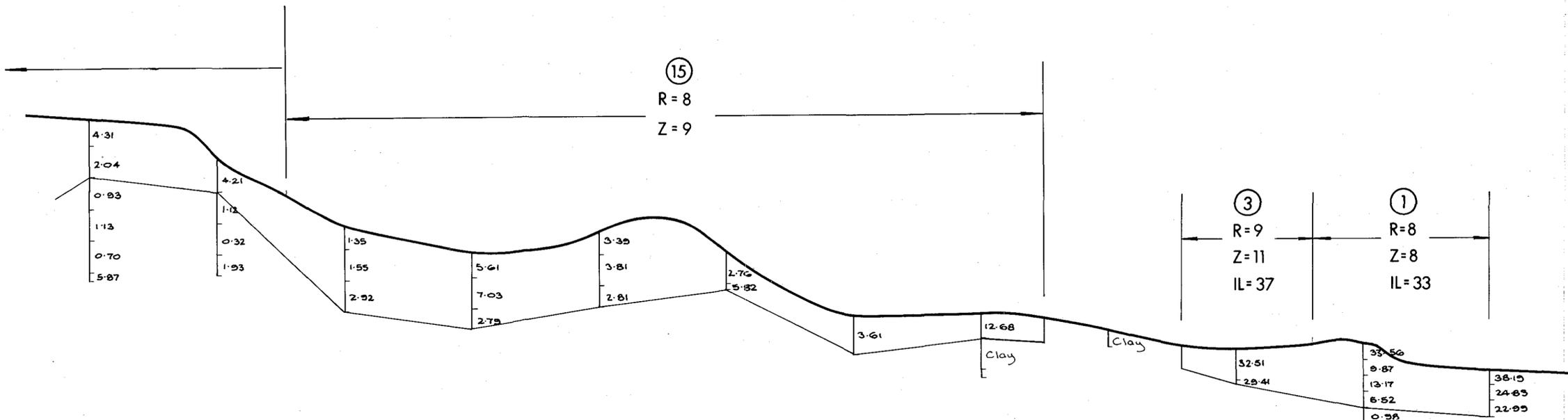
FRAZER RIVER



Clay 240w 5.5m 25.41%	Rock 220w 5.5m 6.10%	Rock 200w 6.0m 8.89%	Rock 180w 8.5m 8.23%	Clay 160w 12.5m 3.97%	Clay 140w 14.5m 7.94%	Rock 120w 14.0m 8.08%	Clay 100w 13.0m 7.70%	Clay 80w 11.5m 14.65%	Clay 60w 10.5m 5.24%	Clay 40w 10.0m 2.71%	Clay 20w 3.5m 3.01%
--------------------------------	-------------------------------	-------------------------------	-------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	-------------------------------	-------------------------------	------------------------------

⑮

R = 8
Z = 9



Clay 20w 3.5m 3.01%	Clay 00 2m 4.21%	Clay 20E 5.5m 1.99%	Clay 40E 4.75m 5.47%	Clay 60E 4.8m 3.47%	Stone Band 80E 2.3m 3.16%	Clay 100E 2.5m 3.61%	Rock 120E 1.5m 12.68%	Rock 140E —	Clay 160E 2.3m 32.11%	Clay 180E 4m 15.53%	Pebbles 200E 3m 28.67%	Descr ⁿ end hole Drill hole no. Depth to 1.5% Cutoff Av. Grade to 1.5% Cutoff
------------------------------	---------------------------	------------------------------	-------------------------------	------------------------------	------------------------------------	-------------------------------	--------------------------------	-------------------	--------------------------------	------------------------------	---------------------------------	---

LEGEND

- ① Mineralogical Sample No.
- R = 8 % Rutile
- Z = 8 % Zircon
- IL = 33 % Ilmenite

88-2885

SCALE
HORIZONTAL 1:500
VERTICAL 1:200
711068

NATIONAL MINERAL SANDS

EL 28/85

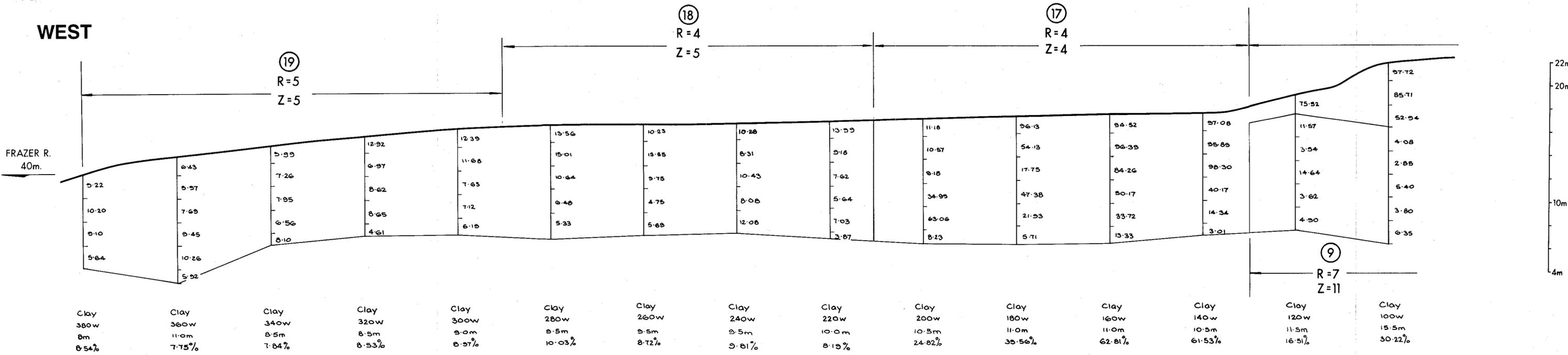
LINE 300N
CROSS SECTION

Author: G. LEE Date: JUNE '88 Figure No. 5

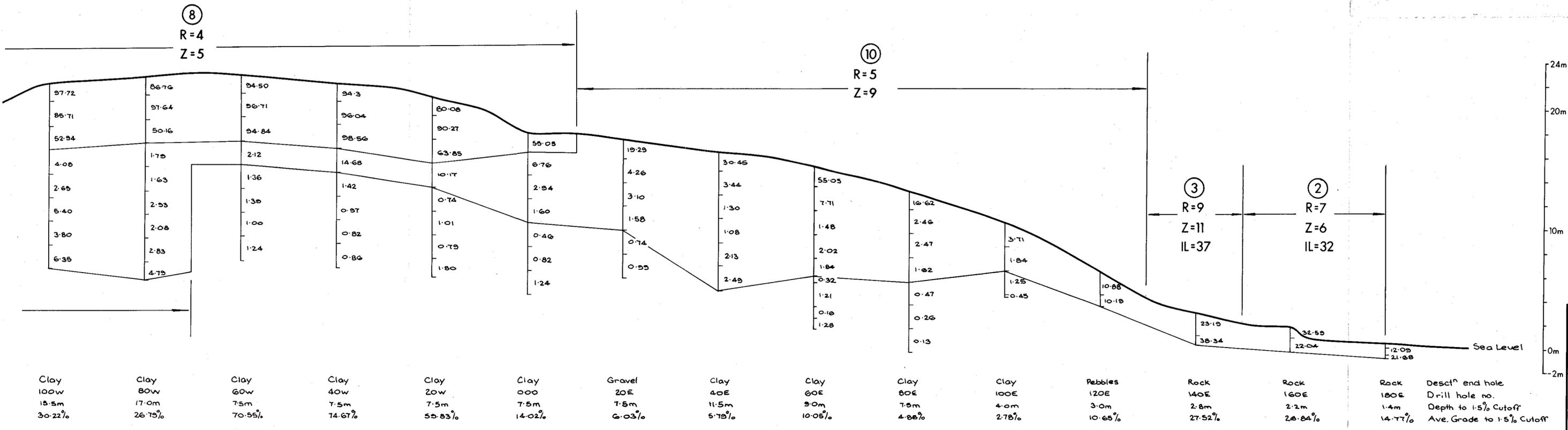
5 cm

WEST

EAST



88-2885



LEGEND
 ① Mineralogical Sample No.
 R = 8 % Rutile
 Z = 8 % Zircon
 IL = 33 % Ilmenite

SCALE 711069
 HORIZONTAL 1:500
 VERTICAL 1:200

NATIONAL MINERAL SANDS
 EL 28/85
LINE 500N
CROSS SECTION
 Author: G. LEE Date: JUNE '88 Figure No. 6

7874

WEST

EAST

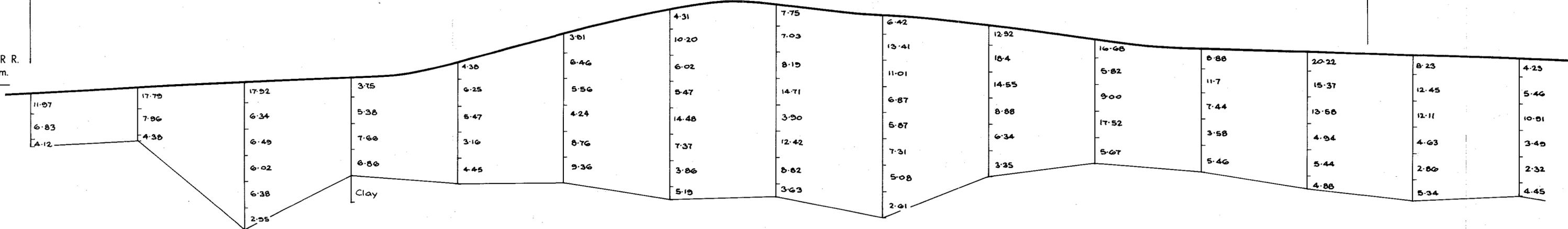
23

R=5
Z=4

22

R=4
Z=5

FRAZER R.
60m.



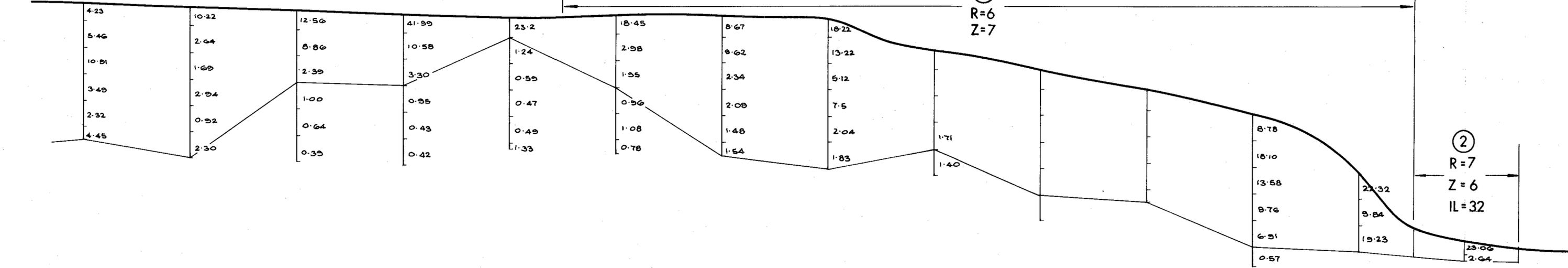
Clay 380w 4.0m 9.42%	Clay 360w 4.0m 11.2%	Clay 340w 11.25m 7.33%	Clay 320w 7.5m 6.06%	Clay 300w 5.5m 4.76%	Clay 280w 11.5m 6.49%	Clay 260w 14.5m 7.34%	Clay 240w 14.5m 8.65%	Clay 220w 15.5m 7.35%	Clay 200w 11.5m 10.65%	Clay 180w 9.5m 10.64%	Clay 160w 9.5m 7.33%	Clay 140w 10.5m 10.84%	Clay 120w 11.0m 7.68%	Clay 100w 10.5m 5.25%
-------------------------------	-------------------------------	---------------------------------	-------------------------------	-------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	---------------------------------	--------------------------------	-------------------------------	---------------------------------	--------------------------------	--------------------------------

21

R=6
Z=8

20

R=6
Z=7



Clay 100w 10.5m 5.25%	Clay 80w 11.5m 3.16%	Clay 60w 5.5m 7.52%	Clay 40w 5.5m 16.5%	Clay 20w 1.5m 23.2%	Clay 000 5.5m 6.82%	Clay 20E 10.5m 4.34%	Clay 40E 11.5m 7.5%	Clay 60E	Clay 80E	Clay 100E	Rock 120E 10.0m 11.43%	Pebbles 140E 6.0m 17.13%	Pebbles 160E 1.5m 16.25%	Descr ⁿ end hole Drill hole no. Depth to 1.5% Cutoff Ave. Grade to 1.5% Cutoff
--------------------------------	-------------------------------	------------------------------	------------------------------	------------------------------	------------------------------	-------------------------------	------------------------------	-------------	-------------	--------------	---------------------------------	-----------------------------------	-----------------------------------	--

24m
20m
10m
8m

5cm

88-2885

20m
10m
0m
-2m

- LEGEND
- ① Mineralogical Sample No.
 - R = 8 % Rutile
 - Z = 8 % Zircon
 - IL = 33 % Ilmenite

711070

SCALE

HORIZONTAL 1:500

VERTICAL 1:200

NATIONAL MINERAL SANDS

EL 28/85

LINE 600N

CROSS SECTION

Author: G. LEE Date: JUNE '88 Figure No. 7

7875

WEST

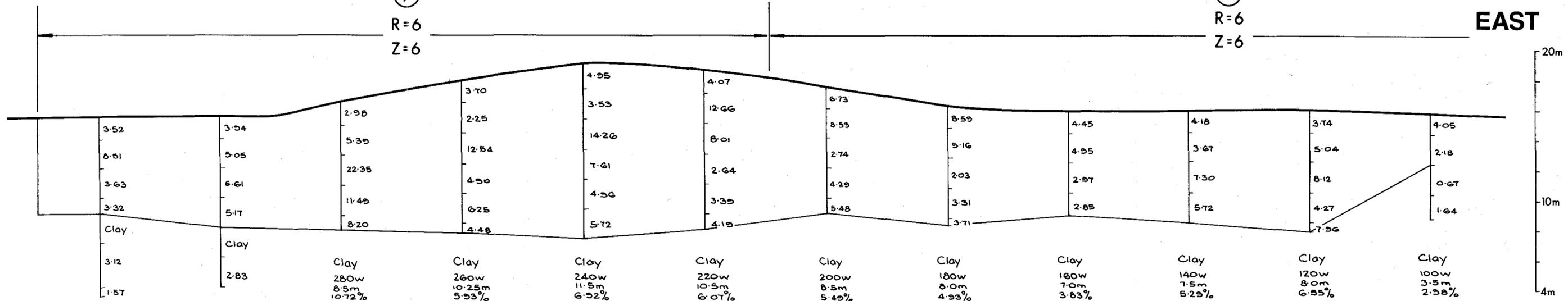
EAST

⑦

R=6
Z=6

⑥

R=6
Z=6



Descrⁿ end hole
 Drill hole no.
 Depth to 1.5% H₂O Cutoff
 Ave. Grade to 1.5% Cutoff

Clay
 320w
 6.5m
 5.06%

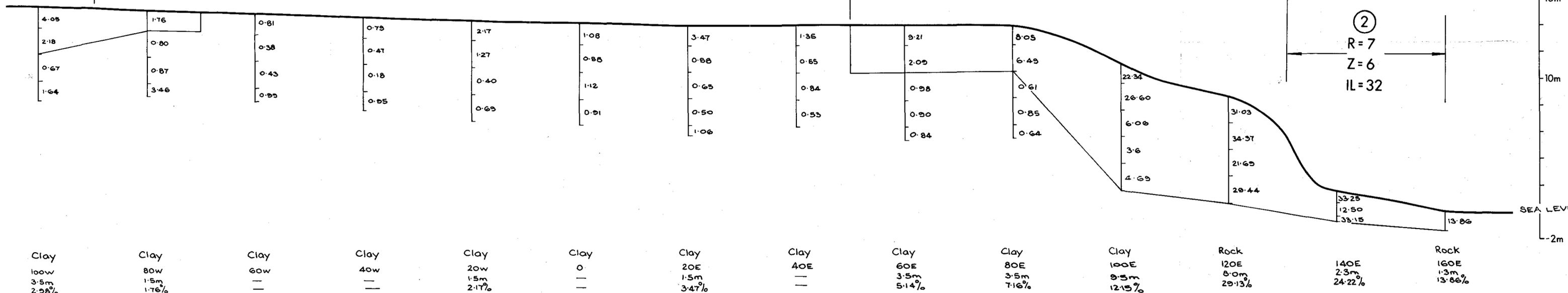
Clay
 300w
 7.5m
 5.28%

⑩

R=6
Z=6

②

R=7
Z=6
IL=32

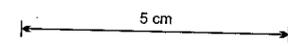


LEGEND

- ① Mineralogical Sample No.
- R=8 % Rutile
- Z=8 % Zircon
- IL=33 % Ilmenite

SCALE

HORIZONTAL 1:500
 VERTICAL 1:200



88-2885

NATIONAL MINERAL SANDS
 EL 28/85
LINE 700N
CROSS SECTION
 Author: G. LEE Date: JUNE '88 Figure No. 8
 711071

WEST

7876

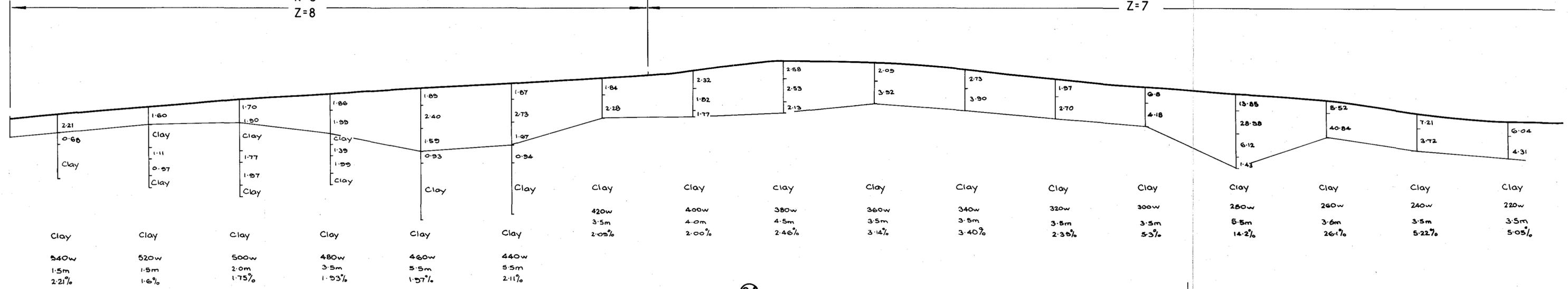
EAST

26

R=6
Z=8

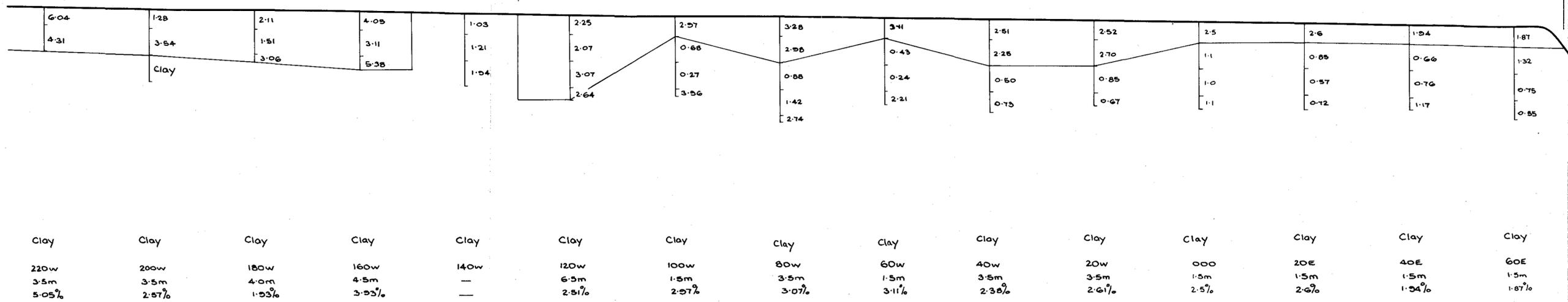
25

R=7
Z=7



24

R=10
Z=15

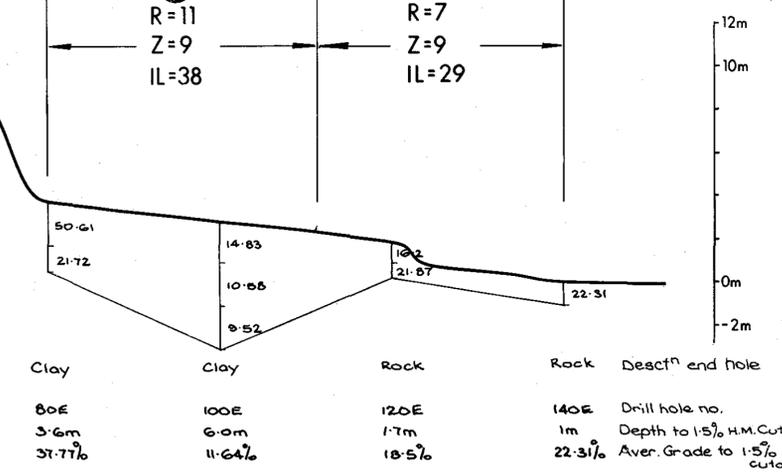


5

R=11
Z=9
IL=38

4

R=7
Z=9
IL=29



88-2885

LEGEND

① Mineralogical Sample No.

R=8 % Rutile

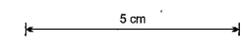
Z=8 % Zircon

IL=33 % Ilmenite

SCALE

HORIZONTAL 1:500

VERTICAL 1:200



711072

NATIONAL MINERAL SANDS

EL 28/85

LINE 100N

CROSS SECTION

Author: G. LEE Date: JUNE '88 Figure No. 9

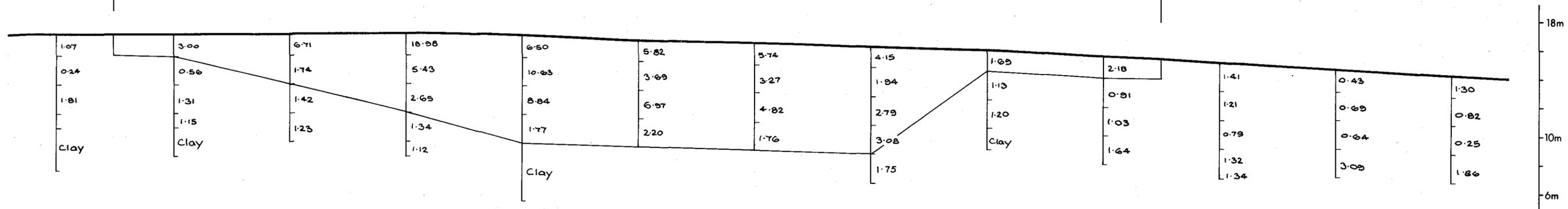
7877

WEST

EAST

27

R = 8
Z = 9



Clay 360w	Clay 340w	Clay 320w	Clay 300w	Clay 280w	Clay 260w	Clay 240w	Clay 220w	Clay 200w	Clay 180w	Clay 160w	Clay 140w	Clay 120w
—	1.5m	3.5m	5.5m	7.5m	7.5m	7.5m	7.5m	1.5m	1.5m	—	—	—
—	3.00%	3.87%	8.11%	6.96%	4.55%	3.77%	2.91%	1.65%	2.18%	—	—	—

Descrⁿ end hole
Drill hole no.
Depth to 1.5% Cutoff
Av. Grade to 1.5% Cutoff

88-2885

5 cm

LEGEND

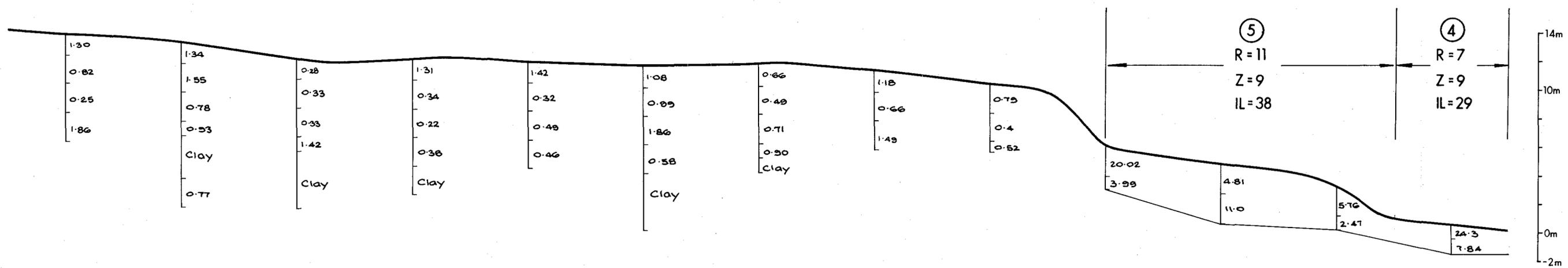
- ① Mineralogical Sample No.
- R = 8 % Rutile
- Z = 8 % Zircon
- IL = 33 % Ilmenite

711073

SCALE
HORIZONTAL 1:500
VERTICAL 1:200

NATIONAL MINERAL SANDS
EL 28/85
LINE 1200N
CROSS SECTION

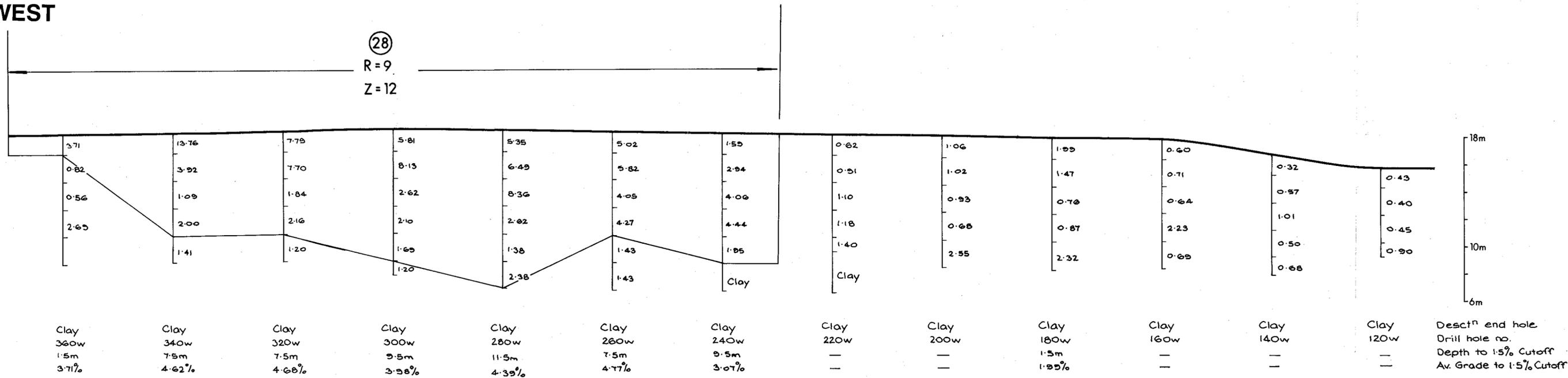
Author: G. LEE Date: JUNE '88 Figure No. 10



Clay 120w	Clay 100w	Clay 80w	Clay 60w	Clay 40w	Clay 20w	Clay 000	Clay 20E	Rock 40E	Rock 60E	Rock 80E	Rock 100E	Rock 120E
—	—	—	—	—	—	—	—	—	3.0m	4.2m	3.0m	2.2m
—	—	—	—	—	—	—	—	—	14.68%	8.05%	4.66%	15.3%

WEST

EAST



5 cm

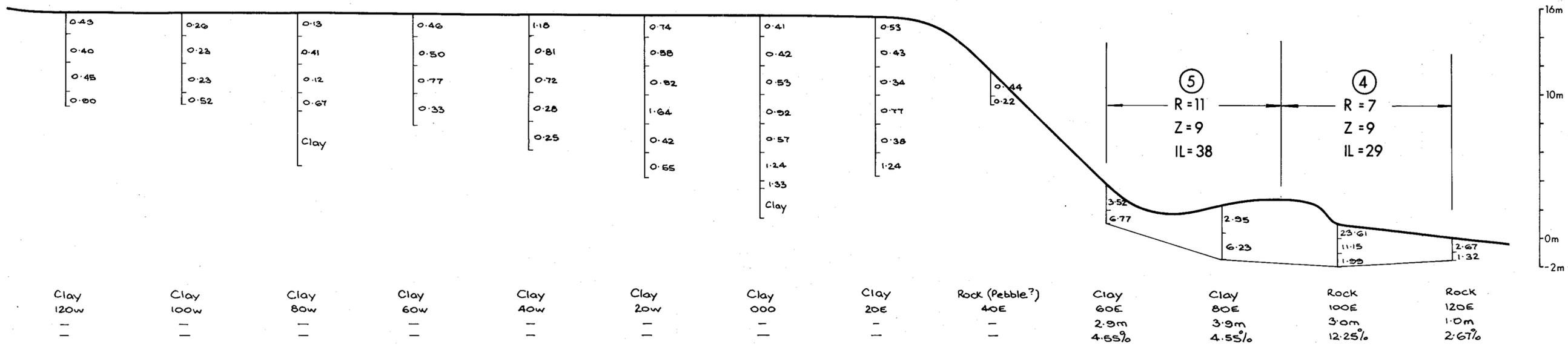
88-2885

LEGEND

- ① Mineralogical Sample No.
- R = 8 % Rutile
- Z = 8 % Zircon
- IL = 33 % Ilmenite

SCALE

HORIZONTAL 1:500
VERTICAL 1:200



NATIONAL MINERAL SANDS
EL 28/85
LINE 1400N
CROSS SECTION

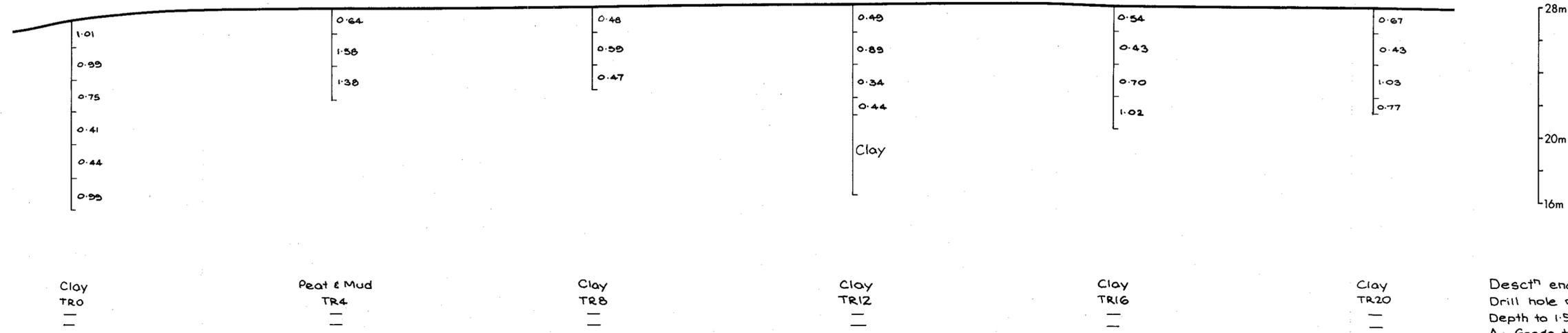
Author: G. LEE Date: JUNE '88 Figure No. 11

711074

7879

WEST

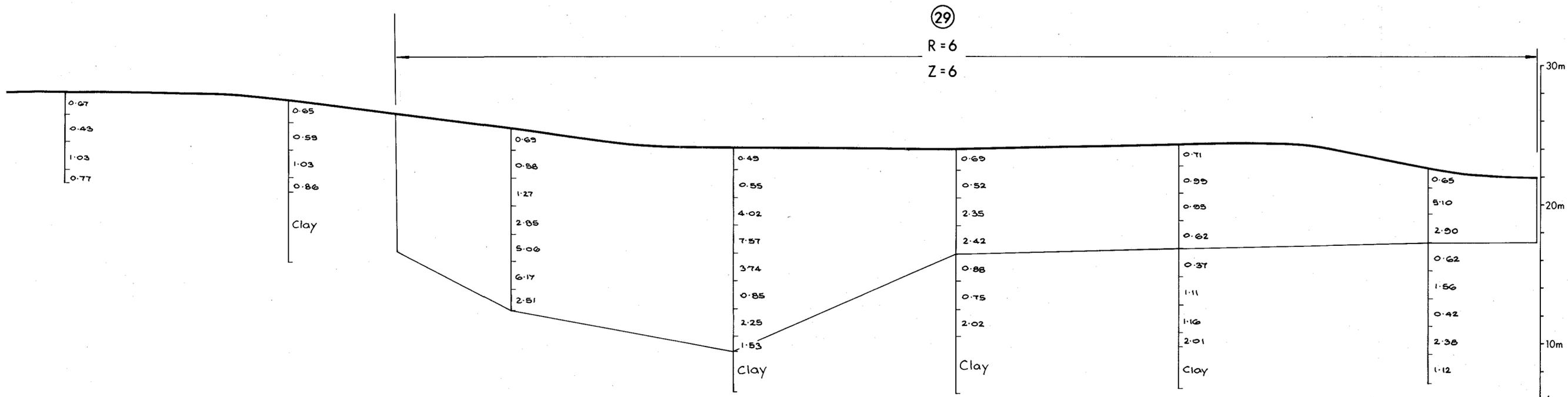
EAST



88-2885

Descrⁿ end hole
 Drill hole no.
 Depth to 1.5% Cutoff
 Av. Grade to 1.5% Cutoff

5 cm



(29)

R=6

Z=6

LEGEND

- ① Mineralogical Sample No.
- R = 8 % Rutile
- Z = 8 % Zircon
- IL = 33 % Ilmenite

SCALE 711075

HORIZONTAL 1:500
 VERTICAL 1:200

NATIONAL MINERAL SANDS
 EL 28/85
TIP ROAD
CROSS SECTION
 Author: G. LEE Date: JUNE '88 Figure No. 12

Clay
 TR20
 —

Clay
 TR24
 —

Clay
 TR28
 13.0m
 2.82%

Clay
 TR32
 14.5m
 2.77%

Clay
 TR36
 7.5m
 1.55%

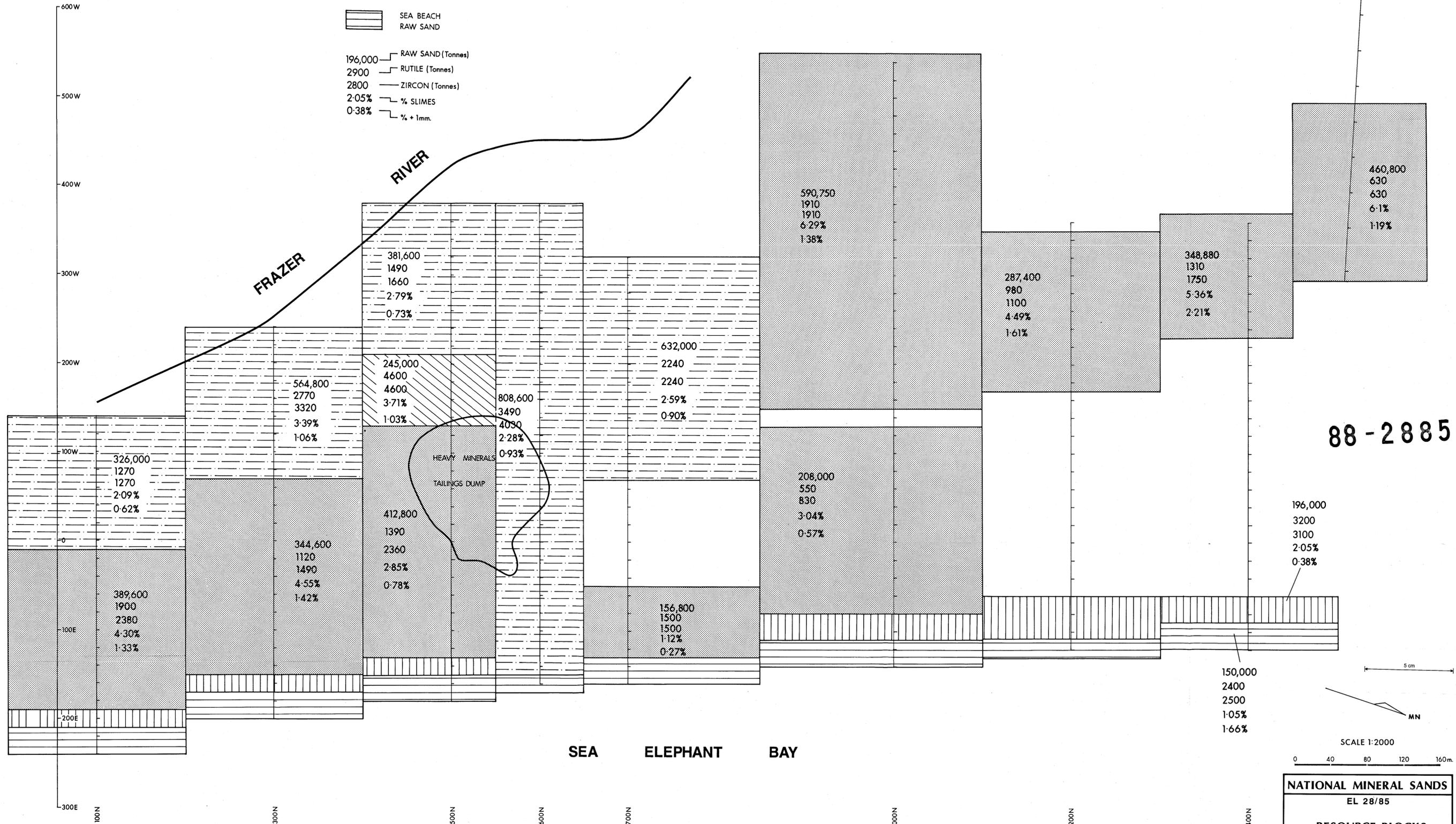
Clay
 TR40
 7.5m
 0.82%

Clay
 TR45
 5.5m
 3.05%

LEGEND

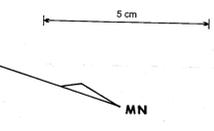
-  LANHERNE BEACH RAW SAND
-  LANHERNE BEACH SAND TAILINGS
-  HEAVY TAILINGS BURIED
-  MILFORD BEACH RAW SAND
-  SEA BEACH RAW SAND

- 196,000 — RAW SAND (Tonnes)
- 2900 — RUTILE (Tonnes)
- 2800 — ZIRCON (Tonnes)
- 2.05% — % SLIMES
- 0.38% — % + 1mm.



88-2885

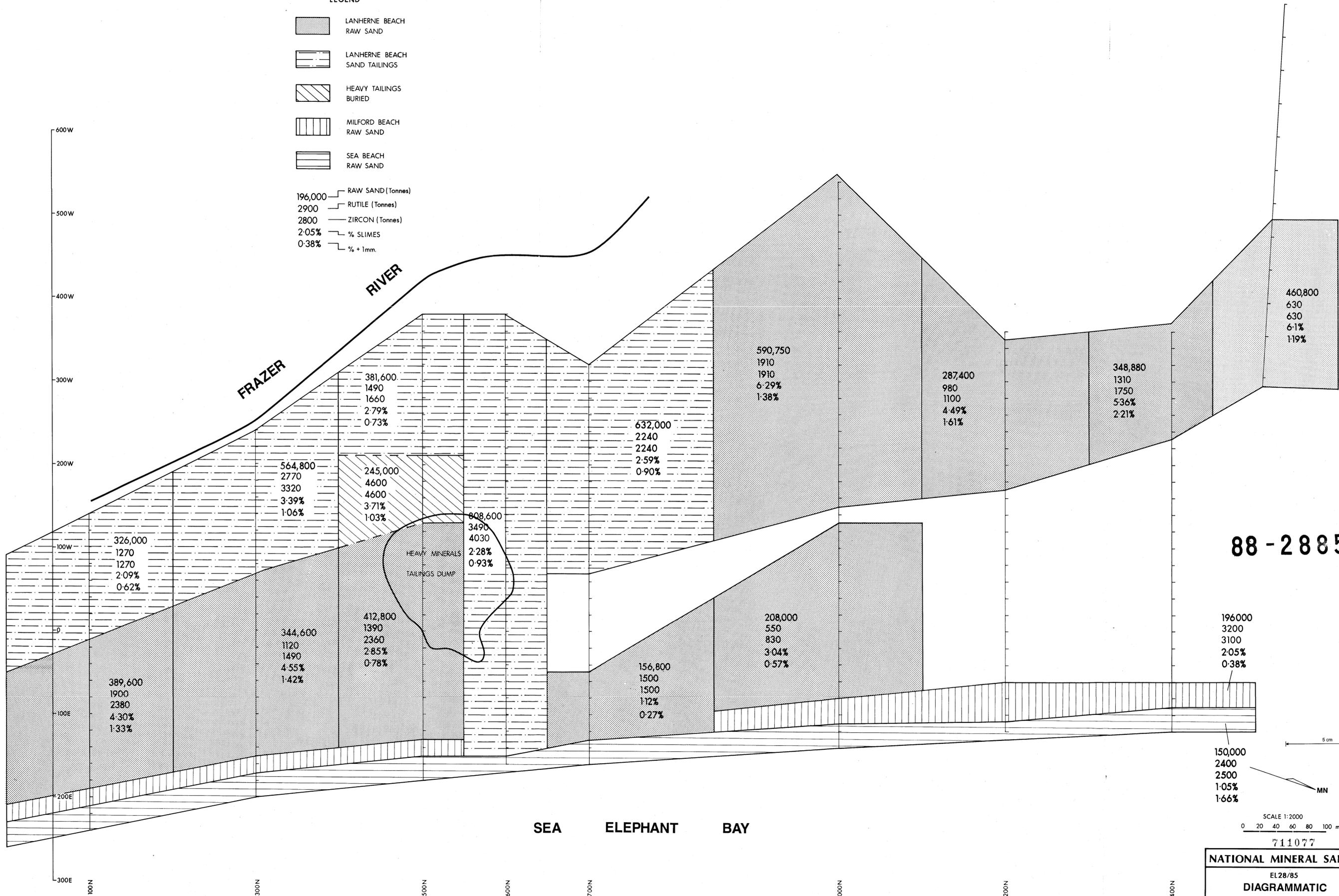
NATIONAL MINERAL SANDS
 EL 28/85
 RESOURCE BLOCKS
 AT 1.5% CUTOFF
 Author: G. LEE Date: JULY '88 Fig. No.: 14



LEGEND

-  LANHERNE BEACH RAW SAND
-  LANHERNE BEACH SAND TAILINGS
-  HEAVY TAILINGS BURIED
-  MILFORD BEACH RAW SAND
-  SEA BEACH RAW SAND

- 196,000 — RAW SAND (Tonnes)
- 2900 — RUTILE (Tonnes)
- 2800 — ZIRCON (Tonnes)
- 2.05% — % SLIMES
- 0.38% — % + 1mm.



88-2885

150,000
2400
2500
1.05%
1.66%

SCALE 1:2000
0 20 40 60 80 100 m.

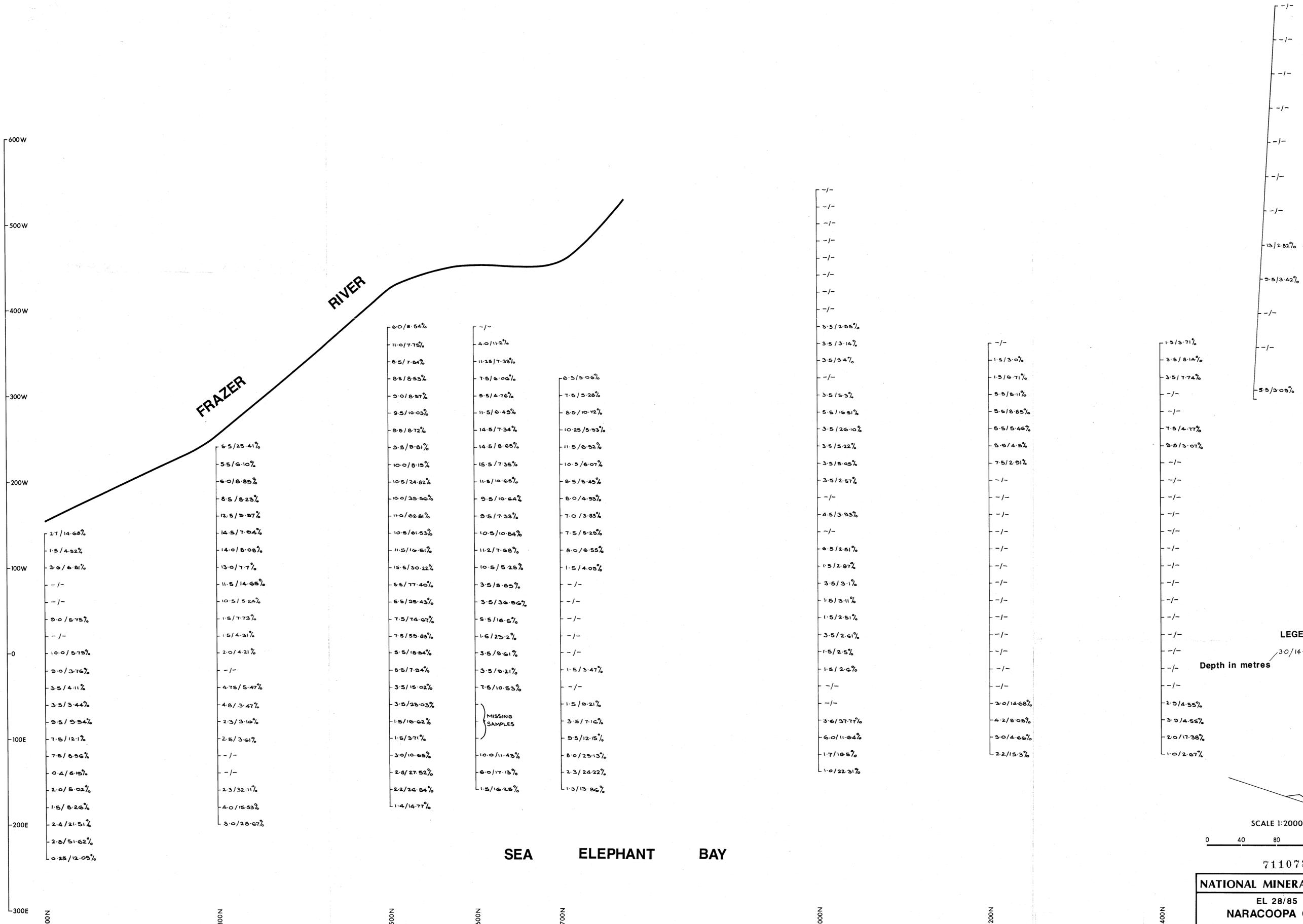
711077

NATIONAL MINERAL SANDS

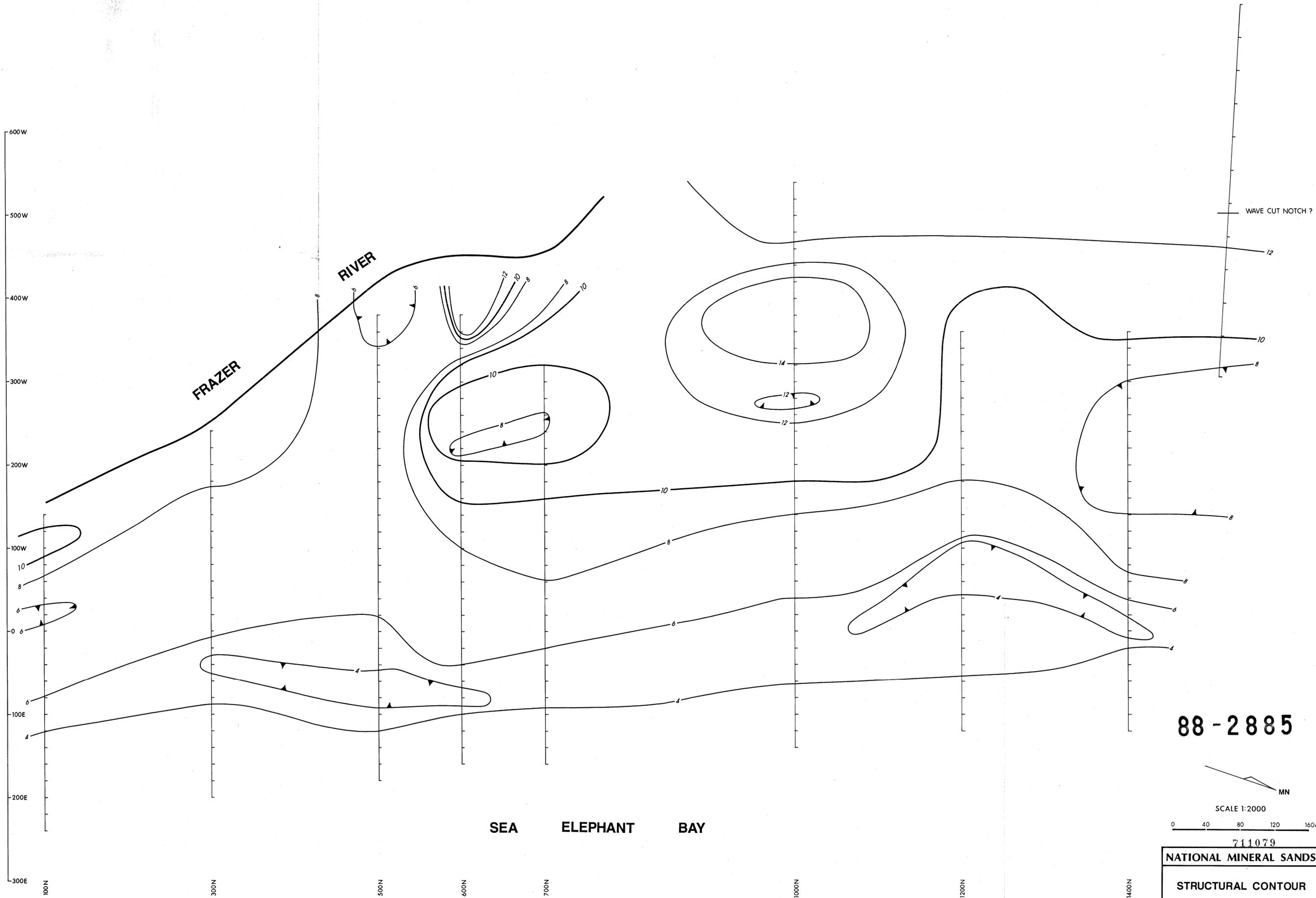
EL28/85

DIAGRAMMATIC INTERPRETATION OF RESOURCE BLOCKS AT 1.5% CUT-OFF

Author: G. LEE Date: JUNE '88 Fig. No.: 15



88-2885



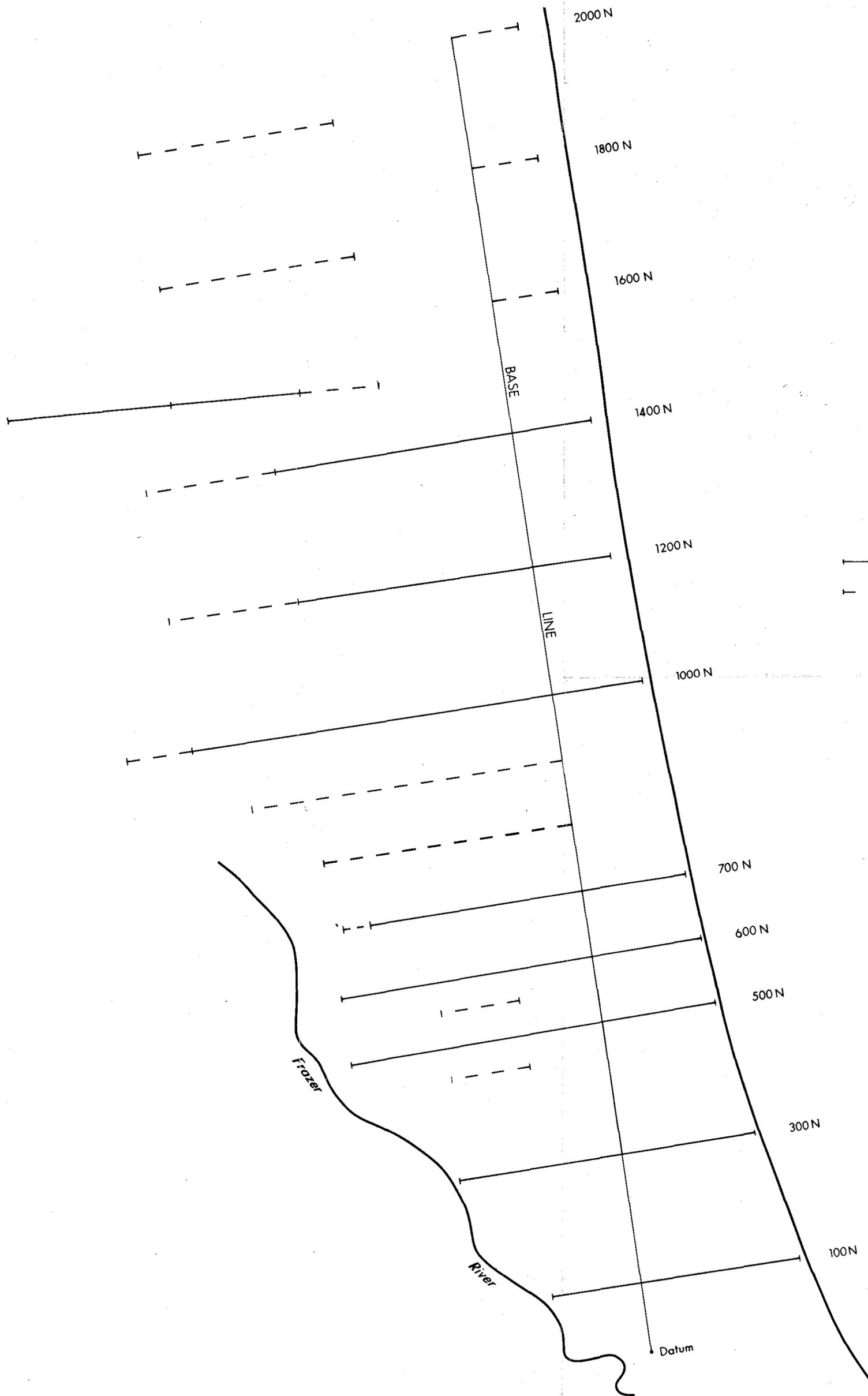
88-2885

711079

NATIONAL MINERAL SANDS

STRUCTURAL CONTOUR
- TOP OF CLAY BENEATH
MINERALIZED SAND

Author: G. LEE Date: JULY '88 Fig. No: 17



5 cm

LEGEND

- Drill traverse lines completed
- - - Suggested additional traverse lines

88 - 2885



SCALE 1:5000

0 50 100 150 200 250m.

067

711080		
NATIONAL MINERAL SANDS		
EL 28/85		
PROPOSED FUTURE PROGRAMME		
Author: A.DOVE	Date: JULY '88	Fig. No.: 18

PETER H. STITT & ASSOCIATES PTY. LTD.
MINING AND GEOLOGICAL CONSULTANTS

5TH FLOOR,
KING YORK HOUSE,
32 YORK STREET,
SYDNEY N.S.W. 2000
PHONE: (02) 29 1403
FAX: (02) 262 2395

MICROFILMED

REPORT NO 20/88

VOLUME 2

(APPENDICES 1 & 2)

OPEN FILE

Evaluation of Mineral Sand Resources
at
Naracoopa
King Island

MINES	
File Ref.	
26 OCT 1988	
Doc. Ref.	
Action Officer	Initials
Resubmit to	Date

Report Prepared for National Mineral Sands Pty. Ltd.

88-2885
Vol 2 of 3

A. Dove
G. Lee

August, 1988

APPENDIX 1

Geospectrum (Australia) Pty. Ltd.

Surveyors Report



070

REPORT ON THE PHOTO-CONTROL AND BASELINE SURVEY
AT KING ISLAND FOR PETER H STITT & ASSOCIATES

A survey to establish a baseline and to provide photogrammetric control for an orthophotomapping programme was carried out for Peter H Stitt & Associates in March 1988, as instructed. The area covered by the project extended from Naracoopa on King Island approximately 12 kms north along Sea Elephant Bay to Cowper Point, and inland generally to the main road.

The survey was established from existing Tasmanian Lands marks, with the coordinates being related horizontally to Australian Map Grid (AMG) and vertically to Mean Sea Level. The survey programme was carried out using Wild T2 single second theodolites, AGA Model 16 electronic distance measuring equipment and Fuji-Koh precise level.

BASELINE SURVEY

As instructed, the baseline was commenced from the origin point (OE, ON) a few metres to the east of the the old mine entrance gate, and pegged at 100 metre intervals from ON to 1500N, with the baseline oriented to run generally parallel to the coastline.

From 650N northward, the baseline passes through thick Ti Tree. Under close supervision by a Mines Department officer, a bulldozer was used to clear the baseline on the northern portion. As instructed, the laterals at 700N, 1000N, 1200N and 1400N were also dozed. This was possible on the western side of the baseline only as the Mines Department officer prohibited any dozing on the eastern side due to the proximity of the less stable coastal dunes. The dozing of laterals at 1200N and 1400N was further limited by swamp and were cleared as far as 385W and 366W respectively.

The bulldozer was required for approximately 1.5 days for these clearing operations and the survey crew were required at all times to maintain the dozer on line.

A permanent Bench Mark (BM) was established at the old mine plant. The BM is a white painted sawn off bolt on a disused concrete footing. A trig heighted MSL elevation of 17.583 metres was adopted for the BM and all baseline pegs were spirit levelled relative to this mark.

A white painted stake was driven into the ground next to each baseline peg with that pegs Easting and Northing marked thereon.

AMG coordinates for the ends of the baseline and elevations for all of the baseline pegs are tabulated in TABLE 1.



071

PHOTO-CONTROL SURVEY

Photogrammetric survey control was established at 12 targetted locations within the mapping area, with each target being a white painted cross on a black plastic background. A survey peg was placed through the centre of each target. This approach was considered to be the most effective in the conditions prevailing.

A closed survey traverse was undertaken based on survey marks found at Naracoopa and Cowper Point with azimuth checks onto Councillor Island Light and Counsel Hill Trig Station. Those targetted stations not included in this traverse were then coordinated by radiations. All elevations were established by trigonometrical heighting.

The AMG coordinates and MSL elevations of these points are listed in TABLE 2.

A survey network plan is included for your reference.

Chris Colman
Surveyor
6th April, 1988

072
TABLE 1 BASELINE ELEVATIONS

0 N	12.838
100 N	14.980
200 N	8.853
300 N	13.788
400 N	16.504
500 N	17.401
600 N	16.920
700 N	13.704
800 N	12.307
900 N	14.594
1000 N	12.370
1100 N	13.131
1200 N	12.301
1300 N	13.354
1400 N	15.065
1500 N	15.026

Elevations are relative to the BM at the old plant site which has an elevation of 17.583 (MSL).

AMG CO-ORDINATES OF BASE LINE ENDPOINTS:

Mine Grid Co-ords	AMG Co-ords	
OE / ON	252 648.727 E	S 577 763.010 N
OE / 1500N	252 407.961 E	S 579 244.096 N

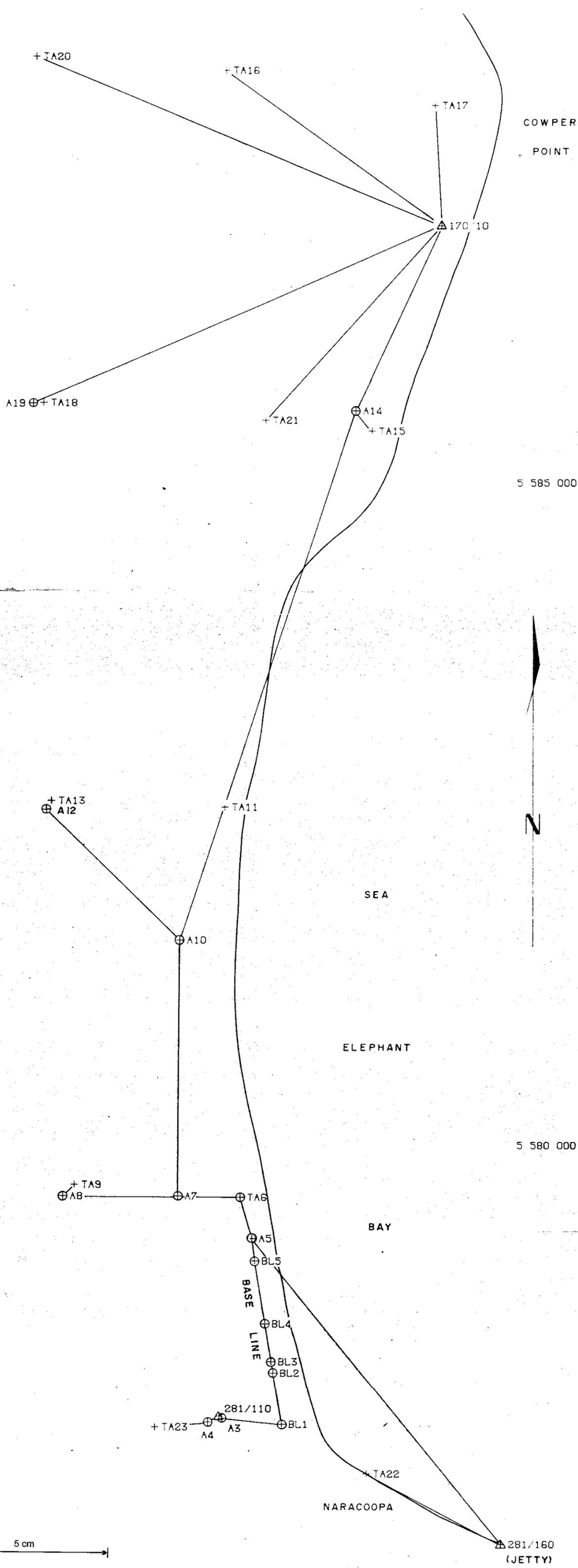
Note: The mean scale factor between horizontal measured distances and grid distances is 1.000352

Therefore, the AMG grid distance of the 1500 metre baseline is $1500 \times 1.000352 = 1500.528$ metres.

The baseline has a grid bearing of $350^{\circ} 46' 00''$ which is approximately 342° magnetic.

073
TABLE 2 SURVEY CONTROL MARK CO-ORDINATES & ELEVATIONS

Mark	Easting A.M.G.	Northing Zone 55	Elev'n M.S.L.	Comment
EXISTING SURVEY CONTROL				
281/110	252 163.787	5 577 941.298	50.41	
281/160	254 268.281	5 576 981.339	4.96	Jetty
170/10	253 826.183	5 586 943.656	43.30	Cowper Pt
131/	256 982.226	5 587 012.972	24.33	Light Hse
BT463	248 213.864	5 593 993.728	85.6	Trig Stn
NEW SURVEY CONTROL ESTABLISHED				
A3	252 183.399	5 577 925.284	48.90	
A4	252 078.448	5 577 897.403	51.85	
A5	252 407.127	5 579 286.783	16.52	
TA6	252 321.238	5 579 599.721	16.03	Target
A7	251 855.439	5 579 609.267	31.94	
A8	251 003.684	5 579 606.131	22.97	
TA9	251 089.897	5 579 693.010	17.25	Target
A10	251 871.248	5 581 547.981	26.01	
TA11	252 206.084	5 582 549.775	10.76	Target
A12	250 880.970	5 582 525.177	25.79	
TA13	250 920.198	5 582 595.405	25.73	Target
A14	253 181.630	5 585 546.681	20.10	
TA15	253 302.342	5 585 393.000	11.82	Target
TA16	252 214.796	5 588 114.317	4.54	Target
TA17	253 778.770	5 587 850.211	10.48	Target
TA18	250 858.662	5 585 606.451	19.20	Target
A19	250 783.026	5 585 602.163	20.02	
TA20	250 806.045	5 588 216.640	17.35	Target
TA21	252 508.601	5 585 473.375	12.52	Target
TA22	253 262.987	5 577 510.948	2.10	Target
TA23	251 681.642	5 577 859.544	49.67	Target
BL1	252 629.447	5 577 881.610	15.25	
BL2	252 565.552	5 578 274.555	19.26	
BL3	252 551.469	5 578 361.172	18.45	
BL4	252 505.215	5 578 645.733	14.98	
BL5	252 428.456	5 579 118.012	15.44	



KING ISLAND SURVEY CONTROL NETWORK

SCALE 1:25,000

SURVEYED BY GEO-SPECTRUM (AUST) PTY. LTD., MARCH '88.

- ▲ ORIGINAL SURVEY MARK
- ⊕ NEWLY ESTABLISHED SURVEY MARK
- + TARGETTED SURVEY MARK

HORIZONTAL DATUM:
AUSTRALIAN MAP GRID, ZONE 55
VERTICAL DATUM:
MEAN SEA LEVEL

075

711088

7

APPENDIX 2

Drill Hole Descriptive Logs

CLIENT: NATIONAL MINERAL SANDS

711089

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 100N

HOLE NO: 240E

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED:

8.4.88

076

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 0.25	0.440	<p>Low water mark on beach.</p> <p>SAND, coarse grained shelly with pebbles and H.M. Hole stopped on rock, probably boulder</p> <p>EOH 0.25m.</p> <p style="text-align: center;">Average</p>	0.82	10.23	12.09

CLIENT: NATIONAL MINERAL SANDS

711090

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 100N HOLE NO: 220E

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 7.4.88

077

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.0	1.750	HWM on Beach SAND, medium to coarse grained, rich in heavies	0.15	0.72	63.27
1.0 - 2.0	2.830	SAND, medium grained. Very rich in H.M.	0.33	0.97	44.71
2.0 - 2.8	4.915	As above getting brown organic coloured towards bottom. Rock at 2.8m. EOH 2.8m.	0.54	1.20	45.70
Average					51.62

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711091

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 100N HOLE NO: 200E

DATE DRILLED: 7.4.88

078

Interval (m)	DRY Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
		Milford Beach			
0 - 2.0	3.810	SAND, medium grained. Rich in heavies	0.40	0.78	41.50
2.0 - 2.4	2.240	As above. White clay at 2.4m.	1.44	0.93	25.28
		EOH 2.4m.			
		Average			38.80

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711092

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 100N HOLE NO: 180E

DATE DRILLED: 14.4.88

079

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.30	SAND, clayey, fine grained, dark grey, hit greenish grey at base, rich in H.M. EOH 1.5m.	31.0	4.92	8.26
Average					8.26

CLIENT: NATIONAL MINERAL SANDS

711093

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 100N HOLE NO: 160E

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 14.4.88

030

Interval (m)	DRY Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	4.45	SAND, medium to coarse grained, pale brown	7.72	1.86	5.87
1.5 -2.0	0.71	AS ABOVE, very coarse, granules, hit dark brown micaceous clay	23.35	10.69	2.46
		EOH 2.0m.			
		Average			5.02

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

HAND DRILLED

711094

TITLE NO: EL 28/85

LINE NO: 100N HOLE NO: 140E

DATE DRILLED: 22.4.88

081

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 0.4	0.85	SAND, fine to medium grained, grey then red-brown. Hit indurated layer. END OF HOLE 0.4m.	1.90	0.34	6.19
		Average			6.19

CLIENT: NATIONAL MINERAL SANDS

711095

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 100N HOLE NO: 120E

LOGGED BY: GRAHAM LEE

R.C. RIG DRILLED

DATE DRILLED: 13.4.88

082

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Redrill by rig for deeper penetration than hand bored. 0.5m. east of H.B. hole			
0 - 1.5	1.81	SAND, medium grained, pale grey and grey	2.08	0.20	5.51
1.5 - 3.5	4.31	SAND, brown medium grained with fine gravel and coarse sand at bottom	2.26	0.86	12.51
3.5 - 5.5	4.38	SAND, medium to coarse grained brown with H.M. and minor pebbles.	7.33	3.45	7.02
5.5 - 7.5	5.02	SAND, medium grained brown, white clay at 7.0m. Slurry sample too wet to weigh.	8.20	1.48	9.95
		EOH 7.5m.			
		Average			5.03

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

HAND DRILLED

711096

TITLE NO: EL 28/85

LINE NO: 100N

HOLE NO: 120E

DATE DRILLED:

7.4.88

083

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
		South side of old pit.			
0 - 2.0	2.72	SAND, brown, slightly indurated	3.13	0.14	12.29
2.0 - 3.4	3.275	As above. Rock at 3.4 m.	1.41	0.45	13.82
		EOH 3.4m.			
		Average			12.92

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711097

LINE NO: 100N HOLE NO: 100E (1S)

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 10.4.88

084

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Hand drilled check hole on unmined sand south of pit (RHF Laboratory)			
0 - 2.0	5.310	SAND, medium grained white with H.M. Dark grey to black at 1.0m. slightly indurated, grading down to brown with H.M. bands	2.07	0.32	10.66
2.0 - 4.0	4.920	SAND, medium grained brown with abundant H.M. Wood at 3.8m. (old tree)	2.26	0.10	14.10
4.0 - 6.0	5.325	SAND, medium grained, brown with abundant H.M. Coarser grained at 6m. with fine gravel.	1.75	1.34	21.36
6.0 - 7.2	3.975	SAND, coarse grained with gravel and H.M. Rock at 7,2m. Water at 6.5m.	0.25	4.42	6.47
		EOH 7.2m.			
		Average			13.89

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711098

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 100N

DATE DRILLED:

HOLE NO: 100E (1S)

10.4.88

085

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		(READINGS LABORATORY)			
0 - 2.0	5.237	For description see previous page	2.1		10.9
2.0 - 4.0	4.763		2.4		14.1
4.0 - 6.0	5.087		1.2		20.9
6.0 - 7.2	3.810		2.0		6.4
		Average			13.82

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711099

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 100N HOLE NO: 100E (2S)

DATE DRILLED: 13.4.88

086

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		R.C. Rig Readings Laboratory			
0 - 1.5	1.584	As for 4S. Small sample rod blocked with clay from last hole sample contaminated.	6.8		5.3
1.5 - 3.5	3.751	As for 4S. Water 3m. Sand indurated in part. Still had partial blockage.	3.1		8.1
3.5 - 5.5	8.688	As for 4S. Rich H.M.	2.9		26.7
5.5 - 7.5	7.909	As for 4S	4.3		6.6
7.5 - 8.5	3.690	Sand to 8m. as above, then black micaceous clay.	21.9		1.6
		EOH 8.5m.			
		Average			10.86

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711100

LINE NO: 100N

HOLE NO: 100E (2S)

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED:

13.4.88

087

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		(RHF LABORATORY)			
0 - 1.5			3.70	0.16	5.32
1.5 - 3.5		For description see previous page	2.69	0.09	7.90
3.5 - 5.5			2.24	1.84	25.42
5.5 - 7.5			3.02	10.75	5.85
7.5 - 8.5			21.96	8.10	1.56
		Average			10.34

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711101

LINE NO: 100N

HOLE NO: 100E (3S)

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED:

10.4.88

088

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Hand drilled check hole on unmined sand south of pit (Readings Laboratory)			
0 - 2.0	5.387	As for 1S	4.4		10.0
2.0 - 4.0	3.798	As for 1S	3.2		12.9
4.0 - 5.8	5.187	As for 1S. Hard band at 5.7m. Stopped auger tried sludging when through hole dry. Gravel at 5.8m. stopped sludging	2.2		29.0
		EOH 5.8m.			
		Average			16.9

CLIENT: NATIONAL MINERAL SANDS

711103

TITLE NO: EL 28/85

AREA: NARACOOKA

LINE NO: 100N HOLE NO: 100E (4S)

LOGGED BY: GRAHAM LEE

R.C. RIG DRILLED

DATE DRILLED: 13.4.88

090

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		R.C. Rig. RHF Laboratory			
0 - 1.5	4.12	SAND, medium grained white and grey	0.88	0.01	3.58
1.5 - 3.5	5.20	SAND medium grained, brown to dark brown organic stained water table 3.5m.	3.17	0.02	10.44
3.5 - 5.5	3.37	SAND as above	1.69	0.14	20.25
5.5 - 7.5	7.53	SAND as above with fine gravel and coarse sand abundant H.M.	2.78	7.39	9.61
7.5 - 9.5	5.41	CLAY, dark grey to black 7.5 - 8.0m. then sand fine grained, pale brown with H.M.	17.22	5.65	1.81
9.5 - 10.5	0.62	SAND as above to 9.7m. then black. Clay to 10.5 micaceous and pyritic	53.60	19.60	0.82
		EOH 10.5m.			
		Average			5.59

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711104

LINE NO: 100N

HOLE NO: 100E (4S)

LOGGED BY: GRAHAM LEE

R.C. RIG DRILLED

DATE DRILLED:

13.4.88

091

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		(READINGS LABORATORY)			
0 - 1.5	4.17		1.8		3.3
1.5 - 3.5	5.274		4.1		10.5
3.5 - 5.5	3.27	For description see previous page	1.8		20.3
5.5 - 7.5	7.143		3.4		10.7
7.5 - 9.5	4.764		15.5		1.8
9.5 - 10.5	0.541		56.4		0.8
		Average			8.8

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711105

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 100N

HOLE NO: 80E

DATE DRILLED: 23.4.88

092

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.65	SAND, medium grained, grey. H.M. rich.	1.41	0.32	8.30
1.5 - 3.5	5.50	SAND, medium grained, brown and dark brown. H.M. rich. WATER TABLE	3.50	0.45	10.44
3.5 - 5.5	9.50	AS ABOVE, H.M. rich.	2.69	0.24	21.54
5.5 - 7.5	8.53	AS ABOVE, becoming coarse. Contains gravel. H.M.	1.43	1.63	2.44
7.5 - 9.5	7.60	AS ABOVE, H.M.	3.12	1.32	4.65
9.5 - 10.5	3.80	AS ABOVE, hit dark brown to black clay. END OF HOLE 10.5m.	4.64	0.96	3.41
		Average			8.95

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY:

ANDREW DOVE

R.C. RIG DRILLED

711106

TITLE NO: EL 28/85

LINE NO: 100N

HOLE NO: 60E

DATE DRILLED:

23.4.88

093

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.10	SAND, medium grained, brownish grey. H.M. present.	3.05	0.55	3.41
1.5 - 3.5	6.77	AS ABOVE, grades into brown. H.M. present.	1.30	0.10	3.47
		WATER TABLE			
3.5 - 5.5	8.65	SAND, medium grained, dark brown, becoming coarser with depth.	3.58	0.39	2.31
5.5 - 7.5	8.32	AS ABOVE	2.68	0.54	1.71
7.5 - 9.5	8.10	AS ABOVE, indurated, contains gravel.	3.60	1.58	3.18
9.5 - 10.5	4.75	AS ABOVE, hit dark brown clay.	4.24	0.31	2.20
		END OF HOLE 10.5m.			
		Average			2.73

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711107

LINE NO: 100N

HOLE NO: 40E

LOGGED BY:

ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 23.4.88

094

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.67	SAND, medium grained, brownish grey. H.M. present.	4.15	0.31	6.23
1.5 - 3.5	6.94	AS ABOVE, grades to grey H.M. WATER TABLE	1.26	0.15	2.52
3.5 - 5.5	9.17	AS ABOVE, grades to brown. Coarser at base. Indurated H.M.	2.17	0.28	2.10
5.5 - 7.5	8.58	SAND, coarse grained, brown to dark brown.	2.28	0.63	0.69
7.5 - 9.5	6.74	AS ABOVE, indurated, contains gravel.	3.35	2.41	2.61
9.5 - 11.0	5.08	AS ABOVE, medium grained. Hit dark brown clay. END OF HOLE 11.0m.	6.88	1.72	1.96
		Average			2.56

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711108

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 100N HOLE NO: 20E

DATE DRILLED: 22.4.88

095

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.11	SAND, medium grained, pale brown.	2.87	0.58	9.09
1.5 - 3.5	5.63	AS ABOVE, grades to brown. WATER TABLE	2.16	0.16	2.97
3.5 - 5.5	7.14	SAND, medium grained, brownish grey. H.M. present.	1.75	0.35	1.17
5.5 - 7.5	9.28	SAND, medium grained, red-brown, contains some gravel. H.M. present.	2.03	0.06	2.93
7.5 - 9.0	5.86	AS ABOVE, indurated, hit dark brown clay. H.M. present. END OF HOLE 9.0m.	5.77	3.68	4.05
Average					3.76

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711109

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 100N

DATE DRILLED:

HOLE NO: 000

22.4.88

096

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.45	SAND, medium grained, pale brown. H.M. rich.	0.46	0.11	4.76
1.5 - 3.5	5.96	AS ABOVE, H.M. rich.	0.75	0.10	4.95
		WATER TABLE			
3.5 - 5.5	8.69	AS ABOVE, grades to brownish grey. H.M. present	1.36	0.13	3.69
5.5 - 7.5	7.75	SAND, medium to light grained, red-brown, indurated, H.M. present.	3.16	0.06	4.74
7.5 - 9.5	9.83	AS ABOVE. hit gravel layers.	3.13	1.91	5.11
9.5 - 10.0	4.80	AS ABOVE, very coarse, gravel, H.M. rich. Hit rock, then dark brown clay.	3.87	2.53	27.57
		END OF HOLE 10.0m.			
		Average			5.79

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711110

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 100N HOLE NO: 20W

DATE DRILLED: 22.4.88

097

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.39	SAND, medium grained, pale brown grading to brown H.M. rich.	0.72	0.68	5.92
1.5 - 3.5	6.55	SAND, medium grained, light brown. H.M. rich.	1.05	0.37	3.61
3.5 - 5.5	5.64	SAND, greyish brown. H.M. rich.	0.76	0.06	5.73
5.5 - 7.5	7.77	AS ABOVE. H.M. rich.	0.60	0.10	5.85
		WATER TABLE			
7.5 - 9.5	7.62	AS ABOVE, becoming lighter. H.M. present.	1.06	0.19	3.16
9.5 - 11.0	5.20	SAND, medium grained, grey to dark grey. Hit dark grey clay. H.M. present.	5.26	1.19	22.97
		END OF HOLE 11.0m.			
		Average			7.28

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711111

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 100N

HOLE NO: 40W

DATE DRILLED: 22.4.88

098

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.40	SAND, medium grained, pale brown to brown. H.M. rich.	1.07	0.64	11.79
1.5 - 3.5	5.20	AS ABOVE, H.M. present	1.19	0.37	2.94
3.5 - 5.5	7.83	AS ABOVE, H.M. present	0.81	0.13	4.22
5.5 - 7.5	7.63	SAND, medium grained, pale brown. H.M. rich. WATER TABLE	1.08	0.08	5.93
7.5 - 9.0	4.54	AS ABOVE, hit dark grey clay. H.M. rich. END OF HOLE 9.0m.	9.74	1.65	5.28
		Average			5.75

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711112

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 100N HOLE NO: 60W

DATE DRILLED: 22.4.88

660

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.99	SAND, medium grained, pale brown to brown. H.M. rich.	1.40	0.38	12.04
1.5 - 3.5	6.30	AS ABOVE. H.M. rich.	0.76	0.11	5.44
3.5 - 5.5	7.22	AS ABOVE, slightly redder. H.M. present.	0.87	0.40	2.78
5.5 - 7.5		AS ABOVE, went through an indurated layer, contains pebbles. H.M. present.	1.43	0.41	4.10
		WATER TABLE			
7.5 - 9.0	5.44	SAND, medium to light grained, red-brown, grades to grey. Rock fragments. Hit basement. H.M. present	7.33	4.09	4.79
		END OF HOLE 9.0m.			
		Average			5.54

CLIENT: NATIONAL MINERAL SANDS

711113

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 100N HOLE NO: 80W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 22.4.88

100

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5		SAND, medium grained, pale brown to brown. H.M. rich.	2.33	0.14	11.67
1.5 - 3.5	6.40	AS ABOVE, H.M. rich.	0.72	0.20	5.63
3.5 - 5.5	8.04	AS ABOVE, hit basement. H.M. rich.	5.06	1.63	5.47
		END OF HOLE 5.5m.			
		Average			7.22

CLIENT: NATIONAL MINERAL SANDS

711114

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 100N

HOLE NO: 100W

101

LOGGED BY: ANDREW DOVE R.C. RIG DRILLED

DATE DRILLED: 22.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.46	SAND, medium grained, pale brown to brown. H.M. rich.	1.52	0.25	10.07
1.5 - 3.6	8.25	AS ABOVE, H.M. rich. Hit basement. END OF HOLE 3.6m.	0.87	0.62	4.48
Average					6.81

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711115

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 100N HOLE NO: 120W

DATE DRILLED: 22.4.88

102

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.78	<p>SAND, medium grained, pale brown to brown, H.M. rich.</p> <p>END OF HOLE 1.5m.</p> <p>Hit grey-white powder prior to hitting basement at 3.0m.</p>	2.15	1.55	4.92
Average					4.92

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711116

LINE NO: 100N HOLE NO: 140W

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 7.4.88

103

Interval (m)	DRY Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 2.0	3.835	EMBANKMENT TO FRASER RIVER SAND, pale brown. Old tailings	1.25	0.15	12.74
2.0 - 2.7	5.325	As above to 2.5m. 2.5 - 2.7m. SAND, dark grey with indurated rock at 2.7m. Tailing to 2.5m. Unmined sand 2.5 - 2.7m.	3.77	0.44	20.24
		EOH 2.7m.			
		Average			14.68

CLIENT: NATIONAL MINERAL SANDS

711117

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 300N HOLE NO: 200E

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 8.4.88

104

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
		Mid beach.			
0 - 1.0	3.750	SAND, medium to coarse grained. Very rich H.M.	0.59	0.97	38.19
1.0 - 2.0	3.56	As above	1.18	2.74	24.83
2.0 - 3.0	5.49	SAND, coarse to very coarse with pebbles and H.M.	1.12	2.51	22.99
		EOH 3.0m.			
		Average			28.67

CLIENT: NATIONAL MINERAL SANDS

711118

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 300N

HOLE NO: 180E

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED:

7.4.88

105

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
		HWM ON BEACH. HOLE ON PEG.			
0 - 1.0	1.940	SAND, medium to coarse. Rich in H.M.	0.26	0.28	33.56
1.0 - 2.0	2.510	SAND, medium to coarse with less H.M. than above Minor pebbles, coarse shell and clay layers.	0.35	4.61	9.87
2.0 - 3.0	5.150	SAND, medium to coarse with H.M. Abundant pebble bands. Minor grey clay	0.96	2.05	13.17
3.0 - 4.0	3.220	SAND, medium grained with find shell and H.M. Cream clay matrix.	3.99	2.31	5.52
4.0 - 5.0	2.450	SAND, fine grained, decreasing H.M. and increasing clay	6.54	3.31	0.98
		EOH 5.0m.			
		Average			12.62

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711119

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 300N

HOLE NO: 160E

DATE DRILLED: 7.4.88

106

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000um	% H.M.
0 - 2.0	4.870	Milford Beach, 0.5m. East of peg. SAND medium grained cream with abundant grey H.M. Minor white clay at 1.3m. Water Table 1.3m.	0.21	1.40	32.51
2.0 - 2.3	1.260	SAND as above to 2.1m. then dark grey clay with H.M. rich sand EOH 2.3m.	3.75	1.35	29.41
		Average			32.11

CLIENT: NATIONAL MINERAL SANDS

711120

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 300N HOLE NO: 140E

LOGGED BY: ANDREW DOVE

DATE DRILLED: 14.4.88

107

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
		CLAY from surface went down about 1m. EOH 1m.			Not Assayed

CLIENT: NATIONAL MINERAL SANDS

711121

TITLE NO: EL 2 8/85

AREA: NARACOOPA

LINE NO: 300N HOLE NO: 120E

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 14.4.88

108

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	2.40	On gravel oversize area. SAND, medium to coarse grained, brown. Water table	5.97	0.97	12.68
1.5 - 3.5		CLAY, brown			
3.5 - 4.0		SAND, coarse angular, indurated. Abundant H.M. hit basement. EOH 4m.			

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711122

HAND DRILLED

TITLE NO: EL28/85

LINE NO: 300N HOLE NO: 100E

DATE DRILLED: 14.4.88

109

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 2.5	3.30	NEXT TO DAM, 30CM. WEST OF PEG SAND, medium grained brown, hit brown micaceous clay. H.M. rich EOH 2.5m. Difficult drilling due to surface ground conditions around dam.	17.53	1.17	3.61
				Av	3.61

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711123

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 300N HOLE NO: 80E

DATE DRILLED: 7.4.88

110

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 2.0	4.035	Redrill 1m. North and 0.5m. East of peg SAND, medium grained brown, slightly indurated. Bands of H.M.	0.86	0.04	2.76
2.0 - 2.3	2.100	As above, pebbly at base. Stone band at 2.3m. EOH 2.3m.	2.20	0.27	5.82
Average					3.16

CLIENT: NATIONAL MINERAL SANDS

711124

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 300N HOLE NO: 80E

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 7.4.88

111

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 2.0		Side of pit, beside old ramp, 0.5m. East of peg SAND, medium grained brown, slightly indurated Bands of H.M.			
2.0 - 2.3		SAND, as above Stone band at 2.3m. Hole abandoned at 2.3m. Samples discarded.			
		EOH 2.3m.			

CLIENT: NATIONAL MINERAL SANDS

711125

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 300N

HOLE NO: 60E

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 7.4.88

112

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
		Hole located on side of old pit.			
0 - 2.0	2.740	SAND medium grained, white then brown	1.38	1.45	3.39
		Water table 1.4m.			
2.0 - 4.0	8.800	SAND medium grained brown inter-bedded with coarse sand and granules. Abundant heavies in coarse sand.	0.75	3.55	3.81
		Indurated layer 3.8 - 4.0m.			
4.0 - 4.8	2.830	As above, indurated 4.8m. Mud, grey	4.34	2.61	2.81
		EOH 4.8m.			
		Average			3.47

CLIENT: NATIONAL MINERAL SANDS

711126

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 300N HOLE NO: 40E

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 14.4.88

113

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	5.70	SAND, medium grained, brown H.M. present. Water table	2.44	1.40	5.61
1.5 - 3.5	8.00	AS ABOVE, rich heavy mineral band, coarser some gravel.	4.84	3.98	7.03
3.5 - 4.75	1.89	SAND, coarse grained, dark brown, H.M. rich, peaty micaceous clay. EOH 4.75m.	28.78	7.21	2.79
				Av.	5.47

CLIENT: NATIONAL MINERAL SANDS

711127

TITLE NO: EL 28/85

AREA: NARACOOKA

LINE NO: 300N HOLE NO: 20E

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 14.4.88

114

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
		0.5m. North of Peg			
0 - 1.5	4.35	SAND, medium grained, brown, went through thin indurated bands. Water table.	3.38	0.86	1.35
1.5 - 3.5	7.69	AS ABOVE. Rich in H.M. becoming coarser, some granules.	2.84	2.99	1.55
3.5 - 5.5	4.82	SAND, medium to coarse grained, brown becoming clay rich, some gravel. Rich in H.M. EOH 5.5m.	11.74	7.94	2.92
				Av.	1.99

CLIENT: NATIONAL MINERAL SANDS

711128

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 300N

HOLE NO: 000

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED:

7.4.88

115

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
		Hole located on West edge of old pit - 1m. south of peg.			
0 - 2.0	3.340	SAND, medium grained grey. Old tailings	1.40	0.08	4.21
2.0 - 4.0	6.690	Water table 2.6m. SAND, greyish brown, trace of H.M. Old tailings	0.45	0.04	1.12
4.0 - 6.0	7.060	As above	0.50	0.70	0.32
6.0 - 7.3	7.695	As above to 7.0m. End of old tailings 7.0 - 7.3. SAND, coarse with granules and abundant heavies. CLAY, dark brown at 7.3m.	1.17	3.32	1.93
		EOH . 7.3m.			
		Average			1.89

CLIENT: NATIONAL MINERAL SANDS

711129

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 300N HOLE NO: 20W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 14.4.88

116

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	6.38	SAND, medium grained, pale brown, rich in H.M. Tailings.	1.14	0.08	4.31
1.5 - 3.5	6.36	SAND, medium gravel, pale brown . Water table.	0.71	0.04	2.04
3.5 - 5.5	9.68	SAND, medium to coarse grained, pale brown	1.22	0.00	0.93
5.5 - 7.5	7.73	SAND, medium to coarse grained, pale brown grading to brown, rich in H.M.	2.21	0.01	1.13
7.5 - 9.5	7.16	SAND, medium to coarse grained, brown, rich in H.M.	4.17	0.88	0.70
9.5 - 10.0	1.81	AS ABOVE, hit black clay. EOH 10m.	22.73	14.46	5.87
				Av.	1.81

CLIENT: NATIONAL MINERAL SANDS

711130

TITLE NO: EL 2 8/85

AREA: NARACOOPA

LINE NO: 300N HOLE NO: 40W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 14.4.88

117

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	6.44	SAND, medium grained, pale brown, thin layer of Tailings over top about 0.5m., then raw sand with H.M.	2.70	0.34	7.73
1.5 - 3.5	8.22	SAND, medium grained, pale brown less H.M. Water table.	1.22	0.03	2.16
3.5 - 5.5	9.23	AS ABOVE	1.04	0.01	1.82
5.5 - 7.5	9.72	SAND, medium grained, pale brown grading into darker brown.	1.62	0.00	1.21
7.5 - 9.5	8.32	SAND, medium to coarse grained, brown, coarse. H.M. present.	2.20	0.63	0.98
9.5 - 10.0	1.59	AS ABOVE with black clay. EOH 10m.	12.12	10.54	6.39
				Av.	2.10

CLIENT: NATIONAL MINERAL SANDS

711131

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 300N HOLE NO: 60W

LOGGED BY: GRAHAM LEE

R.C. RIG DRILLED

DATE DRILLED: 13.4.88

118

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	8.03	SAND, medium grained, pale brown with traces of H.M. Soil on top.	2.57	0.54	9.65
1.5 - 3.5	5.08	SAND, medium grained, dark brownish grey with brown peaty sand at top. Water Table.	4.35	0.27	1.29
3.5 - 5.5	9.68	SAND, medium grained dark brownish grey	4.01	0.03	3.52
5.5 - 7.5	8.83	SAND, medium grained dark brown peaty with H ₂ S from sample	1.51	0.01	6.25
7.5 - 9.5	5.69	SAND, medium to coarse grained with fine gravel, brown. Traces H.M.	3.55	0.43	2.93
9.5 - 10.5	2.85	SAND, as above to 10.3m. then clay, dark grey micaceous. EOH 10.5m.	10.69	2.42	12.57
				Av.	5.24

CLIENT: NATIONAL MINERAL SANDS

711132

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 300N

HOLE NO: 80W

LOGGED BY: GRAHAM LEE

R.C. RIG DRILLED

DATE DRILLED:

13.4.88

119

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Hole 0.5 N. of peg			
0 - 1.5	5.75	SAND, medium grained, pale brown. Old Tailings	1.80	0.21	11.25
1.5 - 3.5	7.01	AS ABOVE	0.68	0.27	8.72
3.5 - 5.5	8.97	AS ABOVE. Rich H.M. Water Table 5.5m. End of Tailings.	0.72	0.10	42.17
5.5 - 7.5	7.71	SAND, dark brown, unmined sand, medium grained, rich in H.M.	4.40	0.05	7.11
7.5 - 9.5	8.95	SAND as above	3.36	0.06	11.73
9.5 - 11.5	6.47	SAND, medium to coarse with some gravel, dark brown, rich H.M. Black clay as 11.5m.	2.41	1.33	6.06
		EOH 11.5m.			
				Av.	14.65

CLIENT: NATIONAL MINERAL SANDS

711133

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 300N HOLE NO: 100W

LOGGED BY: GRAHAM LEE

R.C. RIG DRILLED

DATE DRILLED: 13.4.88

120

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		EAST SIDE OF ROAD TO OLD PLANT			
0 - 1.5	5.16	SAND, medium grained, pale brown with H.M. Old Tailings	2.50	0.27	7.15
1.5 - 3.5	7.72	AS ABOVE	1.13	0.14	11.50
3.5 - 5.5	7.18	AS ABOVE	1.03	0.15	7.83
5.5 - 7.5	7.88	AS ABOVE. Water Table	1.53	0.11	5.93
7.5 - 9.5	8.65	AS ABOVE	2.16	0.17	5.05
9.5 - 11.5	8.80	AS ABOVE	2.25	0.55	10.37
11.5 - 13.0	4.87	AS ABOVE. Black clay at 13.0m. EOH 13.0m.	1.62	0.49	5.36
				AV.	7.70

CLIENT: NATIONAL MINERAL SANDS

711134

TITLE NO: EL 28/85

AREA: NARACOOKA

LINE NO: 300N HOLE NO: 120W

LOGGED BY: GRAHAM LEE

R.C. RIG DRILLED

DATE DRILLED: 13.4.88

121

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 0.5		Beside road to old plant.			
		Road base not sampled			
0.5 - 1.5	4.49	SAND, dark brown, soil to 1.8m. then pale brown medium grained with H.M. Old Tailings	3.37	1.05	14.76
1.5 - 3.5	5.93	SAND, medium grained, pale brown with H.M.	1.00	0.12	10.79
3.5 - 5.5	6.40	AS ABOVE. Water table	0.78	0.22	6.14
5.5 - 7.5	7.69	AS ABOVE	0.72	0.12	8.64
7.5 - 9.5	7.29	AS ABOVE	1.40	0.14	4.45
9.5 - 11.5	6.96	AS ABOVE. Old tailings	1.54	0.57	7.50
11.5 - 13.5	8.60	AS ABOVE. Moist.	1.48	0.43	6.54
13.5 - 14.0	1.29	SAND, gravel coarse with clay matrix. Basement at 14.0m.	5.95	7.07	5.69
		EOH 14.0m.			
				Av.	8.08

CLIENT: NATIONAL MINERAL SANDS

711135

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 300N HOLE NO: 140W

LOGGED BY: GRAHAM LEE

R.C. RIG DRILLED

DATE DRILLED: 13.4.88

122

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.37	SAND, medium grained, brown with H.M.	2.77	0.12	8.15
1.5 - 3.5	7.53	AS ABOVE	1.14	0.13	9.02
3.5 - 5.5	7.58	AS ABOVE	0.80	0.13	6.86
5.5 - 7.5	7.90	AS ABOVE	1.22	0.09	10.95
7.5 - 9.5	6.63	AS ABOVE	1.30	0.42	6.52
9.5 - 11.5	6.60	AS ABOVE. Water Table 11.0m.	1.33	0.43	8.39
11.5 - 13.5	8.35	AS ABOVE. Sample moist.	1.55	0.24	7.72
13.5 - 14.5	2.46	SAND, medium to coarse with some very coarse with H.M. Clay, black at 14.5m. EOH 14.5m.	6.14	1.26	4.02
				Av.	7.94

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711136

LINE NO: 300N HOLE NO: 160W

LOGGED BY: GRAHAM LEE

R.C. RIG DRILLED

DATE DRILLED: 13.4.88

123

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.78	SAND, medium grained, pale brown with H.M. Old Tailings	4.00	0.36	9.30
1.5 - 3.5	6.98	AS ABOVE	0.76	0.06	8.68
3.5 - 5.5	7.57	AS ABOVE	0.91	0.35	14.62
5.5 - 7.5	8.71	AS ABOVE	1.22	0.39	8.15
7.5 - 9.5	7.70	AS ABOVE	0.79	0.39	11.01
9.5 - 11.5	7.05	AS ABOVE	2.01	1.01	9.87
11.5 - 12.5	3.28	AS ABOVE to 12.5m. then black clay. EOH 12.5m.	8.28	3.21	6.06
				Av.	9.97

CLIENT: NATIONAL MINERAL SANDS

711137

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 300N HOLE NO: 180W

LOGGED BY: GRAHAM LEE

R.C. RIG DRILLED

DATE DRILLED: 13.4.88

124

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.85	SAND, medium grained to pale brown with H.M. Old Tailings.	2.55	0.53	6.61
1.5 - 3.5	7.09	AS ABOVE, old Tailings	1.32	0.59	6.89
3.5 - 5.5	7.59	AS ABOVE, old Tailings	1.13	0.37	7.06
5.5 - 7.5	8.44	AS ABOVE, increasing H.M. and pebbles. Old Tailings	1.59	0.34	10.09
7.5 - 8.5	4.31	AS ABOVE, old Tailings. Basement Rock at 8.5m. EOH 8.5m.	2.60	0.84	12.00
				Av.	8.23

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711138

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 300N

DATE DRILLED:

HOLE NO: 200W

13.4.88

125

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.83	SAND, medium grained brown with H.M. Old tailings	2.49	0.35	5.11
1.5 - 3.5	6.97	AS ABOVE	1.75	0.38	7.10
3.5 - 5.5	7.81	AS ABOVE to 5.0m. then medium to coarse grained unmined sand, rich with H.M. Water at 5.0m.	2.68	1.64	13.16
5.5 - 6.0	1.45	SAND as above to 6.0m. then grey basement rock. EOH 6.0m.	6.79	5.46	10.32
				Av.	8.89

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711139

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 300N

HOLE NO: 220W

DATE DRILLED: 13.4.88

126

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.16	SAND, medium grained brown with H.M. Old tailings	2.53	0.38	6.53
1.5 - 3.5	2.23	AS ABOVE	6.50	4.42	5.10
3.5 - 5.5	2.00	CLAY, grey mixed with sand as above and rock fragments. Basement at 5.0m.	37.84	11.13	6.73
5.5 - 6.0		Grey basement rock EOH 6.0m.			
		Average			6.08

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711140

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 300N HOLE NO: 240W

DATE DRILLED: 13.4.88

127

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.96	SAND, medium grained pale brown with H.M. Old Tailings	2.22	0.89	6.89
1.5 - 3.5	6.93	AS ABOVE to 2.5m. then dark brown, very rich H.M.	3.97	1.94	54.63
3.5 - 5.5	4.45	SAND very coarse, pebbly with H.M. then black clayey sand; yellow then grey fine silty sand.	23.95	6.26	10.07
5.5 - 6.0		CLAY, black micaceous. No sample			
		EOH 6.0m.			
		Average			25.41

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711141

R.C. RIGDRILLED

TITLE NO: EL 28/85

LINE NO: 425N HOLE NO: 250W

DATE DRILLED: 10.4.88

128

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 0.15		Slimes Dam Hole SAND, old H.M. tailing			Not assayed
0.15 - 3.8		SLIMES, black mud tailings			
3.8 - 4.0		SAND coarse grained with H.M. EOH 4.0m.			

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711142

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 500N

HOLE NO: 180E

DATE DRILLED:

8.4.88

129

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
		Middle of beach			
0 - 1.0	3.115	SAND, medium to coarse, some coarse shell, some H.M. Sand brown organic stained at bottom	0.75	3.73	12.01
1.0 - 1.4	3.940	SAND, coarse grained, brown organic stain with H.M. Rock at bottom of hole, broken bedrock	0.97	1.26	21.68
		EOH 1.4m.			
		Average			14.77

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711143

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 500N HOLE NO: 160E

DATE DRILLED: 8.4.88

130

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.0	2.505	HWM on beach SAND, medium grained, very rich in H.M. Water table 1.0m.	0.50	0.85	32.59
1.0 - 2.2	4.970	SAND as above. Brown organic stain at 1.9m. Rock at 2.2m. EOH 2.2m.	0.81	1.57	22.04
Average					26.84

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711144

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 500N

HOLE NO: 140E

DATE DRILLED: 8.4.88

131

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
		Milford Beach			
0 - 2.0	4.600	SAND, medium grained with heavy mineral. Old tailing	0.49	0.40	23.19
2.0 - 2.8	3.155	As above with increased H.M. 2.8 EOH on rock and water table.	1.04	0.89	38.34
		END OF HOLE 2.8m.			
		Average			27.52

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711145

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 500N HOLE NO: 120E

DATE DRILLED: 8.4.88

132

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 2.0	4.145	Side of Lanherne Beach SAND, medium grained with heavy mineral. Old tailing	0.46	0.04	10.88
2.0 - 3.0	2.875	As above to 2.5m. then unmined sand, grey with H.M. Pebbles at 3.0m. Stopped hole EOH Redrill Pebbles at 2.0m. couldn't advance further EOH 3.0m.	2.76	1.29	10.19
Average					10.65

CLIENT: NATIONAL MINERAL SANDS

711146

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 500N HOLE NO: 100E

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 8.4.88

133

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Top of Lanherne Beach bank			
0 - 2.0	4.577	SAND, medium grained, white and grey	1.59	0.05	3.71
2.0 - 4.0	5.465	SAND, medium grained brown. Trace of H.M.	2.54	0.12	1.84
4.0 - 6.0	6.265	As above. Heavily indurated 5.9 - 6.0m. White clay at 6.0m. (Sample large casing not advanced fast enough)	1.43	1.23	1.25
6.0 - 6.2	0.750	CLAY, white sandy. Couldn't turn casing EOH 6.2m.	37.62	16.14	0.45
		Average			2.21

CLIENT: NATIONAL MINERAL SANDS

711147

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 500N HOLE NO: 80E

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 14.4.88

134

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.30	SAND, medium grained, old heavy Tailings	5.14	1.83	16.62
1.5 - 3.5	6.14	AS ABOVE to 1.0m. then sand medium grained, pale grey brown. Water table.	4.72	0.25	2.46
3.5 - 5.5	7.80	SAND, medium grained brown to grey brown H.M.	3.63	0.06	2.47
5.5 - 7.5	7.15	SAND, medium to coarse grained, grey brown, contains clay, some granules.	3.35	5.44	1.62
7.5 - 9.5	7.46	Went through white clay for 1.0m. then hit sand, coarse grained, angular, white to pale grey.	22.20	10.63	0.47
9.5 - 11.5	5.85	SAND, coarse to very coarse, angular, white to pale grey	1.53	6.16	0.26
11.5 - 13.5	5.64	AS ABOVE with white to grey micaceous clay. EOH 13.5m.	7.80	5.88	0.13
				Av	2.94

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711148

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 500N

DATE DRILLED:

HOLE NO: 60E(1N)

10.4.88

135

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Hand drilled check hole. Old Tailings over Lanherne Beach. RHF Laboratory Sample.			
0 - 2.0	5.225	SAND, heavy tailings to 1.7m. At 1.7m. dark grey soil	0.98	0.10	55.05
2.0 - 4.0	5.300	SAND medium grained pale grey with visible H.M. Water table 3.5m. Sand dark grey slightly indurated with bands of rich H.M.	1.42	0.08	7.71
4.0 - 6.0	6.180	SAND medium grained brown with trace of H.M.	0.87	0.03	1.48
6.0 - 8.0	7.500	AS ABOVE with thin bands of indurated up to 10cm. thick	1.88	0.02	2.02
8.0 - 8.5	2.620	SAND getting coarser with depth till fine gravel and some pebbles. Increased H.M. rock at 8.5m.	1.59	0.83	1.73
		EOH 8.5m.			
		Average			15.69

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711150

LINE NO: 500N

HOLE NO: 60E (2N)

LOGGED BY: GRAHAM LEE

R.C. RIG DRILLED

DATE DRILLED:

14.4.88

137

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Hole on peg. Rig drilled, check hole (RHF Laboratory)			
0 - 1.5	5.19	SAND, old heavy Tailings	1.42	0.07	46.47
1.5 - 3.5	6.34	AS ABOVE to 2.0m. then medium grained pale grey to grey. End of old Tailings 2.0m.	2.34	0.18	5.27
3.5 - 5.5	8.68	SAND, medium grained grey and brownish grey with H.M. Water 5.5m.	2.47	0.02	1.52
5.5 - 7.5	7.90	SAND, dark brown with H.M.	3.07	0.01	2.02
7.5 - 9.0	4.58	AS ABOVE with rocks at 8.5m. Black clay at 9.0m.	8.36	6.19	1.84
9.0 - 9.5	1.04	CLAY, black with fine pyrite, then pale grey sandy clay grades to angular sandstone with H.M.	6.50	7.42	0.32
9.5 - 11.5	6.29	SAND, medium to coarse grained, angular, white to pale grey.	4.18	3.51	1.21
11.5 - 12.5	2.54	AS ABOVE with white sandy clay 12.4 to 12.5m.	2.96	8.14	0.16
12.5 - 13.5	2.37	CLAY, dark grey sandy and micaceous.	30.81	7.15	1.28
		EOH			
		Average			6.98

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711152

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 500N HOLE NO: 60E (3 N)

DATE DRILLED: 10.4.88

139

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Hand drilled check hole (Readings Laboratory)			
0 - 2.0	4.831	As for 1N	1.7		45.2
2.0 - 4.0	5.009	As for 1N	3.2		6.7
4.0 - 6.0	5.729	As for 1N	2.0		1.3
6.0 - 8.0	8.509	As for 1N. Some boiling sand	4.0		2.0
8.0 - 8.3	1.851	As for 1N	2.5		1.8
		EOH 8.3m.			
		Average			13.37

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOKA

LOGGED BY: GRAHAM LEE

711153

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 500N HOLE NO: 60E (3N)

DATE DRILLED: 10.4.88

140

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		(RHF LABORATORY)			
0 - 2.0			1.01	0.12	46.78
2.0 - 4.0			2.41	0.06	6.53
4.0 - 6.0		For description see previous page	0.70	0.00	1.30
6.0 - 8.0			2.20	0.00	2.00
8.0 - 8.3			2.25	2.83	1.70
		Average			13.55

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711154

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 500N

DATE DRILLED:

HOLE NO: 60E (4N)

14.4.88

141

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Hole on peg. Rig drilled Check Hole (Readings Laboratory)			
0 - 1.5	5.372	As for 2N	8.4		45.7
1.5 - 3.5	7.266	As for 2N	3.5		6.3
3.5 - 5.5	7.896	As for 2N	5.1		2.2
5.5 - 7.5	8.458	As for 2N	5.6		2.1
7.5 - 9.0	5.77	As for 2N	17.4		1.7
9.0 - 9.5	1.466	As for 2N	38.3		0.9
9.5 - 11.5	5.864	As for 2N	8.9		0.1
11.5 - 12.5	4.652	As for 2N	3.4		0.2
12.5 - 13.5	1.289	As for 2N	29.3		2.7
		EOH 13.5m.			
		Average			7.1

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711155

LINE NO: 500N

HOLE NO: 60E (4N)

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 14.4.88

142

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		(RHF LABORATORY)			
0 - 1.5			2.68	0.41	47.57
1.5 - 3.5			1.79	0.12	6.42
3.5 - 5.5			2.45	0.09	2.19
5.5 - 7.5			2.96	0.08	2.27
7.5 - 9.0		For description see previous page	10.37	8.14	1.84
9.0 - 9.5			20.49	6.26	1.20
9.5 - 11.5			1.96	2.28	0.20
11.5 - 12.5			1.49	4.89	0.23
12.5 - 13.5			21.49	6.47	2.73
		Average			7.4

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711156

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 500N HOLE NO: 40E

DATE DRILLED: 14.4.88

143

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	5.42	SAND, medium grained, pale grey to grey, old Tailings	1.81	0.85	30.45
1.5 - 3.5	7.44	SAND, medium grained, pale brown old Tailings for 1m. then raw sand. Water Table.	2.47	0.49	3.44
3.5 - 5.5	9.05	SAND, medium grained, brown	1.80	0.16	1.30
5.5 - 7.5	8.36	AS ABOVE, becoming darker. Rich in H.M.	2.29	0.10	1.08
7.5 - 9.5	8.51	AS ABOVE	1.67	0.05	2.13
9.5 - 11.5	7.0	AS ABOVE, Rich in H.M. Hit grey-green micaceous clay EOH 11.5m.	4.93	5.77	2.49
				Av.	5.79

75

CLIENT: NATIONAL MINERAL SANDS

711157

TITLE NO: EL 2 8/85

144

AREA: NARACOOPA

LINE NO: 500N HOLE NO: 20E

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 14.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	5.98	SAND, medium grained, pale grey to grey. Old Tailings	1.07	0.07	19.29
1.5 - 3.5	7.75	AS ABOVE Water table	1.47	0.09	4.26
3.5 - 5.5	7.80	SAND, medium grained, pale brown	1.14	0.07	3.10
5.5 - 7.5	8.13	SAND, medium to coarse grained, pale brown to brown. H ₂ S.	1.20	0.97	1.58
7.5 - 9.5	8.57	AS ABOVE	1.76	3.57	0.74
9.5 - 11.5	8.99	AS ABOVE, hit coarse gravel and basement fragments. EOH 11.5m.	4.21	5.86	0.99
				Av.	4.37

CLIENT: NATIONAL MINERAL SANDS

711158

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 500N HOLE NO: 00E

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 14.4.88

145

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		1m. off centre to the South			
0 - 1.5	6.38	SAND, medium grained, pale grey to grey. Old Tailings	1.69	0.38	55.02
1.5 - 3.5	3.56	AS ABOVE Water Table 3.0m.	9.40	0.53	6.76
3.5 - 5.5	8.39	SAND, medium grained, pale brown. End of Tailings 4.0m.	2.44	0.11	2.94
5.5 - 7.5	8.41	SAND, medium grained, pale brown, H ₂ S	0.92	0.37	1.60
7.5 - 9.5	8.53	AS ABOVE	1.76	2.22	0.46
9.5 - 11.5	7.64	AS ABOVE, some clay present becoming coarser.	1.91	3.86	0.82
11.5 - 13.5	4.92	SAND, medium to coarse, pale brown, hit grey-green micaceous clay	5.94	3.22	1.24
		EOH 13.5m..			
				Av.	8.16

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711159

R.C. RIG DRILLED

TITLE NO: EL 23/85

LINE NO: 500N HOLE NO: 20W

DATE DRILLED: 14.4.88

146

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000um	% H.M.
		Offset 2m. to NW due to steepness of slope.			
0 - 1.5	3.70	SAND, medium grained, pale grey to grey, old Tailings	3.26	1.69	80.08
1.5 - 3.5	9.72	AS ABOVE	1.69	0.30	90.27
3.5 - 5.5	6.55	AS ABOVE. Water table.	1.86	1.18	63.85
5.5 - 7.5	7.21	SAND, medium grained, pale brown, raw sand, H ₂ S hit dark brown clay	6.45	0.97	10.17
7.5 - 9.5	7.14	SAND, medium to coarse, angular, light grey	0.77	0.22	0.74
9.5 - 11.5	7.17	AS ABOVE . Pale brown, H.M. present	1.26	0.59	1.01
11.5 - 13.5	7.56	SAND, medium grained, pale brown, some dark brown clay. H.M. present.	1.00	1.58	0.79
13.5 - 15.0	2.14	AS ABOVE. Hit micaceous clay, H.M. present. EOH 15.0m.	19.41	8.67	1.50
				Av	30.47

CLIENT: NATIONAL MINERAL SANDS

711160

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 500N HOLE NO: 40W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 14/4/88

147

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.51	SAND, medium grained, pale grey to grey, old Tailings	0.79	0.03	99.97
1.5 - 3.5	10.88	AS ABOVE	0.60	0.02	96.04
3.5 - 5.5	10.45	AS ABOVE	0.42	0.00	98.56
5.5 - 7.5	9.11	SAND, medium grained, pale brown, raw sand, Tailings to 6.0m. Water table	1.11	0.05	14.68
7.5 - 9.5	7.30	AS ABOVE	0.90	0.02	1.42
9.5 - 11.5	8.17	SAND, medium grained, pale brown grading into brown, H.M. rich, H ₂ S	1.02	0.01	0.97
11.5 - 13.5	9.91	SAND, medium grained, brown.	1.64	0.40	0.82
13.5 - 15.5	7.13	AS ABOVE, becoming coarser, hit light grey clay basement. EOH 15.5M.	1.21	1.91	0.86
				Av.	37.2

CLIENT: NATIONAL MINERAL SANDS

711161

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 500N HOLE NO: 60W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 15.4.88

148

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		3M. TO THE SOUTH DUE TO POSITION OF PEG ON BANK			
0 - 1.5	8.99	SAND, medium grained, pale grey to grey. Old Tailings	0.86	0.16	94.50
1.5 - 3.5	9.55	AS ABOVE	0.37	0.00	96.71
3.5 - 5.5	11.59	AS ABOVE. End of Tailings	0.42	0.00	94.84
5.5 - 7.5	8.30	SAND, medium grained, pale brown. Water Table.	1.06	0.03	2.12
7.5 - 9.5	6.85	AS ABOVE	0.92	0.08	1.36
9.5 - 11.5	7.63	SAND, medium to coarse grained, pale brown grading into brown	0.81	0.01	1.39
11.5 - 13.5	10.59	SAND, medium to coarse grained, brown, H ₂ S	1.25	0.09	1.00
13.5 - 15.5	7.74	AS ABOVE. Hit grey-green micaceous clay. H.M. rich. EOH 15.5m.	2.39	2.16	1.24
				AV.	34.78

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711162

R.C. RIG DRILLED

TITLE NO: EL2 8/85

LINE NO: 500N HOLE NO: 80W

DATE DRILLED: 15.4.88

149

Interval (m)	DRY Wt. (kg)	Description	% Slime	% + 1000um	% H.M.
0 - 1.5	8.91	SAND, medium grained, pale grey to grey, old Tailings	0.96	0.04	86.76
1.5 - 3.5	6.91	AS ABOVE	0.49	0.00	97.64
3.5 - 5.5	8.85	AS ABOVE grading into sand, medium grained, pale brown. Tailings end 5.0m. then raw sand	1.14	0.29	50.16
5.5 - 7.5	8.22	SAND, medium grained, pale brown, H.M. rich	0.45	0.01	1.79
7.5 - 9.5	7.57	SAND, medium grained pale brown grading into brown H ₂ S Water Table.	1.17	0.23	1.63
9.5 - 11.5	7.78	SAND, medium to coarse grained, dark brown H ₂ S	2.33	0.02	2.93
11.5 - 13.5	8.53	AS ABOVE	1.67	0.66	2.08
13.5 - 15.5	7.31	AS ABOVE, some granules and pebbles	4.69	3.06	2.83
15.5 - 17.0	5.05	SAND, fine to medium grained, dark grey coarse clay, Hit dark grey clay. EOH 17.0m.	7.40	1.03	4.79
Average					26.79

CLIENT: NATIONAL MINERAL SANDS

711163

TITLE NO: EL 2 8/85

AREA: NARACOOPA

LINE NO: 500N HOLE NO: 100W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 15.4.88

150

Interval (m)	DRY Wt. (kg)	Description	% Slime	% + 1000 μ m	% H.M.
0 - 1.5	8.34	SAND, medium grained, pale grained, pale grey to grey, old Tailings	0.32	0.00	97.72
1.5 - 3.5	7.36	AS ABOVE	0.35	0.13	85.71
3.5 - 5.5	8.61	AS ABOVE	0.50	0.36	52.94
5.5 - 7.5	8.63	SAND, medium grained pale brown, H.M. rich. Water Table.	1.36	0.38	4.08
7.5 - 9.5	6.11	SAND, medium grained, pale brown grading into brown, H.M. rich	1.61	0.52	2.65
9.5 - 11.5	7.88	SAND, medium grained, dark brown, H.M. rich	3.48	0.00	5.40
11.5 - 13.5	7.10	AS ABOVE (hit metal)	1.59	1.43	3.80
13.5 - 15.5	4.30	SAND, fine to medium grained, dark brown. H.M. rich, dark brown micaceous clay at base. EOH 15.5M.	3.19	1.55	6.35
				Av	30.22

CLIENT: NATIONAL MINERAL SANDS

711164

TITLE NO: EL 28/85

AREA: NARACOOKA

LINE NO: 500N HOLE NO: 120W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 15.4.88

151

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.92	SAND, medium grained, pale grey to grey. Old Tailings Water Table	2.14	0.15	75.52
1.5 - 3.5	4.89	SAND, medium grained, pale brown to dark brown, H ₂ S	4.71	0.71	11.57
3.5 - 5.5	7.99	SAND, medium grained pale brown, H.M. rich	1.98	0.02	3.54
5.5 - 7.5	11.69	AS ABOVE, reddish brown	2.77	0.00	14.64
7.5 - 9.5	8.72	AS ABOVE, coarser, pebbles and granules present	2.01	2.55	3.62
9.5 - 11.5	4.56	SAND, fine to medium grained, brown, hit pebble layer, hit black clay EOH 11.5m.	2.87	1.49	4.90
Average					16.51

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711165

LINE NO: 500N HOLE NO: 140W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 15.4.88

152

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.79	SAND, medium grained, grey , old Tailings (very heavy) Water Table	0.62	0.00	97.08
1.5 - 3.5	6.62	AS ABOVE	0.42	0.00	95.89
3.5 - 5.5	10.94	AS ABOVE	0.38	0.00	98.30
5.5 - 7.5	10.21	SAND, medium to coarse grained, red-brown, H.M. rich. Tailings end 6.0m.	2.96	1.69	40.17
7.5 - 9.5	7.93	AS ABOVE, pale brown, H.M. rich, some pebbles	4.31	1.55	14.34
9.5 - 10.5	2.19	AS ABOVE, hit dark grey clay, fine grained. EOH 10.5M.	16.32	6.27	3.01
				AV.	61.53

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711166

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 500N HOLE NO: 160W

DATE DRILLED: 15.4.88

153

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	9.61	SAND, medium grained, grey. Old Tailings	0.74	0.05	94.52
1.5 - 3.5	5.08	AS ABOVE. Water Table.	1.06	0.00	96.39
3.5 - 5.5	8.12	AS ABOVE. End of Tailings??	1.21	0.16	84.26
5.5 - 7.5	2.25	SAND, medium grained grey-brown, hit number of pebble and indurated layers (lost a lot of sample) Rich H.M.	3.74	0.68	50.17
7.5 - 9.5	2.55	AS ABOVE (Lost a lot of sample due to pebble layer.)	3.39	0.58	33.72
9.5 - 11.0	2.75	SAND, fine to medium grained dark grey. Rich H.M. EOH 11.0M.	11.91	3.57	13.33
				Av	62.81

CLIENT: NATIONAL MINERAL SANDS

711167

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 500N HOLE NO: 180W

154

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 15.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.95	SAND, medium grained, grey. Old Tailings. Water Table	0.99	0.07	96.13
1.5 - 3.5	7.38	AS ABOVE	8.97	1.42	54.13
3.5 - 5.5	7.09	SAND, medium grained, pale brown, rich in H.M. Tailings ended 4.0m.	2.43	0.25	17.75
5.5 - 7.5	3.94	SAND, medium grained, pale brown, pebbles present. H.M. rich	2.38	0.47	47.38
7.5 - 9.5	2.24	AS ABOVE	3.12	0.65	21.93
9.5 - 11.0	4.05	AS ABOVE. Hit dark grey clay. EOH 11.0m.	13.92	4.45	5.71
				Av	39.56

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711168

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 500N HOLE NO: 200W

DATE DRILLED: 15.4.88

155

Interval (m)	Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	5.86	SAND, medium grained, pale brown. Old Tailings	1.29	0.38	11.18
1.5 - 3.5	7.78	AS ABOVE	2.00	0.35	10.57
3.5 - 5.5	7.28	AS ABOVE. Water Table	0.77	0.40	9.18
5.5 - 7.5	10.24	AS ABOVE. Tailings end 7.0m. Sand fine to medium grained, light grey, abundant H.M.	1.24	0.33	34.99
7.5 - 9.5	1.07	SAND, fine to medium grained, grey, rich in H.M.	2.71	0.69	63.06
9.5 - 10.5	3.10	AS ABOVE. Hit dark grey clay. EOH 10.5M.	16.74	6.62	8.23
Average					24.82

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711169

LINE NO: 500N HOLE NO: 220W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 15.4.88

156

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5		SAND, medium grained, pale brown. Rich H.M. Old Tailings	1.38	0.38	13.99
1.5 - 3.5	6.68	AS ABOVE	0.69	0.12	9.18
3.5 - 5.5	7.20	AS ABOVE. Water table	0.75	0.78	7.26
5.5 - 7.5	8.74	AS ABOVE, slightly lighter, greyish-brown.	2.59	0.46	5.64
7.5 - 9.5	6.37	AS ABOVE	6.45	1.75	7.03
9.5 - 10.0	2.61	AS ABOVE. Hit dark grey clay	10.64	2.16	3.87
		EOH 10.0M.			
		Average			8.19

CLIENT: NATIONAL MINERAL SANDS

711171

TITLE NO: EL 28/85

AREA: NARACOOKA

LINE NO: 500N HOLE NO: 260W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 15.4.88

158

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.38	SAND, medium grained, pale brown, tailings. H.M. rich.	0.93	0.14	10.23
1.5 - 3.5	5.97	AS ABOVE	0.94	0.21	13.55
3.5 - 5.5	7.97	AS ABOVE WATER TABLE	1.25	0.30	9.75
5.5 - 7.5	9.72	AS ABOVE	1.69	0.95	4.75
7.5 - 9.5	5.82	AS ABOVE, hit dark grey clay. END OF HOLE 7.5m.	9.28	1.62	5.69
				Av	8.72

CLIENT: NATIONAL MINERAL SANDS

711172

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 500N HOLE NO: 280W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 15.4.88

159

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.10	SAND, medium grained, pale brown. H.M. rich. Old tailings.	1.12	0.28	13.56
1.5 - 3.5	7.70	AS ABOVE	0.78	0.21	15.01
3.5 - 5.5	7.73	AS ABOVE	1.34	0.67	10.64
		WATER TABLE			
5.5 - 7.5	10.29	AS ABOVE, becoming darker in colour.	1.30	0.09	6.48
7.5 - 9.5	6.91	SAND, medium grained, light grey to pale grey, Abundant H.M. Hit clay.(this interval probably raw sand).	2.04	0.15	5.33
		END OF HOLE 9.5m.			
				Av.	10.03

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY:

ANDREW DOVE

711173

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 500N

HOLE NO: 300W

DATE DRILLED:

15.4.88

160

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.81	SAND, medium grained, pale brown. H.M. rich. Old tailings	1.99	0.21	12.39
1.5 - 3.5	7.11	AS ABOVE	1.07	0.32	11.68
3.5 - 5.5	8.98	AS ABOVE WATER TABLE	1.54	0.09	7.63
5.5 - 7.5	6.48	SAND, medium grained, light-pale grey. Abundant H.M.	1.22	0.13	7.12
7.5 - 9.0	5.19	AS ABOVE. H.M. rich. Hit dark grey clay. END OF HOLE 9.0m.	8.32	3.00	6.19
				Av	8.97

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711174

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 500N HOLE NO: 320W

DATE DRILLED: 16.4.88

191

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.10	SAND, medium grained, pale brown. H.M. rich. Old tailings.	0.83	0.17	12.92
1.5 - 3.5	3.50	AS ABOVE	1.31	0.74	6.97
3.5 - 5.5	6.35	AS ABOVE, grading into pale grey. Hit number of gravel layers.	2.19	1.55	18.62
		WATER TABLE			
5.5 - 7.5	10.12	SAND, medium grained, pale grey. H.M. rich.	2.64	0.21	8.65
7.5 - 8.5	3.16	AS ABOVE, light grey. H.M. rich. Hit grey-green clay.	4.35	1.08	4.61
		END OF HOLE 8.5m.			
		Average			8.53

CLIENT: NATIONAL MINERAL SANDS

711175

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 500N

HOLE NO: 340W

162

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 16.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.10	SAND, medium grained, pale brown. H.M. rich. Tailings.	1.53	0.25	9.99
1.5 - 3.5	8.03	AS ABOVE.	1.27	0.25	7.26
3.5 - 5.5	6.28	AS ABOVE. Grades into pale grey. H.M. rich. WATER TABLE	1.17	0.15	7.95
5.5 - 7.5	9.85	SAND, medium grained, pale grey. H.M. rich.	1.32	0.18	6.56
7.5 - 8.5	4.48	AS ABOVE. Hit grey green clay. END OF HOLE 8.5m.	8.38	3.06	8.10
		Average			7.84

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711176

LINE NO: 500N

HOLE NO: 360W

LOGGED BY:

ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 16.4.88

163

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.68	SAND, medium grained, pale brown. Old tailings. H.M. rich.	2.69	0.35	6.43
1.5 - 3.5	6.44	AS ABOVE.	1.42	0.14	5.97
3.5 - 5.5	7.44	AS ABOVE, becoming lighter. WATER TABLE.	0.97	0.24	7.69
5.5 - 7.5	8.15	SAND, medium grained, pale grey.H.M. rich.	1.07	0.08	9.45
7.5 - 9.5	6.59	AS ABOVE	3.34	0.32	10.26
9.5 - 11.0m.	3.16	AS ABOVE, hit grey-green clay. END OF HOLE 11.0m.	32.4	8.32	5.92
				Av	7.75

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711177

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 500N HOLE NO: 380W

DATE DRILLED: 10.4.88

104

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + .1000 um	% H.M.
		Beside Bank of Fraser River.			
0 - 2.0	6.740	SAND medium grained with grey soil on top of old tailings with H.M.	2.66	0.12	9.22
2.0 - 4.0	4.950	SAND medium grained, pale brown with H.M. old tailings.	0.79	0.09	10.20
4.0 - 6.0	6.630	SAND as above. Water at 4.5m.	0.66	0.27	9.10
6.0 - 8.0	6.940	SAND fine to medium grained, pale brown with H.M. Probably old tailings, clay at 8m.	0.96	0.28	5.64
		EOH 8.0m.			
		Average			8.54

CLIENT: NATIONAL MINERAL SANDS

711178

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 600N HOLE NO: 160E

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 8.4.88

165

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000um	% H.M.
0 - 1.0	3.810	Middle of Beach SAND, medium grained, rich in mineral	0.68	1.17	23.06
1.0 - 1.5	1.095	SAND, medium to coarse with coarse shell and minor mineral. Pebbles at end	0.67	7.44	2.64
		EOH 1.5m.			
		Average			16.25

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711179

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 600N

HOLE NO: 140E

DATE DRILLED:

8.4.88

166

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
		Edge of dune, old rehabilitation of dark tailings			
0 - 2.0	5.440	SAND, medium grain brown	1.35	0.49	22.32
2.0 - 4.0	4.310	As above with heavy mineral	1.07	0.09	9.84
4.0 - 6.0	7.275	SAND as above with heavy mineral. Became darker brown at 5.0m. (original deposit) Pebbles at 6.0m.	1.01	0.99	19.23
		EOH 6.0m.			
		Average			17.13

CLIENT: NATIONAL MINERAL SANDS

711180

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 600N

HOLE NO: 120E

167

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 8.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Top of old tailings			
0 - 2.0	4.360	SAND, medium grained pale brown with heavies	0.36	0.18	8.78
2.0 - 4.0	4.795	SAND as above but darker brown	1.11	0.16	18.10
4.0 - 6.0	6.010	As above	0.70	0.11	13.58
6.0 - 8.0	5.715	As above	0.96	0.12	9.76
8.0 - 10.0	5.215	As above Water Table at 9.0m.	1.98	0.18	6.91
10.0 - 11.5	2.725	SAND, medium to fine grained, brown grey with silt and clay. Some mica and H.M. EOH 11.5m. in weathered bedrock	4.56	0.32	0.57
		Average			10.01

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711181

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 600N

DATE DRILLED: 17.4.88

HOLE NO: 100E

168

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5		SAND, med. grained, grey brown, H.M. rich.			
1.5 - 3.5		SAND, med. grained, light grey. H.M. rich.			
3.5 - 5.5		AS ABOVE, grades into grey-brown. WATER TABLE			
5.5 - 7.5		SAND, med. to coarse grained, red-brown to dark brown.			
7.5 - 8.5		AS ABOVE. Hit gravel then grey green micaceous clay. END OF HOLE 8.5m.			

CLIENT: NATIONAL MINERAL SANDS

711182

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 600N HOLE NO: 80E

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 17.4.88

169

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5		SAND, medium grained, light grey, H.M. rich.			
1.5 - 3.5		AS ABOVE, grades into light med-brown at 3.0m.			
3.5 - 5.5		SAND, medium grained, pale brown, grading into amber.			
5.5 - 7.5		SAND, medium grained, dark brown.			
7.5 - 9.5		AS ABOVE, hit gravel then micaceous clay.			
9.5 - 11.5 (No sample)		CLAY END OF HOLE 11.5m.			

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711183

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 600N

HOLE NO: 60E

DATE DRILLED: 17.4.88

170

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5		SAND, medium grained, brown grey grading to amber. H.M. rich.			
1.5 - 3.5		SAND, medium gained, brown grey. WATER TABLE.			
3.5 - 5.5		AS ABOVE, slightly lighter at base.			
5.5 - 7.5	9.50	AS ABOVE, grades into red-brown sand.	2.28	0.04	1.71
7.5 - 9.5	6.03	AS ABOVE, contains gravel. Hit grey micaceous clay. END OF HOLE 9.5m.	7.21	4.28	1.40

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711184

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 600N HOLE NO: 40E

DATE DRILLED: 17.4.88

171

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.64	SAND, medium grained, brown-grey. H.M. rich.	1.53	0.09	18.22
1.5 - 3.5	5.90	AS ABOVE, grades into grey sand, H.M. rich. WATER TABLE.	1.33	0.26	13.22
3.5 - 5.5	7.57	AS ABOVE, grades to sand. Medium grained, grey-brown mottle.	1.40	0.00	5.12
5.5 - 7.5	6.13	SAND, medium grained, grey brown mottle. Grades to dark grey.	4.42	0.12	7.50
7.5 - 9.5	9.45	SAND, med. grained. Dark grey. H.M. rich.	2.43	0.00	2.04
9.5 - 11.5	7.52	AS ABOVE, grades to red brown. END OF HOLE 11.5m.	3.40	1.58	1.83
		Average			7.50

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711185

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 600N HOLE NO: 20E

DATE DRILLED: 17.4.88

172

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.15	SAND, medium grained, pale brown at top 1m. with abundant H.M. Grades into dark brown organic sand. WATER TABLE	2.14	0.11	8.67
1.5 - 3.5	6.33	SAND, med. grained, dark brown, grades into brown grey sand.	2.78	0.07	9.62
3.5 - 5.5	7.98	SAND, medium grained, brown grey.	2.91	0.06	2.34
5.5 - 7.5	9.65	SAND, medium grained, dark brown.	2.74	0.13	2.08
7.5 - 9.5	5.05	AS ABOVE.	3.07	1.20	1.48
9.5 - 10.5	3.75	AS ABOVE. BEcomes v. coarse. Contains gravel. Hit dark grey clay. END OF HOLE 10.5m.	8.07	8.75	1.54
		Average			4.34

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711186

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 600N HOLE NO: 000W

DATE DRILLED: 16.4.88

173

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5		SAND, med. grained, pale brown. H.M. rich. Tailings.	1.31	0.22	18.45
1.5 - 3.5		SAND, med. grained, pale brown grading into dark brown. H ₂ S.	1.13	0.01	2.98
3.5 - 5.5		SAND, med to coarse grained, dark brown. H ₂ S.	1.56	0.66	1.95
5.5 - 7.5		AS ABOVE. Very coarse gravel.	0.72	1.73	0.96
7.5 - 9.5		AS ABOVE.	0.70	3.40	1.08
9.5 - 10.5		AS ABOVE, hit grey-green clay.	3.52	4.66	0.78
		END OF HOLE 10.5m.			
		Average			4.04

CLIENT: NATIONAL MINERAL SANDS

711187

TITLE NO: EL 28/85

174

AREA: NARACOOPA

LINE NO: 600N HOLE NO: 20W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 16.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.20	SAND, medium grained, pale brown, H.M. rich tailings.	0.89	0.08	23.20
1.5 - 3.5	7.12	AS ABOVE to 2m. then grading into light brown-amber. WATER TABLE	0.53	0.00	1.24
3.5 - 5.5	6.86	SAND, medium grained, light brown, becoming coarser Darker with depth.	0.52	0.38	0.59
5.5 - 7.5	8.53	SAND, medium to coarse grained, dark brown.	1.36	1.84	0.47
7.5 - 9.5	8.48	AS ABOVE, gravel.	1.69	2.42	0.49
9.5 - 10.0	2.43	AS ABOVE, hit dark grey clay. END OF HOLE 10.0m.	4.70	5.13	1.33
				Av.	4.10

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711188

LINE NO: 600N HOLE NO: 40W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 16.4.88

175

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.02	SAND, medium grained, pale brown, H.M. rich. Tailings.	3.33	0.56	41.99
1.5 - 3.5	7.44	AS ABOVE, to 2.0m. then sand, fine to med. grained. Light grey. H.M. rich. WATER TABLE	1.57	0.03	10.58
3.5 - 5.5	7.66	SAND, medium grained, brown grey.	1.93	0.05	3.30
5.5 - 7.5	8.26	AS ABOVE, grading into dark brown.	3.15	0.09	0.95
7.5 - 9.5	7.96	SAND, medium to coarse, dark brown. H ₂ S.	3.66	1.64	0.43
9.5 - 11.5	8.04	AS ABOVE, some gravel. Hit grey green clay. END OF HOLE 11.5m.	1.02	1.44	0.42
				Av.	8.20

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711189

LINE NO: 600N HOLE NO: 60W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 16.4.88

176

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.52	SAND, medium grained, amber. H.M. rich.	0.77	0.09	12.56
1.5 - 3.5	4.20	SAND, medium grained, light grey. H.M. rich.	4.33	0.36	8.86
		WATER TABLE			
3.5 - 5.5	7.59	AS ABOVE	1.59	0.03	2.39
5.5 - 7.5	8.88	AS ABOVE, grading into pale brown.	1.26	0.01	1.00
7.5 - 9.5	8.36	AS ABOVE, grading into red brown.	3.58	0.35	0.64
9.5 - 11.5	6.95	AS ABOVE, hit gravel then hit grey-green clay.	6.43	3.52	0.39
		END OF HOLE 11.5m.			
				Av	3.95

108

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711190

LINE NO: 600N

HOLE NO: 80W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 16.4.88

177

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.68	SAND, medium grained, brown, slightly organic.	3.21	0.62	10.22
1.5 - 3.5	6.01	SAND, medium grained, red brown.	3.51	0.09	2.64
3.5 - 5.5	7.53	AS ABOVE, grades into pale brown. WATER TABLE	1.40	0.00	1.69
5.5 - 7.5	7.16	SAND, medium grained, red-brown, very muddy.	4.07	0.22	2.94
7.5 - 9.5	9.29	AS ABOVE, med-coarse grained, gravel.	1.21	0.89	0.92
9.5 - 11.5	4.74	AS ABOVE, went through gravel, hit grey clay. END OF HOLE 11.5m.	2.61	2.60	2.30
				Av.	3.16

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711191

LINE NO: 600N HOLE NO: 100W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 16.4.88

178

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.13	SAND, medium grained, pale brown. H.M. rich.	0.62	0.35	4.23
1.5 - 3.5	6.35	AS ABOVE	0.60	0.43	5.46
3.5 - 5.5	6.29	AS ABOVE, grades into brown grey. H.M. rich. WATER TABLE	0.63	0.75	10.91
5.5 - 7.5	8.88	AS ABOVE, grades into yellow brown, H ₂ S then red brown.	2.35	0.22	3.49
7.5 - 9.5	7.03	SAND, red to coarse grained, red brown.	1.76	1.21	2.32
9.5 - 10.5	3.05	AS ABOVE, hit gravel then grey green clay. END OF HOLE 10.5m.	2.29	7.27	4.45
				Av.	5.25

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711192

LINE NO: 600N

HOLE NO: 120W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 16.4.88

179

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.96	SAND, medium grained, pale brown. Rich in H.M.	0.91	0.45	8.23
1.5 - 3.5	5.80	AS ABOVE.	0.87	0.83	12.45
3.5 - 5.5	7.12	SAND, medium grained, pale grey, rich in H.M. WATER TABLE	1.18	0.36	12.11
5.5 - 7.5	8.64	AS ABOVE, grading into yellow brown. Rich in H.M. H ₂ S.	1.02	0.13	4.63
7.5 - 9.5	8.41	SAND, medium to coarse grained, red-brown. H ₂ S.	1.80	0.75	2.86
9.5 - 11.2	5.51	AS ABOVE, hit gravel then grey-green clay. END OF HOLE 11.2m.	2.19	6.01	5.34
				Av.	7.68

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711193

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 600N

DATE DRILLED:

HOLE NO: 140W

16.4.88

180

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.10	SAND, medium grained, pale brown. H.M. rich.	1.12	1.83	20.22
1.5 - 3.5	7.25	AS ABOVE.	0.65	1.75	15.37
3.5 - 5.5	7.35	AS ABOVE, grades into brown-grey. H.M. rich.	0.74	0.95	13.58
5.5 - 7.5	9.00	SAND, medium grained, pale grey, H.M. rich. WATER TABLE	1.01	0.33	4.94
7.5 - 9.5	8.13	SAND, medium grained, red brown, H ₂ S.	1.67	1.08	5.44
9.5 - 10.5	4.47	AS ABOVE, coarser, gravel. Hit grey green clay. END OF HOLE 10.5m.	3.17	4.72	4.88
				Av.	10.84

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711194

LINE NO: 600N

HOLE NO: 160W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 16.4.88

181

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.12	SAND, medium grained, pale brown. Rich in H.M.	1.26	2.43	8.88
1.5 - 3.5	6.86	AS ABOVE.	0.73	3.77	11.70
3.5 - 5.5	7.08	AS ABOVE, grading into brown-grey.	0.69	0.43	7.44
5.5 - 7.5	6.04	SAND, medium grey brown grey grading to yellow grey. Pebbles and gravel. H ₂ S.	3.08	0.42	3.58
		WATER TABLE			
7.5 - 9.5	7.90	SAND, medium to coarse grained, yellow brown, gravel present. Hit grey green clay. END OF HOLE 9.5m.	2.03	1.21	5.46
				Av.	7.33

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711195

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 600N HOLE NO: 180W

DATE DRILLED: 16.4.88

182

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.72	SAND, medium grained, pale brown. Rich in H.M.	1.10	1.59	16.68
1.5 - 3.5	6.07	AS ABOVE.	0.92	2.24	5.82
3.5 - 5.5	7.46	AS ABOVE.	0.80	1.07	9.00
5.5 - 7.5	7.26	AS ABOVE	0.90	0.25	17.52
7.5 - 9.5	9.55	SAND, medium to coarse grained, yellow brown, gravel. Hit grey green clay.	1.45	0.79	5.67
		END OF HOLE 9.5m.			
				Av.	10.64

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711196

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 600N HOLE NO: 200W

DATE DRILLED: 16.4.88

183

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.78	SAND, medium grained, pale brown. H.M. rich.	1.19	0.17	12.92
1.5 - 3.5	7.90	AS ABOVE	0.75	0.66	18.40
3.5 - 5.5	8.00	AS ABOVE	0.72	1.05	14.55
5.5 - 7.5	7.45	AS ABOVE	0.83	1.02	8.88
7.5 - 9.5	7.02	AS ABOVE, grading into brown-grey. H.M. rich. WATER TABLE	0.79	0.95	6.34
9.5 - 11.5	6.88	AS ABOVE. Hit pebbles, gravel and grey-green clay. END OF HOLE 11.5m.	1.32	0.17	3.35
				Av.	10.65

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711197

LINE NO: 600N HOLE NO: 220W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 16.4.88

184

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.85	SAND, medium grained, pale brown. H.M. rich.	0.67	0.12	6.42
1.5 - 3.5	7.50	AS ABOVE	0.77	2.74	13.41
3.5 - 5.5	6.48	AS ABOVE	0.83	1.75	11.01
5.5 - 7.5	9.20	AS ABOVE	1.30	0.93	6.87
7.5 - 9.5	6.99	AS ABOVE	0.79	0.19	5.87
9.5 - 11.5	5.50	SAND, medium-grained, light to pale grey. Abundant H.M.	1.40	0.40	7.31
		WATER TABLE			
11.5 - 13.5	9.68	AS ABOVE. Grades into yellow grey then dark grey.	2.20	1.28	5.08
13.5 - 15.5	5.54	SAND, fine to med. grained dark grey. Hit dark grey clay.	14.19	4.81	2.61
		END OF HOLE 15.5m.			
				Av	7.35

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711198

LINE NO: 600N HOLE NO: 240W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 16.4.88

185

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.66	SAND, medium grained, pale brown. H.M. rich.	2.06	0.17	7.57
1.5 - 3.5	7.07	AS ABOVE, grades into greyish brown. H.M. rich.	0.77	0.77	7.03
3.5 - 5.5	6.94	AS ABOVE.	0.92	0.61	8.19
5.5 - 7.5	7.95	AS ABOVE.	0.66	0.95	14.71
7.5 - 9.5	6.23	SAND, medium grained, light to pale grey. H.M. rich.	1.56	0.81	3.90
9.5 - 11.5	6.26	AS ABOVE, graded into brown. H.M. rich.	1.14	0.24	12.42
		WATER TABLE			
11.5 - 13.5	8.52	SAND, medium grained, yellow brown. H.M. rich.	3.16	0.27	8.82
13.5 - 14.5	3.88	AS ABOVE, hit dark grey clay.	11.59	2.18	3.63
		END OF HOLE 14.5m.			
				Av.	8.63

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711199

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 600N HOLE NO: 260W

DATE DRILLED: 16.4.88

186

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.01	SAND, medium grained, red-brown. H.M. rich.	1.45	0.35	4.31
1.5 - 3.5	5.73	AS ABOVE, grading into greyish brown. H.M. rich.	0.88	0.12	10.20
3.5 - 5.5	6.96	AS ABOVE.	0.69	0.34	6.02
5.5 - 7.5	7.15	AS ABOVE.	1.12	0.55	5.47
7.5 - 9.5	6.53	AS ABOVE	0.73	0.38	14.48
9.5 - 11.5	7.21	AS ABOVE	1.12	0.20	7.37
		WATER TABLE			
11.5 - 13.5	8.75	SAND, fine to medium grained, yellow brown. H.M. rich.	17.51	0.09	3.86
13.5 - 14.5	5.32	AS ABOVE, fine grained. Hit dark grey clay.	4.62	0.08	5.19
		END OF HOLE 14.5m.			
				Av.	7.34

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711200

LINE NO: 600N HOLE NO: 280W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 16.4.88

187

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.08	SAND, fine to medium grained, pale brown. H.M. rich.	0.90	0.30	3.91
1.5 - 3.5	7.02	SAND, med. grained, pale brown, grading to greyish brown. H.M. rich.	0.89	0.01	6.46
3.5 - 5.5	6.25	SAND, med. grained, greyish brown. H.M. rich.	0.93	0.66	5.56
5.5 - 7.5	6.46	AS ABOVE, becoming lighter.	0.92	0.63	4.24
7.5 - 9.5	6.99	AS ABOVE, pale grey.	0.64	0.35	8.76
		WATER TABLE			
9.5 - 11.5	7.91	AS ABOVE, coarse grained, hit dark grey clay.	1.93	2.56	9.36
		END OF HOLE 11.5m.			
				Av.	6.49

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711201

LINE NO: 600N

HOLE NO: 300W

LOGGED BY:

ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED:

16.4.88

188

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.11	SAND, medium grained, pale brown.	1.09	0.19	4.38
1.5 - 3.5	6.15	SAND, fine to medium grained. Pale grey. H.M. rich.	0.92	0.07	6.25
3.5 - 5.5	7.18	AS ABOVE, med. grained.	0.65	0.71	5.47
		WATER TABLE			
5.5 - 7.5	7.73	AS ABOVE, becoming lighter and coarser	1.39	0.91	3.16
7.5 - 9.5	6.06	AS ABOVE, hit grey green clay.	2.70	0.90	4.45
		END OF HOLE 9.5m.			
				Av.	4.76

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711202

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 600N HOLE NO: 320W

DATE DRILLED: 16.4.88

189

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.29	SAND, medium grained, pale brown. H.M. rich. old tailings.	0.93	0.16	3.75
1.5 - 3.5	6.65	SAND, medium grained, light grey. H.M. rich.	0.79	0.19	5.38
3.5 - 5.5	6.39	AS ABOVE. WATER TABLE	1.42	1.01	7.66
5.5 - 7.5	5.17	SAND, medium to coarse grained, dark brown. H.M. very fine. Hit dark grey clay.	10.51	1.58	6.86
7.5 - 9.5 (no sample)		CLAY END OF HOLE 9.5m.			
				Av.	6.06

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711203

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 600N HOLE NO: 340W

DATE DRILLED: 16.4.88

190

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.56	sand, fine to medium grained, pale brown. H.M. rich.	1.54	0.13	17.92
1.5 - 3.5	5.97	AS ABOVE, medium grained, pebble layer.	6.24	1.50	6.34
3.5 - 5.5	2.92	SAND, med. grained, pale grey. H.M. rich.	4.93	0.95	6.49
		WATER TABLE			
5.5 - 7.5	7.23	SAND, fine to medium grained, light grey. H.M. rich.	7.53	4.14	6.02
7.5 - 9.5	7.82	AS ABOVE, coarse grained.	12.40	2.22	6.38
9.5 - 11.25	5.29	AS ABOVE, hit gravel. Hit grey-green clay. H.M. very fine.	11.08	7.35	2.95
		END OF HOLE 11.25m.			
				Av.	7.33

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOKA

711204

LINE NO: 600N

HOLE NO: 360W

LOGGED BY:

ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED:

16.4.88

191

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.81	SAND, medium grained, pale brown. H.M. rich tailings.	1.06	0.18	17.79
1.5 - 3.5	6.41	AS ABOVE.	1.77	0.63	7.96
3.5 - 4.0	2.43	SAND, medium grained, light grey. H.M. rich.	19.20	3.42	4.38
		END OF HOLE 4.0m.			
				Av.	11.2

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711205

LINE NO: 600N HOLE NO: 380W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 16.4.88

192

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.13	SAND, medium grained, pale grey grading into pale brown.	2.55	0.16	11.97
1.5 - 3.5	7.96	SAND, medium grained, pale brown, abundant H.M.	1.20	0.12	6.86
3.5 - 4.0	2.84	AS ABOVE. hit grey green clay. END OF HOLE 4.0m.	28.48	1.43	4.12
Average					8.42

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711207

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 700N

HOLE NO: 140E

DATE DRILLED:

8.4.88

194

Interval (m)	DRY Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		HWM on Beach			
0 - 1.0	2.220	SAND, medium grained, rich in H.M.	0.28	0.03	33.25
1.0 - 2.0	4.030	SAND, medium grained grey with some organics. Less H.M. than above	0.71	1.12	12.50
2.0 - 2.3	1.220	SAND, medium grained dark brown, indurated	1.89	1.59	33.15
		EOH 2.3m.			
		Average			24.22

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711208

LINE NO: 700N

HOLE NO: 120E

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 8.4.88

195

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
		Old tailings on slope of Lanherne Beach			
0 - 2.0	5.035	SAND,medium grain, brownish grey with H.M. Old tailings	0.54	0.31	31.03
2.0 - 4.0	3.215	SAND as above with abundant heavy mineral	0.92	0.13	34.37
4.0- 6.0	4.640	As above. Water Table at 7.0m.	1.05	0.14	21.69
6.0 - 8.0	5.020	As above. Indurated at 8.0m. Rock.	0.88	0.85	29.44
		END OF HOLE 8.0m.			
		Average			29.13

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711209

LINE NO: 700N HOLE NO: 100E

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 17.4.88

196

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.805	SAND, medium grained, brownish grey. H.M. rich.	0.86	0.05	22.34
1.5 - 3.5	6.550	AS ABOVE.	0.62	0.12	26.60
3.5 - 5.5	5.900	SAND, medium grained, grey brown mottle. H.M. rich.	0.82	0.06	6.06
5.5 - 7.5	5.895	SAND, medium to coarse grained, red-brown. Some gravel.	2.34	1.18	3.26
7.5 - 9.5		AS ABOVE, hit grey-green clay. Becomes fine grained. H.M. rich.	9.41	2.71	4.69
		END OF HOLE 9.5m.			
		Average			12.08

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711210

LINE NO: 700N

HOLE NO: 80E

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 17.4.88

197

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.000	SAND, med. grained, light grey. Grades light brown. H.M. rich.	2.57	0.08	8.05
1.5 - 3.5	5.395	SAND, med. grained, grey. H.M. rich.	0.66	0.04	6.49
3.5 - 5.5	8.975	SAND, med. grained, brownish grey. H.M. very fine.	1.78	0.04	0.61
5.5 - 7.5	8.540	AS ABOVE, grading into red-brown. Went through indurated layer.	3.23	0.19	0.85
7.5 - 8.5	2.805	AS ABOVE. BEcomes coarse. Hit dark grey micaceous clay.	6.37	4.85	0.64
		END OF HOLE 8.5m.			
		Average			3.37

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711211

LINE NO: 700N

HOLE NO: 60E

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 17.4.88

198

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.700	SAND, fine - medium grained, brownish grey. H.M. rich.	1.14	0.16	9.21
1.5 - 3.5	6.220	AS ABOVE, grades into light grey at 2.0m. H.M. rich.	1.29	0.02	2.09
3.5 - 5.5	8.095	SAND, fine - medium grained, grey-brown. WATER TABLE	1.51	0.01	0.98
5.5 - 7.5	9.555	AS ABOVE. Grades to red-brown Med. to coarse grained gravel and pebbles present.	2.67	0.30	0.90
7.5 - 8.5	4.100	AS ABOVE, hit dark grey micaceous clay. END OF HOLE 8.5m.	1.72	6.58	0.84
		Average			2.66

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711212

LINE NO: 700N

HOLE NO: 40E

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 17.4.88

199

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	7.200	SAND, medium grained, brownish grey. H.M. rich.	1.48	0.38	1.35
1.5 - 3.5	5.975	SAND, medium grained, greyish brown. WATER TABLE	1.79	0.03	0.55
3.5 - 5.5	7.315	AS ABOVE, darker with depth. Red brown.	4.73	0.03	0.84
5.5 - 7.5	8.585	SAND, medium to coarse grained. Red-brown. Contains gravel. Hit dark grey micaceous clay. END OF HOLE 7.5m.	1.89	3.89	0.53
		Average			0.78

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711213

LINE NO: 700N HOLE NO: 20E
(offset 0.5m. north east due to site)
DATE DRILLED: 17.4.88

LOGGED BY: ANDREW DOVE R.C. RIG DRILLED

300

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.350	SAND , medium grained, brownish grey. WATER TABLE	3.06	0.33	3.47
1.5 - 3.5	7.375	AS ABOVE	2.16	0.02	0.58
3.5 - 5.5	8.400	AS ABOVE, becomes darker with depth. H ₂ S.	1.96	0.00	0.65
5.5 - 7.5	9.550	SAND, medium to coarse grained, dark brown. Indurated layers.	1.35	0.53	0.50
7.5 - 8.2	2.700	AS ABOVE. Hit gravel then dark grey clay. END OF HOLE 8.2m.	5.26	6.50	1.06
		Average			1.15

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711214

LINE NO: 700N

HOLE NO: 00W

LOGGED BY:

ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED:

17.4.88

201

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.24	SAND, medium grained, brownish grey.	3.96	0.22	1.08
1.5 - 3.5	7.05	AS ABOVE.	1.48	0.01	0.58
3.5 - 5.5	8.52	AS ABOVE except dark brown.	2.39	0.04	1.12
		WATER TABLE			
5.5 - 7.5	8.73	SAND, med. to coarse, dark brown, gravel. Hit dark grey micaceous clay.	1.70	2.15	0.91
		END OF HOLE 7.5m.			
		Average			0.91

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711215

LINE NO: 700N

HOLE NO: 20W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 17.4.88

202

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.165	SAND, medium grained, light grey. H.M. rich.	1.15	0.52	2.17
1.5 - 3.5	8.125	SAND, med. to coarse grained, grey-brown.	1.82	0.62	1.27
3.5 - 5.5	7.295	SAND, med. to coarse grained. Red-brown.	2.40	0.67	0.40
5.5 - 7.5	6.325	AS ABOVE, hit gravel then dark grey micaceous clay. END OF HOLE 7.5m.	2.59	8.25	0.69
		Average			1.06

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711216

LINE NO: 700N

HOLE NO: 40W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 17.4.88

203

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.170	SAND, medium grained, light grey to grey. WATER TABLE	1.47	0.22	0.79
1.5 - 3.5	6.78	SAND, medium grained, greyish brown.	1.07	1.85	0.47
3.5 - 5.5	8.860	SAND, med. to coarse grained, red-brown.	2.85	0.72	0.18
5.5 - 7.0	6.050	AS ABOVE , hit gravel, then dark grey clay. END OF HOLE 7.0m.	3.94	2.18	0.95
		Average			0.56

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711217

LINE NO: 700N

HOLE NO: 60W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 17.4.88

204

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.125	SAND, medium grained, grey. WATER TABLE	2.00	0.11	0.81
1.5 - 3.5	7.020	SAND, medium grained greyish brown, darker with depth.	1.68	0.05	0.38
3.5 - 5.5	8.950	SAND, medium to coarse grained, red brown. H ₂ S.	2.31	0.46	0.43
5.5 - 6.5	5.510	AS ABOVE, hit gravel then dark grey micaceous clay. END OF HOLE 6.5m.	1.91	3.32	0.99
		Average			0.59

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711218

LINE NO: 700N HOLE NO: 80W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 17.4.88

205

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	1.960	SAND, medium grained, greyish brown. Organic. WATER TABLE	8.18	0.48	1.76
1.5 - 3.5	5.380	SAND, medium grained, red brown, H ₂ S.	3.69	0.01	0.80
3.5 - 5.5	9.720	AS ABOVE, coarser.	3.26	0.20	0.87
5.5 - 6.5	5.930	AS ABOVE, hit gravel then grey green micaceous clay.	1.58	5.90	3.46
6.5 - 8.5 (No sample)		CLAY			
		END OF HOLE 8.5m.			
		Average			1.45

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711219

LINE NO: 700N HOLE NO: 100W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 17.4.88

206

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.460	SAND, medium grained, greyish brown. WATER TABLE	3.55	0.39	4.05
1.5 - 3.5	5.350	AS ABOVE.	1.35	0.00	2.18
3.5 - 5.5	9.185	AS ABOVE	1.90	0.04	0.67
5.5 - 7.0	7.260	SAND, med. to coarse grained, red-brown. Hit grey then dark grey micaceous clay. END OF HOLE 7.0m.	1.63	3.79	1.64
		Average			2.03

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711220

LINE NO: 700N

HOLE NO: 120W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 17.4.88

207

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.550	SAND, medium grained, pale brown.	0.84	0.16	3.74
1.5 - 3.5	6.060	AS ABOVE, grades into grey sand. WATER TABLE	5.29	0.08	5.04
3.5 - 5.5	6.325	SAND, medium grained, grey brown grading into red brown. H.M. rich.	3.74	0.04	8.12
5.5 - 7.5	9.715	SAND, med. to coarse grained. Red brown. Some pebbles and granules.	1.59	2.84	4.27
7.5 - 8.0	1.160	AS ABOVE, hit gravel then dark grey micaceous clay. Fine H.M. rich. END OF HOLE 8.0m.	2.71	5.68	7.96
		Average			6.55

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

711221

TITLE NO: EL 28/85

LINE NO: 700N HOLE NO: 140W

DATE DRILLED: 17.4.88

208

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.825	SAND, medium grained, pale brown. H.M. rich.	0.82	0.17	4.18
1.5 - 3.5	5.240	SAND, medium grained, brownish grey.	2.08	0.01	3.68
3.5 - 5.5	7.305	AS ABOVE, grades into red-brown. H.M. rich.	2.32	0.02	7.30
5.5.- 7.5	8.110	AS ABOVE, coarse, contains gravel. Hit dark grey micaceous clay.	1.63	2.89	5.72
		END OF HOLE 7.5m.			
		Average			5.29

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711222

LINE NO: 700N HOLE NO: 160W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 17.4.88

209

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.96	SAND, medium grained, pale brown.	1.02	0.27	4.45
1.5 - 3.5	6.265	AS ABOVE, grades into grey sand. H.M. rich.	0.64	0.15	4.95
3.5 - 5.5	7.570	SAND, medium grained, brownish grey. H.M. rich.	1.10	1.01	2.97
5.5 - 7.0	3.935	SAND, medium to coarse grained, red-brown. Hit gravel, then dark grey micaceous clay.	6.76	1.68	2.85
		END OF HOLE 7.0m.			
		Average			3.83

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711223

LINE NO: 700N HOLE NO: 180W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 17.4.88

210

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.175	SAND, medium grained, brownish grey. H.M. rich.	0.66	0.69	8.59
1.5 - 3.5	5.990	AS ABOVE, slightly lighter.	0.55	0.29	5.16
3.5 - 5.5	7.115	SAND, medium grained, light grey. H.M. rich. WATER TABLE	0.67	0.48	2.03
5 .5- 7.5	6.930	SAND, medium to coarse grained, dark brown, gravel.	3.42	0.88	3.31
7.5 - 8.0	0.755	AS ABOVE, hit dark grey clay. END OF HOLE 8.0m.	21.81	8.79	3.71
		Average			4.93

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOKA

711224

LINE NO: 700N

HOLE NO: 200W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 18.4.88

211

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.625	SAND, medium grained, greyish brown. H.M. rich.	1.45	1.16	6.73
1.5 - 3.5	8.085	SAND, medium grained, greyish brown grading to pale brown. H.M. rich.	0.80	1.10	8.53
		WATER TABLE			
3.5 - 5.5	5.855	SAND, medium grained, pale brown. H.M. rich.	0.92	0.34	2.74
5.5 - 7.5	7.690	AS ABOVE, BECOMING DARKER. H.M. rich.	1.83	0.67	4.29
7.5 - 8.5	4.325	SAND, med. to coarse grained, dark brown, hit gravel then dark grey clay.	3.72	1.78	5.48
		END OF HOLE 8.5m.			
		Average			5.49

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711225

LINE NO: 700N

HOLE NO: 220W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 18.4.88

212

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.275	SAND, medium grained, red brown.	0.93	0.50	4.07
1.5 - 3.5	6.620	AS ABOVE, lighter in colour, H.M. rich.	1.05	0.17	12.66
3.5 - 5.5	7.675	AS ABOVE, grades into pale grey. H.M. rich.	0.61	1.24	8.01
		WATER TABLE			
5.5 - 7.5	7.645	AS ABOVE. H.M. rich.	0.85	0.74	2.64
7.5 - 9.5	5.565	AS ABOVE, DARKER. H.M. rich.	3.32	1.07	2.39
9.5 - 10.5	6.330	SAND, fine to med. grained, grey. H.M. rich. Hit dark grey clay.	1.90	0.26	4.19
		END OF HOLE 10.5m.			
		Average			6.07

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711226

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 700N HOLE NO: 240W

DATE DRILLED: 18.4.88

213

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.000	SAND, medium grained, red brown.	1.05	1.20	4.95
1.5 - 3.5	6.185	AS ABOVE	0.75	1.13	3.53
3.5 - 5.5	7.655	AS ABOVE, becomes lighter with depth. H.M. rich.	0.93	0.32	14.26
5.5 - 7.5	8.020	SAND, medium grained, pale grey. H.M. rich. WATER TABLE	1.08	1.58	7.61
7.5 - 9.5	7.245	AS ABOVE, darker with depth H.M. rich.	2.48	1.33	4.96
9.5 - 11.5	3.460	SAND, fine to med. grained, dark grey. H.M. rich. Hit dark grey clay. END OF HOLE 11.5m.	4.46	0.55	5.72
		Average			6.92

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711227

LINE NO: 700N HOLE NO: 260W

LOGGED BY: ANDREW DOVE R.C. RIG DRILLED

DATE DRILLED: 18.4.88

214

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.255	SAND, medium grained, red brown	1.12	1.21	3.70
1.5 - 3.5	6.355	AS ABOVE, becoming lighter with depth.	0.90	0.31	2.25
3.5 - 5.5	8.125	SAND, medium grained, pale grey.H.M. rich.	0.74	0.41	12.54
5.5 - 7.5	7.690	AS ABOVE. H.M. rich. WATER TABLE	1.35	0.39	4.90
7.5 - 9.5	7.565	AS ABOVE, becoming darker. H.M. rich.	1.98	1.98	6.25
9.5 - 10.25	1.800	SAND, fine to medium grained. Dark grey. H.M. rich. Hit dark grey clay. END OF HOLE 10.25m.	13.79	4.35	4.48
		Average			5.93

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711228

LINE NO: 700N

HOLE NO: 280W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 18.4.88

215

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.100	SAND, medium grained, red brown.	1.06	0.23	2.98
1.5 - 3.5	6.085	AS ABOVE, grading into pale grey. H.M. rich. water table	0.81	0.13	5.39
3.5 - 5.5	7.405	SAND, medium grained, greyish brown. H.M. rich.	1.05	0.25	22.35
5.5 - 7.5	5.265	AS ABOVE	5.31	1.01	11.49
7.5 - 8.5	3.015	SAND, fine to med. grained. Dark grey. H.M. rich. Hit dark grey clay.	4.36	0.32	8.20
		END OF HOLE 8.5m.			
		Average			10.72

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

711229

TITLE NO: EL 28/85

LINE NO: 700N

HOLE NO: 300W

DATE DRILLED: 18.4.88

216

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.515	SAND, medium grained, greyish brown. H.M. rich. WATER TABLE	0.60	0.27	3.94
1.5 - 3.5	4.735	AS ABOVE	1.71	0.18	5.05
3.5 - 5.5	6.255	AS ABOVE	2.86	0.17	6.61
5.5 - 7.5	4.340	SAND, med grained, red brown, muddy. Hit grey clay.	7.16	0.79	5.17
7.5 - 9.5 (No sample)		CLAY			
9.5 - 11.5	8.530	SAND, coarse to very coarse. Light grey gravel. Hit white clay. END OF HOLE 11.5m.	3.77	10.06	2.83
		Average			3.93

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711230

LINE NO: 700N HOLE NO: 320W
(offset 1m. to the south due to swamp)

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 18.4.88

217

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	1.250	SAND, medium to coarse grained, brownish grey. Very little sample due to swamp.	4.53	1.80	3.52
1.5 - 3.5	6.830	SAND, medium grained, brownish grey. H.M. rich.	3.87	0.20	8.51
3.5 - 5.5	7.740	AS ABOVE, darker with depth.	7.11	1.12	3.63
5.5 - 6.5	2.920	SAND, fine to medium grained, dark grey, muddy. Hit dark grey clay. H.M. rich.	13.42	2.35	3.32
6.5 - 8.5 (No sample)		CLAY			
8.5 - 11.0	11.265	SAND, coarse to very coarse gravel. H.M. rich	3.30	5.50	3.12
11.5 - 12.0	2.925	AS ABOVE, contains large pebble. Very coarse gravel. H.M. Hit grey green clay.	6.52	18.10	1.57
		END OF HOLE 12.0m.			
		Average			3.46

CLIENT: NATIONAL MINERAL SANDS

711231

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1000N

HOLE NO: 140E

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED:

9.4.88

218

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.0	3.775	<p>LWM on Beach</p> <p>SAND, medium grained with H.M., content increasing to bottom. Pebbles and rocks at 1.0m.</p> <p>EOH 1.0m.</p> <p style="text-align: center;">Average</p>	0.79	1.54	22.31

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711232

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 120E

DATE DRILLED: 9.4.88

219

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.0	1.430	HWM on Beach SAND, medium grained, brown, indurated	1.46	0.07	16.20
1.0 - 1.7	2.325	As above. Rock at 1.7m. EOH 1.7m.	1.83	0.24	21.87
		Average			18.5

CLIENT: NATIONAL MINERAL SANDS

711233

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1000N HOLE NO: 100E

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 9.4.88

220

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Milford Beach			
0 - 2.0	4.550	SAND, medium grained, pale grey with thin indurated band	1.27	0.07	14.83
2.0 - 4.0	4.475	As above. Water Table 3.0m.	1.33	0.13	10.58
4.0 - 6.0	4.650	SAND, coarsening up. Brown medium grained at top grades to pale brown, fine and silty at bottom with mica and H.M. Clay at 6m.	2.57	0.89	9.52
		EOH 6.0m.			
		Average			11.64

CLIENT: NATIONAL MINERAL SANDS

711234

TITLE NO: EL 28/85

221

AREA: NARACOOPA

LINE NO: 1000N HOLE NO: 80E

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 9.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 2.0	5.500	BACK OF MILFORD BEACH , TOE OF LANHERNE BEACH SAND, medium grained, pale grey with H.M.	0.57	0.09	50.61
2.0 - 3.6	6.325	SAND, medium grained, dark brown with H.M. at top grading down to fine grained pale brown sand with mica. Grey clay at 3.6m. EOH 3.6m.	4.47	0.18	21.72
		Average			37.77

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711235

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 60E

DATE DRILLED: 18.4.88

222

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.43	SAND, fine to medium grained, white. H.M. traces.	0.52	0.13	1.87
1.5 - 3.5	6.42	AS ABOVE, went through several thin dark brown layers. WATER TABLE	0.77	0.00	1.32
3.5 - 5.5	8.31	SAND, fine to medium grained, dark brown. Slightly indurated.	3.51	0.18	0.75
5.5 - 7.0	5.68	AS ABOVE, coarser with depth. Hit dark grey clay. END OF HOLE 7.0m.	9.0	3.25	0.55
				AV	1.11

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711236

LINE NO: 1000N HOLE NO: 4-0E

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 18.4.88

223

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.475	SAND, fine to medium grained, white. H.M. traces.	1.04	0.22	1.94
		WATER TABLE			
1.5 - 3.5	9.845	SAND, fine to medium grained, white, grades into pale brown. Brown at base.	2.39	0.15	0.66
3.5 - 5.5	7.250	SAND, fine to medium grained, brown. Slightly indurated.	3.16	0.08	0.76
5.5 - 6.5	4.375	AS ABOVE, coarser with depth. Pebbles. Hit dark grey clay.	7.28	6.80	1.17
		END OF HOLE 6.5m.			
		Average			1.06

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711237

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 20E

DATE DRILLED: 18.4.88

224

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.775	SAND, fine to medium grained, white. H.M. traces WATER TABLE	0.81	0.13	2.60
1.5 - 3.5	6.750	SAND, fine to medium grained, pale brown grading to brown. Slightly indurated.	2.63	0.04	0.85
3.5 - 5.5	7.075	SAND, red grained, red brown, slightly indurated.	3.37	0.03	0.57
5.5 - 6.5	5.075	AS ABOVE, coarser, gravel present. Hit dark grey clay. END OF HOLE 6.5m.	1.84	9.84	0.72
Average					1.15

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711238

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 800N (ON) HOLE NO: 200E
Old grid (RHF Smithton)
DATE DRILLED: 18.4.88

225

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.350	SAND, medium grained, grey, dark grey. WATER TABLE	3.90	0.06	0.71
1.5 - 3.5	6.610	SAND, fine to medium grained, dark brown. Some induration.	3.88	0.28	0.85
3.5 - 5.8	9.750	SAND, fine to med. at top - coarse gravel with gravel at base. Dark brown pebbles at base then dark grey clay. END OF HOLE 5.8m.	3.07	3.11	0.86
Average					0.82

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711239

LINE NO: 800N HOLE NO: 200E (ON)

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

OLD GRID
DATE DRILLED: 18/4/88

226

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 μ m	% H.M.
		(READING LABORATORY)			
0 - 1.5	5.263		3.5		0.6
1.5 - 3.5	6.364	For description see previous page	5.0		0.8
3.5 - 5.8	9.367		5.2		0.7
		Average			0.71

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711240

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 800N

DATE DRILLED:

HOLE NO: 200E (1N)

9.4.88

227

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Hand drilled check hole 1m. north of peg. (ReadingsLaboratory)			
0 - 2.0	3.493	As for 3N	3.7		1.1
2.0 - 4.0	6.252	As for 3N	1.8		0.6
4.0 - 6.1	7.329	As for 3N 4.0 to 5.8m. Rock at 6.1m. EOH 6.1m.	2.2		0.6
		Average			0.76

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711242

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 800N (2N) HOLE NO: 200E
(Readings)

DATE DRILLED: 18.4.88

229

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.181	SAND, medium grained, grey, dark grey. WATER TABLE	4.7		0.7
1.5 - 3.5	7.635	SAND, fine to medium grained, dark brown. Some induration.	4.5		0.8
3.5 - 5.7	6.058	SAND, fine to medium at top - coarse gravel with gravel at base. Dark brown pebbles at base then dark grey clay. END OF HOLE 5.8m.	6.7		0.5
		Average			0.66

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711244

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 800N

HOLE NO: 200E (3N)

DATE DRILLED:

9.4.88

231

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Hand drilled check hole 3m. north of peg. (RHF Laboratory Smithton)			
0 - 2.0	5.320	SAND, medium grained grey, dark grey then pale brown. Water at 1.7m.	3.37	0.42	1.34
2.0 - 4.0	6.350	SAND fine to medium grained, dark brown medium indurated	1.82	0.30	0.64
4.0 - 5.8	6.885	SAND, fine to medium at top grading coarser to fine gravel at 5.8m. Rock and large pebbles at 5.8m.	1.58	2.95	0.49
		EOH 5.8m.			
		Average			0.83

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711245

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 800N HOLE NO: 200E (3N)
OLD GRID

DATE DRILLED: 9.4.88

232

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		(READINGS LABORATORY)			
0 - 2.0	5.269		2.0		1.2
2.0 - 4.0	6.274	For description see previous page	1.9		0.9
4.0 - 5.8	6.083		2.4		0.4
		Average			0.84

CLIENT: NATIONAL MINERAL SANDS

711246

TITLE NO: EL 28/85

AREA: NARACOOPA

HAND DRILLED

LINE NO: 800N

HOLE NO: 275E (1S)

Old Grid

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.4.88

333

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Hand drilled check hole 1m. south of peg (RHF Laboratory Smithton)			
0 - 2.0	6.055	SAND, medium grained pale grey at top to dark grey and then pale brown. Water table 2.0m.	5.76	0.37	3.88
2.0 - 4.0	6.590	SAND, fine grained pale brown, little mineral	0.79	0.09	0.67
4.0 - 6.0	9.205	AS ABOVE, slightly coarse at 6m. Some boiling sand	1.49	1.12	0.77
6.0 - 6.5	2.140	SAND, medium to coarse at top grading to very coarse with fine gravel and H.M. at bottom. Rock at 6.5m.	0.91	5.13	2.03
		EOH 6.5m.			
		Average			1.79

CLIENT: NATIONAL MINERAL SANDS

711247

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 800N HOLE NO: 275E (1S)

234

LOGGED BY: GRAHAM LEE

HAND DRILLED

OLD GRID
DATE DRILLED: 9.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		(READINGS LABORATORY)			
0 - 2.0	5.095		5.9		3.6
2.0 - 4.0	6.461	For description see previous page	1.8		0.6
4.0 - 6.0	8.820		3.4		0.7
6.0 - 6.5	1.988		1.3		1.9
		Average			1.65

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711248

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 800N (2S) HOLE NO:275E
(Readings)

DATE DRILLED: 18.4.88

235

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.115	SAND, medium grained, pale grey at top to dark grey and then pale brown.	4.8		3.1
1.5 - 3.5	6.749	SAND, fine to med. grained then pale brown. Darker with depth. WATER TABLE	4.3		0.6
3.5 - 5.5	9.764	SAND, medium grained, red brown becoming coarser with depth.	6.6		0.8
5.5 - 6.5	4.335	AS ABOVE but gravel and pebbles then dark grey clay. END OF HOLE 6.5m.	8.1		1.4
		Average			1.36

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

711249

AREA: NARACOOPA

LINE NO: 800N
OLD GRID

HOLE NO: 275E (2S)

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED:

18.4.88

236

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		(RHF LABORATORY)			
0 - 1.5			2.58	0.41	3.04
1.5 - 3.5		For description see previous page	2.40	0.07	0.62
3.5 - 5.5			2.52	0.84	0.87
5.5 - 6.5			4.57	8.75	1.35
		Average			1.35

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711250

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 800N HOLE NO: 275E(3S)

Old Grid
DATE DRILLED: 10.4.88

237

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Hand drilled check hole 3m. south of peg (Readings Laboratory Lismore)			
0 - 2.0	4.238	As for 1S	3.5		3.3
2.0 - 4.0	6.477	As for 1S	1.3		0.7
4.0 - 6.0	8.277	As for 1S	1.5		0.7
6.0 - 6.7	2.937	As for 1S. Rock at 6.7 EOH 6.7m.	1.4		1.3
		Average			1.54

CLIENT: NATIONAL MINERAL SANDS

711251

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 800N

HOLE NO: 275E (3S)

LOGGED BY: GRAHAM LEE

HAND DRILLED

OLD GRID

DATE DRILLED:

238

Interval (m)	Wet Wt. (kg)	Description	% Slime	% + 600 um	% H.M.
		(RHF LABORATORY)			
0 -2.0			4.35	0.39	3.39
2.0 - 4.0		For description see previous page	0.74	0.00	0.86
4.0 - 6.0			1.18	0.91	0.77
6.0 - 6.7			0.92	5.40	1.27
		Average			1.63

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711252

LINE NO: 800N (4S) HOLE NO: 275E
(RHF)

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 18.4.88

239

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.500	SAND, medium grained, pale grey at top to dark grey and then pale brown.	3.70	0.21	2.84
1.5 - 3.5	7.200	SAND, fine to med. grained then pale brown. Darker with depth. WATER TABLE	3.77	0.01	0.68
1.5 - 5.5	8.600	SAND, medium grained, red brown becoming coarser with depth.	3.18	0.49	0.90
5.5 - 6.5	4.800	AS ABOVE but gravel and pebbles then dark grey clay. END OF HOLE 6.5m.	2.60	5.21	1.75
		Average			1.41

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711253

LINE NO: 800N

HOLE NO: 275 (4S)

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

OLD GRID

DATE DRILLED: 18.4.88

240

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		(READINGS LABORATORY)			
0 - 1.5	4.423		4.7		2.7
1.5 - 3.5	7.162	For description see previous page	5.3		0.7
3.5 - 5.5	8.479		6.5		0.8
5.5 - 6.5	4.407		7.4		1.6
		Average			1.21

CLIENT: NATIONAL MINERAL SANDS

711254

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1000 N HOLE NO: 000(1S)

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 9.4.88

241

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 2.0	5.565	Hand drilled check hole 1m. south of peg. (Readings Laboratory Lismore) SAND, fine to medium grained white with approximately 1% H.M. At 1.5m. black damp indurated sand to 2.7m. then sand, medium grained pale brown with traces H.M.	4.6		2.8
2.0 - 4.0	5.627	SAND medium grained, brown with minor indurated lumps. Water at 3.0m.	5.0		0.7
4.0 - 6.0	6.909	AS ABOVE, growing coarser with depth and with fine gravel and H.M.	3.6		1.1
6.0 - 7.3	3.628	AS ABOVE. Clay at 7.3m. EOH 7.3m.	4.0		0.9
		Average			1.42

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711255

LINE NO: 1000N

HOLE NO: 000 (1S)

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 18.4.88

242

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		(RHF LABORATORY)			
0 - 1.5			2.66	0.24	2.92
2.0 - 4.0		For description see previous page	1.29	0.06	0.76
4.0 - 6.0			1.93	0.87	1.07
6.0 - 7.3			1.92	8.56	0.81
					Average 1.45

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711256

LINE NO: 1000N(2S) HOLE NO: 000
(Readings)

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 18.4.88

243

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.658	SAND, fine to medium grained. White, then medium grained, pale brown.	3.7		2.5
1.5 - 3.5	6.291	SAND, medium grained, brown. Slightly indurated. WATER TABLE	5.9		1.1
3.5 - 5.5	8.673	AS ABOVE, becoming coarser	5.0		1.0
5.5 - 6.5	5.508	AS ABOVE, contains gravel. Hit dark grey clay.	4.2		1.1
		END OF HOLE 6.5m.			
		Average			1.39

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711257

LINE NO: 1000N

HOLE NO: 000 (2S)

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 18.4.88

244

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		(RHF LABORATORY)			
0 - 1.5			1.99	0.22	2.68
1.5 - 3.5			2.69	0.07	1.13
3.5 - 5.5		For description see previous page	3.41	0.41	1.08
5.5 - 6.5			2.26	17.64	0.85
		Average			1.43

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711258

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 000 (3S)

DATE DRILLED: 9.4.88

245

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		(READINGS LABORATORY)			
0 - 2.0	5.318		4.4		3.3
2.0 - 4.0	4.261	For description see previous page	3.3		0.6
4.0 - 6.0	7.367		2.6		0.9
6.0 - 6.9	3.393		2.8		1.1
		Average			1.53

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711259

LINE NO: 1000N HOLE NO: 000 (3S)

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 9.4.88

246

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Hand drilled check hole 3m. South of Peg. (RHF Laboratory Smithton)			
0 - 2.0	5.370	As for (1S)	2.19	0.14	3.25
2.0 - 4.0	4.350	As for (1S)	1.96	0.07	0.64
4.0 - 6.0	7.470	As for (1S)	2.77	1.04	0.85
6.0 - 6.9	3.800	As for (1S) Finished in pyritic gravel.	1.27	9.40	1.10
		EOH 6.9m.			
		Average			1.52

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711260

LINE NO: 1000N(4S) HOLE NO: 000
(RHF)

LOGGED BY:

ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 18.4.88

247

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.225	SAND, fine to medium grained. White, then medium grained, pale brown.	1.82	0.03	2.79
1.5 - 3.5	5.280	SAND, medium grained, brown. Slightly indurated. WATER TABLE	2.38	0.07	1.78
3.5 - 5.5	8.440	AS ABOVE, becoming coarser	2.62	0.22	1.02
5.5 - 6.5	5.200	AS ABOVE, contains gravel. Hit dark grey clay. END OF HOLE 6.5m.	2.31	9.72	1.13
		Average			1.68

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711261

LINE NO: 1000N

HOLE NO: 000 (4S)

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 18.4.88

248

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		(READING LABORATORY)			
0 - 1.5	5.08		6.1		2.5
1.5 - 3.5	6.523	For description see previous page	5.3		1.5
3.5 - 5.5	8.432		18.3		0.8
5.5 - 6.5	4.677		5.0		1.1
		Average			1.45

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

711262

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 20W

DATE DRILLED: 18.4.88

249

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.150	SAND, fine to medium grained, white at top. Grades into pale brown. WATER TABLE	2.04	0.08	2.52
1.5 - 3.5	6.315	SAND, medium grained, brown.	2.02	0.22	2.70
3.5 - 5.5	8.290	AS ABOVE, coarser with depth. Slightly indurated.	3.56	2.00	0.85
5.5 - 6.5	4.745	AS ABOVE. Hit gravel then darkgrey clay. END OF HOLE 6.5m.	3.15	5.81	0.67
		Average			1.78

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711263

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 40W

DATE DRILLED: 18.4.88

250

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.540	SAND, fine to medium grained, greyish-brown. WATER TABLE	5.88	0.97	2.51
1.5 - 3.5	6.350	SAND, med. to coarse grained, brown, slightly indurated.	4.43	0.93	2.25
3.5 - 5.5	8.215	AS ABOVE	2.96	1.83	0.50
5.5 - 7.0	5.195	AS ABOVE but gravel then dark grey clay. END OF HOLE 7.0m.	7.09	3.74	0.73
		Average			1.48

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711264

LINE NO: 1000N HOLE NO: 60W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 19.4.88

051

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.875	SAND, fine to medium grained, brownish grey. WATER TABLE	2.68	1.86	3.11
1.5 - 3.5	6.265	sand, medium to coarse grained, brownish grey.	1.21	1.88	0.43
3.5 - 5.5	7.780	AS ABOVE, becoming darker with depth.	2.74	3.54	0.24
5.5 - 6.5	4.305	SAND, coarse grained, dark brown, but gravel then dark grey micaceous clay. END OF HOLE 6.5m.	22.28	8.74	2.21
		Average			1.68

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711265

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 80W

DATE DRILLED: 19.4.88

252

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5		SAND, fine to medium grained, light grey, fine H.M. present. WATER TABLE	1.01	0.18	3.28
1.5 - 3.5		SAND, medium grained, brownish grey.	1.42	0.08	2.91
3.5 - 5.5		SAND, medium grained, dark brown, slightly indurated. H.M. present.	8.21	0.74	0.88
5.5 - 7.5		AS ABOVE, Very peaty and muddy.	10.27	3.59	1.42
7.5 - 8.0		AS ABOVE but hit gravel then soft grey clay. END OF HOLE 8.0m.	5.71	6.73	2.74
		Average			2.09

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711266

LINE NO: 1000N HOLE NO: 100W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 19.4.88

253

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.675	SAND, fine to medium grained, light grey. Fine H.M. present	0.66	0.39	2.97
		WATER TABLE			
1.5 - 3.5	6.700	SAND, medium grained, brownish grey.	1.40	0.34	0.68
3.5 - 5.5	8.500	AS ABOVE, grades into reddish brown, coarser at base, slightly indurated.	2.50	1.56	0.27
5.5 - 6.0	3.790	AS ABOVE, coarser. Hit gravel then light grey clay.	2.45	7.23	3.96
		END OF HOLE 6.0m.			
		Average			1.39

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOKA

LOGGED BY: ANDREW DOVE

711267

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 120W

DATE DRILLED: 19.4.88

254

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.250	SAND, fine to medium grained, light grey, grades into brownish grey. Fine H.M. present. WATER TABLE	2.27	0.32	2.25
1.5 - 3.5	7.050	SAND, medium grained, brownish grey.	1.14	0.05	2.07
3.5 - 5.5	8.350	AS ABOVE, becomes coarser and brown with depth, gravel at base.	2.38	3.71	3.07
5.5 - 6.5	3.400	SAND, fine grained, grey. Hit grey-green clay. END OF HOLE 6.5m.	26.35	2.08	2.64
		Average			2.51

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711268

LINE NO: 1000N

HOLE NO: 140W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 19.4.88

255

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5		SAND, medium grained, greyish brown. WATER TABLE	7.09	0.26	1.03
1.5 - 3.5		SAND, medium to coarse. Reddish-brown. Went through peat layer, hence small sample. Slightly indurated.	3.03	0.75	1.21
3.5 - 5.5		SAND, medium grained, red brown. Very muddy. Hit dark grey clay. END OF HOLE 5.5m.	12.81	4.04	1.94
		Average			1.42

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

711269

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 160W

DATE DRILLED: 19.4.88

256

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.605	SAND, fine to medium grained, brownish grey. H.M. present.	1.45	0.12	4.05
1.5 - 3.5	7.400	AS ABOVE, grades into red brown, becomes coarser with depth. Gravel at base.	2.65	0.81	3.11
3.5 - 4.5	4.370	SAND, coarse to very coarse brown, contains gravel and pebbles. H.M. Hit dark grey clay. END OF HOLE 4.5m.	7.77	5.95	5.38
Average					3.93

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711270

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 180W

DATE DRILLED: 18.4.88

257

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5		SAND, fine to medium grained, brownish grey.	10.19	0.65	2.11
1.5 - 3.5		AS ABOVE, grading to red brown. Becomes coarser with depth.	4.57	2.50	1.51
3.5 - 4.0		AS ABOVE, coarse grained. Hit gravel then hard dark grey clay.	10.42	5.38	3.06
		END OF HOLE 4.0m.			
		Average			1.93

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711271

LINE NO: 1000N HOLE NO: 200W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 18.4.88

258

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + .1000 um	% H.M.
0 - 1.5	1.49	SAND, medium to coarse grained, greyish brown, peaty (small sample due to peat)	7.05	2.31	1.28
1.5 - 3.5	7.04	SAND, medium to coarse grained, brown, gravel and pebbles. Hit dark grey clay.	4.18	1.41	3.54
3.5 - 5.5 (No sample)		CLAY			
		END OF HOLE 5.5m.			
				Av.	2.57

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711273

LINE NO: 1000N HOLE NO: 240W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 19.4.88

260

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.225	SAND, medium grained, brown, organic.	5.71	0.14	7.21
1.5 - 3.5	6.425	SAND, medium to coarse grained, brown, dark brown clay.	6.12	0.85	3.72
3.5 - 5.5 (No sample)		CLAY END OF HOLE 5.5m.			
		Average			5.22

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711274

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 260W

DATE DRILLED: 19.4.88

261

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.700	SAND, fine to medium grained, light grey. H.M. present WATER TABLE	0.93	0.27	5.52
1.5 - 3.6	6.525	SAND, medium grained, brown. H.M. rich. Hit clay, dark grey. END OF HOLE 3.6m.	5.61	0.63	40.84
Average					26.12

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711275

LINE NO: 1000N HOLE NO: 280W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 19.4.88

262

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.150	SAND, medium grained, light grey. H.M. rich.	1.39	0.35	13.85
1.5 - 3.5	6.410	AS ABOVE. Grades into red brown. H.M. rich.	5.27	0.25	28.98
3.5 - 5.5	5.325	SANDY, fine grained, slightly brown, H.M. rich.	9.70	0.18	6.12
5.5 - 6.5	2.720	AS ABOVE. Hit green grey clay. END OF HOLE 6.5m.	36.56	1.76	1.43
Average					14.2

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711276

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 300W

DATE DRILLED: 19.4.88

263

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.625	SAND, fine to medium grained, light grey, H.m. rich. Slightly darker at base. WATER TABLE	4.26	0.15	6.80
1.5 - 3.5	5.455	AS ABOVE, grades into brown. Hit gravel layer. dark grey clay at base.	12.01	1.92	4.18
3.5 - 5.5 (No sample)		CLAY END OF HOLE 5.5m.			
		Average			5.3

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711277

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 320W

DATE DRILLED: 19.4.88

264

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5m.	4.470	SAND, medium grained, pale grey. H.M. present.	1.61	0.41	1.97
1.5 - 3.5	6.375	SAND, medium grained, brown, muddy. Slightly indurated. Hit dark grey clay.	8.41	0.79	2.70
		END OF HOLE 3.5m.			
		Average			2.39

CLIENT: NATIONAL MINERAL SANDS

711278

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1000N HOLE NO: 340W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 19.4.88

265

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.38	SAND, medium grained, pale grey. Darker at base. WATER TABLE	4.46	0.31	2.73
1.5 - 3.5	5.33	SAND, medium grained, brown, muddy, slightly indurated. Hit green-grey clay. END OF HOLE 3.5m.	4.98	0.37	3.90
			Av		3.40

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711279

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 360W

DATE DRILLED: 19.4.88

266

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.68	SAND, fine grained, light grey.	3.97	0.54	2.09
1.5 - 3.5	4.86	AS ABOVE, grades quickly into brown. Indurated, muddy. Hit dark grey-green clay.	5.31	0.23	3.92
3.5 - 5.5 (No sample)		CLAY END OF HOLE 5.5m.			
			Av		3.14

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE R.C. RIG DRILLED

711280

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 380W

DATE DRILLED: 19.4.88

267

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.65	SAND, fine grained, pale brown, darker with depth.	9.25	0.46	2.58
1.5 - 3.5	6.62	AS ABOVE, grades into brown, indurated. Fine H.M.	5.56	0.20	2.53
3.5 - 4.5	1.81	AS ABOVE. Hit dark grey clay. END OF HOLE 4.5m.	5.27	1.00	2.13
			A \bar{v}	2.46	

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY:

ANDREW DOVE

R.C. RIG DRILLED

711281

TITLE NO: EL 28/85

LINE NO: 1000N

HOLE NO: 400W

DATE DRILLED: 19.4.88

268

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.01	SAND, fine grained, light grey. H.M. present.	1.12	0.21	2.32
1.5 - 3.5	4.56	AS ABOVE. Grades into brown indurated fine H.M.	6.33	0.51	1.82
3.5 - 4.0	1.33	AS ABOVE. Hit dark grey clay.	9.24	2.17	1.77
		END OF HOLE 4.0m.	Av		2.00

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711282

LINE NO: 1000N HOLE NO: 420W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 19.4.88

201

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.56	SAND, fine grained, white. H.M. present, grading to greyish brown. WATER TABLE	2.94	0.20	1.84
1.5 - 3.5	5.79	SAND, fine to medium grained. Greyish brown grading to brown. Indurated. Hit dark grey clay. END OF HOLE 3.5m.	6.17	1.20	2.28
			Av		2.09

CLIENT: NATIONAL MINERAL SANDS

711283

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1000N HOLE NO: 440W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 19.4.88

270

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.08	SAND, fine grained, white. H.M. present. WATER TABLE	1.75	0.12	1.87
1.5 - 3.5	6.15	SAND, fine to medium grained, greyish brown grading to brown. Slightly indurated. Hit dark grey clay.	5.72	0.36	2.73
3.5 - 5.5	5.76	CLAY for about 1 metre then sand - medium to coarse grained white, gravel.	2.51	2.22	1.67
5.5 - 7.0	5.62	SAND, coarse to very coarse gravel, rock fragments, grey (old creek bed). Hit grey clay.	3.74	4.77	0.94
7.0 - 11.5 (No sample)		CLAY END OF HOLE 11.5m.	Av		1.86

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY:

ANDREW DOVE

R.C. RIG DRILLED

711284

TITLE NO: EL 28/85

LINE NO: 1000N HOLE NO: 460W

DATE DRILLED: 19.4.88

271

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.10	SAND, fine grained, pale grey. WATER TABLE	5.67	1.60	1.89
1.5 - 3.5	4.15	SAND, fine to med. grained. Red brown, indurated.	8.77	1.22	2.40
3.5 - 5.5	4.97	AS ABOVE for 1m. then 50 cm. of red brown clay, then into sandy gravel from 40 cm. then light grey clay.	14.63	5.86	1.59
5.5 - 6.5	2.75	SAND, fine grained, H.M. in sand but light grey clay at 6.2m.	30.48	18.12	0.93
6.5 - 11.5 (No sample)		CLAY END OF HOLE 11.5m.			
			Av		1.81

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711285

LINE NO: 1000N

HOLE NO: 480W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 19.4.88

272

Interval (m)	DRY Wt. (kg)	Description	% Slime	% +1000um	% H.M.
0 - 1.5	4.17	SAND, fine grained, pale brown grading into brownish grey. WATER TABLE	5.78	0.80	1.86
1.5 - 3.5	8.15	SAND, fine grained brownish grey becoming slightly darker at base. Hit grey-green clay. H.M.	11.92	3.89	1.99
3.5 - 4.5 (no sample)		Grey green clay then sand.			
4.5 - 5.5 (sampled)	3.47	SAND, fine grained, white. H.M.	0.90	0.30	1.39
5.5 - 7.0	5.17	SAND, coarse to very coarse grey, gravel. Hit dark grey clay.	6.18	4.95	1.99
7.0 - 8.0 (no sample)		Still clay END OF HOLE 8.0M.			
			Av.		1.59

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711286

LINE NO: 1000N HOLE NO: 500W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 19.4.88

C. 273

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.33	SAND, fine grained, white for 0.5m. then red-brown indurated.	8.03	0.51	1.70
1.5 - 2.0	3.50	SAND, fine grained, red brown, clayey. Hit grey green clay.	19.43	7.38	1.90
2.0 - 4.5 (no sample)		CLAY, grey green			
4.5 - 5.5	4.85	SAND, coarse to very coarse, grey H.M.	1.88	0.31	1.77
5.5 - 7.5	6.94	AS ABOVE, hit gravel, hit a number of thin clay sand layers. Hit grey green clay.	6.50	6.61	1.97
7.5 - 8.5 (No sample)		CLAY END OF HOLE 8.5m.			
			Av		1.45

CLIENT: NATIONAL MINERAL SANDS

711287

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1000N

HOLE NO: 520W

274

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 19.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.67	SAND, fine to medium grained, red-brown. Hit grey-green clay.	13.15	8.11	1.60
		WATER TABLE			
1.5 - 3.5 (No sample)		CLAY, grey-green.			
3.5 - 5.5	5.81	SAND, coarse to very coarse grained, grey. Fine H.M.	10.63	4.44	1.11
5.5 - 6.0	2.96	AS ABOVE, coarser. Med. sized gravel. Hit dark grey clay.	13.10	14.94	0.97
6.0 - 7.0 (No sample)		CLAY			
		END OF HOLE 7.0m.			
			Av		1.01

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711288

LINE NO: 1000N HOLE NO: 540W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 19.4.88

275

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.75	SAND, fineto very fine grained, pale grey H.M.	4.34	0.24	2.21
1.5 - 2.5	2.32	AS ABOVE, grades to red brown. Hit grey green clay.	46.28	15.72	0.68
		WATER TABLE			
2.5 - 5.5 (No sample)		CLAY END OF HOLE 5.5m.			
			Av		1.60

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711289

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 1200N

DATE DRILLED:

HOLE NO: 120E

9.4.88

276

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.0	3.200	Middle of Beach SAND, medium grain with rich H.M.	0.67	0.18	24.30
1.0 - 2.2	4.435	SAND, medium grained, dark brown indurated 2.0- 2.4, then medium grained dark grey with coarser shell fragments. Rock 2.2m. EOH 2.2m.	1.20	1.62	7.84
Average					15.3

CLIENT: NATIONAL MINERAL SANDS

711290

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1200N HOLE NO: 100E

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 9.4.88

277

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		FRONT OF MILFORD BEACH			
0 - 2.0	1.375	SAND, medium grained white then greyish brown	2.47	0.02	5.76
2.0 - 3.0	1.895	SAND, medium grained dark greyish brown Water table 3.0m. Rock at 3.0m. EOH 3.0m.	1.60	0.06	2.47
		Average			4.66

CLIENT: NATIONAL MINERAL SANDS

711292

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1200N HOLE NO: 60E

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 9.4.88

279

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 2.0	5.235	Back of Milford Beach at toe of Lanherne Beach SAND, grey and dark grey with H.M. bands	2.19	0.30	20.02
2.0 - 3.0	2.000	AS ABOVE to 2.3m. then fine sand, pale brownish colour with mica and silt, grading finer with depth. Rock at 3.0m. in clay matrix. EOH 3.0m.	22.69	0.68	3.99
		Average			14.68

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711293

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 1200N HOLE NO: 40E

DATE DRILLED: 9.4.88

280

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 2.0	4.250	TOP OF LANHERNE BEACH SAND medium grained, pale grey and white	1.65	0.15	0.79
2.0 - 4.0	3.525	SAND, as above to 2.7m. then dark grey sand slightly in water. Water table 3.8m.	1.22	0.07	0.40
4.0 - 4.7	3.675	SAND as above grading coarser with depth. Rock at 4.7m. with coarse sand and pebbles at bottom.	1.59	3.20	0.52
		EOH 4.7m.			
		Average			0.58

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711294

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1200N HOLE NO: 20E

DATE DRILLED: 20.4.88

281

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.96	SAND, fine-medium grained, grey and pale grey.	5.77	1.26	1.18
1.5 - 3.5	5.71	SAND, medium grained, dark grey grading to med. brown. Slightly indurated. WATER TABLE	4.43	1.22	0.66
3.5 - 5.5	8.60	SAND, medium coarse to very coarse, gravel, brown, hit dark grey clay. END OF HOLE 5.5m.	9.32	11.43	1.49
			Av		1.10

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711295

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1200N HOLE NO: 000

DATE DRILLED: 20.4.88

282

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.78	SAND, fine to medium grained, light grey to white.	1.04	0.10	0.66
1.5 - 3.5	6.85	AS ABOVE, grades into brown. Slightly indurated.	3.55	0.39	0.49
		WATER TABLE			
3.5 - 5.5	8.85	SAND, medium grained, brown, slightly indurated.	3.63	0.32	0.71
5.5 - 6.5	5.51	AS ABOVE, becomes coarse. Hit gravel then dark grey clay.	2.56	9.37	0.90
6.5 - 7.5 (no sample)		CLAY			
		END OF HOLE 6.5m.			
			Av		0.66

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711296

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1200N HOLE NO: 20W

DATE DRILLED: 20.4.88

283

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.34	SAND, fine to medium grained, white to light grey. Fine H.M.	1.93	0.20	1.08
1.5 - 3.5	8.85	AS ABOVE, grades into brown, slightly indurated.	3.40	0.17	0.99
3.5 - 5.5	9.02	SAND, medium grained, brown, slightly indurated.	2.18	0.03	1.86
5.5 - 7.5	3.50	AS ABOVE, coarser. Hit gravel then dark grey clay.	2.59	5.14	0.58
7.5 - 11.5 (No sample)		CLAY, occasional thin sand layer. END OF HOLE 11.5m.			
			Av		1.13

CLIENT: NATIONAL MINERAL SANDS

711297

TITLE NO: EL 28/85

AREA: NARACOOKA

LINE NO: 1200N HOLE NO: 40W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 20.4.88

284

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.33	SAND, medium grained, light grey grading to pale brown.	1.99	0.35	1.42
1.5 - 3.5	7.20	SAND, coarse to very coarse, pale brown. WATER TABLE	0.52	1.63	0.32
3.5 - 5.5	8.54	SAND, medium to coarse grained, brown. Slightly indurated.	2.63	1.10	0.49
5.5 - 7.5	9.46	AS ABOVE, becomes very coarse. Hit gravel then dark grey clay. END OF HOLE 7.5m.	2.47	6.94	0.45
			Av		0.62

CLIENT: NATIONAL MINERAL SANDS

711298

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1200N HOLE NO: 60W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 20.4.88

085

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.70	SAND, medium grained, light grey. H.M. present.	1.13	0.08	1.31
1.5 - 3.5	7.48	AS ABOVE, becoming slightly darker. WATER TABLE	0.58	0.15	0.34
3.5 - 5.5	8.45	SAND, coarse grained, brownish grey then pale grey.	0.98	2.38	0.22
5.5 - 7.5	8.53	SAND, coarse grained, brown. Hit gravel then dark grey clay.	3.05	4.58	0.38
7.5 - 9.5 (no sample)		CLAY END OF HOLE 9.5m.			
			Av		0.51

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711299

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1200N HOLE NO: 80W

DATE DRILLED: 20.4.88

286

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	9.27	SAND, medium to coarse grained, pale brown.	1.6	1.29	0.28
1.5 - 3.5	7.41	AS ABOVE. Fine H.M. WATER TABLE	0.55	0.31	0.33
3.5 - 5.5	5.08	AS ABOVE, becoming darker.	1.76	0.18	0.43
5.5 - 6.5	5.3	SAND, coarse grained gravel, red brown. Hit dark grey clay.	3.47	6.11	1.42
6.5 - 10.5 (no sample)		CLAY END OF HOLE 10.5m.			
		Average			0.52

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711300

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1200N HOLE NO: 100W

DATE DRILLED: 20.4.88

287

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.00	SAND, fine to medium grained, becomes peaty WATER TABLE	7.53	1.47	1.34
1.5 - 3.5	2.15	SAND, fine to medium grained dark brown. Very peaty and muddy.	4.78	0.73	1.55
3.5 - 5.5	3.76	AS ABOVE, becoming coarser.	2.02	0.58	0.78
5.5 - 6.5	2.50	AS ABOVE, light brown. Hit gravel then dark grey clay. Micaceous.	1.30	1.06	0.93
6.5 - 9.5 (no sample)		CLAY			
9.5 - 11.5	2.15	SAND, fine grained, light grey, very silty and clayey. END OF HOLE 11.5m.	4.93	0.47	0.77
			AV		0.79

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711301

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1200N HOLE NO: 120W

DATE DRILLED: 20.4.88

288

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.43	SAND, fine to medium grained, pale brown then brown. WATER TABLE	6.77	0.64	1.30
1.5 - 3.5	6.25	SAND, medium grained, brown. Slightly indurated.	4.70	0.25	0.82
3.5 - 5.5	7.90	AS ABOVE becoming coarser with depth.	3.62	0.96	0.25
5.5 - 7.5	6.46	AS ABOVE. Hit gravel then dark grey clay. END OF HOLE 7.5m.	6.22	5.36	1.86
			AV		1.04

CLIENT: NATIONAL MINERAL SANDS

711302

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1200N HOLE NO:140W

289

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 20.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.52	SAND, medium grained, pale brown grading to brown. WATER TABLE	5.32	0.48	0.43
1.5 - 3.5	7.46	SAND, medium grained, greyish brown.	1.53	0.04	0.69
3.5 - 5.5	8.44	AS ABOVE, red and brown, slightly indurated.	2.57	0.28	0.64
5.5 - 7.5	10.15	AS ABOVE, hit gravel then hit dark grey clay. END OF HOLE 7.5m.	1.99	4.19	3.09
			Av		1.26

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711303

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1200 N HOLE NO: 160W

DATE DRILLED: 20.4.88

290

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.60	SAND, fine to medium grained, pale brown grading to brown. WATER TABLE	8.30	0.18	1.41
1.5 - 3.5	5.67	SAND, medium grained, brown to dark brown, slightly indurated.	5.20	0.07	1.21
3.5 - 5.5	9.40	AS ABOVE	3.03	0.13	0.79
5.5 - 7.5	8.11	AS ABOVE, becomes coarser. Hit gravel.	3.61	4.54	1.32
7.5 - 8.0	2.41	AS ABOVE, hit gravel then grey micaceous clay. END OF HOLE 8.0m.	16.97	5.34	1.34
			Av		1.18

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711304

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1200N HOLE NO: 180W

DATE DRILLED: 20.4.88

291

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.38	SAND, fine to medium grained, light grey grading to greyish brown. WATER TABLE	2.91	0.17	2.18
1.5 - 3.5	6.25	SAND, medium grained, greyish brown grading to dark brown. Slightly indurated.	2.53	0.05	0.91
3.5 - 5.5	10.05	AS ABOVE, contains gravel.	1.88	0.47	1.03
5.5 - 7.5	7.40	AS ABOVE. Hit gravel then grey clay. END OF HOLE 7.5m.	4.16	3.06	1.64
			Av		1.39

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711305

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1200N HOLE NO: 200W

DATE DRILLED: 20.4.88

292

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.20	SAND, medium grained, greyish brown. WATER TABLE	6.72	1.36	1.69
1.5 - 3.5	7.02	AS ABOVE, grading into dark brown.	3.06	0.38	1.13
3.5 - 5.5	10.45	SAND, medium grained, dark brown, slightly indurated, gravel.	3.38	0.96	1.20
5.5 - 7.0		AS ABOVE, hit gravel then grey clay, micaceous END OF HOLE 7.0m.			
			Av		1.40

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711306

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1200N HOLE NO: 220W

DATE DRILLED: 20.4.88

293

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.12	SAND, fine to medium grained, pale brown, grading to brown. H.M. WATER TABLE	3.25	0.48	4.15
1.5 - 3.5	7.18	SAND, medium grained, brown, slightly indurated, H.M. present.	2.58	0.05	1.94
3.5 - 5.5	9.76	AS ABOVE	2.13	0.84	2.79
5.5 - 7.5	8.00	AS ABOVE, Hit gravel then hit dark grey clay.	4.83	1.83	3.08
7.5 - 9.5 (no sample)		CLAY END OF HOLE 9.5m.			
			Av		2.91

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711307

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1200N HOLE NO: 240W

DATE DRILLED: 20.4.88

294

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.93	SAND, fine to medium grained, light grey then brown. H.M. present WATER TABLE	2.20	0.21	5.74
1.5 - 3.5	7.85	SAND, medium grained, brown, slightly indurated. H.M. present.	2.28	0.02	3.27
3.5 - 5.5	9.38	SAND, medium to coarse grained, brown, grey mottle. Slightly indurated. H.M. present.	1.46	0.28	4.82
5.5 - 7.5	7.96	SAND, coarse grained, gravel, grey. Hit dark grey clay. END OF HOLE 7.5m.	7.77	4.86	1.76
			Av		3.77

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711308

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1200N HOLE NO: 260W

DATE DRILLED: 20.4.88

295

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.25	SAND, fine to medium grained, light grey then brown. H.M. present. WATER TABLE	2.73	1.95	5.82
1.5 - 3.5	6.88	SAND, medium grained, brown. H ₂ S. Slightly indurated.	4.14	0.19	3.69
3.5 - 5.5	10.98	AS ABOVE, gravel and pebbles.	3.61	0.29	6.97
5.5 - 7.5	5.19	AS ABOVE, then SAND, fine to very fine grained grey. Abundant mica. Muddy and clayey. Hit dark grey clay. END OF HOLE 7.5m.	8.96	3.15	2.20
			AV		4.59

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711309

LINE NO: 1200N HOLE NO: 280W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 20.4.88

296

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.55	SAND, fine to medium grained, pale brown. Went through indurated layer H.M. WATER TABLE	2.26	0.64	6.50
1.5 - 3.5	6.98	SAND, medium grained, red brown, slightly indurated H.M.	3.06	0.19	10.63
3.5 - 5.5	6.71	AS ABOVE for 0.5m. then sand. Very fine to fine, grey H.M. present.	3.37	0.56	8.84
5.5 - 7.5	6.84	SAND, fine to very fine grained, grey. Contains a lot of mica. Hit dark grey clay.	10.11	5.74	1.77
7.5 - 11.5 (no sample)		CLAY END OF HOLE 11.5m.			
			Av		6.96

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711310

LINE NO: 1200N

HOLE NO: 300W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED:

20.4.88

297

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.53	SAND, fine to medium grained, pale brown then brown. Went through indurated layer. H.M. rich. WATER TABLE	4.91	0.97	18.98
1.5 - 3.5	7.68	SAND, medium grained, brown. Slightly indurated. H.M.	5.12	2.33	5.43
3.5 - 5.5	8.51	AS ABOVE. Grades into fine to very fine grey, abundant mica. H.M.	4.78	0.78	2.65
5.5 - 7.5	5.51	SAND, fine to very fine grey. Contains pebbles and mica. Very clayey.	7.38	3.07	1.34
7.5 - 8.5	5.05	AS ABOVE but dark grey clay. END OF HOLE 8.5m.	13.40	5.63	1.12
			Av		5.69

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711311

LINE NO: 1200N

HOLE NO: 320W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 20.4.88

298

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.10	SAND, fine to medium grained, pale grey then red brown. H.M.	5.00	0.65	6.71
1.5 - 3.5	3.60	SAND, medium grained, red-brown pebbles, H.M.	8.27	7.12	1.74
3.5 - 5.5	7.43	AS ABOVE, grades into fine grained sand, light brown.	4.15	4.40	1.42
5.5 - 7.5	7.61	SAND, coarse to very coarse pebbles and gravel - grey. Hit dark grey clay.	7.79	3.07	1.23
		END OF HOLE 7.5m.			
			Av		2.51

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711312

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1200N HOLE NO: 340W

DATE DRILLED: 20.4.88

299

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.53	SAND, fine to medium grained, pale brown. Went through indurated layer.	3.53	2.40	3.00
		WATER TABLE			
1.5 - 3.5	5.50	SAND, medium grained, red brown. H ₂ S, slightly indurated.	5.62	2.09	0.56
3.5 - 5.5	5.95	AS ABOVE, slightly lighter, pebbles.	3.81	6.93	1.31
5.5 - 6.5	5.36	SAND, coarse to very coarse grey gravel. Hit grey clay.	6.91	15.83	1.15
6.5 - 8.5		CLAY			
		END OF HOLE 8.5m.			
			Av		1.44

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711313

LINE NO: 1200N HOLE NO: 360W
(off-set 0.5m. north)

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 20.4.88

300

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.84	SAND, fine grained, light grey. WATER TABLE	1.49	0.68	1.07
1.5 - 3.5	6.50	SAND, medium grained, dark brown, indurated.	6.79	0.41	0.24
3.5 - 5.5	7.16	AS ABOVE, grades into fine sand, light grey, clayey, contains abundant mica. Hit clay.	6.41	2.88	1.81
5.5 - 9.5 (no sample)		CLAY END OF HOLE 9.5m.			
			Av		1.04

CLIENT: NATIONAL MINERAL SANDS

711314

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1400N HOLE NO: 120E

301

LOGGED BY: GRAHAM LEE

HAND DRILLED

DATE DRILLED: 9.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.0	3.080	LWM on Beach SAND, medium grained with H.M. at top. Minor shell	0.86	2.14	2.67
1.0 - 1.5	1.955	AS ABOVE. Traces H.M. Rock at 1.5m. EOH 1.5m.	0.74	9.27	1.32
		Average			2.22

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711315

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 1400N

HOLE NO: 100E

DATE DRILLED: 9.4.88

302

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		HWM on Beach			
0 - 1.0	2.205	SAND with H.M.	0.49	0.11	23.61
1.0 - 2.0	2.935	AS ABOVE, grading to pale brown with little H.M.	1.69	0.75	11.15
2.0 - 3.0	3.430	SAND, medium grained, pale brown with traces H.M. Some coarse shell. Rock at 3.0m.	3.79	2.99	1.99
		EOH 3.0m.			
		Average			12.25

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711316

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 1400N HOLE NO: 80E

DATE DRILLED: 9.4.88

303

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Milford Beach			
0 - 2.0	4.920	SAND, medium grained, grey and white. Traces H.M.	1.23	0.17	2.95
2.0 - 3.9	4.610	AS ABOVE with increased H.M. Water Table 3.0m. then dark brown sand grading coarser with depth and increased H.M. Pebbles 3.8 - 3.9m. and pale grey clay at 3.9m.	0.99	0.46	6.23
		EOH 3.9m.			
		Average			4.55

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711317

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 1400N

HOLE NO: 60E

DATE DRILLED:

9.4.88

304

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
		Toe of Lanherne Beach			
0 - 2.0	3.170	SAND, medium grained grey and dark grey Water Table 2.0m.	1.81	0.13	3.52
2.0 - 2.9	2.640	SAND, medium grained dark brown with increasing H.M. Some pebbles. Brown clay at 2.9m.	1.71	0.16	6.77
		EOH 2.9m.			
		Average			4.53

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: GRAHAM LEE

711318

HAND DRILLED

TITLE NO: EL 28/85

LINE NO: 1400N HOLE NO: 40E

DATE DRILLED: 9.4.88

305

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 2.0	2.550	Side of Lanherne Beach SAND, medium grained grey	2.26	0.23	0.44
2.0 - 2.21	0.655	SAND, medium grained dark grey to black, slightly in water. Rock at 2.25m. EOH 2.21 m.	4.52	2.99	0.22
		Average			0.42

CLIENT: NATIONAL MINERAL SANDS

711319

TITLE NO: EL 28/85

306

AREA: NARACOOPA

LINE NO: 1400N HOLE NO: 20E

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 21.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.40	SAND, fine to medium grained, pale brown. Fine H.M.	1.47	0.12	0.53
1.5 - 3.5	6.26	AS ABOVE, slightly lighter. Fine H.M.	0.94	0.02	0.43
3.5 - 5.5	6.98	AS ABOVE, then medium grained dark brown, indurated, fine H.M.	3.17	0.09	0.34
		WATER TABLE			
5.5 - 7.5	7.90	SAND, medium grained, dark brown, indurated.	2.18	0.04	0.77
7.5 - 9.5	8.07	AS ABOVE, becoming coarse, contains gravel.	2.91	4.92	0.38
9.5 - 11.0	4.71	AS ABOVE, grades into sand, fine grained, grey. Abundant mica, very clayey. Hit dark grey clay.	9.11	6.54	1.24
		END OF HOLE 11.0m.			
		Average			0.59

CLIENT: NATIONAL MINERAL SANDS

711320

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1400N

HOLE NO: 000E

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 21.4.88

307

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.03	SAND, fine to medium grained, grey, fine H.M.	1.35	0.33	0.41
1.5 - 3.5	6.40	AS ABOVE	0.62	0.03	0.42
3.5 - 5.5	7.40	AS ABOVE, grades into medium grained. Dark brown, slightly indurated.	3.02	0.37	0.53
		WATER TABLE			
5.5 - 7.5	8.05	SAND, medium grained, dark brown, indurated.	4.43	0.17	0.92
7.5 - 9.5	8.79	AS ABOVE, becoming coarse. Contains gravel	2.10	11.52	0.57
9.5 - 11.5	6.41	AS ABOVE, grades into fine grained sand, grey. Abundant mica, clayey.	4.64	2.30	1.24
11.5 - 12.0	1.18	SAND, fine grained, grey. Abundant mica. Hit dark grey clay.	21.17	4.79	1.33
12.0 - 14.0 (No sample)		CLAY			
		END OF HOLE 14.0m.			
		Average			0.83

CLIENT: NATIONAL MINERAL SANDS

711321

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1400N HOLE NO: 20W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 21.4.88

308

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.54	SAND, fine grained, white. Fine H.M.	1.27	0.14	0.74
1.5 - 3.5	6.86	AS ABOVE, Fine H.M.	0.58	0.01	0.58
3.5 - 5.5	7.78	AS ABOVE, grading into medium grained, dark brown, slightly indurated.	2.57	0.03	0.92
		WATER TABLE			
5.5 - 7.5	7.75	SAND, medium grained, dark brown, indurated.	2.18	0.06	1.64
7.5 - 9.5	6.11	AS ABOVE, coarser, contains gravel.	2.19	11.97	0.42
9.5 - 11.5	5.09	AS ABOVE, hit dark grey clay.	4.43	9.84	0.55
		END OF HOLE 11.5m.			
		Average			0.81

CLIENT: NATIONAL MINERAL SANDS

711322

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1400N HOLE NO: 40W

309

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 21.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.45	SAND, fine grained, white grading into pale grey. H.M. present	1.33	0.87	1.18
1.5 - 3.5	6.39	SAND, medium to coarse grained, dark grey. H.M. present.	0.56	0.47	0.81
		WATER TABLE			
3.5 - 5.5	9.05	SAND, medium to coarse gained, dark brown, indurated.	2.32	1.88	0.72
5.5 - 7.5	8.89	AS ABOVE, coarser, contains gravel.	2.41	9.74	0.28
7.5 - 9.5	6.15	AS ABOVE, hit dark grey clay.	4.13	4.94	0.25
		END OF HOLE 9.5m.			
		Average			0.62

CLIENT: NATIONAL MINERAL SANDS

711323

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1400N HOLE NO: 60W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 21.4.88

310

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.32	SAND, medium grained, pale grey to grey.	2.18	0.47	0.46
1.5 - 3.5	6.80	SAND, medium grained, grey.	2.44	0.29	0.50
		WATER TABLE			
3.5 - 5.5	9.43	AS ABOVE, grading into dark grey.	2.25	0.38	0.77
5.5 - 7.7 (Big sample)	11.08	SAND, medium to coarse grained, contains gravel. Dark brown. Hit dark grey clay.	2.11	1.81	0.33
		END OF HOLE 7.7m.			
		Average			0.51

CLIENT: NATIONAL MINERAL SANDS

711324

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1400N HOLE NO: 80W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

(Off-set 0.5m. N.W.)

DATE DRILLED: 21.4.88

118

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.01	SAND, medium grained, brown, peaty. WATER TABLE	4.46	0.66	0.13
1.5 - 3.5		SAND, medium grained, pale brown to brown.			
3.5 - 5.5	8.50	SAND, med to coarse brown, contains gravel, slightly indurated.	2.66	5.15	0.12
5.5 - 6.75	4.35	AS ABOVE, hit dark grey clay.	1.12	7.96	0.67
6.75 - 10.5 (No sample)		CLAY, with silty bands. Interval v. fine and almost dissolves in your hands. END OF HOLE 10.5m.			
		Average			0.31

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711325

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1400N HOLE NO: 100W

DATE DRILLED: 21.4.88

312

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.80	SAND, medium grained, brown, peaty. WATER TABLE	2.89	0.20	0.26
1.5 - 3.5	5.73	SAND, medium to coarse grained, pale brown to brown.	0.72	0.03	0.23
3.5 - 5.5	8.64	SAND, med. to coarse grained, dark brown, indurated. Contains gravel.	3.20	1.59	0.23
5.5 - 6.25	2.84	AS ABOVE, hit dark grey clay. END OF HOLE 6.25m.	2.85	6.63	0.52
		Average			0.27

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711326

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1400N HOLE NO: 120W

DATE DRILLED: 21.4.88

313

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.01	SAND, fine to med. grained. dark brown. Hit peat for most of the sample.	21.51	3.26	0.43
1.5 - 3.5	0.30	Still black PEAT. Very small sample.	13.56	2.94	0.40
3.5 - 5.5	2.10	AS ABOVE. Sand very fine.	6.52	0.60	0.45
5.5 - 6.5	4.74	SAND, med. to coarse grained, dark brown. Contains gravel. Hit dark grey clay.	3.14	6.49	0.90
		END OF HOLE 6.5m.			
		Average			0.50

CLIENT: NATIONAL MINERAL SANDS

711327

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1400N HOLE NO: 140W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 21.4.88

314

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	1.24	SAND, fine grained, brown, peaty.	5.06	0.99	0.32
1.5 - 3.5	6.96	SAND, fine to medium grained, pale brown to brown.	4.77	0.51	0.57
3.5 - 5.5	9.50	AS ABOVE, dark brown.	2.52	0.06	1.01
5.5 - 7.5	7.14	AS ABOVE, coarser, indurated.	3.23	0.61	0.50
7.5 - 9.0	4.05	AS ABOVE, hit gravel then dark grey clay.	2.60	3.49	0.68
		END OF HOLE 9.0m.			
		Average			0.63

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

711328

LINE NO: 1400N HOLE NO: 160W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 21.4.88

315

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.75	SAND, fine to medium grained, light grey to white. Fine H.M.	1.25	0.15	0.60
1.5 - 3.5	6.70	SAND, medium grained, light grey. Fine H.M. WATER TABLE	1.08	0.02	0.71
3.5 - 5.5	8.68	AS ABOVE, grades to dark grey. Fien H.M.	1.28	0.06	0.64
5.5 - 7.5	5.80	SAND, medium to coarse grained, dark brown. H ₂ S. Slightly indurated.	3.57	0.31	2.23
7.5 - 9.5	7.50	AS ABOVE, contains gravel. Hit dark grey clay, fine sand just before the clay. END OF HOLE 9.5m.	5.07	3.25	0.69
		Average			0.99

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711329

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1400N HOLE NO: 180W

DATE DRILLED: 21.4.88

316

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.49	SAND, fine to medium grained, light grey. Fine H.M.	1.36	0.69	1.99
1.5 - 3.5	6.62	AS ABOVE, grades into brown. WATER TABLE	2.57	0.12	1.47
3.5 - 5.5	9.61	SAND, medium grained, brown to dark brown.	1.72	0.00	0.76
5.5 - 7.5	8.70	AS ABOVE, H ₂ S, becomes coarser.	2.75	0.33	0.87
7.5 - 9.5	7.50	AS ABOVE, contains gravel then med. dark grey clay. END OF HOLE 9.5m.	2.86	5.78	2.32
		Average			1.46

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1400N HOLE NO: 200W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 21.4.88

317

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.80	SAND, fine to medium grained, light grey to grey. Fine H.M.	2.84	1.77	1.06
1.5 - 3.5	6.88	AS ABOVE, medium grained, grey, fine H.M. WATER TABLE	2.93	1.44	1.02
3.5 - 5.5	9.30	AS ABOVE, grades to dark brown. Fine H.M.	4.45	0.92	0.93
5.5 - 7.5	11.88	SAND, med. to coarse grained, dark brown. Contains gravel, indurated.	3.15	1.70	0.68
7.5 - 9.5	5.20	AS ABOVE, hit very fine grained grey sand with abundant mica then dark grey clay. END OF HOEL 9.5m.	7.62	4.19	2.55
		Average			1.26

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711330

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1400N HOLE NO: 220W

DATE DRILLED: 21.4.88

318

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.95	SAND, fine to medium grained, light grey. Fine H.M.	1.88	0.76	0.62
1.5 - 3.5	6.90	AS ABOVE, grading to grey. Fine H.M. WATER TABLE	3.10	0.18	0.91
3.5 - 5.5	8.24	AS ABOVE, becoming darker.	3.71	0.42	1.10
5.5 - 7.5	9.85	SAND, coarse to very coarse, dark brown. Contains gravel - indurated.	1.38	0.77	1.18
7.5 - 8.5	1.68	AS ABOVE, hit dark grey clay.	12.25	4.21	1.40
8.5 - 11.5 (No sample)		CLAY, silty, occasional fine sandy band. END OF H OLE 11.5m.			
		Average			1.03

CLIENT: NATIONAL MINERAL SANDS

711331

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1400N HOLE NO: 240W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 21.4.88

319

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.88	SAND, fine to medium grained, pale grey. H.M.	4.45	0.59	1.59
1.5 - 3.5	6.51	AS ABOVE, grades into brownish grey H.M. WATER TABLE.	5.67	1.94	2.94
3.5 - 5.5	10.53	SAND, medium gained, dark brown. H.M. present.	3.05	1.30	4.06
5.5 - 7.5	8.95	AS ABOVE, indurated.	2.04	1.27	4.44
7.5 - 9.5	5.40	AS ABOVE, hit fine to very fine grained clay and micaceous rich grey sand.	10.84	12.21	1.95
9.5 - 11.5 (No sample)		CLAY, grey, rich in minerals, very silty. END OF HOLE 11.5m.			
		Average			3.07

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711332

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1400N

DATE DRILLED:

HOLE NO: 260W

21.4.88

320

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.45	SAND, fine to medium grained, light grey to grey. Fine H.M.	0.97	0.13	5.02
1.5 - 3.5	6.80	AS ABOVE, grades into brown. H.M. present. WATER TABLE	1.85	0.06	5.82
3.5 - 5.5	9.70	SAND, medium grained, brown to dark brown. Indurated. H.M. present.	1.33	0.06	4.05
5.5 - 7.5	7.53	AS ABOVE. Hit gravel, H.M. present.	2.59	3.26	4.27
7.5 - 9.5	5.48	AS ABOVE, grades into fine to v. fine light grey micaceous and clay rich sand.	12.69	6.26	1.43
9.5 - 11.5	5.58	SAND, very fine to fine grained, light grey, very clayey and micaceous, silty. Hit dark grey clay. END OF HOLE 11.5m.	21.61	8.84	1.43
		Average			3.61

CLIENT: NATIONAL MINERAL SANDS

711333

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1400N HOLE NO: 280W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 21.4.88

321

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.73	SAND, fine to medium grained, light grey grading into dark grey. H.M. present.	2.64	0.36	5.35
1.5 - 3.5	6.93	SAND, medium grained, dark brown, indurated. H.M. present.	3.77	0.03	6.49
		WATER TABLE			
3.5 - 5.5	8.24	AS ABOVE, H.M. present	3.61	0.15	8.36
5.5 - 7.5	7.35	AS ABOVE, grading into fine grained, grey, clayey rich sand.	3.97	2.96	2.62
7.5 - 9.5		SAND, very fine to fine grained light grey to grey clay and mica rich - very silty.			
9.5 - 11.5		AS ABOVE, when added with water turns to silty muddy very difficult to retain.			
		END OF HOLE 11.5m.			
		Average			4.39

CLIENT: NATIONAL MINERAL SANDS

711334

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1400N HOLE NO: 300W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 21.4.88

322

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.85	SAND, fine to medium grained, indurated. H.M. WATER TABLE	5.51	2.37	5.81
1.5 - 3.5	3.60	SAND, medium grained, dark grey to brown. Indurated.	5.91	0.51	8.13
3.5 - 5.5	2.20	SAND, fine to very fine grained, dark grey to brown, indurated sand, mixed with water becomes mud. Difficult to retain. H.M.	7.85	1.35	2.62
5.5 - 7.5	7.45	AS ABOVE. Mica rich H.M.	4.51	3.70	2.10
7.5 - 9.5	6.10	AS ABOVE	9.24	6.09	1.69
9.5 - 10.5	5.55	AS ABOVE but dark grey clay. END OF HOLE 10.5m.	21.16	9.01	1.20
		Average			3.72

CLIENT: NATIONAL MINERAL SANDS

711335

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1400N HOLE NO: 320W

323

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 21.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.90	SAND, medium grained, grey, indurated. H.M. WATER TABLE	5.89	1.09	7.79
1.5 - 3.5	6.85	AS ABOVE, becoming darker. H.M.	5.33	1.10	7.70
3.5 - 5.5	6.70	SAND, medium grained, dark brown, indurated. H.M.	8.15	0.49	1.84
5.5 - 7.5	7.41	AS ABOVE, grading into fine grained grey, silty clayey sand, abundant mica.	6.41	1.65	2.16
7.5 - 9.5	5.13	SAND, silty, clayey, fine grained, grey. Abundant mica. END OF HOLE 9.5m.	20.23	11.34	1.20
		Average			3.95

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711336

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: 1400N HOLE NO: 340W

DATE DRILLED: 21.4.88

324

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.13	SAND, fine to medium grained, light grey grading to dark brown. H.M. rich. WATER TABLE	2.85	0.37	13.76
1.5 - 3.5	6.15	SAND, fine to medium grained, dark brown, indurated.	3.87	0.24	3.92
3.5 - 5.5	5.55	AS ABOVE, medium grained.	5.99	0.20	1.09
5.5 - 7.5	5.30	AS ABOVE, grades into fine grained, dark grey sand, very muddy.	7.28	4.74	2.00
7.5 - 9.5	4.85	AS ABOVE, hit dark grey clay. END OF HOLE 9.5m.	33.88	14.18	1.41
		Average			3.94

CLIENT: NATIONAL MINERAL SANDS

711337

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: 1400N HOLE NO: 360W

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 21.4.88

325

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.35	SAND, fine to medium grained, brownish grey. H.M. present WATER TABLE	4.46	1.24	3.71
1.5 - 3.5	6.15	AS ABOVE	4.78	0.38	0.82
3.5 - 5.5	6.50	AS ABOVE, dark brown, slightly indurated.	6.00	0.61	0.56
5.5 - 7.5	4.49	AS ABOVE, grades into dark grey. Medium grained sand. Very muddy. Hit dark grey clay. END OF HOLE 7.5m.	17.44	8.81	2.69
		Average			1.83

CLIENT: NATIONAL MINERAL SANDS

711338

TITLE NO: EL 28/85

326

AREA: NARACOOPA

LINE NO: TIP ROAD HOLE NO: TRO

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 22.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.75	SAND, fine to medium grained, white to light grey. Trace H.M.	1.00	0.21	1.01
1.5 - 3.5	7.05	AS ABOVE, grades into dark brown. WATER TABLE	3.10	0.85	0.99
3.5 - 5.5	4.93	SAND, medium grained, dark brown, indurated. Some clay layers. Very muddy.	11.71	0.35	0.72
5.5 - 7.5	4.92	SAND, fine to medium grained, red brown. H ₂ S. Indurated.	4.79	0.16	0.41
7.5 - 9.5	8.10	AS ABOVE	2.41	0.62	0.44
9.5 - 11.5	2.63	AS ABOVE, hit gravel then dark grey clay. END OF HOLE 11.5m.	10.27	9.00	0.99
		Average			.72

CLIENT: NATIONAL MINERAL SANDS

711339

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: TIP ROAD HOLE NO: TR4

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 22.4.88

327

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.00	SAND, medium grained, light grey to white. H.M.	0.86	0.06	0.64
1.5 - 3.5	6.05	AS ABOVE, grades into brown H.M.	1.19	0.00	1.58
		WATER TABLE			
3.5 - 5.5	6.08	SAND, medium grained, dark brown. Went through peat layer into dark brown mud.	18.77	1.67	1.31
		Average			1.23

CLIENT: NATIONAL MINERAL SANDS

711340

TITLE NO: EL 28/85

328

AREA: NARACOOPA

LINE NO: TIP ROAD HOLE NO: TR8

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 22.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.67	SAND, medium grained, pale brown. H.M.	2.10	0.02	0.48
1.5 - 3.5	8.10	AS ABOVE	1.83	0.05	0.59
		WATER TABLE			
3.5 - 5.0	2.65	AS ABOVE then hit dark brown clay. END OF HOLE 5.0m.	5.40	1.54	0.47
		Average			0.52

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY: ANDREW DOVE

711341

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: TIP ROAD HOLE NO: TR12

DATE DRILLED: 22.4.88

329

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.13	SAND, medium grained, light grey to white.	0.83	0.16	0.49
1.5 - 3.5	7.12	AS ABOVE WATER TABLE	0.72	0.03	0.89
3.5 - 5.5	8.69	SAND, medium grained, dark brown, very peaty. Heavily indurated.	5.10	0.21	0.34
5.5 - 6.5	4.00	SAND, as above. Hit dark brown clay.	8.90	3.19	0.44
6.5 - 11.5 (No sample)		CLAYS, brown, light brown, tan. Some indurated layers. END OF HOLE 11.5m.			
		Average			0.56

CLIENT: NATIONAL MINERAL SANDS

711342

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: TIP ROAD HOLE NO: TR16

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 22.4.88

330

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.97	SAND, medium grained, pale brown H.M.	0.81	0.05	0.54
1.5 - 3.5	6.84	SAND, medium grained, white H.M. WATER TABLE	0.57	0.03	0.43
3.5 - 5.5	6.80	AS ABOVE, grades into brown.	3.02	0.53	0.70
5.5 - 7.5	8.93	AS ABOVE, becomes dark brown, peaty. Hit dark brown clay. END OF HOLE 2.5m.	8.84	1.66	1.02
		Average			0.68

CLIENT: NATIONAL MINERAL SANDS

711343

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: TIP ROAD HOLE NO: TR20

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 22.4.88

331

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.50	SAND, medium grained, greyish brown.	2.32	0.05	0.57
1.5 - 3.5	6.36	AS ABOVE, slightly lighter WATER TABLE	1.22	0.06	0.43
3.5 - 5.5	6.75	AS ABOVE, grades into dark brown, peaty sand. Indurated.	4.45	0.45	1.03
5.5 - 6.5	3.62	SAND, medium grained, red-brown. Very mottled. Hit dark brown clay. END OF HOLE 6.5m.	20.05	1.10	0.77
Average					0.70

CLIENT: NATIONAL MINERAL SANDS

711344

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: TIP ROAD HOLE NO: TR24

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 22.4.88

332

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.33	SAND, fine to medium grained, light grey to white H.M.	1.55	0.02	0.65
1.5 - 3.5	6.80	sand, fine to medium grained, white H.M. WATER TABLE	1.67	0.01	0.59
3.5 - 5.5	7.87	AS ABOVE then pale brown. Medium grained, heavily indurated H.M.	5.78	0.94	1.03
5.5 - 6.5	2.90	SAND, medium grained, dark brown, indurated. Hit dark brown clay.	6.47	1.92	0.86
6.5 - 11.5 (No sample)		CLAY, hit thin sand layer at 11.0m. END OF HOLE 11.5m.			
		Average			0.78

CLIENT: NATIONAL MINERAL SANDS

711345

TITLE NO: EL 28/85

333

AREA: NARACOOPA

LINE NO: TIP ROAD HOLE NO: TR28

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

(Line offset 10m. to north to follow an old track)

DATE DRILLED: 22.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.50	3.25	SAND, fine to medium grained, greyish brown.	2.23	0.38	0.69
1.5 - 3.5	6.40	AS ABOVE WATER TABLE	2.05	0.09	0.58
3.5 - 5.5	8.64	AS ABOVE, darker H ₂ S, slightly indurated.	5.68	0.47	1.27
5.5 - 7.5	1.69	CLAY, dark brown top 30 cm. then sand, medium grained, grey. H.M. rich heavily indurated.	14.65	4.91	2.85
7.5 - 9.5	4.26	SAND, medium grained, dark brown, indurated, clayey.	12.76	1.51	5.06
9.5 - 11.5	5.26	SAND, fine to medium grained, dark brown, very muddy. Clayey H.M.	15.20	0.40	6.17
11.5 - 13.0	7.68	AS ABOVE. H.M. present. Hit dark brown clay. END OF HOLE 13.0m.	16.80	5.47	2.51
		Average			2.82

CLIENT: NATIONAL MINERAL SANDS

711346

TITLE NO: EL 28/85

AREA: NARACOOPA

LINE NO: TIP ROAD HOLE NO: TR32
(Just about 10m. west of pit)

334

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 22.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.45	sand, medium grained, light grey to white. H.M. trace.	1.28	0.21	0.49
1.5 - 3.5	5.05	SAND, fine to medium grained, white. H.M. trace.	1.01	0.40	0.55
		WATER TABLE			
3.5 - 5.5	7.30	AS ABOVE, then sand. Medium grained, dark brown, indurated. H.M. present.	8.14	0.16	4.02
5.5 - 7.5	7.88	SAND, medium grained, dark brown, indurated.	2.22	1.11	7.57
7.5 - 9.5	5.46	SAND, fine to medium grained, dark brown, very muddy, indurated, H.M. rich.	8.54	1.13	3.74
9.5 - 11.5	4.28	AS ABOVE, then fine to very fine grained grey. Abundant mica H.M.	5.70	0.26	0.85
11.5 - 13.5	5.93	AS ABOVE, H.M.	6.14	6.71	2.25
13.5 - 14.5	2.21	AS ABOVE, hit dark brown clay.	37.84	8.62	1.53
14.5 - 17.5 (No sample)		CLAY			
		END OF HOLE 17.5m.			
		AVERAGE			2.77

CLIENT: NATIONAL MINERAL SANDS

711347

TITLE NO: EL 28/85

335

AREA: NARACOOPA

LINE NO: TIP ROAD HOLE NO: TR36

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

(OFF 3M. TO SOUTH SO ON ROAD)
DATE DRILLED: 22.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.75	SAND, fine to medium grained, light grey, then white.	1.28	0.14	0.69
1.5 - 3.5	6.43	SAND, fine to medium grained, white.	0.50	0.00	0.52
3.5 - 5.5	7.65	AS ABOVE, then dark brown, indurated.	3.36	0.01	2.35
		WATER TABLE			
5.5 - 7.5	7.82	AS ABOVE, H.M. present	3.81	0.28	2.42
7.5 - 9.5	5.54	SAND, fine to medium grained, dark brown, muddy, indurated.	9.93	0.06	0.88
9.5 - 11.5	4.31	AS ABOVE	8.48	1.02	0.75
11.5 - 13.5	5.16	AS ABOVE, thin sand, fine grained, grey, very muddy. Some gravel. Hit dark brown clay.	10.55	4.54	2.02
13.5 - 17.5 (No sample)		CLAY END OF HOLE 17.5m.			
		Average			1.40

CLIENT: NATIONAL MINERAL SANDS

AREA: NARACOOPA

LOGGED BY:

ANDREW DOVE

711348

R.C. RIG DRILLED

TITLE NO: EL 28/85

LINE NO: TIP ROAD HOLE NO: TR40

(Entrance to pit)

DATE DRILLED: 22.4.88

336

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.04	SAND, fine to medium grained, pale brown to pale grey.	2.12	0.45	0.71
1.5 - 3.5	6.81	SAND, fine to medium grained, white then dark brown, indurated. H.M. present.	2.89	0.51	0.99
		WATER TABLE			
3.5 - 5.5	5.88	SAND, fine to medium grained, dark brown, indurated.	3.10	0.29	0.95
5.5 - 7.5	6.20	AS ABOVE, coarser	7.26	0.09	0.62
7.5 - 9.5	3.61	AS ABOVE	6.57	0.23	0.37
9.5 - 11.5	5.58	AS ABOVE	7.61	2.36	1.11
11.5 - 13.5	4.27	SAND, fine to very fine grained, grey, abundant mica. Very muddy.	15.45	6.71	1.16
13.5 - 14.5	8.47	AS ABOVE. Hit dark brown clay.	10.66	6.77	2.01
14.5 - 17.5 (No sample)		CLAY			
		END OF HOLE 17.5m.			
		Average			0.93

CLIENT: NATIONAL MINERAL SANDS

711349

TITLE NO: EL 28/85

337

AREA: NARACOOPA

LINE NO: TIP ROAD HOLE NO: TR45

LOGGED BY: ANDREW DOVE

R.C. RIG DRILLED

DATE DRILLED: 22.4.88

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	6.30	SAND, fine to medium grained, pale brown.	1.32	0.15	0.65
1.5 - 3.5	5.19	AS ABOVE, grades into brownish grey. H.M. rich. WATER TABLE	1.05	0.01	5.10
3.5 - 5.5	8.93	SAND, medium grained, grey, H.M. present.	1.39	0.09	2.90
5.5 - 7.5	9.40	AS ABOVE, grades into brown. H.M. present.	1.59	0.00	0.62
7.5 - 9.5	6.78	SAND, medium grained, dark brown, indurated. H.M. present	4.05	0.34	1.56
9.5 - 11.5	3.74	AS ABOVE	6.08	0.35	0.42
11.5 - 13.5	6.89	SAND, fine to medium grained, grey, mica rich, contains some gravel.	6.63	3.14	2.38
13.5 - 15.5	4.96	AS ABOVE. Hit dark brown clay END OF HOLE 15.5m.	15.87	5.05	1.12
		Average			1.88

PETER H. STITT & ASSOCIATES PTY. LTD.
MINING AND GEOLOGICAL CONSULTANTS

5TH FLOOR,
KING YORK HOUSE,
32 YORK STREET,
SYDNEY N.S.W. 2000
PHONE: (02) 29 1403
FAX: (02) 262 2395

MICROFILMED

REPORT NO 20/88

VOLUME 3

(APPENDICES 3 - 6)

MINES	
File Ref.	
26 OCT 1988	
Doc. Ref.	
Action Officer	Initials
Resubmit to	Date

OPEN FILE

Evaluation of Mineral Sand Resources

at

Naracoopa

King Island

Report Prepared for National Mineral Sands Pty. Ltd.

A. Dove
G. Lee

August, 1988

**88 - 2885
Vol 3 of 3**

APPENDIX 3

R.H.F. Laboratory Result Certificates



RHF 340
Laboratory Services

711352

271
33 Nelson St.
P.O. Box 5,
Smithton 7330
Ph. 52 1982

A Division of Circular Head Dolomite & Trading Co. Pty. Ltd.
(Incorporated in Tasmania)

23rd June, 1988

Peter Stitt & Associate,
32 York Street,
SYDNEY. N.S.W. 2000

ATTENTION: G. LEE

Bulk Density Test for 80W 500N

0-1.5m	2.38 gm/cm	3
1.5-3.5m	2.55 gm/cm	3
3.5-5.5m	1.96 gm/cm	3
5.5-7.6m	1.67 gm/cm	3

C. Schrank
RHF LABORATORY



RHF 341
Laboratory Services

711353

272

33 Nelson St,
P.O. Box 5,
Smithton 7330
Ph. 52 1982

A Division of Circular Head Dolomite & Trading Co. Pty. Ltd.
(Incorporated in Tasmania)

16th May, 1988

Peter Stitt & Associate Pty. Ltd.,
5th Floor King York House,
32 York Street,
SYDNEY, N.S.W. 2000
ATTENTION: MR. A. DOVE

Dear Sir,

Please find enclosed a corrected copy of raw data documentation for the Naracoopa batch of 114 samples. The % Slime calculations were incorrect.

Yours faithfully,

For RHF LABORATORY

G.P. Dowson,
MANAGER.

Hole Grid Co-Ordinates	Sample Depth(m)	wt% of +1000u	wt% of -1000u	wt% Slime	wt% of Heavy Mineral	Total wt of A.R. (KG)
120E, 100N	0-2.0	0.14	99.86	3.13	12.29	2.72
	2.0-3.4	0.45	99.55	1.41	13.82	3.275
200E, 100N	0-2.0	0.78	99.22	0.40	41.50	3.810
	2.0-2.4	0.93	99.07	1.44	25.28	2.240
220E, 100N	0-1.0	0.72	99.28	0.15	63.27	1.750
	1.0-2.0	0.97	99.03	0.33	44.71	2.830
	2.0-2.8	1.20	98.80	0.54	45.70	4.915
240E, 100N	0-0.25	10.23	89.77	0.82	12.09	0.440
140W, 100N	0-2.0	0.15	99.85	1.23	12.74	3.835
	2.0-2.7	0.44	99.56	3.77	20.24	5.325
60E, 300N	0-2.0	1.45	98.55	1.38	3.39	2.740
	2.0-4.0	3.55	96.45	0.75	3.81	8.800
	4.0-4.8	2.61	97.39	4.34	2.81	2.830
80E, 300N	0-2.0	0.04	99.96	0.86	2.76	4.035
	2.0-2.3	0.27	99.73	2.20	5.82	2.100
160E, 300N	0-2.0	1.40	98.60	0.21	32.51	4.87
	2.0-2.3	1.35	98.65	3.75	29.41	1.260
180E, 300N	0-1.0	0.28	99.72	0.26	33.56	1.940
	1.0-2.0	4.61	95.39	0.35	9.87	2.510
	2.0-3.0	2.05	97.95	0.96	13.17	5.150
	3.0-4.0	2.31	97.69	3.99	5.52	3.220
	4.0-5.0	3.31	96.69	6.54	0.98	2.450
200E, 300N	0-1.0	0.97	99.03	0.59	38.19	3.750
	1.0-2.0	2.74	97.26	1.18	24.83	3.56
	2.0-3.0	2.51	97.49	1.12	22.99	5.49
	3.0-4.0	0.08	99.92	1.40	4.21	3.340
000, 300N	2.0-4.0	0.04	99.96	0.45	1.12	6.690
	4.0-6.0	0.70	99.30	0.50	0.32	7.060
	6.0-7.3	3.32	96.68	1.17	1.93	7.695
180E, 500N	0-1.0	3.73	96.27	0.75	12.01	3.115
	1.0-1.4	1.26	98.74	0.97	21.68	3.940 *
160E, 500N	0-1.0	0.85	99.15	0.50	32.59	2.505
	1.0-2.2	1.57	98.43	0.81	22.04	4.970
140E, 500N	0-2.0	0.10	99.90	0.40	23.19	4.600
	2.0-2.8	0.15	99.85	0.89	38.34	3.155
120E, 500N	0-2.0	0.04	99.96	0.46	10.88	4.145
	2.0-3.0	1.29	98.71	2.76	10.19	2.875
	3.0-4.0	0.05	99.95	1.59	3.71	4.577
100E, 500N	2.0-4.0	0.12	99.88	2.54	1.84	5.465
	4.0-6.0	1.23	98.77	1.43	1.25	6.265 *
	6.0-6.2	16.14	83.76	37.62	0.45	0.750
	0-2.0	0.12	99.88	2.66	9.22	6.740
380W, 500N	2.0-4.0	0.09	99.91	0.79	10.20	4.950
	4.0-6.0	0.27	99.73	0.66	9.10	6.630
	6.0-8.0	0.28	99.72	0.96	5.64	6.94
160E, 600N	0-1.0	1.17	98.83	0.68	23.06	3.810
	1.0-1.5	7.44	92.56	0.67	2.64	1.095
140E, 600N	0-2.0	0.49	99.51	1.35	22.32	5.440
	2.0-4.0	0.09	99.91	1.07	9.84	4.310
	4.0-6.0	0.99	99.01	1.01	19.23	7.275
120E, 600N	0-2.0	0.18	99.82	0.36	8.78	4.360
	2.0-4.0	0.16	99.84	1.11	18.10	4.795
	4.0-6.0	0.11	99.89	0.70	13.58	6.010
	6.0-8.0	0.12	99.88	0.96	9.76	5.715
	8.0-10.0	0.18	99.82	1.98	6.91	5.215
	10.0-11.5	0.32	99.68	4.56	0.57	2.725
160E, 700N	0-1.3	1.56	98.44	1.24	13.86	4.484
140E, 700N	0-1.0	0.03	99.97	0.28	33.25	2.220
	1.0-2.0	1.12	98.88	0.71	12.50	4.030
	2.0-2.3	1.59	98.41	1.89	33.15	1.220
120E, 700N	0-2.0	0.31	99.69	0.54	31.03	5.035
	2.0-4.0	0.13	99.87	0.92	34.37	3.215

Hole Grid Co-Ordinates	Sample Depth (m)	wt% of +1000u	wt% of -1000u	wt% Slime	wt% of Heavy Mineral	Total wt of A.R. (Kg)
	4.0-6.0	0.14	99.86	1.05	21.69	4.640
	6.0-8.0	0.85	99.15	0.88	29.44	5.020
140E, 1000N	0-1.0	1.54	98.46	0.79	22.31	3.775
120E, 1000N	0-1.0	0.07	99.93	1.46	16.20	1.430
	1.0-1.9	0.24	99.76	1.83	21.87	2.325
100E, 1000N	0-2.0	0.07	99.93	1.27	14.83	4.550
	2.0-4.0	0.13	99.87	1.33	10.58	4.475
	4.0-6.0	0.89	99.11	2.57	9.52	4.650
80E, 1000N	0-2.0	0.09	99.91	0.57	50.61	5.500
	2.0-3.6	0.18	99.82	4.47	21.72	6.325
120E, 1200N	0-1.0	0.18	99.82	0.67	24.30	3.200
	1.0-2.2	1.62	98.38	1.20	7.84	4.435
100E, 1200N	0-2.0	0.02	99.98	2.47	5.76	1.375
	2.0-3.0	0.06	99.94	1.60	2.47	1.895
80E, 1200N	0-2.0	0.08	99.92	1.25	4.81	4.380
	2.0-4.2	0.33	99.67	2.47	11.00	5.845
60E, 1200N	0-2.0	0.30	99.70	2.79	29.02	5.235
	2.0-3.0	0.68	99.32	22.69	3.99	2.000
40E, 1200N	0-2.0	0.15	99.85	1.65	0.79	4.250
	2.0-4.0	0.07	99.93	1.22	0.40	3.525
	4.0-4.7	3.20	96.80	1.59	0.52	3.675
40E, 1400N	0-2.0	0.23	99.77	2.26	0.44	2.550
	2.0-2.25	2.99	97.01	4.52	0.22	0.655
60E, 1400N	0-2.0	0.13	99.87	1.81	3.52	3.170
	2.0-2.9	0.16	99.84	1.71	6.77	2.640
80E, 1400N	0-2.0	0.17	99.83	1.23	2.95	4.920
	2.0-3.9	0.46	99.54	0.99	6.23	4.610
100E, 1400N	0-1.0	0.11	99.89	0.49	23.61	2.205
	1.0-2.0	0.75	99.25	0.69	11.15	2.935
	2.0-3.0	2.99	97.01	0.79	1.99	3.430
120E, 1400N	0-1.0	2.14	97.86	0.86	2.67	3.080
	1.0-1.5	9.27	90.73	0.74	1.32	1.955
000, 1000N(3S)	0-2.0	0.14	99.86	2.19	3.25	5.370
	2.0-4.0	0.07	99.93	1.96	0.64	4.35
	4.0-6.0	1.04	98.96	2.77	0.85	7.47
	6.0-6.9	9.40	90.60	1.27	1.10	3.800
200E, 800N(3N)	0-2.0	0.42	99.58	3.37	1.34	5.320
	2.0-4.0	0.30	99.70	1.82	0.64	6.350
	4.0-5.8	2.95	97.05	1.58	0.49	6.885
275E, 800N(1S)	0-2.0	0.37	99.63	5.76	3.88	6.055
	2.0-4.0	0.09	99.91	0.79	0.67	6.590
	4.0-6.0	1.12	98.88	1.49	0.77	9.205
	6.0-6.5	5.13	94.87	0.91	2.03	2.140
60E, 500N(1N)	0-2.0	0.10	99.90	0.98	55.05	5.225
	2.0-4.0	0.08	99.92	1.42	7.71	5.300
	4.0-6.0	0.03	99.97	0.87	1.48	6.180
	6.0-8.0	0.02	99.98	1.88	2.02	7.500
	8.0-8.5	0.83	99.17	1.59	1.73	2.620
100E, 100N(1S)	0-2.0	0.32	99.68	2.07	10.66	5.310
	2.0-4.0	0.10	99.90	2.26	14.10	4.920
	4.0-6.0	1.34	98.66	1.75	21.36	5.325
	6.0-7.2	4.42	95.58	0.25	6.47	3.975

Note: (1) A.R. is an abbreviation for oven-dried wt for the "as received" sample.

(2) * 180E, 500N 1-1.4m is thought to have undergone contamination from 100E, 500N 4-6m in the initial riffing preparation. The degree of influence is considered minimal due to the substantially higher heavy mineral content of the former compared to the latter.



RHF 344
Laboratory Services

711356

275
33 Nelson St,
P.O. Box 5,
Smithton 7330
Ph. 52 1982

Division of Circular Head Dolomite & Trading Co. Pty. Ltd.
(Incorporated in Tasmania)

16th May, 1988

Peter Stitt & Associate Pty. Ltd.,
5th Floor King York House,
32 York Street,
SYDNEY. N.S.W. 2000

Dear Sir,

Please find enclosed raw data documentation for the continuation of the
Naracoopa Survey.

Yours faithfully,

For RHF LABORATORY

G.P. Dawson,
MANAGER.

345

RAW DATA DOCUMENTATION FOR HEAVY MINERAL SEPARATION

Hole Grid Co-Ordinates	Sample Depth(m)	wt% of +1000u	wt% of -1000u	wt% Slime	wt% of Heavy Mineral	Total wt of A.R.(Kg)
20W, 700N	0-1.5	0.52	99.48	1.15	2.17	5.165
	1.5-3.5	0.62	99.38	1.82	1.27	8.125
	3.5-5.5	0.67	99.33	2.40	0.40	7.295
	5.5-7.5	8.25	91.75	2.59	0.69	6.325
120W, 700N	0-1.5	0.16	99.84	0.84	3.74	4.550
	1.5-3.5	0.08	99.92	5.29	5.04	6.060
	3.5-5.5	0.04	99.96	3.74	8.12	6.325
	5.5-7.5	2.84	97.16	1.59	4.27	9.715
180W, 700N	7.5-8.0	5.68	94.32	2.71	7.96	1.160
	0-1.5	0.69	99.31	0.66	8.59	6.175
	1.5-3.5	0.29	99.71	0.55	5.16	5.990
	3.5-5.5	0.48	99.52	0.67	2.03	7.115
200E, 800N (0N)	5.5-7.5	0.88	99.12	3.42	3.31	6.930
	7.5-8.0	8.79	91.21	21.81	3.71	0.755
	0-1.5	0.06	99.94	3.90	0.71	5.350
	1.5-3.5	0.28	99.72	3.88	0.85	6.610
275E, 800N (4S)	3.5-5.8	3.11	96.89	3.07	0.86	9.750
	0-1.5	0.21	99.79	3.70	2.84	4.500
	1.5-3.5	0.01	99.99	3.77	0.68	7.200
	3.5-5.5	0.49	99.51	3.18	0.90	8.600
000, 1000N (4S)	5.5-6.5	5.21	94.79	2.60	1.75	4.800
	0-1.5	0.03	99.97	1.82	2.79	5.225
	1.5-3.5	0.07	99.93	2.38	1.78	5.280
	3.5-5.5	0.22	99.78	2.62	1.02	8.440
40E, 1000N	5.5-6.5	9.72	90.28	2.31	1.13	5.200
	0-1.5	0.22	99.78	1.04	1.94	4.475
	1.5-3.5	0.15	99.85	2.39	0.66	9.845
	3.5-5.5	0.08	99.92	3.16	0.76	7.250
20E, 1000N	5.5-6.5	6.80	93.20	7.28	1.17	4.375
	0-1.5	0.13	99.87	0.81	2.60	3.775
	1.5-3.5	0.04	99.96	2.63	0.85	6.750
	3.5-5.5	0.03	99.97	3.37	0.57	7.075
20W, 1000N	5.5-6.5	9.84	90.16	1.84	0.72	5.075
	0-1.5	0.08	99.92	2.04	2.52	5.150
	1.5-3.5	0.22	99.78	2.02	2.70	6.315
	3.5-5.5	2.00	98.00	3.56	0.85	8.290
40W, 1000N	5.5-6.5	5.81	94.19	3.15	0.67	4.745
	0-1.5	0.97	99.03	5.88	2.51	2.540
	1.5-3.5	0.93	99.07	4.43	2.25	6.350
	3.5-5.5	1.83	98.17	2.96	0.50	8.215
60W, 1000N	5.5-7.0	3.74	96.26	7.09	0.73	5.195
	0-1.5	1.86	98.14	2.68	3.11	4.875
	1.5-3.5	1.88	98.12	1.21	0.43	6.265
	3.5-5.5	3.54	96.46	2.74	0.24	7.780
100W, 1000N	5.5-6.5	8.74	91.26	22.28	2.21	4.305
	0-1.5	0.39	99.61	0.66	2.97	5.675
	1.5-3.5	0.34	99.66	1.40	0.68	6.700
	3.5-5.5	1.56	98.44	2.50	0.27	8.500
120W, 1000N	5.5-6.0	7.23	92.77	2.45	3.96	3.790
	0-1.5	0.32	99.68	2.27	2.25	4.250
	1.5-3.5	0.05	99.95	1.14	2.07	7.050
	3.5-5.5	3.71	96.29	2.38	3.07	8.350
160W, 1000N	5.5-6.5	2.08	97.92	26.35	2.64	3.400
	0-1.5	0.12	99.88	1.45	4.05	3.605
	1.5-3.5	0.81	99.19	2.65	3.11	7.400
	3.5-4.5	5.95	94.05	7.77	5.38	4.370
220W, 1000N	0-1.5	0.31	99.69	4.99	6.04	2.600
	1.5-3.5	1.49	98.51	3.61	4.31	6.330
240W, 1000N	0-1.5	0.14	99.86	5.71	7.21	3.225
	1.5-3.5	0.85	99.15	6.12	3.72	6.425

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	Sample Depth(m)	wt% of +1000u	wt% of -1000u	wt% Slime	wt% of Heavy Mineral	Total wt of A.R.(Kg)
260W, 1000N	0-1.5	0.27	99.73	0.93	5.52	4.700
	1.5-3.5	0.63	99.37	5.61	40.84	6.525
280W, 1000N	0-1.5	0.35	99.65	1.39	13.85	3.150
	1.5-3.5	0.25	99.75	5.27	28.98	6.410
	3.5-5.5	0.18	99.82	9.70	6.12	5.325
	5.5-6.5	1.76	98.24	36.56	1.43	2.720
300W, 1000N	0-1.5	0.15	99.85	4.26	6.80	5.625
	1.5-3.5	1.92	98.08	12.01	4.18	5.455
320W, 1000N	0-1.5	0.41	99.59	1.61	1.97	4.470
	1.5-3.5	0.79	99.21	8.41	2.70	6.375

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RHF

Laboratory Services

711359

278

33 Nelson St,
P.O. Box 5,
Smithton 7330
Ph. 52 1982

A Division of Circular Head Dolomite & Trading Co. Pty. Ltd.
(Incorporated in Tasmania)

23rd May, 1988

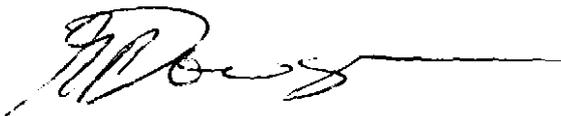
Peter Stitt & Associate Pty. Ltd.,
5th Floor King York House,
32 York Street,
SYDNEY. N.S.W. 2000

Dear Sir,

Please find enclosed raw data documentation for the continuation of the
Naracoopa Survey.

Yours faithfully,

For RHF LABORATORY



G.P. Dowson,
MANAGER.

348

RAW DATA DOCUMENTATION FOR HEAVY MINERAL SEPARATION

711360

Sample Grid Co-Ordinates	Sample Depth (m)	wt% of +1000u	wt% of -1000u	wt% of Slime	wt% of Heavy Mineral	Total wt of A.R. (Kg)
00 600N	0-1.5	0.22	99.78	1.31	18.45	6.820
	1.5-3.5	0.01	99.99	1.13	2.98	7.910
	3.5-5.5	0.66	99.34	1.56	1.95	8.680
	5.5-7.5	1.73	98.27	0.72	0.96	10.050
	7.5-9.5	3.40	96.60	0.70	1.08	11.865
00E 700N	9.5-10.5	4.66	95.34	3.52	0.78	6.670
	0-1.5	0.05	99.95	0.86	22.34	6.805
	1.5-3.5	0.12	99.88	0.62	26.60	6.550
	3.5-5.5	0.06	99.94	0.82	6.06	5.900
	5.5-7.5	1.18	98.82	2.34	3.26	5.895
02E 700N	0-1.5	0.08	99.92	2.57	8.05	5.000
	1.5-3.5	0.04	99.96	0.66	6.49	5.395
	3.5-5.5	0.04	99.96	1.78	0.61	8.975
	5.5-7.5	0.19	99.81	3.23	0.85	8.540
	7.5-8.5	4.85	95.15	6.37	0.64	2.805
06E 700N	0-1.5	0.16	99.84	1.14	9.21	4.700
	1.5-3.5	0.02	99.98	1.29	2.09	6.220
	3.5-5.5	0.01	99.99	1.51	0.98	8.095
	5.5-7.5	0.30	99.70	2.67	0.90	9.555
	7.5-8.5	6.58	93.42	1.72	0.84	4.100
08E 700N	0-1.5	0.38	99.62	1.48	1.35	7.200
	1.5-3.5	0.03	99.97	1.79	0.55	5.975
	3.5-5.5	0.03	99.97	4.73	0.84	7.315
	5.5-7.5	3.89	96.11	1.89	0.53	8.585
	7.5-8.5	0.33	99.67	3.06	3.47	2.350
10E 700N	1.5-3.5	0.02	99.98	2.16	0.58	7.375
	3.5-5.5	0.00	100.00	1.96	0.65	8.400
	5.5-7.5	0.53	99.47	1.35	0.50	9.550
	7.5-8.2	6.50	93.50	5.26	1.06	2.700
	0-1.5	0.22	99.78	1.47	0.79	5.170
12W 700N	1.5-3.5	1.85	98.15	1.07	0.47	6.78
	3.5-5.5	0.72	99.28	2.85	0.18	8.860
	5.5-7.0	2.18	97.82	3.94	0.95	6.050
	0-1.5	0.11	99.89	2.00	0.81	5.125
	1.5-3.5	0.05	99.95	1.68	0.38	7.020
14W 700N	3.5-5.5	0.46	99.54	2.31	0.43	8.950
	5.5-6.5	3.32	96.68	1.91	0.99	5.510
	0-1.5	0.48	99.52	8.18	1.76	1.960
	1.5-3.5	0.01	99.99	3.69	0.80	5.380
	3.5-5.5	0.20	99.80	3.26	0.87	9.720
16W 700N	5.5-6.5	5.90	94.10	1.58	3.46	5.930
	0-1.5	0.39	99.61	3.55	4.05	4.460
	1.5-3.5	0.00	100.00	1.35	2.18	5.350
	3.5-5.5	0.04	99.96	1.9	0.67	9.185
	5.5-7.0	3.79	96.21	1.63	1.64	7.260
18W 700N	0-1.5	0.17	99.83	0.82	4.18	6.825
	1.5-3.5	0.01	99.99	2.08	3.67	5.240
	3.5-5.5	0.02	99.98	2.32	7.30	7.305
	5.5-7.5	2.89	97.11	1.63	5.72	8.110
	0-1.5	0.27	99.73	1.02	4.45	5.96
20W 700N	1.5-3.5	0.15	99.85	0.64	4.95	6.265
	3.5-5.5	1.01	98.99	1.10	2.97	7.570
	5.5-7.0	1.68	98.32	6.76	2.85	3.935
	0-1.5	1.16	98.84	1.45	6.73	6.625
	1.5-3.5	1.10	98.90	0.80	8.53	8.085
22W 700N	3.5-5.5	0.34	99.66	0.92	2.74	5.855
	5.5-7.5	0.67	99.33	1.83	4.29	7.690
	7.5-8.5	1.78	98.22	3.72	5.48	4.325

-Page 2-

RAW DATA DOCUMENTATION FOR HEAVY MINERAL SEPARATION

Hole Grid Co-Ordinates	Sample Depth (m)	wt% of +1000U	wt% of -1000u	wt% of Slime	wt% of Heavy Mineral	Total wt of A.R. (Kg)	
220W 700N	0-1.5	0.50	99.50	0.93	4.07	5.275	
	1.5-3.5	0.17	99.83	1.05	12.66	6.620	
	3.5-5.5	1.24	98.76	0.61	8.01	7.675	
	5.5-7.5	0.74	99.26	0.85	2.64	7.645	
	7.5-9.5	1.07	98.93	3.32	3.39	5.565	
	9.5-10.5	0.26	99.74	1.90	4.19	6.330	
240W 700N	0-1.5	1.20	98.80	1.05	4.95	6.000	
	1.5-3.5	1.13	98.87	0.75	3.53	6.185	
	3.5-5.5	0.32	99.68	0.93	14.26	7.655	
	5.5-7.5	1.58	98.42	1.08	7.61	8.020	
	7.5-9.5	1.33	98.67	2.48	4.96	7.245	
	9.5-11.5	0.55	99.45	4.46	5.72	3.460	
260W 700N	0-1.5	1.21	98.79	1.12	3.70	5.255	
	1.5-3.5	0.31	99.69	0.90	2.25	6.355	
	3.5-5.5	0.41	99.59	0.74	12.54	8.125	
	5.5-7.5	0.39	99.61	1.35	4.90	7.690	
	7.5-9.5	1.98	98.02	1.98	6.25	7.565	
	9.5-10.5	4.35	95.65	13.79	4.48	1.800	
280W 700N	0-1.5	0.23	99.77	1.06	2.98	6.100	
	1.5-3.5	0.13	99.87	0.81	5.39	6.085	
	3.5-5.5	0.25	99.75	1.05	22.35	7.405	
	5.5-7.5	1.01	98.99	5.31	11.49	5.265	
	7.5-8.5	0.32	99.68	4.36	8.20	3.015	
	9.5-10.5	0.27	99.73	0.60	3.94	3.515	
300W 700N	1.5-3.5	0.18	99.82	1.71	5.05	4.735	
	3.5-5.5	0.17	99.83	2.86	6.61	6.255	
	5.5-7.5	0.79	99.21	7.16	5.17	4.340	
	9.5-11.5	10.06	89.94	3.77	2.83	8.530	
	320W 700N	0-1.5	1.80	98.20	4.53	3.52	1.250
		1.5-3.5	0.20	99.80	3.87	8.51	6.830
3.5-5.5		1.12	98.88	7.11	3.63	7.740	
5.5-6.5		2.35	97.65	13.42	3.32	2.920	
8.5-11.5		5.50	94.50	3.30	3.12	11.265	
11.5-12.0		18.10	81.90	6.52	1.57	2.925	
000 1000N (45)	0-1.5	0.03	99.97	1.82	2.79	5.225	
	1.5-3.5	0.07	99.93	2.38	1.78	5.280	
	3.5-5.5	0.22	99.78	2.62	1.02	8.440	
	5.5-6.5	9.72	90.28	2.31	1.13	5.200	
	80W 1000N	0-1.5	0.18	99.82	1.01	3.28	4.920
		1.5-3.5	0.08	99.92	1.42	2.91	7.785
3.5-5.5		0.74	99.26	8.21	0.88	3.960	
5.5-7.5		3.59	96.41	10.27	1.42	1.610	
7.5-8.0		6.73	93.27	5.71	2.74	1.745	
9.5-10.5		0.26	99.74	7.09	1.03	2.295	
140W 1000N	1.5-3.5	0.75	99.25	3.03	1.21	2.325	
	3.5-5.5	4.04	95.96	12.81	1.94	8.780	
	180W 1000N	0-1.5	0.65	99.35	10.19	2.11	1.925
1.5-3.5		2.50	97.50	4.57	1.51	7.845	
3.5-4.0		5.38	94.62	10.42	3.06	1.355	

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RAW DATA DOCUMENTATION FOR HEAVY MINERAL SEPARATION

Sample Grid Co-Ordinates	Sample Depth (m)	wt% of +1000u	wt% of -1000u	wt% of Slime	wt% of Heavy Mineral	Total wt of A.R. (Kg)
600N	0-1.5	0.22	99.78	1.31	18.45	6.820
	1.5-3.5	0.01	99.99	1.13	2.98	7.910
	3.5-5.5	0.66	99.34	1.56	1.95	8.680
	5.5-7.5	1.73	98.27	0.72	0.96	10.050
	7.5-9.5	3.40	96.60	0.70	1.08	11.865
700E 700N	9.5-10.5	4.66	95.34	3.52	0.78	6.670
	0-1.5	0.05	99.95	0.86	22.34	6.805
	1.5-3.5	0.12	99.88	0.62	26.60	6.550
	3.5-5.5	0.06	99.94	0.82	6.06	5.900
	5.5-7.5	1.18	98.82	2.34	3.26	5.895
700E 700N	0-1.5	0.08	99.92	2.57	8.05	5.000
	1.5-3.5	0.04	99.96	0.66	6.49	5.395
	3.5-5.5	0.04	99.96	1.78	0.61	8.975
	5.5-7.5	0.19	99.81	3.23	0.85	8.540
	7.5-8.5	4.85	95.15	6.37	0.64	2.805
700E 700N	0-1.5	0.16	99.84	1.14	9.21	4.700
	1.5-3.5	0.02	99.98	1.29	2.09	6.220
	3.5-5.5	0.01	99.99	1.51	0.98	8.095
	5.5-7.5	0.30	99.70	2.67	0.90	9.555
	7.5-8.5	6.58	93.42	1.72	0.84	4.100
700E 700N	0-1.5	0.38	99.62	1.48	1.35	7.200
	1.5-3.5	0.03	99.97	1.79	0.55	5.975
	3.5-5.5	0.03	99.97	4.73	0.84	7.315
	5.5-7.5	3.89	96.11	1.89	0.53	8.585
	7.5-8.5	0.33	99.67	3.06	3.47	2.350
700E 700N	1.5-3.5	0.02	99.98	2.16	0.58	7.375
	3.5-5.5	0.00	100.00	1.96	0.65	8.400
	5.5-7.5	0.53	99.47	1.35	0.50	9.550
	7.5-8.2	6.50	93.50	5.26	1.06	2.700
	700W 700N	0-1.5	0.22	99.78	1.47	0.79
1.5-3.5		1.85	98.15	1.07	0.47	6.78
3.5-5.5		0.72	99.28	2.85	0.18	8.860
5.5-7.0		2.18	97.82	3.94	0.95	6.050
700W 700N		0-1.5	0.11	99.89	2.00	0.81
	1.5-3.5	0.05	99.95	1.68	0.38	7.020
	3.5-5.5	0.46	99.54	2.31	0.43	8.950
	5.5-6.5	3.32	96.68	1.91	0.99	5.510
	700W 700N	0-1.5	0.48	99.52	8.18	1.76
1.5-3.5		0.01	99.99	3.69	0.80	5.380
3.5-5.5		0.20	99.80	3.26	0.87	9.720
5.5-6.5		5.90	94.10	1.58	3.46	5.930
700W 700N		0-1.5	0.39	99.61	3.55	4.05
	1.5-3.5	0.00	100.00	1.35	2.18	5.350
	3.5-5.5	0.04	99.96	1.9	0.67	9.185
	5.5-7.0	3.79	96.21	1.63	1.64	7.260
	700W 700N	0-1.5	0.17	99.83	0.82	4.18
1.5-3.5		0.01	99.99	2.08	3.67	5.240
3.5-5.5		0.02	99.98	2.32	7.30	7.305
5.5-7.5		2.89	97.11	1.63	5.72	8.110
700W 700N		0-1.5	0.27	99.73	1.02	4.45
	1.5-3.5	0.15	99.85	0.64	4.95	6.265
	3.5-5.5	1.01	98.99	1.10	2.97	7.570
	5.5-7.0	1.68	98.32	6.76	2.85	3.935
	700W 700N	0-1.5	1.16	98.84	1.45	6.73
1.5-3.5		1.10	98.90	0.80	8.53	8.085
3.5-5.5		0.34	99.66	0.92	2.74	5.855
5.5-7.5		0.67	99.33	1.83	4.29	7.690
7.5-8.5		1.78	98.22	3.72	5.48	4.325

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-Page 2-

RAW DATA DOCUMENTATION FOR HEAVY MINERAL SEPARATION

Hole Grid Co-Ordinates	Sample Depth (m)	wt% of +1000u	wt% of -1000u	wt% of Slime	wt% of Heavy Mineral	Total wt of A.R. (Kg)
220W 700N	0-1.5	0.50	99.50	0.93	4.07	5.275
	1.5-3.5	0.17	99.83	1.05	12.66	6.620
	3.5-5.5	1.24	98.76	0.61	8.01	7.675
	5.5-7.5	0.74	99.26	0.85	2.64	7.645
	7.5-9.5	1.07	98.93	3.32	3.39	5.565
240W 700N	9.5-10.5	0.26	99.74	1.90	4.19	6.330
	0-1.5	1.20	98.80	1.05	4.95	6.000
	1.5-3.5	1.13	98.87	0.75	3.53	6.185
	3.5-5.5	0.32	99.68	0.93	14.26	7.655
	5.5-7.5	1.58	98.42	1.08	7.61	8.020
260W 700N	7.5-9.5	1.33	98.67	2.48	4.96	7.245
	9.5-11.5	0.55	99.45	4.46	5.72	3.460
	0-1.5	1.21	98.79	1.12	3.70	5.255
	1.5-3.5	0.31	99.69	0.90	2.25	6.355
	3.5-5.5	0.41	99.59	0.74	12.54	8.125
280W 700N	5.5-7.5	0.39	99.61	1.35	4.90	7.690
	7.5-9.5	1.98	98.02	1.98	6.25	7.565
	9.5-10.5	4.35	95.65	13.79	4.48	1.800
	0-1.5	0.23	99.77	1.06	2.98	6.100
	1.5-3.5	0.13	99.87	0.81	5.39	6.085
300W 700N	3.5-5.5	0.25	99.75	1.05	22.35	7.405
	5.5-7.5	1.01	98.99	5.31	11.49	5.265
	7.5-8.5	0.32	99.68	4.36	8.20	3.015
	0-1.5	0.27	99.73	0.60	3.94	3.515
	1.5-3.5	0.18	99.82	1.71	5.05	4.735
320W 700N	3.5-5.5	0.17	99.83	2.86	6.61	6.255
	5.5-7.5	0.79	99.21	7.16	5.17	4.340
	9.5-11.5	10.06	89.94	3.77	2.83	8.530
	0-1.5	1.80	98.20	4.53	3.52	1.250
	1.5-3.5	0.20	99.80	3.87	8.51	6.830
340W 700N	3.5-5.5	1.12	98.88	7.11	3.63	7.740
	5.5-6.5	2.35	97.65	13.42	3.32	2.920
	8.5-11.5	5.50	94.50	3.30	3.12	11.265
	11.5-12.0	18.10	81.90	6.52	1.57	2.925
	0-1.5	0.03	99.97	1.82	2.79	5.225
360W 1000N (4S)	1.5-3.5	0.07	99.93	2.38	1.78	5.280
	3.5-5.5	0.22	99.78	2.62	1.02	8.440
	5.5-6.5	9.72	90.28	2.31	1.13	5.200
	0-1.5	0.18	99.82	1.01	3.28	4.920
380W 1000N	1.5-3.5	0.08	99.92	1.42	2.91	7.785
	3.5-5.5	0.74	99.26	8.21	0.88	3.960
	5.5-7.5	3.59	96.41	10.27	1.42	1.610
	7.5-8.0	6.73	93.27	5.71	2.74	1.745
	0-1.5	0.26	99.74	7.09	1.03	2.295
400W 1000N	1.5-3.5	0.75	99.25	3.03	1.21	2.325
	3.5-5.5	4.04	95.96	12.81	1.94	8.780
	0-1.5	0.65	99.35	10.19	2.11	1.925
420W 1000N	1.5-3.5	2.50	97.50	4.57	1.51	7.845
	3.5-4.0	5.38	94.62	10.42	3.06	1.355



RHF 352
Laboratory Services

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33 Nelson St,
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A Division of Circular Head Dolomite & Trading Co. Pty. Ltd.
(Incorporated in Tasmania)

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1st June, 1988

Peter Stitt & Associates Pty. Ltd.,
5th Floor King York House,
32 York Street,
SYDNEY. N.S.W. 2000

Dear Sir,

Please find enclosed a corrected copy of the raw data documentation for the continuation of the Naracoopa Survey.

Yours faithfully,

For RHF LABORATORY

G.P. Dowson
MANAGER.

Per: T. Billing

Hole No.	Hole Depth	Total wt.Kg	wt% Slime	wt% +1000u	wt% -1000u	wt% 282 Heavy Mineral
100E 100N (4S)	0-1.5	4.12	0.88	0.01	99.99	3.58
	1.5-3.5	5.20	3.17	0.02	99.98	10.44
	3.5-5.5	3.37	1.69	0.14	99.86	20.25
	5.5-7.5	7.53	2.78	7.39	92.61	9.61
	7.5-9.5	5.41	17.22	5.65	94.35	1.81
120E 100N	9.5-10.5	0.62	53.60	19.60	80.40	0.82
	0-1.5	1.81	2.08	0.20	99.80	5.51
	1.5-3.5	4.31	2.26	0.86	99.14	12.51
	3.5-5.5	4.38	7.33	3.45	96.55	7.02
	5.5-7.5	5.02	8.20	1.48	98.52	9.95
140W 300N	0-1.5	4.37	2.77	0.12	99.88	8.15
	1.5-3.5	7.53	1.14	0.13	99.87	9.02
	3.5-5.5	7.58	0.80	0.13	99.87	6.86
	5.5-7.5	7.90	1.22	0.09	99.91	10.95
	7.5-9.5	6.63	1.30	0.42	99.58	6.52
	9.5-11.5	6.60	1.33	0.43	99.57	8.39
120W 300N	11.5-13.5	8.35	1.55	0.24	99.76	7.72
	13.5-14.5	2.46	6.14	1.26	98.74	4.02
	0-1.5	4.49	3.37	1.05	98.95	14.76
	1.5-3.5	5.93	1.00	0.12	99.88	10.79
	3.5-5.5	6.40	0.78	0.22	99.78	6.14
	5.5-7.5	7.69	0.72	0.12	99.88	8.64
100W 300N	7.5-9.5	7.29	1.40	0.14	99.86	4.45
	9.5-11.5	6.96	1.54	0.57	99.43	7.50
	11.5-13.5	8.60	1.48	0.43	99.57	6.54
	13.5-14.0	1.29	5.95	7.07	92.93	5.69
	0-1.5	5.16	2.50	0.27	99.73	7.15
	1.5-3.5	7.72	1.13	0.14	99.86	11.50
80W 300N	3.5-5.5	7.18	1.03	0.15	99.85	7.83
	5.5-7.5	7.88	1.53	0.11	99.89	5.93
	7.5-9.5	8.65	2.16	0.17	99.83	5.05
	9.5-11.5	8.80	2.25	0.55	99.45	10.37
	11.5-13.0	4.87	1.62	0.49	99.51	5.36
	0-1.5	5.75	1.80	0.21	99.79	11.25
60W 300N	1.5-3.5	7.01	0.68	0.27	99.73	8.72
	3.5-5.5	8.97	0.72	0.10	99.90	42.17
	5.5-7.5	7.71	4.40	0.05	99.95	7.11
	7.5-9.5	8.95	3.36	0.06	99.94	11.73
	9.5-11.5	6.47	2.41	1.33	98.67	6.06
	1.5-3.5	5.08	4.35	0.27	99.73	1.29
40W 300N	3.5-5.5	9.68	4.01	0.03	99.97	3.52
	5.5-7.5	8.83	1.51	0.01	99.99	6.25
	7.5-9.5	5.69	3.55	0.43	99.57	2.93
	9.5-10.5	2.85	10.69	2.42	97.58	12.57
	0-1.5	6.44	2.70	0.34	99.66	7.73
	1.5-3.5	8.22	1.22	0.03	99.97	2.16
40E 300N	3.5-5.5	9.23	1.04	0.01	99.99	1.82
	5.5-7.5	9.72	1.62	0.00	100.00	1.21
	7.5-9.5	8.32	2.20	0.63	99.37	0.98
	9.5-10.0	1.59	12.12	10.54	89.46	6.39
	0-1.5	5.70	2.44	1.40	98.60	5.61
	1.5-3.5	8.00	4.84	3.98	96.02	7.03
100E 300N	3.5-4.75	1.89	28.78	7.21	92.79	2.79
	0-2.5	3.30	17.53	1.17	98.83	3.61
	0-1.5	3.30	5.14	1.83	98.17	16.62
	1.5-3.5	6.14	4.72	0.25	99.75	2.46
	3.5-5.5	7.80	3.63	0.06	99.94	2.47
	5.5-7.5	7.15	3.35	5.44	94.56	1.62
80E 500N	7.5-9.5	7.46	22.20	10.63	89.37	0.47
	9.5-11.5	5.85	1.53	6.16	93.84	0.26
	11.5-13.5	5.64	7.80	5.88	94.12	0.13
	0-1.5	5.98	1.07	0.07	99.93	19.29
	1.5-3.5	7.75	1.47	0.09	99.91	4.26
	60W 300N	0-1.5	8.03	2.57	0.54	99.47

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Hole No.	Hole Depth m	Total wt.Kg	wt% Slime	wt% +1000u	wt% -1000u	wt% Heavy Mineral	
20E 500N Cont.	3.5-5.5	7.80	1.14	0.07	99.93	3.10	
	5.5-7.5	8.13	1.20	0.97	99.03	1.58	
	7.5-9.5	8.57	1.76	3.57	96.43	0.74	
000 500N	9.5-11.5	8.99	4.21	5.86	94.14	0.99	
	0-1.5	6.38	1.69	0.38	99.62	55.02	
	1.5-3.5	3.56	9.40	0.53	99.47	6.76	
	3.5-5.5	8.39	2.44	0.11	99.89	2.94	
	5.5-7.5	8.41	0.92	0.37	99.63	1.60	
	7.5-9.5	8.53	1.76	2.22	97.78	0.46	
	9.5-11.5	7.64	1.91	3.86	96.14	0.82	
20W 500N	11.5-13.5	4.92	5.94	3.22	96.78	1.24	
	0-1.5	3.70	3.26	1.69	98.31	80.08	
	1.5-3.5	9.72	1.69	0.30	99.70	90.27	
	3.5-5.5	6.55	1.86	0.18	99.82	63.85	
	5.5-7.5	7.21	6.45	0.97	99.03	10.17	
	7.5-9.5	7.14	0.77	0.22	99.78	0.74	
	9.5-11.5	7.17	1.26	0.59	99.41	1.01	
	11.5-13.5	7.56	1.00	1.58	98.42	0.79	
	13.5-15.0	2.14	19.41	8.67	91.33	1.50	
	40W 500N	0-1.5	3.51	0.79	0.03	99.97	94.30
1.5-3.5		10.88	0.60	0.02	99.98	96.04	
3.5-5.5		10.45	0.42	0.00	100.00	98.56	
5.5-7.5		9.11	1.11	0.05	99.95	14.68	
7.5-9.5		7.30	0.90	0.02	99.98	1.42	
9.5-11.5		8.17	1.02	0.01	99.99	0.97	
11.5-13.5		9.91	1.64	0.40	99.60	0.82	
13.5-15.5		7.13	1.21	1.91	98.09	0.86	
300W 600N		0-1.5	6.11	1.09	0.19	99.81	4.38
		1.5-3.5	6.15	0.92	0.07	99.93	6.25
	3.5-5.5	7.18	0.65	0.71	99.29	5.47	
	5.5-7.5	7.73	1.39	0.91	99.09	3.16	
	7.5-9.5	6.06	2.70	0.90	99.10	4.45	
	240W 600N	0-1.5	4.66	2.06	0.17	99.83	7.57
1.5-3.5		7.07	0.77	0.77	99.23	7.03	
3.5-5.5		6.94	0.92	0.61	99.39	8.19	
5.5-7.5		7.95	0.66	0.95	99.05	14.71	
7.5-9.5		6.23	1.56	0.81	99.19	3.90	
9.5-11.5		6.26	1.14	0.24	99.76	12.42	
11.5-13.5		8.52	3.16	0.27	99.73	8.82	
13.5-14.5		3.88	11.59	2.18	97.82	3.63	
20E 600N		0-1.5	4.15	2.14	0.11	99.89	8.67
		1.5-3.5	6.33	2.78	0.07	99.93	9.62
	3.5-5.5	7.98	2.91	0.06	99.94	2.34	
	5.5-7.5	9.65	2.74	0.13	99.87	2.08	
	7.5-9.5	5.05	3.07	1.20	98.80	1.48	
	9.5-10.5	3.75	8.07	8.75	91.25	1.54	
40E 600N	0-1.5	5.64	1.53	0.09	99.91	18.22	
	1.5-3.5	5.90	1.33	0.26	99.74	13.22	
	3.5-5.5	7.57	1.40	0.00	100.00	5.12	
	5.5-7.5	6.13	4.42	0.12	99.88	7.50	
	7.5-9.5	9.45	2.43	0.00	100.00	2.04	
	9.5-11.5	7.52	3.40	1.58	98.42	1.83	
000 700N	0-1.5	4.24	3.96	0.22	99.78	1.08	
	1.5-3.5	7.05	1.48	0.01	99.99	0.58	
	3.5-5.5	8.52	2.39	0.04	99.96	1.12	
	5.5-7.5	8.73	1.70	2.15	97.85	0.91	
60E 1000N	0-1.5	5.43	0.52	0.13	99.87	1.87	
	1.5-3.5	6.42	0.77	0.00	100.00	1.32	
	3.5-5.5	8.31	3.51	0.18	99.82	0.75	
200W 1000N	5.5-7.0	5.68	9.0	3.25	96.75	0.55	
	0-1.5	1.49	7.05	2.31	97.69	1.28	
	1.5-3.5	7.04	4.18	1.41	98.59	3.54	

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711367

33 Nelson St,
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Ph. 52 1982

**RHF 355****Laboratory Services**

A Division of Circular Head Dolomite & Trading Co. Pty. Ltd.
(Incorporated in Tasmania)

8th June, 1988

Peter Stitt & Associate Pty. Ltd.,
5th Floor King York House,
32 York Street,
SYDNEY. N.S.W. 2000

Dear Sir,

Please find enclosed raw data documentation for the continuation of the Naracoopa Survey.

Yours faithfully,

For RHF LABORATORY



G.P. Dowson,
MANAGER.

356

Hole No.	Hole Depth m	Total wt. Kg.	wt% Slime	wt% +1000u	wt% -1000u	wt% Heavy Mineral
200W 300N	0-1.5	6.83	2.49	0.35	99.65	5.11
	1.5-3.5	6.97	1.75	0.38	99.62	7.10
	3.5-5.5	7.81	2.68	1.64	98.36	13.16
	5.5-6.0	1.45	6.79	5.46	94.54	10.32
180W 300N	0-1.5	4.85	2.55	0.53	99.47	6.61
	1.5-3.5	7.09	1.32	0.59	99.41	6.89
	3.5-5.5	7.59	1.13	0.37	99.63	7.06
	5.5-7.5	8.44	1.59	0.34	99.66	10.09
160W 300N	7.5-8.5	4.31	2.60	0.84	99.16	12.00
	0-1.5	4.78	4.00	0.36	99.64	9.30
	1.5-3.5	6.98	0.76	0.06	99.94	8.68
	3.5-5.5	7.57	0.91	0.35	99.65	14.62
	5.5-7.5	8.71	1.22	0.39	99.61	8.15
140W 300N	7.5-9.5	7.70	0.79	0.39	99.61	11.01
	9.5-11.5	7.05	2.01	1.01	98.99	9.87
	11.5-12.5	3.28	8.28	3.21	96.79	6.06
	0-1.5	6.38	1.14	0.08	99.92	4.31
	1.5-3.5	6.36	0.71	0.04	99.96	2.04
	3.5-5.5	9.68	1.22	0.00	100.00	0.93
120W 300N	5.5-7.5	7.73	2.21	0.01	99.99	1.13
	7.5-9.5	7.16	4.17	0.88	99.12	0.70
	9.5-10.0	1.81	22.73	14.46	95.54	5.87
	0-1.5	4.35	3.38	0.86	99.14	1.35
	1.5-3.5	7.69	2.84	2.99	97.01	1.55
100W 300N	3.5-5.5	4.82	11.74	7.94	92.06	2.92
	0-1.5	5.19	1.42	0.07	99.93	46.47
	1.5-3.5	6.34	2.34	0.18	99.82	5.27
	3.5-5.5	8.68	2.47	0.02	99.98	1.52
	5.5-7.5	7.90	3.07	0.01	99.99	2.02
	7.5-9.0	4.58	8.36	6.19	93.81	1.84
80W 300N	9.0-9.5	1.04	6.50	7.42	92.58	0.32
	9.5-11.5	6.29	4.18	3.51	96.49	1.21
	11.5-12.5	2.54	2.96	8.14	91.86	0.16
	12.5-13.5	2.37	30.81	7.15	92.85	1.28
	0-1.5	5.42	1.81	0.85	99.15	30.45
	1.5-3.5	7.44	2.47	0.49	99.51	3.44
	3.5-5.5	9.05	1.80	0.16	99.84	1.30
	5.5-7.5	8.36	2.29	0.10	99.90	1.08
60W 500N	7.5-9.5	8.51	1.67	0.05	99.95	2.13
	9.5-11.5	7.0	4.93	5.77	94.23	2.49
	0-1.5	8.99	0.86	0.16	99.84	94.50
	1.5-3.5	9.55	0.37	0.00	100.00	96.71
	3.5-5.5	11.59	0.42	0.00	100.00	94.84
	5.5-7.5	8.30	1.06	0.03	99.97	2.12
40W 500N	7.5-9.5	6.85	0.92	0.08	99.92	1.36
	9.5-11.5	7.63	0.81	0.01	99.99	1.39
	11.5-13.5	10.59	1.25	0.09	99.91	1.00
	13.5-15.5	7.74	2.39	2.16	97.84	1.24
	0-1.5	8.34	0.32	0.00	100.00	97.72
	1.5-3.5	7.36	0.35	0.13	99.87	85.71
	3.5-5.5	8.61	0.50	0.36	99.64	52.94
	5.5-7.5	8.63	1.36	0.38	99.62	4.08
20W 500N	7.5-9.5	6.11	1.61	0.52	99.48	2.65
	9.5-11.5	7.88	3.48	0.00	100.00	5.40
	11.5-13.5	7.10	1.59	1.43	98.57	3.80
	13.5-15.5	4.30	3.19	1.55	98.45	6.35
	0-1.5	3.79	0.62	0.00	100.00	97.08
	1.5-3.5	6.62	0.42	0.00	100.00	95.89
10W 500N	3.5-5.5	10.94	0.38	0.00	100.00	98.30
	5.5-7.5	10.21	2.96	1.69	98.31	40.17
	7.5-9.5	7.93	4.31	1.55	98.45	14.34
	9.5-10.5	2.19	16.32	6.27	93.73	3.01

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Hole No.	357 Hole Depth m	Total wt. Kg.	wt% Slime	wt% +1000u	wt% -1000u	wt% Heavy Mineral
160W 500N	0-1.5	9.61	0.74	0.05	99.95	94.52
	1.5-3.5	5.08	1.06	0.00	100.00	96.39
	3.5-5.5	8.12	1.21	0.16	99.84	84.26
	5.5-7.5	2.25	3.74	0.68	99.32	50.17
	7.5-9.5	2.55	3.39	0.58	99.42	33.72
180W 500N	9.5-11.0	2.75	11.91	3.57	96.43	13.33
	0-1.5	6.95	0.99	0.07	99.93	96.13
	1.5-3.5	7.38	8.97	1.42	98.58	54.13
	3.5-5.5	7.09	2.43	0.25	99.75	17.75
	5.5-7.5	3.94	2.38	0.47	99.53	47.38
260W 500N	7.5-9.5	2.24	3.12	0.65	99.35	21.93
	9.5-11.0	4.05	13.92	4.45	95.55	5.71
	0-1.5	6.38	0.93	0.14	99.86	10.23
	1.5-3.5	5.97	0.94	0.21	99.79	13.55
	3.5-5.5	7.97	1.25	0.30	99.70	9.75
280W 500N	5.5-7.5	9.72	1.69	0.95	99.05	4.75
	7.5-9.5	5.82	9.28	1.62	98.38	5.69
	0-1.5	6.10	1.12	0.28	99.72	13.56
	1.5-3.5	7.70	0.78	0.21	99.79	15.01
	3.5-5.5	7.73	1.34	0.67	99.33	10.64
300W 500N	5.5-7.5	10.29	1.30	0.09	99.91	6.48
	7.5-9.5	6.91	2.04	0.15	99.85	5.33
	0-1.5	4.81	1.99	0.21	99.79	12.39
	1.5-3.5	7.11	1.07	0.32	99.68	11.68
	3.5-5.5	8.98	1.54	0.09	99.91	7.63
360W 500N	5.5-7.5	6.48	1.22	0.13	99.87	7.12
	7.5-9.0	5.19	8.32	3.00	97.00	6.19
	0-1.5	5.68	2.69	0.35	99.65	6.43
	1.5-3.5	6.44	1.42	0.14	99.86	5.97
	3.5-5.5	7.44	0.97	0.24	99.76	7.69
360W 600N	5.5-7.5	8.15	1.07	0.08	99.92	9.45
	7.5-9.5	6.59	3.34	0.32	99.68	10.26
	9.5-11.5	3.16	32.4	8.32	91.68	5.92
	0-1.5	4.81	1.06	0.18	99.82	17.79
	1.5-3.5	6.41	1.77	0.63	99.37	7.96
280W 600N	3.5-5.5	2.43	19.20	3.42	96.58	4.38
	0-1.5	5.08	0.90	0.30	99.70	3.91
	1.5-3.5	7.02	0.89	0.01	99.99	6.46
	3.5-5.5	6.25	0.93	0.66	99.34	5.56
	5.5-7.5	6.46	0.92	0.63	99.37	4.24
220W 600N	7.5-9.5	6.99	0.64	0.35	99.65	8.76
	9.5-11.5	7.91	1.93	2.56	97.44	9.36
	0-1.5	5.85	0.67	0.12	99.88	6.42
	1.5-3.5	7.50	0.77	2.74	97.26	13.41
	3.5-5.5	6.48	0.83	1.75	98.25	11.01
200W 600N	5.5-7.5	9.20	1.30	0.93	99.07	6.87
	7.5-9.5	6.99	0.79	0.19	99.81	5.87
	9.5-11.5	5.50	1.40	0.40	99.60	7.31
	11.5-13.5	9.68	2.20	1.28	98.72	5.08
	13.5-15.5	5.54	14.19	4.81	95.19	2.61
180W 600N	0-1.5	4.78	1.19	0.17	99.83	12.92
	1.5-3.5	7.90	0.75	0.66	99.34	18.40
	3.5-5.5	8.00	0.72	1.05	98.95	14.55
	5.5-7.5	7.45	0.83	1.02	98.98	8.88
	7.5-9.5	7.02	0.79	0.95	99.05	6.34
180W 600N	9.5-11.5	6.88	1.32	0.17	99.83	3.35
	0-1.5	6.72	1.10	1.59	98.41	16.68
	1.5-3.5	6.07	0.92	2.24	97.76	5.82
	3.5-5.5	7.46	0.80	1.07	98.93	9.00
	5.5-7.5	7.26	0.90	0.25	99.75	17.52
	7.5-9.5	9.55	1.45	0.79	99.21	5.67

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Hole No.	Hole Depth m	Total wt. Kg.	wt% Slime	wt% +1000u	wt% -1000u	wt% Heavy Mineral
160W 600N	0-1.5	5.12	1.26	2.43	97.57	8.88
	1.5-3.5	6.86	0.73	3.77	96.23	11.70
	3.5-5.5	7.08	0.69	0.43	99.57	7.44
	5.5-7.5	6.04	3.08	0.42	99.58	3.58
	7.5-9.5	7.90	2.03	1.21	98.79	5.46
140W 600N	0-1.5	4.10	1.12	1.83	98.17	20.22
	1.5-3.5	7.25	0.65	1.75	98.25	15.37
	3.5-5.5	7.35	0.74	0.95	99.05	13.58
	5.5-7.5	9.00	1.01	0.33	99.67	4.94
	7.5-9.5	8.13	1.67	1.08	98.92	5.44
120W 600N	9.5-10.5	4.47	3.17	4.72	95.28	4.88
	0-1.5	6.96	0.91	0.45	99.55	8.23
	1.5-3.5	5.80	0.87	0.83	99.17	12.45
	3.5-5.5	7.12	1.18	0.36	99.64	12.11
	5.5-7.5	8.64	1.02	0.13	99.87	4.63
100W 600N	7.5-9.5	8.41	1.80	0.75	99.25	2.86
	9.5-11.0	5.51	2.19	6.01	93.99	5.34
	0-1.5	6.13	0.62	0.35	99.65	4.23
	1.5-3.5	6.35	0.60	0.43	99.57	5.46
	3.5-5.5	6.29	0.63	0.75	99.25	10.91
80W 600N	5.5-7.5	8.88	2.35	0.22	99.78	3.49
	7.5-9.5	7.03	1.76	1.21	98.79	2.32
	9.5-10.5	3.05	2.29	7.27	92.73	4.45
	0-1.5	3.68	3.21	0.62	99.38	10.22
	1.5-3.5	6.01	3.51	0.09	99.91	2.64
60W 600N	3.5-5.5	7.53	1.40	0.00	100.00	1.69
	5.5-7.5	7.16	4.07	0.22	99.78	2.94
	7.5-9.5	9.29	1.21	0.89	99.11	0.92
	9.5-11.5	4.74	2.61	2.60	97.40	2.30
	0-1.5	3.52	0.77	0.09	99.91	12.56
40W 600N	1.5-3.5	4.20	4.33	0.36	99.64	8.86
	3.5-5.5	7.59	1.59	0.03	99.97	2.39
	5.5-7.5	8.88	1.26	0.01	99.99	1.00
	7.5-9.5	8.36	3.58	0.35	99.65	0.64
	9.5-11.5	6.95	6.43	3.52	96.48	0.39
20W 600N	0-1.5	6.02	3.33	0.56	99.44	41.99
	1.5-3.5	7.44	1.57	0.03	99.97	10.58
	3.5-5.5	7.66	1.93	0.05	99.95	3.30
	5.5-7.5	8.26	3.15	0.09	99.91	0.95
	7.5-9.5	7.96	3.66	1.64	98.36	0.43
20W 600N	9.5-11.5	8.04	1.02	1.44	98.56	0.42
	0-1.5	6.20	0.89	0.08	99.92	23.20
	1.5-3.5	7.12	0.53	0.00	100.00	1.24
	3.5-5.5	6.86	0.52	0.38	99.62	0.59
	5.5-7.5	8.53	1.36	1.84	99.16	0.47
20W 600N	7.5-9.5	8.48	1.69	2.42	97.58	0.49
	9.5-11.0	2.43	4.70	5.13	94.87	1.33

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33 Nelson St,
P.O. Box 5,
Smithton 7330
Ph. 52 1982



RHF

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Laboratory Services

A Division of Circular Head Dolomite & Trading Co. Pty. Ltd.
(Incorporated in Tasmania)

17th June, 1988

Peter Stitt & Associate Pty. Ltd.,
5th Floor King York House,
32 York Street,
SYDNEY. N.S.W. 2000

Dear Sir,

Please find enclosed raw data documentation for the continuation of the Naracoopa Survey.

Yours faithfully,

For RHF LABORATORY

A handwritten signature in black ink, appearing to read 'G.P. Dowson', written in a cursive style.

G.P. Dowson,
MANAGER.

Coordinates	Hole Depth(m)	Total Wt. (Kg)	wt% Slime	wt% +1000u	wt% -1000u	289 wt% H.M.
500N	0-1.5	8.91	0.96	0.04	99.96	86.76
	1.5-3.5	6.91	0.49	0.00	100.00	97.64
	3.5-5.5	8.85	1.14	0.29	99.71	50.16
	5.5-7.5	8.22	0.45	0.01	99.99	1.79
	7.5-9.5	7.57	1.17	0.23	99.77	1.63
	9.5-11.5	7.78	2.33	0.02	99.98	2.93
	11.5-13.5	8.53	1.67	0.66	99.34	2.08
	13.5-15.5	7.31	4.69	3.06	96.94	2.83
	15.5-17.0	5.05	7.40	1.03	98.97	4.79
500N	0-1.5	4.92	2.14	0.15	99.85	75.52
	1.5-3.5	4.89	4.71	0.71	99.29	11.57
	3.5-5.5	7.99	1.98	0.02	99.98	3.54
	5.5-7.5	11.69	2.77	0.00	100.00	14.64
	7.5-9.5	8.72	2.01	2.55	97.45	3.62
	9.5-11.5	4.56	2.87	1.49	98.51	4.90
500N	0-1.5	5.86	1.29	0.38	99.62	11.18
	1.5-3.5	7.78	2.00	0.35	99.65	10.57
	3.5-5.5	7.28	0.77	0.40	99.60	9.18
	5.5-7.5	10.24	1.24	0.33	99.67	34.99
	7.5-9.5	1.07	2.71	0.69	99.31	63.06
	9.5-10.5	3.10	16.74	5.62	94.38	8.23
500N	0-1.5	3.10	0.83	0.17	99.83	12.92
	1.5-3.5	5.50	1.31	0.74	99.26	6.97
	3.5-5.5	6.35	2.19	1.55	98.45	8.62
	5.5-7.5	10.12	2.64	0.21	99.79	8.65
	7.5-8.5	3.16	4.35	1.08	98.92	4.61
500N	0-1.5	5.10	1.53	0.25	99.75	9.99
	1.5-3.5	8.03	1.27	0.25	99.75	7.26
	3.5-5.5	6.28	1.17	0.15	99.85	7.95
	5.5-7.5	9.85	1.32	0.18	99.82	6.56
	7.5-8.5	4.48	8.38	3.06	96.94	8.10
600N	0-1.5	4.56	1.54	0.13	99.87	17.92
	1.5-3.5	5.97	6.24	1.50	98.50	6.34
	3.5-5.5	2.92	4.93	0.95	99.05	6.49
	5.5-7.5	7.23	7.53	4.14	95.86	6.02
	7.5-9.5	7.82	12.40	2.22	97.78	6.38
	9.5-11.5	5.29	11.08	7.35	92.65	2.95
1000N	0-1.5	6.38	4.46	0.31	99.69	2.73
	1.5-3.5	5.33	4.98	0.37	99.63	3.90
1000N	0-1.5	4.68	3.97	0.54	99.46	2.09
	1.5-3.5	4.86	5.31	0.23	99.77	3.92
1000N	0-1.5	4.01	1.12	0.21	99.79	2.32
	1.5-3.5	4.56	6.33	0.51	99.49	1.82
	3.5-4.0	1.33	9.24	2.17	97.83	1.77
1200N	0-1.5	4.38	2.91	0.17	99.83	2.18
	1.5-3.5	6.25	2.53	0.05	99.95	0.91
	3.5-5.5	10.05	1.88	0.47	99.53	1.03
	5.5-7.5	7.40	4.16	3.06	96.94	1.64
1200N	0-1.5	4.25	2.73	1.95	98.05	5.82
	1.5-3.5	6.88	4.14	0.19	99.81	3.69
	3.5-5.5	10.98	3.61	0.29	99.71	6.97
	5.5-7.5	5.19	8.96	3.15	96.85	2.20
1200N	0-1.5	4.53	4.91	0.97	99.03	18.98
	1.5-3.5	7.68	5.12	2.33	97.67	5.43
	3.5-5.5	8.51	4.78	0.78	99.22	2.65
	5.5-7.5	5.51	7.38	3.07	96.93	1.34
	7.5-8.5	5.05	13.40	5.63	94.37	1.12
1200N	0-1.5	5.10	5.00	0.65	99.35	6.71
	1.5-3.5	3.60	8.27	7.12	92.87	1.74
	3.5-5.5	7.43	4.15	4.40	95.60	1.42
	5.5-7.5	7.61	7.79	3.07	96.93	1.23
1200N	0-1.5	3.53	3.53	2.40	97.60	3.00
	1.5-3.5	5.50	5.62	2.09	97.91	0.56
	3.5-5.5	5.95	3.81	6.93	93.07	1.31
	5.5-6.5	5.36	6.91	15.83	84.17	1.15

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Co-ordinates	Hole Depth(m)	Total wt. (Kg)	wt% Slime	wt% +1000u	wt% -1000u	wt% H.M.
40W 1400N	0-1.5	5.45	1.33	0.87	99.13	1.18
	1.5-3.5	6.39	0.56	0.47	99.53	0.81
	3.5-5.5	9.05	2.32	1.88	98.12	0.72
	5.5-7.5	8.89	2.41	9.74	90.26	0.28
	7.5-9.5	6.15	4.13	4.94	95.06	0.25
100W 1400N	0-1.5	2.80	2.89	0.20	99.80	0.26
	1.5-3.5	5.73	0.72	0.03	99.07	0.23
	3.5-5.5	8.64	3.20	1.59	98.41	0.23
	5.5-6.25	2.84	2.85	6.63	93.37	0.52
200W 1400N	0-1.5	3.95	1.88	0.76	99.24	0.62
	1.5-3.5	6.90	3.10	0.18	99.82	0.91
	3.5-5.5	8.24	3.71	0.42	99.58	1.10
	5.5-7.5	9.85	1.38	0.77	99.23	1.18
	7.5-8.5	1.68	12.25	4.21	95.79	1.40
320W 1400N	0-1.5	3.90	5.89	1.09	98.91	7.79
	1.5-3.5	6.85	5.33	1.10	98.90	7.70
	3.5-5.5	6.70	8.15	0.49	99.51	1.84
	5.5-7.5	7.41	6.41	1.65	98.35	2.16
	7.5-9.5	5.13	20.23	11.34	88.66	1.20
12	0-1.5	5.13	0.83	0.16	99.84	0.49
	1.5-3.5	7.12	0.72	0.03	99.97	0.89
	3.5-5.5	8.69	5.10	0.21	99.79	0.34
	5.5-6.5	4.00	8.90	3.19	96.81	0.44
16	0-1.5	5.97	0.81	0.05	99.95	0.54
	1.5-3.5	6.84	0.57	0.03	99.97	0.43
	3.5-5.5	6.80	3.02	0.53	99.47	0.70
	5.5-7.5	8.93	8.84	1.66	98.34	1.02
TR24	0-1.5	5.33	1.55	0.02	99.98	0.65
	1.5-3.5	6.80	1.67	0.01	99.99	0.59
	3.5-5.5	7.87	5.78	0.94	99.06	1.03
	5.5-6.5	2.90	6.47	1.92	98.08	0.86
TR28	0-1.5	3.25	2.23	0.38	99.62	0.69
	1.5-3.5	6.40	2.05	0.09	99.91	0.58
	3.5-5.5	8.64	5.68	0.47	99.53	1.27
	5.5-7.5	1.69	14.65	4.91	95.09	2.85
	7.5-9.5	4.26	12.76	1.51	98.49	5.06
	9.5-11.5	5.26	15.20	0.40	99.60	6.17
TR45	11.5-13.0	7.68	16.80	5.47	94.53	2.51
	0-1.5	6.30	1.32	0.15	99.85	0.65
	1.5-3.5	5.19	1.05	0.01	99.99	5.10
	3.5-5.5	8.93	1.39	0.09	99.91	2.90
	5.5-7.5	9.40	1.59	0.00	100.00	0.62
	7.5-9.5	6.78	4.05	0.34	99.66	1.56
	9.5-11.5	3.74	6.08	0.35	99.65	0.42
	11.5-13.5	6.89	6.63	3.14	96.86	2.38
	13.5-15.5	4.96	15.87	5.05	94.95	1.12

Hole No.	Hole Depth m	Total wt. Kg.	wt% Slime	wt% +1000u	wt% -1000u	wt% Heavy Mineral
80E 100N	0-1.5	5.65	1.41	0.32	99.68	8.30
	1.5-3.5	5.50	3.50	0.45	99.55	10.44
	3.5-5.5	9.50	2.69	0.24	99.76	21.54
	5.5-7.5	8.53	1.43	1.63	98.37	2.44
	7.5-9.5	7.60	3.12	1.32	98.68	4.65
60E 100N	9.5-10.5	3.80	4.64	0.96	99.04	2.17
	0-1.5	4.10	3.05	0.55	99.45	3.41
	1.5-3.5	6.77	1.30	0.10	99.90	3.47
	3.5-5.5	8.65	3.58	0.39	99.61	2.31
	5.5-7.5	8.32	2.68	0.54	99.46	1.71
40E 100N	7.5-9.5	8.10	3.60	1.58	98.42	3.18
	9.5-10.5	4.75	4.24	0.31	99.69	2.20
	0-1.5	4.67	4.15	0.31	99.69	6.23
	1.5-3.5	6.94	1.26	0.15	99.85	2.52
	3.5-5.5	9.17	2.17	0.28	99.72	2.10
20E 100N	5.5-7.5	8.58	2.28	0.63	99.37	0.69
	7.5-9.5	6.74	3.35	2.41	97.59	2.61
	9.5-11.0	5.08	6.88	1.72	98.28	1.96
	0-1.5	3.11	2.87	0.58	99.42	9.09
	1.5-3.5	5.63	2.16	0.16	99.84	2.97
000 100N	3.5-5.5	7.14	1.75	0.35	99.65	1.17
	5.5-7.5	9.28	2.03	0.06	99.94	2.93
	7.5-9.5	5.86	5.77	3.68	96.32	4.05
	0-1.5	4.45	0.46	0.11	99.89	4.76
	1.5-3.5	5.96	0.75	0.10	99.90	4.95
20W 100N	3.5-5.5	8.69	1.36	0.13	99.87	3.69
	5.5-7.5	7.75	3.16	0.06	99.94	4.74
	7.5-9.5	9.83	3.13	1.91	98.09	5.11
	9.5-10.0	4.80	3.87	2.53	97.47	27.57
	0-1.5	5.39	0.72	0.68	99.32	5.92
40W 100N	1.5-3.5	6.55	1.05	0.37	99.63	3.61
	3.5-5.5	5.64	0.76	0.06	99.94	5.73
	5.5-7.5	7.77	0.60	0.10	99.90	5.85
	7.5-9.5	7.62	1.06	0.19	99.81	3.16
	9.5-11.0	5.20	5.26	1.19	98.81	22.97
60W 100N	0-1.5	6.40	1.07	0.64	99.36	11.79
	1.5-3.5	5.20	1.19	0.37	99.63	2.94
	3.5-5.5	7.83	0.81	0.13	99.87	4.22
	5.5-7.5	7.63	1.08	0.08	99.92	5.93
	7.5-9.5	4.54	9.74	1.65	98.35	5.28
80W 100N	0-1.5	5.99	1.40	0.38	99.62	12.04
	1.5-3.5	6.30	0.76	0.11	99.89	5.44
	3.5-5.5	7.22	0.87	0.40	99.60	2.78
	5.5-7.5		1.43	0.41	99.59	4.10
	7.5-9.0	5.44	7.33	4.09	95.91	4.79
100W 100N	0-1.5		2.33	0.14	99.86	11.67
	1.5-3.5	6.40	0.72	0.20	99.80	5.63
	3.5-5.5	8.04	5.06	1.63	98.37	5.47
120W 100N	0-1.5	4.46	1.52	0.25	99.75	10.07
	1.5-3.5	8.25	0.87	0.62	99.38	4.48
120E 300N	0-1.5	3.78	2.15	1.55	98.45	4.92
	0-1.5	2.40	5.97	0.97	99.03	12.68
	1.5-3.5					
180E 100N	3.5-4.0					
	0-1.5	2.30	31.0	4.92	95.08	8.26
160E 100N	0-1.5	4.45	7.72	1.86	98.14	5.87
	1.5-2.0	0.71	23.35	10.69	89.31	2.46
140E 100N	0-0.4	0.85	1.90	0.34	99.66	6.19
220W 300N	0-1.5	4.16	2.53	0.38	99.62	6.53
	1.5-3.5	2.23	6.50	4.42	95.58	5.10
	3.5-5.5	2.00	37.84	11.13	88.87	6.73
	5.5-6.0					

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Hole No.	Hole Depth m	Total wt. Kg.	wt% Slime	wt% +1000u	wt% -1000u	wt% Heavy Mineral
240W 300N	0-1.5	4.96	2.22	0.89	99.11	6.89
	1.5-3.5	6.93	3.97	1.94	98.06	54.63
	3.5-5.5	4.45	23.95	6.26	93.74	10.07
	5.5-6.0					
220W 500N	0-1.5					
	1.5-3.5	6.68	0.69	0.12	99.88	9.18
	3.5-5.5	7.20	0.75	0.78	99.22	7.26
	5.5-7.5	8.74	2.59	0.46	99.54	5.64
	7.5-9.5	6.37	6.45	1.75	98.25	7.03
240W 500N	9.5-10.5	2.61	10.64	2.16	97.84	3.87
	0-1.5	5.57	1.09	0.42	99.58	13.31
	1.5-3.5	6.05	1.11	0.75	99.25	8.31
	3.5-5.5	8.61	1.41	0.27	99.73	10.43
	5.5-7.5	8.06	2.33	0.32	99.68	8.08
60E 600N	7.5-9.5	5.47	7.55	4.08	95.92	12.08
	0-1.5					
	1.5-3.5					
	3.5-5.5					
	5.5-7.5	9.50	2.28	0.04	99.96	1.71
260W 600N	7.5-9.5	6.03	7.21	4.28	95.72	1.40
	0-1.5	6.01	1.45	0.35	99.65	4.31
	1.5-3.5	5.73	0.88	0.12	99.88	10.20
	3.5-5.5	6.96	0.69	0.34	99.66	6.02
	5.5-7.5	7.75	1.12	0.55	99.45	5.47
320W 600N	7.5-9.5	6.53	0.73	0.38	99.62	14.48
	9.5-11.5	7.21	1.12	0.20	99.80	7.37
	11.5-13.5	8.75	3.88	0.78	99.22	6.36
	13.5-14.5	5.32	4.62	0.08	99.92	5.19
	0-1.5	6.29	0.93	0.16	99.84	3.75
	1.5-3.5	6.65	0.79	0.19	99.81	5.38
380W 600N	3.5-5.5	6.39	1.42	1.01	98.99	7.66
	5.5-7.5	5.17	10.51	2.47	97.53	4.33
	0-1.5	5.13	2.55	0.16	99.84	11.97
	1.5-3.5	7.96	1.20	0.12	99.88	6.83
420W 1000N	3.5-4.0	2.84	28.48	1.43	98.57	4.12
	0-1.5	4.56	2.94	0.20	99.80	1.84
	1.5-3.5	5.79	6.17	1.20	98.80	2.28
440W 1000N	0-1.5	4.08	1.75	0.12	99.88	1.87
	1.5-3.5	6.15	5.72	0.36	99.64	2.73
	3.5-5.5	5.76	2.51	2.22	97.78	1.67
	5.5-7.0	5.62	3.74	4.77	95.23	0.94
460W 1000N	0-1.5	6.10	5.67	1.60	98.40	1.89
	1.5-3.5	4.15	8.77	1.22	98.78	2.40
	3.5-5.5	4.97	14.63	5.86	94.14	1.59
	5.5-6.5	2.75	30.48	18.12	81.88	0.93
480W 1000N	0-1.5	4.17	5.78	0.80	99.20	1.86
	1.5-3.5	8.15	11.92	3.89	96.11	1.99
	3.5-5.5	3.47	0.90	0.30	99.70	1.39
	5.5-7.5	5.17	6.18	4.95	95.05	1.99
500W 1000N	0-1.5	6.33	8.03	0.51	99.49	1.70
	1.5-2.0	3.50	19.43	7.38	92.62	1.90
	4.5-5.5	4.85	1.88	0.31	99.69	1.77
	5.5-7.5	6.94	6.50	6.61	93.39	1.97
520W 1000N	0-1.5	3.67	13.15	8.11	91.89	1.60
	1.5-3.5					
	3.5-5.5	5.81	10.63	4.44	95.56	1.11
	5.5-6.0	2.96	13.10	14.94	85.06	0.97
540W 1000N	0-1.5	4.75	4.34	0.24	99.76	2.21
	1.5-2.5	2.32	46.28	15.72	84.28	0.68
	0-1.5	2.96	5.77	1.26	98.74	1.18
20E 1200N	1.5-3.5	5.71	4.43	1.22	98.78	0.66
	3.5-5.5	8.60	9.32	11.43	88.57	1.49

Hole No.	Hole Depth m	Total wt. Kg.	wt% Slime	wt% +1000u	wt% -1000u	wt% Heavy Mineral
000 1200N	0-1.5	4.78	1.04	0.10	99.90	0.66
	1.5-3.5	6.85	3.55	0.39	99.61	0.49
	3.5-5.5	8.85	3.63	0.32	99.68	0.71
	5.5-6.5	5.51	2.56	9.37	90.63	0.90
20W 1200N	0-1.5	4.34	1.93	0.20	99.80	1.08
	1.5-3.5	8.85	3.40	0.17	99.83	0.99
	3.5-5.5	9.02	2.18	0.03	99.97	1.86
	5.5-7.5	3.50	2.59	5.14	94.86	0.58
40W 1200N	0-1.5	5.33	1.99	0.35	99.65	1.42
	1.5-3.5	7.20	0.52	1.63	98.37	0.32
	3.5-5.5	8.54	2.63	1.10	98.90	0.49
	5.5-7.5	9.46	2.47	6.94	93.06	0.45
60W 1200N	0-1.5	4.70	1.13	0.08	99.92	1.31
	1.5-3.5	7.48	0.58	0.15	99.85	0.34
	3.5-5.5	8.45	0.98	2.38	97.62	0.22
	5.5-7.5	8.53	3.05	4.58	95.42	0.38
80W 1200N	0-1.5	9.27	1.60	1.29	98.71	0.28
	1.5-3.5	7.41	0.55	0.31	99.69	0.33
	3.5-5.5	5.08	1.76	0.18	99.82	0.43
	5.5-6.5	5.30	3.47	6.11	93.89	1.42
100W 1200N	0-1.5	2.00	7.53	1.47	98.53	1.34
	1.5-3.5	2.15	4.78	0.73	99.27	1.55
	3.5-5.5	3.76	2.02	0.58	99.42	0.78
	5.5-6.5	2.50	1.30	1.06	98.94	0.93
120W 1200N	6.5-9.5					
	9.5-11.5	2.15	4.93	0.47	99.53	0.77
	0-1.5	4.43	6.77	0.64	99.36	1.30
	1.5-3.5	6.25	4.70	0.25	99.75	0.82
140W 1200N	3.5-5.5	7.90	3.62	0.96	99.04	0.25
	5.5-7.5	6.46	6.22	5.36	94.64	1.86
	0-1.5	2.52	5.32	0.48	99.52	0.43
	1.5-3.5	7.46	1.53	0.04	99.96	0.69
160W 1200N	3.5-5.5	8.44	2.57	0.28	99.72	0.64
	5.5-7.5	10.15	1.99	4.19	95.81	3.09
	0-1.5	3.60	8.30	0.18	99.82	1.41
	1.5-3.5	5.67	5.20	0.07	99.93	1.21
200W 1200N	3.5-5.5	9.40	3.03	0.13	99.87	0.79
	5.5-7.5	8.11	3.61	4.54	95.46	1.32
	7.5-8.0	2.41	16.97	5.34	94.66	1.34
	0-1.5	2.20	6.72	1.36	98.64	1.69
220W 1200N	1.5-3.5	7.02	3.06	0.38	99.62	1.13
	3.5-5.5	10.45	3.38	0.96	99.04	1.20
	5.5-7.0	9.26	3.02	2.05	97.95	1.75
	0-1.5	4.12	3.25	0.48	99.52	4.15
240W 1200N	1.5-3.5	7.18	2.58	0.05	99.95	1.94
	3.5-5.5	9.76	2.13	0.84	99.16	2.79
	5.5-7.5	8.00	4.83	1.83	98.17	3.08
	0-1.5	4.93	2.20	0.21	99.79	5.74
280W 1200N	1.5-3.5	7.85	2.28	0.02	99.98	3.27
	3.5-5.5	9.38	1.46	0.28	99.72	4.82
	5.5-7.5	7.96	7.77	4.86	95.14	1.76
	0-1.5	5.55	2.26	0.64	99.36	6.50
360W 1200N	1.5-3.5	6.98	3.06	0.19	99.81	10.63
	3.5-5.5	6.71	3.37	0.56	99.44	8.84
	5.5-7.5	6.84	10.11	5.74	94.26	1.77
	0-1.5	2.84	1.49	0.68	99.32	1.07
20E 1400N	1.5-3.5	6.50	6.79	0.41	99.59	0.24
	3.5-5.5	7.16	6.41	2.88	97.12	1.81
	0-1.5	4.40	1.47	0.12	99.88	0.53
	1.5-3.5	6.26	0.94	0.02	99.98	0.43
	3.5-5.5	6.98	3.17	0.09	99.91	0.34
	5.5-7.5	7.90	2.18	0.04	99.96	0.77
	7.5-9.5	8.07	2.91	4.92	95.08	0.38
				6.54	93.46	1.24

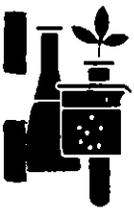
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Hole No.	Hole Depth m	Total wt. Kg.	wt% Slime	wt% +1000u	wt% -1000u	wt% Heavy Mineral
000 1400N	0-1.5	6.03	1.35	0.33	99.67	0.41
	1.5-3.5	6.40	0.62	0.03	99.97	0.42
	3.5-5.5	7.40	3.02	0.37	99.63	0.53
	5.5-7.5	8.05	4.43	0.17	99.83	0.92
	7.5-9.5	8.79	2.10	11.52	88.48	0.57
20W 1400N	9.5-11.5	6.41	4.64	2.30	97.70	1.24
	11.5-12.0	1.18	21.17	4.79	95.21	1.33
	0-1.5	4.54	1.27	0.14	99.86	0.74
	1.5-3.5	6.86	0.58	0.01	99.99	0.58
	3.5-5.5	7.78	2.57	0.03	99.97	0.92
60W 1400N	5.5-7.5	7.75	2.18	0.06	99.94	1.64
	7.5-9.5	6.11	2.19	11.97	88.03	0.42
	9.5-11.5	5.09	4.43	9.84	90.16	0.55
	0-1.5	3.23	2.18	0.47	99.53	0.46
	1.5-3.5	6.80	2.44	0.29	99.71	0.50
80W 1400N	3.5-5.5	9.43	2.25	0.38	99.62	0.77
	5.5-7.5	11.08	2.11	1.81	98.19	0.33
	0-1.5	2.01	4.46	0.66	99.34	0.13
	1.5-3.5	6.50	1.14	0.36	99.64	0.41
	3.5-5.5	8.50	2.66	5.15	94.85	0.12
120W 1400N	5.5-7.5	4.35	1.12	7.96	92.04	0.67
	0-1.5	2.01	21.51	3.26	96.74	0.43
	1.5-3.5	0.30	13.56	2.94	97.06	0.40
	3.5-5.5	2.10	6.52	0.60	99.40	0.45
	5.5-6.5	4.74	3.14	6.49	93.51	0.90
140W 1400N	0-1.5	1.24	5.06	0.99	99.01	0.32
	1.5-3.5	6.96	4.77	0.51	99.49	0.57
	3.5-5.5	9.50	2.52	0.06	99.94	1.01
	5.5-7.5	7.14	3.23	0.61	99.39	0.50
	7.5-9.5	4.05	2.60	3.49	96.51	0.68
160W 1400N	0-1.5	4.75	1.25	0.15	99.85	0.60
	1.5-3.5	6.70	1.08	0.02	99.98	0.71
	3.5-5.5	8.68	1.28	0.06	99.94	0.64
	5.5-7.5	5.80	3.57	0.31	99.69	2.23
	7.5-9.5	7.50	5.07	3.25	96.75	0.69
180W 1400N	0-1.5	5.49	1.36	0.69	99.31	1.99
	1.5-3.5	6.62	2.57	0.12	99.88	1.47
	3.5-5.5	9.61	1.72	0.00	100.00	0.76
	5.5-7.5	8.70	2.75	0.33	99.67	0.87
	7.5-9.5	7.50	2.86	5.78	94.22	2.32
200W 1400N	0-1.5	4.80	2.84	1.77	98.23	1.06
	1.5-3.5	6.88	2.93	1.44	98.56	1.02
	3.5-5.5	9.30	4.45	0.92	99.08	0.93
	5.5-7.5	11.88	3.15	1.70	98.30	0.68
	7.5-9.5	5.20	7.62	4.19	95.81	2.55
240W 1400N	0-1.5	3.88	4.45	0.59	99.41	1.59
	1.5-3.5	6.51	5.67	1.94	98.06	2.94
	3.5-5.5	10.53	3.05	1.30	98.70	4.06
	5.5-7.5	8.95	2.04	1.27	98.73	4.44
	7.5-9.5	5.40	10.84	12.21	87.79	1.95
260W 1400N	0-1.5	5.45	0.97	0.13	99.87	5.02
	1.5-3.5	6.80	1.85	0.06	99.94	5.82
	3.5-5.5	9.70	1.33	0.06	99.94	4.05
	5.5-7.5	7.53	2.59	3.26	96.74	4.27
	7.5-9.5	5.48	12.69	6.26	93.74	1.43
280W 1400N	9.5-11.5	5.58	21.61	8.84	91.16	1.43
	0-1.5	4.73	2.64	0.36	99.64	5.35
	1.5-3.5	6.93	3.77	0.03	99.97	6.49
	3.5-5.5	8.24	3.61	0.15	99.85	8.36
	5.5-7.5	7.35	3.97	2.96	97.04	2.62
	7.5-9.5	8.55	14.18	6.11	93.89	1.38
	9.5-11.5	3.25	18.65	6.15	93.85	2.38

Hole No.	Hole Depth m	Total wt. Kg.	wt% Slime	wt% +1000u	wt% -1000u	wt% Heavy Mineral
300W 1400N	0-1.5	2.85	5.51	2.37	97.63	5.81
	1.5-3.5	3.60	5.91	0.51	99.49	8.13
	3.5-5.5	2.20	7.85	1.35	98.65	2.62
	5.5-7.5	7.45	4.51	3.70	96.30	2.10
	7.5-9.5	6.10	9.24	6.09	93.91	1.69
340W 1400N	9.5-10.5	5.55	21.16	9.01	90.99	1.20
	0-1.5	5.13	2.85	0.37	99.63	13.76
	1.5-3.5	6.15	3.87	0.24	99.76	3.92
	3.5-5.5	5.55	5.99	0.20	99.80	1.09
	5.5-7.5	5.30	7.28	4.74	95.26	2.00
360W 1400N	7.5-9.5	4.85	33.88	14.18	85.82	1.41
	0-1.5	2.35	4.46	1.24	98.76	3.71
	1.5-3.5	6.15	4.78	0.38	99.62	0.82
	3.5-5.5	6.50	6.00	0.61	99.39	0.56
	5.5-7.5	4.49	17.44	8.81	91.19	2.69
TR0	0-1.5	5.75	1.00	0.21	99.79	1.01
	1.5-3.5	7.05	3.10	0.85	99.15	0.99
	3.5-5.5	4.93	11.71	0.35	99.65	0.72
	5.5-7.5	4.92	4.79	0.16	99.84	0.41
	7.5-9.5	8.10	2.41	0.62	99.38	0.44
TR4	9.5-11.5	2.63	10.27	9.00	91.00	0.99
	0-1.5	6.00	0.86	0.06	99.94	0.64
	1.5-3.5	6.05	1.19	0.00	100.00	1.58
	3.5-5.5	6.08	18.77	1.67	98.33	1.31
	5.5-7.5	5.67	2.10	0.02	99.98	0.48
TR8	1.5-3.5	8.10	1.83	0.05	99.95	0.59
	3.5-5.0	2.65	5.40	1.54	98.46	0.47
	5.5-7.5	4.50	2.32	0.05	99.95	0.57
TR20	0-1.5	4.50	2.32	0.05	99.95	0.57
	1.5-3.5	6.36	1.22	0.05	99.94	0.43
	3.5-5.5	6.75	4.45	0.45	99.55	1.03
TR32	5.5-6.5	3.62	20.05	1.10	98.90	0.77
	0-1.5	5.45	1.28	0.21	99.79	0.49
	1.5-3.5	5.05	1.01	0.40	99.60	0.55
	3.5-5.5	7.30	8.14	0.16	99.84	4.02
	5.5-7.5	7.88	2.22	1.11	98.89	7.57
TR36	7.5-9.5	5.46	8.54	1.13	98.87	3.74
	9.5-11.5	4.28	5.70	0.26	99.74	0.85
	11.5-13.5	5.93	6.14	6.71	93.29	2.25
	13.5-14.5	2.21	37.84	8.62	91.38	1.53
	0-1.5	5.75	1.28	0.14	99.86	0.69
TR40	1.5-3.5	6.43	0.50	0.00	100.00	0.52
	3.5-5.5	7.65	3.36	0.01	99.99	2.35
	5.5-7.5	7.82	3.81	0.28	99.72	2.42
	7.5-9.5	5.54	9.93	0.06	99.94	0.88
	9.5-11.5	4.31	8.48	1.02	98.98	0.75
TR40	11.5-13.5	5.16	10.55	4.54	95.46	2.02
	0-1.5	5.04	2.12	0.45	99.55	0.71
	1.5-3.5	6.81	2.89	0.51	99.49	0.99
	3.5-5.5	5.88	3.10	0.29	99.71	0.95
	5.5-7.5	6.20	7.26	0.09	99.91	0.62
TR40	7.5-9.5	3.61	6.57	0.23	99.77	0.37
	9.5-11.5	5.58	7.61	2.36	97.64	1.11
	11.5-13.5	4.27	15.45	6.71	93.29	1.16
	13.5-14.5	8.47	20.66	6.77	93.23	2.01



RHF 367
Laboratory Services

711379 296

33 Nelson St,
 P.O. Box 5,
 Smithton 7330
 Ph. 52 1982

A Division of Circular Head Dolomite & Trading Co. Pty. Ltd.
 (Incorporated in Tasmania)

7th July, 1988

Peter Stitt & Associate Pty. Ltd.,
 5th Floor King York House,
 32 York Street,
 SYDNEY. N.S.W. 2000
 ATTENTION: G. LEE

Dear Sir,

Results of those missing samples from the Naracoopa Survey found:-

Hole No.	Hole Depth m	wt% Slime	wt% +1000u	wt% -1000u	wt% Heavy Mineral
100E 700N	7.5-9.5	9.41	2.71	97.29	4.69
220W 500N	0-1.5	1.38	0.38	99.62	13.99
240W 500N	0-1.5	0.59	0.27	99.73	10.28

Please discard H.M. Sample plus results previously recorded as 240W 500N 0-1.5.

These results were previously faxed to you, but excluded from the typed list.

380W 1000N	0-1.5	9.25	0.46	99.54	2.58
	1.5-3.5	5.56	0.20	99.80	2.53
	3.5-4.5	5.27	1.00	99.00	2.13

An Account for these samples will be forwarded later.

Yours faithfully,

For RHF LABORATORY

C. Schrank

C. Schrank.

APPENDIX 4

Mineralogical Results - Applied Petrographic Services

HEAVY MINERAL BULK COMPOSITES: NARACOOPA, KING ISLAND, TASMANIASample 1

100N 220E 0 - 2.8m.
 100N 240E 0 - 0.25m.
 300N 180E 0 - 4.0m.
 300N 200E 0 - 3.0m.

Sample 2

500N 180E 0 - 1.4m.
 500N 160E 0 - 2.2m.
 600N 160E 0 - 1.5m.
 700N 160E 0 - 1.3m.
 700N 140E 0 - 2.3m.

Sample 3

100N 200E 0 - 2.4m.
 300N 160E 0 - 2.3m.
 500N 140E 0 - 2.8m.

Sample 4

1400N 120E 0 - 1.5m.
 1400N 100E 0 - 3.0m.
 1200N 120E 0 - 2.2m.
 1000N 120E 0 - 1.7m.
 1000N 140E 0 - 1.0m.

Sample 5

1400N 80E 0 - 3.9m.
 1400N 60E 0 - 2.9m.
 1200N 60E 0 - 3.0m.
 1200N 80E 0 - 4.2m.
 1200N 100E 0 - 3.0m.
 1000N 80E 0 - 3.6m.
 1000N 100E 0 - 6.0m.

Sample 6

700N 80W 0 - 1.5m.
 700N 100W 0 - 3.5m.
 700N 120W 0 - 8.0m.
 700N 140W 0 - 7.5m.
 700N 160W 0 - 7.0m.
 700N 180W 0 - 8.0m.
 700N 200W 0 - 8.5m.

Sample 7

700N 220W 0 - 10.5m.
 700N 240W 0 - 11.5m.
 700N 260W 0 - 10.25m.
 700N 280W 0 - 8.5m.
 700N 300W 0 - 7.5m.
 700N 320W 0 - 6.5m.

Sample 8 500 - Line

000 0 - 1.5m.
 20W 0 - 5.5m.
 40W 0 - 5.5m.
 60W 0 - 5.5m.
 80W 0 - 5.5m.
 100W 0 - 5.5m.
 120W 0 - 1.5m.

Sample 9 500 - Line

80W 5.5 - 17.0m.
 100W 5.5 - 15.5m.
 120W 1.5 - 11.5m.

Sample 10 500 - Line

120E 0 - 3.0m.
 100E 0 - 4.0m.
 80E 0 - 7.5m.
 60E 0 - 9.0m.
 40E 0 - 11.5m.
 20E 0 - 7.5m.

Sample 11 300 - Line

00 0 - 2.0m.
 20W 0 - 10.0m.
 40W 0 - 10.0m.
 60W 0 - 10.5m.

Sample 12 300N - Line

80W 0 - 11.5m.
 100W 0 - 13.0m.
 120W 0 - 14.0m.
 140W 0 - 14.5m.

Sample 13 100N - Line

140W 0 - 2.7m.
 120W 0 - 1.5m.
 100W 0 - 3.6m.
 80W 0 - 5.5m.
 60W 0 - 9.0m.
 40W 0 - 9.0m.
 20W 0 - 11.0m.
 000 0 - 10.0m.

Sample 14 100N - Line

20E 0 - 9.0m.
 40E 0 - 11.0m.
 60E 0 - 10.5m.
 80E 0 - 10.5m.
 100E 0 - 8.5m.
 120E 0 - 7.5m.
 140E 0 - 0.4m.
 160E 0 - 2.0m.
 180E 0 - 1.5m.

370

Sample 15 300N - Line

20E	0 - 1.5m.
40E	0 - 4.75
60E	0 - 2.3m.
80E	0 - 4.8m.
100E	0 - 4.75m.
120E	0 - 5.5m.

Sample 16 300 - Line

160W	0 - 12.5m.
180W	0 - 8.5m.
200W	0 - 6.0m.
220W	0 - 5.5m.
240W	0 - 5.0m.

Sample 17 500N - Line

140W	0 - 10.5m.
160W	0 - 11.0m.
180W	0 - 11.0m.
200W	0 - 10.5m.

Sample 18 500N - Line

220W	0 - 10.0m.
240W	0 - 9.5m.
260W	0 - 9.5m.
280W	0 - 9.5m.

Sample 19 500N - Line

300W	0 - 9.0m.
320W	0 - 8.5m.
340W	0 - 8.5m.
360W	0 - 11.0m.
380W	0 - 8.0m.

Sample 20 600N - Line

140E	0 - 6.0m.	
120E	0 - 10.0m.	
100E	0 - ?) Samples missing
80E	0 - ?	
60E	0 - ?	
40E	0 - 11.5m.	
20E	0 - 10.5m.	
000	0 - 5.5m.	

Sample 21 600N - Line

20W	0 - 1.5m.
40W	0 - 5.5m.
60W	0 - 5.5m.
80W	0 - 11.5m.
100W	0 - 10.5m.
120W	0 - 11.0m.

Sample 22 600N - Line

140W	0 - 10.5m.
160W	0 - 9.5m.
180W	0 - 9.5m.
200W	0 - 11.5m.
220W	0 - 15.5m.
240W	0 - 14.5m.

Sample 23 600N - Line

260W	0 - 14.5m.
280W	0 - 11.5m.
300W	0 - 9.5m.
320W	0 - 7.5m.
340W	0 - 11.25m.
360W	0 - 4.0m.
380W	0 - 4.0m.

Sample 24 1000N - Line

60E	0 - 1.5m.
40E	0 - 1.5m.
20E	0 - 1.5m.
000	0 - 1.5m.
20W	0 - 3.5m.
40W	0 - 3.5m.
60W	0 - 1.5m.
80W	0 - 3.5m.

Sample 26 1000N - Line

420W	0 - 3.5m.
440W	0 - 5.5m.
460W	0 - 5.5m.
480W	0 - 3.5m.
500W	0 - 1.5m.
520W	0 - 1.5m.
540W	0 - 1.5m.

Sample 27 1200N - Line

180W	0 - 1.5m.
200W	0 - 1.5m.
220W	0 - 7.5m.
240W	0 - 7.5m.
260W	0 - 7.5m.
280W	0 - 7.5m.
300W	0 - 5.5m.
320W	0 - 3.5m.
340W	0 - 1.5m.

Sample 28 1400N - Line

240W	0 - 9.5m.
260W	0 - 7.5m.
280W	0 - 7.5m.
300W	0 - 7.5m.
320W	0 - 5.5m.
340W	0 - 3.5m.
360W	0 - 1.5m.

Sample 29 Tip Road

TR-28	0 - 13.0m.
TR-32	0 - 14.5m.
TR-36	0 - 7.5m.
TR-40	0 - 7.5m.
TR-45	0 - 7.5m.

Sample 30 700N Line

120E	0 - 8.0m.
100E	0 - 9.5m.
80E	0 - 3.5m.
60E	0 - 3.5m.

372

711384 301

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
Strawberry Hills
Sydney, N.S.W. 2012

Phone: (02) 516 4808

APS REPORT NOS.: M121, M125, M126, M128

DATE: 24.7.88

CLIENT: PETER H. STITT & ASSOCIATES PTY LTD
5TH FLOOR
KING YORK HOUSE
32, YORK STREET
SYDNEY, N.S.W. 2000

SAMPLE DETAILS: NARACOOPA, KING ISLAND HEAVY MINERALS
SAMPLES 1 - 17, 19, 21 - 29

RESULTS FOR: MAGNETIC SEPARATION AND PCINT COUNTS OF HEAVY MINERALS

373

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
Strawberry Hills
Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 1.7.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND

JOB NO.: APS M 121

SAMPLE 1
100M 220E 0 - 2.8m
100N 240E 0 - 0.25m
300N 180E 0 - 4.0m
300N 200E 0 - 3.0m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100	-	-	-	-
ILMENITE	33	-	72	62	-	-
LEUCOX. ILMENITE	-	-	-	-	6	-
IRON OXIDES	-	-	-	-	-	-
CHROMITE	-	-	-	-	-	-
GARNET	10	-	28	18	2	-
TOURMALINE	25	-	-	10	66	10
STAUROLITE	6	-	-	4	16	-
EPIDOTE	2	-	-	2	4	-
ROCK FRAGMENTS	-	-	-	-	-	-
ALUMINO-SILICATES	3	-	-	-	-	12
OTHER SILICATES	3	-	-	4	6	<1
RUTILE	8	-	-	-	-	34
LEUCOXENE	1	-	-	-	-	6
ZIRCON	8	-	-	-	<1	34
QUARTZ	1	-	-	-	-	3
PYRITE	-	-	-	-	-	-
CORUNDUM	-	-	-	-	-	-
SPINEL	<1	-	-	-	<1	1
APATITE	-	-	-	-	-	-
MONAZITE	<1	-	-	-	-	<1
SCHEELITE	<1	-	-	-	-	<1
CASSITERITE						
WEIGHT	7.3170g	0.0117g	0.9422g	2.6156g	2.0796g	1.6677g
%	100%	0.2%	12.9%	35.7%	28.4%	22.8%
NO. OF POINTS			545	542	578	507

374

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
Strawberry Hills
Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 1.7.88

JOB NO.: APS M 121

SAMPLE DETAILS: NARACOOPA, KING ISLAND
SAMPLE 2

500N 180E 0 - 1.4m
500N 160E 0 - 2.2m
600N 160E 0 - 1.5m
700N 160E 0 - 1.3m
700N 140E 0 - 2.3m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100	-	-	-	-
ILMENITE	32	-	79	54	-	-
LEUCOX. ILMENITE	-	-	-	-	9	-
IRON OXIDES	-	-	-	-	-	-
CHROMITE	-	-	-	-	-	-
GARNET	11	-	21	23	<1	-
TOURMALINE	25	-	-	8	67	11
STAUROLITE	5	-	<1	5	14	-
EPIDOTE	6	-	-	6	4	-
ROCKS FRAGMENTS	-	-	-	-	-	-
ALUMINO-SILICATES	3	-	-	-	<1	14
OTHER SILICATES	3	-	<1	4	6	1
RUTILE	7	-	-	-	-	33
LEUCOXENE	2	-	-	-	-	10
ZIRCON	6	-	-	-	-	29
QUARTZ	<1	-	-	-	-	1
PYRITE	-	-	-	-	-	-
CORUNDUM	-	-	-	-	-	-
SPINEL	<1	-	-	-	<1	1
APATITE	-	-	-	-	-	-
MONAZITE	<1	-	-	-	-	<1
SCHEELITE	-	-	-	-	-	-
CASSITERITE	-	-	-	-	-	-
WEIGHT	11.378g	0.0178g	1.4924g	4.0590g	3.3382g	2.4706g
%	100%	0.2%	13.1%	35.7%	29.3%	21.7%
NO. OF POINTS			548	521	526	504

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
Strawberry Hills
Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 1.7.88

JOB NO.: APS M 121

SAMPLE DETAILS: NARACOOPA, KING ISLAND
SAMPLE 3

100N 200E 0 - 2.4m
300N 160E 0 - 2.3m
500N 140E 0 - 2.8m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100	-	-	-	-
ILMENITE	37	-	68	62	10	-
LEUCOX. ILMENITE	-	-	-	-	-	-
IRON OXIDES	-	-	-	-	-	-
CHROMITE	-	-	-	-	-	-
GARNET	10	-	32	12	3	-
TOURMALINE	19	-	-	13	69	4
STAUROLITE	5	-	-	9	8	-
EPIDOTE	2	-	-	3	4	-
ROCK FRAGMENTS	-	-	-	-	-	12
ALUMINO-SILICATES	3	-	-	1	5	-
OTHER SILICATES	1	-	-	-	-	33
RUTILE	9	-	-	-	-	6
LEUCOXENE	2	-	-	-	<1	43
ZIRCON	11	-	-	-	-	2
QUARTZ	1	-	-	-	-	-
PYRITE	-	-	-	-	-	-
CORUNDUM	-	-	-	-	1	-
SPINEL	<1	-	-	-	-	-
APATITE	-	-	-	-	-	<1
MONAZITE	<1	-	-	-	-	-
SCHEELITE	-	-	-	-	-	-
CASSITERITE	-	-	-	-	-	-
WEIGHT	22.1881g	0.025g	3.3408g	8.9534g	3.9624g	5.9065g
%	100%	0.1%	15.1%	40.4%	17.8%	26.6%
NO. OF POINTS			502	544	556	591

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
Strawberry Hills
Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 1.7.88

JOB NO.: APSM 121

SAMPLE DETAILS: NARACOOPA, KING ISLAND
SAMPLE 4

	1400N	120E	D - 1.5m				
	1400N	100E	D - 3.0m				
	1200N	120E	D - 2.2m				
	1000N	120E	D - 1.7m				
	1000N	140E	D - 1.0m				
	TOTAL		HAND	0.5A	0.9A	1.2A	1.2A
			MAGS	MAGS	MAGS	MAGS	NON MAGS
MAGNETITE	<1	100	-	-	-	-	-
ILMENITE	29	-	87	43	6	-	-
LEUCOX. ILMENITE	-	-	-	-	-	-	-
IRON OXIDES	-	-	-	-	-	-	-
CHROMITE	-	-	-	-	-	-	-
GARNET	6	-	13	10	2	-	-
TOURMALINE	31	-	-	27	76	9	-
STAUROLITE	5	-	<1	10	4	-	-
EPIDOTE	2	-	<1	5	1	-	-
ROCK FRAGMENTS	-	-	-	-	-	-	-
ALUMINO-SILICATES	4	-	-	-	2	13	-
OTHER SILICATES	4	-	<1	5	9	-	-
RUTILE	7	-	-	-	-	28	-
LEUCOXENE	2	-	-	-	-	9	-
ZIRCON	9	-	-	-	-	38	-
QUARTZ	1	-	-	-	-	2	-
PYRITE	-	-	-	-	-	-	-
CORUNDUM	<1	-	-	-	-	<1	-
SPINEL	<1	-	-	-	-	1	-
APATITE	-	-	-	-	-	-	<1
MONAZITE	<1	-	-	-	-	<1	-
SCHAEELITE	<1	-	-	-	-	<1	-
CASSITERITE							
WEIGHT	17.7452g	0.0277g	1.7226g	7.5032g	4.2590g	4.2327g	
%	100	0.2%	9.7%	42.3%	24.0%	23.8%	
NO. OF POINTS			535	564	513	528	

377

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
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Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 1.7.88

SAMPLE DETAILS: NARACNOOPA, KING ISLAND

JOB NO.: APS M 121

SAMPLE 5

1400N 80E	0 - 3.9m	1200N 100E	0 - 3.0m
1400N 60E	0 - 2.9m	1000N 80E	0 - 3.6m
1200N 60E	0 - 3.0m	1000N 100E	0 - 6.0m
1200N 80E	0 - 4.2m		

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100	-	-	-	-
ILMENITE	38	-	92	64	12	-
LEUCOX. ILMENITE						
IRON OXIDES	-	-	-	-	-	-
CHROMITE	-	-	-	-	-	-
GARNET	10	-	8	22	<1	-
TOURMALINE	16	-	-	6	64	6
STAUROLITE	4	-	-	3	16	-
EPIDOTE	1	-	-	2	2	-
ROCK FRAGMENTS	-	-	-	-	-	-
ALUMINO-SILICATES	4	-	-	-	<1	12
OTHER SILICATES	1	-	-	1	6	-
RUTILE	11	-	-	1	-	34
LEUCOXENE	2	-	-	<1	-	7
ZIRCON	9	-	-	1	-	27
QUARTZ	4	-	-	-	-	14
PYRITE	<1	-	-	-	-	<1
CORUNDUM	-	-	-	-	-	-
SPINEL	<1	-	-	-	<1	-
APATITE	-	-	-	-	-	-
MONAZITE	<1	-	-	-	-	<1
SCHEELITE	-	-	-	-	-	-
CASSITERITE						
WEIGHT	21.5145g	0.0270g	2.0317g	9.2277g	3.5637g	6.6644g
%	100%	0.1%	9.4%	42.9%	16.6%	31.0%
NO. OF POINTS			515	562	535	552

378

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
Strawberry Hills
Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 1.7.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND

JOB NO.: APSM 125

SAMPLE NO. 6

ZOON LINE 100W - 200W

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100	-	-	-	-
ILMENITE	24	-	90	56	-	-
LEUCOX. ILMENITE	4	-	-	3	8	-
IRON OXIDES	<1	-	1	<1	-	-
CHROMITE	<1	-	-	1	-	-
GARNET	7	-	7	18	-	-
TOURMALINE	32	-	-	11	73	20
STAUROLITE	4	-	-	3	9	-
EPTOOTE	5	-	2	7	8	1
ROCK FRAGMENTS	-	-	-	-	-	-
ALUMINO-SILICATES	4	-	-	-	-	13
OTHER SILICATES	<1	-	<1	1	-	-
RUTILE	6	-	-	-	2	20
LEUCOXENE	5	-	-	-	-	16
ZIRCON	6	-	-	-	<1	22
QUARTZ	2	-	-	-	-	6
PYRITE	1	-	-	-	-	2
CORUNDUM	<1	-	-	-	-	<1
SPINEL	-	-	-	-	-	-
APATITE	-	-	-	-	-	-
MONAZITE	<1	-	-	-	-	<1
SHEELITE	-	-	-	-	-	-
CASSITERITE	-	-	-	-	-	-
WEIGHT	15.1539g	0.0130g	0.7387g	5.1704g	4.8250g	4.4068g
%	100%	0.1%	4.9%	34.1%	31.8%	29.1%
NO. OF POINTS			543	616	692	616

379

711391

308

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
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Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 1.7.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND

JOB NO.: APS M 125

SAMPLE NO. 7

700N LINE 220W - 320W

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100	-	-	-	-
ILMENITE	15	-	89	34	-	-
LEUCOX. ILMENITE	5	-	-	9	7	-
IRON OXIDES	<1	-	<1	-	-	-
CHROMITE	1	-	-	2	-	-
GARNET	6	-	10	18	1	-
TOURMALINE	38	-	-	21	76	14
STAUROLITE	5	-	-	5	10	-
EPIDOTE	4	-	<1	8	5	-
ROCK FRAGMENTS	1	-	1	3	-	1
ALUMINO-SILICATES	5	-	-	-	<1	17
OTHER SILICATES	-	-	-	-	-	-
RUTILE	6	-	-	-	1	19
LEUCOXENE	5	-	-	-	-	18
ZIRCON	6	-	-	-	-	22
QUARTZ	2	-	-	-	-	6
PYRITE	1	-	-	-	-	2
CORUNDUM	<1	-	-	-	-	1
SPINEL	-	-	-	-	-	-
APATITE	-	-	-	-	-	-
MONAZITE	<1	-	-	-	-	<1
SCHEELITE	<1	-	-	-	-	<1
CASSITERITE						
WEIGHT	12.1169g	0.0075g	0.5159g	3.8651g	4.3066g	3.4218g
%	100%	0.1%	4.3%	31.9%	35.5%	28.2%
NO. OF POINTS			528	579	517	603

380 APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
Strawberry Hills
Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 1.7.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND

JOB NO.: APSM 126

SAMPLE 8
500N LINE

000,	0 - 1.5m	80W,	0 - 5.5m
20W,	0 - 5.5m	100W,	0 - 5.5m
40W,	0 - 5.5m	120W,	0 - 1.5m
60W,	0 - 5.5m		

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100			-	-
ILMENITE	54				61	-
LEUCOX. ILMENITE	19				21	-
IRON OXIDES						
CHROMITE	<1				<1	-
GARNET	10				11	-
TOURMALINE	3				4	3
STAUROLITE	1				1	-
EPIDOTE	2				2	-
ROCK FRAGMENTS						
ALUMINO-SILICATES	<1				-	5
OTHER SILICATES						
RUTILE	4				-	33
LEUCOXENE	1				-	10
ZIRCON	5				<1	42
QUARTZ	1				-	7
PYRITE	-				-	-
CORUNDUM						
SPINEL	<1				<1	<1
APATITE						
MONAZITE	<1					<1
SCHEELITE	-					-
CASSITERITE						
WEIGHT	13.1850g	0.0396g			11.7167g	1.4287g
%	100%	0.3%			88.9%	10.8%
NO. OF POINTS					597	544

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

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Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 1.7.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND
SAMPLE 9
500N LINE

JOB NO.: APS M 126

80W, 5.5 - 17.0m
100W, 5.5 - 15.5m
120W, 1.5 - 11.5m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100	-	-	-	-
ILMENITE						
LEUCOX. ILMENITE						
IRON OXIDES						
CHROMITE						
GARNET						
TOURMALINE	(2)					6
STAUROLITE						
EPIDOTE						
ROCK FRAGMENTS						
ALUMINO-SILICATES	2					7
OTHER SILICATES						
RUTILE	7					27
LEUCOXENE	4					15
ZIRCON	11					39
QUARTZ	1					4
PYRITE	1					2
CORUNDUM	<1					<1
SPINEL						
APATITE						
MONAZITE	<1					<1
SHEELITE	-					-
CASSITERITE						
WEIGHT	9.1576g	0.0235g	0.9174g	4.2066g	1.4763g	2.5338g
%	100%	0.3%	10.0%	45.9%	16.1%	27.7%
NO. OF POINTS						556

382 APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

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Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 1.7.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND

JOB NO.: APS M 126

SAMPLE 10

500N LINE

120E, 0 - 3.0m

100E, 0 - 4.0m

80E, 0 - 7.5m

60E, 0 - 9.0m

40E, 0 - 11.5m

20E, 0 - 7.5m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100				-
ILMENITE						
LEUCOX. ILMENITE						
IRON OXIDES						
CHROMITE						
GARNET						
TOURMALINE	(2)					8
STAUROLITE						
EPIDOTE						
ROCK FRAGMENTS						9
ALUMINO-SILICATES	2					
OTHER SILICATES						24
RUTILE	5					16
LEUCOXENE	4					38
ZIRCON	9					3
QUARTZ	1					1
PYRITE	<1					1
CORUNDUM	<1					
SPINEL						
APATITE						
MONAZITE	<1					<1
SCHHEELITE	-					-
CASSITERITE						
WEIGHT	20.5152g	0.0661g	2.1855g	9.5034g	4.1248g	4.6354g
%	100%	0.3%	10.7%	46.3%	20.1%	22.6%
NO. OF POINTS						626

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
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Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 1.7.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND

JOB NO.: APS M 126

SAMPLE 11
300N LINE

00, 0 - 2.0m
20W, 0 - 10.0m
40W, 0 - 10.0m
60W, 0 - 10.5m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100				-
ILMENITE						
LEUCOX. ILMENITE						
IRON OXIDES						
CHROMITE						
GARNET						
TOURMALINE	(2)					5
STAUROLITE						
EPIDOITE						
ROCK FRAGMENTS						8
ALUMINO-SILICATES	2					
OTHER SILICATES						31
RUTILE	9					8
LEUCOXENE	3					46
ZIRCON	14					1
QUARTZ	<1					<1
PYRITE	<1					1
CORUNDUM	<1					
SPINEL						
APATITE						
MONAZITE	<1					<1
SCHEELITE	<1					<1
CASSITERITE						
WEIGHT	18.0770g	0.0107g			12.6144g	5.4519g
%	100%	0.1%			69.8%	30.1%
NO. OF POINTS						557

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

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Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 1.7.88

SAMPLE DETAILS: NARACOODPA, KING ISLAND

JOB NO.: APSM 126

SAMPLE 12
300M LINE 80W, 0 - 11.5m
100W, 0 - 13.0m
120W, 0 - 14.0m
140W, 0 - 14.5m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100				-
ILMENITE						
LEUCOX. ILMENITE						
IRON OXIDES						
CHROMITE						
GARNET						
TOURMALINE	(3)					14
STAUROLITE						
EPIDOTE						
ROCK FRAGMENTS						
ALUMINO-SILICATES	6					23
OTHER SILICATES						
RUTILE	5					18
LEUCOXENE	3					14
ZIRCON	6					26
QUARTZ	1					4
PYRITE	<1					<1
CORUNDUM	<1					1
SPINEL						
APATITE						
MONAZITE	<1					<1
SCHHEELITE	-					-
CASSITERITE						
WEIGHT	16.8400g	0.0053g			12.8390g	3.9957g
%	100%	0.03%			76.24%	23.73%
NO. OF POINTS						567

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
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Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 18.7.08

SAMPLE DETAILS: NARACONNA, KING ISLAND
SAMPLE 13

JOB NO.: APS M 12B

100N Line

140W, 0 - 2.7m

60W, 0 - 9.0m

120W, 0 - 1.5m

40W, 0 - 9.0m

100W, 0 - 3.6m

20W, 0 - 11.0m

80W, 0 - 5.5m

000, 0 - 10.0m

TOTAL

HAND
MAGS

0.5A
MAGS

0.9A
MAGS

1.2A
MAGS

1.2A
NON MAGS

MAGNETITE	<1	100	-	-	-	-
ILMENITE						
LEUCOX. ILMENITE						
IRON OXIDES						
CHROMITE						
GARNET						
TOURMALINE	(4)					17
STAURDLITE						
EPIDOTE						
ROCK FRAGMENTS						
ALUMINO-SILICATES	(4)					18
OTHER SILICATES						
RUTILE	6					24
LEUCOXENE	3					13
ZIRCON	6					23
QUARTZ	1					4
PYRITE	<1					<1
CORUNDUM	<1					1
SPINEL						
APATITE						
MONAZITE	<1					<1
SCHHEELITE	<1					<1
CASSITERITE						
WEIGHT	14.0917g	0.0047g				3.4440g
%	100%	0.03%				24.44%
NO. OF POINTS						677

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

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Strawberry Hills
Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 18.7.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND
SAMPLE 14

JOB NO.: APS M 128

100N LINE	20E, 0 - 9.0m	100E, 0 - 8.5m	180E, 0 - 1.5m
	40E, 0 - 11.0m	120E, 0 - 7.5m	
	60E, 0 - 10.5m	140E, 0 - 0.4m	
	80E, 0 - 10.5m	160E, 0 - 2.0m	

TOTAL	HAND	0.5A	0.9A	1.2A	1.2A
	MAGS	MAGS	MAGS	MAGS	NON MAGS

MAGNETITE	<1	100			-
ILMENITE					
LEUCOX. ILMENITE					
IRON OXIDES					
CHROMITE					
GARNET					
TOURMALINE	(2)				8
STAUROLITE					
EPIDOTE					
ROCK FRAGMENTS					
ALUMINO-SILICATES	4				14
OTHER SILICATES					
RUTILE	8				27
LEUCOXENE	4				13
ZIRCON	10				33
QUARTZ	1				3
PYRITE	1				2
CORUNDUM	<1				<1
SPINEL					
APATITE					
MONAZITE	<1				<1
SCHHEELITE	-				-
CASSITERITE					
WEIGHT	15.3753g	0.0125g			4.5494g
%	100%	0.1%			29.6%
NO. OF POINTS					619

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

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STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 18.7.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND
SAMPLE 15
300N LINE

JOB NO.: APS M 128

20E, 0 - 1.5m
40E, 0.25m
60E, 0 - 2.3m
80E, 0 - 4.8m
100E, 0 - 4.75m
120E, 0 - 5.5m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100	-	-	-	-
ILMENITE	23	-	86	44	-	-
LEUCOX. ILMENITE	9	-	-	19	9	-
IRON OXIDES	<1	1	<1	-	-	-
CHROMITE	-	-	-	-	-	-
GARNET	9	-	13	23	<1	-
TOURMALINE	23	-	-	7	71	7
STAUROLITE	6	-	-	5	16	-
EPIDOTE	2	-	<1	2	4	-
ROCK FRAGMENTS	-	-	-	-	-	-
ALUMINO-SILICATES	4	-	-	-	-	14
OTHER SILICATES	<1	-	-	-	<1	-
RUTILE	8	-	-	-	-	25
LEUCOXENE	6	-	-	-	-	19
ZIRCON	9	-	-	-	-	31
QUARTZ	<1	-	-	-	-	1
PYRITE	1	-	-	-	-	2
CORUNDUM	<1	-	-	-	-	1
SPINEL	-	-	-	-	-	-
APATITE						
MONAZITE	<1					<1
SCHEELITE	-					-
CASSITERITE						
WEIGHT	13.5706g	0.0153g	1.1596g	4.7850g	3.4992g	4.1115g
%	100%	0.1%	8.5%	35.3%	25.8%	30.3%
NO. OF POINTS			531	537	542	618

388

711400 317

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
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STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 18 .7.88

JOB NO.: APS M 128

SAMPLE DETAILS: NARACOOPA, KING ISLAND

SAMPLE 16
300N LINE

160W, 0 - 12.5m
180W, 0 - 8.5m
200W, 0 - 6.0m

220W, 0 - 5.5m
240W, 0 - 5.0m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	< 1	100				-
ILMENITE						
LEUCOX. ILMENITE						
IRON OXIDES						
CHROMITE						
GARNET						16
TOURMALINE	(4)					
STAURDLITE						
EPIDOTE						
ROCK FRAGMENTS						24
ALUMINO-SILICATES	6					
OTHER SILICATES						19
RUTILE	4					11
LEUCOXENE	3					21
ZIRCON	5					7
QUARTZ	2					-
PYRITE	-					1
CORUNDUM	< 1					1
SPINEL	< 1					
APATITE						< 1
MONAZITE	< 1					-
SCHEELITE	-					
CASSITERITE						
WEIGHT	22.3310g	0.0127g				5.3618g
%	100%	0.1%				24.0%
NO. OF POINTS						599

389

711401 318

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
Strawberry Hills
Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 18.7.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND

JOB NO.: APS M 128

SAMPLE 17
500N LINE
140W, 0 - 10.5m
160W, 0 - 11.0m
180W, 0 - 11.0m
200W, 0 - 10.5m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100				-
ILMENITE						
LEUCOX. ILMENITE						
IRON OXIDES						
CHROMITE						
GARNET						
TOURMALINE	(1)					3
STAUROLITE						
EPIDOTE						
ROCK FRAGMENTS						12
ALUMINO-SILICATES	2					
OTHER SILICATES						31
RUTILE	4					14
LEUCOXENE	2					31
ZIRCON	4					7
QUARTZ	1					2
PYRITE	<1					<1
CORUNDUM	<1					<1
SPINEL						
APATITE						
MONAZITE	<1					<1
SCHEELITE	-					-
CASSITERITE						
WEIGHT	16.4168g	0.0494g				2.2690g
%	100%	0.3%				13.8%
NO. OF POINTS						625

711402 319

390 APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
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2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 3.8.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND

JOB NO.: APS M 135

SAMPLE 18 SOON LINE 220W 0 - 10.0m
240W 0 - 9.5m
260W 0 - 9.5m
280W 0 - 9.5m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100				
ILMENITE						
LEUCOX. ILMENITE						
IRON OXIDES						
CHROMITE						
GARNET						
TOURMALINE	(4)					18
STAUROLITE						
EPIDOTE						
ROCK FRAGMENTS						
ALUMINO-SILICATES	5					22
OTHER SILICATES						
RUTILE	4					18
LEUCOXENE	4					15
ZIRCON	5					20
QUARTZ	1					4
PYRITE	1					2
CORUNDUM	<1					<1
SPINEL	<1					1
APATITE						
MONAZITE	<1					<1
SHEELITE	-					-
CASSITERITE						
WEIGHT	10.8620g	0.0096g				2.6167g
%	100%	0.1%				24.1%
NO. OF POINTS						613

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
Strawberry Hills
Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 21.7.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND
SAMPLE 19

JOB NO.: APS M 128

500N LINE 300W, 0 - 9.0m 360W, 0 - 11.0m
 320W, 0 - 8.5m 380W, 0 - 8.0m
 340W, 0 - 8.5m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100				-
ILMENITE						
LEUCOX. ILMENITE						
IRON OXIDES						
CHROMITE						
GARNET						
TOURMALINE	(8)					25
STAUROLITE						
EPIDOTE						
ROCK FRAGMENTS						
ALUMINO-SILICATES	6					19
OTHER SILICATES						
ROUTILE	5					18
LEUCOXENE	6					19
ZIRCON	5					15
QUARTZ	1					3
PYRITE	<1					1
CORUNDUM	<1					<1
SPINEL						
APATITE						
MONAZITE	<1					<1
SCHEELITE	-					-
CASSITERITE						
WEIGHT	12.5725g	0.0096g				3.9533g
%	100%	0.1%				31.4%
NO. OF POINTS						612

392 APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
Strawberry Hills
Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 3.8.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND

JOB NO.: APS M 135

	SAMPLE 20	600N LINE	14DE	0 - 6.0m			
			12DE	0 - 10.0m			
			4DE	0 - 11.5m			
			2DE	0 - 10.5m			
			000	0 - 5.5m			
	TOTAL	HAND	0.5A	0.9A	1.2A	1.2A	
		MAGS	MAGS	MAGS	MAGS	NON	MAGS
MAGNETITE	<1	100					
ILMENITE							
LEUCOX. ILMENITE							
IRON OXIDES							
CHROMITE							
GARNET							
TOURMALINE	(5)						18
STAURDLITE							
EPIDOTE							
ROCK FRAGMENTS							
ALUMINO-SILICATES	5						18
OTHER SILICATES							
RUTILE	6						21
LEUCOXENE	4						14
ZIRCON	7						26
QUARTZ	1						2
PYRITE	<1						<1
CORUNDUM	<1						1
SPINEL	<1						<1
APATITE							
MONAZITE	<1						<1
SCHEELITE	-						-
CASSITERITE							
WEIGHT	13.3824g	0.0191g					3.7802g
%	100%	0.1%					28.3%
NO. OF POINTS							627

393

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
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2A RAILWAY AVENUE
STANMORE
NSW 2048

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CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 21.7.88

JOB NO.: APS M 128

SAMPLE DETAILS: NARACOOPA, KING ISLAND

SAMPLE 21
600N LINE

20W, 0 - 1.5m
40W, 0 - 5.5m
60W, 0 - 5.5m
80W, 0 - 11.5m

100W, 0 - 10.5m
120W, 0 - 11.0m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100				-
ILMENITE						
LEUCOX. ILMENITE						
IRON OXIDES						
CHROMITE						
GARNET						21
TOURMALINE	(6)					
STAURDLITE						
EPIDOTE						
ROCK FRAGMENTS						14
ALUMINO-SILICATES	4					
OTHER SILICATES						23
RUTILE	6					12
LEUCOXENE	3					29
ZIRCON	8					1
QUARTZ	<1					
PYRITE						<1
CORUNDUM	<1					<1
SPINEL	<1					
APATITE						<1
MONAZITE	<1					<1
SCHEELITE	<1					
CASSITERITE						
WEIGHT	12.2970g	0.0152g				3.2794g
%	100%	0.1%				26.7%
NO. OF POINTS						641

394

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

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Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 21.7.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND

JOB NO.: APS M 12B

SAMPLE 22

600N LINE

140W, 0 - 10.5m

160W, 0 - 9.5m

180W, 0 - 9.5m

200W, 0 - 11.5m

220W, 0 - 15.5m

240W, 0 - 14.5m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100				-
ILMENITE						
LEUCOX. ILMENITE						
IRON OXIDES						
CHROMITE						
GARNET						
TOURMALINE	(8)					29
STAUROLITE						
EPIDOTE						
ROCK FRAGMENTS						
ALUMINO-SILICATES	8					28
OTHER SILICATES						
RUTILE	4					13
LEUCOXENE	3					10
ZIRCON	5					17
QUARTZ	1					2
PYRITE	<1					<1
CORUNDUM	<1					1
SPINEL	<1					<1
APATITE						
MONAZITE	<1					<1
SCHHEELITE	-					-
CASSITERITE						
WEIGHT	11.3247g	0.0064g				3.2707g
%	100%	0.1%				28.9%
NO. OF POINTS						669

395

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

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2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

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DATE: 21.7.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND

JOB NO.: APS M 128

SAMPLE 23
600N LINE

260W, 0 - 14.5m
280W, 0 - 11.5m
300W, 0 - 9.5m
320W, 0 - 7.5m

340W, 0 - 11.25m
360W, 0 - 4.0m
380W, 0 - 4.0m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100				-
ILMENITE						
LEUCOX. ILMENITE						
IRON OXIDES						
CHROMITE						
GARNET						
TOURMALINE	(9)					28
STAURDLITE						
EPIDOTE						
ROCK FRAGMENTS						26
ALUMINO-SILICATES	8					
OTHER SILICATES						15
RUTILE	5					14
LEUCOXENE	4					13
ZIRCON	4					3
QUARTZ	1					1
PYRITE	<1					<1
CORUNDUM	<1					<1
SPINEL	<1					<1
APATITE						<1
MONAZITE	<1					<1
SCHEELITE	<1					<1
CASSITERITE						
WEIGHT	9.2279g	0.0034g				2.8412g
%	100%	0.1%				30.8%
NO. OF POINTS						627

396

711408

325

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
Strawberry Hills
Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 21.7.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND
SAMPLE 24

JOB NO.: APS M 128

1000N LINE	60E, 0 - 1.5m	20W, 0 - 3.5m
	40E, 0 - 1.5m	40W, 0 - 3.5m
	20E, 0 - 1.5m	60W, 0 - 1.5m
	000, 0 - 1.5m	80W, 0 - 3.5m

TOTAL	HAND	0.5A	0.9A	1.2A	1.2A
	MAGS	MAGS	MAGS	MAGS	NON MAGS

MAGNETITE	<1	100			
ILMENITE					
LEUCOX. ILMENITE					
IRON OXIDES					
CHROMITE					
GARNET					
TOURMALINE	(5)				12
STAUROLITE					
EPIDOTE					
ROCK FRAGMENTS					
ALUMINO-SILICATES	3				6
OTHER SILICATES					
RUTILE	10				23
LEUCOXENE	8				19
ZIRCON	15				33
QUARTZ	1				2
PYRITE	2				5
CORUNDUM	<1				<1
SPINEL	<1				<1
APATITE					
MONAZITE	<1				<1
SCHEELITE	<1				<1
CASSITERITE					
WEIGHT	10.1014g	0.003g			4.4269g
%	100%	0.03%			43.82%
NO. OF POINTS					661

397 APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
Strawberry Hills
Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 21.7.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND

JOB NO.: APS M 128

SAMPLE 25

320w, 0 - 3.5m

1000N LINE

160w, 0 - 4.5m

240w, 0 - 3.5m

340w, 0 - 3.5m

180w, 0 - 4.0m

260w, 0 - 3.6m

360w, 0 - 3.5m

200w, 0 - 3.5m

280w, 0 - 3.5m

380w, 0 - 4.5m

220w, 0 - 3.5m

300w, 0 - 3.5m

400w, 0 - 4.0m

TOTAL

HAND

0.5A

0.9A

1.2A

1.2A

MAGS

MAGS

MAGS

MAGS

NON MAGS

MAGNETITE

<1

100

-

ILMENITE

LEUCOX. ILMENITE

IRON OXIDES

CHROMITE

GARNET

TOURMALINE

(4)

14

STAUROLITE

EPIDOTE

ROCK FRAGMENTS

ALUMINO-SILICATES

5

16

OTHER SILICATES

RUTILE

7

22

LEUCOXENE

6

20

ZIRCON

7

23

QUARTZ

1

3

PYRITE

1

2

CORUNDUM

<1

<1

SPINEL

APATITE

MONAZITE

<1

<1

SCHEELITE

<1

<1

CASSITERITE

WEIGHT

11.2395g 0.0055g

3.4367g

%

100% 0.1%

30.6%

NO. OF POINTS

600

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

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Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 21.7.08

SAMPLE DETAILS: NARACOOPA, KING ISLAND

JOB NO.: APS M 128

	1000N LINE	420W, 0 - 3.5m	440W, 0 - 5.5m	460W, 0 - 5.5m	480W, 0 - 3.5m	500W, 0 - 1.5m	520W, 0 - 1.5m	540W, 0 - 1.5m	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100												-
ILMENITE														
LEUCOX. ILMENITE														
IRON OXIDES														
CHROMITE														
GARNET														
TOURMALINE	(7)													20
STAURDLITE														
EPIDOTE														
ROCK FRAGMENTS														
ALUMINO-SILICATES	4													10
OTHER SILICATES														
RUTILE	6													18
LEUCOXENE	9													27
ZIRCON	8													23
QUARTZ	1													1
PYRITE	<1													1
CORUNDUM	<1													<1
SPINEL														
APATITE														
MONAZITE	<1													<1
SHEELITE	-													-
CASSITERITE														
WEIGHT	6.3814g	0.0089g												2.2182g
%	100%	0.1%												34.8%
NO. OF POINTS														629

399

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
Strawberry Hills
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2A RAILWAY AVENUE
STANMORE
NSW 2048

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CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 21.7.88

JOB NO.: APS M 128

SAMPLE DETAILS: NARACOOPA, KING ISLAND

		180W, 0 - 1.5m	200W, 0 - 1.5m	220W, 0 - 7.5m	240W, 0 - 7.5m	260W, 0 - 7.5m	280W, 0 - 7.5m	300W, 0 - 5.5m	320W, 0 - 3.5m	340W, 0 - 1.5m						
											TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1										100					-
ILMENITE																
LEUCOX. ILMENITE																
IRON OXIDES																
CHROMITE																
GARNET																
TOURMALINE	(5)															16
STAUROLITE																
EPIDOTE																
ROCK FRAGMENTS																15
ALUMINO-SILICATES	5															
OTHER SILICATES																22
RUTILE	8															15
LEUCOXENE	5															25
ZIRCON	9															3
QUARTZ	1															3
PYRITE	1															1
CORUNDUM	<1															
SPINEL																
APATITE																<1
MONAZITE	<1															-
SCHEELITE	-															
CASSITERITE																
WEIGHT		8.8392g	0.0085g													3.0147g
%		100%	0.1%													34.1%
NO. OF POINTS																627

400

711412 329

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
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Sydney, N.S.W. 2012

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NSW 2048

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DATE: 21.7.88

SAMPLE DETAILS: NARACOOKA, KING ISLAND

JOB NO.: APS M 128

		240W, 0 - 9.5m	260W, 0 - 7.5m	280W, 0 - 7.5m	300W, 0 - 7.5m	320W, 0 - 5.5m	340W, 0 - 3.5m	360W, 0 - 1.5m						
	SAMPLE 28 1400N LINE								TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1									100	-	-	-	-
ILMENITE	21									-	98	56	-	-
LEUCOX. ILMENITE	9									-	-	15	14	-
IRON OXIDES	<1									-	1	<1	-	-
CHROMITE	-									-	-	-	-	-
GARNET	4									-	1	13	-	-
TOURMALINE	27									-	-	11	71	8
STAUROLITE	4									-	-	2	12	-
EPIDOTE	1									-	-	3	2	-
ROCK FRAGMENTS	-									-	-	-	-	-
ALUMINO-SILICATES	3									-	-	-	-	9
OTHER SILICATES	-									-	-	-	-	-
RUTILE	9									-	-	-	<1	25
LEUCOXENE	7									-	-	-	-	18
ZIRCON	12									-	-	-	-	33
QUARTZ	1									-	-	-	-	2
PYRITE	2									-	-	-	1	5
CORUNDUM	<1									-	-	-	-	<1
SPINEL														
APATITE														
MONAZITE	<1													<1
SCHEELITE	<1													<1
CASSITERITE														
WEIGHT		11.1138g	0.0054g	0.5368g	3.2489g	3.2603g	4.0624g							
%		100%	0.1%	4.8%	29.2%	29.3%	36.6%							
NO. OF POINTS				516	504	568	668							

401 APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

P.O. Box 257
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Sydney, N.S.W. 2012

2A RAILWAY AVENUE
STANMORE
NSW 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 21.7.88

SAMPLE DETAILS: NARACOOKA, KING ISLAND
SAMPLE 29
TIP ROAD

JOB NO.: APS M 128

TR 28, 0 - 13.0m
TR 32, 0 - 14.5m
TR 36, 0 - 7.5m
TR 40, 0 - 7.5m
TR 45, 0 - 7.5m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100				-
ILMENITE						
LEUCOX. ILMENITE						
IRON OXIDES						
CHROMITE						
GARNET						
TOURMALINE	(9)					24
STAUROLITE						
EPIDOTE						
ROCK FRAGMENTS						
ALUMINO-SILICATES	4					11
OTHER SILICATES						
RUTILE	6					17
LEUCOXENE	6					17
ZIRCON	6					17
QUARTZ	1					3
PYRITE	4					11
CORUNDUM						
SPINEL						
APATITE						
MONAZITE	<1					<1
SCHEELITE	-					-
CASSITERITE						
WEIGHT	9.8480g	0.0071g				3.5758g
%	100%	0.1%				36.3%
NO. OF POINTS						650

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

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2A RAILWAY AVENUE
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NSW 2048

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CLIENT: PETER H. STITT & ASSOC. PTY LTD

DATE: 3.8.88

SAMPLE DETAILS: NARACOOPA, KING ISLAND

JOB NO.: APS M 135

SAMPLE 30	700N LINE	1205	D - 8.0m
		100L	U - 9.5m
		80E	D - 3.5m
		60F	D - 3.5m

	TOTAL	HAND MAGS	0.5A MAGS	0.9A MAGS	1.2A MAGS	1.2A NON MAGS
MAGNETITE	<1	100				
ILMENITE						
LEUCOX. ILMENITE						
IRON OXIDES						
CHROMITE						
GARNET						
TOURMALINE	(4)					17
STAUROLITE						
EPIDOTE						
ROCK FRAGMENTS						
ALUMINO-SILICATES	6					22
OTHER SILICATES						
RUTILE	6					23
LEUCOXENE	2					9
ZIRCON	6					25
QUARTZ	1					3
PYRITE	<1					<1
CORUNDUM						
SPINEL	<1					<1
APATITE						
MONAZITE	<1					<1
SHEELITE	-					-
CASSITERITE						
WEIGHT	11.3379g	0.0157g				2.8834g
%	100%	0.1%				25.4%
NO. OF POINTS						663

APPLIED PETROGRAPHIC SERVICES

SPECIALIZING IN PETROGRAPHIC ANALYSIS OF GEOLOGICAL AND INDUSTRIAL SAMPLES

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STANMORE
N.S.W. 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOCIATES PTY LTD

DATE: 23.7.88

SAMPLE DETAILS: NARACODPA, KING ISLAND

SAMPLES 13 - 17, 19, 21 - 29

SAMPLE NO.	1.2A NON MAGS. RED RUTILE %	1.2A NON MAGS. BLACK RUTILE %	1.2A NON MAGS. TOTAL RUTILE	TOTAL SAMPLE TOTAL RUTILE
13	13	11	24	6
14	15	12	27	8
15	10	15	25	8
16	13	6	19	4
17	22	9	31	4
19	10	8	18	5
21	15	8	23	6
22	8	5	13	4
23	9	6	15	5
24	9	14	23	10
25	12	10	22	7
26	12	6	18	6
27	13	9	22	8
28	14	11	25	9
29	10	7	17	6

APPENDIX 5

Check Laboratory Reports
Readings of Lismore and R.H.F. Laboratories

READINGS OF LISMORE

Hole No.	Depth (m)	wt% Slime	wt% +1000u	wt% -1000u	wt% Heavy Mineral
100E 100N (3S)	0-2.0	2.37	0.13	99.87	10.43
	2.0-4.0	2.90	0.04	99.96	12.88
	4.0-5.8	2.16	1.21	98.79	27.63
100E 100N (2S)	0-1.5	3.70	0.16	99.84	5.32
	1.5-3.5	2.69	0.09	99.91	7.90
	3.5-5.5	2.24	1.84	98.16	25.42
	5.5-7.5	3.02	10.75	89.25	5.85
	7.5-8.5	21.96	8.10	91.90	1.56
60E 500N (4N)	0-1.5	2.68	0.41	99.59	47.57
	1.5-3.5	1.79	0.12	99.88	6.42
	3.5-5.5	2.45	0.09	99.91	2.19
	5.5-7.5	2.96	0.08	99.92	2.27
	7.5-9.0	10.37	8.14	91.86	1.84
	9.0-9.5	20.49	6.26	93.74	1.20
	9.5-11.5	1.96	2.28	97.72	0.20
60E 500N (3N)	11.5-12.5	1.49	4.89	95.11	0.23
	12.5-13.5	21.49	6.47	93.53	2.73
	0-2.0	1.01	0.12	99.88	46.78
	2.0-4.0	2.41	0.06	99.94	6.53
	4.0-6.0	0.70	0.00	100.00	1.30
	6.0-8.0	2.20	0.00	100.00	2.00
	8.0-8.3	2.25	2.83	97.17	1.70
200E 800N (1N)	0-2.0	3.82	0.32	99.68	1.22
	2.0-4.0	1.03	0.25	99.75	0.69
	4.0-6.1	0.84	5.30	94.70	1.33
200E 800N (2N)	0-1.5	4.17	0.13	99.87	0.72
	1.5-3.5	3.42	0.17	99.83	0.77
	3.5-5.5	3.45	4.81	95.19	0.67
275E 800N (3S)	0-2.0	4.35	0.39	99.61	3.39
	2.0-4.0	0.74	0.00	100.00	0.86
	4.0-6.0	1.18	0.91	99.09	0.77
	6.0-6.7	0.92	5.40	94.60	1.27
275E 800N (2S)	0-1.5	2.58	0.41	99.59	3.04
	1.5-3.5	2.40	0.07	99.93	0.62
	3.5-5.5	2.52	0.84	99.16	0.82
	5.5-6.5	4.57	8.75	91.25	1.35
	0-2.0	2.66	0.24	99.76	2.92
000 1000N (1S)	2.0-4.0	1.29	0.06	99.94	0.76
	4.0-6.0	1.93	0.87	99.13	1.07
	6.0-7.3	1.92	8.56	91.44	0.81
	0-1.5	1.99	0.22	99.78	2.68
000 1000N (2S)	1.5-3.5	2.69	0.07	99.93	1.13
	3.5-5.5	3.41	0.41	99.59	1.08
	5.5-6.5	2.26	17.64	82.36	0.85

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RAW DATA DOCUMENTATION FOR HEAVY MINERAL SEPARATION

Hole Grid Co-Ordinates	Sample Depth(m)	wt% of +1000u	wt% of -1000u	wt% Slime	wt% of Heavy Mineral	Total wt of A.R.(Kg)
20W, 700N	0-1.5	0.52	99.48	1.15	2.17	5.165
	1.5-3.5	0.62	99.38	1.82	1.27	8.125
	3.5-5.5	0.67	99.33	2.40	0.40	7.295
	5.5-7.5	8.25	91.75	2.59	0.69	6.325
120W, 700N	0-1.5	0.16	99.84	0.84	3.74	4.550
	1.5-3.5	0.08	99.92	5.29	5.04	6.060
	3.5-5.5	0.04	99.96	3.74	8.12	6.325
	5.5-7.5	2.84	97.16	1.59	4.27	9.715
	7.5-8.0	5.68	94.32	2.71	7.96	1.160
180W, 700N	0-1.5	0.69	99.31	0.66	8.59	6.175
	1.5-3.5	0.29	99.71	0.55	5.16	5.990
	3.5-5.5	0.48	99.52	0.67	2.03	7.115
	5.5-7.5	0.88	99.12	3.42	3.31	6.930
	7.5-8.0	8.79	91.21	21.81	3.71	0.755
200E, 800N (0N)	0-1.5	0.06	99.94	3.90	0.71	5.350
	1.5-3.5	0.28	99.72	3.88	0.85	6.610
	3.5-5.8	3.11	96.89	3.07	0.86	9.750
275E, 800N (4S)	0-1.5	0.21	99.79	3.70	2.84	4.500
	1.5-3.5	0.01	99.99	3.77	0.68	7.200
	3.5-5.5	0.49	99.51	3.18	0.90	8.600
	5.5-6.5	5.21	94.79	2.60	1.75	4.800
000, 1000N (4S)	0-1.5	0.03	99.97	1.82	2.79	5.225
	1.5-3.5	0.07	99.93	2.38	1.78	5.280
	3.5-5.5	0.22	99.78	2.62	1.02	8.440
	5.5-6.5	9.72	90.28	2.31	1.13	5.200
40E, 1000N	0-1.5	0.22	99.78	1.04	1.94	4.475
	1.5-3.5	0.15	99.85	2.39	0.66	9.845
	3.5-5.5	0.08	99.92	3.16	0.76	7.250
	5.5-6.5	6.80	93.20	7.28	1.17	4.375
20E, 1000N	0-1.5	0.13	99.87	0.81	2.60	3.775
	1.5-3.5	0.04	99.96	2.63	0.85	6.750
	3.5-5.5	0.03	99.97	3.37	0.57	7.075
	5.5-6.5	9.84	90.16	1.84	0.72	5.075
20W, 1000N	0-1.5	0.08	99.92	2.04	2.52	5.150
	1.5-3.5	0.22	99.78	2.02	2.70	6.315
	3.5-5.5	2.00	98.00	3.56	0.85	8.290
	5.5-6.5	5.81	94.19	3.15	0.67	4.745
40W, 1000N	0-1.5	0.97	99.03	5.88	2.51	2.540
	1.5-3.5	0.93	99.07	4.43	2.25	6.350
	3.5-5.5	1.83	98.17	2.96	0.50	8.215
	5.5-7.0	3.74	96.26	7.09	0.73	5.195
60W, 1000N	0-1.5	1.86	98.14	2.68	3.11	4.875
	1.5-3.5	1.88	98.12	1.21	0.43	6.265
	3.5-5.5	3.54	96.46	2.74	0.24	7.780
	5.5-6.5	8.74	91.26	22.28	2.21	4.305
100W, 1000N	0-1.5	0.39	99.61	0.66	2.97	5.675
	1.5-3.5	0.34	99.66	1.40	0.68	6.700
	3.5-5.5	1.56	98.44	2.50	0.27	8.500
	5.5-6.0	7.23	92.77	2.45	3.96	3.790
120W, 1000N	0-1.5	0.32	99.68	2.27	2.25	4.250
	1.5-3.5	0.05	99.95	1.14	2.07	7.050
	3.5-5.5	3.71	96.29	2.38	3.07	8.350
	5.5-6.5	2.08	97.92	26.35	2.64	3.400
160W, 1000N	0-1.5	0.12	99.88	1.45	4.05	3.605
	1.5-3.5	0.81	99.19	2.65	3.11	7.400
	3.5-4.5	5.95	94.05	7.77	5.38	4.370
220W, 1000N	0-1.5	0.31	99.69	4.99	6.04	2.600
	1.5-3.5	1.49	98.51	3.61	4.31	6.330
240W, 1000N	0-1.5	0.14	99.86	5.71	7.21	3.225
	1.5-3.5	0.85	99.15	6.12	3.72	6.425

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Hole Grid Co-Ordinates	Sample Depth (m)	wt% of +1000u	wt% of -1000u	wt% Slime	wt% of Heavy Mineral	Total wt of A.R. (Kg)
	4.0-6.0	0.14	99.86	1.05	21.69	4.640
	6.0-8.0	0.85	99.15	0.88	29.44	5.020
140E, 1000N	0-1.0	1.54	98.46	0.79	22.31	3.775
120E, 1000N	0-1.0	0.07	99.93	1.46	16.20	1.430
	1.0-1.9	0.24	99.76	1.83	21.87	2.325
100E, 1000N	0-2.0	0.07	99.93	1.27	14.83	4.550
	2.0-4.0	0.13	99.87	1.33	10.58	4.475
	4.0-6.0	0.89	99.11	2.57	9.52	4.650
80E, 1000N	0-2.0	0.09	99.91	0.57	50.61	5.500
	2.0-3.6	0.18	99.82	4.47	21.72	6.325
120E, 1200N	0-1.0	0.18	99.82	0.67	24.30	3.200
	1.0-2.2	1.62	98.38	1.20	7.84	4.435
100E, 1200N	0-2.0	0.02	99.98	2.47	5.76	1.375
	2.0-3.0	0.06	99.94	1.60	2.47	1.895
80E, 1200N	0-2.0	0.08	99.92	1.25	4.81	4.380
	2.0-4.2	0.33	99.67	2.47	11.00	5.845
60E, 1200N	0-2.0	0.30	99.70	2.79	29.02	5.235
	2.0-3.0	0.68	99.32	22.69	3.99	2.000
40E, 1200N	0-2.0	0.15	99.85	1.65	0.79	4.250
	2.0-4.0	0.07	99.93	1.22	0.40	3.525
	4.0-4.7	3.20	96.80	1.59	0.52	3.675
40E, 1400N	0-2.0	0.23	99.77	2.26	0.44	2.550
	2.0-2.25	2.99	97.01	4.52	0.22	0.655
60E, 1400N	0-2.0	0.13	99.87	1.81	3.52	3.170
	2.0-2.9	0.16	99.84	1.71	6.77	2.640
80E, 1400N	0-2.0	0.17	99.83	1.23	2.95	4.920
	2.0-3.9	0.46	99.54	0.99	6.23	4.610
100E, 1400N	0-1.0	0.11	99.89	0.49	23.61	2.205
	1.0-2.0	0.75	99.25	0.69	11.15	2.935
	2.0-3.0	2.99	97.01	0.79	1.99	3.430
120E, 1400N	0-1.0	2.14	97.86	0.86	2.67	3.080
	1.0-1.5	9.27	90.73	0.74	1.32	1.955
000, 1000N(3S)	0-2.0	0.14	99.86	2.19	3.25	5.370
	2.0-4.0	0.07	99.93	1.96	0.64	4.35
	4.0-6.0	1.04	98.96	2.77	0.85	7.47
	6.0-6.9	9.40	90.60	1.27	1.10	3.800
200E, 800N(3N)	0-2.0	0.42	99.58	3.37	1.34	5.320
	2.0-4.0	0.30	99.70	1.82	0.64	6.350
	4.0-5.8	2.95	97.05	1.58	0.49	6.885
275E, 800N(1S)	0-2.0	0.37	99.63	5.76	3.88	6.055
	2.0-4.0	0.09	99.91	0.79	0.67	6.590
	4.0-6.0	1.12	98.88	1.49	0.77	9.205
	6.0-6.5	5.13	94.87	0.91	2.03	2.140
60E, 500N(1N)	0-2.0	0.10	99.90	0.98	55.05	5.225
	2.0-4.0	0.08	99.92	1.42	7.71	5.300
	4.0-6.0	0.03	99.97	0.87	1.48	6.180
	6.0-8.0	0.02	99.98	1.88	2.02	7.500
	8.0-8.5	0.83	99.17	1.59	1.73	2.620
100E, 100N(1S)	0-2.0	0.32	99.68	2.07	10.66	5.310
	2.0-4.0	0.10	99.90	2.26	14.10	4.920
	4.0-6.0	1.34	98.66	1.75	21.36	5.325
	6.0-7.2	4.42	95.58	0.25	6.47	3.975

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RAW DATA DOCUMENTATION FOR HEAVY MINERAL SEPARATION

hole Grid Co-Ordinates	Sample Depth (m)	wt% of +1000U	wt% of -1000u	wt% of Slime	wt% of Heavy Mineral	Total wt of A.R. (Kg)
220W 700N	0-1.5	0.50	99.50	0.93	4.07	5.275
	1.5-3.5	0.17	99.83	1.05	12.66	6.620
	3.5-5.5	1.24	98.76	0.61	8.01	7.675
	5.5-7.5	0.74	99.26	0.85	2.64	7.645
	7.5-9.5	1.07	98.93	3.32	3.39	5.565
240W 700N	9.5-10.5	0.26	99.74	1.90	4.19	6.330
	0-1.5	1.20	98.80	1.05	4.95	6.000
	1.5-3.5	1.13	98.87	0.75	3.53	6.185
	3.5-5.5	0.32	99.68	0.93	14.26	7.655
	5.5-7.5	1.58	98.42	1.08	7.61	8.020
260W 700N	7.5-9.5	1.33	98.67	2.48	4.96	7.245
	9.5-11.5	0.55	99.45	4.46	5.72	3.460
	0-1.5	1.21	98.79	1.12	3.70	5.255
	1.5-3.5	0.31	99.69	0.90	2.25	6.355
	3.5-5.5	0.41	99.59	0.74	12.54	8.125
280W 700N	5.5-7.5	0.39	99.61	1.35	4.90	7.690
	7.5-9.5	1.98	98.02	1.98	6.25	7.565
	9.5-10.5	4.35	95.65	13.79	4.48	1.800
	0-1.5	0.23	99.77	1.06	2.98	6.100
	1.5-3.5	0.13	99.87	0.81	5.39	6.085
300W 700N	3.5-5.5	0.25	99.75	1.05	22.35	7.405
	5.5-7.5	1.01	98.99	5.31	11.49	5.265
	7.5-8.5	0.32	99.68	4.36	8.20	3.015
	0-1.5	0.27	99.73	0.60	3.94	3.515
	1.5-3.5	0.18	99.82	1.71	5.05	4.735
320W 700N	3.5-5.5	0.17	99.83	2.86	6.61	6.255
	5.5-7.5	0.79	99.21	7.16	5.17	4.340
	9.5-11.5	10.06	89.94	3.77	2.83	8.530
	0-1.5	1.80	98.20	4.53	3.52	1.250
	1.5-3.5	0.20	99.80	3.87	8.51	6.830
000 1000N (4S)	3.5-5.5	1.12	98.88	7.11	3.63	7.740
	5.5-6.5	2.35	97.65	13.42	3.32	2.920
	8.5-11.5	5.50	94.50	3.30	3.12	11.265
	11.5-12.0	18.10	81.90	6.52	1.57	2.925
	0-1.5	0.03	99.97	1.82	2.79	5.225
80W 1000N	1.5-3.5	0.07	99.93	2.38	1.78	5.280
	3.5-5.5	0.22	99.78	2.62	1.02	8.440
	5.5-6.5	9.72	90.28	2.31	1.13	5.200
	0-1.5	0.18	99.82	1.01	3.28	4.920
	1.5-3.5	0.08	99.92	1.42	2.91	7.785
140W 1000N	3.5-5.5	0.74	99.26	8.21	0.88	3.960
	5.5-7.5	3.59	96.41	10.27	1.42	1.610
	7.5-8.0	6.73	93.27	5.71	2.74	1.745
	0-1.5	0.26	99.74	7.09	1.03	2.295
	1.5-3.5	0.75	99.25	3.03	1.21	2.325
180W 1000N	3.5-5.5	4.04	95.96	12.81	1.94	8.780
	0-1.5	0.65	99.35	10.19	2.11	1.925
	1.5-3.5	2.50	97.50	4.57	1.51	7.845
	3.5-4.0	5.38	94.62	10.42	3.06	1.355

Hole No.	Hole Depth m	Total wt. Kg.	wt% Slime	wt% +1000u	wt% -1000u	wt% Heavy Mineral
200W 300N	0-1.5	6.83	2.49	0.35	99.65	5.11
	1.5-3.5	6.97	1.75	0.38	99.62	7.10
	3.5-5.5	7.81	2.68	1.64	98.36	13.16
	5.5-6.0	1.45	6.79	5.46	94.54	10.32
80W 300N	0-1.5	4.85	2.55	0.53	99.47	6.61
	1.5-3.5	7.09	1.32	0.59	99.41	6.89
	3.5-5.5	7.59	1.13	0.37	99.63	7.06
	5.5-7.5	8.44	1.59	0.34	99.66	10.09
160W 300N	7.5-8.5	4.31	2.60	0.84	99.16	12.00
	0-1.5	4.78	4.00	0.36	99.64	9.30
	1.5-3.5	6.98	0.76	0.06	99.94	8.68
	3.5-5.5	7.57	0.91	0.35	99.65	14.62
	5.5-7.5	8.71	1.22	0.39	99.61	8.15
20W 300N	7.5-9.5	7.70	0.79	0.39	99.61	11.01
	9.5-11.5	7.05	2.01	1.01	98.99	9.87
	11.5-12.5	3.28	8.28	3.21	96.79	6.06
	0-1.5	6.38	1.14	0.08	99.92	4.31
	1.5-3.5	6.36	0.71	0.04	99.96	2.04
	3.5-5.5	9.68	1.22	0.00	100.00	0.93
OE 300N	5.5-7.5	7.73	2.21	0.01	99.99	1.13
	7.5-9.5	7.16	4.17	0.88	99.12	0.70
	9.5-10.0	1.81	22.73	14.46	85.54	5.87
	0-1.5	4.35	3.38	0.86	99.14	1.35
	1.5-3.5	7.69	2.84	2.99	97.01	1.55
OE 500N (2N)	3.5-5.5	4.82	11.74	7.94	92.06	2.92
	0-1.5	5.19	1.42	0.07	99.93	46.47
	1.5-3.5	6.34	2.34	0.18	99.82	5.27
	3.5-5.5	8.68	2.47	0.02	99.98	1.52
	5.5-7.5	7.90	3.07	0.01	99.99	2.02
	7.5-9.0	4.58	8.36	6.19	93.81	1.84
	9.0-9.5	1.04	6.50	7.42	92.58	0.32
	9.5-11.5	6.29	4.18	3.51	96.49	1.21
OE 500N	11.5-12.5	2.54	2.96	8.14	91.86	0.16
	12.5-13.5	2.37	30.81	7.15	92.85	1.28
	0-1.5	5.42	1.81	0.85	99.15	30.45
	1.5-3.5	7.44	2.47	0.49	99.51	3.44
	3.5-5.5	9.05	1.80	0.16	99.84	1.30
	5.5-7.5	8.36	2.29	0.10	99.90	1.08
	7.5-9.5	8.51	1.67	0.05	99.95	2.13
60W 500N	9.5-11.5	7.0	4.93	5.77	94.23	2.49
	0-1.5	8.99	0.86	0.16	99.84	94.50
	1.5-3.5	9.55	0.37	0.00	100.00	96.71
	3.5-5.5	11.59	0.42	0.00	100.00	94.84
	5.5-7.5	8.30	1.06	0.03	99.97	2.12
	7.5-9.5	6.85	0.92	0.08	99.92	1.36
	9.5-11.5	7.63	0.81	0.01	99.99	1.39
	11.5-13.5	10.59	1.25	0.09	99.91	1.00
00W 500N	13.5-15.5	7.74	2.39	2.16	97.84	1.24
	0-1.5	8.34	0.32	0.00	100.00	97.72
	1.5-3.5	7.36	0.35	0.13	99.87	85.71
	3.5-5.5	8.61	0.50	0.36	99.64	52.94
	5.5-7.5	8.63	1.36	0.38	99.62	4.08
	7.5-9.5	6.11	1.61	0.52	99.48	2.65
	9.5-11.5	7.88	3.48	0.00	100.00	5.40
	11.5-13.5	7.10	1.59	1.43	98.57	3.80
140W 500N	13.5-15.5	4.30	3.19	1.55	98.45	6.35
	0-1.5	3.79	0.62	0.00	100.00	97.08
	1.5-3.5	6.62	0.42	0.00	100.00	95.89
	3.5-5.5	10.94	0.38	0.00	100.00	98.30
	5.5-7.5	10.21	2.96	1.69	98.31	40.17
	7.5-9.5	7.93	4.31	1.55	98.45	14.34
	9.5-10.5	2.10	14.32	6.27	97.77	3.01

Hole No	Hole Depth m	Total wt.Kg	wt% Slime	wt% +1000u	wt% -1000u	wt% Heavy Mineral	339
100E 100N (4S)	0-1.5	4.12	0.88	0.01	99.99	3.58	
	1.5-3.5	5.20	3.17	0.02	99.98	10.44	
	3.5-5.5	3.37	1.69	0.14	99.86	20.25	
	5.5-7.5	7.53	2.78	7.39	92.61	9.61	
	7.5-9.5	5.41	17.22	5.65	94.35	1.81	
	9.5-10.5	0.62	53.60	19.60	80.40	0.82	
120E 100N	0-1.5	1.81	2.08	0.20	99.80	5.51	
	1.5-3.5	4.31	2.26	0.86	99.14	12.51	
	3.5-5.5	4.38	7.33	3.45	96.55	7.02	
	5.5-7.5	5.02	8.20	1.48	98.52	9.95	
140W 300N	0-1.5	4.37	2.77	0.12	99.88	8.15	
	1.5-3.5	7.53	1.14	0.13	99.87	9.02	
	3.5-5.5	7.58	0.80	0.13	99.87	6.86	
	5.5-7.5	7.90	1.22	0.09	99.91	10.95	
	7.5-9.5	6.63	1.30	0.42	99.58	6.52	
	9.5-11.5	6.60	1.33	0.43	99.57	8.39	
	11.5-13.5	8.35	1.55	0.24	99.76	7.72	
120W 300N	13.5-14.5	2.46	6.14	1.26	98.74	4.02	
	0-1.5	4.49	3.37	1.05	98.95	14.76	
	1.5-3.5	5.93	1.00	0.12	99.88	10.79	
	3.5-5.5	6.40	0.78	0.22	99.78	6.14	
	5.5-7.5	7.69	0.72	0.12	99.88	8.64	
	7.5-9.5	7.29	1.40	0.14	99.86	4.45	
	9.5-11.5	6.96	1.54	0.57	99.43	7.50	
	11.5-13.5	8.60	1.48	0.43	99.57	6.54	
	13.5-14.0	1.29	5.95	7.07	92.93	5.69	
	100W 300N	0-1.5	5.16	2.50	0.27	99.73	7.15
1.5-3.5		7.72	1.13	0.14	99.86	11.50	
3.5-5.5		7.18	1.03	0.15	99.85	7.83	
5.5-7.5		7.88	1.53	0.11	99.89	5.93	
7.5-9.5		8.65	2.16	0.17	99.83	5.05	
9.5-11.5		8.80	2.25	0.55	99.45	10.37	
11.5-13.0		4.87	1.62	0.49	99.51	5.36	
80W 300N	0-1.5	5.75	1.80	0.21	99.79	11.25	
	1.5-3.5	7.01	0.68	0.27	99.73	8.72	
	3.5-5.5	8.97	0.72	0.10	99.90	42.17	
	5.5-7.5	7.71	4.40	0.05	99.95	7.11	
	7.5-9.5	8.95	3.36	0.06	99.94	11.73	
60W 300N	9.5-11.5	6.47	2.41	1.33	98.67	6.06	
	1.5-3.5	5.08	4.35	0.27	99.73	1.29	
	3.5-5.5	9.68	4.01	0.03	99.97	3.52	
	5.5-7.5	8.83	1.51	0.01	99.99	6.25	
	7.5-9.5	5.69	3.55	0.43	99.57	2.93	
40W 300N	9.5-10.5	2.85	10.69	2.42	97.58	12.57	
	0-1.5	6.44	2.70	0.34	99.66	7.73	
	1.5-3.5	8.22	1.22	0.03	99.97	2.16	
	3.5-5.5	9.23	1.04	0.01	99.99	1.82	
	5.5-7.5	9.72	1.62	0.00	100.00	1.21	
40E 300N	7.5-9.5	8.32	2.20	0.63	99.37	0.98	
	9.5-10.0	1.59	12.12	10.54	89.46	6.39	
	0-1.5	5.70	2.44	1.40	98.60	5.61	
	1.5-3.5	8.00	4.84	3.98	96.02	7.03	
	3.5-4.75	1.89	28.78	7.21	92.79	2.79	
100E 300N	0-2.5	3.30	17.53	1.17	98.83	3.61	
80E 500N	0-1.5	3.30	5.14	1.83	98.17	16.62	
	1.5-3.5	6.14	4.72	0.25	99.75	2.46	
	3.5-5.5	7.80	3.63	0.06	99.94	2.47	
	5.5-7.5	7.15	3.35	5.44	94.56	1.62	
	7.5-9.5	7.46	22.20	10.63	89.37	0.47	
	9.5-11.5	5.85	1.53	6.16	93.84	0.26	
	11.5-13.5	5.64	7.80	5.88	94.12	0.13	
20E 500N	0-1.5	5.98	1.07	0.07	99.93	19.29	
	1.5-3.5	7.75	1.47	0.09	99.91	4.26	
60W 300N	0-1.5	8.03	2.57	0.54	99.47	9.65	

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YOUR REF.

SAMPLE ANALYSIS RESULT SHEET*

OUR REF.

CLIENT: PETER STITT & ASSOCIATES

BATCH:

ROL JOB NO.: 2913

DATE: 31/5/88

SAMPLE NO.	WT. (g)	ANALYSIS %	
		H/M	SLIMES
60E/500N/1N (0-2m)	5,213	51.8	0.9
(2-4m)	5,211	7.8	1.9
(4-6m)	5,980	1.5	1.3
(6-8m)	6,480	1.9	1.6
(8-8.5m)	2,441	1.8	2.4
200E/800N/3N (0-2m)	5,269	1.2	2.0
(2-4m)	6,274	0.9	1.9
(4-5.8m)	6,083	0.4	2.4
100E/100N/1S (0-2m)	5,237	10.9	2.1
(2.4m)	4,763	14.1	2.4
(4-6m)	5,087	20.9	1.2
(6-7.2m)	3,810	6.4	2.0
000/1000N/3S (0-2m)	5,318	3.3	4.4
(2-4m)	4,261	0.6	3.3
(4-6m)	7,367	0.9	2.6
(6-6.9m)	3,393	1.1	2.8
275E/800N/1S (0-2m)	5,095	3.6	5.9
(2-4m)	6,461	0.6	1.8
(4-6m)	8,820	0.7	3.4
(6-6.5m)	1,988	1.9	1.3

Robert E. Doubling
 METALLURGIST

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YOUR REF.

SAMPLE ANALYSIS RESULT SHEET*

OUR REF.

1.

CLIENT: PETER STITT & ASSOCIATES

BATCH: ROL JOB NO.: 2915

DATE: 6/6/88

SAMPLE NO.	WT. (g)	ANALYSIS %	
		H/M	SLIMES
1000E/100N/3S/0-2.0m	5,387	10.0	4.4
2.0-4.0m	3,798	12.9	3.2
4.0-5.8m	5,187	29.0	2.2
100E/100N/2S/0-1.5m	1,584	5.3	6.8
1.5-3.5m	3,751	8.1	3.1
3.5-5.5m	8,688	26.7	2.9
5.5-7.5m	7,909	6.6	4.3
7.5-8.5m	3,690	1.6	21.9
60E/500N/4N/0-1.5m	5,372	45.7	8.4
1.5-3.5m	7,266	6.3	3.5
3.5-5.5m	7,896	2.2	5.1
5.5-7.5m	8,458	2.1	5.6
7.5-9.0m	5,770	1.7	17.4
9.0-9.5m	1,466	0.9	38.3
9.5-11.5m	5,864	0.1	8.9
11.5-12.5m	4,652	0.2	3.4
12.5-13.5m	1,289	2.7	29.3
60E/500N/3N/0-2.0m	4,831	45.2	1.7
2.0-4.0m	5,009	6.7	3.2
4.0-6.0m	5,729	1.3	2.0
6.0-8.0m	8,509	2.0	4.0
8.0-8.3m	1,851	1.8	2.5

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METALLURGIST

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SAMPLE ANALYSIS RESULT SHEET*

OUR REF.

2.

CLIENT: PETER STITT & ASSOCIATES

BATCH: ROL JOB NO.: 2915

DATE: 6/6/88

SAMPLE NO.	WT. (g)	ANALYSIS %	
		H/M	SLIMES
200E/800N/1N/0-2.0m	3,493	1.1	3.7
2.0-4.0m	6,252	0.6	1.8
4.0-6.1m	7,329	0.6	2.2
200E/800N/2N/0-1.5m	4,181	0.7	4.7
1.5-3.5m	7,635	0.8	4.5
3.5-5.5m	6,058	0.5	6.7
275E/800N/3S/0-2.0m	4,238	3.3	3.5
2.0-4.0m	6,477	0.7	1.3
4.0-6.0m	8,277	0.7	1.5
6.0-6.7m	2,937	1.3	1.4
275E/800N/2S/0-1.5m	5,115	3.1	4.8
1.5-3.5m	6,749	0.6	4.3
3.5-5.5m	9,764	0.8	6.6
5.5-6.5m	4,335	1.4	8.1
000/1000N/1S/0-2.0m	5,565	2.8	4.6
2.0-4.0m	5,627	0.7	5.0
4.0-6.0m	6,909	1.1	3.6
6.0-7.3m	3,628	0.9	4.0

Robert Reading
METALLURGIST

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YOUR REF.

SAMPLE ANALYSIS RESULT SHEET*

OUR REF.

CLIENT: PETER STITT & ASSOCIATES

BATCH: ROL JOB NO.: 2931

DATE: 11/7/88

SAMPLE NO.	WT. (g)	ANALYSIS %	
		H/M	SUMES
100E/100N/4S/0-1.5m	4,170	3.3	1.8
1.5-3.5m	5,274	10.5	4.1
3.5-5.5m	3,270	20.3	1.8
5.5-7.5m	7,134	10.7	3.4
7.5-9.5m	4,764	1.8	15.5
9.5-10.5m	541	0.8	56.4
60E/500N/2N/0-1.5m	5,122	47.0	2.3
1.5-3.5m	6,284	5.4	3.4
3.5-5.5m	8,636	1.5	7.5
5.5-7.5m	7,879	2.1	4.3
7.5-9.0m	4,248	1.9	12.7
9.0-9.5m	988	0.3	12.3
9.5-11.5m	6,197	0.2	9.3
11.5-12.5m	2,423	0.1	5.6
12.5-13.5m	2,364	1.4	48.3
200E/800N/0N/0-1.5m	5,263	0.6	3.5
1.5-3.5m	6,364	0.8	5.0
3.5-5.8m	9,367	0.7	5.2
275E/800N/4S 0-1.5m	4,423	2.7	4.7
1.5-3.5m	7,162	0.7	5.3
3.5-5.5m	8,479	0.8	6.5
5.5-6.5m	4,407	1.6	7.4

Robert Bowling
METALLURGIST

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APPENDIX 6

Australasian Code for Reporting of Identified Mineral Resources
and Ore Reserves

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AUSTRALASIAN CODE FOR REPORTING OF IDENTIFIED MINERAL RESOURCES AND ORE RESERVES

REPORT OF THE JOINT COMMITTEE OF
THE AUSTRALASIAN INSTITUTE OF
MINING AND METALLURGY
AND
AUSTRALIAN MINING INDUSTRY
COUNCIL



INCORPORATED BY ROYAL CHARTER 1965

Issued June 1988

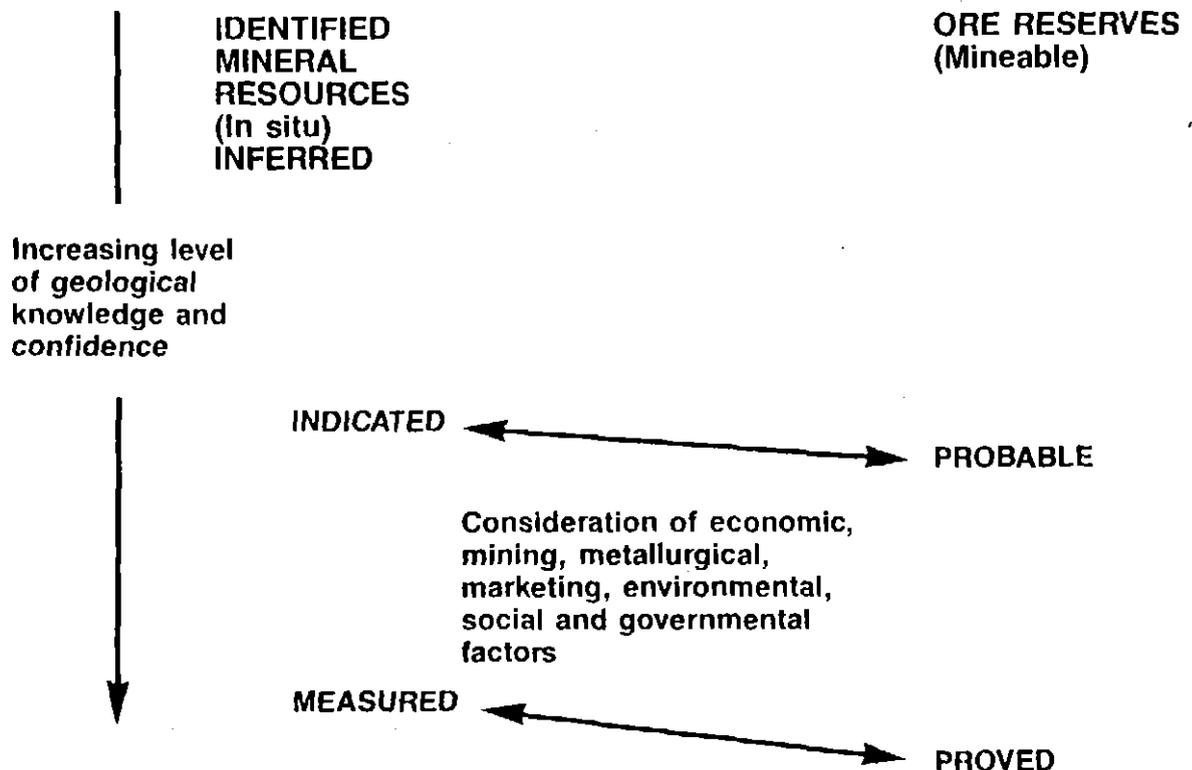


1. The Joint Committee was set up in 1971 to consider and make recommendations on stock exchange listing requirements appropriate to mining companies reporting ore reserves. The first report was published in April 1972 and republished in 1975.
2. The Committee reconvened in 1978 to review developments since the first report and to consider recommending changes. A revised report published in 1981 enlarged the section on pre-ore reserve terminology to recognise the reporting of *indicative, qualitative or quantitative estimates* of potentially economic mineralisation. The report established ore reserves categories and introduced the concepts of "precision" and "qualification" the latter being further refined in 1983.
3. The 1983 Committee did not attempt to define or classify mineral resources (as distinct from reserves) preferring to regard resource assessment issues as matters primarily of concern to government.
4. The present Committee considers that it is now appropriate to link the reporting of mineral resources with the reporting of ore reserves as shown in Figure 1.
5. The Committee has sought to define a mineral resource and then outline the process by which it may be upgraded to an ore reserve through consideration of technical and economic criteria and data including mining, metallurgy and marketing.
6. The Committee also considers that if the investment community recognises that a mineral resource may be the precursor of an ore reserve then it will find it easier to distinguish mineral resource assessments based on geoscientific and sampling data from ore reserve assessments based on consideration of detailed technical and economic data going beyond basic resource data.
7. The Committee considers this report unifies the industry's reporting of mineral resources and ore reserves and complements the Australian Code for Reporting Identified Coal Resources and Reserves and terminology used by government organisations in Australia, which is included with this publication as Appendix I.

CONCLUSIONS

8. The Committee believes that, in its efforts to:
 - define and distinguish between mineral resources and ore reserves;
 - subdivide identified mineral resources into categories of "inferred", "indicated" and "measured";
 - subdivide ore reserves into categories of "probable" and "proved"; and
 - discard the use of the terms "in situ reserves" and "possible ore";
 it has provided a code that will promote standardised reporting of a company's mineral assets.

Figure 1—REPORTING TERMINOLOGY



DISCUSSION

9. A "RESOURCE" is an in situ (meaning as it occurs on surface or underground) mineral occurrence quantified on the basis of geological data and a geological cut-off grade only.
- The term "ORE RESERVE" will only be used if a study of technical and economic criteria and data relating to the "RESOURCE" has been carried out and it will be stated in terms of mineable tonnes or volume and grade.
10. The Committee reaffirms its strong belief that the public release of information concerning mineral resources and ore reserves and related estimates must derive from reports prepared by appropriately qualified persons.
11. In an endeavour to encourage competent, professional reporting of resources and ore reserves and to eliminate unsatisfactory reporting the Committee recommends to the industry and to the Australian Stock Exchange Limited that resource and ore reserve reports conform to the Code set out below.
- The Committee recommends to the Australian Stock Exchange Limited that a declaration of conformity or otherwise with this code be a requirement for prospectus listings, regular reporting to stock exchanges, press releases or other information made available to the public.
12. The Committee is conscious of the fact that this Code has been the subject of considerable discussion and debate and that positive recommendations will continue to be received. This Code has been made in the knowledge that it will require review from time to time.

Competence

13. A "Competent Person" is a person who is a Corporate Member of The Australasian Institute of

Mining and Metallurgy with a minimum of five years' experience in the relevant Resource and Ore Reserve assessment field.

Responsibility

14. A "Resource Report" or "Ore Reserve Report" giving technical facts, interpretations or assessments of Resources or Ore Reserves must be prepared under the direction of, and signed by a Competent Person or Persons.
15. While the public release of information concerning a company's Resources and Ore Reserves remains the responsibility of its Board of Directors any such release must be based on, and fairly reflect a Resource and/or Ore Reserves Report, prepared by a Competent Person. Companies must review and report on Resources and/or Ore Reserves annually.
16. A Company must disclose basic information concerning the status and characteristics of a mineral deposit which could materially influence the economic value of that deposit.
17. The Competent Person responsible for the reporting must also include a statement relating the reported mineralisation to its mode of occurrence. Mineralisation may be established in a surface outcrop, costean, mine opening, or drill hole before there is any certainty or even "likelihood" that it could constitute part of a resource.
18. A company when reporting Pre-Resource mineralisation must disclose all available data including drill intersections. In reporting such mineralisation which may be isolated, sporadic or discontinuous, full information on the nature of the sampling, sample intervals, assay data and positions must be given (refer Table 1).

REPORTING OF IDENTIFIED MINERAL RESOURCES**Resource Terminology**

19. The term "Resource" is defined as an identified in situ mineral occurrence which excludes "Pre-Resource" mineralisation, from which valuable or useful minerals may be recovered. A resource may be reported as:
- an Inferred Resource
 - an Indicated Resource; or
 - a Measured Resource.
- In defining a resource, the competent person will only take into consideration geoscientific data. It must be appreciated, however, that in reporting on a resource, it is implied that there are reasonable prospects for eventual economic exploitation.
20. The term "Inferred Resource" is an estimate, inferred from geoscientific evidence, drill holes, underground openings, or other sampling procedures and before testing and sampling information is sufficient to allow a more reliable and systematic estimation.
21. The term "Indicated Resource" means a Resource sampled by drill holes, underground openings, or other sampling procedures at locations too widely spaced to ensure continuity but close enough to give a reasonable indication of continuity and

where geoscientific data is known with a reasonable level of reliability.

22. The term "Measured Resource" means a Resource intersected and tested by drill holes, underground openings, or other sampling and procedures at locations which are spaced closely enough to confirm continuity and where geoscientific data is reliably known.
23. The appropriate Resource category must be determined by a Competent Person.

Resource Report

24. A mineral resource identified during exploratory investigations should only be reported as a Resource to the stage where a significant probability of economic viability has been established and where relevant mine planning, metallurgical testing and other criteria, as shown in Figure 1, may indicate that the resource could be categorised as a Reserve.
25. Resource reports should be made more informative by dividing Resources into the three categories which reflect the quantity and quality of data available and the degree of correlation or continuity assigned and thus reflect the confidence level of the assessment.

421. 26. An Inferred Resource (the least reliable assessment) is a category for any identified resource, on which testing and sampling information has inferred a resource but not defined it sufficiently to classify it as indicated. Estimates should be expressed in round figures that do not imply precise estimation; be suitably qualified with terms such as "approximately"; and include a statement indicating the data on which the estimate is based. (See Table 1).
27. An Indicated Resource estimate will be based on more data than an Inferred Resource, and will therefore be more reliable.
28. A Measured Resource estimate (the most reliable resource estimate) will be based on a substantial amount of data competently collected, interpreted and evaluated which allows a clear outline of shapes, sizes, densities and grades to be estimated.
29. Any public release of information in a report concerning a company's Resources should state the pertinent data on which the Report is based and contain a qualification drawing attention to any assessment criteria from Table 1 for which inadequate data are available.
30. The words "ore" and "reserves" should not be used in stating Resource estimates as the terms imply technical feasibility and economic viability and are only appropriate when technical and economic factors have been considered. Reports and statements should continue to refer to the appropriate category or categories of identified Resources until technical feasibility and economic viability have been established. If re-evaluation indicates that the Resources are no longer viable, the Ore Reserves must revert to the "Resource" category.
31. Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. Tonnage and grade should reflect the order of accuracy of the estimate by rounding off. Thus an Inferred or Indicated Resource, with an accuracy no better than ± 20 per cent and possibly much less accurate, would be best reported to the second significant figure and by the use of appropriate words. For example, 10 863 000 tonnes at 8.23 per cent should be stated as approximately 11 million tonnes at approximately 8 per cent.

Table 1

Resource assessment criteria	Explanation
Data density	Whether sample density is sufficient to ensure continuity as well as provide an adequate data base for the estimating proceeding used.
Accuracy of location of sampling points	This variable refers to how well the location of a sample position is known and its effect on the resource estimate.
Drilling technique	Whether core, rotary, percussive or percussion and if non-core, whether open hole or reverse circulation.
Sampling technique	If core, whether cut or chisel broken and whether quarter, half or all core taken. If non-core, whether riffled, section cut, tube sampled, or whatever, and whether sampled dry or wet. If wet, what precautions taken to maximise recovery and minimise fines loss.
Proportion of core recovery in mineralised zone	
Tonnage factor (SG)	Whether assumed or determined and, if determined, by what method and how frequently. If assumed, are assumptions valid and the basis for those assumptions.
Quality of assay data	Whether reproducible and whether representative. Substantial quality control and umpire assaying is necessary to identify any deficiencies in assay quality.
Quality of data description	Whether core logged in detail; whether all significant lithologic, structural, mineralogic, alteration or other geological or geotechnical characteristics and properties recorded competently. If underground chip samples, whether channel cut or chipped linearly or whether randomly taken from a face. If, linear, whether horizontal or vertical.
Geological interpretation	Whether based on sufficient data or postulated assumptions, whether constrained by one model or whether consideration given to alternative possible interpretations.
Estimation techniques	A clear description of estimation techniques and key assumptions.
Cut-off grades	What cut-off grades have been assumed.

REPORTING OF ORE RESERVES

Ore Reserve Terminology

32. The term "*Ore Reserve*" means that part of a Measured or Indicated Resource, which could be mined together with dilution and from which valuable or useful minerals could be recovered economically under conditions realistically assumed at the time of reporting. Ore Reserves should be reported as:
- Probable Ore Reserves or
 - Proved Ore Reserves.
33. The term "*Probable Ore Reserves*" means Ore Reserves stated in terms of mineable tonnes or volumes and grades where the conditions are such that ore will probably be confirmed but where the in situ identified Resource has been categorised as "Indicated" and has not been defined with the precision necessary for the "Measured" category. Probable Ore Reserves includes ore that has been sampled on a pattern too widely spaced to ensure continuity.
34. The term "*Proved Ore Reserves*" means Ore Reserves stated in terms of mineable tonnes or volumes and grades in which the identified in situ resource has been defined in three dimensions by excavation or drilling, and may include additional minor extensions beyond actual openings and drill holes, where the geological factors that limit the ore body are known with sufficient confidence, that it is categorised as a "Measured Resource".
35. The choice of the appropriate category of Ore Reserve depends upon the quantity and quality of data available and the level of confidence that is attached to that data.
36. The appropriate Ore Reserve categories must be determined by a Competent Person.

Ore Reserve Reports

37. Any public release concerning a company's Ore Reserves must state the nature of the data on which the Report is based and contain a qualification drawing attention to any assessment criteria from Table 1 for which inadequate data are available. Economic or political factors alone may be the basis for significant changes in Ore Reserves and should be reported accordingly.
38. Ore Reserve estimates are not precise calculations, being derived from the estimates of Resources and modified by economic, mining, metallurgical, marketing, environmental, social and governmental factors. Tonnage or volume and grade figures in reports should be expressed so as to convey the order of accuracy of the estimates by rounding off normally to the second or third significant figure. Also to be included in the report are such restraints as cut-offs and related assumptions.

REPORTING OF COAL RESOURCES AND RESERVES

39. The Committee has not given detailed consideration to the question of coal reserve reporting and recommends that when public statements on coal resources and reserves are being made, the recommendations outlined in the "Australian Code for Reporting Identified Coal Resources and Reserves (February 1987)" published in Appendix 1 be adopted.