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REPORT NO 11/89

VOLUME 1

MICROFILMED

Evaluation of Mineral Sand Resources

at

Cowper Point

King Island

E.L. 41/88

Report Prepared for National Mineral Sands Pty. Ltd.

A. Dove
G. Lee

May, 1989

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vol 1/5

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SYNOPSIS

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1. AIM

To determine the resources of heavy mineral sands in the vicinity of Cowper Point, King Island. At the same time further assess the reliability of McMahon's 1967 data, and to obtain samples for mineralogy studies and metallurgical work.

2. REASON

National Mineral Sands Pty. Ltd. as operators of a joint venture with the Peko Wallsend Ltd. and Sanidine N.L. are evaluating the feasibility of recovering heavy mineral sand resources 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 Exploration Licence 41/88 covers 30 km² on King Island in the vicinity of Cowper Point.

3.2 The Back Beach deposit is the oldest mineralised beach sand occurrence, it overlies Tertiary calcareous sandstone. The deposit is indurated with organic cement.

3.3 The High Dune deposit comprises a sequence of mineralised beach deposits capped with mineralised Aeolian dunes, which extend to the modern coastline south of Cowper Point. For the most part this deposit is a clean, well sorted sand with little matrix.

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3.4 Drill hole locations were surveyed by tape and compass prior to drilling. Upon completion of drilling the High Dune drill hole collars were surveyed to give accurate co-ordinates and elevation.

3.5 A reverse circulation drilling programme of 342 holes totalling 2101.9m was supplemented with 52 hand drilled holes totalling 348.6m, located in areas in accessible to the drill rig.

3.6 An analysis of recovered sample weights shows a greater number of samples meeting specification than for the previous programme at Naracoopa. This is believed to be due to the Cowper Point sand being cleaner, better sorted and free of peat.

3.7 Laboratory testing of drill hole samples focussed on determining % heavy mineral, with mineralogical study of heavy mineral composites.

3.8 Resource estimates have been calculated at 1.5% heavy mineral cut-off for each of the High Dune and Back Beach areas, using both McMahon's 1967 and the recently obtained NMS data.

3.9 In the High Dune an Indicated resource of 16 million tonnes of sand contains 510 000 tonnes of heavy mineral at an average grade of 3.13%, 32 000 t of rutile and 39 000 t of zircon.

3.10 Within this High Dune resource a higher grade block has an Indicated resource of 6 million tonnes of sand containing 260 000 tonnes of heavy mineral at an average grade of 4.28%, 18 000 t of rutile and 20 000 t of zircon.

3.11 In the Back Beach area an Indicated resource of 2.2 million tonnes of sand contains 110 000 t of heavy mineral at an average grade of 5.06%, 8 200 t of rutile and 13 000 t of zircon.

3.12 Within this Back Beach resource a high grade concentration has been identified which contains an Indicated resource of 410 000 t of sand containing 57 000 tonnes of heavy mineral at an average grade of 14.05%, 4 500 t rutile and 6 600 t of zircon.

3.13 For both the High Dune and Back Beach areas a significantly increased resource tonnage is obtained by considering N.M.S. data separate from McMahon's. While average grades from both N.M.S. and McMahon data are very close in both areas the N.M.S. data considered alone gives a significant tonnage increase. It is believed that the most important factor influencing increased N.M.S. tonnage is greater drill hole depth; combined with better resource definition in light of the available McMahon data.

3.14 A computer calculated set of resource estimates are being compiled by Geopeko, Perth, which will take better

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account of the High Dune topography than is possible with manual estimation methods.

3.15 Mineralogy results are summarised in Tables 3 and 5 and detailed in Appendix 4. Throughout the High Dune mineralogy is generally consistent.

3.16 In the Back Beach there is a marked increase in zircon content in the southern part of the area (lines 1325N and 1600N). Rutile remains fairly constant throughout. In the north on line 3750NW both rutile and zircon contents decrease to 2% each of the total heavy mineral.

3.17 Exploration to the west of Back Beach has shown the area to contain shallow sand, less than 2m. thick, although some holes have encountered encouraging grades.

3.18 The strandlines between Back Beach and High Dunes contain sand thicknesses mostly between 3 and 4m. Some heavy mineral grades are greater than 1.5% and would require further investigation to determine economic viability before quantifying the resource.

3.19 Resources outlined to date in the Cowper Point area are summarised as:

Sand	Heavy Mineral	Rutile	Zircon
18 million t	620,000 t	40,000 t	52,000 t

4. RECOMMENDATIONS

4.1 Further investigations to delineate the heavy mineral resources of the Cowper Point area should follow demonstration of economic feasibility.

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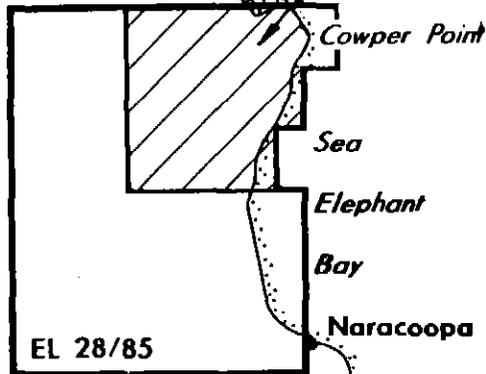
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KING ISLAND

EL 41/88



• Currie

• Grassy

NATIONAL MINERAL SANDS		
EL 41/88		
LOCATION MAP		
Author: A.DOVE	Date: MAY1989	DWG: 10-101

Fig No : 1

REPORT

5. INTRODUCTION

Exploration Licence 41/88 covers an area of 30 sq. km. on the east coast of King Island, Tasmania. Mining operations for heavy mineral sands (rutile and zircon) have been carried out in the past to the south of the licence area, at Naracoopa.

During the past three 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. The market outlook for titanium and zirconium raw materials is one of buoyancy.

In 1966 Ken McMahon & Partners while undertaking a hand drilling programme near Naracoopa, King Island, took the opportunity to test the dunes near Cowper Point. The results were encouraging and prompted a major hand drilling programme in 1967.

After drilling, using hand auger and cased sludging methods, on a widely spaced grid with lines spaced 300m apart and holes drilled at intervals of 30m along them, a reserve estimate using a 1.5% cut-off grade was made on both the High Dune and Back Beach deposits. McMahon's (1967) estimated reserve was 13,000,000 tonnes of sand containing 446,000 tonnes of heavy mineral at an average grade of 3.43%. These estimates were subsequently

revised by Kibuka (Johnson 1976) to 15,700,000 tonnes of sand containing 490,000 tonnes of heavy mineral at an average grade of 3.11%. Cross sections from McMahon showing heavy mineral grades have been made available to National Mineral Sands Pty. Ltd.

In 1975 and 1976 Kibuka Mines Pty. Ltd. also carried out a drilling programme to test the Cowper Point mineralisation. Only limited results from the Kibuka programme are available, and so cannot be used for comparison purposes.

A hand boring investigation was undertaken during November and December, 1988 to verify the reliability of McMahon's results. Results recorded in Dove & Lee (1988b) show a good correlation with those of McMahon. A more extensive exploration programme was commenced in January 1989 and was directed towards:

1. Infill drilling on lines basically spaced mid-way between those of McMahon.
2. Making a further assessment as to the reliability of the results recorded by McMahon.
3. Confirm the extent of the heavy mineral occurrences outlined by McMahon and to seek extensions to the deposit.
4. To more fully examine strandline sand deposits to the west of Back Beach and between Back Beach and the High Dunes for mineralisation.

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5. To obtain samples of mineralised sand for determination of heavy mineral grades, mineralogy and metallurgical work.

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

Investigations carried out and results obtained from this programme within Exploration Licence 41/88 supplement the results obtained from a similar work programme within EL 28/85; and recorded in Report 20/88 Dove & Lee (1988a).

6. TENEMENT INFORMATION

The area encompassed by Exploration Licence 41/88 was originally applied for by Sanidine N.L. in September 1985 as part of E.L. 28/85. Objections were lodged by parties involved with a proposed resort development (Kings Paradise Resort) and subsequently 30 sq. km. at Cowper Point was excised from the north eastern corner of E.L. 28/85 upon granting this licence.

In 1988, when the resort proposal had not materialised, Sanidine N.L. along with its joint venture partners National Mineral Sands Pty. Ltd. and Peko Wallsend Ltd., applied again for an exploration licence covering the Cowper Point area.

Exploration Licence 41/88 was subsequently granted over an area of 30 sq. km. on 28th October, 1988. Figure 1 is a map of King Island showing the licence area.

The licence encompasses land comprising:

- Private Property
- Crown Land
- Tasmanian Territorial Seas

It excludes 0.7 sq. km. being part of the Lavinia Nature Reserve.

7. BRIEF REVIEW OF GEOLOGY

7.1 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 Tertiary sediments, Pleistocene and Recent superficial deposits.

7.2 Formation of Deposits

In the Cowper Point area the Back Beach Deposit is the oldest mineralised beach sand occurrence. This deposit is the northerly time equivalent to the Lanherne deposit at Naracoopa and is most probably a Pleistocene interglacial beach deposit.

The Back Beach deposit overlies the Tertiary calcareous sandstone, similar to that outcropping at the mouth of Blowhole Creek. In some areas, particularly along the western flank of the Back Beach deposit, a dark grey carbonaceous clay underlies the sands and overlies the Tertiary sandstone. This clay unit thins towards the east.

Traversing in an easterly direction from the Back Beach

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is a series of beach strandline deposits resting directly on the Tertiary sandstone. These beach deposits typically fine upwards and often contain a basal gravel and/or coarse shell layer. Along the eastern side Aeolian dune sands overlies these strandline deposits.

The High Dune deposit occurs near the modern coastline at Cowper Point. It comprises a sequence of mineralised beach deposits capped with mineralised Aeolian dunes. Beach sequences typically commence with a poorly sorted shelly sand, sometimes with carbonaceous silt resting directly on the Tertiary sandstone. The sequence fines upwards to a well sorted sometimes richly mineralised beach deposit. Aeolian dune deposits range upwards to in excess of 30m. thick. To the south of Cowper Point the mineralised beach and Aeolian dune deposits extend to the modern coastline, while to the north of Cowper Point a younger, non-mineralised sequence of beach and dune deposits has built up on the coastal side of the High Dune deposit.

High Dune mineral deposition is structurally controlled by a high in the Tertiary calcareous sandstone basement. The structural contour map for the base of the sand body (Figure 25) shows the highest area is in the vicinity of drill traverse line 3150N. The basement high appears to have caused heavy mineral concentration to the north, principally between lines 3150N and 4050N.

The higher concentration of heavy mineral most likely

occured due to an altered energy regime in the shallow beach environment caused by the structural high. This caused the deposition and accumulation of the higher density heavy minerals.

7.3 Nature of Deposits

The Back Beach deposit comprises a moderately well sorted sand with a coarse basal deposit particularly along the western flank. Also along the western margin some very high heavy mineral grades have been encountered in the near surface sands. For the most part the deposit is indurated with accumulated organic cement, similar to Lanherne Beach at Naracoopa. Blowhole Creek forms the western limit to this deposit.

The High Dune deposit comprises a moderately well sorted beach sequence overlain by a well sorted Aeolian dune. For the most part the sand is very clean with little matrix. Shell content is variable. Pebbles and shells with coarse sand occur near the base in places. The western part of the High Dunes overlies organically cemented sands similar to those of Back Beach.

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8. SURVEY AND MAPPING

8.1 Preamble

A project grid was established using an existing north-south straight trafficable track along the axis of the Back Beach deposit as a base line. This line was given an eastings designation of 1000E. It formed the base line for the 1967 McMahon grid. At the northern end the 1000E line swings in a north-westerly direction and has been designated 1000NE.

Drill hole positions were established on east-west traverse lines. Traverse lines were established at right angles to the 1000E line and mostly spaced at 300m intervals, in order to be spaced half way between McMahon's 1967 traverse lines and provide greater information density. Figure 2 shows the 1000E base line and the location of all traverse lines over the length where drill holes were located.

Three exploratory drill traverse lines extended west of Back Beach. These lines were located to coincide with existing cut lines and do not intersect the 1000E line at right angles. In these cases the line has been given a designated northing at the point of intersection with the 1000E line.

All survey of locations prior to drilling was by tape compass and range pole. In the case of the Back Beach and intermediate strandlines between Back Beach and High Dunes, this survey method is considered to be

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sufficiently accurate for resource estimation purposes, since there was good line of sight along cleared lines with minimal topographic relief.

In the High Dune deposit topographic relief caused problems with survey. Furthermore many drill holes had to be relocated to sites accessible by the drill rig which were offset from the original pegged location. In the extreme cases offsets approaching 30m. were made, requiring a rig drilled hole on the offset location and a hand bored hole on the original site. When offsetting hole locations, a balance was made, where possible, to ensure a consistent sampling of the topographic relief i.e. some holes were offset upslope and some downslope, rather than all offsets downslope. Upon completion of the drilling in the High Dunes drill hole collars were surveyed by Mr. R. Cleeland, a registered surveyor.

Collar elevations to mean sea level and co-ordinates to AMG were recorded and are reproduced in Appendix 1 of this report.

Table 1 records drilled traverse lines as originally tape surveyed to the project grid.

8.2 Orthophoto Mapping

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

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TABLE 1

Drilled Traverse Lines on Project Grid

Easting	Northing	Location	Hole Spacing	No. of Holes Drilled
1640E - 2440E	4650N	High Dune	40m	21
1920E - 2640E	4350N	High Dune	40m	21
1930E - 2720E	4050N	High Dune	40m	23
1880E - 2680E	3750N	High Dune	40m	21
2160E - 2720E	3450N	High dune	40m	17
2120E - 2640E	3150N	High Dune	40m	14
2060E - 2800E	2800N	High Dune	40m	12
2040E - 2380E	2500N	High Dune	40m	10
2120E - 2280E	2200N	High Dune	20m	9
2080E - 2320E	1900N	High Dune	20m	9
2040E - 2240E	1600N	High Dune	20m	11
940NE - 1120NE	4020NW	Back Beach	20m	10
940NE - 1320NE	3750NW	Back Beach	20m & 40m	14
940NE - 1080NE	3450NW	Back Beach	20m	8
780E - 920E	3150N	Back Beach	20m	8
840E - 1040E	2800N	Back Beach	20m	11
840E - 1080E	2500N	Back Beach	20m	13
840E - 1120E	2200N	Back Beach	20m	15
920E - 1120E	1900N	Back Beach	20m	11
940E - 1140E	1600N	Back Beach	20m	11
1140E - 1360E	1600N*	Back Beach	20m	12
	(*Offset 20m south i.e. 1580N)			
860E - 1340E	1325N	Back Beach	20m	25
960E - 2080E	3150N	Strandlines	40m	29
1160E - 2080E	2200N	Strandlines	40m	24
440E - 840E	2688N	West of Back Beach	40m	11
540E - 960E	1638N	West of Back Beach	40m	12
1040E - 1320E	1000N	South of Back Beach	40m	8

TOTAL

390

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

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 within E.L. 41/88. On the orthophoto map are reproduced the drilled sections of McMahons 1967 traverse lines and the National Mineral Sands 1989 traverse lines.

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9. DRILLING

9.1 Preamble

Drilling operations were carried out using both hand augering/cased sludging and reverse circulation techniques. Holes spaced at either 40m or 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 surveyed drill hole locations.

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

9.2 Hand Drilling

Hand augering was carried out by Moina Mining Industries in areas inaccessible for the drilling rig. Holes were hand augered to water table using 50mm diameter hand auger. When water table was reached, 50mm casing was inserted into the hole and was advanced by sludging using a whistle top sludger on aluminium extension rods.

In the High Dune area auger holes were terminated at 11.5m if rock basement, pebbles or thick clay were not intersected prior to this depth. Samples for the first interval were 1.5 metres, with subsequent samples representing 2 metre increments. A total of 348.6m from 52 holes was drilled.

9.3 Reverse Circulation Drilling

Reverse circulation drilling was carried out, using a 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. It does however tend to down grade contained heavy mineral grades when compared to results obtained from hand drilling, as was demonstrated at Naracoopa, Dove & Lee 1988a.

The Tasmanian Department of Mines would not allow limited dozing in the more heavily vegetated western parts of the High Dunes. Considerable effort was expended to hand cut access to comply with the Departments directions in these areas.

Photos 1 to 4 show various aspects of the drill problems encountered, and damage caused to equipment by thick vegetation on the 3150N line.

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 2101.9m from 342 holes was drilled, including three (3) water testing holes drilled



Photograph 1

Before hand-clearing to gain access to drillhole
2100E, 2800N

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Photograph 2

Drill rig on site for hole 2100E, 2800N showing extent of hand clearing required to gain access.



Photograph 3

Part of drainage to compressor truck
resulting from inadequate clearing to
access 2800N line.

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Photograph 4

Showing drill hole 2280E, 3150N after completion of drilling. Only limited hand clearing was required to gain access.

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 $1,600 \text{ kg/m}^3 = 7.88 \text{ kg}$

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.

9.4 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 9.3 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 20th March, 1989. Most samples included in this analysis were derived from the High Dunes deposit. In carrying out this analysis top and bottom intervals were considered separately from middle drill hole intervals. Weights for

top and bottom intervals of less than 2.0m length drilled were factored to a 2.0m equivalent so that a direct comparison could be made. Table 2 shows the results of this weight check along with results from a similar study made on the Naracoopa samples (Dove and Lee 1988a p 16) where only drill hole middle intervals were considered.

Comments pertaining to sample weight variations are:

. Top intervals tend to be underweight. None of the top intervals are overweight. Low sample weight for the top interval of reverse circulation drilling is a well known phenomenon.

. Middle sample intervals fall mostly (91.8%) in specification.

. There is a tendency for middle sample intervals to be slightly underweight with 6.4% underweight compared to 2.0% overweight.

. Compared to drilling at Naracoopa there is a greater number of samples meeting specification. Considering that the same drilling equipment and personnel were employed, the most likely explanation for better sample weight control at Cowper Point is the ground conditions in the High Dunes where the sand is clean, well sorted, more uniform grain size and mostly free of induration. The lack of peat in the High Dunes is particularly significant.

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TABLE 2

Analysis of R.C. Drill Sample Weight Variations
for 2.0m. Intervals or Equivalent

Weight	<5.9 kg	5.9-9.9 kg	>9.9 kg	Total
<u>Top Intervals</u>				
No. of Samples	90	44	Nil	134
% of Samples	67.2	32.8	Nil	100.0
<u>Middle Intervals (Cowper Pt.)</u>				
No of Samples	25	367	8	400
% of Samples	6.3	91.8	2.0	100.1
<u>Middle Intervals (Naracoopa Dove & Lee 1988a)</u>				
No. of Samples	66	325	15	406
% of Samples	16.3	80.0	3.7	100.0
<u>Bottom Intervals</u>				
No. of Samples	38	78	18	134
% of Samples	28.4	58.2	13.4	100.0

. Bottom intervals have the highest number of overweight samples, most probably due to a tendency to "mine" at the end of drilling some holes.

. Bottom intervals still maintain the tendency to have more underweight (28.4%) samples than overweight (13.4%) samples.

. The bottom interval underweight samples are most probably caused by partial blockage of the samples recovery system by shells and pebbles.

. The reverse circulation drilling fails to meet the specified weight criteria of section 9.3. There is an overall tendency for the samples to be less than the theoretical weight which is more acceptable than samples significantly larger than the theoretical weight. The cause of overweight samples is usually a tendency to "mine" sample from the hole which produces a non representative sample biased towards the interval mined.

10. LABORATORY TESTING

10.1 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.
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. Records results for:

- . dry weight of sample as received.
- . weight % of +1mm material
- . weight % slimes
- . weight % heavy minerals

10.2 Results of Heavy Mineral Determination

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

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

Figures 4 to 14 are cross-sections showing heavy mineral grades for each drillhole interval in the High Dune deposit. Back Beach deposit cross sections are included as figures 15 to 23 showing heavy mineral grades.

10.3 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 all magnetic fractions were subject to point count, while a few selected samples had only the

1.2 amp non magnetic fraction point counted. 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-magnetics

using 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 fractions.

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

Results are included as Appendix 4 and shown on the cross sections, Figures 6 to 23.

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 rutile and zircon 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 and so no specific gravity correction was applied to volume percentages.

11. RESOURCE ESTIMATES AT 1.5% CUT-OFF

11.1 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 5.

Resource estimates have been calculated initially at 1.5% heavy mineral cut-off. Limits at 1.5% cut-off are shown on the cross-sections, Figures 6 to 23 and are also plotted on plan in Figure 24. 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 drill hole. Each drill hole represents a block extending half way to the adjoining drillhole i.e. either 10m. for Back Beach or 20m. for High Dunes to each side.

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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, at Naracoopa (Dove & Lee, 1988a, p. 18).

. All reserves are considered as "Indicated" and totals have been rounded to 2 significant figures as set out in Tables 3 to 6 .

Figure 24 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 and zircon.

11.2 High Dunes

The High Dune deposit contains both strandline and Aeolian dune concentrations of mineralisation. Figure 24 shows the extent of the area considered which is bounded in the north by McMahon's 160N traverse line and in the south by a line half way between McMahon's 90N and N.M.S. 1900N traverse lines i.e. 1960N on the N.M.S. grid. The western boundary for the most part is the junction

between back barrier swamps and Aeolian dunes which is marked by a distinct break in slope.

McMahon's (1967) results as well as the recent results of N.M.S. have been included in the resource calculations. The McMahon results have been demonstrated to be reliable as shown by Dove & Lee (1988b). Subsequent work has further reinforced the reliability of McMahon's results with respect to:

- . extent of High Dune mineralisation
- . overall grade trends

In calculating resource estimates McMahon's results for heavy mineral content have been given equal weight with those of N.M.S. thereby increasing density of available data throughout the mineralisation. In the north of the High Dune deposit the 160N, 150N, 140N and 130N traverse lines of McMahon and the 4650N, 4350N and 4050N traverse lines of N.M.S. cross each other. In this area triangular resource blocks are generated (see figure 24) with a bisector separating the McMahon and N.M.S. traverse lines into blocks. This creates a variable north-south extension and so each drillhole has been treated as a separate sub-block with an extension to the edge of the resource block. At the apex of each triangular resource block preference has been given to N.M.S. drill hole data.

Table 3 sets out the resource estimates block by block for the High Dune area. Only mineralogy due to National

TABLE 3

HIGH DUNE - INDICATED RESOURCES 1.5% CUT-OFF.

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McMAHON (1967)	N.M.S. (1969)	EXTENSION (m)			t/m EXTENSION		H.M. %	MINERALOGY			TONNES					
		Nth	Sth	Total	Raw Sand	H.M.		Rutile	Zircon	Leu.	Sand	H.M.	Rutile	Zircon	Leu.	
160N		VARIABLE					2.26	(5)	(5)	(5)	192 528	4 390	220	220	220	
	4650N	VARIABLE					2.56	5	5	5	1 535 468	39 306	1 965	1 965	1 965	
150N		VARIABLE					2.32	(5)	(5)	(5)	306 248	7 105	355	355	355	
	4350N	VARIABLE					2.95	4.5	5	5	1 226 240	36 123	1 626	1 806	1 806	
140N		VARIABLE					3.33	(5.5)	(6)	(5)	559 664	18 643	1 025	1 119	932	
	4050N	VARIABLE					3.41	6.5	7.5	5	1 726 741	58 797	3 822	4 875	2 940	
130N		VARIABLE					3.25	(6.5)	(7.5)	(5.5)	1 191 672	38 729	2 517	2 905	2 130	
120NC		90	58	148	5 500	176	3.23	(6.5)	(7.5)	(5.5)	614 000	26 344	1 712	1 976	1 449	
	3750N	58	90	148	11 675	445	3.74	6.5	8	6	1 757 500	65 660	4 291	5 969	3 952	
120NE		90	65	155	5 213	310	3.60	7	10	6	1 333 310	48 050	3 364	4 805	2 883	
	3450N	65	90	155	5 660	213	3.78	6.5	8.5	6.5	677 300	33 015	2 146	2 606	2 146	
120NA		90	58	148	4 267	162	3.60	(6.5)	(8)	(7)	631 516	23 976	1 556	1 918	1 678	
	3150N	58	100	158	6 611	162	2.76	6.5	8	7.5	1 044 538	28 756	1 869	2 300	2 157	
120N		100	75	175	5 467	164	2.75	5	8	9	956 725	26 700	1 435	2 296	2 583	
	2800N	75	75	150	5 066	127	2.51	7	8	7	759 900	19 050	1 333	1 524	1 333	
110N		75	75	150	3 317	90	2.70	(7.5)	(9)	(6)	497 550	13 500	1 013	1 215	810	
	2500N	75	60	155	2 899	81	2.78	8	10	5	449 345	12 555	1 004	1 256	628	
100N		80	70	150	1 800	36	2.00	(6.5)	(7.5)	(5.5)	270 000	5 400	351	405	297	
	2200N	70	88	158	984	20	2.00	5	5	6	155 472	3 160	158	158	190	
90N		88	65	153	758	17	2.30	(5)	(5)	(6)	115 974	2 601	130	130	156	
Average Grade							3.13	TOTAL TONNES			16 401 911	514 060	31 884	39 303	30 610	
								TOTAL ROUNDED TONNES			16 000 000	510 000	32 000	39 000	31 000	

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(6.5) Assumed Mineralogy on the Basis of Adjacent N.M.S. Mineralogy.

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Mineral Sands has been included in this Table. While partial mineralogy is available from McMahon's results it does not contain leucoxene data; it shows similar zircon contents but rutile on average is 2.5% higher than N.M.S. data. Furthermore the writers consider the overall trends exhibited by the N.M.S. mineralogy data to be sufficiently reliable to allow a prediction of the mineralogy on the McMahon lines to be made for resource calculation purposes.

A figure for % +2mm was determined to be 0.24%. However this figure was not applied as a correction to the resource estimates since it does not alter the rounded figures.

Within the High Dune resource there is a higher grade resource, which is also shown on Figure 24. This resource has been defined as the High Dune area where drillholes contain greater than 3.0% heavy mineral average grade. Table 4 sets out details of this higher grade resource.

Estimates were also made for comparative purposes using only N.M.S. and only McMahon data, within basically the same limits used elsewhere. Results are:

	Raw Sand t	Heavy Mineral t	Av Grade %
N.M.S.	18,000,000	560,000	3.14
McMahon	14,000,000	440,000	3.20
N.M.S. & McMahon (Table 3)	16,000,000	514,000	3.13

TABLE 4

HIGH DUNE - INDICATED RESOURCES OF HIGH GRADE AREA

McMAHON (1967)	N.M.S. (1989)	EXTENSION (m)			t/m EXTENSION		H.M. %	MINERALOGY			TONNES				
		Nth	Sth	Total	Raw Sand	H.M.		Rutile	Zircon	Leu.	Sand	H.M.	Rutile	Zircon	Leu.
130N		VARIABLE					4.23	(7)	(7)	(6)	667 008	28 203	1 974	1 974	1 692
	4050N	VARIABLE					4.49	7	7	6	1 048 800	47 121	3 298	3 298	2 827
120NC		90	58	148	2 067	97	4.68	(7)	(7)	(6)	306 212	14 356	1 005	1 005	861
	3750N	58	90	148	9 043	392	4.34	7	8	6	1 338 364	58 016	4 061	4 641	3 480
120NB		90	65	155	5 213	235	4.50	(7)	(8)	(6)	808 015	36 245	2 550	2 914	2 186
	3450N	65	90	155	4 573	192	4.19	7	9	6	708 815	29 760	2 083	2 678	1 786
120NA		90	58	148	2 760	120	4.36	(7)	(9)	(6)	408 480	17 760	1 243	1 598	1 066
	3150N	58	100	158	2 163	81	3.73	7	9	7	341 754	12 798	896	1 152	896
120N		100	75	175	4 027	135	3.36	(7)	(9)	(7)	402 700	13 500	945	1 215	945
Average Grade							4.28	TOTAL TONNES			6 030 148	257 939	18 055	20 474	15 739
								TOTAL ROUNDED TONNES			6 000 000	260 000	18 000	20 000	16 000

(6.5) Assumed Mineralogy on the Basis of Adjacent N.M.S. Mineralogy.

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The above results show:

- . very similar average grades
- . significantly higher tonnage estimates for N.M.S. only data

The higher N.M.S. tonnage estimates are due to greater depth penetration of drill holes; and greater sampling of topographically higher ground by the N.M.S. grid compared to the McMahon grid.

In preparing geological resource estimates only limited consideration has been given to the practicality of mining on each of the cross sections. For the most part the resource estimates are based on practical dredge mining situations with relatively flat bottom to mine path. However in places the practicability of dredge mining is not certain eg. on line 2500N Figure 7 holes 2160E and 2220E show a cut off at 1.5% heavy mineral at a higher RL (shallower depth) than the adjoining holes on each side which are mineralised for the full sand depth. Later closer spaced drilling, initially at 20m centres, may alter the knowledge in this area and will probably alter the mine plan. One of two potential situations is likely to arise from closer spaced drilling:

1. It is conceivable that the average grades will be such that the full depth of the sand body can be worked through the cross-section, that the lower grades in holes 2160E and 2220E represent relatively small sand tonnages which cannot be left unmined from a practical viewpoint

and furthermore are supported by higher surrounding grades.

2. That the high grades in hole 2200E are localised concentrations which do not raise average grades sufficiently to be mineable. In this situation the whole area may be left unmined or else selectively mined where grades and tonnage are economic.

For the purpose of preparing this report and making Indicated Resource Estimates, boundaries to the resource have been taken, as shown on the cross-sections i.e. at the 1.5% cut off limit.

A somewhat similar situation may also apply to:

Lines 3450N; 2520E - 2560E (Fig. 10)

3750N; 2640E - 2680E (Fig. 11)

4050N; 2520E - 2720E (Fig. 12)

as has been outlined for 2500N; 2166E - 2220E.

11.3 Back Beach

The Back Beach deposit is an accumulation of beach deposited strandlines. Figure 24 shows the extent of the area considered which is bounded in the north by traverse line 3750NW and along the western boundary by Blowhole Creek. In the south also by Blowhole Creek where it turns and flows in an easterly direction, but for resource estimation purposes the southern boundary has been taken as a line equivalent to the project grid

1175N. The eastern extent is determined by heavy mineral grade.

McMahon's (1967) results as well as the recent results of N.M.S. have been included in the resource calculations. The McMahon results have previously been demonstrated to be reliable and recent work has further reinforced the reliability with respect to:

- . Overall extent of mineralisation
- . Overall grade trends

In calculating resource estimates McMahon's results have been given equal weight with those of N.M.S., thereby increasing the density of available data throughout the mineralisation.

Table 5 sets out the resource estimates block by block for the Back Beach area.

A figure for % +2mm was determined to be 1.96%.

Reference to Section 10.1 of this report indicates that during laboratory testing heavy minerals are recorded as a % of the minus 2mm working sample in Step 11. Applying 1.96% as an oversize correction factor will slightly alter the results which are shown in Table 5 as "Total Rounded Tonnes After Oversize Correction".

Within the Back Beach resource there is a high grade mineral concentration which probably represents a single storm event. This high grade resource is also shown on Figure 24 and is defined as the area encompassing drill holes with greater than 5.0% heavy mineral average grade.

TABLE 5

BACK BEACH - INDICATED RESOURCES AT 1.5% CUT-OFF.

McMAHON (1967)	N.M.S. (1989)	EXTENSION (m)			t/m EXTENSION		H.M. %	MINERALOGY			TONNES				
		Nth	Sth	Total	Raw Sand	H.M.		Rutile	Zircon	Leu.	Sand	H.M.	Rutile	Zircon	Leu.
	3750NW	-	150	150	728	23	3.20	2	2	2	109 200	3 450	69	69	69
	3450NW	150	122	272	352	9	2.43	8	12	4	95 744	2 448	196	294	98
	3150N	122	98	220	552	23	4.10	6	10	4	121 440	5 060	304	506	202
120N		98	80	178	202	5	2.67	8	12	12	35 956	890	71	107	107
	2800N	80	70	150	680	60	8.84	7	10	2	102 000	9 000	630	900	180
110N		70	85	155	754	31	4.09	(6.5)	(9.5)	(2.5)	118 870	4 805	312	456	120
	2500N	85	75	160	582	35	6.05	6	9	3	93 120	5 600	338	504	168
100N		75	78	253	595	26	4.42	(6.5)	(10)	(3.5)	91 035	3 978	239	398	139
	2200N	78	78	156	2 272	141	6.21	7.5	11	4	347 616	21 573	1 618	2 373	863
90N		78	75	153	154	20	13.34	(7.5)	(11)	(4)	23 562	3 060	230	337	122
	1900N	75	75	150	1 296	86	6.64	8	11	4	194 400	12 900	1 032	1 419	516
80N		75	75	150	906	91	10.00	10	14	8	131 370	13 195	1 320	1 647	1 056
	1800N	70	78	148	1 430	47	3.32	9	16	5	211 640	6 956	626	1 113	328
70N		78	65	143	943	35	3.74	(8.5)	(17)	(5)	134 649	5 005	425	851	250
	1325N	65	150	215	1 565	53	3.41	8	18	5	338 475	11 395	912	2 051	570
Average Grade							5.06	TOTAL TONNES			2 181 677	110 465	8 340	13 225	4 808
								TOTAL ROUNDED TONNES AFTER OVERSIZE CORRECTION			2 200 000	110 000	8 200	13 000	4 700

(6.5) Assumed Mineralogy on the Basis of Adjacent N.M.S. Mineralogy.

Table 6 sets out details of this high grade resource; which while tonnage is relatively low at 57 000 t of heavy mineral the grade at 14% is attractive.

Estimates were also made for comparative purposes using only N.M.S. and only McMahon data, within basically the same limits used elsewhere. Results are:

	Raw Sand t	Heavy Mineral t	Av Grade %
N.M.S.	2,800,000	140,000	5.15%
McMahon	1,400,000	79,000	5.50%
N.M.S. & McMahon (Table 5)	2,200,000	110,000	5.06%

The above results show:

- . very similar average grades
- . significantly higher tonnage estimates for N.M.S. only data

The higher N.M.S. tonnage estimates are due in part to greater drill hole depth penetration, but probably of greater importance is the better definition of mineralisation achieved as a result of the N.M.S. drilling and testing utilising the McMahon data as a basis for planning.

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TABLE 6

BACK BEACH - INDICATED RESOURCES AT 5.0% CUT-OFF

McMAHON (1967)	N.M.S. (1989)	EXTENSION (m)			t/m	EXTENSION		H.M. %	MINERALOGY			TONNES				
		Nth	Sth	Total	Raw Sand	H.M.	Rutile		Zircon	Leu.	Sand	H.M.	Rutile	Zircon	Leu.	
	2800N	80	70	150	328	52.1	15.88		7	10	2	49 200	7 815	547	781	156
110N		70	85	155	115	18.9	16.43	(6.5)	(9.5)	(2.5)	17 825	2 929	190	278	73	
	2500N	85	75	160	112	21.2	18.93		6	9	3	17 920	3 392	204	305	102
100N		75	78	153	187	16.6	8.88	(6.5)	(10)	(3.5)	28 611	2 540	165	254	89	
	2200N	78	78	156	496	78.5	15.83		8	11	2	77 376	12 246	980	1 347	245
90N		78	75	153	154	20.5	13.31	(7.5)	(11)	(4)	23 562	3 136	235	345	125	
	1900N	75	75	150	560	70.0	12.50		8	11	4	84 000	10 500	840	1 155	420
80N		75	70	145	360	68.5	19.03		10	14	8	52 200	9 932	993	1 390	795
	1600N	70	78	148	144	16.4	11.39		9	16	5	21 312	2 427	218	388	121
70N		78	65	143	144	7.3	5.09	(8.5)	(17)	(5)	20 592	1 044	89	177	52	
	1325N	65	150	215	83	7.9	9.52		8	18	5	17 845	1 698	135	306	85
		Average Grade					14.05		TOTAL TONNES			410 443	57 659	4 596	6 726	2 263
							TOTAL ROUNDED TONNES AFTER OVERSIZE CORRECTION			410 000	57 000	4 500	6 600	2 200		

(6.5) Assumed Mineralogy on the Basis of Adjacent N.M.S. Mineralogy.

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12. GENERAL DISCUSSION

12.1 Summary of Resources

Indicated resources at 1.5% heavy mineral cut-off have been determined to be:

	Raw Sand t	H.M. t	Rutile t	Zircon t
High Dunes	16 million	510,000	32,000	39,000
Back Beach	2.2 million	110,000	8,200	13,000
Total	18 million	620,000	40,000	52,000

Within each of the High Dune and Back Beach resources there are higher grade areas which could be selectively mined.

The resource estimates stated in this report have an Indicated status and therefore must be considered as having a reliability of probably 20%. In broad terms this encompasses the range shown in report sections 11.2 and 11.3 by considering the McMahon and N.M.S. data separately.

12.2 Resource Estimates - High Dunes

Resource estimates in the High Dunes are significantly influenced by topography. A close and detailed examination of McMahon's traverse lines indicates that although they form a regular grid they do in fact on average sample more of the low than the high topography. The N.M.S. traverse lines infill between McMahon's lines

and taken together the two sets of data provide a much improved sampling.

Manually calculated resource estimates only consider topography so far as it affects the drill traverse line. Topographic changes between traverse lines are not taken into account. For the High Dune deposit the contained sand volume (and therefore tonnage) is largely influenced by topography. It was considered that a more accurate estimate would be achieved by determining a volume based on the available photogrammetry. At the time of writing this report computer calculated resource estimates were being undertaken by Geopeko through their Perth office, using the Surpac system.

Preliminary indications are that manually calculated volumes are in the order of 15% less than those determined by a rigorous consideration of topography.

Estimates for the High Dunes have at this stage been calculated to a 1.5% cut-off grade. Within this resource area is a higher grade block of 6 million tonnes of sand. (38% of the total) containing 260,000 tonnes of heavy mineral (51% of the High Dune total). Average grade increases from 3.13% to 4.28% heavy mineral. This high grade block is in the western part of the High Dunes and presents fewer problems for mining and rehabilitation than would some of the higher and steeper topography in the area to the east.

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The eastern High Dunes in many places contain steep sand slopes which in one area are non vegetated. Access for mechanical drilling equipment was not possible on a number of drill traverse lines, on which the eastern most holes were all hand drilled. Drill depth penetration in this area was limited to that attainable by hand boring. It is still not possible to say whether richer strandline concentrations of heavy mineral occur beneath these eastern High Dunes. A possible resource exists, principally on the eastern end of lines 3750N and 4050N, which would be in addition to that outlined by this drilling and testing programme. It is pointed out however, that significant additional resource tonnage in the eastern High Dunes would depend on higher grade strandline concentrations which would have to be sufficiently rich to support the mining of the low grade overburden.

Mineralogy results are detailed in Appendix 4 and summarised in Table 3. Throughout the High Dune mineralogy is generally consistent with rutile and zircon contents somewhat lower than contained in either the Back Beach deposit or at Naracoopa. There is a tendency towards slightly higher levels of both rutile and zircon in the heavy mineral suite in areas of higher heavy mineral grades.

12.3 Resource Estimates - Back Beach

The Back Beach deposit has a generally flat topography, similar to that of the Lanherne Beach deposit at

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Naracoopa. Resource estimates, manually calculated, do not suffer from the topography induced errors noted previously for the High Dune deposit.

Within the Back Beach deposit is a high grade strand of mineralisation running along the western flank. Table 6 sets out details at a 5% heavy mineral cut-off grade. This high grade strand contains 19% of the raw sand and 52% of the contained heavy mineral in the whole of the Back Beach deposit. Average grades of 14.05% heavy mineral are estimated.

Mineralogical results for the Back Beach are included in Appendix 4. There is a significant variation from south to north (along strike) in zircon content which drops from 18% of total heavy mineral on 1325N and 16% on 1600N to between 9 and 10% of total heavy mineral on lines 1900N, 2200N, 2500N, 2800N and 3150N. Rutile contents remain fairly constant between 6 and 8% of the total heavy mineral. Moving north again to Line 3750NW both rutile and zircon drop to 2% each of the total heavy mineral.

Mineralogical variations in an east-west direction (across strike) do not appear significant from results obtained for the 2200N line. In this case the high grade mineralisation on the western side of the deposit was kept separate from the eastern lower grade mineralisation during mineralogical examination.

In the Back Beach deposit there is potential to increase heavy mineral tonnage estimates by extending drilling to the east particularly on McMahon lines 90N and 120N. Further the recent N.M.S. drilling at 20m. hole spacing (compared to McMahon 30m. spacing) has given better definition of grades, particularly in the high grade area. Closer spaced drilling at 20m. on McMahon lines and ultimately maybe 10m. on all lines could lead to increased resource estimates as the high grade areas are better defined.

12.4 Other Resources

Exploration drilling was completed with a view to testing other potential targets. The area of principal interest was west of Blowhole Creek. Two lines of holes 1638N and 2688N traversed this area. Some encouraging heavy mineral grades (+5%) were encountered in this area particularly on the 1638N line, however the shallow depth of sand (generally less than 2.0m.) overlying the Tertiary calcareous sandstone would increase mining and rehabilitation costs.

In the intermediate strandline area between Back Beach and High Dunes drilling on 2200N and 3150N has intersected some shallow sands mostly 3 to 4m. thick with mineral grades greater than 1.5%. Whether these are economically attractive will depend upon the feasibility of mining shallow areas, followed by further drilling to define the contained resource.

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12.5 General Comment

During the work programme undertaken in this investigation no attempt has been made to determine variation due to the reverse circulation and hand drilling methods employed, as was carried out at Naracoopa. Similarly no comparative or referee heavy mineral separations have been undertaken. It was considered during the planning of the investigation that such work could be deferred until a feasibility study had been completed and showed the project to be economically viable.

Adequate provision has been made to carry out such work, if required, in the future.

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(APPENDIX 1 & APPENDIX 2.1 to 2.11)

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Evaluation of Mineral Sand Resources

at

Cowper Point

King Island

E.L. 41/88

Report Prepared for National Mineral Sands Pty. Ltd.

A. Dove
G. Lee

May, 1989

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APPENDIX 1

R. Cleeland - Surveyors Report

Cowper Point

High Dune Drillhole Collars

Listing from points 23 to 61 on file WATSON

588058

STADIA No.	CODE	EAST	CO	NORTH	CO	LEVEL	FIELD B.K No.
23	162040	253046.59		5584568.72		4.52	0
24	162060	253064.77		5584565.85		8.72	0
25	162080	253083.87		5584561.66		15.01	0
26	162100	253103.89		5584563.85		10.01	0
27	162120	253121.63		5584558.81		8.39	0
28	162140	253146.37		5584571.06		17.49	0
29	162160	253162.03		5584561.38		15.13	0
30	162180	253181.31		5584556.71		14.43	0
31	162200	253202.54		5584560.47		12.86	0
32	162220	253221.46		5584561.56		8.08	0
33	162240	253241.02		5584560.80		4.82	0
34	192160	253194.09		5584862.37		3.31	0
35	192180	253213.84		5584860.54		3.39	0
36	192200	253233.49		5584859.87		3.37	0
37	192220	253254.54		5584858.16		3.37	0
38	192240	253273.72		5584857.34		6.69	0
39	192260	253293.22		5584855.84		8.63	0
40	192280	253313.22		5584855.07		5.73	0
41	192330	253332.03		5584856.74		4.36	0
42	192320	253352.90		5584853.34		3.63	0
43	222120	253192.96		5585166.41		4.97	0
44	222140	253212.88		5585165.08		5.66	0
45	222160	253232.32		5585164.68		10.70	0
46	222180	253251.92		5585163.29		11.60	0
47	222200	253271.73		5585161.16		8.84	0
48	222220	253290.78		5585158.08		8.99	0
49	222240	253310.75		5585155.33		5.54	0
50	222260	253329.33		5585152.22		5.34	0
51	222280	253348.61		5585150.26		6.24	0
52	252040	253114.19		5585480.13		10.85	0
53	252080	253146.73		5585466.78		11.56	0
54	252120	253193.98		5585496.08		8.13	0
55	252160	253233.63		5585463.06		14.10	0
56	252200	253274.51		5585489.90		3.18	0
57	252220	253311.72		5585473.60		9.54	0
58	252260	253350.61		5585472.51		7.96	0
59	252300	253390.87		5585472.17		6.39	0
60	252340	253429.75		5585470.69		2.62	0
61	252380	253469.85		5585471.73		2.73	0

588059

Listing from points 62 to 101 on file NATSAN

STADIA No.	CODE	EAST CO	NORTH CO	LEVEL	FIELD B.K No.
62	282100	253214.31	5585773.13	10.27	0
63	282140	253250.87	5585767.66	11.85	0
64	282180	253292.28	5585774.14	6.64	0
65	282220	253332.88	5585771.17	10.20	0
66	282260	253370.92	5585766.42	11.49	0
67	282300	253414.67	5585776.95	3.90	0
68	282340	253449.02	5585763.94	14.35	0
69	282380	253495.38	5585744.36	4.14	0
70	282420	253530.68	5585757.90	9.61	0
71	282460	253567.51	5585748.75	1.74	0
72	282500	253606.49	5585741.35	2.31	0
73	312200	253340.56	5586117.29	11.33	0
74	312240	253374.54	5586101.69	16.12	0
75	312280	253417.80	5586120.68	9.01	0
76	312320	253455.21	5586108.57	9.05	0
77	312360	253495.74	5586110.68	15.55	0
78	312400	253533.11	5586102.83	4.69	0
79	312440	253573.83	5586105.12	10.41	0
80	312480	253616.33	5586094.60	12.31	0
81	312520	253652.88	5586116.76	9.54	0
82	312560	253691.92	5586118.79	8.93	0
83	312600	253727.61	5586112.12	3.17	0
84	312640	253767.00	5586101.46	3.13	0
85	342160	253315.79	5586423.70	12.66	0
86	342200	253353.82	5586428.90	17.99	0
87	342200	253352.91	5586400.21	5.93	0
88	342240	253394.59	5586425.34	15.41	0
89	342240	253393.19	5586400.05	5.21	0
90	342280	253432.67	5586418.12	8.61	0
91	342320	253471.08	5586416.04	7.57	0
92	342360	253512.58	5586416.25	7.72	0
93	342400	253554.14	5586430.85	5.96	0
94	342440	253592.33	5586410.98	6.35	0
95	342480	253631.89	5586408.52	4.61	0
96	342520	253667.26	5586405.57	23.07	0
97	342560	253710.84	5586403.81	21.53	0
98	342600	253748.04	5586401.80	23.18	0
99	342640	253784.25	5586396.33	14.28	0
100	342680	253816.66	5586381.83	3.34	0
101	342720	253855.12	5586369.92	2.48	0

588060

Listing from points 102 to 145 on file NATSAN

STADIA No.	CODE	EAST CO	NORTH CO	LEVEL	FIELD B.K No.
102	371880	253070.00	5586742.00	4.98	0
103	371920	253108.53	5586725.65	8.50	0
104	371960	253146.59	5586739.94	9.68	0
105	372000	253185.53	5586735.62	6.76	0
106	372040	253225.41	5586733.50	6.14	0
107	372080	253265.81	5586732.82	6.39	0
108	372120	253306.22	5586732.17	6.19	0
109	372160	253345.84	5586729.18	6.93	0
110	372200	253385.54	5586726.51	6.91	0
111	372240	253424.63	5586723.94	15.76	0
112	372280	253459.11	5586725.50	8.42	0
113	372320	253501.60	5586711.33	18.22	0
114	372400	253576.62	5586709.28	11.33	0
115	372360	253528.87	5586696.56	19.12	0
116	372400	253576.62	5586709.28	11.33	0
117	372440	253611.76	5586712.37	18.97	0
118	372480	253650.77	5586722.66	4.42	0
119	372520	253684.15	5586704.60	6.36	0
120	372560	253722.83	5586702.03	10.17	0
121	372600	253763.45	5586699.69	11.76	0
122	372640	253798.28	5586697.40	23.15	0
123	372680	253835.33	5586694.14	24.35	0
124	401930	253131.14	5587057.67	4.33	0
125	401960	253160.70	5587056.30	5.54	0
126	402000	253199.81	5587049.47	9.81	0
127	402040	253239.33	5587045.89	12.04	0
128	402080	253278.62	5587042.74	13.16	0
129	402120	253318.46	5587038.51	13.81	0
130	402160	253356.07	5587037.57	9.96	0
131	402200	253396.28	5587027.36	11.66	0
132	402240	253439.75	5587038.07	6.75	0
133	402280	253477.48	5587025.21	6.36	0
134	402320	253516.51	5587018.80	8.19	0
135	402360	253560.98	5587018.53	13.18	0
136	402400	253594.66	5587012.08	10.48	0
137	402440	253634.45	5587008.96	7.88	0
138	402520	253704.12	5586978.93	5.07	0
139	402520	253713.49	5587002.91	13.17	0
140	402560	253742.16	5586999.39	12.90	0
141	402560	253755.39	5586976.04	5.96	0
142	402600	253792.28	5586996.90	21.26	0
143	402640	253831.24	5586985.72	26.62	0
144	402680	253870.38	5586984.87	23.16	0
145	402720	253908.98	5586982.17	18.18	0

Listing from points 146 to 186 on file NATSAN

588061

STADIA No.	CODE	EAST CO	NORTH CO	LEVEL	FIELD B.K No.
146	431920	253143.42	5587358.04	9.02	0
147	431960	253182.15	5587351.74	9.92	0
148	432000	253222.00	5587348.95	7.95	0
149	432040	253261.61	5587344.51	6.55	0
150	432080	253301.18	5587340.48	5.34	0
151	432120	253340.84	5587336.27	3.71	0
152	432160	253379.74	5587332.03	7.52	0
153	432200	253420.09	5587327.95	7.00	0
154	432240	253460.37	5587326.64	5.48	0
155	432280	253499.67	5587315.34	5.80	0
156	432320	253538.09	5587315.60	4.64	0
157	432360	253577.05	5587312.18	5.33	0
158	432400	253616.75	5587310.53	7.40	0
159	432440	253656.62	5587306.55	8.62	0
160	432480	253686.08	5587277.68	7.37	0
161	432480	253694.76	5587303.14	18.21	0
162	432520	253734.44	5587299.51	18.91	0
163	432560	253773.96	5587296.13	19.43	0
164	432600	253812.99	5587292.42	9.49	0
165	432640	253851.21	5587288.85	16.11	0
166	471640	252893.76	5587657.76	2.97	0
167	471680	252929.98	5587644.45	2.68	0
168	471720	252969.19	5587638.00	2.91	0
169	471760	253008.30	5587626.22	4.51	0
170	471800	253042.06	5587632.59	4.60	0
171	471840	253087.09	5587630.90	4.60	0
172	471880	253124.93	5587622.04	5.24	0
173	471920	253164.09	5587617.71	10.85	0
174	471960	253204.30	5587618.98	8.57	0
175	472000	253242.55	5587630.79	15.83	0
176	472040	253283.25	5587620.93	16.45	0
177	472080	253322.80	5587622.44	12.91	0
178	472120	253362.10	5587621.48	9.56	0
179	472160	253401.27	5587618.22	6.88	0
180	472200	253441.43	5587616.48	2.97	0
181	472240	253480.30	5587610.75	8.00	0
182	472280	253517.23	5587627.95	5.77	0
183	472320	253560.15	5587611.16	7.98	0
184	472360	253600.23	5587608.96	2.88	0
185	472400	253639.67	5587605.81	1.90	0
186	472440	253679.43	5587602.88	2.36	0

588062

APPENDIX 2

Drillhole Descriptive Logs

APPENDIX 2.1

Line 1600N High Dune

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2040E 1600N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 2.2.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.25	SAND, medium - well sorted, dark grey, organic rich then white.	4.83	0.44	0.38
1.5 - 2.0	1.95	AS ABOVE, dark grey. E.O.H. 2.0m. CLAY	4.38	0.09	0.35
		Down hole Average			<u>0.37</u>
<u>SURVEY:</u>		253047mE 5584569mN			
		COLLAR R.L. 4.52 BASE OF SAND R.L. +2.52			

588064

005

CLIENT: NATIONAL MINERAL SANDS

588065

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2060E 1600N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 1.2.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.00	SAND, fine grained, well sorted, grey.	2.04	0.77	0.82
1.5 - 3.5	2.85	SAND, medium grained, well sorted, brown.	0.85	0.07	0.87
3.5 - 5.5	3.00	SAND, coarse grained, well sorted. Amber and white. Some H.M. ≈ 1%.	1.52	0.05	0.42
Start Sludging	5.5m.				
5.5 - 6.5	2.30	SAND, as above then coarse coaly peat, black. Dark brown clay at 6.5m. E.O.H. CLAY	9.04	2.04	0.23
		Down hole average			<u>0.62</u>
<u>SURVEY:</u>		253065mE 5584566mN			
		COLLAR R.L. 8.72 BASE OF SAND R.L. +2.22			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

00% AREA: COWPER POINT - HIGH DUNE

588066

HOLE NO: 2080E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 19.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.00	SAND, medium grained, brown. H.M. trace.	0.88	0.21	0.91
1.5 - 3.5	7.20	AS ABOVE, grades to amber. H.M. trace.	0.42	0.16	1.12
3.5 - 5.5	6.80	SAND, medium grained, amber. H.M. 1%.	0.44	0.02	1.28
5.5 - 7.5	6.55	AS ABOVE. H.M. 1%.	0.50	0.03	1.89
7.5 - 9.5	6.00	AS ABOVE. H.M. 1%.	0.30	0.03	1.61
9.5 - 11.5	7.25	AS ABOVE, grades to fine to medium grained grey. H.M. trace	1.54	0.13	0.67
11.5 - 13.0	3.00	AS ABOVE, grades to dark brown, indurated, silty. Hit sandstone.	9.55	2.56	0.43
		EOH 13.0m. Sandstone.			
		Down hole average			1.17
<u>SURVEY:</u>		253084mE 5584562mN			
		COLLAR R.L. 15.01 BASE OF SAND R.L. +2.01			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588067

HOLE NO: 2100E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 19.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	1.70	SAND, fine to medium grained, greyish brown. H.M. trace.	9.88	1.55	0.73
1.5 - 3.5	6.75	AS ABOVE. H.M. trace.	0.54	0.02	0.64
3.5 - 5.5	6.65	SAND, medium to coarse grained, brown, some grey layers. H.M. trace.	0.62	0.04	0.68
5.5 - 7.5	8.20	SAND, fine to medium grained, gray. H.M. 1%.	3.15	0.05	0.32
7.5 - 8.4	3.10	SAND, fine to medium grained, dark brown, indurated silty. Hit sandstone. EOH 8.4m. Sandstone.	11.87	3.15	0.63
Down hole average					<u>0.59</u>
<u>SURVEY:</u>		253104mE 5584564mN			
		COLLAR R.L. 10.01 BASE OF SAND R.L. +1.61			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588068

HOLE NO: 2120E 1600N
(4.7m. offset south)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 19.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.05	SAND, fine to medium grained, light grey to grey. H.M. >1%	2.00	0.39	1.06
1.5 - 3.5	7.10	SAND, fine to medium grained, greyish brown. H.M. 1%.	0.44	0.02	0.68
3.5 - 5.5	6.90	AS ABOVE, slightly indurated at base. H.M. 1%.	5.24	0.10	0.33
5.5 - 6.3	1.70	SAND, fine to medium grained, dark brown, indurated, silty. Hit sandstone.	19.94	2.35	0.52
		EOH 6.3m. Sandstone.			
		Down hole average			<u>0.64</u>
<u>SURVEY</u>		253122mE 5584559mN			
		COLLAR R.L. 8.39 BASE OF SAND R.L. +2.09			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588069

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2140E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 19.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	5.40	SAND, fine to medium grained, brown. H.M. trace.	1.13	0.11	1.40
1.5 - 3.5	7.20	AS ABOVE, grades to medium grained, amber. H.M. 1%.	0.67	0.04	1.72
3.5 - 5.5	8.20	SAND, medium to coarse grained, amber. H.M. trace.	0.30	0.12	0.71
5.5 - 7.5	7.20	AS ABOVE. H.M. 1%.	0.58	0.12	0.72
7.5 - 9.5	6.65	AS ABOVE. H.M. 1%	0.78	0.00	1.21
9.5 - 11.5	6.25	AS ABOVE, becoming coarser. H.M. 1%.	0.36	0.02	0.77
11.5 - 13.5	7.00	AS ABOVE, grades fine to medium grained, light grey. H.M. trace.	1.29	0.02	0.43
13.5 - 15.5	5.10	SAND, fine to medium grained, dark brown, indurated, very hard.	10.61	0.19	0.40
15.5 - 16.5	2.30	AS ABOVE, hit dark brown clay then sandstone. Very coarse shell. Hit sandstone.	4.47	14.02	0.51
		EOH 16.5m. Sandstone.			
		Down hole average			<u>0.88</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>1.58</u>
<u>SURVEY:</u>		253146mE 5584571mN COLLAR R.L. 17.49 BASE OF SAND R.L. +0.99			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588070

HOLE NO: 2160E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.60	SAND, fine to medium grained light grey, grades to light brown then grey. H.M. 1%.	0.81	0.09	1.63
1.5 - 3.5	7.85	SAND, fine to medium grained, brown grades to amber. H.M. 1%.	0.62	0.03	1.43
3.5 - 5.5	8.15	SAND, medium grained, amber. H.M. > 1%.	0.16	0.02	1.48
5.5 - 7.5	6.90	AS ABOVE. H.M. > 1%.	0.42	0.00	1.36
7.5 - 9.5	6.60	AS ABOVE. H.M. > 1%.	0.41	0.00	0.70
9.5 - 11.5	6.95	AS ABOVE, grades into grey then indurated band.	1.40	0.02	0.40
11.5 - 13.5	7.75	SAND, fine to medium grained, dark brown, indurated, some gravel.	5.82	0.25	0.29
13.5 - 14.25	2.30	AS ABOVE, hit sandstone. EOH 14.25m. Sandstone.	7.83	6.66	0.32
		Down hole average			<u>0.98</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>1.63</u>
<u>SURVEY:</u>		253162mE 5584561mN			
		COLLAR R.L. 15.13 BASE OF SAND R.L. +0.88			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588071

AREA: COWPER POINT - HIGH DUNE

588071

HOLE NO: 2180E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.30	SAND, fine to medium grained, light brown. H.M. trace.	0.95	0.15	0.74
1.5 - 3.5	6.70	SAND, fine to medium grained, amber. H.M. 1%.	0.40	0.01	0.77
3.5 - 5.5	7.15	AS ABOVE. H.M. 1%.	0.31	0.01	0.56
5.5 - 7.5	6.60	AS ABOVE. H.M. 1%.	0.63	0.01	0.58
7.5 - 9.5	5.20	AS ABOVE. H.M. 1%.	1.04	0.03	0.50
9.5 - 11.5	7.65	AS ABOVE, then grades to sand grey. H.M. trace.	3.89	0.06	0.46
11.5 - 13.5	4.90	SAND, fine to medium grained, dark brown, indurated, silty. Hit sandstone.	9.76	0.85	0.32
		EOH 13.5m. Sandstone.			
		Down hole average			<u>0.55</u>
<u>SURVEY:</u>		253181mE 5584557mN			
		COLLAR R.L. 14.43 BASE OF SAND R.L. +0.93			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588072

HOLE NO: 2200E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.00	SAND, fine to medium grained, light brown. H.M. 1%	1.06	0.06	1.32
1.5 - 3.5	7.15	AS ABOVE, grades to amber. H.M. 1%.	0.33	0.02	0.91
3.5 - 5.5	7.35	SAND, fine to medium grained, amber. H.M. 1%.	0.86	0.06	0.56
5.5 - 7.5	7.35	AS ABOVE, H.M. 1%.	0.64	0.02	0.73
7.5 - 9.5	7.35	SAND, fine to medium grained, light grey grades to dark grey. H.M. 1%.	1.64	0.11	0.39
9.5 - 11.0	3.15	SAND, fine to medium grained, dark brown, indurated, some gravel. Hit sandstone. EOH 11.0m. Sandstone.	10.89	0.86	0.32
		Down hole average			<u>0.69</u>
<u>SURVEY:</u>		253203mE 5584560MN			
		COLLAR R.L. 12.86 BASE OF SAND R.L. +1.86			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

073

AREA: COWPER POINT - HIGH DUNE

588073

HOLE NO: 2220E 1600N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 2.2.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	1.90	SAND, medium grained, well sorted, grey then grey. H.M. 1-2%.	1.53	0.44	2.24
1.5 - 3.5	3.20	AS ABOVE, pale brown.	0.36	0.07	1.28
3.5 - 5.5	3.35	AS ABOVE, white and dark brown.	1.11	0.07	0.37
5.5 - 6.5	0.80	SAND, medium grained, heavily indurated, dark grey.	12.99	0.26	0.25
6.5		White clacareous sandstone E.O.H. 6.5m.			
		Down hole Average			<u>1.06</u>
0 - 1.5		Depth and Grade at 1.5% Cut-off			<u>2.24</u>
<u>SURVEY:</u>		253221mE 5584562mN			
		COLLAR R.L. 8.08 BASE OF SAND R.L. +1.58			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588074

HOLE NO: 2240E 1600N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 2.2.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.35	SAND, medium grained, well sorted, dark grey.	2.02	0.36	0.98
0 - 3.0	2.15	AS ABOVE, amber. H.M. 1-2%. E.O.H. 3.0m. CLAY	0.63	0.92	0.60
		Down hole Average			<u>0.79</u>
<u>SURVEY:</u>		253241mE 5584561mN			
		COLLAR R.L. 4.82 BASE OF SAND R.L. +1.82			

075

588075

APPENDIX 2.2

Line 1900N - High Dune

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L.41/88.

AREA: COWPER POINT - HIGH DUNE

588077

HOLE NO: 218 OE 1900N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 2.2.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.2	1.30	SAND, medium - fine. Well sorted minor clay. E.O.H. 1.2m. CLAY Down hole Average	11.98	1.10	0.29 <u>0.29</u>
<u>SURVEY:</u>		253214mE . 5584864mN COLLAR R.L. 3.39 BASE OF SAND R.L. +2.19			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

078

AREA: COWPER POINT - HIGH DUNE

588078

HOLE NO: 2200E 1900N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 2.2.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.00	SAND, medium grained, well sorted, clayey. Grey. E.O.H. 1.5m. CLAY Down hole Average	12.85	1.40	0.46 <u>0.46</u>
<u>SURVEY:</u>		253233mE 5584860mN			
COLLAR R.L. 3.37		BASE OF SAND R.L. +1.87			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L.41/88

079 AREA: COWPER POINT - HIGH DUNE

588079

HOLE NO: 2220E 1900N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 2/2/89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.0	2.00	SAND, medium grained, well sorted, clay rich, dark grey. E.O.H. 1.0m. CLAY	18.97	2.20	1.72
		Down hole Average			<u>1.72</u>
0 - 1.0		Depth and Grade at 1.5% Cut-off			<u>1.72</u>
SURVEY:		253255mE 5584858mN			
		COLLAR R.L. 3.37 BASE OF SAND R.L. +2.37			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588080

HOLE NO: 2240E 1900N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 2.2.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.90	SAND, medium grained, well sorted. Grey and amber.	1.87	0.69	1.51
1.5 - 3.5	3.90	AS ABOVE, amber. H.M. 1-2%.	0.54	0.00	0.99
3.5 - 4.0	1.95	AS ABOVE, clay increase with depth. Pebbles at bottom.	13.11	2.16	1.10
		E.O.H. 4.0m. CLAY			
		Down hole Average			1.20
0 - 1.5		Depth and Grade at 1.5% Cut-off			1.51
		253274mE 5584857mN			
		COLLAR R.L. 6.69 BASE OF SAND R.L. +2.69			

SURVEY:

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588081

HOLE NO: 2260E 1900N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.50	SAND, fine to medium grained, light brown. H.M. > 1%.	1.58	0.12	2.55
1.5 - 3.5	6.50	AS ABOVE, grades to amber. H.M. 1%.	0.78	0.02	2.18
3.5 - 5.5	6.65	SAND, fine to medium grained, light brown. H.M. 1%.	0.46	0.01	0.87
5.5 - 7.5	7.30	AS ABOVE, grades to dark brown, indurated. Hit sandstone. EOH 7.5m. Sandstone.	9.36	3.74	0.91
		Down hole average			<u>1.57</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>2.33</u>
<u>SURVEY:</u>		253293mE 5584856mN			
		COLLAR R.L. 8.63 BASE OF SAND R.L. +1.13			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588082

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2280E 1900N

082

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.50	SAND, fine - medium grained, light brown. H.M. trace	1.73	0.12	0.93
1.5 - 3.5	7.60	AS ABOVE, grades to amber. H.M. 1%.	0.70	0.20	1.53
3.5 - 4.0	1.25	SAND, medium grained, dark brown, indurated. Hit sandstone.	9.13	3.44	0.55
		E.O.H. 4.0m. Sandstone			
		Down hole average			<u>1.01</u>
		253313mE 5584855mN			
		COLLAR R.L. 5.73 BASE OF SAND R.L. +1.73			

SURVEY:

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588083

HOLE NO: 2300E 1900N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.20	SAND, fine to medium grained, amber. H.M. visible 1%.	1.36	1.41	0.64
1.5 - 3.0	5.15	AS ABOVE, hit sandstone. H.M. visible > 1%. EOH 3.0m. Sandstone.	0.86	1.36	2.63
		Down hole Average			<u>1.64</u>
0 - 3.0		Depth and Grade at 1.5% Cut off			<u>1.64</u>
<u>SURVEY:</u>		253332mE 5584857mN			
		COLLAR R.L. 4.36 BASE OF SAND R.L. +1.36			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588084

HOLE NO: 2320E 1900N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.10	SAND, medium grained, amber. H.M. visible 1% .	0.34	0.34	0.62
1.5 - 3.1	6.25	SAND, medium to coarse grained, amber. H.M. 1%. Hit sandstone. EOH 3.1m.	0.43	2.96	0.58
		Down hole average			<u>0.60</u>
<u>SURVEY:</u>		253353mE 5584853mN			
		COLLAR R.L. 3.63 BASE OF SAND R.L. +0.53			

APPENDIX 2.3

Line 2200N High Dune

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2120E 2200N

LOGGED BY: ANDREW DOVE

588080

DATE DRILLED: 17.1.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.50	SAND, fine to medium grained, greyish brown. N.M. trace.	1.28	0.40	0.42
1.5 - 3.5	5.65	AS ABOVE. H.M. trace.	3.68	0.35	0.45
3.5 - 4.5	1.95	SAND, medium to coarse grained, grey, abundant shell. Hit sandstone. EOH 4.5m. Sandstone.	6.94	29.66	0.75
Down hole average					<u>0.51</u>
<u>SURVEY:</u>		253193mE	5585166mN		
		COLLAR R.L.	4.97	BASE OF SAND R.L.	+0.47

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588087

HOLE NO: 2140E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 17.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.35	SABD, fine to medium grained, light brown, H.M. trace.	1.45	0.81	0.70
1.5 - 3.5	7.20	AS ABOVE, hit dark brown layer, then into amber. H.M. > 1%	1.30	0.15	0.43
3.5 - 4.5	2.70	SAND, medium to coarse grained, brown, abundant shell, hit sandstone. EOH 4.5m. Sandstone.	3.40	1.45	0.83
		Down hole average			<u>0.61</u>
<u>SURVEY:</u>		253213mE 5585165mN COLLAR R.L. 5.66 BASE OF SAND R.L. +1.16			

038

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588038

HOLE NO: 2160E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 17.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	4.85	SAND, fine to medium grained, brown grades to amber. H.M. > 1%	1.54	0.59	0.88
1.5 - 3.5	8.05	SAND, fine to medium grained, amber becoming coarser with depth. N.M. 1%	0.57	0.06	0.68
3.5 - 5.5	7.50	SAND, medium grained, amber. H.M. 1%	0.29	0.02	0.57
5.5 - 7.5	7.50	AS ABOVE. H.M. 1%	0.48	0.01	0.77
7.5 - 9.5	7.95	SAND, medium to coarse grained, amber grading to brown. Possible indurated gravel layers present. H.M. 1%	1.00	3.76	0.50
9.5 - 10.0	1.70	SAND, coarse to very coarse grained, grey, abundant shell. Hit sandstone. H.M. 1%	3.98	20.35	0.30
		EOH 10,0m. Sandstone.			
		Down hole average			<u>0.65</u>
<u>SURVEY:</u>		253232mE 5585165mN			
		COLLAR R.L. 10.70 BASE OF SAND R.L. +0.70			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588039

HOLE NO: 2180E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 17.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	3.55	SAND, Fine to medium grained, brown grades to amber. H.M. trace.	2.59	0.11	0.62
1.5 - 3.5	6.00	SAND, medium grained, light brown to amber. H.M. 1%	1.25	0.04	1.30
3.5 - 5.5	7.05	SAND, medium to coarse grained, amber. H.M. 1%	0.65	0.01	0.80
5.5 - 7.5	6.95	AS ABOVE. H.M. 1%	1.35	0.04	0.64
7.5 - 9.5	8.10	AS ABOVE. H.M. > 2%	0.93	0.30	1.28
9.5 - 10.5	4.30	SAND, medium to coarse grained, grey, abundant shell. H.M. > 2% Hit sandstone. EOH 10.5m. Sandstone.	1.21	3.42	2.77
		Down hole average			<u>1.12</u>
Survey:		253252mE 5585163mN			
		COLLAR R.L. 11.60 BASE OF SAND R.L. +1.10			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588090

HOLE NO: 2200E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 17.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.55	SAND, fine to medium grained, brown. H.M. 1%	1.18	0.10	1.43
1.5 - 3.5	7.55	AS ABOVE, grades to amber, coarser with depth. H.M. > 1%	0.58	0.04	1.37
3.5 - 5.5	8.15	SAND, medium grained, amber. H.M. 2 - 5%	0.59	0.03	2.75
5.5 - 7.5	8.45	AS ABOVE. H.M. > 2%	0.79	0.48	1.34
7.5 - 8.1	1.75	SAND, medium to coarse grained, grey, abundant shell. H.M. > 2%. Hit sandstone. EOH 8.1m. Sandstone.	2.13	4.40	1.37
		Down hole Average			<u>1.71</u>
0 - 5.5		Depth and Grade at 1.5% Cut off			<u>1.89</u>
<u>SURVEY:</u>		253272mE 5585161mN			
		COLLAR R.L. 8.84 BASE OF SAND R.L. +0.74			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2220E 2200N

002

LOGGED BY: ANDREW DOVE

588091

DATE DRILLED: 17.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.50	SAND, fine to medium grained, light brown to brown. H.M. trace.	2.00	0.07	1.21
1.5 - 3.5	7.25	AS ABOVE, grades to amber. H.M. >2%	0.51	0.03	1.68
3.5 - 5.5	7.80	SAND, medium grained, amber. H.M. >2%	0.38	0.03	1.37
5.5 - 7.5	8.25	AS ABOVE. H.M. > 2%	0.43	0.35	2.03
7.5 - 8.5	3.00	SAND, fine to medium grained, grey, abundant shell. H.M. > 2%. Hit sandstone. EOH 8.5m. Sandstone.	1.19	3.82	0.96
		Down hole average			<u>1.52</u>
0 - 7.5		Depth and grade at 1.5% cut-off			<u>1.60</u>
<u>SURVEY:</u>		253291mE 5585158mN			
		COLLAR R.L. 8.99 BASE OF SAND R.L. +2.49			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588092

HOLE NO: 2240E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 17.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.45	SAND, fine to medium grained, light brown to brown. H.M. trace.	0.89	0.20	1.40
1.5 - 3.5	7.35	AS ABOVE, grades to amber becomes coarser with depth. H.M. 1%	0.45	0.03	1.24
3.5 - 5.5	8.80	SAND, medium grained grades to grey, abundant shell. H.M. > 2%. Hit sandstone. EOH 5.5m. Sandstone.	0.91	1.64	2.65
		Down hole average			<u>1.80</u>
0 - 5.5		Depth and Grade at 1.5% Cut off			<u>1.80</u>
<u>SURVEY:</u>		253311mE 5585155mN			
		COLLAR R.L. 5.54 BASE OF SAND R.L. +0.04			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588093

HOLE NO: 2260E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 17.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% >1000 um	% H.M.
0 - 1.5	4.10	SAND, fine to medium grained, light brown. H.M. 1%	1.59	0.16	1.77
1.5 - 3.5	7.95	AS ABOVE, grades to amber, coarser with depth. H.M. 1%	0.76	0.11	2.54
3.5 - 5.5	7.15	SAND, medium grained, amber grades to grey, coarse grained at depth. H.M. 1%	0.89	0.86	1.69
5.5 - 5.75	0.20	SAND, fine to medium grained, grey, abundant shell. Hit sandstone. EOH 5.75m. Sandstone.	3.83	5.03	1.38
		Down hole average			<u>1.99</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>2.02</u>
<u>SURVEY:</u>		253329mE 5585152mN			
		COLLAR R.L. 5.34 BASE OF SAND R.L. -0.41			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

004

AREA: COWPER POINT - HIGH DUNE

588094

HOLE NO: 2280E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 17.1.89
METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.50	SAND, fine to medium grained, brown. H.M. trace.	1.72	0.23	1.32
1.5 - 3.5	7.00	AS ABOVE, grades to amber. H.M. >1%	0.60	0.02	2.01
3.5 - 5.5	8.60	SAND, medium grained amber, grades to grey. H.M. > 1%	0.57	0.11	4.65
5.5 - 6.75	4.40	SAND, fine to medium grained, grey, abundant shell. H.M. > 1%. Hit sandstone. EOH 6.75m. Sandstone.	2.69	4.03	2.26
0 - 6.75		Depth and grade at 1.5% cut-off			<u>2.69</u>
<u>SURVEY:</u>		253349mE 5585150mN COLLAR R.L. 6.24 BASE OF SAND R.L. -0.51			

095

588095

APPENDIX 2.4

Line 2500N High Dune

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

008 AREA: COWPER POINT

588096

HOLE NO: 2040E 2500N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89

METHOD: HAND DRILLED

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.50	SAND, medium grained, well sorted, brown.	0.88	0.05	2.59
1.5 - 3.5	3.20	AS ABOVE, H.M. 1 - 2%	0.33	0.02	2.15
3.5 - 5.5	3.40	AS ABOVE, amber, H.M. 2 - 5%	0.19	0.03	0.94
5.5 - 7.5	3.05	AS ABOVE, H.M. 1 - 2%	0.20	0.00	0.61
7.5 - 9.5	2.20	SAND, medium grained, well sorted, pale gray. H.M. 1-2% Water Table 9.5m. EOH 9.5m.	1.88	0.06	1.72
		Down hole average			<u>1.55</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>2.34</u>
<u>SURVEY:</u>		253114mE 5585480mN			
		COLLAR R.L. 10.85 BASE OF SAND R.L. +1.35			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

007

AREA: COWPER POINT - HIGH DUNE

588097

HOLE NO: 2080E 2500N
(Offset 13m. S)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 21.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.80	SAND, fine to medium grained, light brown. H.M. trace.	1.51	0.21	1.73
1.5 - 3.5	6.80	SAND, fine to medium grained, amber. H.M. > 1%.	1.28	0.07	1.69
3.5 - 5.5	6.70	AS ABOVE, H.M. 2 - 5%.	0.85	0.15	1.61
5.5 - 7.5	6.10	AS ABOVE. H.M. >2%.	1.19	0.04	0.81
7.5 - 9.5	6.55	AS ABOVE, becomes coarse grained, hit dark grey.	3.18	0.09	0.74
9.5 - 11.5	7.00	SAND, fine to medium grained, dark grey, abundant fine shell. Hit sandstone. EOH 11.5m. Sandstone.	4.46	8.19	0.71
		Down hole average			<u>1.19</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>1.67</u>
<u>SURVEY:</u>		253147mE 5585467mN			
		COLLAR R.L. 11.56 BASE OF SAND R.L. +0.06			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2120E 2500N

LOGGED BY: ANDREW DOVE

588098

DATE DRILLED: 21.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.90	SAND, fine to medium grained, greyish brown. H.M. trace.	0.96	0.22	1.52
1.5 - 3.5	7.60	SAND, fine to medium grained, orange brown. H.M. 1%.	0.64	0.01	1.51
3.5 - 5.5	7.60	SAND, fine to medium grained, amber. H.M. 1%.	0.40	0.03	0.96
5.5 - 7.5	7.30	AS ABOVE, becomes coarse grained, grades to dark grey-brown.	1.47	2.18	2.10
7.5 - 8.7	3.20	SAND, fine to medium grained, grey, abundant fine shell. Hit sandstone.	6.64	4.02	0.86
		EOH 8.7m. Sandstone.			
		Down hole average			<u>1.43</u>
0 - 7.5		Depth and grade at 1.5% cut-off			<u>1.52</u>
<u>SURVEY:</u>		253194mE 5585496mN			
		COLLAR R.L. 8.13 BASE OF SAND R.L. -0.57			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588099

HOLE NO: 2160E 2500N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 21.1.89 METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.00	SAND, fine - medium grained, brown. H.M. trace.	1.22	0.25	1.57
1.5 - 3.5	7.15	AS ABOVE, grades to amber. Medium - coarse grained. H.M. <1%.	0.78	0.07	2.05
3.5 - 5.5	7.05	SAND, fine - medium grained, amber. H.M. >2%	0.45	0.01	1.37
5.5 - 7.5	6.45	AS ABOVE. H.M. >2%.	0.52	0.02	0.82
7.5 - 9.5	7.15	AS ABOVE, some darker bands. H.M. >1%.	0.43	0.11	0.98
9.5 - 11.5	7.00	SAND, medium - coarse grained, amber. H.M. ≈1%.	0.46	0.05	1.01
11.5 - 13.5	8.35	AS ABOVE, grades to grey. Abundant fine shell at base. H.M. >1%.	1.21	2.88	2.20
13.5 - 15.0	5.10	SAND, fine - medium grained, grey. Abundant fine shell. H.M. >1%. Hit Sandstone. E.O.H. 15.0m. SANDSTONE PIEZOMETER HOLE	3.73	7.85	1.30
0 - 3.5		Down hole average Depth and grade at 1.5% cut-off			<u>1.41</u> <u>1.84</u>
<u>SURVEY:</u>		253234mE 5585463mN			
		COLLAR R.L. 14.10 BASE OF SAND R.L. -0.90			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588100

HOLE NO: 2200E 2500N
(Offset 16.7m. N)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 21.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.55	SAND, fine to medium grained, greyish brown. H.M. 2 - 5%	0.83	0.07	15.71
1.5 - 3.5	7.70	AS ABOVE, grades to grey, abundant fine shell.	1.02	0.68	1.67
3.5 - 4.1	2.60	SAND, fine to medium grained, grey, abundant fine shell. hit sandstone.	2.04	7.94	1.47
		EOH 41m. Sandstone.			
0 - 3.5		Down hole average			<u>6.78</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>7.69</u>
<u>SURVEY:</u>		253275mE 5585490mN			
		COLLAR R.L. 3.18 BASE OF SAND R.L. -0.92			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT

588101

HOLE NO: 2220E 2500N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89

METHOD: HAND DRILLED

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	2.20	SAND, medium grained, well sorted, pale brown. H.M. 1 - 2%	0.89	0.21	2.14
1.5 - 3.5	2.80	SAND, medium to coarse grained, well sorted, pale brown. H.M. 1 - 2%	0.48	0.03	1.43
3.5 - 5.5	2.55	AS ABOVE, some clay bands.	2.49	0.05	0.96
5.5 - 7.5	4.05	SAND, medium to coarse grained, well sorted, amber. H.M. 1 - 2%	0.37	0.40	1.68
		WATER TABLE 7.0M.			
7.5 - 9.5	2.25	SAND, medium to coarse grained, well sorted, pale greyish brown, thinner peaty layer. H.M. 1 - 2%	0.84	0.18	1.38
9.5 - 10.0	2.65	SAND, medium to coarse grained, some very coarse grained, pale greyish brown. H.M. 1- 2%	0.65	1.23	0.90
		EOH 10.0m. No more sludging rods.			
		Down hole average			1.46%
0 - 1.5		Depth and grade at 1.5% cut-off			2.14%
<u>SURVEY:</u>		253312mE 5585474mN			
		COLLAR R.L. 9.54 BASE OF SAND R.L. -0.46			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588102

HOLE NO: 2260E 2500N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 20.1.89

Method: Rig

10%

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.10	SAND, fine to medium grained, brown grades to amber. H.M. > 2%	0.60	0.05	1.20
1.5 - 3.5	6.20	SAND, fine to medium grained, amber. H.M. > 2%.	0.76	0.01	1.46
3.5 - 5.5	6.50	AS ABOVE. H.M. > 2%.	0.63	0.01	1.90
5.5 - 7.5	9.00	AS ABOVE, grades to light grey, medium to coarse grained. H.M. band. H.M. 2 - 5%.	0.68	1.33	11.06
7.5 - 8.5	3.20	SAND, fine to medium grained, grey, abundant shell. Hit Sandstone. H.M. > 1%. EOH 8.5m. Sandstone.	1.79	6.73	1.86
		Down hole average			<u>3.82</u>
0 - 8.5		Depth and grade at 1.5% cut-off			<u>3.82</u>
<u>SURVEY:</u>		253350mE 5585473mN			
		COLLAR R.L. 7.96 BASE OF SAND R.L. -0.54			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588103

HOLE NO: 2300E 2500N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 20.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.45	SAND, fine to medium grained, brown. H.M. 1%.	0.84	0.27	1.29
1.5 - 3.5	7.45	AS ABOVE, grades to amber, medium grained. H.M. > 1%.	0.51	0.01	1.45
3.5 - 5.5	8.05	SAND, medium to coarse grained, amber. H.M. rich > 5%.	0.26	0.00	4.42
5.5 - 7.5	7.80	SAND, coarse to very coarse grained, light grey grades to fine to medium grained, grey, abundant shell. Hit sandstone. H.M. > 1%. EOH 7.5m. Sandstone.	1.09	3.77	3.40
<u>SURVEY:</u>		253390mE 5585472mN COLLAR R.L. 6.39 BASE OF SAND R.L. -1.11 Down hole average			<u>2.73</u>
0 - 7.5		Depth and grade at 1.5% cut-off			<u>2.73</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588104

HOLE NO: 2340E 2500N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 20.1.89

(Beach)

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.10	SAND, coarse to very coarse grained, light grey to amber, abundant shell. H.M. > 1%.	1.45	1.19	0.81
1.5 - 3.5	8.40	AS ABOVE. H.M. >2%.	0.78	10.85	2.48
3.5 - 4.3	5.10	AS ABOVE, grades to fine to medium grained, grey, hit sandstone. H.M. > 2%. EOH 4.3m. Sandstone.	3.89	2.68	2.01
0 - 4.3		Down hole average Depth and grade at 1.5% cut-off			<u>1.81</u> <u>1.81</u>
<u>SURVEY:</u>		253430mE 5585471mN COLLAR R.L. 2.62 BASE OF SAND R.L. -1.68			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588105

HOLE NO: 2380E 2500N
(Beach)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 20.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.70	SAND, coarse to very coarse grained, light grey, abundant coarse shell.	1.28	10.19	0.40
1.5 - 3.5	9.30	AS ABOVE.	1.60	4.90	0.58
3.5 - 5.0	6.45	SAND, fine to medium grained grey, abundant shell. H.M. > 1%. Hit sandstone. EOH 5.0m. Sandstone.	1.99	8.48	1.47
<u>SURVEY:</u>		253470mE 5585472mN COLLAR R.L. 2.73 BASE OF SAND R.L. -2.27			
Down hole average					<u>0.65</u>

588106

APPENDIX 2.5

Line 2800N High Dune

107 CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT

HOLE NO: 2060E 2800N

LOGGED BY: GRAHAM LEE

588107

DATE DRILLED: 6.2.89

METHOD: Hand drilled

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	1.30	SAND, medium grained, well sorted, dark grey, organic rich. Indurated 1.5m. clay. EOH 1.5m.	15.11	0.52	2.42
		Down hole average			<u>2.42</u>
0 - 1.5		Depth and Grade at 1.5% cut-off			<u>2.42</u>

100

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588108

HOLE NO: 2100E 2800N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 21.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.75	SAND, fine to medium grained, brown. H.M. trace.	1.36	0.24	2.42
1.5 - 3.5	7.20	SAND, fine to medium grained, amber. H.M. > 2%.	0.64	0.08	2.52
3.5 - 5.5	7.35	AS ABOVE, H.M. > 2%.	0.55	0.00	2.84
5.5 - 7.5	6.80	AS ABOVE, grades to greyish brown, hit indurated, dark brown.	1.42	0.18	1.69
7.5 - 9.5	6.30	SAND, fine to medium grained, dark grey, silty. Hit sandstone.	6.32	0.84	1.23
		EOH 9.5m. Sandstone.			
		Down hole average			<u>2.13</u>
0 - 7.5		Depth and grade at 1.5% cut-off			<u>2.36</u>
<u>SURVEY:</u>		253214mE 5585773mN			
		COLLAR R.L. 10.27 BASE OF SAND R.L. +0.77			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

108

AREA: COWPER POINT - HIGH DUNE

588109

HOLE NO: 2140E 2800N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 21.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.20	SAND, fine to medium grained, light grey, grades to brown. H.M. trace.	1.98	0.41	1.67
1.5 - 3.5	7.70	SAND, fine to medium grained, brown grades to amber. H.M. > 2%.	0.93	0.04	1.94
3.5 - 5.5	7.00	SAND, fine to medium grained, amber. H.M. 2 - 5%.	0.90	0.02	2.10
5.5 - 7.5	6.10	AS ABOVE, hit indurated, dark brown.	1.49	0.09	2.01
7.5 - 9.5	7.05	SAND, fine to medium grained, greyish brown. H.M. 1%.	2.68	0.42	2.98
9.5 - 11.5	5.50	SAND, fine to medium grained, brown, silty, abundant fine shell. Hit sandstone.	8.44	4.14	1.06
		EOH 11.5 Sandstone.			
		Down hole average			<u>1.97</u>
0 - 11.5		Depth and grade at 1.5% cut-off			<u>2.16</u>
<u>SURVEY:</u>		253251mE 5585768mN			
		COLLAR R.L. 11.85 BASE OF SAND R.L. +0.35			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588110

118 AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2180E 2800N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 21.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.50	SAND, fine to medium grained, light grey, grades to amber, then hit dark brown indurated layer. N.M. 1%.	1.93	0.12	2.09
1.5 - 3.5	7.75	SAND, medium grained, light brown. H.M. 1%.	0.62	0.02	2.14
3.5 - 5.5	7.40	SAND, medium grained, light grey. H.M. 1%.	3.78	0.09	4.60
5.5 - 6.8	4.50	SAND, fine to medium grained, dark grey, indurated, abundant fine shell. Hit sandstone, H ₂ S. EOH 6.8m. Sandstone.	3.70	6.39	0.85
<u>SURVEY:</u>		253292mE 5585774mN			
		COLLAR R.L. 6.64 BASE OF SAND R.L. -0.16			
		Down hole average			<u>2.61</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>3.02</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588111

HOLE NO: 2220E 2800N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 21.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.90	SAND, medium grained, brown. H.M. trace.	0.89	0.17	2.19
1.5 - 3.5	7.30	SAND, fine to medium grained, light brown. H.M. > 2%.	0.62	0.08	2.23
3.5 - 5.5	7.40	SAND, fine to medium grained, amber. H.M. 2 - 5%.	0.50	0.03	2.20
5.5 - 7.5	7.90	AS ABOVE, hit thin indurated layer. H.M. 2 - 5%.	0.60	0.08	2.43
7.5 - 9.5	8.20	AS ABOVE, grades to grey.	0.85	0.11	2.11
9.5 - 10.0	2.55	SAND, fine to medium grained, grey, abundant fine shell. Hit sandstone. EOH 10.0m. Sandstone.	1.99	5.94	1.34
0 - 9.5		Down hole average Depth and grade at 1.5% cut-off			<u>2.19</u> <u>2.23</u>
<u>SURVEY:</u>		253333mE 5585771mN COLLAR R.L. 10.20 BASE OF SAND R.L. +0.20			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588112

HOLE NO: 2260E 2800N
(Offset 1m. S.)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 21.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.40	SAND, fine to medium grained, greyish brown. H.M. 1%.	1.82	0.09	1.74
1.5 - 3.5	7.50	SAND, fine to medium grained, amber. H.M. 2 - 5%.	0.94	0.02	2.54
3.5 - 5.5	6.70	AS ABOVE. H.M. 2 - 5%.	0.85	0.03	2.55
5.5 - 7.5	7.30	AS ABOVE. H.M. 2 - 5%.	0.62	0.01	3.47
7.5 - 9.5	6.95	AS ABOVE. H.M. 2 - 5%.	0.95	0.01	2.36
9.5 - 11.5	8.20	AS ABOVE, grades to grey, becomes coarser. H.M. > 2%.	1.37	6.13	1.15
11.5 - 11.9	2.60	SAND, fine to medium grained, light grey, abundant fine shell. Hit sandstone. EOH 11.9m. Sandstone.	9.49	2.81	3.62
		Down hole average			<u>2.36</u>
0 - 11.9		Depth and grade at 1.5% cut-off			<u>2.36</u>
<u>SURVEY:</u>		253371mE 5585766mN			
		COLLAR R.L. 11.49 BASE OF SAND R.L. -0.41			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588113

HOLE NO: 2300E 2800N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 21.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.60	SAND, fine to medium grained, light grey, some clay. H.M. > 1%.	4.66	2.49	2.01
1.5 - 3.5	8.70	SAND, fine to medium grained, amber. H.M. 2 - 5%.	1.67	0.14	4.01
3.5 - 5.0	5.70	SAND, fine to medium grained, grey, abundant shell. H.M. > 2%. Hit sandstone.	3.62	5.19	1.85
		EOH 5.0m. Sandstone.			
		Down hole average			<u>2.76</u>
0 - 5.0		Depth and grade at 1.5% cut-off			<u>2.76</u>
<u>SURVEY:</u>		253415mE 5585777mN			
		COLLAR R.L. 3.90 BASE OF SAND R.L. -1.10			

114 CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588114

HOLE NO: 2340E 2800 N
(1m. offset to W)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 20/1/89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.35	SAND, fine to medium grained, brown. H.M. 1%.	1.00	0.58	1.73
1.5 - 3.5	7.40	AS ABOVE, grades to amber. H.M. > 1%.	0.54	0.02	1.38
3.5 - 5.5	5.75	SAND, fine to medium grained, amber. H.M. > 1%.	0.99	0.05	1.16
5.5 - 7.5	7.10	AS ABOVE, H.M. > 2%.	0.54	0.00	1.24
7.5 - 9.5	6.85	AS ABOVE, H.M. > 2%.	1.46	0.00	1.48
9.5 - 11.5	7.25	AS ABOVE, H.M. 2- 5%.	0.67	0.01	3.22
11.5 - 13.5	7.95	AS ABOVE, grades to medium grained, light grey. H.M. > 1%.	1.66	0.05	2.74
13.5 - 14.5	4.30	SAND, fine to medium grained, grey, abundant shell. Hit sandstone. H.M. > 1%.	1.37	2.41	1.41
		EOH 14.5m. Sandstone.			
		Down hole average			<u>1.82</u>
0 - 13.5		Depth and grade at 1.5% cut-off			<u>1.85</u>
<u>SURVEY:</u>		253449mE 5585764mN			
		COLLAR R.L. 14.35 BASE OF SAND R.L. -0.15			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588115

HOLE NO: 2380E 2800N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 20.1.89

(Offset 18.3m. south)

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.50	SAND, fine to medium grained, dark grey, grades to light brown. H.M. trace.	1.77	0.71	2.11
1.5 - 3.5	7.65	SAND, fine to medium grained, light grey. H.M. 2 - 5%.	0.32	0.10	10.29
3.5 - 5.0	5.85	AS ABOVE, medium to coarse grained grades to fine to medium grained, abundant shell. Hit sandstone. H.M. > 2%. EOH 5.0m.	1.42	7.04	1.96
		Down hole average			<u>5.34</u>
0 - 5.0		Depth and grade at 1.5% cut-off			<u>5.34</u>
<u>SURVEY:</u>		253495mE 5585744mN			
		COLLAR R.L. 4.14 BASE OF SAND R.L. -0.86			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE.

588116

HOLE NO: 2420E 2800N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 1.2.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.25	SAND, fine grained, well sorted, grey.	0.93	0.13	2.24
1.5 - 3.5	3.50	AS ABOVE, amber. H.M. 2-5%.	0.15	0.00	2.45
3.5 - 5.5	2.80	AS ABOVE, H.M. 5%+	0.22	0.01	1.91
5.5 - 7.5	2.75	AS ABOVE, H.M. 5%+	0.24	0.001	2.61
7.5 - 9.5	2.55	AS ABOVE, H.M. 5%+	0.30	0.01	2.69
9.5 - 11.5	3.15	AS ABOVE, H.M. 5%+	0.44	0.03	2.29
		E.O.H. 11.5m.			
		Down hole average			<u>2.37</u>
0 - 11.5		Depth and grade at 1.5% cut-off			<u>2.37</u>
<u>SURVEY:</u>		253531mE 5585758mN			
		COLLAR R.L. 9.61 BASE OF SAND R.L. NA			

117 CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE.

588117

HOLE NO: 2460E 2800N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 1.2.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.40	SAND, coarse grained, moderate to well sorted. Some shell. Amber. H.M. 1-2%.	0.41	0.50	2.95
1.5 - 3.5	5.90	AS ABOVE, grey marine sand. H.M. 2-5%. E.O.H. 3.5m. Rock	0.36	1.60	0.91
		Down hole average			<u>1.78</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>2.95</u>
<u>SURVEY:</u>		253563mE 5585749mN			
		COLLAR R.L. 1.74 BASE OF SAND R.L. -1.76			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588118

HOLE NO: 2500E 2800N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 1.2.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.40	SAND, coarse grained, well sorted. Some shell. Amber. H.M. 1-2%.	0.36	0.33	1.24
1.5 - 3.5	5.90	SAND, very coarse with abundant shell fragments. Moderate sorting. Grey marine. H.M. 1-2%. E.O.H. 3.5m. Gravel.	0.39	7.25	0.54
Down hole average					<u>0.84</u>
<u>SURVEY:</u>		253606mE	5585741mN		
		COLLAR R.L. 2.31	BASE OF SAND R.L.	NA	

00 119

588119

APPENDIX 2.6

Line 3150N High Dune

120

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588120

AREA: COWPER POINT

HOLE NO: 2160E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89
METHOD: HAND DRILLED

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	2.70	SAND, medium grained, well sorted, pale grey. H.M. 1 - 2%	1.88	0.08	2.55
1.5 - 3.5	6.90	SAND, fine to medium grained, well sorted, indurated. WATER TABLE 2.1M.	3.87	0.05	1.63
3.5 - 4.5	3.10	SAND, medium with very coarse layers at bottom. Moderate sorting, dark grey. H.M. rich at bottom. Sandstone 4.5m. EOH 4.5m.	4.30	0.26	0.84
		Down hole Average			<u>1.76</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>2.02</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

121

AREA: COWPER POINT - HIGH DUNE

588121

HOLE NO: 2200E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED:

20.1.89 (1m. to SW)

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.00	SAND, fine to medium grained, brown. H.M. trace.	1.16	0.52	4.62
1.5 - 3.5	6.25	AS ABOVE, grades to amber. H.M. 2-5%.	0.72	0.03	4.22
3.5 - 5.5	5.90	SAND, fine to medium grained, amber. H.M. 2 - 5%.	0.30	0.00	3.72
5.5 - 7.5	6.50	AS ABOVE, becomes coarser grades to light grey. H.M. 1%.	0.82	0.09	2.00
7.5 - 9.5	5.80	SAND, medium grained, light grey, grades to fine to medium grained, dark brown, indurated.	5.57	0.12	1.09
9.5 - 9.9	1.50	SAND, fine to medium grained, dark grey, abundant fine shell. Hit sandstone.	5.74	7.68	0.87
		EOH 9.9m. Sandstone.			
<u>SURVEY:</u>		253341 mE 5586117 mN			
		COLLAR R.L. 11.33 BASE OF SAND R.L. +1.43			
		Down hole average			<u>2.96</u>
0 - 7.5		Depth and grade at 1.5% cut-off			<u>3.57</u>

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CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588122

HOLE NO: 2240E 3150N
(12M. OFFSET STH)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 20.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.95	SAND, fine to medium grained, brown. H.M. trace.	1.01	0.15	5.21
1.5 - 3.5	6.60	AS ABOVE, grades to amber. H.M. 2 - 5%.	0.74	0.04	4.69
3.5 - 5.5	5.95	SAND, fine to medium grained, amber. H.M. 2 - 5%.	0.86	0.02	3.98
5.5 - 7.5	6.60	AS ABOVE, H.M. 2 - 5%.	0.60	0.01	4.52
7.5 - 9.5	6.55	AS ABOVE, H.M. 2 - 5%.	0.64	0.00	2.83
9.5 - 11.5	6.55	AS ABOVE, H.M. 2 - 5%.	0.64	0.02	2.33
11.5 - 13.5	7.55	AS ABOVE, hit indurated at 12.5m., dark brown, then grades to dark grey.	2.44	0.06	1.90
13.5 - 15.3	5.00	SAND, fine to medium grained, dark grey to dark brown, indurated, fine shell. Hit sandstone. EOH 15.3m. Sandstone.	6.70	1.84	1.69
Down hole average					<u>3.36</u>
0 - 15.3	Depth and grade at 1.5% cut-off				<u>3.36</u>
<u>SURVEY:</u>	253375mE	5586102MN			
	COLLAR R.L.	16.12	BASE OF SAND R.L.	+0.82	

CLIENT: NATIONAL MINERAL SANDS
 AREA: COWPER POINT - HIGH DUNE

TITLE NO: E.L. 41/88

HOLE NO: 2280E 3150N

588123

LOGGED BY: ANDREW DOVE

DATE DRILLED: 20.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% >1000 um	% H.M.
0 - 1.5	3.70	SAND, fine to medium grained, greyish brown. H.M. trace.	1.12	0.46	3.19
1.5 - 3.5	7.05	AS ABOVE, grades to amber. H.M. > 2%	0.50	0.01	5.52
3.5 - 5.5	7.30	SAND, medium grained, amber, hit dark grey layer at base. H.M. 2 - 5%.	1.50	0.04	5.48
5.5 - 7.5	8.55	SAND, fine to medium grained grey, hit indurated at 6.5m., dark brown.	6.71	0.14	1.27
7.5 - 8.5	2.45	SAND, fine to medium grained, dark brown, indurated, hit sandstone. EOH 8.5m. Sandstone.	6.80	8.75	0.86
<u>SURVEY:</u>		253418mE 5586121mN			
		COLLAR R.L. 9.01 BASE OF SAND R.L. +0.51			
		Down hole average			<u>3.55</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>4.87</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2320E 3150N

LOGGED BY: ANDREW DOVE

588124

DATE DRILLED: 20.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.40	SAND, fine to medium grained, brown, H.M. trace.	1.57	0.45	3.70
1.5 -3.5	7.20	AS ABOVE, grades to amber. H.M.> 2%	0.90	0.02	3.69
3.5 - 5.5	7.60	SAND, fine to medium grained, amber. H.M. 2 - 5%	0.88	0.17	4.03
5.5 - 7.5	6.90	AS ABOVE, hit induration at 6.5m., dark brown.	6.57	0.10	0.82
7.5 - 8.7	3.50	SAND, fine to medium grained, dark brown, indurated, abundant fine shell. Hit sandstone.	4.14	3.01	1.09
		EOH 8.7m. Sandstone.			
		Down hole average			<u>2.75</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>3.82</u>
<u>SURVEY:</u>		253455mE 5586109mN			
		COLLAR R.L. 9.05 BASE OF SAND R.L. +0.35			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588125

HOLE NO: 2360E 3150N
(2.5 m. offset to N.)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 20.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.30	SAND, fine to medium grained, brown. H.M. trace.	1.86	0.18	2.91
1.5 - 3.5	6.80	AS ABOVE, grades to amber. H.M. > 2%.	0.59	0.03	1.92
3.5 - 5.5	7.00	AS ABOVE, H.M. 2 - 5%.	0.44	0.03	1.20
5.5 - 7.5	7.50	AS ABOVE. H.M. > 2%.	0.83	0.03	2.23
7.5 - 9.5	7.75	AS ABOVE. H.M. > 2%.	0.51	0.93	2.57
9.5 - 11.5	6.55	AS ABOVE. H.M. > 2%.	0.56	0.01	1.88
11.5 - 13.5	7.20	AS ABOVE. H.M. > 1%.	0.84	0.19	3.61
13.5 - 15.3	6.80	AS ABOVE, becomes coarser, grades to light grey then grey, abundant shell. Hit sandstone. H.M. > 1%.	2.07	1.13	3.12
		EOH 15.3m. Sandstone.			
		Down hole average			<u>2.41</u>
0 - 15.3		Depth and grade at 1.5% cut-off			<u>2.41</u>
<u>SURVEY:</u>		253496mE 5586111mN			
		COLLAR R.L. 15.55 BASE OF SAND R.L. +0.25			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588126

HOLE NO: 2400 E 3150N
(6.0m. offset sth)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 21.1.89
METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.50	SAND, fine to medium grained, greyish brown. H.M. trace.	1.28	0.16	2.37
1.5 - 3.5	7.40	AS ABOVE, grades to amber H.M. > 2%.	1.60	0.12	3.76
3.5 - 5.0	5.45	SAND, fine to medium grained, grey, abundant shell. Hit sandstone. H.M. > 2%.	1.20	5.23	0.89
		EOH 5m.			
		Down hole average			<u>2.72</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>3.16</u>
<u>SURVEY:</u>		253533mE 5586103mN			
		COLLAR R.L. 4.69 BASE OF SAND R.L. -0.31			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588127

HOLE NO: 2440E 3150N
8.0m. offset S.)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 20.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.90	SAND, fine to medium grained, brown. H.M. trace.	0.76	0.12	1.37
1.5 - 3.5	7.15	AS ABOVE, grades to amber. H.M. > 1%.	0.46	0.07	2.15
3.5 - 5.5	7.45	SAND, fine to medium grained, amber. H.M. 2 - 5%.	0.46	0.12	3.46
5.5 - 7.5	7.40	AS ABOVE. H.M. 2 - 5%.	0.60	0.05	1.60
7.5 - 9.5	8.30	AS ABOVE, grades to light grey, H.M. 2 - 5%.	0.85	0.37	4.27
9.5 - 10.5	3.80	SAND, fine to medium grained, grey, abundant shell. H.M. > 2%. Hit sandstone. EOH 10.5m. Sandstone.	1.88	3.22	0.62
		Down hole average			<u>2.44</u>
0 - 9.5		Depth and grade at 1.5% cut-off			<u>2.63</u>
<u>SURVEY:</u>		253574mE 5586105mN			
		COLLAR R.L. 10.41 BASE OF SAND R.L. -0.09			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588128

HOLE NO: 2480E 3150N

(Offset 20.5m. S. on Ridge)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 21.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% <1000 um	% H.M.
0 - 1.5	3.70	SAND, fine to medium grained, light grey, H.M. > 15.	0.70	0.12	1.13
1.5 - 3.5	7.00	SAND, fine to medium grained, amber. H.M. > 2%.	0.51	0.00	1.25
3.5 - 5.5	5.95	AS ABOVE, H.M. > 2%.	0.63	0.02	1.26
5.5 - 7.5	6.50	AS ABOVE, slightly coarser. H.M. > 2%.	0.67	0.06	1.40
7.5 - 9.5	7.20	AS ABOVE, H.M. 2 - 5%.	0.84	0.02	2.01
9.5 - 11.5	7.80	AS ABOVE. H.M. rich > 5%.	1.01	0.08	4.78
11.5 - 12.5	3.55	SAND, coarse to very coarse grained, light grey, H.M. > 1%. Hit sandstone.	3.10	3.56	2.05
		EOH 12.5m. Sandstone.			
		Down hole average			2.01
0 - 12.5		Depth and grade at 1.5% cut-off			2.01
<u>SURVEY:</u>		253616mE 5586095mN			
		COLLAR R.L. 12.31 BASE OF SAND R.L. -0.19			

CLIENT: NATIONAL MINERAL SANDS

588129

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2520E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 21.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	4.00	SAND, fine to medium grained, brown, H.M. trace.	1.88	0.10	2.61
1.5 - 3.5	6.95	AS ABOVE, grades to amber, H.M. > 2%.	0.60	0.02	1.99
3.5 - 5.5	7.15	SAND, fine to medium grained, amber. H.M. 1 - 5%.	0.66	0.01	2.17
5.5 - 7.5	7.55	AS ABOVE, H.M. > 2%.	0.53	0.03	1.42
7.5 - 9.5	8.40	AS ABOVE, grades to light grey, coarser with depth. H.M. > 2%.	1.16	3.31	1.67
9.5 - 10.2	2.20	SAND, fine to medium grained, grey, abundant shell. Hit sandstone.	3.09	8.36	1.80
		EOH 10.2m. Sandstone.			
		Down hole average			1.93
0 - 10.2		Depth and grade at 1.5% cut-off			1.93
<u>SURVEY:</u>		253653mE 5586117mN			
		COLLAR R.L. 9.54 BASE OF SAND R.L. -0.66			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT

588130

HOLE NO: 2560E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89

METHOD: Hand Drilled

136

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.35	SAND, medium to fine grained, well sorted, greyish amber	1.20	0.43	1.47
1.5 - 3.5	3.30	AS ABOVE, amber. H.M. 5% +	0.32	0.01	2.25
3.5 - 5.5	3.15	SAND, medium grained, well sorted, amber. H.M. 5% +	0.28	0.02	2.12
5.5 - 7.5	2.65	AS ABOVE, H.M. 5% +	0.32	0.01	3.86
7.5 - 9.5	2.50	AS ABOVE, H.M. 5% +	0.41	0.01	2.57
9.5 - 11.5	2.35	AS ABOVE, H.M. 5%+	0.40	0.01	2.50
		EOH 11.5m.			
		Down hole Average			<u>2.50</u>
0 - 11.5		Depth and Grade at 1.5% Cut-off			<u>2.50</u>
<u>SURVEY:</u>		253692mE 5586119mN			
		COLLAR R.L. 8.93 BASE OF SAND R.L. NA			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE.

588131

HOLE NO: 2600E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 1.2.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.35	SAND, coarse grained, well sorted with some shell. H.M. 1-2%.	0.36	0.21	1.27
1.5 - 3.5	4.60	AS ABOVE, H.M. 1-2%.	0.45	0.45	1.67
3.5 - 5.5	6.90	SAND, medium grained, well sorted. Some coarse shell Shell abundant. Mid grey colour. H.M. 1-2%. (marine sand) E.O.H. 5.5m. Rock	2.35	3.41	0.94
		Down hole Average			<u>1.30</u>
0 - 3.5		Depth and Grade at 1.5% Cut-off			<u>1.50</u>
<u>SURVEY:</u>		253728mE 5586112mN			
		COLLAR R.L. 3.17 BASE OF SAND R.L. -2.33			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

133

AREA: COWPER POINT - HIGH DUNE.

588132

HOLE NO: 2640E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 1.2.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.15	SAND, medium to coarse grained, moderately sorted. Amber. H.M. 2-5%.	0.27	13.79	1.49
1.5 - 3.5	6.65	SAND, very coarse with shell fragments. Amber. H.M. 1-2%.	0.19	6.42	1.00
3.5 - 4.4	3.00	SAND, as above, grey (marine). H.M. 2-5%. E.O.H. 4.4m. Rock	0.37	12.37	0.36
Down hole Average					<u>1.04</u>
<u>SURVEY:</u>		253767mE	5586101mN		
		COLLAR R.L. 3.13	BASE OF SAND R.L. -1.27		

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588133

APPENDIX 2.7

Line 3450N High Dune

134

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE 6.5m. to North

588134

HOLE NO: 2160E 3450N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 16.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.65	SAND, fine - medium grained, brown. H.M. trace.	1.17	0.49	5.23
1.5 - 3.5	8.60	AS ABOVE, grades to amber. H.M. 2-5%.	0.35	0.11	4.97
3.5 - 5.5	7.70	SAND, fine - medium grained, amber. H.M. 2-5%.	0.33	0.06	4.05
5.5 - 7.5	7.25	AS ABOVE, H.M. 2-5%.	0.71	0.07	4.83
7.5 - 9.5	6.45	AS ABOVE, becoming coarser. Hit indurated at 8.5m.	3.04	0.23	4.30
9.5 - 11.5	9.45	SAND, fine - medium grained, dark brown, indurated, silty. Hit gravel and pebble layer. Hit Sandstone. E.O.H. 11.5m. SANDSTONE PIEZOMETER HOLE	3.40	6.01	1.50
		Down hole average			<u>4.10</u>
0 - 11.5		Depth and grade at 1.5% cut-off			<u>4.10</u>
<u>SURVEY:</u>		253310mE 5586424mN			
		COLLAR R.L. 12.66 BASE OF SAND R.L. +1.16			

CLIENT: NATIONAL MINERAL SANDS

588135

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2200E 3450N
(31M. OFFSET TO S.)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 16.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.20	SAND, fine to medium grained, light grey with brown layer. H.M. trace.	1.38	0.25	3.76
1.5 - 3.5	4.95	SAND, fine to medium grained, light grey, hit indurated at 2.5m. H.M. > 1%	4.49	0.39	3.85
3.5 - 5.0	2.90	SAND, fine to medium grained, dark brown, indurated, silty. Hit sandstone. EOH 5.0m. Sandstone.	10.15	1.99	1.70
		Down hole average			<u>3.18</u>
0 - 5.0		Depth and grade at 1.5% cut-off			<u>3.18</u>
<u>SURVEY:</u>		253353mE 5586400mN			
		COLLAR R.L. 5.93 BASE OF SAND R.L. +0.93			

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CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT

HOLE NO: 2200E 3450N

LOGGED BY: GRAHAM LEE

588136

DATE DRILLED: 6.2.89

METHOD: Hand Drilled

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.00	SAND, medium to fine grained, well sorted, pale brown.	1.16	0.31	6.52
1.5 - 3.5	3.70	AS ABOVE, amber, H.M. 5%+.	0.55	0.06	4.39
3.5 - 5.5	3.30	AS ABOVE, H.M. 5% +	0.29	0.02	4.46
5.5 - 7.5	3.40	AS ABOVE, H.M. 5% +	0.27	0.03	3.02
7.5 - 9.5	3.10	AS ABOVE, Rich H.M. seams, H.M. 5% + +	0.26	0.03	4.05
9.5 - 11.5	3.45	AS ABOVE, H.M. 5% + EOH 11.5m.	0.26	0.02	4.93
		Down hole Average			<u>4.48</u>
0 - 11.5		Depth and Grade at 1.5% Cut-off			<u>4.48</u>
<u>SURVEY:</u>		253354mE 5586429mN			
		COLLAR R.L. 17.99 BASE OF SAND R.L. NA			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

137

AREA: COWPER POINT - HIGH DUNE

588137

HOLE NO: 2240E 3450N
(offset 26.0m. to south)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 16.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.35	SAND, medium - coarse grained, grey. H.M. >1%.	2.35	0.10	2.62
1.5 - 3.5	6.05	SAND, fine - medium grained, dark brown. Indurated, silty.	8.38	0.35	2.31
3.5 - 5.5	7.05	SAND, fine - medium grained, dark brown, indurated, silty. Abundant fine shell. Hit sandstone. E.O.H. 5.5m. SANDSTONE PIEZOMETER HOLE	4.46	8.92	0.90
0 - 3.5		Down hole average Depth and grade at 1.5% cut-off			<u>1.88</u> <u>2.44</u>
SURVEY:		253393mE 5586400mN COLLAR R.L. 5.21 BASE OF SAND R.L. -0.29			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

133 AREA: COWPER POINT

588138

HOLE NO: 2240E 3450N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6/2/89

METHOD: Hand Drilled

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	2.15	SAND, medium to fine grained, well sorted, pale brown H.M. 2 - 5%	1.30	0.18	4.33
1.5 - 3.5	2.75	AS ABOVE, H.M. 2 - 5%	0.81	0.11	4.56
3.5 - 5.5	3.60	AS ABOVE, amber, H.M. 5% +	0.34	0.03	6.07
5.5 - 7.5	3.20	AS ABOVE, H.M. 5% +	0.28	0.04	7.64
7.5 - 9.5	3.00	AS ABOVE, H.M. 5% +	0.30	0.03	4.97
9.5 - 11.5	3.90	AS ABOVE, H.M. 5% ++ EOH 11.5M.	0.31	0.05	5.14
		Down hole Average			<u>5.50</u>
0 - 11.5		Depth and Grade at 1.5% Cut-off			<u>5.50</u>
<u>SURVEY:</u>		253395mE 5586425mN			
		COLLAR R.L. 15.41 BASE OF SAND R.L. NA			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

135 AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2280E 3450N

LOGGED BY: ANDREW DOVE

588139

DATE DRILLED: 16.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.45	SAND, fine to medium grained, brown. H.M. > 1%	2.09	0.11	3.41
1.5 - 3.5	7.40	SAND, fine to medium grained, amber. H.M. 2 - 5%	1.03	0.07	4.11
3.5 - 5.5	7.55	AS ABOVE. Hit thin indurated layer then graded to light grey. H.M. > 2%	1.27	0.09	2.66
5.5 - 7.5	6.75	SAND, fine to medium grained, dark brown, indurated, silty.	9.83	0.71	2.56
7.5 - 9.0	4.15	SAND, fine to medium grained, grey, abundant shell, silty. Hit sandstone. EOH 9.0m. Sandstone.	3.35	4.23	0.72
		Down hole average			<u>2.76</u>
0 - 7.5		Depth and grade at 1.5% cut-off			<u>3.17</u>
<u>SURVEY:</u>		253433mE 5586418mN COLLAR R.L. 8.61 BASE OF SAND R.L. -0.39			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588140

HOLE NO: 2320E 3450N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 16.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.80	SAND, fine - medium grained, brown. H.M. >1%.	0.11	1.78	4.37
1.5 - 3.5	7.85	SAND, fine - medium grained, brown grading to amber. H.M. 2-5%.	0.66	0.05	4.42
3.5 - 5.5	8.15	SAND, fine - medium grained, amber. Grades to grey. Hit indurated at 4.5m. H.M. 2-5%.	2.38	0.10	2.41
5.5 - 7.5	7.30	SAND, fine - medium grained, dark brown. Indurated, silty. Abundant fine shell.	3.32	1.00	0.67
7.5 - 7.9	1.20	SAND, medium - coarse grained. Grey. Abundant fine and coarse shell. Hit Sandstone. E.O.H. 7.9m sandstone PIEZOMETER HOLE	4.75	17.48	0.75
		Down hole average			2.77
0 - 5.5		Depth and grade at 1.5% cut-off			3.68
<u>SURVEY:</u>		253471mE 5586416mN			
		COLLAR R.L 7.54 BASE OF SAND R.L. -0.33			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588141

HOLE NO: 2360E 3450N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 16.1.89

Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.05	SAND, fine to medium grained, light brown. H.M. > 1%	0.68	0.14	2.46
1.5 - 3.5	5.30	SAND, fine to medium grained, light brown grades to amber. H.M. 2-5%	0.65	0.04	4.70
3.5 - 5.5	7.25	SAND, fine to medium grained, amber. H.M. 2 - 5%	0.71	0.08	4.53
5.5 - 7.5	10.00	AS ABOVE, grades to light grey, hit indurated at 7.0m. Fine shell.	3.89	0.29	6.44
7.5 - 8.0	2.30	SAND, medium grained, grey, abundant fine shell, silty. Hit sandstone. EOH 8.0m. Sandstone.	2.16	6.01	1.21
		Down hole average			<u>4.45</u>
0- 7.5		Depth and grade at 1.5% cut-off			<u>4.67</u>
<u>SURVEY:</u>		253513mE 5586416mN			
		COLLAR R.L. 7.72 BASE OF SAND R.L. -0.28			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588142

HOLE NO: 2400E 3450N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 16.1.89 METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.65	SAND, fine - medium grained. Light brown, grades to light grey. H.M. >2%.	1.10	0.26	3.22
1.5 - 3.5	7.65	SAND, fine - medium grained, light grey with brown bands. H.M. seam. 2 5%.	0.69	0.04	7.83
3.5 - 5.5	7.90	SAND, medium grained, light grey. H.M. 2-5%. Abundant shell.	0.66	0.43	4.79
5.5 - 6.25	4.10	SAND, coarse - very coarse grained, light grey. Abundant shell. H.M. >2%. Hit Sandstone. E.O.H. 6.25m. SANDSTONE PIEZOMETER HOLE	1.38	12.85	1.28
		Down hole average			4.96
0 - 5.5		Depth and grade at 1.5% cut-off			5.47
<u>SURVEY:</u>		253554mE 5586431mN			
		COLLAR R.L. 5.96 BASE OF SAND R.L. -0.29			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

143 AREA: COWPER POINT - HIGH DUNE

588143

HOLE NO: 2440E 3450N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 16.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.05	SAND, fine - medium grained, brown. H.M. base.	2.40	0.33	1.04
1.5 - 3.5	7.00	SAND, fine - medium grained, light brown, grading to amber. H.M. 2-5%.	0.85	0.06	2.36
3.5 - 5.5	8.70	SAND, fine - medium grained, amber. H.M. 2-5%.	1.93	0.01	1.85
5.5 - 7.2	7.70	SAND, fine - medium grained, light grey, abundant fine shell. H.M. >2%. Hit Sandstone. E.O.H. 7.2m. SANDSTONE. PIEZOMETER HOLE	2.43	4.48	1.22
		Down hole average			<u>1.67</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>1.81</u>
<u>SURVEY:</u>		253592mE 5586411mN			
		COLLAR R.L. 6.35 BASE OF SAND R.L. -0.85			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588144

HOLE NO: 2480E 3450N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 17.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.80	SAND, fine - medium grained, brown. H.M. trace.	0.93	0.11	3.24
1.5 - 3.5	8.20	AS ABOVE, grades to amber. Coarser with depth. H.M. 2-5%.	0.45	0.07	7.63
3.5 - 5.5	7.95	SAND, medium - coarse grained, grey. Abundant fine shell. Coarse shell. H.M. >1%.	0.55	3.05	0.87
5.5 - 6.25	3.05	AS ABOVE, abundant coarse shell. Hit Sandstone. E.O.H. 6.25m. SANDSTONE PIEZOMETER HOLE	1.94	15.28	1.03
		Down hole average			<u>3.62</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>5.75</u>
<u>SURVEY:</u>		253632mE 5586408mN			
		COLLAR R.L. 4.61 BASE OF SAND R.L. -1.64			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588145

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2520E 3450N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 31/1/89

Method: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.40	SAND, medium to fine grained, well sorted. Amber. H.M. ≈ 1%.	0.43	0.06	1.78
1.5 - 3.5	2.50	AS ABOVE	0.24	0.01	2.35
3.5 - 5.5	2.90	AS ABOVE, H.M. 1-2%.	0.18	0.01	1.91
5.5 - 7.5	3.15	AS ABOVE, H.M. 2-5%.	0.23	0.00	1.99
7.5 - 9.5	2.50	AS ABOVE, H.M. 2-5%.	0.19	0.00	1.59
9.5 - 10.8	2.50	AS ABOVE, H.M. 1-2%.	0.23	0.00	1.30
		E.O.H. 10.8m. Sand caving in.			
		Down hole Average			1.86
0 - 9.5		Depth and Grade at 1.5% Cut-off			1.93
<u>SURVEY:</u>		253667mE 5586406mN			
		COLLAR R.L. 23.07 BASE OF SAND R.L. NA			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588146

HOLE NO: 2560E 3450N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 31/1/89

Method: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.40	SAND, fine grained, grey and dark amber.	2.94	0.60	1.21
1.5 - 3.5	2.55	SAND, fine grained, amber, well sorted. H.M. 1-2%.	0.30	0.00	1.65
3.5 - 5.5	2.60	AS ABOVE, some rich H.M. seams. H.M. 2-5%.	0.58	0.02	2.22
5.5 - 7.5	3.20	AS ABOVE with rich H.M. seams. H.M. 2-5%.	0.28	0.02	2.71
7.5 - 9.5	2.90	AS ABOVE, H.M. 1-2%.	0.38	0.004	0.89
9.5 - 11.5	3.80	AS ABOVE, H.M. 1-2%.	0.32	0.01	0.90
		E.O.H. 11.5m.			
		Down hole Average			<u>1.61</u>
0 - 7.5		Depth and Grade at 1.5% Cut-off			<u>2.00</u>
<u>SURVEY:</u>		253714mE 5586404mN			
		COLLAR R.L. 21.53 BASE OF SAND R.L. NA			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588147

HOLE NO: 2600E 3450N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 31.1.89

Method: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.20	SAND, medium - fine grained. well sorted. Pale grey.	1.36	0.29	1.23
1.5 - 3.5	3.20	AS ABOVE, amber. H.M. 2-5%.	0.25	0.00	1.32
3.5 - 5.5	3.35	AS ABOVE, H.M. 2-5%.	0.42	0.00	1.03
5.5 - 7.5	3.45	AS ABOVE, H.M. 2-5%.	0.61	0.07	1.05
7.5 - 9.5	3.05	AS ABOVE, H.M. 1-2%.	0.59	0.003	0.93
9.5 - 11.5	2.30	AS ABOVE, H.M. 2-5%	0.53	0.02	0.99
		E.O.H. 11.5m.			
		Down hole Average			<u>1.08</u>
<u>SURVEY:</u>		253748mE 5586402mN			
		COLLAR R.L. 23.18 BASE OF SAND R.L. NA			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

108 AREA: COWPER POINT - HIGH DUNE

588148

HOLE NO: 2640E 3450N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 1.2.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.45	SAND, medium - fine grained, well sorted. Amber. H.M. 2-5%.	0.21	0.01	1.77
1.5 - 3.5	3.20	AS ABOVE, H.M. 2-5%.	0.19	0.00	2.43
3.5 - 5.5	3.10	AS ABOVE, 2-5%.	0.20	0.02	1.43
5.5 - 7.5	2.90	AS ABOVE, H.M. 2-5%.	0.19	0.01	2.28
7.5 - 9.5	2.20	AS ABOVE, H.M. 2-5%.	0.28	0.00	1.57
9.5 - 11.5	3.05	AS ABOVE, H.M. 2-5%.	0.31	0.01	1.46
		E.O.H. 11.5m.			
		Down hole Average			<u>1.83</u>
0 - 9.5		Depth and Grade at 1.5% Cut-off			<u>1.90</u>
<u>SURVEY:</u>		253784mE 5586396mN			
		COLLAR R.L. 14.28 BASE OF SAND R.L. NA			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

100 AREA: COWPER POINT - HIGH DUNE

588149

HOLE NO: 2680E 3450N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 1.2.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	1.50	SAND, coarse grained, well sorted, amber. Some shell. H.M. 2-5%.	0.30	0.77	1.52
1.5 - 3.5	4.00	AS ABOVE, coarser grained. H.M. in seams. H.M. 5%.	0.19	1.42	2.37
3.5 - 5.0	5.85	AS ABOVE, H.M. 2-5%. E.O.H. 5.0m. Coarse shell and hard	0.27	5.47	0.91
		Down hole average			<u>1.68</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>2.01</u>
		253817mE 5586382mN			
		COLLAR R.L. 3.34 BASE OF SAND R.L. -1.66			

SURVEY:

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE.

588150

HOLE NO: 2720E3450N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 1.2.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.55	SAND, coarse grained, well sorted. Some shell. H.M. 2-5%.	0.12	0.91	1.95
1.5 - 3.5	7.30	AS ABOVE, coarser grained with shell fragments. H.M. 1-2%. E.O.H. 3.5m. Coarse shell and gravel.	0.21	13.95	0.44
0 - 1.5		Down hole average			<u>1.09</u>
		Depth and grade at 1.5% cut-off			<u>1.95</u>
<u>SURVEY:</u>		253855mE 5586370mN			
		COLLAR R.L. 2.48 BASE OF SAND R.L. NA			

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588151

APPENDIX 2.8

Line 3750N High Dune

CLIENT: NATIONAL MINERAL SANDS

588152

TITLE NO: E.L. 41/88

AREA: COWPER POINT

HOLE NO: 1880E 3750N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89

METHOD: hand drilled

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.90	SAND, medium grained, well sorted, pale grey. H.M. 1%	2.76	0.32	2.48
1.5 - 3.5	1.50	SAND, as above, hard indurated at 3.5m. EOH 3.5m.	3.43	0.12	0.76
0 - 1.5		Down hole average Depth and grade at 1.5% cut-off			<u>1.50</u> <u>2.48</u>
<u>SURVEY:</u>		253070mE 5586742mN COLLAR R.L. 4.98 +1.48			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1920E 3750N

LOGGED BY: ANDREW DOVE

588153

DATE DRILLED: 16.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.25	SAND, fine to medium grained, brown. H.M. >1%	5.22	0.41	2.95
1.5 - 3.5	3.40	SAND, fine to medium brained, brown grading to light brown. H.M.>1%	1.56	0.02	3.74
3.5 - 5.5	6.40	SAND, fine to medium grained, light grey, hit indurated at 5.0m. H.M. >1%	4.44	0.15	1.34
5.5 - 7.5	9.65	SAND, fine to medium grained, dark brown, indurated, silty. Hit sandstone. EOH 7.5m. Sandstone.	11.41	3.03	1.32
0 - 3.5		Down hole average Depth and grade at 1.5% cut-off			<u>2.30</u> <u>3.40</u>
<u>SURVEY:</u>		253109mE 5586726mN COLLAR R.L. 48.50 +1.00			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE (OFFSET 1M. TO NORTH)

588151

HOLE NO: 1960E 3750N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 16.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 -1.5	3.50	SAND, fine to medium grained, brown. H.M. trace.	1.11	0.60	6.51
1.5 - 3.5	6.55	SAND, fine to medium grained, light brown grades to amber. H.M. > 1%	0.76	0.05	5.29
3.5 - 5.5	8.20	SAND, fine to medium grained, light grey H.M. >1%	0.95	0.07	6.38
5.5 - 7.5	6.20	SAND, fine to medium grained, dark brown, indurated, occasional gravel layer.	5.65	0.14	1.54
7.5 - 9.5	2.65	SAND, coarse to very coarse grained. Gravel layers dark brown, indurated. Hit sandstone. EOH 9.5m. Sandstone	5.05	20.99	1.00
		Down hole average			<u>4.02</u>
0 - 7.5		Depth and grade at 1.5% cut-off			<u>4.82</u>
<u>SURVEY:</u>		253147mE 5586740mN			
		COLLAR R.L. 9.68		BASE OF SAND R.L. 10.18	

155 CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588155

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2000E 3750N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 16.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.90	SAND, fine to medium grained, brown. H.M.>1%	1.94	0.34	5.58
1.5 - 3.5	8.80	SAND, fine to medium grained, light grey. hit indurated at 3.5m. H.M. > 1%	3.81	0.35	3.49
3.5 - 5.5	7.10	SAND, medium grained, dark brown, gravel layers, silty.	7.49	7.09	1.32
5.5 - 6.0	2.05	AS ABOVE. Hit sandstone. EOH 6.0m. Sandstone.	5.94	20.70	1.43
0 - 3.5		Down hole average Depth and grade at 1.5% cut-off			<u>3.12</u> <u>4.39</u>
<u>SURVEY:</u>		253186mE 5586736mN COLLAR R.L. 6.76 BASE OF SAND R.L. +0.76			

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CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588156

HOLE NO: 2040E 3750N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 16.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.20	SAND, fine to medium grained, light brown grading to grey. H.M.> 1%	1.79	0.14	4.90
1.5 - 3.5	6.05	SAND, fine to medium grained, grey. Hit indurated at 2.5m. H.M. > 1%	3.98	0.13	2.94
3.5 - 5.5	6.35	SAND, fine to medium grained, dark brown, indurated, occasional gravel layer.	6.65	3.42	0.81
5.5 - 6.25	2.20	SAND, medium grained, dark brown, indurated, abundant fine shell some coarse shell. Hit sandstone EOH 6.25m. Sandstone	5.58	22.88	1.16
		Down hole average			<u>2.52</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>3.78</u>
<u>SURVEY:</u>		253225mE 5586734mN			
		COLLAR R.L. 6.14 BASE OF SAND R.L. -0.11			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2080E 3750N

LOGGED BY: ANDREW DOVE

588157

DATE DRILLED: 15.1.89

METHOD: Rig

Interval (m)	Wet Wt. (kg)	Description	% Slime	% >1000 um	% H.M.
0 - 1.5	3.60	SAND, fine - medium grained, brown, grades to amber. H.M. ≈ 1%.	1.89	0.30	3.19
1.5 - 3.5	7.65	SAND, fine - medium grained, amber, grades to light grey. Hit indurated at 3.5m. H.M. > 1%.	2.17	0.11	3.04
3.5 - 5.5	7.10	SAND, fine - medium grained, dark brown, indurated, silty.	6.61	0.15	1.73
5.5 - 6.75	2.95	AS ABOVE, contains gravel. Hit sandstone. E.O.H. 6.75m. SANDSTONE	1.78	17.63	0.60
		Down hole average			<u>2.23</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>2.60</u>
<u>SURVEY:</u>		253266mE 5586733mN			
		COLLAR R.L. 6.39 BASE OF SAND R.L. -0.36			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588158

HOLE NO: 2120E 3750N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 15.1.89

METHOD: Rig

Interval (m)	Wet Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.85	SAND, fine - medium grained, light brown, grades to amber. H.M. \approx 1%.	1.07	0.48	3.62
1.5 - 3.5	6.90	SAND, fine - medium grained, amber, grades to light grey. Hit indurated at 3.5m. H.M. \approx 1%.	2.20	0.19	2.34
3.5 - 5.5	3.80	SAND, fine - medium grained, dark brown, indurated, silty.	12.05	0.60	1.12
5.5 - 6.5	4.15	AS ABOVE, contains gravel. Hit sandstone. E.O.H. 6.5m. SANDSTONE.	2.94	2.16	0.36
		Down hole average			<u>1.96</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>2.89</u>
<u>SURVEY:</u>		253306mE 5586732mN			
		COLLAR R.L. 6.19 BASE OF SAND R.L. -0.31			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 216.0E 3750N

LOGGED BY: ANDREW DOVE

588159

DATE DRILLED: 15.1.89

METHOD: Rig

Interval (m)	Wet Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.00	SAND, fine - medium grained, brown. H.M. >1%.	1.36	0.09	7.43
1.5 - 3.5	7.10	AS ABOVE, grades to amber then light grey. H.M. >2%.	0.91	0.05	2.33
3.5 - 5.5	6.00	SAND, fine - medium grained, dark brown, indurated.	8.95	0.18	2.35
5.5 - 7.5	7.90	AS ABOVE, coarser with depth. Silty. Hit sandstone. E.O.H. 7.5m. SANDSTONE	6.74	2.20	0.83
		Down hole average			<u>2.96</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>3.73</u>
<u>SURVEY:</u>		253346mE 5586729mN			
		COLLAR R.L. 6.93 BASE OF SAND R.L. -0.57			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588160

188 AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2200E 3750N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 15.1.89

METHOD: Rig

Interval (m)	Wet Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.75	SAND, fine - medium grained, light brown to brown. H.M. >1%.	1.19	0.15	8.20
1.5 - 3.5	7.45	SAND, fine - medium grained, brown, grading to amber. H.M. 2-5%.	0.76	0.03	4.71
3.5 - 5.5	7.15	SAND, fine - medium grained, amber. Grades to light grey. Hit indurated at 5.3m. H.M. >1%.	4.56	0.10	2.68
5.5 - 7.5	7.65	SAND, fine - medium grained, dark brown, indurated. Silty. Hit sandstone. E.O.H. 7.5m. SANDSTONE	6.21	5.76	0.73
		Down hole average			<u>3.81</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>4.92</u>
<u>SURVEY:</u>		253386mE 5586727mN			
		COLLAR R.L. 6.91 BASE OF SAND R.L. -0.59			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

101 AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2240E 3750N

LOGGED BY: ANDREW DOVE

588161

DATE DRILLED: 15.1.89

METHOD: Rig

Interval (m)	Wet Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.55	SAND, fine - medium grained, amber. H.M. >2%.	1.37	0.32	5.31
1.5 - 3.5	8.15	AS ABOVE. H.M. 2-5%.	0.67	0.04	6.70
3.5 - 5.5	7.70	AS ABOVE, H.M. 2-5%.	0.38	1.50	6.13
5.5 - 7.5	7.10	AS ABOVE, H.M. 2-5%.	0.89	0.01	5.16
7.5 - 9.5	8.15	AS ABOVE, H.M. 2-5%.	0.48	0.03	7.77
9.5 - 11.5	7.70	AS ABOVE, H.M. 2-5%.	0.51	0.02	5.32
11.5 - 13.5	6.05	AS ABOVE, grades to light grey. Hit indurated at 13.0m. H.M. >2%.	2.11	0.40	3.30
13.5 - 15.5	6.20	SAND, fine - medium grained, dark brown, indurated.	11.08	0.20	2.12
15.5 - 17.0	5.40	AS ABOVE, hit sandstone. E.O.H. 17.0m. SANDSTONE	4.99	7.94	0.56
		Down hole average			<u>4.81</u>
0 - 15.5		Depth and grade at 1.5% cut-off			<u>5.22</u>
<u>SURVEY:</u>		253425mE 5586724mN COLLAR R.L. 15.76 BASE OF SAND R.L -1.24			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2280E 3750N

LOGGED BY: ANDREW DOVE

588162

DATE DRILLED: 16.1.89

(5.2 metres N of peg)

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.70	SAND, fine to medium grained, light brown to brown. H.M. > 1%	0.94	0.43	5.33
1.5 - 3.5	7.05	SAND, fine to medium grained, light brown grades to amber.	0.84	0.03	3.42
3.5 - 5.5	7.65	SAND, medium grained amber grades to light grey. H.M. 2-5%	0.83	0.06	7.15
5.5 - 7.5	7.00	SAND, fine to medium grained, dark brown, indurated, silty, occasional gravel layer.	4.99	0.11	3.91
7.5 - 9.5	9.90	AS ABOVE, abundant fine shell. Hit sandstone. EOH 9.5m. Sandstone	3.17	1.20	0.62
		Down hole average			4.02
0 - 7.5		Depth and grade at 1.5% cut-off			4.92
<u>SURVEY:</u>		253459mE 5586726mN			
		COLLAR R.L. 8.42 BASE OF SAND R.L. -1.08			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

183 AREA: COWPER POINT - HIGH DUNE (10m. to the S.E.)

588163

LINE NO:

HOLE NO: 2320E 3750N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 15.1.89
Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.80	SAND, fine - medium grained, light brown to brown. H.M. trace.	1.22	0.21	5.73
1.5 - 3.5	7.20	SAND, fine - medium grained, amber. H.M. 2-5%.	0.68	0.04	5.14
3.5 - 5.5	6.95	AS ABOVE. H.M. 2-5%.	0.58	0.28	4.69
5.5 - 7.5	6.45	AS ABOVE, H.M. 2-5%.	0.77	0.02	3.94
7.5 - 9.5	7.20	AS ABOVE, H.M. 2-5%.	0.65	0.04	5.82
9.5 - 11.5	7.85	AS ABOVE, H.M. >5%.	0.51	0.02	6.73
11.5 - 13.5	5.95	AS ABOVE, H.M. 2-5%.	0.87	0.01	7.21
13.5 - 15.5	7.10	AS ABOVE, hig indurated at 14.5m. H.M. >2%.	1.42	0.09	2.86
15.5 - 17.5	7.60	SAND, fine - medium grained, dark brown, indurated.	2.51	0.04	1.90
17.5 - 19.5	8.20	AS ABOVE, silty.	7.40	0.48	2.32
19.5 - 19.75	1.80	AS ABOVE, hit sandstone. E.O.H. 19.75m.	11.02	5.59	1.01
		Down hole average			<u>4.56</u>
0 - 19.5		Depth and grade at 1.5% cut-off			<u>4.61</u>
<u>SURVEY:</u>		253502mE 5586711mN COLLAR R.L. 18.22 BASE OF SAND R.L. -1.53			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

100 AREA: COWPER POINT - HIGH DUNE

588164

HOLE NO: 2360E 3750N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 15.1.89

Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.85	SAND, fine - medium grained, light brown to brown. H.M. >1%.	1.61	0.28	7.36
1.5 - 3.5	7.45	SAND, fine - medium grained, amber. H.M. 2-5%.	0.78	0.02	6.08
3.5 - 5.5	7.80	AS ABOVE, H.M. 2-5%.	0.81	0.10	4.06
5.5 - 7.5	8.15	AS ABOVE, H.M. 2-5%.	0.82	0.01	6.63
7.5 - 9.5	7.25	AS ABOVE, H.M. 2-5%.	0.75	0.15	5.32
9.5 - 11.5	7.50	AS ABOVE, H.M. 2-5%.	0.42	0.00	5.67
11.5 - 13.5	6.20	AS ABOVE, H.M. 2-5%.	0.65	0.04	5.27
13.5 - 15.5	6.90	AS ABOVE, H.M. 2-5%.	0.40	0.01	3.04
15.5 - 17.5	8.30	AS ABOVE, grading to light grey H.M. >5%.	0.74	0.13	8.16
17.5 - 19.5	7.00	SAND, fine - medium grained, grey. Hit induration at 18.5m. Abundant fine shell. Dark brown at base.	4.17	1.54	3.94
19.5 - 20.75	5.45	SAND, fine - medium grained, dark brown, indurated. Hit sandstone.	9.76	2.69	1.57
0 - 20.75		E.O.H. 20.75m. SANDSTONE Depth and grade at 1.5% cut-off 253529mE 5586697mN COLLAR R.L. 19.12 BASE OF SAND R.L. -1.63			5.27

SURVEY:

185

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588165

HOLE NO: 2400E 3750N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 16.1.89

(1m. sth of peg)

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 -1.5	5.05	SAND, fine to medium grained, brown grading to light brown. H.M. > 1%	0.71	0.15	4.13
1.5 - 3.5	6.00	SAND, fine to medium grained, light brown grading to amber. H.M. > 2%	1.51	0.19	2.78
3.5 - 5.5	7.50	SAND, fine to medium grained, amber. H.M. > 2%	0.69	0.17	2.83
5.5 - 7.5	8.25	AS ABOVE. H.M. 2-5%	0.65	0.03	4.10
7.5 - 9.5	8.75	AS ABOVE. H.M. 2-5%	0.73	0.04	4.22
9.5 - 11.5	7.50	AS ABOVE. H.M. 2-5%	0.91	0.04	2.77
11.5 - 13.5	5.50	AS ABOVE. Hit indurated at 12.5m. some coarse shell. Hit sandstone at 13.5m. EOH 13.5m. Sandstone	4.99	1.68	1.15
		Down hole average			<u>3.10</u>
0 - 11.5		Depth and grade at 1.5% cut-off			<u>3.44</u>
<u>SURVEY:</u>		253577mE 5586709mN			
		COLLAR R.L. 11.33 BASE OF SAND R.L. -2.17			

188

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2440E 3750N

LOGGED BY: ANDREW DOVE

538166

DATE DRILLED: 15.1.89
Rig

Interval (m)	Wt. (kg)	Description	% Slime	% <1000 um	% H.M.
0 - 1.5	3.60	SAND, fine - medium grained, light brown. H.M. trace.	1.52	0.23	4.62
1.5 - 3.5	7.20	SAND, fine - medium grained, amber. H.M. 2-5%.	0.64	0.01	6.50
3.5 - 5.5	7.30	AS ABOVE, H.M. 2-5%.	0.54	0.00	7.69
5.5 - 7.5	6.20	AS ABOVE. H.M. >2%.	0.67	0.02	3.57
7.5 - 9.5	6.95	AS ABOVE, H.M. 2-5%.	0.61	0.00	3.79
9.5 - 11.5	7.35	AS ABOVE, H.M. >2%.	0.53	0.03	2.95
11.5 - 13.5	7.55	AS ABOVE, H.M. >2%.	0.66	0.01	2.55
13.5 - 15.5	7.85	AS ABOVE, H.M. >2%.	0.73	0.01	2.14
15.5 - 17.5	7.65	AS ABOVE, H.M. 2-5%.	0.86	0.04	5.23
17.5 - 19.5	7.95	SAND, medium grained, amber. Abundant shell. H.M. >1%.	1.14	1.62	1.74
19.5 - 21.25	8.40	SAND, coarse - very coarse grained, amber. Abundant shell. Coarse H.M. >1%. Hit sandstone.	1.96	2.24	2.70
		E.O.H. 21.25m. SANDSTONE			
		Down hole average			<u>3.95</u>
0 - 21.25		Depth and grade at 1.5% cut-off			<u>3.95</u>
SURVEY:		253612mE 5586712mN			
		COLLAR R.L. 18.97 BASE OF SAND R.L. -2.28			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588167

HOLE NO: 2480E 3750N

(offset 17m. north due to slope)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 15.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.40	SAND, fine - medium grained, light brown to brown. H.M. >1%.	0.78	0.05	3.20
1.5 - 3.5	8.30	AS ABOVE, grades to amber. H.M. rich >5%.	0.75	0.14	6.41
3.5 - 5.5	8.00	SAND, medium - coarse grained, amber, abundant shell. H.M. >2%.	1.83	3.31	1.27
5.5 - 7.3	7.90	SAND, coarse - very coarse grained, light grey. Abundant shell. H.M. >1%.	0.58	7.19	2.11
		E.O.H. 7.3m. SANDSTONE			
		Down hole average			<u>3.28</u>
0 - 7.3		Depth and grade at 1.5% cut-off			<u>3.28</u>
<u>SURVEY:</u>		253651mE 5586723mN			
		COLLAR R.L. 4.42 BASE OF SAND R.L. -2.88			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588168

HOLE NO: 2520E 3750N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 15.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.20	SAND, fine - medium grained, light brown to brown. H.M. base.	1.26	0.52	1.59
1.5 - 3.5	7.90	SAND, fine - medium grained, brown, grades to amber. H.M. >1%.	0.70	0.03	1.84
3.5 - 5.5	8.55	SAND, fine - medium grained, amber. H.M. bands. H.M. 2-5%.	0.89	1.19	3.86
5.5 - 7.5	8.05	AS ABOVE, grades to coarse grained. Shell present. H.M. visible.	1.82	9.66	0.78
7.5 - 9.1	10.10	SAND, coarse - very coarse grained. Light grey. Abundant shell. Coarse H.M. >2%. Hit Sandstone. E.O.H. 9.1m. SANDSTONE PIEZOMETER HOLE	1.76	15.39	1.99
		Down hole average			2.04
0 - 5.5		Depth and grade at 1.5% cut-off			2.51
<u>SURVEY:</u>		253684mE 5586705mN			
		COLLAR R.L. 6.36 BASE OF SAND R.L. -2.74			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588169

HOLE NO: 2560E 3750N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 15.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.80	SAND, fine - medium grained. Light brown to brown. H.M. trace.	0.75	0.14	1.46
1.5 - 3.5	7.40	SAND, fine - medium grained, brown grades to amber. H.M. >1%.	0.46	0.25	1.07
3.5 - 5.5	7.00	SAND, fine - medium grained, amber. H.M. >1%.	0.41	0.01	1.15
5.5 - 7.5	7.60	AS ABOVE. H.M. >1%.	0.65	0.15	1.13
7.5 - 9.5	8.00	AS ABOVE. H.M. >2%.	0.73	0.09	1.54
9.5 - 11.5	7.55	AS ABOVE, becomes coarser with depth. Abundant shell, Coarse H.M. >1%.	0.54	12.13	0.47
11.5 - 12.5	3.55	SAND, coarse - very coarse grained, light grey. Abundant coarse shell. H.M. visible >1%. Hit Sandstone. E.O.H. 12.5m. SANDSTONE PIEZOMETER HOLE	2.33	18.63	0.75
<u>SURVEY:</u>		253723mE 5586702mN COLLAR R.L. 10.17 BASE OF SAND R.L. -2.33			
		Down hole average			<u>1.09</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2600E 3750N

LOGGED BY: GRAHAM LEE

588170

DATE DRILLED: 31.1.89

Method: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	1.95	SAND, medium to fine grained, well sorted, grey.	1.94	0.31	1.70
1.5 - 3.5	2.70	AS ABOVE, amber. H.M. 1-2%.	1.65	0.21	2.21
3.5 - 5.5	2.85	AS ABOVE, H.M. 1-2%.	0.37	0.01	2.17
5.5 - 7.5	3.00	AS ABOVE, H.M. 2-5%. Some roots with CaCO ₃ deposits around them.	1.58	0.15	1.84
7.5 - 9.5	2.80	AS ABOVE, H.M. 5%+	0.81	0.10	3.12
9.5 - 11.5	2.75	AS ABOVE, H.M. 2-5%.	0.49	0.01	2.25
		E.O.H. 11.5m.			
		Down hole average			<u>2.24</u>
0 - 11.5		Depth and grade at 1.5% cut-off			<u>2.24</u>
<u>SURVEY:</u>		253763mE 5586700mN			
		COLLAR R.L. 11.76 BASE OF SAND R.L. NA			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L.41/88

AREA: COWPER POINT - HIGH DUNE

588171

HOLE NO: 2640E 3750N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 31.1.89

Method: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	2.50	SAND, medium to fine grained. well sorted, grey.	1.37	0.13	1.91
1.5 - 3.5	3.10	AS ABOVE, H.M. 1-2%.	0.60	0.02	1.26
3.5 - 5.5	3.00	AS ABOVE, H.M. 2-5%.	0.23	0.00	1.41
5.5 - 7.5	2.40	AS ABOVE, H.M. 2-5%.	0.28	0.01	1.66
7.5 - 9.5	3.05	AS ABOVE, brownish amber. H.M. ≈ 1%.	0.47	0.02	1.58
9.5 - 11.5	3.10	AS ABOVE, H.M. ≈ 1%.	0.42	0.03	1.37
		E.O.H. 11.5m.			
		Down hole average			<u>1.52</u>
0 - 9.5		Depth and grade at 1.5% cut-off			<u>1.55</u>
<u>SURVEY:</u>		253798mE 5586697mN			
		COLLAR R.L. 23.15 BASE OF SAND R.L. NA			

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CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588172

HOLE NO: 2680E 3750N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 31.1.89

Method: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	2.05	SAND, medium to fine grained, amber. H.M. 1-2%.	0.52	0.27	2.11
1.5 - 3.5	3.65	AS ABOVE, grey. H.M. 1-2%.	1.21	0.33	1.52
3.5 - 5.5	3.40	AS ABOVE, grey and amber. H.M. 1-2%.	0.73	0.04	1.97
5.5 - 7.5	3.30	AS ABOVE, amber. H.M. 1-2%.	0.31	0.01	1.62
7.5 - 9.5	3.00	AS ABOVE, brownish amber. H.M. 1-2%.	0.43	0.04	1.39
9.5 - 11.5	3.00	AS ABOVE, H.M. ~ 1%.	0.49	0.05	1.51
		E.O.H. 11.5m.			
		Down hole average			<u>1.67</u>
0 - 7.5		Depth and grade at 1.5% cut-off			<u>1.78</u>
<u>SURVEY:</u>		253835mE 5586694mN			
		COLLAR R.L. 24.35 BASE OF SAND R.L. NA			

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588173

APPENDIX 2.9

Line 4050N High Dune

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT

588174

HOLE NO: 1930E 4050N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89

METHOD: Hand Drilled

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.15	SAND, medium grained, well sorted, grey	2.91	0.12	2.39
1.5 - 3.5	6.70	AS ABOVE, dark brownish grey. 3.5m. clay plastic EOH 3.5m.	1.49	0.01	1.32
0 - 1.5		Down hole Average Depth and Grade at 1.5% Cut-off			<u>1.78</u> <u>2.39</u>
SURVEY:		253131mE 5587058mN			
		COLLAR R.L. 4.33 BASE OF SAND R.L. +0.83			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588175

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1960E 4050N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 14.1.89
Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.05	SAND, fine - medium grained, light grey grading to light brown. H.M. >1%.	0.97	0.10	7.35
1.5 - 3.5	6.80	SAND, fine - medium grained, amber. Hit induration at 3.0m. H.M. >2%.	3.93	0.06	2.84
3.5 - 5.5	5.60	SAND, fine - medium grained, dark brown, abundant fine shell	5.09	3.46	1.02
5.5 - 6.5	3.70	SAND, medium - coarse grained, grey. Abundant fine shell. Hit sandstone. E.O.H. 6.5m. SANDSTONE	1.61	14.54	0.58
		Down hole average			<u>2.97</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>4.77</u>
<u>SURVEY:</u>		253161mE 5587056mN			
		COLLAR R.L. 5.54 BASE OF SAND R.L.-0.96			

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CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588176

HOLE NO: 2000E 4050N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 14.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.20	SAND, fine - medium grained, light brown to brown. H.M. trace.	1.39	0.24	6.46
1.5 - 3.5	7.85	AS ABOVE, grades to amber. H.M. 2-5%.	0.72	0.05	7.85
3.5 - 5.5	7.10	SAND, fine - medium grained, amber. H.M. 2-5%.	0.54	0.01	6.29
5.5 - 7.5	7.40	AS ABOVE, indurated at 6.5m.	3.58	0.10	3.35
7.5 - 9.5	6.80	SAND, fine - medium grained, dark brown, indurated.	8.07	0.33	2.18
9.5 - 11.0	5.30	SAND, medium - coarse grained, grey. Abundant fine shell, silty. Hit sandstone. E.O.H. 11.0 SANDSTONE	3.26	17.93	0.54
		Down hole average			<u>4.53</u>
0 - 9.5		Depth and grade at 1.5% cut-off			<u>5.16</u>
<u>SURVEY:</u>		253200mE 5587049mN			
		COLLAR R.L. 9.81 BASE OF SAND R.L. -1.19			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

17 AREA: COWPER POINT - HIGH DUNE

588177

HOLE NO: 2040E 4050N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 14.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.35	SAND, fine - medium grained, light brown. H.M. >1%.	0.72	0.18	5.28
1.5 - 3.5	7.30	SAND, fine - medium grained, amber. H.M. 2-5%.	0.49	0.02	6.92
3.5 - 5.5	6.65	AS ABOVE. H.M. 2-5%.	0.29	0.02	4.83
5.5 - 7.5	7.20	AS ABOVE, H.M. >2%.	0.55	0.02	3.81
7.5 - 9.5	8.85	AS ABOVE, grades to light grey at 8.5m. Hit indurated 9.2m.	2.21	0.03	2.13
9.5 - 11.5	8.05	SAND, fine - medium, dark brown, indurated.	5.87	0.06	1.85
11.5 - 13.0	3.85	AS ABOVE, hit gravel layer at 11.8m. Pebbles at 12.3m. Hit sandstone.	5.52	9.19	0.84
		E.O.H. 13.0m. SANDSTONE			
		Down hole average			<u>3.71</u>
0 - 11.5		Depth and grade at 1.5% cut-off			<u>4.09</u>
<u>SURVEY:</u>		253239mE 5587046mN			
		COLLAR R.L. 12.04 BASE OF SAND R.L. -0.96			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588178

HOLE NO: 2080E 4050N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 14.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	3.10	SAND, fine - medium grained, light brown. H.M. >1%.	1.06	0.12	4.51
1.5 - 3.5	6.85	AS ABOVE, grades to amber. H.M. 2-5%.	0.66	0.05	5.48
3.5 - 5.5	6.15	SAND, fine - medium grained, amber. H.M. 2-5%.	0.69	0.02	6.06
5.5 - 7.5	5.20	AS ABOVE. H.M. 2-5%.	0.76	0.04	5.01
7.5 - 9.5	6.90	AS ABOVE, H.M. 2-5%.	0.95	0.01	4.37
9.5 - 11.5	5.00	AS ABOVE. Hit induration at 10.0m. Lens dark brown.	5.22	0.15	1.96
11.5 - 13.5	9.30	SAND, fine - medium grained, dark brown, indurated.	8.51	1.10	1.57
13.5 - 14.4	1.80	SAND, medium - coarse grained, grey. Abundant fine shell. Hit sandstone. E.O.H. 14.4m. SANDSTONE	4.08	7.93	0.50
		Down hole average			<u>3.90</u>
0 - 13.5		Depth and grade at 1.5% cut-off			<u>4.12</u>
		253279mE 5587043mN COLLAR R.L. 13.16 BASE OF SAND R.L. -1.24			

SURVEY:

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588179

HOLE NO: 2120E 405.0N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 14.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% >1000 um	% H.M.
0 - 1.5	3.75	SAND, fine - medium grained, light brown, grading to amber. H.M. >2%.	1.18	0.14	7.07
1.5 - 3.5	8.45	SAND, fine - medium grained, amber. H.M. 2-5%.	0.50	0.00	8.71
3.5 - 5.5	8.35	AS ABOVE. H.M. 2-5%.	0.39	0.00	7.23
5.5 - 7.5	5.70	AS ABOVE. H.M. 2-5%.	0.72	0.01	5.09
7.5 - 9.5	6.10	AS ABOVE, H.M. 2.5%.	0.35	0.00	3.58
9.5 - 11.5	6.80	as above, hit indurated at 11.0m. H.M. >2%.	3.00	0.15	3.27
11.5 - 13.5	3.60	SAND, fine - medium grained, dark brown, indurated.	6.60	0.31	0.84
13.5 - 15.5	7.00	SAND - coarse - v. coarse grained, grey. Abundant shell. Hit sandstone.	4.08	9.37	0.38
		E.O.H. 15.5 SANDSTONE			
		Down hole average			<u>4.44</u>
0 - 11.5		Depth and grade at 1.5% cut-off			<u>5.77</u>
<u>SURVEY:</u>		253318mE 5587039mN			
		COLLAR R.L. 13.81 BASE OF SAND R.L. -1.69			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588180

HOLE NO: 2160E 4050N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 1.4.1.89

Offset 3.5 to SW

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	5.00	SAND, fine - medium grained. Light grey grading to light light brown. H.M. trace.	1.07	0.37	4.64
1.5 - 3.5	7.60	SAND, fine - medium grained, light brown. Grades to amber. H.M. >2%.	0.65	0.02	4.88
3.5 - 5.5	7.25	SAND, fine - medium grained, amber. HM 2-5%.	0.53	0.01	2.94
5.5 - 7.5	7.05	AS ABOVE, grades to grey. H.M. >2%.	1.48	0.05	2.36
7.5 - 9.5	5.80	SAND, fine - medium grained, dark brown, indurated.	7.84	0.28	1.76
9.5 - 11.5	6.50	AS ABOVE. Grades to light grey. Abundant fine shell. Hit sandstone. E.O.H. 11.5m.	6.05	2.48	0.89
		Down hole average			<u>2.84</u>
0 - 9.5		Depth and grade at 1.5% cut-off			<u>3.24</u>
<u>SURVEY:</u>		253356mE 5587038mN			
		COLLAR R.L. 9.96 BASE OF SAND R.L. -1.54			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2200E 4050N

LOGGED BY: ANDREW DOVE

588181

DATE DRILLED: 14.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.20	SAND, fine - medium grained, light brown. H.M. >1%.	1.18	0.15	6.15
1.5 - 3.5	7.65	AS ABOVE, grades to amber. H.M. 2-5%.	0.40	0.03	6.60
3.5 - 5.5	7.7	SAND, fine - medium grained, amber. H.M. 2-5%.	0.32	0.09	5.15
5.5 - 7.5	7.50	AS ABOVE. H.M. 2-5%.	0.73	0.03	4.35
7.5 - 9.5	7.55	AS ABOVE, grades to light grey. Hit indurated layer at 9.0m. H.M. visible	3.08	0.06	2.40
9.5 - 11.5	7.50	SAND, fine - medium grained, dark brown, indurated.	3.00	0.06	1.28
11.5 - 13.5	5.65	SAND - fine - medium grained, dark grey. Abundant fine shell. Some gravel.	3.93	2.11	0.40
13.5 - 13.8	1.70	AS ABOVE, hit sandstone. E.O.H. 13.8m.	5.07	12.49	0.95
		Down hole average			<u>3.61</u>
0 - 9.5		Depth and grade at 1.5% cut-off			<u>4.87</u>
<u>SURVEY:</u>		253396mE 5587027mN			
		COLLAR R.L. 11.66 BASE OF SAND R.L. -2.14			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588182

HOLE NO: 2240E 4050N
Offset 12m. to N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 14.2.89
METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.90	SAND, fine - medium grained, light grey, grades to light brown.	0.81	0.23	3.10
1.5 - 3.5	8.00	SAND, fine - medium grained, brown, grades to amber. H.M. >2%, coarser with depth.	0.66	0.05	7.18
3.5 - 5.5	6.00	SAND, medium grained, amber, becoming indurated at 4.5m.	9.06	2.13	6.37
5.5 - 7.5	5.75	SAND, fine - medium grained, dark brown, indurated.	2.19	0.32	1.38
7.5 - 9.0	3.20	SAND, fine - medium grained, dark brown. Some gravel. Abundant fine shell. Hit sandstone.	3.93	6.21	0.49
		E.O.H. 9.0m. SANDSTONE			
		Down hole average			<u>3.92</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>5.77</u>
		253440mE 5587038mN			
		COLLAR R.L. 6.75 BASE OF SAND -2.25			

SURVEY:

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588183

HOLE NO: 2280E 4050N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 14.1.89
METHOD: Rig

2.8m. offset to N

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.85	SAND, fine - medium grained, light brown. H.M. >1%.	0.98	0.17	2.47
1.5 - 3.5	7.55	AS ABOVE, medium grained. H.M. >2%.	0.96	0.17	7.69
3.5 - 5.5	7.55	SAND, medium - coarse grained, dark brown. Indurated at 4.5m.	2.99	0.23	1.23
5.5 - 7.5	7.50	SAND, fine - medium grained, dark brown. Indurated gravel layers.	2.20	0.45	0.60
7.5 - 9.0	5.50	SAND, fine - medium grained, light grey, silty. Coarse shell and abundant fine shell. H.M. >1%. Hit sandstone. E.O.H. 9.0m. SANDSTONE	3.23	9.58	0.20
		Down hole average			<u>2.56</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>5.45</u>
<u>SURVEY:</u>		253477mE 5587025mN COLLAR R.L. 6.36 BASE OF SAND R.L. -2.64			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588184

HOLE NO: 2320E 4050N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 14.1.89

METHOD: Rig

Interval (m)	Dry. Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.50	SAND, fine - medium grained, light brown. H.M. visible >1%.	2.46	0.19	3.68
1.5 - 3.5	6.20	AS ABOVE, grades to amber. H.M. >2%.	1.19	0.04	3.14
3.5 - 5.5	8.15	SAND, fine - medium grained, amber. H.M. 2-5%.	1.04	0.02	4.69
5.5 - 7.5	7.00	SAND, fine - medium grained, dark brown, indurated.	9.54	0.37	3.90
7.5 - 9.5	6.05	AS ABOVE	3.39	2.14	0.56
9.5 - 11.0	3.90	SAND, fine - medium grained, light grey, silty, gravel and pebbles. Hit sandstone. H.M. >1%. E.O.H. 11.0m. SANDSTONE	12.46	20.20	1.11
		Down hole average			<u>2.84</u>
0 - 7.5		Depth and grade at 1.5% cut-off			<u>3.86</u>
<u>SURVEY:</u>		253517mE 5587019mN			
		COLLAR R.L. 8.19 BASE OF SAND R.L. -2.81			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588185

HOLE NO: 2360E 4050N
Offset 6.5m. to N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 14.1.89
METHOD: Rig

Interval (m)	Dry. Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.60	SAND, fine - medium grained, light brown. H.M. >1%.	1.13	0.37	2.92
1.5 - 3.5	6.50	AS ABOVE, grades to amber. H.M. >2%.	0.38	0.07	2.55
3.5 - 5.5	7.10	SAND, fine - medium grained, amber. H.M. 2.5%.	0.50	0.17	3.44
5.5 - 7.5	7.70	AS ABOVE, H.M. 2.5%.	0.59	0.05	3.62
7.5 - 9.5	6.65	AS ABOVE. H.M. 2-5%.	0.91	0.09	2.93
9.5 - 11.5	8.00	AS ABOVE. H.M. 2-5%	0.75	0.04	4.89
11.5 - 13.5	7.55	AS ABOVE, hit indurated layer then becomes light grey. H.M. >2%.	2.55	1.94	4.50
13.5 - 15.5	3.80	SAND, coarse - v. coarse grained, dark grey gravel layer. Coarse shell. Small sample due to indurated layer.	6.43	19.94	1.49
15.5 - 16.75	8.00	SAND, fine - medium grained, light grey, silty, abundant shell. Hit sandstone. E.O.H. 16.75m. SANDSTONE	15.97	8.99	0.71
		Down hole average			<u>3.11</u>
0 - 13.5		Depth and grade at 1.5% cut-off			<u>3.57</u>
<u>SURVEY:</u>		253561mE 5587019mN			
		COLLAR R.L. 13.18 BASE OF SAND R.L. -3.57			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

186

AREA: COWPER POINT - HIGH DUNE

588186

HOLE NO: 2400E 4050N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 14.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.60	SAND, fine - medium grained, brown.	0.82	0.31	2.81
1.5 - 3.5	7.60	SAND, fine - medium grained, brown grading to amber. H.M. rich 2-5%.	0.31	0.02	6.48
3.5 - 5.5	7.05	SAND, fine- medium grained, amber. H.M. 2-5%.	0.38	0.02	3.61
5.5 - 7.5	7.49	AS ABOVE. H.M. 2.5%.	0.51	0.05	2.58
7.5 - 9.5	8.20	AS ABOVE becoming coarser with depth. H.M. 2-5%.	0.62	0.57	5.55
9.5 - 11.5	5.65	SAND, fine - medium grained. Light grey grading to dark brown. Indurated. H.M. >2%.	2.48	2.48	1.68
11.5 - 13.5	9.10	SAND, coarse - v. coarse, dark brown. Coarse shell. H.M. visible >1%.	4.11	14.25	0.47
13.5 - 14.0	1.50	SAND, coarse - v. coarse grained. Light grey abundant shell. H.M. visible >1%. Hit weathered sandstone. E.O.H. 14.0m. SANDSTONE	5.84	28.67	0.62
		Down hole average			<u>3.23</u>
0 - 11.5		Depth and grade at 1.5% cut-off			<u>3.83</u>
<u>SURVEY:</u>		253595mE 5587012mN			
		COLLAR R.L. 10.48 BASE OF SAND R.L. -3.52			

187

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588187

HOLE NO: 2440E 4050N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 11.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.20	SAND, fine - medium grained, brown. H.M. trace.	1.19	0.36	2.08
1.5 - 3.5	7.35	SAND, fine - medium grained, amber. H.M. bands. H.M. 2-5%.	0.49	0.03	2.66
3.5 - 5.5	7.05	AS ABOVE, number of H.M. rich bands. Occasional coarse shell. >5%.	0.87	0.71	4.02
5.5 - 7.5	6.95	SAND, medium - coarse grained amber. H.M. 2-5%. Some coarse shell.	1.56	0.85	3.31
7.5 - 9.5	7.40	AS ABOVE, grades to light grey. Indurated layer at 9.5m. H.M. rich 2-5%.	2.07	6.42	2.07
9.5 - 11.25	6.00	SAND, coarse - v. coarse grained, dark brown, silty, indurated at top, hit pebbles, shell poorly sorted. E.O.H. 11.25m. Pebbles in bit	2.94	25.59	1.07
		Down hole average			<u>2.59</u>
0 - 9.5		Depth and grade at 1.5% cut-off			<u>2.87</u>
<u>SURVEY:</u>		253634mE 5587009mN			
		COLLAR R.L. 7.88 BASE OF SAND R.L. -3.37			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588188

HOLE NO: 2480E 4050N
Offset 1m. to S

LOGGED BY: ANDREW DOVE

DATE DRILLED: 12.1.89
METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.10	SAND, fine - medium grained, brown. H.M. base.	1.06	0.16	1.04
1.5 - 3.5	6.95	SAND, fine - medium grained, light brown grading to amber. H.M. base.	0.66	0.05	1.12
3.5 - 5.5	7.05	SAND, fine - medium grained, amber. H.M. visible >1%.	0.75	0.10	1.95
5.5 - 7.5	7.25	AS ABOVE. H.M. bands 2-5%.	0.80	0.07	2.05
7.5 - 9.5	7.80	AS ABOVE, becoming coarser with depth. Occasional coarse shell. H.M. visible >1%.	0.80	0.07	0.99
9.5 - 11.5	8.55	SAND, medium - coarse grained, amber. Coarse shell. Coarse H.M. 2-5%.	0.92	11.71	1.52
11.5 - 12.5	4.60	SAND, coarse - v. coarse grained, light grey. Abundant shell. H.M. coarse >2%. Hit sandstone. E.O.H. 12.5m. SANDSTONE	0.82	9.77	1.39
		Down hole average			<u>1.46</u>
0 - 7.5		Depth and grade at 1.5% cut-off			<u>1.57</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588189

HOLE NO: 2520E 4050N

LOGGED BY: ANDREW DOVE

(Off-set 26m. to south of peg)
DATE DRILLED: 12.1.89

METHOD: Rig

Interval (m)	Wet Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.65	SAND, fine - medium grained, brown. H.M. trace.	1.44	0.25	1.06
1.5 - 3.5	8.00	AS ABOVE, grades to light brown then amber. H.M. 2-5%.	0.98	0.21	1.78
3.5 - 5.5	8.85	SAND, fine - medium grained, amber becoming coarser with depth. Abundant shell from 5.0m. H.M. >1%.	0.96	4.43	0.69
5.5 - 7.5	8.40	SAND, coarse - v. coarse grained. Amber. Occasional gravel layer. Coarse H.M. 2-5%.	0.56	7.71	1.59
7.5 - 8.7	6.15	SAND, coarse grained, light grey. Abundant shell. Occasional gravel layer. H.M. 2-5%. Hit weathered sandstone. E.O.H. SANDSTONE 8.7m,	1.23	14.07	1.90
Down hole average					<u>1.38</u>
<u>SURVEY:</u>		253704mE	5586979mN		
		COLLAR R.L.	5.07	BASE OF SAND R.L.	-3.63

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2520E 4050N

LOGGED BY: ANDREW DOVE

588190

DATE DRILLED: 12.1.89
METHOD: Hand

Interval (m)	Wet Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.55	SAND, fine - medium grained, orange brown, grades to amber. H.M. trace.	0.55	0.27	1.71
1.5 - 3.5	3.60	SAND, fine - medium grained, amber. H.M. >1%.	1.00	0.29	1.22
3.5 - 5.5	4.00	AS ABOVE. H.M. 2-5%. Band of H.M. at 5.0m.	0.27	0.02	1.13
5.5 - 7.5	3.60	AS ABOVE. H.M. >2%.	0.29	0.01	1.20
7.5 - 9.5	4.10	AS ABOVE. H.M. band at 9.0m. H.M. >2%. Coarser at base.	0.54	0.05	1.39
9.5 - 11.5	4.30	SAND, fine - medium grained becoming coarser with depth. Amber. Thin H.M. bands. H.M. >2%.	0.31	0.12	1.28
		Hit W.T. at 11.3m.			
		E.O.H. 11.5m.			
		Down hole average			1.30
0 - 1.5		Depth and grade at 1.5% cut-off			1.71
<u>SURVEY:</u>		COLLAR R.L. 253713mE 5587003mN			
		COLLAR R.L. 13.17 BASE OF SAND R.L. NA			

135

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2560E 4050N

LOGGED BY: ANDREW DOVE

588191

DATE DRILLED: 12.1.89

METHOD: Hand

Interval (m)	Wet Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.10	SAND, fine - medium grained, light grey grading to coarse brown. H.M. trace.	2.15	0.36	1.86
1.5 - 3.5	4.10	SAND, fine - medium grained, orange brown to amber. H.M. >1%.	0.21	0.00	1.31
3.5 - 5.5	3.75	SAND, fine - medium grained, amber. H.M. >1%.	0.36	0.05	1.66
5.5 - 7.5	4.70	AS ABOVE. H.M. >2%.	0.19	0.00	1.86
7.5 - 9.5	4.20	AS ABOVE. H.M. >1%.	0.31	0.01	1.34
9.5 - 11.5	4.50	AS ABOVE. H.M. >1%.	0.42	0.08	1.28
		Hit water table 11.1m.			
		E.O.H. 11.5m.			
		Down hole average			<u>1.54</u>
0 - 7.5		Depth and grade at 1.5% cut-off			<u>1.66</u>
<u>SURVEY:</u>		253742mE 5586999mN			
		COLLAR R.L. 12.90 BASE OF SAND R.L. NA			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588192

HOLE NO: 2560E 4050N
(Off-set 27m. to S.)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 14.1.89
METHOD: Rig

Interval (m)	Wet Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.70	SAND, fine - medium grained, brown. H.M. trace.	1.65	0.11	1.95
1.5 - 3.5	7.90	SAND, fine - medium grained. Amber. H.M. >1%.	0.70	0.07	0.82
3.5 - 5.5	8.10	AS ABOVE, becomes coarser with depth. H.M. >1%.	0.72	0.68	0.82
5.5 - 7.5	8.10	SAND, medium - coarse grained. Amber. Occasional coarse gravel and shell. H.M. >2%.	1.13	6.50	0.29
7.5 - 9.5	9.10	SAND, coarse - very coarse grained, light grey. Gravel layer present. H.M. visible >1%.	2.30	23.10	1.06
9.5 - 10.8	5.30	AS ABOVE. Hit weathered SANDSTONE. E.O.H. 10.8m. SANDSTONE	4.85	18.16	1.79
		Down hole average			<u>1.04</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>1.95</u>
<u>SURVEY:</u>		253755mE 5586976mN			
		COLLAR R.L. 5.96 BASE OF SAND R.L. -4.84			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

133 AREA: COWPER POINT - HIGH DUNE

588193

HOLE NO: 2600E 4050N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 13.1.89

METHOD: Hand

Interval (m)	Wet Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.40	SAND, fine - medium grained, light grey, grading to orange brown.	2.13	0.23	1.68
1.5 - 3.5	4.00	SAND, fine - medium grained, orange brown, grades to amber. H.M. visible >1%.	0.21	0.00	1.28
3.5 - 5.5	3.65	SAND, fine - medium grained, amber. H.M. >2%.	0.20	0.01	1.17
5.5 - 7.5	4.70	AS ABOVE, H.M. >2%.	0.38	0.00	1.76
7.5 - 9.5	4.55	AS ABOVE, Hit orange brown layer at 8.0m. 5 cm thick. H.M. >2%	0.39	0.02	1.45
9.5 - 11.5	5.00	AS ABOVE. H.M. >1%.	0.33	0.01	1.39
		E.O.H. 11.5m.			
		Down hole average			<u>1.45</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>1.68</u>
<u>SURVEY:</u>		253792mE 5586997mN			
		COLLAR R.L. 21.26 BASE OF SAND R.L. NA			

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CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588194

HOLE NO: 2640E 4050N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 13.1.89

METHOD: Hand

Interval (m)	Wet Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.40	SAND, fine - medium grained, light grey grading to amber.	1.84	0.17	0.75
1.5 - 3.5	4.15	SAND, fine - medium grained, amber. H.M. >1%.	0.37	0.02	0.65
3.5 - 5.5	4.75	AS ABOVE. H.M. >1%.	0.25	0.00	0.76
5.5 - 7.5	4.75	AS ABOVE. H.M. >1%.	0.48	0.02	1.18
7.5 - 9.5	5.80	AS ABOVE. H.M. >2%.	0.28	0.00	1.81
9.5 - 11.5	4.70	AS ABOVE. H.M. >2%.	0.34	0.02	1.45
		E.O.H. 11.5m.			
		Down hole average			<u>1.12</u>
<u>SURVEY:</u>		253831mE 5586987mN			
		COLLAR R.L. 26.62 BASE OF SAND R.L. NA			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

135 AREA: COWPER POINT - HIGH DUNE

588195

HOLE NO: 2680E 4050N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 31.1.89

Method: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.70	SAND, fine to medium grained, well sorted, dark grey.	4.18	0.10	0.96
1.5 - 3.5	2.80	AS ABOVE, amber. H.M. 2-5%.	0.40	0.00	1.82
3.5 - 5.5	3.30	AS ABOVE, H.M. 2-5%.	0.44	0.01	1.71
5.5 - 7.5	2.80	AS ABOVE, H.M. 2-5%.	0.32	0.00	1.83
7.5 - 9.5	2.80	AS ABOVE, amber then grey (palaesol) H.M. 1-2%.	0.53	0.01	2.30
9.5 - 11.5	3.00	AS ABOVE, brownish grey (paleosol)	0.73	0.01	2.12
		E.O.H. 11.5m.			
		Down hole Average			<u>1.83</u>
0 - 11.5		Depth and Grade at 1.5% Cut-off			<u>1.83</u>
<u>SURVEY:</u>		253870mE 5586985mN			
		COLLAR R.L. 23.16 BASE OF SAND R.L. NA			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2720E 4050N

LOGGED BY: GRAHAM LEE

588196

DATE DRILLED: 31.1.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.50	SAND, fine - medium grained, well sorted, grey.	2.49	0.07	1.33
1.5 - 3.5	3.20	SAND, fine - medium grained, well sorted, pale brown then amber. H.M. 1-2%.	2.06	0.10	1.46
3.5 - 5.5	2.95	AS ABOVE, H.M. 2-5%.	0.72	0.02	1.45
5.5 - 7.5	3.20	AS ABOVE, amber. H.M. 2-5%.	0.37	0.01	1.53
7.5 - 9.5	3.15	AS ABOVE, amber, H.M. 2-5%.	0.50	0.00	1.95
9.5 - 10.5	2.40	AS ABOVE, H.M. 2-5%.	0.57	0.01	2.02
		E.O.H. 10.5m.			
		Down hole Average			1.60
0 - 10.5		Depth and Grade at 1.5% Cut-off			1.60
<u>SURVEY:</u>		253910mE 5586982mN			
		COLLAR R.L. 18.18 BASE OF SAND R.L. NA			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1920E 4350N

LOGGED BY: GRAHAM LEE

588197

DATE DRILLED: 9.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	3.30	SAND, medium grained, amber with trace of shell? H.M. 2 - 5%.	0.89	0.27	5.48
1.5 - 3.5	6.25	AS ABOVE. H.M. 5%.	0.40	0.01	5.74
3.5 - 5.5	6.80	AS ABOVE, H.M. 5%.	0.47	0.06	3.05
5.5 - 7.5	7.05	SAND, medium to coarse grained, amber and pale grey. H.M. 2 - 5%.	0.91	0.04	2.83
7.5 - 9.5	6.10	SAND, medium to coarse grained. Dark brown and grey. Shell rich with some coarse fragments. H.M. 2 - 5%.	3.80	2.23	1.27
9.5 - 10.5	3.85	SAND, medium grained, silty, dark grey. Shell rich with coarser fragments. H.M.? Sandstone 10.5m. E.O.H. 10.5m.	3.17	8.31	1.30
Down hole Average					<u>3.36</u>
0 - 7.5	Depth and Grade at 1.5% Cut off				<u>4.19</u>
<u>SURVEY:</u>	253143 mE		5587358 mN		
	COLLAR R.L.	9.02	BASE OF SAND R.L.	-1.48	

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588198

APPENDIX 2.10

Line 4350N High Dune

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588199

HOLE NO: 1960E 4350N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	3.20	SAND, medium grained, amber.H.M. 2 - 5%.	0.71	0.20	4.96
1.5 - 3.5	4.45	AS ABOVE. H.M. 5%+	0.97	0.08	4.01
3.5 - 5.5	4.40	AS ABOVE, some calcareous bands. H.M. 5%+.	1.41	0.03	4.93
5.5 - 7.5	6.80	AS ABOVE. H.M. 2 - 5%.	0.61	0.02	3.18
7.5 - 9.5	7.70	SAND, medium to coarse grained, dark greyish brown. Some coarse shell. H.M. ≈ 1%.	2.29	0.19	3.19
9.5 - 11.5	5.55	SAND, medium grained, dark brown, silty and calcareous. Some shell fragments. Sandstone 11.3m. E.O.H. 11.5m.	5.25	11.36	0.90
Down hole Average					<u>3.47</u>
0 - 9.5	Depth and Grade at 1.5% Cut off			<u>4.01</u>	
<u>SURVEY:</u>	253182 mE	5587352 mN			
	COLLAR R.L. 9.92	BASE OF SAND R.L. -1.38			

200

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588200

HOLE NO: 2000E 4350N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.05	SAND, medium grained, brown. H.M. ≈ 2%	1.07	1.13	4.39
1.5 - 3.5	6.15	SAND, medium grained, amber. Some shell. H.M. 2 - 5%.	0.56	0.04	3.43
3.5 - 5.5	6.45	AS ABOVE.	0.44	0.07	2.11
5.5 - 7.5	7.90	SAND, medium to coarse grained, grey. H.M. ≈ 2%.	1.55	0.08	2.78
7.5 - 9.5	7.57	AS ABOVE but coarse grained.	0.71	0.59	1.62
9.5 - 10.25	3.40	SAND, coarse grained with some gravel and coarse shell fragments. Tr. H.M. Sandstone 10.25m. E.O.H. 10.25	0.70	6.24	2.39
		Down hole Average			<u>2.76</u>
0 - 10.25		Depth and Grade at 1.5% Cut off			<u>2.76</u>
<u>SURVEY:</u>		253222mE 5587349mN			
		COLLAR R.L. 7.95 BASE OF SAND R.L. -2.30			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588201

HOLE NO: 2040E 4350N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.85	SAND, medium grained, grey then brown.	1.21	0.31	4.20
1.5 - 3.5	6.95	SAND, medium grained, amber. H.M. 2 - 5%.	0.37	0.02	2.32
3.5 - 5.5	7.25	SAND, medium to coarse grained, amber then brown and grey (paleosol) layer. H.M. 2 - 5%.	0.93	0.09	3.26
5.5 - 7.5	7.25	SAND, medium to coarse grained, greyish brown. H.M. 5%+	1.08	0.22	1.94
7.5 - 9.5	8.10	SAND, coarse grained, grey with coarser shell fragments. H.M. 5%+. Sandstone at 9.4m. E.O.H. 9.5m.	0.69	3.31	2.99
		Down hole Average			<u>2.88</u>
0 - 9.5		Depth and Grade at 1.5% Cut off			<u>2.88</u>
<u>SURVEY:</u>		253262mE 5587345mN			
		COLLAR R.L. 6.55 BASE OF SAND R.L. -2.85			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

21. AREA: COWPER POINT - HIGH DUNE

588202

HOLE NO: 2080E 4350N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.25	SAND, medium grained, amber. 2 - 5% H.M.	0.72	0.47	3.57
1.5 - 3.5	7.55	AS ABOVE	0.51	0.06	3.09
3.5 - 5.5	7.15	SAND, medium grained to coarse grained, pale greyish brown. H.M. 5%+	1.29	0.27	2.77
5.5 - 7.5	8.10	SAND, coarse grained, pale grey. H.M. 2 - 5%. Some shell. 7.4m. Sandstone. E.O.H. 7.5m.	0.44	4.31	2.50
		Down hole Average			<u>2.94</u>
0 - 7.5		Depth and Grade at 1.5% Cut off			<u>2.94</u>
<u>SURVEY:</u>		253301mE 5587340mN			
		COLLAR R.L. 5.34 BASE OF SAND R.L. -2.06			

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CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2120E 4350N

588203

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	%+Slime	%+1000 um	% H.M.
0 - 1.5	4.30	SAND, medium grained, grey. Tr. H.M.	1.18	0.23	2.35
1.5 - 3.5	7.95	SAND, medium grained, greyish brown. H.M. 5%+	1.33	0.16	3.53
3.5 - 5.5	9.20	SAND, coarse grained, grey. H.M. 5%.	0.30	1.49	2.56
5.5 - 6.0	1.80	AS ABOVE with shell. 6.0m. Sandstone. H.M. 2 - 5%. E.O.H. 6.0m.	2.07	10.07	2.51
		Down hole Average			<u>2.83</u>
0 - 6.0		Depth and Grade at 1.5% Cut off			<u>2.83</u>
<u>SURVEY:</u>		253341mE 5587336mN			
		COLLAR R.L.3.71 BASE OF SAND R.L. -2.29			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588204

HOLE NO: 2160E 4350N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.00	SAND, medium grained, pale brown. H.M. 1 - 2%	0.59	0.19	2.77
1.5 - 3.5	6.75	SAND, medium grained, amber. H.M. 2 - 5%.	0.85	0.09	2.64
3.5 - 5.5	7.15	AS ABOVE	0.57	0.27	2.17
5.5 - 7.5	8.10	SAND, medium to coarse grained, brown. H.M. 2 - 5%,	1.74	0.55	2.90
7.5 - 9.5	8.15	SAND, coarse grained, grey. H.M. 2 - 5%.	0.49	3.06	2.71
9.5 - 10.5	5.55	SAND, coarse grained with shell. Some grey silt. 10.3m. Sandstone, soft. E.O.H. 10.5m.	2.31	11.09	3.20
		Down hole Average.			<u>2.69</u>
0 - 10.5		Depth and Grade at 1.5% Cut off			<u>2.69</u>
<u>SURVEY:</u>		253380 mE 5587332mN			
		COLLAR R.L. 7.52 BASE OF SAND R.L. -2.78			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588205

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2200E 4350N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.90	SAND, medium grained, brown. Tr. H.M.	0.74	0.47	1.99
1.5 - 3.5	6.25	SAND, medium grained, amber. good H.M. +5%	0.51	0.06	3.10
3.5 - 5.5	7.20	SAND, medium grained, amber then grey. Visible H.M. 2 - 5%	0.86	0.06	3.50
5.5 - 7.5	6.95	SAND, medium grained, brownish grey. Tr of H.M. Some coarse shell.	1.64	0.96	2.32
7.5 - 9.5	7.60	SAND, medium grained, grey, silty with coarse shell. 2-5%	1.47	4.53	2.76
9.5 - 10.0	4.50	AS ABOVE, with increased silt and carbonate fragments. Sandstone at 10.0m. E.O.H. 10.0m.	3.04	10.83	1.37
		Down hole Average			<u>2.70</u>
0 - 9.5		Depth and Grade at 1.5% Cut off			<u>2.77</u>
<u>SURVEY:</u>		253420 mE 5587328 mN			
		COLLAR R.L. 7.00 BASE OF SAND R.L. -3.00			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588206

HOLE NO: 2240E 4350N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

Offset 4m. to north

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.80	SAND, medium to fine grained, amber. Trace H.M.	0.86	0.31	3.47
1.5 - 3.5	7.50	AS ABOVE. Tr of shell + visible H.M.	0.39	0.05	3.22
3.5 - 5.5	8.20	SAND, pale grey, medium grained with coarse shell. Good H.M.	0.36	0.18	3.76
5.5 - 7.5	8.10	AS ABOVE but very coarse grained.	0.61	4.46	2.23
7.5 - 8.5	4.70	SAND, medium grained with coarse shell. Grey, silty. Some H.M. Sandstone at 8.5m. E.O.H. 8.5m.	1.53	4.63	2.20
		Down hole Average			<u>3.04</u>
0 - 8.5		Depth and Grade at 1.5% Cut off			<u>3.04</u>
<u>SURVEY:</u>		253460 mE 5587327 mN			
		COLLAR R.L. 5.48 BASE OF SAND R.L. -3.02			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588207

HOLE NO: 2280E 4350N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.10	SAND, medium to fine grained, amber. Tr. H.M.	0.69	0.14	1.17
1.5 - 3.5	7.00	AS ABOVE, brownish. Visible H.M.	0.72	0.06	3.72
3.5 - 5.5	8.65	AS ABOVE, brownish. Visible H.M.	0.45	0.08	4.39
5.5 - 7.5	8.50	SAND, medium to coarse grained, pale grey. Good H.M.	0.30	1.10	2.59
7.5 - 9.5	9.25	AS ABOVE, coarsens with depth. Some shell. Sandstone at 9.5m. E.O.H. 9.5m.	0.45	10.93	2.45
		Down hole Average			<u>2.95</u>
0 - 9.5		Depth and Grade at 1.5% Cut off			<u>2.95</u>
<u>SURVEY:</u>		253500 mE 5587315 mN			
		COLLAR R.L. 5.80 BASE OF SAND R.L. -3.70			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2320E 4350N

LOGGED BY: GRAHAM LEE

588208

DATE DRILLED: 9.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.80	SAND, medium grained, brownish amber. Visible H.M.	0.92	0.11	1.53
1.5 - 3.5	7.95	AS ABOVE, then amber with H.M. bands. Good H.M.	0.54	0.98	3.73
3.5 - 5.5	8.25	SAND, pale grey & amber. Rich H.M.	0.58	0.31	4.61
5.5 - 7.5	6.50	SAND, medium to coarse grained with pebbles and shell fragments. Rich H.M.	0.38	4.26	3.00
7.5 - 8.0	1.27	AS ABOVE, but coarser grained. SANDSTONE at 8.0m. E.O.H. 8.0m. SANDSTONE PIEZOMETER HOLE	1.55	28.49	2.36
		Down hole average			<u>3.27</u>
0 - 8.0		Depth and grade at 1.5% cut-off			<u>3.27</u>
<u>SURVEY:</u>		253538 mE 5587316 mN COLLAR R.L. 4.64 BASE OF SAND R.L. -3.36			

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CLIENT: NATIONAL MINERAL SANDS
 AREA: COWPER POINT - HIGH DUNE
 LOGGED BY: GRAHAM LEE

588209

TITLE NO: E.L. 41/88
 HOLE NO: 2360E 4350N
 DATE DRILLED: 11.1.89
 METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.15	SAND, medium grained, brownish amber. H.M. 1-2%.	0.51	0.15	2.23
1.5 - 3.5	6.30	AS ABOVE with seams of H.M. rich sand. H.M. 5%+.	0.46	0.16	3.70
3.5 - 5.5	8.35	SAND, medium grained. Amber with seams of H.M. rich sand. Minor coarse shell fragments.	0.80	3.62	2.20
5.5 - 7.5	6.80	SAND, medium to coarse grained with some shell fragments, grey. Indurated band 6-7m. dark brown. H.M. 2-5%.	3.54	3.52	1.32
7.5 - 9.0	4.27	SAND, medium grained, silty with v. coarse shell and rounded granules. 8.9m. Clayey weathered sandstone, then sandstone. E.O.H. 9.0m.	5.66	9.78	0.44
		Down hole Average			<u>2.05</u>
0 - 5.5		Depth and Grade at 1.5% Cut off			<u>2.75</u>
<u>SURVEY:</u>		253577 mE 5587312 mN			
		COLLAR R.L. 5.33 BASE OF SAND R.L. -3.57			

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CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2400E 4350N

LOGGED BY: GRAHAM LEE

588210

DATE DRILLED: 11.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.25	SAND, medium grained, brownish amber. H.M. 1%.	0.56	0.15	2.07
1.5 - 3.5	8.75	SAND, medium grained, amber. Rich mineral seams. H.M. 5%+.	0.32	0.10	2.81
3.5 - 5.5	7.30	AS ABOVE. Some seams. ≈ 50%.	0.28	0.09	7.46
5.5 - 7.5	7.30	SAND, medium to coarse grained. Amber. Some fine shell. H.M. 1-2%.	0.45	0.89	0.40
7.5 - 9.5	6.30	SAND, coarse to very coarse with granules and shell fragments, grey. Indurated, brown near 9.0m. Some coarse H.M.	1.20	13.24	0.78
9.5 - 11.0	10.40	SAND, coarse silty with abundant v. coarse shell fragments. Carbonate nodules. grey. E.O.H. 11.0 in shell	3.12	16.61	0.42
Down hole Average					2.42
0 - 5.5		Depth and Grade at 1.5% Cut off			4.30
SURVEY:		253617 mE	5587311 mN		
		COLLAR R.L. 7.40	BASE OF SAND R.L. -.360		

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588211

HOLE NO: 2440E 4350N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 11.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.70	SAND, medium grained, brownish amber. H.M. 1-2%.	0.48	0.46	1.19
1.5 - 3.5	7.50	SAND, medium grained, amber. H.M. 1-2%.	0.47	0.04	1.32
3.5 - 5.5	8.15	AS ABOVE. H.M. 1-2%.	0.45	0.14	1.26
5.5 - 7.5	7.72	AS ABOVE. H.M. 1-2%.	0.76	0.14	1.48
7.5 - 9.5	8.35	SAND, medium to coarse grained, pale grey. Some fine shell. H.M. 1-2%.	0.48	7.44	0.45
9.5 - 11.5	8.00	SAND, medium to coarse grained. Gravelly sand and coarse shell. 9.5 - 10.0m. Indurated layer at 10.0m. Dark brown.	3.18	12.00	0.65
11.5 - 12.8	5.80	SAND, coarse grained with abundant shell. Silty. Dark grey. Pyrite nodule at 12.8m. E.O.H. 12.8m.	1.67	11.06	0.35
Down hole average					<u>1.32</u>
<u>SURVEY:</u>		253657 mE	5587307 mN		
		COLLAR R.L.8.62	BASE OF SAND R.L. -4.18		

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

213 AREA: COWPER POINT - HIGH DUNE

588212

HOLE NO: 2480E 4350N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 11.1.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.0	1.55	SAND, medium grained, amber with organics at top. H.M. Tr.	0.87	0.22	3.39
1.0 - 2.0	1.85	AS ABOVE. H.M. 2-5%.	0.75	0.02	2.84
2.0 - 3.0	1.65	AS ABOVE. H.M. 1-2%.	0.39	0.01	2.04
3.0 - 4.0	1.70	AS ABOVE, H.M. 1-2%.	0.72	0.03	2.80
4.0 - 5.0	1.55	AS ABOVE. H.M. 2-5%.	0.36	0.02	2.46
5.0 - 6.0	1.70	AS ABOVE. H.M. 2-5%.	0.45	0.53	2.61
6.0 - 7.0	1.60	AS ABOVE. H.M. 1-2%.	0.38	0.02	2.92
7.0 - 8.0	1.60	AS ABOVE. H.M. 1-2%.	0.43	0.04	2.32
8.0 - 9.0	1.95	AS ABOVE. H.M. 1-2%.	0.41	0.05	2.79
9.0 - 10.0	1.60	AS ABOVE. H.M. 1-2%.	0.56	0.02	2.03
		E.O.H. 10.0m.			
		Down hole average			<u>2.62</u>
0 - 10.0		Depth and grade at 1.5% cut-off			<u>2.62</u>
<u>SURVEY:</u>		253695 mE 5587303 mN			
		COLLAR R.L. 18.21 BASE OF SAND R.L. N.A.			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588213

AREA: COWPER POINT - HIGH DUNE (Off-set to south of peg in valley. 29m. down slope, 8m. fall)

HOLE NO: 2480E 4350N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 11.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.90	SAND, medium grained, amber. H.M. 1-2%.	0.75	0.42	0.80
1.5 - 3.5	7.05	AS ABOVE. H.M. 1-2%.	0.81	0.05	0.87
3.5 - 5.5	7.25	AS ABOVE. H.M. 1-2%.	0.86	0.24	1.10
5.5 - 7.5	7.70	AS ABOVE. H.M. 2-5%.	1.01	0.68	0.65
7.5 - 9.5	8.10	SAND, coarse grained, poorly sorted. Grey. H.M. 1-2%. Indurated layer hit at 9.5m.	1.42	8.62	0.61
9.5 - 11.5	10.90	SAND, coarse grained to v. coarse. Abundant shell fragments. Some silt.	2.26	18.39	0.62
11.5 - 12.0	2.10	SAND, medium to coarse grained. v. poorly sorted. Abundant coarse shell. Calcareous sandstone basement at 12.0m. with <u>pyrite</u> throughout. E.O.H. 12.0m.	4.16	14.17	1.12
Down hole Average					<u>0.84</u>
<u>SURVEY:</u>		253686 mE	5587278 mN		
		COLLAR R.L. 7.37	BASE OF SAND R.L. -4.63		

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588214

HOLE NO: 2520E 4350N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 11.1.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% <1000 um	% H.M.
0 - 1.0	1.15	SAND, medium grained, amber. Organics at top.	1.26	0.81	1.95
1.0 - 2.0	2.00	AS ABOVE. H.M. 1-2%.	0.32	0.12	2.16
2.0 - 3.0	1.70	AS ABOVE. H.M. 1-2%.	0.42	0.08	1.75
3.0 - 4.0	2.00	AS ABOVE. H.M. 1-2%.	0.82	0.06	2.27
4.0 - 5.0	1.85	AS ABOVE. H.M. 1-2%.	0.26	0.04	2.02
5.0 - 6.0	1.85	AS ABOVE. H.M. 1-2%.	0.25	0.03	1.88
6.0 - 7.0	1.85	AS ABOVE. H.M. 1-2%.	0.27	0.03	1.94
7.0 - 8.0	1.70	AS ABOVE. H.M. 1-2%.	0.30	0.05	2.16
8.0 - 9.0	1.75	AS ABOVE. H.M. 1-2%.	0.27	0.05	1.83
9.0 - 10.0	1.05	AS ABOVE. H.M. 1-2%.	0.29	0.03	1.32
		E.O.H. 10.0m.			
		Down hole average			<u>1.93</u>
		Depth and grade at 1.5% cut-off			<u>2.00</u>
		253734 mE 5587300mN			
		COLLAR R.L. 18.91 BASE OF SAND R.L. N.A.			

0 - 9.0
SURVEY:

CLIENT: NATIONAL MINERAL SANDS

588215

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE (Off-set to south of peg in valley. 26m. down slope 8m. fall)

HOLE NO: 2520E 4350N

LOGGED BY: GRAHAM LEE

DATE DRILLED:
METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.75	SAND, medium grained, brown. H.M. Tr.	1.40	0.20	1.85
1.5 - 3.5	6.75	AS ABOVE. H.M. Tr.	0.65	0.03	1.26
3.5 - 5.5	7.95	AS ABOVE with seams of richer H.M. H.M. 5%+.	0.69	0.09	1.94
5.5 - 7.5	8.75	SAND, medium to coarse grained. Amber. Some shell. H.M. Trace.	0.81	2.55	0.40
7.5 - 9.5	7.95	SAND, coarse grained, poorly sorted with layers of better sorted granules. Grey. Some coarse shell. H.M. layers. H.M. 5%+.	1.03	15.92	0.34
9.5 - 11.5	7.60	SAND, as above with gravelly sand at base. Overlies indurated at 10.5m. Dark brown.	3.31	15.07	0.31
11.5 - 12.0	2.20	SAND, coarse grained, silty with coarse shell and some gravel. Dark grey brown. Hit basement at 11.9m. Calcareous sandstone with some quartz granules and pyrite throughout. E.O.H. 12.0m.	6.58	20.41	2.99
		Down hole Average			<u>1.07</u>
0 - 5.5		Depth and Grade at 1.5% Cut off			<u>1.69</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588216

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2560E 4350N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 11.1.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.20	SAND, medium grained, amber with organics at top. H.M. 1-2%.	1.47	0.18	1.94
1.5 - 3.5	4.40	AS ABOVE. H.M. 2-5%.	0.32	0.02	1.77
3.5 - 5.5	4.30	AS ABOVE. H.M. 2-5%.	0.23	0.02	1.57
5.5 - 7.5	3.55	AS ABOVE. H.M. 2-5%.	0.40	0.07	1.46
7.5 - 8.9	1.95	AS ABOVE. H.M. 2-5%.	0.56	0.05	1.33
		Hole caved in 8.9m.			
		E.O.H. 8.9m.			
		Down hole Average			<u>1.61</u>
0 - 5.5		Depth and Grade at 1.5% Cut off			<u>1.74</u>
<u>SURVEY:</u>		253774 mE 5587296 mN			
		COLLAR R.L. 19.43 BASE OF SAND R.L. N.A.			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2600E 4350N

21 LOGGED BY: GRAHAM LEE

588217

DATE DRILLED: 11.1.89
METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.20	SAND, medium grained, amber organics at top. Tr. H.M.	1.26	0.25	1.10
1.5 - 3.5	3.25	AS ABOVE	0.42	0.05	0.76
3.5 - 5.5	3.30	AS ABOVE. H.M. 2-5%.	0.36	0.02	1.45
5.5 - 7.5	3.60	AS ABOVE. H.M. 1-2%.	0.52	0.05	1.03
7.5 - 9.5	3.50	AS ABOVE. H.M. 2-5%.	0.86	0.05	1.58
9.5 - 11.5	3.00	AS ABOVE. H.M. 1-2%	0.59	0.03	1.91
		E.O.H. 11.5m.			
		Down hole Average			<u>1.31</u>
		253813 mE 5587292 mN			
		COLLAR R.L. 9.49 BASE OF SAND R.L. N.A.			

SURVEY:

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588218

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2640E 4350N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 11.1.89

METHOD: Hand

Interval (m)	Dry Wt. (kg)	Description	% Slime	% >1000 um	% H.M.
0 - 1.5	3.30	SAND, medium grained, amber. Organics at top.	0.40	0.11	1.06
1.5 - 3.5	3.70	AS ABOVE. H.M. 1-2%.	0.18	0.03	1.15
3.5 - 5.5	3.80	AS ABOVE. H.M. 1-2%.	0.17	0.02	1.27
5.5 - 7.5	3.30	AS ABOVE. H.M. 2-5%.	0.35	0.001	1.13
7.5 - 9.5	3.35	AS ABOVE. H.M. 2-5%.	0.35	0.01	0.92
9.5 - 11.5	2.75	AS ABOVE, H.M. 2-5%.	0.43	0.01	1.01
		E.O.H. 11.5m.			
		Down hole Average			<u>1.09</u>
<u>SURVEY:</u>		253851 mE 5587288 mN			
		COLLAR R.L. 16.11 BASE OF SAND R.L. N.A.			

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588219

APPENDIX 2.11

Line 4650N High Dune

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

538220

HOLE NO: 1640E 4650N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.85	SAND, medium to coarse grained, grey. Tr. H.M.	1.31	0.50	1.04
1.5 - 3.5	6.40	AS ABOVE. Darker grey.	4.40	0.27	1.23
3.5 - 4.0	1.50	AS ABOVE. Sandstone 4.0m. soft weathered clayey. E.O.H. 4.0m.	3.51	5.74	1.10
Down hole Average					<u>1.14</u>
<u>SURVEY:</u>	252894 mE	5587658 mN			
	COLLAR R.L. 2.97	BASE OF SAND R.L. -1.03			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588221

HOLE NO: 1680E 4650N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	6.65	SAND, medium grained, dark grey, wet swampy deposit. No visible H.M.	9.59	0.67	1.48
1.5 - 3.5	6.55	AS ABOVE	8.18	1.76	1.96
3.5 - 4.5	3.90	AS ABOVE. Grades down to coarse sand with shell fragments. Sandstone 4.5m. E.O.H. 4.5m.	2.95	12.19	0.80
		Down hole Average			<u>1.54</u>
0 - 3.5		Depth and Grade at 1.5% Cut off			<u>1.75</u>
<u>SURVEY:</u>		252930 mE 5587644 mN			
		COLLAR R.L. 2.68 BASE OF SAND R.L. -1.82			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588222

HOLE NO: 1720E 4650N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	1.90	SAND, medium grained, grey. Slightly silty.	2.71	0.20	1.75
1.5 - 3.5	5.70	AS ABOVE	3.78	0.39	2.18
3.5 - 5.0	4.35	SAND, medium to coarse grained with shell fragments. Silty. Dark grey. Sandstone 5.0m. E.O.H. 5.0m.	5.02	9.70	1.10
		Down hole Average			<u>1.73</u>
0 - 3.5		Depth and Grade at 1.5% Cut off			<u>2.00</u>
<u>SURVEY:</u>		252969 mE 5587638 mN			
		COLLAR R.L. 2.91 BASE OF SAND R.L. -2.09			

CLIENT: NATIONAL MINERAL SANDS

588223

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE (Hole offset 8.2m. to south of peg on crest of ridge)

HOLE NO: 1760E 4650N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.25	SAND, medium to fine grained, amber. H.M. 2 - 5%.	1.03	0.094	3.02
1.5 - 3.5	6.95	AS ABOVE	0.53	0.02	2.53
3.5 - 5.5	7.55	AS ABOVE	0.40	0.00	2.38
5.5 - 7.5	7.15	SAND, medium grained, grey. Slightly silty. H.M. Tr.	1.35	0.91	1.86
7.5 - 9.5	5.40	AS ABOVE, grading down to coarse sand with very coarse layers and some shell fragments. Indurated at bottom. H.M. Trace.	3.31	2.97	1.86
9.5 - 10.5	3.25	SAND, as above, then soft weathered clayey sandstone basement. Probably drilled 0.5m. of basement. E.O.H. 10.5m. Note: 9.5 - 10.5 heavy mineral suite dominated by carbonates.	12.35	10.92	3.83
		Down hole Average			<u>2.44</u>
0 - 9.5		Depth and Grade at 1.5% Cut off			<u>2.29</u>
<u>SURVEY:</u>		253008mE 5587626mN			
		COLLAR R.L. 4.51 BASE OF SAND R.L. -5.49			

221 CLIENT: NATIONAL MINERAL SANDS

588224

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE (Hole offset 2m. north of peg.)

HOLE NO: 1800E 4650 N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.80	SAND, medium to fine grained, brown with H.M. 2 - 5%,	0.46	0.11	2.90
1.5 - 3.5	7.30	SAND, medium grained, amber. One thin clay seam. H.M. Tr.	0.93	0.1938	1.68
3.5 - 5.5	7.50	SAND, medium grained, grey. H.M. 1 - 2%.	1.85	0.88	2.10
5.5 - 7.2	6.90	SAND, medium to coarse grained, grey, with some coarse shell fragments. Minor indurated layer. H.M. 2.5%. 7.2m. sandstone.	1.59	9.92	2.60
		E.O.H. 7.2m.			
		Down hole Average			<u>2.27</u>
0 - 7.2		Depth and Grade at 1.5% Cut off			<u>2.27</u>
<u>SURVEY:</u>		253042mE 5587633 mN			
		COLLAR R.L. 4.60 BASE OF SAND R.L. -2.60			

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CLIENT: NATIONAL MINERAL SANDS

588225

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE (Hole offset 5m to north of peg)

HOLE NO: 1840E 4650N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.50	SAND, medium grained, brown. H.M. 2 - 5%.	0.72	0.13	2.33
1.5 - 3.5	7.00	AS ABOVE, amber with minor clay seams 3.0-3.5m. H.M. 2 - 5%.	0.40	0.10	1.96
3.5 - 5.5	6.55	SAND, medium to coarse grained, grey. H.M. 2 - 5%.	1.39	0.96	2.49
5.5 - 6.9	7.05	SAND, coarse to very coarse grained, some v.c. shell fragments. H.M. 2 - 5%. Sandstone 6.8m. E.O.H. 6.9m.	0.69	5.88	2.77
		Down hole Average			<u>2.36</u>
0 - 6.9		Depth and Grade at 1.5% Cut off			<u>2.36</u>
<u>SURVEY:</u>		253087 mE 5587631 mN			
		COLLAR R.L. 4.60 BASE OF SAND R.L. -2.20			

22 CLIENT: NATIONAL MINERAL SANDS

588226

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE (Hole offset 6m. to north of peg -
on sth edge of depression)

HOLE NO: 1880E 4650N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.00	SAND, medium to fine grained, pale brown. H.M. Tr.	2.10	0.15	1.79
1.5 - 3.5	7.10	AS ABOVE. H.M. 2 - 5%.	0.74	0.07	2.02
3.5 - 5.5	7.60	SAND, medium to coarse grained, amber then grey. Some H.M. bands. H.M. 5%+.	0.93	0.67	2.19
5.5 - 7.5	8.65	SAND, coarse grained with very coarse shell fragments, grey. H.M. 5%+.	0.82	1.52	2.28
7.5 - 7.75	0.90	AS ABOVE with increased shell and some silt. 7.70M. Sandstone. E.O.H. 7.75m.	1.73	16.27	1.30
Down hole Average					<u>2.06</u>
0 - 7.5	Depth and Grade at 1.5% Cut off				<u>2.09</u>
<u>SURVEY:</u>	253125 mE	5587622mN			
	COLLAR R.L. 5.24	BASE OF SAND R.L. -2.46			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588227

227

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1920E 4650N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	3.40	SAND, medium grained, amber. H.M. 1- 2%.	0.94	0.09	3.07
1.5 - 3.5	5.65	AS ABOVE	2.16	0.31	3.17
3.5 - 5.5	8.60	AS ABOVE	1.15	0.02	2.74
5.5 - 7.5	8.60	AS ABOVE	1.08	0.04	2.01
7.5 - 9.5	7.20	AS ABOVE with minor coarse shell	0.97	0.12	2.27
9.5 - 11.5	8.50	SAND, grey, medium to coarse grained, some coarse shell fragments. H.M. +5%. Some richer seams.	0.88	0.33	2.16
11.5 - 13.5	6.60	SAND, coarse grained, grey. Some silty bands and coarser shell. H.M. 2 - 5%. Sandstone 13.4m. E.O.H. 13.5m.	2.50	2.47	2.88
		Down hole Average			<u>2.60</u>
0 - 13.5		Depth and GRade at 1.5% Cut off			<u>2.60</u>
<u>SURVEY:</u>	253164 mE	5587618 mN			
	COLLAR R.L. 10.85	BASE OF SAND R.L. -2.55			

CLIENT: NATIONAL MINERAL SANDS
 AREA: COWPER POINT - HIGH DUNE
 LOGGED BY: ANDREW DOVE

TITLE NO: E.L. 41/88

HOLE NO: 1960E 4650N

588228

DATE DRILLED: 10.1.89
 METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.85	SAND, fine - medium grained, brown.	1.53	0.29	2.52
1.5 - 3.5	6.90	AS ABOVE, grading to pale brown. H.M. present.	0.56	0.06	2.13
3.5 - 5.5	7.00	SAND, fine - medium grained, amber. H.M. present	0.67	0.03	1.72
5.5 - 7.5	7.15	AS ABOVE	1.92	0.05	2.52
7.5 - 9.5	8.10	AS ABOVE, becoming light grey.	0.59	0.40	2.72
9.5 - 11.5	8.75	SAND, medium to coarse grained, grey, coarse shell. H.M. present. E.O.H. 11.5m.	0.55	5.7	2.99
		Down hole Average			<u>2.43</u>
0 - 11.5		Depth and Grade at 1.5% Cut off			<u>2.43</u>
<u>SURVEY:</u>		253204 mE 5587619 mN			
		COLLAR R.L. 8.57 BASE OF SAND R.L. -2.93			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588229

AREA: COWPER POINT - HIGH DUNE (offset 10m. to North)

HOLE NO: 2000E 4650N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 10 .1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	5.0	SAND, fine - medium grained, light brown. H.M. visible	1.26	0.15	3.01
1.5 - 3.5	7.0	SAND, fine - medium grained, amber. H.M. visible. 2 - 5%	0.69	0.05	2.87
3.5 - 5.5	4.60	AS ABOVE, HM >1%.	1.22	0.12	2.94
5.5 - 7.5	6.50	AS ABOVE, H.M. >1%.	1.00	0.05	2.33
7.5 - 9.5	7.65	AS ABOVE. H.M. >1%.	0.77	0.02	2.71
9.5- 11.5	8.20	AS ABOVE. H.M. >1%.	0.82	0.04	2.56
11.5 - 13.5	6.90	AS ABOVE. H.M. >1%.	0.94	0.02	1.87
13.5 - 15.5	7.55	AS ABOVE, grades into light grey. H.M. >1%.	1.23	0.41	2.87
15.5 - 17.5	8.65	SAND, medium to coarse grained, grey. Becoming coarser with depth. Coarse shell. H.M. >1%.	0.84	1.44	3.29
17.5 - 19.0	5.10	SAND, coarse grained, grey. Gravel layers, coarse shell. E.O.H. 19.0m. Sandstone	0.81	13.05	2.24
Down hole Average					2.67
0 - 19.0	Depth and Grade at 1.5% Cut off				2.67
<u>SURVEY:</u>	253243 mE	5587631mN			
	COLLAR R.L. 15.83	BASE OF SAND R.L. -3.17			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

230

588230

AREA: COWPER POINT - HIGH DUNE (off-set 1m. to south)

HOLE NO: 2040E 4650N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 10.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.25	SAND, fine - medium grained, light brown, grading to amber. H.M. visible	0.61	1.21	2.26
1.5 - 3.5	5.40	SAND, fine - medium grained, amber. H.M. visible	0.70	0.02	1.55
3.5 - 5.5	6.85	AS ABOVE, H.M. visible	0.71	0.02	1.70
5.5 - 7.5	6.50	AS ABOVE, H.M. visible	0.90	0.02	1.54
7.5 - 9.5	8.10	AS ABOVE, H.M. >1%.	0.81	0.07	2.61
9.5 - 11.5	6.75	AS ABOVE, H.M. visible	0.56	0.02	1.71
11.5 - 13.5	7.90	AS ABOVE, H.M. visible	1.12	0.01	1.88
13.5 - 15.5	8.00	AS ABOVE, H.M. >1%	0.88	0.05	2.95
15.5 - 17.5	8.40	SAND, medium grained, grey. H.M.	0.78	0.27	3.60
17.5 - 19.5	9.15	AS ABOVE, becoming coarser with depth. Some coarse shell. H.M. >1%.	0.78	3.47	2.68
19.5 - 21.5	6.30	AS ABOVE, silty layers. Gravel. Hit sandstone. H.M. >1%.	14.17	11.32	12.29
		E.O.H. 21.5m. SANDSTONE			
		Note: 19.5 - 21.5m. heavy mineral suite dominated by carbonates.			
		Down hole Average			3.18
0 - 19.5		Depth and Grade at 1.5% Cut off			2.25
		253283 mE 5587621mN			
		COLLAR R.L. 16.54 BASE OF SAND R.L. -5.05			

SURVEY:

231 CLIENT: NATIONAL MINERAL SANDS
 AREA: COWPER POINT - HIGH DUNE
 LOGGED BY: ANDREW DOVE

538231

TITLE NO: E.L. 41/88
 HOLE NO: 2080E 4650N

DATE DRILLED: 10.1.89
 METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% >1000 um	% H.M.
0 - 1.5	3.50	SAND, fine - medium grained, light brown. H.M. trace	1.74	0.40	3.18
1.5 - 3.5	6.20	SAND, fine - medium grained, amber. H.M. visible >1%.	1.18	0.44	3.41
3.5 - 5.5	6.15	AS ABOVE. H.M. visible >1%.	1.08	0.21	2.95
5.5 - 7.5	6.05	AS ABOVE, H.M. visible >1%.	2.00	0.08	3.46
7.5 - 9.5	5.90	AS ABOVE, some silty layers. H.M. visible >1%.	1.64	0.28	2.08
9.5 - 11.5	7.55	AS ABOVE, becoming grey. H.M. visible >1%.	2.44	0.12	2.87
11.5 - 13.5	7.45	SAND, medium grained, light grey to grey. H.M. 2-5%.	2.97	0.44	4.98
13.5 - 15.5	8.20	AS ABOVE, becoming coarser with depth. Some coarse shell. H.M. 2-5%.	2.89	3.66	2.56
15.5 - 16.5	6.85	AS ABOVE. H.M. 2-5%. Hit Sandstone	5.79	11.10	3.55
		E.O.H. 16.5m. sandstone			
		Down hole Average			3.21
0- 16.5		Depth and Grade at 1.5% Cut off			3.21
SURVEY:		253323 mE 5587622 mN			
		COLLAR R.L. 12.91 BASE OF SAND R.L. -3.59			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588232

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2120E 4650N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 10.1.89
METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% >1000 um	% H.M.
0 - 1.5	3.90	SAND, fine - medium grained, brown. H.M. trace.	1.54	0.22	2.33
1.5 - 3.5	6.15	SAND, fine - medium grained, amber. H.M. visible >1%.	1.12	0.05	1.94
3.5 - 5.5	6.50	AS ABOVE. H.M. visible >1%.	0.92	0.07	1.31
5.5 - 7.5	6.80	AS ABOVE. H.M. visible >1%.	0.98	0.04	1.60
7.5 - 9.5	7.95	AS ABOVE, grading to grey. H.M. 2-5%.	1.25	0.36	5.66
9.5 - 11.5	7.95	AS ABOVE, becoming coarser. H.M. 2-5%.	2.97	0.96	3.03
11.5 - 13.5	7.30	AS ABOVE, some gravel and coarse shell. H.M. 2-5%.	1.58	8.81	1.34
13.5 - 14.0	1.35	AS ABOVE. Hit sandstone.	9.65	21.23	2.49
		E.O.H. 14.0m. SANDSTONE			
		Note; 13.5-14.0 heavy mineral suite dominated by carbonates.			
		Down hole Average			2.46
0 - 11.5		Depth and Grade at 1.5% Cut off			2.66
<u>SURVEY:</u>		253362 mE 5587621mN			
		COLLAR R.L. 9.56 BASE OF SAND R.L. -4.44			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588233

HOLE NO: 2160E 4650N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 10.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.95	SAND, fine - medium grained. Brown. H.M. trace	1.24	0.49	1.80
1.5 - 3.5	6.70	SAND, fine - medium grained. Amber. H.M. trace.	0.83	0.17	1.34
3.5 - 5.5	7.20	AS ABOVE. H.M. trace.	1.24	0.46	2.27
5.5 - 7.5	7.30	SAND, medium grained. Pale grey. H.M. 2-5%.	1.57	0.71	4.90
7.5 - 9.5	9.25	SAND, medium to coarse grained with coarse shell. grey H.M. 2-5%.	1.24	4.12	2.74
9.5 - 11.0	3.55	SAND, medium to coarse grained, silty. Coarse shell. Dark grey. Some weathered sandstone E.O.H. 11.0m. Note: 13.5-14.0 heavy mineral suite dominated by carbonates.	2.91	6.20	1.59
		Down hole Average			<u>2.51</u>
0 - 11.0		Depth and Grade at 1.5% Cut off			<u>2.51</u>
<u>SURVEY:</u>		253401 mE 5587618 mN			
		COLLAR R.L. 6.88 BASE OF SAND R.L. -4.12			

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CLIENT: NATIONAL MINERAL SANDS

588234

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2200E 4650N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 11.1.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.10	SAND, fine - medium grained, brown. H.M. trace	1.36	1.42	4.25
1.5 - 3.5	8.45	AS ABOVE, grades to medium - coarse grained. Grey. H.M. visible 2-5%.	1.30	0.37	4.83
3.5 - 5.5	10.70	SAND, medium - coarse grained, grey. Occasional silty layers, shell present. H.M. 2-5%.	0.87	2.44	2.90
5.5 - 7.5	6.41	AS ABOVE, becomes dark brown at base. H.M. 2-5%.	2.64	4.03	4.34
7.5 - 8.0	1.35	AS ABOVE but weathered sandstone. Silty.	12.58	19.40	9.83
8.0 - 11.5 (No Sample)		Went through sandstone into blue green clay and then into dark brown clay to 11.5m. EOH 11.5m. Clay Note: 7.5-8.0 heavy mineral suite dominated by carbonates.			
		Down hole Average			<u>4.43</u>
0 - 7.5		Depth and Grade at 1.5% Cut off			<u>4.07</u>
<u>SURVEY:</u>		253441 mE 5587616mN			
		COLLAR R.L. 2.97 BASE OF SAND R.L. -5.03			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE (off 4.5m. to S)

588235

HOLE NO: 2240E 4650N

236 LOGGED BY: ANDREW DOVE

DATE DRILLED: 11.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% >1000 um	% H.M.
0 - 1.5	3.75	SAND, fine - medium grained. Brown. H.M. visible >1%.	0.74	0.24	2.36
1.5 - 3.5	7.10	SAND, fine - medium grained, amber. H.M. >1%.	0.51	0.02	2.29
3.5 - 5.5	7.55	AS ABOVE. H.M. >1%.	0.52	0.05	1.66
5.5 - 7.5	8.75	SAND, medium - coarse grained. Amber. H.M. 2-5%.	0.56	0.28	4.46
7.5 - 9.5	8.15	SAND, coarse grained, light grey. Coarse shell. H.M. 2-5%.	0.66	3.24	1.90
9.5 - 11.5	7.40	AS ABOVE, becoming dark brown at base. H.M. 2-5%.	1.91	3.04	1.17
11.5 - 13.0	4.45	AS ABOVE, hit weathered sandstone. Silty. E.O.H. 13.0m. SANDSTONE	2.78	8.04	0.41
		Down hole Average			<u>2.09</u>
0 - 9.5		Depth and Grade at 1.5% Cut off			<u>2.54</u>
<u>SURVEY:</u>		253480mE 5587611mN			
		COLLAR R.L. 8.00 BASE OF SAND R.L. -5.00			

CLIENT: NATIONAL MINERAL SANDS

588236

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE (off 16m. N)

HOLE NO: 2280E 4650N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 11.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5		SAND, fine - medium grained, brown. H.M. visible >1%.	1.12	0.48	1.32
1.5 - 3.5	5.95	SAND, fine - medium grained. Amber. H.M. >1%.	0.76	0.08	1.49
3.5 - 5.5	7.55	AS ABOVE, grades to coarse at base. Abundant coarse shell at base. H.M. visible 2-5%.	1.48	0.86	1.71
5.5 - 7.5	7.20	SAND, coarse grained, light grey. Abundant shell. H.M.>1%.	0.91	3.94	1.35
7.5 - 9.5	7.80	AS ABOVE, H.M. 2-5%.	1.21	4.55	2.33
9.5 - 11.5	7.37	AS ABOVE, becomes dark brown, silty.	5.18	0.74	0.42
11.5 - 13.5	6.60	AS ABOVE, dark brown. Hit dark brown clay.Approx. 1m. of clay. E.O.H. 13.5m.	15.45	8.10	0.85
Down Hole Average					1.35
0 - 9.5		Depth and Grade at 1.5% Cut off			1.66
<u>SURVEY:</u>		253517 mE	5587628mN		
		COLLAR R.L. 5.77	BASE OF SAND R.L. -6.73		

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CLIENT: NATIONAL MINERAL SANDS
 AREA: COWPER POINT - HIGH DUNE
 LOGGED BY: ANDREW DOVE

588237

TITLE NO: E.L. 41/88
 DATE DRILLED: 11.1.89
 METHOD: Rig

HOLE NO: 2320E 4650N

Interval (m)	Dry. Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.15	SAND, fine - medium grained, amber. H.M. base.	0.49	0.27	0.88
1.5 - 3.5	6.85	SAND, fine - medium grained. Amber. H.M. >1%.	0.51	0.0	0.85
3.5 - 5.5	6.00	AS ABOVE. H.M. >1%.	0.61	0.01	0.81
5.5 - 7.5	7.30	AS ABOVE, slightly coarser with depth. H.M. trace.	0.50	0.09	0.53
7.5 - 9.5	9.30	SAND, medium - coarse grained, amber, occasional coarse shell. H.M. visible >1%.	0.72	4.11	1.00
9.5 - 11.5	8.85	SAND, medium - coarse grained. Light grey. Some shell. H.M. visible 2-5%.	0.66	3.20	1.80
11.5 - 13.5	8.15	SAND, fine - medium grained, dark brown. Silty. Trace of mica, shell. Poss. indurated.	5.67	1.24	0.53
13.5 - 15.5	4.75	AS ABOVE with clay.	3.17	5.53	0.25
15.5 - 16.5 No Sample		CLAY, dark brown, silty. Hit metamorphic basement. E.O.H. 16.5m. METAMORPHIC			
		Down hole Average			0.73
<u>SURVEY:</u>		253560 mE 5587611 mN			
		COLLAR R.L. 7.98 BASE OF SAND R.L. -7.52			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

588238

HOLE NO: 2360E 4650N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 11.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.55	SAND, fine - medium grained, brown. H.M. trace.	1.95	0.17	1.32
1.5 - 3.5	7.65	SAND, fine - medium grained, amber grading to light grey. H.M. >1%.	1.20	0.14	1.03
3.5 - 5.5	9.50	SAND, medium - coarse grained. Light grey. Occasional coarse shell. H.M. 2-5%.	0.94	2.08	1.59
5.5 - 7.5	6.40	AS ABOVE, grades to dark brown. Occasional mica. Poss. indurated.	4.02	1.58	0.92
7.5 - 9.5	9.00	SAND, fine - medium grained, dark brown. Silty and clay bands.	3.30	3.76	0.47
9.5 - 11.5	8.75	SAND, fine - medium, greenish grey. Abundant shell, weathered. Metamorphic basement. E.O.H. 11.5m. Weathered basement	3.34	5.10	1.15
		Down hole Average			<u>1.07</u>
<u>SURVEY:</u>		253600mE	5587609mN		
		COLLAR R.L. 2.88	BASE OF SAND R.L. -8.62		

CLIENT: NATIONAL MINERAL SANDS

588239

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2400E 4650N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 11.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.20	SAND, medium grained, amber. H.M. 1-2%.	0.63	0.09	1.01
1.5 - 3.5	8.35	AS ABOVE, grades to light grey. Occasional coarse shell at base. H.M. 1-2%.	0.35	3.12	0.96
3.5 - 5.5	10.00	SAND, coarse grained, light grey. Abundant shell. Coarse H.M. >2%.	0.47	11.59	1.96
5.5 - 7.5	8.40	SAND, fine - medium grained, dark brown. Silty. Indurated.	2.87	0.64	0.79
7.5 - 9.5	9.35	AS ABOVE	3.18	2.12	0.29
9.5 - 10.5	5.90	SAND, coarse to very coarse with some gravel. Well rounded dark brownish grey. Dark brown mica rich clay at bottom. E.O.H. 10.5m.	2.05	7.11	0.80
Down hole Average					<u>0.98</u>
<u>SURFACE:</u>		253640 mE 5587606 mN			
		COLLAR R.L. 1.90 BASE OF SAND R.L. -8.60			

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CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - HIGH DUNE

538240

HOLE NO: 2440E 4650N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 11.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	1.90	SAND, fine - medium grained, brown. H.M. visible.	4.27	0.37	0.74
1.5 - 3.5	5.90	SAND, fine - medium grained, amber. H.M. visible.	1.37	0.08	0.88
3.5 - 5.5	10.80	AS ABOVE. grades to light grey, becomes coarse to very coarse. Occasional coarse shell at base. Coarse H.M. - 2.5%.	1.04	7.80	1.47
5.5 - 7.5	9.80	SAND, coarse - very coarse grained, light grey shell. Coarse H.M. 2-5%.	1.04	2.84	1.37
7.5 - 9.5	8.55	SAND, medium grained dark brown, indurated slightly.	6.01	1.63	0.32
9.5 - 11.0	6.40	AS ABOVE, slightly coarser. Clay, dark brown with mica at bottom.	4.34	5.46	0.92
		E.O.H. 11.0m.			
		Down hole Average			<u>0.96</u>
<u>SURVEY:</u>		253679 mE 5587603 mN			
		COLLAR R.L. 2.36 BASE OF SAND R.L. -8.64			

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REPORT NO 11/89

VOLUME 3

(APPENDIX 2.12 to 2.27)

Evaluation of Mineral Sand Resources
at

Cowper Point

King Island

E.L. 41/88

Report Prepared for National Mineral Sands Pty. Ltd.

A. Dove
G. Lee

May, 1989



89-3019

VOL 3/5

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243

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588243

APPENDIX 2.12

Line 1325N Back Beach

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - BACK BEACH

588244

HOLE NO: 860E 1325N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 0.5	0.55	SAND, coarse to very coarse grained. greyish brown. Minor clay. H.M. Tr. E.O.H. 0.5m. in brown clay	17.26	37.97	1.18
		Down hole average			<u>1.18</u>

CLIENT:

NATIONAL MINERAL SANDS

TITLE NO:

E.L. 41/88

248

AREA:

COWPER POINT - BACK BEACH

588245

HOLE NO: 880E 1325N

LOGGED BY:

GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 0.5	1.05	SAND, coarse grained, dark grey with some clay and coarse H.M.	19.75	51.49	4.33
0.5		CLAY, orangish brown. E.O.H. 0.5m.			
		Down hole average			<u>4.33</u>
	0 - 0.5	Depth and grade at 1.5% cut-off			<u>4.33</u>

CLIENT: NATIONAL MINERAL SANDS

588246

TITLE NO: E.L. 41/88

AREA: COWPER POINT - BACK BEACH - Western bank Blowhole Creek

HOLE NO: 900E 1325N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.00	SAND, coarse and gravelly 0 - 0.3m. Then clay, pale grey, with minor sand. E.O.H. 1.5m. CLAY DO NOT TEST THIS SAMPLE	40.39	20.95	2.82
		Down hole average			<u>2.82</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>2.82</u>

CLIENT: NATIONAL MINERAL SANDS

588247

TITLE NO: E.L. 41/88

AREA: COWPER POINT - BACK BEACH - in Blowhole Creek

HOLE NO: 920E 1325N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	<u>1.35</u>	PEAT, sand and clay. Sand, medium to coarse grained, with some gravel. (Creek flood deposits)	20.19	17.23	4.23
1.5 - 2.0 (not sampled)		CLAY, greyish brown, Micaceous. E.O.H. 2.0m.			
		Down hole average			<u>4.23</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>4.23</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588248

AREA: COWPER POINT - BACK BEACH - on eastern sloping bank of Blowhole Creek

HOLE NO: 940E 1325N

24

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.0	1.00	SAND, medium grained, grading to very coarse with gravel. Some coarse H.M.	22.97	11.77	5.49
1.0		CLAY, chocolate brown with minor sand. E.O.H. 1.0m.			
		Down hole average			<u>5.49</u>
0 - 1.0		Depth and grade at 1.5% cut-off			<u>5.49</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - BACK BEACH

588249
HOLE NO: 960E 1325N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.80	SAND, medium grained, pale brown. H.M. 5%+.	19.72	1.76	12.44
1.5 - 1.6	0.60	AS ABOVE	22.16	2.48	5.31
1.6		CLAY, grey, sandy. E.O.H. 1.6m.			
		Down hole average			<u>11.99</u>
0 - 1.6		Depth and grade at 1.5% cut-off			<u>11.99</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588250

AREA: COWPER POINT - BACK BEACH

HOLE NO: 980E 1325N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.55	SAND, medium to coarse grained, dark grey. H.M. 2-5%.	3.95	0.69	3.28
1.5 - 2.25	2.30	AS ABOVE, becomes clay rich at 2.20m.	16.20	5.29	5.34
2.25 - 5.5 (not sampled)		CLAY, dark grey and brown, plastic. Greenish in places at about 3.0m. then dark grey, organic rich clay with minor weathered sandstone. E.O.H. 5.5m.			
		Down hole average			<u>3.97</u>
0 - 2.25		Depth and grade at 1.5% cut-off			<u>3.97</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588251

AREA: .COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 10COE 1325N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

Method: Rig

251

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.65	SAND, fine - medium grained, greyish brown.	2.38	0.52	1.64
1.5 - 3.25	7.60	AS ABOVE, grades to dark brown, indurated. Clay rich. Hit clay.	11.08	5.60	5.06
3.25 - 5.5 (no sample)		CLAY, dark brown E.O.H. 5.5m.			
		Down hole average			<u>3.48</u>
0 - 3.25		Depth and grade at 1.5% cut-off			<u>3.48</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588252

AREA: COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 1020E 1325N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.50	SAND, fine - medium grained, light grey, grading to greyish brown.	1.82	0.34	2.28
1.5 - 3.5	7.05	SAND, fine - medium grained, dark brown, indurated, clay rich, silty.	5.76	4.70	4.10
3.5 - 3.7	1.00	AS ABOVE, hit clay. E.O.H. 3.7 CLAY	16.38	26.46	5.03
		Down hole average			<u>3.41</u>
0 - 3.7		Depth and grade at 1.5% cut-off			<u>3.41</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588253

AREA: .COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 1040E 1325N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.50	SAND, medium grained, light grey. Grades to coarse grained, brown. H.M. trace.	1.81	0.13	2.01
1.5 - 3.5	5.75	SAND, medium - coarse grained, dark brown, indurated.	5.83	5.94	1.59
3.5 - 3.6	1.00	AS ABOVE, clay rich. Hit weathered sandstone. E.O.H. 3.6m. SANDSTONE	14.04	10.73	3.98
		Down hole average			<u>1.83</u>
0 - 3.6		Depth and grade at 1.5% cut-off			<u>1.83</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588254

AREA: COWPER POINT - BACK BEACH,

LINE NO:

HOLE NO: 1060E 1325N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.50	SAND, medium grained, grey, grading to greyish brown.	5.91	0.70	1.95
1.5 - 3.5	8.20	AS ABOVE, grades to dark brown, indurated, silty.	5.26	3.38	1.87
3.5 - 4.5	3.65	SAND, medium grained, dark brown, indurated, clay rich, some gravel. Hit clay. E.O.H. 4.5m. CLAY	10.05	11.29	3.44
		Down hole average			<u>2.25</u>
0 - 4.5		Depth and grade at 1.5% cut-off			<u>2.25</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

538255

233 AREA: .COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 1080E 1325N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.60	SAND, medium - coarse grained, light grey grading to greyish brown.	2.02	0.53	1.46
1.5 - 3.5	5.70	SAND, fine - medium grained, dark brown, indurated.	5.13	6.49	1.23
3.5 - 4.0	3.15	AS ABOVE, clay rich, hit weathered sandstone. E.O.H. 4.0m. SANDSTONE	11.55	17.18	2.34
		Down hole average			<u>1.46</u>

CLIENT: NATIONAL MINERAL SANDS
 AREA: COWPER POINT - BACK BEACH
 LOGGED BY: ANDREW DOVE

TITLE NO: E.L. 41/88
 DATE DRILLED: 26.1.89
 METHOD: Rig

588256

HOLE NO: 1100E 1325N

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	1.56	SAND, medium - coarse grained, grey to greyish brown. Peaty.	10.38	2.81	1.72
1.5 - 3.5	5.60	SAND, coarse - very coarse grained, dark brown, indurated.	5.58	15.05	1.66
3.5 - 4.5	6.90	AS ABOVE, clay rich. Some gravel and pebbles. Hit weathered sandstone.	18.67	2.71	4.23
		E.O.H. 4.5m. SANDSTONE			
		Down hole average			<u>2.25</u>
0 - 4.5		Depth and grade at 1.5% cut-off			<u>2.25</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588257

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1120E 1325N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.15	SAND, medium grained, grey, grades to dark brown. Slightly indurated.	5.00	0.30	4.44
1.5 - 3.25	5.50	SAND, fine - medium grained, dark brown, indurated, clay rich, some gravel. Hit weathered sandstone. E.O.H. 3.25m. SANDSTONE	5.92	11.87	6.08
		Down Hole average			<u>5.32</u>
0 - 3.25		DEpth and grade at 1.5% cut-off			<u>5.32</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - BACK BEACH

588258
HOLE NO: 1140E 1325N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

METHOD: Rig

280

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.50	SAND, medium grained, brown, slightly silty.	8.30	0.52	1.91
1.5 - 3.25	4.90	SAND, fine - medium grained, dark brown, indurated. Hit weathered sandstone. E.O.H. 3.25m. SANDSTONE	8.11	6.42	5.13
0 - 3.25		Down hole average depth and grade at 1.5% cut-off			<u>3.64</u> <u>3.64</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588259

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1160E 1325N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.45	SAND, fine - medium grained, light grey, grades to dark brown.	4.86	0.19	2.94
1.5 - 3.25	4.70	SAND, fine - medium grained, dark brown, indurated. Hit weathered sandstone. E.O.H. 3.25m. SANDSTONE	6.35	7.46	3.28
		Down hole average			<u>3.12</u>
0 - 3.25		Depth and grade at 1.5% cut-off			<u>3.12</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588260

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1180E 1325N

200 LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.20	SAND, fine - medium grained, brown to dark brown. Slightly indurated.	4.74	0.73	2.20
1.5 - 3.25	6.45	SAND, fine - medium grained, dark brown, clay rich. Silty. Hit clay. E.O.H. 3.25m. CLAY	23.97	6.92	6.59
		Down hole average			<u>4.56</u>
0 - 3.25		Depth and grade at 1.5% cut-off			<u>4.56</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588261

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1200E 1325N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.00	SAND, fine - medium grained, grey, organic rich at top. Silty.	6.26	1.05	2.55
1.5 - 2.5	3.35	SAND, fine - medium grained, dark brown, indurated, clay rich. Hit green-grey clay. E.O.H. 2.5m.	7.15	17.45	4.09
		Down hole average			<u>3.17</u>
0 - 2.5		Depth and grade at 1.5% cut-off			<u>3.17</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588262

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1220E 1325N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

METHOD: Rig

258

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	1.15	SAND, fine - medium grained, dark brown, organic rich, peaty, clay rich.	11.25	5.05	1.99
1.5 - 2.0	1.90	AS ABOVE, hit dark brown clay. E.O.H. 2.0m.	21.89	9.80	1.81
		Down hole average			<u>1.95</u>
0 - 2.0		Depth and grade at 1.5% cut-off			<u>1.95</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588263

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1240E 1325N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.0	1.85	SAND, fine - medium graiend, dark brown, clay rich, peaty. Hit dark brown clay. E.O.H. 1.5m.	9.36	3.96	1.77
		Down hole average			<u>1.77</u>
0 - 1.0		Depth and grade at 1.5% cut-off			<u>1.77</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588264

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1260E 1325N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 μ m	% H.M.
0 - 1.5	2.85	SAND, fine - medium grained, dark brown, peaty.	6.03	1.20	1.94
1.5 - 2.3	1.65	AS ABOVE, clay rich. Hit dark brown clay. E.O.H. 2.3m.	19.59	17.29	3.15
		Down hole average			<u>2.36</u>
0 - 2.3		Depth and grade at 1.5% cut-off			<u>2.36</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588265

280

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1280E 1325N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.25	SAND, fine - medium grained, dark brown, silty. Organic rich at top.	7.11	4.46	1.78
1.5 - 2.5	1.90	AS ABOVE, indurated. Clay rich, some weathered sandstone. Hit clay. E.O.H. 2.5m. CLAY	14.97	7.09	2.11
0 - 2.5		Down hole average Depth and grade at 1.5% cut-off			<u>1.91</u> <u>1.91</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588266

285 AREA: COWPER POINT - BACK BEACH

HOLE NO: 1300E 1325m

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.20	SAND, fine - medium grained, dark brown, peaty. Organic rich, clay rich.	11.40	1.65	1.94
1.5 - 2.6	1.25	SAND, fine - medium grained, dark brown, indurated. Clay rich. Hit weathered sandstone. E.O.H. 2.6m. CLAY	37.61	10.79	1.53
		Down hole average			<u>1.77</u>
0 - 2.6		Depth and grade at 1.5% cut-off			<u>1.77</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588267

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1320E 1325N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.15	SAND, fine - medium grained, grey.	2.67	0.92	1.35
1.5 - 3.5	5.55	AS ABOVE, grades to dark brown. Indurated. Hit clay. E.O.H. 3.5m. CLAY	15.84	3.56	2.14
0 - 3.5		Down hole average Depth and grade at 1.5% cut-off			<u>1.80</u> <u>1.80</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

538268

258 AREA: COWPER POINT - BACK BEACH

HOLE NO: 1340E 1325N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.05	SAND, fine - medium grained, grey.	2.47	0.69	1.43
1.5 - 3.0	3.50	AS ABOVE, grades to dark brown. Indurated. Hit dark brown clay. E.O.H. 3.0m. CLAY	14.99	8.78	1.78
0 - 3.0		Down hole average Depth and grade at 1.5% cut-off			<u>1.61</u> <u>1.61</u>

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588269

APPENDIX 2.13

Line 1600N Back Beach

276

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88.

588270

AREA: COWPER POINT - BACK BEACH

HOLE NO: 940E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1	2.85	SAND, medium - coarse grained, grey. Hit dark brown CLAY. E.O.H. 1.0m.	11.03	7.93	10.03
		Down hole average			10.03
		Depth and grade at 1.5% cut-off			10.03

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588271

AREA: COWPER POINT - BACK BEACH

HOLE NO: 960E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.05	SAND, medium - coarse grained, grey, grades to brown shelly, indurated. H.M. rich >5%.	4.46	6.13	16.40
1.5 - 1.75	1.20	SAND, fine - medium grained, dark brown, indurated. Hit clay. E.O.H. 1.75m. CLAY	15.58	8.54	12.57
		Down hole average			<u>15.85</u>
0 - 1.75		Depth and grade at 1.5% cut-off			<u>15.85</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588272

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 980E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.75	SAND, fine - medium grained, greyish brown. H.M. 2-5%.	3.05	0.44	7.49
1.5 - 2.25	5.00	SAND, fine - medium grained, dark brown, indurated. Hit weathered sandstone. H.M. 2-5%.	7.40	10.32	9.57
		E.O.H. 2.25m.			
		Down hole average			<u>8.18</u>
0 - 2.25		Depth and grade at 1.5% cut-off			<u>8.18</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588273

275 AREA: COWPER POINT - BACK BEACH

HOLE NO: 1000E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89 METHOD: Rig

Interval (m)	Dry. Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	5.00	SAND, medium grained, grey, grading to greyish brown.	2.65	0.24	2.09
1.5 - 3.5	4.85	SAND, medium grained, dark brown, indurated. Clay rich. Hit weathered sandstone. E.O.H. 3.5m. SANDSTONE PIEZOMETER HOLE	11.55	7.43	3.00
		Down hole average			<u>2.61</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>2.61</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588274

270

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1020E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.60	SAND, medium grained, grey, grades to greyish brown.	3.91	1.36	1.70
1.5 - 3.5	5.25	SAND, medium grained, indurated, silty. Hit weathered sandstone. E.O.H. 3.3m. SANDSTONE	7.00	2.15	3.71
		Down hole average			<u>2.85%</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>2.85%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588275

27- AREA: .COWPER POINT - BACK BEACH

HOLE NO: 1040E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	%+Slime	% 1000 um	% H.M.
0 - 1.5	5.00	SAND, medium grained, grey, grades to greyish brown.	3.44	0.20	2.55
1.5 - 3.3	5.65	SAND, medium grained, dark brown. Indurated. Hit weathered sandstone. E.O.H. 3.3. SANDSTONE	4.31	5.79	3.74
0 - 3.3		Down hole average Depth and grade at 1.5% cut-off			<u>3.20%</u> <u>3.20%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88.

588276

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 1060E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.90	SAND, medium - coarse grained, greyish brown. H.M. >1%.	3.43	0.21	0.84
1.5 - 3.5	6.30	SAND, medium - coarse grained, dark brown, indurated.	5.13	1.33	1.48
3.5 - 4.4	3.50	AS ABOVE, silty. Hit weathered sandstone. E.O.H. 4.4m. SANDSTONE	22.77	2.97	2.37
		Down hole average			<u>1.44%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588277

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 1080E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	5.15	SAND, coarse grained, grey grading to greyish brown.	2.20	0.45	0.69
1.5 - 3.5	8.40	AS ABOVE, grades to dark brown, indurated.	3.04	0.49	1.47
3.5 - 5.25	2.25	SAND, coarse - very coarse grained, dark brown, indurated. Some gravel. Hit sandstone. E.O.H. 5.25m.. SANDSTONE	7.12	14.77	1.60
Down hole average					<u>1.29</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588278

278

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 1100E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.35	SAND, medium - coarse grained, light grey.	1.96	1.99	0.90
1.5 - 3.5	7.70	SAND, medium - coarse grained, greyish brown grading to brown, Indurated . Hit coarse shell and sandstone.	4.02	2.17	1.51
		E.O.H. 3.5m. SANDSTONE			
3.5 - 4.5		Weathered sandstone, shell and clay			
		Down hole average			<u>1.25</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588279

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1120E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	5.10	SAND, medium - coarse grained, greyish brown.	12.46	0.36	1.69
1.5 - 3.5	6.00	AS ABOVE, grades to brown, indurated.	6.24	3.65	1.18
3.5 - 4.0	0.40	SAND, MEDIUM COARSE GRAINED, BROWN. Hit weathered sandstone. E.O.H. 4.0m. SANDSTONE	8.48	20.03	0.44
		Down hole average			<u>1.28</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>1.69</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588280

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1140E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.40	SAND, fine - medium grained, dark grey, silty. Clay rich.	11.76	0.63	3.03
1.5 - 3.0	3.85	SAND, fine - medium grained, dark brown, indurated, clay rich, silty. Hit sandstone. E.O.H. 3.0m. SANDSTONE	11.49	11.09	6.12
		Down hole average			<u>4.58</u>
0 - 3.0		Depth and grade at 1.5% cut-off			<u>4.58</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588231

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1140E 1600N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

Offset

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	1.85	SAND, medium to coarse grained. Peat rich. Dark grey to black.	15.55	1.19	1.74
1.5 - 2.75	3.80	AS ABOVE, very coarse with gravel and shale. Sandstone at 2.75m. E.O.H. 2.75m.	8.95	36.06	3.55
		Down hole average			<u>2.56</u>
0 - 2.75		Depth and grade at 1.5% cut-ff			<u>2.56</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588282

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1160E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	1.20	SAND, fine - medium grained, dark grey, peaty and clay rich.	11.28	2.04	2.05
1.5 - 3.5	7.00	AS ABOVE, dark brown, indurated. Hit shell and weathered sandstone.	8.63	11.99	2.37
3.5 - 5.5		Weathered sandstone, contains gravel and shell. E.O.H. 5.5m.			
		Down hole average			<u>2.23</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>2.23</u>

280

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588283

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 1180E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.55	SAND, fine - medium grained, dark grey, peat rich, silty.	6.13	0.52	1.66
1.5 - 3.5	5.40	AS ABOVE, dark brown, indurated, clay rich.	7.65	1.10	2.17
3.5 - 4.5	2.45	AS ABOVE, hit coarse shell then weathered sandstone. E.O.H. 4.5m. SANDSTONE	6.14	50.79	4.43
0 - 4.5		Down hole average Depth and grade at 1.5% cut-off			<u>2.50</u> <u>2.50</u>

284

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588284

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 1200E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	4.30	SAND, fine - medium grained, light grey, grades to dark grey.	4.35	0.53	2.26
1.5 - 3.5	5.65	SAND, fine - medium grained, dark brown, indurated.	4.84	0.28	7.01
3.5 - 4.5	2.45	AS ABOVE, peat. Hit coarse shell, weathered sandstone.	10.20	6.36	4.07
		E.O.H. 4.5m. SANDSTONE			
		Down hole average			<u>4.77</u>
0 - 4.5		Depth and grade at 1.5% cut-off			<u>4.77</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588285

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 1220E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	1.10	SAND, fine - medium grained, dark brown, m very epty.	12.12	4.32	1.99
1.5 - 3.0	3.55	SAND, fine - medium grained, dark brown, indurated. Grades to grey. Abundant fine shell. Hit WEATHERED SANDSTONE. E.O.H. 3.0m. SANDSTONE	4.45	3.80	1.16
		Down hole average			<u>1.58</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>1.99</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588286

288 AREA: COWPER POINT - BACK BEACH

HOLE NO: 1240E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.55	SAND, fine - medium grained, light grey, grades to grey.	3.06	0.24	0.76
1.5 - 3.5	4.20	SAND, fine - medium grained, dark brown, indurated. Some shell.	8.02	7.80	1.43
3.5 - 3.75	2.15	AS ABOVE, clay rich, hit weathered sandstone. E.O.H. 3.75m. SANDSTONE	11.03	6.68	2.96
		Down hole average			<u>1.26</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588287

AREA: .COWPER.POINT - BACK BEACH

HOLE NO: 1260E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 21.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% <1000 um	% H.M.
0 - 1.5	3.15	SAND, fine - medium grained, light grey, grades to grey.	6.18	0.27	1.25
1.5 - 3.5	7.10	SAND, fine - medium grained, dark brown, indurated, clay rich, silty.	10.53	0.21	2.56
3.5 - 5.0	4.85	AS ABOVE, hit weathered sandstone. E.O.H. 5.0m. SANDSTONE	7.78	10.26	2.85
		Down hole average			<u>2.25</u>
0 - 5.0		Depth and grade at 1.5% cut-off			<u>2.25</u>

288

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588288

AREA: .COWPER.POINT - BACK BEACH

HOLE NO: 1280E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	1.80	SAND, fine - medium grained, grey, silty, peaty.	9.53	0.92	0.95
1.5 - 3.5	3.90	AS ABOVE, grades to dark brown, indurated, peaty.	9.12	1.26	1.43
3.5 - 4.7	7.60	SAND, fine - medium grained, dark brown, indurated, hit shell then weathered sandstone.	13.07	12.62	2.26
		E.O.H. 4.7m.			
		Down hole average			<u>1.49</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588239

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 1300E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.85	SAND, fine - medium grained, grey, grading to greyish brown.	14.71	1.11	2.04
1.5 - 3.5	4.90	SAND, fine - medium grained, dark brown, indurated.	5.78	1.18	0.97
3.5 - 4.0	0.75	AS ABOVE, clay rich, hit sandstone. E.O.H. 4.0m. SANDSTONE	8.45	8.93	1.30
		Down hole average			<u>1.41</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>2.04</u>

280

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 588290
1320E-1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.80	SAND, fine - medium grained, grey, grades to brown.	8.67	0.49	0.81
1.5 - 3.5	2.80	SAND, fine - medium grained, dark brown, indurated., peaty.	8.22	0.90	0.64
3.5 - 4.5	4.60	AS ABOVE, clay rich, peaty. Hit weathered sandstone. E.O.H. 4.5m. SANDSTONE	13.09	0.77	1.88
		Down hole average			<u>0.97</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588291

AREA: .COWPER POINT - BACK BEACH

HOLE NO:1340E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.05	SAND, fine - medium grained, grey, grades to brown.	4.57	0.13	1.42
1.5 - 3.5	5.80	SAND, fine - medium grained, dark brown, indurated.	6.11	0.25	3.51
3.5 - 4.6	7.95	AS ABOVE, clay rich, peaty. Hit weathered sandstone. e.O.H. 4.6m. SANDSTONE	13.37	0.79	3.63
		Down hole average			<u>2.86</u>
0 - 4.6		Depth and grade at 1.5% cut-off			<u>2.86</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88.

588292

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1360E 1600N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.00	SAND, fine- medium grained, grey, grades to brown.	3.12	0.17	0.88
1.5 - 3.5	7.65	SAND, fine - medium grained, dark brown, indurated.	5.77	1.04	3.28
3.5 - 4.3	2.20	AS ABOVE, clay rich, silty. Hit weathered sandstone. E.O.H. 4.3m. SANDSTONE	11.18	4.68	2.46
		Down hole average			<u>2.27</u>
0 - 4.3		Depth and grade at 1.5% cut-off			<u>2.27</u>

APPENDIX 2.14

Line 1900N Back Beach

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588294

AREA: COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 920E 1900N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.30	SAND, fine - medium grained, grey, grades to brown. H.M. rich >5%.	4.41	0.30	21.89
1.5 - 3.5	5.30	SAND, medium grained, dark brown, indurated. Hit peat and clay. Hit grey green clay. E.O.H. 3.5m. CLAY Sandstone below clay = 1 m. below.	17.73	5.23	4.47
		Down hole average			<u>11.94%</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>11.94%</u>

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CLIENT: NATIONAL MINERAL SANDS
AREA: .COWPER POINT - BACK BEACH
LOGGED BY: ANDREW DOVE

TITLE NO: E.L. 41/88. 588295
LINE NO: HOLE NO: 940E 1900N
DATE DRILLED: 25.1.89
Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.40	SAND, fine - medium grained, grey, grades to brown. H.M. rich >5%.	4.75	0.29	26.53
1.5 - 3.5	6.35	SAND, medium grained, dark brown, indurated. H.M. rich >5%.	8.65	1.19	10.66
3.5 - 4.0	1.75	AS ABOVE, clay rich, silty, hit clay. E.O.H. 4.0m. CLAY	20.62	3.62	7.62
0 - 4.0		Down hole average Depth and grade at 1.5% cut-off			<u>16.23%</u> <u>16.23%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588296

238 AREA: .COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 960E 1900N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.50	SAND, medium - coarse grained, grey, grading to brown. H.M. rich >5%.	3.38	0.62	26.84
1.5 - 3.5	6.05	SAND, medium - coarse graioned, dark brown. Indurated. H.M. rich >5%.	6.34	1.59	14.69
3.5 - 5.0	4.80	AS ABOVE, clay rich, silty, hit clay. Grey green. Contains weathered sandstone.	8.63	9.26	6.02
5.0 - 6.5		CLAY with weathered sandstone. E.O.H. 6.5m. CLAY			
0 - 5.0		Down hole average Depth and grade at 1.5% cut-off			<u>15.73%</u> <u>15.73%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88.

588297

AREA: .COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 980E 1900N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.10	SAND, medium grained, grey, H.M. >1%.	3.29	0.59	4.77
1.5 - 3.5	6.80	AS ABOVE, grades to dark brown, indurated.	5.39	2.29	9.18
3.5 - 5.0	6.00	SAND, medium grained, dark brown, indurated, clay rich. hit clay.	9.46	4.89	5.24
5.0 - 6.5 (No sample)		clay for 1m. then hit sandstone E.O.H. 6.5m. SANDSTONE			
		Down hole average			<u>6.68%</u>
0 - 5.0		Depth and grade at 1.5% cut-off			<u>6.68%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588298

AREA: COWPER POINT

HOLE NO: 1000E 1900N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

METHOD: Rig

Interval (m)	Wet Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	5.55	SAND, fine - medium grained, light grey. H.M. trace.	2.40	0.14	3.75
1.5 - 3.5	6.55	SAND, medium - coarse grained, dark brown, indurated	5.34	1.18	2.63
3.5 - 4.5	2.00	AS ABOVE, clay rich. Hit clay then weathered sandstone	11.41	9.29	4.59
4.5 - 5.5		SANDSTONE			
		E.O.H. 4.5m. SANDSTONE			
		Down hole average			<u>3.44%</u>
0 - 4.5		Depth and grade at 1.5% cut-off			<u>3.44%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588299

230 AREA: COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 1020E 1900N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.10	SAND, fine - medium grained, dark brown, indurated.	7.16	0.77	2.02
1.5 - 3.5	4.75	AS ABOVE, silty, clay rich.	6.76	6.26	2.26
3.5 - 4.0	1.20	AS ABOVE, hit clay. E.O.H. 4.0m. CLAY	20.71	15.24	3.89
		Down hole average			<u>2.37%</u>
0 - 4.0		Depth and grade at 1.5% cut-off			<u>2.37%</u>

300

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588300

AREA: COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 1040E 1900N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.90	SAND, fine - medium grained, dark brown, silty. Clay rich. Indurated.	14.45	0.44	1.76
1.5 - 3.5	7.10	AS ABOVE	12.65	7.41	1.56
3.5 - 3.9	1.25	AS ABOVE, abundant fine shell. Hit sandstone. E.O.H. 3.9m. SANDSTONE	17.86	7.22	1.34
		Down hole average			<u>1.61%</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>1.65%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588301

AREA: .COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 1060E 1900N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.50	SAND, medium grained, light grey grading to grey. H.M. >1%.	3.20	0.37	1.30
1.5 - 3.5	4.30	SAND, medium grained, dark brown, indurated. Some gravel. Abundant fine shell. Hit sandstone. E.O.H. 3.5m. SANDSTONE	7.36	5.67	1.45
		Down hole average			<u>1.39</u>

302 CLIENT: NATIONAL MINERAL SANDS
 AREA: .COWPER POINT - BACK BEACH
 LOGGED BY: ANDREW DOVE

TITLE NO: E.L. 41/88

588302

LINE NO:

HOLE NO: 1080E 1900N

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	5.65	SAND, medium grained, grey. Grades to brown.	2.87	1.21	1.60
1.5 - 3.5	4.65	SAND, medium grained, dark brown, indurated. Some gravel, clay rich. Hit clay then sandstone. E.O.H. 3.5m. SANDSTONE	5.00	15.22	0.78
		Down hole average			<u>1.13</u>
0 - 1.5		Depth and grade at 1.5% cut-off			1.60

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588303

AREA: COWPER POINT

HOLE NO: 1100E 1900N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.60	SAND, medium grained, grey grades to brown.	4.69	0.40	1.51
1.5 - 3.5	3.95	SAND, medium grained, dark brown, indurated, silty clay rich, some gravel. Hit clay then sandstone.	7.01	16.42	1.39
		EOH 3.5m. Sandstone			
		Down hole average			<u>1.44%</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>1.51%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588304

AREA: COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 1120E 1900N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.20	SAND, medium grained, grey, grading to breyish brown.	4.62	0.68	2.06
1.5 - 3.5	5.00	SAND, medium grained, dark brown, indurated, some gravel, clay rich, silty.	5.41	17.78	1.68
3.5 - 4.5	4.50	AS ABOVE, hit clay then sandstone. E.O.H. 4.5m. SANDSTONE	17.01	5.23	2.42
0 - 4.5		Down hole average Depth and grade at 1.5% cut-off			<u>1.97%</u> <u>1.97%</u>

305

588305

APPENDIX 2.15

Line 2200N Back Beach

CLIENT: NATIONAL MINERAL SANDS

TITLE NO:

E.L. 41/88

588306

AREA: BACK BEACH

HOLE NO: 840E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED:

23.1.89

METHOD; RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.55	<p>SAND, medium grained, grey grades to peat then clay. H.M. > 1%</p> <p>EOH 1.5m.</p> <p style="text-align: center;">Down hole average</p> <p style="text-align: center;">Depth and grade at 1.5% cut-off</p>	25.54	5.75	<p style="text-align: right;">4.55</p> <p style="text-align: right;"><u>4.55%</u></p> <p style="text-align: right;"><u>4.55%</u></p>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588307

AREA: COWPER POINT

HOLE NO: 860E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Wet Wt. (kg)	Description	% Slime	% +600 um	% H.M.
0 - 1.5	4.70	SAND, medium grained, light grey to grey. H.M. rich. Coarse H.M. >5%.	1.63	0.11	37.32
1.5 - 2.5	2.70	SAND, medium grained, grey to dark grey. H.M. rich >5%. Hit grey green clay	5.48	0.73	9.51
2.5 - 5.5 No sample		CLAY, hit clay and weathered sandstone then yellow brown clay. E.O.H. 2.5m. CLAY			
0 - 2.5		Down hole average Depth and grade at 1.5% cut-off			<u>26.20%</u> <u>26.20%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88.

588308

AREA: COWPER POINT - BACK BEACH

HOLE NO: 880E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.60	SAND, medium grained, grey, grading to greyish brown. Coarse H.M. 2-5%.	4.61	0.27	27.33
1.5 - 3.5	9.00	SAND, medium grained, dark brown, indurated. Coarse H.M. 2-5%.	4.64	0.83	31.80
3.5 - 4.0	1.35	AS ABOVE, clay rich. Hit clay. E.O.H. 4.0m. CLAY	10.90	2.97	13.87
		Down hole average			<u>27.88</u>
0 - 4.0		Depth and grade at 1.5% cut-off			<u>27.88</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588300

AREA: COWPER POINT - BACK BEACH

HOLE NO: 900E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.70	SAND, medium grained, greyish brown. H.M. >1%.	2.51	0.08	2.74
1.5 - 3.5	6.20	SAND, medium grained, dark brown, indurated. H.M. >1%.	6.65	0.11	9.53
3.5 - 4.5	2.00	AS ABOVE, clay rich. Hit grey green clay. E.O.H. 4.5m. clay	12.53	4.55	17.02
		Down hole average			<u>8.93</u>
0 - 4.5		Depth and grade at 1.5% cut-off			<u>8.93</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588310

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 920E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	5.15	SAND, medium grained, light grey grading to grey. H.M. >1%.	2.27	0.15	2.09
1.5 - 3.5	7.85	SAND, medium grained, dark brown, indurated. H.M. >2%.	4.50	0.26	7.35
3.5 - 4.5	2.25	AS ABOVE, clay rich. Hit grey green clay.	9.91	3.74	11.55
4.5 - 6.5		CLAY, then clay with weathered sandstone. E.O.H. 6.5m.			
		Down hole average			<u>6.53%</u>
0 - 4.5		Depth and grade at 1.5% cut-off			<u>6.53%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588311

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 940E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.10	SAND, fine - medium grained, grey, grades to greyish brown.	7.22	0.93	2.93
1.5 - 3.5	4.70	SAND, fine - medium grained, dark brown, indurated.	7.07	1.52	3.92
3.5 - 4.5	3.80	AS ABOVE, clay rich. Hit grey green clay.	7.56	5.52	6.88
4.5 - 6.5 (no sample)		CLAY and weathered sandstone, yellow green colour			
		E.O.H. 4.5m. CLAY			
		Down hole average			<u>4.73</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>4.73</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588312

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 960E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.50	SAND, fine - medium grained, grey, grading to greyish brown.	5.90	0.17	1.87
1.5 - 3.5	4.50	SAND, fine - medium grained. Dark brown, indurated. H ₂ S	9.01	1.31	3.13
3.5 - 4.5	6.30	AS ABOVE. Clay rich, silty. Hit grey green clay. E.O.H. 4.5m. CLAY	7.64	2.34	5.30
		Down hole average			<u>3.58</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>3.58</u>

SIE CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588313

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 980E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.85	SAND, fine - medium grained, grey, grades to brown. Slightly indurated.	6.14	0.42	1.42
1.5 - 3.5	5.45	SAND, fine - medium grained, dark brown, indurated. Clay rich, silty.	8.37	2.96	1.64
3.5 - 5.0	4.85	AS ABOVE, hit grey green clay. Abundant fine shell.	6.86	16.67	3.44
5.0 - 6.0		CLAY, hit weathered sandstone. E.O.H. 5.0m. clay			
		Down hole average			<u>2.11%</u>
0 - 5.0		Depth and grade at 1.5% cut-off			<u>2.11%</u>

314 CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588314

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 1000E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.55	SAND, fine - medium grained, brown, slightly indurated.	5.96	0.27	1.77
1.5 - 3.5	5.25	SAND, fine - medium grained, dark brown, indurated. Clay rich.	7.16	11.46	2.98
3.5 - 5.5	7.70	AS ABOVE, silty, clay rich.	14.87	7.45	4.74
5.5 - 6.0	1.80	AS ABOVE, hit yellow green clay, then sandstone. E.O.H. 6.0m. SANDSTONE	23.50	3.76	8.11
		PIEZOMETER HOLE			
		Down hole average			<u>3.69%</u>
0 - 6.0		Depth and grade at 1.5% cut-off			<u>3.69%</u>

315

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588315

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 1020E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.60	SAND, medium grained, brown, light, indurated. H.M. >1%.	5.12	0.26	0.95
1.5 - 3.5	5.30	SAND, fine - medium grained, dark brown, indurated, silty.	6.74	2.04	2.03
3.5 - 5.5	3.70	AS ABOVE, clay rich	16.62	12.58	3.90
5.5 - 6.25	4.65	AS ABOVE, hit grey green clay	21.95	5.00	5.51
		E.O.H. 6.25m. CLAY			
		Down hole average			<u>2.79</u>
0 - 6.25		Depth and grade at 1.5% cut-off			<u>2.79</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588316

AREA: .COWPER POINT - BACK BEACH

HOLE NO: 1040E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.40	SAND, medium grained, light grey, grading to grey	2.51	0.10	1.45
1.5 - 3.5	5.55	SAND, medium grained, dark brown, indurated.	5.97	1.78	1.87
3.5 - 5.5	5.40	AS ABOVE, clay rich, silty. Hit grey green clay. E.O.H. 5.5m. clay	7.43	7.16	2.81
		Down hole average			<u>2.10</u>
0 - 5.5		Depth and Grade at 1.5% Cut-off			<u>2.10</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588317

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1060E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.80	SAND, fine - medium grained, greyish brown.	7.77	0.30	2.18
1.5 - 3.5	6.77	SAND, fine - medium grained, dark brown, indurated.	5.24	0.92	4.47
3.5 - 5.5	5.10	AS ABOVE, silty, clay rich. Hit grey green clay.	10.98	8.42	4.67
5.5 - 6.5 (no sample)		CLAY, grey green. E.O.H. 5.5m. CLAY			
		Down hole average			<u>3.92</u>
0 - 5.5		depth and grade at 1.5% cut-off			<u>3.92</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588318

318 AREA: .COWPER POINT - BACK BEACH

HOLE NO: 1080E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% >1000 um	% H.M.
0 - 1.5	4.60	SAND, fine - medium grained, greyish brown.	3.34	0.08	1.22
1.5 - 3.5	6.25	SAND, fine - medium grained, dark brown, indurated, some gravel.	6.27	0.42	2.03
3.5 - 5.5	5.75	AS ABOVE, silty, clay rich. Hit grey green clay. E.O.H. 5.5m. CLAY	9.22	2.51	3.66
		Down hole Average			<u>2.40</u>
0 - 5.5		Depth and Grade at 1.5% Cut-off			<u>2.40</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588319

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1100E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.55	SAND, fine - medium grained, dark brown, organic rich at top (peaty) silty and clay rich.	9.93	1.11	2.49
1.5 - 3.5	5.90	SAND, fine - medium grained, dark brown, indurated, silty and clay rich. Some gravel.	6.06	2.50	8.31
3.5 - 5.5	6.45	AS ABOVE, hit grey green clay.	4.95	7.85	3.82
5.5 - 6.0	NA	CLAY, hit weathered sandstone E.O.H. 5.5m. CLAY	NA	NA	NA
		Down hole average			<u>5.09</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>5.09</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588320

329 AREA: COWPER POINT

HOLE NO: 1120E 2200N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	0.65	SAND, medium grained, well sorted, grey. (Small sample due to hole in boggy area, sample went out into formation as ground lifted. Three attempts at hole)	15.62	2.59	5.59
1.5 - 3.5	5.20	AS ABOVE to 3.0m. 3.0 - 3.5m. sand medium to moderate sorted, shell rich, creamy grey.	5.72	3.59	4.40
3.5 - 4.5	4.40	SAND, medium grained, moderate sorted, shell rich with some coarse shell. Sandstone at 4.5m. EOH 4.5m.	5.40	1.22	4.52
		Down hole Average			<u>4.82</u>
0 - 4.5		Depth and Grade at 1.5% Cut-off			<u>4.82</u>

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588321

APPENDIX 2.16

Line 2500N Back Beach

32 CLIENT: NATIONAL MINERAL SANDS
 AREA: .COWPER POINT - BACK BEACH
 LOGGED BY: ANDREW DOVE

TITLE NO: E.L. 41/88
 LINE NO:
 DATE DRILLED: 23.1.89
 Method: Rig

588322
 HOLE NO: 840E 2500N
 1.5m. N

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.50	SAND, medium - coarse grained, light grey, grades to brown. H.M. rich. >5%.	3.95	1.08	7.69
1.5 - 2.8	5.30	SAND, medium - coarse grained, brown. H.M. >1%. Hit grey-green clay.	6.34	5.84	1.86
2.8 - 3.2		CLAY, high weathered sandstone. E.O.H. 3.2m. SANDSTONE			
0 - 2.8		Down hole average Depth and grade at 1.5% cut-off			<u>4.98%</u> <u>4.98%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588323

AREA: COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 860E 2500N
1m N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.25	SAND, medium - coarse grained, light grey to grey. H.M. rich >3%.	2.07	0.26	15.84
1.5 - 3.5	1.85	SAND, medium - coarse grained, dark brown, indurated. H.M. rich >5%. Hit dark brown clay.	4.14	0.77	21.29
3.5 - 4.5 (no sample)		CLAY, dark brown, hit sandstone at 4.0m. E.O.H. 4.5m. SANDSTONE			
		Down hole average			<u>18.95%</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>18.95%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588324

AREA: COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 880E 2500N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.50	SAND, medium grained, light grey grading to brown. H.M. >1%	2.05	0.25	2.63
1.5 - 3.5	7.95	SAND, fine - medium grained, brown, grades to dark brown, indurated, silty. H.M. >2%.	6.66	1.50	5.54
3.5 - 5.0	2.75	SAND, fine - medium grained, dark brown, indurated. Clay rich. Hit sandstone. E.O.H. 5.0m. SANDSTONE	9.02	9.43	0.75
0 - 3.5		Down hole average Depth and grade at 1.5% cut-off			<u>3.23%</u> <u>4.29%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588325

AREA: COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 900E 2500N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Offset 1m Nth of peg

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	5.10	SAND, fine - medium grained, light grey, grades to brown.	1.72	0.57	0.86
1.5 - 3.5	8.25	SAND, fine - medium grained, brown, grades to dark brown. Indurated.	3.88	0.13	2.15
3.5 - 4.3	3.05	SAND, fine - medium grained, dark brown. Hit abundant fine shell then dark brown clay.	7.42	7.11	5.59
4.3 - 4.6 (no sample)		CLAY, dark brown, hit sandstone at 4.6m. E.O.H. 4.6m. SANDSTONE			
		Down hole average			2.34%
0 - 4.3		Depth and grade at 1.5% cut-off			2.34%

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CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588326

AREA: .COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 920E 2500N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

(Offset 1m. N of
peg)

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.75	SAND, fine - medium grained, light grey, grades to brown.	6.02	0.31	1.36
1.5 - 3.5	8.25	SAND, fine - medium grained, brown, grades to dark brown, indurated.	4.21	0.19	1.90
3.5 - 5.5	5.35	SAND, medium grained, dark brown. Hit clay and weathered sandstone.	8.57	7.76	2.92
		E.O.H. 5.5m. SANDSTONE			
		Down hole average			<u>2.12%</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>2.12%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588327

AREA: .COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 940E 2500N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.10	SAND, medium grained, grey, grades to brown.	5.79	0.35	0.64
1.5 - 3.5	7.65	SAND, medium grained, brown, grades to dark brown, indurated.	5.07	0.24	1.03
3.5 - 5.0	4.50	SAND, fine - medium grained, dark brown, indurated, silty. Clay rich. Hit clay and weathered sandstone. E.O.H. 5.0m. SANDSTONE	10.27	3.68	1.39
		Down hole average			<u>1.02</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588328

AREA: .COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 960E 2500N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.80	SAND, medium grained, grey, grades to brown.	5.24	0.36	0.91
1.5 - 3.5	8.30	SAND, fine - medium grained, brown, grades to dark brown. Indurated.	5.02	0.20	1.42
3.5 - 5.5	8.65	SAND, fine - medium graine, dark brown, indurated. Clay rich, silty. Hit sandstone.	12.32	2.95	1.92
		E.O.H, 5.5m. SANDSTONE			
		Down hole average			<u>1.46</u>

CLIENT: NATIONAL MINERAL SANDS
 AREA: COWPER POINT - BACK BEACH
 LOGGED BY: ANDREW DOVE

TITLE NO: E.L. 41/88
 LINE NO:
 DATE DRILLED: 23.1.89
 METHOD: Rig

588329

HOLE NO: 980E 2500N

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.50	SAND, Medium grained, grey, grades to brown.	6.33	0.42	1.00
1.5 - 3.5	7.90	SAND, medium grained, brown, grades to dark brown, indurated.	6.70	1.34	1.65
3.5 - 4.7	2.35	SAND, fine - medium grained, dark brown, indurated. Silty, hit abundant shell, weathered sandstone.	7.09	13.74	1.50
		E.O.H. 4.7m. SANDSTONE			
		Down hole average			<u>1.40%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588330

AREA: COWPER-POINT - BACK BEACH

LINE NO:

HOLE NO: 1000E 2500N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89
METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	5.50	SAND, fine - medium grained, brown grading to dark brown. Slightly indurated.	3.19	0.24	3.22
1.5 - 3.5	7.75	SAND, fine - medium grained, dark brown. Indurated, silty.	3.80	1.31	3.85
3.5 - 5.5	6.60	AS ABOVE, clay rich. Hit weathered sandstone. E.O.H. 5.5m. SANDSTONE	11.53	14.60	1.47
		Down hole average			<u>2.81</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>3.58</u>

321 CLIENT: NATIONAL MINERAL SANDS
 AREA: COWPER POINT - BACK BEACH
 LOGGED BY: ANDREW DOVE

TITLE NO: E.L. 41/88
 LINE NO:
 DATE DRILLED: 23.1.89
 METHOD: Rig

588331

HOLE NO: 1020E 2500N

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.15	SAND, fine - medium grained, grey, grades to dark brown. Indurated. Silty.	4.56	0.18	0.52
1.5 - 3.5	8.40	SAND, fine - medium grained, dark brown, indurated. Slightly coarser at base.	3.43	0.11	0.75
3.5 - 5.5	5.15	AS ABOVE, hit gravel and pebbles.	7.86	7.38	2.02
5.5 - 7.5	1.25	AS ABOVE, then grey, abundant shell. Hit weathered sandstone. E.O.H. 5.7m. SANDSTONE	6.38	11.24	2.63
		Down hole average			<u>1.20</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588332

AREA: COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 1040E 2500N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.95	SAND, medium grained, light grey, grading to brown.	1.82	0.29	0.48
1.5 - 3.5	8.90	SAND, medium grained, brown, grading to dark brown. Indurated, silty.	3.70	0.71	0.59
3.5 - 5.5	6.60	SAND, medium grained, dark brown, indurated. Some gravel, clay rich, silty.	6.80	7.23	1.58
5.5 - 5.8	3.25	SAND, coarse - very coarse grained, dark brown, abundant shell, clay. Hit weathered sandstone.	4.82	33.93	2.22
		E.O.H. 5.8m. SANDSTONE			
		Down hole average			<u>0.99%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588333

333 AREA: COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 1060E 25oON

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	1.70	SAND, medium - coarse grained, dark brown, organic rich at top, indurated.	6.20	0.15	0.76
1.5 - 3.5	8.15	SAND, medium - coarse grained, dark brown, indurated.	2.86	0.17	4.20
3.5 - 5.5	6.85	AS ABOVE, hit gravel at 4.5m. then peat pebbles, then weathered sandstone. E.O.H. 5.5m. SANDSTONE	8.84	3.24	2.23
		Down hole average			<u>2.55</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>2.55</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588334

AREA: COWPER-POINT - BACK BEACH

LINE NO:

HOLE NO: 1080E 2500N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.15	SAND, fine - medium grained, grey, grading to dark brown.	3.90	0.33	1.00
1.5 - 3.5	6.55	SAND, medium grained, brown, grading to dark brown, indurated.	4.21	0.21	2.44
3.5 - 5.3	4.25	SAND, medium grained, dark brown, indurated. Hit gravel 4.5m. Clay rich, silty. Abundant shell. Hit weathered sandstone. E.O.H. 5.3m. SANDSTONE	5.40	12.76	1.58
		Down hole average			<u>1.74%</u>
0 - 5.3		Depth and grade at 1.5% cut-off			<u>1.74%</u>

335

538335

APPENDIX 2.17

Line 2800N Back Beach

336

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588336

AREA: COWPER POINT

HOLE NO: 840E 2800N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89

METHOD: HAND DRILLED

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 -1.4	2.50	SAND, medium grained, well sorted, brown, peaty. Clay at 1.4m. EOH 1.4m.	5.31	1.73	11.09
		Down hole average			<u>11.09%</u>
0 - 1.4		Depth and grade at 1.5% cut-off			<u>11.09%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588337

33 AREA: COWPER-POINT - BACK BEACH

LINE NO:

HOLE NO: 860E 2800N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.20	SAND, medium grained. Light grey. Coarse. H.M. rich >5%.	1.10	0.16	14.90
1.5 - 3.5	7.15	SAND, medium grained, grey, grades to dark brown. Indurated. coarse. H.M. rich >5%	3.73	2.59	24.30
3.5 - 4.0	1.60	SAND, medium - coarse grained, dark brown, indurated. Clay rich, silty. Hit dark brown clay.	22.81	18.32	6.18
4.0 - 4.5 (no sample)		CLAY, hit sandstone E.O.H. 4.0m. CLAY			
		Down hole average			<u>18.51%</u>
0 - 4.0		Depth and grade at 1.5% cut-off			<u>18.51%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588338

AREA: COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 880E 2800N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Sline	% 1000 um	% H.M.
0 - 1.5	4.25	SAND, fine - medium grained, light grey to grey. H.M. >2%.	3.51	0.24	6.74
1.5 - 3.5	8.25	SAND, fine - medium grained, grey, grades to dark brown, indurated. Coarse. H.M. rich. >5%.	6.45	0.50	25.33
3.5 - 5.5	7.55	SAND, fine - medium grained, dark brown, indurated. Clay rich, silty. Hit peat layer then weathered sandstone. E.O.H. 5.5m. SANDSTONE	7.39	3.11	9.78
		Down hole Average			<u>14.61</u>
0 - 5.5		Depth and Grade at 1.5% cut-off			<u>14.61</u>

339

CLIENT: NATIONAL MINERAL SANDS
 AREA: COWPER POINT - BACK BEACH
 LOGGED BY: ANDREW DOVE

TITLE NO: E.L. 41/88

588339

LINE NO:

HOLE NO: 9 00E 2800N

DATE DRILLED: 23.1.89
 METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.90	SAND, fine - medium grained, light grey, grades to grey.	1.65	0.25	2.23
1.5 - 3.5	8.25	SAND, fine - medium grained, grey, grades to dark brown. Indurated, silty.	4.58	0.10	3.57
3.5 - 5.5	8.35	SAND, fine - medium grained, dark brown, indurated, some gravel. Clay rich, silty.	6.07	11.59	2.39
5.5 - 6.5	1.15	SAND, coarse - very coarse grained, some gravel, grey. Hit weathered sandstone.	22.67	35.23	1.18
		E.O.H. 6.5m. SANDSTONE			
		Down hole Average			<u>2.53</u>
0 - 5.5		Depth and Grade at 1.5% Cut-off			<u>2.78</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588340

AREA: COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 920E 2800N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.25	SAND, fine - medium grained, grey.	2.41	0.11	1.35
1.5 - 3.5	8.60	AS ABOVE, grades to dark brown, indurated, silty.	3.54	0.14	1.95
3.5 - 5.5	7.90	SAND, fine - medium grained, dark brown, indurated, silty. Clay rich. Hit weathered sandstone.	7.15	6.04	2.09
		E.O.H. 5.5m. SANDSTONE			
		Down hole Average			<u>1.80</u>
0 - 5.5		Depth and Grade at 1.5% cut-off			<u>1.80</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588341

AREA: COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 940E 2800N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.70	SAND, fine - medium grained, brown to dark brown, indurated. H.M. 1%.	4.02	0.65	1.08
1.5 - 3.5	7.80	SAND, fine - medium grained, dark brown, indurated. Clay rich	4.75	2.04	0.95
3.5 - 5.5	5.90	AS ABOVE, some gravel hit clay then weathered sandstone. E.O.H. 5.5m. SANDSTONE	6.14	13.39	0.85
		Down hole average			<u>0.95%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588342

30 AREA: COWPER POINT - BACK BEACH

LINE NO:

HOLE NO: 960E 2800N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	5.40	SAND, fine - medium grained, dark brown, clay rich, silty,	15.64	1.31	1.72
1.5 - 3.5	6.65	AS ABOVE, very sticky	6.50	2.21	1.22
3.5 - 5.5	4.90	AS ABOVE	5.63	15.27	0.95
5.5 - 5.7	1.40	AS ABOVE, hit sandstone	15.07	17.09	1.72
		E.O.H. 5.7m. SANDSTONE			
		Down hole average			<u>1.27</u>

CLIENT: NATIONAL MINERAL SANDS
 AREA: COWPER POINT - BACK BEACH
 LOGGED BY: ANDREW DOVE

TITLE NO: E.L. 41/88 588343
 LINE NO:
 HOLE NO: 980E 2800N
 DATE DRILLED: 23.1.89
 METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.00	SAND, medium grained, light grey grading to grey. H.M. trace.	5.10	1.23	1.42
1.5 - 3.5	7.35	SAND, medium grained, grey grading to coarse grained. Dark brown, indurated, some gravel.	2.87	0.42	0.95
3.5 - 5.5	3.70	SAND, coarse grained, dark brown, indurated, clay rich. Some gravel, hit coarse shell and sandstone. E.O.H. 5.5m. SANDSTONE	8.39	23.68	0.79
		Down hole average			<u>1.02 %</u>

CLIENT: NATIONAL MINERAL SANDS
 AREA: COWPER-POINT - BACK BEACH
 LOGGED BY: ANDREW DOVE

TITLE NO: E.L. 41/88
 LINE NO:
 HOLE NO: 1000E 2800N
 DATE DRILLED: 23.1.89
 METHOD: Rig

588344

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.65	SAND, medium - coarse grained, light grey, grades to dark brown.	4.64	0.42	1.73
1.5 - 3.5	8.00	SAND, medium - coarse grained, dark brown, indurated, silty.	4.44	2.46	1.97
3.5 - 4.8	3.65	AS ABOVE, hit sandstone, weathered. E.O.H. 4.8m. SANDSTONE	6.95	12.22	1.25
		Down hole average			<u>1.70%</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>1.87%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588345

AREA: COWPER-POINT - BACK BEACH

LINE NO:

HOLE NO: 1020E 2800N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.00	SAND, medium - coarse grained, light grey to grey.	6.24	0.38	0.96
1.5 - 3.5	8.45	SAND, medium - coarse grained, dark brown, some gravel, indurated.	3.99	5.58	1.85
3.5 - 4.75	5.15	AS ABOVE, hit sandstone. E.O.H. 4.75 SANDSTONE	11.46	9.28	1.12
Down hole average					<u>1.38%</u>

CLIENT: NATIONAL MINERAL SANDS
 AREA: COWPER-POINT - BACK BEACH
 LOGGED BY: ANDREW DOVE

TITLE NO: E.L. 41/88

588346

LINE NO:

HOLE NO: 1040E 2800N

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.20	SAND, fine - medium grained, brown, clay rich, silty.	7.96	0.47	0.80
1.5 - 3.5	7.50	SAND, medium grained, dark brown, indurated, some gravel.	4.45	0.76	1.67
3.5 - 4.7	4.50	AS ABOVE, hit weathered SANDSTONE. E.O.H. 4.7 SANDSTONE	8.07	20.69	0.89
		Down hole average			<u>1.19%</u>

347

588347

APPENDIX 2.18

Line 3150N Back Beach

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588348

AREA: COWPER POINT

HOLE NO: 780E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89

METHOD: HAND DRILLED

Interval (m)	Dry Wt. (kg)	Description	% Slime	% < 1000 um	% H.M.
0 - 1.5	1.90	SAND, medium grained, moderate sorted, silty and peaty. Clay at 1.5m. EOH 1.5m.	23.94	5.56	1.37
		Down hole Average			<u>1.37</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588349

AREA: COWPER POINT

HOLE NO: 800E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89

METHOD: HAND DRILLED

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.10	SAND, medium grained, moderate sorting, silty and peaty. Clay at 1.5m. EOH 1.5m.	20.43	5.83	1.71
0 - 1.5		Down hole average Depth and grade at 1.5% cut-off			<u>1.71</u> <u>1.71</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588350

AREA: COWPER POINT

HOLE NO: 820E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89

METHOD: HAND DRILLED

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	1.95	SAND, medium, moderate sorted, silty and peaty, black , clay at 1.5m. EOH 1.5m.	13.93	1.77	2.44
0 - 1.5		Down hole Average Depth and Grade at 1.5% Cut-off			<u>2.44</u> <u>2.44</u>

588351

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - BACK BEACH

HOLE NO: 840E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89 METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.50	SAND, medium - coarse grained, grey, grading to dark brown. H.M. rich >5%.	2.86	0.57	11.13
1.5 - 3.5	7.90	SAND, fine - medium grained, dark brown, silty. Indurated. H.M. 2 - 5%.	4.27	2.46	5.39
3.5 - 5.25	2.65	SAND, medium - coarse grained, dark brown, silty. Clay rich. H.M. >2%. Hit green grey clay. E.O.H. 5.25m. CLAY PIEZOMETER HOLE	9.48	15.98	0.56
		Down hole average			<u>5.42</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>7.85</u>

CLIENT: NATIONAL MINERAL SANDS
 AREA: COWPER POINT - BACK BEACH
 LOGGED BY: ANDREW DOVE

TITLE NO: E.L. 41/88

588352

HOLE NO: 860E 3150N

DATE DRILLED: 23.1.89
 METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.65	SAND, medium - coarse grained, light grey, grades to dark brown. Indurated. H.M. 2-5%.	2.00	0.33	4.97
1.5 - 3.5	9.10	SAND, medium - coarse grained, dark brown, indurated. H.M. >5%.	2.18	0.12	6.79
3.5 - 5.5	7.45	AS ABOVE, silty and clay rich.	5.91	1.72	2.00
5.5 - 5.8	1.00	SAND, coarse - very coarse grained, dgravel, dark brown. Hit clay. E.O.H. 5.8m. CLAY, dark brown	4.56	18.18	0.72
		Down hole average			<u>4.35</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>4.55</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588353

AREA: COWPER-POINT - BACK BEACH

HOLE NO: 880E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	5.70	SAND, medium - coarse grained, light grey grading to dark brown. Indurated. H.M. 2-5%.	2.06	0.21	1.78
1.5 - 3.5	8.45	SAND, coarse grained, dark brown gravel present. H.M. 2-5%.	3.71	4.18	3.41
3.5 - 5.0	2.35	AS ABOVE, silty, clay rich. Hit clay. E.O.H. 5.0m. CLAY, dark brown	11.05	2.73	2.58
0 - 5.0		Down hole average Depth and grade at 1.5% cut-off			<u>2.67</u> <u>2.67</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588354

AREA: COWPER POINT - BACK BEACH

HOLE NO: 900E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% +1000 um	% H.M.
0 - 1.5	3.60	SAND, medium - coarse grained, greyish brown. Grades to brown.	3.49	0.38	0.57
1.5 - 3.5	8.00	SAND, medium - coarse grained, dark brown, indurated.	5.25	0.77	1.17
3.5 - 5.5	6.45	AS ABOVE, clay rich, silty.	6.41	13.94	1.56
5.5 - 6.75	3.85	AS ABOVE, some gravel, hit clay, green grey.	6.04	31.42	0.68
		E.O.H. 6.75m. CLAY			
		Down hole average			<u>1.06</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588353

AREA: COWPER POINT - BACK BEACH

HOLE NO: 920E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	5.85	SAND, medium - coarse grained, light grey, grades to brown. H.M. visible.	1.96	0.21	0.80
1.5 - 3.5	9.60	SAND, medium - coarse grained, dark brown, indurated.	2.05	0.71	0.59
3.5 - 5.5	5.50	AS ABOVE, clay rich, silty.	6.94	11.62	1.08
5.5 - 5.8	0.50	AS ABOVE, Hit dark grey clay.	16.44	15.39	2.32
		E.O.H. 5.8m. CLAY			
		Down hole average			<u>0.90</u>

APPENDIX 2.19

Line 3450NW Back Beach

337

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588357

AREA: COWPER POINT

HOLE NO: 940NE 3450NW

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89

METHOD: HAND DRILLED

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	1.20	SAND, medium grained, well sorted, dark grey, clay at 1.5m. EOH 1.5m.	23.42	3.74	1.58
		Down hole average			<u>1.58</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>1.58</u>

350

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588358

AREA: COWPER POINT - BACK BEACH

HOLE NO: 960NE 3450NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89
METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	1.75	SAND, fine - medium grained, dark brown. Organic rich, clay rich.	11.52	0.56	2.19
1.5 - 3.25	5.40	SAND, fine - medium grained, dark brown. Clay rich. Hit dark brown clay. E.O.H. 3.25 CLAY	18.35	7.01	1.56
		Down hole average			<u>1.85</u>
0 - 3.25		Depth and Grade at 1.5% cut-off			<u>1.85</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588359

AREA: COWPER POINT - BACK BEACH

HOLE NO: 980NE 3450NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.90	SAND, medium - coarse graiend, grey, grading to brown. Coarse H.M. >1%.	2.14	0.33	3.61
1.5 - 3.5	6.70	SAND, medium - coarse grained, dark brown. Indurated. Clay rich.	6.87	3.18	1.91
3.5 - 4.5	2.50	AS ABOVE, clay rich. Hit dark brown clay. E.O.H. 4.5m. CLAY	10.86	22.12	0.76
0 - 3.5		Down hole average Depth and grade at 1.5% cut-off			<u>2.22</u> <u>2.64</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588360

AREA: COWPER-POINT - BACK BEACH

HOLE NO: 1000NE 3450NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	6.05	SAND, medium - coarse grained, light grey, grades to brown. H.M. >1%.	1.81	0.53	1.96
1.5 - 3.5	9.00	SAND, medium - coarse grained, dark brown, indurated. Coarse H.M. 2-5%.	1.87	2.58	3.67
3.5 - 5.5	6.95	AS ABOVE, H.M. visible.	5.04	8.83	1.24
5.5 - 6.25	2.75	AS ABOVE, clay rich. Some gravel. Hit dark brown clay.	21.43	15.27	1.25
6.25 - 10.0 (no sample)		CLAY, DARK BROWN. Hit weathered gravel/sandstone. 7.5m. back into light brown clay, 8.0m. Gravel, sandstone at 9.5m. E.O.H. 10.0m.			
		Down hole average			<u>2.19</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>2.94</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588361

AREA: COWPER POINT - BACK BEACH

HOLE NO: 102ONE 3450NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.95	SAND, medium - coarse grained, light grey. Coarse H.M. visible \approx 1%.	1.50	0.34	1.25
1.5 - 3.5	8.90	SAND, medium - coarse grained, dark brown, indurated.	1.70	1.32	0.92
3.5 - 5.3	7.80	AS ABOVE, hit dark brown clay. E.O.H. 5.3m. CLAY	5.73	4.31	1.78
		Down hole average			<u>1.31</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588362

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1040NE 3450NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.85	SAND, medium - coarse grained, light grey. Grades to dark brown.	2.62	0.56	0.82
1.5 - 3.5	9.80	SAND, medium - coarse grained, dark brown, indurated.	1.26	2.98	0.65
3.5 - 5.5	8.80	AS ABOVE, some gravel.	3.76	8.86	1.77
5.5 - 5.8	1.30	AS ABOVE, gravel. Hit pebbles, hit clay. H.M. visible. E.O.H. 5.8m. CLAY	3.05	26.96	5.17
		Down hole average			<u>1.31</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588363

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1060NE 3450NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	5.75	SAND, medium - coarse grained, light grey. Grades to brown. H.M. \approx 1%.	1.62	0.97	1.21
1.5 - 3.5	10.15	SAND, coarse - very coarse grained, dark brown, indurated.	1.14	3.78	0.36
3.5 - 5.5	6.95	AS ABOVE, clay rich. Hit dark brown clay. E.O.H. 5.5m. CLAY	4.28	9.34	0.47
		Down hole average			<u>0.63</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - BACK BEACH

588364
HOLE NO: 1100NE 3450NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	5.50	SAND, medium - coarse grained, grey.	4.76	0.32	0.76
1.5 - 3.5	8.65	AS ABOVE, grades to dark brown, indurated.	2.40	0.46	1.31
3.5 - 5.5	8.50	SAND, medium - coarse grained, dark brown, indurated. Some gravel.	3.25	8.36	0.47
5.5 - 6.0	1.90	AS ABOVE, coarse - very coarse grained. Hit dark brown clay. E.O.H. 6.0m. CLAY	2.46	12.35	0.53
		Down hole average			<u>0.83</u>

365

588365

APPENDIX 2.20

Line 3750NW Back Beach

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588366

AREA: COWPER-POINT - BACK BEACH

HOLE NO: 940NE 3750N W

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.35	SAND, fine - medium grained, dark brown, clay rich. Organic rich. H.M. visible	12.99	15.09	1.52
1.5 - 3.0	3.80	SAND, coarse grained, clay rich. Tends to be bands of coarse-very coarse sand and clay. Yellow brown.	27.09	32.23	7.51
3.0 - 4.0		GRAVEL, consolidated, very hard then hit clay. E.O.H. 4.0m.			
		Down hole average			<u>4.52</u>
0 - 3.0		Depth and grade at 1.5% cut-off			<u>4.52</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588367

AREA: COWPER POINT - BACK BEACH

HOLE NO: 96ONE 3750NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.80	SAND, medium grained, dark brown, clay rich. Organic rich at top	7.18	2.38	3.57
1.5 - 3.5	4.50	AS ABOVE, clay rich, weathered gravel and sandstone.	12.72	15.64	5.33
3.5 - 4.5 (no sample)		Weathered, sand stone and gravel. Clay bound. E.O.H. 4.5m. CLAY			
		Down hole average			<u>4.58</u>
0 - 3.5		Depth and grade at 1.5% cut-off			<u>4.58</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588368

AREA: COWPER-POINT - BACK BEACH

HOLE NO: 980NE 3750NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	5.45	SAND, medium - coarse grained, light grey grading to brown. H.M. >1%.	1.64	0.27	2.60
1.5 - 3.5	8.40	SAND, medium - coarse grained, dark brown, indurated. Coarse H.M. 2-5%.	2.37	3.36	4.19
3.5 - 4.75	3.90	AS ABOVE, hit green-yellow clay. E.O.H. 4.75 CLAY	10.86	26.70	1.93
		Down hole average			<u>3.09</u>
0 - 4.75		Depth and grade at 1.5% cut-off			<u>3.09</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588369

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1000NE 3750NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.35	SAND, medium - coarse grained, light grey. H.M. base.	3.82	0.37	0.80
1.5 - 3.5	9.00	SAND, medium - coarse grained, dark brown, indurated. H.M. >1%.	5.77	1.41	2.69
3.5 - 5.5	7.65	AS ABOVE, hit blue grey clay. H.M. >1%.	14.60	11.07	2.67
5.5 - 11.5 No sample		CLAY, then coarse gravel (weathered) basement then coarse sandstone and gravel basement at 6.5m. clay layers in sandstone. Dark brown clay at 8.5m. E.O.H. 11.5m. CLAY			
		Down hole average			<u>2.17</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>2.17</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588370

AREA: COWPER POINT - BACK BEACH

HOLE NO: 102ONE 3750NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	5.70	SAND, medium - coarse grained, light grey, dark brown, indurated at base.	1.72	0.26	0.45
1.5 - 3.5	9.60	sand, coarse - very coarse grained, dark brown, indurated H.M. trace.	1.23	0.49	0.34
3.5 - 5.5	6.50	AS ABOVE, silty at base. Yellow brown clay at base. Contains weathered sandstone and gravel.	6.69	8.02	0.74
5.5 - 7.5	8.85	CLAY, yellow brown, contains gravel. Clay turns to dark brown at base. E.O.H. 7.5m. CLAY	28.33	45.13	10.33
		Down hole average			<u>3.13</u>
0 - 7.5		Depth and grade at 1.5% cut-off			<u>3.13</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588371

AREA: COWPER-POINT - BACK BEACH

HOLE NO: 104ONE 3750NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.60	SAND, medium - coarse grained, light grey, grades to dark brown, indurated.	1.78	0.35	0.71
1.5 - 3.5	10.50	SAND, coarse - very coarse grained, dark brown, indurated.	0.95	2.30	0.27
3.5 - 5.5	4.90	AS ABOVE, hit blue grey clay at base. E.O.H. 5.5m. CLAY	4.19	8.34	0.20
		Down hole average			<u>0.36</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588372

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1060NE 3750NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	5.80	SAND, medium - coarse grained, grey, grading to brown.	2.73	0.33	0.89
1.5 - 3.5	10.60	SAND, coarse - very coarse grained, brown to dark brown, indurated.	1.87	0.99	0.43
3.5 - 5.5	10.25	AS ABOVE, hit yellow brown clay at base. H.M. visible E.O.H. 5.5M. CLAY	2.68	7.21	0.34
Down hole average					<u>0.52</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588373

AREA: COWPER-POINT - BACK BEACH

HOLE NO: 1080NE 3750NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	6.45	SAND, medium - coarse grained, light grey to grey. H.M. visible.	1.53	0.23	0.44
1.5 - 3.5	9.60	sand, medium - coarse grained, dark brown, indurated. H.M. trace.	1.44	0.19	0.36
3.5 - 5.5	9.05	AS ABOVE, becoming coarse - very coarse grained. Clayey.	2.06	5.93	0.35
5.5 - 6.0	1.75	AS ABOVE, hit clay. Yellow - grey, contains weathered gravel and clay. E.O.H. 6.0m. CLAY	2.85	11.09	0.28
Down hole average					<u>0.37</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588374

AREA: COWPER-POINT - BACK BEACH

HOLE NO: 1120NE 3750NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.80	SAND, medium - coarse grained, grey, grades to dark brown, indurated.	6.00	0.76	0.20
1.5 - 3.5	10.95	SAND, coarse - very coarse grained, dark brown, indurated.	2.17	1.62	0.15
3.5 - 5.5	10.45	AS ABOVE.	1.47	4.08	0.24
5.5 - 7.3	7.35	AS ABOVE, contains weathered basement gravel. Hit clay, dark brown. E.O.H. 7.3m. CLAY	2.63	16.88	0.29
		Down hole average			<u>0.22</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588375

AREA: COWPER POINT - BACK BEACH

HOLE NO: 116 ONE 3750NW

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	3.20	SAND, fine - medium grained, dark brown, peaty. Silty.	10.35	2.26	2.20
1.5 - 3.5	9.90	SAND, medium grained, dark brown, indurated.	2.11	2.48	0.81
3.5 - 5.5	10.25	AS ABOVE, coarser.	1.80	5.72	0.24
5.5 - 7.5	6.00	SAND, coarse - very coarse grained, dark brown, indurated, hit weathered sandstone and gravel Hit clay E.O.H. 7.5m. CLAY	3.77	21.52	0.52
		Down hole average			<u>0.86</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>2.20</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588376

377 AREA: COWPER POINT

HOLE NO: 1200NE 3750 NW

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89

METHOD: Hand Drilled

Interval (m)	Dry Wt. (kg)	Description	% Slime	% $\leq 1000 \mu\text{m}$	% H.M.
0 - 1.5	3.65	SAND, medium grained, well sorted, pale grey.	2.00	0.05	0.30
1.5 - 2.5	3.55	SAND, coarse grained, well sorted, brown. Indurated at 2.5m. EOH 2.5m.	1.05	0.01	0.33
		Down hole average			<u>0.31</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588377

AREA: COWPER POINT

HOLE NO: 1240NE 3750NW

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89

METHOD: Hand Drilled

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+ 1000 um	% H.M.
0 - 1.5	4.20	SAND, medium grained, well sorted, pale grey. H.M. trace.	5.95	0.49	0.62
1.5 - 2.0	2.00	AS ABOVE. Hard indurated at 2.0m. EOH 2.0m.	1.56	0.00	0.48
		Down hole average			<u>0.59%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588378

AREA: COWPER POINT

HOLE NO: 1280NE 3750NW

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6/2/89

METHOD: Hand Drilled

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	1.35	SAND, medium grained, well sorted, dark grey. Peaty clay at 1.5m. EOH 1.5m.	8.66	0.69	0.32
		Down hole Average			<u>0.32</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588379

079 AREA: COWPER POINT

HOLE NO: 1320NE 3750NW

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6/2/89
METHOD: HAND DRILLED

Interval (m)	Dry Wt. (kg)	Description	% Sline	% >1000 um	% H.M.
0 - 1.5	1.00	SAND, medium grained, well sorted, black. Peat and clay at 1.5m. EOH 1.5m.	23.39	4.28	0.37
		Down hole average			<u>0.37%</u>

380

588380

APPENDIX 2.21

Line 4020NW Back Beach

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588381

AREA: COWPER POINT - BACK BEACH

HOLE NO: 94ONE 402ONW

LOGGED BY: GRAHAM LEE

DATE DRILLED: 5.2.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	1.30	SILT, sandy with sand at base. Medium grained, well sorted.	21.25	3.00	1.11
1.5 - 2.4	1.65	SAND, medium to coarse, well sorted with clay matrix. Grey H.M. 1-2%. Grey clay at 2.4m. E.O.H. 2.5m.	16.80	7.92	0.97
		Down hole average			<u>1.06</u>

32

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588332

AREA: GOWPER POINT - BACK BEACH

HOLE NO: 96ONE 402ONW

LOGGED BY: GRAHAM LEE

DATE DRILLED: 5.2.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.60	SAND , coarse grained, well sorted, grey. H.M. 5%+.	4.27	1.02	1.39
1.5 - 3.5	7.50	AS ABOVE, H.M. 5%+. Clay grey plastic at 3.5m. E.O.H. 3.5m.	4.50	5.21	1.52
Down hole average					<u>1.46%</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588333

AREA: GOWPER-POINT - BACK BEACH

HOLE NO: 980NE 4020NW

LOGGED BY: GRAHAM LEE

DATE DRILLED: 5.2.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	6.65	SAND, coarse, well sorted, pale brown. H.M. 1-2%.	1.15	0.13	1.07
1.5 - 3.5	7.65	AS ABOVE, H.M. 5%+.	1.51	0.90	4.15
3.5 - 5.0	3.60	SAND, very coarse with gravel and angular rocks at bottom. Clay, grey plastic at 5.0m. H.M. 1-2%. E.O.H. 5.0m.	6.65	6.30	1.55
		Down hole Average			<u>2.45</u>
0 - 5.0		Depth and Grade at 1.5% cut-off			<u>2.45</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588384

AREA: GOWPER POINT - BACK BEACH (on Sea Elephant Road)

HOLE NO: 100ONE 4020NW

LOGGED BY: GRAHAM LEE

DATE DRILLED: 5.2.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	6.15	SAND, coarse grained, well sorted, pale brown.	1.19	0.20	0.21
1.5 - 3.5	9.80	AS ABOVE, greyish brown.	0.86	0.29	0.28
3.5 - 5.5	8.70	AS ABOVE, dark grey.	4.18	6.71	0.87
5.5 - 6.25	2.90	SAND, very coarse with gravel to 5mm. moderate sorting. H.M. Tr. Brown plastic clay at 6.25m. E.O.H. 6.25	5.49	24.41	0.51
		Down hole average			<u>0.48</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588385

885 AREA: GOWPER POINT - BACK BEACH

HOLE NO: 1020NE 4020NW

LOGGED BY: GRAHAM LEE

DATE DRILLED: 5.2.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.40	SAND, coarse grained, well sorted, grey.	3.09	0.53	0.22
1.5 - 3.5	10.55	AS ABOVE, very coarse at end of sample	2.75	3.00	0.27
3.5 - 5.5	10.15	SAND, medium grained with some very coarse. Mod. sorting, brownish grey.	4.74	4.24	0.55
5.5 - 6.5	5.50	SAND, medium to very coarse, poorly sorted, grey. H.M. Tr. Clay at 6.4m. E.O.H. 6.5m.	5.42	10.66	0.52
		Down hole Average			<u>0.38</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588336

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1040NE 4020NW

336 LOGGED BY: GRAHAM LEE

DATE DRILLED: 5.2.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	5.55	SAND, coarse grained, well sorted, grey. H.M. <1%.	2.89	0.58	0.31
1.5 - 3.5	9.80	AS ABOVE	1.09	1.07	0.16
3.5 - 5.5	9.60	AS ABOVE, silty, brown.	2.82	6.11	0.22
5.5 - 6.3	7.05	SAND, very coarse with gravel at bottom. Poorly sorted. brown, clay at 6.3m. E.O.H. 6.3m.	5.38	15.89	0.97
Down hole Average					<u>0.32</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588387

887 AREA: COWPER POINT - BACK BEACH

HOLE NO: 1060NE 4020NW

LOGGED BY: GRAHAM LEE

DATE DRILLED: 5.2.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	5.35	SAND, coarse, well sorted, pale brown.	1.78	0.30	0.10
1.5 - 3.5	10.20	AS ABOVE	1.06	1.33	<0.01
3.5 - 5.5	10.50	AS ABOVE, brown	2.05	4.39	0.14
5.5 - 6.3	4.55	SAND, very coarse gravel at bottom. Clay at 6.3m. E.O.H. 6.3m.	7.06	3.36	0.36
Down hole average					<u>0.11</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588388

AREA: GOWPER POINT - BACK BEACH

HOLE NO: 1080NE 4020NW

LOGGED BY: GRAHAM LEE

DATE DRILLED: 5.2.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	2.30	SAND, coarse grained, well sorted, brown.	4.73	0.25	0.10
1.5 - 3.5	10.75	AS ABOVE, greyish brown.	2.55	1.79	0.13
3.5 - 5.5	11.30	SAND, very coarse, moderate sorted. Greyish brown.	1.93	9.60	0.25
5.5 - 7.4	8.70	AS ABOVE with gravel at bottom. Clay at 7.4m. E.O.H. 7.5m.	3.27	15.98	0.38
Down hole average					<u>0.22</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588389

AREA: GOWPER POINT - BACK BEACH

HOLE NO: 1100NE 4020NW

LOGGED BY: GRAHAM LEE

DATE DRILLED: 5.2.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	4.90	SAND, coarse grained, well sorted, grey.	1.53	0.17	0.16
1.5 - 3.5	10.85	AS ABOVE	1.09	0.82	0.14
3.5 - 5.5	8.85	AS ABOVE, brownish grey.	1.08	6.19	0.15
5.5 - 7.5	7.15	AS ABOVE, very coarse with granules.	2.20	15.48	0.34
7.5 - 7.6	0.95	AS ABOVE. Clay at 7.6. E.O.H. 7.6m.	18.46	23.01	0.66
		Down hole average			<u>0.21</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588390

AREA: GOWPER POINT - BACK BEACH

HOLE NO: 1120NE 4020NW

LOGGED BY: GRAHAM LEE

DATE DRILLED: 5.2.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% 1000 um	% H.M.
0 - 1.5	6.00	SAND, medium - coarse grained. Well sorted, grey.	1.36	0.14	0.24
1.5 - 3.5	8.35	AS ABOVE, coarse grained.	1.36	0.23	0.14
3.5 - 5.5	10.65	AS ABOVE, very coarse.	1.09	8.13	0.29
5.5 - 7.5	9.25	SAND, very coarse with gravel at bottom and rock fragments. Clay at 7.0m.	3.96	11.21	0.74
		E.O.H. 7.1m.			
		Down hole Average			<u>0.16</u>

391

538391

APPENDIX 2.22

Line 1000N West of Blowhole Creek

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588392

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1040E 1000N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 0.9	2.30	SAND, medium to coarse grained with pebbles and clay. Brown clay at 0.9m. E.O.H. 0.9m.	17.68	21.64	7.07
		Down hole average			<u>7.07</u>
0 - 0.9		Depth and grade at 1.5% cut-off			<u>7.07</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588393

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1080E 1000N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 0.5 Not sampled		SAND, grey organic rich 0 - 0.1m. Clay, brown plastic 0.1 - 0.5m. E.O.H. 0.5m.			

CLIENT: NATIONAL MINERAL SANDS
 AREA: COWPER POINT - BACK BEACH
 LOGGED BY: GRAHAM LEE

TITLE NO: E.L. 41/88

588394

HOLE NO: 1120E 1000N

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.2	2.95	SAND, medium grained with some granules. Pale grey. Clay brown at 1.2m. E.O.H. 1.2m.	5.58	5.58	2.68
		Down hole average			<u>2.68</u>
0 - 1.2		Depth and grade at 1.5% cut-off			<u>2.68</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588395

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1160E 1000N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.70	SAND, medium to coarse grained, moderately sorted, yellow. H.M. Tr.	5.43	1.85	1.08
1.5 - 1.6 (Not sampled)		AS ABOVE, very clayey. 1.6m. Clay yellow-orange E.O.H. 1.6m.			
		Down hole average			<u>1.08</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588396

335

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1200E 1000N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.0	2.35	SAND, medium grained, clayey. Some indurated lumps. Yellowish brown. 1.0 clay with pebbles. Grey. E.O.H. 1.0m.	15.89	9.53	1.79
		Down hole average			<u>1.79</u>
0 - 1.0		Depth and grade at 1.5% cut-off			<u>1.79</u>

507

CLIENT: NATIONAL MINERAL SANDS
AREA: COWPER POINT - BACK BEACH
LOGGED BY: GRAHAM LEE

TITLE NO: E.L. 41/88

588397

HOLE NO: 1240E 1000N

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 0.25 (No sample)		CLAY, brown with lateritic nodules.			

534

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588398

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1280E 1000N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5 (No sample)		CLAY, brown lateritic on surface, grades down to grey and orange mottled. Plastic. E.O.H. 1.5m.			

508

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1320E 1000N

588399

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.15	SAND, medium grained, dark grey organic rich then brown clayey sand. Clay at 1.5m. E.O.H. 2.0m. in clay	10.20	5.29	1.32
		Down hole average			<u>1.32</u>

400

588400

APPENDIX 2.23

Line 1638N West of Blowhole Creek

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588401

AREA: COWPER POINT - BACK BEACH

HOLE NO: 540E 1638N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	0.15	SAND, medium to coarse grained, grey and brownish grey, becomes clayey with depth.	16.67	5.62	1.42
1.5 - 2.0	2.65	AS ABOVE with increasing clay. Becomes sandy pale grey clay at 2.0m. 2.0 - 2.5m. grey plastic clay. E.O.H. 2.5m.	25.16	5.93	1.38
		Down hole average			1.41

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588402

AREA: COWPER POINT - BACK BEACH

HOLE NO: 580E 1638N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.15	SAND, medium to coarse grained, moderate sorting, brown. H.M. visible	11.25	4.07	2.65
1.5 - 3.0	4.30	AS ABOVE, becomes clayey with depth. Some H.M. visible. 2.8m. grey and green plastic sandy clay. E.O.H. 3.0m.	17.90	8.63	0.50
		Down hole average			<u>1.58</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>2.65</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588403

AREA: COWPER POINT - BACK BEACH

HOLE NO: 620E 1638N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.65	SAND, medium to coarse grained, moderately sorted, dark brown, indurated.	18.07	7.47	2.90
1.5 - 2.9	4.90	AS ABOVE, becomes clayey with depth. 2.5m. clayey grey sand becomes clay at 2.9m. E.O.H. 2.9m.	22.68	13.75	1.85
		Down hole average			<u>2.39</u>
0 - 2.9		Depth and grade at 1.5% cut-off			<u>2.39</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588404

AREA: COWPER POINT - BACK BEACH

HOLE NO: 660E 1638N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.15	SAND, medium to coarse grained. Some very coarse grains. Moderately well sorted, brownish grey then brown. Clayey near bottom. H.M. visible.	14.74	12.90	3.23
1.5 - 2.6	4.55	SAND, very coarse well sorted, clean. 2.5 clayey sand and clay. E.O.H. 2.6m.	11.02	49.53	1.09
0 - 1.5		Down hole average Depth and grade at 1.5% cut-off			<u>2.32</u> <u>3.23</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588405

AREA: COWPER POINT - BACK BEACH

HOLE NO: 700E 1638N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.70	SAND, medium grained, well sorted, grey and brown. H.M. Tr.	10.54	1.69	6.10
1.5 - 2.5	6.30	SAND, medium to coarse grained sand very coarse, poorly sorted with increasing clay. 2.5m. clay with granules and sand throughout. E.O.H. 2.5m.	16.97	17.57	3.29
		Down hole average			<u>4.15</u>
0 - 2.5		Depth and grade at 1.5% cut-off			<u>4.15</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588406

AREA: COWPER POINT - BACK BEACH

HOLE NO: 740E 1638N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.10	SAND, medium to coarse grained, some very coarse. Pale brown with some indurated layers. H.M. Tr.	9.81	3.20	4.92
1.5 - 2.5	4.20	AS ABOVE, grades down to clay with poorly sorted coarse sand. E.O.H. 2.5m.	14.81	15.31	2.42
		Down hole average			<u>3.92</u>
0 - 2.5		Depth and grade at 1.5% cut-off			<u>3.92</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588407

AREA: COWPER POINT - BACK BEACH

HOLE NO: 780E 1638N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.60	SAND, medium to very coarse grained. Poorly sorted. Grey and brown, indurated.	10.43	8.11	3.86
1.5 - 2.1	3.25	AS ABOVE, grades to poorly sorted, very coarse sand and gravel with plastic clay matrix. E.O.H. 2.1m.	23.51	27.20	1.40
		Down hole Average			<u>3.16</u>
0 - 1.5		Depth and Grade at 1.5% Cut-off			<u>3.86</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588408

AREA: COWPER POINT - BACK BEACH

HOLE NO: 820E 1638N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.55	SAND, medium to coarse grained layers. Well sorted. Rich H.M. Seams brownish grey. H.M. 5%+	4.95	13.41	7.60
1.5 - 1.9	1.90	SAND, coarse grained, poorly sorted with green/grey clay matrix. E.O.H. 1.9m.	26.71	11.41	6.20
		Down hole average			<u>7.31</u>
0 - 1.9		Depth and grade at 1.5% cut-off			<u>7.31</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588409

AREA: COWPER POINT - BACK BEACH

HOLE NO: 860E 1638N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.40	SAND, medium grained with some granules and coarse layers. Dark grey with some indurated layers. Clayey at 1.5m. 1.5m. brown plastic clay with sand. E.O.H. 1.5m.	13.23	4.76	7.60
0 - 1.5		Down hole Average Depth and grade at 1.5% cut-off			<u>7.60</u> <u>7.60</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588410

AREA: COWPER POINT - BACK BEACH

HOLE NO: 900E 1638N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 27.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.20	SAND, medium to coarse grained, moderately well sorted. Dark grey. H.M. visible. 1.5m. clay, dark brown. E.O.H. 1.5m.	10.63	22.03	1.60
		Down hole average			<u>1.60</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>1.60</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - BACK BEACH - Bed of Blowhole Creek

HOLE NO: 940E 1638N
588411

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.40	SAND, medium to coarse grained. Some fine shell and granules. H.M. 2-5% (coarse)	12.15	13.2	5.11
1.5 - 2.0	4.00	AS ABOVE, then clay at 1.9m. Basement metamorphic at 2.0m. H.M. 2-5%. E.O.H. 2.0m.	22.84	17.59	6.13
		Down hole average			<u>5.37</u>
0 - 2.0		Depth and grade at 1.5% cut-off			<u>4.37</u>

412

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588412

AREA: .COWPER.POINT - BACK BEACH

LINE NO:

HOLE NO: 960E 1638N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 25.1.89

Method: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.65	SAND, fine - medium grained, dark brown, indurated. Hit dark brown clay.	17.06	13.24	7.99
1.5 - 2.0	NA	CLAY and weathered sandstone. Hit sandstone. E.O.H. 2.0m.	NA	NA	NA
		Down hole average			<u>7.99</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>7.99</u>

413

588413

APPENDIX 2.24

Line 2688N West of Blowhole Creek

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588414

AREA: COWPER POINT - BACK BEACH

HOLE NO: 440E 2688N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.4	3.20	SAND, coarse grained, grey. Silty towards bottom. 1.4m. clay, brown micaceous. E.O.H. 1.4m.	7.75	15.39	0.77
		Down hole average			<u>0.77</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588415

AREA: COWPER POINT - BACK BEACH

HOLE NO: 480E 2688N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.65	SAND, coarse grained, grey. Some organics. Tr of H.M. Little clay.	6.18	22.71	0.40
1.5 - 2.5	3.70	SAND, as above, becomes clayey at bottom. Clay, dark grey plastic; with some sand. E.O.H. 2.5m.	24.99	21.73	0.92
		Down hole average			<u>0.61</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588417

AREA: COWPER POINT - BACK BEACH

HOLE NO: 560E 2688N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	4.55	SAND, medium grained, well sorted, grey. No visible H.M. Clay, pale grey, plastic 1.4 - 1.5m. (excluded from sample) E.O.H. 1.5m.	4.30	13.98	0.55
		Down hole average			<u>0.55</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588418

118

AREA: COWPER POINT - BACK BEACH

HOLE NO: 600E 2688N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.3	2.77	<p>SAND, coarse to very coarse grained, well sorted and rounded. Grey. H.M. Tr. Sandstone weathered 1.3m - 1.4m.</p> <p>E.O.H. 1.4m.</p> <p style="text-align: center;">Down hole average</p>	8.29	36.76	1.15
					<u>1.15</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588419

AREA: COWPER POINT - BACK BEACH

HOLE NO: 640E 2688N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.00	SAND, coarse grained, some very coarse, moderately sorted. H.M. Tr.	3.15	16.33	0.30
1.5 - 2.1	1.15	AS ABOVE. Weathered sandstone 2.1m. E.O.H. 2.1m.	6.80	36.04	0.53
		Down hole average			<u>0.37</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588420

420 AREA: COWPER POINT - BACK BEACH

HOLE NO: 680E 2688N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 0.6	0.55	SAND, coarse grained, dark grey, clayey. Weathered sandstone 0.5m. E.O.H. 0.6m.	21.09	9.90	6.50
		Down hole average			<u>6.50</u>
0 - 0.y		dEpth and grade at 1.5% cut-off			<u>6.50</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588421

AREA: COWPER POINT - BACK BEACH

HOLE NO: 720E 2688N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.0	0.65	SAND, medium - very coarse grained. Poorly sorted, grey. Sand, clayey at 1.0m. then to weathered calcareous sandstone at 1.0m. E.O.H. 1.0m.	10.02	26.01	1.04
		Down hole average			<u>1.04</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

AREA: COWPER POINT - BACK BEACH - Western bank Blowhole Creek

HOLE NO: 760E 2688N

588422

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 0.3	1.90	SAND, medium to coarse grained, very clayey, grey, organic rich. E.O.H. in dark grey clay 0.3m.	14.86	12.50	1.14
		Down hole average			<u>1.14</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588423

AREA: COWPER POINT - BACK BEACH - in Blowhole Creek

HOLE NO: 800E 2688N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.10	SAND, medium to coarse grained, very silty and organic rich. Dark grey.	17.38	9.06	0.60
1.5 - 1.6	NA	SANDSTONE, weathered, calcareous E.O.H. 1.6m.	NA	NA	NA
		Down hole average			<u>0.60</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588424

AREA: COWPER POINT - BACK BEACH (east bank Blowhole Creek)

HOLE NO: 840E 2688N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 26.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.30	SAND, medium to coarse grained. grey. H.M. 5%+ (coarse)	8.13	1.42	6.22
1.5 - 3.0	4.60	AS ABOVE, with minor very coarse sand. H.M. 2-5%. Clay brown and grey, plastic 3.0m. E.O.H. 3.0m.	8.07	2.29	2.04
		Down hole average			4.13
0 - 3.0		Depth and grade at 1.5% cut-off			4.13

425

588425

APPENDIX 2.25

Intermediate Strandlines Line 2200N (1160E - 2080E)

428

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588426

AREA: COWPER POINT

HOLE NO: 1160E 2200N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.70	SAND, medium grained, well sorted, grey	5.32	0.32	1.24
1.5 - 3.5	5.50	AS ABOVE, with sand sized shell at end of sample.	6.87	0.23	1.61
3.5 - 5.5	7.00	AS ABOVE, with coarse shell fragments	3.58	0.72	3.32
5.5 - 6.0	1.90	AS ABOVE, shell rich, sandstone at 6.0m. EOH 6.0m.	7.94	3.34	2.51
		Down hole Average			<u>2.16</u>
0 - 6.0		Depth and Grade at 1.5% Cut-off			<u>2.16</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588427

AREA: COWPER POINT

HOLE NO: 1200E 2200N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.30	SAND, medium grained, well sorted, grey.	4.20	0.15	2.84
1.5 - 3.5	7.65	SAND, medium grained, well sorted, grey. Shell rich H.M. 1 - 2%	5.72	0.24	3.22
3.5 - 5.5	6.30	AS ABOVE, with some course shell fragments. H.M. 1 - 2%	4.35	0.45	2.53
5.5 - 6.0	5.95	AS ABOVE, with layers of very coarse shell and pebbles near bottom. H.M. 1 -2%. Sandstone at 6.0m. Drilled to 6.1m.	6.63	1.24	3.95
		EOH 6.1m.			
		Down hole Average			<u>2.96</u>
0 - 6.0		Depth and Grade at 1.5% Cut-off			<u>2.96</u>

428

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588428

AREA: COWPER POINT

HOLE NO: 1240E 2200N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	1.85	SAND, medium grained, well sorted, grey.	4.81	1.47	0.28
1.5 - 3.5	5.35	SAND, medium grained, well sorted, dark grey.	7.10	0.46	0.48
3.5 - 5.5	7.65	SAND, fine to medium grained, silty, moderate sorted. Rich fine shell and coarse shell fragments.	4.71	2.59	1.79
5.5 - 7.5	2.50	AS ABOVE, Sandstone at 5.7m. EOH 5.7m.	6.49	10.94	3.77
					100

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588429

AREA: COWPER POINT

HOLE NO: 1280E 2200N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.95	SAND, medium grained, well sorted, dark grey	8.70	0.20	0.29
1.5 - 3.5	4.90	AS ABOVE, with hard indurated layer at top, dark brown	9.31	0.04	0.61
3.5 - 5.5	5.65	SAND, medium to fine grained shell rich with some coarse fragments, moderately sorted, pale grey - creamy. (Marine sediment)	4.02	0.34	0.80
5.5 - 7.5	7.40	AS ABOVE	3.05	0.68	1.93
7.5 - 8.0	2.55	AS ABOVE, then sandstone coarse with shell and granule sized quartz particles.	14.12	4.02	1.55
		EOH 8.0m.			
		Down hole Average			<u>0.98</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588430

AREA: COWPER POINT

HOLE NO: 1320E 2200N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.55	SAND, medium grained, well sorted, grey	6.77	0.16	0.71
1.5 - 3.5	7.15	AS ABOVE, some induration, dark grey	5.79	0.09	0.79
3.5 - 5.5	5.35	AS ABOVE, thick indurated layer with peat overlying.	10.53	0.24	1.20
5.5 - 7.25	5.15	SAND, as above then coarse shell overlying, sandstone white calcareous	6.70	2.72	1.50
		EOH 7.25m.			
		Down hole Average			<u>0.85</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588431

AREA: COWPER POINT

HOLE NO: 1360E 2200N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.00	SAND, medium grained, well sorted, grey.	4.32	0.30	0.58
1.5 - 3.5	8.15	AS ABOVE	5.09	0.04	1.40
3.5 - 5.5	6.85	AS ABOVE, dark brown with minor induration	7.42	0.20	2.83
5.5 - 6.5	2.35	SAND, fine to medium grained, silty, moderate sorted, some fine pyritic sandstone at 6.5m. EOH 6.5m.	6.86	0.34	1.82
		Down hole Average			<u>1.71</u>
0 - 6.5		Depth and Grade at 1.5% Cut-off			<u>1.71</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588432

AREA: COWPER POINT

HOLE NO: 1400E 2200N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.55	SAND, medium grained, well sorted, grey	6.74	0.15	1.03
1.5 - 3.5	4.90	SAND, as above, dark brown, indurated	6.41	0.28	0.56
3.5 - 5.5	3.70	AS ABOVE	7.23	1.20	0.57
5.5 - 6.5	4.85	SAND, as above with some shell fragments and minor gravel	9.50	0.75	0.96
		EOH 6.75m. Sandstone.			
		Down hole Average			<u>0.74</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588433

AREA: COWPER POINT

HOLE NO: 1440E 2200N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.05	SAND, medium grained, well sorted, grey	3.50	0.09	0.51
1.5 - 3.5	6.90	AS ABOVE, dark brown, indurated	4.11	0.60	1.29
3.5 - 5.5	4.10	AS ABOVE, with gravel and shell fragments at bottom	6.44	10.83	3.00
5.5 - 5.7	0.45	CLAY, grey pyritic with sand and minor gravel and metamorphic rock fragments	18.58	3.34	3.23
		EOH 5.7m.			
		Down hole Average			<u>1.75</u>
0 - 5.7		Depth and Grade at 1.5% Cut-off			<u>1.75</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588434

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1480E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.95	SAND, fine to medium grained, dark grey grades to dark brown, organic rich (peaty)	7.99	0.75	1.09
1.5 - 3.5	6.70	SAND, medium grained, dark brown, indurated, H ₂ S, some gravel.	5.07	2.49	0.57
3.5 - 3.75	1.90	SAND, fine to medium grained, dark grey, silty, some gravel. Hit sandstone. EOH 3.75m. Sandstone.	6.39	2.92	2.39
		Down hole average			<u>0.90</u>

439
CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588435

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1520E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.45	SAND, fine to medium grained, grey grading to dark brown, silty, indurated.	6.65	0.78	0.80
1.5 - 3.5	7.45	SAND, medium grained, dark brown, some gravel layer, indurated.	4.07	3.24	1.02
3.5 - 4.5	3.30	SAND, medium to coarse grained, dark grey coarse shell, gravel. Hit sandstone. EOH 4.5m. Sandstone.	2.37	12.54	1.28
		Down hole average			<u>1.00</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588436

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1560E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	5.05	SAND, fine to medium grained, pale grey. H.M. 1%	1.32	0.20	2.14
1.5 - 3.5	7.35	SAND, fine to medium grained, dark brown, grey to medium grained grey then dark brown indurated, some gravel	3.38	1.15	3.26
3.5 - 3.75	0.70	SAND, medium to coarse grained, grey, abundant fine shell, some gravel. Hit sandstone.	4.38	24.96	2.00
3.75 - 4.5 No sample		PUSHED down to 4.5m. coarse to very coarse sandstone, abundant coarse shell, very hard to drill then into shell rich sandstone fine, very hard. EOH 4.5m.			
		Down hole average			<u>2.73</u>
0 - 3.75		Depth and grade at 1.5% cut-off			<u>2.73</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588437

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1600E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.10	SAND, fine to medium grained, light grey, grades to dark grey.	6.72	0.18	0.83
1.5 - 3.0	3.80	SAND, medium grained, dark brown, indurated, some gravel Hit sandstone. EOH 3.0m.	5.42	1.11	1.96
		Down hole Average			<u>1.40</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588438

430 AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1640E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	1.50	SAND, fine to medium grained, grey to dark grey, silty, organic rich.	7.66	0.99	1.00
1.5 - 1.9	1.30	SAND, fine to medium grained, dark brown, indurated. Hit weathered sandstone. EOH 1.9m. Sandstone.	5.12	4.32	1.34
		Down hole average			<u>1.07</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588439

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1680E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89
METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.65	SAND, fine to medium grained, light grey. H.M. trace.	2.26	0.14	0.88
1.5 - 2.9	2.90	AS ABOVE, grades to sand medium grained, dark brown, indurated, gravel and pebble layers. Hit sandstone. EOH 2.9m. Sandstone.	5.69	3.73	2.76
0 - 2.9		Down hole Average Depth and Grade at 1.5% Cut off			<u>1.79</u> <u>1.79</u>

440 CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588440

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1720E 2200N
(0.5m. south)

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89
METHOD: Rig

of peg

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.20	SAND, fine to medium grained, light grey grading to grey. H.M. trace.	3.16	0.10	2.35
1.5 - 3.0	3.60	SAND, medium grained, dark brown, indurated. Hit sandstone. EOH 3.0m. Sandstone.	5.74	5.32	1.39
0 - 1.5		Down hole Average Depth and Grade at 1.5% Cut off			<u>1.87</u> <u>2.35</u>

441

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588441

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1760E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.55	SAND, fine to medium grained, light grey grades to dark brown, indurated. H.M. trace.	5.48	0.18	1.52
1.5 - 2.9	3.45	SAND, fine to medium grained, dark brown, indurated, some gravel. Hit sandstone. H.M. trace. EOH 2.9m. Sandstone.	2.95	10.84	1.14
0 - 1.5		Down hole Average Depth and Grade at 1.5% Cut off			<u>1.34</u> <u>1.52</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588442

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1800E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.55	SAND, fine to medium grained, brown to dark brown, organic rich, silty.	8.89	1.29	1.24
1.5 - 2.75	3.70	SAND, fine to medium grained, dark brown, indurated. Hit sandstone. H.M. trace. EOH 2.75m. Sandstone.	6.46	5.08	0.93
		Down hole average			<u>1.10</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588443

440 AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1840E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	1.95	SAND, fine to medium grained, grey to dark grey.	4.59	0.32	1.74
1.5 - 2.5	3.05	SAND, fine to medium grained, grey grading to dark brown. Hit sandstone. EOH 2.5m. Sandstone.	4.38	5.76	<u>1.28</u>
0 - 1.5		Down hole Average Depth and Grade at 1.5% Cut off			<u>1.56</u> <u>1.74</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588444

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1880E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 18.1.89

METHOD: Rig

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.80	SAND, fine - medium grained, grey, grades to dark brown. Poss. indurated.	4.63	0.56	1.55
1.5 - 3.0	4.15	SAND, fine - medium grained, dark brown. Indurated. Hit sandstone. E.O.H. 3.0m. SANDSTONE PIEZOMETER HOLE	14.68	2.86	1.10
		Down hole average			<u>1.33</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588445

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1920E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 17.1.89
METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.00	SAND, fine to medium grained, dark grey, silty.	7.40	0.72	0.96
1.5 - 3.0	4.85	AS ABOVE, grades to dark brown, possibly indurated, abundant fine shell. Hit sandstone. EOH 3.0m. Sandstone.	5.59	1.40	1.70
Down hole Average					<u>1.33</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588446

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 1960E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 17.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 -1.5	4.75	SAND, fine to medium grained, light grey, hit dark grey layer.	4.24	0.20	0.60
1.5 - 2.8	3.10	SAND, fine to medium grained, dark brown, possible indurated, silty and clay rich. Hit sandstone. EOH 2.8m. Sandstone.	5.91	1.60	1.13
		Down hole Average			<u>0.85</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588447

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2000E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 17.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.50	SAND, fine to medium grained, grey to dark grey.	6.77	1.34	0.54
1.5 - 2.0	0.60	SAND, fine to medium grained, dark brown, possible indurated. Hit sandstone. EOH 2.0m. Sandstone.	9.86	7.04	0.48
		Down hole Average			<u>0.53</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588448

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2040E 2000N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 17.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	1.65	SAND, fine to medium grained, dark grey, silty.	8.00	2.94	0.93
1.5 - 1.9	1.50	SAND, fine to medium grained, grey, abundant fine shell. Hit sandstone. EOH 1.9m.	5.08	0.79	0.62
Down hole Average					<u>0.86</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588449

AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2080E 2200N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 17.1.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.20	SAND, fine to medium grained, yellow brown, clay rich. Hit sandstone. EOH 1.5m.	13.24	4.16	1.72
		Down hole average			<u>1.72</u>
o - 1.5		Depth and grade at 1.5% cut-off			<u>1.72</u>

588450

APPENDIX 2.26

Intermediate Strandlines 3150N (960E - 2120E)

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588451

AREA: COWPER POINT - BACK BEACH

HOLE NO: 960E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 22.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	5.60	SAND, medium - coarse grained, light grey, grading to grey.	2.07	0.15	0.78
1.5 - 3.5	7.80	SAND, medium - coarse grained, dark brown, indurated.	3.49	1.40	2.00
3.5 - 5.5	6.85	AS ABOVE, clay rich, silty.	4.56	9.74	0.71
5.5 - 7.0	4.10	AS ABOVE, clay rich, silty. Hit clay then sandstone.	7.57	13.94	0.94
		E.O.H. 7.0m. SANDSTONE			
		Down hole average			<u>1.14</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588452

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1000E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.10	SAND, fine - medium grained, dark brown, indurated, silty.	5.94	0.48	0.65
1.5 - 3.5	9.25	SAND, medium - coarse grained, dark brown, indurated, silty.	3.28	0.40	0.92
3.5 - 5.5	5.80	AS ABOVE, some gravel.	4.18	11.30	0.85
5.5 - 6.5	3.15	AS ABOVE, hit dark brown clay.	6.70	12.89	1.81
		E.O.H. 6.5m. CLAY (a lot of water in hole)			
		Down hole average			<u>0.97</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588453

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1040E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	5.35	SAND, medium - coarse grained, grey, grading to brown.	4.14	0.30	0.29
1.5 - 3.5	8.85	SAND, medium - coarse grained, dark brown, indurated.	2.27	1.89	0.37
3.5 - 5.5	5.50	AS ABOVE, some gravel. Silty, clay rich.	3.73	19.98	0.41
5.5 - 6.0	0.20	AS ABOVE, hit clay then sandstone.	11.44	59.89	0.78
		E.O.H. 6.0m. SANDSTONE			
		Down hole average			<u>0.40</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588454

AREA: COWPER-POINT - BACK BEACH

HOLE NO: 1080E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.50	SAND, medium - coarse grained, dark brown, indurated, silty.	7.11	0.93	0.60
1.5 - 3.5	8.20	AS ABOVE, some gravel.	5.36	2.52	1.14
3.5 - 5.5	8.50	AS ABOVE, silty, clay rich.	5.63	11.99	1.14
5.5 - 6.0	1.70	AS ABOVE, hig clay then sandstone.	7.11	20.10	3.03
		E.O.H. 6.0m. SANDSTONE			
		Down hole average			<u>1.16</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588455

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1120E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	1.65	SAND, dark brown, clay rich, silty. Organic rich at top.	12.51	0.92	2.86
1.5 - 3.5	6.70	SAND, medium grained, dark brown, indurated, clay rich, silty.	4.25	7.44	2.06
3.5 - 5.25	4.35	AS ABOVE, some gravel. Hit sandstone. E.O.H. 5.25m. SANDSTONE	4.76	25.46	0.90
0 - 3.5		Down hole average Depth and grade at 1.5% cut-off			<u>1.90</u> <u>2.40</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588456

480 AREA: COWPER POINT - BACK BEACH

HOLE NO: 1160E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	3.10	SAND, medium grained, brown to dark brown. Slithly indurated.	7.48	0.37	0.54
1.5 - 3.5	3.65	SAND, fine - medium grained, dark brown, indurated, silty.	7.20	2.35	1.94
3.5 - 5.25	8.35	AS ABOVE, grades to grey. Abundant shell. Hit weathered sandstone. E.O.H. 5.25m. SANDSTONE	11.59	14.06	1.00
		Down hole average			<u>1.23</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588457

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1200E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.90	SAND, fine - medium grained, light grey, grades to dark brown, indurated.	6.64	0.17	0.82
1.5 - 3.5	4.30	SAND, fine - medium grained, dark brown, indurated.	5.48	0.11	1.68
3.5 - 5.5	9.55	AS ABOVE, grades to medium - coarse grained, grey. Some gravel still present.	2.78	10.50	1.04
5.5 - 6.3	4.00	SAND, medium - coarse grained, light grey, abundant fine shell, some gravel. Hit sandstone.	2.92	21.15	0.99
		E.O.H. 6.3m. SANDSTONE			
		Down hole average			<u>1.18</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588458

AREA: COWPER-POINT - BACK BEACH

HOLE NO: 1240E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.00	SAND, fine - medium grained, dark brown, silty, indurated.	14.76	0.30	0.65
1.5 - 3.5	7.80	AS ABOVE, indurated.	6.82	0.27	2.39
3.5 - 5.5	5.80	AS A BOVE, grades to light grey, abundant fine shell. Hit sandstone. E.O.H. 5.5m. SANDSTONE	4.46	7.21	0.64
0 - 3.5		Down hole average Depth and grade at 1.5% cut-off			<u>1.30</u> <u>1.64</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588459

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1280E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.00	SAND, fine - medium grained, grey, grades to brown.	5.08	0.33	0.53
1.5 - 3.5	6.15	SAND, fine - medium grained, dark brown, indurated.	4.88	0.16	0.51
3.5 - 5.5	9.60	AS ABOVE, hit gravel, then grades to grey. Abundant shell at base.	2.93	7.01	0.46
5.5 - 6.5	4.70	SAND, fine - medium grained, light grey, abundant shell. Hit sandstone.	1.35	8.71	0.48
		E.O.H. 6.5m. SANDSTONE			
		Down hole average			<u>0.49</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588460

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1320E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89 METHOD: Rig

Interval (m)	Dry. Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.77	SAND, fine - medium grained, dark brown, silty. Organic, indurated.	11.32	0.96	0.55
1.5 - 3.5	5.45	SAND, fine - medium grained, dark brown, indurated, silty.	4.93	0.20	0.59
3.5 - 5.5	9.55	AS ABOVE, coarser with depth. Some gravel. Grades to grey. Abundant fine shall, some coarse shell.	4.63	9.37	0.37
5.5 - 7.5	4.95	SAND, fine - medium grained, light grey. Some gravel. Abundant and coarse shell. Hit sandstone - weathered. E.O.H. 7.5m. SANDSTONE PIEZOMETER HOLE	5.28	22.85	0.53
		Down hole average			<u>0.51</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588461

AREA: COWPER-POINT - BACK BEACH

HOLE NO: 1360E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.70	SAND, fine - medium grained, light grey	1.61	0.18	1.14
1.5 - 3.5	5.25	AS ABOVE, grades to dark brown, indurated.	5.79	0.07	0.71
3.5 - 5.5	4.65	SAND, fine - medium grained, dark brown, indurated, silty.	6.61	0.92	1.07
5.5 - 6.6	4.30	AS ABOVE, grades to grey, abundant fine and coarse shell. Hit sandstone.	3.01	4.93	0.58
		E.O.H. 6.6m. SANDSTONE			
		Down hole average			<u>0.90</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588462

AREA: COWPER POINT - BACK BEACH

HOLE NO 1400E, 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	5.75	SAND, fine - medium grained, light grey, grading to grey.	2.91	0.10	1.08
1.5 - 3.5	8.45	SAND, fine - medium grained, grey, grading to dark brown. indurated.	3.33	0.12	1.10
3.5 - 5.5	8.05	SAND, fine - medium grained, dark brown, indurated.	6.53	0.51	2.01
5.5 - 7.25	6.15	AS ABOVE, grades to grey, abundant shell. Hit sandstone. E.O.H. 7.25m. SANDSTONE	2.84	6.16	0.33
		Down hole average			<u>1.16</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588463

AREA: COWPER POINT - BACK BEACH

HOLE NO: 1440E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.65	SAND, fine - medium grained, grey grading to brown.	9.94	0.45	1.02
1.5 - 3.5	8.95	SAND, fine - medium grained, brown grading to dark brown, indurated.	3.95	0.06	1.33
3.5 - 5.5	6.20	SAND, fine - medium grained, dark brown, indurated.	4.69	2.87	1.23
5.5 - 7.0	6.75	AS ABOVE, grades to light grey. Abundant shell, gravel. Hit sandstone, weathered.	3.34	27.14	0.65
		E.O.H. 7.0m. SANDSTONE			
		Down hole average			<u>1.09</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588464

AREA: COWPER-POINT - BACK BEACH

HOLE NO: 1480E 3150N

LOGGED BY: ANDREW DOVE

DATE DRILLED: 23.1.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.80	SAND, fine - medium grained, light grey, grades to grey.	3.51	0.75	1.40
1.5 - 3.5	7.15	SAND, fine - medium grained, grading to dark brown. Hit indurated.	4.28	0.07	3.78
3.5 - 5.5	8.10	SAND, fine - medium grained, dark brown, indurated, silty.	5.64	5.88	1.81
5.5 - 7.0	4.30	AS ABOVE, grades to grey, abundant shell, silty. Hit weathered sandstone. E.O.H. 7.0m. SANDSTONE	18.19	8.52	0.47
		Down hole average			<u>2.00</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>2.41</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588465

AREA: COWPER POINT

HOLE NO: 1520E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.85	SAND, medium grained, well sorted, grey then brown.	5.27	0.17	0.76
1.5 - 3.5	7.95	SAND, as above, brownish grey.	5.99	0.73	1.45
3.5 - 3.8	1.00	SAND, medium grained, silty, grey, then sandstone, calcareous weathered sandstone 3.8m. EOH 3.8m.	6.30	4.56	0.95
Down hole Average					<u>1.14</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588466

AREA: COWPER POINT

HOLE NO: 1560E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.25	SAND, medium grained, well sorted, pale grey.	2.92	0.13	0.91
1.5 -3.5	7.40	AS ABOVE, brown	4.75	0.36	1.34
3.5 - 4.5	4.35	SAND, fine to medium grained, moderate sorted, sand sized shell, Sandstone at 4.5m. EOH 4.5m.	4.23	3.06	1.34
Down hole Average					<u>1.20</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588467

AREA: COWPER POINT

HOLE NO: 1600E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	5.35	SAND, medium grained, silty, moderate sorted, dark grey.	8.57	0.35	2.01
1.5 - 3.5	8.80	SAND, medium grained, well sorted, indurated, dark brown.	3.91	0.99	1.20
3.5 - 3.75	1.85	SAND, medium grained, moderate sorted, shell sand and large fragments, creamy grey. EOH 3.75m.	5.09	4.38	2.51
		Down hole Average			<u>1.61</u>
0 - 3.75		Depth and Grade at 1.5% Cut-off			<u>1.61</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588468

AREA: COWPER POINT

HOLE NO: 1640E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.45	SAND, medium grained, well sorted, dark grey.	6.42	0.28	1.51
1.5 - 3.0	5.25	AS ABOVE EOH 3.0m. Sandstone	4.18	1.49	2.05
		Down hole Average			<u>1.78</u>
0 - 3.0		Depth and Grade at 1.5% Cut-off			<u>1.78</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588469

AREA: COWPER POINT

HOLE NO: 1680E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.00	SAND, medium grained, well sorted, grey	9.03	0.37	2.71
1.5 - 3.0	7.60	SAND, fine to medium grained, silty, moderate sorting. Coarse shell at 2.9 - 3.0m. EOH 3.0m. Sandstone.	8.67	3.58	2.34
		Down hole average			<u>2.52</u>
0 - 3.0		Depth and grade at 1.5% cut-off			<u>2.52</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588470

AREA: COWPER POINT

HOLE NO: 1720E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	3.10	SAND, medium grained, well sorted, grey	5.34	0.47	1.96
1.5 - 2.6	3.55	AS ABOVE, with shell pebbles and weathered sandstone. EOH 2.6m. Sandstone	5.47	17.88	1.86
		Down hole average			<u>1.92</u>
0 - 2.6		Depth and grade at 1.5% cut-off			<u>1.92</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588471

AREA: COWPER POINT

HOLE NO: 1760E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	1.70	SAND, medium grained, well sorted, grey.	4.20	0.50	1.04
1.5 - 3.0	2.65	AS ABOVE, brownish grey. EOH 3.0m. Sandstone.	4.37	1.28	1.69
		Down hole Average			<u>1.34</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588472

AREA: COWPER POINT

HOLE NO: 1800E 3150N

473 LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.75	SAND, medium grained, well sorted, pale grey.	5.05	0.18	0.93
1.5 - 3.0	5.25	AS ABOVE, brown well weathered shelly sandstone at 3.0m. EOH 3.0m. Sandstone.	5.19	0.57	1.00
		Down hole Average			<u>0.97</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588473

AREA: COWPER POINT

HOLE NO: 1840E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.50	SAND, medium grained, well sorted, pale grey.	3.66	0.13	1.27
1.5 - 3.3	6.00	AS ABOVE, brown with shell grains or weathered sandstone at bottom. EOH 3.3m. Sandstone.	5.95	0.17	2.11
0 - 3.3		Down hole Average Depth and Grade at 1.5% Cut-off			<u>1.73</u> <u>1.73</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588474

AREA: COWPER POINT

HOLE NO: 1880E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.85	SAND, medium grained, well sorted, grey and dark brown.	12.37	0.20	1.80
1.5 - 3.0	5.40	AS ABOVE, with shell grains or weathered calcareous sandstone at 3.0m. EOH 3.0m. Sandstone.	8.10	0.92	1.29
		Down hole average			<u>1.55</u>
0 - 1.5		Depth and grade at 1.5% cut-off			<u>1.80</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588475

AREA: COWPER POINT

HOLE NO: 1920E 3150M

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.85	SAND, medium grained, well sorted, grey	5.02	0.14	1.38
1.5 - 2.7	1.20	AS ABOVE, Sandstone at 2.7m. EOH 2.7m.	8.20	0.96	1.06
		Down hole Average			<u>1.24</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588476

AREA: COWPER POINT

HOLE NO: 1960E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	2.95	SAND, medium grained, well sorted, grey at top then grown, indurated)	7.36	0.22	1.20
1.5 - 2.7	2.55	AS ABOVE 2.7m. Sandstone EOH	6.90	2.27	2.19
		Down hole Average			<u>1.64</u>
0 - 2.7		Depth and grade at 1.5% cut-off			<u>1.64</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

538477

AREA: COWPER POINT

HOLE NO: 2000E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	1.50	SAND, medium grained, well sorted, grey.	12.91	0.48	1.45
1.5 - 3.0	3.15	AS ABOVE, sandstone at 3.0m. EOH 3.0m.	7.37	2.16	1.11
Down hole Average					<u>1.28</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588478

AREA: COWPER POINT

HOLE NO: 2040E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 9.2.89

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5	1.15	SAND, medium grained, silty, moderate sorting, dark grey. (Small sample ground lifting, sample loss due to formation. 2 attempts at hole).	11.93	0.50	2.45
1.5 - 3.0	7.90	SAND, fine grained, silty with fine shell. Sandstone at 3.0m. EOH 3.0m.	15.45	1.33	2.49
		Down hole Average			<u>2.47</u>
0 - 3.0		Depth and grade at 1.5% cut-off			<u>2.47</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588479

AREA: COWPER POINT

HOLE NO: 2080E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89

METHOD: HAND DRILLED

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	2.35	SAND, medium grained, well sorted, peaty at top. Brown plastic clay 1.5m. Hole located in Swamp.	11.40	0.89	1.11
		Down hole Average			<u>1.11</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588430

AREA: COWPER POINT

HOLE NO: 2120E 3150N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89

METHOD: HAND DRILLED

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.4	3.75	SAND, medium grained, well sorted, peaty at top, dark brown, silty. Clay brown plastic at 1.4 - 1.5 EOH 1.5m. Hole located in swamp.	5.92	0.45	0.96
		Down hole average			0.96

481

538431

APPENDIX 2.27

Miscellaneous

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

533432

AREA: COWPER POINT - Site Investigation

HOLE NO: CPSI Sea Elephant

LOGGED BY: GRAHAM LEE

Rd. 500m. Sth of line 2688 and 30m. East of Road.

DATE DRILLED: 9.2.89

ANG: 251345m. E 5585360m. N

METHOD: RIG

Interval (m)	Dry Wt. (kg)	Description	% Slime	% + 1000 um	% H.M.
0 - 1.5		SAND, medium to coarse grained, moderately sorted, greyish brown. 1.0m. sandy clay grading down to stiff brown and orange mottled clay.			
1.5 - 3.5		CLAY, as above to 2.5m. 2.5 - 3.0m. SAND very coarse, granitic. 3.0 - 3.5m. CLAY orange-yellow, plastic.			
3.5 - 5.5		CLAY, plastic, mostly grey, poor foundation.			

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588433

433 AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2320E 4320N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89 METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	5.05	SAND, medium grained, well sorted, amber. H.M. Tr.	1.63	0.11	1.05
1.5 - 3.5	6.60	AS ABOVE	1.10	0.08	4.09
3.5 - 5.5	7.95	SAND, medium grained, well sorted, pale amber. H.M. 1-2%.	0.86	0.20	2.80
5.5 - 7.5	9.05	AS ABOVE, medium - coarse.	1.05	2.31	2.18
7.5 - 9.5	8.55	AS ABOVE, coarse grained with some very coarse and shell fragments. Minor gravel. H.M. 1-2%.	1.10	3.89	3.08
		E.O.H. 9.5m. SANDSTONE			
		PIEZOMETER HOLE			
		Down hole Average			<u>2.72</u>
0 - 9.5		Depth and Grade at 1.5% Cut-off			<u>2.72</u>

CLIENT: NATIONAL MINERAL SANDS

TITLE NO: E.L. 41/88

588434

487 AREA: COWPER POINT - HIGH DUNE

HOLE NO: 2308E 4378N

LOGGED BY: GRAHAM LEE

DATE DRILLED: 6.2.89

METHOD: Rig

Interval (m)	Dry Wt. (kg)	Description	% Slime	%+1000 um	% H.M.
0 - 1.5	4.45	SAND, medium, well sorted, pale brown.	0.99	0.13	2.80
1.5 - 3.5	6.70	SAND, coarse with some very coarse moderate sorted, amber. Some shell. H.M. 1 - 2%	0.64	1.10	3.67
3.5 - 5.5	6.75	SAND, medium - coarse, pale grey. Well sorted. H.M. 1-2%.	0.67	2.17	2.78
5.5 - 7.5	3.70	SAND, medium - coarse. Moderate sorted, silty, dark brownish grey with coarse shell fragments.	3.89	12.40	0.65
		SANDSTONE 7.5m.			
		E.O.H. 7.5m.			
		PIEZOMETER HOLE			
		Down hole average			<u>2.45%</u>
0 - 5.5		Depth and grade at 1.5% cut-off			<u>3.1%</u>

480
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REPORT NO 11/89

VOLUME 4

(APPENDIX 3 to APPENDIX 5)

Evaluation of Mineral Sand Resources
at

Cowper Point

King Island

E.L. 41/88

Report Prepared for National Mineral Sands Pty. Ltd.

A. Dove
G. Lee

May, 1989

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APPENDIX 3

R.H.F. Laboratory Result Certificates.

Note: "O" following "% Heavy Mineral" designates an offset hole.

588488



RHF

Laboratory Services

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

31st March, 1989

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

ATTENTION Mr. G. Lee

Dear Sir,

Please find enclosed raw data documentation for the Cowper Point Survey.

Yours faithfully,
For RHF LABORATORY SERVICES

A handwritten signature in dark ink, appearing to read 'G.P. Dowson', is written over the typed name.

G.P. Dowson,
Manager.

GPD;CJH
Encl.

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 1920E 4350N	0-1.5	3.30	0.2118	0.06	99.94	0.89	5.48
Cp 1920E 4350N	1.5-3.5	6.25	0.0029	0.01	99.99	0.40	5.74
Cp 1920E 4350N	3.5-5.5	6.80	0.0000	0.06	99.94	0.47	3.05
Cp 1920E 4350N	5.5-7.5	7.05	0.0037	0.04	99.96	0.91	2.83
Cp 1920E 4350N	7.5-9.5	6.10	0.4744	1.76	98.24	3.80	1.27
Cp 1920E 4350N	9.5-10.5	3.85	6.2870	2.02	97.98	3.17	1.30
Cp 1960E 4350N	0-1.5	3.20	0.1306	0.07	99.93	0.71	4.96
Cp 1960E 4350N	1.5-3.5	4.45	0.0034	0.08	99.92	0.97	4.01
Cp 1960E 4350N	3.5-5.5	4.40	0.0000	0.03	99.97	1.41	4.93
Cp 1960E 4350N	5.5-7.5	6.80	0.0075	0.01	99.99	0.61	3.18
Cp 1960E 4350N	7.5-9.5	7.70	0.0499	0.14	99.86	2.29	3.19
Cp 1960E 4350N	9.5-11.5	5.55	3.7121	7.65	92.35	5.25	0.90
Cp 2000E 4350N	0-1.5	2.05	0.9239	0.21	99.79	1.07	4.39
Cp 2000E 4350N	1.5-3.5	6.15	0.0135	0.03	99.97	0.56	3.43
Cp 2000E 4350N	3.5-5.5	6.45	0.0460	0.02	99.98	0.44	2.11
Cp 2000E 4350N	5.5-7.5	7.90	0.0552	0.21	99.79	1.55	2.78
Cp 2000E 4350N	7.5-9.5	7.57	0.1704	0.42	99.58	0.71	1.62
Cp 2000E 4350N	9.5-10.25	3.40	4.2894	1.95	98.05	0.70	2.38
Cp 2040E 4350N	0-1.5	3.85	0.2161	0.09	99.91	1.21	4.20
Cp 2040E 4350N	1.5-3.5	6.95	0.0020	0.02	99.98	0.37	2.32
Cp 2040E 4350N	3.5-5.5	7.25	0.0000	0.09	99.91	0.93	3.26
Cp 2040E 4350N	5.5-7.5	7.25	0.0607	0.16	99.84	1.08	1.94
Cp 2040E 4350N	7.5-9.5	8.10	1.6558	1.65	98.35	0.69	2.99
Cp 2080E 4350N	0-1.5	3.25	0.3048	0.14	99.86	0.72	3.57
Cp 2080E 4350N	1.5-3.5	7.55	0.0012	0.06	99.94	0.51	3.19
Cp 2080E 4350N	3.5-5.5	7.15	0.0371	0.23	99.77	1.29	2.77
Cp 2080E 4350N	5.5-7.5	8.10	1.7810	2.53	97.47	0.44	2.50
Cp 2120E 4350N	0-1.5	4.30	0.1114	0.12	99.88	1.18	2.35
Cp 2120E 4350N	1.5-3.5	7.95	0.0443	0.12	99.88	1.33	3.58
Cp 2120E 4350N	3.5-5.5	9.20	0.3180	1.17	98.83	0.30	2.56
Cp 2120E 4350N	5.5-6.0	1.80	5.3817	4.69	95.31	2.07	2.51
Cp 2160E 4350N	0-1.5	4.00	0.1178	0.07	99.93	0.59	2.77
Cp 2160E 4350N	1.5-3.5	6.75	0.0070	0.08	99.92	0.85	2.64
Cp 2160E 4350N	3.5-5.5	7.15	0.0227	0.04	99.96	0.57	2.17
Cp 2160E 4350N	5.5-7.5	8.10	0.1531	0.40	99.60	1.74	2.90
Cp 2160E 4350N	7.5-9.5	8.15	0.6072	2.45	97.55	0.49	2.71
Cp 2160E 4350N	9.5-10.5	5.55	7.6180	3.48	96.52	2.31	3.20

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 2200E 4350N	0-1.5	2.90	0.3221	0.15	99.85	0.74	1.99
Cp 2200E 4350N	1.5-3.5	6.25	0.0210	0.04	99.96	0.51	3.10
Cp 2200E 4350N	3.5-5.5	7.20	0.0068	0.05	99.95	0.86	3.50
Cp 2200E 4350N	5.5-7.5	6.95	0.2365	0.72	99.28	1.64	2.32
Cp 2200E 4350N	7.5-9.5	7.60	1.7420	2.79	97.21	1.47	2.76
Cp 2200E 4350N	9.5-10.0	4.50	3.1189	7.71	92.29	3.04	1.37
Cp 2240E 4350N	0-1.5	2.80	0.1818	0.13	99.87	0.86	3.47
Cp 2240E 4350N	1.5-3.5	7.50	0.0021	0.05	99.95	0.39	3.22
Cp 2240E 4350N	3.5-5.5	8.20	0.0498	0.13	99.87	0.36	3.76
Cp 2240E 4350N	5.5-7.5	8.10	1.2528	3.21	96.79	0.61	2.23
Cp 2240E 4350N	7.5-8.5	5.70	2.4961	2.13	97.87	1.53	2.20
Cp 2280E 4350N	0-1.5	3.10	0.0632	0.08	99.92	0.69	1.17
Cp 2280E 4350N	1.5-3.5	7.00	0.0070	0.05	99.95	0.72	3.72
Cp 2280E 4350N	3.5-5.5	8.65	0.0341	0.05	99.95	0.45	4.39
Cp 2280E 4350N	5.5-7.5	8.50	0.2148	0.89	99.11	0.30	2.59
Cp 2280E 4350N	7.5-9.5	9.25	5.3618	5.57	94.43	0.45	2.45
Cp 2320E 4350N	0-1.5	3.80	0.0171	0.09	99.91	0.92	1.53
Cp 2320E 4350N	1.5-3.5	7.95	0.0828	0.90	99.10	0.54	3.73
Cp 2320E 4350N	3.5-5.5	8.25	0.0261	0.28	99.72	0.58	4.61
Cp 2320E 4350N	5.5-7.5	6.50	1.7143	2.55	97.45	0.38	3.00
Cp 2320E 4350N	7.5-8.0	1.27	16.1701	12.32	87.68	1.55	2.36
Cp 2360E 4350N	0-1.5	4.15	0.0586	0.10	99.90	0.51	2.23
Cp 2360E 4350N	1.5-3.5	6.30	0.0543	0.11	99.89	0.46	3.70
Cp 2360E 4350N	3.5-5.5	8.35	1.1699	2.45	97.55	0.30	2.28
Cp 2360E 4350N	5.5-7.5	6.80	1.0519	2.47	97.53	0.54	1.32
Cp 2360E 4350N	7.5-9.0	4.27	3.6037	6.18	93.82	5.66	0.44
Cp 2400E 4350N	0-1.5	4.25	0.0605	0.09	99.91	0.56	2.07
Cp 2400E 4350N	1.5-3.5	8.75	0.0163	0.08	99.92	0.82	2.51
Cp 2400E 4350N	3.5-5.5	7.30	0.0374	0.35	99.95	0.28	7.48
Cp 2400E 4350N	5.5-7.5	7.30	0.3084	0.88	99.42	0.45	0.40
Cp 2400E 4350N	7.5-9.5	6.30	4.9490	8.23	91.71	1.20	0.79
Cp 2400E 4350N	9.5-11.0	10.40	6.1374	10.37	89.33	3.32	0.12
Cp 2440E 4350N	0-1.5	3.70	0.1227	0.34	99.66	0.48	1.19
Cp 2440E 4350N	1.5-3.5	7.50	0.0045	0.04	99.96	0.47	1.32
Cp 2440E 4350N	3.5-5.5	8.15	0.0287	0.11	99.89	0.45	1.26
Cp 2440E 4350N	5.5-7.5	7.72	0.1047	0.04	99.96	0.76	1.48
Cp 2440E 4350N	7.5-9.5	8.35	2.3959	5.04	94.96	0.48	0.45
Cp 2440E 4350N	9.5-11.5	8.00	8.8226	11.33	88.67	3.18	0.65
Cp 2440E 4350N	11.5-12.8	5.80	9.3910	15.40	84.60	1.67	0.35

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R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH 	TOTAL WEIGHT KG	+ 2mm		+1000u		-1000u		SLIME		HEAVY (MINERAL)	
			%		%		%		%		%	
CP 2460E	4350N	0-1.5	3.90	0.1359	0.26	99.72	0.75	0.80	0			
CP 2460E	4350N	1.5-3.5	7.05	0.0007	0.05	99.95	0.81	0.87	0			
CP 2460E	4350N	3.5-5.5	7.25	0.1103	0.13	99.87	0.86	1.10	0			
CP 2460E	4350N	5.5-7.5	7.70	0.1925	0.49	99.51	1.01	0.65	0			
CP 2460E	4350N	7.5-9.5	8.10	3.3201	5.30	94.70	1.42	0.61	0			
CP 2460E	4350N	9.5-11.5	10.90	7.4065	10.98	89.02	2.26	0.62	0			
CP 2460E	4350N	11.5-12.0	2.10	5.3214	8.85	91.15	4.18	1.12	0			
CP 2520E	4350N	0-1.5	3.75	0.0851	0.11	99.89	1.40	1.85	0			
CP 2520E	4350N	1.5-3.5	6.75	0.0013	0.03	99.97	0.65	1.26	0			
CP 2520E	4350N	3.5-5.5	7.95	0.0150	0.07	99.93	0.69	1.94	0			
CP 2520E	4350N	5.5-7.5	8.75	0.6472	1.70	98.30	0.81	0.40	0			
CP 2520E	4350N	7.5-9.5	7.95	5.3491	10.57	89.42	1.03	0.34	0			
CP 2520E	4350N	9.5-11.5	7.60	6.5942	8.48	91.52	3.31	0.31	0			
CP 2520E	4350N	11.5-12.0	2.20	9.7877	19.62	89.38	6.58	2.99	0			
CP 2560E	4350N	0-1.5	2.20	0.1291	0.05	99.95	1.47	1.94				
CP 2560E	4350N	1.5-3.5	4.40	0.0053	0.01	99.99	0.32	1.77				
CP 2560E	4350N	3.5-5.5	4.30	0.0056	0.01	99.99	0.23	1.57				
CP 2560E	4350N	5.5-7.5	3.55	0.0476	0.02	99.98	0.40	1.46				
CP 2560E	4350N	7.5-9.5	1.95	0.0431	0.01	99.99	0.56	1.33				
CP 2600E	4350N	0-1.5	2.20	0.1468	0.10	99.90	1.26	1.10				
CP 2600E	4350N	1.5-3.5	3.25	0.0092	0.04	99.96	0.42	0.76				
CP 2600E	4350N	3.5-5.5	3.30	0.0067	0.01	99.99	0.36	1.45				
CP 2600E	4350N	5.5-7.5	3.60	0.0031	0.05	99.95	0.52	1.03				
CP 2600E	4350N	7.5-9.5	5.50	0.0046	0.05	99.95	0.86	1.58				
CP 2600E	4350N	9.5-11.5	3.30	0.0667	0.02	99.98	0.59	1.91				
CP 2640E	4350N	0-1.5	3.30	0.0573	0.05	99.95	0.40	1.06				
CP 2640E	4350N	1.5-3.5	3.70	0.0073	0.02	99.98	0.18	1.15				
CP 2640E	4350N	3.5-5.5	3.80	0.0000	0.02	99.98	0.17	1.27				
CP 2640E	4350N	5.5-7.5	3.30	0.0018	0.00	100.00	0.35	1.13				
CP 2640E	4350N	7.5-9.5	3.35	0.0110	0.00	100.00	0.55	0.92				
CP 2640E	4350N	9.5-11.5	2.75	0.0044	0.01	99.99	0.43	1.01				
CP 2680E	4350N	0-1.5	1.55	0.1895	0.04	99.95	0.97	1.33				
CP 2680E	4350N	1.0-2.0	1.85	0.0114	0.01	99.99	0.75	2.09				
CP 2680E	4350N	2.0-3.0	1.70	0.0005	0.00	100.00	0.39	2.04				
CP 2680E	4350N	3.0-4.0	1.65	0.0000	0.03	99.97	0.72	2.80				
CP 2680E	4350N	4.0-5.0	1.55	0.0185	0.01	99.99	0.36	2.46				
CP 2680E	4350N	5.0-6.0	1.70	0.3832	0.14	99.86	0.45	2.61				
CP 2680E	4350N	6.0-7.0	1.60	0.0100	0.01	99.99	0.38	2.82				
CP 2680E	4350N	7.0-8.0	1.60	0.0219	0.02	99.98	0.43	2.32				
CP 2680E	4350N	8.0-9.0	1.35	0.0232	0.02	99.99	0.41	2.79				
CP 2680E	4350N	9.0-10.0	1.60	0.0075	0.01	99.99	0.56	2.03				

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

SOLE NUMBER	DEPTH	TOTAL WEIGHT	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 2520E 4350N	0-1.0	1.15	0.6835	0.13	99.87	1.26	1.95
Cp 2520E 4350N	1.0-2.0	2.00	0.0905	0.03	99.97	0.32	2.16
Cp 2520E 4350N	2.0-3.0	1.70	0.0488	0.03	99.97	0.42	1.75
Cp 2520E 4350N	3.0-4.0	2.00	0.0095	0.05	99.95	0.82	2.27
Cp 2520E 4350N	4.0-5.0	1.85	0.0324	0.01	99.99	0.26	2.02
Cp 2520E 4350N	5.0-6.0	1.85	0.0227	0.01	99.99	0.25	1.88
Cp 2520E 4350N	6.0-7.0	1.85	0.0168	0.01	99.99	0.27	1.94
Cp 2520E 4350N	7.0-8.0	1.70	0.0412	0.01	99.99	0.30	2.16
Cp 2520E 4350N	8.0-9.0	1.75	0.0434	0.01	99.99	0.27	1.83
Cp 2520E 4350N	9.0-10.0	1.85	0.0189	0.01	99.99	0.29	1.32
Cp 1640E 4650N	0-1.5	2.85	0.3200	0.18	99.82	1.31	1.04
Cp 1640E 4650N	1.5-3.5	6.40	0.0752	0.19	99.81	4.40	1.23
Cp 1640E 4650N	3.5-4.0	1.50	2.6747	3.07	96.93	3.51	1.10
Cp 1680E 4650N	0-1.5	6.85	0.1034	0.57	99.43	9.59	1.48
Cp 1680E 4650N	1.5-3.5	6.55	0.4469	1.31	98.69	8.18	1.96
Cp 1680E 4650N	3.5-4.5	3.90	6.2295	5.96	94.04	2.95	0.80
Cp 1720E 4650N	0-1.5	1.90	0.0316	0.17	99.83	2.71	1.75
Cp 1720E 4650N	1.5-3.5	5.70	0.0574	0.33	99.67	3.78	2.18
Cp 1720E 4650N	3.5-5.0	4.35	2.7940	6.91	93.09	5.02	1.10
Cp 1760E 4650N	0-1.5	4.25	0.0440	0.05	99.95	1.03	3.02
Cp 1760E 4650N	1.5-3.5	6.95	0.0000	0.02	99.98	0.53	2.53
Cp 1760E 4650N	3.5-5.5	7.55	0.0000	0.00	100.00	0.40	2.38
Cp 1760E 4650N	5.5-7.5	7.15	0.4557	0.45	99.55	1.35	1.86
Cp 1760E 4650N	7.5-9.5	5.40	0.6369	2.33	97.67	3.31	1.86
Cp 1760E 4650N	9.5-10.5	3.25	2.2674	8.65	91.35	12.35	3.83
Cp 1800E 4650N	0-1.5	3.80	0.0653	0.04	99.96	0.46	2.90
Cp 1800E 4650N	1.5-3.5	7.30	0.0038	0.19	99.81	0.93	1.68
Cp 1800E 4650N	3.5-5.5	7.50	0.5080	0.37	99.63	1.85	2.10
Cp 1800E 4650N	5.5-7.2	6.90	4.3323	5.59	94.41	1.59	2.60
Cp 1840E 4650N	0-1.5	4.50	0.0916	0.04	99.96	0.72	2.33
Cp 1840E 4650N	1.5-3.3	7.50	0.0034	0.09	99.81	0.40	1.50
Cp 1840E 4650N	3.5-5.8	6.55	0.7647	0.20	99.80	1.39	2.49
Cp 1840E 4650N	5.8-6.9	7.65	3.4213	2.46	97.54	0.69	2.77

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY (MINERAL)
Cp 1880E 4650N	0-1.5	3.00	0.0337	0.12	99.88	2.10	1.79
Cp 1880E 4650N	1.5-3.5	7.10	0.0021	0.07	99.93	0.74	2.02
Cp 1880E 4650N	3.5-5.5	7.60	0.3701	0.29	99.71	0.93	2.19
Cp 1880E 4650N	5.5-7.5	8.65	0.8213	0.70	99.30	0.82	2.28
Cp 1880E 4650N	7.5-7.75	0.90	8.0978	6.17	91.83	1.73	1.30
Cp 1920E 4650N	0-1.5	3.40	0.0403	0.05	99.95	0.94	3.07
Cp 1920E 4650N	1.5-3.5	5.65	0.0722	0.24	99.76	2.16	3.17
Cp 1920E 4650N	3.5-5.5	8.60	0.0000	0.02	99.98	1.15	2.74
Cp 1920E 4650N	5.5-7.5	8.60	0.0126	0.03	99.97	1.08	2.01
Cp 1920E 4650N	7.5-9.5	7.20	0.0396	0.08	99.92	0.97	2.27
Cp 1920E 4650N	9.5-11.5	8.50	0.1153	0.21	99.79	0.88	2.16
Cp 1920E 4650N	11.5-13.5	6.60	0.0000	2.47	97.53	2.50	2.88
Cp 1960E 4650N	0-1.5	4.85	0.1891	0.10	99.90	1.53	2.52
Cp 1960E 4650N	1.5-3.5	6.90	0.0057	0.05	99.95	0.56	2.13
Cp 1960E 4650N	3.5-5.5	7.00	0.0000	0.03	99.97	0.67	1.72
Cp 1960E 4650N	5.5-7.5	7.15	0.0000	0.05	99.95	1.92	2.52
Cp 1960E 4650N	7.5-9.5	8.10	0.1396	0.26	99.74	0.59	2.72
Cp 1960E 4650N	9.5-11.5	8.75	3.0867	2.59	97.41	0.55	2.99
Cp 2000E 4650N	0-1.5	5.00	0.0000	0.15	99.85	1.26	3.01
Cp 2000E 4650N	1.5-3.5	7.00	0.0000	0.05	99.95	0.69	2.87
Cp 2000E 4650N	3.5-5.5	4.60	0.0678	0.05	99.95	1.22	2.94
Cp 2000E 4650N	5.5-7.5	6.50	0.0012	0.05	99.95	1.00	2.33
Cp 2000E 4650N	7.5-9.5	7.65	0.0000	0.02	99.98	0.77	2.71
Cp 2000E 4650N	9.5-11.5	8.20	0.0000	0.04	99.96	0.82	2.56
Cp 2000E 4650N	11.5-13.5	6.90	0.0000	0.02	99.98	0.94	1.87
Cp 2000E 4650N	13.5-15.5	7.35	0.3073	0.11	99.89	1.23	2.87
Cp 2000E 4650N	15.5-17.5	8.65	0.1936	1.24	98.76	0.84	3.29
Cp 2000E 4650N	17.5-19.0	5.10	5.7035	7.35	92.65	0.81	2.24
Cp 2040E 4650N	0-1.5	3.25	0.0880	0.33	99.67	0.61	2.00
Cp 2040E 4650N	1.5-3.5	5.40	0.0037	0.02	99.98	0.70	1.55
Cp 2040E 4650N	3.5-5.5	6.85	0.0000	0.02	99.98	0.71	1.70
Cp 2040E 4650N	5.5-7.5	6.50	0.0000	0.02	99.98	0.90	1.54
Cp 2040E 4650N	7.5-9.5	2.30	0.0000	0.17	99.83	0.81	2.61
Cp 2040E 4650N	9.5-11.5	6.75	0.0000	0.02	99.98	0.56	1.71
Cp 2040E 4650N	11.5-13.5	7.90	0.0020	0.01	99.99	1.12	1.88
Cp 2040E 4650N	13.5-15.5	8.00	0.0020	0.05	99.95	0.88	2.95
Cp 2040E 4650N	15.5-17.5	8.40	0.1736	0.10	99.90	0.79	3.60
Cp 2040E 4650N	17.5-19.5	9.15	1.3048	2.17	97.83	0.78	2.68
Cp 2040E 4650N	19.5-21.5	6.30	2.0203	9.30	90.70	14.17	12.29

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R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 2080E 4650N	0-1.5	3.50	0.1197	0.28	99.72	-1.74	3.18
Cp 2080E 4650N	1.5-3.5	6.20	0.0090	0.43	99.57	1.18	3.41
Cp 2080E 4650N	3.5-5.5	6.15	0.0039	0.21	99.79	1.08	2.95
Cp 2080E 4650N	5.5-7.5	6.05	0.0000	0.08	99.92	2.00	3.46
Cp 2080E 4650N	7.5-9.5	5.90	0.0000	0.28	99.72	1.64	2.08
Cp 2080E 4650N	9.5-11.5	7.55	0.0004	0.10	99.90	2.44	2.87
Cp 2080E 4650N	11.5-13.5	7.45	0.1689	0.27	99.73	2.97	4.98
Cp 2080E 4650N	13.5-15.5	8.20	0.7588	2.90	97.10	2.89	2.56
Cp 2080E 4650N	15.5-16.5	6.85	5.3336	5.77	94.23	5.79	3.55
Cp 2120E 4650N	0-1.5	3.90	0.0672	0.15	99.85	1.54	2.33
Cp 2120E 4650N	1.5-3.5	6.15	0.0046	0.05	99.95	1.12	1.94
Cp 2120E 4650N	3.5-5.5	6.50	0.0029	0.07	99.93	0.92	1.31
Cp 2120E 4650N	5.5-7.5	6.80	0.0037	0.04	99.96	0.98	1.60
Cp 2120E 4650N	7.5-9.5	7.95	0.1423	0.22	99.78	1.25	5.66
Cp 2120E 4650N	9.5-11.5	7.95	0.2030	0.76	99.24	2.96	3.03
Cp 2120E 4650N	11.5-13.5	7.30	2.3173	6.49	93.51	1.58	1.34
Cp 2120E 4650N	13.5-14.0	1.35	7.8607	13.37	86.63	9.65	2.49
Cp 2160E 4650N	0-1.5	3.95	0.1375	0.35	99.65	1.25	1.80
Cp 2160E 4650N	1.5-3.5	6.70	0.0237	0.15	99.85	0.83	1.34
Cp 2160E 4650N	3.5-5.5	7.20	0.1679	0.29	99.71	1.24	2.27
Cp 2160E 4650N	5.5-7.5	7.30	0.5005	0.21	99.79	1.57	4.90
Cp 2160E 4650N	7.5-9.5	9.25	1.2871	2.83	97.17	1.24	2.74
Cp 2160E 4650N	9.5-11.0	3.55	3.1580	3.26	96.74	2.91	1.59
Cp 2200E 4650N	0-1.5	4.10	0.2937	1.13	98.87	1.36	4.25
Cp 2200E 4650N	1.5-3.5	8.45	0.2181	0.15	99.85	1.00	4.83
Cp 2200E 4650N	3.5-5.5	10.70	0.6378	1.80	98.20	0.87	2.93
Cp 2200E 4650N	5.5-7.5	6.41	2.2456	1.78	98.22	2.64	4.34
Cp 2200E 4650N	7.5-8.0	1.35	5.7674	13.63	86.37	12.58	9.83
Cp 2240E 4650N	0-1.5	3.75	0.1424	0.10	99.90	0.74	2.36
Cp 2240E 4650N	1.5-3.5	7.10	0.0031	0.02	99.98	0.51	2.29
Cp 2240E 4650N	3.5-5.5	7.55	0.0089	0.04	99.96	0.52	1.66
Cp 2240E 4650N	5.5-7.5	8.75	0.1581	0.12	99.88	0.56	4.46
Cp 2240E 4650N	7.5-9.5	8.15	0.4506	2.79	97.21	0.66	1.01
Cp 2240E 4650N	9.5-11.5	7.40	1.7669	1.27	98.73	1.91	1.17
Cp 2240E 4650N	11.5-13.0	4.45	2.4748	5.57	94.43	2.78	0.41
Cp 2280E 4650N	0-1.5	4.00	0.1970	0.28	99.72	1.12	1.32
Cp 2280E 4650N	1.5-3.5	5.95	0.0035	0.08	99.92	0.76	1.49
Cp 2280E 4650N	3.5-5.5	7.55	0.1738	0.69	99.31	1.49	1.71
Cp 2280E 4650N	5.5-7.5	7.20	0.8228	3.12	96.88	0.91	1.35
Cp 2280E 4650N	7.5-9.5	7.80	1.8129	2.74	97.26	1.21	2.33
Cp 2280E 4650N	9.5-11.5	7.37	0.1628	0.58	99.42	5.18	0.42
Cp 2280E 4650N	11.5-13.5	6.60	2.3635	3.74	94.26	15.45	0.85

R.A.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	%	+2mm	%	+10000	%	-10000	SLIME	%	HEAVY MINERAL	%
CP 2320E	4650N	0-1.5	3.15	0.2254	0.04	99.96	0.49	0.86				
CP 2320E	4650N	1.5-3.5	6.65	0.0000	0.00	100.00	0.51	0.85				
CP 2320E	4650N	3.5-5.5	6.00	0.0000	0.01	99.99	0.61	0.81				
CP 2320E	4650N	5.5-7.5	7.30	0.0555	0.04	99.96	0.50	0.53				
CP 2320E	4650N	7.5-9.5	8.20	1.6852	2.42	97.58	0.72	1.00				
CP 2320E	4650N	9.5-11.5	8.65	1.3015	1.50	98.10	0.66	1.80				
CP 2320E	4650N	11.5-13.5	8.15	0.4915	0.75	99.25	5.67	0.53				
CP 2320E	4650N	13.5-15.5	4.75	1.5177	4.01	95.99	3.17	0.25				
CP 2360E	4650N	0-1.5	3.55	0.1068	0.06	99.94	1.95	1.32				
CP 2360E	4650N	1.5-3.5	7.65	0.0464	0.09	99.91	1.20	1.03				
CP 2360E	4650N	3.5-5.5	9.50	0.6286	1.45	98.55	0.94	1.59				
CP 2360E	4650N	5.5-7.5	6.40	0.9213	0.66	99.34	4.02	0.92				
CP 2360E	4650N	7.5-9.5	9.00	0.8502	2.91	97.09	3.30	0.47				
CP 2360E	4650N	9.5-11.5	8.75	2.8317	3.07	96.93	3.34	1.15				
CP 2400E	4650N	0-1.5	4.20	0.0064	0.08	99.92	0.63	1.01				
CP 2400E	4650N	1.5-3.5	8.35	1.4114	1.71	98.29	0.35	0.96				
CP 2400E	4650N	3.5-5.5	10.00	4.1354	7.45	92.55	0.47	1.96				
CP 2400E	4650N	5.5-7.5	8.40	0.2486	0.39	99.61	2.87	0.79				
CP 2400E	4650N	7.5-9.5	9.35	0.3436	1.78	98.22	3.18	0.29				
CP 2400E	4650N	9.5-10.5	5.90	3.3373	3.77	96.23	2.05	0.60				
CP 2440E	4650N	0-1.5	1.90	0.0426	0.39	99.67	4.27	0.74				
CP 2440E	4650N	1.5-3.5	5.90	0.0090	0.07	99.93	1.37	0.88				
CP 2440E	4650N	3.5-5.5	10.80	2.7892	5.01	94.99	1.04	1.47				
CP 2440E	4650N	5.5-7.5	9.80	1.0427	1.80	98.20	1.04	1.37				
CP 2440E	4650N	7.5-9.5	8.55	0.3329	1.30	98.70	6.01	0.32				
CP 2440E	4650N	9.5-11.0	6.40	2.8717	3.09	96.91	4.34	0.32				
CP 2440E	4050N	0-1.5	4.20	0.1745	0.19	99.81	1.19	2.08				
CP 2440E	4050N	1.5-3.5	7.35	0.0000	0.03	99.97	0.49	2.66				
CP 2440E	4050N	3.5-5.5	7.05	0.4451	0.26	99.74	0.67	4.02				
CP 2440E	4050N	5.5-7.5	6.95	0.2964	0.55	99.45	1.56	3.61				
CP 2440E	4050N	7.5-9.5	7.40	1.9303	4.49	95.51	2.07	2.07				
CP 2440E	4050N	9.5-11.25	6.00	13.9150	11.67	88.33	2.94	1.67				
CP 2480E	4050N	0-1.5	4.10	0.0427	0.12	99.88	1.06	1.04				
CP 2480E	4050N	1.5-3.5	6.95	0.0912	0.05	99.95	0.60	1.12				
CP 2480E	4050N	3.5-5.5	7.05	0.0000	0.10	99.90	0.75	1.96				
CP 2480E	4050N	5.5-7.5	7.25	0.0203	0.04	99.98	0.50	2.05				
CP 2480E	4050N	7.5-9.5	7.80	0.0000	0.67	99.33	0.80	0.99				
CP 2480E	4050N	9.5-11.5	8.55	4.1840	7.53	92.47	0.92	1.52				
CP 2480E	4050N	11.5-12.5	4.60	3.2993	6.47	93.53	0.82	1.39				

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY (MINERAL)
Cp 2520E 4050N	0-1.5	3.65	0.0822	0.17	99.83	1.44	1.06 0
Cp 2520E 4050N	1.5-3.5	8.00	0.0931	0.12	99.88	0.98	1.78 0
Cp 2520E 4050N	3.5-5.5	8.85	1.3217	3.11	96.89	0.96	0.69 0
Cp 2520E 4050N	5.5-7.5	8.40	2.9068	4.81	95.19	0.56	1.59 0
Cp 2520E 4050N	7.5-8.7	6.15	5.7675	8.30	91.70	1.23	1.90 0
Cp 2520E 4050N	0-1.5	2.55	0.2067	0.07	99.93	0.55	1.71
Cp 2520E 4050N	1.5-3.5	3.60	0.0000	0.29	99.71	1.00	1.22
Cp 2520E 4050N	3.5-5.5	4.00	0.0020	0.02	99.98	0.27	1.13
Cp 2520E 4050N	5.5-7.5	3.60	0.0047	0.01	99.99	0.29	1.20
Cp 2520E 4050N	7.5-9.5	4.10	0.0000	0.05	99.95	0.54	1.39
Cp 2520E 4050N	9.5-11.5	4.30	0.0647	0.06	99.94	0.31	1.28
Cp 1960E 4050N	0-1.5	4.05	0.0459	0.05	99.95	0.97	7.35
Cp 1960E 4050N	1.5-3.5	6.80	0.0100	0.05	99.95	3.93	2.84
Cp 1960E 4050N	3.5-5.5	5.60	0.6254	1.83	98.17	5.09	1.02
Cp 1960E 4050N	5.5-6.5	3.70	7.0741	14.47	85.53	1.61	0.58
Cp 2000E 4050N	0-1.5	3.20	0.0878	0.15	99.85	1.39	6.46
Cp 2000E 4050N	1.5-3.5	7.85	0.0013	0.05	99.95	0.72	7.85
Cp 2000E 4050N	3.5-5.5	7.10	0.0028	0.01	99.99	0.54	6.29
Cp 2000E 4050N	5.5-7.5	7.40	0.0143	0.09	99.91	3.58	3.35
Cp 2000E 4050N	7.5-9.5	6.80	0.0760	0.26	99.74	8.07	2.18
Cp 2000E 4050N	9.5-11.0	5.30	3.2866	14.64	85.36	3.26	0.54
Cp 2040E 4050N	0-1.5	3.35	0.1269	0.05	99.95	0.72	5.28
Cp 2040E 4050N	1.5-3.5	7.30	0.0010	0.02	99.98	0.49	6.92
Cp 2040E 4050N	3.5-5.5	6.65	0.0000	0.02	99.98	0.29	4.83
Cp 2040E 4050N	5.5-7.5	7.20	0.0000	0.02	99.98	0.55	3.81
Cp 2040E 4050N	7.5-9.5	8.85	0.0000	0.03	99.97	2.21	2.13
Cp 2040E 4050N	9.5-11.5	8.05	0.0015	0.06	99.94	5.87	1.85
Cp 2040E 4050N	11.5-13.0	3.85	6.6205	2.57	97.43	5.52	0.84
Cp 2080E 4050N	0-1.5	3.10	0.0681	0.05	99.95	1.06	4.51
Cp 2080E 4050N	1.5-3.5	6.85	0.0050	0.04	99.96	0.66	5.48
Cp 2080E 4050N	3.5-5.5	6.15	0.0114	0.01	99.99	0.89	6.06
Cp 2080E 4050N	5.5-7.5	5.20	0.0000	0.34	99.66	0.76	3.31
Cp 2080E 4050N	7.5-9.5	6.90	0.0000	0.31	99.99	0.95	4.37
Cp 2080E 4050N	9.5-11.5	5.00	0.0122	0.14	99.86	5.22	1.96
Cp 2080E 4050N	11.5-13.5	9.30	0.1524	0.95	99.05	8.31	1.57
Cp 2080E 4050N	13.5-14.4	1.80	3.4783	4.46	95.54	4.08	0.50

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R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY (MINERAL)
Cp 2120E 4050N	0-1.5	3.75	0.0824	0.06	99.94	1.18	7.07
Cp 2120E 4050N	1.5-3.5	8.45	0.0009	0.00	100.00	0.50	8.71
Cp 2120E 4050N	3.5-5.5	8.35	0.0000	0.00	100.00	0.39	7.23
Cp 2120E 4050N	5.5-7.5	5.70	0.0000	0.01	99.99	0.72	5.89
Cp 2120E 4050N	7.5-9.5	6.10	0.0000	0.00	100.00	0.35	3.58
Cp 2120E 4050N	9.5-11.5	6.80	0.0513	0.10	99.90	3.00	3.27
Cp 2120E 4050N	11.5-13.5	3.60	0.0628	0.25	99.75	6.60	0.84
Cp 2120E 4050N	13.5-15.5	7.00	1.4537	7.92	92.08	4.08	0.38
Cp 2160E 4050N	0-1.5	5.00	0.2292	0.14	99.86	1.07	4.64
Cp 2160E 4050N	1.5-3.5	7.60	0.0000	0.02	99.98	0.65	4.88
Cp 2160E 4050N	3.5-5.5	7.25	0.0000	0.01	99.99	0.53	2.94
Cp 2160E 4050N	5.5-7.5	7.05	0.0057	0.04	99.96	1.48	2.36
Cp 2160E 4050N	7.5-9.5	5.80	0.0057	0.27	99.73	7.84	1.76
Cp 2160E 4050N	9.5-11.5	6.50	0.5914	1.89	98.11	6.05	0.89
Cp 2200E 4050N	0-1.5	3.20	0.0931	0.06	99.94	1.18	6.15
Cp 2200E 4050N	1.5-3.5	7.65	0.0022	0.03	99.97	0.40	6.60
Cp 2200E 4050N	3.5-5.5	7.70	0.0790	0.01	99.99	0.32	5.15
Cp 2200E 4050N	5.5-7.5	7.50	0.0000	0.03	99.97	0.73	4.35
Cp 2200E 4050N	7.5-9.5	7.55	0.0000	0.06	99.94	3.08	2.40
Cp 2200E 4050N	9.5-11.5	7.50	0.0009	0.06	99.94	3.00	1.28
Cp 2200E 4050N	11.5-13.5	5.65	0.4701	1.64	98.36	3.93	0.40
Cp 2200E 4050N	13.5-13.8	1.70	9.8929	3.40	96.60	5.07	0.95
Cp 2240E 4050N	0-1.5	3.90	0.1077	0.12	99.88	0.81	3.10
Cp 2240E 4050N	1.5-3.5	8.00	0.0020	0.05	99.95	0.66	7.18
Cp 2240E 4050N	3.5-5.5	6.00	1.2822	0.83	99.15	9.06	6.37
Cp 2240E 4050N	5.5-7.5	6.75	0.0889	0.23	99.77	2.19	1.38
Cp 2240E 4050N	7.5-9	3.20	4.1206	2.09	97.91	3.93	0.49
Cp 2280E 4050N	0-1.5	3.85	0.1177	0.05	99.95	0.98	2.47
Cp 2280E 4050N	1.5-3.5	7.55	0.0066	0.16	99.84	0.96	7.69
Cp 2280E 4050N	3.5-5.5	7.55	0.0702	0.16	99.84	2.99	1.23
Cp 2280E 4050N	5.5-7.5	7.50	0.1025	0.35	99.65	2.20	0.80
Cp 2280E 4050N	7.5-9.0	5.50	3.5878	5.99	94.01	3.25	0.20
Cp 2320E 4050N	0-1.5	3.50	0.0286	0.18	99.84	2.46	3.68
Cp 2320E 4050N	1.5-3.5	6.20	0.0011	0.04	99.96	1.19	3.14
Cp 2320E 4050N	3.5-5.5	9.15	0.0000	0.02	99.98	1.04	4.69
Cp 2320E 4050N	5.5-7.5	7.00	0.0203	0.35	99.65	9.54	3.90
Cp 2320E 4050N	7.5-9.5	6.05	0.5466	1.59	98.41	3.39	0.56
Cp 2320E 4050N	9.5-11.0	3.90	12.0651	8.14	91.86	12.46	1.11

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R.M.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT + 2mm + 1000u - 1000u SLIME	%	%	%	%	%	HEAVY MINERAL
CP 2360E	4050N	0-1.5	3.60	0.2222	0.15	99.85	1.13	2.92
CP 2360E	4050N	1.5-3.5	6.50	0.0357	0.03	99.97	0.38	2.55
CP 2360E	4050N	3.5-5.5	7.10	0.1273	0.04	99.96	0.50	3.44
CP 2360E	4050N	5.5-7.5	7.70	0.0008	0.05	99.95	0.59	3.62
CP 2360E	4050N	7.5-9.5	6.65	0.0000	0.09	99.91	0.91	2.93
CP 2360E	4050N	9.5-11.5	8.00	0.0010	0.04	99.96	0.75	4.89 0
CP 2360E	4050N	11.5-13.5	7.35	0.1118	1.83	98.17	2.55	4.50
CP 2360E	4050N	13.5-15.5	3.80	4.1474	15.79	84.21	6.43	1.49
CP 2360E	4050N	15.5-16.75	8.00	3.8520	5.14	94.86	15.97	0.71
CP 2400E	4050N	0-1.5	4.60	0.2285	0.03	99.92	0.62	2.81
CP 2400E	4050N	1.5-3.5	7.60	0.0025	0.02	99.98	0.31	6.48
CP 2400E	4050N	3.5-5.5	7.05	0.0000	0.02	99.98	0.38	3.61
CP 2400E	4050N	5.5-7.5	7.49	0.0004	0.05	99.95	0.51	2.58
CP 2400E	4050N	7.5-9.5	8.20	0.2516	0.32	99.68	0.62	5.55
CP 2400E	4050N	9.5-11.5	5.65	0.7804	1.70	98.30	2.48	1.68
CP 2400E	4050N	11.5-13.5	9.10	5.0670	9.18	90.82	4.11	0.47
CP 2400E	4050N	13.5-14.0	1.50	19.8587	8.81	91.19	5.84	0.62
CP 2560E	4050N	0-1.5	3.70	0.0665	0.05	99.95	1.65	1.95 0
CP 2560E	4050N	1.5-3.5	7.90	0.0061	0.06	99.94	0.70	0.82 0
CP 2560E	4050N	3.5-5.5	8.10	0.1310	0.55	99.45	0.72	0.82 0
CP 2560E	4050N	5.5-7.5	8.10	1.6370	4.86	95.14	1.13	0.29 0
CP 2560E	4050N	7.5-9.5	9.10	10.7548	12.35	87.65	2.30	1.06 0
CP 2560E	4050N	9.5-10.9	5.30	12.5151	5.64	94.36	4.85	1.79 0
CP 2560E	4050N	0-1.5	2.10	0.2543	0.11	99.89	2.15	1.66
CP 2560E	4050N	1.5-3.5	4.10	0.0000	0.00	100.00	0.21	1.61
CP 2560E	4050N	3.5-5.5	3.75	0.0019	0.05	95.95	0.36	1.66
CP 2560E	4050N	5.5-7.5	4.70	0.0006	0.00	100.00	0.19	1.86
CP 2560E	4050N	7.5-9.5	4.20	0.0010	0.01	99.99	0.31	1.34
CP 2560E	4050N	9.5-11.5	4.50	0.0680	0.01	99.99	0.42	1.26
CP 2600E	4050N	0-1.5	2.40	0.1792	0.05	99.95	2.13	1.68
CP 2600E	4050N	1.5-3.5	4.00	0.0025	0.00	100.00	0.21	1.28
CP 2600E	4050N	3.5-5.5	3.65	0.0060	0.01	99.99	0.20	1.17
CP 2600E	4050N	5.5-7.5	4.76	0.0000	0.00	100.00	0.39	1.70
CP 2600E	4050N	7.5-9.5	4.95	0.0000	0.02	99.98	0.39	1.65
CP 2600E	4050N	9.5-11.5	5.00	0.0000	0.01	99.99	0.30	1.39
CP 2640E	4050N	0-1.5	2.40	0.0788	0.09	99.91	1.84	0.75
CP 2640E	4050N	1.5-3.5	4.15	0.0140	0.01	99.99	0.37	0.65
CP 2640E	4050N	3.5-5.5	4.75	0.0000	0.00	100.00	0.25	0.76
CP 2640E	4050N	5.5-7.5	4.75	0.0034	0.02	99.98	0.48	1.18
CP 2640E	4050N	7.5-9.5	5.80	0.0043	0.00	100.00	0.28	1.81
CP 2640E	4050N	9.5-11.5	4.70	0.0079	0.01	99.99	0.34	1.45

588490

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 2560E 3750N	0-1.5	2.80	0.1000	0.08	99.92	0.75	1.46
Cp 2560E 3750N	1.5-3.5	7.40	0.0035	0.25	99.75	0.46	1.07
Cp 2560E 3750N	3.5-5.5	7.00	0.0000	0.01	99.99	0.41	1.15
Cp 2560E 3750N	5.5-7.5	7.60	0.0600	0.09	99.91	0.65	1.13
Cp 2560E 3750N	7.5-9.5	8.00	0.0470	0.04	99.96	0.73	1.54
Cp 2560E 3750N	9.5-11.5	7.55	4.8507	7.28	92.72	0.54	0.47
Cp 2560E 3750N	11.5-12.5	3.55	6.6141	12.02	87.98	2.33	0.75
Cp 2520E 3750N	0-1.5	4.20	0.1145	0.41	99.59	1.26	1.59
Cp 2520E 3750N	1.5-3.5	7.90	0.0013	0.03	99.97	0.70	1.84
Cp 2520E 3750N	3.5-5.5	6.55	0.4216	0.77	99.23	0.89	3.86
Cp 2520E 3750N	5.5-7.5	8.05	2.4861	7.17	92.83	1.82	0.78
Cp 2520E 3750N	7.5-9.1	10.10	7.0721	8.32	91.68	1.76	1.99
Cp 2480E 3750N	0-1.5	4.40	0.0330	0.02	99.98	0.78	3.20
Cp 2480E 3750N	1.5-3.5	8.30	0.0806	0.06	99.94	0.75	6.41
Cp 2480E 3750N	3.5-5.5	8.00	1.4743	1.84	98.16	1.83	1.27
Cp 2480E 3750N	5.5-7.3	7.90	4.5909	2.60	97.40	0.58	2.11
Cp 2440E 3750N	0-1.5	3.60	0.1086	0.12	99.88	1.52	4.62
Cp 2440E 3750N	1.5-3.5	7.20	0.0024	0.01	99.99	0.64	6.50
Cp 2440E 3750N	3.5-5.5	7.30	0.0010	0.00	100.00	0.54	7.69
Cp 2440E 3750N	5.5-7.5	6.20	0.0003	0.02	99.98	0.67	3.57
Cp 2440E 3750N	7.5-9.5	6.95	0.0000	0.00	100.00	0.61	3.79
Cp 2440E 3750N	9.5-11.5	7.35	0.0000	0.03	99.97	0.53	2.95
Cp 2440E 3750N	11.5-13.5	7.55	0.0004	0.01	99.99	0.66	2.55
Cp 2440E 3750N	13.5-15.5	7.85	0.0000	0.01	99.99	0.73	2.14
Cp 2440E 3750N	15.5-17.5	7.65	0.0125	0.03	99.97	0.86	3.23
Cp 2440E 3750N	17.5-19.5	7.95	0.3252	1.29	98.71	1.14	1.74
Cp 2440E 3750N	19.5-21.25	8.40	0.8655	1.37	98.63	1.96	2.70
Cp 2400E 3750N	0-1.5	6.05	0.1145	0.04	99.96	0.71	4.13
Cp 2400E 3750N	1.5-3.5	6.00	0.0018	0.19	99.81	1.51	2.78
Cp 2400E 3750N	3.5-5.5	7.50	0.0851	0.08	99.92	0.69	2.83
Cp 2400E 3750N	5.5-7.5	8.25	0.0048	0.03	99.97	0.65	4.10
Cp 2400E 3750N	7.5-9.5	8.75	0.0008	0.04	99.96	0.73	4.22
Cp 2400E 3750N	9.5-11.5	7.50	0.0011	0.04	99.96	0.91	2.77
Cp 2400E 3750N	11.5-13.5	5.50	0.2749	1.41	98.59	4.99	1.15

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL		+1000µ		-1000µ		HEAVY (MINERAL)	
		WEIGHT	%	WEIGHT	%	WEIGHT	%	WEIGHT	%
CP 2120E	3750N	0-1.5	4.85	0.2711	0.21	99.79	1.07	3.62	
CP 2120E	3750N	1.5-3.5	6.90	0.0229	0.17	99.83	2.20	2.34	
CP 2120E	3750N	3.5-5.5	3.80	0.3368	0.26	99.74	12.05	1.12	
CP 2120E	3750N	5.5-7.5	4.15	0.5648	1.50	98.50	2.94	0.36	
CP 2080E	3750N	0-1.5	3.60	0.1133	0.19	99.81	1.89	3.19	
CP 2080E	3750N	1.5-3.5	7.65	0.0165	0.09	99.91	2.17	3.04	
CP 2080E	3750N	3.5-5.5	7.10	0.0392	0.11	99.89	6.61	1.73	
CP 2080E	3750N	5.5-6.75	2.95	10.4488	7.18	92.82	1.78	0.60	
CP 2040E	3750N	0-1.5	4.20	0.0743	0.07	99.93	1.79	4.90	
CP 2040E	3750N	1.5-3.5	6.05	0.0278	0.10	99.90	3.98	2.94	
CP 2040E	3750N	3.5-5.5	6.35	0.6953	2.72	97.28	6.65	0.81	
CP 2040E	3750N	5.5-6.25	2.20	8.0164	14.86	85.14	5.58	1.16	
CP 2000E	3750N	0-1.5	2.90	0.2021	0.14	99.86	1.94	5.58	
CP 2000E	3750N	1.5-3.5	8.80	0.0052	0.34	99.66	3.81	3.49	
CP 2000E	3750N	3.5-5.5	7.10	2.3282	4.76	95.24	7.49	1.92	
CP 2000E	3750N	5.5-6.0	2.05	7.2400	13.46	86.54	5.94	1.49	
CP 1960E	3750N	0-1.5	3.50	0.2094	0.39	99.61	1.11	6.51	
CP 1960E	3750N	1.5-3.5	6.55	0.0116	0.04	99.96	0.76	5.29	
CP 1960E	3750N	3.5-5.5	8.20	0.0046	0.07	99.93	0.95	5.38	
CP 1960E	3750E	5.5-7.5	6.20	0.0069	0.13	99.87	5.65	1.54	
CP 1960E	3750N	7.5-9.5	2.65	6.9857	14.00	96.00	5.05	1.00	
CP 1920E	3750N	0-1.5	3.25	0.1920	0.28	99.72	5.22	2.95	
CP 1920E	3750N	1.5-3.5	3.40	0.0062	0.01	99.99	1.56	3.76	
CP 1920E	3750N	3.5-5.5	6.40	0.0484	0.10	99.90	4.44	1.38	
CP 1920E	3750N	5.5-7.5	9.65	1.0046	2.03	97.97	11.41	1.92	
CP 2450E	3450N	0-1.5	4.80	0.0704	0.04	99.96	0.93	9.24	
CP 2450E	3450N	1.5-3.5	8.20	0.0485	0.02	99.98	0.45	7.69	
CP 2450E	3450N	3.5-5.5	7.95	0.9564	2.08	97.92	0.55	0.87	
CP 2450E	3450N	5.5-6.25	3.05	9.9085	5.37	94.63	1.94	1.00	

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY (MINERAL)
Cp 2440E 3450N	0-1.5	3.05	0.1852	0.15	99.85	2.40	1.04
Cp 2440E 3450N	1.5-3.5	7.00	0.0134	0.05	99.95	0.85	2.36
Cp 2440E 3450N	3.5-5.5	8.70	0.0018	0.01	99.99	1.93	1.85
Cp 2440E 3450N	5.5-7.2	7.70	1.5832	2.90	97.10	2.43	1.22
Cp 2400E 3450N	0-1.5	4.65	0.0869	0.17	99.83	1.10	3.22
Cp 2400E 3450N	1.5-3.5	7.65	0.0052	0.03	99.97	0.69	7.33
Cp 2400E 3450N	3.5-5.5	7.90	0.1248	0.31	99.69	0.66	4.79
Cp 2400E 3450N	5.5-6.25	4.10	4.9176	7.93	92.07	1.38	1.28
Cp 2360E 3450N	0-1.5	2.05	0.0766	0.06	99.94	0.68	2.46
Cp 2360E 3450N	1.5-3.5	5.30	0.0270	0.01	99.99	0.65	4.70
Cp 2360E 3450N	3.5-5.5	7.25	0.0399	0.04	99.96	0.71	4.53
Cp 2360E 3450N	5.5-7.5	10.00	0.0376	0.25	99.75	3.89	6.44
Cp 2360E 3450N	7.5-8.0	2.30	2.6326	3.38	96.62	2.16	1.21
Cp 2320E 3450N	0-1.5	4.80	0.0298	0.08	99.92	1.78	4.37
Cp 2320E 3450N	1.5-3.5	7.85	0.0278	0.02	99.98	0.66	4.42
Cp 2320E 3450N	3.5-5.5	8.15	0.0082	0.09	99.91	2.38	2.41
Cp 2320E 3450N	5.5-7.5	7.30	0.1053	0.89	99.11	3.32	0.67
Cp 2320E 3450N	7.5-7.9	1.20	10.6050	6.87	93.13	4.75	0.75
Cp 2280E 3450N	0-1.5	4.45	0.0202	0.09	99.91	2.08	3.41
Cp 2280E 3450N	1.5-3.5	7.40	0.0000	0.07	99.93	1.03	4.11
Cp 2280E 3450N	3.5-5.5	7.55	0.0393	0.05	99.95	1.27	2.66
Cp 2280E 3450N	5.5-7.5	6.75	0.2024	0.51	99.49	3.83	2.56
Cp 2280E 3450N	7.5-9	4.15	2.7100	1.52	98.48	3.35	0.72
Cp 2240E 3450N	0-1.5	4.35	0.0476	0.05	99.95	2.33	2.62 0
Cp 2240E 3450N	1.5-3.5	6.05	0.1068	0.24	99.76	8.38	2.31 0
Cp 2240E 3450N	3.5-5.5	7.05	4.4189	4.50	95.50	4.46	0.90 0
Cp 2200E 3450N	0-1.5	4.20	0.1236	0.13	99.87	1.38	3.76 0
Cp 2200E 3450N	1.5-3.5	4.93	0.1535	0.24	99.76	4.49	3.85 0
Cp 2200E 3450N	3.5-5.5	2.90	1.3255	0.66	99.34	10.15	1.70 0

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH 	TOTAL WEIGHT KG	% + 3mm	% +10000	% -10000	SLIME	HEAVY MINERAL	
CP 2160E	3450N	0-1.5	4.65	0.2903	0.20	99.80	1.17	5.23
CP 2160E	3450N	1.5-3.5	8.60	0.0241	0.09	99.91	0.95	4.97
CP 2160E	3450N	3.5-5.5	7.70	0.0008	0.06	99.94	0.33	4.05
CP 2160E	3450N	5.5-7.5	7.25	0.0321	0.04	99.96	0.71	4.83
CP 2160E	3450N	7.5-9.5	6.45	0.0459	0.18	99.82	2.04	4.30
CP 2160E	3450N	9.5-11.5	9.45	1.9904	4.02	95.99	3.40	1.50
CP 2520E	3150N	0-1.5	4.00	0.0450	0.05	99.95	1.88	2.61
CP 2520E	3150N	1.5-3.5	6.95	0.0000	0.02	99.98	0.60	1.99
CP 2520E	3150N	3.5-5.5	7.15	0.0000	0.01	99.99	0.65	2.17
CP 2520E	3150N	5.5-7.5	7.55	0.0000	0.03	99.97	0.53	1.42
CP 2520E	3150N	7.5-9.5	8.40	1.5750	1.73	98.27	1.16	1.67
CP 2520E	3150N	9.5-10.2	2.20	5.5209	2.84	97.16	3.09	1.80
CP 2480E	3150N	0-1.5	3.70	0.1032	0.02	99.98	0.70	1.13
CP 2480E	3150N	1.5-3.5	7.00	0.0000	0.04	99.96	0.51	1.25
CP 2480E	3150N	3.5-5.5	5.95	0.0000	0.02	99.98	0.63	1.26
CP 2480E	3150N	5.5-7.5	6.50	0.0000	0.06	99.94	0.67	1.40
CP 2480E	3150N	7.5-9.5	7.20	0.0033	0.02	99.98	0.84	2.01
CP 2480E	3150N	9.5-11.5	7.80	0.0192	0.06	99.94	1.01	4.78
CP 2480E	3150N	11.5-12.5	3.55	1.4915	2.07	97.93	3.10	2.05
CP 2440E	3150N	0-1.5	4.90	0.0610	0.06	99.94	0.76	1.37
CP 2440E	3150N	1.5-3.5	7.15	0.0202	0.04	99.96	0.46	2.15
CP 2440E	3150N	3.5-5.5	7.45	0.0297	0.03	99.97	0.46	3.46
CP 2440E	3150N	5.5-7.5	7.40	0.0000	0.05	99.95	0.60	1.60
CP 2440E	3150N	7.5-9.5	8.30	0.0799	0.29	99.71	0.85	4.27
CP 2440E	3150N	9.5-10.5	3.80	1.7129	1.81	98.49	1.88	0.62
CP 2400E	3150N	0-1.5	3.50	0.0703	0.09	99.91	1.28	2.97
CP 2400E	3150N	1.5-3.5	7.40	0.0120	0.11	99.89	1.60	3.76
CP 2400E	3150N	3.5-5.0	5.45	1.6317	3.60	96.40	1.20	0.89
CP 2360E	3150N	0-1.5	3.30	0.1197	0.06	99.94	1.86	2.51
CP 2360E	3150N	1.5-3.5	6.80	0.0124	0.02	99.90	0.59	1.92
CP 2360E	3150N	3.5-5.5	7.00	0.0000	0.03	99.97	0.44	1.20
CP 2360E	3150N	5.5-7.5	7.53	3.0000	3.03	99.97	1.63	1.33
CP 2360E	3150N	7.5-9.5	7.75	0.0000	0.03	99.97	0.51	2.57
CP 2360E	3150N	9.5-11.5	6.55	0.0000	0.03	99.99	0.56	1.88
CP 2360E	3150N	11.5-13.5	7.20	0.0789	0.11	99.89	0.84	3.61
CP 2360E	3150N	13.5-15.3	6.60	0.4588	0.66	99.94	2.07	3.12
CP 2320E	3150N	0-1.5	3.40	0.3309	0.12	99.88	1.57	3.70
CP 2320E	3150N	1.5-3.5	7.20	0.0014	0.02	99.93	0.90	3.89
CP 2320E	3150N	3.5-5.5	7.60	0.1316	0.04	99.96	0.88	4.03
CP 2320E	3150N	5.5-7.5	6.90	0.0000	0.10	99.80	6.57	0.82
CP 2320E	3150N	7.5-8.7	3.50	1.6097	1.40	98.60	4.14	1.09

588504

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY (MINERAL)
Cp 2280E 3150N	0-1.5	3.70	0.3154	0.14	99.86	1.12	3.19
Cp 2280E 3150N	1.5-3.5	7.05	0.0075	0.00	100.00	0.50	5.52
Cp 2280E 3150N	3.5-5.5	7.30	0.0000	0.04	99.96	1.50	5.48
Cp 2280E 3150N	5.5-7.5	8.55	0.0000	0.14	99.86	6.71	1.27
Cp 2280E 3150N	7.5-8.5	2.45	0.7106	5.04	94.96	6.80	0.86
Cp 2240E 3150N	0-1.5	2.95	0.1125	0.04	99.96	1.01	5.21
Cp 2240E 3150N	1.5-3.5	6.60	0.0274	0.01	99.99	0.74	4.69
Cp 2240E 3150N	3.5-5.5	5.95	0.0047	0.02	99.98	0.86	3.98
Cp 2240E 3150N	5.5-7.5	6.60	0.0000	0.01	99.99	0.60	4.52
Cp 2240E 3150N	7.5-9.5	6.55	0.0000	0.00	100.00	0.64	2.83
Cp 2240E 3150N	9.5-11.5	6.55	0.0000	0.02	99.98	0.64	2.33
Cp 2240E 3150N	11.5-13.5	7.55	0.0000	0.06	99.94	2.44	1.90
Cp 2240E 3150N	13.5-15.3	5.00	0.6008	1.24	98.76	6.70	1.69
Cp 2200E 3150N	0-1.5	4.00	0.4343	0.09	99.91	1.16	4.62
Cp 2200E 3150N	1.5-3.5	6.25	0.0107	0.01	99.99	0.72	4.22
Cp 2200E 3150N	3.5-5.5	5.90	0.0000	0.00	100.00	0.30	3.72
Cp 2200E 3150N	5.5-7.5	6.50	0.0238	0.07	99.92	0.82	2.00
Cp 2200E 3150N	7.5-9.5	5.80	0.0000	0.12	99.88	5.57	1.09
Cp 2200E 3150N	9.5-9.9	1.50	4.4220	3.26	96.74	5.74	0.87
Cp 1480E 3150N	0-1.5	4.80	0.0860	0.66	99.34	3.51	1.40
Cp 1480E 3150N	1.5-3.5	7.15	0.0232	0.05	99.95	4.28	3.78
Cp 1480E 3150N	3.5-5.5	8.10	0.9738	4.91	95.09	5.64	1.81
Cp 1480E 3150N	5.5-7.0	4.30	2.1886	6.33	93.67	18.19	0.47
Cp 1440E 3150N	0-1.5	2.65	0.1519	0.27	99.73	3.34	1.02
Cp 1440E 3150N	1.5-3.5	6.95	0.0094	0.05	99.95	3.35	1.33
Cp 1440E 3150N	3.5-5.5	6.20	0.6055	2.26	97.74	4.69	1.23
Cp 1440E 3150N	5.5-7.0	6.75	19.7719	7.37	92.63	3.34	0.65
Cp 1400E 3150N	0-1.5	5.75	0.0174	0.08	99.92	2.91	1.08
Cp 1400E 3150N	1.5-3.5	8.45	0.0187	0.10	99.90	3.33	1.10
Cp 1400E 3150N	3.5-5.5	6.05	0.0814	0.43	99.57	6.53	2.01
Cp 1400E 3150N	5.5-7.25	6.15	1.6190	4.54	95.46	2.84	0.33
Cp 1360E 3150N	0-1.5	4.70	0.0900	0.09	99.91	1.61	1.14
Cp 1360E 3150N	1.5-3.5	5.25	0.0103	0.06	99.94	5.79	0.71
Cp 1360E 3150N	3.5-5.5	4.65	0.1895	0.73	99.27	6.61	1.07
Cp 1360E 3150N	5.5-6.6	4.30	2.5637	2.37	97.63	3.01	0.58
Cp 1320E 3150N	0-1.5	2.77	0.4451	0.51	99.49	11.32	0.55
Cp 1320E 3150N	1.5-3.5	5.45	0.0479	0.15	99.85	4.93	0.59
Cp 1320E 3150N	3.5-5.5	9.55	3.4199	5.95	94.05	4.63	0.37
Cp 1320E 3150N	5.5-7.5	4.65	15.5202	7.33	92.67	5.28	0.53

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 1280E 3150N	0-1.5	4.00	0.2380	0.09	99.91	5.08	0.53
Cp 1280E 3150N	1.5-3.5	6.15	0.0128	0.15	99.85	4.88	0.51
Cp 1280E 3150N	3.5-5.5	9.60	2.1011	4.91	95.09	2.93	0.46
Cp 1280E 3150N	5.5-6.5	4.70	5.4651	3.24	96.76	1.35	0.48
Cp 1240E 3150N	0-1.5	2.00	0.0860	0.21	99.79	14.76	0.65
Cp 1240E 3150N	1.5-3.5	7.80	0.0759	0.19	99.81	6.82	2.39
Cp 1240E 3150N	3.5-5.5	5.80	3.0472	5.16	94.84	4.46	0.64
Cp 1200E 3150N	0-1.5	4.90	0.0000	0.17	99.83	6.64	0.82
Cp 1200E 3150N	1.5-3.5	4.30	0.0093	0.10	99.90	5.48	1.68
Cp 1200E 3150N	3.5-5.5	9.55	4.9081	5.59	94.41	2.78	1.04
Cp 1200E 3150N	5.5-6.5	4.00	12.6710	8.48	91.52	2.92	0.99
Cp 1160E 3150N	0-1.5	3.10	0.0000	0.37	99.63	7.48	0.54
Cp 1160E 3150N	1.5-3.5	3.65	0.7427	1.61	98.39	7.20	1.94
Cp 1160E 3150N	3.5-5.25	8.35	7.0406	7.02	92.98	11.59	1.00
Cp 1120E 3150N	0-1.5	1.65	0.5176	0.40	99.60	12.51	2.86
Cp 1120E 3150N	1.5-3.5	6.70	2.7125	4.73	95.27	4.25	2.06
Cp 1120E 3150N	3.5-5.25	4.35	6.8657	16.59	83.41	4.76	0.90
Cp 1080E 3150N	0-1.5	3.50	0.1134	0.82	99.18	7.11	0.60
Cp 1080E 3150N	1.5-3.5	9.20	0.5001	1.92	98.08	5.36	1.14
Cp 1080E 3150N	3.5-5.5	8.50	5.4955	6.49	93.51	5.63	1.14
Cp 1080E 3150N	5-5.6	1.70	15.6694	4.71	95.29	7.11	3.03
Cp 1040E 3150N	0-1.5	3.35	0.0282	0.27	99.73	4.14	0.29
Cp 1040E 3150N	1.5-3.5	3.85	0.3192	1.57	98.43	2.27	0.37
Cp 1040E 3150N	3.5-5.5	5.90	6.4696	13.51	86.49	3.73	0.41
Cp 1040E 3150N	5.5-6.0	0.20	40.4500	19.44	80.56	11.44	0.78
Cp 1000E 3150N	0-1.5	3.10	0.0948	0.39	99.61	5.94	0.65
Cp 1000E 3150N	1.5-3.5	9.25	0.0802	0.32	99.68	3.28	0.92
Cp 1000E 3150N	3.5-5.5	5.80	2.4234	6.88	91.12	4.18	0.85
Cp 1000E 3150N	5.5-6.5	3.15	10.3016	3.59	97.41	6.70	1.81

588506

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

SOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 960E 3150N	0-1.5	5.60	0.0291	0.12	99.88	2.07	0.78
Cp 960E 3150N	1.5-3.5	7.80	0.0124	1.39	98.61	3.49	2.00
Cp 960E 3150N	3.5-5.5	6.85	2.8463	6.90	93.10	4.56	0.71
Cp 960E 3150N	5.5-7.0	4.10	8.8668	5.05	94.95	7.57	0.94
Cp 920E 3150N	0-1.5	5.85	0.0395	0.17	99.83	1.96	0.80
Cp 920E 3150N	1.5-3.5	9.60	0.1393	0.57	99.43	2.05	0.59
Cp 920E 3150N	3.5-5.5	5.50	5.3167	6.30	93.70	6.94	1.08
Cp 920E 3150N	5.5-5.8	0.50	7.9280	7.46	92.54	16.44	2.32
Cp 900E 3150N	0-1.5	3.60	0.1047	0.28	99.72	3.49	0.57
Cp 900E 3150N	1.5-3.5	8.00	0.1951	0.57	99.43	5.25	1.17
Cp 900E 3150N	3.5-5.5	6.45	6.4166	7.52	92.48	6.41	1.56
Cp 900E 3150N	5.5-6.75	3.85	11.0865	20.33	79.67	6.04	0.68
Cp 880E 3150N	0-1.5	5.70	0.0625	0.15	99.85	2.06	1.78
Cp 880E 3150N	1.5-3.5	8.45	2.3533	1.83	98.17	3.71	3.41
Cp 880E 3150N	3.5-5.0	2.35	1.3643	1.37	98.63	11.05	2.58
Cp 860E 3150N	0-1.5	4.65	0.0202	0.31	99.69	2.00	4.97
Cp 860E 3150N	1.5-3.5	9.10	0.0064	0.11	99.89	2.18	6.79
Cp 860E 3150N	3.5-5.5	7.45	0.4456	1.27	98.73	5.91	2.00
Cp 860E 3150N	5.5-5.8	1.00	7.1630	11.02	88.98	4.56	0.72
Cp 840E 3150N	0-1.5	4.50	0.1887	0.38	99.62	2.66	11.13
Cp 840E 3150N	1.5-3.5	7.90	0.7722	1.69	98.31	4.27	5.39
Cp 840E 3150N	3.5-5.25	2.65	6.4408	9.54	90.46	9.48	0.56
Cp 2380E 2800N	0-1.5	3.80	0.5626	0.13	99.85	1.77	2.11 0
Cp 2380E 2800N	1.5-3.5	7.65	0.0903	0.01	99.99	0.32	10.29 0
Cp 2380E 2800N	3.5-5.0	5.85	4.0267	3.01	96.99	1.42	1.96 0
Cp 2340E 2800N	0-1.5	2.35	0.4404	0.14	99.86	1.00	1.73
Cp 2340E 2800N	1.5-3.5	7.40	0.0015	0.02	99.98	0.54	1.38
Cp 2340E 2800N	3.5-5.5	5.75	0.0000	0.05	99.95	0.99	1.16
Cp 2340E 2800N	5.5-7.5	7.10	0.0000	0.00	100.00	0.54	1.24
Cp 2340E 2800N	7.5-9.5	6.95	0.0000	0.00	100.00	0.66	1.06
Cp 2340E 2800N	9.5-11.5	7.25	0.0028	0.01	99.99	0.67	3.22
Cp 2340E 2800N	11.5-13.5	7.95	0.0327	0.02	99.98	1.66	2.74
Cp 2340E 2800N	13.5-14.5	4.30	1.5287	0.89	99.11	1.37	1.41

588507

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 2300E 2800N	0-1.5	2.60	0.2869	2.20	97.80	4.66	2.01
Cp 2300E 2800N	1.5-3.5	8.70	0.0180	0.12	99.88	1.67	4.01
Cp 2300E 2800N	3.5-5.0	5.70	3.1381	2.05	97.95	3.62	1.85
Cp 2260E 2800N	0-1.5	4.40	0.0327	0.06	99.94	1.82	1.74
Cp 2260E 2800N	1.5-3.5	7.50	0.0000	0.02	99.98	0.95	2.54
Cp 2260E 2800N	3.5-5.5	6.70	0.0000	0.03	99.97	0.85	2.55
Cp 2260E 2800N	5.5-7.5	7.30	0.0000	0.01	99.99	0.62	3.47
Cp 2260E 2800N	7.5-9.5	6.95	0.0000	0.01	99.99	0.95	2.36
Cp 2260E 2800N	9.5-11.5	8.20	1.5409	5.29	94.71	1.37	1.15
Cp 2260E 2800N	11.5-11.9	2.60	1.0835	1.73	98.27	9.49	3.62
Cp 2220E 2800N	0-1.5	4.90	0.1137	0.06	99.94	0.89	2.19
Cp 2220E 2800N	1.5-3.5	7.30	0.0022	0.08	99.92	0.62	2.23
Cp 2220E 2800N	3.5-5.5	7.40	0.0000	0.03	99.97	0.50	2.20
Cp 2220E 2800N	5.5-7.5	7.90	0.0000	0.08	99.92	0.60	2.43
Cp 2220E 2800N	7.5-9.5	8.20	0.0583	0.05	99.95	0.85	2.11
Cp 2220E 2800N	9.5-10.0	2.55	3.1141	2.83	97.17	1.99	1.34
Cp 2180E 2800N	0-1.5	4.50	0.0716	0.05	99.95	1.93	2.09
Cp 2180E 2800N	1.5-3.5	7.75	0.0016	0.02	99.98	0.62	2.14
Cp 2180E 2800N	3.5-5.5	7.40	0.0000	0.09	99.91	3.78	4.60
Cp 2180E 2800N	5.5-8.8	4.58	1.6776	4.71	95.29	3.70	0.85
Cp 2140E 2800N	0-1.5	4.20	0.2302	0.18	99.82	1.98	1.67
Cp 2140E 2800N	1.5-3.5	7.70	0.0021	0.04	99.96	0.93	1.94
Cp 2140E 2800N	3.5-5.5	7.00	0.0000	0.02	99.98	0.90	2.10
Cp 2140E 2800N	5.5-7.5	6.10	0.0000	0.09	99.91	1.49	2.01
Cp 2140E 2800N	7.5-9.5	7.05	0.0000	0.12	99.88	2.68	2.98
Cp 2140E 2800N	9.5-11.5	5.50	0.4991	3.64	96.06	8.44	1.06
Cp 2100E 2800N	0-1.5	3.75	0.1595	0.08	99.92	1.36	2.42
Cp 2100E 2800N	1.5-3.5	7.20	0.0055	0.08	99.92	0.64	2.52
Cp 2100E 2800N	3.5-5.5	7.35	0.0000	0.00	100.00	0.55	2.84
Cp 2100E 2800N	5.5-7.5	6.80	0.0000	0.18	99.82	1.42	1.69
Cp 2100E 2800N	7.5-9.5	8.30	0.0617	0.78	99.22	6.32	1.23
Cp 2060E 2800N	0-1.5	2.70	1.2778	8.91	91.09	1.28	0.40
Cp 2060E 2800N	1.5-3.5	9.30	0.6901	4.21	95.79	1.60	0.58
Cp 2060E 2800N	3.5-5.0	6.45	3.9843	4.50	95.50	1.99	1.47

588508

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH 	TOTAL WEIGHT KG	+ 2mm		+1000µ		-1000µ		SLIME		HEAVY MINERAL	
			%	KG	%	KG	%	KG	%	KG	%	KG
CP 2340E	2500N	0-1.5	4.10	0.1195	1.07	99.99	1.45	0.81				
CP 2340E	2500N	1.5-3.5	8.40	3.4096	7.44	92.56	0.78	2.48				
CP 2340E	2500N	3.5-4.5	5.10	1.8853	0.79	99.21	3.89	2.01				
CP 2300E	2500N	0-1.5	3.45	0.2020	0.07	99.93	0.84	1.29				
CP 2300E	2500N	1.5-3.5	7.45	0.0074	0.01	99.99	0.51	1.45				
CP 2300E	2500N	3.5-5.5	8.05	0.0022	0.00	100.00	0.26	4.42				
CP 2300E	2500N	5.5-7.5	7.80	2.6505	1.12	98.88	1.09	3.40				
CP 2260E	2500N	0-1.5	4.10	0.0344	0.02	99.98	0.60	1.20				
CP 2260E	2500N	1.5-3.5	6.20	0.0000	0.01	99.99	0.76	1.46				
CP 2260E	2500N	3.5-5.5	6.50	0.0000	0.01	99.99	0.63	1.90				
CP 2260E	2500N	5.5-7.5	9.00	0.7117	0.62	99.98	0.68	11.06				
CP 2260E	2500N	7.5-9.5	3.20	5.0231	1.71	98.29	1.79	1.86				
CP 2200E	2500N	0-1.5	4.55	0.0138	0.06	99.94	0.83	15.71				
CP 2200E	2500N	1.5-3.5	7.70	0.2112	0.47	99.53	1.02	1.67				
CP 2200E	2500N	3.5-4.1	2.60	7.2481	0.69	99.31	2.04	1.47				
CP 2160E	2500N	0-1.5	4.90	0.1020	0.15	99.85	1.22	1.57				
CP 2160E	2500N	1.5-3.5	7.15	0.0038	0.07	99.93	0.78	2.05				
CP 2160E	2500N	3.5-5.5	7.05	0.0000	0.01	99.99	0.45	1.97				
CP 2160E	2500N	5.5-7.5	6.45	0.0000	0.02	99.98	0.52	0.82				
CP 2160E	2500N	7.5-9.5	7.15	0.0000	0.11	99.89	0.43	0.98				
CP 2160E	2500N	9.5-11.5	7.00	0.0047	0.05	99.95	0.46	1.01				
CP 2160E	2500N	11.5-13.5	8.35	0.8000	2.06	97.92	1.21	2.30				
CP 2160E	2500N	13.5-15.0	5.10	5.6345	2.22	97.79	3.73	1.00				
CP 2120E	2500N	0-1.5	4.90	0.1266	0.09	99.91	0.96	1.54				
CP 2120E	2500N	1.5-3.5	7.60	0.0000	0.01	99.99	0.64	1.51				
CP 2120E	2500N	3.5-5.5	7.60	0.0000	0.03	99.97	0.40	0.96				
CP 2120E	2500N	5.5-7.5	7.30	0.1921	1.99	98.01	1.47	2.10				
CP 2120E	2500N	7.5-9.7	3.20	1.8700	2.15	97.85	6.64	0.86				
CP 2090E	2500N	0-1.5	4.80	0.0902	0.12	99.98	1.51	1.79				
CP 2090E	2500N	1.5-3.5	6.60	0.0029	0.07	99.99	1.28	1.69				
CP 2090E	2500N	3.5-5.5	6.70	0.0000	0.15	99.95	0.85	1.51				
CP 2090E	2500N	5.5-7.5	6.10	0.0000	0.04	99.96	1.19	0.81				
CP 2090E	2500N	7.5-9.5	6.55	0.0024	0.09	99.91	3.19	0.74				
CP 2090E	2500N	9.5-11.5	7.00	0.7901	7.40	92.60	4.46	0.71				

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 2280E 2200N	0-1.5	3.50	0.1717	0.06	99.94	1.72	1.32
Cp 2280E 2200N	1.5-3.5	7.00	0.0081	0.01	99.99	0.60	2.01
Cp 2280E 2200N	3.5-5.5	8.60	0.0523	0.06	99.94	0.57	4.65
Cp 2280E 2200N	5.5-6.75	4.40	2.7984	1.23	98.77	2.69	2.26
Cp 2260E 2200N	0-1.5	4.10	0.0598	0.10	99.90	1.59	1.77
Cp 2260E 2200N	1.5-3.5	7.95	0.0257	0.08	99.92	0.76	2.54
Cp 2260E 2200N	3.5-5.5	7.15	0.4498	0.41	99.59	0.89	1.69
Cp 2260E 2200N	5.5-6.75	0.20	0.1150	4.91	95.09	3.83	1.38
Cp 2240E 2200N	0-1.5	4.45	0.1456	0.05	99.95	0.89	1.40
Cp 2240E 2200N	1.5-3.5	7.35	0.0010	0.03	99.97	0.45	1.24
Cp 2240E 2200N	3.5-5.5	8.80	1.1215	0.52	99.48	0.91	2.65
Cp 2220E 2200N	0-1.5	4.50	0.0060	0.06	99.94	2.00	1.21
Cp 2220E 2200N	1.5-3.5	7.25	0.0023	0.03	99.97	0.51	1.68
Cp 2220E 2200N	3.5-5.5	7.80	0.0000	0.03	99.97	0.38	1.37
Cp 2220E 2200N	5.5-7.5	8.25	0.1165	0.23	99.77	0.43	2.03
Cp 2220E 2200N	7.5-8.5	3.00	2.0943	1.73	98.27	1.19	0.96
Cp 2200E 2200N	0-1.5	4.55	0.0523	0.05	99.95	1.18	1.43
Cp 2200E 2200N	1.5-3.5	7.55	0.0007	0.04	99.96	0.58	1.37
Cp 2200E 2200N	3.5-5.5	8.15	0.0000	0.03	99.97	0.59	2.75
Cp 2200E 2200N	5.5-7.5	8.45	0.1265	0.35	99.65	0.79	1.34
Cp 2200E 2200N	7.5-8.1	1.75	1.0800	3.32	96.68	2.13	1.37
Cp 2180E 2200N	0-1.5	3.85	0.0310	0.08	99.92	2.59	0.62
Cp 2180E 2200N	1.5-3.5	6.00	0.0000	0.04	99.96	1.25	1.33
Cp 2180E 2200N	3.5-5.5	7.05	0.0000	0.01	99.99	0.65	0.80
Cp 2180E 2200N	5.5-7.5	6.95	0.0024	0.04	99.96	1.35	0.64
Cp 2180E 2200N	7.5-9.5	8.10	0.0407	0.26	99.74	0.93	1.28
Cp 2180E 2200N	9.5-10.5	4.30	2.0828	1.34	98.66	1.21	2.77
Cp 2160E 2200N	0-1.5	4.85	0.3186	0.27	99.73	1.54	0.83
Cp 2160E 2200N	1.5-3.5	8.05	0.0000	0.06	99.94	0.57	0.88
Cp 2160E 2200N	3.5-5.5	7.50	0.0000	0.02	99.98	0.29	0.57
Cp 2160E 2200N	5.5-7.5	7.35	0.0000	0.01	99.99	1.43	1.77
Cp 2160E 2200N	7.5-9.5	7.95	0.9214	2.84	97.16	1.00	0.58
Cp 2160E 2200N	9.5-10.0	1.70	6.7041	13.65	86.35	3.98	0.38
Cp 2140E 2200N	0-1.5	3.35	0.6122	0.20	99.80	1.45	0.70
Cp 2140E 2200N	1.5-3.5	7.20	0.0142	0.14	99.86	1.30	0.43
Cp 2140E 2200N	3.5-4.5	2.70	0.0926	1.36	98.64	3.40	0.83

588510

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

SOLE NUMBER	DEPTH	TOTAL WEIGHT	% + 2mm	% +1000µ	% -1000µ	SLIME	HEAVY MINERAL	
		KG					(MINERAL)	
CR 2120E	2200N	0-1.5	3.50	0.2517	0.15	99.85	1.28	0.42
CR 2120E	2200N	1.5-3.5	5.65	0.0136	0.34	99.66	3.68	0.45
CR 2120E	2200N	3.5-4.5	1.95	21.0046	6.66	93.34	6.94	0.75
CR 2080E	2200N	0-1.5	2.20	1.4764	2.68	97.32	13.24	1.72
CR 2040E	2200N	0-1.5	1.65	1.4648	1.48	98.52	8.00	0.93
CR 2040E	2200N	1.5-1.9	1.50	0.2633	0.53	99.47	5.08	0.62
CR 2000E	2200N	0-1.5	3.50	0.2303	1.11	98.89	6.77	0.54
CR 2000E	2200N	1.5-2.0	0.60	1.4400	5.60	94.40	9.86	0.48
CR 1960E	2200N	0-1.5	4.75	0.0547	0.15	99.85	4.24	0.60
CR 1960E	2200N	1.5-2.8	3.10	0.1619	1.44	98.56	5.91	1.13
CR 1920E	2200N	0-1.5	4.00	0.5158	0.20	99.80	7.40	0.96
CR 1920E	2200N	1.5-3.0	4.85	0.8047	0.60	99.40	5.59	1.70
CR 1880E	2200N	0-1.5	2.80	0.9746	0.19	99.81	4.69	1.55
CR 1880E	2200N	1.5-3.0	4.15	0.3542	2.51	97.49	14.63	1.10
CR 1840E	2200N	0-1.5	1.95	0.1887	0.13	99.87	4.59	1.74
CR 1840E	2200N	1.5-2.5	3.05	2.5279	2.23	97.77	4.38	1.28
CR 1800E	2200N	0-1.5	2.55	0.9067	0.38	99.62	9.89	1.24
CR 1800E	2200N	1.5-2.75	3.70	2.3770	2.70	97.30	6.46	0.93
CR 1760E	2200N	0-1.5	4.55	0.0677	0.11	99.89	5.48	1.52
CR 1760E	2200N	1.5-2.9	3.45	4.5032	6.34	90.66	2.95	1.14
CR 1720E	2200N	0-1.5	4.20	0.0224	0.08	99.92	3.16	2.85
CR 1720E	2200N	1.5-3.0	3.60	2.6917	2.63	97.37	5.74	1.39
CR 1680E	2200N	0-1.5	4.65	0.0639	0.09	99.92	2.26	0.88
CR 1680E	2200N	1.5-2.9	2.90	3.0110	0.72	99.28	5.69	2.76
CR 1640E	2200N	0-1.5	1.35	0.6653	0.92	94.59	7.65	1.11
CR 1640E	2200N	1.5-1.9	1.30	1.5915	2.73	97.27	5.12	1.34
CR 1600E	2200N	0-1.5	4.10	0.0800	0.10	99.90	6.72	0.83
CR 1600E	2200N	1.5-3.0	3.90	0.5129	0.60	99.40	5.42	1.96
CR 1560E	2200N	0-1.5	5.05	0.1101	0.09	99.91	1.32	2.14
CR 1560E	2200N	1.5-3.5	7.35	0.3341	0.76	99.24	3.38	3.26
CR 1560E	2200N	3.5-3.75	0.70	19.7729	5.19	94.81	4.39	2.00
CR 1520E	2200N	0-1.5	3.45	0.4394	0.32	99.68	6.65	0.80
CR 1520E	2200N	1.5-3.5	7.45	0.2919	2.95	97.05	4.07	1.02
CR 1520E	2200N	3.5-4.5	3.30	6.1545	6.39	93.61	2.37	1.28

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 1480E 2200N	0-1.5	2.95	0.3959	0.35	99.65	7.99	1.09
Cp 1480E 2200N	1.5-3.5	6.70	0.4960	1.99	98.01	5.07	0.57
Cp 1480E 2200N	3.5-3.75	1.90	1.6268	1.29	98.71	6.39	2.39
Cp 960E 2200N	0-1.5	4.50	0.0596	0.11	99.89	5.90	1.87
Cp 960E 2200N	3.5-5.5	6.30	1.4773	0.86	99.14	7.64	5.30
Cp 2260E 1900N	0-1.5	3.50	0.0523	0.07	99.93	1.58	2.55
Cp 2260E 1900N	1.5-3.5	6.50	0.0052	0.01	99.99	0.78	2.18
Cp 2260E 1900N	3.5-5.5	6.65	0.0021	0.01	99.99	0.46	0.87
Cp 2260E 1900N	5.5-7.5	7.30	2.8233	0.92	99.08	9.36	0.91
Cp 2280E 1900N	0-1.5	4.50	0.0638	0.06	99.94	1.73	0.93
Cp 2280E 1900N	1.5-3.5	7.60	0.1501	0.05	99.95	0.70	1.53
Cp 2280E 1900N	3.5-4.0	1.25	1.9504	1.49	98.51	9.13	0.55
Cp 2300E 1900N	0-1.5	4.20	1.3679	0.04	99.96	1.36	0.64
Cp 2300E 1900N	1.5-3.0	5.15	1.1917	0.17	99.83	0.86	2.63
Cp 2320E 1900N	0-1.5	4.10	0.2007	0.14	99.86	0.34	0.62
Cp 2320E 1900N	1.5-3.1	6.25	0.7872	2.17	97.83	0.43	0.58
Cp 2200E 1600N	0-1.5	4.00	0.0503	0.01	99.99	1.06	1.32
Cp 2200E 1600N	1.5-3.5	7.15	0.0101	0.01	99.99	0.33	0.91
Cp 2200E 1600N	3.5-5.5	7.35	0.0090	0.05	99.95	0.86	0.56
Cp 2200E 1600N	5.5-7.5	7.35	0.0000	0.02	99.98	0.64	0.73
Cp 2200E 1600N	7.5-9.5	7.35	0.0026	0.11	99.89	1.64	0.39
Cp 2200E 1600N	9.5-11.0	3.15	0.5302	0.33	99.67	10.89	0.32
Cp 2180E 1600N	0-1.5	4.30	0.0279	0.12	99.88	0.95	0.74
Cp 2180E 1600N	1.5-3.5	6.70	0.0000	0.01	99.99	0.40	0.77
Cp 2180E 1600N	3.5-5.5	7.15	0.0000	0.01	99.99	0.31	0.56
Cp 2180E 1600N	5.5-7.5	6.60	0.0000	0.01	99.99	0.63	0.58
Cp 2180E 1600N	7.5-9.5	6.20	0.0000	0.03	99.97	1.04	0.50
Cp 2180E 1600N	9.5-11.5	7.65	0.0014	0.06	99.94	3.89	0.46
Cp 2180E 1600N	11.5-13.5	4.90	0.2871	0.56	99.44	9.76	0.32
Cp 2160E 1600N	0-1.5	4.60	0.0613	0.03	99.97	0.81	1.63
Cp 2160E 1600N	1.5-3.5	7.85	0.0027	0.03	99.97	0.62	1.43
Cp 2160E 1600N	3.5-5.5	8.15	0.0000	0.02	99.98	0.16	1.48
Cp 2160E 1600N	5.5-7.5	6.90	0.0000	0.00	100.00	0.42	1.36
Cp 2160E 1600N	7.5-9.5	6.60	0.0000	0.00	100.00	0.41	0.70
Cp 2160E 1600N	9.5-11.5	6.95	0.0063	0.02	99.98	1.40	0.40
Cp 2160E 1600N	11.5-13.5	7.75	0.0439	0.21	99.79	5.82	0.29
Cp 2160E 1600N	13.5-14.25	2.30	5.4878	1.17	98.83	7.83	0.32

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT + 2mm	%	+1000µ	%	-1000µ	%	SLIME	%	HEAVY MINERAL	%
CP 2140E	1600N	0-1.5	5.40	0.0693	0.04	99.96	1.13			1.40	
CP 2140E	1600N	1.5-3.5	7.20	0.0007	0.04	99.96	0.67			1.72	
CP 2140E	1600N	3.5-5.5	8.20	0.0000	0.12	99.88	0.30			0.71	
CP 2140E	1600N	5.5-7.5	7.20	0.0025	0.12	99.88	0.58			0.72	
CP 2140E	1600N	7.5-9.5	6.65	0.0000	0.00	100.00	0.78			1.21	
CP 2140E	1600N	9.5-11.5	6.25	0.0000	0.02	99.98	0.36			0.77	
CP 2140E	1600N	11.5-13.5	7.00	0.0000	0.02	99.98	1.29			0.43	
CP 2140E	1600N	13.5-15.5	5.10	0.0239	0.17	99.83	10.61			0.40	
CP 2140E	1600N	15.5-16.5	2.30	10.0157	4.00	96.00	4.47			0.51	
CP 2120E	1600N	0-1.5	3.05	0.2784	0.11	99.89	2.00			1.06	
CP 2120E	1600N	1.5-3.5	7.10	0.0128	0.01	99.99	0.44			0.58	
CP 2120E	1600N	3.5-5.5	6.90	0.0000	0.10	99.90	5.24			0.33	
CP 2120E	1600N	5.5-6.3	1.70	0.4916	1.86	98.14	19.94			0.52	
CP 2100E	1600N	0-1.5	1.70	0.5224	1.03	98.97	9.88			0.73	
CP 2100E	1600N	1.5-3.5	6.75	0.0021	0.02	99.98	0.54			0.64	
CP 2100E	1600N	3.5-5.5	6.65	0.0012	0.04	99.96	0.62			0.68	
CP 2100E	1600N	5.5-7.5	8.20	0.0027	0.05	99.95	3.15			0.32	
CP 2100E	1600N	7.5-8.4	3.10	1.3697	1.78	98.22	11.87			0.63	
CP 2080E	1600N	0-1.5	3.00	0.1150	0.09	99.91	0.68			0.91	
CP 2080E	1600N	1.5-3.5	7.20	0.0153	0.14	99.86	0.42			1.12	
CP 2080E	1600N	3.5-5.5	6.60	0.0000	0.02	99.98	0.44			1.28	
CP 2060E	1600N	5.5-7.5	6.55	0.0000	0.03	99.97	0.50			1.69	
CP 2080E	1600N	7.5-8.5	6.00	0.0000	0.03	99.97	0.30			1.61	
CP 2080E	1600N	8.5-11.5	7.25	0.0000	0.13	99.87	1.54			0.67	
CP 2061E	1600N	11.5-13.0	3.00	1.0149	1.56	96.46	9.36			1.43	
CP1160E	3750NW	0-1.5	3.20	1.0544	1.21	98.79	10.36			2.20	
CP1160E	3750NW	1.5-3.5	9.90	0.0604	0.42	99.58	2.11			0.81	
CP1160E	3750NW	3.5-5.5	10.25	1.0995	4.62	95.38	1.80			0.24	
CP1150E	3750NW	5.5-7.5	6.00	6.9458	14.57	85.43	9.77			0.82	
CP1120NE	3750NW	0-1.5	2.80	0.1925	0.57	99.43	6.00			0.20	
CP1120NE	3750NW	1.5-3.5	10.95	0.0884	1.54	98.46	2.17			0.15	
CP1120NE	3750NW	3.5-5.5	11.25	0.3841	2.66	97.32	1.67			0.23	
CP1120NE	3750NW	5.5-7.3	7.95	9.8926	7.49	92.51	2.63			0.29	
CP1080NE	3750NW	0-1.5	6.45	0.0307	0.20	99.80	1.80			0.44	
CP1080NE	3750NW	1.5-3.5	9.60	0.0000	0.19	99.81	1.44			0.36	
CP1080NE	3750NW	3.5-5.5	9.05	0.7541	5.18	94.82	2.06			0.35	
CP1080NE	3750NW	5.5-6.0	1.75	3.7490	7.25	92.65	2.85			0.28	
CP1060NE	3750NW	0-1.5	5.80	0.1345	0.20	99.80	2.73			0.89	
CP1060NE	3750NW	1.5-3.5	10.60	0.0234	0.97	99.03	1.87			0.43	
CP1060NE	3750NW	3.5-5.5	10.25	1.6686	5.54	94.46	2.68			0.34	

588513

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000µ	% -1000µ	% SLIME	% HEAVY MINERAL
Cp1040NE 3750NW	0-1.5	4.60	0.1576	0.19	99.81	1.78	0.71
Cp1040NE 3750NW	1.5-3.5	10.50	0.1355	2.16	97.84	0.95	0.27
Cp1040NE 3750NW	3.5-5.5	4.90	2.5286	5.81	94.19	4.19	0.20
Cp1020NE 3750NW	0-1.5	5.70	0.0900	0.18	99.82	1.72	0.45
Cp1020NE 3750NW	1.5-3.5	9.60	0.0073	0.46	99.52	1.23	0.34
Cp1020NE 3750NW	3.5-5.5	6.50	2.1232	5.90	94.10	6.69	0.74
Cp1020NE 3750NW	5.5-7.5	8.85	27.3424	17.79	82.21	28.33	10.33
Cp1000E 3750NW	0-1.5	4.35	0.0646	0.31	99.69	3.82	0.80
Cp1000E 3750NW	1.5-3.5	9.00	0.2466	1.16	98.84	5.77	2.69
Cp1000E 3750NW	3.5-5.5	7.65	8.5424	2.53	97.47	14.60	2.67
Cp980NE 3750NW	0-1.5	5.45	0.1185	0.15	99.85	1.64	2.60
Cp980NE 3750NW	1.5-3.5	8.40	1.1008	2.26	97.74	2.37	4.19
Cp980NE 3750NW	3.5-4.75	3.90	12.3331	14.37	85.63	10.86	1.93
Cp960NE 3750NW	0-1.5	2.80	0.3414	2.04	97.96	7.18	3.57
Cp960NE 3750NW	1.5-3.5	4.50	7.9798	7.66	92.34	12.72	5.33
Cp 940E 3750NW	0-1.5	2.35	4.7417	10.35	89.65	12.99	1.52
Cp 940E 3750NW	1.5-3.0	3.80	14.4074	17.82	82.18	27.09	7.51
Cp1100E 3450NW	0-1.5	5.50	0.1264	0.19	99.81	4.76	0.76
Cp1100E 3450NW	1.5-3.5	8.65	0.1108	0.35	99.65	2.40	1.31
Cp1100E 3450NW	3.5-5.5	8.50	1.3515	7.01	92.99	3.25	0.47
Cp1100E 3450NW	5.5-6.0	1.90	5.6037	6.75	93.25	2.46	0.53
Cp1060E 3450NW	0-1.5	5.75	0.3066	0.66	99.34	1.62	1.21
Cp1060E 3450NW	1.5-3.5	10.15	0.3833	3.40	96.60	1.14	0.36
Cp1060E 3450NW	3.5-5.5	6.95	3.3424	6.00	94.00	4.28	0.47
Cp1040NE 3450NW	0-1.5	4.85	0.0862	0.47	99.53	2.62	0.82
Cp1040NE 3450NW	1.5-3.5	9.80	0.3624	2.62	97.36	1.26	0.65
Cp1040NE 3450NW	3.5-5.5	8.80	5.0757	3.78	96.22	3.76	1.77
Cp1040NE 3450NW	5.5-5.8	1.30	15.1762	11.78	88.22	3.05	5.17

588514

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000µ	% -1000µ	% SLIME	% HEAVY MINERAL
Cp1020NE 3450NW	0-1.5	4.95	0.2022	0.14	99.86	1.50	1.25
Cp1020NE 3450NW	1.5-3.5	8.90	0.2290	1.09	98.91	1.70	0.92
Cp1020NE 3450NW	3.5-5.3	7.80	2.4097	1.90	98.10	5.73	1.78
Cp1000NE 3450NW	0-1.5	6.05	0.0826	0.45	99.55	1.81	1.96
Cp1000NE 3450NW	1.5-3.5	9.00	0.9817	1.60	98.40	1.87	3.67
Cp1000NE 3450NW	3.5-5.5	6.95	2.6429	6.19	93.91	5.04	1.24
Cp1000NE 3450NW	5.5-6.25	2.75	4.9535	10.32	89.68	21.43	1.25
Cp 980E 3450NW	0-1.5	4.90	0.0680	0.26	99.74	2.14	3.61
Cp 980E 3450NW	1.5-3.5	6.70	0.6985	2.48	97.52	6.87	1.91
Cp 980E 3450NW	3.5-4.5	2.50	6.2516	15.87	84.13	10.86	0.76
Cp960NE 3450NW	0-1.5	1.75	0.2834	0.28	99.72	11.52	2.19
Cp960NE 3450NW	1.5-3.25	5.40	1.0087	6.00	94.00	18.35	1.56



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RHF

Laboratory Services

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29
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)

12th May, 1989

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

ATTENTION Mr. G. Lee

Dear Sir,

Please find enclosed complete raw data documentation for the Cowper Point and Naracoopa Surveys.

Yours faithfully,
For RHF LABORATORY SERVICES

Per *G.P. Dowson*

G.P. Dowson,
Manager.

GPD;CJH
Encl.

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 1930E 4050N	0-1.5	3.15	0.4790	0.12	99.88	2.91	2.39
Cp 1930E 4050N	1.5-3.5	6.70	0.0003	0.01	99.99	1.49	1.32
Cp 2680E 4050N	0-1.5	2.70	0.2485	0.10	99.90	4.18	0.96
Cp 2680E 4050N	1.5-3.5	2.80	0.0000	0.00	100.00	0.40	1.82
Cp 2680E 4050N	3.5-5.5	3.30	0.0000	0.01	99.99	0.44	1.71
Cp 2680E 4050N	5.5-7.5	2.80	0.0064	0.00	100.00	0.32	1.83
Cp 2680E 4050N	7.5-9.5	2.80	0.0268	0.01	99.99	0.53	2.30
Cp 2680E 4050N	9.5-11.5	3.00	0.0320	0.01	99.99	0.73	2.12
Cp 2720E 4050N	0-1.5	2.50	0.5944	0.07	99.93	2.49	1.33
Cp 2720E 4050N	1.5-3.5	3.20	0.4078	0.10	99.90	2.06	1.46
Cp 2720E 4050N	3.5-5.5	2.95	0.0810	0.02	99.98	0.72	1.45
Cp 2720E 4050N	5.5-7.5	3.20	0.0103	0.01	99.99	0.37	1.53
Cp 2720E 4050N	7.5-9.5	3.15	0.0073	0.00	100.00	0.50	1.95
Cp 2720E 4050N	9.5-10.5	2.40	0.0096	0.01	99.99	0.57	2.02
Cp 2360E 3750N	0-1.5	4.85	0.0928	0.19	99.81	1.61	7.36
Cp 2360E 3750N	1.5-3.5	7.45	0.0000	0.02	99.98	0.78	6.08
Cp 2360E 3750N	3.5-5.5	7.80	0.0000	0.10	99.90	0.81	4.06
Cp 2360E 3750N	5.5-7.5	8.15	0.0000	0.01	99.99	0.82	6.63
Cp 1880E 3750N	0-1.5	2.90	0.2159	0.10	99.90	2.76	2.48
Cp 1880E 3750N	1.5-3.5	1.50	0.0680	0.05	99.95	3.43	0.76
Cp 2600E 3750N	0-1.5	1.95	0.2369	0.07	99.93	1.94	1.70
Cp 2600E 3750N	1.5-3.5	2.70	0.0881	0.12	99.88	1.65	2.21
Cp 2600E 3750N	5.5-7.5	3.00	0.0077	0.14	99.86	1.58	1.84
Cp 2600E 3750N	3.5-5.5	2.85	0.0130	0.00	100.00	0.37	2.17
Cp 2600E 3750N	7.5-9.5	2.80	0.0068	0.09	99.91	0.81	3.12
Cp 2600E 3750N	9.5-11.5	2.75	0.0087	0.00	100.00	0.49	2.25
Cp 2640E 3750N	0-1.5	2.50	0.0916	0.04	99.96	1.37	1.91
Cp 2640E 3750N	1.5-3.5	3.10	0.0161	0.00	100.00	0.60	1.26
Cp 2640E 3750N	3.5-5.5	3.00	0.0000	0.00	100.00	0.23	1.41
Cp 2640E 3750N	5.5-7.5	2.40	0.0104	0.00	100.00	0.28	1.66
Cp 2640E 3750N	7.5-9.5	3.05	0.0203	0.00	100.00	0.47	1.88
Cp 2640E 3750N	9.5-11.5	3.10	0.0252	0.00	100.00	0.42	1.37
Cp 2680E 3750N	0-1.5	2.05	0.1922	0.08	99.92	0.52	2.11
Cp 2680E 3750N	1.5-3.5	3.65	0.2463	0.08	99.92	1.21	1.52
Cp 2680E 3750N	3.5-5.5	3.40	0.0103	0.03	99.97	0.73	1.97
Cp 2680E 3750N	5.5-7.5	3.30	0.0000	0.01	99.99	0.31	1.62
Cp 2680E 3750N	7.5-9.5	3.00	0.0267	0.01	99.99	0.43	1.39
Cp 2680E 3750N	9.5-11.5	3.00	0.0303	0.02	99.98	0.49	1.51

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 2200E 3450N	0-1.5	3.00	0.2453	0.06	99.94	1.16	6.52
Cp 2200E 3450N	1.5-3.5	3.70	0.0327	0.03	99.97	0.55	4.39
Cp 2200E 3450N	3.5-5.5	3.30	0.0091	0.01	99.99	0.29	4.46
Cp 2200E 3450N	5.5-7.5	3.40	0.0071	0.02	99.98	0.27	3.02
Cp 2200E 3450N	7.5-9.5	3.10	0.0168	0.01	99.99	0.26	4.05
Cp 2200E 3450N	9.5-11.5	3.45	0.0191	0.00	100.00	0.26	4.93
Cp 2240E 3450N	0-1.5	2.15	0.1191	0.06	99.94	1.30	4.33
Cp 2240E 3450N	1.5-3.5	2.75	0.0669	0.04	99.96	0.81	4.56
Cp 2240E 3450N	3.5-5.5	3.60	0.0072	0.02	99.98	0.34	6.07
Cp 2240E 3450N	5.5-7.5	3.20	0.0150	0.02	99.98	0.28	7.64
Cp 2240E 3450N	7.5-9.5	3.00	0.0237	0.01	99.99	0.30	4.97
Cp 2240E 3450N	9.5-11.5	3.90	0.0408	0.02	99.98	0.31	5.14
Cp 2520E 3450N	0-1.5	2.40	0.0642	0.00	100.00	0.43	1.78
Cp 2520E 3450N	1.5-3.5	2.50	0.0056	0.00	100.00	0.24	2.35
Cp 2520E 3450N	3.5-5.5	2.90	0.0062	0.00	100.00	0.18	1.91
Cp 2520E 3450N	5.5-7.5	3.15	0.0000	0.00	100.00	0.23	1.99
Cp 2520E 3450N	7.5-9.5	2.50	0.0000	0.00	100.00	0.19	1.59
Cp 2520E 3450N	9.5-10.8	2.50	0.0000	0.00	100.00	0.23	1.30
Cp 2560E 3450N	0-1.5	2.40	0.4975	0.10	99.90	2.94	1.21
Cp 2560E 3450N	1.5-3.5	2.55	0.0000	0.00	100.00	0.30	1.65
Cp 2560E 3450N	3.5-5.5	2.60	0.0027	0.02	99.98	0.58	2.22
Cp 2560E 3450N	5.5-7.5	3.20	0.0122	0.01	99.99	0.28	2.71
Cp 2560E 3450N	7.5-9.5	2.90	0.0041	0.00	100.00	0.38	0.89
Cp 2560E 3450N	9.5-11.5	3.80	0.0058	0.00	100.00	0.32	0.90
Cp 2600E 3450N	0-1.5	2.20	0.2518	0.04	99.96	1.36	1.23
Cp 2600E 3450N	1.5-3.5	3.20	0.0000	0.00	100.00	0.25	1.32
Cp 2600E 3450N	3.5-5.5	3.35	0.0000	0.00	100.00	0.42	1.03
Cp 2600E 3450N	5.5-7.5	3.45	0.0000	0.07	99.93	0.61	1.05
Cp 2600E 3450N	7.5-9.5	3.05	0.0030	0.00	100.00	0.59	0.93
Cp 2600E 3450N	9.5-11.5	2.30	0.0091	0.01	99.99	0.53	0.99
Cp 2640E 3450N	0-1.5	2.45	0.0053	0.00	100.00	0.21	1.77
Cp 2640E 3450N	1.5-3.5	3.20	0.0000	0.00	100.00	0.19	2.43
Cp 2640E 3450N	3.5-5.5	3.10	0.0074	0.01	99.99	0.20	1.43
Cp 2640E 3450N	5.5-7.5	2.90	0.0076	0.00	100.00	0.19	2.28
Cp 2640E 3450N	7.5-9.5	2.20	0.0000	0.00	100.00	0.28	1.57
Cp 2640E 3450N	9.5-11.5	3.05	0.0059	0.00	100.00	0.31	1.46
Cp 2680E 3450N	0-1.5	1.50	0.1153	0.65	99.35	0.30	1.52
Cp 2680E 3450N	1.5-3.5	4.00	0.2345	1.19	98.81	0.19	2.37
Cp 2680E 3450N	3.5-5.0	5.85	1.9860	3.49	96.51	0.27	0.91

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 2720E 3450N	0-1.5	2.55	0.1235	0.79	99.21	0.12	1.95
Cp 2720E 3450N	1.5-3.5	7.30	3.2690	10.68	89.32	0.21	0.44
Cp 780E 3150N	0-1.5	1.90	0.0800	5.56	94.44	23.94	1.37
Cp 800E 3150N	0-1.5	2.10	0.7952	5.03	94.97	20.43	1.71
Cp 820E 3150N	0-1.5	1.95	0.4374	1.77	98.23	13.93	2.44
Cp 1520E 3150N	0-1.5	3.85	0.0356	0.17	99.83	5.27	0.76
Cp 1520E 3150N	1.5-3.5	7.95	0.3284	0.73	99.27	5.99	1.45
Cp 1520E 3150N	3.5-3.8	1.00	0.5020	4.56	95.44	6.30	0.95
Cp 1560E 3150N	0-1.5	5.25	0.0375	0.13	99.87	2.92	0.91
Cp 1560E 3150N	1.5-3.5	7.40	0.4618	0.36	99.64	4.75	1.34
Cp 1560E 3150N	3.5-4.5	4.35	4.8522	3.06	96.94	4.23	1.34
Cp 1600E 3150N	0-1.5	5.35	0.0664	0.35	99.65	8.57	2.01
Cp 1600E 3150N	1.5-3.5	8.80	0.4550	0.99	99.01	3.91	1.20
Cp 1600E 3150N	3.5-3.75	1.85	16.0876	4.38	95.62	5.09	2.51
Cp 1640E 3150N	0-1.5	2.45	0.1078	0.28	99.72	6.42	1.51
Cp 1640E 3150N	1.5-3.0	5.25	4.6870	1.49	98.51	4.18	2.05
Cp 1680E 3150N	0-1.5	3.00	0.0660	0.30	99.70	9.03	2.71
Cp 1680E 3150N	1.5-3.0	7.60	2.5341	1.05	98.95	8.67	2.34
Cp 1720E 3150N	0-1.5	3.10	0.2426	0.23	99.77	5.34	1.96
Cp 1720E 3150N	1.5-2.6	3.55	14.3580	3.52	96.48	5.47	1.86
Cp 1760E 3150N	0-1.5	1.70	0.2459	0.50	99.50	4.20	1.04
Cp 1760E 3150N	1.5-3.0	2.65	5.0668	1.28	98.72	4.37	1.69
Cp 1800E 3150N	0-1.5	2.75	0.0982	0.19	99.82	5.05	0.93
Cp 1800E 3150N	1.5-3.0	5.25	0.0236	0.57	99.43	5.19	1.00
Cp 1840E 3150N	0-1.5	2.50	0.2088	0.13	99.87	3.66	1.27
Cp 1840E 3150N	1.5-3.3	6.00	0.2247	0.17	99.83	5.95	2.11
Cp 1880E 3150N	0-1.5	2.85	0.0256	0.17	99.83	12.37	1.80
Cp 1880E 3150N	1.5-3.0	5.40	0.5006	0.42	99.58	8.10	1.29
Cp 1920E 3150N	0-1.5	2.85	0.0856	0.14	99.86	5.02	1.38
Cp 1920E 3150N	1.5-2.7	1.20	0.1950	0.96	99.04	8.20	1.06

588519

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 1960E 3150N	0-1.5	2.95	0.0383	0.22	99.78	7.36	1.20
Cp 1960E 3150N	1.5-2.7	2.55	3.8788	2.27	97.73	6.90	2.19
Cp 2000E 3150N	0-1.5	1.50	0.1473	0.48	99.52	12.91	1.45
Cp 2000E 3150N	1.5-3.0	3.15	4.2568	2.16	97.84	7.37	1.11
Cp 2040E 3150N	0-1.5	1.15	0.5243	0.50	99.50	11.93	2.45
Cp 2040E 3150N	1.5-3.0	7.90	0.2958	1.33	98.67	15.45	2.49
Cp 2080E 3150N	0-1.5	2.35	0.5596	0.89	99.11	11.40	1.11
Cp 2120E 3150N	0-1.4	3.75	0.1613	0.29	99.71	5.92	0.96
Cp 2160E 3150N	0-1.5	2.70	0.5622	0.08	99.92	1.88	2.55
Cp 2160E 3150N	1.5-3.5	6.90	0.0061	0.05	99.95	3.87	1.63
Cp 2160E 3150N	3.5-4.5	3.10	0.0365	0.28	99.72	4.30	0.84
Cp 2560E 3150N	0-1.5	2.35	0.3170	0.11	99.89	1.20	1.47
Cp 2560E 3150N	1.5-3.5	3.30	0.0067	0.00	100.00	0.32	2.25
Cp 2560E 3150N	3.5-5.5	3.15	0.0038	0.02	99.98	0.28	2.12
Cp 2560E 3150N	5.5-7.5	2.65	0.0102	0.00	100.00	0.32	3.86
Cp 2560E 3150N	7.5-9.5	2.50	0.0056	0.00	100.00	0.41	2.57
Cp 2560E 3150N	9.5-11.5	2.35	0.0106	0.00	100.00	0.40	2.50
Cp 2600E 3150N	0-1.5	2.35	0.0583	0.15	99.85	0.36	1.27
Cp 2600E 3150N	1.5-3.5	4.60	0.1422	0.31	99.69	0.45	1.67
Cp 2600E 3150N	3.5-5.5	6.90	1.7484	1.66	98.34	2.35	0.94
Cp 2640E 3150N	0-1.5	2.15	2.6326	11.16	88.84	0.27	1.49
Cp 2640E 3150N	1.5-3.5	6.65	1.1919	5.23	94.77	0.19	1.00
Cp 2640E 3150N	3.5-4.4	3.00	3.0237	9.35	90.65	0.37	0.36
Cp 840E 2800N	0-1.5	2.50	1.3180	0.41	99.59	5.31	11.09
Cp 860E 2800N	0-1.5	4.20	0.0550	0.10	99.90	1.10	14.90
Cp 860E 2800N	1.5-3.5	7.15	0.8382	1.75	98.25	3.73	24.30
Cp 860E 2800N	3.5-4.0	1.60	8.3763	9.94	90.06	22.81	6.18
Cp 880E 2800N	0-1.5	4.25	0.1506	0.24	99.76	3.51	6.74
Cp 880E 2800N	1.5-3.5	8.25	0.2479	0.50	99.50	6.45	25.33
Cp 880E 2800N	3.5-5.5	7.55	1.5177	3.11	96.89	7.39	9.78
Cp 900E 2800N	0-1.5	4.90	0.0510	0.20	99.80	1.65	2.23
Cp 900E 2800N	1.5-3.5	8.25	0.0097	0.09	99.91	4.58	3.57
Cp 900E 2800N	3.5-5.5	8.35	4.2868	7.30	92.70	6.07	2.39
Cp 900E 2800N	5.5-6.5	1.15	22.8557	12.37	87.63	22.67	1.18

588520

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 920E 2800N	0-1.5	4.25	0.0765	0.11	99.89	2.41	1.35
Cp 920E 2800N	1.5-3.5	8.60	0.0573	0.14	99.86	3.54	1.85
Cp 920E 2800N	3.5-5.5	7.90	2.8346	6.04	93.96	7.15	2.09
Cp 940E 2800N	0-1.5	2.70	0.2685	0.38	99.62	4.02	1.08
Cp 940E 2800N	1.5-3.5	7.80	0.3950	1.64	98.36	4.75	0.95
Cp 940E 2800N	3.5-5.5	5.90	5.8864	7.50	92.50	6.14	0.85
Cp 960E 2800N	0-1.5	5.40	0.1711	1.20	98.80	15.64	1.72
Cp 960E 2800N	1.5-3.5	6.65	0.4472	1.76	98.24	6.50	1.22
Cp 960E 2800N	3.5-5.5	4.90	7.4382	7.83	92.17	5.63	0.95
Cp 960E 2800N	5.5-5.7	1.40	9.9636	7.15	92.85	15.07	1.72
Cp 980E 2800N	0-1.5	3.00	1.0613	0.17	99.83	5.10	1.42
Cp 980E 2800N	1.5-3.5	7.35	0.0371	0.88	99.12	2.87	0.95
Cp 980E 2800N	3.5-5.5	3.70	12.8697	10.81	89.19	8.39	0.79
Cp 1000E 2800N	0-1.5	4.65	0.1540	0.27	99.73	4.64	1.73
Cp 1000E 2800N	1.5-3.5	8.00	0.4194	2.04	97.96	4.44	1.97
Cp 1000E 2800N	3.5-4.8	3.65	4.6329	7.59	92.41	6.95	1.25
Cp 1020E 2800N	0-1.5	3.00	0.1540	0.23	99.77	6.24	0.96
Cp 1020E 2800N	1.5-3.5	8.45	1.0647	4.52	95.48	3.99	1.85
Cp 1020E 2800N	3.5-4.75	5.15	3.9909	5.29	94.71	11.46	1.12
Cp 1040E 2800N	0-1.5	3.20	0.0859	0.38	99.62	7.96	0.80
Cp 1040E 2800N	1.5-3.5	7.50	0.2055	0.55	99.45	4.45	1.67
Cp 1040E 2800N	3.5-4.7	4.50	5.8653	14.82	85.18	8.07	0.89
Cp 2060E 2800N	0-1.5	1.30	0.2854	0.52	99.48	15.11	2.42
Cp 2420E 2800N	0-1.5	2.25	0.0924	0.04	99.96	0.93	2.24
Cp 2420E 2800N	1.5-3.5	3.50	0.0000	0.00	100.00	0.15	2.45
Cp 2420E 2800N	3.5-5.5	2.80	0.0129	0.00	100.00	0.22	1.91
Cp 2420E 2800N	5.5-7.5	2.75	0.0076	0.00	100.00	0.24	2.61
Cp 2420E 2800N	7.5-9.5	2.55	0.0141	0.00	100.00	0.30	2.69
Cp 2420E 2800N	9.5-11.5	3.15	0.0181	0.01	99.99	0.44	2.29
Cp 2460E 2800N	0-1.5	3.40	0.1215	0.38	99.62	0.41	2.95
Cp 2460E 2800N	1.5-3.5	5.90	0.5305	1.07	98.93	0.36	0.91
Cp 2500E 2800N	0-1.5	2.40	0.0396	0.29	99.71	0.36	1.24
Cp 2500E 2800N	1.5-3.5	5.90	1.1656	6.08	93.92	0.39	0.54

588521

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 840E 2500N	0-1.5	3.50	0.2569	0.82	99.18	3.95	7.69
Cp 840E 2500N	1.5-2.8	5.30	3.1925	2.65	97.35	6.34	1.86
Cp 860E 2500N	0-1.5	4.25	0.0864	0.17	99.83	2.07	15.84
Cp 860E 2500N	1.5-3.5	1.85	0.1714	0.60	99.40	4.14	21.29
Cp 880E 2500N	0-1.5	4.50	0.1307	0.12	99.88	2.05	2.63
Cp 880E 2500N	1.5-3.5	7.95	0.2220	1.28	98.72	6.66	5.54
Cp 880E 2500N	3.5-5.0	2.75	3.5040	5.93	94.07	9.02	0.75
Cp 900E 2500N	0-1.5	5.10	0.2553	0.31	99.69	1.72	0.86
Cp 900E 2500N	1.5-3.5	8.25	0.0159	0.11	99.89	3.88	2.15
Cp 900E 2500N	3.5-4.3	3.05	4.3236	2.79	97.21	7.42	5.59
Cp 920E 2500N	0-1.5	4.75	0.1434	0.17	99.83	6.02	1.36
Cp 920E 2500N	1.5-3.5	8.25	0.0187	0.17	99.83	4.21	1.90
Cp 920E 2500N	3.5-5.5	5.35	3.9662	3.79	96.21	8.57	2.92
Cp 940E 2500N	0-1.5	3.10	0.8271	0.35	99.65	5.79	0.64
Cp 940E 2500N	1.5-3.5	7.65	0.0269	0.24	99.76	5.07	1.03
Cp 940E 2500N	3.5-5.0	4.50	3.4658	3.68	96.32	10.27	1.39
Cp 960E 2500N	0-1.5	3.80	0.1797	0.36	99.64	5.24	0.91
Cp 960E 2500N	1.5-3.5	8.30	0.0318	0.20	99.80	5.02	1.42
Cp 960E 2500N	3.5-5.5	8.65	3.0081	2.95	97.05	12.32	1.92
Cp 980E 2500N	0-1.5	3.50	0.1406	0.28	99.72	6.33	1.00
Cp 980E 2500N	1.5-3.5	7.90	0.1720	1.17	98.83	6.70	1.65
Cp 980E 2500N	3.5-4.7	2.35	5.3587	8.38	91.62	7.09	1.50
Cp 1000E 2500N	0-1.5	5.50	0.1251	0.11	99.89	3.19	3.22
Cp 1000E 2500N	1.5-3.5	7.75	0.3568	0.95	99.05	3.80	3.85
Cp 1000E 2500N	3.5-5.5	6.60	4.4918	10.11	89.89	11.53	1.47
Cp 1020E 2500N	0-1.5	3.15	0.1086	0.18	99.82	4.56	0.52
Cp 1020E 2500N	1.5-3.5	8.40	0.1271	0.11	99.89	3.43	0.75
Cp 1020E 2500N	3.5-5.5	5.15	9.4852	7.38	92.62	7.86	2.02
Cp 1020E 2500N	5.5-5.7	1.25	18.0536	11.24	88.76	6.38	2.63
Cp 1040E 2500N	0-1.5	4.95	0.0881	0.20	99.80	1.62	0.48
Cp 1040E 2500N	1.5-3.5	8.90	0.0699	0.64	99.36	3.70	0.59
Cp 1040E 2500N	3.5-5.5	6.60	3.7864	3.44	96.56	6.80	1.58
Cp 1040E 2500N	5.5-5.8	3.25	16.6788	17.24	82.76	4.82	2.22
Cp 1060E 2500N	0-1.5	1.70	0.2888	0.19	99.81	6.20	0.76
Cp 1060E 2500N	1.5-3.5	8.15	0.0270	0.17	99.83	2.86	4.20
Cp 1060E 2500N	3.5-5.5	6.65	3.8131	3.24	96.76	8.84	2.23

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 1080E 2500N	0-1.5	3.15	0.1168	0.21	99.79	3.90	1.00
Cp 1080E 2500N	1.5-3.5	6.55	0.0756	0.13	99.87	4.21	2.44
Cp 1080E 2500N	3.5-5.3	4.25	3.8195	8.94	91.06	5.40	1.58
Cp 2040E 2500N	0-1.5	2.50	0.1680	0.05	99.95	0.88	2.59
Cp 2040E 2500N	1.5-3.5	3.20	0.0366	0.02	99.98	0.33	2.15
Cp 2040E 2500N	3.5-5.5	3.40	0.0044	0.03	99.97	0.19	0.94
Cp 2040E 2500N	5.5-7.5	3.05	0.0000	0.00	100.00	0.20	0.61
Cp 2040E 2500N	7.5-9.5	2.20	0.0168	0.06	99.94	1.88	1.72
Cp 2220E 2500N	0-1.5	2.20	0.1886	0.02	99.98	0.89	2.14
Cp 2220E 2500N	1.5-3.5	2.80	0.0196	0.01	99.99	0.48	1.43
Cp 2220E 2500N	3.5-5.5	2.55	0.0047	0.05	99.95	2.49	0.96
Cp 2220E 2500N	5.5-7.5	4.05	0.1262	0.27	99.73	0.37	1.68
Cp 2220E 2500N	7.5-9.5	2.25	0.1320	0.05	99.95	0.84	1.38
Cp 2220E 2500N	9.5-10.0	2.65	0.2623	0.97	99.03	0.65	0.90
Cp 960E 2200N	0-1.5	4.50	0.0596	0.11	99.89	5.90	1.87
Cp 960E 2200N	3.5-5.5	6.30	1.4773	0.86	99.14	7.64	5.30
Cp 1040E 2200N	0-1.5	4.40	0.0373	0.10	99.90	2.51	1.45
Cp 1040E 2200N	1.5-3.5	5.55	0.1692	1.78	98.22	5.97	1.87
Cp 1040E 2200N	3.5-5.5	5.40	5.5263	7.16	92.84	7.43	2.81
Cp 840E 2200N	0-1.5	2.55	0.6988	5.05	94.95	25.54	4.55
Cp 860E 2200N	0-1.5	4.70	0.0209	0.09	99.91	1.63	37.32
Cp 860E 2200N	1.5-2.5	2.70	0.0615	0.67	99.33	5.48	9.51
Cp 880E 2200N	0-1.5	4.60	0.0650	0.20	99.80	4.61	27.33
Cp 880E 2200N	1.5-3.5	9.00	0.3902	0.44	99.56	4.64	31.80
Cp 880E 2200N	3.5-4.0	1.35	0.3874	2.58	97.42	10.90	13.87
Cp 900E 2200N	0-1.5	4.70	0.0223	0.08	99.92	2.51	2.74
Cp 900E 2200N	1.5-3.5	6.20	0.1531	0.11	99.89	5.65	9.53
Cp 900E 2200N	3.5-4.5	2.00	6.1955	4.55	95.45	12.53	17.02
Cp 920E 2200N	0-1.5	5.15	0.0695	0.08	99.92	2.27	2.09
Cp 920E 2200N	1.5-3.5	7.85	0.0096	0.25	99.75	4.50	7.35
Cp 920E 2200N	3.5-4.5	2.25	2.2333	1.51	98.49	9.91	11.55
Cp 940E 2200N	0-1.5	3.10	0.1823	0.75	99.25	7.22	2.93
Cp 940E 2200N	1.5-3.5	4.70	0.7000	0.82	99.18	7.07	3.92
Cp 940E 2200N	3.5-5.5	3.80	2.1432	1.38	98.62	7.56	6.88

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 960E 2200N	0-1.5	4.50	0.0596	0.11	99.89	5.90	1.87
Cp 960E 2200N	1.5-3.5	4.50	0.4280	0.88	99.12	9.01	3.13
Cp 960E 2200N	3.5-5.5	6.30	1.4773	0.86	99.14	7.64	5.30
Cp 980E 2200N	0-1.5	3.85	0.1153	0.30	99.70	6.14	1.42
Cp 980E 2200N	1.5-3.5	5.45	0.5367	2.42	97.58	8.37	1.64
Cp 980E 2200N	3.5-5.0	4.85	12.4913	4.18	95.82	6.86	3.44
Cp 1000E 2200N	0-1.5	2.55	0.0145	0.26	99.74	5.96	1.77
Cp 1000E 2200N	1.5-3.5	5.25	2.4291	9.03	90.97	7.16	2.98
Cp 1000E 2200N	3.5-5.5	7.70	3.3781	4.07	95.93	14.87	4.74
Cp 1000E 2200N	5.5-6.0	1.80	3.1083	0.65	99.35	23.50	8.11
Cp 1020E 2200N	0-1.5	2.60	0.0254	0.23	99.77	5.12	0.95
Cp 1020E 2200N	1.5-3.5	5.30	1.1749	0.87	99.13	6.74	2.03
Cp 1020E 2200N	3.5-5.5	3.70	4.2803	8.30	91.70	16.62	3.90
Cp 1020E 2200N	5.5-6.25	4.65	1.0841	3.92	96.08	21.95	5.51
Cp 1060E 2200N	0-1.5	3.80	0.0363	0.26	99.74	7.77	2.18
Cp 1060E 2200N	1.5-3.5	6.77	0.1716	0.75	99.25	5.24	4.47
Cp 1060E 2200N	3.5-5.5	5.10	5.3088	3.11	96.89	10.98	4.67
Cp 1080E 2200N	0-1.5	4.60	0.0324	0.08	99.92	3.34	1.22
Cp 1080E 2200N	1.5-3.5	6.25	0.0963	0.42	99.58	6.27	2.03
Cp 1080E 2200N	3.5-5.5	5.75	6.1108	2.51	97.49	9.22	3.66
Cp 1100E 2200N	0-1.5	3.55	0.4552	0.65	99.35	9.93	2.49
Cp 1100E 2200N	1.5-3.5	5.90	1.0958	2.40	97.60	6.06	8.31
Cp 1100E 2200N	3.5-5.5	6.45	6.0098	1.84	98.16	4.95	3.82
Cp 1120E 2200N	0-1.5	0.65	0.6769	2.59	97.41	15.62	5.59
Cp 1120E 2200N	1.5-3.5	5.20	4.0710	3.59	96.41	5.72	4.40
Cp 1120E 2200N	3.5-4.5	4.40	4.1327	1.22	98.78	5.40	4.52
Cp 1160E 2200N	0-1.5	3.70	0.0538	0.32	99.68	5.32	1.24
Cp 1160E 2200N	1.5-3.5	5.50	0.0744	0.23	99.77	6.87	1.61
Cp 1160E 2200N	3.5-5.5	7.00	3.5504	0.72	99.28	3.58	3.32
Cp 1160E 2200N	5.5-6.0	1.90	2.1405	3.43	96.57	7.94	2.51
Cp 1200E 2200N	0-1.5	3.30	0.0852	0.15	99.85	4.20	2.84
Cp 1200E 2200N	1.5-3.5	7.65	0.4089	0.24	99.76	5.72	3.22
Cp 1200E 2200N	3.5-5.5	6.30	1.9683	0.45	99.55	4.35	2.53
Cp 1200E 2200N	5.5-6.0	5.95	7.7629	1.24	98.76	5.63	3.95

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 1240E 2200N	0-1.5	1.85	1.0892	0.38	99.62	4.81	0.28
Cp 1240E 2200N	1.5-3.5	5.35	0.1222	0.34	99.66	7.10	0.48
Cp 1240E 2200N	3.5-5.5	7.65	2.5252	0.61	99.39	4.71	1.79
Cp 1240E 2200N	5.5-5.7	2.50	9.2976	1.64	98.36	6.49	3.77
Cp 1280E 2200N	0-1.5	2.95	0.2017	0.20	99.80	8.70	0.29
Cp 1280E 2200N	1.5-3.5	4.90	0.0108	0.04	99.96	9.31	0.61
Cp 1280E 2200N	3.5-5.5	5.65	0.1782	0.34	99.66	4.02	0.80
Cp 1280E 2200N	5.5-7.5	7.40	2.9884	0.68	99.32	3.05	1.93
Cp 1280E 2200N	7.5-8.0	2.55	6.9569	4.02	95.98	14.12	1.55
Cp 1320E 2200N	0-1.5	2.55	0.2353	0.16	99.84	6.77	0.71
Cp 1320E 2200N	1.5-3.5	7.15	0.0159	0.09	99.91	5.79	0.79
Cp 1320E 2200N	3.5-5.5	5.35	0.2159	0.24	99.76	10.53	1.20
Cp 1320E 2200N	5.5-7.2	6.15	11.4197	2.72	97.28	6.70	1.50
Cp 1360E 2200N	0-1.5	2.00	0.7315	0.30	99.70	4.32	0.58
Cp 1360E 2200N	1.5-3.5	8.15	0.0595	0.04	99.96	5.09	1.40
Cp 1360E 2200N	3.5-5.5	6.85	0.0799	0.20	99.80	7.42	2.83
Cp 1360E 2200N	5.5-6.5	2.35	1.4562	0.34	99.66	6.86	1.82
Cp 1400E 2200N	0-1.5	3.55	0.2268	0.15	99.85	6.74	1.03
Cp 1400E 2200N	1.5-3.5	4.90	0.0257	0.28	99.72	6.41	0.56
Cp 1400E 2200N	3.5-5.5	3.70	1.2297	1.20	98.80	7.23	0.57
Cp 1400E 2200N	5.5-6.75	4.85	3.4264	0.75	99.25	9.50	0.96
Cp 1440E 2200N	0-1.5	3.05	0.1672	0.09	99.91	3.50	0.51
Cp 1440E 2200N	1.5-3.5	6.90	0.0794	0.60	99.40	4.11	1.29
Cp 1440E 2200N	3.5-5.5	4.10	10.3017	10.83	89.17	6.44	3.00
Cp 1440E 2200N	5.5-5.7	0.45	8.6422	3.34	96.66	18.58	3.23
Cp 920E 1900N	0-1.5	4.30	0.0698	0.23	99.77	4.41	21.89
Cp 920E 1900N	1.5-3.5	5.30	2.3074	2.92	97.08	17.73	4.47
Cp 940E 1900N	0-1.5	4.40	0.1407	0.15	99.85	4.75	26.53
Cp 940E 1900N	1.5-3.5	6.35	0.5359	0.65	99.35	6.65	10.66
Cp 940E 1900N	3.5-4.0	1.75	1.1257	2.49	97.51	20.62	7.62
Cp 960E 1900N	0-1.5	3.80	0.3703	0.25	99.75	3.38	26.84
Cp 960E 1900N	1.5-3.5	6.05	0.7851	0.80	99.20	6.34	14.69
Cp 960E 1900N	3.5-5.0	4.80	4.1625	5.10	94.90	8.63	6.02
Cp 980E 1900N	0-1.5	4.10	0.3163	0.27	99.73	3.29	4.77
Cp 980E 1900N	1.5-3.5	6.80	1.4003	0.89	99.11	5.39	9.18
Cp 980E 1900N	3.5-5.0	6.00	4.7147	0.18	99.82	9.46	5.24

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 1000E 1900N	0-1.5	5.55	0.0645	0.08	99.92	2.40	3.75
Cp 1000E 1900N	1.5-3.5	6.55	0.5037	0.68	99.32	5.34	2.63
Cp 1000E 1900N	3.5-4.5	2.00	5.1650	4.12	95.88	11.41	4.59
Cp 1020E 1900N	0-1.5	2.10	0.4176	0.35	99.65	7.16	2.02
Cp 1020E 1900N	1.5-3.5	4.75	3.2072	3.05	96.95	6.76	2.26
Cp 1020E 1900N	3.5-4.0	1.20	7.6092	7.63	92.37	20.71	3.89
Cp 1040E 1900N	0-1.5	2.90	0.0379	0.40	99.60	14.45	1.76
Cp 1040E 1900N	1.5-3.5	7.10	3.0308	4.38	95.62	12.65	1.56
Cp 1040E 1900N	3.5-5.9	1.25	0.7112	6.51	93.49	17.86	1.34
Cp 1060E 1900N	0-1.5	4.50	0.0536	0.32	99.68	3.20	1.30
Cp 1060E 1900N	1.5-3.5	4.30	1.0530	4.62	95.38	7.36	1.45
Cp 1080E 1900N	0-1.5	5.65	0.0807	1.13	98.87	2.87	1.60
Cp 1080E 1900N	1.5-3.5	4.65	1.7116	13.51	86.49	5.00	0.78
Cp 1100E 1900N	0-1.5	3.60	0.1600	0.24	99.76	4.63	1.51
Cp 1100E 1900N	1.5-3.5	3.95	2.2658	14.15	85.85	7.01	1.39
Cp 1120E 1900N	0-1.5	4.20	0.2369	0.44	99.56	4.62	2.06
Cp 1120E 1900N	1.5-3.5	5.00	5.3530	12.43	87.57	5.41	1.68
Cp 1120E 1900N	3.5-4.5	4.50	0.8296	4.40	95.60	17.01	2.42
Cp 2160E 1900N	0-1.5	2.90	0.5828	0.58	99.42	12.65	0.32
Cp 2180E 1900N	0-1.2	1.30	0.5746	0.53	99.47	11.98	0.29
Cp 2200E 1900N	0-1.5	2.00	0.2675	1.13	98.87	12.85	0.46
Cp 2220E 1900N	0-1.0	2.00	1.8515	0.35	99.65	18.97	1.72
Cp 2240E 1900N	0-1.5	2.90	0.5679	0.12	99.88	1.87	1.51
Cp 2240E 1900N	1.5-3.5	3.90	0.0000	0.00	100.00	0.54	0.99
Cp 2240E 1900N	3.5-4.0	1.95	0.7728	1.39	98.61	13.11	1.10
Cp 1180E 1600N	3.5-4.5	2.45	36.9620	13.83	86.17	6.14	4.43
Cp 940E 1600N	0-1.0	2.85	3.2930	4.64	95.36	11.03	10.03
Cp 960E 1600N	0-1.5	3.05	3.2256	2.90	97.10	4.46	16.40
Cp 960E 1600N	1.5-1.75	1.20	3.8483	4.69	95.31	15.58	12.57
Cp 980E 1600N	0-1.5	3.75	0.1376	0.30	99.70	3.05	7.49
Cp 980E 1600N	1.5-2.25	5.00	4.8356	5.48	94.52	7.40	9.57

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 1000E 1600N	0-1.5	5.00	0.1248	0.12	99.88	2.65	2.09
Cp 1000E 1600N	1.5-3.5	4.85	4.0056	3.42	96.58	11.55	3.00
Cp 1020E 1600N	0-1.5	4.60	0.0720	1.29	98.71	3.91	1.70
Cp 1020E 1600N	1.5-3.5	5.25	0.4876	1.66	98.34	7.00	3.71
Cp 1040E 1600N	0-1.5	5.00	0.0340	0.17	99.83	3.44	2.55
Cp 1040E 1600N	1.5-3.3	5.65	1.3202	4.47	95.53	4.31	3.74
Cp 1060E 1600N	0-1.5	3.90	0.0772	0.13	99.87	3.43	0.84
Cp 1060E 1600N	1.5-3.5	6.30	0.3095	1.02	98.98	5.13	1.48
Cp 1060E 1600N	3.5-4.4	3.50	1.1794	1.79	98.21	22.77	2.37
Cp 1080E 1600N	0-1.5	5.15	0.1068	0.34	99.66	2.20	0.69
Cp 1080E 1600N	1.5-3.5	8.40	0.0529	0.44	99.56	3.04	1.47
Cp 1080E 1600N	3.5-5.25	2.25	4.6938	10.08	89.92	7.12	1.60
Cp 1100E 1600N	0-1.5	4.35	0.1067	1.88	98.12	1.96	0.90
Cp 1100E 1600N	1.5-3.5	7.70	0.2781	1.89	98.11	4.02	1.51
Cp 1120E 1600N	0-1.5	5.10	0.0678	0.29	99.71	12.46	1.69
Cp 1120E 1600N	1.5-3.5	6.00	0.8452	2.80	97.20	6.24	1.18
Cp 1120E 1600N	3.5-4.0	0.40	0.0000	20.03	79.97	8.48	0.44
Cp 1140E 1600N	0-1.5	2.40	0.4408	0.19	99.81	11.76	3.03
Cp 1140E 1600N	1.5-3.0	3.85	10.8125	0.28	99.72	11.49	6.12
Cp 1140E 1600N	0-1.5	1.85	0.4908	0.70	99.30	15.55	1.74 0
Cp 1140E 1600N	1.5-2.75	3.80	11.9924	24.07	75.93	8.95	3.55 0
Cp 1160E 1600N	0-1.5	1.20	1.3242	0.77	99.23	11.28	2.05
Cp 1160E 1600N	1.5-3.5	7.00	6.1914	5.80	94.20	8.63	2.37
Cp 1180E 1600N	0-1.5	2.55	0.2800	0.24	99.76	6.13	1.66
Cp 1180E 1600N	1.5-3.5	5.40	0.3887	0.71	99.29	7.65	2.17
Cp 1200E 1600N	0-1.5	4.30	0.1779	0.35	99.65	4.35	2.26
Cp 1200E 1600N	1.5-3.5	5.65	0.0347	0.25	99.75	4.84	7.01
Cp 1200E 1600N	3.5-4.5	2.45	4.5988	1.76	96.24	10.20	4.07
Cp 1220E 1600N	0-1.5	1.10	1.8218	2.50	97.50	12.12	1.99
Cp 1220E 1600N	1.5-3.0	3.55	1.0104	2.79	97.21	4.45	1.16
Cp 1240E 1600N	0-1.5	4.55	0.0820	0.16	99.84	3.06	0.76
Cp 1240E 1600N	1.5-3.5	4.20	3.5729	4.23	95.77	8.02	1.43
Cp 1240E 1600N	3.5-3.75	2.15	5.1991	1.48	98.52	11.03	2.96

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 1260E 1600N	0-1.5	3.15	0.1130	0.16	99.84	6.18	1.25
Cp 1260E 1600N	1.5-3.5	7.10	0.0258	0.18	99.82	10.53	2.56
Cp 1260E 1600N	3.5-5.0	4.85	8.4748	1.79	98.21	7.78	2.85
Cp 1280E 1600N	0-1.5	1.80	0.6667	0.25	99.75	9.53	0.95
Cp 1280E 1600N	1.5-3.5	3.90	0.4862	0.77	99.23	9.12	1.43
Cp 1280E 1600N	3.5-4.7	7.60	9.4475	3.17	96.83	13.07	2.26
Cp 1300E 1600N	0-1.5	2.85	0.5533	0.56	99.44	14.71	2.04
Cp 1300E 1600N	1.5-3.5	4.90	0.3880	0.79	99.21	5.78	0.97
Cp 1300E 1600N	3.5-4.0	0.75	7.7173	1.21	98.79	8.45	1.30
Cp 1320E 1600N	0-1.5	3.80	0.0908	0.40	99.60	8.67	0.81
Cp 1320E 1600N	1.5-3.5	2.80	0.3161	0.58	99.42	8.22	0.64
Cp 1320E 1600N	3.5-4.5	4.60	0.2509	0.52	99.48	13.09	1.88
Cp 1340E 1600N	0-1.5	4.05	0.0370	0.09	99.91	4.57	1.42
Cp 1340E 1600N	1.5-3.5	5.80	0.0626	0.19	99.81	6.11	3.51
Cp 1340E 1600N	3.5-4.6	7.95	0.1223	0.67	99.33	13.37	3.63
Cp 1360E 1600N	0-1.5	4.00	0.0685	0.10	99.90	3.12	0.88
Cp 1360E 1600N	1.5-3.5	7.65	0.1736	0.87	99.13	5.77	3.28
Cp 1360E 1600N	3.5-4.3	2.20	2.5673	2.11	97.89	11.18	2.46
Cp 2040E 1600N	0-1.5	2.25	0.3209	0.12	99.88	4.83	0.38
Cp 2040E 1600N	1.5-2.0	1.95	0.0138	0.08	99.92	4.38	0.35
Cp 2060E 1600N	0-1.5	2.00	0.6815	0.09	99.91	2.04	0.82
Cp 2060E 1600N	1.5-3.5	2.85	0.0228	0.05	99.95	0.85	0.87
Cp 2060E 1600N	3.5-5.5	3.00	0.0060	0.04	99.96	1.52	0.42
Cp 2060E 1600N	5.5-6.5	2.30	0.0000	2.04	97.96	9.04	0.23
Cp 2220E 1600N	0-1.5	1.90	0.3621	0.08	99.92	1.53	2.24
Cp 2220E 1600N	1.5-3.5	3.20	0.0188	0.05	99.95	0.36	1.28
Cp 2220E 1600N	3.5-5.5	3.35	0.0021	0.07	99.93	1.11	0.37
Cp 2220E 1600N	5.5-6.5	0.80	0.0263	0.23	99.77	12.99	0.25
Cp 2240E 1600N	0-1.5	2.35	0.2694	0.09	99.91	2.02	0.98
Cp 2240E 1600N	1.5-3.0	2.15	0.7023	0.22	99.78	0.63	0.60
Cp1200NE 3750NW	0-1.5	3.65	0.0214	0.03	99.97	2.00	0.30
Cp1200NE 3750NW	1.5-2.5	3.55	0.0000	0.01	99.99	1.05	0.33
Cp1240E 3750NW	0-1.5	4.20	0.1088	0.08	99.92	5.95	0.62
Cp1240E 3750NW	1.5-2.0	2.00	0.0000	0.00	100.00	1.56	0.48

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp1280NE 3750NW	0-1.5	1.35	0.2541	0.69	99.31	8.66	0.32
Cp1320E 3750NW	0-1.5	1.00	0.7110	3.57	96.43	23.39	0.37
Cp920NE 3450NW	0-1.5	1.20	0.5967	3.14	96.86	23.42	1.58
Cp 440E 2688N	0-1.4	3.20	6.4341	8.96	91.04	7.75	0.77
Cp 480E 2688N	0-1.5	3.65	9.7822	12.93	87.07	6.18	0.40
Cp 480E 2688N	1.5-2.5	3.70	11.4786	10.25	89.75	24.99	0.92
Cp 520E 2688N	0-1.5	2.50	8.2944	21.54	78.46	6.54	0.26
Cp 560E 2688N	0-1.5	4.55	5.1664	8.81	91.19	4.30	0.55
Cp 600E 2688N	0-1.3	2.77	20.7347	16.03	83.97	8.29	1.15
Cp 640E 2688N	0-1.5	3.00	6.6953	9.64	90.36	3.15	0.30
Cp 640E 2688N	1.5-2.1	1.15	14.8730	21.17	78.83	6.80	0.53
Cp 680E 2688N	0-0.6	0.55	9.1909	0.71	99.29	21.09	6.50
Cp 720E 2688N	0-1.0	0.65	10.9969	15.01	84.99	10.02	1.04
Cp 760E 2688N	0-0.3	1.90	4.3658	8.13	91.87	14.86	1.14
Cp 800E 2688N	0-1.5	2.10	2.5890	6.47	93.53	17.38	0.60
Cp 800E 2688N	1.5-1.6	1.20	0.0175	1.69	98.31	23.56	1.08
Cp 840E 2688N	0-1.5	3.30	0.1921	1.23	98.77	8.13	6.22
Cp 840E 2688N	1.5-3.0	4.60	0.5026	1.79	98.21	8.07	2.04
Cp 540E 1638N	0-1.5	3.15	0.9575	4.66	95.34	16.67	1.42
Cp 540E 1638N	1.5-2.0	2.65	1.1664	4.76	95.24	25.16	1.38
Cp 580E 1638N	0-1.5	3.15	0.9168	4.05	95.95	11.25	2.65
Cp 580E 1638N	1.5-3.0	4.30	1.6909	6.94	93.06	17.90	0.50
Cp 620E 1638N	0-1.5	3.65	2.6518	4.82	95.18	16.07	2.90
Cp 620E 1638N	1.5-2.9	4.90	3.6390	10.21	89.79	22.68	1.85
Cp 660E 1638N	0-1.5	4.15	3.7325	9.17	90.83	14.74	3.23
Cp 660E 1638N	1.5-2.6	4.55	18.1818	31.35	68.65	11.02	1.09
Cp 700E 1638N	0-1.5	3.70	0.3392	1.35	98.65	10.54	6.10
Cp 700E 1638N	1.5-2.5	6.30	5.3752	12.19	87.81	16.97	3.29

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 740E 1638N	0-1.5	3.10	1.2255	1.97	98.03	9.81	4.92
Cp 740E 1638N	1.5-2.5	4.20	5.3402	9.97	90.03	14.81	2.42
Cp 780E 1638N	0-1.5	5.60	7.3266	8.11	91.89	10.43	3.86
Cp 780E 1638N	1.5-2.1	3.25	21.9775	27.20	72.80	23.51	1.40
Cp 820E 1638N	0-1.5	4.55	5.0758	8.33	91.67	4.95	7.60
Cp 820E 1638N	1.5-1.9	1.90	5.3063	6.10	93.90	26.71	6.20
Cp 860E 1638N	0-1.5	4.40	1.8532	4.76	95.24	13.23	7.60
Cp 900E 1638N	0-1.5	2.20	13.7845	8.25	91.75	10.63	1.60
Cp 940E 1638N	0-1.5	3.40	6.2600	6.94	93.06	12.15	5.11
Cp 940E 1638N	1.5-2.0	4.00	11.5193	6.07	93.93	22.84	6.13
Cp 960E 1638N	0-1.5	2.65	7.8706	5.37	94.63	17.06	7.99
Cp 860E 1325N	0-0.5	0.55	16.7164	21.25	78.75	17.26	1.18
Cp 880E 1325N	0-0.5	1.05	28.5305	22.96	77.04	19.75	4.33
Cp 900E 1325N	0-1.5	2.00	9.2815	11.67	88.33	40.39	2.82
Cp 920E 1325N	0-1.5	1.35	8.8748	8.36	91.64	20.19	4.23
Cp 940E 1325N	0-1.0	1.00	4.7560	7.00	93.00	22.97	5.49
Cp 960E 1325N	0-1.5	3.80	0.6476	1.11	98.89	19.72	12.44
Cp 960E 1325N	1.5-1.6	0.60	0.6133	1.87	98.13	22.16	5.31
Cp 980E 1325N	0-1.5	3.55	0.1994	0.49	99.51	3.95	3.28
Cp 980E 1325N	1.5-2.25	2.30	1.9543	3.34	96.66	16.20	5.34
Cp 1000E 1325N	0-1.5	4.65	0.1226	0.40	99.60	2.38	1.64
Cp 1000E 1325N	1.5-3.25	7.60	2.4034	3.20	96.80	11.08	5.06
Cp 1020E 1325N	0-1.5	4.50	0.0969	0.24	99.76	1.82	2.28
Cp 1020E 1325N	1.5-3.5	7.05	1.1930	3.51	96.49	5.76	4.10
Cp 1020E 1325N	3.5-3.7	1.00	14.5780	11.88	88.12	16.38	5.03
Cp 1040E 1325N	0-1.5	4.50	0.1280	0.15	99.85	1.81	2.01
Cp 1040E 1325N	1.5-3.5	5.75	1.5099	4.43	95.57	5.83	1.59
Cp 1040E 1325N	3.5-3.6	1.00	7.2800	3.45	96.55	14.04	3.98

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 1060E 1325N	0-1.5	4.50	0.2093	0.49	99.51	5.91	1.95
Cp 1060E 1325N	1.5-3.5	8.20	0.6901	2.69	97.31	5.26	1.87
Cp 1060E 1325N	3.5-4.5	3.65	4.1567	7.13	92.87	10.05	3.44
Cp 1080E 1325N	0-1.5	4.60	0.2109	0.32	99.68	2.02	1.46
Cp 1080E 1325N	1.5-3.5	5.70	1.1802	5.31	94.69	5.13	1.23
Cp 1080E 1325N	3.5-4.0	3.15	7.3035	9.88	90.12	11.55	2.34
Cp 1100E 1325N	0-1.5	1.56	1.1853	1.62	98.38	10.38	1.72
Cp 1100E 1325N	1.5-3.5	5.60	4.3995	10.65	89.35	5.58	1.66
Cp 1100E 1325N	3.5-4.5	6.90	1.7330	0.98	99.02	18.67	4.23
Cp 1120E 1325N	0-1.5	4.15	0.1352	0.16	99.84	5.00	4.44
Cp 1120E 1325N	1.5-3.25	5.50	4.3776	7.49	92.51	5.92	6.08
Cp 1140E 1325N	0-1.5	3.50	0.1443	0.38	99.62	8.30	1.91
Cp 1140E 1325N	1.5-3.25	4.90	3.0614	3.36	96.64	8.11	5.13
Cp 1160E 1325N	0-1.5	4.45	0.0930	0.10	99.90	4.86	2.94
Cp 1160E 1325N	1.5-3.25	4.70	4.0691	3.39	96.61	6.35	3.28
Cp 1180E 1325N	0-1.5	2.20	0.3641	0.37	99.63	4.74	2.20
Cp 1180E 1325N	1.5-3.25	6.45	3.7860	3.13	96.87	23.97	6.59
Cp 1200E 1325N	0-1.5	3.00	0.4077	0.64	99.36	6.26	2.55
Cp 1200E 1325N	1.5-2.5	3.35	14.4701	2.98	97.02	7.15	4.09
Cp 1220E 1325N	0-1.5	1.15	2.9670	2.08	97.92	11.25	1.99
Cp 1220E 1325N	1.5-2.0	1.90	4.8511	4.95	95.05	21.89	1.81
Cp 1240E 1325N	0-1.5	1.85	3.0038	0.96	99.04	9.36	1.77
Cp 1260E 1325N	0-1.5	2.85	0.5789	0.62	99.38	6.03	1.94
Cp 1260E 1325N	1.5-2.3	1.65	10.4667	6.82	93.18	19.59	3.15
Cp 1280E 1325N	0-1.5	2.25	2.3702	2.09	97.91	7.11	1.78
Cp 1280E 1325N	1.5-2.5	1.90	1.3811	5.71	94.29	14.97	2.11
Cp 1300E 1325N	0-1.5	2.20	0.3905	1.26	98.74	11.40	1.94
Cp 1300E 1325N	1.5-2.6	1.25	1.2240	9.57	90.43	37.61	1.53
Cp 1320E 1325N	0-1.5	4.15	0.4123	0.51	99.49	2.67	1.35
Cp 1320E 1325N	1.5-3.5	5.55	1.9393	1.62	98.38	15.84	2.14
Cp 1340E 1325N	0-1.5	4.05	0.2593	0.43	99.57	2.47	1.43
Cp 1340E 1325N	1.5-3.0	3.50	4.3923	4.39	95.61	14.99	1.78

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R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 1040E 1000N	0-0.9	2.30	11.6196	10.02	89.98	17.68	7.07
Cp 1120E 1000N	0-1.2	2.95	1.7136	3.87	96.13	5.58	2.68
Cp 1160E 1000N	0-1.5	3.70	0.4086	1.44	98.56	5.43	1.08
Cp 1200E 1000N	0-1.0	2.35	5.6957	3.84	96.16	15.89	1.79
Cp 1320E 1000N	0-1.5	2.15	2.9112	2.38	97.62	10.20	1.32
Cp940NE 4020NW	0-1.5	1.30	1.2531	1.75	98.25	21.25	1.11
Cp940NE 4020NW	1.5-2.4	1.65	1.9545	5.97	94.03	16.80	0.97
Cp960NE 4020NW	0-1.5	4.60	0.2611	0.76	99.24	4.27	1.39
Cp960NE 4020NW	1.5-3.5	7.50	2.8617	2.35	97.65	4.50	1.52
Cp980NE 4020NW	0-1.5	6.65	0.0400	0.13	99.87	1.15	1.07
Cp980NE 4020NW	1.5-3.5	7.65	0.2508	0.90	99.10	1.51	4.15
Cp980NE 4020NW	3.5-5.0	3.60	5.4333	6.30	93.70	6.65	1.55
Cp1000NE 4020NW	0-1.5	6.15	0.0262	0.17	99.83	1.19	0.21
Cp1000NE 4020NW	1.5-3.5	9.80	0.0112	0.28	99.72	0.86	0.28
Cp1000NE 4020NW	3.5-5.5	8.70	1.7108	5.00	95.00	4.18	0.87
Cp1000NE 4020NW	5.5-6.25	2.90	7.0414	17.37	82.63	5.49	0.51
Cp1020NE 4020NW	0-1.5	4.40	0.2705	0.53	99.47	3.09	0.22
Cp1020NE 4020NW	1.5-3.5	10.55	0.1225	3.00	97.00	2.75	0.27
Cp1020NE 4020NW	3.5-5.5	10.15	0.6621	4.24	95.76	4.74	0.55
Cp1020NE 4020NW	5.5-6.5	5.50	3.9109	10.66	89.34	5.42	0.52
Cp1040NE 4020NW	0-1.5	5.55	0.0139	0.58	99.42	2.89	0.31
Cp1040NE 4020NW	1.5-3.5	9.80	0.0420	1.07	98.93	1.09	0.16
Cp1040NE 4020NW	3.5-5.5	9.60	0.8097	6.11	93.89	2.82	0.22
Cp1040NE 4020NW	5.5-6.3	7.05	9.0235	15.89	84.11	5.38	0.97
Cp1060NE 4020NW	0-1.5	5.35	0.7798	0.30	99.70	1.78	0.10
Cp1060NE 4020NW	1.5-3.5	10.20	0.0165	1.33	98.67	1.06	0.01
Cp1060NE 4020NW	3.5-5.5	10.05	0.7972	4.39	95.61	2.05	0.14
Cp1060NE 4020NW	5.5-6.3	4.55	2.2448	3.36	96.64	7.06	0.36
Cp1080NE 4020NW	0-1.5	2.30	0.2043	0.25	99.75	4.73	0.10
Cp1080NE 4020NW	1.5-3.5	10.75	0.0296	1.79	98.21	2.55	0.13
Cp1080NE 4020NW	3.5-5.5	11.30	1.5592	8.04	91.96	1.93	0.25
Cp1080NE 4020NW	5.5-7.5	8.70	4.1386	11.84	88.16	3.27	0.38

R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp1100NE 4020NW	0-1.5	4.90	0.0073	0.16	99.84	1.53	0.16
Cp1100NE 4020NW	1.5-3.5	10.85	0.0095	0.81	99.19	1.09	0.14
Cp1100NE 4020NW	3.5-5.5	8.85	0.6277	5.56	94.44	1.08	0.15
Cp1100NE 4020NW	5.5-7.5	7.15	4.2173	11.26	88.74	2.20	0.34
Cp1100NE 4020NW	7.5-7.6	0.95	1.5274	21.48	78.52	18.46	0.66
Cp1120NE 4020NW	0-1.5	6.00	0.0548	0.14	99.86	1.36	0.24
Cp1120NE 4020NW	1.5-3.5	8.35	0.0988	0.23	99.77	1.36	0.14
Cp1120NE 4020NW	3.5-5.5	10.65	1.5777	8.13	91.87	1.09	0.29
Cp1120NE 4020NW	5.5-7.0	9.25	6.3085	11.21	88.79	3.96	0.74
Cp 2320E 4320N	0-1.5	5.05	0.0867	0.11	99.89	1.63	1.05
Cp 2320E 4320N	1.5-3.5	6.60	0.0661	0.08	99.92	1.10	4.09
Cp 2320E 4320N	3.5-5.5	7.95	0.0898	0.20	99.80	0.86	2.80
Cp 2320E 4320N	5.5-7.5	9.05	0.6330	2.31	97.69	1.05	2.18
Cp 2320E 4320N	7.5-9.5	8.55	5.2850	3.89	96.11	1.10	3.08
Cp 2308E 4378N	0-1.5	4.45	0.0661	0.06	99.94	0.99	2.80
Cp 2308E 4378N	1.5-3.5	6.70	0.1987	0.90	99.10	0.64	3.67
Cp 2308E 4378N	3.5-5.5	6.75	1.6228	0.55	99.45	0.67	2.78
Cp 2308E 4378N	5.5-7.5	3.70	5.7143	6.69	93.31	3.89	0.65
Cp 2480E 3430N	0-1.5	4.90	0.0592	0.07	99.93	0.99	3.81
Cp 2480E 3430N	1.5-3.5	7.55	0.0646	0.02	99.98	0.79	6.26
Cp 2480E 3430N	3.5-5.5	6.95	0.4239	1.04	98.96	1.04	1.08
Cp 2480E 3430N	5.5-7.5	3.85	6.4525	2.49	97.51	1.65	1.79
Cp SE70	0-1.5	5.70	0.4167	7.20	92.80	3.89	0.03
Cp SE70	1.5-3.5	8.20	3.8090	23.55	76.45	6.54	0.10
Cp SE70	3.5-5.0	5.90	4.4268	14.13	85.87	5.18	0.20
Cp SE74	0-1.5	5.10	0.1951	3.70	96.30	4.83	0.13
Cp SE74	1.5-3.5	7.15	6.8245	22.84	77.16	9.38	0.14
Cp SE74	3.5-4.75	6.60	7.4114	13.57	86.43	10.84	0.16
Cp SE78	0-1.5	4.35	4.0738	16.39	83.61	1.50	0.10
Cp SE78	1.5-3.5	8.10	9.0441	14.10	85.90	9.93	0.28
Cp SE78	3.5-4.25	2.70	8.4796	17.55	82.45	30.37	0.37
Cp SE82	0-1.5	2.50	0.9092	4.30	95.70	4.60	0.37
Cp SE82	1.5-3.5	4.05	3.6158	10.79	89.21	20.67	0.36

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R.H.F. LABORATORY HEAVY MINERAL SEPARATION

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 800E 2688N	0-1.5	2.10	2.5890	6.47	93.53	17.38	0.60
Cp 800E 2688N	1.5-1.6	1.20	0.0175	1.69	98.31	23.56	1.08

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HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp 2360E 3750N	0-1.5	4.85	0.0928	0.19	99.81	1.61	7.36
Cp 2360E 3750N	1.5-3.5	7.45	0.0000	0.02	99.98	0.78	6.08
Cp 2360E 3750N	3.5-5.5	7.80	0.0000	0.10	99.90	0.81	4.06
Cp 2360E 3750N	5.5-7.5	8.15	0.0000	0.01	99.99	0.82	6.63
Cp 940E 2200N	0-1.5	3.10	0.1823	0.75	99.25	7.22	2.93
Cp 940E 2200N	1.5-3.5	4.70	0.7000	0.82	99.18	7.07	3.92
Cp 940E 2200N	3.5-5.5	3.80	2.1432	1.38	98.62	7.56	6.88
Cp 960E 2200N	0-1.5	4.50	0.0596	0.11	99.89	5.90	1.87
Cp 960E 2200N	1.5-3.5	4.50	0.4280	0.88	99.12	9.01	3.13
Cp 960E 2200N	3.5-5.5	6.30	1.4773	0.86	99.14	7.64	5.30
Cp 1060E 2200N	0-1.5	3.80	0.0363	0.26	99.74	7.77	2.18
Cp 1060E 2200N	1.5-3.5	6.77	0.1716	0.75	99.25	5.24	4.47
Cp 1060E 2200N	3.5-5.5	5.10	5.3088	3.11	96.89	10.98	4.67
Cp 1060E 1900N	0-1.5	4.50	0.0536	0.32	99.68	3.20	1.30
Cp 1060E 1900N	1.5-3.5	4.30	1.0530	4.62	95.38	7.36	1.45
Cp 1080E 1900N	0-1.5	5.65	0.0807	1.13	98.87	2.87	1.60
Cp 1080E 1900N	1.5-3.5	4.65	1.7116	13.51	86.49	5.00	0.78
Cp 2060E 1600N	0-1.5	2.00	0.6815	0.09	99.91	2.04	0.82
Cp 2060E 1600N	1.5-3.5	2.85	0.0228	0.05	99.95	0.85	0.87
Cp 2060E 1600N	3.5-5.5	3.00	0.0060	0.04	99.96	1.52	0.42
Cp 2060E 1600N	5.5-6.5	2.30	0.0000	2.04	97.96	9.04	0.23
Cp 640E 2688N	0-1.5	3.00	6.6953	9.64	90.36	3.15	0.30
Cp 640E 2688N	1.5-2.1	1.15	14.8730	21.17	78.83	6.80	0.53
Cp 960E 1638N	0-1.5	2.65	7.8706	5.37	94.63	17.06	7.99
Cp1100NE 4020NW	0-1.5	4.90	0.0073	0.16	99.84	1.53	0.16
Cp1100NE 4020NW	1.5-3.5	10.85	0.0095	0.81	99.19	1.09	0.14
Cp1100NE 4020NW	3.5-5.5	8.85	0.6277	5.56	94.44	1.08	0.15
Cp1100NE 4020NW	5.5-7.5	7.15	4.2173	11.26	88.74	2.20	0.34
Cp1100NE 4020NW	7.5-7.6	0.95	1.5274	21.48	78.52	18.46	0.66
Cp 2480E 3430N	0-1.5	4.90	0.0592	0.07	99.93	0.99	3.81
Cp 2480E 3430N	1.5-3.5	7.55	0.0646	0.02	99.98	0.79	6.26
Cp 2480E 3430N	3.5-5.5	6.95	0.4239	1.04	98.96	1.04	1.08
Cp 2480E 3430N	5.5-7.5	3.85	6.4525	2.49	97.51	1.65	1.79

588535

HOLE NUMBER	DEPTH	TOTAL WEIGHT KG	% + 2mm	% +1000u	% -1000u	% SLIME	% HEAVY MINERAL
Cp SE70	0-1.5	5.70	0.4167	7.20	92.80	3.89	0.03
Cp SE70	1.5-3.5	8.20	3.8090	23.55	76.45	6.54	0.10
Cp SE70	3.5-5.0	5.90	4.4268	14.13	85.87	5.18	0.20
Cp SE74	0-1.5	5.10	0.1951	3.70	96.30	4.83	0.13
Cp SE74	1.5-3.5	7.15	6.8245	22.84	77.16	9.38	0.14
Cp SE74	3.5-4.75	6.60	7.4114	13.57	86.43	10.84	0.16
Cp SE78	0-1.5	4.35	4.0738	16.39	83.61	1.50	0.10
Cp SE78	1.5-3.5	8.10	9.0441	14.10	85.90	9.93	0.28
Cp SE78	3.5-4.25	2.70	8.4796	17.55	82.45	30.37	0.37
Cp SE82	0-1.5	2.50	0.9092	4.30	95.70	4.60	0.37
Cp SE82	1.5-3.5	4.05	3.6158	10.79	89.21	20.67	0.36

0 536

588536

APPENDIX 4

Mineralogical Results - Applied Petrographic Services

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

~~20 Holdsworth Street
Newtown
Sydney, N.S.W. 2042~~

Phone: (02) 516 4808
~~(02) 909 8747~~

CLIENT: PETER H. STITT & ASSOC. PTY LTD

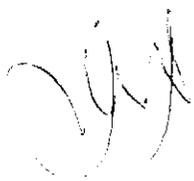
APS REPORT NO.: M 174

ATTENTION: MR G.F. LEE

DATE: 24.4.89

SAMPLE DETAILS: ORDER NO. A28, SAMPLES 1 - 5

COMMENTS: The unidentified material present in samples 1 and 2, occurs only in the 0.4A mags. It superficially resembles a carbonate, but I can find no record of carbonates being so strongly magnetic. It has a high refractive index and birefringence, and appears to be fairly soft. No identifiable absorption spectrum was seen except for a few faint lines in the blue which might indicate the presence of iron. S.E.M. analysis can be arranged to confirm the identity of this mineral if you require.



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Sydney, N.S.W. 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

APS REPORT NO.: M 174

ATTENTION: MR G. LEE

DATE: 23.4.89

SAMPLE DETAILS: ORDER NO. A28 SAMPLE 1,1680E - 1960E, 4650N

	TOTAL	+25#	HAND MAG	0.4A MAG	1.0A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	-	-	-	<1	-
ZIRCON	5	-	-	-	-	-	27
RUTILE	5	-	-	-	-	1	25
LEUCOXENE	6	-	-	-	-	-	33
LEUCOXENISED ILMENITE	13	-	-	4	19	29	-
ILMENITE	18	-	60	67	12	-	-
MAGNETITE	<1	-	30	-	-	-	-
GARNET	5	-	-	21	3	2	-
TOURMALINE	24	-	-	-	34	45	3
ALUMINO SILICATES	1	-	-	-	-	-	8
OTHER SILICATES	22	-	10	-	32	20	-
PYRITE	<1	-	-	-	-	1	2
SHELL	<1	-	-	-	-	2	-
QUARTZ	<1	-	-	-	-	-	2
IRON OXIDES	-	-	-	-	-	-	-
UNIDENTIFIED	1	-	-	8	-	-	-
+25# NON ECONOMIC	<1	100	-	-	-	-	-
NO. OF POINTS	-	-	-	558	555	530	591
WEIGHT %	100	0.4	0.9	13.7	66.2	1.4	17.4


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CLIENT: PETER H. STITT & ASSOC. PTY LTD

APS REPORT NO.: M 174

ATTENTION: MR G. LEE

DATE: 23.4.89

SAMPLE DETAILS: ORDER NO. A28, SAMPLE 2, 2000E - 2280E, 4650N

	TOTAL	+25#	HAND MAG	0.4A MAG	1.0A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	-	-	-	1	-
ZIRCON	5	-	-	-	-	1	29
RUTILE	5	-	-	-	-	-	27
LEUCOXENE	4	-	-	-	-	-	27
LEUCOXENISED ILMENITE	10	-	-	-	14	35	-
ILMENITE	21	-	-	57	19	-	-
MAGNETITE	<1	-	100	-	-	-	-
GARNET	5	-	-	14	5	1	-
TOURMALINE	22	-	-	-	30	32	4
ALUMINO SILICATES	2	-	-	-	-	-	11
OTHER SILICATES	23	-	-	3	32	28	-
PYRITE	<1	-	-	-	-	2	<1
SHELL	-	-	-	-	-	-	-
QUARTZ	<1	-	-	-	-	-	2
IRON OXIDES	-	-	-	-	-	-	-
UNIDENTIFIED	3	-	-	26	-	-	-
+25# NON ECONOMIC	-	-	-	-	-	-	-
NO. OF POINTS	-	-	-	502	562	539	518
WEIGHT %	100	-	0.31	12.68	69.31	1.42	16.28


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APS REPORT NO.: M 174

ATTENTION: MR G. LEE

DATE: 23.4.89

SAMPLE DETAILS: ORDER NO. A28, SAMPLE 3, 1920E - 2240E, 4350N

	TOTAL	+25#	HAND MAG	0.4A MAG	1.0A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	-	-	-	1	-
ZIRCON	5	-	-	-	<1	<1	29
RUTILE	4	-	-	-	-	-	25
LEUCOXENE	5	-	-	-	-	-	28
LEUCOXENISED ILMENITE	12	-	-	-	16	28	-
ILMENITE	24	-	-	92	24	-	-
MAGNETITE	<1	-	100	-	-	-	-
GARNET	5	-	-	6	6	2	-
TOURMALINE	23	-	-	-	29	40	2
ALUMINO SILICATES	3	-	-	-	-	-	14
OTHER SILICATES	19	-	-	2	25	29	-
PYRITE	<1	-	-	-	-	<1	<1
SHELL	-	-	-	-	-	-	-
QUARTZ	<1	-	-	-	-	-	2
IRON OXIDES	-	-	-	-	-	-	-
UNIDENTIFIED	-	-	-	-	-	-	-
+25# NON ECONOMIC	<1	100	-	-	-	-	-
NO. OF POINTS	-	-	-	531	526	547	629
WEIGHT %	100	0.33	.031	6.99	73.58	1.27	17.52



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CLIENT: PETER H. STITT & ASSOC. PTY LTD

APS REPORT NO.: M 174

ATTENTION: MR G. LEE

DATE: 23.4.89

SAMPLE DETAILS: ORDER NO. A28, SAMPLE 4, 2280E - 2560E, 4350N

	TOTAL	+25#	HAND MAG	0.4A MAG	1.0A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	-	-	-	1	-
ZIRCON	5	-	-	-	-	1	25
RUTILE	5	-	-	-	-	-	29
LEUCOXENE	5	-	-	-	-	-	29
LEUCOXENISED ILMENITE	13	-	-	-	17	42	-
ILMENITE	23	-	-	88	20	-	-
MAGNETITE	<1	-	100	-	-	-	-
GARNET	4	-	-	9	5	2	-
TOURMALINE	25	-	-	-	33	30	3
ALUMINO SILICATES	2	-	-	-	-	-	12
OTHER SILICATES	18	-	-	1	25	24	-
PYRITE	<1	-	-	-	-	<1	<1
SHELL	-	-	-	-	-	-	-
QUARTZ	<1	-	-	-	-	-	2
IRON OXIDES	<1	-	-	2	-	-	-
UNIDENTIFIED	-	-	-	-	-	-	-
+25# NON ECONOMIC	<1	100	-	-	-	-	-
NO. OF POINTS	-	-	-	530	522	552	551
WEIGHT %	100	0.38	0.34	9.31	70.98	1.51	17.47



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APS REPORT NO.: M 174

ATTENTION: MR G. LEE

DATE: 23.4.89

SAMPLE DETAILS: ORDER NO. A28, SAMPLE 5, 2320E - 2600E, 4050N

	TOTAL	+25#	HAND MAG	0.4A MAG	1.0A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	-	-	<1	1	-
ZIRCON	8	-	-	-	<1	<1	38
RUTILE	6	-	-	-	<1	<1	28
LEUCOXENE	4	-	-	-	-	-	19
LEUCOXENISED ILMENITE	13	-	-	-	19	37	-
ILMENITE	27	-	-	89	27	-	-
MAGNETITE	<1	-	100	-	-	-	-
GARNET	5	-	-	9	6	1	-
TOURMALINE	16	-	-	-	22	36	1
ALUMINO SILICATES	2	-	-	-	-	-	10
OTHER SILICATES	18	-	-	2	26	25	-
PYRITE	<1	-	-	-	-	<1	1
SHELL	<1	-	-	-	-	-	<1
QUARTZ	1	-	-	-	-	-	3
IRON OXIDES	-	-	-	-	-	-	-
UNIDENTIFIED	-	-	-	-	-	-	-
+25# NON ECONOMIC	<1	100	-	-	-	-	-
NO. OF POINTS	-	-	-	590	590	553	576
WEIGHT %	100	0.21	0.42	10.42	67.46	1.55	19.94


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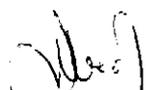
Phone: (02) 516 4808

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APS REPORT NO.: M 175

SAMPLE DETAILS: KING ISLAND SAMPLE 6 1930E - 2280E 4050N DATE: 21.5.89
ORDER NO. A31 REF. NMS EL 41/88

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	-	-	1	-
ZIRCON	7	-	-	-	<1	33
RUTILE	7	-	-	-	<1	31
LEUCOXENE	6	-	-	-	-	26
LEUCOXENISED ILMENITE	11	-	-	22	41	-
ILMENITE	28	-	84	7	-	-
MAGNETITE	<1	100	-	-	-	-
IRON OXIDES	1	-	2	9	-	-
GARNET	4	-	13	1	1	-
TOURMALINE	19	-	<1	39	40	<1
ALUMINO-SILICATES	2	-	-	-	-	7
OTHER SILICATES	14	-	1	29	17	-
PYRITE	<1	-	-	-	<1	-
CORUNDUM	-	-	-	-	-	-
SHELL	-	-	-	-	-	-
QUARTZ	1	-	-	-	-	3
CARBONATE	-	-	-	-	-	-
SPINEL	-	-	-	-	-	-
WEIGHT %	100	0.4	29.7	43.9	4.1	21.9
NO. OF POINTS			568	516	530	564


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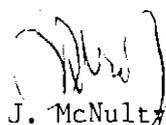
Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

APS REPORT NO.: M 175

SAMPLE DETAILS: KING ISLAND SAMPLE 7 1880E - 2320E 3750N DATE: 21.5.89
ORDER NO. A31 REF. NMS EL 41/88

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	-	<1	<1	-
ZIRCON	8	-	-	<1	-	35
RUTILE	7	-	-	-	<1	31
LEUCOXENE	6	-	-	-	-	25
LEUCOXENISED ILMENITE	7	-	-	14	37	-
ILMENITE	28	-	84	4	-	-
MAGNETITE	1	100	-	-	-	-
IRON OXIDES	<1	-	-	1	-	-
GARNET	4	-	13	<1	4	-
TOURMALINE	21	-	1	44	40	1
ALUMINO-SILICATES	1	-	-	-	-	6
OTHER SILICATES	17	-	2	37	19	-
PYRITE	<1	-	-	-	-	<1
CORUNDUM	<1	-	-	-	-	<1
SHELL	-	-	-	-	-	-
QUARTZ	<1	-	-	-	-	2
CARBONATE	-	-	-	-	-	-
SPINEL	-	-	-	-	-	-
WEIGHT %	100	0.5	30.6	43.9	2.7	22.3
NO. OF POINTS			541	604	517	505


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CLIENT: PETER H. STITT & ASSOC. PTY LTD

APS REPORT NO. M 183

SAMPLE DETAILS: ORDER NO. A44, REF. NMS EL 41/88

DATE: 29.5.89

SAMPLE 8, 2360E - 2680E, 3750N

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	-	-	1	-
ZIRCON	8	-	-	-	1	36
RUTILE	6	-	-	-	1	25
LEUCOXENE	6	-	-	-	-	25
LEUCOXENISED ILMENITE	8	-	-	16	41	-
ILMENITE	27	-	84	1	-	-
MAGNETITE	1	100	-	-	-	-
IRON OXIDES	1	-	1	2	-	-
GARNET	4	-	12	1	2	-
TOURMALINE	21	-	1	46	38	2
ALUMINO-SILICATES	2	-	-	-	-	9
OTHER SILICATES	15	-	2	33	16	-
PYRITE	<1	-	-	-	<1	<1
CORUNDUM	<1	-	-	-	-	<1
SHELL	<1	-	-	<1	-	1
QUARTZ	<1	-	-	-	-	2
CARBONATE	-	-	-	-	-	-
SPINEL	1	-	<1	1	-	-
WEIGHT %	100	0.7	31.9	41.3	3.2	22.9
NO. OF POINTS			578	562	513	525


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CLIENT: PETER H. STITT & ASSOC. PTY LTD

APS REPORT NO.: M 179

SAMPLE DETAILS: ORDER NO. A35, REF NMS EL 41/88

DATE: 29.5.89

KING ISLAND SAMPLE 9 2160E - 2400E, 3450N

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	<1	<1	2	-
ZIRCON	9	-	<1	<1	<1	37
RUTILE	7	-	-	-	1	27
LEUCOXENE	6	-	-	-	-	25
LEUCOXENISED ILMENITE	10	-	-	22	44	-
ILMENITE	29	-	86	<1	-	-
MAGNETITE	1	100	-	-	-	-
IRON OXIDES	<1	-	<1	-	-	-
GARNET	4	-	10	1	1	-
TOURMALINE	18	-	<1	44	33	2
ALUMINO-SILICATES	1	-	-	-	-	5
OTHER SILICATES	13	-	2	32	18	-
PYRITE	<1	-	-	-	1	<1
CORUNDUM	<1	-	-	-	-	<1
SHELL	-	-	-	-	-	-
QUARTZ	1	-	-	-	-	4
CARBONATE	-	-	-	-	-	-
SPINEL	1	-	2	1	1	-
WEIGHT %	100	0.6	33.9	37.5	2.6	25.4
NO. OF POINTS			548	552	509	546



J. McNulty

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CLIENT: PETER H. STITT & ASSOC. PTY LTD

APS REPORT NO.: M 179

SAMPLE DETAILS: KING ISLAND SAMPLE 10 2440E - 2560E 3450N DATE: 21.5.89
ORDER NO. A35, REF NMS EL 41/88

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE						-
ZIRCON	8					34
RUTILE	6					26
LEUCOXENE	7					30
LEUCOXENISED ILMENITE						-
ILMENITE						-
MAGNETITE						-
IRON OXIDES						-
GARNET						-
TOURMALINE	<1					1
ALUMINO-SILICATES	2					7
OTHER SILICATES						-
PYRITE						-
CORUNDUM	<1					<1
SHELL	<1					<1
QUARTZ	1					2
CARBONATE						-
SPINEL						-
WEIGHT %	100					23.7
NO. OF POINTS						513


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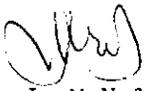
APS REPORT NO. M 179

SAMPLE DETAILS: ORDER NO. A35, REF. NMS EL 41/88

DATE: 29.5.89

KING ISLAND SAMPLE 11, 2060E - 2460E, 2800N

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	-	<1	<1	-
ZIRCON	8	-	-	-	<1	32
RUTILE	7	-	-	-	1	28
LEUCOXENE	7	-	-	-	-	29
LEUCOXENISED ILMENITE	11	-	-	23	53	-
ILMENITE	27	-	84	2	-	-
MAGNETITE	1	100	-	-	-	-
IRON OXIDES	1	-	2	2	-	-
GARNET	4	-	11	2	2	-
TOURMALINE	17	-	1	40	29	2
ALUMINO-SILICATES	2	-	-	-	-	7
OTHER SILICATES	13	-	<1	31	15	-
PYRITE	<1	-	-	-	<1	-
CORUNDUM	<1	-	-	-	-	<1
SHELL	-	-	-	-	-	-
QUARTZ	1	-	-	-	-	2
CARBONATE	-	-	-	-	-	-
SPINEL	1	-	2	<1	-	-
WEIGHT %	100	0.9	31.4	40.1	2.5	25.1
NO. OF POINTS			512	561	557	543


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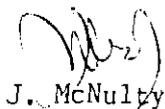
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APS REPORT NO.: M 175

SAMPLE DETAILS: KING ISLAND SAMPLE 12 2040E - 2340E 2500N DATE: 21.5.89
ORDER NO. A31, REF. NMS EL 41/88

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	-	1	1	-
ZIRCON	10	-	-	<1	<1	39
RUTILE	8	-	-	<1	<1	32
LEUCOXENE	5	-	-	-	-	18
LEUCOXENISED ILMENITE	7	-	-	17	41	-
ILMENITE	31	-	87	2	-	-
MAGNETITE	1	100	-	-	-	-
IRON OXIDES	1	-	<1	3	-	-
GARNET	5	-	12	1	2	-
TOURMALINE	15	-	-	40	40	1
ALUMINO-SILICATES	2	-	-	-	-	6
OTHER SILICATES	14	-	1	36	16	-
PYRITE	<1	-	-	-	-	1
CORUNDUM	<1	-	-	-	-	<1
SHELL	<1	-	-	-	-	1
QUARTZ	1	-	-	-	-	2
CARBONATE	-	-	-	-	-	-
SPINEL	-	-	-	-	-	-
WEIGHT %	100	0.7	35.2	35.5	2.7	25.9
NO. OF POINTS			539	557	582	585


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538550 ⁶⁴

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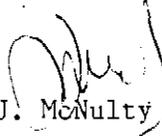
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CLIENT: PETER H. STITT & ASSOC. PTY LTD

APS REPORT NO.: M 175

SAMPLE DETAILS: KING ISLAND SAMPLE 13 2200E - 2280E 2200N DATE: 21.5.89
ORDER NO. A 31, REF. NMS EL 41/88

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE						-
ZIRCON	5					25
RUTILE	5					27
LEUCOXENE	6					28
LEUCOXENISED ILMENITE						-
ILMENITE						-
MAGNETITE						-
IRON OXIDES						-
GARNET						-
TOURMALINE	<1					1
ALUMINO-SILICATES	3					13
OTHER SILICATES						-
PYRITE	<1					<1
CORUNDUM	<1					1
SHELL	<1					<1
QUARTZ	1					5
CARBONATE						-
SPINEL						-
WEIGHT %	100					19.7
NO. OF POINTS						582


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APS REPORT NO.: M 183

SAMPLE DETAILS: ORDER NO. A44, REF. NMS EL 41/88

DATE: 29.5.89

SAMPLE 14, 880E - 1220E, 1325N

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	1	-	-	2	2	-
ZIRCON	18	-	-	-	1	51
RUTILE	8	-	-	-	2	24
LEUCOXENE	5	-	-	-	-	14
LEUCOXENISED ILMENITE	11	-	-	30	73	-
ILMENITE	26	-	88	<1	-	-
MAGNETITE	1	100	-	-	-	-
IRON OXIDES	2	-	3	4	-	-
GARNET	2	-	7	-	<1	-
TOURMALINE	16	-	<1	51	19	1
ALUMINO-SILICATES	2	-	-	-	-	5
OTHER SILICATES	4	-	<1	12	1	-
PYRITE	1	-	-	<1	2	3
CORUNDUM	<1	-	-	-	-	<1
SHELL	<1	-	-	-	-	<1
QUARTZ	1	-	-	-	-	2
+600um	2	-	-	-	-	-
SPINEL	2	-	2	1	-	-
WEIGHT %	100	0.9	29.3	30.0	2.5	35.0
NO. OF POINTS			522	520	574	514



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APS REPORT NO. M 183

SAMPLE DETAILS: ORDER NO. A44, REF. NMS e1 41/88

DATE: 29.5.89

SAMPLE 15, 940E - 1220E, 1600N

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	1	-	1	1	<1	-
ZIRCON	16	-	-	-	1	49
RUTILE	9	-	-	-	1	28
LEUCOXENE	5	-	-	-	-	16
LEUCOXENISED ILMENITE	9	-	-	22	69	-
ILMENITE	26	-	88	1	-	-
MAGNETITE	<1	100	-	-	-	-
IRON OXIDES	<1	-	<1	<1	-	-
GARNET	3	-	9	<1	1	-
TOURMALINE	22	-	<1	60	23	<1
ALUMINO-SILICATES	1	-	-	-	-	4
OTHER SILICATES	6	-	<1	15	4	-
PYRITE	<1	-	-	<1	1	<1
CORUNDUM	<1	-	-	-	-	<1
SHELL	-	-	-	-	-	-
QUARTZ	1	-	-	-	-	3
CARBONATE	-	-	-	-	-	-
SPINEL	1	-	2	1	-	-
WEIGHT %	100	0.4	29.2	35.9	2.0	32.5
NO. OF POINTS			570	501	541	558


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APS REPORT NO.: M 183

SAMPLE DETAILS: KING ISLAND, SAMPLE 16; 92OE - 120E, 1900 DATE: 21.5.89
ORDER NO. A44, REF NMS EL 41/88 N

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE						-
ZIRCON	11					42
RUTILE	8					28
LEUCOXENE	4					16
LEUCOXENISED ILMENITE						-
ILMENITE						-
MAGNETITE						-
IRON OXIDES						-
GARNET						-
TOURMALINE	<1					1
ALUMINO-SILICATES	2					6
OTHER SILICATES						-
PYRITE	<1					1
CORUNDUM	<1					<1
SHELL						-
QUARTZ	2					6
CARBONATE						-
SPINEL						-
WEIGHT %	100					26.6
NO. OF POINTS						551


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APS REPORT NO.: M 183

SAMPLE DETAILS: ORDER NO. A44, REF. NMS EL 41/88

DATE: 29.5.89

SAMPLE 17, 840E - 920E, 2200N

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	-	<1	<1	-
ZIRCON	11	-	-	<1	<1	44
RUTILE	8	-	-	-	3	31
LEUCOXENE	2	-	-	-	-	9
LEUCOXENISED ILMENITE	9	-	-	20	29	-
ILMENITE	22	-	76	1	-	-
MAGNETITE	<1	100	-	-	-	-
IRON OXIDES	1	-	1	2	-	-
GARNET	7	-	23	1	3	-
TOURMALINE	28	-	<1	60	52	<1
ALUMINO-SILICATES	3	-	-	-	-	11
OTHER SILICATES	7	-	-	15	6	-
PYRITE	<1	-	-	<1	7	i
CORUNDUM	<1	-	-	-	-	<1
SHELL	-	-	-	-	-	-
QUARTZ	1	-	-	-	-	4
CARBONATE	-	-	-	-	-	-
SPINEL	1	-	<1	1	-	-
WEIGHT %	100	0.2	28.6	44.3	2.0	24.9
NO. OF POINTS			535	567	532	570


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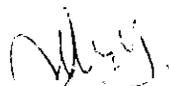
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APS REPORT NO.: M 183

SAMPLE DETAILS: KING ISLAND SAMPLE 18 940E - 1120E 2200N DATE: 21.5.89
ORDER NO. A44, REF NMS EL 41/88

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE						-
ZIRCON	11					42
RUTILE	7					25
LEUCOXENE	6					23
LEUCOXENISED ILMENITE						-
ILMENITE						-
MAGNETITE						-
IRON OXIDES						-
GARNET						-
TOURMALINE	<1					1
ALUMINO-SILICATES	1					3
OTHER SILICATES						-
PYRITE	1					3
CORUNDUM						-
SHELL						-
QUARTZ	1					3
CARBONATE						-
SPINEL						-
WEIGHT %	100					27.1
NO. OF POINTS						549


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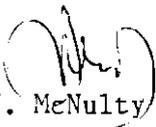
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APS REPORT NO.: M 175

SAMPLE DETAILS: KING ISLAND SAMPLE 19 840E - 920E 2500N
ORDER NO. A31, REF. NMS EL 41/88

DATE: 21.5.89

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	-	<1	1	-
ZIRCON	9	-	-	<1	1	40
RUTILE	6	-	-	-	<1	28
LEUCOXENE	3	-	-	-	-	14
LEUCOXENISED ILMENITE	11	-	-	19	33	-
ILMENITE	20	-	80	8	-	-
MAGNETITE	<1	100	-	-	-	-
IRON OXIDES	1	-	<1	1	-	-
GARNET	4	-	19	1	1	-
TOURMALINE	35	-	<1	59	52	1
ALUMINO-SILICATES	3	-	-	-	-	12
OTHER SILICATES	7	-	1	12	11	-
PYRITE	<1	-	-	-	1	1
CORUNDUM	<1	-	-	-	-	<1
SHELL	-	-	-	-	-	-
QUARTZ	1	-	-	-	-	4
CARBONATE	-	-	-	-	-	-
SPINEL	<1	-	-	<1	-	-
WEIGHT %	100	0.1	19.3	55.9	2.8	21.9
NO. OF POINTS			520	541	505	573


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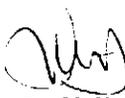
APS REPORT NO.: M 179

SAMPLE DETAILS: ORDER NO. A35, REF. NMS EL 41/88

DATE: 21.5.89

KING ISLAND SAMPLE 20, 840E - 920E, 2800N

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	1	-	-	1	1	-
ZIRCON	10	-	<1	-	<1	43
RUTILE	7	-	-	-	1	29
LEUCOXENE	2	-	-	-	-	10
LEUCOXENISED ILMENITE	9	-	-	15	33	-
ILMENITE	18	-	79	6	-	-
MAGNETITE	<1	100	-	-	-	-
IRON OXIDES	<1	-	<1	-	-	-
GARNET	4	-	20	1	1	-
TOURMALINE	39	-	<1	66	57	1
ALUMINO-SILICATES	3	-	-	-	-	15
OTHER SILICATES	6	-	<1	10	5	-
PYRITE	<1	-	-	-	2	1
CORUNDUM	<1	-	-	-	-	<1
SHELL	-	-	-	-	-	-
QUARTZ	<1	-	-	-	-	1
CARBONATE	-	-	-	-	-	-
SPINEL	1	-	1	1	-	-
WEIGHT %	100	0.2	18.9	56.3	2.7	21.9
NO. OF POINTS			506	539	500	509


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APS REPORT NO.: M 183

SAMPLE DETAILS: KING ISLAND SAMPLE 21 800E - 880E 3150N
ORDER NO. A44, REF NMS EL 41/88

DATE: 21.5.89

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE						-
ZIRCON	10					42
RUTILE	6					24
LEUCOXENE	4					18
LEUCOXENISED ILMENITE						
ILMENITE						-
MAGNETITE						-
IRON OXIDES						-
GARNET						-
TOURMALINE	1					2
ALUMINO-SILICATES	3					12
OTHER SILICATES						-
PYRITE	<1					1
CORUNDUM	<1					<1
SHELL						-
QUARTZ	<1					1
CARBONATE						-
SPINEL						-
WEIGHT %	100					24.2
NO. OF POINTS						509


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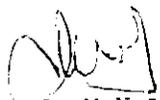
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APS REPORT NO.: M 183

SAMPLE DETAILS: KING ISLAND SAMPLE 22 940E - 102ZONE 3450 DATE: 21.5.89
ORDER NO. A44 REF NMS EL 41/88 NW

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE						-
ZIRCON	12					45
RUTILE	8					29
LEUCOXENE	4					17
LEUCOXENISED ILMENITE						-
ILMENITE						-
MAGNETITE						-
IRON OXIDES						-
GARNET						-
TOURMALINE	<1					1
ALUMINO-SILICATES	1					5
OTHER SILICATES						-
PYRITE	1					2
CORUNDUM						-
SHELL						-
QUARTZ	<1					2
CARBONATE						-
SPINEL						-
WEIGHT %						26.1
NO. OF POINTS						555


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APS REPORT NO.: M 175

SAMPLE DETAILS: KING ISLAND SAMPLE 23 94ONE - 102ONE 3750 DATE: 21.5.89
ORDER NO. A31, REF. NMS EL 41/88 NW

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	-	1	<1	-
ZIRCON	2	-	-	-	-	19
RUTILE	2	-	-	-	1	17
LEUCOXENE	2	-	-	-	-	13
LEUCOXENISED ILMENITE	4	-	-	9	25	-
ILMENITE	5	-	10	2	-	-
MAGNETITE	2	100	-	-	-	-
IRON OXIDES	9	-	19	3	-	-
GARNET	2	-	5	<1	1	-
TOURMALINE	21	-	<1	59	29	3
ALUMINO-SILICATES	2	-	-	-	-	15
OTHER SILICATES	9	-	-	25	10	-
PYRITE	4	-	-	<1	34	24
CORUNDUM	-	-	-	-	-	-
SHELL	<1	-	-	-	-	<1
QUARTZ	1	-	-	-	-	9
CARBONATE	28	-	66	1	-	-
+600 um	7	-	-	-	-	-
WEIGHT %	100	1.8	42.5	33.3	2.1	12.9
NO. OF POINTS			532	507	539	528

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APS REPORT NO.: M 179

SAMPLE DETAILS: ORDER NO. A35, REF. NMS EL 41/88

DATE: 29.5.89

KING ISLAND SAMPLE 24, 2160E - 2400E, 3150N

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	<1	<1	1	-
ZIRCON	9	-	-	<1	<1	36
RUTILE	7	-	-	-	<1	28
LEUCOXENE	7	-	-	-	-	27
LEUCOXENISED ILMENITE	11	-	-	23	60	-
ILMENITE	27	-	82	2	-	-
MAGNETITE	1	100	-	-	-	-
IRON OXIDES	1	-	2	2	-	-
GARNET	4	-	12	<1	1	-
TOURMALINE	16	-	<1	39	25	1
ALUMINO-SILICATES	2	-	-	-	-	7
OTHER SILICATES	14	-	3	33	13	-
PYRITE	-	-	-	-	-	-
CORUNDUM	<1	-	-	-	-	<1
SHELL	-	-	-	-	-	-
QUARTZ	<1	-	-	-	-	1
CARBONATE	-	-	-	-	-	-
SPINEL	1	-	1	1	-	-
WEIGHT %	100	0.9	31.9	40.0	2.2	25.0
NO. OF POINTS			558	528	524	539


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SYDNEY, NSW 2048

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CLIENT: PETER H. STITT & ASSOC. PTY LTD

APS REPORT NO.: M 183

SAMPLE DETAILS: ORDER NO. A44, REF. NMS EL 41/88

DATE: 29.5.89

SAMPLE 25, 2440E - 2600E, 3150N

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MONAZITE	<1	-	<1	1	<1	-
ZIRCON	7	-	-	-	-	31
RUTILE	6	-	-	-	<1	27
LEUCOXENE	8	-	-	-	-	32
LEUCOXENISED ILMENITE	9	-	-	18	57	-
ILMENITE	26	-	80	<1	-	-
MAGNETITE	1	100	-	-	-	-
IRON OXIDES	2	-	4	2	-	-
GARNET	4	-	12	1	1	-
TOURMALINE	19	-	<1	44	26	1
ALUMINO-SILICATES	2	-	-	-	-	8
OTHER SILICATES	15	-	3	33	16	-
PYRITE	<1	-	-	-	<1	-
CORUNDUM	<1	-	-	-	-	<1
SHELL	-	-	-	-	-	-
QUARTZ	<1	-	-	-	-	1
CARBONATE	-	-	-	-	-	-
SPINEL	1	-	1	1	-	-
WEIGHT %	100	1.2	32.2	40.3	2.9	23.4
NO. OF POINTS			504	561	561	579



J. McNulty

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
SYDNEY, N.S.W. 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

APS REPORT NO.: M 160

ATTENTION: MR. G. LEE

DATE: 18.1.89

SAMPLE DETAILS: BACK BEACH 80N COMPOSITE

2W 0 - 1.5m	2E 0 - 1.7m
1W 0 - 2.1m	3E 0 - 2.6m
000 0 - 1.9m	4E 0 - 2.6m
1E 0 - 1.8m	5E 0 - 2.4m

	TOTAL	1.2A NON MAG
LEUCOXENE	8	21
RUTILE	10	28
ZIRCON	14	38
TOURMALINE	<1	1
ALUMINO-SILICATES	2	7
QUARTZ	2	5
WEIGHT	4.9039g	1.7464g
WEIGHT %	100	35.6
NO, OF POINTS		596



J. McNulty

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RECEIVED
2/2/89

78

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
SYDNEY, N.S.W. 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

APS REPORT NO.: M 160

ATTENTION: MR. G. LEE

DATE: 19.1.89

SAMPLE DETAILS: BACK BEACH 120N COMPOSITE

3E 0 - 4.5m

4E 0 - 1.9m

5E 0 - 1.2m

	TOTAL	1.2A NON MAG
LEUCOXENE	12	33
RUTILE	8	22
ZIRCON	12	35
TOURMALINE	<1	1
ALUMINO-SILICATES	2	5
QUARTZ	1	3
PYRITE	<1	1
CORUNDUM	<1	<1
WEIGHT	5.2624g	1.8269g
WEIGHT %	100	34.7
NO. OF POINTS		662



J. McNulty

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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
SYDNEY, N.S.W. 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

APS REPORT NO. M 160

ATTENTION: MR. G. LEE

DATE: 18.1.89

SAMPLE DETAILS: HIGH DUNE 120NB COMPOSITE 24E 0 - 5.2m 29E 0 - 2.4m
20E 0 - 10.5m 25E 0 - 7.5m
21E 0 - 4.5m 26E 0 - 9.0m
22E 0 - 2.9m 27E 0 - 6.3m
23E 0 - 7.5m 28E 0 - 8.0m

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MAGNETITE	1	25	-	-	-	-
ILMENITE	29	75	81	12	-	-
LEUCOXENISED ILMENITE	8	-	-	16	34	-
IRON OXIDES	1	<1	-	2	-	-
GARNET	5	-	15	2	-	-
TOURMALINE	19	-	1	42	41	1
STAUROLITE	1	-	-	3	-	-
EPIDOTE	3	-	1	7	5	-
ALUMINO SILICATES	1	-	-	-	-	5
OTHER SILICATES*	8	-	2	16	17	-
RUTILE	7	-	-	-	-	29
LEUCOXENE	6	-	-	-	-	24
ZIRCON	10	-	-	-	1	39
QUARTZ	1	-	-	-	-	2
PYRITE	<1	-	-	-	-	<1
MONAZITE	<1	-	-	-	2	-
WEIGHT	7.3582g	0.2512g	1.9770g	2.9954g	0.3098g	1.8248g
WEIGHT%	100	3.4	26.9	40.7	4.2	24.8
NO. OF POINTS			537	527	507	607

* Pyroxene, amphibole, olivine.



J. McNulty

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
SYDNEY, N.S.W. 2048

Phone: (02) 516 4808

CLIENT: PETER H. STITT & ASSOC. PTY LTD

APS REPORT NO.: M 160

ATTENTION: MR. G. LEE

DATE: 18.1.89

SAMPLE DETAILS: HIGH DUNE 12ON COMPOSITE 43E 0 - 4.5m 47E 0 - 10.5m
40E 0 - 7.5m 44E 0 - 6.0m 48E 0 - 9.0m
41E 0 - 3.0m 45E 0 - 5.9m 49E 0 - 7.0m
42E 0 - 7.5m 46E 0 - 10.5m 4W 0 - 1.6m (Back Beach)

	TOTAL	HAND MAG	0.5A MAG	0.9A MAG	1.2A MAG	1.2A NON MAG
MAGNETITE	1	40	-	-	-	-
ILMENITE	30	55	83	18	-	-
LEUCOXENISED ILMENITE	8	-	-	15	38	-
IRON OXIDES	1	5	<1	1	-	-
GARNET	5	-	14	2	-	-
TOURMALINE	17	-	<1	35	46	1
STAUROLITE	<1	-	-	1	-	-
EPIDOTE	3	-	<1	7	5	-
ALUMINO-SILICATES	3	-	-	-	-	10
OTHER SILICATES*	10	-	3	21	10	-
RUTILE	5	-	-	-	-	20
LEUCOXENE	9	-	-	-	-	35
ZIRCON	8	-	-	-	-	32
QUARTZ	<1	-	-	-	-	2
PYRITE	-	-	-	-	-	-
MONAZITE	<1	-	-	-	1	-
WEIGHT	9.3967g	0.1769g	2.4045g	4.0705g	3.294g	2.4154g
WEIGHT %	100	1.9	25.6	43.3	3.5	25.7
NO. OF POINTS			589	575	589	513

* Pyroxene, amphibole, olivine.



J. McNulty

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APPENDIX 5

Australasian Code for Reporting of Identified
Mineral Resources and Ore Reserves

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 1955

Issued June 1988



FOREWORD

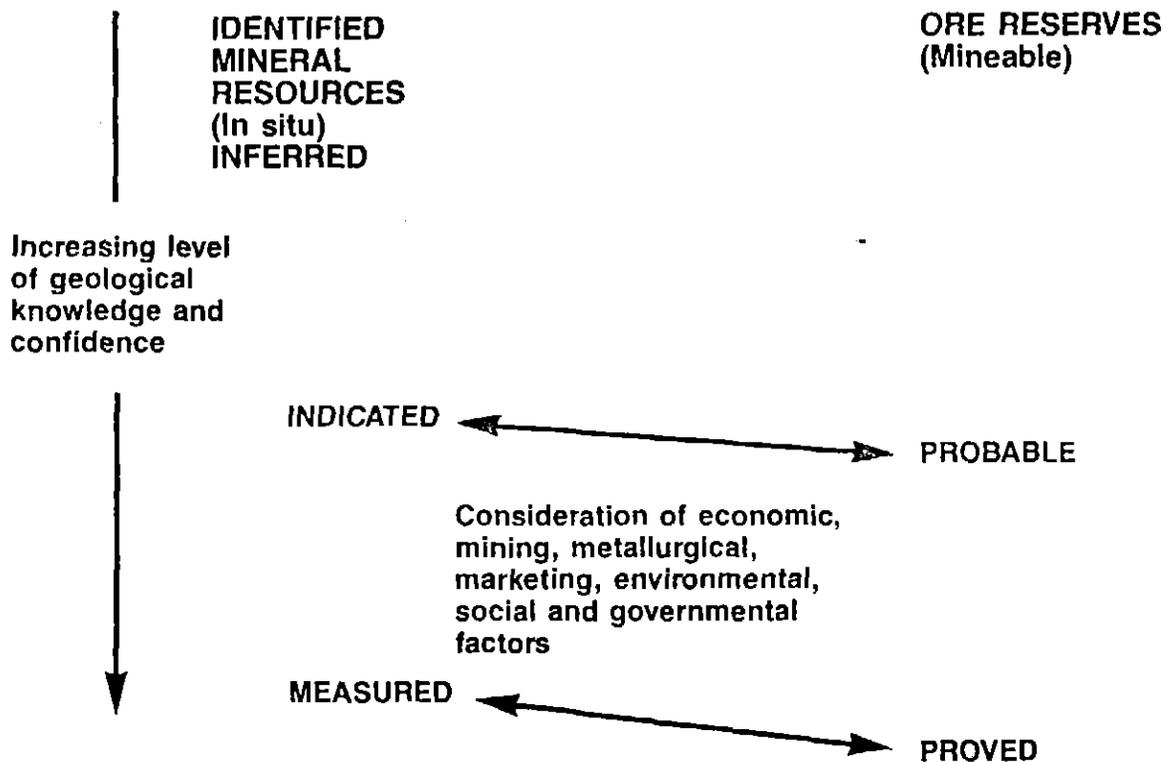
1. The Joint Committee was set up in 1971 to consider and make recommendations on stock exchange listing requirements appropriate to mining companies reporting ore reserves. The first report was published in April 1972 and republished in 1975.
2. The Committee reconvened in 1978 to review developments 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.

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

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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.

REPORT NO 11/89

588572A

VOLUME 5

Evaluation of Mineral Sand Resources

at

Cowper Point

King Island

E.L. 41/88

OPEN FILE

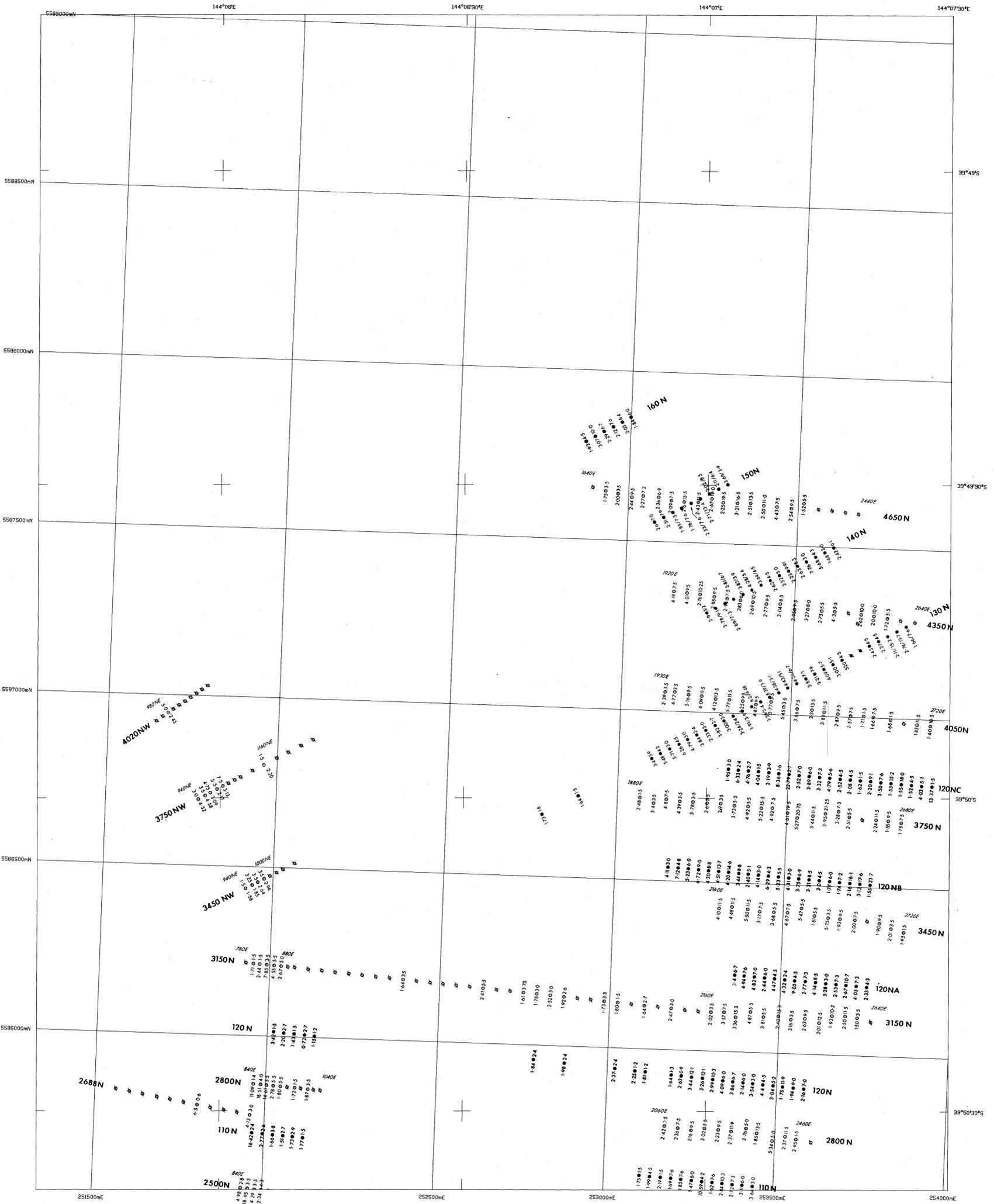
Report Prepared for National Mineral Sands Pty. Ltd.

A. Dove

G. Lee

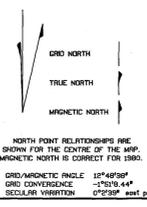
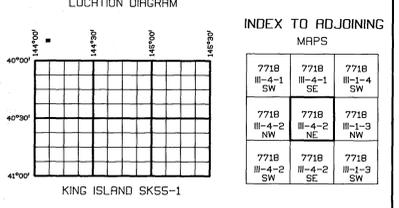
May, 1989

clg 70A



- LEGEND**
- Depth to 1.5% Cutoff
 - % HM at 1.5% Cutoff
 - Grades less than 1.5%
 - M'cMahon 1967 Drillhole
 - NMS 1989 Drillhole

8881
89-30191
(COPY)



NATIONAL MINERAL SANDS PTY. LTD.

Scale 1:15 000
 100 0 100 200 300 400 500 metres

AUSTRALIAN MAP GRID Map Centre Scale Factor 1.00035347

Map Ref **771B-III-4-2-NE COWPER POINT**

COWPER POINT GRID 588573
 Showing Grades at 15% Cutoff

Geo	
Drawn	
Checked	
Date	

DWG. No: 10-103 Fig. No.: 3 Dwg. No.



LEGEND

- DRILL TRAVERSE LINE
McMAHON 1967
- DRILL TRAVERSE LINE
N.M.S. 1989
- GRID BASE LINE

NATIONAL MINERAL SANDS PTY.LTD.

5 cm 588574

ORTHO PHOTO MAP

COWPER POINT

SHOWING DRILLING GRIDS

89-3019

1/ 5000 FIG.No: 2 DWG.No: 10.102

70mRL

70mRL

60mRL

60mRL

50mRL

50mRL

40mRL

40mRL

30mRL

30mRL

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0mRL

10mRL

10mRL

20mRL

20mRL

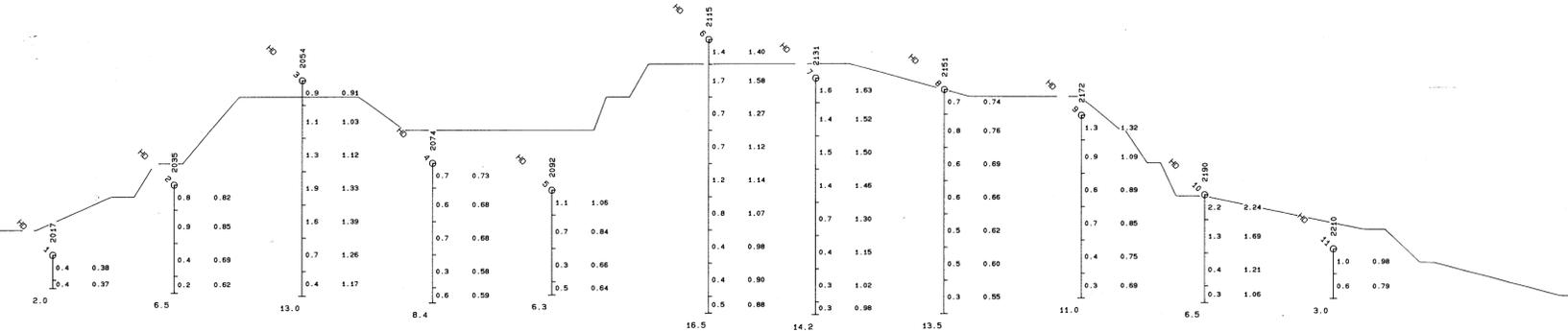
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30mRL

40mRL

40mRL

X



89-3019

588575

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Geo	CR	Fig. No.	4
Drawn	JJK 6-7-89	Dwg No.	10-104
Checked		DWG.No.	WSKL001.3955
Date	4-JUL-89	SURPAC - SURPAC MINING SYSTEMS, PERTH WA (09) 4781411	

8884

E 2050

E 2100

E 2150

E 2200

E 2250

E 2300

E 2350

E 2400

70mRL

70mRL

60mRL

60mRL

50mRL

50mRL

40mRL

40mRL

30mRL

30mRL

20mRL

20mRL

10mRL

10mRL

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20mRL

30mRL

30mRL

40mRL

40mRL

E 2050

E 2100

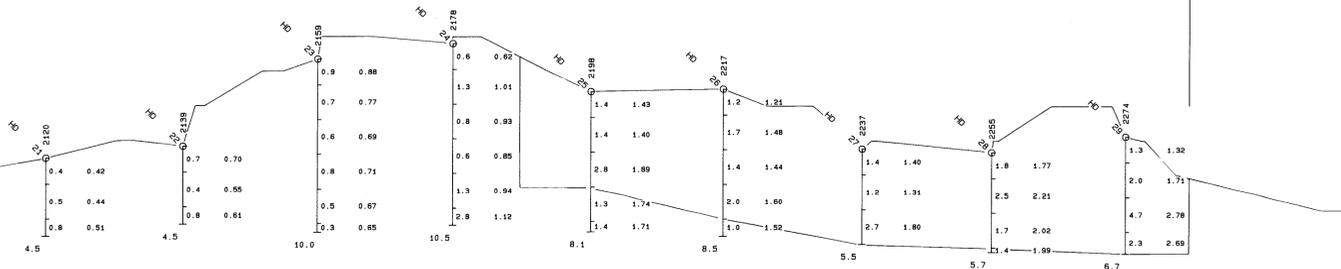
E 2150

E 2200

E 2250

E 2300

ZIRCON%= 5.0
RUTILE%= 4.0
LEUCOXENE%= 5.0



5 cm

89-3019



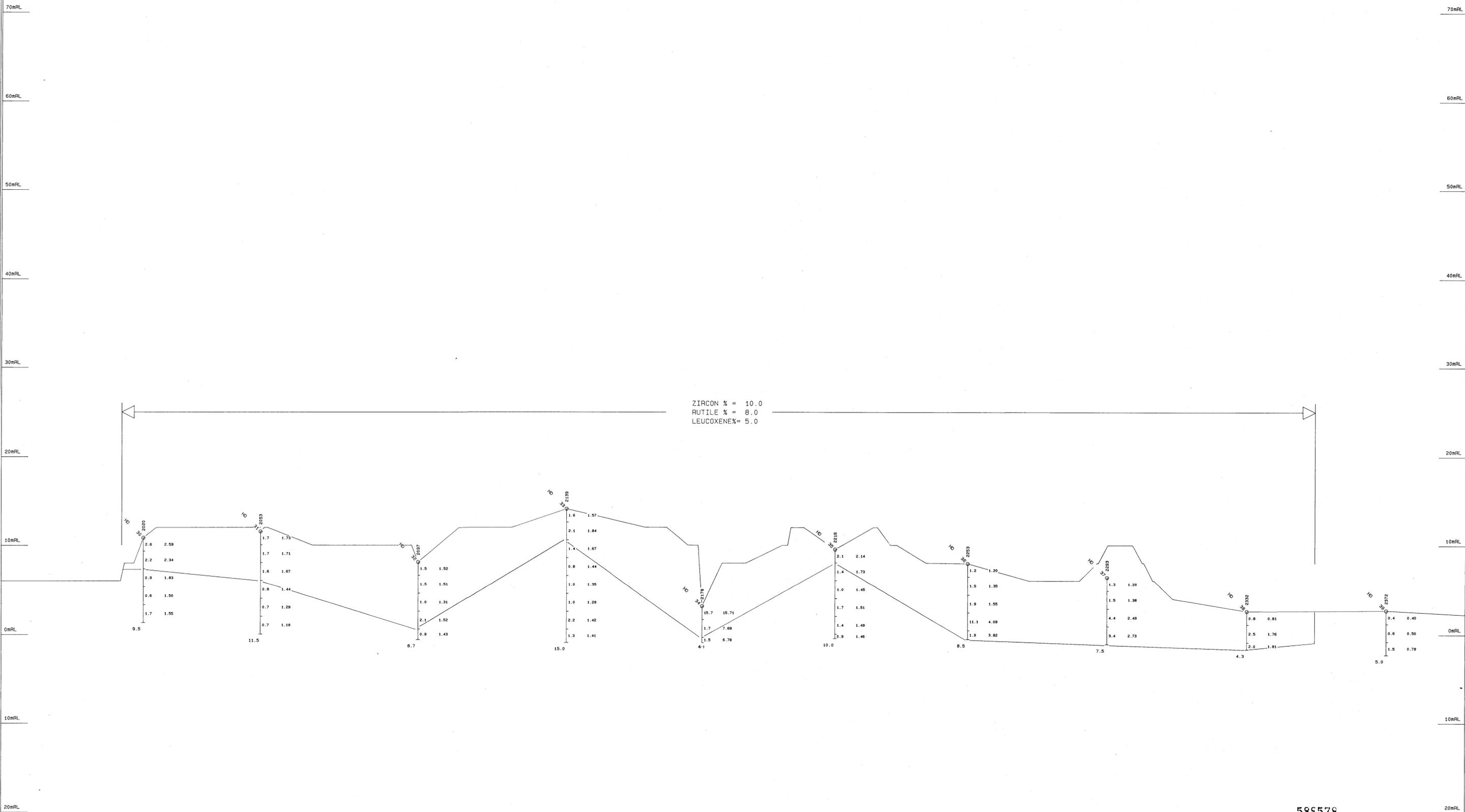
GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.
Scale 1: 500

PERTH
Geo CR
Drawn JJK
Checked 6-7-89
Date 4-JUL-89

Map Ref.
Drillhole Section A
2200 North
High Dune Prospect- Cowper Pt.

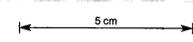
Fig. No. 6

Dwg No. 10-106



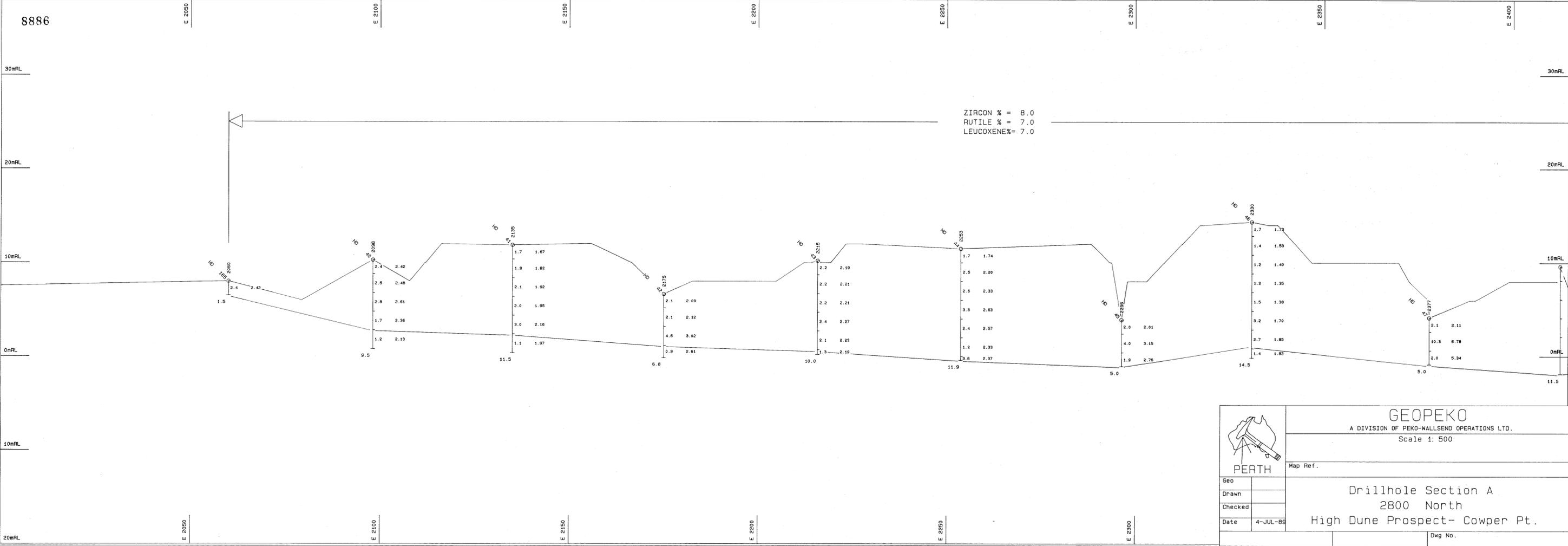
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89-3019

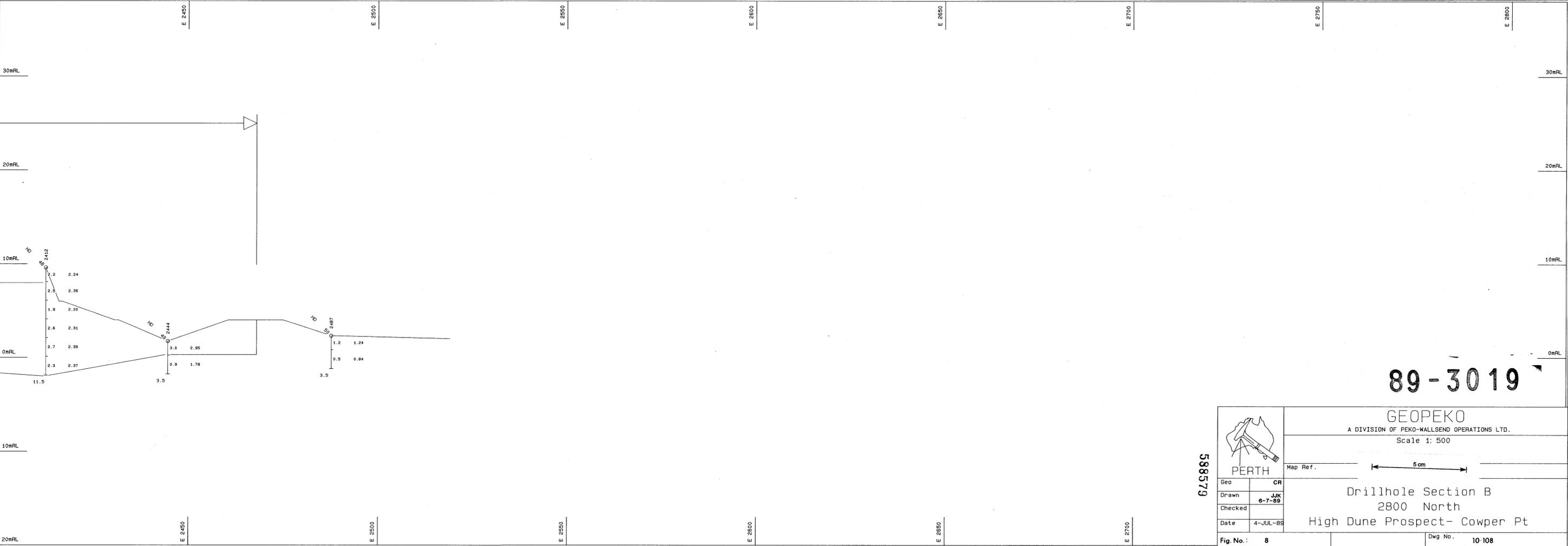


		GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD. Scale 1: 500	
		Map Ref.	
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Drawn	JJK 8-7-89		
Checked			
Date	4-JUL-89		
Fig. No. : 7		Dwg No. : 10-107	

8886



	GEOPEKO	
	A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.	
Scale 1: 500		Map Ref.
Geo	Drillhole Section A	
Drawn	2800 North	
Checked	High Dune Prospect - Cowper Pt.	
Date	4-JUL-89	Dwg No.



89-3019

	GEOPEKO	
	A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.	
Scale 1: 500		Map Ref.
Geo	Drillhole Section B	
Drawn	2800 North	
Checked	High Dune Prospect - Cowper Pt	
Date	4-JUL-89	Dwg No.
Fig. No.:	8	10-108

DWG.No. WSKL001.3959 SUPPAC - SURPAC MINING SYSTEMS, PERTH WA (09) 4781411

8887

E 2050

E 2100

E 2150

E 2200

E 2250

E 2300

E 2350

E 2400

30mRL

20mRL

10mRL

0mRL

10mRL

20mRL

E 2450

E 2500

E 2550

E 2600

E 2650

E 2700

E 2750

E 2800

30mRL

20mRL

10mRL

0mRL

10mRL

20mRL

E 2450

E 2500

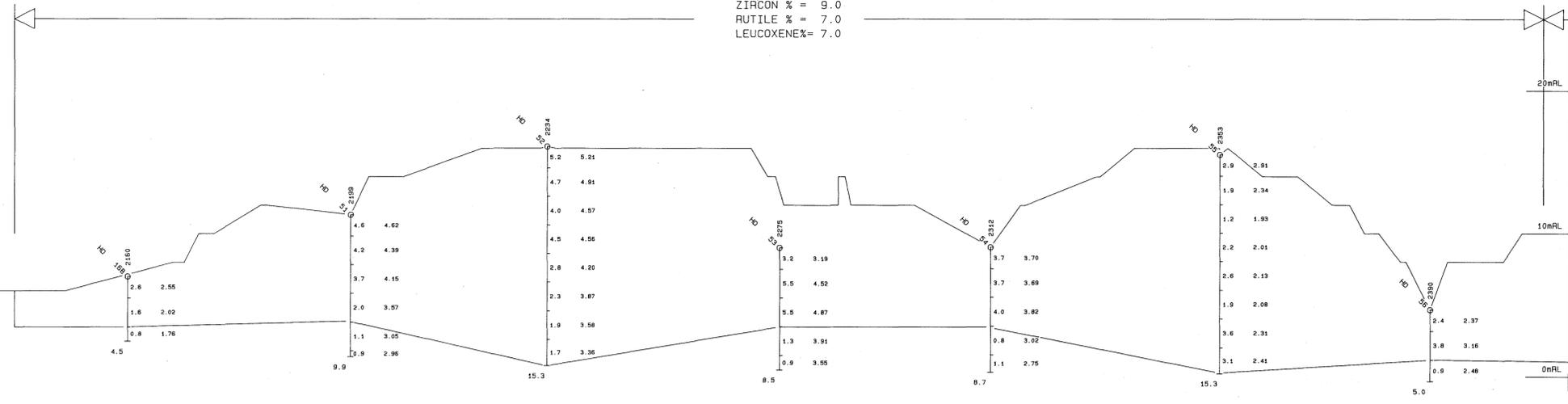
E 2550

E 2600

E 2650

E 2700

ZIRCON % = 9.0
RUTILE % = 7.0
LEUCOXENE% = 7.0

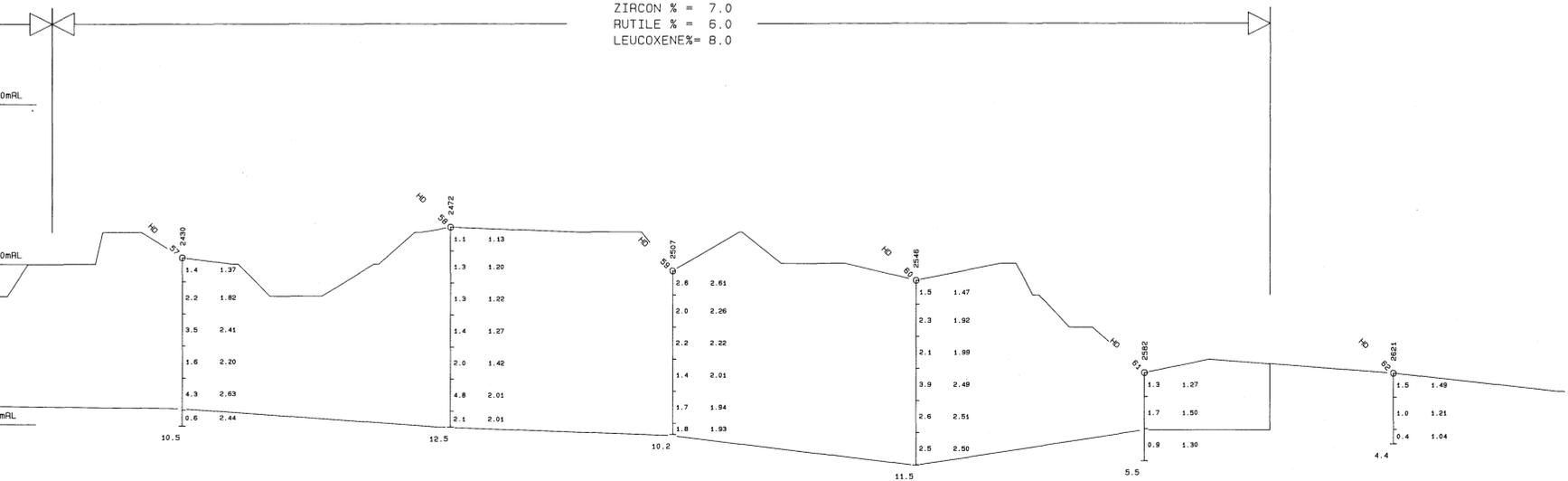


GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.
Scale 1: 500

Geo	
Drawn	
Checked	
Date	4-JUL-89

Map Ref.
Drillhole Section A
3150 North
High Dune Prospect- Cowper Pt.
Dwg No.

ZIRCON % = 7.0
RUTILE % = 6.0
LEUCOXENE% = 8.0



GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.
Scale 1: 500

Geo	CR
Drawn	JJK
Checked	6-7-89
Date	4-JUL-89

Map Ref. 5 cm
Drillhole Section B
3150 North
High Dune Prospect- Cowper Pt.
Dwg No. 10-109

583530 89-3019

30mRL

20mRL

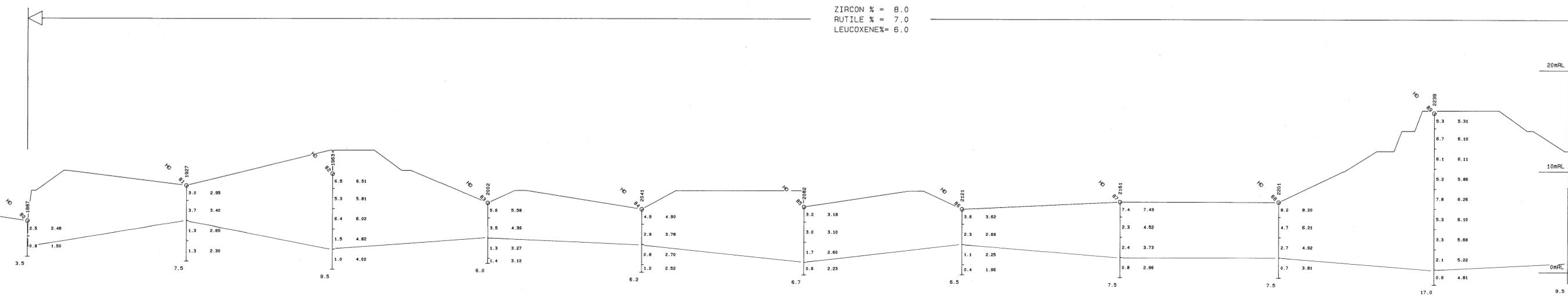
10mRL

0mRL

10mRL

20mRL

ZIRCON % = 8.0
RUTILE % = 7.0
LEUCOXENE% = 6.0



 GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD. Scale 1: 500		Map Ref.
		Drillhole Section A 3750 North High Dune Prospect- Cowper Pt.
Geo	Drawn	Date
PERTH		4-JUL-89
Checked		
		Dwg No.

30mRL

20mRL

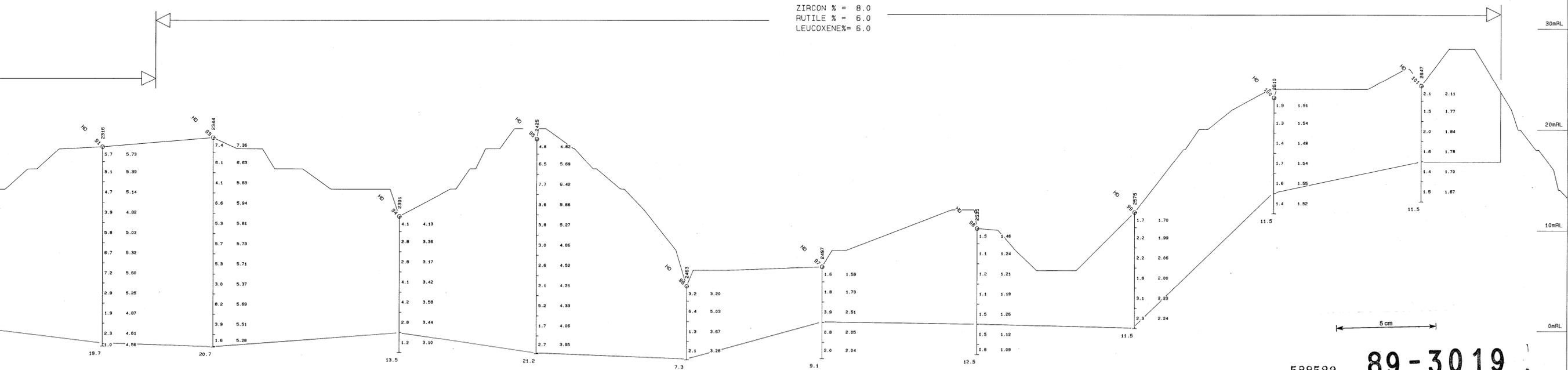
10mRL

0mRL

10mRL

20mRL

ZIRCON % = 8.0
RUTILE % = 6.0
LEUCOXENE% = 6.0

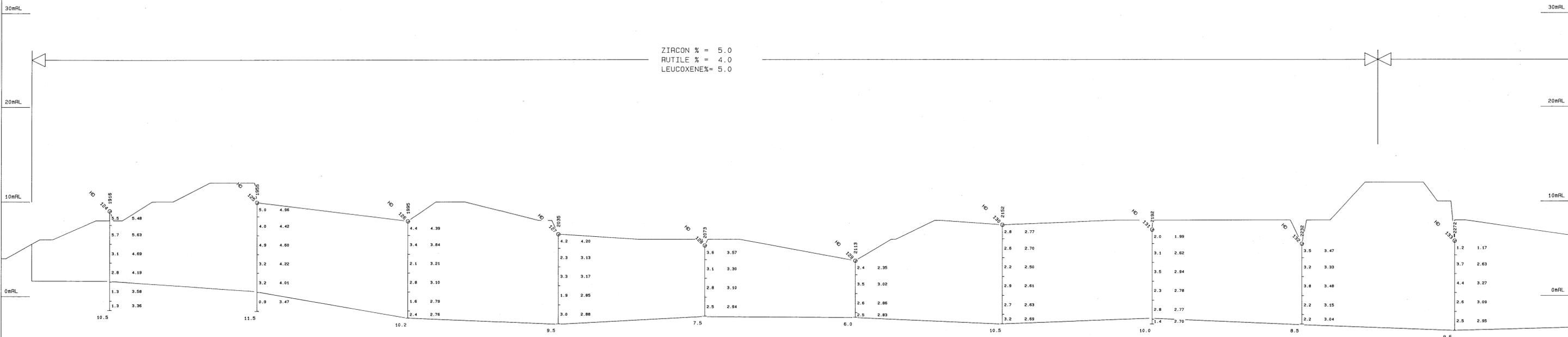


 GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD. Scale 1: 500		Map Ref.
		Drillhole Section B 3750 North High Dune Prospect- Cowper Pt.
Geo	Drawn	Date
PERTH	JK	6-7-89
Checked		
		Dwg No.

538532 89-3019

5 cm

E 1900 E 1950 E 2000 E 2050 E 2100 E 2150 E 2200 E 2250 E 2300



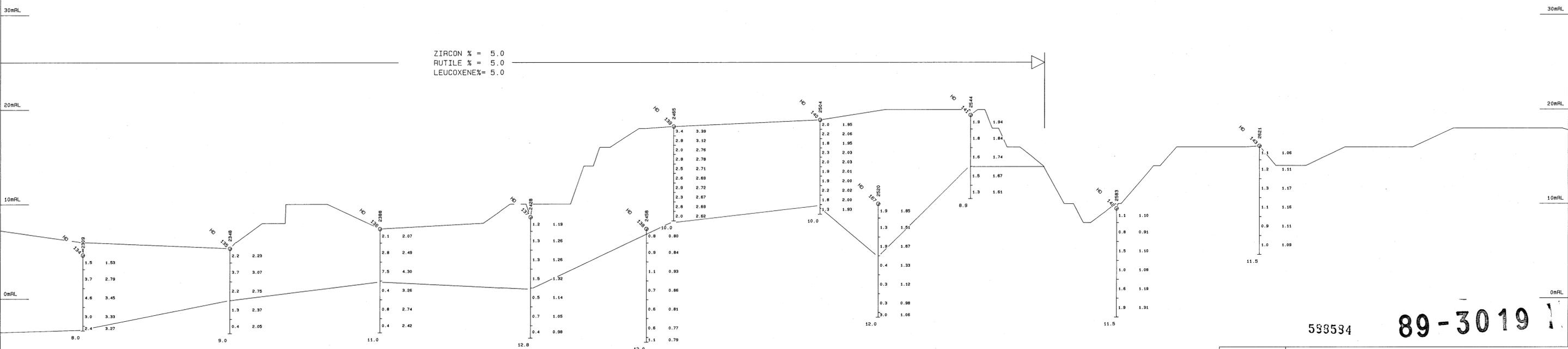
GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.
Scale 1: 500

PERTH Map Ref.

Drillhole Section A
4350 North
High Dune Prospect - Cowper Pt.

Date 4-JUL-89 Dwg No.

E 1900 E 1950 E 2000 E 2050 E 2100 E 2150 E 2200 E 2250 E 2300



GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.
Scale 1: 500

PERTH Map Ref.

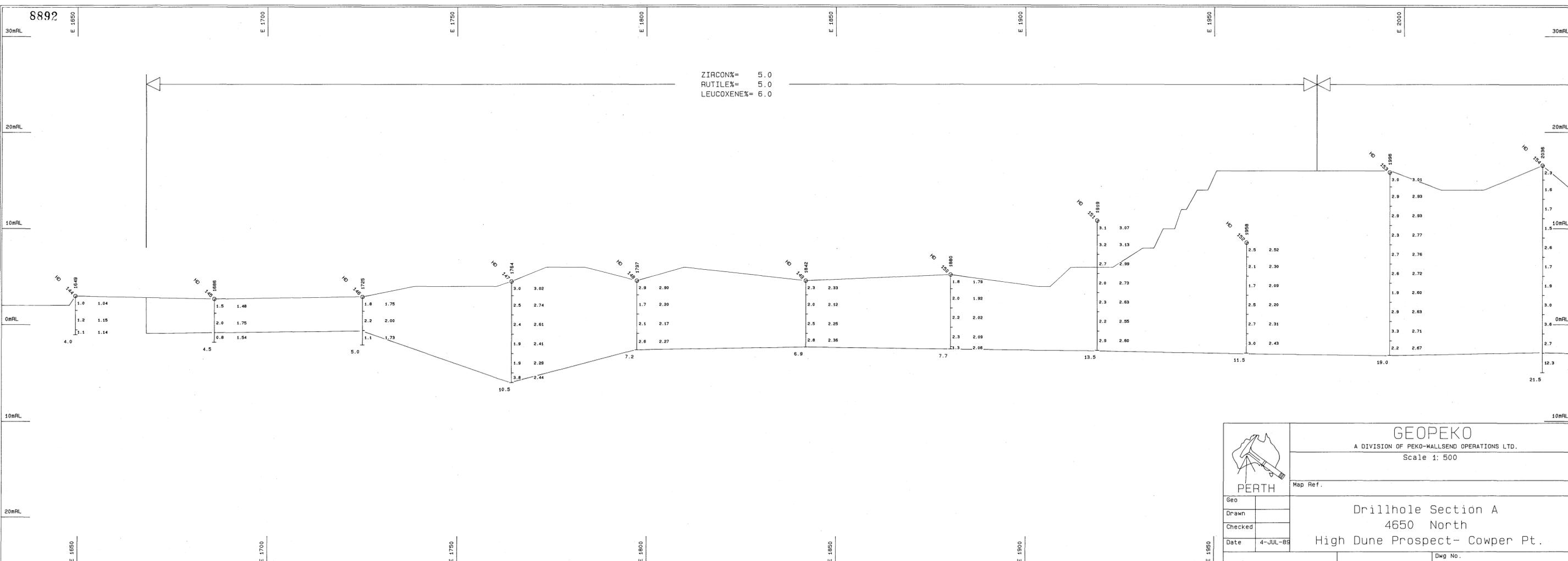
Drillhole Section B
4350 North
High Dune Prospect - Cowper Pt.

Date 4-JUL-89 Dwg No. 10-113

DWG No. WSK1.001.3964 SURPAC - SURPAC MINING SYSTEMS, PERTH WA (09) 4781441

533534 89-3019

ZIRCON%= 5.0
RUTILE%= 5.0
LEUCOXENE%= 6.0



GEOPEKO
A DIVISION OF PEKO-MALLSEND OPERATIONS LTD.
Scale 1: 500

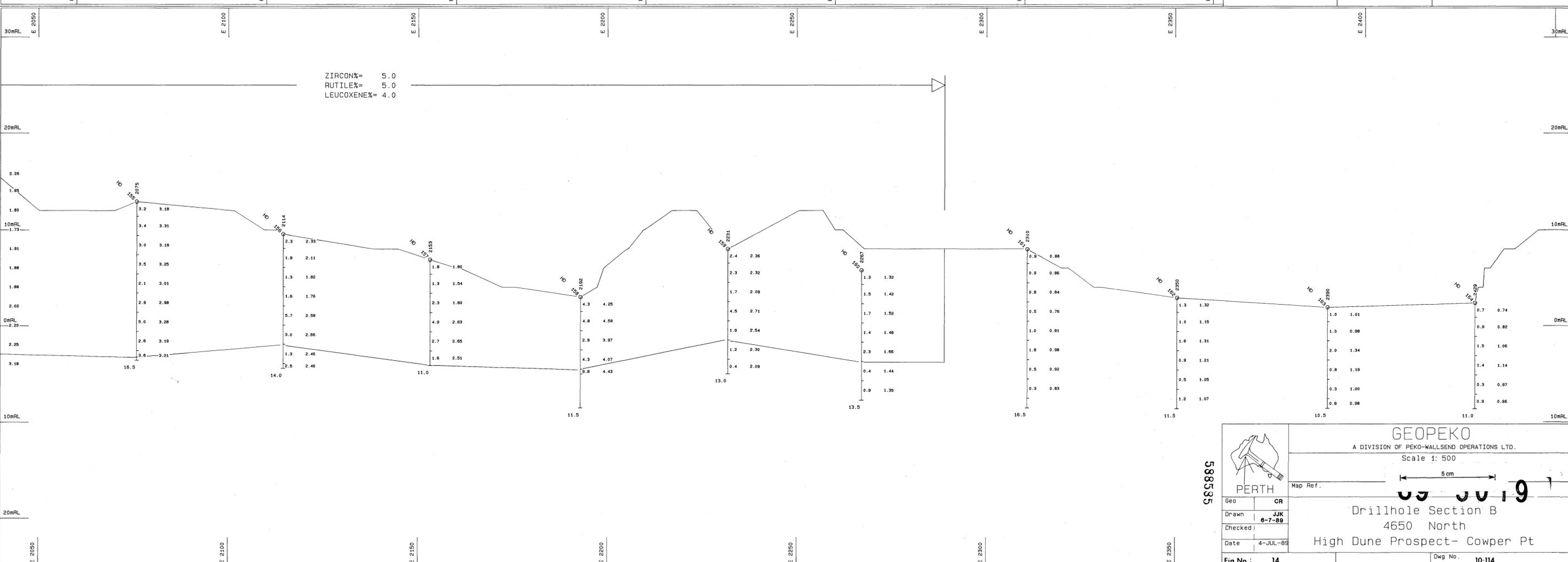
PERTH Map Ref.

Drillhole Section A
4650 North
High Dune Prospect- Cowper Pt.

Date 4-JUL-89

Dwg No.

ZIRCON%= 5.0
RUTILE%= 5.0
LEUCOXENE%= 4.0



GEOPEKO
A DIVISION OF PEKO-MALLSEND OPERATIONS LTD.
Scale 1: 500

PERTH Map Ref.

Drillhole Section B
4650 North
High Dune Prospect- Cowper Pt.

Date 4-JUL-89

Dwg No. 10-114

Fig. No. 14

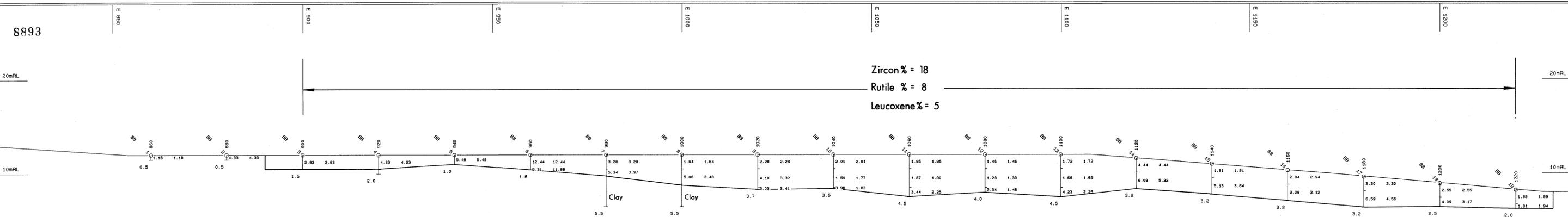
DWG. No. WSKI.001.3965

SURPAC - SURPAC MINING SYSTEMS, PERTH WA (09) 4781411

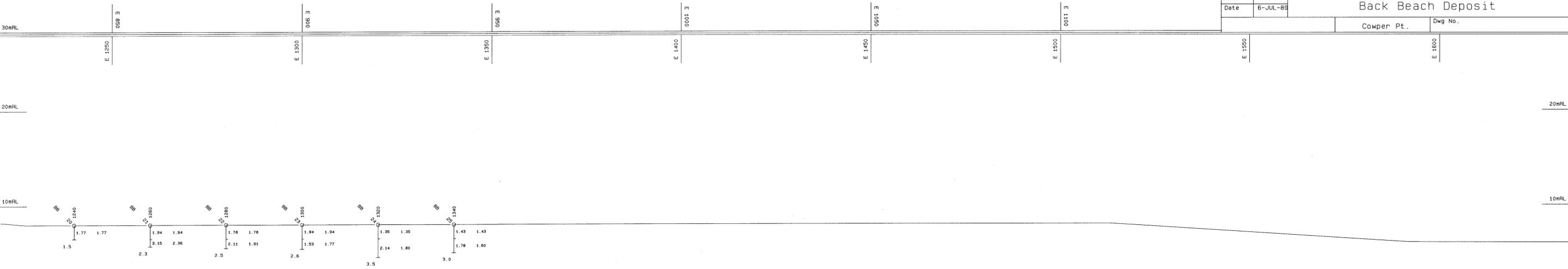
588535

8893

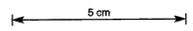
Zircon % = 18
Rutile % = 8
Leucoxene % = 5



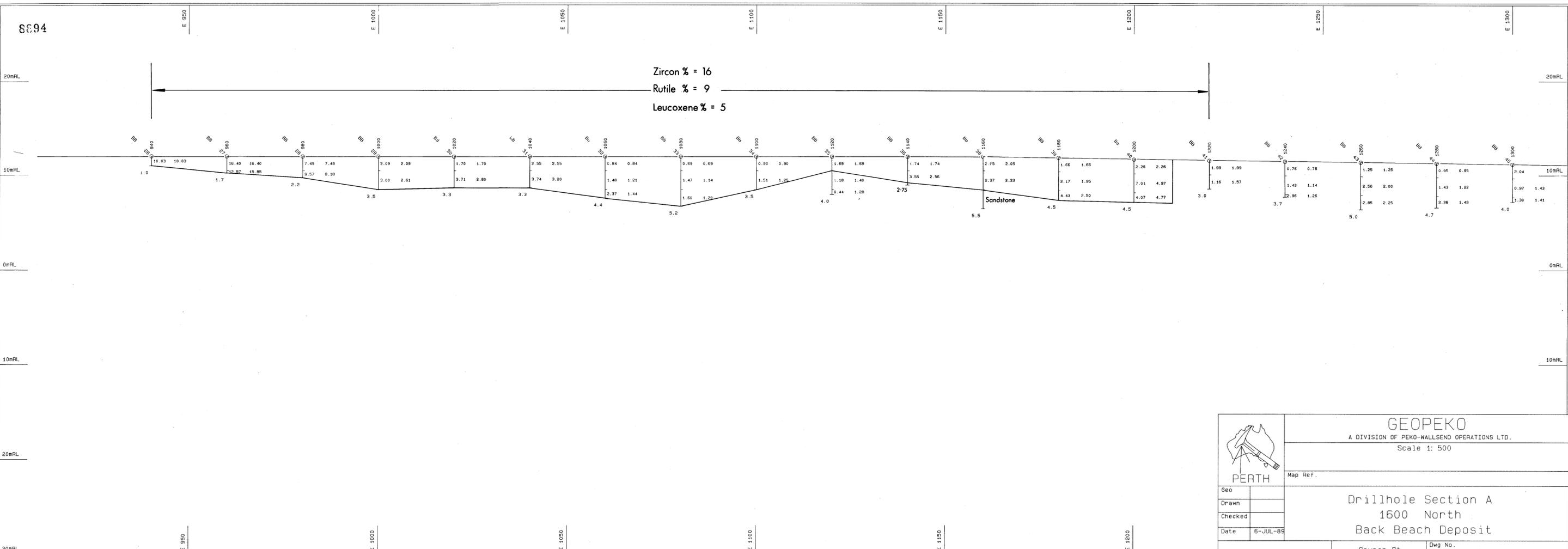
 PERTH		GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD. Scale 1: 500	
		Map Ref.	
Geo		Drillhole Section A 1325 North Back Beach Deposit	
Drawn			
Checked			
Date	6-JUL-89		
		Cowper Pt.	Dwg No.



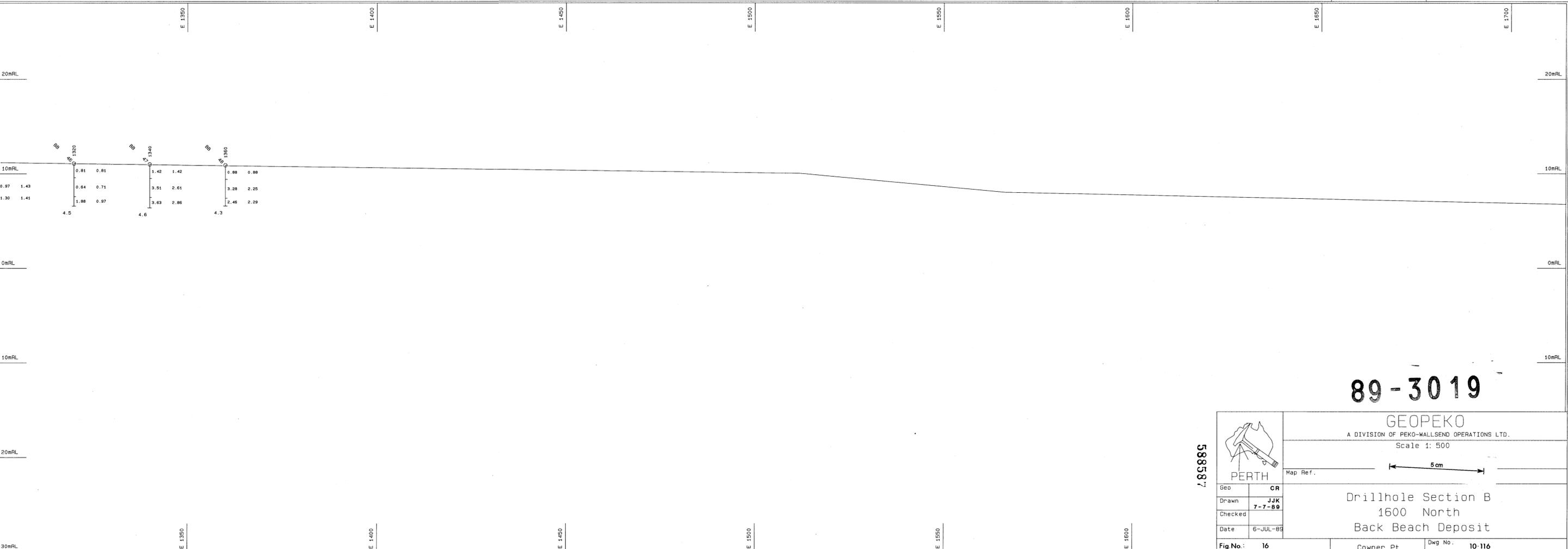
588586 **89-3019**

 PERTH		GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD. Scale 1: 500	
		Map Ref.  5cm	
Geo	CR	Drillhole Section B 1325 North Back Beach Deposit	
Drawn	JJK 7-7-89		
Checked			
Date	6-JUL-89		
Fig No.:	15	Cowper Pt.	Dwg No. 10-115

8894

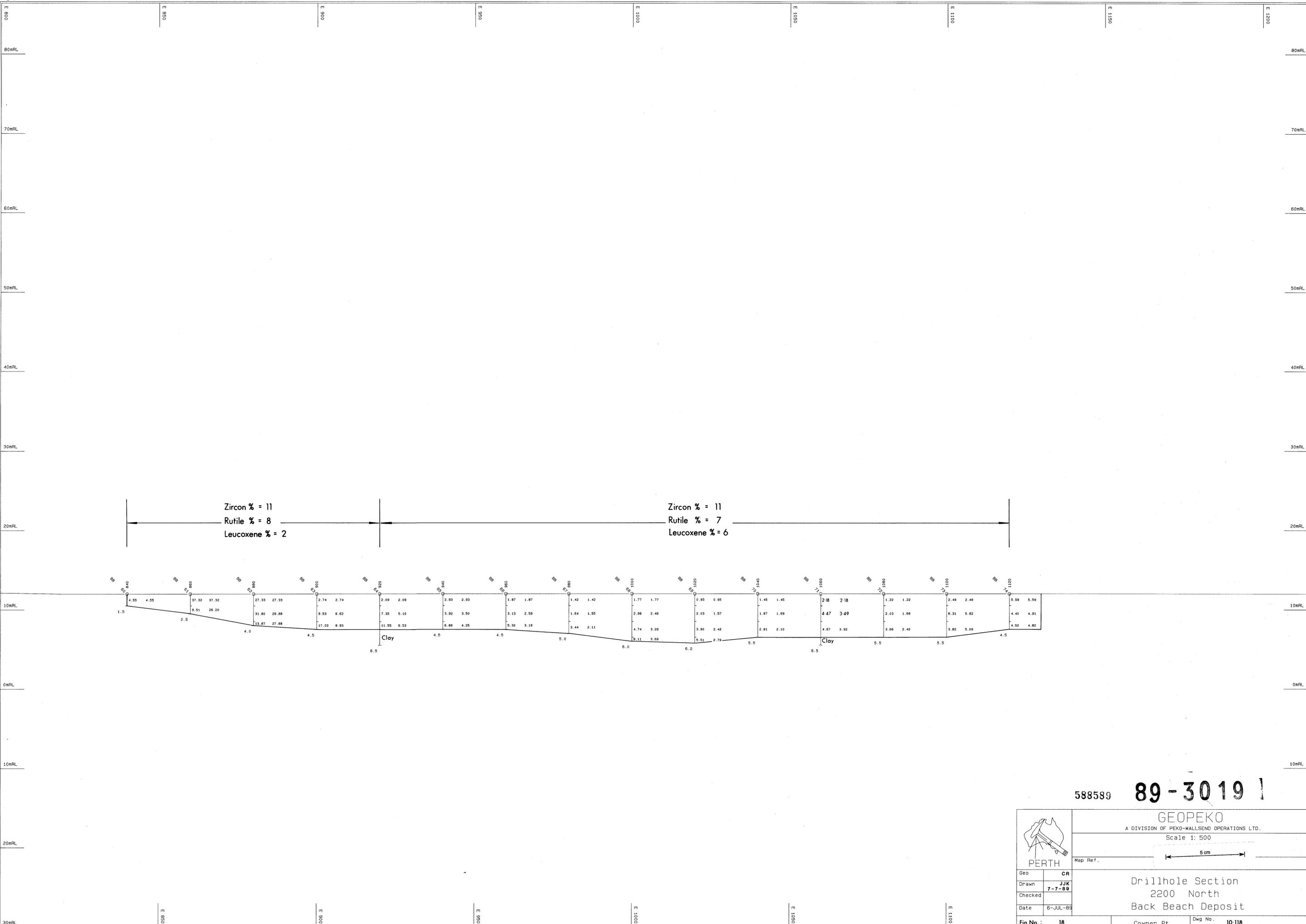


		GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD. Scale 1: 500	
		Map Ref.	
Geo		Drillhole Section A 1600 North Back Beach Deposit	
Drawn			
Checked			
Date	6-JUL-89		
		Cowper Pt.	Dwg No.



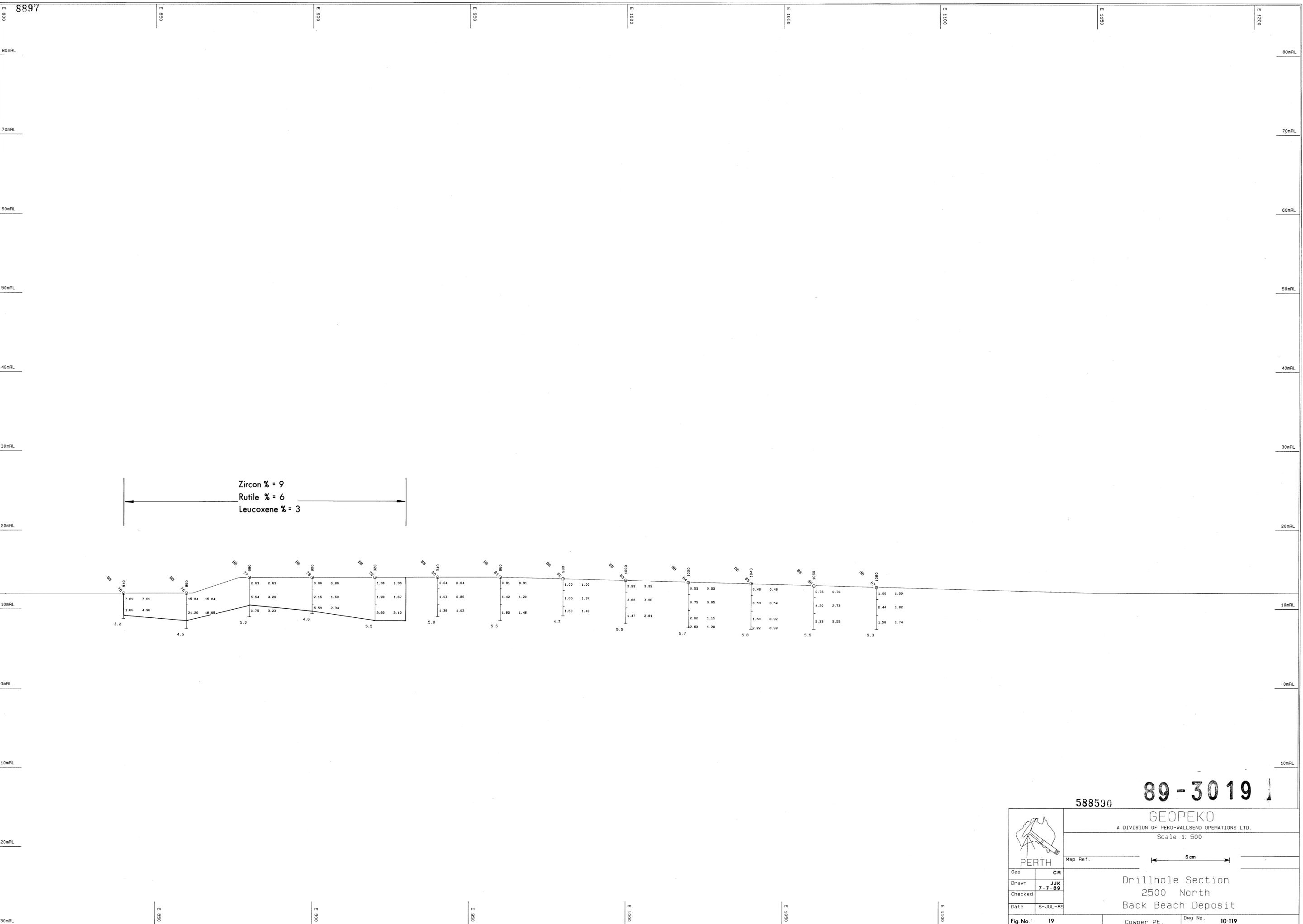
588587

		GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD. Scale 1: 500	
		5 cm	
Geo	CR	Drillhole Section B 1600 North Back Beach Deposit	
Drawn	JJK 7-7-89		
Checked			
Date	6-JUL-89		
Fig No.	16	Cowper Pt.	Dwg No. 10-116



588589 89-3019 1

<p>PERTH</p>	<p>GEOPEKO A DIVISION OF PEKO-WALLESEND OPERATIONS LTD. Scale 1: 500</p>		
	<p>Map Ref. </p>		
Geo	CR	<p>Drillhole Section 2200 North Back Beach Deposit</p>	
Drawn	JJK		
Checked	7-7-89		
Date	6-JUL-89		
Fig. No.	18	Dwg. No.	10-118



588530 89-3019

		GEOPEKO	
		A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.	
Map Ref.		Scale 1: 500	
Geo: CR		Drillhole Section	
Drawn: JJK		2500 North	
Checked: 7-7-89		Back Beach Deposit	
Date: 6-JUL-89		Fig No.: 19	
DWG.No. WSK1.002.3971		Dwg No. 10-119	

80mRL

80mRL

70mRL

70mRL

60mRL

60mRL

50mRL

50mRL

40mRL

40mRL

30mRL

30mRL

20mRL

20mRL

10mRL

10mRL

0mRL

0mRL

10mRL

10mRL

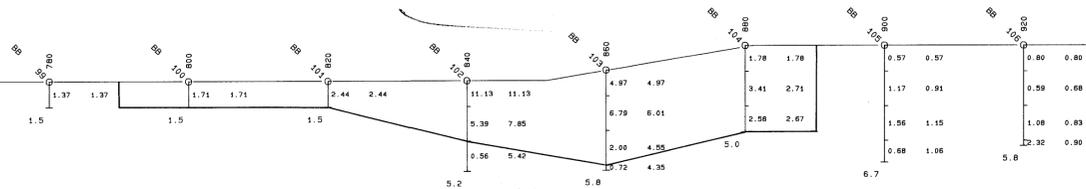
20mRL

20mRL

30mRL

30mRL

Zircon % = 10
Rutile % = 6
Leucoxene % = 4



89-3019 1

588592

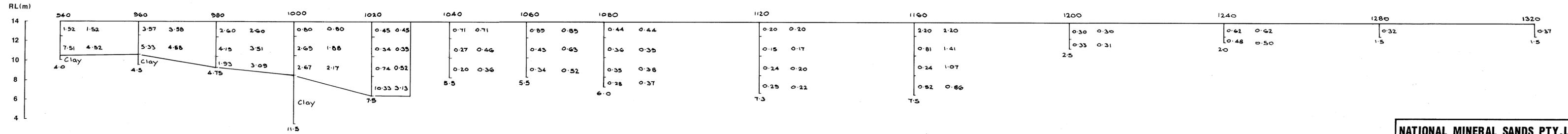
 PERTH		GEOPEKO A DIVISION OF PEKO-WALLSEND OPERATIONS LTD. Scale 1: 500	
		Map Ref. 	
Geo	CR	Drillhole Section 3150 North Back Beach Deposit	
Drawn	JJK		
Checked	7-7-89		
Date	6-JUL-89		
Fig. No.	21	Cowper Pt.	Dwg No. 10-121

S900

WEST

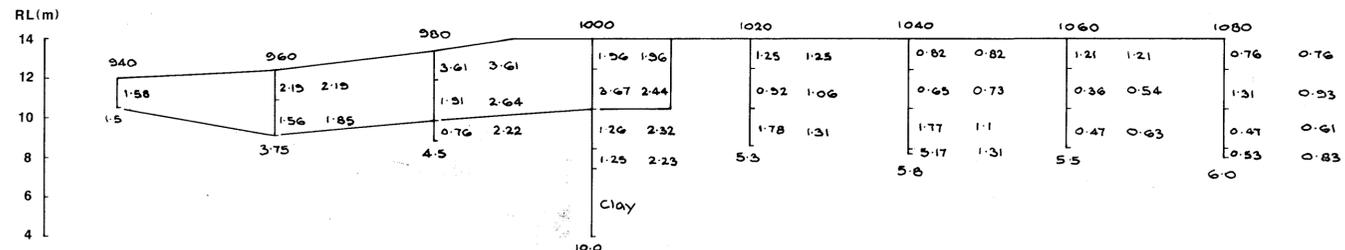
Zircon % = 2
Rutile % = 2
Leucoxene % = 2

EAST



NATIONAL MINERAL SANDS PTY.LTD.
EL 41/88
DRILLHOLE SECTION
3750 NW
BACK BEACH DEPOSIT
Author: A. DOVE | Dwg. No.: 10-123 | Fig. No.: 23

Zircon % = 12
Rutile % = 8
Leucoxene % = 4



SCALE
HORIZONTAL 1:500
VERTICAL 1:200

89-3019
NATIONAL MINERAL SANDS PTY.LTD.
EL 41/88
DRILLHOLE SECTION
3450 NW
BACK BEACH DEPOSIT
Author: A. DOVE | Dwg. No.: 10-122 | Fig. No.: 22

5 cm

588593



BACK BEACH - INDICATED RESOURCES AT 1.5% CUTOFF

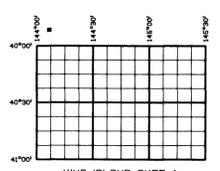
BLOCK	% H.M.	TONNES			
		Sand*	H.M.	Rutile	Zircon
3750NW	3.20	109,200	3,450	69	69
3450NW	2.43	95,744	2,448	196	294
3150N	4.10	121,440	5,060	304	506
120N	2.67	35,956	890	71	107
2800N	8.84	102,000	9,000	630	900
110N	4.09	116,870	4,805	312	456
2500N	6.05	93,120	5,600	336	504
100N	4.42	91,035	3,978	259	398
2200N	6.21	347,616	21,573	1,618	2,373
90N	13.34	23,562	3,060	230	337
1900N	6.64	194,400	12,900	1,032	1,419
80N	10.00	131,370	13,195	1,320	1,847
1600N	3.32	211,640	6,956	626	1,113
70N	3.74	134,849	5,005	425	851
1325N	3.41	336,475	11,395	912	2,051
	5.06	2,200,000	110,000	8,200	13,000

HIGH DUNES - INDICATED RESOURCES AT 1.5% CUTOFF

BLOCK	% H.M.	TONNES			
		Sand	H.M.	Rutile	Zircon
160N	2.28	192,528	4,390	220	220
4650N	2.56	1,535,488	39,306	1,965	1,965
150N	2.32	306,248	7,105	355	355
4350N	2.95	1,226,240	36,123	1,626	1,806
140N	3.33	559,864	18,643	1,025	1,119
4050N	3.41	1,726,741	58,797	3,822	4,875
130N	3.25	1,191,672	38,729	2,517	2,905
120NC	3.23	814,000	26,344	1,712	1,976
3750N	3.74	1,757,500	65,860	4,281	5,269
120NB	3.60	1,333,310	48,050	3,364	4,805
3450N	3.76	877,300	33,015	2,146	2,806
120NA	3.80	631,516	23,976	1,558	1,918
3150N	2.76	1,044,538	28,756	1,869	2,300
120N	2.75	956,725	28,700	1,435	2,296
2800N	2.51	759,900	19,050	1,333	1,524
110N	2.70	497,550	13,500	1,013	1,215
2500N	2.78	449,345	12,555	1,004	1,256
100N	2.00	270,000	5,400	351	405
2200N	2.00	155,472	3,160	158	158
90N	2.30	115,974	2,601	130	130
	3.13	16,000,000	510,000	32,000	39,000

- LEGEND**
- McMahon 1967 Resource Blocks
 - NMS 1989 Resource Blocks
 - High grade Resource Blocks

LOCATION DIAGRAM



INDEX TO ADJOINING MRPS

7718 III-4-2 NW	7718 III-4-2 NE	7718 III-1-3 NW
7718 III-4-2 SW	7718 III-4-2 SE	7718 III-1-3 SW
7718 III-3-1 NW	7718 III-3-1 NE	7718 III-2-4 NW

89-3019

NATIONAL MINERAL SANDS PTY.LTD.

Scale 1:5 000

100 0 100 200 300 400 500 metres

AUSTRALIAN MAP GRID Map Centre Scale Factor 1.00035278

Map Ref: **7718-III-4-2-SE ELDORADO**

RESOURCE BLOCKS FOR MANUAL CALCULATION 1.5% CUTOFF

DWG.No: 10.124 Fig.No: 24

Geo: _____
 Drawn: _____
 Checked: _____
 Date: _____

GRID NORTH
 TRUE NORTH
 MAGNETIC NORTH

NORTH POINT RELATIONSHIPS ARE SHOWN FOR THE CENTRE OF THE MAP. MAGNETIC NORTH IS CORRECT FOR 1980.

GRID/MAGNETIC ANGLE 1°49'33"
 GRID CONVERGENCE -1°12'23.80"
 SECLAR VARIATION 0°22'00" East per year

8902

N 4500

N 4000

N 3500

N 3000

N 2500

N 2000

E 3000

E 3000

E 2500

E 2500

E 2000

E 2000

E 1500

E 1500

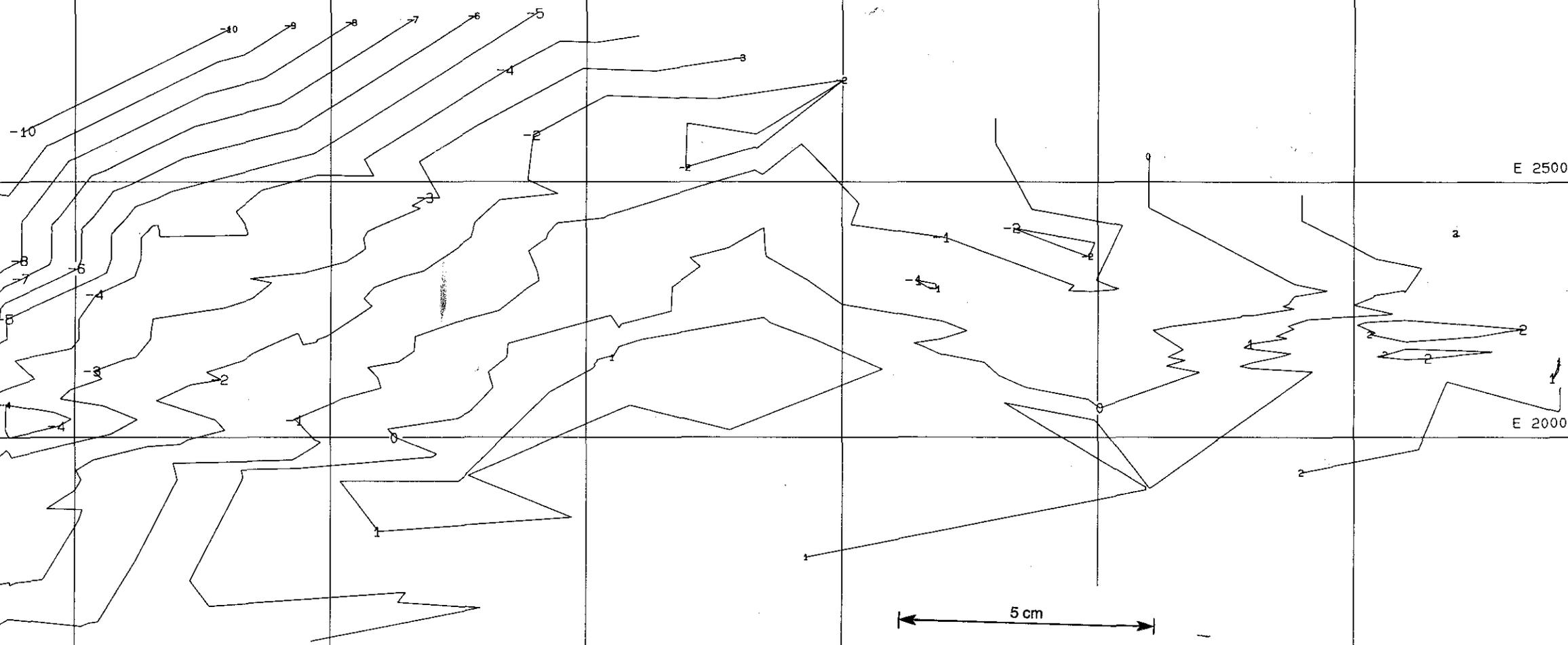
E 1000

N 4500

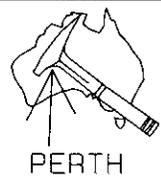
N 4000

N 3500

N 3000



89-3019



PERTH

GEOPEKO

A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.

Scale 1: 10000

588595

Geo
 Drawn
 Checked
 Date 7-JUN-89

BASEMENT CONTOURS
 HIGH DUNE DEPOSIT
 COWPER POINT

Fig.No: 25 DWG: 10.125