Open File Envelope No. 8561

EL 1598, EL 1600 AND EL 1601

YARRANNA HILL, EURIA WELL AND KOONIBBA MISSION

FINAL RELINQUISHMENT REPORT FOR THE PERIOD 25/7/89 TO 24/1/92

Submitted by
Peko Exploration Ltd
1992

Enquiries: Customer Services
Ground Floor
101 Grenfell Street, Adelaide 5000

Telephone: (08) 8463 3000
Facsimile: (08) 8204 1880

PRIMARY INDUSTRIES AND RESOURCES SA

ENVELOPE 8561

TENEMENT: EL 1600, Euria Well; EL 1601, Kooniba Mission

TENEMENT HOLDER: National Mineral Sands (SA) NL, Swan Reach NL

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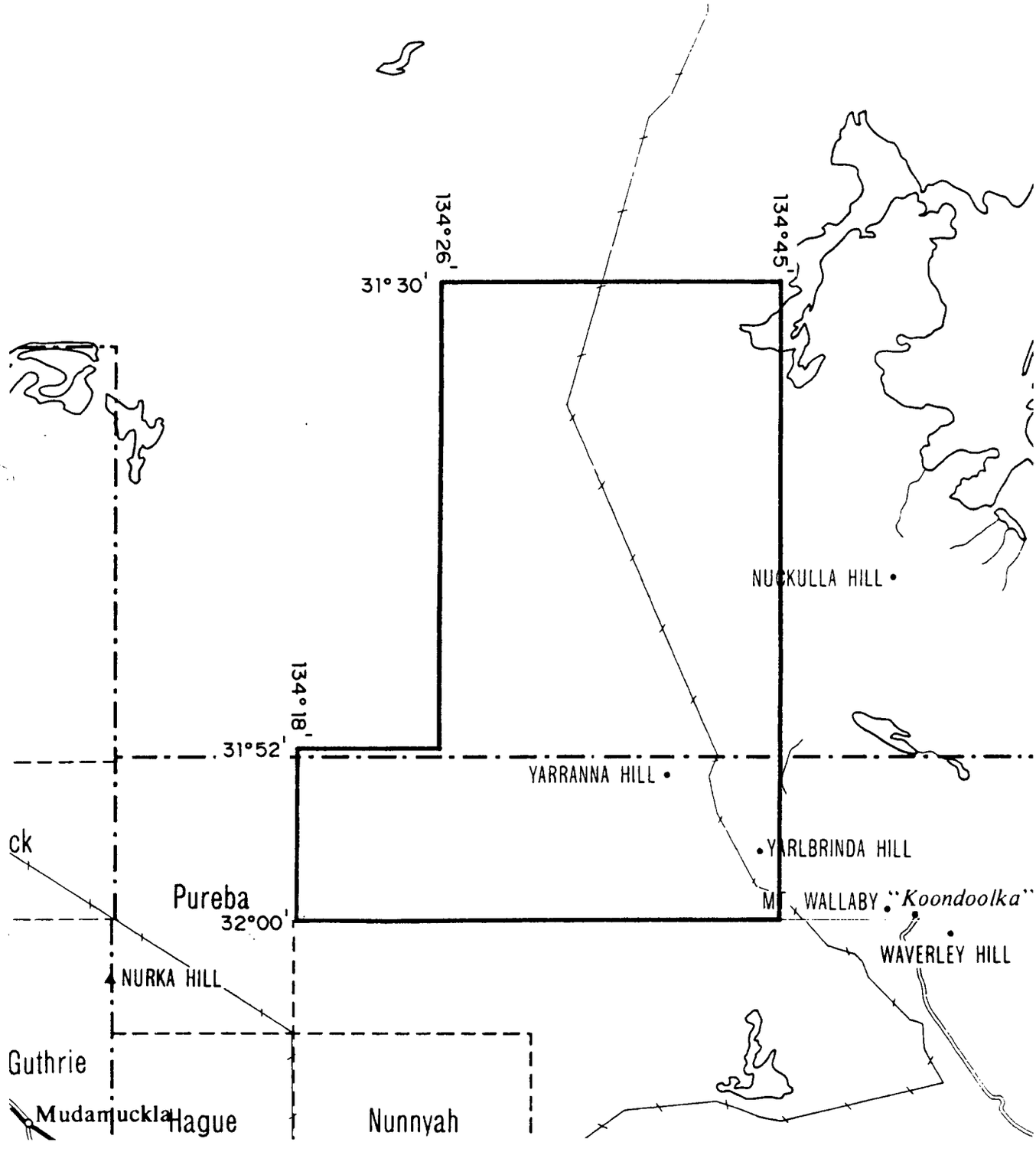
SCHEDULE A



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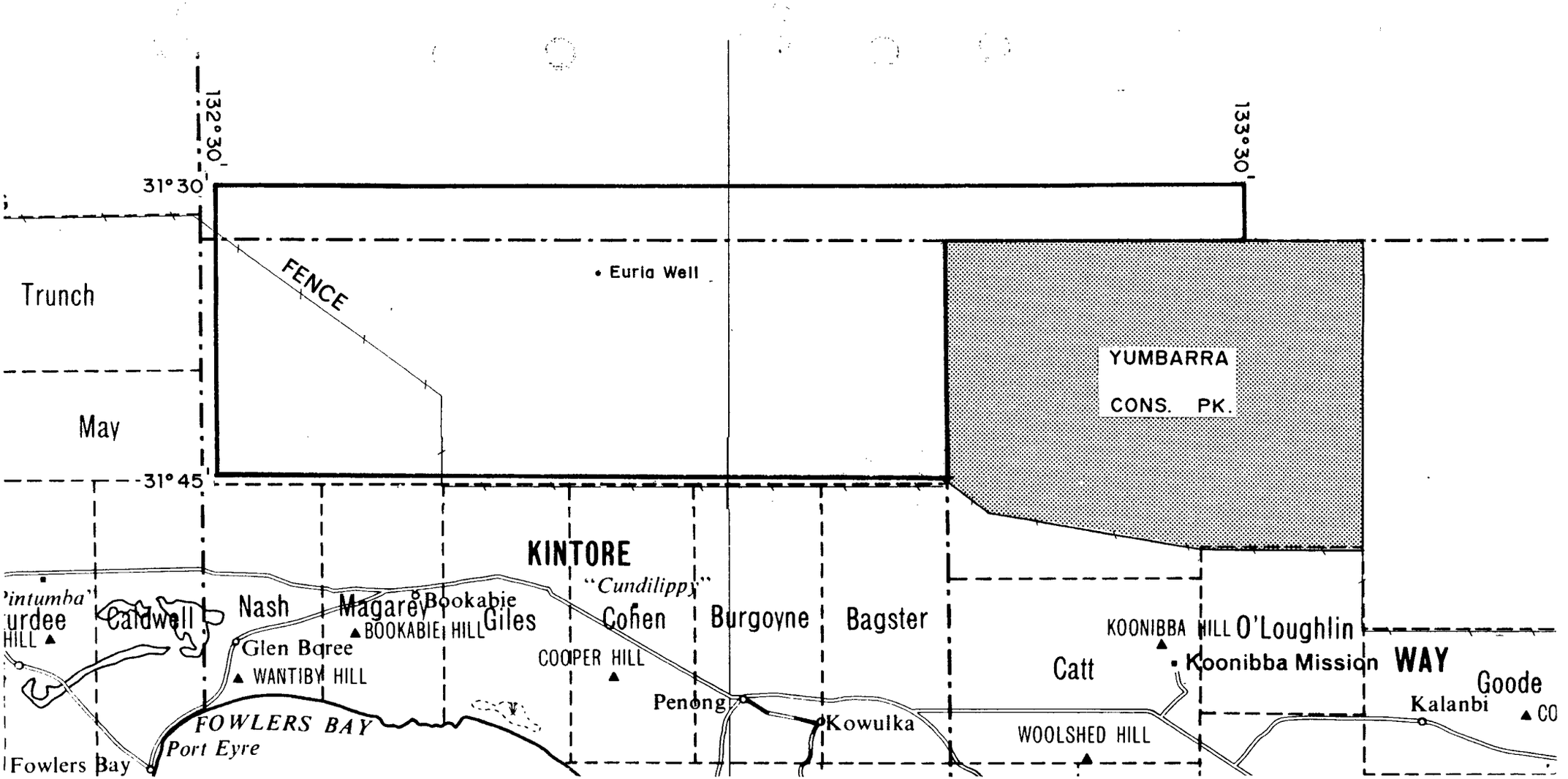
APPLICANT: NATIONAL MINERAL SANDS (S.A.) N.L. and SWAN REACH N.L.

DM: 402/88 AREA: 1848 square kilometres (approx.)

1:250000 PLANS: CHILDARA

LOCALITY: YARRANNA HILL AREA - Approx. 100 km SOUTH of TARCOOLA

DATE GRANTED: 25-7-89 DATE EXPIRED: 24-1-~~90~~ 92 EL No: 1598



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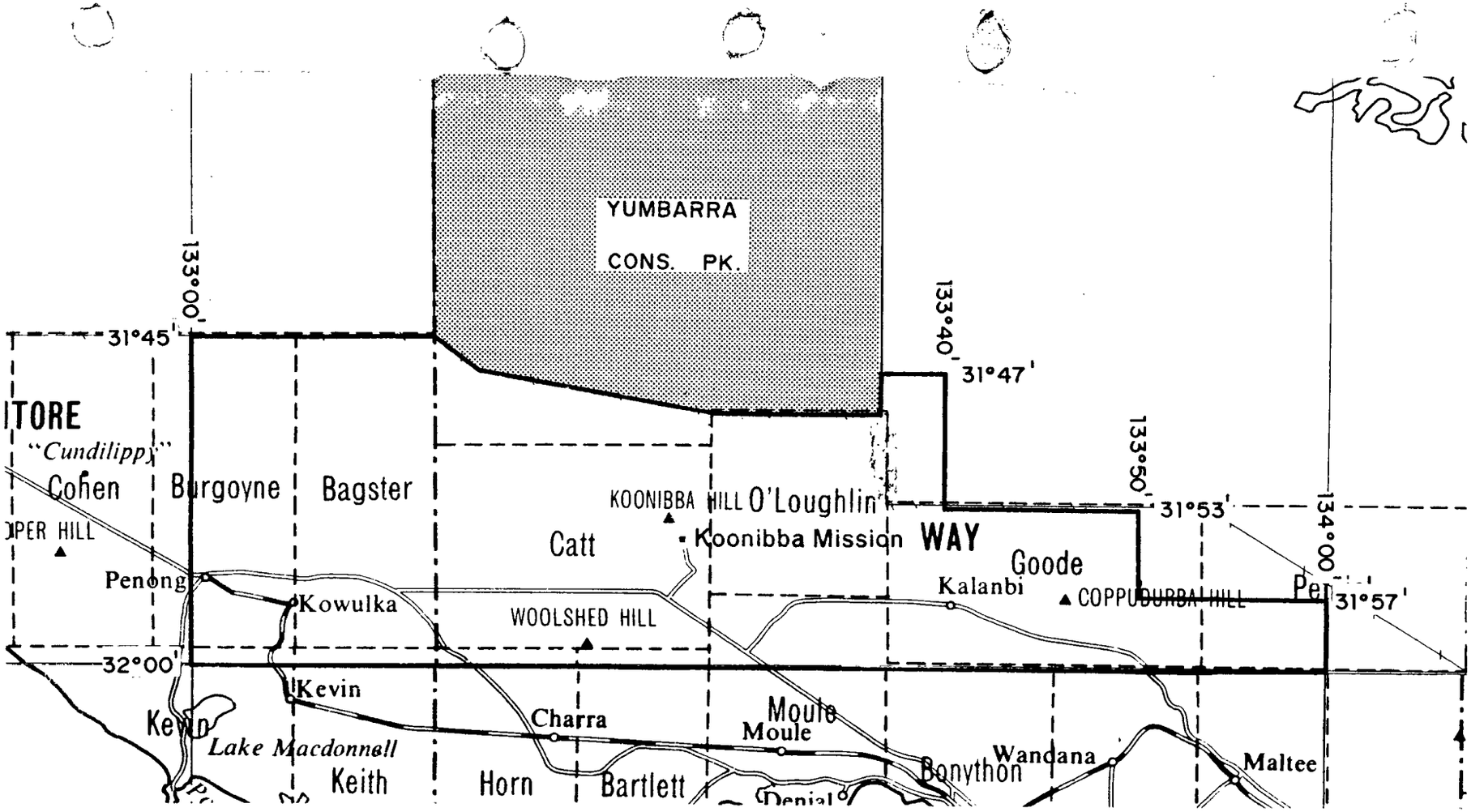
DM: 404/88 AREA: 2022 square kilometres (approx.)

1:250000 PLANS: FOWLER

LOCALITY: EURIA WELL AREA – approx. 100 km NW of Ceduna

DATE GRANTED: 25.7.89 DATE EXPIRED: 24.1.90 ~~90~~ 91 FI No: 1600

SCHEDULE A



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EXPIRED

APPLICANT: NATIONAL MINERAL SANDS (S.A.) N.L. and SWAN REACH N.L.

DM: 405/88 AREA: 1807 square kilometres (approx.)

1:250000 PLANS: FOWLER, CHILDARA

LOCALITY: KOONIBBA MISSION AREA – Approx. 35 km NW of Ceduna

DATE GRANTED: 25-7-89 DATE EXPIRED: 24-1-~~90~~ 91 FI No: 1601

SCHEDULE A

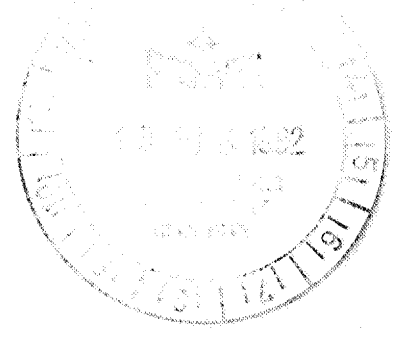
GEOPEKO
A Division of Peko Exploration Ltd. A.C.N. 000 362 550

REPORT NO WA92/3S

CEDUNA HEAVY MINERALS PROJECT
SOUTH AUSTRALIA
RELINQUISHMENT REPORT FOR
EXPLORATION LICENCES 1598, 1600, 1601

by

A. JURICA & C. ROTHNIE



DISTRIBUTION:

Geopeko - Perth
- Melbourne
Department of Mines S.A.

PERTH
FEBRUARY 1992

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FIGURES

APPENDICES

1. INTRODUCTION

The aim of the Ceduna Heavy Mineral Project was to investigate the possibility of economic heavy mineral (HM) accumulations on the eastern margin of the Eucla Basin.

The southernmost section of the project is partly covered by the three following ELs:

Yarrana Hill	1598
Euria Well	1600
Kooniba Mission	1601

Limited drilling conducted on ELs 1598, 1600 and 1601 was to investigate the occurrence and abundance of HM's associated with various geomorphological features, inferred from air photo interpretation by Australian Photogeological Consultants.

This report details all the exploration work and expenditures carried out on these three Exploration Licences. Details of exploration conducted by Geopeko Brisbane on EL 1598 has already been released on relinquishment of ELs 1631-33 and will not be duplicated in this report.

1.1 Summary

Between August 1989 and October 1990, air-core drilling was carried out on eleven separate lines across geomorphological features interpreted by Australian Photogeological Consultants as Cainozoic (Eocene-Miocene) shorelines and related features.

A total of 123 air-core holes totalling 2,449m were drilled terminating at basement, drill refusal, or a reasonable depth after assessing the percentage of HM's logged in the hole.

Drilling showed that the majority of the area has only minor occurrences of HMs. Prospective sands intersected are often overlain by hard calcrete capping and partially indurated. Penetration proved difficult, because of induration and clay content, in a great number of the holes drilled.

1.2 Conclusions

It is likely that most of the area covered by ELs 1598, 1600 and 1601 is underlain by partially indurated Cainozoic sequences characterised by hard cappings of calcrete and silcrete. In the vicinity of salt lakes (EL 1598), abundant clay sequences are present.

Minor HMs occur throughout all sequences. No economically viable concentrations of heavy minerals were observed.

1.3 Recommendations

Cementation of prospective shoreline sediments together with poor access make ELs 1598, 1600 and 1601 unattractive for further mineral sand exploration.

As drilling failed to detect any significant HM concentrations Geopeko has relinquished these tenements.

2. TENURE

Exploration Licences 1598, 1600 and 1601 were registered in the names National Mineral Sands (S.A.) NL (A.C.N. 050 125 525) and Swan Reach NL (A.C.N. 050 125 507), both companies being owned 100% by International Mineral Sands Limited (A.C.N. 009 390 416). International Mineral Sands Limited is now a wholly-owned subsidiary of Peko-Wallsend Limited, which is in turn wholly-owned by North Broken Hill Peko Ltd.

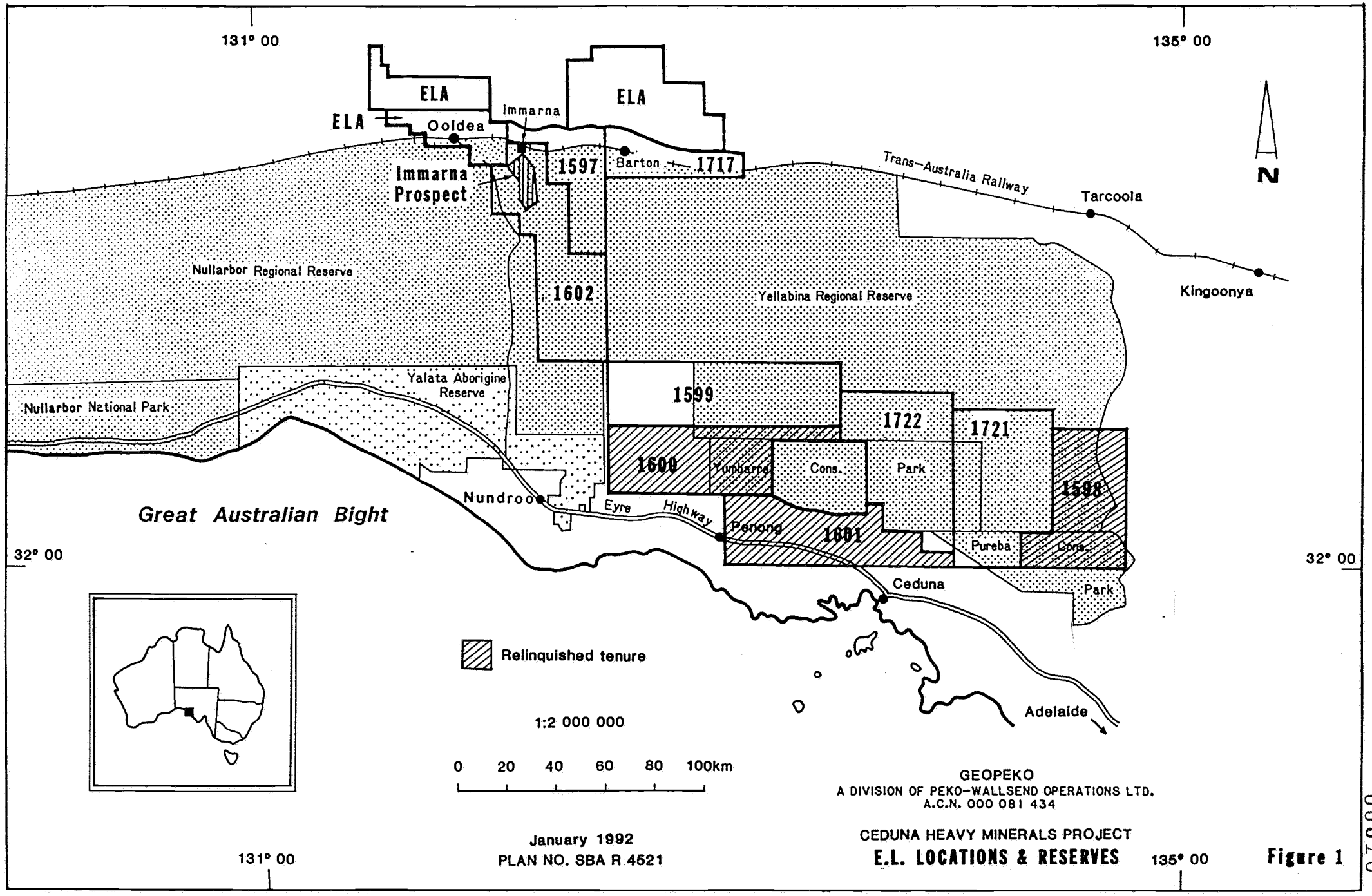
The tenements formed part of a joint venture (the Ceduna Joint Venture) in which Peko Exploration Ltd is earning an interest. Peko Exploration Ltd is also wholly-owned by North Broken Hill Peko Ltd. Geopeko is the exploration division of North Broken Hill Peko Ltd and is managing the project.

EL No.	Name	Area (km^2)	Date Granted	Term	Expiry Date
1598	Yarrana Hill	1,848	25/07/89	30 months	24/01/92
1600	Euria Well	2,022	25/07/89	30 months	24/01/92
1601	Kooniba Mission	1,807	25/07/89	30 months	24/01/92

3. LOCATION AND ACCESS

Ceduna, on the southern margin of the tenements, is the business centre of South Australia's far west coast (Figure 1). A ship-loading facility at the adjacent port of Thevenard loads grain, gypsum and salt on to ships up to 35,000 tonnes capacity. Kendall Airlines flies almost daily between Ceduna and Adelaide.

Access is by well-formed grain haulage roads that crisscross the area. To the north of the dune line, access is by 4WD along station and vermin fence tracks. Movement away from these tracks is severely restricted and scrub clearing is generally required for further access.


131° 00
135° 00
ELA
ELA
ELA
Ooldea
Immarna
Immarna Prospect
1597
Barton
1717
Trans-Australia Railway
Tarcoola
N
Kingoonya
Nullarbor Regional Reserve
1602
Yellabina Regional Reserve
Yalata Aborigine Reserve
Nullarbor National Park
1599
1722
1721
1600
Yumbarra
Cons.
Park
1598
Great Australian Bight
Nundroo
Eyre Highway
Penong
1601
Pureba
Cons.
Park
32° 00
32° 00
Ceduna
Relinquished tenure
1:2 000 000
0 20 40 60 80 100km
Adelaide
GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.
A.C.N. 000 081 434
CEDUNA HEAVY MINERALS PROJECT
E.L. LOCATIONS & RESERVES
January 1992
PLAN NO. SBA R.4521
131° 00
135° 00
Figure 1

4. GEOLOGICAL SETTING

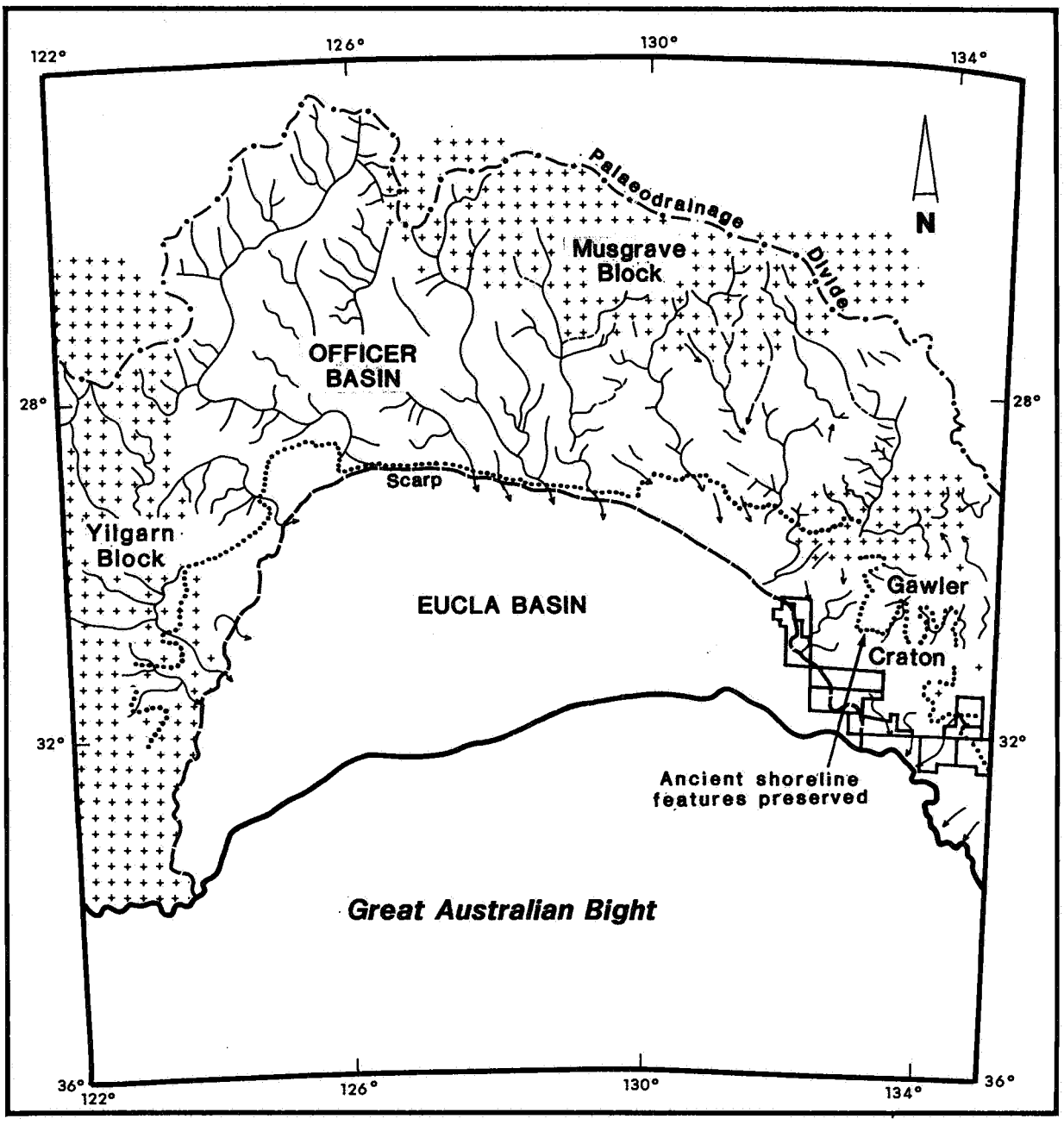
ELs 1598, 1600 and 1601 are situated along the eastern limits of the Cretaceous-Tertiary Eucla Basin. This basin together with its off-shore extension, the Great Australian Bight Basin, formed in response to the separation of Australia and Antarctica.

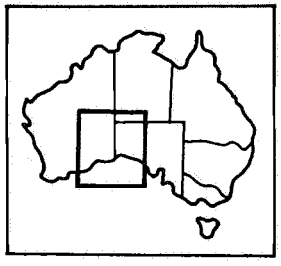
Extensive carbonate platforms developed in the Tertiary with margins of terrigenous clastics flanking the basin.

Shoreline deposits around the margins of the Eucla Basin were formed by two cycles of marine transgression. The first was in the Early to Middle Eocene (about 50 million years ago). A substantial fall in sea level at the end of the Eocene produced shoreline retreat to a location beyond the current coastline. Marine conditions were not re-imposed on the Eucla Basin until the Middle Miocene, some 25 million years later.

Precambrian blocks are thought to underlie all of the Eucla Basin, and are exposed along the western margin (Yilgarn Craton and Albany-Fraser Province) and eastern margin (Gawler Craton). In the north, the Tertiary rocks are underlain and flanked by Permian and Cretaceous sediments of the Officer Basin. These relationships are schematically illustrated in Figure 2.

(MODIFIED FROM BENBOW, 1990)





GEOPEKO
A DIVISION OF PEKO-WALLSEND OPERATIONS LTD.
A.C.N. 000 081 434

CEDUNA HEAVY MINERALS PROJECT

GEOLOGICAL SETTING
Eucla Basin

..... Basin margin Eocene

——— Basin margin Miocene

1 0 1 2 3 4 5km

1:100 000

PLAN NO.
SBA GER 4525

FIGURE 2

5. PHOTOGEOLOGIC STUDY

5.1 Introduction

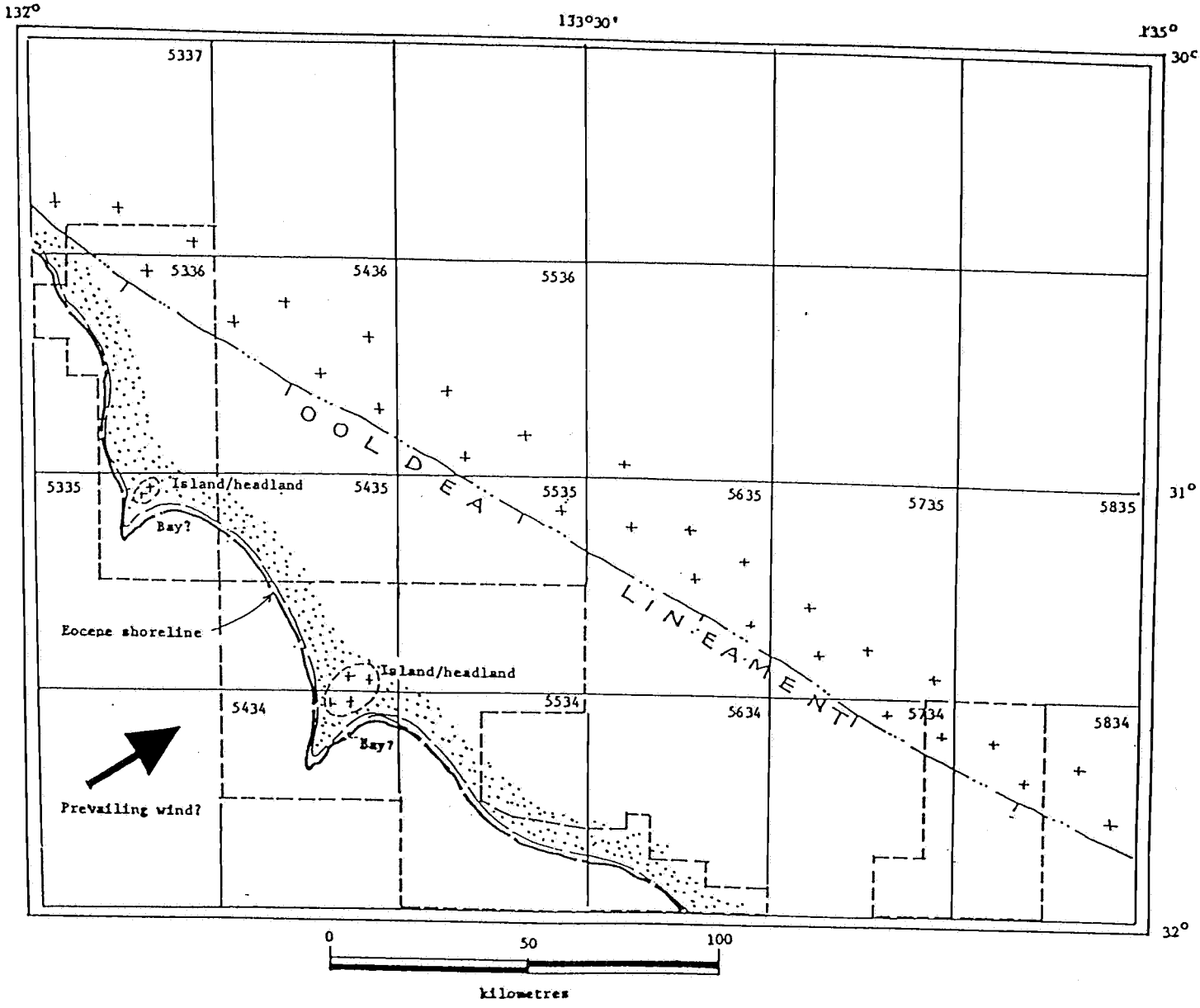
Australian Photogeologic Consultants were contracted by National Mineral Sands Pty Ltd in May 1989 to undertake a photogeologic study of an area including ELs 1598, 1600 and 1601. The objective was to characterise the shoreline morphologies and target areas for heavy mineral accumulation.

The study was carried out on small scale RC9 and RC10 photographs. Compilation proved difficult owing to the absence of topo-cadastral features in the desert region under study. The problem was resolved by photographing annotated aerial photographs on to 35mm slides and projecting the latter on to the 1:100,000 scale base maps upon which a few characteristic Holocene dune patterns had been traced. Ancillary data available for the study included a topographic map of the region produced by Benbow and Crooks (1988).

Results of the photogeological investigation on ELs 1598, 1600 and 1601 are presented in Appendix 1 as five 1:100,000 scale compilations, covering portions of the Bookabie (5434), Penong (5534), Kalanbi (5634), Pureba (5734) and Childara (5834) topographic sheet areas.

5.2 Landform Interpretation

A large promontory or headland is inferred to have existed on Bookabie 5434 (see Figure 3). An elevated area of inferred suboutcropping basement is surrounded by extensive Pleistocene sand cover, which in turn probably rests upon older dune material. An arcuate bay probably occurred to the SE of the headland, from whence an ancient (wave cut?) coastline may be followed in an ESE direction across Penong 5534. Several raised areas of probable suboutcropping basement on sheet 5534 are interpreted as forming islands during marine transgression.



LARGE-SCALE LANDFORMS OF THE EASTERN EUCLA BASIN

FIGURE 3

The primary control of the Eocene coastline and associated dune structures along the eastern margin of the Eucla Basin is thought to be an extensive zone of WNW oriented early Tertiary extensional faulting which may be traced from Maralinga to a series of lineaments and faults to the south of Lake Everard, 300km away. The "Ooldea Lineament" is clearly expressed on the topographic compilation by Benbow and Crooks (1988) and is thought to be related to late Cretaceous-early Tertiary opening of the southern ocean.

The inferred ESE-WNW Eocene coastline, to the SE of a prominent cape or headland located in the central part of Bookabie 5434, may have been controlled by a similar and parallel structure to the "Ooldea Lineament".

The edge of the Nullarbor Plain is a well-defined photogeological feature which can be traced to the SE part of Penong 5534. As far south as the major headland on Bookabie 5434, the eastern boundary of the Nullarbor coincides with a topographic depression in which a chain of Holocene playas and their associated lunette dunes are developed (e.g. Ifould Lake, Lake Tallacootra). It is uncertain as to whether this depression resulted from Pleistocene-Holocene deflation or whether it may be an earlier feature.

Spectacular examples of inferred regressive lacustrine shoreline are to be seen on aerial photographs covering the northern part of Childara. These features coincide partially with topographic lows in the topographic data of Benbow and Crooks (1988).

6. DRILLING

A summary of drilling conducted on ELs 1598, 1600 and 1601 is presented below. All drilling was reverse circulation air-core.

Traverse	EL	Hole Nos	Total(m)	Company & Date Drilled
7/8	1600	EB64-79	236	N.M.S. August 89
9	1601	EB80-91	177	N.M.S. August 89
10	1601	EB92-99	113	N.M.S. August 89
11	1598	EB100-110	159	N.M.S. September 89
20	1600	EB320-330	177	Geopeko Perth Sept 90
7/8 EXT	1600	EB331-341	156	Geopeko Perth Sept 90
21	1600	EB342-363	532	Geopeko Perth Sept 90
22	1600	EB364-371	354	Geopeko Perth Sept 90
12	1598	EB459-466	202	Geopeko Bris. Oct 90
23	1598	EB475-482	269	Geopeko Bris. Oct 90
24	1598	EB467-474	73.9	Geopeko Bris. Oct 90

The first stage of reconnaissance drilling on tenements 1598, 1600 and 1601 was completed by National Mineral Sands Pty Ltd in 1989. The results of this work confirmed the presence of shoreline sand environment throughout the tenements. A description of this work is given in a report covering ELs 1597, 1598, 1599, 1600, 1601 and 1602 for the period 25 July 1989-25 January 1990 (Besley and Oliver, 1989 - Closed File). Parts of this 1989 report relevant to ELs 1598, 1600 and 1601 have been reproduced in Appendix 2.

The Stage Two programme was carried out by Geopeko in 1990 and was designed to test mineralised trends established in Stage One as well as test target areas where no access was available in 1989.

Because of work commitments at Perth base, staff from Geopeko's Brisbane base were mobilised to oversee the drilling of the south-eastern part of the project area. For various reasons the drilling contractor was also mobilised from Brisbane. The south-eastern part of the Ceduna H.M. Project covered the four following ELs:

Yarrana Hill	EL 1598
Dunn Hill	EL 1631
Wallala	EL 1632
Mt. Centre	EL 1633

These four ELs were reported on as a group by Geopeko Brisbane despite having different grant dates. Technical information produced by Geopeko Brisbane on EL 1598 has already been released on relinquishment of ELs 1631-33 and will not be duplicated in this report.

6.1 Equipment

Wallis Drilling supplied a Mantis 75 air-core drilling rig mounted on a Toyota Landcruiser for both the National Mineral Sands (N.M.S.) and Geopeko drilling programmes.

Support vehicles comprised:

- light truck - drill rods/water
- Toyota 4WD traytop (N.M.S./Geopeko)
- Toyota 4WD van (N.M.S./Geopeko)

Hole diameter was NQ. Air-core bits were used except for hard zones such as calcrete and silcrete, when either a down-hole hammer or tri-core bit was fitted.

6.2 Sampling Techniques and Analysis

N.M.S.

The aim was to collect all cuttings for each interval, 1.5m sample intervals were used.

20% split samples (1-2kg) were taken on site by a rotary splitter attached to the sample cyclone.

All samples were sent to Adelaide. The 20% splits were dispatched to Australmin's laboratory at Woodburn N.S.W. to determine heavy mineral content. The remaining larger samples sent to the S.A.D.M.E. Core Library at Glenside were relogged lithologically and split by riffle into three parts:

- about 1kg for submission to Amdel Ltd for check analysis
- 200g for S.A.D.M.E. archival storage
- balance held in temporary storage by S.A.D.M.E.

For each interval, rock type and colour were recorded together with grain size, sorting and roundness of quartz grains.

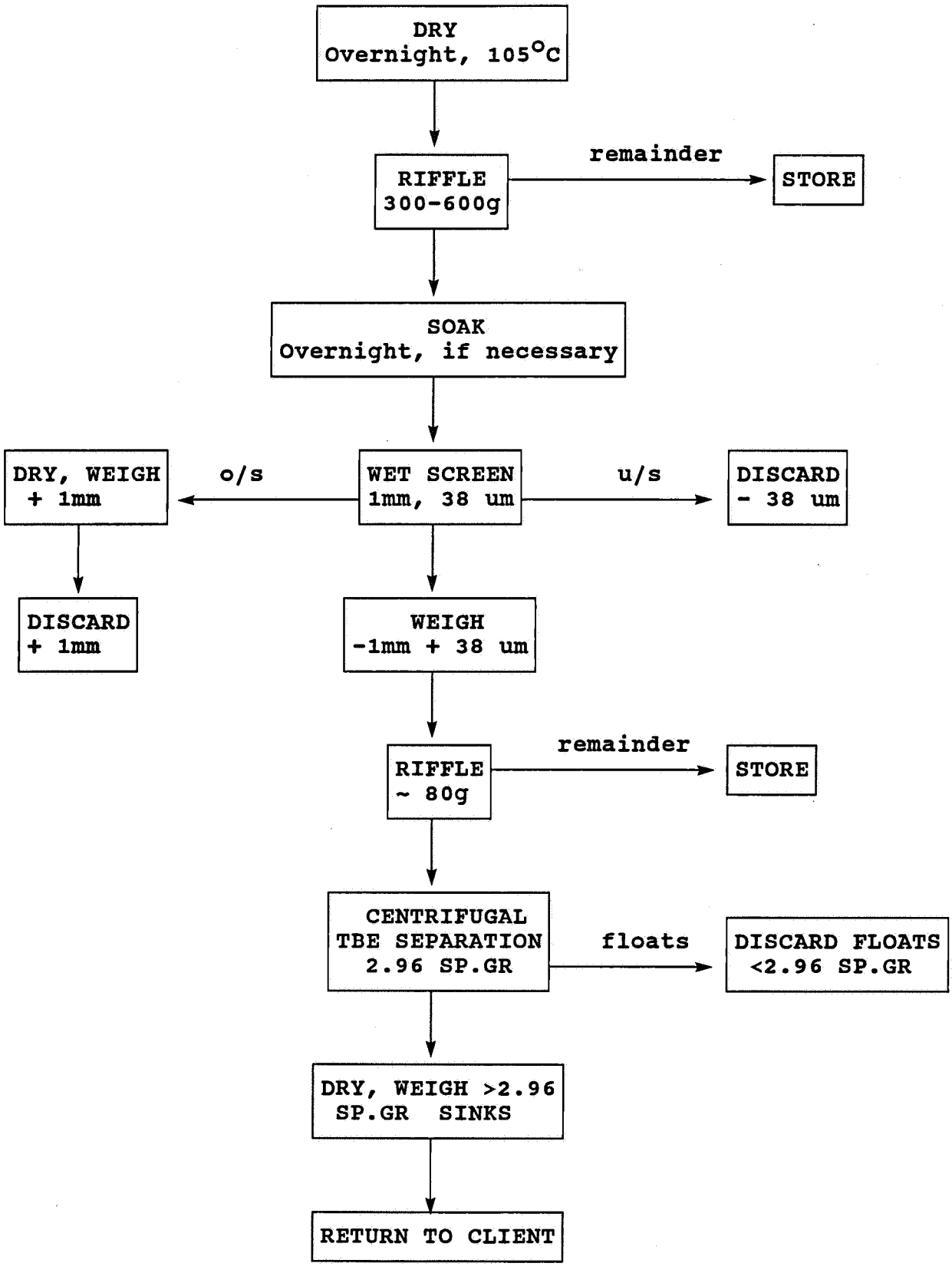
Geopeko

The aim was to collect about 25% (2-3kg) of each sample interval. Sample intervals of 2m were used.

Samples were split on site by a rotary splitter attached to the sample cyclone.

Each interval was logged and heavy mineral percentages estimated by panning. Intervals greater than 0.5% estimated heavy minerals were dispatched to Amdel's laboratory in Adelaide to determine heavy mineral content (see Figure 4 for laboratory method). About 10% of the Amdel samples were duplicated by Western Geochem Laboratories in Perth with reasonable correlation of results.

Representative 2m samples of all holes drilled were stored in Ceduna and made available to S.A.D.M.E.



AMDEL SAMPLE ANALYSIS FLOW DIAGRAM

FIGURE 4

7. RESULTS

A brief summary of the results of drilling for each of the different traverses is presented below in approximate order from north to south. Detailed results of the drilling may be found on the geological logs (Appendix 3) and on the cross sections (Appendix 2). All sample assay data is recorded on the geological logs.

7.1 Traverse 20 (Geopeko)

This traverse was planned to test shoreline features interpreted on air-photos. Eleven holes were drilled (EB320-330, see Appendix 2) with all of the holes finishing in either Hampton Sandstone or Precambrian basement. None of the holes intersected sands which could be interpreted as Ooldea Sand and none of the samples contained anomalous HM mineralisation.

7.2 Traverse 7/8 & 7/8 EXT (N.M.S./Geopeko)

N.M.S. drilled twelve holes on Traverse 7/8 in 1989. All of the holes intersected Hampton Sandstone or Precambrian basement at shallow depths.

The target of the 1990 drilling was to test an area east of the 1989 drillholes, where the elevations are slightly higher. Eleven holes were drilled (EB331-341, see Appendix 2) with all of them finishing in Hampton Sandstone or Precambrian basement at shallow depth. Six holes at the eastern end of the traverse (EB336-341) intersected thin zones of fine sand that may be Ooldea Sand, but none of these intersections exceeded eight metres in thickness or contained anomalous HM concentrations.

Given that none of the holes intersected significant thicknesses of Ooldea Sand, it is likely that all of the drilling on this traverse has been located too far to the west. Further work on the elevation data for this area is

required to see whether landforms likely to host mineralisation are found nearby.

Given that nearby granite outcrops, the area may have been a rocky headland at the time the Ooldea Sand was deposited. If this is the case, then it is unlikely that extensive shoreline or dune sediments were deposited in this area.

7.3 Traverse 21 (Geopeko)

Traverses 21 and 22 were planned to test paleo-shorelines interpreted from airphotos. The shoreline features stretch between two areas of shallow granite outcrop. It was envisaged that beach deposits may have formed between two basement headlands at the time that the Ooldea Sand was being deposited.

Twenty-two holes were drilled (EB342-363, see Appendix 2) with most of the holes reaching either the Hampton Sandstone or Precambrian basement. A layer of fine sand which may correlate with the Ooldea Sand was intersected in many of the holes on this traverse. The layer was thickest at the northern end of the traverse, where elevations were highest.

Two zones of anomalous HM concentrations were located on this traverse. The first zone is toward the southern end of the traverse (EB345, 346, 363) where a layer of fine sand abuts onto Precambrian basement. This layer contains high background concentrations of HM with the highest intersection being 1.0% in EB346 (20-22m). The second anomalous zone is at the northern end of the traverse (EB357-362), where the thicker layer of Ooldea Sand was intersected. Again the grades in this zone are anomalous, but none of them exceed 1.0%.

7.4 Traverse 22 (Geopeko)

Traverse 22 was targeted at the same shoreline features as Traverse 21. Eight holes were drilled to test the area (EB364-371, see Appendix 2), with most of the holes reaching either Hampton Sandstone or Precambrian basement.

Moderate thicknesses of Ooldea Sand were intersected in all of the holes except EB364. The formation contains thick zones of anomalous HM concentrations, but none of them exceed 1.0%. This probably indicates that the shoreline in this area was distant from any source of HM and further work should be done to identify possible paleochannels in this area which could have been HM sources.

7.5 Traverse 9 (N.M.S.)

Twelve holes (EB080-091, see Appendix 2) comprise Traverse 9. At this location calcrete covers fine-coarse grained Tertiary sand (Ooldea Sand) which contains only minor heavy minerals. Sandstone was intersected at the base of Holes EB090 and 091 in the south.

7.6 Traverse 10 (N.M.S.)

Eight holes (EB092-099) comprise Traverse 10 located at Carpenter Corner. At this location, surface calcrete covers a thin layer of sand significantly coarser-grained and less sorted than elsewhere. The unit (Hampton Sandstone) is partially cemented and heavy mineral content is low.

7.7 Traverse 11 (N.M.S.)

At Traverse 11 Yarrana Hill, an undulating surface of weathered Precambrian granite marked in places by ferricrete (EB107) and basal conglomerate (EB109) is overlain by red-orange Quaternary sand. The sediments in this area are likely to be fluvial in origin.

8. EXPENDITURE

Total expenditure for ELs 1598, 1600 and 1601 was $328,686. An expenditure breakdown is presented below.

EXPENDITURE FOR ELs 1598, 1600 and 1601
JULY 1989-JANUARY 1992

	Yarrana Hill	Euria Well	Kooniba Mission	TOTAL
EXPLORATION LICENCE	1598	1600	1601	
SALARIES:				
Geologists	10,528	2,020	912	13,460
Other	445	2,763	-	3,208
WAGES:				
Field Assistants	3,979	13,894	567	18,440
Other	-	101	-	101
TEN. EXPENSES:	93,60	16,599	9,262	35,221
BASE SUPPORT:	4,190	5,995	472	10,657
FIELD SUPPORT:				
Vehicles	3,755	2,700	-	6,455
Travel/Accommodation	1,139	1,376	-	2,515
Freight	54	180	-	234
Supplies	1,811	1,525	-	3,336
Sustenance	945	1,328	180	2,453
Communications	9	148	-	157
Other	6	-	-	6
RC (AIR-CORE DRILLING:	14,412	4,956	-	19,368
GEOL. CONSULTANTS AND MAPS:	1,311	726	571	2,608
ASSAYING:	-	2,948	-	2,948
GENERAL CONTRACTORS:	4,680	7,276	-	11,956
MANAGEMENT:	4,486	5,633	444	10,563
NATIONAL MINERAL SANDS PTY LTD EXPENDITURE JULY 89-JAN-90	60,000	65,000	60,000	185,000
TOTALS	121,110	135,168	72,408	328,686

9. REFERENCES

Benbow, M.C. and Crooks, A.F., 1988. Topographic Contour Maps and Data, Western S.A. S.A.D.M.E. Rept. BK., 88/44.

Besley, E.R. and Olliver, J.G., 1989. Report on Stage 1 Exploration Programme, Eucla Basin Heavy Minerals Project S.A. (unpub).

Jurica, A. and Rothnie, C., 1990. Annual Report - ELs 1597, 1599, 1600, 1601 and 1602. January 1990 - January 1991. Ceduna Heavy Minerals Project, S.A. (unpub).

A P P E N D I X 1

A.P.C.'s PHOTOGEOLOGICALLY INTERPRETED LANDFORMS AND CAINOZOIC STRATIGRAPHY FOR ELs 1598, 1600, 1601

LEGEND

BOOKABIE
5434

132°30'
133°00'
31°30'
32°00'

EL 1600

Qlo
Qpo
d
sl
ld
s
elevated area (sand ridge?)
subcrop?
elevated region: islands and accreted dunes?
Bay?
headland
shoreline?
topography
029
027
025
068
066
036

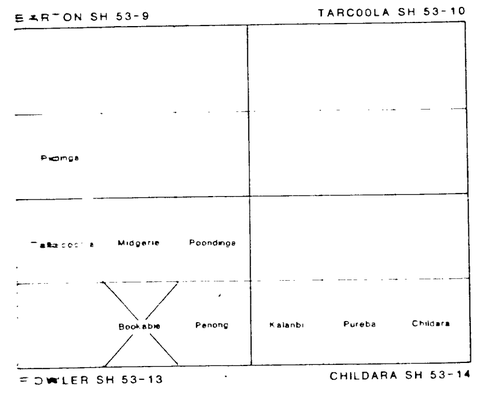
PHOTOGEOLOGICALLY INTERPRETED LANDFORMS AND CAINOZOIC STRATIGRAPHY OF THE EASTERN EUCLA BASIN REGION, SOUTH AUSTRALIA

for National Mineral Sands Pty Ltd

Scale 1:100,000

For Legend see PIDINGA sheet

KEY DIAGRAM



AUSTRALIAN PHOTOGEOLOGICAL CONSULTANTS

Job 341N, July 1989

8561-1

PENONG
5534

133°00'
32°00'
133°30'
EL 1600
32°00'

large dune formed in lee of island?
flat platform.
flat platform
023
021
019
062
060
island?
Qpo?
Qpo
shoreline?
flat platform
possible shoreline?
EL 1600
EL 1600
EL 1601
island?
flat platform
115
117
119
shoreline?
island?
flat platform
flat platform
152
150
148
modern coastal cliffs
32°00
133°00'
32°00'
133°30'

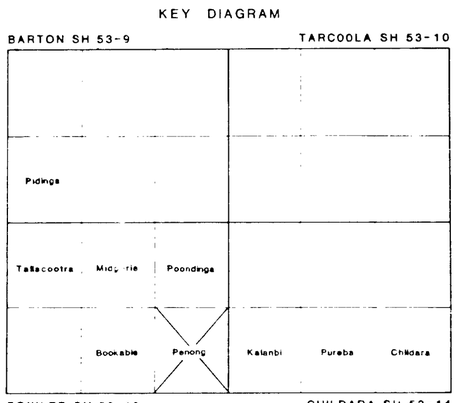
PHOTOGEOLOGICALLY INTERPRETED LANDFORMS AND CAINOZOIC STRATIGRAPHY OF THE EASTERN EUCLA BASIN REGION, SOUTH AUSTRALIA

for National Mineral Sands Pty Ltd

Scale 1:100,000

For Legend see PIDINGA sheet

KEY DIAGRAM



AUSTRALIAN PHOTOGEOLOGICAL CONSULTANTS

Job 341N, July 1989

8561-2

KALANBI
5634

133° 30′ — 134° 00′ — 31° 30′ — 32° 00′ — 32° 00′ — 133° 30′ — 134° 00′

EL 1600

EL 1601

island

island

Comm station

flat marine platform

flat platform

023 026 028 030

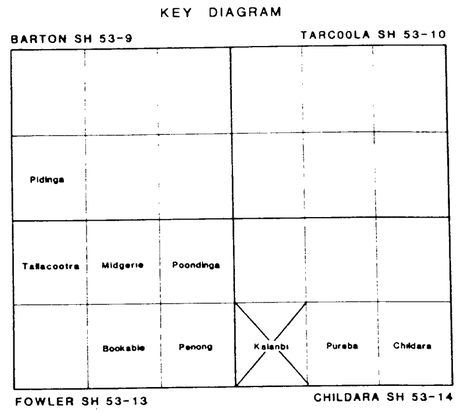
PHOTOGEOLOGICALLY INTERPRETED LANDFORMS AND CAINOZOIC STRATIGRAPHY OF THE EASTERN EUCLA BASIN REGION, SOUTH AUSTRALIA

for National Mineral Sands Pty Ltd

Scale 1:100,000

For Legend see PIDINGA sheet

KEY DIAGRAM



AUSTRALIAN PHOTOGEOLOGICAL CONSULTANTS
34 Jacka Crescent Campbell A.C.T. 2601 Australia
Postal Address P.O. Box 11 Campbell A.C.T. 2601 Australia

Job 341N. July 1989

8561-3

PUREBA
5734

134 °00′
31° 30′
134 ° 30′
31° 30′
32°00′
134 °00′
31°30′
134 ° 30

EL 1598

d?
lakeshore regression lines?
flat platform
lacustrine depression
lakeshore regression lines?
073
012
034
036

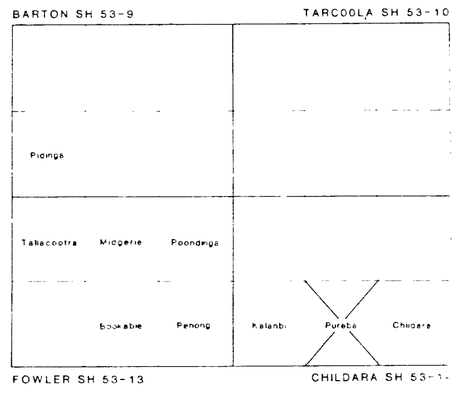
PHOTOGEOLOGICALLY INTERPRETED LANDFORMS AND CAINOZOIC STRATIGRAPHY OF THE EASTERN EUCLA BASIN REGION, SOUTH AUSTRALIA

for National Mineral Sands Pty Ltd

Scale 1:100,000

For Legend see PIDINGA sheet

KEY DIAGRAM



AUSTRALIAN PHOTOGEOLOGICAL CONSULTANTS

Job 341N, July 1989

8561-4

CHILDARA
5834

134° 30'
32°00'
135° 00'
31° 30'
32°00'
134° 30'
32°00'
135°00'

Salt lake

flat platform

lacustrine depression

island?

lakeshore regression lines

flat platform

headland

flat platform

EL 1598

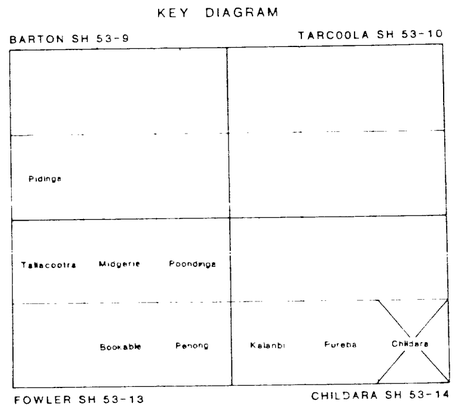
PHOTOGEOLOGICALLY INTERPRETED LANDFORMS AND CAINOZOIC STRATIGRAPHY OF THE EASTERN EUCLA BASIN REGION, SOUTH AUSTRALIA

for National Mineral Sands Pty Ltd

Scale 1:100,000

For Legend see PIDINGA sheet

KEY DIAGRAM



AUSTRALIAN PHOTOGEOLOGICAL CONSULTANTS

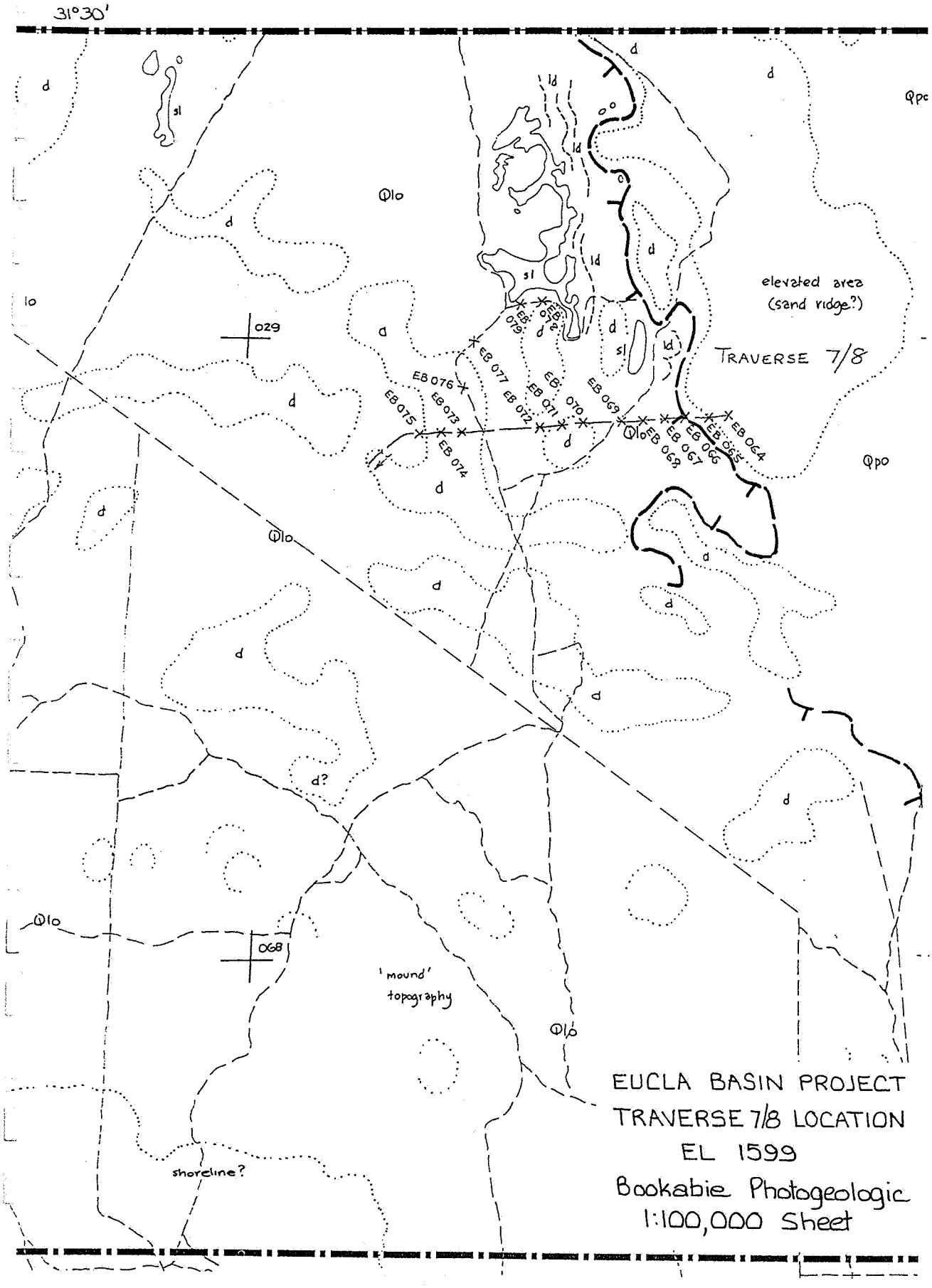
Job 341N July 1989

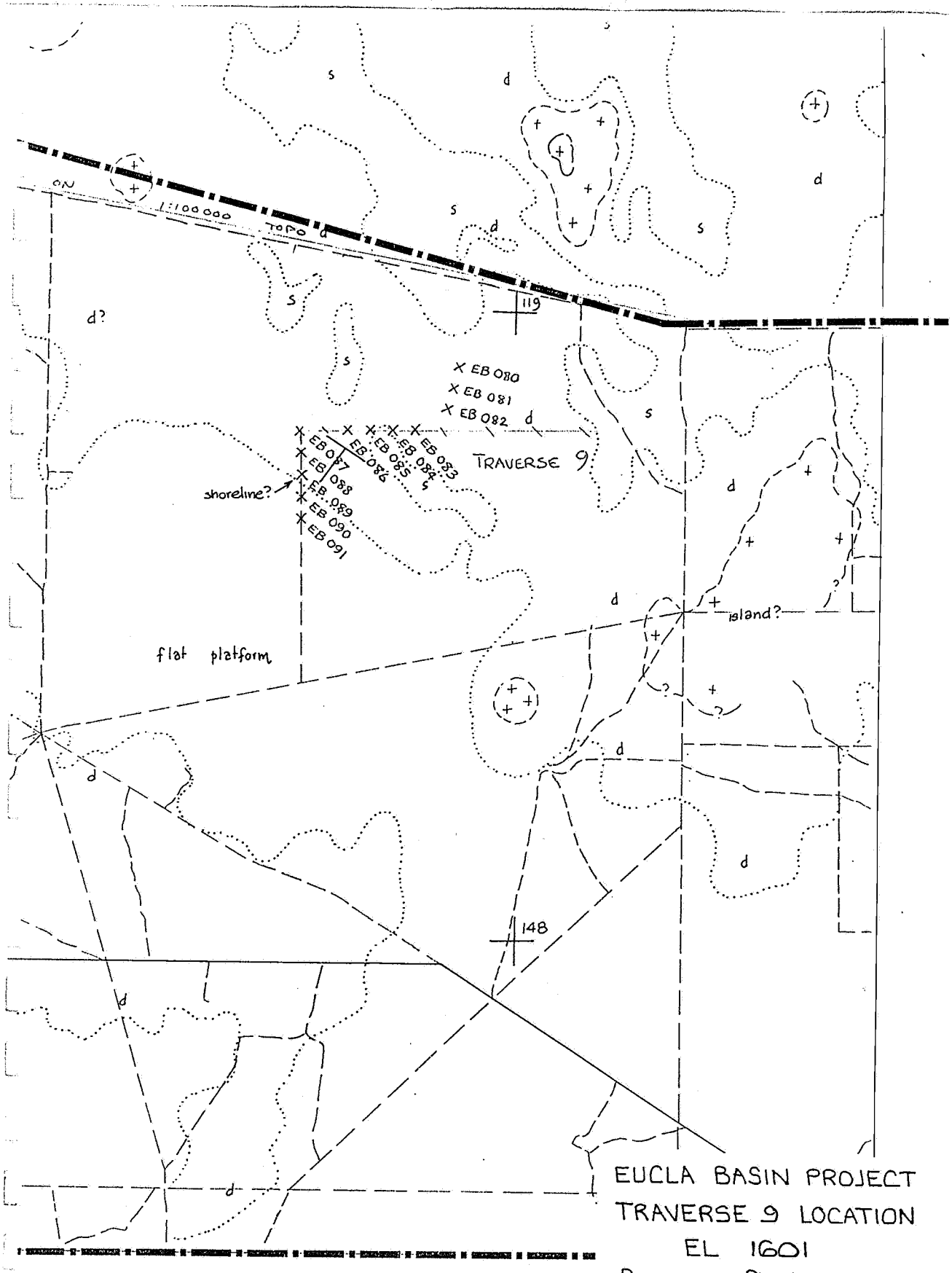
8561-5

A P P E N D I X 2

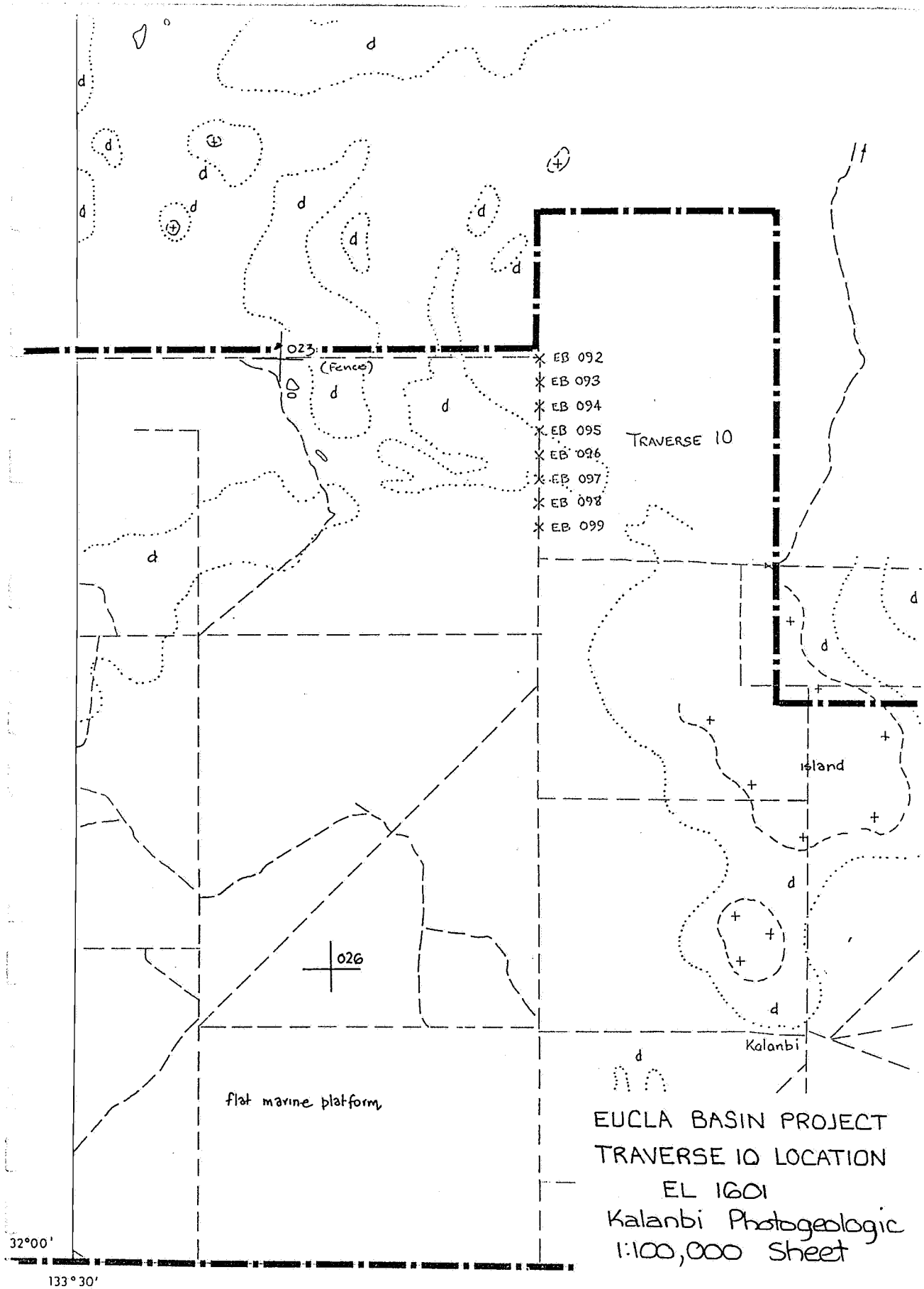
TRAVERSE LOCATIONS AND CROSS SECTIONS

(N.M.S. & GEOPEKO)

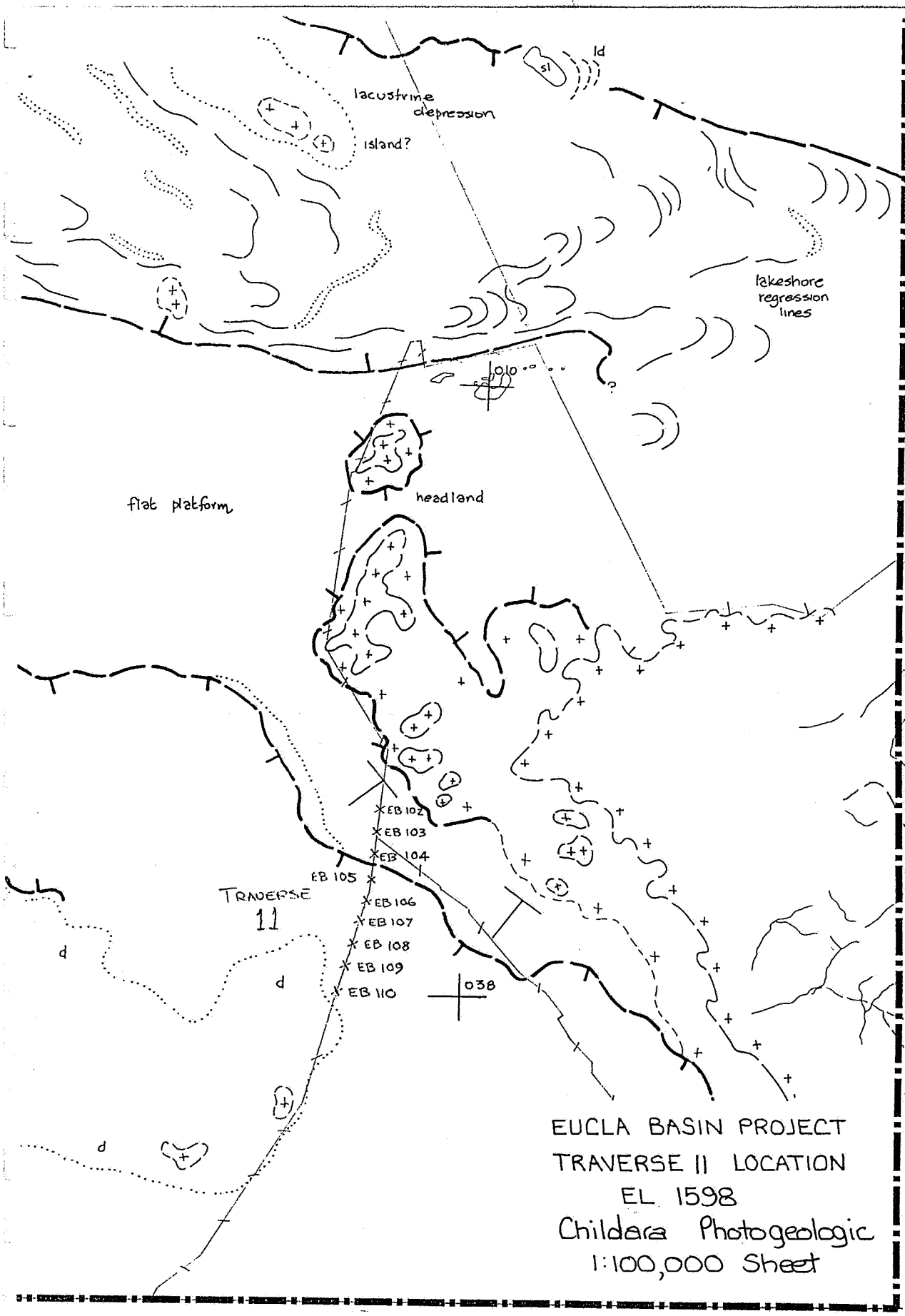

31°30'
d
sl
ld
Qpc
Qlo
lo
elevated area
(sand ridge?)
TRAVERSE 7/8
029
EB 079
EB 078
EB 077
EB 076
EB 075
EB 073
EB 074
EB 072
EB 071
070
EB 069
EB 068
EB 067
EB 066
EB 065
EB 064
Qpo
d?
068
'mound'
topography
Qlo
shoreline?
EUCLA BASIN PROJECT
TRAVERSE 7/8 LOCATION
EL 1599
Bookabie Photogeologic
1:100,000 Sheet

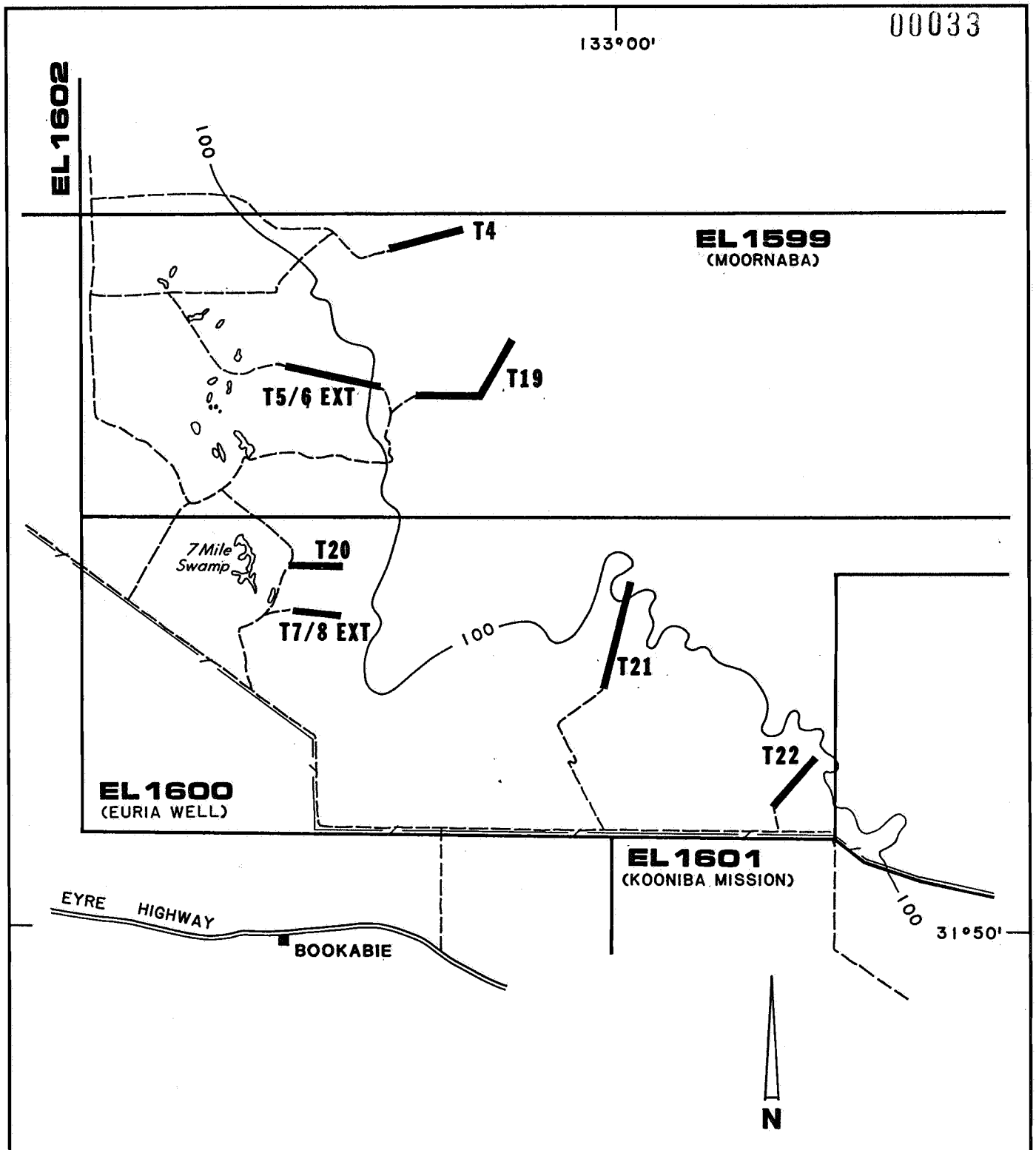


EUCLA BASIN PROJECT
TRAVERSE 9 LOCATION
EL 1601
Penong Photogeologic
1:100,000 Sheet



EUCLA BASIN PROJECT
TRAVERSE 10 LOCATION
EL 1601
Kalanbi Photogeologic
1:100,000 Sheet


ld
sl
lacustrine depression
island?
lakeshore regression lines
010
flat platform
headland
EB 102
EB 103
EB 104
EB 105
EB 106
EB 107
EB 108
EB 109
EB 110
TRAVERSE 11
038
d
d
d
EUCLA BASIN PROJECT
TRAVERSE II LOCATION
EL 1598
Childara Photogeologic
1:100,000 Sheet



REFERENCE

T4 — Drillhole traverse

Access track

100 — 100metre contour (approx.)

EL boundary

SCALE

0 5 10 15 20 25km

1:500,000

PLAN NO.
SBA GE 4524

GEOPEKO
A DIVISION OF PEKO EXPLORATION LTD.
A.C.N. 000 362 550

Ceduna Heavy Minerals Project

TRAVERSES DRILLED ON ELs 1599 & 1600 JULY-OCTOBER 1990

KEY TO GEOLOGICAL CROSS-SECTIONS

Q1 - QUATERNARY DUNE SAND

Orange/brown/white/pink, fine to medium-grained sand & calcrete

Q2 - QUATERNARY DUNE SAND

Dark red/orange sand + ferruginised clays

Q3 - QUATERNARY DUNE SAND

Clean (minor clay) orange/yellow fine-medium sand

Q4 - QUATERNARY DUNE SAND

Poorly sorted fine-coarse interdunal sand ± gravels

To - OOLDEA SAND (EOCENE/OLIGOCENE)

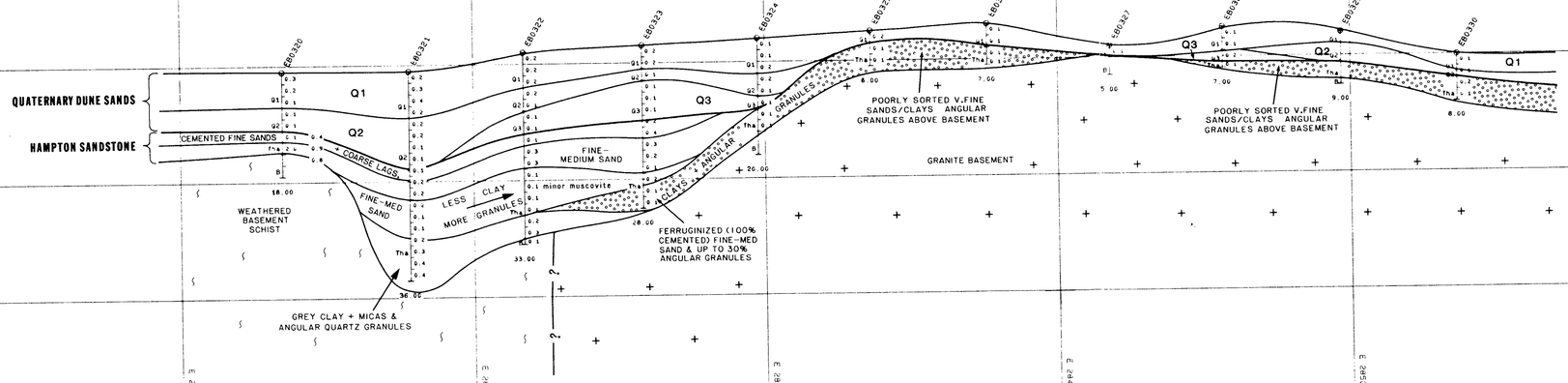
Included in this division are Middle Miocene? sands of Colville Sandstone

Tha - HAMPTON SANDSTONE (EOCENE)

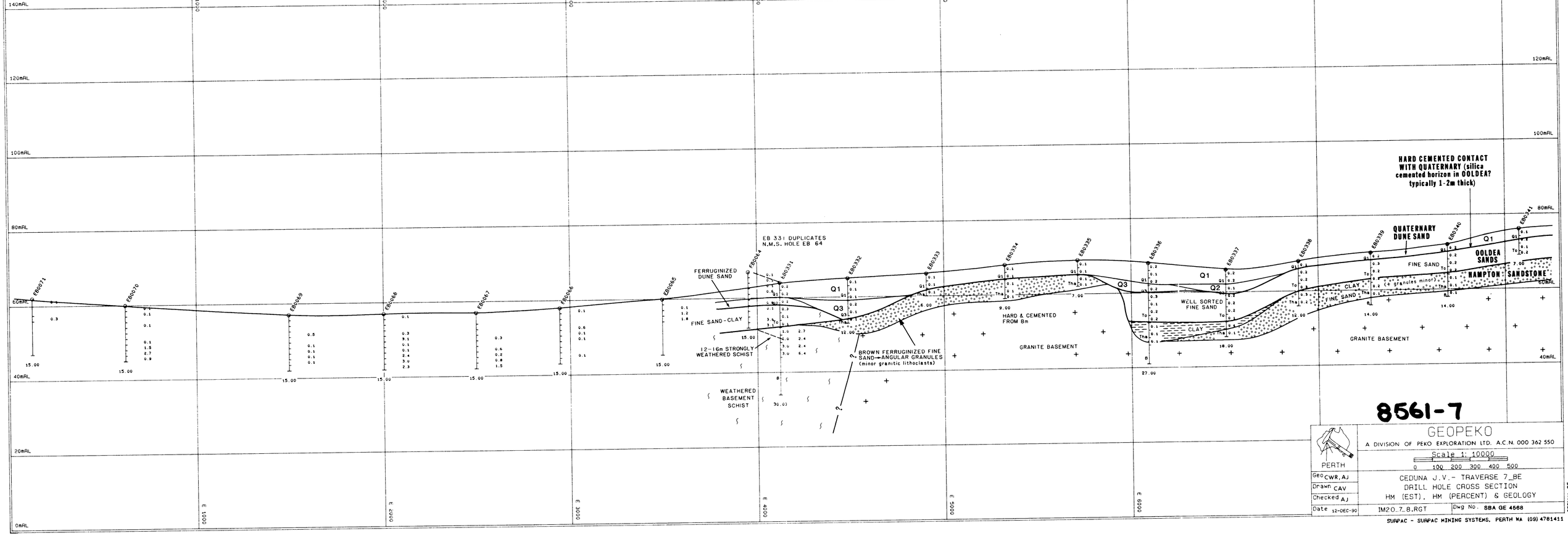
Pidinga Formation and Wilson Bluff Limestone are both included in this division

B - PRECAMBRIAN BASEMENT

Differentiation between different types of basement rocks not made



GEOPEKO
A DIVISION OF PEKO EXPLORATION LTD. A.C.N. 000 362 550
PERTH
Scale 1: 10000
0 100 200 300 400 500
Geo
Drawn
Checked
Date 12-DEC-90
CEDUNA J.V.- TRAVERSE 20
DRILL HOLE CROSS SECTION
HM (EST), HM (PERCENT) & GEOLOGY
Dwg No

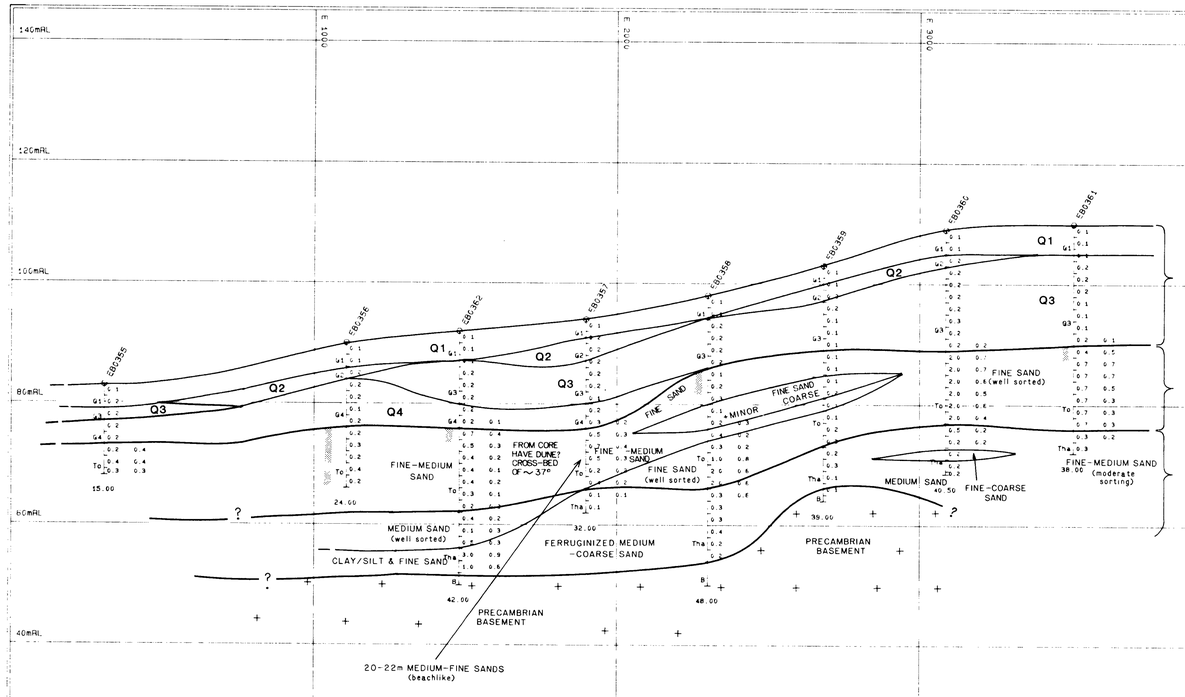


8561-7

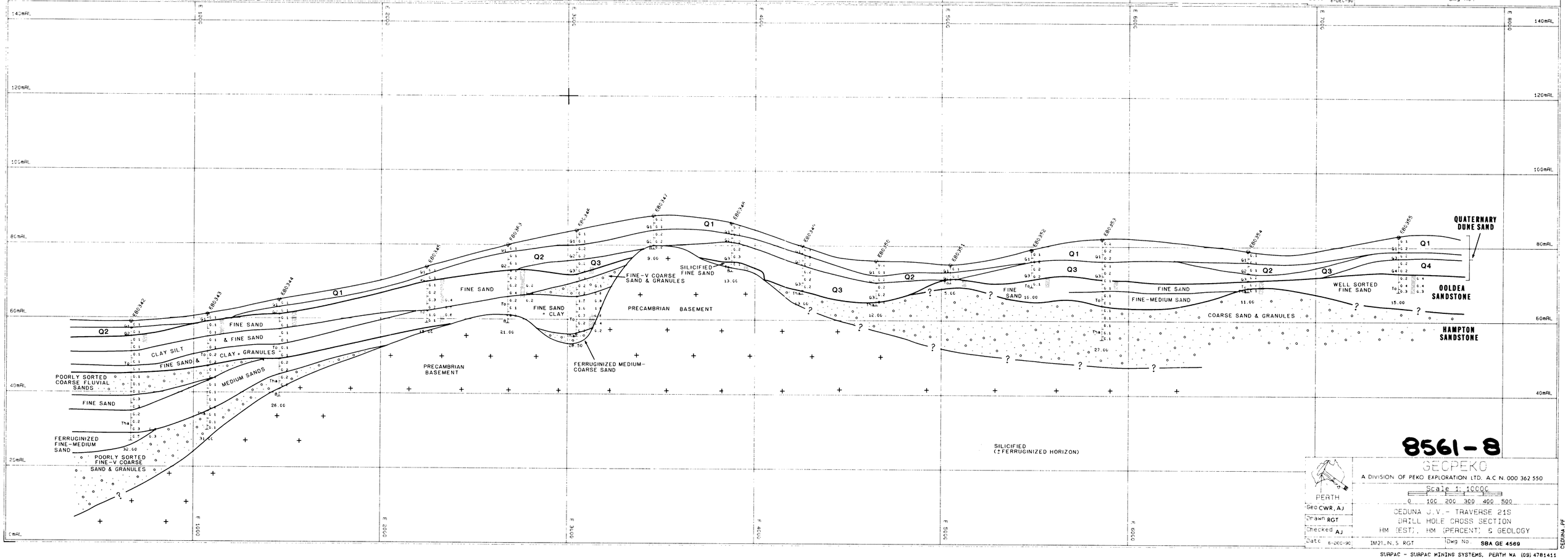
GEOPEKO
A DIVISION OF PEKO EXPLORATION LTD. A.C.N. 000 362 550
PERTH
Scale 1: 10000
0 100 200 300 400 500
Geo CWR, AJ
Drawn CAV
Checked AJ
Date 12-DEC-90
CEDUNA J.V.- TRAVERSE 7_8E
DRILL HOLE CROSS SECTION
HM (EST), HM (PERCENT) & GEOLOGY
IM20_7_8.RGT
Dwg No. SBA GE 4568

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

CEDUNA.PF



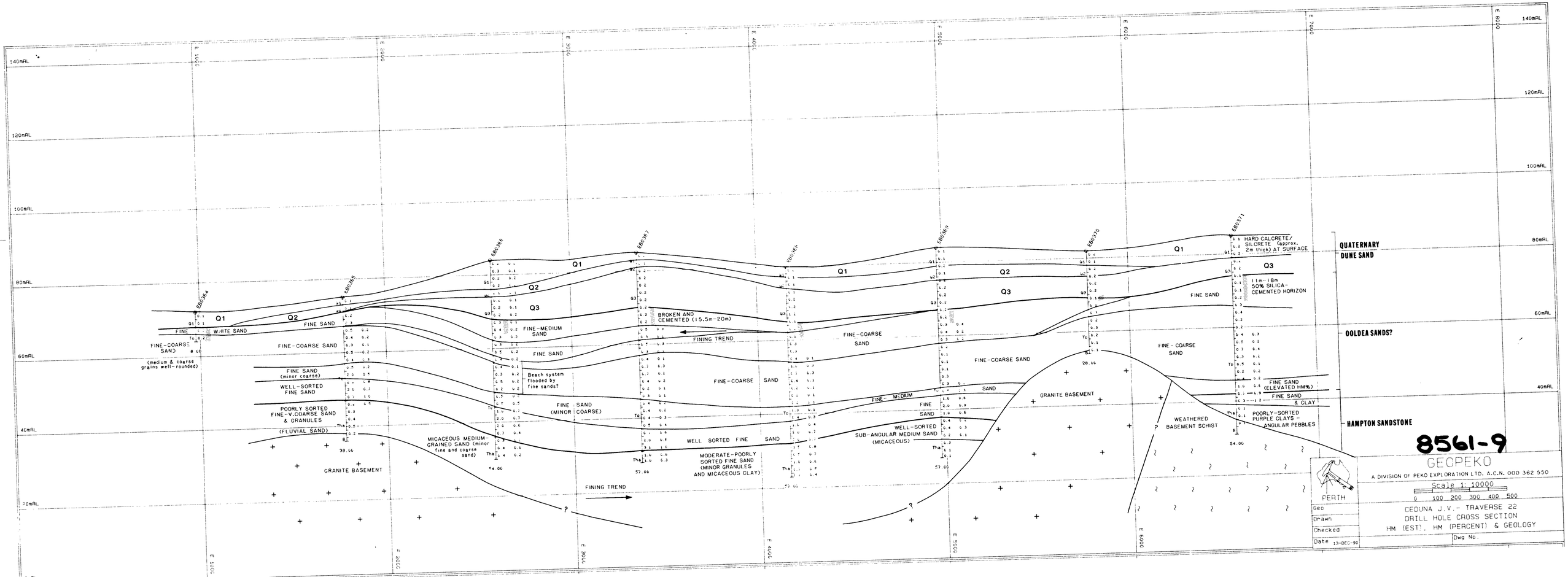
GEOPEKO
A DIVISION OF PEKO EXPLORATION LTD. A.C.N. 000 362 550
PERTH
Scale 1: 1000
0 100 200 300 400 500
Geo
Drawn
Checked
Date 6-DEC-90
CEDUNA J.V. - TRAVERSE 21N
DRILL HOLE CROSS SECTION
HM (EST), HM (PERCENT) & GEOLOGY
Dwg No.



8561-8

GEOPEKO
A DIVISION OF PEKO EXPLORATION LTD. A.C.N. 000 362 550
PERTH
Scale 1: 1000
0 100 200 300 400 500
Geo CWR, AJ
Drawn RGT
Checked AJ
Date 6-DEC-90
CEDUNA J.V. - TRAVERSE 21S
DRILL HOLE CROSS SECTION
HM (EST), HM (PERCENT) & GEOLOGY
IM21_N_S RGT
Dwg No. S8A GE 4569

CEDUNA.PF


E 1000
E 2000
E 3000
E 4000
E 5000
E 6000
E 7000
E 8000
140mRL
120mRL
100mRL
80mRL
60mRL
40mRL
20mRL
EB63R4
EB63R5
EB63R6
EB63R7
EB63R8
EB63R9
EB63T0
EB63T1
Q1
Q2
Q3
FINE SAND
WHITE SAND
FINE-COARSE SAND
(medium & coarse grains well-rounded)
8.00
FINE SAND (minor coarse)
WELL-SORTED FINE SAND
POORLY SORTED FINE-V.COARSE SAND & GRANULES
(FLUVIAL SAND)
39.00
GRANITE BASEMENT
MICACEOUS MEDIUM-GRAINED SAND (minor fine and coarse sand)
54.00
FINE-MEDIUM SAND
Beach system flooded by fine sands?
FINE SAND (MINOR COARSE)
BROKEN AND CEMENTED (15.5m-20m)
FINING TREND
FINE-COARSE SAND
WELL SORTED FINE SAND
MODERATE-POORLY SORTED FINE SAND (MINOR GRANULES AND MICACEOUS CLAY)
57.00
FINE-COARSE SAND
FINE-MEDIUM SAND
WELL-SORTED SUB-ANGULAR MEDIUM SAND (MICACEOUS)
57.00
HARD CALCRETE/ SILCRETE (approx. 2m thick) AT SURFACE
1 1m-18m 50% SILICA-CEMENTED HORIZON
FINE SAND
FINE-COARSE SAND
28.00
GRANITE BASEMENT
WEATHERED BASEMENT SCHIST
FINE SAND (ELEVATED HM%)
FINE SAND & CLAY
POORLY-SORTED PURPLE CLAYS - ANGULAR PEBBLES
54.00
QUATERNARY
DUNE SAND
OOLDEA SANDS?
HAMPTON SANDSTONE
8561-9
GEOPEKO
A DIVISION OF PEKO EXPLORATION LTD. A.C.N. 000 362 550
Scale 1: 10000
0 100 200 300 400 500
PERTH
Geo
Drawn
Checked
Date 13-DEC-90
CEDUNA J.V. - TRAVERSE 22
DRILL HOLE CROSS SECTION
HM (EST), HM (PERCENT) & GEOLOGY
Dwg No.

A P P E N D I X 3

GEOLOGICAL LOGS

TRAVERSE 7/8

EB 064 - EB 079

EL 1600

(EURIA WELL)

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 064	LOCATION Traverse 7/8 - Seven Mile Swamp	COLLAR R.L.(m) 67	DEPTH (m) 15.0	EL 1600
DATE 27/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE			LOGGED BY S. Kennedy	DATE 15/09/89

620

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS	
0	1.5	3.0	SAND orange v fgr → fgr mod sort subang		430	4.0	35.3	0.18		
1.5	3.0	6.0	SILT, CALCRETE brown		807	7.1	46.0	0.15		
3.0	4.5	7.0	SAND, CALCRETE brown silt → fgr poor sort subang CLAY		1146	7.0	36.9	0.13		
4.5	6.0	9.0	CLAY, SAND brown silt → mgr poor sort subround SANDSTONE (hard)		1270	1.2	25.7	0.67		
6.0	7.5	10.0	GYPSUM brown mgr mod sort subang SANDSTONE (hard)		0.0					
7.5	9.0	13.0	GYPSUM, CLAY brown silt → mgr poor sort subang SANDSTONE (hard)		1823	1.5	41.2	0.61		
9.0	10.5	11.0	SAND, CLAY brown silt → fgr mod sort subang GYPSUM		1089	20.2	39.3	0.16		
10.5	12.0	11.0	SAND, CLAY brown silt → fgr poor sort subang SANDSTONE, GYPSUM		0.0					
12.0	13.5	9.0	SAND, GYPSUM brown fgr mod sort subang		1256	13.5	47.8	3.68	4.99	IZRLG
13.5	15.0	9.0	SAND, GYPSUM brown fgr mod sort ang		1380	1.3	43.6	3.12	2.19	
							AV HM	1.09		

00037

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 065	LOCATION Traverse 7/8 Seven Mile Swamp	COLLAR R.L.(m) 60	DEPTH (m) 15.0	EL 1600
DATE 27/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE			LOGGED BY S. Kennedy	DATE 15/09/89

630

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS	
0	1.5	10.0	CALCRETE (hard) brown		1570	51.0	11.8	0.08		
1.5	3.0	9.0	CALCRETE, CLAY brown		1043	57.5	16.9	0.12		
3.0	4.5	10.0	CALCRETE, SANDSTONE brown silt→fgr poorsort subang		1633	55.8	10.5	1.25	A 1.42	I z R L G
4.5	6.0	10.0	CALCRETE, SANDSTONE brown silt→fgr poorsort subang GYPSUM		1040	14.4	27.7	1.87	1.39	
6.0	7.5	10.0	GRANITE (weathered) brown, white m gr ang							
7.5	9.0	12.0	" " pink " "							
9.0	10.5	12.0	" " pink " "							
10.5	12.0	12.0	" " brown " "							
12.0	13.5	13.0	" " brown " "							
13.5	15.0	11.0	" " pink " "							
							AV HM	0.42		

00038

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 066	LOCATION Traverse 7/8 Seven Mile Swamp	COLLAR R.L.(m) 58	DEPTH (m) 15.0	EL 1600
DATE 27/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE			LOGGED BY S. Kennedy	DATE 15/09/89

640

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	8.0	SILT, CALCRETE lt brown silt		1361	33.7	17.0	0.13	
1.5	3.0	15.0	SILT, CALCRETE lt brown silt → v fgr mod sort subround SAND		2205	60.8	10.9	0.05	
3.0	4.5	7.0	SAND, CALCRETE red silt → fgr well sort subang		1205	36.5	23.5	0.09	
4.5	6.0	8.0	SAND orange fgr/mgr well sort subang		1310	11.2	21.5	0.63	A 0.54
6.0	7.5	9.0	SAND orange fgr well sort subang		1970	1.2	16.6	0.14	
7.5	9.0	8.0	SAND orange/yellow fgr/mgr well sort subang		1523	2.2	17.4	0.14	
9.0	10.5	10.0	SAND white/yellow mgr → cgr poor sort round		2020	15.6	18.6	0.09	
10.5	12.0	9.0	SAND white mgr well sort subround		1866	2.6	19.9	0.02	
12.0	13.5	10.0	SAND white fgr well sort subang		1997	3.8	8.5	0.13	
13.5	15.0	10.0	" " " " "		1674	3.2	16.4	0.09	
							AV HM	0.15	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 067	LOCATION Traverse 7/8 Seven Mile Swamp	COLLAR R.L.(m) 57	DEPTH (m) 15·0	EL 1600
DATE 27/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 7·5-9·0 10·5-13·5	LOGGED BY S. Kennedy	DATE 15/09/89

650

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS	
0	1·5	12·0	SILT, CALCRETE light brown		0·0					
1·5	3·0	6·0	" " " "		0·0					
3·0	4·5	8·0	SILT, SAND orange silt → fgr poor sort subround		1146	0·6	45·6	0·08		
4·5	6·0	9·0	SAND orange fgr well sort subround		1263	0·0	32·8	0·10		
6·0	7·5	9·0	SAND orange fgr/m gr well sort subang		1321	3·9	32·0	0·32	A 0·22	I
7·5	9·0	8·0	SAND orange m gr well sort subround		1650	9·0	23·1	0·40	0·47	Z R L G
9·0	10·5	9·0	SAND yellow m gr well sort subround		1598	3·0	26·0	0·68	0·54	
10·5	12·0	9·0	SAND yellow fgr well sort subround		1466	1·0	0·7	0·22	0·20	
12·0	13·5	9·0	SAND white, brown m gr mod sort subround SANDSTONE (Fe rich)		1712	8·5	12·4	0·89	0·91	I Z R L G
13·5	15·0	9·0	SAND white fgr mod sort subang SANDSTONE (minor)		1660	8·9	31·0	1·57	2·32	
							AV HM	0·53		

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 068	LOCATION Traverse 7/8 Seven Mile Swamp	COLLAR R.L.(m) 57	DEPTH (m) 15.0	EL 1600
DATE 27/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 4.5-7.5	LOGGED BY S. Kennedy	DATE 15/09/89

660

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	6.0	SILT, CALCRETE light brown		976	32.8	19.1	0.16	
1.5	3.0	8.0	" " "		978	47.2	17.7	0.04	
3.0	4.5	9.0	SILT, CLAY SAND red silt → fgr poor sort subround		1391	12.0	31.5	0.08	
4.5	6.0	7.0	SAND, CLAY brown fgr mod sort subround		1129	24.1	28.2	0.34	
6.0	7.5	9.0	SAND, FERRICRETE orange, brown fgr m dsort subround		1405	18.6	22.2	3.18	
7.5	9.0	8.0	SAND yellow mgr mod sort ang		1611	0.7	22.3	0.13	
9.0	10.5	8.0	SAND yellow mgr well sort subang		1385	1.4	14.4	0.13	
10.5	12.0	9.0	SAND red to brown mgr mod sort subang		2096	19.6	33.6	2.41	
12.0	13.5	11.0	WEATHERED BEDROCK (Qtz, Mica, Feldspar) grey mgr ang		2451	30.4	28.8	3.70	
13.5	15.0	10.0	" " " " "		2054	23.7	32.7	2.38	
							AV HM	0.80	(0-12 m)

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 069	LOCATION Traverse 7,8 Seven Mile Swamp	COLLAR R.L.(m) 57	DEPTH (m) 15.0	EL 1600
DATE 27/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Water used at 7.0 m to clear blockage
WATER TABLE		DK GRAINS 4.5–6.0m	LOGGED BY S. Kennedy	DATE 15/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	3.0	SILT, CALCRETE light brown		744	18.0	36.8	0.10	
1.5	3.0	7.0	" " "		905	30.2	35.6	0.08	
3.0	4.5	8.0	SILT, SAND CLAY brown silt → fgr poor sort subang		1311	40.5	25.0	0.02	
4.5	6.0	7.0	SAND red fgr mod sort subround		1026	28.7	21.1	0.56	A 0.72
6.0	7.5	10.0	SAND, SILT orange silt → fgr mod sort subround		—	—	—	—	
7.5	9.0	8.0	SAND orange/pink fgr/mgr well sort subang		1121	0.8	22.0	0.13	
9.0	10.5	8.0	SAND orange fgr/mgr well sort subang		1340	1.3	27.8	0.15	
10.5	12.0	9.0	SAND orange fgr/mgr well sort subang		1409	0.5	40.2	0.12	
12.0	13.5	9.6	SAND, CLAY red/purple fgr → silt poor sort subround		1476	25.2	38.0	0.12	
13.5	15.0	11.0	WEATHERED BEDROCK purple (mica)		1587	63.1	24.5	0.03	
							AV HM	0.15	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 070	LOCATION Traverse 7/8 Seven Mile Swamp	COLLAR R.L.(m) 60	DEPTH (m) 15.0	EL 1600
DATE 28/08/89.	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 3.0-4.5 7.5-9.0	LOGGED BY S. Kennedy	DATE 15/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	3.0	SAND light brown vfgr well sort subround		416	2.6	42.3	0.12	
1.5	3.0	7.0	SILT, CALCRETE light brown		1084	14.9	35.9	0.11	
3.0	4.5	8.0	SAND, CALCRETE lt brown silt→vfgr well sort subround		1320	18.4	42.4	0.07	
4.5	6.0	7.0	SAND orange fgr well sort sub round		1426	0.0	35.7	0.14	
6.0	7.5	10.0	SAND red fgr well sort subround		1106	0.3	56.9	0.03	
7.5	9.0	8.0	" " " " "		1180	0.3	50.3	0.08	
9.0	10.5	9.0	SAND red fgr well sort subround		1050	0.4	35.2	0.15	
10.5	12.0	9.0	WEATHERED BEDROCK brown m gr ang		1881	38.9	26.2	1.54	
12.0	13.5	9.0	" " " " "		1290	39.2	12.3	2.74	
13.5	15.0	11.0	" " " " "		1031	43.9	23.4	0.98	
							AV HM	0.10	(0-10.5m)

680

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 071	LOCATION Traverse 7/8 Seven Mile Swamp	COLLAR R.L.(m) 62	DEPTH (m) 15·0	EL 1600
DATE 28/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Water used at 14·0 m to clear blockage
WATER TABLE			LOGGED BY S. Kennedy	DATE 15/09/89

690

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	5·0	CALCRETE, SILT light brown		696	20·7	40·3	0·15	
1·5	3·0	6·0	CALCRETE, SILT brown CLAY		0·0				
3·0	4·5	9·0	SAND, CLAY/ red silt → f gr poor sort subround		0·0				
4·5	6·0	8·0	FERRICRETE brown m gr poor sort ang		1290	60·9	9·2	0·39	
6·0	7·5	7·0	WEATHERED BEDROCK brown m gr ang						
7·5	9·0	11·0	SILICIFIED WEATHERED BEDROCK light brown m gr ang						
9·0	10·5	11·0	SOFT WEATHERED BEDROCK brown m gr ang						
10·5	12·0	11·0	" " " "						
12·0	13·5	11·0	SILIC WEATHERED BEDROCK brown m gr ang						
13·5	15·0	13·0	SOFT WEATHERED BEDROCK brown m gr ang						
							AV HM	0·27	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 072	LOCATION Traverse 7,8 Seven Mile Swamp	COLLAR R.L.(m) 61	DEPTH (m) 15.0	EL 1600
DATE 28/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 3.0-4.5	LOGGED BY S. Kennedy	DATE 15/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	5.0	SAND, CALCRETE light brown silt→fgr mod sort subang		696	18.7	35.1	0.16	
1.5	3.0	10.0	SAND light brown silt→fgr mod sort subang CALCRETE (minor)		1562	33.0	25.7	0.13	
3.0	4.5	9.0	SAND orange fgr well sort subround		1429	19.0	24.0	0.04	
4.5	6.0	9.0	SAND red fgr mod sort subround CLAY (minor)		1340	0.1	22.9	0.12	
6.0	7.5	8.0	" " " " "		1245	0.9	26.4	0.13	
7.5	9.0	7.0	" " " " "		1050	0.0	33.2	0.08	
9.0	10.5	8.0	SAND red fgr/mgr mod sort subround		1680	0.0	30.1	0.10	
10.5	12.0	9.0	SAND orange fgr/mgr well sort subround		1950	0.0	22.8	0.13	
12.0	13.5	8.0	SAND orange mgr well sort subround		1654	0.0	24.2	0.15	
13.5	15.0	9.0	SAND orange mgr mod sort subang		1482	0.0	41.9	0.14	
							AV HM	0.12	

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NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 073	LOCATION Traverse 7/8 Seven Mile Swamp	COLLAR R.L.(m) 62	DEPTH (m) 11.0	EL 1600
DATE 28/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE			LOGGED BY S. Kennedy	DATE 18/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	5.0	SILT, SAND silt → v f gr mod sort subang brown		774	5.0	35.8	0.15	
1.5	3.0	8.0	SAND, CALCRETE brown silt → f gr poor sort ang		1214	19.8	30.5	0.20	
3.0	4.5	10.0	SAND, CLAY red silt → f gr poor sort subang		1610	0.2	34.7	0.18	
4.5	6.0	10.6	SAND, SILT brown silt → f gr mod sort subang		1780	0.1	38.8	0.26	
6.0	7.5	11.0	SAND, SILT red silt → f gr mod sort subang		1799	0.9	40.5	0.53	
7.5	9.0	12.0	WEATHERED GRANITE brown m gr subang						
9.0	10.5	9.0	WEATHERED GRANITE brown c gr ang (mica)						
10.5	11.0	5.0	WEATHERED GRANITE grey c gr ang						
							AV HM	0.26	

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NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 074	LOCATION Traverse 7,8 Seven Mile Swamp	COLLAR R.L.(m) 65	DEPTH (m) 15.0	EL 1600
DATE 28/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 3.0–4.5m	LOGGED BY S. Kennedy	DATE 18/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	5.0	SAND brown vfgr/fgr well sort subang		562	0.5	18.8	0.12	
1.5	3.0	7.0	SILT, SAND brown silt→vfgr well sort subang		693	1.7	26.7	0.09	
3.0	4.5	8.0	SAND brown fgr well sort subround		1188	0.6	21.6	0.12	
4.5	6.0	8.0	SILT, SAND brown silt→vfgr mod sort subround		1183	7.1	42.4	0.09	
6.0	7.5	10.0	SILT, SAND brown silt→fgr poor sort subround CALCRETE		1694	16.3	39.6	0.07	
7.5	9.0	10.0	SAND orange grey fgr poor sort subround SANDSTONE		1520	27.1	39.4	0.04	
9.0	10.5	10.0	CLAY, SAND orange silt→fgr poor sort subround		1577	23.7	26.9	0.08	
10.5	12.0	10.0	SAND orange fgr/mgr mod sort subround		1796	0.1	33.9	0.11	
12.0	13.5	10.0	CLAY, SAND red silt→mgr poor sort subround		1629	37.7	29.5	0.10	
13.5	15.0	10.0	SAND orange, red mgr mod sort subround		1604	12.4	31.1	0.24	
							AV HM	0.11	

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NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 075	LOCATION Traverse 7,8 Seven Mile Swamp	COLLAR R.L.(m) 60	DEPTH (m) 15.0	EL 1600
DATE 28/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE	-		LOGGED BY S. Kennedy	DATE 18/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	5.0	SILT, SAND brown silt→fgr mod sort subround		642	5.0	29.9	0.09	
1.5	3.0	7.0	" " " " " "		868	13.7	30.9	0.10	
3.0	4.5	8.0	SILT, SAND brown silt→fgr poor sort subround CALCRETE		802	10.6	35.4	0.10	
4.5	6.0	8.0	SAND, CALCRETE orange fgr mod sort subround		1066	17.2	24.1	0.10	
6.0	7.5	10.0	SAND orange fgr/mgr well sort subround		1662	0.7	0.8	0.19	
7.5	9.0	10.0	SAND orange/brown fgr/mgr mod sort subround		1759	15.3	23.4	0.12	
9.0	10.5	10.0	SAND orange mgr mod sort subround SANDSTONE brown		2355	27.0	16.2	0.10	
10.5	12.0	10.0	SAND, CLAY brown, grey silt→mgr poor sort subang		1237	49.6	15.3	0.07	
12.0	13.5	10.0	SAND, CLAY white silt→mgr poor sort ang SANDSTONE brown		1385	44.6	15.1	0.13	
13.5	15.0	10.0	SAND, CLAY white silt→vfgr well sort ang		1630	40.4	31.1	0.11	
							AV HM	0.11	

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NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 076	LOCATION Traverse 7,8 Seven Mile Swamp	COLLAR R.L.(m) 57	DEPTH (m) 15·0	EL 1600
DATE 28/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE			LOGGED BY S. Kennedy	DATE 18/09/89

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DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	4·0	SILT, CALCRETE brown		621	20·9	37·8	0·08	
1·5	3·0	5·0	DOLOMITE (hard) brown		1024	53·2	16·3	0·08	
3·0	4·5	6·0	SAND brown fgr mod sort ang DOLOMITE (minor)		1340	16·5	39·0	0·08	
4·5	6·0	8·0	SAND brown silt→fgr poor sort subround DOLOMITE (hard)		1408	25·9	32·3	0·07	
6·0	7·5	8·0	SAND orange, brown silt→fgr poor sort subround DOLOMITE (hard)		1473	27·2	32·4	0·06	
7·5	9·0	10·0	CLAY, SAND red silt→fgr mod sort subround		1631	1·3	36·3	0·08	
9·0	10·5	12·0	CLAY, MICA red silt→mgr poor sort subround SAND		1151	76·1	9·7	0·02	
10·5	12·0	12·0	" " " " " "		2606	15·8	29·4	0·10	
12·0	13·5	10·0	" " " " " "		1960	8·0	28·5	0·14	
13·5	15·0	12·0	SANDSTONE orange fgr/mgr well sort subround SAND		1877	28·8	11·1	0·11	
							AV HM	0·08	

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NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 077	LOCATION Traverse 7,8 Seven Mile Swamp	COLLAR R.L.(m) 65	DEPTH (m) 15·0	EL 1600
DATE 28/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 6·0-7·5m 10·5-13·5m	LOGGED BY S. Kennedy	DATE 18/09/89

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DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	4·0	SILT, SAND light brown silt→v fgr wellsort subang		700	1·6	27·0	0·26	
1·5	3·0	7·0	SAND light brown v fgr/fgr mod sort subround		1100	7·9	32·3	0·12	
3·0	4·5	8·0	SAND, SILT brown silt→fgr mod sort subround		1540	8·3	36·2	0·07	
4·5	6·0	9·0	SILT, SAND orange silt→fgr mod sort subround CALCRETE		1400	19·9	30·4	0·09	
6·0	7·5	9·0	SAND orange fgr/mgr wellsort subround SILT (minor)		1482	7·8	25·0	0·06	A 0·21
7·5	9·0	9·0	SAND red fgr/mgr mod sort subround SILT		1703	2·2	29·2	0·13	A 0·20
9·0	10·5	9·0	SAND orange mgr wellsort subang		1318	2·4	39·2	0·14	
10·5	12·0	9·0	SAND orange fgr/mgr wellsort subround		1413	0·0	11·6	0·14	
12·0	13·5	10·0	SAND orange fgr/mgr wellsort subang		1440	0·0	24·1	0·15	A 0·23
13·5	15·0	9·0	SAND orange fgr/mgr mod sort subang		1710	2·2	17·5	0·15	
							AV HM	0·13	

00050

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB078	LOCATION Traverse 7,8 Seven Mile Swamp	COLLAR R.L.(m) 42	DEPTH (m) 15.0	EL 1600
DATE 28/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Water used to clear blockage at 14.0 m
WATER TABLE		DK GRAINS 1.5-6.0 7.5-9.0 (common 1.5-3.0)	LOGGED BY S. Kennedy	DATE 18/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	5·0	SILT, SAND brown silt → fgr wellsort ang		718	6·0	26·4	0·16	
1·5	3·0	6·0	SAND brown/orange fgr mod sort subround		1143	9·1	28·2	0·18	A 0·21
3·0	4·5	10·0	SAND orange fgr mod sort subang CALCRETE (minor)		2224	12·6	27·5	0·17	
4·5	6·0	8·0	SAND red/orange mgr mod sort subround		1680	0·0	26·1	0·17	
6·0	7·5	9·0	SAND red fgr mod sort subround		1323	2·5	26·1	0·24	
7·5	9·0	8·0	WEATHERED GRANITE grey SAND red mgr subang					0·92	A 0·65
9·0	10·5	9·0	WEATHERED GRANITE grey/brown mgr subang						
10·5	12·0	12·0	WEATHERED GRANITE brown cgr ang						
12·0	13·5	9·0	MICA (Vermiculite?) white/grey cgr ang						
13·5	15·0	4·0	MICA (Vermiculite?) brown cgr ang						
							AV HM	0·18	

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NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 079	LOCATION Traverse 7,8 Seven Mile Swamp	COLLAR R.L.(m) 40	DEPTH (m) 15·0	EL 1600
DATE 28/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Water used at 5.0 and 9.0
WATER TABLE			LOGGED BY S. Kennedy	DATE 18/09/89

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DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	3·0	SILT, SAND brown silt → fgr poor sort ang		682	10·7	31·9	0·17	
1·5	3·0	6·0	SAND orange fgr mod sort subang		931	9·5	36·9	0·19	
3·0	4·5	8·6	SAND orange mgr mod sort subang		1222	14·5	33·9	0·13	
4·5	6·0	16·0	CLAY, SAND orange silt → mgr poor sort subrnd		—	—	—	—	
6·0	7·5	11·0	CLAY, SAND brown silt → mgr poor sort subang		—	—	—	—	
7·5	9·0	10·0	FERRICRETE brown fgr poor sort ang		1431	51·6	10·5	21·5	
9·0	10·5	9·0	CLAY, SAND FERRICRETE brown silt → mgr poor sort ang		1380	48·9	21·0	0·8	
10·5	12·0	4·0	CLAY, MICA brown silt → mgr poor sort ang		—	—	—	—	
12·0	13·5	7·0	MICA, CARB. SHALE dark brown silt → mgr poor sort ang		—	—	—	—	
13·5	15·0	7·0	MICA, CARB. SHALE dark brown silt → mgr poor sort ang		—	—	—	—	
							Av HM	0·16	(0–4·5m)

TRAVERSE 9

EB 080 - EB 091

EL 1601

(KOONIBA MISSION)

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 080	LOCATION Traverse 9 Koonibba	COLLAR R.L.(m) 115	DEPTH (m) 15·0	EL 1601
DATE 30/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 0-1.5 m 3.0-9.0 m	LOGGED BY S. Kennedy	DATE 18/09/89

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DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	10·0	SAND, CALCRETE brown mgr mod sort subang		0·0				
1·5	3·0	8·0	SAND, CALCRETE white fgr mod sort subang		0·0				
3·0	4·5	9·0	SAND orange fgr well sort subang CALCRETE (minor)		1344	2·8	46·3	0·07	
4·5	6·0	9·0	SAND orange fgr/mgr well sort subang CALCRETE (minor)		1840	2·1	31·5	0·25	
6·0	7·5	9·6	SAND orange fgr/mgr mod sort round		1990	0·5	32·2	0·13	
7·5	9·0	11·0	SAND orange fgr/mgr well sort subround		2322	0·0	44·1	0·06	
9·0	10·5	11·0	SAND orange fgr/mgr well sort subround		2562	0·2	22·9	0·12	
10·5	12·0	10·0	SAND orange mgr well sort subround		2407	0·1	20·3	0·08	
12·0	13·5	11·0	SAND yellow mgr well sort round SANDSTONE red		1798	3·6	11·5	0·25	
13·5	15·0	10·0	SAND yellow mgr/cgr well sort round		1496	7·2	5·5	0·05	
							AV HM	0·13	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 081	LOCATION Traverse 9 Koonibba	COLLAR R.L.(m) 115	DEPTH (m) 15·0	EL 1601
DATE 30/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE			LOGGED BY S. Kennedy	DATE 18/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	11.0	CALCRETE, SAND grey, brown silt → fgr poorsort ang		1726	42.0	12.4	0.05	
1·5	3·0	8.0	" " " " "		1143	40.8	21.4	0.04	
3·0	4·5	10.0	SAND brown fgr/mgr mod sort subang CALCRETE (minor)		1466	19.3	30.2	0.08	
4·5	6·0	10.0	SAND brown fgr/mgr mod sort subang		1200	7.8	30.5	0.08	
6·0	7·5	10.0	SAND yellow fgr/mgr well sort subround		2203	0.4	29.1	0.11	
7·5	9·0	10.0	SAND yellow mgr well sort subround		1842	3.3	23.2	0.10	
9·0	10·5	9.0	SAND yellow fgr/mgr well sort subround		1980	0.7	7.8	0.12	
10·5	12·0	9.0	SAND yellow mgr well sort subround		1820	0.6	7.6	0.08	
12·0	13·5	10.0	SAND white mgr well sort round		1658	4.8	4.7	0.06	
13·5	15·0	10.0	" " " " "		1341	3.6	3.2	0.04	
							AV HM	0.08	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 082	LOCATION Traverse 9 Koonibba	COLLAR R.L.(m) 127	DEPTH (m) 15.0	EL 1601
DATE 30/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 1.5-3.0 m, 6.0-7.5 m, 10.5-15.0 m	LOGGED BY S. Kennedy	DATE 19/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	4.0	CALCAREOUS SAND grey fgr/mgr modsort subang		638	1.9	39.7	0.06	
1.5	3.0	4.0	CALCRETE, SAND brown silt→fgr modsort subang		706	8.4	36.1	0.23	
3.0	4.5	4.0	CALCRETE, SAND brown fgr modsort subang		880	12.5	34.2	0.07	
4.5	6.0	8.0	CALCRETE, SAND CLAY brown silt→fgr poorsort subround		1020	13.8	35.2	0.06	
6.0	7.5	9.0	SAND orange fgr wellsort subround		1756	1.1	34.4	0.11	
7.5	9.0	9.0	SAND orange fgr/mgr wellsort subround		1492	0.2	32.8	0.10	
9.0	10.5	10.0	SAND orange " " " "		1640	0.0	27.7	0.11	
10.5	12.0	10.0	SAND orange fgr/mgr wellsort subang		1608	0.1	26.2	0.11	
12.0	13.5	10.0	SAND orange " " " "		2130	0.4	20.3	0.14	
13.5	15.0	10.0	SAND orange, yellow fgr/mgr wellsort subround		2230	0.0	23.3	0.16	
							AV HM	0.11	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 083	LOCATION Traverse 9 Koonibba	COLLAR R.L.(m) 129	DEPTH (m) 15.0	EL 1601
DATE 30/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 9.0–15.0 m	LOGGED BY S. Kennedy	DATE 19/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	4.0	CALCRETE, SAND grey silt→fgr poor sort subang		544	31.1	28.2	0.03	
1.5	3.0	4.0	CALCRETE, SAND light brown silt→fgr poor sort subang		548	33.9	32.3	0.02	
3.0	4.5	4.0	SAND brown fgr/mgr mod sort subround		840	12.7	32.3	0.08	
4.5	6.0	8.0	SAND, SILT dark brown silt/mgr mod sort subround		1650	4.1	36.0	0.09	
6.0	7.5	9.0	SAND red fgr/mgr well sort subang SILT (minor)		1676	2.0	37.1	0.08	
7.5	9.0	9.0	SAND red fgr/mgr wellsort subround		1050	0.1	36.4	0.14	
9.0	10.5	10.0	SAND orange fgr well sort subround		1909	0.0	20.0	0.12	
10.5	12.0	10.0	SAND orange/yellow fgr/mgr wellsort subang		1703	0.0	19.5	0.12	
12.0	13.5	10.0	SAND yellow fgr well sort subang		1731	0.0	15.3	0.14	
13.5	15.0	10.0	SAND yellow fgr well sort subround		1513	0.1	26.5	0.09	
							AV HM	0.09	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 084	LOCATION Traverse 9 Koonibba	COLLAR R.L.(m) 134	DEPTH (m) 15.0 m	EL 1601
DATE 30/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 4.5-9.0 m	LOGGED BY S. Kennedy	DATE 19/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	5.0	CALCRETE, SAND grey fgr/mgr mod sort subround SILT		850	8.1	29.5	0.07	
1.5	3.0	8.0	CALCRETE, SAND light brown vfgr/fgr mod sort subang		1128	14.1	37.9	0.04	
3.0	4.5	9.0	CALCRETE, SAND light brown vfgr → mgr poor sort subang		1890	13.7	38.1	0.04	
4.5	6.0	9.0	SAND brown mgr mod sort subang		1809	0.5	23.8	0.05	
6.0	7.5	9.0	SAND orange mgr well sort subang		1913	0.3	19.3	0.10	
7.5	9.0	8.0	SAND yellow mgr well sort subang		1268	0.2	11.4	0.14	
9.0	10.5	11.0	CLAY, CALCRETE SAND yellow red silt → mgr poor sort subang		2188	22.8	22.1	0.07	
10.5	12.0	10.0	CLAY, SAND red silt → mgr mod sort subang		1290	24.9	30.8	0.08	
12.0	13.5	10.0	SAND CLAY (minor) red silt → mgr mod sort subang		1886	9.5	24.2	0.09	
13.5	15.0	10.0	SAND red mgr mod sort subang		1819	0.2	30.4	0.10	
							AV HM	0.08	

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NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 085	LOCATION Traverse 9 Koonibba	COLLAR R.L.(m) 120	DEPTH (m) 15·0	EL 1601
DATE 30/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 13·5-15·0m	LOGGED BY S. Kennedy	DATE 19/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	8·0	CALCRETE, SAND grey fgr→mgr poor sort subang		0·0				
1·5	3·0	6·0	CALCRETE, SAND brown fgr→mgr poor sort subang		0·0				
3·0	4·5	9·0	SAND, CLAY brown silt→fgr poor sort subang		0·0				
4·5	6·0	9·0	SAND orange fgr/mgr mod sort subround		1469	0·0	37·8	0·11	
6·0	7·5	9·0	SAND orange fgr/mgr well sort subround		1498	0·0	27·8	0·13	
7·5	9·0	10·0	SAND orange fgr/mgr mod sort subround		1564	0·1	10·7	0·11	
9·0	10·5	10·0	SAND yellow fgr/mgr well sort subround		2045	0·0	18·8	0·10	
10·5	12·0	9·0	" " " " "		1833	0·1	22·0	0·26	A 0·14
12·0	13·5	11·0	SAND yellow mgr well sort round		1884	0·0	18·1	0·15	
13·5	15·0	11·0	SAND yellow fgr/mgr well sort round		2031	0·0	31·7	0·08	
							AV HM	0·13	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 086	LOCATION Traverse 9 Koonibba	COLLAR R.L.(m) 137	DEPTH (m) 15·0	EL 1601
DATE 30/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 13·5–15·0	LOGGED BY S. Kennedy	DATE 19/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	6·0	CALCRETE, SAND brown fgr/mgr poor sort subang		1002	11·6	38·7	0·04	
1·5	3·0	5·0	CALCRETE, SAND " " " "		1283	0·0	47·9	0·14	
3·0	4·5	7·0	CALCRETE, SAND brown silt→mgr poor sort subang CLAY		1044	50·2	25·7	0·12	
4·5	6·0	8·0	CALCRETE, SAND orange mgr mod sort subround CLAY (minor)		900	0·3	51·9	0·06	
6·0	7·5	9·0	SAND orange mgr mod sort subround CLAY (minor)		1654	23·0	30·0	0·05	
7·5	9·0	10·0	SAND orange fgr/mgr mod sort subround CLAY (minor)		1360	36·8	26·7	0·07	
9·0	10·5	8·0	SAND red fgr/mgr mod sort subround		1486	0·6	37·3	0·10	
10·5	12·0	8·0	SAND red fgr/mgr well sort subround		1717	0·3	20·1	0·15	
12·0	13·5	10·0	SAND orange, red mgr well sort subround		2090	0·5	24·0	0·17	
13·5	15·0	9·0	SAND orange mgr well sort subround		1925	0·1	30·8	0·10	
							AV H.M.	0·10	

00060

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 087	LOCATION Traverse 9 Koonibba	COLLAR R.L.(m) 131	DEPTH (m) 15.0	EL 1601
DATE 30/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 10.5-15.0m	LOGGED BY S. Kennedy	DATE 19/09/89

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DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	5.0	CALCRETE, SAND grey, brown silt → mgr poor sort subang		971	27.9	28.8	0.04	
1.5	3.0	7.0	CALCRETE grey, brown mgr poor sort ang		1175	55.7	16.8	0.02	
3.0	4.5	9.0	SAND orange, brown mgr mod sort subang SILT (minor)		1521	20.0	24.8	0.05	
4.5	6.0	8.0	SAND orange mgr mod sort subround		1580	0.1	25.6	0.07	
6.0	7.5	10.0	SAND orange fgr/mgr well sort subround		1431	0.1	21.6	0.13	
7.5	9.0	9.0	" " " " "		1753	0.1	18.3	0.13	
9.0	10.5	9.0	" " " " "		1970	0.1	19.2	0.10	
10.5	12.0	10.0	SAND yellow fgr/mgr well sort subang		1448	0.1	13.7	0.08	
12.0	13.5	11.0	" " " " "		1489	0.3	25.8	0.07	
13.5	15.0	11.0	SAND yellow fgr well sort subround		1844	0.1	10.6	0.07	
							AV HM	0.08	

19001

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 088	LOCATION Traverse 9 Koonibba	COLLAR R.L.(m) 128	DEPTH (m) 15.0	EL 1601
DATE 30/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 12.0-13.5	LOGGED BY S. Kennedy	DATE 19/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	1.0	SILT brown		436.0	5.0	30.5	0.09	
1.5	3.0	3.0	SILT, CALCRETE brown		718.0	21.3	41.4	0.04	
3.0	4.5	4.0	SILT, CALCRETE SAND brown silt → mgr poor sort subang		561.0	5.2	21.3	0.07	
4.5	6.0	4.0	SILT, SAND brown silt → mgr poor sort ang		1218.0	0.3	35.0	0.09	
6.0	7.5	6.0	SILT, SAND brown silt → mgr poor sort subang		990.0	0.7	36.3	0.05	
7.5	9.0	9.0	SAND red silt → mgr poor sort subround SILT (minor)		1749.0	0.6	31.0	0.10	
9.0	10.5	10.0	SAND red fgr / mgr mod sort subang		2110.0	0.2	27.6	0.08	
10.5	12.0	10.0	SAND orange fgr / mgr mod sort subround		2328.0	0.5	40.1	0.12	
12.0	13.5	10.0	SAND orange fgr well sort subround		1880.0	0.1	17.6	0.12	
13.5	15.0	11.0	SAND orange mgr well sort subround		2460.0	0.4	16.3	0.15	
							AV HM	0.09	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 089	LOCATION Traverse 9 Koonibba	COLLAR R.L.(m) 125	DEPTH (m) 15.0	EL 1601
DATE 30/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 0-1.5 6.0-7.5 12.0-15.0	LOGGED BY S. Kennedy	DATE 19/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	3.0	SAND brown mgr mod sort subround		600	0.8	31.9	0.08	
1.5	3.0	5.0	SAND brown fgr/mgr mod sort subang		840	7.5	37.6	0.04	
3.0	4.5	8.0	SAND, CALCRETE brown v fgr/fgr mod sort subround		1310	13.4	36.6	0.04	
4.5	6.0	7.0	SAND light brown fgr/mgr poor sort subround		1260	5.3	22.4	0.05	
6.0	7.5	8.0	SAND light brown mgr mod sort subround		1640	0.9	20.1	0.06	
7.5	9.0	9.0	SAND brown mgr poor sort subround SILT (minor)		1661	35.5	27.6	0.04	
9.0	10.5	8.0	SAND red mgr mod sort subang		1792	4.5	28.6	0.06	
10.5	12.0	10.0	SAND orange mgr well sort round		1978	0.1	16.7	0.09	
12.0	13.5	9.0	" " " " "		1700	0.0	14.6	0.23	A 0.10 / I Z
13.5	15.0	10.0	" " " " "		1935	0.0	19.8	0.16	0.11 / L G
							AV HM	0.09	

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00063

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 090	LOCATION Traverse 9 Koonibba	COLLAR R.L.(m) 116	DEPTH (m) 15.0	EL 1601
DATE 30/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 12.0-15.0	LOGGED BY S. Kennedy	DATE 19/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	3.0	SILT, SAND brown silt/v fgr mod sort subround		790	3·8	35·7	0·05	
1·5	3·0	5.0	SAND brown v fgr/f gr mod sort subround		850	5·3	40·2	0·06	
3·0	4·5	8.0	SAND brown f gr well sort subround		1473	5·0	38·6	0·07	
4·5	6·0	8.0	SAND brown fgr well sort subang		1338	13·5	40·3	0·06	
6·0	7·5	9.0	SAND brown fgr/mgr poor sort subang		1876	21·4	30·1	0·06	
7·5	9·0	9.0	SAND orange fgr/mgr poor sort subang		1577	12·7	31·8	0·05	
9·0	10·5	9.0	SAND orange mgr poor sort subang		1926	12·6	32·6	0·10	
10·5	12·0	9.0	SAND orange mgr mod sort subround		1988	0·1	24·0	0·18	
12·0	13·5	13.0	SANDSTONE (hard) grey mgr mod sort subang		1556	35·5	9·9	0·09	
13·5	15·0	12.0	" " " " " "		1426	40·3	6·6	0·12	
							AV H.M	0·08	

NATIONAL

MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 091	LOCATION Traverse 9 Koonibba	COLLAR R.L.(m) 108	DEPTH (m) 12·0	EL 1601
DATE 30/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 4·5-6·0	LOGGED BY S. Kennedy	DATE 19/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	3·0	SAND, CALCRETE brown fgr/mgr poor sort subround		587	23.9	29.9	0.03	
1·5	3·0	9·0	SAND, CALCRETE brown silt→fgr poor sort subround SILT		1145	50.8	17.8	0.04	
3·0	4·5	8·0	" " " " " "		1585	14.5	33.0	0.03	
4·5	6·0	9.0	SAND orange mgr well sort subround		1887	1.1	33.3	0.07	
6·0	7·5	9.0	SAND orange mgr well sort subround SILT (minor)		1497	0.4	38.0	0.05	
7·5	9·0	9.0	SAND pale yellow fgr well sort round		1223	0.4	15.0	0.09	
9·0	10·5	8.0	SANDSTONE (hard tubular) pale yellow fgr/mgr well sort round SAND		1640	22.0	10.3	0.05	
10·5	12·0	16.0	SANDSTONE (hard tubular) grey fgr/mgr mod sort ang		0.0				
							AV HM	0·05	

TRAVERSE 10

EB 092 - EB 099

EL 1601

(KOONIBA MISSION)

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 092	LOCATION Traverse 10 Carpenter Corner	COLLAR R.L.(m) 100	DEPTH (m) 15.0	EL 1601
DATE 31/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 3.0-4.5	LOGGED BY S. Kennedy	DATE 19/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	5.0	SAND brown mgr well sort subround		766	2.6	27.0	0.01	
1.5	3.0	7.0	SAND light brown mgr well sort subround		1472	0.5	33.4	0.03	
3.0	4.5	9.0	CALCRETE light brown fgr/mgr well sort subround SAND		1720	5.9	28.9	0.04	
4.5	6.0	9.0	CALCRETE brown fgr/mgr poor sort subround SAND		1575	6.3	28.6	0.03	
6.0	7.5	9.0	SAND white, orange fgr → cgr poor sort round		1415	1.6	21.6	0.04	
7.5	9.0	9.0	SAND orange mgr mod sort subround		1800	23.3	10.1	0.01	
9.0	10.5	10.0	" " " " "		1770	7.7	11.8	0.01	
10.5	12.0	9.0	" " " " "		1097	6.5	11.3	0.00	
12.0	13.5	9.0	SAND red fgr well sort subround		1168	3.4	12.3	0.02	
13.5	15.0	10.0	" " " " "		1235	4.9	12.8	0.05	
							AV HM	0.02	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 093	LOCATION Traverse 10 Carpenter Corner	COLLAR R.L.(m) 100	DEPTH (m) 15·0	EL 1601
DATE 31/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE			LOGGED BY S. Kennedy	DATE 19/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	8·0	SANDSTONE, SAND brown mgr mod sort subang		1456	24·4	14·1	0·04	
1·5	3·0	7·0	SAND SILT brown silt→mgr poor sort subround		1262	23·5	29·4	0·03	
3·0	4·5	9·0	SANDSTONE (hard micaceous) grey mgr well sort subround		1275	31·5	8·4	0·03	
4·5	6·0	10·0	SAND yellow mgr/cgr poor sort subround		986	13·4	2·9	0·02	
6·0	7·5	10·0	" " " " " "		1025	7·3	2·8	0·29	A 0·02 TZRLG
7·5	9·0	10·0	SAND dark yellow mgr well sort round		1028	5·5	3·5	0·04	
9·0	10·5	10·0	SANDSTONE (hard) grey SAND yellow mgr mod sort subround		2218	13·7	5·1	0·03	
10·5	12·0	10·0	SANDSTONE grey SAND yellow mgr/cgr mod sort subround		1420	6·7	8·1	0·07	
12·0	13·5	10·0	SANDSTONE grey SAND orange fgr/cgr poor sort. subround		1982	5·9	9·7	0·11	
13·5	15·0	9·0	SAND red fgr well sort subround		1510	0·0	13·4	0·14	
							AVHM.	0·08	

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NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 094	LOCATION Traverse 10 Carpenter Corner	COLLAR R.L.(m) 100	DEPTH (m) 15.0	EL 1601
DATE 31/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 4.5–12.0	LOGGED BY S. Kennedy	DATE 19/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	3.0	SAND, CALCRETE brown fgr/mgr poor sort subang		0.0				
1.5	3.0	9.0	SAND, CALCRETE white, brown fgr/mgr poor sort subround		1705	9.6	30.8	0.0	
3.0	4.5	10.6	SAND white, orange mgr mod sort subround		1530	12.9	14.2	0.05	
4.5	6.0	10.0	SANDSTONE white mgr well sort round SAND		980	24.1	4.4	0.02	
6.0	7.5	10.6	SANDSTONE white mgr/cgr mod sort subround SAND		1501	19.3	4.3	0.04	
7.5	9.0	9.6	SANDSTONE white fgr/mgr mod sort subround SAND		1065	31.7	5.2	0.02	
9.0	10.5	9.0	SANDSTONE (hard) white yellow fgr/mgr mod sort subang SAND		1063	26.2	4.2	0.03	
10.5	12.0	9.0	SANDSTONE (hard) white yellow fgr/mgr well sort subround SAND		1340	35.1	5.3	0.10	
12.0	13.5	10.0	SANDSTONE (hard) brown mgr mod sort subround		1516	32.8	9.0	0.02	
13.5	15.0	5.0	" " " " "		1225	43.0	5.5	0.03	
							AV HM	0.04	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 095	LOCATION Traverse 10 Carpenter Corner	COLLAR R.L.(m) 100	DEPTH (m) 13.5	EL 1601
DATE 31/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE			LOGGED BY S. Kennedy	DATE 19/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	8·0	CALCRETE, SAND brown fgr→mgr poor sort subround		1432	16.1	21.3	0.04	
1·5	3·0	8·0	CALCRETE, SAND brown fgr→mgr poor sort subang		1305	29.3	22.8	0.05	
3·0	4·5	8·0	SAND orange fgr/mgr mod sort subround		1571	10.9	23.9	0.08	
4·5	6·0	9·0	SAND orange SANDSTONE white fgr/mgr mod sort subround		1550	18.5	10.4	0.06	
6·0	7·5	10.0	SAND brown mgr mod sort subround SANDSTONE (hard)		1632	23.0	4.8	0.14	A 0.06 I Z R
7·5	9·0	9·0	SANDSTONE (hard) brown mgr mod sort subround SAND yellow		1570	24.5	4.5	0.02	L G
9·0	10·5	10·0	SANDSTONE (hard) brown mgr mod sort subround SAND		1601	26.6	6.0	0.05	
10·5	12·0	10·0	SANDSTONE (hard) brown fgr/mgr mod sort subround		1532	42.4	8.3	0.11	
12·0	13·5	10·0	SANDSTONE (hard) brown fgr/mgr mod sort subround SAND		1872	37.9	6.9	0.11	
							AV HM	0·07	

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NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB096	LOCATION Traverse 10 Carpenter Corner	COLLAR R.L.(m) 100	DEPTH (m) 6.5	EL 1601
DATE 31/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE			LOGGED BY S. Kennedy	DATE 19/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	7.0	CALCRETE brown		1458	41.3	18.6	0.02	
1.5	3.0	6.0	CALCRETE brown		1031	43.1	24.4	0.13	
3.0	4.5	9.0	SANDSTONE (hard tubular) grey fgr/mgr modsort SAND subang		1702	20.8	12.9	0.05	
4.5	6.0	6.0	" " " "		958	35.9	10.6	0.04	
6.0	6.5	7.0	SANDSTONE (hard tubular) grey mgr modsort subang		980	45.3	11.5	0.03	
							AV HM	0.05	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 097	LOCATION Traverse 10 Carpenter Corner	COLLAR R.L.(m) 100	DEPTH (m) 15.0	EL 1601
DATE 31/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE			LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	5·0	SILT, SAND brown silt → fgr mod sort subang		1104	4·2	39·1	0·09	
1·5	3·0	7·0	DOLOMITE (sandy) brown vfgr → fgr poor sort ang SAND		1300	22·7	30·3	0·04	
3·0	4·5	8·0	" " " " " "		1172	40·8	19·5	0·02	
4·5	6·0	8·0	SAND orange fgr → mgr mod sort subround		1222	1·4	32·4	0·03	
6·0	7·5	9·0	SAND orange fgr → mgr mod sort subang SANDSTONE (hard) grey		1321	21·0	13·3	0·03	
7·5	9·0	10·0	SANDSTONE → SAND pink mgr mod sort subang		1396	34·5	8·2	0·03	
9·0	10·5	10·0	SANDSTONE pink, grey mgr well sort subround		1632	49·3	5·7	0·01	
10·5	12·0	9·0	SAND yellow fgr / mgr well sort subround		1309	4·1	4·4	0·07	
12·0	13·5	10·0	SAND yellow mgr well sort subround		1290	1·9	5·6	0·06	
13·5	15·0	10·0	" " " " "		2702	1·3	4·6	0·02	
							AV HM	0·04	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 098	LOCATION Traverse 10 Carpenter Corner	COLLAR R.L.(m) 100	DEPTH (m) 18.0	EL 1601
DATE 31/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 16.5-18.0	LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	9.0	DOLOMITE (sandy) grey, brown silt → fgr poor sort subang		1776	31.6	13.2	0.04	
1.5	3.0	9.0	DOLOMITE grey silt → fgr poor sort subang SAND, CLAY orange		1485	17.8	34.6	0.05	
3.0	4.5	8.0	SAND, CLAY brown silt → fgr poor sort ang IRONSTONE		1246	22.9	21.2	0.16	
4.5	6.0	9.0	SAND brown fgr → Cgr poorsort round		1564	7.1	7.1	0.05	
6.0	7.5	10.0	SAND → SANDSTONE light brown fgr/mgr modsort subround		1301	17.2	4.7	0.03	
7.5	9.0	10.0	SAND white fgr/mgr mod sort subround		1160	7.2	5.2	0.03	
9.0	10.5	10.0	SAND white fgr well sort subround		1221	2.2	6.7	0.04	
10.5	12.0	10.0	SAND white fgr/mgr mod sort subround		1988	0.2	9.2	0.04	
12.0	13.5	10.0	" " " " "		1651	1.2	5.1	0.03	
13.5	15.0	9.0	SAND white mgr mod sort subang		1844	0.7	4.7	0.05	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 098 (cont)	LOCATION Traverse 10 Carpenter Corner	COLLAR R.L.(m) 100	DEPTH (m) 18.0	EL 1601
DATE 31/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 16.5-18.0	LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
15.0	16.5	10.0	SAND brown fgr/mgr mod sort subang		2518	0.9	5.2	0.04	
16.5	18.0	10.0	SAND brown mgr mod sort subang		2608	0.7	6.3	0.03	
							AV HM	0.04	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 099	LOCATION Traverse 10 Carpenter Corner	COLLAR R.L.(m) 100	DEPTH (m) 15.0	EL 1601
DATE 31/08/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 10.5-12.0	LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	5.0	SILT, CALCRETE brown silt → fgr poorsort ang		820	23.8	19.8	0.06	
1.5	3.0	6.0	" " " " " "		1141	18.8	27.5	0.06	
3.0	4.5	9.0	SAND orange fgr mod sort subang		1625	7.3	31.2	0.00	
4.5	6.0	9.0	SAND orange fgr mod sort subround		1490	0.9	21.7	0.05	
6.0	7.5	9.0	SAND white mgr well sort subround SANDSTONE brown		1670	18.2	7.3	0.03	
7.5	9.0	10.0	SAND white mgr well sort subround SANDSTONE		2220	15.1	7.3	0.04	
9.0	10.5	9.0	SANDSTONE (tubular) white mgr well sort subround		1348	38.0	4.1	0.02	
10.5	12.0	12.0	SANDSTONE (tubular) white mgr well sort subround SAND		1778	16.4	5.4	0.04	
12.0	13.5	9.0	SANDSTONE (tubular) white fgr well sort subang SAND		1178	29.9	5.4	0.02	
13.5	15.0	10.0	" " " " " "		1150	13.0	4.9	0.03	
							AV HM	0.03	

TRAVERSE 11

EB 100 - EB 110

EL 1598

(YARRANA HILL)

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 100	LOCATION Traverse 11 Yaranna Hill	COLLAR R.L.(m) 168	DEPTH (m) 15.0	EL 1598
DATE 01/09/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 12.0-13.5	LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	5.0	SAND brown fgr/mgr poor sort subround		763	1.4	15.2	0.10	
1.5	3.0	9.0	SAND orange fgr/mgr poor sort subround		1644	9.1	20.7	0.11	
3.0	4.5	9.0	" " " " "		1772	9.0	31.5	0.07	
4.5	6.0	9.0	SAND orange to brown fgr well sort subround		1256	2.8	29.1	0.05	
6.0	7.5	8.0	SAND orange fgr/mgr mod sort subround		1316	2.0	31.0	0.07	
7.5	9.0	8.0	SAND orange fgr/mgr well sort subang		1638	0.4	24.5	0.05	
9.0	10.5	9.0	SAND orange mgr well sort subang		1353	4.8	20.5	0.09	
10.5	12.0	9.0	" " " " "		1835	0.1	3.1	0.06	
12.0	13.5	9.0	SAND orange/white mgr poor sort subround		2140	0.0	13.1	0.07	
13.5	15.0	9.0	SAND orange fgr/mgr mod sort subround		1926	0.4	11.5	0.09	
							AV HM	0.08	

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NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB101	LOCATION Traverse 11 Yaranna Hill	COLLAR R.L.(m) 160	DEPTH (m) 15.0	EL 1598
DATE 01/09/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 1.5-3.0	LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	5.0	SAND brown vfgr/fgr mod sort subang		891	3.0	35.8	0.03	
1.5	3.0	9.0	SAND orange fgr mod sort subang		1857	1.0	27.4	0.07	
3.0	4.5	7.0	SAND brown fgr/mgr mod sort subround		1554	3.3	29.2	0.03	
4.5	6.0	9.0	SAND brown m gr mod sort subround		1534	3.4	16.9	0.03	
6.0	7.5	8.0	SAND orange m gr mod sort subround		1936	5.8	23.6	0.03	
7.5	9.0	10.0	SILT, CALCRETE brown silt → mgr SAND poor sort subround		2285	4.2	29.0	0.03	
9.0	10.5	10.0	SAND orange fgr/m gr mod sort subround		2314	0.6	31.5	0.03	
10.5	12.0	10.0	SAND orange m gr mod sort subang		2383	1.5	32.1	0.04	
12.0	13.5	10.0	SAND orange m gr mod sort subround		1955	0.2	19.2	0.06	
13.5	15.0	11.0	SAND SILT red silt → mg mod sort subround		2324	1.2	33.6	0.07	
							AV HM	0.04	

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00078

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 102	LOCATION Traverse 11 Yaranna Hill	COLLAR R.L.(m) 152	DEPTH (m) 15.0	EL 1598
DATE 01/09/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE			LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	7.0	SAND, SILT brown silt → mgr poor sort subround		1501	1.8	35.5	0.02	
1.5	3.0	8.0	SAND, SILT CALCRETE brown silt → mgr poor sort subang		1640	5.7	34.2	0.03	
3.0	4.5	8.0	SAND orange fgr → mgr poor sort subround		2161	3.7	29.9	0.04	
4.5	6.0	8.0	SAND orange mgr mod sort subround		1806	2.4	24.9	0.03	
6.0	7.5	9.0	SAND orange fgr/mgr well sort subround		1968	0.1	24.2	0.06	
7.5	9.0	9.0	SAND orange fgr/mgr mod sort subround		2206	0.0	24.3	0.06	
9.0	10.5	9.0	SAND " " " "		1916	0.2	21.1	0.05	
10.5	12.0	10.0	SAND CLAY red fgr/mgr poor sort subang		2471	5.7	34.3	0.06	
12.0	13.5	10.0	CLAY SAND red silt → mgr poor sort subang		2218	14.7	51.1	0.06	
13.5	15.0	11.0	CLAY, SAND GRANITE BEDROCK red silt → mgr poor sort subang		1890	37.8	21.1	0.32	
							AV HM	0.05	0 – 13.5 m

000179

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 103	LOCATION Traverse 11 Yaranna Hill	COLLAR R.L.(m) 150	DEPTH (m) 15.0	EL 1598
DATE 01/09/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 6.0–7.5 m, 12.0–13.5 m	LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	6.0	SAND brown fgr/mgr mod sort subround		1452	0.5	31.4	0.03	
1.5	3.0	8.0	" " " " "		2187	0.0	41.2	0.03	
3.0	4.5	8.0	" " " " "		1975	0.0	38.3	0.03	
4.5	6.0	8.0	SAND orange mgr mod sort subround		0.0				
6.0	7.5	9.0	SAND red, orange fgr/mgr mod sort subround		1721	0.1	17.8	0.05	
7.5	9.0	10.0	SAND red fgr/mgr poor sort subround		2401	0.0	27.4	0.05	
9.0	10.5	9.0	SAND orange fgr/mgr mod sort subround		2026	0.0	38.0	0.02	
10.5	12.0	9.0	SAND orange mgr mod sort subround		2314	0.0	22.8	0.03	
12.0	13.5	10.0	" " " " "		2122	0.0	24.3	0.10	
13.5	15.0	10.0	SAND orange fgr/mgr mod sort subround		2095	0.5	33.4	0.06	
							AV HM	0.07	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 104	LOCATION Traverse 11 Yaranna Hill	COLLAR R.L.(m) 148	DEPTH (m) 15.0	EL 1598
DATE 01/09/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 0-1.5 m 13.5-15.0 m	LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	4.0	CALCAREOUS SAND brown, grey m gr mod sort subround		781	6.0	42.0	0.02	
1.5	3.0	7.0	CALCRETE, SAND orange, grey mgr poor sort subang		1307	20.4	23.8	0.00	
3.0	4.5	8.0	SAND orange m gr poor sort subround		1580	7.1	24.4	0.05	
4.5	6.0	9.0	SAND pink m gr mod sort subround		1709	0.1	11.3	0.03	
6.0	7.5	8.0	SAND orange m gr mod sort round		1200	0.9	17.9	0.06	
7.5	9.0	8.0	SAND orange fgr/mgr mod sort round		1496	0.0	18.3	0.10	
9.0	10.5	8.0	SAND orange mgr well sort round		1393	0.0	18.1	0.02	
10.5	12.0	9.0	SAND orange fgr well sort round		1711	0.0	11.6	0.02	I
12.0	13.5	9.0	SAND orange mgr well sort round		1535	0.0	16.8	0.11	A 0.07 Z R
13.5	15.0	10.0	SAND orange fgr/mgr mod sort subround		1693	0.0	21.4	0.07	L G
							AV HM	0.05	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 105	LOCATION Traverse 11 Yaranna Hill	COLLAR R.L.(m) 145	DEPTH (m) 21·0	EL 1598
DATE 01/09/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air Water used 4·5-6·0, 19·5-21·0
WATER TABLE		DK GRAINS 12·0-15·0	LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	5·0	CALCAREOUS SAND brown mgr/cgr poor sort subround		605	0.0	29.9	0.05	
1·5	3·0	7·0	SAND orange mgr mod sort subround		1360	4.2	42.5	0.04	
3·0	4·5	10·0	SAND, CLAY brown fgr/mgr poor sort subround		1283	17.0	27.1	0.05	
4·5	6·0	9·0	SAND, CLAY brown/orange mgr poor sort subround		1004	8.9	27.1	0.05	
6·0	7·5	8·0	SAND orange mgr mod sort subround		1265	0.6	18.9	0.03	
7·5	9·0	9·0	SAND orange mgr well sort round		1221	0.2	17.1	0.05	
9·0	10·5	9·0	SAND orange fgr/mgr mod sort subround		1324	0.2	27.1	0.05	
10·5	12·0	9·0	" " " " "		1054	0.1	16.8	0.03	
12·0	13·5	8·0	" " " " "		1079	0.1	15.4	0.05	
13·5	15·0	8·0	" " " " "		1119	0.1	13.0	0.03	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 105 (cont)	LOCATION Traverse 11 Yaranna Hill	COLLAR R.L.(m) 145	DEPTH (m) 21.0	EL 1598
DATE 01/09/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Water used 4.5-6.0 19.5-21.0 m
WATER TABLE		DK GRAINS 12.0-15.0	LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
15.0	16.5	8.0	SAND orange fgr/mgr mod sort subround		1669	0.2	18.8	0.04	
16.5	18.0	8.0	SAND orange fgr/mgr poor sort round		1159	0.0	19.1	0.05	
18.0	19.5	9.0	SAND orange fgr/mgr poor sort subround		1248	0.6	26.1	0.06	
19.5	21.0	11.0	SAND, CLAY red silt→mgr poor sort subround		1128	19.0	39.6	0.16	
							AV HM	0.06	

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 106	LOCATION Traverse 11 Yaranna Hill	COLLAR R.L.(m) 141	DEPTH (m) 15.0	EL 1598
DATE 01/09/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Water used 12.0–15.0
WATER TABLE		DK GRAINS 10.5–12.0	LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	6·0	SILT, SAND brown m gr mod sort subround		556	6.7	31.1	0.05	
1·5	3·0	7·0	SAND orange m gr mod sort subround		751	3.3	31.8	0.02	I
3·0	4·5	8·0	" " " " "		1103	4.1	29.8	0.21	A Z 0·07 R
4·5	6·0	8·0	" " " " "		1240	5.0	22.7	0.05	L G
6·0	7·5	8·0	" " " " "		1260	0.1	23.6	0.03	
7·5	9·0	9·0	" " " " "		1272	2.6	16.6	0.09	
9·0	10·5	8·0	" " " " "		1034	0.5	12.4	0.09	
10·5	12·0	9·0	" " " " "		1083	4.0	17.0	0.04	
12·0	13·5	11·0	SAND, CLAY red silt → cgr sub ang WEATHERED GRANITE		0.0				
13·5	15·0	10.0	SAND red silt → cgr KAOLINIZED GRANITE white		0.0				
							AV HM	0·07	

1036

00084

Page of

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 107	LOCATION Traverse 11 Yaranna Hill	COLLAR R.L.(m) 140	DEPTH (m) 15.0	EL 1598
DATE 01/09/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE			LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	5.0	CALCRETE, SAND orange silt → fgr poor sort subround		760	14.7	16.9	0.10	
1.5	3.0	8.0	SAND orange fgr mod sort subround		1335	0.5	24.6	0.12	
3.0	4.5	7.0	" " " " "		1300	0.9	20.9	0.00	
4.5	6.0	9.0	" " " " "		1473	0.5	26.3	0.07	
6.0	7.5	8.0	SAND orange fgr/mgr mod sort subround		1390	3.5	25.6	0.08	
7.5	9.0	11.0	SAND brown fgr/mgr poor sort ang FERRICRETE (hard)		1589	27.4	22.8	0.92	
9.0	10.5	13.0	KAOLINIZED GRANITE white cgr						
10.5	12.0	14.0	" " "						
12.0	13.5	13.0	" " "						
13.5	15.0	13.0	" " "						
							AV HM	0.22	

31046

00803

MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 108	LOCATION Traverse 11 Yaranna Hill	COLLAR R.L.(m) 145	DEPTH (m) 6.0	EL 1598
DATE 01/09/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE			LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	4·0	FERRICRETE brown m gr/c gr poor sort ang CALCRETE, SAND		688	0·9	30·1	0·08	
1·5	3·0	5·0	SAND orange f gr/m gr poor sort subang		1298	0·3	35·1	0·04	
3·0	4·5	9·0	SAND orange f gr well sort subang		1700	0·1	26·6	0·06	
4·5	6·0	10·0	SAND brown f gr/m gr poor sort subang WEATHERED GRANITE						
							AV HM	0·06	

NATIONAL

MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB 109	LOCATION Traverse 11 Yaranna Hill	COLLAR R.L.(m) 140	DEPTH (m) 12·0	EL 1598
DATE 01/09/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS A·5–9·0	LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1·5	4·0	CALCAREOUS SAND brown mgr mod sort subround		674	5·9	30·7	0·15	
1·5	3·0	5·0	" " " " "		554	13·9	35·3	0·05	
3·0	4·5	8·0	SAND orange mgr mod sort subround		1862	1·3	25·3	0·07	
4·5	6·0	8·0	" " " " "		1803	0·0	21·3	0·07	
6·0	7·5	9·6	" " " " "		2034	0·0	18·7	0·11	
7·5	9·0	10·0	" " " " "		1927	1·7	19·3	0·45	A 0·45 I Z R
9·0	10·5	13·0	SAND orange mgr mod sort subround CONGLOMERATE grey		2382	15·8	22·3	1·38	L G
10·5	12·0	11·0	CONGLOMERATE grey mgr/cgr poor sort ang (with limonite nodules)		0·0				
							AV HM	0·33	

18000

NATIONAL MINERAL SANDS PTY. LTD.

REVERSE CIRCULATION DRILLHOLE LOG

HOLE No. EB110	LOCATION Traverse 11 Yaranna Hill	COLLAR R.L.(m) 138	DEPTH (m) 15.0	EL 1598
DATE 01/09/89	CONTRACTOR Wallis	RIG Mantis 75	DRILLER A. Collison	AIR/WATER Air
WATER TABLE		DK GRAINS 4.5-9.0	LOGGED BY S. Kennedy	DATE 20/09/89

DEPTH (m) From	DEPTH (m) To	WT (kg)	LITHOLOGY	SAMPLE	WT (g)	PERCENT O/S +2mm	PERCENT SLIMES	PERCENT HM	PERCENT MINERALS
0	1.5	5.0	CALCRETE white silt → mgr poor sort subang SAND brown		620	24.4	21.8	0.08	
1.5	3.0	7.0	SAND brown fgr mod sort subang CALCRETE (minor) white		1050	12.4	22.4	0.06	
3.0	4.5	9.0	SAND orange fgr/mgr well sort round		1023	0.8	10.2	0.02	
4.5	6.0	8.0	SAND orange fgr/mgr well sort subround		1028	2.2	8.3	0.05	
6.0	7.5	9.0	SAND orange mgr well sort subround		1552	0.1	7.0	0.01	
7.5	9.0	8.0	" " " " "		945	0.3	9.6	0.05	
9.0	10.5	8.0	SAND, SILT red silt → mgr poor sort subround		1103	4.1	30.1	0.19	
10.5	12.0	8.0	SAND brown fgr → mgr poor sort ang CONGLOMERATE		0.0				
12.0	13.5	12.0	CONGLOMERATE brown c gr poor sort ang (ferruginous)		0.0				
13.5	15.0	9.0	GRANITE grey cgr (bleached, weathered)		1052	31.3	11.6	0.09	
							AV HM	0.07	

TRAVERSE 20

EB 320 - EB 330

EL 1600

(EURIA WELL)

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-320

DEPTH : 18m

DATE DRILLED: 11/9/90

	Nominal Collar		Surveyed Collar
	Easting	: 281349	Easting : 281380
	Northing	: 507851	Northing : 6508216
Proposed by : CWR	Reduced Level	: 59	Reduced Level :
Logged by : AJJ			Surveyed by : WW (GPS)
Contractor : Wallis		Rig : Mantis 75	

Reason for drilling : Start of Traverse 20.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
271927	0	2	0.3	20				f-m	m/p	Pale brown/pink dune sand + calcrete.	
271928	2	4	0.2	15				"	"	"	
271929	4	6	0.1	15				"	"	"	
271930	6	8	0.1	15				"	"	Dark red/brown ferruginized dune sand +	
271931	8	10	0.1	10				"	"	calcrete.	
271932	10	12	0.1	10	19.5	22.1	0.38	f+c	m	Red/pale brown fine sand + coarse lags.	(Cemented fine sands with coarse lags)
271933	12	14	2	5	8.5	19.4	0.92	m+c+f	m/p	Red/pale brown medium + coarse sand.	
271934	14	16			9.6	44.8	0.75			Brown/pink white weathered schist.	
271935	16	18								"	

Method: SEP Analyses by Amdel Limited
Detection Limit: N/A Quality: Accuracy +- 15%

06090

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.
PROSPECT: EURIA WELL 1600
HOLE No.: EB-321
DEPTH : 36m
DATE DRILLED: 11/9/90

Nominal Collar
Easting : 281781
Northing : 507836
Reduced Level : 59

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 400m east of EB-320.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
271936	0	2	0.2	20				f-m	m	Pale brown/pink dune sand + fine calcrete.	
271937	2	4	0.3	20				"	"	"	
271938	4	6	0.4	20				"	"	"	
271939	6	8	0.2	20				"	"	"	
271940	8	10	0.2	15				"	"	Pale pink/orange sand + calcrete nodules.	(Up to 30% calcrete nodules)
271941	10	12	0.2	15				"	m/p	"	"
271942	12	14	0.1	15				"	"	Ferruginized dune sand.	
271943	14	16	0.1	15				"	"	Dark red/brown sand and soft nodules.	
271944	16	18	0.1	2				f	w	Cemented fine sand.	(Ooldea. 70% cement)
271945	18	20	0.2	3				f-m+c	m/p	Fine-medium and angular-rounded lags.	(Poorly sorted)
271946	20	22	0.2	10				"	"	White/dark red as above.	
271947	22	24	0.2	15				"	m	Brown/white fine-medium sand + clay	
271948	24	26	0.1	15				f+m+c	m/p	(+ minor coarse).	
271949	26	28	0.1	20				"	p	"	
271950	28	30	0.2	30				"	"	"	
271951	30	32	0.3	70				vf-vc	"	Grey clay + angular quartz and micas.	(Heavies hornblendes?)
271952	32	34	0.4	70				"	"	"	
271953	34	36	0.4	70				"	"	"	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-322

DEPTH : 33m

DATE DRILLED: 12/9/90

Nominal Collar
Easting : 282174
Northing : 507839
Reduced Level : 62

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 800m east of EB-320.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
271954	0	2	0.2	20				f-m	m/p	Pale brown/pink dune sand + calcrete.	
271955	2	4	0.2	15				"	"	"	
271956	4	6	0.2	15				"	"	"	
271957	6	8	0.2	20				"	"	Dark red/brown dune sand, ferruginized.	(Soft clay rich nodules)
271958	8	10	0.1	10				"	"	"	"
271959	10	12	0.1	10				"		Orange dune sand.	
271960	12	14	0.1	5				"		Orange/white dune sand.	(Coarser fraction, not well rounded)
271961	14	16	0.1	5				"	m/p	Fine-medium sand + clay.	(15% cement)
271962	16	18	0.3	5				f	m	Yellow fine sand + minor clay.	
271963	18	20	0.3	5				f-m	m/p	Red/white fine-medium sand + minor clay.	(10% cement)
271964	20	22	0.1	10				f-m+vc	p	Dark red/brown fine-medium sand + angular granules.	
271965	22	24	0.1	10				f-m	"	"	
271966	24	26	0.1	10				"	"	"	
271967	26	28	0.1	10				"	"	Dark red fine-medium sand + angular granules.	
271968	28	30	0.2	20				vf-m+vc	vp	Dark red/pink clay - granules.	
271969	30	32	0.3	30				vf+vc	"	Pink/grey micaceous clay.	(Pyrite)
271970	32	33	0.1	40				"	"	Grey + angular quartz (weathered basement?)	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

26000

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-323

DEPTH : 28m

DATE DRILLED: 12/9/90

Nominal Collar
Easting : 282581
Northing : 507849
Reduced Level : 63

Surveyed Collar
Easting : 282676
Northing : 6508245
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 1200m east of EB-320.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
271971	0	2	0.2	20				f-m	m/p	Pale brown/pink dune sand + calcrete.	
271972	2	4	0.2	15				"	"	"	
271973	4	6	0.1	20				"	p	Ferruginized dune sand + clays.	
271974	6	8	0.1	10				f-m+vc	"	Orange dune sand + abundant coarse angular	
271975	8	10	0.1	5				"	"	granule lags.	
271976	10	12	0.1	5				"	"	Pale orange brown sand.	
271977	12	14	0.2	5				f+c	m/w	Pink/brown fine sand + minor coarse.	(Cemented fine sand)
271978	14	16	0.4	5				f	w	Pale yellow fine sand.	(Clays product of desilicification)
271979	16	18	0.3	5				f-m	m/w	Pink fine-medium sand.	"
271980	18	20	0.2	5				"	"	Dark red fine-medium sand.	"
271981	20	22	0.1	5				"	"	Pink fine-medium sand.	
271982	22	24	0.2	5				"	"	Dark yellow/red/brown fine-medium sand.	(Minor muscovite flakes)
271983	24	26	0.1					f+vc	p	Dark brown/black fine sand + angular granules.	(Matrix support)
271984	26	28	0.1					"	"	"	(Matrix/clast support)
										Hole ended in granule stone.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00093

GEOPEKO
HEAVY MINERALS DRILL LOG

PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-324

DEPTH : 20m

DATE DRILLED: 12/9/90

Nominal Collar
Easting : 282976
Northing : 507848
Reduced Level : 64

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 1600m east of EB-320.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
271985	0	2	0.1	15				f-m	m/p	Pale brown/pink dune sand + calcrete.	
271986	2	4	0.1	15				"	"	"	
271987	4	6	0.2	15				"	"	"	(60% calcrete pisolites)
271988	6	8	0.2	20				f-m+c	p	Dark red/brown ferruginized dune sand.	(Clay rich dune sand)
271989	8	10	0.1	20				"	"	"	"
271990	10	12	0.1	10				"	"	Orange dune sand + angular lags.	
271991	12	14	0.1	30				vf-vc	"	White pale brown clay - angular granules.	
271992	14	16	0.1	40				"	"	"	
271993	16	18								White/pale yellow weathered granite.	
271994	18	20								"	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-325

DEPTH : 6m

DATE DRILLED: 12/9/90

Nominal Collar
Easting : 283361
Northing : 507848
Reduced Level : 65

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 2000m east of EB-320.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
271995	0	2	0.2	20				vf-vc	p	Pale brown/pink very fine-very coarse (~4mm) angular granules. Very hard cemented clast support and matrix micaceous.	(Cemented and very hard close to basement)
271996	2	4	0.1	20				"	"		
271997	4	6	0.1	20				"	"		

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00095

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-326

DEPTH : 7m

DATE DRILLED: 12/9/90

	Nominal Collar		Surveyed Collar	
	Easting	: 283758	Easting	:
	Northing	: 507855	Northing	:
Proposed by : CWR	Reduced Level	: 66	Reduced Level	:
Logged by : AJJ			Surveyed by	:
Contractor : Wallis		Rig : Mantis 75		

Reason for drilling : 2400m east of EB-320.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
271998	0	2	0.1	15				f-m	m	Pale brown/pink dune sand + calcrete.	
271999	2	4	0.1	15				"	"	"	
272000	4	6	0.1	10				f-vc	m/p	Brown fine sand + angular granules.	
272001	6	7	0.1	5				"	"	"	(Silicified and hard) Basement close)

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00096

GEOPEKO
HEAVY
MINERALS
DRILL LOG
PERTH

Nominal Collar		Surveyed Collar	
Easting	: 284180	Easting	: 284251
Northing	: 507863	Northing	: 6508282
Reduced Level	: 62	Reduced Level	:
		Surveyed by	: WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis Rig : Mantis 75
Reason for drilling : 2800m east of EB-320.

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-327

DEPTH : 5m

DATE DRILLED: 12/9/90

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272002	0	2	0.1					f-m	p	Residual soils + red/brown dune sand.	
272003	2	4								Pale green saprolite.	
272004	4	5								Fresh green/grey granite.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00097

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-328

DEPTH : 7m

DATE DRILLED: 12/9/90

Nominal Collar
Easting : 284565
Northing : 507863
Reduced Level : 65

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 3200m east of EB-320.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272005	0	2	0.1	15				f-m	m/w	Pale brown/orange fine-medium sand.	
272006	2	4	0.1	15				"	"	"	
272007	4	6	0.2	10				"	"	Orange fine-medium sand.	
272008	6	7	0.1					f-vc	p	Red/orange poorly sorted fine sand and angular granules.	(Calcrete and silica cement, very hard)

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00098

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-329

DEPTH : 9m

DATE DRILLED: 12/9/90

Nominal Collar			Surveyed Collar	
Easting	:	284968	Easting	:
Northing	:	507855	Northing	:
Reduced Level	:	64	Reduced Level	:
			Surveyed by	:

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis Rig : Mantis 75
Reason for drilling : 3600m east of EB-320.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272009	0	2		15				f-m	m	Pale orange/red dune sand + calcrete.	
272010	2	4		20				"	m/p	Ferruginized dune sand.	
272011	4	6		15				f-m+c	p	"	(Cemented)
272012	6	8		10				vf-vc	"	White kaolinitic sand.	"
272013	8	9								Weathered granite (white).	"

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

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GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-330

DEPTH : 8m

DATE DRILLED: 12/9/90

Nominal Collar
Easting : 285363
Northing : 507852
Reduced Level : 60

Surveyed Collar
Easting : 285405
Northing : 6508291
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 4000m east of EB-320.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272014	0	2	0.1	15				f-m	p	Hard calcrete.	(Very cemented (hard))
272015	2	4	0.1	15				"	"	Red/brown ferruginized fine-medium sand	"
272016	4	6	0.2	10				"	"	+ granules.	
272017	6	8	0.1					"	"	White/dark red ferruginized fine-medium sand	(Minor mica)
										+ granules.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00100

TRAVERSE 7/8 EXT.

EB 331 - EB 341

EL 1600

(EURIA WELL)

PERTH

GEOPEKO
HEAVY MINERALS DRILL LOG

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-331

DEPTH : 30m

DATE DRILLED: 13/9/90

Nominal Collar
Easting : 281905
Northing : 503845
Reduced Level : 64

Surveyed Collar
Easting : 281937
Northing : 6503991
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis Rig : Mantis 75
Reason for drilling : Start of Traverse 7/8 extension.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272018	0	2	0.2	20				f-m	m	Pale brown/pink dune sand + fine calcrete.	
272019	2	4	0.2	20							
272020	4	6	0.2	15				f-m	m/p	Ferruginized dune sand.	(Clay nodules)
272021	6	8	0.3					vf-f	p	Pale brown/yellow fine sand and clay.	(2m hard silicified fine sand/claystone)
272022	8	10	0.1	30				"	"	Pale brown/pink fine sand - clay.	
272023	10	12	0.1	30				"	"	Pale brown/pink fine sand + clay.	
272024	12	14	1	40	12	34.2	2.7	vf-c	"	Pink-brown gypsum, micas + minor angular	(Heavy minerals not ilmenites zircons etc
272025	14	16	2	40	6.3	22.1	2.36	"	"	coarse grained lags.	but iron rich silicates and (micas)
272026	16	18	3	40	12.6	17.4	2.36	"	vp	Weathering product.	iron oxides (black))
272027	18	20	3	50	19.7	17.4	6.35			Weathered basement (brown).	
272028	20	22								"	
272029	22	24								Yellow.	
272030	24	26								Purple.	
272031	26	28									
272032	28	30									

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

20102

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

Nominal Collar		Surveyed Collar	
Easting	: 282273	Easting	:
Northing	: 503792	Northing	:
Reduced Level	: 65	Reduced Level	:
		Surveyed by	:

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis Rig : Mantis 75
Reason for drilling : 4000m east of EB-331.

PROJECT : CEDUNA J.V.
PROSPECT: EURIA WELL 1600
HOLE No.: EB-332
DEPTH : 12m
DATE DRILLED: 13/9/90

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272033	0	2	0.1	20				vf-f	m	Pale brown/pink dune sand + fine calcrete.	
272034	2	4	0.1	20				"	"	"	
272035	4	6	0.1	15				"	"	"	(40% calcrete pisolites)
272036	6	8	0.2	10				f	w	Pale orange/orange fine dune sand.	(Minor lag layer)
272037	8	10	0.1	10				"	"	"	
272038	10	12	0.1					f-vc	vp	Dark brown ferruginized fine sand - angular granules + litho clasts (granitic).	

Method: SEP Analyses by Amdel Limited
Detection Limit: N/A Quality: Accuracy +- 15%

00103

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-333

DEPTH : 6m

DATE DRILLED: 13/9/90

Nominal Collar		Surveyed Collar	
Easting	: 282694	Easting	:
Northing	: 503765	Northing	:
Reduced Level	: 66	Reduced Level	:
		Surveyed by	:

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis Rig : Mantis 75
Reason for drilling : 800m east of EB-331.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272039	0	2	0.1					vf-m	m	Pale brown/pink dune sand + fine calcrete.	
272040	2	4	0.1					"	"	"	
272041	4	6	0.1					f-vc	p	Ferruginized breccia containing laterite pisolites and quartz fragments, average size ~5-10mm and minor granules clasts.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00104

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-334

DEPTH : 9m

DATE DRILLED: 13/9/90

Nominal Collar
Easting : 283114
Northing : 503750
Reduced Level : 68

Surveyed Collar
Easting : 283110
Northing : 6503914
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 1200m east of EB-331.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272042	0	2	0.1	20				vf-m	m	Pale brown/pink dune sand + fine calcrete.	
272043	2	4	0.1	20				"	"	"	
272044	4	6	0.1	15				f-vc	p	Fine sand + angular granules.	
272045	6	8	0.1	15				"	"	Dark orange fine sand + angular granules.	
272046	8	9	0.1	10				"	"	Transported laterite pisolites.	(Cemented)

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00103

PERTH

GEOPEKO
HEAVY MINERALS DRILL LOG

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-335

DEPTH : 7m

DATE DRILLED: 13/9/90

	Nominal Collar		Surveyed Collar
	Easting :	283507	Easting :
	Northing :	503727	Northing :
Proposed by : CWR	Reduced Level :	69	Reduced Level :
Logged by : AJJ			Surveyed by :
Contractor : Wallis		Rig : Mantis 75	

Reason for drilling : 1600m east of EB-331.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272047	0	2	0.1	20				vf-m	m	Pale brown/pink dune sand + fine calcrete.	(Minor lags)
272048	2	4	0.1	20				"	"	"	
272049	4	6	0.1	15				f-vc	p	Red/brown poorly sorted fine sand - granules	
272050	6	7	0.1	15				"	"	+ laterite pisolites.	

Method: SEP

Detection Limit: N/A

Analyses by Amdel Limited

Quality: Accuracy +- 15%

00106

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-336

DEPTH : 27m

DATE DRILLED: 13/9/90

Nominal Collar
Easting : 283884
Northing : 503709
Reduced Level : 68

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 2000m east of EB-331.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272051	0	2	0.2	20				f-m+c	m	Pale brown/pink dune sand + fine calcrete.	(Minor <5% coarse sand lags)
272052	2	4	0.1	20				f-m	"	"	"
272053	4	6	0.2	20				"	"	"	"
272054	6	8	0.2	10				"	w	Orange dune sand.	"
272055	8	10	0.3	5				f+c	"	Pale yellow fine dune sand (Ooldea?).	(Cemented horizon)
272056	10	12	0.1	3				f	"	"	(Minor cement <10%)
272057	12	14	0.2	3				"	"	Orange/pink fine dune sand.	"
272058	14	16	0.2	3				"	"	"	
272059	16	18	0.1	99				vf	"	Dark green/grey clay + minor angular quartz.	
272060	18	20	0.1	99				"	"	"	
272061	20	22	0.1	80				vf-vc	p	Transition to granules.	
272062	22	24								White/pink very weathered.	
272063	24	26									
272064	26	27									

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00107

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-337

DEPTH : 18m

DATE DRILLED: 13/9/90

Nominal Collar
Easting : 284302
Northing : 503672
Reduced Level : 66

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 2400m east of EB-331.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272065	0	2	0.2	20				f-m	p	Pale brown/pink calcrete + dune sand.	(>50% calcrete nodules)
272066	2	4	0.2	20				"	"	"	"
272067	4	6	0.1	60				vf+m	vp	Dark red/brown ferruginized dune sand + clay.	(Clay rich)
272068	6	8	0.2	10				f	w	Fine sand.	(Cemented)
272069	8	10	0.2	3				"	"	(Cemented Ooldea?).	(<10% cement)
272070	10	12	0.2	2				"	"	"	"
272071	12	14	0.1	10				vf-f	m	Fine sand + clay.	
272072	14	16	0.1	90				vf+c	m/w	Clay (pale green) minor granules.	
272073	16	18	0.1	20				vf-c	p	Clay + ending in coarse sand and angular granules.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-338

DEPTH : 12m

DATE DRILLED: 13/9/90

Nominal Collar
Easting : 284690
Northing : 503654
Reduced Level : 68

Surveyed Collar
Easting : 284651
Northing : 6503811
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 2800m east of EB-331.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272074	0	2	0.1	15				vf-m	p	Calcrete + dune sand.	
272075	2	4	0.2	10				f	w	Yellow/brown cemented fine sand.	(Cemented)
272076	4	6	0.2	2				"	"	White well sorted fine sand (Ooldea).	(Very hard. Re-entered with rollar bit
272077	6	8	0.3	0				"	"	"	sample taken at ~5m)
272078	8	10	0.3	1				f+c	w/m	White/pink fine + coarse sand - clay.	(Transition to clays)
272079	10	12	0.2	15				vf-f+c	m/p	Pink/pale green fine sand + clays + minor granules often well rounded.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00109

PERTH

GEOPEKO
HEAVY MINERALS DRILL LOG

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-339

DEPTH : 14m

DATE DRILLED: 13/9/90

Nominal Collar
Easting : 285080
Northing : 503634
Reduced Level : 70

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 3200m east of EB-331.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272080	0	2	0.2	15				vf-m	p	Calcrete + dune sand.	(Hard calcrete)
272081	2	4	0.3	2				f	w	Pale yellow/white fine sand (Ooldea).	(Hard and cemented + minor ferruginization)
272082	4	6	0.2	2				"	"	"	
272083	6	8	0.2	2				vf-vc	p	Transition to clay and fine sand	(Ooldea at ~1.2m)
272084	8	10	0.2	20				"	"	+ angular granules.	
272085	10	12	0.1	30				"	"	"	
272086	12	14								Weathered pink/white granite.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00110

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-340

DEPTH : 14m

DATE DRILLED: 14/9/90

Nominal Collar
Easting : 285493
Northing : 503606
Reduced Level : 72

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 3600m east of EB-331.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272087	0	2	0.2	15				f-m	m/p	Calcrete + dune sand.	
272088	2	4	0.2	1				f	w	Pink/white cemented fine sand.	(Cemented Ooldea @ ~ 2.5 - 3m)
272089	4	6	0.2	1				"	"	Pink/yellow/white cemented fine sand.	
272090	6	8	0.2	1				f+c	"	"	(At contact have well rounded coarse grained lags)
272091	8	10	0.1	30				vf-f+c	p	Green/brown fine sand, silt and clays.	
272092	10	12	0.1	20				vf-f		Brown/yellow fine sand + granules + clay.	
272093	12	14	0.1	40				"		Weathered basement.	(Sample (core) taken)

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00111

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-341

DEPTH : 7m

DATE DRILLED: 14/9/90

	Nominal Collar		Surveyed Collar	
	Easting	: 285876	Easting	: 285804
	Northing	: 503583	Northing	: 6503740
Proposed by : CWR	Reduced Level	: 76	Reduced Level	:
Logged by : AJJ			Surveyed by	: WW (GPS)
Contractor : Wallis		Rig : Mantis 75		

Reason for drilling : 4000m east of EB-331.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272094	0	2	0.1	15				f-m	m/p	Calcrete + dune sand.	(Abundant loose pisolites)
272095	2	4	0.2	5				f	m/w	Calcrete/fine cemented sand. Transition.	
272096	4	6	0.1	3				"	"	"	(Hole abandoned. Pisolites falling down hole)
272097	6	7	0.2	2							

Method: SEP Analyses by Amdel Limited
Detection Limit: N/A Quality: Accuracy +- 15%

00112

TRAVERSE 21

EB 342 - EB 363

EL 1600

(EURIA WELL)

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-342

DEPTH : 32m

DATE DRILLED: 15/9/90

Nominal Collar
Easting : 309628
Northing : 497475
Reduced Level : 59

Surveyed Collar
Easting : 309712
Northing : 6497534
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : Start of Traverse 21.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272098	0	2	0.1					vf-m	m/p	Pink/white hard calcrete + dune sand.	
272099	2	4	0.1	20				"	p	Red/brown ferruginized dune sand + clay.	
272100	4	6	0.1	3				f	w	Red/pale yellow silicified fine sand.	(Hard and cemented)
272101	6	8	0.1	2				"	"	Pale yellow/white (Ooldea?).	(Partially cemented)
272102	8	10	0.1	50				vf/f	m/w	Pale green silt + clay.	
272103	10	12	0.1	20				vf/f+c	p	Pale green/white clay + fine sand.	
272104	12	14	0.1	15				"	"	Yellow fine sand + medium and coarse.	(Coarser fraction angular)
272105	14	16	0.1	3				c-f	"	Pink/brown fine-coarse sand.	(Fluvials?)
272106	16	18	0.1	3				"	"	Brown/yellow fine-coarse sand.	"
272107	18	20	0.1	3				"	"	"	"
272108	20	22	0.3	5				f-m	w	Yellow fine-medium sand.	(Minor mica)
272109	22	24	0.3	5				"	"	Yellow/white fine-medium sand.	"
272110	24	26	0.2	3				m+f	"	Yellow/pale yellow medium + fine sand.	
272111	26	28	0.2	3				m	"	"	
272112	28	30	0.3	2	0.2	1.4	0.12	"	"	Pink/white medium sand.	(Clean well sorted)
272113	30	32	0.5	2	1.1	3.2	0.27	f-m	"	Yellow/red fine-medium sand.	(1% mica)

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00114

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-343

DEPTH : 31m

DATE DRILLED: 15/9/90

Nominal Collar
Easting : 309721
Northing : 497872
Reduced Level : 61

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 400m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272114	0	2	0.1					vf-m	p	Pink/white hard calcrete.	
272115	2	4	0.1					f	m/w	White/brown silicified and ferruginized	(Silicified)
272116	4	6	0.1					"	"	Ooldea?	"
272117	6	8	0.1	40				vf-f	p	Pale green fine sand + clay.	(Fining up)
272118	8	10	0.1	10				"	m/p	Pale yellow/brown fine sand + clay.	"
272119	10	12	0.2	10				vf-f+c	m	Pink/white fine sand + clay + coarse lags.	"
272120	12	14	0.2	5				f+c	m/p	Pink/grey fine sand + lags.	"
272121	14	16	0.1	2				f-c	"	Pink fine-coarse sand.	(Fluvials?)
272122	16	18	0.1	2				"	"	Grey fine-coarse sand.	
272123	18	20	0.1	1				m+f	m/w	Grey/yellow medium sand.	(Gradual increase in clay content)
272124	20	22	0.1	1				m	"	Grey (clean) medium sand.	
272125	22	24	0.1	2				"	"	Grey/yellow medium sand.	(1% micas)
272126	24	26	0.1	3				"	"	Yellow/orange medium sand.	
272127	26	28	0.1	3				"	"	"	
272128	28	30	0.1	5				m+c	m/p	Red/orange medium + coarse sand.	
272129	30	31	0.1	10				m-vc	p	Yellow/brown medium-very coarse sand.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-344

DEPTH : 26m

DATE DRILLED: 15/9/90

Nominal Collar
Easting : 309802
Northing : 498248
Reduced Level : 65

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 800m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272130	0	2	0.1	20				vf-m	m/p	Hard calcrete + dune sand.	
272131	2	4	0.1	20				"	"	Calcrete + ferruginized dune sand.	(Clay rich)
272132	4	6	0.1	5				f	w	Pink/white silicified fine grained sand.	
272133	6	8	0.1	3				"	"	"	
272134	8	10	0.1	60				vf-f	m/p	Pale green fine sand + clay.	
272135	10	12	0.1	5				f+c	w/m	Pale pink fine sand + minor lags.	(Lags often well rounded)
272136	12	14	0.1	3				f	"	White fine sand + minor clay.	"
272137	14	16	0.1	2				"	"	"	(Micaceous (<5% micas))
272138	16	18	0.2	2				m+f+c	m	Pale pink medium sand + coarse + fine.	"
272139	18	20	0.2	3				"	"	"	"
272140	20	22	0.2					vf-vc	p	Pale pink poorly sorted fine sand to granules.	"
272141	22	24	0.2					"	"	Pale yellow poorly sorted fine sand to granules.	"
272142	24	26								Weathered basement.	"

Method: SEP
Detection Limit: N/A

Analyses by Andel Limited
Quality: Accuracy +- 15%

00116

GEOPEKO
HEAVY MINERALS DRILL LOG

PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-345

DEPTH : 15m

DATE DRILLED: 16/9/90

Nominal Collar
Easting : 309950
Northing : 499023
Reduced Level : 74

Surveyed Collar
Easting : 310112
Northing : 6499007
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis Rig : Mantis 75
Reason for drilling : 1600m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272143	0	2	0.1	10				f-m	m/p	Pink white/orange hard calcrete.	(Dune sand + calcrete)
272144	2	4	0.1	15				"	m	Ferruginized + clays.	"
272145	4	6	0.1	10				f	w	Black/dark orange ferruginized sand.	(Cemented Ooldea?)
272146	6	8	0.2					"	"	Pink/white hard silicified fine sand.	"
272147	8	10	0.3		32	9.2	0.36	"	"	"	"
272148	10	12	0.7	3	10.6	12.5	0.51	"	"	Orange/pink fine sand.	(Minor cement)
272149	12	14	1	10	3.3	10	0.6	f-vf	"	Orange/yellow very fine sand/silt.	(Free flowing)
272150	14	15	0.1					vf-f	"	From 13.5m cemented siltstone/mudstone. Fine scale cross-bedding.	(Cemented)

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00117

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-346

DEPTH : 28.5m

DATE DRILLED: 16/9/90

Nominal Collar
Easting : 310150
Northing : 499799
Reduced Level : 84

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis Rig : Mantis 75
Reason for drilling : 2400m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272151	0	2	0.1	20				vf-m	p/m	Pink/white calcrete + dune sand.	(Quaternary dune)
272152	2	4	0.1	20				"	"	"	"
272153	4	6	0.2	10				f-m	m	Red/orange dune sand.	"
272154	6	8	0.2	5				"	m/w	"	"
272155	8	10	0.2	3				"	"	Orange dune sand.	"
272156	10	12	0.2	3				"	"	"	"
272157	12	14	0.3	3				f+c	m	Pale brown/orange silicified fine sand.	(Silicified Ooldea and transition to fluvials)
272158	14	16	0.2	5	12.1	44.5	0.1	f-c+vc	p	Pale yellow/orange fine-coarse sand + granules.	(Increase in clay content)
272159	16	18	0.2	5	6.6	17.7	0.59	"	w	Pale yellow transition.	(Fluvials)
272160	18	20	1.5	5	4.7	10.5	0.8	f	"	Orange/pink fine sand + minor coarse lags.	(Coarse grains sub angular-well rounded)
272161	20	22	1	5	1.1	10.1	0.98	"	"	Brown/yellow fine sand + minor clay.	
272162	22	24	0.7	10	0.5	12.1	0.63	f+vf	"	Red/pink fine sand + clay.	
272163	24	26	0.2	10	36.8	14.7	0.39	"	"	Pale brown/pink fine sand.	(Minor cement)
272164	26	28	0.2	10	31	15.5	0.17	"	"	Pale brown/pink/white fine sand.	"
272165	28	28.5						m-c	"	Dark brown/black ferruginized medium-coarse sand.	(28.5m cemented)
										Core sample taken at 28.5m.	

DUPLICATES

259681	18	20			2.79	11.76	0.67				

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00118

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-347

DEPTH : 9m

DATE DRILLED: 16/9/90

Nominal Collar
Easting : 310230
Northing : 500203
Reduced Level : 88

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 2800m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272166	0	2	0.2	10				f-m	m/p	Pale pink/brown dune sand + fine calcrete.	(Minor calcrete nodules)
272167	2	4	0.1	15				"	"	"	"
272168	4	6	0.2	20				"	p	Dark red/brown ferruginized dune sand + clay.	(Collared just before topo high)
272169	6	8	0.2	10				"	"	"	
272170	8	9	0.2	2				f-vc	"	Silicified breccia fine grained matrix. Pale brown basement schist.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00119

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-348

DEPTH : 13m

DATE DRILLED: 16/9/90

Nominal Collar
Easting : 310326
Northing : 500607
Reduced Level : 86

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 3200m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272171	0	2	0.2	25				f-m	m/p	Pale brown/pink dune sand + fine calcrete.	(EB-348 collared ~250m from crest of hill)
272172	2	4	0.1	15				"	"	Dark red/brown ferruginized clay rich dune sand.	
272173	4	6	0.2	10				"	m	Orange/red dune sand.	
272174	6	8	0.2	5				"	"	"	(>50% of HMs comprise zircons)
272175	8	10	0.3	3				"	"	"	
272176	10	12	0.1	2				f	w	Silicified Ooldea.	(From 10.5m very hard and silicified)
272177	12	13								Pink weathered basement schist.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00120

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-349

DEPTH : 13m

DATE DRILLED: 16/9/90

Nominal Collar
Easting : 310421
Northing : 500976
Reduced Level : 80

Surveyed Collar
Easting : 310621
Northing : 6500848
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 3600m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272178	0	2	0.1	15				vf-m	m/p	Pale brown/pink calcrete + dune sand.	
272179	2	4	0.2	20				"	"	Ferruginized dune sand + clay.	
272180	4	6	0.2	10				f-m+c	m/w	Orange/red dune sand.	(Much of HM comprising zircon)
272181	6	8	0.2	5				f-m	"	"	
272182	8	10	0.2	3				"	"	"	
272183	10	12	0.2	3				"	"	Orange/yellow dune sand.	
272184	12	13						f-vc	p	Dark brown silicified and ferruginized poorly sorted fine sand and granules.	(From 12.5m very hard layer)

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00121

PERTH

GEOPEKO
HEAVY MINERALS DRILL LOG

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-350

DEPTH : 12m

DATE DRILLED: 16/9/90

	Nominal Collar		Surveyed Collar		
	Easting	: 310514	Easting	:	
	Northing	: 501360	Northing	:	
Proposed by : CWR	Reduced Level	: 76	Reduced Level	:	
Logged by : AJJ			Surveyed by	:	
Contractor : Wallis		Rig : Mantis 75			

Reason for drilling : 4000m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272185	0	2	0.2	20				vf-m	m/p	Pink/white calcrete + dune sand.	
272186	2	4	0.1	15				"	"	"	
272187	4	6	0.2	20				f-m+c	m	Ferruginized dune sand + clays.	(5% coarse sand lags)
272188	6	8	0.2	10				f-m	"	Orange dune sand.	"
272189	8	10	0.2	3				"	"	"	"
272190	10	12	0.1	3				f-vc	p	Brown ferruginized and silicified fine-very coarse poorly sorted sand/granules.	(Cemented)

Method: SEP Analyses by Amdel Limited

Detection Limit: N/A Quality: Accuracy +- 15%

00122

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-351

DEPTH : 5m

DATE DRILLED: 16/9/90

Nominal Collar
Easting : 310607
Northing : 501747
Reduced Level : 75

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 4400m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272191	0	2	0.1	15				vf-m	m/p	Pink/white hard calcrete.	
272192	2	4	0.2	20				"	"	Dark red/brown ferruginized dune sand + clay.	(Clays soft)
272193	4	5						f-m/c	"	Red/white hard silicified fine-medium and coarse siltstone.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00123

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-352

DEPTH : 10m

DATE DRILLED: 16/9/90

Nominal Collar
Easting : 310712
Northing : 502166
Reduced Level : 79

Surveyed Collar
Easting : 310866
Northing : 6501981
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 4800m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272194	0	2	0.1	20				vf-m	p	0 - 3m hard calcrete + dune sand.	
272195	2	4	0.2	15				"	"	"	
272196	4	6	0.2	5				f-m	m/w	Orange dune sand.	(>50% of HMs = zircon)
272197	6	8	0.2	3				"	"	"	
272198	8	10	0.1					f	w	Red/brown/white very hard silicified fine grained siltstone.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00124

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-353

DEPTH : 27m

DATE DRILLED: 16/9/90

Nominal Collar
Easting : 310802
Northing : 502533
Reduced Level : 82

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 5200m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272199	0	2	0.2	1				f-m	w	Pale brown clean dune sand.	(Hole collared on top of dune crest,
272200	2	4	0.2	10				"	m	Pale brown/pink dune sand top + fine calcrete.	high point in area)
272201	4	6	0.2	10				"	"	"	
272202	6	8	0.1	10				"	m/w	Red/brown dune sand.	
272203	8	10	0.2	5				"	"	Orange/red dune sand.	
272204	10	12	0.1	2				f	w	White/pink silicified fine sand.	(Hard and silicified)
272205	12	14	0.1	2				"	"	"	"
272206	14	16	0.1	5				f-m	m/w	Brown/yellow fine-medium sand.	
272207	16	18	0.1	3				f-m+c	"	Orange/yellow fine-medium sand.	(Coarse fraction SR-well rounded)
272208	18	20	0.1	15				vf-m+c	m	Orange/white very fine-medium sand + coarse.	(Coarse grains well rounded.
272209	20	22	0.1	30				vf-vc	p	White/pale yellow clay - coarse sand.	Rapid increase in clay content)
272210	22	24	0.1	30				"	"	"	
272211	24	26	0.1	30				"	"	"	
272212	26	27	0.1	10				vf-c	"	Pink fine-coarse sand.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00125

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-354

DEPTH : 11m

DATE DRILLED: 17/9/90

	Nominal Collar		Surveyed Collar	
	Easting	: 310996	Easting	:
	Northing	: 503291	Northing	:
Proposed by : CWR	Reduced Level	: 79	Reduced Level	:
Logged by : AJJ			Surveyed by	:
Contractor : Wallis		Rig : Mantis 75		

Reason for drilling : 6000m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272213	0	2	0.1					vf-m	p	White/pink hard calcrete + dune sand.	
272214	2	4	0.1					"	"	"	
272215	4	6	0.1	10				f-m	m/p	Red/brown ferruginized dune sand.	
272216	6	8	0.2	5				"	"	Orange red dune sand.	
272217	8	10	0.2					f+m	m/w	Pale brown silicified fine sand.	(Very hard and silicified)
272218	10	11	0.1					vf-vc	p	Pale brown/pink poorly sorted coarse sands (fluvial).	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00126

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-355

DEPTH : 15m

DATE DRILLED: 17/9/90

Nominal Collar
Easting : 311171
Northing : 504074
Reduced Level : 83

Surveyed Collar
Easting : 311416
Northing : 6503818
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 6800m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272219	0	2	0.1	20				vf-m	p	Pink/white hard calcrete + dune sand.	
272220	2	4	0.2	20				"	"	"	
272221	4	6	0.2	10				f-m	m	Orange dune sand.	
272222	6	8	0.2	5				f-c	p	Pale orange fine-coarse sand.	(Poorly sorted sands most coarse
272223	8	10	0.2	5				"	"	Pale orange/yellow fine-coarse sand.	fraction angular)
272224	10	12	0.2	2	17.6	4	0.41	f	w	Pale yellow fine sand.	(Fine cemented sands)
272225	12	14	0.4	2	23.2	4.6	0.38	"	"	Pale yellow Ooldea.	(HM kick)
272226	14	15	0.3		37.6	4.6	0.31	"	"	Pink/white Ooldea.	
										Sample very silicified and hard.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00127

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-356

DEPTH : 24m

DATE DRILLED: 17/9/90

Nominal Collar
Easting : 311349
Northing : 504854
Reduced Level : 90

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 7600m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272227	0	2	0.1	20				vf-m	p	White/pale brown dune sand.	
272228	2	4	0.1	20				"	"	Pink/white dune sand + calcrete.	
272229	4	6	0.2	10				f-m	m	Red-brown dune sand.	
272230	6	8	0.2	5				f-m-c	p	Orange fine-coarse sand.	(Dune sands + abundant lags coarse
272231	8	10	0.2	5				"	"	"	fraction angular to well rounded)
272232	10	12	0.1	3				f-vc	"	Orange/yellow fine-coarse sand + granules.	
272233	12	14	0.2	3				"	"		
272234	14	16	0.2	2				m-f	w/m	Pale yellow fine-medium sand.	
272235	16	18	0.3	2				"	"	"	(Minor cement <5%)
272236	18	20	0.2	2				"	"	Pale yellow/brown fine-medium sand.	
272237	20	22	0.4	2				f-m	"	Pale yellow fine-medium sand.	(Minor coarse grained lags)
272238	22	24	0.2	10				"	m/p	Pale yellow/pink fine-medium + coarse sand.	(Strongly silicified and hard. Cannot penetrate. Sample taken) (Elevated HM % above cemented horizon @ ~22m)

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00128

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-357

DEPTH : 32m

DATE DRILLED: 17/9/90

Nominal Collar
Easting : 311520
Northing : 505627
Reduced Level : 94

Surveyed Collar
Easting : 311828
Northing : 6505219
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 8400m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272239	0	2	0.1	15				vf-m	p	Pale brown/white dune sand + calcrete.	
272240	2	4	0.2	10				"	"	"	
272241	4	6	0.2	10				"	m/p	Brown/red clay-rich dune sand.	
272242	6	8	0.2	5				f-m	"	"	
272243	8	10	0.2	5				f-m+c	m	Orange dune sand.	(Increase in coarse lags)
272244	10	12	0.2	3				f-m	"	"	"
272245	12	14	0.1	3				"	"	Yellow dune sand.	"
272246	14	16	0.2	2				f-c-vc	p	Pale yellow fine-coarse sand + granules.	
272247	16	18	0.3	1	7.1	1	0.24	"	"	"	
272248	18	20	0.5	1	1.7	0.7	0.32	f-m	m/w	White fine-medium sand.	(Clean sand beach like)
272249	20	22	0.7	0	0.8	0.6	0.37	"	"	"	"
272250	22	24	0.5	1	0.3	0.6	0.31	"	"	Pale yellow/white fine-medium sand.	"
272251	24	26	0.2	1	0.4	0.7	0.17	"	"	Pale yellow/grey fine-medium sand.	
272252	26	28	0.4	1	3.3	1.5	0.19	f-m+c	"	Pale yellow fine-medium + coarse sand.	(Minor coarse lags)
272253	28	30	0.1	2	6.9	1.5	0.14	m	m	Brown medium sand.	
272254	30	32	0.1	5				m-c	"	Dark brown/purple ferruginized and hard medium-coarse sand.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00129

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-358

DEPTH : 48m

DATE DRILLED: 17/9/90

Nominal Collar
Easting : 311608
Northing : 506021
Reduced Level : 98

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 8800m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272255	0	2	0.1	20				f-m	m/p	White/pink hard calcrete + dune sand.	(Calcrete cemented ~60%)
272256	2	4	0.1	15				"	"	"	"
272257	4	6	0.2	5				f-m+c	m/w	Orange/yellow dune sand.	(Minor cemented horizon mostly soft sand.
272258	6	8	0.2	3				f-m	"	"	Minor coarse lags <5%)
272259	8	10	0.2	3				"	"	Yellow dune sand.	"
272260	10	12	0.2	2				"	w	Pale yellow fine dune sand.	"
272261	12	14	0.1	1				f	"	Yellow/brown fine sand.	(40 - 50% cement Ooldea)
272262	14	16	0.2	1				"	"	Orange/pink fine sand.	
272263	16	18	0.3	1				"	"	Pale yellow fine sand.	(Transition to fine + coarse (bimodal)
272264	18	20	0.1	2				f-c	p	Yellow/orange fine + coarse sand.	angular sand (coarse fraction mostly
272265	20	22	0.2	2	14.8	4.5	0.29	"	"	Yellow/pale brown fine + coarse sand.	angular))
272266	22	24	0.4	2	0.9	3.4	0.2	m-f	w	Yellow/pale brown fine-medium sand.	
272267	24	26	0.3	5	9.9	7.5	0.19	vf-f	"	Yellow/pale brown fine sand + clay.	
272268	26	28	1	3	1.1	7.8	0.76	f	"	White/pale yellow fine sand.	
272269	28	30	2	3	1.8	6.1	0.63	"	"	Pale yellow/pink fine sand.	
272270	30	32	2	3	0.6	4.1	0.6	"	"	Pink fine sand.	
272271	32	34	0.3	3	4.6	5.4	0.56	f-m+c	m/w	Brown fine-medium sand + minor coarse lags.	(Minor 5% cement)
272272	34	36	0.3	3				"	"	"	
272273	36	38	0.3	5				"	m	"	
272274	38	40	0.4	5				"	"	Brown/red fine-medium sand + minor coarse lags.	
272275	40	42	0.2	5				"	"	"	
272276	42	44	0.2	5				"	"	"	
272277	44	46								Basement (weathered).	
272278	46	48								"	
DUPLICATES											
259682	30	32			0.43	4.64	0.54				

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00130

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-359

DEPTH : 39m

DATE DRILLED: 18/9/90

Nominal Collar		Surveyed Collar		
Easting	: 311706	Easting	:	
Northing	: 506390	Northing	:	
Reduced Level	: 103	Reduced Level	:	
		Surveyed by	:	

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis Rig : Mantis 75
Reason for drilling : 9200m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272279	0	2	0.1					vf-m+c	p	White/pink calcrete + dune sand.	
272280	2	4	0.1	15				f-m+c	m/p	Dark red/brown dune sand + clay, ferruginized.	(+ minor coarse lags)
272281	4	6	0.2	10				f-m	m	Orange dune sand.	(>50% of HM = zircon)
272282	6	8	0.2	5				"	m/w	"	
272283	8	10	0.1	2				"	w	Yellow dune sand.	(Minor cement)
272284	10	12	0.1	2				f	"	"	
272285	12	14	0.1	1				"	"	"	
272286	14	16	0.1	1				"	"	Pale yellow fine sand (Ooldea).	(Minor cement)
272287	16	18	0.1	1				"	"	"	
272288	18	20	0.1	1				f+c	p	Pale yellow/brown fine + coarse sand.	(Most coarse grains ~15%)
272289	20	22	0.2	1				f+m+c	m/w	Pale yellow fine + medium + coarse sand.	
272290	22	24	0.1	2				f-m	"	Red fine-medium sand.	
272291	24	26	0.1	2				f-m+c	m	Red/pink yellow fine-medium + coarse sand.	(Not well sorted or rounded, especially
272292	26	28	0.2	5				"	"	Pale yellow/white fine-medium + coarse sand.	coarse fractions)
272293	28	30	0.3	3				"	"	"	"
272294	30	32	0.2	5				"	m/p	Pale brown fine-medium + coarse sand.	"
272295	32	34	0.3	3				"	"	Red/brown fine-medium + coarse sa	"
272296	34	36	0.1	5				"	"	"	"
272297	36	38	0.1	5						Brown/white fine-medium + coarse sand.	"
272298	38	39								White weathered basement.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00131

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-360

DEPTH : 40.5m

DATE DRILLED: 18/9/90

Nominal Collar
Easting : 311799
Northing : 506782
Reduced Level : 109

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 9600m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272299	0	2	0.1	20				vf-m	p	Hard calcrete + dune sand.	
272300	2	4	0.1	20				"	"	Pink/white dune sand.	
272301	4	6	0.2	15				f-m+c	m/p	Red/brown dune sand + clay.	(5 - 10% coarse lags mostly angular)
272302	6	8	0.2	5				"	m/w	Orange dune sand.	"
272303	8	10	0.2	3				"	"	Orange/yellow dune sand.	"
272304	10	12	0.2	3				"	"	"	"
272305	12	14	0.2	3				"	"	"	"
272306	14	16	0.3	2				"	"	Yellow dune sand.	"
272307	16	18	0.2	2				"	"	"	"
272308	18	20	0.2	2	11.1	3.1	0.16	"	"	"	(Increase in coarse lags)
272309	20	22	2	1	8.7	3.6	0.66	f	w	Pale yellow/white fine sand (Ooldea).	(Coarse lags mostly well rounded)
272310	22	24	2	1	5.5	3	0.68	"	"	"	(At boundary with Ooldea have
272311	24	26	2	1	8.3	2.8	0.63	"	"	White fine sand (Ooldea).	minor cement ~ 19.5m)
272312	26	28	2	1	8	2.8	0.51	"	"	Very minor (traces) rounded lags.	
272313	28	30	2	1	1.4	2.9	0.62	"	"	"	
272314	30	32	2	1	1.2	2.6	0.43	"	"	White/pale yellow fine sand.	
272315	32	34	0.5	0	5.4	1.9	0.24	m+f	"	Pale yellow/white medium + fine sand.	(Minor cemented layer (sample taken @ ~34m))
272316	34	36	0.2	2	7.4	1.9	0.15	m	"	Pale yellow/white medium sand.	
272317	36	38	0.2	2				f-c	m	Yellow fine-coarse sand.	
272318	38	40	0.2	2				m-f	w	Red/brown medium + fine sand.	
272319	40	40.5	0.2	2				m	"	Red/brown medium sand.	(Hard and ferruginized last sample 1/2m)

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00132

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-361

DEPTH : 38m

DATE DRILLED: 18/9/90

Nominal Collar
Easting : 311891
Northing : 507194
Reduced Level : 110

Surveyed Collar
Easting : 312367
Northing : 6506633
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 10000m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272320	0	2	0.1					vf-m	m/p	White/pink calcrete + dune sand (hard).	
272321	2	4	0.1					"	"	"	
272322	4	6	0.1	10				"	"	"	(Ferruginized)
272323	6	8	0.2	5				f-m+c	m/w	Orange dune sand.	(Minor <3% coarse lags)
272324	8	10	0.2	5				f-m	"	"	"
272325	10	12	0.2	5				"	"	"	"
272326	12	14	0.1	3				"	"	Yellow dune sand.	"
272327	14	16	0.1	5				"	"	"	"
272328	16	18	0.1	3				"	"	"	"
272329	18	20	0.2	3	6.3	4.2	0.09	f-c	"	"	(Increase in % coarse lags)
272330	20	22	0.4	2	6	3.8	0.49	f	w	Pale yellow fine sand (Ooldea).	(Silicified cap)
272331	22	24	0.7	1	4	3.7	0.69	"	"	"	(Minor cemented layers)
272332	24	26	0.7	1	9.2	3.6	0.65	"	"	Pale yellow/white fine sand.	"
272333	26	28	0.7	1	9.7	3.1	0.5	"	"	White fine sand.	"
272334	28	30	0.7	1	15.4	2	0.29	"	"	"	"
272335	30	32	0.7	1	11.2	1.6	0.34	"	"	"	"
272336	32	34	0.7	1	6.3	1.6	0.3	"	"	"	"
272337	34	36	0.3	1	7.4	3.3	0.21	f-m	m/w	White/pale orange fine-medium sand.	
272338	36	38	0.3	1							

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00133

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.
PROSPECT: EURIA WELL 1600
HOLE No.: EB-362
DEPTH : 42m
DATE DRILLED: 19/9/90

Nominal Collar
Easting : 311438
Northing : 505216
Reduced Level : 92

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 8000m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272339	0	2	0.1	20				vf-m	p	Hard calcrete + dune sand.	
272340	2	4	0.1	10				"	"	Pink/white dune sand.	
272341	4	6	0.1	5				f-m	m/w	Orange dune sand.	(Minor <5% coarse lags)
272342	6	8	0.2	5				f-m+c	"	"	"
272343	8	10	0.2	5				f-m	"	"	"
272344	10	12	0.2	3				"	"	"	"
272345	12	14	0.2	3				"	m	Yellow dune sand.	
272346	14	16	0.2	2	15.2	4.6	0.11	"	"	"	(Increase of coarse lags towards Ooldea contact)
272347	16	18	0.7	1	16.6	1.1	0.35	"	w	Pale yellow transition to fine-medium sand.	(10% cemented)
272348	18	20	0.5	1	15.5	1.6	0.26	"	"	"	(<30% cemented)
272349	20	22	0.4	0	0.7	0.8	0.19	"	"	White/pale yellow fine-medium sand.	(From core sample have cross-bed (dune) of ~37°)
272350	22	24	0.4	0	0.8	1.2	0.14	"	"	Pale yellow fine-medium sand.	
272351	24	26	0.4	1	2.5	1.8	0.17	"	"	Pale orange/pale yellow fine-medium sand.	
272352	26	28	0.3	0	2.5	1.1	0.1	"	"	Pale yellow fine-medium sand.	
272353	28	30	0.2	1	5	1.4	0.17	"	"	"	
272354	30	32	0.4	1	0.7	1.6	0.18	m+c	"	Brown/pale yellow medium + coarse sand.	
272355	32	34	0.1	2	7.7	3	0.27	m-f	"	Dark red medium-fine sand.	
272356	34	36	0.5	3	5.4	2.2	0.34	"	"	Yellow/pink fine-medium sand.	
272357	36	38	3	10	10.4	5	0.89	vf-f+c	"	White/yellow fine sand/silt + coarse.	(Core sample)
272358	38	40	1	10	3.4	15	0.62	"	"	Brown/white fine sand/silt + coarse.	
272359	40	42								White weathered basement.	

DUPLICATES

259683	18	20			14.24	2.33	0.31				

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00134

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-363

DEPTH : 21m

DATE DRILLED: 19/9/90

Nominal Collar
Easting : 310052
Northing : 499445
Reduced Level : 80

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 2000m north north east of EB-342.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272360	0	2	0.1					vf-m	m/p	White/pink hard calcrete + dune sand.	
272361	2	4	0.1	20				f-m	"	Red/brown ferruginized dune sand.	
272362	4	6	0.1	10				"	"	"	
272363	6	8	0.1	5				f	w	Orange/white transition to Ooldea.	(Strongly silicified)
272364	8	10	0.2	1				"	"	White/pink fine sand.	(Zircon comprising most of HM%)
272365	10	12	0.2	1	53	6	0.16	"	"	"	
272366	12	14	0.4	5	26.2	10.4	0.37	"	"	"	
272367	14	16	0.2	60	20.4	21.8	0.16	vf-f	"	White very fine sand/silt + clay.	(Gypsum rich playa? Fine acicular crystals)
272368	16	18	0.1	60				"	"	"	
272369	18	20	0.2	60				vf-f-vc	p	Basement gneiss.	(Well rounded quartz pebbles, up to 2cm at contact with gneiss)
272370	20	21									

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00135

TRAVERSE 22

EB 364 - EB 371

EL 1600

(EURIA WELL)

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-364

DEPTH : 8m

DATE DRILLED: 21/9/90

Nominal Collar
Easting : 325036
Northing : 487442
Reduced Level : 72

Surveyed Collar
Easting : 324956
Northing : 6487291
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : Start of Traverse 22.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272371	0	2	0.1	15				vf-m	m/p	Pale pink/brown and white dune sand + calcarete.	
272372	2	4	0.1	15				"	"	"	
272373	4	6	0.2					f-m	w/m	Pale brown/white fine sand.	(Cemented)
272374	6	8	0.2					m-c+f	"	White fine-coarse sand.	
											(Grains mostly well rounded)
											(Cemented, penetration slow)
											(Possible marine sands)

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00137

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.
PROSPECT: EURIA WELL 1600
HOLE No.: EB-365
DEPTH : 39m
DATE DRILLED: 21/9/90

Nominal Collar
Easting : 325557
Northing : 488041
Reduced Level : 75

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 800m north east of EB-364.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272375	0	2	0.1	20				vf-m	p	Pink/white calcrete + dune sand.	(Very hard silicified cap. Bimodal,
272376	2	4	0.1	20				f-m	m/p	Dark red/brown clay rich horizon, orange dune sand.	fine sand + well rounded coarse
272377	4	6	0.2					f+c	w	White cemented fine (+ coarse minor 2%) sand.	grains, coarse grains 15%)
272378	6	8	0.3					f	"	White fine sand.	"
272379	8	10	0.5	2	14.5	2.4	0.21	f-c	m/p	Yellow fine-coarse sand.	"
272380	10	12	0.4	3	4.3	1.5	0.18	"	"	Orange/pink fine-coarse sand.	
272381	12	14	0.3	3	4	2.1	0.13	"	"	Pink/yellow fine-coarse sand.	(Coarse fraction up to 20% and
272382	14	16	0.5	2	1.9	2.1	0.19	f+c	"	Pale yellow fine + coarse sand.	well rounded seriate)
272383	16	18	0.4	2	2.7	1.4	0.3	"	"	"	(Bimodal fine 65% coarse 35%)
272384	18	20	0.5	2	3.7	2.4	0.23	"	m/w	Pale yellow fine + coarse sand.	"
272385	20	22	2	3	0.6	3.7	0.48	"	"	"	(Fine 90% coarse 10%)
272386	22	24	2	3	0.1	5.4	0.77	f	w	Yellow fine sand.	"
272387	24	26	2	3	0.1	6.2	0.7	"	"	Yellow/red fine sand.	(Ooldea)
272388	26	28	0.7	5	7.2	6.5	1.04	f+vc	w/p	Transition to coarser material + granules.	
272389	28	30	0.2	5	4.7	6.2	0.45	f-c+m	p	Micaceous 5%.	(Granules angular - well rounded)
272390	30	32	0.3	5				m-c+f	"	Medium-coarse sand.	
272391	32	34	0.4	5				f-vc	"	"	
272392	34	36	0.5	5				"	"	"	(Granule layer)
272393	36	38	0.2	10				"	"	"	
272394	38	39								White/pink granite (weathered),	(Basement)

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

001138

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.
PROSPECT: EURIA WELL 1600
HOLE No.: EB-366
DEPTH : 54m
DATE DRILLED: 21/9/90

Nominal Collar
Easting : 326066
Northing : 488660
Reduced Level : 84

Surveyed Collar
Easting : 325991
Northing : 6488590
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 1600m north east of EB-364.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272395	0	2	0.2	10	2	7.5	0.16	f-m	m/w	Pale white/brown/pink fine-medium dune sand	(Collared on crest of dune)
272396	2	4	0.3	15	0.5	10.9	0.1	"	"	+ fine calcareous deposits.	
272397	4	6	0.2	20	2.3	14.9	0.15	"	"	"	
272398	6	8	0.2	20	16.9	13.5	0.16	"	"	(7 - 8m) Hard calcrete band.	(Hard @ 7m)
272399	8	10	0.1	10	0.6	26.6	0.07	f-m+c	m/p	Dark red/brown clay rich dune sand.	
272400	10	12	0.2	5	0.7	18.1	0.13	"	m	Orange dune sand.	
272401	12	14	0.2	3	0.7	13.7	0.12	"	"	"	
272402	14	16	0.2	1	7.5	10	0.16	"	"	"	
272403	16	18	0.3	1	21.6	3.5	0.14	f-c	p	Pale yellow fine-coarse sand.	(17 - 20m cemented cap, 2 samples taken)
272404	18	20	0.4	1	27.7	2.8	0.17	f+c	"	Pink fine-caorse sand.	
272405	20	22	0.3	1	12.1	4.7	0.23	f-c	m	"	
272406	22	24	0.3	1	0.2	1.4	0.17	f	w	Pale yellow fine sand.	(Coarse grains well rounded)
272407	24	26	0.5	1	0.2	1.6	0.15	"	"	Yellow fine-coarse sand.	
272408	26	28	0.4	2	1.5	3.6	0.23	f-c	m	"	
272409	28	30	0.4	2	1.2	1.8	0.14	c+f	"	Yellow coarse-fine sand.	
272410	30	32	0.3	2	1.3	3.7	0.17	"	"	Yellow/orange coarse-fine sand.	(70/30 beach)
272411	32	34	0.5	2	1	1.9	0.19	"	"	Yellow coarse-fine sand.	(60/40 flooded
272412	34	36	0.2	3	0.8	2.5	0.23	f-c	m/p	Yellow/red fine-coarse sand.	(50/50 by fines?)
272413	36	38	0.5	3	0.6	3.4	0.23	"	"	Orange fine-coarse sand.	(80/20)
272414	38	40	0.5	5	0.3	4.5	0.48	"	"	"	
272415	40	42	1	5	0.1	5.9	0.65	f	w	Orange fine sand.	
272416	42	44	2	5	0	6.2	0.68	"	"	Brown fine sand.	
272417	44	46	2	5	0.4	7	0.71	"	"	Yellow fine sand.	
272418	46	48	0.7	5	7.4	3.8	0.39	"	"	"	(Trace mica)
272419	48	50	0.3	3	2.8	1.3	0.18	f-m-c	m/p	Yellow fine-coarse sand.	(Micaceous ~5%)
272420	50	52	0.4	3	0.6	1.7	0.13	"	"	Yellow/pink fine-coarse sand.	"
272421	52	54	0.4	3	0.7	1.3	0.21	"	"	Pink/red fine-coarse sand.	"

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00139

GEOPEKO
HEAVY
MINERALS
DRILL LOG
PERTH

HOLE No.: EB-366 (Continued)

Sample W	from (m)	to (m)	HM Slime Est Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
DUPLICATES										
259684	44	46		0.41	9.16	0.55				

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00140

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.
PROSPECT: EURIA WELL 1600
HOLE No.: EB-367
DEPTH : 57m
DATE DRILLED: 22/9/90

Nominal Collar
Easting : 326574
Northing : 489262
Reduced Level : 85

Surveyed Collar
Easting :
Northing :
Reduced Level :
Surveyed by :

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 2400m north east of EB-364.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272422	0	2	0.2	20				vf-f/m	m/p		
272423	2	4	0.1	20				"	"	Ferruginized dune sand + clay.	
272424	4	6	0.2	10				f-m+c	m	Orange dune sand.	
272425	6	8	0.2	5				"	"	"	
272426	8	10	0.2	3				"	"	Yellow dune sand.	
272427	10	12	0.2	3				"	"	"	
272428	12	14	0.2	3				"	"	"	
272429	14	16	0.2					f-m+c	"	Yellow fine-medium + coarse sand.	(Broken/cemented from 15.5 - 20m)
272430	16	18	0.2					"	m/p	Pink/yellow fine-medium + coarse sand.	
272431	18	20	0.2					"	"	"	
272432	20	22	0.5	5	8.5	6.6	0.29	vf-c/vc	p	Pale brown transition to fine sand + clays.	
272433	22	24	0.3	3	0.6	4.5	0.12	f	w	White fine sand.	
272434	24	26	0.5	3	0.3	2.6	0.28	f-m+c	m	Pale yellow fine-medium (+ coarse) sand.	
272435	26	28	0.3	3	0.4	3.1	0.13	"	m/p	"	
272436	28	30	0.4	2	1	1.9	0.08	m-c	m/w	Yellow medium-coarse sand.	
272437	30	32	0.7	3	0.9	2.1	0.27	f-c	m/p	Yellow fine-coarse sand.	(>50% coarse sand)
272438	32	34	0.7	3	1.2	2	0.22	"	"	"	"
272439	34	36	0.4	3	2.3	3.3	0.19	"	"	Pink/brown fine-coarse sand.	"
272440	36	38	0.2	3	1.8	2.5	0.11	"	"	"	"
272441	38	40	0.3	3	0.6	3	0.14	"	"	"	"
272442	40	42	0.4	3	1.7	2.7	0.15	"	"	Light brown fine-coarse sand.	(20 - 30% coarse sand)
272443	42	44	0.4	3	2.9	3.8	0.21	"	"	"	"
272444	44	46	0.4	3	2.9	3.6	0.32	"	"	"	"
272445	46	48	0.5	3	2.2	3.3	0.35	"	"	"	"
272446	48	50	0.7	5	0.4	5.8	0.62	f+vf	w	Yellow/brown fine sand.	
272447	50	52	2	10	0.3	8.6	0.63	"	"	Brown/pink fine sand.	
272448	52	54	3	10	0.1	10.7	0.95	"	"	"	

Method: SEP
Detection Limit: N/A
Analyses by Amdel Limited
Quality: Accuracy +- 15%

001141

GEOPEKO
HEAVY
MINERALS
DRILL LOG
PERTH

HOLE No.: EB-367 (Continued)

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272449	54	56	1	10	2	10.2	0.64	f-vf+vc	m	Brown/pink fine sand + clay + granules.	(Micaceous (5% mica)
272450	56	57	1	5	0.2	2.9	0.26	f	w	Yellow-pink fine sand.	"

DUPLICATES

259685	50	52			0.15	9.61	0.56				

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00142

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-368

DEPTH : 57m

DATE DRILLED: 23/9/90

Nominal Collar
Easting : 327078
Northing : 489884
Reduced Level : 80

Surveyed Collar
Easting : 327270
Northing : 6489547
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 3200m north east of EB-364.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272451	0	2	0.2	20				vf-m	p	Pink/white/brown clay rich dune sand.	
272452	2	4	0.1	15				"	"	Dark red/brown clay rich dune sand.	
272453	4	6	0.1	10				f-c	"	"	
272454	6	8	0.1	10				"	m/p	Orange dune sand.	
272455	8	10	0.2	5				"	"	"	
272456	10	12	0.2	3				"	"	Yellow dune sand.	
272457	12	14	0.2	3				"	"	"	(Abundant WR granules)
272458	14	16	0.1	3				"	p	Transition to cemented horizon.	(15.5m hard band)
272459	16	18	0.2	3				"	m/p	Pink/white fine-coarse sand.	(50% cement)
272460	18	20	0.2	3				"	p	Yellow fine-coarse sand.	(50:50 fine and coarse)
272461	20	22	0.3	3				"	m/p	Pale yellow fine-coarse sand.	(20% cement)
272462	22	24	0.3	3				"	"	Pink fine-coarse sand.	(Minor cement cross-bedded,
272463	24	26	0.4	3	5.9	3.7	0.12	"	"	"	sample taken)
272464	26	28	1	3	3.7	4.9	0.25	"	m	Yellow fine-coarse sand.	
272465	28	30	0.7	3	1.7	3.3	0.26	"	"	"	
272466	30	32	0.4	3	1.6	3.7	0.12	"	m/p	"	(Increase in fines)
272467	32	34	0.2	5	1.2	3.1	0.09	"	"	Pale yellow fine-coarse sand.	"
272468	34	36	0.2	5	0.7	4.2	0.1	"	"	Pale yellow/pink fine-coarse sand.	"
272469	36	38	0.2	5	0.5	3.5	0.09	"	m	"	"
272470	38	40	0.3	3	0.1	4.2	0.14	f-m	w	Yellow/pink fine-medium sand.	
272471	40	42	0.4	2	0.2	3.2	0.26	f-m+c	"	Yellow fine-medium + coarse sand.	
272472	42	44	1	5	0.2	5.1	0.36	f	"	Brown/pink fine sand.	
272473	44	46	2	5	0.1	7.2	0.66	"	"	"	
272474	46	48	2	5	0.1	10.1	0.65	"	"	"	
272475	48	50	1.5	5	9	8.4	0.78	f-vc	m/p	Brown fine sand - granules + mica.	(Granules mostly sub angular - angular)
272476	50	52	0.5	5	4.8	6.8	0.68	"	m	"	"
272477	52	54	1	5	7.6	4.4	0.57	"	"	"	(Angular granules + mica)

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00143

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

HOLE No.: EB-368 (Continued)

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272478	54	56	0.7	5	4.2	3.8	0.47	f-vc	m	Pink/brown fine sand - granules + mica.	
272479	56	57	0.7	5	0.4	3.7	0.41	f+c	m/w	Pink fine sand, minor coarse.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-369

DEPTH : 57m

DATE DRILLED: 23/9/90

Nominal Collar
Easting : 327609
Northing : 490498
Reduced Level : 84

Surveyed Collar
Easting : 328102
Northing : 6490080
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 4000m north east of EB-364.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272480	0	2	0.1	20				f-m	m/w	Calcrete + fine (+ medium) sand.	
272481	2	4	0.1	15				"	"	"	
272482	4	6	0.2	20				f-m+c	m/p	Red/orange dune sand + clay.	
272483	6	8	0.1	10				"	"	"	
272484	8	10	0.2	10				"	m	Orange dune sand.	
272485	10	12	0.2	5				"	"	"	
272486	12	14	0.2	5				"	"	"	
272487	14	16	0.2	3				"	"	Yellow dune sand.	
272488	16	18	0.2	2				"	"	"	(Hard band from 17m to 20m)
272489	18	20	0.2	2				f-c	m/w	Pale yellow/white fine-coarse sand.	(Sample taken, individual layers
272490	20	22	0.3	2	10.2	2.1	0.38	"	"	Red/yellow fine-coarse sand.	well sorted)
272491	22	24	0.4	2	15.8	1.1	0.18	"	"	Yellow fine-coarse sand.	
272492	24	26	0.3	2	12.9	2.8	0.24	"	"	"	(24m- 30m minor cement)
272493	26	28	0.2	2				c-f	"	Yellow coarse-fine sand.	
272494	28	30	0.1	2				"	"	"	
272495	30	32	0.1	2				"	"	"	
272496	32	34	0.1	2				f-c	"	Pale yellow fine-coarse sand.	
272497	34	36	0.3	2				"	"	Pale yellow/orange fine-coarse sand.	
272498	36	38	0.3	2	0.7	1.5	0.24	"	"	"	
272499	38	40	0.5	3	0.2	3.3	0.32	f-m	w	Orange/brown fine-medium sand.	
272500	40	42	1	3	0.2	6.5	0.6	f	"	Pink/red fine sand.	
272501	42	44	2	5	0.1	9.8	0.86	"	"	Pink/brown fine sand.	
272502	44	46	1	5	0.3	6.2	0.7	"	"	Brown/yellow fine sand.	(Minor micas)
272503	46	48	0.4	2	0.1	1.3	0.23	m	"	Brown/yellow medium sand.	(% mica increases with depth)
272504	48	50	0.4	2	1.2	2.2	0.25	m+vc	"	Brown/yellow medium sand + minor granules.	
272505	50	52	0.2	2	1	1.3	0.11	m	"	"	(Some mica flakes up to 5mm diameter)
272506	52	54	0.3	2				m-c	"	Yellow/pink medium + coarse sand.	(Most ~2mm)

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00143

GEOPEKO
HEAVY
MINERALS
DRILL LOG
PERTH

HOLE No.: EB-369 (Continued)

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272507	54	56	0.1	2				m-c	w	Yellow/pink medium + coarse sand.	
272508	56	57	0.1	2				"	"	Pink/orange medium sand + minor - absent.)	
DUPLICATES											
259686	44	46			0.33	6.81	0.56				

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00146

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-370

DEPTH : 28m

DATE DRILLED: 23/9/90

Nominal Collar
Easting : 328120
Northing : 491123
Reduced Level : 82

Surveyed Collar
Easting : 328906
Northing : 6490540
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 4800m north east of EB-364.

Sample N	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272509	0	2	0.2	15				vf-f+m	m/p	Pink/pale brwon fine sand + fine calcrete.	
272510	2	4	0.1	20				"	"	"	
272511	4	6	0.2	20				f-m	"	Dark red/brown ferruginized dune sand + clay.	
272512	6	8	0.2	10				f-m+c	m	Orange dune sand.	
272513	8	10	0.2	10				"	"	"	
272514	10	12	0.2	5				"	"	"	
272515	12	14	0.1	5				"	"	White/pink dune sand.	(Cemented)
272516	14	16	0.1	2				c+f	"	Pink coarse + fine sand.	
272517	16	18	0.3	2				f-c	m/w	Orange/pale yellow fine-coarse sand.	
272518	18	20	0.2	2				"	m	Red/dark brown fine-coarse sand.	
272519	20	22	0.3	2				"	"	Brown fine-coarse sand.	
272520	22	24	0.2	2				"	"	Brown/dark brown fine-coarse sand.	
272521	24	26	0.1	2				"	"	Red/orange fine-coarse sand.	
272522	26	28	0.1	3				"	"	Orange/white fine-coarse sand.	
										White weathered granite.	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

GEOPEKO
HEAVY MINERALS DRILL LOG
PERTH

PROJECT : CEDUNA J.V.

PROSPECT: EURIA WELL 1600

HOLE No.: EB-371

DEPTH : 54m

DATE DRILLED: 23/9/90

Nominal Collar
Easting : 328621
Northing : 491722
Reduced Level : 85

Surveyed Collar
Easting : 329643
Northing : 6491028
Reduced Level :
Surveyed by : WW (GPS)

Proposed by : CWR
Logged by : AJJ
Contractor : Wallis
Rig : Mantis 75
Reason for drilling : 5600m north east of EB-364.

Sample W	from (m)	to (m)	HM Est	Slime Est	OS% Lab	Slimes% Lab	HM% Lab	Grain size	Sorting p,m,w	GEOLOGICAL LOG	Comments
272523	0	2	0.1	20				vf-m	p	Hard calcrete.	
272524	2	4	0.2	20				f-m	m/p	Pale brown/pink dune sand + fine calcrete.	
272525	4	6	0.2	15				"	"	"	
272526	6	8	0.2	10				"	m/w	Orange dune sand + clay.	
272527	8	10	0.2	5				"	"	Orange dune sand.	
272528	10	12	0.1	3				f	w	Hard silicified white/pink fine sand.	
272529	12	14	0.1					"	"	"	
272530	14	16	0.1					"	"	"	(>50% cemented bands)
272531	16	18	0.2	2				"	"	Pale yellow fine sand.	(HM "kick")
272532	18	20	0.3	2				f-vc	m	Yellow transition to medium-coarse sand.	(3% granules most angular)
272533	20	22	0.4	3				f-c	m/p	Yellow fine-coarse sand.	
272534	22	24	0.2	3				"	"	Red/brown fine-coarse sand.	
272535	24	26	0.2	3				"	"	"	
272536	26	28	0.4	3	1.4	2.2	0.3	"	"	Yellow fine-coarse sand.	
272537	28	30	0.5	3	1.3	2.2	0.23	"	"	"	
272538	30	32	0.7	3	1.1	3.1	0.38	"	"	"	
272539	32	34	0.3	3	5.3	3.4	0.15	"	"	"	
272540	34	36	0.5	3	3.1	1.6	0.13	"	"	Pale yellow fine-coarse sand.	(Coarse fraction coarser)
272541	36	38	0.2	3	2.9	2.1	0.2	"	"	Yellow fine-coarse sand.	(Becoming more fine %)
272542	38	40	0.4	3	2.2	2.3	0.24	f+c	m	Paleyellow/orange fine-coarse sand.	
272543	40	42	1	5	0.3	2.7	0.56	f	w	Orange fine sand.	
272544	42	44	0.7	30	2.7	12.8	0.86	vf-f	"	Orange/brown fine sand + clay.	(Transition)
272545	44	46	0.3	80	5.1	44.6	1.21	vf+f	"	Brown/yellow clay + fine sand.	
272546	46	48	0.1	60				vf-cv	p	Purple clay + fine sand and granules.	(Angular quartz granules up to 1cm
272547	48	50	0.1	70				"	"	Light purple clay + fine sand and granules.	diameter)
272548	50	52	0.1	90						Purple/white weathered schist.	
272549	52	54								"	

Method: SEP
Detection Limit: N/A

Analyses by Amdel Limited
Quality: Accuracy +- 15%

00148