Rept. Bk. No. 55/65
G.S. No. 2439
PAL. Rep. 14/62

Palaeo. BUNDY No.1

DEPARTMENT OF MINES
SOUTH AUSTRALIA

GEOLOGICAL SURVEY

PALAEONTOLOGY SECTION

CONFIDENTIAL

WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

BUNDY NO. 1 WELL, N.S.W.

PALAEONTOLOGICAL REPORT

by

N. H. Ludbrook
Senior Palaeontologist

4th September, 1962

D.M. 1180/62

MURRAY 62 (Sept. 4).

S9/SS

RB 55/65

DEPARTMENT OF MINES
SOUTH AUSTRALIA

WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

BUNDY NO. 1 WELL, N.S.W.

PALAEONTOLOGICAL REPORT

by

N. H. Ludbrook
Senior Palaeontologist

Rept. Bk. No. 55/65
G.S. No. 2439
D.M. 1180/62
Pal. Rep. 14/62

4th September, 1962.

CONTENTS

WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.

BUNDY NO. 1 WELL, NEW SOUTH WALES.

PALAEONTOLOGICAL REPORT

by

N. H. Ludbrook

ABSTRACT

Bundy No. 1 Well near the eastern margin of the Murray Basin intersected a sequence 1340 feet thick of non-marine lignitic sands and silts of Tertiary age. The oldest are Eocene and the youngest probably Pliocene. The well bottomed in granite at 1340 feet and drilling ceased at 1373 feet.

1. INTRODUCTION

Bundy No. 1 Well of Woodside (Lakes Entrance) Oil Company N.L. was spudded in on May 7, 1962. The well is located in New South Wales on Deniliquin 4 mile Military Sheet I 55/13, Grid reference 029.5E066.0N, latitude 35°3'0"S, longitude 144°31'18"E.

Cuttings samples taken every 10 feet and samples from cores 1, 3, 4 and 5 were submitted for micropalaeontological examination.

The sediments are entirely non-marine or paralic and as soon as opportunity offers will be studied for their microfloral content. Descriptions of the Tertiary microfloras have so far been confined for the most part to the lower Tertiary and little information is available on the mid and later Tertiary succession.

An attempt has been made by correlating with wells intersecting marine sediments in the same general area of the Murray Basin to establish a sequence. From this it appears as if equivalents of most of the marine succession in the Murray Basin are present in the non-marine facies.

2. STRATIGRAPHIC SUMMARY

Stratigraphic units intersected in Bundy No. 1 are as follows:

	Depth (feet)	Thickness (feet)
Quaternary fluviatile sands	0 - 230	230
Lower Pliocene or uppermost Miocene, equivalents of Loxton Sands	230 - 315	85
?Upper Miocene equivalents of Bookpurnong Beds	315 - 410	95
Middle Miocene equivalents of Pata Limestone	410 - 534	124
Lower Miocene equivalents of Morgan Limestone and Mannum Formation	534 - 696	162
?Oligocene equivalents of Gambier Limestone and Ettrick Formation	696 - 871	175
Eocene sediments of Knight Group	871 - 1340	469
Granite	1340 - 1373	33 +

3. QUATERNARY FLUVIATILE SANDS 0 - 230 feet

From 100 feet at which the first samples were taken to 230 feet the well intersected buff coarse angular quartz sand with felspar, muscovite, some carbonaceous matter and limonite. The composition of these sands is distinct from that of the underlying Tertiary sediments. They are regarded as of fluviatile origin.

4. ?LOWER PLIOCENE EQUIVALENTS OF LOXTON SANDS 230 - 315 feet.

In this interval the sediments consist of yellow brown silty sand, dark grey-brown silt and quartz sand and green-grey sandy silt with chlorite, occasional fish bone fragments and rare foraminifera.

5. ?UPPER MIOCENE EQUIVALENTS OF BOOKPURNONG BEDS 315 - 410 feet

The Bookpurnong Beds appear to be represented by brown ferruginized sandstone and grey pyritic sandstone. Fragments of what appear to be small water plants (?Azolla) are present at 400-420 feet.

6. MIDDLE MIOCENE EQUIVALENTS OF PATA LIMESTONE 410 - 534 feet

Grey pyritic sandstone and grit and brown carbonaceous grit are considered to be the lateral equivalents of the Pata Limestone.

7. LOWER MIOCENE SEDIMENTS EQUIVALENT TO THE MORGAN LIMESTONE AND MANNUM FORMATION 534 - 696 feet

These are mostly dark brown-black carbonaceous silt and sand with lignite.

8. ?OLIGOCENE EQUIVALENTS OF GAMBIER LIMESTONE AND ETTRICK FORMATION 696 - 871 feet.

Downwards from 696 a sequence of coal, brown silty sand and carbonaceous silt appears to be equivalent to the Oligocene part of the Gambier Limestone and the Ettrick Formation. No reliable method of confirming the correlation is available and the interval is determined principally from its stratigraphic position.

9. EOCENE SEDIMENTS OF THE KNIGHT GROUP 871 - 1340 feet

Below 871 feet brown-grey siltstone with abundant animal burrows or algal markings, fine angular quartz and abundant muscovite and earthy coal are considered to belong to the Knight Group. Although lacking foraminifera the sediments are lithologically close to the Dartmoor Formation of Victoria.

10. GRANITE

The basement rock which the well entered at 1340 feet is granite.

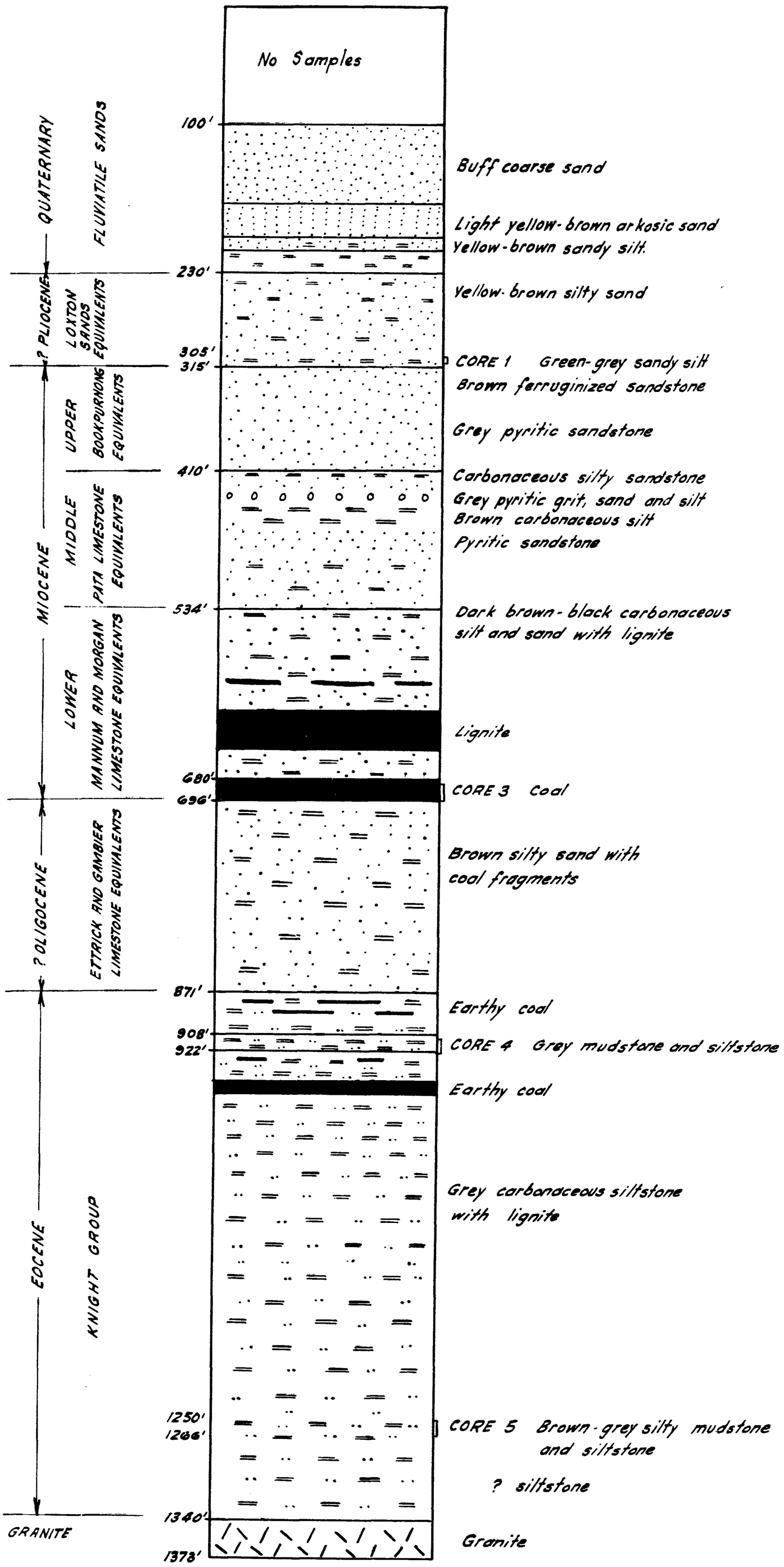
11. DETAILS OF THE CORES AND CUTTINGS

Cuttings Depth (feet)	Core No.	Description
100 - 170		Buff coarse sand with angular to sub-angular quartz, felspar, muscovite, coalified plant remains and some limonitic silty material at 110-140.
170 - 180		Light yellow-brown felspathic sand with fine angular quartz, felspar, limonitic silty material, some carbonaceous matter.
180 - 200		As above, with coarse angular grains and silty matrix.
200 - 210		Yellow brown sandy silt with constituents as 170-180, fairly abundant fine limonite.
210 - 220		Sandy silt as above and ferruginized grey silt and plant remains.
220 - 230		Cuttings with abundant ferruginized silt fragments.
230 - 250		Yellow-brown silty sand with yellow silt matrix.
250 - 260		Dark grey-brown silt and quartz sand, with carbonaceous silt material, carbonized plant fragments.
260 - 305		Yellow brown silty sand as 230-250.
305 - 310	1	305-307 Green grey silty sand with fine very angular quartz grains, loosely cemented with greenish clay material, chlorite common, scattered coarse subangular grains, 1 fish bone fragment, 1 lagenid. 307-310. Grey sandy silt with constituents as above and coalified plant fragments.
310 - 320		Brown ferruginized sandstone with coarse angular quartz in a limonitic matrix; coaly fragments.
320 - 335		No recovery.
335 - 340		Quartz grit.
340 - 350		Quartz grit and brown ferruginized sandstone.
350 - 380		Grey pyritic sandstone with fine to medium angular quartz cemented with pyrite.
380 - 400		Grey pyritic sandstone with pyrite-coal aggregates.
400 - 410		Dark brown carbonaceous silty sandstone with abundant partially carbonized plant fragments, woody material; quartz grains in carbonaceous silt matrix.

Cuttings Depth (feet)	Core No.	Description
410 - 420		As above with plant fragments, some woody fragments partly pyritized.
420 - 430		Grey pyritic sandstone; abundant quartz-pyrite aggregates and grey quartz grit.
430 - 440		Grey very pyritic grit, sandstone and silt; plant fragments as above.
440 - 450		Brown carbonaceous silt and coarse quartz sand, less pyrite.
450 - 480		As above, with abundant pyrite and ?rutile.
480 - 520		Dark brown-black carbonaceous silt consisting mainly of partially coalified plant material, lignite and fine pyrite.
520 - 550		Dark brown sand and pyritic carbonaceous silt; some schist grains.
550 - 590		Dark brown carbonaceous silt with coal fragments.
590 - 600		Silt as above with coalified stems and other plant fragments.
600-- 660		Lignite and lignitic silt.
660 - 665		Carbonaceous sand.
665 - 680		No recovery.
680 - 700	3	Brown coal and fine quartz sand consisting of fine angular quartz grains, muscovite, felspar, coalified stems and woody fragments.
700 - 740		Brownish-black carbonaceous and somewhat pyritic silt, coal and quartz sand.
740 - 830		Brownish medium fairly clean angular to subangular quartz sand with frequent grey quartz grains, pyrite, coal fragments.
830 - 908		Brown-black lignitic sand with coalified and earthy coal at 870-880.
908 - 922	4	908-910 Grey dolomitic weakly glauconitic clay with abundant small pellets of dolomite, fine angular quartz grains, some felspar, coalified plant fragments, fine muscovite, rare bright green glauconite grains. 910-914 Grey very fine silty sand with some glauconite, fine muscovite, occasional pyrite. 916-918 Grey laminated mudstone with very fine muscovite and fine carbonized plant remains scattered throughout. (Contd.)

Cuttings Depth (feet)	Core No.	Description
908 - 922 'Contd.'		918-920 Grey mudstone with abundant plant remains. 920-922 Brownish grey siltstone with abundant animal burrows, fine angular quartz, plant remains, muscovite.
922 - 950		Brown-black carbonaceous silt.
950 - 960		Earthy coal.
960 - 1070		Coal, medium sand and silt interbeds.
1070 - 1164		Brown grey coarse sand.
1164 - 1250		Medium quartz sand and silt.
1250 - 1266	5	1250-1254 Brownish grey silty mudstone, with fine angular quartz, abundant fine muscovite and plant remains. 1254-1260 Dirty grey siltstone irregularly mottled with off-white threads and lenticular patches. The white patches are of very fine silica unstained by silty matter. Some of the threads are probably animal feeding trails. Abundant muscovite plant remains, resin. 1260-1264 Brown siltstone as above with coalified plant fragments. 1264-1266 Dirty grey siltstone with abundant plant remains, fine angular quartz.
1266 - 1340		Sandy siltstone
1340 - 1373	6	Granite.

N. H. Ludbrook
SENIOR PALAEONTOLOGIST.



To accompany palaeontological report 14/62 by N.H. Ludbrook.

S.A. DEPARTMENT OF MINES

No.	Amendment	Exd.	Date

WOODSIDE (LAKES ENTRANCE) OIL COMPANY N.L.
BUNDY No1 WELL N.S.W. — COLUMNAR SECTION

Approved	Passed		Scale : vert. 1" = 100'
		Drn.	62-614
		Tcd. A.W.	994-4
		Ckd. M.B.L.	
Director		Exd.	Date 4-9-62

200 2.61 3805