WELL SUMMARY
GROPER-1 (W538)

1 Folio No	2 Referred to	3 Date	4 Clearing Officer's Initials	1 Folio No.	2 Referred to	3 Date	4 Clearing Officer's Initials

FILE COVER INSTRUCTIONS FOR ACTION OFFICERS

(1) FOLIO NUMBERS: Each subject paper attached to a file is to be given a consecutive number by the attaching officer. Papers must not be removed from or attached to a file without approval.

(2) REFERRAL TO OTHER OFFICERS: When an Officer completes action on the file and further action is required by some other Officer, please initial Column (4) and on the next vacant line, enter the relevant folio number in Column (1), indicate to whom the file is to be forwarded in Column (2) and record the date in Column (3).

(3) BRING UP MARKINGS: When action on a file is required at a later date, the officer will initial Column (4) and, on the next vacant line, enter the relevant folio number in Column (1), then write "B/U" followed by the action officer's name in Column (2) and the date the file is required in Column (3).

(4) PUTAWAY MARKINGS: When ALL action on a file is completed the officer concerned will initial Column (4) and, on the next vacant line, write "P/A" in column (2).

REGISTRY MUST BE NOTIFIED OF ANY FILE MOVEMENTS BETWEEN OFFICERS

LOCATION

GROPER-1 ESSO.

COMP. 6-1-1969. T.D. 3379'. 538. W.D. 196' RT GLOMAR III

✓ I.E.S. RUN 1. 333'-1568'. SEPARATE LOGS 2" AND 5".
" " 2 1519'-3369' " " 2" " 5"
✓ B.H.C.S/GR. " 1. 333-1559. " " 2" " 5"
✓ B.H.C.S. " 2. 1519'-3370. " " 2" " 5"
✓ F.D.C./G.R. " 1 1519'-3369' " " 2" " 5"
✓ C.D.M. " 1. 5"&2". 1519'-3365'.
✓ CORE LAB MUDLOG. 1570'-3379'.
✓ " " COMPLETION COREGRAPH. CORES 11-15.
✓ CORE DESCRIPTIONS. 1-15. ESSO.
✓ S.W.C. " 1600'-3350'.
X FIELD DATA CORE ANALYSIS REPORT. CORES 11, 13 & 15.
X LITHOLOGY FROM CORE LAB "GRAPHOLOG"
✓ " " ~~DAILY~~ REPORTS — cuttings & cores. descriptions
✓ TIME DEPTH CURVE.
✓ COMPLETION REPORT. pad only
CORES. 15 OFF. 2800' 3307'. in core store

S.W.C SHOT 37. REC 32.
X I.E.S. COMPLETION LOG. RUNS 1 & 2. 2".
X MICROPALAEONTOLOGY REPORT BY D. TAYLOR.
X ✓ PALYNOLOGY REPORT BY L STOVER & A.D. PARTRIDGE. PLUS REVISION
X ✓ PALAEOZOIC GRANITIC ROCK REPORT BY J. BARRY HOCKING.
X ✓ PETROLOGICAL REPORT BY ANDEL
X X STRUCTURE, ISOPACH MAPS & GEOLOGICAL CROSS SECTIONS A-A', B-B'
X X " CONTOURS LATROBE DELTA TOPOGRAPHIC SURFACE.
X X MAP. BASEMENT COMPLEX.
X WEEKLY REPORT. 6-1-1969.
X ✓ WELL SUMMARY
X ✓ " COMPLETION REPORT INCLUDING STRATIGRAPHY.

Cores 1—15 and cuttings 1570'-3379' were received by B.M.R. 5/12/73.

GROPER-1 (W538)

Well Summary Report

Table of Contents

Enclosures

WELL SUMMARY

GROPER 1 WELL SUMMARY

Type of Well:	Exploratory.
Purpose of Well:	Groper 1 well was located approximately 26 miles south-southeast of Perch 1 and 46 miles south-west of Kingfish 3. The purpose of this well was to test the possible stratigraphic entrapment of hydrocarbons along the southern depositional limits of the Latrobe Delta Complex. Seismic mapping indicated that the Latrobe onlapped crystalline basement and was overlain by the Lakes Entrance Formation. Prospective reservoir sands were anticipated in the Latrobe section which was mapped to be approximately 300 feet thick at the Groper 1 site.
Well Statistics:	
Status:	Plugged and abandoned.
Location:	Latitude 38° 56' 20" S Longitude 147° 24' 56" E Shot Point 9969, Line EC 74.
Drilling Unit:	Glomar III.
Elevation:	R.T. 31 feet above mean sea level.
Water Depth:	~~196~~ 190 feet.
Spudded:	December 18, 1968.
Completed:	January 6, 1969.
Operation Time:	20 days.
Total Depth:	3379 feet.
Casing:	30 inch at 332 feet; 13 3/8 inch at 1519 feet.
Plugs:	Plug No.1 1380 to 1570 feet; Plug No.2 400 to 600 feet.

.../2

G ROPER -1

Mud Logging: Corelab logged the well from 1570 feet to total depth.

Electric Logging:

IES	Run 1	333 - 1568 feet
	Run 2	1519 - 3369 feet
Sonic	Run 1	333 - 1559 feet
	Run 2	1519 - 3370 feet
FDC	Run 1	1519 - 3369 feet
CDM	Run 1	1519 - 3369 feet

Coring: The section from 2800 to 3307 feet was continuously cored with a total of 15 cores being cut. Total footage cut was 495 feet and recovery was 327.5 feet or 66%.

Sidewall cores were cut with a recovery of 4 from 7 shot.

Core Analysis:

Depth	Hor. Perm.	Vert. Perm.	Porosity	Water	Oil
3160	229	102	22.3	84.3	3.4(tar)
3163.5	4520	1035	13.5	86.7	0.0
3211	0.8	0.8	24.5	93.1	0.0
3213	0.14	0.14	17.8	92.7	0.0
3290	471	436	18.7	89.9	0.0

Hydrocarbons: No hydrocarbon shows were encountered during drilling, although Core-9 (glauconitic sandstone) from 3057 to 3105 feet, was reported to have a petroliferous odour.

Stratigraphy:

Formation	Age	Top(RT)	Subsea	Thickness
Water		31 ft		190 ft
Gippsland	Miocene and younger.	221 ft	- 190 ft	2429 ft
Lakes Entrance	Oligocene.	2650 ft	-2619 ft	463 ft
Latrobe Delta	Eocene.	3113 ft	-3082 ft	227 ft
Basement (Granite).		3340 ft	-3309 ft	39+ ft

Gippsland Formation

1570 - 2650 feet: Marl: light grey, soft, fossiliferous, silty, sandy, some glauconite, some unconsolidated skeletal limestone.

Lakes Entrance Formation:

2650 - 3113 feet: Mudstone: grey green, firm to hard, very glauconitic, calcareous, burrowed, massive, silty and sandy, with glauconitic sandstone at base.

Gropper-1

Latrobe Delta Formation:

3113 - 3340 feet:	Sandstone, Shale and minor Coal. Sandstone: very fine to granular, grading to conglomerate in part buff to light brown grey, poorly sorted, subangular to subrounded quartz, unconsolidated, silty in part. Shale: dark grey to grey black, firm, slightly fissile, carbonaceous, silty in part. Coal: black, brittle.

Basement:

3340 - T.D.:	Granite: porphyritic, pink orthoclase, biotite, abundant quartz, chloritic.

Melbourne
MZ:JHM
13.1.69

COMPLETION REPORT

WELL COMPLETION REPORT

GROPER 1

J.L. Elliott
W.D. Laporte

May 7, 1969.

GROPER 1.

Purpose of Well: This wildcat was drilled to test the stratigraphic entrapment of hydrocarbons along the southern updip limit of the Latrobe Delta Complex. Here the Latrobe onlaps granite basement and is overlain by the Lakes Entrance Formation. The updip limit of the Latrobe forms an irregular outline, resulting from topographic and structural undulations of the basement surface. A Lakes Entrance top seal and basement bottom seal, required for a stratigraphic trap, are present.

Well Statistics

Location:

Latitude 38° 56' 20" S
Longitude 147° 24' 56" E

Seismic S.P. 9969, Line EC-74.

Gippsland Basin, Victoria, Australia.

Elevation: Rotary table above mean sea level 31'.

Water Depth: 190'

Spudded: December 18, 1968.

Completed: January 8, 1969.

Total Depth: 3379'.

Well Status: Dry and abandoned.

Casing:
30" @ 332'
13-1/8" @ 1519'.

Perforations: No perforations.

Plugs:

# 1	1570'-1380'	200 sacks cement.
# 2	600'- 400'	150 sacks cement.

Cores: A total of fifteen conventional cores were cut in Groper 1; ten in the Lakes Entrance Formation and five in the Latrobe Delta Complex.

Core	Interval	Cut	Recovery
1	2800-2854'	54'	54'
2	2854-2856'	2'	0'
3	2856-2861'	5'	4"
4	2866-2875'	9'	4'
5	2875-2891'	16'	11½'
6	2891-2951'	60'	60'
7	2951-3005'	54'	31'
8	3005-3057'	52'	52'
9	3057-3105'	48'	45'
10	3105-3142'	37'	17'
11	3142-3164'	22'	10'
12	3164-3205'	41'	12'
13	3205-3263'	58'	12'
14	3263-3280'	17'	8'
15	3280-3307'	27'	11'

A total of 37 sidewall cores were shot in the interval 1195-3350', with 32 recovered.

Mud Logs: Well was logged by Core Laboratories over the interval 1585' to total depth.

Electric Logs:

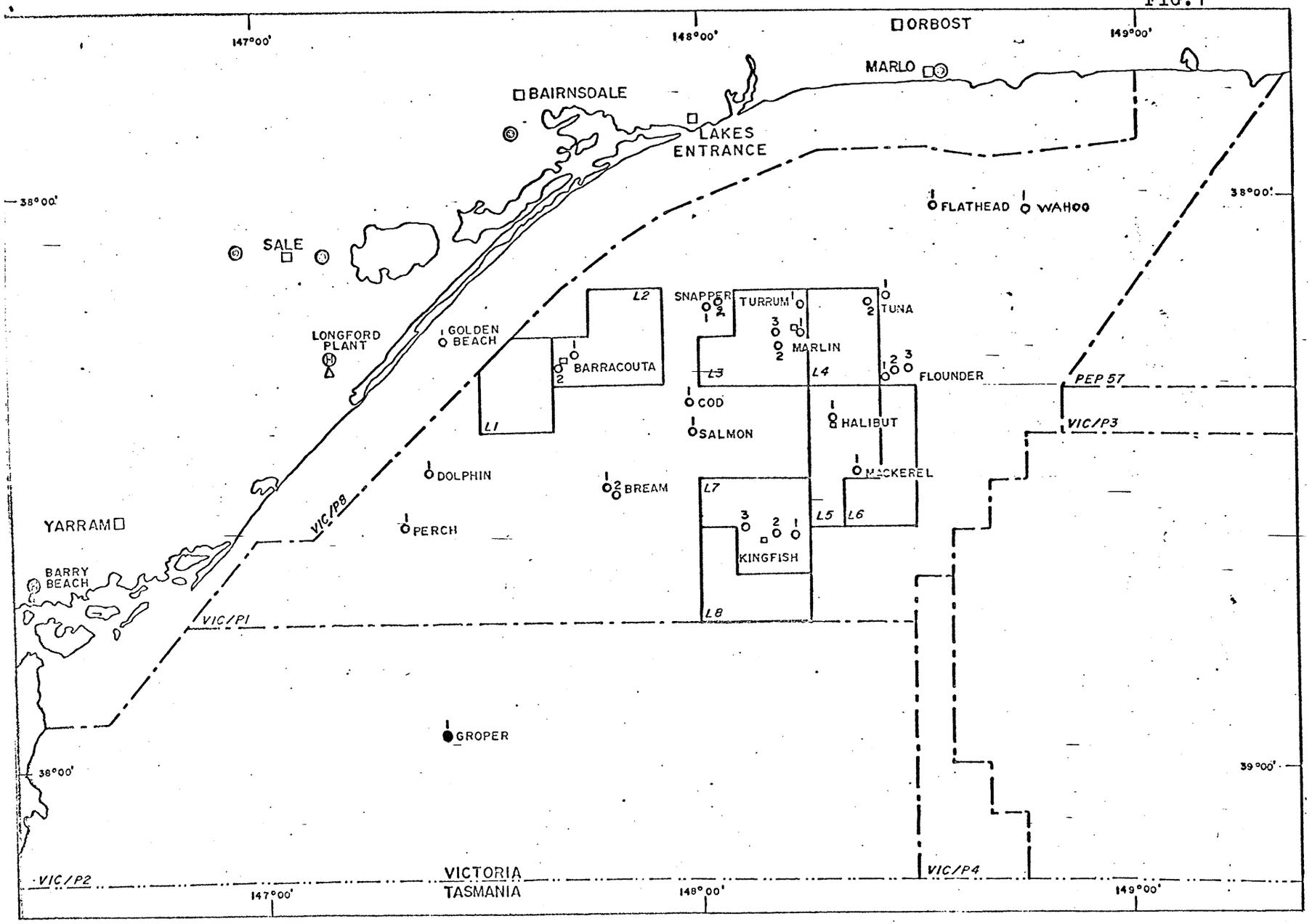
Induction Electric Log	333'	-	3369'
Sonic-SP	333'	-	3370'
Formation Density-Gamma Ray	1519'	-	3369'
Dipmeter	1519'	-	3370'

Velocity Survey.

Hydrocarbons: None.

Wireline Formation Test: No wireline tests were run on Groper 1.

FIG. 1



- Well location
- Airfield
- Helipad
- Production licence boundary
- Exploration permit boundary

Scale 1:1,000,000

10 0 10 20

GIPPSLAND BASIN

LOCALITY MAP

SHOWING

OFF SHORE WELLS

DEPARTMENT OF MINES VICTORIA

PETROLEUM AND NATURAL GAS BRANCH.

Z 2542/M/3

WELL COMPLETION REPORT

GROPER-1

Stratigraphy:

Formation	Top	Thickness
Gippsland Formation	-	+ 2300'
Lakes Entrance Formation	2650(-2619)	465'
Latrobe Delta Complex	3115(-3084)	205'
Weathered Granite	3320(-3289)	20'
Granite	3340(-3309)	+ 39'

Miocene

Gippsland Formation: The Gippsland Formation at Groper 1 consists of skeletal limestones with interbedded marls. The marls increase downwards and give way to mudstone in the lower portion of the section.

Skeletal limestone; (calcarenite) soft, argillaceous, white to mottled, white and yellow-brown, very fine to coarse, skeletal debris of spines, tubes, forams, bryozoans and broken shell fragments. Porosity varies from poor to good.

Marl; soft, medium light grey, abundant very fine to silt sized skeletal debris, occasional calcite filled veinlets, forams common.

Mudstone: medium light grey to light green-grey, blocky, soft, with scattered skeletal debris along faint bedding planes, commonly silty.

Oligocene

Lakes Entrance Formation: The Lakes Entrance lithology consists of glauconitic mudstones and minor tight, micritic skeletal limestones. Near the base the glauconite content increases with a ten foot tight argillaceous, glauconite sandstone occurring approximately 60' above the Latrobe Delta Complex.

Mudstone; light grey to grey-green, soft, calcareous, glauconitic, fossiliferous, with skeletal debris of forams, spines, algal and pelecypod fragments. Faint bedding defined by flecks of bryozoan debris, but mostly churned.

Micritic skeletal limestone; tight, argillaceous, very light grey to grey-green, occasionally glauconitic, moderately hard skeletal micrite with forams, bryozoans, pelecypods, algae and spines. Fossils as broken fragments, no bedding, evidence of churning and burrowing.

Argillaceous, glauconite sandstone; composed of rounded grains of glauconite in a silty argillaceous matrix, mottled yellow-green-green, and rust brown. Well indurated, grading downward into glauconitic mudstone; porosity and permeability nil to very poor.

Eocene

Latrobe Delta Complex: Lithology of the Latrobe consists of sandstones of braided stream and minor point bar facies, with minor shales and coals of the delta plain environment. A zone of weathered granite approximately 25 feet thick was penetrated before reaching hard Devonian Granite basement.

Sandstone; quartz, buff to light grey to light brown-grey, very fine to granule size, sub angular to sub-rounded, generally poorly sorted, occasionally with silty argillaceous matrix, and commonly slightly calcareous, good porosity and permeability.

Shale; silty, dark brown grey, carbonaceous, blocky, to weakly fissile, with carbonaceous wavy laminations and plant debris common.

Coal; black, brittle, with conchoidal fracture.

Weathered granite; light grey, grey-green, feldspathic, with biotite, chlorite and muscovite, kaolinitic matrix, angular, weathered feldspar common, pyritic, tight. This lithologic unit probably represents a weathered zone and not a true granite wash.

Basement

Granite; medium grey to grey-green, porphyritic, pink orthoclase, quartz rich with biotite and chlorite common.

Zonation:

Foraminifera (D.J. Taylor)

Zone	Depth (below sea level)
A - C	190-1919'
D - (?)	1919-2489'
H - I	2489-2619'
I_1 - I_2	2619-2919'
I_2 - J_1	2919-2951'
J_2 - LDC	2951-3084'

Palynology (P.R. Evans)

N. goniatus 3084-3289'

Entire Latrobe Delta Complex is Upper Eocene.

Stratigraphic Summary: The geologic column penetrated in Groper 1 included 225' of Latrobe sediments of which 153' is sandstone with excellent porosity (25-30%). Below this is a zone (14') of highly weathered granite which grades into hard, unweathered granite. The weathered zone and granite were not cored, but are probably capable of forming a bottom seal.

The Oligocene, Lakes Entrance mudstone overlying the Latrobe was cored and consists of calcareous mudstone which forms an effective top seal at Groper 1.

Geology:

Groper 1 is located near the updip pinchout of the Latrobe Delta Complex onto the Bassian Rise at the southern end of the basin. In this area the Latrobe Delta Complex overlies and pinches out against a granitic basement, and is in turn overlain by a transgressive sequence of Oligocene and Lower Miocene mudstones. These mudstones overlie both the Latrobe Delta Complex and the granitic basement in the area of the pinchout, and hence provide the top seal. The southern end of the basin is structurally very stable and the basement, Latrobe, Lakes Entrance and Miocene sediments all dip regionally to the north.

Latrobe sediments in the Groper area were found to retain their excellent reservoir characteristics. They consisted of about 75% sands, mainly in the form of braided stream deposits, with porosities varying from 25-30%. Separating the fresh granitic basement from the typical Latrobe sediments was about 25' of weathered granite and feldspathic sandstones. This unit was interpreted as a weathering or soil profile since the weathered granite graded upwards gradually into a clayey and feldspathic sandstone. The extremely clayey nature of this weathering profile provides an excellent base seal for this stratigraphic play.

In the Groper well the Lakes Entrance Formation consists of 465' of mudstones with minor amounts of glauconitic skeletal limestones which would appear to provide an excellent top seal. However, the presence of thin beds of skeletal limestones within the formation throws some doubt on the regional sealing capacity of the Lakes Entrance. Groper 1 was drilled about 6 miles downdip from the actual Latrobe pinchout, and hence it is not known what proportion of the formation is comprised of these skeletal limestones in the pinchout area. The Mullet 1 well, however, was drilled closer to the pinchout, only 4 miles downdip. In the Mullet well the skeletal limestones did make up a higher proportion of the Lakes Entrance Fm. and where they lay directly on top of the Latrobe sediments, they were considerably more porous, due to reworked sands from the Latrobe. Although this work is only preliminary, it is very possible that the Lakes Entrance Formation is not an effective top seal in the pinchout position of the Groper play.

The Top of the Latrobe at Groper 1 (-3082') ran about 207' low to prediction (-2875'). However, the cycles picked as top of Latrobe and basement are correct; the error results from higher velocity than predicted in the Lakes Entrance and Gippsland Formations.

As a result of Groper 1, we can now confidently map formation boundaries over a large area in the play trend, and along with new stratigraphic information will be in an improved position to recommend further exploration.

LITHOLOGY

- SUMMARY

BASIC 1/2

GROPER 1 WELL.

LITHOLOGY

Loc: Lat 38° 56' 20"S: Long. 147° 24' 56"E.

Elev: R.T. 31 feet a.s.l.

Water Depth: 190 feet.

Lithology from daily reports - cuttings and cores.

1570' - 2500' Marl: light grey, soft and sticky, very fossiliferous, silty, sandy. Sand very fine grained skeletal debris, with some glauconitic and quartz; some unconsolidated skeletal limestone.

2500' - 2805' Mudstone: green-grey, soft, very glauconitic particularly below 2710 feet, fossiliferous, splintery appearance.

2800' - 2854' Core No.1 cut 54 feet, recovered 54 feet (100%).

Mudstone: grey-green, firm to hard, very glauconitic, fossiliferous, calcareous, grades in part to light grey muddy micrite, abundant burrows, massive, partly sandy and silty.

2854' - 2856' Core No.2 cut 2 feet, recovered 0 feet (0%).

2856' - 2861' Core No.3 cut 5 feet, recovered 4 inches.

Mudstone, as above.

2861' - 2866' Mudstone, as above.

2866' - 2875' Core No.4 cut 9 feet, recovered 4 feet.

Mudstone, as above.

2875' - 2891' Core No.5 cut 16 feet, recovered 11½ feet.

Mudstone, as above.

2891' - 2951' Core No.6 cut 60 feet, recovered 60 feet (100%)

Mudstone, as above.

2951' - 3005' Core No.7 cut 54 feet, recovered 31 feet.

Mudstone, as above.

4/..

3005' - 3057' Core No.8 cut 52 feet, recovered 52 feet (100%)

Mudstone, as above.

3057' - 3105' Core No.9 cut 48 feet, recovered 45 feet.

Glauconitic sandstone.

3105' - 3142' Core No.10 cut 37 feet, recovered 17 feet.

Mudstone

3142' - 3164' Core No.11 cut 22 feet, recovered 10 feet.

Shale, sandstone, minor coal and conglomerate.

3164' - 3205' Core No.12 cut 41' recovered 12 feet.

Shale and coal.

3205' - 3263' Core No.13, cut 58 feet, recovered 12 feet.

Shale, siltston and sandstone.

3263' - 3280' Core No.14 cut 17 feet, recovered 8 feet.

Shale, sandstone.

3280' - 3307' Core No.15 cut 27 feet, recovered 11 feet.

Shale, conglomerate.

3057' - 3340' Sandstone, shale and siltstone, minor coal and conglomerate bands.

3340' - 3379' (T.D.) Granite.

LITHOLOGY

- SIDEWALL CORE

SIDEWALL CORES

BASIC

GROPER 1

1. 3350' No recovery.

2. 3337' ½" weathered granite; light grey to dark grey, weathered feldspars, biotite and some fine quartz present.

3. 3330' Lithic feldspathic sandstone with kaolinitic matrix sand grains of light green chert, angular, medium grained, poorly sorted, weathered feldspar common, pyritic, hard, tight. No show.

4. 3320' Quartzose, feldspathic sandstone; pyritic, clear grains of quartz in dark grey matrix, medium to granule, angular, poorly sorted, weathered feldspar common; matrix of pyrite, clay and biotite. Very calcareous. No show.

5. 3315' Shale; silty, micaceous, dark brown, blocky.

6. 3303' 1" Quartz sandstone; buff, very fine to granule, sub angular to sub rounded, poorly sorted, very friable, slightly calcareous. No show.

7. 3287' Chip shale; green-grey, waxy, bentonitic, calcareous.

8. 3263' No recovery.

9. 3245' 1" Quartz sandstone; unconsolidated, buff, very fine to granule, angular to sub rounded, poorly sorted, good porosity and permeability No show.

10. 3225' Quartz sandstone; as above, very slightly calcareous.

11. 3212' 2" Quartz sandstone; with kaolinitic matrix, very fine to fine, occasionally medium, sub angular to sub rounded, well sorted, soft, friable to unconsolidated, good porosity and permeability. No show.

12. 3147' 1" Quartz Sandstone; buff to light brown grey, (colour in part due to mud contamination), very fine to granule, sub angular to sub rounded, poorly sorted, very friable to unconsolidated, good porosity and permeability. No show.

13. 3177' 1" Quartz Sandstone; as above, with argillaceous silty matrix, and firm. Slightly calcareous.

14. 3170' 1½" Quartz Sandstone; as above, with streak of soft black asphaltic residue.

15. 3143' 1½" Quartz Sandstone; pyritic, light grey, very fine to granule, sub angular, poorly sorted, very friable to unconsolidated, good porosity and permeability. No show.

16. 3130' 2" Quartz Sandstone; medium light grey silt to medium grained, angular to sub rounded, poorly sorted, very friable to slightly unconsolidated, soft, good porosity and permeability. No show.

17. 3126' 1-3/4" Quartz Sandstone; medium dark grey, very fine to coarse, sub angular to sub rounded, poorly sorted, very friable, soft, pyritic, good porosity and permeability. No show.

18. 2790' 1-3/4" Mudstone; silty, glauconitic, medium light grey, firm, blocky.

19. 2665' 1-3/4" Limestone; micritic, skeletal, very fine to silt size, glauconite grains, abundant skeletal debris, forams, firm, tight; no show.

20. 2600' 1-3/4" Mudstone; light green grey, waxy, blocky, scattered skeletal debris.

21. 2500' 1½" Mudstone; as above.

22. 2400' 1¼"Marl; medium light grey, abundant very fine skeletal debris, with calcite filled veinlets, trace silt sized glauconite.

23. 2300' 1½" Marl; medium light grey, with silt sized skeletal debris, firm.

24. 2200' 2" Marl; as above.

25. 2100' 2" Calcarenite; mottled white and yellow brown, fine to coarse skeletal debris, firm, good porosity and permeability.

26. 2000' 1½" Marl; as above.

27. 1900' 1-3/4" Calcarenite; white, very fine to fine, angular, well sorted, skeletal debris, spines, tubes and forams, poor visible porosity.

28. 1800' 2" Marl; as above.

29. 1700' Marl; as above (2")

30. 1600' 2" Marl; as above.

LITHOLOGY

- CORE

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

BASIC 1/15

Core No. 1

WELL: GROPER 1

Interval Cored 2800 - 2854 ft., Cut 54 ft., Recovered 54 ft., (100 %) Fm. Lakes Entrance

Bit Type C-22, Bit Size 8 5/16 in., Desc. by B. L. Culp Date Dec. 30, 1968

Depth & Coring Rate (min./ft.)	Graphic (1" = 5'), 10	Shows	Interval (ft.)	Descriptive Lithology
0 2800			2800 - 2854	Mudstone - gray to grayish-green, firm to hard, very glauconitic, very fossiliferous with pelecypod fragments, bryozoans, foraminifera and algal fragments abundant, very calcareous and occasionally grades into a very light gray muddy micritic limestone which is also very fossiliferous and glauconitic. The core exhibits abundant burrowing throughout and is "massive" in appearance. The mudstone is often silty.
2854			zone of large pelecypod fragments 2806 - 2809	

REMARKS:

2/15

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 2

WELL: GROPER - 1

Interval Cored 2854-56 ft., Cut 2 ft., Recovered 0 ft., (0 %) Fm.

Bit Type Christensen C-22, Bit Size 8 5/16 in., Desc. by Date Dec 30 1968

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0			2854-56	No recovery

REMARKS:

3/15

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 3

WELL: GROPER-1

Interval Cored 2856-61 ft., Cut 5 ft., Recovered 0 ft., (0 %) Fm.

Bit Type Christensen C-22, Bit Size 8 5/16 in., Desc. by Date Dec 31, 1968

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0			2856-61	No recovery

REMARKS:

4/15

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 4

WELL: Grodger 1

Interval Cored 2866 - 2875 ft., Cut 9' ft., Recovered 4' ft., (.....%) Fm. Lakes Entrance

Bit Type C - 22, Bit Size 8 5/16 in., Desc. by R.V. Hicks Date 31 Dec 1968

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0	2866			Mudstone, brown grey to green grey, glauconitic, abundant skeletal debris, algal material, forams, spines, occ. pelecypod, burrowed. slightly calcareous
	2875			Limestone, micritic skeletal, very light grey with green cast, glauconitic, skeletal material consists of forams, algal, spines and pelecypod fragments., hard, tight, No Show.

REMARKS:

5/15

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 5

WELL: GRUPER - 1

Interval Cored 2875 - 2891 ft., Cut 16' ft., Recovered 11½ ft., (....%) Fm. LAKES ENTRANCE

Bit Type C - ZZ, Bit Size 8 5/16 in., Desc. by R.V. Hicks Date 1 JAN 1969

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0	2875			
			2875 - 76½	Mudstone glauconitic, fossiliferous, brown grey to green grey, massive to weakly laminated, burrowed, forams, skeletal debris of algal, spicars and pelecypod fragments calcareous
	M-S		2876½ - 2878	Limestone, micritic skeletal, argillaceous, very light grey w/ green cast, glauconitic, burrowed, massive, hard, tight, No show, skeletal debris as ↑ forams.
	M-S			
			2878 - 2881	Interbedding mudstone as ↑ limestone as.
	2891'		2881 - 2884	Mudstone as
			2884 - 2884½	Limestone as
			2884½ - 2886½	Mudstone as

REMARKS:

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

6/15

Core No. 6

WELL: Groper 1

Interval Cored 2891 - 2951 ft., Cut 60 ft., Recovered 60 ft., (100 %) Fm. Lakes Entrance

Bit Type C 20, Bit Size 8 5/16 in., Desc. by R.V. Hicks Date 1 Jan 1969

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
2891				
			2891 - 2895	Mudstone, sl calcareous, glauconitic, fossiliferous green gy to brown grey, massive to very weakly fissile, burrowed, forams and skeletal debris of spines, algal and pelecypod fragments
			2895 - 2896	Limestone, micritic skeletal argillaceous, very light grey w/ green cast occasionally glauconitic, skeletal material aa
			2896 - 2900	Mudstone aa
			2900 - 2901 1/2	Limestone aa.
			2901 1/2 - 2916	Mudstone aa
			2916 - 2917	Limestone aa
			2917 - 2921	Mudstone aa
			2921 - 2922	Limestone aa
			2922 - 2951	Mudstone aa
2951				

REMARKS:

7/15

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 7

WELL: GROPER -1

Interval Cored 2951-3005 ft., Cut 54 ft., Recovered 31 ft., ( ) % Fm. Lakes Entrance

Bit Type C-20, Bit Size 8 5/16 in., Desc. by R.V. Hicks Date 2 Jan 1968

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0	2951'			
			2951 - 2982	Mudstone, calcareous, glauconitic, fossiliferous, in part very glauconitic forams and skeletal debris of algal spines, and pelecypod fragments common, massive to weakly laminated abundant burrows
	3005			

REMARKS:

8/15

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 8

WELL: Gropper 1

Interval Cored 3005 - 3057 ft., Cut 52 ft., Recovered 52 ft., (100 %) Fm. Latrobe Entrance

Bit Type C-20, Bit Size 8 5/16 in., Desc. by RV Hicks Date 2 Jan 1969

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0	3005			
			3005 - 3057	Mudstone, calcareous, glauconitic, medium brown grey. echinoid spines & forams common, occasional pelecypod, fecal pellets common, burrowed, massive to weakly laminated, slightly fissile
	3057			

REMARKS:

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

9/15

Core No. 9

WELL: GROPER-1

Interval Cored 3057-3105 ft., Cut 48 ft., Recovered 45' ft., (.....%) Fm. Lakes Entrance

Bit Type C-20, Bit Size 8 5/16 in., Desc. by R.V. Hicks Date 3 Jan 1969

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0	3057			
			3057-3066	Glauconitic sandstone, silty matrix, well indurated, argillaceous, mottled green yellow green and rust brown, hard, tight, NS, grading into glauconitic mudstone with glauconite filled burrows at base.
			3066-3102	Glauconitic mudstone, with occasional thin (to 2") beds of muddy glauconitic sandstone, grey brown to dark green color, occ. rare skeletal debris, bryozoans, forams, & algal material. faint burrows. pyrite nodules common.

REMARKS:

10/15

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 10

WELL: Gooper - 1

Interval Cored 3105 - 3142 ft., Cut 37 ft., Recovered 17 ft., ( ) % Fm Lakes Entrance

Bit Type C - 20, Bit Size 8 5/16 in., Desc. by R.V. Hicks Date 3 Jan 1969

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
	3105		3105 - 3122	Glauconitic mudstone, brown grey mudstone with dark green glauconite bands to ½" thick, abundant pyrite nodules, rare fossil fragments.
	3142			

REMARKS:

11/15

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 11

WELL: Gropper-1

Interval Cored 3142-3164 ft., Cut 22 ft., Recovered 10 ft., ( ) % Fm. Latrobe

Bit Type C-22, Bit Size 8 5/16 in., Desc. by R.V. Hicks Date 3 Jan 1967

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0	3142			
			3154 - 3156	Shale, very dark brown to grey black, firm, wavy discontinous laminations, blocky to slightly fissile, firm
			3156 - 3156 ½	Coal, black, brittle
			3156 ½ - 3159	Shale, brown, with carbonaceous plant debris
			3159 - 3160	Sandstone, silty, argillaceous, silt to very fine, sub angular, moderately well sorted, friable, micaceous, fair porosity, No Show, H_2S odor
			3160 - 3164	Pebble Conglomerate, light brown grey, silt to granule occasionally pebble size grains, quartz grains light grey to white to clear, sub angular to sub rounded, poorly sorted, unconsolidated to 6" of dolomite cemented cong. at base
	3164			

REMARKS:

12/15

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 12

WELL: Grosser - 1

Interval Cored 3164 - 3205 ft., Cut 41 ft., Recovered 12 ft., ( ) % Fm. Latrobe

Bit Type C-20, Bit Size 8 5/16 in., Desc. by R.V. Hicks Date 4 Jan 1969

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0	3164			
			3164 - 3167	Shale, silty, brown, carbonaceous plant debris, H_2S odour
			3167 - 3170	Coal, black brittle
			3170 - 3176	Shale as.
	3205			

REMARKS:

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

13/15

Core No. 13

WELL: Gropper -1

Interval Cored 3205-3263 ft., Cut 58 ft., Recovered 12 ft., (...%) Fm. Latrobe

Bit Type C-20, Bit Size 8 5/16 in., Desc. by R.V. Hicks Date 4 Jan 69

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0	3205			
			3205 - 3208½	Mudstone, light brown to bf, blocky firm grading down to argillaceous siltstone.
			3208½ - 3209½	Siltstone, sandy at base, with very fine sand grains, buff, micaceous, firm, No Show H_2S odor
			3209½ - 3211	Sandstone, silty at top, buff, very fine, subangular, well sorted, friable, soft, fair porosity slightly micaceous, No Show H_2S odor
			3211 - 3213½	Mudstone, silty, buff, blocky
			3213½ - 3217	Shale, brown to brown grey, abundant plant debris, slightly fissile, with wavy discontinous carbonaceous laminations
	3263			

REMARKS:

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 14

WELL: GRAPER - 1

Interval Cored 3263 - 3280 ft., Cut 17 ft., Recovered 8 ft., ( ) % Fm. Latrobe

Bit Type C-22, Bit Size 8 5/16 in., Desc. by R.V. Hicks Date 5 Jan 69

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0	3263			
			3263 - 3267½	Shale, ben gy, blocky, carbonaceous, w/ wavy carbonaceous laminations
			3267½ - 3269	Shale, silty, buff to light grey, blocky
			3269 - 3270½	Sandstone, unconsolidated, very fine to granule occasionally pebble buff to lt brown grey, sub angular to sub rounded, p. sorted
			3270½ - 3271	Mudstone, light grey, blocky waxy, occasional carbonaceous plant debris
	3280			

REMARKS:

15/15

ESSO STANDARD OIL (AUSTRALIA) LTD.

CORE DESCRIPTION

Core No. 15

WELL: GROPER - 1

Interval Cored 3280-3307 ft., Cut 27 ft., Recovered 11 ft., ( ) % Fm. Latrobe

Bit Type C-20, Bit Size 8 5/16 in., Desc. by R.V. Hicks Date 5 Jan 69

Depth & Coring Rate (min./ft.)	Graphic (1" = 5')	Shows	Interval (ft.)	Descriptive Lithology
0	3280			
			3280 - 3289½	Bentonitic Shale, v light grey, waxy blocky, with scattered very small pyrite nodules
			3289½ - 3290½	Pebble Conglomerate, light grey brown, very fine to pebble size, sub angular to sub rounded, poorly sorted, with local streaks of dolomite cement, fair porosity N.S.
			3290½ - 3291	Shale, dark brown grey with wavy carbonaceous laminations and coal lense to 2mm. thick. in pene contemporaneous fault contact with Bentonitic shale as.
	3307			

REMARKS:

BASIC
I.F. 081182

FIELD DATA CORE ANALYSIS REPORT

Date:.....

GROPER-1.

Sample Number	Depth Feet	Permeability Millidarcys H	Permeability Millidarcys V	Porosity Percent	Residual Liquid Saturation Oil % Vol.	Residual Liquid Saturation Oil % Por.	Residual Liquid Saturation Total Water % Por.	Cb.	Dens.	Remarks
1	3160	229	102	22.3	0.75	3.4	84.3	2.7	2.14	CORE # 11
2	3163.5	4520	1035	13.5	0.0	0.0	86.7	1.8	2.44	
3	3211	0.8	0.8	24.5	0.0	0.0	93.1	1.7	2.24	CORE # 13
4	3213	0.14	0.14	17.8	0.0	0.0	92.7	1.3	2.36	
5	3290	471	436	18.7	0.0	0.0	89.9	1.9	2.40	CORE # 15

CO[illegible]: ESSO WELL: GROPER-1 ELEVATION:

CORE LABORATORIES, INC. *Petroleum Reservoir Engineering*

COMPANY ESSO STANDARD OIL (AUSTRALIA) LTD. FILE NO FL-115-18L
WELL GROPER 1 DATE ENGRS. THM
FIELD WILDCAT FORMATION LATROBE VALLEY ELEV. 31' KB.
COUNTY VICTORIA STATE AUSTRALIA DRLG FLD FRESHWATER GEL CORES 11-13-15.
LOCATION OFFSHORE/GLOMAR 111 REMARKS DIAMOND CORE BITS

COMPLETION COREGRAPH

SAND LIMESTONE CONGLOMERATE CHERT ANHYDRITE
SHALE DOLOMITE OOLITES

SAMPLE CHARACTERISTICS
F: Fractured L: Laminated FG; MG; CG: Type Grain Size S: Stylolitic V: Vuggy

PROBABLE PRODUCTION
O: Oil W: Water G: Gas T: Transitional

TOTAL WATER O—O
PERCENT PORE SPACE
75 50 25

OIL SATURATION X---X
PERCENT PORE SPACE
25 50 75

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY, MD. ✲ = Horizontal Perm Plug		POROSITY %	RESIDUAL SATURATION % PORE SPACE		GB	PERMEABILITY O—O MILLIDARCYS 1000 500	POROSITY X---X PERCENT 20 10
		*			OIL	TOTAL WATER			
1	3160	229	102	22.3	3.4	84.3	2.7	O	×
2	3163.5	4520	1035	13.5	0.0	86.7	1.8		×
CORE No 12									
3	3211	0.8	0.8	24.5	0.0	93.0	1.7		×
4	3213	0.14	0.14	17.8	0.0	92.7	1.3		×
CORE No 14									
5	3290	471	436	18.7	0.0	89.9	1.9	O	×
CORE No 15									

SAMPLE NUMBER	OIL SATURATION X---X PERCENT PORE SPACE 25 50 75
1	× O
2	× O
3	× O
4	× O
5	× O

LITHOLOGY

- THIN SECTION EXAMINATION

PALAEOZOIC GRANITIC ROCK FROM ESSO'S GROPER 1 WELL (S.W. FLANK OF GIPPSLAND BASIN)

INTRODUCTION

Esso's Groper 1 well was drilled in 1968 as a stratigraphic test on the S.W. flank of the Gippsland Basin, but it proved to be dry. The well encountered Palaeozoic bedrock at 3,340 feet (3,309 feet below sea level) after drilling through Cainozoic sediments, and then continued to a total depth of 5,379 feet in the former. The well location is shown in Fig. 1, and is seen to be 50 miles east of Wilson's Promontory.

A cuttings sample at 3,360 to 3,370 feet has been examined, a total of 29 chips being selected for thin-sectioning. The results are presented below.

HAND SPECIMEN (Rock No. 16826)

The cuttings consist of a medium-grained granitic rock that appears to be dominated by pink feldspar, though quartz, white feldspar, and greenish black mica are also evident.

PETROGRAPHY (Slide No. 9711)

A thin-section of the chips reveals that the sample is indeed a medium-grained granitic rock which is probably roughly equigranular (though the chips are too small to be sure), and holocrystalline. It consists of quartz, plagioclase and potash feldspar that is frequently altered, and also chloritised biotite.

Quartz is anhedral and up to at least 1.8 mm in size

Potash feldspar, where positively identified (refer below), is not very common and consists of orthoclase and perthite. It is anhedral and does not appear to be much larger than 1 mm in most cases. There is minor alteration to kaolinite which tends to have a pinkish coloration, perhaps due to included, finely-divided hematite.

Plagioclase feldspar is common as anhedral crystals up to at least 4.3 mm (the maximum chip size). It tends to be finely twinned, indicating a calcic oligoclase to sodic andesine composition, but is also occasionally zoned. However, virtually all of the plagioclase crystals are partially to severely altered to sericite, as well as calcite, kaolinite, and chlorite. The same pinkish coloration found in the potash feldspars is widespread in the plagioclase variety. In addition to rare zircon inclusions the plagioclase feldspar encloses fine altered biotite.

/2...

PALAEOZOIC GRANITIC ROCK etc.

In addition to the positively identifiable potash and plagioclase feldspars, there are quite a large number of questionable compositions. The latter have no obvious twinning, though in many cases the pattern of calcite alteration suggests that fine twins may have been present. Furthermore, the size of the crystals are comparable to that of the plagioclase feldspars and so too are the well-developed sericite, calcite and other alteration products. Thus, although these feldspars have the superficial appearance of orthoclase, the writer believes that they are probably extensively altered plagioclase feldspar. An approximate count of the feldspar types is as follows: potash 19; plagioclase, 66; indefinite, 81.

Biotite is present in significant amounts as ragged-looking flakes up to 1.8 mm long. It is rarely fresh, but is altered to penninite, a variety of chlorite with blue to purple interference colors. Iron ore is associated, consisting mostly of leucoxene, which is an alteration product of ilmenite, but also minor hematite and pyrite.

In addition to its role as an alteration product of feldspar, calcite is also found in one chip filling 'hairline' veins.

COMMENTS

It appears from the above description that the sample examined is a partially altered biotite granodiorite. (If the indefinite feldspars are in fact orthoclase, then it would lie close to the granite-adamellite subdivision).

Groper 1 is 30 miles away from the nearest known granitic rocks, though one cannot assume that the intervening area is also granitic. For example, north of the Gippsland Basin, comparably spaced granites are separated by Lower Palaeozoic sediments. A possible further lead to support this view is that Groper 1 was drilled immediately west of a prominent N.E.-S.W. magnetic anomaly (approximately 30 miles N.E. of the Hogan Group) which, though its origin is unknown, seems to line up with a similar one at Lakes Entrance where buried granitic rocks of comparable composition (the writer, unpublished) intrude Lower Palaeozoic sediments (Quilty, 1962, Plate 2).

REFERENCE

Quilty, J.H., 1962. Gippsland Basin airborne magnetic surveys, Victoria, 1951-52 and 1956. B.M.R. Record 1962/53 (open file)

Barry Hocking

J.B. Hocking,
Geologist,
Sedimentary Basin Studies Section

August 1966

Sample: Groper 1: 3288 ft: TS22658

Thin Section:

Point count of a little over 3000 points gives the following modal analysis:

	%
Quartz	71.2
Feldspar	0.5
Lithics	-
Quartzite	1.1
Mica	0.3
Detrital clay	2.9
Authigenic clay	0.4
Carbonate	23.6
Carbonaceous material	-
Sulphides	-
Heavies	0.1

(Details of grains included in these categories are as given in report MP1333/69 of 5/2/69)

This rock is very irregularly sorted, and the grains are angular to subangular. No lithic fragments were observed apart from quartzite, and the quartzite fragments are probably coarse chert or originally clastic material. Little if any is of metamorphic origin, though some larger grains are severely strained, and have even formed quartz mosaics. One quartz grain was observed with a large biotite inclusion, and some grains are associated with muscovite; this suggests a possible granitic origin for much of the framework.

Most of the cement is calcite, the only other cement being a small amount of clay. The carbonate has either prevented or obscured any cementation there may have been by quartz overgrowths, and many quartz grains are crossed by veins of calcite, showing that it has to some extent replaced quartz.

Green-brown tourmaline was the only heavy mineral observed.

Clay minerals:

The clay minerals were identified by X-ray diffraction, and are as follows:

kaolin dominant
illite accessory
smectite accessory

It is likely that the authigenic clay, as determined in the modal analysis, is not significantly different in composition from the total clay.

bn.3

Amdel Report MP 2809/69
March 1969

PALYNOLOGY

INTERPRETATIVE

PALYNOLOGY REPORT

ON

GROPER -1

BY

LEWIS E. STOVER

Palynology Report 1970/16 June 1970.

INTRODUCTION

An essentially uninterrupted sequence of conventional cores from Groper -1 between 2800 and 3310 feet were sampled to determine if dinoflagellates and associated microplankton could be used to subdivide the section containing spore-pollen assemblages attributable to the Nothofagidites asperus Zone. This involved ascertaining the age differences, if any, between the lower part of the dominately marly section, the underlying "glauconitic silt" and the subjacent Latrobe sands. On the basis of electric log characteristics, the top of the "glauconitic silts" was picked at 3056 feet and the top of the Latrobe sands at 3114 feet.

Pelagic foraminiferal determinations by D.J. Taylor indicate that the top of I-2 is at 2950 feet, the top of J at 2982 feet and the base of the marine section is at 3060 feet. Samples from 3090 feet to 3315 feet which contain abundant spores and pollen were placed in the N. asperus Zone by P.R. Evans (Palynology Report 1969/3).

SUMMARY

Sample	Drill Depth	Age	Dinoflagellate Zone
Core 6	2947 feet	Oligocene	Unnamed.
Core 7	2962 feet	"	"
Core 7	2980 feet	"	"
Core 8	3010 feet	"	"
Core 8	3024 feet	"	"
Core 8	3055 feet	"	"
Core 9	3067-70 feet	Eocene	O. diktyoplokus
Core 9	3073-77 feet	"	"
Core 9	3085-88 feet	"	"
Core 9	3094-97 feet	"	"
Core 9	3102 feet	"	"
Core 10	3127 feet	"	D. extensa
Core 10	3134 feet	"	"
Core 10	3140 feet	"	"
Core 11	3157 feet	No dinoflagellates	

COMMENTS

Dinoflagellates assemblages consisting primarily of several varieties of Hystrichsphaera ramosa were recovered from the marly section between 2947 and 3055 feet in all of the samples from this interval. Associated spores and pollen are dominated by specimens of Nothofagidites, and there is little diversity of species among either the microplankton or the spores and pollen in this part of the section. A greater diversity of dinoflagellates and of spores and pollen was found in the assemblages between 3064 and 3140 feet. Dinoflagellate assemblages from 3064 and 3102 feet are placed in the Oligosphaeridium diktyoplokus Zone, and those from 3127 to 3140 feet in the Deflandrea extensa Zone. Samples between 3157 and 3315 feet lack dinoflagellates but yielded excellent spore-pollen assemblages.

The sample from 3102 feet contained numerous specimens of Dinopterygium mitrum, and the same species has been identifed in Snapper -3 at 4206 feet and in Turrum -1 at 6580 feet.

Form R125 3/71

BASIN Otway Basin BY David Taylor

WELL NAME Grofer-1 DATE 19 April 1971 ELEV. + 31'

Foram Zonules

		Highest Data	Quality	2 Way Time	Lowest Data	Quality	2 Way Time
MIOCENE	A						
	Alternate						
	B						
	Alternate						
	C						
	Alternate						
	D_1	1950	3		2070	3	
	Alternate						
	D_2						
	Alternate						
	E						
	Alternate						
	F						
	Alternate						
	G						
	Alternate						
	H_1						
	Alternate						
	H_2						
	Alternate						
OLIGOCENE	I_1	2600	2		2935	1	
	Alternate	2665	1				
	I_2	2931	1		2970	1	
	Alternate						
	J_1	2982	0		3060	2	
	Alternate						
	J_2						
	Alternate						
EOC.	K						
	Alternate						
	Pre K						

COMMENTS:

Note: If highest or lowest data is a 3 or 4, then an alternate 0, 1, 2 highest or lowest data will be filled in if control is available.

If a sample cannot be interpreted to be one zonule, as apart from the other, no entry should be made.

0 SWC or Core - Complete assemblage (very high confidence).
1 SWC or Core - Almost complete assemblage (high confidence).
2 SWC or Core - Close to zonule change but able to interpret (low confidence).
3 Cuttings - Complete assemblage (low confidence).
4 Cuttings - Incomplete assemblage, next to uninterpretable or SWC with depth suspicion (very low confidence).

Date Revised _____

By _____

BASIN GIPPSLAND DATE

WELL NAME GROPER -1 ELEVATION + 31 feet

AGE	PALYNOLOGIC ZONES	HIGHEST DATA					LOWEST DATA				
		Preferred Depth	Rtg	Alternate Depth	Rtg	2 way time	Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time
I.G. MIOC.	T. bellus										
	P. tuberculatus										
EOCENE	U. N. asperus										
	L. N. asperus	3055	0				3315	1			
	P. asperopolus										
	U. M. diversus										
	L. M. diversus										
PALEO-CENE	L. balmei										
	T. longus										
LATE CRETACEOUS	T. lilliei										
	N. senectus										
	C. trip./T.pach.										
	C. distocarin.										
	T. pannosus										
EARLY CRETACEOUS	C. paradoxa										
	C. striatus										
	U. C. hughesii										
	L. C. hughesii										
	C. stylosus										
Pre-Cretaceous											

COMMENTS: L. N. asperus "B" from 3055 to 3140 feet; L. N. asperus "A" from 3157' to 3315 feet.

T.D. 3290' (L.D.)

RATINGS:
0; SWC or CORE, EXCELLENT CONFIDENCE, assemblage with zone species of spores, pollen and microplankton.
1; SWC or CORE, GOOD CONFIDENCE, assemblage with zone species of spores and pollen or microplankton.
2; SWC or CORE, POOR CONFIDENCE, assemblage with non-diagnostic spores, pollen and/or microplankton.
3; CUTTINGS, FAIR CONFIDENCE, assemblage with zone species of either spores and pollen or microplankton, or both.
4; CUTTINGS, NO CONFIDENCE, assemblage with non-diagnostic spores, pollen and/or microplankton.

NOTE: If a sample cannot be assigned to one particular zone, then no entry should be made. Also, if an entry is given a 3 or 4 confidence rating, an alternate depth with a better confidence rating should be entered, if possible.

DATA RECORDED BY: I.E.S./ A.D.P. DATE Dec. 1971

DATA REVISED BY: DATE

BASIN GIPPSLAND DATE

WELL NAME GROPER – 1 ELEVATION +31 feet

AGE	PALYNOLOGIC ZONES	HIGHEST DATA Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time	LOWEST DATA Preferred Depth	Rtg.	Alternate Depth	Rtg.	2 way time
MIO.	P. tuberculatus										
	U. N. asperus										
	M. N. asperus	3055	0				3140	0			
	L. N. asperus	3157	1.				3315	1			
EOCENE	P. asperopolus										
	U. M. diversus										
	M. M. diversus										
	L. M. diversus										
PALEOCENE	U. L. balmei										
	L. L. balmei										
	T. longus										
LATE CRETACEOUS	T. lilliei										
	N. senectus										
	C. trip./T.pach.										
	C. distocarin.										
	T. pannosus										
EARLY CRETACEOUS											
EARLY CRETACEOUS T.D.		3380									

COMMENTS: Deflandrea extensa Dinoflagellate Zone 3055 (1) – 3140 (1)

RATINGS:
0; SWC or CORE, EXCELLENT CONFIDENCE, assemblage with zone species of spores, pollen and microplankton.
1; SWC or CORE, GOOD CONFIDENCE, assemblage with zone species of spores and pollen or microplankton.
2; SWC or CORE, POOR CONFIDENCE, assemblage with non-diagnostic spores, pollen and/or microplankton.
3; CUTTINGS, FAIR CONFIDENCE, assemblage with zone species of either spore and pollen or microplankton, or both.
4; CUTTINGS, NO CONFIDENCE, assemblage with non-diagnostic spores, pollen and/or microplankton.

NOTE: If a sample cannot be assigned to one particular zone, then no entry should be made. Also, if an entry is given a 3 or 4 confidence rating, an alternate depth with a better confidence rating should be entered, if possible.

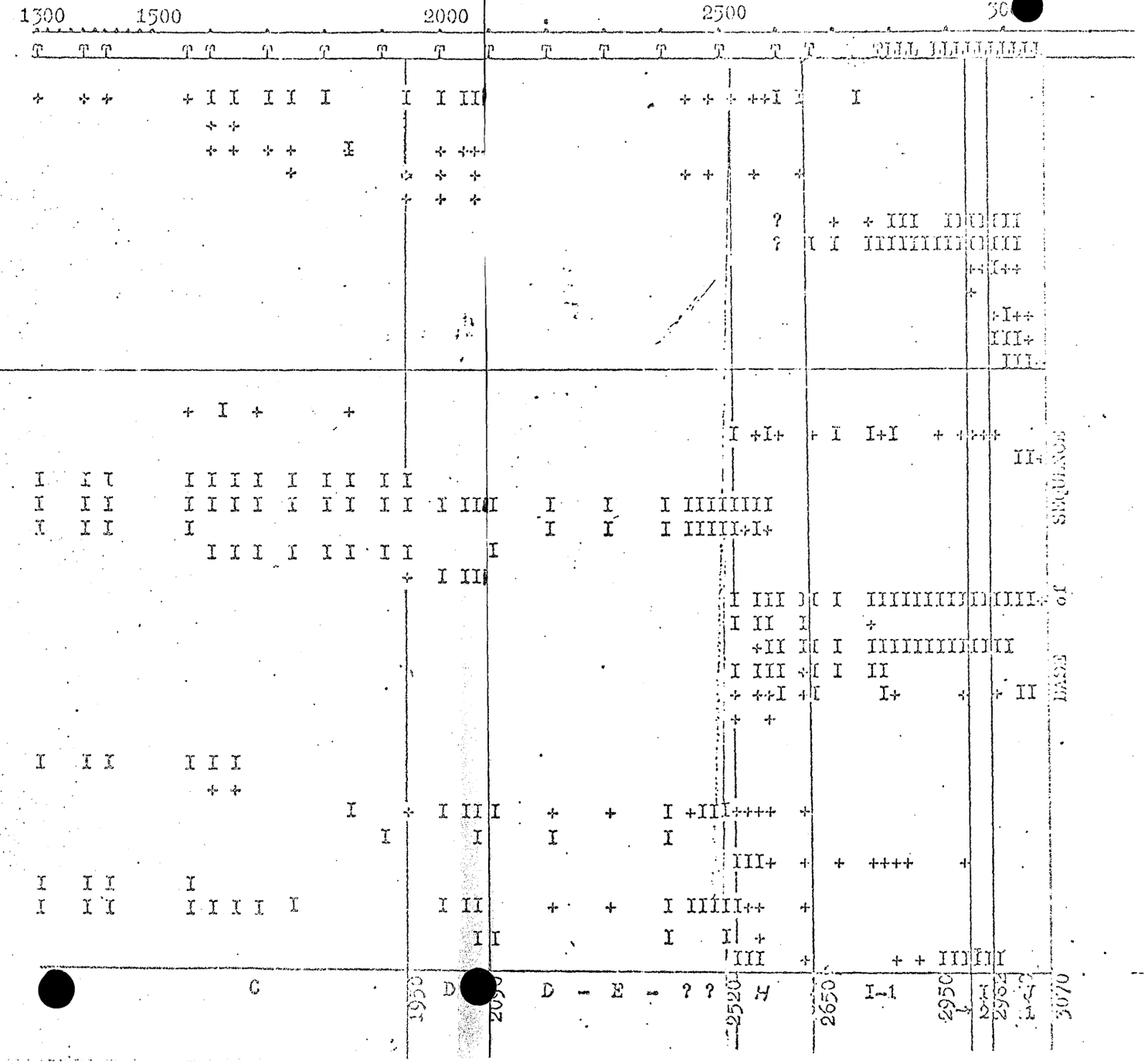
DATA RECORDED BY: LES/ADP. DATE Dec. 1971

DATA REVISED BY: ADP DATE January. 1975.

FORM N. 8 215 12/72

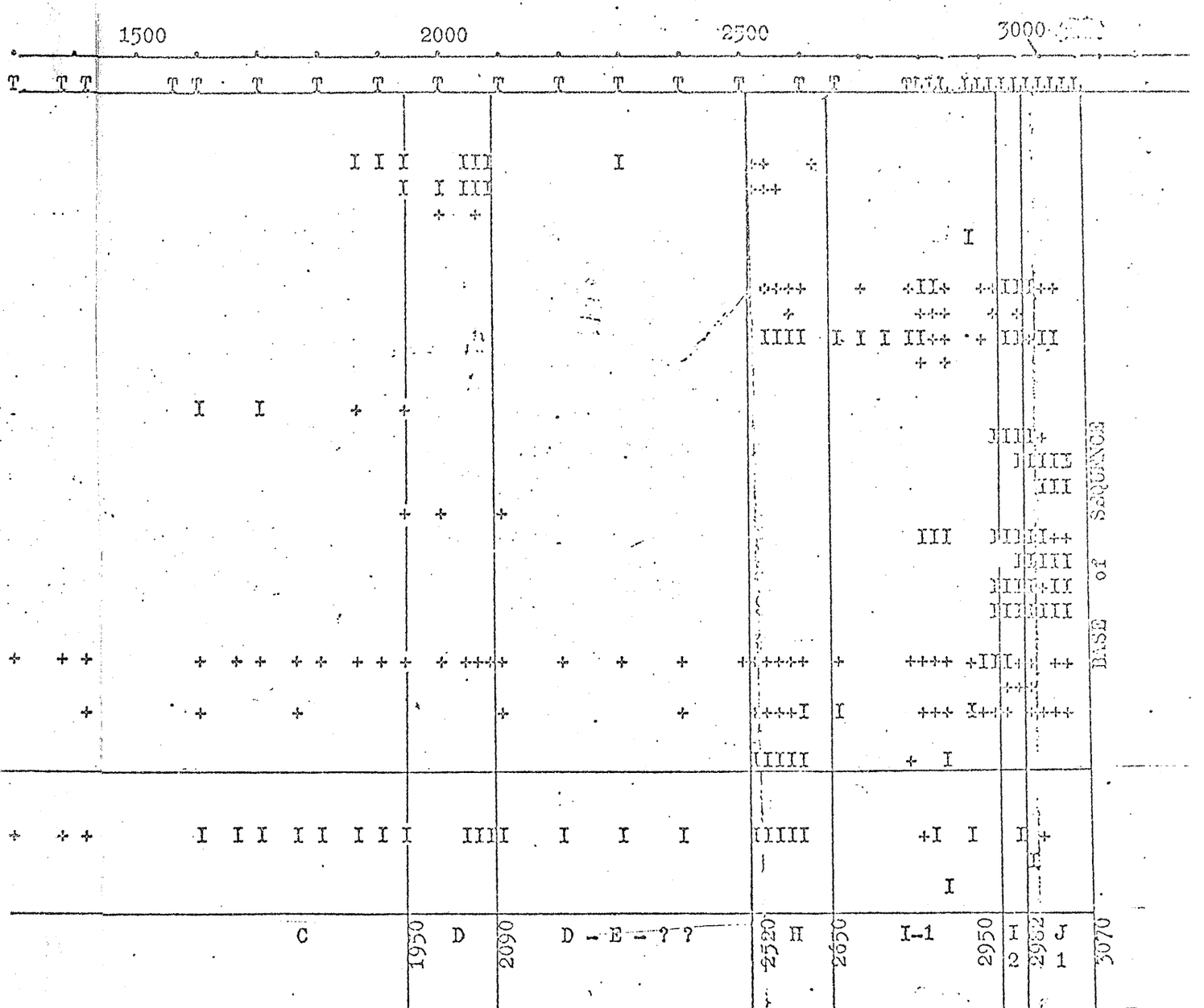
GROPER - 1
Sheet - 1
of 3 sheets.

SPECIES LIST.



GROPER - 1
Sheet - 1
of 2 sheets.

GROPER-1. SPECIES LIST



CALC. BENTHONICS - C

36. Operculina victoriensis
37. Amphistegina lessonii
38. Calcarinarackeyi
39. Carpenteria rotaliformis

CALC. BENTHONICS - D

40. Cassidulina subglobosa
41. Cassidulinoides sp.
42. Sphaeroidina bulloides
43. Fillouia sp.

CALC. BENTHONICS - E

44. Bolivina nobilis
45. B. cf. zedirecta
46. B. anastomosa-pontis
47. Bulimina truncanella
48. Uvigerina (Hofkeruva) mata
49. ?Siphouvigerina canariensis
50. Anglogenerina ototara
51. A. sp.?
52. Trifarina bradyi

CALC. BENTHONICS - F

53. NODOSARIDS
54. Vaginulinopsis gippslandicus
55. POLYMORPHINIDS

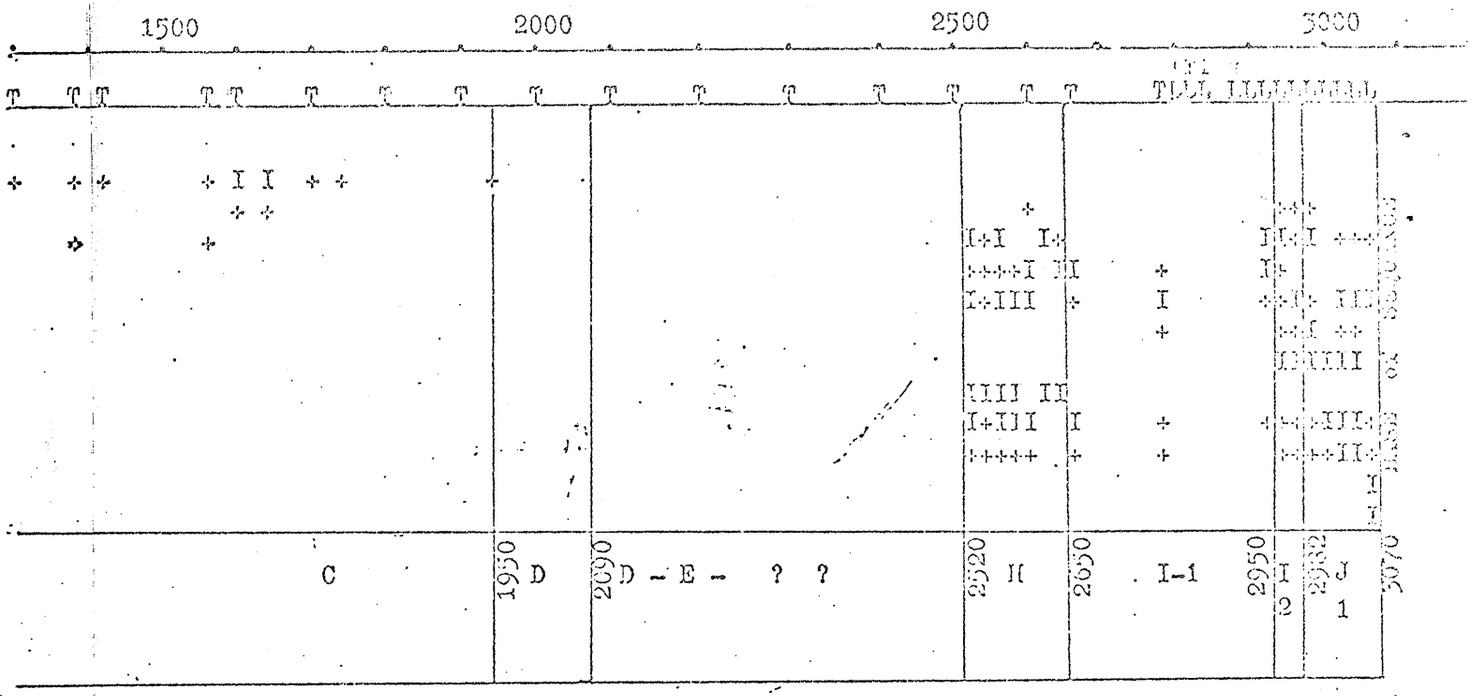
CALC. BENTHONICS - H

56. MILIOLIDS

OTHER FAUNA

BRYOZOA
SPONGE SPICULES
MOLLUSCA

GROPER – 1. SPECIES LIST. 3 OF 3.



ARENACEOUS BENTHONICS

57. Textularia semicarinata
58. T. sp.?
59. Pseudoclavulina radis
60. Gaudryina convexa
61. G. heywoodensis
62. Siphotextularia finlayi
63. Bolivinopsis cubensis
64. Clavulinoides victoriensis
65. Ammosphaeroidina sphaeroidiniformis
66. Haplophragmoides spp.
67. Bathysiphon sp.
68. Ammodiscus parri.

L = Core samples at:-
2800; 2826; 2853 from core-1
2875 from core-4.
2900; 2920; 2935; 2951 from core-6.
2960; 2970; 2982 from core-7
3009; 3015; 3024; 3056 from core-8
3060; 3075; 3100 from core-9

T = side wall cores at:-
1306; 1388; 1412; 1550; 1600;
1700; 1800; 1900; 2000; 2100;
2200; 2300; 2400; 2500; 2600;
2665 & 2790.

PE603422

This is an enclosure indicator page.
The enclosure PE603422 is enclosed within the container PE906095 at this location in this document.

The enclosure PE603422 has the following characteristics:

ITEM_BARCODE	= PE603422
CONTAINER_BARCODE	= PE906095
NAME	= Mud Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P2
TYPE	= WELL
SUBTYPE	= MUD_LOG
DESCRIPTION	= Mud Log (Grapholog), enclosure from Well Summary, for Groper-1
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W538
WELL_NAME	= GROPER-1
CONTRACTOR	= CORE LABORATORIES AUSTRALIA LTD
CLIENT_OP_CO	= ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603421

This is an enclosure indicator page.
The enclosure PE603421 is enclosed within the container PE906095 at this location in this document.

The enclosure PE603421 has the following characteristics:

ITEM_BARCODE	= PE603421
CONTAINER_BARCODE	= PE906095
NAME	= Induction Electrical Log (Competion Log)
BASIN	= GIPPSLAND
PERMIT	= VIC/P2
TYPE	= WELL
SUBTYPE	= COMPLETION_LOG
DESCRIPTION	= Completion Log including Induction-Electrical Logs (enclosure from Well Summary) for Groper-1
REMARKS	=
DATE_CREATED	= 06/01/1969
DATE_RECEIVED	=
W_NO	= W538
WELL_NAME	= GROPER-1
CONTRACTOR	= SCHLUMBERGER
CLIENT_OP_CO	= ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603420

This is an enclosure indicator page.
The enclosure PE603420 is enclosed within the container PE906095 at this location in this document.

The enclosure PE603420 has the following characteristics:

ITEM_BARCODE	= PE603420
CONTAINER_BARCODE	= PE906095
NAME	= Formation Density Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P2
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= Compensated Formation Density Log (enclosure from Well Summary) for Groper-1
REMARKS	=
DATE_CREATED	= 06/01/1969
DATE_RECEIVED	=
W_NO	= W538
WELL_NAME	= GROPER-1
CONTRACTOR	= SCHLUMBERGER
CLIENT_OP_CO	= ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE603418

This is an enclosure indicator page.
The enclosure PE603418 is enclosed within the container PE906095 at this location in this document.

The enclosure PE603418 has the following characteristics:

ITEM_BARCODE	= PE603418
CONTAINER_BARCODE	= PE906095
NAME	= Compensated Sonic Log
BASIN	= GIPPSLAND
PERMIT	= VIC/P2
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= Borehold Compensated Sonic Log for Groper-1
REMARKS	=
DATE_CREATED	= 06/01/1969
DATE_RECEIVED	=
W_NO	= W538
WELL_NAME	= GROPER-1
CONTRACTOR	= SCHLUMBERGER
CLIENT_OP_CO	= ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE906097

This is an enclosure indicator page.
The enclosure PE906097 is enclosed within the container PE906095 at this location in this document.

The enclosure PE906097 has the following characteristics:

ITEM_BARCODE	= PE906097
CONTAINER_BARCODE	= PE906095
NAME	= Time-Depth Curve
BASIN	= GIPPSLAND
PERMIT	= VIC/P2
TYPE	= WELL
SUBTYPE	= VELOCITY_CHART
DESCRIPTION	= Time-Depth Curve (enclosure from Well Summary) for Groper-1
REMARKS	=
DATE_CREATED	= 01/09/1971
DATE_RECEIVED	=
W_NO	= W538
WELL_NAME	= GROPER-1
CONTRACTOR	=
CLIENT_OP_CO	= ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

PE601500

This is an enclosure indicator page.
The enclosure PE601500 is enclosed within the container PE906095 at this location in this document.

The enclosure PE601500 has the following characteristics:

ITEM_BARCODE	= PE601500
CONTAINER_BARCODE	= PE906095
NAME	= Continuous Dipmeter
BASIN	= GIPPSLAND
PERMIT	= VIC/P2
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= Continuous Dipmeter, scale 1:200, (enclosure from Well Summary Folder) for Groper-1
REMARKS	=
DATE_CREATED	= 06/01/1969
DATE_RECEIVED	=
W_NO	= W538
WELL_NAME	= Groper-1
CONTRACTOR	= Schlumberger
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE906096

This is an enclosure indicator page.
The enclosure PE906096 is enclosed within the container PE906095 at this location in this document.

The enclosure PE906096 has the following characteristics:

ITEM_BARCODE	= PE906096
CONTAINER_BARCODE	= PE906095
NAME	= Geological Cross-Section
BASIN	= GIPPSLAND
PERMIT	= VIC/P2
TYPE	= WELL
SUBTYPE	= CROSS_SECTION
DESCRIPTION	= Geological Cross-Section (enclosure from WCR) through Groper-1
REMARKS	=
DATE_CREATED	= 21/01/1969
DATE_RECEIVED	=
W_NO	= W538
WELL_NAME	= GROPER-1
CONTRACTOR	=
CLIENT_OP_CO	= ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)