

FROME LAKES-5 (W450)

Well Summary Report

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Gippsland Bores Table, 4 of 4

WELL SUMMARY

C O P Y

DEPT. NAT. RES & ENV



PE904212

FROME-LAKES PROPRIETARY LIMITED

Telephone
MF5661

95, Collins St.,
Melbourne, C.1.

January 15th, 1957.

The Hon. W. J. Mibus, M.L.A.,
Minister for Mines,
Department of Mines,
Treasury Gardens,
MELBOURNE, C.2.

Dear Sir,

We submit hereunder details of our exploration well No. 5
as required by regulations under the Mines Petroleum Act:-

- | | |
|---|---|
| (a) <u>Designation:</u> | Frome-Lakes Gippsland No. 5. |
| (b) <u>Location:</u> | Petroleum Prospecting Licence
181, County of Tanjil, Parish
of Moormurrg, 2190 feet west
and 510 feet north of the south-
east corner of allotment 98B. |
| (c) <u>Distance from nearest
boundary of Licence:</u> | 1-1/8 miles. |
| (d) <u>Height of derrick
floor:</u> | 250 feet (approx.) |
| (e) <u>Diameter of hole at
surface:</u> | 7 ⁷ / ₈ ins. |
| (f) <u>Depth proposed:</u> | 1,000-1,500 feet. |
| (g) <u>Drilling method:</u> | Rotary. |
| (h) <u>Extent of Coring:</u> | Minimum of 40 feet. |

Yours very truly,

(N. Osborne)
General Manager.

NO/ml.

GIPPSLAND-FROME LAKES - 5 W450.

	No. 1	No. 1A	No. 2	No. 3	No. 4	No. 5
Location (See Well Locality Map)	Approx. 4 miles south of Woodside, Vic.		8 miles S.E. of Yarram	8 miles ESE of Yarram	9½ miles east of Stratford	3 miles SW of Bairnsdale
Elevation (1) Derrick Floor	36'	37'	15'	30'	126'	253'
(2) Ground Level	33.5'	33.5'	12'	27'	123'	250'
Date commenced	24.9.56	9.10.56	3.11.56*	15.11.56	18.12.56	10.1.57
Date abandoned	4.10.56	28.10.56	15.12.56	30.11.56	8. 1.57	25.1.57
Casing (1) Length	582'	615'	1065'	783'	488'	423'
(2) Size	6½" O.D.	6½" O.D.	6" O.D.	6½" O.D.	6½" O.D.	6" O.D.
(3) Cement	at bottom W/25 sks.	to surface W/95 sks.	to surface W/133 sks.	to surface W/100 sks.	to surface W/60 sks.	to surface W/56 sks.
Total depth	790'	1962'	1552'	1876' 6"	1815'	1550'
Drilled	790'	1904'	1518'	1866' 6"	1745'	1495'
Cored	-	58'	34'	10'	70'	55'
Recovery	-	8' 14%	25.5' 75%	1' 10%	28' 40%	16.25' 30%
Maximum deviation	-	0°	0°	2°	2°	5°
Depth of "	-	998'	1500'	1500'	1500'	1000'
Testing Program	-	Bailed glauconitic sand zone-- no shows of oil or gas	Bailed as in No.1A No shows	Bailed as in No.1A No shows	Bailed as in No. 1A No shows	Bailed as in No.1A No shows
Hole troubles	Well abandoned with "frozen pipe" at 769' recovered later	Tight hole at 750' - changed mud - no further difficulty	Core barrel stuck 3 days at 621' - no further trouble	None	None	None
Test Logging						
+ Mud level	Not tested	No record	108'	122'	97'	114'
+ Bailed down level		No record	240'	148'	213'	333'
+ Equilibrium level on standing		45'	Flowing	35'	98'	258'
Gallons bailed		No record	2400	2700	2500	3600
Oil or Gas show		Nil	Nil	Nil	Nil	Nil

* Suspended 10-11 to 10-12.56

+ Depth below well head

RECORDS TRANSFER DOCUMENTS,
PART 1: TRANSFER RECORD

Sheet No. 1 of 1 Sheets

Transferring Agency
MINES DEPARTMENT.
Branch
OIL & GAS DIVISION.
Section

Transfer No.
Date of Transfer
Quantity .. metres
Location of records prior to transfer ..
Location of records in Archives ..
Name of Agency Representative ..

Control No.	List of Items (if not records of transferring office, indicate creating office)
	<u>BOX 1054. TECHNICAL BACK UP DATA.</u>
<u>G008</u>	<u>BAIRNSDALE - SALE 1960. WOODSIDE SEISMIC SURVEY.</u> <u>22 BUNDLES OF PAPER RECORDS (WIGGLE TRACE) OF SEISMIC LINES.</u>
<u>G049</u>	<u>CAPE GRIM - CAPE JAFFA 1965. HEMA. MARINE SEIS. SURVEY.</u> <u>MONITORS & PLAYBACKS FOR OS LINES. WIGGLE TRACE.</u> <u>LINES: OS-17 2 OFF, OS-19 2 OFF, OS-20 2 OFF.</u>
<u>G082</u>	<u>GIPPSLAND BASIN 1969. WOODSIDE SEISMIC SURVEY.</u> <u>EXPERIMENTAL REFLECTION RECORDS FOR LINE 69-79. 8 OFF.</u> <u>WIGGLE TRACE.</u>
<u>G091</u>	<u>CAPE PATERSON 1969. A.O.D. MARINE SEISMIC SURVEY.</u> <u>VELOCITY ANALYSIS CHARTS FOR LINES: 1, 2, 3, 5, 6, 7.</u> <u>PAPER PRINTS.</u>
<u>W450</u>	<u>FROME LAKES GIPPSLAND - 5 (NEAR)</u> <u>REFRACTION PROFILE. WIGGLE TRACE.</u>
<u>W467</u>	<u>WELLINGTON PARK - 1 (AT)</u> <u>REFRACTION PROFILE. WIGGLE TRACE.</u>
	<u>GOON NURE NO 1 BORE (NEAR)</u> <u>REFRACTION PROFILE. WIGGLE TRACE.</u>
	<u>PERRY RIVER (NEAR)</u> <u>REFRACTION PROFILE. WIGGLE TRACE.</u>

COMPLETION REPORT

Frome Report No. 7100-G-59

4 CHARTS

5 LITHO LOGS

5 MAPS

EXPLORATION DRILLING IN THE TERTIARY BASIN OF SOUTHEAST
GIPPSLAND, VICTORIA

by

Richard L. Wood

FROME-LAKES PROPRIETARY LTD.,
MELBOURNE, AUSTRALIA.

April, 1957.

Completion Report Frome Lakes Gippsland N°1
" " " N°1A
" " " N°2
" " " N°3
" " " N°4
" " " N°5

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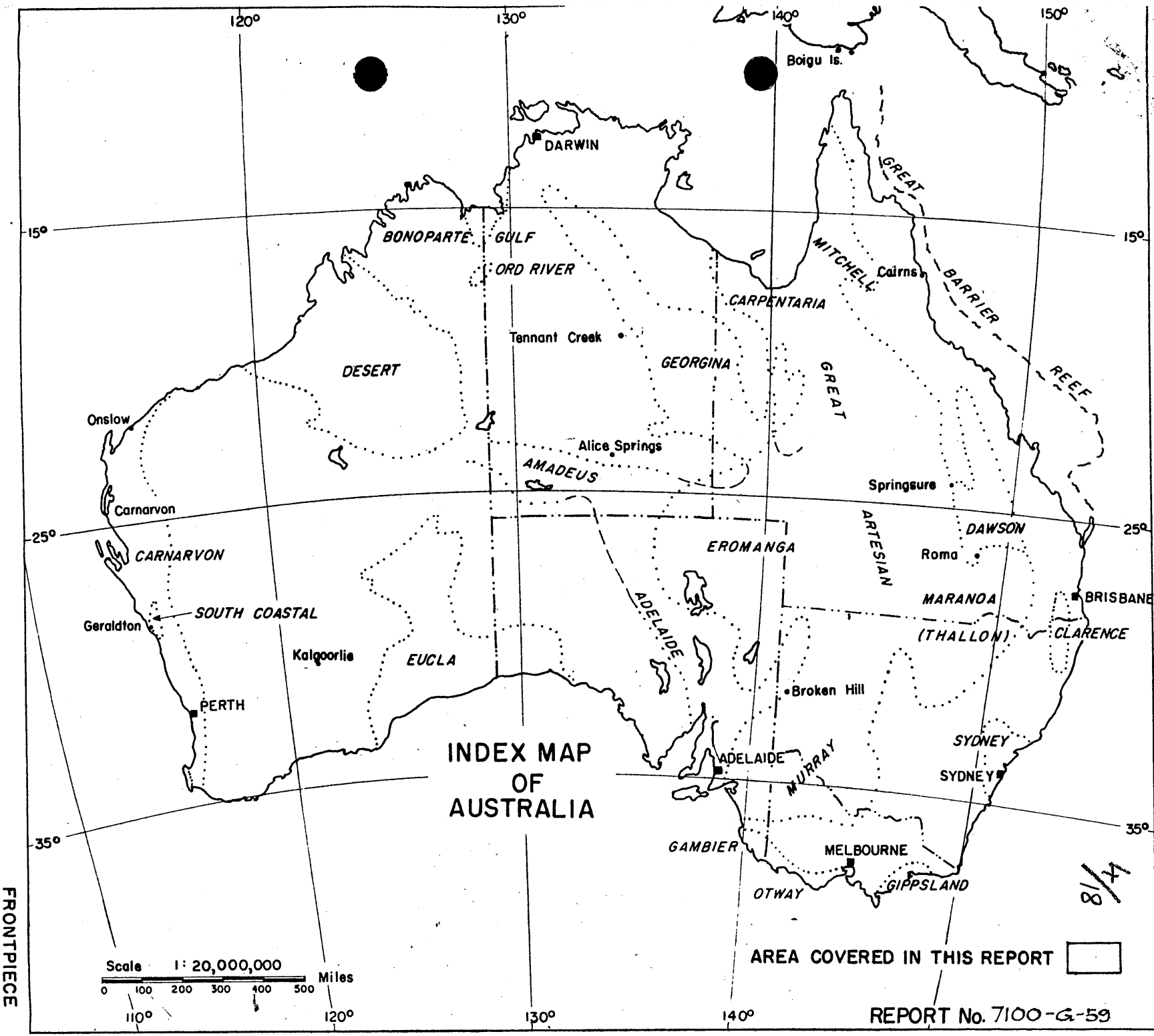
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INDEX MAP
OF
AUSTRALIA

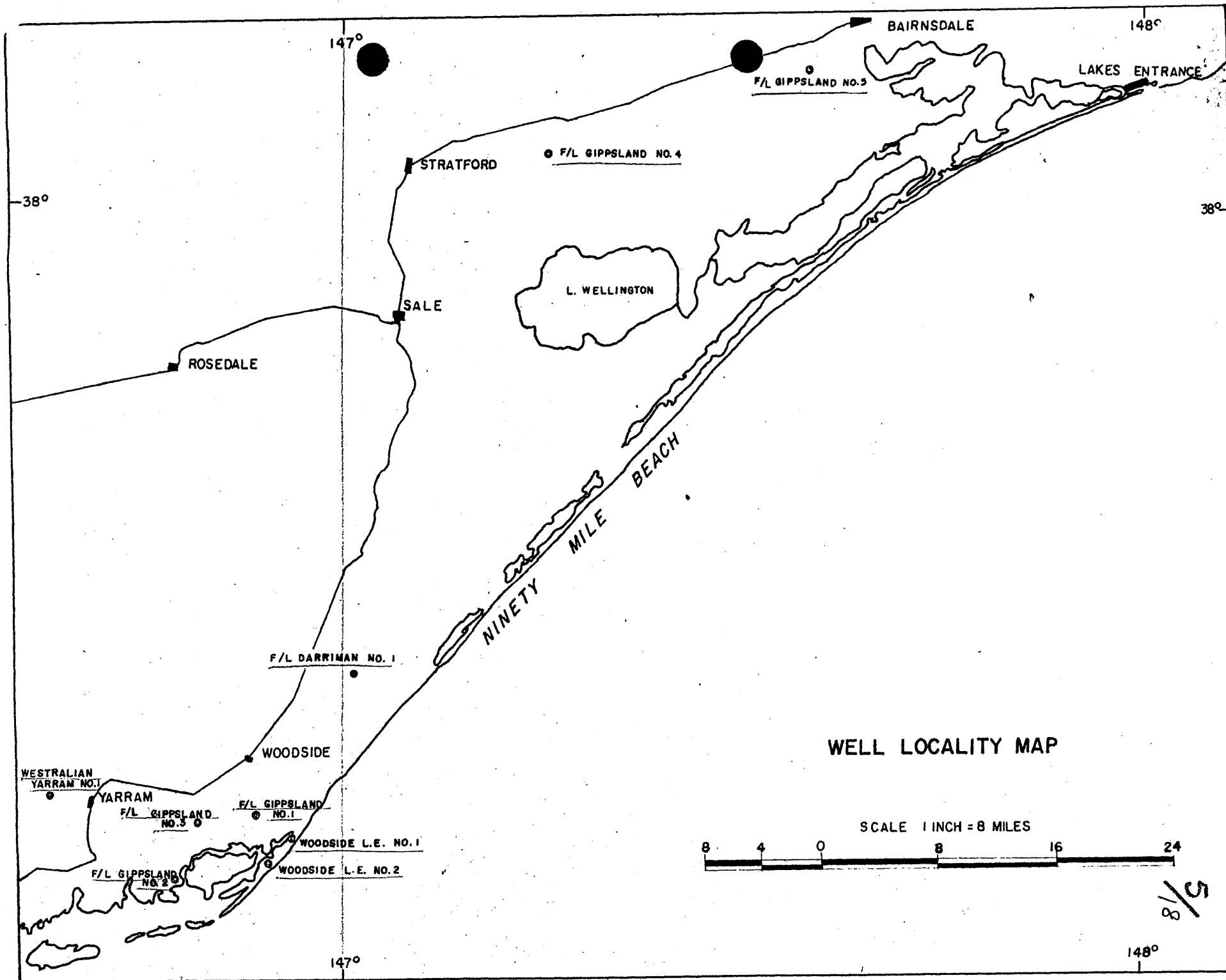
Scale 1:20,000,000
0 100 200 300 400 500 Miles

AREA COVERED IN THIS REPORT

REPORT No. 7100-G-59

FRONTPIECE

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EXPLORATION DRILLING IN THE TERTIARY BASIN OF SOUTHEAST
GIPPSLAND, VICTORIA

ABSTRACT

Frome-Lakes Gippsland wells were drilled through the base of the marine Tertiary on local gravity anomalies in southeast Gippsland. The wells were drilled to test the glauconitic sandstone, a shore line facies of the basal marine Tertiary formation. In some parts of the Gippsland basin this sandstone is known to contain small quantities of oil. All of the present wells penetrated the objective horizon with no indications of oil or gas.

Subsurface maps constructed from bore information do not indicate any features favouring Tertiary petroleum prospects. The Gippsland Tertiary oil appears to be unaffected by structure but to be preserved in small stratigraphic traps only. These traps are apparently the result of porosity and permeability variations within the glauconitic sandstone.

EXPLORATION DRILLING IN THE TERTIARY BASIN OF SOUTHEAST
GIPPSLAND, VICTORIA

By Richard L. Wood

7/18
Completion Report on
Frome Lakes Gippstand 1

INTRODUCTION

In September 1956 Frome-Lakes Pty. Ltd. "spudded in" the first of a series of shallow exploratory wells in southeast Gippsland, Victoria. Five wells had been drilled by January 25, 1957 when the drilling program was suspended pending analysis of the results of the five wells drilled and a study of this data and that from other wells in the area. An exchange of information, well by well, was arranged between Frome-Lakes Pty. Ltd. and two other companies with adjacent areas, Woodside (Lakes Entrance) Oil Company and Westralian Oil Company.

In the light of the large amount of new information available as the result of the recent exploration wells in Gippsland, a revision of previous subsurface maps is necessary. This report will therefore be a completion report on the five Gippsland wells and will also include a set of revised subsurface maps similar to those in my report entitled "Subsurface Studies of East and South Gippsland, Victoria", May 1956.

Two new subsurface maps are included and discussed in this report. One of these maps the "Log Map of the Lakes Entrance Formation with Isopach Lines of the Glauconitic Sand" combines all of the present information directly relating to the Tertiary oil of Gippsland, and the major discussion will relate to this map.

OBJECTIVE

Frome-Lakes five shallow exploration wells were drilled for the purpose of testing the oil prospects of the marine Tertiary, mainly the basal member - the so-called glauconitic sandstone - from which small quantities of oil have been reported in several parts of Gippsland, chiefly the Lakes Entrance area.

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3
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5



DRILLING LOCATIONS

Frome Lakes drilled their Darriman No. 1 well in the southwestern part of their lease area hoping to find the glauconitic sandstone favourably developed in that area. No sign of oil was found in the Darriman well and the base of the marine Tertiary was not developed in a true sandstone facies.

When the Woodside (Lakes Entrance) Oil Company drilled a glauconitic sandstone facies with shows of oil in one of their wells southeast of Darriman and nearer to the granite outcrop at the southwestern edge of the basin, it became apparent that the elusive glauconitic sandstone must be a shore line facies of the basal marine section. With this idea in mind, Frome-Lakes decided to test the basal marine Tertiary within its licence area on gravity anomalies in localities more favourable for shore line development. The Darriman well, located on a seismic and gravity high suggested that gravity is related to structure in this area and therefore gravity highs were selected in four of the five wells drilled. No. 3 was located on a gravity low re-entrant to ensure gravity representation and geographic distribution in the southern part of the basin. No. 5, west of Bairnsdale, was located on both a gravity and topographic high.

NOTES ON THE ACCOMPANYING PLATES

Plates 1-5 are the individual lithologic logs of the Gippsland wells. A drilling rate log is plotted against the detailed 10 foot descriptive log of the lithology.

Plate 6 is a well data sheet. This sheet shows generalized stratigraphic sections of the Gippsland wells, two Woodside (Lakes Entrance) Oil Company wells and one Westralian Oil Company well. A brief resumé of operational and testing data accompanies each section.

Plates 7-9 are revised subsurface maps which have been reviewed in detail in my previous report "Subsurface Studies of South and East Gippsland, Victoria" (May 1956). The addition of the results of the

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recent exploration drilling in Gippsland brings these maps up to date and fills in some detail especially in the south-western section of our licence area.

Plate 10 is a new subsurface map contoured on the base of the marine Tertiary in the Lakes Entrance/Sale/Woodside area. All depths have been computed from mean sea level. The base of the marine Tertiary is taken to be the base of the glauconitic sandstone where present, alternatively the top of the Yallourn formation.

The bore information for the construction of plates 7-10 is listed in Table 1 accompanying this report.

GEOLOGY

The stratigraphy and structure of the Gippsland Tertiary Basin have been reviewed in detail by Evans (1954) and Boutakoff (1955) and this will not be discussed in this report in any more detail than revealed in the individual wells.

The five Gippsland wells penetrated all of the known marine Tertiary formations present in Gippsland. The No. 5 well penetrated the entire Tertiary section and was abandoned below sands correlated with the Yallourn formation in metamorphic rocks of assumed Ordovician age.

Four of the wells penetrated the glauconitic sandstone with no indications of any oil or gas. One well penetrated a deeper-water limestone facies of the glauconitic sand and it also had no indications of any oil or gas.

The thickness of the formations encountered in the five wells are recorded in the following table - (See also Plate 6, Well Data Sheet).

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Formation and Age (Crespin 1954)	Lithology	Thickness in feet				
		No. 1	No. 2	No. 3	No. 4	No. 5
Jemmy's Point L. Pliocene	Clay and sands with shelly bands	578	370	657	360	394
Mitchell R. U. Miocene	Sandy marl, marl - glauconitic in places	628	625	493	390	256
Gippsland Limestone L. Miocene	Polyzoal lime- stones and marls	565	499	625	670	260
Lakes Entrance Miocene	Fine-grained marls, some places micaceous becoming glauconitic and sandy towards the base	166	68	90	327	440
Yallourn M. Eocene	Lignitic sands and clays with intercalated brown coal seams	21+	5+	11.5+	68+	135

Plates 7 and 10 illustrate structural conditions in the Tertiary, but it is emphasised that these maps, as well as Plates 8 and 9, represent regional trends rather than a detailed picture of conditions, as close bore control is lacking over a large part of the area under review.

The most prominent feature of Plate 10, "Contour Map of the Base of the Marine Tertiary" is the large synclinal trough developed through Lake Wellington and Seacombe to the southeast. This regional low is presumably the eastward extension of the Latrobe Valley syncline.

Three faults in the southern half of the area are suggested by the bore information, as plotted on the subsurface maps. It is felt they may have been pre-Tertiary faults that have been active during

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the deposition of the Tertiary. The large east-west fault known as the Rosedale fault has been substantiated by surface evidence.

Within the wedge formed by the two faults south of the Latrobe River the base of the marine Tertiary appears to form a nose pitching to the northeast. Detailed bore information is lacking in this area and the contours are incomplete.

A second synclinal trough is suggested in the Woodside area, plunging east-southeast. Information from several recent wells in that area suggest that the basin rises rapidly to the west with the marine Tertiary practically disappearing in the Westralian Yarram No. 1 Well about two miles west of Yarram.

As a result of the large number of bores drilled in the Lakes Entrance area, more precision is possible in contouring. A large inset of this area is shown on Plate 10 to include the detail. The main feature of this inset is a structural terrace dipping gently southward. The slope of the base of the marine Tertiary breaks and becomes more gentle between bores 95 and 96 and forms the structural terrace. Only the base of the marine Tertiary which is the glauconitic sandstone in this area is affected by this feature. Since the larger accumulation of oil from this sandstone is located on the southern slope of the structural terrace around Foster's bore (No. 104), it appears that this feature may have more control over the small accumulation of oil in that area.

Plate No. 11 entitled "Log Map of the Lakes Entrance Formation with Isopach Lines of the Glauconitic Sand" is the major plate in this report. Compiled on this plate is all of the presently known pertinent information relating to the main occurrence of Tertiary oil in Gippsland.

Its purpose is to depict by lithologic logs, electric logs where possible, the lithologic development of the Lakes Entrance formation. The map shows the areal distribution of this stratigraphic interval, each log being shown on the map at the location of the bore from which it was derived. The oil-bearing basal sandstone member is not present throughout the basin as glauconitic sand but Isopach lines of this sand or its equivalent have been superimposed upon the log map, and oil shows are indicated against the pertinent logs.

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Only three electric logs were available when compiling the map. Most of the information is from drillers' logs from bores dating back as far as 1924. Except for a few bores from which cores were examined by the Commonwealth Palaeontologist, the bores were drilled without any geologic supervision. Therefore, there are no stratigraphic divisions for most bores and they must be interpreted from the lithologic descriptions which in practically all cases are anything but definite and provide no information as to porosity and permeability. Since most of the bores were drilled for oil, the depth and thickness of the potential reservoir rock, the glauconitic sand, is fairly accurate. Table I shows the information from which the map was constructed. Where the records appeared contradictory the figures that seemed more reliable were used.

The logs show the Lakes Entrance formation to consist mainly of marl which towards the base becomes glauconitic and either arenaceous or calcareous depending mainly on the distance from the old shore line. They also roughly indicate the shape of the Tertiary basin. In the southwest the formation thins rapidly from Woodside to Yarram as shown by the three Frome-Lakes bores. Two miles west of Yarram in the Westralian Yarram No. 1 there is present no marine formation recognisable as the Lakes Entrance. North of the Ninety Mile Beach the formation thins against Jurassic and Palaeozoic hills. East of Lakes Entrance, the Lakes Entrance formation might be abruptly cut out. At Lakes Entrance the thickness is fairly uniform with glauconitic sand at the base.

In Cobden's bore (No. 116) there is no glauconitic sand recorded and possibly no Lakes Entrance formation. The records are not very clear. Gravity and magnetic data for that area suggest the presence of a fault to the east of which crystalline basement and old Palaeozoic rocks are probably near the surface.

The isopach map of the glauconitic sand suggests three main areas of sand deposition separated by two marine embayments. Oil and gas have been reported from all three sand areas, with the best shows from the thicker sand deposits. The Lakes Entrance Field, with glauconitic sand thickness up to 85 feet, has actually produced small

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quantities of oil. The large map does not show the sand at Lakes Entrance in detail. An inset showing all of the bores drilled in that area indicates which bores contained oil and where they are located in relation to the reservoir thickness.

Near Lake Wellington oil was reported in two bores. Oil and gas shows were reported from the glauconitic sand in the Amalgamated Oil Bore No. 1 (No. 48). In the Pelican Point bore (No. 50) which did not penetrate to the glauconitic sand, numerous shows of oil and gas were reported from the limestone above the Lakes Entrance formation. Frome-Lakes Gippsland No. 4 bore was drilled west of these bores and penetrated a thinner section of glauconitic sand with no shows. Frome-Lakes Gippsland No. 5 well was drilled to the north of the Amalgamated Oil bore, and although encountering a similar very sandy facies of the Lakes Entrance formation, did not contain any oil or gas in the glauconitic sand. A thin film of oil was noticed momentarily when the first sand sample was washed, but this film could not be reproduced or any other indication of oil observed.

CONCLUSIONS

Considering their favourable distribution for adequately testing the Woodside-Yarram area, the results of the exploration wells drilled by Frome-Lakes, Woodside Oil Co. and Westralian Oil Ltd. must be accepted as condemning the southern part of the Gippsland Basin as a potential source of commercial oil, whether structure or porosity variation is the controlling factor in accumulation. Further, the Frome-Lakes Stratford and Bairnsdale wells finally discourage the idea that the northern marginal zone might be favourable.

Analysis of the log map, Plate 11, suggests that the oil in the marine Tertiary of Gippsland does not follow any definite pattern of accumulation. No bores with shows of oil were drilled on definite structures, while all Frome-Lakes bores including the

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Darriman No. 1 bore were drilled on either gravity or seismic structure and those that penetrated glauconitic sand had no shows of oil or gas. The Tertiary oil appears not to be controlled by structure but must accumulate in small stratigraphic traps associated with porosity variation in the glauconitic sandstone. A complicating and discouraging feature is the appearance of fresh water in the glauconitic sands throughout the region, denoting considerable flushing.

Isopach map, Plate 11, shows two areas where there appears to be a thickening of the glauconitic sandstone and near which some shows of oil have been reported in bores. No structural association is suggested by aeromagnetics or gravity however. These areas are about the same size as Lake Entrance, but the depth to the glauconitic sand is much deeper - greater than 2,600 feet at Lake Victoria and greater than 1,300 feet at Lake King.

The description of the glauconitic sandstone in the bore logs is not sufficiently detailed to allow a comparison of porosity and permeability between different areas. We are therefore unable to say whether the Lakes Victoria and King areas are more or less favourable in this respect than the Lakes Entrance area. It is probable that they are more or less the same and that consequently no accumulation of oil large enough to justify the great expense of probing for stratigraphic traps can be expected.

APPENDIX

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OPERATIONAL NOTES ON THE FROME-LAKES
GIPPSLAND WELLS

The Gippsland wells were drilled for Frome-Lakes Pty. Ltd. by a local contractor, W. L. Sides and Son, with a Failing 1500 rotary plant. The standard Failing was supplemented by additional equipment such as shale shaker, weight indicator, and blowout preventor etc. This was the contractor's first oil drilling venture with rotary equipment and some difficulties were experienced while drilling the No. 1 well with both men and equipment. These difficulties were overcome once a pattern for drilling was set up and the balance of the wells were drilled quite smoothly and efficiently.

Plate No. 6 "Well Data Sheet" sets out the basic information for each of the Gippsland wells with a lithologic section. Recently drilled competitors' wells are included on this plate with as much information as is available at present.

Presented below in tabulated form are the operational details of the five Frome-Lakes wells for reference and comparison.

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	No. 1	No. 1A	No. 2	No. 3	No. 4	No. 5
Location (Refer: Well Locality Map)	Approx. 4 miles south of Woodside, Vic.		8 miles SE of Yarram	8 miles ESE of Yarram	9½ miles east of Stratford	3 miles SW of Bairnsdale
Elevation (1) Derrick Floor	36'	37'	15'	30'	126'	253'
(2) Ground Level	33.5'	33.5'	12'	27'	123'	250'
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(2) Size	6½" O.D.	6½" O.D.	6" O.D.	6½" O.D.	6½" O.D.	6" O.D.
(3) Cement	at bottom W/25 sks.	to surface W/95 sks.	to surface W/133 sks.	to surface W/100 sks.	to surface W/60 sks.	to surface W/56 sks.
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Cored	-	58'	34'	10'	70'	55'
Recovery	-	8'	25.5'	1'	28'	16.25'
	-	14%	75%	10%	40%	30%
Maximum deviation	-	0°	0°	2°	2°	5°
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Testing Program	-	Bailed glauconitic sand zone - no shows of oil or gas	Bailed as in No.1A. No shows	Bailed as in No.1A. No shows	Bailed as in No. 1A. No shows	Bailed as in No.1A. No shows
Hole troubles	Well abandoned with "frozen pipe" at 769' recovered later	Tight hole at 750' - changed mud - no further difficulty	Core barrel stuck 3 days at 621' - no further trouble	None	None	None
Test bailing						
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+ Equilibrium level on standing		45'	Flowing	35'	98'	258'
Gallons bailed		No record	2400	2700	2500	3600
Oil or Gas show		Nil	Nil	Nil	Nil	Nil

* Suspended 10-11 to 10-12.56

+ Depth below well head

For completeness a few general and a few qualifying statements are necessary.

7⁷/₈ inch hole was drilled from the surface in all wells into a solid marl where casing was set. At that point either 6¹/₂ inch O.D. or 6 inch O.D. casing was cemented as indicated in Table I. The hole was then reduced to about 5³/₄ inch depending on the size of bits available and this reduced hole was carried down to total depth.

Hole trouble started in the No. 1 well after it had reached a depth of 790 feet in soft sand. While making a trip the pipe became frozen at 769 feet. The well finally had to be abandoned and the No. 1A well started 80 feet away. The reason for the pipe becoming "frozen" was thought to be poor mud. A local clay had been used with Bentonite on the No. 1 well. A pure Bentonite mud was used on the remaining wells with no further tight hole problems.

Loss of circulation while coring on the No. 2 well resulted in a 3 day fishing job - there was no repetition of this type of trouble either.

A coring program had been set up to obtain maximum information with minimum coring. It was intended, as a rule, to core only the prospective oil horizon, the "glauconitic sand" zone, but the program was flexible and the well site geologist was authorized to call for a core at any time considered necessary. A total of 227 feet were cored for all the wells with a 34.7% recovery of 78³/₄ feet.

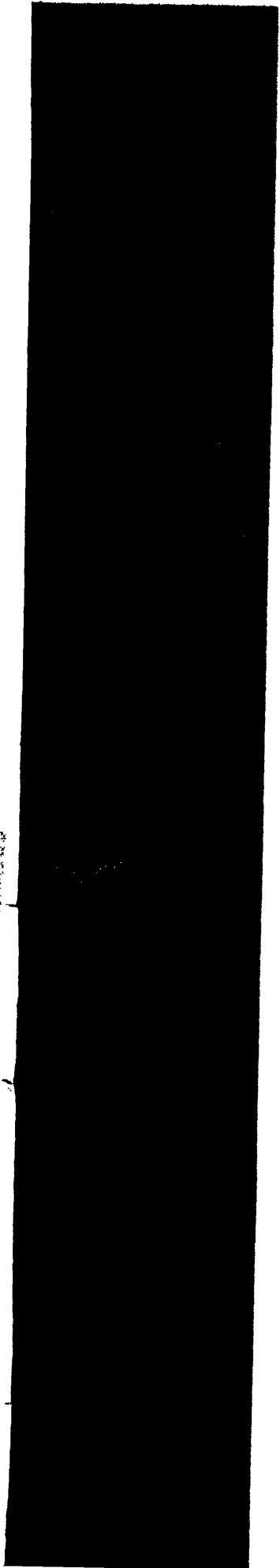
All cores proved to be barren of oil or gas but as a final check before abandoning the wells each hole was bailed as quickly as possible until the fluid level could be lowered no further and then maintained at that state for about 1/2 - 1 hour. The well was then allowed to rest approximately 30 minutes until equilibrium fluid level under normal conditions was reached. After resting a further sample was dipped from the top of the column to be checked for signs of oil or gas. No indications of oil or gas were observed throughout the bailing tests.

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- Woolnough, W. G. "Origin of Mud Island near Paynesville", Proc. Roy. Soc. Victoria, Vol. XLIII, No. 2, 1930.

: : : : : :



LITHOLOGY

- WEEKLY REPORTS

W 450

From - Lake Cippaland No 5.

(NOT subdivided).

From weekly Drilling Reports.

1st Week.

- 1'-102' Orange stained medium subangular quartz sand in an orange clay matrix.
 102'-120' Orange stained white conglomerate - white of basalt, siltstone, granite etc.
 120'-169' Orange stained very coarse to granular quartz sand with pebbles of
 above conglomerate.
 169'-330' White to light grey very fine to very coarse round milky quartz
 sand with sandstone bands.
 330'-394' Grey soft highly carbonaceous & pyritic sandy micaceous clay.
 394'-425' Grey soft highly glauconitic, pyritic sandy marl with fragments
 of Tumitella

2nd Week.

- 425'-650' Grey soft biogherd marl, the last 50' becoming glauconitic
 with gypsum needles.
 650'-750' Grey very fine granular glauconitic biogherd limestone.
 750'-910' White fine granular hard porous polyherd limestone
 910'-990' Grey green soft very fine velvety textured marl with white
 fossil casts
 990'-1040' Light grey very fine granular tight biogherd limestone with
 grey pyritic calcite veins.
 1040'-1215' Grey green soft velvety textured marl swelling at 1090, at
 1175 becoming brown micaceous marl: at 1200 becoming glauconitic
 1215'-1240' Brown very fine angular soft friable glauconitic & micaceous
 argillaceous & calcareous sandstone
 1240'-1260' Grey glauconitic marl with hard bands of calcareous
 sideritic & limonitic sandstone.
 1260'-1281' Brown very fine angular tight hard calcareous sandstone
 with bands of soft friable micaceous sand.

3rd Week.

- 1281'-1315' Light brown fine angular tight very hard argillaceous and
 calcareous micaceous sandstone.
 1315'-1335' Dark brown hard tight limonitic sideritic calcareous
 sandstone with abundant loose grains of glauconite & pyrite.
 1335'-1350' Light brown very hard tight argillaceous & calcareous
 micaceous sandstone

cont.

- 1350'-1410' Yellow to white opaque well rounded granules of quartz, sand with fragments of sharks teeth.
- 1410'-1450' Dark grey tight very hard medium grained siliceous sandstone with mica, carbonaceous streaks, & siderite.
- 1450'-1485' Buff, tan. & reddish very coarse round sucrosidolomite concretions, & nodules.
- 1485'-1500' Buff to orange very fine soft laminated unctuous weathered phyllite (Barnett and?).
- 1500'-1530' Reddish to purple fine to medium angular friable weathered quartz sandstone with phyllite bands.
- 1530'-1550' Above reddish weathered sandstone.
- 1550' T.D.

W 450.

Mines (Petroleum) Act, 1935.
Section 45.

Record of Work at ... Gippsland No. 5..... bore on

* Petroleum Prospecting Licence Number 157[?] 181 during week
~~* Petroleum Minerals Lease~~
ending .. Midnight .. January 13, 1957.

DEPTH	DESCRIPTION OF STRATA
1 - 102'	Orange stained medium subangular quartz sand in an orange clay matrix.
102 - 120'	Orange stained cobble conglomerate-cobbles of basalt, rhyolite, granite, etc.
120 - 169'	Orange stained very coarse to granule quartz sand with pebbles of above conglomerate.
169 - 330'	White to light grey very fine to very coarse round milky quartz sand with sandstone bands.
330 - 394'	Grey soft highly carbonaceous and pyritic sandy micaceous clay.
394 - 425'	Grey soft highly glauconitic, pyritic sandy marl with fragments of turritella.

Notes by Driller in Charge (State in notes whether water, gas or petroleum has been met with, and, if so, give depth and nature of occurrence, also depth to which casing has been inserted and cemented.)

No artesian water, oil, or gas met with in the bore to date.

420 feet of 6" O.D. seamless casing inserted and cemented to the surface.

SIGNED .H.C..Warren....Secretary....

LEGAL MANAGER ..Frome-Lakes.Pty..Ltd..... COV.

Date ..25../...1../..1957..

N.B. - The Act also requires the Minister to be notified immediately water, gas or petroleum is encountered.

Analyses of water, gas and oil should be submitted if available.

J. Thomas
29.1.57.

Copy

MINES DEPARTMENT

VICTORIA

2/3

Mines (Petroleum) Act, 1935.
Section 45.

Record of Work at ... GIPPSLAND NO. 5 bore on

* Petroleum Prospecting Licence Number 157 during week
 * ~~XXXXXXXXXXXXXXXXXXXX~~
 ending Midnight, January 20, 1957.

DEPTH	DESCRIPTION OF STRATA
425 - 650'	Grey soft Bryozoal marl the last 50 feet becoming glauconitic with gypsum needles.
650 - 750'	Grey very fine granular glauconitic Bryozoal limestone.
750 - 910'	White fine granular hard porous polyzoal limestone.
910 - 990'	Grey green soft very fine velvety textured marl with white fossil casts.
990 - 1040'	Light grey very fine granular tight Bryozoal limestone with grey pyritic calcite veins.
1040 - 1216'	Grey green soft velvety textured marl swelling at 1090 at 1175 becoming brown micaceous marl at 1200 becoming glauconitic
1216 - 1240'	Brown very fine angular soft friable glauconitic and micaceous argillaceous and calcareous sandstone.
1240 - 1260'	Grey glauconitic marl with hard bands of calcareous sideritic and limonitic sandstone.
1260 - 1281'	Brown very fine angular tight hard calcareous sandstone with bands of soft friable micaceous sand.

Notes by Driller in Charge (State in notes whether water, gas or petroleum has been met with, and, if so, give depth and nature of occurrence, also depth to which casing has been inserted and cemented.)

No oil, gas, or artesian water met with in this bore to date.

SIGNED H. C. Warren, Secretary.....

LEGAL MANAGER Frome-Lakes Pty. Ltd...... COY.

Date 1/...2/..1957.

N.B. - The Act also requires the Minister to be notified immediately water, gas or petroleum is encountered.

Analyses of water, gas and oil should be submitted if available.

Copy

MINES DEPARTMENT

3/3

VICTORIA

Mines (Petroleum) Act, 1935.
Section 45.

Record of Work at GIPPSLAND NO. 5 bore on

* Petroleum Prospecting Licence Number 157 during week
~~* Petroleum Prospecting Licence~~
 ending . . . Midnight, . . . January . 27, 1957.

DEPTH	DESCRIPTION OF STRATA
1281 - 1315'	Light brown fine angular tight very hard argillaceous and calcareous micaceous sandstone.
1315 - 1335'	Dark brown hard tight limonitic sideritic calcareous sandstone with abundant loose grains of glauconite and pyrite.
1335 - 1350'	Light brown very hard tight argillaceous and calcareous micaceous sandstone.
1350 - 1410'	Yellow to white opaque well rounded granules of quartz sand with fragments of sharks teeth.
1410 - 1450'	Dark grey tight very hard medium grained siliceous sandstone with mica, carbonaceous specks, and siderite.
1450 - 1485'	Buff, tan, and reddish very coarse round sucrosive dolomite concretions, and nodules.
1485 - 1500'	Buff to orange very fine soft laminated unctious weathered phyllite (possibly Ord?)
1500 - 1530'	Reddish to purple fine to medium angular friable weathered quartz sandstone with phyllite bands.
1530 - 1550'	Above reddish weathered sandstone Total depth 1550'.

Notes by Driller in Charge (State in notes whether water, gas or petroleum has been met with, and, if so, give depth and nature of occurrence, also depth to which casing has been inserted and cemented.)

No shows of oil, gas, or artesian water met with in this bore.

Dr. Thomas
5.2.57

SIGNED H.C. Warren, Secretary...

LEGAL MANAGER Frome-Lakes Pty. Ltd. COY.

Date . . . 1 . . . 2 . . . 1957 . . .

N.B. - The Act also requires the Minister to be notified immediately water, gas or petroleum is encountered.

Analyses of water, gas and oil should be submitted if available.

LITHOLOGY

- HOCKING ?

Frome-Lakes Gippisland No 5

Lith Log of Basal
Tertiary Sediments

- 1300-05: light to dark grey marl. (chips)
- 1305-10:
- 1310-15:
- 1315-20: dark brownish gy ~~faintly~~ mic. ^{sl. calc sand} ~~marl.~~
- 35:
- 1335-40: marl contains some grains of grit.
- 1345-50: high ppw. of yellowish quartz grit, rounded.
- 1350-55: grit & fine sand.
- 70
- 1370-75: ~~high ppw. of~~ ^{predominantly} grit.
- 1375-80: ~~marl~~ sand common as well as grit.
- 1410:
- 1410-20: signific. ppw. of dark grey micaceous calc^s sand.
- 30: -
- 1430-40: pred. hard mid-grey faintly micaceous sandy marl.
- 1440: yellowish br. calcareous sst, faintly micaceous.
- hard chips.
- 50:
- 1450-60: fragments of grit, also marl contamination.
- 1460: as above, reasonable amt. of fine sand.
- 1460-70: predominantly grey sandgrit.
- 1470-80: Considerable contamination.
- 1480-90:
- 1490-1500:
- 1500-10:
- 1510-13:
- 1513-23:
- 1523-30: contamination.
- 1530-40: a no. of chips, including phyletic material
↓ grains of red v. fine sst.
- 1540-45:
- 1547-52: Contamination.

accompanied
by chips of
molled br & white
faintly calc^s.
sandstone.

Cores.

Core 3.

1271-81.

Brownish-grey mic. sand, v. sh. calc.
Also v. hard br. gy calc sst. (or sandy lst.) with
small white gastropods, also traces of mica & glauc.

1286-96

As above
one ~~thin~~ ^{small} core (= 3") of v. hard calc (prob. sideritic) sandstone,
mica traces, v. small amt of qz grit.

1335-40

Rel. friable brownish gy micaceous sand
Sl. hardened and gritty ~~low~~ at ^{one} end of recovered
core (? base).
Other end: v. hard calc sst ~~or~~ or sandy lst.
(core abt. 3" length)

1515-23

1545-50

Mottled yellowish to reddish ^{fine} sandy material.
In part, a weathered clayey material.

FROME - LAKES GIPPSLAND No. 5

BASAL TERTIARY SECTION.

- 1260 - 1350 : ▶ brownish grey micaceous sand, and interbedded ^{bands of} hard calcareous sandstone, partially glauc. micaceous with small mollusca; basal quartz granules. (sideritic)
 ▶ definite F.U.5. down to 1320ft., uncertain 4 or 5 below this (poor faunas)

- 1350 - 1410 : ▶ though continuation, appears to be quartz gravel (grit) and sand; some chips of sideritic sandstone.
 ▶ contains fragments of shark's teeth; a microfauna at 1355ft. is probable F.U.4.

- Approx. 1410 - 1510 : ▶ calcareous sandstone, grey to brown, usually sideritic; nodules of brown calcareous material (? dolomite or siderite) appear below 1450ft.; records of carbonaceous species.
 ▶ v. poor fauna.

- Approx. 1510 - 1550 : (T.P.) ▶ highly weathered + buckled Ord. sediments, including ^{yellow.} big reddish sandstone.

? U. Dev

PE603439

This is an enclosure indicator page.
The enclosure PE603439 is enclosed within the
container PE906125 at this location in this
document.

The enclosure PE603439 has the following characteristics:

ITEM_BARCODE = PE603439
CONTAINER_BARCODE = PE906125
NAME = Lithological Log
BASIN = GIPPSLAND
PERMIT = PPL 157
TYPE = WELL
SUBTYPE = WELL_LOG
DESCRIPTION = Lithological Log of Frome Lakes-5
REMARKS = also has lithological descriptions
alongside
DATE_CREATED = 25/01/1957
DATE_RECEIVED =
W_NO = W450
WELL_NAME = FROME LAKES-5
CONTRACTOR =
CLIENT_OP_CO = FROME-LAKES PTY LTD

(Inserted by DNRE - Vic Govt Mines Dept)

PE906126

This is an enclosure indicator page.
The enclosure PE906126 is enclosed within the
container PE906125 at this location in this
document.

The enclosure PE906126 has the following characteristics:

ITEM_BARCODE = PE906126
CONTAINER_BARCODE = PE906125
NAME = Table of Gippsland Bores 1 of 4
BASIN = GIPPSLAND
PERMIT = PPL 157
TYPE = WELL
SUBTYPE = DIAGRAM
DESCRIPTION = Data Table of Gippsland bores
containing data on location and
stratigraphic depths 1 of 4.
REMARKS =
DATE_CREATED = 30/04/1957
DATE_RECEIVED =
W_NO = W450
WELL_NAME = FROME LAKES-5
CONTRACTOR =
CLIENT_OP_CO = FROME-LAKES PTY LTD

(Inserted by DNRE - Vic Govt Mines Dept)

PE906127

This is an enclosure indicator page.
The enclosure PE906127 is enclosed within the
container PE906125 at this location in this
document.

The enclosure PE906127 has the following characteristics:

ITEM_BARCODE = PE906127
CONTAINER_BARCODE = PE906125
NAME = Table of Gippsland Bores 2 of 4
BASIN = GIPPSLAND
ON_OFF = ONSHORE
PERMIT = PPL 157
TYPE = WELL
SUBTYPE = CHART
DESCRIPTION = Data Table of Gippsland bores
containing data on location and
stratigraphic depths 2 of 4.
REMARKS =
DATE_CREATED = 30/04/57
DATE_RECEIVED =
W_NO = W450
WELL_NAME = FROME LAKES-5
CONTRACTOR =
CLIENT_OP_CO = FROME-LAKES PTY LTD

(Inserted by DNRE - Vic Govt Mines Dept)

PE906128

This is an enclosure indicator page.
The enclosure PE906128 is enclosed within the
container PE906125 at this location in this
document.

The enclosure PE906128 has the following characteristics:

ITEM_BARCODE = PE906128
CONTAINER_BARCODE = PE906125
NAME = Table of Gippsland Bores 3 of 4
BASIN = GIPPSLAND
ON_OFF = ONSHORE
PERMIT = PPL 157
TYPE = WELL
SUBTYPE = CHART
DESCRIPTION = Data Table of Gippsland bores
containing data on location and
stratigraphic depths 3 of 4.
REMARKS =
DATE_CREATED = 30/04/57
DATE_RECEIVED =
W_NO = W450
WELL_NAME = FROME LAKES-5
CONTRACTOR =
CLIENT_OP_CO = FROME-LAKES PTY LTD

(Inserted by DNRE - Vic Govt Mines Dept)

PE906129

This is an enclosure indicator page.
The enclosure PE906129 is enclosed within the
container PE906125 at this location in this
document.

The enclosure PE906129 has the following characteristics:

ITEM_BARCODE = PE906129
CONTAINER_BARCODE = PE906125
 NAME = Table of Gippsland Bores 4 of 4
 BASIN = GIPPSLAND
 ON_OFF = ONSHORE
 PERMIT = PPL 157
 TYPE = WELL
 SUBTYPE = CHART
DESCRIPTION = Data Table of Gippsland bores
 containing data on location and
 stratigraphic depths 4 of 4.
REMARKS =
DATE_CREATED = 30/04/57
DATE_RECEIVED =
 W_NO = W450
 WELL_NAME = FROME LAKES-5
CONTRACTOR =
CLIENT_OP_CO = FROME-LAKES PTY LTD

(Inserted by DNRE - Vic Govt Mines Dept)