



DOME FROME - LAKE TYERS - 1.

WELL SUMMARY

W 454

WELL SUMMARY

DOME FROME

LAKE TYERS 1

W454

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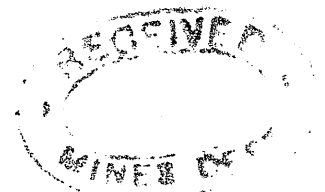
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8 Pages
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FROME-BROKEN HILL CO., PTY., LTD.

REPORT 7100-G-63



SUMMARY OF DRILLING BY DOME OIL AND
MINERAL SYNDICATE N.L. ON FROME-BROKEN
PETROLEUM PROSPECTING LICENCE AREA
NO. 161, GIPPSLAND.

by

A. F. McQueen

Dome Frome N° 1

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MELBOURNE,

April, 1958

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INTRODUCTION

By an agreement dated 30th October, 1957 between Frome-Lakes Pty. Ltd. and Dome Oil and Mineral Syndicate No Liability, the latter company drilled four holes on Frome-Lakes' Petroleum Prospecting Licence area No. 161, Gippsland.

The well sites were selected by representatives of Dome Oil & Mineral Syndicate. Geologists of Frome-Broken Hill Pty. Ltd. visited the sites while drilling was in progress, and prepared geological bore logs. The holes are known by the prefix DOME-FROME No....., and locations are shown on Plate 1.

DRILLING

Drilling commenced on 12th December, 1957 and was completed on 17th March, 1958. Drilling was carried out under contract to Dome Oil and Mineral Syndicate N.L. by W.L. Sides and Son, drilling contractors, using a Failing 1500 outfit mounted on a Ford F7 truck. Drilling mud used was of the water-bentonite type, and no unusual drilling problems were encountered. Cores were taken of basement in holes 1, 2 and 3, but no coring was carried out in bore No. 4.

GEOLOGY

Holes Nos. 1, 2 and 3 are three to three and a half miles south of the northern margin of the Tertiary basin of Southeast Gippsland, and intersect basement under the Balcombian Stage Gippsland limestone at 560, 500 and 530 feet respectively.

Hole No. 4, six miles south of the northern margin of the basin, penetrated a much thicker section including Gippsland limestone, Lakes Entrance Formation and probably Yallourn Formation, before entering basement at 1,287 feet.

Plate 2 shows the general lithology of the bores, and the formations penetrated. The drilling results support fairly

closely Wood's (3) contour maps of the Tertiary System and some of its components in this area.

Each hole commences in the Upper Miocene Mitchellian Stage. In bores 2, 3 and 4, this unit is represented by unconsolidated quartz sand and gravels, which compare very closely with descriptions of the Pleistocene sands and gravels which form a mantle over the Tertiary rocks throughout most of the basin. However, in No. 1 well, similar sands and gravels lie between the bryozoal marls of the Mitchellian Stage and the polyzoal limestone of the Balcombian Stage Gippsland limestone. The Mitchellian Stage sands in the area under review are therefore a coarser facies than that described for this unit in other parts of the basin.

The Gippsland limestone in No. 4 well commences in a sandy facies which can be correlated with similar facies in wells 1, 2 and 3. (See Plate 2.)

In the coarse sands of the Mitchellian Stage there is an apparent thickening towards the edge of the basin. This may not be a true indication of the trend, as the sections in holes 2, 3 and 4 probably are not complete.

Similarly, in the sandy facies of the Gippsland limestone, there is an apparent thickening towards the edge of the basin. In this case, there is a variation in elevation at the top of the basement, which tends locally to be depressed to the north towards the edge of the basin.

No oil or gas shows were encountered during drilling of the holes, and as there was no known structural control in selection of the holes by Dome Oil and Mineral Syndicate, no new conclusion can be drawn regarding the relation of the structure and oil accumulation in this area.

Although part of the Lakes Entrance Formation was intersected in No. 4 well, the basal glauconitic sandstone as recorded in Lakes Entrance bores was not present. The Lakes Entrance Formation wedges out between No. 4 and No. 3 holes and it is probable that the basal glauconitic sand, which is oil-bearing at Lakes Entrance, wedges

giving
down the
section

out between Dome-Frome No. 4 well and Bore No. 7, Parish of Colquhoun, and Cobden's No. 1 bore. Although Lakes Entrance Formation and glauconitic sand is not recorded in the latter bore, there is a section of 1334 feet above the Yallourn Formation in this hole which has not been described, and it is probable that some of this section represents Lakes Entrance Formation.

A bore sunk by the Department of Public Works at the Lake Tyers Mission Station reached a depth of 1,305 feet. The site of this bore is shown on Plate 1 as PWD No. 1.

From 145 to 980 feet in this bore, strata logged were blue marl and polyzoal limestone, which appear to be the equivalent of the Gippsland limestone.

From 980 to 1302 feet occur brown micaceous clay, glauconite and sandstone, which can be correlated with the Lakes Entrance Formation. This thickness (322 feet) is much greater than that recorded for the Lakes Entrance Formation in Dome-Frome No. 4 (170 feet). The log of the bore indicates the presence of the basal glauconitic sandstone which is absent in Dome-Frome No. 4. Water was produced from the glauconitic sand, but there have been no reports of the occurrence of oil in this well at Lake Tyers.

The presence of the glauconitic sand in this bore, and the lack of proof that glauconitic sand was not intersected in Cobden's Bore, indicates that the boundary of this member, as mapped by Wood (4, Plate 11), can be extended to the east.

Whether or not oil could be present along the line of wedge out of the glauconitic sand in this area is open to conjecture, but drilling of the Dome-Frome wells has revealed no new conditions which might be considered favourable to accumulation of petroleum in this area. Gravity contours do not help in clarifying the matter.

The Dome-Frome wells are situated between a gravity low to the east, in the vicinity of the Nowa Nowa arm of Lake Tyers, and a gravity high northeast of Nos. 1 and 2 holes (See Plate 2). The depths to phyllite basement in hole No. 1 is 530 feet and to quartz

porphyry basement in hole No. 3 is 560 feet. The density of phyllite ranges from 2.68 to 2.8 and quartz porphyry from 2.55 to 2.73 (3). This small variation in rock density and thickness would not provide the gravity variation shown by the Bouguer anomaly values in the area. It appears, therefore, that gravity values reflect variations in basement rock rather than structure in the Tertiary. This is supported by the fact that contours of Bouguer gravity anomalies are parallel to the direction of thickening of Tertiary sediments and not parallel to the regional strike of those sediments.

Boutakoff (1) ascribes the gravity low in the area of the Nowa Nowa arm of Lake Tyers to a tectonic depression, the axis of which runs north-south through the centre of the gravity low.

CONCLUSIONS:

Drilling by Dome Oil and Mineral Syndicate N.L. on Frome-Lakes Petroleum Prospecting Licence Area No. 161 has confirmed previous views about the attitude of the Tertiary sediments in this area, but has not provided any new positive data about possible petroleum accumulation in the area.

A.F. McQueen

REFERENCES

1. Boutakoff, N. "A New Approach to Petroleum Geology and Oil Possibilities in Gippsland".
Min. & Geol. Jour. (Victoria) Vol. 5
Nos. 4 and 5, 1955.
2. Crespin, I. "The Stratigraphy of the Tertiary Marine Rocks in Gippsland, Victoria".
Bull (Palaeontological Series No. 4) Dept.
of Supply and Shipping. Min. Resources Survey.
Com. of Australia, Canberra, 1943.
3. Heiland, C.A. "Geophysical Exploration"
Prontice-Hall Inc., New York, 1951.
4. Wood, R.L. "Exploration Drilling in the Tertiary Basin of Southeast Gippsland, Victoria".
Frome-Broken Hill Co. Rep. 7100-G-57,
April, 1957.

APPENDIX I

OPERATIONAL DATA - DOME-FROME BORES

Bore No.	1	2	3	4
Map Reference Hartland 1 mile sheet)	942377	967393	049404	007342
Approximate elevation Derrick floor	130 feet	50 feet	20 feet	140 feet
Date commenced	10 Dec. 1957	10 Jan. 1958	14 Feb. 1958	4 Mar. 1958
Date Abandoned	18 Dec. 1957	6 Feb. 1958	27 Feb. 1958	17 Mar. 1958
Total Depth	564 feet	557 feet	582 feet	1300 feet
Petroleum Indications	Nil	Nil	Nil	Nil

PE905454

This is an enclosure indicator page.
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container PE904222 at this location in this
document.

The enclosure PE905454 has the following characteristics:

- ITEM_BARCODE = PE905454
- CONTAINER_BARCODE = PE904222
 - NAME = Dome Frome Lake Tyers 1 Location Map
 - BASIN = GIPPSLAND
 - ON_OFF = ONSHORE
 - PERMIT = PPL161
 - TYPE = WELL
 - SUBTYPE = MAP
- DESCRIPTION = Dome Frome Lake Tyers 1 Location Map
- REMARKS =
- DATE_CREATED = 30/04/58
- DATE_RECEIVED = 31/07/58
 - W_NO = W454
 - WELL_NAME = Dome Frome Lake Tyers 1
 - CONTRACTOR = Frome-Broken Hill Co. Pty. Ltd.
 - CLIENT_OP_CO = Frome-Broken Hill Co. Pty. Ltd.

(Inserted by DNRE - Vic Govt Mines Dept)

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ITEM_BARCODE = PE905455
CONTAINER_BARCODE = PE904222
NAME = Dome Frome Lake Tyers 1 Bouguer Map
BASIN = GIPPSLAND
ON_OFF = ONSHORE
PERMIT = PPL161
TYPE = GENERAL
SUBTYPE = GRAV_MAP
DESCRIPTION = Dome Frome Lake Tyers 1 Bouguer Anomaly
Map, Hartland Area, Victoria, showing
locations of nearby wells.
REMARKS =
DATE_CREATED = 31/12/55
DATE_RECEIVED = 31/07/58
W_NO = W454
WELL_NAME = Dome Frome Lake Tyers 1
CONTRACTOR = Bureau of Mineral Resources
CLIENT_OP_CO = Frome-Broken Hill Co. Pty. Ltd.

(Inserted by DNRE - Vic Govt Mines Dept)

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The enclosure PE905456 has the following characteristics:

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- CONTAINER_BARCODE = PE904222
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 - BASIN = GIPPSLAND
 - ON_OFF = ONSHORE
 - PERMIT = PPL161
 - TYPE = WELL
 - SUBTYPE = STRAT_COL
- DESCRIPTION = Compartive Litholgy Dome From Bores
(Plate 2).
- REMARKS =
- DATE_CREATED = 30/04/58
- DATE_RECEIVED = 31/07/58
 - W_NO = W454
 - WELL_NAME = Dome Frome Lake Tyers 1
 - CONTRACTOR = Frome-Lakes Pty Ltd. (Exploration
Department)
- CLIENT_OP_CO = Frome-Broken Hill Co. Pty. Ltd.

(Inserted by DNRE - Vic Govt Mines Dept)

2.0. WELL CARD

PE904223

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document.

The enclosure PE904223 has the following characteristics:

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- CONTAINER_BARCODE = PE904222
 - NAME = Dome Frome Lake Tyers 1 Well Card
 - BASIN = GIPPSLAND
 - ON_OFF = ONSHORE
 - PERMIT = PPL161
 - TYPE = WELL
 - SUBTYPE = CARD
- DESCRIPTION = Dome Frome Lake Tyers 1 Well Card
- REMARKS =
- DATE_CREATED =
- DATE_RECEIVED =
 - W_NO = W454
 - WELL_NAME = Dome Frome Lake Tyers 1
 - CONTRACTOR = Frome-Lakes Pty Ltd. (Exploration
Department)
- CLIENT_OP_CO = Frome-Broken Hill Co. Pty. Ltd.

(Inserted by DNRE - Vic Govt Mines Dept)

3.0. LITHOLOGY

DOME FROME NO.1.

Copy of log given in Weekly Work Record submitted by DOMS.

0 -	6'	Brown clay	
	15'	Yellow sandy clay	
	62'	Greyish sand and shell with few hard bands (limestone)	
	160'	Limestone and shells, hard bands.	
	205'	Coarse sand	
	206'	Hard band	
	238'	Coarse sand (some hard bands)	
	249'	Grey marl (with hard bands)	
	251'	Hard band	
	334'	Grey marl and shell with hard bands. No casing run.	
	340'	Grey marl	
	341'	Hard band	
	390'	Grey marl (silty)	
	490'	Grey marl	
	520'	Grey marl and limestone	
	560'	Sandy limestone	
	564'	Metamorphic (<i>Phyllite ? Ord.</i>)	No trace Oil.

MINES DEPARTMENT

W 454

VICTORIA

Dome Frome - Lake Eyre - 1

Mines (Petroleum) Act, 1935.
Section 45.

Residence in Zomba County, South Africa.

Record of Work at Dome Frome Bore No. 1..... bore on

* Petroleum Prospecting Licence Number during week
* Petroleum Mineral Lease ending 14. 12. 19. 57

DEPTH	DESCRIPTION OF STRATA
0 - 6	Brown clay
6 - 15	Yellow sandy clay
15 - 62	Greyish Sand & Shell with a few hard bands (limestone)
62 - 160	Limestone and shells, hard bands
160 - 205	Coarse sand
205 - 206	Hard band
206 - 238	Coarse sand (some hard bands)
238 - 249	Grey Marl (with hard bands) cont...page 2

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.)

(Signature)

(Signature)
13.1.56

SIGNED

LEGAL MANAGER COY.

Date/...../.....

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.

MINES DEPARTMENT

VICTORIA

W454

Mines (Petroleum) Act, 1935.
Section 45.

Record of Work at bore on

* Petroleum Prospecting Licence Number during week
* Petroleum Mineral Lease ending 19...

(Sondanuck)

DEPTH	DESCRIPTION OF STRATA
249 - 251	Hard band
251 - 334	Grey Marl and shell with hard bands

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 casing run.

SIGNED L.C. COOKE

LEGAL MANAGER DOME OIL & MINERALS SYNDICATE COY.
NO LIABILITY

Date ..23../...12/...57 .

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.

MINES DEPARTMENT

VICTORIA

Mines (Petroleum) Act, 1935.
Section 45.

Record of Work at Dome Frome Bore No.1 bore on

* Petroleum Prospecting Licence Number 161
* Petroleum Mineral Lease Number during week
ending 21. 12. 1957.

DEPTH	DESCRIPTION OF STRATA
334 - 340	Grey Marl
340 - 341	Hard Band
341 - 390	Grey Marl (silty)
390 - 490	Grey Marl
490 - 520	Grey Marl and Limestone
520 - 560	Sandy Limestone
560 - 564	Metamorphic (phyllite ? ord.)

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 trace of oil

[Handwritten signature]
13.1.58

SIGNED L.C. COOKE

LEGAL MANAGER DOME OIL & MINERALS SYNDICATE
NO LIABILITY COY.

Date 23/12/57

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.

40. MISCELLANEOUS
CORRESPONDENCE

COPY

FROME-LAKES PROPRIETARY LTD.

95 Collins Street,

Melbourne C.1

January 2, 1958.

Hon. Minister for Mines,
Department of Mines,
Treasury Gardens,
Melbourne C.2.

Dear Sir,

Dome Oil & Minerals Syndicate N.L. exploration well Frome No.1, located six miles north northeast of Lakes Entrance, as shown on the map attached to the Dome letter to you dated November 4, 1957, has been abandoned at a depth of 564' after plugging, according to the requirements of the Mines Department drilling superintendent.

Copies of statutory drilling log for the weeks ending December 14 and 21, 1957, are attached. The well finished in phyllite of probably Ordovician age, after passing through 560' of limestone, calcareous sandstone and loose quartz sand without revealing any evidence of oil or gas.

Dome Frome No.2, located 2 1/10 miles east northeast of No.1, is scheduled to spud in January 3, 1958. Location details will be submitted as soon as distance and bearing to reference points have been determined.

Yours very truly,

Sgd. N. Osborne
General Manager