



DOME FROME - LAKE TYERS - 2

WELL SUMMARY
DOME FROME
LAKE TYERS 2
W455

WELL SUMMARY

W455

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8 Pages
2 Maps
1 Chart

FROME-BROKEN HILL CO., PTY. LTD.

REPORT 7100-G-63



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

by

A. F. McQueen

Dome Frome N° 1

" " 2
" " 3
" " 4

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

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

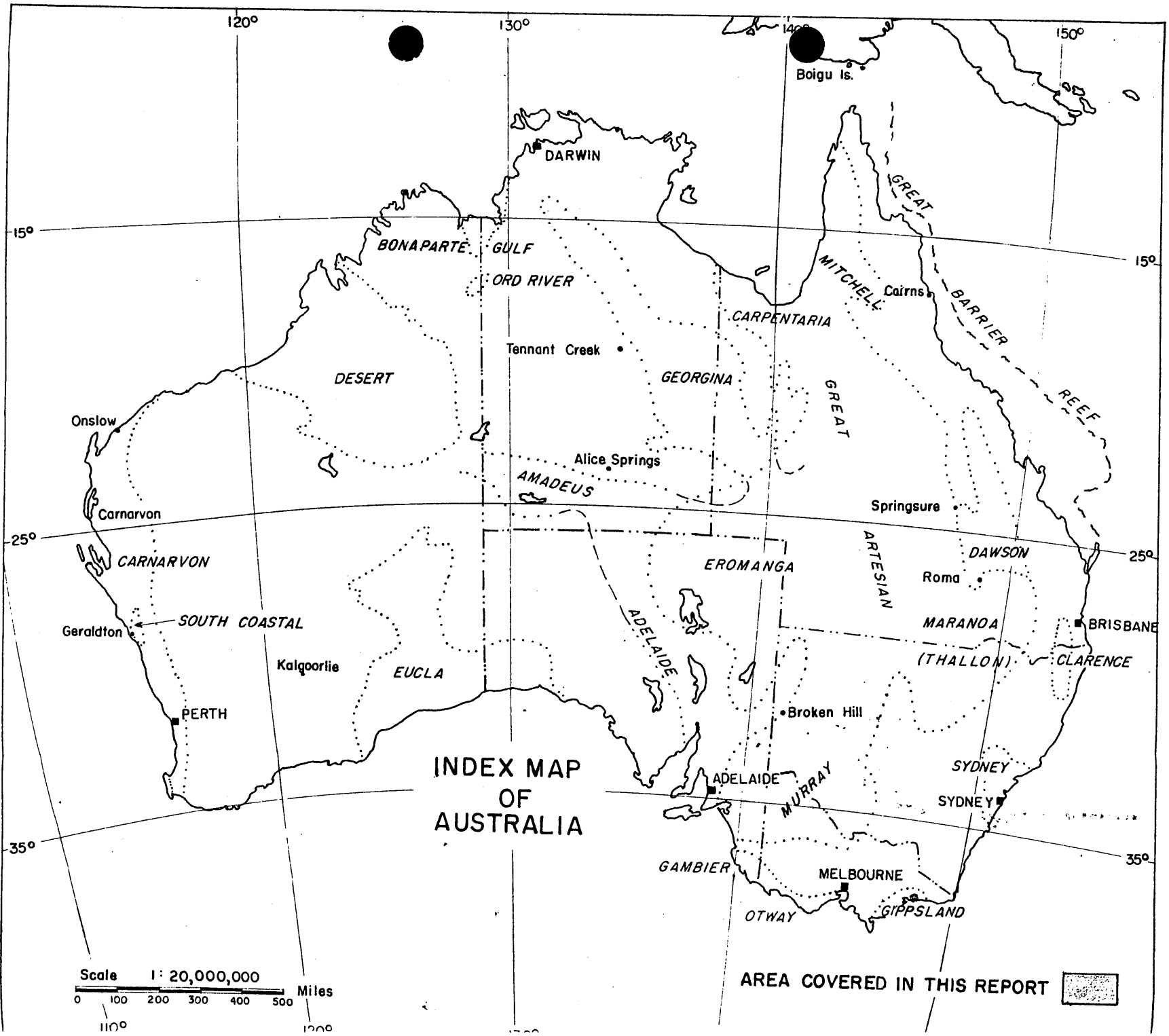
REFERENCES

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"
Prentice-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 Lec.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



INDEX MAP
OF
AUSTRALIA

Scale 1: 20,000,000
0 100 200 300 400 500 Miles
110° 120° 130° 140° 150°

AREA COVERED IN THIS REPORT

FRONTPIECE

PE905457

This is an enclosure indicator page.
The enclosure PE905457 is enclosed within the
container PE904224 at this location in this
document.

The enclosure PE905457 has the following characteristics:

ITEM_BARCODE = PE905457
CONTAINER_BARCODE = PE904224
 NAME = Dome Frome Lake Tyers 2 Bouguer Map
 BASIN = GIPPSLAND
 ON_OFF = ONSHORE
 PERMIT = PPL161
 TYPE = GENERAL
 SUBTYPE = GRAV_MAP
DESCRIPTION = Dome Frome Lake Tyers 2 Bouguer Anomaly
 Map, Hartland Area, Victoria, showing
 locations of nearby wells.
REMARKS =
DATE_CREATED = 31/12/55
DATE_RECEIVED = 31/07/58
W_NO = W455
WELL_NAME = Dome Frome Lake Tyers 2
CONTRACTOR = Bureau of Mineral Resources
CLIENT_OP_CO = Frome-Broken Hill Co. Pty. Ltd.

(Inserted by DNRE - Vic Govt Mines Dept)

PE905458

This is an enclosure indicator page.
The enclosure PE905458 is enclosed within the
container PE904224 at this location in this
document.

The enclosure PE905458 has the following characteristics:

ITEM_BARCODE = PE905458
CONTAINER_BARCODE = PE904224
 NAME = Dome Frome Bores, Compartive Lithology
 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 = W455
WELL_NAME = Dome Frome Lake Tyers 2
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 SUMMARY CARD

PE904225

This is an enclosure indicator page.
The enclosure PE904225 is enclosed within the
container PE904224 at this location in this
document.

The enclosure PE904225 has the following characteristics:

ITEM_BARCODE = PE904225
CONTAINER_BARCODE = PE904224
NAME = well card
BASIN = GIPPSLAND
PERMIT =
TYPE = WELL
SUBTYPE = well card
DESCRIPTION = well card Dome Frome Lake Tyers 2
REMARKS =
DATE_CREATED = 10/01/1958
DATE_RECEIVED =
W_NO = W455
WELL_NAME = Dome Frome Lake Tyers 2
CONTRACTOR = Dome Oil & Minerals Syndicate NL
CLIENT_OP_CO = Dome Oil & Minerals Syndicate NL

(Inserted by DNRE - Vic Govt Mines Dept)

3.0. LITHOLOGY

DOME FROME NO. 2.

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

0' - 38'	Surface clays (sandy)
83'	Fine sand
115'	" "
122'	" "
123'	Marl band
186'	Fine sand
231'	Sandy limestone 20' of casing inserted.
310'	Sandy limestone (hard band)
330'	Fine sand
359'	Sandy limestone (hard bands)
360'	Sandy limestone
370'	Fine sand
400'	Sandy limestone
430'	Sandy limestone with basement fragments
445'	Sandy limestone
451'	Coring (sandy limestone)
466'	Sandy limestone
480'	Sandy limestone with quartz and basement fragments.
500'	Quartz and basement fragments. A little sandy limestone.
505'	Phyllite slate or metamorphic rock
510'	Phyllite or metamorphic
516'6"	" " "
527'6"	Phyllite
540'	"
557'	Phyllite (coring) 542' of 5" casing in hole

MINES DEPARTMENT

VICTORIA

Page 1 of 4 (1)

W 455

Mines (Petroleum) Act, 1935.
Section 45.

Record of Work at Dome Frome No. 41² bore on

* Petroleum Prospecting Licence Number 161 during week
* Petroleum Mineral Lease ending 11. 1. 1958.

DEPTH	DESCRIPTION OF STRATA
- 38'	Surface Clays (sandy)
38' - 83'	Fine sand
83' - 115'	Fine sand
115' - 122'	Fine sand
122' - 123'	Marl band
123' - 186'	Fine sand
186' - 231'	Sandy limestone

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.)

20' of casing inserted

*Dr. J. ...
24.1.58*

SIGNED ... L.C. Cooke
Dome Oil & Minerals Syndicate
LEGAL MANAGER No Liability COY.

Date ..15../...1../..1958..

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

2

Mines (Petroleum) Act, 1935.
Section 45.

Record of Work at Dome Frome No. 112 bore on

* Petroleum Prospecting Licence Number during week
* Petroleum Mineral Lease ending 18. 1. 1958. 19...

DEPTH	DESCRIPTION OF STRATA
231 - 310.	Sandy limestone (hard bands)
310 - 330.	Fine sand.
330 - 359.	Sandy limestone (hard bands).
359 - 360.	Sandy limestone.
360 - 370.	Fine sand.
370- 400.	Sandy limestone.
400 - 430.	Sandy limestone with basement fragments.
430 - 445.	Sandy limestone.

445 - 451. Coring (sandy limestone)
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.)

(See page 2.)

SIGNED L.C. Cooke

LEGAL MANAGER DOME OIL & MINERALS SYNDICATE COY.
NO LIABILITY

Reg. Office: 422 Collins St., Melbourne.
L.C. Cooke Manager.

Date 22. / Jan. / 1958.

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 No. ~~11~~² bore on

* Petroleum Prospecting Licence Number during week
* Petroleum Mineral Lease ending 18- 1 - 1958. 19... (Continued)

DEPTH	DESCRIPTION OF STRATA
451 - 466.	Sandy limestone.
466 - 480.	Sandy limestone with quartz & basement fragments.
480 - 500.	Quartz & basement fragments. A little sandy limestone.
500 - 505.	Phyllite slate, or metamorphic rock.
505 - 510.	Phyllite or metamorphic.
510 - 516'6"	Phyllite or metamorphic.

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.)

.....
.....
.....
.....
.....
.....

SIGNED L.C. Cooke.....
LEGAL MANAGER DOME OIL & MINERALS SYNDICATE COY. NO LIABILITY.....

Date ... 22./Jan./... 1958:

Reg. Office: 422 Collins St.,
Melbourne.
L.C. Cooke, Manager.

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 No. 2 ... bore on

* Petroleum Prospecting Licence Number during ~~week~~ fortnight
* Petroleum Mineral Lease ending 1st. February, 1958.

DEPTH	DESCRIPTION OF STRATA
516'6"-527'6"	Phyllite
527'6"-540'	"
540' -557'	" (Coring)

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.)

542' of 5" Casing in hole.

SIGNED ... LC. Cooke

LEGAL MANAGER COY.

Date/...../..... 28 Mar. 1958 DOME OIL & MINERALS SYNDICATE
NO LIABILITY.

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.

Reg. Office- 422 Collins St. Melbourne
L.C. COOKE, Manager.

A.O.

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

FROME-LAKES PROPRIETARY LIMITED

(COPY)

95 Collins Street,

Melbourne. C.1.

16th January, 1958.

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

Dear Sir,

Petroleum Prospecting Licence No. 161.

We submit herewith details of Dome Oil & Minerals Syndicate exploration well No.24 as required by regulations under the Mines (Petroleum) Act.

- (a) Designation: Dome From No. 2.
- (b) Location: County Tambora Parish
Colquhoun East, 1500 feet north,
51° west of north-east corner
of allotment D.1.
- (c) Distance from nearest boundary of Licence: Three-quarters of a mile.
- (d) Height of Derrick Floor. Approximately 50 feet above sea level.
- (e) Diameter of Well as surface: 7 $\frac{7}{8}$ "
- (f) Depth Proposed: To 2,000 feet or basement rocks.
- (g) Drilling Method: Rotary.
- (h) Extent of Coring: As required.

Yours very truly,
(Sgd.) N. Osborne.
General Manager.

(COPY)

FROME-BROKEN HILL COMPANY PROPRIETARY LIMITED

95 Collins Street,
Melbourne. C.1.

21st January, 1958.

The Minister of Mines,
Department of Mines,
Treasury Gardens,
Melbourne. C.2.

Dear Sir,

The Second hole to be drilled by Dome Oil and Minerals Syndicate N.L. on Petroleum Prospecting Licence area No. 161 was spudded in on 10th January, 1958, and a Statutory drilling log for the week ending 11th January is attached.

In my letter of 16th January which contained details of the location of the abovementioned well, reference was made to well No. 4. You no doubt realise that this reference should have been to well No. 2 and it would be appreciated if you would note the correction on my original letter.

Yours very truly,

(Sgd.) N. Osborne,
General Manager.

N. Osborne
24.1.58

C O P Y.

FROME-BROKEN HILL COMPANY PROPRIETARY LIMITED.
(Incorporated in Victoria)

95 Collins St.,
MELBOURNE, C.1.

Telephone,
MF 5661.

3rd. February, 1958.

The Minister for Mines,
Department of Mines,
Treasury Gardens,
MELBOURNE, C.1.

Dear Sir,

Dome-Frome No. 2 Bore.

Attached for your information is copy of Record
of Work at the above bore during the week ending January 18, 1958.

The word 'Filite' used on page 2 of the Record
of Work should read 'Phyllite'.

Yours very truly,

(sgd) N.Osborne.

N.Osborne.

General Manager.

AFMcQ/Bh.

Dr. Thomas (of your file)

5. 2. 58.

to file 14 6/12/58.

C O P Y

Frome-Broken Hill Co. Pty. Ltd.,
95 Collins Street,
MELBOURNE, C.1.

1st April, 1958.

The Hon. Minister for Mines,
Treasury Gardens,
MELBOURNE, C.2.

Dear Sir,

Petroleum Prospecting Licence No. 161

Attached for your information, in accordance with the Mines (Petroleum) Act, 1935, are copies of the Record of Work at Dome-Frome Bores Nos. 2, 3 and 4, as submitted by Dome Oil and Minerals Syndicate N.L.

Yours very truly,

(N. Osborne)
General Manager

AMQ/ml.

N. Osborne
9-4-58