BOCAL PTY. LTD.

PETROPHYSICAL NOTE NO. 81

GOV. BORE 29/75/3

GIPPSLAND ONSHORE P.E.P. 89

LOGS AVAILABLE

Date	Run	Log	Interval (feet)
4-7-75	1	BHCS/GR/CAL	3444 - 350
		FDC/CAL	3440 - 1500
		IES/SP	3396 - 1500
		LITH. LOG	(Provisional sketch)

LITHOLOGICAL UNITS

All depths relate to Kelly Bushing at an elevation above permanent datum (mean sea level). All units are log-units.

1.	Surface - 350 feet	No data available.
2.	350 - 535 feet	Marl, Limestone.
3.	535 - 2141 feet	Marl, Limestone; dolomitic in parts, minor Dolomite streaks.
4.	2141 - 2332 feet	Marl; geopressured.
5.	2332 - 2626 feet	Calcareous Claystone
6.	2626 - 2654 feet	Shale, Dolomite, Limestone interbeds.
7.	2654 - 2730 feet	Sandstone; glauconitic, becoming cleaner towards base.
8.	2730 - 2774 feet	Sandstone.
9.	2774 - 2874 feet	Coal, minor Shale streaks.
10.	2874 - 3322 feet	Shale, Coal, Sandstone interbeds.
11.	3322 - 3357 feet	Sandstone
12.	3357 - 3444 feet	Mudstone, argillaceous Sandstone; chloritic.

SUMMARY OF INTERPRETATION

Unit (No.)	Porosity (%)	Sw (%)	Salinity (ppm NaCl)	Temperature (Deg. F)
7	20	100	1400	120
8	31	100	600	121
10	27	100	600	123
11	20	100	600	130
				BHT 132

COMMENTS

The porosity values given in the summary are matrix corrected. Sonic response is affected by unconsolidation at shallow depth. A compaction factor of 1.6 was therefore applied to bring sonic porosity in line with density porosity. The salinity changes across the unconformity between Units 7 and 8. There is no shale break at the bottom of Unit 7. The log response is due to shoulder effect at the unconformity.

The objective sands in the basal part of the Lakes Entrance Formation (Unit 7) and in the top of the Latrobe Formation (Unit 8) are basically fresh water sands, as are the other sands within the Latrobe Group.

The magnitude of the indicated pore pressure in Unit 4 is of the order of 0.54 psi/ft or 10.4 lbs/gal in terms of equivalent mud density.

RKN/mmm

16/7/75.

WOODSIDE OIL N.L.

GEOLOGICAL NOTE

GOVERNMENT BORE 29/75/3

GIPPSLAND ONSHORE P.E.P. 89

INTRODUCTION

In May 1975 the Operator was advised that the Mines Department was about to drill Bore No. 29/75/3 as part of routine groundwater and stratigraphic studies carried out by the Geological Survey. After discussions with the Department and the plotting of the location on our seismic maps, it became apparent that the Bore would test an undrilled fault bound seismic culmination on Latrobe Group level (see Encl. No.5, Gippsland Onshore Report, map date October 1, 1969).

The Bore is located near shotpoint 866a of seismic line 106, approximately 100 metres from Lake Wellington and 13 kilometres due east of Sale, and was programmed to fully penetrate the Latrobe Group.

In order to fully evaluate the potential reservoirs Woodside, as Operator, sought and received approval by Partners to commission Schlumberger to run a suite of logs at total depth.

The following logs were run on July 4, 1975, and copies of the final prints were distributed to Partners and the Mines Department on July 22, 1975.

1) Borehole Compensated Sonic Log - Gamma Ray
(3,450' - 350') Scales 2" and 5"/100'

2) Induction Electrical Log
(3,396' - 1,500') Scales 2" and 5"/100'

3) Compensated Formation Density Log
(3,440' - 1,500') Scales 2" and 5"/100'

RESULTS

A stratigraphic section incorporating the main findings of the Petrophysical Note is attached as Figure 1, and the Bore location has been plotted on the Gas Map of the area, Figure 2.

.../2

The main hydrocarbon objectives in this Bore are the basal sands of the Lakes Entrance Formation (2,654 - 2,730 feet b.k.b.) and sands in the top of the Latrobe Group (2,730 - 2,774 feet b.k.b.) trapped in what is interpreted as a loosely controled, fault-bound seismic structure, Figure 3.

Log interpretation has shown that all reservoir sands are water-wet. The reservoir characteristics of the sands are excellent with log derived porosities up to 31%. Adequate seals are provided by marls and clays of the Lakes Entrance Formation and intra-formational coals and shales in the Latrobe Group.

An interesting phenomenom is the change in salinity of the formation waters in the basal Lakes Entrance sand (1400 ppm NaCl) and in the top of the Latrobe Group (600 ppm NaCl) as witnessed by the reversal of the S.P. curve.

If the salinity change had been more pronounced, it would have been indicative of trapping conditions in the basal Lakes Entrance Formation with the main front of fresh water flushing below the unconformity at 2,730 feet. However, both salinity values indicate fresh water and the slight difference is probably due to the fact that the basal Lakes Entrance sands are marine and the underlying Latrobe sands are continental. Subsequent flushing (slightly more effective in the cleaner Latrobe sands) has effectively taken place over the whole interval between 2,654 - 2,774 feet.

CONCLUSIONS

1. The objective reservoirs in Government Bore 29/75/3 are water-wet and are fresh water flushed.

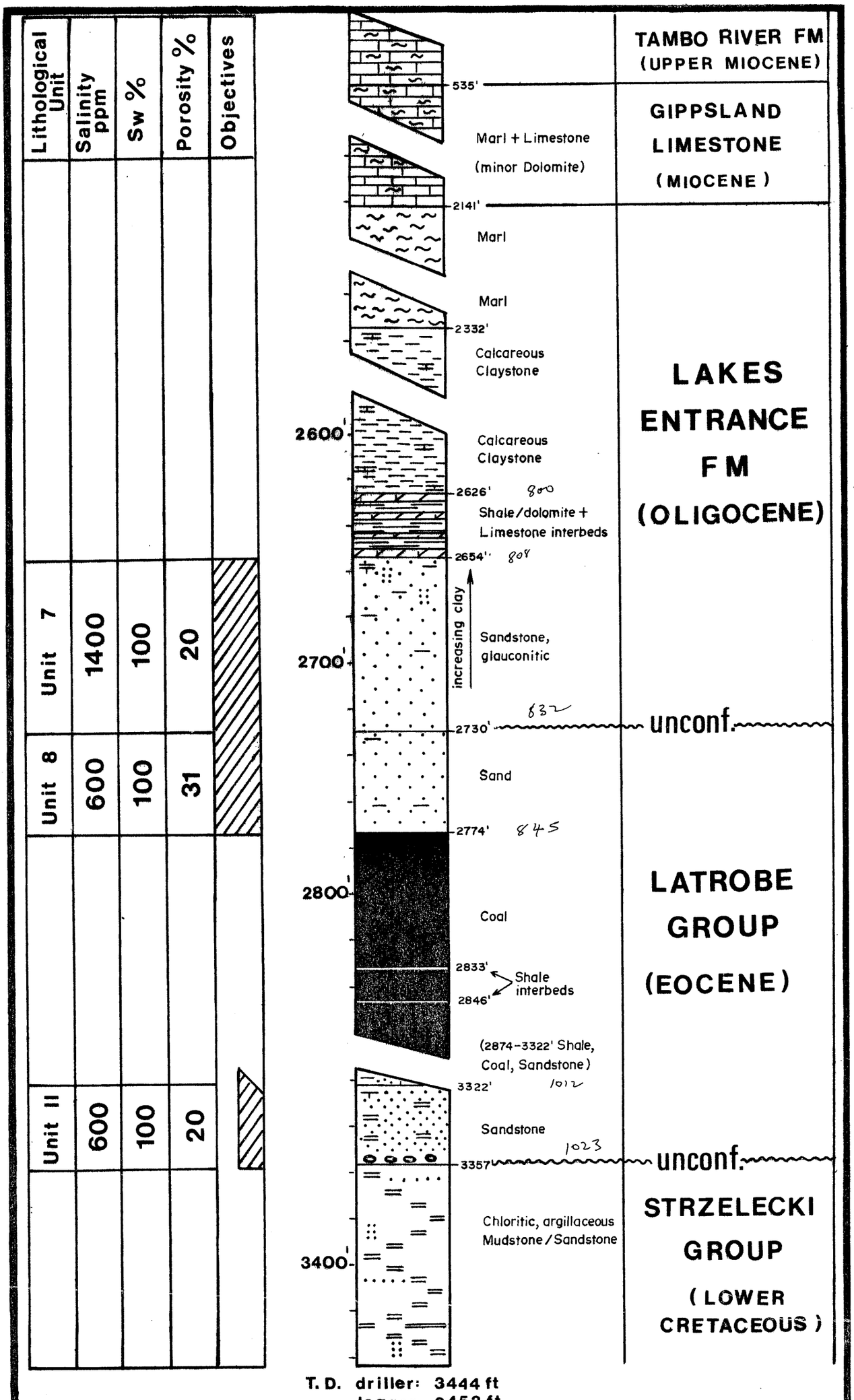
2. The flushed reservoirs indicate that adequate trapping conditions do not exist or were insufficient to protect the objectives from flushing.

3. The integration of efforts by the Mines Department and the P.E.P. 89 Partnership is mutually beneficial in that a prospective structure has been tested at little cost to the Partnership, and the logging provided the Mines Department with a valuable source of data.

Close cooperation with the Mines Department will continue in the near future. Further Bores will be drilled within the confines of the permit and a programmed Bore north of Lake Wellington may be located to test the gas anomalies in that area.

Melbourne, August 11, 1975.

Figures 1, 2 and 3.



T. D. driller: 3444 ft
logger: 3453 ft

GOV. BORE 29/75/3

P. E. P. 89

WOODSIDE OIL N.L.
Aug., 1975
Fig 1

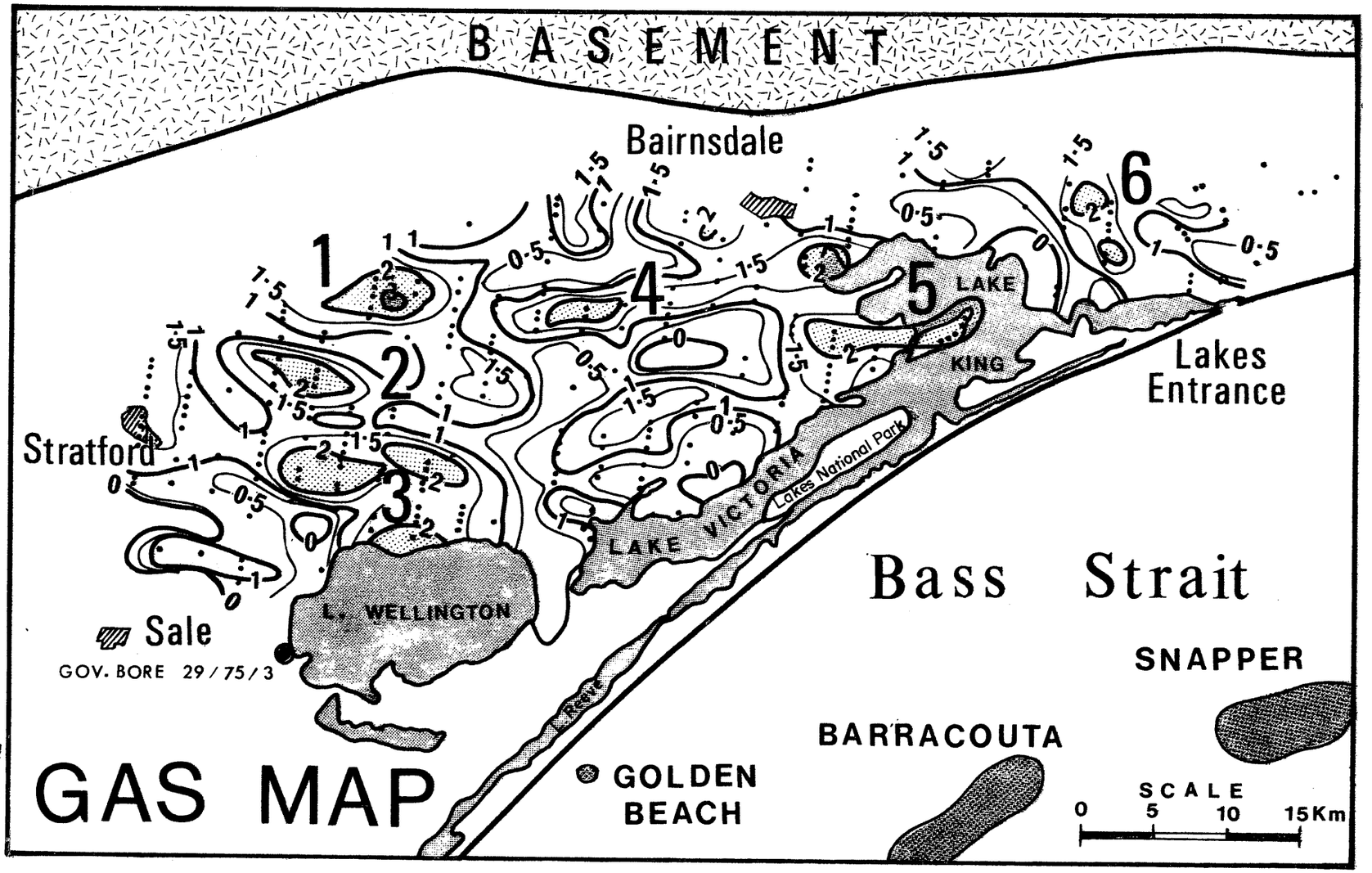

BASEMENT
Bairnsdale
1
2
3
4
5
6
LAKE KING
Lakes Entrance
Stratford
LAKE VICTORIA
Lakes National Park
L. WELLINGTON
Sale
GOV. BORE 29/75/3
Bass Strait
SNAPPER
BARRACOUTA
GOLDEN BEACH
SCALE
0 5 10 15Km
GAS MAP

Fig. 2

PE906289

This is an enclosure indicator page.
The enclosure PE906289 is enclosed within the container PE902817 at this location in this document.

The enclosure PE906289 has the following characteristics:

ITEM_BARCODE	= PE906289
CONTAINER_BARCODE	= PE902817
NAME	= Structure Map
BASIN	= GIPPSLAND
PERMIT	= PEP72
TYPE	= SEISMIC
SUBTYPE	= HRZN_CONTR_MAP
DESCRIPTION	= Structure Map of Horizon 'K', Enclosure 21 of Gippsland Onshore Report (Oct 1969)
REMARKS	= Hand coloured
DATE_CREATED	=
DATE_RECEIVED	=
W_NO	= W583
WELL_NAME	= SALT LAKE-1
CONTRACTOR	=
CLIENT_OP_CO	= WOODSIDE OIL COMPANY

(Inserted by DNRE - Vic Govt Mines Dept)