MINERVA-1

Location: Offshore Otway Basin
Latitude: 38 42 12.23 S
Longitude: 142 57 12.34 E

Water Depth = 56.7 m
Total Depth Drilled (KB) = 2425 m; Depth logged (KB) = 2431.08 m
KB Elevation = 25.3 m amsl
Seismic line reference: OE81A-2028, sp 2232

Completed April 17, 1993 by BHP Petroleum
Status = Gas Well - Cased & suspended

Lithostratigraphy by Geoff Geary (1998)
Lithological interpretation by Natalia Liberman (1998)
Palynology by A.D. Partridge (1996)
Produced by the Basin Studies Group 04-Jun-2000

State Government Victoria AUSTRALIA — Department of Primary Industries

Lithological legend

Carbonate Lithotypes
- Limestone
- Limestone, sandy
- Limestone, dolomitic
- Dolomite
- Dolomite, calcareous
- Marl

Siliciclastic Lithotypes
- Conglomerate
- Sandstone, pebbly
- Sandstone
- Sandstone, calcareous
- Sandstone, argillaceous
- Sandstone, glauconitic
- "Greensand"
- I'bedded sandstone & mudstone
- Siltstone
- Mudstone (shale)
- Mudstone, calcareous
- Claystone
- Coal

Others
- Extrusive rocks
- Mafic sills
- Plutonic rocks
- Metamorphic rocks

N.B. Not all lithological patterns in the legend have been used in this wellsheet.

Accessory minerals legend

C - carbonaceous debris
P - pyrite
G - glauconite
M - mica
Arrowheads indicate SWC range & abundance
Patterns indicate cuttings/core range & abundance

trace · minor · common · abundant

Pristane/Phytane Legend

< 1.5 Anoxic - Subaqueous (lacustrine or marine)
1.5 - 3.0 Trans - Transitional environment
> 3.0 Oxic - Subaerial environment

Palynological scheme legend

SPORE-POLLEN:

T. be	= T. bellus
P. tu	= P. tuberculatus
N. as	= N. asperus
P. as	= P. asperopolus
M. di	= M. diversus
L. ba	= L. balmei
F. lo	= F. longus
T. li	= T. lilliei
N. se	= N. senectus
T. ap	= T. apoxyexinus
P. ma	= P. mawsonii
H. un	= H. uniforma (A. di = A. distocarinatus)
P. pa	= P. pannosus
C. pa	= C. paradoxa
C. st	= C. striatus
C. hu	= C. hughesii
P. no	= P. notensis
F. wo	= F. wonthaggiensis
C. au	= C. australiensis
R. wa	= R. watherooensis

DINOFLAGELLATES:

W. th	= W. thompsonae
C. in	= C. incompositum
H. ta	= H. tasmaniense
D. he	= D. heterophylcta
A. hy	= A. hyperacantha
A. ho	= A. homomorphom
E. cr	= E. crassitabulata
T. ev	= T. evittii
P. py	= P. pyrophorum
M. dr	= M. druggii
I. ko	= I. korojenense
X. au	= X. australis
N. ac	= N. aceras
I. ro	= I. rotundatum
I. cr	= I. cretaceum
O. po	= O. porifera
C. st	= C. striatoconus
P. in	= P. infusorioides

N.B. Not all palynological zones in the legend have been used in this wellsheet.

Palynologists' environments legend

nm - non marine
lac - lacustrine
est - estuarine
mm - marginal marine
ns - nearshore marine
om - offshore marine

N.B. Environments are based on spore-pollen/dino ratios.

Hydrocarbon shows/tests legend

- Gas show (weak)
- Gas show (strong)
- Gas zone
- Oil show (weak)
- Oil show (strong)
- Oil zone
- Oil/gas show (weak)
- Oil/gas show (strong)
- Oil fluorescence
- CO_2 zone
- RFT test

N.B. Not all hydrocarbon symbols in the legend have been used in this wellsheet.

Depth(kb) · Casing · CALI 5 IN 20 · SP -50 MV 100 · GR 0 GAPI 200 · Lithologies · Sidewall · Core · Accessory minerals C P G M · LLS 0.2 OHMM 2000 · LLD 0.2 OHMM 2000 · DRHO -0.4 G/CC 0.1 · RHOB 1.95 G/CC 2.95 · NPHI 0.45 V/V -0.15 · Sonic Log 140 US/F 40 · TWT (ms) · Lithostratigraphy · Palynologists' palaeoenvirons nm lac est mm ns om · Spore/pollen zones · Dino zones · Show · Hydrocarbon shows/tests Tests Description · Pristane/Phytane Ratio Environ · Palaeoenvironment from integrated analysis · Sequence stratigraphic scheme · Depth(kb)

Casing: 30" · 13-3/8" · 9-5/9" · 7"

Lithostratigraphy	Spore/pollen zones	Dino zones
Heytesbury Gp (undiff.)		
Narrawaturk Marl		
Mepunga Fm		
Dilwyn Fm		
Pember Mudstone	up M. di	
	lw M. di	A. hy
	up L. ba	
Pebble Point Fm		
K/T Boundary Shale Mbr	lw L. ba	
	up F. lo	M. dr
	lw F. lo	
	T. li	I. ko
Paaratte Fm		
	N. se	X. au
Belfast Mudstone		
	N. ac	
	I. cr	
	O. po	
	T. ap	
	C. st	
Flaxman Fm		
Waarre Fm	P. ma	
Eumeralla Fm	C. pa	

Hydrocarbon shows/tests:
- 4% gas (RFT). C1=94%,C2=2.5% CO2=0.32%, >C2=1.8%
- Flow at a rate between 5.8 and 28.8 mmcfpd
- RFT C1=93.5%,C2=2.2%,CO2=1.8%,>C2=1.6%
- RFT C1=93.5%,C2=2.2%,CO2=1.8%,>C2=1.6%