S98-1 & 2 / V98-2 to 5

Otway Basin

Location Map

Point Summary (2)

Structure (2)

Stratigraphy (4)

Source Rock (2)

Geohistory (3)

Seismic (4)

Play Fairways

GALLERY

BACK

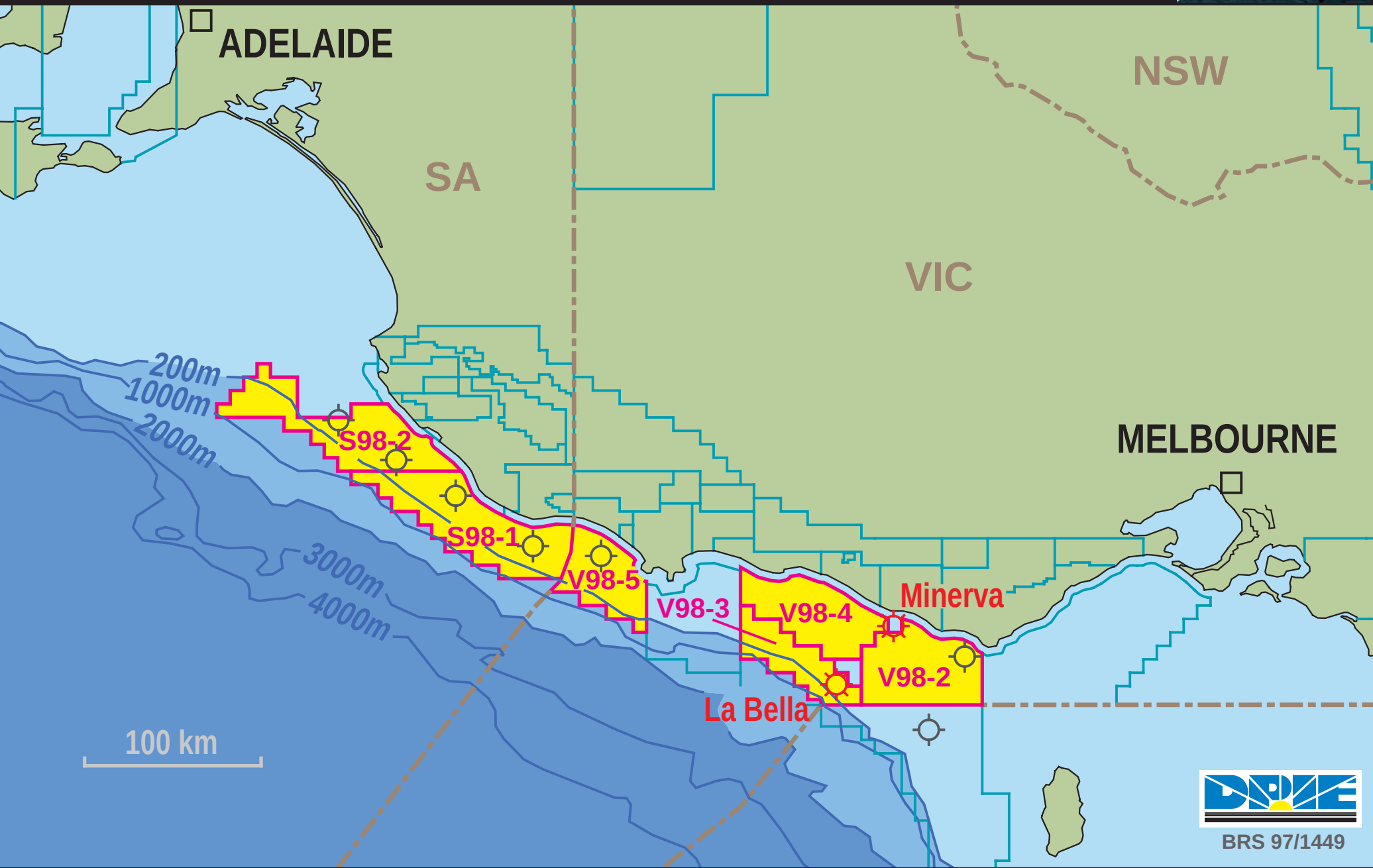
w98-016

w98-012

w98-011

w98-014

OTWAY BASIN - SA / VIC

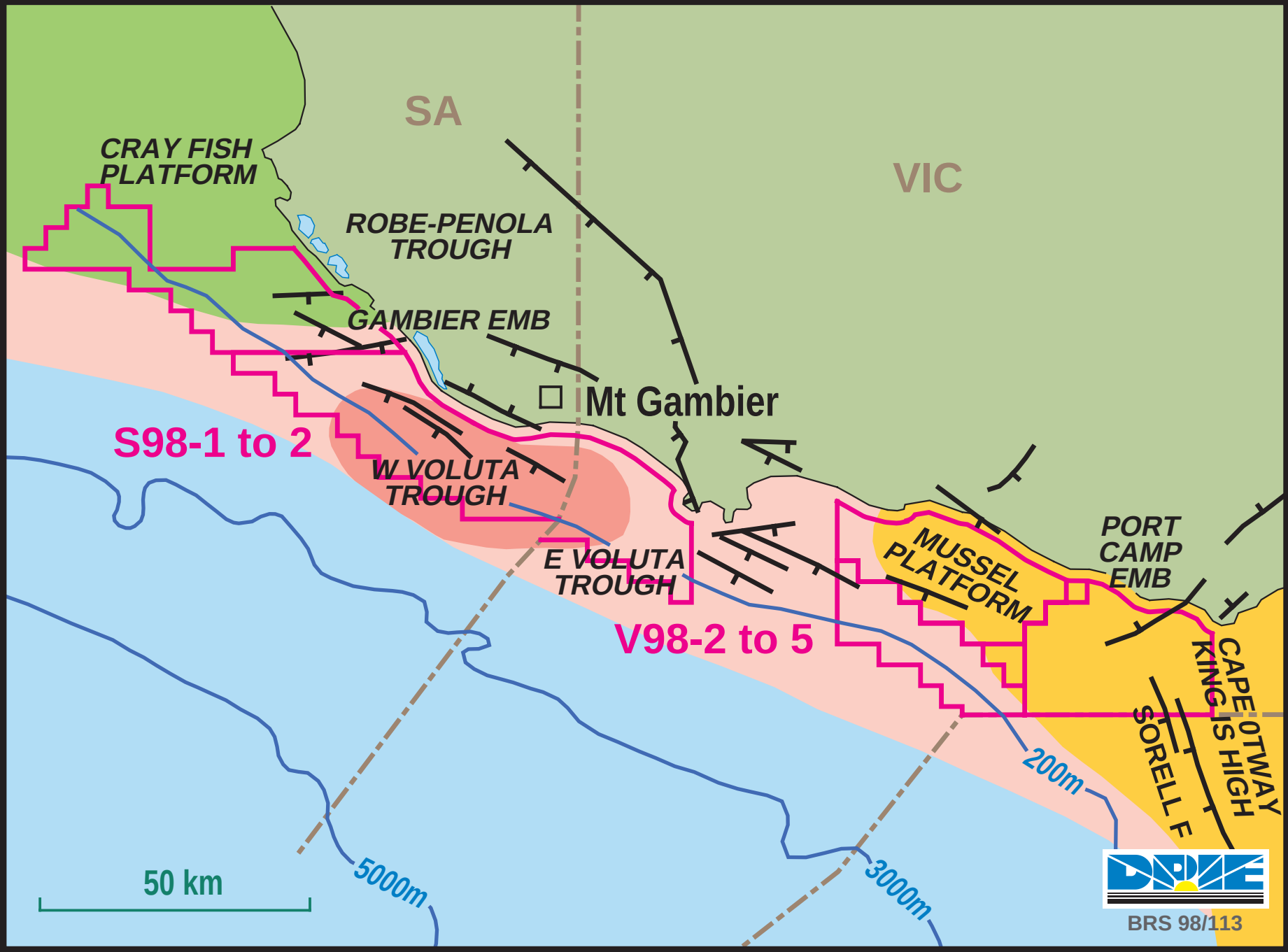


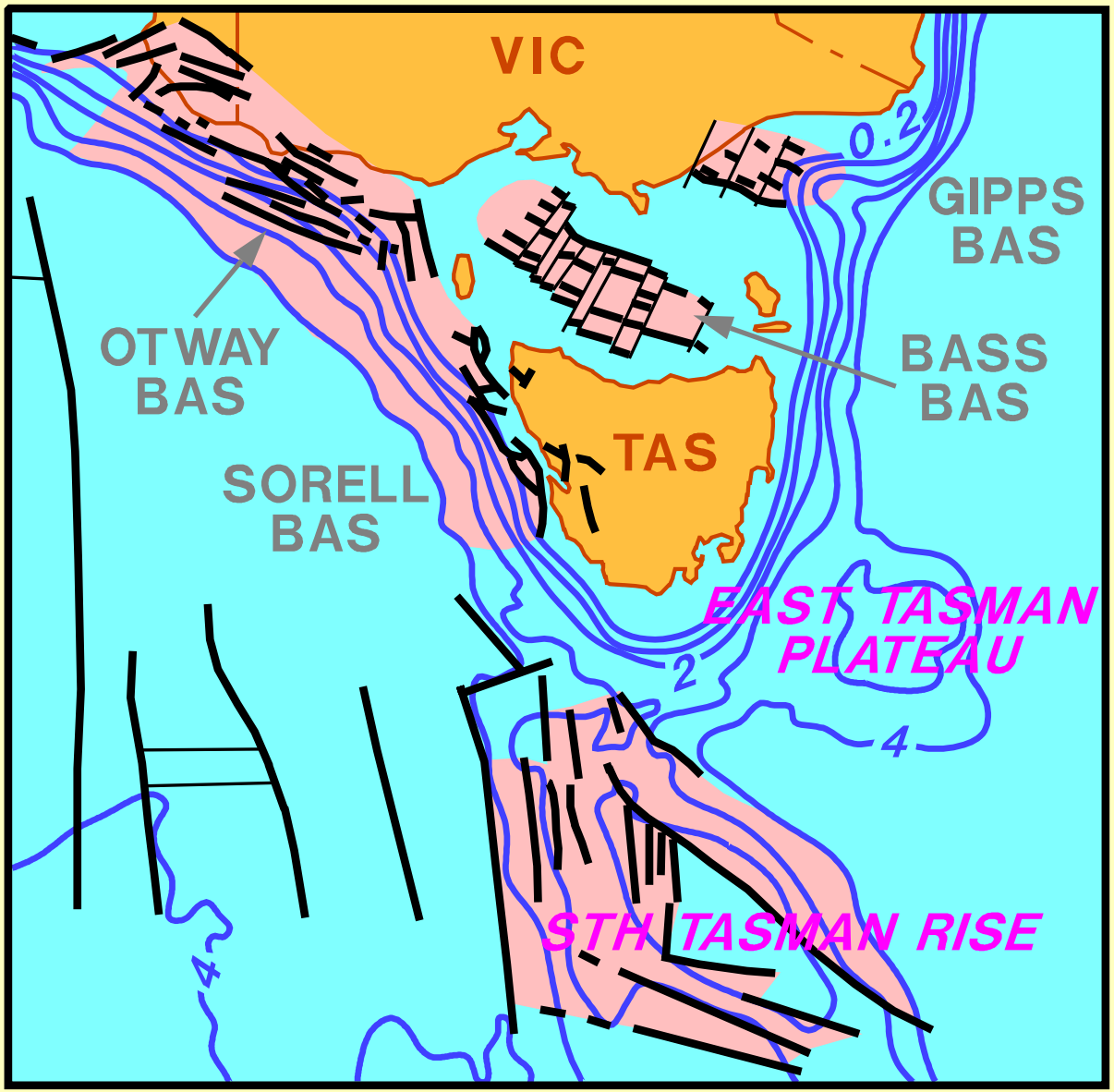
Areas V98-2 to 4
Eastern Otway Basin

- Proven gas province; oil potential
- Close to southeast Australian gas markets
- Cretaceous-Cainozoic Australia/Antarctica breakup sequence
- Good source and reservoir potential in southern trough and northern platform areas
- Large structural and stratigraphic trap potential
- Stratigraphic detailing a key for trap integrity
- 8 wells (plus 2 gas discoveries now in retention leases)
- Extensive modern seismic available
- Water depth mainly coastal to <200 m

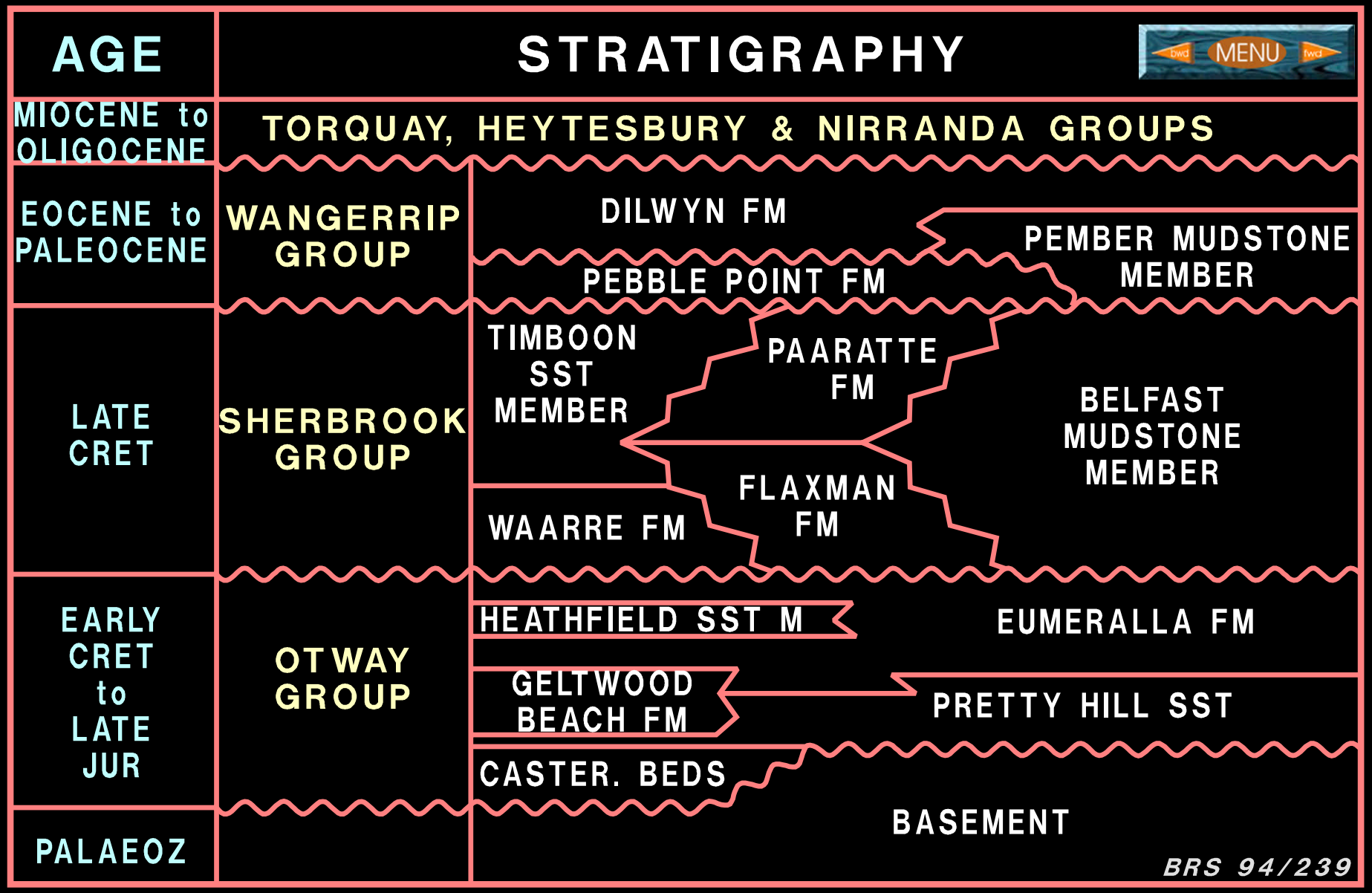
Areas S98-1 & 2, and V98-5
Western Otway Basin

- Oil and gas prospective
- New play concepts developed, plus similar play types to gas discoveries to the east
- Structural and stratigraphic traps mapped
- Only 8 wells drilled (1967-89) - reevaluation needed
- Cretaceous-Cainozoic Australia/Antarctica breakup sequence
- Fair to good seismic coverage
- Close to southeast Australian gas markets
- Water depth up to 1,000 m but mainly coastal to <200 m


SA
VIC
CRAY FISH PLATFORM
ROBE-PENOLA TROUGH
GAMBIER EMB
Mt Gambier
S98-1 to 2
W VOLUTA TROUGH
E VOLUTA TROUGH
V98-2 to 5
MUSSEL PLATFORM
PORT CAMP EMB
CAPE OTWAY
KING IS HIGH
SORELL F
200m
3000m
5000m
50 km
BRS 98/113


VIC
TAS
GIPPS BAS
BASS BAS
OTWAY BAS
SORELL BAS
EAST TASMAN PLATEAU
STH TASMAN RISE
0.2
2
4
4

BMR 90/482


AGE
STRATIGRAPHY
MENU
bwd
fwd
MIOCENE to OLIGOCENE
TORQUAY, HEYTESBURY & NIRRANDA GROUPS
EOCENE to PALEOCENE
WANGERRIP GROUP
DILWYN FM
PEMBER MUDSTONE MEMBER
PEBBLE POINT FM
LATE CRET
SHERBROOK GROUP
TIMBOON SST MEMBER
PAARATTE FM
BELFAST MUDSTONE MEMBER
FLAXMAN FM
WAARRE FM
EARLY CRET to LATE JUR
OTWAY GROUP
HEATHFIELD SST M
EUMERALLA FM
GELTWOOD BEACH FM
PRETTY HILL SST
CASTER. BEDS
BASEMENT
PALAEOZ
BRS 94/239

RESERVOIRS

AGE	STRATIGRAPHY			
MIOCENE to OLIGOCENE	TORQUAY, HEYTESBURY & NIRRANDA GROUPS			
EOCENE to PALEOCENE	WANGERRIP GROUP	DILWYN FM	PEMBER MUDSTONE MEMBER	
		PEBBLE POINT FM		
LATE CRET	SHERBROOK GROUP	TIMBOON SST MEMBER	PAARATTE FM	BELFAST MUDSTONE MEMBER
		WAARRE FM	FLAXMAN FM	
EARLY CRET to LATE JUR	OTWAY GROUP	HEATHFIELD SST M	EUMERALLA FM	
		GELTWOOD BEACH FM	PRETTY HILL SST	
		CASTER. BEDS		
PALAEOZ		BASEMENT		

BRS 94/236

SOURCES

AGE	STRATIGRAPHY			
MIOCENE to OLIGOCENE	TORQUAY, HEYTESBURY & NIRRANDA GROUPS			
EOCENE to PALEOCENE	WANGERRIP GROUP	DILWYN FM	PEMBER MUDSTONE MEMBER	
		PEBBLE POINT FM		
LATE CRET	SHERBROOK GROUP	TIMBOON SST MEMBER	PAARATTE FM	BELFAST MUDSTONE MEMBER
		WAARRE FM	FLAXMAN FM	
EARLY CRET to LATE JUR	OTWAY GROUP	HEATHFIELD SST M	EUMERALLA FM	
		GELTWOOD BEACH FM	PRETTY HILL SST	
		CASTER. BEDS		
PALAEOZ		BASEMENT		

BRS 94/238

SEALS

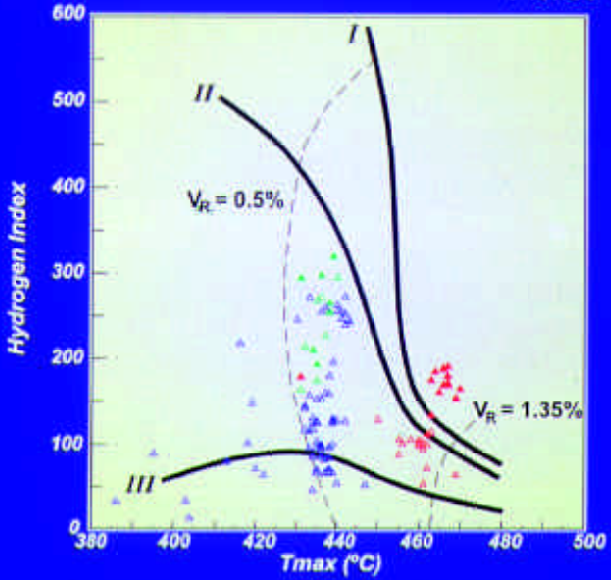
AGE	STRATIGRAPHY			
MIOCENE to OLIGOCENE	TORQUAY, HEYTESBURY & NIRRANDA GROUPS			
EOCENE to PALEOCENE	WANGERRIP GROUP	DILWYN FM	PEMBER MUDSTONE MEMBER	
		PEBBLE POINT FM		
LATE CRET	SHERBROOK GROUP	TIMBOON SST MEMBER	PAARATTE FM	BELFAST MUDSTONE MEMBER
		WAARRE FM	FLAXMAN FM	
EARLY CRET to LATE JUR	OTWAY GROUP	HEATHFIELD SST M	EUMERALLA FM	
		GELTWOOD BEACH FM	PRETTY HILL SST	
		CASTER. BEDS		
PALAEOZ		BASEMENT		

BRS 94/237

Natural Resources and Environment

Eumeralla Formation Hydrogen Index vs Tmax

Picked and Whole Rock Samples

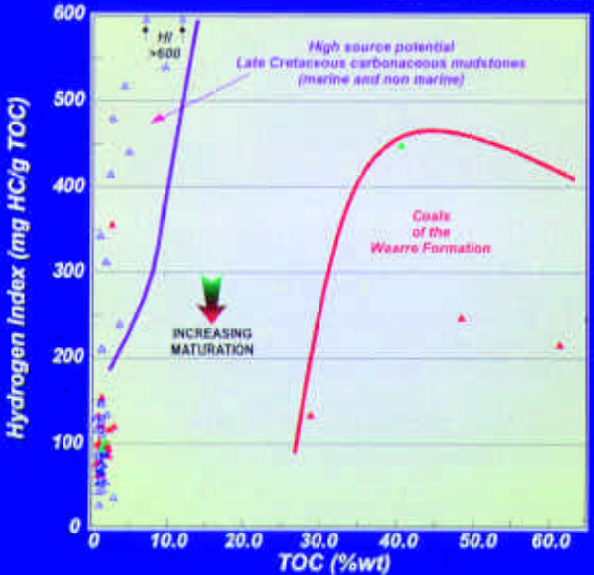


- Ross Creek-1, *C. hughesii*, coals
- Ross Creek-1, *C. hughesii*, mudstones
- Ross Creek-1, *C. striatus*, coals
- Ross Creek-1, *C. striatus*, mudstones
- Chama-1A, whole rock, Eumeralla

MENU

Natural Resources and Environment

TOC vs Hydrogen Index for selected Late Cretaceous Intersections

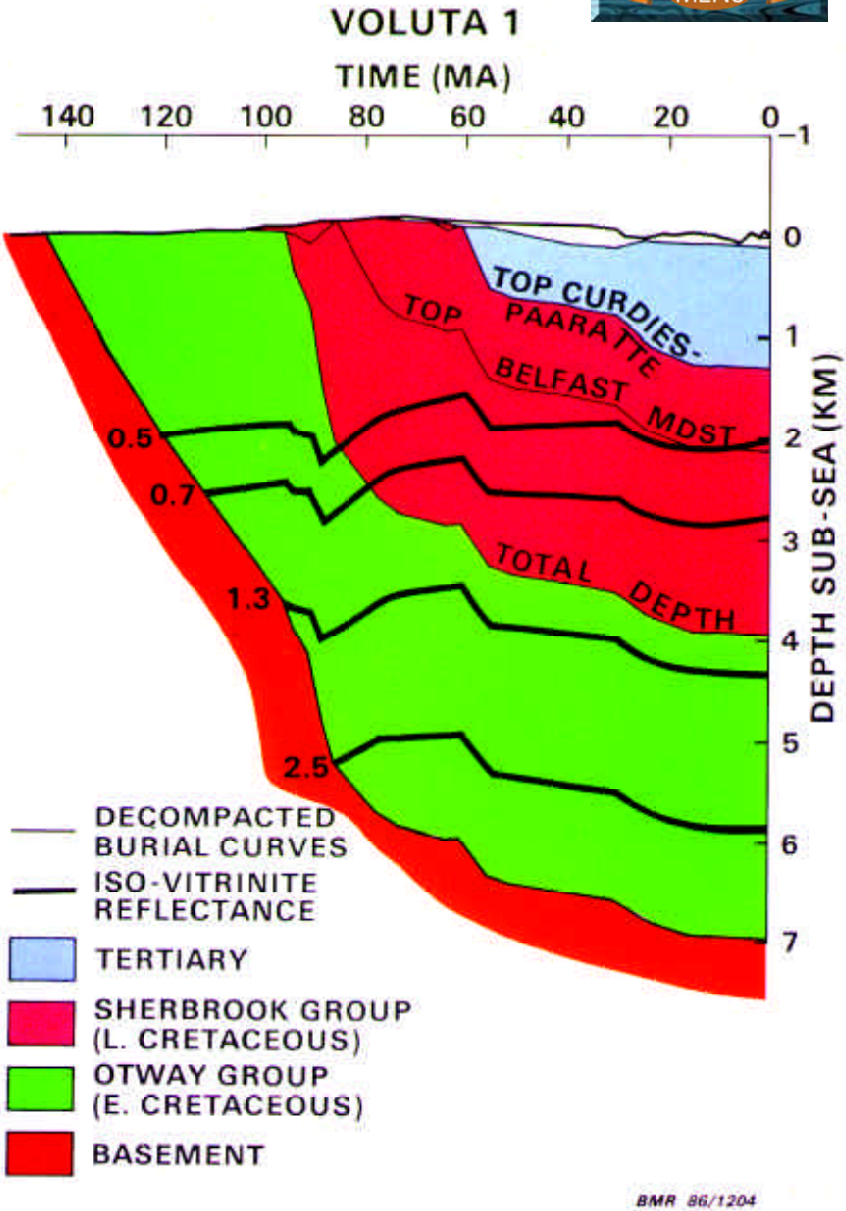


Normanby-1

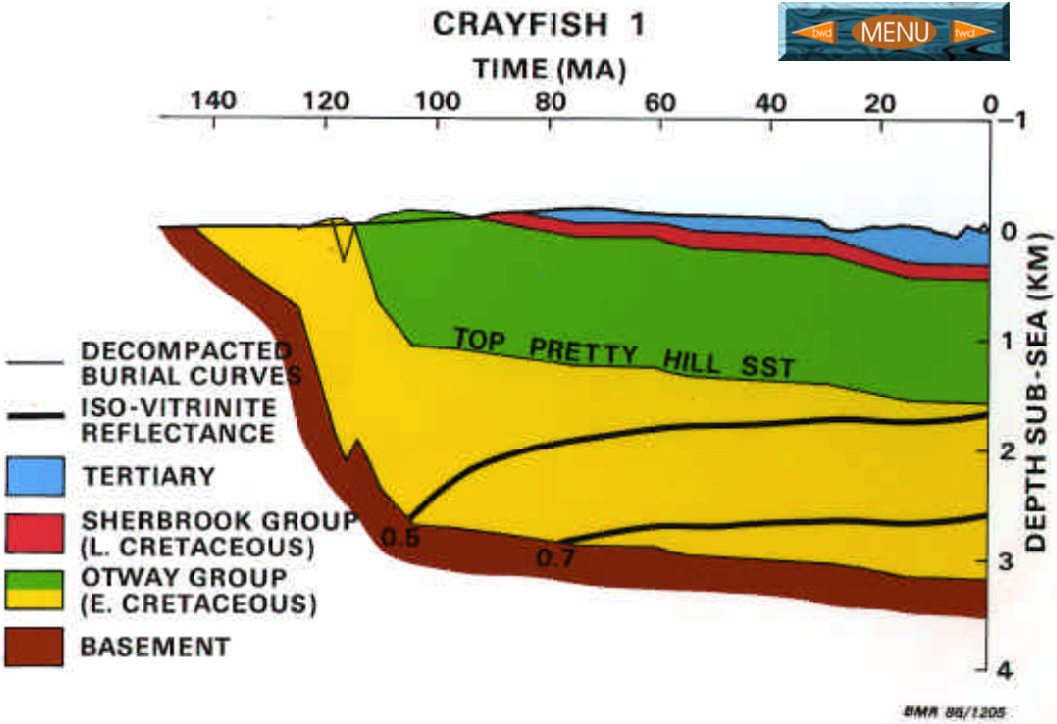
Minerva-1

Bridgewater Bay-1

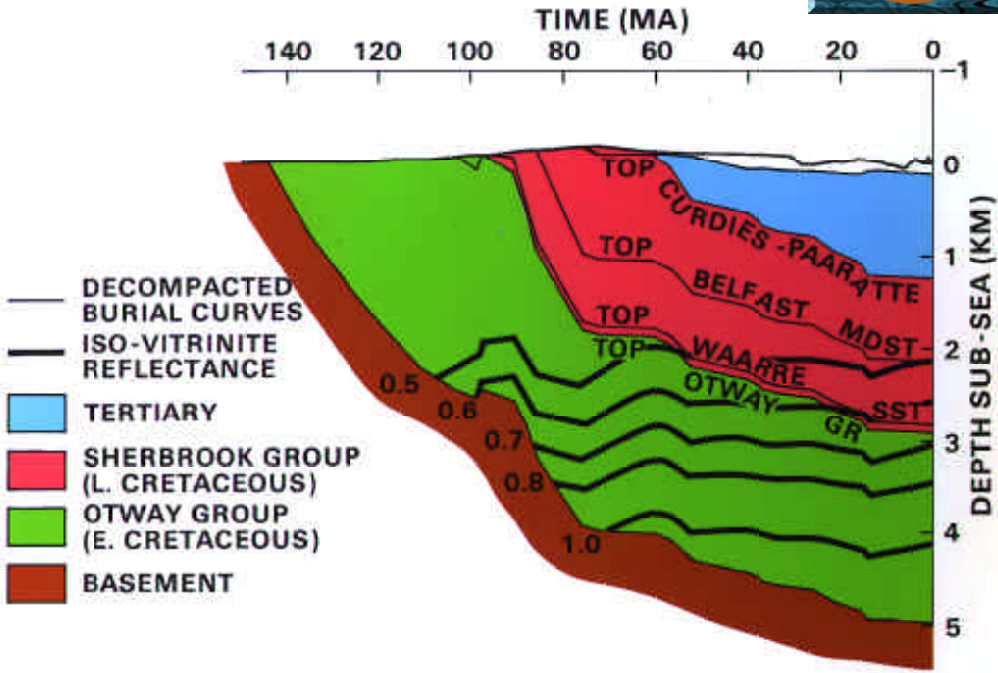
MENU


VOLUTA 1
TIME (MA)
140
120
100
80
60
40
20
0
-1
0
1
2
3
4
5
6
7
DEPTH SUB-SEA (KM)
TOP CURDIES-PAARATTE
TOP BELFAST MDST
TOTAL DEPTH
0.5
0.7
1.3
2.5
DECOMPACTED BURIAL CURVES
ISO-VITRINITE REFLECTANCE
TERTIARY
SHERBROOK GROUP (L. CRETACEOUS)
OTWAY GROUP (E. CRETACEOUS)
BASEMENT

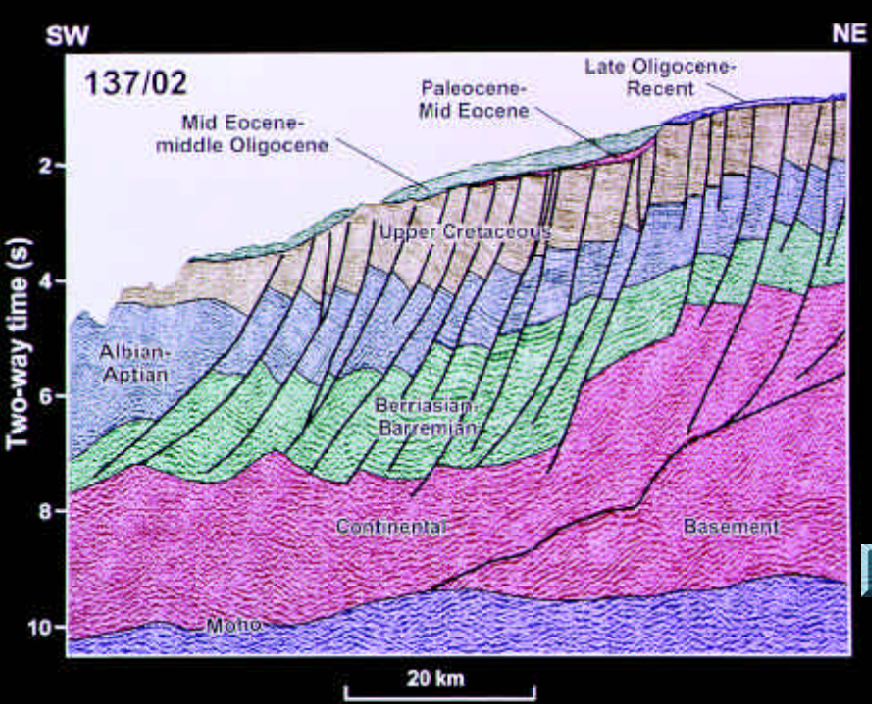
BMR 86/1204


CRAYFISH 1
TIME (MA)
140
120
100
80
60
40
20
0
-1
0
1
2
3
4
DEPTH SUB-SEA (KM)
TOP PRETTY HILL SST
0.5
0.7
DECOMPACTED BURIAL CURVES
ISO-VITRINITE REFLECTANCE
TERTIARY
SHERBROOK GROUP (L. CRETACEOUS)
OTWAY GROUP (E. CRETACEOUS)
BASEMENT
BMR 86/1205

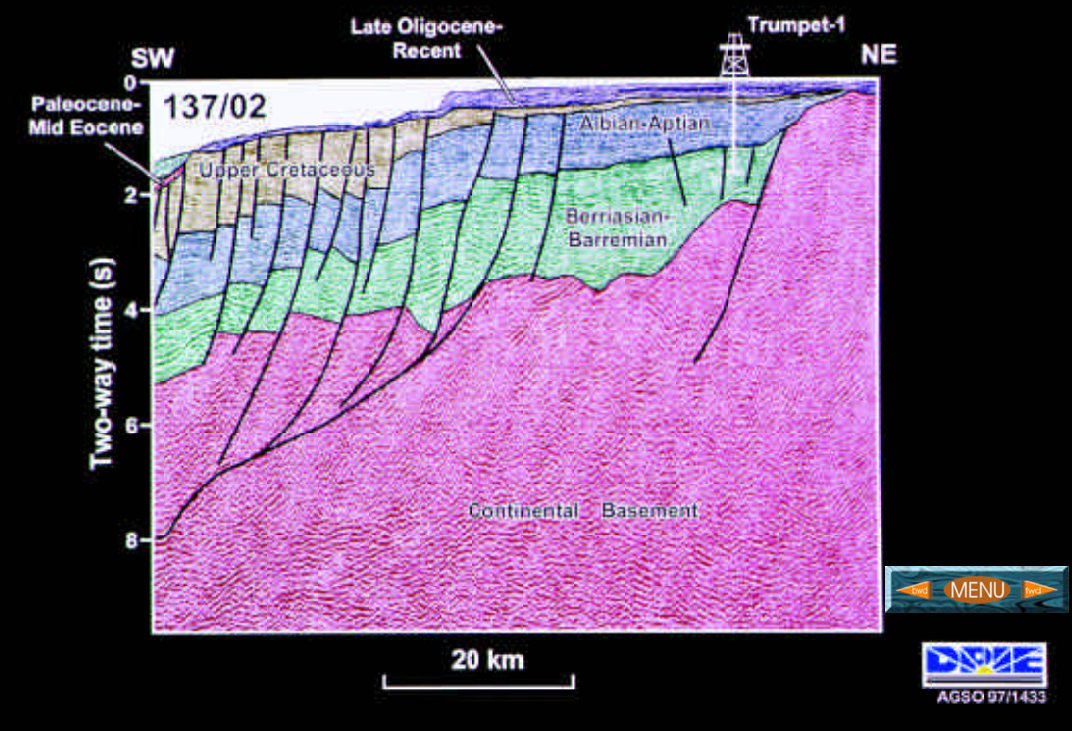
PRAWN A1

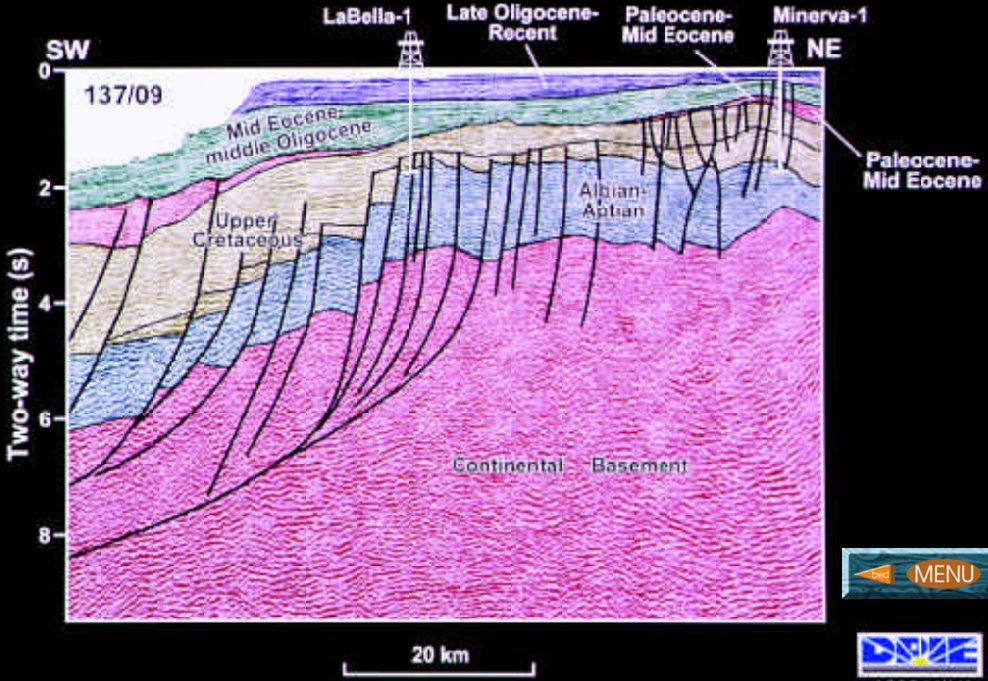


BMR 86/1206


SW
NE
137/02
Late Oligocene-
Recent
Paleocene-
Mid Eocene
Mid Eocene-
middle Oligocene
Upper Cretaceous
Albian-
Aptian
Berriasian-
Barremian
Continental
Basement
Moho
Two-way time (s)
2
4
6
8
10
20 km
AGSO 97/1432

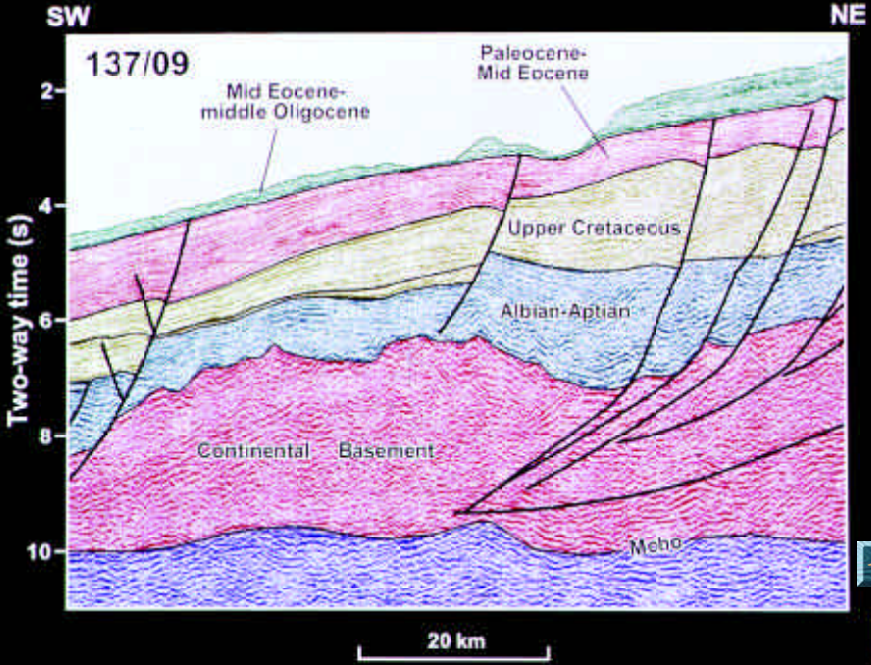
MENU


Late Oligocene-
Recent
Trumpet-1
SW
NE
137/02
Paleocene-
Mid Eocene
Albian-Aptian
Upper Cretaceous
Berriasian-
Barremian
Continental Basement
Two-way time (s)
0
2
4
6
8
20 km
MENU
AGSO 97/1433



MENU

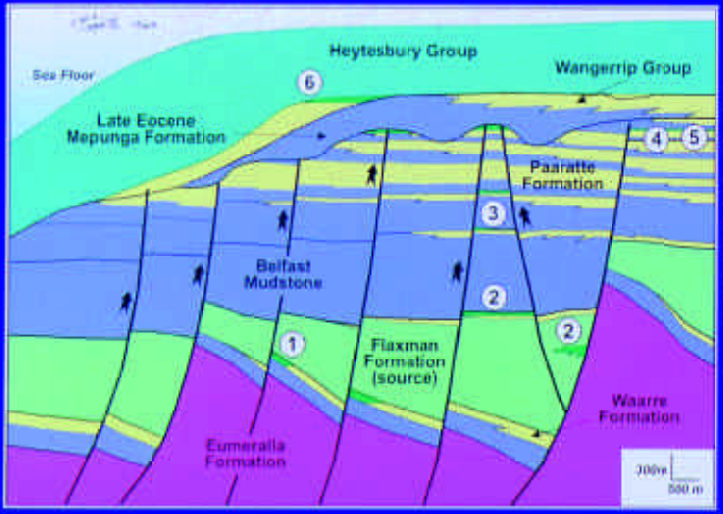
AGSO 97/1434


SW
NE
137/09
Paleocene-
Mid Eocene
Mid Eocene-
middle Oligocene
Upper Cretacecus
Albian-Aptian
Continental Basement
Moho
Two-way time (s)
2
4
6
8
10
20 km

AGSO 97/1435

Natural Resources and Environment

Play Fairways for the Offshore Otway Basin



1. *Upper Waarre Formation*
2. *Top / Intra Flaxman Formation*
3. *Intra Belfast Sands*
4. *Upper Paaratte Formation*
5. *Pebble Point Formation*
6. *Early Oligocene Lowstand Wedge*

Oil migration pathways

Potential oil accummulation

bwd MENU fwd