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*Geological Survey of Victoria*

WORANGA 12 : WELL COMPLETION REPORT

by

D STANLEY & V ARCHER

GEOLOGICAL SURVEY UNPUBL. REPT. 1986/67

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V. ARCHER

DEPARTMENT OF MINERALS AND ENERGY



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**ABSTRACT**

Woranga 12 is located approximately 6 kilometres east of Yarram, Victoria within the Seaspray Depression Region of the onshore Gippsland Basin. The bore was drilled as part of a groundwater and stratigraphic survey by DITR, was geophysically logged and completed as an observation bore. A TDS of 268 mg/L was obtained from a screened interval within the Latrobe Group between 530 - 533 m, with a low yield of 0.2 L/sec due to probable screen failure.

The bore penetrates sediments of the Strzelecki Group, Older Volcanics, Undifferentiated Latrobe Group, Balook Formation, Gippsland Limestone Formation, Boisdale Formation, Jemmys Point Formation and Haunted Hill Gravels.

Palynologically determined ages for the Latrobe Group range from Early Paleocene (Lower L. balmei Zone) to Late Eocene-Early Oligocene (Upper N. asperus Zone). The Gippsland Limestone Formation is dated as Late Eocene-Early Oligocene (Upper N. asperus Zone) and the top of the Balook Formation, older than Late Miocene ie T. bellus Zone or older.

## 1 INTRODUCTION

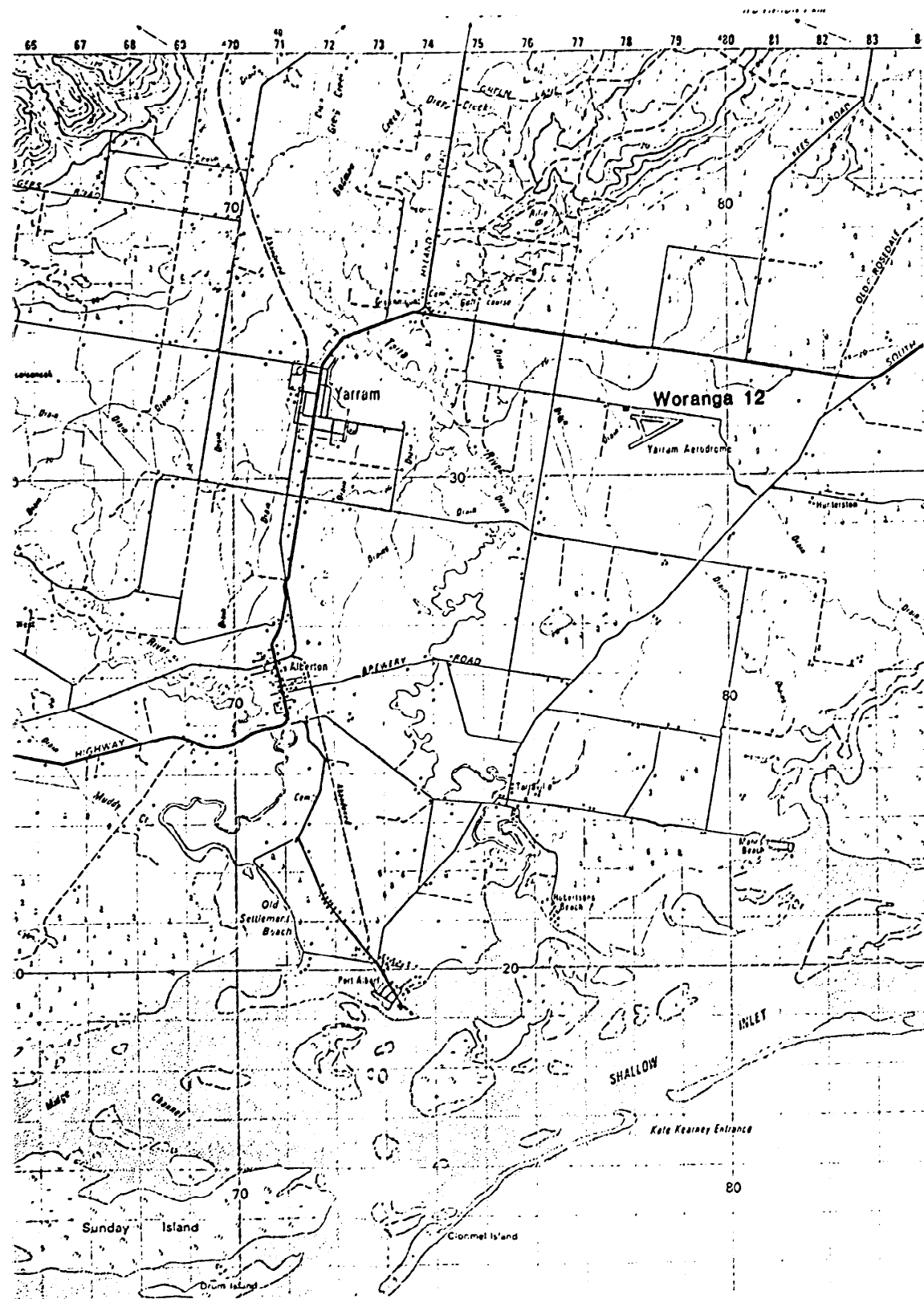
Woranga 12, was drilled as part of DITR's regional groundwater and stratigraphic survey of the Gippsland Basin, and is located within the Seaspray Depression area of the onshore Gippsland Basin, Victoria (fig. 1), approximately 6 kilometers east of the town of Yarram (fig. 2). The bore penetrates sediments of the Strzelecki Group, Older Volcanics, Undifferentiated Latrobe Group, Balook Formation, Gippsland Limestone Formation, Boisdale Formation, Jemmys Point Formation and Haunted Hill Gravels.

The bore was spudded on 25 February 1982 and drilling was completed on 23 April 1982 at a depth of 839.67 m. Woranga 12 was completed as an observation bore, but due to screen failure, produced a low yield of approximately 0.2 L/sec.

Lithological descriptions of the cores, sidewall cores and cuttings, and compilation of the composite well log were made by P Taylor, who was temporarily employed by this Department in 1985 under the CEP Scheme.

This report contains a compilation of the basic drilling data on Woranga 12, lithological descriptions, palaeontology, water analysis and composite well log containing gamma ray, neutron, S.P., resistivity, density and temperature logs (Enclosure 1).

The stratigraphic breakdown presented in this report closely follows the stratigraphy of Woranga 12 in Thompson and Walker (1982).



**FIGURE 1 : BORE HOLE LOCATION MAP**

Scale 1 : 100,000

**2. BASIN STUDIES SECTION - DEEP WELL SUMMARY SHEET - DM & E WELL**

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WELL NAME: WORANGA 12 BASIN: GIPPSLAND  
 STATUS: OBSERVATION BORE RIG: GD 2500 CONSEC. No.: 29/82/1  
 DATE: Commenced 25 February 1982 Completed 23 April 1982 TOTAL DEPTH: 839.67m  
 ELEVATION IGL) 18.15m LOCATION: AMG sheet Zone 55 YARRAM (8220)  
 PARISH No 1883 N 5731356 6477960

ENGINEERING DATA: (casing, plugs, completion details)  
 Hole Size: 38.1cm to 88.0m Casing: 27.3cm to 72.5m Plugs: Cement plug set.  
           24.1cm to 135.5m           20.3cm - 15.2cm and 556.5 - 581.0m  
           20.0cm to 822.7m           12.7cm casing string  
           18.7cm to 839.67m           run to 556.5m

GEOPHYSICAL LOGS: Logged by D.M. and E 4th May 1982 BH.T. 57.6°C at 840m  
  
 GR, Neutron 0 - 837.5m  
 SP, SN, LN, LAT 72.5 - 837.5m  
 Density 0 - 837.5m  
 Caliper 0 - 837.5m  
 Temp., & Temp. 0 - 840m

CORES: Conventional					Side Wall Cores			
From (m)	Thick	Recov.	%	Depth (m)	Recov.	Depth	Recov.	
1.	76.0	4.5	0.40	9	1.	100	15mm	
2.	81.9	6.0	0.0	0	2.	142.5	20mm	
3.	88.7	6.0	0.73	12	3.	162.5	V.poor	
4.	129.6	6.0	0.45	8	4.	207.5	poor	
5.	183.8	6.0	0.45	8	5.	225	15mm	
6.	237.8	6.0	0.45	8	6.	230	poor	
7.	292.3	6.0	0.0	0	7.	240	poor	
8.	346.9	2.2	0.75	34	8.	250	15mm	
9.	400.8	6.0	1.30	22	9.	269	good	
10.	455.2	6.0	0.65	11	10.	270	mod.	
11.	509.4	6.0	1.07	18	11.	265	mod.	
12.	563.9	6.0	2.34	39	12.	290	good	
13.	618.7	3.8	2.21	58	13.	349	mod.	
14.	659.5	1.0	1.00	100	14.	461	10mm	
15.	707.3	6.0	1.49	25	15.	490	mod.	
16.	761.2	1.0	1.00	100	16.	533	good	
17.	822.7	4.5	2.94	65	17.	535	good	
					18.	539	good	
					19.	587	good	
					20.	690	V.good	



PALAEONTOLOGY: Foraminifera Det. by

Polynology Det. by

- 1 88-94m core: C.bifurcatus Zone to early Pliocene
- 2 207.5m SWC: Upper T.bellus to C.bifurcatus Zone
- 3 285m: Upper N. asperus Zone
- 4 290m SWC: Upper N. asperus Zone
- 5 400.8-403.8m core: Middle N. asperus Zone
- 6 455-461m core: Lower N. asperus Zone
- 7 509.4-512m core: ? M.diversus Zone
- 8 563-566m core: Lower L.balmei Zone

GROUNDWATER DATA: (TDS, screened intervals, S.L., Drawdown, Yield).

Screened interval: 530-533 metres, 0.76mm aperture stainless steel screens  
 TDS: 268 mg/L  
 Yield: 0.21/sec  
 SWL: 8.0m

STRATIGRAPHY: Formation	Depth(m)	P.L.	Thick	Comments
Haunted Hill Gravels	0		32.5	
Boisdale Formation	32.5		70.5	
Jemmys Point Formation	102		27.6	
Boisdale Formation	129.6		87.9	
Balçok Formation	207.5		62.5	
Gippsland Limestone Formation	270		21.3	
Balçok Formation	290.0		55.6	
Undifferentiated Latrobe Group	346.9		263.1	
Older Volcanics	510.0		58.0	
Undifferentiated Latrobe Group	668.0		32.5	
Older Volcanics	707.5		26.5	
Strzelecki Group	727.0			

OTHER DATA: (Velocity survey, seismic line, gas/oil show, tests)

DATA SOURCE, REFERENCES, COMMENTS

- Thompson B.R., & Walker, G.M., 1980. A progress report on the Alberton Coalfield Investigation. Geol. Surv. Vict. Unpubl. Rept. 1980/72
- IBID 1982 Wronga 12 Completion Report. Geol. Surv. Vict. Unpubl. Rept
- IBID 1984 The Geology of the Seaspray Depression. Australian Coal Geology 4, Pt 1
- Walker, G.M., 1982 Notes on the Tertiary Stratigraphy of the Western Seaspray Depression of the Gippsland Basin. Geol. Surv. Vict. Unpubl. Rept. 1982/71

GROUP	FORMATION	MEMBER	DEPTH TO (m)	THICKNESS (m)
	Haunted Hill Gravels		0	32.5
Sale Group	Boisdale Formation		32.5	70.5
	Jemmys Point Formation		102.0	27.6
Sale Group	Boisdale Formation		129.6	87.9
	Balook Formation		207.5	62.5
Seaspray Group	Gippsland Limestone Formation		270.0	21.3
	Balook Formation		290.0	55.6
Undifferentiated Latrobe Group			346.9	263.1
	Older Volcanics		610.0	58.0
	Undifferentiated Latrobe Group		668.0	32.5
	Older Volcanics		700.5	26.5
Strzelecki group			727.0	

Figure 2

## APPENDIX 4

## PALYNOLOGICAL REPORT ON WORANGA 12

Samples from Woranga 12 were examined for palynological dating purposes by V Archer. Some of the zone determinations made earlier (unpub. rept. 1982/4) have been reassessed (1986) and some new samples have been examined. The following results were obtained:

Depth (m)	Spore-Pollen Zone	Age
88-94	<u>C. bifurcatus</u> Zone to Early Pliocene	Late Miocene to Early Pliocene.
Comments:	Age is based on the low but consistent occurrence of <u>Nothofagidites</u> spp.	
183.8-189.8	Barren	
207.5	Upper <u>T. bellus</u> Zone - <u>C. bifurcatus</u> Zone	Late Miocene
Comments:	Zone assessment is based on the high numbers of both <u>Nothofagidites</u> spp. and <u>H. harrisii</u> , with <u>Nothofagidites</u> spp. being the more common. Zone index fossils are lacking and there is evidence of Paleocene reworking with <u>G. rudata</u> being present.	
270	Indeterminate	
285	Upper <u>N. asperus</u> Zone	Late Eocene - Early Oligocene
290	" " "	" "
346.9-349.7	" " "	" "

400.8-403.8	Middle <u>N. asperus</u> Zone	Late Eocene
455-461	Lower <u>N. asperus</u> Zone	Middle Eocene
509.4-512	? <u>M. diversus</u> Zone	Late Palaeocene - Early Eocene
563-566	Lower <u>L. balmei</u> Zone	Early Paleocene
565-567.5	<u>L. balmei</u> Zone	"
701.5-702.5	Barren	
761.2	"	
825	Indeterminate	

GIPPSLAND BASIN

Albatross 1	(Endeavour Oil: offshore); Abele 1970/38
Alberton East 2	
3	
Alberton West 183	
197	
Bairnsdale 6	
Barracouta A-1	(Esso Gippsland Shelf 1: offshore); Taylor 1965/16, Taylor 1966
Barracouta B-1	(Esso Gippsland Shelf 2: offshore); Taylor 1965/18
Bengworden South 1	
6	Abele in Thompson 1979/139 & PhD thesis (1980)
Boodyarn 4	Abele in Thompson 1979
6	
Boole Poole 1	
Broadlands 2	
Bruthen 6	
Bundalaguah 2	
Carrs Creek 1	(Arco-Woodside: Wulla Wullock); Taylor 1963/64
Col A-1	(Esso Gippsland Shelf 3: offshore); Taylor 1965/47
Colquhoun 1	(new number :3)
2	"          5
4	"          9
8	"         13
9	"         14
11	"         16
12	"         18
Colquhoun North 1	
3	
Coolungoolan 88	Abele 1972/34
Coongulmerang 3	
Darriman 1	(Frome-Lakes : Darriman)
Dome Frome 1	(Frome-Lakes & Dome Oil and Minerals: Colquhoun North)
2	"          "                  "          East
3	"          "                  "          East
4	"          "                  "          East

Duck Bay 1	(Arco-Woodside: Bairnsdale)
Dutson Downs 1	(Woodside: Dulungalong)
East End 1	(Lakes Oil: Waygara)
East Lake Tyers 1	(Arco-Woodside: Tildesley West); Taylor 1962/88
East Ncwa 1	(Arco-Woodside: Tildesley)
Garnet 1	(Endeavour Oil: offshore); Abele 1970/42
Giffard 15	
Gippsland 1	(Frome-Lakes : Balloong)
1A	" "
2	" Woranga
3	" Balloong
4	" Yeerung
5	" Moornung
Gippsland Oil Co. 1	(Gippsland Oil : Bumberrah)
" 3	" "
Glencoe 2	
3	
5	
7	
8	
Glencoe South 2	
8001	
Golden Beach 1A	(B.O.C. of Australia: offshore); Abele 1967/26
Golden Beach West 1	(Woodside: Dulungalong); Taylor 1965/48
Goon Nure 1	
9	Abele in Thompson 1979/139 & PhD thesis (1980)
Holey Plains 32	
33	
38	
39	
40	
47	
56	
166	
169	
170	
185	Abele in Thompson 1979/139 & PhD thesis (1980)

Lake Reeve 1	(Woodside: Wulla Wullock); Taylor 1965/19
Lakes Entrance 1	(Woodside: Colquhoun)
Lakes Entrance Development 1	(Lakes Entrance Development: new name/number Colquhoun 1)
	2 (Lakes Entrance Development: new name/number Colquhoun 2)
Marlin A-1	(Esso Gippsland Shelf 4: offshore); Taylor 1966/8, 49
Marlin B-1	(Esso: offshore); Taylor 1966/49
Meerlieu 1	
4	Abele in Thompson 1979/139 & PhD thesis (1980)
Merriman 1	(Arco-Woodside: Wulla Wullock); Taylor 1963/65
Moormung 15	
Mullungdung 1	
5	
6	
7	Abele in Thompson 1979
8	" "
9	" "
Nindoo 1	
2	
North Seaspray 1	(Arco-Woodside: Wulla Wullock); Taylor 1962/87
2	(Arco-Woodside: Wulla Wullock)
Nuntin 2	
Oilco 1	(Woodside: Colquhoun)
Sale 8	
13	Abele in Thompson 1979/139 & PhD thesis (1980)
15	" "
Seaspray 1	(Arco-Woodside:Wulla Wullock); Taylor 1964/8
Sarsfield 8	
South Longford 1	(Arco-Woodside:Glencoe)
South West Bairnsdale	(Arco-Woodside: Nindoo); Taylor 1963/63
St Margaret Island 1	(Woodside: St Margaret); Taylor 1966/10
Stradbroke 13	
15	
16	
41	
45	
47	Abele in Thompson 1979

Stradbroke 48	Abele in Thompson 1979
49	" "
Stratford 12	
17	Abele in Thompson 1979/139 & PhD thesis (1980)
Tarwin Meadows 1	(Alliance Oil Development: Tarwin); Taylor 1965/30
Wellington Park 1	(Arco-Woodside:Booran); Taylor 1962/42
Welshpool 20	
Won Wron 60	
Woodside 1	(Woodside:Balloong)
2	" "
3	" "
4	" St Margaret
Woodside South 1	(Woodside:Balloong); Taylor 1965/20
Woranga 5	
7	
Woundellah 10	Abele in Thompson 1979/139 & PhD thesis (1980)
Wulla Wullock 1	
Wurruk Wurruk 1	
11	
13	Abele in Thompson 1979/139 & PhD thesis (1980)
Wy Yung 13	
Yarram 1	(Westralian Oil:Devon)