W760

WELL COMPLETION REPORT TARWHINE-1

VOL 2

PART 2 of 2

WCR VOL 2

TARWHINE-1

W760

E+P

APPENDIX 6

INCLUDES: TARWHINE-1 BULK ANALYSIS LOG
" -1 COMPUTER LISTING

OIL and GAS DIVISION

TARWHINE #1

19 JAN 1983

QUANTITATIVE LOG ANALYSIS

The Tarwhine #1 wireline log data has been analysed to provide clay volume, water saturation, Sxo, hydrocarbon volume and effective porosity data for the interval 1386 - 2940m KB. Drilling history, mud log data and wireline formation test data show the presence of oil at the top of Latrobe between 1386 and 1408m KB and gas intra-Latrobe below 2340m KB.

Two zones were production tested: The interval 2656 to 2667m KB flowed water only (22000 ppm salinity), despite hydrocarbon shows in a core cut from 2663 - 2669m KB. The second production test from 1398 to 1400.5m KB in the top of Latrobe hydrocarbon accumulation flowed light oil at a rate of 2604 bbls/day.

Log interpretation is hampered by several factors, these being:

1. Total fresh water flushing of the Latrobe Group from 1408m KB to 2340m KB. This means that connate water salinity/Rw for the top of Latrobe hydrocarbon zone, (1386-1408m KB) cannot be determined from logs.

2. The top of Latrobe hydrocarbon accumulation occurs in a laminated and interbedded sandstone, siltstone and shale sequence. The scale of the bedding and lamination is very much less than the vertical resolution of most of the logging devices. As the different logging devices have different vertical resolution, this means that at any one depth in this sequence, the various log values will represent averages of different vertical intervals of varying formation type. The MSFL is probably the only device which has vertical resolution appropriate to the scale of lamination.

3. Much of the intra-Latrobe has badly washed out. This has necessitated extensive editing of the density log and made the MSFL invalid in through many sections.

Logs Used

LLD, LLS, MSFL, GR, RHOB, CNL, CALIPER.
The LLD, LLS, MSFL and CNL logs were all corrected for bore hole and environmental effects. An RT "log" was then derived by correcting the LLD for invasion effects. The RHOB curve was edited to give "most likely" values in the "badhole" sections.

Analysis Parameters

Apparent shale density and neutron porosity values were derived from density/neutron crossplots (eg. Figure #1). a and m values for the intra-Latrobe section below 2350m were derived by crossplotting log RT versus log porosity (Pickett plot, - Figure #2).

	1386-1408mKB	1408-2340mKB	2340-2940mKB
a	0.80	0.80	1.00
m	2.00	2.00	2.42
N	2.00	2.00	2.00
Gamma Ray Minimum	20.00 API	15.00 API	40.00 API
Gamma Ray Maximum	160.00 API	135.00 API	145.00 API
Apparent Shale Density	2.45 gm/cc	2.54 gm/cc	2.59 gm/cc
Apparent Shale Neutron Porosity	0.40	0.37	0.38
Apparent Shale Resistivity	30.00 ohm.m	15.00 ohm.m	45.00 ohm.m
Formation Water Salinity	35000.00 ppm	-	22000.00 ppm

A formation water salinity value of 35000 ppm was assumed as a "best guess" for the interval 1986 - 1408m KB. As outlined above, a formation water salinity for this interval could not be derived from logs owing to fresh water flushing of the underlying water wet sands.

Since hydrocarbons were not present between 1408m KB and 2340m KB, 100% Sw was assumed for this interval and formation water salinity values derived.

Discussion and Results

Calculated results are presented in the form of a clay, porosity and hydrocarbon fraction of total volume versus depth plot and in the form of a depth, Vcl, Sw, Sxo, porosity and hydrocarbon volume listing at 0.25m increments. A bulk analysis depth plot for the top of Latrobe hydrocarbon accumulation is also presented in Figure 3.

Coals and coal rich shale sequences were set to a bulk density value of 1 gm/cc. In these zones Vcl output was set to 0 and porosity to 0.

Calculated salinities for the interval 1408 - 2340m KB range from 500 - 1400 ppm NaCleq.

Calculated water saturations for the intra-Latrobe "hydrocarbon bearing interval" are generally high. This is in keeping with the low RFT gas recoveries and water flow during the production test. It is suggested that the only probable intra-Latrobe production would be gas from the sand occuring between 2356 and 2360.5m KB.

T.M. FRANKHAM
December 1982

01731/71

NET TO GROSS SUMMARY*

Interval mKB	Assuming 10% O Net/gross cut off		Assuming 15% O Net/gross cut off	
	Net to gross	Average Porosity of net interval	Net to gross	Average porosity of net interval
1386-1408	93%	19.2%	71%	21.4%
1408-2340	75%	20.3%	64%	21.6%
2340-2940	36%	13.3%	7.6%	15.9%
	Average Sw of net interval	Average Hydrocarbon volume of net interval	Average Sw of net interval	Average Hydrocarbon volume of net interval
1386-1408	28%	14.4%	24%	16.6%

* Net interval being the cumulative interval with porosity greater than the porosity cut off value.

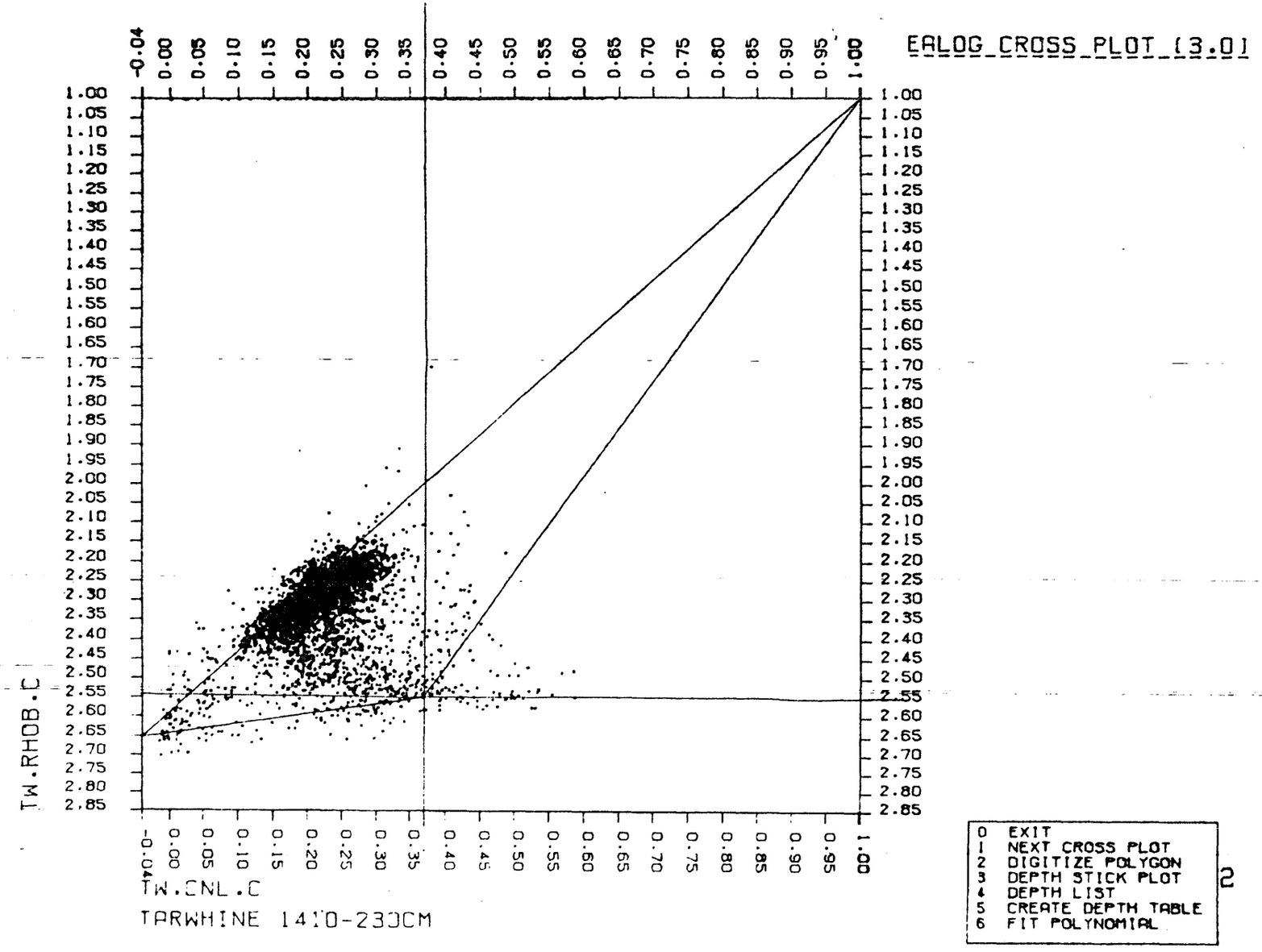
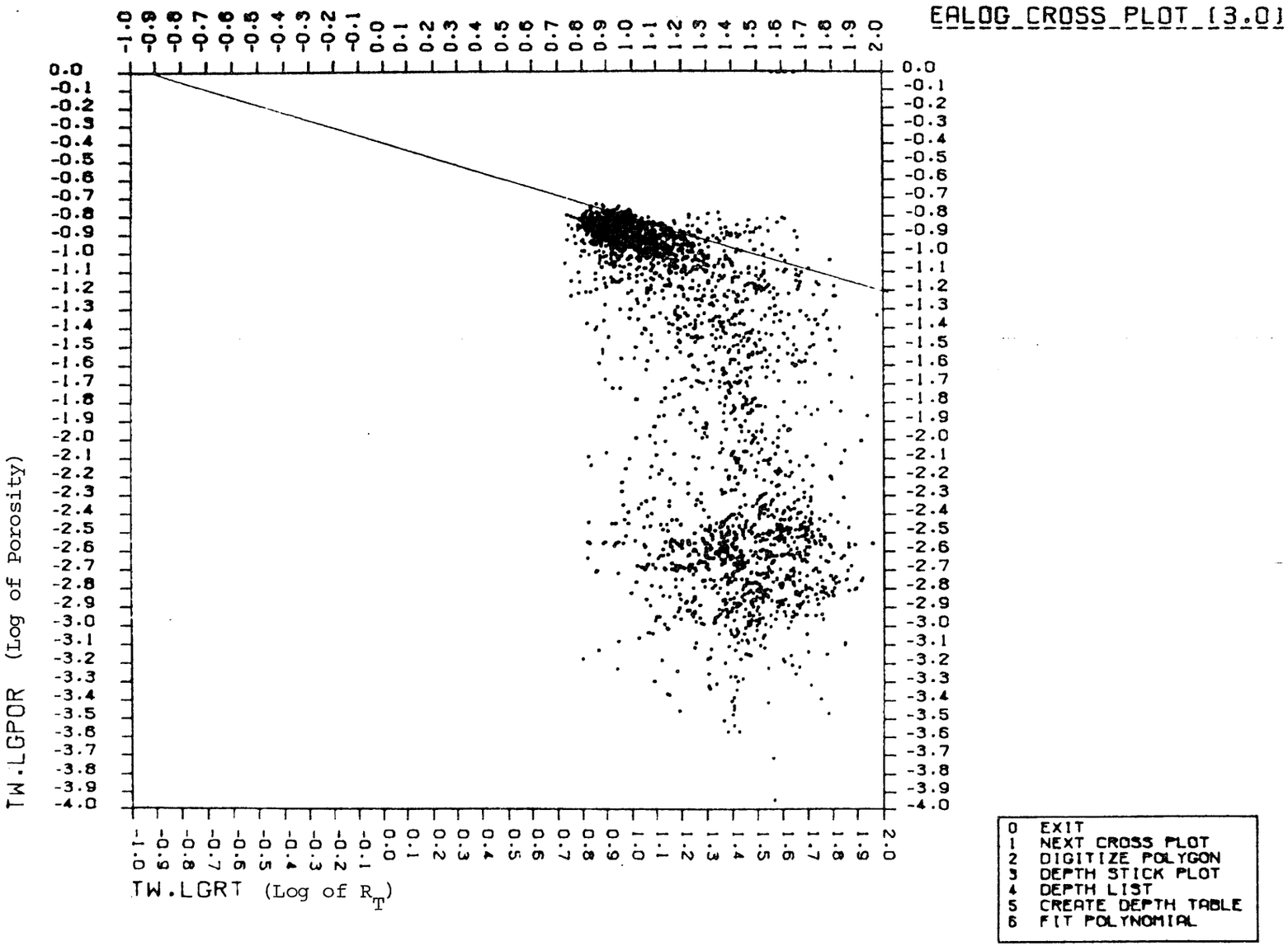

EALOG_CROSS_PLOT_(3.0)
TW.RHOB.C
TW.CNL.C
TARWHINE 1410-2300M
0 EXIT
1 NEXT CROSS PLOT
2 DIGITIZE POLYGON
3 DEPTH STICK PLOT
4 DEPTH LIST
5 CREATE DEPTH TABLE
6 FIT POLYNOMIAL

FIGURE 1.



Tarwhine-1 2350 - 2940m(KB)

FIGURE 2.

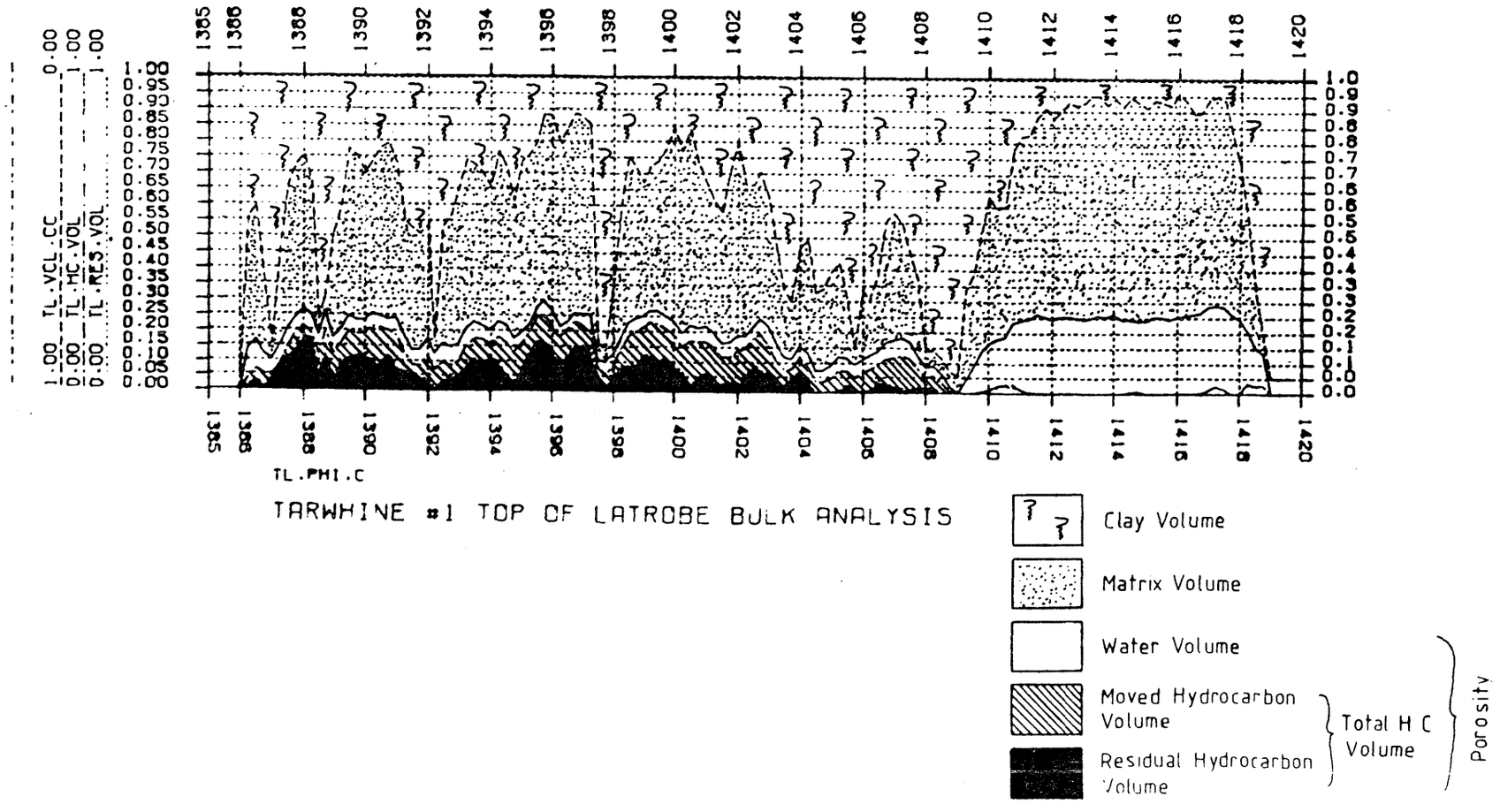

TL_VCL_CC
TL_HC_VOL
TL_RES_VOL
TL.PHI.C
TARWHINE #1 TOP OF LATROBE BULK ANALYSIS
Clay Volume
Matrix Volume
Water Volume
Moved Hydrocarbon Volume
Residual Hydrocarbon Volume
Total H C Volume
Porosity

FIGURE 3.

PE603793

This is an enclosure indicator page.
The enclosure PE603793 is enclosed within the container PE902677 at this location in this document.

The enclosure PE603793 has the following characteristics:

ITEM_BARCODE	= PE603793
CONTAINER_BARCODE	= PE902677
NAME	= Quantitative Log
BASIN	= GIPPSLAND
PERMIT	= VIC/L1
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= Quantitative (Bulk) Analysis Log for Tarwhine-1
REMARKS	=
DATE_CREATED	= 12/12/82
DATE_RECEIVED	= 19/01/83
W_NO	= W760
WELL_NAME	= TARWHINE-1
CONTRACTOR	=
CLIENT_OP_CO	= ESSO AUSTRALIA LIMITED

(Inserted by DNRE - Vic Govt Mines Dept)

APPENDIX 7

APPENDIX - 7

WIRELINE TEST REPORT

APPENDIX 7

RFT TEST REPORT

A listing of the RFT pressure data and RFT and FIT sample recoveries is included in this appendix.

A discussion of these results, together with the results of production tests 1 and 2, is included in Appendix 8.

RFT PRETEST PRESSURES

SERVICE COMPANY: .SCHLUMBERGER.....RFT RUN. NO: .....1.....

LOGGING SUITE 2

WELL : ..TARWHINE-1.....

DATE : ..1-12-1981.....

OBSERVERS : S.. TWARTZ/T.. FRANKHAM

-21m $^{o}_{F}$

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
1. 1	1560	1539	PT	HP	140.5	A	=	=	=	SF
				SCH	YES	G	2731 = 10.3		2730 = 10.3	
2	1559.5	1538.5	PT	HP	140.5	A		2225.19 = 8.5		VALID
				SCH	YES	G	2732 = 10.3	2222.50 = 8.5	2732 = 10.3	
3	1552	1531	PT	HP	140.5	A		2214.78 = 8.5		VALID
				SCH	YES	G	2718 = 10.3	2212.50 = 8.5	2720 = 10.3	
4	1538	1517	PT	HP	141.0	A		2194.44 = 8.5		VALID
				SCH	YES	G	2690 = 10.3	2190.00 = 8.5	2692 = 10.3	
5	1529	1508	PT	HP	141.0	A		2181.80 = 8.5		VALID
				SCH	YES	G	2675 = 10.3	2178.00 = 8.5	2677 = 10.3	
6	1522.5	1501.5	PT	HP	141.0	A		2172.54 = 8.5		VALID
				SCH	YES	G	2664 = 10.3	2169.00 = 8.5	2665 = 10.3	
7	1515.5	1494.5	PT	HP	140.8	A		2163.76 = 8.5		VALID
				SCH	YES	G	2653 = 10.3	2160.00 = 8.5	2653 = 10.3	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: ....SCHLUMBERGER.....RFT RUN. NO: ...1.....

LOGGING SUITE 2

WELL : ..TARWHINE-1.....

DATE : ..1-12-1981.....

OBSERVERS :S. TWARTZ/T. FRANKHAM

-21m °F

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi = ppg	FORMATION PRESSURE psi = ppg	FHP psi = ppg	TEST RESULT
8	1508.5	1487.5	PT	HP	142.8	A		2150.22 = 8.5		VALID
				SCH	YES	G	2640 = 10.3	2148.00 = 8.5	2638 = 10.3	
9	1498	1477	PT	HP	142.8	A		2135.34 = 8.5		VALID
				SCH	YES	G	2620 = 10.3	2132.00 = 8.5	2620 = 10.3	
10	1489.5	1468.5	PT	HP	142.8	A		2124.00 = 8.5		VALID
				SCH	YES	G	2606 = 10.3	2122.00 = 8.5	2606 = 10.3	
11	1480	1459	PT	HP	142.8	A		2110.00 = 8.5		VALID
				SCH	YES	G	2590 = 10.3	2107.00 = 8.5	2589 = 10.3	
12	1470	1449	PT	HP	142.8	A		2096.50 = 8.5		VALID
				SCH	YES	G	2573 = 10.3	2093.00 = 8.5	2572 = 10.3	
13	1460	1439	PT	HP	142.8	A		2082.00 = 8.5		VALID
				SCH	YES	G	2553 = 10.3	2079.00 = 8.5	2553 = 10.3	
14	1439	1418	PT	HP	142.8	A		2053.00 = 8.5		VALID
				SCH	YES	G	2519 = 10.3	2051.00 = 8.5	2518 = 10.3	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: ....SCHLUMBERGER.....RFT RUN. NO: .....1.....

LOGGING SUITE 2

WELL : TARWHINE-1.....

DATE : 1-12-1981.....

OBSERVERS : S. TWARTZ/T. FRANKHAM

-21m °F

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
15	1416.5	1395.5	PT	HP	142.9	A	=	2022.40 = 8.5		VALID
				SCH	Y	G	2477 = 10.3	2019.00 = 8.5		
16	1412	1391	PT	HP	142.9	A		2015.30 = 8.5		VALID
				SCH	Y	G	2470 = 10.3	2013.00 = 8.5	2471 = 10.3	
17	1431	1410	PT	HP	142.9	A		2041.1 = 8.5		VALID
				SCH	Y	G	2499 = 10.3	2039.00 = 8.5	2503 = 10.3	
18	1407	1386	PT	HP	142.0	A		2008.85 = 8.5		VALID
				SCH	Y	G	2462 = 10.3	2006.00 = 8.5	2461 = 10.3	
19	1403.5	1382.5	PT	HP	140.4	A				TIGHT
				SCH	Y	G	2453 = 10.3		2453 = 10.3	
20	1402	1381	PT	HP	140.4	A		2004.8 = 8.5		VALID
				SCH	Y	G	2453 = 10.3	2002.00 = 8.5	2453 = 10.3	
21	1399	1378	PT	HP	140.4	A		2002.83 = 8.5		VALID
				SCH	Y	G	2448.5= 10.3	2000.00 = 8.5	2448 = 10.3	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: ....SCHLUMBERGER.....RFT RUN. NO: ....1-3.....

LOGGING SUITE 2

WELL : ....TARWHINE-1.....

DATE : ....1-12-1981.....

OBSERVERS :S. TWARTZ/T. FRANKHAM

- 21m

°F

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
22	1396.7	1375.7	PT	HP		A		2000.50 = 8.5		VALID
				SCH	Y	G	2443 = 10.3	1998.00 = 8.5	2443 = 10.3	
23	1393.1	1372.1	PT	HP		A		1997.50 = 8.5		VALID
				SCH	Y	G	2438 = 10.3	1995.00 = 8.5	2437 = 10.3	
24	1390.5	1369.5	PT	HP		A		1995.15 = 8.5		VALID
				SCH	Y	G	2435 = 10.3	1993.00 = 8.5	2434 = 10.3	
25	1387.8	1366.8	PT	HP		A		1993.54 = 8.5		VALID
				SCH	Y	G	2428 = 10.3	1992.00 = 8.5	2428 = 10.3	
26	1406.4	1385.4	SPT	HP		A		2007.70 = 8.5		SEG SAMPLE
				SCH	Y	G	2458 = 10.3		2458 = 10.3	
3. 27	1396.6	1915.6	SPT	HP		A		2000.2 = 8.5		SEG SAMPLE
				SCH	Y	G	2443 = 10.3	1996.00 = 8.5	2443 = 10.3	

1. Pressure Test = PT
   Sample & Pressure Test = SPT
2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard
3. Yes = Y
   No = N
4. PSIA = A
   PSIG = G

Note: RFT Run 2 was a misrun due to a cable fault.

RFT PRETEST PRESSURES

SERVICE COMPANY: ...SCHLUMBERGER.....RFT RUN. NO: .....4.....

LOGGING SUITE 3

WELL : ....TARWHINE-1.....

DATE : ....6-12-1981.....

OBSERVERS :...TF/RP/AL.....

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
28	1403.5	1382.5	PT	HP		A				SEAL FAILURE
				SCH		G	2449 = 10.3		2449 = 10.3	
29	1400.7	1379.7	PT	HP		A		2003.6 = 8.5		VALID
				SCH		G	2447 = 10.3	1999 = 8.5	2448 = 10.3	
30	1397.5	1376.5	PT	HP		A				TIGHT + SEAL FAILURE
				SCH		G	2437 = 10.3		2437 = 10.3	
31	1397.7	1376.7	PT	HP		A		2000.9 = 8.5		VALID
				SCH		G	2444 = 10.3	1996.0 = 8.5	2440 = 10.3	
32	1392.2	1371.2	PT	HP		A				TIGHT TEST + PACKER LEAK
				SCH		G	2433 = 10.3		2430 = 10.3	
33	1388.5	1367.5	PT	HP		A				TIGHT TEST + SLOW PACKER LEAK
				SCH		G	2429 = 10.3		2428 = 10.3	
34	1387.7	1366.7	SPT	HP		A		1993.3 = 8.5		SEG SAMPLE
				SCH		G	2423 = 10.3	1990.0 = 8.5	2423 = 10.3	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: ....SCHLUMBERGER.....RFT RUN. NO: ....5.....

LOGGING SUITE 3

WELL : ....TARWHINE-1.....

DATE : ....6-12-1981.....

OBSERVERS : TF/RP/AL.....

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
5. 35	1399m	1378	SPT	HP		A		2001.7 = 8.5		SEG SAMPLE
				SCH	Y	G	2441 = 10.3	1998 = 8.5	2441 = 10.3	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: SCHLUMBERGER ..... RFT RUN. NO: 6-7 .....

LOGGING SUITE 4

WELL : TARWHINE-1

DATE : 15-12-1981

OBSERVERS : MUDGE/GLENTON

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
43	2365.5	2344.5	PT	SCH	N	G	4175			SF
				HP	Y	A	4180 = 10.4		4160 = 10.4	
44	2367.5	2346.5	PT	SCH	N	G	4150			SF
				HP	Y	A	4160 = 10.3		4150 = 10.3	
6 45	1797	1776	Check Tool function	SCH	N	G	3165			SF
				HP	Y	A	3160 = 10.3		3140 = 10.3	
7 46	1973	1952	PT	SCH	N	G	3465	2808		VALID
				HP	Y	A	3465 = 10.3	2810.3 = 8.5	3455 = 10.3	
47	2166.5	2145.5	PT	SCH	N	G	3805	3081	3805	VALID STICKY HOLE
				HP	Y	A	3800 = 10.3	3079.3 = 8.44	3790 = 10.3	
48	2166.5	2195.5	PT	SCH	N	G	3895	3158		VALID
				HP	Y	A	3890 = 10.3	3149.8 = 8.44	3890 = 10.3	
49	2298	2277	PT	SCH	N	G	4025	3260		VALID
				HP	Y	A	4025 = 10.3	3266.4 = 8.44	4000 = 10.3	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: SCHLUMBERGER RFT RUN. NO: 6-7

LOGGING SUITE 4

WELL : TARWHINE-1

DATE : 15-12-1981

OBSERVERS : MUDGE/GLENTON

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
43	2365.5	2344.5	PT	SCH	N	G	4175			SF
				HP	Y	A	4180 = 10.4		4160 = 10.4	
44	2367.5	2346.5	PT	SCH	N	G	4150			SF
				HP	Y	A	4160 = 10.3		4150 = 10.3	
6 45	1797	1776	Check Tool function	SCH	N	G	3165			SF
				HP	Y	A	3160 = 10.3		3140 = 10.3	
7 46	1973	1952	PT	SCH	N	G	3465	2808		VALID
				HP	Y	A	3465 = 10.3	2810.3 = 8.5	3455 = 10.3	
47	2166.5	2145.5	PT	SCH	N	G	3805	3081	3805	VALID STICKY HOLE
				HP	Y	A	3800 = 10.3	3079.3 = 8.44	3790 = 10.3	
48	2166.5	2195.5	PT	SCH	N	G	3895	3158		VALID
				HP	Y	A	3890 = 10.3	3149.8 = 8.44	3890 = 10.3	
49	2298	2277	PT	SCH	N	G	4025	3260		VALID
				HP	Y	A	4025 = 10.3	3266.4 = 8.44	4000 = 10.3	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: ....SCHLUMBERGER.....RFT RUN. NO: 7.....

LOGGING SUITE 4

WELL : ....TARWHINE-1.....
DATE : ....15-12-1981.....
OBSERVERS : MUDGE/GLENTON....

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
50	2506	2483	PT	SCH	N	G	4438			SF
				HP	Y	A	4410 = 10.4			
51	2503	2482	PT	SCH	N	G	4430	3559		VALID
				HP	Y	A	4395 = 10.3	3564.6 = 8.45	4390 = 10.3	
52	2489	2468	PT	SCH	N	G	4340	3536		VALID
				HP	Y	A	4360 = 10.3	3539.3 = 8.44	4360 = 10.3	
53	2482	2461	PT	SCH	N	G	4330	3527.5		VALID
				HP	Y	A	4345 = 10.3	3529.2 = 8.44	4310 = 10.3	
54	2470	2449	PT	SCH	N	G	4325	3511.5		VALID
				HP	Y	A	4300 = 10.2	3512.8 = 8.44	4300 = 10.2	
55	2461.5	2440.5	PT	SCH	N	G	4295	3500		VALID
				HP	Y	A	4280 = 10.2	3501.1 = 8.44	4301 = 10.2	
56	2453	2432	PT	SCH	N	G	4290	3488		VALID
				HP	Y	A	4275 = 10.3	3488.1 = 8.44	4280 = 10.2	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: ...SCHLUMBERGER.....RFT RUN. NO: 7.....

LOGGING SUITE 4

WELL : ...TARWHINE-1.....

DATE : ...15-12-1981.....

OBSERVERS :..MUDGE/GLENTON..

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
57	2442	2421	PT	SCH	N	G	4285	3472		VALID
				HP	Y	A	4270 = 10.3	3473.1 = 8.44	4280 = 10.3	
58	2435.5	2414.5	PT	SCH	N	G	4231	3463		VALID
				HP	Y	A	4274 = 10.3	3463.7 = 8.44	4260 = 10.3	
59	2426	2405	PT	SCH	N	G	4242	3450		VALID
				HP	Y	A	4248 = 10.3	3449.9 = 8.44	4245 = 10.3	
60	2415.5	2394.5	PT	SCH	N	G	4225			S.F.
				HP	Y	A	4220 = 10.3		4220 = 10.3	
61	2415	2394	PT	SCH	N	G	4215			S.F.
				HP	Y	A	4216 = 10.3		4210 = 10.3	
62	2411	2390	PT	SCH	N	G	4207	3428		VALID TEST
				HP	Y	A	4206 = 10.3	3427.6 = 8.44	4210 = 10.3	
63	2403.5	2382.5	PT	SCH	N	G	4210	3418 8.44		VALID
				HP	Y	A	4191 = 10.3	3418.2 =	4180 = 10.3	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: SCHLUMBERGER RFT RUN. NO: 7
LOGGING SUITE 4

WELL : TARWHINE-1
DATE : 15-12-1981
OBSERVERS : MUDGE/GLENTON

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
64	2405	2384	PT	SCH	N	G	4203	3419.5		VALID TEST
				HP	Y	A	4209 = 10.3	3419.3 = 8.44	4200 = 10.3	
65	2397.5	2376.5	PT	SCH	N	G	4190	3410		VALID TEST
				HP	Y	A	4203 = 10.3	3410.4 = 8.44	4180 = 10.3	
66	2394.5	2373.5	PT	SCH	N	G	4174	3410		VALID TEST
				HP	Y	A	4203 = 10.3	3410.2 = 8.45	4180 = 10.3	
67	2378.5	3457.5	PT	SCH	N	G	4180	3389		VALID TEST
				HP	Y	A	4160 = 10.3	3387.5 = 8.45	4160 = 10.3	
68	2369	2348	PT	SCH	N	G	4165	3368.5		VALID TEST
				HP	Y	A	4145 = 10.3	3367.3 = 8.45	4140 = 10.3	
69	2365.5	2344.5	PT	SCH	N	G	4144	3363		VALID
				HP	Y	A	4140 = 10.3	3363 = 8.45	4120 = 10.3	
70	2363	2342	PT	SCH	N	G	4133			S.F.
				HP	Y	A	4132 = 10.3		4130 = 10.3	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: .....SCHLUMBERGER.....RFT RUN. NO: ..7.....
LOGGING SUITE 4

WELL : ..TARWHINE-1.....
DATE : ..15-12-1981.....
OBSERVERS :..MUDGE/GLENTON...

	SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
	71	2362.8	2341.8	PT	SCH	N	G	4125			S.F.
					HP	Y	A	4127 = 10.3		4127 = 10.3	
	72	2359.5	2338.5	PT	SCH	N	G				VALID TEST
					HP	Y	A	4116 = 10.3	3362.6 = 8.46	4120 = 10.3	
	73	2352.5	2331.5	PT	SCH	N	G	4130	3343		VALID
					HP	Y	A	4125 = 10.3	3343.9 = 8.44	4120 = 10.3	
	74	2336	2315	PT	SCH	N	G		3322		VALID
					HP	Y	A	4095 = 10.3	3320.3 = 8.44	4090 = 10.3	
	75	2359.5	2338.5	SPT							TIGHT WHEN SAMPLING
					HP	Y	A	4133 = 10.3	3363.9 = 8.46		
	76	2359	2338	SPT							TIGHT WHEN SAMPLING
					HP	Y	A	4130 = 10.3	3362.5 = 8.46		
Run 7	77	2403.4	2382.4	SPT							SEG. SAMPLE
					HP	Y	A	4210 = 10.3	3419.3 = 8.44	4200 = 10.3	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: ...SCHLUMBERGER.....RFT RUN. NO: ....8.....

LOGGING SUITE 4

WELL : TARWHINE-1

DATE : 15-12-1981

OBSERVERS : MUDGE/GLENTON....

	SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
* Run 8	78	2365.5	2344.5	SPT	HP	Y	A	4130 = 10.3	3363.5 = 8.44	4130 = 10.3	SEG. SAMPLE
Run 8	78a	2366.5	2345.5	SPT	HP	Y	A	4130 = 10.3	3364.8 = 8.44	4130 = 10.3	SEG. SAMPLE

1. Pressure Test = PT
   Sample & Pressure Test = SPT
2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard
3. Yes = Y
   No = N
4. PSIA = A
   PSIG = G

* Tool originally set at 2365.5 but moved to 2366.5 when formation proved to be tight on sampling.

RFT PRETEST PRESSURES

SERVICE COMPANY: SCHLUMBERGER RFT RUN. NO: 9
LOGGING NO. 5

WELL : TARWHINE-1
DATE : 24-12-1981
OBSERVERS : R. PRASSER/J. ROCHE/ L. FINLAYSON

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
9. 78b	2489	2468	PT	HP	173.8	PSIA	4394 = 10.4	3539.9 = 8.4	4387 = 10.4	GOOD
				SCH		PSIG	4380	3531.5	4380	
79	2803	2782	PT	HP	180.0	A	4934 = 10.4	4006.4 = 8.5	4921 = 10.3	GOOD - TIGHTISH
				SCH		G	4915	4005	4920	
80	2796.2	2775.2	PT	HP	184.2	A	4910 = 10.3	3996.5 = 8.5	4918 = 10.3	GOOD
				SCH		G	4892.5	3988.5	4888	
81	2792	2771	PT	HP		A	4909 = 10.3	3989.3 = 8.5	4902 = 10.3	GOOD
				SCH		G	4890	3982	4890	
82	2779	2758	PT	HP	183.5	A	4874 = 10.3	3981.4 = 8.5	4870 = 10.3	TIGHT
				SCH		G	4867	3972.5	4866.5	
83	2769	2748	PT	HP		A	4857 = 10.3	3961.1 = 8.5	4867 = 10.3	TIGHT
				SCH		G	4855	3950.5	4852.5	
84	2749	2728	PT	HP	181.9	A	4815 = 10.3	3935.5 = 8.5	4834 = 10.3	TIGHT
				SCH		G	4812	3925.5	4815	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: SCHLUMBERGER RFT RUN. NO: 9
LOGGING SUITE 5

WELL : TARWHINE-1
DATE : 24-12-1981
OBSERVERS : R. PRASSER/J. ROCHE/ L. FINLAYSON

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
85	2743.8	2722.8	PT	HP		PSIA	4814 = 10.3	3915.6 = 8.5	4809 = 10.3	GOOD
				SCH		PSIG	4802.5	3905	4799	
86	2732	2711	PT	HP		A	4794 = 10.3	3902.8 = 8.5	4799 = 10.3	GOOD/OIL?
				SCH		G	4775	3894.5	4783.5	
87	2726	2705	PT	HP	184.8	A	4781 = 10.3		4782 = 10.3	SEAL FAILURE
				SCH		G	4761.5			
88	2725.8	2704.8	PT	HP		A	4786 = 10.3		4790 = 10.3	SEAL FAILURE
				SCH		G	4775.5			
89	2720.5	2699.5	PT	HP		A	4786 = 10.3		4780 = 10.3	SEAL FAILURE
				SCH		G	4774			
90	2721.6	2700.6	PT	HP		A	4779 = 10.3		4778 = 10.3	SEAL FAILURE
				SCH		G	4762.5			
91	2718	2697	PT	HP		A	4767 = 10.3	3898.5 = 8.5	4778 = 10.3	TIGHT HIGH FLUCTUATIONS
				SCH		G	4752.5	3890	4747.5	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: ...SCHLUMBERGER.....RFT RUN. NO: ..9.....

LOGGING SUITE 5

WELL : .....TARWHINE-1.....

DATE : .....24-12-1981.....

OBSERVERS :.....

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
92	2712.4	2619.4	PT	HP		PSIA	4770 = 10.3	3872.7 = 8.5		V. TIGHT WATER
				SCH		PSIG	4741.5	3864	4759 = 10.3	
93	2693.8	2672.8	PT	HP	188.3	A	4721 = 10.3		4720 = 10.3	V. TIGHT
				SCH		G	4711			
94a	2691	2670	PT	HP		A	4730 = 10.3		4730 = 10.3	TIGHT SEAL FAILURE
*				SCH		G	4712			
94b	2691	2670	PT	HP		A	4658 = 10.3		4650 = 10.3	SEAL FAILURE
				SCH		G	4710.5			
95	2689	2668	PT	HP		A	4707 = 10.3		4700 = 10.3	TIGHT
				SCH		G	4712.5			
96	2690.7	2669.7	PT	HP		A	4711 = 10.3		4710 = 10.3	SEAL FAILURE
				SCH		G	4719			
97	2690.5	2669.5	PT	HP		A	4731 = 10.3		4730 = 10.3	SEAL FAILURE
				SCH		G	4721.5			

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

* Reset tool.

RFT PRETEST PRESSURES

SERVICE COMPANY: SCHLUMBERGER ..... RFT RUN. NO: 9 / LOGGING SUITE 5

WELL : TARWHINE-1

DATE : 24-12-1981

OBSERVERS : .....

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
98	2686	2665	PT	HP		PSIA	4711 = 10.3	3854.2 = 8.5	4726 = 10.3	VERY TIGHT HC's
				SCH		PSIG	4705	3846		
99	2670	2649	PT	HP	188.2	A	4692 = 10.3		4960 = 10.3	SEAL FAILURE
				SCH		G	4672			
100	2669.5	2648.5	PT	HP		A	4680 = 10.3		4682 = 10.3	VERY TIGHT (WATER)
				SCH		G	4665		2671.5	
101	2664	2643	PT	HP		A	4657 = 10.3		4650 = 10.3	SEAL FAILURE
				SCH		G	4642			
102	2661.8	2640.8	PT	HP		A	4683 = 10.3	3796.2 = 8.5	4669 = 10.3	TIGHTISH HC
				SCH		G	4645	3787.5	4666	
103	2666.4	2645.4	PT	HP		A	4680 = 10.3		4680 = 10.3	V. TIGHT
				SCH		G	4662			
104	2665.6	2644.6	PT	HP		A	4670 = 10.3	3804.2 = 8.5	4685 = 10.3	GOOD TIGHT HC
				SCH		G	4656.5	3797	4671	

1. Pressure Test = PT
   Sample & Pressure Test = SPT
2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard
3. Yes = Y
   No = N
4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: ..SCHLUMBERGER.....RFT RUN NO: .....9.....
LOGGING SUITE 5

WELL: ..TARWHINE-1.....
DATE: ..24/12/1981.....
OBSERVERS: JR RP LF.....

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNIT 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
105	2658	2637	PT	HP		PSIA	4677 = 10.3	3794.5 = 8.5		V. TIGHT
				SCH		PSIG	4663	3785.5	4655	
106	2659.4	2638.4	PT	HP		A	4665 = 10.3	3794.9 = 8.5	4673 = 10.3	GOOD
				SCH		G	4653	3785.5	4653	
107	2665.6	2644.6	PT	HP		A	4695 = 10.3	3805.3 = 8.5	4675 = 10.3	GOOD
				SCH		G	4667.5	3795	4667.5	
108	2614	2593	PT	HP	188.1	A	4587 = 10.3	3723.0 = 8.5	4591 = 10.3	GOOD
				SCH		G	4574.5	3714	4580.5	
109	2595	2574	PT	HP		A	4565 = 10.3	3694.1 = 8.5	4551 = 10.3	GOOD
				SCH		G	4557.5	3685.5	4539	
110	2579	2558		HP		A	4531 = 10.3		4525 = 10.3	SEAL FAILURE
111	2578.5	2557.5	PT	HP	188.4	A	4531 = 10.3	3669.1 = 8.5	4525 = 10.3	GOOD
				SCH		G	4511.5	3661.5	4513.5	
112	2568.7	2547.7	PT	HP		A	4516 = 10.3	3655.2 = 8.5	4508 = 10.3	GOOD
				SCH		G	4505	3648.5	4509	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: ...SCHLUMBERGER.....RFT RUN. NO: ..9..10.....
LOGGING SUITE 5

WELL : ...TARWHINE-1.....
DATE : ...24-12-1981.....
OBSERVERS :..RP/JR/LF.....

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
113	2555	2534	PT	HP		PSIA	4488 = 10.3	3637 = 8.4	4488 = 10.3	GOOD TEST
				SCH		PSIG	4478	3629.5	4478.5	
114	2547	2526	PT	HP	189.7	A	4481 = 10.3	3634.9 = 8.5	4482 = 10.3	GOOD TEST
				SCH		G	4476	3626	4471	
* 115	2540.5	2519.5	PT	HP		A	4478 = 10.3		4477 = 10.3	? S.F.
				SCH		G	4468			
10. 115[a]	2503	2482	PT	HP	188.1	A	4397 = 10.3	3562.9 = 8.4	4396 = 10.3	GOOD TEST
				SCH		G	4383	3557.5	4399.5	
116	2489	2468	PT	HP	198.2	A	4388 = 10.3		4390 = 10.3	(Packer Leak) SEAL FAILURE
				SCH		G	4375.5		4387	
117	2490.5	2469.5	PT	HP		A	4377 = 10.3	3541.7 = 8.4	4376 = 10.3	GOOD TEST
				SCH		G	4365.6	3835.5	4368	
118	2498.5	2477.5	PT	HP		A	4378.7 = 10.3	3554.9 = 8.4	4396 = 10.3	GOOD TEST POSSIBLE OIL
				SCH		G	4363	3546.5	4382	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

* Tool Problem

RFT PRETEST PRESSURES

SERVICE COMPANY: SCHLUMBERGER RFT RUN. NO: 10
LOGGING SUITE 5

WELL : TARWHINE-1
DATE : 24-12-1981
OBSERVERS : RP/LF/JR

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
119	2509.5	2488.5	PT	HP		PSIA	4405 = 10.3	3570.6 = 8.4	4396 = 10.3	GOOD TEST WATER
				SCH		PSIG	4394	3562.5	4396.5	
120	2513	2492	PT	HP		A	4407 = 10.3	3575 = 8.4	4420 = 10.3	NOT VALID
				SCH		G	4399.5	3570.5	4406.5	
121	2512.5	2491.5	PT	HP		A	4405 = 10.3	3574.2 = 8.4	4424 = 10.3	GOOD TEST WATER
				SCH		G	4393	3568	4416.4	
122	2501.5	2480.5	PT	HP		A	4398 = 10.3	3562.4 = 8.4	4398 = 10.3	GOOD TEST WATER
				SCH		G	4387.5	3555	4384.5	
123	2504.4	2483.4	PT	HP		A	4390 = 10.3	3566.9 = 8.4	4389 = 10.3	VALID?
				SCH		G	4381	3560	4382	
124	2507.5	2486.5	PT	HP		A	4415 = 10.3	3567.5 = 8.4	4408 = 10.3	GOOD TEST
				SCH		G	4406	3561	4401	
125	2536.5	2515.5	PT	HP	193.2	A	4445 = 10.3	3611.2 = 8.4	4458 = 10.3	GOOD TEST
				SCH		G	4424	3602.5	4444	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: SCHLUMBERGER ..... RFT RUN. NO: ...10-12.....
LOGGING SUITE 5

WELL : TARWHINE-1
DATE : 24-12-1981
OBSERVERS : RP/LF/JR

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
126	2540.5	2519.5	PT	HP		PSIA	4462 = 10.3	3615.6 = 8.4	4466 = 10.3	TIGHTISH
				SCH		PSIG	4453.5	3607.5	4454.5	
127	2547	2526	PT	HP		A	4473 = 10.3	3624.6 = 8.4	4485 = 10.3	GOOD WATER
				SCH		G	4460	3615	4468.5	
128	2659.4	2638.4	SPT	HP		A		3792.6 = 8.5		SEG SAMPLE
				SCH		G	4665 = 10.3		4665 = 10.3	
11. 129	2779	2758	SPT	HP		A	4864 = 10.3	3975.9 = 8.5	4864 = 10.3	SEG SAMPLE
				SCH		G				
12. 130	2498.5	2477.5	SPT	HP		A	4417 = 10.4	3557.3 = 8.4	4417 = 10.4	SEG SAMPLE
				SCH		G				
131	2498.7	2477.7	SPT	HP		A	4400 = 10.4	3554.1 = 8.4	4400 = 10.4	SEG SAMPLE
				SCH		G				

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: SCHLUMBERGER RFT RUN. NO: 13
LOGGING SUITE 6

WELL : TARWHINE-1
DATE : 30-12-1981
OBSERVERS JR/LF/LM

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
13. 132	2712.4	2691.4	PT (tie-in)	HP	184.8	PSIA	4764 = 10.3	3871.8 = 8.5		GOOD WATER TEST
				SCH		PSIG	4750	3864.5	4751.5 = 10.3	
133	2927	2906	PT	HP	191.8	A	5144 = 10.3		5144 = 10.3	SEAL FAILURE
				SCH		G	5118.5			
134	2927.2	2906.2	PT	HP		A	5140 = 10.3		5145 = 10.3	SEAL FAILURE
				SCH		G	5122.5			
135	2926	2905	PT	HP		A	5140 = 10.3	4193.1 = 8.5		GOOD WATER TEST
				SCH		G	5123	4182.5	5125 = 10.3	
136	2922	2901	PT	HP		A	5131 = 10.3		5132 = 10.3	SEAL FAILURE
				SCH		G	5116			
137	2922.3	2901.3	PT	HP		A	5130 = 10.3		5132 = 10.3	EXTREMELY TIGHT
				SCH		G	5116		5114	
138	2921	2900	PT	HP		A	5127 = 10.3		5129 = 10.3	SEAL FAILURE
				SCH		G	5111			

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: SCHLUMBERGER RFT RUN. NO: 13
LOGGING SUITE 6

WELL : TARWHINE-1
DATE : 301-2-1981
OBSERVERS : LM/JR/LF

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
139	2921.2	2900.2	PT	HP		PSIA	5128 = 10.3		5125 = 10.3	SEAL FAILURE
				SCH		PSIG	5111.5			
140	2923	2902	PT	HP		A	5128 = 10.3		5128 = 10.3	SEAL FAILURE
				SCH		G	5112			
141	2917.2	2896.2	PT	HP	193.2	A	5116 = 10.3		5117 = 10.3	SEAL FAILURE
				SCH		G	5097.5			
142	2920.2	2899.2	PT	HP		A	5120 = 10.3	4182.4 = 8.5	5121 = 10.3	GOOD TEST WATER
				SCH		G	5014	4170	5015	
143	2907.7	2886.7	PT	HP	195.0	A	5096 = 10.3		5096 = 10.3	SEAL FAILURE
				SCH		G	5079			
144	2908	2887	PT	HP		A	5095 = 10.3		5096 = 10.3	LEAKING S.F. PACKER
				SCH		G	5080			
145	2907.2	2886.2	PT	HP		A	5092 = 10.3		5095 = 10.3	LEAKING S.F. PACKER
				SCH			5080.5		5083	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: SCHLUMBERGER ..... RFT RUN. NO: 13
LOGGING SUITE 6

WELL : TARWHINE-1
DATE : 30-12-1981
OBSERVERS : JR/LF

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
153	2870.7	2849.7	PT	HP	194.3		5041 = 10.3		5041 = 10.3	SEAL FAILURE
				SCH			5018			
154	2871.3	2850.3	PT	HP			5039 = 10.3		5039 = 10.3	SEAL FAILURE
				SCH			5020.5			
155	2855	2834	PT	HP	195.5		5008 = 10.3		5008 = 10.3	SEAL FAILURE
				SCH			4991.5			
156	2860.5	2839.5	PT	HP			5015 = 10.3		5015 = 10.3	SEAL FAILURE
				SCH			5001			
157	2860	2839	PT	HP			5015 = 10.3	4098.9 = 8.5	5014 = 10.3	GOOD TIGHT TIGHTISH-GAS
				SCH			5000	4089	5000	
158	2854	2833	PT	HP			5003 = 10.3	4083.6 = 8.5	5000 = 10.3	GOOD TIGHT WATER
				SCH			4989.5	4074	4990	
159	2843.5	2822.5	PT	HP			4986 = 10.3		4986 = 10.3	SEAL FAILURE
				SCH			4972			

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: SCHLUMBERGER RFT RUN. NO: 13-14
LOGGING SUITE 6

WELL : TARWHINE-1
DATE : 30-12-1981
OBSERVERS : LF/JR

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
160	2843	2822	PT	HP		PSIA	4982 = 10.3	4063.1 = 8.5	4982 = 10.3	GOOD TEST WATER
				SCH		PSIG	4969.5	4055	4970	
161	2834	2813	PT	HP	197.0	A	4968 = 10.3		4968 = 10.3	SEAL FAILURE
				SCH		G	4949			
162	2836.8	2815.8	PT	HP		A	4971 = 10.3		4971 = 10.3	SEAL FAILURE
				SCH		G	4954			
163 13	2726	2705	PT	HP	193.8	A	4799 = 10.3		4799 = 10.3	V. TIGHT
				SCH		G	4777.5			
164 14	2727.5	2706.5	PT	HP		A	4798 = 10.3		4798 = 10.3	V. TIGHT
				SCH		G	4781			
165	2721.5	2700.5	PT	HP		A	4792 = 10.3	3894.0 = 8.5	4792 = 10.3	TIGHT POSSIBLE GAS
				SCH		G	4774.5	3885.5		
166	2694	2673	PT	HP		A	4730 = 10.3	3845.6 = 8.5	4725 = 10.3	GOOD TEST WATER
				SCH		G	4713.5	3836.5	4715.5	

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT PRETEST PRESSURES

SERVICE COMPANY: ....SCHLUMBERGER.... RFT RUN. NO: ....14....
LOGGING SUITE 6

WELL : ...TARWHINE-1.....
DATE : ...30-12-1981.....
OBSERVERS :.JR/LF.....

SEAT NO.	DEPTH	DEPTH (Ss)	REASON 1 FOR TEST	GAUGE 2	TEMP 3 CORR.	UNITS 4	IHP psi ppg	FORMATION PRESSURE psi ppg	FHP psi ppg	TEST RESULT
167	2690.8	2669.8	PT	HP		PSIA	4721 = 10.3	3846.7 = 8.5	4720 = 10.3	GOOD TEST WATER/TIGHT
				SCH		PSIG	4708.5	3837.5	4708.5	
168	2670	2649	PT	HP	197.9	A	4681 = 10.3		4681 = 10.3	V. TIGHT
				SCH		G	4666.5			
169	2664	2643	PT	HP		A	4671 = 10.3	3798.6 = 8.5	4671 = 10.3	GOOD TEST WATER
				SCH		G	4657.5	3789	4657	
170	2667	2646	PT	HP		A	4676 = 10.3		4676 = 10.3	V. TIGHT
				SCH		G	4661			
171	2662	2641	PT	HP		A	4668 = 10.3		4670 = 10.3	V. TIGHT
				SCH		G	4652.6		4642.5	
172			PT	HP		A				
				SCH		G				
173			PT	HP		A				
				SCH		G				

1. Pressure Test = PT
   Sample & Pressure Test = SPT

2. Gauges = SCH = Schlumberger Strain Gauge
   = HP = Hewlett Packard

3. Yes = Y
   No = N

4. PSIA = A
   PSIG = G

RFT SAMPLE TEST REPORT

WELL : TARWHINE-1

OBSERVER : S. TWARTZ, T. FRANKHAM DATE : 1/12/81 RUN NO. : 1

	CHAMBER 1 (6 Gal)		CHAMBER 2 (1 Gal)	
SEAT NO. 1	26		26	
DEPTH	1406.4		1406.4	
A.RECORDING TIMES				
Tool Set	1131		-	
Pretest Open	1133		-	
Time Open	2 mins		-	
Chamber Open	1134		1243	
Chamber Full	1242 partially full		1255	
Fill Time	1.2 hrs		12 mins	
Start Build up	-		1250	
Finish Build up	-		1252	
Build Up time	-			
Seal Chamber	1242 hrs		1255	
Tool Retract	-		1256	
Total Time	-	hrs.	1.5	hrs.
B.SAMPLE PRESSURES				
IHP	2458 (Sch)	psig		psig
ISIP	2007.7 (HP)	psia		
Initial Flowing Press.	363	psia	191	psia
Final Flowing Press.	330	psia	2001	psia
Sampling Press. Range	33	psia	1810	psia
FSIP	-		-	
FHP	-		-	
Form.Press.(Horner)	-		-	
C.TEMPERATURE				
Depth Tool Reached	1560	m	1560	m
Max.Rec.Temp.		°C		°C
Time Circ. Stopped	0400	hrs.	0400	hrs.
Time since Circ.	11	hrs.	12	hrs.
Form.Temp.(Horner)		°C		°C
D.SAMPLE RECOVERY				
Surface Pressure	100	psig	100	psig
Amt Gas	0.24 cu.ft	lit.	0.35 cu.ft	lit.
Amt oil	-	lit.	-	lit.
Amt Water	8.6	lit.	3.75	lit.
Amt Others		lit.		lit.
E.SAMPLE PROPERTIES				
Gas Composition				
C1	19000	ppm	1117 000	ppm
C2	1300	ppm	6700	ppm
C3	1200	ppm	5800	ppm
IC4/nC4	360	ppm	1200	ppm
C5		ppm		ppm
C6+		ppm		ppm
CO2/H2S		ppm		ppm
Oil Properties	°API@	°C	°API@	°C
Colour				
Fluorescence				
GOR				
Water Properties				
Resistivity	0.52 @ 77°F	°C	1.05 @ 77	°C
NaCl Equivalent		ppm		ppm
Cl-titrated	7500	ppm	4500	ppm
NO3	11	ppm	9	ppm
Est.Water Type	WATER/FILTRATE		WATER/FILTRATE	
Mud Properties				
Resistivity	0.188 @ XX 73°F		0.188 @ XX 73°F	
NaCl Equivalent		ppm		ppm
Cl- titrated	17000	ppm	17000	ppm
Calibration				
Calibration Press.	14.7 psia	psig	14.7 psia	psig
Calibration Temp.	75 °F	°C	75 °F	°C
Hewlett Packard No.	688		688	
Mud Weight	10.2 ppg		10.2 ppg	
Calc.Hydrostatic	10.3 ppg		10.3 ppg	
RFT Chokesize	1/.040		1/.030	
REMARKS	Very tight formation			

WELL : TARWHINE-1

RFT SAMPLE TEST REPORT

OBSERVER : FRANKHAM/TWARTZ DATE : 1/12/81 RUN NO. 3

	CHAMBER 1 (6 gal)		CHAMBER 2 (1 gal)	
SEAT NO. 27	27		27	
DEPTH 1396.6	1396.6		1396.6	
A.RECORDING TIMES				
Tool Set	1837 hr	2053 hr		
Pretest Open		2054 hr		
Time Open	1839 hr	2057 hr		
Chamber Open			1942 hrs	
Chamber Full	Reset Chamber			
Fill Time	Several times		Reset chamber	
Start Build up			several times	
Finish Build up				
Build Up time				
Seal Chamber	1939 hrs		2047 hrs	
Tool Retract		2103 hr		
Total Time		hrs.		hrs.
B.SAMPLE PRESSURES	SCH(g) HP(a)	SCH HP	SCH(g) HP (a)	
IHP	2443	2007 2000		psig
ISIP	1996 2000.2			
Initial Flowing Press.	169 166	263 259	193 188	
Final Flowing Press.	1415	262	1165	
Sampling Press. Range				
FSIP				
FHP			2452 2446.7	
Form.Press.(Horner)				
C.TEMPERATURE				
Depth Tool Reached		m		m
Max.Rec.Temp.		°C		°C
Time Circ. Stopped		hrs.		hrs.
Time since Circ.		hrs.		hrs.
Form.Temp.(Horner)		°C		°C
D.SAMPLE RECOVERY				
Surface Pressure	≃ 100	psig	≃ 200	psig
Amt Gas	3.06 cuft	lit.	4.8 cuft	lit.
Amt oil	350 ml	lit.	720 ml	lit.
Amt Water Sludge/Oil/Mixture	950 ml	lit.	110 ml	lit.
Amt Others		lit.		lit.
E.SAMPLE PROPERTIES				
Gas Composition				
C1	450,000	ppm	304,000	ppm
C2	78,800	ppm	92,200	ppm
C3	61,400	ppm	115,000	ppm
IC4/nC4	7,200	ppm	36,900	ppm
C5	1,870	ppm	7,490	ppm
C6+	Tr.	ppm	Tr.	ppm
CO2/H2S		ppm		ppm
Oil Properties	°API@	°C	63 °API@ 23	°C
Colour	light brown		light brown	
Fluorescence	bright lavender		bright lavender	
GOR				
Water Properties				
Resistivity	@	°C	@	°C
NaCl Equivalent		ppm		ppm
Cl-titrated	8000	ppm		ppm
NO3	13	ppm		ppm
Est.Water Type				
Mud Properties				
Resistivity	@°C		@°C	
NaCl Equivalent		ppm		ppm
Cl- titrated		ppm		ppm
Calibration				
Calibration Press.		psig		psig
Calibration Temp.		°C		°C
Hewlett Packard No.				
Mud Weight				
Calc.Hydrostatic				
RFT Chokesize				

REMARKS: UNABLE TO OBTAIN BUILDUP ON EITHER CHAMBER AFTER 2½ HRS ON SEAT - TOOL SET NUMEROUS TIMES IN ATTEMPT TO IMPROVE FLOW.

PRESSURE DATA PROBABLY MEANINGLESS.

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RFT SAMPLE TEST REPORT

WELL : TARWHINE-1

OBSERVER : FRANKHAM/R.P./A.L. DATE : 6.12.81 RUN NO. : 4

	CHAMBER 1 (6 Gal)		CHAMBER 2 (1 Gal)	
SEAT NO. 34	34		34	
DEPTH 1387.7	1387.7		1387.7	
A.RECORDING TIMES				
Tool Set				
Pretest Open				
Time Open				
Chamber Open				
Chamber Full				
Fill Time	8 minutes 2o seconds		2 minutes	
Start Build up				
Finish Build up				
Build Up time				
Seal Chamber				
Tool Retract				
Total Time		hrs.		hrs.
B.SAMPLE PRESSURES	RFT HP		RFT HP	
IHP	2423 psig	psia	psig	psia
ISIP	1990 psig	1993.3 psia		
Initial Flowing Press.	1960 psig	1963 psia	1983	1985.8
Final Flowing Press.		1665.69 psia		
Sampling Press. Range				
FSIP	1989 psig	1992.8 psia	1990	1992.9
FHP			2422	
Form.Press.(Horner)				
C.TEMPERATURE				
Depth Tool Reached	1403m	m		m
Max.Rec.Temp.		°C		°C
Time Circ. Stopped	1445 (5.12.81)	hrs.		hrs.
Time since Circ.	11 hrs, 45 min	hrs.		hrs.
Form.Temp.(Horner)		°C		°C
D.SAMPLE RECOVERY				
Surface Pressure	1450	psig		psig
Amt Gas	64.3 cuft	XXX.		lit.
Amt oil	11.3	lit.		lit.
Amt Water	3.1	lit.		lit.
Amt XXXXXX Sludge		lit.		lit.
E.SAMPLE PROPERTIES				
Gas Composition				
C1	469,300	ppm		ppm
C2	29700	ppm		ppm
C3	20500	ppm		ppm
IC4/nC4	2700	ppm		ppm
C5	330	ppm		ppm
C6+	-	ppm		ppm
CO2/H2S	-	ppm		ppm
Oil Properties	65.8 °API@14.4	°C	°API@	°C
Colour	Clear Honey Brown			
Fluorescence	Bright Blue White			
GOR	905			
Water Properties				
Resistivity	0.28 @ 14.4	°C	@	°C
NaCl Equivalent		ppm		ppm
Cl-titrated	18,000	ppm		ppm
NO3	94	ppm		ppm
Est.Water Type	(pH 6.8)			
Mud Properties				
Resistivity	@°C		@°C	
NaCl Equivalent		ppm		ppm
Cl- titrated		ppm		ppm
Calibration				
Calibration Press.		psig		psig
Calibration Temp.		°C		°C
Hewlett Packard No.				
Mud Weight				
Calc.Hydrostatic				
RFT Chokesize	.030		.020	
REMARKS				

SAMPLE PRESERVED

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RFT SAMPLE TEST REPORT

WELL : TARWHINE-1

OBSERVER : FRANKHAM/RSP/AL DATE : 6.12.81 RUN NO. : 5

	CHAMBER 1 (6 Gal)		CHAMBER 2 (1 Gal)	
SEAT NO. 35	35		35	
DEPTH 1399m	1399m		1399m	
A. RECORDING TIMES				
Tool Set				
Pretest Open				
Time Open				
Chamber Open	0532 hrs		0544 hrs	
Chamber Full				
Fill Time + Build Up	8.25 minutes		2.25 minutes	
Start Build up				
Finish Build up				
Build Up time				
Seal Chamber				
Tool Retract				
Total Time		hrs.		hrs.
B. SAMPLE PRESSURES	SCHL	HP	SCH	HP
IHP	2441 psig	psia	psig	psig
ISIP	1998 psig	2001.74		
Initial Flowing Press.	1877 psig	1882.6	1896	1898
Final Flowing Press.	1679 psig	1678.3	1885	1885.5
Sampling Press. Range				
FSIP	1998	2000.5	2001	2001.08
FHP			2443	
Form.Press.(Horner)				
C. TEMPERATURE				
Depth Tool Reached	1399	m		m
Max.Rec.Temp.	140.8°F = 60.4	°C		°C
Time Circ. Stopped	1445 (5.12.81)	hrs.		hrs.
Time since Circ.	15.25	hrs.		hrs.
Form.Temp.(Horner)		°C		°C
D. SAMPLE RECOVERY				
Surface Pressure	1220	psig		psig
Amt Gas	33.9 cuft	lit.		lit.
Amt oil	6.3	lit.		lit.
Amt Water /Filtrate	11.2	lit.		lit.
Amt Others		lit.		lit.
E. SAMPLE PROPERTIES			SAMPLE PRESERVED	
Gas Composition				
C1	348,400	ppm		ppm
C2	29,700	ppm		ppm
C3	37,600	ppm		ppm
IC4/nC4	11,600	ppm		ppm
C5	1,700	ppm		ppm
C6+	200	ppm		ppm
CO2/H2S		ppm		ppm
Oil Properties	64.4 °API@ 18	°C	°API@	°C
Colour	Clear Honey Brown			
Fluorescence	Bright White Blue			
GOR	860			
Water Properties				
Resistivity	.28 @ 18	°C	@	°C
NaCl Equivalent		ppm		ppm
Cl-titrated	16000	ppm		ppm
NO3	187	ppm		ppm
Est.Water Type	(pH - 6.8)			
Mud Properties				
Resistivity	@°C		@°C	
NaCl Equivalent		ppm		ppm
Cl- titrated		ppm		ppm
Calibration				
Calibration Press.		psig		psig
Calibration Temp.		°C		°C
Hewlett Packard No.				
Mud Weight				
Calc.Hydrostatic				
RFT Chokesize	.030		.020	
REMARKS				

RFT SAMPLE TEST REPORT

WELL :..TARWHINE-1.....

OBSERVER :WM/PNG..... DATE : .15th.December.1981. RUN NO.:..7.....

	CHAMBER 1 (6 gal)		CHAMBER 2 (1 gal)	
SEAT NO. 75	75			
DEPTH	2359.5			
A.RECORDING TIMES				
Tool Set	1750			
Pretest Open				
Time Open	2 min			
Chamber Open	1752			
Chamber Full				
Fill Time				
Start Build up				
Finish Build up				
Build Up time				
Seal Chamber	1758			
Tool Retract	1758			
Total Time		hrs.		hrs.
B.SAMPLE PRESSURES				
IHP	4133	psia		psig
ISIP	3363.9			
Initial Flowing Press.	50			
Final Flowing Press.				
Sampling Press. Range				
FSIP				
FHP				
Form.Press.(Horner)				
C.TEMPERATURE				
Depth Tool Reached		m		m
Max.Rec.Temp.		°C		°C
Time Circ. Stopped		hrs.		hrs.
Time since Circ.		hrs.		hrs.
Form.Temp.(Horner)		°C		°C
D.SAMPLE RECOVERY				
Surface Pressure		psig		psig
Amt Gas		lit.		lit.
Amt oil		lit.		lit.
Amt Water		lit.		lit.
Amt Others		lit.		lit.
E.SAMPLE PROPERTIES				
Gas Composition				
C1		ppm		ppm
C2		ppm		ppm
C3		ppm		ppm
IC4/nC4		ppm		ppm
C5		ppm		ppm
C6+		ppm		ppm
CO2/H2S		ppm		ppm
Oil Properties	°API@	°C	°API@	°C
Colour				
Fluorescence				
GOR				
Water Properties				
Resistivity	@	°C	@	°C
NaCl Equivalent		ppm		ppm
Cl-titrated		ppm		ppm
NO3		ppm		ppm
Est.Water Type				
Mud Properties				
Resistivity	@°C		@°C	
NaCl Equivalent		ppm		ppm
Cl- titrated		ppm		ppm
Calibration				
Calibration Press.		psig		psig
Calibration Temp.		°C		°C
Hewlett Packard No.	1413A - 00688			
Mud Weight	10.1			
Calc.Hydrostatic	4051 psi			
RFT Chokesize	.03"		.02"	
REMARKS	Tight Flowline plugging retract. Try 2359			

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RFT SAMPLE TEST REPORT

WELL : TARWHINE-1

OBSERVER : WM/PNG DATE : 15th December 1981 RUN NO.: 7

	CHAMBER 1 (6 gal)		CHAMBER 2 (1 gal)	
SEAT NO. 76	76			
DEPTH	2359			
A.RECORDING TIMES				
Tool Set	1802			
Pretest Open				
Time Open				
Chamber Open	1803			
Chamber Full				
Fill Time				
Start Build up				
Finish Build up				
Build Up time				
Seal Chamber	1818			
Tool Retract				
Total Time		hrs.		hrs.
B.SAMPLE PRESSURES				
IHP	4130	psia		psig
ISIP	3362.5			
Initial Flowing Press.	100			
Final Flowing Press.	160			
Sampling Press. Range				
FSIP				
FHP				
Form.Press.(Horner)				
C.TEMPERATURE				
Depth Tool Reached		m		m
Max.Rec.Temp.		°C		°C
Time Circ. Stopped		hrs.		hrs.
Time since Circ.		hrs.		hrs.
Form.Temp.(Horner)		°C		°C
D.SAMPLE RECOVERY				
Surface Pressure		psig		psig
Amt Gas		lit.		lit.
Amt oil		lit.		lit.
Amt Water		lit.		lit.
Amt Others		lit.		lit.
E.SAMPLE PROPERTIES				
Gas Composition				
C1		ppm		ppm
C2		ppm		ppm
C3		ppm		ppm
IC4/nC4		ppm		ppm
C5		ppm		ppm
C6+		ppm		ppm
CO2/H2S		ppm		ppm
Oil Properties	°API@	°C	°API@	°C
Colour				
Fluorescence				
GOR				
Water Properties				
Resistivity	@	°C	@	°C
NaCl Equivalent		ppm		ppm
Cl-titrated		ppm		ppm
NO3		ppm		ppm
Est.Water Type				
Mud Properties				
Resistivity	@°C		@°C	
NaCl Equivalent		ppm		ppm
Cl- titrated		ppm		ppm
Calibration				
Calibration Press.		psig		psig
Calibration Temp.		°C		°C
Hewlett Packard No.	1413A - 00688			
Mud Weight	10.1 ppg			
Calc.Hydrostatic	4050 psi			
RFT Chokesize	.03"		.02"	
REMARKS	Tight, some flowline plugging. Retract try 2403.4			

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RFT SAMPLE TEST REPORT

WELL : TARWHINE-1

OBSERVER : WM/PNG DATE : 15th December 1981 RUN NO. : 7

	CHAMBER 1 (6 gal)		CHAMBER 2 (1 gal)
SEAT NO. 77	77		77
DEPTH	2403.4		2403.4
A. RECORDING TIMES			
Tool Set	1819		1944
Pretest Open			
Time Open		Reopen	
Chamber Open	1820	1944	1950
Chamber Full			
Fill Time			
Start Build up			2053
Finish Build up			2059
Build Up time			
Seal Chamber	1940	1950	2053
Tool Retract			2059
Total Time		hrs.	hrs.
B. SAMPLE PRESSURES			
IHP	4210	psia	psig
ISIP	3419.3		
Initial Flowing Press.	400	1520	380
Final Flowing Press.	1527	1548	2280
Sampling Press. Range			
FSIP		3419	3417 building slowly
FHP			4200
Form.Press.(Horner)			
C. TEMPERATURE			
Depth Tool Reached		m	m
Max.Rec.Temp.		°C	°C
Time Circ. Stopped		hrs.	hrs.
Time since Circ.	Mud	hrs.	hrs.
Form.Temp.(Horner)	190.9°F (Thermistor)	°C	193.8°F (Thermistor) °C
D. SAMPLE RECOVERY			
Surface Pressure	7700 k Pa	XXXX	1 gal psig
Amt Gas	35.92 cu ft	lit.	Chamber preserved lit.
Amt oil		lit.	lit.
Amt XXXXX Filtrate	5.5	lit.	lit.
Amt XXXXXX Condensate	0.1	lit.	lit.
E. SAMPLE PROPERTIES			
Gas Composition			
C1	447078	ppm	ppm
C2	7660	ppm	ppm
C3	1760	ppm	ppm
IC4/nC4	560	ppm	ppm
C5	180	ppm	ppm
C6+	Tr	ppm	ppm
CO2/H2S	.7%/Nil	ppm	ppm
Oil Properties	°API@	°C	°API@ °C
Colour			
Fluorescence-condensate	Blue-white		
GOR			
Water Properties			
Resistivity	.26 @ 22	°C	@ °C
NaCl Equivalent	29000	ppm	ppm
Cl-titrated	19000	ppm	ppm
NO3	140	ppm	ppm
Est.Water Type	Filtrate		
Mud Properties			
Resistivity	.229 @°C 16.6		@°C
NaCl Equivalent	34000	ppm	ppm
Cl- titrated	19000	ppm	ppm
Calibration			
Calibration Press.		psig	psig
Calibration Temp.		°C	°C
Hewlett Packard No.	1413A - 00688		
Mud Weight	10.1 ppg		
Calc.Hydrostatic	4127 psi		
RFT Chokesize	.03"		.02"
REMARKS	Seal chamber retract pull off wall-not stuck reset		v. slow build up in flowline.

RFT SAMPLE TEST REPORT

WELL : TARWHINE-1

OBSERVER : WM/PNG DATE : 15th December 1981 RUN NO.: 8

	CHAMBER 1 (6 gal)		CHAMBER 2 (1 gal)
SEAT NO. 78	78		78
DEPTH 2366.5	2366.5		2366.5
A.RECORDING TIMES			
Tool Set	0046		
Pretest Open			
Time Open	(2365.5m)	(2366.5m)	
Chamber Open	0047	0057	0156
Chamber Full			0202
Fill Time			
Start Build up			0202
Finish Build up			0220 @ 1880 psi
Build Up time			
Seal Chamber	0055	0155	
Tool Retract			
Total Time		hrs.	hrs.
B.SAMPLE PRESSURES			
IHP	4138	psia	psia
ISIP	3363.5	3364.8	
Initial Flowing Press.	500	380	520
Final Flowing Press.	360	1300	530
Sampling Press. Range		3342 building	
FSIP		still	Not built to FSIP
FHP			
Form.Press.(Horner)			
C.TEMPERATURE			
Depth Tool Reached		m	m
Max.Rec.Temp.		°C	°C
Time Circ. Stopped		hrs.	hrs.
Time since Circ.		hrs.	hrs.
Form.Temp.(Horner)	191.4°F	°C	°C
D.SAMPLE RECOVERY			
Surface Pressure	7800 kPa	psig	psig
Amt Gas	30.07 cu ft	lit.	lit.
Amt oil		lit.	lit.
Amt Water	9.75	lit.	lit.
Amt ~~xxxxx~~ condensate	Scum (50cc)	lit.	lit.
E.SAMPLE PROPERTIES			
Gas Composition			
C1	394 045	ppm	1 gal chamber ppm
C2	7 056	ppm	preserved ppm
C3	2 200	ppm	ppm
IC4/nC4	448	ppm	ppm
C5	54	ppm	ppm
C6+	39	ppm	ppm
CO2/H2S	0.3%/Nil	ppm	ppm
Oil Properties	°API@	°C	°API@ °C
Colour			
Fluorescence			
GOR			
Water Properties			
Resistivity	.25 @ 20	°C	@ °C
NaCl Equivalent	27000	ppm	ppm
Cl-titrated	19000	ppm	ppm
NO3	120	ppm	ppm
Est.Water Type	Filtrate		
Mud Properties			
Resistivity	.229 @°C 16.6°C		@°C
NaCl Equivalent	34000	ppm	ppm
Cl- titrated	1900	ppm	ppm
Calibration	Nitrates 175		
Calibration Press.		psig	psig
Calibration Temp.		°C	°C
Hewlett Packard No.	1413A-00688		
Mud Weight	10.1 ppg		
Calc.Hydrostatic	4063 psi		
RFT Chokesize	.03"		.02"
REMARKS	Opened tool at 0046 hrs at 2365.5m. Tight, some flowline plugging. Moved tool to 2366.5m, at 0057 hrs where sample was taken.		

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RFT SAMPLE TEST REPORT

WELL : TARWHINE-1

OBSERVER : WM/PNG DATE : 15th December 1981 RUN NO. : 8

	CHAMBER 1 (6 gal)	CHAMBER 2 (1 gal .)
SEAT NO. 78a	78a	78a
DEPTH 2366.5	2366.5	2366.5
A.RECORDING TIMES	Reset 6 gal	
Tool Set	0230	
Pretest Open		
Time Open		
Chamber Open	0231	
Chamber Full		
Fill Time		
Start Build up		
Finish Build up		
Build Up time		
Seal Chamber	0237	
Tool Retract		
Total Time	hrs.	hrs.
B.SAMPLE PRESSURES		
IHP	4130 psia	psig
ISIP	3330+ (still increasing)	
Initial Flowing Press.	1350	
Final Flowing Press.	1670; increasing	
Sampling Press. Range		
FSIP	Not taken	
FHP	4130	
Form.Press.(Horner)		
C.TEMPERATURE		
Depth Tool Reached	m	m
Max.Rec.Temp.	°C	°C
Time Circ. Stopped	hrs.	hrs.
Time since Circ.	hrs.	hrs.
Form.Temp.(Horner)	°C	°C
D.SAMPLE RECOVERY		
Surface Pressure	psig	psig
Amt Gas	lit.	lit.
Amt oil	lit.	lit.
Amt Water	lit.	lit.
Amt Others	lit.	lit.
E.SAMPLE PROPERTIES		
Gas Composition		
C1	ppm	ppm
C2	ppm	ppm
C3	ppm	ppm
IC4/nC4	ppm	ppm
C5	ppm	ppm
C6+	ppm	ppm
CO2/H2S	ppm	ppm
Oil Properties	°API@ °C	°API@ °C
Colour		
Fluorescence		
GOR		
Water Properties		
Resistivity	@ °C	@ °C
NaCl Equivalent	ppm	ppm
Cl-titrated	ppm	ppm
NO3	ppm	ppm
Est.Water Type		
Mud Properties		
Resistivity	@ °C	@ °C
NaCl Equivalent	ppm	ppm
Cl- titrated	ppm	ppm
Calibration		
Calibration Press.	psig	psig
Calibration Temp.	°C	°C
Hewlett Packard No.	1413A - 00688	
Mud Weight	10.1 ppg	
Calc.Hydrostatic	4063 psi	
RFT Chokesize	.03"	.02"
REMARKS	opened 6 gal (see seat 78 sample report). Sealed opened 1 gal - filled quickly. Sealed. Pulled off wall to ensure tool not stuck. Reset tool at 2366.5 and reopen 6 gal to try and fill more	

FIT SAMPLE TEST REPORT

WELL : TARWHINE#1

OBSERVER : J. ROCHE/W. MUDGE DATE : 8 - 9/1/82 RUN NO.: FIT#2

	CHAMBER 1 (12 gal)		CHAMBER 2 (600 cc)	
SEAT NO.	2		2	
DEPTH	2661.5m		2661.5m	
A.RECORDING TIMES				
Tool Set				
Pretest Open	19:45			
Time Open			24:00	
Chamber Open	19:50			
Chamber Full				
Fill Time				
Start Build up				
Finish Build up				
Build Up time				
Seal Chamber	24:00		00:15	
Tool Retract				
Total Time	4 hrs. 10 min		15 min.	
B.SAMPLE PRESSURES				
IHP		psig		psig
ISIP				
Initial Flowing Press.	3900 (4460)		4539 (4590)	
Final Flowing Press.	4495 - Shoot 2nd Charge			
Sampling Press. Range	22:00 increased to 4616			
FSIP	4602		4583	
FHP			5180	
Form.Press.(Horner)				
C.TEMPERATURE				
Depth Tool Reached		m		m
Max.Rec.Temp.		°C		°C
Time Circ. Stopped		hrs.		hrs.
Time since Circ.		hrs.		hrs.
Form.Temp.(Horner)		°C		°C
D.SAMPLE RECOVERY				
Surface Pressure	900 KPa	psig	0	psig
Amt Gas	1.5 cu. ft.	lit.	0	lit.
Amt oil	0	lit.	0	lit.
Amt Water	0	lit.	0	lit.
Amt Others	36.00	lit.	.600	lit.
E.SAMPLE PROPERTIES				
Gas Composition				
C1	58,752	ppm	No Gas	ppm
C2	904	ppm		ppm
C3	297	ppm		ppm
IC4/nC4	211	ppm		ppm
C5	424	ppm		ppm
C6+	99	ppm		ppm
CO2	0.05	ppm		ppm
Oil Properties	°API@	°C	°API@	°C
Colour				
Fluorescence				
GOR				
Water Properties				
Resistivity	0.24 @ 22°	°C	0.32 @ 22	°C
NaCl Equivalent		ppm		ppm
Cl-titrated	13,000 15,000	ppm	13,500	ppm
NO3	540 395	ppm	95	ppm
Est.Water Type				
Mud Properties				
Resistivity	@°C		@°C	
NaCl Equivalent		ppm		ppm
Cl- titrated		ppm		ppm
Calibration				
Calibration Press.		psig		psig
Calibration Temp.		°C		°C
Hewlett Packard No.				
Mud Weight				
Calc.Hydrostatic				
RFT Chokesize	0.020		0.020	
REMARKS				

RFT SAMPLE TEST REPORT

WELL : TARWHINE-1

OBSERVER : RP/LF/JR DATE : 24th December, 1981. RUN NO.: 10

	CHAMBER 1 (6 gal.)		CHAMBER 2 (1 gal.)	
SEAT NO.	128		128	
DEPTH	2659.4		2659.4	
A.RECORDING TIMES				
Tool Set	2105			
Pretest Open	2105			
Time Open	1 min			
Chamber Open	2106		2150	
Chamber Full	2148		2158	
Fill Time	42 min		8 min	
Start Build up				
Finish Build up				
Build Up time				
Seal Chamber	2148		2203	
Tool Retract			2210	
Total Time	44 min		20 min	
B.SAMPLE PRESSURES				
IHP	4665	psia		psia
ISIP	3792.6		3782	
Initial Flowing Press.	431		120	
Final Flowing Press.	800		530	
Sampling Press. Range	369		410	
FSIP			3782.9	
FHP			4665.1	
Form.Press.(Horner)				
C.TEMPERATURE				
Depth Tool Reached	2659.4	m		m
Max.Rec.Temp.	91	°C		°C
Time Circ. Stopped	0230 hrs., 24-12-81			hrs.
Time since Circ.	19	hrs.		hrs.
Form.Temp.(Horner)		°C		°C
D.SAMPLE RECOVERY				
Surface Pressure	3600 KPa		4300 KPa	
Amt Gas	2.1 cu. ft.		0.44 cu. ft.	
Amt oil		lit.		lit.
Amt Water		lit.		lit.
Amt Others FILTRATE	21.3	lit.	3.5	lit.
E.SAMPLE PROPERTIES				
Gas Composition				
C1	675000	ppm	243000	ppm
C2	2150	ppm	6470	ppm
C3	687	ppm	2260	ppm
IC4/nC4	760	ppm	152	ppm
C5	NIL	ppm	NIL	ppm
C6+	NIL	ppm	NIL	ppm
CO2/H2S	NIL	ppm	NIL	ppm
Oil Properties	°API@	°C	°API@	°C
Water Colour	Dark brown		Dark brown	
Water Fluorescence	Dull green yellow		Dull green yellow	
GOR				
Water Properties				
Resistivity	.222 @ 72°F		.243 @ 72°F	
NaCl Equivalent		ppm		ppm
Cl-titrated	17,500	ppm	18,100	ppm
NO3	158	ppm	143	ppm
Est.Water Type	FILTRATE		FILTRATE	
Mud Properties				
Resistivity	1.2 @ 72°F		@°C	
NaCl Equivalent		ppm		ppm
Cl- titrated	19,200	ppm		ppm
Calibration				
Calibration Press.		psig		psig
Calibration Temp.		°C		°C
Hewlett Packard No.				
Mud Weight				
Calc.Hydrostatic				
RFT Chokesize	.03"		.02"	
REMARKS				

RFT SAMPLE TEST REPORT

WELL : TARWHINE-1

OBSERVER : RP/JR/LF DATE : 25th December, 1981 RUN NO.: 11

	CHAMBER 1 (6 gal.)		CHAMBER 2 (1 gal.)	
SEAT NO.	129			
DEPTH	2779			
A.RECORDING TIMES				
Tool Set	0234			
Pretest Open	0234			
Time Open	2 min			
Chamber Open	0236		0329	
Chamber Full	0316		0336	
Fill Time	42 min		7 min	
Start Build up	0316		0336	
Finish Build up	0327		0343	
Build Up time	11 min		7 min	
Seal Chamber	0328		0343	
Tool Retract			0344	
Total Time	64 min		15 min	
B.SAMPLE PRESSURES				
IHP	4864	psia		psia
ISIP	3975.9		3970.8	
Initial Flowing Press.	350		150	
Final Flowing Press.	1000		500	
Sampling Press. Range	650		350	
FSIP	3970.9		3970.7	
FHP			4864	
Form.Press.(Horner)				
C.TEMPERATURE				
Depth Tool Reached		m		m
Max.Rec.Temp.	98	°C		°C
Time Circ. Stopped	0230 hrs., 24-12-81			hrs.
Time since Circ.	25.25	hrs.		hrs.
Form.Temp.(Horner)		°C		°C
D.SAMPLE RECOVERY				
Surface Pressure	3300 KPa		4100 KPa	psig
Amt Gas	2.24 cu. ft.		0.52 cu. ft.	
Amt oil		lit.		lit.
Amt Water		lit.		lit.
Amt Others	21.1	lit.	3.65	lit.
E.SAMPLE PROPERTIES				
Gas Composition				
C1	63600	ppm	73700	ppm
C2	1520	ppm	11760	ppm
C3	283	ppm	328	ppm
IC4/nC4	38	ppm	44	ppm
C5	NIL	ppm	NIL	ppm
C6+	NIL	ppm	NIL	ppm
CO2/H2S	NIL	ppm	NIL	ppm
Oil Properties	°API@	°C	°API@	°C
Water Colour	Dark brown		Dark brown	
Water Fluorescence	Dull green yellow		Dull green yellow	
GOR				
Water Properties				
Resistivity	.24 @ 23	°C	.26 @ 21	°C
NaCl Equivalent		ppm		ppm
Cl-titrated	17,200	ppm	17,100	ppm
NO3	143	ppm	165	ppm
Est.Water Type	FILTRATE		FILTRATE	
Mud Properties				
Resistivity	@°C		@°C	
NaCl Equivalent		ppm		ppm
Cl- titrated		ppm		ppm
Calibration				
Calibration Press.		psig		psig
Calibration Temp.		°C		°C
Hewlett Packard No.				
Mud Weight				
Calc.Hydrostatic				
RFT Chokesize	.03"		.02"	
REMARKS				

RFT SAMPLE TEST REPORT

WELL : TARWHINE-1

OBSERVER : LF/JR DATE : 25TH DECEMBER, 1981. RUN NO.: 12

	CHAMBER 1 (6 gal.)		CHAMBER 2 (2 3/4 gal.)
SEAT NO.	130 / 131		131
DEPTH	2498.5	2498.7	2498.7
A.RECORDING TIMES			
Tool Set	1925	1935	
Pretest Open	1925	1935	
Time Open	5	1	
Chamber Open	1930	1936	2022
Chamber Full		2019	2040
Fill Time		43 min	18 min
Start Build up		2012	2040
Finish Build up		2017	2042
Build Up time		5 min	2 min
Seal Chamber		2019	2044
Tool Retract			2044
Total Time		44 min	22 min
B.SAMPLE PRESSURES			
IHP	4417	4400 psi a	4417 psig
ISIP	3557.3	3554.1	3552.0
Initial Flowing Press.	34	104	98
Final Flowing Press.	42	350	400
Sampling Press. Range		246	302
FSIP		3550.3	3552.1
FHP	4417		4400
Form.Press.(Horner)			
C.TEMPERATURE			
Depth Tool Reached	2540 m		m
Max.Rec.Temp.	82 °C		°C
Time Circ. Stopped	1300 hrs.		hrs.
Time since Circ.	6.5 hrs.		hrs.
Form.Temp.(Horner)	°C		°C
D.SAMPLE RECOVERY			
Surface Pressure	(2950KPa) 432 psig		(69KPa) 10 psig
Amt Gas	1.22 cu. ft.		0.098 cu. ft.
Amt oil	lit.		lit.
Amt Water	lit.		lit.
Amt Others Filtrate	21.9 lit.		9.0 lit.
E.SAMPLE PROPERTIES			
Gas Composition			
C1	138000 ppm		Insufficient gas ppm
C2	1140 ppm		to measure ppm
C3	162 ppm		ppm
IC4/nC4	23 ppm		ppm
C5	NIL ppm		ppm
C6+	NIL ppm		ppm
CO2/H2S	NIL ppm		ppm
Oil Properties	°API@ °C		°API@ °C
Colour			
Fluorescence			
GOR			
Water Properties	pH = 9.0		pH = 8.7
Resistivity	0.32 @ 22 °C		0.28 @ 22 °C
NaCl Equivalent	ppm		ppm
Cl-titrated	18800 ppm		18200 ppm
NO3	99 ppm		121 ppm
Est.Water Type	FILTRATE		FILTRATE
Mud Properties			
Resistivity	@°C		@°C
NaCl Equivalent	ppm		ppm
Cl- titrated	ppm		ppm
Calibration			
Calibration Press.	psig		psig
Calibration Temp.	°C		°C
Hewlett Packard No.			
Mud Weight			
Calc.Hydrostatic			
RFT Chokesize	.03"		.04"

REMARKS A reasonable pretest was obtained at 2498.5 but the formation proved to be tight when sampling was attempted. Tool was moved to 2498.7 where a sample was obtained.

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FIT SAMPLE TEST REPORT

WELL : TARWHINE#1

OBSERVER : W. MUDGE/J. ROCHE DATE : 8/1/82 RUN NO. : FIT RUN1

	CHAMBER 1 (12 gal.)		CHAMBER 2 (600 cc)	
SEAT NO.				
DEPTH	2779		2779	
A.RECORDING TIMES				
Tool Set	0200			
Pretest Open				
Time Open				
Chamber Open	0200		0630	
Chamber Full				
Fill Time				
Start Build up				
Finish Build up				
Build Up time				
Seal Chamber	0630		0645	
Tool Retract				
Total Time	4.50	hrs.	0.25	hrs.
B.SAMPLE PRESSURES				
IHP	5500	psig		psig
ISIP				
Initial Flowing Press.	431 - 4540		4621	
Final Flowing Press.	4662		4625	
Sampling Press. Range				
FSIP			4629	
FHP			5310	
Form.Press.(Horner)				
C.TEMPERATURE				
Depth Tool Reached		m		m
Max.Rec.Temp.		°C		°C
Time Circ. Stopped		hrs.		hrs.
Time since Circ.		hrs.		hrs.
Form.Temp.(Horner)		°C		°C
D.SAMPLE RECOVERY				
Surface Pressure	2400 KPa		800 KPa	
Amt Gas	2.5 cu. ft.		0.1 cu. ft	
Amt oil		lit.		lit.
Amt Water		lit.		lit.
Amt Others MUD	30.050	lit.	0.600	lit.
E.SAMPLE PROPERTIES				
Gas Composition				
C1	297.676	ppm	GAS VOL	ppm
C2	1.808	ppm	TOO SMALL	ppm
C3	325	ppm	TO QUANTIFY	ppm
IC4/nC4	105	ppm		ppm
C5	62	ppm		ppm
C6+	NIL	ppm		ppm
CO2/H2S	0.05/NIL	ppm		ppm
Oil Properties	°API@	°C	°API@	°C
Colour				
Fluorescence				
GOR				
Water Properties				
Resistivity	0.32 @ 23	°C	0.28 @ 23	°C
NaCl Equivalent		ppm		ppm
Cl-titrated	14.50 K	ppm	13.0 K	ppm
NO3	248	ppm	264	ppm
Est.Water Type				
Mud Properties				
Resistivity	0.33 @°C 22		@°C	
[illegible]		ppm		ppm
Cl- titrated	14.00 K	ppm		ppm
Calibration				
Calibration Press.		psig		psig
Calibration Temp.		°C		°C
Hewlett Packard No.				
Mud Weight				
Calc.Hydrostatic				
RFT Chokesize	0.020		0.020	
REMARKS				

APPENDIX 8

TARWHINE-1 WELL TESTING

SUMMARY

Well testing of the Tarwhine-1 well included 14 RFT runs, 2 FIT runs and two production tests. The first production test over the interval 2656-2667.5m KB recovered formation water with minor gas. Pressure buildup analysis indicated a permeability of about 1-10 md. The second production test over the interval 1398-1400.5m KB was designed to evaluate the 22m gross oil sand at the Top of Latrobe coarse clastics. The results of this test are summarised below:

1. Oil (65° API, 1135 SCF/STB) flowed at a stabilised rate of 2604 STB/d through a 42/64" positive choke for a metered period of five hours.

2. During the stabilised flow period, bottom hole drawdown was 79 psi giving a Producitivity Index (P.I.) of 33 STB/d/psi. Flowing wellhead pressure was 852 psig and shut-in wellhead pressure was 1030 psig.

3. Pressure buildup analysis indicated an increase in permeability-thickness away from the well. If a net sand thickness of 12m is assumed, the permeability increases from 1250 md to 4075 md at about 50-100m radius.

This report presents the results of RFT and FIT runs and the two production test performed on the Tarwhine-1 exploration well. Tarwhine-1 is located approximately 17.5 km south-west of the Barracouta A platform and was drilled and tested to a total depth of 2955m KB (-2934m ss).

The well encountered a 22m gross oil column below the top of the Latrobe Coarse Clastics. This oil zone was subsequently production tested. Intra-Latrobe hydrocarbon sands were also encountered over several intervals, although RFT and FIT sampling only succeeded in recovering gas,water and mud filtrate. A production test was run over the interval 2656-2667.5m KB. Cores taken from within this zone showed some fluorescence but the production test only recovered minor gas and formation water.

This report discusses the RFT pressure profiles, RFT and FIT sampling, and the two production tests.

2. RFT PRESSURES

A total of 109 successful pretest pressures were taken during 14 RFT runs. The pressures are plotted versus depth in Figs 1-5 and discussed below.

2.1 Runs 1-5

Pressures taken during these runs are plotted on Fig. 1. Run 1 obtained the bulk of the pressure data for this depth interval. The pressures indicate that the oil sands below the top of Coarse Clastics have a common OWC estimated at 1407.5m KB with an oil gradient of 0.80 psi/m. The pressure measured at the OWC was about 40 psi below original basin pressure (prior to Gippsland production). This compares closely with predicted drawdown and shows that the oil zone is in good communication with the Gippsland Aquifer. Strong water drive would be expected. A slight shift occurred in the water gradient line at about 1510m KB with a gradient of 1.40 psi/m measured above and 1.41 psi/m measured below.

In Run 4 several pressures were performed to test the permeability of the apparent non-net intervals within the oil zone. Very low permeability was found at depth corresponding to peaks of high gamma ray response.

Segregated samples were taken during Runs 1,2,4 and 5 (see Section 3).

2.2 Runs 6-8

Run 7 obtained pretest pressures over the interval 1973-2503m, primarily to investigate hydrocarbon shows below 2350m. Pressures measured between 1797m and 2298m fell on a water gradient of 1.41 psi/m. The RFT pressure profile over the interval 2330-2510m is shown in Fig. 2. A water gradient of 1.43 psi/m was established and pressures measured in probable gas sands showed some deviation from the water line. However, these pressures fell on different gas gradient lines indicating that the gas sands do not have a common GWC. Segregated gas samples were taken at 2403.4m and 2366.5m.

2.3 Runs 9-12

Pressures measured during Runs 9 and 10 are shown in Figs. 3 and 4. These runs were made to investigate hydrocarbon shows and to test the cored interval (2663m-2669m) where fluorescence was observed. Segregated samples were taken on Runs 10,11 and 12.

Shifts in the water line with increasing depth is considered the best interpretation of the pressure gradients. This is probably due to variations in the pressure drawdown with depth due to Gippsland Basin production. Slightly different interpretations can be made if higher water gradients are assumed. However there was no evidence of salinity changes large enough to account for the higher gradient. Pressures

measured in sands which had hydrocarbon shows plotted above the water line in most cases, although interpretation is difficult. There is evidence of slight supercharging at some of the seats, particularly in sands of very low permeability. It is not possible to distinguish oil from gas in the interpreted hydrocarbon sands. The pretests indicated low permeability (0.1-10md) in most of the sand tested.

2.4 Runs 13 - 14

Run 13 was made to test the deepest section of the well (Fig. 5). Pretest performance was poor and very little can be interpreted from the results. Further shifting in the water line can be interpreted. Run 14 was made to confirm some previous pressures.

3. RFT AND FIT SAMPLING

A total of nine sample runs were made with the RFT tool and two sample runs with the FIT tool in cased hole.

3.1 RFT Runs 1-5

Four sample seats were taken in the oil zone. The long nosed probe was used for RFT samples 1 and 3. Severe probe plugging occurred resulting in very long sampling time. No oil was recovered at 1406.4m but this is believed to be due to mud filtrate invasion.

However, good samples were obtained in Runs 4 and 5 using the large diameter Martineau probe. Both chambers were filled, with sample times of about 8-9 minutes for the 6 gal. lower chamber and 2-3 minutes for the 1 gal. upper chamber. The upper chambers, containing segregated oil samples, were preserved for fluid analyses.

3.2 RFT Runs 6-8

Gas samples were obtained from 2403.4m and 2366.5m. The 1 gal. upper chambers were preserved for compositional analyses.

3.3 RFT Runs 9-14

A tool failure on Run 9 prevented sampling. Water, believed to be mud filtrate, with minor gas was collected on Runs 10-12. No samples were taken during Runs 13 and 14.

3.4 FIT Runs 1-2

After the hole was cased, FIT samples were taken at 2779m and 2661.5m. In both cases only mud and water with minor gas were recovered.

4. PRODUCTION TEST NO. 1

The interval 2656-2667.5m was production tested from January 10-14, 1982. A summary of the flow history is shown in Fig. 6.

The tubing was twice circulated with diesel and was swabbed over three periods. During the entire production test, only mud filtrate, formation water and minor gas were recovered. The well flowed fairly strongly during Flow 3 (Fig. 6) due to natural gas lifting effects.

Pressure buildup analysis showed that the permeability of this sand was of the order of 1 to 10 md. A reliable build-up analysis could not be made due to the erratic flow history during this test.

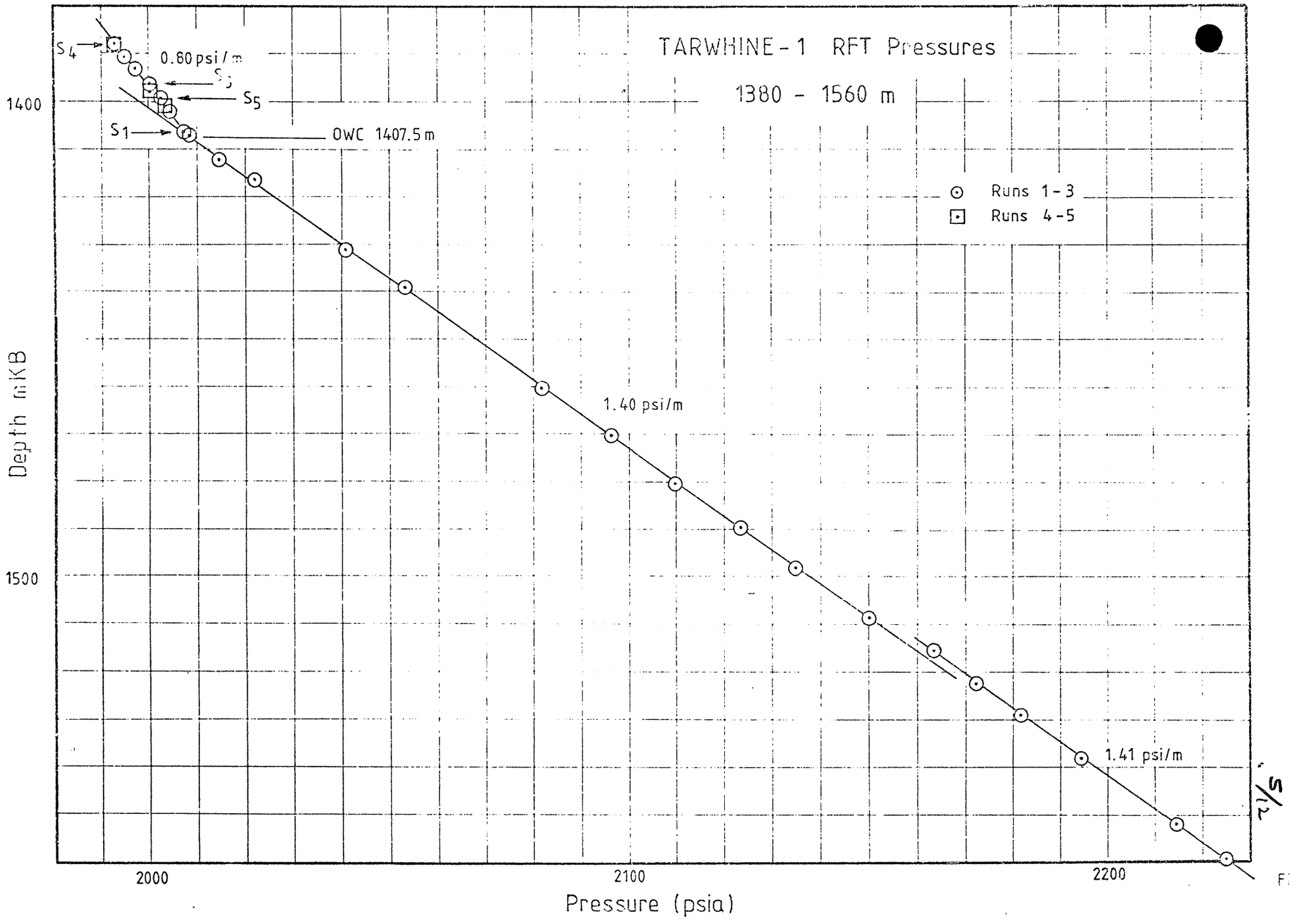
5. PRODUCTION TEST NO. 2

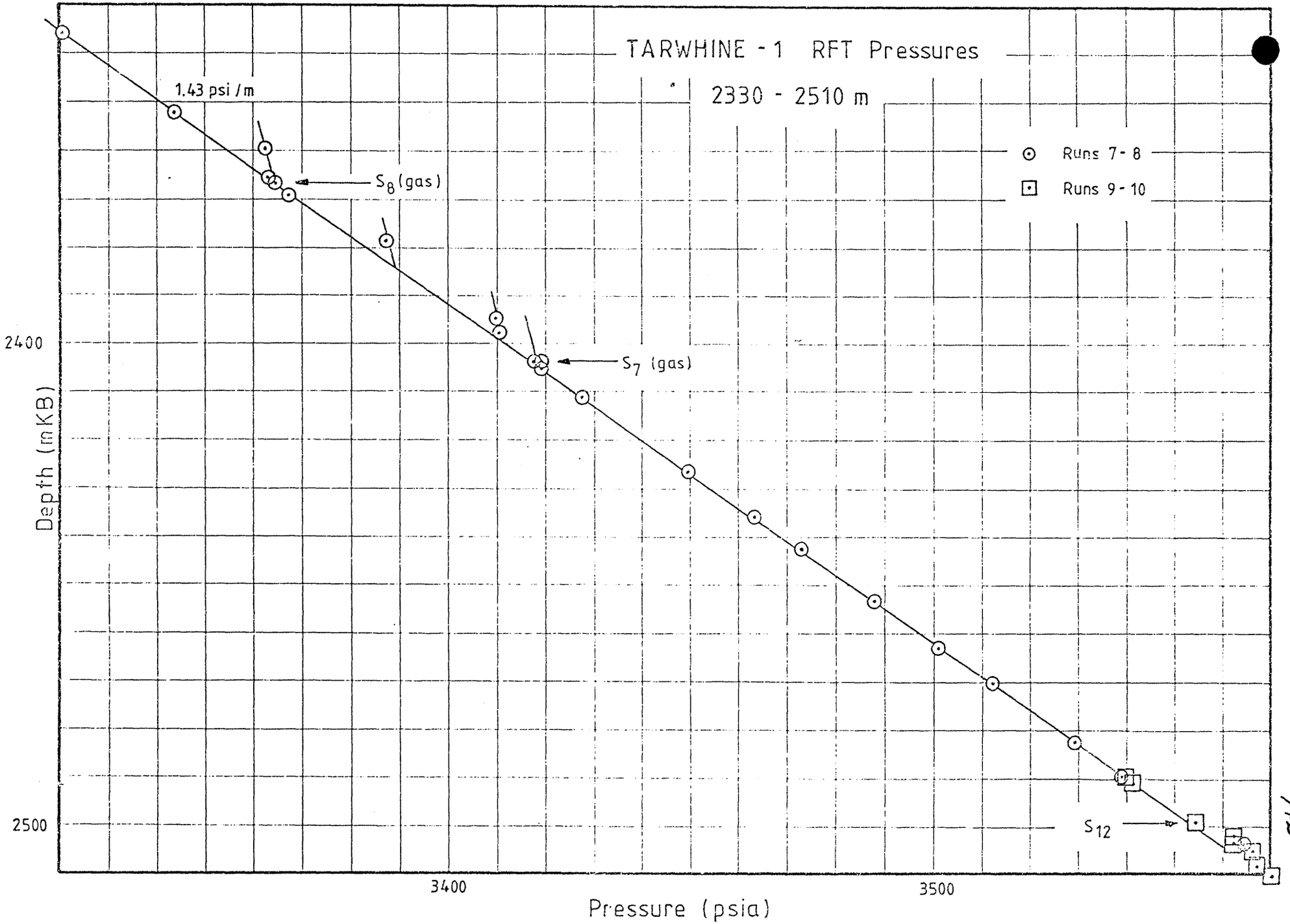
The interval 1398-1400.5m KB was perforated at 0724 hours on January 16, 1982, and the well opened for initial flow at 0825 hours. Mud was observed at the surface after 55 minutes, gas after 61 minutes and oil after 65 minutes. The well was allowed to clean up until 1031 hours when it was shut in at the choke. The Hewlett-Packard (H-P) pressure gauge was run in and the bottomhole pressure monitored.

The well was opened directly to the burner at 1231 hours and was allowed to continue cleaning up. At 1505 hours, flow was diverted to the test separator and allowed to stabilise on 42/64 inch positive choke. Metering commenced at 1515 hours. The flow was metered for five hours. During this period the oil rate averaged 2604 STB/d with a GOR of 1135 SCF/STB and an API gravity of 65^{0}. These are Otis estimated stock tank rates based on metered rates at separator conditions. Stable flowing bottomhole pressure was 1914 psia at a wellhead pressure of 852 psig. Flowing wellhead temperature was 43^{0}C. Figure 7 shows a plot of bottomhole pressure versus time for the production test.

The well shut in at 2020 hours. Bottomhole pressure buildup was very rapid. The Horner buildup plot (Fig. 8) shows a decreased in the gradient of the straight line indicating an increase of kh away from the well. This is probably due to an improvement in effective sand thickness and/or permeability at some distance away from the well. If constant viscosity of 0.17 cp and net sand thickness at 12m are assumed, near well permeability is 1250 md, increasing to 4075 md at about 50-100m radius away from the well.

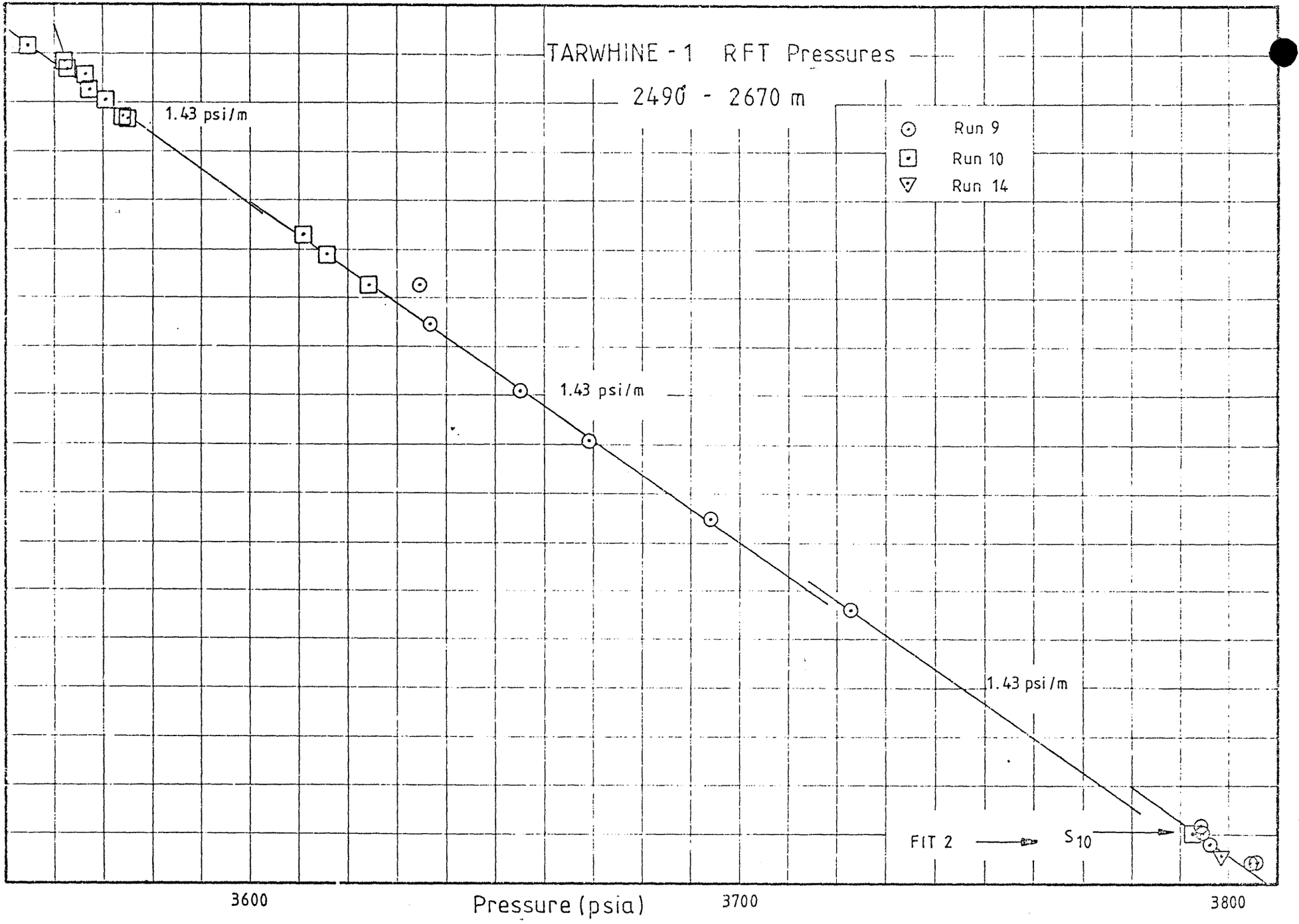
Extrapolated shut-in bottomhole pressure was 1993 psia at 1390m KB giving a flowing bottomhole drawdown of 79 psi and a productivity index of 33 STB/d/psi. The initial pressures measured with the RFT were about 2 psi higher than the extrapolated shut-in bottomhole pressure. No pressure depletion is interpreted as this is within the accuracy of the gauges and depth measurements.


TARWHINE-1 RFT Pressures
1380 - 1560 m
S4
0.80 psi/m
S3
S5
S1
OWC 1407.5 m
Runs 1-3
Runs 4-5
1.40 psi/m
1.41 psi/m
1400
1500
Depth mKB
2000
2100
2200
Pressure (psia)
5/12


TARWHINE - 1 RFT Pressures
2330 - 2510 m
1.43 psi / m
S8 (gas)
S7 (gas)
S12
Runs 7 - 8
Runs 9 - 10
2400
2500
Depth (mKB)
3400
3500
Pressure (psia)

6/12

Figur


TARWHINE - 1 RFT Pressures
2490 - 2670 m
Run 9
Run 10
Run 14
1.43 psi/m
1.43 psi/m
1.43 psi/m
FIT 2
S10
3600
3700
3800
Pressure (psia)

Figure

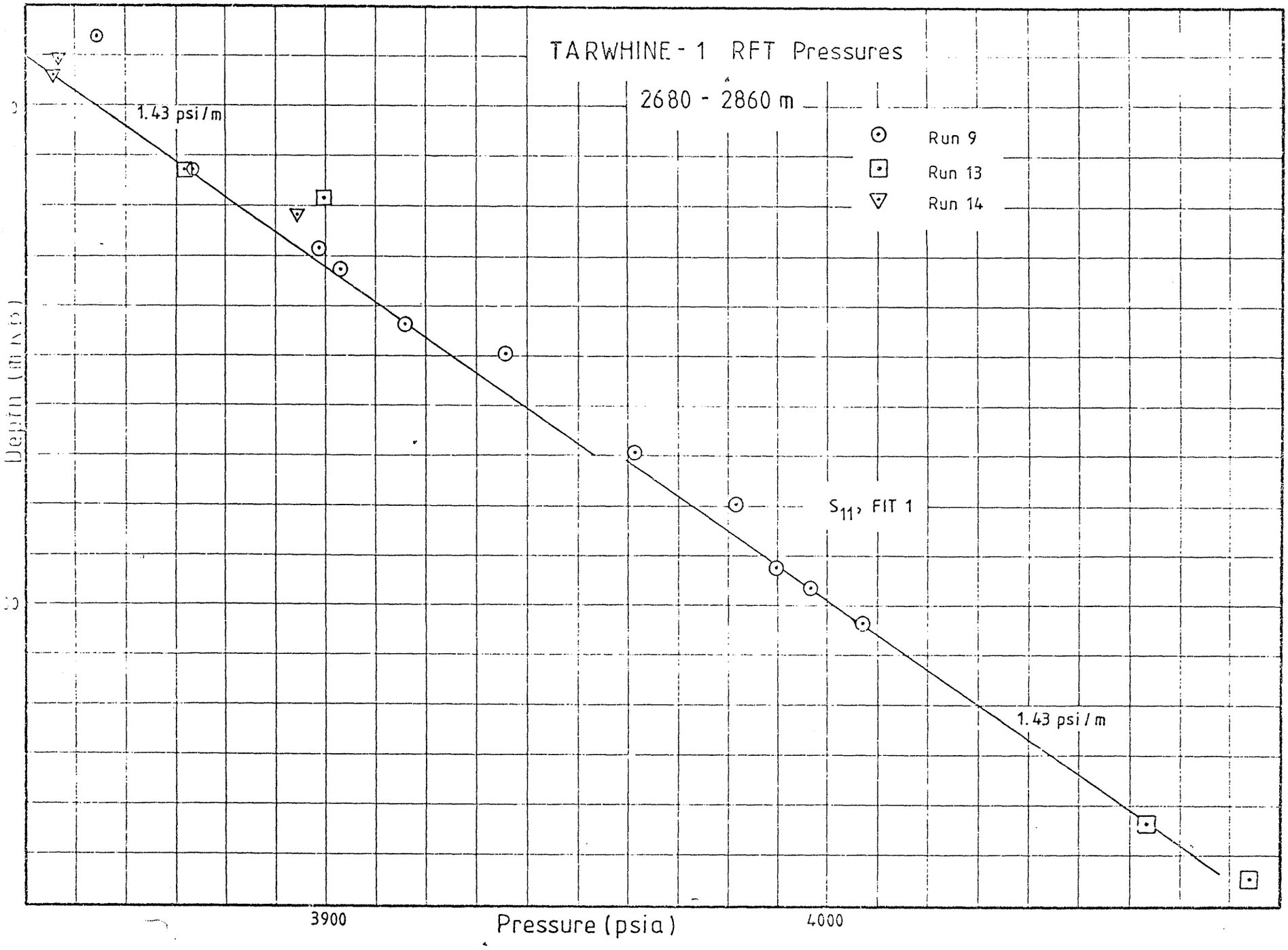

TARWHINE - 1 RFT Pressures
2680 - 2860 m
Run 9
Run 13
Run 14
1.43 psi / m
S_{11}, FIT 1
1.43 psi / m
Depth (mRKB)
3900
Pressure (psia)
4000

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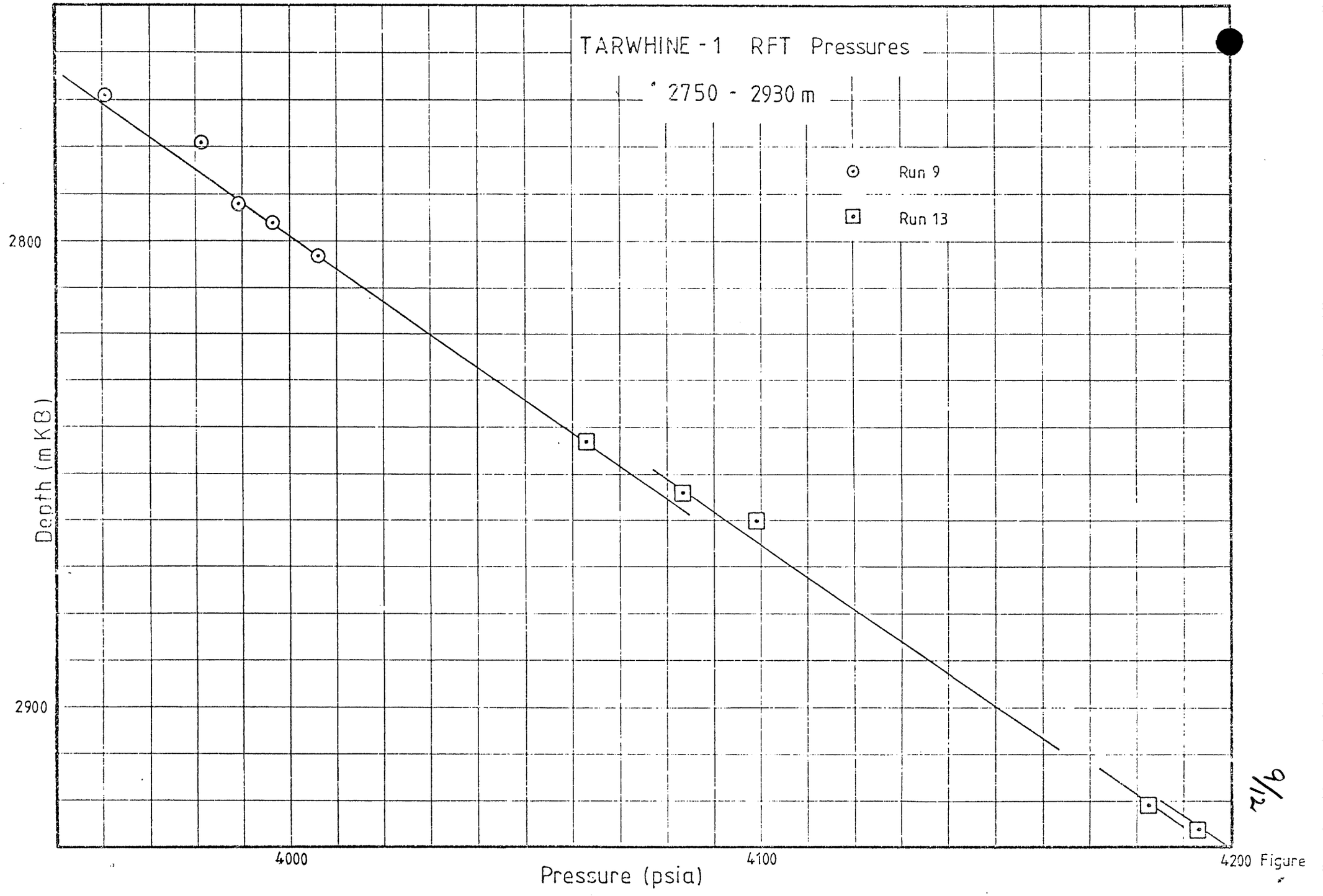
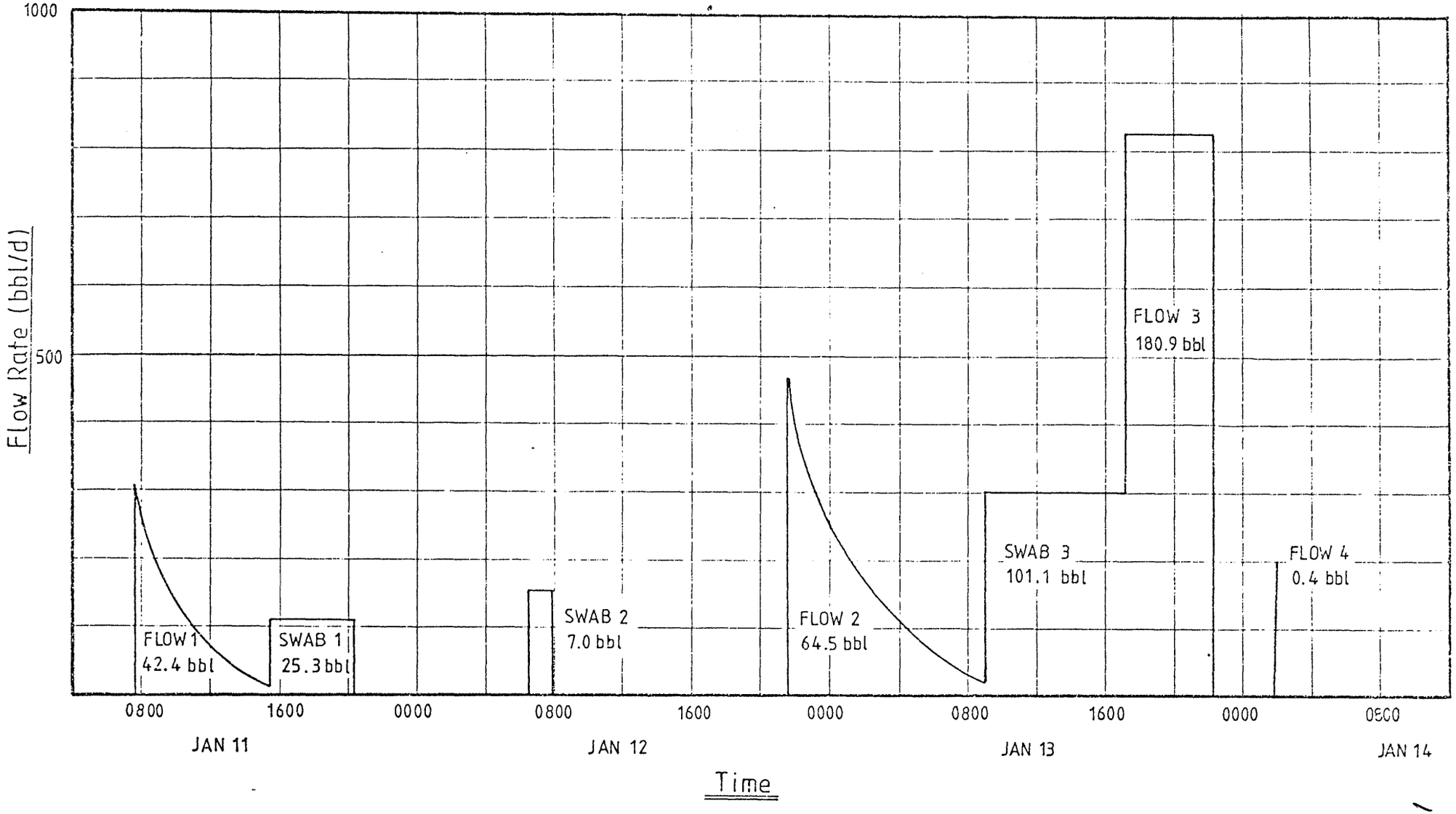
Figure 4


TARWHINE - 1 RFT Pressures
2750 - 2930 m
Run 9
Run 13
2800
2900
Depth (m KB)
4000
4100
4200
Pressure (psia)

9/12

Figure

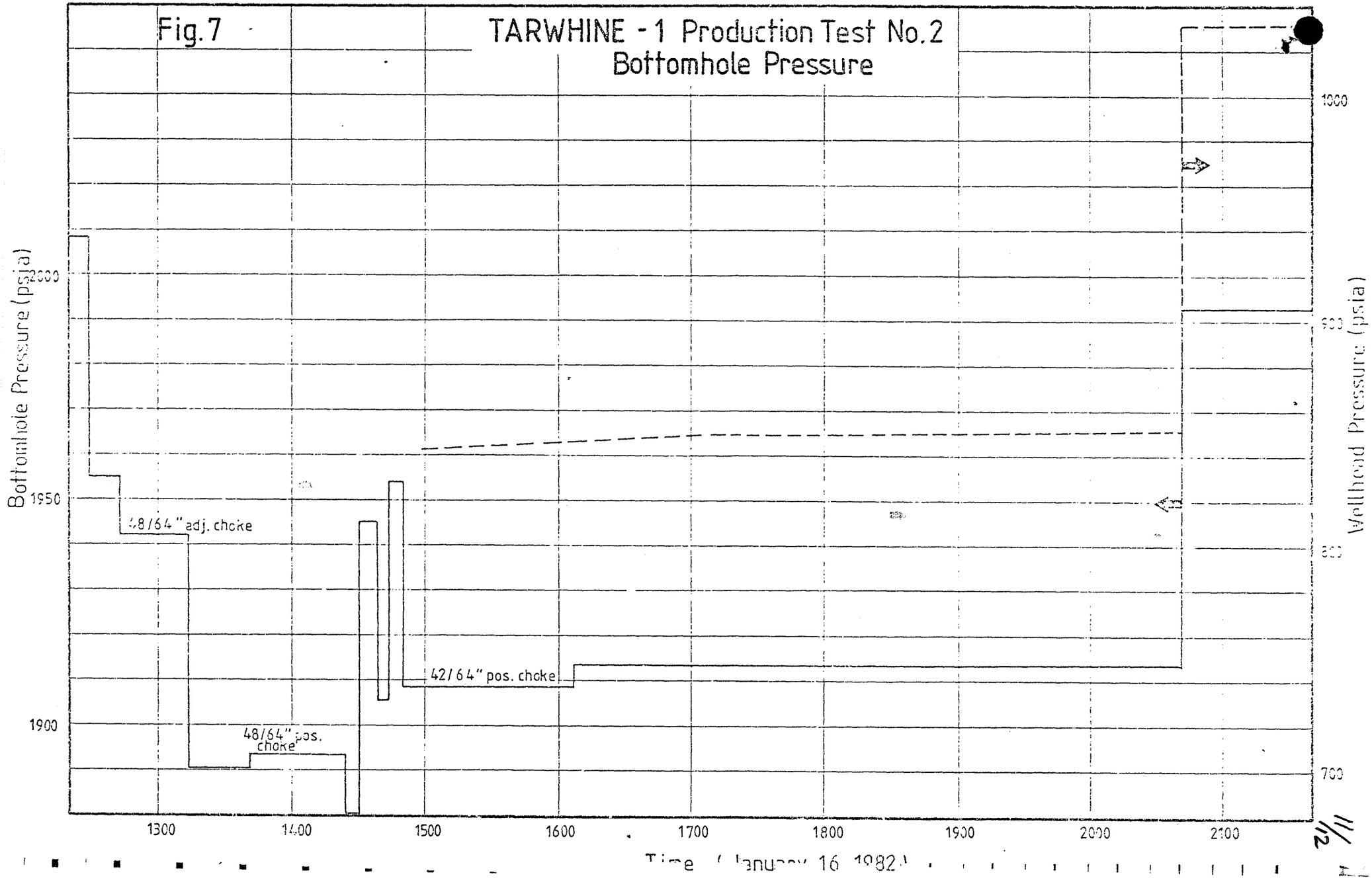
Fig 6. TARWHINE - 1 Production Test No.1 Flow History



2/01

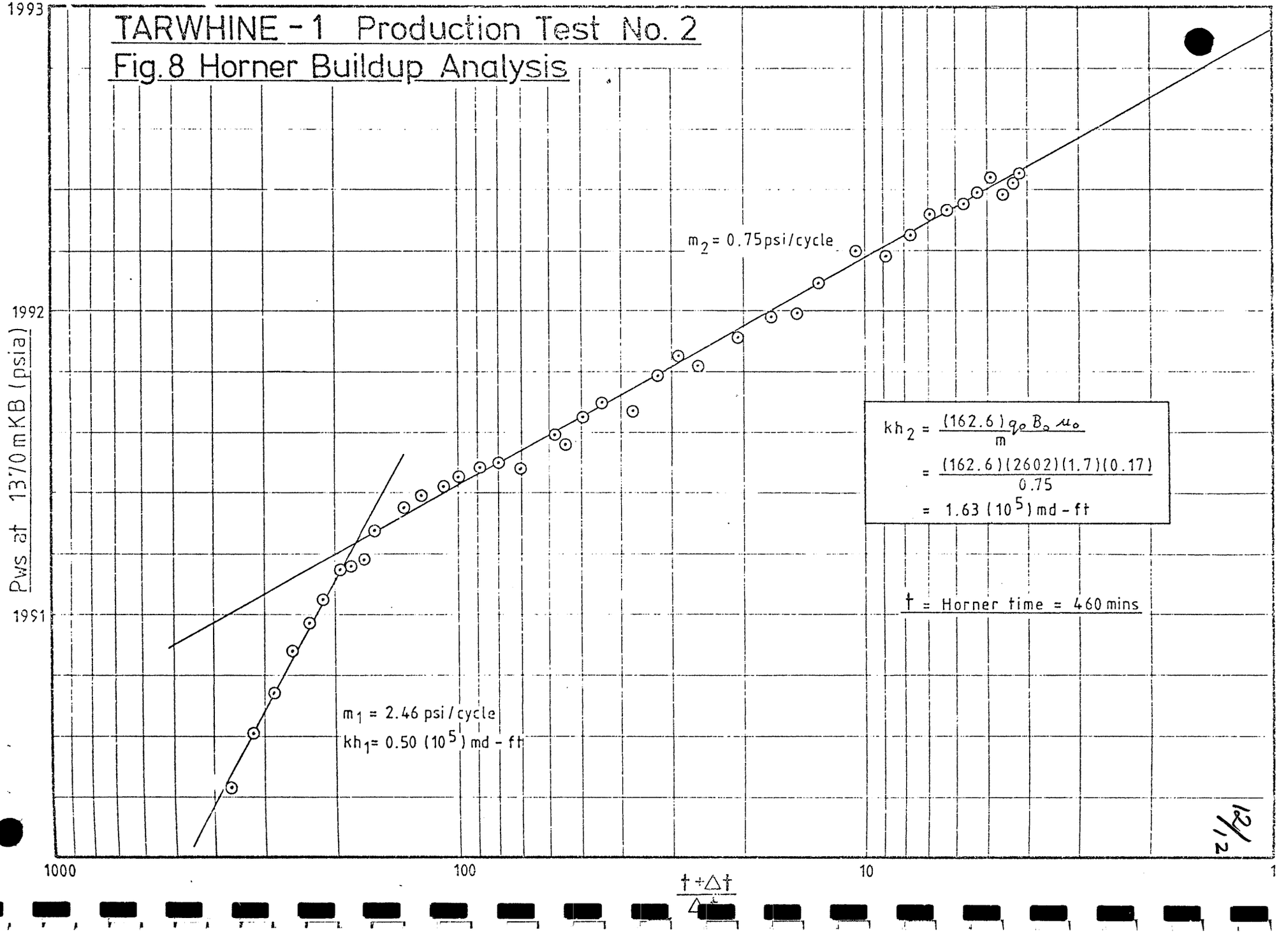
Fig.7

TARWHINE - 1 Production Test No.2
Bottomhole Pressure



TARWHINE - 1 Production Test No. 2

Fig. 8 Horner Buildup Analysis



APPENDIX 9

APPENDIX - 9

GEOCHEMICAL REPORT

GEOCHEMICAL REPORT

TARWHINE-1

GIPPSLAND BASIN, VICTORIA

By

J.K. Emmett

Esso Australia, Ltd.

Geochemical Report

10 August, 1982

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LIST OF TABLES:

LIST OF FIGURES:

APPENDICES:

TARWHINE-1

INTRODUCTION:

Samples of canned cuttings and sidewall cores from the Tarwhine-1 well, Gippsland Basin, were collected and subjected to various geochemical analyses. Canned cuttings composited over 15-metre intervals were collected from 200 metres down to 2955 metres (T.D.). Alternate 15-metre intervals were analysed for C_{1-4} headspace hydrocarbon gases over the whole sequence, and between 1340m and 2940m, succeeding alternate 15-metre intervals were analysed for C_{4-7} gasoline range hydrocarbons. Selected samples were hand-picked for more detailed analyses such as Total Organic Carbon (T.O.C.), kerogen isolation and elemental analysis, and $C_{15}+$ liquid and gas chromatography. Vitrinite Reflectance ($R_o$max) was measured by Professor A.C. Cook of Wollongong.

An oil sample (RFT No. 4, 1387.7m) was analysed for API gravity, whole oil, and C_{4-7} gas chromatography. The components of two gas samples (RFT 7, 2403.4m and RFT 8, 2366.5m) were also determined.

DISCUSSION OF RESULTS:

The detailed headspace C_{1-4} hydrocarbon gas analysis data are listed in Table 1 and have been plotted in Figure 1. The C_{1-4} gas content is very low down to the Top of the Latrobe Group sediments, below which it increases significantly and remains uniformly moderately rich to rich down to T.D. (2955m). The amount of wet gas (C_2+) components is generally fairly low over the whole sequence penetrated (ranging from about 10-35%) but is much more abundant in the Latrobe Group sediments than in the section above. The instances where the net gas concentration is above 50% (i.e. 61.05% at 1360-1385m and 50.53% at 2745-2760m) correspond with oil reservoir zones and are probably affected by the oil.

The detailed C_{4-7} gasoline range hydrocarbon data sheets are given in Appendix-1 and have also been plotted in Figure 2. The "saw tooth-like" pattern developed in Figure 2 is due to the coal-rich nature of some zones resulting in very high gasoline-range hydrocarbon contents. The generally fairly high percentage of C_{6-7} hydrocarbons (which also tends to increase with depth) within the gasoline range hydrocarbons for the Latrobe Group sediments is indicative of a good hydrocarbon source potential.

The Latrobe Group sediments are rich in Total Organic Carbon (average T.O.C. = 2.29% - Table 2) which also supports a good hydrocarbon source rock potential.

Vitrinite Reflectance ($R_o$max) data are presented in Table 3 and have been plotted against depth in Figure 3. The straight line gradient shown in Figure 3 indicates that there are no major breaks in the maturation profile. If the top of the organic maturity window for significant hydrocarbon generation is taken to be $R_o$max= 0.65% then the section penetrated in Tarwhine-1 is considered to be basically immature but approaching early mature in the vicinity of T.D.

In Table 4, the elemental analyses of selected kerogen samples isolated from Tarwhine-1 sidewall cores are presented. Approximate H/C, O/C and N/C atomic ratios for these samples are given in Table 5. These ratios are labelled "approximate" since the oxygen % is calculated by difference, and the naturally occurring sulphur %, which may be up to a few percent, was not determined. Figure 4 is a modified Van Krevelen Plot of atomic H/C ratio versus atomic O/C. Comparison of Figure 4 with Figure 5, which shows the principal products of kerogen evolution, confirms that in the Latrobe Group sediments, particularly below about 2500m, the organic matter has an appropriate H/C ratio to have good potential to source both oil and gas.

The $C_{15}+$ liquid chromatography results from canned cuttings are given in Table 6. All samples are from the Latrobe Group sediments and have rich total extract values. The large amount of non hydrocarbon (nitrogen, sulphur, oxygen (N.S.O.) compounds and asphaltenes) in all the samples, indicates that they are still immature, although the relatively increased amounts of saturate (SATS) and Aromatic (AROM) hydrocarbons below about 2500m is probably a result of increasing maturity. Representative $C_{15}+$ chromatograms shown in figures 6, 7 and 8, indicate predominantly non-marine organic matter, evidence for which is the abundance of high molecular weight ($C_{22}+$) n-alkanes with accompanying odd-over-even predominance. Increasing maturity with depth is also indicated by the shift of the n-alkane maxima from n-C_{29} (Fig. 6) to n-C_{27} (Fig. 8), a slight reduction in the odd-over-even predominance, and increasing ratios of n-C_{17}/pristane (a) and n-C_{18}/phytane (b). The remaining $C_{15}+$ chromatograms for Tarwhine-1 are given in Appendix-2.

Whole oil gas chromatography of a sample of oil (RFT No. 4 from 1387.7m) found in Tarwhine-1 (Figure 9) shows it to be a very light (API gravity = 62.^{o} at 60^{o}F) paraffinic-naphthenic crude which has been altered by partial biodegradation, as indicated by the reduced amount of n-alkanes below n-C_{14}. Partial biodegradation can also be seen in the C_{4-7} gasoline range hydrocarbon chromatogram (figure 10) in which there can be seen a preferential loss of n-alkanes compared to branched- and cyclic-alkanes.

Partial biodegradation is also suggested from the component analyses of two Tarwhine-1 gas samples (RFT 7, 2403.4m and RFT 8 2366.5m - Appendices 3 and 4 respectively) in which isopentane is more abundant than n-pentane. A similar occurrence was also noted in biodegraded gas samples from the near-by Barracouta field.

CONCLUSIONS:

1. The Latrobe Group sediments are rated as having a good potential to source both oil and gas but are presently immature in Tarwhine-1, although early maturity is being approached by T.D. (2955m).

2. Oil discovered in Tarwhine-1 is a very light paraffinic-naphthenic based crude which has been partially altered by biodegradation.

TABLE 1: C1-C4 HYDROCARBON ANALYSES

REPORT A - HEADSPACE GAS

BASIN - GIPPSLAND
WELL - TARWHINE1

SAMPLE NO.	DEPTH	METHANE C1	ETHANE C2	PROPANE C3	IBUTANE IC4	NBUTANE C4	WET C2-C4	TOTAL C1-C4	WET/TOTAL PERCENT	TOTAL GAS M	TOTAL GAS E	TOTAL GAS P	TOTAL GAS IB	TOTAL GAS NB	WET GAS E	WET GAS P	WET GAS IB	WET GAS NB
		GAS CONCENTRATION (VOLUME GAS PER MILLION VOLUMES CUTTINGS)							GAS COMPOSITION (PERCENT)									
72331 A	215.00	30	6	0	0	0	6	36	16.67	83.	17.	0.	0.	0.	100.	0.	0.	0.
72331 D	260.00	0	0	0	0	0	0	0	.00	0.	0.	0.	0.	0.	0.	0.	0.	0.
72331 G	305.00	0	0	0	0	0	0	0	.00	0.	0.	0.	0.	0.	0.	0.	0.	0.
72331 J	360.00	6	1	0	0	0	1	7	14.29	86.	14.	0.	0.	0.	100.	0.	0.	0.
72331 M	395.00	0	0	0	0	0	0	0	.00	0.	0.	0.	0.	0.	0.	0.	0.	0.
72331 P	440.00	4	0	0	0	0	0	4	.00	100.	0.	0.	0.	0.	0.	0.	0.	0.
72331 S	485.00	17	0	0	0	0	0	17	.00	100.	0.	0.	0.	0.	0.	0.	0.	0.
72332 B	530.00	3	0	0	0	0	0	3	.00	100.	0.	0.	0.	0.	0.	0.	0.	0.
72332 E	575.00	3	0	0	0	0	0	3	.00	100.	0.	0.	0.	0.	0.	0.	0.	0.
72332 H	620.00	2	0	2	0	0	2	4	50.00	50.	0.	50.	0.	0.	0.	100.	0.	0.
72332 K	665.00	3	0	0	0	0	0	3	.00	100.	0.	0.	0.	0.	0.	0.	0.	0.
72332 N	710.00	1	0	0	0	0	0	1	.00	100.	0.	0.	0.	0.	0.	0.	0.	0.
72332 Q	755.00	0	0	0	0	0	0	0	.00	0.	0.	0.	0.	0.	0.	0.	0.	0.
72332 T	800.00	1	0	0	0	0	0	1	.00	100.	0.	0.	0.	0.	0.	0.	0.	0.
72333 C	845.00	4	1	0	0	0	1	5	20.00	80.	20.	0.	0.	0.	100.	0.	0.	0.
72333 F	890.00	29	5	0	0	0	5	34	14.71	85.	15.	0.	0.	0.	100.	0.	0.	0.
72333 I	935.00	32	11	1	0	0	12	44	27.27	73.	25.	2.	0.	0.	92.	8.	0.	0.
72333 L	980.00	44	9	1	1	0	11	55	20.00	80.	16.	2.	2.	0.	82.	9.	9.	0.
72333 O	1025.00	38	4	1	3	1	9	47	19.15	81.	9.	2.	6.	2.	44.	11.	33.	11.
72333 R	1070.00	189	5	6	3	2	16	205	7.80	92.	2.	3.	1.	1.	31.	38.	19.	13.
72334 A	1115.00	148	4	4	2	1	11	159	6.92	93.	3.	3.	1.	1.	36.	36.	18.	9.
72334 D	1160.00	139	17	21	14	9	61	200	30.50	69.	8.	11.	7.	4.	28.	34.	23.	15.
72334 M	1295.00	339	26	9	4	3	42	381	11.02	89.	7.	2.	1.	1.	62.	21.	10.	7.
72334 P	1340.00	1210	362	192	65	13	632	1842	34.31	66.	20.	10.	4.	1.	57.	30.	10.	2.
72334 S	1385.00	2264	331	1582	668	967	3548	5812	61.05	39.	6.	27.	11.	17.	9.	45.	19.	27.
72335 B	1439.00	40766	2206	1595	420	413	4634	45400	10.21	90.	5.	4.	1.	1.	48.	34.	9.	9.
72335 C	1445.00	11324	819	981	324	319	2443	13767	17.75	82.	6.	7.	2.	2.	34.	40.	13.	13.
72335 E	1475.00	385	32	46	16	20	114	499	22.85	77.	6.	9.	3.	4.	28.	40.	14.	18.
72335 G	1505.00	2787	247	266	80	85	678	3465	19.57	80.	7.	8.	2.	2.	36.	39.	12.	13.
72335 I	1535.00	9435	672	204	50	43	969	10404	9.31	91.	6.	2.	0.	0.	69.	21.	5.	4.
72335 K	1565.00	2786	216	68	19	17	320	3106	10.30	90.	7.	2.	1.	1.	67.	21.	6.	5.
72335 M	1595.00	2076	104	50	19	187	360	2436	14.78	85.	4.	2.	1.	8.	29.	14.	5.	52.
72335 O	1625.00	3752	327	156	30	23	536	4288	12.50	88.	8.	4.	1.	1.	61.	29.	6.	4.
72335 Q	1665.00	710	78	46	11	10	145	855	16.96	83.	9.	5.	1.	1.	54.	32.	8.	7.
72335 S	1685.00	1917	136	100	30	22	288	2205	13.06	87.	6.	5.	1.	1.	47.	35.	10.	8.
72336 A	1715.00	2723	260	278	73	76	687	3410	20.15	80.	8.	8.	2.	2.	38.	40.	11.	11.
72336 C	1745.00	1017	131	149	59	50	389	1406	27.67	72.	9.	11.	4.	4.	34.	38.	15.	13.
72336 E	1775.00	1156	50	82	36	39	207	1363	15.19	85.	4.	6.	3.	3.	24.	40.	17.	19.
72336 G	1805.00	1445	123	94	20	19	256	1701	15.05	85.	7.	6.	1.	1.	48.	37.	8.	7.
72336 I	1835.00	4125	472	488	133	143	1236	5361	23.06	77.	9.	9.	2.	3.	38.	39.	11.	12.
72336 K	1865.00	1446	142	161	48	58	409	1855	22.05	78.	8.	9.	3.	3.	35.	39.	12.	14.
72336 M	1895.00	1423	171	181	66	64	482	1905	25.30	75.	9.	10.	3.	3.	35.	38.	14.	13.
72336 O	1925.00	450	33	24	8	9	74	524	14.12	86.	6.	5.	2.	2.	45.	32.	11.	12.
72336 Q	1955.00	797	124	165	107	131	527	1324	39.80	60.	9.	12.	8.	10.	24.	31.	20.	25.
72336 S	1985.00	757	85	103	40	49	277	1034	26.79	73.	8.	10.	4.	5.	31.	37.	14.	18.
72337 A	2015.00	771	63	65	25	29	182	953	19.10	81.	7.	7.	3.	3.	35.	36.	14.	16.
72337 C	2045.00	203	23	11	5	6	45	248	18.15	82.	9.	4.	2.	2.	51.	24.	11.	13.

TABLE 1 (CONT'D) C1-C4 HYDROCARBON ANALYSES

BASIN - GIPPSLAND
WELL - TARWHINE1

REPORT A - HEADSPACE GAS

		GAS CONCENTRATION (VOLUME GAS PER MILLION VOLUMES CUTTINGS)							GAS COMPOSITION (PERCENT)								
										TOTAL GAS					WET GAS			
SAMPLE NO.	DEPTH	METHANE C1	ETHANE C2	PROPANE C3	IBUTANE IC4	NBUTANE C4	WET C2-C4	TOTAL C1-C4	WET/TOTAL PERCENT	M	E	P	IB	NB	E	P	IB	NB
72337 E	2075.00	6615	280	144	31	41	496	7111	6.98	93.	4.	2.	0.	1.	56.	29.	6.	8.
72337 G	2105.00	2392	153	117	25	32	327	2719	12.03	88.	6.	4.	1.	1.	47.	36.	8.	10.
72337 I	2135.00	6046	370	300	76	82	828	6874	12.05	88.	5.	4.	1.	1.	45.	36.	9.	10.
72337 K	2165.00	2243	372	553	165	207	1297	3540	36.64	63.	11.	16.	5.	6.	29.	43.	13.	16.
72337 M	2195.00	75	10	9	4	3	26	101	25.74	74.	10.	9.	4.	3.	38.	35.	15.	12.
72337 O	2235.00	483	110	81	21	30	242	725	33.38	67.	15.	11.	3.	4.	45.	33.	9.	12.
72337 Q	2255.00	623	100	114	25	41	280	903	31.01	69.	11.	13.	3.	5.	36.	41.	9.	15.
72337 S	2285.00	962	233	214	36	63	546	1508	36.21	64.	15.	14.	2.	4.	43.	39.	7.	12.
72338 A	2315.00	231	33	40	11	15	99	330	30.00	70.	10.	12.	3.	5.	33.	40.	11.	15.
72338 C	2345.00	531	88	80	19	23	210	741	28.34	72.	12.	11.	3.	3.	42.	38.	9.	11.
72338 E	2375.00	171504	9913	1808	188	220	12129	183633	6.61	93.	5.	1.	0.	0.	82.	15.	2.	2.
72338 G	2405.00	12416	1219	402	59	78	1758	14174	12.40	88.	9.	3.	0.	1.	69.	23.	3.	4.
72338 I	2420.00	52033	3582	895	140	122	4739	56772	8.35	92.	6.	2.	0.	0.	76.	19.	3.	3.
72338 K	2465.00	7080	622	179	35	30	866	7946	10.90	89.	8.	2.	0.	0.	72.	21.	4.	3.
72338 M	2495.00	1189	229	114	21	23	387	1576	24.56	75.	15.	7.	1.	1.	59.	29.	5.	6.
72338 O	2525.00	8925	778	273	50	55	1156	10081	11.47	89.	8.	3.	0.	1.	67.	24.	4.	5.
72359 P	2550.00	4732	658	297	50	71	1076	5808	18.53	81.	11.	5.	1.	1.	61.	28.	5.	7.
72359 R	2580.00	3957	749	421	57	74	1301	5258	24.74	75.	14.	8.	1.	1.	58.	32.	4.	6.
72359 T	2610.00	10627	1498	872	163	218	2751	13378	20.56	79.	11.	7.	1.	2.	54.	32.	6.	8.
72359 V	2640.00	16928	1679	520	92	82	2373	19301	12.29	88.	9.	3.	0.	0.	71.	22.	4.	3.
72359 X	2670.00	27224	2877	1025	165	210	4277	31501	13.58	86.	9.	3.	1.	1.	67.	24.	4.	5.
72359 Z	2700.00	4612	1038	468	68	157	1731	6343	27.29	73.	16.	7.	1.	2.	60.	27.	4.	9.
72358 V	2730.00	445	123	115	7	15	260	705	36.88	63.	17.	16.	1.	2.	47.	44.	3.	6.
72358 X	2760.00	232	129	55	31	22	237	469	50.53	49.	28.	12.	7.	5.	54.	23.	13.	9.
72358 Z	2790.00	266	96	39	6	9	150	416	36.06	64.	23.	9.	1.	2.	64.	26.	4.	6.
72338 U	2820.00	12819	640	125	18	18	801	13620	5.88	94.	5.	1.	0.	0.	80.	16.	2.	2.
72338 W	2850.00	5192	441	141	26	33	641	5833	10.99	89.	8.	2.	0.	1.	69.	22.	4.	5.
72338 Y	2880.00	2239	360	136	18	22	536	2775	19.32	81.	13.	5.	1.	1.	67.	25.	3.	4.
72339 U	2910.00	11035	914	357	42	53	1366	12401	11.02	89.	7.	3.	0.	0.	67.	26.	3.	4.
72339 V	2925.00	11641	1161	345	53	58	1617	13258	12.20	88.	9.	3.	0.	0.	72.	21.	3.	4.
72339 X	2955.00	12572	1031	294	56	81	1462	14034	10.42	90.	7.	2.	0.	1.	71.	20.	4.	6.

TABLE 2 TOTAL ORGANIC CARBON REPORT

BASIN - GIPPSLAND
WELL - TARWHINE 1

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	TOC%	AN	TOC%	AN	TOC%	DESCRIPTION
72339 A	1348.00	EOCENE-LATE CRETAC.	LATROBE GROUP-GURNARD FM.	1	.62					OL GY SLST GLAU CALC
72339 B	1369.10	EOCENE-LATE CRETAC.	LATROBE GROUP-GURNARD FM.	1	.91					OL GY SLST GLAU CALC MUD
72339 C	1380.00	EOCENE-LATE CRETAC.	LATROBE GROUP-GURNARD FM.	1	6.20					DK GY SLST MICA
72339 D	1418.50	EOCENE-LATE CRETAC.	LATROBE GROUP	1	9.61					DK GY SLST TRACE SS
72339 E	1591.00	EOCENE-LATE CRETAC.	LATROBE GROUP	1	.52					YEL GY SH
72335 P	1640.00	EOCENE-LATE CRET.	LATROBE GROUP	2	6.92					
72339 F	1680.00	EOCENE-LATE CRETAC.	LATROBE GROUP	1	.67					OL GY SLST V CALC
72336 J	1850.00	EOCENE-LATE CRET.	LATROBE GROUP	2	1.12					
72339 G	1961.90	EOCENE-LATE CRETAC.	LATROBE GROUP	1	1.93					DK OL GY SH MUD
72336 R	2000.00	EOCENE-LATE CRET.	LATROBE GROUP	2	1.10					
72339 H	2057.00	EOCENE-LATE CRETAC.	LATROBE GROUP	1	2.30					DK OL GY SLTY SH MUD
72339 I	2115.70	EOCENE-LATE CRETAC.	LATROBE GROUP	1	2.57					DK OL GY SH MUD
72337 H	2120.00	EOCENE-LATE CRET.	LATROBE GROUP	2	1.36					
72339 J	2204.90	EOCENE-LATE CRETAC.	LATROBE GROUP	1	.81					OL GY SLST MUD
72339 K	2230.90	EOCENE-LATE CRETAC.	LATROBE GROUP	1	.23					DK GY SLST MUD CALC
72339 L	2304.00	EOCENE-LATE CRETAC.	LATROBE GROUP	1	2.27					DK GY + BLK SH
72339 M	2391.00	EOCENE-LATE CRETAC.	LATROBE GROUP	1	1.24					M DK GY SLTY SS
72339 N	2431.00	EOCENE-LATE CRETAC.	LATROBE GROUP	1	8.61					DK GY SH CARB
72339 O	2486.10	EOCENE-LATE CRETAC.	LATROBE GROUP	1	1.56					M DK GY SLST CARB
72339 P	2496.50	EOCENE-LATE CRETAC.	LATROBE GROUP	1	1.15					M GY SLST CARB
72338 L	2510.00	EOCENE-LATE CRET.	LATROBE GROUP	2	2.73					
72359 O	2535.00	EOCENE-LATE CRET.	LATROBR GROUP	2	2.60					
72339 Q	2651.30	EOCENE-LATE CRETAC.	LATROBE GROUP	1	1.16					M GY SLST CARB
72359 Y	2685.00	EOCENE-LATE CRET.	LATROBE GROUP	2	2.31					
72339 R	2703.40	EOCENE-LATE CRETAC.	LATROBE GROUP	1	.75					DK GY SH
72339 S	2758.40	EOCENE-LATE CRETAC.	LATROBE GROUP	1	1.66					OL GY SLST CARB
72339 T	2779.00	EOCENE-LATE CRETAC.	LATROBE GROUP	1	.07					V P SRTD SS FE OXIDE
72338 P	2785.50	EOCENE-LATE CRETAC.	LATROBE GROUP	1	.99					M DK GY SLST CARB
72338 T	2805.00	EOCENE-LATE CRET.	LATROBE GROUP	2	4.72					
72338 Q	2820.00	EOCENE-LATE CRETAC.	LATROBE GROUP	1	.63					OL GY SS CARB
72338 R	2905.80	EOCENE-LATE CRETAC.	LATROBE GROUP	1	2.77					DK GY SLST CARB
72338 S	2939.80	EOCENE-LATE CRETAC.	LATROBE GROUP	1	1.28					M DK GY F SLST CARB
72339 W	2940.00	EOCENE-LATE CRET.	LATROBE GROUP	2	2.36					

===> DEPTH : .00 TO 2940.00 METRES. <=== I ===> AVERAGE TOC : 2.29 % EXCLUDING VALUES GREATER THAN 10.00 % <===

TABLE 3: VITRINITE REFLECTANCE REPORT

BASIN - GIPPSLAND
WELL - TARWHINE 1

SAMPLE NO.	DEPTH	AGE	FORMATION	AN	MAX. RO	FLUOR. COLOUR	NO.CNTS.	MACERAL TYPE
72482 A	1408.20	EOCENE-LATE CRETAC.	LATROBE GROUP	5	.44	YL-OR	20	V>>E,NO I
72482 B	1425.00	EOCENE-LATE CRETAC.	LATROBE GROUP	5	.45	OR-DULL OR	28	V>E>I:SPOR,CUTIN.COMMON
72482 C	1505.00	EOCENE-LATE CRETAC.	LATROBE GROUP	5	.50	YL-DULL OR	21	V>>E>I;E SPARSE
72482 D	1745.00	EOCENE-LATE CRETAC.	LATROBE GROUP	5	.52	YL-OR-DULL O	17	V>E>I;E COMMON-ABUNDANT
72358 R	1836.00	EOCENE-LATE CRETAC.	LATROBE GROUP	5	.43	YL-OR	21	V>E,NO I;V ABUNDANT
72482 E	1840.00	EOCENE-LATE CRETAC.	LATROBE GROUP	5	.49	YL-OR,OR	34	E>V>I IN D.O.M.
72339 G	1961.90	EOCENE-LATE CRETAC.	LATROBE GROUP	5	.42	OR	5	E>I>V,ABUNDANT E
72482 F	2500.50	EOCENE-LATE CRETAC.	LATROBE GROUP	5	.58	YL-DULL OR	40	55%V,40%I,5%E
72359 G	2699.30	EOCENE-LATE CRETAC.	LATROBE GROUP	5	.54	GRN-YL,OR	23	V>E,NO I:E ABUNDANT
72482 G	2741.90	EOCENE-LATE CRETAC.	LATROBE GROUP	5	.58	YL-OR,OR	25	V>E,NO I:E ABUNDANT
72482 H	2934.50	EOCENE-LATE CRETAC.	LATROBE GROUP	5	.54	OR	1	I>>E>?V

TABLE 4: KEROGEN ELEMENTAL ANALYSIS REPORT

BASIN - GIPPSLAND
WELL - TARWHINE 1

SAMPLE NO.	DEPTH	SAMPLE TYPE	--- ELEMENTAL % (ASH FREE) ---						COMMENTS
			N%	C%	H%	S%	O%	ASH%	
72403 A	1356.10	KEROGEN	2.64	66.88	4.99	.00	25.50	4.93	
72358 F	1405.44	KEROGEN	.77	68.07	5.22	.00	25.94	6.32	
72403 P	1409.98	KEROGEN	.62	72.26	7.11	.00	20.02	23.62	HIGH ASH
72358 J	1503.00	KEROGEN	.75	63.82	4.60	.00	30.83	4.50	
72358 N	1656.00	KEROGEN	1.07	71.80	5.30	.00	21.82	2.08	
72358 P	1715.50	KEROGEN	1.07	73.27	5.63	.00	20.04	3.33	
72358 R	1836.00	KEROGEN	1.09	73.44	6.85	.00	18.61	12.22	HIGH ASH
72359 A	1932.00	KEROGEN	1.03	71.16	7.31	.00	20.49	33.00	HIGH ASH
72359 B	2003.10	KEROGEN	1.06	74.79	5.71	.00	18.44	3.69	
72339 I	2115.70	KEROGEN	1.05	71.88	5.40	.00	21.66	3.01	
72339 J	2204.90	KEROGEN	.94	76.34	6.80	.00	15.92	14.12	HIGH ASH
72359 C	2290.10	KEROGEN	.90	75.92	5.25	.00	17.93	1.77	
72403 M	2447.20	KEROGEN	1.17	79.74	4.61	.00	14.48	2.07	
72359 E	2571.80	KEROGEN	1.74	80.12	4.66	.00	13.47	9.29	
72359 G	2699.30	KEROGEN	1.64	81.11	7.00	.00	10.25	4.98	
72359 H	2776.00	KEROGEN	2.40	80.07	6.21	.00	11.31	3.44	
72359 I	2799.00	KEROGEN	1.99	82.57	5.70	.00	9.74	4.29	
72403 N	2807.00	KEROGEN	1.63	80.76	5.18	.00	12.43	3.05	
72338 S	2939.80	KEROGEN	2.11	82.42	4.66	.00	10.81	1.86	

TABLE 5: KEROGEN ELEMENTAL ANALYSIS REPORT

BASIN - GIPPSLAND
WELL - TARWHINE 1

SAMPLE NO.	DEPTH	SAMPLE TYPE	AGE	FORMATION	ATOMIC RATIOS H/C	O/C	N/C	COMMENTS
72403 A	1356.10	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP-GURNARD FM	.89	.29	.03	
72358 E	1405.44	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	.92	.29	.01	
72403 P	1409.98	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	1.18	.21	.01	HIGH ASH
72358 J	1503.00	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	.86	.36	.01	
72358 N	1656.00	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	.89	.23	.01	
72358 P	1715.50	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	.92	.21	.01	
72358 R	1836.00	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	1.12	.19	.01	HIGH ASH
72359 A	1932.00	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	1.23	.22	.01	HIGH ASH
72359 B	2003.10	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	.92	.18	.01	
72339 I	2115.70	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	.90	.23	.01	
72339 J	2204.90	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	1.07	.16	.01	HIGH ASH
72359 C	2290.10	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	.83	.18	.01	
72403 M	2447.20	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	.69	.14	.01	
72359 E	2571.80	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	.70	.13	.02	
72359 G	2699.30	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	1.04	.09	.02	
72359 H	2776.00	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	.93	.11	.03	
72359 I	2799.00	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	.83	.09	.02	
72403 N	2807.00	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	.77	.12	.02	
72338 S	2939.80	KEROGEN	EOCENE-LATE CRETAC.	LATROBE GROUP	.68	.10	.02	

TABLE 6. C15+ LIQUID CHROMATOGRAPHY DATA

DEPTH IN METRES	FORMATION/EQUIVALENT	AGE	TOTAL EXTRACT (ppm)	HC's (ppm)	NON HC's (ppm)	SULPHUR (ppm)	EXTRACT COMPOSITION %				
							SATS	AROM.	N.S.O	ASPH.	SULPHUR
1625-1640	LATROBE GROUP	Eocene	10,776	696	10080	N.D.	1.3	5.2	4.0	89.6	-
1935-1850	LATROBE GROUP	Eocene	1,653	285	1368	N.D.	4.4	12,8	18.5	64.2	-
1955-2000	LATROBE GROUP	Paleocene	1731	334	1397	N.D.	5.1	14.2	14.7	66.0	-
2105-2120	LATROBE GROUP	Paleocene	2086	302	1784	N.D.	3.2	11.3	18.5	67.0	-
2465-2510	LATROBE GROUP	Late Creataceous	1498	475	1023	N.D.	11.5	20.2	22.9	45.3	-
2520-2535	LATROBE GROUP	Late Creataceous	2358	509	1849	N.D.	5.9	15.7	29.0	49.4	-
2670-2685	LATROBE GROUP	Late Creataceous	1616	755	861	N.D.	25.2	21.5	12.9	40.4	-
2790-2805	LATROBE GROUP	Late Creataceous	4493	1232	3261	N.D.	10.3	17.1	12.2	60.4	-
2925-2940	LATROBE GROUP	Late Creataceous	2020	681	1339	N.D.	17.9	15.8	10.4	55.9	-

PE601367

This is an enclosure indicator page.
The enclosure PE601367 is enclosed within the container PE902677 at this location in this document.

The enclosure PE601367 has the following characteristics:

ITEM_BARCODE	= PE601367
CONTAINER_BARCODE	= PE902677
NAME	= C1-4 Cuttings Gas Log
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= C1-4 Cuttings Gas Log
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	= 29/12/82
W_NO	= W760
WELL_NAME	= Tarwhine-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601369

This is an enclosure indicator page.
The enclosure PE601369 is enclosed within the container PE902677 at this location in this document.

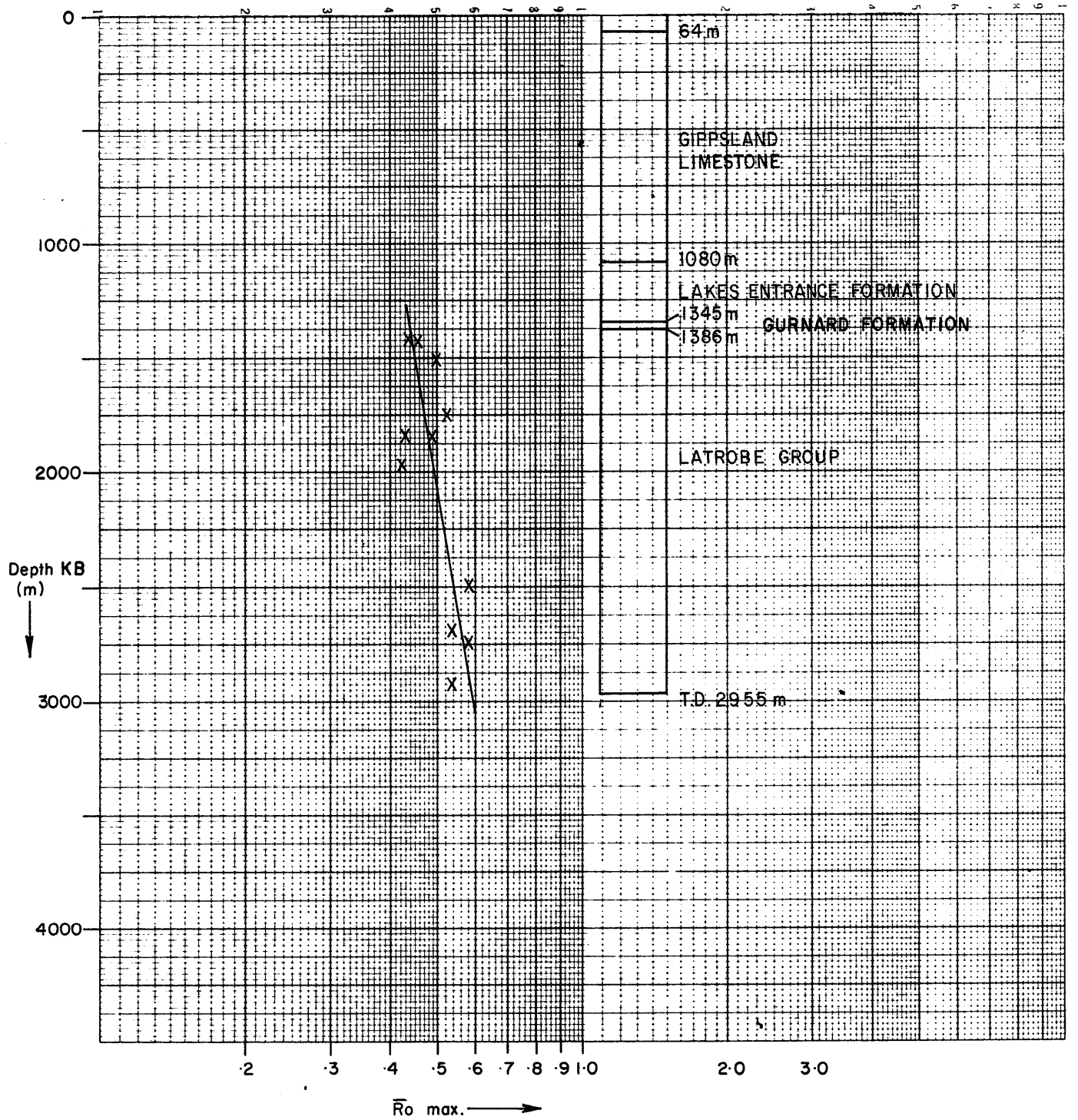
The enclosure PE601369 has the following characteristics:

ITEM_BARCODE	= PE601369
CONTAINER_BARCODE	= PE902677
NAME	= Geochemical Log
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= WELL_LOG
DESCRIPTION	= Geochemical Log
REMARKS	=
DATE_CREATED	=
DATE_RECEIVED	= 29/12/82
W_NO	= W760
WELL_NAME	= Tarwhine-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

TARWHINE-1

VITRINITE REFLECTANCE vs DEPTH



Dwg. 2070/OP/8

TARWHINE -1

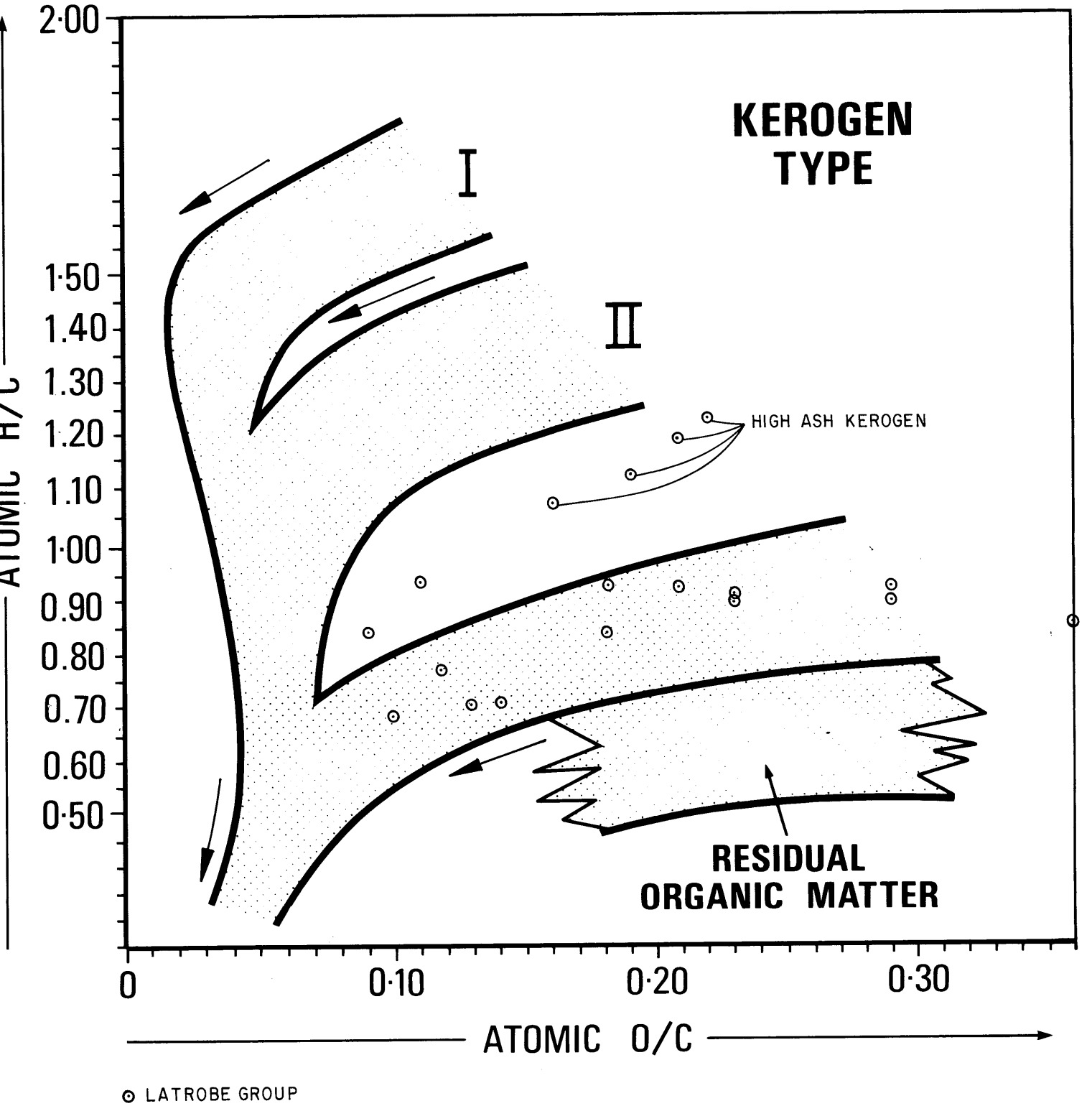
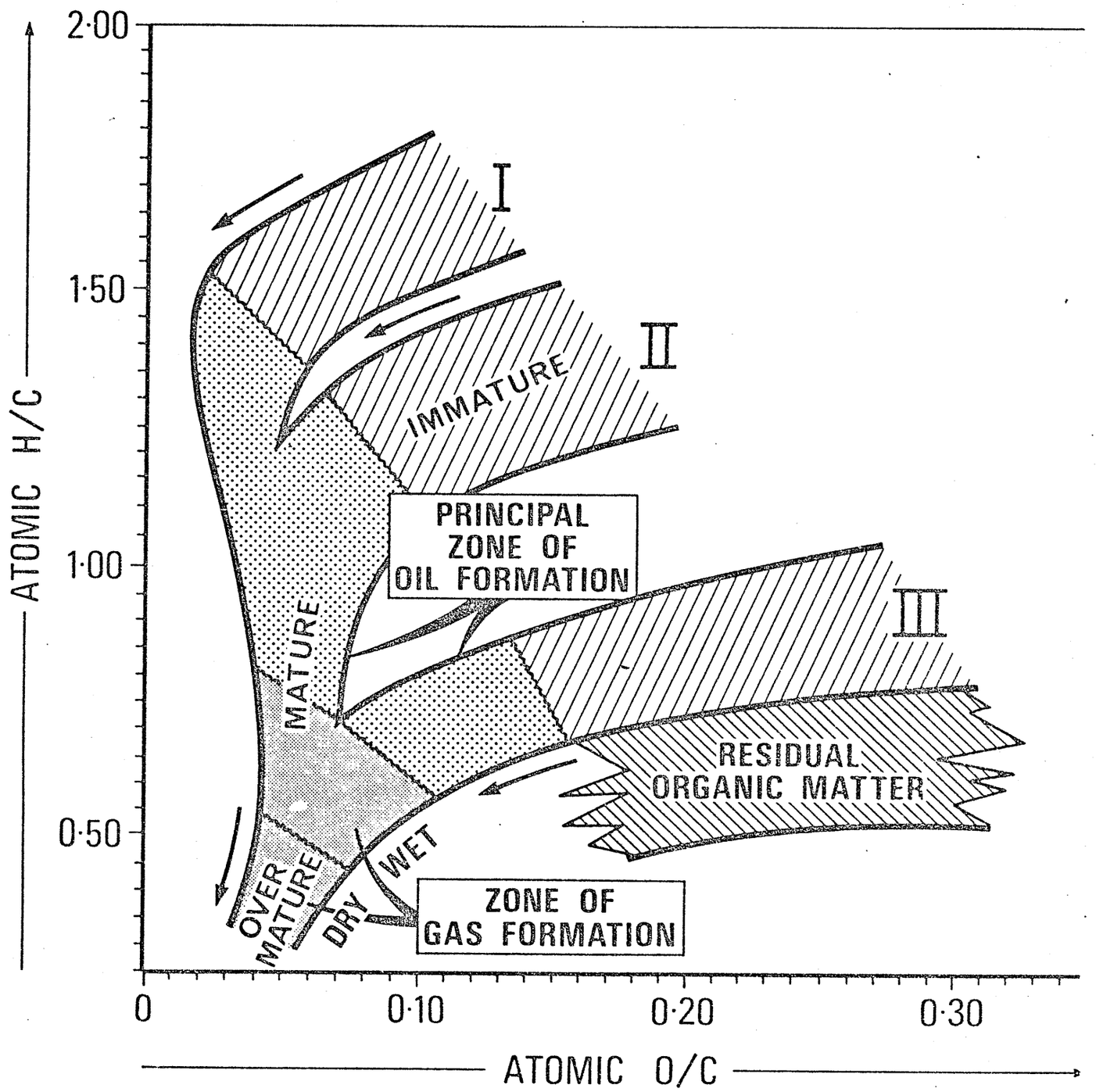

KEROGEN TYPE
I
II
HIGH ASH KEROGEN
RESIDUAL ORGANIC MATTER
ATOMIC H/C
2·00
1·50
1.40
1.30
1.20
1.10
1·00
0.90
0.80
0.70
0.60
0·50
0
0·10
0·20
0·30
ATOMIC O/C
⊙ LATROBE GROUP

FIGURE 5.



PRINCIPAL PRODUCTS OF KEROGEN EVOLUTION

CO_2, H_2O

OIL

GAS

RESIDUAL ORGANIC MATTER
(NO POTENTIAL FOR OIL OR GAS)

1380/BS/75

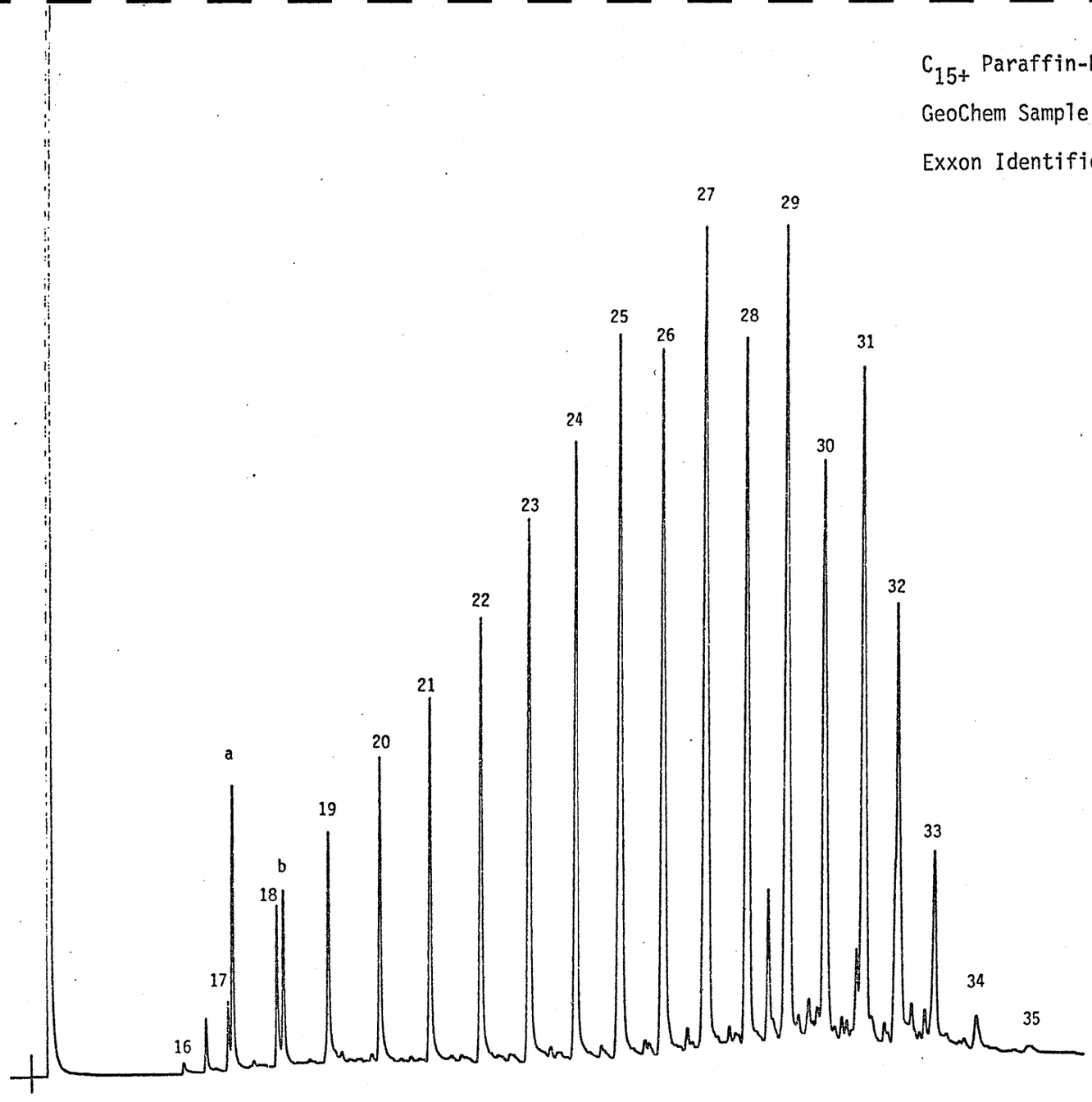
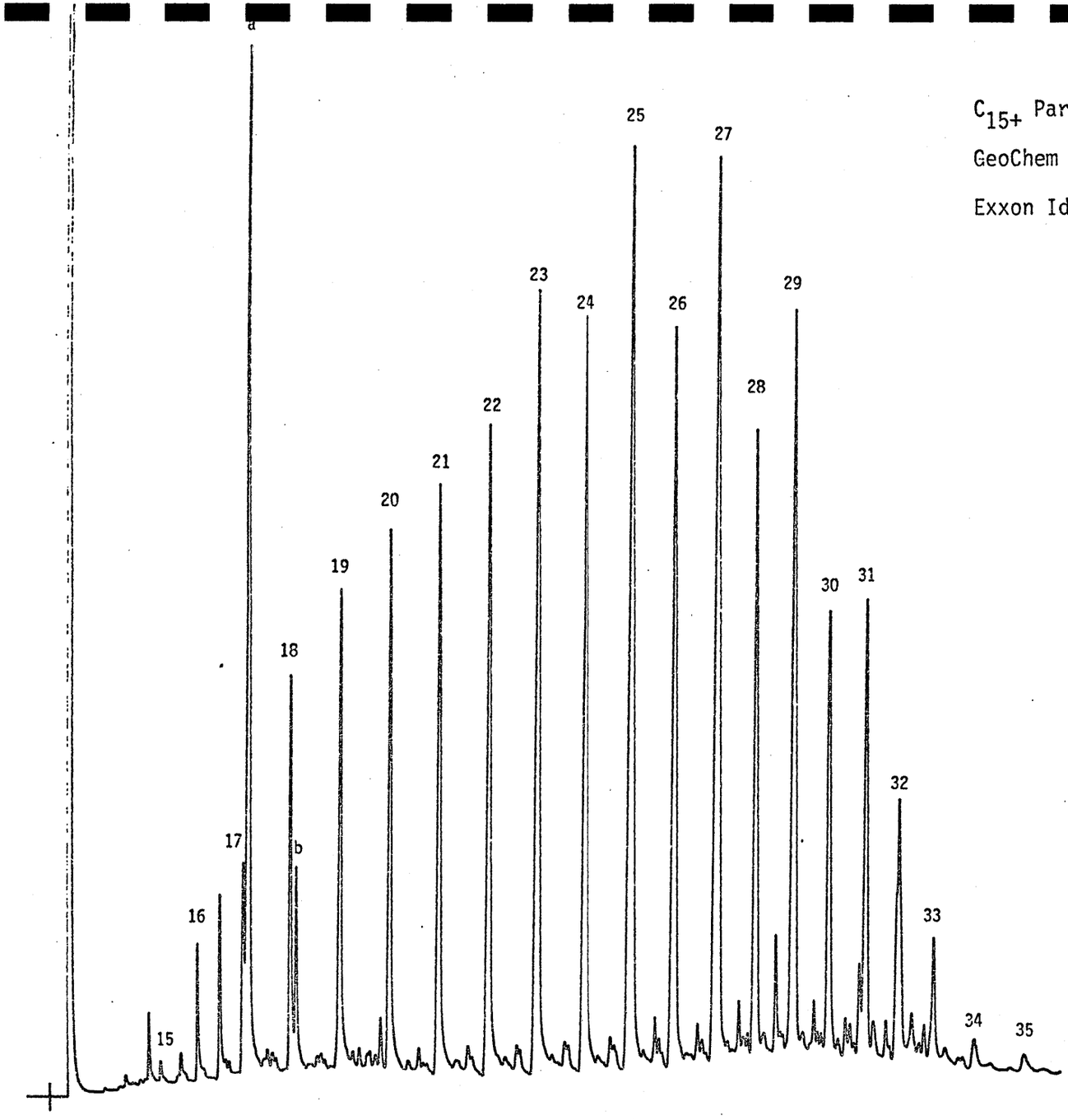


FIGURE 6: TARWHINE - 1, 1625 - 1640m - LATROBE GROUP



C_{15+} Paraffin-Naphthene Hydrocarbon

GeoChem Sample No. E512-008

Exxon Identification No. 72359-0

FIGURE 7: TARWHINE-1, 2520-2535m - LATROBE GROUP

C_{15+} Paraffin-Naphthene Hydrocarbon

GeoChem Sample No. E512-007

Exxon Identification No. 72339-W

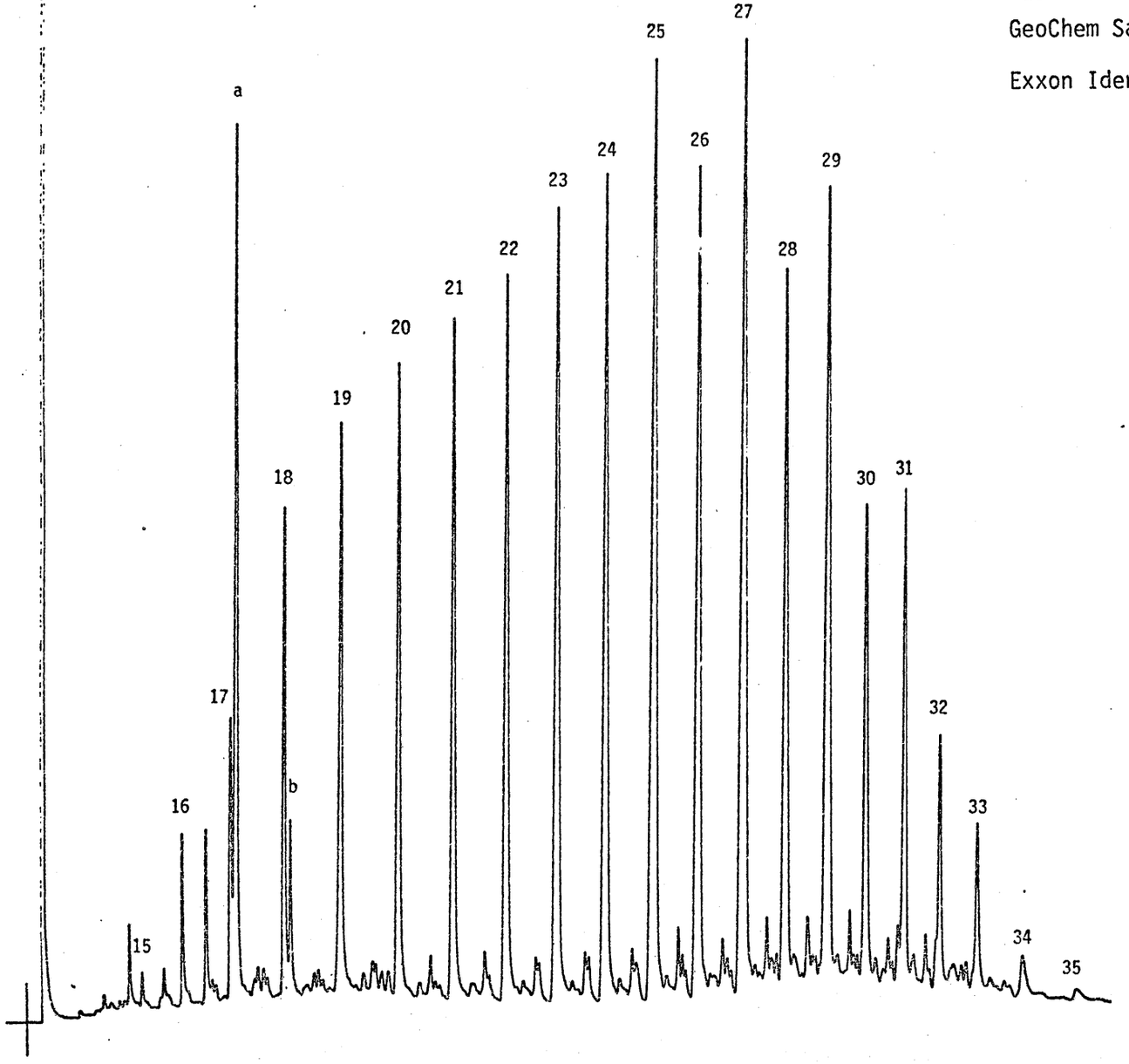


FIGURE 8: TARWHINE-1 2925-2940m - LATROBE GROUP

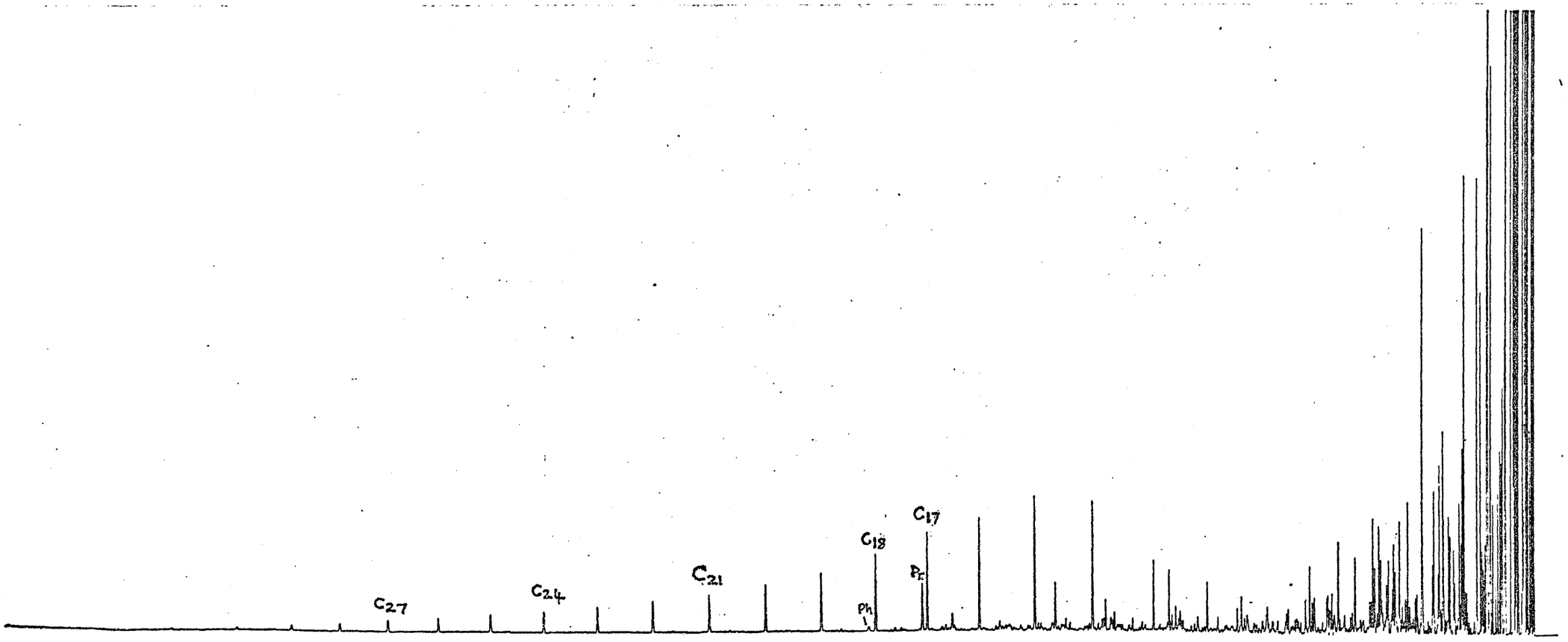


FIGURE 9 : WHOLE OIL CHROMATOGRAM - RFT NO. 4, 1387.7m , TARWHINE-1

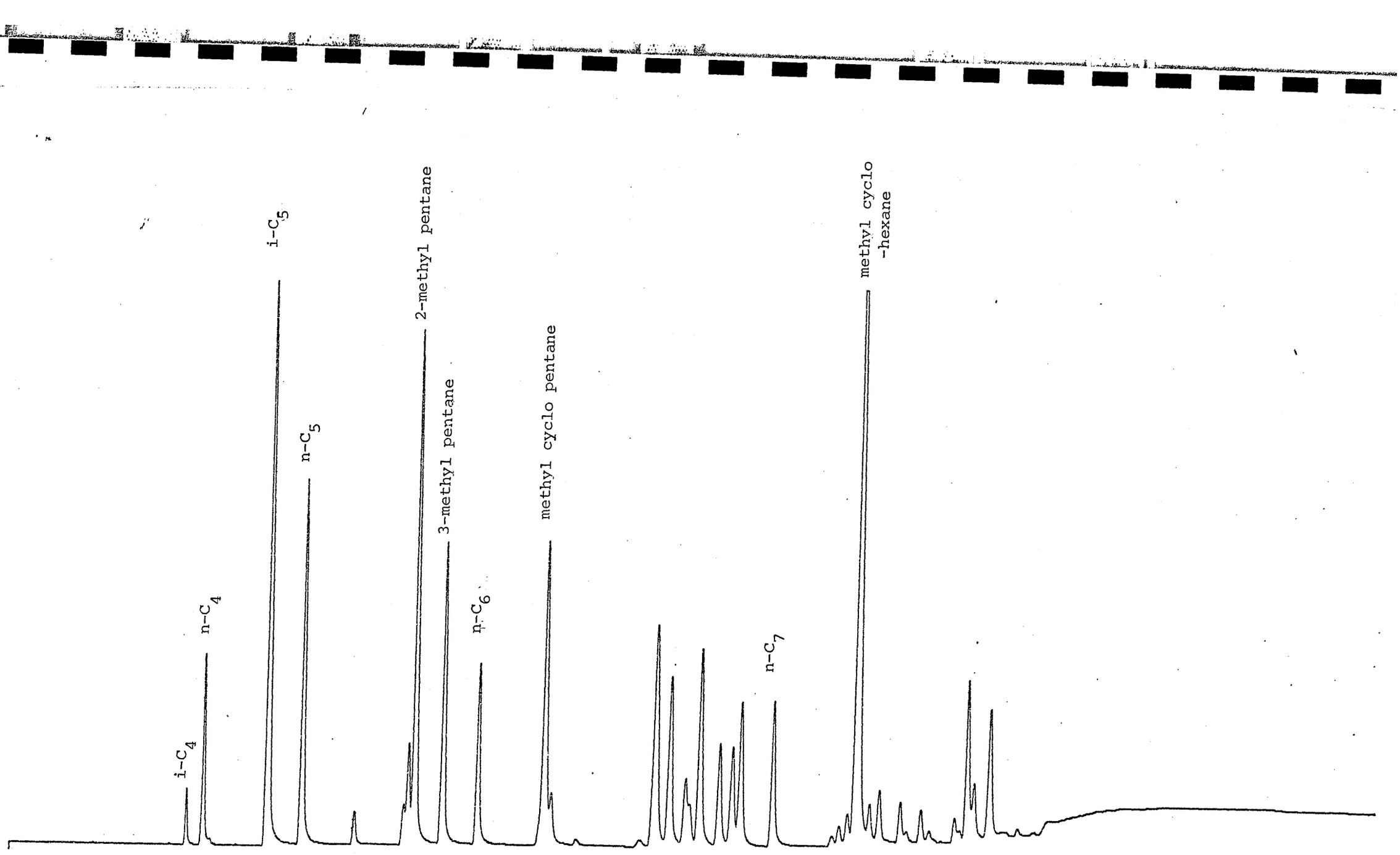


FIGURE 10 C_{4-7} GASOLINE RANGE CHROMATOGRAM: RET NO. 4; 1387.7m, TARWHINE-1.

APPENDIX 1

APPENDIX-1

24 MAR 82

72334Q AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1355 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	5.0	0.41
ETHANE	0.0		1T2-DMCP	4.5	0.37
PROPANE	57.8		3-EPENT	0.0	0.00
IBUTANE	109.7	9.02	224-TMP	0.0	0.00
NBUTANE	213.9	17.58	NHEPTANE	26.4	2.17
IPENTANE	247.6	20.34	1C2-DMCP	0.0	0.00
NPENTANE	195.9	16.09	MCH	20.2	1.66
22-DMB	4.3	0.36			
CPENTANE	5.2	0.42			
23-DMB	16.8	1.38			
2-MP	101.2	8.31			
3-MP	49.1	4.03			
NHEXANE	81.0	6.66			
MCP	69.5	5.71			
22-DMP	0.0	0.00			
24-DMP	1.9	0.16			
223-TMB	0.0	0.00			
CHEXANE	36.6	3.00			
33-DMP ,	0.0	0.00			
11-DMCP	10.7	0.88			
2-MHEX ,	0.0	0.00			
23-DMP ,	8.2	0.67			
3-MHEX ,	9.6	0.79			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1275.		C1/C2	0.85
GASOLINE	1217.		A /D2	11.21
NAPHTHENES	152.	12.46	C1/D2	7.05
C6-7	274.	22.48	CH/MCP	0.53
			PENT/IPENT,	0.79

	PPB	NORM PERCENT
MCP	69.5	55.1
CH	36.6	28.9
MCH	20.2	16.0
TOTAL	126.3	100.0

PARAFFIN INDEX 1	2.136
PARAFFIN INDEX 2	21.764

24 MAR 82

72334R AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1370 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	6.2	1.21
ETHANE	0.0		1T2-DMCP	10.0	1.97
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	19.3	3.79	224-TMP	0.0	0.00
NBUTANE	40.4	7.91	NHEPTANE	41.1	8.06
IPENTANE	63.5	12.45	1C2-DMCP	0.0	0.00
NPENTANE	68.1	13.36	MCH	49.9	9.78
22-DMB	2.4	0.46			
CPENTANE	3.9	0.76			
23-DMB	6.2	1.22			
2-MP	38.5	7.54			
3-MP	20.4	4.01			
NHEXANE	40.1	7.86			
MCP	35.3	6.93			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	21.8	4.28			
33-DMP ,	0.0	0.00			
11-DMCP	16.3	3.19			
2-MHEX ,	0.0	0.00			
23-DMP ,	7.0	1.37			
3-MHEX ,	12.3	2.41			
1C3-DMCP	7.4	1.45			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	510.		C1/C2	1.49
GASOLINE	510.		A /D2	6.59
NAPHTHENES	151.	29.56	C1/D2	7.14
C6-7	247.	48.50	CH/MCP	0.62
			PENT/IPENT,	1.07

	PPB	NORM PERCENT
MCP	35.3	33.0
CH	21.8	20.4
MCH	49.9	46.6
TOTAL	107.0	100.0

PARAFFIN INDEX 1	1.213
PARAFFIN INDEX 2	23.912

24 MAR 82

72334T AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1400 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	1929.1	1.19
ETHANE	2672.4		1T2-DMCP	1782.5	1.10
PROPANE	30888.7		3-EPENT	0.0	0.00
IBUTANE	27014.3	16.72	224-TMP	0.0	0.00
NBUTANE	30386.2	18.81	NHEPTANE	3768.2	2.33
IPENTANE	24837.9	15.38	1C2-DMCP	380.2	0.24
NPENTANE	17194.8	10.64	MCH	4805.8	2.97
22-DMB	215.2	0.13			
CPENTANE	4188.6	2.59			
23-DMB	1410.1	0.87			
2-MP	7366.3	4.56			
3-MP	3380.1	2.09			
NHEXANE	5640.0	3.49			
MCP	15216.9	9.42			
22-DMP	0.0	0.00			
24-DMP	97.4	0.06			
223-TMB	13.6	0.01			
CHEXANE	6040.7	3.74			
33-DMP ,	0.0	0.00			
11-DMCP	945.5	0.59			
2-MHEX ,	0.0	0.00			
23-DMP ,	1131.9	0.70			
3-MHEX ,	1288.8	0.80			
1C3-DMCP	2508.7	1.55			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS		
ALL COMP	195104.		C1/C2	0.54	
GASOLINE	161543.		A /D2	7.30	
NAPHTHENES	37798.	23.40	C1/D2	9.15	
C6-7	45549.	28.20	CH/MCP	0.40	
			PENT/IPENT,		0.69

	PPB	NORM PERCENT
MCP	15216.9	58.4
CH	6040.7	23.2
MCH	4805.8	18.4
TOTAL	26063.4	100.0

PARAFFIN INDEX 1	0.359
PARAFFIN INDEX 2	15.570

24 MAR 82

72335D AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1460 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	17.3	1.25
ETHANE	0.0		1T2-DMCP	24.0	1.74
PROPANE	44.0		3-EPENT	0.0	0.00
IBUTANE	65.3	4.72	224-TMP	0.0	0.00
NBUTANE	133.2	9.64	NHEPTANE	56.2	4.06
IPENTANE	200.5	14.51	1C2-DMCP	0.0	0.00
NPENTANE	179.8	13.01	MCH	107.8	7.80
22-DMB	7.1	0.51			
CPENTANE	15.0	1.08			
23-DMB	22.9	1.66			
2-MP	108.4	7.84			
3-MP	65.6	4.75			
NHEXANE	87.9	6.36			
MCP	134.7	9.75			
22-DMP	0.0	0.00			
24-DMP	2.4	0.18			
223-TMB	0.0	0.00			
CHEXANE	77.8	5.63			
33-DMP ,	0.0	0.00			
11-DMCP	18.6	1.35			
2-MHEX ,	0.0	0.00			
23-DMP ,	16.2	1.17			
3-MHEX ,	22.1	1.60			
1C3-DMCP	18.9	1.37			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1426.		C1/C2	1.05
GASOLINE	1382.		A /D2	6.52
NAPHTHENES	414.	29.97	C1/D2	9.23
C6-7	584.	42.27	CH/MCP	0.58
			PENT/IPENT,	0.90

	PPB	NORM PERCENT
MCP	134.7	42.1
CH	77.8	24.3
MCH	107.8	33.6
TOTAL	320.3	100.0

PARAFFIN INDEX 1	0.676
PARAFFIN INDEX 2	15.646

24 MAR 82

72335F AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1490 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	8.1	0.78
ETHANE	0.0		1T2-DMCP	12.8	1.22
PROPANE	36.6		3-EPENT	0.0	0.00
IBUTANE	119.5	11.43	224-TMP	0.0	0.00
NBUTANE	116.2	11.12	NHEPTANE	26.3	2.52
IPENTANE	136.7	13.08	1C2-DMCP	0.0	0.00
NPENTANE	134.4	12.86	MCH	68.1	6.52
22-DMB	5.5	0.52			
CPENTANE	10.3	0.99			
23-DMB	17.9	1.71			
2-MP	91.3	8.74			
3-MP	54.4	5.21			
NHEXANE	62.7	6.00			
MCP	73.3	7.01			
22-DMP	0.0	0.00			
24-DMP	3.4	0.33			
223-TMB	0.0	0.00			
CHEXANE	43.1	4.12			
33-DMP ,	0.0	0.00			
11-DMCP	16.1	1.54			
2-MHEX ,	0.0	0.00			
23-DMP ,	13.1	1.25			
3-MHEX ,	19.8	1.89			
1C3-DMCP	12.1	1.16			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1082.		C1/C2	1.20
GASOLINE	1045.		A /D2	4.50
NAPHTHENES	244.	23.34	C1/D2	6.44
C6-7	359.	34.34	CH/MCP	0.59
			PENT/IPENT,	0.98

	PPB	NORM PERCENT
MCP	73.3	39.7
CH	43.1	23.4
MCH	68.1	36.9
TOTAL	184.5	100.0

PARAFFIN INDEX 1	1.088
PARAFFIN INDEX 2	11.984

24 MAR 82

72335H AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1520 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	252.0	2.42
ETHANE	0.0		1T2-DMCP	218.9	2.11
PROPANE	190.8		3-EPENT	0.0	0.00
IBUTANE	599.8	5.77	224-TMP	0.0	0.00
NBUTANE	709.9	6.83	NHEPTANE	313.2	3.01
IPENTANE	1099.3	10.57	1C2-DMCP	30.9	0.30
NPENTANE	841.9	8.10	MCH	1351.2	13.00
22-DMB	50.3	0.48			
CPENTANE	60.9	0.59			
23-DMB	163.6	1.57			
2-MP	1059.8	10.19			
3-MP	572.3	5.50			
NHEXANE	508.6	4.89			
MCP	800.8	7.70			
22-DMP	0.0	0.00			
24-DMP	56.8	0.55			
223-TMB	9.3	0.09			
CHEXANE	580.0	5.58			
33-DMP ,	0.0	0.00			
11-DMCP	370.6	3.56			
2-MHEX ,	0.0	0.00			
23-DMP ,	185.0	1.78			
3-MHEX ,	351.3	3.38			
1C3-DMCP	210.6	2.03			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	10588.		C1/C2	1.52
GASOLINE	10397.		A /D2	2.34
NAPHTHENES	3876.	37.28	C1/D2	6.55
C6-7	5239.	50.39	CH/MCP	0.72
			PENT/IPENT,	0.77

	PPB	NORM PERCENT
MCP	800.8	29.3
CH	580.0	21.2
MCH	1351.2	49.5
TOTAL	2732.0	100.0

PARAFFIN INDEX 1	1.059
PARAFFIN INDEX 2	8.171

24 MAR 82

72335J AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1550 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	5.4	0.73
ETHANE	0.0		1T2-DMCP	9.3	1.25
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	29.6	3.99	224-TMP	0.0	0.00
NBUTANE	51.7	6.95	NHEPTANE	120.8	16.25
IPENTANE	60.0	8.08	1C2-DMCP	0.0	0.00
NPENTANE	81.4	10.95	MCH	75.8	10.20
22-DMB	1.0	0.13			
CPENTANE	2.1	0.29			
23-DMB	7.0	0.94			
2-MP	69.5	9.35			
3-MP	27.1	3.64			
NHEXANE	77.6	10.44			
MCP	35.8	4.82			
22-DMP	0.0	0.00			
24-DMP	3.0	0.40			
223-TMB	0.0	0.00			
CHEXANE	19.8	2.67			
33-DMP ,	0.0	0.00			
11-DMCP	21.9	2.94			
2-MHEX ,	0.0	0.00			
23-DMP ,	16.7	2.25			
3-MHEX ,	20.5	2.76			
1C3-DMCP	7.3	0.98			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	743.		C1/C2	2.04
GASOLINE	743.		A /D2	9.67
NAPHTHENES	177.	23.88	C1/D2	5.73
C6-7	414.	55.69	CH/MCP	0.55
			PENT/IPENT,	1.36

	PPB	NORM PERCENT
MCP	35.8	27.2
CH	19.8	15.1
MCH	75.8	57.7
TOTAL	131.4	100.0

PARAFFIN INDEX 1	1.931
PARAFFIN INDEX 2	40.599

24 MAR 82

72335L AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1580 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	1.1	0.12
ETHANE	0.0		1T2-DMCP	2.1	0.24
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	131.3	14.66	224-TMP	0.0	0.00
NBUTANE	175.6	19.61	NHEPTANE	82.5	9.22
IPENTANE	104.0	11.61	1C2-DMCP	0.0	0.00
NPENTANE	113.5	12.68	MCH	22.1	2.47
22-DMB	0.0	0.00			
CPENTANE	16.2	1.81			
23-DMB	8.2	0.92			
2-MP	61.6	6.88			
3-MP	13.8	1.54			
NHEXANE	75.5	8.43			
MCP	45.6	5.09			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	14.4	1.61			
33-DMP ,	0.0	0.00			
11-DMCP	8.6	0.96			
2-MHEX ,	0.0	0.00			
23-DMP ,	10.3	1.15			
3-MHEX ,	6.0	0.67			
1C3-DMCP	3.1	0.35			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	896.		C1/C2	0.87
GASOLINE	896.		A /D2	26.32
NAPHTHENES	113.	12.64	C1/D2	7.52
C6-7	271.	30.30	CH/MCP	0.32
			PENT/IPENT,	1.09

	PPB	NORM PERCENT
MCP	45.6	55.5
CH	14.4	17.6
MCH	22.1	26.9
TOTAL	82.1	100.0

PARAFFIN INDEX 1	2.313
PARAFFIN INDEX 2	54.924

24 MAR 82

72335N AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1610 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	55.4	12.35	224-TMP	0.0	0.00
NBUTANE	64.3	14.33	NHEPTANE	0.0	0.00
IPENTANE	113.0	25.19	1C2-DMCP	0.0	0.00
NPENTANE	85.0	18.94	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	3.6	0.80			
23-DMB	4.2	0.93			
2-MP	46.1	10.27			
3-MP	12.0	2.68			
NHEXANE	55.3	12.32			
MCP	9.8	2.19			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	0.0	0.00			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	0.0	0.00			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	449.		C1/C2	0.00
GASOLINE	449.		A /D2	999.99
NAPHTHENES	13.	2.98	C1/D2	999.99
C6-7	65.	14.50	CH/MCP	0.00
			PENT/IPENT,	0.75

	PPB	NORM PERCENT
MCP	9.8	100.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	9.8	100.0

PARAFFIN INDEX 1	0.000
PARAFFIN INDEX 2	0.000

24 MAR 82

72335P AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1640 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	1982.3	0.89
ETHANE	0.0		1T2-DMCP	3180.4	1.44
PROPANE	25080.8		3-EPENT	0.0	0.00
IBUTANE	23830.9	10.75	224-TMP	0.0	0.00
NBUTANE	31790.6	14.34	NHEPTANE	9450.3	4.26
IPENTANE	34383.5	15.51	1C2-DMCP	250.7	0.11
NPENTANE	24645.7	11.12	MCH	13416.1	6.05
22-DMB	82.9	0.04			
CPENTANE	3411.7	1.54			
23-DMB	2690.7	1.21			
2-MP	14806.5	6.68			
3-MP	6174.5	2.79			
NHEXANE	12812.6	5.78			
MCP	16792.9	7.58			
22-DMP	0.0	0.00			
24-DMP	299.3	0.14			
223-TMB	76.0	0.03			
CHEXANE	12056.0	5.44			
33-DMP ,	0.0	0.00			
11-DMCP	2414.4	1.09			
2-MHEX ,	0.0	0.00			
23-DMP ,	2188.0	0.99			
3-MHEX ,	2515.5	1.14			
1C3-DMCP	2373.9	1.07			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	246706.		C1/C2	1.13
GASOLINE	221625.		A /D2	8.85
NAPHTHENES	55879.	25.21	C1/D2	11.09
C6-7	79809.	36.01	CH/MCP	0.72
			PENT/IPENT,	0.72

	PPB	NORM PERCENT
MCP	16792.9	39.7
CH	12056.0	28.5
MCH	13416.1	31.7
TOTAL	42265.0	100.0

PARAFFIN INDEX 1	0.654
PARAFFIN INDEX 2	19.062

24 MAR 82

72335R AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1670 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	21.2	1.34
ETHANE	0.0		1T2-DMCP	34.0	2.15
PROPANE	54.7		3-EPENT	0.0	0.00
IBUTANE	40.5	2.57	224-TMP	0.0	0.00
NBUTANE	88.5	5.61	NHEPTANE	218.3	13.83
IPENTANE	143.4	9.09	1C2-DMCP	0.0	0.00
NPENTANE	150.4	9.53	MCH	173.2	10.98
22-DMB	4.2	0.26			
CPENTANE	13.7	0.87			
23-DMB	19.5	1.23			
2-MP	116.6	7.39			
3-MP	54.0	3.42			
NHEXANE	150.6	9.54			
MCP	120.5	7.63			
22-DMP	0.0	0.00			
24-DMP	5.2	0.33			
223-TMB	0.0	0.00			
CHEXANE	74.2	4.70			
33-DMP ,	0.0	0.00			
11-DMCP	59.5	3.77			
2-MHEX ,	0.0	0.00			
23-DMP ,	25.1	1.59			
3-MHEX ,	46.4	2.94			
1C3-DMCP	19.3	1.22			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1633.		C1/C2	1.57
GASOLINE	1578.		A /D2	7.96
NAPHTHENES	516.	32.67	C1/D2	6.62
C6-7	947.	60.03	CH/MCP	0.62
			PENT/IPENT,	1.05

	PPB	NORM PERCENT
MCP	120.5	32.7
CH	74.2	20.2
MCH	173.2	47.1
TOTAL	367.9	100.0

PARAFFIN INDEX 1	1.421
PARAFFIN INDEX 2	32.525

24 MAR 82

72335T AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1700 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	140.1	0.53
ETHANE	0.0		1T2-DMCP	288.0	1.10
PROPANE	861.2		3-EPENT	0.0	0.00
IBUTANE	1365.6	5.20	224-TMP	0.0	0.00
NBUTANE	3167.0	12.06	NHEPTANE	574.0	2.19
IPENTANE	4152.8	15.81	1C2-DMCP	7.8	0.03
NPENTANE	4265.3	16.24	MCH	346.6	1.32
22-DMB	155.0	0.59			
CPENTANE	241.9	0.92			
23-DMB	396.6	1.51			
2-MP	2974.7	11.33			
3-MP	1405.3	5.35			
NHEXANE	3120.5	11.88			
MCP	1639.6	6.24			
22-DMP	0.0	0.00			
24-DMP	100.2	0.38			
223-TMB	17.6	0.07			
CHEXANE	544.1	2.07			
33-DMP ,	0.0	0.00			
11-DMCP	507.9	1.93			
2-MHEX ,	0.0	0.00			
23-DMP ,	197.5	0.75			
3-MHEX ,	499.2	1.90			
1C3-DMCP	154.0	0.59			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	27122.		C1/C2	0.63
GASOLINE	26261.		A /D2	7.40
NAPHTHENES	3870.	14.74	C1/D2	2.80
C6-7	8137.	30.98	CH/MCP	0.33
			PENT/IPENT,	1.03

	PPB	NORM PERCENT
MCP	1639.6	64.8
CH	544.1	21.5
MCH	346.6	13.7
TOTAL	2530.3	100.0

PARAFFIN INDEX 1	1.730
PARAFFIN INDEX 2	17.653

24 MAR 82

72336B AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1730 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	7.4	0.94
ETHANE	0.0		1T2-DMCP	12.4	1.57
PROPANE	49.6		3-EPENT	0.0	0.00
IBUTANE	33.2	4.20	224-TMP	0.0	0.00
NBUTANE	82.2	10.40	NHEPTANE	57.0	7.22
IPENTANE	80.9	10.25	1C2-DMCP	0.0	0.00
NPENTANE	95.2	12.05	MCH	64.2	8.13
22-DMB	1.9	0.24			
CPENTANE	7.5	0.95			
23-DMB	9.3	1.18			
2-MP	66.8	8.46			
3-MP	35.6	4.50			
NHEXANE	83.1	10.52			
MCP	66.7	8.44			
22-DMP	0.0	0.00			
24-DMP	1.6	0.20			
223-TMB	0.0	0.00			
CHEXANE	32.0	4.05			
33-DMP ,	0.0	0.00			
11-DMCP	15.7	1.99			
2-MHEX ,	0.0	0.00			
23-DMP ,	11.6	1.47			
3-MHEX ,	16.2	2.05			
1C3-DMCP	9.3	1.18			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	840.		C1/C2	1.17
GASOLINE	790.		A /D2	8.66
NAPHTHENES	215.	27.25	C1/D2	6.92
C6-7	377.	47.76	CH/MCP	0.48
			PENT/IPENT,	1.18

	PPB	NORM PERCENT
MCP	66.7	40.9
CH	32.0	19.6
MCH	64.2	39.4
TOTAL	162.9	100.0

PARAFFIN INDEX 1	1.094
PARAFFIN INDEX 2	25.229

24 MAR 82

72336D AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1760 METERS

	TOTAL PPB	NORM PERCENT
METHANE	0.0	
ETHANE	0.0	
PROPANE	6080.8	
IBUTANE	8612.3	2.70
NBUTANE	14633.8	4.58
IPENTANE	20556.5	6.44
NPENTANE	20802.7	6.51
22-DMB	550.2	0.17
CPENTANE	3493.0	1.09
23-DMB	2568.0	0.80
2-MP	20801.2	6.51
3-MP	10228.1	3.20
NHEXANE	34989.6	10.96
MCP	28936.2	9.06
22-DMP	0.0	0.00
24-DMP	945.4	0.30
223-TMB	120.8	0.04
CHEXANE	15720.6	4.92
33-DMP ,	0.0	0.00
11-DMCP	10713.0	3.35
2-MHEX ,	0.0	0.00
23-DMP ,	5040.3	1.58
3-MHEX ,	10432.5	3.27
1C3-DMCP	5789.7	1.81
1T3-DMCP	5576.1	1.75
1T2-DMCP	8866.2	2.78
3-EPENT	0.0	0.00
224-TMP	0.0	0.00
NHEPTANE	44716.1	14.00
1C2-DMCP	1566.4	0.49
MCH	43690.1	13.68

	TOTALS PPB	NORM PERCENT
ALL COMP	325429.	
GASOLINE	319349.	
NAPHTHENES	124351.	38.94
C6-7	217103.	67.98

SIG COMP RATIOS

C1/C2	1.38
A /D2	7.64
C1/D2	6.72
CH/MCP	0.54
PENT/IPENT,	1.01

	PPB	NORM PERCENT
MCP	28936.2	32.8
CH	15720.6	17.8
MCH	43690.1	49.5
TOTAL	88346.9	100.0

PARAFFIN INDEX 1	1.045
PARAFFIN INDEX 2	29.703

24 MAR 82

72336F AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1790 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	89.6	1.81
ETHANE	0.0		1T2-DMCP	86.3	1.74
PROPANE	194.2		3-EPENT	0.0	0.00
IBUTANE	280.1	5.66	224-TMP	0.0	0.00
NBUTANE	418.7	8.46	NHEPTANE	505.6	10.21
IPENTANE	442.9	8.94	1C2-DMCP	9.8	0.20
NPENTANE	406.7	8.21	MCH	611.6	12.35
22-DMB	10.9	0.22			
CPENTANE	57.9	1.17			
23-DMB	43.2	0.87			
2-MP	319.7	6.46			
3-MP	168.1	3.40			
NHEXANE	471.2	9.52			
MCP	373.7	7.55			
22-DMP	0.0	0.00			
24-DMP	18.4	0.37			
223-TMB	0.0	0.00			
CHEXANE	179.9	3.63			
33-DMP ,	0.0	0.00			
11-DMCP	167.6	3.38			
2-MHEX ,	0.0	0.00			
23-DMP ,	57.4	1.16			
3-MHEX ,	160.1	3.23			
1C3-DMCP	72.3	1.46			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	5146.		C1/C2	1.52
GASOLINE	4952.		A /D2	6.10
NAPHTHENES	1649.	33.30	C1/D2	5.99
C6-7	2803.	56.62	CH/MCP	0.48
			PENT/IPENT,	0.92

	PPB	NORM PERCENT
MCP	373.7	32.1
CH	179.9	15.4
MCH	611.6	52.5
TOTAL	1165.2	100.0

PARAFFIN INDEX 1	1.320
PARAFFIN INDEX 2	24.191

24 MAR 82

72336H AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1820 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	10.8	1.37
ETHANE	0.0		1T2-DMCP	33.4	2.44
PROPANE	29.2		3-EPENT	0.0	0.00
IBUTANE	6.5	0.48	224-TMP	0.0	0.00
NBUTANE	18.1	1.32	NHEPTANE	291.1	21.20
IPENTANE	38.3	2.79	1C2-DMCP	2.2	0.16
NPENTANE	60.3	4.39	MCH	277.6	20.22
22-DMB	3.6	0.27			
CPENTANE	3.0	0.22			
23-DMB	11.9	0.86			
2-MP	104.0	7.57			
3-MP	52.1	3.79			
NHEXANE	173.1	12.61			
MCP	67.3	4.90			
22-DMP	0.0	0.00			
24-DMP	10.8	0.79			
223-TMB	0.0	0.00			
CHEXANE	35.0	2.55			
33-DMP ,	3.2	0.23			
11-DMCP	101.9	7.42			
2-MHEX ,	0.0	0.00			
23-DMP ,	28.5	2.08			
3-MHEX ,	8.0	0.58			
1C3-DMCP	24.2	1.77			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1402.		C1/C2	2.86
GASOLINE	1373.		A /D2	58.17
NAPHTHENES	563.	41.04	C1/D2	52.35
C6-7	1075.	78.32	CH/MCP	0.52
			PENT/IPENT,	1.57

	PPB	NORM PERCENT
MCP	67.3	17.7
CH	35.0	9.2
MCH	277.6	73.1
TOTAL	379.9	100.0

PARAFFIN INDEX 1	1.437
PARAFFIN INDEX 2	35.423

24 MAR 82

72336J AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1850 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	58.1	1.73
ETHANE	0.0		1T2-DMCP	58.7	1.74
PROPANE	0.0		3-EPENT	0.0	0.00
IBUTANE	111.1	3.30	224-TMP	0.0	0.00
NBUTANE	203.4	6.04	NHEPTANE	423.8	12.60
IPENTANE	235.2	6.99	1C2-DMCP	7.2	0.21
NPENTANE	284.9	8.47	MCH	466.7	13.87
22-DMB	7.3	0.22			
CPENTANE	25.3	0.75			
23-DMB	27.7	0.82			
2-MP	234.8	6.98			
3-MP	116.5	3.46			
NHEXANE	403.3	11.99			
MCP	207.7	6.17			
22-DMP	0.0	0.00			
24-DMP	15.5	0.46			
223-TMB	0.0	0.00			
CHEXANE	110.8	3.29			
33-DMP ,	1.4	0.04			
11-DMCP	154.4	4.59			
2-MHEX ,	0.0	0.00			
23-DMP ,	40.7	1.21			
3-MHEX ,	124.3	3.70			
1C3-DMCP	45.8	1.36			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	3365.		C1/C2	1.94
GASOLINE	3365.		A /D2	6.65
NAPHTHENES	1135.	33.72	C1/D2	5.90
C6-7	2118.	62.96	CH/MCP	0.53
			PENT/IPENT,	1.21

	PPB	NORM PERCENT
MCP	207.7	26.5
CH	110.8	14.1
MCH	466.7	59.4
TOTAL	785.2	100.0

PARAFFIN INDEX 1	1.714
PARAFFIN INDEX 2	28.544

24 MAR 82

72336L AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1880 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	4.4	1.51
PROPANE	23.9		3-EPENT	0.0	0.00
IBUTANE	6.1	2.09	224-TMP	0.0	0.00
NBUTANE	17.0	5.85	NHEPTANE	37.7	12.95
IPENTANE	14.8	5.09	1C2-DMCP	0.0	0.00
NPENTANE	33.7	11.60	MCH	56.5	19.40
22-DMB	0.0	0.00			
CPENTANE	0.6	0.21			
23-DMB	2.4	0.81			
2-MP	21.7	7.47			
3-MP	11.9	4.07			
NHEXANE	37.1	12.74			
MCP	15.7	5.38			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	10.5	3.60			
33-DMP ,	0.0	0.00			
11-DMCP	9.7	3.34			
2-MHEX ,	0.0	0.00			
23-DMP ,	2.8	0.97			
3-MHEX ,	8.4	2.90			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	315.		C1/C2	3.82
GASOLINE	291.		A /D2	8.86
NAPHTHENES	97.	33.46	C1/D2	9.09
C6-7	183.	62.81	CH/MCP	0.67
			PENT/IPENT,	2.28

	PPB	NORM PERCENT
MCP	15.7	19.0
CH	10.5	12.7
MCH	56.5	68.4
TOTAL	82.7	100.0

PARAFFIN INDEX 1	4.121
PARAFFIN INDEX 2	28.979

24 MAR 82

72336N AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1910 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	8.2	3.36
PROPANE	17.1		3-EPENT	0.0	0.00
IBUTANE	0.0	0.00	224-TMP	0.0	0.00
NBUTANE	0.0	0.00	NHEPTANE	50.0	20.48
IPENTANE	0.0	0.00	1C2-DMCP	0.0	0.00
NPENTANE	8.4	3.42	MCH	83.1	34.02
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	6.8	2.80			
3-MP	7.2	2.96			
NHEXANE	36.3	14.85			
MCP	12.5	5.14			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	11.2	4.61			
33-DMP ,	0.0	0.00			
11-DMCP	9.8	4.01			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	10.6	4.36			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	261.		C1/C2	5.02
GASOLINE	244.		A /D2	8.11
NAPHTHENES	125.	51.14	C1/D2	9.79
C6-7	222.	90.82	CH/MCP	0.90
			PENT/IPENT,	999.99

	PPB	NORM PERCENT
MCP	12.5	11.7
CH	11.2	10.5
MCH	83.1	77.7
TOTAL	106.8	100.0

PARAFFIN INDEX 1	2.491
PARAFFIN INDEX 2	28.913

24 MAR 82

72336P AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1940 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	37.8	1.01
ETHANE	0.0		1T2-DMCP	72.2	1.93
PROPANE	84.2		3-EPENT	0.0	0.00
IBUTANE	142.5	3.81	224-TMP	0.0	0.00
NBUTANE	322.2	8.62	NHEPTANE	245.4	6.56
IPENTANE	416.2	11.13	1C2-DMCP	4.4	0.12
NPENTANE	536.3	14.34	MCH	356.8	9.54
22-DMB	11.2	0.30			
CPENTANE	41.0	1.10			
23-DMB	36.3	0.97			
2-MP	283.8	7.59			
3-MP	147.2	3.94			
NHEXANE	372.1	9.95			
MCP	301.5	8.06			
22-DMP	0.0	0.00			
24-DMP	9.0	0.24			
223-TMB	0.0	0.00			
CHEXANE	157.5	4.21			
33-DMP ,	0.0	0.00			
11-DMCP	95.7	2.56			
2-MHEX ,	0.0	0.00			
23-DMP ,	34.6	0.92			
3-MHEX ,	76.8	2.05			
1C3-DMCP	38.5	1.03			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	3823.		C1/C2	1.34
GASOLINE	3739.		A /D2	8.04
NAPHTHENES	1105.	29.57	C1/D2	7.94
C6-7	1802.	48.21	CH/MCP	0.52
			PENT/IPENT,	1.29

	PPB	NORM PERCENT
MCP	301.5	37.0
CH	157.5	19.3
MCH	356.8	43.7
TOTAL	815.8	100.0

PARAFFIN INDEX 1	1.161
PARAFFIN INDEX 2	22.002

24 MAR 82

72336R AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 1970 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	20.3	0.97
ETHANE	0.0		1T2-DMCP	39.7	1.90
PROPANE	22.6		3-EPENT	0.0	0.00
IBUTANE	9.0	0.43	224-TMP	0.0	0.00
NBUTANE	33.2	1.59	NHEPTANE	232.3	11.15
IPENTANE	107.1	5.14	1C2-DMCP	0.0	0.00
NPENTANE	185.7	8.91	MCH	276.7	13.28
22-DMB	8.8	0.42			
CPENTANE	1.4	0.07			
23-DMB	23.8	1.14			
2-MP	239.0	11.47			
3-MP	112.9	5.42			
NHEXANE	385.4	18.50			
MCP	118.6	5.69			
22-DMP	0.0	0.00			
24-DMP	12.8	0.61			
223-TMB	0.0	0.00			
CHEXANE	49.9	2.39			
33-DMP ,	0.5	0.02			
11-DMCP	100.5	4.82			
2-MHEX ,	0.0	0.00			
23-DMP ,	27.4	1.31			
3-MHEX ,	69.1	3.32			
1C3-DMCP	29.8	1.43			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	2106.		C1/C2	2.05
GASOLINE	2084.		A /D2	8.94
NAPHTHENES	637.	30.56	C1/D2	6.19
C6-7	1363.	65.40	CH/MCP	0.42
			PENT/IPENT,	1.73

	PPB	NORM PERCENT
MCP	118.6	26.6
CH	49.9	11.2
MCH	276.7	62.2
TOTAL	445.2	100.0

PARAFFIN INDEX 1	1.889
PARAFFIN INDEX 2	27.454

24 MAR 82

72336T AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2000 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	449.0		1T3-DMCP	266.2	0.32
ETHANE	2804.3		1T2-DMCP	384.9	0.47
PROPANE	20134.8		3-EPENT	0.0	0.00
IBUTANE	15160.3	18.40	224-TMP	0.0	0.00
NBUTANE	15630.8	18.97	NHEPTANE	618.4	0.75
IPENTANE	13505.5	16.39	1C2-DMCP	13.0	0.02
NPENTANE	10083.0	12.24	MCH	1243.5	1.51
22-DMB	233.7	0.28			
CPENTANE	1482.3	1.80			
23-DMB	865.9	1.05			
2-MP	5570.9	6.76			
3-MP	2320.9	2.82			
NHEXANE	5361.6	6.51			
MCP	5445.5	6.61			
22-DMP	0.0	0.00			
24-DMP	120.9	0.15			
223-TMB	18.5	0.02			
CHEXANE	2587.4	3.14			
33-DMP ,	0.0	0.00			
11-DMCP	394.3	0.48			
2-MHEX ,	0.0	0.00			
23-DMP ,	329.1	0.40			
3-MHEX ,	322.4	0.39			
1C3-DMCP	448.7	0.54			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	105796.		C1/C2	0.64
GASOLINE	82407.		A /D2	18.55
NAPHTHENES	12266.	14.88	C1/D2	13.11
C6-7	17554.	21.30	CH/MCP	0.48
			PENT/IPENT,	0.75

	PPB	NORM PERCENT
MCP	5445.5	58.7
CH	2587.4	27.9
MCH	1243.5	13.4
TOTAL	9276.4	100.0

PARAFFIN INDEX 1	0.652
PARAFFIN INDEX 2	9.377

24 MAR 82

72337B AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2030 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	98.2		3-EPENT	0.0	0.00
IBUTANE	44.8	16.01	224-TMP	0.0	0.00
NBUTANE	89.7	32.07	NHEPTANE	5.2	1.88
IPENTANE	40.2	14.38	1C2-DMCP	0.0	0.00
NPENTANE	22.4	8.02	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	20.5	7.34			
3-MP	12.1	4.32			
NHEXANE	34.7	12.39			
MCP	10.0	3.59			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	0.0	0.00			
33-DMP ,	0.0	0.00			
11-DMCP	0.0	0.00			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	0.0	0.00			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	378.		C1/C2	0.00
GASOLINE	280.		A /D2	999.99
NAPHTHENES	10.	3.59	C1/D2	999.99
C6-7	50.	17.86	CH/MCP	0.00
			PENT/IPENT,	0.56

	PPB	NORM PERCENT
MCP	10.0	100.0
CH	0.0	0.0
MCH	0.0	0.0
TOTAL	10.0	100.0

PARAFFIN INDEX 1	0.000
PARAFFIN INDEX 2	100.000

24 MAR 82

72337H AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2120 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	22.3		3-EPENT	0.0	0.00
IBUTANE	6.3	2.52	224-TMP	0.0	0.00
NBUTANE	21.1	8.41	NHEPTANE	7.6	3.04
IPENTANE	29.5	11.78	1C2-DMCP	0.0	0.00
NPENTANE	45.7	18.25	MCH	0.0	0.00
22-DMB	0.0	0.00			
CPENTANE	2.4	0.94			
23-DMB	4.6	1.85			
2-MP	36.0	14.39			
3-MP	18.8	7.50			
NHEXANE	46.1	18.40			
MCP	22.9	9.14			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	5.5	2.19			
33-DMP	0.0	0.00			
11-DMCP	4.0	1.58			
2-MHEX	0.0	0.00			
23-DMP	0.0	0.00			
3-MHEX	0.0	0.00			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	273.		C1/C2	0.41
GASOLINE	250.		A /D2	999.99
NAPHTHENES	35.	13.85	C1/D2	999.99
C6-7	86.	34.35	CH/MCP	0.24
			PENT/IPENT,	1.55

	PPB	NORM PERCENT
MCP	22.9	80.7
CH	5.5	19.3
MCH	0.0	0.0
TOTAL	28.4	100.0

PARAFFIN INDEX 1	0.000
PARAFFIN INDEX 2	44.570

24 MAR 82

72337J AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2150 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	21.0		3-EPENT	0.0	0.00
IBUTANE	1.3	0.38	224-TMP	0.0	0.00
NBUTANE	13.8	4.04	NHEPTANE	21.3	6.21
IPENTANE	23.1	6.74	1C2-DMCP	0.0	0.00
NPENTANE	46.4	13.55	MCH	10.7	3.13
22-DMB	0.0	0.00			
CPENTANE	1.8	0.53			
23-DMB	4.8	1.40			
2-MP	40.4	11.77			
3-MP	20.1	5.88			
NHEXANE	49.7	14.50			
MCP	24.7	7.21			
22-DMP	0.0	0.00			
24-DMP	1.8	0.53			
223-TMB	0.0	0.00			
CHEXANE	9.1	2.66			
33-DMP ,	0.0	0.00			
11-DMCP	14.1	4.12			
2-MHEX ,	0.0	0.00			
23-DMP ,	48.5	14.15			
3-MHEX ,	11.0	3.22			
1C3-DMCP	0.0	0.00			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS		
ALL COMP	364.		C1/C2	1.38	
GASOLINE	343.		A /D2	6.44	
NAPHTHENES	60.	17.65	C1/D2	3.08	
C6-7	191.	55.72	CH/MCP	0.37	
			PENT/IPENT,		2.01

	PPB	NORM PERCENT
MCP	24.7	55.5
CH	9.1	20.5
MCH	10.7	24.1
TOTAL	44.5	100.0

PARAFFIN INDEX 1	0.000
PARAFFIN INDEX 2	18.549

24 MAR 82

72337L AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2180 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	0.0	0.00
ETHANE	0.0		1T2-DMCP	0.0	0.00
PROPANE	30.2		3-EPENT	0.0	0.00
IBUTANE	4.6	1.73	224-TMP	0.0	0.00
NBUTANE	23.5	8.75	NHEPTANE	29.4	10.96
IPENTANE	15.6	5.80	1C2-DMCP	0.0	0.00
NPENTANE	38.3	14.27	MCH	45.4	16.90
22-DMB	0.0	0.00			
CPENTANE	0.0	0.00			
23-DMB	0.0	0.00			
2-MP	19.4	7.22			
3-MP	14.1	5.24			
NHEXANE	34.8	12.97			
MCP	18.2	6.80			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	9.2	3.43			
33-DMP ,	0.0	0.00			
11-DMCP	9.7	3.62			
2-MHEX ,	0.0	0.00			
23-DMP ,	0.0	0.00			
3-MHEX ,	0.0	0.00			
1C3-DMCP	6.2	2.32			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	299.		C1/C2	2.63
GASOLINE	268.		A /D2	999.99
NAPHTHENES	89.	33.07	C1/D2	999.99
C6-7	153.	56.99	CH/MCP	0.50
			PENT/IPENT,	2.46

	PPB	NORM PERCENT
MCP	18.2	25.1
CH	9.2	12.6
MCH	45.4	62.3
TOTAL	72.8	100.0

PARAFFIN INDEX 1	1.561
PARAFFIN INDEX 2	29.420

24 MAR 82

72337P AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2240 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	9.1	0.97
ETHANE	0.0		1T2-DMCP	20.1	2.15
PROPANE	31.9		3-EPENT	0.0	0.00
IBUTANE	11.1	1.19	224-TMP	0.0	0.00
NBUTANE	33.3	3.56	NHEPTANE	128.8	13.77
IPENTANE	67.8	7.25	1C2-DMCP	0.0	0.00
NPENTANE	87.9	9.40	MCH	146.5	15.66
22-DMB	0.0	0.00			
CPENTANE	3.1	0.33			
23-DMB	8.3	0.89			
2-MP	73.3	7.84			
3-MP	39.7	4.24			
NHEXANE	102.8	10.99			
MCP	63.6	6.80			
22-DMP	0.0	0.00			
24-DMP	4.6	0.50			
223-TMB	0.0	0.00			
CHEXANE	34.6	3.70			
33-DMP ,	0.0	0.00			
11-DMCP	39.3	4.20			
2-MHEX ,	0.0	0.00			
23-DMP ,	13.6	1.45			
3-MHEX ,	34.7	3.70			
1C3-DMCP	13.2	1.41			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	967.		C1/C2	2.08
GASOLINE	935.		A /D2	6.68
NAPHTHENES	330.	35.23	C1/D2	6.36
C6-7	611.	65.31	CH/MCP	0.54
			PENT/IPENT,	1.30

	PPB	NORM PERCENT
MCP	63.6	26.0
CH	34.6	14.1
MCH	146.5	59.9
TOTAL	244.7	100.0

PARAFFIN INDEX 1	1.741
PARAFFIN INDEX 2	29.280

24 MAR 82

72337R AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2270 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	8.3	0.83
ETHANE	0.0		1T2-DMCP	14.5	1.46
PROPANE	47.0		3-EPENT	0.0	0.00
IBUTANE	45.2	4.55	224-TMP	0.0	0.00
NBUTANE	96.0	9.65	NHEPTANE	85.3	8.58
IPENTANE	89.5	8.99	1C2-DMCP	0.0	0.00
NPENTANE	135.0	13.57	MCH	131.7	13.24
22-DMB	2.2	0.22			
CPENTANE	11.2	1.13			
23-DMB	8.1	0.81			
2-MP	59.1	5.94			
3-MP	32.8	3.30			
NHEXANE	97.0	9.75			
MCP	65.2	6.55			
22-DMP	0.0	0.00			
24-DMP	0.0	0.00			
223-TMB	0.0	0.00			
CHEXANE	48.3	4.85			
33-DMP ,	0.0	0.00			
11-DMCP	23.9	2.41			
2-MHEX ,	0.0	0.00			
23-DMP ,	9.4	0.95			
3-MHEX ,	21.4	2.15			
1C3-DMCP	10.7	1.08			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1042.		C1/C2	2.07
GASOLINE	995.		A /D2	8.54
NAPHTHENES	314.	31.55	C1/D2	9.55
C6-7	516.	51.84	CH/MCP	0.74
			PENT/IPENT,	1.51

	PPB	NORM PERCENT
MCP	65.2	26.6
CH	48.3	19.7
MCH	131.7	53.7
TOTAL	245.2	100.0

PARAFFIN INDEX 1	1.351
PARAFFIN INDEX 2	24.138

24 MAR 82

72338B AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2330 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	245.3	0.70
ETHANE	0.0		1T2-DMCP	476.1	1.35
PROPANE	5758.7		3-EPENT	0.0	0.00
IBUTANE	2727.5	7.73	224-TMP	0.0	0.00
NBUTANE	6992.7	19.82	NHEPTANE	1570.4	4.45
IPENTANE	3669.4	10.40	1C2-DMCP	39.1	0.11
NPENTANE	3796.0	10.76	MCH	3674.8	10.42
22-DMB	110.9	0.31			
CPENTANE	543.0	1.54			
23-DMB	323.1	0.92			
2-MP	1760.6	4.99			
3-MP	924.4	2.62			
NHEXANE	2328.0	6.60			
MCP	2161.3	6.13			
22-DMP	0.0	0.00			
24-DMP	55.3	0.16			
223-TMB	11.6	0.03			
CHEXANE	2343.2	6.64			
33-DMP ,	0.0	0.00			
11-DMCP	465.5	1.32			
2-MHEX ,	0.0	0.00			
23-DMP ,	348.7	0.99			
3-MHEX ,	478.3	1.36			
1C3-DMCP	236.3	0.67			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	41040.		C1/C2	2.05
GASOLINE	35281.		A /D2	8.15
NAPHTHENES	10185.	28.87	C1/D2	13.55
C6-7	14434.	40.91	CH/MCP	1.08
			PENT/IPENT,	1.03

	PPB	NORM PERCENT
MCP	2161.3	26.4
CH	2343.2	28.6
MCH	3674.8	44.9
TOTAL	8179.3	100.0

PARAFFIN INDEX 1	0.986
PARAFFIN INDEX 2	15.962

24 MAR 82

72338F AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2390 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	419.7	0.46
ETHANE	0.0		1T2-DMCP	764.0	0.84
PROPANE	17291.0		3-EPENT	0.0	0.00
IBUTANE	7746.0	8.47	224-TMP	0.0	0.00
NBUTANE	14023.2	15.34	NHEPTANE	1599.3	1.75
IPENTANE	12662.5	13.85	1C2-DMCP	12.8	0.01
NPENTANE	12774.3	13.97	MCH	979.0	1.07
22-DMB	444.4	0.49			
CPENTANE	2296.2	2.51			
23-DMB	1170.1	1.28			
2-MP	7753.1	8.48			
3-MP	3539.2	3.87			
NHEXANE	9291.8	10.16			
MCP	7029.8	7.69			
22-DMP	0.0	0.00			
24-DMP	189.4	0.21			
223-TMB	43.8	0.05			
CHEXANE	5324.4	5.82			
33-DMP ,	0.0	0.00			
11-DMCP	1175.2	1.29			
2-MHEX ,	0.0	0.00			
23-DMP ,	789.3	0.86			
3-MHEX ,	1006.8	1.10			
1C3-DMCP	380.8	0.42			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	108706.		C1/C2	0.87
GASOLINE	91415.		A /D2	10.82
NAPHTHENES	18382.	20.11	C1/D2	7.43
C6-7	29006.	31.73	CH/MCP	0.76
			PENT/IPENT,	1.01

	PPB	NORM PERCENT
MCP	7029.8	52.7
CH	5324.4	39.9
MCH	979.0	7.3
TOTAL	13333.2	100.0

PARAFFIN INDEX 1	1.395
PARAFFIN INDEX 2	12.858

24 MAR 82

72338H AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2420 METERS

	.TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	40.6	0.83
ETHANE	0.0		1T2-DMCP	75.6	1.55
PROPANE	329.7		3-EPENT	0.0	0.00
IBUTANE	233.9	4.80	224-TMP	0.0	0.00
NBUTANE	681.7	14.01	NHEPTANE	190.5	3.91
IPENTANE	542.2	11.14	1C2-DMCP	0.0	0.00
NPENTANE	667.6	13.72	MCH	486.5	10.00
22-DMB	15.2	0.31			
CPENTANE	104.3	2.14			
23-DMB	48.0	0.99			
2-MP	271.1	5.57			
3-MP	140.4	2.89			
NHEXANE	387.9	7.97			
MCP	419.4	8.62			
22-DMP	0.0	0.00			
24-DMP	6.4	0.13			
223-TMB	0.0	0.00			
CHEXANE	347.2	7.13			
33-DMP ,	0.0	0.00			
11-DMCP	76.5	1.57			
2-MHEX ,	0.0	0.00			
23-DMP ,	34.4	0.71			
3-MHEX ,	57.1	1.17			
1C3-DMCP	40.6	0.83			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	5197.		C1/C2	1.58
GASOLINE	4867.		A /D2	10.13
NAPHTHENES	1591.	32.68	C1/D2	15.95
C6-7	2163.	44.43	CH/MCP	0.83
			PENT/IPENT,	1.23

	PPB	NORM PERCENT
MCP	419.4	33.5
CH	347.2	27.7
MCH	486.5	38.8
TOTAL	1253.1	100.0

PARAFFIN INDEX 1	0.852
PARAFFIN INDEX 2	14.124

24 MAR 82

72338L AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2480 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	17.6	0.23
ETHANE	0.0		1T2-DMCP	26.2	0.35
PROPANE	735.1		3-EPENT	0.0	0.00
IBUTANE	584.2	7.72	224-TMP	0.0	0.00
NBUTANE	1594.5	21.08	NHEPTANE	32.1	0.42
IPENTANE	1162.4	15.36	1C2-DMCP	0.0	0.00
NPENTANE	1280.2	16.92	MCH	18.2	0.24
22-DMB	45.4	0.60			
CPENTANE	172.0	2.27			
23-DMB	106.9	1.41			
2-MP	585.8	7.74			
3-MP	286.9	3.79			
NHEXANE	745.6	9.85			
MCP	516.6	6.83			
22-DMP	0.0	0.00			
24-DMP	14.7	0.19			
223-TMB	0.0	0.00			
CHEXANE	238.6	3.15			
33-DMP ,	0.0	0.00			
11-DMCP	56.2	0.74			
2-MHEX ,	0.0	0.00			
23-DMP ,	29.8	0.39			
3-MHEX ,	36.7	0.49			
1C3-DMCP	15.0	0.20			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	8301.		C1/C2	0.54
GASOLINE	7566.		A /D2	21.19
NAPHTHENES	1060.	14.02	C1/D2	8.53
C6-7	1747.	23.10	CH/MCP	0.46
			PENT/IPENT,	1.10

	PPB	NORM PERCENT
MCP	516.6	66.8
CH	238.6	30.9
MCH	18.2	2.3
TOTAL	773.4	100.0

PARAFFIN INDEX 1	1.579
PARAFFIN INDEX 2	6.834

24 MAR 82

72338N AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2510 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	750.5	0.65
ETHANE	0.0		1T2-DMCP	1392.6	1.21
PROPANE	31030.8		3-EPENT	0.0	0.00
IBUTANE	11074.9	9.59	224-TMP	0.0	0.00
NBUTANE	20628.0	17.86	NHEPTANE	3252.2	2.82
IPENTANE	12623.0	10.93	1C2-DMCP	83.1	0.07
NPENTANE	15039.9	13.02	MCH	4004.8	3.47
22-DMB	354.7	0.31			
CPENTANE	3148.9	2.73			
23-DMB	1144.2	0.99			
2-MP	6462.7	5.60			
3-MP	3262.1	2.82			
NHEXANE	9633.5	8.34			
MCP	9556.6	8.27			
22-DMP	0.0	0.00			
24-DMP	157.5	0.14			
223-TMB	43.8	0.04			
CHEXANE	8458.3	7.32			
33-DMP ,	0.0	0.00			
11-DMCP	1391.6	1.20			
2-MHEX ,	0.0	0.00			
23-DMP ,	977.0	0.85			
3-MHEX ,	1322.2	1.14			
1C3-DMCP	739.2	0.64			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	146532.		C1/C2	1.11
GASOLINE	115501.		A /D2	9.75
NAPHTHENES	29526.	25.56	C1/D2	10.48
C6-7	41763.	36.16	CH/MCP	0.89
			PENT/IPENT,	1.19

	PPB	NORM PERCENT
MCP	9556.6	43.4
CH	8458.3	38.4
MCH	4004.8	18.2
TOTAL	22019.7	100.0

PARAFFIN INDEX 1	0.942
PARAFFIN INDEX 2	14.592

24 MAR 82

723590 AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2535 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	60.0	1.41
ETHANE	0.0		1T2-DMCP	54.9	1.28
PROPANE	416.4		3-EPENT	0.0	0.00
IBUTANE	163.9	3.83	224-TMP	0.0	0.00
NBUTANE	541.2	12.67	NHEPTANE	236.4	5.53
IPENTANE	384.3	8.99	1C2-DMCP	5.2	0.12
NPENTANE	448.2	10.49	MCH	618.3	14.47
22-DMB	12.4	0.29			
CPENTANE	98.6	2.31			
23-DMB	38.0	0.89			
2-MP	200.9	4.70			
3-MP	110.0	2.57			
NHEXANE	334.0	7.82			
MCP	379.5	8.88			
22-DMP	0.0	0.00			
24-DMP	6.2	0.15			
223-TMB	0.0	0.00			
CHEXANE	363.9	8.52			
33-DMP ,	0.0	0.00			
11-DMCP	75.3	1.76			
2-MHEX ,	0.0	0.00			
23-DMP ,	40.2	0.94			
3-MHEX ,	62.0	1.45			
1C3-DMCP	39.5	0.92			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	4689.		C1/C2	1.96
GASOLINE	4273.		A /D2	9.20
NAPHTHENES	1695.	39.67	C1/D2	17.05
C6-7	2276.	53.25	CH/MCP	0.96
			PENT/IPENT,	1.17

	PPB	NORM PERCENT
MCP	379.5	27.9
CH	363.9	26.7
MCH	618.3	45.4
TOTAL	1361.7	100.0

PARAFFIN INDEX 1	0.889
PARAFFIN INDEX 2	15.248

24 MAR 82

723590 AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2565 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	11.9	0.79
ETHANE	0.0		1T2-DMCP	22.9	1.51
PROPANE	56.3		3-EPENT	0.0	0.00
IBUTANE	32.8	2.17	224-TMP	0.0	0.00
NBUTANE	109.4	7.24	NHEPTANE	119.2	7.89
IPENTANE	108.8	7.20	1C2-DMCP	0.0	0.00
NPENTANE	137.5	9.10	MCH	301.7	19.97
22-DMB	5.2	0.34			
CPENTANE	18.0	1.19			
23-DMB	15.8	1.05			
2-MP	93.5	6.19			
3-MP	47.0	3.11			
NHEXANE	127.5	8.44			
MCP	134.6	8.91			
22-DMP	0.0	0.00			
24-DMP	3.6	0.24			
223-TMB	0.0	0.00			
CHEXANE	116.7	7.72			
33-DMP ,	0.0	0.00			
11-DMCP	33.2	2.20			
2-MHEX ,	0.0	0.00			
23-DMP ,	21.2	1.40			
3-MHEX ,	33.8	2.24			
1C3-DMCP	16.4	1.09			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	1567.		C1/C2	2.43
GASOLINE	1510.		A /D2	7.29
NAPHTHENES	655.	43.39	C1/D2	13.35
C6-7	943.	62.41	CH/MCP	0.87
			PENT/IPENT,	1.26

	PPB	NORM PERCENT
MCP	134.6	24.3
CH	116.7	21.1
MCH	301.7	54.6
TOTAL	553.0	100.0

PARAFFIN INDEX 1	1.309
PARAFFIN INDEX 2	17.611

24 MAR 82

72359S AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2595 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	4988.8	0.81
ETHANE	0.0		1T2-DMCP	9659.3	1.56
PROPANE	72202.1		3-EPENT	0.0	0.00
IBUTANE	29539.5	4.78	224-TMP	0.0	0.00
NBUTANE	63275.8	10.23	NHEPTANE	34325.4	5.55
IPENTANE	53532.0	8.66	1C2-DMCP	2650.0	0.43
NPENTANE	61354.8	9.92	MCH	69408.8	11.22
22-DMB	2369.4	0.38			
CPENTANE	17130.4	2.77			
23-DMB	0.0	0.00			
2-MP	46025.9	7.44			
3-MP	18353.7	2.97			
NHEXANE	58479.2	9.46			
MCP	49903.1	8.07			
22-DMP	0.0	0.00			
24-DMP	1189.6	0.19			
223-TMB	433.7	0.07			
CHEXANE	61264.4	9.91			
33-DMP ,	0.0	0.00			
11-DMCP	10934.0	1.77			
2-MHEX ,	0.0	0.00			
23-DMP ,	8357.6	1.35			
3-MHEX ,	10371.1	1.68			
1C3-DMCP	4841.2	0.78			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	690589.		C1/C2	1.97
GASOLINE	618387.		A /D2	8.95
NAPHTHENES	230780.	37.32	C1/D2	13.65
C6-7	326806.	52.85	CH/MCP	1.23
			PENT/IPENT,	1.15

	PPB	NORM PERCENT
MCP	49903.1	27.6
CH	61264.4	33.9
MCH	69408.8	38.4
TOTAL	180576.3	100.0

PARAFFIN INDEX 1	1.093
PARAFFIN INDEX 2	16.029

24 MAR 82

72359U AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2625 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	14.1	0.74
ETHANE	0.0		1T2-DMCP	25.5	1.34
PROPANE	158.7		3-EPENT	0.0	0.00
IBUTANE	74.3	3.92	224-TMP	0.0	0.00
NBUTANE	207.4	10.95	NHEPTANE	146.8	7.75
IPENTANE	143.9	7.60	1C2-DMCP	0.0	0.00
NPENTANE	176.4	9.31	MCH	328.5	17.34
22-DMB	7.4	0.39			
CPENTANE	28.7	1.51			
23-DMB	21.3	1.12			
2-MP	113.9	6.02			
3-MP	56.3	2.97			
NHEXANE	156.3	8.25			
MCP	124.9	6.60			
22-DMP	0.0	0.00			
24-DMP	4.0	0.21			
223-TMB	0.0	0.00			
CHEXANE	136.7	7.22			
33-DMP ,	0.0	0.00			
11-DMCP	53.6	2.83			
2-MHEX ,	0.0	0.00			
23-DMP ,	18.8	1.00			
3-MHEX ,	38.1	2.01			
1C3-DMCP	16.9	0.89			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	2053.		C1/C2	2.86
GASOLINE	1894.		A /D2	7.96
NAPHTHENES	729.	38.48	C1/D2	13.62
C6-7	1064.	56.20	CH/MCP	1.09
			PENT/IPENT,	1.23

	PPB	NORM PERCENT
MCP	124.9	21.2
CH	136.7	23.2
MCH	328.5	55.7
TOTAL	590.1	100.0

PARAFFIN INDEX 1	1.623
PARAFFIN INDEX 2	18.849

24 MAR 82

72359W AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2655 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	603.3	1.00
ETHANE	0.0		1T2-DMCP	1023.6	1.70
PROPANE	4828.1		3-EPENT	0.0	0.00
IBUTANE	4773.4	7.94	224-TMP	0.0	0.00
NBUTANE	8048.6	13.38	NHEPTANE	3192.1	5.31
IPENTANE	8350.5	13.88	1C2-DMCP	295.7	0.49
NPENTANE	6708.7	11.15	MCH	4897.4	8.14
22-DMB	80.1	0.13			
CPENTANE	921.7	1.53			
23-DMB	581.6	0.97			
2-MP	4433.2	7.37			
3-MP	1669.6	2.78			
NHEXANE	4399.0	7.31			
MCP	4228.5	7.03			
22-DMP	0.0	0.00			
24-DMP	82.1	0.14			
223-TMB	9.8	0.02			
CHEXANE	2627.2	4.37			
33-DMP ,	0.0	0.00			
11-DMCP	1051.6	1.75			
2-MHEX ,	0.0	0.00			
23-DMP ,	685.6	1.14			
3-MHEX ,	848.0	1.41			
1C3-DMCP	635.3	1.06			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	64974.		C1/C2	1.26
GASOLINE	60146.		A /D2	8.95
NAPHTHENES	16284.	27.07	C1/D2	10.11
C6-7	24579.	40.87	CH/MCP	0.62
			PENT/IPENT,	0.80

	PPB	NORM PERCENT
MCP	4228.5	36.0
CH	2627.2	22.4
MCH	4897.4	41.7
TOTAL	11753.1	100.0

PARAFFIN INDEX 1	0.840
PARAFFIN INDEX 2	20.509

24 MAR 82

72359Y AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2685 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	184.8	1.27
ETHANE	0.0		1T2-DMCP	316.4	2.17
PROPANE	587.1		3-EPENT	0.0	0.00
IBUTANE	655.4	4.49	224-TMP	0.0	0.00
NBUTANE	1443.2	9.88	NHEPTANE	946.8	6.48
IPENTANE	1619.6	11.09	1C2-DMCP	32.9	0.23
NPENTANE	1435.4	9.83	MCH	1805.5	12.36
22-DMB	25.1	0.17			
CPENTANE	250.2	1.71			
23-DMB	146.6	1.00			
2-MP	1045.2	7.16			
3-MP	416.5	2.85			
NHEXANE	1112.6	7.62			
MCP	1241.6	8.50			
22-DMP	0.0	0.00			
24-DMP	21.4	0.15			
223-TMB	1.9	0.01			
CHEXANE	894.0	6.12			
33-DMP ,	0.0	0.00			
11-DMCP	349.6	2.39			
2-MHEX ,	0.0	0.00			
23-DMP ,	152.3	1.04			
3-MHEX ,	317.5	2.17			
1C3-DMCP	192.7	1.32			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	15195.		C1/C2	1.55
GASOLINE	14607.		A /D2	6.49
NAPHTHENES	5268.	36.06	C1/D2	9.60
C6-7	7570.	51.82	CH/MCP	0.72
			PENT/IPENT,	0.89

	PPB	NORM PERCENT
MCP	1241.6	31.5
CH	894.0	22.7
NCH	1805.5	45.8
TOTAL	3941.1	100.0

PARAFFIN INDEX 1	0.961
PARAFFIN INDEX 2	18.350

24 MAR 82

72358U AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2715 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	112.9	1.54
ETHANE	0.0		1T2-DMCP	119.5	1.63
PROPANE	297.6		3-EPENT	0.0	0.00
IBUTANE	290.9	3.96	224-TMP	0.0	0.00
NBUTANE	786.7	10.70	NHEPTANE	335.7	4.57
IPENTANE	762.6	10.37	1C2-DMCP	6.2	0.08
NPENTANE	894.1	12.16	MCH	424.2	5.77
22-DMB	25.5	0.35			
CPENTANE	164.6	2.24			
23-DMB	86.5	1.18			
2-MP	508.8	6.92			
3-MP	256.6	3.49			
NHEXANE	716.1	9.74			
MCP	813.8	11.07			
22-DMP	0.0	0.00			
24-DMP	14.1	0.19			
223-TMB	3.8	0.05			
CHEXANE	540.1	7.35			
33-DMP ,	0.0	0.00			
11-DMCP	171.3	2.33			
2-MHEX ,	0.0	0.00			
23-DMP ,	80.0	1.09			
3-MHEX ,	149.3	2.03			
1C3-DMCP	88.4	1.20			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	7649.		C1/C2	1.00
GASOLINE	7352.		A /D2	7.05
NAPHTHENES	2441.	33.20	C1/D2	7.61
C6-7	3575.	48.63	CH/MCP	0.66
			PENT/IPENT,	1.17

	PPB	NORM PERCENT
MCP	813.8	45.8
CH	540.1	30.4
MCH	424.2	23.9
TOTAL	1778.1	100.0

PARAFFIN INDEX 1	1.000
PARAFFIN INDEX 2	16.608

24 MAR 82

72358W AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2745 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	305.2	1.09
ETHANE	0.0		1T2-DMCP	601.6	2.14
PROPANE	574.4		3-EPENT	0.0	0.00
IBUTANE	716.0	2.55	224-TMP	0.0	0.00
NBUTANE	2195.6	7.81	NHEPTANE	1012.4	3.60
IPENTANE	2724.5	9.69	1C2-DMCP	19.8	0.07
NPENTANE	3096.6	11.01	MCH	1509.5	5.37
22-DMB	124.2	0.44			
CPENTANE	907.4	3.23			
23-DMB	385.5	1.37			
2-MP	1966.3	6.99			
3-MP	1029.0	3.66			
NHEXANE	2785.9	9.90			
MCP	3785.6	13.46			
22-DMP	0.0	0.00			
24-DMP	49.9	0.18			
223-TMB	22.8	0.08			
CHEXANE	3210.2	11.41			
33-DMP ,	0.0	0.00			
11-DMCP	483.6	1.72			
2-MHEX ,	0.0	0.00			
23-DMP ,	402.3	1.43			
3-MHEX ,	468.4	1.67			
1C3-DMCP	327.0	1.16			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	28704.		C1/C2	1.03
GASOLINE	28129.		A /D2	8.11
NAPHTHENES	11150.	39.64	C1/D2	11.11
C6-7	14984.	53.27	CH/MCP	0.85
			PENT/IPENT,	1.14

	PPB	NORM PERCENT
MCP	3785.6	44.5
CH	3210.2	37.7
MCH	1509.5	17.7
TOTAL	8505.3	100.0

PARAFFIN INDEX 1	0.772
PARAFFIN INDEX 2	12.168

24 MAR 82

72358Y AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2775 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	667.3	1.11
ETHANE	0.0		1T2-DMCP	1278.0	2.13
PROPANE	4165.2		3-EPENT	0.0	0.00
IBUTANE	2122.3	3.54	224-TMP	0.0	0.00
NBUTANE	6079.5	10.13	NHEPTANE	3181.7	5.30
IPENTANE	5679.3	9.47	1C2-DMCP	342.9	0.57
NPENTANE	6050.1	10.08	MCH	6925.8	11.54
22-DMB	219.5	0.37			
CPENTANE	1229.5	2.05			
23-DMB	693.7	1.16			
2-MP	4524.4	7.54			
3-MP	2034.7	3.39			
NHEXANE	5130.6	8.55			
MCP	5408.0	9.01			
22-DMP	0.0	0.00			
24-DMP	112.6	0.19			
223-TMB	33.2	0.06			
CHEXANE	4717.0	7.86			
33-DMP ,	0.0	0.00			
11-DMCP	1039.0	1.73			
2-MHEX ,	0.0	0.00			
23-DMP ,	866.6	1.44			
3-MHEX ,	970.4	1.62			
1C3-DMCP	688.7	1.15			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	64160.		C1/C2	1.51
GASOLINE	59995.		A /D2	8.57
NAPHTHENES	22296.	37.16	C1/D2	13.07
C6-7	31362.	52.27	CH/MCP	0.87
			PENT/IPENT,	1.07

	PPB	NORM PERCENT
MCP	5408.0	31.7
CH	4717.0	27.7
MCH	6925.8	40.6
TOTAL	17050.8	100.0

PARAFFIN INDEX 1	0.763
PARAFFIN INDEX 2	15.647

24 MAR 82

72338T AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2805 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	465.0		1T3-DMCP	1048.3	0.95
ETHANE	11342.5		1T2-DMCP	2107.0	1.90
PROPANE	22727.5		3-EPENT	0.0	0.00
IBUTANE	8981.5	8.12	224-TMP	0.0	0.00
NBUTANE	14399.0	13.01	NHEPTANE	4389.5	3.97
IPENTANE	11361.3	10.27	1C2-DMCP	504.8	0.46
NPENTANE	11558.5	10.44	MCH	12369.8	11.18
22-DMB	292.8	0.26			
CPENTANE	2543.1	2.30			
23-DMB	1010.1	0.91			
2-MP	6234.9	5.63			
3-MP	2847.7	2.57			
NHEXANE	7403.7	6.69			
MCP	9113.5	8.24			
22-DMP	0.0	0.00			
24-DMP	132.2	0.12			
223-TMB	48.7	0.04			
CHEXANE	9264.3	8.37			
33-DMP ,	0.0	0.00			
11-DMCP	1352.0	1.22			
2-MHEX ,	0.0	0.00			
23-DMP ,	1260.9	1.14			
3-MHEX ,	1378.8	1.25			
1C3-DMCP	1060.3	0.96			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	145198.		C1/C2	1.66
GASOLINE	110663.		A /D2	8.55
NAPHTHENES	39363.	35.57	C1/D2	16.67
C6-7	51434.	46.48	CH/MCP	1.02
			PENT/IPENT,	1.02

	PPB	NORM PERCENT
MCP	9113.5	29.6
CH	9264.3	30.1
MCH	12369.8	40.2
TOTAL	30747.6	100.0

PARAFFIN INDEX 1	0.648
PARAFFIN INDEX 2	12.823

24 MAR 82

72338V AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2835 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	238.5	1.25
ETHANE	236.4		1T2-DMCP	480.5	2.52
PROPANE	734.1		3-EPENT	0.0	0.00
IBUTANE	519.8	2.73	224-TMP	0.0	0.00
NBUTANE	1322.7	6.94	NHEPTANE	1657.3	8.70
IPENTANE	1593.9	8.37	1C2-DMCP	105.0	0.55
NPENTANE	1668.0	8.75	MCH	2974.1	15.61
22-DMB	51.8	0.27			
CPENTANE	314.3	1.65			
23-DMB	176.2	0.93			
2-MP	1043.6	5.48			
3-MP	551.5	2.89			
NHEXANE	1415.0	7.43			
MCP	1826.2	9.58			
22-DMP	0.0	0.00			
24-DMP	52.0	0.27			
223-TMB	10.2	0.05			
CHEXANE	1454.4	7.63			
33-DMP ,	0.0	0.00			
11-DMCP	561.3	2.95			
2-MHEX ,	0.0	0.00			
23-DMP ,	206.3	1.08			
3-MHEX ,	577.0	3.03			
1C3-DMCP	253.3	1.33			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	20023.		C1/C2	1.72
GASOLINE	19053.		A /D2	5.32
NAPHTHENES	8208.	43.08	C1/D2	8.65
C6-7	11811.	61.99	CH/MCP	0.80
			PENT/IPENT,	1.05

	PPB	NORM PERCENT
MCP	1826.2	29.2
CH	1454.4	23.3
MCH	2974.1	47.5
TOTAL	6254.7	100.0

PARAFFIN INDEX 1	1.171
PARAFFIN INDEX 2	19.724

24 MAR 82

72338X AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2865 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	462.8	1.42
ETHANE	153.0		1T2-DMCP	921.7	2.82
PROPANE	788.8		3-EPENT	0.0	0.00
IBUTANE	654.2	2.00	224-TMP	0.0	0.00
NBUTANE	2024.8	6.20	NHEPTANE	2372.1	7.26
IPENTANE	2430.3	7.44	1C2-DMCP	217.6	0.67
NPENTANE	2802.4	8.58	MCH	5286.6	16.18
22-DMB	82.7	0.25			
CPENTANE	582.9	1.78			
23-DMB	320.9	0.98			
2-MP	2176.6	6.66			
3-MP	1034.8	3.17			
NHEXANE	2761.1	8.45			
MCP	3241.1	9.92			
22-DMP	0.0	0.00			
24-DMP	71.7	0.22			
223-TMB	14.4	0.04			
CHEXANE	2822.0	8.64			
33-DMP ,	0.0	0.00			
11-DMCP	706.5	2.16			
2-MHEX ,	0.0	0.00			
23-DMP ,	520.9	1.59			
3-MHEX ,	706.9	2.16			
1C3-DMCP	466.4	1.43			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	33623.		C1/C2	1.66
GASOLINE	32681.		A /D2	7.26
NAPHTHENES	14708.	45.00	C1/D2	12.47
C6-7	20572.	62.95	CH/MCP	0.87
			PENT/IPENT,	1.15

	PPB	NORM PERCENT
MCP	3241.1	28.6
CH	2822.0	24.9
MCH	5286.6	46.6
TOTAL	11349.7	100.0

PARAFFIN INDEX 1	0.764
PARAFFIN INDEX 2	16.628

24 MAR 82

72338Z AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2895 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	187.0	1.96
ETHANE	0.0		1T2-DMCP	365.7	3.82
PROPANE	84.2		3-EPENT	0.0	0.00
IBUTANE	47.5	0.50	224-TMP	0.0	0.00
NBUTANE	98.7	1.03	NHEPTANE	1158.6	12.11
IPENTANE	164.2	1.72	1C2-DMCP	36.2	0.38
NPENTANE	285.3	2.98	MCH	2272.7	23.76
22-DMB	10.7	0.11			
CPENTANE	123.3	1.29			
23-DMB	66.5	0.70			
2-MP	508.4	5.31			
3-MP	272.2	2.85			
NHEXANE	848.2	8.87			
MCP	1039.2	10.86			
22-DMP	0.0	0.00			
24-DMP	25.0	0.26			
223-TMB	5.0	0.05			
CHEXANE	917.2	9.59			
33-DMP ,	0.0	0.00			
11-DMCP	385.6	4.03			
2-MHEX ,	0.0	0.00			
23-DMP ,	166.1	1.74			
3-MHEX ,	385.5	4.03			
1C3-DMCP	196.2	2.05			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	9649.		C1/C2	1.96
GASOLINE	9565.		A /D2	5.21
NAPHTHENES	5523.	57.74	C1/D2	9.27
C6-7	7988.	83.51	CH/MCP	0.88
			PENT/IPENT,	1.74

	PPB	NORM PERCENT
MCP	1039.2	24.6
CH	917.2	21.7
MCH	2272.7	53.7
TOTAL	4229.1	100.0

PARAFFIN INDEX 1	1.030
PARAFFIN INDEX 2	19.199

24 MAR 82

72339W AUSTRALIA, TARWHINE-1, GIPPSLAND BASIN, 2940 METERS

	TOTAL PPB	NORM PERCENT		TOTAL PPB	NORM PERCENT
METHANE	0.0		1T3-DMCP	1159.3	1.24
ETHANE	0.0		1T2-DMCP	2342.5	2.51
PROPANE	3768.8		3-EPENT	0.0	0.00
IBUTANE	2482.7	2.66	224-TMP	0.0	0.00
NBUTANE	7155.0	7.66	NHEPTANE	5707.5	6.11
IPENTANE	6462.1	6.91	1C2-DMCP	610.4	0.65
NPENTANE	7752.1	8.29	MCH	17600.8	18.83
22-DMB	211.2	0.23			
CPENTANE	2183.0	2.34			
23-DMB	783.6	0.84			
2-MP	5023.8	5.38			
3-MP	2410.8	2.58			
NHEXANE	6808.5	7.29			
MCP	9362.8	10.02			
22-DMP	0.0	0.00			
24-DMP	125.9	0.13			
223-TMB	43.8	0.05			
CHEXANE	9734.2	10.42			
33-DMP ,	0.0	0.00			
11-DMCP	1481.2	1.58			
2-MHEX ,	0.0	0.00			
23-DMP ,	1291.5	1.38			
3-MHEX ,	1486.8	1.59			
1C3-DMCP	1237.9	1.32			

	TOTALS PPB	NORM PERCENT	SIG COMP RATIOS	
ALL COMP	97226.		C1/C2	1.96
GASOLINE	93457.		A /D2	8.42
NAPHTHENES	45712.	48.91	C1/D2	19.38
C6-7	58993.	63.12	CH/MCP	1.04
			PENT/IPENT,	1.20

	PPB	NORM PERCENT
MCP	9362.8	25.5
CH	9734.2	26.5
MCH	17600.8	48.0
TOTAL	36697.8	100.0

PARAFFIN INDEX 1	0.626
PARAFFIN INDEX 2	13.576

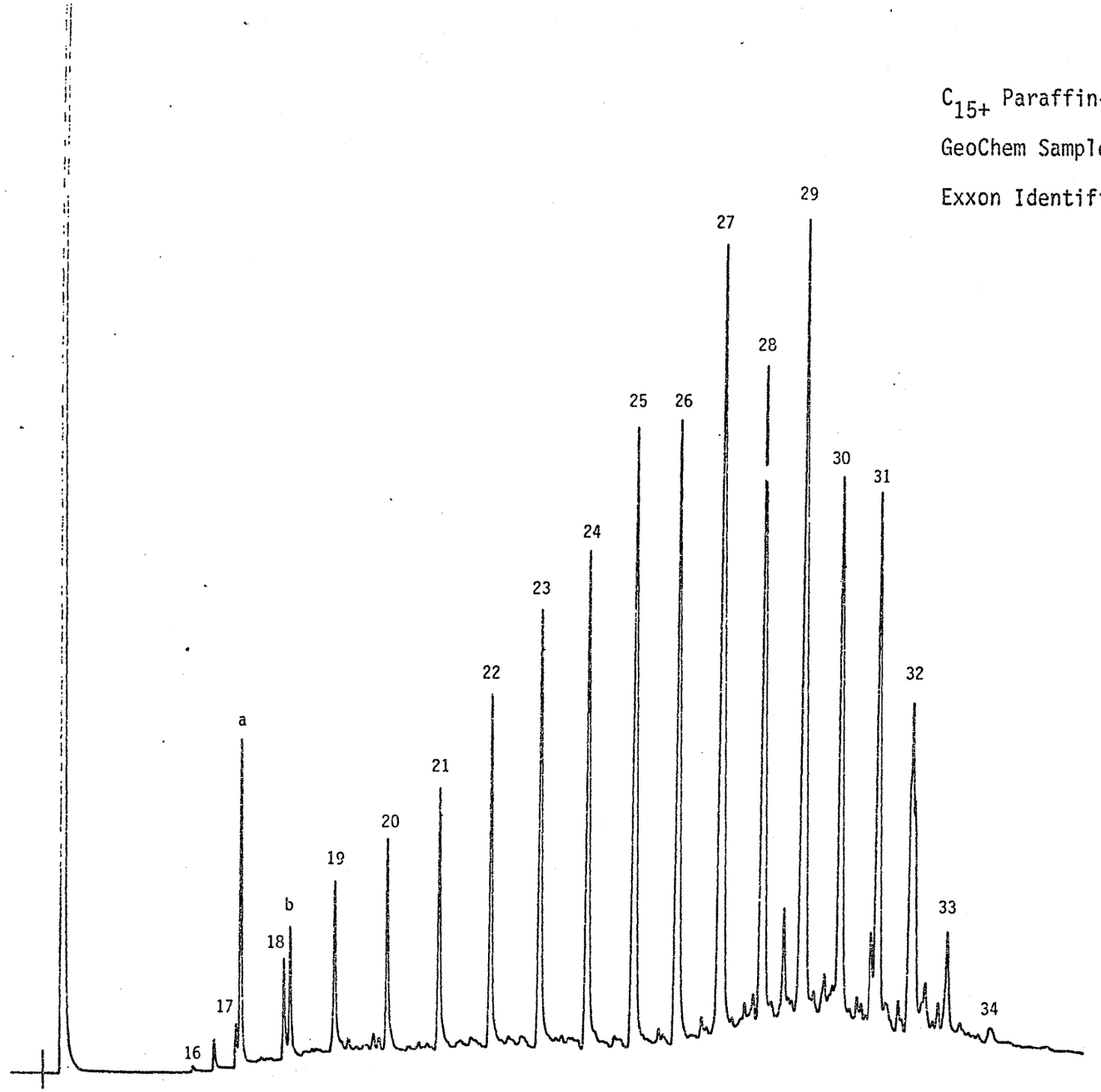
APPENDIX -2

-C_{15}+ CHROMATOGRAMS

C_{15+} Paraffin-Naphthene Hydrocarbon

GeoChem Sample No. E512-002

Exxon Identification No. 72336-J

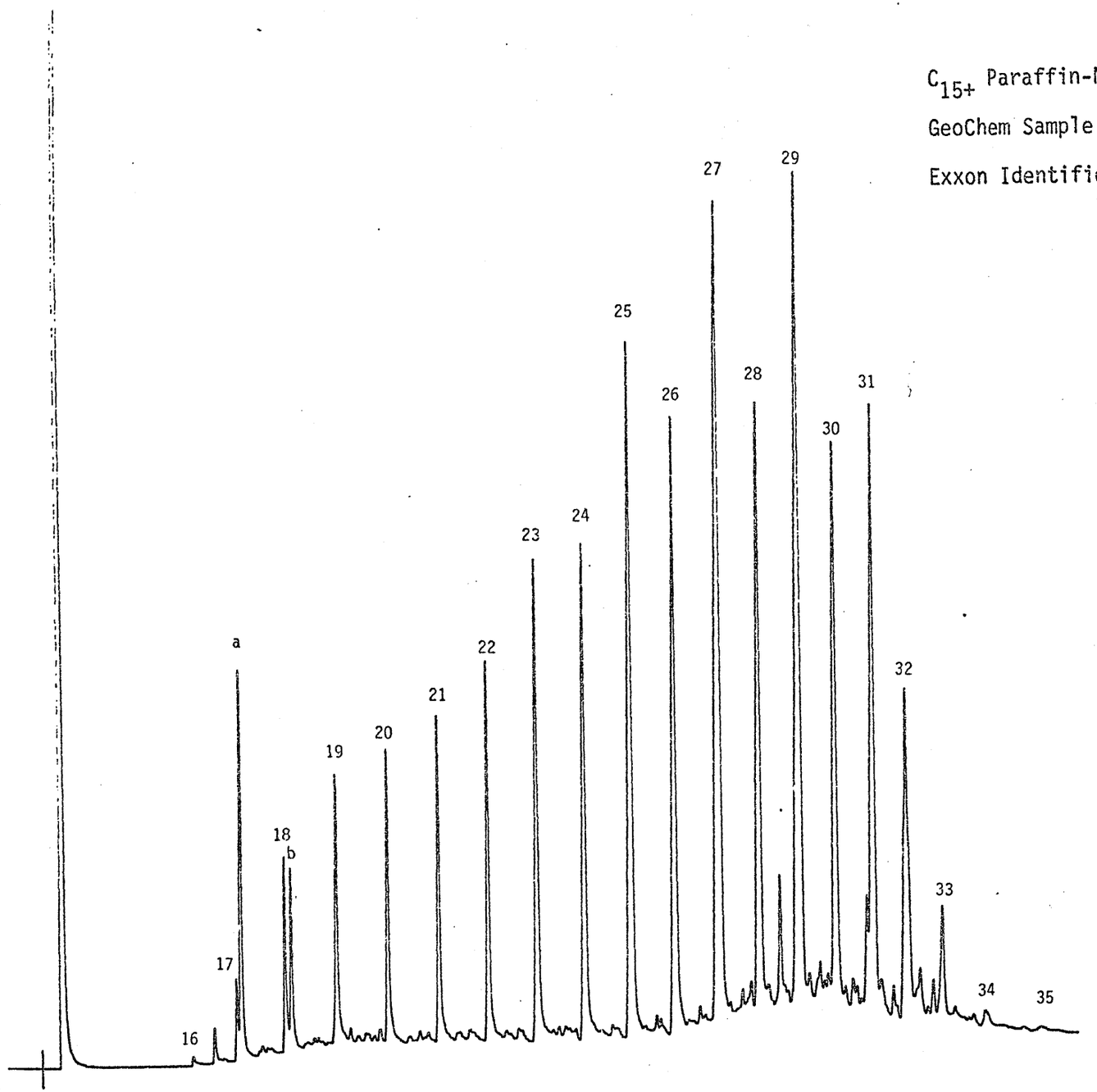


TARWHINE-1, 1835-1850m - LATROBE GROUP

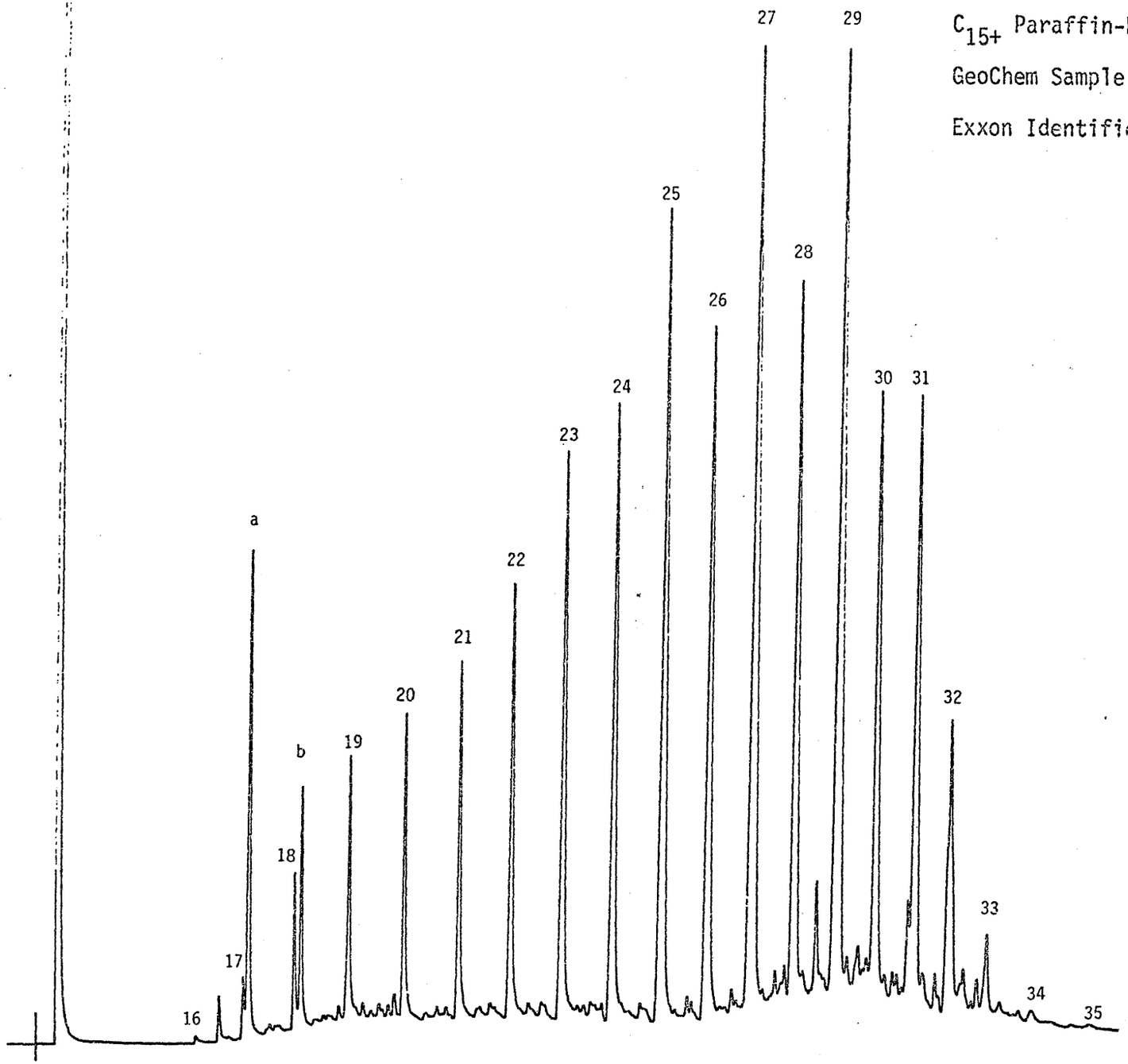
C_{15+} Paraffin-Naphthene Hydrocarbon

GeoChem Sample No. E512-003

Exxon Identification No. 72336-R+T



TARWHINE-1, 1955-2000m LATROBE GROUP

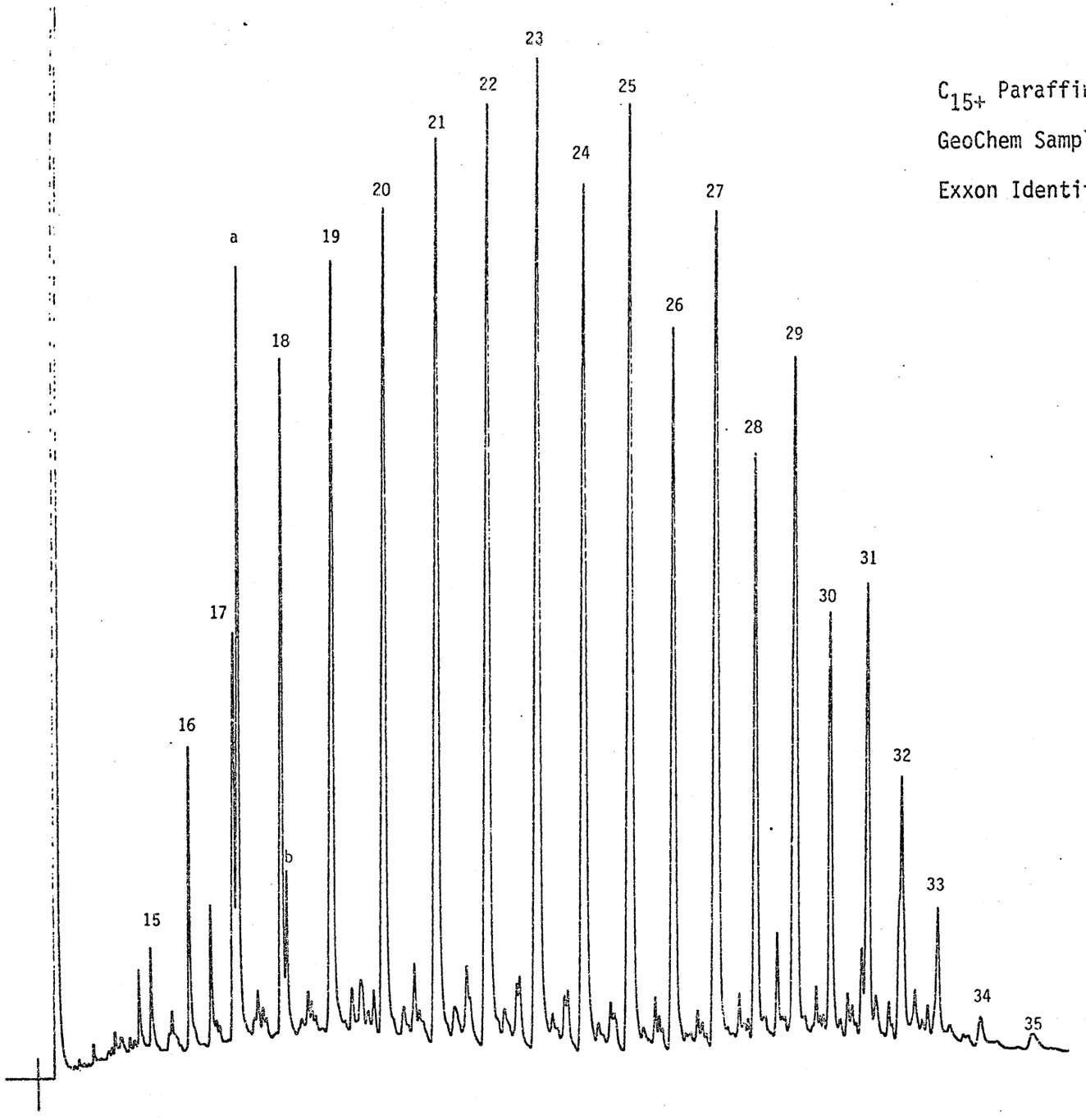


C_{15+} Paraffin-Naphthene Hydrocarbon

GeoChem Sample No. E512-004

Exxon Identification No. 72337-H

TARWHINE-1, 2105-2120m LATROBE GROUP



C_{15+} Paraffin-Naphthene Hydrocarbon

GeoChem Sample No. E512-005

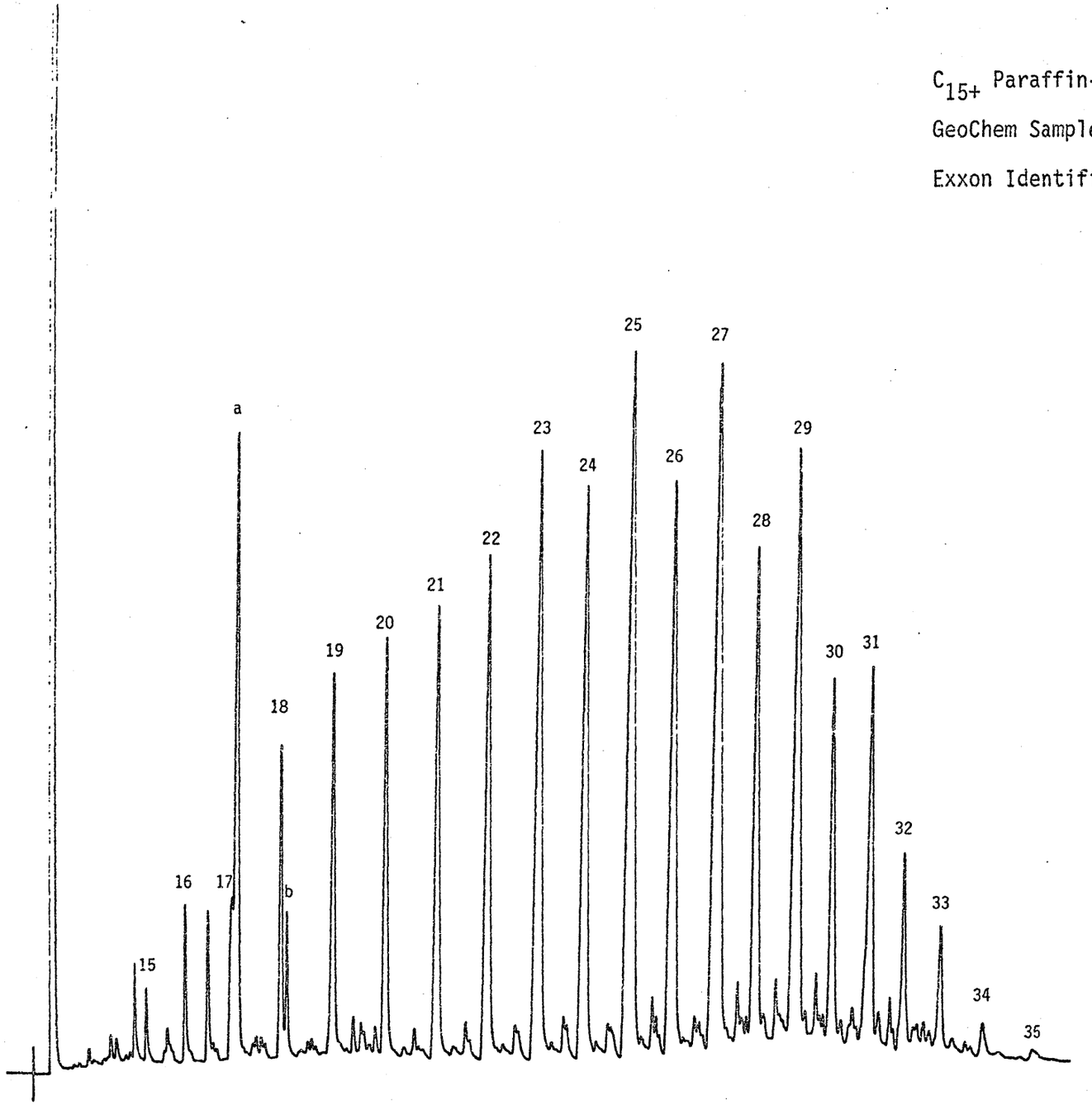
Exxon Identification No. 72338-N

TARWHINE-1, 2465-2510m - LATROBE GROUP

C_{15+} Paraffin-Naphthene Hydrocarbon

GeoChem Sample No. E512-009

Exxon Identification No. 72359-Y

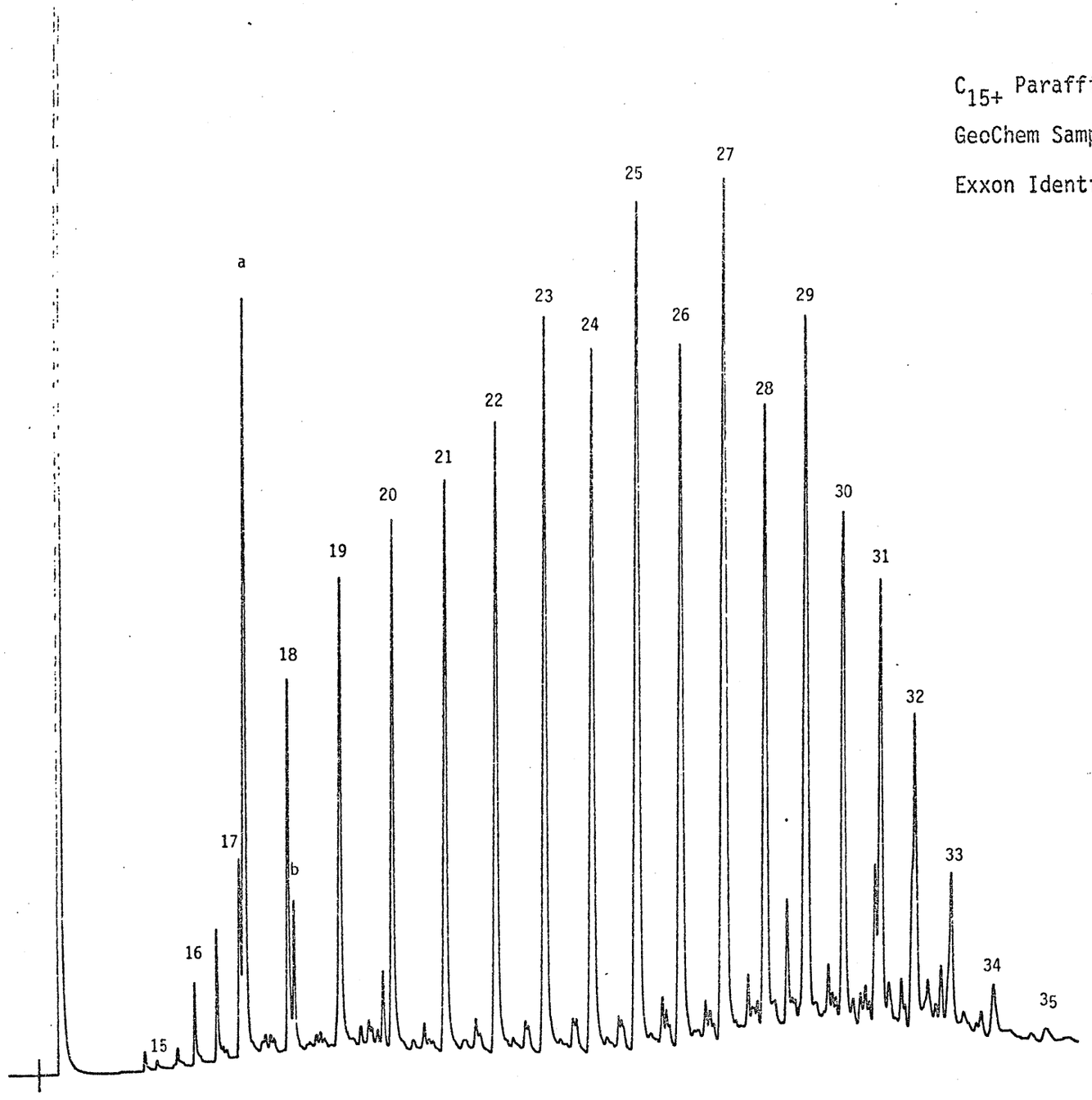


TARWHINE-1, 2670-2685m - LATROBE GROUP

C_{15+} Paraffin-Naphthene Hydrocarbon

GeoChem Sample No. E512-006

Exxon Identification No. 72338-T



TARWHINE-1, 2790-2805m - LATROBE GROUP

REPORT No.: 3-3-82

ESSO AUSTRALIA LTD.

GIPPSLAND LABORATORY

Sample: TARWHINE GAS

Sample Source: RFT 7

Date Sampled: 1982 (Sample Transfer date 15/1/82)

Pressure: 2450 PSI

Temperature: 99°C

COMPONENT	MOLE %	COMPONENT	MOLE %
Oxygen / Nitrogen	0.621	Isobutane	0.302
Carbon Dioxide	0.375	*n*-Butane / Neopentane	0.464
Methane	91.660	Isopentane	0.155
Ethane	4.075	*n*-Pentane	0.144
Propane	1.806	Hexanes and heavier	0.398

Ideal Specific Gravity in accordance with GPA Publication 2172-76
*0.6258 (Ideal Air = 1)

Remarks: 1. Although these results are reported to three and four decimal places, this bears no relationships to the accuracy of the analysis.
2. Sampled in accordance with GPA Publication 2166-68
3. Chromatographic analysis in accordance with ASTM D1945-64 (Reapproved 1976)
*4. Taking hexanes and heavier specific gravity as 3.4596

Tested by W.B. Lewis

Checked by E. Lynch

Date of Testing 15.3.82

Approved Signatory

Date 26/3/82

This laboratory is registered by the National Association of Testing Authorities, Australia. The tests reported herein have been performed in accordance with its terms of registration.

REPORT No.: 3-4-82

ESSO AUSTRALIA LTD.
GIPPSLAND LABORATORY

Sample: TARWHINE GAS
Sample Source: RFT 8
Date Sampled: 1982 (Sample Transfer date 15/1/82)
Pressure: 2000 PSI
Temperature: 99°C

COMPONENT	MOLE %	COMPONENT	MOLE %
Oxygen / Nitrogen	0.856	Isobutane	0.314
Carbon Dioxide	0.367	*n*-Butane / Neopentane	0.466
Methane	91.200	Isopentane	0.149
Ethane	4.247	*n*-Pentane	0.133
Propane	1.923	Hexanes and heavier	0.345

Ideal Specific Gravity in accordance with GPA Publication 2172-76
*0.6270 (Ideal Air = 1)

Remarks: 1. Although these results are reported to three and four decimal places, this bears no relationships to the accuracy of the analysis.
2. Sampled in accordance with GPA Publication 2166-68
3. Chromatographic analysis in accordance with ASTM D1945-64 (Reapproved 1976)
*4. Taking hexanes and heavier specific gravity as 3.4596

Tested by W D Lawrie
Checked by E. Lynch
Date of Testing 19.3.82
Approved Signatory
Date 26/3/82

TARWHINE — 1.

WATER ANALYSIS REPORT

AMDEL COMPUTER SERVICES

SAMPLE ID. PWT #1 1010/82

		CHEMICAL COMPOSITION	
		MILLIGRAMS PER LITRE MG/L	MILLIEQUIVS. PER LITRE ME/L
CATIONS			
CALCIUM	(CA)	200.0	10.0
MAGNESIUM	(MG)	100.0	8.2
SODIUM	(NA)	9150.0	398.0
POTASSIUM	(K)	330.0	8.4
ANIONS			
HYDROXIDE	(OH)	0.	0.0
CARBONATE	(CO3)	0.	0.0
BICARBONATE	(HC03)	1368.	22.4
SULPHATE	(S04)	1860.	38.7
CHLORIDE	(CL)	12707.	358.3
NITRATE	(NO3)	<4.	0.1

TOTALS AND BALANCE

CATIONS (ME/L)	424.7	DIFF =	5.1
ANIONS (ME/L)	419.5	SUM =	844.2

$\frac{DIFF*100.}{SUM}$ = 0.6%

DERIVED AND OTHER DATA

CONDUCTIVITY (E.C.)
MICRO-S/CM AT 25 DEG. C 34028

	MILLIGRAMS PER LITRE MG/L
TOTAL DISSOLVED SOLIDS	
A. BASED ON E.C.	
B. CALCULATED (HC03=C03)	25024.
C. RESIDUE ON EVAP. AT 180 DEG.C	

TOTAL HARDNESS AT CAC03	911.
CARBONATE HARDNESS AS CAC03	911.
NON-CARBONATE HARDNESS AS CAC03	<1
TOTAL ALKALINITY AS CAC03	1121.
FREE CARBON DIOXIDE (C02)	
SUSPENDED SOLIDS	
SILICA (SI02)	
BORON (B)	

	UNITS
REACTION - PH	7.0
TURBIDITY (JACKSON)	
COLOUR (HAZEN)	
SODIUM TO TOTAL CATION RATIO (ME/L)	93.7%

REMARKS

WELL-TARWHINE #1
PERFORATION 2656-2667.5 M
FINAL FLOW
TIME-15:00 HOURS
SAMPLE TAKEN FROM CHOKE MANIFOLD

CONDUCTIVITY AS REQUESTED IS 3.403 mhos/m

NAME - ESSO AUST LTD.
ADDRESS -

DATE COLLECTED 13-1-82

DATE RECEIVED

HUNDRED- WATER CUT
SECTION- WATER LEVEL
HOLE NO- DEPTH HOLE
SUPPLY -
SAMPLE COLLECTED BY - NOT SHOWN

ADDED TO WCR BY DNRE 11-5-99

APPENDIX 10

APPENDIX - 10

VELOCITY SURVEY REPORT

MARINE VELOCITY SURVEY

Well .....TARWHINE #1.....

Basin .....GIPPSLAND.....

INTRODUCTION

Esso Personnel .Peter Glenton.....

Contractor .....Velocity Data Ltd.....

Supplied (1) Instruments.
(2) Personnel

Seismic Observer.....J. Larsen.....

Marine Shooter .....M. O'Driscoll..

Navigation.....N/A.....

(3) Licenced Shooting Boat

Name.....N/A.....

Date Loaded.....

Date Released.....

Agent.....

(4) Seismic Source

Gas Gun

Gas Pressures.....20 sec fill.....

Oxygen.....90.....psi

Propane.....45.....psi

Personnel and Instruments

assembled at ...Melbourne.....Date ...28.12.81....

Boarded (rig) ..Southern Cross.....Date ...28.12.81....

Date of survey .....29.12.81.....

Casing Depth ..13.3/8"..@.784m.RKB...

.....

T.D. when shot .....2955M.RKB.....

water depth .....43.8....metres

SURVEY PROCEDURE

Weather: Wind .....LOW.....

Swell .....MODERATE.....

Sea .....MODERATE.....

Rig Movement ..MODERATE.....

Rig Noise .....NIL.....

Hydrophones: Number.....TWO.....

Depth below sea level .....12.2.....metres

Position ...one a.c. of Gun.....

...and one in moonpool.....

Gas Gun: number of shots per level .....2;3;4.....

gun depth .....12.2.....metres

Well phone positioning:

No of depths .....10.....

Time: first shot .....0930.....

last shot .....1130.....

Total rig time .....3 hrs.....

RESULTS

Quality of results (good .....3.....

(fair .....26.....

(poor .....2.....

(not used .....

Comparison of Interval Times with Sonic Log

/ / average ..29.3.....microsec/metre

/ / max .....153.8.....microsec/metre

CONCLUSION

Reliability of T-D curve .....GOOD.....

COMMENTS

VELOCITY SURVEY

Well ..... TARWHINE #1 .....

Basin ..... GIPPSLAND .....

INTRODUCTION

Esso personnel ..... T. FRANKHAM .....

Contractor ..... VELOCITY DATA PTY LTD .....

Supplied (1) Instruments.
(2) Personnel

Seismic Observer ..... T. POOLEY .....

Marine Shooter ..... M. O'DRISCOLL ....

Navigation ..... N/A .....

(3) Licenced Shooting Boat

Name ..... N/A .....

Date Loaded .....

Date Released .....

Agent .....

(4) Seismic Source

Gas Gun

Gas Pressures .. 20 SEC FILL .....

Oxygen ..... 90 ..... psi

Propane ..... 45 ..... psi

Personnel and Instruments

assembled at .... MELBOURNE ..... Date .....

Boarded (rig) ... SOUTHERN CROSS ..... Date .....

Date of survey .... 5.12.81 .....

Casing Depth .... 784m RKB .....

T.D. when shot ..... 1980m RKB .....

water depth ..... 43.8 ..... metres

SURVEY PROCEDURE

Weather: Wind ..... HIGH .....

Swell ..... MODERATE .....

Sea ..... MODERATE .....

Rig Movement ..... MODERATE .....

Rig Noise ..... NIL .....

Hydrophones: Number .....TWO.....

Depth below sea level ..6/12.2.....metres

Position .....ONE.AT.TOP.OF.GUN.....

.....AND.ONE.IN.MOONPOOL.....

Gas Gun: number of shots .....37.....

gun depth 6m/12.2metres

Well phone positioning:

No of depths .....13.....

Time: first shot .....1953.....

last shot .....2310.....

Total rig time .....4.hrs.....

RESULTS

Quality of results (good .....13.....

(fair .....23.....

(poor .....

(not used .....1.....

Comparison of Interval Times with Sonic Log

/ / average .....microsec/metre

/ / max .....microsec/metre

CONCLUSION

Reliability of T-D curve .....

COMMENTS

Survey was generally high quality. Only delay encountered throughout survey was between shots 33 & 34, when the gun had to be lifted out of water so the oxygen hose could be repaired.

VELOCITY SURVEY

Well TARWHINE #1

Basin GIPPSLAND

INTRODUCTION

Esso personnel .. BRETT HARDIMAN

Contractor ..... VELOCITY DATA PTY. LTD

Supplied (1) Instruments.
(2) Personnel

Seismic Observer . J. LARSEN

Marine Shooter ... M. O'DRISCOLL

Navigation ..... N/A

(3) Licenced Shooting Boat

Name ..... N/A

Date Loaded .....

Date Released .....

Agent .....

(4) Seismic Source

Gas Gun

Gas Pressures ..... 20 SEC FILL

Oxygen ..... 90 ..... psi

Propane ..... 45 ..... psi

Personnel and Instruments

assembled at ... MELBOURNE ..... Date . 13.12.81

Boarded (rig) ... SOUTHERN CROSS ..... Date . 13.12.81

Date of survey 14.12.81

Casing Depth ..... 784m RKB

T.D. when shot ... 2521m RKB

water depth ..... 43.8 .. metres

SURVEY PROCEDURE

Weather: Wind ..... LOW

Swell ..... MILD

Sea ..... CALM

Rig Movement ... MODERATE

Rig Noise ..... NIL

Hydrophones: Number .....2.....

Depth below sea level .....12.2....metres

Position ..ONE AT TOP OF GUN.....

..AND ONE IN MOONPOOL.....

Gas Gun: number of shots .....

gun depth .....22.....metres

Well phone positioning:

No of depths .....9.....

Time: first shot .....0645.....

last shot .....0849.....

Total rig time .....3 hrs.....

RESULTS

Quality of results (good .....5.....

(fair .....15.....

(poor .....2.....

(not used .....

Comparison of Interval Times with Sonic Log

/ / average .....microsec/metre

/ / max .....microsec/metre

CONCLUSION

Reliability of T-D curve .....

COMMENTS

Two delays were encountered during the running of the velocity survey. The first occurred before the first shot had been fired. This was caused by an unexpected storm, and the necessity of having to dry equipment (shooting). The second delay occurred between shots 40 & 41. This was caused by the wireline coming off the top cable sheave.

Quality of results is adequate.

Rn	Run	ToS	Dgm	Ds	Tr	Re	Gr	Dgs	H	Tan i	Cos i	Tgs	*sd	*sd/V	Tgd	Tgd/Av	Dgd	*Dgd	*Tgd	Vi	Va
34	1	2253	840	6	027	.339	G	813	41.2	OFFSET	DOES	NOT	6	004	.343	.343	819				2388
35	1	2254	840			.339	G			AFFECT	TIME							200	.071	2817	
36	1	2310	840			--	NU														
31	1	2200	1040	6	027	.410	F	1013	41.2				6	004	.414	.414	1019				2461
32	1	2201	1040			.410	F											110	.047	2340	
33	1	2242	1040			.410	F														
28	1	2151	1150	12.2	027	.453	F	1116.8	41.2				12.2	008	.461	.461	1129				2449
29	1	2152	1150			.453	F														
30	1	2153	1150			.453	F											94	.037	2541	
37	2	0645	1150			.453	P														
38	2	0647	1150			.453	G														
25	1	2141	1244	12.2	027	.490	G	1210.8	41.2				12.2	008	.498	.498	1223				2456
26	1	2142	1244			.490	F											143	.052	2750	
27	1	2143	1244			.490	F														
23	1	2130	1387	12.2	027	.542	G	1353.8	41.2				12.2	008	.550	.550	1366				2484
24	1	2131	1387			.542	G											21	.009	2333	
01	1	1955	1387			.542	F														
00	1	1953	1387			.542	F														
20	1	2117	1408	12.2	027	.551	F	1374.8	41.2				12.2	008	.559	.559	1387				2481
21	1	2118	1408			.551	F											95.5	.0287	3328	
22	1	2119	1408			.551	F														
17	1	2105	1503.5	12.2	027	.580	F	1470.3	41.2				12.2	008	.588	.588	1482.5				2523
18	1	2106	1503.5			.580	F								.588						
19	1	2107	1503.5			.580	G								.588			112.5	.0343	3280	
39	2	0701	1503.5			.580	G								.588						
59	3	0930	1503.5			.579	G								.587						
60	3	0932	1503.5			.579	G								.587						

Rn	Run	ToS	Dgm	Ds	Tr	Re	Gr	Dgs	H	Tan i	Cos i	Tgs	*sd	*sd/V	Tgd	Tgd/Av	Dgd	*Dgd	*Tgd	Vi	Va
14	1	2053	1616	12.2	027	.614	F	1582.9	41.2				12.2	008	.662	.662	1595				2564
15	1	2054	1616			.614	G											74	.023	3217	
16	1	2055	1616			.614	G														
11	1	2045	1690	12.2	027	.638	F	1656.8	41.2				12.2	008	.645	.645	1669				2588
12	1	2046	1690			.637	F								.645			110	.033	3333	
13	1	2047	1690			.637	F								.645						
8	1	2034	1800	12.2	027	.670	F	1766.8	41.2				12.2	008	.645	.678	1779				2624
9	1	2035	1800			.670	F						12.2	008				64	.019	3368	
10	1	2036	1800			.670	G														
40	2	0713	1800			.670	G														
5	1	2027	1864	12.2	027	.690	G	1830.8	41.2				12.2	008	.698	.697	1843				2644
6	1	2028	1864			.689	G								.697			116	.029	4000	
7	1	2049	1864			.689	G								.697						
2	1	2010	1980	12.2	027	.718	G	1946.8	41.2				12.2	008	.726	.726	1959				2698
3	1	2011	1980			.718	F														
4	1	2013	1980			.718	G											133	.034	3912	
41	2	0743	1980			.718	F														
89	3	1130	1980			.718	F														
90	3	1133	1980			.718	F														
56	2	0843	2113	12.2	027	.752	F	2079.8	41.2				12.2	008	.760	.760	2092				2753
57	2	0844	2113			.752	F											89	.022	4045	
58	2	0845	2113			.752	F														
52	2	0832	2202	12.2	027	.774	F	2168.8	41.2				12.2	008	.782	.782	2181				2789
53	2	0833	2202			.774	F														
54	2	0834	2202			.774	F											159	.040	3975	
55	2	0835	2202			.774	F														
49	2	0820	2361	12.2	027	.814	F	2327.8	41.2				12.2	008	.822	.822	2340				2847

Rn	Run	ToS	Dgm	Ds	Tr	Re	Gr	Dgs	H	Tan i	Cos i	Tgs	*sd	*sd/V	Tgd	Tgd/Av	Dgd	*Ðgd	*Tgd	Vi	Va
50	2	0821	2361			.814	G														
51	2	0822	2361			.814	F											94	.023	4087	
45	2	0809	2455	12.2	027	.837	F	2421.8	41.2				12.2	008	.845	.845	2434				2880
46	2	0811	2455			.837	F														
47	2	0812	2455			.837	P											38	.009	4222	
48	2	0813	2455			.837	F														
61	3	0946	2493	12.2	027	.846	F	2459.8	41.2				12.2	008	.854	.854	2472				2895
62	3	0948	2493			.846	F														
63	3	0950	2493			.846	G											27	.0037	-	
42	2	0758	2520	12.2	027	.851	F	2486.8	41.2				12.2	008	.859	.8577	2499				2914
43	2	0801	2520			.850	G								.858						
44	2	0803	2520			.849	F								.857						
64	3	0958	2520			.849	F								.857						
65	3	0959	2520			.849	F								.857			77	.0216	3565	
66	3	1001	2520			.850	F								.858						
67	3	1010	2597	12.2	027	.871	F	2563.8	41.2				12.2	008	.879	.8793	2576				2930
68	3	1012	2597			.871	F								.879						
69	3	1013	2597			.871	F								.879			99	.024	4125	
70	3	1015	2597			.872	F								.880						
74	3	1022	2696	12.2	027	.895	P	2662.8	41.2				12.2	008	.903	.9033	2675				2961
72	3	1024	2696			.895	P						12.2	008	.903						
73	3	1026	2696			.896	F								.904			83	.0167	4970	
75	3	1035	2779	12.2	027	.912	F	2745.8	41.2				12.2	008	.920	.920	2758				2998
76	3	1037	2779			.912	F														
77	3	1039	2779			.912	F											65	.015	4333	
78	3	1045	2844	12.2	027	.927	F	2810.8	41.2				12.2	008	.935	.935	2823				3019
79	3	1047	2844			.927	F														
																		102.5	.024	4271	

Rn	Run	ToS	Dgm	Ds	Tr	Re	Gr	Dgs	H	Tan i	Cos i	Tgs	*sd	*sd/V	Tgd	Tgd/Av	Dgd	*Dgd	*Tgd	Vi	Va
80	3	1049	2844			.927	F														
85	3	1115	2946.5	12.2	027	.951	F	2913.3	41.2				12.2	008	.959	.959	2925.5				3051
86	3	1117	2946.5			.951	F											6.5	.003	2167	
87	3	1119	2946.5			.951	F														
88	3	1120	2946.5			.951	F														
81	3	1100	2953	12.2	027	.954	F	2919.8	41.2				12.2	008	.962	.962	2932				3048
82	3	1102	2953			.954	F														
83	3	1104	2953			.954	F														
84	3	1106	2953			.954	F														

VELOCITY SURVEY ERROR CHECK

TARWHINE #1

Depth Rel Datum (m)	Av. Vertical Travel Time (check shots)	Ti Check Shots (sec.)	Ti Sonic Log (sec.)	* (Milsecs) Ti - Ti Check Sonic	Depth Interval (m)	Error (Micro per m.)
819	0.343	0.071	0.0663	4.7	200	23.5
1019	0.414					
1019	0.414	0.047	0.0428	4.2	110	38.2
1129	0.461					
1129	0.461	0.037	0.0398	-2.8	94	29.8
1223	0.498					
1223	0.498	0.052	0.0551	-3.1	143	21.7
1366	0.550					
1366	0.550	0.009	0.0068	2.2	21	104.8
1387	0.559					
1387	0.559	0.029	0.0291	-0.1	95.5	1.0
1482.5	0.588					
1482.5	0.588	0.034	0.0338	0.2	112.5	1.8
1595	0.622					
1595	0.622	0.023	0.0221	0.9	74	12.2
1669	0.645					
1669	0.645	0.033	0.0314	1.6	110	14.5
1779	0.678					
1779	0.678	0.019	0.0180	1.0	64	15.6
1843	0.697					
1843	0.697	0.029	0.0329	-3.9	116	33.6
1959	0.726					
1959	0.726	0.034	0.0338	0.2	133	1.5
2092	0.760					
2092	0.760	0.022	0.0214	0.6	89	6.7
2181	0.782					
2181	0.782	0.040	0.0385	1.5	159	9.4
2340	0.822					
2340	0.822	0.023	0.0235	-0.5	94	5.3
2434	0.845					
2434	0.845	0.009	0.0093	-0.3	38	7.9
2472	0.854					

tarwhine #1/1-2
18/0742Q/Moz

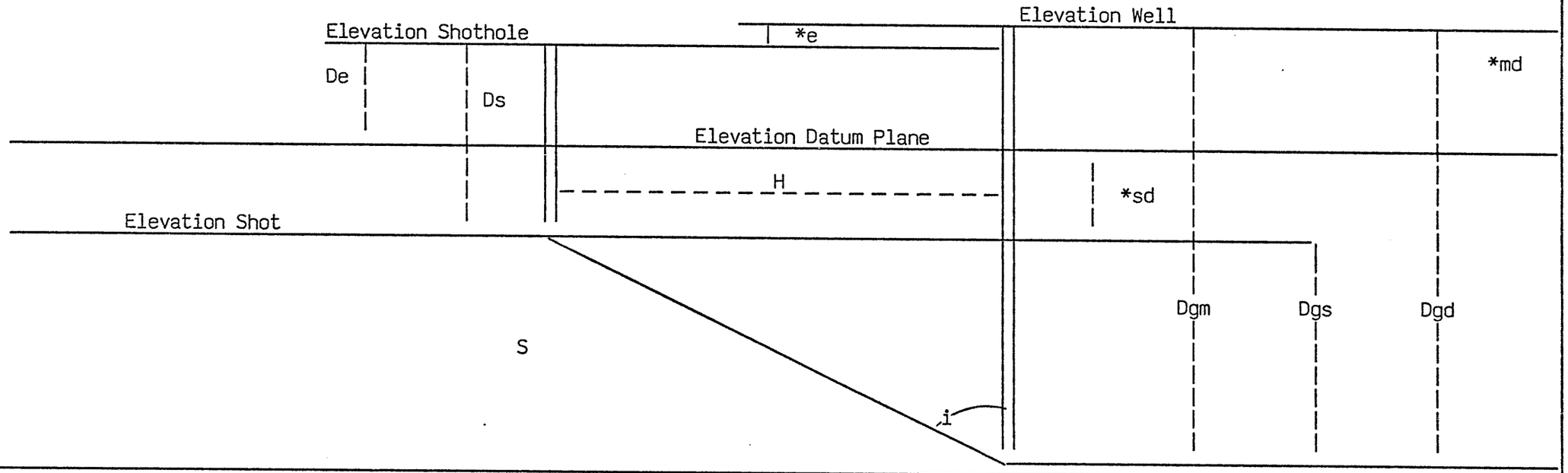
VELOCITY SURVEY ERROR CHECK

TARWHINE #1

Depth Rel Datum (m)	Av. Vertical Travel Time (check shots)	Ti Check Shots (sec.)	Ti Sonic Log (sec.)	(Milsecs) Ti - Ti Check Sonic	Depth Interval (m)	Error (Micro per m.)
2472	0.854	.0037	0.0066	-2.9	27	104.7
2499	0.8577					
2499	0.8577	.0216	0.0183	3.3	77	42.9
2576	0.8793					
2576	0.8793	.024	0.0241	-0.1	99	1.0
2675	0.9033					
2675	0.9033	.0167	0.0199	-3.2	83	38.6
2758	0.920					
2758	0.920	.015	0.0152	-0.2	65	3.1
2823	0.935					
2823	0.935	.024	0.0238	0.2	102.5	2.0
2925.5	0.959					
2925.5	0.959	.003	0.0020	1.0	6.5	153.8
2932	0.962					
					MAX	153.8
					MIN	1.0
					AV	29.3

tarwhine #1/2-2
19/0742Q/Moz

Shothole Information - Elevation, Distance and Direction from Well	Elevation (Derrick Floor)	Total Depth	Co-ordinates	Datum	Country - Area/Field
	21m RKB	2953m RKB	Lat. 38°24'17.35" S Long. 147°31'41.28" E	Mean Sea level	Gippsland



Dgm = Geophone depth measured from well elevation
Dgs = Geophone depth measured from shot elevation
Dgd = Geophone depth measured from datum elevation
*e = Difference in elevation between well and shotpoint
*sd = Difference in elevation between shot and datum plane
*sd = Ds - De
Dgs = $Dgm - Ds \pm *e$; $\tan i = \frac{H}{Dgs}$
Tgs = cos i T = Vert. travel time from shot elev. to geophone
Tgd = $Tgs \pm \frac{*sd}{V}$ = Vert. travel time from datum plane to geophone
Dgd = Dgm = *md
Sn = Shothole number
Re = Reading

Ds = Depth of shot
De = Shothole elevation to datum plane
H = Horizontal distance from well to shotpoint
S = Straight line travel path from shot to well geophone
T = Observed time from shotpoint to well geophone
Gr = Grade
tr = Observed time from shotpoint to reference geophone
Vi = Interval velocity = $\frac{*Dgd}{*Tgd}$
Va = Average = $\frac{Dgd}{Tgd}$
$\frac{*sd}{V}$ = is in milliseconds
Rn = Record number
ToS = Time of shot

Surveyed by : Velocity Data Ltd Date : 5&14*29.12.81 Casing Record : 13 3/8" Casing @ 784m RKB

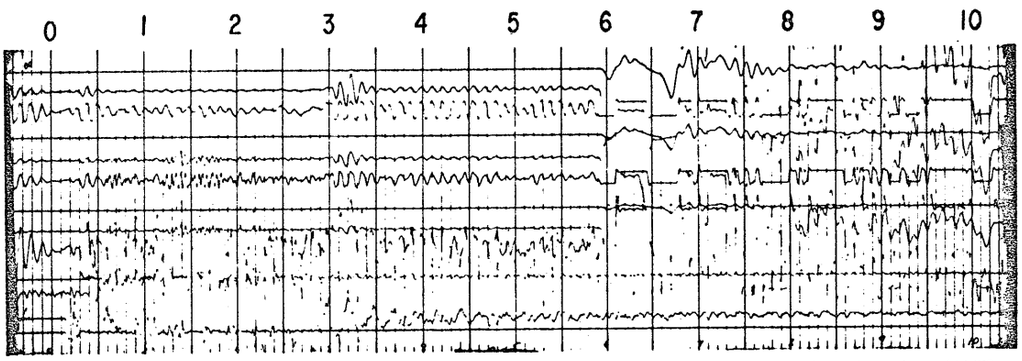
TARWHINE - 1

WELL VELOCITY RECORD

14-12-81

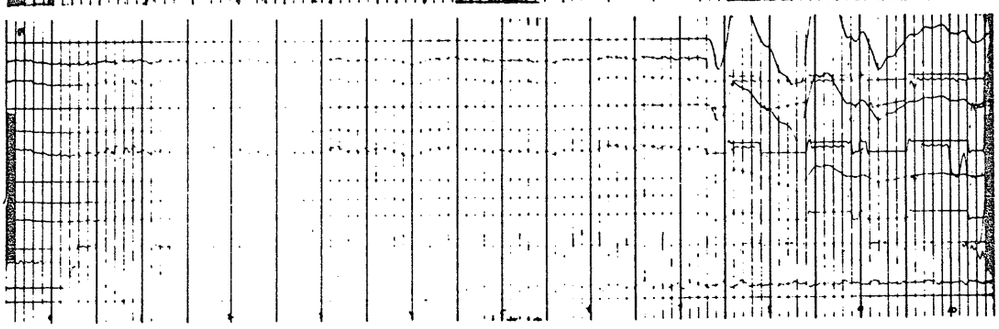
Rec. No. 60

1503·5 m RKB



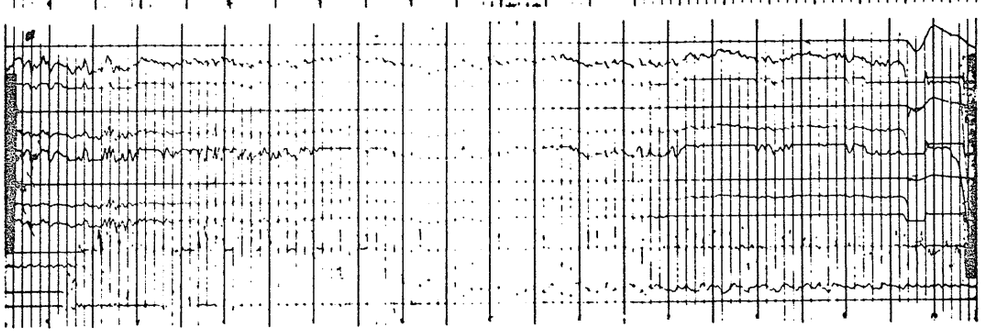
Rec. No. 89

1980 m RKB



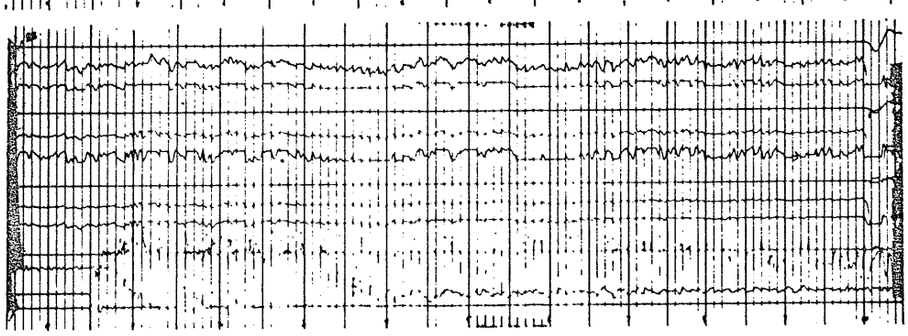
Rec. No. 88

2946·5 m RKB



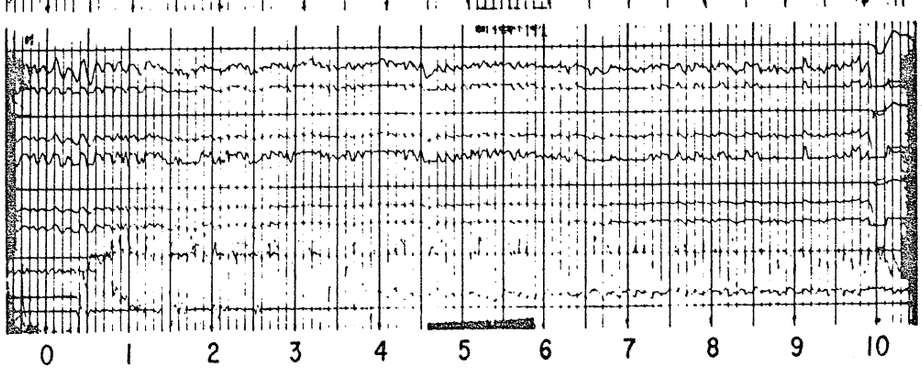
Rec. No. 83

2953 m RKB



Rec. No. 84

2953 m RKB



Dwg. 2070/OP/2

151 PAGES & 7 ENCLOSURES.

APPENDIX 6

QUANTITATIVE LOG
EVALUATION

APPENDIX II

SUB-SURFACE DIRECTIONAL SURVEY REPORT

ADDED TO WCR BY DNRE 11-5-99

Eastman Whipstock

A PETROLANE COMPANY

REPORT of SUB-SURFACE DIRECTIONAL SURVEY

ESSO AUST. LTD.

COMPANY

TARWHINE.

WELL NAME

LOCATION

JOB NUMBER	TYPE OF SURVEY	DATE
	MAGNETIC MULTISHOT	31-12-81

SURVEY BY

OFFICE

SALE

EASTMAN WHIPSTOCK, INC.

RECORD OF SURVEY

ESSO AUSTRALIA TARWHINE SOUTHERN CROSS MAGNETIC MULTISHOT

JOB NO._____ DATE 31.12.81 CHECKED BY_____

STATION	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	VERTICAL SECTION	COURSE DEVIATION	DRIFT DIRECTION	RECTANGULAR COORDINATES NORTH	SOUTH	EAST	WEST
	784 00	0	784 00		ASSUMED STRAIGHT		00		00	
	807 82	30'	807 82			S20E		10	04	
	836 23	1°	836 23			S73E		34	30	
	864 63	45'	864 62			S64E		50	70	
5	893 04	30'	893 03			N87E		56	1 00	
	921 44	15'	921 43			N24E		46	1 14	
	949 85	30'	949 84			N10E		29	1 20	
	978 25	30'	978 24			N12E		04	1 25	
	1006 66	45'	1006 65			N15E	26		1 32	
10	1035 06	1°	1035 04			N18W	69		1 31	
	1063 47	1°	1063 45			N29W	1 14		1 11	
	1091 87	45'	1091 85			N19W	1 53		93	
	1120 28	30'	1120 26			N42W	1 80		78	
	1148 68	15'	1148 65			N53W	1 93		64	
15	1177 09	30'	1177 06			S53W	1 93		47	
	1205 49	45'	1205 46			S61W	1 76		21	
	1233 90	45'	1233 87			S54W	1 56			11
	1262 30	1°	1262 27			S65W	1 34			48
	1290 71	1°15'	1290 67			S65W	1 10			98
20	1319 11	1°	1319 07			S67W	87			1 49

FORM NO. D—303E

EASTMAN WHIPSTOCK, INC.

RECORD OF SURVEY

ESSO AUSTRALIA TARWHINE SOUTHERN CROSS MAGNETIC MULTISHOT
WELL NO. 1

JOB NO._____ DATE 31.12.81 CHECKED BY_____

STATION	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	VERTICAL SECTION	COURSE DEVIATION	DRIFT DIRECTION	RECTANGULAR COORDINATES NORTH	SOUTH	EAST	WEST
	1347 51	1°	1347 46			S68W	69			1 95
	1375 92	1°	1375 87			S61W	47			2 40
	1404 32	1°	1404 26			S52W	20			2 81
	1432 73	1°	1432 67			S58W		09		3 22
25	1461 13	1°	1461 06			S58W		35		3 64
	1489 54	1°	1489 47			S64W		59		4 07
	1517 94	1°	1517 87			S84W		72		4 55
	1546 35	1°	1546 27			N79W		70		5 04
	1574 75	1°	1574 67			N67W		56		5 51
30	1603 16	1°15'	1603 07			N46W		25		5 97
	1631 56	1°30'	1631 46			N52W	19			6 49
	1659 97	1°45'	1659 86			N56W	67			7 14
	1688 37	1°30'	1688 25			N47W	1 17			7 77
	1716 78	1°15'	1716 65			N58W	1 58			8 31
35	1745 18	45'	1745 05			N64W	1 82			8 74
	1773 59	1°	1773 45			N76W	1 97			9 15
	1801 99	1°	1801 85			N70W	2 12			9 62
	1830 40	1°	1830 26			N75W	2 27			10 10
	1858 80	1°	1858 65			N80W	2 37			10 58
40	1887 20	1°	1887 05			N83W	2 45			11 07

FORM NO. D—303E

EASTMAN WHIPSTOCK, INC.

RECORD OF SURVEY

SHEET 3 OF 3

ESSO AUSTRALIA TARWHINE SOUTHERN CROSS MAGNETIC MULTISHOT
WELL NO. 1

JOB NO._____ DATE 31.12.81 CHECKED BY_____

STATION	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	VERTICAL SECTION	COURSE DEVIATION	DRIFT DIRECTION	RECTANGULAR COORDINATES NORTH	SOUTH	EAST	WEST
	1915 61	1°15'	1915 45			N69W	2 58			11 61
	1944 01	1°	1943 85			N37W	2 91			12 05
	1972 42	1°	1972 25			N59W	3 24			12 42
	2000 82	1°	2000 65			N59W	3 50			12 84
45	2029 23	1°30'	2029 05			N52W	3 85			13 35
	2057 63	2°	2057 44			N61W	4 33			14 07
	2086 04	2°	2085 83			N59W	4 82			14 93
	2114 44	2°	2114 21			N55W	5 36			15 76
	2142 85	2°	2142 61			N56W	5 92			16 58
50	2171 25	2°	2170 99			N61W	6 44			17 43
	2199 66	2°15'	2199 38			N68W	6 89			18 38
	2228 06	2°15'	2227 76			N67W	7 32			19 41
	2256 47	2°	2256 15			N74W	7 67			20 40
	2284 87	2°	2284 53			N82W	7 88			21 37
55	2313 28	2°	2312 92			S88W	7 93			22 36
	2341 68	1°30'	2341 31			S85W	7 88			23 22
	2370 09	1°15'	2369 71			S75W	7 76			23 89
	2398 49	1°	2398 11			S69W	7 59			24 42
	2426 90	1°	2426 51			S81W	7 46			24 90
60	2455 30	1°	2454 91			N52W	7 58			25 37

FORM NO. D—303E

EASTMAN WHIPSTOCK, INC.

RECORD OF SURVEY

ESSO AUSTRALIA TARWHINE SOUTHERN CROSS MAGNETIC MULTISHOT
WELL NO. 1

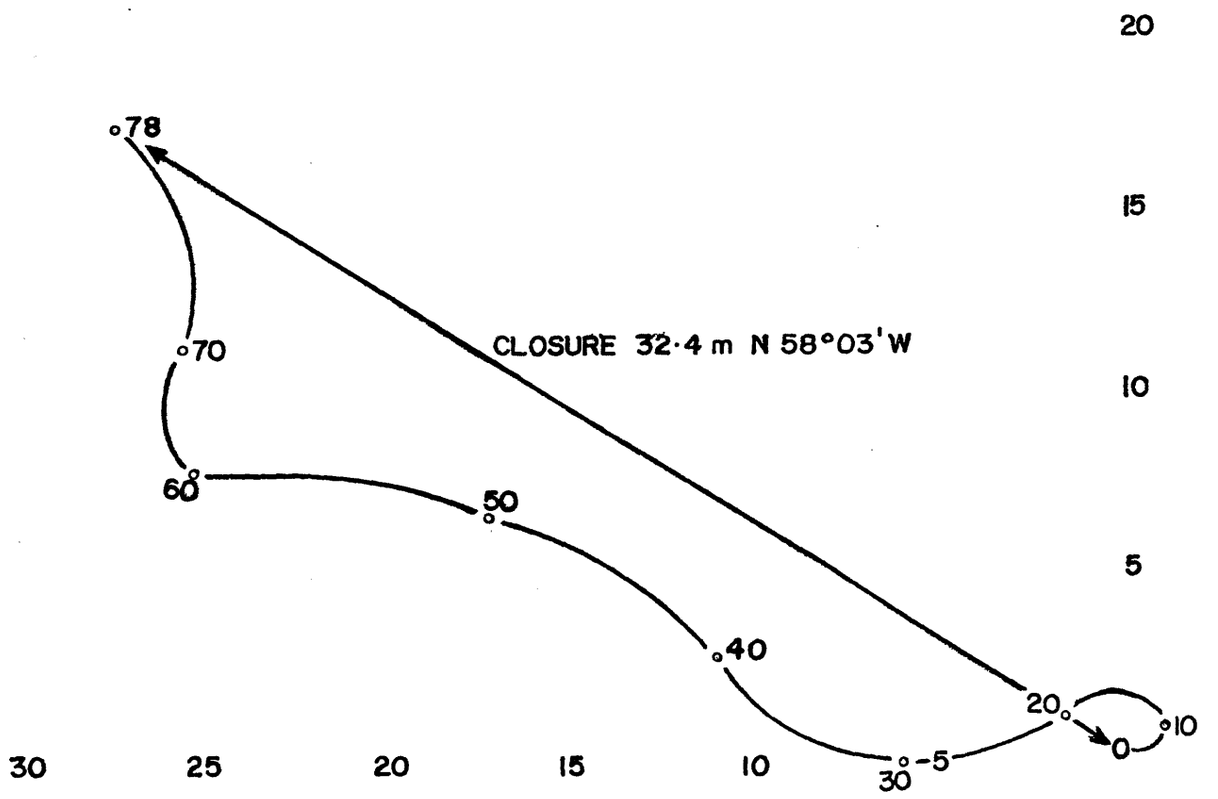
JOB NO._____ DATE_____ CHECKED BY_____

STATION	MEASURED DEPTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	VERTICAL SECTION	COURSE DEVIATION	DRIFT DIRECTION	RECTANGULAR COORDINATES NORTH	SOUTH	EAST	WEST
	2483 93	1°	2483 53			N08W	8 00			25 61
	2512 56	1°	2512 16			N17W	8 49			25 72
	2541 19	1°	2540 78			N27W	8 95			25 91
	2569 89	1°30'	2569 48			N28W	9 51			26 19
65	2598 45	1°30'	2598 03			N39W	10 13			26 61
	2627 08	30'	2626 65			N33E	10 60			26 63
	2655 71	1°	2655 28			N84E	10 78			26 32
	2684 34	45'	2683 91			N84E	10 83			25 89
	2712 96	15'	2712 52			N43E	10 94			25 67
70	2741 59	30'	2741 15			N03E	11 11			25 60
	2770 22	1°	2769 78			N41W	11 45			25 72
	2798 85	1°30'	2798 40			N42W	11 92			26 13
	2827 48	1°45'	2827 02			N19W	12 62			26 54
	2856 11	2°	2855 64			N20W	13 50			26 85
75	2884 74	2°	2884 25			N27W	14 42			27 25
	2913 37	2°	2912 86			N02E	15 38			27 46
	2942 00	3°	2941 47			N03W	16 63			27 47
78	2952 00	3°	2951 45			N03W	17 15			27 50
				CLOSURE	32.4m	N58° 03'W				

FORM NO. D—303E

ESSO AUSTRALIA LIMITED
TARWHINE

PLAN VIEW
SCALE: 1" = 5m



APPENDIX 12

SUBSEA WELL COMPLETION REPORT

ADDED TO WCR BY DNRE 11/5/99

ATTACHMENT 2

ESSO AUSTRALIA LTD

SUBSEA WELL COMPLETION REPORT

TARWHINE - 1

SEPTEMBER, 1990

ATTACHMENT 2

ESSO AUSTRALIA LTD

SUBSEA WELL COMPLETION REPORT

TARWHINE - 1

LOCATION DETAILS

WELL NAME: TARWHINE - 1

STATE: VICTORIA

PERMIT: VIC/L1

CO-ORDINATES: Latitude 38 deg 24 min 17.35 sec S

Longitude 147 deg 31 min 41.28 sec E

X = 546 113 m E

Y = 5 749 121 m N

MAP PROJECTION: AMG Zone 55

ELEVATIONS AND DEPTHS

REFERENCE: MSL

RKB: +21 m

WATER DEPTH: 43 m

PLUG BACK DEPTH: 1420 mSS

AVERAGE ANGLE: Vertical

INSTALLATION DETAILS

TUBING SPOOL INSTALLATION DATES

RUN ANCHORS: 31 Aug, 1989

PULL ANCHORS: 6 Sep, 1989

SUBSEA TREE INSTALLATION DATES

RUN ANCHORS: 30 Dec, 1989

PULL ANCHORS: 17 Jan, 1990

CONTRACTOR: South Seas Drilling Company

RIG NAME: Southern Cross

EQUIPMENT TYPE: Oilwell E-2000

TOTAL RIG DAYS: 23.9

DRILLING AFE No.: 767 008

PRODUCTION TEST DETAILS

Details of the production tests conducted during the installation of the subsea equipment are provided in Appendix 1.

Fluid sample analyses are provided in Appendix 2B.

PERFORATION DETAILS

INTERVALS PERFORATED: N-1 1366.0 - 1379.5 mSS

SERVICE COMPANY: Schlumberger

DIFFERENTIAL PRESSURE: Approximately 300 psi

PERFORATION FLUID: Diesel

SIZE & TYPE OF GUN: TCP, 7", 12 spf, 30 deg phasing, 37 gm RDX charges

---

SUBSEA EQUIPMENT DETAILS

Details of the subsea equipment installed on the well are provided in Appendix 3.

TARWHINE

APPENDIX 2B

ESSO AUSTRALIA LTD

SUBSEA WELL COMPLETION REPORT

FLUID SAMPLE ANALYSES

47 Woodforde Road, Magill,
South Australia, 5072
P.O. Box 410,
Magill, South Australia, 5072

PETROLAB

Fax: 364 1500
Telex: AA88214
Tel: (08) 364 1500
(08) 333 0787

Reservoir Fluid and Core Services, Laboratory Consulting and Analysis

Adelaide, March 5 1990
P. O. Box 410
Magill
S. A. 5072

Esso Australia
70 Foster Street
Sale, Vic. 3850

Subject: Reservoir Fluid Analysis
Well : Tarwhine # 1
File : E - 89043

Attention: Mr. Philip Reichardt

Dear Sirs,

Please find enclosed results of a partial PVT study performed on surface samples from subject well.

We thank Esso Australia for the opportunity to be of service. Please do not hesitate in contacting us should you require any further information.

Yours sincerely,

Jan G. Bon
Manager

P E T R O L A B

Company : Esso Australia
Well : Tarwhine # 1
File : E-89043

Surface Samples Set # 1

Sampling Conditions

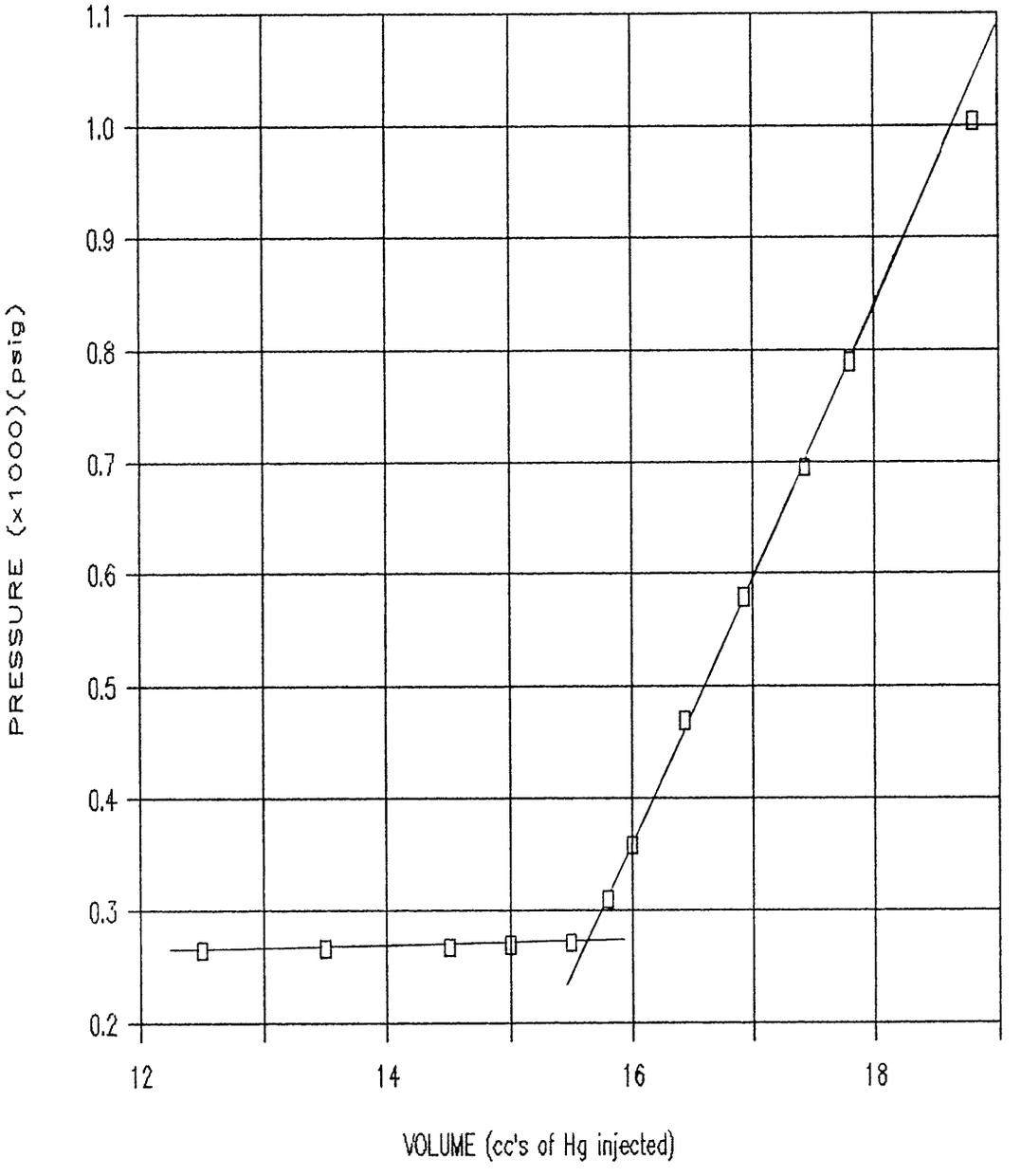
Date : January 13 1990
Pressure : 270 psig
Temperature : 64 deg F

Cylinder # : ED 5582 (gas)
Opening Pressure : 225 psig @ 84 deg F

Cylinder # : L-34 (liquid)
Opening Pressure : 266 psig @ 68 deg F

Volume (cc's)	Pressure (psig)
12.50	265
13.50	266
14.50	268
15.00	270
15.50	272
15.80	310
16.00	359
16.44	470
16.93	579
17.42	695
17.80	789
18.80	1004

Saturation Pressure : 271 psig @ 68 deg F.



P E T R O L A B

Company : Esso Australia
Well : Tarwhine # 1
File : E-89043

Surface Samples Set # 2

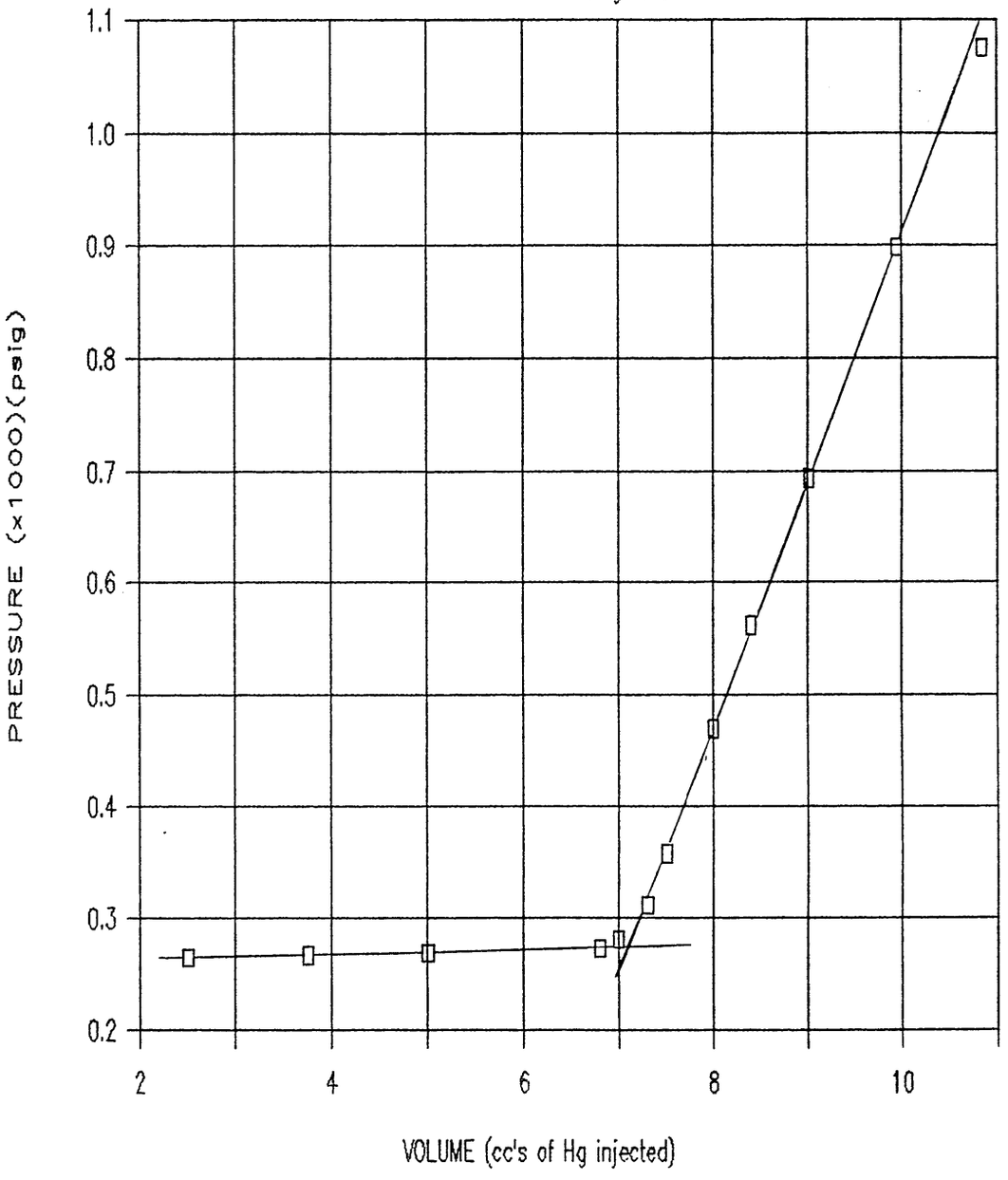
Sampling Conditions
Date : January 13 1990
Pressure : 270 psig
Temperature : 66 deg F

Cylinder # : ED 5583 (gas)
Opening Pressure : 231 psig @ 84 deg F

Cylinder # : L-38 (liquid)
Opening Pressure : 266 psig @ 68 deg F

Volume (cc's)	Pressure (psig)
2.50	265
3.75	267
5.00	269
6.80	273
7.00	281
7.30	312
7.50	358
8.00	470
8.40	562
9.01	693
9.95	897
10.85	1075

Saturation Pressure : 271 psig @ 68 deg F.



P E T R O L A B

Company: Esso Australia
Well : Tarwhine # 1

File: E 89043

COMPOSITIONAL ANALYSIS OF

SEPARATOR GAS

Cyl. # EC - 5582

Component	Mol %	GPM
Hydrogen Sulphide	0.00	
Carbon Dioxide	4.29	
Nitrogen	0.54	
Methane	83.04	
Ethane	1.14	0.304
Propane	5.16	1.418
Iso-Butane	2.00	0.653
N-Butane	2.08	0.654
Iso-Pentane	0.59	0.215
N-Pentane	0.21	0.076
Hexanes	0.43	0.166
Heptanes	0.17	0.071
Octanes	0.14	0.063
Nonanes	0.11	0.055
Decanes	0.07	0.038
Undecanes	0.03	0.018
Dodecanes Plus	0.00	0.000
TOTAL	100.00	3.731

Pressure Base :	14.696
Zsc:	0.997
Mol Weight :	21.87
Gas Gravity:	0.758
Pc :	671.6
Tc :	397.0
Mol Weight C6+ :	99.5
Density C6+ :	0.6884
Mol Weight C7+ :	112.3
Density C7+ :	0.7044
Mol Weight C10+:	137.9
Density C10+:	0.7316
Mol Weight C11+:	147.0
Density C11+:	0.7400
Mol Weight C12+:	--
Density C12+:	--
Heating Value (BTU/ft3)	
Gross:	1213
Nett:	1100
Wobbe Index:	1394
Zpt*:	0.937

* Remarks: Pressure 270 psig, Temperature 65 deg F

Laboratory Opening Pressure - 225 psig @ 84 deg F

P E T R O L A B

Company: Esso Australia
Well : Tarwhine # 1

File: E 89043

COMPOSITIONAL ANALYSIS OF

SEPARATOR GAS

Cyl. # EC - 5583

Component	Mol %	GPM
Hydrogen Sulphide	0.00	
Carbon Dioxide	4.29	
Nitrogen	0.53	
Methane	78.87	
Ethane	1.19	0.318
Propane	5.65	1.558
Iso-Butane	2.24	0.733
N-Butane	2.49	0.786
Iso-Pentane	0.96	0.352
N-Pentane	0.48	0.174
Hexanes	1.15	0.447
Heptanes	0.85	0.358
Octanes	0.59	0.268
Nonanes	0.47	0.236
Decanes	0.21	0.115
Undecanes	0.03	0.018
Dodecanes Plus	0.00	0.000
TOTAL	100.00	5.363

Pressure Base :	14.696
Zsc:	0.996
Mol Weight :	24.63
Gas Gravity:	0.854
Pc :	663.2
Tc :	419.3
Mol Weight C6+ :	100.2
Density C6+ :	0.6894
Mol Weight C7+ :	108.9
Density C7+ :	0.7004
Mol Weight C10+:	135.6
Density C10+:	0.7294
Mol Weight C11+:	147.0
Density C11+:	0.7400
Mol Weight C12+:	--
Density C12+:	--
Heating Value (BTU/ft3)	
Gross:	1362
Nett:	1239
Wobbe Index:	1474
Zpt*:	0.919

* Remarks: Pressure 270 psig, Temperature 65 deg F

Laboratory Opening Pressure - 231 psig @ 84 deg F

HIGH TEMPERATURE DISTILLATION OF STOCK TANK LIQUID SAMPLE
(Hexanes to Dodecanes Plus)
Flashed from Separator Liquid # L-34

	Cut (Deg C)	Mol %	Mol Weight	Weight %	Density (gm/cc)	Volume %	API Gravity
	IBP 28						
Hexanes	59 - 84	20.56	83	14.24	0.6725	16.07	78.7
Heptanes	85 - 112	28.39	98	23.16	0.7279	24.16	62.7
Octanes	113 - 138	15.18	110	13.87	0.7437	14.16	58.6
Nonanes	139 - 162	10.51	123	10.77	0.7578	10.79	55.0
Decanes	163 - 185	6.97	134	7.79	0.7789	7.59	50.0
Undecanes	186 - 206	3.38	143	4.04	0.8048	3.81	44.1
Dodecanes Plus	> 206	15.01	209	26.13	0.8476	23.42	35.3
		100.00		100.00		100.00	

P E T R O L A B

Company: Esso Australia
Well : Tarwhine # 1

File: E 89043

COMPOSITIONAL ANALYSIS OF RECOMBINED SEPARATOR LIQUID

Cylinder # L-38

Component		Stock Tank Liquid Mol %	Stock Tank Gas Mol %	Separator Liquid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	0.03	2.05	0.91
Nitrogen	N2	0.00	0.22	0.10
Methane	C1	0.10	17.75	7.80
Ethane	C2	0.04	1.36	0.62
Propane	C3	2.13	19.28	9.62
Iso-Butane	iC4	4.01	14.71	8.68
N-Butane	nC4	8.49	21.90	14.34
Iso-Pentane	iC5	9.41	9.37	9.39
N-Pentane	nC5	5.12	4.01	4.64
Hexanes	C6	14.53	5.01	10.37
Heptanes	C7	20.06	3.37	12.78
Octanes	C8	10.73	0.67	6.34
Nonanes	C9	7.43	0.23	4.29
Decanes	C10	4.93	0.07	2.81
Undecanes	C11	2.39	0.00	1.35
Dodecanes Plus	C12+	10.61	0.00	5.96
TOTAL		100.00	100.00	100.00
Ratios				
Molar Ratio	:	0.5636	0.4364	1.0000
Mass Ratio	:	0.7190	0.2810	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.5028 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	721 SCF	--
Stream Properties				
Molecular Weight	:	103.4	52.19	81.0
Density obs. (gm/cc)	:	0.7239 @ 60 F	--	0.6751 @ PT*
Gravity (AIR = 1.000)	:	63.8 API @60F	1.849	--
GHV (BTU/scf)	:	--	2968.0	--
Hexanes Plus Properties				
Mol %	:	70.67	9.35	43.90
Molecular Weight	:	119.9	91.3	117.2
Density (gm/cc @ 60 F)	:	0.7593	0.6770	0.7527
Gravity (API @ 60 F)	:	54.7	77.3	56.3
Heptanes Plus Properties				
Mol %	:	56.14	4.34	33.53
Molecular Weight	:	129.4	99.6	127.7
Density (gm/cc @ 60 F)	:	0.7759	0.6886	0.7716
Gravity (API @ 60 F)	:	50.7	73.8	51.7
Decanes Plus Properties				
Mol %	:	17.92	0.07	10.12
Molecular Weight	:	179.4	134.0	179.0
Density (gm/cc @ 60 F)	:	0.8279	0.7278	0.8279
Gravity (API @ 60 F)	:	39.2	62.7	39.2
Undecanes Plus Properties				
Mol %	:	13.00	0.00	7.31
Molecular Weight	:	196.6	--	197.0
Density (gm/cc @ 60 F)	:	0.8416	--	0.8416
Gravity (API @ 60 F)	:	36.5	--	36.5
Dodecanes Plus Properties				
Mol %	:	10.61	0.00	5.96
Molecular Weight	:	208.7	--	209.3
Density (gm/cc @ 60 F)	:	0.8476	--	0.8476
Gravity (API @ 60 F)	:	35.3	--	35.3

* (P)ressure 270 psig, (T)emperature 63 deg.F

P E T R O L A B

Company: Esso Australia
Well : Tarwhine # 1

File: E 89043

COMPOSITIONAL ANALYSIS OF RECOMBINED RESERVOIR FLUID

Cyl. # L-38 Cyl. # EC-5582

Component		Separator Liquid Mol %	Separator Gas Mol %	Reservoir Fluid Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	0.91	4.29	2.28
Nitrogen	N2	0.10	0.54	0.28
Methane	C1	7.80	83.04	38.21
Ethane	C2	0.62	1.14	0.83
Propane	C3	9.62	5.16	7.82
Iso-Butane	iC4	8.68	2.00	5.98
N-Butane	nC4	14.34	2.08	9.38
Iso-Pentane	iC5	9.39	0.59	5.83
N-Pentane	nC5	4.64	0.21	2.85
Hexanes	C6	10.37	0.43	6.35
Heptanes	C7	12.78	0.17	7.68
Octanes	C8	6.34	0.14	3.83
Nonanes	C9	4.29	0.11	2.60
Decanes	C10	2.81	0.07	1.70
Undecanes	C11	1.35	0.03	0.82
Dodecanes Plus	C12+	5.96	0.00	3.56
TOTAL		100.00	100.00	100.00
Ratios				
Molar Ratio	:	0.5958	0.4042	1.0000
Mass Ratio	:	0.8452	0.1548	1.0000
Gas Liquid Ratio	:	1.0000 bbl @ PT*	752 SCF**	--
Stream Properties				
Molecular Weight	:	81.0	21.87	57.38
Density obs. (gm/cc)	:	0.6751 @ PT*	--	--
Gravity (AIR = 1.000)	:	--	0.758	--
GHV (BTU/scf)	:	--	1213.0	--
Hexanes Plus Properties				
Mol %	:	43.90	0.95	26.54
Molecular Weight	:	117.2	99.5	116.9
Density (gm/cc @ 60 F)	:	0.7527	0.6884	0.7518
Gravity (API @ 60 F)	:	56.3	73.8	56.5
Heptanes Plus Properties				
Mol %	:	33.53	0.52	20.19
Molecular Weight	:	127.7	112.3	127.5
Density (gm/cc @ 60 F)	:	0.7716	0.7044	0.7709
Gravity (API @ 60 F)	:	51.7	69.2	51.9
Decanes Plus Properties				
Mol %	:	10.12	0.10	6.08
Molecular Weight	:	179.0	137.9	177.5
Density (gm/cc @ 60 F)	:	0.8279	0.7316	0.8279
Gravity (API @ 60 F)	:	39.3	61.7	39.3
Undecanes Plus Properties				
Mol %	:	7.31	0.03	4.38
Molecular Weight	:	197.0	147.0	195.9
Density (gm/cc @ 60 F)	:	0.8416	0.7400	0.8416
Gravity (API @ 60 F)	:	36.5	59.5	36.5
Dodecanes Plus Properties				
Mol %	:	5.96	0.00	3.56
Molecular Weight	:	209.3	--	208.8
Density (gm/cc @ 60 F)	:	0.8476	--	0.8476
Gravity (API @ 60 F)	:	35.3	--	35.3

* (P)ressure 270 psig, (T)emperature 63 deg F

** 752 SCF / SEP BBL @ PT = 1130 SCF / ST BBL

APPENDIX 1

ESSO AUSTRALIA LTD

SUBSEA WELL COMPLETION REPORT

PRODUCTION TEST DETAILS

Seahorse #1 and Tarwhine #1 Production Tests

Production tests were carried out on the Seahorse N-1 and N-2.6 zones on December 23-26, 1989, and on the Tarwhine N-1 zone on January 13-14, 1990.

The build-up test on the Seahorse N-2.6 zone, performed on 24/12/89 was characterised by oscillations in the pressure response and the pressure beginning to decline at the end of the buildup test. As a consequence no results have been inferred from this test. The tests on the Tarwhine N-1 zone and the Seahorse N-1 zone gave some more meaningful results.

The build-up tests were analysed using the EPS software package "PANSYSTEM". After the data points were reduced down to a manageable number, the program placed a line of best fit onto a Horner plot, from which the permeability thickness, the skin factor and the extrapolated shut-in pressure were able to be determined. The productivity index was also determined using PANSYSTEM. However, due to the fact that PANSYSTEM uses a maximum of three production test points to determine the productivity index, it was also calculated by a linear regression on all available test points using Lotus.

In order to calculate the permeabilities, a net oil column was assumed for each zone. The values used were:

Tarwhine N-1 : 40.2 feet (11.2 metres)
Seahorse N-1 : 22.0 feet (6.7 metres)

Table 1 summarizes the production test results obtained from the PANSYSTEM and Lotus analyses. Figures 1 and 2 are the Horner plots for the Tarwhine N-1 and Seahorse N-1 zones, respectively, and Figures 3 to 5 are the plots of bottomhole pressure vs. flowrate used to obtain the productivity indices for the Tarwhine N-1, Seahorse N-1 and Seahorse N-2.6 zones.

The negative skin factors obtained from the Seahorse N-1 production test are attributed to the perforations. The API rating for the arrangement used is 1/2" dia. holes with 29" perforation, which would help account for the skin.

There is good agreement between the bottomhole shut in pressures obtained from the production tests, and static BHP and RFT pressures.

The results obtained are consistent with separate analysis performed by Philip Reichardt on the production tests.

Table 1 - Production Tests Results

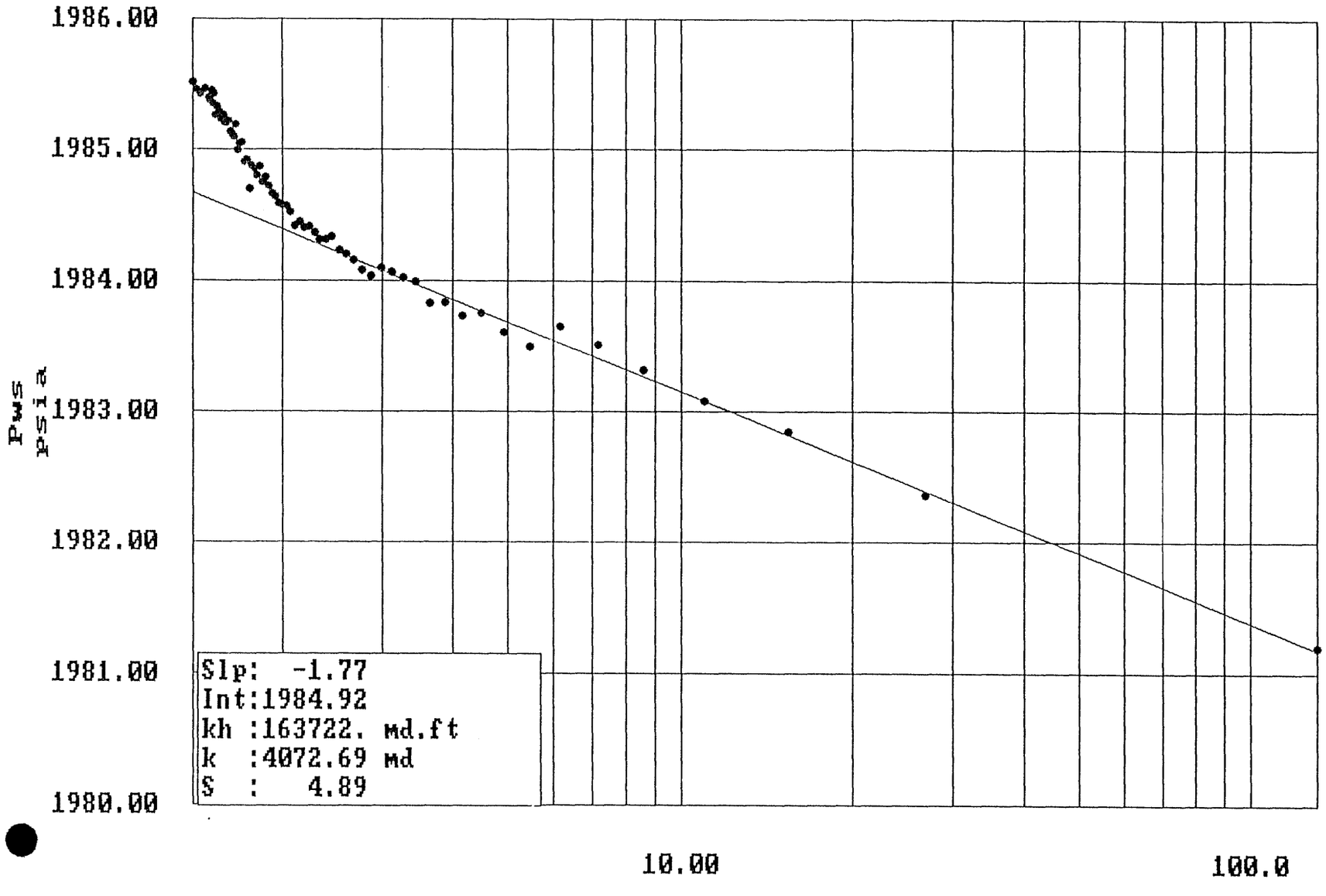
	Tarwhine N-1	Seahorse N-1	Seahorse N-2.6
Perm thick. kh (md.ft)	167696	26675	-
Permeability (md)	4172	325	-
Skin Factor	-6.11	0.464	-
Flow efficiency	3.48	0.92	-
Extrap. SI press. (Horner) (psi)	1984.9	2088.6	-
PI (PANOIL) (Stb/psi/day)	208.9	113.7	183.2
PI (Lotus L.R.) (stb/psi/day)	205.8	109.8	204.2
Extrap. SI press. (Lotus L.R)(psi)	1984.5	2075.6	2093.3

Figure 1

TARWHINE #1 - HORNER

Tp =2.845

Time from start of test (hours)



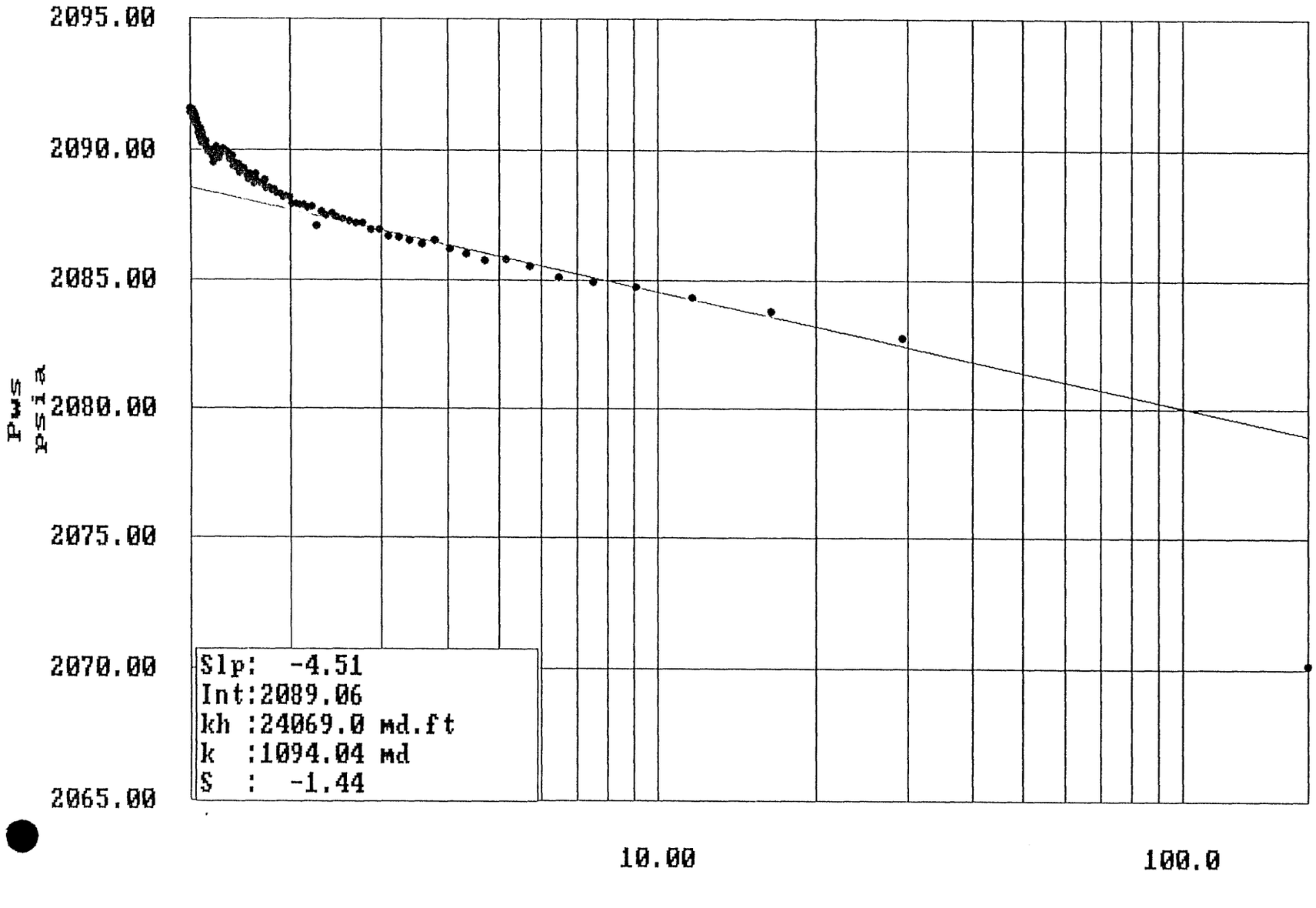
dt

Figure 2

Seahorse #1 - HORNER

Tp =2.239

Time from start of test (hours)



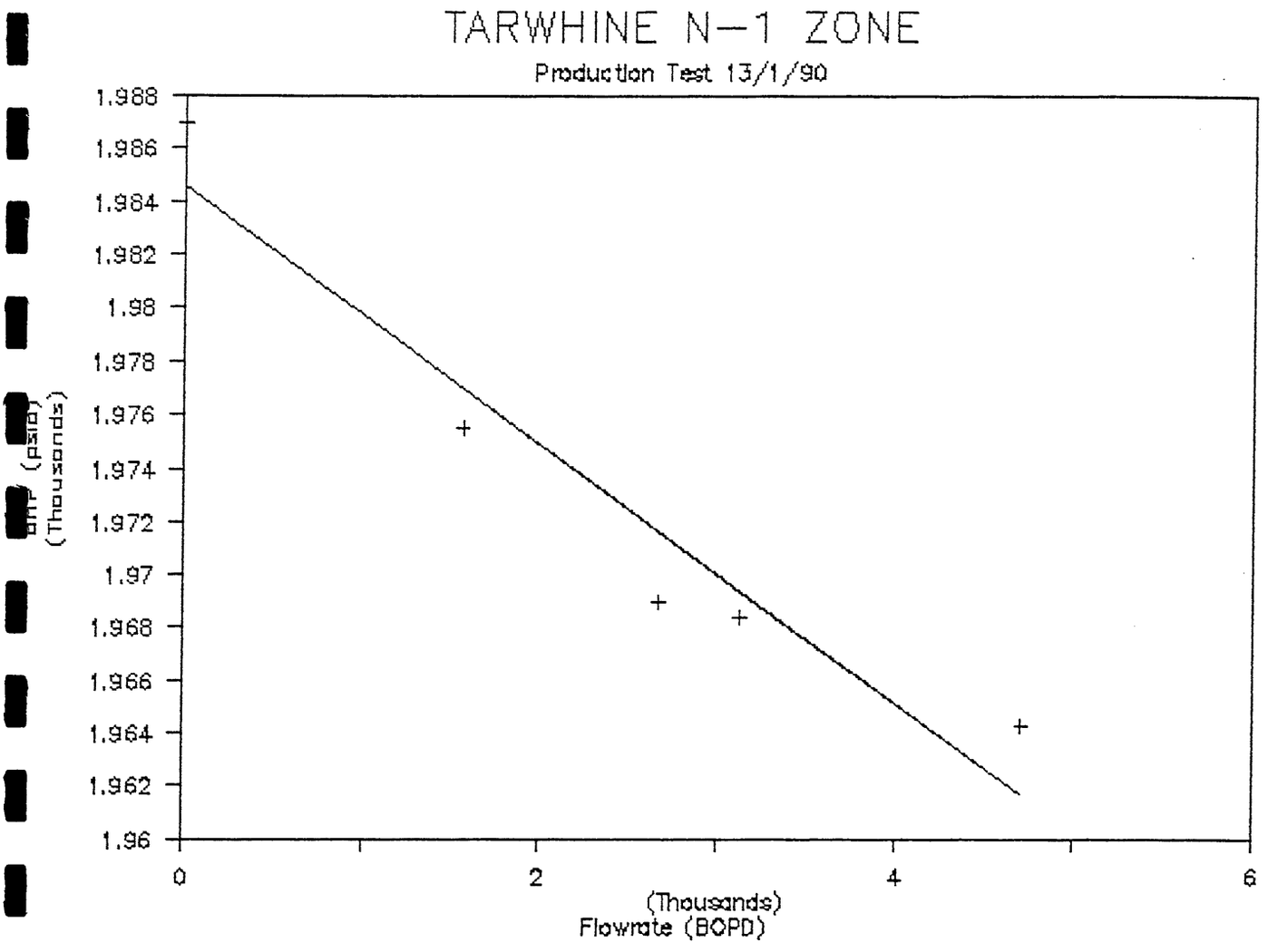

TARWHINE N-1 ZONE
Production Test 13/1/90
1.988
1.986
1.984
1.982
1.98
1.978
1.976
1.974
1.972
1.97
1.968
1.966
1.964
1.962
1.96
BHP (psia)
(Thousands)
0
2
4
6
(Thousands)
Flowrate (BOPD)

Figure 4

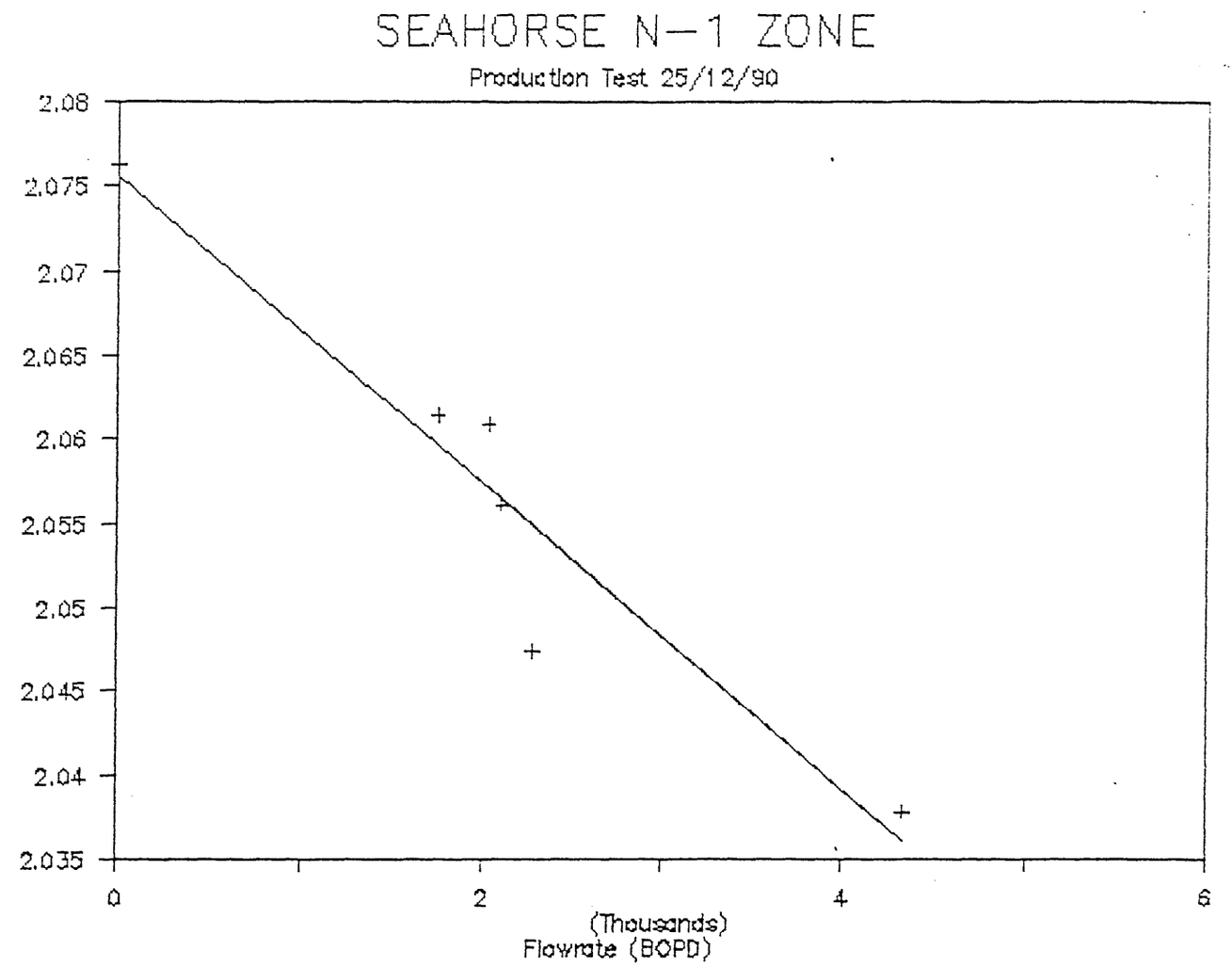
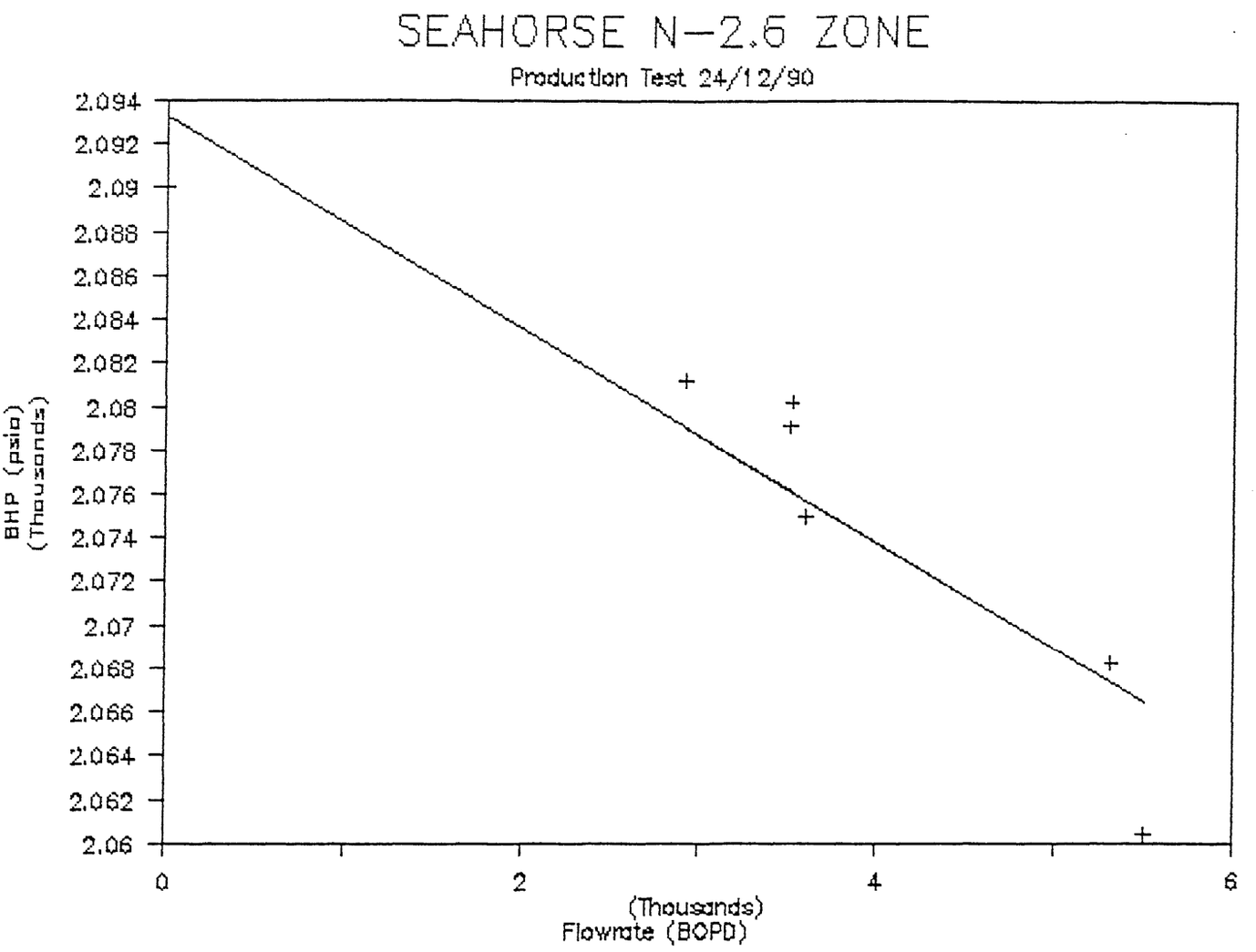

SEAHORSE N-1 ZONE
Production Test 25/12/90
BHP (psia)
(Thousands)
2.08
2.075
2.07
2.065
2.06
2.055
2.05
2.045
2.04
2.035
0
2
4
6
(Thousands)
Flowrate (BOPD)

Figure 5


SEAHORSE N-2.6 ZONE
Production Test 24/12/90
BHP (psia)
(Thousands)
2.094
2.092
2.09
2.088
2.086
2.084
2.082
2.08
2.078
2.076
2.074
2.072
2.07
2.068
2.066
2.064
2.062
2.06
0
2
4
6
(Thousands)
Flowrate (BOPD)

APPENDIX 3

ESSO AUSTRALIA LTD

SUBSEA WELL COMPLETION REPORT

SUBSEA EQUIPMENT DETAILS

ESSO AUSTRALIA LTD

SUBSEA WELL COMPLETION REPORT

SUBSEA EQUIPMENT DETAILS

1 SYSTEM OVERVIEW

Both of the Seahorse-1 (SHS-1) and Tarwhine-1 (TWN-1) subsea wells produce to the existing Barracouta platform. A common control system operators console, hydraulic power unit and chemical injection skid have been installed on Barracouta along with common process equipment.

Both the Seahorse and Tarwhine crudes are light and relatively gassy.

Both subsea completions were installed on previously drilled exploration wells.

1.1 Downhole Equipment

The downhole completions for Seahorse-1 and Tarwhine-1 are simple 4-1/2 inch single production tubing strings with a short 2-3/8" annulus tubing string as shown in Figures 1 thru 4.

Seahorse-1 produces oil from two discrete reservoir units, commingled downhole via a sliding sleeve.

The Tarwhine-1 completion produces oil from a single zone.

A single gas lift mandrel has been provided in each completion string to enable gas lift via the production annulus.

Two tubing retrievable subsurface safety valves have been installed in tandem in each completion string. Each safety valve has an operating control line and a permanent lock-out line. It is intended to use the upper safety valve as the operating safety valve with the lower safety valve provided as a standby.

In the event of the operating safety valve failing it would be permanently locked out of service and the standby valve used. The permanent lock-out line cannot be accessed by the operating control system and requires a Remote Operated Vehicle (ROV) intervention. A communication nipple accessing the lower SCSSV control line has also been provided to enable a wireline insert sub-surface safety valve to be installed should both tubing retrievable safety valves fail.

1.2 Subsea Tree

Both the Seahorse and Tarwhine subsea christmas trees are 4 inch x 2 inch non-TFL 5000 psi MWP trees. A schematic of the trees is shown in Figure 5. Figure 6 shows a cross-section through the trees.

Each tree incorporates a tubing spool which was installed on the existing 18-3/4 inch Cameron Iron Works wellhead. A flowline retainer system has been provided on the tubing spool to retain the production line and annulus line in place when the tree is disconnected from the tubing spool. The tree is a single solid block type which provides vertical access to both the production and annulus bores. Both trees have a dual bore, orienting type tubing hanger which locks down in the tubing spool. The drift I.D. through the production and annulus bores in the tree/tubing hanger is 3.879 inches and 1.656 inches respectively.

Most valves on the subsea trees are hydraulically actuated with manual overrides. Some ROV actuated valves are also provided.

Control lines to the various valve actuators are routed over the tree cap to enable the tree running tool to have direct access to the valve actuators during installation and workover. This allows the subsea control module (SCM) to remain in place on the tree during installation and workovers.

The running tools for the tubing hanger, tree and tree cap are hydraulically actuated. The running tools provided for Seahorse and Tarwhine are common to both wells and are also suitable for use on other subsea wells which may be subsequently installed.

Seahorse and Tarwhine both require pipeline pigging facilities. These facilities have been provided in the form of an on-tree pigging manifold.

Both trees provide a tie-in point for a potential second well. This "tie-in point" consists simply of some additional piping on the tubing spool and a junction box (currently in storage at BBMT) for the connection of a jumper umbilical to a second well.

1.3 Control System

The operating control system for Seahorse and Tarwhine employs a multiplexed electro-hydraulic control system capable of expansion to control three additional wells. The electronics are housed in a one atmosphere chamber in the subsea control module (SCM).

An overview of the control system is shown in Figure 7.

A dual pressure hydraulic system has been provided with 3000 psi and 5000 psi nominal pressures to actuate the tree valves and subsurface safety valves respectively.

The control system requires the hydraulic fluid cleanliness to be maintained to NAS 1638 Class 8. The control system senses the production and annulus pressures, the production temperature, inferred valve position and a number of system parameters.

1.4 Umbilicals

Two chemical injection lines (1 x 3/4 inch and 1 x 1 inch), two hydraulic supply lines (1 x 1/2 inch x 3000 psi and 1 x 3/8 inch x 5000 psi) and electrical power and signal cables (plus redundant back-up cables) have been installed to both wells. The chemical injection lines, hydraulic supply lines and electrical cables are installed in a single composite armoured thermoplastic umbilical.

The chemical injection lines, two hydraulic supply lines and electrical cables are all connected to the umbilical junction plate mounted on the subsea tree and thence by hard pipe/wiring to the SCM mounting base.

1.5 Flowlines

Seahorse produces 11.3 km to Barracouta via a 6 inch flowline insulated to prevent wax deposition as the crude cools. A 2 inch annulus (gas lift) line has also been installed to provide gas lift gas from Barracouta.

Tarwhine produces 17.4 km to Barracouta via an 8 inch flowline, insulated to prevent hydrate formation. A 2 inch annulus (gas lift) line has also been installed to provide gas lift gas from Barracouta.

The production lines and annulus lines are connected to the flowline retainer piping on the tubing spools with flexible pipe spools.

2 PHASES OF OPERATION

The subsea equipment provided for the Seahorse-1 and Tarwhine-1 subsea wells was designed to support a number of different phases of operation including initial installation, production and a range of interventions, as outlined below.

2.1 Installation

Seahorse-1 and Tarwhine-1 were both originally drilled as exploration wells, in 1978 and 1981 - 82 respectively. Both wells used Cameron Iron Works WS-I marine wellheads.

In order to facilitate early tie-in of the pipelines to the subsea completions, the tubing spools (supplied by Vetco Gray) were installed at the Seahorse-1 and Tarwhine-1 well locations in August - September 1989.

The pipelines were then laid by the "Apache" reel ship and the flexible jumpers were connected to the hard piping on the tubing spools by divers working from the Stena "Seahorse-II" dive support vessel.

The downhole equipment (supplied by Sumitomo, Camco and Otis) and the subsea trees (supplied by Vetco Gray) were installed in December 1989 - January 1990.

The tubing spools and subsea trees were all installed using the semi-submersible drilling rig "Southern Cross", after which the umbilicals were connected to the trees by divers working from the Stena "Seahorse-II" dive support vessel.

2.2 Production

Production activities for the subsea wells will include regular subsurface safety valve leak tests, kick-off of gas lift operations, monitoring of production data, and pigging operations.

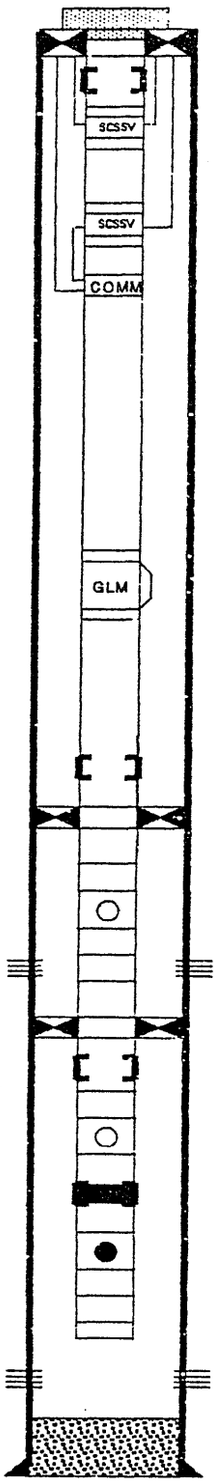
2.3 Interventions

A range of interventions may be required during the productive life of these subsea wells including; repair of the SCM, wireline workovers, tubing workovers, ROV override of an hydraulically actuated valve, operation of an ROV actuated valve or ROV lockout of a subsurface safety valve.

FIGURE 1

SEAHORSE 1

PRODUCTION COMPLETION SCHEMATIC



DESCRIPTION	APPROXIMATE DEPTH (mSS)
4" x 2" TUBING HANGER	40
4 – 1/2" DB-6 LANDING NIPPLE (3.812")	54
4 – 1/2" SURFACE CONTROLLED SUB-SURFACE SAFETY VALVE (SINGLE CONTROL LINE , DEDICATED HYDRAULIC LOCK LINE)	274
4 – 1/2" SURFACE CONTROLLED SUB-SURFACE SAFETY VALVE (SINGLE CONTROL LINE , DEDICATED HYDRAULIC LOCK LINE)	290
4 – 1/2" COMMUNICATION NIPPLE	305
4 – 1/2" TUBING	
4 – 1/2" SIDEPOCKET GAS LIFT MANDREL	896
4 – 1/2" DB-5 LANDING NIPPLE (3.687")	1369
9 – 5/8" OTIS HB HYDRAULIC SET PACKER	1370
CAMCO SLIDING SIDE SLEEVE (LEFT OPEN) (CAN BE USED FOR LANDING SEPARATION TOOL)	1391
PERFORATIONS	1401 TO 1424
9 – 5/8" OTIS HB HYDRAULIC SET PACKER	1450
4 – 1/2" DB-6 LANDING NIPPLE (3.563")	1458
OTIS SLIDING SIDE DOOR (LEFT OPEN)	1462
3 – 1/2" "XN" LANDING NIPPLE (2.750") – LEFT BOTTOM HALF OF PLUG IN PLACE	1467
SCHLUMBERGER ONE SHOT SLIDING SLEEVE (LEFT CLOSED)	1471
BULL NOSE	1482
NEW PERFORATIONS	1487 TO 1491
PBTD	1625
9 – 5/8" PRODUCTION CASING	1654

DEPTHS SHOWN ARE TO BOTTOM OF EACH ITEM.

REV 15

FIGURE 2

SEAHORSE 1

ANNULUS COMPLETION SCHEMATIC

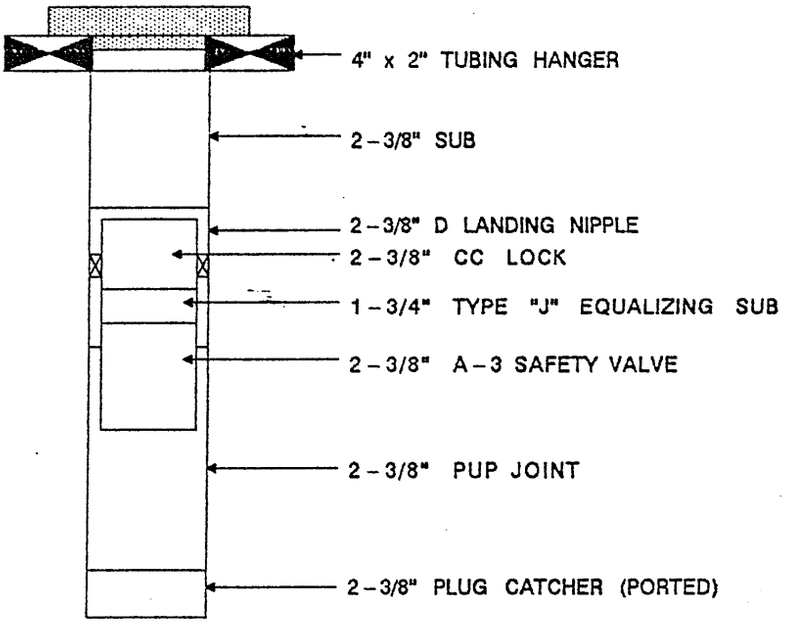
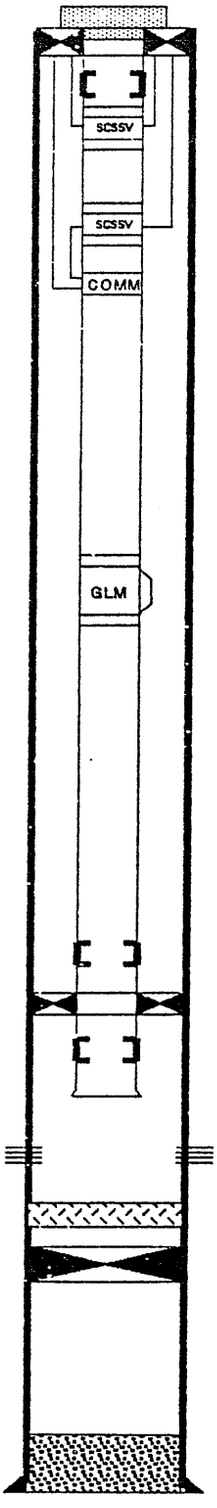


FIGURE 3

TARWHINE 1

PRODUCTION COMPLETION SCHEMATIC



DESCRIPTION	APPROXIMATE DEPTH (m SS)
4" x 2" TUBING HANGER	39
4 – 1/2" LANDING NIPPLE (3.812")	53
4 – 1/2" SURFACE CONTROLLED SUB-SURFACE SAFETY VALVE (SINGLE CONTROL LINE , DEDICATED HYDRAULIC LOCK LINE)	270
4 – 1/2" SURFACE CONTROLLED SUB-SURFACE SAFETY VALVE (SINGLE CONTROL LINE , DEDICATED HYDRAULIC LOCK LINE)	286
4 – 1/2" COMMUNICATION NIPPLE	301
4 – 1/2" TUBING	
4 – 1/2" SIDEPOCKET GAS LIFT MANDREL	889
4 – 1/2" TUBING	
4 – 1/2" LANDING NIPPLE (3.687")	1338
9 – 5/8" HYDRAULIC SET PACKER	1339
4 – 1/2" LANDING NIPPLE (3.563")	1357
WIRELINE RE – ENTRY GUIDE	1358
PERFORATIONS	1366 TO 1380
REMAINS OF MODEL D PACKER	1420
EZSV	1429
PBTD	2873
9 – 5/8" PRODUCTION CASING	2909

DEPTHS SHOWN ARE TO BOTTOM OF EACH ITEM.

REV 9

FIGURE 4

TARWHINE 1

ANNULUS COMPLETION SCHEMATIC

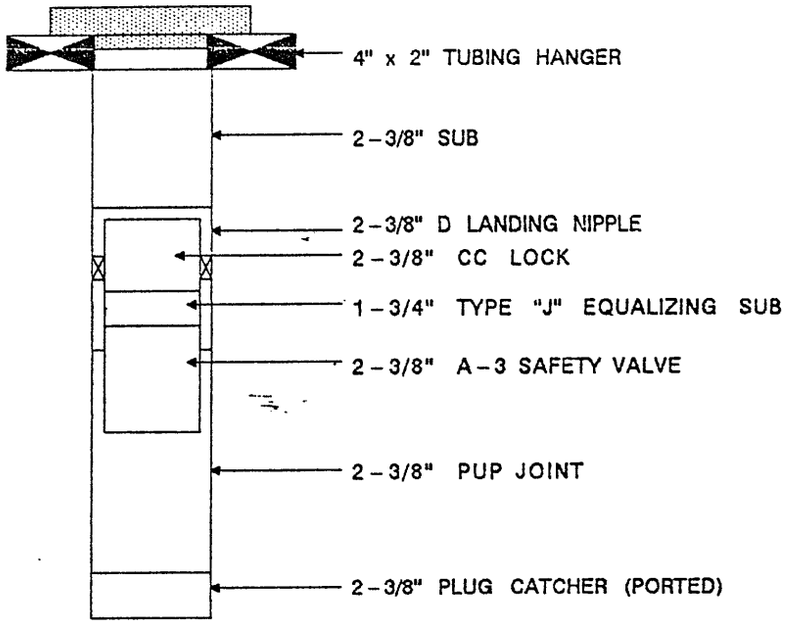
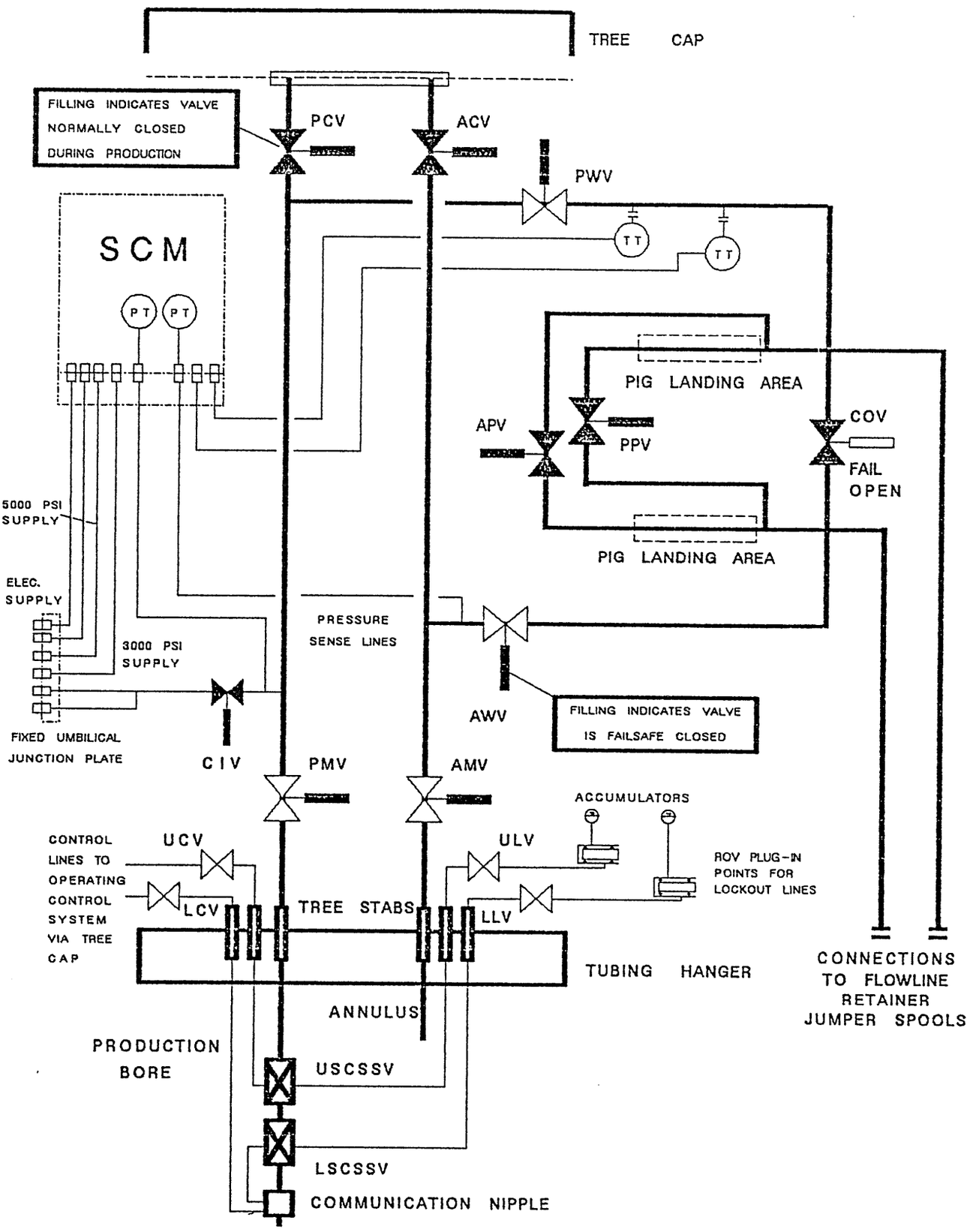


FIGURE 5



SUBSEA TREE SCHEMATIC

REV. 6

FIGURE 6

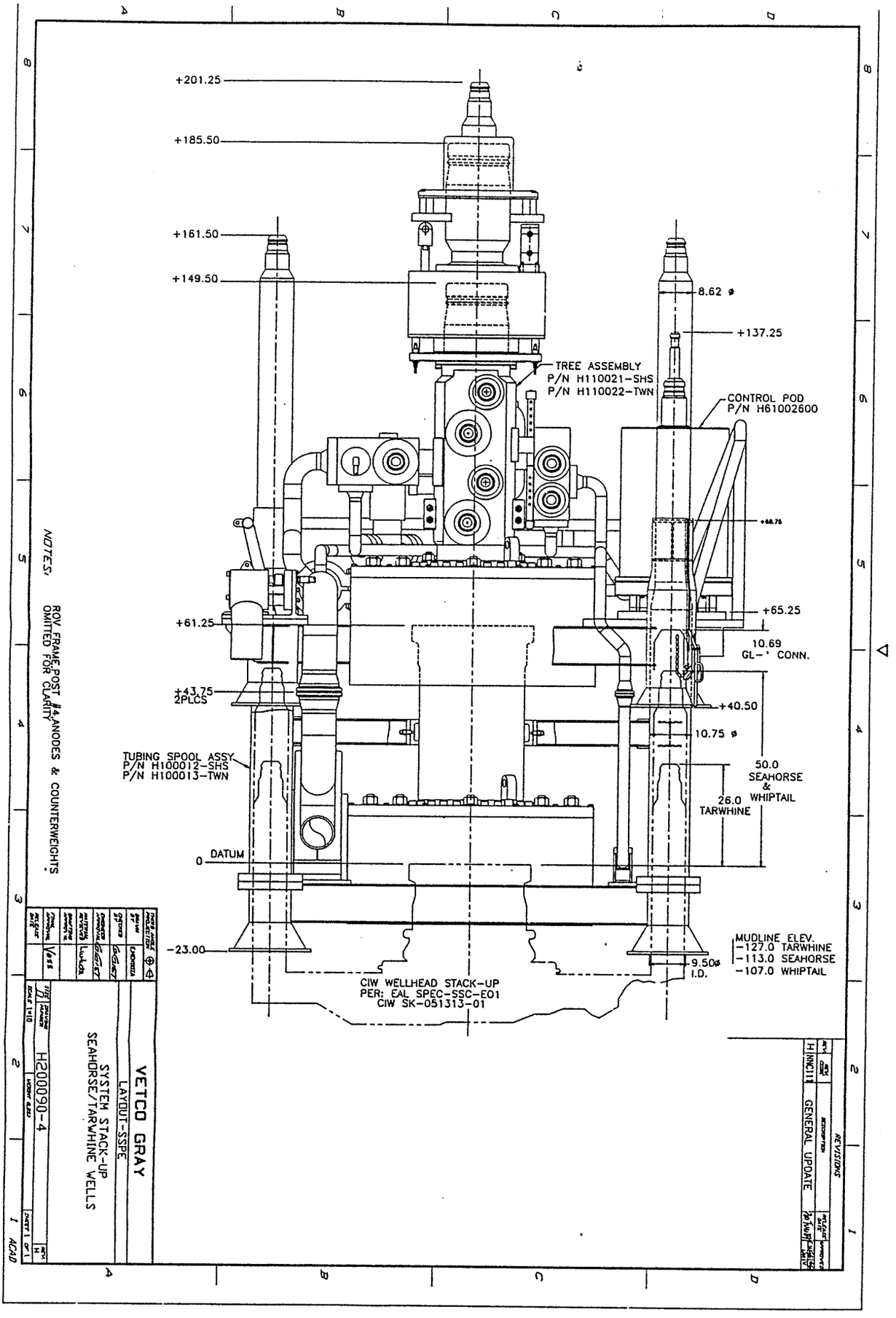
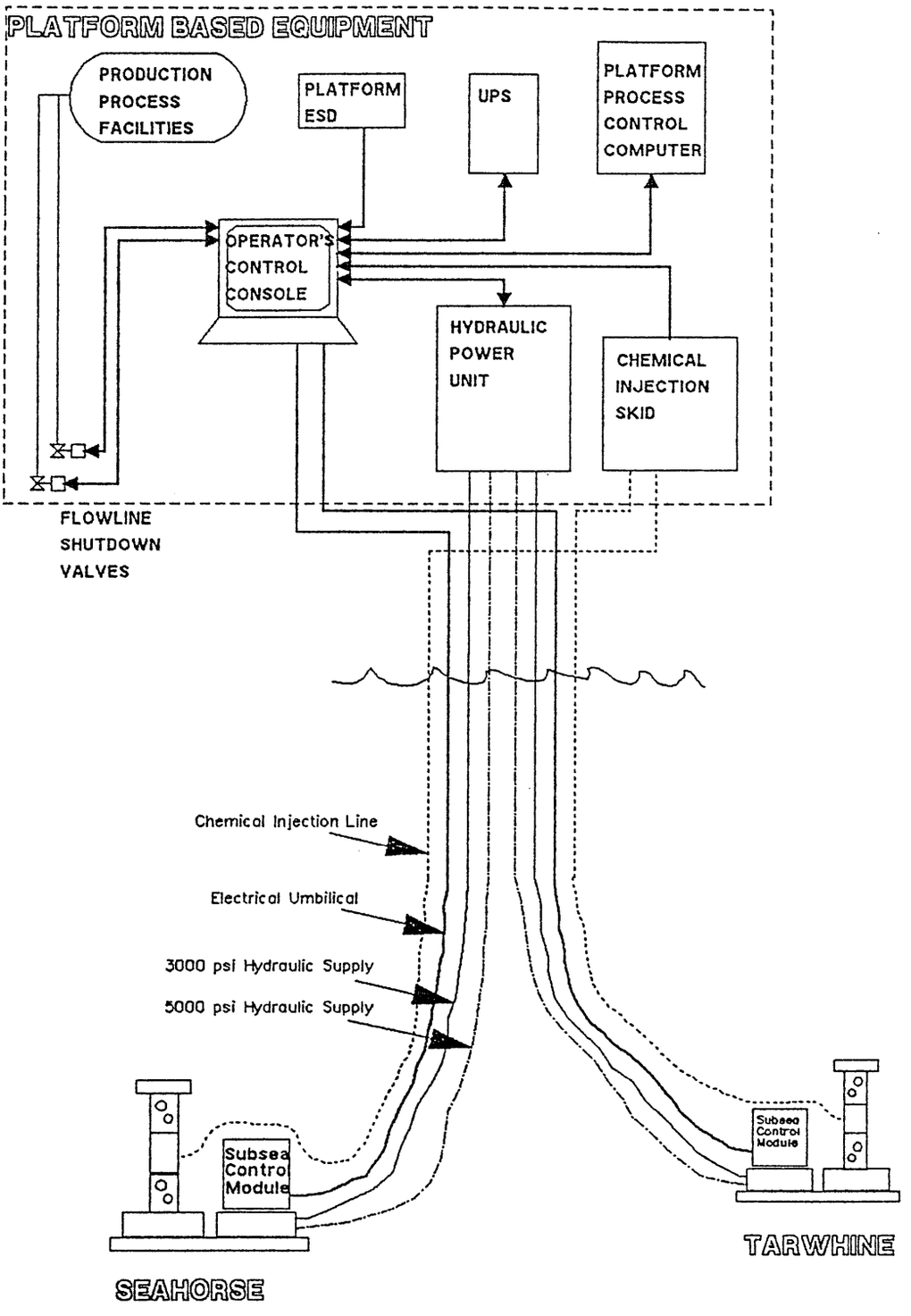

+201.25
+185.50
+161.50
+149.50
8.62 ø
+137.25
TREE ASSEMBLY
P/N H110021-SHS
P/N H110022-TWN
CONTROL POD
P/N H61002600
+65.25
10.69
GL-' CONN.
+61.25
+43.75
2PLCS
+40.50
10.75 ø
TUBING SPOOL ASSY
P/N H100012-SHS
P/N H100013-TWN
50.0
SEAHORSE
&
WHIPTAIL
26.0
TARWHINE
DATUM
0
-23.00
MUDLINE ELEV.
-127.0 TARWHINE
-113.0 SEAHORSE
-107.0 WHIPTAIL
9.50ø
I.D.
CIW WELLHEAD STACK-UP
PER: EAL SPEC-SSC-E01
CIW SK-051313-01
NOTES:
ROV FRAME POST #4 ANODES & COUNTERWEIGHTS
OMITTED FOR CLARITY.
VETCO GRAY
LAYOUT-SSPE
SYSTEM STACK-UP
SEAHORSE/TARWHINE WELLS
H200090-4
GENERAL UPDATE
H1NNC111

FIGURE 7



CONTROL SYSTEM OVERVIEW
ELECTROHYDRAULIC SYSTEM

REVISION 1
FIG14
31-MAY-88

PE902678

This is an enclosure indicator page.
The enclosure PE902678 is enclosed within the container PE902677 at this location in this document.

The enclosure PE902678 has the following characteristics:

ITEM_BARCODE	= PE902678
CONTAINER_BARCODE	= PE902677
NAME	= Structure Map Top of Coarse Clastics Seismic Marker
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= SEISMIC
SUBTYPE	= HRZN_CNTR_MAP
DESCRIPTION	= Structure Map Top of Coarse Clastics Seismic Marker (Latrobe Group) enclosure from WCR for Tarwhine-1
REMARKS	=
DATE_CREATED	= 1/03/82
DATE_RECEIVED	= 29/12/82
W_NO	= W760
WELL_NAME	= Tarwhine-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902679

This is an enclosure indicator page.
The enclosure PE902679 is enclosed within the container PE902677 at this location in this document.

The enclosure PE902679 has the following characteristics:

ITEM_BARCODE	= PE902679
CONTAINER_BARCODE	= PE902677
NAME	= Tarwhine Prospect Geological Cross Section A-A'
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= cross section
DESCRIPTION	= Tarwhine Prospect Geological Cross Section A-A'
REMARKS	=
DATE_CREATED	= 1/03/82
DATE_RECEIVED	= 29/12/82
W_NO	= W760
WELL_NAME	= Tarwhine-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE601370

This is an enclosure indicator page.
The enclosure PE601370 is enclosed within the container PE902677 at this location in this document.

The enclosure PE601370 has the following characteristics:

ITEM_BARCODE	= PE601370
CONTAINER_BARCODE	= PE902677
NAME	= Well Completion log
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= COMPLETION_LOG
DESCRIPTION	= Well Completion log
REMARKS	=
DATE_CREATED	= 20/11/81
DATE_RECEIVED	= 29/12/82
W_NO	= W760
WELL_NAME	= Tarwhine-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902680

This is an enclosure indicator page.
The enclosure PE902680 is enclosed within the container PE902677 at this location in this document.

The enclosure PE902680 has the following characteristics:

ITEM_BARCODE	= PE902680
CONTAINER_BARCODE	= PE902677
NAME	= Tarwhine Time Depth Curve
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= VELOCITY_CHART
DESCRIPTION	= Tarwhine Time Depth Curve (enclosure from WCR) for Tarwhine-1
REMARKS	=
DATE_CREATED	= 1/03/82
DATE_RECEIVED	= 29/12/82
W_NO	= W760
WELL_NAME	= Tarwhine-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)

PE902681

This is an enclosure indicator page.
The enclosure PE902681 is enclosed within the container PE902677 at this location in this document.

The enclosure PE902681 has the following characteristics:

ITEM_BARCODE	= PE902681
CONTAINER_BARCODE	= PE902677
NAME	= Sonic Calibration Curve
BASIN	= GIPPSLAND
PERMIT	=
TYPE	= WELL
SUBTYPE	= VELOCITY_CHART
DESCRIPTION	= Sonic Calibration Curve
REMARKS	=
DATE_CREATED	= 1/04/82
DATE_RECEIVED	= 29/12/82
W_NO	= W760
WELL_NAME	= Tarwhine-1
CONTRACTOR	= ESSO
CLIENT_OP_CO	= ESSO

(Inserted by DNRE - Vic Govt Mines Dept)