



INTEQ



END OF WELL REPORT

ESSO AUSTRALIA PTY LTD

EAST PILCHARD - 1

JULY - AUGUST 2001

by

BAKER HUGHES INTEQ

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Esso Australia Pty Ltd: East Pilchard-1

Final Well Report

Section 1 Operations Summary

- 1-1 Introduction
- 1-2 Well and rig information

Section 2 Drilling and Engineering

- 2-1 Bit Run Summaries
- 2-2 Casing and Cement Summaries

Section 3 Geology and Shows

- 3-1 Geology Summary and Shows
- 3-2 Sample Distribution

Section 4 Pressure Evaluation

- 4-1 Pore Pressure Evaluation
- 4-2 Fracture Pressure Evaluation

Tables

- 1 Bit Run Summary
- 2 Bit Hydraulics Summary
- 3 Survey Data Summary
- 4 Time vs. Depth Curve

Appendices

- | | | |
|---|--------------------------|--------|
| 1 | Formation Evaluation Log | 1: 500 |
| 2 | Drilling Data Plot | 1:1000 |
| 3 | Pressure Data Plot | 1:1000 |
| 4 | Pressure Summary Plot | 1:7500 |
| 5 | Gas Ratio Plot | 1: 500 |

SECTION 1

WELL SUMMARY

1. Operations Summary

1.1 Introduction

Baker Hughes INTEQ Mudlogging provided formation evaluation, drill monitoring and pressure evaluation services for East Pilchard-1 from spud until suspension. Data was processed and stored using Drillbyte V.2.3.1 software. All depths in this report unless otherwise stated refer to mMDRT - measured distance in metres from the rig's rotary table.

East Pilchard-1 was planned as a 2925m MDRT vertical hole to test the sub-volcanic oil potential of the Golden Beach Group, expected to be composed of good quality braided fluvial to upper deltaic sands and gravels.

The well was spudded at 12:15 hours on 03 July 2001, drilling the 36" hole with a 17.5" bit with 36" hole opener from the seabed at 116m to 163m using seawater and high viscosity prehydrated gel (PHG) sweeps. The 30" conductor casing was run with the casing shoe set at 163m.

The 17.5" hole was then drilled riserless with rates of penetration averaging 63m/hr, using seawater with guar gum sweeps every joint and hi-vis sweeps every stand to the section TD of 885m. The 13.375" casing was run smoothly with the shoe set at 873m. The BOPs were landed and tested as per programme.

With a 12.25" drilling assembly the 13.375" float, the casing shoe and new hole from 885m to 888m were drilled using seawater and hi-vis gel sweep. The hole was displaced to 9.05 ppg KCl mud and the Leak Off Test (LOT) conducted to 17.0 ppg EMW. The 12.25" hole was drilled initially with a fixed cutter PDC bit, drilling from 885m to 2054m with penetration rates ranging from 2 to 168m/hr until the bit was pulled due to poor penetration rates in the coarse sandstones. A tricone bit was then used and it drilled in the sandstone at 8m/hr. Past the sandstone at 2107m the tricone bit was pulled due to poor penetration in the siltstones. A PDC bit was run but soon pulled out due to bit balling having drilled 7m in 9.5 hours. The PDC bit was replaced with a tricone bit that drilled at 5m/hr from the siltstone/sandstone sequence at 2114m to the volcanics at 2471m. The bit was pulled after accumulating 71.2 hours of drilling. The mudweight was raised gradually from 9.05 ppg to 10.1 ppg at the top of the volcanics. At 2471m a phase 3 PIT was done with 10.1 ppg mud that yielded 12.7 ppg EMW fracture gradient.

A new Security XL20D bit was run in and drilling resumed slowly in the volcanics/siltstone/ sandstone sequence. Several flow checks were conducted on drill breaks, all with static-hole results. The bit was pulled out at 2783m after 82 hours of drilling averaging 3.8m/hr. Drilling to the initial target depth of 2925m was accomplished using NB#8 Reed EHP51 with an average penetration of 4.01 m/hr. The target depth was extended to 2945m after hydrocarbon shows were seen and recorded from the sandstones near prognosed TD of 2925m MD. Wireline logs were run and after thorough evaluation, it was decided to drill further. NB#9 was made up with the previous bottom hole assembly and RIH. MDT Gas was circulated out at the shoe and when back on bottom, bottoms up gas was diverted through the choke line. Drilling then resumed slowly maintaining the mud density at 10.1ppg by continuous premix mud additions. The total depth of 3138m was reached at 0900hrs on the 1st of August 2001. The bit was tripped to the shoe. On the way back, the hole became sticky at 3131m requiring reaming to bottom. The subsequent wireline run indicated a severely washed out section at 3131m. A string of 9 5/8" casing was then run with the shoe set at 3126m and the well was suspended as a gas discovery.

1.2 Well and Rig Information

Well Name:	East Pilchard-1	
Well Type:	Wildcat Exploration	
Operator:	ESSO Australia Pty Ltd.	
Location:	Gippsland Basin, Offshore Victoria, Australia	
Block:	VIC/L9	
Final Coordinates:	Latitude	38° 11' 54.184" S
	Longitude	148° 33' 42.825" E
Rig:	Ocean Bounty	
Type:	Semi-submersible MODU	
Rig Floor - Seabed:	116 mMDRT	
Rig Floor - MSL	25 m	
Spud Date:	03 July 2001	
Total Depth:	3138 mMDRT	
Status:	Cased and Suspended	
Baker Hughes INTEQ:	Data Engineers:	Rommel Tadiar Jeff Wilson Joseph Bardelosa Romeo Tena
	Logging Geologists:	Matt Ronan Elaine Spence
	Trainee Logging Geologists:	Daniel Pickering Rhys Graafhuis

Section 2

Drilling and Engineering

2.1 Bit Run Summaries

36" Phase: 03 July 2001

Bit Run 1 Summary

Bit Number	NB 1
Bit Size	17.5" / 36" hole opener
Bit Type	Security XT1C
S/N	743584
Jets	4x20 (H-O 4x18)
Depth In	116m
Depth Out	163m
Metres Drilled	47
Drilling Hours	1.7
TBR, krevs	9.0
Circulating Hours	2.4
Average ROP, m/hr	27.6
API Condition	1-1-NO-A-E-I-NO-TD

Drilling Parameters

WOB, tonnes	0.5	-	3.4
RPM	31	-	90
Torque kft-lbs.	0.5	-	1.7
Pump Pressure, psi	80	-	1523
Flow In, gpm	292	-	1208

Mud System

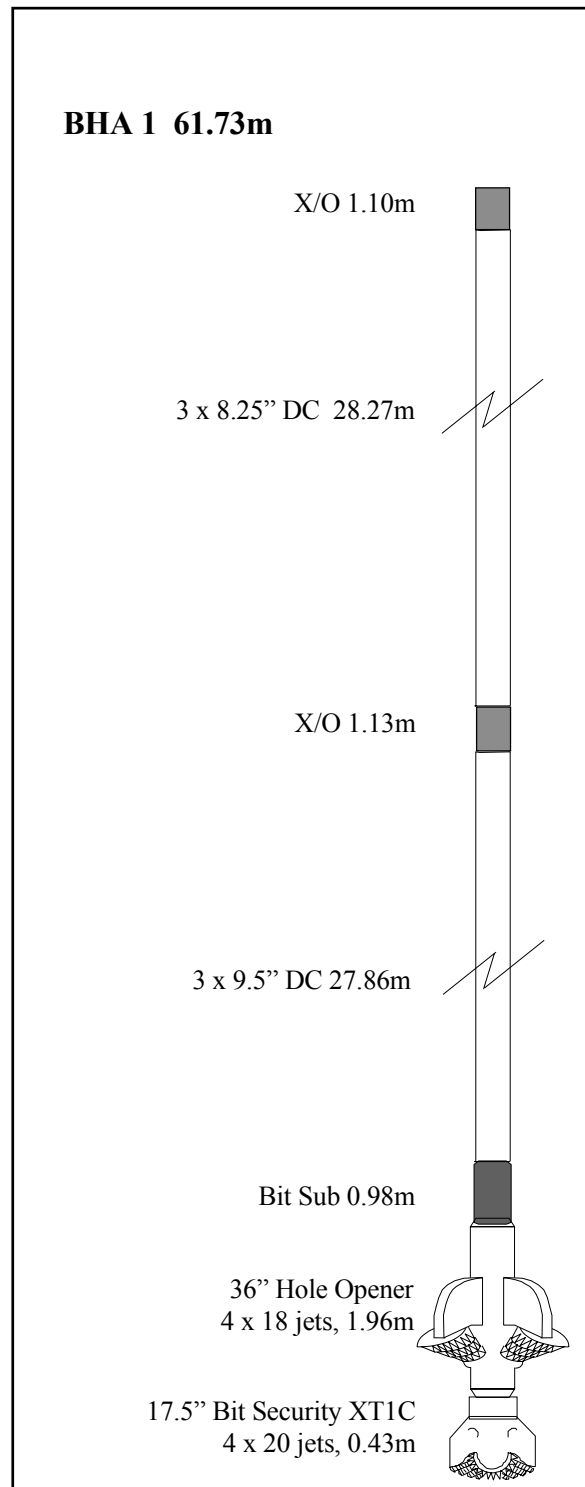
Seawater & hi-viscosity Gel 8.6 ppg
Sweeps

Lithology

Returns to seabed.

Drilling Summary

After running anchors, a 17.5" roller bit with 36" hole opener tagged the seabed at 116m. East Pilchard-1 was spudded at 12:15hrs on 03 July 2001. The section was drilled using seawater, with 50bbls hi-vis prehydrated gel (PHG) sweeps pumped every 15 metres. At section TD of 163m, a 100bbls hi-vis PHG pill was swept around before displacing the hole to 280bbls gel. Before pulling the bit to 15 metres below the mudline, a TOTCO survey tool was dropped, but the survey was a misrun. The bit was then run back to bottom and 50 bbls hi-vis gel swept around. The hole was displaced with 380bbls PHG before the bit was pulled to surface to run the 30" conductor casing.



17.5" Phase : 04 - 05 July 2001**Bit Run 2 Summary**

Bit Number	NB 2
Bit Size	17.5"
Bit Type	Hycalog HF34+GN
S/N	24400
Jets	8 x 14
Depth In	163m
Depth Out	885m
Metres Drilled	722
Drilling Hours	17.1
TBR, krevs	126.6
Circulating Hours	20.8
Average ROP, m/hr	42.2
API Condition	1-1-NO-A-X-I-CT-TD

Drilling Parameters

WOB, klbs	0.7	-	17.3
RPM	61	-	154
Torque kft-lbs.	0.48	-	9.61
Pump Pressure, psi	827	-	3135
Flow In, gpm	626	-	1189

Mud System

Seawater & hi-viscosity	8.6 ppg
Gel Sweeps	

Lithology

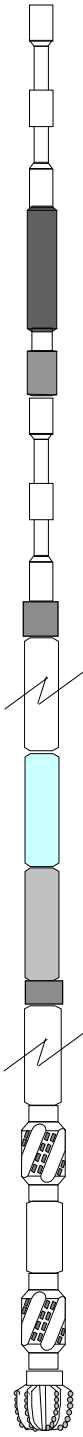
Returns to seabed.

Drilling Summary

NB 2, a fixed cutter bit was made up to a packed drilling assembly and run in, tagging cement at 162m. After drilling out of the cement and the 20" casing shoe at 163m, new formation was drilled from 163m with 50bbls prehydrated gel (PHG) sweeps pumped every 15 metres drilled. Directional surveys were taken at every connection. Section TD was reached at 885m. After the final directional survey was made, a 100bbls hi-vis gel pill was swept around. The hole was then wiped back to the 30" casing shoe at 163m. On the way back in, one metre of fill was tagged at 884m. Another 100bbls gel sweep was pumped to clean the hole. The open hole was then displaced to weighted (12ppg) gel mud. There were no hole problems encountered on the trip out.

BHA 2 382.46m

30 x 5" HWDP	274.47m	
6.5" Jars	9.79m	
2 x 5" HWDP	17.78m	
X/O	1.10m	
3 x 8" DC	28.27m	✓
8" Monel DC	9.09m	
MWD	8.46m	
X/O	1.13m	
2 x 9.5" DC	18.42m	✓
Stabiliser	2.53m	
9.5" DC	9.44m	
NB Stabiliser	1.57m	
17.5" Bit Hycalog DS34HF+GN		
8 x 14 Jets	0.41m	



12.25" Phase: 07 - 10 July 2001**Bit Run 3 Summary**

Bit Number	NB 3
Bit Size	12.25"
Bit Type	Smith MA89PX
S/N	JS4375
Jets	7 x 12
Depth In	885m
Depth Out	2054m
Metres Drilled	1169
Drilling Hours	51.5
TBR, krevs	472.2
Circulating Hours	68.1
Average ROP, m/hr	22.7
API Condition	3-3-BT-A-X-2-WT-PR

Drilling Parameters

WOB, klbs	0.5	-	18.4
RPM	56	-	178
Torque kft-lbs.	2.4	-	12.0
Pump Pressure, psi	1168	-	3742
Flow In, gpm	591	-	1132

Mud System

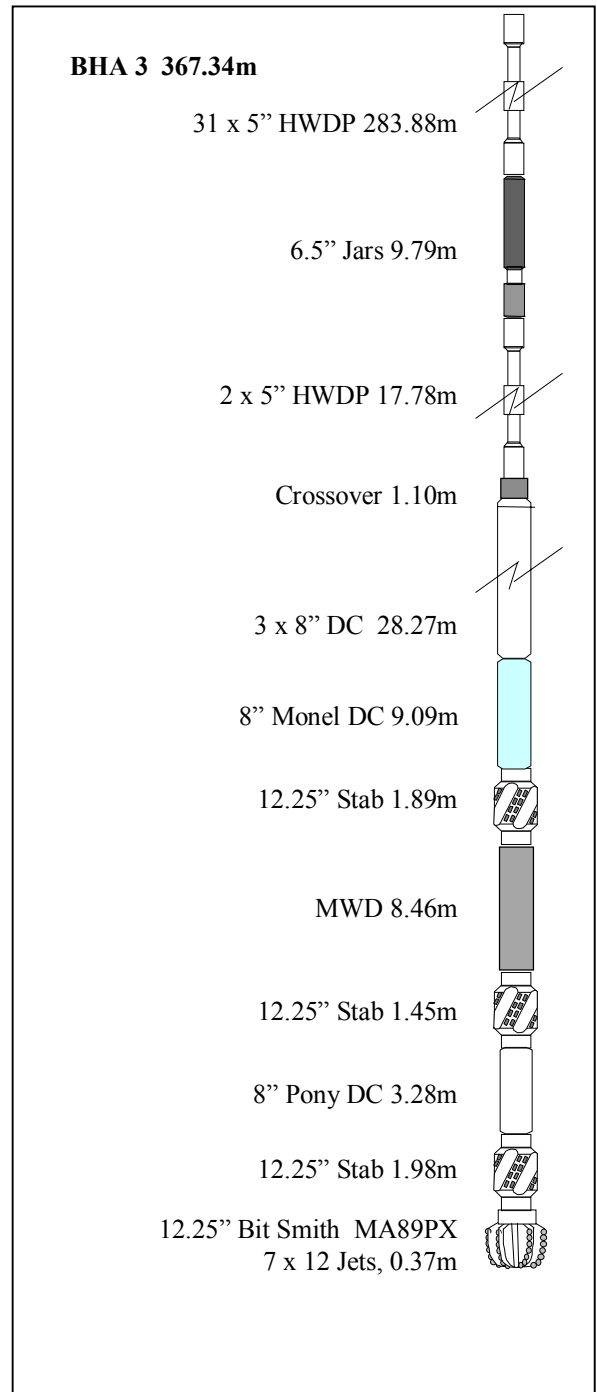
KCI / PHPA / Glycol	9.0	-	9.9 ppg
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Lithology

Marl, Claystone, Siltstone & Sandstone & Coal

Drilling Summary

After running BOPs and marine riser, NB 3 was made up to a locked conventional drilling assembly with Directional MWD tool and run in, tagging the float collar at 849m. Cement, shoe track, the casing shoe at 873m and three metres of new formation to 888m were drilled out. After displacing the hole to KCI/PHPA/Glycol mud, the bit was pulled back into the casing shoe and a Formation Integrity Test (FIT) was performed. A surface pressure of 1180psi exerted on the formation with 9.0ppg mud yielded an Equivalent Mud Weight (EMW) of 17.0ppg. Drilling resumed and the mud weight was gradually increased to 9.9 ppg. Claystones higher in the section were producing trace amounts of large blocky cavings intermittently, though all pore pressure parameters indicated a normal geopressure gradient throughout the section.



11 July 2001**Bit Run 4 Summary**

Bit Number	NB 4
Bit Size	12.25"
Bit Type	Security XL20D
S/N	743448
Jets	3 x 18
Depth In	2054m
Depth Out	2107m
Metres Drilled	53
Drilling Hours	7.0
TBR, krevs	43.7
Circulating Hours	8.9
Average ROP, m/hr	7.6
API Condition	1-1-NO-A-E-I-NO-PR

Drilling Parameters

WOB, klbs	3.6	-	27.8
RPM	78	-	130
Torque kft-lbs.	2.3	-	15.1
Pump Pressure, psi	3096	-	3597
Flow In, gpm	650	-	853

Mud System

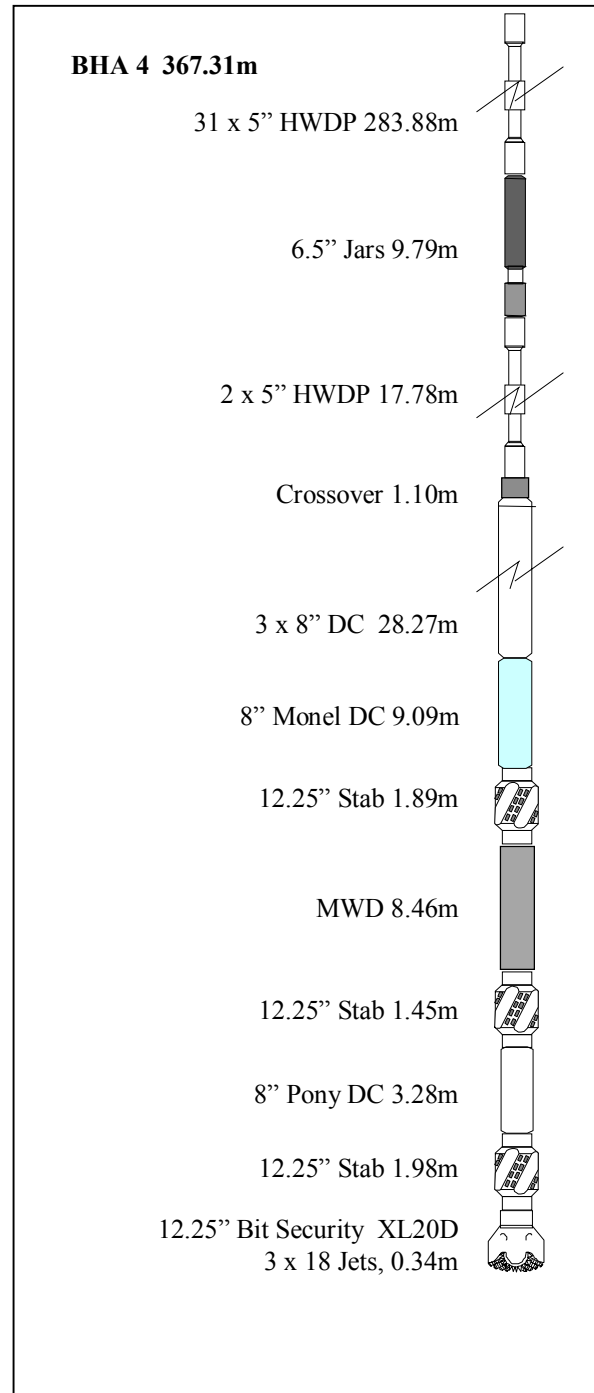
KCI / PHPA / Glycol	9.9 sg
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Lithology

Sandstone, Siltstone

Drilling Summary

A conventional tricone insert bit was made up to the previous locked drilling assembly with in-string Directional MWD tool and run in. The pumps were started and washing and reaming started from 1817m to the bottom. 53m of new hole was then drilled in 7 hours. Due to the slow rate of penetration, it was decided to pull out of hole and inspect the bit at surface.



12 July 2001**Bit Run 5 Summary**

Bit Number	NB 5
Bit Size	12.25"
Bit Type	Smith MGR84VPX
S/N	JS 5357
Jets	8 x 12
Depth In	2107m
Depth Out	2114m
Metres Drilled	7
Drilling Hours	9.5
TBR, krevs	43.6
Circulating Hours	11.4
Average ROP, m/hr	0.7
API Condition	1-1-WT-A-X-I-BU-PR

Drilling Parameters

WOB, klbs	8.8	-	40.4
RPM	34	-	109
Torque kft-lbs.	1.5	-	5.0
Pump Pressure, psi	3492	-	3710
Flow In, gpm	867	-	918

Mud System

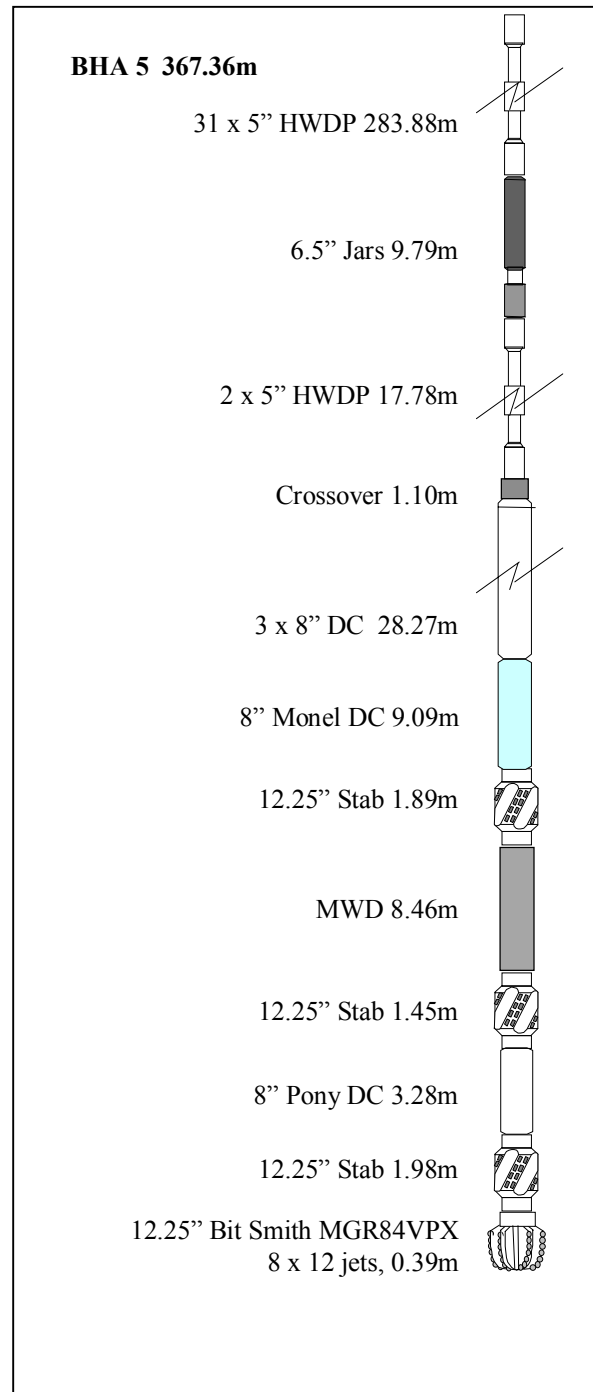
KCI / PHPA / Glycol	9.9	-	10.1 ppg
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Lithology

Siltstone & Sandstone

Drilling Summary

NB 5, an experimental design fixed cutter bit, was made up to the previous locked drilling assembly and run in hole. The hole was washed and reamed where necessary from 1865 to 2107m. Once on bottom, new formation was drilled at about 7 m/hr from 2107 to 2110m. Then while increasing weight-on-bit significantly to increase penetration rates, the bit probably became balled, resulting in extremely slow penetration rates. Drilling parameters were varied to try and get improve ROP, but nothing tried was successful. In an attempt to clean the bit face, two 25 bbls seawater pills were circulated, but had no apparent effect. At 2114m, the decision was made to replace the bit with one more suitable to the formations downhole. The bit was pulled to surface with no problems.



13 - 16 July 2001**Bit Run 6 Summary**

Bit Number	NB 6
Bit Size	12.25"
Bit Type	Security XL20D
S/N	743445
Jets	3 x 18
Depth In	2114m
Depth Out	2471m
Metres Drilled	357
Drilling Hours	71.2
TBR, krevs	375.8
Circulating Hours	76.9
Average ROP, m/hr	5
API Condition	2-3-WT-A-1-I-BT-HR

Drilling Parameters

WOB, klbs	13	-	53
RPM	48	-	111
Torque kft-lbs.	21	-	5.3
Pump Pressure, psi	2913	-	3877
Flow In, gpm	588	-	905

Mud System

KCI / PHPA / Glycol	10.0	-	10.1 ppg
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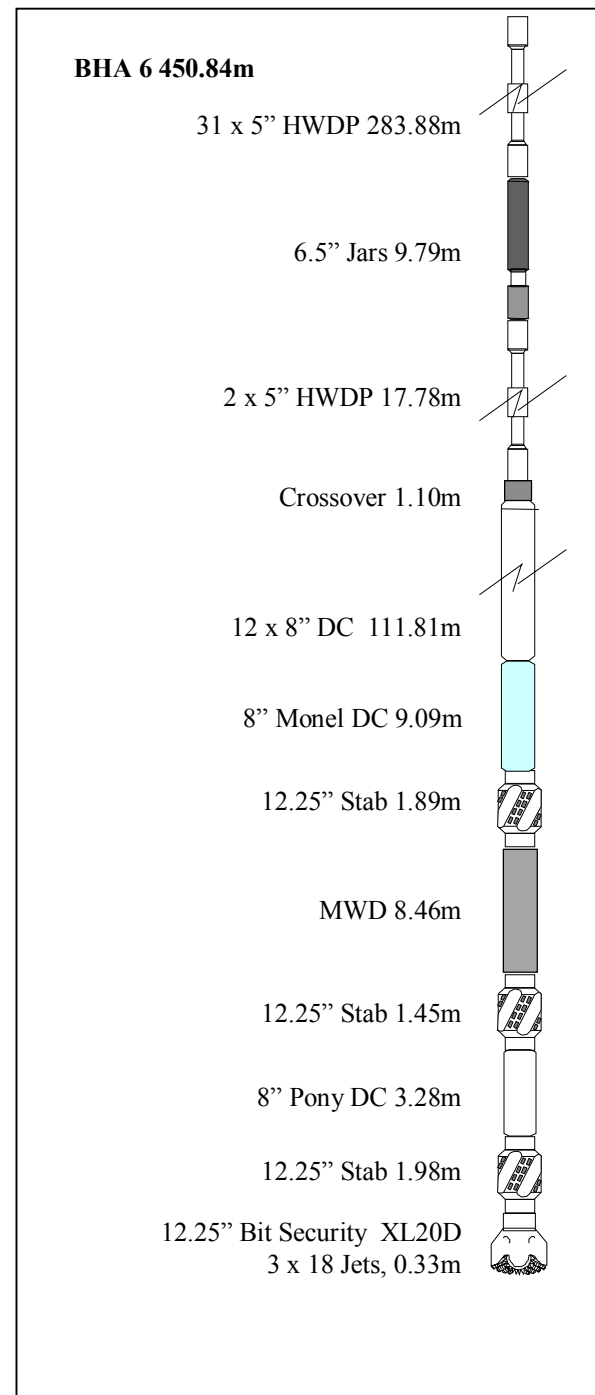
Lithology

Sandstone, Siltstone and Volcanics

Drilling Summary

NB6, a conventional tricone bit, was made up to the previous locked drilling assembly, with 8" drill collars added, and tripped in. After a check MWD survey at 2075m, the hole was lightly washed and reamed as a precaution down to bottom. The hole was found to be in good condition. Drilling new formation started from 2114m, averaging 5 m/hr. Directional surveys were taken as required. The hole was routinely backreamed prior to connections, with the hole found to be good. Intermittent mud seepage losses while drilling were about 10bbls per hour. Fine-grade calcium carbonate LCM was added to the mud regularly to minimise these losses. Gas levels remained low throughout. While drilling, a flow check was made at a drilling break at 2376m, with the well showing no signs of flow. A carbide check run at 2449m, indicated that the average open hole size was 12.4". Drilling continued to 2471m after drilling several metres into volcanic rock formations. The bit was pulled back to the 13.375" casing shoe, with up to 20 klbs drag from 2471 to 2250m, and a tight spot worked through at 2438m. At the casing shoe, an FIT was performed, with 980 psi exerted

at surface yielding an EMW of 12.7ppg. The bit was then pulled out of hole.



17 - 21 July 2001**Bit Run 7 Summary**

Bit Number	NB 7
Bit Size	12.25"
Bit Type	Security XL20D
S/N	740310
Jets	3 x 18
Depth In	2471m
Depth Out	2783m
Metres Drilled	312
Drilling Hours	82.0
TBR, krevs	393.6
Circulating Hours	88.1
Average ROP, m/hr	3.8
API Condition	2-3-CT-G-E-1-WT-HR

Drilling Parameters

WOB, mt	36.1	-	57.0
RPM	66	-	101
Torque kft-lbs.	2.8	-	6.9
Pump Pressure, psi	3540	-	3837
Flow In, gpm	795	-	826

Mud System

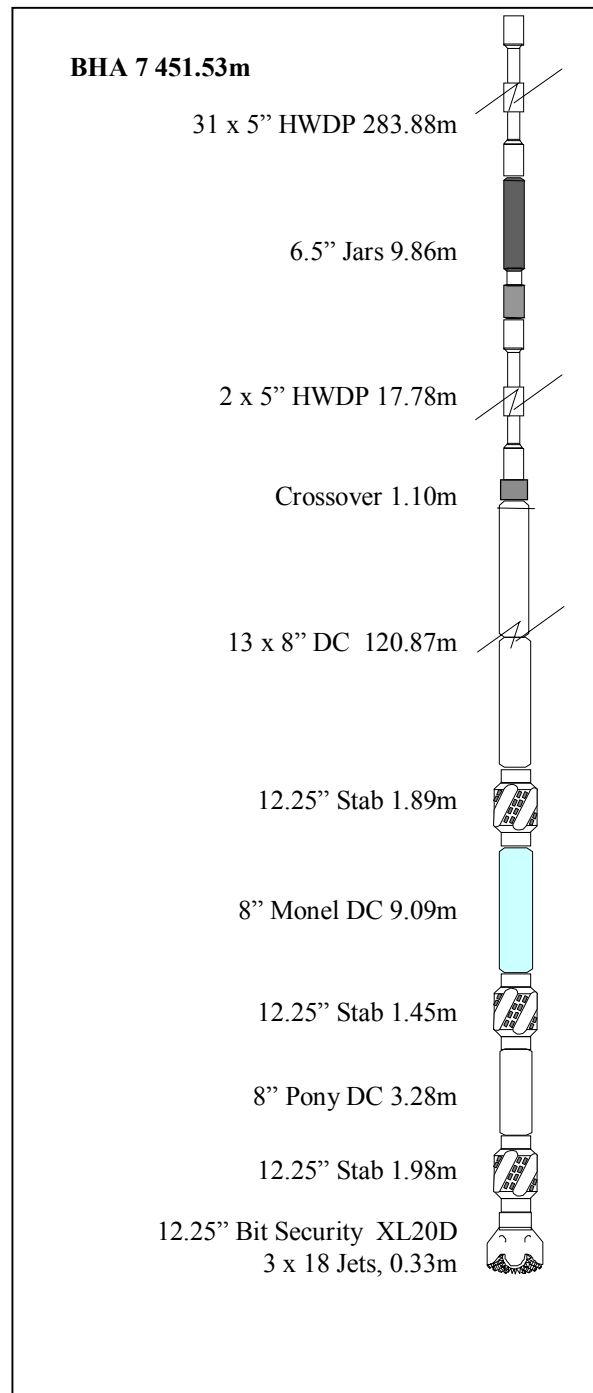
KCI / PHPA /Glycol 10.1 ppg

Lithology

Volcanics, Siltstone, Sandstone

Drilling Summary

After testing the BOPs and surface equipment, another tricone bit was picked up and run in hole on a locked drilling assembly. The string was run in filling pipe every 10 stands. The pumps were started and the bit washed two stands from bottom. Drilling resumed flow checking drill breaks. All flow checks were static. Averaging 3.8m/hour, the bit drilled 312m to 2783m with the weight on bit ranging from 36 to 57klbs. At 2783m, the hole was circulated clean and the hole was flow checked. A multishot survey tool was dropped and the bit was pulled to surface. On the way out, up to 40klbs drag was noted at 2592m and again at 2420 - 2404m interval.



21 - 24 July 2001**Bit Run 8 Summary**

Bit Number	NB 8
Bit Size	12.25"
Bit Type	Reed EHP51
S/N	CT6905
Jets	3 x 18
Depth In	2783m
Depth Out	2945m
Metres Drilled	162
Drilling Hours	40.3
TBR, krevs	213.8
Circulating Hours	47.9
Average ROP, m/hr	3.8
API Condition	2-2-WT-A-F-I-NO-TD

Drilling Parameters

WOB, mt	39.2	-	56.0
RPM	78	-	91
Torque kft-lbs.	3.6	-	6.6
Pump Pressure, psi	3543	-	3868
Flow In, gpm	779	-	810

Mud System

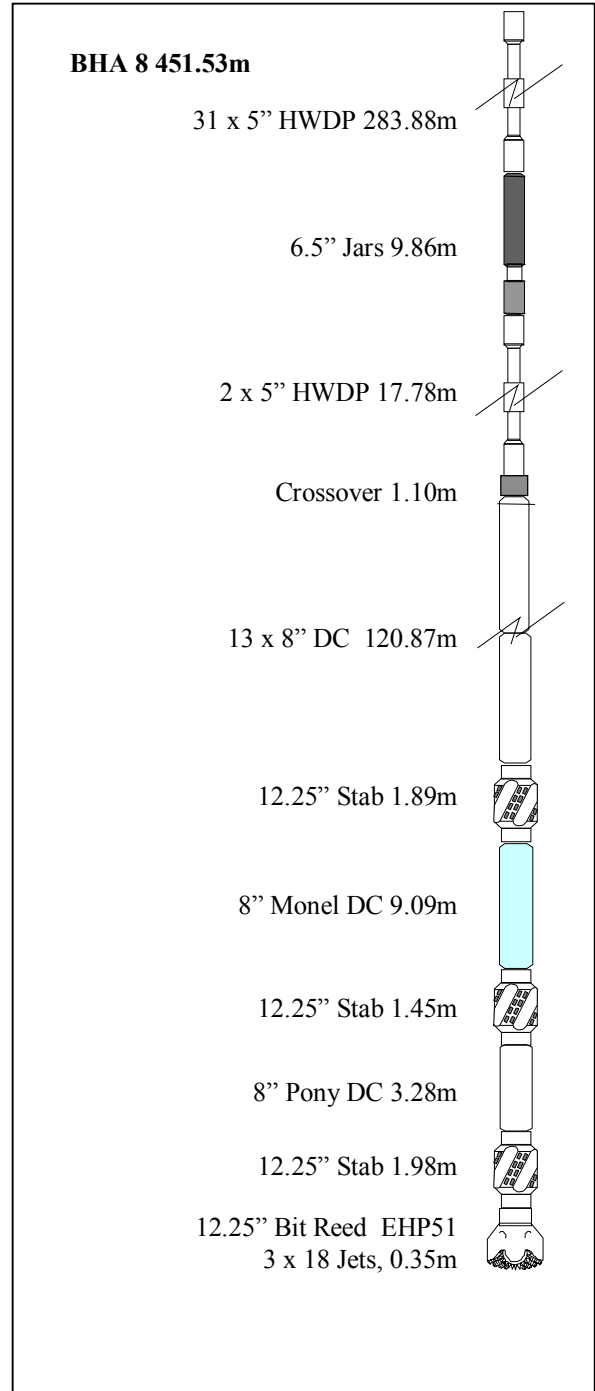
KCI / PHPA / Glycol 10.1 ppg

Lithology

Siltstone, Sandstone, Volcanics

Drilling Summary

A Reed EHP51 was picked up and RIH with the same bottom hole assembly filling pipe every 20 stands. Washing and reaming started from 2741m. Drilling resumed from 2783m noting the absence of drag on connections. Flow checks were made on drill breaks at 2824m, 2830m, 2912m, 2925m, 2928m and at 2933m static results. Samples were circulated out at 2835m, 2925m and at 2934m. After a drilling time of 40.3hrs, the bit was then pulled out of hole at 2945m to run electric logs.



30 July - 1 Aug 2001

Bit Run 9 Summary

Bit Number	NB 9
Bit Size	12.25"
Bit Type	Security XL20D
S/N	740718
Jets	3 x 18
Depth In	2945m
Depth Out	3138m
Metres Drilled	193
Drilling Hours	52.4
TBR, krevs	243.7
Circulating Hours	56.3
Average ROP, m/hr	3.7
API Condition	2-2-CT-S-E-1-WT-TD

Drilling Parameters

WOB, mt	45.7	-	58.5
RPM	54	-	84
Torque kft-lbs.	2.5	-	6.3
Pump Pressure, psi	3641	-	4062
Flow In, gpm	758	-	812

Mud System

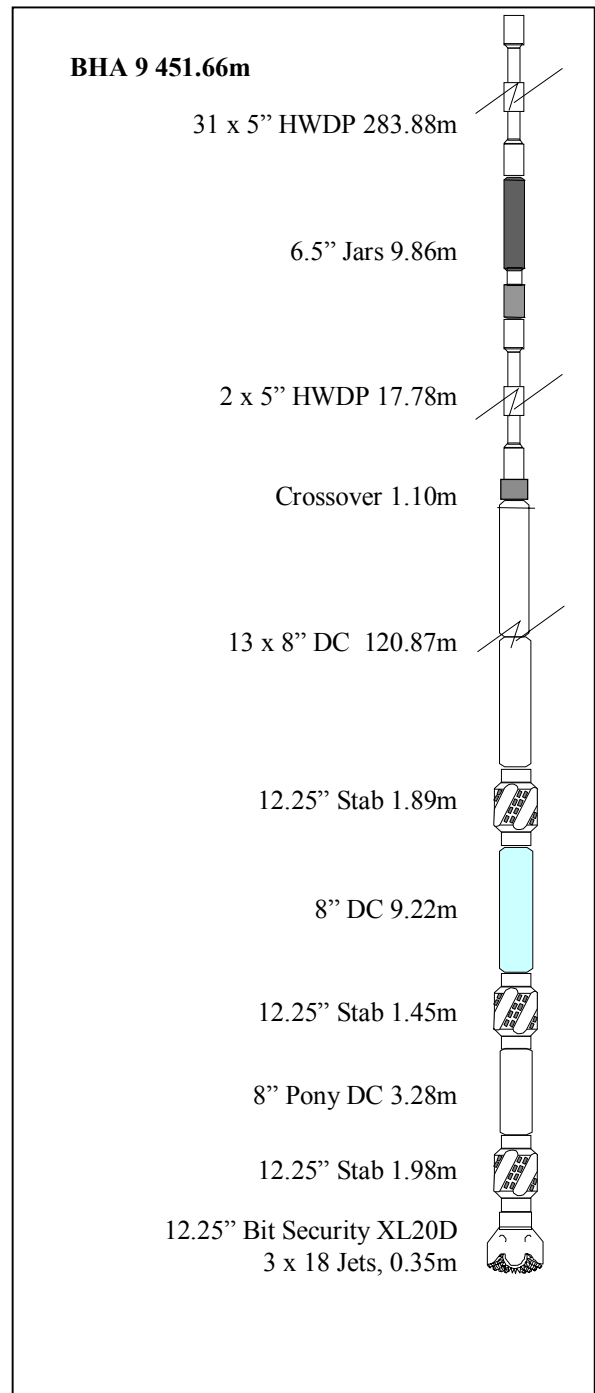
KCI / PHPA /Glycol 10.1 ppg

Lithology

Siltstone, Sandstone, Coal

Drilling Summary

After running wireline logs, it was decided to drill deeper. The monel was laid out from the previous drilling assembly and replaced with a drill collar. A new Security XL20D was made up with the BHA and RIH. Gas was circulated out at the shoe and bottoms up gas was released via the choke line. Drilling started from 2945m making flow checks on drill breaks. Maximum gas rose to 1.06% at 3079m. The mud weight was kept at 10.1ppg by constant premix addition to the active pit. At the the total depth of 3138m, the drilling assembly got stuck, unable to rotate. The string was worked out and was freed after a few minutes. 100B/Ls havis pill was circulated out before a wiper trip to the casing shoe was made. The hole became sticky from 3131m requiring rotary motion to get back to bottom. The hole was circulated clean and the bit was then pulled to surface to run wireline logs.



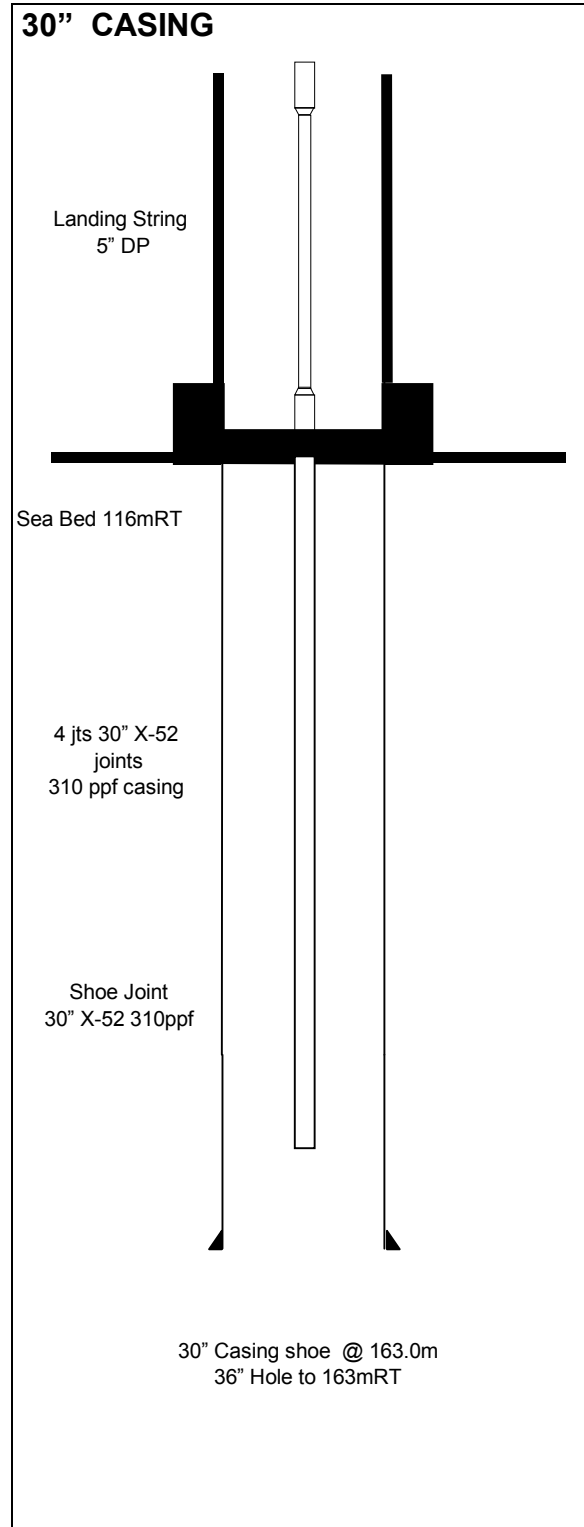
2.2 Casing and Cementing Summaries

30" Casing

Hole Size	36"
Depth	163.0m
Casing	
OD	30"
ID	27"
Weight	310 lb/ft X52 ST2
Shoe Depth	163.0m
Cement	Single Stage, Tail
Type	ABC Class G
Sacks	1006 sxs
Yield	1.2
Slurry Density	15.9 ppg
Mix Water	125 bbls
Additives	2% CaCl

Summary

The 30" casing was ran through the PGB and landed in the rotary table on 30" elevators. These were lowered to sea level while pumping to fill the conductor. The casing and the PGB were ran in the hole on heavy weight landing string and landout with the PGB 1.0m above mud line. The shoe was stabbed with the ROV after the rig was moved to proper alignment. The shoe was landed at 163m and the PGB 1m above the mud line. The bullseye recorded 1 degree aft. The cementing program commenced with lines tested to 2000 psi. Mixed and pumped 211 bbls (1020 sxs) of 15.9 ppg tail slurry. The cement was mixed with 125 bbls seawater and 2% CaCl. The cement was displaced with 25 bbls seawater. Meanwhile the floats were checked holding ok. The ROV monitored good returns throughout but they were unable to identify the cement in returns. The full casing weight was slacked off and the running tool backed out. The slope indicator indicated 1 degree aft. The running tool was then pulled out of hole.

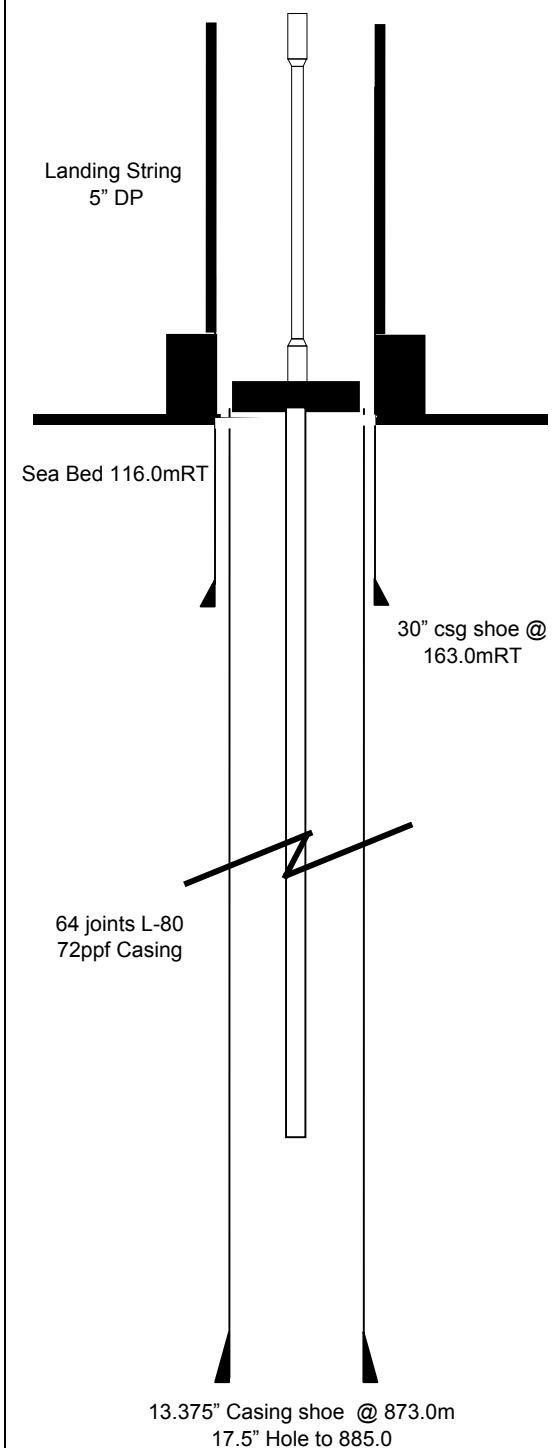


13.375" Casing

Hole Size	17½"
Depth	885m
Casing	
OD	13.375"
ID	12.347"
Weight	72 lb/ft L-80 BTC
Shoe Depth	873m
Cement	Lead Slurry
Type	ABC class"G"
Sacks	1371 sx
Slurry Density	12.5 ppg
Yield	2.21 cu-ft/sx
Additives	Liquid Extender/Econolite
Cement	Tail Slurry
Type	class"G"
Sacks	726sx
Slurry Density	15.8 ppg
Yield	1.16 cu-ft/sx
Mix Water	5.15 gal/sx

Summary

Sixty four joints of 13.375" casing including the shoe and housing joint were run and landed with the shoe at 873m. The 18-3/4" wellhead to 30' housing connection was confirmed with 50 klbs overpull. The casing was circulated with 550 bbls (1.5x casing vol seawater with the pump rate staged up and recorded at 6, 10 and 15bpm. Pressure test cement lines to 2000/3000psi OK. Mixed and pumped 1371 sxs of class G cement yielding 540 B/Ls of 12.5 ppg extended followed by 726 sxs of class G cement yielding 150 B/Ls of 15.8 ppg tail slurry. The cement was displaced with 7.3bbls seawater and sheared the plug out at 2730 psi. The hole was displaced with 350 B/Ls of seawater and bumped plug with 1800 psi. The pressure was held for 2 minutes then bled off after the floats were checked holding OK. ROV monitored and confirmed returns were good throughout the cement job.

13.375" CASING

9.625" Casing

Hole Size 12 1/4"
Depth 3138m

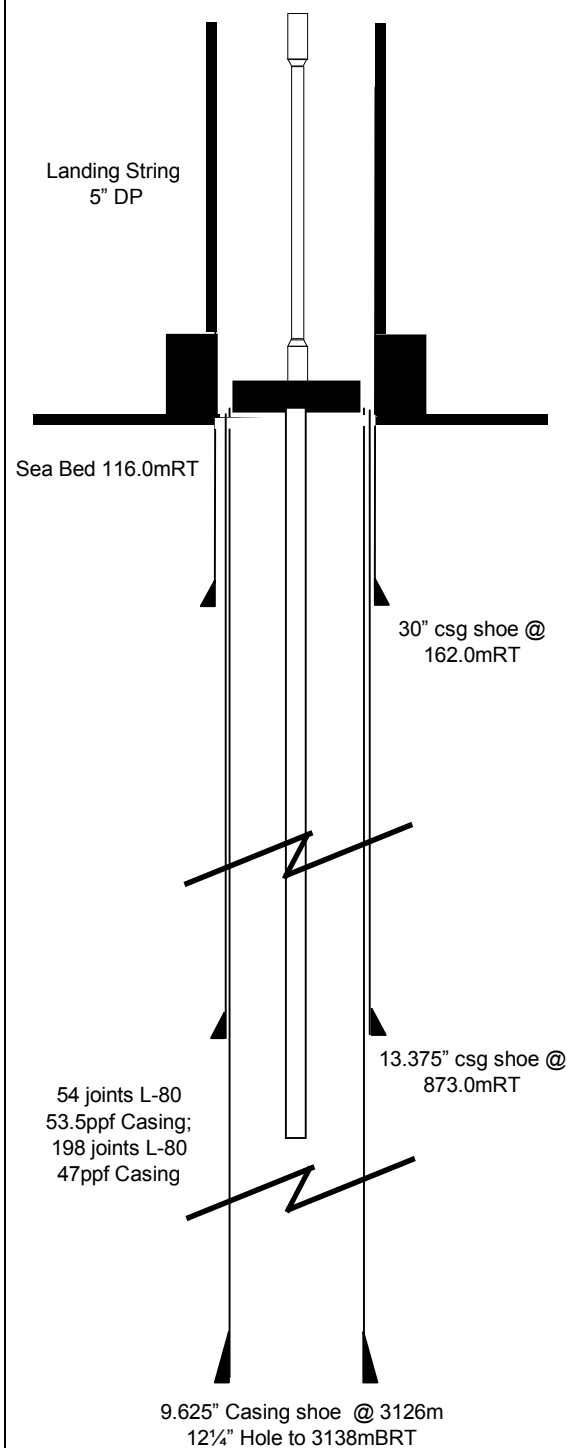
Casing
OD 9.625"
ID 8.681"
Weight 53.5 lb/ft L-80
47.0 lb/ft L-80
Shoe Depth 3126m

Cement Lead Slurry
Type class"G"
Sacks 886 sx
Slurry Density 15.8 ppg
Mix Water 4.35 gal/sx
Yield 1.13 ft³/sx
Additives
Halad-413L 32 gal/10bbbls
SCR-100L 2 gal/10bbbls
NF-5 0.25 gal/10bbbls

Cement Tail Slurry
Type class"G"
Sacks 586sx
Slurry Density 14.5 ppg
Mix Water 6.4l/sx
Yield 1.36t³/sx
Additives
WG17L XP 2 gal/10bbbls
SCR-100L 3 gal/10bbbls
NF-5 0.25 gal/10bbbls

Summary

54 joints of 53.5ppf L-80 LTC 9-5/8" and 198 joints of 47ppf L-80 LTC 9-5/8" casing including the shoe and housing joint were run with the shoe at 3125.8m. The 9-5/8" casing hanger landout to the 18-3/4" wellhead landing shoulder was confirmed and the seal assembly latched. The casing was precirculated with 1100 bbls of 10.1ppg mud at 12bpm and the cement lines were tested to 5000psi for 5 min. The dart was dropped. 60 bbls of seawater, then a further 60bbls of dual spacer were pumped chased with 178bbls 15.8 ppg slurry (886sx class G) followed by 142bbls 14.5ppg tail slurry(586sx class G), mixed and chased at 6-7bpm with 750 psi pumping pressure. 13.8bbls of post flush was then pumped. The bottom plug released at 2600 psi. The cement was displaced with 578bbls of 10.1ppg mud. The plug was bumped with 1400psi, held for 5 mins and released with the floats holding OK. The casing was tested to 5000psi for 10 minutes. After pressure /function testing of the BOP's the casing hanger running tool was released with 60 klbs overpull.

9.625" CASING

Section 3

Geology and Shows

3.1 GEOLOGY AND SHOWS

Formation Evaluation for East Pilchard-1 commenced from below the 13.375" casing shoe at 873.0m MDRT to the well's Total Depth of 3138m MDRT. Sampling rates were dependent on rate of penetration. Washed cuttings samples were collected at the following intervals:

From (m)	To (m)	Sampling Interval (m)
885	895	10
895	1525	30
1525	3135	5
3135	3138	3

During the course of the well, all gas equipment was checked and calibrated before drilling. Carbide tracers were run at 1449m, 1816m and 2999m to ensure lag times were correct. Cuttings samples were analysed for calcimetry data as requested by the ESSO Wellsite Geologists.

The lithological units observed during the drilling of East Pilchard-1 are described below. For more detailed descriptions, see Appendix-1, Formation Evaluation Log.

36" HOLE SECTION

Seabed to 163m: Returns to Seabed

17 ½" HOLE SECTION

163m to 885m: Returns to Seabed

12 ¼" HOLE SECTION

885m to 955m: ARGILLACEOUS CALCILUTITE

ARGILLACEOUS CALCILUTITE: Light grey to medium light grey, olive grey. Soft, occasionally firm, subblocky, sticky in places, trace carbonaceous material and trace Foraminifera.

There were no oil shows in this interval.

955m to 1200m: ARGILLACEOUS CALCILUTITE and MARL

ARGILLACEOUS CALCILUTITE: Light grey to light medium, grey light olive grey, olive grey. Soft to firm, subblocky to blocky, sticky in parts, trace carbonaceous material, trace fine quartz grains, trace Foraminifera, trace fossil fragments.

MARL: Medium light grey, medium grey, olive grey, light olive grey. Soft to firm, occasionally hard, subblocky to blocky, trace subrounded, fine and occasionally orange stained quartz grains, trace carbonaceous specks, trace fossil fragments.

There were no oil shows in this interval.

1200m to 1535 m: MARL AND CALCAREOUS CLAYSTONE

CALCAREOUS CLAYSTONE: Light grey to medium light grey, light olive grey, olive grey. Soft to firm, subblocky to blocky, sticky in parts, trace carbonaceous material, trace fine quartz grains, trace glauconite, trace Foraminifera, trace fossil fragments.

MARL: Medium light grey, medium grey, olive grey, light olive grey. Soft to firm, occasionally hard, subblocky to blocky, trace fine, subrounded and orange stained quartz grains, trace carbonaceous specks, trace glauconite, trace pyrite nodules and disseminated pyrite, trace Foraminifera, trace fossil fragments. Grading to CALCAREOUS CLAYSTONE in places.

There were no oil shows in this interval.

1535m to 1645m: CALCAREOUS CLAYSTONE

CALCAREOUS CLAYSTONE: Light medium grey, light grey to greenish grey, light olive grey, brownish grey. Soft to firm, subblocky to blocky, waxy, rare to trace glauconite, occasionally abundant glauconite, trace carbonaceous specks, trace pyrite, trace Dolomite, trace burrows, trace fossil fragments.

There were no oil shows in this interval.

1645m to 1795m: SILTSTONE, SANDSTONE, COAL and minor CLAYSTONE

SILTSTONE: Pale yellowish brown, yellowish brown, light brown, light olive grey, dark greenish grey, moderate brown, greyish brown, brownish grey, medium dark grey. Firm to hard, dispersive, subblocky to blocky, platy, laminated, trace carbonaceous lamination, trace glauconite, trace nodular and disseminated pyrite.

SANDSTONE: Translucent to opaque quartz grains, very fine to medium, occasionally coarse grains, subangular to subrounded, subspherical, moderate to well sorted. Rare to abundant white argillaceous matrix and trace silt matrix, well cemented in parts with trace to rare pyrite cement, weak silica cement. Trace pyrite nodules, trace to glauconite, poor inferred porosity. Grading to SILTSTONE in places.

COAL: Bituminous to subbituminous. Greyish black to black, brownish black. Firm to moderately hard, subconchoidal fracture, blocky, vitreous lustre, trace pyrite. Grading to CARBONACEOUS SILTSTONE in places.

CLAYSTONE: Light grey to light olive grey, brownish grey. Firm, subblocky to blocky, waxy in parts, abundant glauconite, trace carbonate specks, trace pyrite, trace dolomite.

There were no oil shows in this interval.

1795m to 1895m: SILTSTONE, SANDSTONE and minor COAL

SILTSTONE: Dark greenish grey, dark grey, greenish grey, brownish grey, olive grey, medium grey to medium dark grey. Firm to hard, subblocky to blocky, trace to rare carbonaceous laminations, trace glauconite, trace nodular and disseminated pyrite.

SANDSTONE: Translucent to opaque, occasionally yellowish brown stained, occasionally frosted quartz grains. Predominantly loose, fine to very coarse grained with occasional pebbles, subangular to rounded, subelongated to subspherical, poor to moderately sorted, weak siliceous cement, trace pyrite cement, rare argillaceous matrix, trace disseminated pyrite and coal fragments, fair inferred porosity.

COAL: Subbituminous. Greyish black to black, brownish black. Firm to moderately hard, subconchoidal fracture, blocky, vitreous lustre, trace pyrite. Grading to CARBONACEOUS SILTSTONE in places.

There were no oil shows in this interval

1895m to 2100m: SANDSTONE, SILTSTONE, COAL with minor CARBONACEOUS SILTSTONE

SANDSTONE: Translucent to opaque, occasionally grey, occasionally frosted, quartz grains. Predominantly loose, fine to very coarse grained with occasional pebbles, subangular to subrounded, subelongated to subspherical, poor to moderately sorted, trace to rare pyrite cement, rare weak siliceous cement, trace pyrite nodules, good inferred porosity.

SILTSTONE: Dark yellowish brown, dusky yellowish brown to brownish grey, olive grey, light grey. Firm to moderately hard, subblocky to blocky, trace to rare disseminated pyrite, trace carbonaceous laminations. Grading to CARBONACEOUS SILTSTONE in places.

COAL: Subbituminous, greyish black, brownish black, black to dusky brown. Firm to moderately hard, subconchoidal, subblocky to blocky. Grading to CARBONACEOUS SILTSTONE in places.

CARBONACEOUS SILTSTONE: Dusky brown to dark yellowish brown, olive black. Firm to moderately hard, subblocky to blocky, laminated. Grading to COAL in places.

There were no oil shows in this interval.

2100m to 2200m: SILTSTONE interbedded with SANDSTONE

SILTSTONE: Brownish grey to olive grey. Soft to firm, occasionally hard and pyritic, amorphous to blocky, rare coal fragments, trace to abundant glauconite, trace disseminated pyrite, trace pyrite nodules, trace carbonaceous material, trace carbonaceous laminations. Grading to CARBONACEOUS SILTSTONE in places.

SANDSTONE: Light olive grey to light grey, clear to translucent quartz grains. Loose, very fine to medium grained, angular to subrounded, subelongated to subspherical, poorly to well sorted, trace to rare disseminated pyrite, trace pyrite cement, , trace fine pyrite aggregates, trace nodular pyrite, trace metallic green micromicaceous flakes, trace black carbonaceous material, trace glauconite, trace dolomite, trace Foraminifera, fair inferred porosity.

There were no oil shows in this interval.

2200m to 2440m: SILTSTONE interbedded with SANDSTONE and minor COAL

SILTSTONE: Light grey, light brownish grey, light olive grey, olive grey, dark greenish grey, pale yellowish brown, dark yellowish brown. Very soft to firm, sticky in places, subblocky to blocky, trace to common carbonaceous specks, trace carbonaceous laminations. Grading to CARBONACEOUS SILTSTONE in places and ARGILLACEOUS SANDSTONE in places.

SANDSTONE: Clear to translucent, occasionally medium light grey, pale blue green, light red, opaque, frosted and milky quartz grains. Predominantly loose, fine to very coarse grained, subangular to subrounded, subspherical, poorly to moderately sorted, trace to common pyrite cement, trace siliceous cement, trace nodular pyrite, trace micromicaceous and mica flakes, poor to fair inferred porosity.

COAL: Greyish black to black, brownish black. Bituminous to subbituminous, fissile to conchoidal, brittle in places, vitreous to subvitreous. Grading to CARBONACEOUS SILTSTONE in places.

There were no oil shows in this interval.

2440m to 2517m: VOLCANICS

BASALT: Black, dark brown black, greenish black, firm to hard, mafic, abundant anhedral pyroxene, common olivine and biotite, feldspar, minor quartz, mottled texture, glassy groundmass, rare quartz or minor carbonate minerals filled amygdaloids.

TUFF: Red to brown. Soft argillaceous microlaminated remnant pyroxenes in microcrystalline glassy/ash groundmass, common biotite, occasional emerald green serpentine phenocrysts.

ALTERED VOLCANICS: Greenish brown, light grey, greyish red, pale reddish brown, mottled texture, some relict crystalline texture, predominantly weathered feldspars, white to pale green clays (chlorite, kaolinite, serpentine), soft to very soft.

There were no oil shows in this interval.

2517m to 2570m: SANDSTONE with minor SILTSTONE

SILTSTONE: Yellowish brown, pale yellowish brown, very light grey, very pale or pale yellowish brown, very soft to soft, subblocky, occasionally amorphous, minor carbonaceous specks, minor carbonaceous laminations, trace rounded silica concretions, argillaceous in places. Grading to CLAYSTONE in places.

SANDSTONE: Clear to translucent quartz grains, fine to medium, predominantly medium, minor fine grains, trace coarse, subangular to subrounded, subspherical, moderately sorted, predominantly loose, occasionally hard, trace friable aggregates with trace weak argillaceous cement, rare pyrite cement, trace siliceous cement, trace calcite cement, trace coal fragments, fair to poor inferred porosity, trace fluorescence.

FLUORESCENCE:

2525m to 2530m: Trace. Dull yellowish green, spotted fluorescence in fine grey aggregates, slow weak direct cut, weak slow cream diffuse crush cut, thin dull yellow film residue.

2570m to 2590m: VOLCANICS

BASALT: Black, dark brownish black, greenish black, brownish grey, red brown, firm to hard, mafic, trace anhedral pyroxene, trace olivine and biotite, trace feldspar, trace quartz, trace secondary calcite and quartz veins.

ALTERED VOLCANICS: pale olive to greyish olive, light greenish grey to greenish grey, white to very light grey, very soft to soft, trace rounded silica concretions, trace remnant crystal structure.

There were no oil shows in this interval.

2590m to 2675m: SANDSTONE interbedded with SILTSTONE

SILTSTONE: Dark yellowish brown, dusky yellowish brown, olive grey, brownish grey, light brownish grey, soft, firm in places, subblocky to blocky, amorphous in places trace carbonaceous specks, trace carbonaceous laminations, trace coal fragments. Grading to CARBONACEOUS SILTSTONE in places.

SANDSTONE: White to light brown. Translucent, clear, opaque quartz grains, predominantly loose and clean, fine to coarse, occasionally very coarse, subangular, locally subrounded, subspherical, fine to medium aggregates with white argillaceous matrix, abundant argillaceous matrix, trace weak silica cement, trace pyrite cement and pyrite nodules, trace hard calcite cemented aggregates. Poor visible porosity.

FLUORESCENCE:

2590m to 2595m Trace. Dim pinkish yellow spotted fluorescence, very weak direct cut slow weak cream diffuse crush cut, thick greenish yellow ring residue.

2595m to 2605m Trace to 10%. Dim pale blue spotted fluorescence, weak direct cut, slow weak bluish yellow diffuse crush cut, thick pale greenish yellow ring residue.

2610m to 2619m Trace. Dim pinkish yellow spotted fluorescence, trace weak direct cut, trace very slow weak dim pale blue crush cut, trace residue.

2620m to 2630m 5%. Dull pale green, no direct cut, trace very slow pale yellow cream crush cut, thin moderately solid greenish yellow residue ring.

2635m to 2640m 10%. Dull, light green, no direct cut, trace very slow pale blue-cream crush cut, thin broken light blue green residue ring.

2665m to 2670m Trace. Dim yellowish green spotted fluorescence, slow bleeding cream direct cut, instant dark cream crush cut, thin pale yellow residue ring.

2675m to 2745m: Interbedded SANDSTONE and SILTSTONE with minor COAL and DOLOMITE

SILTSTONE: Dark yellowish brown, dusky yellowish brown, olive grey, brownish grey, light brownish grey, soft, firm in places, subblocky to blocky, amorphous in places, trace carbonaceous specks, trace carbonaceous laminations, trace coal fragments. Grading to CARBONACEOUS SILTSTONE in places.

SANDSTONE: Light grey. Translucent to clear, occasionally opaque quartz grains, loose, very fine to medium, occasionally coarse to very coarse, trace granule, subangular to subrounded, minor fractured grains, locally strong pyrite cement, rare pyrite nodules, trace fine to medium aggregates with white to pale pinkish grey argillaceous matrix, trace grey chert, trace argillaceous matrix, trace moderately hard silica cement, trace hard calcite cemented aggregates. Poor to moderate inferred porosity, very poor to poor visual porosity, trace fluorescence

COAL: Greyish black to black, brownish black. Bituminous to subbituminous, fissile to conchoidal, brittle in places, vitreous to subvitreous. Grading to CARBONACEOUS SILTSTONE in places.

DOLOMITE: Dark yellowish brown, dusky yellow brown. Cryptocrystalline, very hard block and flinty.

FLUORESCENCE:

2690m to 2695m Trace. Dim yellowish green spotted fluorescence, slow bleeding bluish green direct cut, moderate bluish green crush cut.

2745m to 2835m: SANDSTONE interbedded with SILTSTONE and minor COAL

SILTSTONE: Dusky yellowish brown, light greenish grey, light brownish grey, soft to firm, subblocky to blocky, trace carbonaceous specks, trace chalcedony.

SANDSTONE: Translucent to clear, white, trace milky quartz grains, loose, occasional aggregates, fine to medium, occasionally coarse to very coarse, subangular to subrounded, trace to 5% yellowish brown very hard DOLOMITE with trace pyrite, trace fractured grains, locally trace pyrite cement and nodules, trace fine to medium aggregates with white to pale pinkish grey argillaceous matrix, trace argillaceous matrix, trace moderately hard silica cement, trace mica flakes. Poor to fair inferred porosity, very poor to poor visual porosity, trace fluorescence.

COAL: Greyish black to black, brownish black. Bituminous to subbituminous, fissile to conchoidal, brittle in places, vitreous to subvitreous. Grading to CARBONACEOUS SILTSTONE in places.

FLUORESCENCE:

2755m to 2765m Trace. Dim pale bluish yellow spotted fluorescence no direct cut, trace thick pale yellowish green residue.

2790m to 2795m Trace. Dim pale greenish yellow spotted fluorescence, no direct cut, very weak very slow pale cream diffuse crush cut, trace residue.

2835 to 2875m: SILTSTONE

SILTSTONE: Light brownish grey to brownish grey, light greenish grey, dusky yellowish brown, soft to firm, subblocky to blocky, dispersive in places, trace carbonaceous specks, trace carbonaceous specks, trace carbonate laminations, trace pyrite.

There were no oil shows in this interval.

2875m to 2980m: SANDSTONE interbedded with SILTSTONE and minor COAL

SILTSTONE: Dusky yellowish brown, light greenish grey, brownish grey to light brownish grey. Soft to firm, dispersive in parts, subblocky to blocky, trace carbonaceous specks and laminations, trace pyrite nodules. Grading to CARBONACEOUS SILTSTONE in places.

SANDSTONE: Dark yellowish brown to pale yellowish brown. Translucent to clear, occasional opaque quartz grains, loose, fine to medium, occasionally coarse to very coarse and very fine, subangular to subrounded, trace fractured grains minor to abundant fine aggregates with abundant kaolin matrix, locally trace pyrite cement and nodules, trace fine to medium aggregates with white argillaceous matrix, trace

argillaceous matrix, trace weak dolomite to silica cement, trace lithic fragments, trace mica flakes. Poor to good inferred porosity, very poor to poor visual porosity, trace to 10% fluorescence. Grading to SILTSTONE in places.

COAL: Black to brownish black. Bituminous to subbituminous, dull, soft to firm, subblocky, irregular fracture.

FLUORESCENCE:

2910m to 2915m 10%. Dull light yellow peach, no direct cut, no crush cut, no residue.

2915m to 2920m 35%. **2920m to 2925m** 10%. Dominate dull yellow to light red green, peach, no direct cut, very weak crush cut, trace broken light cream residue ring.

2930m to 2940m 5%. **2940m to 2945m** Trace. Dull bluish white spotted fluorescence, no direct cut, pale yellow bleeding direct cut, moderate yellowish white diffuse crush cut, thick residue ring

2980m to 3020m: SILTSTONE

SILTSTONE: Pale yellowish brown, dusky yellowish brown, greenish black, brownish black, brownish grey. Soft to moderately hard, dispersive in parts, blocky, trace carbonaceous specks and laminations. Grading to ARENACEOUS SILTSTONE in places.

3020m to 3090m: SANDSTONE interbedded with SILTSTONE

SILTSTONE: Dusky yellowish brown, greenish black, brownish black, brownish grey. Soft, occasionally firm, subblocky to blocky, argillaceous in places, trace carbonaceous specks and laminations. Brownish black. Firm to moderately hard, occasionally hard, predominantly argillaceous, arenaceous in places, trace mica, trace pyrite.

SANDSTONE: Translucent to clear, occasional opaque quartz grains, loose, fine to medium, occasionally coarse, subangular, minor to abundant white argillaceous matrix, trace fractured grains, trace fluorescence. Off white to light brown, fine aggregates with abundant kaolin matrix, trace weak argillaceous to silica cement, trace mica flakes. Poor to good inferred porosity, very poor to poor visual porosity, trace to 5% fluorescence.

FLUORESCENCE:

3040m to 3060m 5%- trace. Dull yellow spotted fluorescence, slow pale yellow bleeding direct cut, moderate fast light yellow crush cut, moderate yellow/green residue ring

3065m to 3090m 5%- trace. Dull yellow spotted fluorescence, no direct cut, slow cream bleeding crush cut, moderate blue residue ring.

3090m to 3138m: SANDSTONE interbedded with SILTSTONE and minor COAL and VOLCANICS

SILTSTONE: Dusky yellowish brown, greenish black, brownish black, brownish grey. Soft, occasionally firm, subblocky to blocky, argillaceous in places, trace carbonaceous specks and laminations. Brownish black. Firm to hard, predominantly argillaceous, arenaceous in places, trace mica, trace pyrite.

SANDSTONE: Translucent to clear, occasional opaque quartz grains, loose, fine to coarse, subangular to subrounded, minor to abundant white argillaceous matrix, trace argillaceous cement, trace fractured grains, trace pyrite, trace chlorite, trace coal fragments, trace fluorescence. Off white to light brown, fine to medium aggregates with abundant kaolin matrix, trace weak argillaceous to silica cement, trace weak dolomite cement, trace mica flakes. Poor to good inferred porosity, very poor to poor visual porosity, trace to 10% fluorescence.

COAL: Black to brownish black. Bituminous to subbituminous, dull, soft to firm, subblocky, irregular fracture.

VOLCANICS: Yellowish grey, mottled green/white, light green, white and black speckled, predominantly quartz, yellowish grey weathered feldspars, Black to dark brownish black pyroxene and olivine, altered in parts to white and pale green clays (chlorite, kaolinite, serpentine).

FLUORESCENCE:

3090m to 3115m 5%- trace. Moderate yellowish blue spotted fluorescence, slow bleeding direct cut, moderate diffuse light blue/cream crush cut, thin cream residue ring.

3115m to 3130m 10%- 5%. Moderate yellowish blue spotted fluorescence, slow bleeding direct cut, thin diffuse pale blueish white crush cut, thin residue ring.

Drilling Rate Summary for All Lithology Intervals on East Pilchard-1			
Depth Interval (m)	RATE OF PENETRATION (m/hr)		
	Minimum	Maximum	Average
885 - 955	5.7	97.1	42.4
955 - 1200	8.4	93.0	32.9
1200 - 1535	9.2	128.6	53.2
1535 - 1645	14.6	167.5	69.1
1645 - 1795	3.9	90.8	23.2
1795 - 1895	4.9	113.5	29.4
1895 - 2100	1.8	84.8	19.8
2100-2200	0.4	29.8	8.5
2200-2440	1.7	23.1	7.2
2440-2517	1.6	9.4	5.1
2517-2570	1.8	9.4	5.4
2570-2590	3.0	8.9	5.3
2590-2675	2.2	6.1	4.0
2675-2745	1.6	10.1	4.1
2745-2835	1.6	25.2	6.3
2835-2875	1.8	21.1	6.1
2875-2980	1.6	25.5	6.5
2980-3020	2.0	5.8	3.5
3020-3090	1.9	13.7	4.8
3090-3138	2.4	16.0	7.9

Summary of Gas Readings Recorded for All Lithology Intervals on East Pilchard-1													
Interval (m) From To		Total Gas (gas units)				Chromatograph Analysis (percent %)							
		Range		Max Gas	Av. Total								
		From	To	at (m)	Gas		C1	C2	C3	iC4	NC4	IC5	nC5
0	885	Returns to Seabed				Min	-	-	-	-	-	-	-
						Max							
885	955	0.6	4.5	931	2.4	Min	-	-	-	-	-	-	-
						Max	0.061						
955	1200	1.4	5.7	1117	3.9	Min	0.006	-	-	-	-	-	-
						Max	0.063						
1200	1535	1.6	6.4	1405	3.9	Min	0.005	-	-	-	-	-	-
						Max	0.081						
1535	1645	2.0	5.9	1619	4.6	Min	0.017	-	-	-	-	-	-
						Max	0.125	0.008					
1645	1795	1.7	12.1	1728	4.8	Min	0.018	-	-	-	-	-	-
						Max	0.191	0.015	0.007	0.002	0.002		
1795	1895	1.5	6.5	1868	2.7	Min	0.011	-	-	-	-	-	-
						Max	0.071	0.011	0.004				
1895	2100	0.8	14.8	1995	3.2	Min	0.007	-	-	-	-	-	-
						Max	0.200	0.092	0.093	0.094	0.095	0.098	0.095
2100	2200	1.0	3.3	2196	1.8	Min	0.009	-	-	-	-	-	-
						Max	0.040	0.006	0.003		0.001		
2200	2440	1.2	10.3	2368	3.3	Min	0.012	0.002	0.001	-	-	-	-
				2378		Max	0.138	0.012	0.005		0.001	0.001	
2440	2517	1.0	2.0	2482	1.5	Min	0.011	-	-	-	-	-	-
				2484		Max	0.028	0.009	0.003				
2517	2570	1.1	6.1	2520	2.3	Min	0.011	0.001	-	-	-	-	-
						Max	0.083	0.010	0.05	0.02	0.02		
2570	2590	0.5	2.0	2588	1	Min	0.010	-	0.001	-	-	-	-
						Max	0.032	0.05	0.002				
2590	2675	1.2	20.2	2662	8.25	Min	0.013	0.003	0.001	-	-	-	-
						Max	0.384	0.020	0.008	0.002	0.002	0.001	0.001
2675	2745	1.8	32.3	2725	10.25	Min	0.015	0.003	0.002	-	-	-	-
						Max	0.543	0.019	0.009	0.003	0.004	0.001	0.001
2745	2835	1.65	25	2790	6.2	Min	0.014	0.002	0.001	-	-	-	-
						Max	0.422	0.018	0.007	0.003	0.003	0.001	
2835	2875	1.5	7	2864	3.4	Min	0.016	0.003	0.002	-	-	-	-
						Max	0.112	0.010	0.004		0.002		
2875	2980	1.46	61	2923	7	Min	0.016	0.003	0.002	-	-	-	-
						Max	1.097	0.030	0.017	0.005	0.010	0.003	0.003
2980	3020	1.5	6	2991	4	Min	0.028	-	0.001	-	-	-	-
						Max	0.072	0.007	0.004	0.003	0.005	0.002	0.001
3020	3090	2.45	53	3079	8.4	Min	0.027	0.004	0.002	-	-	-	-
						Max	0.715	0.014	0.006	0.002	0.003		
3090	3138	1.5	40.8	3120	13.9	Min	0.012	0.004	0.002	-	-	-	-
						Max	0.640	0.019	0.009	0.002	0.005	0.001	0.003

SAMPLE TYPE	No. of Sets	COMPOSITION			PACKING DETAILS
		Sample	Depth Interval (m)		
		Box No.	From	To	
Set A (200 g) : Lightly Washed & Air Dried Palynology	1	1	875	1225	Small Boxes are packed in Shipping boxes. Large Box No. 1: 8 small boxes: 885-1930m
		2	1225	1535	
		3	1535	1600	
		4	1600	1655	
		5	1655	1725	
		6	1725	1795	
		7	1795	1865	
		8	1865	1930	
		9	1930	2000	Large Box No. 2: 8 small boxes: 1930-2620m
		10	2000	2100	
		11	2100	2170	
		12	2170	2275	
		13	2275	2360	
		14	2360	2465	
		15	2465	2545	
		16	2545	2620	
		17	2620	2720	Large Box No. 3: 4 small boxes: 2620-3138m
		18	2720	2800	
		19	2800	2875	
		20	2875	2955	
		21	2955	3035	
		22	3035	3085	
		23	3085	3138	
Sets B, C, D, E (100 g) : Washed & Air Dried 1540m to 1545m - Missed	4	1	875	1255	Small Boxes are packed in Shipping boxes. Large Box No. 1: 8 small boxes: 875-1935m
		2	1255	1540	
		3	1540	1610	
		4	1610	1680	
		5	1680	1740	
		6	1740	1820	
		7	1820	1880	
		8	1880	1935	
		9	1935	2000	Large Box No. 2: 8 Small Boxes: 1935-2465m
		10	2000	2070	
		11	2070	2140	
		12	2140	2205	
		13	2205	2260	
		14	2260	2325	
		15	2325	2395	
		16	2395	2465	
		17	2465	2550	Large Box No. 3: 8 small boxes: 2465-3138m
		18	2550	2640	
		19	2640	2730	
		20	2730	2810	
		21	2810	2880	
		22	2880	2965	
		23	2965	3055	
		24	3055	3138	
Charts & Worksheets	1				1 Large Box

ALL BOXES TO BE SENT TO KESTREL WAREHOUSE FOR ONWARD DISTRIBUTION:

DISTRIBUTION	Destination & Address	Attention of:
Lightly Washed & Dried (Palynology) Set A: ESSO	ESSO c/o Kestral Information Manament 596-600 Somerville Rd Sunshine, VIC 3020	Diana Giodano Core/Archive Supervisor
Washed & Dried Set B: ESSO	ESSO c/o Kestral Information Manament 596-600 Somerville Rd Sunshine, VIC 3020	Diana Giodano Core/Archive Supervisor
Washed & Dried Set C: ESSO	BHPP c/o Kestral Information Manament 596-600 Somerville Rd Sunshine, VIC 3020	Diana Giodano Core/Archive Supervisor
Washed & Dried Set D & E: VIC DNRE	DNRE Core Sample Library South Rd. (off Sneydes Rd) Werribee, Victoria, 3030	Dave Murfitt Note: to be forwarded to VIC DNRE after 2 days notification
Charts & Worksheets	ESSO c/o Kestral Information Manament 596-600 Somerville Rd Sunshine, VIC 3020	Ops Geologist Andrew Hodgson, ESSO, Melbourne

SAMPLE RECORD

Missed Samples in 12.25" hole @ 5m sampling interval due to ROP

1540m to 1545m

Section 4

Pressure Evaluation

4.1 PORE PRESSURE EVALUATION

An average sea water density of 8.6 ppg was assumed as the normal saline pressure gradient for all calculations for East Pilchard-1. Using real-time data, such as the hydrocarbon gas trend, lithology, flowline temperature, character of drilled cuttings, constant drilling fluid parameters, corrected drilling exponent (DxC) data, as well as wireline logging data when available, pore pressure estimates were made during the drilling of East Pilchard-1. For more details, please refer to Appendix 3, "Pressure Summary Plot".

36" Hole Section

The 36" hole was drilled from seabed at 116mMDRT to 163.0m with NB#1 Security XTIC, 17.5" and a 36" hole opener. The section was short, with returns dumped to the seabed. With an average penetration rate of about 31m/hr and low weight-on-bit 0.5-3.4 klbs, the plotted DxC data curve showed no decent trend for a possible pressure evaluation. The wide DxC scatter suggested strong jetting of the formation. The variations in the penetration rates, 10.7 - 63.9m/hr and the DxC, 0.20 - 0.80 units over this shallow interval were also due to the varying drillability of the lithologies consisting of very soft, possibly unconsolidated sediments and cemented calcarenite. The pore pressure was estimated to be normal at 8.6ppg EMW from the seabed down to 163.0mMDRT.

17½" Hole Section

This section was drilled from 163m to 885m with a PDC bit, NB#2 Hycalog, DS34HF+GN 17.5" with 8x14 jets. As in the 36" section, pore pressure estimates were based on the DxC curve, penetration rate and the behaviour of available drilling parameters (torque and pump pressure), since drilling was done riserless and returns were directed to the seabed. The DxC continued the wide scatter from 163m to 300m with a range of 0.29 - 0.85 units, coinciding with penetration rates ranging from 19 - 366 m/hr, averaging 92m/hr. The section was within the soft Gippsland Limestone where drilling was a combination of jetting and bit cutting. From 300m to 420m the DxC steepened to near-vertical line (0.40-0.58units), with an overall leftward trend and penetration rates of 112m/hr average. From 420m to 885m the penetration rates slowed to 42m/hr average, marking entry to the more consolidated and possibly compacted lithologies of the lower part of Gippsland Limestone consisting of marl, siltstones and shales. The DxC established a rightward trend that was referenced as the normal pore pressure trendline. The DxC ranged from 0.44-1.08 units while penetration recorded rates ranging from 13 - 130 m/hr. The hole was kept clean by circulating guar gum sweeps every joint drilled and prehydrated gel spotted at each connection. There was no abnormal torque, drag and hole problems throughout the section. The pore pressure was estimated to be normal at 8.6 ppg EMW from 163m down to 885m.

12 ¼" Hole Section

The 12¼" hole section was drilled initially with NB#3 Smith MA89PX PDC bit 12.25", with 7x12 jets from 885m to 2054m. Prior to drilling, the hole was displaced and conditioned to a KCI/PHPA/Glycol mud system weighing 9.05 ppg. Pore pressure estimation, due to the use of the PDC bit, relied on the relationship of mud weight, gas and cavings, and the temperature log and drilling parameters rather than corrected drilling exponent data.

From 885m to 1216m the bit penetrated through marl, argillaceous calcilutites and calcareous claystones at 6 - 97m/hr, averaging 35 m/hr penetration. Normal pressure at 8.6 ppg EMW in this section was indicated by the low background gas, (0.6 - 6 units), no connection gas, rare to trace amounts of splintery cavings and the temperature gradient 0.08 °C/m (24.1 - 42.5°C). There was no drag seen at connections while drilling and the torque was low at 6.4 kft-lb average. With 9.0 - 9.4 ppg mud in the hole, a slightly overbalanced condition was in place.

From 1216m to 1643m the lithologies gradually changed to dominantly soft marl becoming less calcareous with depth and eventually turning into claystone. Penetration in this section ranged from 9.2 - 167.5 m/hr, averaging

58.2 m/hr. The cuttings were soft, mashy and dispersive that yielded nil to trace concave-shaped shale cavings. The mudweight was kept at 9.6 ppg that was weighted up gradually to 9.7 ppg towards the base of this formation. The ditch gas was maintained at 1.6 - 6.4 units background with no distinct peaks and no connection gases recorded. The flowline temperature slightly decreased its gradient to 0.02 °C/m with a range of 42.5 - 51.3°C. The pore pressure at this section remained normal at 8.6 ppg EMW. Drilling went smoothly except when thin, hard bands of firm marl and claystones were intersected, causing reverse drill breaks.

From 1643m to 2054m the lithologies were mainly sandstones, siltstones and minor shales and coals. The rate of penetration ranged from 1.8 - 113.5 m/hr that averaged 24.3m/hr. The background gas was maintained in the range 1.1 - 4.0 units with peaks of 14.8 units, liberated from the coalbeds and occasionally from the sandstones. Connection gas was absent. The flowline temperature ranging 51.3°C - 58.2°C had a gradient of 0.02°C/m, the same as that of the overlying sediments. The cuttings and the cavings increased in volume and size. The average blocky to elongate cavings measured about 40mm x 20mm x 1.5mm with occasional larger fragments. The cavings were dominated by the blocky stress-relief type with very rare splintery and concave variety. The pore pressure at this section was estimated to have remained normal at 8.6 ppg EMW. No notable drag and fill at the bottom was observed while drilling and after connections. The bit was pulled at 2054m due to poor penetration rates in the very coarse sandstones. Pulling out of the hole was smooth with no tight spots encountered. The drilling fluid used in the section weighed 9.8 ppg, incremented to 9.9 ppg towards bottom.

NB#4, Security XL20D 12.25" with 3X18 jets was ran in to drill the sands. This sandstone section from 2054m to 2107m was drilled at a penetration range of 1.6 - 15.6 m/hr averaging 10.0 m/hr. Pressure indicators were maintained as in the upper section. The pore pressure was estimated to have remained normal at 8.6 ppg EMW from the low background gas (0.9 - 1.9 units), the absence of connection gas, splintery cavings, DxC on the rightward trend and no hole problems except for poor penetration. Mudweight was 10.0 ppg. The bit was pulled out slick. NB#5, Smith MGR84VPX, 12.25" with 8x12 jets, PDC bit was then picked up and run in hole. The bit drilled 7m in 9.5 hours and was pulled out. At the surface, evidence of bit balling was seen.

The section from 2114m to 3138m TD was drilled with roller bits, 3 units of Security XL20D and 1 unit of Reed EHP51. The drilling fluid was KCl/PHPA/Glycol that weighed 10.0 ppg initially and was gradually weighted to 10.1 ppg in anticipation of a possible high pressure regime below the volcanics at around 2540m depth. The volcanics was penetrated with no significant changes in the pressure regimes. Formations below the volcanics including the target reservoirs indicated normal pore pressures.

Massive siltstones with thin sandstone and coal interbeds composed the lithologies from 2114m to 2535m. This section was penetrated at 1.6 - 29.8m/hr, averaging 7.2m/hr. The DxC scatter ranging from 1.02 - 1.88 units over the massive siltstones had a steep slope with a steady rightward tend. The low values 1.02 +/- 0.02 tend to indicate a sand baseline while the high end showed a siltstone line. Background gas was 1.0 - 2.5 units with peaks reaching 10 units in the coal intervals. No connection gas was noted while drilling the section and the first trip gas at 2114m recorded 1.5 units. Cavings were seen at the shakers with 90 - 95% consisted of blocky and tabular stress-relief type. Traces of the cavings were sharp and concave measuring up to 20 x 8 x 3mm. The temperature gradient from the flowline, 52.1°C - 64.0°C, was calculated at 0.079°C/m near the top then steepened to 0.01°C/m at the lower half, a trend typically seen in geopressure transitions zones. The change in the temperature gradient however coincided with the lithology change from sandstone to the siltstones. The pore pressure at this interval was estimated to be normal at 8.6 ppg EMW but may have possibly increased to 8.8+ ppg EMW when emphasis on the temperature log was given. Flowchecks at 2114m, 2142m, 2176m, 2229m and 2258m however, showed a static hole.

The volcanic sequence from 2535m - 2592m composed of a massive basalt and tuff overlaid the target sandstone reservoir. Below the sandstone was another volcanic layer of similar composition. Entry into the sequence was slow, 2.2 - 8.9 m/hr, average 4.5m/hr. The drilling fluid weighed 10.1 ppg. The drilling exponent was nearly vertical, though with a general rightward trend and ranged from 1.42 - 1.80 units. There was not much departure from the trend established in the overlying siltstones. Much less cavings, <5% were seen on the shakers. The flowline temperature ranged 58.9 °C - 62.2°C, with a gradient of .04°C/m. The background gas was 1-1.6 units with a gas peak 3.2 units, lagged from the sandstones. No connection gas was detected. Based on the monitored and calculated pressure indicators, this interval showed normal pore pressure, at 8.6 ppg EMW.

From 2592m to 2945m, siltstones with interbedded sandstones and coals were penetrated. Penetration rates were low at 5.6 m/hr average, except for occasional drillbreaks of 10 - 25 m/hr. The DxC points maintained a rightward trend with occasional deflection to the left over short drillbreaks in the sandstones. The DxC ranged from 1.14 - 1.91 units. The gas level increased averaging 7.4 units with several gas peaks from the coal and the sandstone beds. The gas peaks ranging from 17.5 units to 60 units showed a very distinct ascending trend with depth that would characterise the transition zones in the offset wells. However, no connection gas was seen. The degasser unit was ran occasionally to clean the mud though no significant gas bubbling was observed in the system. Trip gas in two trips recorded 7 units (2741m) and 24 units (2783m) respectively. The shale cavings however diminished to trace quantity and the flowline temperature was measured at a range of 59.9 - 69.7 °C, following a thermal gradient of 0.04 °C/m. Several flowchecks at 2595m, 2619m, 2664m, 2786m, 2842m, 2896m, 2912m, 2928m, 2933m confirmed static hole condition. Returns and gas were circulated at 2835m, 2925m and 2934m. At 2945m, the wiper trip was slick and no substantial fill was seen back on bottom. The pore pressure at this interval was then estimated to be normal at 8.6ppg EMW.

After a suite of wireline logs was run, it was decided to drill further and evaluate the hydrocarbon potential of the well below 2945m. A new bit was picked up and the hole was then drilled to a total depth of 3138m with the mud weight maintained at 10.1ppg by constant premix additions to the system. The lithology penetrated at this interval consisted predominantly of a massive siltstone interbedded with sandstone, occasional thin coal seams and a highly altered diorite / granodiorite facies at the bottom. The DxC scatter line was normal to vertical within the massive siltstone deposit. The DxC trend however veered to the left from 3090m to 3120m in response to the coarsening downward change in lithology. The gas background did increase from 3 units to 6 units at this interval. However, there were no cavings noted at the shakers and there was no corresponding gas increase tracked from flowchecks and connections. The flowline temperature from 3090m to 3120m ranging from 74.2 to 74.3°C was disregarded as a pore pressure indicator tool due to constant mud dilution. Below 3120m to the total depth of 3138m, all pore pressure parameters indicated a normally pressured formation. From these observations, the formation pore pressure from 2945m to 3090m and from 3120m to the total depth of 3138m was thus estimated to be normal at 8.6ppg EMW. However, based on background gas level and a non-homogenous lithological application of the DxC ratio, it was possible that the section from 3090m to 3120m could have a marginal pore pressure increase from 8.7 to 8.9ppg EMW.

4.2 FRACTURE PRESSURE EVALUATION

Fracture pressure estimation for East Pilchard-1 was made using the Baker Hughes INTEQ zero tensile strength method. For a full explanation of this method, refer to INTEQ Manual MS-156 "The Theory and Evaluation of Formation Pressures".

With no returns to surface it was not possible to estimate the fracture pressure through the 36 and 17.5" hole sections. Formation Integrity Tests (FIT) were performed at the 13.375" casing shoe and at 2471m prior to drilling into the target below the volcanics, with the results shown below:

Casing Depth	Casing Size		Hole Size		Test Mud Density	FIT EMW	Test type
mMDRT	in	mm	in	mm	(ppg)	(ppg)	
873	13.375	340	12.25	311	9.05	17.0	FIT
2471	13.375	340	12.25	311	10.1	11.8	FIT

The 13 3/8" casing was run and set at 873m. The 12 1/4" assembly was made-up and RIH. After drilling cement, casing shoe and new hole to 888m, the hole was displaced to a KCL/PHPA/Glycol water-based mud system weighted at 9.05 ppg. A leak-off test was then performed recording a 17.0ppg EMW formation strength. Drilling resumed with nil to minimal surface losses. The system was weighted up to 9.5-9.6ppg before Lakes Entrance formation was penetrated. At 1600m, Baracarb limestone was then gradually added to the drilling fluid to minimise seepage loss to the Latrobe sands. Further additions of KCL and Baracarb then increased the mud weight to 10.0 ppg without significant fluid loss to the formation. At 2440m however, seepage losses to the system was recorded at 10-15 bph.

Another FIT was then performed at 2471m with the mud weight measured at 10.1ppg. The resulting formation strength was recorded at 11.8ppg EMW. The drilling fluid density was then kept constant by adding mud premix to the system until the target depth was reached at 3138m. Numerous flow checks conducted at drilling breaks showed a static hole condition. While drilling over the entire 12 1/4" hole, fluid losses to the system were minimal and within expected volume to the arenaceous formations. The maximum effective circulating density exerted by the rig pumps was calculated at 10.4ppg. This value was way below the 11.8 ppg strength of the weakest formation in this bottom hole section.

Tables

Table 1: Bit Run Summary

Tables





OPERATOR				WELL NAME				LOCATION				CONTRACTOR				RIG																	
ESSO AUSTRALIA PTY LTD				EAST PILCHARD-1				VIC/L9				DIAMOND OFFSHORE GENERAL COMPANY				MODU OCEAN BOUNTY																	
<div><div><div></div><div></div><div>INTEQ</div></div></div>				PUMP 1 - OILWELL A1700 PT 6" LINER (36, 17.5, 12.25 & 8.5") PUMP 2 - OILWELL A1700 PT 6" LINER (36, 17.5, 12.25 & 8.5") PUMP 3 - OILWELL A1700 PT 6" LINER (36, 17.5, 12.25" & 8.5")				BIT DULL CHARACTERISTICS								REASONS PULLED																	
								BC - Broken Cone		CI - Cone Interference		JD - Junk Damage		PB - Pinched Bit		SS - Self-Sharpening		BHA - Bottomhole Assembly				LOG - Run Logs				FM - Formation Change				TD - Total / Cag depth			
								BT - Broken Teeth		CR - Cored		LC - Lost Cone		PN - Plugged Nozzle		TR - Tracking		DMF - Downhole Motor failure				RIG - Rig repair				HP - Hole Problems				TQ - Torque			
								BU - Balled Up		CT - Chipped Teeth		LN - Lost Nozzle		RG - Rounded Gauge		WO - Washed-Out Bit		DSF - Drill String failure				CM - Condition Mud				HR - Hours				TW - Twist Off			
								CC - Cracked Cone		FC - Flat Crested Wear		LT - Lost Teeth		RO - Ring Out		WT - Worm Teeth		DST - Drill Stem Test				CP - Core Point				PP - Pump Pressure				WC - Weather Conditions			
								CD - Cone Dragged		HC - Heat Checking		OC - Off-Center Wear		SD - Shrittail Damage		NO - No Dull Characs.		DTP - Downhole Tool Failure				DP - Drill Plug				PR - Penetration rate				WO - Washout - Drill String			
BIT RUN	BIT No.	MAKE	TYPE	TFA sq.in.	JETS	SERIAL No.	DEPTH IN m	METRES ON BIT	HRS ON BOTTOM	AV ROP m/hr	IADC HRS	WOB klbs	RPM S/M	TBR krevs	SPP psi	GPM	TQ	GRADE								MW ppg	REMARKS						
																		I	O	D	L	B	G	O	R								
36"/17.5" HOLE SECTION 116 - 163mMDRT																																	
1	NB1	Security	XTIC	4.712	4x20, (4x18)	743584	116	47	1.7	27.6	2.3	0.5-3.4	90 /-	9.0	80-1523	292-1208	0.5-1.7	1	1	NO	A	E	I	NO	TD	8.6	With Hole Opener						
17.5" HOLE SECTION 163 - 885mMDRT																																	
2	NB2	Hycalog	DS34HF+GN	1.203	8 x 14	24400	163	722	17.1	42.2	22.0	0.7-17.3	121 / -	126.6	827-3135	626-1189	0.5-9.6	1	1	NO	A	X	I	CT	TD	8.6							
12.25" HOLE SECTION 885 - 3125mMDRT																																	
3	NB3	Smith	MA89PX	0.773	7 x 12	JS4375	885	1169	51.5	22.7	69.3	0.5-18.4	155 / -	472.2	1168-3742	591-1132	2.4-12.0	3	3	BT	A	X	2	WT	PR	9.0 - 9.9	MWD						
4	NB4	Security	XL20D	0.745	3 x 18	743448	2054	53	7.0	7.6	8.0	3.6-27.8	107 / -	43.7	3096-3597	650-853	2.3-15.1	1	1	NO	A	E	I	NO	PR	9.9	MWD						
5	NB5	Smith	MGR84VPX	0.884	8 x 12	JS5357	2107	7	9.5	0.7	10.5	8.8-40.4	34-109	43.6	3492-3710	867	918	1	1	WT	A	X	I	BU	PR	9.9-10.0	MWD						
6	NB6	Security	XL20D	0.745	3 x 18	743445	2114	357	71.2	5.0	77.0	13-53	90 / -	375.8	2913-3877	588-905	2.1-5.3	2	3	WT	A	I	I	BT	HR	10.0-10.1	MWD						
7	NB7	Security	XL20D	0.745	3 x 18	740310	2471	312	82.0	3.8	89.0	36-57	80 / -	393.6	3540-3837	745-826	2.8-6.9	2	3	CT	G	E	I	WT	HR	10.1							
8	NB8	Reed	EHP51	0.745	3 x 18	CT6095	2783	162	40.3	4.0	45.3	39-56	87 / -	213.8	3543-3868	779-810	3.6-6.6	2	2	WT	A	F	I	NO	TD	10.1							
9	NB9	Security	XL20D	0.745	3 x 18	740718	2945	193	52.4	3.7	54.8	46-59	77 / -	243.7	3641-4062	758-812	2.5-6.3	2	2	CT	S	E	I	WT	TD	10.1							
NOTE: Bit run number = BHA number ; NB = New Bit RB = Rerun Bit PDM = Downhole Motor																																	
TOTAL DEPTH (m)							3138 mMDRT																										

Table 2: Bit Hydraulics Summary

Tables

<div><div></div><div>Table 2: BIT HYDRAULICS SUMMARY</div><div></div></div>																							
OPERATOR ESSO AUSTRALIA PTY LTD							WELL NAME EAST PILCHARD-1					LOCATION VIC/L9			CONTRACTOR Diamond Offshore General Co.					RIG MODU OCEAN BOUNTY			
Drillstring Abbreviations N Normal MWD T Turbine Core P Positive Displacement Motor												Hydraulics Models Power Law Model used for drilling with Mud Bingham Model used for coring and drilling with sea water											
Bit No.	Depth In (m)	Hole Size in	Cale'd Hole Size in	JETS x 1/32"	Drill String Type	Mud Density ppg	Mud Type	PV / YP	Flow Rate gpm	ECD ppg	Annular Velocities				Jet Vel m/sec	HHP hp	HSI hp/sq in	Impact Force lbf	Bit Pressure Loss psi	% Bit Loss	Theoretical Pressure Loss psi	Actual Pressure Loss psi	
											DP Riser m/min	DP OH m/min	DC OH m/min	DC critical m/min									
36"/17.5" HOLE SECTION				116 - 163mMDRT																			
NB1	116	36/17.5	36	4x20, (4x18)	N	8.6	SW / Gel sweeps	1 / 1	1208	8.6	-	-	24.3	25.5	57.0	110	0.5	584	269	17.7	1521	1523	
17.5 " HOLE SECTION				163 - 885mMDRT																			
NB2	163	17.5	17.5	8 x 14	M	8.6	SW / Gel sweeps	1 / 1	1200	8.6	-	1.4	41.5	25.5	97.5	551.1	2.3	1711.0	2800	37.0	2917	2800	
12.25 " HOLE SECTION				885 - 2945mMDRT																			
NB3	885	12.25	12.25	7 x 12	M	9.9	KCl/PHPA/Glycol	25 / 30	914	10.1	18.7	53.1	85.4	158.6	115.6	678.9	5.8	1778.0	1274	34.1	3940	3742	
NB4	2054	12.25	12.25	3 x 18	M	10.0	KCl/PHPA/Glycol	23 / 37	834	10.1	17.1	48.4	78.0	176.9	109.4	554.6	4.8	1535.1	1141	35.9	3381	3597	
NB5	2107	12.25	13.00	8 x 12	M	10.1	KCl/PHPA/Glycol	20 / 33	918	10.3	18.8	53.3	85.8	161.7	101.6	537.1	4.6	1601.0	1004	30.6	3480	3710	
NB6	2114	12.25	13.00	3 x 18	M	10.1	KCl/PHPA/Glycol	24 / 45	905	10.4	18.4	52.2	80.3	193.3	117.9	707.4	6.1	1817.6	1351	34.8	4076	3877	
NB7	2471	12.25	12.40	3 x 18	N	10.1	KCl/PHPA/Glycol	25 / 38	808	10.4	16.6	48.5	74.2	183.7	106.0	514.5	4.4	1470.0	1092	33.1	3305	3837	
NB8	2783	12.25	12.25	3 x 18	N	10.1	KCl/PHPA/Glycol	23 / 34	794	10.4	16.3	47.6	72.9	165.3	104.2	488.2	4.2	1419.5	1055	31.4	3362	3868	
NB9	2945	12.25	12.25	3 x 18	N	10.1	KCl/PHPA/Glycol	24 / 41	810	10.4	16.6	48.6	74.4	184.4	106.3	518.3	4.5	1477.3	1098	30.4	3606	3880	

Esso Australia Pty Ltd
East Pilchard-1

July - August 2001

Latitude:	038° 11' 54.184" S	Field Strength, HCNT:	1200.61
Longitude:	148° 33' 42.825" E	Grid Convergence:	1.2°
Section Azimuth:	0.00	Total Azimuth Corr:	9.85°
Dip:	-68.70°	North Reference:	Grid North
Declination:	13.22°	Computation Method:	Minimum Curvature

Directional Survey Listing

MEASURED DEPTH (m)	INCLINATION ANGLE (deg)	AZIMUTH ANGLE (deg)	VERTICAL DEPTH (m)	LATITUDE +N/S- (m)	DEPARTURE +E/W- (m)	VERTICAL SECTION (m)	DOGLEG (deg/10 m)	Survey Type
116.00	0.00	0.00	116.00	0.00	0.00	0.00	0.00	Tie-in
146.11	1.69	178.87	146.11	-0.44	0.01	-0.44	0.56	MWD
175.01	0.03	217.72	175.00	-0.88	0.01	-0.88	0.58	MWD
202.71	0.92	280.32	202.70	-0.84	-0.21	-0.84	0.33	MWD
231.81	0.64	253.06	231.80	-0.85	-0.60	-0.85	0.16	MWD
258.71	0.62	201.27	258.70	-1.03	-0.79	-1.03	0.20	MWD
286.01	0.41	115.81	286.00	-1.21	-0.76	-1.21	0.26	MWD
313.01	0.78	115.03	312.99	-1.33	-0.50	-1.33	0.14	MWD
372.31	0.43	317.18	372.29	-1.33	-0.29	-1.33	0.20	MWD
429.01	0.20	118.74	428.99	-1.23	-0.35	-1.23	0.11	MWD
461.00	0.57	346.70	460.98	-1.10	-0.34	-1.10	0.22	MWD
486.51	0.35	250.17	486.49	-1.00	-0.44	-1.00	0.28	MWD
515.01	0.39	359.99	514.99	-0.93	-0.52	-0.93	0.21	MWD
573.61	0.14	199.31	573.59	-0.80	-0.54	-0.80	0.09	MWD
603.21	1.01	174.66	603.19	-1.10	-0.53	-1.10	0.30	MWD
647.01	0.29	29.30	646.99	-1.38	-0.44	-1.38	0.29	MWD
689.61	0.43	162.88	689.59	-1.44	-0.34	-1.44	0.16	MWD
719.61	0.45	20.00	719.59	-1.44	-0.27	-1.44	0.28	MWD
777.81	0.06	98.86	777.79	-1.23	-0.16	-1.23	0.08	MWD
806.91	0.50	206.12	806.88	-1.34	-0.20	-1.34	0.18	MWD
835.91	0.73	152.67	835.88	-1.62	-0.17	-1.62	0.20	MWD
846.81	0.27	283.76	846.78	-1.68	-0.16	-1.68	0.85	MWD
962.46	0.19	13.47	962.43	-1.43	-0.38	-1.43	0.03	MWD
990.96	0.18	15.01	990.93	-1.34	-0.36	-1.34	0.00	MWD
1019.86	0.26	21.98	1019.83	-1.23	-0.33	-1.23	0.03	MWD
1136.76	0.35	18.11	1136.73	-0.65	-0.12	-0.65	0.01	MWD
1217.16	0.43	31.20	1217.13	-0.16	0.12	-0.16	0.01	MWD
1236.46	0.41	30.88	1236.43	-0.04	0.19	-0.04	0.01	MWD
1277.46	0.50	34.40	1277.43	0.24	0.37	0.24	0.02	MWD
1335.36	0.58	31.06	1335.32	0.70	0.66	0.70	0.01	MWD
1376.86	0.58	32.31	1376.82	1.06	0.88	1.06	0.00	MWD
1394.76	0.61	38.15	1394.72	1.21	0.99	1.21	0.04	MWD
1411.66	0.66	32.47	1411.62	1.36	1.10	1.36	0.05	MWD
1450.86	0.81	37.61	1450.82	1.77	1.39	1.77	0.04	MWD
1543.26	0.90	36.56	1543.21	2.87	2.22	2.87	0.01	MWD
1659.56	1.34	25.83	1659.48	4.83	3.35	4.83	0.04	MWD
1746.16	1.46	24.84	1746.06	6.74	4.26	6.74	0.01	MWD
1800.66	1.55	26.91	1800.54	8.03	4.88	8.03	0.02	MWD
1862.26	1.63	27.49	1862.12	9.55	5.67	9.55	0.01	MWD
1978.76	1.88	31.82	1978.56	12.64	7.44	12.64	0.02	MWD

Table 3: Survey Data Summary

Tables

MEASURED DEPTH (m)	INCLINATION ANGLE (deg)	AZIMUTH ANGLE (deg)	VERTICAL DEPTH (m)	LATITUDE +N/S- (m)	DEPARTURE +E/W- (m)	VERTICAL SECTION (m)	DOGLEG (deg/10 m)	Survey Type
2006.66	1.86	30.71	2006.45	13.42	7.91	13.42	0.01	MWD
2094.09	1.87	33.51	2093.83	15.87	9.45	15.87	0.01	MWD
2119.76	1.79	31.60	2119.49	16.56	9.89	16.56	0.04	MWD
2147.16	1.72	30.83	2146.87	17.27	10.32	17.27	0.03	MWD
2177.76	1.78	27.49	2177.46	18.09	10.78	18.09	0.04	MWD
2205.76	1.89	24.20	2205.44	18.90	11.17	18.90	0.05	MWD
2234.96	1.84	25.08	2234.63	19.76	11.56	19.76	0.02	MWD
2265.46	2.00	22.94	2265.11	20.69	11.98	20.69	0.06	MWD
2293.56	1.86	20.50	2293.20	21.57	12.33	21.57	0.06	MWD
2322.66	1.98	20.10	2322.28	22.49	12.67	22.49	0.04	MWD
2350.66	2.01	17.08	2350.26	23.37	12.95	23.37	0.04	MWD
2379.56	2.13	15.86	2379.14	24.38	13.25	24.38	0.04	MWD
2459.76	2.01	14.97	2459.29	27.17	14.02	27.17	0.02	MWD
2488.30	2.11	241.25	2487.80	28.30	11.00	30.20	3.99	M/Shot
2517.40	2.13	246.09	2516.90	27.80	10.00	29.50	0.19	M/Shot
2546.40	1.73	265.58	2545.80	27.60	9.10	29.00	0.79	M/Shot
2585.50	1.84	320.27	2584.90	28.00	8.10	29.10	1.26	M/Shot
2604.40	1.94	316.85	2603.80	28.50	7.70	29.50	0.23	M/Shot
2643.10	1.83	28.79	2642.50	29.50	7.60	30.40	1.72	M/Shot
2672.00	2.05	27.26	2671.40	30.30	8.00	31.40	0.23	M/Shot
2690.60	2.13	23.89	2690.00	31.00	8.30	32.00	0.24	M/Shot
2729.70	2.15	21.61	2729.00	32.30	8.90	33.50	0.07	M/Shot
2758.30	2.37	21.79	2757.60	33.30	9.30	34.60	0.24	M/Shot
2771.00	2.74	12.81	2770.30	33.90	9.50	35.20	1.29	M/Shot

WFTI INCLINOMETRY LIST
ESSO AUSTRALIA - EAST PILCHARD 1

Meas. Tie Depth : 2205.8m

True Vert. Tie Depth : 2205.4M

Measured Depth (M)	Deviation (DEG)	Azimuth (DEG)	True Vertical Depth (M)
2205.8	1.89	24.20	2205.4
2215.0	1.90	24.54	2214.6
2216.0	1.90	24.54	2215.6
2217.0	1.89	24.44	2216.6
2218.0	1.89	24.36	2217.6
2219.0	1.90	24.39	2218.6
2220.0	1.90	24.31	2219.6
2221.0	1.89	24.11	2220.6
2222.0	1.90	23.74	2221.6
2223.0	1.90	23.27	2222.6
2224.0	1.91	23.12	2223.6
2225.0	1.91	23.27	2224.6
2226.0	1.91	23.57	2225.6
2227.0	1.90	23.93	2226.6
2228.0	1.90	23.85	2227.6
2229.0	1.90	23.50	2228.6
2230.0	1.89	23.24	2229.6
2231.0	1.89	23.39	2230.6
2232.0	1.90	23.49	2231.6
2233.0	1.91	23.88	2232.6
2234.0	1.91	23.56	2233.6
2235.0	1.91	23.20	2234.6
2236.0	1.91	23.22	2235.6
2237.0	1.92	23.45	2236.6
2238.0	1.93	23.10	2237.6
2239.0	1.92	22.88	2238.6
2240.0	1.92	22.90	2239.6
2241.0	1.93	22.90	2240.6
2242.0	1.93	22.96	2241.6
2243.0	1.93	23.26	2242.6
2244.0	1.93	23.67	2243.6
2245.0	1.94	23.90	2244.6
2246.0	1.94	23.87	2245.6
2247.0	1.94	23.80	2246.6
2248.0	1.94	23.79	2247.6
2249.0	1.95	23.72	2248.6
2250.0	1.97	23.47	2249.6
2251.0	1.96	23.63	2250.6
2252.0	1.96	23.66	2251.6
2253.0	1.97	23.24	2252.6
2254.0	1.99	22.46	2253.6
2255.0	2.01	22.08	2254.6
2256.0	2.02	22.27	2255.6
2257.0	2.02	22.17	2256.6
2258.0	2.02	22.21	2257.6
2259.0	2.02	22.14	2258.6
2260.0	2.03	22.21	2259.6
2261.0	2.04	22.33	2260.6
2262.0	2.05	22.43	2261.6

WFTI INCLINOMETRY LIST
ESSO AUSTRALIA - EAST PILCHARD 1

Meas. Tie Depth : 2205.8m

True Vert. Tie Depth : 2205.4M

Measured Depth (M)	Deviation (DEG)	Azimuth (DEG)	True Vertical Depth (M)
2263.0	2.03	22.41	2262.6
2264.0	2.03	22.32	2263.6
2265.0	2.03	22.45	2264.6
2266.0	2.05	22.30	2265.6
2267.0	2.03	22.27	2266.6
2268.0	2.01	22.25	2267.6
2269.0	2.01	21.96	2268.6
2270.0	2.00	21.90	2269.6
2271.0	2.01	21.72	2270.6
2272.0	2.00	21.78	2271.6
2273.0	2.01	21.81	2272.6
2274.0	2.01	21.75	2273.6
2275.0	1.99	21.68	2274.6
2276.0	1.99	21.59	2275.6
2277.0	1.99	21.58	2276.6
2278.0	1.99	21.63	2277.6
2279.0	2.01	21.71	2278.6
2280.0	2.00	21.93	2279.6
2281.0	2.00	22.02	2280.6
2282.0	1.99	21.90	2281.6
2283.0	1.98	21.74	2282.6
2284.0	1.99	21.77	2283.6
2285.0	2.00	21.81	2284.6
2286.0	2.00	21.91	2285.6
2287.0	2.01	21.88	2286.6
2288.0	2.00	21.86	2287.6
2289.0	2.00	21.73	2288.6
2290.0	1.99	21.58	2289.6
2291.0	1.98	21.36	2290.6
2292.0	1.97	21.23	2291.6
2293.0	1.98	21.01	2292.6
2294.0	1.98	20.78	2293.6
2295.0	1.97	20.42	2294.6
2296.0	1.95	20.03	2295.6
2297.0	1.95	19.85	2296.6
2298.0	1.94	19.48	2297.6
2299.0	1.94	19.57	2298.6
2300.0	1.94	19.46	2299.6
2301.0	1.94	19.24	2300.6
2302.0	1.92	18.98	2301.6
2303.0	1.92	19.10	2302.6
2304.0	1.91	19.30	2303.6
2305.0	1.92	19.55	2304.6
2306.0	1.92	19.58	2305.6
2307.0	1.92	19.64	2306.6
2308.0	1.91	19.85	2307.6
2309.0	1.91	20.32	2308.6
2310.0	1.91	20.47	2309.6
2311.0	1.90	20.22	2310.6

WFTI INCLINOMETRY LIST
ESSO AUSTRALIA - EAST PILCHARD 1

Meas. Tie Depth : 2205.8m

True Vert. Tie Depth : 2205.4M

Measured Depth (M)	Deviation (DEG)	Azimuth (DEG)	True Vertical Depth (M)
2312.0	1.90	19.66	2311.6
2313.0	1.90	19.08	2312.6
2314.0	1.90	18.83	2313.6
2315.0	1.91	18.79	2314.6
2316.0	1.92	18.12	2315.6
2317.0	1.93	17.75	2316.6
2318.0	1.93	17.90	2317.6
2319.0	1.94	18.29	2318.6
2320.0	1.95	18.60	2319.6
2321.0	1.96	18.93	2320.6
2322.0	1.96	18.94	2321.6
2323.0	1.96	18.88	2322.6
2324.0	1.97	18.62	2323.6
2325.0	1.98	18.55	2324.6
2326.0	1.99	18.44	2325.6
2327.0	1.99	18.27	2326.6
2328.0	1.98	18.10	2327.6
2329.0	1.97	18.00	2328.6
2330.0	1.97	18.00	2329.6
2331.0	1.97	17.70	2330.6
2332.0	1.97	17.35	2331.6
2333.0	1.98	17.22	2332.6
2334.0	1.98	17.06	2333.6
2335.0	1.98	16.90	2334.6
2336.0	1.98	16.81	2335.6
2337.0	1.99	16.69	2336.6
2338.0	1.99	16.54	2337.6
2339.0	2.00	16.15	2338.6
2340.0	2.01	15.91	2339.6
2341.0	2.02	15.64	2340.6
2342.0	2.04	15.32	2341.6
2343.0	2.04	15.25	2342.6
2344.0	2.04	15.03	2343.6
2345.0	2.05	14.52	2344.6
2346.0	2.06	14.19	2345.6
2347.0	2.07	14.27	2346.6
2348.0	2.06	14.44	2347.6
2349.0	2.06	14.43	2348.6
2350.0	2.06	14.53	2349.6
2351.0	2.06	14.59	2350.6
2352.0	2.06	14.91	2351.6
2353.0	2.04	15.11	2352.6
2354.0	2.05	15.27	2353.6
2355.0	2.04	15.40	2354.6
2356.0	2.06	15.65	2355.6
2357.0	2.09	15.80	2356.5
2358.0	2.11	15.87	2357.5
2359.0	2.10	16.24	2358.5
2360.0	2.08	16.47	2359.5

WFTI INCLINOMETRY LIST
ESSO AUSTRALIA - EAST PILCHARD 1

Meas. Tie Depth : 2205.8m

True Vert. Tie Depth : 2205.4M

Measured Depth (M)	Deviation (DEG)	Azimuth (DEG)	True Vertical Depth (M)
2362.0	2.05	16.28	2361.5
2363.0	2.06	16.25	2362.5
2364.0	2.07	16.25	2363.5
2365.0	2.11	16.43	2364.5
2366.0	2.11	16.41	2365.5
2367.0	2.11	16.48	2366.5
2368.0	2.10	16.48	2367.5
2369.0	2.10	16.14	2368.5
2370.0	2.12	16.04	2369.5
2371.0	2.14	15.74	2370.5
2372.0	2.15	15.43	2371.5
2373.0	2.15	15.08	2372.5
2374.0	2.16	14.83	2373.5
2375.0	2.16	14.56	2374.5
2376.0	2.16	14.49	2375.5
2377.0	2.15	14.58	2376.5
2378.0	2.15	14.79	2377.5
2379.0	2.15	15.05	2378.5
2380.0	2.15	15.25	2379.5
2381.0	2.16	15.41	2380.5
2382.0	2.16	15.63	2381.5
2383.0	2.16	15.92	2382.5
2384.0	2.15	15.86	2383.5
2385.0	2.17	15.73	2384.5
2386.0	2.17	15.69	2385.5
2387.0	2.18	15.54	2386.5
2388.0	2.19	15.70	2387.5
2389.0	2.20	15.56	2388.5
2390.0	2.20	15.62	2389.5
2391.0	2.19	15.58	2390.5
2392.0	2.19	15.60	2391.5
2393.0	2.19	15.49	2392.5
2394.0	2.19	15.38	2393.5
2395.0	2.19	15.38	2394.5
2396.0	2.19	15.49	2395.5
2397.0	2.20	15.41	2396.5
2398.0	2.20	15.32	2397.5
2399.0	2.19	15.40	2398.5
2400.0	2.18	15.81	2399.5
2401.0	2.18	16.03	2400.5
2402.0	2.19	15.88	2401.5
2403.0	2.19	15.57	2402.5
2404.0	2.21	15.64	2403.5
2405.0	2.21	15.74	2404.5
2406.0	2.21	15.77	2405.5
2407.0	2.22	15.89	2406.5
2408.0	2.22	15.98	2407.5
2409.0	2.22	16.18	2408.5
2410.0	2.23	16.07	2409.5

WFTI INCLINOMETRY LIST
ESSO AUSTRALIA - EAST PILCHARD 1

Meas. Tie Depth : 2205.8m

True Vert. Tie Depth : 2205.4M

Measured Depth (M)	Deviation (DEG)	Azimuth (DEG)	True Vertical Depth (M)
2411.0	2.24	16.04	2410.5
2412.0	2.25	15.89	2411.5
2413.0	2.26	15.67	2412.5
2414.0	2.26	15.74	2413.5
2415.0	2.23	15.53	2414.5
2416.0	2.23	15.30	2415.5
2417.0	2.22	15.34	2416.5
2418.0	2.21	15.02	2417.5
2419.0	2.19	14.88	2418.5
2420.0	2.18	14.66	2419.5
2421.0	2.19	14.33	2420.5
2422.0	2.18	14.04	2421.5
2423.0	2.18	13.89	2422.5
2424.0	2.17	13.98	2423.5
2425.0	2.19	13.87	2424.5
2426.0	2.19	13.67	2425.5
2427.0	2.20	13.72	2426.5
2428.0	2.19	13.96	2427.5
2429.0	2.19	14.18	2428.5
2430.0	2.18	14.17	2429.5
2431.0	2.17	13.68	2430.5
2432.0	2.18	13.12	2431.5
2433.0	2.18	13.71	2432.5
2434.0	2.15	14.55	2433.5
2435.0	2.15	15.44	2434.5
2436.0	2.13	16.61	2435.5
2437.0	2.13	16.86	2436.5
2438.0	2.11	16.53	2437.5
2439.0	2.10	16.24	2438.5
2440.0	2.13	16.86	2439.5
2441.0	2.13	18.18	2440.5
2442.0	2.10	18.54	2441.5
2443.0	2.09	17.94	2442.5
2444.0	2.08	17.53	2443.5
2445.0	2.09	16.64	2444.5
2446.0	2.10	16.20	2445.5
2447.0	2.11	15.80	2446.5
2448.0	2.11	15.39	2447.5
2449.0	2.09	14.92	2448.5
2450.0	2.09	14.08	2449.5
2451.0	2.08	13.96	2450.5
2452.0	2.08	14.22	2451.5
2453.0	2.07	14.24	2452.5
2454.0	2.07	14.14	2453.5
2455.0	2.06	13.90	2454.5
2456.0	2.07	13.91	2455.5
2457.0	2.07	13.86	2456.5
2458.0	2.06	13.11	2457.5
2459.0	2.06	12.40	2458.5

WFTI INCLINOMETRY LIST
ESSO AUSTRALIA - EAST PILCHARD 1

Meas. Tie Depth : 2205.8m

True Vert. Tie Depth : 2205.4M

Measured Depth (M)	Deviation (DEG)	Azimuth (DEG)	True Vertical Depth (M)
2460.0	2.07	11.17	2459.5
2461.0	2.07	13.57	2460.5
2462.0	2.08	14.70	2461.5
2463.0	2.09	15.74	2462.5
2464.0	2.07	18.89	2463.5
2465.0	2.07	19.44	2464.5
2466.0	2.04	20.55	2465.5
2467.0	2.08	20.11	2466.5
2468.0	2.08	20.32	2467.5
2469.0	2.08	16.38	2468.5
2470.0	2.09	15.90	2469.5
2471.0	2.08	14.23	2470.5
2472.0	2.08	11.55	2471.5
2473.0	2.04	9.44	2472.5
2474.0	2.10	11.95	2473.5
2475.0	2.09	14.45	2474.5
2476.0	2.11	14.75	2475.5
2477.0	2.12	15.06	2476.5
2478.0	2.13	15.98	2477.5
2479.0	2.14	15.98	2478.5
2480.0	2.15	16.01	2479.5
2481.0	2.16	16.19	2480.5
2482.0	2.15	16.00	2481.5
2483.0	2.14	15.69	2482.5
2484.0	2.12	15.67	2483.5
2485.0	2.12	15.75	2484.5
2486.0	2.12	16.05	2485.5
2487.0	2.13	16.49	2486.5
2488.0	2.11	17.16	2487.5
2489.0	2.11	17.28	2488.5
2490.0	2.11	17.13	2489.5
2491.0	2.09	17.37	2490.5
2492.0	2.08	17.28	2491.5
2493.0	2.08	17.40	2492.5
2494.0	2.10	17.53	2493.5
2495.0	2.11	17.41	2494.5
2496.0	2.10	17.16	2495.5
2497.0	2.09	17.47	2496.5
2498.0	2.07	18.01	2497.5
2499.0	2.08	18.21	2498.5
2500.0	2.06	18.11	2499.4
2501.0	2.05	18.33	2500.4
2502.0	2.04	18.66	2501.4
2503.0	2.07	19.43	2502.4
2504.0	2.07	18.88	2503.4
2505.0	2.08	18.62	2504.4
2506.0	2.08	17.67	2505.4
2507.0	2.12	18.19	2506.4
2508.0	2.10	18.77	2507.4

WFTI INCLINOMETRY LIST
ESSO AUSTRALIA - EAST PILCHARD 1

Meas. Tie Depth : 2205.8m

True Vert. Tie Depth : 2205.4M

Measured Depth (M)	Deviation (DEG)	Azimuth (DEG)	True Vertical Depth (M)
2509.0	2.06	19.55	2508.4
2510.0	2.06	19.60	2509.4
2511.0	2.06	19.00	2510.4
2512.0	2.09	20.14	2511.4
2513.0	2.09	20.15	2512.4
2514.0	2.10	20.43	2513.4
2515.0	2.06	20.32	2514.4
2516.0	2.07	19.95	2515.4
2517.0	2.07	19.95	2516.4
2518.0	2.08	19.90	2517.4
2519.0	2.06	19.98	2518.4
2520.0	2.07	20.00	2519.4
2521.0	2.08	19.88	2520.4
2522.0	2.09	19.64	2521.4
2523.0	2.10	19.49	2522.4
2524.0	2.12	19.57	2523.4
2525.0	2.12	19.44	2524.4
2526.0	2.14	19.39	2525.4
2527.0	2.14	19.60	2526.4
2528.0	2.14	19.54	2527.4
2529.0	2.15	19.59	2528.4
2530.0	2.16	19.42	2529.4
2531.0	2.14	19.70	2530.4
2532.0	2.13	19.76	2531.4
2533.0	2.13	19.99	2532.4
2534.0	2.15	20.05	2533.4
2535.0	2.15	19.88	2534.4
2536.0	2.15	20.06	2535.4
2537.0	2.15	19.74	2536.4
2538.0	2.14	19.27	2537.4
2539.0	2.15	19.27	2538.4
2540.0	2.11	19.36	2539.4
2541.0	2.09	19.14	2540.4
2542.0	2.08	19.34	2541.4
2543.0	2.09	19.52	2542.4
2544.0	2.09	19.90	2543.4
2545.0	2.08	20.55	2544.4
2546.0	2.06	20.35	2545.4
2547.0	2.04	20.05	2546.4
2548.0	2.03	19.96	2547.4
2549.0	2.04	19.62	2548.4
2550.0	2.05	19.60	2549.4
2551.0	2.03	19.42	2550.4
2552.0	2.01	19.27	2551.4
2553.0	2.00	18.89	2552.4
2554.0	2.00	18.63	2553.4
2555.0	2.00	18.50	2554.4
2556.0	2.00	18.21	2555.4
2557.0	2.00	18.39	2556.4

WFTI INCLINOMETRY LIST
ESSO AUSTRALIA - EAST PILCHARD 1

Meas. Tie Depth : 2205.8m

True Vert. Tie Depth : 2205.4M

Measured Depth (M)	Deviation (DEG)	Azimuth (DEG)	True Vertical Depth (M)
2558.0	1.99	18.38	2557.4
2559.0	1.99	18.08	2558.4
2560.0	1.99	17.45	2559.4
2561.0	2.02	17.49	2560.4
2562.0	2.01	17.27	2561.4
2563.0	2.01	17.56	2562.4
2564.0	2.00	17.27	2563.4
2565.0	2.00	17.74	2564.4
2566.0	1.99	18.54	2565.4
2567.0	1.96	19.03	2566.4
2568.0	1.92	18.83	2567.4
2569.0	1.94	18.64	2568.4
2570.0	1.93	18.34	2569.4
2571.0	1.93	17.99	2570.4
2572.0	1.92	17.69	2571.4
2573.0	1.93	17.81	2572.4
2574.0	1.95	18.13	2573.4
2575.0	1.95	18.00	2574.4
2576.0	1.95	17.19	2575.4
2577.0	1.96	16.59	2576.4
2578.0	1.93	17.05	2577.4
2579.0	1.91	17.08	2578.4
2580.0	1.90	17.03	2579.4
2581.0	1.90	16.85	2580.4
2582.0	1.88	16.77	2581.4
2583.0	1.89	16.56	2582.4
2584.0	1.89	16.49	2583.4
2585.0	1.89	16.90	2584.4
2586.0	1.88	17.35	2585.4
2587.0	1.87	17.58	2586.4
2588.0	1.87	16.96	2587.4
2589.0	1.87	16.77	2588.4
2590.0	1.87	16.93	2589.4
2591.0	1.87	17.12	2590.4
2592.0	1.85	17.22	2591.4
2593.0	1.84	17.26	2592.4
2594.0	1.83	17.43	2593.4
2595.0	1.82	17.47	2594.4
2596.0	1.82	17.65	2595.4
2597.0	1.82	17.61	2596.4
2598.0	1.83	17.67	2597.4
2599.0	1.82	17.40	2598.4
2600.0	1.82	17.01	2599.4
2601.0	1.83	17.10	2600.4
2602.0	1.84	17.32	2601.4
2603.0	1.84	17.83	2602.4
2604.0	1.84	18.20	2603.4
2605.0	1.84	18.35	2604.4
2606.0	1.86	18.58	2605.4

WFTI INCLINOMETRY LIST
ESSO AUSTRALIA - EAST PILCHARD 1

Meas. Tie Depth : 2205.8m

True Vert. Tie Depth : 2205.4M

Measured Depth (M)	Deviation (DEG)	Azimuth (DEG)	True Vertical Depth (M)
2607.0	1.87	18.61	2606.4
2608.0	1.86	18.69	2607.4
2609.0	1.85	18.81	2608.4
2610.0	1.86	19.29	2609.4
2611.0	1.86	19.30	2610.4
2612.0	1.86	19.09	2611.4
2613.0	1.86	18.94	2612.4
2614.0	1.86	18.84	2613.4
2615.0	1.85	18.78	2614.4
2616.0	1.85	18.47	2615.4
2617.0	1.84	18.28	2616.4
2618.0	1.84	18.38	2617.4
2619.0	1.85	18.25	2618.4
2620.0	1.85	18.45	2619.4
2621.0	1.84	18.33	2620.4
2622.0	1.83	18.22	2621.4
2623.0	1.83	17.98	2622.4
2624.0	1.84	17.61	2623.4
2625.0	1.83	17.33	2624.4
2626.0	1.83	17.04	2625.4
2627.0	1.82	16.74	2626.4
2628.0	1.82	16.51	2627.4
2629.0	1.81	15.97	2628.4
2630.0	1.80	15.45	2629.4
2631.0	1.81	15.17	2630.4
2632.0	1.81	14.70	2631.4
2633.0	1.81	13.79	2632.4
2634.0	1.81	13.29	2633.4
2635.0	1.82	13.00	2634.4
2636.0	1.82	12.97	2635.4
2637.0	1.82	12.55	2636.4
2638.0	1.82	12.07	2637.4
2639.0	1.83	12.13	2638.4
2640.0	1.84	11.96	2639.4
2641.0	1.86	11.75	2640.4
2642.0	1.87	11.68	2641.4
2643.0	1.87	11.82	2642.4
2644.0	1.87	12.07	2643.4
2645.0	1.88	11.95	2644.4
2646.0	1.89	11.89	2645.4
2647.0	1.88	12.01	2646.4
2648.0	1.87	12.27	2647.4
2649.0	1.87	12.27	2648.4
2650.0	1.85	12.22	2649.4
2651.0	1.84	12.53	2650.4
2652.0	1.84	12.57	2651.4
2653.0	1.85	12.34	2652.4
2654.0	1.87	12.62	2653.4
2655.0	1.88	12.68	2654.4

WFTI INCLINOMETRY LIST
ESSO AUSTRALIA - EAST PILCHARD 1

Meas. Tie Depth : 2205.8m

True Vert. Tie Depth : 2205.4M

Measured Depth (M)	Deviation (DEG)	Azimuth (DEG)	True Vertical Depth (M)
2656.0	1.90	12.80	2655.4
2657.0	1.91	12.60	2656.4
2658.0	1.93	12.02	2657.4
2659.0	1.95	11.39	2658.4
2660.0	1.95	10.98	2659.4
2661.0	1.96	10.96	2660.4
2662.0	1.98	11.09	2661.4
2663.0	1.99	10.99	2662.4
2664.0	1.99	11.04	2663.4
2665.0	1.99	10.96	2664.4
2666.0	2.00	11.06	2665.4
2667.0	2.01	11.34	2666.4
2668.0	2.00	11.74	2667.3
2669.0	2.00	12.31	2668.3
2670.0	2.00	12.19	2669.3
2671.0	1.99	11.81	2670.3
2672.0	1.98	11.44	2671.3
2673.0	1.97	11.58	2672.3
2674.0	1.98	11.74	2673.3
2675.0	1.99	11.90	2674.3
2676.0	1.99	11.60	2675.3
2677.0	1.99	11.17	2676.3
2678.0	2.01	11.02	2677.3
2679.0	2.02	10.76	2678.3
2680.0	2.04	10.60	2679.3
2681.0	2.05	10.33	2680.3
2682.0	2.06	9.98	2681.3
2683.0	2.07	9.97	2682.3
2684.0	2.09	9.94	2683.3
2685.0	2.09	10.09	2684.3
2686.0	2.10	10.13	2685.3
2687.0	2.12	10.24	2686.3
2688.0	2.13	10.34	2687.3
2689.0	2.14	10.35	2688.3
2690.0	2.14	10.27	2689.3
2691.0	2.15	10.39	2690.3
2692.0	2.15	10.44	2691.3
2693.0	2.16	10.48	2692.3
2694.0	2.15	10.38	2693.3
2695.0	2.15	10.16	2694.3
2696.0	2.15	10.09	2695.3
2697.0	2.16	10.09	2696.3
2698.0	2.17	10.19	2697.3
2699.0	2.18	10.32	2698.3
2700.0	2.19	10.27	2699.3
2701.0	2.18	10.11	2700.3
2702.0	2.17	10.04	2701.3
2703.0	2.16	9.87	2702.3
2704.0	2.17	9.51	2703.3

WFTI INCLINOMETRY LIST
ESSO AUSTRALIA - EAST PILCHARD 1

Meas. Tie Depth : 2205.8m

True Vert. Tie Depth : 2205.4M

Measured Depth (M)	Deviation (DEG)	Azimuth (DEG)	True Vertical Depth (M)
2705.0	2.16	9.38	2704.3
2706.0	2.15	9.55	2705.3
2707.0	2.15	9.63	2706.3
2708.0	2.15	9.63	2707.3
2709.0	2.14	9.60	2708.3
2710.0	2.12	9.81	2709.3
2711.0	2.12	9.81	2710.3
2712.0	2.13	9.82	2711.3
2713.0	2.15	10.00	2712.3
2714.0	2.14	9.83	2713.3
2715.0	2.14	9.57	2714.3
2716.0	2.14	9.44	2715.3
2717.0	2.14	9.59	2716.3
2718.0	2.14	9.21	2717.3
2719.0	2.14	8.82	2718.3
2720.0	2.14	8.93	2719.3
2721.0	2.14	9.08	2720.3
2722.0	2.15	9.37	2721.3
2723.0	2.14	9.30	2722.3
2724.0	2.14	9.33	2723.3
2725.0	2.15	9.24	2724.3
2726.0	2.16	9.18	2725.3
2727.0	2.17	9.33	2726.3
2728.0	2.18	9.46	2727.3
2729.0	2.17	9.62	2728.3
2730.0	2.16	9.86	2729.3
2731.0	2.16	9.99	2730.3
2732.0	2.17	10.06	2731.3
2733.0	2.18	10.06	2732.3
2734.0	2.17	9.92	2733.3
2735.0	2.18	10.29	2734.3
2736.0	2.18	10.32	2735.3
2737.0	2.20	10.43	2736.3
2738.0	2.21	10.48	2737.3
2739.0	2.24	10.69	2738.3
2740.0	2.27	10.96	2739.3
2741.0	2.28	11.20	2740.3
2742.0	2.28	11.63	2741.3
2743.0	2.29	11.91	2742.3
2744.0	2.30	12.07	2743.3
2745.0	2.31	12.07	2744.3
2746.0	2.32	12.05	2745.3
2747.0	2.33	11.93	2746.3
2748.0	2.34	11.92	2747.3
2749.0	2.36	11.32	2748.3
2750.0	2.38	10.70	2749.3
2751.0	2.37	10.13	2750.3
2752.0	2.37	9.99	2751.3
2753.0	2.38	9.53	2752.3

WFTI INCLINOMETRY LIST
ESSO AUSTRALIA - EAST PILCHARD 1

Meas. Tie Depth : 2205.8m

True Vert. Tie Depth : 2205.4M

Measured Depth (M)	Deviation (DEG)	Azimuth (DEG)	True Vertical Depth (M)
2754.0	2.39	9.50	2753.3
2755.0	2.38	9.78	2754.3
2756.0	2.37	10.13	2755.3
2757.0	2.38	10.58	2756.3
2758.0	2.37	10.68	2757.3
2759.0	2.37	10.95	2758.3
2760.0	2.36	10.90	2759.3
2761.0	2.36	11.06	2760.3
2762.0	2.36	11.24	2761.3
2763.0	2.38	11.56	2762.3
2764.0	2.38	11.76	2763.3
2765.0	2.39	11.93	2764.3
2766.0	2.39	12.16	2765.3
2767.0	2.39	12.50	2766.3
2768.0	2.38	12.60	2767.3
2769.0	2.39	12.49	2768.3
2770.0	2.40	12.36	2769.3
2771.0	2.42	12.26	2770.3
2772.0	2.42	12.33	2771.3
2773.0	2.42	12.56	2772.3
2774.0	2.42	12.48	2773.3
2775.0	2.45	12.16	2774.3
2776.0	2.47	11.79	2775.3
2777.0	2.49	11.63	2776.3
2778.0	2.50	11.57	2777.3
2779.0	2.51	11.42	2778.3
2780.0	2.52	11.23	2779.3
2781.0	2.53	11.10	2780.3
2782.0	2.54	10.76	2781.3
2783.0	2.53	10.72	2782.3
2784.0	2.55	10.88	2783.3
2785.0	2.55	11.07	2784.3
2786.0	2.55	10.99	2785.3
2787.0	2.55	10.72	2786.3
2788.0	2.58	10.55	2787.3
2789.0	2.59	10.45	2788.3
2790.0	2.57	10.62	2789.3
2791.0	2.55	10.68	2790.3
2792.0	2.54	10.79	2791.3
2793.0	2.54	11.11	2792.3
2794.0	2.54	11.44	2793.3
2795.0	2.56	11.79	2794.3
2796.0	2.60	11.95	2795.3
2797.0	2.61	12.14	2796.3
2798.0	2.60	12.28	2797.3
2799.0	2.59	11.99	2798.3
2800.0	2.59	11.57	2799.3
2801.0	2.59	11.26	2800.3
2802.0	2.60	11.32	2801.3

WFTI INCLINOMETRY LIST
ESSO AUSTRALIA - EAST PILCHARD 1

Meas. Tie Depth : 2205.8m

True Vert. Tie Depth : 2205.4M

Measured Depth (M)	Deviation (DEG)	Azimuth (DEG)	True Vertical Depth (M)
2803.0	2.62	11.33	2802.2
2804.0	2.63	11.57	2803.2
2805.0	2.63	11.76	2804.2
2806.0	2.61	11.82	2805.2
2807.0	2.61	11.53	2806.2
2808.0	2.60	11.04	2807.2
2809.0	2.60	10.61	2808.2
2810.0	2.59	10.06	2809.2
2811.0	2.60	9.98	2810.2
2812.0	2.61	9.92	2811.2
2813.0	2.62	9.84	2812.2
2814.0	2.62	9.79	2813.2
2815.0	2.60	9.55	2814.2
2816.0	2.60	9.53	2815.2
2817.0	2.61	9.70	2816.2
2818.0	2.62	9.68	2817.2
2819.0	2.61	9.80	2818.2
2820.0	2.60	9.76	2819.2
2821.0	2.60	9.71	2820.2
2822.0	2.60	9.68	2821.2
2823.0	2.60	9.87	2822.2
2824.0	2.60	9.85	2823.2
2825.0	2.62	9.89	2824.2
2826.0	2.62	9.75	2825.2
2827.0	2.61	9.82	2826.2
2828.0	2.61	9.85	2827.2
2829.0	2.62	10.21	2828.2
2830.0	2.64	10.50	2829.2
2831.0	2.64	10.84	2830.2
2832.0	2.65	11.10	2831.2
2833.0	2.64	11.42	2832.2
2834.0	2.64	11.89	2833.2
2835.0	2.63	12.20	2834.2
2836.0	2.64	12.35	2835.2
2837.0	2.65	12.29	2836.2
2838.0	2.66	12.32	2837.2
2839.0	2.65	12.46	2838.2
2840.0	2.65	12.41	2839.2
2841.0	2.65	12.47	2840.2
2842.0	2.66	12.53	2841.2
2843.0	2.66	12.45	2842.2
2844.0	2.66	12.17	2843.2
2845.0	2.67	12.16	2844.2
2846.0	2.68	12.01	2845.2
2847.0	2.70	11.99	2846.2
2848.0	2.70	12.02	2847.2
2849.0	2.72	12.13	2848.2
2850.0	2.74	12.30	2849.2
2851.0	2.76	12.36	2850.2

WFTI INCLINOMETRY LIST
ESSO AUSTRALIA - EAST PILCHARD 1

Meas. Tie Depth : 2205.8m

True Vert. Tie Depth : 2205.4M

Measured Depth (M)	Deviation (DEG)	Azimuth (DEG)	True Vertical Depth (M)
2852.0	2.77	12.47	2851.2
2853.0	2.79	12.41	2852.2
2854.0	2.80	12.72	2853.2
2855.0	2.81	12.95	2854.2
2856.0	2.81	12.78	2855.2
2857.0	2.82	12.96	2856.2
2858.0	2.82	12.95	2857.2
2859.0	2.83	13.14	2858.2
2860.0	2.84	13.10	2859.2
2861.0	2.84	13.17	2860.2
2862.0	2.84	13.28	2861.2
2863.0	2.82	13.53	2862.2
2864.0	2.83	14.01	2863.2
2865.0	2.84	14.28	2864.2
2866.0	2.86	14.62	2865.2
2867.0	2.85	14.79	2866.2
2868.0	2.85	14.94	2867.2
2869.0	2.84	15.00	2868.2
2870.0	2.83	14.99	2869.2
2871.0	2.83	15.07	2870.2
2872.0	2.84	15.27	2871.2
2873.0	2.87	15.30	2872.2
2874.0	2.87	15.27	2873.2
2875.0	2.86	15.18	2874.2
2876.0	2.86	15.11	2875.2
2877.0	2.88	15.19	2876.2
2878.0	2.90	15.32	2877.2
2879.0	2.91	15.00	2878.2
2880.0	2.91	14.88	2879.2
2881.0	2.91	14.95	2880.2
2882.0	2.91	14.89	2881.2
2883.0	2.89	14.43	2882.2
2884.0	2.87	14.22	2883.2
2885.0	2.85	13.97	2884.2
2886.0	2.84	13.88	2885.2
2887.0	2.83	13.47	2886.2
2888.0	2.83	13.20	2887.2
2889.0	2.84	13.13	2888.2
2890.0	2.84	13.10	2889.2
2891.0	2.85	13.24	2890.2
2892.0	2.85	13.15	2891.2
2893.0	2.86	13.30	2892.1
2894.0	2.86	13.46	2893.1
2895.0	2.85	13.56	2894.1
2896.0	2.85	13.57	2895.1
2897.0	2.85	13.66	2896.1
2898.0	2.84	13.63	2897.1
2899.0	2.83	13.59	2898.1
2900.0	2.82	13.52	2899.1

WFTI INCLINOMETRY LIST
ESSO AUSTRALIA - EAST PILCHARD 1

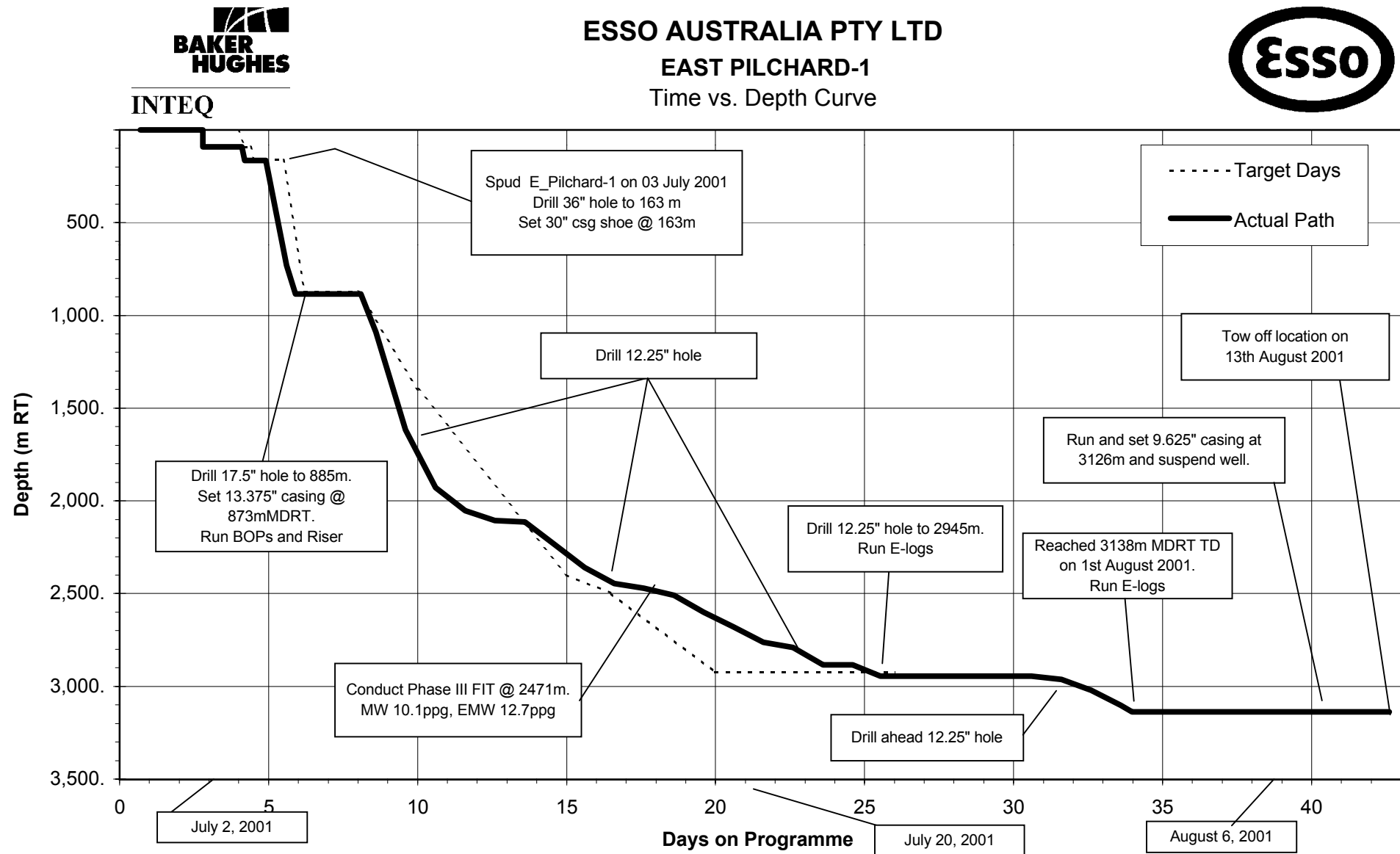
Meas. Tie Depth : 2205.8m

True Vert. Tie Depth : 2205.4M

Measured Depth (M)	Deviation (DEG)	Azimuth (DEG)	True Vertical Depth (M)
2901.0	2.81	13.34	2900.1
2902.0	2.81	13.04	2901.1
2903.0	2.81	12.76	2902.1
2904.0	2.79	12.73	2903.1
2905.0	2.80	12.34	2904.1
2906.0	2.81	11.81	2905.1
2907.0	2.82	11.44	2906.1
2908.0	2.82	11.11	2907.1
2909.0	2.80	10.74	2908.1
2910.0	2.80	10.51	2909.1
2911.0	2.79	10.48	2910.1
2912.0	2.78	10.24	2911.1
2913.0	2.78	10.31	2912.1
2914.0	2.78	10.62	2913.1
2915.0	2.78	10.58	2914.1
2916.0	2.76	10.06	2915.1
2917.0	2.77	9.96	2916.1
2918.0	2.76	9.83	2917.1
2919.0	2.75	9.77	2918.1
2920.0	2.75	9.58	2919.1
2921.0	2.75	9.47	2920.1
2922.0	2.74	9.56	2921.1
2923.0	2.74	10.06	2922.1
2924.0	2.72	10.45	2923.1
2925.0	2.71	10.41	2924.1
2926.0	2.69	10.16	2925.1
2927.0	2.70	10.37	2926.1
2928.0	2.68	10.58	2927.1
2929.0	2.65	10.53	2928.1
2930.0	2.63	10.32	2929.1
2931.0	2.64	10.27	2930.1
2932.0	2.66	10.47	2931.1
2933.0	2.66	10.69	2932.1
2934.0	2.65	11.11	2933.1
2935.0	2.64	11.23	2934.1
2936.0	2.65	11.39	2935.1
2937.0	2.63	11.49	2936.1
2938.0	2.64	11.28	2937.1
2939.0	2.67	12.32	2938.1
2940.0	2.68	13.85	2939.1
2941.0	2.68	15.15	2940.1
2942.0	2.60	14.68	2941.1
2943.0	2.53	13.78	2942.1
2944.0	2.45	13.25	2943.1
2945.0	2.48	13.09	2944.1
2946.0	2.45	13.00	2945.1
2947.0	2.44	12.84	2946.1

Table 4: Time vs Depth Curve

Tables



Appendix

Formation Evaluation Log

1: 500

Drilling Data Plot

1: 1000

Pressure Data Plot

1: 1000

Pressure Summary Plot

1: 7500

Gas Ratio Analysis Plot

1: 500