

WELL COMPLETION REPORT

WEST MOONFISH-1

VOLUME 1 BASIC DATA

GIPPSLAND BASIN VICTORIA

ESSO AUSTRALIA PTY LTD

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<p style="text-align: center;">WELL COMPLETION RPEORT WEST MOONFISH-1</p>

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<p>WELL COMPLETION RPEORT WEST MOONFISH-1</p>

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BASIC DATA (cont'd)

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I. WELL INDEX SUMMARY

WELL NAME: West Moonfish -1	CLASSIFICATION: Wildcat
OPERATOR: Esso Australia Resources Pty Ltd	

Location:		Rig Details:		Dates:
Latitude:	38° 9' 00.48" S	Rig Name:	Ensco 102	On Location: 25/12/2004
Longitude:	147° 58' 40.63" E	Contractor:	Ensco Australia Pty Ltd	Spud Date: 05/01/2005
Eastings:	585687.25	Rig Type:	Jack-up	TD Date: 06/02/2005
Northings:	5,777,075.49			Rig Released: 17/02/2005
Geodetic Datum:	GDA94(GRS80)			Total Rig Days: 54
Zone/Meridian:	Zone 55, South			Drilling AFE: L6101E001
		Depths (m)		Status
Basin:	Gippsland	RT to seafloor:	91.0	Plugged and Abandoned
Field:	Gippsland	RT to Sealevel	39.0	Plug 1: 2461-2235m
Permit:	VIC-L10	Total Depth:	3369 (Driller) 3370.5 (Logger)	Plug 2: 840-693m
Permittee And Interest:	BHP Billiton Petroleum (Bass Strait) Pty Ltd 50% and Esso Australia Resources Pty Ltd 50%			Plug 3: 230-112m

Casing/Liner Details		Mud Details		Trajectory:
Size (mm)	Depth (m)	Mud Type	Interval	Deviated hole
508	155.34	S/Wtr-Bentonite	160-761	
339.7	755.42	S/Water/ KCL / PHPA / Glycol	761-2532	
244.5	2526.87	Seawater / KCL / PHPA / Glycol	2532 - 3369	

Conventional Coring Details			Sidewall Coring		Cuttings	
No.	Interval	Recovery	Shot	Recovered	Interval	Sample Rate
N/A			SWC (#1) 60	44	761-780	10m
			SWC (#2) 60	51	780-1470	30m
					1470 - 1550	10m
					1550 - 3360	5m

MWD Logging			
Date	Depth(M)		Description
	From	To	
08/01/05-10/01/05	155.3	719.8	Powerpulse-D&I-GR
11/01/05-14/01/05	755.4	1717.2	Powerpulse-D&I-GR
14/01/05-18/01/05	1717.2	2053.2	Powerpulse-D&I-GR
1801/05-1901/05	2053.2	2518.8	Powerpulse-D&I-GR
26/01/05-29/01/05	2527.0	2681.9	Powerpulse-D&I-GVR6-ADN6
29/01/05-01/02/05	2660.4	2859.9	Powerpulse-D&I-GVR6-ADN7
01/02/05-03/02/05	2832.8	3015.2	Powerpulse-D&I-GVR6-ADN8
04/02/05-06/02/05	2990.8	3360.2	Powerpulse-D&I-GVR6-ADN9

Wireline Logging			
Date	Depth(M)		Description
	From	To	
19/01/05	752	2523	HRLA-HNGS-LEHQT
19/01/05	752	2522	PEX150-LEHQT
20/01/05	91	2524	DSI-FMI-LEHQT
21/01/05	1647	2517	MDT-GR-LEHQT
22/01/05	1634	2515	CST-GR
6/02/05	2527	3370	DSI-HNGS-MSFL-LEHQT
7/02/05	2583	3211	MDT-GR-LEHQT
7/02/05	825	3363	VI-VSP
8/02/05	2568	3369	CST-GR

II. OPERATIONS SUMMARY

1. MOVING

At 1550 hrs on the 26th of December 2004 the Ensco 102 arrived at one nautical mile of the West Moonfish 1 location. The rig was pinned in 52 meter of water, 9.54m from the original surface location at Latitude 38° 08' 52.04"S, Longitude 147° 58' 38.70"E, MGA Easting 585,643.0m, Northing 5,777,336.0m. Preloading commenced at 1845 hrs on the 26th of December 2004 and was completed at 1745 hrs on the 31th of December 2004 with a bow leg penetration of 41' (12.50m) and port and starboard aft legs of 4' (1.22m). The original surface location was located above a paleochannel covered by 6m of coarse sand. Because of concern that, with this unequal penetration, there was a possibility that the aft legs could punch-through in a dynamic loading situation, the surface location was moved 280m SSE off the paleochannel. After waiting-on-weather the move commenced at 0700 hrs on the 3rd of January 2005, and the rig arrived at the soft pin location at 1215 hrs on the same day when preloading commenced. Preloading was completed at 1700 hrs on the 4th of January 2005 with a bow leg penetration of 3.1' (0.94m) and port and starboard aft legs each at 3.5' (1.07m). The rig was jacked to 57' air gap (rotary table 39.24m above MSL), and the cantilever skidded out to 60'.

The final rig location was 8.32m on a grid bearing of 48.7° from the revised surface location at Latitude 38° 09' 0.66"S, Longitude 147° 58' 40.37"E, MGA Easting 585,681.0m, Northing 5,777,070.0m. Water depth was 52m.

2. DRILLING OPERATIONS

26 " PHASE

A Security XN1C 26" Bit was used to drill the 26" Phase from the mudline at 91m to the section TD of 160m. All returns for this section were to the seabed. A total of 69 m of 26" hole was drilled in 6.9 on bottom drilling hours resulting in an average ROP of 10 m/hr. The hole was circulated and conditioned and a wiper trip was conducted. The 20" conductor casing was run in hole and cemented with the shoe set at 155.4 mMDRT (155.4 mTVD).

17 1/2" PHASE

A Security FS 2563 PDC Bit was used to drill the 17 1/2" phase. The cement was tagged at 150m and the casing shoe cleaned out. The hole was then drilled from 160m – 761mMDRT (761.0 mTVD). A total of 601m of 17 1/2" hole was drilled to 761 mMDRT, in 15.4 on bottom drilling hours, resulting in an average ROP of 39 m/hr.

HiVis pill was pumped before pulling back to the 20" shoe for a wiper trip. The 17 1/2" BHA was pulled out of hole and racked back before rigging up to run 13 3/8" casing.

The 13 3/8" casing was run and the casing shoe was set & cemented at depth of 755.4 mMDRT (755.4 mTVD).

II. OPERATIONS SUMMARY (cont'd)

12¼" PHASE

A HYCALOG 12¼" RSX192 bit in conjunction with an A962GT 7:8 motor was run to drill out the shoe track, casing shoe (755.4mMDRT) and 12¼" rat hole to 764mMDRT. A PIT was performed resulting in a EMW of 16.6ppg.

The 12 ¼ " hole was drilled to the depth of 1700 mMDRT, which was a kick-off point. Drill and slide to 1737.5 mMDRT, where it was decided to pull out of the hole and change the bit, because of the insufficient angle build up. A total of 976 m of 12 ¼" hole was drilled in 33.2 on bottom drilling hours, resulting in an average ROP of 29.4 m/hr.

Bit # 4 a Hughes MX20DX was run in the hole to build hole angle averaging 3 degrees per 50 metres though the target was 4 degrees per 40 metres. Large

cuttings at the shakers were mainly from the Lakes Entrance Formation. The hole was circulated clean, back-reamed and washed to bottom at 1885 m prior to sliding to gain hole angle. The hole did not build angle as planned so sliding continued to 2059 m and then 2 stands were rotary drilled to determine build / drop rates. Large platy shale cuttings continued.

At 2072 m the hole was circulated clean and prior to POOH. At 1965 m tight hole (25 K overpull), the string was worked through this section. A slug was pumped at 1700m. The bit was changed out and motor removed replaced by adjustable gauge stabilizer. The bit drilled 335 m in 50 on bottom hours averaging 6.7 m/hr.

A PDC bit (RSX192) was run. Tight hole was encountered from 1706 m, and the hole was washed and reamed to 1735 m and from 1822 m to 1851 m. RIH continued to 2054 m before washing to bottom. Drilling-sliding continued to the section TD of 2532 mMDRT (2439.3 mTVD). The bit drilled 460 m in 26.0 on bottom drilling hours, resulting in an average ROP of 17.7 m/hr.

Wireline logs were run (see Log run Summary) with a wiper trip performed prior to running the MDT & SWC logging runs.

Suite 1 of wire line log run

RUN #1	HRLA-HNGS-LEHQT
RUN #2	PEX150-LEHQT
RUN #3	DSI-FMI-LEHQT
RUN #4	MDT-GR-LEHQT
RUN #4	CST-GR

Trip gas of 40 units was recorded on the wiper trip. 915 units of gas was recorded during the pre-casing wiper trip.

The 9⅝" casing shoe was set at 2526.87mMD (2434.8mTVD).

II. OPERATIONS SUMMARY (cont'd)

8½" PHASE

The 8½" hole was drilled with (Bit# 7) a Hughes Christensen MX30D bit and rotary assembly. The string was run in the hole, tagging cement at 2502mMDRT. The cement, float collar and cement were drilled to 2525mMDRT before displacing to new mud at 9.9ppg.

Once the mud was balanced in/out, the remaining cement, shoe and rat hole was drilled to 2532m. 3m of new formation was drilled to 2535mMDRT and the hole circulated to condition the mud. A pressure integrity test was performed, achieving an EMW of 14.0 ppg.

Drilling continued to 2556mMDRT, the string was pulled back to the shoe and the mud circulated. A leak off test was performed, returning an EMW of 16.6 ppg.

Drilling continued from 2556m to 2688mMDRT, where a bit trip was made due to the bit hours.

The Hughes Christensen bit drilled 156m in 44.2 on bottom hours, resulting in an average ROP of 3.5 m/hr. The string was pulled out of hole with no problems. The LWD was downloaded and the near bit roller reamer was changed for a near bit stabiliser to help maintain the hole angle.

Bit # 8, a Hughes Christiansen MX30D was made up and run in hole to 2688m. Drilling continued from 2688m to 2866mMDRT where a bit trip was made due to the hole angle dropping.

The bit drilled 178m in 50.5 on bottom hours, resulting in an average ROP of 3.5 m/hr. The string was pulled out of hole with no problems. The LWD was downloaded, and a new bit and a mud motor picked up to allow the hole angle to be built.

Bit# 9, a Smith GF11Y, was made up and run in hole to 2866m. Drilling continued from 2866m to 3024mMDRT, where a bit trip was made due to high revolutions on the bit. Bit# 9 drilled a total 158m of 8½" hole in 29.88 on bottom hours, resulting in an average ROP of 5.29 m/hr.

Bit # 10 a HYCALOG DSX173 DC was made up and run in hole to 3024m. Drilling continued from 3024m to the final depth of 3369.0 mMDRT (3149.5 mTVDRT). Bit #10 drilled 345m of 8½" hole in 28.0 on bottom hours, resulting in an average ROP of 12.32 m/hr. The hole was then circulated clean and a wiper trip was made to the casing shoe before pulling out of hole.

II. OPERATIONS SUMMARY (cont'd)

Wireline Logs were then ran as per the logging programme:

Run#1: DSI-HNGS-MSFL-LEHQT
Run#2: MDT-GR-LEHQT
Run#3: VI-VSP
Run#4: CST-GR

Pick up 3.5" tubing on drillpipe and unsuccessfully attempt to abandon 8-1/2" open-hole with a sacrificial tubing string. A leak at the top of the tubing, followed by reverse circulating the cement, resulted in cementing in tubing and drillpipe with the top of fish at 1054m MDRT, and a cement plug in the 9-5/8" casing annulus from a top estimated at 2235m MDRT to 2461m MDRT (Plug 1). The plug was tested to 3,000 psi for 15 minutes. A review of the open-hole logs indicated that there were no significant oil, gas or fresh water zones in the open-hole that required cementing under the requirements of P(SL)A Clause 514(1).

Plug 2 was set from 840.0 - 693.0 m MDRT. An EZSV was set and tagged in the 9-5/8" Intermediate casing at 840m MDRT. 9-5/8" casing was cut at 800m MDRT and recovered. A cement plug was set from the EZSV at 840m, across the top of the 9-5/8" casing, the 12-1/4" open-hole, across the 13-3/8" Surface casing shoe at 755m MDRT, into the Surface casing. The plug was tagged at 693m MDRT, 62m above the Surface casing shoe, with 15,000 lb WOB.

Plug 3 (Surface plug) was set from 230 - 112 m MDRT. An EZSV was set and tagged in the 13-3/8" Surface casing at 230m MDRT. 13-3/8" casing was cut at 185m MDRT and recovered. A cement plug was set from the EZSV at 230m, across the top of the 13-3/8" casing, the 17-1/2" open-hole, across the 20" Conductor shoe at 155m MDRT, into the Conductor. The plug was tagged at 112m MDRT, 43m above the Conductor shoe and 21m below the seabed, with 15,000 lb WOB.

Nippled down BOPs and lines, 18-3/4" wellhead, and lay out DP. Cut 20" conductor at 93.5 m MDRT, 2.5m below the seabed. Retrieve cutting assembly. Pickup to recover conductor riser to discover that 65.63m of conductor riser, comprising five joints and a part joint to the cut-point, had been dropped. These were not recovered. Backloaded equipment, cantilevered in, jacked down and prepared for rig move. Towed rig to 1 NM off West Moonfish-1 location and released rig at 1300 hrs on the 17th of February 2005 for the tow to Barracouta platform.

III. CASING DATA

Type	Size (Inches)	Weight (lb/ft)	Grade	Thread	Depth (mMDRT)
Conductor	20 "	129.3	X56	RL4S	155
Surface	13 ³ / ₈ "	68.0	L80	BTC	755
Intermediate 12 ¹ / ₄ " Hole	9 ⁵ / ₈ "	47	L80	LT&C	2527

IV. CEMENTING DATA

20" Conductor casing

Casing details	Cement Type	Dry Cement Volume (sx)	Cement Additives	Mix Water (bbls)	Slurry Vol (bbls)	Slurry Density (ppg)	Top of Cement (mMDRT)	Casing Press Test (psi)
Lead Slurry	G	960	1% BWOC CaCl ₂ NF-6	118.9 Mixwater	200.1	15.9	155	200

13³/₈" Surface casing

Casing details	Cement Type	Dry Cement Volume (sx)	Cement Additives	Mix Water (bbls)	Slurry Vol (bbls)	Slurry Density (ppg)	Top of Cement (mMDRT)	Casing Press Test (psi)
Lead Slurry	G	388	Econolite liquid HR-6L NF-6	119.1 Mixwater	152.2	12.5	722	
Tail Slurry	G	649	0.01 gal/bbl NF-6	30 Drl water	134.1	15.9		

IV. CEMENTING DATA (cont'd)

9⁵/₈" Intermediate casing

Casing details	Cement Type	Dry Cement Volume (sx)	Cement Additives	Mix Water (bbls)	Slurry Vol (bbls)	Slurry Density (ppg)	Top of Cement (mMDRT)	Casing Press Test (psi)
Lead Slurry	G	924	32 bbl Gascon 2.7 bbl SCR-100L 16 bbl Halad-413L 2.7 bbl CFR-3L 0.2 bbl NF-6	170.7 Drl Water	246	13.0	2502	
Tail Slurry	G	288	0 bbl Gascon 0.1 bbl SCR-100L 2.5 bbl Halad-413L 0.2 bbl CFR-3L 0 bbl NF-6	29.6 Drl Water	54	15.8		4500

ABANDONMENT PLUGS

	Cement Type	Dry Cmt Vol (sx)	Cement Additives	Mix Water	Slurry Vol (bbls)	Slurry Density (ppg)	Cement to/from (mMDRT)	Csg Test Pressure (psi)
Plug #1	HTB	242	-	10 S/water	165	15.8	2461-2235	Balanced plug
Plug #2	Class G	335	-	10 S/water	69	15.9	840-693	Balanced plug
Plug #3	Class G	752	-	5.13 S/water	156	15.9	230-112	Balanced plug

V. SAMPLES, SIDEWALL CORES

Cuttings Samples

<u>Interval (m)</u>	<u>Type</u>	<u>Sets</u>
761 - 780	Washed and dried samples every 10m	5(*)
780 - 1470	Washed and dried samples every 30m	5(*)
1470 - 1550	Washed and dried samples every 10m	5(*)
1550 - 3369(TD)	Washed and dried samples every 5m	5(*)

(*) One set of samples for Palynology studies.

Conventional Cores

No conventional cores were cut at West Moonfish-1.

Sidewall Cores

Two runs of sidewall cores were cut at West Moonfish -1.

Run #1: 2515 - 1634 mMDRT

Shot 60 cores; Recovered 44; Lost 11; Empty 2; Misfired 3
(73.3% recovery)

Run #2: 3363.8 - 2561.5 mMDRT

Shot 60 cores; Recovered 51; Lost 8; Empty 1 (85% recovery)

VI. LWD & WIRELINE LOGS AND SURVEYS

Survey /Log	Company	Top (m MDRT)	Bottom (mMDRT)
Powerpulse D&I-GR	Schlumberger	155.3	719.8
Powerpulse D&I-GR	Schlumberger	755.4	1717.2
Powerpulse D&I-GR	Schlumberger	1717.2	2053.2
Powerpulse D&I-GR	Schlumberger	2053.2	2518.8
Powerpulse D&I-GVR6-ADN6	Schlumberger	2527.0	2681.9
Powerpulse D&I-GVR6-ADN7	Schlumberger	2660.4	2859.9
Powerpulse D&I-GVR6-ADN8	Schlumberger	2832.8	3015.2
Powerpulse D&I-GVR6-ADN9	Schlumberger	2990.8	3360.2

Survey /Log	Company	Top (m MDRT)	Bottom (mMDRT)
Directional Survey	Schlumberger	91.0	3343.24
Suite 1 Run at 2532 m			
HRLA-HNGS-LEHQT	Schlumberger	2524	755
PEX150-LEHQT	Schlumberger	2522	755
DSI-FMI-LEHQT	Schlumberger	2519	755
MDT-GR-LEHQT	Schlumberger	2517	1647.25
CST-GR	Schlumberger	2515	1634
Suite 2 Run at 3369 m			
DSI-HNGS-MSFL-LEHQT	Schlumberger	3369	2444
MDT-GR-LEHQT	Schlumberger	3018	2583
VI-VSP	Schlumberger	3285	805
CST-GR	Schlumberger	3363.8	2561.5

VII. SUMMARY OF FORMATION TEST PROGRAMME

SUITE	TYPE OF LOG	FROM	TO	RPT. SECT. / SUMMARY.	Time Since Last Circ / BHT
1	MDT-GR-LEHQT	2517.0	1647.2	44 stations measured	11.15 hrs / 92.8°C @ 2517m
2	MDT-GR-LEHQT	3018.0	2583.0	26 stations measured	21:50 hrs / 117°C @ 3018m

VIII. TEMPERATURE RECORD

SUITE 1

LABEL	TYPE OF LOG	FROM	TO	RPT. SECT. / SUMMARY.	Time Since Last Circ / BHT
1	HRLA-HNGS-LEHQT	2524	755	2170 - 2065	9.10 hrs / 93.8°C
2	PEX150-LEHQT	2522	755	2170 - 2065	16.30 hrs / 103.9°C
3	DSI-FMI-LEHQT	2519	755	2170 - 2065	42.30 hrs / 104.4°C
4	MDT-GR-LEHQT	2517	1647.2		11.15 hrs / 92.8°C

SUITE 2

LABEL	TYPE OF LOG	FROM	TO	RPT. SECT. / SUMMARY.	Time Since Last Circ / BHT
1	DSI-HNGS-MSFL-LEHQT	3369	2444	3025 - 2965	15.10 hrs / 116.7°C
2	MDT-GR-LEHQT	3018	2583		21.50 hrs / 117.2°C
3	VI-VSP	3285	805		38.10 hrs / 123.9°C

FIGURES

West Moonfish-1

Location Map

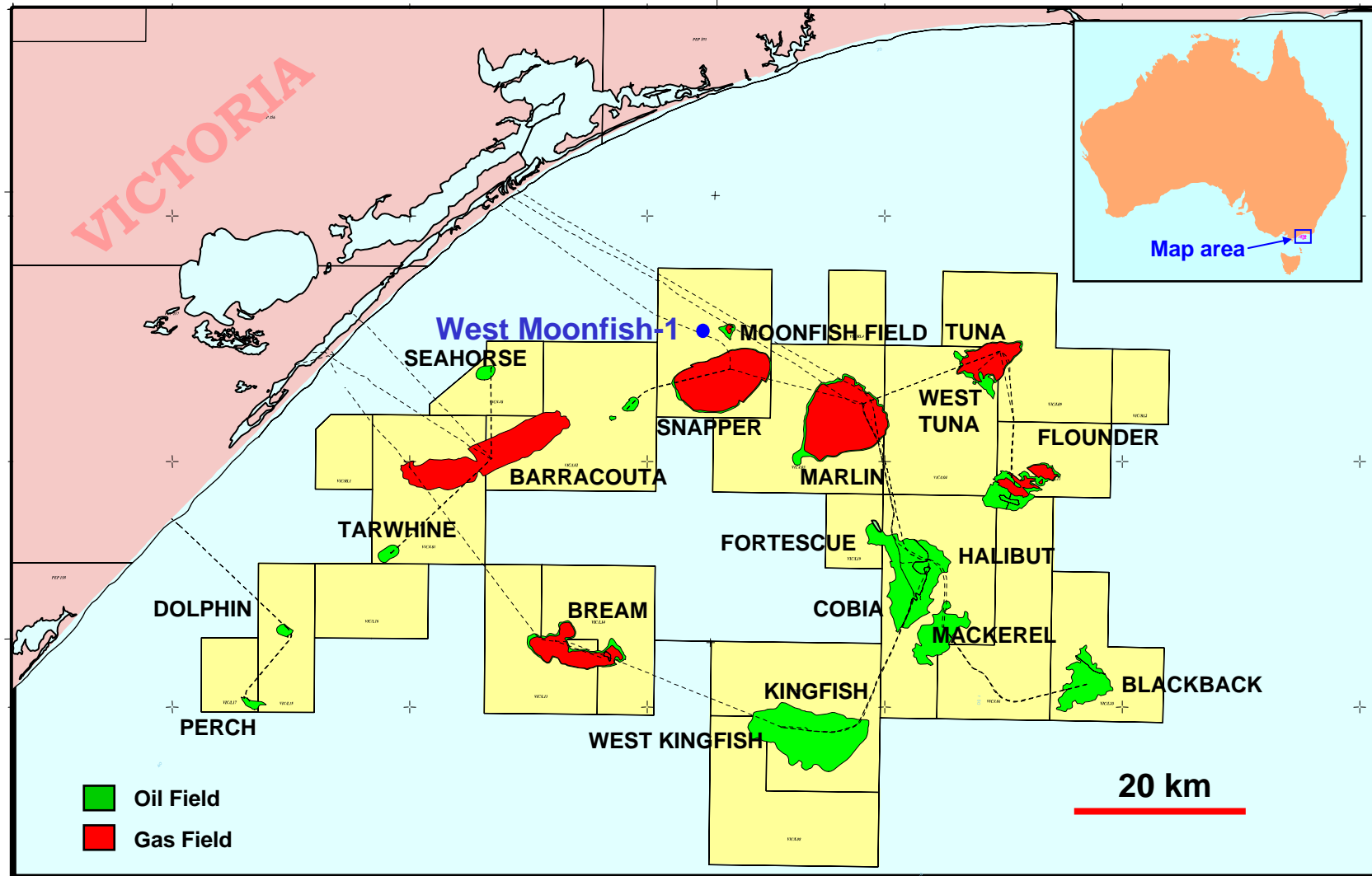


Figure 1

West Moonfish-1 Time vs Depth Curve

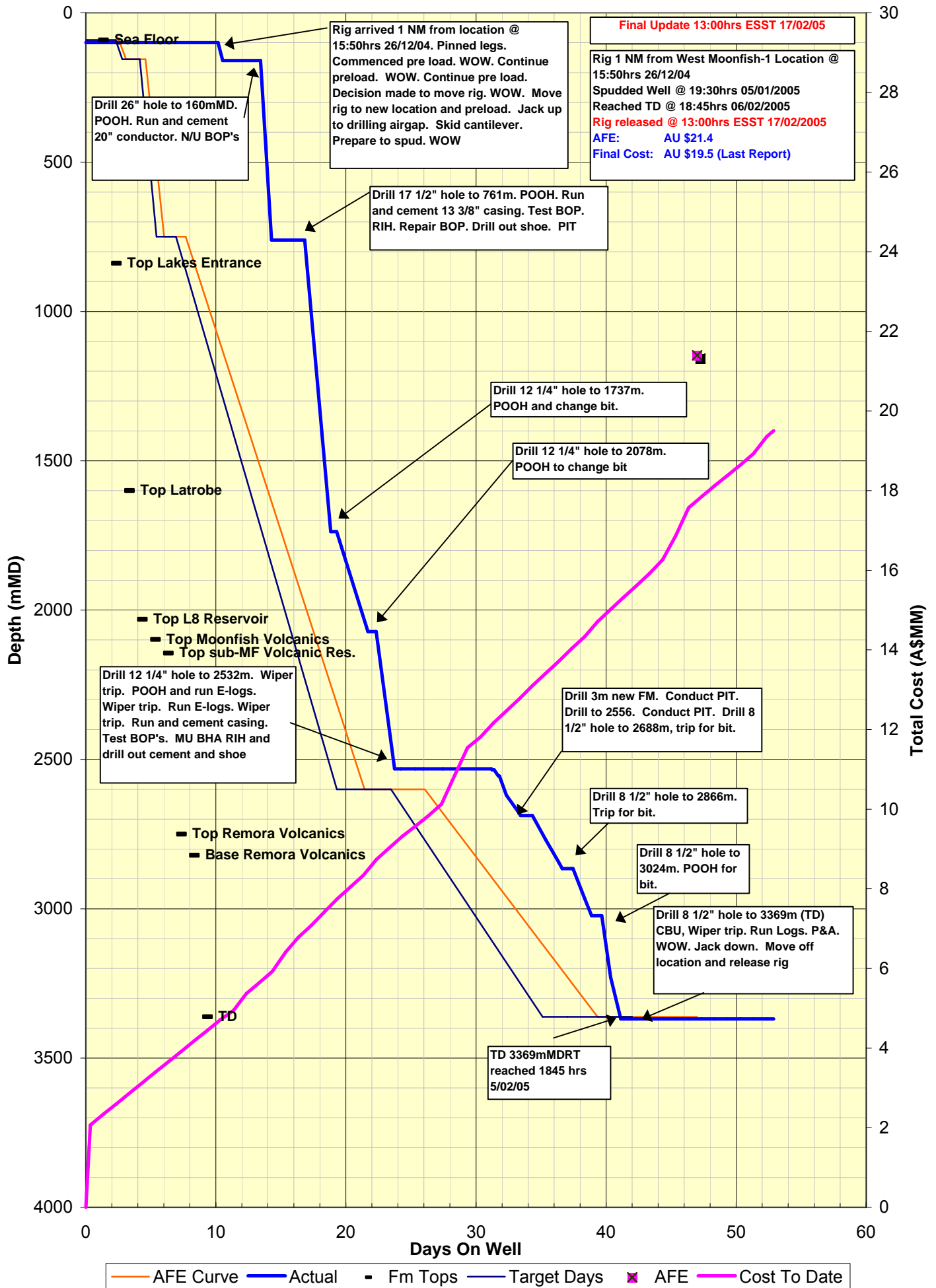


FIGURE 2

WEST MOONFISH-1 - Final Well Report**GENERAL**

Platform:	N/A	Rig:	ENSCO 102	Reservoir:	Lower L.balmei sands
Well:	WEST MOONFISH-1	Well Slot:	N/A	RT-MSL	39.24m
Drilling Complexity Index	3.4	Completion Complexity Index	N/A		

DEPTH		PERFORMANCE		MUD	
m MDRT	3,369.0	20" Cond. Hole	189 m/day	Max Wt (ppg)	10.35
m TVDRT	3,149.5	17-1/2" Surf. Hole	703 m/day	Type (Cond. Hole)	Seawater/Gel sweeps
Vert. Section (m)	788.8	12-1/4" Intmdt. Hole	260 m/day	Type (Surf. Hole)	Seawater/Floc. Gel
INCLINATION		8-1/2" Prod. Hole	87 m/day	Type (Inter. Hole)	KCl/PHPA/Poly/Glycol
Max (deg) / Ave (deg)	37.5/ 31.7(Tang)	* time to drill interval, incl's Connections & NPT.		Type (Prod. Hole)	KCl/PHPA/Poly/Glycol

Comments: Water depth was 52.0m. The well was spudded on 5-Jan-2005 at 1930 hrs and reached TD on 5-Feb-2005 at 1845hr. 3,278m of new hole was drilled from 91m to 3,369m.

TIME ANALYSIS

Start Date:	26-Dec-2005, 1550hrs	Finish Date:	17-Feb-2005, 1300hrs		
Target Days (P10):	44.04	Total Days:	52.882	% Under Target:	20.1% (over)
AFE Days (P50):	47.00	NPT Days:	11.24	% of Total Days:	21.3%
Supplementary AFE Days (P50):	N/A				

COSTS

AFE No.:	L.6101E001	Revisions:	--	\$ per m	A \$6.14 k / metre (new hole)
\$ per day:	A\$ 380.8 k/day	\$ per day (excl. T + L) * Equipment, LWD & Logging	A\$ 348.8 k/day		A\$ 5.98 k / metre* * based on TD not new hole

	Equipment	Materials	Contracts	Allocations	Contingency	Total
AFE (Original)	706,500	1,770,800	17,044,700	1,878,000	0	A\$21,400,000
AFE (Supplement)	-	-	-	-	-	-
Estimated Total	582,916	920,663	17,176,399	1,455,327	0	A\$20,135,305

CASING (all depths herein are based on ENSCO 102 elevations: RT-MSL=39.24m)

	Size / Weight / Grade / Thread	m MDRT	m TVDRT	PIT (ppg)
Conductor Casing *	20", 0.625" wall, X56, RL4S	16	155	N/A
Surface Casing *	13-3/8", 68 ppf, L80, BTC	755	755	16.6 (LOT)
Intermediate Casing	9-5/8", 47ppf, L80, LTC	2,527	2,435	16.6 (LOT)

Comments: Refer to P&A diagram for casing remaining after well was plugged and abandoned.

COMPLETION (No completion run. well was plugged and abandoned)

	Size / Weight / Grade / Thread	MMDRT	MTVDRT	Type
Completion	-	-	-	-

	Upper Interval [m MDRT]	Upper Interval [m TVDRT]	Lower Interval [mMDRT]	Lower Interval [mTVDRT]	Gun Type
Perforation Interval:	-	-	-	-	-

ADDITIONAL

MWD LWD Run	Logs	Upper Interval [m MDRT]	Lower Interval [m MDRT]
1	Powerpulse-D&I-GR	155.3	719.8
2	Powerpulse-D&I-GR	755.4	1717.2
3	Powerpulse-D&I-GR	1717.2	2053.2
4	Powerpulse-D&I-GR	2053.2	2518.8
5	Powerpulse-D&I-GVR6-ADN6	2527	2681.9
6	Powerpulse-D&I-GVR6-ADN7	2660.4	2859.9
7	Powerpulse-D&I-GVR6-ADN8	2832.8	3015.2
8	Powerpulse-D&I-GVR6-ADN9	2990.8	3360.2
Wireline Suite/Run	Logs Run	Upper Interval [m MDRT]	Lower Interval [m MDRT]
1/1	HRLA-HNGS-LEHQT	752	2523
1/2	PEX150-LEHQT	752	2523
1/3	DSI-FMI-LEHQT	91	2524
1/4	MDT-GR-LEHQT	1647	2517
1/5	CST-GR	1634	2515
2/1	DSI-HNGS-MSFL-LEHQT	2527	3370
2/2	MDT-GR-LEHQT	2583	3211
2/3	VI-VSP	825	3363
2/4	CST-GR	2568	3369

Comments:

1. Refer to the West Moonfish-1 P&A Schematic for details of the well after abandonment.

ACTUAL WELLBORE SKETCH FOR PLUGGED & ABANDONED WEST MOONFISH-1

Drilled by the Jack-up ENSCO 102

LOCATION: GDA94. Latitude 38° 09' 00.48" S. Longitude 147° 58' 40.63" E.
MGA Zone 55 Easting 585,687.25m, Northing 5,777,075.49m
Rig on Location 1550 hours 25-Dec-2004. Rig released 1300 hours 17-Feb-2005

ALL DEPTHS ARE METRES FROM ROTARY TABLE.

MSL @ 39m RT

WATER DEPTH = 52m

Seafloor @ 91m MDRT

TOC @ Seafloor for Conductor string

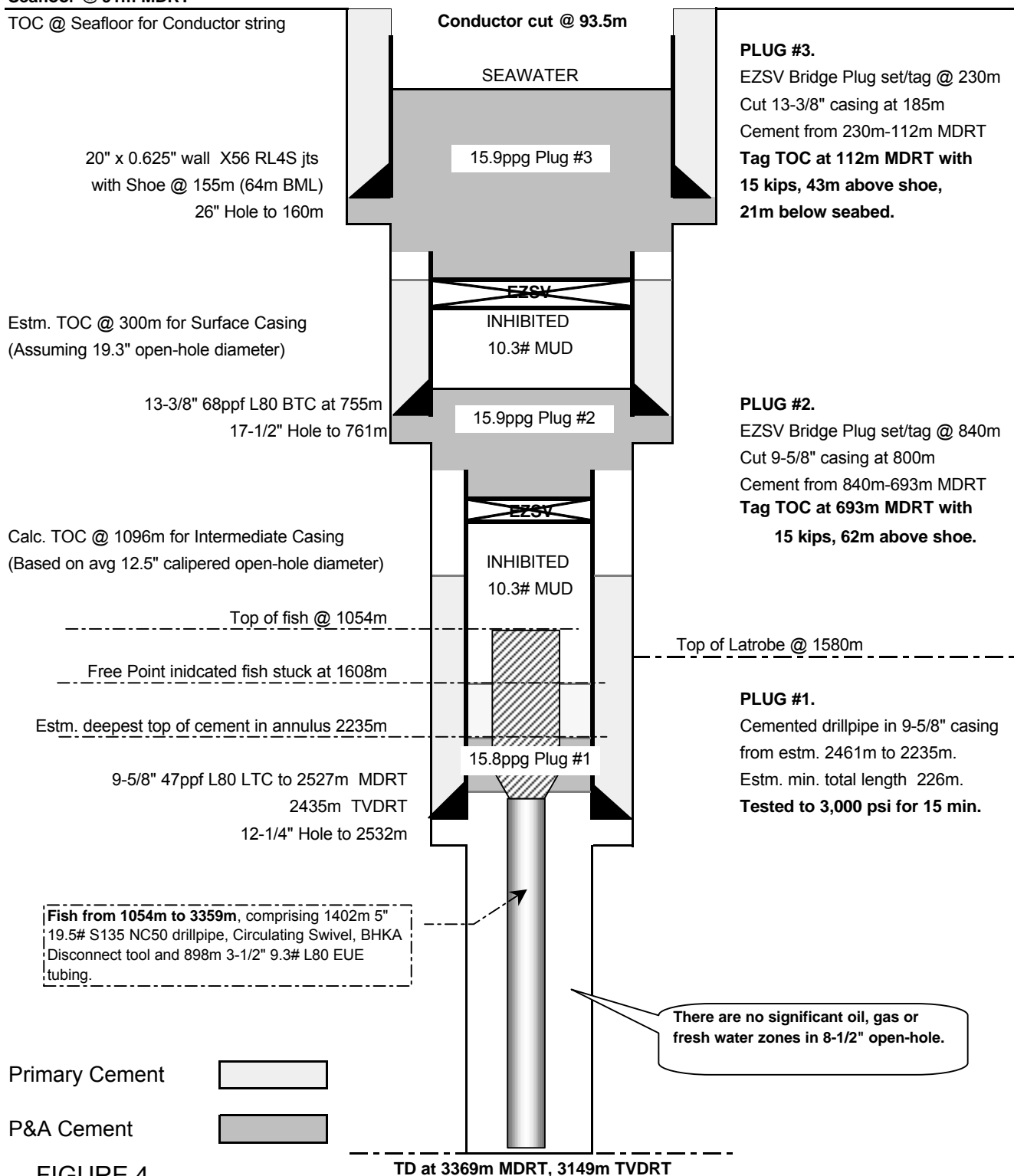


FIGURE 4

APPENDIX 1

LITHOLOGICAL DESCRIPTIONS

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
<i>Drilled 17 1/2" hole section to 761.0m and set 13 3/8" casing shoe at 755.4m. Drilled 3m of new 12 1/4" hole to 764m and pulled back up to inside casing for PIT. Completed PIT to 16.6 ppg (1.99 sg) EMW. Drilled ahead with Reed Hycalog PDC bit RSX192, 6% KCl/ PHPA / Glycol with 9.5 ppg MW.</i>			
761	770	80	MARL: light grey to light medium grey shades, with white calcareous streaks in places, cryptocrystalline to very finely crystalline in places, 30-50% clay minerals, rare micromicas and carbonaceous flecks in places, few to common very small foraminifera, soft to firm mostly and good sub-blocky PDC cuttings, minor appears gradational to firmer overall argillaceous calcilutite.
		20	HIGHLY CALCAREOUS CLAYSTONE: medium grey to tending dark grey, as above but with increased clay content.
770	780	80	MARL: light grey to light medium grey shades, with white calcareous streaks in places, cryptocrystalline to very finely crystalline in places, 30-50% clay minerals, rare micromicas and carbonaceous flecks in places, few to common very small, soft to firm mostly and good sub-blocky PDC cuttings, minor appears gradational to a firmer overall argillaceous calcilutite. Appears to be interbedded with
		20	HIGHLY CALCAREOUS CLAYSTONE: medium grey to tending dark grey, as above but with increased clay content. Calcimetry: 48/0
780	810	70	MARL: light grey to light medium grey shades, with white calcareous streaks in places, cryptocrystalline to very finely crystalline in places, 30-50% clay minerals, rare micromicas and carbonaceous flecks in places, few to common very small foraminifera, soft to firm mostly and good sub-blocky PDC cuttings, minor appears gradational to a firmer overall argillaceous calcilutite. Appears to be interbedded with
		30	HIGHLY CALCAREOUS CLAYSTONE/CALCAREOUS CLAYSTONE: varying medium grey to tending dark grey with minor olive grey, as above but with increased clay content, soft to firm and mostly sub-blocky. Calcimetry: 40/0
810	840	60	MARL: light grey to light medium grey shades, with white calcareous streaks in places, cryptocrystalline to very finely crystalline in places, 30-50% clay minerals, rare micromicas and carbonaceous flecks in places, few to common very small foraminifera, soft to firm mostly and good sub-blocky PDC cuttings, minor appears gradational to a firmer overall argillaceous calcilutite. Appears to be interbedded with and increasing amounts of
		40	HIGHLY CALCAREOUS CLAYSTONE/CALCAREOUS CLAYSTONE: varying medium grey to tending dark grey with minor olive grey, as above but with increased clay content and rare silt content, soft to firm and mostly sub-blocky. Calcimetry: 44/0
840	870	60	MARL: light grey to light medium grey shades, with white calcareous streaks in places, cryptocrystalline to very finely crystalline in places, 30-50% clay minerals, rare micromicas and carbonaceous flecks in places, few to common very small foraminifera, soft to firm mostly and good sub-blocky PDC cuttings, minor appears gradational to a firmer overall argillaceous calcilutite. Appears to be interbedded with and increasing amounts of
		40	HIGHLY CALCAREOUS CLAYSTONE/CALCAREOUS CLAYSTONE: varying medium grey to tending dark grey with minor olive grey, as above but with increased clay content and rare silt content, soft to firm and mostly sub-blocky. Calcimetry: 40/0
870	900	60	MARL: light grey to light medium grey shades, with white calcareous streaks in places, cryptocrystalline to very finely crystalline in places, 30-50% clay minerals, rare micromicas and carbonaceous flecks in places, few to common very small foraminifera, soft to firm mostly and good sub-blocky PDC cuttings, minor appears gradational to a firmer overall argillaceous calcilutite. Appears to be interbedded with and increasing amounts of
		40	HIGHLY CALCAREOUS CLAYSTONE/CALCAREOUS CLAYSTONE: varying medium grey to tending dark grey with minor olive grey, as above but with increased clay content and rare silt content, soft to firm and mostly sub-blocky. Calcimetry: 40/0

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
900	930	70	MARL: light grey to light medium grey shades, with white calcareous streaks in places, cryptocrystalline to very finely crystalline in places, 30-50% clay minerals, rare micromicas and carbonaceous flecks in places, few to common very small foraminifera, rare glauconite smears and grains in places, soft to firm mostly and good sub-blocky PDC cuttings, minor appears gradational to a firmer overall argillaceous calcilutite. Appears to be interbedded with
		30	HIGHLY CALCAREOUS CLAYSTONE/CALCAREOUS CLAYSTONE: varying medium grey to sometimes tending dark grey with minor olive grey, as above but with increased clay content and rare silt content, soft to firm and mostly sub-blocky. Calcimetry: 48/0
930	960	70	MARL: light grey to light medium grey shades, with white calcareous streaks in places, cryptocrystalline to very finely crystalline in places, 30-50% clay minerals, rare micromicas and carbonaceous flecks in places, few to common very small foraminifera, rare glauconite smears and grains in places, soft to firm mostly and good sub-blocky PDC cuttings, minor appears gradational to a firmer argillaceous calcilutite. Appears to be interbedded with
		30	HIGHLY CALCAREOUS CLAYSTONE/CALCAREOUS CLAYSTONE: varying medium grey to sometimes tending dark grey with minor olive grey, as above but with increased clay content and rare silt content, soft to firm and mostly sub-blocky. Calcimetry: 47.9/0
960	990	70	MARL: light grey to medium light grey, as above.
		30	CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Calcimetry: 46.7/0
990	1020	80	MARL: light grey to medium light grey, as above.
		20	CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Calcimetry: 52.4/0
1020	1050	90	MARL: light grey to medium light grey, white calcareous streaks in part, soft to moderately firm, sub blocky, predominantly PDC bit texture, cryptocrystalline to very finely crystalline in part, 30-50% clay minerals, rare to minor foraminifera, trace micromicas and carbonaceous flecks, grading to Argillaceous Calcilutite.
		10	CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, generally as above with increased clay and rare silt content, soft to firm, predominantly sub-blocky. Calcimetry: 51.4/0
1050	1080	90	MARL: light grey to medium light grey, as above.
		10	CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Calcimetry: 49/6
1080	1110	100	MARL: generally as above, light grey to medium light grey, medium grey, white calcareous streaks in part, soft to moderately firm, sub blocky, predominantly PDC bit texture, cryptocrystalline to very finely crystalline in part, 30-50% clay minerals, rare to minor foraminifera, trace micromicas and carbonaceous flecks, grading to Argillaceous Calcilutite. Calcimetry: 46/0
1110	1140	100	MARL: light grey to medium grey, as above. Calcimetry: 52/1
1140	1170	100	MARL: light grey to medium grey, as above. Calcimetry: 48/1
1170	1200	100	MARL: light grey to medium grey, as above. Calcimetry: 47/2
1200	1230	100	MARL: light grey to medium grey, as above. Calcimetry: 51/4

Interval (m)		Lithology / Show Description	
From	To	%	
1230	1260	100	MARL: generally as above, light grey to medium light grey, medium grey, white calcareous streaks in part, soft to moderately firm, sub blocky, predominantly PDC bit texture = stacked platelets, cryptocrystalline to very finely crystalline in part, 30-50% clay minerals, rare to minor foraminifera, trace micromicas and carbonaceous flecks, trace glauconite, grading to Argillaceous Calcilutite. Calcimetry: 42/3
1260	1290	100	MARL: generally as above, trace nodular pyrite. Calcimetry: 45/1
1290	1320	90	MARL: generally as above, trace nodular pyrite. Minor amounts tending to argillaceous calcilutite (where lighter coloured) and highly calcareous claystone (where darker coloured)
		10	HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Calcimetry: 40/0
1320	1350	90	MARL: light grey to medium light grey, as above.
		10	HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Calcimetry: 41/0
1350	1380	80	MARL: mostly light grey to medium light grey shades, as above.
		20	HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Calcimetry: 40/0
1380	1410	80	MARL: mostly light grey to medium light grey shades, as above.
		20	HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Calcimetry: 39/0
1410	1440	85	MARL: mostly light grey to medium light grey shades, as above.
		15	HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Calcimetry: 37/0
1440	1470	90	MARL: light grey to medium light grey, as above.
		10	HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Calcimetry: 40/0
Change sampling interval from 30m down to 10m			
1470	1480	90	MARL: light grey to medium light grey, as above. Traces clearly yellowish brown and hard/cryptocrystalline to finely crystalline = limestone.
		10	HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Calcimetry: 39/0
1480	1490	90	MARL: light grey to medium light grey, as above. Traces clearly yellowish brown and hard/cryptocrystalline to finely crystalline = limestone.
		10	HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above.
1490	1500	90	MARL: light grey to medium light grey, as above. Traces clearly yellowish brown and hard/cryptocrystalline to finely crystalline = limestone.
		10	HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Calcimetry: 38/0
1500	1510	90	MARL: light grey to medium light grey, as above.
		10	HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Calcimetry: 38/0
1510	1520	85	MARL: light grey to medium light grey, as above.
		15	HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Calcimetry: 35/0

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
1520	1530	90	MARL: light grey to medium light grey, as above.
		10	HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Calcimetry: 35/0
Add bara-carb to mud system at 1532m bit depth.			
1530	1540	75	MARL: light grey to medium light grey, as above.
		25	HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Calcimetry: 29/0 <i>Fine fraction of this sample heavily contaminated very fine Bara-carb (crushed marble)</i>
1540	1550	90	MARL: light grey to medium light grey, as above.
		10	HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Some cuttings of this lithology showing distinctly increased dark greenish black glauconite as large grains and inclusions Calcimetry: 30/0 <i>Fine fraction of this sample heavily contaminated very fine Bara-carb (crushed marble)</i>
1550	1555	90	MARL: light grey to medium light grey, as above.
		10	HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium grey to dark grey, minor olive grey, as above. Some cuttings of this lithology showing distinctly increased dark greenish black glauconite as large grains and inclusions Calcimetry: 30/0 <i>Fine fraction of this sample heavily contaminated very fine Bara-carb (crushed marble)</i>
1555	1560	90	GLAUCONITIC MARL: varying light grey to medium light grey with dominating distinct shades of greenish grey, greyish green and brownish grey, soft to firm and mostly sub-blocky, few to common planktonic foraminifera, often with 20-30% dark blackish green glauconite grains and pellets.
		10	Variably GLAUCONITIC HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium greyish green to dark greenish grey, minor olive grey, as above. Some cuttings of this lithology showing distinctly increased dark greenish black glauconite as large grains and inclusions Calcimetry: 31/0 <i>Fine fraction of this sample heavily contaminated very fine Bara-carb (crushed marble)</i>
1560	1565	90	GLAUCONITIC MARL: light grey to medium light grey with distinct shades of greenish grey, greyish green and brownish grey, minor yellowish brown, soft to firm and mostly sub-blocky, few to common planktonic foraminifera, often with 20-30% dark blackish green glauconite grains and pellets and minor medium greenish smears.
		10	Variably GLAUCONITIC HIGHLY CALCAREOUS / CALCAREOUS CLAYSTONE: medium greyish green to dark greenish grey, minor olive grey, as above. Some cuttings of this lithology showing distinctly increased dark greenish black glauconite as large grains and inclusions <i>Fine fraction of this sample heavily contaminated very fine Bara-carb (crushed marble)</i> Calcimetry: 31/0
Major colour change from the 1565m sample to the 1570m sample			
1565	1570	100	CALCAREOUS CLAYSTONE: distinct colour change this sample to tending dark brown to medium olive black, soft to firm and mostly sub-blocky, continues to be 5-20% glauconite grains and smears within individual cuttings (freshly broken surfaces to check), moderately calcareous. Calcimetry: 30/0

Interval (m)			Lithology / Show Description
From	To	%	
1570	1575	100	CALCAREOUS CLAYSTONE: distinct colour change this sample to tending dark brown to medium olive black, soft to firm and mostly sub-blocky, continues to be 5-20% glauconite grains and smears within individual cuttings (freshly broken surfaces to check), moderately calcareous. Calcimetry: 27/0
Major colour change from 1575m sample to 1580m sample with the downhole appearance of sandstone			
1575	1580	100	SANDSTONE: varicoloured, varying yellowish brown to distinctly more mottled greenish grey/yellowish brown/medium grey, very fine grained to very coarse grained, poorly sorted, subangular to subrounded, varying very soft to soft 'degraded'/weathered aggregates to hard/very hard cemented aggregates (non calcareous = siliceous or partly dolomitic also) to loose disaggregated grains, trace to 10% glauconite grains as matrix, inferred poor porosity. Correlates to unconformity surface lithology. NO SHOWS. Calcimetry: 5/0
1585	1590	100	SANDSTONE; mostly light to medium olive grey, comprises clear quartz grains only, very fine to very coarse grained, dominantly medium to coarse grained, poorly tending moderately well sorted, subangular to subrounded, traces of pyritic cementation in places, mostly loose/disaggregated quartz grains, inferred good porosity. NO SHOWS.
1590	1600	100	SANDSTONE: light olive grey to yellowish brown (different colour from the sandstone sample above), comprises clear quartz grains only, very fine to granular, dominantly medium to coarse grained, tending moderately well sorted, subangular to subrounded, traces of pyritic cementation in places, traces of yellowish mostly loose/disaggregated quartz grains, inferred good porosity. NO SHOWS.
1600	1610	70	SANDSTONE: light olive grey to yellowish brown (different colour from the sandstone sample above), comprises clear quartz grains only, very fine to granular, dominantly medium to coarse grained, tending moderately well sorted, subangular to subrounded, traces of pyritic cementation in places, traces of yellowish mostly loose/disaggregated quartz grains, inferred good porosity. NO SHOWS.
		20	CLAYSTONE: mostly light to sometimes medium shades of tending brownish grey to greyish brown, very soft to soft, dispersive, non calcareous, trace to more common carbonaceous debris in places.
		10	HIGH ASH COAL: mostly brownish black with minor black, moderately hard to hard, brittle, semi bright surfaces, tending to carbonaceous claystone in part.
1610	1620	30	SANDSTONE: light olive grey to yellowish brown (different colour from the sandstone sample above), comprises clear quartz grains only, very fine to granular, dominantly medium to coarse grained, tending moderately well sorted, subangular to subrounded, traces of pyritic cementation in places, traces of yellowish mostly loose/disaggregated quartz grains, inferred good porosity. WEAK SHOW (spot at 1615m only) - 10-15% of sandstone shows subdued yellowish background UV sample fluorescence, same gives a weak intensity, delayed slowly diffusing solvent cut, no residue ring. .Does not appear to be mineral fluorescence.
		50	CLAYSTONE: mostly light to sometimes medium shades of tending brownish grey to greyish brown, very soft to soft, dispersive, non calcareous, trace to more common carbonaceous debris in places.
		20	HIGH ASH COAL: mostly brownish black with minor black, moderately hard to hard, brittle, semi bright surfaces, tending to carbonaceous claystone in part. Calcimetry: 6/0

Interval (m)		Lithology / Show Description	
From	To	%	
1620	1630	30	SANDSTONE: light olive grey to yellowish brown (different colour from the sandstone sample above), comprises clear quartz grains only, very fine to granular, dominantly medium to coarse grained, tending moderately well sorted, subangular to subrounded, traces of pyritic cementation in places, traces of yellowish mostly loose/disaggregated quartz grains, inferred good porosity. NO SHOW.
		40	CLAYSTONE: mostly light to sometimes medium shades of tending brownish grey to greyish brown, very soft to soft, dispersive, non calcareous, trace to more common carbonaceous debris in places.
		30	COAL: mostly brownish black with minor black, moderately hard to hard, brittle, semi bright surfaces, tending to carbonaceous claystone in part.
1630	1640	30	SANDSTONE: light olive grey to yellowish brown (different colour from the sandstone sample above), comprises clear quartz grains only, very fine to granular, dominantly medium to coarse grained, tending moderately well sorted, subangular to subrounded, traces of pyritic cementation in places, traces of yellowish mostly loose/disaggregated quartz grains, inferred good porosity. NO SHOW.
		60	CLAYSTONE: mostly very light brown to sometimes medium shades of tending brownish grey to greyish brown, very soft to soft, dispersive, non calcareous, trace to more common carbonaceous debris in places.
		10	HIGH ASH / CLEAN COAL: mostly brownish black with minor black, moderately hard to hard, brittle, semi bright surfaces, tending to carbonaceous claystone in part.
1640	1650	20	SANDSTONE: light olive grey to pale yellowish brown, predominantly clear with minor translucent quartz grains, predominantly medium to coarse grained, rare to minor fine, subangular to sub rounded, moderately well sorted, commonly loose, rare strongly calcite cemented aggregates, trace pyrite cement, common white to very light grey argillaceous matrix. WEAK SHOW: 10-15% of sandstone shows dull yellow direct fluorescence, weak dull yellow white slowly diffusing cut, no residue ring.
		70	CLAYSTONE: light grey to pale yellowish brown, very soft to soft, dispersive, trace to rare carbonaceous debris in places. non calcareous,
		10	COAL: predominantly brownish black, minor black, moderately hard to hard, brittle, semi bright surfaces, lignitic, grading to carbonaceous claystone in part.
1650	1655	90	CLAYSTONE: light grey to medium light grey, light brownish grey to pale yellowish brown, minor light olive grey, soft to moderately firm, dispersive, minor silt and trace very fine quartz throughout, brownish grey component has minor to common carbonaceous flecks and fragments, non calcareous.
		10	COAL: generally as above, probably cavings.
1655	1660	90	CLAYSTONE: generally as above, predominantly light brownish grey to pale yellowish brown, minor light olive grey, light grey to medium light grey, soft to moderately firm, dispersive, minor to common silt and trace very fine quartz throughout, minor to common carbonaceous flecks and fragments, grading to carbonaceous claystone in part, non calcareous.
		10	COAL: generally as above, probably cavings.
1660	1665	90	CLAYSTONE: generally as above.
		10	COAL: generally as above, probably cavings.
1665	1670	95	CLAYSTONE: light grey to pale yellowish brown, very soft to soft, dispersive, common to abundant very fine to fine grained quartz, grading to arenaceous claystone/argillaceous sandstone, trace to rare carbonaceous fragments, trace nodular pyrite, non calcareous.
		5	COAL: generally as above
1670	1675	80	CLAYSTONE: as above.
		20	SANDSTONE: white to very light grey, clear to translucent grains, returned loose, predominantly coarse to very coarse grained, minor medium and granules, sub rounded to rounded, moderately sorted, trace sub angular and bit fractured grains, common light grey argillaceous matrix, fair to good inferred porosity. No Shows.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
1675	1680	40	CLAYSTONE: mottled, light grey to medium light grey, light brownish grey to pale yellowish brown, minor light olive grey and light brown, soft to moderately firm, dispersive, minor silt and trace very fine quartz throughout, brownish grey component has minor to common carbonaceous flecks and fragments, non calcareous.
		60	SANDSTONE: as above.
1680	1685	70	CLAYSTONE: light grey to pale yellowish brown, very soft to soft, dispersive, common to abundant very fine to fine grained quartz, grading to arenaceous claystone/argillaceous sandstone, trace to rare carbonaceous fragments, trace nodular pyrite, non calcareous.
		30	SANDSTONE: white to very light grey, clear to translucent grains, returned loose, predominantly very coarse to granule, minor coarse grain, sub rounded to rounded, trace sub angular and bit fractured grains, poorly to moderately sorted, trace intergranular pyrite cement, common light grey argillaceous matrix, rare rock flour, fair to good inferred porosity. No Shows.
1685	1690	-	Sample missed due to high ROP
1690	1695	10	CLAYSTONE: mottled, light grey to medium light grey, light brownish grey to pale yellowish brown, minor light olive grey and light brown, soft to moderately firm, dispersive, minor silt and trace very fine quartz throughout, brownish grey component has minor to common carbonaceous flecks and fragments, non calcareous.
		90	SANDSTONE: white to very light grey, clear to translucent grains, returned loose, predominantly coarse to very coarse grained, minor medium and granules, sub rounded to rounded, poorly to moderately sorted, trace sub angular and bit fractured grains, , trace intergranular pyrite cement, trace nodular pyrite, common light grey argillaceous matrix, fair to good inferred porosity. No Shows.
1695	1700	60	CLAYSTONE: as above.
		40	SANDSTONE: as above.
			Commence sliding at 1700m MDRT
1700	1705	60	CLAYSTONE: as above.
		40	SANDSTONE: as above.
1705	1710	95	CLAYSTONE: medium grey to medium dark grey, light brownish grey, moderately firm to firm, minor silt, trace very fine quartz, minor to common carbonaceous flecks and fragments, trace disseminated pyrite, trace pyritic replacement of burrows and plant fragments, abundant bit generated texture.
		5	SANDSTONE: as above.
1710	1715	95	CLAYSTONE: generally as above, sample predominantly bit generated texture.
		5	SANDSTONE: as above.
1715	1720	80	CLAYSTONE: generally as above, sample commonly bit generated texture.
		20	SANDSTONE: white to very light grey, clear to translucent grains, returned loose, predominantly very coarse to granule, minor coarse grain, sub rounded to rounded, rare sub angular and bit fractured grains, poorly sorted, nil to trace intergranular pyrite cement, common light grey argillaceous matrix, rare rock flour, fair to good inferred porosity. No shows.
1720	1725	40	CLAYSTONE: as above, sample predominantly bit generated texture.
		60	SANDSTONE: as above.
1725	1730	30	CLAYSTONE: as above, sample predominantly bit generated texture.
		70	SANDSTONE: as above.
1730	1735	30	CLAYSTONE: as above, sample predominantly bit generated texture.
		70	SANDSTONE: as above.
1735	1737	90	SANDSTONE : light olive grey to very light yellowish brown, clear to translucent quartz grains, no lithics discernible, fine grained to very fine pebbly, dominantly coarse to very coarse grained, moderately well sorted,
		10	CLAYSTONE: as above

POOH at 1737m because unable to affect successful kick-off with the PDC bit. P/u insert Hughes bit.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)			Lithology / Show Description
From	To	%	
1737	1740	90	SANDSTONE : light olive grey to very light yellowish brown, clear to translucent quartz grains, no lithics discernible, fine grained to very fine pebbly, dominantly coarse to very coarse grained, moderately well sorted, subangular to subrounded, traces of coaly fragments and rare pyrite, trace to 10% quartz silt as matrix in places, samples varying loose/disaggregated grains to minor cemented aggregates, aggregates appear siliceous cemented, varying poor to good inferred intergranular porosity. NO SHOWS.
		10	CLAYSTONE : as above, probable cavings from trip back in hole with new bit.
		Trace	COAL : as above.
1740	1745	100	SANDSTONE : white to very light grey, clear to translucent grains, returned loose, medium to very coarse grained, predominantly coarse, trace granule, sub rounded to rounded, rare sub angular and bit fractured grains, poorly sorted, nil to trace intergranular pyrite cement, common light grey argillaceous matrix, trace lithic grains, common rock flour and bit generated textures, fair to good inferred porosity. No shows.
		Tr	COAL : predominantly brownish black, minor black, earthy to sub vitreous, moderately hard to hard, brittle, semi bright surfaces, angular to sub conchoidal fracture, lignitic, grading to carbonaceous claystone in part. Sample contains abundant cavings.
1745	1750	90	SANDSTONE : as above.
		10	CLAYSTONE : mottled, light grey to medium light grey, light brownish grey to pale yellowish brown, minor light olive grey and light brown, soft to moderately firm, dispersive, minor silt and trace very fine quartz throughout, minor carbonaceous flecks and fragments, sample predominantly bit generated texture, non calcareous.
		Tr	COAL : as above.
1750	1755	80	SANDSTONE : as above.
		15	CLAYSTONE : as above.
		5	COAL : as above.
1755	1760	-	Sample missed due to high ROP
1760	1765	60	SANDSTONE : white to very light grey, clear to translucent grains, returned loose, medium to very coarse grained, predominantly coarse, sub rounded to rounded, rare sub angular and bit fractured grains, poorly sorted, common light grey argillaceous matrix, trace lithic grains, common rock flour and bit generated textures, fair to good inferred porosity. SHOW: fine grained aggregates have dull yellow direct fluorescence, weak dull yellow white slowly diffusing cut, dull yellow residue.
		30	CLAYSTONE : generally as above, mottled, light grey to medium light grey, light brownish grey to pale yellowish brown, minor light olive grey and light brown, soft to moderately firm, dispersive, minor silt and trace very fine quartz throughout, minor carbonaceous flecks and fragments, sample predominantly bit generated texture, non calcareous.
		10	COAL : as above.
1765	1770	60	SANDSTONE : as above. SHOW: fine grained aggregates have dull yellow direct fluorescence, weak dull yellow white slowly diffusing cut, dull yellow residue.
		40	CLAYSTONE : as above.
		Tr	COAL : as above.

Interval (m)		Lithology / Show Description	
From	To	%	
1770	1775	80	SANDSTONE: white to very light grey, clear to translucent grains, returned loose, medium to very coarse grained, predominantly coarse, sub rounded to rounded, rare sub angular and bit fractured grains, poorly sorted, common light grey argillaceous matrix, trace lithic grains, common rock flour and bit generated textures, fair to good inferred porosity. No shows.
		20	CLAYSTONE: generally as above, mottled, light grey to medium light grey, light brownish grey to pale yellowish brown, minor light olive grey and light brown, soft to moderately firm, dispersive, minor silt and trace very fine quartz throughout, minor carbonaceous flecks and fragments, sample predominantly bit generated texture, non calcareous.
		Tr	COAL: predominantly brownish black, minor black, earthy to sub vitreous, moderately hard to hard, brittle, semi bright surfaces, angular to sub conchoidal fracture, lignitic, grading to carbonaceous claystone in part.
1775	1780	100	SANDSTONE: as above.
		Tr	CLAYSTONE: as above.
		Tr	COAL: as above.
1780	1785	80	SANDSTONE: as above.
		10	CLAYSTONE: as above.
		10	COAL: as above.
1785	1790	90	SANDSTONE: as above.
		10	CLAYSTONE: as above.
		Tr	COAL: as above.
1790	1795	20	SANDSTONE: very light grey to light brownish grey, clear to translucent grains, friable aggregates, very fine to fine grained, sub rounded to rounded, minor sub angular to angular, well sorted, trace light grey argillaceous matrix, trace lithic grains, common rock flour and bit generated textures, poor inferred porosity. No shows.
		80	CLAYSTONE: light brownish grey to brownish grey, soft to moderately firm, sub blocky to blocky, minor silt and common to abundant very fine quartz, grading to Arenaceous Claystone, trace very fine grained sandstone interlamination, trace carbonaceous flecks, trace disseminated pyrite, non calcareous.
		10	SANDSTONE: as above.
1795	1800	90	CLAYSTONE: as above.
			Sample dominantly bit generated texture.
		20	SANDSTONE: as above.
1800	1805	80	CLAYSTONE: as above.
			Sample dominantly bit generated texture.
		20	SANDSTONE: as above.
1805	1810	80	CLAYSTONE: as above.
			Sample dominantly bit generated texture.
		20	SANDSTONE: as above.
1810	1815	80	CLAYSTONE: as above.
			Sample dominantly bit generated texture.
		20	SANDSTONE: as above.
1815	1820	80	CLAYSTONE: as above
			Sample dominantly bit generated texture.
		20	SANDSTONE: very light grey to light brownish grey, clear to translucent grains, very fine to fine grained, sub rounded to rounded, minor sub angular to angular, well sorted, trace light grey argillaceous matrix, trace lithic grains, poor inferred porosity. No shows.
1820	1825	80	CLAYSTONE: light brownish grey to brownish grey, soft, sub blocky to blocky, minor silt and common to abundant very fine quartz, trace very fine grained sandstone interlamination, trace carbonaceous flecks, trace disseminated pyrite, non calcareous.
			Sample dominantly bit generated texture.
		20	SANDSTONE: as above.

Interval (m)		Lithology / Show Description	
From	To	%	
1825	1830	30	SANDSTONE: very light grey to light brownish grey, clear to translucent grains, dominantly very fine to fine grained, sub rounded to rounded, minor sub angular to angular, minor loose medium to very coarse grains, moderately to well sorted, trace lithic grains, trace disseminated pyrite. No shows.
		70	CLAYSTONE: light brownish grey to brownish grey, soft to moderately firm, abundant very fine quartz, trace carbonaceous flecks. Sample dominantly bit generated texture.
1830	1835	90	SANDSTONE: very light grey to light brownish grey, clear to translucent grains, returned loose, medium to coarse grained, predominantly medium, trace fine, sub rounded to rounded, minor sub angular to angular, moderately well sorted, trace silica cement, trace light grey argillaceous matrix, trace lithic grains, trace disseminated pyrite, poor to fair inferred porosity. No shows.
		10	CLAYSTONE: light brownish grey to brownish grey, soft to moderately firm, common silt and very fine quartz, trace carbonaceous flecks. Sample dominantly loose grains and bit generated texture.
1835	1840	90	SANDSTONE: generally as above, trace very coarse grains.
		10	CLAYSTONE: as above. Sample dominantly loose grains and bit generated texture.
1840	1845	90	SANDSTONE: generally as above, trace very coarse grains, trace nodular pyrite.
		10	CLAYSTONE: as above. Sample dominantly loose grains and bit generated texture.
1845	1850	20	SANDSTONE: generally as above, trace very coarse grains, trace nodular pyrite.
		80	CLAYSTONE: light to medium shades of greyish brown, minor dark greyish brown and olive grey, mostly very soft to soft and tending dispersive, trace silt matrix, minor to sometimes more common carbonaceous debris, non calcareous.
1850	1855	70	SANDSTONE: generally as above, trace very coarse grains, trace nodular pyrite, also with some aggregates indicating argillaceous sandstone.
		30	CLAYSTONE: light to medium shades of greyish brown, minor dark greyish brown and olive grey, mostly very soft to soft and tending dispersive, trace silt matrix, minor to sometimes more common carbonaceous debris, non calcareous.
1855	1860	20	SANDSTONE: generally as above, trace very coarse grains, trace nodular pyrite.
		80	CLAYSTONE: light to medium shades of greyish brown, minor dark greyish brown and olive grey, mostly very soft to soft and tending dispersive, trace silt matrix, minor to sometimes more common carbonaceous debris, non calcareous. Clearly grading to ARENACEOUS CLAYSTONE in places: shades of greyish brown to dark brown, firm to moderately hard, 10-20% very fine to fine quartz sand matrix, visually very poor, sand as laminations and microlaminations in places,
1860	1865	20	SANDSTONE: generally as above, trace very coarse grains, trace nodular pyrite.
		80	CLAYSTONE: light to medium shades of greyish brown, but with minor medium tending dark brown, mostly very soft to soft and tending dispersive, trace silt matrix, minor to sometimes more common carbonaceous debris, non calcareous. Clearly grading to ARENACEOUS CLAYSTONE in places: shades of greyish brown to dark brown, firm to moderately hard, 10-20% very fine to fine quartz sand matrix, visually very poor, sand as laminations and microlaminations in places,
1865	1870	70	SANDSTONE: very light grey to light olive grey, very fine to coarse grained, dominantly medium grained, tending moderately well sorted, subangular to subrounded, traces of pyrite and micas and quartz silt matrix, mostly disaggregated/loose quartz grains, sometimes clearly grading to very fine to fine grained argillaceous sandstone. Inferred poor to good visual porosity. NO SHOWS.
		30	CLAYSTONE: light to medium shades of greyish brown, minor dark greyish brown and olive grey, mostly very soft to soft and tending dispersive, trace silt matrix, minor to sometimes more common carbonaceous debris, non calcareous.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
1870	1875	20	SANDSTONE: as above.
		80	CLAYSTONE: medium tending dark shades of greyish brown and brown, varying very soft to moderately hard, mostly very soft to soft and tending dispersive, trace silt and very fine quartz sand matrix , trace micromicaceous, trace to good trace disseminated carbonaceous debris in places, minor to sometimes more common carbonaceous debris, non calcareous. Minor grading to ARENACEOUS CLAYSTONE in places: shades of greyish brown to dark brown, firm to moderately hard, 10-20% very fine to fine quartz sand matrix, visually very poor, sand as laminations and microlaminations in places.
1875	1880	10	SANDSTONE: as above.
		90	CLAYSTONE: distinct colour change compared to 1875m sample, mostly very light olive grey to light grey, varying very soft to moderately hard, mostly very soft to soft and tending dispersive, trace silt and very fine quartz sand matrix , trace micromicaceous, non calcareous. Minor gradational to quartz siltstone and very fine grained argillaceous sandstone.
1880	1885	80	SANDSTONE: very light grey to light olive grey, quartz rich, no lithics discernible, very fine to coarse grained, dominantly medium grained, tending moderately well sorted, varying angular to subrounded, dominantly subangular to subrounded, traces of pyrite and micas and quartz silt matrix, mostly disaggregated/loose quartz grains but with minor cemented aggregates (moderately hard to hard) , with minor grading to very fine to fine grained argillaceous sandstone. Inferred poor to good visual porosity. NO SHOWS.
		20	CLAYSTONE: light to medium shades of greyish brown, minor dark greyish brown and olive grey, mostly very soft to soft and tending dispersive, minor moderately hard tending hard and subfissile, trace silt matrix, minor to sometimes more common carbonaceous debris, non calcareous. Minor gradational to light coloured siltstone.
1885	1890	10	SANDSTONE: as above. NO SHOWS.
		90	CLAYSTONE: mostly very light olive grey to light grey to light greyish brown, varying very soft to moderately hard, mostly very soft to soft and tending dispersive, trace silt and very fine quartz sand matrix , trace micromicaceous, non calcareous. Minor gradational to quartz siltstone and very fine grained argillaceous sandstone.
1890	1895	10	SANDSTONE: as above. NO SHOWS.
		90	CLAYSTONE: mostly very light olive grey to light grey to light greyish brown, minor dark brown to blackish brown, varying very soft to moderately hard, mostly very soft to soft and tending dispersive, trace silt and very fine quartz sand matrix , trace micromicaceous, non calcareous. Minor gradational to quartz siltstone and very fine grained argillaceous sandstone.
		Trace	COAL: black , mostly as very fine to fine 'grinds', ?in situ or cavings.
1895	1900	10	SANDSTONE: as above. NO SHOWS.
		90	CLAYSTONE: as above.
1900	1905	80	SANDSTONE: very light grey to light olive grey, minor becoming olive grey, quartz rich, no lithics discernible, very fine to very coarse grained, dominantly medium to lower coarse grained, tending moderately well sorted, varying angular to subrounded, dominantly subangular to subrounded, traces of pyrite and micas and quartz silt matrix, mostly disaggregated/loose quartz grains but with minor cemented aggregates (moderately hard to hard) , with minor grading to very fine to fine grained argillaceous sandstone. Inferred poor to good intergranular porosity. NO SHOWS.
		20	CLAYSTONE: light to medium shades of greyish brown, minor dark greyish brown and olive grey, mostly very soft to soft and tending dispersive, minor moderately hard tending hard and subfissile, trace silt matrix, minor to sometimes more common carbonaceous debris, non calcareous. Minor gradational to light coloured siltstone.
1905	1910	90	SANDSTONE: as above. NO SHOWS.
		10	CLAYSTONE: as above.

Interval (m)		Lithology / Show Description	
From	To	%	
1910	1915	30	SANDSTONE: as above. NO SHOWS.
		70	CLAYSTONE: very light to light shades of greyish brown, minor dark greyish brown and olive grey, mostly very soft to soft and tending dispersive, minor moderately hard tending hard and subfissile, trace silt matrix, minor to sometimes more common carbonaceous debris, non calcareous. Minor gradational to light coloured siltstone.
		Tr	COAL: as above, fragmented.
1915	1918	90	CLAYSTONE: mostly light olive grey, minor light shades of greyish brown and medium olive grey, mostly very soft to soft and sub-blocky, trace to 10% quartz silt and very fine sand grains in places, minor to sometimes more common disseminated carbonaceous flecks and coaly fragments, non calcareous. Minor gradational to light coloured siltstone.
		10	SANDSTONE: as above. NO SHOWS.
1918	1920	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
1920	1925	80	CLAYSTONE: mostly as above, but with the appearance of greyish brown and medium brown colours, increased carbonaceous content.
		20	SANDSTONE: as above.
1925	1930	50	COAL: brownish black to shiny black, varying moderate to low ash, moderately hard to hard, brittle to some conchoidal surfaces.
		20	CARBONACEOUS CLAYSTONE: mostly medium to darker shades of greyish brown and medium brown, mostly very soft to soft and sub-blocky, minor to sometimes more common disseminated carbonaceous flecks and coaly fragments, non calcareous
1925	1930	30	SANDSTONE: very light grey to light olive grey, minor becoming olive grey, quartz rich, no lithics discernible, very fine to very coarse grained, dominantly medium to lower coarse grained, tending moderately well sorted, varying angular to subrounded, dominantly subangular to subrounded, traces of pyrite and micas and quartz silt matrix, mostly disaggregated/loose quartz grains but with minor cemented aggregates (moderately hard to hard). NO SHOWS.
Clear gas peak of 4.2% TG associated with significant coal % increase in the sample 1930m			
1930	1935	80	CLAYSTONE: medium shades of greyish brown to medium brown varying very soft to moderately hard, mostly very soft to soft and tending dispersive, trace silt and very fine quartz sand matrix, trace micromicaceous, trace to good trace disseminated carbonaceous debris in places, minor to sometimes more common carbonaceous debris, non calcareous. Minor grading to ARENACEOUS CLAYSTONE in places: shades of greyish brown to dark brown, firm to moderately hard, 10-20% very fine to fine quartz sand matrix, visually very poor, sand as laminations and microlaminations in places.
		20	SANDSTONE: light greyish brown to light grey, very fine to medium grained, dominantly very fine to fine grained, 10-30% clay minerals, trace to 20% finely disseminated carbonaceous flecks, soft to firm, sub-blocky, very poor to poor visual porosity. NO SHOWS.
1935	1940	90	CLAYSTONE: very light grey to light brownish grey, very soft to moderately hard, predominantly very soft to soft, dispersive, trace silt and very fine quartz sand throughout, trace micromicaca, trace to rare carbonaceous fragments, non calcareous. Grading to ARENACEOUS CLAYSTONE in part: firm to moderately hard, abundant very fine to fine grained quartz, occurring as laminations and microlaminations in part, no visual porosity.
		10	SANDSTONE: light grey to light brownish grey, soft to firm, amorphous to sub-blocky, very fine to medium grained, dominantly very fine to fine grained, abundant argillaceous matrix, grading to ARGILLACEOUS SANDSTONE in part, trace to abundant finely disseminated carbonaceous flecks, very poor to poor visual porosity. NO SHOWS.
			Samples predominantly bit generated texture
1940	1945	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
1945	1950	70	CLAYSTONE: generally as above, trace nodular pyrite.
		30	SANDSTONE: as above.
1950	1955	80	CLAYSTONE: as above.
		20	SANDSTONE: as above.
1955	1960	60	CLAYSTONE: as above.
		20	SANDSTONE: as above.
		20	COAL: brownish black to black, earthy to sub vitreous, brittle, blocky to sub conchoidal fracture, lignitic in part.
1960	1965	75	CLAYSTONE: generally as above, becoming more brownish grey.
		20	SANDSTONE: as above.
		5	COAL:
1965	1970	70	CLAYSTONE: as above.
		30	SANDSTONE: as above.
1970	1975	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
			Samples predominantly bit generated texture
1975	1980	90	CLAYSTONE: as above.
		10	SANDSTONE: as above.
1980	1985	90	CLAYSTONE: light grey to light brownish grey, light grey, firm, sub blocky to sub fissile, minor silt, trace to rare carbonaceous specks and coal fragments, trace disseminated pyrite, good trace to common micromicaceous, trace nodular pyrite, non calcareous.
		10	SANDSTONE: light grey to light brownish grey, soft to firm, amorphous to sub-blocky, very fine to medium grained, dominantly very fine to fine grained, abundant argillaceous matrix, grading to ARGILLACEOUS SANDSTONE in part, trace to abundant finely disseminated carbonaceous flecks, very poor to poor visual porosity. NO SHOWS.
1985	1990	80	CLAYSTONE: generally as above, common coaly fragments.
		20	SANDSTONE: as above.
1990	1995	80	CLAYSTONE: generally as above, common coaly fragments.
		20	SANDSTONE: as above.
1995	2000	70	CLAYSTONE: generally as above, common coaly fragments and disseminated carbonaceous flecks in places.
		Tr	SANDSTONE: as above. NO SHOWS.
		20	COAL: brownish black to shiny black, varying moderate to low ash, moderately hard to hard, brittle to some conchoidal surfaces. Clear gas peak associated with this coal seam.
2000	2002.5	100	COAL: brownish black to shiny black, varying moderate to low ash, moderately hard to hard blocky to angular cuttings, brittle to some conchoidal surfaces.
2002.5	2005	100	COAL: as above. TG peak of 7.6% at 2003m.
2005	2010	40	COAL: as above.
		60	CLAYSTONE: as above
2010	2012.5	90	CLAYSTONE / CARBONACEOUS CLAYSTONE: light to medium shades of greyish brown and brownish grey to very light/light olive grey, minor medium to dark brownish, varying soft to moderately hard, mostly soft, mostly sub-blocky with minor subfissile, trace to 20% silt in places, trace to rare carbonaceous specks and coal fragments, rarer carbonaceous flecks in the light olive grey coloured claystone, trace disseminated pyrite, good trace to common micromicaceous, trace nodular pyrite, non calcareous. Minor grading to very fine arenaceous claystone.
		10	COAL: as above, cavings, washout.
2012.5	2015.0	90	CLAYSTONE: as above
		10	COAL: as above, cavings, washout.

Interval (m)		Lithology / Show Description	
From	To	%	
2015	2017.5	80	CLAYSTONE: as above
		10	SANDSTONE: varying very light olive grey to light olive grey, to medium to sometimes darker shades of brownish grey and greyish brown, very fine to medium grained, moderately to well sorted, dominantly subangular, partly laminated with carbonaceous claystone in places,, varying nil to 30% clay minerals and quartz silt, firm to moderately hard aggregates, nil to poor visual porosity. Clearly gradational to argillaceous sandstone in places. NO SHOWS.
		10	COAL: as above, probable cavings, washout.
2017.5	2020	80	CLAYSTONE: as above, mostly very light olive grey to light olive grey.
		10	SANDSTONE: varying very light olive grey to light olive grey, to medium to sometimes darker shades of brownish grey and greyish brown, very fine to medium grained, moderately to well sorted, dominantly subangular, partly laminated with carbonaceous claystone in places,, varying nil to 30% clay minerals and quartz silt, sometimes with increased 30-40% quartz silt, varying soft to hard aggregates, mostly firm and sub-blocky. Clearly gradational to argillaceous sandstone in places. Nil to poor visual porosity. NO SHOWS.
		10	COAL: as above, probable cavings, washout.
2020	2022.5	80	CLAYSTONE: as above,
		10	SANDSTONE: as above. NO SHOWS.
		10	COAL: as above, probable cavings, washout.
2022.5	2025	80	CLAYSTONE: as above,
		10	SANDSTONE: as above. NO SHOWS.
		10	COAL: as above, probable cavings, washout.
2025	2027.5	90	CLAYSTONE / CARBONACEOUS CLAYSTONE: darker coloured overall than the 2 samples immediately above, light to medium shades of greyish brown and brownish grey to very light/light olive grey, minor medium to dark brownish, varying soft to moderately hard, mostly soft, mostly sub-blocky with minor subfissile, trace to 20% silt in places, trace to rare carbonaceous specks and coal fragments, rarer carbonaceous flecks in the light olive grey coloured claystone, trace disseminated pyrite, good trace to common micromicaceous, trace nodular pyrite, non calcareous. Minor grading to very fine arenaceous claystone.
		10	SANDSTONE : as above
		Tr	COAL: as above. .
2027.5	2030	90	CLAYSTONE / CARBONACEOUS CLAYSTONE: as above..
		10	SANDSTONE : as above
		Tr	COAL: as above. .
2030	2032	80	CLAYSTONE / CARBONACEOUS CLAYSTONE: as above..
		10	SANDSTONE : as above
		10	COAL: as above. .
2032	2035	80	CLAYSTONE / CARBONACEOUS CLAYSTONE: as above..
		10	SANDSTONE : as above
		10	COAL: as above. .
2035	2040	90	CLAYSTONE / CARBONACEOUS CLAYSTONE: as above..
		10	SANDSTONE : as above
		Tr	COAL: as above. .
2040	2042.5	50	CLAYSTONE / CARBONACEOUS CLAYSTONE: as above..
		30	SANDSTONE : medium olive grey, clear to lesser opaque quartz grains, fine to very coarse grained, dominantly medium to lower coarse grained, moderately well sorted, subangular to subrounded, traces of pyrite and coaly fragments and micas, ?trace kaolin, varying disaggregated to moderately cemented aggregates, siliceous cemented, nil to poor inferred porosity, maybe minor fair porosity. NO SHOWS.
		20	COAL: as above. Distinct gas peak associated with this coal seam.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
2042.5	2045	45	CLAYSTONE / CARBONACEOUS CLAYSTONE: as above..
		50	SANDSTONE : medium olive grey, clear to lesser opaque quartz grains, fine to very coarse grained, dominantly medium to lower coarse grained, moderately well sorted, subangular to subrounded, traces of pyrite and coaly fragments and micas, ?trace kaolin, varying disaggregated to moderately cemented aggregates, siliceous cemented, nil to poor inferred porosity, maybe minor fair porosity. NO SHOWS.
		5	COAL: as above.
2045	2047	40	CLAYSTONE : as above..
		20	SANDSTONE : medium olive grey, clear to lesser opaque quartz grains, fine to very coarse grained, dominantly medium to lower coarse grained, moderately well sorted, subangular to subrounded, traces of pyrite and coaly fragments and micas, ?trace kaolin, varying disaggregated to moderately cemented aggregates, siliceous cemented, nil to poor inferred porosity, maybe minor fair porosity. NO SHOWS.
		40	HIGHLY DEGRADED VOLCANICS: varicoloured and mottled but mostly lighter shades of very light grey and whitish grey, with lesser bluish grey, minor amounts mottled light/bright green and mottled medium/dark grey, soft to very hard, mostly soft tending firm to moderately hard, sub-blocky, minor cuttings with greasy texture, microcrystalline degraded volcanic textures, rare cuttings with remnant aphanatic texture. Good traces of light grey and yellowish brown chert. Definite degraded appearance.
2047	2050	90	HIGHLY DEGRADED VOLCANICS: as above.
		10	SANDSTONE: as above, cavings.
2050	2055	100	WEATHERED VOLCANICS: varicoloured and mottled, white to very light grey, and whitish grey, with light to medium bluish grey, rare mottled light green to greyish green and mottled medium to dark grey, soft to very hard, predominantly soft to moderately hard, amorphous to sub-blocky, minor cuttings with greasy texture, microcrystalline weathered volcanic textures, rare cuttings with remnant aphanatic texture, trace light grey and yellowish brown chert, trace black lithics.
2055	2060	100	WEATHERED VOLCANICS: generally as above, becoming less weathered, common loose medium to coarse quartz and feldspathic grains, minor nodular pyrite, trace mica, trace black lithics.
2060	2065	80	VOLCANICS: mottled very light grey, medium grey to greyish black, hard to very hard, returned as angular to subangular aggregates and fine to medium loose grains, quartz rich, common feldspars and black lithics ?mafics, trace mica and nodular pyrite, trace chert.
		20	WEATHERED VOLCANICS: generally as above
2065	2070	100	VOLCANICS: as above.
2070	2072	80	VOLCANICS : as above
		20	CLAYSTONE/CARB.CLAYSTONE: medium to lesser darker shades of greyish brown, very soft to soft and dispersive, ?in situ.
POOH for bit change and modification to BHA - pick up new PDC bit and AGS, lay out mud motor.			
2072	2075	60	CLAYSTONE: medium light grey to light olive grey, firm to moderately hard, sub blocky to blocky, trace to minor quartz silt, trace very fine grained quartz, trace to locally common disseminated pyrite, trace nodular pyrite, trace glauconite, nil to trace carbonaceous specks.
		40	WEATHERED VOLCANICS: generally as above
2075	2080	60	CLAYSTONE: medium light grey to light olive grey, light brownish grey to light brown in part, firm to moderately hard, sub blocky to blocky, trace to minor quartz silt, trace very fine grained quartz, trace to locally common disseminated pyrite, trace nodular pyrite, trace glauconite, trace carbonaceous specks, trace carbonaceous wisps in part.
		30	WEATHERED VOLCANICS: generally as above
		10	COAL: brownish black to predominantly black, earthy to sub vitreous, brittle, blocky to sub conchoidal fracture, lignitic in part.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
2080	2085	80	CLAYSTONE: medium light grey to light olive grey, light brownish grey to light brown in part, firm to moderately hard, sub blocky to blocky, trace to minor quartz silt, trace very fine grained quartz, trace to locally common disseminated pyrite, trace nodular pyrite, trace glauconite, trace carbonaceous specks, trace carbonaceous wisps in part.
		15	WEATHERED VOLCANICS: generally as above, cavings.
		5	SANDSTONE: light brownish grey, clear to translucent grains, hard aggregates, fine grained, angular to sub angular, well sorted, abundant strong silica cement, rare pyrite cement, trace lithic grains, no visible porosity. No shows.
		Tr	COAL: brownish black to predominantly black, earthy to sub vitreous, brittle, blocky to sub conchoidal fracture, lignitic in part. Sample predominantly bit generated texture.
2085	2090	90	SANDSTONE: white to very light grey, clear to translucent grains, returned loose, very fine to medium grained, predominantly fine to medium, trace coarse, sub angular to sub rounded, minor angular, moderately sorted, trace silica cement, rare pyrite cement, trace lithic grains, fair inferred porosity. No shows.
		5	CLAYSTONE: as above.
		5	COAL: as above.
			Sample contains common bit generated rock flour.
2090	2095	95	SANDSTONE: white to very light grey, clear to translucent grains, predominantly returned loose, trace friable aggregates, fine to coarse grained, predominantly medium to coarse, trace very coarse, sub angular to sub rounded, minor angular, moderately to well sorted, trace silica cement, trace pyrite cement, trace very light grey argillaceous matrix in aggregates, trace lithic grains, fair inferred porosity. No shows.
		5	CLAYSTONE: as above.
		Tr	COAL: as above.
2095	2100	95	SANDSTONE: generally as above, trace firm silica cemented aggregates.
		5	CLAYSTONE: as above.
2100	2105	100	SANDSTONE: white to very light grey, clear to translucent grains, predominantly returned loose, nil to trace friable aggregates, fine to coarse grained, predominantly medium to coarse, sub angular to sub rounded, minor angular, well sorted, trace intergranular silica cement, trace lithic grains, fair to good inferred porosity. No shows.
		Tr	CLAYSTONE: as above.
2105	2110	100	SANDSTONE: generally as above, trace nodular pyrite.
		Tr	CLAYSTONE: as above.
2110	2115	100	SANDSTONE: generally as above, trace nodular pyrite.
		Tr	CLAYSTONE: as above.
2115	2120		Sample contains common bit generated rock flour.
		100	SANDSTONE: white to very light grey, clear to translucent grains, predominantly returned loose, trace friable aggregates, fine to coarse grained, predominantly medium, trace very coarse, sub angular to sub rounded, minor angular, moderately to well sorted, trace silica cement, trace pyrite cement, trace very light grey argillaceous matrix in aggregates, trace lithic grains, trace thinly interbedded coal laminae. trace nodular pyrite, fair to good inferred porosity. No shows.
			CLAYSTONE: as above.
			Sample contains common bit generated rock flour.
2120	2125	100	SANDSTONE: as above.
		Tr	CLAYSTONE: as above.
			Sample contains common bit generated rock flour.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
2125	2130	100	SANDSTONE: white to very light grey, clear to translucent grains, predominantly returned loose, trace friable aggregates, fine to coarse grained, predominantly medium, trace very coarse, sub angular to sub rounded, minor angular, moderately to well sorted, trace silica cement, trace pyrite cement, trace very light grey argillaceous matrix in aggregates, trace lithic grains, trace thinly interbedded coal laminae. trace nodular pyrite, fair to good inferred porosity. No shows.
		Tr	CLAYSTONE: light brownish grey to light brown, firm to moderately hard, sub blocky to blocky, trace to minor quartz silt, trace very fine grained quartz, trace disseminated pyrite, trace nodular pyrite, minor to common carbonaceous wisps and specks, grading to Carbonaceous Claystone. Sample contains common bit generated rock flour.
2130	2135	100	SANDSTONE: as above.
		Tr	CLAYSTONE: as above. Sample contains common bit generated rock flour.
2135	2140	100	SANDSTONE: as above.
		Tr	CLAYSTONE: as above. Sample contains common bit generated rock flour.
2140	2145	100	SANDSTONE: as above.
		Tr	CLAYSTONE: as above. Sample contains common bit generated rock flour.
2145	2150	100	SANDSTONE: as above.
		Tr	CLAYSTONE: as above. Sample contains common bit generated rock flour.
2150	2155	100	SANDSTONE: as above.
		Tr	CLAYSTONE: as above. Sample contains common bit generated rock flour.
2155	2160	95	SANDSTONE: white to very light grey, clear to translucent grains, predominantly returned loose, trace friable aggregates, fine to coarse grained, predominantly medium, trace very coarse, sub angular to sub rounded, minor angular, moderately to well sorted, trace silica cement, trace pyrite cement, trace very light grey argillaceous matrix in aggregates, trace lithic grains, trace nodular pyrite, fair to good inferred porosity. No shows.
		5	CLAYSTONE: light brownish grey to light brown, firm to moderately hard, sub blocky to blocky, trace to minor quartz silt, trace very fine grained quartz, trace disseminated pyrite, trace nodular pyrite, minor to common carbonaceous wisps and specks, grading to Carbonaceous Claystone. Sample contains common bit generated rock flour.
2160	2165	100	SANDSTONE: as above.
		Tr	CLAYSTONE: as above. Sample contains common bit generated rock flour.
2165	2170	95	SANDSTONE: white to very light grey, clear to translucent grains, predominantly returned loose, trace friable aggregates, fine to coarse grained, predominantly medium to coarse, trace very coarse, sub angular to sub rounded, minor angular, moderately to well sorted, trace silica cement, trace pyrite cement, trace very light grey argillaceous matrix in aggregates, trace lithic grains, trace nodular pyrite, fair to good inferred porosity. No shows.
		5	CLAYSTONE: as above. Sample contains common bit generated rock flour.
2170	2175	60	SANDSTONE: white to very light grey, clear to translucent grains, predominantly returned loose, trace friable aggregates, fine to coarse grained, predominantly medium to coarse, trace very coarse, sub angular to sub rounded, minor angular, moderately to well sorted, trace silica cement, trace pyrite cement, trace very light grey argillaceous matrix in aggregates, trace lithic grains, trace nodular pyrite, fair to good inferred porosity. No shows.
		40	CLAYSTONE: medium light grey to light olive grey, light brownish grey to light brown in part, firm to moderately hard, sub blocky to blocky, trace to minor quartz silt, trace very fine grained quartz, trace disseminated pyrite, trace carbonaceous specks, trace carbonaceous wisps in part.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
2175	2180	70	SANDSTONE: as above.
		30	CLAYSTONE: as above. Sample contains abundant bit generated rock flour.
2180	2185	90	SANDSTONE: as above.
		10	CLAYSTONE: as above. Sample contains abundant bit generated rock flour.
2185	2190	70	SANDSTONE: white to very light grey, clear to translucent grains, predominantly returned loose, trace friable aggregates, fine to coarse grained, predominantly medium, trace very coarse, sub angular to sub rounded, minor angular, moderately to well sorted, trace silica cement, trace pyrite cement, trace very light grey argillaceous matrix in aggregates, trace lithic grains, trace nodular pyrite, fair to good inferred porosity. No shows.
		30	CLAYSTONE: as above. Sample contains abundant bit generated rock flour.
2190	2195	70	SANDSTONE: generally as above, trace to rare very coarse grains.
		30	CLAYSTONE: as above. Sample contains abundant bit generated rock flour.
2195	2200	100	SANDSTONE: white to very light grey, clear to translucent grains, predominantly returned loose, trace friable aggregates, fine to coarse grained, predominantly medium to coarse, trace very coarse, sub angular to sub rounded, minor angular, moderately to well sorted, trace silica cement, trace pyrite cement, trace very light grey argillaceous matrix in aggregates, trace lithic grains, trace nodular pyrite, fair to good inferred porosity. No shows.
		Tr	CLAYSTONE: as above. Sample contains common bit generated rock flour.
2200	2205	100	SANDSTONE: generally as above, trace to rare very coarse grains.
		Tr	CLAYSTONE: as above. Sample contains abundant bit generated rock flour.
2205	2210	100	SANDSTONE: generally as above, trace to rare very coarse grains.
		Tr	CLAYSTONE: as above. Sample contains abundant bit generated rock flour.
2210	2215	95	SANDSTONE: generally as above, becoming predominantly coarse grained.
		5	CLAYSTONE: generally as above, trace nodular pyrite. Sample contains abundant bit generated rock flour.
2215	2220	95	SANDSTONE: as above.
		5	CLAYSTONE: as above. Sample contains abundant bit generated rock flour.
2220	2225	80	SANDSTONE: white to very light grey, clear to translucent grains, predominantly returned loose, trace friable aggregates, fine to coarse grained, predominantly fine to medium, trace very coarse, sub angular to sub rounded, minor angular, well sorted, trace silica cement, trace very fine to fine grained strongly silica cemented laminae, trace very light grey argillaceous matrix in aggregates, trace lithic grains, trace nodular pyrite, fair to good inferred porosity. No shows.
		20	CLAYSTONE: medium light grey to light olive grey, light brownish grey to light brown in part, firm to moderately hard, sub blocky to blocky, trace to minor quartz silt, trace very fine grained quartz, trace disseminated pyrite, trace carbonaceous specks, trace carbonaceous wisps in part.
2225	2230	90	SANDSTONE: as above.
		10	CLAYSTONE: as above. Sample contains abundant bit generated rock flour.
2230	2235	100	SANDSTONE: white to very light grey, clear to translucent grains, predominantly returned loose, trace friable aggregates, fine to coarse grained, predominantly medium to coarse, trace very coarse and granule, sub angular to sub rounded, minor angular, moderately well sorted, trace silica cement, trace pyrite cement, trace very light grey argillaceous matrix in aggregates, trace lithic grains, trace nodular pyrite, fair to good inferred porosity. No shows.
		Tr	CLAYSTONE: as above. Sample contains abundant bit generated rock flour.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
2235	2240	70	SANDSTONE: as above.
		30	CLAYSTONE: light brownish grey to light brown, firm to moderately hard, sub blocky to blocky, minor to common quartz silt, trace very fine grained quartz, trace disseminated pyrite, trace nodular pyrite, minor to common carbonaceous wisps and specks, grading to Carbonaceous Claystone. Sample contains common bit generated rock flour.
2240	2245	60	SANDSTONE: as above.
		30	CLAYSTONE: as above.
		10	COAL: brownish black to predominantly black, earthy to sub vitreous, brittle, blocky to sub conchoidal fracture, lignitic. Sample predominantly bit generated texture.
2245	2250	60	SANDSTONE: as above.
		40	CLAYSTONE: as above.
		Tr	COAL: as above.
2250	2255	70	SANDSTONE: white to very light grey, clear to translucent grains, predominantly returned loose, fine to coarse grained, predominantly fine to medium, trace very coarse, sub angular to sub rounded, minor angular, moderately well sorted, trace silica cement, trace pyrite cement, trace lithic grains, trace nodular pyrite, fair inferred porosity. No shows.
		30	CLAYSTONE: as above.
		Tr	COAL: as above.
		90	SANDSTONE: as above.
2255	2260	10	CLAYSTONE: as above.
		Tr	COAL: as above.
2260	2265	75	SANDSTONE: as above.
		10	CLAYSTONE: as above.
		15	COAL: as above.
2265	2270	90	SANDSTONE: as above.
		5	CLAYSTONE: as above.
		5	COAL: as above.
2270	2275	60	SANDSTONE: generally as above, white to very light grey, clear to translucent grains, returned loose, fine to coarse grained, predominantly fine to medium, trace very coarse, sub angular to sub rounded, minor angular, moderately well sorted, trace silica cement, trace pyrite cement, trace lithic grains, trace nodular pyrite, fair inferred porosity. No shows.
		40	CLAYSTONE: generally as above, light brownish grey to light brown, firm to moderately hard, sub blocky to blocky, minor to common quartz silt, trace very fine grained quartz, trace disseminated pyrite, trace nodular pyrite, minor to common carbonaceous wisps and specks, grading to Carbonaceous Claystone. Sample contains common bit generated rock flour.
2275	2280	100	SANDSTONE: as above.
		Tr	CLAYSTONE: as above. Sample contains common bit generated rock flour.
2280	2285	100	SANDSTONE: as above.
		Tr	CLAYSTONE: as above. Sample contains common bit generated rock flour.
2285	2290	90	SANDSTONE: as above.
		10	CLAYSTONE: as above. Sample contains common bit generated rock flour.
2290	2295	70	SANDSTONE: as above.
		30	CLAYSTONE: medium light grey to light olive grey, light brownish grey to light brown in part, firm to moderately hard, sub blocky to blocky, trace to minor quartz silt, trace very fine grained quartz, trace disseminated pyrite, trace nodular pyrite, trace carbonaceous specks, trace carbonaceous wisps in part.
2295	2300	70	SANDSTONE: as above.
		30	CLAYSTONE: as above. Sample contains common bit generated rock flour.

Interval (m)		Lithology / Show Description	
From	To	%	
2300	2305	60	SANDSTONE: as above.
		40	CLAYSTONE: as above.
2305	2310		Sample contains common bit generated rock flour.
		70	SANDSTONE: as above.
2310	2315	30	CLAYSTONE: as above.
			Sample contains common bit generated rock flour.
2315	2320	80	SANDSTONE: as above.
		20	CLAYSTONE: as above.
2320	2325		Sample contains common bit generated rock flour.
		90	SANDSTONE: as above.
2325	2330	10	CLAYSTONE: as above.
			Sample contains common bit generated rock flour.
2330	2335	90	SANDSTONE: as above.
		10	CLAYSTONE: as above.
2335	2340		Sample contains common bit generated rock flour.
		90	CLAYSTONE / CARBONACEOUS CLAYSTONE: medium to darker shades of greyish brown and brown, lesser amounts blackish brown, varying soft to moderately hard, mostly soft to tending firm, sub blocky to blocky, trace to minor quartz silt and very fine grained quartz as matrix and laminations/microlaminations, trace disseminated pyrite and trace nodular pyrite and good trace - 10% carbonaceous specks and laminations in places, non calcareous. Gradational in places to arenaceous claystone.
2340	2345	10	SANDSTONE: as above
		70	CLAYSTONE: as above.
2345	2350	30	SANDSTONE/ARGILLACEOUS SANDSTONE: light to medium shades of olive grey with minor amounts medium shades of greyish brown, very fine to medium grained, dominantly very fine to fine grained, well sorted, dominantly subangular, mostly firm to hard aggregates, trace to 10% disseminated carbonaceous material and laminae, trace of kaolin and micromicas, nil to very poor visual porosity. Clearly gradational in part to arenaceous claystone and siltstone suggesting thin finer grained interbeds. NO SHOWS.
		60	CLAYSTONE: as above.
2350	2355	40	SANDSTONE/ARGILLACEOUS SANDSTONE: light to medium shades of olive grey with minor amounts medium shades of greyish brown, minor medium to dark brown where more carbonaceous, very fine to medium grained, dominantly very fine to fine grained, well sorted, dominantly subangular, mostly firm to hard aggregates, trace to 10% disseminated carbonaceous material and laminae, 20-40% clay minerals as matrix and laminae/microlaminae in places, trace of kaolin and micromicas, nil to very poor visual porosity. Clearly gradational in part to arenaceous claystone and siltstone suggesting thin finer grained interbeds. NO SHOWS.
		50	CLAYSTONE: as above.
2355		50	SANDSTONE/ARGILLACEOUS SANDSTONE: as above, variable suggesting that finely bedded/laminated but finer grained overall with mostly nil to very poor inferred porosity. NO SHOWS.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
2355	2360	90	SANDSTONE : light olive grey, minor light whitish grey and yellowish brown, mostly clear and opaque quartz grains, very fine to coarse grained, dominantly medium grained or medium to coarse grained, dominantly subangular to subrounded, mostly appears clean but with trace to occasionally 10% carbonaceous flecks in places, trace pyrite, trace kaolin, varying disaggregated/loose quartz grains to moderately to highly siliceous cemented aggregates, varying poor to good inferred porosity, mostly fair to good inferred porosity. NO SHOWS.
		10	CLAYSTONE : as above.
2360	2365	90	SANDSTONE : as above. NO SHOWS.
		10	CLAYSTONE : as above.
2365	2370	90	SANDSTONE : as above. NO SHOWS.
		10	CLAYSTONE : as above.
2370	2375	100	SANDSTONE : as above. NO SHOWS.
		TR	CLAYSTONE : as above.
2375	2380	70	SANDSTONE : as above. NO SHOWS.
		20	SANDSTONE / ARGILLACEOUS SANDSTONE : as above, very fine to fine grained with variable argillaceous and carbonaceous content, all visually very poor. NO SHOWS.
		10	CLAYSTONE / CARBONACEOUS CLAYSTONE : as above.
2380	2385	60	SANDSTONE/ARGILLACEOUS SANDSTONE : light to medium shades of olive grey with minor amounts medium shades of greyish brown, minor medium to dark brown where more carbonaceous, very fine to medium grained, dominantly very fine to fine grained, well sorted, dominantly subangular, varying soft friable to very hard, mostly firm to hard aggregates, trace to 10% disseminated carbonaceous material and laminae, 20-40% clay minerals as matrix and laminae/microlaminae in places, trace of kaolin and micromicas, nil to very poor visual porosity. Clearly gradational in part to arenaceous claystone and siltstone suggesting thin finer grained interbeds. NO SHOWS.
		40	CLAYSTONE / CARBONACEOUS CLAYSTONE : medium to darker shades of greyish brown and brown, lesser amounts blackish brown, varying soft to very hard, mostly soft to tending firm, somewhat dispersive, sub blocky to blocky, very minor subfissile, trace to minor quartz silt and very fine grained quartz as matrix and laminations/microlaminations in places, trace disseminated pyrite and trace nodular pyrite, good trace - 10% carbonaceous specks and carbonaceous/coaly laminations in places, non calcareous but silicified in places. Sometimes gradational in places to arenaceous claystone and siltstone of same type.
		Gd	SILICIFIED BLACK SHALE : grey black to black, hard to very hard, partly silicified, microlaminated, minor disseminated pyrite.
		Tr	
2385	2390	70	SANDSTONE/ARGILLACEOUS SANDSTONE : as above. NO SHOWS.
		30	CLAYSTONE / CARBONACEOUS CLAYSTONE : as above.
2390	2395	60	SANDSTONE/ARGILLACEOUS SANDSTONE : as above. NO SHOWS.
		30	CLAYSTONE / CARBONACEOUS CLAYSTONE : as above.
		10	COAL and SILICIFIED BLACK SHALE : grey black to black, hard to very hard, partly silicified, microlaminated, minor disseminated pyrite.
2395	2400	60	SANDSTONE/ARGILLACEOUS SANDSTONE : as above. NO SHOWS.
		30	CLAYSTONE / CARBONACEOUS CLAYSTONE : as above.
		Tr	COAL and SILICIFIED BLACK SHALE : grey black to black, hard to very hard, partly silicified, microlaminated, minor disseminated pyrite.

Interval (m)			Lithology / Show Description
From	To	%	
2400	2405	50	SANDSTONE: light olive grey, minor light whitish grey and yellowish brown, mostly clear and opaque quartz grains, very fine to coarse grained, dominantly medium grained or medium to coarse grained, dominantly subangular to subrounded, mostly appears clean but with trace to occasionally 10% carbonaceous flecks in places, trace pyrite, trace kaolin as matrix, trace micas, varying disaggregated/loose quartz grains to moderately to occasionally highly siliceous cemented aggregates, varying poor to good inferred porosity, mostly fair to good inferred porosity. WEAK SHOWS - 5-10% grain aggregates with even but subdued yellowish sample fluorescence (same on freshly broken surfaces), delayed slowly fusing whitish blue solvent cut which intensifies slowly over several minutes, moderate yellowish ring residue under UV light. Faint petroliferous odours from bulk unwashed cuttings this depth.
		20	SANDSTONE/ARGILLACEOUS SANDSTONE: as above. NO SHOWS.
		30	CLAYSTONE / CARBONACEOUS CLAYSTONE: as above.
2405	2410	90	SANDSTONE: light olive grey, minor light whitish grey and yellowish brown, mostly clear and opaque quartz grains, very fine to coarse grained, dominantly medium grained or medium to coarse grained, dominantly subangular to subrounded, mostly appears clean but with trace to occasionally 10% carbonaceous flecks in places, trace pyrite, trace kaolin, conspicuous balls of white quartz 'rock flour' formed by PDC bit, varying disaggregated/loose quartz grains to moderately to highly siliceous cemented aggregates, varying poor to good inferred porosity, mostly fair to good inferred porosity. WEAK SHOWS - 5-10% grain aggregates with even but subdued yellowish sample fluorescence (same on freshly broken surfaces), delayed slowly fusing whitish blue solvent cut which intensifies slowly over several minutes, moderate yellowish ring residue under UV light. Faint petroliferous odours from bulk unwashed cuttings this depth.
		10	CLAYSTONE / CARBONACEOUS CLAYSTONE: as above
		95	SANDSTONE : as above, WEAK SHOWS as above.
2410	2415	5	CLAYSTONE / CARBONACEOUS CLAYSTONE: as above
		95	SANDSTONE : as above, VERY WEAK SHOWS with only traces of fluorescence as described above.
		5	CLAYSTONE / CARBONACEOUS CLAYSTONE: as above
2415	2420	95	SANDSTONE : as above, VERY WEAK SHOWS with only traces of fluorescence as described above.
		5	CLAYSTONE / CARBONACEOUS CLAYSTONE: as above
		90	CLAYSTONE / CARBONACEOUS CLAYSTONE: medium to darker shades of greyish brown and brown, lesser amounts blackish brown, mostly medium greyish brown to brownish grey, varying soft to very hard, mostly soft to tending firm, somewhat dispersive, sub blocky to blocky, very minor subfissile, trace to minor quartz silt and very fine grained quartz as matrix and laminations/microlaminations in places, trace disseminated pyrite and trace nodular pyrite, good trace - 10% carbonaceous specks and carbonaceous/coaly laminations in places, non calcareous but clearly silicified and very hard in places. Sometimes gradational in places to arenaceous claystone and siltstone of same type.
2420	2425	10	SANDSTONE: as above. NO SHOWS.
		70	HIGHLY CARBONACEOUS CLAYSTONE: dark brown to blackish brown, soft to moderately hard, mostly soft to firm, sub-blocky to subfissile, moderate to common carbonaceous and coaly material as matrix and laminae/microlaminae, trace micaceous, with very fine quartz sand laminations and microlaminations in places, minor gradational to arenaceous claystone, non calcareous,
		20	COAL: varying brownish black to lesser black, moderately hard to hard, brittle, angular to conchoidal surfaces, high to moderate ash, partly gradational in places to highly carbonaceous claystone.
2425	2430	10	SANDSTONE/ ARGILLACEOUS SANDSTONE: very fine to fine grained type. NO SHOWS.
		60	HIGHLY CARBONACEOUS CLAYSTONE: as above.
		30	COAL: as above.
2430	2435	10	SANDSTONE/ ARGILLACEOUS SANDSTONE

Interval (m)		Lithology / Show Description	
From	To	%	
2435	2440	50	HIGHLY CARBONACEOUS CLAYSTONE: as above.
		20	COAL: as above.
		30	FINE SANDSTONE/ ARGILLACEOUS SANDSTONE: light to medium shades of olive grey with minor amounts medium shades of greyish brown, minor medium to dark brown where more carbonaceous, very fine to medium grained, dominantly very fine to fine grained, well sorted, dominantly subangular, varying soft/friable to very hard, mostly firm to hard aggregates, trace to 10% disseminated carbonaceous material and laminae, 20-40% clay minerals as matrix and laminae/microlaminae in places, trace of kaolin and micromicas, nil to very poor visual porosity. Clearly gradational in part to arenaceous claystone and siltstone suggesting thin finer grained interbeds. NO SHOWS.
2440	2445	80	HIGHLY CARBONACEOUS CLAYSTONE: as above
		Tr	COAL: as above
		20	SANDSTONE/ ARGILLACEOUS SANDSTONE: as above very fine to fine grained type. NO SHOWS.
2445	2450	80	HIGHLY CARBONACEOUS CLAYSTONE: as above
		Tr	COAL: as above
		20	SANDSTONE/ ARGILLACEOUS SANDSTONE: as above, very fine to fine grained type. NO SHOWS.
2450	2452.5	60	HIGHLY CARBONACEOUS CLAYSTONE: as above
		TR	COAL: as above
		40	SANDSTONE: light whitish grey to light olive grey, very fine to coarse grained, dominantly fine to medium grained, moderately well sorted, appears clean , traces of micas, trace carbonaceous debris, common balls of ground up whitish 'rock flour' from PDC bit, quartz grains vary disaggregated/loose to varying weakly to moderately cemented aggregates. Inferred poor to fair intergranular porosity. FAIR SHOW - PDC bit generated balls of quartz rock flour and grain aggregates both give moderately bright whitish yellow sample fluorescence, same give almost immediate fusing fair intensity bluish solvent cut, intensifies over 3-4 minutes to moderately bright whitish blue, fair residue ring after several minutes.
2452.5	2455	80	HIGHLY CARBONACEOUS CLAYSTONE: as above
		TR	COAL: as above
		20	SANDSTONE: as above with FAIR SHOW - as above
2455	2460	100	HIGHLY CARBONACEOUS CLAYSTONE: as above
		TR	COAL: as above
2460	2465	90	SANDSTONE: light whitish grey to light olive grey, very fine to very coarse grained, dominantly medium grained, moderately well sorted, appears clean , traces of micas, trace carbonaceous debris, common balls of ground up whitish 'rock flour' from PDC bit, quartz grains vary disaggregated/loose to varying weakly to moderately cemented aggregates. Inferred poor to fair intergranular porosity. FAIR SHOW tending GOOD SHOW- PDC bit generated balls of quartz rock flour and grain aggregates both give moderately bright whitish yellow sample fluorescence while the washed disaggregated/loose quartz grains also now give a more subdued yellowish UV sample fluorescence despite having been moderately washed, same give almost immediate fusing fair intensity bluish solvent cut, intensifies over 3-4 minutes to moderately bright whitish blue which leaves a fair residue ring after several minutes.
		10	HIGHLY CARBONACEOUS CLAYSTONE: as above
		70	SANDSTONE: as above. FAIR SHOW tending GOOD SHOW.
2465	2470	30	HIGHLY CARBONACEOUS CLAYSTONE: as above
		100	SANDSTONE: light whitish grey to light olive grey, as above except dominantly medium to coarse grained quartz sand, FAIR SHOW tending GOOD SHOW- as above.
		Tr	HIGHLY CARBONACEOUS CLAYSTONE: dark brown to blackish brown, soft to moderately hard, mostly soft to firm, sub-blocky to subfissile, moderate to common carbonaceous and coaly material as matrix and laminae/microlaminae, trace micaceous, with very fine quartz sand laminations and microlaminations in places, minor gradational to arenaceous claystone, non calcareous.
2470	2475	100	

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
2475	2480	100	SANDSTONE: light whitish grey to light olive grey, as above except dominantly medium to coarse grained quartz sand, FAIR SHOW tending GOOD SHOW- as above.
		Tr	HIGHLY CARBONACEOUS CLAYSTONE: as above
2480	2485	100	SANDSTONE: very light grey to light olive grey, very fine to coarse grained, predominantly medium grained, returned loose, angular to sub angular, moderately well sorted, trace mica, trace carbonaceous fragments, common rock flour, nil to trace cemented aggregates. Inferred poor to fair intergranular porosity. FAIR SHOW quartz rock flour and grain aggregates both give dull yellow white direct fluorescence, very weak yellow white to bluish white cut, nil residue.
		Tr	CARBONACEOUS CLAYSTONE: brownish grey to brownish black, soft to moderately hard, predominantly soft to firm, sub-blocky to subfissile, minor to common carbonaceous and coaly material as matrix and laminae/microlaminae, trace mica, very fine quartz sand laminations and microlaminations in part, grading to arenaceous claystone, non calcareous
2485	2490	100	SANDSTONE: as above.
		Tr	CARBONACEOUS CLAYSTONE: as above.
2490	2495	100	SANDSTONE: as above.
2505	2500	100	SANDSTONE: as above.
2500	2505	100	SANDSTONE: very light grey to light olive grey, very fine to coarse grained, predominantly medium grained, returned loose, trace strongly cemented aggregates, angular to sub angular, moderately well sorted, trace mica, strong silica and calcite cement in aggregates, trace argillaceous matrix, trace black lithic grains, trace carbonaceous fragments, common rock flour. Poor visual porosity. POOR SHOW quartz rock flour and grain aggregates both give very dull yellow white direct fluorescence, very weak yellow white to bluish white cut, nil residue.
2505	2510	100	SANDSTONE: as above.
2510	2515	90	SANDSTONE: as above.
		10	CLAYSTONE: medium grey to brownish grey, firm to moderately hard, sub-blocky to subfissile, minor to common carbonaceous flecks, trace mica, trace very fine quartz, trace nodular pyrite, non calcareous.
2515	2520	95	SANDSTONE: very light grey to light olive grey, very fine to medium grained, predominantly fine grained, returned loose, trace strongly cemented aggregates, angular to sub angular, well sorted, strong silica and calcite cement in aggregates, trace argillaceous matrix, trace black lithic grains, nil to trace carbonaceous fragments, common rock flour. Poor visual porosity. POOR SHOW quartz rock flour and grain aggregates both give very dull yellow white direct fluorescence, very weak yellow white to bluish white cut, nil residue.
		5	CLAYSTONE: as above.
2520	2525	100	SANDSTONE: as above.
		Tr	CLAYSTONE: as above.
2525	2530	60	SANDSTONE: generally as above, very light grey to light olive grey, very fine to medium grained, predominantly fine grained, returned loose, trace strongly cemented aggregates, angular to sub angular, well sorted, strong silica and calcite cement in aggregates, trace argillaceous matrix, trace black lithic grains, nil to trace carbonaceous fragments, common rock flour. Poor visual porosity. POOR SHOW quartz rock flour and grain aggregates both give very dull yellow white direct fluorescence, very weak yellow white to bluish white cut, nil residue.
		40	CLAYSTONE: brownish grey to brownish black, soft to moderately hard, predominantly soft to firm, sub-blocky to subfissile, minor to common carbonaceous and coaly laminae, trace mica, very fine quartz sand laminations and microlaminations in part, grading to arenaceous claystone, non calcareous.
2530	2532	80	SANDSTONE: generally as above, trace very coarse and granule sized grains, commonly bit fractured.
		20	CLAYSTONE: as above.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
TD'd the 12¼" Hole section 2532mMDRT (2439.26mTVDRT) reached 9:20 hrs 19/01/05. Completed Schlumberger wireline logging Suite 1 / Runs 1-5. Run 9 5/8" casing to 2527m MDRT, cemented same, test BOPs and drill ahead 8 1/2" hole section.			
2532	2532		Drilled 3m of new formation from 2332-2535m for PIT (pressure integrity test). Appeared to be contaminated cuttings sample after trip back in the hole and unclear which cavings from the rathole and which new lithology drilled.....
		50	SANDSTONE: generally as above, varying cemented aggregates to loose disaggregated grains. Nil to poor visual porosity from aggregates. POOR SHOW 5-10% quartz rock flour and grain aggregates both give very dull yellow white direct fluorescence, very weak yellow white to bluish white cut, nil residue.
		50	CLAYSTONE: medium to sometimes darker shades of brownish grey, soft to moderately hard, predominantly soft to firm, sub-blocky to subfissile, minor to common carbonaceous and coaly laminae, non calcareous.
		10	CEMENT
2535	2540	90	SANDSTONE: generally as above, very light grey to light olive grey, medium to coarse grained, predominantly medium, trace very coarse, predominantly returned loose, minor strongly cemented aggregates, angular to sub angular, moderately well sorted, strong silica cement in aggregates, trace argillaceous matrix, trace black lithic grains, trace carbonaceous and coaly fragments, common rock flour, poor visual porosity. POOR SHOW quartz rock flour and grain aggregates both give very dull yellow white direct fluorescence, very weak yellow white to bluish white cut, nil residue.
		10	CLAYSTONE: light brownish grey to brownish grey, soft to moderately hard, predominantly soft to firm, sub-blocky to subfissile, minor to common carbonaceous and coaly laminae, trace mica, very fine quartz sand laminations and microlaminations in part, grading to arenaceous claystone, non calcareous. **Sample contains common cavings and cement contamination.
2540	2545	100	SANDSTONE: generally as above, very light grey to light olive grey, medium to coarse grained, predominantly medium, trace very coarse, predominantly returned loose, minor strongly cemented aggregates, angular to sub angular, common bit fractured grains, moderately well sorted, strong silica cement in aggregates, trace argillaceous matrix, trace black lithic grains, trace carbonaceous and coaly fragments, trace nodular pyrite, common bit generated rock flour, poor visual porosity. POOR SHOW as above.
2545	2550	100	SANDSTONE: generally as above, very light grey to light olive grey, medium to coarse grained, predominantly medium grained, trace very coarse, predominantly returned loose, minor strongly cemented aggregates, angular to sub angular, common bit fractured grains, moderately well sorted, strong silica cement in aggregates, trace pyrite cement, trace argillaceous matrix, trace black lithic grains, trace carbonaceous and coaly fragments, trace nodular pyrite, common bit generated rock flour, poor visual porosity. POOR SHOW quartz rock flour and grain aggregates both give very dull yellow white direct fluorescence, very weak yellow white to bluish white cut, nil residue.
2550	2555	70	SANDSTONE: generally as above, very light grey to light olive grey, medium to coarse grained, predominantly medium grained, predominantly returned loose, minor strongly cemented aggregates, angular to sub angular, common bit fractured grains, well sorted, strong silica cement in aggregates, trace argillaceous matrix, trace black lithic grains, trace carbonaceous and coaly fragments, common bit generated rock flour, poor visual porosity in aggregates. POOR SHOW quartz rock flour and grain aggregates both give very dull yellow white direct fluorescence, very weak yellow white to bluish white cut, nil residue.
		30	COAL: brownish black to black, earthy to sub vitreous, brittle, blocky to sub conchoidal fracture, lignitic.

Interval (m)		Lithology / Show Description	
From	To	%	
2555	2560	30	SANDSTONE: generally as above, very light grey to light olive grey, fine to coarse grained, predominantly medium grained, varying disaggregated to hard/very hard aggregates, angular to sub angular, common bit fractured grains, well sorted, strong silica cement and some calcareous cementation in aggregates, trace argillaceous matrix, trace black lithic grains, trace carbonaceous and coaly fragments, common bit generated rock flour, poor visual porosity in aggregates. NO SHOWS , minor calcite mineral fluorescence.
		20	FINE SANDSTONE/ ARGILLACEOUS SANDSTONE: light to medium shades of olive grey with minor amounts medium shades of greyish brown, minor medium to dark brown where more carbonaceous, very fine to medium grained, dominantly very fine to fine grained, well sorted, dominantly subangular, varying soft/friable to very hard, mostly firm to hard aggregates, trace to 10% disseminated carbonaceous material and laminae, 20-40% clay minerals as matrix and laminae/microlaminae in places, trace of kaolin and micromicas, nil to very poor visual porosity. NO SHOWS.
		50	CLAYSTONE: light brownish grey to brownish grey, soft to moderately hard, predominantly soft to firm, sub-blocky to subfissile, minor to common carbonaceous and coaly laminae, trace mica, very fine quartz sand laminations and microlaminations in part, grading to arenaceous claystone and siltstone in part, non calcareous.
2560	2565	20	SANDSTONE: generally as above. NO SHOWS , minor calcite mineral fluorescence.
		20	FINE SANDSTONE/ ARGILLACEOUS SANDSTONE: as above, NO SHOWS.
		60	CLAYSTONE: as above.
2565	2570	80	SANDSTONE: very light grey to light olive grey, quartz rich, fine to granular, predominantly medium to lower coarse grained, varying disaggregated to only minor hard/very hard aggregates compared to sandstone's immediately above , subangular to subrounded , common bit fractured grains and some 'rock flour', moderately well sorted, trace argillaceous matrix, trace carbonaceous and coaly fragments, inferred fair to good intergranular porosity, poor visual porosity in aggregates. NO SHOWS , minor calcite mineral fluorescence.
		10	FINE SANDSTONE/ ARGILLACEOUS SANDSTONE: as above, NO SHOWS.
		10	CLAYSTONE: as above.
2570	2575	50	SANDSTONE: very light grey to light olive grey, quartz rich, fine to granular, predominantly medium to lower coarse grained, varying disaggregated to only minor hard/very hard aggregates, sub angular to subrounded , common bit fractured grains and some 'rock flour', moderately well sorted, trace argillaceous matrix, trace carbonaceous and coaly fragments, inferred fair to good intergranular porosity, poor visual porosity in aggregates. NO SHOWS , minor calcite mineral fluorescence.
		20	FINE SANDSTONE/ ARGILLACEOUS SANDSTONE: as above, NO SHOWS.
		30	CLAYSTONE: light to medium brownish grey otherwise as above.
2575	2580	20	SANDSTONE: as above. NO SHOWS , minor calcite mineral fluorescence.
		40	FINE SANDSTONE/ ARGILLACEOUS SANDSTONE: as above, NO SHOWS.
		40	CLAYSTONE: varying medium to darker shades of greyish brown to greyish black to olive black, very soft to soft and tending dispersive, non calcareous.
2580	2585	60	SANDSTONE: as above. NO SHOWS , minor calcite mineral fluorescence.
		20	FINE SANDSTONE/ ARGILLACEOUS SANDSTONE: as above, NO SHOWS.
		20	CLAYSTONE: varying medium to darker shades of greyish brown to greyish black to olive black, very soft to soft and tending dispersive, non calcareous.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
2585	2590	80	SANDSTONE: very light grey to light olive grey, quartz rich, fine to granular, predominantly medium to lower coarse grained, varying disaggregated to only minor hard/very hard aggregates, subangular to subrounded , common bit fractured grains and some 'rock flour', moderately well sorted, trace argillaceous matrix, race carbonaceous and coaly fragments, inferred fair to good intergranular porosity, poor visual porosity in aggregates. NO SHOWS , minor calcite mineral fluorescence.
		10	FINE SANDSTONE/ ARGILLACEOUS SANDSTONE: as above, NO SHOWS .
		10	CLAYSTONE: as above.
2590	2595	60	SANDSTONE: very light grey to light olive grey, quartz rich, fine to very coarse grained, predominantly medium grained, varying disaggregated to only minor hard/very hard aggregates, subangular to subrounded , common bit fractured grains and some 'rock flour', moderately well sorted, trace argillaceous matrix, race carbonaceous and coaly fragments, inferred fair to good intergranular porosity, poor visual porosity in aggregates. NO SHOWS , minor calcite mineral fluorescence.
		40	CLAYSTONE: mostly greyish brown, otherwise as above.
2595	2600	80	SANDSTONE: very light grey to light olive grey, quartz rich, fine to granular coarse grained, predominantly medium grained, moderately well sorted, varying disaggregated with minor hard/very hard aggregates, aggregates mostly siliceous cemented, subangular to subrounded , common bit fractured grains and some 'rock flour', moderately well sorted, trace argillaceous matrix (kaolin) , race carbonaceous and coaly fragments, trace pyrite, inferred fair to good intergranular porosity, poor visual porosity in aggregates. VERY WEAK SHOWS , 5-10% moderately bright yellowish white UV sample fluorescence, delayed fusing bluish solvent cut.
		20	CLAYSTONE: mostly greyish brown, otherwise as above.
2600	2605	90	SANDSTONE: very light grey to light olive grey, quartz rich, fine grained to granular, predominantly medium grained, moderately well sorted, subangular to subrounded varying disaggregated with lesser hard/very hard aggregates, aggregates mostly siliceous cemented, common bit fractured grains and some 'rock flour', moderately well sorted, trace argillaceous matrix (kaolin) , race carbonaceous and coaly fragments, trace pyrite, inferred fair to good intergranular porosity, poor visual porosity in aggregates. NO SHOWS .
		10	CLAYSTONE: mostly greyish brown, otherwise as above.
2605	2610	100	SANDSTONE: as above, NO SHOWS .
2610	2615	100	SANDSTONE: as above, NO SHOWS .
2615	2620	100	SANDSTONE: very light grey to light olive grey, fine to coarse grained, predominantly medium, moderately well sorted, subangular to subrounded, varying disaggregated with lesser hard/very hard aggregates, aggregates mostly siliceous cemented, common bit fractured grains and some 'rock flour', trace argillaceous matrix (kaolin), race carbonaceous and coaly fragments, trace pyrite, inferred fair to good intergranular porosity, poor visual porosity in aggregates. NO SHOWS .
2620	2625	100	SANDSTONE: as above, NO SHOWS .
2625	2630	70	SANDSTONE: as above, common pyrite NO SHOWS .
		30	CLAYSTONE: very light grey, brownish grey to olive grey, very soft to soft and tending dispersive, minor carbonaceous laminae, trace mica, non calcareous.
2630	2635	40	SANDSTONE: as above, common pyrite NO SHOWS .
		60	CLAYSTONE: as above.
Very slow ROP's below 2635m , cuttings becoming finer grained overall			
2635	2640	30	SANDSTONE: as above, NO SHOWS .
		70	CLAYSTONE: light brownish grey to brownish grey to dark brown and blackish brown, varying soft/dispersive to very hard, mostly varying sub-blocky to subfissile with minor fissile/shaley, minor to common carbonaceous and coaly laminae, trace mica, very fine quartz sand laminations and microlaminations in part, grading to arenaceous claystone and siltstone in part, non calcareous.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
2640	2645	50	FINE SANDSTONE/ ARGILLACEOUS SANDSTONE: light to medium shades of olive grey with minor amounts medium shades of greyish brown, and medium to dark brown where more carbonaceous, very fine to medium grained, dominantly very fine to fine grained, well sorted, dominantly subangular, varying soft/friable to very hard, mostly firm to very hard aggregates, trace to 10% disseminated carbonaceous material and laminae, 20-40% clay minerals as matrix and laminae/microlaminae in places, trace of kaolin and micromicas, nil to rarely very poor visual porosity. NO SHOWS.
		50	CLAYSTONE: varicoloured ranging light brownish grey to brownish grey to dark brown and blackish brown, minor amounts medium to dark grey to rare blackish grey, varying soft/dispersive to very hard, mostly varying sub-blocky to subfissile with minor fissile/shaley, minor to common carbonaceous and coaly laminae, trace mica, very fine quartz sand laminations and microlaminations in part, grading to arenaceous claystone and siltstone in part, non calcareous.
2645	2650	70	SANDSTONE: generally as above, increasing amounts of cleaner very fine to medium grained quartz sandstone and same indicating cemented aggregates, NO SHOWS.
		20	CLAYSTONE: as above.
2650	2652.5 (spot)	90	SANDSTONE: <i>increased amounts of cleaner and coarser grained type</i> , very light grey to light olive grey, fine to coarse grained, predominantly medium, moderately well sorted, subangular to subrounded, varying disaggregated with lesser hard/very hard aggregates, aggregates mostly siliceous cemented, common bit fractured grains and some 'rock flour', trace argillaceous matrix (kaolin), trace carbonaceous and coaly fragments, trace pyrite, inferred fair to good intergranular porosity, poor visual porosity in aggregates. NO SHOWS.
		10 Tr's	CLAYSTONE: as above.
2652.5	2655	90	SANDSTONE: <i>increased amounts of cleaner and coarser grained type but this sandstone type distinctly cemented at this depth compared to the one at 2652.5m</i> , very light grey to light olive grey, fine to coarse grained, predominantly medium, moderately well sorted, subangular to subrounded, varying disaggregated with lesser hard/very hard aggregates, aggregates mostly siliceous cemented, common bit fractured grains and increasing 'rock flour' (?indicating that more of the sandstone cemented and being ground up to 'quartz flour', trace argillaceous matrix (kaolin), trace carbonaceous and coaly fragments, trace pyrite, inferred fair to good intergranular porosity, poor visual porosity in aggregates. NO SHOWS.
		10 Tr's	CLAYSTONE: as above.
			COAL: as previously.
2655	2660	40	SANDSTONE: as above, but with less cemented aggregates.. NO SHOWS.
		60	CLAYSTONE: mostly brownish grey to medium tending dark brown, varying soft/dispersive to very hard, mostly soft to tending firm and sub-blocky, minor subfissile, minor to common carbonaceous and coaly laminae, trace mica, rare very fine quartz sand laminations and microlaminations, non calcareous.
2660	2665	40	SANDSTONE: as above, but with less cemented aggregates.. NO SHOWS.
		50	CLAYSTONE /CARBONACEOUS CLAYSTONE: mostly brownish grey to medium tending dark brown, varying soft/dispersive to very hard, mostly soft to tending firm and sub-blocky, minor subfissile, minor to common carbonaceous and coaly laminae, trace mica, rare very fine quartz sand laminations and microlaminations, non calcareous.
		10	COAL: brownish black to black, earthy to semibright, brittle to hard, blocky to sub conchoidal fracture.

Interval (m)		Lithology / Show Description	
From	To	%	
2665	2670	50	CLAYSTONE /CARBONACEOUS CLAYSTONE: mostly brownish grey to medium tending dark brown, varying soft/dispersive to hard, mostly soft to tending firm and sub-blocky, minor subfissile, minor to common carbonaceous and coaly laminae, trace mica, rare very fine quartz sand, non calcareous.
		30	FINE SANDSTONE/ ARGILLACEOUS SANDSTONE: light to medium shades of olive grey with minor amounts medium shades of greyish brown, and medium to dark brown where more carbonaceous, very fine to medium grained, dominantly very fine to fine grained, well sorted, dominantly subangular, varying soft/friable to very hard, mostly firm to hard aggregates, trace to 10% disseminated carbonaceous material and laminae, 20-40% clay minerals as matrix and laminae/microlaminae in places, trace of kaolin and micromicas, nil to rarely very poor visual porosity. NO SHOWS.
		20	SANDSTONE: as above, cleaner type but with less cemented aggregates.. NO SHOWS.
2670	2672.5 (spot)	50	CLAYSTONE /CARBONACEOUS CLAYSTONE: mostly light to medium shades of brownish grey to medium tending dark brown, varying soft/dispersive to hard, mostly soft to tending firm and sub-blocky, minor subfissile, minor to common carbonaceous and coaly laminae, trace mica, rare very fine quartz sand, non calcareous.
		40	FINE SANDSTONE/ ARGILLACEOUS SANDSTONE: light to medium shades of olive grey with minor amounts medium shades of greyish brown, and medium to dark brown where more carbonaceous, very fine to medium grained, dominantly very fine to fine grained, well sorted, dominantly subangular, varying soft/friable to very hard, mostly firm to hard aggregates, trace to 10% disseminated carbonaceous material and laminae, 20-40% clay minerals as matrix and laminae/microlaminae in places, trace of kaolin and micromicas, nil to rarely very poor visual porosity. NO SHOWS.
		10	SANDSTONE: as above, fine to coarse grained, cleaner type but with less cemented aggregates.. NO SHOWS.
2672.5	2675	60	SANDSTONE: <i>increased amounts of cleaner and coarser grained type</i> , very light grey to light olive grey, mostly clear/opaque quartz, minor greyish quartz and with very rare reddish jasper grains, extremely rare greenish fine grains, fine to coarse grained, predominantly medium, moderately well sorted, subangular to subrounded, varying disaggregated with lesser hard/very hard aggregates, aggregates mostly siliceous cemented, common bit fractured grains and some 'rock flour', trace argillaceous matrix (kaolin), trace carbonaceous and coaly fragments, trace pyrite, inferred fair to good intergranular porosity, poor visual porosity in aggregates. NO SHOWS.
		20	FINE SANDSTONE/ ARGILLACEOUS SANDSTONE: as above. NO SHOWS.
		20	CLAYSTONE /CARBONACEOUS CLAYSTONE: as above.
2675	2680	20	SANDSTONE: as above. NO SHOWS.
		30	FINE SANDSTONE/ ARGILLACEOUS SANDSTONE: as above. NO SHOWS.
		50	CLAYSTONE /CARBONACEOUS CLAYSTONE: as above.
2680	2685	10	SANDSTONE: as above. NO SHOWS.
		30	FINE SANDSTONE/ ARGILLACEOUS SANDSTONE: as above. NO SHOWS.
		60	CLAYSTONE /CARBONACEOUS CLAYSTONE: as above.
2685	2688 (spot)	10	SANDSTONE: as above. NO SHOWS.
		20	FINE SANDSTONE/ ARGILLACEOUS SANDSTONE: as above. NO SHOWS.
		60	CLAYSTONE /CARBONACEOUS CLAYSTONE: as above.
		10	COAL: brownish black to black, earthy to semibright, brittle to hard , blocky to sub conchoidal fracture.

POOH for bit change at 2688mMDRT.

Interval (m)		Lithology / Show Description	
From	To	%	
2688	2695	30	SANDSTONE: very light grey to light olive grey, mostly clear/opaque quartz, fine to coarse grained, predominantly medium, moderately well sorted, subangular to subrounded, varying disaggregated with lesser hard/very hard aggregates, aggregates mostly siliceous cemented, common bit fractured grains and some 'rock flour', trace argillaceous matrix (kaolin), trace carbonaceous and coaly fragments, trace pyrite, inferred fair to good intergranular porosity, poor visual porosity in aggregates. NO SHOWS.
		20	ARGILLACEOUS SANDSTONE: very light grey to light olive grey with minor amounts medium greyish brown, very fine to medium grained, dominantly very fine to fine grained, well sorted, dominantly subangular, varying soft friable to very hard, mostly firm to hard aggregates, trace to 10% disseminated carbonaceous material and laminae, 20-40% clay minerals as matrix and laminae/microlaminae in places, trace of kaolin and micromicas, nil to rarely very poor visual porosity. NO SHOWS.
		50	CLAYSTONE / CARBONACEOUS CLAYSTONE: mostly brownish grey to medium tending dark brown, varying soft/dispersive to hard, mostly soft to tending firm and sub-blocky, minor subfissile, minor to common carbonaceous and coaly laminae, trace mica, rare very fine quartz sand, non calcareous.
2695	2700	20	SANDSTONE: as above. NO SHOWS.
		10	ARGILLACEOUS SANDSTONE: as above. NO SHOWS.
		70	CLAYSTONE / CARBONACEOUS CLAYSTONE: as above.
2700	2705	10	SANDSTONE: as above, trace medium to dark grey chert. NO SHOWS.
		10	ARGILLACEOUS SANDSTONE: as above. NO SHOWS.
		80	CLAYSTONE / CARBONACEOUS CLAYSTONE: as above.
2705	2710	10	SANDSTONE: as above, trace medium to dark grey chert. NO SHOWS.
		10	ARGILLACEOUS SANDSTONE: as above. NO SHOWS.
		75	CLAYSTONE / CARBONACEOUS CLAYSTONE: as above.
2710	2715	5	DOLOMITE/SIDERITE: pale to dark yellowish brown, cryptocrystalline, very hard, angular, no visual porosity.
		20	ARGILLACEOUS SANDSTONE: as above. NO SHOWS.
		20	CLAYSTONE/ CARBONACEOUS CLAYSTONE: mostly brownish grey to medium tending dark brown, minor tending brownish black to blackish, soft/dispersive to hard, mostly soft to tending firm and sub-blocky, minor subfissile, minor carbonaceous laminae, trace mica, rare very fine quartz sand, non calcareous. Minor grading to HIGHLY CARBONACEOUS CLAYSTONE / HIGH ASH COAL.???? carbonised
Top of "REMORA	2715	60	ALTERED VOLCANICS / 'FRESHER' ACIDIC VOLCANICS: light grey to yellowish grey, pale greyish green, white, firm to very hard, occasional remnant crystal structure, dominantly weathered feldspar altering to predominantly white and minor green clays (chlorite), minor quartz, trace calcite. With Minor Basalt: black, dark brownish black, greenish black, brownish grey, firm to predominantly hard, common biotite, minor quartz, rare olivine, trace visible feldspar, minor calcite and quartz veining (secondary).
		100	Top of "REMORA VOLCANICS" at 2715m MDRT based on pronounced MWD resistivity increase
		TR	'FRESHER' ACIDIC VOLCANICS / VOLCANICS: medium olive grey to olive grey, pale greyish green, white, mostly hard to very hard, quartz rich with significant feldspar (fresh to partial alteration) , and subordinate micas, greenish mineral (?olivine), well defined medium grained crystal structure with transparent 'needle' crystals, trace weathered feldspar altering to clay minerals , minor green clays (chlorite), trace secondary replacement calcite as cementation .
			DARKER BASALTIC TYPES: dark grey to steel grey and darker bluish grey, very hard to hard, blocky, dark groundmass with black crystals.

Interval (m)			Lithology / Show Description
From	To	%	
2720	2725	65	'FRESHER' ACIDIC VOLCANICS / VOLCANICS: medium olive grey to olive grey, pale greyish green, white, mostly hard to very hard, quartz rich with significant feldspar (fresh to partial alteration) , and subordinate micas, greenish mineral (?olivine), well defined medium grained crystal structure with transparent 'needle' crystals, trace weathered feldspar altering to clay minerals , minor green clays (chlorite), trace secondary replacement calcite as cementation .
		15	DARKER BASALTIC TYPES: dark grey to steel grey and darker bluish grey, very hard to hard, blocky, dark groundmass with black crystals.
		10	?THERMALLY ALTERED CARBONACEOUS CLAYSTONES / HIGH ASH COAL: steel black to blackish, varying soft to very hard (gives black streak on scratch plate), minor carbonaceous fragments/structures, with quartz veining and minor calcite veining.
		10	ARGILLACEOUS SANDSTONE: as previously, unclear if cavings or in situ.
2725	2730	80	CLAYSTONE/ CARBONACEOUS CLAYSTONE: mostly shades of medium to sometimes darker brown, minor tending brownish black to blackish and medium to dark yellowish brown, varying soft/dispersive to hard, mostly soft to tending firm and sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare to traces of very fine quartz sand, non calcareous.
		10	ARGILLACEOUS SANDSTONE: shades of medium to dark yellowish brown and brown, very fine grained, very well sorted, dominantly subangular, mostly moderately hard to hard aggregates, trace to 10% disseminated carbonaceous material and laminae, 20-40% clay minerals as matrix and laminae/microlaminae in places, trace of kaolin and micromicas, partly siliceous cemented, nil visual porosity. Minor gradational to cleaner but fine grained sandstone. NO SHOWS.
2730	2735	10	'FRESHER' ACIDIC VOLCANICS / minor BASALTIC: as described above.
		80	CLAYSTONE/ CARBONACEOUS CLAYSTONE: mostly shades of medium to sometimes darker brown, minor tending brownish black to blackish and medium to dark yellowish brown, varying soft/dispersive to hard, mostly soft to tending firm and sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand, non calcareous. Gradational to silty claystone in places.
		20	ARGILLACEOUS SANDSTONE: shades of medium to dark yellowish brown and brown, very fine grained, very well sorted, dominantly subangular, mostly moderately hard to hard aggregates, trace to 10% disseminated carbonaceous material, 20-40% clay minerals as matrix and laminae/microlaminae in places, trace of kaolin and micromicas, partly siliceous cemented, nil visual porosity. Minor gradational to cleaner but fine grained sandstone. NO SHOWS.
		TR	'FRESHER' ACIDIC VOLCANICS / minor BASALTIC: as described above, mainly 'grinds' , cavings.

Interval (m)		Lithology / Show Description	
From	To	%	
2735	2740	60	CLAYSTONE/ CARBONACEOUS CLAYSTONE: mostly shades of medium to sometimes darker brown, minor tending brownish black to blackish and medium to dark yellowish brown, varying soft/dispersive to hard, mostly soft to tending firm and sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand, non calcareous. Gradational to silty claystone in places.
		30	ARGILLACEOUS SANDSTONE: shades of medium to dark yellowish brown and brown, very fine grained, very well sorted, dominantly subangular, mostly moderately hard to hard aggregates, trace to 10% disseminated carbonaceous material, 20-40% clay minerals as matrix and laminae/microlaminae in places, trace of kaolin and micromicas, partly siliceous cemented, nil visual porosity. Gradational to silty/sandy claystone in places. NO SHOWS.
		10	FINE GRAINED SANDSTONE: medium olive grey to olive grey, quartz rich, generally as above but very fine to medium grained, dominantly fine grained, well sorted, dominantly subangular, trace to 10% clay minerals, trace to good trace carbonaceous debris, firm to very hard, mostly firm to tending hard aggregates, siliceous cemented, nil to minor very poor visual porosity. NO SHOWS.
		TR	'FRESHER' ACIDIC VOLCANICS / minor BASALTIC: as described above, mainly 'grinds' , cavings.
2740	2745	50	CLAYSTONE/ CARBONACEOUS CLAYSTONE: mostly shades of medium to sometimes darker brown, minor tending brownish black to blackish and medium to dark yellowish brown, varying soft/dispersive to hard, mostly soft to tending firm and sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand, non calcareous. Gradational to silty claystone in places.
		40	ARGILLACEOUS SANDSTONE: shades of medium to dark yellowish brown and brown, sometimes olive grey, very fine grained, very well sorted, dominantly subangular, mostly moderately hard to hard aggregates, trace to 10% disseminated carbonaceous material as debris and microlaminae, 20-40% clay minerals as matrix and laminae/microlaminae in places, trace of kaolin and micromicas, partly siliceous cemented, nil visual porosity. Gradational to silty/sandy claystone in places. NO SHOWS.
		10	FINE GRAINED SANDSTONE: medium olive grey to olive grey, quartz rich, generally as above but very fine to medium grained, dominantly fine grained, well sorted, dominantly subangular, trace to 10% clay minerals (kaolin) , trace to good trace carbonaceous debris, firm to very hard, mostly firm to tending hard aggregates, siliceous cemented, nil to minor very poor visual porosity. NO SHOWS.
		TR	'FRESHER' ACIDIC VOLCANICS / minor BASALTIC: as described above, mainly 'grinds' , cavings.
2745	2750	50	CLAYSTONE/ CARBONACEOUS CLAYSTONE: as above.
		40	ARGILLACEOUS SANDSTONE: as above. NO SHOWS.
		10	FINE GRAINED SANDSTONE: as above. NO SHOWS.
2750	2752.5	50	CLAYSTONE/ CARBONACEOUS CLAYSTONE: as above.
		40	ARGILLACEOUS SANDSTONE: as above. NO SHOWS.
		10	FINE GRAINED SANDSTONE: as above. NO SHOWS.
2752.5	2755	80	SANDSTONE: light medium grey to medium olive grey, appears to be mostly clear quartz grains with extremely rare reddish jasper, very fine to very coarse grained, dominantly medium grained, moderately well sorted, angular to subrounded, dominantly subangular , few accessories discernible - trace coaly fragments, rare pyrite, very rare greenish flecks, appears as loose disaggregated grains with white quartz 'rock flour', rare weakly to moderately cemented aggregates discernible, inferred fair to good porosity. NO SHOWS.
		20	CLAYSTONE/ CARBONACEOUS CLAYSTONE: as above.

Interval (m)		Lithology / Show Description	
From	To	%	
2755	2757.5	80	SANDSTONE: light medium grey to medium olive grey, appears to be mostly clear quartz grains, very fine to coarse grained, dominantly medium grained, moderately well sorted, dominantly subangular, few accessories discernible - trace coaly fragments, rare pyrite, very rare greenish flecks, appears as loose disaggregated grains with white quartz 'rock flour', rare weakly to moderately cemented aggregates discernible, inferred fair to good porosity. NO SHOWS.
		20	CLAYSTONE/ CARBONACEOUS CLAYSTONE: as above.
2757.5	2760.0	90	SANDSTONE: light medium grey to medium olive grey, appears to be mostly clear quartz grains, very fine to coarse grained, dominantly medium grained, moderately well sorted, dominantly subangular, few accessories discernible - trace coaly fragments, rare pyrite, very rare greenish flecks, appears as loose disaggregated grains with white quartz 'rock flour', rare weakly to moderately siliceous cemented aggregates discernible, inferred fair to good porosity. NO SHOWS.
			CLAYSTONE/ CARBONACEOUS CLAYSTONE: as above.
2760	2765	60	SANDSTONE: as above, but appears to be dominantly medium to lower coarse grained. NO SHOWS.
		20	ARGILLACEOUS SANDSTONE: as above. NO SHOWS.
		20	CLAYSTONE/ CARBONACEOUS CLAYSTONE: as above.
2765	2770	30	SANDSTONE: as above. NO SHOWS.
		10	ARGILLACEOUS SANDSTONE: as above. NO SHOWS.
		60	CLAYSTONE/ CARBONACEOUS CLAYSTONE: mostly shades of medium to sometimes darker brown, minor tending brownish black to blackish and medium to dark yellowish brown, varying soft/dispersive to hard, mostly soft to tending firm and sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand, non calcareous. Grading to silty claystone in places.
2770	2775	10	SANDSTONE: as above. NO SHOWS.
		40	CLAYSTONE/ CARBONACEOUS CLAYSTONE: as above.
		50	SILTSTONE: medium dark grey to brownish grey, minor tending brownish black to blackish, firm to hard, sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand, non calcareous.
2775	2780	10	SANDSTONE: as above. NO SHOWS.
		70	CLAYSTONE/ CARBONACEOUS CLAYSTONE: as above.
		20	SILTSTONE: medium dark grey to brownish grey, minor tending brownish black to blackish, firm to hard, sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand, non calcareous.
2780	2785	20	SANDSTONE: light medium grey to medium olive grey, appears to be mostly clear quartz grains, very fine to coarse grained, dominantly medium grained, moderately well sorted, dominantly subangular, weak to moderate dolomitic/sideritic cement, very poor to nil visual porosity. NO SHOWS.
		50	CLAYSTONE/ CARBONACEOUS CLAYSTONE: as above.
		30	SILTSTONE: as above.
2785	2790	Tr	SANDSTONE: as above. NO SHOWS.
		70	CLAYSTONE/ CARBONACEOUS CLAYSTONE: mostly shades of light brownish grey to olive grey, minor moderate to dark yellowish brown, varying soft/dispersive to firm, sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand, non calcareous. Grading to silty claystone in places.
		30	SILTSTONE: as above.
2790	2795	Tr	SANDSTONE: as above. NO SHOWS.
		70	CLAYSTONE/ CARBONACEOUS CLAYSTONE: as above.
		30	SILTSTONE: as above.
2795	2800	Tr	SANDSTONE: as above. NO SHOWS.
		60	CLAYSTONE/ CARBONACEOUS CLAYSTONE: as above.
		40	SILTSTONE: as above.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
2800	2805	Tr	SANDSTONE: as above. NO SHOWS.
		60	CLAYSTONE/ CARBONACEOUS CLAYSTONE: as above.
		40	SILTSTONE: as above.
2805	2810	Tr	SANDSTONE: as above. NO SHOWS.
		60	CLAYSTONE/ CARBONACEOUS CLAYSTONE: as above, predominately light brownish grey.
		40	SILTSTONE: as above.
2810	2815	40	SANDSTONE: white to very light grey to pale brown, very fine to fine grained, well sorted, subangular to subrounded, weak to moderate siliceous cement, abundant white argillaceous matrix, firm to moderately hard, poor to very poor visual porosity, NO SHOWS.
		60	CLAYSTONE/SILTSTONE: pale grey/brown, argillaceous, common carbonaceous fragments, moderately hard, subblocky.
		Tr	COAL: black, dull to subvitreous, silty, blocky, brittle.
2815	2820	70	SANDSTONE: as above, NO SHOWS.
		30	CLAYSTONE/Carbonaceous SILTSTONE: as above.
		Tr	COAL: as above.
2820	2825	60	SANDSTONE: white to very light grey to pale brown, very fine to fine grained, well sorted, subrounded, weak to moderate siliceous cement, abundant white argillaceous matrix, trace lithic & carbonaceous fragments, friable to moderately hard, poor to very poor visual porosity, NO SHOWS.
		40	Intergrading CLAYSTONE/SILTSTONE: mottled pale grey/brown, argillaceous, common carbonaceous laminations & fragments, moderately hard, subblocky to subfissile.
		60	SANDSTONE: as above, NO SHOWS.
2825	2830	40	CLAYSTONE/SILTSTONE: as above.
2830	2835	60	SANDSTONE: white to very light grey to mottled grey/brown, very fine to fine grained, well sorted, subangular to subrounded, weak to moderate siliceous cement, abundant white argillaceous matrix, common carbonaceous fragments, common lithic fragments, firm to moderately hard, poor to very poor visual porosity, NO SHOWS.
		40	SILTSTONE: mottled pale grey/brown, argillaceous grading to claystone, arenaceous in part & grading to very fine grained sandstone, common carbonaceous fragments & laminations, moderately hard, subblocky to subfissile.
		Tr	COAL: black, dull to subvitreous, silty, blocky, brittle to moderately hard.
2835	2840	20	SANDSTONE: as above. NO SHOWS.
		20	CLAYSTONE: light brownish grey to olive grey, minor moderate to dark yellowish brown, soft/dispersive to firm, sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand, non calcareous. Grading to silty claystone in places.
		80	SILTSTONE: medium dark to dark grey, greyish black, argillaceous, common carbonaceous fragments, moderately hard, subblocky.
2840	2845	10	SANDSTONE: as above. NO SHOWS.
		30	CLAYSTONE: as above.
		60	SILTSTONE: as above.
2845	2850	10	SANDSTONE: as above, trace quartz overgrowths. NO SHOWS.
		30	CLAYSTONE: as above.
		60	SILTSTONE: as above.
2850	2855	Tr	SANDSTONE: as above. NO SHOWS.
		60	CLAYSTONE: as above.
		40	SILTSTONE: as above.
2855	2860	Tr	SANDSTONE: as above. NO SHOWS.
		40	CLAYSTONE: as above.
		60	SILTSTONE: as above.
2860	2865	30	CLAYSTONE: as above.
		70	SILTSTONE: as above.

POOH for BHA and bit change at 2866mMDRT.

Interval (m)		Lithology / Show Description	
From	To	%	
2865	2870	Tr	SANDSTONE: as above. NO SHOWS.
		30	CLAYSTONE: as above.
		70	SILTSTONE: as above.
2870	2875	20	ARGILACEOUS SANDSTONE: medium to dark grey, sometimes olive grey, very fine grained, very well sorted, dominantly subangular, mostly moderately hard to hard aggregates, trace to 10% disseminated carbonaceous material as debris and microlaminae, 20-40% clay minerals as matrix and laminae/microlaminae in places grading to silty/sandy claystone, trace of kaolin and micromicas, partly siliceous cemented, nil visual porosity. NO SHOWS.
		30	CLAYSTONE: as above.
		50	SILTSTONE: as above.
2875	2880	10	ARGILACEOUS SANDSTONE: as above. NO SHOWS.
		40	CLAYSTONE: as above.
		50	SILTSTONE: as above.
2880	2885	10	ARGILACEOUS SANDSTONE: as above. NO SHOWS.
		30	CLAYSTONE: as above.
		60	SILTSTONE: as above.
2885	2890	10	ARGILACEOUS SANDSTONE: as above. NO SHOWS.
		30	CLAYSTONE: as above.
		60	SILTSTONE: as above.
2890	2895	10	SANDSTONE: white to very light grey, pale grey/brown, very fine to fine grained, well sorted, subangular to subrounded, weak to moderate siliceous cement, abundant white argillaceous matrix, grain supporting in part, friable to moderately hard, very poor visual porosity, poor where decreasing matrix, NO SHOWS.
		70	SILTSTONE: pale grey/brown, argillaceous grading to claystone in part, arenaceous in part & grading to very fine grained sandstone, abundant carbonaceous fragments & occasional laminations, moderately hard, subblocky.
		20	CLAYSTONE: pale yellow/brown, siliceous, trace carbonaceous laminations, firm to moderately hard, subblocky to predominantly fissile.
2895	2900	15	Lithologies as above, NO SHOWS.
		60	
		25	
2900	2905	15	Lithologies as per 2890 - 2895 mMDRT, NO SHOWS.
		60	
		25	
2905	2910	40	Lithologies as per 2890 - 2895 mMDRT, NO SHOWS.
		60	
		25	
2910	2915	10	Lithologies as per 2890 - 2895 mMDRT, NO SHOWS.
		60	
		30	
2915	2920	40	SANDSTONE, SILTSTONE & CLAYSTONE as per 2890 - 2895 mMDRT, NO SHOWS.
		50	
		10	COAL: black, dull to subvitreous, silty grading to carbonaceous siltstone, blocky to subfissile, brittle.
2920	2925	Tr	
		50	SANDSTONE: white to very light grey, mottled grey/brown, very fine to fine grained, well sorted, subangular to rounded, weak to moderate siliceous cement, abundant white argillaceous & silty matrix, carbonaceous & lithic fragments, friable to moderately hard, poor to very poor visual porosity, poor where decreasing matrix, NO SHOWS.
		50	SILTSTONE: mottled grey/brown, argillaceous grading to claystone in part, arenaceous in part, common carbonaceous & very fine sandstone laminations, moderately hard, subblocky.
2925	2930	Tr	SANDSTONE, SILTSTONE & COAL: as above, NO SHOWS.
		10	
		90	
		Tr	

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
2930	2935	10	SANDSTONE & SILTSTONE: as above, NO SHOWS.
		90	Siliceous SILTSTONE: pale grey/brown, siliceous, scattered carbonaceous material, moderately hard to hard, subfissile.
2935	2940	70	SANDSTONE: white to very light grey, very fine to fine grained, well sorted, subangular to rounded, weak to moderate siliceous cement, abundant white argillaceous & silty matrix, common carbonaceous fragments, moderately hard, very poor visual porosity, NO SHOWS.
		30	Siliceous SILTSTONE: as above.
		Tr	COAL: black, dull to subvitreous, silty grading to carbonaceous siltstone, blocky to subfissile, brittle.
			Lithologies as per 2935 - 2940 mMDRT, NO SHOWS.
2940	2945	10	
		90	
2945	2950	Tr	SANDSTONE: white to very light grey, very fine to fine grained, well sorted, subangular to rounded, weak to moderate siliceous cement, abundant white argillaceous & silty matrix, common carbonaceous fragments, moderately hard, very poor visual porosity, NO SHOWS.
		40	SILTSTONE: mottled grey/brown, argillaceous grading to claystone in part, arenaceous in part, common carbonaceous & very fine sandstone laminations, moderately hard, subblocky.
		60	Siliceous SILTSTONE: pale grey/brown, siliceous, scattered carbonaceous material, moderately hard to hard, subfissile.
		Tr	SANDSTONE: as above. NO SHOWS.
		30	SILTSTONE: as above.
		70	CLAYSTONE: light brownish grey to olive grey, minor moderate to dark yellowish brown, soft/dispersive to firm, sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand, non calcareous. Grading to silty claystone in places.
2950	2955	Tr	Siliceous SILTSTONE: as above.
		Tr	SANDSTONE: as above. NO SHOWS.
		20	SILTSTONE: as above.
		20	CLAYSTONE: as above.
		60	Siliceous SILTSTONE: pale grey/brown, siliceous, hard to very hard, angular, scattered carbonaceous material.
2955	2960	30	SILTSTONE: as above.
		60	CLAYSTONE: light brownish grey to olive grey, minor moderate to dark yellowish brown, soft/dispersive to firm, sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand, non calcareous. Grading to silty claystone in places.
2960	2965	10	Siliceous SILTSTONE: as above.
		40	SILTSTONE: as above.
		60	CLAYSTONE: as above.
		Tr	Siliceous SILTSTONE: as above.
2965	2970	30	SILTSTONE: as above.
		70	CLAYSTONE: as above.
2970	2975	Tr	SANDSTONE: white to very light grey, very fine to fine grained, well sorted, subangular to rounded, weak to moderate siliceous cement, abundant white argillaceous & silty matrix, common carbonaceous fragments, moderately hard, very poor visual porosity, NO SHOWS.
		70	SILTSTONE: as above.
2975	2980	30	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
2980	2985	60	SILTSTONE: as above, becoming more carbonaceous.
		40	CLAYSTONE: as above.

Interval (m)		Lithology / Show Description	
From	To	%	
2985	2990	20	SANDSTONE: white to very light grey, very fine to fine grained, well sorted, subangular to rounded, weak to moderate siliceous cement, abundant white argillaceous & silty matrix, common carbonaceous fragments, friable to moderately hard, nil visual porosity. Grading to silty/sandy claystone in places. NO SHOWS.
		60	SILTSTONE: mottled grey/brown to greyish black, argillaceous grading to claystone in part, arenaceous in part, very coaly/carbonaceous & very fine sandstone laminations, moderately hard, subblocky.
		20	CLAYSTONE: as above.
		40	SANDSTONE: white to very light grey, transparent to translucent, fine to coarse grained, predominantly medium to coarse, moderately sorted, subangular to subrounded, friable to moderately hard, common loose, weak to moderate siliceous cement, abundant white argillaceous & silty matrix in parts, common carbonaceous fragments, fair to good inferred porosity. NO SHOWS.
		40	SILTSTONE: mottled grey/brown to greyish black, argillaceous grading to claystone in part, arenaceous in part, very coaly/carbonaceous & very fine sandstone laminations, moderately hard, subblocky.
		20	CLAYSTONE: as above.
		Tr	COAL: black, dull to subvitreous, silty grading to carbonaceous siltstone, blocky to subfissile, brittle.
		30	SANDSTONE: as above.
		50	SILTSTONE: as above.
		20	CLAYSTONE: as above.
2995	3000	10	SANDSTONE: as above.
		50	SILTSTONE: as above.
		40	CLAYSTONE: light brownish grey to light olive grey, minor moderate to dark yellowish brown, soft/dispersive to firm, sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand, non calcareous.
3000	3005	10	SANDSTONE: as above.
		45	SILTSTONE: as above.
		40	CLAYSTONE: light brownish grey to light olive grey, minor moderate to dark yellowish brown, soft/dispersive to firm, sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand, non calcareous.
		5	COAL: black, dull to subvitreous, silty grading to carbonaceous siltstone, blocky to subfissile, brittle.
3005	3010	30	SANDSTONE: white to very light grey, very to fine grained, well sorted, subangular to subrounded, friable to moderately hard, weak to moderate siliceous cement, abundant white argillaceous & silty matrix in parts, common carbonaceous fragments, poor visual porosity. NO SHOWS.
		40	SILTSTONE: as above.
		Tr	Siliceous SILTSTONE: pale grey/brown, siliceous, hard to very hard, angular, scattered carbonaceous material.
		30	CLAYSTONE: as above.
		Tr	COAL: as above.
		20	SANDSTONE: as above. NO SHOWS.
3010	3015	50	SILTSTONE: as above.
		Tr	Siliceous SILTSTONE: as above.
		30	CLAYSTONE: as above.
		Tr	COAL: as above.
3015	3020	30	SANDSTONE: mottled brown/grey, very fine to fine grained, well sorted, subrounded, strong to moderate siliceous cement, common to abundant lithic & silty matrix, common carbonaceous fragments, hard to moderately hard, very poor to poor visual porosity with decreasing matrix, NO SHOWS.
		70	SILTSTONE: light to medium grey/brown, argillaceous, common carbonaceous material, moderately hard, subblocky.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
3020	3024	20 80	Lithologies as above. NO SHOWS.
POOH for BHA and bit change at 3024mMDRT.			
3024	3025	20	SANDSTONE: very light grey, predominantly fine grained, rare very fine and medium, well sorted, subrounded, moderate siliceous cement, common white argillaceous matrix, rare carbonaceous fragments, friable to moderately hard, fair visual porosity. NO SHOWS.
		70	SILTSTONE: light to medium grey/brown, argillaceous, common carbonaceous material, moderately hard, subblocky.
		Tr	Siliceous SILTSTONE: pale grey/brown, siliceous, angular, hard to very hard.
3025	3030	40	SANDSTONE: very light grey to medium light grey, very fine to occasionally fine grained, well sorted, subrounded, moderate siliceous cement, common silty/argillaceous matrix, abundant carbonaceous fragments and laminae, friable to moderately hard, very poor visual porosity. NO SHOWS.
		60	SILTSTONE: light to medium grey/brown, argillaceous, common carbonaceous material, moderately hard, subblocky.
3030	3035	20	SANDSTONE: as above.
		80	SILTSTONE: as above.
3035	3040	20	SANDSTONE: as above.
		80	SILTSTONE: as above.
3040	3045	50	SANDSTONE: very light grey to medium light grey, very fine to occasionally fine grained, well sorted, subrounded, moderate siliceous cement, common silty/argillaceous matrix, abundant carbonaceous fragments and laminae, friable to moderately hard, very poor visual porosity. NO SHOWS.
		50	SILTSTONE: as above.
3045	3050	20	SANDSTONE: as above.
		60	SILTSTONE: light to medium grey/brown, argillaceous, abundant carbonaceous material, moderately hard, subblocky.
		20	COAL: black, dull to subvitreous, silty grading to carbonaceous siltstone, blocky to subfissile, brittle.
3050	3055	20	SANDSTONE: as above.
		70	SILTSTONE: as above.
		10	COAL: as above.
3055	3060	40	SANDSTONE: as above.
		60	SILTSTONE: light to medium grey/brown, light brownish grey in parts, argillaceous, common carbonaceous material, soft to moderately hard, subblocky.
			COAL: as above.
		Tr	
3060	3065	30	SANDSTONE: as above.
		70	SILTSTONE: as above.
3065	3070	20	SANDSTONE: as above.
		60	SILTSTONE: light to medium grey/brown, argillaceous, abundant carbonaceous material, moderately hard, subblocky.
		20	COAL: black, dull to subvitreous, silty grading to carbonaceous siltstone, blocky to subfissile, brittle.
3070	3075	20	SANDSTONE: as above.
		60	SILTSTONE: as above.
		20	COAL: as above.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
3075	3080	20 80 Tr	<p>SANDSTONE: white to pale grey, very fine to occasionally fine grained, well sorted, subangular to subrounded, moderate siliceous cement, common silty/argillaceous matrix, common carbonaceous & lithic flecks and laminae, friable to moderately hard, poor to very poor visual porosity. NO SHOWS.</p> <p>SILTSTONE: light to medium grey/brown, argillaceous, abundant carbonaceous material, carbonaceous & very fine sandstone laminations, moderately hard, subblocky.</p> <p>Siliceous SILTSTONE: pale grey/brown, siliceous, angular, hard to very hard.</p> <p>COAL: black, dull to subvitreous, silty grading to carbonaceous siltstone, blocky to subfissile, subconchoidal fracture, brittle.</p>
3080	3085	30 70 Tr	Lithologies as above. NO SHOWS.
3085	3090	20 80 Tr	Lithologies as per 3075 to 3080m. NO SHOWS.
3090	3095	10 90 Tr	Lithologies as per 3075 to 3080m. NO SHOWS.
3095	3100	5 95	Lithologies as per 3075 to 3080m. NO SHOWS.
3100	3105	10 90 Tr	<p>SANDSTONE: as per 3075 to 3080m. NO SHOWS.</p> <p>SILTSTONE: light to medium grey/brown, argillaceous, trace to common carbonaceous specks & laminations, firm to moderately hard, subfissile to subblocky.</p> <p>COAL: as per 3075 to 3080m.</p>
3105	3110	10 90 Tr	Lithologies as above. NO SHOWS.
3110	3115	10 90 Tr	<p>SANDSTONE: white to pale grey, very fine, grading to arenaceous siltstone, well sorted, subangular to subrounded, weak to moderate siliceous cement, abundant white argillaceous matrix, friable to moderately hard, very poor visual porosity. NO SHOWS.</p> <p>SILTSTONE: medium grey/brown, argillaceous, common carbonaceous laminations, common very fine sandstone laminations, moderately hard, subblocky to subfissile.</p> <p>Siliceous SILTSTONE: pale grey/brown, siliceous, angular, hard to very hard.</p> <p>COAL: black, dull to subvitreous, silty grading to carbonaceous siltstone, blocky to subfissile, subconchoidal fracture, brittle.</p>
3115	3120	20 80 Tr	Lithologies as per 3110 to 3115m. NO SHOWS.
3120	3125	40 60	Lithologies as per 3110 to 3115m. NO SHOWS.
3125	3130	10 90 Tr	Lithologies as per 3110 to 3115m. NO SHOWS.
3130	3135	10 90 Tr	Lithologies as per 3110 to 3115m. NO SHOWS.
3135	3140	10 90 Tr	Lithologies as per 3110 to 3115m. NO SHOWS.

Vic/L10 West Moonfish-1 Lithology & Show Descriptions

Interval (m)		Lithology / Show Description	
From	To	%	
3140	3145	30 70	SANDSTONE: white to pale grey, very fine to fine grained, well sorted, subangular to rounded, weak to moderate siliceous cement, common to abundant white argillaceous & silty matrix, friable to moderately hard, very poor visual porosity. Fluorescence: 50% of sandstone has pale yellow, patchy fluorescence, pale yellow crush cut, thin ring residue. SILTSTONE: as above.
3145	3150	50 50	SANDSTONE: white to pale grey, very fine to medium grained, predominantly fine grained, well sorted, subangular to subrounded, weak to moderate siliceous cement, common to abundant white argillaceous & silty matrix, friable to firm, very poor to poor visual porosity. Fluorescence: 20% of sandstone has pale yellow, patchy fluorescence, pale yellow crush cut, thin ring residue. SILTSTONE: medium grey/brown, argillaceous, common carbonaceous laminations, common carbonaceous & lithic fragments, moderately hard, subblocky. Siliceous SILTSTONE: pale grey/brown, siliceous, angular, hard to very hard.
3150	3155	50 50	Lithologies as above. Fluorescence: trace sandstone has pale yellow, patchy fluorescence, pale yellow crush cut, thin ring residue.
3155	3160	20 80	Lithologies as above.
3160	3165	20 80 Tr	SANDSTONE: white to pale grey, very fine to occasionally fine grained, well sorted, subrounded, weak to moderate siliceous cement, abundant white argillaceous & silty matrix, friable to moderately hard, very poor visual porosity. NO SHOWS. SILTSTONE: medium grey/brown, argillaceous, abundant carbonaceous laminations & fragments, common arenaceous laminations, moderately hard, subblocky. Siliceous SILTSTONE: pale grey/brown, siliceous, trace carbonaceous flecks, subblocky, hard to very hard. COAL: black, dull to subvitreous, silty grading to carbonaceous siltstone, blocky to subblocky, brittle.
3165	3170	20 80 Tr	Lithologies as per 3160 to 3165m. NO SHOWS.
3170	3175	20 80 Tr	Lithologies as per 3160 to 3165m. NO SHOWS.
3175	3180	20 80 Tr	Lithologies as per 3160 to 3165m. NO SHOWS.
3180	3185	20 80 Tr	Lithologies as per 3160 to 3165m. NO SHOWS.
3185	3190	20 80 Tr	Lithologies as per 3160 to 3165m. NO SHOWS.
3190	3200	20 80 Tr	Lithologies as per 3160 to 3165m. NO SHOWS.

Interval (m)		Lithology / Show Description	
From	To	%	
3200	3205	15 80 5	SANDSTONE: white to pale grey, very fine to occasionally fine grained, well sorted, subrounded, weak to moderate siliceous cement, abundant white argillaceous & silty matrix, firm to moderately hard, very poor visual porosity. NO SHOWS. SILTSTONE: medium grey/brown, argillaceous, common carbonaceous laminations & fragments, common arenaceous laminations, firm to moderately hard, subblocky. Siliceous SILTSTONE: pale grey/brown, siliceous, trace carbonaceous flecks, subblocky, hard to very hard. COAL: black, dull to subvitreous, silty, grading to carbonaceous siltstone, subblocky, brittle, amber hydrocarbon staining. Fluorescence: 20% of the coal/carbonaceous siltstone has bright, yellow, even fluorescence, yellow/white crush cut, thin film residue.
3205	3210	20 80 Tr	Lithologies as above. Coal fluorescence as above.
3210	3215	20 80 Tr	Lithologies as per 3200 - 3205m. NO SHOWS
3215	3220	10 90 Tr	SANDSTONE: white to pale grey, very fine to occasionally fine grained, well sorted, subrounded, weak to moderate siliceous cement, abundant white argillaceous & silty matrix, firm to moderately hard, very poor visual porosity. NO SHOWS. SILTSTONE: medium grey/brown, argillaceous, common carbonaceous laminations & fragments, common arenaceous laminations, firm to moderately hard, subblocky. Siliceous SILTSTONE: pale grey/brown, siliceous, trace carbonaceous flecks, subblocky, hard to very hard.
3220	3225	10 90 Tr	SANDSTONE: as above. SILTSTONE: as above. COAL: black, dull to subvitreous, silty, grading to carbonaceous siltstone, subblocky, brittle.
3225	3230	10 90 Tr	SANDSTONE: as above. SILTSTONE: as above. Siliceous SILTSTONE: as above.
3230	3235	10 90 Tr	SANDSTONE: as above. SILTSTONE: as above. COAL: as above.
3235	3240	10 90	SANDSTONE: as above. SILTSTONE: as above.
3240	3245	10 90 Tr	SANDSTONE: as above. SILTSTONE: as above. COAL: as above.
3245	3250	10 50 40	SANDSTONE: as above. SILTSTONE: as above. CLAYSTONE: light brownish grey to light olive grey, minor moderate to dark yellowish brown, soft/dispersive to firm, sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand, non calcareous.
3250	3255	10 50 40	SANDSTONE: as above. SILTSTONE: as above. CLAYSTONE: as above.
3255	3260	20 30 50	SANDSTONE: white to very light grey, very fine to occasionally fine grained, well sorted, subrounded, weak to moderate siliceous cement, abundant white argillaceous and silty matrix, firm to moderately hard in parts, very poor visual porosity. NO SHOWS. SILTSTONE: as above. CLAYSTONE: as above.

Interval (m)		Lithology / Show Description	
From	To	%	
3260	3265	10	SANDSTONE: as above.
		30	SILTSTONE: as above.
		60	CLAYSTONE: as above.
3265	3270	20	SANDSTONE: as above.
		30	SILTSTONE: as above.
		50	CLAYSTONE: as above.
3270	3275	10	SANDSTONE: as above.
		50	SILTSTONE: medium grey to brownish black, olive black in parts, argillaceous, common to abundant carbonaceous laminations and fragments, occasionally grading to silty coal, common arenaceous laminations, firm to moderately hard, subblocky.
3275	3280	40	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		50	SILTSTONE: as above.
3280	3285	40	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
		50	SILTSTONE: as above.
3285	3290	50	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
		60	SILTSTONE: medium grey to olive black in parts, argillaceous, common to abundant carbonaceous laminations and fragments, occasionally grading to silty coal, common arenaceous laminations, firm to moderately hard, subblocky.
3290	3295	40	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
		40	SILTSTONE: as above.
3295	3300	60	CLAYSTONE: light brownish grey, minor yellowish brown, soft/dispersive to firm, dispersive to sub-blocky, minor subfissile, minor to common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand in parts, non calcareous.
		Tr	SANDSTONE: as above.
		40	SILTSTONE: as above.
3300	3305	60	CLAYSTONE: as above.
		Tr	SANDSTONE: as above.
		40	SILTSTONE: as above.
3305	3310	60	CLAYSTONE: as above.
		5	SANDSTONE: white to pale grey, very fine grading to arenaceous siltstone, well sorted, subrounded, weak to moderate siliceous cement, abundant white argillaceous & silty matrix, carbonaceous fragments, firm to moderately hard, very poor visual porosity. NO SHOWS.
		60	SILTSTONE: medium grey/brown, argillaceous, arenaceous in part, common carbonaceous laminations & fragments, firm to moderately hard, subblocky to subfissile.
3310	3315	35	CLAYSTONE: as above.
		40	SANDSTONE: as above.
		60	SILTSTONE: as above.
3315	3320	60	CLAYSTONE: as above.
		40	SANDSTONE: as above.
		60	SILTSTONE: as above.
3320	3325	60	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		40	SILTSTONE: as above.
3325	3330	50	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		40	SILTSTONE: as above.
3330	3335	50	CLAYSTONE: as above.
		10	SANDSTONE: as above.
		40	SILTSTONE: as above.
		50	CLAYSTONE: as above.

Interval (m)			Lithology / Show Description
From	To	%	
3335	3340	10	SANDSTONE: white to pale grey, very fine grading to arenaceous siltstone, well sorted, subrounded, weak to moderate siliceous cement, abundant white argillaceous & silty matrix, common carbonaceous fragments, firm to moderately hard, very poor visual porosity. NO SHOWS. SILTSTONE: pale to medium grey/brown, argillaceous, arenaceous in part, common carbonaceous laminations & fragments, firm to moderately hard, subblocky to subfissile. CLAYSTONE: light brown/grey, carbonaceous specks & laminations, trace micromicaceous, firm, dispersive, subblocky.
		30	
		60	
3340	3345	10	SANDSTONE: as above. SILTSTONE: as above. CLAYSTONE: as above.
		30	
		60	
3345	3350	20	SANDSTONE: as above. SILTSTONE: as above. CLAYSTONE: as above.
		30	
		50	
3350	3355	20	SANDSTONE: as above. SILTSTONE: as above. CLAYSTONE: as above.
		30	
		50	
3355	3360	40	SANDSTONE: as above. SILTSTONE: as above.
		60	
		70	
3360	3365	30	SANDSTONE: as above. SILTSTONE: as above. COAL: black, dull to subvitreous, silty, grading to carbonaceous siltstone, uneven fracture, brittle.
		70	
		Tr.	
3365	3369		SANDSTONE: as above. SILTSTONE: as above. COAL: as above.

TD 1845 hrs, February 05, 2005

3369 mMDRT

3149 mTVDRT

3110 mTVDSS MSL

APPENDIX 2

SIDEWALL CORE DESCRIPTIONS

West Moonfish-1 Sidewall Core Descriptions

Shot = 60, recovered = 44, empty = 2, lost = 11 and Misfire = 3. Recovery = 73.3%.

No	Depth (m)	Rec. (mm)	B/R	Descriptions (23/01/05)
60	1634	30		COAL: brownish grey to brownish black, minor black, dull to earthy lustre, firm, commonly argillaceous, grading to carbonaceous claystone.
59	1655	18		CLAYSTONE: light brownish grey to medium grey, moderately firm, amorphous, dispersive, trace to rare quartz silt and very fine grained quartz, trace disseminated pyrite, trace carbonaceous specks, non calcareous.
58	1669	25		CLAYSTONE: very light grey to light grey, firm, amorphous, trace disseminated pyrite, trace nodular pyrite, non calcareous.
57	1710	24		CLAYSTONE: very light grey to light brownish grey, firm, visible millimetre scale laminations, minor very finely disseminated carbonaceous specks, trace disseminated pyrite, trace quartz silt, weakly calcareous.
56	1766	30		CLAYSTONE: light brownish grey to brownish grey, moderately firm, predominantly amorphous, trace to rare quartz silt and very fine grained quartz, trace fine coal laminae, trace disseminated pyrite, trace to rare fine carbonaceous specks, moderately calcareous.
55	1793	27		SANDSTONE: white to very light grey, clear to translucent grains, moderately firm, very fine to predominantly fine grained, sub angular to sub rounded, minor angular, well sorted quartz, minor siliceous cement, trace to rare pyrite cement, trace argillaceous matrix, trace argillaceous/carbonaceous wisps, poor visual porosity. NO SHOWS.
54	1845	26		ARGILLACEOUS SILTSTONE: light brownish grey to brownish grey, moderately firm, amorphous, abundant argillaceous matrix, trace to rare carbonaceous specks and fragments, trace very fine grained quartz, trace disseminated pyrite, trace mica, grading to Silty Claystone.
53	1874	-		MISFIRE
52	1886	-		LOST BULLET
51	1917	34		CLAYSTONE: very light grey to light grey, firm, amorphous, trace disseminated pyrite, trace nodular pyrite, trace coal fragments, non calcareous.
50	1938	34		CLAYSTONE: very light grey to light grey, firm, amorphous, trace disseminated pyrite, trace nodular pyrite, trace coal fragments, non calcareous.
49	1976	30		CLAYSTONE: medium light grey to brownish grey, moderately firm, predominantly amorphous, trace to rare quartz silt and very fine grained quartz, trace fine coal laminae, trace disseminated pyrite, trace fine carbonaceous specks, non calcareous.
48	1995	28		CLAYSTONE: very light grey to light grey, firm, amorphous, trace disseminated pyrite, trace quartz silt, trace carbonaceous/coaly fragments, trace mica, non calcareous.
47	2018	32		CLAYSTONE: very light grey to light grey, firm, amorphous, trace very finely disseminated pyrite, trace quartz silt, trace mica, trace carbonaceous/coaly fragments and wisps, non calcareous.
46	2024	28		CLAYSTONE: light brownish grey to brownish grey, moderately firm, predominantly amorphous, trace to rare quartz silt and very fine grained quartz, trace coal fragments, trace disseminated pyrite, trace carbonaceous specks, trace mica, non calcareous.
45	2032	33		CLAYSTONE: very light grey to light brownish grey, firm, amorphous, trace finely disseminated pyrite, rare to minor quartz silt, trace mica, common carbonaceous/coaly fragments and wisps, non

No	Depth (m)	Rec. (mm)	B/R	Description
				calcareous.
44	2060	10		VOLCANICS: mottled very light grey, medium grey to greyish black, hard to friable, (Sample commonly disaggregated due to bullet impact) very fine to fine grained, quartz rich, minor to common feldspars and black lithics (mafic?), trace mica. Very poor sample recovery from broken bullet.
43	2067	-		EMPTY BULLET , filter cake only
42	2076	-		LOST BULLET
41	2082	-		LOST BULLET
40	2123	27		SANDSTONE: Light grey to light olive grey, firm, predominantly fine grained, moderately-well sorted, subangular to subrounded quartz grains, trace argillaceous matrix, trace carbonaceous fragments. Good inferred porosity. FAIR SHOW: 100% moderately bright, yellow-green, even fluor, milky-white slow streaming cut, thin blue-white ring residue.
39	2133	26		SANDSTONE: Light grey to light brownish grey, firm, predominantly fine grained, well sorted, subangular to subrounded quartz grains, trace argillaceous matrix, trace pyrite nodules, minor carbonaceous fragments and wisps. Good inferred porosity. NO SHOW.
38	2144	25		SANDSTONE: Light grey to light olive grey, moderately firm, very fine to predominantly fine grained, well sorted, subangular to subrounded, minor angular quartz grains, trace argillaceous matrix, trace carbonaceous fragments, clay-rich lamination. Fair to good inferred porosity. FAIR SHOW: 100% moderately bright, yellow-green, even fluor, milky white fast streaming cut, thin yellow-white ring residue.
37	2172	20		CLAYSTONE: Medium light grey to medium grey, firm, very fine grained, well sorted, minor quartz silt, non calcareous. NO SHOW.
36	2175	-		LOST BULLET
35	2191	-		LOST BULLET
34	2193	-		LOST BULLET
33	2217	29		SANDSTONE: Very light grey to light brownish grey, firm, very fine to predominantly fine grained, well sorted, subangular to subrounded quartz grains, trace-minor argillaceous matrix, trace carbonaceous fragments and wisps, non calcareous. NO SHOW: trace-10% dull, yellow-green, mineral fluor.
32	2225	23		SILTSTONE : olive grey, very fine grained quartz sand grains in places, trace micromicaceous, firm , trace carbonaceous flecks, no visual porosity. NO SHOWS.
31	2245	-		LOST BULLET
30	2249	30		CARBONACEOUS CLAYSTONE: brownish black to olive black, firm, micromicaceous, with trace very fine quartz sand microlaminae, non calcareous.
29	2267	-		LOST BULLET.
28	2275	20		CLAYSTONE: dark olive grey, firm, micromicaceous, trace sulphide smears, trace silt in places, non calcareous.
27	2291	26		SILTY CLAYSTONE: dark olive grey, firm, micromicaceous, trace sulphide smears, trace to good trace carbonaceous flecks, trace - 10% silt and very fine quartz sand in places, non calcareous.
26	2304	27		SILTY CLAYSTONE: dark olive grey, firm, micromicaceous, trace sulphide smears, trace to good trace carbonaceous flecks, 10 - 15% silt and very fine quartz sand in places, non calcareous. Grading to

No	Depth (m)	Rec. (mm)	B/R	Description
				SLTSTONE.
25	2316	30		SILTY/SANDY CLAYSTONE: dark olive grey, firm, micromicaceous, trace sulphide smears, trace to good trace carbonaceous flecks and some coaly laminae, 10 - 20% silt and very fine quartz sand in places, non calcareous. NO SHOW.
24	2322	30		SANDSTONE: quartz rich, light greyish white, firm but friable, very fine to lower coarse grained, dominantly fine to medium grained, moderately well sorted, varying angular to subangular, mostly appears clean but with traces of carbonaceous material and kaolin clay matrix in places, trace to good trace quartz silt matrix, poor to occasional fair visual porosity. NO SHOWS.
23	2339	20		CLAYSTONE: dark olive grey, firm, micromicaceous, trace sulphide smears, trace silt in places, rare carbonaceous flecks, non calcareous.
22	2344	26		CLAYSTONE: dark greyish brown tending barkish brown, firm, micromicaceous, rare silt, trace scattered coaly and carbonaceous fragments, non calcareous.
21	2353	20		CARBONACEOUS CLAYSTONE: brownish black to olive black, firm, micromicaceous, with trace very fine quartz sand microlaminae, non calcareous.
20	2356	18		ARGILLACEOUS SANDSTONE: light olive grey, very fine to fine grained, dominantly very fine grained, tending well sorted, dominantly angular to subangular, 20-30% argillaceous matrix, trace micromicas and coaly fragments and disseminated carbonaceous flecks, firm but friable, nil to very poor visual porosity. NO SHOWS - from freshly broken surfaces.
19	2381	20		SILTY CLAYSTONE: medium dark grey, firm, micromicaceous, trace sulphide smears, rare carbonaceous flecks, trace - 10% silt and very fine quartz sand in places, non calcareous.
18	2389	10		ARGILLACEOUS SANDSTONE: dark olive grey, very fine to fine grained, dominantly very fine grained, tending well sorted, dominantly angular to subangular, 20-30% argillaceous matrix, trace micromicas, good trace to 5% coaly fragments and disseminated carbonaceous flecks, firm but friable, nil to very poor visual porosity. NO SHOWS - from freshly broken surfaces.
17	2394	13		CARBONACEOUS SANDSTONE: mottled blackish olive grey, silty to very fine grained, dominantly very fine grained, tending well sorted, dominantly angular to subangular, 30-40% argillaceous material and carbonaceous debris, firm but friable, nil to very poor visual porosity. NO SHOWS - from freshly broken surfaces.
16	2401	22		SANDSTONE: light to medium yellowish grey (? Appears to be brownish from background oil staining), very fine to coarse grained, dominantly medium grained, moderately tending well sorted, angular to subangular, soft and friable, no cementation but with 10-15% quartz silt matrix, trace pyrite smears and carbonaceous debris, rare greenish flecks, poor visual porosity. FAIR SHOW - 100% even but subdued to sometimes moderately bright yellowish UV sample fluorescence, instant streaming bluish solvent cut which intensifies after 2-3 minutes to moderately bright whitish blue solvent cut. Light residue ring. Petroliferous odours from freshly broken surface of sidewall core sample.
15	2424	23		SILTY/SANDY CLAYSTONE: dark olive grey, firm, micromicaceous, trace sulphide smears, trace to good trace

No	Depth (m)	Rec. (mm)	B/R	Description
				carbonaceous flecks and some coaly laminae, 15 - 25% silt and very fine quartz sand as matrix, non calcareous, visually tight. NO SHOW.
14	2428	25		ARGILLACEOUS SANDSTONE: dark olive grey, very fine to lower fine grained, dominantly very fine grained, tending well sorted, dominantly angular to subangular, 20-30% argillaceous matrix, trace micromicas, good trace to 5% coaly fragments and disseminated carbonaceous flecks, firm but friable, nil to very poor visual porosity. NO SHOWS - from freshly broken surfaces.
13	2443	29		SILTY/SANDY CLAYSTONE: dark olive grey, firm, good micromicaceous, trace sulphide smears, trace to good trace carbonaceous flecks and some coaly laminae, 20 - 25% silt and very fine quartz sand as matrix, non calcareous, visually tight. NO SHOW.
12	2449	25		CARBONACEOUS CLAYSTONE: brownish black to olive black, firm, micromicaceous, with good trace - 5% very fine quartz sand as scattered matrix, non calcareous.
11	2455	30		CLAYSTONE: olive black, micromicaceous, firm tending moderately hard.
10	2459	26		CLAYSTONE: medium olive grey, micromicaceous, firm tending moderately hard.
9	2463	-		LOST BULLET
8	2466	-		MISFIRE
7	2472	25		CARBONACEOUS CLAYSTONE: brownish black to olive black, firm, micromicaceous, with good trace - 5% very fine to fine quartz sand as scattered matrix, non calcareous.
6	2474	-		LOST BULLET
5	2479	-		LOST BULLET
4	2482	-		EMPTY BULLET
3	2490	25		SANDSTONE: mottled light yellowish brown (light oil staining) to medium grey with white quartz granules, quartz rich, very fine grained to granular, dominantly fine to medium grained but overall tending poorly sorted, subangular, variable clay and quartz silt matrix, rare carbonaceous and sulphide specks. Firm but friable, poor visual porosity. WEAK tending FAIR SHOW - 40-50% patchy, moderately bright yellowish white UV sample fluorescence, instant but slowly diffusing moderately bright bluish solvent cut, doesn't intensifies greatly over several minutes but intensifies slightly on crush, petroliferous odours discernable.
2	2499	-		MISFIRE
1	2515	32		SANDSTONE: quartz rich, light greyish white to very light olive grey, , firm but friable, very fine to lower fine grained, dominantly very fine grained, well sorted, varying angular to subangular, mostly appears clean but with traces of carbonaceous material as indistinct laminae/microlaminae, trace to good trace quartz silt matrix, poor to occasional fair visual porosity. NO SHOWS.

Vic/L10 West Moonfish-1**Sidewall Core Descriptions: Suite 2, Run 4, Feb 08, 2005**

No	Depth mMDRT	Rec mm	Paly or EAL	Shows	Description
Shot: 60					
Recover: 51 (85%)					
Lost bullets: 8					
Empty: 1					
EAL: 16 cores (2 boxes)					
Palynology: 35 cores (4 boxes)					
60	2561.5	20	Paly		CARBONACEOUS SILTSTONE: mottled black & brown, argillaceous, abundant carbonaceous material, silty white laminations, moderately hard, subblocky.
59	2574.5	25	Paly		SILTSTONE: mottled grey/brown, argillaceous & arenaceous grading to silty sandstone, moderately hard, subblocky.
58	2575.5	2 by 5mm	Paly		SILTSTONE: mottled grey/brown, argillaceous & arenaceous grading to silty sandstone, moderately hard, subblocky.
57	2581.0	20	Paly		CARBONACEOUS SILTSTONE: mottled black & grey/brown, argillaceous & carbonaceous, moderately hard, subblocky.
56	2583.5	15	EAL	20% fluor	SANDSTONE: white, very fine to fine grained, rare medium & coarse clasts, generally well sorted, subrounded, weak siliceous cement, abundant white silty matrix, friable to firm, very poor to poor visual porosity. Fluorescence: 20% dull, patchy, yellow/white fluorescence, slow streaming yellow/white cut, thick ring residue.
55	2589.5	10	EAL	70% fluor	SANDSTONE: white, very fine grained, grading to arenaceous siltstone, well sorted, subrounded, weak siliceous cement, abundant white silty matrix, friable, very poor visual porosity. Fluorescence: 70% moderately bright, patchy, yellow/white fluorescence, slow streaming yellow/white cut, thick ring residue.
54	2596.5	10	Paly	40% fluor	SANDSTONE: white, very fine to fine grained, well sorted, subangular to subrounded, moderate siliceous cement, abundant very fine & silty white matrix, friable to moderately hard, very poor to poor visual porosity. Fluorescence: 40% dim to dull, patchy, yellow fluorescence, yellow/white crush cut, thick ring residue.
53	2611.0	10	Paly	30% fluor	SANDSTONE: white, very fine to fine grained, well sorted, subangular to subrounded, moderate siliceous cement, abundant very fine & silty white matrix, friable to moderately hard, very poor to poor visual porosity. Fluorescence: 30% dim to dull, patchy, yellow fluorescence, yellow/white crush cut, thick ring residue.
52	2638.0	2 by 10mm	Paly		SILTSTONE: brown, argillaceous, grading to claystone, occasional carbonaceous fragments, moderately hard, subfissile.
51	2641.0	10mm + frags	Paly	40% fluor	Silty SANDSTONE: pale grey/brown, very fine grained, grading to arenaceous siltstone, well sorted, subrounded, weak siliceous cement, abundant white silty & argillaceous matrix, firm to friable, nil to very poor visual porosity. Fluorescence: 40% dim, even, yellow fluorescence, crush cut, thick film residue.
50	2646.0	15	Paly		SILTSTONE: pale brown, argillaceous, trace carbonaceous fragments, scattered very fine sand grains, moderately hard, subfissile.
49	2653.0	20	Paly		Carbonaceous SILSTONE with rare silty SANDSTONE laminations. CARBONACEOUS SILTSTONE: medium grey/brown, argillaceous, common to abundant carbonaceous laminations & specks, moderately hard, subblocky to subfissile. SANDSTONE: white, very fine grained, well sorted, weak siliceous cement, abundant argillaceous & silty white matrix, firm, nil visual porosity. NO SHOWS.

Sidewall Core Descriptions: Suite 2, Run 4, Feb 08, 2005

No	Depth mMDRT	Rec mm	Paly or EAL	Shows	Description
48	2659.5		LOST BULLET		
47	2670.5	20	Paly		SILTSTONE: pale grey, argillaceous, grading to claystone, scattered micro lithic & carbonaceous flecks, moderately hard, subfissile to subblocky.
46	2682.5	18	Paly		Argillaceous SILTSTONE: medium grey/brown, argillaceous, grading to claystone, scattered micro-carbonaceous flecks, moderately hard, subfissile to subblocky, discontinuous carbonaceous siltstone laminations.
45	2702.0	20	Paly		Argillaceous SILTSTONE: medium grey/brown, argillaceous, grading to claystone, scattered micro-carbonaceous flecks, moderately hard, subfissile to subblocky.
44	2708.0	25	Paly		SILTSTONE: very pale grey/brown, argillaceous, arenaceous in part, grading to silty sandstone, firm, subfissile to subblocky.
43	2712.0		LOST BULLET		
42	2715.8	10	EAL		VOLCANI-CLASTIC SEDIMENT: as per SWC #39. NO SHOWS.
41	2717.2		LOST BULLET		
40	2719.5	5mm+15 mm	EAL		VOLCANI-CLASTIC SEDIMENT: as per SWC #39, with white ?kaolinite? bands. NO SHOWS.
39	2721.0	5mm + 10mm+ frags	EAL		VOLCANI-CLASTIC SEDIMENT: white, mottled grey/brown, silty & argillaceous white matrix, occasional embedded very coarse grains, ?feldspathic?, weakly calcareous, hard with friable matrix, no visual porosity, NO SHOWS.
38	2728.0	25	Paly		SILTSTONE: medium grey/brown, argillaceous, grading to claystone, common micro-carbonaceous flecks, moderately hard, subfissile to subblocky.
37	2737.0	20	Paly		SILTSTONE: pale grey/brown, argillaceous, grading to claystone, , moderately hard, subfissile.
36	2757.0	20	EAL	50% fluor	SANDSTONE: white, mottled pale grey/brown, very fine to fine grained, well sorted, subangular to subrounded, weak siliceous cement, abundant white silty matrix, friable to firm, very poor to poor visual porosity. Fluorescence: 50% dull to moderately bright, patchy, yellow/white fluorescence, slow streaming yellow/white cut, thin film residue.
35	2762.2	20	EAL	50% fluor	SANDSTONE with carbonaceous SILTSTONE laminations. SANDSTONE: white, mottled pale grey/brown, very fine to fine grained, well sorted, subrounded, weak to moderate siliceous cement, abundant white silty matrix, firm, very poor to poor visual porosity. Fluorescence: 50% dim, patchy, yellow fluorescence, slow streaming yellow/white cut, thick ring residue.
34	2804.0	15	Paly		ARGILLACEOUS SANDSTONE: pale grey/brown, very fine, well sorted, subrounded, weak to moderately strong siliceous cement, abundant grey/brown argillaceous matrix, common lithic and carbonaceous fragments, firm, nil to very poor porosity. NO SHOWS.
33	2847.0	20	Paly		SILTSTONE: pale grey, argillaceous, common scattered carbonaceous flakes, firm to moderately hard, subblocky to subfissile.
32	2887.0	Frag	Paly		SILTSTONE: medium grey, argillaceous, common scattered carbonaceous flakes, firm, subfissile to fissile.
31	2921.0	Frag	Paly		SILTSTONE: pale to medium grey, argillaceous, arenaceous in parts, trace lithic and carbonaceous fragments moderately hard, subblocky to subfissile.

Vic/L10 West Moonfish-1**Sidewall Core Descriptions: Suite 2, Run 4, Feb 08, 2005**

No	Depth mMDRT	Rec mm	Paly or EAL	Shows	Description
30	2925.0	25	EAL	20% fluor	SANDSTONE: white to very pale grey, very fine grading to arenaceous SILTSTONE, rounded to subrounded, weak siliceous cement, abundant silty matrix, trace carbonaceous fragments, friable to firm, very poor visual porosity. Fluorescence: 20%, dim even yellow, yellow to white crush cut, thick film residue.
29	2929.0	30	Paly		ARGILLACEOUS SILTSTONE with scattered COAL fragments ARGILLACEOUS SILTSTONE: pale grey, argillaceous, moderately hard, subblocky to subfissile. COAL: black, dull, silty, uneven fracture, brittle.
28	2953.0	30	LOST BULLET		
27	2983.0		Paly		ARGILLACEOUS SILTSTONE with scattered COAL fragments ARGILLACEOUS SILTSTONE: pale grey, argillaceous, moderately hard, subblocky to subfissile. COAL: black, dull, silty, uneven fracture, brittle.
26	2989.5	15	EAL		CARBONACEOUS SILTSTONE: mottled black brown, argillaceous, abundant carbonaceous material, arenaceous in parts, hard, subblocky to blocky.
25	2990.2	25	LOST BULLET		
24	3017.8		EAL		SANDSTONE: white, very fine, grading to arenaceous siltstone, well sorted, subrounded, weak siliceous cement, abundant silty matrix, friable to firm, nil to very poor visual porosity. NO SHOWS.
23	3018.2	30	EAL	10% fluor	SILTY SANDSTONE: mottled grey/brown, very fine, grading to arenaceous siltstone, well sorted, subrounded, weak to moderately strong siliceous cement, abundant grey/white argillaceous matrix, friable, nil to very poor visual porosity. Fluorescence: trace to 10% dull, patchy, yellow fluorescence, yellow/white cut, thick ring residue.
22	3045.0	15	Paly		SILTSTONE: white to pale grey, argillaceous, arenaceous in parts, firm, subblocky to subfissile.
21	3083.0	20	EAL	50% fluor	SANDSTONE: white, very fine to fine grained, well sorted, subrounded, weak siliceous cement, abundant white silty matrix, friable, very poor visual porosity. Fluorescence: 50% bright, patchy, yellow/white fluorescence, slow streaming yellow/white cut, thick ring residue.
20	3090.0	20	Paly		SILTSTONE: pale to medium grey, argillaceous, common carbonaceous flakes, moderately hard, subfissile.
19	3114.0	20	LOST BULLET		
18	3130.0		Paly		SILTSTONE: pale to medium grey, argillaceous, common carbonaceous flakes, moderately hard, subfissile.
17	3136.5	15	EAL		CLAYSTONE: very pale olive grey, hard, subblocky to subfissile.
16	3147.5	15	EAL	40% fluor	SANDSTONE: white, very fine grained, grading to arenaceous SILTSTONE, well sorted, subrounded, weak siliceous cement, abundant white argillaceous & silty matrix, grain supporting matrix in part, friable, nil to very poor visual porosity. Fluorescence: 40% dull, patchy, yellow fluorescence, yellow/white crush cut, thin ring residue.
15	3175.0	20	Paly		ARENACEOUS SILTSTONE: very pale grey/brown, arenaceous grading to very fine sandstone, argillaceous in parts, firm, subblocky.
14	3193.0	20	Paly		SILTSTONE laminations with COAL SILTSTONE: medium to dark grey/brown, argillaceous,

Vic/L10 West Moonfish-1**Sidewall Core Descriptions: Suite 2, Run 4, Feb 08, 2005**

No	Depth mMDRT	Rec mm	Paly or EAL	Shows	Description
					moderately hard to hard, subfissile.
13	3198.0	15	Paly		COAL: black, subvitreous, silty, uneven fracture, subblocky. SILTSTONE: pale to medium grey, argillaceous, common scattered carbonaceous flakes, firm to moderately hard, subblocky to subfissile.
12	3205.0	25	EAL		SILTSTONE: pale to medium grey, argillaceous in parts, arenaceous in parts, grading to silty sandstone, abundant carbonaceous flakes, firm to moderately hard, subblocky.
11	3215.5	10	EAL		ARGILLACEOUS SANDSTONE: white to very pale grey. Silty to very fine, well sorted, grades to arenaceous siltstone, subrounded, very weak siliceous cement, abundant white argillaceous silty matrix, grain supporting, friable, nil to very poor visual porosity, NO SHOWS .
10	3225.0	LOST BULLET			
9	3239.0	20	Paly		SILTSTONE with COAL bands SILTSTONE: pale grey, argillaceous, rare scattered micro carbonaceous flakes moderately hard, subblocky. COAL: black, subvitreous, silty, uneven fracture, brittle.
8	3263.0	25	Paly		ARGILLACEOUS SILTSTONE: medium grey/brown, argillaceous abundant carbonaceous flakes, scattered lithic fragments, moderately hard, subblocky.
7	3287.5	20	Paly		Laminated SILTSTONE and CARBONACEOUS SILTSTONE SILTSTONE: medium brown, hard, subblocky, common carbonaceous specks and laminations. CARBONACEOUS SILTSTONE: black, grading to silty coal, uneven fracture, brittle to moderately hard.
6	3303.0	EMPTY BULLET			
5	3323.0	20	Paly		SILTSTONE: pale grey, argillaceous, scattered micro carbonaceous and rare lithic fragments, firm to moderately hard, subblocky to subfissile.
4	3341.0	15	Paly		ARGILLACEOUS SILTSTONE: pale grey, argillaceous grading to claystone, scattered very fine sand grains, firm, subfissile.
3	3349.5	23	Paly		SANDSTONE with COAL laminations SANDSTONE: white to pale grey brown, very fine grained, well sorted, surrounded to subangular, weak siliceous cement, abundant white silty and argillaceous matrix, grain supporting, firm to friable, very poor to nil visual porosity, NO SHOWS . COAL: black, dull to subvitreous, grades to carbonaceous siltstone, uneven fracture, brittle.
2	3355.5	15	Paly		ARGILLACEOUS SILTSTONE: pale grey, argillaceous grading to claystone, scattered very fine sand grains, firm, subfissile.
1	3363.8	LOST BULLET			

APPENDIX 3

MDT RESULTS

ESSO AUSTRALIA PTY LTD

Well: West Moonfish-1

Date: 20/01/2005

Geologist-Engineer

Cliff Menhennitt - Stuart Duff

Tool Type (MDT-GR-LEHQT)

Deviated Well

KB (metres):

39.2

Gauge Type: CQG

Inclination average 31deg

Probe type

Large

Pressure units (psia, psig)

Temperature units

Deg C

Point No	Schlumberger Depth mMD	Schlumberger Depth mTVDS	Strain Gauge				Quartz Gauge					Strain	Qtz	Mobility Ratio	Comments
			Hydrostatic Before	PPG	Reservoir	PPG	Hydrostatic Before	PPG	Reservoir	PPG	Temp				
1	2517.00	2387.10	4122.80	10.1	3398.10	8.35	4130.85	10.2	3405.88	8.37	92.84	4123.00	4131.48	20.9	10cc drawdown, good test
1	2517.00	2387.10		0.0	3398.20	8.35		0.0	3405.75	8.37					Repeat 10cc drawdown
2	2508.50	2379.77	4110.40	10.1	3418.30	8.43	4118.10	10.2	3425.92	8.45	94.12	4110.60	4117.82	2.3	10cc dd, didn't stabilise after 10 minutes, tight formation
3	2497.75	2370.50	4095.20	10.1		0.00	4102.68	10.2		0.00	94.15	4095.20	4102.42	0.1	Very tight, only 5cc ddown 1st attempt and 2.5cc ddown 2nd attempt
4	2491.00	2364.70	4085.00	10.1	3393.20	8.42	4092.52	10.2	3400.66	8.44	95.53	4085.00	4092.30	1.5	10cc dd, appeared to be ??good test, stable QG pressure
5	2486.50	2360.80	4078.60	10.1		0.00	4086.29	10.2		0.00	96.09	4078.60	4085.96	0.1	only 4.8cc dd 1st attempt, 2.1cc 2nd dd, very tight
6	2478.75	2354.10	4067.20	10.1	3347.00	8.34	4074.78	10.2	3354.38	8.36	96.43	4067.10	4074.53	105.6	10cc ddown, good test
7	2475.25	2351.10	4061.90	10.1	3342.40	8.34	4069.49	10.2	3349.78	8.36	96.72	4061.90	4069.28	402.2	10cc ddown, good test
8	2473.25	2349.40	4058.40	10.1		0.00	4066.29	10.2		0.00	97.37	4058.80	4066.04	1.9	4cc ddown only, tight formation/lith boundary, move down 2474m
9	2474.00	2350.00	4059.70	10.1	3340.50	8.34	4067.18	10.2	3348.00	8.36	97.60	4059.70	4067.20	51.0	10cc ddown, good test
10	2470.00	2346.60	4054.40	10.1	3336.10	8.34	4062.10	10.2	3343.61	8.36	97.73	4054.40	4062.01	9.6	10cc ddown, good test
11	2467.50	2344.40	4050.70	10.1		0.00	4058.43	10.2		0.00	97.84	4050.70	4058.32	0.1	5.1 cc ddown, not stabilising, abort after 10 mins, move up 0.5m
12	2467.00	2343.98	4049.70	10.1	3332.50	8.34	4057.46	10.2	3340.08	8.36	97.98	4049.70	4057.40	13.1	10cc ddown, good test
13	2463.75	2341.20	4045.20	10.1	3327.70	8.34	4052.88	10.2	3335.30	8.36	98.11	4045.10	4052.67	16.2	10cc ddown, good test
14	2461.75	2339.46	4042.10	10.1		0.00	4049.93	10.2		0.00	98.09	4042.10	4049.76		Tight
15	2462.25	2339.89	4042.60	10.1	3341.20	8.38	4050.51	10.2	3348.90	8.40	98.16	4042.60	4050.36	8.2	Supercharged
16	2451.50	2369.86	4027.20	10.0		0.00	4035.08	10.0		0.00	98.35	4027.20	4035.01	1.0	Supercharged (3689.6?)
17	2417.50	2301.37	3977.00	10.1	3258.20	8.31	3984.74	10.2	3265.65	8.33	98.32	3977.10	3984.66	90.0	10cc ddown, good test
18	2415.00	2299.22	3974.10	10.1	3255.60	8.31	3981.79	10.2	3263.28	8.33	98.15	3973.90	3981.68	578.4	20cc ddown, good test
19	2411.75	2296.42	3968.70	10.1	3251.40	8.31	3976.47	10.2	3259.13	8.33	98.20	3968.60	3976.37	137.0	20cc ddown, good test
20	2406.50	2291.92	3961.30	10.1	3245.40	8.31	3969.07	10.2	3253.01	8.33	98.23	3961.20	3968.95	73.6	20cc ddown, good test
21	2401.00	2287.19	3954.80	10.1	3241.50	8.32	3961.13	10.2	3249.07	8.34	98.19	3953.30	3961.02	39.6	20cc ddown, good test
22	2375.00	2264.84	3915.30	10.1	3193.30	8.27	3923.29	10.2	3201.27	8.29	97.10	3915.00	3923.10	5076.1	20cc ddown, good test
23	2367.00	2257.95	3903.40	10.1	3183.70	8.27	3911.67	10.2	3191.82	8.30	97.10	3903.30	3911.51	510.8	20cc ddown, good test
24	2359.50	2251.50	3892.70	10.1	3175.10	8.28	3901.54	10.2	3183.54	8.30	97.36	3892.90	3901.34	60.6	20cc ddown, good test
25	2286.50	2188.79	3785.40	10.1	3079.80	8.26	3793.39	10.2	3087.53	8.28	97.57	3785.50	3793.33	40.2	20cc ddown, good test
26	2279.00	2182.37	3774.90	10.2	3071.10	8.26	3782.82	10.2	3078.93	8.28	97.27	3774.80	3782.80	97.9	20cc ddown, good test
27	2272.50	2176.80	3765.20	10.2	3063.30	8.26	3773.22	10.2	3071.14	8.28	97.01	3765.20	3773.20	11.1	20cc ddown, good test
28	2269.50	2174.23	3760.60	10.2		0.00	3768.61	10.2		0.00	96.99	3760.70	3769.49		Tight
29	2270.00	2174.65	3761.80	10.2	3060.30	8.26	3769.77	10.2	3068.27	8.28	96.74	3761.60	3769.60	13.4	20cc ddown, good test
30	2263.00	2168.66	3751.20	10.2	3053.40	8.26	3759.44	10.2	3061.49	8.28	96.77	3751.20	3759.36	2.0	20cc ddown, good test
31	2261.00	2166.95	3748.50	10.2	3049.00	8.26	3756.83	10.2	3057.27	8.28	96.95	3748.40	3756.67	63.0	20cc ddown, good test
32	2257.00	2163.53	3742.20	10.2		0.00	3750.39	10.2		0.00	96.86	3742.30	3750.27		Tight
33	2253.00	2160.10	3736.70	10.2	3038.80	8.26	3744.93	10.2	3046.97	8.28	96.87	3736.80	3744.90	5.3	20cc ddown, good test
34	2242.75	2151.30	3721.80	10.2	3019.50	8.24	3729.99	10.2	3027.67	8.26	96.73	3721.80	3729.91	803.2	20cc ddown, good test
35	2142.00	2066.07	3578.20	10.2	2900.90	8.24	3585.39	10.2	2908.44	8.26	94.51	2577.80	3585.52	1744.9	20cc ddown, good test
36	2134.50	2059.79	3566.80	10.2	2892.30	8.24	3574.84	10.2	2900.34	8.26	93.97	3566.60	3574.91	6.5	20cc ddown, good test
37	2131.00	2056.87	3561.50	10.2	2887.30	8.24	3569.90	10.2	2895.54	8.26	94.28	3561.60	3569.86	883.6	20cc ddown, good test
38	2128.00	2054.35	3557.40	10.2	2883.80	8.24	3565.65	10.2	2892.08	8.26	94.15	3557.40	3565.68	1435.7	20cc ddown, good test
39	2125.00	2051.84	3553.40	10.2	2880.50	8.24	3561.64	10.2	2888.77	8.26	94.23	3553.40	3561.65	135.1	20cc ddown, good test
40	2121.00	2048.50	3547.70	10.2	2876.40	8.24	3555.85	10.2	2884.62	8.26	94.08	3547.60	3555.87	567.8	20cc ddown, good test
41	2115.00	2043.48	3539.10	10.2	2875.20	8.26	3547.41	10.2	2883.37	8.28	94.02	3539.20	3547.42	212.0	20cc ddown, good test
42	2106.00	2035.95	3526.50	10.2	2873.50	8.28	3534.72	10.2	2881.84	8.31	93.91	3526.40	3534.88	7563.9	20cc ddown, good test
43	2097.00	2028.42	3514.30	10.2	2871.80	8.31	3522.74	10.2	2880.43	8.33	93.67	3514.20	3522.85	3475.5	20cc ddown, good test
44	2088.00	2020.91	3501.60	10.2	2870.20	8.33	3510.26	10.2	2878.89	8.36	93.63	3501.60	3510.32	11278.8	20cc ddown, good test

Table 1.1 - MDT Pre-tests conducted in the 12 1/4" hole section

EAL - WEST MOONFISH-1 MDT FLUID SAMPLE DATA**Well: West Moonfish -1**

A. Sample Identification							
Run/seat number	#/#	1/1	1/2	1/3	1/4	1/5	1/6
Sample depth	m MDRT	2121	2121.0	2125.0	2106.0	2475.3	1647.3
Pretest volume	cc	20 cc	20cc	20cc	20cc	20cc	20cc
Chamber size	cc/litre/gallon	450cc	x2 450cc	pumpout only	x2 450cc	pumpout only	pumpout only
Chamber serial number	#		66/122		113/123		
Probe type		Large					
Choke size		n/a					
B. Sampling History							
Date	dd/mm/yy	22/01/05	22/01/05	22/01/05	22/01/05	22/01/05	22/01/05
Initial hydrostatic	psia	3556.32	3555.9	3562.2	3534.9	4070.5	2812.5
Tool Set	hh:mm	7:46	8:31	10:36	11:41	13:02	14:43
Pretest start	hh:mm	7:47	8:32	10:38	11:42	13:04	14:45
Initial formation pressure (pre	psia	2885.13	2884.6	2889.5	2882.0	3350.7	2223.0
Pretest end	hh:mm	7:52	8:33	10:41	11:44	13:08	14:47
Pretest duration	hh:mm	5min	1min	3min	2min	4 min	2 min
Pumpout start	hh:mm	7:52	8:33	10:43	11:44	13:10	14:49
Pumpout end	hh:mm	8:15	9:48	11:28	12:05	14:03	15:40
Pumpout duration	hh:mm	Probe blocked	1:15	0:45	0:21	0:53	12:14
Pumpout volume	litres	Abort and	29.25	38.61	19.89	55	45.6
OFA indication	colour	reset probe	green/pink	blue	pink/red	blue	blue
Interpreted fluid at OFA	-		oil/gas	water	gas	water	water
Maximum resistivity at probe	ohm-m		26	0.051	0.325	0.066	0.079
Chamber open	hh:mm		9:48	pumpout only	12:06	pumpout only	pumpout only
Minimum sampling pressure	psia		2849.1				
Final formation pressure	psia		2885.1	2889.5	2882.5	3350.3	2223.0
Seal chamber	hh:mm		9:58		12:14		
Chamber fill time	hh:mm		0:10		0:08		
Tool retract	hh:mm		10:01	11:35	12:18	14:07	15:45
Final hydrostatic	psia		3555.9	3562.0	3534.6	4069.6	2812.4
Total time	hh:mm		1:30	1:00	0:37	1:05	1:02

Table 1.2 - MDT Fluid samples conducted in the 12 1/4" hole section

ESSO AUSTRALIA PTY LTD

Well: West Moonfish-1

Date:

Geologist-Engineer

Antonio Ribeiro - Greg O'Neill

Tool Type (MDT-GR-LEHQT)

Deviated Well

KB (metres):

39.2

Gauge Type: CQG

Inclination average 31deg

Probe type

Large

Pressure units (psia, psig)

Temperature units

Deg C

Point No	Schlumberger Depth mMD	Schlumberger Depth mTVDSS	Strain Gauge				Quartz Gauge					Strain	Qtz	Mobility Ratio	Comments
			Hydrostatic Before	PPG	Reservoir	PPG	Hydrostatic Before	PPG	Reservoir	PPG	Temp	hyd after	hyd after		
1	3211.10	2980.50	5362.60	10.6		0.00	5373.13	10.6		0.00	115.60				2 x 10cc drawdown, no seal
2	3211.40	2980.74	5363.30	10.6		0.00	5373.62	10.6		0.00	117.20				2 x 10cc drawdown, no seal
3	3147.50	2929.22	5272.10	10.6		0.00	5281.50	10.6		0.00	116.90				20cc drawdown, no seal
4	3140.00	2923.20		0.0		0.00		0.0		0.00					Testing seal. No seal
5	3083.00	2877.65	5177.20	10.6		0.00	5189.29	10.6		0.00	111.20				20cc drawdown, no seal
6	3082.50	2877.26	5177.60	10.6		0.00	5189.00	10.6		0.00	113.30				20cc drawdown, no seal
7	3018.30	2826.23	5087.90	10.6		0.00	5098.50	10.6		0.00	114.50				20cc drawdown, no seal
8	3018.00	2825.99	5087.40	10.6		0.00	5097.53	10.6		0.00	114.10				20cc drawdown, no seal
9	2757.00	2600.89	4688.90	10.6	3820.10	8.62	4697.60	10.6	3829.18	8.64	112.00	4687.90	4697.44	2.4	20cc ddown, good test
10	2989.50	2803.20	5046.30	10.6		0.00	5057.26	10.6		0.00	110.40				20cc drawdown, no seal
11	2989.50	2803.20	5045.70	10.6		0.00	5057.07	10.6		0.00	111.20				Supercharged
12	2989.20	2802.96	5046.30	10.6		0.00	5057.40	10.6		0.00	112.00				Supercharged
13	2814.20	2652.63	4778.40	10.6		0.00	4787.43	10.6		0.00	111.30				20cc drawdown, no seal
14	2814.00	2652.45	4777.70	10.6		0.00	4787.55	10.6		0.00	110.20				20cc drawdown, no seal
15	2762.20	2605.58	4694.30	10.6	3850.40	8.67	4704.16	10.6	3860.35	8.69	109.80	4693.80	4704.08	1.3	20cc ddown, good test
16	2761.00	2604.50	4691.40	10.6		0.00	4701.88	10.6		0.00					Supercharged (3914.13)?
17	2761.00	2604.50	4691.20	10.6		0.00	4701.80	10.6		0.00		4691.10	4701.70		Supercharged (3914.52)?
18	2757.00	2600.89	4685.40	10.6	3820.10	8.62	4695.53	10.6	3830.10	8.64	109.50	4685.00	4695.55	2.2	20cc ddown, good test
19	2755.20	2599.27	4683.00	10.6		0.00	4693.35	10.6		0.00	109.30				Supercharged (3926.49 after 8 minutes)?
20	2756.00	2599.99	4683.30	10.6		0.00	4693.89	10.6		0.00	109.50				Tight
21	2686.50	2537.41	4579.90	10.6		0.00	4584.53	10.6		0.00	108.60				20cc drawdown, no seal
22	2686.00	2536.96	4570.00	10.6		0.00	4580.57	10.6		0.00	107.60				Tight
23	2675.20	2527.25	4553.30	10.6	3647.70	8.47	4564.03	10.6	3657.79	8.49	107.90	4553.40	4564.05	7.2	20cc ddown, good test
24	2593.00	2454.04	4423.40	10.6	3498.20	8.37	4433.50	10.6	3507.95	8.39	107.60	4423.20	4433.22	2.5	20cc ddown, good test
25	2589.50	2450.94	4417.40	10.6	3493.70	8.37	4427.68	10.6	3503.80	8.39	106.50	4417.20	4427.48	4.5	20cc ddown, good test
26	2583.00	2445.19	4406.80	10.6	3486.40	8.37	4417.30	10.6	3496.60	8.39	106.10	4406.80	4417.18	4.0	20cc ddown, good test

Table 1.3 - MDT Pre-tests conducted in the 8 1/2" hole section

APPENDIX 4

Mud Logging Report



WEST MOONFISH 1

FINAL WELL REPORT

Prepared by
Overseas Oilfield Services S.A.
Engineers: P. Mc Gilveray, T. Platt, B. Beranek, D. van der Aa.

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SECTION 3 -- GEOSERVICES WELL LOGS

MASTERLOG --	1:500 scale from 91 to 3369 metres
DRILLING LOG --	1:1000 scale from 91 to 3369 metres
GAS RATIO LOG --	1:500 scale from 91 to 3369 metres
OVERPRESSURE LOG --	1:1000 scale from 91 to 3369 metres

Section 1

General Well Summary

WELL DATA

Operator : Esso Australia Ltd
Well name : West Moonfish - 1
Country : Australia
Location : Bass Strait
Field : Moonfish
Permit : VIC / L10

Location MGA co-ordinates : 585687.25m E 5777075.49 m N

Location local co-ordinates : Lat: 38° 09' 00.48" S Long: 147° 58' 40.63" E

Profile : Directional
Reference depth : Rotary Table
RT to Seabed : 91.2 metres
RT above M.S.L. : 39.2 metres
Sea-water depth : 52.0 metres
Proposed total depth : 3362.0 metres
Actual total depth : 3369.0 metres
True vertical depth : 3149.5 metres
Spudded on : 5th January 2005
Total depth reached on : 5th February 2005

Drilling Contractor : Ensco Australia
Rig name : Ensco 102
Rig type : Jackup

Drilling Phases

Diameter (inch)	From (m)	To (m)	Mud Type
26"	91.0	160.0	Seawater
17.5"	160.0	761.0	Seawater / Bentonite
12 ¹ / ₄ "	761.0	2532.0	Seawater / KCL / PHPA / Glycol
8 ¹ / ₂ "	2532.0	3369.0	Seawater / KCL / PHPA / Glycol

Cased Hole

Casing Diameter (inch)	Casing Type	Shoe Depth (m)
20"	Conductor	155.34 MDRT
13 ³ / ₈ "	Surface	755.40 MDRT
9 ⁵ / ₈ "	Intermediate	2526.78 MDRT

MUD LOGGING

Logging Unit Number: 171

Engineers: T.Platt, B.Beranek, P.McGilveray, D. van der Aa

Mudloggers: N. Elliot, A. Cruickshank, C. Chadwick, I. Faichney

Sampling Interval

West Moonfish - 1

Sample Type	Number of sets	Quantity per set	Sampling interval	From (m)	To (m)
Washed and Dried	4	100 grams	30 metres	160	1470
Unwashed and Dried	1	200 grams	30 metres	160	1470
Washed and Dried	4	100 grams	5 metres	1470	3438 TD
Unwashed and Dried	1	200 grams	5 metres	1470	3438 TD
Mud Samples	1	1 litre	Taken @	900m 1530m 2010m 3369mTD	

Cuttings Distribution

Company	Unwashed and Dried Samples
EAPL	1

Company	Washed and Dried Samples
EAPL	1
BHPB	1
DPI	1
Geoscience Australia	1

Company	Mud Samples
EAPL	1

WELL SUMMARY

West Moonfish-1 is located in permit VIC / L10, and it will test a structural trap west of the Moonfish Field, with the primary target being a reservoir below volcanics which are Lower L. balmei in age. These volcanics are referred to here as Moonfish volcanics. West moonfish-1 was planned to drill deeper to test a second target which is the Golden Beach Group reservoir, situated below another volcanic interval. The volcanic interval is believed to be N. senectus to T. lilliei in age, and is referred to here as the Remora volcanics. West Moonfish-1 was drilled as a directional exploration well in 52 m of water, using the ENSCO 102 jack up drilling rig, and was spudded @ 19:40 on the 5th of January 2005 and drilled to a Total Depth of 3369mMBRT, reached on the 5th February 2005.

26 " PHASE

A Security MGF 26" Bit was used to drill the 26" Phase. (Bit#1) It washed and drilled from the seabed at 91m to the section TD of 160 m. All returns for this section went to the seabed.

A total of 69 m of 26" hole to 160.0 mMBRT was drilled in 6.9 on bottom drilling hours, at an average ROP of 10 m/hr.

The hole was circulated and conditioned and a wiper trip was made. The 20" conductor casing was run in hole, with the shoe set at 155.4 mMBRT (155.4 mTVD). The cement job was performed as per the programme.

17 1/2" PHASE

A Security FS 2563 PDC Bit (Bit# 2) was used to drill the 17 1/2" phase. Top cement was tagged at 150.0m, drilled, and the casing shoe cleaned out. New hole was then drilled from 160.0m – 761.0 mMBRT (761.0 mTVD).

A total of 601m of 17 1/2" hole was drilled to 761.0 mMBRT, in 15.4 on bottom drilling hours, at an average ROP of 39.0 m/hr.

A Hi-Vis pill was pumped before pulling back to the 20" shoe for a wiper trip. The 17 1/2" BHA was pulled out of hole and racked back before rigging up to run 13 3/8" casing as per tally.

The 13 3/8" casing was run and the shoe was set at depth of 755.4 mMBRT (755.4 mTVD). The cement job was then performed as per the programme.

12 1/4" PHASE

A HYCALOG 12 1/4" RSX192 (Bit# 3) in conjunction with an A962GT 7:8 motor was run to drill out the shoe track, casing shoe (755.4mMBRT) and 12 1/4" rat hole to 764mMBRT. A PIT was performed resulting in an EMW of 16.6ppg.

The 12 1/4 " hole was drilled to the depth of 1700mMBRT, being the planned directional Kick-off Point. The hole was drilled and steered as directed by the directional driller to 1737.5 mMBRT, where it was decided to pull out of the hole and change the bit, because of the insufficient angle build up.

The HYCALOG 12 1/4" RSX192 bit drilled a total of 976 m to 1737.5 mMBRT (1737.5 mTVD), in 33.2 on bottom drilling hours, at an average ROP of 29.4 m/hr.

A Hughes MX20DX (Bit# 4) was then run in the hole to build hole angle averaging 3 degrees per 50 metres. The angle build was 4 degrees per 40 metres. Large cuttings at the shakers were mainly from the Lakes Entrance formation though they were not from overpressure. The hole was circulated clean, and backreamed through the caved formation, before washing back to bottom at 1885mMBRT. Sliding was resumed to gain hole angle. The hole did not build angle as planned. Sliding continued to 2059 mMBRT and then two stands were rotary drilled to determine build / drop rates. Large platy cuttings continued to come up at the shakers through this section of Clay and Coal but these were typical of the Lakes Entrance formation and not pressure related.

At 2072 mMBRT the hole was circulated clean and the BHA pulled out of hole. Tight hole was experienced at 1965mMBRT with a 25Klbs overpull. The string was worked through this section before continuing to pull out of hole. A slug was pumped at 1700m. At surface the bit and motor were changed out, and an adjustable gauge stabilizer added to the BHA.

The Hughes MX20DX bit drilled 335m in 50 on bottom hours, averaging an ROP of 6.7 m/hr.

A Hycalog RSX 192 PDC bit (Bit# 5) was ran in hole to 1706mMBRT where tight hole was encountered. The hole was washed and reamed through tight spots to 1735 mMBRT, and again from 1822m to 1851mMBRT.

The string was then run in hole to 2054mMBRT. Drilling and sliding when necessary continued to the 12 ¼" section TD of 2532mMBRT (2439.3mTVD). The bit drilled 460m in 26.0 on bottom drilling hours at an average ROP of 17.7 m/hr.

Wireline logs were then ran, with a wiper trip performed before running the MDT & SWC logging runs. A trip gas peak of 40units (0.80%) was recorded during the wiper run.

MDT and SWC wireline tools were run prior to doing a further wiper trip. Wiper Trip gas prior to casing run was 915 u (18.3 %).

Run # 1: HRLA-HNGS-LEHQT

Run # 2: PEX150-LEHQT

Run # 3: DSI-FMI-LEHQT

Run # 4: MDT-GR-LEHQT

The 9⅝" casing shoe was set at 2526.87mMD (2434.8mTVD).

8½" PHASE

The 8½" hole was drilled with (Bit# 7) a Hughes Christensen MX30D bit and rotary assembly. The string was run in the hole, tagging cement at 2502mMBRT. The cement, float collar and cement were drilled to 2525mMBRT before displacing to new mud at 9.9ppg.

Once the mud was balanced in/out, the remaining cement, shoe and rat hole was drilled to 2532m. 3m of new formation was drilled to 2535mMBRT and the hole circulated to condition the mud. A pressure integrity test was performed, achieving an EMW of 14.0 ppg.

Drilling continued to 2556mMBRT, the string was pulled back to the shoe and the mud circulated. A leak off test was performed, returning an EMW of 16.6 ppg.

Drilling continued from 2556m to 2688mMBRT, where a bit trip was made due to the bit hours.

The Hughes Christensen bit drilled 156m in 44.2 on bottom hours, at an average ROP of 3.5 m/hr. The string was pulled out of hole with no problems. The LWD was downloaded and the near bit roller reamer was changed for a near bit stabiliser to help maintain the hole angle.

Bit # 8, a Hughes Christiansen MX30D was made up and run in hole to 2688m. Drilling continued from 2688m to 2866mMBRT where a bit trip was made due to the hole angle dropping.

The bit drilled 178m in 50.5 on bottom hours, at an average ROP of 3.5 m/hr. The string was pulled out of hole with no problems. The LWD was downloaded, and a new bit and a mud motor picked up to allow the hole angle to be built.

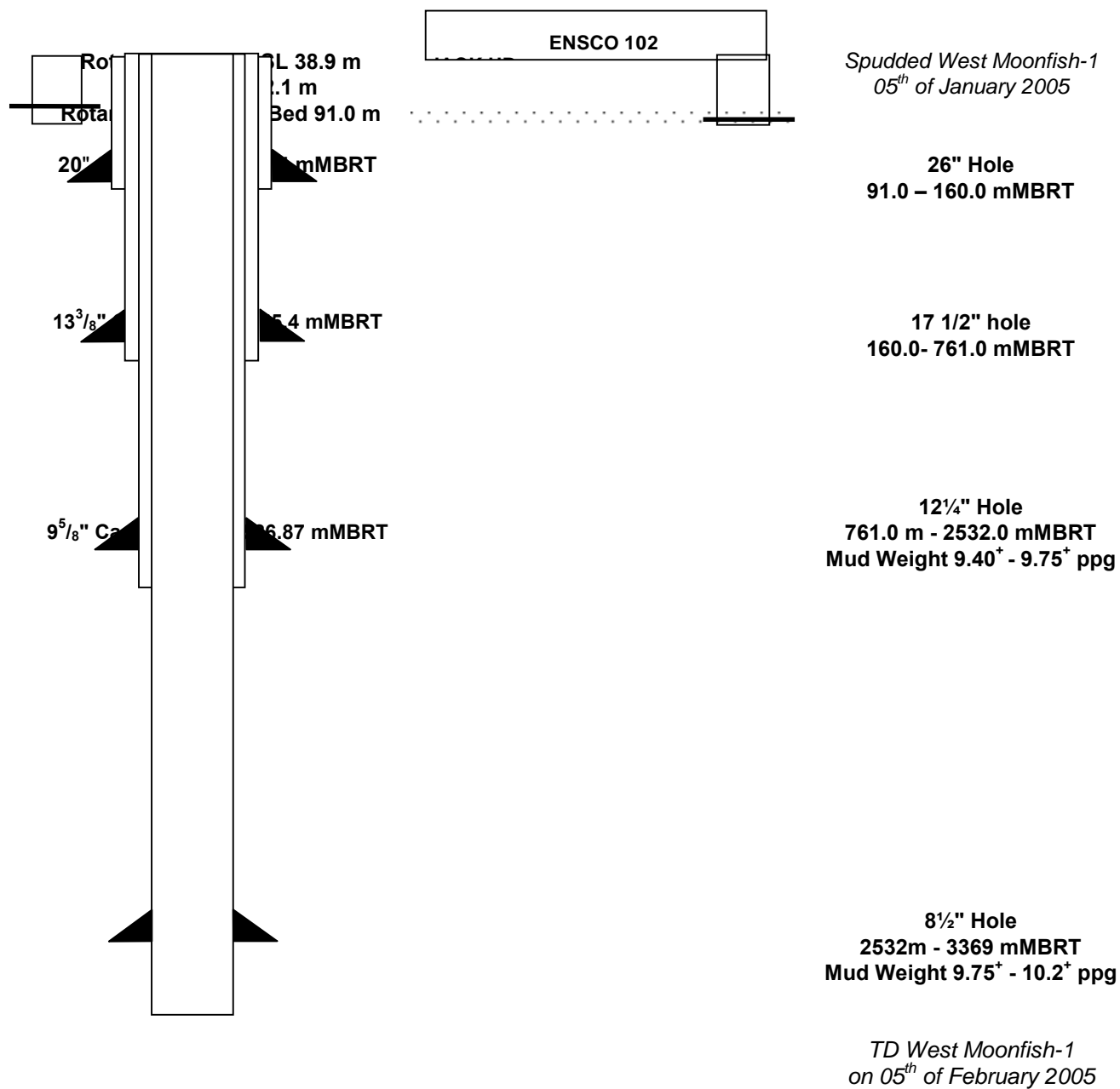
Bit# 9, a Smith GF11Y, was made up and run in hole to 2866m. Drilling continued from 2866m to 3024mMBRT, where a bit trip was made due to high revolutions on the bit. Bit# 9 drilled a total 158m of 8½" hole in 29.88 on bottom hours, resulting in an average ROP of 5.29 m/hr.

Bit # 10 a HYCALOG DSX173 DC was made up and run in hole to 3024m. Drilling continued from 3024m to the final depth of 3369.0 mMBRT (3149.5 mTVDRT). Bit #10 drilled 345m of 8½" hole in 28.0 on bottom hours, at an average ROP of 12.32 m/hr. The hole was then circulated clean and a wiper trip was made to the casing shoe before pulling out of hole.

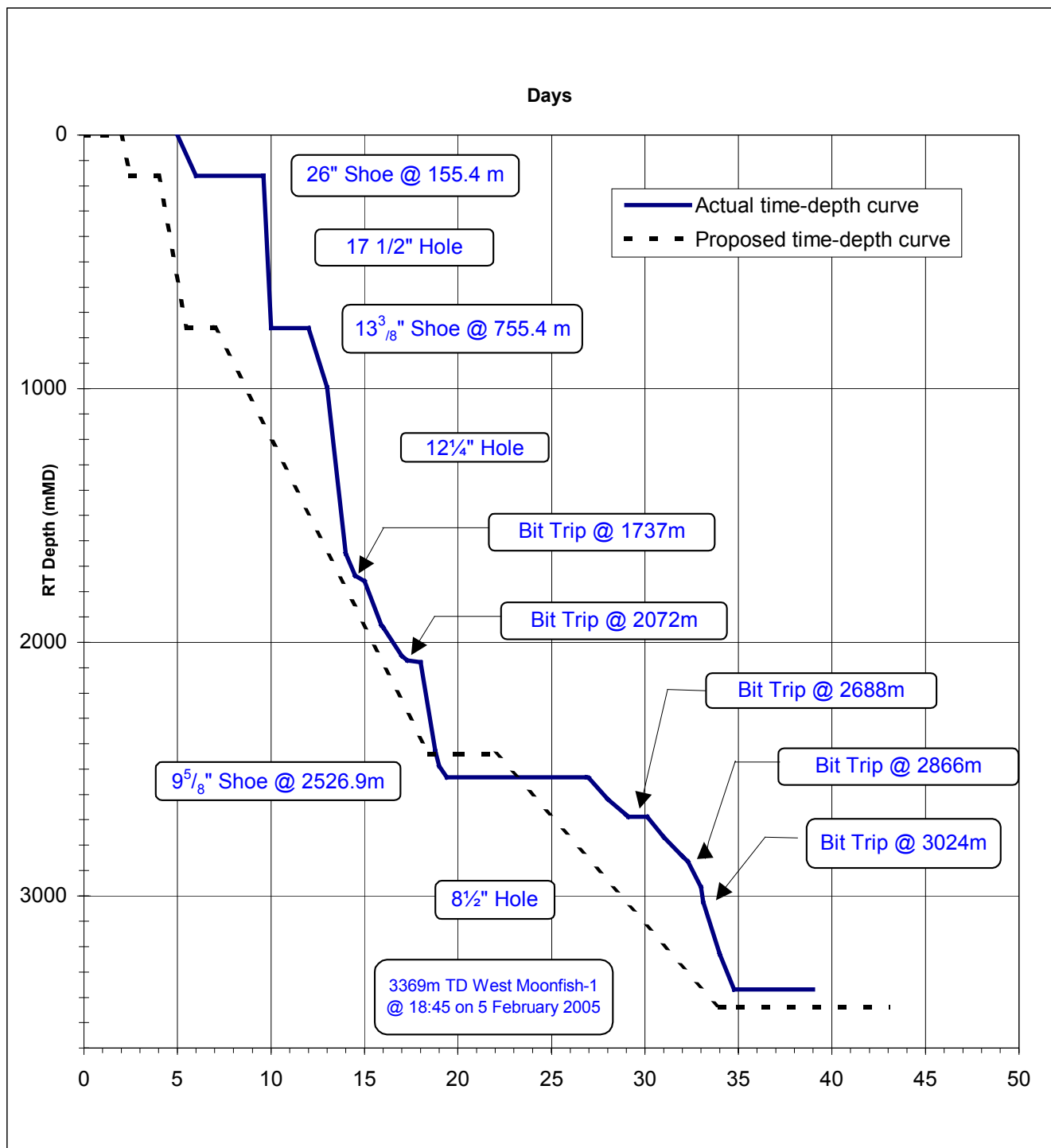
Wireline Logs were then ran as per the logging programme:

Run#1:	DSI-HNGS-MSFL-LEHQT
Run#2:	MDT-GR-LEHQT
Run#3:	VI-VSP
Run#4:	CST-GR

WELL PROFILE



West Moonfish-1 Days Vs Depth Curve



CASING DATA

Type	Size (Inches)	Weight (lb/ft)	Grade	Thread	Depth (mMBRT)
Conductor	20 "	129.3	X56	RL4S	155.4
Surface	13 ³ / ₈ "	68.0	L80	BTC	755.4
Intermediate 12 ¹ / ₄ " Hole	9 ⁵ / ₈ "	47	L80	LT&C	2526.87

CEMENTING DATA

20" Conductor casing

Casing details	Cement Type	Dry Cement Volume (sx)	Cement Additives	Mix Water (bbls)	Slurry Vol (bbls)	Slurry Density (ppg)	Top of Cement (mMBRT)	Casing Press Test (psi)
Lead Slurry	G	960	1% BWOC CaCl ₂ NF-6	118.9 Mixwater	200.1	15.9	150	200

13³/₈" Surface casing

Casing details	Cement Type	Dry Cement Volume (sx)	Cement Additives	Mix Water (bbls)	Slurry Vol (bbls)	Slurry Density (ppg)	Top of Cement (mMBRT)	Casing Pressure Test (psi)
Lead Slurry	G	388	Econolite liquid HR-6L NF-6	119.1 Mixwter	152.2	12.5	722	
Tail Slurry	G	649	0.01 gal/bbl NF-6	30 Drl water	134.1	15.9		

CEMENTING DATA (Cont'd)**9⁵/₈" Intermediate casing**

Casing details	Cement Type	Dry Cement Volume (sx)	Cement Additives	Mix Water (bbls)	Slurry Volume (bbls)	Slurry Density (ppg)	Top of Cement (mMBRT)	Casing Pressure Test (psi)
Lead Slurry	G	924	32 bbl Gascon 2.7 bbl SCR-100L 16 bbl Halad-413L 2.7 bbl CFR-3L 0.2 bbl NF-6	170.7 Drl Water	246	13.0	2502	
Tail Slurry	G	288	0 bbl Gascon 0.1 bbl SCR-100L 2.5 bbl Halad-413L 0.2 bbl CFR-3L 0 bbl NF-6	29.6 Drl Water	54	15.8		4500



BIT SUMMARY

WELL: West Moonfish-1



Bit	BH A	Bit Type	Serial No.	Jets	Size	Depth In	Depth Out	Bit Time	Run	ROP	Formation	Bit Grading	Comments
#	#			(/32)	Inc h	(m)	(m)	(Hrs)	(m)	m/hr		(I-O-D-L-B-G-O-R)	
1	1	Security MGF	10426790	Open	26	91	160	6.9	69	10	Sand/Marl/ L/st Top	1-1-NO-A-E-I-NO-TD	TD Section
2	2	Security FS2563	10629925	7 x 20	17.5	160	761	15.4	601	39.0	Upper Gippsland	1-1-WT-A-X-I-NO-TD	TD Section
3	3	Hycalog RSX19 2	206985	7 x 20	12.2 5	761	1737	33.2	976	29.3	Gippsland Marl/ LE/ Latrobe	1-5-CT-S-X-I-WT-PR	Poor ROP and angle build.
4	4	Hughes MX20D X	6017688	2 x 22 Open	12.2 5	1737	2072	50.0	336	6.7	Latrobe/ Moonfish Volcanics	5-6-WT-A-E-I-BT-HR	Total hours up for Bit
5	5	Hycalog RSX19 2	208592	7 x 20	12.2 5	2072	2532	26.0	460	17.7	Sub Moonfish Volcanics	2-6-WT-S-X-I-NO-PR	Poor ROP/ TD Section
7	8	Hughes MX30D	6023698	3 x 24	8.5	2532	2688	44.2	156	3.5	Remora Volcanics	6-6-WT-A-E-I-BT-HR	Poor ROP/ Bit Hours
8	9	Hughes MX30D	6025358	3 x 24	8.5	2688	2866	50.5	178	3.52	Sub Remora Volcanics	4-4-WT-A-E-I-NO-HR	Angle drop/Bit Hours
9	10	Smith GF11Y	MX0600	3 x 24	8.5	2866	3024	29.9	158	5.3	Sub Remora Volcanics	3-4-WT-A-E-I-NO-HR	Bit Revolutions
10	11	Hycalog DSX17 3DC	208594	4x20 3x18	8.5	3024	3369	28.0	345	12.3	Sub Remora Volcanics	1-3-WT-S-X-I-NO-TD	TD Well

WELL DIRECTIONAL PROFILE

Geoservices - ALS Software



WEST MOONFISH 1

PROFILE PLOT

WELL PROPOSAL :

Target VD 0.0
Target MD 0.0
Direction N00.00E

DRILLED WELL :

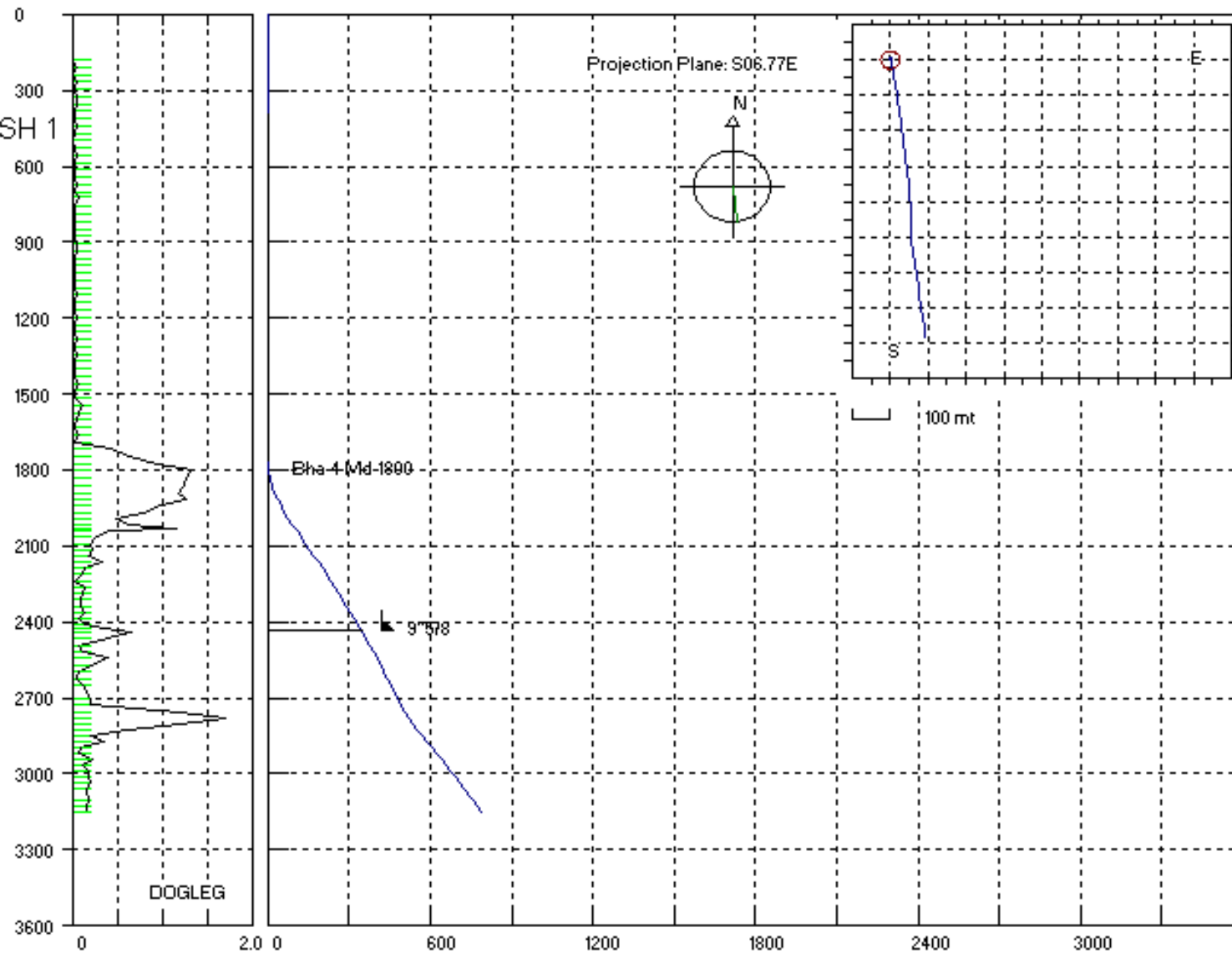
Last VD 3149.4
Last MD 3369.0
X (E-W) 92.9
Y (N-S) -781.3
Displac. 786.8
Mean Az. S06.78E

CASING Tmd

20" 155.4
20" 155.4
13"3/8 755.4
9"5/8 2526.9

Date: 02-07-2005
Azimuths relative
to Magnetic North

Dogleg in deg/10m
Depth in Meters



West Moonfish-1 WELL DIARY

05th Jan 2005	Spud West Moonfish-1 at 19:40 hrs and drill ahead from 91m to 133mMBRT.
06th Jan 2005	Continue drilling from 133m to 160mMBRT(160.0mTVD). Circulate and condition hole. Make a wiper trip. RIH with 20" conductor casing. Set casing shoe at 155.4mMBRT(155.4 mTVD) Install wellhead.
07th Jan 2005	Continue installing wellhead. Make up 5" DP cement stinger and RIH. Rig up cementing lines and pressure test. Circulate 100 bbl of seawater. Mix and pump cement and displace as per program. Wait on cement. Pressure test casing 200 psi.
08th Jan 2005	Wait on weather. Pick up drill pipe and make up stands. Make up BHA and RIH.
09th Jan 2005	Tag cement at 150 m. Drill out cement and casing shoe. Drill 17 ½" hole from 160m to 761mMBRT (761.0 mTVD). Circulate bottoms up.
10th Jan 2005	Pull out to the 20" casing shoe. RIH to the bottom and circulate. POOH. Rig up and run 13⅝" casing. Land casing shoe at 755.40 mMBRT (755.4mTVD).
11th Jan 2005	Install cement head and circulate casing. Test lines, line up cement unit and pump cement as per program. Wait on cement. Line up and pressure test casing. Install Cameron compact wellhead housing and pressure test seals. Prepare to nipple up BOPs and hold safety meeting. Test BOPs
12th Jan 2005	Make up 12¼" BHA. RIH and shallow test MWD. RIH and tag cement at 722m. Drill out cement, shoe, clean out rat-hole and drill 5m new formation. Perform Pressure Integrity Test. Drill 12 ¼" hole to 996mMBRT.
13th Jan 2005	Continue to drill 12¼" hole from 996m - 1651mMBRT
14th Jan 2005	Continue to drill 12¼" hole from 1651m-1700mMBRT, the Kick-off Point. Drill and slide to 1737.5mMBRT. Low ROP / weight stacking / erratic tool face & not enough angle build-up. Circulate bottoms up, work string, circulate hole clean at 1737mMBRT. Flow check – well static, POOH 5 stands wet, pump slug and POOH to the shoe. Flow check-static. POOH to BHA-flow check – well static. POOH with BHA, change MWD and bit, scribe motor to MWD. Surface test MWD and run in hole to the shoe. Service and inspect the top drive, crown and block. Run in hole; fill every 15 stands down to 1711mMBRT. Wash to bottom-no fill. Drill 12¼" hole with MWD surveys – slide to 1759mMBRT.
15th Jan 2005	Continue to drill and slide 12¼" hole from 1759mMBRT, backream each stand once, MWD surveys on connection. Take SCR's. Circulate the hole clean at 1885mMBRT, backream and wash to bottom prior to sliding to 1942mMBRT.
16th Jan 2005	Drill-Slide from 1942m to 2053mMBRT. MWD surveys on connections. Backream on connections once.
17th Jan 2005	Drill to 2072mMBRT (Sliding to 2058m). Circulate bottoms up. Flow check. POOH, tight hole at 1965mMBRT - 25K overpull. Circulate and work through. POOH. Pump slug at 1700 mMBRT. POOH. Change bit and run in hole. Drill from 2072m to 2078mMBRT.
18th Jan 2005	Drill rotary from 2078m to 2489mMBRT. Backream each stand twice after 2220mMBRT, MWD survey on connections.

19th Jan 2005	Drill rotary from 2489m to 2532mMBRT. Circulate bottoms up. Make a wiper trip to 2026 mMBRT. The string was run in to bottom and the hole circulated. A 90 bbl Hi-Vis pill was pumped and circulated out. The well was flow checked and the string was POOH. A flow check was done at the shoe (755mMBRT). The BHA was layed out and Schlumberger rigged up and log Run # 1: HRLA-HNGS-LEHQT was RIH.
20th Jan 2005	Continue logging run # 1. Run # 2: PEX150-LEHQT and Run # 3: DSI-FMI-LEHQT. POOH and clean tools, lay out wireline and sheaves. Prepare to pick up BHA.
21st Jan 2005	Pick up-make up 12¼" Wiper Assembly. Run in hole to 755mMBRT. Service and inspect Top drive, block and crown. Run in hole – tag restriction at 2515m. Wash-ream to 2532 mMBRT. No fill. Circulate hole clean. Flow check. POOH 5 stand wet, pump slug and POOH. Lay out BHA. PJSM for wireline rig up. Pick up wireline – sheaves. Run in hole MDT logging run to 88 m. Power problem, POOH tool and repair fault. RIH to 2467 mMBRT with MDT tool and pre - test.
22nd Jan 2005	Continue logging MDT tool, taking pressure points and samples. POOH, run sidewall core tool string. Correlate depth.
23rd Jan 2005	POOH side wall core tool string. Recover samples from 2 x 30 guns. Pick up and make up 12¼" Wiper Assembly with mill. Run in the hole & fill every 20 stands. Wash-ream from 2521m to the bottom 2532mMBRT, junk at 2528m. Circulate 2 x bottoms up (18.4% gas peak). Flow check. POOH wiper assembly, 5 stands wet, pump slug & POOH. Flow check at BHA. Retrieve wear bushing on way out. PJSM – change top pipe rams to 9 5/8". Rig up & test 9 5/8" ram & seals 200/5000 psi. Rig down test lines. PJSM – rig up Weatherford casing tools & run 9.625" casing in hole.
24th Jan 2005	Continue to run in hole 9.625" casing and land at 2526.86 m. Install double plug cement head, connect surface lines. Circulate with 10.2 ppg mud. Dowell cement unit engine not start - trouble shoot problem. Loose connection on timing switch. Connect lines to Dowell unit, pump 15 bbl drill water. Pressure test lines to 4000 psi. Pump 40 bbl 11.5ppg spacer, release bottom plug. Mix and pump cement as per programme, 246 bbl 13ppg Lead slurry; follow by 54 bbl 15.8ppg Tail slurry.
25th Jan 2005	Drop top plug, Dowell unit pump 20 bbl seawater. Rig pumps displace cement with 582 bbl mud. Bump plug 1800 psi, 01:15 hr finish. Dowell attempt pressure test casing 4500 psi, leaking by plug, bleed off, check floats – not holding. Flush cement lines 600 psi to casing with rig pumps, wait on cement. Bleed off pressure. Rig down cement head and lines. Back out landing string. Pup joint threads galled-change out. Back out hanger and string. Rig down 9 5/8" equipment, bails and elevators. Make up jet tool and jet wellhead – side outlet valves plugging up. Make up junk basket-jet well head and BOP. Make up seal assembly and run tool, set same. Pressure test to 5000 psi. Install 5" top rams. Make up cap test assembly, run in hole. Unable to pass down hole. Fill BOP stack – pressure test casing/shear rams 200/4500 psi. Pick up-make up and run in 9 5/8" RTTS packer assembly, pressure test BOP-lines and equipment, 200/5000 psi.
26th Jan 2005	Pressure test BOP. POOH RTTS and lay out. Test upper-lower IBOP and top drive valves, 200/5000 psi. Make up 8½" BHA, surface test LWD tool and AGS, 600 gpm. PJSM install radioactive sources. RIH, change out drilling jars. Surface test ADN tool, run in hole 311.9 m, run in drill pipe. Kick drill-strip drill into hole, choke drill. Drill out wiper plug, float collar, displace to new mud system 9.9 ppg. Dump returns. Drill cement-shoe and 3 m new hole to 2535mMBRT. Circulate to balance mud. Pull out to the shoe, perform Pressure Integrity Test.
27th Jan 2005	Continue Pressure Integrity Test, 1730 psi, 9.9 ppg mud -14.0 ppg EMW. Drill 8½" section from 2535m to 2539mMBRT. O-ring leak in hydraulic solenoid BOP stack mini pod, replaced. Drill to 2556mMBRT, pull to shoe, circulate. Rig up Dowell lines and test to 3000 psi. Performed Pressure Integrity Test -16.6 ppg EMW, 2790 psi with 10.0 ppg mud. Drilling continued to 2620mMBRT.
28th Jan 2005	Continue to drill 8½" hole from 2620m to 2682mMBRT.

29th Jan 2005	Continued to drill 8½" hole from 2682m to 2688mMBRT. Flow check, pull 5 stands wet to inside shoe, pump slug, POOH for bit trip due to bit hours. Change out bit and jars, lay out roller reamer and pick up near bit stabiliser. RIH to 9.625" casing shoe. Slip and cut drilling line. Perform top drive and PRS maintenance. Wash down to stand # 81, pull back into the shoe to repair top drive problems.
30th Jan 2005	Continue to repair top drive. Wash down to the bottom and drill ahead 8½" hole from 2688m to 2768mMBRT.
31st Jan 2005	Continued to drill 8½" section from 2768m to 2844mMBRT.
01st Feb 2005	Continued to drill 8½" section from 2844m to 2866mMBRT. Circulate hole clean. Flow check, pull 5 stands wet. Pump slug, flow check and POOH for bit trip due to a drop in hole angle. Change out bit, pick up mud motor. Begin to RIH.
02nd Feb 2005	RIH to 9.625" casing shoe. Change out swivel packer, carry out top drive maintenance. RIH, wash down last stand. Drill ahead 8½" section from 2866m to 2965mMBRT, sliding to build hole angle as per Directional Drillers instructions.
03rd Feb 2005	Drill 8 ½" hole to 3024mMBRT. Circulate 2x bottoms up and POOH for a bit change.
04th Feb 2005	Make up a new bit & motor and RIH. Drill ahead 8 ½" hole from 3024m to 3230mMBRT.
05th Feb 2005	Drill 8 ½" hole from 3230mMBRT to well TD of 3369 mMBRT (3149.5mTVDRT). Circulate bottoms up. Flowcheck, pump slug and pull out to the casing shoe for a wiper trip. RIH.
06th Feb 2005	Continue RIH to the bottom and circulate. POOH. R/U wireline running equipment. Make up logging tools and RIH with the logging tools.
07th Feb 2005	Wireline logging.
08th Feb 2005	Continue with the logging. Pick up 3.5" tubing for cement stinger. RIH with cement stinger.
09th Feb 2005	Perform cement job as per programme. Wait on cement.
10th Feb 2005	POOH & lay down cement stinger & drill pipe.
11th Feb 2005	Geoservices rig down the equipment and shut down logging unit.

Section 2

Geological Summary

All returns to the sea-bed from spud to 160.0 metres as there was no riser to the rig.

Interval (m)			ROP (avg)	Lithology Description MARL with interbeds of highly CALCAREOUS CLAYSTONE and rare stringers of LIMESTONE (argillaceous CALCILUTITE).							
720	-	996	30.9 (9.1-48.8)	<p>MARL(60 - 80%): light grey to light medium grey shades, with white calcareous streaks and inclusions in places, cryptocrystalline to very finely crystalline in places, 30-50% clay minerals, rare micro-micas and carbonaceous flecks in places, few to common very small foraminifera, rare pyrite, rare glauconite smears and grains in places, mostly soft to firm and good sub-blocky PDC cuttings, some appears gradational to a firmer argillaceous Calcilutite. Appears to be interbedded with and increasing amounts of CLAYSTONE.</p> <p>HIGHLY CALCAREOUS CLAYSTONE/CALCAREOUS CLAYSTONE (20-40%) : varying medium grey to tending dark grey with minor olive grey, generally descriptively as the above Marl but with increased clay content and rare silt content, soft to firm and mostly sub-blocky.</p>							
Gas average			(units):	7.5	Composition (ppm)	C1 902	C2 12	C3 3	C4 1	C5 0	-
Show Details			No Hydrocarbon Shows								

Interval (m)			ROP (avg)	Lithology Description Dark CALCAREOUS CLAYSTONE							
1570	-	1580	50 (45-56)	CALCAREOUS CLAYSTONE: distinct colour change this sample to tending dark brown to medium olive black, soft to firm and mostly sub-blocky, continues to be 5-20% glauconite grains and smears within individual cuttings (freshly broken surfaces to check), moderately calcareous. Calcimetry = 27%.							
Gas average			(units):	31	Composition (ppm)	C1 4762	C2 303	C3 79	C4 7	C5 2	-
Show Details			No Hydrocarbon Shows								

Interval (m)			ROP (avg)	Lithology Description SANDSTONE with interbeds of CLAYSTONE and lesser COAL seams and CARBONACEOUS CLAYSTONE beds.							
1580	-	1650	26.6 (2-50)	<p>SANDSTONE (100% - occurs at 1580m only): varicoloured, varying yellowish brown to distinctly more mottled greenish grey/yellowish brown/medium grey, very fine grained to very coarse grained, poorly sorted, subangular to subrounded, varying very soft to soft 'degraded'/weathered aggregates to hard/very hard cemented aggregates (non calcareous = siliceous or partly dolomitic also) to loose disaggregated grains, trace to 10% glauconite grains as matrix, inferred poor porosity. Correlates to unconformity surface lithology. NO SHOWS.</p> <p>SANDSTONE - appearing below 1585m (20 - 100%): light olive grey to yellowish brown, comprises clear quartz grains only, very fine to granular, dominantly medium to coarse grained, tending moderately well sorted, subangular to subrounded, traces of pyritic cementation in places, traces of yellowish mostly loose/disaggregated quartz grains, inferred good intergranular porosity.</p> <p>CLAYSTONE (0 - 70%) : mostly light to sometimes medium shades of tending brownish grey to greyish brown, very soft to soft, dispersive, non calcareous, trace to more common carbonaceous debris in places.</p> <p>HIGH ASH COAL (0 - 30%): mostly brownish black with minor black, moderately hard to hard, brittle, semi bright surfaces, tending to carbonaceous claystone in part.</p>							
Gas average			(units):	79	Composition (ppm)	C1 11957	C2 936	C3 232	C4 52	C5 113	-
Show Details			<p>Mostly NO SHOWS except in spot samples at 1615 and 1650m which had a WEAK SHOW - 10-15% of sandstone shows subdued yellowish background UV sample fluorescence, same gives a weak intensity, delayed slowly diffusing solvent cut, no residue ring. .Does not appear to be mineral fluorescence.</p>								

Interval (m)			ROP (avg)	Lithology Description							
				Coarse grained quartz SANDSTONES with lesser interbeds of variably CARBONACEOUS CLAYSTONE / CLAYSTONE and minor thin COAL seams.							
1650	-	1760	9 (2.3-53)	<p>SANDSTONE (0-100%): light olive grey to very light grey, clear to translucent quartz grains, no lithics discernable, varying fine to fine pebbly, predominantly coarse to very coarse grained, moderately well sorted, varying angular to subrounded, angular grains = PDC shattered, dominantly subangular to subrounded, minor to sometimes common light grey argillaceous matrix in places, scattered aggregates of quartz rock flour (PDC bit induced), traces of pyrite and coaly fragments but no other accessories discernable, mainly occurring as loose/disaggregated grains with the PDC bit, but appearance of more /siliceous cemented aggregates with the insert bit below 1737m, varying poor to good but mostly good inferred intergranular porosity. NO SHOWS - very minor background fluorescence from glycol and coal 'grinds' but no inferred in situ hydrocarbon fluorescence noted from sandstone cuttings this interval.</p> <p>CLAYSTONE (0-90%): generally as above, predominantly light to medium shades brownish grey to pale yellowish brown, minor light olive grey and light grey to medium light grey and blackish brown (where more carbonaceous), very soft to moderately firm, mostly soft, tending dispersive, minor to common silt in places, minor to common carbonaceous flecks and fragments, sometimes with very fine to fine quartz sandy micro-laminations and laminations, non calcareous. Clearly grading to CARBONACEOUS CLAYSTONE in places.</p> <p>COAL (0-10%): predominantly brownish black (moderate ash), minor black (clean - low ash), moderately hard to hard, brittle, sometimes in samples as 'grinds', mostly semi-bright surfaces, sometimes more lignitic, grading to carbonaceous claystone in places.</p>							
Gas average			(units):	15	Composition (ppm)	C1 1688	C2 253	C3 108	C4 36	C5 9	-
Show Details			Trace 10-15% of sandstone shows subdued yellowish background UV sample fluorescence, the same gives a weak intensity, delayed slowly diffusing solvent cut, no residue ring. Does not appear to be mineral fluorescence.								

Interval (m) (m TVDRT)			ROP (avg)	Lithology Description Interbedded sequence of Quartz SANDSTONES and variably CARBONACEOUS CLAYSTONES/CLAYSTONES with thin COAL seams in places.							
1760 (1760)	-	1940 (1934)	9.1 (3-38)	<p>SANDSTONE (10 - 90%): mostly very light grey to light olive grey, occasionally light yellowish brown to olive grey, quartz rich, no lithics discernable, very fine to coarse grained, dominantly medium grained or medium to coarse grained, tending moderately well sorted, varying angular to subrounded, dominantly subangular to subrounded, traces of pyrite and micas and quartz silt matrix in places, rare coaly fragments in places, very rare greenish flecks (?glauconite or chlorite), cuttings mostly disaggregated/loose quartz grains but with minor cemented aggregates (moderately hard to hard) in places , with minor grading to very fine to fine grained argillaceous sandstone. Mostly inferred poor to good visual porosity. Poor porosity indicated from aggregates. NO SHOWS from bulk raw/unwashed cuttings, or moderately washed sandstone cuttings.</p> <p>CLAYSTONES to sometimes CARBONACEOUS CLAYSTONE (10 - 90%): varying colours, mostly either light to medium shades of greyish brown or light olive grey, minor dark greyish brown and olive grey, less often dark greyish brown to medium dark brown, traces blackish brown, varying very soft to hard, mostly very soft to soft and tending dispersive, mostly sub-blocky but tending sub-fissile where more carbonaceous, trace silt matrix, trace to sometimes more common carbonaceous debris, all Claystones non calcareous. Clearly grading to ARENACEOUS CLAYSTONE in places: shades of greyish brown to dark brown, firm to moderately hard, 10-30% very fine to fine quartz sand matrix, visually tight, sand as laminations and micro-laminations in places.</p> <p>COAL (0 - 50%): mostly small %'s of coal but increased to 50% in the 1930m sample, varying brownish black to shiny black, earthy to sub vitreous, moderately hard to hard, brittle, semi-bright surfaces, angular to sub conchoidal fracture, lignitic, grading to carbonaceous claystone in part..</p>							
Gas average			(units) :	18	Composition (ppm)	C1 2459	C2 189	C3 73	C4 30	C5 9	-
Show Details			Nil – 15-20% of sandstone shows sub-dued grey/yellowish background UV sample fluorescence, same gives a weak intensity, delayed moderately fast diffusing solvent cut, pale yellowish residue ring.								

Interval (m) (m TVDRT)			ROP (avg)	Lithology Description							
				Interbedded variably CARBONACEOUS CLAYSTONES / CLAYSTONES , with thin COAL seams and thin quartz SANDSTONE and argillaceous SANDSTONE interbeds and stringers.							
1940 (1934)	-	2045 (2024.9)	5.2 (2.4-27)	<p>CLAYSTONES to sometimes CARBONACEOUS CLAYSTONE (60 - 90%): varying colours, mostly either light to medium shades of greyish brown or light olive grey, minor dark greyish brown and olive grey, less often dark greyish brown to medium dark brown, traces blackish brown, varying very soft to hard, mostly very soft to soft and tending dispersive, mostly sub-blocky but tending sub-fissile where more carbonaceous, trace silt matrix, trace to sometimes more common carbonaceous debris, all Claystones non calcareous. Minor grading to arenaceous claystone.</p> <p>COAL (0 - 100%): best seen 2000-2010m interval, brownish black to shiny black, varying moderate to low ash, moderately hard to hard blocky to angular cuttings, brittle to some conchoidal surfaces, comprising bright vitreous laminae and micro-laminae in semi-bright ground mass.</p> <p>SANDSTONE (10 - 30%): mostly very light grey to light olive grey quartz rich, no lithics discernable, very fine to coarse grained, dominantly fine to medium grained, tending moderately well sorted, dominantly subangular to subrounded, traces of pyrite and micas, trace to 30% clay minerals and quartz silt matrix in places, rare coaly fragments in places cuttings mostly disaggregated/loose quartz grains but with minor cemented aggregates (moderately hard to hard) in places, with minor grading to very fine to fine grained ARGILLACEOUS SANDSTONE: olive grey to medium and dark shades of brown, very fine to medium grained, dominantly very fine to fine grained, well sorted, with carbonaceous matrix and laminae/micro-laminae in places, trace micro-micas and coaly fragments, varying soft to hard aggregates. Mostly inferred poor to sometimes fair visual porosity. Nil to poor porosity indicated from aggregates. NO SHOWS.</p> <p>.</p>							
Gas average			(units) :	61	Composition (ppm)	C1 4484	C2 397	C3 145	C4 62	C5 24	-
Show Details			Nil hydrocarbon, minor mineral fluorescence in some samples.								

Interval (m) (m TVDRT)			ROP (avg)	Lithology Description Highly degraded VOLCANICS (Moonfish Volcanics)							
2045 (2024.9)	-	2050 (2029.1)	4.0 (2.5-7.6)	<p>HIGHLY DEGRADED VOLCANICS (50 - 90%): varicoloured and mottled but mostly lighter shades of very light grey and whitish grey, with lesser bluish grey, mottled light/bright green and mottled medium/dark grey, soft to very hard, mostly firm to moderately hard, sub-blocky, minor cuttings with greasy texture, microcrystalline degraded textures, rare cuttings with rare aphanatic texture. Good traces of light grey and yellowish brown chert. Definite degraded appearance throughout.</p> <p>CLAYSTONE / CARBONACEOUS CLAYSTONE (5 - 30%): cavings, decreasing down interval.</p> <p>SANDSTONE (10-20%): as above, cavings, % decreasing down interval.</p>							
Gas average			(units) :	16	Composition (ppm)	C1 1703	C2 227	C3 117	C4 63	C5 15	-
Show Details			Nil hydrocarbon, minor mineral fluorescence in some samples.								

Interval (m) (m TVDRT)			ROP (avg)	Lithology Description WEATHERED VOLCANICS and VOLCANICS (Moonfish Volcanics)							
2050 (2029)	-	2072 (2047)	3 (2-7)	<p>WEATHERED VOLCANICS (0-100%): varicoloured and mottled, white to very light grey, and whitish grey, with light to medium bluish grey, rare mottled light green to greyish green and mottled medium to dark grey, soft to very hard, predominantly soft to moderately hard, amorphous to sub-blocky, minor cuttings with greasy texture, microcrystalline weathered volcanic textures, rare cuttings with remnant aphanatic texture, trace light grey and yellowish brown chert, trace black lithics.</p> <p>VOLCANICS (0-100%): distinctly less weathered/degraded appearance compared to the type mentioned above, mottled very light grey, medium grey to greyish black, mostly hard to very hard, returned as angular to subangular aggregates and fine to medium loose grains, quartz rich with associated dark mafics, very fine to finely crystalline texture, common feldspars and black lithics, trace mica and nodular pyrite, trace chert.</p> <p>CLAYSTONE / CARBONACEOUS CLAYSTONE (20%): as described previously, occurs in the bottoms up sample 2073m possibly indicating base of the Moonfish Volcanics at this depth.</p>							
Gas average			(units) :	10	Composition (ppm)	C1 1206	C2 89	C3 38	C4 20	C5 11	-
Show Details			Nil hydrocarbon, minor mineral fluorescence in some samples. Also noted the very fine coal grinds also giving some subdued yellowish sample fluorescence on surface of raw/unwashed cutting samples. Aggregates of white rock flour also exhibit similar fluorescence.								

Interval (m) (m TVDRT)			ROP (avg)	Lithology Description CLAYSTONE with minor COAL							
2072 (2047)		2085 (2057.7)	9.6 (4.2-38)	CLAYSTONE(60-80%): medium light grey to light olive grey, light brownish grey to light brown in part, firm to moderately hard, sub blocky to blocky, trace to minor quartz silt, trace very fine grained quartz, trace to locally common disseminated pyrite, trace nodular pyrite, trace glauconite, trace carbonaceous specks, trace carbonaceous wisps in part. WEATHERED VOLCANICS (15-40%): generally as above, predominantly cavings. COAL(Tr-10%): brownish black to predominantly black, earthy to sub vitreous, brittle, blocky to sub conchoidal fracture, lignitic in part.							
Gas average			(units) :	72	Composition (ppm)	C1 11044	C2 712	C3 220	C4 80	C5 24	-
Show Details			Nil hydrocarbon, minor mineral fluorescence in some samples. Also noted the very fine coal grinds also giving some subdued yellowish sample fluorescence on surface of raw/unwashed cutting samples. Aggregates of white rock flour also exhibit similar fluorescence.								

Interval (m) (m TVDRT)			ROP (avg)	Lithology Description Sub- SANDSTONE with minor CLAYSTONE and COAL							
2085 (2057.7)		2150 (2112)	40.6 (18-67)	SANDSTONE: white to very light grey, clear to translucent grains, predominantly returned loose, trace friable aggregates, fine to coarse grained, predominantly medium, trace very coarse, sub angular to sub rounded, minor angular, moderately to well sorted, trace silica cement, trace pyrite cement, trace very light grey argillaceous matrix in aggregates, trace lithic grains, trace thinly interbedded coal laminae. trace nodular pyrite, fair to good inferred porosity. No shows. (Strongly silica and pyrite cemented aggregates in 2085m sample) CLAYSTONE (Tr-5%): as above. COAL: (0-5%) brownish black to predominantly black, earthy to sub vitreous, brittle, blocky to sub conchoidal fracture, lignitic in part.							
Gas average			(units) :	129	Composition (ppm)	C1 15848	C2 1243	C3 486	C4 179	C5 67	-
Show Details			Nil hydrocarbons, minor mineral fluorescence in some samples. Also noted the very fine coal grinds also giving some subdued yellowish sample fluorescence on surface of raw/unwashed cutting samples. Aggregates of white rock flour also exhibit similar fluorescence.								

Interval (m) (m TVDRT)			ROP (avg)	Lithology Description							
				Clean coarser grained quartz SANDSTONES with thinner and less frequent interbeds of CLAYSTONE , with very thin COAL seams.							
2150 (2112)	-	2340 (2274)	34 (6-86)	<p>SANDSTONE (60-100%): white to very light grey, clear to translucent quartz grains, fine to very coarse grained, dominantly medium to coarse, mostly subangular to subrounded, minor angular, moderately to well sorted, trace silica cement where aggregates, trace pyrite cement, trace very light grey argillaceous matrix in aggregates, trace lithic grains, trace nodular pyrite, mostly disaggregated/loose grains but with trace cemented/friable aggregates, fair to good inferred intergranular porosity. NO SHOWS from washed cutting samples. Possible that any oil originally present has been washed/flushed out of the cutting samples on way back to surface.</p> <p>CLAYSTONE (0-40%): medium light grey to light olive grey, light brownish grey to light brown in part, varying soft to moderately hard but mostly firm to moderately hard, sub-blocky to blocky, trace to minor quartz silt and very fine quartz sand grains in places, trace disseminated pyrite, trace to occasional good trace carbonaceous specks.</p> <p>COAL (0-15%) : brownish black to predominantly black, earthy to sub vitreous, brittle, blocky to sub-conchoidal fracture.</p>							
Gas average			(units) :	75	Composition (ppm)	C1 11239	C2 544	C3 168	C4 66	C5 31	-
Show Details			2150-2400m: Raw/unwashed cutting samples consistently have subdued yellowish UV sample fluorescence from the glycol in the mud system and also from crushed coaly "grinds" on the surface of cuttings pile, but washed cutting samples indicate NO SHOWS .								

Interval (m) (m TVDRT)			ROP (avg)	Lithology Description							
				SANDSTONES with thin interbedded inter-laminated finer SANDSTONES / variably argillaceous SANDSTONES, CLAYSTONES, variably CARBONACEOUS CLAYSTONES and minor COAL seams.							
2340 (2274)	-	2485 (2398.7)	33.6 (6.5-86.2)	<p>SANDSTONE (40-100%): light olive grey, minor light whitish grey and yellowish brown, mostly clear and opaque quartz grains, very fine to coarse grained, dominantly medium grained or medium to coarse grained, dominantly subangular to subrounded, mostly appears clean but with trace to occasionally 10% carbonaceous flecks in places, trace pyrite, trace kaolin as matrix, trace micas, varying disaggregated / loose quartz grains to moderately to occasionally highly siliceous cemented aggregates, varying poor to good inferred porosity, mostly fair to good inferred porosity. Mostly NO SHOWS from washed cuttings, but WEAK SHOWS from between 2400-2415m MDRT, and better FAIR SHOW from thin sandstone bed 2450-2455m (gas peak of 4.8%TG at 2452.5m), FAIR tending GOOD SHOWS between 2460-2480m (gas peak of 5.4%TG at 2466m).</p> <p>Interbedded finer grained lithologies: FINE GRAINED SANDSTONE/ARGILLACEOUS SANDSTONE (10-60%): light to medium shades of olive grey with minor amounts medium shades of greyish brown, minor medium to dark brown where more carbonaceous, very fine to medium grained, dominantly very fine to fine grained, well sorted, dominantly subangular, varying soft/friable to very hard, mostly firm to hard aggregates, trace to 10% disseminated carbonaceous material and laminae, 20-40% clay minerals as matrix and laminae/micro-laminae in places, trace of kaolin and micro-micas, nil to very poor visual porosity. Clearly gradational in part to arenaceous claystone and siltstone suggesting thin finer grained interbeds. NO SHOWS.</p> <p>CLAYSTONE / CARBONACEOUS CLAYSTONE (5-60%): medium to darker shades of greyish brown and brown, lesser amounts blackish brown, varying soft to very hard, mostly soft to tending firm, somewhat dispersive, sub blocky to blocky, very minor sub-fissile, trace to minor quartz silt and very fine grained quartz as matrix and laminations/micro-laminations in places, trace disseminated pyrite and trace nodular pyrite, good trace - 10% carbonaceous specks and carbonaceous/coaly laminations in places, non calcareous but silicified in places. Sometimes gradational in places to arenaceous claystone and siltstone.</p> <p>SILICIFIED BLACK SHALE (0-10%): grey black to black, hard to very hard, partly silicified, micro-laminated, micro-pyrite in places.</p> <p>HIGHLY CARBONACEOUS CLAYSTONE (0 - 100%): dark brown to blackish brown to olive black, soft to moderately hard, mostly soft to firm, sub-blocky to sub-fissile, moderate to common carbonaceous and coaly material as matrix and laminae/micro-laminae throughout, trace micaceous, with very fine quartz sand laminations and micro-laminations in places, minor gradational to arenaceous claystone, non calcareous.</p> <p>COAL (0-30%): varying brownish black to lesser black, moderately hard to hard, brittle, angular to conchoidal surfaces, high to moderate ash, partly gradational in places to highly carbonaceous claystone. Gas peaks associated with thin coal seams.</p>							
Gas average			(units) :	65	Composition (ppm)	C1 7651	C2 694	C3 315	C4 130	C5 56	-

Show Details	
	<p>2400-2415 m: Raw/unwashed cutting samples consistently have subdued yellowish UV sample fluorescence from the glycol in the mud system and also from crushed coaly "grinds" on the surface of cuttings pile. WEAK SHOWS from washed sandstone cuttings- 5-10% grain aggregates with even but subdued yellowish sample fluorescence (same on freshly broken surfaces), delayed slowly fusing whitish blue solvent cut which intensifies slowly over several minutes, moderate yellowish ring residue under UV light. Faint petroliferous odours from bulk unwashed cuttings this depth.</p> <p>2415-2450m / 2455-2460m: Raw/unwashed cutting samples consistently have subdued yellowish UV sample fluorescence from the glycol in the mud system and also from crushed coaly "grinds" on the surface of cuttings pile, but washed cutting samples indicate NO SHOWS.</p> <p>2450-2455m: Raw/unwashed cuttings fluorescing characteristics as previously mentioned above. Lightly washed samples give FAIR SHOW from thin quartz sandstone bed- all PDC bit generated balls of quartz rock flour and all grain aggregates give moderately bright even whitish yellow UV sample fluorescence, same give almost immediate fusing fair intensity bluish solvent cut, this intensifies over 4-5 minutes to moderately bright whitish blue, fair residue ring after several minutes. Weak petroliferous odour from unwashed cuttings.</p> <p>2460-2485m: Raw/unwashed cuttings fluorescing characteristics as previously mentioned above. FAIR SHOW tending GOOD SHOW from sandstone below 2460m- PDC bit generated balls of quartz rock flour and grain aggregates both give moderately bright whitish yellow sample fluorescence while the even the washed disaggregated/loose quartz grains also now give a subdued yellowish UV sample fluorescence despite having been moderately washed, all give an almost immediate fusing fair intensity bluish solvent cut, intensifies over 3-4 minutes to moderately bright whitish blue which leaves a fair residue ring after several minutes.</p>

Interval (m) (m TVDRT)			ROP (avg)	Lithology Description SANDSTONE (variably cemented) with minor CLAYSTONE.							
2485 (2398.7)	-	2532 (2439.2)	6 (2-17)	<p>SANDSTONE (60 - 100%): very light grey to light olive grey, very fine to coarse grained, predominantly medium grained, angular (probable PDC bit shattered) to subangular, moderately well sorted, returned loose/disaggregated to variably cemented aggregates, trace mica, moderate to strong siliceous and minor calcareous cementation indicated from aggregates, trace carbonaceous fragments, trace to occasional good trace kaolin, common whitish quartz "rock flour" aggregates. Nil to poor visual porosity from aggregates, inferred very poor to sometimes fair overall. Mostly POOR to VERY POOR SHOWS - decreasing down interval - both give very dull yellow white direct fluorescence, very weak yellow white to bluish white cut, nil residue.</p> <p>CLAYSTONE (0 - 40%): brownish grey to brownish black, soft to moderately hard, predominantly soft to firm, partly dispersive, sub-blocky to sub-fissile, minor to common carbonaceous and coaly laminae, trace mica, very fine quartz sand laminations and micro-laminations in part, grading to arenaceous claystone, non calcareous. Minor gradational to arenaceous claystone and siltstone.</p>							
Gas average			(units) :	45	Composition (ppm)	C1 4962	C2 416	C3 201	C4 120	C5 74	-
Show Details			POOR to VERY POOR SHOWS - decreasing down interval. Sandstone noted as being significantly more cemented this section.								

Interval (m) (m TVDRT)			ROP (avg) m/hr	Lithology Description Sequence dominated by VARIABLY CEMENTED QUARTZ SANDSTONES with lesser interbeds of ARGILLACEOUS SANDSTONE, CLAYSTONE and rare thin COAL SEAMS.							
2532 (2439.2)	-	2620 (2517.5)	4.5 (0.9-18.9)	<p>Weakly to moderately cemented type..... SANDSTONE (20 - 100%): very light grey to light olive grey, quartz rich, fine grained to granular, predominantly medium to lower coarse grained, moderately well sorted, subangular to subrounded, varying disaggregated to only minor hard/very hard aggregates, aggregates mostly siliceous cemented with rare calcareous cementation, common bit fractured grains and some 'rock flour', trace argillaceous matrix, trace carbonaceous and coaly fragments, rare micas, trace pyrite, overall inferred fair to good intergranular porosity, poor visual porosity in aggregates. Mostly NO SHOWS, minor calcite mineral fluorescence, at 2600m MDRT - VERY WEAK SHOWS, 5% moderately bright yellowish white UV sample fluorescence, delayed fusing bluish solvent cut.</p> <p>Moderately to very strongly cemented type..... SANDSTONE (20 - 50%): very light grey to light olive grey sometimes tending olive grey, fine to coarse grained, predominantly upper fine to medium grained, varying disaggregated to conspicuous hard/very hard aggregates, angular to subrounded, dominantly subangular, common bit fractured grains, well sorted, strong silica cement and some calcareous cementation in aggregates, trace argillaceous matrix, trace black lithic grains, trace carbonaceous and coaly fragments, common bit generated rock flour, poor visual porosity in aggregates. NO SHOWS, minor calcite mineral fluorescence.</p> <p>VARIABLY ARGILLACEOUS SANDSTONE (0-40%): light to medium shades of olive grey with minor amounts medium shades of greyish brown to medium and dark brown where more carbonaceous, very fine to medium grained, dominantly very fine to fine grained, well sorted, dominantly subangular, varying soft/friable to very hard aggregates, mostly firm to hard aggregates, trace to 10% disseminated carbonaceous material as laminae and micro laminae, 20-40% clay minerals as matrix and laminae/micro laminae in places, trace of kaolin and micromicas, nil to minor very poor visual porosity from aggregates. NO SHOWS.</p> <p>CLAYSTONE (0-80%): light brownish grey to brownish grey, soft to moderately hard, predominantly soft to firm, sub-blocky to subfissile, minor to common carbonaceous and coaly laminae, trace mica, very fine quartz sand laminations and micro laminations in part, grading to arenaceous claystone and siltstone in part, non calcareous.</p> <p>COAL (0-30%): mainly in the sample at 2555m, brownish black to black, varying earthy to semi bright with some bright laminae, brittle to hard, blocky to sub conchoidal fractures, minor pyritization.</p>							
Gas average			(units) :	0.9	Composition (ppm)	C1 1435	C2 89	C3 3	C4 9	C5 7	-
Show Details			Mostly NO SHOWS, minor calcite mineral fluorescence, at 2600m MDRT - VERY WEAK SHOWS, 5% moderately bright yellowish white UV sample fluorescence, delayed fusing bluish solvent cut.								

Interval (m)			ROP (avg)	Lithology Description							
				Sequence dominated by variably cemented QUARTZ SANDSTONES with lesser interbeds of ARGILLACEOUS SANDSTONE and CLAYSTONE / VARIABLY CARBONACEOUS CLAYSTONE and rare very thin COAL SEAMS .							
2620 (2517.5)	- -	2680 (2570.7)	2.7 (0.9-22.2)	<p>Weakly to moderately cemented type..... SANDSTONE (0 - 100%): eg. at 2651-2652m, very light grey to light olive grey, quartz rich, fine grained to granular, predominantly medium to lower coarse grained, moderately well sorted, subangular to subrounded, varying disaggregated to only minor hard/very hard aggregates, aggregates mostly siliceous cemented with rare calcareous cementation, common bit fractured grains and some 'rock flour', trace argillaceous matrix, rare carbonaceous and coaly fragments, rare micas, trace pyrite, overall inferred fair to good intergranular porosity, poor visual porosity in aggregates. NO SHOWS.</p> <p>Moderately to very strongly cemented type..... SANDSTONE (0 - 90%): eg. at 2655m, very light grey to light olive grey sometimes tending olive grey, fine to coarse grained, predominantly upper fine to medium grained, varying disaggregated to conspicuous hard/very hard aggregates, angular to subrounded, dominantly subangular, common bit fractured grains, well sorted, strong silica cement and some calcareous cementation in aggregates, trace argillaceous matrix, trace black lithic grains, rare micas, trace carbonaceous and coaly fragments, common bit generated rock flour, poor visual porosity in aggregates. NO SHOWS, minor calcite mineral fluorescence.</p> <p>VARIABLY ARGILLACEOUS SANDSTONE (0-50%): light to medium shades of olive grey with minor amounts medium shades of greyish brown to medium and dark brown where more carbonaceous, very fine to medium grained, dominantly very fine to fine grained, well sorted, dominantly subangular, varying soft/friable to very hard aggregates, mostly hard to very hard aggregates, trace to 10% disseminated carbonaceous material as laminae and micro laminae, 20-40% clay minerals as matrix and laminae/micro laminae in places, trace of kaolin and micromicas, nil to minor very poor visual porosity from aggregates. NO SHOWS.</p> <p>CLAYSTONE / CARBONACEOUS CLAYSTONE (0-70%): light brownish grey to brownish grey, sometimes dark brown to blackish brown, varying soft to very hard, mostly soft to moderately hard, mostly sub-blocky to subfissile, minor to common carbonaceous and coaly laminae, trace mica, very fine quartz sand laminations and micro laminations in part, grading to arenaceous claystone and siltstone in part, non calcareous.</p> <p>COAL (0-15%): mainly in the sample 2660-2665m, brownish black to black, varying earthy to semi-bright with some bright laminae, brittle to hard, blocky to sub conchoidal fractures.</p>							
Gas average			(units) :	1.4	Composition (ppm)	C1 1818	C2 116	C3 46	C4 27	C5 12	-
Show Details			NO SHOWS - minor dull yellowish and dull orangish mineral fluorescence in places.								

Interval (m)			ROP (avg)	Lithology Description							
				QUARTZ SANDSTONES WITH LESSER INTERBEDS OF VARIABLY ARGILLACEOUS SANDSTONE AND VARIABLY CARBONACEOUS CLAYSTONES. THIN DOLOMITE INTERBEDS AT BASE OF INTERVAL.							
2688 (2578)	- -	2715 (2602.3)	4.5 (3-17)	<p>SANDSTONES (10 - 50%): very light grey to light olive grey, mostly clear/opaque quartz, fine to coarse grained, predominantly medium, moderately well sorted, subangular to subrounded, varying disaggregated with lesser hard/very hard aggregates, aggregates mostly siliceous cemented, common bit fractured grains and some 'rock flour', trace argillaceous matrix (kaolin), trace carbonaceous and coaly fragments, trace pyrite, inferred fair to good intergranular porosity, poor visual porosity in aggregates. NO SHOWS other than minor mineral fluorescence.</p> <p>CLAYSTONE / CARBONACEOUS CLAYSTONE (30-70%): mostly brownish grey to medium tending dark brown, varying soft/dispersive to hard, mostly soft to tending firm and sub-blocky, minor subfissile, minor to common carbonaceous and coaly laminae, trace mica, rare very fine quartz sand, non calcareous.</p> <p>VARIABLY ARGILLACEOUS SANDSTONE (10-20%): very light grey to light olive grey with minor amounts medium greyish brown, very fine to medium grained, dominantly very fine to fine grained, well sorted, dominantly subangular, varying soft/friable to very hard, mostly firm to hard aggregates, trace to 10% disseminated carbonaceous material and laminae, 20-40% clay minerals as matrix and laminae/micro laminae in places, trace of kaolin and micromicas, nil to rarely very poor visual porosity. NO SHOWS.</p> <p>DOLOMITE (10% in 2710m sample): calcimetry on bulk cuttings from this depth gave 4% dolomite, medium to dark yellowish brown, with carbonaceous flecks, hard to very hard, blocky to conchoidal in part.</p>							
Gas average			(units) :	10	Composition (ppm)	C1 1613	C2 95	C3 35	C4 8	C5 6	-
Show Details			NO SHOWS - minor dull yellowish and dull orange mineral fluorescence in places.								

Interval (m)			ROP (avg)	Lithology Description MOSTLY CLAYSTONE / CARBONACEOUS CLAYSTONE GRADING TO LESSER AND THIN INTERBEDS OF ARGILLACEOUS VERY FINE GRAINED SANDSTONE AND FINE GRAINED, CLEANER QUARTZ SANDSTONE IN PLACES.							
2725 (2611.3)	-	2755 (2638.3)	4.5 (3.0-17.0)	CLAYSTONE / CARBONACEOUS CLAYSTONE (50 - 80%): mostly shades of medium to sometimes darker brown, minor tending brownish black to blackish and medium to dark yellowish brown, varying soft/dispersive to hard, mostly soft to tending firm and sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand, non calcareous. ARGILLACEOUS SANDSTONE (10 - 40%): shades of medium to dark yellowish brown and brown, very fine grained, very well sorted, dominantly subangular, mostly moderately hard to hard aggregates, trace to 10% disseminated carbonaceous material and laminae, 20-40% clay minerals as matrix and laminae/micro laminae in places, trace of kaolin and micromicas, partly siliceous cemented, nil visual porosity. Minor gradational to cleaner but fine grained sandstone. NO SHOWS. FINE GRAINED SANDSTONE (0 - 10%): medium olive grey to olive grey, quartz rich, generally as above but very fine to medium grained, dominantly fine grained, well sorted, dominantly subangular, trace to 10% clay minerals, trace to good trace carbonaceous debris, firm to very hard, mostly firm to tending hard aggregates, siliceous cemented, nil to minor very poor visual porosity.							
Gas average			(units) :	11	Composition (ppm)	C1 1619	C2 113	C3 49	C4 14	C5 5	-
Show Details			NO SHOWS.								

Interval (m)			ROP (avg)	Lithology Description Laminated to thinly bedded SANDSTONE, SILTSTONE & trace COAL.							
2768 (2649.8)	- -	2844 (2719.3)	3.3 (2.1-22)	SANDSTONE: very light grey to mottled grey/brown, very fine to fine grained, well sorted, subangular to subrounded, weak to moderate siliceous cement, abundant white argillaceous matrix, common carbonaceous fragments, common lithic fragments, firm to moderately hard, poor to tight visual porosity, NO SHOWS. SILTSTONE: mottled pale grey/brown, argillaceous grading to claystone, arenaceous in part & grading to very fine grained sandstone, common carbonaceous fragments & laminations, moderately hard, subblocky to subfissile. COAL: black, dull to subvitreous, silty, blocky, brittle to moderately hard.							
Gas average			(units) :	11	Composition (ppm)	C1 1526	C2 101	C3 56	C4 15	C5 5	-
Show Details			NO SHOWS								

Interval (m)			ROP (avg)	Lithology Description							
2844 (2719)	-	2866 (2739)	3.2 (2.2-4.3)	<p>Interbedded SILTSTONE and CLAYSTONE with minor SANDSTONE & trace COAL.</p> <p>CLAYSTONE: light brownish grey to olive grey, minor moderate to dark yellowish brown, soft/dispersive to firm, sub-blocky, minor subfissile, minor to sometimes common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand, non calcareous. Grading to silty claystone in places.</p> <p>SILTSTONE: medium dark to dark grey, greyish black, argillaceous grading to claystone, arenaceous in part, trace to common carbonaceous fragments & laminations, soft to firm, subblocky to fissile.</p> <p>SANDSTONE: very light grey to mottled grey/brown, very fine to fine grained, well sorted, subangular to subrounded, weak to moderate siliceous cement, abundant white argillaceous matrix, common carbonaceous fragments, common lithic fragments, firm to moderately hard, poor to tight visual porosity, NO SHOWS.</p> <p>COAL: black, dull to subvitreous, silty, blocky, brittle to moderately hard.</p>							
Gas average			(units) :	8	Composition (ppm)	C1 1081	C2 91	C3 56	C4 24	C5 11	-
Show Details			NO SHOWS								

Interval (m)			ROP (avg)	Lithology Description							
2866 (2739)	-	2900 (2770)	5 (2-20)	SILTSTONE with minor SANDSTONE & CLAYSTONE. SANDSTONE (10%): white to very light grey, pale grey/brown, very fine to fine grained, well sorted, subangular to subrounded, weak to moderate siliceous cement, abundant white argillaceous matrix, grain supporting in part, friable to moderately hard, tight visual porosity, poor where decreasing matrix, NO SHOWS. SILTSTONE (50 - 60%): pale grey/brown, argillaceous grading to claystone in part, arenaceous in part & grading to very fine grained sandstone, abundant carbonaceous fragments & occasional laminations, moderately hard, subblocky. CLAYSTONE (20 - 40%): pale yellow/brown, siliceous, trace carbonaceous laminations, firm to moderately hard, subblocky to predominantly fissile.							
Gas average			(units) :	11	Composition (ppm)	C1 1643	C2 129	C3 72	C4 23	C5 4	-
Show Details			NO SHOWS.								

Interval (m)			ROP (avg)	Lithology Description							
2900 (2770)	-	2950 (2799)	5 (3-25)	SILTSTONE with interbedded silty SANDSTONE. SANDSTONE(10 - 70%): white to very light grey, mottled grey/brown, very fine to fine grained, well sorted, subangular to rounded, weak to moderate siliceous cement, abundant white argillaceous & silty matrix, carbonaceous & lithic fragments, friable to moderately hard, poor to tight visual porosity, poor where decreasing matrix, NO SHOWS. SILTSTONE (30 - 90%): mottled grey/brown, argillaceous grading to claystone in part, arenaceous in part, common carbonaceous & very fine sandstone laminations, moderately hard, subblocky.							
Gas average			(units) :	16	Composition (ppm)	C1 2496	C2 173	C3 98	C4 35	C5 6	-

Interval (m)			ROP (avg)	Lithology Description							
3000 (2849)	-	3024 (2870)	5 (2-20)	<p>Predominantly SILSTONE with minor SANDSTONE.</p> <p>SILTSTONE: (90% to 70%) light to medium grey/brown, argillaceous, common carbonaceous material, moderately hard, subblocky.</p> <p>SANDSTONE: (10% to 30%) mottled brown/grey, very fine to fine grained, well sorted, subrounded, strong to moderate siliceous cement, common to abundant lithic & silty matrix, common carbonaceous fragments, hard to moderately hard, tight to poor visual porosity with decreasing matrix, NO SHOWS.</p>							
Gas average			(units) :	25	Composition (ppm)	C1 2894	C2 408	C3 226	C4 97	C5 14	-
Show Details			NO SHOWS								

Interval (m)			ROP (avg)	Lithology Description							
3024 (2870)	- -	3140 (2962)	22 (5-45)	SILSTONE with thinly interbedded SANDSTONE and COAL. SILTSTONE (60 - 90%): light to medium grey/brown, argillaceous, abundant carbonaceous material, carbonaceous & very fine sandstone laminations, moderately hard, subblocky. SANDSTONE (10 - 40%): white to pale grey, very fine to occasionally fine grained, well sorted, subangular to subrounded, moderate siliceous cement, common silty/argillaceous matrix, common carbonaceous & lithic flecks and laminae, friable to moderately hard, very poor visual porosity. NO SHOWS. COAL (trace - 10%): black, dull to subvitreous, silty grading to carbonaceous siltstone, blocky to subfissile, subconchoidal fracture, brittle.							
Gas average			(units) :	30	Composition (ppm)	C1 4993	C2 441	C3 288	C4 109	C5 31	-
Show Details			NO SHOWS								

Interval (m)			ROP (avg)	Lithology Description							
3140 (2962)	- -	3150 (2971)	25 (6-40)	SANDSTONE with minor SILTSTONE. SANDSTONE (30 - 50%): white to pale grey, very fine to medium grained, predominantly fine, well sorted, subangular to subrounded, weak to moderate siliceous cement, common to abundant white argillaceous & silty matrix, friable to firm, very poor to poor visual porosity. Fluorescence: 50% decreasing to 20% of sandstone has pale yellow, patchy, pale yellow crush cut, thin ring residue. SILTSTONE (70 - 50%): as above.							
Gas average			(units) :	95	Composition (ppm)	C1 12440	C2 1054	C3 930	C4 439	C5 99	-
Show Details			50% decreasing to trace of the sandstone has pale yellow, patchy fluorescence, pale yellow crush cut, thin ring residue.								

Interval (m)			ROP (avg)	Lithology Description							
3150 (2971)	- -	3230 (3035)	16.2 (2.1-52)	<p>SILSTONE with thinly interbedded SANDSTONE, Siliceous SILTSTONE and COAL.</p> <p>SILTSTONE (80 - 90%): medium grey/brown, argillaceous, abundant carbonaceous laminations & fragments, common arenaceous laminations, moderately hard, subblocky.</p> <p>SANDSTONE (10 - 20%): white to pale grey, very fine to occasionally fine grained, well sorted, subrounded, weak to moderate siliceous cement, abundant white argillaceous & silty matrix, friable to moderately hard, very poor visual porosity. 3150-3155 Fluorescence: trace yellow, patchy, pale yellow crush cut, thin ring residue.</p> <p>Siliceous SILTSTONE (trace - 30%): pale grey/brown, siliceous, trace carbonaceous flecks, subblocky, hard to very hard.</p> <p>COAL: black, dull to subvitreous, silty, grading to carbonaceous siltstone, subblocky, brittle, amber hydrocarbon staining. Fluorescence: 3200-3210 mMBRT, 20% of the coal/carbonaceous siltstone has bright, yellow, even fluorescence, yellow/white crush cut, thin film residue.</p>							
Gas average			(units) :	60	Composition (ppm)	C1 8229	C2 635	C3 497	C4 197	C5 58	-
Show Details 3200-3210			20% of the coal/carbonaceous siltstone has bright, yellow, even fluorescence, yellow/white crush cut, thin film residue.								

Interval (m)			ROP (avg)	Lithology Description							
3230 (3035)	- -	3300 (3093)	15 (3-50)	SILTSTONE with thinly interbedded SANDSTONE and trace COAL SILTSTONE (80 - 90%): medium grey/brown, argillaceous, abundant carbonaceous laminations & fragments, common arenaceous laminations, moderately hard, subblocky. SANDSTONE (10 - 20%): white to pale grey, very fine to occasionally fine grained, well sorted, subrounded, weak to moderate siliceous cement, abundant white argillaceous & silty matrix, friable to moderately hard, very poor visual porosity. COAL (trace): black, dull to subvitreous, silty, grading to carbonaceous siltstone, subblocky, brittle, amber hydrocarbon staining.							
Gas average			(units) :	44	Composition (ppm)	C1 6014	C2 441	C3 327	C4 128	C5 27	-
Show Details			NO SHOWS								

Interval (m)			ROP (avg)	Lithology Description							
3300 (3093)	-	3369 (3149)	10 (3-30)	SILSTONE/CLAYSTONE with thinly interbedded SANDSTONE and trace COAL. SILTSTONE (40 - 60%): medium grey/brown, argillaceous, arenaceous in part, common carbonaceous laminations & fragments, firm to moderately hard, subblocky to subfissile. SANDSTONE (trace - 40%): white to pale grey, very fine grading to arenaceous siltstone, well sorted, subrounded, weak to moderate siliceous cement, abundant white argillaceous & silty matrix, carbonaceous fragments, firm to moderately hard, very poor visual porosity. NO SHOWS. CLAYSTONE (40 - 60%): light brownish grey, minor yellowish brown, soft/dispersive to firm, dispersive to sub-blocky, minor subfissile, minor to common disseminated carbonaceous matrix and laminae, trace mica, rare very fine quartz sand in parts, non calcareous. COAL (trace): as above.							
Gas average			(units) :	41	Composition (ppm)	C1 5458	C2 489	C3 312	C4 119	C5 37	-
Show Details			NO SHOWS								

GAS REPORT

West Moonfish-1 was drilled with returns going to the seabed prior to reaching 160m. Trace gas was recorded after drilling out the 20" shoe. Trace C2 was recorded from 515m, gas levels remained low mainly C1-Methane. Background gas levels increased from 630 m and remained steady until (1580 mMBRT).

12 1/4" section

Gas peaks were recorded through the Latrobe and corresponded to Coal seams, which samples and gamma ray confirmed. Background gas averaged 20 units, maximum gas recorded at 2003 m for a coal was 379 units (7.58%). Gas levels dropped at (2045 mMBRT), averaging 7 units background. A Coal gas peak of 430 units (8.6%) was recorded prior to drilling into the deeper volcanics where gas levels increased with some heavier gas concentrations indicating oil shows. Maximum gas recorded was 1067 units (21.3%) in mainly dry gas sands. Background gas levels remained up around 70 units, decreasing after 2480 m to 20 units by section TD at 2532 m. Minor fluorescence shows were seen at 1610-1615m, 1650-1655 m, 1765-1770 m, 1960-1965 m increasing at 2400-2415 m, 2450-2455 m, 2460-2480 m and 2480-2532 m, with up to 50% shows in parts.

Minor connection gas was seen at 1856 m, 1885 m, 1914m, & 1943 m before disappearing, mud weight only increased slightly in this section from 9.6 to 9.65 ppg.

No H₂S or CO₂ was recorded while drilling the 12.25" hole section. Gas ratio plot examples are included in this report to highlight various gas sections within the 12.25" and 8.5" section.

8 1/2" section

Through the 8 1/2" hole section from 2526mMBRT to 3024mMBRT background gas levels were low, averaging between 10 and 30 units. A maximum gas peak of 589 units (10.78%) was recorded at 2989.5mMBRT in a sand, but no fluorescence was seen in the sample. From 3024mMBRT to the well TD at 3369mMBRT the background gas was slightly higher, averaging 45 units. This was due to the bit change at 3024mMBRT, resulting in higher ROP. Maximum gas recorded was 250 units (5.0%) at 3089m, but no fluorescence was seen in the sample.

Minor fluorescence shows were seen in the cuttings at 3140-3150m, and again at 3200-3210 m.

The mud weight was in the range from 10.0 to 10.3ppg.

No H₂S or significant CO₂ (<1%) levels were recorded while drilling the 8 1/2" hole section.

Gas Peaks listed below are as detected by the Reserval gas equipment. A FCP-FGP (FID) backup gas system was also operating for West Moonfish-1. The gas ratio plots show the same trends with variation in the gas recorded. (1% = 50 units = 10000 ppm). The Reserval is more accurate than the auxillary FID system and therefore provides a higher quality of data for analytical purposes. The Reserval picks up more background heavy gas and the Reserval's mud degasser (GZG) has a constant flow of mud through its sample chamber. It is therefore not affected by varying flow rates from its position in the flow line. (Situated as close to the bell nipple as possible) The Backup GZII degasser operating with the FID system has a higher mud flow through it when immersed in mud and therefore liberates more gas from the mud. Consequently, while drilling gas zones the GZ11 degassing chamber tends to saturate with gas and tends to give higher readings on the Auxillary FID gas system in comparison to the main GZG/ Reserval. Calibrations on both detector systems were checked regularly before and during the drilling phases and these dates were recorded in accordance with the ESSO weekly maintenance requirements.

Gas Peaks (from Reserval Main Gas Detection System)

Depth metres	Total Gas Peak units	C ₁ ppm	C ₂ ppm	C ₃ ppm	iC ₄ ppm	nC ₄ ppm	iC ₅ ppm	nC ₅ ppm
1598.0	114	17451	1299	356	46	55	54	9
1612.0	79	11249	877	225	24	27	11	3
1621.0	114	17257	1512	365	30	34	35	11
1631.0	360	57421	4222	823	63	88	20	13
1654.0	97	12693	1720	657	72	115	34	27
1756.0	83	13166	1741	452	31	62	0	0
1768.0	22	2248	444	249	30	60	13	12
1788.0	79	11499	1084	411	48	82	20	14
1812.0	34	5021	338	109	18	26	13	7
1842.0	127	20352	1287	387	57	87	35	25
1890.0	19	2541	181	59	11	13	8	4
1914.0	41	6069	439	142	22	27	11	6
1930.0	210	33451	2352	695	95	120	35	19
1966.0	84	11882	1023	403	70	106	31	26
1971.0	129	19089	1466	525	96	146	45	40
1983.0	99	14408	1218	449	93	134	50	44
1990.0	68	10160	797	259	48	69	26	24
2000.0	364	58737	4257	1087	149	155	47	31
2003.0	379	61958	4266	1032	126	133	34	23
2012.0	130	19856	1496	425	61	61	44	11
2027.0	83	12876	962	290	49	59	21	12
2031.0	101	15971	1141	335	54	74	24	18
2043.0	159	25932	1750	506	66	124	37	35
2059.0	23	3596	248	75	13	18	7	6
2067.0	13	2022	142	45	7	9	4	3
2077.0	199	33559	1767	492	75	107	32	24
2079.0	430	72052	4022	925	105	202	51	48
2086.0	865	135615	8051	2426	309	531	137	128
2096.0	1067	161230	8595	2529	324	566	151	142
2118.0	920	136387	9006	3115	441	822	249	242
2148.0	211	27525	2437	1240	253	453	183	171
2188.0	104	15574	853	311	58	106	44	40
2247.0	321	50272	3096	896	134	217	72	56
2265.0	284	45987	2529	685	90	155	47	38
2335.0	207	32877	1880	555	75	120	35	22
2351.0	295	46486	2899	838	107	197	57	42
2396.0	192	28778	1988	656	64	169	43	39
2400.0	198	27132	2161	934	152	280	102	89
2424.0	92	11586	1154	516	63	155	50	47
2429.0	231	35355	2331	797	121	241	108	102
2436.0	455	70269	4220	1327	224	418	200	193
2445.0	144	20022	1424	588	97	193	92	94
2452.0	238	34454	2380	936	151	310	127	128
2461.0	228	34596	2046	782	120	246	91	91
2466.0	274	40773	2476	930	145	289	105	106
2478.0	206	28819	2090	851	146	293	116	117
2491.0	102	12424	1073	508	96	191	81	81
2554.5	118	19602	734	122	17	25	9	8
2557.0	53	10565	430	88	13	18	16	6
2661.5	64	9836	553	160	36	34	13	7
2673.0	23	3439	138	49	15	12	7	3
2687.0	37	5756	265	92	25	19	11	5

Depth metres	Total Gas Peak units	C ₁ ppm	C ₂ ppm	C ₃ ppm	iC ₄ ppm	nC ₄ ppm	iC ₅ ppm	nC ₅ ppm
2706.5	22	3481	198	61	12	12	6	3
2727.5	20	3420	99	22	5	3	2	1
2769.0	26	3825	248	130	48	31	19	8
2770.0	26	2730	244	118	41	26	15	6
2775.0	41	6258	381	177	55	34	19	8
2781.0	23	3560	167	82	27	17	11	5
2803.0	20	3100	184	87	23	15	8	3
2813.5	14	1792	105	61	19	12	11	3
2826.5	22	3210	199	94	22	15	8	3
2835.0	35	5294	334	158	36	24	12	4
2839.0	32	4809	330	159	34	25	13	5
2843.5	12	1864	118	63	16	11	7	3
2851.0	13	1787	136	73	18	13	13	3
2854.0	17	2476	194	102	23	17	22	4
2875.0	39	6123	444	214	30	24	11	4
2891.5	32	4827	365	172	27	20	11	4
2913.0	43	6836	456	211	35	30	15	6
2929.5	32	4988	309	158	32	25	14	5
2933.5	56	8745	516	255	48	40	19	7
2969.0	37	5811	408	184	36	30	14	7
2974.5	30	4614	361	158	32	25	14	6
2976.5	29	4356	355	154	31	24	13	5
2979.5	49	7542	617	233	41	33	16	6
2982.5	12	1630	162	81	18	15	8	4
2985.0	19	2781	271	118	24	21	11	5
2989.5	539	80307	7246	3093	549	615	206	158
2992.0	164	24447	2170	925	160	177	62	43
2994.5	142	21944	1931	647	98	95	42	18
2997.0	88	13074	1256	491	87	84	38	20
3004.5	57	8149	817	330	59	61	31	14
3008.0	100	14414	1342	609	133	120	66	29
3025.0	108	16550	1429	546	82	91	37	20
3029.0	70	10416	901	380	67	77	34	22
3035.0	168	26776	1996	772	128	129	56	33
3039.0	112	17329	1338	569	102	105	48	30
3052.0	137	21955	1428	667	116	101	44	23
3058.5	87	13196	988	501	83	85	35	20
3064	59	8470	685	391	72	70	33	18
3069	203	33190	1955	1059	176	163	70	34
3074	164	25443	1544	919	160	151	67	32
3077.5	224	35472	2147	1301	229	213	93	44
3084.5	106	16353	1028	666	126	117	55	27
3089	250	39782	2382	1505	280	254	111	52
3097.5	166	25297	1674	1099	217	195	88	43
3106	94	13932	1023	662	122	120	52	27
3110.5	131	19707	1370	844	169	148	68	34
3115.5	80	11274	831	588	120	112	53	26
3122.5	142	21092	1493	965	174	164	71	36
3136.5	127	18270	1387	997	167	180	69	35
3146.5	218	26445	2325	2324	640	606	275	188
3149	160	21620	1711	1347	256	304	110	74
3159.5	165	23912	1762	1230	189	205	82	40
3171	82	10738	884	698	135	140	67	35
3183.5	127	18168	1285	930	171	179	79	41
3185.5	121	15383	1160	878	166	172	78	39
3191	148	21555	1516	1093	205	204	89	46
3201.5	82	10960	794	624	117	124	58	28
3205	127	18649	1271	916	171	167	74	36

Depth metres	Total Gas Peak units	C₁ ppm	C₂ ppm	C₃ ppm	iC₄ ppm	nC₄ ppm	iC₅ ppm	nC₅ ppm
3221	108	15850	1037	738	136	133	59	29
3242.5	104	15091	1078	780	142	146	54	32
3251.5	55	7850	536	367	71	71	27	16
3265.5	83	11962	880	553	105	94	35	21
3276	38	4993	441	288	50	59	19	12
3285.5	85	11953	1013	640	124	121	49	29
3290.5	129	18497	1444	804	133	142	48	30
3298	102	14608	1184	653	103	116	36	22
3303.5	60	8028	736	433	74	82	28	17
3307.5	67	9112	813	474	82	88	29	18
3313	66	8752	831	490	86	90	30	19
3318	50	6405	632	382	62	77	23	15
3324	60	7928	764	431	68	73	24	13
3332	89	10791	1139	854	210	179	67	37
3335.5	47	6332	592	362	63	69	23	14
3338	40	5306	470	293	52	58	20	12
3340.5	48	6022	636	402	67	84	26	16
3365	123	18367	1640	928	158	182	59	39
3367.5	118	17172	1579	907	156	178	58	39

Gas Ratio Interpretation - Introduction

The composition of the gas in mud from the formation is significant in determining the geochemical origin and value of a show. There are several methods that can be used to determine whether the hydrocarbon gas in mud comes from a potential gas or oil zone. Amongst these methods are the Triangle Diagram (also known as the gas composition diagram), Pixler Diagram (also known as the gas ratios method) and the Wetness/Balance/Character plots.

Explanation of Gas Composition Diagrams

The composition of entrained reservoir gas in mud is significant in determining the origin and value of a show. The Gas Composition Diagram is used to graphically represent the hydrocarbon distribution in the gas and to determine whether it corresponds to a gas or oil reservoir.

The triangular diagram is obtained by tracing lines on three scales at 120° to each other, corresponding respectively to the ratios of ethane, propane and normal butane to the total gas. The scales are arranged in such a way that if the apex of the triangle is upward, the diagram represents the analysis of gas from a gas zone, while if the apex points downwards, the diagram represents the analysis of gas from an oil zone. A large triangle diagram represents dry gas or low GOR oil, while small triangles represent wet gases or high GOR oils.

The homothetic centre of the triangle should fall inside the area delineated by the dotted line, which encircles compositions, which are 'normal'. If the triangle area is outside this area the gas indicates that the reservoir is not exploitable and that the heavier hydrocarbons composition is 'abnormal' (hydrocarbons chemically altered or gases with special compositions which are not associated with oil) and may indicate a dead show.

The Gas Ratio Analysis Diagram is a plot of the ratio of C1 to the other gas elements. The magnitude of the methane to ethane ratio determines if the reservoir contains gas or oil or if it is non-productive. The following conclusions are possible:

Ratio C1/C2:	< 2	non-productive zone
	2 - 15	oil present
	15 - 65	gas present
	> 65	non-productive zone

The slope of the line of the ratio plot of C1/C2, C1/C3, C1/C4 and C1/C5 indicates whether the reservoir will produce hydrocarbons or hydrocarbons and water. Positive line slopes indicate production; negative line slopes indicate water-bearing formations. When using the slope of the gas ratios plot as an indicator of a possibly productive zone the following points should be borne in mind:

1. Productive dry gas zones may show only C1, but abnormally high shows of C1 are usually indicative of salt-water zones.
2. If the ratio C1/C2 is low in the oil section and the ratio C1/C4 is high in the gas section, the zone is probably non-productive.
3. If any ratio (C1/C5 excepted in an oil based mud) is lower than the preceding ratio then the zone is probably non-productive.
4. The ratios may not be definitive for zones of low permeability.
5. Steep gas ratio plots may be indicative of tight zones.

Explanation of Wetness/Balance/Character Curves

Another method for evaluating gas zones uses three ratios: hydrocarbon Wetness (W_h), hydrocarbon Balance (B_h) and hydrocarbon Character (C_h) plotted against depth where:

$$W_h = \frac{(C_2 + C_3 + C_4 + C_5) \times 100 (\%)}{(C_1 + C_2 + C_3 + C_4 + C_5)}$$

$$B_h = \frac{(C_1 + C_2)}{(C_3 + C_4 + C_5)}$$

$$C_h = \frac{(C_4 + C_5)}{C_3}$$

Wetness (W_h) is the primary zone indicator and provides a measure of the relative proportion of heavier gases in the overall gas show as follows:-

$W_h < 0.5$	Light non-associated gas with low productivity potential or only geo-pressured methane.
$0.5 < W_h < 17.5$	Potentially productive gas with gas density increasing with W_h .
$17.5 < W_h < 40.0$	Potentially productive oil with gravity decreasing as W_h increases.
$W_h > 40.0$	Heavy or residual oil with low productivity potential.

Balance (B_h) and Wetness (W_h) move closer together and eventually cross as reservoir hydrocarbons become denser in transition from gas to oil. The zone guidelines for B_h combine with those for W_h to improve reliability of show evaluation as follows:

$W_h < 0.5$ and $B_h > 100$	Very light, dry gas that is almost certainly non-productive.
$0.5 < W_h < 17.5$ and $W_h < B_h < 100$	Productive gas with gas increasing in wetness and density as the two curves converge.
$0.5 < W_h < 17.5$ and $B_h < W_h$	Productive gas condensate or a high gravity gas/oil ratio.
$17.5 < W_h < 40$ and $B_h < W_h$	Productive oil with oil gravity decreasing - density increasing as the curves diverge.
$17.5 < W_h < 40$ and $B_h > W_h$	Non-productive residual oil.

Character (C_h) serves to resolve ambiguities between oil or gas indications by defining the following:

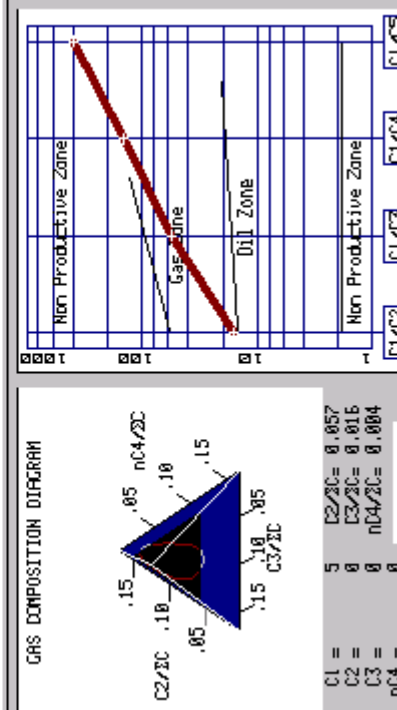
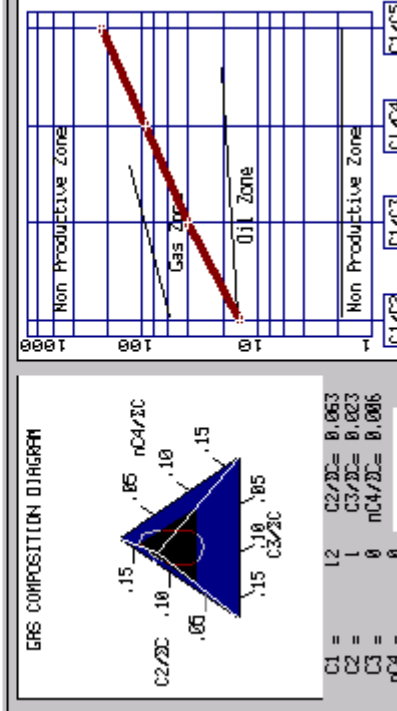
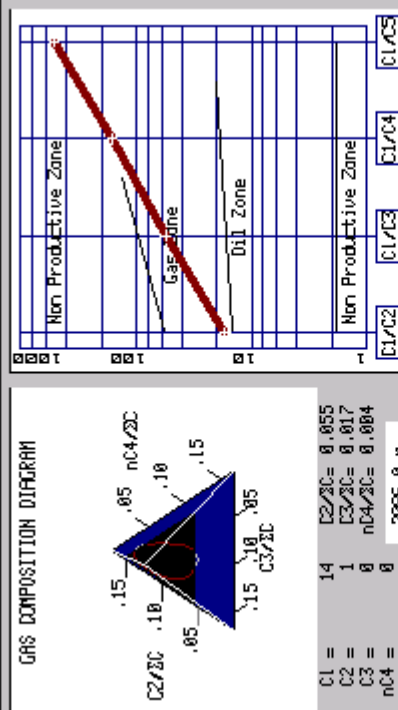
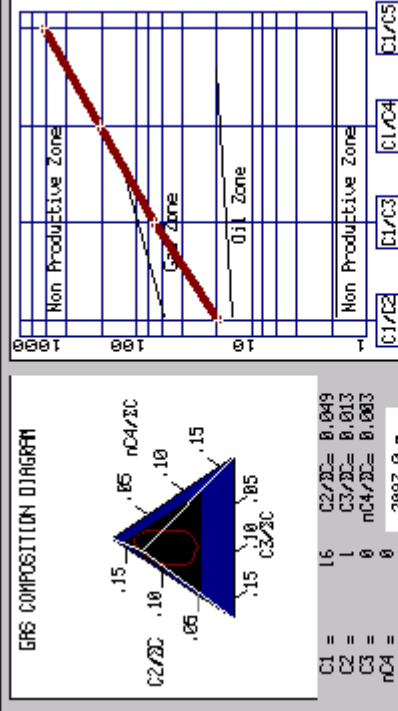
$0.5 < W_h < 17.5$ and $B_h < W_h$ and $C_h < 0.5$	Productive wet gas or condensate.
$0.5 < W_h < 17.5$ and $B_h < W_h$ and $C_h > 0.5$	Productive high gravity and/or high GOR oil.

It is important to note that in the conclusion to each of the interpretive tools, the terms 'productive' and 'non-productive' are used in a geochemical sense. Ultimate production of a zone is dependent upon reservoir thickness and extent as well as other physical and economic factors, which are not taken into account when analysing gas compositions. The methods discussed here are intended to assist the interpretive skills of the geologist or log analyst. We do not advocate their use blindly or in ignorance of the underlying geological and chemical principles of hydrocarbon occurrence.

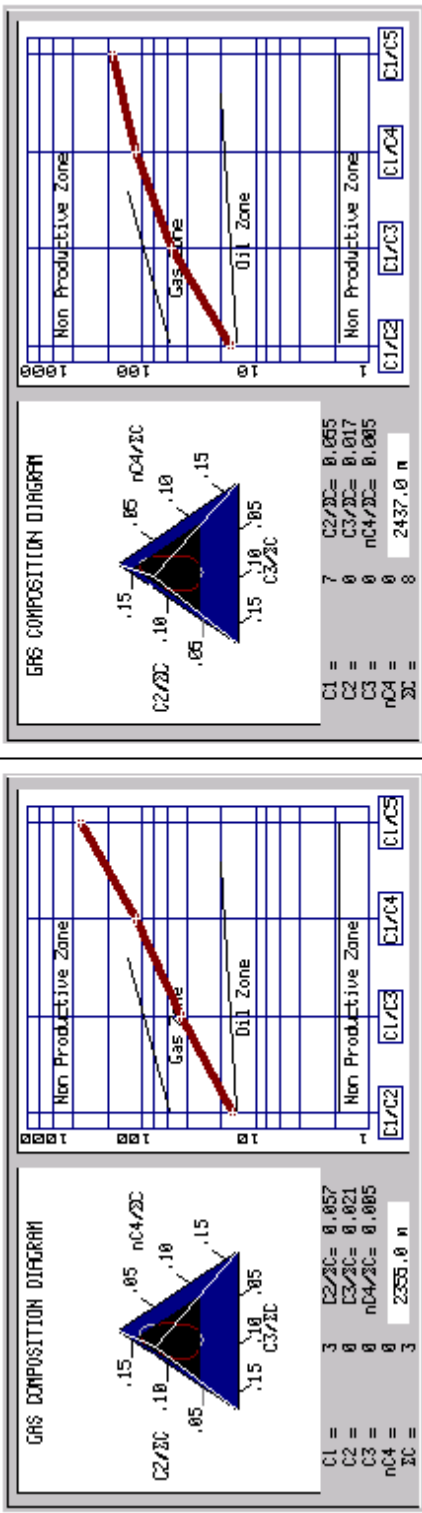
Please refer to the Gas Ratio Log enclosure.

Abbreviation : GOR - Gas Oil Ratio

GAS COMPOSITION DIAGRAM



GAS COMPOSITION DIAGRAM



OVERPRESSURE SUMMARY

West Moonfish-1 was expected to have normal formation pressure. Previous wells have shown characteristics of a transition zone and abnormal pressure. Deep Intra Latrobe wells in the Gippsland Basin have encountered abnormal pressure anywhere between 2462m (Sunfish-1) and 4325m (Volador-1). Pressure generally increases gradationally with depth in the lower Latrobe Group and Golden Beach groups.

The best pressure indicators in this basin area are: erratic gas unit readings, high connection gas, ROP increases and Dxc (D-exponent) decreases as seen on plots on the overpressure log. Gas levels (background, connection, trip & drill gas), are a valuable record for pressure interpretation and as previously mentioned, were monitored using the Reserval gas system. The backup auxillary system (FID) was also in operation throughout the drilling phases. Other parameters monitored included ROP, Dxc, torque, drag and fill, flow line temperature, chlorides, lithology and cuttings analysis to provide a good indication of hole conditions to predict any abnormal hole conditions.

The 12 1/4" hole section was drilled with no hole problems, though some connection gas was seen between 1856 to 1943 m. The mud weight was increased from 9.6 to 9.65 ppg in this section, but gas was generally minor and no connection gas was seen after 1943m. Background gas levels remained low until the gas sand was entered. Large platy cuttings from Coals and the Lakes Entrance/Latrobe Clays were seen at the shakers while drilling the 12.25" hole, but this tends to be typical of the formation and not as a product of an over-pressured formation.

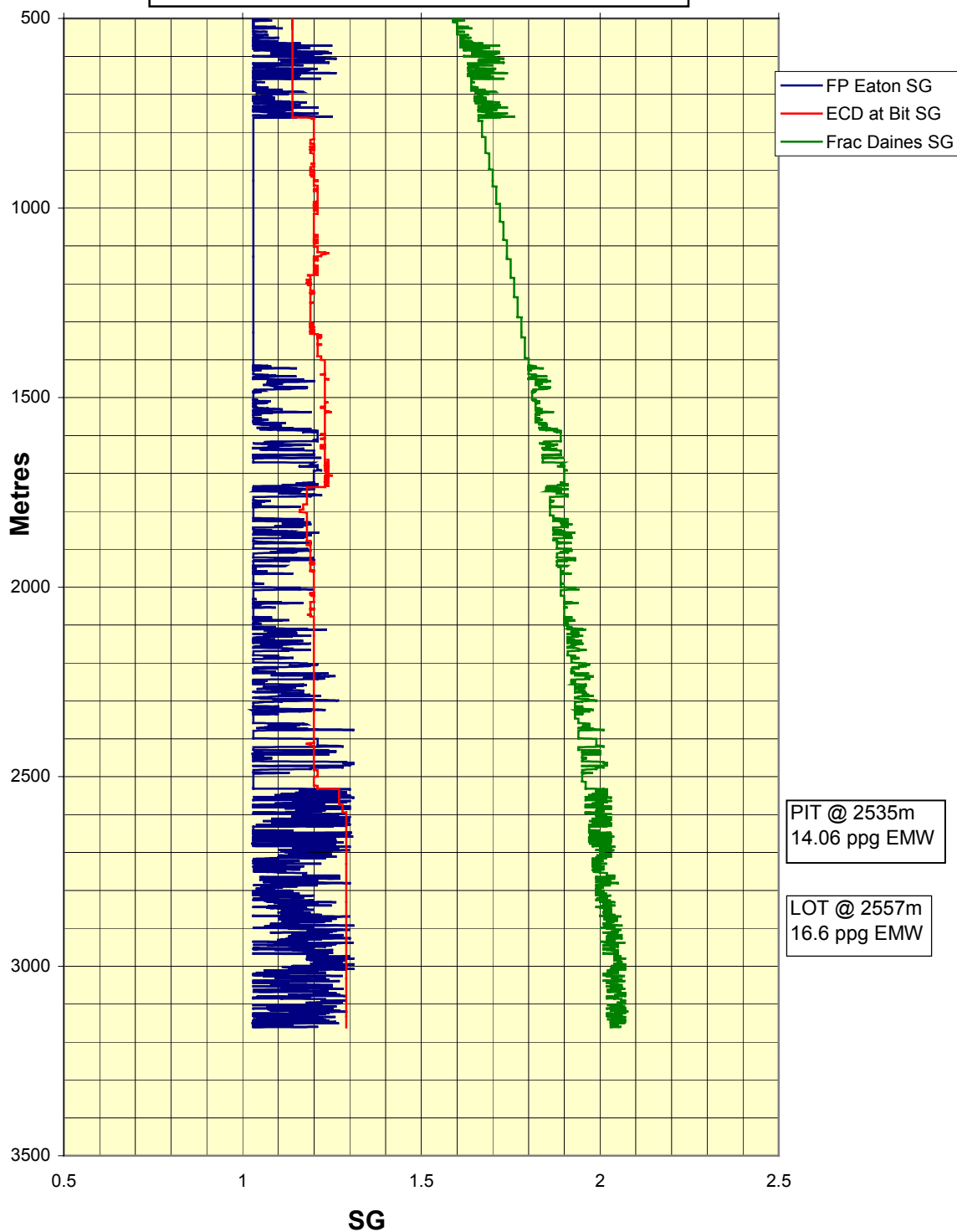
The 8 1/2" hole section was drilled with no hole problems. No increased torque or drag was observed throughout the section. Mud weight was in the range of 10.00 – 10.20⁺ ppg, background gas remained low, typically 7-14 units with max background gas of 25 units. No connection gas was seen throughout the 8 1/2" section. No large cuttings or cavings were seen on the shakers and the mud temperature was in line with the normal temperature gradient.

Coefficients used for West Moonfish - 1

Source: Gulf Coast Area

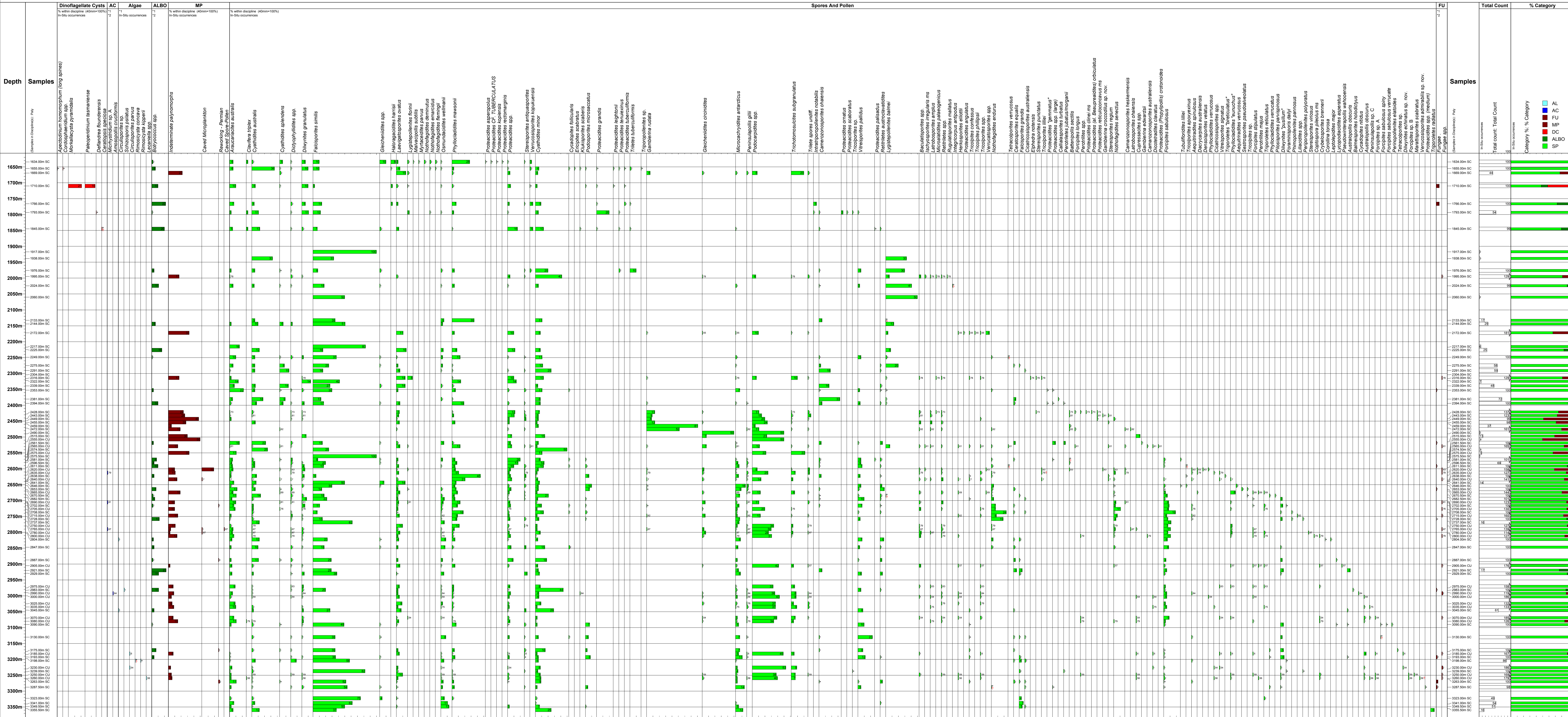
Poisson	: aK = 0.26600	bK = -2.66700	
Overburden	: aS = 0.01304	bS = -0.17314	cS = 1.43350

West Moonfish - 1
Calculated formation & fracture pressures



APPENDIX 5

BASIC PALYNOLOGY REPORT



APPENDIX 6

PVT REPORT



Company : Esso Australia Limited
Well : West Moonfish # 1

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File : E -25004

COMPOSITIONAL ANALYSIS OF BOTTOM HOLE RESERVOIR FLUID

Cylinder # L-194 ex MPSR Chamber 0113

Component	Stock Tank		Reservoir
	Liquid	Gas	Fluid
	Mol %	Mol %	Mol %
Hydrogen Sulphide	H2S	0.00	0.00
Carbon Dioxide	CO2	0.18	12.28
Nitrogen	N2	0.00	0.08
Methane	C1	0.46	78.43
Ethane	C2	0.18	5.07
Propane	C3	0.20	1.57
Iso-Butane	iC4	0.08	0.26
N-Butane	nC4	0.21	0.44
Iso-Pentane	iC5	0.19	0.15
N-Pentane	nC5	0.24	0.15
Hexanes	C6	1.93	0.24
Heptanes	C7	10.17	0.40
Octanes	C8	15.78	0.34
Nonanes	C9	24.24	0.34
Decanes	C10	15.10	0.13
Undecanes	C11	7.93	0.04
Dodecanes Plus	C12+	23.10	0.08
TOTAL		100.00	100.00

Ratios

Molar Ratio	:	0.0035	0.9965	1.0000
Mass Ratio	:	0.0211	0.9789	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	-- @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	217051 SCF	--

Stream Properties

Molecular Weight	:	136.1	22.21	22.6
Density obs. (gm/cc)	:	0.7795 @ 60 °F	--	-- @ PT*
Gravity (AIR = 1.000)	:	49.8 °API @ 60 °F	0.769	--
GHV (BTU/scf)	:	--	1036	--

Hexanes Plus Properties

Mol %	:	98.26	1.24	1.57
Molecular Weight	:	137.8	104.5	111.7
Density (gm/cc @ 60 °F)	:	0.7816	0.6949	0.7162
Gravity (°API @ 60 °F)	:	49.4	71.9	65.9

Heptanes Plus Properties

Mol %	:	96.33	1.01	1.33
Molecular Weight	:	138.8	109.1	116.6
Density (gm/cc @ 60 °F)	:	0.7829	0.7006	0.7233
Gravity (°API @ 60 °F)	:	49.1	70.3	63.9

Decanes Plus Properties

Mol %	:	46.14	0.09	0.25
Molecular Weight	:	168.5	135.4	156.2
Density (gm/cc @ 60 °F)	:	0.8080	0.7292	0.7816
Gravity (°API @ 60 °F)	:	43.5	62.4	49.4

Undecanes Plus Properties

Mol %	:	31.03	0.01	0.12
Molecular Weight	:	185.4	146.9	182.1
Density (gm/cc @ 60 °F)	:	0.8191	0.7399	0.8132
Gravity (°API @ 60 °F)	:	41.1	59.6	42.3

Dodecanes Plus Properties

Mol %	:	23.10	0.00	0.08
Molecular Weight	:	198.5	--	198.5
Density (gm/cc @ 60 °F)	:	0.8271	--	0.8271
Gravity (°API @ 60 °F)	:	39.4	--	39.4

* (P)ressure : 5000 psig * (T)emperature : 75 °F



Company : Esso Australia Limited
Well : West Moonfish # 1

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File : E -25004

COMPOSITIONAL ANALYSIS OF BOTTOM HOLE RESERVOIR FLUID

Cylinder # L-183 ex MPSR Chamber 0123

Component	Stock Tank		Stock Tank	Reservoir
	Liquid	Gas		Fluid
	Mol %	Mol %		Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	0.19	12.46	12.42
Nitrogen	N2	0.00	0.07	0.07
Methane	C1	0.46	78.62	78.34
Ethane	C2	0.18	5.15	5.13
Propane	C3	0.21	1.63	1.62
Iso-Butane	iC4	0.08	0.25	0.25
N-Butane	nC4	0.19	0.40	0.40
Iso-Pentane	iC5	0.16	0.13	0.13
N-Pentane	nC5	0.21	0.13	0.13
Hexanes	C6	0.98	0.21	0.21
Heptanes	C7	6.63	0.34	0.36
Octanes	C8	12.89	0.28	0.33
Nonanes	C9	27.43	0.27	0.37
Decanes	C10	20.26	0.06	0.13
Undecanes	C11	10.12	0.00	0.04
Dodecanes Plus	C12+	20.03	0.00	0.07
TOTAL		100.00	100.00	100.00

Ratios

Molar Ratio	:	0.0036	0.9964	1.0000
Mass Ratio	:	0.0218	0.9782	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	-- @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	210174 SCF	--

Stream Properties

Molecular Weight	:	135.9	22.16	22.6
Density obs. (gm/cc)	:	0.7794 @ 60 °F	--	-- @ PT*
Gravity (AIR = 1.000)	:	49.9 °API @ 60 °F	0.767	--
GHV (BTU/scf)	:	--	1030	--

Hexanes Plus Properties

Mol %	:	98.32	1.16	1.51
Molecular Weight	:	137.4	104.3	112.1
Density (gm/cc @ 60 °F)	:	0.7814	0.6946	0.7176
Gravity (°API @ 60 °F)	:	49.4	72.0	65.5

Heptanes Plus Properties

Mol %	:	97.35	0.95	1.30
Molecular Weight	:	138.0	108.7	116.7
Density (gm/cc @ 60 °F)	:	0.7821	0.7002	0.7245
Gravity (°API @ 60 °F)	:	49.3	70.4	63.6

Decanes Plus Properties

Mol %	:	50.40	0.06	0.24
Molecular Weight	:	160.6	134.0	154.1
Density (gm/cc @ 60 °F)	:	0.8019	0.7278	0.7847
Gravity (°API @ 60 °F)	:	44.8	62.7	48.7

Undecanes Plus Properties

Mol %	:	30.15	0.00	0.11
Molecular Weight	:	178.5	--	178.5
Density (gm/cc @ 60 °F)	:	0.8144	--	0.8144
Gravity (°API @ 60 °F)	:	42.1	--	42.1

Dodecanes Plus Properties

Mol %	:	20.03	0.00	0.07
Molecular Weight	:	194.5	--	194.5
Density (gm/cc @ 60 °F)	:	0.8246	--	0.8246
Gravity (°API @ 60 °F)	:	39.9	--	39.9

* (P)ressure : 5000 psig * (T)emperature : 75 °F



Company : Esso Australia Limited
Well : West Moonfish # 1

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File : E -25004

COMPOSITIONAL ANALYSIS OF BOTTOM HOLE RESERVOIR FLUID

Cylinder # L-079 ex MPSR Chamber 0066

Component	Stock Tank		Stock Tank	Reservoir
	Liquid	Gas		Fluid
	Mol %	Mol %		Mol %
Hydrogen Sulphide	H2S	0.00	0.00	0.00
Carbon Dioxide	CO2	0.22	15.02	9.59
Nitrogen	N2	0.00	0.07	0.04
Methane	C1	0.40	69.66	44.26
Ethane	C2	0.26	7.70	4.97
Propane	C3	0.45	3.68	2.50
Iso-Butane	iC4	0.21	0.67	0.50
N-Butane	nC4	0.55	1.25	0.99
Iso-Pentane	iC5	0.49	0.42	0.45
N-Pentane	nC5	0.61	0.41	0.48
Hexanes	C6	2.70	0.45	1.27
Heptanes	C7	6.72	0.43	2.74
Octanes	C8	6.57	0.17	2.52
Nonanes	C9	7.64	0.06	2.84
Decanes	C10	5.08	0.01	1.87
Undecanes	C11	3.60	0.00	1.32
Dodecanes Plus	C12+	64.49	0.00	23.66
TOTAL		100.00	100.00	100.00

Ratios

Molar Ratio	:	0.3667	0.6333	1.0000
Mass Ratio	:	0.8289	0.1711	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.4573 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	932 SCF	--

Stream Properties

Molecular Weight	:	205.2	24.52	90.8
Density obs. (gm/cc)	:	0.8326 @ 60 °F	--	0.6898 @ PT*
Gravity (AIR = 1.000)	:	38.3 °API @ 60 °F	0.850	73.4
GHV (BTU/scf)	:	--	1093	--

Hexanes Plus Properties

Mol %	:	96.81	1.12	36.22
Molecular Weight	:	210.2	94.5	208.0
Density (gm/cc @ 60 °F)	:	0.8359	0.6817	0.8342
Gravity (°API @ 60 °F)	:	37.6	75.9	38.0

Heptanes Plus Properties

Mol %	:	94.10	0.67	34.95
Molecular Weight	:	213.8	101.6	212.5
Density (gm/cc @ 60 °F)	:	0.8379	0.6912	0.8369
Gravity (°API @ 60 °F)	:	37.2	73.0	37.4

Decanes Plus Properties

Mol %	:	73.16	0.01	26.85
Molecular Weight	:	244.0	133.9	243.9
Density (gm/cc @ 60 °F)	:	0.8513	0.7277	0.8513
Gravity (°API @ 60 °F)	:	34.5	62.8	34.6

Undecanes Plus Properties

Mol %	:	68.09	0.00	24.98
Molecular Weight	:	252.2	--	252.2
Density (gm/cc @ 60 °F)	:	0.8545	--	0.8545
Gravity (°API @ 60 °F)	:	33.9	--	33.9

Dodecanes Plus Properties

Mol %	:	64.49	0.00	23.66
Molecular Weight	:	258.0	--	258.0
Density (gm/cc @ 60 °F)	:	0.8568	--	0.8568
Gravity (°API @ 60 °F)	:	33.5	--	33.5

* (P)ressure : 2800 psig * (T)emperature : 140 °F



Company : Esso Australia Limited
Well : West Moonfish # 1

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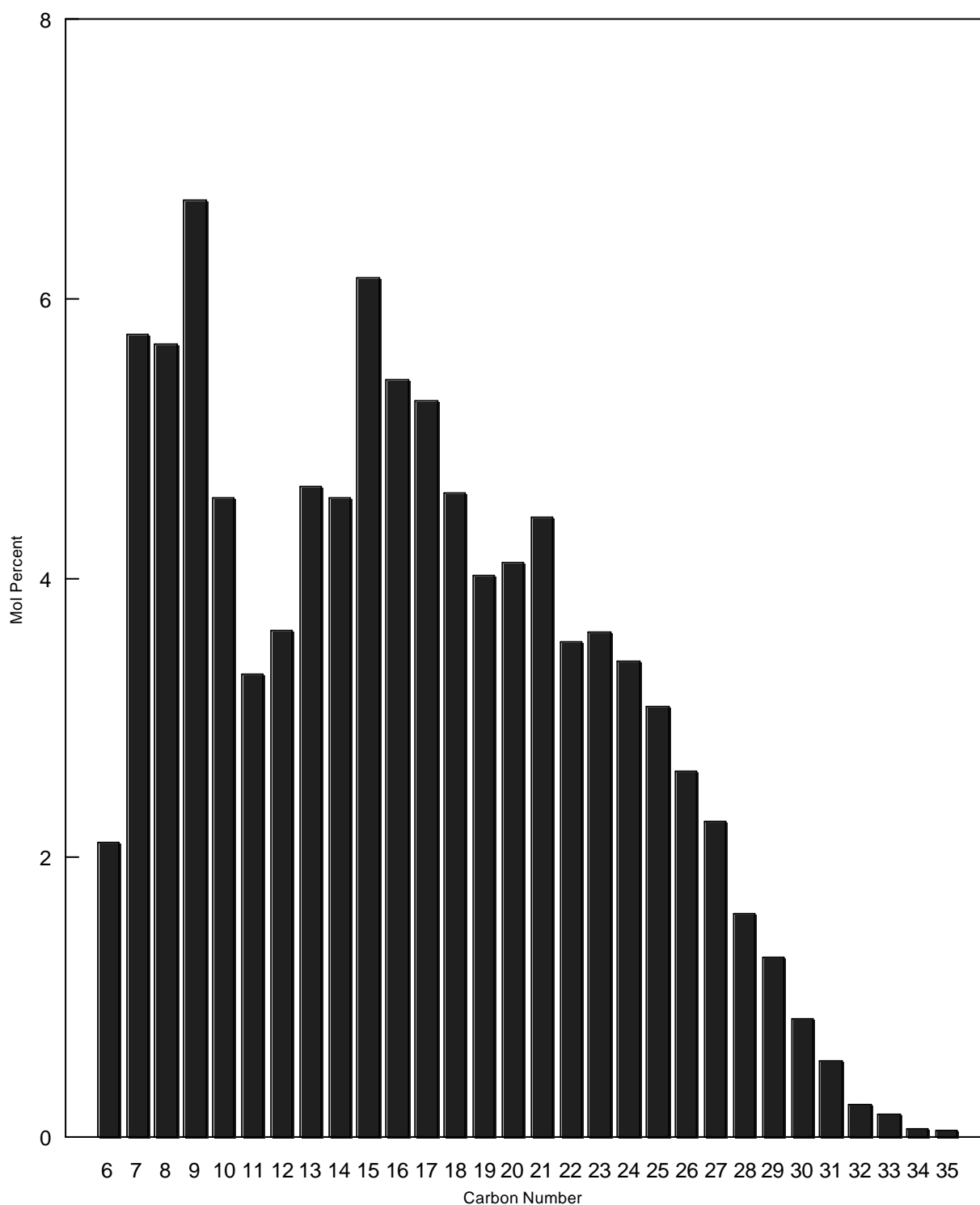
FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
ADJUSTED TO BE SATURATED AT RESERVOIR CONDITIONS
On Stock Tank Oil from atmospheric flash of sample in cylinder # L-079

Component	Mol %
Hexanes minus	C6- 1.74
Hexanes	C6 2.11
Heptanes	C7 5.75
Octanes	C8 5.68
Nonanes	C9 6.71
Decanes	C10 4.57
Undecanes	C11 3.31
Dodecanes	C12 3.63
Tridecanes	C13 4.65
Tetradecanes	C14 4.57
Pentadecanes	C15 6.15
Hexadecanes	C16 5.42
Heptadecanes	C17 5.27
Octadecanes	C18 4.61
Nonadecanes	C19 4.02
Eicosanes	C20 4.11
Heneicosanes	C21 4.43
Docosanes	C22 3.54
Tricosanes	C23 3.61
Tetracosanes	C24 3.40
Pentacosanes	C25 3.08
Hexacosanes	C26 2.62
Heptacosanes	C27 2.26
Octacosanes	C28 1.60
Nonacosanes	C29 1.29
triacontanes	C30 0.84
Hentriacontanes	C31 0.54
Dotriacontanes	C32 0.23
Tritriacontanes	C33 0.16
Tetratriacontanes	C34 0.06
Pentatriacontanes Plus	C35+ 0.04
TOTAL	100.00

Molecular Weight Calculated *	:	221.6
Density @ 60 °F Calculated *	:	0.8413

*Calculation based on generalized properties as published by Katz and Firoozabadi

FINGERPRINT ANALYSIS
BY CAPILLARY GAS CHROMATOGRAPHY
ADJUSTED TO BE SATURATED AT RESERVOIR CONDITIONS
On Stock Tank Oil from atmospheric flash of sample in cylinder # L-079





Company : Esso Australia Limited
Well : West Moonfish # 1

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File : E -25004

COMPOSITIONAL ANALYSIS OF BOTTOM HOLE RESERVOIR FLUID ADJUSTED TO BE SATURATED AT RESERVOIR CONDITIONS

Cylinder # L-079 ex MPSR Chamber 0066

Component	Stock Tank		Stock Tank		Reservoir
	Liquid	Mol %	Gas	Mol %	Fluid
					Mol %
Hydrogen Sulphide	H2S	0.00	0.00		0.00
Carbon Dioxide	CO2	0.23	15.01		8.01
Nitrogen	N2	0.00	0.06		0.03
Methane	C1	0.41	69.63		36.86
Ethane	C2	0.27	7.65		4.16
Propane	C3	0.49	3.71		2.18
Iso-Butane	iC4	0.23	0.70		0.48
N-Butane	nC4	0.61	1.27		0.96
Iso-Pentane	iC5	0.55	0.43		0.49
N-Pentane	nC5	0.70	0.42		0.55
Hexanes	C6	2.07	0.45		1.22
Heptanes	C7	5.65	0.43		2.90
Octanes	C8	5.58	0.17		2.73
Nonanes	C9	6.59	0.06		3.15
Decanes	C10	4.49	0.01		2.13
Undecanes	C11	3.25	0.00		1.54
Dodecanes Plus	C12+	68.88	0.00		32.61
TOTAL		100.00	100.00		100.00

Ratios

Molar Ratio	:	0.4734	0.5266	1.0000
Mass Ratio	:	0.8887	0.1113	1.0000
Liquid Ratio (bbl/bbl)	:	1.0000 @ SC	--	1.3328 @ PT*
Gas Liquid Ratio	:	1.0000 bbl @ SC	570 SCF	--

Stream Properties

Molecular Weight	:	218.1	24.55	116.2
Density obs. (gm/cc)	:	0.8397 @ 60 °F	--	0.7094 @ PT*
Gravity (AIR = 1.000)	:	36.8 °API @ 60 °F	0.851	67.8
GHV (BTU/scf)	:	--	1096	--

Hexanes Plus Properties

Mol %	:	96.51	1.12	46.28
Molecular Weight	:	224.0	94.5	222.4
Density (gm/cc @ 60 °F)	:	0.8432	0.6817	0.8422
Gravity (°API @ 60 °F)	:	36.1	75.9	36.4

Heptanes Plus Properties

Mol %	:	94.44	0.67	45.06
Molecular Weight	:	227.1	101.6	226.1
Density (gm/cc @ 60 °F)	:	0.8448	0.6912	0.8442
Gravity (°API @ 60 °F)	:	35.8	73.0	36.0

Decanes Plus Properties

Mol %	:	76.62	0.01	36.28
Molecular Weight	:	254.6	133.9	254.6
Density (gm/cc @ 60 °F)	:	0.8561	0.7277	0.8561
Gravity (°API @ 60 °F)	:	33.6	62.8	33.6

Undecanes Plus Properties

Mol %	:	72.13	0.00	34.15
Molecular Weight	:	262.1	--	262.1
Density (gm/cc @ 60 °F)	:	0.8588	--	0.8588
Gravity (°API @ 60 °F)	:	33.1	--	33.1

Dodecanes Plus Properties

Mol %	:	68.88	0.00	32.61
Molecular Weight	:	267.6	--	267.6
Density (gm/cc @ 60 °F)	:	0.8608	--	0.8608
Gravity (°API @ 60 °F)	:	32.7	--	32.7

* (P)ressure : 2865 psig * (T)emperature : 201 °F

APPENDIX 7

CHECKSHOT DATA

Shot Summary Listing (1/5)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
1065.0	1	32	-1.1	9.5	762.6	163, 164, 165, 166, 167
1085.0	2	32	6.4	9.5	698.0	163, 164, 165, 166, 167
1105.0	3	32	-2.6	9.5	813.2	163, 164, 165, 166, 167
1125.0	4	32	-19.6	9.5	669.9	163, 164, 165, 166, 167
1145.0	1	31	-3.0	9.5	744.4	160, 161, 162
1165.0	2	31	6.6	9.5	689.7	160, 161, 162
1185.0	3	31	-2.7	9.5	814.0	160, 161, 162
1205.0	4	31	-38.9	9.5	670.4	160, 161, 162
1225.0	1	30	-11.3	9.4	741.1	155, 156, 157, 158, 159
1245.0	2	30	8.0	9.5	667.8	155, 156, 157, 158, 159
1265.0	3	30	-2.9	9.5	802.2	155, 156, 157, 158, 159
1285.0	4	30	-41.5	9.5	669.5	155, 156, 157, 158, 159
1304.9	1	29	-12.1	9.5	740.4	150, 151, 152, 153, 154
1324.9	2	29	5.5	9.5	674.9	150, 151, 152, 153, 154
1344.9	3	29	9.6	9.5	794.3	150, 151, 152, 153, 154
1364.9	4	29	-48.6	9.5	661.6	150, 151, 152, 153, 154
1384.9	1	28	-23.8	9.5	717.6	145, 146, 147, 148, 149
1404.9	2	28	11.4	9.5	658.7	145, 146, 147, 148, 149
1424.9	3	28	9.3	9.5	808.3	145, 146, 147, 148, 149
1444.9	4	28	-47.5	9.5	631.4	145, 146, 147, 148, 149
1465.0	1	27	-24.3	9.4	723.8	140, 141, 142, 143, 144
1485.0	2	27	18.1	9.5	655.9	140, 141, 142, 143, 144
1505.0	3	27	17.8	9.5	787.1	140, 141, 142, 143, 144
1525.0	4	27	-56.7	9.5	654.1	140, 141, 142, 143, 144
1544.9	1	26	-24.0	9.5	704.7	135, 136, 137, 138, 139
1564.9	2	26	70.7	9.5	647.7	135, 136, 137, 138, 139
1584.9	3	26	29.4	9.5	801.2	135, 136, 137, 138, 139
1604.9	4	26	-80.9	9.5	623.6	135, 136, 137, 138, 139

Shot Summary Listing (2/5)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
1624.9	1	25	-34.4	9.4	691.4	130, 131, 132, 133, 134
1644.9	2	25	119.0	9.5	651.2	130, 131, 132, 133, 134
1664.9	3	25	30.4	9.5	771.3	130, 131, 132, 133, 134
1684.9	4	25	25.4	9.4	611.1	130, 131, 132, 133, 134
1705.0	1	24	-113.6	9.4	692.5	125, 126, 127, 128, 129
1725.0	2	24	146.2	9.5	651.2	125, 126, 127, 128, 129
1745.0	3	24	42.9	9.5	779.5	125, 126, 127, 128, 129
1765.0	4	24	-1.0	9.4	598.8	125, 126, 127, 128, 129
1784.8	1	23	154.5	9.5	692.7	120, 121, 122, 123, 124
1804.8	2	23	75.8	9.4	652.6	120, 121, 122, 123, 124
1824.8	3	23	-1.7	9.5	722.8	120, 121, 122, 123, 124
1844.8	4	23	-13.6	9.4	572.7	120, 121, 122, 123, 124
1865.0	1	22	34.0	9.3	651.6	115, 116, 117, 118, 119
1885.0	2	22	14.4	9.3	634.0	115, 116, 117, 118, 119
1905.0	3	22	-10.7	9.4	738.3	115, 116, 117, 118, 119
1925.0	4	22	-14.6	9.4	575.8	115, 116, 117, 118, 119
1945.0	1	21	24.4	9.2	654.9	110, 111, 112, 113, 114
1965.0	2	21	13.0	9.3	600.0	110, 111, 112, 113, 114
1985.0	3	21	-10.9	9.4	708.3	110, 111, 112, 113, 114
2005.0	4	21	-14.9	9.4	554.8	110, 111, 112, 113, 114
2024.9	1	20	27.8	9.2	661.8	105, 106, 107, 108, 109
2044.9	2	20	12.5	9.3	609.7	105, 106, 107, 108, 109
2064.9	3	20	-11.1	9.4	703.3	105, 106, 107, 108, 109
2084.9	4	20	-15.0	9.4	570.0	105, 106, 107, 108, 109
2104.9	1	19	23.3	9.2	651.6	100, 101, 102, 103, 104
2124.9	2	19	13.0	9.4	603.9	100, 101, 102, 103, 104
2144.9	3	19	-11.0	9.4	693.8	100, 101, 102, 103, 104
2164.9	4	19	-15.0	9.4	556.8	100, 101, 102, 103, 104

Shot Summary Listing (3/5)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
2184.9	1	18	26.6	9.2	647.3	95, 96, 97, 98, 99
2204.9	2	18	12.8	9.4	591.9	95, 96, 97, 98, 99
2224.9	3	18	-11.1	9.3	718.1	95, 96, 97, 98, 99
2244.9	4	18	-15.5	9.4	550.5	95, 96, 97, 98, 99
2265.0	1	17	26.2	9.2	600.1	90, 91, 92, 93, 94
2285.0	2	17	13.4	9.4	582.0	90, 91, 92, 93, 94
2305.0	3	17	-11.0	9.4	691.5	90, 91, 92, 93, 94
2325.0	4	17	-16.1	9.4	552.8	90, 91, 92, 93, 94
2345.0	1	16	25.7	9.2	570.2	85, 86, 87, 88, 89
2365.0	2	16	12.7	9.4	597.0	85, 86, 87, 88, 89
2385.0	3	16	-11.2	9.3	624.6	85, 86, 87, 88, 89
2405.0	4	16	-15.5	9.4	557.7	85, 86, 87, 88, 89
2424.9	1	15	24.2	9.2	577.4	80, 81, 82, 83, 84
2444.9	2	15	11.3	9.4	595.0	80, 81, 82, 83, 84
2464.9	3	15	-11.4	9.4	702.2	80, 81, 82, 83, 84
2484.9	4	15	-15.2	9.4	548.5	80, 81, 82, 83, 84
2505.0	1	14	22.4	9.2	605.5	75, 76, 77, 78, 79
2525.0	2	14	2.2	9.7	575.6	75, 76, 77, 78, 79
2545.0	3	14	-8.2	9.5	676.4	75, 76, 77, 78, 79
2565.0	4	14	-12.1	9.1	543.8	75, 76, 77, 78, 79
2585.0	1	13	19.4	9.1	595.4	70, 71, 72, 73, 74
2605.0	2	13	11.3	9.4	563.7	70, 71, 72, 73, 74
2625.0	3	13	-12.1	9.8	626.1	70, 71, 72, 73, 74
2645.0	4	13	-16.6	9.5	515.9	70, 71, 72, 73, 74
2665.0	1	12	28.2	9.8	588.0	65, 66, 67, 68, 69
2685.0	2	12	14.6	9.4	573.4	65, 66, 67, 68, 69
2705.0	3	12	-12.3	9.7	668.0	65, 66, 67, 68, 69
2725.0	4	12	-5.6	9.8	508.9	65, 66, 67, 68, 69

Shot Summary Listing (4/5)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
2744.9	1	11	28.3	9.3	593.8	59, 60, 61, 62, 63, 64
2764.9	2	11	14.0	9.5	579.0	59, 60, 61, 62, 63, 64
2784.9	3	11	-12.2	9.7	651.3	59, 60, 61, 62, 63, 64
2804.9	4	11	-15.3	9.5	503.4	59, 60, 61, 62, 63, 64
2825.0	1	10	27.0	9.2	581.7	54, 55, 56, 57, 58
2845.0	2	10	16.8	9.4	550.5	54, 55, 56, 57, 58
2865.0	3	10	-14.3	9.6	677.5	54, 55, 56, 57, 58
2885.0	4	10	-15.4	9.5	494.9	54, 55, 56, 57, 58
2905.0	1	9	26.0	9.6	594.7	49, 50, 51, 52, 53
2925.0	2	9	20.8	10.3	503.3	49, 50, 51, 52, 53
2945.0	3	9	-5.8	9.5	627.9	49, 50, 51, 52, 53
2965.0	4	9	-12.5	9.7	470.8	49, 50, 51, 52, 53
2985.0	1	8	27.7	9.3	565.0	44, 45, 46, 47, 48
3005.0	2	8	15.0	9.6	533.9	44, 45, 46, 47, 48
3025.0	3	8	-3.9	9.6	632.5	44, 45, 46, 47, 48
3045.0	4	8	-18.5	9.1	450.9	44, 45, 46, 47, 48
3145.0	1	6	35.9	9.2	550.0	31, 32, 33, 34, 35, 36, 37
3165.0	2	6	15.6	9.2	433.3	31, 32, 33, 34, 35, 36, 37
3185.0	3	6	-2.6	10.2	593.8	35
3205.0	4	6	-12.3	9.3	453.2	31, 32, 33, 34, 35, 36, 37
3303.5	1	4	59.0	8.1	473.2	21, 22, 23, 24, 25
3323.5	2	4	94.8	7.6	394.6	21, 22, 23, 24, 25
3343.5	3	4	64.1	8.8	491.9	21, 22, 23, 24, 25
3363.5	4	4	72.0	7.9	429.1	21, 22, 24, 25
2825.0	1	10	27.0	9.2	581.7	54, 55, 56, 57, 58
2845.0	2	10	16.8	9.4	550.5	54, 55, 56, 57, 58
2865.0	3	10	-14.3	9.6	677.5	54, 55, 56, 57, 58
2885.0	4	10	-15.4	9.5	494.9	54, 55, 56, 57, 58

Shot Summary Listing (5/5)

Measured Depth [m]	Tool Number	Stack Number	Relative Bearing [deg]	Caliper [in]	Anchoring force [kg]	Shot number
2905.0	1	9	26.0	9.6	594.7	49, 50, 51, 52, 53
2925.0	2	9	20.8	10.3	503.3	49, 50, 51, 52, 53
2945.0	3	9	-5.8	9.5	627.9	49, 50, 51, 52, 53
2965.0	4	9	-12.5	9.7	470.8	49, 50, 51, 52, 53
2985.0	1	8	27.7	9.3	565.0	44, 45, 46, 47, 48
3005.0	2	8	15.0	9.6	533.9	44, 45, 46, 47, 48
3025.0	3	8	-3.9	9.6	632.5	44, 45, 46, 47, 48
3045.0	4	8	-18.5	9.1	450.9	44, 45, 46, 47, 48
3145.0	1	6	35.9	9.2	550.0	31, 32, 33, 34, 35, 36, 37
3145.0	1	7	25.6	9.0	542.4	31, 32, 33, 34, 35, 36, 37
3165.0	2	6	15.6	9.2	433.3	31, 32, 33, 34, 35, 36, 37
3165.0	2	7	17.6	10.0	459.9	31, 32, 33, 34, 35, 36, 37
3185.0	3	7	-11.1	9.2	563.7	35
3185.0	3	6	-2.6	10.2	593.8	35
3205.0	4	6	-12.3	9.3	453.2	31, 32, 33, 34, 35, 36, 37
3205.0	4	7	-15.2	9.2	482.4	31, 32, 33, 34, 35, 36, 37
3303.5	1	5	15.8	9.3	538.6	21, 22, 23, 24, 25
3303.5	1	4	59.0	8.1	473.2	21, 22, 23, 24, 25
3323.5	2	4	94.8	7.6	394.6	21, 22, 23, 24, 25
3323.5	2	5	8.2	9.4	517.0	21, 22, 23, 24, 25
3343.5	3	4	64.1	8.8	491.9	21, 22, 23, 24, 25
3343.5	3	5	-14.2	9.1	465.2	21, 22, 23, 24, 25
3363.5	4	5	-16.0	9.4	443.3	21, 22, 24, 25
3363.5	4	4	72.0	7.9	429.1	21, 22, 24, 25

APPENDIX 8

SURVEY DATA



West Moonfish-1

Schlumberger

Report Date: February 5, 2005	Survey / DLS Computation Method: Minimum Curvature / Lubinski
Client: Esso Australia Pty Ltd	Vertical Section Azimuth: 171.730°
Field: West Moonfish GDA 94	Vertical Section Origin: N 0.000 m, E 0.000 m
Structure / Slot: W. Moonfish-1 / West Moonfish-1	TVD Reference Datum: RKB
Well: W. Moonfish-1	TVD Reference Elevation: 39.2 m relative to MSL
Borehole: West Moonfish 1	Sea Bed / Ground Level Elevation: -52.120 m relative to MSL
UWI/API#:	Magnetic Declination: 13.039°
Survey Name / Date: WMF-1 Actual Surveys / January 11, 2005	Total Field Strength: 59962.992 nT
Tort / AHD / DDI / ERD ratio: 72.929° / 803.44 m / 4.797 / 0.255	Magnetic Dip: -68.704°
Grid Coordinate System: GDA94/MGA94 Zone 55	Declination Date: January 11, 2005
Location Lat/Long: S 38 9 0.477, E 147 58 40.628	Magnetic Declination Model: BGGM 2004
Location Grid N/E Y/X: N 5777075.490 m, E 585687.250 m	North Reference: Grid North
Grid Convergence Angle: -0.60414149°	Total Corr Mag North -> Grid North: +13.643°
Grid Scale Factor: 0.99969043	Local Coordinates Referenced To: Well Head

Comments	Measured Depth (m)	Inclination (deg)	Azimuth (deg)	TVD (m)	Vertical Section (m)	NS (m)	EW (m)	DLS (deg/30 m)
Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sea Floor	91.00	0.00	0.00	91.00	0.00	0.00	0.00	0.00
	181.88	0.35	328.21	181.88	-0.25	0.24	-0.15	0.12
	209.79	0.46	330.61	209.79	-0.44	0.41	-0.25	0.12
	238.18	0.46	334.44	238.18	-0.65	0.61	-0.35	0.03
	266.14	0.41	322.98	266.14	-0.85	0.79	-0.46	0.11
	294.58	0.45	330.64	294.58	-1.04	0.97	-0.58	0.07
	323.45	0.47	319.47	323.45	-1.25	1.16	-0.71	0.10
	352.76	0.37	334.57	352.75	-1.44	1.33	-0.83	0.15
	381.80	0.35	324.72	381.79	-1.61	1.49	-0.92	0.07
	411.24	0.31	328.91	411.23	-1.76	1.63	-1.01	0.05
	440.44	0.31	306.16	440.43	-1.89	1.75	-1.12	0.13
	469.19	0.35	319.12	469.18	-2.02	1.86	-1.24	0.09
	498.06	0.33	320.27	498.05	-2.16	1.99	-1.35	0.02
	526.97	0.37	310.22	526.96	-2.30	2.11	-1.47	0.08
	555.67	0.28	328.64	555.66	-2.44	2.23	-1.58	0.14
	584.65	0.30	319.14	584.64	-2.57	2.35	-1.67	0.05
	613.64	0.26	310.54	613.63	-2.68	2.45	-1.77	0.06
	642.62	0.21	308.91	642.61	-2.77	2.53	-1.86	0.05
	671.64	0.18	340.56	671.63	-2.85	2.60	-1.91	0.11
	700.59	0.24	324.48	700.58	-2.95	2.70	-1.96	0.09
	716.66	0.28	343.92	716.65	-3.02	2.76	-1.99	0.18
	760.72	0.35	341.43	760.71	-3.26	2.99	-2.07	0.05
	818.90	0.39	345.99	818.89	-3.63	3.35	-2.17	0.03
	848.10	0.45	351.62	848.09	-3.84	3.56	-2.21	0.07
	877.05	0.38	344.38	877.04	-4.05	3.77	-2.25	0.09
	906.37	0.28	0.58	906.36	-4.22	3.93	-2.28	0.14
	935.33	0.35	12.98	935.32	-4.37	4.09	-2.26	0.10
	964.33	0.27	17.88	964.31	-4.52	4.24	-2.22	0.09
	992.58	0.29	13.91	992.56	-4.64	4.37	-2.18	0.03
	1021.76	0.36	9.73	1021.74	-4.80	4.54	-2.15	0.08
	1050.63	0.30	18.15	1050.61	-4.95	4.70	-2.11	0.08
	1079.82	0.33	13.33	1079.80	-5.10	4.85	-2.07	0.04
	1108.59	0.28	27.98	1108.57	-5.23	4.99	-2.01	0.10
	1137.86	0.28	33.98	1137.84	-5.34	5.12	-1.94	0.03
	1166.83	0.29	28.94	1166.81	-5.45	5.24	-1.86	0.03
	1195.74	0.29	56.71	1195.72	-5.54	5.34	-1.77	0.14
	1224.73	0.34	48.47	1224.71	-5.62	5.44	-1.64	0.07
	1253.76	0.28	53.99	1253.74	-5.70	5.54	-1.52	0.07
	1282.95	0.28	76.24	1282.93	-5.74	5.60	-1.39	0.11
	1312.43	0.35	69.81	1312.41	-5.77	5.65	-1.24	0.08
	1341.45	0.49	75.67	1341.43	-5.80	5.71	-1.04	0.15

1370.44	0.54	77.71	1370.42	-5.82	5.77	-0.78	0.06
1399.38	0.57	80.90	1399.36	-5.83	5.82	-0.51	0.04
1428.34	0.57	72.23	1428.32	-5.86	5.89	-0.23	0.09
1457.45	0.71	75.91	1457.42	-5.90	5.97	0.09	0.15
1486.39	0.67	81.34	1486.36	-5.92	6.04	0.43	0.08
1515.33	0.64	84.68	1515.30	-5.91	6.08	0.75	0.05
1544.31	0.58	114.39	1544.28	-5.82	6.04	1.05	0.33
1573.33	0.68	130.93	1573.30	-5.62	5.87	1.31	0.21
1602.43	0.81	124.83	1602.39	-5.34	5.63	1.61	0.16
1630.64	0.88	126.64	1630.60	-5.05	5.39	1.95	0.08
1659.72	0.73	120.96	1659.68	-4.78	5.16	2.29	0.18
1688.54	0.77	115.92	1688.50	-4.56	4.98	2.62	0.08
1707.82	1.14	158.54	1707.77	-4.30	4.75	2.81	1.21
1716.29	1.42	170.03	1716.24	-4.11	4.57	2.86	1.34
1747.14	3.39	168.14	1747.06	-2.82	3.30	3.11	1.92
1776.39	6.07	175.23	1776.21	-0.41	0.91	3.42	2.81
1803.97	9.73	177.60	1803.52	3.37	-2.87	3.63	4.00
1833.36	13.39	175.76	1832.31	9.23	-8.75	3.99	3.75
1863.43	16.85	168.96	1861.34	17.06	-16.50	5.08	3.87
1892.32	20.05	169.00	1888.74	26.19	-25.48	6.83	3.32
1921.31	23.60	171.03	1915.65	36.96	-36.09	8.68	3.76
1950.39	26.42	171.08	1942.00	49.26	-48.23	10.59	2.91
1980.01	28.74	171.62	1968.25	62.97	-61.79	12.65	2.36
2008.88	30.11	172.21	1993.40	77.15	-75.83	14.65	1.46
2037.15	31.81	172.17	2017.64	91.69	-90.24	16.62	1.80
2051.91	33.50	172.13	2030.07	99.66	-98.13	17.71	3.44
2066.15	33.78	171.23	2041.92	107.55	-105.94	18.85	1.20
2095.12	33.12	171.96	2066.09	123.51	-121.73	21.19	0.80
2124.15	33.36	172.51	2090.37	139.43	-137.50	23.34	0.40
2153.24	33.01	172.88	2114.72	155.35	-153.29	25.36	0.42
2181.80	32.54	173.18	2138.73	170.80	-168.64	27.24	0.52
2210.92	31.59	173.33	2163.41	186.26	-183.99	29.06	0.98
2240.12	31.28	173.54	2188.32	201.48	-199.12	30.80	0.34
2268.93	31.04	173.24	2212.98	216.38	-213.93	32.51	0.30
2298.13	31.01	173.23	2238.00	231.42	-228.87	34.29	0.03
2327.14	30.80	172.89	2262.89	246.32	-243.66	36.09	0.28
2356.90	30.47	172.50	2288.50	261.48	-258.70	38.01	0.39
2385.70	30.69	172.74	2313.29	276.13	-273.23	39.90	0.26
2414.71	30.89	172.94	2338.21	290.98	-287.97	41.75	0.23
2443.86	30.53	172.62	2363.27	305.86	-302.74	43.62	0.41
2472.51	30.38	172.52	2387.97	320.38	-317.14	45.49	0.17
2500.10	30.49	173.16	2411.76	334.36	-331.00	47.24	0.37
2513.76	30.10	173.67	2423.55	341.24	-337.85	48.03	1.03
2534.52	28.77	174.36	2441.63	351.44	-348.00	49.09	1.98
2563.83	27.68	175.01	2467.46	365.28	-361.80	50.38	1.16
2591.89	27.75	175.43	2492.30	378.31	-374.80	51.46	0.22
2621.44	27.65	176.02	2518.46	392.01	-388.50	52.49	0.30
2649.26	26.55	176.15	2543.23	404.65	-401.14	53.35	1.19
2679.64	25.96	176.64	2570.47	418.04	-414.55	54.20	0.62
2709.01	25.79	176.94	2596.90	430.81	-427.35	54.92	0.22
2738.14	25.73	177.20	2623.13	443.41	-440.00	55.56	0.13
2766.75	25.60	177.87	2648.92	455.74	-452.37	56.10	0.33
2795.87	25.09	178.27	2675.24	468.13	-464.83	56.52	0.55
2824.87	24.62	179.06	2701.55	480.23	-477.02	56.80	0.60
2844.77	24.22	179.64	2719.67	488.38	-485.25	56.90	0.70
2853.96	24.18	180.01	2728.06	492.11	-489.01	56.91	0.51
2882.63	27.57	178.74	2753.85	504.51	-501.52	57.05	3.59
2911.83	32.47	177.23	2779.12	519.03	-516.11	57.58	5.09
2940.58	35.22	173.63	2803.00	535.00	-532.07	58.87	3.55
2969.76	36.72	171.96	2826.62	552.14	-549.07	61.03	1.84
2998.29	36.71	172.92	2849.49	569.19	-565.98	63.27	0.60
3027.63	37.32	171.60	2872.92	586.85	-583.48	65.65	1.02
3056.67	37.50	171.93	2895.98	604.50	-600.94	68.18	0.28

3086.05	37.34	171.98	2919.32	622.35	-618.61	70.68	0.17
3115.20	36.75	171.59	2942.58	639.91	-636.00	73.19	0.65
3143.56	36.84	172.02	2965.29	656.90	-652.81	75.61	0.29
3173.28	36.36	171.83	2989.15	674.61	-670.35	78.10	0.50
3202.29	35.86	171.78	3012.59	691.71	-687.27	80.53	0.52
3231.67	35.66	172.64	3036.43	708.88	-704.28	82.86	0.55
3259.72	35.26	172.40	3059.28	725.15	-720.42	84.98	0.45
3289.09	34.82	172.26	3083.32	742.01	-737.13	87.23	0.46
3318.30	34.25	172.36	3107.39	758.57	-753.54	89.45	0.59
3343.24	33.90	172.67	3128.04	772.54	-767.40	91.27	0.47

PROJECTION TO TD 3369.00 33.54 172.99 3149.47 786.84 -781.58 93.05 0.47

Survey Type: Definitive Survey

Survey Error Model: SLB ISCWSA version 21 *** 3-D 95.00% Confidence 2.7955 sigma

Surveying Prog:

<u>MD From (m)</u>	<u>MD To (m)</u>	<u>EOU Freq</u>	<u>Survey Tool Type</u>
0.00	91.00	Act-Stns	SLB_UNKNOWN (default tool used)
91.00	1716.29	Act-Stns	SLB_MWD-STD^^1
1716.29	3369.00	Act-Stns	SLB_MWD-STD^^2

APPENDIX 9

RIG POSITIONING REPORT



**REPORT FOR THE
ENSCO 102 RIG MOVE TO THE
WEST MOONFISH-1 LOCATION**

FUGRO SURVEY JOB NO. – P0146

Client : Esso Australia Pty Ltd
Esso House
12 Riverside Quay
Southbank, 3006
Victoria

Date of Survey : 19 December 2004 - 6 January 2005

0	Final			14 January 2005
Rev	Description	Checked	Approved	Date

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APPENDIX B : FINAL POSITIONING DATA
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ABSTRACT

Between 19 December 2004, and 6 January 2005, Fugro Survey Pty Ltd (Fugro) provided equipment and personnel for the jack-up Mobile Offshore Drilling Unit, Ensco 102, rig move to the West Moonfish-1 location in Permit VIC/L10 in the Bass Strait, Australia.

Surface positioning was achieved utilising Fugro's Starfix HP Differential GPS, interfaced to Fugro's MRDGPS multiple reference station positioning software and Fugro's Seis navigation software.

The final position for the drill stem derived from HP DGPS observations at the West Moonfish-1 location is:

Location Name:	West Moonfish-1
Easting:	585687.25m
Northing:	5777075.49m
Latitude:	38° 09' 00.48" S
Longitude:	147° 58' 40.63" E
Rig Heading:	132.9° T

This position is 8.32m on a bearing of 48.7° (grid) from the proposed West Moonfish-1 location.

All coordinates in this report are quoted in GDA94 datum and MGA Zone 55 (CM 147° E) projection, unless otherwise stated.

1.0 INTRODUCTION

Fugro Survey Pty Ltd (Fugro) was contracted by Esso Australia Pty Ltd (Esso) to provide positioning survey services on board the jack-up Mobile Offshore Drilling Unit (MODU), *Ensco 102*, during the rig move to the West Moonfish-1 location in Permit VIC\L10 in the Bass Strait, Australia.

A general location diagram is shown as Figure 1-1.

This report details the equipment used, survey parameters adopted, procedures employed and the results achieved. A section on safety is included in Section 3.0 of this report.

1.1 Scope of Work

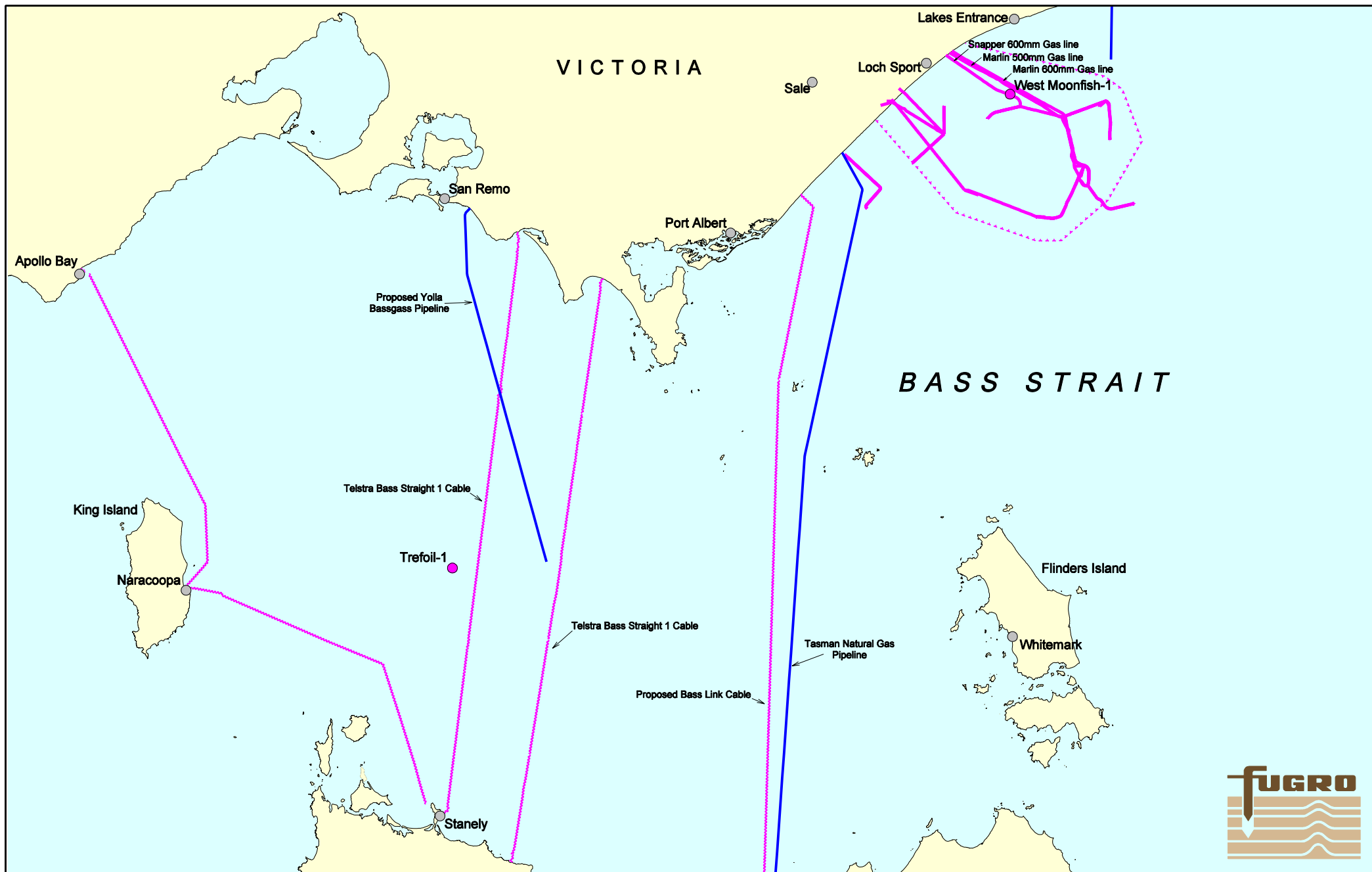
Personnel and equipment were provided on a 24-hour per day basis for:

- Provision of real-time positioning of the MODU *Ensco 102* during transit to the West Moonfish-1 location using HP DGPS.
- Determination of the final Differential GPS position of the *Ensco 102* drillstem at the West Moonfish-1 location using a Multiple Reference Station Differential GPS solution.
- GPS carrier phase logging and processing to verify the final Differential GPS drillstem position.
- The provision of a comprehensive positioning report containing the final Differential GPS position of the *Ensco 102* drillstem at the West Moonfish-1 location.

1.2 Sequence of Events

On 21 December 2004, V. Knight and S. Bradley arrived on board the *Ensco 102*. After equipment calibrations, the rig departed Trefoil-1 location on 25 December 2004. The rig was positioned at West Moonfish-1 on 4 January 2005. Fugro personnel departed the rig on 5 January 2005.

Further details of Fugro's involvement in the rig move are presented in the Daily Operations Reports included in Appendix A.



GENERAL LOCATION DIAGRAM

FIGURE 1-1

2.0 RESULTS

2.1 Final DGPS Position

The final DGPS position of the *Ensco 102* drillstem was established by calculating the mean position from three hours of differential GPS data logged between 18:55 and 21:55 on 4 January 2005. During this period, calculated drillstem coordinates from the primary positioning system was logged at ten second intervals in Starfix.Seis. Data from the primary positioning system was used for the final position calculation.

Differential corrections for the GPS positioning system were derived using a multi-reference solution with base station data from Melbourne, Bathurst, Ceduna and Cobar.

GDA94 geographical positions for the West Moonfish-1 location are shown in Table 2-1.

GDA94			
Position	Method	Latitude	Longitude
Drill Stem at Surface	DGPS	38° 09' 00.48" S	147° 58' 40.63" E
Proposed Location	-	38° 09' 00.66" S	147° 58' 40.37" E

TABLE 2-1 : GEOGRAPHICAL POSITIONS FOR WEST MOONFISH-1

GDA94 grid coordinates for West Moonfish-1 location are shown in Table 2-2.

GDA94, MGA, CM 147° E			
Position	Method	Easting (m)	Northing (m)
Drill Stem at Surface	DGPS	585687.25	5777075.49
Proposed Location	-	585681.00	5777070.00

TABLE 2-2 : GRID COORDINATES FOR WEST MOONFISH-1

This position is 8.32m at a bearing of 48.7° (grid) from the design location.

A copy of the original rig position field report is contained in Appendix B.

2.2 Final Carrier Phase Position

The final carrier phase position of the *Ensco 102* drillstem was established by processing the three hours of carrier phase GPS data logged between 18:55 and 21:55 on 4 January 2005, with AUSLIG's AUSPOS online processing service. During this period, calculated drillstem coordinates from the primary positioning system was logged at 15 second intervals.

Carrier phase data was logged using a Trimble 4000SSE dual frequency GPS receiver with an Ashtech L1\L2 geodetic antenna.

GDA94 geographical coordinates for the carrier phase drillstem position at West Moonfish-1 location are shown in Table 2-3.

GDA94			
Position	Method	Latitude	Longitude
Drill Stem at Surface	Carrier Phase	38° 09' 00.477" S	147° 58' 40.626" E

TABLE 2-3 : CARRIER PHASE GEOGRAPHICAL POSITIONS FOR WEST MOONFISH-1

GDA94 grid coordinates (CM 147° E) for the carrier phase position at West Moonfish-1 location are shown in Table 2-4.

GDA94, MGA, CM 147° E			
Position	Method	Easting (m)	Northing (m)
Drill Stem at Surface	Carrier Phase	585687.19	5777075.50

TABLE 2-4 : CARRIER PHASE GRID COORDINATES FOR WEST MOONFISH-1

This position is 8.28m at a bearing of 48.2° (grid) from the design location and 0.06m at a bearing of 279.5° (grid) from the final Differential GPS drillstem position.

2.3 Comparison Between DGPS and Carrier Phase Positions

Comparisons were made between the DGPS and carrier phase drillstem positions at the West Moonfish-1 location. The results of these comparisons are shown in Table 2-5.

GDA94, MGA, CM 147° E	
Difference Easting (m)	Difference Northing (m)
0.06	0.01

TABLE 2-5 : DGPS AND CARRIER PHASE COMPARISONS

2.4 Rig Heading

The heading of the *Ensco 102* was established by calculating the average heading during three hours of corrected gyro compass readings logged between 18:55 and 21:55 on 4 January 2005. During this period gyro readings were logged at ten second intervals in Seis.

The *Ensco 102* rig heading is shown in Table 2-6.

Description	Method	True	Grid
Rig Heading	Gyro	132.9°	132.7°
Proposed Heading	-	130°	-

TABLE 2-6 : RIG HEADING

2.5 Leg Penetrations

Leg penetration values were calculated by the *Ensco 102*'s Barge Engineer as follows:

Bow	:	0.94m (3.1ft)
Port	:	1.07m (3.5ft)
Starboard	:	1.07m (3.5ft)

3.0 SAFETY

All work undertaken by Fugro personnel during the project was performed within the guidelines of Fugro's Safety Policy, as defined in Fugro's Safety Manual (SMS-P01) and Offshore Survey Safety Practices (SMS-SP26).

Fugro personnel worked within all project safety guidelines and plans adopted by Esso and Ensco.

No safety incidents involving Fugro personnel were reported during the project.

Fugro personnel attended a rig induction upon arrival on the rig, and a pre-rig move meeting. While on board Fugro personnel participated in Abandon Rig Drills which were held on 24 December 2004, and 2 January 2005.

4.0 SURVEY PROCEDURES

4.1 Mobilisation

Mobilisation commenced with departure of V. Knight and S. Bradley from Perth on 19 December 2004, to Melbourne. On 21 December 2004, V. Knight and S. Bradley were transferred to the *Ensco 102* and arrived on board mid-morning. The survey equipment on board the rig was mobilised and powered up and systems and function tests commenced.

4.2 General Survey Procedures

The towing vessel *Ray J Hope* brought the *Ensco 102* onto location, upon which the *Invincible Tide* assisted in final manoeuvring. After jacking up, preloading and skidding out, final position data was logged between 18:55 and 21:55 on 4 January 2005. A rig positioning field report was issued to the Esso Company Representative (see Appendix B).

4.3 Demobilisation

Equipment on board the rig was powered down on 5 January 2005. Prior to Fugro personnel departing the rig, checks were made to ensure that all equipment was secure for the next rig move.

V. Knight and S. Bradley departed the rig on 5 January 2005.

5.0 EQUIPMENT CALIBRATIONS

5.1 DGPS Navigation Integrity Check

In order to check the correct operation of the navigation systems installed on board the *Ensco 102*, DGPS data was logged for 30 minutes on 22 December 2004, while the rig was located at Trefoil-1.

The comparison of the primary and secondary DGPS was also conducted. The results from both of these tests are provided in Table 5-1.

GDA94, MGA, CM 147° E				
	Latitude	Longitude	Easting (m)	Northing (m)
Established Well Coordinates	39° 51' 44.12"	145° 22' 30.73"	361026.14	5586267.85
Observed Coordinates	39° 51' 44.14"	145° 22' 30.74"	361026.35	5586267.18
Differences	0.02"	0.01"	-0.21	0.67
Primary Navigation	39° 51' 44.14"	145° 22' 30.74"	361026.35	5586267.18
Secondary Navigation	39° 51' 44.11"	145° 22' 30.73"	361026.11	5586267.94
Differences	0.03"	0.01"	0.24	-0.76

TABLE 5-1 : DGPS NAVIGATION INTEGRITY CHECK

The DGPS check described above demonstrated that the navigation systems on board the *Ensco 102* were set up and working correctly. Details of the DGPS check are provided in Appendix C.

A positioning checklist was completed for the West Moonfish-1 location to confirm the proposed rig position and to ensure that the correct geodetic datum, transformation and projection parameters were being used. Geodetic calculations were performed using both Seis and the off-line geodetic calculation package Norcom Surveyor.

5.2 Gyro Compass Calibration

The calibration of the two survey gyro compasses was carried out on 22 December 2004, at the Trefoil-1 location.

A series of observations were made to the sun from which the rig heading was calculated. The calculated values were then compared to the observed gyro compass values logged in Seis. A mean C-O value of 1.75° was determined for the Meridian Gyrocompass and 0.12° for the SG Brown 1000 and applied in Seis.

Details of the observations and gyro calibrations reduction results are enclosed in Appendix C.

5.3 Vessel Offset Calculations

In consultation with the Esso survey representative a closed traverse was not performed due to the antennae being located in the same position as the previous Esso rig move to West Whiptail-1.

The final offsets are shown below in Table 5-2.

Offset	X	Y
Datum	0	0
Ashtech	-3.32m	+118.99m
Apsat	+13.29m	+104.61m

TABLE 5-2 : VESSEL OFFSETS

6.0 SURVEY PARAMETERS

6.1 Geodetic Parameters

Well coordinates are referenced to the Geocentric Datum of Australia 1994 (GDA94). The Global Positioning System (GPS) operates on the World Geodetic System 1984 (WGS84) datum. Fugro's Differential GPS Reference Stations are currently defined in the International Terrestrial Reference Frame 2000 (ITRF2000 Epoch 2004.75). Due to the continual refinement of the WGS84 Reference Frame, the WGS84 and ITRF2000 Reference Frames are essentially identical.

Datum : **World Geodetic System 1984 (WGS84)**
Reference Spheroid : World Geodetic System 1984
Semi-Major Axis : 6378137.000m
Inverse flattening : 298.257223563

Datum : **Geocentric Datum of Australia 1994 (GDA94)**
Reference Spheroid : Geodetic Reference System 1980 (GRS80)
Semi-Major Axis : 6378137.000m
Inverse flattening : 298.257222101

The following seven parameter datum transformation (Table 6-1) has been used in Fugro's software, to transform WGS84 (ITRF2000 Epoch 2004.50) coordinates to GDA94 coordinates. These parameters are calculated from the 14 parameter transformation defined by Geoscience Australia. Fugro follows the Coordinate Frame Rotation convention (as defined by UKOOA) for datum transformations.

Transformation Parameters from WGS84 (ITRF2000 Epoch 2004.50) to GDA94			
dX	-0.0266m	rX	+0.0134"
dY	-0.0303m	rY	+0.0124"
dZ	-0.0339m	rZ	+0.0140"
		dS	+0.0055ppm

TABLE 6-1 : TRANSFORMATION PARAMETERS

All grid coordinates are referenced to the Map Grid of Australia.

Grid : Map Grid of Australia (MGA)
Projection Type : Universal Transverse Mercator (UTM)
Latitude of Origin : 0° North
Central Meridian : 147° East (Zone 55)
Central Scale Factor : 0.9996
False Easting : 500000.000m
False Northing : 10000000.000m
Units : Metres

6.2 Differential GPS Reference Stations

Fugro's Differential GPS Reference Stations are currently defined in the ITRF2000 (Epoch 2004.75) datum and are shown in Table 6-2.

ITRF2000, EPOCH 2004.75				
Description	Site ID	Latitude	Longitude	Height (m)
Melbourne	385	37° 48' 29.010" S	144° 57' 48.028" E	82.06
Bathurst	336	33° 25' 46.884" S	149° 34' 01.968" E	756.66
Cobar	316	31° 29' 57.436" S	145° 50' 20.343" E	270.16
Ceduna	355	32° 07' 03.054" S	133° 41' 22.848" E	7.269

TABLE 6-2 : MRDGPS REFERENCE STATIONS

6.3 Project Coordinates and Tolerances

Project target coordinates and surface tolerance for the West Moonfish-1 location were supplied by Esso and are shown in Table 6-2, and can be found in Appendix D.

GDA94, MGA, CM 147° E			
Location	Easting (m)	Northing (m)	Tolerance
West Moonfish-1	585681.0	5777070.0	10m radius

TABLE 6-3 : PROJECT DESIGN COORDINATES

7.0 EQUIPMENT AND PERSONNEL

7.1 Equipment Listing

Survey equipment used for the positioning of the *Ensco 102* was as follows:

Ensco 102

2 x	Trimble 4000SSE GPS receivers
2 x	Starfix HP (Differential GPS) receivers
3 x	Starfix demodulators
1 x	Ashtech L1/L2 geodetic antenna
1 x	APSAT antenna
1 x	SG Brown 1000S gyro compass
1 x	Meridian gyro compass
1 x	3GHz Pentium 4 computer
1 x	2.4GHz Pentium 4 computer
1 x	Canon S200SPx printer
2 x	UPS power conditioner
4 x	24v PSU
1 x	Topcon GTS 210 total station
1 x	Prism
2 x	Tripods

Seis version 6.1 Service Pack 2, MRDGPS version 3.02.02.

All systems were provided complete with all necessary cabling, connectors, power supplies, antennae, accessories, manuals and consumables.

Refer to Figure 7-1 for vessel offset diagram.

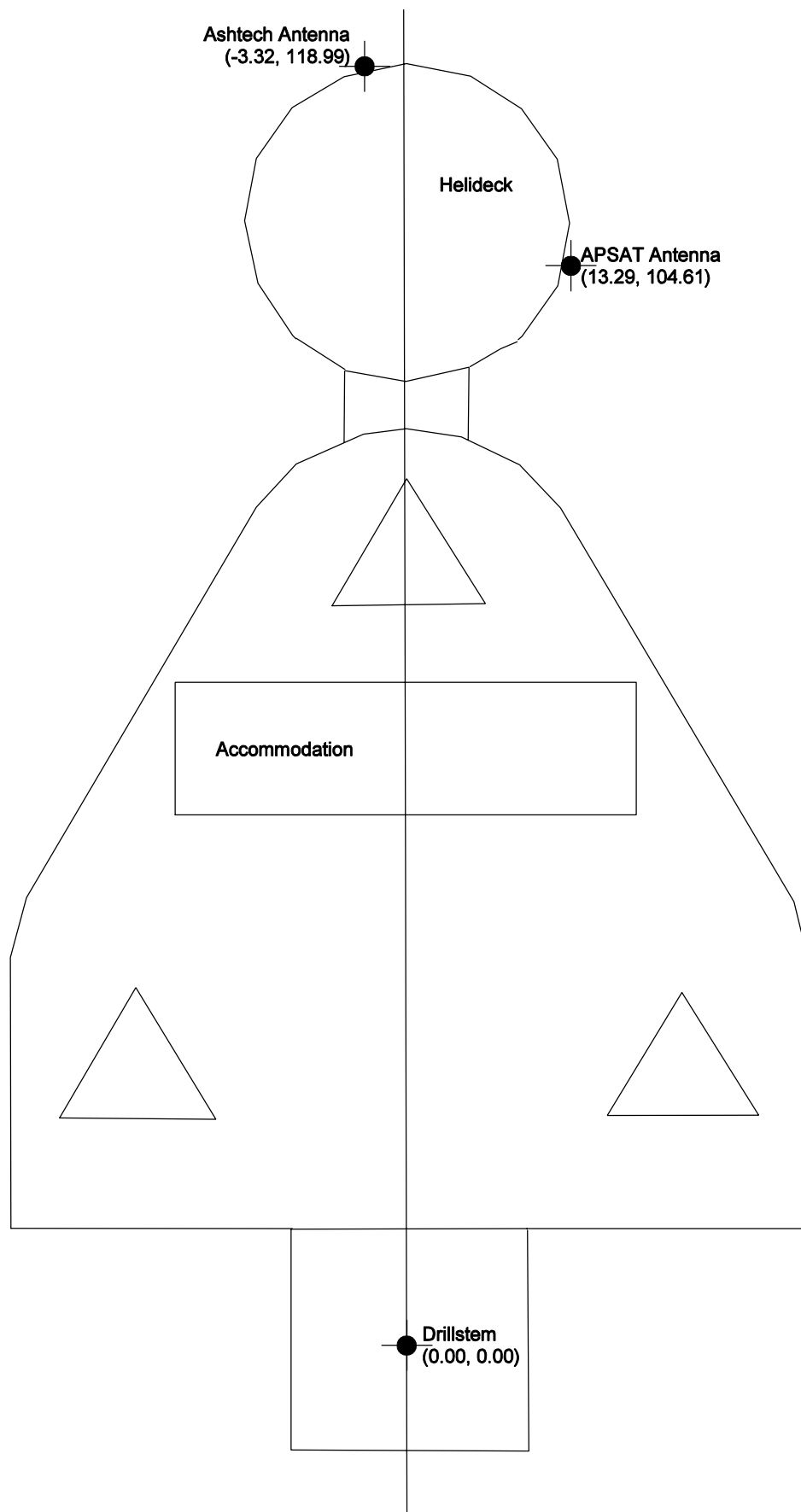
7.2 Personnel

Fugro personnel involved in the rig positioning operation were as follows:

V. Knight	Party Chief/Surveyor	19 December 2004 – 6 January 2005
S. Bradley	Senior Engineer	19 December 2004 – 6 January 2005

Esso were represented during the rig move by:

H. Arrowsmith	Esso Representative	19 December 2004 – 5 January 2005
---------------	---------------------	-----------------------------------



8.0 CONCLUSIONS

On reviewing the rig move and positioning operations undertaken by Fugro on board the *Ensco 102*, the conclusion was reached that the *Ensco 102* was successfully positioned at the West Moonfish-1 location.

9.0 DISTRIBUTION

Copies of this report have been distributed as follows:

Esso Australia Pty Ltd	: 2 paper copies
Attn: Mr Chris Meakin	: 1 electronic copy

ExxonMobil Exploration Company (Houston)	: 5 paper copies
ExxonMobil Upstream Technical Computing	: 1 electronic copy
Geodetics and Cartography Group	
Attn: Mr Barry Barrs	

Fugro Survey Pty Ltd	: 1 paper copy
	: 1 electronic copy

APPENDIX A
DAILY OPERATIONS REPORTS

Approved by Dave Scott, Operations Manager – 08/05/01
Note – To ensure that this is the latest version check the Electronic Master File

Approved by Dave Scott, Operations Manager – 08/05/01
Note – To ensure that this is the latest version check the Electronic Master File

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Note – To ensure that this is the latest version check the Electronic Master File



CLIENT: ESSO		LOCATION: TREFOIL-1		DATE: 24 DEC 04	
PROJECT: RIG MOVE		VESSEL: ENSCO 102		JOB NO: P0146	
FROM	TO	SUMMARY OF OPERATIONS			
0001	0500	Standing by to depart Trefoil-1 location			
0500		Request RJ Hope to connect to tow bridle			
0600		RJ Hope connected			
0612		Hull down			
0619		Zero air gap			
0626		All stop, 10 feet draft. Check water tight integrity			
0735		Jetting hoses connected			
0746		20 feet draft, commence pulling legs (port and starboard)			
1100		Level rig for helicopter			
1130	1200	Recommence jetting operations			
1200		Weather 2.5m swell and 1m sea. Hull down to remove jetting lines			
1246		All stop, hull level 10 feet air gap			
1300		Waiting on weather, sea 10-13 feet			
1325	1345	Fugro personnel attend emergency muster drill and pre-rig move meeting			
1345	2400	Waiting on weather. Standby to depart Trefoil-1 location			
EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
P4 PC	2	Starfix HP Receiver	2	Steve Bradley	Senior Engineer
Monitor	3	Starfix Demodulator	2	Vanessa Knight	Surveyor
Total Station	1	Printer	1		
Trimble Receivers	2				
Meridian Gyro	1				
SGBrown Gyro	1				
UPS	2				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					
AUTHORISED CONTRACT CHANGES / COMMENTS:					
Party Chief Signature:		Client Representative Signature:		D O R Number	
				6	

Approved by Dave Scott, Operations Manager – 08/05/01
Note – To ensure that this is the latest version check the Electronic Master File



CLIENT: ESSO		LOCATION: WEST MOONFISH-1		DATE: 26 DEC 04	
PROJECT: RIG MOVE		VESSEL: ENSCO 102		JOB NO: P0146	
FROM	TO	SUMMARY OF OPERATIONS			
0001	1445	Continuing tow to West Moonfish-1 location			
1446		Commence lowering legs			
1543		Invincible tide connected			
1550		Ensco 102 1 nautical mile from West Moonfish-1 location			
1607		All stop lowering legs, 25 feet from bottom			
1636		Recommence lowering legs			
1648		Legs 3 feet off bottom			
1700		Legs pinned, require position adjustment			
1715		Adjust rig position to allow comms antenna coverage			
1717		Rig pinned			
1720		Client accepts position			
1850	2400	Pre-load operations			
EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
P4 PC	2	Starfix HP Receiver	2	Steve Bradley	Senior Engineer
Monitor	3	Starfix Demodulator	3	Vanessa Knight	Surveyor
Total Station	1	Printer	1		
Trimble Receivers	2				
Meridian Gyro	1				
SGBrown Gyro	1				
UPS	2				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					
AUTHORISED CONTRACT CHANGES / COMMENTS:					
Party Chief Signature:		Client Representative Signature:		D O R Number	
				8	

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Fugro Marine Division
FSHY01-1
DAILY OPERATIONS REPORT



CLIENT: ESSO		LOCATION: WEST MOONFISH-1		DATE: 31 DEC 04	
PROJECT: RIG MOVE		VESSEL: ENSCO 102		JOB NO: P0146	
FROM	TO	SUMMARY OF OPERATIONS			
0001	0139	Waiting on weather			
0140		All legs ready for jacking			
0155	0812	Preload operations port leg			
0812		Hull down zero feet air gap. Rig hit hard by swell			
0830	1200	Waiting on weather			
1200	1800	Preload operations			
1800		Unsuitable position for drilling with significant punch through on bow leg. Waiting on relocation plan			
1930	2400	Plan to move rig 275m South. Waiting on weather and boats			
EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
P4 PC	2	Starfix HP Receiver	2	Steve Bradley	Senior Engineer
Monitor	3	Starfix Demodulator	3	Vanessa Knight	Surveyor
Total Station	1	Printer	1		
Trimble Receivers	2				
Meridian Gyro	1				
SGBrown Gyro	1				
UPS	2				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					
AUTHORISED CONTRACT CHANGES / COMMENTS:					
Party Chief Signature:		Client Representative Signature:		D O R Number	
				13	

Client Representative Signature: 

Approved by Dave Scott, Operations Manager – 08/05/01
Note – To ensure that this is the latest version check the Electronic Master File


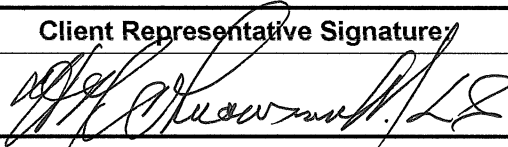


CLIENT: ESSO		LOCATION: WEST MOONFISH-1		DATE: 3 JAN 05	
PROJECT: RIG MOVE		VESSEL: ENSCO 102		JOB NO: P0146	
FROM	TO	SUMMARY OF OPERATIONS			
0001	0735	Waiting on weather			
0735		RJ Hope connected on main bridle			
0800		All legs ready			
0803		Hull down			
0811		Zero feet air gap			
0823		Connecting jetting line bow leg			
0830		Jetting line connected commence pulling bow leg			
1000		Bow leg free, continue raising leg			
1015		Connecting Invincible Tide starboard aft			
1021		Jetting line disconnected all clear			
1033		Invincible Tide connected			
1050		Legs up			
1100		Legs clear of seabed, rig moving away from location			
1120	1145	Attempt to survey seabed with ROV			
1150		Moving into final position			
EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
P4 PC	2	Starfix HP Receiver	2	Steve Bradley	Senior Engineer
Monitor	3	Starfix Demodulator	3	Vanessa Knight	Surveyor
Total Station	1	Printer	1		
Trimble Receivers	2				
Meridian Gyro	1				
SGBrown Gyro	1				
UPS	2				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					
AUTHORISED CONTRACT CHANGES / COMMENTS:					
Party Chief Signature:		Client Representative Signature:		D O R Number	
<i>Khugh</i>		<i>[Signature]</i>		16	

Approved by Dave Scott, Operations Manager – 08/05/01
Note – To ensure that this is the latest version check the Electronic Master File

Fugro Marine Division
FSHY01-1
DAILY OPERATIONS REPORT



CLIENT: ESSO		LOCATION: WEST MOONFISH-1		DATE: 4 JAN 05	
PROJECT: RIG MOVE		VESSEL: ENSCO 102		JOB NO: P0146	
FROM	TO	SUMMARY OF OPERATIONS			
0001	1255	Continue preload operations			
1255		Preload held for 3 hours without settlement. Dumping preload			
1345		RJ Hope disconnected from main bridle			
1410		All legs ready. Final penetration 3.5', 3.1', 3.5'			
1415	1545	Hull up to 57 feet air gap, MSL			
1545		Commence engaging rack chocks			
1700	1815	Skid out of cantilever			
1855	2155	Log final position of drillstem for three hours. Final position : 585687.35mE, 5777075.49mN. The drillstem position is 8.32m at a bearing of 48.7° (G) from the design location. Rig heading: 132.9°(T)			
2230		Send copy of Preliminary Position Report to ExxonMobil			
EQUIPMENT	NO.	EQUIPMENT	NO.	PERSONNEL	TITLE
P4 PC	2	Starfix HP Receiver	2	Steve Bradley	Senior Engineer
Monitor	3	Starfix Demodulator	3	Vanessa Knight	Surveyor
Total Station	1	Printer	1		
Trimble Receivers	2				
Meridian Gyro	1				
SGBrown Gyro	1				
UPS	2				
VEHICLES:					
CONSUMABLES:					
ACCOMMODATION:					
AUTHORISED CONTRACT CHANGES / COMMENTS:					
Party Chief Signature:		Client Representative Signature:		D O R Number	
				17	

Approved by Dave Scott, Operations Manager – 08/05/01
Note – To ensure that this is the latest version check the Electronic Master File

Approved by Dave Scott, Operations Manager – 08/05/01
Note – To ensure that this is the latest version check the Electronic Master File

APPENDIX B
FINAL POSITIONING DATA

RIG FINAL POSITION FIELD REPORT



West Moonfish-1

Client : Esso Australia Pty Ltd

Rig : Ensco 102

Project : Rig Move

Attention : H. Arrowsmith

Copy : B. Steel

Job Number : P0146

Date: 5-Jan-05

Esso Survey Representative

Esso Company Man

The surface location of the drill stem on the Ensco 102 was derived from three hours of observations of the Primary Differential GPS data, between 1855 hrs and 2155 hrs. Which confirms the position of the Ensco 102 over West Moonfish-1 location.

The results of the observations are as follows:

Geographical Coordinates				Grid Coordinates	
Latitude	38°	9'	0.48 "	South	Easting 585687.25
Longitude	147°	58'	40.63 "	East	Northing 5777075.49

The drill stem position is 8.32 m at a bearing of 48.7° Grid from the design location.

The Client supplied design location for West Moonfish-1 :

Geographical Coordinates				Grid Coordinates	
Latitude	38°	9'	0.66 "	South	Easting 585681.0
Longitude	147°	58'	40.37 "	East	Northing 5777070.0

The Ensco 102's rig heading, derived from the mean of three hours of observations of the gyro heading is:

132.9° TRUE ^{133.5°}
132.7° Grid

All coordinates in this field report are quoted in the following coordinate system:

Datum : GDA94	Projection : Transverse Mercator (UTM)
Spheroid : GRS80	Zone (Central Meridian) : 55 147° East

Party Chief/Surveyor:

V. Knight

Client Representative:

H. Arrowsmith

APPENDIX C
DGPS AND GYRO CHECKS

RIG POSITIONING

DGPS CHECK LIST (PRE RIG MOVE)



Client : Esso Australia Pty Ltd

Job Number : P0146

Rig : Ensco 102

Date: 22-Dec-04

Project : Rig Move from Trefoil-1 to West Moonfish-1

1) ESTABLISHED WELL COORDINATES

Horizontal Datum: GRS80

Observe 30 minutes of DGPS data, logging both Primary and Secondary systems.
Establish a mean drill stem position from the primary navigation system and compare against the established well coordinates.

	Easting	Northing
Established Well Coordinates	361026.14	5586267.85
Observed Coordinates	361026.35	5586267.18
Differences	-0.21	0.67

Ensure agreement OK(?) Y / N

If No, Check and ensure that rig has not moved off location.

2) PRIMARY/SECONDARY NAV SYSTEMS

From the data logged above, compare the observed coordinates for both Primary and Secondary navigation systems.

	Easting	Northing
Primary Navigation	361026.35	5586267.18
Secondary Navigation	361026.11	5586267.94
Differences	0.24	-0.76

Ensure agreement OK(?) Y / N

If No, Check antenna offsets and gyro calibration.

Party Chief/Surveyor:

V. Knight

Client Representative:

H. Arrowsmith

Fugro Survey Pty Ltd
 Hydrographic House
 4 Ledger Road
 Balcatta 6021
 Western Australia



Solar Observation for Azimuth (Hour Angle) 2004

Fugro Job Number: P0146
Job Description: Rig Move to West Moonfish-1, Primary SN 07-136022
Client: Esso Australia Pty Ltd
Party Chief: V. Knight
Surveyor: V. Knight
Rig Name: Ensco 102
Date: 22 December 2004

Control Point Co-ordinates

Datum: GDA94 **Projection:** MGA Zone 55 CM 147° East

Latitude (DMS): -039 51 42
 Longitude (DMS): 145 22 31
 UTC Correction (HMS): 11.00

Total Station Observations:

Face	Local Time (HMS)			Observed Direction to R.O. (DMS)			Observed Direction to Sun (DMS)			Observed (O) True Heading (D.D)
Left	17	28	18	000	00	00	215	30	04	50.17
Right	17	28	18	180	00	00	035	30	04	
Left	17	28	48	000	00	00	215	25	51	50.17
Right	17	28	48	180	00	00	035	25	51	
Left	17	29	23	000	00	00	215	20	24	50.17
Right	17	29	23	180	00	00	035	20	24	
Left	17	29	48	000	00	00	215	16	37	50.17
Right	17	29	48	180	00	00	035	16	37	
Left	17	32	25	000	00	00	214	54	12	50.17
Right	17	32	25	180	00	00	034	54	12	
Left	17	32	50	000	00	00	214	51	08	50.17
Right	17	32	50	180	00	00	034	51	08	
Left	17	34	04	000	00	00	214	38	45	50.17
Right	17	34	04	180	00	00	034	38	45	
Left	17	34	23	000	00	00	214	36	21	50.17
Right	17	34	23	180	00	00	034	36	21	
Left	17	34	48	000	00	00	214	32	38	50.17
Right	17	34	48	180	00	00	034	32	38	
Left	17	35	20	000	00	00	214	28	29	50.17
Right	17	35	20	180	00	00	034	28	29	
Left	17	35	41	000	00	00	214	24	52	50.17
Right	17	35	41	180	00	00	034	24	52	
Left	17	36	10	000	00	00	214	20	14	50.17
Right	17	36	10	180	00	00	034	20	14	

Signature

 SURVEYOR/PARTY CHIEF

 CLIENT SURVEY REPRESENTATIVE

Fugro Survey Pty Ltd
 Hydrographic House
 4 Ledger Road
 Balcatta 6021
 Western Australia



Solar Observation for Azimuth (Hour Angle) 2004

Fugro Job Number: P0146
Job Description: Rig Move to West Moonfish-1, Primary SN 07-136022
Client: Esso Australia Pty Ltd
Party Chief: V. Knight
Surveyor: V. Knight
Rig Name: Ensco 102
Date: 22 December 2004

Datum: GDA94 **Projection:** MGA Zone 55 CM 147° East

Average Local Time (HMS)			Average Horizontal Angle (DMS)			Azimuth Sun (DMS)			Azimuth RO (DMS)			Calculated (C) True Heading (D.D)	Observed (O) True Heading (D.D)	C-O (D.D)
17	28	18.0	215	30	04	267	26	56	051	56	52	51.95	50.17	1.78
17	28	48.0	215	25	51	267	22	18	051	56	27	51.94	50.17	1.77
17	29	23.0	215	20	24	267	16	55	051	56	31	51.94	50.17	1.77
17	29	48.0	215	16	37	267	13	05	051	56	28	51.94	50.17	1.77
17	32	25.0	214	54	12	266	49	01	051	54	49	51.91	50.17	1.74
17	32	50.0	214	51	08	266	45	12	051	54	04	51.90	50.17	1.73
17	34	04.0	214	38	45	266	33	54	051	55	09	51.92	50.17	1.75
17	34	23.0	214	36	21	266	31	01	051	54	40	51.91	50.17	1.74
17	34	48.0	214	32	38	266	27	12	051	54	34	51.91	50.17	1.74
17	35	20.0	214	28	29	266	22	20	051	53	51	51.90	50.17	1.73
17	35	41.0	214	24	52	266	19	09	051	54	17	51.90	50.17	1.73
17	36	10.0	214	20	14	266	14	45	051	54	31	51.91	50.17	1.74

Mean C-O 1.75

Signature

 SURVEYOR/PARTY CHIEF

 CLIENT SURVEY REPRESENTATIVE



Solar Observation for Azimuth (Hour Angle) 2004

Fugro Job Number: P0146
Job Description: Rig Move to West Moonfish-1, Secondary SN 07-131680
Client: Esso Australia Pty Ltd
Party Chief: V. Knight
Surveyor: V. Knight
Rig Name: Ensco 102
Date: 22 December 2004

Control Point Co-ordinates

Datum: GDA94 **Projection:** MGA Zone 55 CM 147° East

Latitude (DMS): -039 51 42
Longitude (DMS): 145 22 31
UTC Correction (HMS): 11.00

Total Station Observations:

Face	Local Time (HMS)			Observed Direction to R.O. (DMS)			Observed Direction to Sun (DMS)			Observed (O) True Heading (D.D)
Left	17	28	18	000	00	00	215	30	04	51.80
Right	17	28	18	180	00	00	035	30	04	
Left	17	28	48	000	00	00	215	25	51	51.80
Right	17	28	48	180	00	00	035	25	51	
Left	17	29	23	000	00	00	215	20	24	51.80
Right	17	29	23	180	00	00	035	20	24	
Left	17	29	48	000	00	00	215	16	37	51.80
Right	17	29	48	180	00	00	035	16	37	
Left	17	32	25	000	00	00	214	54	12	51.80
Right	17	32	25	180	00	00	034	54	12	
Left	17	32	50	000	00	00	214	51	08	51.80
Right	17	32	50	180	00	00	034	51	08	
Left	17	34	04	000	00	00	214	38	45	51.80
Right	17	34	04	180	00	00	034	38	45	
Left	17	34	23	000	00	00	214	36	21	51.80
Right	17	34	23	180	00	00	034	36	21	
Left	17	34	48	000	00	00	214	32	38	51.80
Right	17	34	48	180	00	00	034	32	38	
Left	17	35	20	000	00	00	214	28	29	51.80
Right	17	35	20	180	00	00	034	28	29	
Left	17	35	41	000	00	00	214	24	52	51.80
Right	17	35	41	180	00	00	034	24	52	
Left	17	36	10	000	00	00	214	20	14	51.80
Right	17	36	10	180	00	00	034	20	14	

Signature

SURVEYOR/PARTY CHIEF

CLIENT SURVEY REPRESENTATIVE

Fugro Survey Pty Ltd
 Hydrographic House
 4 Ledger Road
 Balcatta 6021
 Western Australia



Solar Observation for Azimuth (Hour Angle) 2004

Fugro Job Number: P0146
Job Description: Rig Move to West Moonfish-1, Secondary SN 07-131680
Client: Esso Australia Pty Ltd
Party Chief: V. Knight
Surveyor: V. Knight
Rig Name: Ensco 102
Date: 22 December 2004

Datum: GDA94 **Projection:** MGA Zone 55 CM 147° East

Average Local Time (HMS)			Average Horizontal Angle (DMS)			Azimuth Sun (DMS)			Azimuth RO (DMS)			Calculated (C) True Heading (D.D)	Observed (O) True Heading (D.D)	C-O (D.D)
17	28	18.0	215	30	04	267	26	56	051	56	52	51.95	51.80	0.15
17	28	48.0	215	25	51	267	22	18	051	56	27	51.94	51.80	0.14
17	29	23.0	215	20	24	267	16	55	051	56	31	51.94	51.80	0.14
17	29	48.0	215	16	37	267	13	05	051	56	28	51.94	51.80	0.14
17	32	25.0	214	54	12	266	49	01	051	54	49	51.91	51.80	0.11
17	32	50.0	214	51	08	266	45	12	051	54	04	51.90	51.80	0.10
17	34	04.0	214	38	45	266	33	54	051	55	09	51.92	51.80	0.12
17	34	23.0	214	36	21	266	31	01	051	54	40	51.91	51.80	0.11
17	34	48.0	214	32	38	266	27	12	051	54	34	51.91	51.80	0.11
17	35	20.0	214	28	29	266	22	20	051	53	51	51.90	51.80	0.10
17	35	41.0	214	24	52	266	19	09	051	54	17	51.90	51.80	0.10
17	36	10.0	214	20	14	266	14	45	051	54	31	51.91	51.80	0.11

Mean C-O 0.12

Signature

 SURVEYOR/PARTY CHIEF

 CLIENT SURVEY REPRESENTATIVE

APPENDIX D
CLIENT SUPPLIED DATA

MacDonald/U-SouthPacific/ExxonMobil@XOM

cc: Adem W

Djakic/U-SouthPacific/ExxonMobil@xom, Simon J

31/12/04 19:18

Grope/U-SouthPacific/ExxonMobil@xom

Subject: West

Moonfish-1 Revised Surface Location

Carl,

The new West Moonfish-1 surface location is:

MGA: X 585,681 mE Y 5,777,070 mN
Latitude: 38deg 9min 0.66sec S
Longitude: 147deg 58min 40.37sec E

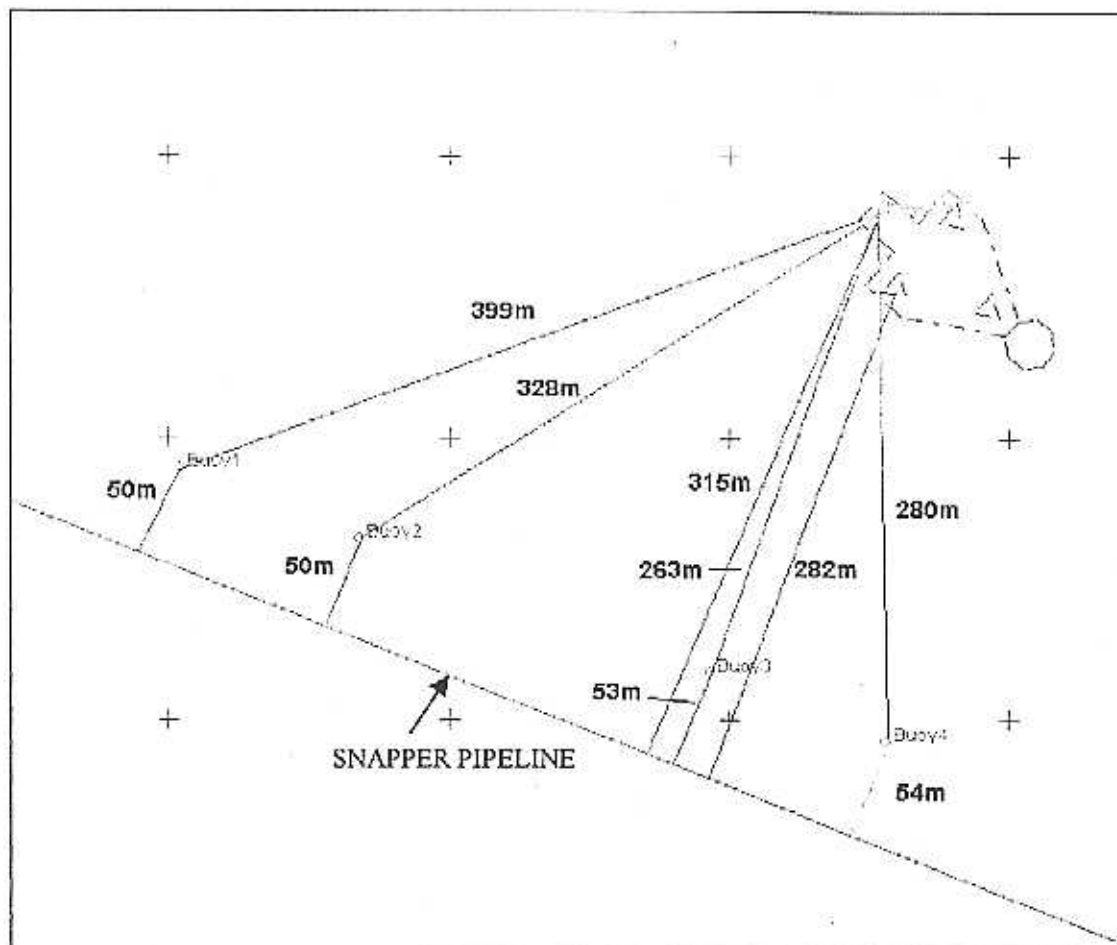
Cheers, Eliza.

Eliza Larratt
Gippsland Exploration Geoscience
Esso Australia Pty Ltd
GPO Box 400C, Melbourne, 3001
Phone: (03) 9270 3946
Fax: (03) 9270 3895
eliza.m.larratt@exxonmobil.com

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NEW WEST MOONFISH-1 LOCATION



Closest leg to pipeline: Starboard leg - 282m

Hole centre to pipeline: 315m

Buoys 1-4 to pipeline: ~ 50m

Buoys to location:

- Buoy 1 - 399m
- Buoy 2 - 328m
- Buoy 3 - 263m
- Buoy 4 - 280m



Tim Paltridge

01/01/05 10:55 AM

To: Barry J Steel/U-SouthPacific/ExxonMobil@xom
cc:
Subject: West Moonfish-1 Revised Surface Location

Barry

Can you get the surveys to plot up and email or fax (email preferred) a plot to us. Showing the following

Closet leg to pipeline in metres.
Hole centre to pipeline
Bouy locations referenced to location and pipeline in metres

Thanks

Bouys are at		From location	from pipeline
Easting Northings			
585306.83	5776934.23	34m	50m
585402.42	5776897.24	32m	50m
585590.30	5776825.49	26m	13m
585684.24	5776788.50	23m	5m

Regards
Tim Paltridge

Relief Operations Superintendent
Office 03-92703540
Mobile 0403-868-448

----- Forwarded by Tim Paltridge/U-SouthPacific/ExxonMobil on 01/01/05 10:52 AM -----

Carl MacDonald

12/31/04 07:23 PM

To: btodd@enscous.com
cc: Tim Paltridge/U-SouthPacific/ExxonMobil@xom
Subject: West Moonfish-1 Revised Surface Location

Barry,
For use in your move program.

Rgds ... Carl

Carl MacDonald
Drilling Engineer
Esso Australia / ExxonMobil Development Company
Tel: (+61 3) 9270-3074
Fax: (+61 3) 9270-3546
Email: carl.macdonald@exxonmobil.com

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----- Forwarded by Carl MacDonald/U-SouthPacific/ExxonMobil on 31/12/04 19:21 -----

Eliza M Larratt

31/12/04 19:18

To: Carl MacDonald/U-SouthPacific/ExxonMobil@XOM
cc: Adem W Djakic/U-SouthPacific/ExxonMobil@xom, Simon
J Grope/U-SouthPacific/ExxonMobil@xom
Subject: West Moonfish-1 Revised Surface Location

Carl,

The new West Moonfish-1 surface location is:

MGA: X 585,681 mE Y 5,777,070 mN
Latitude: 38deg 9min 0.66sec S
Longitude: 147deg 58min 40.37sec E

Cheers, Eliza.

Eliza Larratt
Gippsland Exploration Geoscience
Esso Australia Pty Ltd
GPO Box 400C, Melbourne, 3001
Phone: (03) 9270 3946
Fax: (03) 9270 3895
eliza.m.larratt@exxonmobil.com

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APPENDIX 10

DRILLING INFORMATION

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

CASING REPORT

Mixed Oilfield Units

Start Date/Time	:	6-Jan-05 09:30	Water Depth	:	52.00 below MSL
End Date/Time	:	6-Jan-05 21:45	K.B. Elevation:	:	39.24 above MSL
Hours to Run Casing:	:	12:15	K.B. to Seabed:	:	91.24
			Bradenhead	:	76.95 above ML

===== Setting Depths =====

	Measured Depth	True Vertical Depth
String Top Depth :	16.21	16.21
String Shoe Depth:	155.34	155.34

===== Casing String Limitations =====

Burst of Top Joint: 5150. Drift of Smallest Section: 18.000

===== Casing (Top Down) =====

OD	ID	Wgt/Lng	Grade	Conn	No of Jts	Length
20.000	18.000	202.900	X56	ALT2	1	11.656
20.000	18.500	129.300	X56	RL4S	11	127.479
Total					12	139.135

===== Casing Equipment =====

Placement	Length	Description
-----------	--------	-------------

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

CASING REPORT

Mixed Oilfield Units

Start Date/Time	:	10-Jan-05 11:15	Water Depth	:	52.00 below MSL
End Date/Time	:	10-Jan-05 21:15	K.B. Elevation:	:	39.24 above MSL
Hours to Run Casing:	:	10:00	K.B. to Seabed:	:	91.24
			Bradenhead	:	76.95 above ML

===== Setting Depths =====

	Measured Depth	True Vertical Depth
String Top Depth :	15.50	15.50
String Shoe Depth:	755.42	755.42

===== Casing String Limitations =====

Burst of Top Joint:	5024.	Drift of Smallest Section:	12.289
---------------------	-------	----------------------------	--------

===== Casing (Top Down) =====

OD	ID	Wgt/Lng	Grade	Conn	No of Jts	Length
13.375	12.415	68.000	L80	BTC	60	739.921
Total					60	739.921

===== Casing Equipment =====

	Placement	Length	Description
Shoe			Auto fill
Float Collar	730.200		Auto fill
Centralizers	Number:	12	Bow
Placement Interval:			2 ea on lower 3 jts, 719, 705,667, 615,376,337

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

CASING REPORT

Mixed Oilfield Units

Start Date/Time	: 23-Jan-05 21:45	Water Depth	: 52.00 below MSL
End Date/Time	: 24-Jan-05 13:45	K.B. Elevation:	39.24 above MSL
Hours to Run Casing:	16:00	K.B. to Seabed:	91.24
		Bradenhead	: 76.95 above ML

===== Setting Depths =====

	Measured Depth	True Vertical Depth
String Top Depth :	14.72	14.72
String Shoe Depth:	2526.87	2435.06

===== Casing String Limitations =====

Burst of Top Joint:	6865.	Drift of Smallest Section:	8.681
---------------------	-------	----------------------------	-------

===== Casing (Top Down) =====

OD	ID	Wgt/Lng	Grade	Conn	No of Jts	Length
9.625	8.681	47.000	L80	LTC	207	2512.148
Total					207	2512.148

===== Casing Equipment =====

	Placement	Length	Description
Shoe			Super Seal II / Value Seal Automatic Fill
Float Collar	2501.730		Super Seal II / Value Seal Automatic Fill
Centralizers	Number:	50	Bow
	Placement Interval:		2 on bottom 3 joints, then every other joint
Other			Six stop rings

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

CEMENT REPORT

Mixed Oilfield Units

Start Date/Time: 7-Jan-05 08:00 Job Type: Primary Single Stage
End Date/Time : 7-Jan-05 10:45 Rig Name: 102

Casing Size : 20.000 Setting Depth : 155.34 Float Collar : .00
Drift : 18.000 String Top MD : 16.21 Landing Collar: .00
Weight/Length: 202.900 Gauge Hole Size: 26.000 Estimated BHST: 13.0
Excess Cement: 250.0% over Gauge

Last Casing Run: at (shoe MD)

===== Mud Data =====

Mud Weight : 8.60 PV: 13.0 Oil Content : .0
pH : .0 YP: 58.0 Water Content: .0
Temperature: .0

===== Mud Flush and Spacer =====

Type	Density	Volume	Avg Rate	Maximum Press	Composition
Preflush	8.500	30.0	6.4	275.	seawater
Flush	8.500	10.0	6.6	293.	seawater with fluoroscene

===== Cement Slurries =====

Cement	Class	Additives
Tail	G	Class G cement plus 1% CaCl2 and .03% NF6 defoamer

Cement	Amount Used	Yield	Water Req	Mix Water	Thick Time	Comp Strength 12 Hr 24 Hr	Free Water	Fluid Loss
Tail	974.	1.17	5.200	S	01:46	500.0 2013.0	0	0

Type	Density	Volume	Avg Rate	Maximum Press
Tail	15.900	207.0	5.3	467.

Type	Temp	PV	YP
Tail	20.0	47.	71.

===== Postflush and Displacement =====

Avg Maximum

Type	Density	Volume	Rate	Press	Composition
Displ'mnt	8.500	9.0	2.0	41.	seawater

===== Job Procedure =====

Date	Start Time	End Time	Activity
7-Jan-05	01:45	02:30	Make up top drive plug dropping head.
7-Jan-05	02:30	03:15	Rig up Tee, cement line and overboard line to cement head.
7-Jan-05	08:00	10:15	Held pre-job cement meeting. Break circulation with Dowell and pump 20bbls seawater. Pressure test cement lines 2000 psi. Dowell pump 10 bbls seawater and 10 bbls dye preflush. Dowell mix and pump 207 bbls 15.9ppg accelerated (1% bwoc CaCl2) cement slurry. NOTE: ROV sighted Dye after 150bbls cement pumped.
7-Jan-05	10:15	10:45	Flush cement line at rig floor. Drop latch-in dart and displace drill pipe with 9 bbls seawater bumping plug with 600 psi. Bleed off pressure. Check floats holding OK.

===== Post Job =====

Final Pump Pressure	:	41.	Estimated TOC:	91.00
Number of Plugs Used	:	1	From	Other
Did Plug Bump? (Y/N)	:	Y	Estimated BOC:	155.34
Bump Pressure	:	600.	From	Calculation
Held Pressure for	:	00:03		
Release Pressure at	:	10:39		
Reciprocated Casing? (Y/N)	:	N		
Rotated Casing? (Y/N)	:	N		
Float Equipment OK? (Y/N)	:	Y		
% Returns during Job	:	25.0		
Cement to Surface? (Y/N)	:	Y		
Volume	:	57.		

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

CEMENT REPORT

Mixed Oilfield Units

Start Date/Time: 11-Jan-05 01:15 Job Type: Primary Single Stage
End Date/Time : 11-Jan-05 02:30 Rig Name: 102

Casing Size : 13.375 Setting Depth : 755.42 Float Collar : 730.20
Drift : 12.289 String Top MD : 15.50 Landing Collar: .00
Weight/Length: 68.000 Gauge Hole Size: 17.500 Estimated BHST: 34.0
Excess Cement: 100.0% over Gauge

Last Casing Run: 20.000 at 155.34 (shoe MD)

===== Mud Data =====

Mud Weight : 9.50 PV: 6.0 Oil Content : .0
pH : .0 YP: 35.0 Water Content: .0
Temperature: .0

===== Mud Flush and Spacer =====

Type	Density	Volume	Avg Rate	Maximum Press	Composition
Preflush	8.500	60.0	6.5	316.	Seawater

===== Cement Slurries =====

Cement	Class	Additives							
Lead	G	Class G w/ 1.5 gpb Econolite, .03 gpb, NF6							
Tail	G	Class G w/ .03 gpb NF6							

Cement	Amount Used	Yield	Water Req	Mix Water	Thick Time	Comp Strength 12 Hr	24 Hr	Free Water	Fluid Loss
Lead	395.	2.20	12.450	S	05:54	250.0	500.0	1	0
Tail	668.	1.16	5.120	S	03:30	500.0	2019.0	0	0

Type	Density	Volume	Avg Rate	Maximum Press
Lead	12.500	155.0	6.5	467.
Tail	15.900	138.8	5.1	444.

Type	Temp	PV	YP
Lead	25.0	8.	10.
Tail	20.0	105.	15.

===== Postflush and Displacement =====

Type	Density	Volume	Avg Rate	Maximum Press	Composition
Displ'mnt	8.500	348.0	8.0	942.	Seawater

===== Job Procedure =====

Date	Start Time	End Time	Activity
11-Jan-05	00:30	01:15	Dowell pump 20 bbl seawater. Pressure test cementing lines to 200/3000 psi. Dowell pump 40 bbl seawater taking returns from wellhead from four side outlets to opening in pollution control unit. Release bottom plug. Pump 5 bbl seawater. Load top plug.
11-Jan-05	01:15	02:30	Cement casing with 396 sx Class G cement with 0.461 gps Econolite and 0.009 gps NF-6 mixed in seawater to 12.5 ppg (155 bbl) followed by 668 sx Class G cement 0.003 gps NF-6 mixed in seawater to 15.9 ppg (139 bbl) Release top plug. Displace with 10 bbl seawater with cement unit.
11-Jan-05	02:30	03:15	Switch to rig pump to displace cement. Final displacement pressure 600 psi. Bump plug with 1169 psi.
11-Jan-05	03:15	03:30	Bled back 2¼ bbls. Check floats - OK

===== Post Job =====

Final Pump Pressure	:	599.	Estimated TOC:	300.00
Number of Plugs Used	:	2	From	:
Did Plug Bump? (Y/N)	:	Y	Estimated BOC:	755.00
Bump Pressure	:	1169.	From	:
Held Pressure for	:	00:06		
Release Pressure at	:	03:19		
Reciprocated Casing? (Y/N):		N		
Rotated Casing? (Y/N)	:	N		
Float Equipment OK? (Y/N)	:	Y		
% Returns during Job	:	100.0		
Cement to Surface? (Y/N)	:	N		
Volume	:	0.		

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

CEMENT REPORT

Mixed Oilfield Units

Start Date/Time: 24-Jan-05 22:00 Job Type: Primary Single Stage
End Date/Time : 25-Jan-05 01:15 Rig Name: 102

Casing Size : 9.625 Setting Depth : 2527.00 Float Collar : 2501.73
Drift : 8.681 String Top MD : 14.72 Landing Collar: .00
Weight/Length: 47.000 Gauge Hole Size: 12.250 Estimated BHST: 116.0
Excess Cement: 20.0% over Caliper

Last Casing Run: 13.375 at 755.42 (shoe MD)

===== Mud Data =====

Mud Weight : 9.95 PV: 34.0 Oil Content : .0
pH : 9.0 YP: 23.0 Water Content: 88.5
Temperature: 60.0

===== Mud Flush and Spacer =====

Type	Density	Volume	Avg Rate	Maximum Press	Composition
Preflush	8.300	20.0	.0	0.	Fresh water
Flush	11.500	40.0	.0	0.	Tuned Spacer

===== Cement Slurries =====

Cement	Class	Additives
Lead	G	Class G in HTB w/ 1.456 gps Gascon 469, 0.728 gps Halad 413L, 0.121 gps CFR-3L, 0.121 gps SCR-100L, 0.007 gps
Tail	G	Class G in HTB w/ 0.011 gps SCR-100L, 0.36 gps Halad 413L, 0.034 gps CFR-3L, 0.003 gps NF-6

Cement	Amount Used	Yield	Water Req	Mix Water	Thick Time	Comp Strength 12 Hr	Comp Strength 24 Hr	Free Water	Fluid Loss
Lead	723.	1.86	7.760	F	03:36	235.0	581.0	1	35
Tail	279.	1.13	4.320	F	04:15	938.0	2005.0	0	100

Type	Density	Volume	Avg Rate	Maximum Press
Lead	13.000	239.5	.0	0.
Tail	15.800	56.1	.0	0.

Type	Temp	PV	YP
------	------	----	----

Lead	76.0	68.	7.
Tail	76.0	142.	33.

===== Postflush and Displacement =====

Type	Density	Volume	Avg Rate	Maximum Press	Composition
Postflush	8.500	22.0	.0	0.	Seawater
Displ'mnt	10.000	582.3	12.4	2260.	Glycol, PHPA polymer mud

===== Job Procedure =====

Date	Start Time	End Time	Activity
24-Jan-05	21:30	21:45	Held rig floor prejob cementing safety meeting for all personnel.
24-Jan-05	21:45	22:45	With cement unit pump 15 barrels fresh water. Test lines to 4,000 psi. Pump 5 barrels fresh water. Pump 40 bbls of 11.5 ppg Tuned Spacer. Release bottom wiper plug.
24-Jan-05	22:45	00:00	Cement casing with 723 sacks Class G in HTB cement (239.5 bbl slurry) with 1.456 gps Gascon 469, 0.728 gps Halad 413L, 0.121 gps CFR 3L, 0.121 gps SCR 100L, and 0.007 gps NF-6 mixed in fresh water to 13.0 ppg lead slurry followed by 279 sacks Class G in HTB cement (56.12 bbl slurry) with 0.360 gps Halad 413L, 0.034 gps CFR 3L, 0.011 gps SCR 100L and 0.003 gps NF-6 mixed in fresh water to 15.8 ppg tail slurry. Lead slurry less than planned due to running out of mix water. Tail slurry increased as partial compensation.
25-Jan-05	00:00	01:15	Release top plug. Displace cement with 20 barrels seawater followed by 582 barrels of mud at 12.4 bbl/min. Final displacement pressure 1,387 psi at 181 gpm. Bump plug with 1,800 psi.
25-Jan-05	02:15	02:30	Cement unit flushed cement lines until clean.
25-Jan-05	02:30	05:00	Pressure casing to 670 psi to balance cement while WOC

===== Post Job =====

Final Pump Pressure	:	1387.	Estimated TOC:	1300.00
Number of Plugs Used	:	2	From	: Other
Did Plug Bump? (Y/N)	:	Y	Estimated BOC:	2527.00
Bump Pressure	:	1740.	From	: Calculation
Held Pressure for	:	00:06		
Release Pressure at	:	01:21		
Reciprocated Casing? (Y/N)	:	N		
Rotated Casing? (Y/N)	:	N		
Float Equipment OK? (Y/N)	:	N		
% Returns during Job	:	100.0		
Cement to Surface? (Y/N)	:	N		
Volume	:	0.		

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

CEMENT REPORT

Mixed Oilfield Units

Start Date/Time: 9-Feb-05 10:45 Job Type: Plug and Abandon
End Date/Time : 9-Feb-05 15:00 Rig Name: 102

Casing Size : 9.625 Setting Depth : 2527.00 Float Collar : 2501.73
Drift : 8.681 String Top MD : 14.72 Landing Collar: .00
Weight/Length: 47.000 Gauge Hole Size: 8.500 Estimated BHST: 126.0
Excess Cement: 1.2% over Gauge

Last Casing Run: 9.625 at 2526.87 (shoe MD)

===== Mud Data =====

Mud Weight : 10.35 PV: 21.0 Oil Content : .0
pH : 8.9 YP: 34.0 Water Content: 87.1
Temperature: .0

===== Mud Flush and Spacer =====

Type	Density	Volume	Avg Rate	Maximum Press	Composition
Preflush	8.600	40.0	4.5	628.	Fresh water

===== Cement Slurries =====

Cement	Class	Additives
Tail	G	HTB-"G"+35% Silica flour+ .36gps Halad 413L + .011 gps SCR-100L + .034 gps CFR-3L + .002 gps NF6

Cement	Amount Used	Yield	Water Req	Mix Water	Thick Time	Comp 12 Hr	Strength 24 Hr	Free Water	Fluid Loss
Tail	1202.	1.13	4.320	F	03:00	500.0	2086.0	0	0

Type	Density	Volume	Avg Rate	Maximum Press
Tail	15.800	242.0	5.0	1035.

===== Postflush and Displacement =====

Type	Density	Volume	Avg Rate	Maximum Press	Composition
Postflush	8.600	10.0	7.2	280.	Drill water
Displ'mnt	10.300	135.0	4.0	1250.	WBM

===== Job Procedure =====

Date	Start Time	End Time	Activity
9-Feb-05	10:45	13:30	Dowell pump 10 bbl fresh water spacer & test lines to 3000 psi - OK. Continue to pump 30 bbl fresh water spacer for total of 40 bbl spacer. Mix & Pump Plug #1 cmt job as follows: 242 bbl "HTB" cmt @ 15.8 ppg, (1358 cu ft). Drop Dart. Pump 10 bbl fresh water spacer. Positive indication of dart leaving cmt head. Rig displaced with 135 bbl, plus additional 10 bbls of 10.3 ppg mud, with no indication of release dart latching. During displacement observed pump press incr. Shut down. 1250 psi on drillpipe.
9-Feb-05	13:30	15:00	R/U to rev circ. Reciprocating pipe while Rev out 153 bbl/1100 stks @ 3.5 BPM/350 psi, holding back press to ctrl back flow, Cmt observed at surface. Press slowly incr to 4000 psi after 190 bbl. Shut down, bled off press.

===== Post Job =====

Wait-on-cement Time:	03:00	Estimated TOC:	2235.00
Tagged Cement at :	.00	From :	Other
Weight Applied :	0.	Estimated BOC:	2461.00
Tested Cement to :	3000.	From :	Other
Drilled Cement to :	.00		

===== Remarks and Problems =====

Displaced with rig. Slow product delivery, slowing rate. Dart did not latch, cement placement was in the 9-5/8" casing due to BHKA/Equalizing sub tool failure prior to or during cement job. Cemented up 1056m of 5" drill pipe & LIH 1402m of 5" drill pipe cemented inside of 9-5/8".

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

CEMENT REPORT

Mixed Oilfield Units

Start Date/Time: 12-Feb-05 17:15 Job Type: Plug and Abandon
End Date/Time : 12-Feb-05 18:00 Rig Name: 102

Casing Size : 13.375 Setting Depth : 755.40 Float Collar : 730.20
Drift : 12.289 String Top MD : 15.50 Landing Collar: .00
Weight/Length: 68.000 Gauge Hole Size: 17.500 Estimated BHST: 29.0
Excess Cement: 1.3% over Gauge

Last Casing Run: 9.625 at 2526.87 (shoe MD)

===== Mud Data =====

Mud Weight : 10.35 PV: 19.0 Oil Content : .0
pH : 9.9 YP: 30.0 Water Content: 87.2
Temperature: .0

===== Mud Flush and Spacer =====

Type	Density	Volume	Avg Rate	Maximum Press	Composition
Preflush	8.600	14.0	4.5	150.	Seawater

===== Cement Slurries =====

Cement	Class	Additives
Tail	G	Class "G"

Cement	Amount Used	Yield	Water Req	Mix Water	Thick Time	Comp Strength 12 Hr	24 Hr	Free Water	Fluid Loss
Tail	335.	1.16	5.070	S	03:30	500.0	2019.0	0	0

Type	Density	Volume	Avg Rate	Maximum Press
Tail	15.900	69.0	3.8	230.

===== Postflush and Displacement =====

Type	Density	Volume	Avg Rate	Maximum Press	Composition
Postflush	8.600	2.0	3.0	215.	Seawater
Displ'mnt	10.300	39.0	6.5	266.	WBM

===== Job Procedure =====

Date	Start Time	End Time	Activity
12-Feb-05	17:15	18:00	P & A Plug #2, (840m-705m). Dowell pumped 10 bbls seawater, Test lines to 1500 psi. Additional 4 bbl seawater. Mix & Pump 69 bbls, (335 sxs/385 cu ft) class "G" cmt @ 15.9 ppg. Pump 2 bbls seawater & displace with 39 bbl 10.3 ppg Mud. CIP @ 1800 hrs.
12-Feb-05	19:30	21:15	WOC. While waiting on cement, P/U & break service brakes on Baker's cmt head. L/D 15 Jts of 5" HWDP.

===== Post Job =====

Wait-on-cement Time:	07:00	Estimated TOC:	705.00
Tagged Cement at :	693.00	From :	Calculation
Weight Applied :	15000.	Estimated BOC:	740.00
Tested Cement to :	0.	From :	Calculation
Drilled Cement to :	.00		

===== Remarks and Problems =====

Tagged cmt after 7 hrs with 15 klbs @ 693m

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

CEMENT REPORT

Mixed Oilfield Units

Start Date/Time: 13-Feb-05 21:25 Job Type: Plug and Abandon
End Date/Time : 13-Feb-05 22:40 Rig Name: 102

Casing Size : 20.000 Setting Depth : 155.40 Float Collar : .00
Drift : 18.000 String Top MD : 16.21 Landing Collar: .00
Weight/Length: 202.900 Gauge Hole Size: 17.500 Estimated BHST: 13.0
Excess Cement: 250.0% over Gauge

Last Casing Run: 9.625 at 2526.87 (shoe MD)

===== Mud Data =====

Mud Weight : 10.15 PV: 13.0 Oil Content : .0
pH : 9.1 YP: 19.0 Water Content: 87.9
Temperature: .0

===== Mud Flush and Spacer =====

Type	Density	Volume	Avg Rate	Maximum Press	Composition
Preflush	8.600	36.0	5.0	200.	Seawater

===== Cement Slurries =====

Cement	Class	Additives
Tail	G	"G"+ 1% CaCl2 + 0.003 gps NF-6

Cement	Amount Used	Yield	Water Req	Mix Water	Thick Time	Comp Strength 12 Hr	24 Hr	Free Water	Fluid Loss
Tail	752.	1.17	5.130	S	02:12	.0	3013.0	0	0

Type	Density	Volume	Avg Rate	Maximum Press
Tail	15.900	156.0	4.5	340.

===== Postflush and Displacement =====

Type	Density	Volume	Avg Rate	Maximum Press	Composition
Postflush	8.600	2.0	4.0	150.	Seawater
Displ'mnt	8.600	4.0	5.0	160.	Seawater

===== Job Procedure =====

Date	Start Time	End Time	Activity
-----	-----	-----	-----

===== Post Job =====

Wait-on-cement Time:	05:00	Estimated TOC:	105.00
Tagged Cement at :	112.00	From :	Calculation
Weight Applied :	15000.	Estimated BOC:	230.00
Tested Cement to :	0.	From :	Calculation
Drilled Cement to :	.00		

===== Remarks and Problems =====

CIP @ 22:40 hrs. Surface sample went from soft to hard between 4 & 5 hrs -
 Tagged TOC @ 112m with 15 klbs.

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

DRILL STRING REPORT

Mixed Oilfield Units

Date Run: 5-Jan-05 Date Pulled: 6-Jan-05 Length of BHA : 147.580
Time Run: 18:30 Time Pulled: 08:00 BHA Weight in Air : .0
Depth In: 91.00 Depth Out : 160.00 Above Jars: .0
Below Jars: .0
In Mud : .0

26" Bit, BS, Anderdrift, 3 x 9-1/2" DC, XO, 3 x 8-1/4" DC, XO, 9 x 5" HWDP

Tp	OD	ID	Grd	Connections Size	Nom Type	Wt/Len	Stab OD In	Blade OD Out	Length To Ctr	Bend	Section Length
HW	5.000	3.000	S135	4.500	IF	50.0					.000
XO	8.250	2.875	????	6.625	REG	160.0					1.100
DC	8.250	2.812	????	6.625	REG	160.0					28.120
XO	9.437	3.125	????	7.625	REG	160.0					.800
DC	9.500	3.000	????	7.625	REG	216.0					28.250
MS	9.500	3.000	????	7.625	REG	195.0	.000	.000	.000		3.260
FS	9.500	3.000	????	7.625	REG	198.0					.980
BT	26.000	3.000	????	7.625	REG	220.0					.550

Bit Code : BT Bit Manufacturer: SEC Billing : D
Bit Number: 1 Bit Model : XN1C Cost : 9333
Run Number: 1 Serial Number : 10426790 Daily Rig Rate: 280000
Bit Size : 26.000 IADC Class : 111

Nozzles : 28.0 28.0 28.0 28.0
Flow Area : 2.4053

Reason bit pulled	Location of reported wear:	A
or run terminated : TD	Wear to bearings or seals:	1
Wear to inner 2/3 cutters: 1	Wear to gauge :	1.
Wear to inner 1/3 cutters: 1	Other dull characteristic:	NO
Major dull characteristic: NO		

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

DRILL STRING REPORT

Mixed Oilfield Units

Date Run: 8-Jan-05 Date Pulled: 10-Jan-05 Length of BHA : 338.470
Time Run: 19:30 Time Pulled: 09:15 BHA Weight in Air : .0
Depth In: 160.00 Depth Out : 761.00 Above Jars: .0
Below Jars: 38.0
In Mud : .0

17" bit, NB stab, 9" dc, stab, 2 x 9" dc, stab, xo, 8" NMPDC, MWD, xo, 5" NMHW,
2 x HW, 6" jar, HW

TP	OD	ID	Grd	Connections Size	Nom Type	Wt/Len	Stab OD In	Blade OD Out	Length To Ctr Bend	Section Length
DP	5.000	3.000	????	4.500	IF	19.5				422.530
HW	5.000	3.000	????	4.500	IF	50.0				253.290
JR	6.500	2.750	????	4.500	IF	.0				9.630
HW	5.000	3.000	????	4.500	IF	50.0				18.820
NH	5.000	2.750	????	4.500	IF	.0				9.480
XO	1.100	2.875	????	4.500	IF	.0				1.100
MW	8.250	.000	????	6.625	REG	.0	.000	.000	.000	8.450
ND	8.000	2.875	????	6.625	REG	.0				2.670
XO	9.438	3.062	????	6.625	REG	.0				.800
ST	17.500	3.000	????	7.625	REG	.0	.000	17.500	.000	1.500
DC	9.563	3.000	????	7.625	REG	216.0				18.850
ST	17.500	3.000	????	7.625	REG	.0	.000	17.500	.000	2.270
DC	9.562	3.000	????	7.625	REG	216.0				9.400
ST	17.500	.000	????	7.625	REG	.0	.000	17.500	.000	1.790
BT	17.500	.000	????	7.625	REG	.0				.420

Bit Code : BT Bit Manufacturer: SEC Billing : D
Bit Number: 2 Bit Model : FS2563 Cost : 0
Run Number: 1 Serial Number : 10629925 Daily Rig Rate: 0
Bit Size : 17.500 IADC Class : 115

Nozzles : 20.0 20.0 20.0 20.0 20.0 20.0 20.0
Flow Area : 2.1476

Reason bit pulled		Location of reported wear:	A
or run terminated	: TD	Wear to bearings or seals:	X
Wear to inner 2/3 cutters:	1	Wear to gauge	: 0.
Wear to inner 1/3 cutters:	1	Other dull characteristic:	NO
Major dull characteristic:	WT		

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

DRILL STRING REPORT

Mixed Oilfield Units

Date Run: 11-Jan-05 Date Pulled: 14-Jan-05 Length of BHA : 318.290
Time Run: 21:00 Time Pulled: 16:00 BHA Weight in Air : 79.5
Depth In: 761.00 Depth Out : 1737.00 Above Jars: 41.5
Below Jars: 38.0
In Mud : 68.2

12~" bit, motor, float sub, stab, NM pony collar, MWD, stab, xo, NM HW, 2 x
HeviWate, Jars, 27 x HW

Tp	OD	ID	Grd	Connections Size	Nom Type	Wt/Len	Stab OD In	Blade OD Out	Length To Ctr Bend	Section Length
DP	5.000	4.000	S135	4.500	IF	19.5				1418.709
HW	5.000	3.000	????	4.500	IF	50.0				253.290
JR	6.250	2.750	????	4.500	IF	.0				9.630
HW	5.000	3.000	????	4.500	IF	50.0				18.820
NH	5.000	3.000	????	4.500	IF	50.0				9.480
XO	8.250	2.875	????	4.500	IF	.0				1.100
NS	12.000	2.875	????	6.625	REG	.0	.000	12.000	.000	1.450
MW	8.250	.000	????	6.625	REG	.0	.000	.000	.000	8.450
ND	8.250	2.875	????	6.625	REG	172.0				2.670
NS	11.875	2.875	????	6.625	REG	.0	.000	11.875	.000	2.270
FS	8.000	3.000	????	6.625	REG	.0				1.000
MM	9.625	.000	????	6.625	REG	.0	.000	.000	.000	9.800
BT	12.250	.000	????	6.625	REG	.0			.00	.330

Bit Code : BT Bit Manufacturer: RRB Billing : D
Bit Number: 3 Bit Model : RSX192 Cost : 0
Run Number: 1 Serial Number : 206985 Daily Rig Rate: 0
Bit Size : 12.250 IADC Class : S322

Nozzles : 20.0 20.0 20.0 20.0 20.0 20.0 20.0
Flow Area : 2.1476

Reason bit pulled		Location of reported wear:	S
or run terminated	: PR	Wear to bearings or seals:	X
Wear to inner 2/3 cutters:	5	Wear to gauge	: 1.
Wear to inner 1/3 cutters:	1	Other dull characteristic:	CT
Major dull characteristic:	WT		

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

DRILL STRING REPORT

Mixed Oilfield Units

Date Run: 14-Jan-05 Date Pulled: 17-Jan-05 Length of BHA : 318.420
Time Run: 17:00 Time Pulled: 15:00 BHA Weight in Air : 75.8
Depth In: 1737.00 Depth Out : 2072.00 Above Jars: 46.6
Below Jars: 29.2
In Mud : 64.8

12-1/2" MX 20 bit, 9-1/2" motor, float sub, 11 7/8" stab, 8" NM pony collar, 8-1/2" MWD,
12" stab, xo, NM HW, 2 x HeviWate, Jars, 27 x HW

Tp	OD	ID	Grd	Connections Size	Nom Type	Wt/Len	Stab OD In	Blade OD Out	Length To Ctr Bend	Section Length
DP	5.000	4.000	S135	4.500	IF	19.5				1734.580
HW	5.000	3.000	????	4.500	IF	50.0				253.290
JR	6.250	2.750	????	4.500	IF	.0				9.630
HW	5.000	3.000	????	4.500	IF	50.0				18.820
NH	5.000	3.000	????	4.500	IF	50.0				9.480
XO	8.250	2.875	????	4.500	IF	.0				1.100
NS	12.000	2.875	????	6.625	REG	.0	.000	12.000	.000	1.400
MW	8.250	.000	????	6.625	REG	.0	.000	.000	.000	8.400
ND	8.000	2.875	????	6.625	REG	172.0				2.670
NS	11.875	2.875	????	6.625	REG	.0	.000	11.875	.000	2.490
FS	8.000	3.000	????	6.625	REG	.0				1.100
MM	9.625	.000	????	6.625	REG	.0	.000	.000	.000	9.710
BT	12.250	.000	????	6.625	REG	.0				.330

Bit Code : BT Bit Manufacturer: HC Billing : D
Bit Number: 4 Bit Model : MX20DX Cost : 0
Run Number: 1 Serial Number : 6017688 Daily Rig Rate: 0
Bit Size : 12.250 IADC Class : 517

Nozzles : 22.0 22.0 35.0
Flow Area : 1.6820

Reason bit pulled	Location of reported wear:	A
or run terminated : HR	Wear to bearings or seals:	E
Wear to inner 2/3 cutters: 6	Wear to gauge :	0.
Wear to inner 1/3 cutters: 5	Other dull characteristic:	CT
Major dull characteristic: BT		

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

DRILL STRING REPORT

Mixed Oilfield Units

Date Run: 17-Jan-05 Date Pulled: 19-Jan-05 Length of BHA : 312.890
Time Run: 16:00 Time Pulled: 19:45 BHA Weight in Air : 76.1
Depth In: 2072.00 Depth Out : 2532.00 Above Jars: 46.8
Below Jars: 29.3
In Mud : 65.0
12-" RSX162 bit, 12 3/6" NB stab, 8" NM PDC, 12-" AGS, 8" NM PDC, 8-" MWD, 12"
stab, xo, NM HW, 2 x HeviWate, Jars, 27 x HW

Tp	OD	ID	Grd	Connections Size Type	Nom Wt/Len	Stab Blade OD In OD Out	Length To Ctr Bend	Section Length
DP	5.000	4.000	S135	4.500 IF	19.5			2219.111
HW	5.000	3.000	????	4.500 IF	50.0			253.290
JR	6.500	2.750	????	4.500 IF	.0			9.630
HW	5.000	3.000	????	4.500 IF	50.0			18.820
NH	5.000	2.750	????	4.500 IF	50.0			9.480
XO	8.250	2.875	????	4.500 IF	.0			1.100
NS	12.000	3.000	????	6.625 REG	.0	.000 12.000	.000	1.400
MW	8.250	.000	????	6.625 REG	.0	.000 .000	.000	8.400
ND	8.000	2.875	????	6.625 REG	172.0			2.670
ST	12.250	3.250	????	6.625 REG	.0	.000 12.250	.000	3.335
ND	8.000	2.875	????	6.625 REG	172.0			2.685
ST	12.188	2.875	????	6.625 REG	.0	.000 12.188	.000	1.830
BT	12.250	2.875	????	6.625 REG	.0			.250

Bit Code : BT Bit Manufacturer: NLH Billing : D
Bit Number: 5 Bit Model : RSX162 Cost : 0
Run Number: 1 Serial Number : 206982 Daily Rig Rate: 0
Bit Size : 12.250 IADC Class : M422

Nozzles : 20.0 20.0 20.0 20.0 20.0 20.0
Flow Area : 1.8408

Reason bit pulled Location of reported wear: S
or run terminated : PR Wear to bearings or seals: X
Wear to inner 2/3 cutters: 6 Wear to gauge : 0.
Wear to inner 1/3 cutters: 2 Other dull characteristic: NO
Major dull characteristic: WT

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

DRILL STRING REPORT

Mixed Oilfield Units

Date Run: 20-Jan-05 Date Pulled: 21-Jan-05 Length of BHA : 314.660
Time Run: 23:30 Time Pulled: 14:00 BHA Weight in Air : 68.1
Depth In: 2532.00 Depth Out : 2532.00 Above Jars: 46.9
Below Jars: 21.1
In Mud : 58.0

12-" RSX162 bit, 12 3/6" NB stab, 2 x 8-" DC, 12" Stabilizer, xo, NM HW, 2 x
HeviWate, Jars, 27 x HW

Tp	OD	ID	Grd	Connections Size	Nom Type	Wt/Len	Stab OD In	Blade OD Out	Length To Ctr Bend	Section Length
DP	5.000	4.000	S135	4.500	IF	19.5				2217.340
HW	5.000	3.000	????	4.500	IF	50.0				253.290
JR	6.500	2.750	????	4.500	IF	.0				9.630
HW	5.000	3.000	????	4.500	IF	50.0				18.820
NH	5.000	2.750	????	4.500	IF	50.0				9.480
XO	8.250	2.875	????	4.500	IF	.0				1.100
ST	12.000	3.000	????	6.625	REG	.0	.000	12.000	.000	1.400
DC	8.250	2.189	????	6.625	REG	160.0				18.860
ST	12.188	2.875	????	6.625	REG	.0	.000	12.188	.000	1.830
BT	12.250	2.875	????	6.625	REG	.0				.250

Bit Code : BT Bit Manufacturer: NLH Billing : D
Bit Number: 5 Bit Model : RSX162 Cost : 0
Run Number: 2 Serial Number : 206982 Daily Rig Rate: 0
Bit Size : 12.250 IADC Class : M422

Nozzles : 20.0 20.0 20.0 20.0 20.0 20.0
Flow Area : 1.8408

Reason bit pulled		Location of reported wear:	S
or run terminated	: CM	Wear to bearings or seals:	X
Wear to inner 2/3 cutters:	6	Wear to gauge	: 0.
Wear to inner 1/3 cutters:	2	Other dull characteristic:	NO
Major dull characteristic:	WT		

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

DRILL STRING REPORT

Mixed Oilfield Units

Date Run: 23-Jan-05 Date Pulled: 23-Jan-05 Length of BHA : 315.500
Time Run: 02:30 Time Pulled: 17:00 BHA Weight in Air : 68.1
Depth In: 2532.00 Depth Out : 2532.00 Above Jars: 46.9
Below Jars: 21.1
In Mud : 58.0

11 15/16" mill, 12 3/6" NB stab, 2 x 8-" DC, 12" Stabilizer, xo, NM HW, 2 x
HeviWate, Jars, 27 x HW

Tp	OD	ID	Grd	Connections Size	Nom Type	Wt/Len	Stab OD In	Blade OD Out	Length To Ctr Bend	Section Length
DP	5.000	4.000	S135	4.500	IF	19.5				2216.500
HW	5.000	3.000	????	4.500	IF	50.0				253.290
JR	6.500	2.750	????	4.500	IF	.0				9.630
HW	5.000	3.000	????	4.500	IF	50.0				18.820
NH	5.000	2.750	????	4.500	IF	50.0				9.480
XO	8.250	2.875	????	4.500	IF	.0				1.100
ST	12.000	3.000	????	6.625	REG	.0	.000	12.000	.000	1.400
DC	8.250	2.189	????	6.625	REG	160.0				18.860
ST	12.188	2.875	????	6.625	REG	.0	.000	12.188	.000	1.830
ML	11.938	2.562	????	6.625	REG	.0				1.090

Bit Code : ML Bit Manufacturer: ??? Billing : D
Bit Number: 1 Bit Model : Mill Cost : 0
Run Number: 1 Serial Number : TS 48 Daily Rig Rate: 0
Bit Size : 11.938 IADC Class :

Nozzles : 20.0 20.0 20.0 20.0
Flow Area : 1.2272

Reason bit pulled		Location of reported wear:	G
or run terminated	: TD	Wear to bearings or seals:	X
Wear to inner 2/3 cutters:	2	Wear to gauge	: 0.
Wear to inner 1/3 cutters:	2	Other dull characteristic:	WT
Major dull characteristic:	JD		

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

DRILL STRING REPORT

Mixed Oilfield Units

Date Run: 26-Jan-05 Date Pulled: 29-Jan-05 Length of BHA : 320.940
Time Run: 05:30 Time Pulled: 02:00 BHA Weight in Air : 52.0
Depth In: 2532.00 Depth Out : 2688.00 Above Jars: 42.0
Below Jars: 10.0
In Mud : 44.0

8«" MX30D bit, NBRR, Pony NMDC, AGS, Pony NMDC, XO, GVR, MWD, ADN, 3xHW, jars,
27xHW

Tp	OD	ID	Grd	Connections Size	Nom Type	Wt/Len	Stab OD In	Blade OD Out	Length To Ctr Bend	Section Length
BT	8.500	.000	????	4.500	REG	.0				.240
RR	8.500	2.312	????	4.500	IF	.0	6.500	8.500	.000	1.830
ND	6.187	2.875	????	4.500	IF	.0				2.490
ST	7.875	3.000	????	4.500	IF	.0	.000	.000	.000	3.230
ND	6.188	2.875	????	4.500	IF	.0				3.610
XO	7.000	2.375	????	4.500	REG	.0				.580
LW	6.187	.000	????	5.500	FH	.0				3.080
MW	6.750	.000	????	5.500	FH	.0	.000	.000	.000	8.380
LW	6.187	.000	????	5.500	FH	.0				6.240
HW	5.000	3.000	????	4.500	IF	50.0				28.240
JR	6.250	2.750	????	4.500	IF	.0				9.730
HW	5.000	3.000	????	4.500	IF	50.0				253.290
DP	5.000	4.200	????	4.500	IF	19.5				2211.060

Bit Code : BT Bit Manufacturer: HC Billing : P
Bit Number: 6 Bit Model : MX30D Cost : 16267
Run Number: 1 Serial Number : 6023698 Daily Rig Rate: 225000
Bit Size : 8.500 IADC Class : 537

Nozzles : 24.0 24.0 24.0
Flow Area : 1.3254

Reason bit pulled		Location of reported wear:	A
or run terminated	: HR	Wear to bearings or seals:	E
Wear to inner 2/3 cutters:	6	Wear to gauge	: 0.
Wear to inner 1/3 cutters:	6	Other dull characteristic:	CT
Major dull characteristic:	WT		

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

DRILL STRING REPORT

Mixed Oilfield Units

Date Run: 29-Jan-05 Date Pulled: 1-Feb-05 Length of BHA : 320.870
Time Run: 15:00 Time Pulled: 13:30 BHA Weight in Air : 52.0
Depth In: 2688.00 Depth Out : 2866.00 Above Jars: 44.0
Below Jars: 42.0
In Mud : 10.0
8«" MX30D HC TCI Bit, 8«" NB Stab, Pony NMDC, AGS, Pony NMDC, XO, GVR, MWD, ADN,
3 x HWDP, Jars, 27 x HWDP

Tp	OD	ID	Grd	Connections Size	Nom Type	Wt/Len	Stab OD In	Blade OD Out	Length To Ctr Bend	Section Length
DP	5.000	4.276	S135	4.500	IF	19.5				.000
HW	5.000	3.000	????	4.500	IF	50.0				253.290
JR	6.250	2.750	????	4.500	IF	.0				9.730
HW	5.000	3.000	????	4.500	IF	50.0				28.240
LW	6.188	2.250	????	5.500	FH	50.0				6.240
MW	6.750	2.250	????	5.500	FH	50.0	.000	.000	.000	8.380
LW	6.188	2.250	????	5.500	FH	50.0				3.080
XO	7.000	2.375	????	4.500	REG	50.0				.580
ND	6.180	2.875	????	4.500	IF	50.0				3.610
ST	7.875	3.000	????	4.500	IF	50.0	8.500	.000	.000	3.230
ND	6.188	2.875	????	4.500	IF	50.0				2.490
ST	6.500	2.313	????	4.500	IF	50.0	.000	.000	.000	1.760
BT	8.500	2.000	????	4.500	REG	50.0				.240

Bit Code : BT Bit Manufacturer: HC Billing : P
Bit Number: 7 Bit Model : MX30DX Cost : 16327
Run Number: 1 Serial Number : 6025358 Daily Rig Rate: 275000
Bit Size : 8.500 IADC Class : 537

Nozzles : 24.0 24.0 24.0
Flow Area : 1.3254

Reason bit pulled		Location of reported wear:	A
or run terminated	: HR	Wear to bearings or seals:	E
Wear to inner 2/3 cutters:	4	Wear to gauge	: 0.
Wear to inner 1/3 cutters:	4	Other dull characteristic:	NO
Major dull characteristic:	WT		

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

DRILL STRING REPORT

Mixed Oilfield Units

Date Run: 1-Feb-05 Date Pulled: 3-Feb-05 Length of BHA : 326.410
Time Run: 18:30 Time Pulled: 20:30 BHA Weight in Air : 55.0
Depth In: 2866.00 Depth Out : 3024.00 Above Jars: 40.0
Below Jars: 15.0
In Mud : 46.5
8«" GF11Y STC TCI Bit, 1.15øMud Motor, ADOS, AGS, Pony NMDC, XO, GVR, MWD, ADN,
3 x HWDP, Jars, 27 x HWDP

Tp	OD	ID	Grd	Connections Size Type	Nom Wt/Len	Stab OD In	Blade OD Out	Length To Ctr Bend	Section Length
DP	5.000	4.276	S135	4.500 IF	19.5				.000
HW	5.000	3.000	????	4.500 IF	50.0				253.290
JR	6.250	2.750	????	4.500 IF	.0				9.730
HW	5.000	3.000	????	4.500 IF	50.0				28.240
LW	6.188	2.250	????	5.500 FH	50.0				6.240
MW	6.750	2.250	????	5.500 FH	50.0	.000	.000	.000	8.380
LW	6.188	2.250	????	5.500 FH	50.0				3.080
XO	7.000	2.375	????	4.500 REG	50.0				.580
ND	6.180	2.875	????	4.500 IF	50.0				3.610
ST	7.875	3.000	????	4.500 IF	50.0	8.500	.000	.000	3.230
OT	6.875	2.313	????	4.500 IF	50.0				.800
MM	6.625	2.313	????	4.500 IF	50.0	.000	.000	.000	8.980
BT	8.500	2.000	????	4.500 REG	50.0				.240

Bit Code : BT Bit Manufacturer: STC Billing : P
Bit Number: 8 Bit Model : GF11Y Cost : 21313
Run Number: 1 Serial Number : MX0600 Daily Rig Rate: 275000
Bit Size : 8.500 IADC Class : 537

Nozzles : 24.0 24.0 24.0
Flow Area : 1.3254

Reason bit pulled	Location of reported wear:	A
or run terminated : HR	Wear to bearings or seals:	E
Wear to inner 2/3 cutters: 4	Wear to gauge :	0.
Wear to inner 1/3 cutters: 3	Other dull characteristic:	NO
Major dull characteristic: WT		

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

DRILL STRING REPORT

Mixed Oilfield Units

Date Run: 4-Feb-05 Date Pulled: 6-Feb-05 Length of BHA : 326.420
Time Run: 01:00 Time Pulled: 14:30 BHA Weight in Air : 55.0
Depth In: 3024.00 Depth Out : 3369.00 Above Jars: 40.0
Below Jars: 15.0
In Mud : 46.5
8«" DSX173 PDC Bit, 1.15øMud Motor, ADOS, AGS, Pony NMDC, XO, GVR, MWD, ADN, 3
x HWDP, Jars, 27 x HWDP

Tp	OD	ID	Grd	Connections Size	Nom Type	Wt/Len	Stab OD In	Blade OD Out	Length To Ctr Bend	Section Length
DP	5.000	4.276	S135	4.500	IF	19.5				.000
HW	5.000	3.000	????	4.500	IF	50.0				253.290
JR	6.250	2.750	????	4.500	IF	.0				9.730
HW	5.000	3.000	????	4.500	IF	50.0				28.240
LW	6.188	2.250	????	5.500	FH	50.0				6.240
MW	6.750	2.250	????	5.500	FH	50.0	.000	.000	.000	8.380
LW	6.188	2.250	????	5.500	FH	50.0				3.080
XO	7.000	2.375	????	4.500	REG	50.0				.580
ND	6.180	2.875	????	4.500	IF	50.0				3.610
ST	7.875	3.000	????	4.500	IF	50.0	8.500	.000	.000	3.230
OT	6.875	2.313	????	4.500	IF	50.0				.800
MM	6.625	2.313	????	4.500	IF	50.0	8.375	.000	.000	.00
BT	8.500	2.000	????	4.500	REG	50.0				.250

Bit Code : BT Bit Manufacturer: NLH Billing : P
Bit Number: 9 Bit Model : DSX173 Cost : 78180
Run Number: 1 Serial Number : 208594 Daily Rig Rate: 275000
Bit Size : 8.500 IADC Class : M322

Nozzles : 20.0 20.0 20.0 18.0 18.0
Flow Area : 1.4174

Reason bit pulled		Location of reported wear:	S
or run terminated	: TD	Wear to bearings or seals:	X
Wear to inner 2/3 cutters:	3	Wear to gauge	: 0.
Wear to inner 1/3 cutters:	1	Other dull characteristic:	NO
Major dull characteristic:	WT		

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

WORK STRING REPORT

Mixed Oilfield Units

Date Run:	8-Feb-05	Date Pulled:	10-Feb-05
Time Run:	14:30	Time Pulled:	01:45
Depth In:	3369.000	Depth Out :	3369.000

Cmt'g BN, 93 Jts 3«" Tbg, BHKA, BHKA RT - Sacrificial tbg string for Plug #1

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

WORK STRING REPORT

Mixed Oilfield Units

Date Run:	10-Feb-05	Date Pulled:	11-Feb-05
Time Run:	17:30	Time Pulled:	03:00
Depth In:	1056.000	Depth Out :	1054.000

8-1/2" HTC Bit MX20D, BS, 8-" Stab, 6-3/4" DC, 5xHWDP, Jar, 24xHWDP - Clean out
BHA after Plug #1

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

WORK STRING REPORT

Mixed Oilfield Units

Date Run:	11-Feb-05	Date Pulled:	11-Feb-05
Time Run:	03:30	Time Pulled:	10:45
Depth In:	1054.000	Depth Out :	1054.000

8-«" RR Bit, 9-5/8" Casing Scraper, BS, 6-¾" DC, 5xHWDP, Jars, 24xHWDP

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

WORK STRING REPORT

Mixed Oilfield Units

Date Run:	11-Feb-05	Date Pulled:	11-Feb-05
Time Run:	10:45	Time Pulled:	16:15
Depth In:	1054.000	Depth Out :	840.000

9-5/8" EZSV, (configured as CIBP), Running tool (OAL = 2.67m)

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

WORK STRING REPORT

Mixed Oilfield Units

Date Run:	11-Feb-05	Date Pulled:	11-Feb-05
Time Run:	16:15	Time Pulled:	20:45
Depth In:	840.000	Depth Out :	800.000

Bullnose, Baker M/S csg cutter, 8-«" Non-Rot Stab, XO OAL = 3.53m

9-Jun-05

ExxonMobil DRILLING
West Moonfish 1
WM1

01:42

WORK STRING REPORT

Mixed Oilfield Units

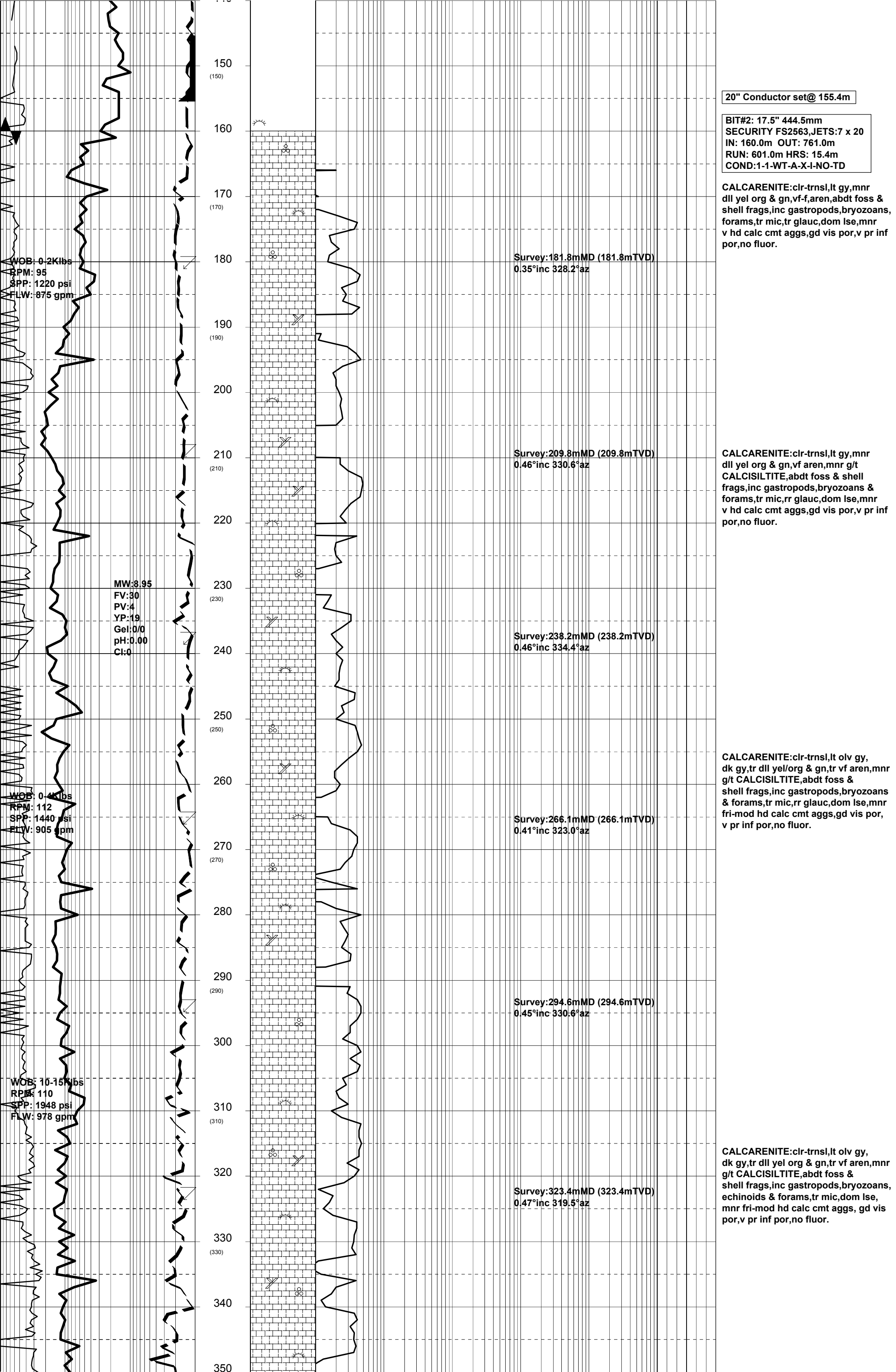
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Time Run:	10:30	Time Pulled:	14:00
Depth In:	235.000	Depth Out :	235.000

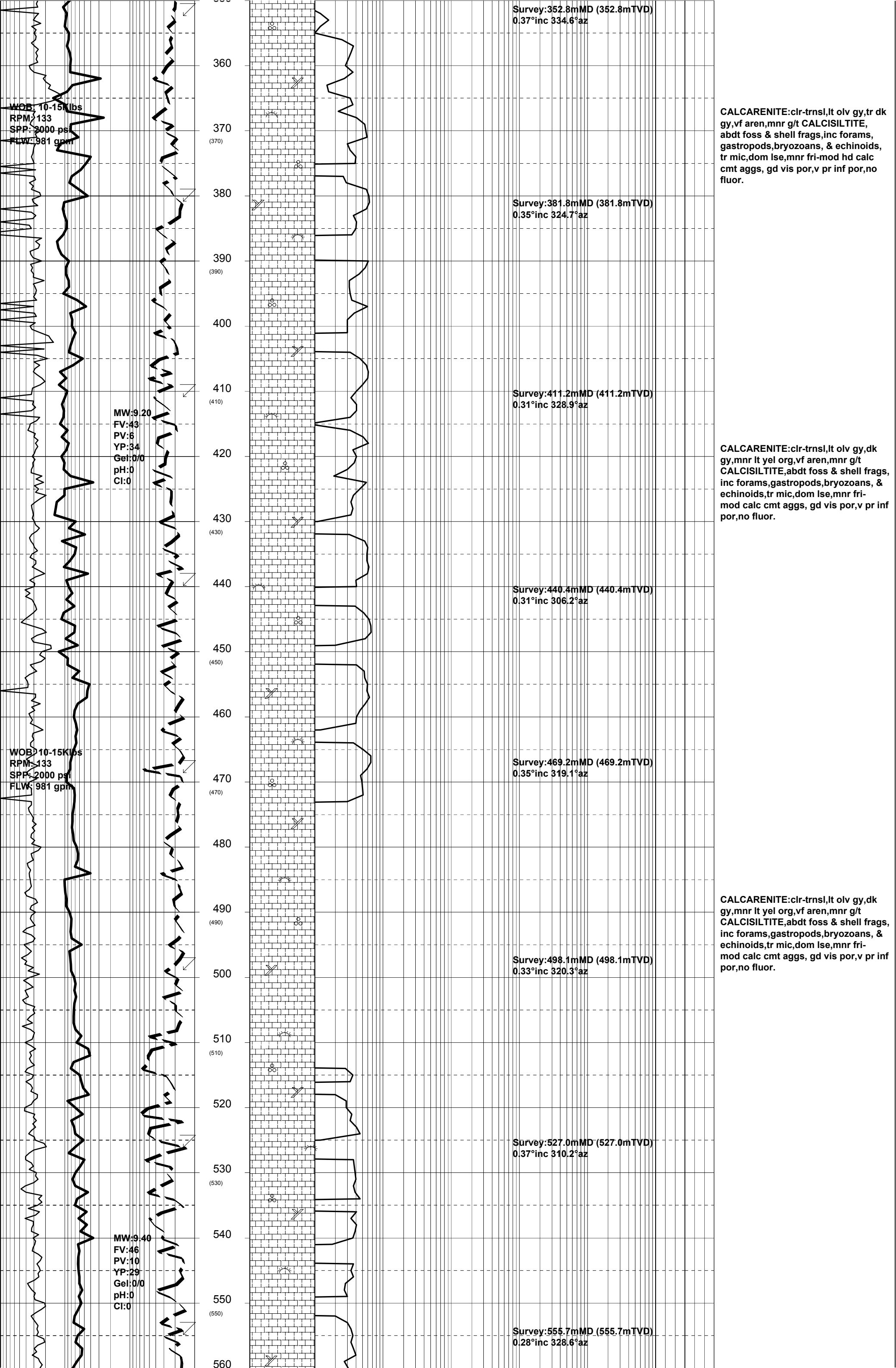
12" Mill, 13-3/8" csg scraper, BS, XO OAL 3.79m

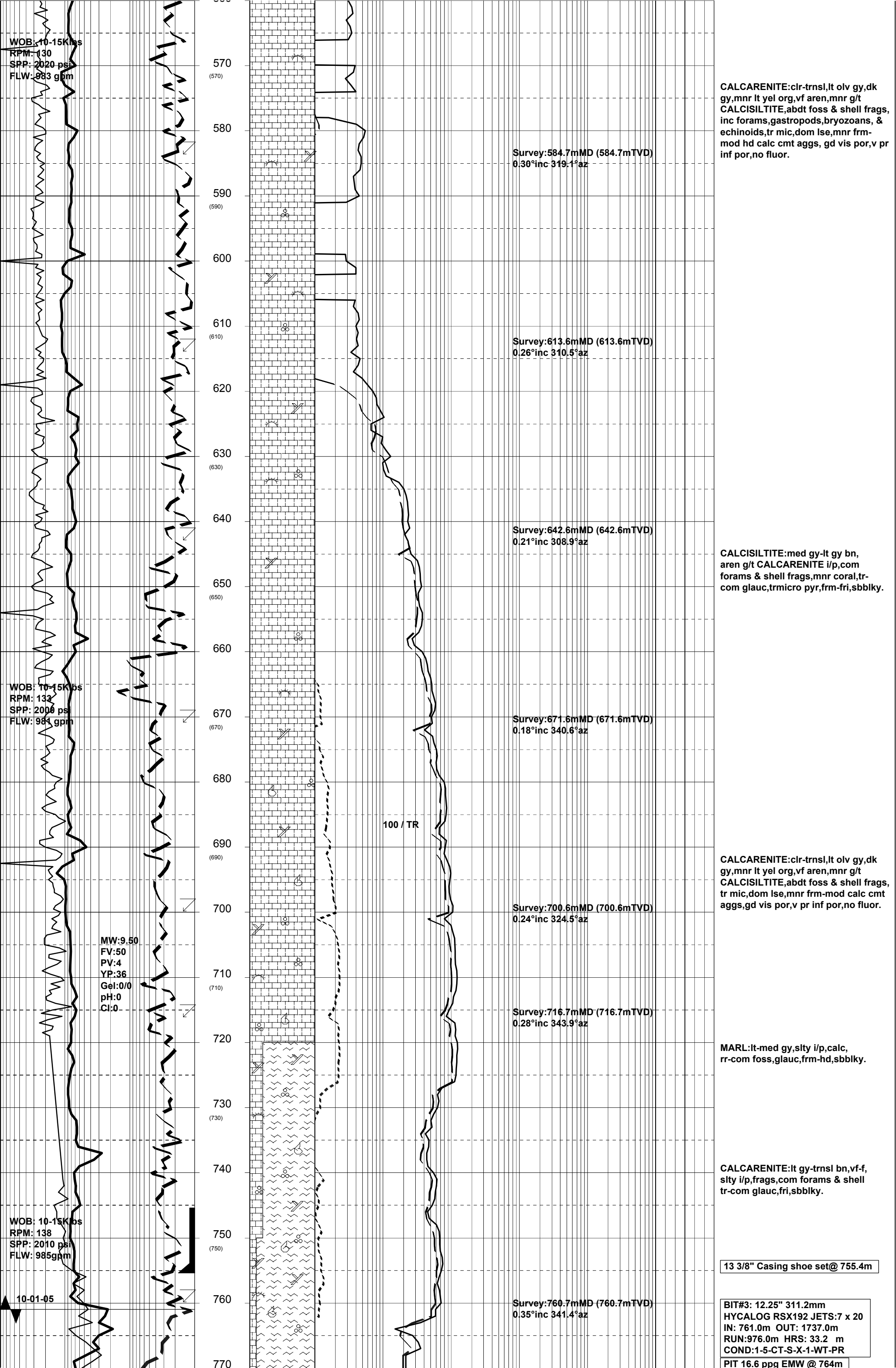
ENCLOSURE 1

MASTER LOG









WOB: 10-15Klbs
RPM: 168
SPP: 1310 psi
FLW: 752gpm

WOB: 7-11Klbs
RPM: 168
SPP: 2090 psi
FLW: 1030gpm

MW:9.45
FV:49
PV:11
YP:21
Gel:6/7/7
pH:9.5
CI:34000

WOB: 7-11Klbs
RPM: 240
SPP: 2090 psi
FLW: 1030gpm

WOB: 10-15Klbs
RPM: 240
SPP: 2240 psi
FLW: 1055gpm

780
(790)
800
810
(810)
820
830
(830)
840
850
(850)
860
870
(870)
880
890
(890)
900
910
(910)
920
930
(930)
940
950
(950)
960
970
(970)
980

95 / 1 / TR / TR / TR

99 / 1 / TR / TR / TR

99 / 1 / TR / TR / TR

Survey:818.9mMD (818.9mTVD)
0.39°inc 346.0°az

Survey:848.1mMD (848.1mTVD)
0.45°inc 351.6°az

Survey:877.1mMD (877.0mTVD)
0.38°inc 344.4°az

Survey:906.4mMD (906.4mTVD)
0.28°inc 0.6°az

Survey:935.3mMD (935.3mTVD)
0.35°inc 13.0°az

Survey:964.3mMD (964.3mTVD)
0.27°inc 17.9°az

MARL:lt-med gy,slty i/p,calc,
rr-com foss,glauc,frm-hd,sbblky.

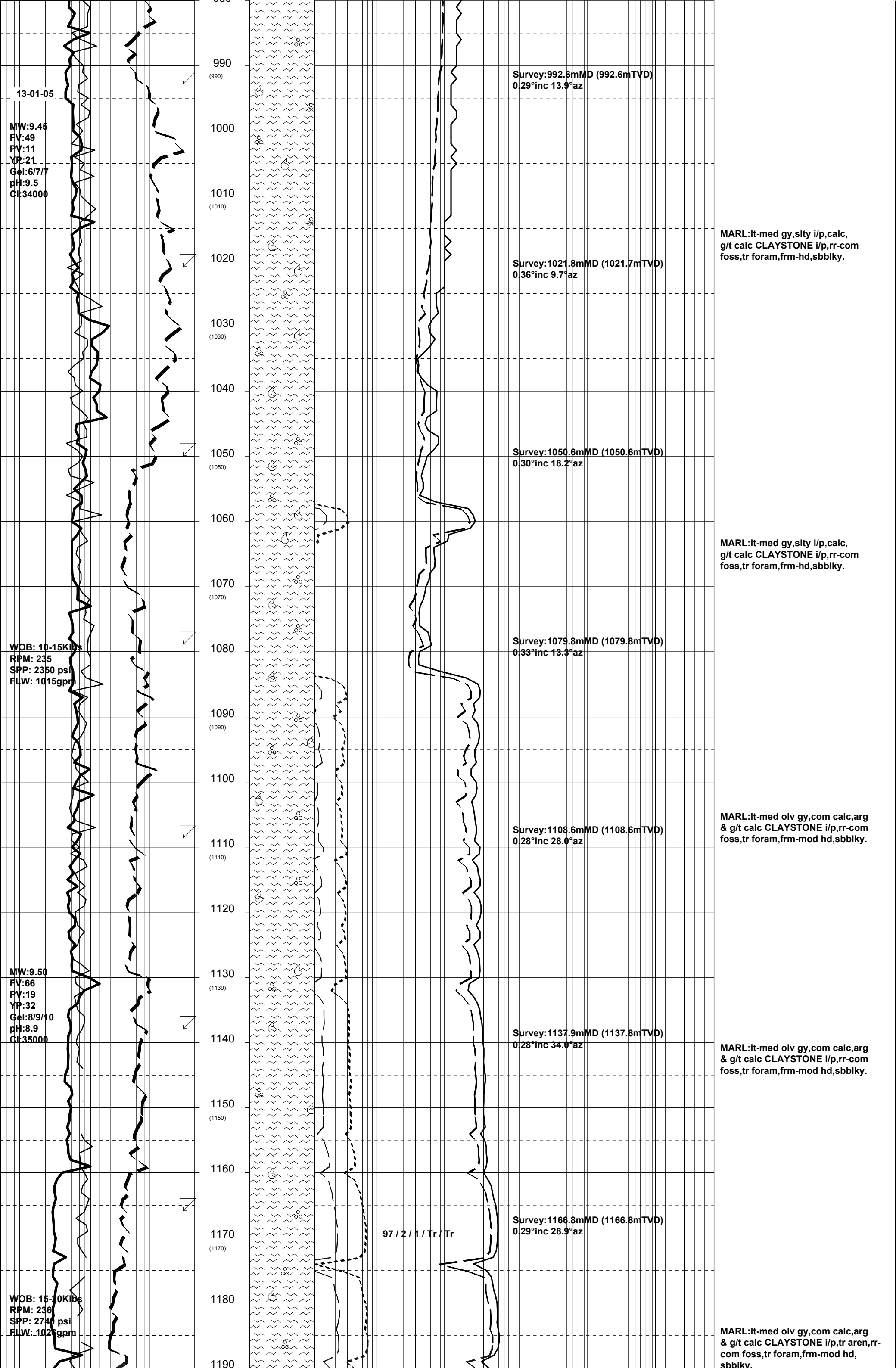
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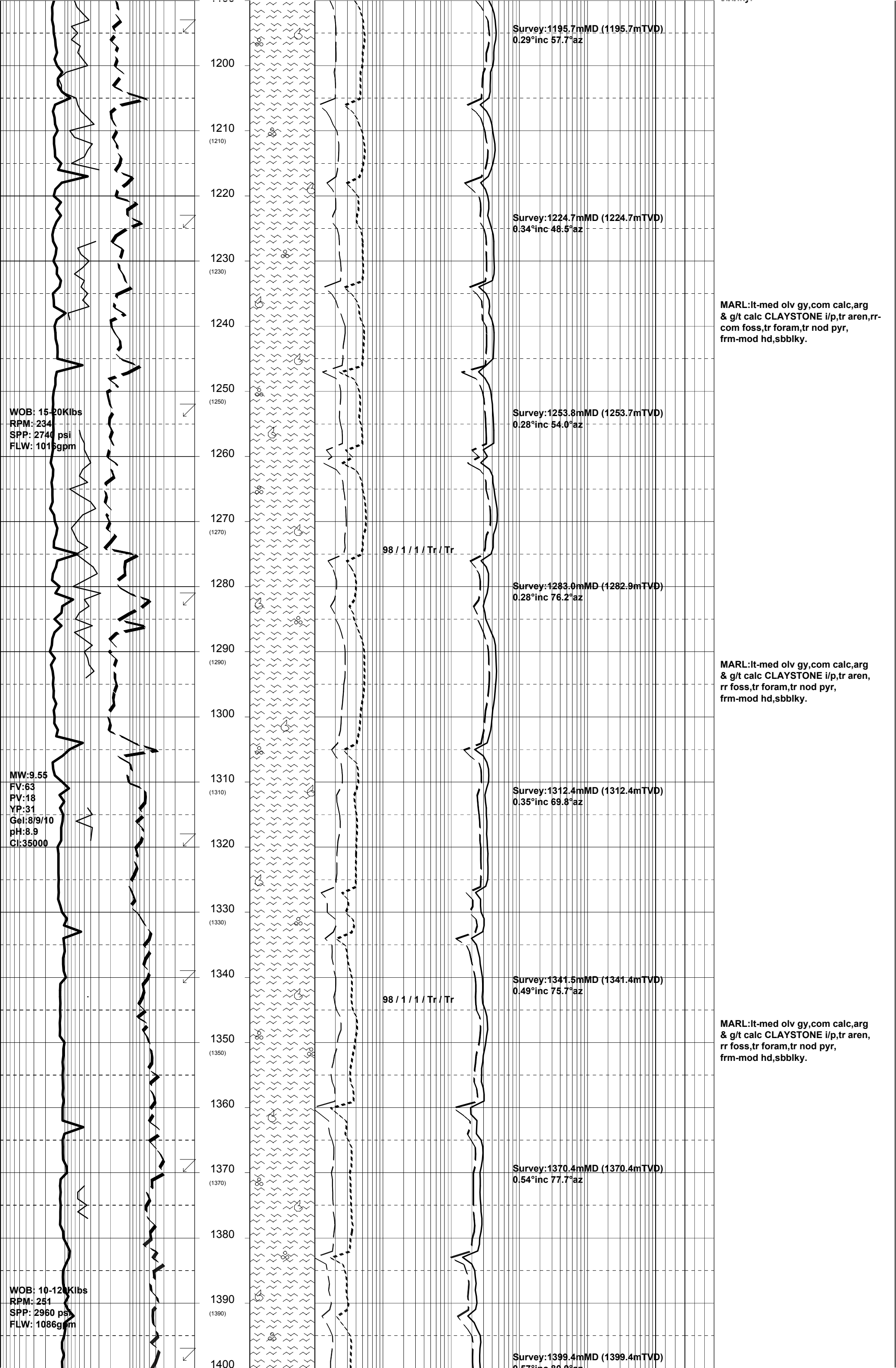
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glauc,frm-hd,sbblky.

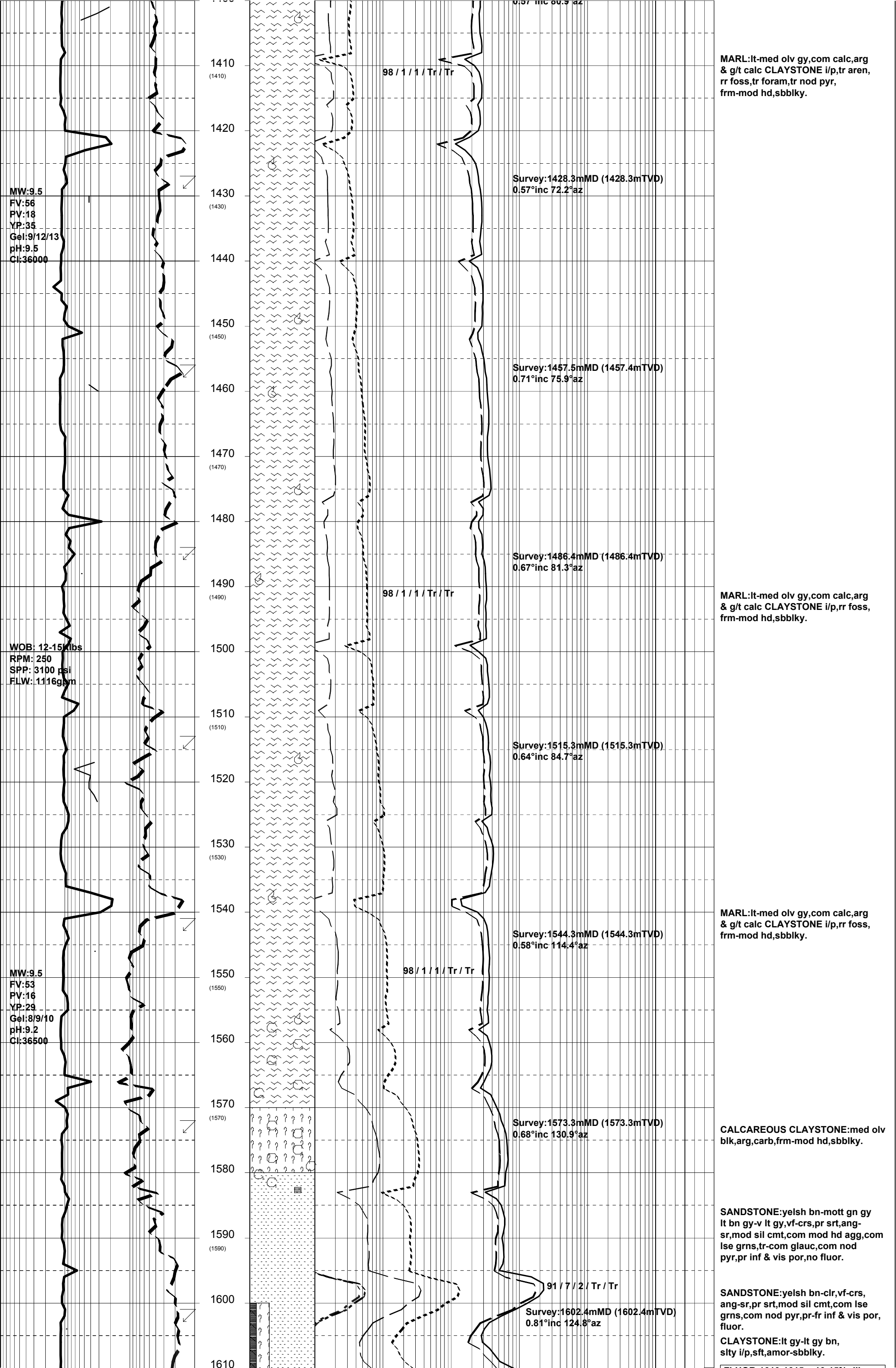
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foss,tr foram,frm-hd,sbblky.

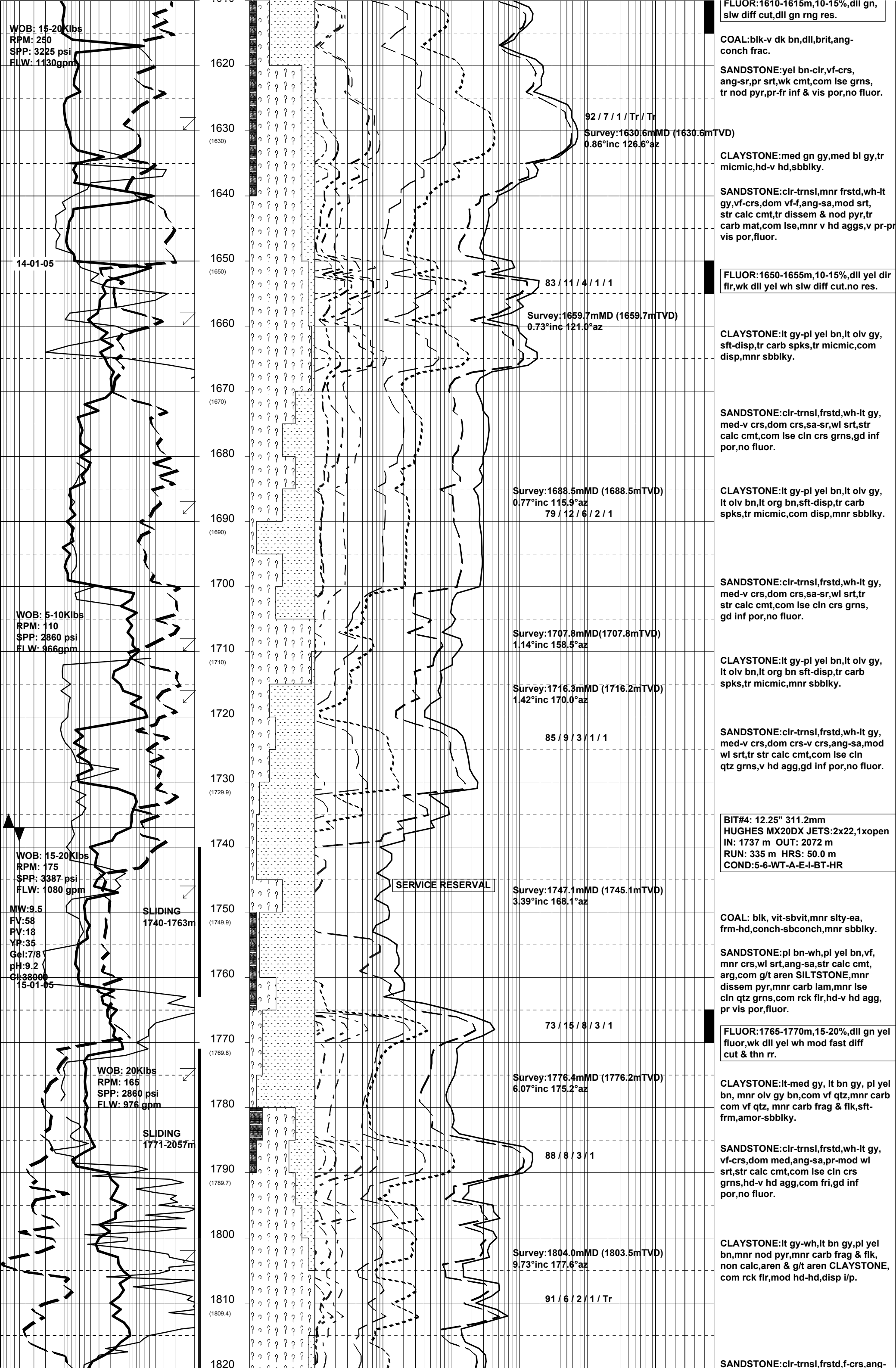
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foss,tr foram,frm-hd,sbblky.

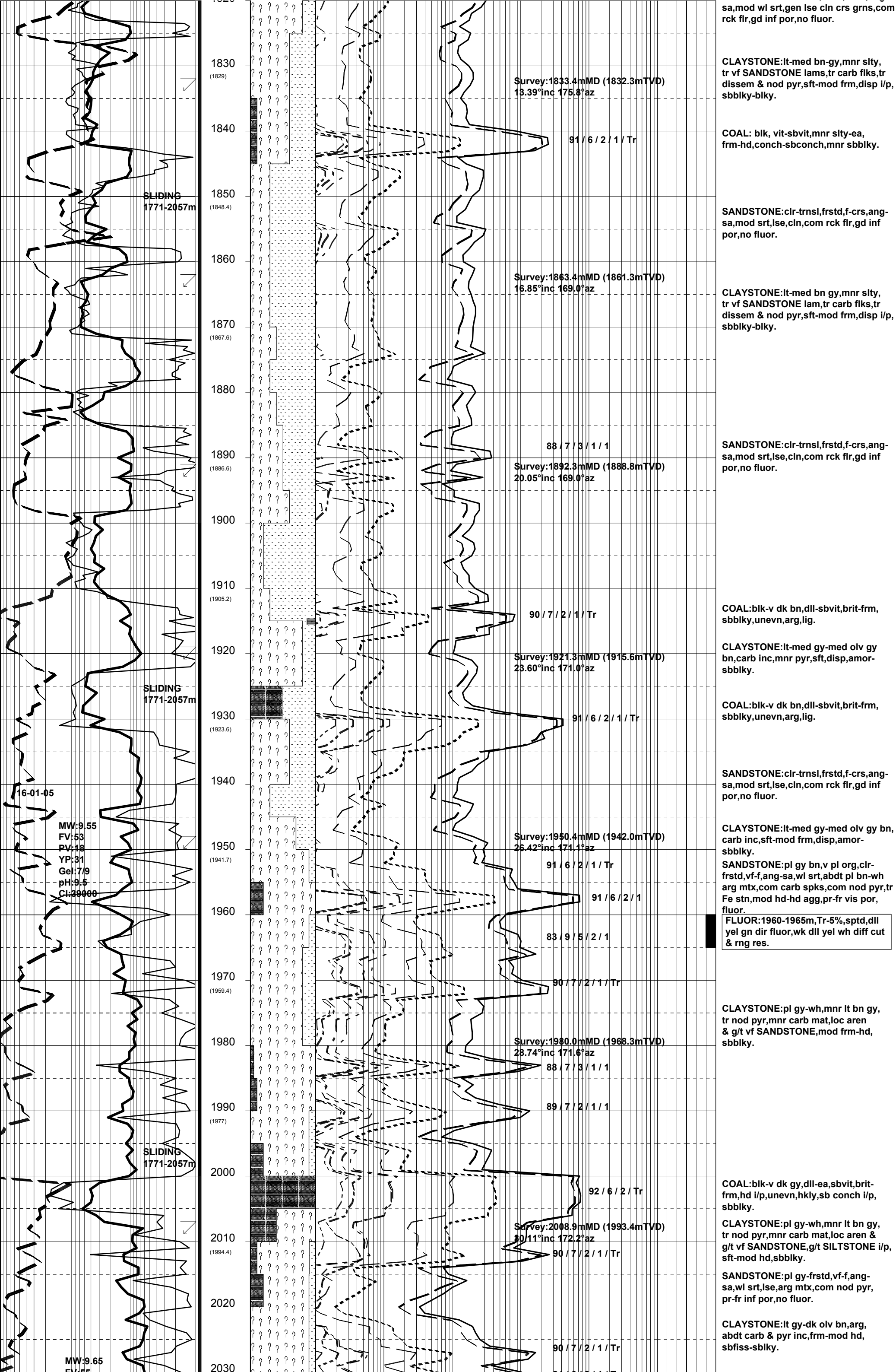
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g/t calc CLAYSTONE i/p,rr-com
foss,tr foram,frm-hd,sbblky.

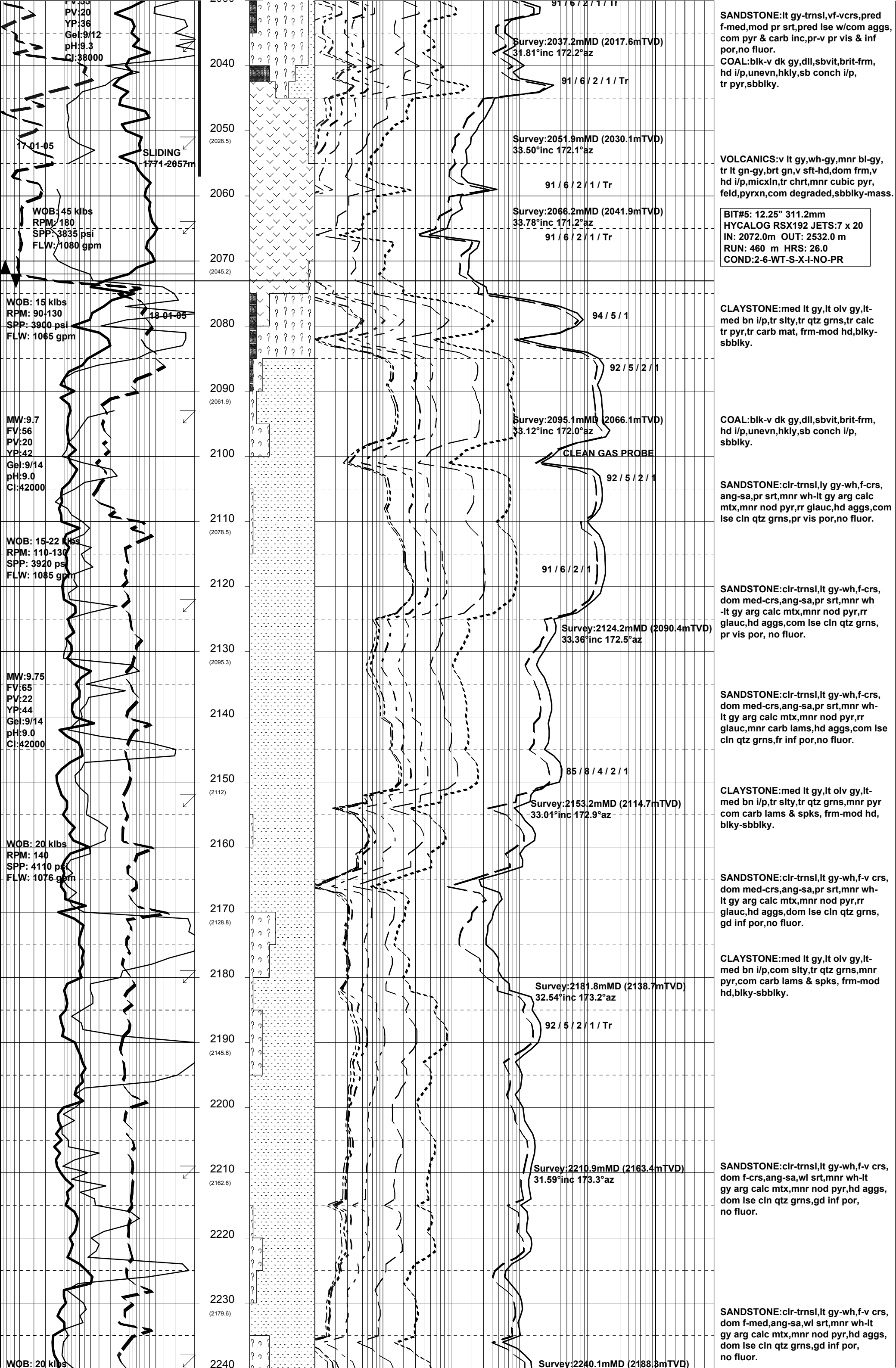












RPM: 183
SPP: 3840 psi
FLW: 1077 gpm

MW: 9.75
FV: 60
PV: 22
YP: 39
Gel: 9/16
pH: 9.0
Cl: 42000

WOB: 35 klbs
RPM: 100
SPP: 3880 psi
FLW: 1085 gpm

WOB: 25-30 klbs
RPM: 72
SPP: 3940 psi
FLW: 1075 gpm

WOB: 20-25 klbs
RPM: 75-100
SPP: 4090 psi
FLW: 1075 gpm

MW: 9.8
FV: 58
PV: 22
YP: 43

2250
(2196.7)

2260

2270
(2213.9)

2280

2290
(2231)

2300

2310
(2248.1)

2320

2330
(2265.3)

2340

2350
(2282.5)

2360

2370
(2299.7)

2380

2390
(2316.9)

2400

2410
(2334.1)

2420

2430
(2351.3)

2440

2450

92 / 6 / 2 / Tr

93 / 5 / 1 / 1

Survey: 2268.9mMD (2213.0mTVD)
31.0°inc 173.2°az

Survey: 2298.1mMD (2238.0mTVD)
31.01°inc 173.2°az

Survey: 2327.1mMD (2262.9mTVD)
30.80°inc 172.9°az

92 / 5 / 2 / 1 / Tr

92 / 5 / 2 / 1 / Tr

Survey: 2356.9mMD (2288.5mTVD)
30.47°inc 172.5°az

Survey: 2385.7mMD (2313.3mTVD)
30.69°inc 172.7°az

88 / 7 / 3 / 1 / 1

89 / 6 / 3 / 1 / 1

Survey: 2414.7mMD (2338.2mTVD)
30.89°inc 172.9°az

85 / 9 / 4 / 1 / 1

90 / 6 / 2 / 1 / 1

91 / 5 / 2 / 1 / 1

Survey: 2443.9mMD (2363.3mTVD)
30.53°inc 172.6°az

COAL: blk-v dk gy, dll, sbvit, slty i/p, brit-frm, hd i/p, mntr hkly, sb conch i/p, sbblky.

CLAYSTONE: med-dk bn, med gy-bn, lt-med bn i/p, com slty & g/t arg
SILTSTONE i/p, mntr micmic, com carb lams & spks, tr pyr, frm-mod hd, blky-sbblky.

SANDSTONE: clr-trnsl, lt gy-wh, vf-med, dom vf-f, mntr med, ang-sa, wl srt, mntr wh-lt gy arg calc mtx, mntr nod pyr, hd aggs, dom lse cln qtz grns, gd inf por, no fluor.

SANDSTONE: clr-trnsl, lt gy-wh, vf-med, dom f-med, sa-sr, wl srt, wh-lt gy arg calc mtx, mntr nod pyr, hd aggs, dom lse cln qtz grns, gd inf por, no fluor.

CLAYSTONE: med-dk bn, med gy-bn, lt-med bn i/p, com slty g/t arg
SILTSTONE i/p, mntr micmic, com carb lams & spks, tr nod pyr, frm-mod hd, blky-sbblky.

SANDSTONE: clr-trnsl, lt gy-wh, vf-med, om f-med, sa-sr, wl srt, wh-lt gy arg calc mtx, mntr nod pyr, mntr COAL lams, com hd aggs, dom lse cln qtz grns, gd inf por, no fluor.

CLAYSTONE: med lt gy, lt olv gy, lt bn-gy, lt bn i/p, mntr aren g/t arg
SILTSTONE, tr nod & dissem pyr, mntr micmic, mntr carb, frm-hd, sbblky-blky.

SANDSTONE: lt gy-lt bn, vf-crs, mntr v crs pred f-med, sr-sa, pr srt pred lse, com aggs, wk sil cmt, com-abdt arg mtx, v pr-pr inf & vis por, no fluor.

CLAYSTONE: lt-med gy-gy bn, aren, arg i/p, com carb inc, com diss pyr, mntr nod pyr, frm, sbblky.

SANDSTONE: lt gy-lt bn, vf-crs, mntr v crs, pred f-med, sr-sa, mod wl srt, pred lse, com aggs, wk sil cmt, arg-slty mtx, v pr-fr inf & vis por, fluor.

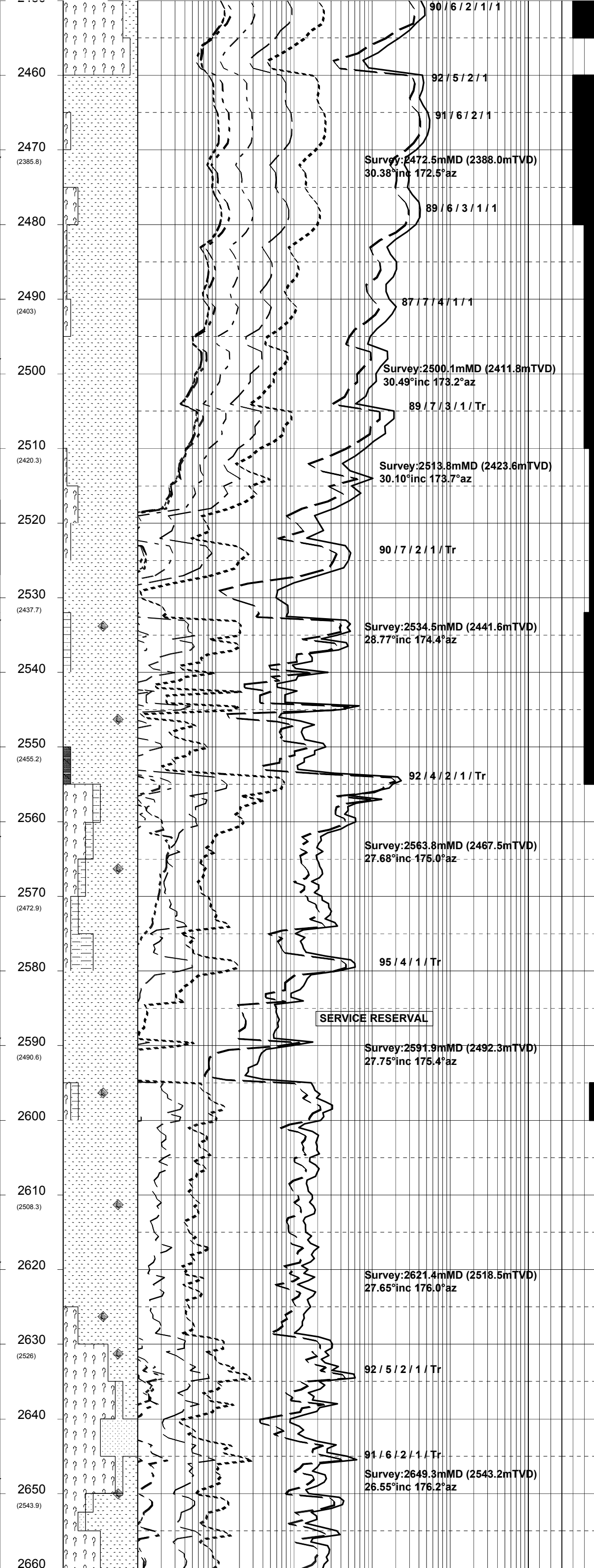
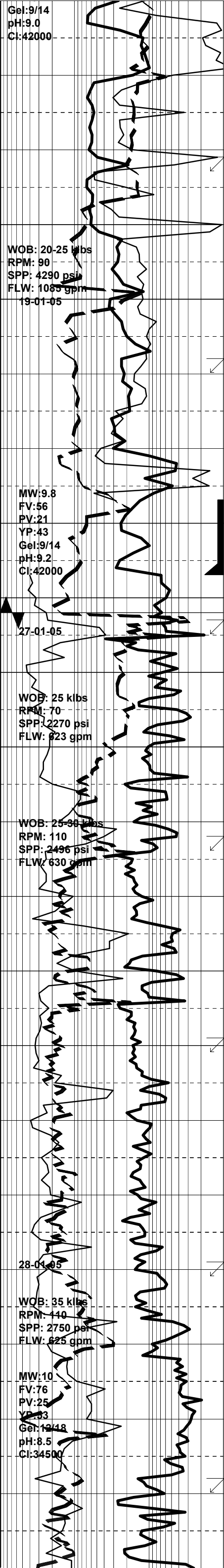
FLUOR 2400m-2415m: 5-10% dll yel, slw wht bl cut, dll pl yel thn rng res.

CARBONACEOUS CLAYSTONE: mod dk gy-gy bn, arg, slty, carb g/t COAL, com diss & nod pyr, frm-hd, sbblky-blky

COAL: dk gy bn-blk, dll-sbvit, brit-frm, sbblky, ang.

SANDSTONE: lt gy-lt bn, vf-med, mntr crs pred f-med, sr-sa, mod w srt, pred lse, loc aggs, wk sil cmt, arg-slty mtx, v pr-fr inf & vis por, fluor.

FLUOR 2450-2455m: 30-40% mod br



FLUOR 2450-2460m:50-60% mod brt
gn,inst cut,bl wh thn rng res.

SANDSTONE:lt gy-lt bn,f-crs,
pred med-crs,sr-ang,mod srt,pred
lse,com aggs,wk sil cmt,arg-slty
mtx,fr-gd inf & vis por,fluor.

FLUOR 2460-2480m:40-50% mod brt
wh yel,inst fusing cut,mod brt blsh
becoming whtsh bl,thn rng res,wk
petroliferous odour.

CLAYSTONE:lt-med gy-gy bn,aren,
arg i/p,com carb inc,com diss pyr,
mnr nod pyr,frm,sbblky.

SANDSTONE:lt gy-lt bn,f-crs,
pred f-med,sr-ang,mod srt,pred
lse,com aggs,wk sil cmt,tr wk calc
cmt,arg-slty,mtx,fr-gd inf & vis por,
fluor.

FLUOR 2480m-2532m:5- 10% mod brt
pl yel,inst cut,brt bl wh thn rng res.

WIRELINE LOGS RUN:
#1: HRLA-HNGS-LEHQT
#2: PEX150-LEHQT
#3: DSI-FMI-LEHQT
#4: MDT-GR-LEHQT
SANDSTONE:lt gy-lt bn,vf-crs pred
f-med,sa-ang,mod srt,pred lse,com
aggs,wk sil cmt,tr wk calc cmt,com
arg-slty mtx,g/t aren SILTSTONE i/p,
v pr-fr inf & vis por,tr fluor.
9 5/8" CASING SHOE @
2526.8mMBRT, 2434.8mTVD

BIT#7: 8.5", 216mm
HUGHES MX30D JETS:3x24
IN: 2532.0m OUT: 2688.0m
RUN: 156m HRS: 44.2
COND:6-6-WT-A-E-I-BT-HR
PIT @ 2535m : 14.06 ppg EMW

SANDSTONE:lt gy-lt bn,med-crs,mnr
f,pr srt,sr-ang,abdt sli calc
cmt,bec lse below 2564m,arg mtx,
tr glauc,nod pyr,tr-com carb spks &
flks.mod hd,fri i/p,com lse,pr vis
por,v mod inf por,fluor.
FLUOR 2532m-2555m: Tr-40% ptchy
fluor,mod brt pl yel/gld,slw bldg
cut, brt bl wh thn rng res.

COAL:blk,mnr dk bn bk,vit,frm-mod
hd,ang frac,sbblky-blky.

LOT @ 2557m : 16.6 ppg EMW

SILTSTONE:med-dk gy bn,arg,
aren i/p,carb inc & lam,mnr pyr,
frm-hd,sbblky.

CLAYSTONE:med gy-gy bn,carb i/p,
frm,sbblky.

SANDSTONE:lt gy,pred vf-f,com
med-crs,wl srt,sa-sr,lse,com
aggs,wk sil calc cmt,pred cln,loc
arg-slty mtx,com carb spks,tr pyr,
v pr-fr vis & inf por,no fluor.

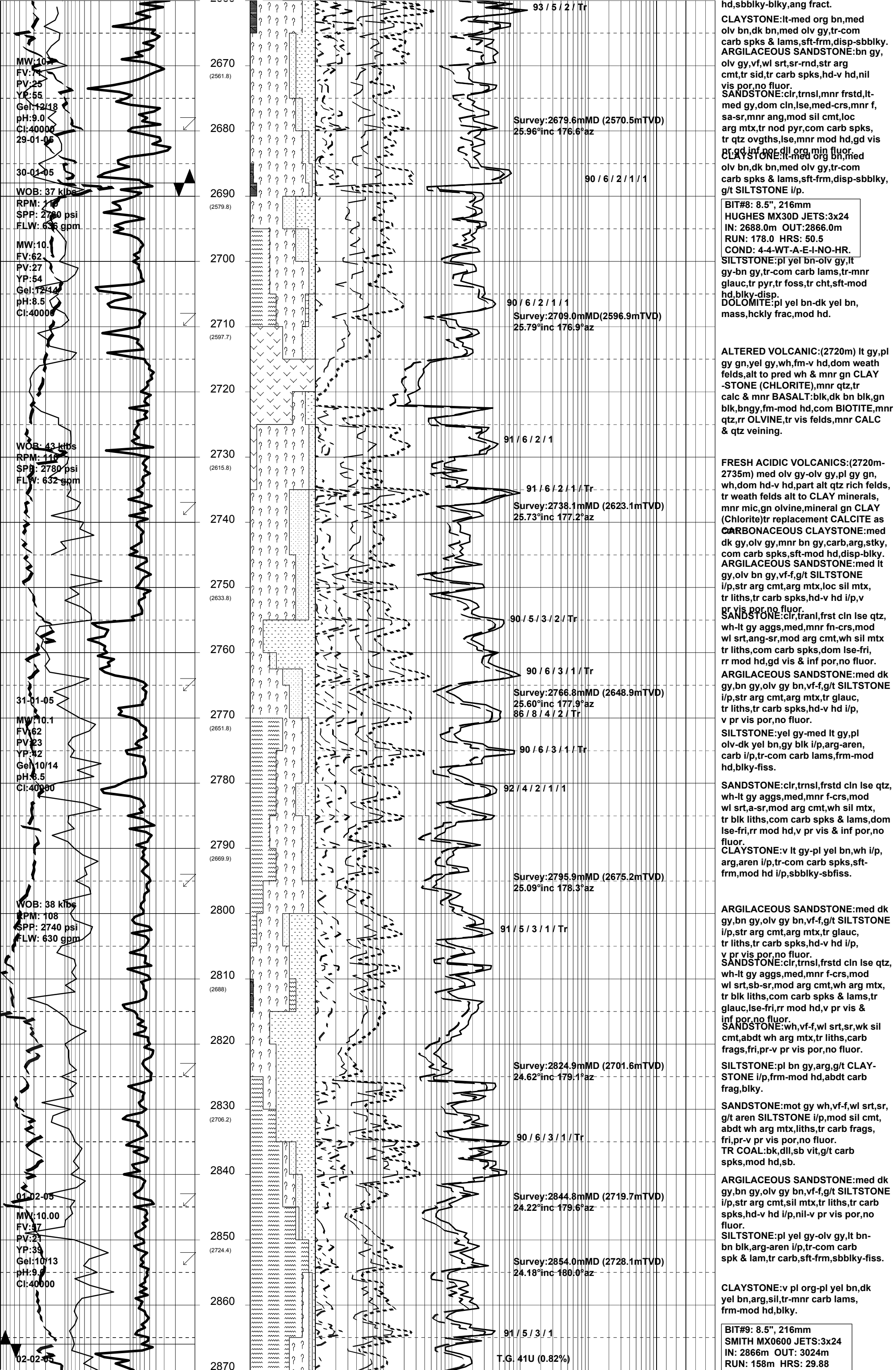
SANDSTONE:lt gy,pred med-crs,
f i/p,pr srt,sa-sr,lse wk sil cmt
pred cln,loc arg-slty mtx,com carb
spks,tr pyr,v pr-fr vis & inf por,
fluor.
FLUOR:2595-2600m,5% mod brt yel,
slw sol cut,thn rng res.

SANDSTONE:lt gy,pred med,mnr f-
crs, mod wl srt,sa-sr,wk sil cmt,
com sli calc wh kaol mtx,loc arg mtx,
com carb spks,rr glauc,tr nod pyr,v pr-fr
vis por,gd inf por,no fluor.

SANDSTONE:lt gy,med-v crs,mnr f,
pr srt,sa-sr,mod sil cmt,com sli
calc wh kaol mtx,loc arg mtx,com
carb spks,rr glauc,com nod pyr,
tr qtz ovghts,v pr vis & inf por,no
fluor.

CLAYSTONE:lt gy,med gy bn,olv gy,
olv blk,tr sid,tr pyr,sft-v hd i/p,
disp-sbblky.

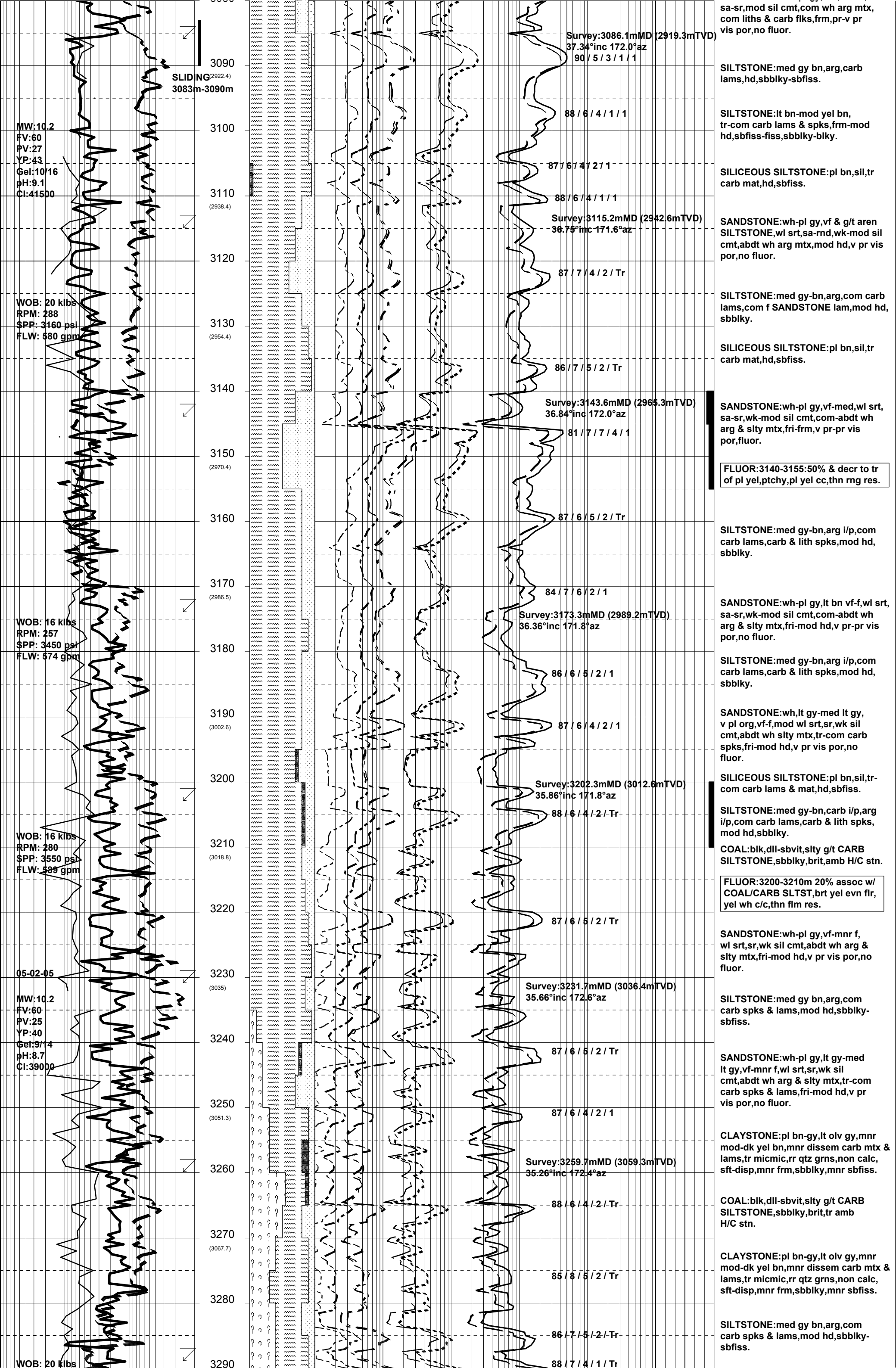
ARGILACEOUS SANDSTONE:bn gy,
olv gy,vf,wl srt,sr-rnd,str arg cmt,
tr sid,tr carb spks,hd-v hd,nil vis
por,no fluor.
SANDSTONE:clr,trnsI,lt gy,dom cln
lse,med-crs,mnr f,pr srt,sa-sr,mnr
ang,mod sil cmt,wh kaol mtx,loc
aren mtx,com nod pyr,tr glauc,com
carb spks & flks,lse,mod hd i/p,mod
vis por,gd inf por,no fluor.
COAL:blk,mnr dk bn bk,vit,frm-mod



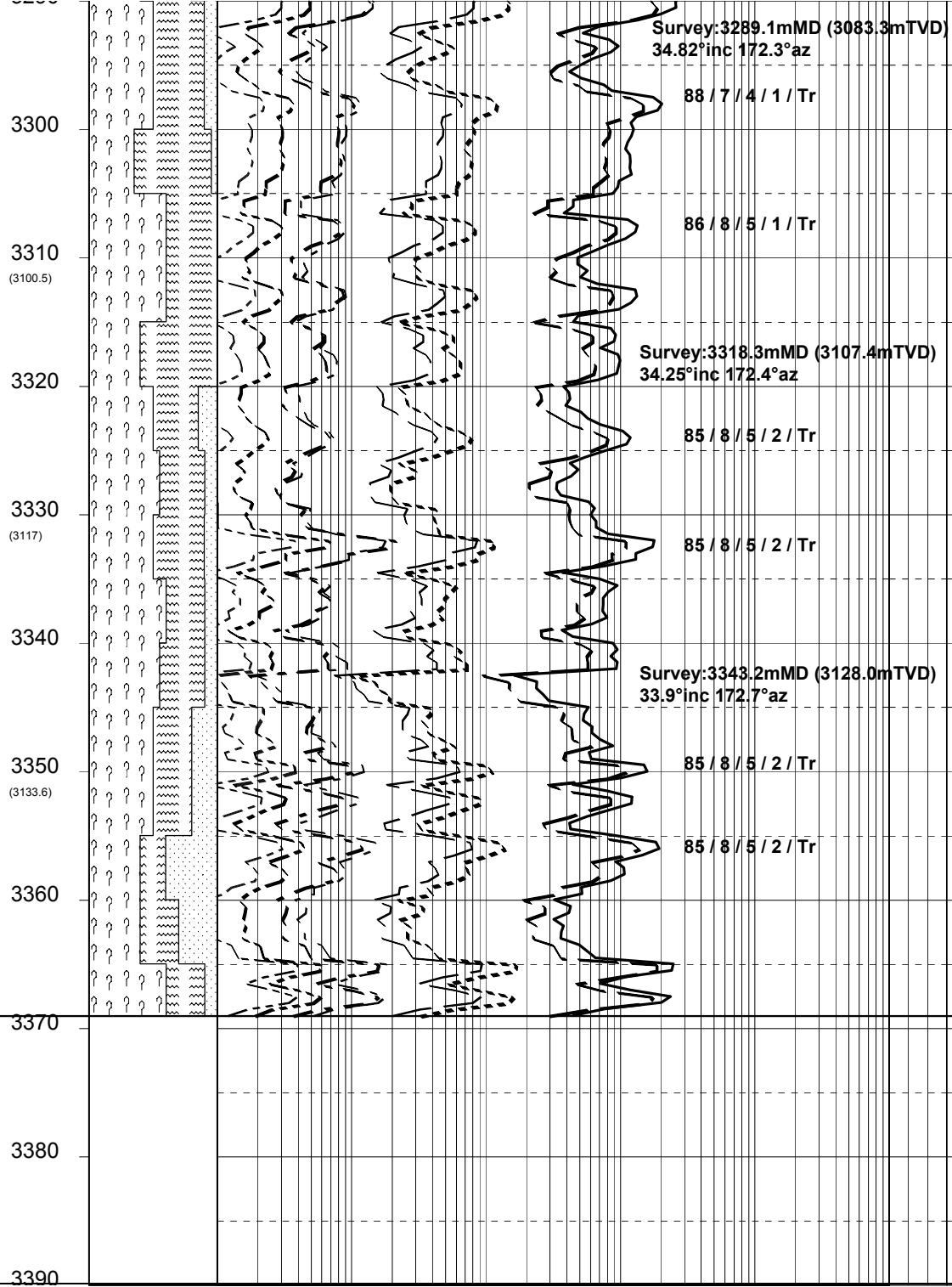
NOB: 15 klbs
RPM: 290
SPP: 3330 psi
FLW: 588 gpi

90 / 5 / 3 / 1 / 1

SANDSTONE:wh-pl gy,vf-f,wl srt.



WOB: 22 klbs
RPM: 289
SPP: 3820 psi
FLW: 600 gpm



WEST MOONFISH-1 reached TD 3369m MBRT 3149m TVDBRT 3110m TVDSS @ 18:45 on 5 February 2005.
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WIRELINE LOGS RUN:
#1: DSI-HNGS-MSFL-LEHQ
#2: MDT-GR-LEHQ
#3: VI-VSP
#4: CST-GR

ENCLOSURE 2

PRESSURE LOG



OVERPRESSURE



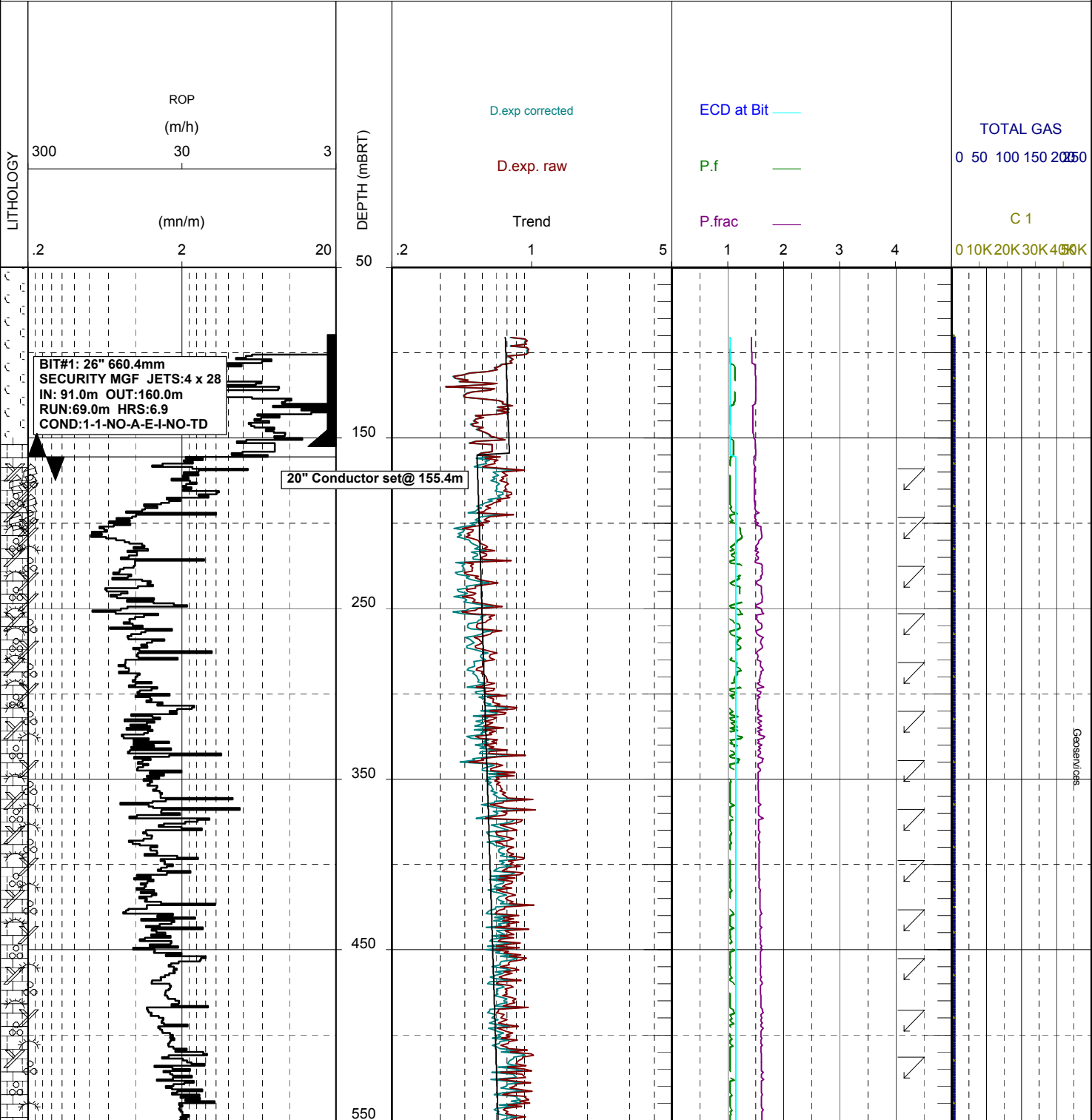
FROM :(m) 50 TO :(m) 3450 SCALE : 1/ 1000

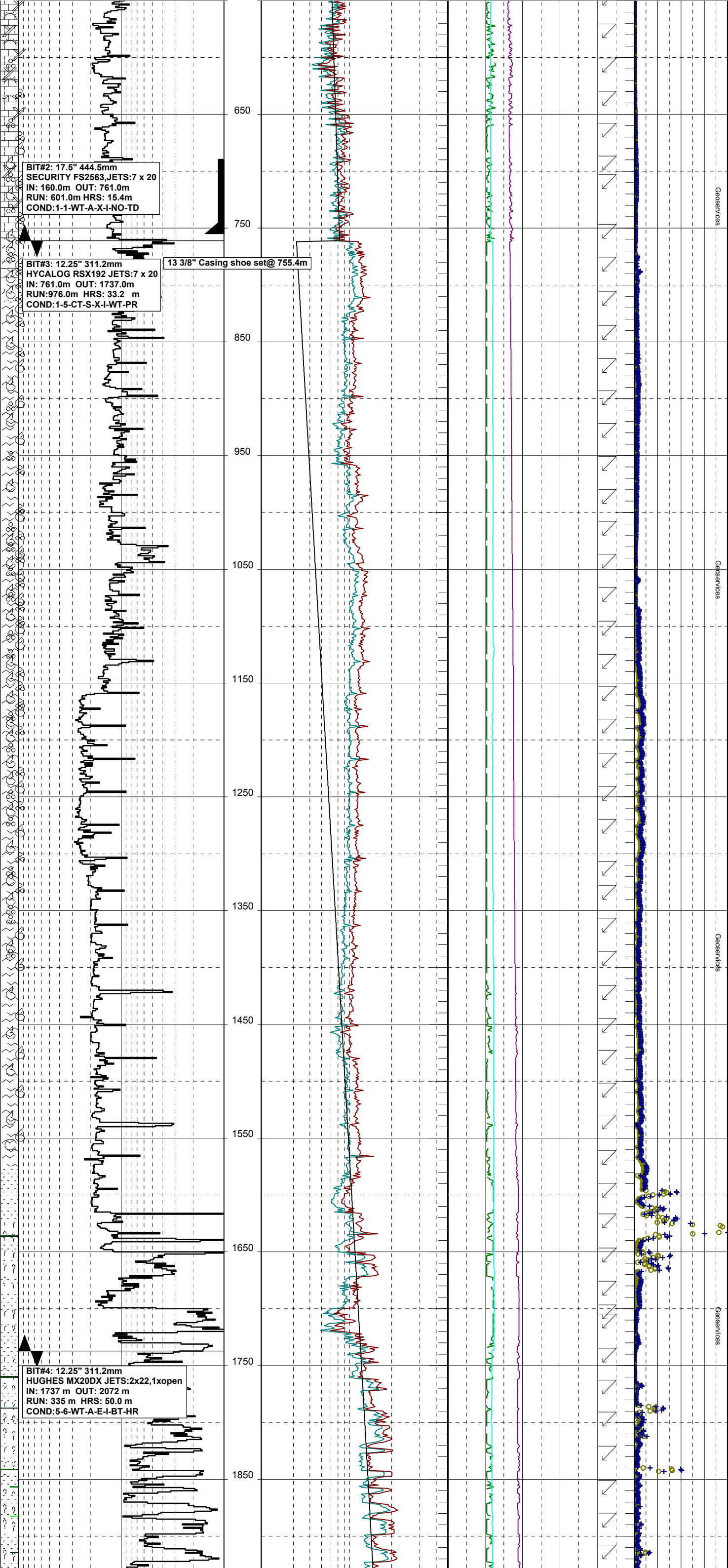
Well name : WEST MOONFISH 1 Location : BASS STRAIT
Company : ESSO AUST LTD Country : AUSTRALIA

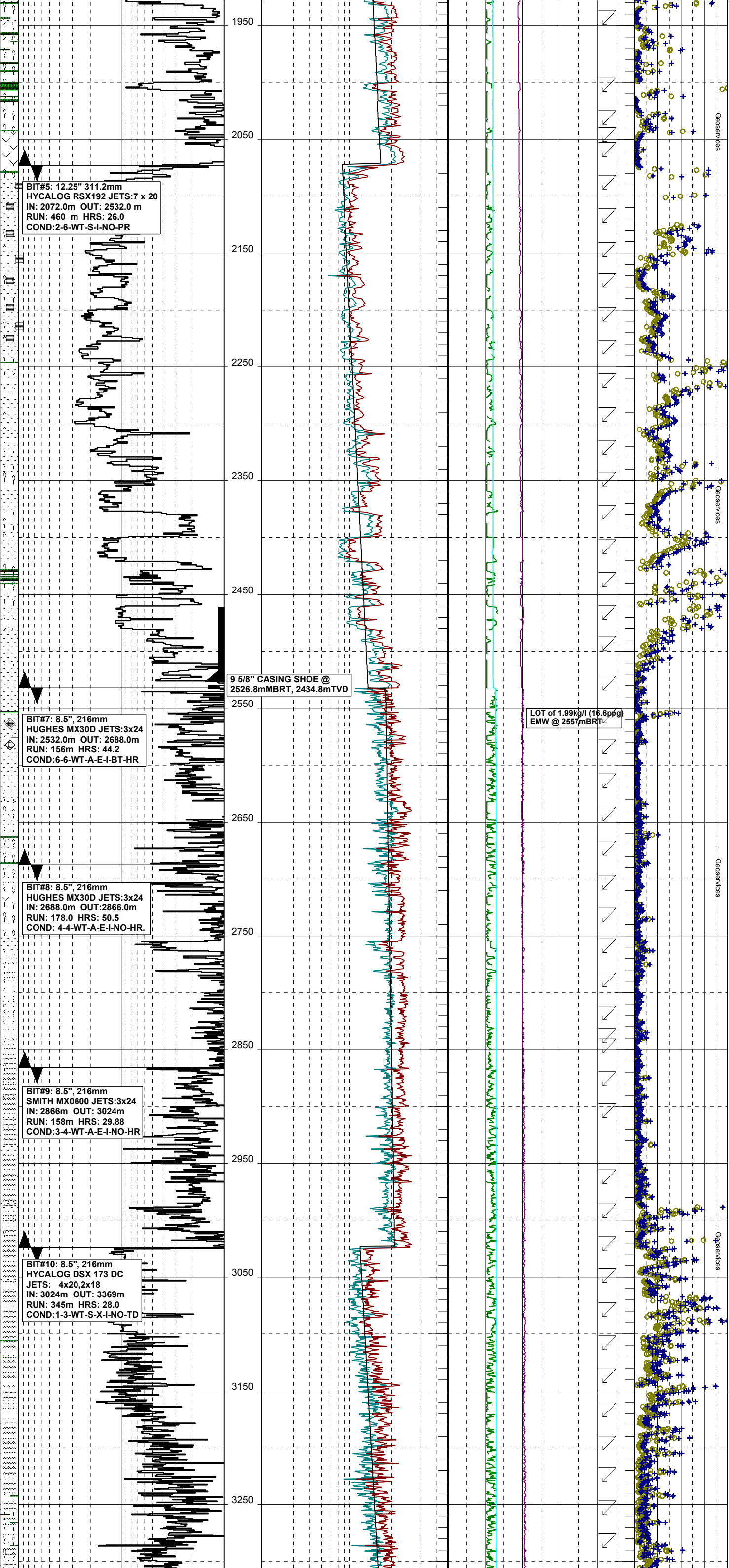
Refer. depth : Rotary Table Final TD : 3369.0m
Water depth : 45.7m Final TVD : 3149.0m

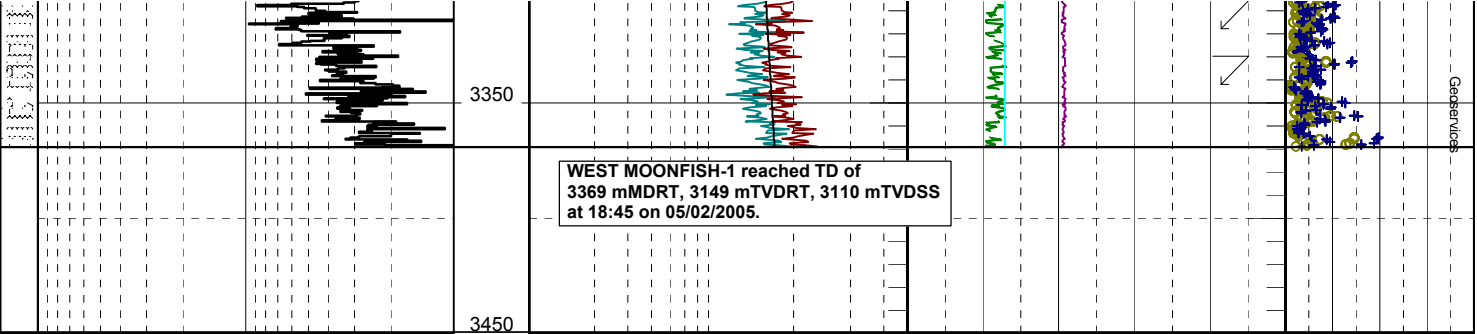
Comput. method : Daines
Hydro. Gradient : 8.5799ppg

Generated by ALX Package









ENCLOSURE 3

DRILLING LOG



DRILLING LOG



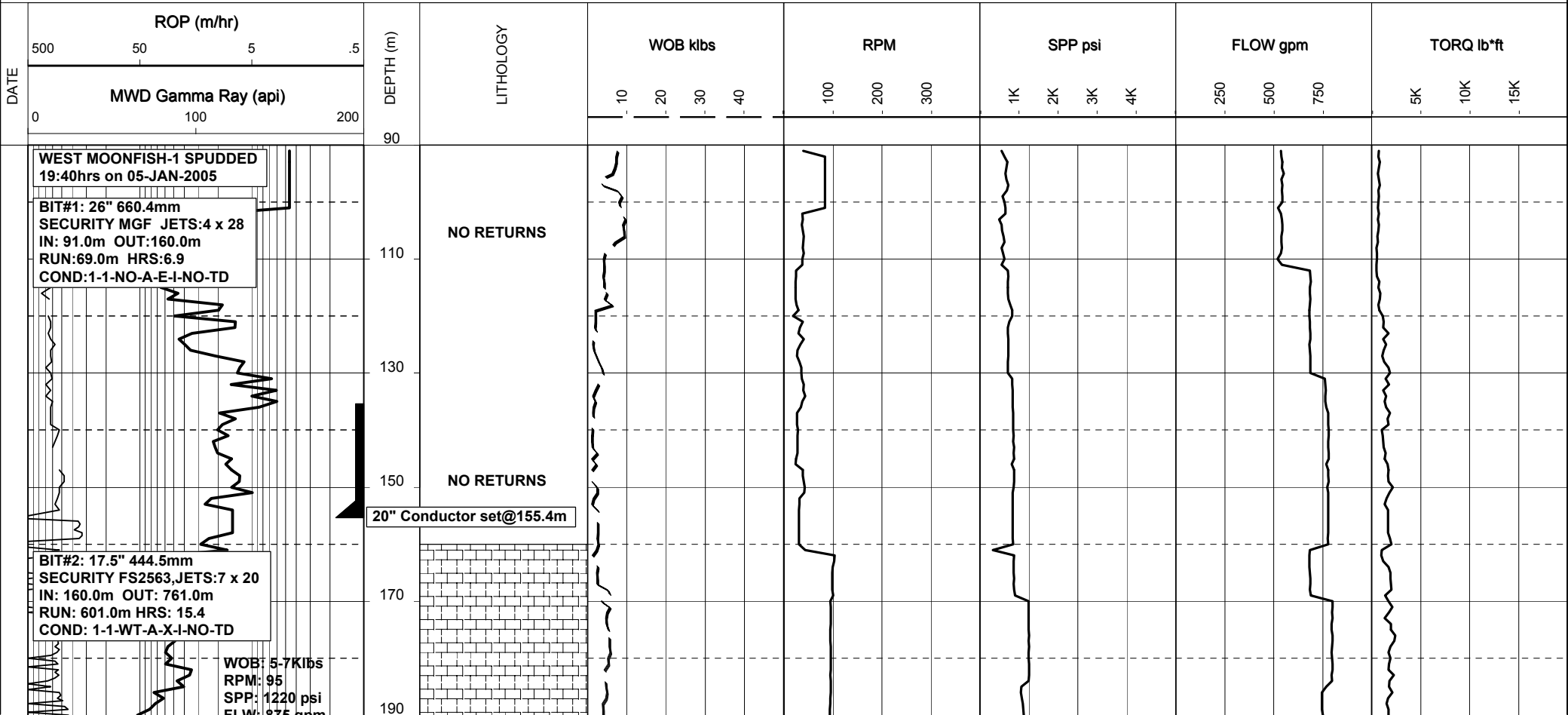
FROM :(mt) 90 TO :(mt) 3390 SCALE : 1/ 1000

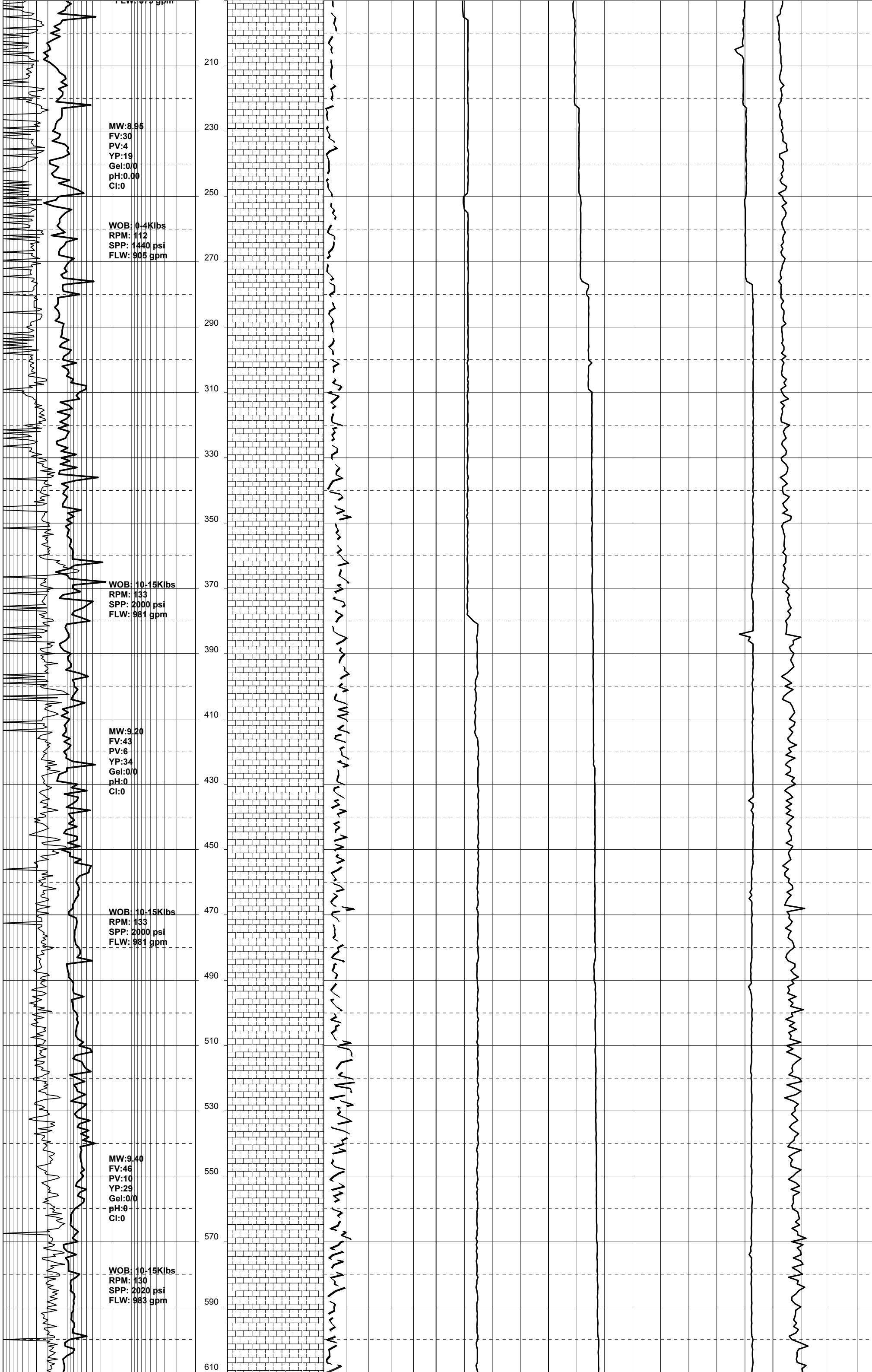
Well Name : WEST MOONFISH-1
Company : ESSO AUSTRALIA

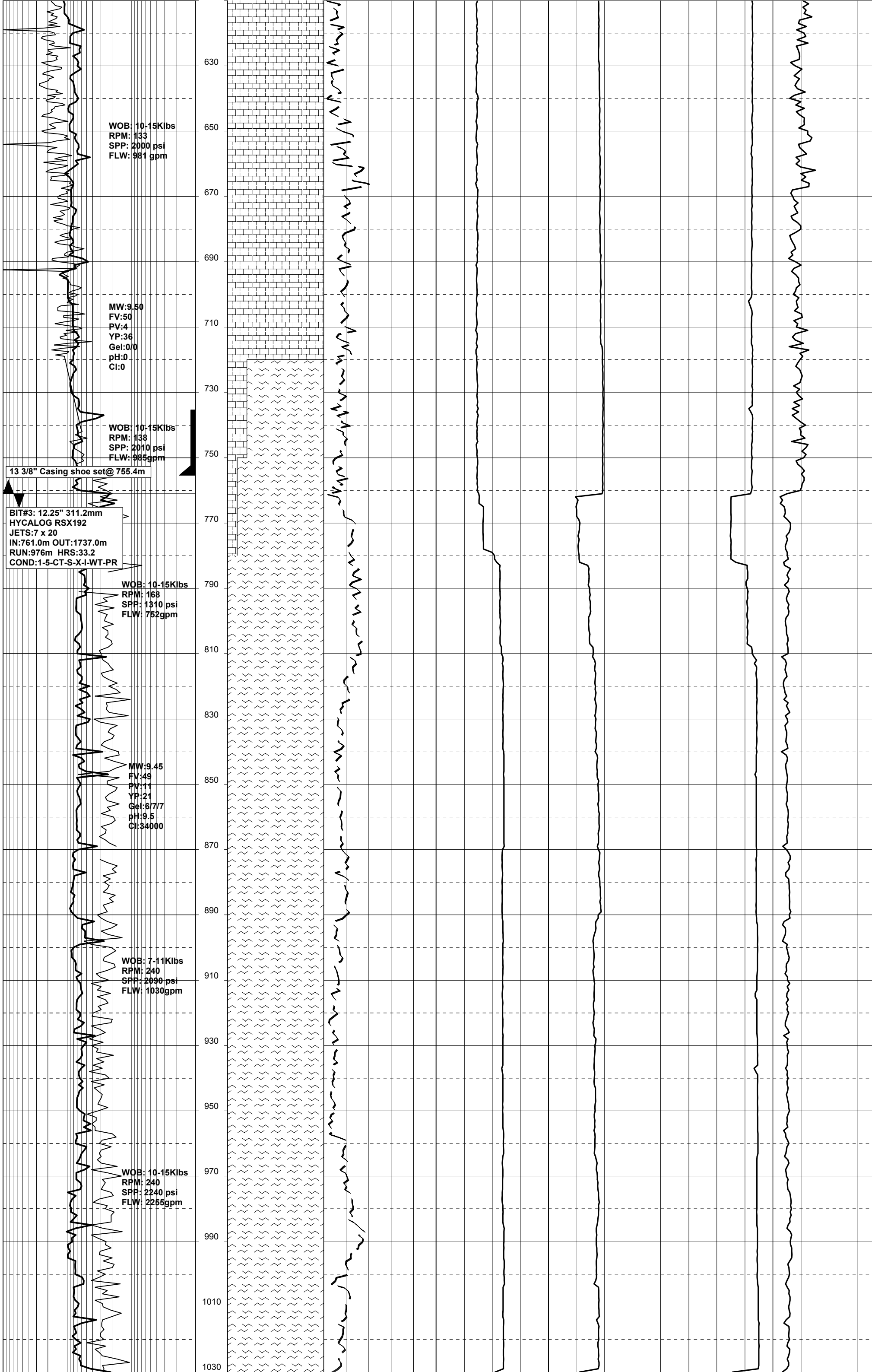
Country : AUSTRALIA
Final TD : 3369.0m
Final TVD : 3149.0m

RT-MSL : 39.24m
RT-SEABED : 91.0m

Generated by ALS Package







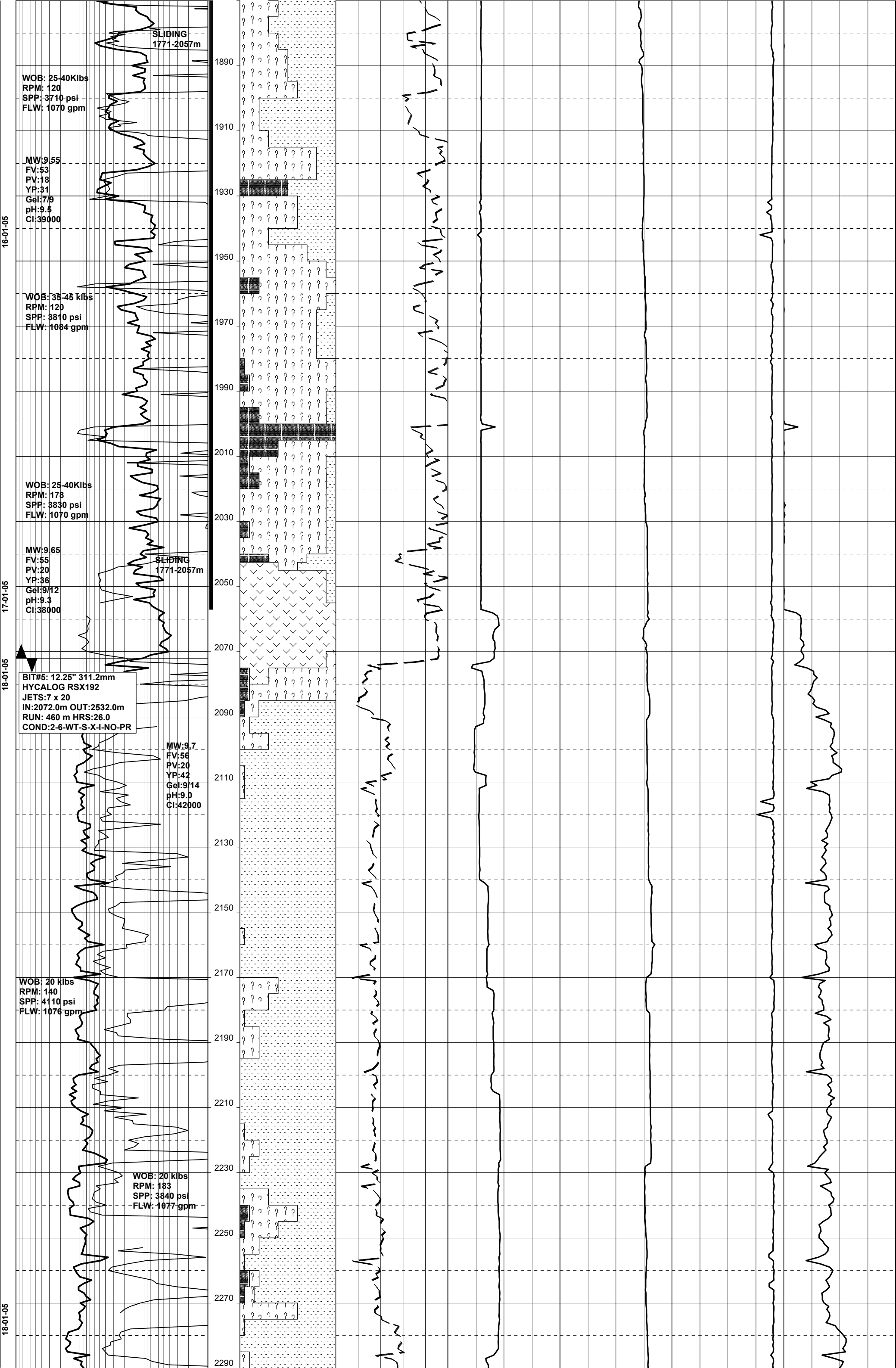
MW:9.45
FV:49
PV:11
YP:21
Gel:6/7/7
pH:9.5
Cl:34000

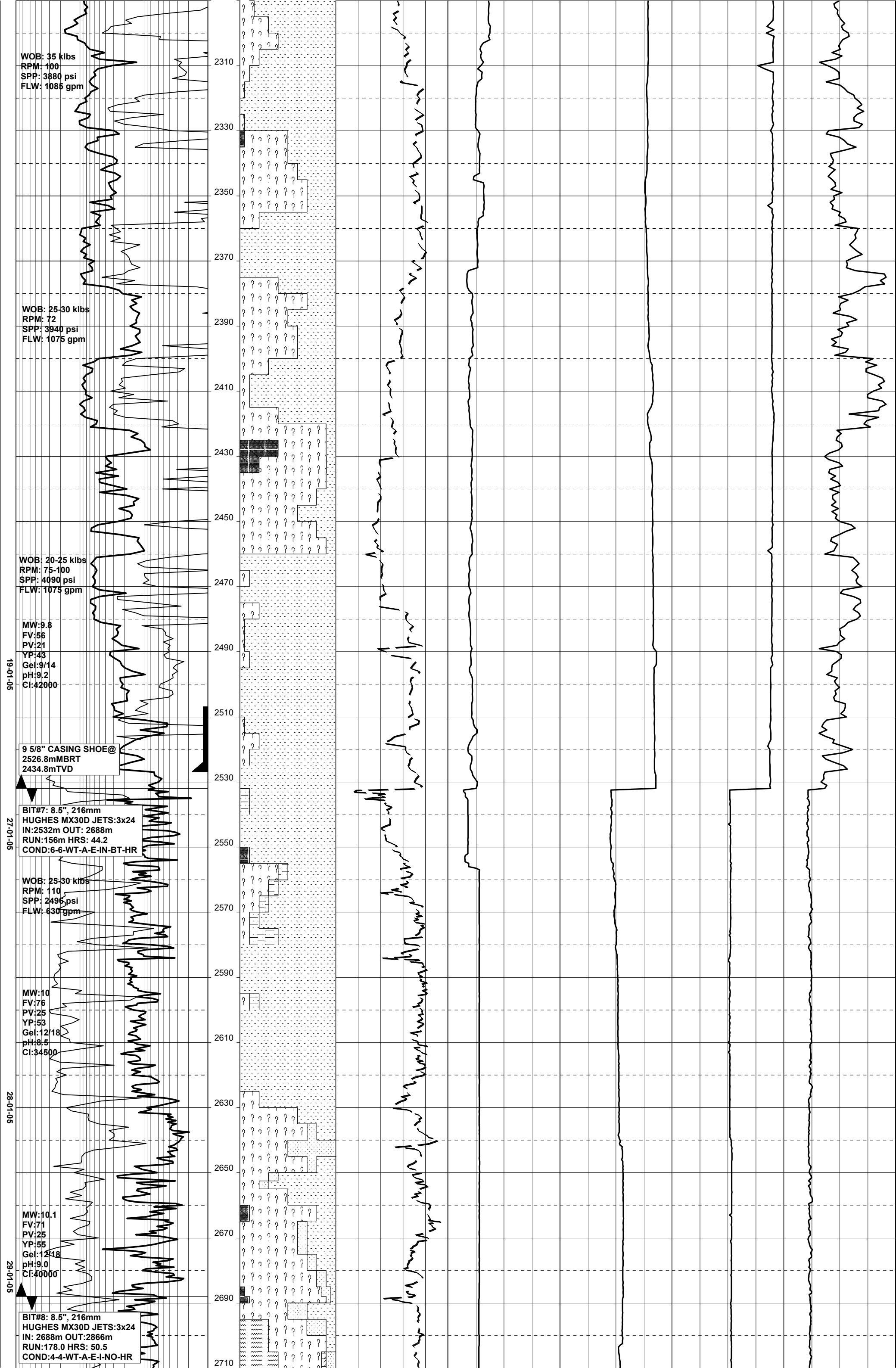
WOB: 10-15Klbs
RPM: 235
SPP: 2350 psi
FLW: 1015gpm

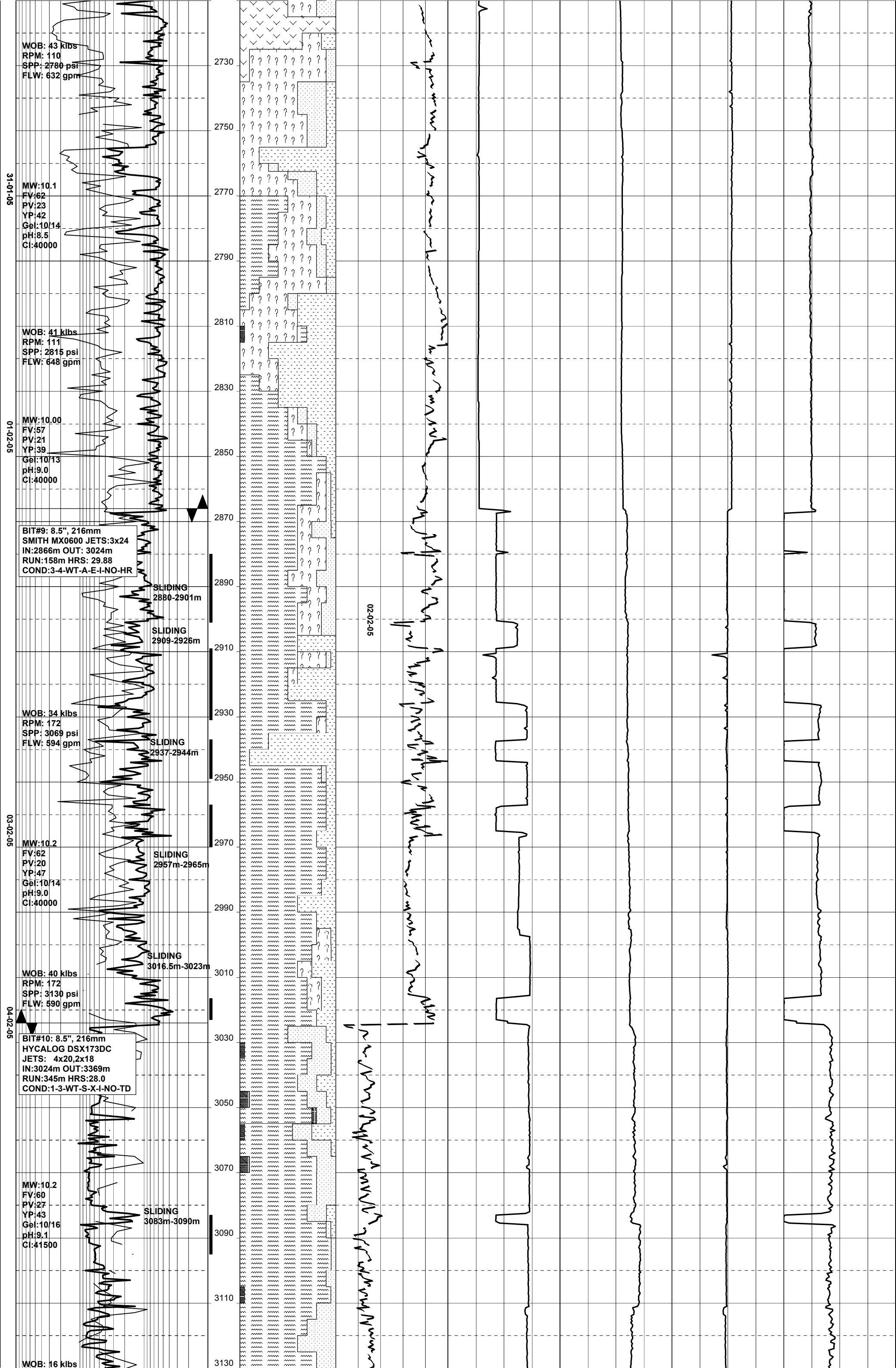
WOB: 15-20Klbs
RPM: 234
SPP: 2740 psi
FLW: 1016gpm

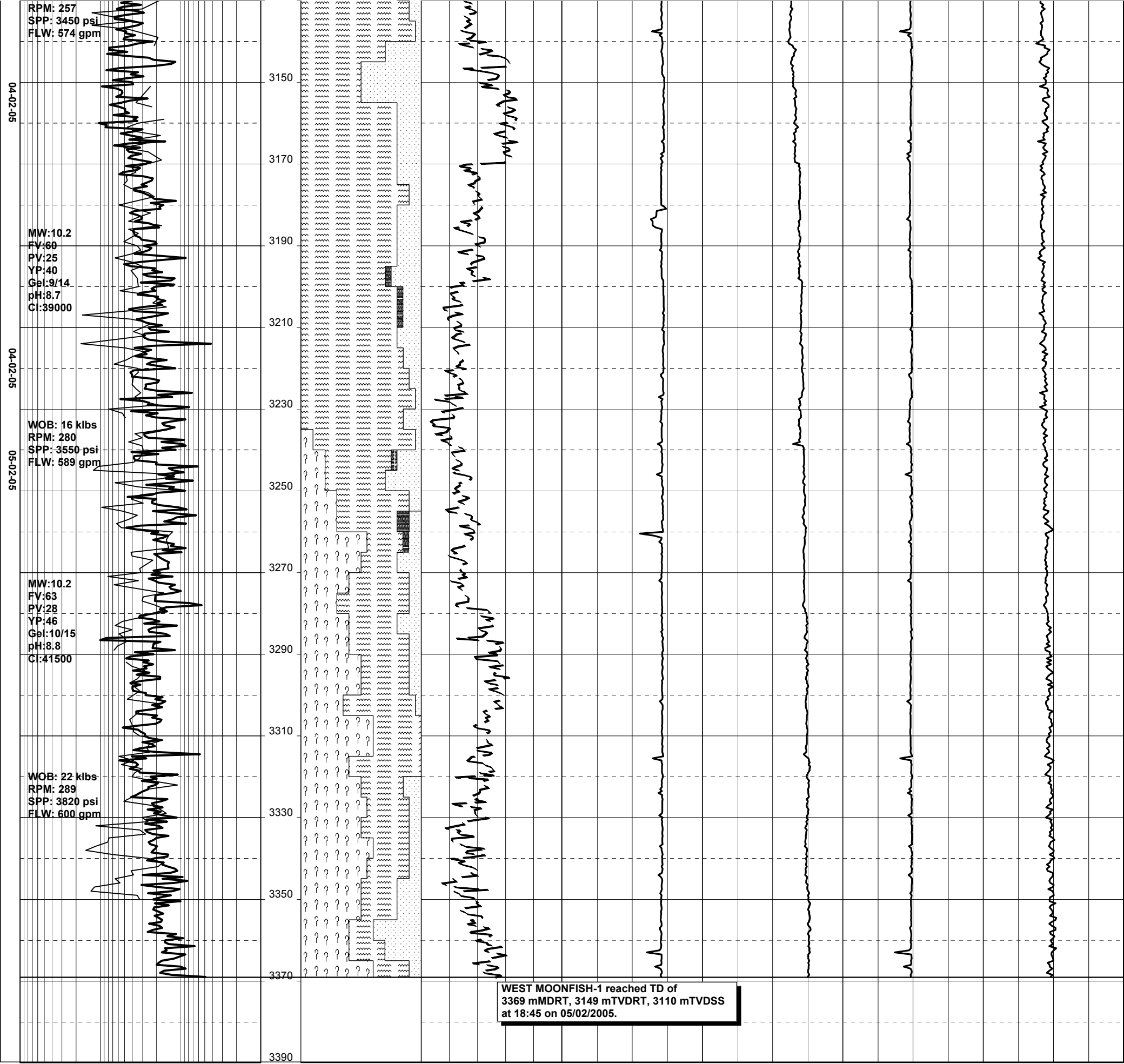
MW:9.50
FV:66
PV:19
YP:32
Gel:8/9/10
pH:8.9
Cl:35000











ENCLOSURE 4

GAS RATIO LOG

