

# **WELL COMPLETION REPORT**

**MARLIN A-10A & A-10AST1**

**GIPPSLAND BASIN, VICTORIA**

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March 2005

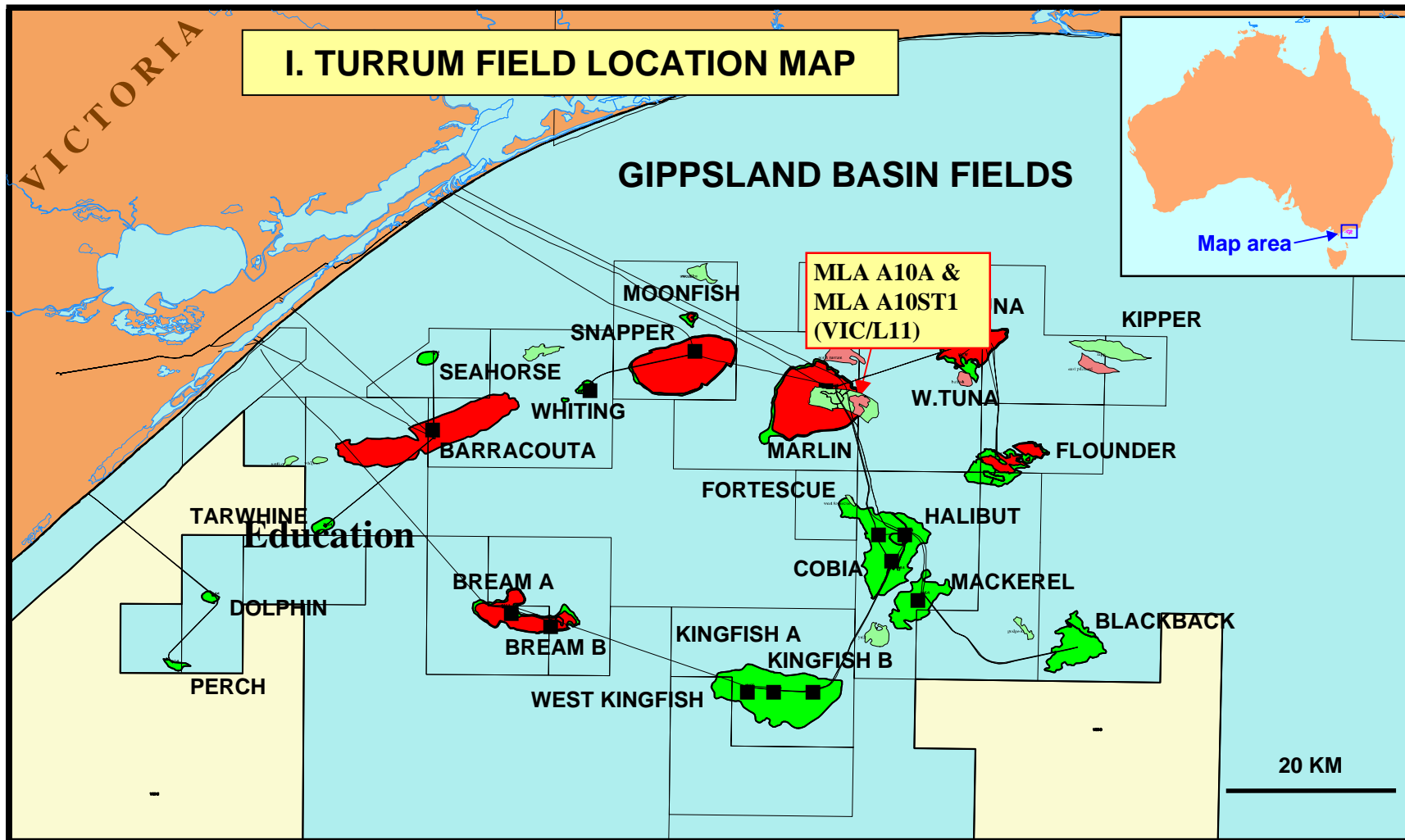
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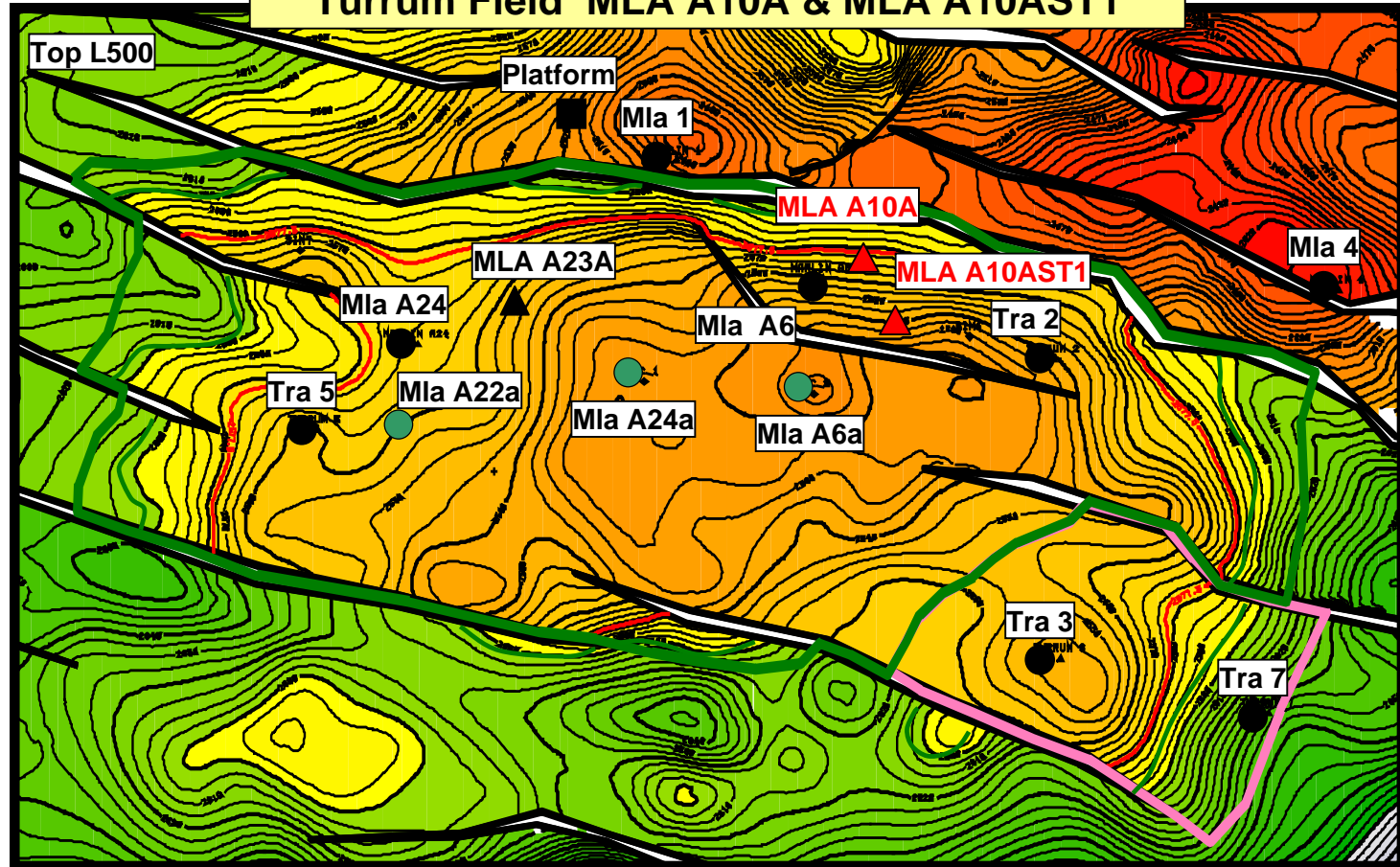
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# Top L500 Depth Structure Map

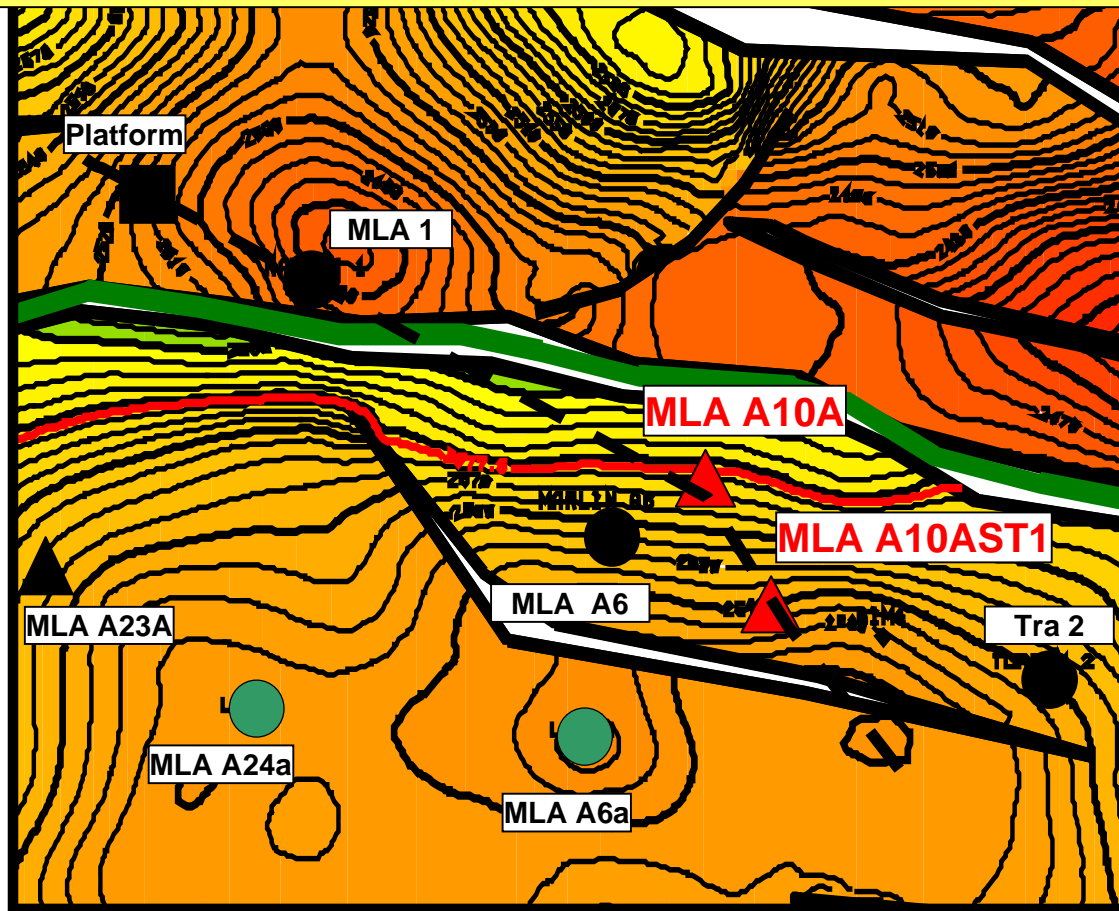
## II. WELL DATA RECORD: Location Map Turrum Field MLA A10A & MLA A10AST1



Map updated after MLA A6A & MLA A24A & MLA A22A

# Top L500 Depth Structure Map

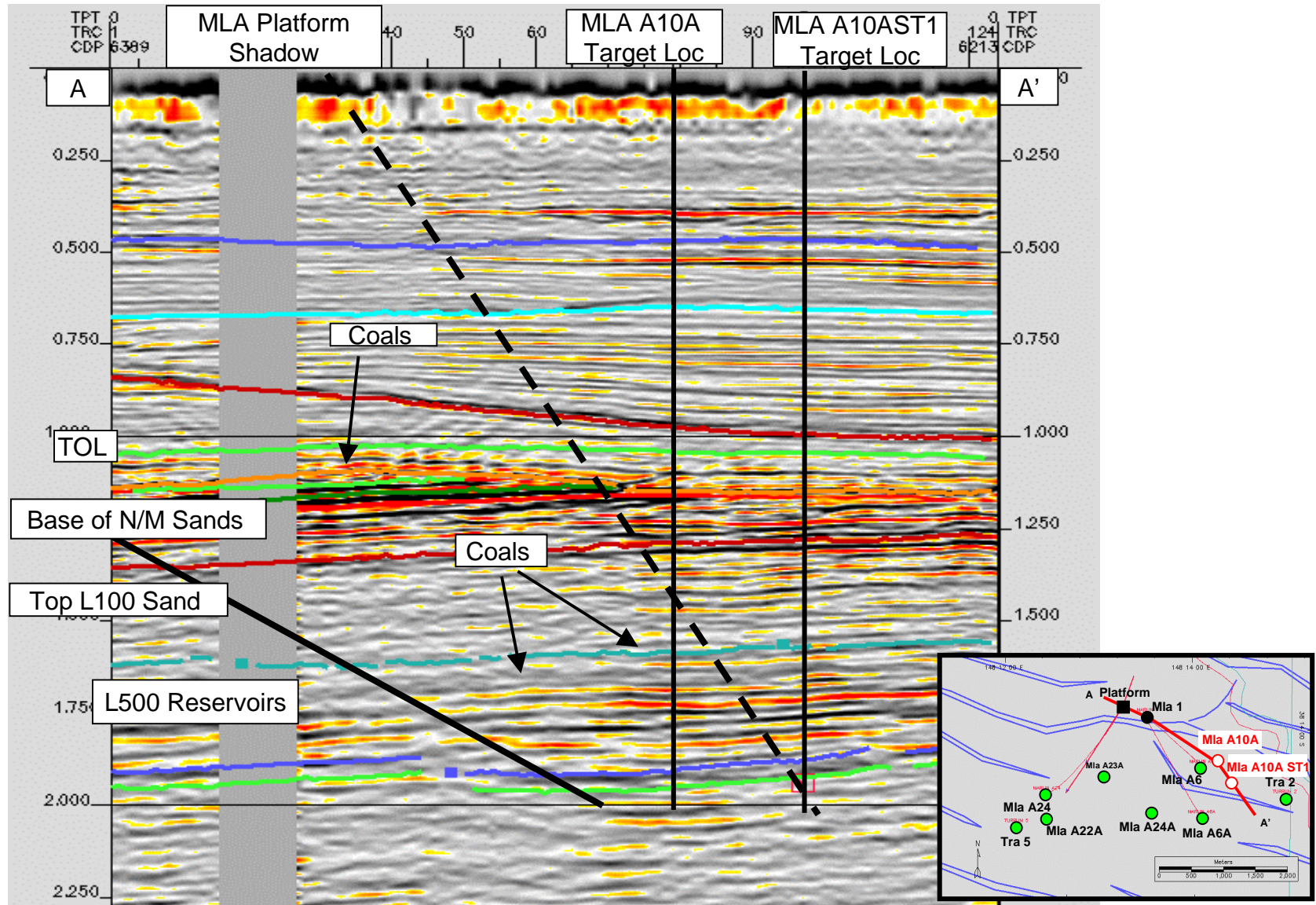
A10A & A10AST1 (L500 Depth Map Zoom-in with seismic well path)



- |  |   |  |
|--|---|--|
|  GOC 2577.5 m |  Marlin Platform                 |  2004 Drilled Wells |
|  OWC 2600 m   |  P&A'd / Appraisal / Expl. Wells |  Planned Wells      |

Map updated after MLA A6A & MLA A24A

# Seismic Traverse along Wellpath



**Seismic Line (MLA Platform - MLA A10A & MLA A10AST1 well path)**

## II. WELL DATA RECORD (cont.)

### LOCATION

<b>Field</b>	<b>Turrum/Marlin</b>	<b>Conductor #23 Surface Coordinates</b>	
<b>Well Name</b>	<b>A10A&amp; A10A ST1</b> (Loc 4)	(GDA94 ) X	606,868.95mE
<b>Conductor Number</b>	Slot 23	(MGA94) Y	5,767,920.06mN
<b>State</b>	Victoria	Latitude	38°13'49.320"S
<b>Permit/Licence</b>	Vic/L11	Longitude	148°13'15.712"E
<b>Geological Basin</b>	Gippsland	<b>Perforations</b> (driller)	N/A
<b>Top of Latrobe</b>	1731.4m MDRT	<b>(A-10A)</b>	Non-Well plugged back and Sidetracked.
<b>(A-10A)</b>	1414.2m TVDRT	<b>(A-10AST1)</b>	To be completed in January 2005
MGA94 X	607513.51m E		
MGA94 Y	5767362.65m N		
<b>Top of L500</b>	3181.5m MDRT		
<b>(A10-A)</b>	2621.4m TVDRT		
MGA94 X	608161.99 m E	<b>Datum</b>	GDA94 (GRS80)
MGA94 Y	5767100.82 m N	<b>Projection</b>	MGA94/UTM Zone 55 (S)
<b>Top of L500</b>	3344.0m MDRT		
<b>(A10-AST1)</b>	2588.4m TVDRT		
MGA94 X	608434.48 m E		
MGA94 Y	5766755.27 m N		

### ELEVATIONS & DEPTHS

<b>Water Depth</b>	59.0m
<b>Top Wellhead to MSL</b>	16.259 m
<b>Main Deck Rel to MSL</b>	14.48 m
<b>RT Relative to MSL</b>	27.91m
<b>Average Well Angle</b>	35.3°
<b>Total Depth</b>	3248.0m MDRT
<b>(A10A)</b>	2687.0m TVDRT
<b>Total Depth</b>	3491.0m MDRT
<b>(A10AST1)</b>	2713.4m TVDRT
<b>Plug Back Depth</b>	2471.0m MDRT

### DATES

<b>Skid Rig</b>	02/08/2004
<b>Spudded Well(A10-A)</b>	04/08/2004
<b>Sidetracked (A-10AST1)</b>	03/09/2004
<b>Development Rig Days</b>	55.06
<b>NPT Days</b>	8.91
<b>Rig Released</b>	26/09/04
<b>I.P. Established</b>	To be completed Jan 2005

### MISCELLANEOUS

<b>Operator</b>	Esso Australia Pty Ltd	<b>Contractor</b>	International Sea Drilling Ltd
<b>Esso Interest</b>	50%	<b>Rig Name</b>	Nabors Rig 453
<b>Permittee/Licensee</b>	Esso/BHPP	<b>Equipment Type</b>	Platform
<b>Other Interest</b>	50% J.V. Interest	<b>Completion Type</b>	Not completed
<b>Overriding Royalty</b>	2.5%	<b>Completion Size</b>	Not completed
<b>Drilling AFE No.</b>	L0531E206		

### WELL CLASSIFICATION

<b>Before Drilling</b>	Oil Development	<b>After Drilling</b>	Cased and Abandoned
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## II. WELL DATA RECORD (cont.)

### CASING RECORD

Marlin A-10A

Type	Size (Inches)	Weight (lb/ft)	Grade	Thread	Depth (mMDRT)
Conductor	20	133	K-55	BTC	163.0
Surface	13 <sup>3</sup> / <sub>8</sub>	54.5	J-55	BTC	642.2

Marlin A-10AST1

Type	Size (Inches)	Weight (lb/ft)	Grade	Thread	Depth (mMDRT)
Conductor	20	133	K-55	BTC	163.0
Surface	13 <sup>3</sup> / <sub>8</sub>	54.5	J-55	BTC	642.2
Production	7	26	L-80	LTC	3485.0

## II. WELL DATA RECORD (cont.)

### CEMENTING RECORD

Marlin A-10A

Casing Details	Cement Type	Dry Cement Volume (sx)	Cement Additives	Mix Water (bbls)	Slurry Volume (bbls)	Slurry Density (ppg)	Cement To / From (mMDRT)	Casing Pressure Test (psi)
Plug Back	HTB	655	HALAD 413L 20 gal / 10 bbl Gascon 50 gal / 10 bbl NF-5 0.25 gal / 10 bbl CFR-3L 2 gal / 10 bbl SCR-100L 5 gal / 10 bbl	163	216	13.0	2471 m 3248 m	
Kick off Plug	HTB	254	HALAD 413L 10 gal / 10 bbl NF-6 0.25 gal / 10 bbl CFR-3L 15 gal / 10 bbl SCR-100L 1 gal / 10 bbl	32.8	46.47	16.5	2328 m 2471 m	

Marlin A-10AST1

Casing Details	Cement Type	Dry Cement Volume (sx)	Cement Additives	Mix Water (bbls)	Slurry Volume (bbls)	Slurry Density (ppg)	Cement To / From (mMDRT)	Casing Pressure Test (psi)
7"	HTB	344	HALAD413L 30 gal / 10 bbl GASCON469 60 gal / 10 bbl 15 gal / 10 bbl CFR-3L 2 gal / 10 bbl 5 gal / 10 bbl SCR-100L 7 gal / 10 bbl 1 gal / 10 bbl	100	114	L:13.0	1630 m 3485 m	3000 psi
		516	NF-6 0.25 gal / 10 bbl	90	116.5	T:15.0		

## II. WELL DATA RECORD (cont.)

### MLA A10A & A10AST1 - Final Well Report

#### GENERAL

Platform:	Marlin	Rig:	453	Reservoir:	L500 Sands
Well:	A10A/A10A ST1	Well Slot:	#23	RT-MSL (Rig453)	27.91m
Drilling Complexity Index	3.6	Completion Complexity Index	NA		

DEPTH		PERFORMANCE		MUD	
m MDRT	3,248.00	20" Cond. Hole	N/A	Max Wt (ppg)	9.8
m TVDRT	2,686.90	12-1/4" Surf. Hole	N/A	Type (Surf. Hole)	N/A
Vert. Section (m)	1,539.67	8-1/2" Prod. Hole	221 m/day	Type (Inter. Hole)	N/A
INCLINATION		6" Liner Hole	N/A	Type (Prod. Hole)	KCI/PHPA/Poly/Glycol
Max (deg) / Ave (deg)	45.5 / 35.3 (Tang)	* time to drill interval, incl's Connections & NPT.		Type (Liner Hole)	N/A

Comments: New hole drilled: 642m to 3,248mMDRT (2,622m drilled).

#### SIDETRACK WELL

DEPTH		PERFORMANCE		MUD	
m MDRT	3,491.00	20" Cond. Hole	N/A	Max Wt (ppg)	10.1
m TVDRT	2,713.36	12-1/4" Surf. Hole	N/A	Type (Surf. Hole)	N/A
Vert. Section (m)	2,013.68	8-1/2" Prod. Hole	178 m/day	Type (Inter. Hole)	N/A
INCLINATION		6" Liner Hole	N/A	Type (Prod. Hole)	KCI/PHPA/Poly/Glycol
Max (deg) / Ave (deg)	45.1 / 41.2 (Tang)	* time to drill interval, incl's Connections & NPT.		Type (Liner Hole)	N/A

Comments: New sidetrack hole drilled: 2,328m to 3,491mMDRT (1,163m drilled).

#### TIME ANALYSIS

Start Date:	02/08/2004, 1200hrs	Finish Date:	26/09/2004, 1330hrs		
Target Days (P10):	36.5	Total Days:	55.06	% Under Target:	56.6% (over)
AFE Days (P50):	40.5	NPT Days:	8.91	% of Total Days:	16.2%
Supplementary AFE Days (P50):	N/A				

#### COSTS (based on projected)

AFE No.:	L0531E206	Revisions:	--	\$ per m	A \$2.90k / metre (new hole)
\$ per day:	A\$ 199 k/day	\$ per day (excl. T + L) * Equipment, LWD & Reeves	A\$ 175 k/day		A\$ 2.47 k / metre* * based on TD not new hole

	Equipment	Materials	Contracts	Allocations	Contingency	Total
AFE (Original)	318,000	1,193,000	5,500,000	1,784,000	405,000	A\$9,200,000
AFE (Supplement)	318,000	1,276,000	7,105,000	2,108,000	493,000	A\$11,300,000
Projected	247,000	1,177,000	6,968,000	2,029,000	553,000	A\$10,974,000

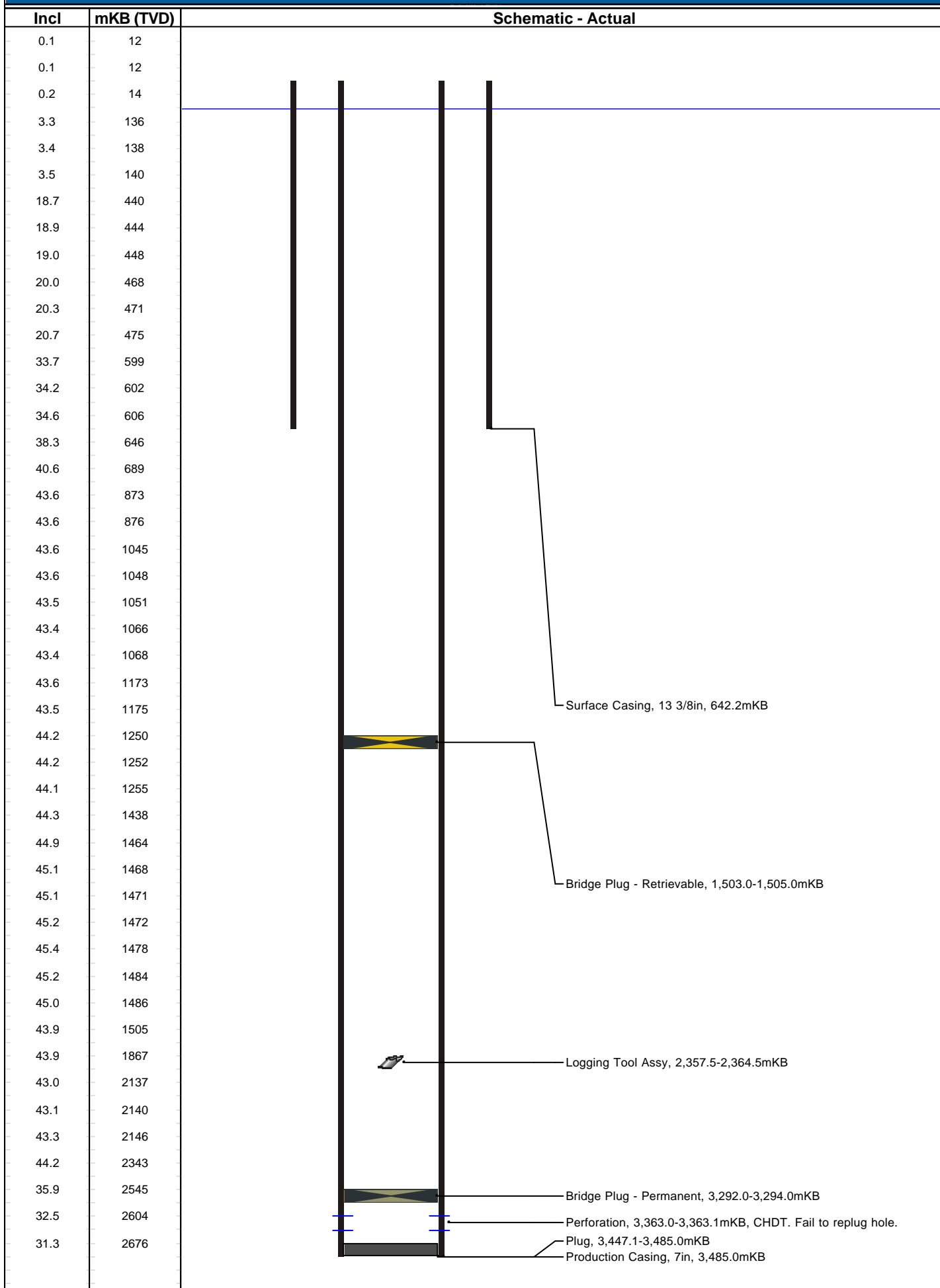
#### CASING (all depths herein are based on Rig453 elevations: RT-MSL=27.91m)

	Size / Weight / Grade / Thread	m MDRT	m TVDRT	PIT (ppg)
Conductor Casing *	20"	163	163	N/A
Surface Casing *	13-3/8", 54.5ppf/68.0ppf, J55/K55, BTC	642.2	618	14.0 PIT
Intermediate Casing	N/A	N/A	N/A	N/A
Prod Casing	7", 26.0ppf, L80, LTC	3,485	2,713	N/A
Prod Liner	N/A	N/A	N/A	N/A

Comments: \* Pre-existing casing strings.

COMPLETION Comments: Well to be completed in January 2005 with Rig 22.

# Marlin A10AST1: Existing Schematic





### III. SAMPLES

#### **CUTTINGS Marlin A-10A**

The cuttings sampling programme for Marlin A-10A are detailed in the following table:

<b>Interval</b>	<b>Formation</b>	<b>Sampling Details</b>
Surface Casing to 150m above Top of Latrobe (TOL) 650 m - 1560 m	Gippsland Limestone & Lakes Entrance	30 m sampling interval  Spot samples
150 m above TOL to the TOL  1560 m – 1760 m	Lakes Entrance Formation	10 m sampling interval  Three sets of washed and oven dried cuttings.
TOL to Total Depth (TD)  1760 m – 3248 m (TD)	Latrobe Group	5 m sampling interval  Three sets of washed and oven dried cuttings.

Detailed cuttings descriptions for the interval 690mMDRT to 3248m (TD) are contained in Appendix 3a.

#### **CUTTINGS Marlin A-10AST1**

The cuttings sampling programme for Marlin A10AST1 are detailed in the following table:

<b>Interval</b>	<b>Formation</b>	<b>Sampling Details</b>
Kick off to Total Depth (TD)  2375 m – 3491m (TD)	Latrobe Group	5 m sampling interval  Three sets of washed and oven dried cuttings.

Detailed cuttings descriptions for the interval 2325 to 3491mMDRT (TD) are contained in Appendix 3b.

#### **CONVENTIONAL CORING**

No conventional cores were cut in Marlin A-10A/A-10AST1.

#### **SIDEWALL CORING**

No sidewall core samples were shot in Marlin A-10A/A-10AST1.

#### **MDT's**

Open Hole MDT data for Marlin A-10A is contained in Appendix 5a.

CHDT data for Marlin A-10AST1 is contained in Appendix 5b.

#### IV. LOGS AND SURVEYS Marlin A-10A

<b>Survey/Log</b>	<b>Company</b>	<b>Top (m MDRT)</b>	<b>Bottom (m MDRT)</b>
MWD Run 1, Powerpulse (Directional & GR)	Schlumberger/Anadrill	644.0	734.35
MWD Run 2, Powerpulse (Directional & GR)	Schlumberger/Anadrill	734.36	743.36
MWD Run 3, Powerpulse (Directional & GR)	Schlumberger/Anadrill	743.36	1439.36
MWD Run 4, Powerpulse (Directional & GR)	Schlumberger/Anadrill	1439.36	1819.36
MWD Run 5, Powerpulse (Directional & GR)	Schlumberger/Anadrill	1819.36	3226.24
MWD Run 6, Powerpulse (Directional & GR)	Schlumberger/Anadrill	644.0	3226.24 (Wiper Trip)
Run 1: Compact Logging MCG-MDN-MPD-MSS-MDL	Reeves Compact run on drillpipe	2008.0	3248.0
Run 2: MDT (on drillpipe)	Schlumberger Wireline	3220.5	1645.0

#### IV. LOGS AND SURVEYS Marlin A-10AST1

<b>Survey/Log</b>	<b>Company</b>	<b>Top (m MDRT)</b>	<b>Bottom (m MDRT)</b>
MWD Run 1, Powerpulse (Directional & GR)	Schlumberger/Anadrill	2339.7	2362.0
MWD Run 2, Powerpulse (Directional & GR)	Schlumberger/Anadrill	2362.0	2662.0
MWD Run 3, Powerpulse (Directional & GR)	Schlumberger/Anadrill	2662.0	3040.0
MWD Run 4, Powerpulse (Directional & GR)	Schlumberger/Anadrill	3040.0	3393.0
MWD Run 5, Powerpulse (Directional & GR)	Schlumberger/Anadrill	3393.0	3470.52
Run 1: Compact Logging MCG-MDN-MPD-MSS-MDL	Reeves Compact run on drillpipe	2275.0	3471.6
Run 2: MDT (on drillpipe)	Schlumberger Wireline	3122.5	3391.0
Run 3: CHDT (on wireline)	Schlumberger Wireline	3349.0	3362.0
Run 4: CHDT (on wireline)	Schlumberger Wireline	3363.0	3363.0

## V. FORMATION RESERVOIR TOPS Marlin A-10A

Zone	m TVDSS			m MDRT	m TVT Gross HC Column	
	Predicted	Actual	Diff.		Predicted	Actual
Top Lakes Entrance	-1295.3	-1284.7	10.6m high	1590.9	9.8m HC column	0m HC column
Top Latrobe Group (TOL)	-1388.5	-1386.1	2.4m high	1731.4		
Top N1.5 Coal	-1469.9	-1464.4	5.5m high	1841.3		
Base N/M Sands	-1692.4	-1673.5	18.9m high	2129.7		
Top L100 Sand	-2113.1	-2095.9	17.2m high	2662.9		
Top L500 Sand	-2590.2	-2593.3	3.1m low	3181.5	Increased vertical angle led to increased TD	
Current GOC	NA	NA	-	NA		
Current OWC	-2600	-2600	-	3188.4		
Near Top Cretaceous Shale	NA	NA	-	-		
Total Depth (TD)	-2656.2	-2659.1	2.9m low	3248.0		

## V. FORMATION RESERVOIR TOPS Marlin A-10AST1

Zone	m TVDSS			m MDRT	m TVT Gross HC Column	
	Predicted	Actual	Diff.		Predicted	Actual
Top Lakes Entrance	NA	NA	-	-	46.1m HC column	39.7m HC column
Top Latrobe Group (TOL)	NA	NA	-	-		
Top N1.5 Coal	NA	NA	-	-		
Base N/M Sands	NA	NA	-	-		
Top L100 Sand	-2116.0	-2094.5	21.5m high	2712.1		
Top L500 Sand	-2553.9	-2560.3	6.4m low	3344.0		
Current GOC	-2577.5	-2577.5	-	3364.5		
Current OWC	-2600	-2600	-	3391.1		
Near Top Cretaceous Shale	-2646.1	-2652.9	6.8m low	3453.4		
Total Depth (TD)	-2689.4	-2685.6	3.8m high	3538.0		

## VI. GEOLOGICAL ANALYSIS - MARLIN A-10A

### Objectives

Marlin A10A (pre-drill Location 4) is the fifth well in a series of 6 wells to be drilled on the Turrum field during 2004 using rig "Rig 453". This well was designed to test two targets, the primary L-500 upper reservoir OWC and the secondary target of the higher L100 to L400 reservoirs.

Within the L500 reservoir there were several objectives:

- a) To confirm the expected field-wide OWC of -2600m TVDSS within the upper L500 reservoir; and,
- b) To confirm the number of hydraulic systems within the L500 upper and middle reservoir.

In the higher L100 to L400 reservoirs the objective was:

- a) To confirm the number and continuity of the previously identified sand and gas systems of the L100 to L400 reservoirs.

One additional objective was identified for the Marlin field:

The Marlin A10A well location was also crestally located for the overlying Marlin Gas field which allowed additional pressure data to be collected to identify the current GWC for the Marlin field.

### Results

Marlin A10A was drilled below surface casing (of the original Marlin A10A conductor). At the completion of drilling the A10A well, logging was conducted via Reeves Shuttle on drillpipe in 6" hole and a total of 58 MDT pressure points collected. Of the 58 MDT points tested, 38 MDT points were collected within the Turrum reservoirs and 20 in the Marlin reservoirs.

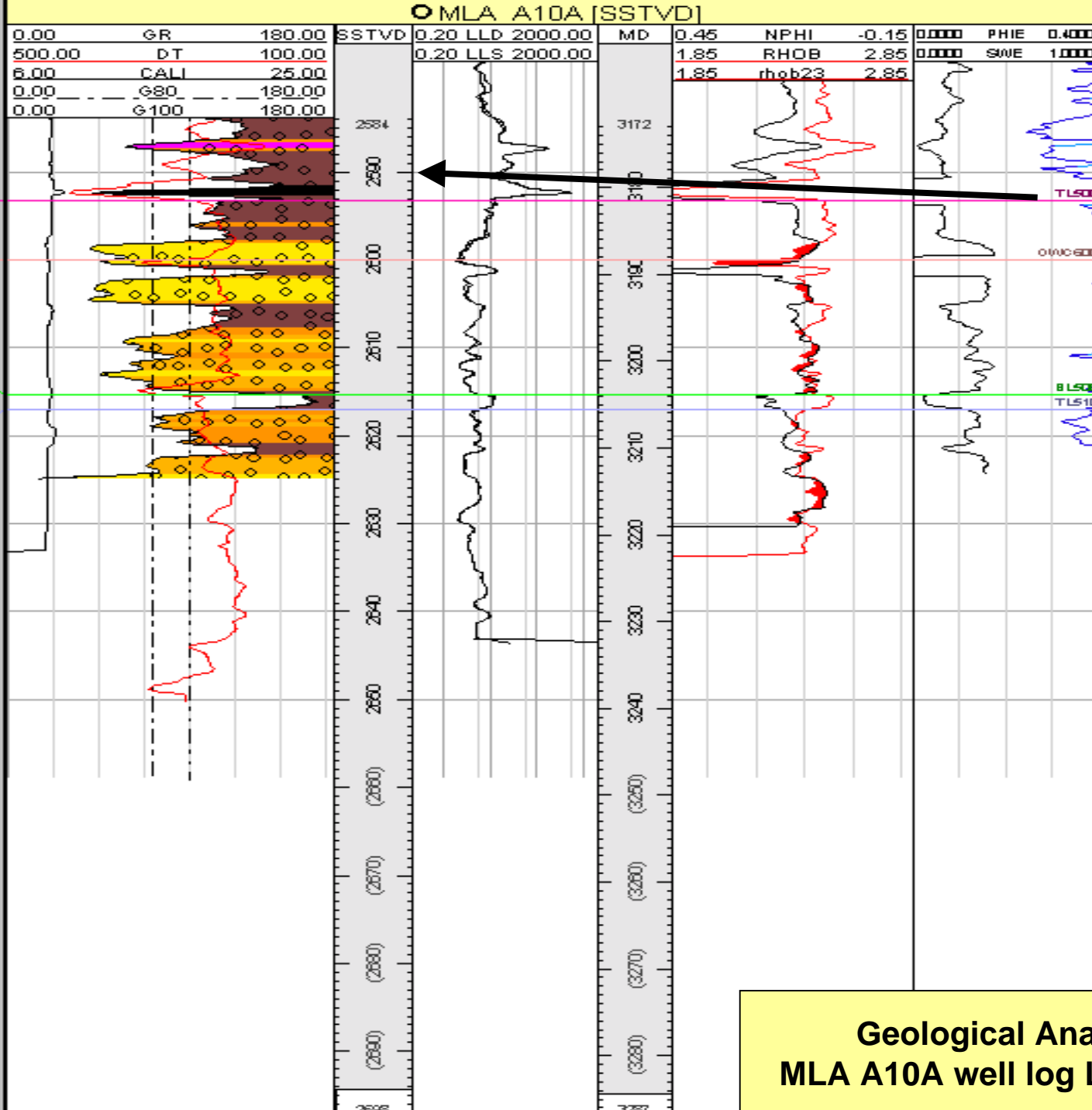
The A10A well intersected the top of L500 at 3181.53m MDRT (-2593.26m TVDSS), 3.06m TVD low to prognosis, as shown on the attached L500 well data and well log section (Page 16 & 17).

Log character indicated that hydrocarbons were present over the entire L100 to L500 column plus identifying the current GWC's of the overlying Marlin reservoirs. After MDT pressures were taken the well was plugged back and sidetracked to drill the Marlin A10AST location

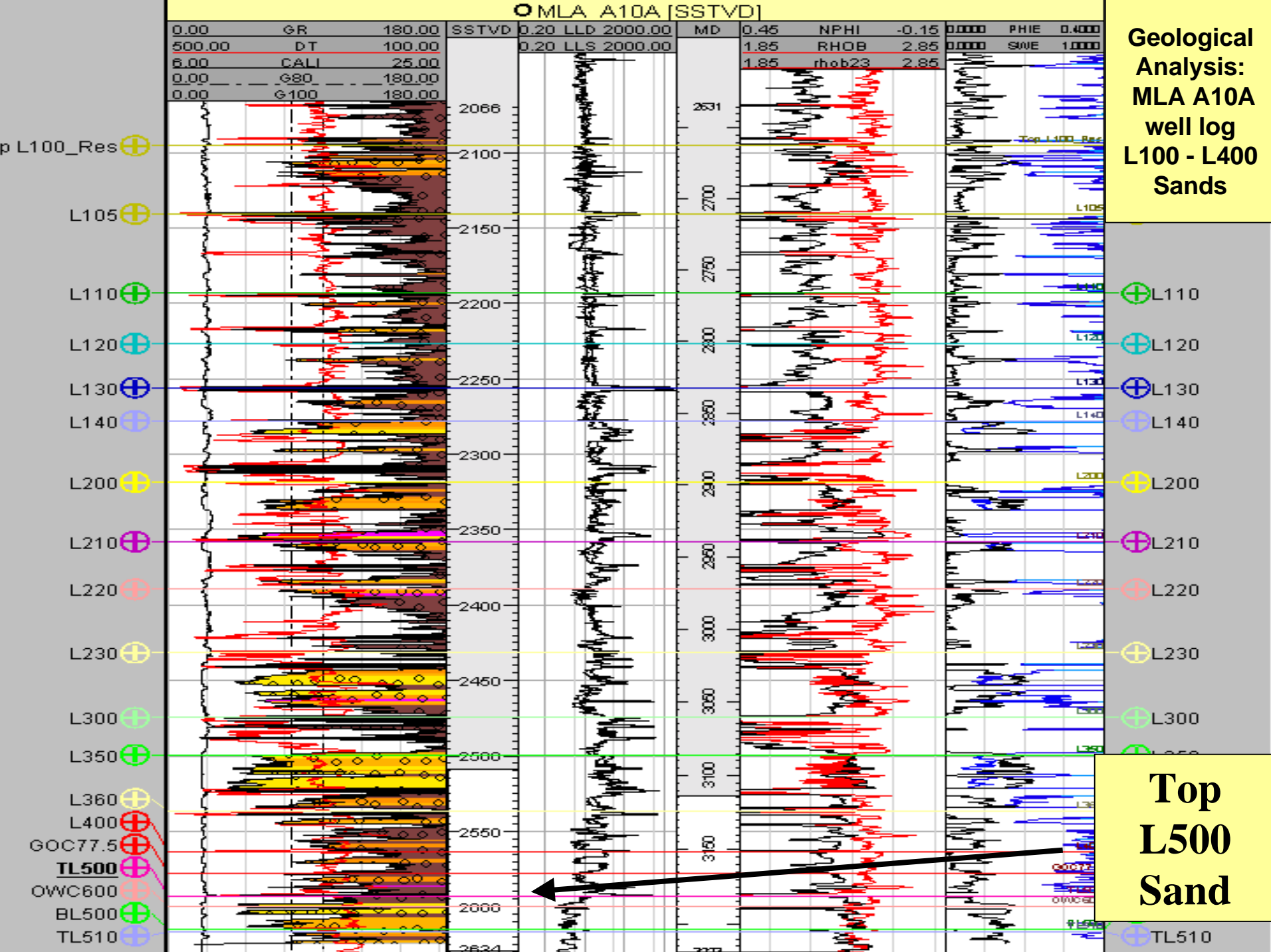
## **VI. GEOLOGICAL ANALYSIS - MARLIN A-10A (cont'd)**

In the secondary target a total of 116 metres TVT gross gas column was encountered in the upper reservoirs of the L100 group (36m TVT), L200 group (50m TVT), L300 group (26m TVT) & L400 group (4m TVT) sands.

In the primary target no hydrocarbons were encountered. Pressure data in this zone indicates that the top L500 zone is water wet which is believed to be due to uncertain directional control leading to imprecise depth control for the L500 sands.







## VI. GEOLOGICAL ANALYSIS - MARLIN A-10AST1

### Objectives

Marlin A10AST1 is the final well in a series of 6 wells to be drilled on the Turrum field during 2004 using rig "Rig 453". This well is a sidetrack from Marlin A10A and was designed to test the primary L-500 middle (L510) reservoir OWC.

Within the L500 reservoir there were several objectives:

- c) To confirm the expected field-wide OWC of -2600m TVDSS; and,
- d) To confirm the number of hydraulic systems within the L500 reservoir.

### Results

Marlin A10AST1 well "kicked-off" at 2362 mMD from the A10A well path.

At the completion of drilling the A10AST1 well, logging was conducted via Reeves Shuttle on drillpipe in 6" hole and a total of 7 MDT pressure points collected within the Turrum L500 reservoirs.

The A10AST1 well intersected the top of L500 at 3344.03m MDRT (-2560.3m TVDSS), 6.4m TVD low to prognosis, as shown on the attached L500 well data and well log section. (See page 19 & 20)

Log character indicated that hydrocarbons were present over the L500 column. After MDT pressures were taken casing was set and a Cased Hole Dynamic Tester (CHDT) tool was used to take pressures at 3 selected points within the L500 sands.

These points were:

- a) CHDT point #1 (3362.0m MD (-2575.60m TVDSS));
- b) CHDT point #2 (3349.0m MD (-2564.65m TVDSS)); and,
- c) CHDT point #3 (3363.0m MD (-2576.45m TVDSS)).

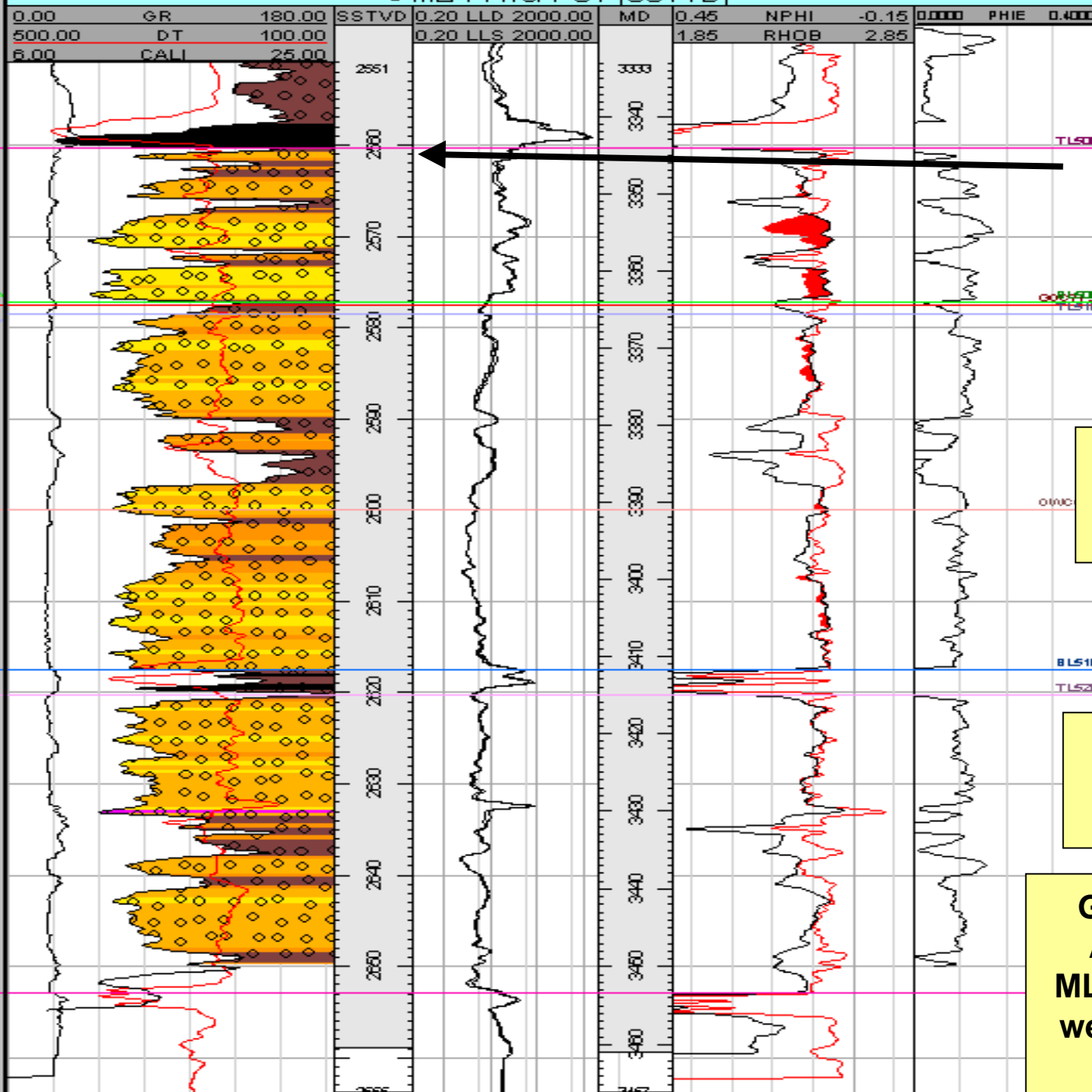
The CHDT tool confirmed that the L500 reservoir consisted of two fluid compartments.

Due to drilling operational difficulties the kick-off point was higher than anticipated which allowed us to collect data in the higher L100 to L400 reservoirs.

In the L100 to L400 reservoirs a total of 110 metres TVT gross gas column was encountered in the upper reservoirs of the L100 group (35m TVT), L200 group (48m TVT), L300 group (23m TVT) & L400 group (4m TVT) sands.

In the primary target a total of 39.7m TVT gross gas and oil column was encountered in the L500 sands.

○ MLA A10A ST [SSTVD]

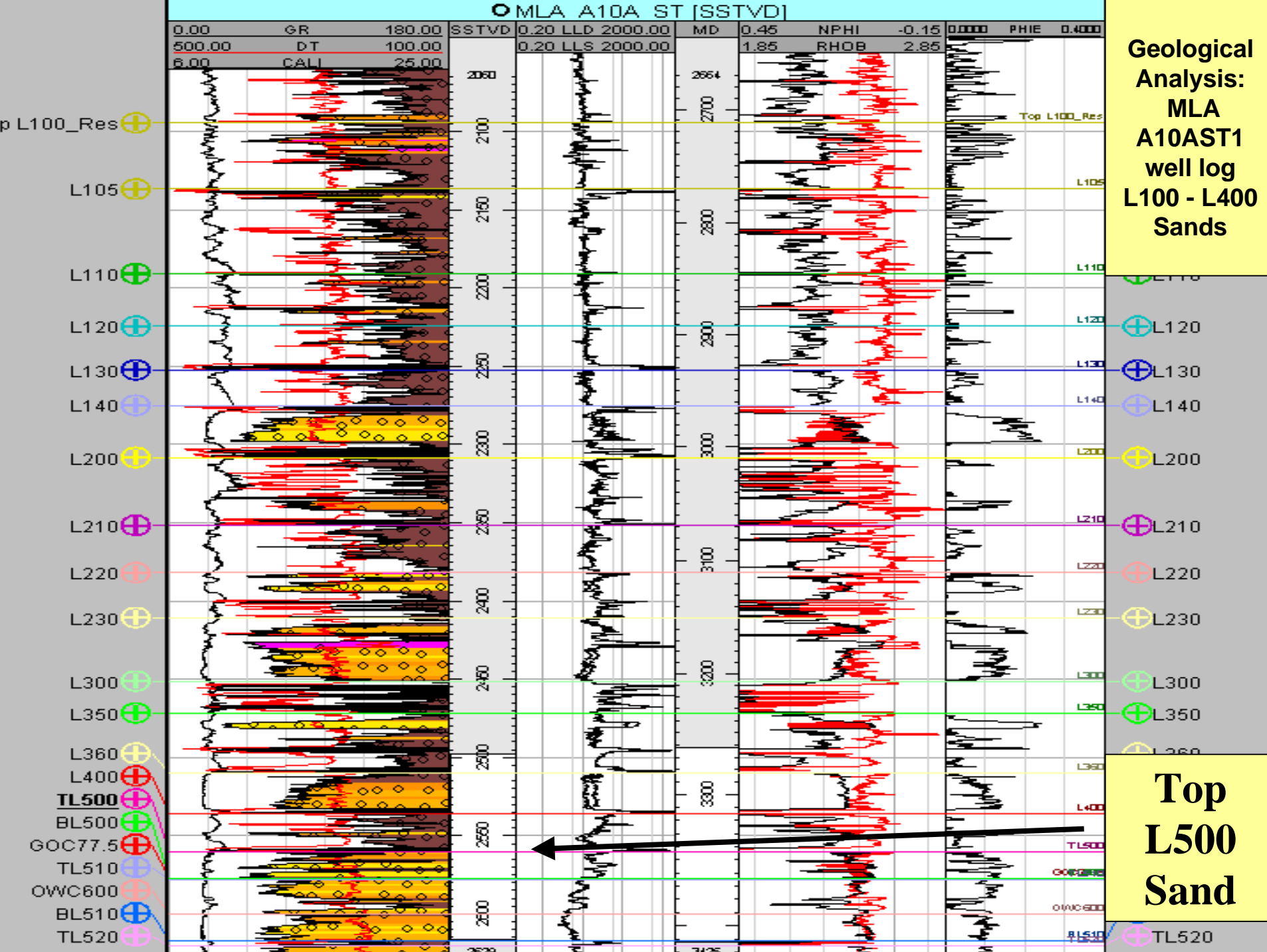


**Top  
L500  
Sand**

**L510  
Sand**

**L520  
Sand**

**Geological  
Analysis:  
MLA A10AST1  
well log L500  
Sands**



**APPENDIX 1a**

**MARLIN A-10A**

**Survey Data**

## MLA A10A Surveys

Report Date: August 23, 2004	Survey / DLS Computation Method: Minimum Curvature / Lubinski
Client: Esso Australia Pty Ltd	Vertical Section Azimuth: 120.200°
Field: Marlin GDA 94	Vertical Section Origin: S 6.841 m, E 28.362 m
Structure / Slot: Marlin / 23	TVD Reference Datum: Drillsite Elevation
Well: A-10	TVD Reference Elevation: 27.9 m relative to MSL
Borehole: MLA A-10A	Sea Bed / Ground Level Elevation: 0.000 m relative to MSL
UWI/API#:	Magnetic Declination: 13.135°
Survey Name / Date: A10A Actual Surveys / August 3, 2004	Total Field Strength: 59979.557 nT
Tort / AHD / DDI / ERD ratio: 144.793° / 1626.74 m / 5.454 / 0.605	Magnetic Dip: -68.728°
Grid Coordinate System: GDA94/MGA94 Zone 55	Declination Date: August 03, 2004
Location Lat/Long: S 38 13 49.320, E 148 13 15.712	Magnetic Declination Model: BGGM 2003
Location Grid N/E Y/X: N 5767920.060 m, E 606868.950 m	North Reference: Grid North
Grid Convergence Angle: -0.75567573°	Total Corr Mag North -> Grid North: +13.891°
Grid Scale Factor: 0.99974066	Local Coordinates Referenced To: Structure Reference Point

Comments	Measured Depth (m)	Inclination (deg)	Azimuth (deg)	TVD (m)	Vertical Section (m)	NS (m)	EW (m)	DLS (deg/30 m)
Projected-Up	0.00	0.00	0.00	0.00	0.00	-6.84	28.36	0.00
Tie-In	0.51	0.00	0.00	0.51	0.00	-6.84	28.36	0.00
	15.51	0.18	148.53	15.51	0.02	-6.86	28.37	0.36
	20.51	0.26	152.54	20.51	0.03	-6.88	28.38	0.49
	25.51	0.15	144.48	25.51	0.05	-6.89	28.39	0.68
	30.51	0.16	146.81	30.51	0.06	-6.91	28.40	0.07
	35.51	0.28	153.60	35.51	0.08	-6.92	28.40	0.74
	40.51	0.28	153.52	40.51	0.10	-6.94	28.42	0.00
	45.51	0.14	140.67	45.51	0.11	-6.96	28.43	0.88
	50.51	0.26	151.92	50.51	0.13	-6.97	28.43	0.75
	55.51	0.24	151.83	55.51	0.15	-6.99	28.44	0.12
	60.51	0.24	151.70	60.51	0.17	-7.01	28.45	0.00
	65.51	0.18	146.38	65.51	0.18	-7.03	28.46	0.38
	70.51	0.22	148.02	70.51	0.20	-7.04	28.47	0.24
	75.51	0.21	149.24	75.51	0.21	-7.06	28.48	0.07
	80.51	0.27	153.49	80.51	0.23	-7.08	28.49	0.38
	85.51	0.50	160.64	85.51	0.26	-7.11	28.51	1.41
	90.51	0.65	162.67	90.51	0.30	-7.16	28.52	0.91
	95.51	0.88	162.58	95.51	0.35	-7.22	28.54	1.38
	100.51	1.09	166.59	100.51	0.41	-7.30	28.56	1.33
	105.51	1.34	167.34	105.51	0.48	-7.41	28.59	1.50
	110.51	1.66	167.13	110.51	0.57	-7.53	28.62	1.92
	115.51	1.91	167.82	115.50	0.67	-7.69	28.65	1.51
	120.51	2.26	166.82	120.50	0.80	-7.86	28.69	2.11
	125.51	2.62	167.27	125.49	0.94	-8.07	28.74	2.16
	130.51	2.84	165.90	130.49	1.11	-8.30	28.79	1.38
	135.51	3.30	165.82	135.48	1.29	-8.56	28.86	2.76
	140.51	3.49	172.37	140.47	1.49	-8.85	28.91	2.59
	145.51	3.72	170.30	145.46	1.69	-9.16	28.96	1.59
	150.51	3.70	171.73	150.45	1.89	-9.48	29.01	0.57
	155.51	3.75	172.46	155.44	2.09	-9.80	29.06	0.41
	160.51	3.81	172.87	160.43	2.29	-10.13	29.10	0.39
	165.51	3.87	172.52	165.42	2.50	-10.46	29.14	0.39
	170.51	3.88	172.14	170.41	2.70	-10.80	29.19	0.17
	175.51	3.92	172.26	175.40	2.91	-11.13	29.23	0.24
	180.51	3.97	171.22	180.39	3.13	-11.48	29.28	0.52
	185.51	3.95	171.18	185.37	3.34	-11.82	29.33	0.12
	190.51	3.75	165.49	190.36	3.57	-12.14	29.40	2.59
	195.51	3.58	157.85	195.35	3.81	-12.45	29.50	3.10
	200.51	3.73	148.11	200.34	4.07	-12.73	29.65	3.83

205.51	3.68	147.51	205.33	4.36	-13.00	29.82	0.38
210.51	4.16	144.46	210.32	4.67	-13.29	30.01	3.14
215.51	4.45	143.43	215.31	5.01	-13.59	30.23	1.80
220.51	5.16	142.23	220.29	5.40	-13.92	30.48	4.30
225.51	5.37	143.92	225.27	5.82	-14.29	30.76	1.57
230.51	5.97	144.66	230.24	6.27	-14.69	31.05	3.63
235.51	6.23	144.94	235.21	6.75	-15.13	31.35	1.57
240.51	6.68	145.85	240.18	7.26	-15.59	31.67	2.77
245.51	6.90	145.66	245.15	7.80	-16.08	32.01	1.33
250.51	7.21	145.62	250.11	8.35	-16.58	32.35	1.86
255.51	7.35	145.46	255.07	8.92	-17.11	32.71	0.85
260.51	7.54	145.31	260.03	9.51	-17.64	33.08	1.15
265.51	7.79	144.90	264.98	10.11	-18.19	33.46	1.54
270.51	7.97	146.00	269.93	10.73	-18.75	33.85	1.41
275.51	8.31	146.50	274.88	11.37	-19.34	34.24	2.08
280.51	8.57	146.95	279.83	12.03	-19.95	34.65	1.61
285.51	8.94	147.27	284.77	12.71	-20.59	35.06	2.24
290.51	9.17	147.26	289.71	13.41	-21.25	35.48	1.38
295.51	9.41	147.42	294.64	14.12	-21.93	35.92	1.45
300.51	9.53	147.48	299.58	14.86	-22.63	36.36	0.72
305.51	9.72	148.09	304.51	15.60	-23.33	36.81	1.29
310.51	9.78	148.66	309.43	16.34	-24.06	37.25	0.68
315.51	10.11	149.67	314.36	17.10	-24.80	37.69	2.24
320.51	10.31	149.70	319.28	17.87	-25.56	38.14	1.20
325.51	10.49	149.95	324.20	18.66	-26.34	38.60	1.11
330.51	10.71	149.92	329.11	19.45	-27.14	39.06	1.32
335.51	11.09	150.28	334.02	20.27	-27.96	39.53	2.32
340.51	11.26	149.96	338.93	21.11	-28.80	40.01	1.09
345.51	11.75	149.89	343.83	21.98	-29.66	40.51	2.94
350.51	12.17	151.05	348.72	22.87	-30.56	41.02	2.90
355.51	12.72	151.58	353.60	23.80	-31.51	41.54	3.37
360.51	13.10	151.99	358.47	24.75	-32.49	42.07	2.35
365.51	13.73	152.53	363.34	25.73	-33.52	42.61	3.85
370.51	14.21	153.16	368.19	26.75	-34.59	43.16	3.02
375.51	14.70	153.97	373.03	27.79	-35.71	43.71	3.18
380.51	15.03	154.25	377.86	28.85	-36.87	44.27	2.03
385.51	15.45	154.90	382.69	29.94	-38.05	44.84	2.72
390.51	15.71	155.53	387.50	31.04	-39.27	45.40	1.86
395.51	16.14	156.48	392.31	32.15	-40.52	45.96	3.02
400.51	16.49	156.62	397.11	33.28	-41.81	46.52	2.11
405.51	16.73	156.71	401.90	34.43	-43.13	47.08	1.45
410.51	17.02	156.90	406.69	35.60	-44.46	47.65	1.77
415.51	17.21	156.97	411.47	36.78	-45.81	48.23	1.15
420.51	17.50	156.89	416.24	37.97	-47.19	48.81	1.75
425.51	17.58	157.33	421.01	39.18	-48.57	49.40	0.93
430.51	17.87	157.74	425.77	40.39	-49.98	49.98	1.89
435.51	18.10	157.65	430.52	41.61	-51.41	50.57	1.39
440.51	18.47	158.34	435.27	42.85	-52.86	51.16	2.57
445.51	18.72	158.09	440.01	44.11	-54.34	51.75	1.57
450.51	18.94	158.21	444.74	45.38	-55.84	52.35	1.34
455.51	19.09	158.02	449.47	46.67	-57.35	52.96	0.97
460.51	19.34	158.24	454.19	47.96	-58.88	53.57	1.56
465.51	19.45	158.13	458.91	49.27	-60.42	54.19	0.70
470.51	19.71	158.40	463.62	50.59	-61.98	54.81	1.65
475.51	20.09	159.18	468.32	51.92	-63.57	55.42	2.78
480.51	20.46	159.47	473.01	53.27	-65.19	56.03	2.30
485.51	20.84	159.56	477.69	54.63	-66.84	56.65	2.29
490.51	21.26	159.81	482.36	56.02	-68.52	57.27	2.58
495.51	21.59	159.80	487.01	57.42	-70.24	57.90	1.98
500.51	21.96	159.87	491.65	58.85	-71.98	58.54	2.23

Tie-In

505.51	22.16	159.98	496.29	60.30	-73.74	59.19	1.23
510.51	22.39	160.48	500.91	61.75	-75.53	59.83	1.79
515.51	22.75	160.38	505.53	63.21	-77.33	60.47	2.17
520.51	23.16	161.00	510.13	64.69	-79.17	61.12	2.86
525.51	23.43	160.21	514.73	66.20	-81.04	61.77	2.48
530.51	23.72	160.21	519.31	67.73	-82.92	62.45	1.74
535.51	24.12	160.14	523.88	69.29	-84.83	63.14	2.41
540.51	24.46	160.17	528.44	70.86	-86.76	63.84	2.04
545.51	24.78	160.42	532.98	72.46	-88.72	64.54	2.02
550.51	25.06	160.39	537.52	74.06	-90.71	65.25	1.68
555.51	25.62	160.51	542.04	75.70	-92.72	65.96	3.37
560.51	25.99	160.55	546.54	77.36	-94.78	66.69	2.22
565.51	26.71	160.59	551.02	79.05	-96.87	67.43	4.32
570.51	27.14	160.41	555.48	80.77	-99.00	68.18	2.63
575.51	27.91	160.44	559.91	82.54	-101.18	68.96	4.62
580.51	28.21	160.35	564.32	84.34	-103.40	69.74	1.82
585.51	28.89	160.44	568.71	86.16	-105.65	70.55	4.09
590.51	29.39	160.59	573.08	88.02	-107.94	71.36	3.03
595.51	30.09	160.54	577.42	89.91	-110.28	72.18	4.20
600.51	30.59	160.50	581.74	91.83	-112.66	73.03	3.00
605.51	31.43	160.45	586.02	93.80	-115.09	73.89	5.04
610.51	32.17	160.36	590.27	95.81	-117.57	74.77	4.45
615.51	32.94	160.26	594.49	97.87	-120.11	75.68	4.63
620.51	33.66	160.22	598.67	99.97	-122.69	76.61	4.32
625.51	34.29	160.30	602.81	102.11	-125.32	77.55	3.79
630.51	34.74	160.42	606.93	104.27	-127.99	78.50	2.73
635.51	35.08	160.46	611.03	106.46	-130.68	79.46	2.04
640.51	35.33	160.26	615.12	108.66	-133.40	80.43	1.65
645.00	35.55	160.36	618.78	110.65	-135.85	81.31	1.55
703.90	40.14	144.21	665.39	141.17	-167.47	98.21	5.54
732.14	40.55	141.06	686.92	158.07	-182.00	109.31	2.21
761.57	40.68	142.73	709.26	175.87	-197.07	121.13	1.12
790.20	41.02	143.18	730.91	193.14	-212.02	132.41	0.47
818.78	41.08	138.63	752.47	210.68	-226.58	144.24	3.14
847.90	41.36	134.42	774.38	229.09	-240.49	157.44	2.87
876.11	41.48	127.82	795.54	247.39	-252.75	171.48	4.64
904.81	42.40	122.89	816.90	266.49	-263.84	187.12	3.58
932.86	43.46	120.24	837.44	285.58	-273.83	203.40	2.24
961.92	43.74	119.87	858.48	305.62	-283.87	220.74	0.39
990.86	43.60	119.86	879.41	325.61	-293.82	238.07	0.15
1019.22	43.67	119.61	899.94	345.17	-303.53	255.07	0.20
1048.10	43.59	119.59	920.84	365.10	-313.37	272.39	0.08
1076.57	44.20	120.95	941.36	384.84	-323.32	289.44	1.18
1105.41	44.22	120.79	962.03	404.95	-333.64	306.70	0.12
1133.86	44.16	120.71	982.43	424.78	-343.78	323.74	0.09
1162.44	43.94	120.88	1002.97	444.65	-353.95	340.81	0.26
1191.10	43.77	120.76	1023.64	464.50	-364.13	357.87	0.20
1219.70	43.60	120.49	1044.32	484.26	-374.19	374.86	0.26
1248.31	43.43	120.24	1065.07	503.96	-384.15	391.86	0.25
1276.86	43.32	120.49	1085.82	523.56	-394.06	408.78	0.21
1305.91	43.14	120.26	1106.99	543.46	-404.12	425.94	0.25
1334.56	43.88	121.50	1127.77	563.18	-414.24	442.87	1.18
1362.97	43.95	121.60	1148.23	582.88	-424.55	459.66	0.10
1391.85	43.62	121.88	1169.08	602.86	-435.07	476.66	0.40
1420.66	43.21	121.88	1190.01	622.65	-445.52	493.47	0.43
1450.71	43.22	121.88	1211.91	643.22	-456.39	510.94	0.01
1479.58	44.21	123.67	1232.78	663.15	-467.19	527.72	1.65
1508.27	44.15	123.85	1253.35	683.10	-478.30	544.34	0.15
1536.77	44.13	123.83	1273.80	702.91	-489.36	560.83	0.03
1565.03	44.15	123.85	1294.09	722.55	-500.32	577.17	0.03



1594.24	43.93	123.85	1315.08	742.82	-511.63	594.04	0.23
1622.84	43.75	123.89	1335.71	762.58	-522.67	610.48	0.19
1651.34	43.46	123.89	1356.35	782.20	-533.63	626.80	0.31
1679.44	43.51	123.98	1376.74	801.50	-544.42	642.84	0.08
1708.34	44.04	123.25	1397.60	821.45	-555.49	659.49	0.76
1736.89	44.00	123.04	1418.13	841.27	-566.34	676.11	0.16
1765.56	44.26	122.92	1438.71	861.21	-577.21	692.85	0.29
1794.14	44.76	122.09	1459.09	881.23	-587.97	709.75	0.81
1823.71	45.45	122.24	1479.96	902.16	-599.12	727.48	0.71
1852.95	44.04	122.56	1500.73	922.73	-610.15	744.86	1.46
1880.92	43.53	122.31	1520.92	942.07	-620.53	761.19	0.58
1909.80	43.11	122.55	1541.94	961.87	-631.16	777.92	0.47
1938.87	43.09	122.69	1563.16	981.71	-641.86	794.65	0.10
1964.78	43.75	122.35	1581.98	999.51	-651.44	809.66	0.81
1996.00	43.67	122.25	1604.55	1021.06	-662.97	827.90	0.10
2024.60	43.18	122.11	1625.32	1040.71	-673.44	844.54	0.52
2053.10	43.26	121.90	1646.09	1060.22	-683.78	861.09	0.17
2082.05	43.39	121.91	1667.15	1080.07	-694.28	877.95	0.13
2110.79	43.74	122.04	1687.97	1099.87	-704.77	894.75	0.38
2139.52	44.20	121.99	1708.65	1119.81	-715.34	911.67	0.48
2168.19	43.87	122.07	1729.26	1139.73	-725.91	928.56	0.35
2195.93	43.58	122.31	1749.31	1158.89	-736.12	944.79	0.36
2225.38	43.20	122.34	1770.71	1179.11	-746.94	961.88	0.39
2253.34	43.84	122.56	1790.98	1198.34	-757.27	978.13	0.71
2282.79	43.44	122.67	1812.30	1218.65	-768.23	995.25	0.41
2311.17	42.99	122.68	1832.98	1238.07	-778.72	1011.61	0.48
2339.70	42.24	122.92	1853.98	1257.36	-789.18	1027.85	0.81
2368.21	41.26	123.08	1875.25	1276.32	-799.52	1043.77	1.04
2396.80	42.45	123.60	1896.54	1295.37	-810.01	1059.70	1.30
2425.38	39.14	121.62	1918.17	1314.02	-820.08	1075.42	3.73
2454.28	37.00	118.22	1940.93	1331.84	-828.97	1090.86	3.11
2483.13	35.18	116.54	1964.24	1348.81	-836.79	1105.94	2.15
2511.94	32.27	114.92	1988.20	1364.75	-843.74	1120.34	3.17
2540.74	28.93	111.27	2012.99	1379.29	-849.51	1133.81	3.98
2569.71	27.16	106.89	2038.56	1392.65	-853.98	1146.67	2.81
2598.39	25.54	103.63	2064.26	1404.95	-857.33	1158.95	2.27
2626.92	22.22	100.97	2090.34	1415.94	-859.81	1170.22	3.67
2655.76	20.27	92.04	2117.23	1425.50	-861.03	1180.57	3.92
2684.07	20.16	81.42	2143.80	1433.63	-860.47	1190.30	3.89
2713.00	19.76	77.75	2171.00	1441.12	-858.69	1200.01	1.36
2741.62	19.40	76.77	2197.96	1448.15	-856.58	1209.36	0.51
2770.13	18.28	77.13	2224.94	1454.85	-854.50	1218.33	1.18
2798.77	17.51	77.18	2252.20	1461.28	-852.54	1226.91	0.81
2827.33	17.29	76.90	2279.45	1467.51	-850.63	1235.24	0.25
2856.42	18.68	72.75	2307.12	1473.81	-848.27	1243.90	1.95
2884.76	17.92	71.45	2334.03	1479.75	-845.53	1252.36	0.91
2913.49	18.61	64.18	2361.31	1485.23	-842.13	1260.68	2.48
2942.44	17.74	65.89	2388.82	1490.38	-838.32	1268.87	1.06
2970.95	16.77	68.09	2416.05	1495.44	-835.01	1276.65	1.23
2999.52	15.81	69.75	2443.47	1500.45	-832.12	1284.12	1.12
3028.29	14.08	73.13	2471.27	1505.33	-829.75	1291.15	2.02
3056.82	13.45	75.98	2498.98	1510.08	-827.94	1297.69	0.97
3085.62	11.70	83.42	2527.09	1514.82	-826.79	1303.84	2.48
3114.46	11.31	84.29	2555.35	1519.45	-826.18	1309.56	0.44
3143.17	10.33	87.65	2583.55	1523.90	-825.79	1314.93	1.22
3172.07	9.47	95.13	2612.02	1528.24	-825.90	1319.89	1.60
3200.78	9.03	99.46	2640.35	1532.48	-826.48	1324.46	0.86
3226.24	8.98	101.24	2665.50	1536.23	-827.19	1328.38	0.33
3248.00	8.94	102.66	2686.99	1539.45	-827.89	1331.70	0.31

Projection to TD

**Survey Type:** Raw Survey

**Survey Error Model:** SLB ISCWSA version 16 \*\*\* 3-D 95.00% Confidence 2.7955 sigma

**Surveying Prog:**

<b><u>MD From ( m )</u></b>	<b><u>MD To ( m )</u></b>	<b><u>EOU Freq</u></b>	<b><u>Survey Tool Type</u></b>
0.00	640.51	Act-Stns	SLB_UNKNOWN (default tool used)
640.51	645.00	Act-Stns	SLB_UNKNOWN (default tool used)
645.00	3248.00	Act-Stns	SLB_MWD-STD

**APPENDIX 1b**  
**MARLIN A-10AST1**  
**Survey Data**

## MLA A10A ST1 Surveys

Report Date: September 14, 2004	Survey / DLS Computation Method: Minimum Curvature / Lubinski
Client: Esso Australia Pty Ltd	Vertical Section Azimuth: 120.200°
Field: Marlin GDA 94	Vertical Section Origin: S 6.840 m, E 28.360 m
Structure / Slot: Marlin / 23	TVD Reference Datum: Drillsite Elevation
Well: A-10	TVD Reference Elevation: 27.9 m relative to MSL
Borehole: MLA A-10A	Sea Bed / Ground Level Elevation: 0.000 m relative to MSL
UWI/API#:	Magnetic Declination: 13.136°
Survey Name / Date: A10A ST Actual Surveys / August 3, 2004	Total Field Strength: 59977.008 nT
Tort / AHD / DDI / ERD ratio: 133.961° / 2060.35 m / 5.550 / 0.759	Magnetic Dip: -68.727°
Grid Coordinate System: GDA94/MGA94 Zone 55	Declination Date: September 03, 2004
Location Lat/Long: S 38 13 49.320, E 148 13 15.712	Magnetic Declination Model: BGGM 2003
Location Grid N/E Y/X: N 5767920.060 m, E 606868.950 m	North Reference: Grid North
Grid Convergence Angle: -0.75567573°	Total Corr Mag North -> Grid North: +13.892°
Grid Scale Factor: 0.99974066	Local Coordinates Referenced To: Structure Reference Point

Comments	Measured Depth (m)	Inclination (deg)	Azimuth (deg)	TVD (m)	Vertical Section (m)	NS (m)	EW (m)	DLS (deg/30 m)
Projected-Up	0.00	0.00	0.00	0.00	0.00	-6.84	28.36	0.00
Tie-In	0.51	0.00	0.00	0.51	0.00	-6.84	28.36	0.00
	15.51	0.18	148.53	15.51	0.02	-6.86	28.37	0.36
	20.51	0.26	152.54	20.51	0.04	-6.88	28.38	0.49
	25.51	0.15	144.48	25.51	0.05	-6.89	28.39	0.68
	30.51	0.16	146.81	30.51	0.06	-6.91	28.40	0.07
	35.51	0.28	153.60	35.51	0.08	-6.92	28.40	0.74
	40.51	0.28	153.52	40.51	0.10	-6.94	28.42	0.00
	45.51	0.14	140.67	45.51	0.12	-6.96	28.43	0.88
	50.51	0.26	151.92	50.51	0.13	-6.97	28.43	0.75
	55.51	0.24	151.83	55.51	0.15	-6.99	28.44	0.12
	60.51	0.24	151.70	60.51	0.17	-7.01	28.45	0.00
	65.51	0.18	146.38	65.51	0.18	-7.03	28.46	0.38
	70.51	0.22	148.02	70.51	0.20	-7.04	28.47	0.24
	75.51	0.21	149.24	75.51	0.22	-7.06	28.48	0.07
	80.51	0.27	153.49	80.51	0.23	-7.08	28.49	0.38
	85.51	0.50	160.64	85.51	0.26	-7.11	28.51	1.41
	90.51	0.65	162.67	90.51	0.30	-7.16	28.52	0.91
	95.51	0.88	162.58	95.51	0.35	-7.22	28.54	1.38
	100.51	1.09	166.59	100.51	0.41	-7.30	28.56	1.33
	105.51	1.34	167.34	105.51	0.48	-7.41	28.59	1.50
	110.51	1.66	167.13	110.51	0.57	-7.53	28.62	1.92
	115.51	1.91	167.82	115.50	0.68	-7.69	28.65	1.51
	120.51	2.26	166.82	120.50	0.80	-7.86	28.69	2.11
	125.51	2.62	167.27	125.49	0.95	-8.07	28.74	2.16
	130.51	2.84	165.90	130.49	1.11	-8.30	28.79	1.38
	135.51	3.30	165.82	135.48	1.30	-8.56	28.86	2.76
	140.51	3.49	172.37	140.47	1.49	-8.85	28.91	2.59
	145.51	3.72	170.30	145.46	1.69	-9.16	28.96	1.59
	150.51	3.70	171.73	150.45	1.89	-9.48	29.01	0.57
	155.51	3.75	172.46	155.44	2.09	-9.80	29.06	0.41
	160.51	3.81	172.87	160.43	2.29	-10.13	29.10	0.39
	165.51	3.87	172.52	165.42	2.50	-10.46	29.14	0.39
	170.51	3.88	172.14	170.41	2.71	-10.80	29.19	0.17
	175.51	3.92	172.26	175.40	2.91	-11.13	29.23	0.24
	180.51	3.97	171.22	180.39	3.13	-11.48	29.28	0.52
	185.51	3.95	171.18	185.37	3.35	-11.82	29.33	0.12
	190.51	3.75	165.49	190.36	3.57	-12.14	29.40	2.59
	195.51	3.58	157.85	195.35	3.81	-12.45	29.50	3.10
	200.51	3.73	148.11	200.34	4.08	-12.73	29.65	3.83

205.51	3.68	147.51	205.33	4.36	-13.00	29.82	0.38
210.51	4.16	144.46	210.32	4.67	-13.29	30.01	3.14
215.51	4.45	143.43	215.31	5.01	-13.59	30.23	1.80
220.51	5.16	142.23	220.29	5.40	-13.92	30.48	4.30
225.51	5.37	143.92	225.27	5.82	-14.29	30.76	1.57
230.51	5.97	144.66	230.24	6.27	-14.69	31.05	3.63
235.51	6.23	144.94	235.21	6.76	-15.13	31.35	1.57
240.51	6.68	145.85	240.18	7.26	-15.59	31.67	2.77
245.51	6.90	145.66	245.15	7.80	-16.08	32.01	1.33
250.51	7.21	145.62	250.11	8.35	-16.58	32.35	1.86
255.51	7.35	145.46	255.07	8.93	-17.11	32.71	0.85
260.51	7.54	145.31	260.03	9.51	-17.64	33.08	1.15
265.51	7.79	144.90	264.98	10.12	-18.19	33.46	1.54
270.51	7.97	146.00	269.93	10.74	-18.75	33.85	1.41
275.51	8.31	146.50	274.88	11.37	-19.34	34.24	2.08
280.51	8.57	146.95	279.83	12.03	-19.95	34.65	1.61
285.51	8.94	147.27	284.77	12.71	-20.59	35.06	2.24
290.51	9.17	147.26	289.71	13.41	-21.25	35.48	1.38
295.51	9.41	147.42	294.64	14.13	-21.93	35.92	1.45
300.51	9.53	147.48	299.58	14.86	-22.63	36.36	0.72
305.51	9.72	148.09	304.51	15.60	-23.33	36.81	1.29
310.51	9.78	148.66	309.43	16.35	-24.06	37.25	0.68
315.51	10.11	149.67	314.36	17.10	-24.80	37.69	2.24
320.51	10.31	149.70	319.28	17.87	-25.56	38.14	1.20
325.51	10.49	149.95	324.20	18.66	-26.34	38.60	1.11
330.51	10.71	149.92	329.11	19.46	-27.14	39.06	1.32
335.51	11.09	150.28	334.02	20.28	-27.96	39.53	2.32
340.51	11.26	149.96	338.93	21.12	-28.80	40.01	1.09
345.51	11.75	149.89	343.83	21.98	-29.66	40.51	2.94
350.51	12.17	151.05	348.72	22.88	-30.56	41.02	2.90
355.51	12.72	151.58	353.60	23.80	-31.51	41.54	3.37
360.51	13.10	151.99	358.47	24.75	-32.49	42.07	2.35
365.51	13.73	152.53	363.34	25.73	-33.52	42.61	3.85
370.51	14.21	153.16	368.19	26.75	-34.59	43.16	3.02
375.51	14.70	153.97	373.03	27.79	-35.71	43.71	3.18
380.51	15.03	154.25	377.86	28.86	-36.87	44.27	2.03
385.51	15.45	154.90	382.69	29.94	-38.05	44.84	2.72
390.51	15.71	155.53	387.50	31.04	-39.27	45.40	1.86
395.51	16.14	156.48	392.31	32.15	-40.52	45.96	3.02
400.51	16.49	156.62	397.11	33.28	-41.81	46.52	2.11
405.51	16.73	156.71	401.90	34.43	-43.13	47.08	1.45
410.51	17.02	156.90	406.69	35.60	-44.46	47.65	1.77
415.51	17.21	156.97	411.47	36.78	-45.81	48.23	1.15
420.51	17.50	156.89	416.24	37.97	-47.19	48.81	1.75
425.51	17.58	157.33	421.01	39.18	-48.57	49.40	0.93
430.51	17.87	157.74	425.77	40.39	-49.98	49.98	1.89
435.51	18.10	157.65	430.52	41.61	-51.41	50.57	1.39
440.51	18.47	158.34	435.27	42.85	-52.86	51.16	2.57
445.51	18.72	158.09	440.01	44.11	-54.34	51.75	1.57
450.51	18.94	158.21	444.74	45.38	-55.84	52.35	1.34
455.51	19.09	158.02	449.47	46.67	-57.35	52.96	0.97
460.51	19.34	158.24	454.19	47.96	-58.88	53.57	1.56
465.51	19.45	158.13	458.91	49.27	-60.42	54.19	0.70
470.51	19.71	158.40	463.62	50.59	-61.98	54.81	1.65
475.51	20.09	159.18	468.32	51.92	-63.57	55.42	2.78
480.51	20.46	159.47	473.01	53.27	-65.19	56.03	2.30
485.51	20.84	159.56	477.69	54.63	-66.84	56.65	2.29
490.51	21.26	159.81	482.36	56.02	-68.52	57.27	2.58
495.51	21.59	159.80	487.01	57.42	-70.24	57.90	1.98
500.51	21.96	159.87	491.65	58.85	-71.98	58.54	2.23

Tie-In

505.51	22.16	159.98	496.29	60.30	-73.74	59.19	1.23
510.51	22.39	160.48	500.91	61.75	-75.53	59.83	1.79
515.51	22.75	160.38	505.53	63.21	-77.33	60.47	2.17
520.51	23.16	161.00	510.13	64.70	-79.17	61.12	2.86
525.51	23.43	160.21	514.73	66.20	-81.04	61.77	2.48
530.51	23.72	160.21	519.31	67.73	-82.92	62.45	1.74
535.51	24.12	160.14	523.88	69.29	-84.83	63.14	2.41
540.51	24.46	160.17	528.44	70.86	-86.76	63.84	2.04
545.51	24.78	160.42	532.98	72.46	-88.72	64.54	2.02
550.51	25.06	160.39	537.52	74.07	-90.71	65.25	1.68
555.51	25.62	160.51	542.04	75.70	-92.72	65.96	3.37
560.51	25.99	160.55	546.54	77.36	-94.78	66.69	2.22
565.51	26.71	160.59	551.02	79.05	-96.87	67.43	4.32
570.51	27.14	160.41	555.48	80.78	-99.00	68.18	2.63
575.51	27.91	160.44	559.91	82.54	-101.18	68.96	4.62
580.51	28.21	160.35	564.32	84.34	-103.40	69.74	1.82
585.51	28.89	160.44	568.71	86.16	-105.65	70.55	4.09
590.51	29.39	160.59	573.08	88.02	-107.94	71.36	3.03
595.51	30.09	160.54	577.42	89.91	-110.28	72.18	4.20
600.51	30.59	160.50	581.74	91.83	-112.66	73.03	3.00
605.51	31.43	160.45	586.02	93.80	-115.09	73.89	5.04
610.51	32.17	160.36	590.27	95.81	-117.57	74.77	4.45
615.51	32.94	160.26	594.49	97.87	-120.11	75.68	4.63
620.51	33.66	160.22	598.67	99.97	-122.69	76.61	4.32
625.51	34.29	160.30	602.81	102.11	-125.32	77.55	3.79
630.51	34.74	160.42	606.93	104.28	-127.99	78.50	2.73
635.51	35.08	160.46	611.03	106.46	-130.68	79.46	2.04
640.51	35.33	160.26	615.12	108.66	-133.40	80.43	1.65
645.00	35.55	160.36	618.78	110.65	-135.85	81.31	1.55
703.90	40.14	144.21	665.39	141.18	-167.47	98.21	5.54
732.14	40.55	141.06	686.92	158.07	-182.00	109.31	2.21
761.57	40.68	142.73	709.26	175.87	-197.07	121.13	1.12
790.20	41.02	143.18	730.91	193.14	-212.02	132.41	0.47
818.78	41.08	138.63	752.47	210.69	-226.58	144.24	3.14
847.90	41.36	134.42	774.38	229.09	-240.49	157.44	2.87
876.11	41.48	127.82	795.54	247.40	-252.75	171.48	4.64
904.81	42.40	122.89	816.90	266.49	-263.84	187.12	3.58
932.86	43.46	120.24	837.44	285.58	-273.83	203.40	2.24
961.92	43.74	119.87	858.48	305.62	-283.87	220.74	0.39
990.86	43.60	119.86	879.41	325.61	-293.82	238.07	0.15
1019.22	43.67	119.61	899.94	345.18	-303.53	255.07	0.20
1048.10	43.59	119.59	920.84	365.10	-313.37	272.39	0.08
1076.57	44.20	120.95	941.36	384.84	-323.32	289.44	1.18
1105.41	44.22	120.79	962.03	404.95	-333.64	306.70	0.12
1133.86	44.16	120.71	982.43	424.78	-343.78	323.74	0.09
1162.44	43.94	120.88	1002.97	444.65	-353.95	340.81	0.26
1191.10	43.77	120.76	1023.64	464.50	-364.13	357.87	0.20
1219.70	43.60	120.49	1044.32	484.26	-374.19	374.86	0.26
1248.31	43.43	120.24	1065.07	503.96	-384.15	391.86	0.25
1276.86	43.32	120.49	1085.82	523.56	-394.06	408.78	0.21
1305.91	43.14	120.26	1106.99	543.46	-404.12	425.94	0.25
1334.56	43.88	121.50	1127.77	563.18	-414.24	442.87	1.18
1362.97	43.95	121.60	1148.23	582.88	-424.55	459.66	0.10
1391.85	43.62	121.88	1169.08	602.86	-435.07	476.66	0.40
1420.66	43.21	121.88	1190.01	622.65	-445.52	493.47	0.43
1450.71	43.22	121.88	1211.91	643.22	-456.39	510.94	0.01
1479.58	44.21	123.67	1232.78	663.15	-467.19	527.72	1.65
1508.27	44.15	123.85	1253.35	683.10	-478.30	544.34	0.15
1536.77	44.13	123.83	1273.80	702.91	-489.36	560.83	0.03
1565.03	44.15	123.85	1294.09	722.55	-500.32	577.17	0.03

Tie In Point

1594.24	43.93	123.85	1315.08	742.82	-511.63	594.04	0.23
1622.84	43.75	123.89	1335.71	762.59	-522.67	610.48	0.19
1651.34	43.46	123.89	1356.35	782.20	-533.63	626.80	0.31
1679.44	43.51	123.98	1376.74	801.50	-544.42	642.84	0.08
1708.34	44.04	123.25	1397.60	821.46	-555.49	659.49	0.76
1736.89	44.00	123.04	1418.13	841.27	-566.34	676.11	0.16
1765.56	44.26	122.92	1438.71	861.21	-577.21	692.85	0.29
1794.14	44.76	122.09	1459.09	881.23	-587.97	709.75	0.81
1823.71	45.45	122.24	1479.96	902.16	-599.12	727.48	0.71
1852.95	44.04	122.56	1500.73	922.73	-610.15	744.86	1.46
1880.92	43.53	122.31	1520.92	942.07	-620.53	761.19	0.58
1909.80	43.11	122.55	1541.94	961.87	-631.16	777.92	0.47
1938.87	43.09	122.69	1563.16	981.71	-641.86	794.65	0.10
1964.78	43.75	122.35	1581.98	999.51	-651.44	809.66	0.81
1996.00	43.67	122.25	1604.55	1021.07	-662.97	827.90	0.10
2024.60	43.18	122.11	1625.32	1040.71	-673.44	844.54	0.52
2053.10	43.26	121.90	1646.09	1060.22	-683.78	861.09	0.17
2082.05	43.39	121.91	1667.15	1080.08	-694.28	877.95	0.13
2110.79	43.74	122.04	1687.97	1099.87	-704.77	894.75	0.38
2139.52	44.20	121.99	1708.65	1119.81	-715.34	911.67	0.48
2168.19	43.87	122.07	1729.26	1139.73	-725.91	928.56	0.35
2195.93	43.58	122.31	1749.31	1158.89	-736.12	944.79	0.36
2225.38	43.20	122.34	1770.71	1179.11	-746.94	961.88	0.39
2253.34	43.84	122.56	1790.98	1198.35	-757.27	978.13	0.71
2282.79	43.44	122.67	1812.30	1218.65	-768.23	995.25	0.41
2311.17	42.99	122.68	1832.98	1238.07	-778.72	1011.61	0.48
2339.70	42.24	122.92	1853.98	1257.36	-789.18	1027.85	0.81
2370.23	45.12	126.14	1876.06	1278.38	-801.14	1045.20	3.57
2398.02	44.56	126.06	1895.76	1297.87	-812.69	1061.03	0.61
2426.51	43.32	124.70	1916.28	1317.56	-824.14	1077.15	1.64
2454.92	43.29	123.12	1936.95	1337.00	-835.01	1093.32	1.14
2483.86	43.60	121.48	1957.96	1356.89	-845.64	1110.14	1.21
2512.25	44.18	121.58	1978.42	1376.56	-855.93	1126.92	0.62
2540.84	44.92	121.38	1998.80	1396.62	-866.41	1144.02	0.79
2569.37	43.81	120.98	2019.19	1416.56	-876.73	1161.09	1.20
2598.21	43.61	120.70	2040.04	1436.49	-886.95	1178.20	0.29
2627.02	43.24	121.07	2060.96	1456.29	-897.12	1195.19	0.47
2655.51	43.25	122.24	2081.72	1475.80	-907.36	1211.81	0.84
2684.17	44.65	124.22	2102.35	1495.66	-918.26	1228.44	2.05
2712.97	42.72	125.62	2123.18	1515.49	-929.64	1244.75	2.25
2741.46	43.19	125.14	2144.03	1534.82	-940.88	1260.58	0.60
2770.13	43.95	124.26	2164.80	1554.52	-952.13	1276.83	1.02
2798.78	43.58	123.35	2185.49	1574.30	-963.16	1293.30	0.76
2827.53	43.12	122.43	2206.40	1594.01	-973.88	1309.87	0.82
2856.18	44.61	122.49	2227.05	1613.85	-984.53	1326.62	1.56
2884.87	45.10	122.55	2247.39	1634.07	-995.41	1343.68	0.51
2908.51	44.95	122.76	2264.10	1650.78	-1004.43	1357.76	0.27
2942.16	44.39	123.16	2288.03	1674.40	-1017.30	1377.61	0.56
2971.42	43.63	123.67	2309.08	1694.70	-1028.50	1394.58	0.86
3000.29	44.39	123.68	2329.84	1714.72	-1039.62	1411.27	0.79
3028.64	44.11	124.48	2350.15	1734.46	-1050.70	1427.66	0.66
3058.04	42.79	125.21	2371.49	1754.61	-1062.25	1444.25	1.44
3085.69	42.75	124.69	2391.79	1773.32	-1073.01	1459.64	0.39
3114.46	43.08	124.17	2412.86	1792.86	-1084.09	1475.80	0.50
3143.15	43.27	124.07	2433.78	1812.44	-1095.10	1492.05	0.21
3171.75	43.81	123.71	2454.51	1832.10	-1106.08	1508.40	0.62
3200.60	44.41	123.68	2475.23	1852.15	-1117.22	1525.11	0.62
3229.06	40.75	126.43	2496.18	1871.33	-1128.27	1540.88	4.33
3257.94	39.00	127.27	2518.34	1889.72	-1139.37	1555.69	1.90
3286.60	36.20	129.73	2541.05	1907.02	-1150.24	1569.38	3.32

	3315.17	34.57	131.07	2564.34	1923.30	-1160.96	1581.98	1.90
	3343.58	32.76	132.73	2587.99	1938.72	-1171.47	1593.71	2.14
	3371.90	32.44	133.37	2611.84	1953.60	-1181.89	1604.86	0.50
	3401.06	32.24	134.16	2636.48	1968.76	-1192.68	1616.12	0.48
	3427.39	31.81	135.26	2658.81	1982.28	-1202.50	1626.05	0.83
	3458.35	30.98	136.77	2685.23	1997.80	-1214.10	1637.25	1.11
	3470.52	30.00	137.67	2695.72	2003.70	-1218.63	1641.44	2.67
Projection to TD	3491.00	30.00	137.67	2713.46	2013.47	-1226.20	1648.34	0.00

**Survey Type:** Raw Survey

**Survey Error Model:** SLB ISCWSA version 16 \*\*\* 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	640.51	Act-Stns	SLB_UNKNOWN (default tool used)
640.51	645.00	Act-Stns	SLB_UNKNOWN (default tool used)
645.00	3491.00	Act-Stns	SLB_MWD-STD



**APPENDIX 1c**  
**MARLIN A-10A**  
**MD-TVD Survey Data Listing**

Report Date:	6 January 2005
Well:	MARLIN A10A
Structure / Slot:	Marlin Rig 453 / 23
TVD Reference Datum:	Drillsite Elevation
TVD Reference Elevation:	27.91 m relative to MSL
Sea Bed / Ground Level Elevation:	-59.00 m relative to MSL
Grid Coordinate System:	GDA94/MGA94 Zone 55
Location Lat/Long:	S 38 13 49.320, E 148 13 15.712
Location Grid N/E:	N 5767920.06 m, E 606868.95 m
Survey Azimuth Reference:	Grid North

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
0	0.00	0.00	0.00	27.91	0.00	0.00	5767920.06	606868.95
5	0.05	44.46	5.00	22.91	-0.01	0.00	5767920.06	606868.96
10	0.11	93.97	10.00	17.91	-0.01	0.01	5767920.05	606868.96
15	0.17	143.48	15.00	12.91	-0.02	0.01	5767920.04	606868.96
20	0.25	152.13	20.00	7.91	-0.04	0.02	5767920.03	606868.97
25	0.16	145.30	25.00	2.91	-0.05	0.03	5767920.01	606868.98
30	0.16	146.57	30.00	-2.09	-0.06	0.04	5767920.00	606868.99
35	0.27	152.91	35.00	-7.09	-0.08	0.05	5767919.98	606869.00
40	0.28	153.53	40.00	-12.09	-0.10	0.06	5767919.96	606869.01
45	0.15	141.98	45.00	-17.09	-0.12	0.07	5767919.95	606869.02
50	0.25	150.77	50.00	-22.09	-0.13	0.08	5767919.93	606869.03
55	0.24	151.84	55.00	-27.09	-0.15	0.09	5767919.91	606869.04
60	0.24	151.71	60.00	-32.09	-0.17	0.10	5767919.89	606869.05
65	0.19	146.92	65.00	-37.09	-0.18	0.11	5767919.88	606869.06
70	0.22	147.85	70.00	-42.09	-0.20	0.12	5767919.86	606869.07
75	0.21	149.12	75.00	-47.09	-0.22	0.13	5767919.85	606869.08
80	0.26	153.06	80.00	-52.09	-0.23	0.13	5767919.83	606869.09
85	0.48	159.91	85.00	-57.09	-0.26	0.15	5767919.80	606869.10
90	0.63	162.46	90.00	-62.09	-0.31	0.16	5767919.75	606869.11
95	0.86	162.59	95.00	-67.09	-0.37	0.18	5767919.69	606869.13
100	1.07	166.18	100.00	-72.09	-0.45	0.20	5767919.61	606869.16
105	1.31	167.26	105.00	-77.09	-0.55	0.23	5767919.51	606869.18
110	1.63	167.15	110.00	-82.09	-0.68	0.26	5767919.38	606869.21
115	1.88	167.75	114.99	-87.08	-0.83	0.29	5767919.23	606869.24
120	2.22	166.92	119.99	-92.08	-1.00	0.33	5767919.06	606869.28
125	2.58	167.22	124.99	-97.08	-1.21	0.38	5767918.85	606869.33
130	2.82	166.04	129.98	-102.07	-1.44	0.43	5767918.63	606869.38
135	3.25	165.83	134.97	-107.06	-1.69	0.49	5767918.37	606869.45
140	3.47	171.70	139.96	-112.05	-1.98	0.55	5767918.08	606869.50
145	3.70	170.51	144.95	-117.04	-2.29	0.60	5767917.77	606869.55
150	3.70	171.58	149.94	-122.03	-2.61	0.65	5767917.45	606869.60
155	3.74	172.39	154.93	-127.02	-2.93	0.69	5767917.13	606869.65
160	3.80	172.83	159.92	-132.01	-3.26	0.74	5767916.81	606869.69
165	3.86	172.56	164.91	-137.00	-3.59	0.78	5767916.47	606869.73
170	3.88	172.18	169.90	-141.99	-3.92	0.82	5767916.14	606869.78
175	3.92	172.25	174.89	-146.98	-4.26	0.87	5767915.80	606869.82
180	3.96	171.33	179.88	-151.97	-4.60	0.92	5767915.46	606869.87
185	3.95	171.18	184.86	-156.95	-4.94	0.97	5767915.12	606869.92
190	3.77	166.07	189.85	-161.94	-5.27	1.04	5767914.79	606869.99
195	3.60	158.63	194.84	-166.93	-5.57	1.13	5767914.49	606870.09
200	3.71	149.10	199.83	-171.92	-5.86	1.27	5767914.20	606870.23
205	3.69	147.57	204.82	-176.91	-6.13	1.44	5767913.93	606870.40
210	4.11	144.77	209.81	-181.90	-6.42	1.63	5767913.65	606870.59
215	4.42	143.54	214.80	-186.89	-6.72	1.85	5767913.34	606870.80
220	5.09	142.35	219.78	-191.87	-7.05	2.10	5767913.01	606871.05
225	5.35	143.75	224.76	-196.85	-7.41	2.37	5767912.65	606871.33
230	5.91	144.58	229.73	-201.82	-7.81	2.66	5767912.25	606871.61
235	6.20	144.91	234.71	-206.80	-8.24	2.97	5767911.82	606871.92
240	6.63	145.76	239.68	-211.77	-8.70	3.28	5767911.36	606872.24
245	6.88	145.68	244.64	-216.73	-9.19	3.62	5767910.88	606872.57
250	7.18	145.62	249.60	-221.69	-9.69	3.96	5767910.37	606872.91
255	7.34	145.48	254.56	-226.65	-10.21	4.32	5767909.85	606873.27
260	7.52	145.33	259.52	-231.61	-10.74	4.68	5767909.32	606873.64

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
265	7.76	144.94	264.48	-236.57	-11.29	5.06	5767908.77	606874.02
270	7.95	145.89	269.43	-241.52	-11.85	5.45	5767908.21	606874.40
275	8.28	146.45	274.38	-246.47	-12.44	5.85	5767907.62	606874.80
280	8.54	146.90	279.33	-251.42	-13.05	6.25	5767907.01	606875.20
285	8.90	147.24	284.27	-256.36	-13.69	6.66	5767906.38	606875.61
290	9.15	147.26	289.21	-261.30	-14.34	7.08	5767905.72	606876.04
295	9.39	147.40	294.14	-266.23	-15.02	7.52	5767905.04	606876.47
300	9.52	147.47	299.07	-271.16	-15.72	7.96	5767904.35	606876.91
305	9.70	148.03	304.00	-276.09	-16.42	8.41	5767903.64	606877.36
310	9.77	148.60	308.93	-281.02	-17.14	8.85	5767902.92	606877.80
315	10.08	149.57	313.86	-285.95	-17.88	9.29	5767902.18	606878.24
320	10.29	149.70	318.78	-290.87	-18.64	9.74	5767901.42	606878.69
325	10.47	149.92	323.70	-295.79	-19.42	10.19	5767900.64	606879.14
330	10.69	149.92	328.61	-300.70	-20.22	10.65	5767899.85	606879.60
335	11.05	150.24	333.52	-305.61	-21.03	11.12	5767899.03	606880.07
340	11.24	149.99	338.43	-310.52	-21.87	11.60	5767898.19	606880.56
345	11.70	149.90	343.33	-315.42	-22.73	12.10	5767897.33	606881.05
350	12.13	150.93	348.22	-320.31	-23.63	12.61	5767896.43	606881.56
355	12.66	151.53	353.10	-325.19	-24.57	13.13	5767895.49	606882.08
360	13.06	151.95	357.98	-330.07	-25.55	13.66	5767894.51	606882.61
365	13.67	152.47	362.84	-334.93	-26.57	14.19	5767893.49	606883.14
370	14.16	153.10	367.69	-339.78	-27.64	14.74	5767892.42	606883.69
375	14.65	153.89	372.54	-344.63	-28.76	15.30	5767891.31	606884.25
380	15.00	154.22	377.37	-349.46	-29.91	15.86	5767890.16	606884.81
385	15.41	154.83	382.20	-354.29	-31.09	16.42	5767888.97	606885.37
390	15.68	155.47	387.01	-359.10	-32.31	16.98	5767887.76	606885.94
395	16.10	156.38	391.82	-363.91	-33.56	17.54	5767886.51	606886.49
400	16.45	156.61	396.62	-368.71	-34.84	18.10	5767885.22	606887.05
405	16.71	156.70	401.41	-373.50	-36.15	18.67	5767883.91	606887.62
410	16.99	156.88	406.20	-378.29	-37.48	19.24	5767882.58	606888.19
415	17.19	156.96	410.98	-383.07	-38.83	19.81	5767881.23	606888.77
420	17.47	156.90	415.75	-387.84	-40.20	20.40	5767879.86	606889.35
425	17.57	157.29	420.52	-392.61	-41.59	20.98	5767878.47	606889.94
430	17.84	157.70	425.28	-397.37	-43.00	21.57	5767877.07	606890.52
435	18.08	157.66	430.04	-402.13	-44.42	22.15	5767875.64	606891.10
440	18.43	158.27	434.79	-406.88	-45.87	22.74	5767874.19	606891.69
445	18.69	158.12	439.53	-411.62	-47.35	23.33	5767872.71	606892.28
450	18.92	158.20	444.26	-416.35	-48.85	23.93	5767871.21	606892.88
455	19.07	158.04	448.99	-421.08	-50.36	24.54	5767869.70	606893.49
460	19.31	158.22	453.71	-425.80	-51.88	25.15	5767868.18	606894.10
465	19.44	158.14	458.43	-430.52	-53.42	25.77	5767866.64	606894.72
470	19.68	158.37	463.14	-435.23	-54.98	26.39	5767865.08	606895.34
475	20.05	159.10	467.84	-439.93	-56.56	27.00	5767863.50	606895.95
480	20.42	159.44	472.53	-444.62	-58.18	27.61	5767861.88	606896.57
485	20.80	159.55	477.21	-449.30	-59.83	28.23	5767860.23	606897.18
490	21.22	159.78	481.88	-453.97	-61.51	28.85	5767858.55	606897.80
495	21.56	159.80	486.54	-458.63	-63.22	29.48	5767856.84	606898.43
500	21.92	159.86	491.18	-463.27	-64.96	30.12	5767855.10	606899.07
505	22.14	159.97	495.81	-467.90	-66.72	30.77	5767853.34	606899.72
510	22.37	160.43	500.44	-472.53	-68.50	31.41	5767851.56	606900.36
515	22.71	160.39	505.06	-477.15	-70.31	32.05	5767849.75	606901.00
520	23.12	160.94	509.67	-481.76	-72.14	32.69	5767847.92	606901.65
525	23.40	160.29	514.26	-486.35	-74.01	33.35	5767846.05	606902.30
530	23.69	160.21	518.84	-490.93	-75.89	34.02	5767844.18	606902.98
535	24.08	160.15	523.41	-495.50	-77.79	34.71	5767842.27	606903.66
540	24.43	160.17	527.97	-500.06	-79.72	35.41	5767840.34	606904.36
545	24.75	160.39	532.52	-504.61	-81.68	36.11	5767838.38	606905.06
550	25.03	160.39	537.06	-509.15	-83.66	36.82	5767836.40	606905.77
555	25.56	160.50	541.58	-513.67	-85.68	37.53	5767834.38	606906.48
560	25.95	160.55	546.08	-518.17	-87.73	38.26	5767832.34	606907.21
565	26.64	160.59	550.56	-522.65	-89.81	38.99	5767830.25	606907.94
570	27.10	160.43	555.02	-527.11	-91.94	39.75	5767828.12	606908.70
575	27.83	160.44	559.46	-531.55	-94.12	40.52	5767825.94	606909.47
580	28.18	160.36	563.87	-535.96	-96.33	41.31	5767823.73	606910.26
585	28.82	160.43	568.27	-540.36	-98.58	42.11	5767821.49	606911.06
590	29.34	160.57	572.64	-544.73	-100.87	42.92	5767819.19	606911.87

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
595	30.02	160.55	576.98	-549.07	-103.20	43.74	5767816.86	606912.69
600	30.54	160.50	581.30	-553.39	-105.58	44.58	5767814.48	606913.53
605	31.34	160.46	585.59	-557.68	-108.00	45.44	5767812.06	606914.39
610	32.09	160.37	589.84	-561.93	-110.48	46.32	5767809.58	606915.27
615	32.86	160.27	594.06	-566.15	-113.01	47.23	5767807.06	606916.18
620	33.59	160.22	598.24	-570.33	-115.58	48.15	5767804.48	606917.10
625	34.23	160.29	602.39	-574.48	-118.21	49.10	5767801.85	606918.05
630	34.69	160.41	606.51	-578.60	-120.87	50.05	5767799.19	606919.00
635	35.05	160.46	610.61	-582.70	-123.57	51.00	5767796.49	606919.96
640	35.30	160.28	614.70	-586.79	-126.28	51.97	5767793.78	606920.92
645	35.55	160.36	618.78	-590.87	-129.01	52.95	5767791.05	606921.90
650	35.94	158.99	622.73	-594.82	-131.69	54.38	5767788.37	606923.33
655	36.33	157.62	626.69	-598.78	-134.38	55.82	5767785.68	606924.77
660	36.72	156.25	630.65	-602.74	-137.06	57.25	5767783.00	606926.21
665	37.11	154.88	634.61	-606.70	-139.75	58.69	5767780.32	606927.64
670	37.50	153.51	638.56	-610.65	-142.43	60.12	5767777.63	606929.08
675	37.89	152.13	642.52	-614.61	-145.11	61.56	5767774.95	606930.51
680	38.28	150.76	646.48	-618.57	-147.80	63.00	5767772.26	606931.95
685	38.67	149.39	650.43	-622.52	-150.48	64.43	5767769.58	606933.38
690	39.06	148.02	654.39	-626.48	-153.17	65.87	5767766.89	606934.82
695	39.45	146.65	658.35	-630.44	-155.85	67.30	5767764.21	606936.25
700	39.84	145.28	662.31	-634.40	-158.54	68.74	5767761.53	606937.69
705	40.16	144.09	666.23	-638.32	-161.20	70.29	5767758.87	606939.24
710	40.23	143.53	670.04	-642.13	-163.77	72.25	5767756.29	606941.20
715	40.30	142.97	673.85	-645.94	-166.34	74.22	5767753.72	606943.17
720	40.37	142.41	677.66	-649.75	-168.91	76.18	5767751.15	606945.13
725	40.45	141.86	681.47	-653.56	-171.48	78.15	5767748.58	606947.10
730	40.52	141.30	685.29	-657.38	-174.05	80.11	5767746.01	606949.06
735	40.56	141.22	689.09	-661.18	-176.62	82.10	5767743.44	606951.05
740	40.58	141.51	692.88	-664.97	-179.18	84.11	5767740.88	606953.06
745	40.61	141.79	696.68	-668.77	-181.74	86.12	5767738.32	606955.07
750	40.63	142.07	700.47	-672.56	-184.30	88.12	5767735.76	606957.08
755	40.65	142.36	704.27	-676.36	-186.86	90.13	5767733.20	606959.08
760	40.67	142.64	708.07	-680.16	-189.42	92.14	5767730.64	606961.09
765	40.72	142.78	711.85	-683.94	-192.02	94.12	5767728.04	606963.07
770	40.78	142.86	715.63	-687.72	-194.63	96.09	5767725.43	606965.04
775	40.84	142.94	719.42	-691.51	-197.24	98.06	5767722.82	606967.02
780	40.90	143.02	723.20	-695.29	-199.85	100.03	5767720.21	606968.99
785	40.96	143.10	726.98	-699.07	-202.46	102.00	5767717.60	606970.96
790	41.02	143.18	730.76	-702.85	-205.07	103.97	5767714.99	606972.93
795	41.03	142.42	734.54	-706.63	-207.62	106.04	5767712.44	606974.99
800	41.04	141.62	738.31	-710.40	-210.17	108.11	5767709.89	606977.06
805	41.05	140.82	742.08	-714.17	-212.71	110.18	5767707.35	606979.13
810	41.06	140.03	745.85	-717.94	-215.26	112.25	5767704.80	606981.20
815	41.07	139.23	749.62	-721.71	-217.81	114.32	5767702.25	606983.27
820	41.09	138.45	753.39	-725.48	-220.32	116.44	5767699.74	606985.39
825	41.14	137.73	757.15	-729.24	-222.71	118.70	5767697.35	606987.65
830	41.19	137.01	760.91	-733.00	-225.10	120.97	5767694.97	606989.92
835	41.24	136.29	764.68	-736.77	-227.49	123.23	5767692.58	606992.19
840	41.28	135.56	768.44	-740.53	-229.88	125.50	5767690.19	606994.45
845	41.33	134.84	772.20	-744.29	-232.26	127.77	5767687.80	606996.72
850	41.37	133.93	775.96	-748.05	-234.56	130.13	5767685.50	606999.08
855	41.39	132.76	779.71	-751.80	-236.74	132.61	5767683.33	607001.57
860	41.41	131.59	783.46	-755.55	-238.91	135.10	5767681.15	607004.06
865	41.43	130.42	787.21	-759.30	-241.08	137.59	5767678.98	607006.54
870	41.45	129.25	790.96	-763.05	-243.25	140.08	5767676.81	607009.03
875	41.48	128.08	794.71	-766.80	-245.43	142.57	5767674.63	607011.52
880	41.60	127.15	798.44	-770.53	-247.41	145.24	5767672.65	607014.19
885	41.76	126.29	802.16	-774.25	-249.34	147.97	5767670.72	607016.92
890	41.93	125.43	805.88	-777.97	-251.27	150.69	5767668.79	607019.64
895	42.09	124.58	809.60	-781.69	-253.21	153.42	5767666.86	607022.37
900	42.25	123.72	813.32	-785.41	-255.14	156.14	5767664.92	607025.09
905	42.41	122.87	817.04	-789.13	-257.06	158.87	5767663.00	607027.82
910	42.60	122.40	820.70	-792.79	-258.84	161.77	5767661.22	607030.73
915	42.79	121.93	824.36	-796.45	-260.63	164.68	5767659.44	607033.63
920	42.97	121.45	828.02	-800.11	-262.41	167.58	5767657.65	607036.53

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
925	43.16	120.98	831.68	-803.77	-264.19	170.48	5767655.87	607039.43
930	43.35	120.51	835.34	-807.43	-265.97	173.38	5767654.09	607042.33
935	43.48	120.21	838.99	-811.08	-267.73	176.32	5767652.33	607045.27
940	43.53	120.15	842.61	-814.70	-269.46	179.30	5767650.60	607048.25
945	43.58	120.09	846.23	-818.32	-271.18	182.29	5767648.88	607051.24
950	43.63	120.02	849.85	-821.94	-272.91	185.27	5767647.15	607054.22
955	43.67	119.96	853.47	-825.56	-274.64	188.25	5767645.42	607057.21
960	43.72	119.89	857.09	-829.18	-276.36	191.24	5767643.70	607060.19
965	43.73	119.87	860.71	-832.80	-278.09	194.23	5767641.98	607063.18
970	43.70	119.87	864.33	-836.42	-279.81	197.22	5767640.26	607066.18
975	43.68	119.87	867.94	-840.03	-281.52	200.22	5767638.54	607069.17
980	43.65	119.86	871.56	-843.65	-283.24	203.21	5767636.82	607072.16
985	43.63	119.86	875.18	-847.27	-284.96	206.21	5767635.10	607075.16
990	43.60	119.86	878.79	-850.88	-286.68	209.20	5767633.38	607078.15
995	43.61	119.82	882.41	-854.50	-288.39	212.20	5767631.67	607081.15
1000	43.62	119.78	886.03	-858.12	-290.11	215.19	5767629.96	607084.14
1005	43.63	119.74	889.65	-861.74	-291.82	218.19	5767628.24	607087.14
1010	43.65	119.69	893.27	-865.36	-293.53	221.18	5767626.53	607090.14
1015	43.66	119.65	896.89	-868.98	-295.24	224.18	5767624.82	607093.13
1020	43.67	119.61	900.51	-872.60	-296.95	227.18	5767623.11	607096.13
1025	43.65	119.61	904.12	-876.21	-298.65	230.18	5767621.41	607099.13
1030	43.64	119.60	907.74	-879.83	-300.36	233.18	5767619.70	607102.13
1035	43.63	119.60	911.36	-883.45	-302.06	236.18	5767618.00	607105.13
1040	43.61	119.60	914.98	-887.07	-303.77	239.18	5767616.30	607108.13
1045	43.60	119.59	918.60	-890.69	-305.47	242.18	5767614.59	607111.13
1050	43.63	119.68	922.21	-894.30	-307.19	245.17	5767612.87	607114.12
1055	43.74	119.92	925.82	-897.91	-308.94	248.17	5767611.12	607117.12
1060	43.84	120.16	929.42	-901.51	-310.69	251.16	5767609.38	607120.11
1065	43.95	120.40	933.02	-905.11	-312.43	254.15	5767607.63	607123.11
1070	44.06	120.64	936.63	-908.72	-314.18	257.15	5767605.88	607126.10
1075	44.17	120.88	940.23	-912.32	-315.93	260.14	5767604.13	607129.09
1080	44.20	120.93	943.82	-915.91	-317.70	263.13	5767602.36	607132.09
1085	44.21	120.90	947.40	-919.49	-319.49	266.13	5767600.57	607135.08
1090	44.21	120.88	950.99	-923.08	-321.28	269.12	5767598.78	607138.07
1095	44.21	120.85	954.57	-926.66	-323.07	272.11	5767596.99	607141.06
1100	44.22	120.82	958.16	-930.25	-324.86	275.10	5767595.20	607144.06
1105	44.22	120.79	961.74	-933.83	-326.65	278.10	5767593.41	607147.05
1110	44.21	120.78	965.33	-937.42	-328.43	281.09	5767591.63	607150.04
1115	44.20	120.76	968.91	-941.00	-330.21	284.09	5767589.85	607153.04
1120	44.19	120.75	972.50	-944.59	-332.00	287.08	5767588.07	607156.03
1125	44.18	120.73	976.08	-948.17	-333.78	290.08	5767586.28	607159.03
1130	44.17	120.72	979.67	-951.76	-335.56	293.07	5767584.50	607162.02
1135	44.15	120.72	983.25	-955.34	-337.34	296.07	5767582.72	607165.02
1140	44.11	120.75	986.85	-958.94	-339.12	299.05	5767580.94	607168.00
1145	44.07	120.78	990.44	-962.53	-340.90	302.04	5767579.16	607170.99
1150	44.04	120.81	994.03	-966.12	-342.68	305.03	5767577.38	607173.98
1155	44.00	120.84	997.63	-969.72	-344.46	308.01	5767575.60	607176.96
1160	43.96	120.87	1001.22	-973.31	-346.24	311.00	5767573.82	607179.95
1165	43.92	120.87	1004.82	-976.91	-348.02	313.98	5767572.04	607182.93
1170	43.90	120.85	1008.43	-980.52	-349.79	316.95	5767570.27	607185.90
1175	43.87	120.83	1012.03	-984.12	-351.57	319.93	5767568.49	607188.88
1180	43.84	120.81	1015.64	-987.73	-353.34	322.90	5767566.72	607191.85
1185	43.81	120.79	1019.24	-991.33	-355.12	325.88	5767564.94	607194.83
1190	43.78	120.76	1022.85	-994.94	-356.89	328.85	5767563.17	607197.80
1195	43.75	120.72	1026.46	-998.55	-358.65	331.83	5767561.41	607200.78
1200	43.72	120.68	1030.08	-1002.17	-360.41	334.80	5767559.65	607203.75
1205	43.69	120.63	1033.69	-1005.78	-362.17	337.77	5767557.89	607206.72
1210	43.66	120.58	1037.31	-1009.40	-363.93	340.74	5767556.13	607209.69
1215	43.63	120.53	1040.92	-1013.01	-365.69	343.71	5767554.37	607212.66
1220	43.60	120.49	1044.54	-1016.63	-367.45	346.68	5767552.61	607215.64
1225	43.57	120.44	1048.17	-1020.26	-369.19	349.65	5767550.87	607218.61
1230	43.54	120.40	1051.79	-1023.88	-370.93	352.62	5767549.13	607221.58
1235	43.51	120.36	1055.42	-1027.51	-372.67	355.60	5767547.39	607224.55
1240	43.48	120.31	1059.04	-1031.13	-374.41	358.57	5767545.65	607227.52
1245	43.45	120.27	1062.67	-1034.76	-376.15	361.54	5767543.91	607230.49
1250	43.42	120.25	1066.30	-1038.39	-377.89	364.50	5767542.17	607233.46

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1255	43.40	120.30	1069.93	-1042.02	-379.63	367.47	5767540.44	607236.42
1260	43.38	120.34	1073.57	-1045.66	-381.36	370.43	5767538.70	607239.38
1265	43.37	120.39	1077.20	-1049.29	-383.10	373.39	5767536.96	607242.34
1270	43.35	120.43	1080.84	-1052.93	-384.83	376.35	5767535.23	607245.31
1275	43.33	120.47	1084.47	-1056.56	-386.57	379.32	5767533.49	607248.27
1280	43.30	120.47	1088.11	-1060.20	-388.30	382.28	5767531.76	607251.23
1285	43.27	120.43	1091.75	-1063.84	-390.03	385.23	5767530.03	607254.18
1290	43.24	120.39	1095.40	-1067.49	-391.77	388.18	5767528.30	607257.14
1295	43.21	120.35	1099.04	-1071.13	-393.50	391.14	5767526.56	607260.09
1300	43.18	120.31	1102.68	-1074.77	-395.23	394.09	5767524.83	607263.04
1305	43.15	120.27	1106.33	-1078.42	-396.96	397.05	5767523.10	607266.00
1310	43.25	120.44	1109.96	-1082.05	-398.72	400.00	5767521.34	607268.95
1315	43.37	120.65	1113.58	-1085.67	-400.49	402.96	5767519.57	607271.91
1320	43.50	120.87	1117.21	-1089.30	-402.26	405.91	5767517.81	607274.86
1325	43.63	121.09	1120.83	-1092.92	-404.02	408.87	5767516.04	607277.82
1330	43.76	121.30	1124.46	-1096.55	-405.79	411.82	5767514.27	607280.77
1335	43.88	121.50	1128.08	-1100.17	-407.56	414.77	5767512.50	607283.73
1340	43.89	121.52	1131.69	-1103.78	-409.37	417.73	5767510.69	607286.68
1345	43.91	121.54	1135.29	-1107.38	-411.19	420.68	5767508.87	607289.64
1350	43.92	121.55	1138.89	-1110.98	-413.00	423.64	5767507.06	607292.59
1355	43.93	121.57	1142.49	-1114.58	-414.82	426.59	5767505.24	607295.55
1360	43.94	121.59	1146.09	-1118.18	-416.63	429.55	5767503.43	607298.50
1365	43.93	121.62	1149.70	-1121.79	-418.45	432.50	5767501.61	607301.45
1370	43.87	121.67	1153.31	-1125.40	-420.27	435.44	5767499.79	607304.39
1375	43.81	121.72	1156.92	-1129.01	-422.09	438.38	5767497.97	607307.34
1380	43.76	121.77	1160.53	-1132.62	-423.91	441.33	5767496.15	607310.28
1385	43.70	121.81	1164.14	-1136.23	-425.73	444.27	5767494.33	607313.22
1390	43.64	121.86	1167.75	-1139.84	-427.55	447.21	5767492.51	607316.16
1395	43.58	121.88	1171.37	-1143.46	-429.37	450.14	5767490.69	607319.09
1400	43.50	121.88	1175.00	-1147.09	-431.18	453.06	5767488.88	607322.01
1405	43.43	121.88	1178.64	-1150.73	-433.00	455.98	5767487.07	607324.93
1410	43.36	121.88	1182.27	-1154.36	-434.81	458.89	5767485.25	607327.84
1415	43.29	121.88	1185.90	-1157.99	-436.63	461.81	5767483.44	607330.76
1420	43.22	121.88	1189.53	-1161.62	-438.44	464.73	5767481.62	607333.68
1425	43.21	121.88	1193.17	-1165.26	-440.25	467.64	5767479.81	607336.59
1430	43.21	121.88	1196.82	-1168.91	-442.06	470.55	5767478.00	607339.50
1435	43.21	121.88	1200.46	-1172.55	-443.87	473.45	5767476.19	607342.40
1440	43.22	121.88	1204.11	-1176.20	-445.67	476.36	5767474.39	607345.31
1445	43.22	121.88	1207.75	-1179.84	-447.48	479.27	5767472.58	607348.22
1450	43.22	121.88	1211.39	-1183.48	-449.29	482.17	5767470.77	607351.13
1455	43.37	122.15	1215.01	-1187.10	-451.15	485.08	5767468.91	607354.03
1460	43.54	122.46	1218.63	-1190.72	-453.02	487.98	5767467.04	607356.94
1465	43.71	122.77	1222.24	-1194.33	-454.89	490.89	5767465.17	607359.84
1470	43.88	123.08	1225.85	-1197.94	-456.77	493.79	5767463.30	607362.74
1475	44.05	123.39	1229.47	-1201.56	-458.64	496.70	5767461.42	607365.65
1480	44.21	123.67	1233.08	-1205.17	-460.51	499.60	5767459.55	607368.55
1485	44.20	123.70	1236.67	-1208.76	-462.45	502.50	5767457.61	607371.45
1490	44.19	123.74	1240.25	-1212.34	-464.39	505.40	5767455.68	607374.35
1495	44.18	123.77	1243.84	-1215.93	-466.32	508.29	5767453.74	607377.24
1500	44.17	123.80	1247.42	-1219.51	-468.26	511.19	5767451.80	607380.14
1505	44.16	123.83	1251.01	-1223.10	-470.19	514.09	5767449.87	607383.04
1510	44.15	123.85	1254.60	-1226.69	-472.13	516.98	5767447.93	607385.93
1515	44.15	123.85	1258.18	-1230.27	-474.07	519.87	5767445.99	607388.83
1520	44.14	123.84	1261.77	-1233.86	-476.01	522.77	5767444.05	607391.72
1525	44.14	123.84	1265.36	-1237.45	-477.95	525.66	5767442.11	607394.61
1530	44.13	123.83	1268.95	-1241.04	-479.89	528.55	5767440.17	607397.50
1535	44.13	123.83	1272.54	-1244.63	-481.83	531.44	5767438.23	607400.40
1540	44.13	123.83	1276.12	-1248.21	-483.77	534.34	5767436.30	607403.29
1545	44.14	123.84	1279.71	-1251.80	-485.71	537.23	5767434.36	607406.18
1550	44.14	123.84	1283.30	-1255.39	-487.64	540.12	5767432.42	607409.07
1555	44.14	123.84	1286.89	-1258.98	-489.58	543.01	5767430.48	607411.96
1560	44.15	123.85	1290.48	-1262.57	-491.52	545.90	5767428.54	607414.86
1565	44.15	123.85	1294.07	-1266.16	-493.46	548.80	5767426.60	607417.75
1570	44.11	123.85	1297.66	-1269.75	-495.40	551.68	5767424.66	607420.63
1575	44.07	123.85	1301.25	-1273.34	-497.33	554.57	5767422.73	607423.52
1580	44.04	123.85	1304.85	-1276.94	-499.27	557.46	5767420.79	607426.41

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1585	44.00	123.85	1308.44	-1280.53	-501.21	560.34	5767418.86	607429.29
1590	43.96	123.85	1312.04	-1284.13	-503.14	563.23	5767416.92	607432.18
1595	43.93	123.85	1315.63	-1287.72	-505.08	566.11	5767414.98	607435.07
1600	43.89	123.86	1319.24	-1291.33	-507.01	568.99	5767413.05	607437.94
1605	43.86	123.87	1322.85	-1294.94	-508.94	571.87	5767411.12	607440.82
1610	43.83	123.87	1326.45	-1298.54	-510.87	574.74	5767409.19	607443.69
1615	43.80	123.88	1330.06	-1302.15	-512.80	577.62	5767407.26	607446.57
1620	43.77	123.89	1333.66	-1305.75	-514.73	580.49	5767405.33	607449.44
1625	43.73	123.89	1337.28	-1309.37	-516.66	583.36	5767403.41	607452.31
1630	43.68	123.89	1340.90	-1312.99	-518.58	586.22	5767401.48	607455.18
1635	43.63	123.89	1344.52	-1316.61	-520.50	589.09	5767399.56	607458.04
1640	43.58	123.89	1348.14	-1320.23	-522.42	591.95	5767397.64	607460.90
1645	43.52	123.89	1351.76	-1323.85	-524.35	594.81	5767395.72	607463.76
1650	43.47	123.89	1355.38	-1327.47	-526.27	597.68	5767393.79	607466.63
1655	43.47	123.90	1359.01	-1331.10	-528.19	600.53	5767391.87	607469.48
1660	43.48	123.92	1362.63	-1334.72	-530.11	603.39	5767389.95	607472.34
1665	43.48	123.93	1366.26	-1338.35	-532.03	606.24	5767388.03	607475.19
1670	43.49	123.95	1369.89	-1341.98	-533.95	609.10	5767386.11	607478.05
1675	43.50	123.97	1373.52	-1345.61	-535.87	611.95	5767384.19	607480.90
1680	43.52	123.97	1377.14	-1349.23	-537.79	614.81	5767382.27	607483.76
1685	43.61	123.84	1380.75	-1352.84	-539.71	617.69	5767380.35	607486.64
1690	43.70	123.71	1384.36	-1356.45	-541.62	620.57	5767378.44	607489.52
1695	43.80	123.59	1387.97	-1360.06	-543.54	623.45	5767376.52	607492.40
1700	43.89	123.46	1391.58	-1363.67	-545.45	626.33	5767374.61	607495.28
1705	43.98	123.33	1395.19	-1367.28	-547.37	629.21	5767372.69	607498.16
1710	44.04	123.24	1398.80	-1370.89	-549.28	632.10	5767370.78	607501.05
1715	44.03	123.20	1402.40	-1374.49	-551.18	635.01	5767368.88	607503.96
1720	44.02	123.16	1405.99	-1378.08	-553.08	637.92	5767366.98	607506.87
1725	44.02	123.13	1409.59	-1381.68	-554.98	640.83	5767365.08	607509.78
1730	44.01	123.09	1413.18	-1385.27	-556.88	643.74	5767363.18	607512.69
1731	44.01	123.08	1413.90	-1385.99	-557.26	644.32	5767362.80	607513.27
1732	44.01	123.08	1414.62	-1386.71	-557.64	644.90	5767362.42	607513.85
1733	44.01	123.07	1415.34	-1387.43	-558.02	645.48	5767362.04	607514.44
1734	44.00	123.06	1416.06	-1388.15	-558.40	646.07	5767361.66	607515.02
1735	44.00	123.05	1416.78	-1388.87	-558.78	646.65	5767361.28	607515.60
1736	44.00	123.05	1417.50	-1389.59	-559.16	647.23	5767360.90	607516.18
1737	44.00	123.04	1418.21	-1390.30	-559.54	647.81	5767360.52	607516.76
1738	44.01	123.04	1418.93	-1391.02	-559.92	648.40	5767360.15	607517.35
1739	44.02	123.03	1419.65	-1391.74	-560.30	648.98	5767359.77	607517.93
1740	44.03	123.03	1420.37	-1392.46	-560.67	649.56	5767359.39	607518.52
1741	44.04	123.02	1421.09	-1393.18	-561.05	650.15	5767359.01	607519.10
1742	44.05	123.02	1421.80	-1393.89	-561.43	650.73	5767358.63	607519.68
1743	44.06	123.01	1422.52	-1394.61	-561.81	651.32	5767358.25	607520.27
1744	44.06	123.01	1423.24	-1395.33	-562.19	651.90	5767357.87	607520.85
1745	44.07	123.01	1423.96	-1396.05	-562.57	652.49	5767357.49	607521.44
1746	44.08	123.00	1424.67	-1396.76	-562.95	653.07	5767357.11	607522.02
1747	44.09	123.00	1425.39	-1397.48	-563.33	653.65	5767356.73	607522.60
1748	44.10	122.99	1426.11	-1398.20	-563.71	654.24	5767356.36	607523.19
1749	44.11	122.99	1426.83	-1398.92	-564.09	654.82	5767355.98	607523.77
1750	44.12	122.99	1427.55	-1399.64	-564.46	655.41	5767355.60	607524.36
1751	44.13	122.98	1428.26	-1400.35	-564.84	655.99	5767355.22	607524.94
1752	44.14	122.98	1428.98	-1401.07	-565.22	656.57	5767354.84	607525.52
1753	44.15	122.97	1429.70	-1401.79	-565.60	657.16	5767354.46	607526.11
1754	44.16	122.97	1430.42	-1402.51	-565.98	657.74	5767354.08	607526.69
1755	44.16	122.96	1431.13	-1403.22	-566.36	658.33	5767353.70	607527.28
1756	44.17	122.96	1431.85	-1403.94	-566.74	658.91	5767353.32	607527.86
1757	44.18	122.96	1432.57	-1404.66	-567.12	659.49	5767352.94	607528.45
1758	44.19	122.95	1433.29	-1405.38	-567.50	660.08	5767352.57	607529.03
1759	44.20	122.95	1434.01	-1406.10	-567.88	660.66	5767352.19	607529.61
1760	44.21	122.94	1434.72	-1406.81	-568.25	661.25	5767351.81	607530.20
1761	44.22	122.94	1435.44	-1407.53	-568.63	661.83	5767351.43	607530.78
1762	44.23	122.93	1436.16	-1408.25	-569.01	662.41	5767351.05	607531.37
1763	44.24	122.93	1436.88	-1408.97	-569.39	663.00	5767350.67	607531.95
1764	44.25	122.93	1437.59	-1409.68	-569.77	663.58	5767350.29	607532.53
1765	44.25	122.92	1438.31	-1410.40	-570.15	664.17	5767349.91	607533.12
1766	44.27	122.91	1439.03	-1411.12	-570.53	664.75	5767349.53	607533.71

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1767	44.29	122.88	1439.74	-1411.83	-570.90	665.34	5767349.16	607534.30
1768	44.30	122.85	1440.45	-1412.54	-571.28	665.94	5767348.78	607534.89
1769	44.32	122.82	1441.17	-1413.26	-571.66	666.53	5767348.40	607535.48
1770	44.34	122.79	1441.88	-1413.97	-572.03	667.12	5767348.03	607536.07
1771	44.36	122.76	1442.59	-1414.68	-572.41	667.71	5767347.65	607536.66
1772	44.37	122.73	1443.31	-1415.40	-572.79	668.30	5767347.27	607537.25
1773	44.39	122.70	1444.02	-1416.11	-573.16	668.89	5767346.90	607537.84
1774	44.41	122.67	1444.73	-1416.82	-573.54	669.48	5767346.52	607538.43
1775	44.43	122.65	1445.45	-1417.54	-573.92	670.07	5767346.14	607539.03
1776	44.44	122.62	1446.16	-1418.25	-574.29	670.67	5767345.77	607539.62
1777	44.46	122.59	1446.87	-1418.96	-574.67	671.26	5767345.39	607540.21
1778	44.48	122.56	1447.59	-1419.68	-575.05	671.85	5767345.01	607540.80
1779	44.50	122.53	1448.30	-1420.39	-575.42	672.44	5767344.64	607541.39
1780	44.51	122.50	1449.01	-1421.10	-575.80	673.03	5767344.26	607541.98
1781	44.53	122.47	1449.73	-1421.82	-576.18	673.62	5767343.88	607542.57
1782	44.55	122.44	1450.44	-1422.53	-576.55	674.21	5767343.51	607543.16
1783	44.57	122.41	1451.15	-1423.24	-576.93	674.80	5767343.13	607543.76
1784	44.58	122.38	1451.86	-1423.95	-577.31	675.40	5767342.75	607544.35
1785	44.60	122.36	1452.58	-1424.67	-577.68	675.99	5767342.38	607544.94
1786	44.62	122.33	1453.29	-1425.38	-578.06	676.58	5767342.00	607545.53
1787	44.64	122.30	1454.00	-1426.09	-578.44	677.17	5767341.62	607546.12
1788	44.65	122.27	1454.72	-1426.81	-578.81	677.76	5767341.25	607546.71
1789	44.67	122.24	1455.43	-1427.52	-579.19	678.35	5767340.87	607547.30
1790	44.69	122.21	1456.14	-1428.23	-579.57	678.94	5767340.49	607547.89
1791	44.71	122.18	1456.86	-1428.95	-579.94	679.53	5767340.12	607548.48
1792	44.72	122.15	1457.57	-1429.66	-580.32	680.13	5767339.74	607549.09
1793	44.74	122.12	1458.28	-1430.37	-580.70	680.72	5767339.36	607549.67
1794	44.76	122.09	1459.00	-1431.09	-581.07	681.31	5767338.99	607550.26
1795	44.78	122.09	1459.70	-1431.79	-581.45	681.91	5767338.61	607550.86
1796	44.80	122.10	1460.41	-1432.50	-581.83	682.51	5767338.23	607551.46
1797	44.83	122.10	1461.11	-1433.20	-582.21	683.11	5767337.86	607552.06
1798	44.85	122.11	1461.82	-1433.91	-582.58	683.71	5767337.48	607552.66
1799	44.87	122.11	1462.53	-1434.62	-582.96	684.31	5767337.10	607553.26
1800	44.90	122.12	1463.23	-1435.32	-583.34	684.90	5767336.72	607553.86
1801	44.92	122.12	1463.94	-1436.03	-583.71	685.50	5767336.35	607554.46
1802	44.94	122.13	1464.64	-1436.73	-584.09	686.10	5767335.97	607555.06
1803	44.97	122.13	1465.35	-1437.44	-584.47	686.70	5767335.59	607555.66
1804	44.99	122.14	1466.06	-1438.15	-584.85	687.30	5767335.22	607556.25
1805	45.01	122.15	1466.76	-1438.85	-585.22	687.90	5767334.84	607556.85
1806	45.04	122.15	1467.47	-1439.56	-585.60	688.50	5767334.46	607557.45
1807	45.06	122.16	1468.17	-1440.26	-585.98	689.10	5767334.08	607558.05
1808	45.08	122.16	1468.88	-1440.97	-586.35	689.70	5767333.71	607558.65
1809	45.11	122.17	1469.58	-1441.67	-586.73	690.30	5767333.33	607559.25
1810	45.13	122.17	1470.29	-1442.38	-587.11	690.90	5767332.95	607559.85
1811	45.15	122.18	1471.00	-1443.09	-587.49	691.50	5767332.58	607560.45
1812	45.18	122.18	1471.70	-1443.79	-587.86	692.10	5767332.20	607561.05
1813	45.20	122.19	1472.41	-1444.50	-588.24	692.70	5767331.82	607561.65
1814	45.22	122.19	1473.11	-1445.20	-588.62	693.30	5767331.44	607562.25
1815	45.25	122.20	1473.82	-1445.91	-588.99	693.90	5767331.07	607562.85
1816	45.27	122.20	1474.52	-1446.61	-589.37	694.50	5767330.69	607563.45
1817	45.29	122.21	1475.23	-1447.32	-589.75	695.10	5767330.31	607564.05
1818	45.32	122.21	1475.94	-1448.03	-590.13	695.70	5767329.94	607564.65
1819	45.34	122.22	1476.64	-1448.73	-590.50	696.30	5767329.56	607565.25
1820	45.36	122.22	1477.35	-1449.44	-590.88	696.90	5767329.18	607565.85
1821	45.39	122.23	1478.05	-1450.14	-591.26	697.50	5767328.80	607566.45
1822	45.41	122.23	1478.76	-1450.85	-591.63	698.10	5767328.43	607567.05
1823	45.43	122.24	1479.46	-1451.55	-592.01	698.70	5767328.05	607567.65
1824	45.44	122.24	1480.17	-1452.26	-592.39	699.29	5767327.67	607568.25
1825	45.39	122.25	1480.88	-1452.97	-592.77	699.89	5767327.30	607568.84
1826	45.34	122.27	1481.59	-1453.68	-593.14	700.48	5767326.92	607569.43
1827	45.29	122.28	1482.30	-1454.39	-593.52	701.08	5767326.54	607570.03
1828	45.24	122.29	1483.01	-1455.10	-593.90	701.67	5767326.16	607570.62
1829	45.19	122.30	1483.72	-1455.81	-594.27	702.27	5767325.79	607571.22
1830	45.15	122.31	1484.43	-1456.52	-594.65	702.86	5767325.41	607571.81
1831	45.10	122.32	1485.14	-1457.23	-595.03	703.46	5767325.03	607572.41
1832	45.05	122.33	1485.85	-1457.94	-595.41	704.05	5767324.66	607573.00



MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1833	45.00	122.34	1486.56	-1458.65	-595.78	704.64	5767324.28	607573.60
1834	44.95	122.35	1487.27	-1459.36	-596.16	705.24	5767323.90	607574.19
1835	44.91	122.36	1487.98	-1460.07	-596.54	705.83	5767323.52	607574.78
1836	44.86	122.37	1488.69	-1460.78	-596.91	706.43	5767323.15	607575.38
1837	44.81	122.39	1489.40	-1461.49	-597.29	707.02	5767322.77	607575.97
1838	44.76	122.40	1490.12	-1462.21	-597.67	707.62	5767322.39	607576.57
1839	44.71	122.41	1490.83	-1462.92	-598.05	708.21	5767322.02	607577.16
1840	44.66	122.42	1491.54	-1463.63	-598.42	708.80	5767321.64	607577.76
1841	44.62	122.43	1492.25	-1464.34	-598.80	709.40	5767321.26	607578.35
1842	44.57	122.44	1492.96	-1465.05	-599.18	709.99	5767320.88	607578.94
1843	44.52	122.45	1493.67	-1465.76	-599.55	710.59	5767320.51	607579.54
1844	44.47	122.46	1494.38	-1466.47	-599.93	711.18	5767320.13	607580.13
1845	44.42	122.47	1495.09	-1467.18	-600.31	711.78	5767319.75	607580.73
1846	44.38	122.48	1495.80	-1467.89	-600.69	712.37	5767319.38	607581.32
1847	44.33	122.49	1496.51	-1468.60	-601.06	712.97	5767319.00	607581.92
1848	44.28	122.51	1497.22	-1469.31	-601.44	713.56	5767318.62	607582.51
1849	44.23	122.52	1497.93	-1470.02	-601.82	714.15	5767318.24	607583.11
1850	44.18	122.53	1498.64	-1470.73	-602.19	714.75	5767317.87	607583.70
1851	44.13	122.54	1499.35	-1471.44	-602.57	715.34	5767317.49	607584.29
1852	44.09	122.55	1500.06	-1472.15	-602.95	715.94	5767317.11	607584.89
1853	44.04	122.56	1500.77	-1472.86	-603.33	716.53	5767316.74	607585.48
1854	44.02	122.55	1501.49	-1473.58	-603.70	717.11	5767316.36	607586.07
1855	44.00	122.54	1502.21	-1474.30	-604.07	717.70	5767315.99	607586.65
1856	43.98	122.53	1502.93	-1475.02	-604.44	718.28	5767315.62	607587.23
1857	43.97	122.52	1503.66	-1475.75	-604.81	718.87	5767315.25	607587.82
1858	43.95	122.51	1504.38	-1476.47	-605.18	719.45	5767314.88	607588.40
1859	43.93	122.51	1505.10	-1477.19	-605.55	720.03	5767314.51	607588.99
1860	43.91	122.50	1505.82	-1477.91	-605.92	720.62	5767314.14	607589.57
1861	43.89	122.49	1506.54	-1478.63	-606.29	721.20	5767313.77	607590.15
1862	43.87	122.48	1507.27	-1479.36	-606.67	721.79	5767313.40	607590.74
1863	43.86	122.47	1507.99	-1480.08	-607.04	722.37	5767313.02	607591.32
1864	43.84	122.46	1508.71	-1480.80	-607.41	722.95	5767312.65	607591.91
1865	43.82	122.45	1509.43	-1481.52	-607.78	723.54	5767312.28	607592.49
1866	43.80	122.44	1510.15	-1482.24	-608.15	724.12	5767311.91	607593.07
1867	43.78	122.43	1510.88	-1482.97	-608.52	724.71	5767311.54	607593.66
1868	43.77	122.43	1511.60	-1483.69	-608.89	725.29	5767311.17	607594.24
1869	43.75	122.42	1512.32	-1484.41	-609.26	725.87	5767310.80	607594.83
1870	43.73	122.41	1513.04	-1485.13	-609.63	726.46	5767310.43	607595.41
1871	43.71	122.40	1513.76	-1485.85	-610.01	727.04	5767310.06	607595.99
1872	43.69	122.39	1514.49	-1486.58	-610.38	727.63	5767309.68	607596.58
1873	43.67	122.38	1515.21	-1487.30	-610.75	728.21	5767309.31	607597.16
1874	43.66	122.37	1515.93	-1488.02	-611.12	728.79	5767308.94	607597.75
1875	43.64	122.36	1516.65	-1488.74	-611.49	729.38	5767308.57	607598.33
1876	43.62	122.35	1517.37	-1489.46	-611.86	729.96	5767308.20	607598.91
1877	43.60	122.35	1518.10	-1490.19	-612.23	730.55	5767307.83	607599.50
1878	43.58	122.34	1518.82	-1490.91	-612.60	731.13	5767307.46	607600.08
1879	43.57	122.33	1519.54	-1491.63	-612.97	731.71	5767307.09	607600.67
1880	43.55	122.32	1520.26	-1492.35	-613.35	732.30	5767306.72	607601.25
1881	43.53	122.31	1520.98	-1493.07	-613.72	732.88	5767306.34	607601.83
1882	43.51	122.32	1521.71	-1493.80	-614.08	733.46	5767305.98	607602.41
1883	43.50	122.33	1522.44	-1494.53	-614.45	734.04	5767305.61	607602.99
1884	43.49	122.34	1523.17	-1495.26	-614.82	734.62	5767305.24	607603.57
1885	43.47	122.34	1523.89	-1495.98	-615.19	735.20	5767304.87	607604.15
1886	43.46	122.35	1524.62	-1496.71	-615.56	735.78	5767304.51	607604.73
1887	43.44	122.36	1525.35	-1497.44	-615.92	736.36	5767304.14	607605.31
1888	43.43	122.37	1526.08	-1498.17	-616.29	736.94	5767303.77	607605.89
1889	43.41	122.38	1526.80	-1498.89	-616.66	737.52	5767303.40	607606.47
1890	43.40	122.39	1527.53	-1499.62	-617.03	738.09	5767303.03	607607.05
1891	43.38	122.39	1528.26	-1500.35	-617.40	738.67	5767302.67	607607.62
1892	43.37	122.40	1528.99	-1501.08	-617.76	739.25	5767302.30	607608.20
1893	43.35	122.41	1529.71	-1501.80	-618.13	739.83	5767301.93	607608.78
1894	43.34	122.42	1530.44	-1502.53	-618.50	740.41	5767301.56	607609.36
1895	43.33	122.43	1531.17	-1503.26	-618.87	740.99	5767301.19	607609.94
1896	43.31	122.44	1531.90	-1503.99	-619.24	741.57	5767300.83	607610.52
1897	43.30	122.44	1532.62	-1504.71	-619.60	742.15	5767300.46	607611.10
1898	43.28	122.45	1533.35	-1505.44	-619.97	742.73	5767300.09	607611.68

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1899	43.27	122.46	1534.08	-1506.17	-620.34	743.31	5767299.72	607612.26
1900	43.25	122.47	1534.81	-1506.90	-620.71	743.89	5767299.35	607612.84
1901	43.24	122.48	1535.53	-1507.62	-621.08	744.46	5767298.99	607613.42
1902	43.22	122.49	1536.26	-1508.35	-621.44	745.04	5767298.62	607613.99
1903	43.21	122.49	1536.99	-1509.08	-621.81	745.62	5767298.25	607614.57
1904	43.19	122.50	1537.72	-1509.81	-622.18	746.20	5767297.88	607615.15
1905	43.18	122.51	1538.44	-1510.53	-622.55	746.78	5767297.51	607615.73
1906	43.17	122.52	1539.17	-1511.26	-622.91	747.36	5767297.15	607616.31
1907	43.15	122.53	1539.90	-1511.99	-623.28	747.94	5767296.78	607616.89
1908	43.14	122.54	1540.63	-1512.72	-623.65	748.52	5767296.41	607617.47
1909	43.12	122.54	1541.35	-1513.44	-624.02	749.10	5767296.04	607618.05
1910	43.11	122.55	1542.08	-1514.17	-624.39	749.68	5767295.67	607618.63
1911	43.11	122.56	1542.81	-1514.90	-624.75	750.25	5767295.31	607619.20
1912	43.11	122.56	1543.54	-1515.63	-625.12	750.83	5767294.94	607619.78
1913	43.11	122.57	1544.27	-1516.36	-625.49	751.40	5767294.57	607620.35
1914	43.11	122.57	1545.00	-1517.09	-625.86	751.98	5767294.20	607620.93
1915	43.11	122.58	1545.73	-1517.82	-626.23	752.55	5767293.83	607621.50
1916	43.11	122.58	1546.46	-1518.55	-626.60	753.13	5767293.46	607622.08
1917	43.11	122.58	1547.19	-1519.28	-626.96	753.70	5767293.10	607622.66
1918	43.10	122.59	1547.92	-1520.01	-627.33	754.28	5767292.73	607623.23
1919	43.10	122.59	1548.65	-1520.74	-627.70	754.85	5767292.36	607623.81
1920	43.10	122.60	1549.38	-1521.47	-628.07	755.43	5767291.99	607624.38
1921	43.10	122.60	1550.11	-1522.20	-628.44	756.01	5767291.62	607624.96
1922	43.10	122.61	1550.85	-1522.94	-628.81	756.58	5767291.25	607625.53
1923	43.10	122.61	1551.58	-1523.67	-629.17	757.16	5767290.89	607626.11
1924	43.10	122.62	1552.31	-1524.40	-629.54	757.73	5767290.52	607626.68
1925	43.10	122.62	1553.04	-1525.13	-629.91	758.31	5767290.15	607627.26
1926	43.10	122.63	1553.77	-1525.86	-630.28	758.88	5767289.78	607627.83
1927	43.10	122.63	1554.50	-1526.59	-630.65	759.46	5767289.41	607628.41
1928	43.10	122.64	1555.23	-1527.32	-631.02	760.03	5767289.04	607628.99
1929	43.10	122.64	1555.96	-1528.05	-631.38	760.61	5767288.68	607629.56
1930	43.10	122.65	1556.69	-1528.78	-631.75	761.19	5767288.31	607630.14
1931	43.10	122.65	1557.42	-1529.51	-632.12	761.76	5767287.94	607630.71
1932	43.09	122.66	1558.15	-1530.24	-632.49	762.34	5767287.57	607631.29
1933	43.09	122.66	1558.88	-1530.97	-632.86	762.91	5767287.20	607631.86
1934	43.09	122.67	1559.61	-1531.70	-633.23	763.49	5767286.83	607632.44
1935	43.09	122.67	1560.34	-1532.43	-633.59	764.06	5767286.47	607633.01
1936	43.09	122.68	1561.07	-1533.16	-633.96	764.64	5767286.10	607633.59
1937	43.09	122.68	1561.80	-1533.89	-634.33	765.21	5767285.73	607634.16
1938	43.09	122.69	1562.53	-1534.62	-634.70	765.79	5767285.36	607634.74
1939	43.09	122.69	1563.26	-1535.35	-635.07	766.36	5767284.99	607635.32
1940	43.12	122.68	1563.98	-1536.07	-635.44	766.94	5767284.62	607635.90
1941	43.14	122.66	1564.71	-1536.80	-635.81	767.52	5767284.25	607636.48
1942	43.17	122.65	1565.44	-1537.53	-636.18	768.10	5767283.88	607637.06
1943	43.20	122.64	1566.16	-1538.25	-636.55	768.68	5767283.52	607637.63
1944	43.22	122.62	1566.89	-1538.98	-636.92	769.26	5767283.15	607638.21
1945	43.25	122.61	1567.62	-1539.71	-637.29	769.84	5767282.78	607638.79
1946	43.27	122.60	1568.34	-1540.43	-637.65	770.42	5767282.41	607639.37
1947	43.30	122.58	1569.07	-1541.16	-638.02	771.00	5767282.04	607639.95
1948	43.32	122.57	1569.79	-1541.88	-638.39	771.58	5767281.67	607640.53
1949	43.35	122.56	1570.52	-1542.61	-638.76	772.16	5767281.30	607641.11
1950	43.37	122.54	1571.25	-1543.34	-639.13	772.74	5767280.93	607641.69
1951	43.40	122.53	1571.97	-1544.06	-639.50	773.32	5767280.56	607642.27
1952	43.42	122.52	1572.70	-1544.79	-639.87	773.90	5767280.19	607642.85
1953	43.45	122.50	1573.43	-1545.52	-640.24	774.48	5767279.82	607643.43
1954	43.48	122.49	1574.15	-1546.24	-640.61	775.06	5767279.45	607644.01
1955	43.50	122.48	1574.88	-1546.97	-640.98	775.64	5767279.08	607644.59
1956	43.53	122.47	1575.60	-1547.69	-641.35	776.22	5767278.71	607645.17
1957	43.55	122.45	1576.33	-1548.42	-641.72	776.80	5767278.34	607645.75
1958	43.58	122.44	1577.06	-1549.15	-642.09	777.38	5767277.97	607646.33
1959	43.60	122.43	1577.78	-1549.87	-642.46	777.96	5767277.60	607646.91
1960	43.63	122.41	1578.51	-1550.60	-642.83	778.54	5767277.23	607647.49
1961	43.65	122.40	1579.24	-1551.33	-643.20	779.12	5767276.86	607648.07
1962	43.68	122.39	1579.96	-1552.05	-643.57	779.70	5767276.49	607648.65
1963	43.70	122.37	1580.69	-1552.78	-643.94	780.27	5767276.12	607649.23
1964	43.73	122.36	1581.42	-1553.51	-644.31	780.85	5767275.76	607649.81

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1965	43.75	122.35	1582.14	-1554.23	-644.68	781.44	5767275.39	607650.39
1966	43.75	122.35	1582.86	-1554.95	-645.04	782.02	5767275.02	607650.97
1967	43.74	122.34	1583.59	-1555.68	-645.41	782.60	5767274.65	607651.55
1968	43.74	122.34	1584.31	-1556.40	-645.78	783.19	5767274.28	607652.14
1969	43.74	122.34	1585.03	-1557.12	-646.15	783.77	5767273.91	607652.72
1970	43.74	122.33	1585.76	-1557.85	-646.52	784.36	5767273.54	607653.31
1971	43.73	122.33	1586.48	-1558.57	-646.89	784.94	5767273.17	607653.89
1972	43.73	122.33	1587.20	-1559.29	-647.26	785.52	5767272.80	607654.48
1973	43.73	122.32	1587.92	-1560.01	-647.63	786.11	5767272.43	607655.06
1974	43.73	122.32	1588.65	-1560.74	-648.00	786.69	5767272.06	607655.64
1975	43.72	122.32	1589.37	-1561.46	-648.37	787.28	5767271.69	607656.23
1976	43.72	122.31	1590.09	-1562.18	-648.74	787.86	5767271.32	607656.81
1977	43.72	122.31	1590.82	-1562.91	-649.11	788.44	5767270.96	607657.40
1978	43.72	122.31	1591.54	-1563.63	-649.48	789.03	5767270.59	607657.98
1979	43.71	122.30	1592.26	-1564.35	-649.84	789.61	5767270.22	607658.56
1980	43.71	122.30	1592.98	-1565.07	-650.21	790.20	5767269.85	607659.15
1981	43.71	122.30	1593.71	-1565.80	-650.58	790.78	5767269.48	607659.73
1982	43.71	122.29	1594.43	-1566.52	-650.95	791.36	5767269.11	607660.32
1983	43.70	122.29	1595.15	-1567.24	-651.32	791.95	5767268.74	607660.90
1984	43.70	122.29	1595.88	-1567.97	-651.69	792.53	5767268.37	607661.48
1985	43.70	122.29	1596.60	-1568.69	-652.06	793.12	5767268.00	607662.07
1986	43.70	122.28	1597.32	-1569.41	-652.43	793.70	5767267.63	607662.65
1987	43.69	122.28	1598.04	-1570.13	-652.80	794.28	5767267.26	607663.24
1988	43.69	122.28	1598.77	-1570.86	-653.17	794.87	5767266.89	607663.82
1989	43.69	122.27	1599.49	-1571.58	-653.54	795.45	5767266.52	607664.40
1990	43.69	122.27	1600.21	-1572.30	-653.91	796.04	5767266.16	607664.99
1991	43.68	122.27	1600.94	-1573.03	-654.28	796.62	5767265.79	607665.57
1992	43.68	122.26	1601.66	-1573.75	-654.64	797.20	5767265.42	607666.16
1993	43.68	122.26	1602.38	-1574.47	-655.01	797.79	5767265.05	607666.74
1994	43.68	122.26	1603.10	-1575.19	-655.38	798.37	5767264.68	607667.32
1995	43.67	122.25	1603.83	-1575.92	-655.75	798.96	5767264.31	607667.91
1996	43.67	122.25	1604.55	-1576.64	-656.12	799.54	5767263.94	607668.49
1997	43.65	122.25	1605.28	-1577.37	-656.49	800.12	5767263.57	607669.07
1998	43.64	122.24	1606.00	-1578.09	-656.85	800.70	5767263.21	607669.66
1999	43.62	122.24	1606.73	-1578.82	-657.22	801.29	5767262.84	607670.24
2000	43.60	122.23	1607.46	-1579.55	-657.59	801.87	5767262.48	607670.82
2001	43.58	122.23	1608.18	-1580.27	-657.95	802.45	5767262.11	607671.40
2002	43.57	122.22	1608.91	-1581.00	-658.32	803.03	5767261.74	607671.98
2003	43.55	122.22	1609.63	-1581.72	-658.68	803.61	5767261.38	607672.57
2004	43.53	122.21	1610.36	-1582.45	-659.05	804.20	5767261.01	607673.15
2005	43.52	122.21	1611.09	-1583.18	-659.42	804.78	5767260.64	607673.73
2006	43.50	122.20	1611.81	-1583.90	-659.78	805.36	5767260.28	607674.31
2007	43.48	122.20	1612.54	-1584.63	-660.15	805.94	5767259.91	607674.89
2008	43.46	122.19	1613.27	-1585.36	-660.51	806.52	5767259.55	607675.47
2009	43.45	122.19	1613.99	-1586.08	-660.88	807.11	5767259.18	607676.06
2010	43.43	122.18	1614.72	-1586.81	-661.25	807.69	5767258.81	607676.64
2011	43.41	122.18	1615.44	-1587.53	-661.61	808.27	5767258.45	607677.22
2012	43.40	122.17	1616.17	-1588.26	-661.98	808.85	5767258.08	607677.80
2013	43.38	122.17	1616.90	-1588.99	-662.35	809.43	5767257.72	607678.38
2014	43.36	122.16	1617.62	-1589.71	-662.71	810.01	5767257.35	607678.97
2015	43.34	122.16	1618.35	-1590.44	-663.08	810.60	5767256.98	607679.55
2016	43.33	122.15	1619.08	-1591.17	-663.44	811.18	5767256.62	607680.13
2017	43.31	122.15	1619.80	-1591.89	-663.81	811.76	5767256.25	607680.71
2018	43.29	122.14	1620.53	-1592.62	-664.18	812.34	5767255.89	607681.29
2019	43.28	122.14	1621.25	-1593.34	-664.54	812.92	5767255.52	607681.87
2020	43.26	122.13	1621.98	-1594.07	-664.91	813.51	5767255.15	607682.46
2021	43.24	122.13	1622.71	-1594.80	-665.27	814.09	5767254.79	607683.04
2022	43.22	122.12	1623.43	-1595.52	-665.64	814.67	5767254.42	607683.62
2023	43.21	122.12	1624.16	-1596.25	-666.01	815.25	5767254.06	607684.20
2024	43.19	122.11	1624.89	-1596.98	-666.37	815.83	5767253.69	607684.78
2025	43.18	122.11	1625.61	-1597.70	-666.74	816.41	5767253.32	607685.37
2026	43.18	122.10	1626.34	-1598.43	-667.10	816.99	5767252.96	607685.95
2027	43.19	122.09	1627.07	-1599.16	-667.46	817.58	5767252.60	607686.53
2028	43.19	122.08	1627.80	-1599.89	-667.83	818.16	5767252.24	607687.11
2029	43.19	122.08	1628.53	-1600.62	-668.19	818.74	5767251.87	607687.69
2030	43.20	122.07	1629.26	-1601.35	-668.55	819.32	5767251.51	607688.27

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2031	43.20	122.06	1629.98	-1602.07	-668.91	819.90	5767251.15	607688.85
2032	43.20	122.06	1630.71	-1602.80	-669.28	820.48	5767250.78	607689.43
2033	43.20	122.05	1631.44	-1603.53	-669.64	821.06	5767250.42	607690.01
2034	43.21	122.04	1632.17	-1604.26	-670.00	821.64	5767250.06	607690.59
2035	43.21	122.03	1632.90	-1604.99	-670.37	822.22	5767249.69	607691.17
2036	43.21	122.03	1633.63	-1605.72	-670.73	822.80	5767249.33	607691.75
2037	43.21	122.02	1634.36	-1606.45	-671.09	823.38	5767248.97	607692.33
2038	43.22	122.01	1635.09	-1607.18	-671.46	823.96	5767248.61	607692.91
2039	43.22	122.00	1635.81	-1607.90	-671.82	824.54	5767248.24	607693.50
2040	43.22	122.00	1636.54	-1608.63	-672.18	825.12	5767247.88	607694.08
2041	43.23	121.99	1637.27	-1609.36	-672.54	825.71	5767247.52	607694.66
2042	43.23	121.98	1638.00	-1610.09	-672.91	826.29	5767247.15	607695.24
2043	43.23	121.97	1638.73	-1610.82	-673.27	826.87	5767246.79	607695.82
2044	43.23	121.97	1639.46	-1611.55	-673.63	827.45	5767246.43	607696.40
2045	43.24	121.96	1640.19	-1612.28	-674.00	828.03	5767246.07	607696.98
2046	43.24	121.95	1640.92	-1613.01	-674.36	828.61	5767245.70	607697.56
2047	43.24	121.94	1641.64	-1613.73	-674.72	829.19	5767245.34	607698.14
2048	43.25	121.94	1642.37	-1614.46	-675.09	829.77	5767244.98	607698.72
2049	43.25	121.93	1643.10	-1615.19	-675.45	830.35	5767244.61	607699.30
2050	43.25	121.92	1643.83	-1615.92	-675.81	830.93	5767244.25	607699.88
2051	43.25	121.92	1644.56	-1616.65	-676.17	831.51	5767243.89	607700.46
2052	43.26	121.91	1645.29	-1617.38	-676.54	832.09	5767243.52	607701.04
2053	43.26	121.90	1646.02	-1618.11	-676.90	832.67	5767243.16	607701.63
2054	43.26	121.90	1646.74	-1618.83	-677.26	833.26	5767242.80	607702.21
2055	43.27	121.90	1647.47	-1619.56	-677.63	833.84	5767242.44	607702.79
2056	43.27	121.90	1648.20	-1620.29	-677.99	834.42	5767242.07	607703.37
2057	43.28	121.90	1648.93	-1621.02	-678.35	835.00	5767241.71	607703.95
2058	43.28	121.90	1649.65	-1621.74	-678.71	835.59	5767241.35	607704.54
2059	43.29	121.90	1650.38	-1622.47	-679.08	836.17	5767240.99	607705.12
2060	43.29	121.90	1651.11	-1623.20	-679.44	836.75	5767240.62	607705.70
2061	43.30	121.90	1651.84	-1623.93	-679.80	837.33	5767240.26	607706.28
2062	43.30	121.90	1652.56	-1624.65	-680.16	837.92	5767239.90	607706.87
2063	43.30	121.90	1653.29	-1625.38	-680.53	838.50	5767239.54	607707.45
2064	43.31	121.90	1654.02	-1626.11	-680.89	839.08	5767239.17	607708.03
2065	43.31	121.90	1654.75	-1626.84	-681.25	839.66	5767238.81	607708.61
2066	43.32	121.90	1655.47	-1627.56	-681.61	840.25	5767238.45	607709.20
2067	43.32	121.90	1656.20	-1628.29	-681.98	840.83	5767238.08	607709.78
2068	43.33	121.91	1656.93	-1629.02	-682.34	841.41	5767237.72	607710.36
2069	43.33	121.91	1657.66	-1629.75	-682.70	841.99	5767237.36	607710.94
2070	43.34	121.91	1658.38	-1630.47	-683.06	842.58	5767237.00	607711.53
2071	43.34	121.91	1659.11	-1631.20	-683.43	843.16	5767236.63	607712.11
2072	43.34	121.91	1659.84	-1631.93	-683.79	843.74	5767236.27	607712.69
2073	43.35	121.91	1660.57	-1632.66	-684.15	844.32	5767235.91	607713.27
2074	43.35	121.91	1661.29	-1633.38	-684.52	844.91	5767235.55	607713.86
2075	43.36	121.91	1662.02	-1634.11	-684.88	845.49	5767235.18	607714.44
2076	43.36	121.91	1662.75	-1634.84	-685.24	846.07	5767234.82	607715.02
2077	43.37	121.91	1663.48	-1635.57	-685.60	846.65	5767234.46	607715.60
2078	43.37	121.91	1664.20	-1636.29	-685.97	847.24	5767234.10	607716.19
2079	43.38	121.91	1664.93	-1637.02	-686.33	847.82	5767233.73	607716.77
2080	43.38	121.91	1665.66	-1637.75	-686.69	848.40	5767233.37	607717.35
2081	43.39	121.91	1666.39	-1638.48	-687.05	848.98	5767233.01	607717.93
2082	43.39	121.91	1667.11	-1639.20	-687.42	849.57	5767232.65	607718.52
2083	43.40	121.91	1667.84	-1639.93	-687.78	850.15	5767232.28	607719.10
2084	43.41	121.92	1668.56	-1640.65	-688.15	850.73	5767231.92	607719.69
2085	43.43	121.92	1669.29	-1641.38	-688.51	851.32	5767231.55	607720.27
2086	43.44	121.93	1670.01	-1642.10	-688.88	851.90	5767231.19	607720.86
2087	43.45	121.93	1670.74	-1642.83	-689.24	852.49	5767230.82	607721.44
2088	43.46	121.94	1671.46	-1643.55	-689.61	853.07	5767230.46	607722.02
2089	43.47	121.94	1672.19	-1644.28	-689.97	853.66	5767230.09	607722.61
2090	43.49	121.95	1672.91	-1645.00	-690.34	854.24	5767229.73	607723.19
2091	43.50	121.95	1673.64	-1645.73	-690.70	854.83	5767229.36	607723.78
2092	43.51	121.96	1674.36	-1646.45	-691.07	855.41	5767229.00	607724.36
2093	43.52	121.96	1675.08	-1647.17	-691.43	856.00	5767228.63	607724.95
2094	43.54	121.96	1675.81	-1647.90	-691.80	856.58	5767228.27	607725.53
2095	43.55	121.97	1676.53	-1648.62	-692.16	857.17	5767227.90	607726.12
2096	43.56	121.97	1677.26	-1649.35	-692.53	857.75	5767227.54	607726.70

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2097	43.57	121.98	1677.98	-1650.07	-692.89	858.33	5767227.17	607727.29
2098	43.58	121.98	1678.71	-1650.80	-693.26	858.92	5767226.81	607727.87
2099	43.60	121.99	1679.43	-1651.52	-693.62	859.50	5767226.44	607728.45
2100	43.61	121.99	1680.16	-1652.25	-693.99	860.09	5767226.08	607729.04
2101	43.62	122.00	1680.88	-1652.97	-694.35	860.67	5767225.71	607729.62
2102	43.63	122.00	1681.61	-1653.70	-694.72	861.26	5767225.35	607730.21
2103	43.65	122.00	1682.33	-1654.42	-695.08	861.84	5767224.98	607730.79
2104	43.66	122.01	1683.05	-1655.14	-695.44	862.43	5767224.62	607731.38
2105	43.67	122.01	1683.78	-1655.87	-695.81	863.01	5767224.25	607731.96
2106	43.68	122.02	1684.50	-1656.59	-696.17	863.60	5767223.89	607732.55
2107	43.69	122.02	1685.23	-1657.32	-696.54	864.18	5767223.52	607733.13
2108	43.71	122.03	1685.95	-1658.04	-696.90	864.76	5767223.16	607733.72
2109	43.72	122.03	1686.68	-1658.77	-697.27	865.35	5767222.79	607734.30
2110	43.73	122.04	1687.40	-1659.49	-697.63	865.93	5767222.43	607734.89
2111	43.74	122.04	1688.13	-1660.22	-698.00	866.52	5767222.06	607735.47
2112	43.76	122.04	1688.85	-1660.94	-698.37	867.11	5767221.69	607736.06
2113	43.78	122.04	1689.57	-1661.66	-698.74	867.70	5767221.33	607736.65
2114	43.79	122.03	1690.29	-1662.38	-699.10	868.29	5767220.96	607737.24
2115	43.81	122.03	1691.00	-1663.09	-699.47	868.87	5767220.59	607737.83
2116	43.82	122.03	1691.72	-1663.81	-699.84	869.46	5767220.22	607738.41
2117	43.84	122.03	1692.44	-1664.53	-700.21	870.05	5767219.85	607739.00
2118	43.86	122.03	1693.16	-1665.25	-700.58	870.64	5767219.48	607739.59
2119	43.87	122.03	1693.88	-1665.97	-700.94	871.23	5767219.12	607740.18
2120	43.89	122.02	1694.60	-1666.69	-701.31	871.82	5767218.75	607740.77
2121	43.90	122.02	1695.32	-1667.41	-701.68	872.41	5767218.38	607741.36
2122	43.92	122.02	1696.04	-1668.13	-702.05	872.99	5767218.01	607741.95
2123	43.94	122.02	1696.76	-1668.85	-702.42	873.58	5767217.64	607742.54
2124	43.95	122.02	1697.48	-1669.57	-702.79	874.17	5767217.28	607743.12
2125	43.97	122.02	1698.20	-1670.29	-703.15	874.76	5767216.91	607743.71
2126	43.98	122.01	1698.92	-1671.01	-703.52	875.35	5767216.54	607744.30
2127	44.00	122.01	1699.64	-1671.73	-703.89	875.94	5767216.17	607744.89
2128	44.02	122.01	1700.36	-1672.45	-704.26	876.53	5767215.80	607745.48
2129	44.03	122.01	1701.08	-1673.17	-704.63	877.12	5767215.44	607746.07
2130	44.05	122.01	1701.80	-1673.89	-704.99	877.70	5767215.07	607746.66
2131	44.06	122.00	1702.52	-1674.61	-705.36	878.29	5767214.70	607747.24
2132	44.08	122.00	1703.24	-1675.33	-705.73	878.88	5767214.33	607747.83
2133	44.10	122.00	1703.96	-1676.05	-706.10	879.47	5767213.96	607748.42
2134	44.11	122.00	1704.68	-1676.77	-706.47	880.06	5767213.60	607749.01
2135	44.13	122.00	1705.40	-1677.49	-706.83	880.65	5767213.23	607749.60
2136	44.14	122.00	1706.12	-1678.21	-707.20	881.24	5767212.86	607750.19
2137	44.16	121.99	1706.84	-1678.93	-707.57	881.83	5767212.49	607750.78
2138	44.18	121.99	1707.56	-1679.65	-707.94	882.41	5767212.12	607751.37
2139	44.19	121.99	1708.28	-1680.37	-708.31	883.00	5767211.75	607751.95
2140	44.19	121.99	1709.00	-1681.09	-708.67	883.59	5767211.39	607752.54
2141	44.18	121.99	1709.72	-1681.81	-709.04	884.18	5767211.02	607753.13
2142	44.17	122.00	1710.43	-1682.52	-709.41	884.77	5767210.65	607753.72
2143	44.16	122.00	1711.15	-1683.24	-709.78	885.36	5767210.28	607754.31
2144	44.15	122.00	1711.87	-1683.96	-710.15	885.95	5767209.91	607754.90
2145	44.14	122.01	1712.59	-1684.68	-710.52	886.54	5767209.54	607755.49
2146	44.13	122.01	1713.31	-1685.40	-710.89	887.13	5767209.17	607756.08
2147	44.11	122.01	1714.03	-1686.12	-711.26	887.72	5767208.81	607756.67
2148	44.10	122.01	1714.75	-1686.84	-711.62	888.31	5767208.44	607757.26
2149	44.09	122.02	1715.47	-1687.56	-711.99	888.90	5767208.07	607757.85
2150	44.08	122.02	1716.19	-1688.28	-712.36	889.48	5767207.70	607758.44
2151	44.07	122.02	1716.91	-1689.00	-712.73	890.07	5767207.33	607759.03
2152	44.06	122.02	1717.62	-1689.71	-713.10	890.66	5767206.96	607759.61
2153	44.04	122.03	1718.34	-1690.43	-713.47	891.25	5767206.59	607760.20
2154	44.03	122.03	1719.06	-1691.15	-713.84	891.84	5767206.23	607760.79
2155	44.02	122.03	1719.78	-1691.87	-714.20	892.43	5767205.86	607761.38
2156	44.01	122.04	1720.50	-1692.59	-714.57	893.02	5767205.49	607761.97
2157	44.00	122.04	1721.22	-1693.31	-714.94	893.61	5767205.12	607762.56
2158	43.99	122.04	1721.94	-1694.03	-715.31	894.20	5767204.75	607763.15
2159	43.98	122.04	1722.66	-1694.75	-715.68	894.79	5767204.38	607763.74
2160	43.96	122.05	1723.38	-1695.47	-716.05	895.38	5767204.01	607764.33
2161	43.95	122.05	1724.09	-1696.18	-716.42	895.97	5767203.65	607764.92
2162	43.94	122.05	1724.81	-1696.90	-716.78	896.56	5767203.28	607765.51

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2163	43.93	122.06	1725.53	-1697.62	-717.15	897.15	5767202.91	607766.10
2164	43.92	122.06	1726.25	-1698.34	-717.52	897.73	5767202.54	607766.69
2165	43.91	122.06	1726.97	-1699.06	-717.89	898.32	5767202.17	607767.28
2166	43.90	122.06	1727.69	-1699.78	-718.26	898.91	5767201.80	607767.86
2167	43.88	122.07	1728.41	-1700.50	-718.63	899.50	5767201.43	607768.45
2168	43.87	122.07	1729.13	-1701.22	-719.00	900.09	5767201.06	607769.04
2169	43.86	122.08	1729.85	-1701.94	-719.36	900.68	5767200.70	607769.63
2170	43.85	122.09	1730.57	-1702.66	-719.73	901.26	5767200.33	607770.21
2171	43.84	122.09	1731.29	-1703.38	-720.10	901.85	5767199.96	607770.80
2172	43.83	122.10	1732.02	-1704.11	-720.47	902.43	5767199.59	607771.38
2173	43.82	122.11	1732.74	-1704.83	-720.84	903.02	5767199.22	607771.97
2174	43.81	122.12	1733.46	-1705.55	-721.21	903.60	5767198.86	607772.55
2175	43.80	122.13	1734.18	-1706.27	-721.57	904.19	5767198.49	607773.14
2176	43.79	122.14	1734.91	-1707.00	-721.94	904.77	5767198.12	607773.72
2177	43.78	122.15	1735.63	-1707.72	-722.31	905.36	5767197.75	607774.31
2178	43.77	122.15	1736.35	-1708.44	-722.68	905.94	5767197.38	607774.89
2179	43.76	122.16	1737.08	-1709.17	-723.05	906.53	5767197.01	607775.48
2180	43.75	122.17	1737.80	-1709.89	-723.42	907.11	5767196.65	607776.06
2181	43.74	122.18	1738.52	-1710.61	-723.78	907.70	5767196.28	607776.65
2182	43.73	122.19	1739.24	-1711.33	-724.15	908.28	5767195.91	607777.23
2183	43.72	122.20	1739.97	-1712.06	-724.52	908.87	5767195.54	607777.82
2184	43.70	122.21	1740.69	-1712.78	-724.89	909.45	5767195.17	607778.40
2185	43.69	122.22	1741.41	-1713.50	-725.26	910.04	5767194.80	607778.99
2186	43.68	122.22	1742.13	-1714.22	-725.62	910.62	5767194.44	607779.57
2187	43.67	122.23	1742.86	-1714.95	-725.99	911.21	5767194.07	607780.16
2188	43.66	122.24	1743.58	-1715.67	-726.36	911.79	5767193.70	607780.74
2189	43.65	122.25	1744.30	-1716.39	-726.73	912.38	5767193.33	607781.33
2190	43.64	122.26	1745.02	-1717.11	-727.10	912.96	5767192.96	607781.91
2191	43.63	122.27	1745.75	-1717.84	-727.47	913.55	5767192.60	607782.50
2192	43.62	122.28	1746.47	-1718.56	-727.83	914.13	5767192.23	607783.08
2193	43.61	122.28	1747.19	-1719.28	-728.20	914.72	5767191.86	607783.67
2194	43.60	122.29	1747.92	-1720.01	-728.57	915.30	5767191.49	607784.25
2195	43.59	122.30	1748.64	-1720.73	-728.94	915.89	5767191.12	607784.84
2196	43.58	122.31	1749.36	-1721.45	-729.31	916.47	5767190.75	607785.42
2197	43.57	122.31	1750.09	-1722.18	-729.67	917.05	5767190.39	607786.00
2198	43.55	122.31	1750.81	-1722.90	-730.04	917.63	5767190.02	607786.58
2199	43.54	122.31	1751.54	-1723.63	-730.41	918.21	5767189.65	607787.16
2200	43.53	122.31	1752.27	-1724.36	-730.78	918.79	5767189.29	607787.74
2201	43.51	122.32	1752.99	-1725.08	-731.14	919.37	5767188.92	607788.33
2202	43.50	122.32	1753.72	-1725.81	-731.51	919.95	5767188.55	607788.91
2203	43.49	122.32	1754.45	-1726.54	-731.88	920.53	5767188.18	607789.49
2204	43.48	122.32	1755.17	-1727.26	-732.25	921.12	5767187.82	607790.07
2205	43.46	122.32	1755.90	-1727.99	-732.61	921.70	5767187.45	607790.65
2206	43.45	122.32	1756.63	-1728.72	-732.98	922.28	5767187.08	607791.23
2207	43.44	122.32	1757.35	-1729.44	-733.35	922.86	5767186.71	607791.81
2208	43.42	122.32	1758.08	-1730.17	-733.71	923.44	5767186.35	607792.39
2209	43.41	122.32	1758.81	-1730.90	-734.08	924.02	5767185.98	607792.97
2210	43.40	122.32	1759.53	-1731.62	-734.45	924.60	5767185.61	607793.55
2211	43.39	122.33	1760.26	-1732.35	-734.82	925.18	5767185.24	607794.13
2212	43.37	122.33	1760.99	-1733.08	-735.18	925.76	5767184.88	607794.71
2213	43.36	122.33	1761.71	-1733.80	-735.55	926.34	5767184.51	607795.29
2214	43.35	122.33	1762.44	-1734.53	-735.92	926.92	5767184.14	607795.87
2215	43.33	122.33	1763.17	-1735.26	-736.29	927.50	5767183.78	607796.45
2216	43.32	122.33	1763.89	-1735.98	-736.65	928.08	5767183.41	607797.03
2217	43.31	122.33	1764.62	-1736.71	-737.02	928.66	5767183.04	607797.61
2218	43.30	122.33	1765.35	-1737.44	-737.39	929.24	5767182.67	607798.19
2219	43.28	122.33	1766.07	-1738.16	-737.76	929.82	5767182.31	607798.77
2220	43.27	122.33	1766.80	-1738.89	-738.12	930.40	5767181.94	607799.35
2221	43.26	122.34	1767.53	-1739.62	-738.49	930.98	5767181.57	607799.94
2222	43.24	122.34	1768.25	-1740.34	-738.86	931.56	5767181.20	607800.52
2223	43.23	122.34	1768.98	-1741.07	-739.22	932.14	5767180.84	607801.10
2224	43.22	122.34	1769.71	-1741.80	-739.59	932.73	5767180.47	607801.68
2225	43.20	122.34	1770.43	-1742.52	-739.96	933.31	5767180.10	607802.26
2226	43.21	122.34	1771.16	-1743.25	-740.33	933.89	5767179.73	607802.84
2227	43.24	122.35	1771.89	-1743.98	-740.70	934.47	5767179.36	607803.42
2228	43.26	122.36	1772.61	-1744.70	-741.07	935.05	5767178.99	607804.00

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2229	43.28	122.37	1773.34	-1745.43	-741.44	935.63	5767178.63	607804.58
2230	43.31	122.38	1774.06	-1746.15	-741.81	936.21	5767178.26	607805.16
2231	43.33	122.38	1774.79	-1746.88	-742.18	936.79	5767177.89	607805.74
2232	43.35	122.39	1775.51	-1747.60	-742.54	937.37	5767177.52	607806.32
2233	43.37	122.40	1776.24	-1748.33	-742.91	937.95	5767177.15	607806.91
2234	43.40	122.41	1776.96	-1749.05	-743.28	938.54	5767176.78	607807.49
2235	43.42	122.42	1777.69	-1749.78	-743.65	939.12	5767176.41	607808.07
2236	43.44	122.42	1778.41	-1750.50	-744.02	939.70	5767176.04	607808.65
2237	43.47	122.43	1779.14	-1751.23	-744.39	940.28	5767175.67	607809.23
2238	43.49	122.44	1779.86	-1751.95	-744.76	940.86	5767175.30	607809.81
2239	43.51	122.45	1780.59	-1752.68	-745.13	941.44	5767174.93	607810.39
2240	43.53	122.46	1781.31	-1753.40	-745.50	942.02	5767174.56	607810.97
2241	43.56	122.46	1782.04	-1754.13	-745.87	942.60	5767174.19	607811.55
2242	43.58	122.47	1782.76	-1754.85	-746.24	943.18	5767173.82	607812.14
2243	43.60	122.48	1783.49	-1755.58	-746.61	943.76	5767173.45	607812.72
2244	43.63	122.49	1784.21	-1756.30	-746.98	944.35	5767173.08	607813.30
2245	43.65	122.49	1784.94	-1757.03	-747.35	944.93	5767172.71	607813.88
2246	43.67	122.50	1785.66	-1757.75	-747.72	945.51	5767172.34	607814.46
2247	43.69	122.51	1786.39	-1758.48	-748.09	946.09	5767171.97	607815.04
2248	43.72	122.52	1787.11	-1759.20	-748.46	946.67	5767171.60	607815.62
2249	43.74	122.53	1787.84	-1759.93	-748.83	947.25	5767171.24	607816.20
2250	43.76	122.53	1788.56	-1760.65	-749.20	947.83	5767170.87	607816.78
2251	43.79	122.54	1789.29	-1761.38	-749.57	948.41	5767170.50	607817.36
2252	43.81	122.55	1790.01	-1762.10	-749.93	948.99	5767170.13	607817.95
2253	43.83	122.56	1790.74	-1762.83	-750.30	949.58	5767169.76	607818.53
2254	43.83	122.56	1791.46	-1763.55	-750.68	950.16	5767169.39	607819.11
2255	43.82	122.57	1792.19	-1764.28	-751.05	950.74	5767169.01	607819.69
2256	43.80	122.57	1792.91	-1765.00	-751.42	951.32	5767168.64	607820.27
2257	43.79	122.57	1793.63	-1765.72	-751.79	951.90	5767168.27	607820.85
2258	43.78	122.58	1794.36	-1766.45	-752.16	952.48	5767167.90	607821.43
2259	43.76	122.58	1795.08	-1767.17	-752.54	953.06	5767167.53	607822.01
2260	43.75	122.58	1795.81	-1767.90	-752.91	953.64	5767167.15	607822.60
2261	43.74	122.59	1796.53	-1768.62	-753.28	954.23	5767166.78	607823.18
2262	43.72	122.59	1797.25	-1769.34	-753.65	954.81	5767166.41	607823.76
2263	43.71	122.60	1797.98	-1770.07	-754.02	955.39	5767166.04	607824.34
2264	43.70	122.60	1798.70	-1770.79	-754.40	955.97	5767165.67	607824.92
2265	43.68	122.60	1799.42	-1771.51	-754.77	956.55	5767165.29	607825.50
2266	43.67	122.61	1800.15	-1772.24	-755.14	957.13	5767164.92	607826.08
2267	43.65	122.61	1800.87	-1772.96	-755.51	957.71	5767164.55	607826.67
2268	43.64	122.61	1801.59	-1773.68	-755.88	958.29	5767164.18	607827.25
2269	43.63	122.62	1802.32	-1774.41	-756.26	958.88	5767163.81	607827.83
2270	43.61	122.62	1803.04	-1775.13	-756.63	959.46	5767163.43	607828.41
2271	43.60	122.63	1803.77	-1775.86	-757.00	960.04	5767163.06	607828.99
2272	43.59	122.63	1804.49	-1776.58	-757.37	960.62	5767162.69	607829.57
2273	43.57	122.63	1805.21	-1777.30	-757.74	961.20	5767162.32	607830.15
2274	43.56	122.64	1805.94	-1778.03	-758.11	961.78	5767161.95	607830.73
2275	43.55	122.64	1806.66	-1778.75	-758.49	962.36	5767161.57	607831.32
2276	43.53	122.64	1807.38	-1779.47	-758.86	962.95	5767161.20	607831.90
2277	43.52	122.65	1808.11	-1780.20	-759.23	963.53	5767160.83	607832.48
2278	43.51	122.65	1808.83	-1780.92	-759.60	964.11	5767160.46	607833.06
2279	43.49	122.66	1809.56	-1781.65	-759.97	964.69	5767160.09	607833.64
2280	43.48	122.66	1810.28	-1782.37	-760.35	965.27	5767159.71	607834.22
2281	43.46	122.66	1811.00	-1783.09	-760.72	965.85	5767159.34	607834.80
2282	43.45	122.67	1811.73	-1783.82	-761.09	966.43	5767158.97	607835.38
2283	43.44	122.67	1812.45	-1784.54	-761.46	967.01	5767158.60	607835.97
2284	43.42	122.67	1813.18	-1785.27	-761.83	967.59	5767158.23	607836.54
2285	43.40	122.67	1813.91	-1786.00	-762.20	968.17	5767157.86	607837.12
2286	43.39	122.67	1814.64	-1786.73	-762.57	968.74	5767157.49	607837.69
2287	43.37	122.67	1815.37	-1787.46	-762.94	969.32	5767157.12	607838.27
2288	43.36	122.67	1816.09	-1788.18	-763.31	969.90	5767156.75	607838.85
2289	43.34	122.67	1816.82	-1788.91	-763.68	970.47	5767156.38	607839.42
2290	43.33	122.67	1817.55	-1789.64	-764.05	971.05	5767156.01	607840.00
2291	43.31	122.67	1818.28	-1790.37	-764.42	971.62	5767155.64	607840.58
2292	43.29	122.67	1819.01	-1791.10	-764.79	972.20	5767155.27	607841.15
2293	43.28	122.67	1819.74	-1791.83	-765.16	972.78	5767154.90	607841.73
2294	43.26	122.67	1820.47	-1792.56	-765.53	973.35	5767154.53	607842.31

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2295	43.25	122.67	1821.20	-1793.29	-765.90	973.93	5767154.16	607842.88
2296	43.23	122.67	1821.93	-1794.02	-766.27	974.51	5767153.79	607843.46
2297	43.21	122.68	1822.65	-1794.74	-766.64	975.08	5767153.42	607844.03
2298	43.20	122.68	1823.38	-1795.47	-767.01	975.66	5767153.05	607844.61
2299	43.18	122.68	1824.11	-1796.20	-767.38	976.24	5767152.68	607845.19
2300	43.17	122.68	1824.84	-1796.93	-767.75	976.81	5767152.32	607845.76
2301	43.15	122.68	1825.57	-1797.66	-768.12	977.39	5767151.95	607846.34
2302	43.14	122.68	1826.30	-1798.39	-768.49	977.96	5767151.58	607846.92
2303	43.12	122.68	1827.03	-1799.12	-768.86	978.54	5767151.21	607847.49
2304	43.10	122.68	1827.76	-1799.85	-769.22	979.12	5767150.84	607848.07
2305	43.09	122.68	1828.48	-1800.57	-769.59	979.69	5767150.47	607848.65
2306	43.07	122.68	1829.21	-1801.30	-769.96	980.27	5767150.10	607849.22
2307	43.06	122.68	1829.94	-1802.03	-770.33	980.85	5767149.73	607849.80
2308	43.04	122.68	1830.67	-1802.76	-770.70	981.42	5767149.36	607850.37
2309	43.02	122.68	1831.40	-1803.49	-771.07	982.00	5767148.99	607850.95
2310	43.01	122.68	1832.13	-1804.22	-771.44	982.58	5767148.62	607851.53
2311	42.99	122.68	1832.86	-1804.95	-771.81	983.15	5767148.25	607852.10
2312	42.97	122.69	1833.59	-1805.68	-772.18	983.72	5767147.88	607852.67
2313	42.94	122.70	1834.33	-1806.42	-772.55	984.29	5767147.51	607853.24
2314	42.92	122.70	1835.06	-1807.15	-772.91	984.86	5767147.15	607853.81
2315	42.89	122.71	1835.80	-1807.89	-773.28	985.43	5767146.78	607854.38
2316	42.86	122.72	1836.54	-1808.63	-773.65	986.00	5767146.41	607854.95
2317	42.84	122.73	1837.27	-1809.36	-774.01	986.57	5767146.05	607855.52
2318	42.81	122.74	1838.01	-1810.10	-774.38	987.14	5767145.68	607856.09
2319	42.78	122.75	1838.74	-1810.83	-774.75	987.71	5767145.31	607856.66
2320	42.76	122.75	1839.48	-1811.57	-775.11	988.28	5767144.95	607857.23
2321	42.73	122.76	1840.22	-1812.31	-775.48	988.84	5767144.58	607857.80
2322	42.71	122.77	1840.95	-1813.04	-775.85	989.41	5767144.21	607858.36
2323	42.68	122.78	1841.69	-1813.78	-776.21	989.98	5767143.85	607858.93
2324	42.65	122.79	1842.42	-1814.51	-776.58	990.55	5767143.48	607859.50
2325	42.63	122.80	1843.16	-1815.25	-776.95	991.12	5767143.11	607860.07
2326	42.60	122.80	1843.89	-1815.98	-777.31	991.69	5767142.75	607860.64
2327	42.57	122.81	1844.63	-1816.72	-777.68	992.26	5767142.38	607861.21
2328	42.55	122.82	1845.37	-1817.46	-778.05	992.83	5767142.01	607861.78
2329	42.52	122.83	1846.10	-1818.19	-778.41	993.40	5767141.65	607862.35
2330	42.49	122.84	1846.84	-1818.93	-778.78	993.97	5767141.28	607862.92
2331	42.47	122.85	1847.57	-1819.66	-779.15	994.54	5767140.91	607863.49
2332	42.44	122.86	1848.31	-1820.40	-779.52	995.10	5767140.55	607864.06
2333	42.42	122.86	1849.05	-1821.14	-779.88	995.67	5767140.18	607864.63
2334	42.39	122.87	1849.78	-1821.87	-780.25	996.24	5767139.81	607865.19
2335	42.36	122.88	1850.52	-1822.61	-780.62	996.81	5767139.45	607865.76
2336	42.34	122.89	1851.25	-1823.34	-780.98	997.38	5767139.08	607866.33
2337	42.31	122.90	1851.99	-1824.08	-781.35	997.95	5767138.71	607866.90
2338	42.28	122.91	1852.73	-1824.82	-781.72	998.52	5767138.35	607867.47
2339	42.26	122.91	1853.46	-1825.55	-782.08	999.09	5767137.98	607868.04
2340	42.23	122.92	1854.20	-1826.29	-782.45	999.65	5767137.61	607868.61
2341	42.20	122.93	1854.95	-1827.04	-782.81	1000.21	5767137.25	607869.16
2342	42.16	122.93	1855.69	-1827.78	-783.17	1000.77	5767136.89	607869.72
2343	42.13	122.94	1856.44	-1828.53	-783.54	1001.33	5767136.53	607870.28
2344	42.09	122.94	1857.19	-1829.28	-783.90	1001.89	5767136.16	607870.84
2345	42.06	122.95	1857.93	-1830.02	-784.26	1002.45	5767135.80	607871.40
2346	42.02	122.96	1858.68	-1830.77	-784.62	1003.01	5767135.44	607871.96
2347	41.99	122.96	1859.42	-1831.51	-784.99	1003.56	5767135.07	607872.52
2348	41.95	122.97	1860.17	-1832.26	-785.35	1004.12	5767134.71	607873.07
2349	41.92	122.97	1860.92	-1833.01	-785.71	1004.68	5767134.35	607873.63
2350	41.89	122.98	1861.66	-1833.75	-786.07	1005.24	5767133.99	607874.19
2351	41.85	122.98	1862.41	-1834.50	-786.44	1005.80	5767133.62	607874.75
2352	41.82	122.99	1863.15	-1835.24	-786.80	1006.36	5767133.26	607875.31
2353	41.78	122.99	1863.90	-1835.99	-787.16	1006.91	5767132.90	607875.87
2354	41.75	123.00	1864.65	-1836.74	-787.53	1007.47	5767132.54	607876.42
2355	41.71	123.01	1865.39	-1837.48	-787.89	1008.03	5767132.17	607876.98
2356	41.68	123.01	1866.14	-1838.23	-788.25	1008.59	5767131.81	607877.54
2357	41.65	123.02	1866.88	-1838.97	-788.61	1009.15	5767131.45	607878.10
2358	41.61	123.02	1867.63	-1839.72	-788.98	1009.71	5767131.09	607878.66
2359	41.58	123.03	1868.38	-1840.47	-789.34	1010.27	5767130.72	607879.22
2360	41.54	123.03	1869.12	-1841.21	-789.70	1010.82	5767130.36	607879.77



MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2361	41.51	123.04	1869.87	-1841.96	-790.06	1011.38	5767130.00	607880.33
2362	41.47	123.05	1870.61	-1842.70	-790.43	1011.94	5767129.64	607880.89
2363	41.44	123.05	1871.36	-1843.45	-790.79	1012.50	5767129.27	607881.45
2364	41.40	123.06	1872.11	-1844.20	-791.15	1013.06	5767128.91	607882.01
2365	41.37	123.06	1872.85	-1844.94	-791.51	1013.62	5767128.55	607882.57
2366	41.34	123.07	1873.60	-1845.69	-791.88	1014.17	5767128.18	607883.13
2367	41.30	123.07	1874.34	-1846.43	-792.24	1014.73	5767127.82	607883.68
2368	41.27	123.08	1875.09	-1847.18	-792.60	1015.29	5767127.46	607884.24
2369	41.29	123.09	1875.84	-1847.93	-792.97	1015.85	5767127.09	607884.80
2370	41.33	123.11	1876.58	-1848.67	-793.33	1016.41	5767126.73	607885.36
2371	41.38	123.13	1877.33	-1849.42	-793.70	1016.96	5767126.36	607885.91
2372	41.42	123.15	1878.07	-1850.16	-794.07	1017.52	5767125.99	607886.47
2373	41.46	123.17	1878.81	-1850.90	-794.43	1018.08	5767125.63	607887.03
2374	41.50	123.19	1879.56	-1851.65	-794.80	1018.64	5767125.26	607887.59
2375	41.54	123.20	1880.30	-1852.39	-795.17	1019.19	5767124.89	607888.14
2376	41.58	123.22	1881.05	-1853.14	-795.54	1019.75	5767124.53	607888.70
2377	41.63	123.24	1881.79	-1853.88	-795.90	1020.31	5767124.16	607889.26
2378	41.67	123.26	1882.54	-1854.63	-796.27	1020.87	5767123.79	607889.82
2379	41.71	123.28	1883.28	-1855.37	-796.64	1021.42	5767123.43	607890.37
2380	41.75	123.29	1884.03	-1856.12	-797.00	1021.98	5767123.06	607890.93
2381	41.79	123.31	1884.77	-1856.86	-797.37	1022.54	5767122.69	607891.49
2382	41.83	123.33	1885.52	-1857.61	-797.74	1023.09	5767122.33	607892.05
2383	41.88	123.35	1886.26	-1858.35	-798.10	1023.65	5767121.96	607892.60
2384	41.92	123.37	1887.01	-1859.10	-798.47	1024.21	5767121.59	607893.16
2385	41.96	123.39	1887.75	-1859.84	-798.84	1024.77	5767121.23	607893.72
2386	42.00	123.40	1888.50	-1860.59	-799.20	1025.32	5767120.86	607894.28
2387	42.04	123.42	1889.24	-1861.33	-799.57	1025.88	5767120.49	607894.83
2388	42.08	123.44	1889.99	-1862.08	-799.94	1026.44	5767120.13	607895.39
2389	42.13	123.46	1890.73	-1862.82	-800.30	1027.00	5767119.76	607895.95
2390	42.17	123.48	1891.48	-1863.57	-800.67	1027.55	5767119.39	607896.51
2391	42.21	123.49	1892.22	-1864.31	-801.04	1028.11	5767119.03	607897.06
2392	42.25	123.51	1892.97	-1865.06	-801.40	1028.67	5767118.66	607897.62
2393	42.29	123.53	1893.71	-1865.80	-801.77	1029.23	5767118.29	607898.18
2394	42.33	123.55	1894.46	-1866.55	-802.14	1029.78	5767117.93	607898.74
2395	42.38	123.57	1895.20	-1867.29	-802.50	1030.34	5767117.56	607899.29
2396	42.42	123.59	1895.95	-1868.04	-802.87	1030.90	5767117.19	607899.85
2397	42.43	123.59	1896.69	-1868.78	-803.23	1031.45	5767116.83	607900.41
2398	42.31	123.52	1897.45	-1869.54	-803.59	1032.00	5767116.48	607900.96
2399	42.20	123.45	1898.21	-1870.30	-803.94	1032.55	5767116.12	607901.51
2400	42.08	123.38	1898.96	-1871.05	-804.29	1033.10	5767115.77	607902.06
2401	41.96	123.31	1899.72	-1871.81	-804.64	1033.65	5767115.42	607902.61
2402	41.85	123.24	1900.48	-1872.57	-805.00	1034.20	5767115.07	607903.16
2403	41.73	123.17	1901.23	-1873.32	-805.35	1034.75	5767114.71	607903.71
2404	41.62	123.10	1901.99	-1874.08	-805.70	1035.30	5767114.36	607904.26
2405	41.50	123.03	1902.75	-1874.84	-806.05	1035.85	5767114.01	607904.81
2406	41.38	122.96	1903.51	-1875.60	-806.40	1036.40	5767113.66	607905.36
2407	41.27	122.89	1904.26	-1876.35	-806.76	1036.95	5767113.30	607905.91
2408	41.15	122.82	1905.02	-1877.11	-807.11	1037.50	5767112.95	607906.46
2409	41.04	122.75	1905.78	-1877.87	-807.46	1038.05	5767112.60	607907.01
2410	40.92	122.69	1906.53	-1878.62	-807.81	1038.60	5767112.25	607907.56
2411	40.81	122.62	1907.29	-1879.38	-808.17	1039.15	5767111.89	607908.11
2412	40.69	122.55	1908.05	-1880.14	-808.52	1039.70	5767111.54	607908.66
2413	40.57	122.48	1908.80	-1880.89	-808.87	1040.25	5767111.19	607909.21
2414	40.46	122.41	1909.56	-1881.65	-809.22	1040.80	5767110.84	607909.76
2415	40.34	122.34	1910.32	-1882.41	-809.58	1041.35	5767110.49	607910.31
2416	40.23	122.27	1911.08	-1883.17	-809.93	1041.90	5767110.13	607910.86
2417	40.11	122.20	1911.83	-1883.92	-810.28	1042.45	5767109.78	607911.41
2418	39.99	122.13	1912.59	-1884.68	-810.63	1043.00	5767109.43	607911.96
2419	39.88	122.06	1913.35	-1885.44	-810.99	1043.55	5767109.08	607912.51
2420	39.76	121.99	1914.10	-1886.19	-811.34	1044.10	5767108.72	607913.06
2421	39.65	121.92	1914.86	-1886.95	-811.69	1044.65	5767108.37	607913.61
2422	39.53	121.85	1915.62	-1887.71	-812.04	1045.20	5767108.02	607914.16
2423	39.42	121.78	1916.37	-1888.46	-812.39	1045.75	5767107.67	607914.71
2424	39.30	121.72	1917.13	-1889.22	-812.75	1046.30	5767107.31	607915.26
2425	39.18	121.65	1917.89	-1889.98	-813.10	1046.85	5767106.96	607915.81
2426	39.09	121.55	1918.66	-1890.75	-813.42	1047.39	5767106.64	607916.35

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2427	39.02	121.43	1919.45	-1891.54	-813.73	1047.93	5767106.33	607916.88
2428	38.95	121.31	1920.24	-1892.33	-814.04	1048.46	5767106.02	607917.41
2429	38.87	121.19	1921.03	-1893.12	-814.35	1049.00	5767105.71	607917.95
2430	38.80	121.08	1921.81	-1893.90	-814.66	1049.53	5767105.41	607918.48
2431	38.72	120.96	1922.60	-1894.69	-814.96	1050.07	5767105.10	607919.02
2432	38.65	120.84	1923.39	-1895.48	-815.27	1050.60	5767104.79	607919.55
2433	38.58	120.72	1924.18	-1896.27	-815.58	1051.13	5767104.48	607920.08
2434	38.50	120.61	1924.96	-1897.05	-815.89	1051.67	5767104.17	607920.62
2435	38.43	120.49	1925.75	-1897.84	-816.19	1052.20	5767103.87	607921.15
2436	38.35	120.37	1926.54	-1898.63	-816.50	1052.74	5767103.56	607921.69
2437	38.28	120.25	1927.32	-1899.41	-816.81	1053.27	5767103.25	607922.22
2438	38.21	120.14	1928.11	-1900.20	-817.12	1053.80	5767102.94	607922.75
2439	38.13	120.02	1928.90	-1900.99	-817.43	1054.34	5767102.64	607923.29
2440	38.06	119.90	1929.69	-1901.78	-817.73	1054.87	5767102.33	607923.82
2441	37.98	119.78	1930.47	-1902.56	-818.04	1055.41	5767102.02	607924.36
2442	37.91	119.66	1931.26	-1903.35	-818.35	1055.94	5767101.71	607924.89
2443	37.84	119.55	1932.05	-1904.14	-818.66	1056.47	5767101.40	607925.42
2444	37.76	119.43	1932.84	-1904.93	-818.97	1057.01	5767101.10	607925.96
2445	37.69	119.31	1933.62	-1905.71	-819.27	1057.54	5767100.79	607926.49
2446	37.61	119.19	1934.41	-1906.50	-819.58	1058.08	5767100.48	607927.03
2447	37.54	119.08	1935.20	-1907.29	-819.89	1058.61	5767100.17	607927.56
2448	37.47	118.96	1935.98	-1908.07	-820.20	1059.14	5767099.86	607928.09
2449	37.39	118.84	1936.77	-1908.86	-820.50	1059.68	5767099.56	607928.63
2450	37.32	118.72	1937.56	-1909.65	-820.81	1060.21	5767099.25	607929.16
2451	37.24	118.61	1938.35	-1910.44	-821.12	1060.75	5767098.94	607929.70
2452	37.17	118.49	1939.13	-1911.22	-821.43	1061.28	5767098.63	607930.23
2453	37.09	118.37	1939.92	-1912.01	-821.74	1061.81	5767098.33	607930.76
2454	37.02	118.25	1940.71	-1912.80	-822.04	1062.35	5767098.02	607931.30
2455	36.95	118.18	1941.51	-1913.60	-822.32	1062.87	5767097.74	607931.82
2456	36.89	118.12	1942.32	-1914.41	-822.60	1063.40	5767097.47	607932.35
2457	36.83	118.06	1943.13	-1915.22	-822.87	1063.92	5767097.19	607932.87
2458	36.77	118.00	1943.94	-1916.03	-823.14	1064.44	5767096.92	607933.39
2459	36.70	117.95	1944.74	-1916.83	-823.41	1064.97	5767096.65	607933.92
2460	36.64	117.89	1945.55	-1917.64	-823.68	1065.49	5767096.38	607934.44
2461	36.58	117.83	1946.36	-1918.45	-823.95	1066.01	5767096.11	607934.96
2462	36.51	117.77	1947.17	-1919.26	-824.22	1066.53	5767095.84	607935.49
2463	36.45	117.71	1947.98	-1920.07	-824.49	1067.06	5767095.57	607936.01
2464	36.39	117.65	1948.78	-1920.87	-824.76	1067.58	5767095.30	607936.53
2465	36.32	117.60	1949.59	-1921.68	-825.04	1068.10	5767095.03	607937.05
2466	36.26	117.54	1950.40	-1922.49	-825.31	1068.63	5767094.76	607937.58
2467	36.20	117.48	1951.21	-1923.30	-825.58	1069.15	5767094.48	607938.10
2468	36.13	117.42	1952.02	-1924.11	-825.85	1069.67	5767094.21	607938.62
2469	36.07	117.36	1952.82	-1924.91	-826.12	1070.19	5767093.94	607939.15
2470	36.01	117.30	1953.63	-1925.72	-826.39	1070.72	5767093.67	607939.67
2471	35.95	117.25	1954.44	-1926.53	-826.66	1071.24	5767093.40	607940.19
2472	35.88	117.19	1955.25	-1927.34	-826.93	1071.76	5767093.13	607940.71
2473	35.82	117.13	1956.06	-1928.15	-827.20	1072.29	5767092.86	607941.24
2474	35.76	117.07	1956.86	-1928.95	-827.47	1072.81	5767092.59	607941.76
2475	35.69	117.01	1957.67	-1929.76	-827.75	1073.33	5767092.32	607942.28
2476	35.63	116.96	1958.48	-1930.57	-828.02	1073.85	5767092.04	607942.81
2477	35.57	116.90	1959.29	-1931.38	-828.29	1074.38	5767091.77	607943.33
2478	35.50	116.84	1960.10	-1932.19	-828.56	1074.90	5767091.50	607943.85
2479	35.44	116.78	1960.90	-1932.99	-828.83	1075.42	5767091.23	607944.37
2480	35.38	116.72	1961.71	-1933.80	-829.10	1075.95	5767090.96	607944.90
2481	35.31	116.66	1962.52	-1934.61	-829.37	1076.47	5767090.69	607945.42
2482	35.25	116.61	1963.33	-1935.42	-829.64	1076.99	5767090.42	607945.94
2483	35.19	116.55	1964.14	-1936.23	-829.91	1077.52	5767090.15	607946.47
2484	35.09	116.49	1964.97	-1937.06	-830.16	1078.02	5767089.90	607946.97
2485	34.99	116.43	1965.80	-1937.89	-830.40	1078.52	5767089.66	607947.47
2486	34.89	116.38	1966.63	-1938.72	-830.64	1079.02	5767089.42	607947.97
2487	34.79	116.32	1967.46	-1939.55	-830.88	1079.52	5767089.18	607948.47
2488	34.69	116.27	1968.29	-1940.38	-831.12	1080.02	5767088.94	607948.97
2489	34.59	116.21	1969.12	-1941.21	-831.37	1080.52	5767088.70	607949.47
2490	34.49	116.15	1969.96	-1942.05	-831.61	1081.02	5767088.45	607949.97
2491	34.39	116.10	1970.79	-1942.88	-831.85	1081.52	5767088.21	607950.47
2492	34.28	116.04	1971.62	-1943.71	-832.09	1082.02	5767087.97	607950.97

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2493	34.18	115.99	1972.45	-1944.54	-832.33	1082.52	5767087.73	607951.47
2494	34.08	115.93	1973.28	-1945.37	-832.57	1083.02	5767087.49	607951.97
2495	33.98	115.87	1974.11	-1946.20	-832.81	1083.52	5767087.25	607952.47
2496	33.88	115.82	1974.94	-1947.03	-833.05	1084.02	5767087.01	607952.97
2497	33.78	115.76	1975.78	-1947.87	-833.30	1084.52	5767086.77	607953.47
2498	33.68	115.70	1976.61	-1948.70	-833.54	1085.02	5767086.52	607953.97
2499	33.58	115.65	1977.44	-1949.53	-833.78	1085.52	5767086.28	607954.47
2500	33.48	115.59	1978.27	-1950.36	-834.02	1086.02	5767086.04	607954.97
2501	33.38	115.54	1979.10	-1951.19	-834.26	1086.52	5767085.80	607955.47
2502	33.27	115.48	1979.93	-1952.02	-834.50	1087.02	5767085.56	607955.97
2503	33.17	115.42	1980.77	-1952.86	-834.74	1087.52	5767085.32	607956.47
2504	33.07	115.37	1981.60	-1953.69	-834.98	1088.02	5767085.08	607956.97
2505	32.97	115.31	1982.43	-1954.52	-835.23	1088.52	5767084.84	607957.47
2506	32.87	115.25	1983.26	-1955.35	-835.47	1089.02	5767084.59	607957.97
2507	32.77	115.20	1984.09	-1956.18	-835.71	1089.52	5767084.35	607958.47
2508	32.67	115.14	1984.92	-1957.01	-835.95	1090.02	5767084.11	607958.97
2509	32.57	115.09	1985.76	-1957.85	-836.19	1090.52	5767083.87	607959.47
2510	32.47	115.03	1986.59	-1958.68	-836.43	1091.02	5767083.63	607959.97
2511	32.36	114.97	1987.42	-1959.51	-836.67	1091.52	5767083.39	607960.47
2512	32.26	114.91	1988.25	-1960.34	-836.91	1092.01	5767083.15	607960.97
2513	32.15	114.79	1989.11	-1961.20	-837.11	1092.48	5767082.95	607961.43
2514	32.03	114.66	1989.97	-1962.06	-837.31	1092.95	5767082.75	607961.90
2515	31.92	114.53	1990.83	-1962.92	-837.51	1093.42	5767082.55	607962.37
2516	31.80	114.41	1991.70	-1963.79	-837.71	1093.89	5767082.35	607962.84
2517	31.68	114.28	1992.56	-1964.65	-837.91	1094.35	5767082.15	607963.30
2518	31.57	114.15	1993.42	-1965.51	-838.11	1094.82	5767081.95	607963.77
2519	31.45	114.03	1994.28	-1966.37	-838.31	1095.29	5767081.75	607964.24
2520	31.34	113.90	1995.14	-1967.23	-838.51	1095.76	5767081.55	607964.71
2521	31.22	113.77	1996.00	-1968.09	-838.71	1096.22	5767081.35	607965.18
2522	31.10	113.65	1996.86	-1968.95	-838.91	1096.69	5767081.15	607965.64
2523	30.99	113.52	1997.72	-1969.81	-839.11	1097.16	5767080.95	607966.11
2524	30.87	113.39	1998.58	-1970.67	-839.32	1097.63	5767080.75	607966.58
2525	30.76	113.26	1999.44	-1971.53	-839.52	1098.09	5767080.55	607967.05
2526	30.64	113.14	2000.30	-1972.39	-839.72	1098.56	5767080.35	607967.51
2527	30.52	113.01	2001.16	-1973.25	-839.92	1099.03	5767080.15	607967.98
2528	30.41	112.88	2002.02	-1974.11	-840.12	1099.50	5767079.95	607968.45
2529	30.29	112.76	2002.88	-1974.97	-840.32	1099.96	5767079.74	607968.92
2530	30.18	112.63	2003.75	-1975.84	-840.52	1100.43	5767079.54	607969.38
2531	30.06	112.50	2004.61	-1976.70	-840.72	1100.90	5767079.34	607969.85
2532	29.94	112.38	2005.47	-1977.56	-840.92	1101.37	5767079.14	607970.32
2533	29.83	112.25	2006.33	-1978.42	-841.12	1101.84	5767078.94	607970.79
2534	29.71	112.12	2007.19	-1979.28	-841.32	1102.30	5767078.74	607971.25
2535	29.60	112.00	2008.05	-1980.14	-841.52	1102.77	5767078.54	607971.72
2536	29.48	111.87	2008.91	-1981.00	-841.72	1103.24	5767078.34	607972.19
2537	29.36	111.74	2009.77	-1981.86	-841.92	1103.71	5767078.14	607972.66
2538	29.25	111.62	2010.63	-1982.72	-842.12	1104.17	5767077.94	607973.12
2539	29.13	111.49	2011.49	-1983.58	-842.32	1104.64	5767077.74	607973.59
2540	29.02	111.36	2012.35	-1984.44	-842.52	1105.11	5767077.54	607974.06
2541	28.91	111.23	2013.22	-1985.31	-842.71	1105.57	5767077.35	607974.52
2542	28.85	111.08	2014.10	-1986.19	-842.86	1106.01	5767077.20	607974.97
2543	28.79	110.93	2014.98	-1987.07	-843.02	1106.46	5767077.05	607975.41
2544	28.73	110.78	2015.87	-1987.96	-843.17	1106.90	5767076.89	607975.85
2545	28.67	110.63	2016.75	-1988.84	-843.32	1107.35	5767076.74	607976.30
2546	28.61	110.47	2017.63	-1989.72	-843.48	1107.79	5767076.58	607976.74
2547	28.55	110.32	2018.51	-1990.60	-843.63	1108.23	5767076.43	607977.19
2548	28.49	110.17	2019.40	-1991.49	-843.79	1108.68	5767076.27	607977.63
2549	28.43	110.02	2020.28	-1992.37	-843.94	1109.12	5767076.12	607978.07
2550	28.36	109.87	2021.16	-1993.25	-844.09	1109.57	5767075.97	607978.52
2551	28.30	109.72	2022.05	-1994.14	-844.25	1110.01	5767075.81	607978.96
2552	28.24	109.57	2022.93	-1995.02	-844.40	1110.45	5767075.66	607979.40
2553	28.18	109.42	2023.81	-1995.90	-844.56	1110.90	5767075.50	607979.85
2554	28.12	109.27	2024.69	-1996.78	-844.71	1111.34	5767075.35	607980.29
2555	28.06	109.11	2025.58	-1997.67	-844.87	1111.78	5767075.20	607980.74
2556	28.00	108.96	2026.46	-1998.55	-845.02	1112.23	5767075.04	607981.18
2557	27.94	108.81	2027.34	-1999.43	-845.17	1112.67	5767074.89	607981.62
2558	27.88	108.66	2028.22	-2000.31	-845.33	1113.12	5767074.73	607982.07

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2559	27.81	108.51	2029.11	-2001.20	-845.48	1113.56	5767074.58	607982.51
2560	27.75	108.36	2029.99	-2002.08	-845.64	1114.00	5767074.43	607982.96
2561	27.69	108.21	2030.87	-2002.96	-845.79	1114.45	5767074.27	607983.40
2562	27.63	108.06	2031.75	-2003.84	-845.94	1114.89	5767074.12	607983.84
2563	27.57	107.90	2032.64	-2004.73	-846.10	1115.34	5767073.96	607984.29
2564	27.51	107.75	2033.52	-2005.61	-846.25	1115.78	5767073.81	607984.73
2565	27.45	107.60	2034.40	-2006.49	-846.41	1116.22	5767073.66	607985.17
2566	27.39	107.45	2035.29	-2007.38	-846.56	1116.67	5767073.50	607985.62
2567	27.33	107.30	2036.17	-2008.26	-846.71	1117.11	5767073.35	607986.06
2568	27.26	107.15	2037.05	-2009.14	-846.87	1117.56	5767073.19	607986.51
2569	27.20	107.00	2037.93	-2010.02	-847.02	1118.00	5767073.04	607986.95
2570	27.14	106.86	2038.82	-2010.91	-847.17	1118.44	5767072.90	607987.39
2571	27.09	106.74	2039.72	-2011.81	-847.28	1118.87	5767072.78	607987.82
2572	27.03	106.63	2040.61	-2012.70	-847.40	1119.29	5767072.66	607988.25
2573	26.97	106.52	2041.51	-2013.60	-847.52	1119.72	5767072.54	607988.67
2574	26.92	106.40	2042.40	-2014.49	-847.63	1120.15	5767072.43	607989.10
2575	26.86	106.29	2043.30	-2015.39	-847.75	1120.58	5767072.31	607989.53
2576	26.80	106.18	2044.20	-2016.29	-847.87	1121.01	5767072.19	607989.96
2577	26.75	106.06	2045.09	-2017.18	-847.99	1121.43	5767072.08	607990.39
2578	26.69	105.95	2045.99	-2018.08	-848.10	1121.86	5767071.96	607990.81
2579	26.64	105.83	2046.88	-2018.97	-848.22	1122.29	5767071.84	607991.24
2580	26.58	105.72	2047.78	-2019.87	-848.34	1122.72	5767071.72	607991.67
2581	26.52	105.61	2048.68	-2020.77	-848.45	1123.15	5767071.61	607992.10
2582	26.47	105.49	2049.57	-2021.66	-848.57	1123.57	5767071.49	607992.53
2583	26.41	105.38	2050.47	-2022.56	-848.69	1124.00	5767071.37	607992.95
2584	26.35	105.27	2051.37	-2023.46	-848.81	1124.43	5767071.26	607993.38
2585	26.30	105.15	2052.26	-2024.35	-848.92	1124.86	5767071.14	607993.81
2586	26.24	105.04	2053.16	-2025.25	-849.04	1125.29	5767071.02	607994.24
2587	26.18	104.92	2054.05	-2026.14	-849.16	1125.71	5767070.90	607994.66
2588	26.13	104.81	2054.95	-2027.04	-849.27	1126.14	5767070.79	607995.09
2589	26.07	104.70	2055.85	-2027.94	-849.39	1126.57	5767070.67	607995.52
2590	26.01	104.58	2056.74	-2028.83	-849.51	1127.00	5767070.55	607995.95
2591	25.96	104.47	2057.64	-2029.73	-849.63	1127.43	5767070.44	607996.38
2592	25.90	104.36	2058.53	-2030.62	-849.74	1127.85	5767070.32	607996.80
2593	25.84	104.24	2059.43	-2031.52	-849.86	1128.28	5767070.20	607997.23
2594	25.79	104.13	2060.33	-2032.42	-849.98	1128.71	5767070.08	607997.66
2595	25.73	104.02	2061.22	-2033.31	-850.09	1129.14	5767069.97	607998.09
2596	25.67	103.90	2062.12	-2034.21	-850.21	1129.57	5767069.85	607998.52
2597	25.62	103.79	2063.01	-2035.10	-850.33	1129.99	5767069.73	607998.94
2598	25.56	103.67	2063.91	-2036.00	-850.45	1130.42	5767069.62	607999.37
2599	25.47	103.57	2064.82	-2036.91	-850.54	1130.83	5767069.52	607999.78
2600	25.35	103.48	2065.73	-2037.82	-850.63	1131.22	5767069.43	608000.18
2601	25.24	103.39	2066.65	-2038.74	-850.72	1131.62	5767069.34	608000.57
2602	25.12	103.29	2067.56	-2039.65	-850.80	1132.01	5767069.26	608000.97
2603	25.00	103.20	2068.47	-2040.56	-850.89	1132.41	5767069.17	608001.36
2604	24.89	103.11	2069.39	-2041.48	-850.98	1132.81	5767069.08	608001.76
2605	24.77	103.01	2070.30	-2042.39	-851.06	1133.20	5767069.00	608002.15
2606	24.65	102.92	2071.22	-2043.31	-851.15	1133.60	5767068.91	608002.55
2607	24.54	102.83	2072.13	-2044.22	-851.24	1133.99	5767068.82	608002.94
2608	24.42	102.73	2073.05	-2045.14	-851.33	1134.39	5767068.74	608003.34
2609	24.31	102.64	2073.96	-2046.05	-851.41	1134.78	5767068.65	608003.73
2610	24.19	102.55	2074.88	-2046.97	-851.50	1135.18	5767068.56	608004.13
2611	24.07	102.45	2075.79	-2047.88	-851.59	1135.57	5767068.48	608004.52
2612	23.96	102.36	2076.70	-2048.79	-851.67	1135.97	5767068.39	608004.92
2613	23.84	102.27	2077.62	-2049.71	-851.76	1136.36	5767068.30	608005.31
2614	23.72	102.17	2078.53	-2050.62	-851.85	1136.76	5767068.22	608005.71
2615	23.61	102.08	2079.45	-2051.54	-851.93	1137.15	5767068.13	608006.10
2616	23.49	101.99	2080.36	-2052.45	-852.02	1137.55	5767068.04	608006.50
2617	23.37	101.89	2081.28	-2053.37	-852.11	1137.94	5767067.95	608006.89
2618	23.26	101.80	2082.19	-2054.28	-852.19	1138.34	5767067.87	608007.29
2619	23.14	101.71	2083.10	-2055.19	-852.28	1138.73	5767067.78	608007.69
2620	23.03	101.62	2084.02	-2056.11	-852.37	1139.13	5767067.69	608008.08
2621	22.91	101.52	2084.93	-2057.02	-852.45	1139.52	5767067.61	608008.48
2622	22.79	101.43	2085.85	-2057.94	-852.54	1139.92	5767067.52	608008.87
2623	22.68	101.34	2086.76	-2058.85	-852.63	1140.31	5767067.43	608009.27
2624	22.56	101.24	2087.68	-2059.77	-852.71	1140.71	5767067.35	608009.66

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2625	22.44	101.15	2088.59	-2060.68	-852.80	1141.11	5767067.26	608010.06
2626	22.33	101.06	2089.50	-2061.59	-852.89	1141.50	5767067.17	608010.45
2627	22.21	100.95	2090.42	-2062.51	-852.97	1141.89	5767067.09	608010.84
2628	22.15	100.64	2091.35	-2063.44	-853.01	1142.25	5767067.05	608011.20
2629	22.08	100.33	2092.28	-2064.37	-853.06	1142.61	5767067.01	608011.56
2630	22.01	100.02	2093.22	-2065.31	-853.10	1142.97	5767066.96	608011.92
2631	21.94	99.71	2094.15	-2066.24	-853.14	1143.33	5767066.92	608012.28
2632	21.88	99.40	2095.08	-2067.17	-853.18	1143.69	5767066.88	608012.64
2633	21.81	99.09	2096.01	-2068.10	-853.22	1144.05	5767066.84	608013.00
2634	21.74	98.78	2096.95	-2069.04	-853.27	1144.40	5767066.79	608013.36
2635	21.67	98.47	2097.88	-2069.97	-853.31	1144.76	5767066.75	608013.72
2636	21.61	98.16	2098.81	-2070.90	-853.35	1145.12	5767066.71	608014.07
2637	21.54	97.85	2099.74	-2071.83	-853.39	1145.48	5767066.67	608014.43
2638	21.47	97.54	2100.67	-2072.76	-853.44	1145.84	5767066.63	608014.79
2639	21.40	97.23	2101.61	-2073.70	-853.48	1146.20	5767066.58	608015.15
2640	21.34	96.92	2102.54	-2074.63	-853.52	1146.56	5767066.54	608015.51
2641	21.27	96.61	2103.47	-2075.56	-853.56	1146.92	5767066.50	608015.87
2642	21.20	96.30	2104.40	-2076.49	-853.60	1147.28	5767066.46	608016.23
2643	21.13	95.99	2105.34	-2077.43	-853.65	1147.63	5767066.42	608016.59
2644	21.07	95.68	2106.27	-2078.36	-853.69	1147.99	5767066.37	608016.95
2645	21.00	95.37	2107.20	-2079.29	-853.73	1148.35	5767066.33	608017.30
2646	20.93	95.06	2108.13	-2080.22	-853.77	1148.71	5767066.29	608017.66
2647	20.86	94.75	2109.06	-2081.15	-853.81	1149.07	5767066.25	608018.02
2648	20.79	94.44	2110.00	-2082.09	-853.86	1149.43	5767066.20	608018.38
2649	20.73	94.13	2110.93	-2083.02	-853.90	1149.79	5767066.16	608018.74
2650	20.66	93.82	2111.86	-2083.95	-853.94	1150.15	5767066.12	608019.10
2651	20.59	93.51	2112.79	-2084.88	-853.98	1150.51	5767066.08	608019.46
2652	20.52	93.20	2113.73	-2085.82	-854.03	1150.86	5767066.04	608019.82
2653	20.46	92.89	2114.66	-2086.75	-854.07	1151.22	5767065.99	608020.18
2654	20.39	92.58	2115.59	-2087.68	-854.11	1151.58	5767065.95	608020.53
2655	20.32	92.28	2116.52	-2088.61	-854.15	1151.94	5767065.91	608020.89
2656	20.27	91.95	2117.46	-2089.55	-854.18	1152.30	5767065.88	608021.25
2657	20.27	91.57	2118.40	-2090.49	-854.16	1152.64	5767065.90	608021.59
2658	20.26	91.20	2119.33	-2091.42	-854.14	1152.98	5767065.92	608021.94
2659	20.26	90.82	2120.27	-2092.36	-854.12	1153.33	5767065.94	608022.28
2660	20.25	90.45	2121.21	-2093.30	-854.10	1153.67	5767065.96	608022.62
2661	20.25	90.07	2122.15	-2094.24	-854.08	1154.01	5767065.98	608022.97
2662	20.25	89.70	2123.09	-2095.18	-854.06	1154.36	5767066.00	608023.31
2663	20.24	89.32	2124.03	-2096.12	-854.04	1154.70	5767066.02	608023.65
2664	20.24	88.95	2124.97	-2097.06	-854.02	1155.05	5767066.04	608024.00
2665	20.23	88.57	2125.90	-2097.99	-854.00	1155.39	5767066.06	608024.34
2666	20.23	88.20	2126.84	-2098.93	-853.98	1155.73	5767066.08	608024.68
2667	20.23	87.82	2127.78	-2099.87	-853.96	1156.08	5767066.10	608025.03
2668	20.22	87.45	2128.72	-2100.81	-853.94	1156.42	5767066.12	608025.37
2669	20.22	87.07	2129.66	-2101.75	-853.92	1156.76	5767066.14	608025.72
2670	20.21	86.70	2130.60	-2102.69	-853.91	1157.11	5767066.16	608026.06
2671	20.21	86.32	2131.54	-2103.63	-853.89	1157.45	5767066.18	608026.40
2672	20.21	85.95	2132.48	-2104.57	-853.87	1157.79	5767066.20	608026.75
2673	20.20	85.57	2133.41	-2105.50	-853.85	1158.14	5767066.22	608027.09
2674	20.20	85.20	2134.35	-2106.44	-853.83	1158.48	5767066.23	608027.43
2675	20.20	84.82	2135.29	-2107.38	-853.81	1158.83	5767066.25	608027.78
2676	20.19	84.45	2136.23	-2108.32	-853.79	1159.17	5767066.27	608028.12
2677	20.19	84.07	2137.17	-2109.26	-853.77	1159.51	5767066.29	608028.46
2678	20.18	83.70	2138.11	-2110.20	-853.75	1159.86	5767066.31	608028.81
2679	20.18	83.32	2139.05	-2111.14	-853.73	1160.20	5767066.33	608029.15
2680	20.18	82.95	2139.99	-2112.08	-853.71	1160.54	5767066.35	608029.50
2681	20.17	82.57	2140.92	-2113.01	-853.69	1160.89	5767066.37	608029.84
2682	20.17	82.20	2141.86	-2113.95	-853.67	1161.23	5767066.39	608030.18
2683	20.16	81.82	2142.80	-2114.89	-853.65	1161.57	5767066.41	608030.53
2684	20.16	81.45	2143.74	-2115.83	-853.63	1161.92	5767066.43	608030.87
2685	20.15	81.30	2144.68	-2116.77	-853.57	1162.25	5767066.49	608031.21
2686	20.13	81.18	2145.62	-2117.71	-853.51	1162.59	5767066.55	608031.54
2687	20.12	81.05	2146.56	-2118.65	-853.45	1162.93	5767066.61	608031.88
2688	20.11	80.92	2147.50	-2119.59	-853.39	1163.26	5767066.67	608032.21
2689	20.09	80.79	2148.44	-2120.53	-853.33	1163.60	5767066.74	608032.55
2690	20.08	80.67	2149.38	-2121.47	-853.26	1163.93	5767066.80	608032.88

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2691	20.06	80.54	2150.32	-2122.41	-853.20	1164.27	5767066.86	608033.22
2692	20.05	80.41	2151.26	-2123.35	-853.14	1164.60	5767066.92	608033.55
2693	20.04	80.29	2152.20	-2124.29	-853.08	1164.94	5767066.98	608033.89
2694	20.02	80.16	2153.14	-2125.23	-853.02	1165.27	5767067.04	608034.23
2695	20.01	80.03	2154.08	-2126.17	-852.96	1165.61	5767067.10	608034.56
2696	20.00	79.91	2155.02	-2127.11	-852.90	1165.95	5767067.17	608034.90
2697	19.98	79.78	2155.96	-2128.05	-852.83	1166.28	5767067.23	608035.23
2698	19.97	79.65	2156.90	-2128.99	-852.77	1166.62	5767067.29	608035.57
2699	19.95	79.53	2157.84	-2129.93	-852.71	1166.95	5767067.35	608035.90
2700	19.94	79.40	2158.78	-2130.87	-852.65	1167.29	5767067.41	608036.24
2701	19.93	79.27	2159.72	-2131.81	-852.59	1167.62	5767067.47	608036.58
2702	19.91	79.15	2160.66	-2132.75	-852.53	1167.96	5767067.54	608036.91
2703	19.90	79.02	2161.60	-2133.69	-852.46	1168.29	5767067.60	608037.25
2704	19.88	78.89	2162.54	-2134.63	-852.40	1168.63	5767067.66	608037.58
2705	19.87	78.76	2163.48	-2135.57	-852.34	1168.97	5767067.72	608037.92
2706	19.86	78.64	2164.42	-2136.51	-852.28	1169.30	5767067.78	608038.25
2707	19.84	78.51	2165.36	-2137.45	-852.22	1169.64	5767067.84	608038.59
2708	19.83	78.38	2166.30	-2138.39	-852.16	1169.97	5767067.90	608038.92
2709	19.82	78.26	2167.24	-2139.33	-852.09	1170.31	5767067.97	608039.26
2710	19.80	78.13	2168.18	-2140.27	-852.03	1170.64	5767068.03	608039.60
2711	19.79	78.00	2169.12	-2141.21	-851.97	1170.98	5767068.09	608039.93
2712	19.77	77.88	2170.06	-2142.15	-851.91	1171.31	5767068.15	608040.27
2713	19.76	77.75	2171.00	-2143.09	-851.85	1171.65	5767068.21	608040.60
2714	19.75	77.72	2171.94	-2144.03	-851.77	1171.98	5767068.29	608040.93
2715	19.73	77.68	2172.88	-2144.97	-851.70	1172.30	5767068.36	608041.26
2716	19.72	77.65	2173.83	-2145.92	-851.63	1172.63	5767068.43	608041.58
2717	19.71	77.61	2174.77	-2146.86	-851.55	1172.96	5767068.51	608041.91
2718	19.70	77.58	2175.71	-2147.80	-851.48	1173.28	5767068.58	608042.24
2719	19.68	77.54	2176.65	-2148.74	-851.41	1173.61	5767068.66	608042.56
2720	19.67	77.51	2177.59	-2149.68	-851.33	1173.94	5767068.73	608042.89
2721	19.66	77.48	2178.54	-2150.63	-851.26	1174.27	5767068.80	608043.22
2722	19.65	77.44	2179.48	-2151.57	-851.18	1174.59	5767068.88	608043.54
2723	19.63	77.41	2180.42	-2152.51	-851.11	1174.92	5767068.95	608043.87
2724	19.62	77.37	2181.36	-2153.45	-851.04	1175.25	5767069.03	608044.20
2725	19.61	77.34	2182.31	-2154.40	-850.96	1175.57	5767069.10	608044.52
2726	19.60	77.30	2183.25	-2155.34	-850.89	1175.90	5767069.17	608044.85
2727	19.58	77.27	2184.19	-2156.28	-850.81	1176.23	5767069.25	608045.18
2728	19.57	77.24	2185.13	-2157.22	-850.74	1176.55	5767069.32	608045.50
2729	19.56	77.20	2186.07	-2158.16	-850.67	1176.88	5767069.40	608045.83
2730	19.55	77.17	2187.02	-2159.11	-850.59	1177.21	5767069.47	608046.16
2731	19.53	77.13	2187.96	-2160.05	-850.52	1177.53	5767069.54	608046.49
2732	19.52	77.10	2188.90	-2160.99	-850.44	1177.86	5767069.62	608046.81
2733	19.51	77.07	2189.84	-2161.93	-850.37	1178.19	5767069.69	608047.14
2734	19.50	77.03	2190.78	-2162.87	-850.30	1178.51	5767069.76	608047.47
2735	19.48	77.00	2191.73	-2163.82	-850.22	1178.84	5767069.84	608047.79
2736	19.47	76.96	2192.67	-2164.76	-850.15	1179.17	5767069.91	608048.12
2737	19.46	76.93	2193.61	-2165.70	-850.08	1179.50	5767069.99	608048.45
2738	19.45	76.89	2194.55	-2166.64	-850.00	1179.82	5767070.06	608048.77
2739	19.43	76.86	2195.50	-2167.59	-849.93	1180.15	5767070.13	608049.10
2740	19.42	76.83	2196.44	-2168.53	-849.85	1180.48	5767070.21	608049.43
2741	19.41	76.79	2197.38	-2169.47	-849.78	1180.80	5767070.28	608049.75
2742	19.39	76.77	2198.32	-2170.41	-849.71	1181.12	5767070.36	608050.08
2743	19.35	76.79	2199.27	-2171.36	-849.63	1181.44	5767070.43	608050.39
2744	19.31	76.80	2200.22	-2172.31	-849.56	1181.75	5767070.50	608050.71
2745	19.27	76.81	2201.16	-2173.25	-849.49	1182.07	5767070.57	608051.02
2746	19.23	76.83	2202.11	-2174.20	-849.41	1182.38	5767070.65	608051.33
2747	19.19	76.84	2203.06	-2175.15	-849.34	1182.70	5767070.72	608051.65
2748	19.15	76.85	2204.00	-2176.09	-849.27	1183.01	5767070.79	608051.96
2749	19.11	76.86	2204.95	-2177.04	-849.20	1183.33	5767070.87	608052.28
2750	19.07	76.88	2205.89	-2177.98	-849.12	1183.64	5767070.94	608052.59
2751	19.03	76.89	2206.84	-2178.93	-849.05	1183.96	5767071.01	608052.91
2752	18.99	76.90	2207.79	-2179.88	-848.98	1184.27	5767071.08	608053.22
2753	18.95	76.91	2208.73	-2180.82	-848.90	1184.59	5767071.16	608053.54
2754	18.91	76.93	2209.68	-2181.77	-848.83	1184.90	5767071.23	608053.85
2755	18.87	76.94	2210.63	-2182.72	-848.76	1185.21	5767071.30	608054.17
2756	18.84	76.95	2211.57	-2183.66	-848.69	1185.53	5767071.38	608054.48

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2757	18.80	76.96	2212.52	-2184.61	-848.61	1185.84	5767071.45	608054.80
2758	18.76	76.98	2213.47	-2185.56	-848.54	1186.16	5767071.52	608055.11
2759	18.72	76.99	2214.41	-2186.50	-848.47	1186.47	5767071.59	608055.42
2760	18.68	77.00	2215.36	-2187.45	-848.39	1186.79	5767071.67	608055.74
2761	18.64	77.01	2216.31	-2188.40	-848.32	1187.10	5767071.74	608056.05
2762	18.60	77.03	2217.25	-2189.34	-848.25	1187.42	5767071.81	608056.37
2763	18.56	77.04	2218.20	-2190.29	-848.17	1187.73	5767071.89	608056.68
2764	18.52	77.05	2219.14	-2191.23	-848.10	1188.05	5767071.96	608057.00
2765	18.48	77.07	2220.09	-2192.18	-848.03	1188.36	5767072.03	608057.31
2766	18.44	77.08	2221.04	-2193.13	-847.96	1188.68	5767072.11	608057.63
2767	18.40	77.09	2221.98	-2194.07	-847.88	1188.99	5767072.18	608057.94
2768	18.36	77.10	2222.93	-2195.02	-847.81	1189.30	5767072.25	608058.26
2769	18.32	77.12	2223.88	-2195.97	-847.74	1189.62	5767072.32	608058.57
2770	18.29	77.13	2224.82	-2196.91	-847.66	1189.93	5767072.40	608058.89
2771	18.26	77.13	2225.77	-2197.86	-847.60	1190.24	5767072.47	608059.19
2772	18.23	77.13	2226.73	-2198.82	-847.53	1190.53	5767072.53	608059.49
2773	18.20	77.14	2227.68	-2199.77	-847.46	1190.83	5767072.60	608059.79
2774	18.18	77.14	2228.63	-2200.72	-847.39	1191.13	5767072.67	608060.09
2775	18.15	77.14	2229.58	-2201.67	-847.32	1191.43	5767072.74	608060.38
2776	18.12	77.14	2230.53	-2202.62	-847.25	1191.73	5767072.81	608060.68
2777	18.10	77.14	2231.48	-2203.57	-847.19	1192.03	5767072.88	608060.98
2778	18.07	77.14	2232.44	-2204.53	-847.12	1192.33	5767072.94	608061.28
2779	18.04	77.15	2233.39	-2205.48	-847.05	1192.63	5767073.01	608061.58
2780	18.01	77.15	2234.34	-2206.43	-846.98	1192.93	5767073.08	608061.88
2781	17.99	77.15	2235.29	-2207.38	-846.91	1193.23	5767073.15	608062.18
2782	17.96	77.15	2236.24	-2208.33	-846.84	1193.53	5767073.22	608062.48
2783	17.93	77.15	2237.19	-2209.28	-846.78	1193.83	5767073.29	608062.78
2784	17.91	77.15	2238.15	-2210.24	-846.71	1194.13	5767073.35	608063.08
2785	17.88	77.16	2239.10	-2211.19	-846.64	1194.43	5767073.42	608063.38
2786	17.85	77.16	2240.05	-2212.14	-846.57	1194.73	5767073.49	608063.68
2787	17.83	77.16	2241.00	-2213.09	-846.50	1195.03	5767073.56	608063.98
2788	17.80	77.16	2241.95	-2214.04	-846.43	1195.33	5767073.63	608064.28
2789	17.77	77.16	2242.90	-2214.99	-846.37	1195.63	5767073.70	608064.58
2790	17.75	77.16	2243.86	-2215.95	-846.30	1195.93	5767073.76	608064.88
2791	17.72	77.17	2244.81	-2216.90	-846.23	1196.23	5767073.83	608065.18
2792	17.69	77.17	2245.76	-2217.85	-846.16	1196.53	5767073.90	608065.48
2793	17.67	77.17	2246.71	-2218.80	-846.09	1196.83	5767073.97	608065.78
2794	17.64	77.17	2247.66	-2219.75	-846.02	1197.13	5767074.04	608066.08
2795	17.61	77.17	2248.61	-2220.70	-845.96	1197.42	5767074.11	608066.38
2796	17.58	77.18	2249.56	-2221.65	-845.89	1197.72	5767074.17	608066.68
2797	17.56	77.18	2250.52	-2222.61	-845.82	1198.02	5767074.24	608066.98
2798	17.53	77.18	2251.47	-2223.56	-845.75	1198.32	5767074.31	608067.27
2799	17.51	77.18	2252.42	-2224.51	-845.68	1198.62	5767074.38	608067.57
2800	17.50	77.17	2253.37	-2225.46	-845.62	1198.91	5767074.45	608067.86
2801	17.49	77.16	2254.33	-2226.42	-845.55	1199.20	5767074.51	608068.16
2802	17.49	77.15	2255.28	-2227.37	-845.48	1199.50	5767074.58	608068.45
2803	17.48	77.14	2256.24	-2228.33	-845.41	1199.79	5767074.65	608068.74
2804	17.47	77.13	2257.19	-2229.28	-845.35	1200.08	5767074.71	608069.03
2805	17.46	77.12	2258.15	-2230.24	-845.28	1200.37	5767074.78	608069.32
2806	17.45	77.11	2259.10	-2231.19	-845.21	1200.66	5767074.85	608069.61
2807	17.45	77.10	2260.05	-2232.14	-845.15	1200.95	5767074.92	608069.90
2808	17.44	77.09	2261.01	-2233.10	-845.08	1201.24	5767074.98	608070.20
2809	17.43	77.08	2261.96	-2234.05	-845.01	1201.54	5767075.05	608070.49
2810	17.42	77.07	2262.92	-2235.01	-844.94	1201.83	5767075.12	608070.78
2811	17.42	77.06	2263.87	-2235.96	-844.88	1202.12	5767075.18	608071.07
2812	17.41	77.05	2264.83	-2236.92	-844.81	1202.41	5767075.25	608071.36
2813	17.40	77.04	2265.78	-2237.87	-844.74	1202.70	5767075.32	608071.65
2814	17.39	77.03	2266.73	-2238.82	-844.68	1202.99	5767075.38	608071.94
2815	17.38	77.02	2267.69	-2239.78	-844.61	1203.28	5767075.45	608072.24
2816	17.38	77.01	2268.64	-2240.73	-844.54	1203.58	5767075.52	608072.53
2817	17.37	77.00	2269.60	-2241.69	-844.48	1203.87	5767075.59	608072.82
2818	17.36	76.99	2270.55	-2242.64	-844.41	1204.16	5767075.65	608073.11
2819	17.35	76.98	2271.51	-2243.60	-844.34	1204.45	5767075.72	608073.40
2820	17.35	76.97	2272.46	-2244.55	-844.27	1204.74	5767075.79	608073.69
2821	17.34	76.96	2273.41	-2245.50	-844.21	1205.03	5767075.85	608073.98
2822	17.33	76.95	2274.37	-2246.46	-844.14	1205.32	5767075.92	608074.28

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2823	17.32	76.94	2275.32	-2247.41	-844.07	1205.62	5767075.99	608074.57
2824	17.32	76.93	2276.28	-2248.37	-844.01	1205.91	5767076.06	608074.86
2825	17.31	76.92	2277.23	-2249.32	-843.94	1206.20	5767076.12	608075.15
2826	17.30	76.91	2278.18	-2250.27	-843.87	1206.49	5767076.19	608075.44
2827	17.29	76.90	2279.14	-2251.23	-843.80	1206.78	5767076.26	608075.73
2828	17.32	76.80	2280.09	-2252.18	-843.73	1207.08	5767076.33	608076.03
2829	17.37	76.66	2281.04	-2253.13	-843.65	1207.37	5767076.41	608076.33
2830	17.42	76.52	2281.99	-2254.08	-843.57	1207.67	5767076.50	608076.62
2831	17.47	76.38	2282.94	-2255.03	-843.48	1207.97	5767076.58	608076.92
2832	17.51	76.23	2283.90	-2255.99	-843.40	1208.27	5767076.66	608077.22
2833	17.56	76.09	2284.85	-2256.94	-843.32	1208.56	5767076.74	608077.52
2834	17.61	75.95	2285.80	-2257.89	-843.24	1208.86	5767076.82	608077.81
2835	17.66	75.81	2286.75	-2258.84	-843.16	1209.16	5767076.90	608078.11
2836	17.70	75.66	2287.70	-2259.79	-843.08	1209.46	5767076.98	608078.41
2837	17.75	75.52	2288.65	-2260.74	-843.00	1209.76	5767077.06	608078.71
2838	17.80	75.38	2289.60	-2261.69	-842.92	1210.05	5767077.14	608079.00
2839	17.85	75.24	2290.55	-2262.64	-842.84	1210.35	5767077.23	608079.30
2840	17.90	75.09	2291.51	-2263.60	-842.75	1210.65	5767077.31	608079.60
2841	17.94	74.95	2292.46	-2264.55	-842.67	1210.95	5767077.39	608079.90
2842	17.99	74.81	2293.41	-2265.50	-842.59	1211.24	5767077.47	608080.20
2843	18.04	74.66	2294.36	-2266.45	-842.51	1211.54	5767077.55	608080.49
2844	18.09	74.52	2295.31	-2267.40	-842.43	1211.84	5767077.63	608080.79
2845	18.13	74.38	2296.26	-2268.35	-842.35	1212.14	5767077.71	608081.09
2846	18.18	74.24	2297.21	-2269.30	-842.27	1212.43	5767077.79	608081.39
2847	18.23	74.09	2298.16	-2270.25	-842.19	1212.73	5767077.88	608081.68
2848	18.28	73.95	2299.11	-2271.20	-842.10	1213.03	5767077.96	608081.98
2849	18.33	73.81	2300.07	-2272.16	-842.02	1213.33	5767078.04	608082.28
2850	18.37	73.67	2301.02	-2273.11	-841.94	1213.63	5767078.12	608082.58
2851	18.42	73.52	2301.97	-2274.06	-841.86	1213.92	5767078.20	608082.87
2852	18.47	73.38	2302.92	-2275.01	-841.78	1214.22	5767078.28	608083.17
2853	18.52	73.24	2303.87	-2275.96	-841.70	1214.52	5767078.36	608083.47
2854	18.56	73.10	2304.82	-2276.91	-841.62	1214.82	5767078.44	608083.77
2855	18.61	72.95	2305.77	-2277.86	-841.54	1215.11	5767078.52	608084.07
2856	18.66	72.81	2306.72	-2278.81	-841.46	1215.41	5767078.61	608084.36
2857	18.66	72.72	2307.67	-2279.76	-841.37	1215.71	5767078.70	608084.66
2858	18.64	72.68	2308.62	-2280.71	-841.27	1216.01	5767078.79	608084.96
2859	18.61	72.63	2309.57	-2281.66	-841.17	1216.31	5767078.89	608085.26
2860	18.58	72.59	2310.52	-2282.61	-841.08	1216.61	5767078.99	608085.56
2861	18.56	72.54	2311.47	-2283.56	-840.98	1216.91	5767079.08	608085.86
2862	18.53	72.49	2312.42	-2284.51	-840.88	1217.20	5767079.18	608086.16
2863	18.50	72.45	2313.37	-2285.46	-840.79	1217.50	5767079.27	608086.45
2864	18.48	72.40	2314.32	-2286.41	-840.69	1217.80	5767079.37	608086.75
2865	18.45	72.36	2315.27	-2287.36	-840.59	1218.10	5767079.47	608087.05
2866	18.42	72.31	2316.22	-2288.31	-840.50	1218.40	5767079.56	608087.35
2867	18.40	72.26	2317.17	-2289.26	-840.40	1218.70	5767079.66	608087.65
2868	18.37	72.22	2318.12	-2290.21	-840.30	1219.00	5767079.76	608087.95
2869	18.34	72.17	2319.07	-2291.16	-840.21	1219.30	5767079.85	608088.25
2870	18.32	72.13	2320.02	-2292.11	-840.11	1219.59	5767079.95	608088.55
2871	18.29	72.08	2320.97	-2293.06	-840.02	1219.89	5767080.05	608088.85
2872	18.26	72.04	2321.91	-2294.00	-839.92	1220.19	5767080.14	608089.14
2873	18.24	71.99	2322.86	-2294.95	-839.82	1220.49	5767080.24	608089.44
2874	18.21	71.94	2323.81	-2295.90	-839.73	1220.79	5767080.33	608089.74
2875	18.18	71.90	2324.76	-2296.85	-839.63	1221.09	5767080.43	608090.04
2876	18.15	71.85	2325.71	-2297.80	-839.53	1221.39	5767080.53	608090.34
2877	18.13	71.81	2326.66	-2298.75	-839.44	1221.69	5767080.62	608090.64
2878	18.10	71.76	2327.61	-2299.70	-839.34	1221.99	5767080.72	608090.94
2879	18.07	71.71	2328.56	-2300.65	-839.24	1222.28	5767080.82	608091.24
2880	18.05	71.67	2329.51	-2301.60	-839.15	1222.58	5767080.91	608091.53
2881	18.02	71.62	2330.46	-2302.55	-839.05	1222.88	5767081.01	608091.83
2882	17.99	71.58	2331.41	-2303.50	-838.96	1223.18	5767081.11	608092.13
2883	17.97	71.53	2332.36	-2304.45	-838.86	1223.48	5767081.20	608092.43
2884	17.94	71.48	2333.31	-2305.40	-838.76	1223.78	5767081.30	608092.73
2885	17.93	71.39	2334.26	-2306.35	-838.66	1224.08	5767081.40	608093.03
2886	17.95	71.14	2335.21	-2307.30	-838.54	1224.36	5767081.52	608093.32
2887	17.97	70.88	2336.16	-2308.25	-838.42	1224.65	5767081.64	608093.61
2888	18.00	70.63	2337.11	-2309.20	-838.31	1224.94	5767081.76	608093.90



MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2889	18.02	70.38	2338.06	-2310.15	-838.19	1225.23	5767081.87	608094.18
2890	18.05	70.12	2339.01	-2311.10	-838.07	1225.52	5767081.99	608094.47
2891	18.07	69.87	2339.96	-2312.05	-837.95	1225.81	5767082.11	608094.76
2892	18.09	69.62	2340.91	-2313.00	-837.83	1226.10	5767082.23	608095.05
2893	18.12	69.36	2341.85	-2313.94	-837.71	1226.39	5767082.35	608095.34
2894	18.14	69.11	2342.80	-2314.89	-837.59	1226.68	5767082.47	608095.63
2895	18.17	68.86	2343.75	-2315.84	-837.48	1226.97	5767082.59	608095.92
2896	18.19	68.61	2344.70	-2316.79	-837.36	1227.26	5767082.70	608096.21
2897	18.21	68.35	2345.65	-2317.74	-837.24	1227.55	5767082.82	608096.50
2898	18.24	68.10	2346.60	-2318.69	-837.12	1227.84	5767082.94	608096.79
2899	18.26	67.85	2347.55	-2319.64	-837.00	1228.13	5767083.06	608097.08
2900	18.29	67.59	2348.50	-2320.59	-836.88	1228.42	5767083.18	608097.37
2901	18.31	67.34	2349.45	-2321.54	-836.77	1228.71	5767083.30	608097.66
2902	18.33	67.09	2350.40	-2322.49	-836.65	1229.00	5767083.41	608097.95
2903	18.36	66.83	2351.35	-2323.44	-836.53	1229.29	5767083.53	608098.24
2904	18.38	66.58	2352.30	-2324.39	-836.41	1229.58	5767083.65	608098.53
2905	18.41	66.33	2353.25	-2325.34	-836.29	1229.87	5767083.77	608098.82
2906	18.43	66.08	2354.20	-2326.29	-836.17	1230.15	5767083.89	608099.11
2907	18.45	65.82	2355.15	-2327.24	-836.05	1230.44	5767084.01	608099.40
2908	18.48	65.57	2356.10	-2328.19	-835.94	1230.73	5767084.13	608099.69
2909	18.50	65.32	2357.05	-2329.14	-835.82	1231.02	5767084.24	608099.97
2910	18.53	65.06	2358.00	-2330.09	-835.70	1231.31	5767084.36	608100.26
2911	18.55	64.81	2358.95	-2331.04	-835.58	1231.60	5767084.48	608100.55
2912	18.57	64.56	2359.90	-2331.99	-835.46	1231.89	5767084.60	608100.84
2913	18.60	64.30	2360.85	-2332.94	-835.34	1232.18	5767084.72	608101.13
2914	18.59	64.21	2361.80	-2333.89	-835.22	1232.47	5767084.84	608101.42
2915	18.56	64.27	2362.75	-2334.84	-835.09	1232.75	5767084.97	608101.70
2916	18.53	64.33	2363.70	-2335.79	-834.95	1233.03	5767085.11	608101.98
2917	18.50	64.39	2364.65	-2336.74	-834.82	1233.32	5767085.24	608102.27
2918	18.47	64.45	2365.60	-2337.69	-834.69	1233.60	5767085.37	608102.55
2919	18.44	64.51	2366.55	-2338.64	-834.56	1233.88	5767085.50	608102.83
2920	18.41	64.56	2367.50	-2339.59	-834.43	1234.16	5767085.63	608103.12
2921	18.38	64.62	2368.45	-2340.54	-834.30	1234.45	5767085.77	608103.40
2922	18.35	64.68	2369.40	-2341.49	-834.16	1234.73	5767085.90	608103.68
2923	18.32	64.74	2370.35	-2342.44	-834.03	1235.01	5767086.03	608103.96
2924	18.29	64.80	2371.30	-2343.39	-833.90	1235.29	5767086.16	608104.25
2925	18.26	64.86	2372.25	-2344.34	-833.77	1235.58	5767086.29	608104.53
2926	18.23	64.92	2373.20	-2345.29	-833.64	1235.86	5767086.42	608104.81
2927	18.20	64.98	2374.15	-2346.24	-833.51	1236.14	5767086.56	608105.09
2928	18.17	65.04	2375.10	-2347.19	-833.37	1236.43	5767086.69	608105.38
2929	18.14	65.10	2376.05	-2348.14	-833.24	1236.71	5767086.82	608105.66
2930	18.11	65.16	2377.00	-2349.09	-833.11	1236.99	5767086.95	608105.94
2931	18.08	65.21	2377.95	-2350.04	-832.98	1237.27	5767087.08	608106.22
2932	18.05	65.27	2378.90	-2350.99	-832.85	1237.56	5767087.21	608106.51
2933	18.02	65.33	2379.85	-2351.94	-832.72	1237.84	5767087.35	608106.79
2934	17.99	65.39	2380.80	-2352.89	-832.58	1238.12	5767087.48	608107.07
2935	17.96	65.45	2381.75	-2353.84	-832.45	1238.40	5767087.61	608107.36
2936	17.93	65.51	2382.70	-2354.79	-832.32	1238.69	5767087.74	608107.64
2937	17.90	65.57	2383.65	-2355.74	-832.19	1238.97	5767087.87	608107.92
2938	17.87	65.63	2384.60	-2356.69	-832.06	1239.25	5767088.00	608108.20
2939	17.84	65.69	2385.55	-2357.64	-831.93	1239.53	5767088.14	608108.49
2940	17.81	65.75	2386.50	-2358.59	-831.79	1239.82	5767088.27	608108.77
2941	17.78	65.80	2387.45	-2359.54	-831.66	1240.10	5767088.40	608109.05
2942	17.75	65.86	2388.40	-2360.49	-831.53	1240.38	5767088.53	608109.33
2943	17.72	65.93	2389.36	-2361.45	-831.41	1240.66	5767088.65	608109.61
2944	17.69	66.01	2390.31	-2362.40	-831.29	1240.93	5767088.77	608109.88
2945	17.65	66.09	2391.27	-2363.36	-831.17	1241.21	5767088.89	608110.16
2946	17.62	66.16	2392.22	-2364.31	-831.06	1241.48	5767089.00	608110.43
2947	17.58	66.24	2393.18	-2365.27	-830.94	1241.75	5767089.12	608110.70
2948	17.55	66.32	2394.13	-2366.22	-830.83	1242.02	5767089.23	608110.98
2949	17.52	66.40	2395.09	-2367.18	-830.71	1242.30	5767089.35	608111.25
2950	17.48	66.47	2396.04	-2368.13	-830.59	1242.57	5767089.47	608111.52
2951	17.45	66.55	2397.00	-2369.09	-830.48	1242.84	5767089.58	608111.80
2952	17.41	66.63	2397.95	-2370.04	-830.36	1243.12	5767089.70	608112.07
2953	17.38	66.70	2398.91	-2371.00	-830.25	1243.39	5767089.82	608112.34
2954	17.35	66.78	2399.86	-2371.95	-830.13	1243.66	5767089.93	608112.61

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2955	17.31	66.86	2400.82	-2372.91	-830.01	1243.94	5767090.05	608112.89
2956	17.28	66.94	2401.77	-2373.86	-829.90	1244.21	5767090.16	608113.16
2957	17.24	67.01	2402.73	-2374.82	-829.78	1244.48	5767090.28	608113.43
2958	17.21	67.09	2403.68	-2375.77	-829.67	1244.75	5767090.40	608113.71
2959	17.18	67.17	2404.64	-2376.73	-829.55	1245.03	5767090.51	608113.98
2960	17.14	67.25	2405.59	-2377.68	-829.43	1245.30	5767090.63	608114.25
2961	17.11	67.32	2406.55	-2378.64	-829.32	1245.57	5767090.74	608114.52
2962	17.07	67.40	2407.50	-2379.59	-829.20	1245.85	5767090.86	608114.80
2963	17.04	67.48	2408.46	-2380.55	-829.09	1246.12	5767090.98	608115.07
2964	17.01	67.55	2409.41	-2381.50	-828.97	1246.39	5767091.09	608115.34
2965	16.97	67.63	2410.37	-2382.46	-828.85	1246.66	5767091.21	608115.62
2966	16.94	67.71	2411.32	-2383.41	-828.74	1246.94	5767091.32	608115.89
2967	16.90	67.79	2412.28	-2384.37	-828.62	1247.21	5767091.44	608116.16
2968	16.87	67.86	2413.23	-2385.32	-828.50	1247.48	5767091.56	608116.43
2969	16.84	67.94	2414.19	-2386.28	-828.39	1247.76	5767091.67	608116.71
2970	16.80	68.02	2415.14	-2387.23	-828.27	1248.03	5767091.79	608116.98
2971	16.77	68.09	2416.10	-2388.19	-828.16	1248.30	5767091.90	608117.25
2972	16.73	68.15	2417.06	-2389.15	-828.06	1248.56	5767092.01	608117.51
2973	16.70	68.21	2418.02	-2390.11	-827.96	1248.82	5767092.11	608117.78
2974	16.67	68.27	2418.98	-2391.07	-827.85	1249.09	5767092.21	608118.04
2975	16.63	68.33	2419.94	-2392.03	-827.75	1249.35	5767092.31	608118.30
2976	16.60	68.38	2420.90	-2392.99	-827.65	1249.61	5767092.41	608118.56
2977	16.57	68.44	2421.86	-2393.95	-827.55	1249.87	5767092.51	608118.82
2978	16.53	68.50	2422.81	-2394.90	-827.45	1250.13	5767092.61	608119.08
2979	16.50	68.56	2423.77	-2395.86	-827.35	1250.39	5767092.71	608119.35
2980	16.47	68.62	2424.73	-2396.82	-827.25	1250.66	5767092.81	608119.61
2981	16.43	68.67	2425.69	-2397.78	-827.15	1250.92	5767092.91	608119.87
2982	16.40	68.73	2426.65	-2398.74	-827.05	1251.18	5767093.01	608120.13
2983	16.37	68.79	2427.61	-2399.70	-826.95	1251.44	5767093.12	608120.39
2984	16.33	68.85	2428.57	-2400.66	-826.84	1251.70	5767093.22	608120.65
2985	16.30	68.91	2429.53	-2401.62	-826.74	1251.96	5767093.32	608120.92
2986	16.26	68.96	2430.49	-2402.58	-826.64	1252.23	5767093.42	608121.18
2987	16.23	69.02	2431.45	-2403.54	-826.54	1252.49	5767093.52	608121.44
2988	16.20	69.08	2432.41	-2404.50	-826.44	1252.75	5767093.62	608121.70
2989	16.16	69.14	2433.37	-2405.46	-826.34	1253.01	5767093.72	608121.96
2990	16.13	69.20	2434.33	-2406.42	-826.24	1253.27	5767093.82	608122.22
2991	16.10	69.25	2435.29	-2407.38	-826.14	1253.53	5767093.92	608122.49
2992	16.06	69.31	2436.25	-2408.34	-826.04	1253.80	5767094.02	608122.75
2993	16.03	69.37	2437.21	-2409.30	-825.94	1254.06	5767094.13	608123.01
2994	16.00	69.43	2438.17	-2410.26	-825.83	1254.32	5767094.23	608123.27
2995	15.96	69.49	2439.13	-2411.22	-825.73	1254.58	5767094.33	608123.53
2996	15.93	69.55	2440.09	-2412.18	-825.63	1254.84	5767094.43	608123.79
2997	15.89	69.60	2441.05	-2413.14	-825.53	1255.10	5767094.53	608124.06
2998	15.86	69.66	2442.01	-2414.10	-825.43	1255.37	5767094.63	608124.32
2999	15.83	69.72	2442.97	-2415.06	-825.33	1255.63	5767094.73	608124.58
3000	15.78	69.81	2443.93	-2416.02	-825.24	1255.88	5767094.82	608124.83
3001	15.72	69.92	2444.90	-2416.99	-825.16	1256.12	5767094.91	608125.08
3002	15.66	70.04	2445.87	-2417.96	-825.07	1256.37	5767094.99	608125.32
3003	15.60	70.16	2446.83	-2418.92	-824.99	1256.61	5767095.07	608125.56
3004	15.54	70.28	2447.80	-2419.89	-824.91	1256.86	5767095.15	608125.81
3005	15.48	70.39	2448.77	-2420.86	-824.83	1257.10	5767095.24	608126.05
3006	15.42	70.51	2449.73	-2421.82	-824.74	1257.35	5767095.32	608126.30
3007	15.36	70.63	2450.70	-2422.79	-824.66	1257.59	5767095.40	608126.54
3008	15.30	70.75	2451.66	-2423.75	-824.58	1257.83	5767095.48	608126.79
3009	15.24	70.86	2452.63	-2424.72	-824.50	1258.08	5767095.57	608127.03
3010	15.18	70.98	2453.60	-2425.69	-824.41	1258.32	5767095.65	608127.27
3011	15.12	71.10	2454.56	-2426.65	-824.33	1258.57	5767095.73	608127.52
3012	15.06	71.22	2455.53	-2427.62	-824.25	1258.81	5767095.81	608127.76
3013	15.00	71.33	2456.49	-2428.58	-824.17	1259.06	5767095.90	608128.01
3014	14.94	71.45	2457.46	-2429.55	-824.08	1259.30	5767095.98	608128.25
3015	14.88	71.57	2458.43	-2430.52	-824.00	1259.54	5767096.06	608128.50
3016	14.82	71.69	2459.39	-2431.48	-823.92	1259.79	5767096.14	608128.74
3017	14.76	71.80	2460.36	-2432.45	-823.84	1260.03	5767096.23	608128.98
3018	14.70	71.92	2461.33	-2433.42	-823.75	1260.28	5767096.31	608129.23
3019	14.64	72.04	2462.29	-2434.38	-823.67	1260.52	5767096.39	608129.47
3020	14.58	72.16	2463.26	-2435.35	-823.59	1260.77	5767096.47	608129.72

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
3021	14.52	72.27	2464.22	-2436.31	-823.51	1261.01	5767096.56	608129.96
3022	14.46	72.39	2465.19	-2437.28	-823.42	1261.25	5767096.64	608130.21
3023	14.40	72.51	2466.16	-2438.25	-823.34	1261.50	5767096.72	608130.45
3024	14.34	72.63	2467.12	-2439.21	-823.26	1261.74	5767096.80	608130.69
3025	14.28	72.74	2468.09	-2440.18	-823.18	1261.99	5767096.89	608130.94
3026	14.22	72.86	2469.05	-2441.14	-823.09	1262.23	5767096.97	608131.18
3027	14.16	72.98	2470.02	-2442.11	-823.01	1262.48	5767097.05	608131.43
3028	14.10	73.10	2470.99	-2443.08	-822.93	1262.72	5767097.13	608131.67
3029	14.06	73.20	2471.96	-2444.05	-822.86	1262.95	5767097.20	608131.90
3030	14.04	73.30	2472.93	-2445.02	-822.80	1263.18	5767097.26	608132.13
3031	14.02	73.40	2473.90	-2445.99	-822.73	1263.41	5767097.33	608132.36
3032	14.00	73.50	2474.87	-2446.96	-822.67	1263.64	5767097.39	608132.59
3033	13.98	73.60	2475.84	-2447.93	-822.61	1263.87	5767097.46	608132.82
3034	13.95	73.70	2476.81	-2448.90	-822.54	1264.10	5767097.52	608133.05
3035	13.93	73.80	2477.78	-2449.87	-822.48	1264.33	5767097.58	608133.28
3036	13.91	73.90	2478.76	-2450.85	-822.42	1264.56	5767097.65	608133.51
3037	13.89	74.00	2479.73	-2451.82	-822.35	1264.79	5767097.71	608133.74
3038	13.87	74.10	2480.70	-2452.79	-822.29	1265.02	5767097.77	608133.97
3039	13.84	74.20	2481.67	-2453.76	-822.23	1265.25	5767097.84	608134.20
3040	13.82	74.30	2482.64	-2454.73	-822.16	1265.47	5767097.90	608134.43
3041	13.80	74.40	2483.61	-2455.70	-822.10	1265.70	5767097.96	608134.66
3042	13.78	74.50	2484.58	-2456.67	-822.03	1265.93	5767098.03	608134.88
3043	13.76	74.60	2485.55	-2457.64	-821.97	1266.16	5767098.09	608135.11
3044	13.73	74.70	2486.53	-2458.62	-821.91	1266.39	5767098.15	608135.34
3045	13.71	74.80	2487.50	-2459.59	-821.84	1266.62	5767098.22	608135.57
3046	13.69	74.90	2488.47	-2460.56	-821.78	1266.85	5767098.28	608135.80
3047	13.67	75.00	2489.44	-2461.53	-821.72	1267.08	5767098.34	608136.03
3048	13.64	75.10	2490.41	-2462.50	-821.65	1267.31	5767098.41	608136.26
3049	13.62	75.20	2491.38	-2463.47	-821.59	1267.54	5767098.47	608136.49
3050	13.60	75.30	2492.35	-2464.44	-821.53	1267.77	5767098.53	608136.72
3051	13.58	75.40	2493.33	-2465.42	-821.46	1268.00	5767098.60	608136.95
3052	13.56	75.50	2494.30	-2466.39	-821.40	1268.23	5767098.66	608137.18
3053	13.53	75.60	2495.27	-2467.36	-821.34	1268.45	5767098.72	608137.41
3054	13.51	75.70	2496.24	-2468.33	-821.27	1268.68	5767098.79	608137.64
3055	13.49	75.80	2497.21	-2469.30	-821.21	1268.91	5767098.85	608137.86
3056	13.47	75.90	2498.18	-2470.27	-821.15	1269.14	5767098.92	608138.09
3057	13.44	76.03	2499.15	-2471.24	-821.09	1269.37	5767098.97	608138.32
3058	13.38	76.28	2500.13	-2472.22	-821.05	1269.58	5767099.01	608138.53
3059	13.32	76.54	2501.11	-2473.20	-821.01	1269.80	5767099.05	608138.75
3060	13.26	76.80	2502.08	-2474.17	-820.97	1270.01	5767099.09	608138.96
3061	13.20	77.06	2503.06	-2475.15	-820.93	1270.22	5767099.13	608139.17
3062	13.14	77.32	2504.03	-2476.12	-820.89	1270.44	5767099.17	608139.39
3063	13.07	77.58	2505.01	-2477.10	-820.85	1270.65	5767099.21	608139.60
3064	13.01	77.83	2505.99	-2478.08	-820.81	1270.86	5767099.25	608139.82
3065	12.95	78.09	2506.96	-2479.05	-820.77	1271.08	5767099.29	608140.03
3066	12.89	78.35	2507.94	-2480.03	-820.73	1271.29	5767099.33	608140.24
3067	12.83	78.61	2508.91	-2481.00	-820.69	1271.51	5767099.37	608140.46
3068	12.77	78.87	2509.89	-2481.98	-820.65	1271.72	5767099.41	608140.67
3069	12.71	79.13	2510.87	-2482.96	-820.61	1271.93	5767099.45	608140.88
3070	12.65	79.38	2511.84	-2483.93	-820.57	1272.15	5767099.49	608141.10
3071	12.59	79.64	2512.82	-2484.91	-820.53	1272.36	5767099.53	608141.31
3072	12.53	79.90	2513.79	-2485.88	-820.49	1272.57	5767099.57	608141.52
3073	12.47	80.16	2514.77	-2486.86	-820.45	1272.79	5767099.61	608141.74
3074	12.41	80.42	2515.75	-2487.84	-820.41	1273.00	5767099.65	608141.95
3075	12.35	80.68	2516.72	-2488.81	-820.37	1273.21	5767099.69	608142.17
3076	12.28	80.93	2517.70	-2489.79	-820.33	1273.43	5767099.73	608142.38
3077	12.22	81.19	2518.67	-2490.76	-820.29	1273.64	5767099.77	608142.59
3078	12.16	81.45	2519.65	-2491.74	-820.25	1273.85	5767099.81	608142.81
3079	12.10	81.71	2520.63	-2492.72	-820.21	1274.07	5767099.85	608143.02
3080	12.04	81.97	2521.60	-2493.69	-820.17	1274.28	5767099.89	608143.23
3081	11.98	82.23	2522.58	-2494.67	-820.13	1274.50	5767099.93	608143.45
3082	11.92	82.48	2523.55	-2495.64	-820.09	1274.71	5767099.97	608143.66
3083	11.86	82.74	2524.53	-2496.62	-820.05	1274.92	5767100.01	608143.87
3084	11.80	83.00	2525.51	-2497.60	-820.01	1275.14	5767100.05	608144.09
3085	11.74	83.26	2526.48	-2498.57	-819.97	1275.35	5767100.09	608144.30
3086	11.69	83.43	2527.46	-2499.55	-819.94	1275.56	5767100.12	608144.51

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
3087	11.68	83.46	2528.44	-2500.53	-819.92	1275.76	5767100.14	608144.71
3088	11.67	83.49	2529.42	-2501.51	-819.90	1275.95	5767100.16	608144.91
3089	11.65	83.52	2530.40	-2502.49	-819.88	1276.15	5767100.19	608145.10
3090	11.64	83.55	2531.38	-2503.47	-819.85	1276.35	5767100.21	608145.30
3091	11.63	83.58	2532.36	-2504.45	-819.83	1276.55	5767100.23	608145.50
3092	11.61	83.61	2533.34	-2505.43	-819.81	1276.75	5767100.25	608145.70
3093	11.60	83.64	2534.32	-2506.41	-819.79	1276.95	5767100.27	608145.90
3094	11.59	83.67	2535.30	-2507.39	-819.77	1277.14	5767100.29	608146.10
3095	11.57	83.70	2536.28	-2508.37	-819.75	1277.34	5767100.31	608146.29
3096	11.56	83.73	2537.26	-2509.35	-819.73	1277.54	5767100.34	608146.49
3097	11.55	83.76	2538.24	-2510.33	-819.70	1277.74	5767100.36	608146.69
3098	11.53	83.79	2539.22	-2511.31	-819.68	1277.94	5767100.38	608146.89
3099	11.52	83.82	2540.20	-2512.29	-819.66	1278.14	5767100.40	608147.09
3100	11.51	83.85	2541.18	-2513.27	-819.64	1278.33	5767100.42	608147.29
3101	11.49	83.88	2542.16	-2514.25	-819.62	1278.53	5767100.44	608147.48
3102	11.48	83.91	2543.14	-2515.23	-819.60	1278.73	5767100.46	608147.68
3103	11.46	83.94	2544.12	-2516.21	-819.58	1278.93	5767100.48	608147.88
3104	11.45	83.97	2545.10	-2517.19	-819.56	1279.13	5767100.51	608148.08
3105	11.44	84.00	2546.08	-2518.17	-819.53	1279.33	5767100.53	608148.28
3106	11.42	84.03	2547.06	-2519.15	-819.51	1279.52	5767100.55	608148.47
3107	11.41	84.06	2548.04	-2520.13	-819.49	1279.72	5767100.57	608148.67
3108	11.40	84.10	2549.02	-2521.11	-819.47	1279.92	5767100.59	608148.87
3109	11.38	84.13	2550.00	-2522.09	-819.45	1280.12	5767100.61	608149.07
3110	11.37	84.16	2550.98	-2523.07	-819.43	1280.32	5767100.63	608149.27
3111	11.36	84.19	2551.96	-2524.05	-819.41	1280.51	5767100.66	608149.47
3112	11.34	84.22	2552.94	-2525.03	-819.38	1280.71	5767100.68	608149.66
3113	11.33	84.25	2553.92	-2526.01	-819.36	1280.91	5767100.70	608149.86
3114	11.32	84.28	2554.90	-2526.99	-819.34	1281.11	5767100.72	608150.06
3115	11.29	84.35	2555.88	-2527.97	-819.32	1281.30	5767100.74	608150.25
3116	11.26	84.47	2556.86	-2528.95	-819.31	1281.49	5767100.75	608150.44
3117	11.22	84.59	2557.84	-2529.93	-819.30	1281.68	5767100.76	608150.63
3118	11.19	84.70	2558.83	-2530.92	-819.28	1281.86	5767100.78	608150.81
3119	11.16	84.82	2559.81	-2531.90	-819.27	1282.05	5767100.79	608151.00
3120	11.12	84.94	2560.79	-2532.88	-819.26	1282.24	5767100.80	608151.19
3121	11.09	85.06	2561.77	-2533.86	-819.24	1282.42	5767100.82	608151.38
3122	11.05	85.17	2562.75	-2534.84	-819.23	1282.61	5767100.83	608151.56
3123	11.02	85.29	2563.74	-2535.83	-819.22	1282.80	5767100.84	608151.75
3124	10.98	85.41	2564.72	-2536.81	-819.20	1282.99	5767100.86	608151.94
3125	10.95	85.52	2565.70	-2537.79	-819.19	1283.17	5767100.87	608152.13
3126	10.92	85.64	2566.68	-2538.77	-819.18	1283.36	5767100.89	608152.31
3127	10.88	85.76	2567.67	-2539.76	-819.16	1283.55	5767100.90	608152.50
3128	10.85	85.87	2568.65	-2540.74	-819.15	1283.74	5767100.91	608152.69
3129	10.81	85.99	2569.63	-2541.72	-819.14	1283.92	5767100.93	608152.87
3130	10.78	86.11	2570.61	-2542.70	-819.12	1284.11	5767100.94	608153.06
3131	10.75	86.23	2571.59	-2543.68	-819.11	1284.30	5767100.95	608153.25
3132	10.71	86.34	2572.58	-2544.67	-819.10	1284.48	5767100.97	608153.44
3133	10.68	86.46	2573.56	-2545.65	-819.08	1284.67	5767100.98	608153.62
3134	10.64	86.58	2574.54	-2546.63	-819.07	1284.86	5767100.99	608153.81
3135	10.61	86.69	2575.52	-2547.61	-819.06	1285.05	5767101.01	608154.00
3136	10.57	86.81	2576.51	-2548.60	-819.04	1285.23	5767101.02	608154.18
3137	10.54	86.93	2577.49	-2549.58	-819.03	1285.42	5767101.03	608154.37
3138	10.51	87.04	2578.47	-2550.56	-819.01	1285.61	5767101.05	608154.56
3139	10.47	87.16	2579.45	-2551.54	-819.00	1285.79	5767101.06	608154.75
3140	10.44	87.28	2580.43	-2552.52	-818.99	1285.98	5767101.07	608154.93
3141	10.40	87.40	2581.42	-2553.51	-818.97	1286.17	5767101.09	608155.12
3142	10.37	87.51	2582.40	-2554.49	-818.96	1286.36	5767101.10	608155.31
3143	10.34	87.63	2583.38	-2555.47	-818.95	1286.54	5767101.11	608155.49
3144	10.31	87.86	2584.37	-2556.46	-818.95	1286.72	5767101.11	608155.67
3145	10.28	88.12	2585.35	-2557.44	-818.95	1286.89	5767101.11	608155.84
3146	10.25	88.38	2586.34	-2558.43	-818.96	1287.06	5767101.11	608156.01
3147	10.22	88.64	2587.32	-2559.41	-818.96	1287.23	5767101.10	608156.18
3148	10.19	88.90	2588.31	-2560.40	-818.96	1287.40	5767101.10	608156.35
3149	10.16	89.16	2589.29	-2561.38	-818.97	1287.57	5767101.09	608156.53
3150	10.13	89.42	2590.28	-2562.37	-818.97	1287.75	5767101.09	608156.70
3151	10.10	89.68	2591.26	-2563.35	-818.97	1287.92	5767101.09	608156.87
3152	10.07	89.94	2592.25	-2564.34	-818.98	1288.09	5767101.08	608157.04

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
3153	10.04	90.19	2593.23	-2565.32	-818.98	1288.26	5767101.08	608157.21
3154	10.01	90.45	2594.22	-2566.31	-818.99	1288.43	5767101.08	608157.38
3155	9.98	90.71	2595.20	-2567.29	-818.99	1288.60	5767101.07	608157.56
3156	9.95	90.97	2596.19	-2568.28	-818.99	1288.78	5767101.07	608157.73
3157	9.92	91.23	2597.17	-2569.26	-819.00	1288.95	5767101.07	608157.90
3158	9.89	91.49	2598.16	-2570.25	-819.00	1289.12	5767101.06	608158.07
3159	9.86	91.75	2599.14	-2571.23	-819.00	1289.29	5767101.06	608158.24
3160	9.83	92.01	2600.13	-2572.22	-819.01	1289.46	5767101.05	608158.41
3161	9.80	92.26	2601.11	-2573.20	-819.01	1289.63	5767101.05	608158.58
3162	9.77	92.52	2602.10	-2574.19	-819.01	1289.80	5767101.05	608158.76
3163	9.74	92.78	2603.08	-2575.17	-819.02	1289.98	5767101.04	608158.93
3164	9.71	93.04	2604.07	-2576.16	-819.02	1290.15	5767101.04	608159.10
3165	9.68	93.30	2605.05	-2577.14	-819.03	1290.32	5767101.04	608159.27
3166	9.65	93.56	2606.04	-2578.13	-819.03	1290.49	5767101.03	608159.44
3167	9.62	93.82	2607.02	-2579.11	-819.03	1290.66	5767101.03	608159.61
3168	9.59	94.08	2608.01	-2580.10	-819.04	1290.83	5767101.02	608159.78
3169	9.56	94.34	2608.99	-2581.08	-819.04	1291.00	5767101.02	608159.96
3170	9.53	94.59	2609.98	-2582.07	-819.04	1291.18	5767101.02	608160.13
3171	9.50	94.85	2610.96	-2583.05	-819.05	1291.35	5767101.01	608160.30
3172	9.47	95.11	2611.95	-2584.04	-819.05	1291.52	5767101.01	608160.47
3173	9.46	95.27	2612.94	-2585.03	-819.07	1291.68	5767100.99	608160.63
3174	9.44	95.42	2613.92	-2586.01	-819.09	1291.84	5767100.97	608160.79
3175	9.43	95.57	2614.91	-2587.00	-819.11	1292.00	5767100.95	608160.95
3176	9.41	95.72	2615.90	-2587.99	-819.13	1292.16	5767100.93	608161.11
3177	9.39	95.87	2616.88	-2588.97	-819.15	1292.32	5767100.91	608161.27
3178	9.38	96.02	2617.87	-2589.96	-819.17	1292.48	5767100.89	608161.43
3179	9.36	96.18	2618.86	-2590.95	-819.19	1292.64	5767100.87	608161.59
3180	9.35	96.33	2619.84	-2591.93	-819.21	1292.80	5767100.85	608161.75
3181	9.33	96.48	2620.83	-2592.92	-819.23	1292.95	5767100.83	608161.91
3182	9.32	96.63	2621.82	-2593.91	-819.25	1293.11	5767100.81	608162.07
3183	9.30	96.78	2622.81	-2594.90	-819.27	1293.27	5767100.79	608162.22
3184	9.29	96.93	2623.79	-2595.88	-819.29	1293.43	5767100.77	608162.38
3185	9.27	97.08	2624.78	-2596.87	-819.31	1293.59	5767100.75	608162.54
3186	9.26	97.23	2625.77	-2597.86	-819.33	1293.75	5767100.73	608162.70
3187	9.24	97.38	2626.75	-2598.84	-819.35	1293.91	5767100.71	608162.86
3188	9.23	97.53	2627.74	-2599.83	-819.37	1294.07	5767100.69	608163.02
3189	9.21	97.68	2628.73	-2600.82	-819.39	1294.23	5767100.67	608163.18
3190	9.20	97.83	2629.72	-2601.81	-819.41	1294.39	5767100.65	608163.34
3191	9.18	97.98	2630.70	-2602.79	-819.44	1294.55	5767100.63	608163.50
3192	9.16	98.14	2631.69	-2603.78	-819.46	1294.71	5767100.61	608163.66
3193	9.15	98.29	2632.68	-2604.77	-819.48	1294.87	5767100.59	608163.82
3194	9.13	98.44	2633.66	-2605.75	-819.50	1295.03	5767100.57	608163.98
3195	9.12	98.59	2634.65	-2606.74	-819.52	1295.19	5767100.55	608164.14
3196	9.10	98.74	2635.64	-2607.73	-819.54	1295.34	5767100.53	608164.30
3197	9.09	98.89	2636.62	-2608.71	-819.56	1295.50	5767100.50	608164.46
3198	9.07	99.04	2637.61	-2609.70	-819.58	1295.66	5767100.48	608164.61
3199	9.06	99.19	2638.60	-2610.69	-819.60	1295.82	5767100.46	608164.77
3200	9.04	99.34	2639.59	-2611.68	-819.62	1295.98	5767100.44	608164.93
3201	9.03	99.48	2640.57	-2612.66	-819.64	1296.14	5767100.42	608165.09
3202	9.03	99.55	2641.56	-2613.65	-819.67	1296.29	5767100.39	608165.25
3203	9.03	99.62	2642.55	-2614.64	-819.70	1296.45	5767100.37	608165.40
3204	9.02	99.69	2643.54	-2615.63	-819.72	1296.60	5767100.34	608165.55
3205	9.02	99.76	2644.52	-2616.61	-819.75	1296.76	5767100.31	608165.71
3206	9.02	99.82	2645.51	-2617.60	-819.78	1296.91	5767100.28	608165.86
3207	9.02	99.89	2646.50	-2618.59	-819.81	1297.06	5767100.25	608166.02
3208	9.02	99.96	2647.49	-2619.58	-819.84	1297.22	5767100.23	608166.17
3209	9.01	100.03	2648.47	-2620.56	-819.86	1297.37	5767100.20	608166.32
3210	9.01	100.10	2649.46	-2621.55	-819.89	1297.53	5767100.17	608166.48
3211	9.01	100.17	2650.45	-2622.54	-819.92	1297.68	5767100.14	608166.63
3212	9.01	100.24	2651.44	-2623.53	-819.95	1297.83	5767100.11	608166.79
3213	9.01	100.31	2652.42	-2624.51	-819.98	1297.99	5767100.08	608166.94
3214	9.00	100.38	2653.41	-2625.50	-820.00	1298.14	5767100.06	608167.09
3215	9.00	100.45	2654.40	-2626.49	-820.03	1298.30	5767100.03	608167.25
3216	9.00	100.52	2655.39	-2627.48	-820.06	1298.45	5767100.00	608167.40
3217	9.00	100.59	2656.38	-2628.47	-820.09	1298.60	5767099.97	608167.55
3218	9.00	100.66	2657.36	-2629.45	-820.12	1298.76	5767099.94	608167.71

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
3219	8.99	100.73	2658.35	-2630.44	-820.15	1298.91	5767099.92	608167.86
3220	8.99	100.80	2659.34	-2631.43	-820.17	1299.07	5767099.89	608168.02
3221	8.99	100.87	2660.33	-2632.42	-820.20	1299.22	5767099.86	608168.17
3222	8.99	100.94	2661.31	-2633.40	-820.23	1299.37	5767099.83	608168.32
3223	8.99	101.01	2662.30	-2634.39	-820.26	1299.53	5767099.80	608168.48
3224	8.98	101.08	2663.29	-2635.38	-820.29	1299.68	5767099.78	608168.63
3225	8.98	101.15	2664.28	-2636.37	-820.31	1299.84	5767099.75	608168.79
3226	8.98	101.22	2665.26	-2637.35	-820.34	1299.99	5767099.72	608168.94
3227	8.98	101.29	2666.25	-2638.34	-820.37	1300.14	5767099.69	608169.09
3228	8.98	101.35	2667.24	-2639.33	-820.41	1300.29	5767099.66	608169.25
3229	8.97	101.42	2668.23	-2640.32	-820.44	1300.45	5767099.62	608169.40
3230	8.97	101.49	2669.22	-2641.31	-820.47	1300.60	5767099.59	608169.55
3231	8.97	101.55	2670.20	-2642.29	-820.50	1300.75	5767099.56	608169.70
3232	8.97	101.62	2671.19	-2643.28	-820.53	1300.90	5767099.53	608169.86
3233	8.97	101.68	2672.18	-2644.27	-820.57	1301.06	5767099.49	608170.01
3234	8.97	101.75	2673.17	-2645.26	-820.60	1301.21	5767099.46	608170.16
3235	8.96	101.81	2674.15	-2646.24	-820.63	1301.36	5767099.43	608170.31
3236	8.96	101.88	2675.14	-2647.23	-820.66	1301.51	5767099.40	608170.46
3237	8.96	101.94	2676.13	-2648.22	-820.70	1301.67	5767099.37	608170.62
3238	8.96	102.01	2677.12	-2649.21	-820.73	1301.82	5767099.33	608170.77
3239	8.96	102.07	2678.11	-2650.20	-820.76	1301.97	5767099.30	608170.92
3240	8.95	102.14	2679.09	-2651.18	-820.79	1302.12	5767099.27	608171.07
3241	8.95	102.20	2680.08	-2652.17	-820.82	1302.27	5767099.24	608171.23
3242	8.95	102.27	2681.07	-2653.16	-820.86	1302.43	5767099.20	608171.38
3243	8.95	102.33	2682.06	-2654.15	-820.89	1302.58	5767099.17	608171.53
3244	8.95	102.40	2683.04	-2655.13	-820.92	1302.73	5767099.14	608171.68
3245	8.95	102.46	2684.03	-2656.12	-820.95	1302.88	5767099.11	608171.84
3246	8.94	102.53	2685.02	-2657.11	-820.99	1303.04	5767099.08	608171.99
3247	8.94	102.59	2686.01	-2658.10	-821.02	1303.19	5767099.04	608172.14
3248	8.94	102.66	2687.00	-2659.09	-821.05	1303.34	5767099.01	608172.29

**APPENDIX 1d**  
**MARLIN A-10AST1**  
**MD-TVD Survey Data Listing**

Report Date:	27 January 2005
Well:	MARLIN A10AST1
Structure / Slot:	Marlin Rig 453 / 23
TVD Reference Datum:	Drillsite Elevation
TVD Reference Elevation:	27.91 m relative to MSL
Sea Bed / Ground Level Elevation:	-59.00 m relative to MSL
Grid Coordinate System:	GDA94/MGA94 Zone 55
Location Lat/Long:	S 38 13 49.320, E 148 13 15.712
Location Grid N/E:	N 5767920.06 m, E 606868.95 m
Survey Azimuth Reference:	Grid North

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
0	0.00	0.00	0.00	27.91	0.00	0.00	5767920.06	606868.95
5	0.05	44.46	5.00	22.91	-0.01	0.00	5767920.06	606868.96
10	0.11	93.97	10.00	17.91	-0.01	0.01	5767920.05	606868.96
15	0.17	143.48	15.00	12.91	-0.02	0.01	5767920.04	606868.96
20	0.25	152.13	20.00	7.91	-0.04	0.02	5767920.03	606868.97
25	0.16	145.30	25.00	2.91	-0.05	0.03	5767920.01	606868.98
30	0.16	146.57	30.00	-2.09	-0.06	0.04	5767920.00	606868.99
35	0.27	152.91	35.00	-7.09	-0.08	0.05	5767919.98	606869.00
40	0.28	153.53	40.00	-12.09	-0.10	0.06	5767919.96	606869.01
45	0.15	141.98	45.00	-17.09	-0.12	0.07	5767919.95	606869.02
50	0.25	150.77	50.00	-22.09	-0.13	0.08	5767919.93	606869.03
55	0.24	151.84	55.00	-27.09	-0.15	0.09	5767919.91	606869.04
60	0.24	151.71	60.00	-32.09	-0.17	0.10	5767919.89	606869.05
65	0.19	146.92	65.00	-37.09	-0.18	0.11	5767919.88	606869.06
70	0.22	147.85	70.00	-42.09	-0.20	0.12	5767919.86	606869.07
75	0.21	149.12	75.00	-47.09	-0.22	0.13	5767919.85	606869.08
80	0.26	153.06	80.00	-52.09	-0.23	0.13	5767919.83	606869.09
85	0.48	159.91	85.00	-57.09	-0.26	0.15	5767919.80	606869.10
90	0.63	162.46	90.00	-62.09	-0.31	0.16	5767919.75	606869.11
95	0.86	162.59	95.00	-67.09	-0.37	0.18	5767919.69	606869.13
100	1.07	166.18	100.00	-72.09	-0.45	0.20	5767919.61	606869.16
105	1.31	167.26	105.00	-77.09	-0.55	0.23	5767919.51	606869.18
110	1.63	167.15	110.00	-82.09	-0.68	0.26	5767919.38	606869.21
115	1.88	167.75	114.99	-87.08	-0.83	0.29	5767919.23	606869.24
120	2.22	166.92	119.99	-92.08	-1.00	0.33	5767919.06	606869.28
125	2.58	167.22	124.99	-97.08	-1.21	0.38	5767918.85	606869.33
130	2.82	166.04	129.98	-102.07	-1.44	0.43	5767918.63	606869.38
135	3.25	165.83	134.97	-107.06	-1.69	0.49	5767918.37	606869.45
140	3.47	171.70	139.96	-112.05	-1.98	0.55	5767918.08	606869.50
145	3.70	170.51	144.95	-117.04	-2.29	0.60	5767917.77	606869.55
150	3.70	171.58	149.94	-122.03	-2.61	0.65	5767917.45	606869.60
155	3.74	172.39	154.93	-127.02	-2.93	0.69	5767917.13	606869.65
160	3.80	172.83	159.92	-132.01	-3.26	0.74	5767916.81	606869.69
165	3.86	172.56	164.91	-137.00	-3.59	0.78	5767916.47	606869.73
170	3.88	172.18	169.90	-141.99	-3.92	0.82	5767916.14	606869.78
175	3.92	172.25	174.89	-146.98	-4.26	0.87	5767915.80	606869.82
180	3.96	171.33	179.88	-151.97	-4.60	0.92	5767915.46	606869.87
185	3.95	171.18	184.86	-156.95	-4.94	0.97	5767915.12	606869.92
190	3.77	166.07	189.85	-161.94	-5.27	1.04	5767914.79	606869.99
195	3.60	158.63	194.84	-166.93	-5.57	1.13	5767914.49	606870.09
200	3.71	149.10	199.83	-171.92	-5.86	1.27	5767914.20	606870.23
205	3.69	147.57	204.82	-176.91	-6.13	1.44	5767913.93	606870.40
210	4.11	144.77	209.81	-181.90	-6.42	1.63	5767913.65	606870.59
215	4.42	143.54	214.80	-186.89	-6.72	1.85	5767913.34	606870.80
220	5.09	142.35	219.78	-191.87	-7.05	2.10	5767913.01	606871.05
225	5.35	143.75	224.76	-196.85	-7.41	2.37	5767912.65	606871.33
230	5.91	144.58	229.73	-201.82	-7.81	2.66	5767912.25	606871.61
235	6.20	144.91	234.71	-206.80	-8.24	2.97	5767911.82	606871.92
240	6.63	145.76	239.68	-211.77	-8.70	3.28	5767911.36	606872.24
245	6.88	145.68	244.64	-216.73	-9.19	3.62	5767910.88	606872.57
250	7.18	145.62	249.60	-221.69	-9.69	3.96	5767910.37	606872.91
255	7.34	145.48	254.56	-226.65	-10.21	4.32	5767909.85	606873.27
260	7.52	145.33	259.52	-231.61	-10.74	4.68	5767909.32	606873.64



MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
265	7.76	144.94	264.48	-236.57	-11.29	5.06	5767908.77	606874.02
270	7.95	145.89	269.43	-241.52	-11.85	5.45	5767908.21	606874.40
275	8.28	146.45	274.38	-246.47	-12.44	5.85	5767907.62	606874.80
280	8.54	146.90	279.33	-251.42	-13.05	6.25	5767907.01	606875.20
285	8.90	147.24	284.27	-256.36	-13.69	6.66	5767906.38	606875.61
290	9.15	147.26	289.21	-261.30	-14.34	7.08	5767905.72	606876.04
295	9.39	147.40	294.14	-266.23	-15.02	7.52	5767905.04	606876.47
300	9.52	147.47	299.07	-271.16	-15.72	7.96	5767904.35	606876.91
305	9.70	148.03	304.00	-276.09	-16.42	8.41	5767903.64	606877.36
310	9.77	148.60	308.93	-281.02	-17.14	8.85	5767902.92	606877.80
315	10.08	149.57	313.86	-285.95	-17.88	9.29	5767902.18	606878.24
320	10.29	149.70	318.78	-290.87	-18.64	9.74	5767901.42	606878.69
325	10.47	149.92	323.70	-295.79	-19.42	10.19	5767900.64	606879.14
330	10.69	149.92	328.61	-300.70	-20.22	10.65	5767899.85	606879.60
335	11.05	150.24	333.52	-305.61	-21.03	11.12	5767899.03	606880.07
340	11.24	149.99	338.43	-310.52	-21.87	11.60	5767898.19	606880.56
345	11.70	149.90	343.33	-315.42	-22.73	12.10	5767897.33	606881.05
350	12.13	150.93	348.22	-320.31	-23.63	12.61	5767896.43	606881.56
355	12.66	151.53	353.10	-325.19	-24.57	13.13	5767895.49	606882.08
360	13.06	151.95	357.98	-330.07	-25.55	13.66	5767894.51	606882.61
365	13.67	152.47	362.84	-334.93	-26.57	14.19	5767893.49	606883.14
370	14.16	153.10	367.69	-339.78	-27.64	14.74	5767892.42	606883.69
375	14.65	153.89	372.54	-344.63	-28.76	15.30	5767891.31	606884.25
380	15.00	154.22	377.37	-349.46	-29.91	15.86	5767890.16	606884.81
385	15.41	154.83	382.20	-354.29	-31.09	16.42	5767888.97	606885.37
390	15.68	155.47	387.01	-359.10	-32.31	16.98	5767887.76	606885.94
395	16.10	156.38	391.82	-363.91	-33.56	17.54	5767886.51	606886.49
400	16.45	156.61	396.62	-368.71	-34.84	18.10	5767885.22	606887.05
405	16.71	156.70	401.41	-373.50	-36.15	18.67	5767883.91	606887.62
410	16.99	156.88	406.20	-378.29	-37.48	19.24	5767882.58	606888.19
415	17.19	156.96	410.98	-383.07	-38.83	19.81	5767881.23	606888.77
420	17.47	156.90	415.75	-387.84	-40.20	20.40	5767879.86	606889.35
425	17.57	157.29	420.52	-392.61	-41.59	20.98	5767878.47	606889.94
430	17.84	157.70	425.28	-397.37	-43.00	21.57	5767877.07	606890.52
435	18.08	157.66	430.04	-402.13	-44.42	22.15	5767875.64	606891.10
440	18.43	158.27	434.79	-406.88	-45.87	22.74	5767874.19	606891.69
445	18.69	158.12	439.53	-411.62	-47.35	23.33	5767872.71	606892.28
450	18.92	158.20	444.26	-416.35	-48.85	23.93	5767871.21	606892.88
455	19.07	158.04	448.99	-421.08	-50.36	24.54	5767869.70	606893.49
460	19.31	158.22	453.71	-425.80	-51.88	25.15	5767868.18	606894.10
465	19.44	158.14	458.43	-430.52	-53.42	25.77	5767866.64	606894.72
470	19.68	158.37	463.14	-435.23	-54.98	26.39	5767865.08	606895.34
475	20.05	159.10	467.84	-439.93	-56.56	27.00	5767863.50	606895.95
480	20.42	159.44	472.53	-444.62	-58.18	27.61	5767861.88	606896.57
485	20.80	159.55	477.21	-449.30	-59.83	28.23	5767860.23	606897.18
490	21.22	159.78	481.88	-453.97	-61.51	28.85	5767858.55	606897.80
495	21.56	159.80	486.54	-458.63	-63.22	29.48	5767856.84	606898.43
500	21.92	159.86	491.18	-463.27	-64.96	30.12	5767855.10	606899.07
505	22.14	159.97	495.81	-467.90	-66.72	30.77	5767853.34	606899.72
510	22.37	160.43	500.44	-472.53	-68.50	31.41	5767851.56	606900.36
515	22.71	160.39	505.06	-477.15	-70.31	32.05	5767849.75	606901.00
520	23.12	160.94	509.67	-481.76	-72.14	32.69	5767847.92	606901.65
525	23.40	160.29	514.26	-486.35	-74.01	33.35	5767846.05	606902.30
530	23.69	160.21	518.84	-490.93	-75.89	34.02	5767844.18	606902.98
535	24.08	160.15	523.41	-495.50	-77.79	34.71	5767842.27	606903.66
540	24.43	160.17	527.97	-500.06	-79.72	35.41	5767840.34	606904.36
545	24.75	160.39	532.52	-504.61	-81.68	36.11	5767838.38	606905.06
550	25.03	160.39	537.06	-509.15	-83.66	36.82	5767836.40	606905.77
555	25.56	160.50	541.58	-513.67	-85.68	37.53	5767834.38	606906.48
560	25.95	160.55	546.08	-518.17	-87.73	38.26	5767832.34	606907.21
565	26.64	160.59	550.56	-522.65	-89.81	38.99	5767830.25	606907.94
570	27.10	160.43	555.02	-527.11	-91.94	39.75	5767828.12	606908.70
575	27.83	160.44	559.46	-531.55	-94.12	40.52	5767825.94	606909.47
580	28.18	160.36	563.87	-535.96	-96.33	41.31	5767823.73	606910.26
585	28.82	160.43	568.27	-540.36	-98.58	42.11	5767821.49	606911.06
590	29.34	160.57	572.64	-544.73	-100.87	42.92	5767819.19	606911.87

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
595	30.02	160.55	576.98	-549.07	-103.20	43.74	5767816.86	606912.69
600	30.54	160.50	581.30	-553.39	-105.58	44.58	5767814.48	606913.53
605	31.34	160.46	585.59	-557.68	-108.00	45.44	5767812.06	606914.39
610	32.09	160.37	589.84	-561.93	-110.48	46.32	5767809.58	606915.27
615	32.86	160.27	594.06	-566.15	-113.01	47.23	5767807.06	606916.18
620	33.59	160.22	598.24	-570.33	-115.58	48.15	5767804.48	606917.10
625	34.23	160.29	602.39	-574.48	-118.21	49.10	5767801.85	606918.05
630	34.69	160.41	606.51	-578.60	-120.87	50.05	5767799.19	606919.00
635	35.05	160.46	610.61	-582.70	-123.57	51.00	5767796.49	606919.96
640	35.30	160.28	614.70	-586.79	-126.28	51.97	5767793.78	606920.92
645	35.55	160.36	618.78	-590.87	-129.01	52.95	5767791.05	606921.90
650	35.94	158.99	622.73	-594.82	-131.69	54.38	5767788.37	606923.33
655	36.33	157.62	626.69	-598.78	-134.38	55.82	5767785.68	606924.77
660	36.72	156.25	630.65	-602.74	-137.06	57.25	5767783.00	606926.21
665	37.11	154.88	634.61	-606.70	-139.75	58.69	5767780.32	606927.64
670	37.50	153.51	638.56	-610.65	-142.43	60.12	5767777.63	606929.08
675	37.89	152.13	642.52	-614.61	-145.11	61.56	5767774.95	606930.51
680	38.28	150.76	646.48	-618.57	-147.80	63.00	5767772.26	606931.95
685	38.67	149.39	650.43	-622.52	-150.48	64.43	5767769.58	606933.38
690	39.06	148.02	654.39	-626.48	-153.17	65.87	5767766.89	606934.82
695	39.45	146.65	658.35	-630.44	-155.85	67.30	5767764.21	606936.25
700	39.84	145.28	662.31	-634.40	-158.54	68.74	5767761.53	606937.69
705	40.16	144.09	666.23	-638.32	-161.20	70.29	5767758.87	606939.24
710	40.23	143.53	670.04	-642.13	-163.77	72.25	5767756.29	606941.20
715	40.30	142.97	673.85	-645.94	-166.34	74.22	5767753.72	606943.17
720	40.37	142.41	677.66	-649.75	-168.91	76.18	5767751.15	606945.13
725	40.45	141.86	681.47	-653.56	-171.48	78.15	5767748.58	606947.10
730	40.52	141.30	685.29	-657.38	-174.05	80.11	5767746.01	606949.06
735	40.56	141.22	689.09	-661.18	-176.62	82.10	5767743.44	606951.05
740	40.58	141.51	692.88	-664.97	-179.18	84.11	5767740.88	606953.06
745	40.61	141.79	696.68	-668.77	-181.74	86.12	5767738.32	606955.07
750	40.63	142.07	700.47	-672.56	-184.30	88.12	5767735.76	606957.08
755	40.65	142.36	704.27	-676.36	-186.86	90.13	5767733.20	606959.08
760	40.67	142.64	708.07	-680.16	-189.42	92.14	5767730.64	606961.09
765	40.72	142.78	711.85	-683.94	-192.02	94.12	5767728.04	606963.07
770	40.78	142.86	715.63	-687.72	-194.63	96.09	5767725.43	606965.04
775	40.84	142.94	719.42	-691.51	-197.24	98.06	5767722.82	606967.02
780	40.90	143.02	723.20	-695.29	-199.85	100.03	5767720.21	606968.99
785	40.96	143.10	726.98	-699.07	-202.46	102.00	5767717.60	606970.96
790	41.02	143.18	730.76	-702.85	-205.07	103.97	5767714.99	606972.93
795	41.03	142.42	734.54	-706.63	-207.62	106.04	5767712.44	606974.99
800	41.04	141.62	738.31	-710.40	-210.17	108.11	5767709.89	606977.06
805	41.05	140.82	742.08	-714.17	-212.71	110.18	5767707.35	606979.13
810	41.06	140.03	745.85	-717.94	-215.26	112.25	5767704.80	606981.20
815	41.07	139.23	749.62	-721.71	-217.81	114.32	5767702.25	606983.27
820	41.09	138.45	753.39	-725.48	-220.32	116.44	5767699.74	606985.39
825	41.14	137.73	757.15	-729.24	-222.71	118.70	5767697.35	606987.65
830	41.19	137.01	760.91	-733.00	-225.10	120.97	5767694.97	606989.92
835	41.24	136.29	764.68	-736.77	-227.49	123.23	5767692.58	606992.19
840	41.28	135.56	768.44	-740.53	-229.88	125.50	5767690.19	606994.45
845	41.33	134.84	772.20	-744.29	-232.26	127.77	5767687.80	606996.72
850	41.37	133.93	775.96	-748.05	-234.56	130.13	5767685.50	606999.08
855	41.39	132.76	779.71	-751.80	-236.74	132.61	5767683.33	607001.57
860	41.41	131.59	783.46	-755.55	-238.91	135.10	5767681.15	607004.06
865	41.43	130.42	787.21	-759.30	-241.08	137.59	5767678.98	607006.54
870	41.45	129.25	790.96	-763.05	-243.25	140.08	5767676.81	607009.03
875	41.48	128.08	794.71	-766.80	-245.43	142.57	5767674.63	607011.52
880	41.60	127.15	798.44	-770.53	-247.41	145.24	5767672.65	607014.19
885	41.76	126.29	802.16	-774.25	-249.34	147.97	5767670.72	607016.92
890	41.93	125.43	805.88	-777.97	-251.27	150.69	5767668.79	607019.64
895	42.09	124.58	809.60	-781.69	-253.21	153.42	5767666.86	607022.37
900	42.25	123.72	813.32	-785.41	-255.14	156.14	5767664.92	607025.09
905	42.41	122.87	817.04	-789.13	-257.06	158.87	5767663.00	607027.82
910	42.60	122.40	820.70	-792.79	-258.84	161.77	5767661.22	607030.73
915	42.79	121.93	824.36	-796.45	-260.63	164.68	5767659.44	607033.63
920	42.97	121.45	828.02	-800.11	-262.41	167.58	5767657.65	607036.53

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
925	43.16	120.98	831.68	-803.77	-264.19	170.48	5767655.87	607039.43
930	43.35	120.51	835.34	-807.43	-265.97	173.38	5767654.09	607042.33
935	43.48	120.21	838.99	-811.08	-267.73	176.32	5767652.33	607045.27
940	43.53	120.15	842.61	-814.70	-269.46	179.30	5767650.60	607048.25
945	43.58	120.09	846.23	-818.32	-271.18	182.29	5767648.88	607051.24
950	43.63	120.02	849.85	-821.94	-272.91	185.27	5767647.15	607054.22
955	43.67	119.96	853.47	-825.56	-274.64	188.25	5767645.42	607057.21
960	43.72	119.89	857.09	-829.18	-276.36	191.24	5767643.70	607060.19
965	43.73	119.87	860.71	-832.80	-278.09	194.23	5767641.98	607063.18
970	43.70	119.87	864.33	-836.42	-279.81	197.22	5767640.26	607066.18
975	43.68	119.87	867.94	-840.03	-281.52	200.22	5767638.54	607069.17
980	43.65	119.86	871.56	-843.65	-283.24	203.21	5767636.82	607072.16
985	43.63	119.86	875.18	-847.27	-284.96	206.21	5767635.10	607075.16
990	43.60	119.86	878.79	-850.88	-286.68	209.20	5767633.38	607078.15
995	43.61	119.82	882.41	-854.50	-288.39	212.20	5767631.67	607081.15
1000	43.62	119.78	886.03	-858.12	-290.11	215.19	5767629.96	607084.14
1005	43.63	119.74	889.65	-861.74	-291.82	218.19	5767628.24	607087.14
1010	43.65	119.69	893.27	-865.36	-293.53	221.18	5767626.53	607090.14
1015	43.66	119.65	896.89	-868.98	-295.24	224.18	5767624.82	607093.13
1020	43.67	119.61	900.51	-872.60	-296.95	227.18	5767623.11	607096.13
1025	43.65	119.61	904.12	-876.21	-298.65	230.18	5767621.41	607099.13
1030	43.64	119.60	907.74	-879.83	-300.36	233.18	5767619.70	607102.13
1035	43.63	119.60	911.36	-883.45	-302.06	236.18	5767618.00	607105.13
1040	43.61	119.60	914.98	-887.07	-303.77	239.18	5767616.30	607108.13
1045	43.60	119.59	918.60	-890.69	-305.47	242.18	5767614.59	607111.13
1050	43.63	119.68	922.21	-894.30	-307.19	245.17	5767612.87	607114.12
1055	43.74	119.92	925.82	-897.91	-308.94	248.17	5767611.12	607117.12
1060	43.84	120.16	929.42	-901.51	-310.69	251.16	5767609.38	607120.11
1065	43.95	120.40	933.02	-905.11	-312.43	254.15	5767607.63	607123.11
1070	44.06	120.64	936.63	-908.72	-314.18	257.15	5767605.88	607126.10
1075	44.17	120.88	940.23	-912.32	-315.93	260.14	5767604.13	607129.09
1080	44.20	120.93	943.82	-915.91	-317.70	263.13	5767602.36	607132.09
1085	44.21	120.90	947.40	-919.49	-319.49	266.13	5767600.57	607135.08
1090	44.21	120.88	950.99	-923.08	-321.28	269.12	5767598.78	607138.07
1095	44.21	120.85	954.57	-926.66	-323.07	272.11	5767596.99	607141.06
1100	44.22	120.82	958.16	-930.25	-324.86	275.10	5767595.20	607144.06
1105	44.22	120.79	961.74	-933.83	-326.65	278.10	5767593.41	607147.05
1110	44.21	120.78	965.33	-937.42	-328.43	281.09	5767591.63	607150.04
1115	44.20	120.76	968.91	-941.00	-330.21	284.09	5767589.85	607153.04
1120	44.19	120.75	972.50	-944.59	-332.00	287.08	5767588.07	607156.03
1125	44.18	120.73	976.08	-948.17	-333.78	290.08	5767586.28	607159.03
1130	44.17	120.72	979.67	-951.76	-335.56	293.07	5767584.50	607162.02
1135	44.15	120.72	983.25	-955.34	-337.34	296.07	5767582.72	607165.02
1140	44.11	120.75	986.85	-958.94	-339.12	299.05	5767580.94	607168.00
1145	44.07	120.78	990.44	-962.53	-340.90	302.04	5767579.16	607170.99
1150	44.04	120.81	994.03	-966.12	-342.68	305.03	5767577.38	607173.98
1155	44.00	120.84	997.63	-969.72	-344.46	308.01	5767575.60	607176.96
1160	43.96	120.87	1001.22	-973.31	-346.24	311.00	5767573.82	607179.95
1165	43.92	120.87	1004.82	-976.91	-348.02	313.98	5767572.04	607182.93
1170	43.90	120.85	1008.43	-980.52	-349.79	316.95	5767570.27	607185.90
1175	43.87	120.83	1012.03	-984.12	-351.57	319.93	5767568.49	607188.88
1180	43.84	120.81	1015.64	-987.73	-353.34	322.90	5767566.72	607191.85
1185	43.81	120.79	1019.24	-991.33	-355.12	325.88	5767564.94	607194.83
1190	43.78	120.76	1022.85	-994.94	-356.89	328.85	5767563.17	607197.80
1195	43.75	120.72	1026.46	-998.55	-358.65	331.83	5767561.41	607200.78
1200	43.72	120.68	1030.08	-1002.17	-360.41	334.80	5767559.65	607203.75
1205	43.69	120.63	1033.69	-1005.78	-362.17	337.77	5767557.89	607206.72
1210	43.66	120.58	1037.31	-1009.40	-363.93	340.74	5767556.13	607209.69
1215	43.63	120.53	1040.92	-1013.01	-365.69	343.71	5767554.37	607212.66
1220	43.60	120.49	1044.54	-1016.63	-367.45	346.68	5767552.61	607215.64
1225	43.57	120.44	1048.17	-1020.26	-369.19	349.65	5767550.87	607218.61
1230	43.54	120.40	1051.79	-1023.88	-370.93	352.62	5767549.13	607221.58
1235	43.51	120.36	1055.42	-1027.51	-372.67	355.60	5767547.39	607224.55
1240	43.48	120.31	1059.04	-1031.13	-374.41	358.57	5767545.65	607227.52
1245	43.45	120.27	1062.67	-1034.76	-376.15	361.54	5767543.91	607230.49
1250	43.42	120.25	1066.30	-1038.39	-377.89	364.50	5767542.17	607233.46

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1255	43.40	120.30	1069.93	-1042.02	-379.63	367.47	5767540.44	607236.42
1260	43.38	120.34	1073.57	-1045.66	-381.36	370.43	5767538.70	607239.38
1265	43.37	120.39	1077.20	-1049.29	-383.10	373.39	5767536.96	607242.34
1270	43.35	120.43	1080.84	-1052.93	-384.83	376.35	5767535.23	607245.31
1275	43.33	120.47	1084.47	-1056.56	-386.57	379.32	5767533.49	607248.27
1280	43.30	120.47	1088.11	-1060.20	-388.30	382.28	5767531.76	607251.23
1285	43.27	120.43	1091.75	-1063.84	-390.03	385.23	5767530.03	607254.18
1290	43.24	120.39	1095.40	-1067.49	-391.77	388.18	5767528.30	607257.14
1295	43.21	120.35	1099.04	-1071.13	-393.50	391.14	5767526.56	607260.09
1300	43.18	120.31	1102.68	-1074.77	-395.23	394.09	5767524.83	607263.04
1305	43.15	120.27	1106.33	-1078.42	-396.96	397.05	5767523.10	607266.00
1310	43.25	120.44	1109.96	-1082.05	-398.72	400.00	5767521.34	607268.95
1315	43.37	120.65	1113.58	-1085.67	-400.49	402.96	5767519.57	607271.91
1320	43.50	120.87	1117.21	-1089.30	-402.26	405.91	5767517.81	607274.86
1325	43.63	121.09	1120.83	-1092.92	-404.02	408.87	5767516.04	607277.82
1330	43.76	121.30	1124.46	-1096.55	-405.79	411.82	5767514.27	607280.77
1335	43.88	121.50	1128.08	-1100.17	-407.56	414.77	5767512.50	607283.73
1340	43.89	121.52	1131.69	-1103.78	-409.37	417.73	5767510.69	607286.68
1345	43.91	121.54	1135.29	-1107.38	-411.19	420.68	5767508.87	607289.64
1350	43.92	121.55	1138.89	-1110.98	-413.00	423.64	5767507.06	607292.59
1355	43.93	121.57	1142.49	-1114.58	-414.82	426.59	5767505.24	607295.55
1360	43.94	121.59	1146.09	-1118.18	-416.63	429.55	5767503.43	607298.50
1365	43.93	121.62	1149.70	-1121.79	-418.45	432.50	5767501.61	607301.45
1370	43.87	121.67	1153.31	-1125.40	-420.27	435.44	5767499.79	607304.39
1375	43.81	121.72	1156.92	-1129.01	-422.09	438.38	5767497.97	607307.34
1380	43.76	121.77	1160.53	-1132.62	-423.91	441.33	5767496.15	607310.28
1385	43.70	121.81	1164.14	-1136.23	-425.73	444.27	5767494.33	607313.22
1390	43.64	121.86	1167.75	-1139.84	-427.55	447.21	5767492.51	607316.16
1395	43.58	121.88	1171.37	-1143.46	-429.37	450.14	5767490.69	607319.09
1400	43.50	121.88	1175.00	-1147.09	-431.18	453.06	5767488.88	607322.01
1405	43.43	121.88	1178.64	-1150.73	-433.00	455.98	5767487.07	607324.93
1410	43.36	121.88	1182.27	-1154.36	-434.81	458.89	5767485.25	607327.84
1415	43.29	121.88	1185.90	-1157.99	-436.63	461.81	5767483.44	607330.76
1420	43.22	121.88	1189.53	-1161.62	-438.44	464.73	5767481.62	607333.68
1425	43.21	121.88	1193.17	-1165.26	-440.25	467.64	5767479.81	607336.59
1430	43.21	121.88	1196.82	-1168.91	-442.06	470.55	5767478.00	607339.50
1435	43.21	121.88	1200.46	-1172.55	-443.87	473.45	5767476.19	607342.40
1440	43.22	121.88	1204.11	-1176.20	-445.67	476.36	5767474.39	607345.31
1445	43.22	121.88	1207.75	-1179.84	-447.48	479.27	5767472.58	607348.22
1450	43.22	121.88	1211.39	-1183.48	-449.29	482.17	5767470.77	607351.13
1455	43.37	122.15	1215.01	-1187.10	-451.15	485.08	5767468.91	607354.03
1460	43.54	122.46	1218.63	-1190.72	-453.02	487.98	5767467.04	607356.94
1465	43.71	122.77	1222.24	-1194.33	-454.89	490.89	5767465.17	607359.84
1470	43.88	123.08	1225.85	-1197.94	-456.77	493.79	5767463.30	607362.74
1475	44.05	123.39	1229.47	-1201.56	-458.64	496.70	5767461.42	607365.65
1480	44.21	123.67	1233.08	-1205.17	-460.51	499.60	5767459.55	607368.55
1485	44.20	123.70	1236.67	-1208.76	-462.45	502.50	5767457.61	607371.45
1490	44.19	123.74	1240.25	-1212.34	-464.39	505.40	5767455.68	607374.35
1495	44.18	123.77	1243.84	-1215.93	-466.32	508.29	5767453.74	607377.24
1500	44.17	123.80	1247.42	-1219.51	-468.26	511.19	5767451.80	607380.14
1505	44.16	123.83	1251.01	-1223.10	-470.19	514.09	5767449.87	607383.04
1510	44.15	123.85	1254.60	-1226.69	-472.13	516.98	5767447.93	607385.93
1515	44.15	123.85	1258.18	-1230.27	-474.07	519.87	5767445.99	607388.83
1520	44.14	123.84	1261.77	-1233.86	-476.01	522.77	5767444.05	607391.72
1525	44.14	123.84	1265.36	-1237.45	-477.95	525.66	5767442.11	607394.61
1530	44.13	123.83	1268.95	-1241.04	-479.89	528.55	5767440.17	607397.50
1535	44.13	123.83	1272.54	-1244.63	-481.83	531.44	5767438.23	607400.40
1540	44.13	123.83	1276.12	-1248.21	-483.77	534.34	5767436.30	607403.29
1545	44.14	123.84	1279.71	-1251.80	-485.71	537.23	5767434.36	607406.18
1550	44.14	123.84	1283.30	-1255.39	-487.64	540.12	5767432.42	607409.07
1555	44.14	123.84	1286.89	-1258.98	-489.58	543.01	5767430.48	607411.96
1560	44.15	123.85	1290.48	-1262.57	-491.52	545.90	5767428.54	607414.86
1565	44.15	123.85	1294.07	-1266.16	-493.46	548.80	5767426.60	607417.75
1570	44.11	123.85	1297.66	-1269.75	-495.40	551.68	5767424.66	607420.63
1575	44.07	123.85	1301.25	-1273.34	-497.33	554.57	5767422.73	607423.52
1580	44.04	123.85	1304.85	-1276.94	-499.27	557.46	5767420.79	607426.41

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1585	44.00	123.85	1308.44	-1280.53	-501.21	560.34	5767418.86	607429.29
1590	43.96	123.85	1312.04	-1284.13	-503.14	563.23	5767416.92	607432.18
1595	43.93	123.85	1315.63	-1287.72	-505.08	566.11	5767414.98	607435.07
1600	43.89	123.86	1319.24	-1291.33	-507.01	568.99	5767413.05	607437.94
1605	43.86	123.87	1322.85	-1294.94	-508.94	571.87	5767411.12	607440.82
1610	43.83	123.87	1326.45	-1298.54	-510.87	574.74	5767409.19	607443.69
1615	43.80	123.88	1330.06	-1302.15	-512.80	577.62	5767407.26	607446.57
1620	43.77	123.89	1333.66	-1305.75	-514.73	580.49	5767405.33	607449.44
1625	43.73	123.89	1337.28	-1309.37	-516.66	583.36	5767403.41	607452.31
1630	43.68	123.89	1340.90	-1312.99	-518.58	586.22	5767401.48	607455.18
1635	43.63	123.89	1344.52	-1316.61	-520.50	589.09	5767399.56	607458.04
1640	43.58	123.89	1348.14	-1320.23	-522.42	591.95	5767397.64	607460.90
1645	43.52	123.89	1351.76	-1323.85	-524.35	594.81	5767395.72	607463.76
1650	43.47	123.89	1355.38	-1327.47	-526.27	597.68	5767393.79	607466.63
1655	43.47	123.90	1359.01	-1331.10	-528.19	600.53	5767391.87	607469.48
1660	43.48	123.92	1362.63	-1334.72	-530.11	603.39	5767389.95	607472.34
1665	43.48	123.93	1366.26	-1338.35	-532.03	606.24	5767388.03	607475.19
1670	43.49	123.95	1369.89	-1341.98	-533.95	609.10	5767386.11	607478.05
1675	43.50	123.97	1373.52	-1345.61	-535.87	611.95	5767384.19	607480.90
1680	43.52	123.97	1377.14	-1349.23	-537.79	614.81	5767382.27	607483.76
1685	43.61	123.84	1380.75	-1352.84	-539.71	617.69	5767380.35	607486.64
1690	43.70	123.71	1384.36	-1356.45	-541.62	620.57	5767378.44	607489.52
1695	43.80	123.59	1387.97	-1360.06	-543.54	623.45	5767376.52	607492.40
1700	43.89	123.46	1391.58	-1363.67	-545.45	626.33	5767374.61	607495.28
1705	43.98	123.33	1395.19	-1367.28	-547.37	629.21	5767372.69	607498.16
1710	44.04	123.24	1398.80	-1370.89	-549.28	632.10	5767370.78	607501.05
1715	44.03	123.20	1402.40	-1374.49	-551.18	635.01	5767368.88	607503.96
1720	44.02	123.16	1405.99	-1378.08	-553.08	637.92	5767366.98	607506.87
1725	44.02	123.13	1409.59	-1381.68	-554.98	640.83	5767365.08	607509.78
1730	44.01	123.09	1413.18	-1385.27	-556.88	643.74	5767363.18	607512.69
1735	44.00	123.05	1416.78	-1388.87	-558.78	646.65	5767361.28	607515.60
1740	44.03	123.03	1420.37	-1392.46	-560.67	649.56	5767359.39	607518.52
1745	44.07	123.01	1423.96	-1396.05	-562.57	652.49	5767357.49	607521.44
1750	44.12	122.99	1427.55	-1399.64	-564.46	655.41	5767355.60	607524.36
1755	44.16	122.96	1431.13	-1403.22	-566.36	658.33	5767353.70	607527.28
1760	44.21	122.94	1434.72	-1406.81	-568.25	661.25	5767351.81	607530.20
1765	44.25	122.92	1438.31	-1410.40	-570.15	664.17	5767349.91	607533.12
1770	44.34	122.79	1441.88	-1413.97	-572.03	667.12	5767348.03	607536.07
1775	44.43	122.65	1445.45	-1417.54	-573.92	670.07	5767346.14	607539.03
1780	44.51	122.50	1449.01	-1421.10	-575.80	673.03	5767344.26	607541.98
1785	44.60	122.36	1452.58	-1424.67	-577.68	675.99	5767342.38	607544.94
1790	44.69	122.21	1456.14	-1428.23	-579.57	678.94	5767340.49	607547.89
1795	44.78	122.09	1459.70	-1431.79	-581.45	681.91	5767338.61	607550.86
1800	44.90	122.12	1463.23	-1435.32	-583.34	684.90	5767336.72	607553.86
1805	45.01	122.15	1466.76	-1438.85	-585.22	687.90	5767334.84	607556.85
1810	45.13	122.17	1470.29	-1442.38	-587.11	690.90	5767332.95	607559.85
1815	45.25	122.20	1473.82	-1445.91	-588.99	693.90	5767331.07	607562.85
1820	45.36	122.22	1477.35	-1449.44	-590.88	696.90	5767329.18	607565.85
1825	45.39	122.25	1480.88	-1452.97	-592.77	699.89	5767327.30	607568.84
1830	45.15	122.31	1484.43	-1456.52	-594.65	702.86	5767325.41	607571.81
1835	44.91	122.36	1487.98	-1460.07	-596.54	705.83	5767323.52	607574.78
1840	44.66	122.42	1491.54	-1463.63	-598.42	708.80	5767321.64	607577.76
1845	44.42	122.47	1495.09	-1467.18	-600.31	711.78	5767319.75	607580.73
1850	44.18	122.53	1498.64	-1470.73	-602.19	714.75	5767317.87	607583.70
1855	44.00	122.54	1502.21	-1474.30	-604.07	717.70	5767315.99	607586.65
1860	43.91	122.50	1505.82	-1477.91	-605.92	720.62	5767314.14	607589.57
1865	43.82	122.45	1509.43	-1481.52	-607.78	723.54	5767312.28	607592.49
1870	43.73	122.41	1513.04	-1485.13	-609.63	726.46	5767310.43	607595.41
1875	43.64	122.36	1516.65	-1488.74	-611.49	729.38	5767308.57	607598.33
1880	43.55	122.32	1520.26	-1492.35	-613.35	732.30	5767306.72	607601.25
1885	43.47	122.34	1523.89	-1495.98	-615.19	735.20	5767304.87	607604.15
1890	43.40	122.39	1527.53	-1499.62	-617.03	738.09	5767303.03	607607.05
1895	43.33	122.43	1531.17	-1503.26	-618.87	740.99	5767301.19	607609.94
1900	43.25	122.47	1534.81	-1506.90	-620.71	743.89	5767299.35	607612.84
1905	43.18	122.51	1538.44	-1510.53	-622.55	746.78	5767297.51	607615.73
1910	43.11	122.55	1542.08	-1514.17	-624.39	749.68	5767295.67	607618.63

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
1915	43.11	122.58	1545.73	-1517.82	-626.23	752.55	5767293.83	607621.50
1920	43.10	122.60	1549.38	-1521.47	-628.07	755.43	5767291.99	607624.38
1925	43.10	122.62	1553.04	-1525.13	-629.91	758.31	5767290.15	607627.26
1930	43.10	122.65	1556.69	-1528.78	-631.75	761.19	5767288.31	607630.14
1935	43.09	122.67	1560.34	-1532.43	-633.59	764.06	5767286.47	607633.01
1940	43.12	122.68	1563.98	-1536.07	-635.44	766.94	5767284.62	607635.90
1945	43.25	122.61	1567.62	-1539.71	-637.29	769.84	5767282.78	607638.79
1950	43.37	122.54	1571.25	-1543.34	-639.13	772.74	5767280.93	607641.69
1955	43.50	122.48	1574.88	-1546.97	-640.98	775.64	5767279.08	607644.59
1960	43.63	122.41	1578.51	-1550.60	-642.83	778.54	5767277.23	607647.49
1965	43.75	122.35	1582.14	-1554.23	-644.68	781.44	5767275.39	607650.39
1970	43.74	122.33	1585.76	-1557.85	-646.52	784.36	5767273.54	607653.31
1975	43.72	122.32	1589.37	-1561.46	-648.37	787.28	5767271.69	607656.23
1980	43.71	122.30	1592.98	-1565.07	-650.21	790.20	5767269.85	607659.15
1985	43.70	122.29	1596.60	-1568.69	-652.06	793.12	5767268.00	607662.07
1990	43.69	122.27	1600.21	-1572.30	-653.91	796.04	5767266.16	607664.99
1995	43.67	122.25	1603.83	-1575.92	-655.75	798.96	5767264.31	607667.91
2000	43.60	122.23	1607.46	-1579.55	-657.59	801.87	5767262.48	607670.82
2005	43.52	122.21	1611.09	-1583.18	-659.42	804.78	5767260.64	607673.73
2010	43.43	122.18	1614.72	-1586.81	-661.25	807.69	5767258.81	607676.64
2015	43.34	122.16	1618.35	-1590.44	-663.08	810.60	5767256.98	607679.55
2020	43.26	122.13	1621.98	-1594.07	-664.91	813.51	5767255.15	607682.46
2025	43.18	122.11	1625.61	-1597.70	-666.74	816.41	5767253.32	607685.37
2030	43.20	122.07	1629.26	-1601.35	-668.55	819.32	5767251.51	607688.27
2035	43.21	122.03	1632.90	-1604.99	-670.37	822.22	5767249.69	607691.17
2040	43.22	122.00	1636.54	-1608.63	-672.18	825.12	5767247.88	607694.08
2045	43.24	121.96	1640.19	-1612.28	-674.00	828.03	5767246.07	607696.98
2050	43.25	121.92	1643.83	-1615.92	-675.81	830.93	5767244.25	607699.88
2055	43.27	121.90	1647.47	-1619.56	-677.63	833.84	5767242.44	607702.79
2060	43.29	121.90	1651.11	-1623.20	-679.44	836.75	5767240.62	607705.70
2065	43.31	121.90	1654.75	-1626.84	-681.25	839.66	5767238.81	607708.61
2070	43.34	121.91	1658.38	-1630.47	-683.06	842.58	5767237.00	607711.53
2075	43.36	121.91	1662.02	-1634.11	-684.88	845.49	5767235.18	607714.44
2080	43.38	121.91	1665.66	-1637.75	-686.69	848.40	5767233.37	607717.35
2085	43.43	121.92	1669.29	-1641.38	-688.51	851.32	5767231.55	607720.27
2090	43.49	121.95	1672.91	-1645.00	-690.34	854.24	5767229.73	607723.19
2095	43.55	121.97	1676.53	-1648.62	-692.16	857.17	5767227.90	607726.12
2100	43.61	121.99	1680.16	-1652.25	-693.99	860.09	5767226.08	607729.04
2105	43.67	122.01	1683.78	-1655.87	-695.81	863.01	5767224.25	607731.96
2110	43.73	122.04	1687.40	-1659.49	-697.63	865.93	5767222.43	607734.89
2115	43.81	122.03	1691.00	-1663.09	-699.47	868.87	5767220.59	607737.83
2120	43.89	122.02	1694.60	-1666.69	-701.31	871.82	5767218.75	607740.77
2125	43.97	122.02	1698.20	-1670.29	-703.15	874.76	5767216.91	607743.71
2130	44.05	122.01	1701.80	-1673.89	-704.99	877.70	5767215.07	607746.66
2135	44.13	122.00	1705.40	-1677.49	-706.83	880.65	5767213.23	607749.60
2140	44.19	121.99	1709.00	-1681.09	-708.67	883.59	5767211.39	607752.54
2145	44.14	122.01	1712.59	-1684.68	-710.52	886.54	5767209.54	607755.49
2150	44.08	122.02	1716.19	-1688.28	-712.36	889.48	5767207.70	607758.44
2155	44.02	122.03	1719.78	-1691.87	-714.20	892.43	5767205.86	607761.38
2160	43.96	122.05	1723.38	-1695.47	-716.05	895.38	5767204.01	607764.33
2165	43.91	122.06	1726.97	-1699.06	-717.89	898.32	5767202.17	607767.28
2170	43.85	122.09	1730.57	-1702.66	-719.73	901.26	5767200.33	607770.21
2175	43.80	122.13	1734.18	-1706.27	-721.57	904.19	5767198.49	607773.14
2180	43.75	122.17	1737.80	-1709.89	-723.42	907.11	5767196.65	607776.06
2185	43.69	122.22	1741.41	-1713.50	-725.26	910.04	5767194.80	607778.99
2190	43.64	122.26	1745.02	-1717.11	-727.10	912.96	5767192.96	607781.91
2195	43.59	122.30	1748.64	-1720.73	-728.94	915.89	5767191.12	607784.84
2200	43.53	122.31	1752.27	-1724.36	-730.78	918.79	5767189.29	607787.74
2205	43.46	122.32	1755.90	-1727.99	-732.61	921.70	5767187.45	607790.65
2210	43.40	122.32	1759.53	-1731.62	-734.45	924.60	5767185.61	607793.55
2215	43.33	122.33	1763.17	-1735.26	-736.29	927.50	5767183.78	607796.45
2220	43.27	122.33	1766.80	-1738.89	-738.12	930.40	5767181.94	607799.35
2225	43.20	122.34	1770.43	-1742.52	-739.96	933.31	5767180.10	607802.26
2230	43.31	122.38	1774.06	-1746.15	-741.81	936.21	5767178.26	607805.16
2235	43.42	122.42	1777.69	-1749.78	-743.65	939.12	5767176.41	607808.07
2240	43.53	122.46	1781.31	-1753.40	-745.50	942.02	5767174.56	607810.97

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2245	43.65	122.49	1784.94	-1757.03	-747.35	944.93	5767172.71	607813.88
2250	43.76	122.53	1788.56	-1760.65	-749.20	947.83	5767170.87	607816.78
2255	43.82	122.57	1792.19	-1764.28	-751.05	950.74	5767169.01	607819.69
2260	43.75	122.58	1795.81	-1767.90	-752.91	953.64	5767167.15	607822.60
2265	43.68	122.60	1799.42	-1771.51	-754.77	956.55	5767165.29	607825.50
2270	43.61	122.62	1803.04	-1775.13	-756.63	959.46	5767163.43	607828.41
2275	43.55	122.64	1806.66	-1778.75	-758.49	962.36	5767161.57	607831.32
2280	43.48	122.66	1810.28	-1782.37	-760.35	965.27	5767159.71	607834.22
2285	43.40	122.67	1813.91	-1786.00	-762.20	968.17	5767157.86	607837.12
2290	43.33	122.67	1817.55	-1789.64	-764.05	971.05	5767156.01	607840.00
2295	43.25	122.67	1821.20	-1793.29	-765.90	973.93	5767154.16	607842.88
2300	43.17	122.68	1824.84	-1796.93	-767.75	976.81	5767152.32	607845.76
2305	43.09	122.68	1828.48	-1800.57	-769.59	979.69	5767150.47	607848.65
2310	43.01	122.68	1832.13	-1804.22	-771.44	982.58	5767148.62	607851.53
2315	42.89	122.71	1835.80	-1807.89	-773.28	985.43	5767146.78	607854.38
2320	42.76	122.75	1839.48	-1811.57	-775.11	988.28	5767144.95	607857.23
2325	42.63	122.80	1843.16	-1815.25	-776.95	991.12	5767143.11	607860.07
2328	42.55	122.82	1845.37	-1817.46	-778.05	992.83	5767142.01	607861.78
2329	42.52	122.83	1846.10	-1818.19	-778.41	993.40	5767141.65	607862.35
2330	42.49	122.84	1846.84	-1818.93	-778.78	993.97	5767141.28	607862.92
2331	42.47	122.85	1847.57	-1819.66	-779.15	994.54	5767140.91	607863.49
2332	42.44	122.86	1848.31	-1820.40	-779.52	995.10	5767140.55	607864.06
2333	42.42	122.86	1849.05	-1821.14	-779.88	995.67	5767140.18	607864.63
2334	42.39	122.87	1849.78	-1821.87	-780.25	996.24	5767139.81	607865.19
2335	42.36	122.88	1850.52	-1822.61	-780.62	996.81	5767139.45	607865.76
2336	42.34	122.89	1851.25	-1823.34	-780.98	997.38	5767139.08	607866.33
2337	42.31	122.90	1851.99	-1824.08	-781.35	997.95	5767138.71	607866.90
2338	42.28	122.91	1852.73	-1824.82	-781.72	998.52	5767138.35	607867.47
2339	42.26	122.91	1853.46	-1825.55	-782.08	999.09	5767137.98	607868.04
2340	42.27	122.95	1854.19	-1826.28	-782.46	999.66	5767137.60	607868.61
2341	42.36	123.06	1854.92	-1827.01	-782.85	1000.23	5767137.21	607869.18
2342	42.46	123.16	1855.64	-1827.73	-783.24	1000.79	5767136.82	607869.75
2343	42.55	123.27	1856.36	-1828.45	-783.63	1001.36	5767136.43	607870.31
2344	42.65	123.37	1857.09	-1829.18	-784.02	1001.93	5767136.04	607870.88
2345	42.74	123.48	1857.81	-1829.90	-784.42	1002.50	5767135.65	607871.45
2346	42.83	123.58	1858.53	-1830.62	-784.81	1003.07	5767135.25	607872.02
2347	42.93	123.69	1859.26	-1831.35	-785.20	1003.64	5767134.86	607872.59
2348	43.02	123.80	1859.98	-1832.07	-785.59	1004.21	5767134.47	607873.16
2349	43.12	123.90	1860.70	-1832.79	-785.98	1004.77	5767134.08	607873.73
2350	43.21	124.01	1861.43	-1833.52	-786.37	1005.34	5767133.69	607874.29
2351	43.31	124.11	1862.15	-1834.24	-786.77	1005.91	5767133.30	607874.86
2352	43.40	124.22	1862.87	-1834.96	-787.16	1006.48	5767132.90	607875.43
2353	43.49	124.32	1863.60	-1835.69	-787.55	1007.05	5767132.51	607876.00
2354	43.59	124.43	1864.32	-1836.41	-787.94	1007.62	5767132.12	607876.57
2355	43.68	124.53	1865.04	-1837.13	-788.33	1008.18	5767131.73	607877.14
2356	43.78	124.64	1865.77	-1837.86	-788.72	1008.75	5767131.34	607877.70
2357	43.87	124.74	1866.49	-1838.58	-789.12	1009.32	5767130.94	607878.27
2358	43.97	124.85	1867.21	-1839.30	-789.51	1009.89	5767130.55	607878.84
2359	44.06	124.96	1867.94	-1840.03	-789.90	1010.46	5767130.16	607879.41
2360	44.15	125.06	1868.66	-1840.75	-790.29	1011.03	5767129.77	607879.98
2361	44.25	125.17	1869.38	-1841.47	-790.68	1011.60	5767129.38	607880.55
2362	44.34	125.27	1870.10	-1842.19	-791.08	1012.16	5767128.99	607881.12
2363	44.44	125.38	1870.83	-1842.92	-791.47	1012.73	5767128.59	607881.68
2364	44.53	125.48	1871.55	-1843.64	-791.86	1013.30	5767128.20	607882.25
2365	44.63	125.59	1872.27	-1844.36	-792.25	1013.87	5767127.81	607882.82
2366	44.72	125.69	1873.00	-1845.09	-792.64	1014.44	5767127.42	607883.39
2367	44.82	125.80	1873.72	-1845.81	-793.03	1015.01	5767127.03	607883.96
2368	44.91	125.90	1874.44	-1846.53	-793.43	1015.57	5767126.64	607884.53
2369	45.00	126.01	1875.17	-1847.26	-793.82	1016.14	5767126.24	607885.09
2370	45.10	126.12	1875.89	-1847.98	-794.21	1016.71	5767125.85	607885.66
2371	45.10	126.14	1876.60	-1848.69	-794.62	1017.28	5767125.44	607886.23
2372	45.08	126.13	1877.31	-1849.40	-795.03	1017.85	5767125.03	607886.80
2373	45.06	126.13	1878.02	-1850.11	-795.45	1018.42	5767124.61	607887.37
2374	45.04	126.13	1878.73	-1850.82	-795.87	1018.99	5767124.20	607887.94
2375	45.02	126.13	1879.44	-1851.53	-796.28	1019.56	5767123.78	607888.51
2376	45.00	126.12	1880.15	-1852.24	-796.70	1020.13	5767123.36	607889.08

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2377	44.98	126.12	1880.86	-1852.95	-797.11	1020.70	5767122.95	607889.65
2378	44.96	126.12	1881.57	-1853.66	-797.53	1021.27	5767122.53	607890.22
2379	44.94	126.11	1882.28	-1854.37	-797.94	1021.84	5767122.12	607890.79
2380	44.92	126.11	1882.98	-1855.07	-798.36	1022.41	5767121.70	607891.36
2381	44.90	126.11	1883.69	-1855.78	-798.77	1022.98	5767121.29	607891.93
2382	44.88	126.11	1884.40	-1856.49	-799.19	1023.55	5767120.87	607892.50
2383	44.86	126.10	1885.11	-1857.20	-799.60	1024.12	5767120.46	607893.07
2384	44.84	126.10	1885.82	-1857.91	-800.02	1024.69	5767120.04	607893.64
2385	44.82	126.10	1886.53	-1858.62	-800.44	1025.26	5767119.63	607894.21
2386	44.80	126.09	1887.24	-1859.33	-800.85	1025.83	5767119.21	607894.78
2387	44.78	126.09	1887.95	-1860.04	-801.27	1026.40	5767118.79	607895.35
2388	44.76	126.09	1888.66	-1860.75	-801.68	1026.97	5767118.38	607895.92
2389	44.74	126.09	1889.37	-1861.46	-802.10	1027.54	5767117.96	607896.49
2390	44.72	126.08	1890.08	-1862.17	-802.51	1028.11	5767117.55	607897.06
2391	44.70	126.08	1890.78	-1862.87	-802.93	1028.68	5767117.13	607897.63
2392	44.68	126.08	1891.49	-1863.58	-803.34	1029.25	5767116.72	607898.20
2393	44.66	126.07	1892.20	-1864.29	-803.76	1029.81	5767116.30	607898.77
2394	44.64	126.07	1892.91	-1865.00	-804.17	1030.38	5767115.89	607899.34
2395	44.62	126.07	1893.62	-1865.71	-804.59	1030.95	5767115.47	607899.91
2396	44.60	126.07	1894.33	-1866.42	-805.01	1031.52	5767115.06	607900.48
2397	44.58	126.06	1895.04	-1867.13	-805.42	1032.09	5767114.64	607901.05
2398	44.56	126.06	1895.75	-1867.84	-805.84	1032.66	5767114.22	607901.62
2399	44.52	126.01	1896.47	-1868.56	-806.24	1033.23	5767113.82	607902.18
2400	44.47	125.97	1897.19	-1869.28	-806.64	1033.80	5767113.42	607902.75
2401	44.43	125.92	1897.91	-1870.00	-807.04	1034.36	5767113.02	607903.31
2402	44.39	125.87	1898.63	-1870.72	-807.44	1034.93	5767112.62	607903.88
2403	44.34	125.82	1899.35	-1871.44	-807.85	1035.49	5767112.22	607904.44
2404	44.30	125.77	1900.07	-1872.16	-808.25	1036.06	5767111.81	607905.01
2405	44.26	125.73	1900.79	-1872.88	-808.65	1036.62	5767111.41	607905.57
2406	44.21	125.68	1901.51	-1873.60	-809.05	1037.19	5767111.01	607906.14
2407	44.17	125.63	1902.23	-1874.32	-809.45	1037.75	5767110.61	607906.71
2408	44.13	125.58	1902.95	-1875.04	-809.86	1038.32	5767110.21	607907.27
2409	44.08	125.54	1903.67	-1875.76	-810.26	1038.89	5767109.80	607907.84
2410	44.04	125.49	1904.39	-1876.48	-810.66	1039.45	5767109.40	607908.40
2411	44.00	125.44	1905.11	-1877.20	-811.06	1040.02	5767109.00	607908.97
2412	43.95	125.39	1905.83	-1877.92	-811.46	1040.58	5767108.60	607909.53
2413	43.91	125.34	1906.55	-1878.64	-811.86	1041.15	5767108.20	607910.10
2414	43.86	125.30	1907.27	-1879.36	-812.27	1041.71	5767107.80	607910.67
2415	43.82	125.25	1907.99	-1880.08	-812.67	1042.28	5767107.39	607911.23
2416	43.78	125.20	1908.71	-1880.80	-813.07	1042.85	5767106.99	607911.80
2417	43.73	125.15	1909.43	-1881.52	-813.47	1043.41	5767106.59	607912.36
2418	43.69	125.11	1910.15	-1882.24	-813.87	1043.98	5767106.19	607912.93
2419	43.65	125.06	1910.87	-1882.96	-814.27	1044.54	5767105.79	607913.49
2420	43.60	125.01	1911.59	-1883.68	-814.68	1045.11	5767105.38	607914.06
2421	43.56	124.96	1912.31	-1884.40	-815.08	1045.67	5767104.98	607914.63
2422	43.52	124.92	1913.03	-1885.12	-815.48	1046.24	5767104.58	607915.19
2423	43.47	124.87	1913.75	-1885.84	-815.88	1046.81	5767104.18	607915.76
2424	43.43	124.82	1914.47	-1886.56	-816.28	1047.37	5767103.78	607916.32
2425	43.39	124.77	1915.19	-1887.28	-816.69	1047.94	5767103.38	607916.89
2426	43.34	124.72	1915.91	-1888.00	-817.09	1048.50	5767102.97	607917.45
2427	43.32	124.67	1916.63	-1888.72	-817.48	1049.07	5767102.58	607918.02
2428	43.32	124.62	1917.36	-1889.45	-817.86	1049.64	5767102.20	607918.59
2429	43.32	124.56	1918.09	-1890.18	-818.25	1050.21	5767101.82	607919.16
2430	43.32	124.51	1918.82	-1890.91	-818.63	1050.78	5767101.43	607919.73
2431	43.32	124.45	1919.54	-1891.63	-819.01	1051.35	5767101.05	607920.30
2432	43.31	124.39	1920.27	-1892.36	-819.39	1051.92	5767100.67	607920.87
2433	43.31	124.34	1921.00	-1893.09	-819.78	1052.48	5767100.29	607921.44
2434	43.31	124.28	1921.73	-1893.82	-820.16	1053.05	5767099.90	607922.01
2435	43.31	124.23	1922.46	-1894.55	-820.54	1053.62	5767099.52	607922.57
2436	43.31	124.17	1923.18	-1895.27	-820.92	1054.19	5767099.14	607923.14
2437	43.31	124.12	1923.91	-1896.00	-821.31	1054.76	5767098.76	607923.71
2438	43.31	124.06	1924.64	-1896.73	-821.69	1055.33	5767098.37	607924.28
2439	43.31	124.01	1925.37	-1897.46	-822.07	1055.90	5767097.99	607924.85
2440	43.31	123.95	1926.09	-1898.18	-822.45	1056.47	5767097.61	607925.42
2441	43.30	123.89	1926.82	-1898.91	-822.84	1057.04	5767097.22	607925.99
2442	43.30	123.84	1927.55	-1899.64	-823.22	1057.61	5767096.84	607926.56



MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2443	43.30	123.78	1928.28	-1900.37	-823.60	1058.18	5767096.46	607927.13
2444	43.30	123.73	1929.01	-1901.10	-823.98	1058.75	5767096.08	607927.70
2445	43.30	123.67	1929.73	-1901.82	-824.37	1059.32	5767095.69	607928.27
2446	43.30	123.62	1930.46	-1902.55	-824.75	1059.88	5767095.31	607928.84
2447	43.30	123.56	1931.19	-1903.28	-825.13	1060.45	5767094.93	607929.40
2448	43.30	123.50	1931.92	-1904.01	-825.51	1061.02	5767094.55	607929.97
2449	43.30	123.45	1932.64	-1904.73	-825.90	1061.59	5767094.16	607930.54
2450	43.30	123.39	1933.37	-1905.46	-826.28	1062.16	5767093.78	607931.11
2451	43.29	123.34	1934.10	-1906.19	-826.66	1062.73	5767093.40	607931.68
2452	43.29	123.28	1934.83	-1906.92	-827.05	1063.30	5767093.02	607932.25
2453	43.29	123.23	1935.55	-1907.64	-827.43	1063.87	5767092.63	607932.82
2454	43.29	123.17	1936.28	-1908.37	-827.81	1064.44	5767092.25	607933.39
2455	43.29	123.12	1937.01	-1909.10	-828.19	1065.01	5767091.87	607933.96
2456	43.30	123.06	1937.74	-1909.83	-828.56	1065.59	5767091.50	607934.54
2457	43.31	123.00	1938.46	-1910.55	-828.93	1066.17	5767091.13	607935.12
2458	43.32	122.95	1939.19	-1911.28	-829.29	1066.75	5767090.77	607935.70
2459	43.33	122.89	1939.91	-1912.00	-829.66	1067.33	5767090.40	607936.28
2460	43.34	122.83	1940.64	-1912.73	-830.03	1067.91	5767090.03	607936.87
2461	43.36	122.78	1941.37	-1913.46	-830.40	1068.50	5767089.66	607937.45
2462	43.37	122.72	1942.09	-1914.18	-830.76	1069.08	5767089.30	607938.03
2463	43.38	122.66	1942.82	-1914.91	-831.13	1069.66	5767088.93	607938.61
2464	43.39	122.61	1943.54	-1915.63	-831.50	1070.24	5767088.56	607939.19
2465	43.40	122.55	1944.27	-1916.36	-831.87	1070.82	5767088.20	607939.77
2466	43.41	122.49	1945.00	-1917.09	-832.23	1071.40	5767087.83	607940.35
2467	43.42	122.44	1945.72	-1917.81	-832.60	1071.98	5767087.46	607940.93
2468	43.43	122.38	1946.45	-1918.54	-832.97	1072.56	5767087.09	607941.52
2469	43.44	122.32	1947.17	-1919.26	-833.34	1073.15	5767086.73	607942.10
2470	43.45	122.27	1947.90	-1919.99	-833.70	1073.73	5767086.36	607942.68
2471	43.46	122.21	1948.63	-1920.72	-834.07	1074.31	5767085.99	607943.26
2472	43.47	122.15	1949.35	-1921.44	-834.44	1074.89	5767085.62	607943.84
2473	43.48	122.10	1950.08	-1922.17	-834.81	1075.47	5767085.26	607944.42
2474	43.49	122.04	1950.81	-1922.90	-835.17	1076.05	5767084.89	607945.00
2475	43.51	121.98	1951.53	-1923.62	-835.54	1076.63	5767084.52	607945.58
2476	43.52	121.93	1952.26	-1924.35	-835.91	1077.21	5767084.15	607946.17
2477	43.53	121.87	1952.98	-1925.07	-836.28	1077.79	5767083.79	607946.75
2478	43.54	121.81	1953.71	-1925.80	-836.64	1078.38	5767083.42	607947.33
2479	43.55	121.76	1954.44	-1926.53	-837.01	1078.96	5767083.05	607947.91
2480	43.56	121.70	1955.16	-1927.25	-837.38	1079.54	5767082.68	607948.49
2481	43.57	121.64	1955.89	-1927.98	-837.74	1080.12	5767082.32	607949.07
2482	43.58	121.59	1956.61	-1928.70	-838.11	1080.70	5767081.95	607949.65
2483	43.59	121.53	1957.34	-1929.43	-838.48	1081.28	5767081.58	607950.23
2484	43.60	121.48	1958.06	-1930.15	-838.85	1081.86	5767081.22	607950.82
2485	43.62	121.48	1958.79	-1930.88	-839.21	1082.46	5767080.85	607951.41
2486	43.64	121.49	1959.51	-1931.60	-839.57	1083.05	5767080.49	607952.00
2487	43.66	121.49	1960.23	-1932.32	-839.93	1083.64	5767080.13	607952.59
2488	43.68	121.49	1960.95	-1933.04	-840.30	1084.23	5767079.76	607953.18
2489	43.71	121.50	1961.67	-1933.76	-840.66	1084.82	5767079.40	607953.77
2490	43.73	121.50	1962.39	-1934.48	-841.02	1085.41	5767079.04	607954.36
2491	43.75	121.51	1963.11	-1935.20	-841.38	1086.00	5767078.68	607954.95
2492	43.77	121.51	1963.83	-1935.92	-841.75	1086.59	5767078.31	607955.54
2493	43.79	121.51	1964.55	-1936.64	-842.11	1087.18	5767077.95	607956.13
2494	43.81	121.52	1965.27	-1937.36	-842.47	1087.77	5767077.59	607956.73
2495	43.83	121.52	1965.99	-1938.08	-842.83	1088.36	5767077.23	607957.32
2496	43.85	121.52	1966.71	-1938.80	-843.20	1088.96	5767076.86	607957.91
2497	43.87	121.53	1967.43	-1939.52	-843.56	1089.55	5767076.50	607958.50
2498	43.89	121.53	1968.15	-1940.24	-843.92	1090.14	5767076.14	607959.09
2499	43.91	121.53	1968.88	-1940.97	-844.28	1090.73	5767075.78	607959.68
2500	43.93	121.54	1969.60	-1941.69	-844.65	1091.32	5767075.41	607960.27
2501	43.95	121.54	1970.32	-1942.41	-845.01	1091.91	5767075.05	607960.86
2502	43.97	121.54	1971.04	-1943.13	-845.37	1092.50	5767074.69	607961.45
2503	43.99	121.55	1971.76	-1943.85	-845.73	1093.09	5767074.33	607962.04
2504	44.01	121.55	1972.48	-1944.57	-846.10	1093.68	5767073.96	607962.63
2505	44.03	121.55	1973.20	-1945.29	-846.46	1094.27	5767073.60	607963.23
2506	44.05	121.56	1973.92	-1946.01	-846.82	1094.87	5767073.24	607963.82
2507	44.07	121.56	1974.64	-1946.73	-847.19	1095.46	5767072.88	607964.41
2508	44.09	121.57	1975.36	-1947.45	-847.55	1096.05	5767072.51	607965.00

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2509	44.11	121.57	1976.08	-1948.17	-847.91	1096.64	5767072.15	607965.59
2510	44.13	121.57	1976.80	-1948.89	-848.27	1097.23	5767071.79	607966.18
2511	44.15	121.58	1977.52	-1949.61	-848.64	1097.82	5767071.43	607966.77
2512	44.17	121.58	1978.24	-1950.33	-849.00	1098.41	5767071.06	607967.36
2513	44.20	121.57	1978.96	-1951.05	-849.36	1099.01	5767070.70	607967.96
2514	44.23	121.57	1979.67	-1951.76	-849.73	1099.61	5767070.33	607968.56
2515	44.25	121.56	1980.38	-1952.47	-850.10	1100.20	5767069.97	607969.16
2516	44.28	121.55	1981.10	-1953.19	-850.46	1100.80	5767069.60	607969.75
2517	44.30	121.55	1981.81	-1953.90	-850.83	1101.40	5767069.23	607970.35
2518	44.33	121.54	1982.52	-1954.61	-851.19	1102.00	5767068.87	607970.95
2519	44.35	121.53	1983.23	-1955.32	-851.56	1102.60	5767068.50	607971.55
2520	44.38	121.53	1983.95	-1956.04	-851.93	1103.20	5767068.13	607972.15
2521	44.41	121.52	1984.66	-1956.75	-852.29	1103.79	5767067.77	607972.74
2522	44.43	121.51	1985.37	-1957.46	-852.66	1104.39	5767067.40	607973.34
2523	44.46	121.50	1986.08	-1958.17	-853.03	1104.99	5767067.03	607973.94
2524	44.48	121.50	1986.80	-1958.89	-853.39	1105.59	5767066.67	607974.54
2525	44.51	121.49	1987.51	-1959.60	-853.76	1106.19	5767066.30	607975.14
2526	44.54	121.48	1988.22	-1960.31	-854.13	1106.78	5767065.94	607975.74
2527	44.56	121.48	1988.94	-1961.03	-854.49	1107.38	5767065.57	607976.33
2528	44.59	121.47	1989.65	-1961.74	-854.86	1107.98	5767065.20	607976.93
2529	44.61	121.46	1990.36	-1962.45	-855.22	1108.58	5767064.84	607977.53
2530	44.64	121.46	1991.07	-1963.16	-855.59	1109.18	5767064.47	607978.13
2531	44.67	121.45	1991.79	-1963.88	-855.96	1109.78	5767064.10	607978.73
2532	44.69	121.44	1992.50	-1964.59	-856.32	1110.37	5767063.74	607979.33
2533	44.72	121.43	1993.21	-1965.30	-856.69	1110.97	5767063.37	607979.92
2534	44.74	121.43	1993.92	-1966.01	-857.06	1111.57	5767063.01	607980.52
2535	44.77	121.42	1994.64	-1966.73	-857.42	1112.17	5767062.64	607981.12
2536	44.79	121.41	1995.35	-1967.44	-857.79	1112.77	5767062.27	607981.72
2537	44.82	121.41	1996.06	-1968.15	-858.16	1113.37	5767061.91	607982.32
2538	44.85	121.40	1996.77	-1968.86	-858.52	1113.96	5767061.54	607982.92
2539	44.87	121.39	1997.49	-1969.58	-858.89	1114.56	5767061.17	607983.51
2540	44.90	121.39	1998.20	-1970.29	-859.25	1115.16	5767060.81	607984.11
2541	44.91	121.38	1998.91	-1971.00	-859.62	1115.76	5767060.44	607984.71
2542	44.87	121.36	1999.63	-1971.72	-859.98	1116.36	5767060.08	607985.31
2543	44.84	121.35	2000.34	-1972.43	-860.34	1116.96	5767059.72	607985.91
2544	44.80	121.34	2001.06	-1973.15	-860.71	1117.55	5767059.36	607986.50
2545	44.76	121.32	2001.77	-1973.86	-861.07	1118.15	5767058.99	607987.10
2546	44.72	121.31	2002.49	-1974.58	-861.43	1118.75	5767058.63	607987.70
2547	44.68	121.29	2003.20	-1975.29	-861.79	1119.35	5767058.27	607988.30
2548	44.64	121.28	2003.92	-1976.01	-862.15	1119.95	5767057.91	607988.90
2549	44.60	121.27	2004.63	-1976.72	-862.52	1120.54	5767057.55	607989.50
2550	44.56	121.25	2005.35	-1977.44	-862.88	1121.14	5767057.18	607990.09
2551	44.52	121.24	2006.06	-1978.15	-863.24	1121.74	5767056.82	607990.69
2552	44.49	121.22	2006.78	-1978.87	-863.60	1122.34	5767056.46	607991.29
2553	44.45	121.21	2007.49	-1979.58	-863.96	1122.94	5767056.10	607991.89
2554	44.41	121.20	2008.21	-1980.30	-864.33	1123.54	5767055.74	607992.49
2555	44.37	121.18	2008.92	-1981.01	-864.69	1124.13	5767055.37	607993.08
2556	44.33	121.17	2009.64	-1981.73	-865.05	1124.73	5767055.01	607993.68
2557	44.29	121.15	2010.35	-1982.44	-865.41	1125.33	5767054.65	607994.28
2558	44.25	121.14	2011.07	-1983.16	-865.77	1125.93	5767054.29	607994.88
2559	44.21	121.13	2011.78	-1983.87	-866.14	1126.53	5767053.93	607995.48
2560	44.17	121.11	2012.50	-1984.59	-866.50	1127.12	5767053.56	607996.08
2561	44.14	121.10	2013.21	-1985.30	-866.86	1127.72	5767053.20	607996.67
2562	44.10	121.08	2013.93	-1986.02	-867.22	1128.32	5767052.84	607997.27
2563	44.06	121.07	2014.64	-1986.73	-867.58	1128.92	5767052.48	607997.87
2564	44.02	121.06	2015.36	-1987.45	-867.95	1129.52	5767052.12	607998.47
2565	43.98	121.04	2016.07	-1988.16	-868.31	1130.12	5767051.75	607999.07
2566	43.94	121.03	2016.78	-1988.87	-868.67	1130.71	5767051.39	607999.66
2567	43.90	121.01	2017.50	-1989.59	-869.03	1131.31	5767051.03	608000.26
2568	43.86	121.00	2018.21	-1990.30	-869.39	1131.91	5767050.67	608000.86
2569	43.82	120.99	2018.93	-1991.02	-869.76	1132.51	5767050.31	608001.46
2570	43.81	120.97	2019.65	-1991.74	-870.11	1133.10	5767049.95	608002.05
2571	43.80	120.96	2020.37	-1992.46	-870.47	1133.70	5767049.59	608002.65
2572	43.79	120.95	2021.10	-1993.19	-870.82	1134.29	5767049.24	608003.24
2573	43.78	120.94	2021.82	-1993.91	-871.18	1134.88	5767048.89	608003.83
2574	43.78	120.94	2022.54	-1994.63	-871.53	1135.48	5767048.53	608004.43

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2575	43.77	120.93	2023.26	-1995.35	-871.88	1136.07	5767048.18	608005.02
2576	43.76	120.92	2023.99	-1996.08	-872.24	1136.66	5767047.82	608005.61
2577	43.76	120.91	2024.71	-1996.80	-872.59	1137.26	5767047.47	608006.21
2578	43.75	120.90	2025.43	-1997.52	-872.95	1137.85	5767047.11	608006.80
2579	43.74	120.89	2026.16	-1998.25	-873.30	1138.44	5767046.76	608007.39
2580	43.74	120.88	2026.88	-1998.97	-873.66	1139.04	5767046.41	608007.99
2581	43.73	120.87	2027.60	-1999.69	-874.01	1139.63	5767046.05	608008.58
2582	43.72	120.86	2028.32	-2000.41	-874.36	1140.22	5767045.70	608009.17
2583	43.72	120.85	2029.05	-2001.14	-874.72	1140.82	5767045.34	608009.77
2584	43.71	120.84	2029.77	-2001.86	-875.07	1141.41	5767044.99	608010.36
2585	43.70	120.83	2030.49	-2002.58	-875.43	1142.00	5767044.63	608010.95
2586	43.69	120.82	2031.21	-2003.30	-875.78	1142.60	5767044.28	608011.55
2587	43.69	120.81	2031.94	-2004.03	-876.14	1143.19	5767043.93	608012.14
2588	43.68	120.80	2032.66	-2004.75	-876.49	1143.78	5767043.57	608012.73
2589	43.67	120.79	2033.38	-2005.47	-876.84	1144.38	5767043.22	608013.33
2590	43.67	120.78	2034.11	-2006.20	-877.20	1144.97	5767042.86	608013.92
2591	43.66	120.77	2034.83	-2006.92	-877.55	1145.56	5767042.51	608014.51
2592	43.65	120.76	2035.55	-2007.64	-877.91	1146.16	5767042.15	608015.11
2593	43.65	120.75	2036.27	-2008.36	-878.26	1146.75	5767041.80	608015.70
2594	43.64	120.74	2037.00	-2009.09	-878.62	1147.34	5767041.45	608016.29
2595	43.63	120.73	2037.72	-2009.81	-878.97	1147.94	5767041.09	608016.89
2596	43.63	120.72	2038.44	-2010.53	-879.32	1148.53	5767040.74	608017.48
2597	43.62	120.71	2039.17	-2011.26	-879.68	1149.12	5767040.38	608018.07
2598	43.61	120.70	2039.89	-2011.98	-880.03	1149.72	5767040.03	608018.67
2599	43.60	120.71	2040.61	-2012.70	-880.39	1150.31	5767039.68	608019.26
2600	43.59	120.72	2041.34	-2013.43	-880.74	1150.90	5767039.32	608019.85
2601	43.57	120.74	2042.07	-2014.16	-881.09	1151.49	5767038.97	608020.44
2602	43.56	120.75	2042.79	-2014.88	-881.44	1152.08	5767038.62	608021.03
2603	43.55	120.76	2043.52	-2015.61	-881.80	1152.67	5767038.26	608021.62
2604	43.54	120.77	2044.25	-2016.34	-882.15	1153.26	5767037.91	608022.21
2605	43.52	120.79	2044.97	-2017.06	-882.50	1153.85	5767037.56	608022.80
2606	43.51	120.80	2045.70	-2017.79	-882.86	1154.44	5767037.21	608023.39
2607	43.50	120.81	2046.42	-2018.51	-883.21	1155.03	5767036.85	608023.98
2608	43.48	120.83	2047.15	-2019.24	-883.56	1155.62	5767036.50	608024.57
2609	43.47	120.84	2047.88	-2019.97	-883.91	1156.21	5767036.15	608025.16
2610	43.46	120.85	2048.60	-2020.69	-884.27	1156.80	5767035.79	608025.75
2611	43.45	120.86	2049.33	-2021.42	-884.62	1157.39	5767035.44	608026.34
2612	43.43	120.88	2050.06	-2022.15	-884.97	1157.98	5767035.09	608026.93
2613	43.42	120.89	2050.78	-2022.87	-885.33	1158.57	5767034.74	608027.52
2614	43.41	120.90	2051.51	-2023.60	-885.68	1159.16	5767034.38	608028.11
2615	43.39	120.92	2052.24	-2024.33	-886.03	1159.75	5767034.03	608028.70
2616	43.38	120.93	2052.96	-2025.05	-886.38	1160.34	5767033.68	608029.29
2617	43.37	120.94	2053.69	-2025.78	-886.74	1160.93	5767033.32	608029.88
2618	43.36	120.95	2054.41	-2026.50	-887.09	1161.52	5767032.97	608030.47
2619	43.34	120.97	2055.14	-2027.23	-887.44	1162.11	5767032.62	608031.06
2620	43.33	120.98	2055.87	-2027.96	-887.80	1162.69	5767032.27	608031.65
2621	43.32	120.99	2056.59	-2028.68	-888.15	1163.28	5767031.91	608032.24
2622	43.30	121.01	2057.32	-2029.41	-888.50	1163.87	5767031.56	608032.83
2623	43.29	121.02	2058.05	-2030.14	-888.85	1164.46	5767031.21	608033.42
2624	43.28	121.03	2058.77	-2030.86	-889.21	1165.05	5767030.85	608034.01
2625	43.27	121.04	2059.50	-2031.59	-889.56	1165.64	5767030.50	608034.60
2626	43.25	121.06	2060.22	-2032.31	-889.91	1166.23	5767030.15	608035.19
2627	43.24	121.07	2060.95	-2033.04	-890.27	1166.82	5767029.80	608035.78
2628	43.24	121.11	2061.68	-2033.77	-890.62	1167.41	5767029.44	608036.36
2629	43.24	121.15	2062.41	-2034.50	-890.98	1167.99	5767029.08	608036.94
2630	43.24	121.19	2063.14	-2035.23	-891.34	1168.57	5767028.72	608037.53
2631	43.24	121.23	2063.86	-2035.95	-891.70	1169.16	5767028.36	608038.11
2632	43.24	121.27	2064.59	-2036.68	-892.06	1169.74	5767028.00	608038.69
2633	43.24	121.32	2065.32	-2037.41	-892.42	1170.32	5767027.64	608039.28
2634	43.24	121.36	2066.05	-2038.14	-892.78	1170.91	5767027.28	608039.86
2635	43.24	121.40	2066.78	-2038.87	-893.14	1171.49	5767026.92	608040.44
2636	43.24	121.44	2067.51	-2039.60	-893.50	1172.07	5767026.56	608041.02
2637	43.24	121.48	2068.23	-2040.32	-893.86	1172.66	5767026.20	608041.61
2638	43.24	121.52	2068.96	-2041.05	-894.22	1173.24	5767025.84	608042.19
2639	43.24	121.56	2069.69	-2041.78	-894.58	1173.82	5767025.48	608042.77
2640	43.24	121.60	2070.42	-2042.51	-894.94	1174.41	5767025.12	608043.36

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2641	43.24	121.64	2071.15	-2043.24	-895.30	1174.99	5767024.76	608043.94
2642	43.25	121.69	2071.88	-2043.97	-895.66	1175.57	5767024.40	608044.52
2643	43.25	121.73	2072.61	-2044.70	-896.02	1176.16	5767024.04	608045.11
2644	43.25	121.77	2073.33	-2045.42	-896.38	1176.74	5767023.68	608045.69
2645	43.25	121.81	2074.06	-2046.15	-896.74	1177.32	5767023.32	608046.27
2646	43.25	121.85	2074.79	-2046.88	-897.10	1177.90	5767022.96	608046.86
2647	43.25	121.89	2075.52	-2047.61	-897.46	1178.49	5767022.61	608047.44
2648	43.25	121.93	2076.25	-2048.34	-897.82	1179.07	5767022.25	608048.02
2649	43.25	121.97	2076.98	-2049.07	-898.17	1179.65	5767021.89	608048.61
2650	43.25	122.01	2077.70	-2049.79	-898.53	1180.24	5767021.53	608049.19
2651	43.25	122.05	2078.43	-2050.52	-898.89	1180.82	5767021.17	608049.77
2652	43.25	122.10	2079.16	-2051.25	-899.25	1181.40	5767020.81	608050.36
2653	43.25	122.14	2079.89	-2051.98	-899.61	1181.99	5767020.45	608050.94
2654	43.25	122.18	2080.62	-2052.71	-899.97	1182.57	5767020.09	608051.52
2655	43.25	122.22	2081.35	-2053.44	-900.33	1183.15	5767019.73	608052.10
2656	43.27	122.27	2082.07	-2054.16	-900.70	1183.74	5767019.36	608052.69
2657	43.32	122.34	2082.79	-2054.88	-901.08	1184.32	5767018.98	608053.27
2658	43.37	122.41	2083.51	-2055.60	-901.46	1184.90	5767018.60	608053.85
2659	43.42	122.48	2084.23	-2056.32	-901.84	1185.48	5767018.22	608054.43
2660	43.47	122.55	2084.95	-2057.04	-902.22	1186.06	5767017.84	608055.01
2661	43.52	122.62	2085.67	-2057.76	-902.60	1186.64	5767017.46	608055.59
2662	43.57	122.69	2086.39	-2058.48	-902.98	1187.22	5767017.08	608056.17
2663	43.62	122.76	2087.11	-2059.20	-903.36	1187.80	5767016.70	608056.75
2664	43.66	122.83	2087.83	-2059.92	-903.75	1188.38	5767016.32	608057.33
2665	43.71	122.90	2088.55	-2060.64	-904.13	1188.96	5767015.94	608057.91
2666	43.76	122.96	2089.27	-2061.36	-904.51	1189.54	5767015.56	608058.49
2667	43.81	123.03	2089.99	-2062.08	-904.89	1190.12	5767015.18	608059.07
2668	43.86	123.10	2090.71	-2062.80	-905.27	1190.70	5767014.79	608059.65
2669	43.91	123.17	2091.43	-2063.52	-905.65	1191.28	5767014.41	608060.23
2670	43.96	123.24	2092.15	-2064.24	-906.03	1191.86	5767014.03	608060.81
2671	44.01	123.31	2092.87	-2064.96	-906.41	1192.44	5767013.65	608061.39
2672	44.06	123.38	2093.59	-2065.68	-906.79	1193.02	5767013.27	608061.97
2673	44.10	123.45	2094.31	-2066.40	-907.17	1193.60	5767012.89	608062.55
2674	44.15	123.52	2095.03	-2067.12	-907.55	1194.18	5767012.51	608063.13
2675	44.20	123.59	2095.75	-2067.84	-907.93	1194.76	5767012.13	608063.71
2676	44.25	123.66	2096.47	-2068.56	-908.31	1195.34	5767011.75	608064.29
2677	44.30	123.72	2097.19	-2069.28	-908.69	1195.92	5767011.37	608064.87
2678	44.35	123.79	2097.91	-2070.00	-909.07	1196.50	5767010.99	608065.45
2679	44.40	123.86	2098.63	-2070.72	-909.45	1197.08	5767010.61	608066.04
2680	44.45	123.93	2099.35	-2071.44	-909.83	1197.66	5767010.23	608066.62
2681	44.50	124.00	2100.07	-2072.16	-910.21	1198.24	5767009.85	608067.20
2682	44.54	124.07	2100.79	-2072.88	-910.59	1198.83	5767009.47	608067.78
2683	44.59	124.14	2101.51	-2073.60	-910.97	1199.41	5767009.09	608068.36
2684	44.64	124.21	2102.23	-2074.32	-911.35	1199.99	5767008.71	608068.94
2685	44.59	124.26	2102.95	-2075.04	-911.75	1200.55	5767008.32	608069.51
2686	44.53	124.31	2103.68	-2075.77	-912.14	1201.12	5767007.92	608070.07
2687	44.46	124.36	2104.40	-2076.49	-912.54	1201.69	5767007.53	608070.64
2688	44.39	124.41	2105.12	-2077.21	-912.93	1202.25	5767007.13	608071.21
2689	44.33	124.45	2105.84	-2077.93	-913.33	1202.82	5767006.73	608071.77
2690	44.26	124.50	2106.57	-2078.66	-913.72	1203.39	5767006.34	608072.34
2691	44.19	124.55	2107.29	-2079.38	-914.12	1203.95	5767005.94	608072.90
2692	44.13	124.60	2108.01	-2080.10	-914.51	1204.52	5767005.55	608073.47
2693	44.06	124.65	2108.74	-2080.83	-914.91	1205.09	5767005.15	608074.04
2694	43.99	124.70	2109.46	-2081.55	-915.30	1205.65	5767004.76	608074.60
2695	43.92	124.75	2110.18	-2082.27	-915.70	1206.22	5767004.36	608075.17
2696	43.86	124.80	2110.91	-2083.00	-916.09	1206.78	5767003.97	608075.74
2697	43.79	124.84	2111.63	-2083.72	-916.49	1207.35	5767003.57	608076.30
2698	43.72	124.89	2112.35	-2084.44	-916.88	1207.92	5767003.18	608076.87
2699	43.66	124.94	2113.08	-2085.17	-917.28	1208.48	5767002.78	608077.44
2700	43.59	124.99	2113.80	-2085.89	-917.67	1209.05	5767002.39	608078.00
2701	43.52	125.04	2114.52	-2086.61	-918.07	1209.62	5767001.99	608078.57
2702	43.46	125.09	2115.25	-2087.34	-918.46	1210.18	5767001.60	608079.13
2703	43.39	125.14	2115.97	-2088.06	-918.86	1210.75	5767001.20	608079.70
2704	43.32	125.18	2116.69	-2088.78	-919.25	1211.32	5767000.81	608080.27
2705	43.25	125.23	2117.41	-2089.50	-919.65	1211.88	5767000.41	608080.83
2706	43.19	125.28	2118.14	-2090.23	-920.05	1212.45	5767000.02	608081.40

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2707	43.12	125.33	2118.86	-2090.95	-920.44	1213.01	5766999.62	608081.97
2708	43.05	125.38	2119.58	-2091.67	-920.84	1213.58	5766999.23	608082.53
2709	42.99	125.43	2120.31	-2092.40	-921.23	1214.15	5766998.83	608083.10
2710	42.92	125.48	2121.03	-2093.12	-921.63	1214.71	5766998.44	608083.67
2711	42.85	125.52	2121.75	-2093.84	-922.02	1215.28	5766998.04	608084.23
2712	42.79	125.57	2122.48	-2094.57	-922.42	1215.85	5766997.64	608084.80
2713	42.72	125.62	2123.20	-2095.29	-922.81	1216.41	5766997.25	608085.36
2714	42.74	125.60	2123.93	-2096.02	-923.21	1216.97	5766996.86	608085.92
2715	42.75	125.59	2124.66	-2096.75	-923.60	1217.52	5766996.46	608086.48
2716	42.77	125.57	2125.40	-2097.49	-924.00	1218.08	5766996.07	608087.03
2717	42.79	125.55	2126.13	-2098.22	-924.39	1218.63	5766995.67	608087.59
2718	42.80	125.54	2126.86	-2098.95	-924.78	1219.19	5766995.28	608088.14
2719	42.82	125.52	2127.59	-2099.68	-925.18	1219.75	5766994.88	608088.70
2720	42.84	125.50	2128.32	-2100.41	-925.57	1220.30	5766994.49	608089.25
2721	42.85	125.48	2129.06	-2101.15	-925.97	1220.86	5766994.09	608089.81
2722	42.87	125.47	2129.79	-2101.88	-926.36	1221.41	5766993.70	608090.36
2723	42.89	125.45	2130.52	-2102.61	-926.76	1221.97	5766993.30	608090.92
2724	42.90	125.43	2131.25	-2103.34	-927.15	1222.52	5766992.91	608091.48
2725	42.92	125.42	2131.98	-2104.07	-927.55	1223.08	5766992.52	608092.03
2726	42.93	125.40	2132.71	-2104.80	-927.94	1223.64	5766992.12	608092.59
2727	42.95	125.38	2133.45	-2105.54	-928.34	1224.19	5766991.73	608093.14
2728	42.97	125.37	2134.18	-2106.27	-928.73	1224.75	5766991.33	608093.70
2729	42.98	125.35	2134.91	-2107.00	-929.12	1225.30	5766990.94	608094.25
2730	43.00	125.33	2135.64	-2107.73	-929.52	1225.86	5766990.54	608094.81
2731	43.02	125.32	2136.37	-2108.46	-929.91	1226.41	5766990.15	608095.36
2732	43.03	125.30	2137.11	-2109.20	-930.31	1226.97	5766989.75	608095.92
2733	43.05	125.28	2137.84	-2109.93	-930.70	1227.52	5766989.36	608096.48
2734	43.07	125.27	2138.57	-2110.66	-931.10	1228.08	5766988.96	608097.03
2735	43.08	125.25	2139.30	-2111.39	-931.49	1228.64	5766988.57	608097.59
2736	43.10	125.23	2140.03	-2112.12	-931.89	1229.19	5766988.18	608098.14
2737	43.12	125.22	2140.77	-2112.86	-932.28	1229.75	5766987.78	608098.70
2738	43.13	125.20	2141.50	-2113.59	-932.68	1230.30	5766987.39	608099.25
2739	43.15	125.18	2142.23	-2114.32	-933.07	1230.86	5766986.99	608099.81
2740	43.17	125.16	2142.96	-2115.05	-933.46	1231.41	5766986.60	608100.37
2741	43.18	125.15	2143.69	-2115.78	-933.86	1231.97	5766986.20	608100.92
2742	43.20	125.12	2144.42	-2116.51	-934.25	1232.53	5766985.81	608101.48
2743	43.23	125.09	2145.15	-2117.24	-934.64	1233.10	5766985.42	608102.05
2744	43.26	125.06	2145.87	-2117.96	-935.04	1233.66	5766985.02	608102.62
2745	43.28	125.03	2146.59	-2118.68	-935.43	1234.23	5766984.63	608103.18
2746	43.31	125.00	2147.32	-2119.41	-935.82	1234.80	5766984.24	608103.75
2747	43.34	124.97	2148.04	-2120.13	-936.21	1235.36	5766983.85	608104.32
2748	43.36	124.94	2148.77	-2120.86	-936.61	1235.93	5766983.46	608104.88
2749	43.39	124.91	2149.49	-2121.58	-937.00	1236.50	5766983.06	608105.45
2750	43.42	124.88	2150.22	-2122.31	-937.39	1237.06	5766982.67	608106.02
2751	43.44	124.85	2150.94	-2123.03	-937.78	1237.63	5766982.28	608106.58
2752	43.47	124.82	2151.67	-2123.76	-938.18	1238.20	5766981.89	608107.15
2753	43.50	124.79	2152.39	-2124.48	-938.57	1238.76	5766981.49	608107.72
2754	43.52	124.76	2153.12	-2125.21	-938.96	1239.33	5766981.10	608108.28
2755	43.55	124.72	2153.84	-2125.93	-939.35	1239.90	5766980.71	608108.85
2756	43.58	124.69	2154.56	-2126.65	-939.74	1240.46	5766980.32	608109.42
2757	43.60	124.66	2155.29	-2127.38	-940.14	1241.03	5766979.92	608109.98
2758	43.63	124.63	2156.01	-2128.10	-940.53	1241.60	5766979.53	608110.55
2759	43.65	124.60	2156.74	-2128.83	-940.92	1242.16	5766979.14	608111.12
2760	43.68	124.57	2157.46	-2129.55	-941.31	1242.73	5766978.75	608111.68
2761	43.71	124.54	2158.19	-2130.28	-941.71	1243.30	5766978.36	608112.25
2762	43.73	124.51	2158.91	-2131.00	-942.10	1243.86	5766977.96	608112.82
2763	43.76	124.48	2159.64	-2131.73	-942.49	1244.43	5766977.57	608113.38
2764	43.79	124.45	2160.36	-2132.45	-942.88	1245.00	5766977.18	608113.95
2765	43.81	124.42	2161.09	-2133.18	-943.28	1245.56	5766976.79	608114.52
2766	43.84	124.39	2161.81	-2133.90	-943.67	1246.13	5766976.39	608115.08
2767	43.87	124.36	2162.53	-2134.62	-944.06	1246.70	5766976.00	608115.65
2768	43.89	124.33	2163.26	-2135.35	-944.45	1247.26	5766975.61	608116.22
2769	43.92	124.29	2163.98	-2136.07	-944.84	1247.83	5766975.22	608116.78
2770	43.95	124.26	2164.71	-2136.80	-945.24	1248.40	5766974.82	608117.35
2771	43.94	124.23	2165.43	-2137.52	-945.62	1248.97	5766974.44	608117.92
2772	43.93	124.20	2166.15	-2138.24	-946.01	1249.55	5766974.05	608118.50

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2773	43.91	124.17	2166.87	-2138.96	-946.39	1250.12	5766973.67	608119.07
2774	43.90	124.14	2167.60	-2139.69	-946.78	1250.70	5766973.28	608119.65
2775	43.89	124.11	2168.32	-2140.41	-947.16	1251.27	5766972.90	608120.22
2776	43.87	124.07	2169.04	-2141.13	-947.55	1251.84	5766972.51	608120.80
2777	43.86	124.04	2169.76	-2141.85	-947.93	1252.42	5766972.13	608121.37
2778	43.85	124.01	2170.49	-2142.58	-948.32	1252.99	5766971.74	608121.95
2779	43.84	123.98	2171.21	-2143.30	-948.70	1253.57	5766971.36	608122.52
2780	43.82	123.95	2171.93	-2144.02	-949.09	1254.14	5766970.98	608123.10
2781	43.81	123.91	2172.65	-2144.74	-949.47	1254.72	5766970.59	608123.67
2782	43.80	123.88	2173.37	-2145.46	-949.86	1255.29	5766970.21	608124.24
2783	43.78	123.85	2174.10	-2146.19	-950.24	1255.87	5766969.82	608124.82
2784	43.77	123.82	2174.82	-2146.91	-950.63	1256.44	5766969.44	608125.39
2785	43.76	123.79	2175.54	-2147.63	-951.01	1257.02	5766969.05	608125.97
2786	43.75	123.76	2176.26	-2148.35	-951.40	1257.59	5766968.67	608126.54
2787	43.73	123.72	2176.99	-2149.08	-951.78	1258.17	5766968.28	608127.12
2788	43.72	123.69	2177.71	-2149.80	-952.17	1258.74	5766967.90	608127.69
2789	43.71	123.66	2178.43	-2150.52	-952.55	1259.32	5766967.51	608128.27
2790	43.69	123.63	2179.15	-2151.24	-952.93	1259.89	5766967.13	608128.84
2791	43.68	123.60	2179.87	-2151.96	-953.32	1260.47	5766966.74	608129.42
2792	43.67	123.57	2180.60	-2152.69	-953.70	1261.04	5766966.36	608129.99
2793	43.65	123.53	2181.32	-2153.41	-954.09	1261.62	5766965.97	608130.57
2794	43.64	123.50	2182.04	-2154.13	-954.47	1262.19	5766965.59	608131.14
2795	43.63	123.47	2182.76	-2154.85	-954.86	1262.76	5766965.20	608131.72
2796	43.62	123.44	2183.49	-2155.58	-955.24	1263.34	5766964.82	608132.29
2797	43.60	123.41	2184.21	-2156.30	-955.63	1263.91	5766964.43	608132.87
2798	43.59	123.37	2184.93	-2157.02	-956.01	1264.49	5766964.05	608133.44
2799	43.58	123.34	2185.65	-2157.74	-956.40	1265.06	5766963.67	608134.02
2800	43.56	123.31	2186.38	-2158.47	-956.77	1265.64	5766963.29	608134.59
2801	43.54	123.28	2187.11	-2159.20	-957.14	1266.22	5766962.92	608135.17
2802	43.53	123.25	2187.83	-2159.92	-957.51	1266.79	5766962.55	608135.74
2803	43.51	123.21	2188.56	-2160.65	-957.89	1267.37	5766962.17	608136.32
2804	43.50	123.18	2189.29	-2161.38	-958.26	1267.95	5766961.80	608136.90
2805	43.48	123.15	2190.02	-2162.11	-958.63	1268.52	5766961.43	608137.47
2806	43.46	123.12	2190.74	-2162.83	-959.01	1269.10	5766961.06	608138.05
2807	43.45	123.09	2191.47	-2163.56	-959.38	1269.67	5766960.68	608138.63
2808	43.43	123.05	2192.20	-2164.29	-959.75	1270.25	5766960.31	608139.20
2809	43.42	123.02	2192.92	-2165.01	-960.12	1270.83	5766959.94	608139.78
2810	43.40	122.99	2193.65	-2165.74	-960.50	1271.40	5766959.56	608140.36
2811	43.38	122.96	2194.38	-2166.47	-960.87	1271.98	5766959.19	608140.93
2812	43.37	122.93	2195.11	-2167.20	-961.24	1272.56	5766958.82	608141.51
2813	43.35	122.89	2195.83	-2167.92	-961.61	1273.13	5766958.45	608142.08
2814	43.34	122.86	2196.56	-2168.65	-961.99	1273.71	5766958.07	608142.66
2815	43.32	122.83	2197.29	-2169.38	-962.36	1274.29	5766957.70	608143.24
2816	43.30	122.80	2198.01	-2170.10	-962.73	1274.86	5766957.33	608143.81
2817	43.29	122.77	2198.74	-2170.83	-963.11	1275.44	5766956.96	608144.39
2818	43.27	122.73	2199.47	-2171.56	-963.48	1276.02	5766956.58	608144.97
2819	43.26	122.70	2200.20	-2172.29	-963.85	1276.59	5766956.21	608145.54
2820	43.24	122.67	2200.92	-2173.01	-964.22	1277.17	5766955.84	608146.12
2821	43.22	122.64	2201.65	-2173.74	-964.60	1277.74	5766955.46	608146.70
2822	43.21	122.61	2202.38	-2174.47	-964.97	1278.32	5766955.09	608147.27
2823	43.19	122.57	2203.10	-2175.19	-965.34	1278.90	5766954.72	608147.85
2824	43.18	122.54	2203.83	-2175.92	-965.72	1279.47	5766954.35	608148.42
2825	43.16	122.51	2204.56	-2176.65	-966.09	1280.05	5766953.97	608149.00
2826	43.14	122.48	2205.29	-2177.38	-966.46	1280.63	5766953.60	608149.58
2827	43.13	122.45	2206.01	-2178.10	-966.83	1281.20	5766953.23	608150.15
2828	43.14	122.43	2206.74	-2178.83	-967.21	1281.78	5766952.86	608150.73
2829	43.20	122.43	2207.46	-2179.55	-967.58	1282.37	5766952.48	608151.32
2830	43.25	122.44	2208.18	-2180.27	-967.95	1282.95	5766952.11	608151.90
2831	43.30	122.44	2208.90	-2180.99	-968.32	1283.54	5766951.74	608152.49
2832	43.35	122.44	2209.62	-2181.71	-968.69	1284.12	5766951.37	608153.07
2833	43.40	122.44	2210.34	-2182.43	-969.07	1284.71	5766951.00	608153.66
2834	43.46	122.44	2211.06	-2183.15	-969.44	1285.29	5766950.62	608154.24
2835	43.51	122.45	2211.78	-2183.87	-969.81	1285.88	5766950.25	608154.83
2836	43.56	122.45	2212.51	-2184.60	-970.18	1286.46	5766949.88	608155.41
2837	43.61	122.45	2213.23	-2185.32	-970.55	1287.05	5766949.51	608156.00
2838	43.66	122.45	2213.95	-2186.04	-970.93	1287.63	5766949.14	608156.58

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2839	43.72	122.45	2214.67	-2186.76	-971.30	1288.21	5766948.76	608157.17
2840	43.77	122.46	2215.39	-2187.48	-971.67	1288.80	5766948.39	608157.75
2841	43.82	122.46	2216.11	-2188.20	-972.04	1289.38	5766948.02	608158.34
2842	43.87	122.46	2216.83	-2188.92	-972.41	1289.97	5766947.65	608158.92
2843	43.92	122.46	2217.55	-2189.64	-972.78	1290.55	5766947.28	608159.50
2844	43.98	122.46	2218.27	-2190.36	-973.16	1291.14	5766946.90	608160.09
2845	44.03	122.47	2218.99	-2191.08	-973.53	1291.72	5766946.53	608160.67
2846	44.08	122.47	2219.72	-2191.81	-973.90	1292.31	5766946.16	608161.26
2847	44.13	122.47	2220.44	-2192.53	-974.27	1292.89	5766945.79	608161.84
2848	44.18	122.47	2221.16	-2193.25	-974.64	1293.48	5766945.42	608162.43
2849	44.24	122.47	2221.88	-2193.97	-975.02	1294.06	5766945.05	608163.01
2850	44.29	122.48	2222.60	-2194.69	-975.39	1294.65	5766944.67	608163.60
2851	44.34	122.48	2223.32	-2195.41	-975.76	1295.23	5766944.30	608164.18
2852	44.39	122.48	2224.04	-2196.13	-976.13	1295.82	5766943.93	608164.77
2853	44.44	122.48	2224.76	-2196.85	-976.50	1296.40	5766943.56	608165.35
2854	44.50	122.49	2225.48	-2197.57	-976.88	1296.98	5766943.19	608165.94
2855	44.55	122.49	2226.20	-2198.29	-977.25	1297.57	5766942.81	608166.52
2856	44.60	122.49	2226.93	-2199.02	-977.62	1298.15	5766942.44	608167.11
2857	44.62	122.49	2227.64	-2199.73	-978.00	1298.75	5766942.06	608167.70
2858	44.64	122.49	2228.35	-2200.44	-978.38	1299.34	5766941.69	608168.29
2859	44.66	122.50	2229.05	-2201.14	-978.76	1299.94	5766941.31	608168.89
2860	44.68	122.50	2229.76	-2201.85	-979.13	1300.53	5766940.93	608169.48
2861	44.69	122.50	2230.47	-2202.56	-979.51	1301.13	5766940.55	608170.08
2862	44.71	122.50	2231.18	-2203.27	-979.89	1301.72	5766940.17	608170.67
2863	44.73	122.50	2231.89	-2203.98	-980.27	1302.32	5766939.79	608171.27
2864	44.74	122.51	2232.60	-2204.69	-980.65	1302.91	5766939.41	608171.86
2865	44.76	122.51	2233.31	-2205.40	-981.03	1303.50	5766939.03	608172.46
2866	44.78	122.51	2234.02	-2206.11	-981.41	1304.10	5766938.65	608173.05
2867	44.79	122.51	2234.73	-2206.82	-981.79	1304.69	5766938.27	608173.65
2868	44.81	122.51	2235.43	-2207.52	-982.17	1305.29	5766937.89	608174.24
2869	44.83	122.52	2236.14	-2208.23	-982.55	1305.88	5766937.51	608174.84
2870	44.85	122.52	2236.85	-2208.94	-982.93	1306.48	5766937.13	608175.43
2871	44.86	122.52	2237.56	-2209.65	-983.31	1307.07	5766936.76	608176.02
2872	44.88	122.52	2238.27	-2210.36	-983.69	1307.67	5766936.38	608176.62
2873	44.90	122.53	2238.98	-2211.07	-984.06	1308.26	5766936.00	608177.21
2874	44.91	122.53	2239.69	-2211.78	-984.44	1308.86	5766935.62	608177.81
2875	44.93	122.53	2240.40	-2212.49	-984.82	1309.45	5766935.24	608178.40
2876	44.95	122.53	2241.11	-2213.20	-985.20	1310.05	5766934.86	608179.00
2877	44.97	122.53	2241.81	-2213.90	-985.58	1310.64	5766934.48	608179.59
2878	44.98	122.54	2242.52	-2214.61	-985.96	1311.24	5766934.10	608180.19
2879	45.00	122.54	2243.23	-2215.32	-986.34	1311.83	5766933.72	608180.78
2880	45.02	122.54	2243.94	-2216.03	-986.72	1312.43	5766933.34	608181.38
2881	45.03	122.54	2244.65	-2216.74	-987.10	1313.02	5766932.96	608181.97
2882	45.05	122.54	2245.36	-2217.45	-987.48	1313.62	5766932.58	608182.57
2883	45.07	122.55	2246.07	-2218.16	-987.86	1314.21	5766932.21	608183.16
2884	45.09	122.55	2246.78	-2218.87	-988.24	1314.80	5766931.83	608183.76
2885	45.10	122.55	2247.48	-2219.57	-988.61	1315.40	5766931.45	608184.35
2886	45.09	122.56	2248.19	-2220.28	-989.00	1316.00	5766931.06	608184.95
2887	45.09	122.57	2248.90	-2220.99	-989.38	1316.59	5766930.68	608185.54
2888	45.08	122.58	2249.61	-2221.70	-989.76	1317.19	5766930.30	608186.14
2889	45.07	122.59	2250.31	-2222.40	-990.14	1317.78	5766929.92	608186.73
2890	45.07	122.60	2251.02	-2223.11	-990.52	1318.38	5766929.54	608187.33
2891	45.06	122.60	2251.73	-2223.82	-990.91	1318.97	5766929.16	608187.92
2892	45.05	122.61	2252.43	-2224.52	-991.29	1319.57	5766928.77	608188.52
2893	45.05	122.62	2253.14	-2225.23	-991.67	1320.16	5766928.39	608189.12
2894	45.04	122.63	2253.85	-2225.94	-992.05	1320.76	5766928.01	608189.71
2895	45.04	122.64	2254.55	-2226.64	-992.43	1321.36	5766927.63	608190.31
2896	45.03	122.65	2255.26	-2227.35	-992.81	1321.95	5766927.25	608190.90
2897	45.02	122.66	2255.97	-2228.06	-993.20	1322.55	5766926.87	608191.50
2898	45.02	122.67	2256.67	-2228.76	-993.58	1323.14	5766926.48	608192.09
2899	45.01	122.68	2257.38	-2229.47	-993.96	1323.74	5766926.10	608192.69
2900	45.00	122.68	2258.09	-2230.18	-994.34	1324.33	5766925.72	608193.29
2901	45.00	122.69	2258.79	-2230.88	-994.72	1324.93	5766925.34	608193.88
2902	44.99	122.70	2259.50	-2231.59	-995.10	1325.52	5766924.96	608194.48
2903	44.98	122.71	2260.21	-2232.30	-995.49	1326.12	5766924.58	608195.07
2904	44.98	122.72	2260.91	-2233.00	-995.87	1326.72	5766924.19	608195.67

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2905	44.97	122.73	2261.62	-2233.71	-996.25	1327.31	5766923.81	608196.26
2906	44.97	122.74	2262.33	-2234.42	-996.63	1327.91	5766923.43	608196.86
2907	44.96	122.75	2263.03	-2235.12	-997.01	1328.50	5766923.05	608197.45
2908	44.95	122.76	2263.74	-2235.83	-997.39	1329.10	5766922.67	608198.05
2909	44.94	122.77	2264.45	-2236.54	-997.78	1329.69	5766922.29	608198.64
2910	44.93	122.78	2265.16	-2237.25	-998.16	1330.28	5766921.90	608199.23
2911	44.91	122.79	2265.87	-2237.96	-998.54	1330.87	5766921.52	608199.82
2912	44.89	122.80	2266.58	-2238.67	-998.92	1331.46	5766921.14	608200.41
2913	44.88	122.81	2267.30	-2239.39	-999.31	1332.05	5766920.76	608201.00
2914	44.86	122.83	2268.01	-2240.10	-999.69	1332.64	5766920.37	608201.59
2915	44.84	122.84	2268.72	-2240.81	-1000.07	1333.23	5766919.99	608202.18
2916	44.83	122.85	2269.43	-2241.52	-1000.45	1333.82	5766919.61	608202.77
2917	44.81	122.86	2270.14	-2242.23	-1000.84	1334.41	5766919.23	608203.36
2918	44.79	122.87	2270.85	-2242.94	-1001.22	1335.00	5766918.84	608203.95
2919	44.78	122.88	2271.56	-2243.65	-1001.60	1335.59	5766918.46	608204.54
2920	44.76	122.90	2272.27	-2244.36	-1001.98	1336.18	5766918.08	608205.13
2921	44.74	122.91	2272.98	-2245.07	-1002.37	1336.77	5766917.70	608205.72
2922	44.73	122.92	2273.70	-2245.79	-1002.75	1337.36	5766917.31	608206.31
2923	44.71	122.93	2274.41	-2246.50	-1003.13	1337.95	5766916.93	608206.90
2924	44.69	122.94	2275.12	-2247.21	-1003.51	1338.54	5766916.55	608207.49
2925	44.68	122.96	2275.83	-2247.92	-1003.90	1339.13	5766916.17	608208.08
2926	44.66	122.97	2276.54	-2248.63	-1004.28	1339.72	5766915.78	608208.67
2927	44.64	122.98	2277.25	-2249.34	-1004.66	1340.31	5766915.40	608209.26
2928	44.63	122.99	2277.96	-2250.05	-1005.04	1340.90	5766915.02	608209.85
2929	44.61	123.00	2278.67	-2250.76	-1005.43	1341.49	5766914.64	608210.44
2930	44.59	123.02	2279.38	-2251.47	-1005.81	1342.08	5766914.25	608211.03
2931	44.58	123.03	2280.10	-2252.19	-1006.19	1342.67	5766913.87	608211.62
2932	44.56	123.04	2280.81	-2252.90	-1006.57	1343.26	5766913.49	608212.21
2933	44.54	123.05	2281.52	-2253.61	-1006.96	1343.85	5766913.11	608212.80
2934	44.53	123.06	2282.23	-2254.32	-1007.34	1344.44	5766912.72	608213.39
2935	44.51	123.07	2282.94	-2255.03	-1007.72	1345.03	5766912.34	608213.98
2936	44.49	123.09	2283.65	-2255.74	-1008.10	1345.62	5766911.96	608214.57
2937	44.48	123.10	2284.36	-2256.45	-1008.48	1346.21	5766911.58	608215.16
2938	44.46	123.11	2285.07	-2257.16	-1008.87	1346.80	5766911.19	608215.75
2939	44.44	123.12	2285.78	-2257.87	-1009.25	1347.39	5766910.81	608216.34
2940	44.43	123.13	2286.50	-2258.59	-1009.63	1347.98	5766910.43	608216.93
2941	44.41	123.15	2287.21	-2259.30	-1010.01	1348.57	5766910.05	608217.52
2942	44.39	123.16	2287.92	-2260.01	-1010.40	1349.16	5766909.66	608218.11
2943	44.37	123.17	2288.64	-2260.73	-1010.78	1349.74	5766909.28	608218.69
2944	44.34	123.19	2289.36	-2261.45	-1011.16	1350.32	5766908.90	608219.27
2945	44.32	123.21	2290.07	-2262.16	-1011.55	1350.90	5766908.52	608219.85
2946	44.29	123.23	2290.79	-2262.88	-1011.93	1351.48	5766908.13	608220.43
2947	44.26	123.24	2291.51	-2263.60	-1012.31	1352.06	5766907.75	608221.01
2948	44.24	123.26	2292.23	-2264.32	-1012.69	1352.64	5766907.37	608221.59
2949	44.21	123.28	2292.95	-2265.04	-1013.08	1353.22	5766906.99	608222.17
2950	44.19	123.30	2293.67	-2265.76	-1013.46	1353.80	5766906.60	608222.75
2951	44.16	123.31	2294.39	-2266.48	-1013.84	1354.38	5766906.22	608223.33
2952	44.13	123.33	2295.11	-2267.20	-1014.22	1354.96	5766905.84	608223.91
2953	44.11	123.35	2295.83	-2267.92	-1014.61	1355.54	5766905.46	608224.49
2954	44.08	123.37	2296.55	-2268.64	-1014.99	1356.12	5766905.07	608225.07
2955	44.06	123.38	2297.27	-2269.36	-1015.37	1356.70	5766904.69	608225.65
2956	44.03	123.40	2297.99	-2270.08	-1015.75	1357.28	5766904.31	608226.23
2957	44.00	123.42	2298.71	-2270.80	-1016.14	1357.86	5766903.93	608226.81
2958	43.98	123.44	2299.42	-2271.51	-1016.52	1358.44	5766903.54	608227.39
2959	43.95	123.45	2300.14	-2272.23	-1016.90	1359.02	5766903.16	608227.97
2960	43.93	123.47	2300.86	-2272.95	-1017.28	1359.60	5766902.78	608228.55
2961	43.90	123.49	2301.58	-2273.67	-1017.67	1360.18	5766902.39	608229.13
2962	43.87	123.51	2302.30	-2274.39	-1018.05	1360.76	5766902.01	608229.71
2963	43.85	123.52	2303.02	-2275.11	-1018.43	1361.34	5766901.63	608230.29
2964	43.82	123.54	2303.74	-2275.83	-1018.81	1361.92	5766901.25	608230.87
2965	43.80	123.56	2304.46	-2276.55	-1019.20	1362.50	5766900.86	608231.45
2966	43.77	123.58	2305.18	-2277.27	-1019.58	1363.08	5766900.48	608232.03
2967	43.74	123.59	2305.90	-2277.99	-1019.96	1363.66	5766900.10	608232.61
2968	43.72	123.61	2306.62	-2278.71	-1020.34	1364.24	5766899.72	608233.19
2969	43.69	123.63	2307.34	-2279.43	-1020.73	1364.82	5766899.33	608233.77
2970	43.67	123.65	2308.06	-2280.15	-1021.11	1365.40	5766898.95	608234.35



MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
2971	43.64	123.66	2308.77	-2280.86	-1021.49	1365.98	5766898.57	608234.93
2972	43.65	123.67	2309.49	-2281.58	-1021.88	1366.56	5766898.18	608235.51
2973	43.67	123.67	2310.21	-2282.30	-1022.26	1367.13	5766897.80	608236.09
2974	43.70	123.67	2310.93	-2283.02	-1022.65	1367.71	5766897.41	608236.66
2975	43.72	123.67	2311.65	-2283.74	-1023.03	1368.29	5766897.03	608237.24
2976	43.75	123.67	2312.37	-2284.46	-1023.42	1368.87	5766896.64	608237.82
2977	43.78	123.67	2313.09	-2285.18	-1023.80	1369.45	5766896.26	608238.40
2978	43.80	123.67	2313.81	-2285.90	-1024.19	1370.02	5766895.87	608238.98
2979	43.83	123.67	2314.53	-2286.62	-1024.57	1370.60	5766895.49	608239.55
2980	43.86	123.67	2315.25	-2287.34	-1024.96	1371.18	5766895.10	608240.13
2981	43.88	123.67	2315.97	-2288.06	-1025.34	1371.76	5766894.72	608240.71
2982	43.91	123.67	2316.69	-2288.78	-1025.73	1372.34	5766894.33	608241.29
2983	43.93	123.67	2317.41	-2289.50	-1026.11	1372.92	5766893.95	608241.87
2984	43.96	123.67	2318.12	-2290.21	-1026.50	1373.49	5766893.56	608242.45
2985	43.99	123.67	2318.84	-2290.93	-1026.88	1374.07	5766893.18	608243.02
2986	44.01	123.68	2319.56	-2291.65	-1027.27	1374.65	5766892.79	608243.60
2987	44.04	123.68	2320.28	-2292.37	-1027.66	1375.23	5766892.41	608244.18
2988	44.07	123.68	2321.00	-2293.09	-1028.04	1375.81	5766892.02	608244.76
2989	44.09	123.68	2321.72	-2293.81	-1028.43	1376.39	5766891.64	608245.34
2990	44.12	123.68	2322.44	-2294.53	-1028.81	1376.96	5766891.25	608245.91
2991	44.15	123.68	2323.16	-2295.25	-1029.20	1377.54	5766890.87	608246.49
2992	44.17	123.68	2323.88	-2295.97	-1029.58	1378.12	5766890.48	608247.07
2993	44.20	123.68	2324.60	-2296.69	-1029.97	1378.70	5766890.09	608247.65
2994	44.22	123.68	2325.32	-2297.41	-1030.35	1379.28	5766889.71	608248.23
2995	44.25	123.68	2326.04	-2298.13	-1030.74	1379.85	5766889.32	608248.81
2996	44.28	123.68	2326.75	-2298.84	-1031.12	1380.43	5766888.94	608249.38
2997	44.30	123.68	2327.47	-2299.56	-1031.51	1381.01	5766888.55	608249.96
2998	44.33	123.68	2328.19	-2300.28	-1031.89	1381.59	5766888.17	608250.54
2999	44.36	123.68	2328.91	-2301.00	-1032.28	1382.17	5766887.78	608251.12
3000	44.38	123.68	2329.63	-2301.72	-1032.66	1382.75	5766887.40	608251.70
3001	44.38	123.70	2330.35	-2302.44	-1033.05	1383.32	5766887.01	608252.27
3002	44.37	123.73	2331.06	-2303.15	-1033.44	1383.90	5766886.62	608252.85
3003	44.36	123.76	2331.78	-2303.87	-1033.83	1384.48	5766886.23	608253.43
3004	44.35	123.78	2332.50	-2304.59	-1034.23	1385.06	5766885.84	608254.01
3005	44.34	123.81	2333.21	-2305.30	-1034.62	1385.64	5766885.44	608254.59
3006	44.33	123.84	2333.93	-2306.02	-1035.01	1386.21	5766885.05	608255.16
3007	44.32	123.87	2334.65	-2306.74	-1035.40	1386.79	5766884.66	608255.74
3008	44.31	123.90	2335.36	-2307.45	-1035.79	1387.37	5766884.27	608256.32
3009	44.30	123.93	2336.08	-2308.17	-1036.18	1387.95	5766883.88	608256.90
3010	44.29	123.95	2336.80	-2308.89	-1036.57	1388.52	5766883.49	608257.48
3011	44.28	123.98	2337.51	-2309.60	-1036.96	1389.10	5766883.10	608258.05
3012	44.27	124.01	2338.23	-2310.32	-1037.35	1389.68	5766882.71	608258.63
3013	44.26	124.04	2338.94	-2311.03	-1037.74	1390.26	5766882.32	608259.21
3014	44.25	124.07	2339.66	-2311.75	-1038.14	1390.84	5766881.93	608259.79
3015	44.24	124.10	2340.38	-2312.47	-1038.53	1391.41	5766881.53	608260.37
3016	44.23	124.12	2341.09	-2313.18	-1038.92	1391.99	5766881.14	608260.94
3017	44.22	124.15	2341.81	-2313.90	-1039.31	1392.57	5766880.75	608261.52
3018	44.22	124.18	2342.53	-2314.62	-1039.70	1393.15	5766880.36	608262.10
3019	44.21	124.21	2343.24	-2315.33	-1040.09	1393.73	5766879.97	608262.68
3020	44.20	124.24	2343.96	-2316.05	-1040.48	1394.30	5766879.58	608263.26
3021	44.19	124.26	2344.68	-2316.77	-1040.87	1394.88	5766879.19	608263.83
3022	44.18	124.29	2345.39	-2317.48	-1041.26	1395.46	5766878.80	608264.41
3023	44.17	124.32	2346.11	-2318.20	-1041.65	1396.04	5766878.41	608264.99
3024	44.16	124.35	2346.82	-2318.91	-1042.05	1396.62	5766878.02	608265.57
3025	44.15	124.38	2347.54	-2319.63	-1042.44	1397.19	5766877.63	608266.15
3026	44.14	124.41	2348.26	-2320.35	-1042.83	1397.77	5766877.23	608266.72
3027	44.13	124.43	2348.97	-2321.06	-1043.22	1398.35	5766876.84	608267.30
3028	44.12	124.46	2349.69	-2321.78	-1043.61	1398.93	5766876.45	608267.88
3029	44.09	124.49	2350.41	-2322.50	-1044.00	1399.50	5766876.06	608268.45
3030	44.05	124.51	2351.14	-2323.23	-1044.39	1400.06	5766875.67	608269.02
3031	44.00	124.54	2351.86	-2323.95	-1044.79	1400.63	5766875.27	608269.58
3032	43.96	124.56	2352.59	-2324.68	-1045.18	1401.19	5766874.88	608270.15
3033	43.91	124.59	2353.31	-2325.40	-1045.57	1401.76	5766874.49	608270.71
3034	43.87	124.61	2354.04	-2326.13	-1045.97	1402.32	5766874.10	608271.27
3035	43.82	124.64	2354.77	-2326.86	-1046.36	1402.89	5766873.70	608271.84
3036	43.78	124.66	2355.49	-2327.58	-1046.75	1403.45	5766873.31	608272.40

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
3037	43.73	124.69	2356.22	-2328.31	-1047.14	1404.02	5766872.92	608272.97
3038	43.69	124.71	2356.94	-2329.03	-1047.54	1404.58	5766872.52	608273.53
3039	43.64	124.74	2357.67	-2329.76	-1047.93	1405.14	5766872.13	608274.10
3040	43.60	124.76	2358.39	-2330.48	-1048.32	1405.71	5766871.74	608274.66
3041	43.56	124.79	2359.12	-2331.21	-1048.72	1406.27	5766871.35	608275.23
3042	43.51	124.81	2359.85	-2331.94	-1049.11	1406.84	5766870.95	608275.79
3043	43.47	124.84	2360.57	-2332.66	-1049.50	1407.40	5766870.56	608276.35
3044	43.42	124.86	2361.30	-2333.39	-1049.89	1407.97	5766870.17	608276.92
3045	43.38	124.89	2362.02	-2334.11	-1050.29	1408.53	5766869.77	608277.48
3046	43.33	124.91	2362.75	-2334.84	-1050.68	1409.10	5766869.38	608278.05
3047	43.29	124.94	2363.48	-2335.57	-1051.07	1409.66	5766868.99	608278.61
3048	43.24	124.96	2364.20	-2336.29	-1051.47	1410.22	5766868.60	608279.18
3049	43.20	124.99	2364.93	-2337.02	-1051.86	1410.79	5766868.20	608279.74
3050	43.15	125.01	2365.65	-2337.74	-1052.25	1411.35	5766867.81	608280.30
3051	43.11	125.04	2366.38	-2338.47	-1052.64	1411.92	5766867.42	608280.87
3052	43.06	125.06	2367.11	-2339.20	-1053.04	1412.48	5766867.02	608281.43
3053	43.02	125.08	2367.83	-2339.92	-1053.43	1413.05	5766866.63	608282.00
3054	42.97	125.11	2368.56	-2340.65	-1053.82	1413.61	5766866.24	608282.56
3055	42.93	125.13	2369.28	-2341.37	-1054.22	1414.18	5766865.85	608283.13
3056	42.88	125.16	2370.01	-2342.10	-1054.61	1414.74	5766865.45	608283.69
3057	42.84	125.18	2370.74	-2342.83	-1055.00	1415.30	5766865.06	608284.26
3058	42.79	125.21	2371.46	-2343.55	-1055.39	1415.87	5766864.67	608284.82
3059	42.79	125.19	2372.20	-2344.29	-1055.78	1416.43	5766864.28	608285.38
3060	42.79	125.17	2372.93	-2345.02	-1056.17	1416.98	5766863.89	608285.93
3061	42.79	125.15	2373.66	-2345.75	-1056.56	1417.54	5766863.50	608286.49
3062	42.78	125.14	2374.40	-2346.49	-1056.95	1418.10	5766863.11	608287.05
3063	42.78	125.12	2375.13	-2347.22	-1057.34	1418.65	5766862.72	608287.60
3064	42.78	125.10	2375.87	-2347.96	-1057.73	1419.21	5766862.33	608288.16
3065	42.78	125.08	2376.60	-2348.69	-1058.12	1419.77	5766861.94	608288.72
3066	42.78	125.06	2377.33	-2349.42	-1058.51	1420.32	5766861.55	608289.27
3067	42.78	125.04	2378.07	-2350.16	-1058.90	1420.88	5766861.17	608289.83
3068	42.78	125.02	2378.80	-2350.89	-1059.28	1421.43	5766860.78	608290.39
3069	42.77	125.00	2379.54	-2351.63	-1059.67	1421.99	5766860.39	608290.94
3070	42.77	124.99	2380.27	-2352.36	-1060.06	1422.55	5766860.00	608291.50
3071	42.77	124.97	2381.00	-2353.09	-1060.45	1423.10	5766859.61	608292.06
3072	42.77	124.95	2381.74	-2353.83	-1060.84	1423.66	5766859.22	608292.61
3073	42.77	124.93	2382.47	-2354.56	-1061.23	1424.22	5766858.83	608293.17
3074	42.77	124.91	2383.21	-2355.30	-1061.62	1424.77	5766858.44	608293.73
3075	42.77	124.89	2383.94	-2356.03	-1062.01	1425.33	5766858.05	608294.28
3076	42.76	124.87	2384.67	-2356.76	-1062.40	1425.89	5766857.66	608294.84
3077	42.76	124.85	2385.41	-2357.50	-1062.79	1426.44	5766857.28	608295.40
3078	42.76	124.83	2386.14	-2358.23	-1063.17	1427.00	5766856.89	608295.95
3079	42.76	124.82	2386.88	-2358.97	-1063.56	1427.56	5766856.50	608296.51
3080	42.76	124.80	2387.61	-2359.70	-1063.95	1428.11	5766856.11	608297.07
3081	42.76	124.78	2388.35	-2360.44	-1064.34	1428.67	5766855.72	608297.62
3082	42.76	124.76	2389.08	-2361.17	-1064.73	1429.23	5766855.33	608298.18
3083	42.75	124.74	2389.81	-2361.90	-1065.12	1429.78	5766854.94	608298.74
3084	42.75	124.72	2390.55	-2362.64	-1065.51	1430.34	5766854.55	608299.29
3085	42.75	124.70	2391.28	-2363.37	-1065.90	1430.90	5766854.16	608299.85
3086	42.75	124.68	2392.02	-2364.11	-1066.29	1431.45	5766853.78	608300.41
3087	42.77	124.67	2392.75	-2364.84	-1066.67	1432.02	5766853.39	608300.97
3088	42.78	124.65	2393.48	-2365.57	-1067.06	1432.58	5766853.01	608301.53
3089	42.79	124.63	2394.21	-2366.30	-1067.44	1433.14	5766852.62	608302.09
3090	42.80	124.61	2394.94	-2367.03	-1067.83	1433.70	5766852.24	608302.65
3091	42.81	124.59	2395.68	-2367.77	-1068.21	1434.26	5766851.85	608303.21
3092	42.82	124.58	2396.41	-2368.50	-1068.60	1434.82	5766851.47	608303.78
3093	42.83	124.56	2397.14	-2369.23	-1068.98	1435.39	5766851.08	608304.34
3094	42.85	124.54	2397.87	-2369.96	-1069.37	1435.95	5766850.70	608304.90
3095	42.86	124.52	2398.61	-2370.70	-1069.75	1436.51	5766850.31	608305.46
3096	42.87	124.50	2399.34	-2371.43	-1070.14	1437.07	5766849.93	608306.02
3097	42.88	124.49	2400.07	-2372.16	-1070.52	1437.63	5766849.54	608306.58
3098	42.89	124.47	2400.80	-2372.89	-1070.91	1438.19	5766849.16	608307.15
3099	42.90	124.45	2401.54	-2373.63	-1071.29	1438.76	5766848.77	608307.71
3100	42.91	124.43	2402.27	-2374.36	-1071.68	1439.32	5766848.39	608308.27
3101	42.93	124.41	2403.00	-2375.09	-1072.06	1439.88	5766848.00	608308.83
3102	42.94	124.40	2403.73	-2375.82	-1072.45	1440.44	5766847.62	608309.39

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
3103	42.95	124.38	2404.47	-2376.56	-1072.83	1441.00	5766847.23	608309.95
3104	42.96	124.36	2405.20	-2377.29	-1073.22	1441.56	5766846.85	608310.52
3105	42.97	124.34	2405.93	-2378.02	-1073.60	1442.13	5766846.46	608311.08
3106	42.98	124.32	2406.66	-2378.75	-1073.99	1442.69	5766846.08	608311.64
3107	42.99	124.30	2407.40	-2379.49	-1074.37	1443.25	5766845.69	608312.20
3108	43.01	124.29	2408.13	-2380.22	-1074.76	1443.81	5766845.31	608312.76
3109	43.02	124.27	2408.86	-2380.95	-1075.14	1444.37	5766844.92	608313.32
3110	43.03	124.25	2409.59	-2381.68	-1075.53	1444.93	5766844.54	608313.89
3111	43.04	124.23	2410.32	-2382.41	-1075.91	1445.50	5766844.15	608314.45
3112	43.05	124.21	2411.06	-2383.15	-1076.30	1446.06	5766843.77	608315.01
3113	43.06	124.20	2411.79	-2383.88	-1076.68	1446.62	5766843.38	608315.57
3114	43.07	124.18	2412.52	-2384.61	-1077.07	1447.18	5766843.00	608316.13
3115	43.08	124.17	2413.25	-2385.34	-1077.45	1447.75	5766842.61	608316.70
3116	43.09	124.16	2413.98	-2386.07	-1077.83	1448.31	5766842.23	608317.26
3117	43.10	124.16	2414.71	-2386.80	-1078.22	1448.88	5766841.84	608317.83
3118	43.10	124.16	2415.44	-2387.53	-1078.60	1449.44	5766841.46	608318.40
3119	43.11	124.15	2416.17	-2388.26	-1078.98	1450.01	5766841.08	608318.96
3120	43.12	124.15	2416.90	-2388.99	-1079.37	1450.58	5766840.69	608319.53
3121	43.12	124.15	2417.63	-2389.72	-1079.75	1451.14	5766840.31	608320.10
3122	43.13	124.14	2418.36	-2390.45	-1080.14	1451.71	5766839.93	608320.66
3123	43.14	124.14	2419.09	-2391.18	-1080.52	1452.28	5766839.54	608321.23
3124	43.14	124.14	2419.82	-2391.91	-1080.90	1452.84	5766839.16	608321.79
3125	43.15	124.13	2420.55	-2392.64	-1081.29	1453.41	5766838.77	608322.36
3126	43.16	124.13	2421.27	-2393.36	-1081.67	1453.98	5766838.39	608322.93
3127	43.16	124.13	2422.00	-2394.09	-1082.05	1454.54	5766838.01	608323.49
3128	43.17	124.12	2422.73	-2394.82	-1082.44	1455.11	5766837.62	608324.06
3129	43.18	124.12	2423.46	-2395.55	-1082.82	1455.68	5766837.24	608324.63
3130	43.18	124.12	2424.19	-2396.28	-1083.21	1456.24	5766836.86	608325.19
3131	43.19	124.11	2424.92	-2397.01	-1083.59	1456.81	5766836.47	608325.76
3132	43.20	124.11	2425.65	-2397.74	-1083.97	1457.37	5766836.09	608326.33
3133	43.20	124.11	2426.38	-2398.47	-1084.36	1457.94	5766835.70	608326.89
3134	43.21	124.10	2427.11	-2399.20	-1084.74	1458.51	5766835.32	608327.46
3135	43.22	124.10	2427.84	-2399.93	-1085.13	1459.07	5766834.94	608328.03
3136	43.22	124.09	2428.57	-2400.66	-1085.51	1459.64	5766834.55	608328.59
3137	43.23	124.09	2429.30	-2401.39	-1085.89	1460.21	5766834.17	608329.16
3138	43.24	124.09	2430.03	-2402.12	-1086.28	1460.77	5766833.78	608329.72
3139	43.24	124.08	2430.75	-2402.84	-1086.66	1461.34	5766833.40	608330.29
3140	43.25	124.08	2431.48	-2403.57	-1087.04	1461.91	5766833.02	608330.86
3141	43.26	124.08	2432.21	-2404.30	-1087.43	1462.47	5766832.63	608331.42
3142	43.26	124.07	2432.94	-2405.03	-1087.81	1463.04	5766832.25	608331.99
3143	43.27	124.07	2433.67	-2405.76	-1088.20	1463.61	5766831.87	608332.56
3144	43.29	124.06	2434.40	-2406.49	-1088.58	1464.18	5766831.48	608333.13
3145	43.30	124.05	2435.12	-2407.21	-1088.96	1464.75	5766831.10	608333.70
3146	43.32	124.03	2435.85	-2407.94	-1089.35	1465.32	5766830.71	608334.27
3147	43.34	124.02	2436.57	-2408.66	-1089.73	1465.89	5766830.33	608334.84
3148	43.36	124.01	2437.30	-2409.39	-1090.12	1466.46	5766829.95	608335.42
3149	43.38	124.00	2438.02	-2410.11	-1090.50	1467.04	5766829.56	608335.99
3150	43.40	123.98	2438.75	-2410.84	-1090.88	1467.61	5766829.18	608336.56
3151	43.42	123.97	2439.47	-2411.56	-1091.27	1468.18	5766828.79	608337.13
3152	43.44	123.96	2440.20	-2412.29	-1091.65	1468.75	5766828.41	608337.70
3153	43.46	123.95	2440.92	-2413.01	-1092.04	1469.32	5766828.02	608338.27
3154	43.47	123.93	2441.65	-2413.74	-1092.42	1469.89	5766827.64	608338.85
3155	43.49	123.92	2442.37	-2414.46	-1092.81	1470.47	5766827.26	608339.42
3156	43.51	123.91	2443.10	-2415.19	-1093.19	1471.04	5766826.87	608339.99
3157	43.53	123.90	2443.82	-2415.91	-1093.57	1471.61	5766826.49	608340.56
3158	43.55	123.88	2444.55	-2416.64	-1093.96	1472.18	5766826.10	608341.13
3159	43.57	123.87	2445.27	-2417.36	-1094.34	1472.75	5766825.72	608341.71
3160	43.59	123.86	2446.00	-2418.09	-1094.73	1473.33	5766825.34	608342.28
3161	43.61	123.85	2446.72	-2418.81	-1095.11	1473.90	5766824.95	608342.85
3162	43.63	123.83	2447.45	-2419.54	-1095.49	1474.47	5766824.57	608343.42
3163	43.64	123.82	2448.17	-2420.26	-1095.88	1475.04	5766824.18	608343.99
3164	43.66	123.81	2448.90	-2420.99	-1096.26	1475.61	5766823.80	608344.56
3165	43.68	123.79	2449.62	-2421.71	-1096.65	1476.19	5766823.42	608345.14
3166	43.70	123.78	2450.34	-2422.43	-1097.03	1476.76	5766823.03	608345.71
3167	43.72	123.77	2451.07	-2423.16	-1097.41	1477.33	5766822.65	608346.28
3168	43.74	123.76	2451.79	-2423.88	-1097.80	1477.90	5766822.26	608346.85

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
3169	43.76	123.74	2452.52	-2424.61	-1098.18	1478.47	5766821.88	608347.42
3170	43.78	123.73	2453.24	-2425.33	-1098.57	1479.04	5766821.49	608348.00
3171	43.80	123.72	2453.97	-2426.06	-1098.95	1479.62	5766821.11	608348.57
3172	43.82	123.71	2454.69	-2426.78	-1099.34	1480.19	5766820.73	608349.14
3173	43.84	123.71	2455.41	-2427.50	-1099.72	1480.77	5766820.34	608349.72
3174	43.86	123.71	2456.13	-2428.22	-1100.11	1481.35	5766819.95	608350.30
3175	43.88	123.71	2456.85	-2428.94	-1100.49	1481.93	5766819.57	608350.88
3176	43.90	123.71	2457.56	-2429.65	-1100.88	1482.51	5766819.18	608351.46
3177	43.92	123.70	2458.28	-2430.37	-1101.27	1483.09	5766818.80	608352.04
3178	43.94	123.70	2459.00	-2431.09	-1101.65	1483.66	5766818.41	608352.62
3179	43.96	123.70	2459.72	-2431.81	-1102.04	1484.24	5766818.02	608353.20
3180	43.98	123.70	2460.44	-2432.53	-1102.42	1484.82	5766817.64	608353.77
3181	44.00	123.70	2461.15	-2433.24	-1102.81	1485.40	5766817.25	608354.35
3182	44.02	123.70	2461.87	-2433.96	-1103.20	1485.98	5766816.86	608354.93
3183	44.04	123.70	2462.59	-2434.68	-1103.58	1486.56	5766816.48	608355.51
3184	44.06	123.70	2463.31	-2435.40	-1103.97	1487.14	5766816.09	608356.09
3185	44.09	123.70	2464.03	-2436.12	-1104.35	1487.72	5766815.71	608356.67
3186	44.11	123.70	2464.74	-2436.83	-1104.74	1488.30	5766815.32	608357.25
3187	44.13	123.69	2465.46	-2437.55	-1105.13	1488.88	5766814.93	608357.83
3188	44.15	123.69	2466.18	-2438.27	-1105.51	1489.46	5766814.55	608358.41
3189	44.17	123.69	2466.90	-2438.99	-1105.90	1490.03	5766814.16	608358.99
3190	44.19	123.69	2467.62	-2439.71	-1106.29	1490.61	5766813.78	608359.57
3191	44.21	123.69	2468.33	-2440.42	-1106.67	1491.19	5766813.39	608360.14
3192	44.23	123.69	2469.05	-2441.14	-1107.06	1491.77	5766813.00	608360.72
3193	44.25	123.69	2469.77	-2441.86	-1107.44	1492.35	5766812.62	608361.30
3194	44.27	123.69	2470.49	-2442.58	-1107.83	1492.93	5766812.23	608361.88
3195	44.29	123.69	2471.21	-2443.30	-1108.22	1493.51	5766811.85	608362.46
3196	44.31	123.68	2471.93	-2444.02	-1108.60	1494.09	5766811.46	608363.04
3197	44.34	123.68	2472.64	-2444.73	-1108.99	1494.67	5766811.07	608363.62
3198	44.36	123.68	2473.36	-2445.45	-1109.37	1495.25	5766810.69	608364.20
3199	44.38	123.68	2474.08	-2446.17	-1109.76	1495.83	5766810.30	608364.78
3200	44.40	123.68	2474.80	-2446.89	-1110.15	1496.41	5766809.91	608365.36
3201	44.36	123.72	2475.52	-2447.61	-1110.53	1496.97	5766809.53	608365.93
3202	44.23	123.82	2476.26	-2448.35	-1110.92	1497.53	5766809.14	608366.48
3203	44.10	123.91	2477.00	-2449.09	-1111.31	1498.08	5766808.75	608367.03
3204	43.97	124.01	2477.73	-2449.82	-1111.70	1498.64	5766808.36	608367.59
3205	43.84	124.11	2478.47	-2450.56	-1112.09	1499.19	5766807.98	608368.14
3206	43.72	124.20	2479.20	-2451.29	-1112.47	1499.74	5766807.59	608368.70
3207	43.59	124.30	2479.94	-2452.03	-1112.86	1500.30	5766807.20	608369.25
3208	43.46	124.40	2480.68	-2452.77	-1113.25	1500.85	5766806.81	608369.80
3209	43.33	124.49	2481.41	-2453.50	-1113.64	1501.41	5766806.42	608370.36
3210	43.20	124.59	2482.15	-2454.24	-1114.03	1501.96	5766806.04	608370.91
3211	43.07	124.68	2482.89	-2454.98	-1114.41	1502.51	5766805.65	608371.47
3212	42.94	124.78	2483.62	-2455.71	-1114.80	1503.07	5766805.26	608372.02
3213	42.82	124.88	2484.36	-2456.45	-1115.19	1503.62	5766804.87	608372.57
3214	42.69	124.97	2485.09	-2457.18	-1115.58	1504.18	5766804.48	608373.13
3215	42.56	125.07	2485.83	-2457.92	-1115.97	1504.73	5766804.10	608373.68
3216	42.43	125.17	2486.57	-2458.66	-1116.35	1505.28	5766803.71	608374.24
3217	42.30	125.26	2487.30	-2459.39	-1116.74	1505.84	5766803.32	608374.79
3218	42.17	125.36	2488.04	-2460.13	-1117.13	1506.39	5766802.93	608375.34
3219	42.04	125.46	2488.78	-2460.87	-1117.52	1506.95	5766802.54	608375.90
3220	41.92	125.55	2489.51	-2461.60	-1117.91	1507.50	5766802.15	608376.45
3221	41.79	125.65	2490.25	-2462.34	-1118.29	1508.05	5766801.77	608377.01
3222	41.66	125.75	2490.98	-2463.07	-1118.68	1508.61	5766801.38	608377.56
3223	41.53	125.84	2491.72	-2463.81	-1119.07	1509.16	5766800.99	608378.11
3224	41.40	125.94	2492.46	-2464.55	-1119.46	1509.72	5766800.60	608378.67
3225	41.27	126.04	2493.19	-2465.28	-1119.85	1510.27	5766800.21	608379.22
3226	41.14	126.13	2493.93	-2466.02	-1120.23	1510.82	5766799.83	608379.78
3227	41.01	126.23	2494.67	-2466.76	-1120.62	1511.38	5766799.44	608380.33
3228	40.89	126.33	2495.40	-2467.49	-1121.01	1511.93	5766799.05	608380.88
3229	40.76	126.42	2496.14	-2468.23	-1121.40	1512.49	5766798.66	608381.44
3230	40.69	126.46	2496.90	-2468.99	-1121.78	1513.00	5766798.28	608381.95
3231	40.63	126.49	2497.67	-2469.76	-1122.17	1513.51	5766797.89	608382.47
3232	40.57	126.52	2498.44	-2470.53	-1122.55	1514.03	5766797.51	608382.98
3233	40.51	126.54	2499.21	-2471.30	-1122.94	1514.54	5766797.12	608383.49
3234	40.45	126.57	2499.97	-2472.06	-1123.32	1515.05	5766796.74	608384.01

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
3235	40.39	126.60	2500.74	-2472.83	-1123.71	1515.57	5766796.36	608384.52
3236	40.33	126.63	2501.51	-2473.60	-1124.09	1516.08	5766795.97	608385.03
3237	40.27	126.66	2502.28	-2474.37	-1124.47	1516.59	5766795.59	608385.54
3238	40.21	126.69	2503.04	-2475.13	-1124.86	1517.11	5766795.20	608386.06
3239	40.15	126.72	2503.81	-2475.90	-1125.24	1517.62	5766794.82	608386.57
3240	40.09	126.75	2504.58	-2476.67	-1125.63	1518.13	5766794.43	608387.08
3241	40.03	126.78	2505.34	-2477.43	-1126.01	1518.65	5766794.05	608387.60
3242	39.97	126.81	2506.11	-2478.20	-1126.40	1519.16	5766793.67	608388.11
3243	39.91	126.84	2506.88	-2478.97	-1126.78	1519.67	5766793.28	608388.62
3244	39.84	126.86	2507.65	-2479.74	-1127.17	1520.18	5766792.90	608389.14
3245	39.78	126.89	2508.41	-2480.50	-1127.55	1520.70	5766792.51	608389.65
3246	39.72	126.92	2509.18	-2481.27	-1127.93	1521.21	5766792.13	608390.16
3247	39.66	126.95	2509.95	-2482.04	-1128.32	1521.72	5766791.74	608390.67
3248	39.60	126.98	2510.72	-2482.81	-1128.70	1522.24	5766791.36	608391.19
3249	39.54	127.01	2511.48	-2483.57	-1129.09	1522.75	5766790.97	608391.70
3250	39.48	127.04	2512.25	-2484.34	-1129.47	1523.26	5766790.59	608392.21
3251	39.42	127.07	2513.02	-2485.11	-1129.86	1523.78	5766790.21	608392.73
3252	39.36	127.10	2513.79	-2485.88	-1130.24	1524.29	5766789.82	608393.24
3253	39.30	127.13	2514.55	-2486.64	-1130.62	1524.80	5766789.44	608393.75
3254	39.24	127.16	2515.32	-2487.41	-1131.01	1525.31	5766789.05	608394.27
3255	39.18	127.18	2516.09	-2488.18	-1131.39	1525.83	5766788.67	608394.78
3256	39.12	127.21	2516.86	-2488.95	-1131.78	1526.34	5766788.28	608395.29
3257	39.06	127.24	2517.62	-2489.71	-1132.16	1526.85	5766787.90	608395.81
3258	38.99	127.28	2518.39	-2490.48	-1132.55	1527.36	5766787.52	608396.32
3259	38.90	127.36	2519.18	-2491.27	-1132.93	1527.84	5766787.14	608396.79
3260	38.80	127.45	2519.98	-2492.07	-1133.31	1528.32	5766786.76	608397.27
3261	38.70	127.53	2520.77	-2492.86	-1133.68	1528.80	5766786.38	608397.75
3262	38.60	127.62	2521.56	-2493.65	-1134.06	1529.28	5766786.00	608398.23
3263	38.51	127.70	2522.35	-2494.44	-1134.44	1529.75	5766785.62	608398.70
3264	38.41	127.79	2523.15	-2495.24	-1134.82	1530.23	5766785.24	608399.18
3265	38.31	127.88	2523.94	-2496.03	-1135.20	1530.71	5766784.86	608399.66
3266	38.21	127.96	2524.73	-2496.82	-1135.58	1531.19	5766784.48	608400.14
3267	38.11	128.05	2525.52	-2497.61	-1135.96	1531.66	5766784.10	608400.61
3268	38.02	128.13	2526.32	-2498.41	-1136.34	1532.14	5766783.72	608401.09
3269	37.92	128.22	2527.11	-2499.20	-1136.72	1532.62	5766783.34	608401.57
3270	37.82	128.31	2527.90	-2499.99	-1137.10	1533.10	5766782.96	608402.05
3271	37.72	128.39	2528.69	-2500.78	-1137.48	1533.57	5766782.58	608402.53
3272	37.63	128.48	2529.48	-2501.57	-1137.86	1534.05	5766782.20	608403.00
3273	37.53	128.56	2530.28	-2502.37	-1138.24	1534.53	5766781.82	608403.48
3274	37.43	128.65	2531.07	-2503.16	-1138.62	1535.01	5766781.44	608403.96
3275	37.33	128.73	2531.86	-2503.95	-1139.00	1535.48	5766781.07	608404.44
3276	37.24	128.82	2532.65	-2504.74	-1139.38	1535.96	5766780.69	608404.91
3277	37.14	128.91	2533.45	-2505.54	-1139.75	1536.44	5766780.31	608405.39
3278	37.04	128.99	2534.24	-2506.33	-1140.13	1536.92	5766779.93	608405.87
3279	36.94	129.08	2535.03	-2507.12	-1140.51	1537.39	5766779.55	608406.35
3280	36.84	129.16	2535.82	-2507.91	-1140.89	1537.87	5766779.17	608406.82
3281	36.75	129.25	2536.61	-2508.70	-1141.27	1538.35	5766778.79	608407.30
3282	36.65	129.34	2537.41	-2509.50	-1141.65	1538.83	5766778.41	608407.78
3283	36.55	129.42	2538.20	-2510.29	-1142.03	1539.31	5766778.03	608408.26
3284	36.45	129.51	2538.99	-2511.08	-1142.41	1539.78	5766777.65	608408.73
3285	36.36	129.59	2539.78	-2511.87	-1142.79	1540.26	5766777.27	608409.21
3286	36.26	129.68	2540.58	-2512.67	-1143.17	1540.74	5766776.89	608409.69
3287	36.18	129.75	2541.38	-2513.47	-1143.55	1541.20	5766776.51	608410.15
3288	36.12	129.80	2542.19	-2514.28	-1143.92	1541.64	5766776.14	608410.59
3289	36.06	129.84	2543.01	-2515.10	-1144.30	1542.08	5766775.76	608411.03
3290	36.01	129.89	2543.82	-2515.91	-1144.67	1542.52	5766775.39	608411.48
3291	35.95	129.94	2544.64	-2516.73	-1145.05	1542.97	5766775.01	608411.92
3292	35.89	129.98	2545.45	-2517.54	-1145.42	1543.41	5766774.64	608412.36
3293	35.83	130.03	2546.27	-2518.36	-1145.80	1543.85	5766774.26	608412.80
3294	35.78	130.08	2547.08	-2519.17	-1146.17	1544.29	5766773.89	608413.24
3295	35.72	130.12	2547.90	-2519.99	-1146.55	1544.73	5766773.51	608413.68
3296	35.66	130.17	2548.71	-2520.80	-1146.92	1545.17	5766773.14	608414.12
3297	35.61	130.22	2549.53	-2521.62	-1147.30	1545.61	5766772.76	608414.56
3298	35.55	130.26	2550.34	-2522.43	-1147.67	1546.05	5766772.39	608415.00
3299	35.49	130.31	2551.16	-2523.25	-1148.05	1546.49	5766772.01	608415.45
3300	35.44	130.36	2551.98	-2524.07	-1148.42	1546.93	5766771.64	608415.89

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
3301	35.38	130.41	2552.79	-2524.88	-1148.80	1547.38	5766771.26	608416.33
3302	35.32	130.45	2553.61	-2525.70	-1149.17	1547.82	5766770.89	608416.77
3303	35.26	130.50	2554.42	-2526.51	-1149.55	1548.26	5766770.51	608417.21
3304	35.21	130.55	2555.24	-2527.33	-1149.92	1548.70	5766770.14	608417.65
3305	35.15	130.59	2556.05	-2528.14	-1150.30	1549.14	5766769.76	608418.09
3306	35.09	130.64	2556.87	-2528.96	-1150.67	1549.58	5766769.39	608418.53
3307	35.04	130.69	2557.68	-2529.77	-1151.05	1550.02	5766769.01	608418.97
3308	34.98	130.73	2558.50	-2530.59	-1151.43	1550.46	5766768.64	608419.41
3309	34.92	130.78	2559.31	-2531.40	-1151.80	1550.90	5766768.26	608419.86
3310	34.86	130.83	2560.13	-2532.22	-1152.18	1551.34	5766767.89	608420.30
3311	34.81	130.87	2560.94	-2533.03	-1152.55	1551.79	5766767.51	608420.74
3312	34.75	130.92	2561.76	-2533.85	-1152.93	1552.23	5766767.14	608421.18
3313	34.69	130.97	2562.57	-2534.66	-1153.30	1552.67	5766766.76	608421.62
3314	34.64	131.02	2563.39	-2535.48	-1153.68	1553.11	5766766.39	608422.06
3315	34.58	131.06	2564.20	-2536.29	-1154.05	1553.55	5766766.01	608422.50
3316	34.52	131.12	2565.03	-2537.12	-1154.42	1553.97	5766765.64	608422.92
3317	34.45	131.18	2565.87	-2537.96	-1154.79	1554.38	5766765.27	608423.33
3318	34.39	131.24	2566.70	-2538.79	-1155.16	1554.79	5766764.90	608423.74
3319	34.33	131.29	2567.53	-2539.62	-1155.53	1555.21	5766764.53	608424.16
3320	34.26	131.35	2568.36	-2540.45	-1155.90	1555.62	5766764.16	608424.57
3321	34.20	131.41	2569.20	-2541.29	-1156.27	1556.03	5766763.79	608424.98
3322	34.13	131.47	2570.03	-2542.12	-1156.64	1556.44	5766763.42	608425.39
3323	34.07	131.53	2570.86	-2542.95	-1157.01	1556.86	5766763.05	608425.81
3324	34.01	131.59	2571.69	-2543.78	-1157.38	1557.27	5766762.68	608426.22
3325	33.94	131.64	2572.52	-2544.61	-1157.75	1557.68	5766762.31	608426.63
3326	33.88	131.70	2573.36	-2545.45	-1158.12	1558.09	5766761.94	608427.05
3327	33.82	131.76	2574.19	-2546.28	-1158.49	1558.51	5766761.57	608427.46
3328	33.75	131.82	2575.02	-2547.11	-1158.86	1558.92	5766761.20	608427.87
3329	33.69	131.88	2575.85	-2547.94	-1159.23	1559.33	5766760.83	608428.28
3330	33.63	131.94	2576.69	-2548.78	-1159.60	1559.74	5766760.46	608428.70
3331	33.56	131.99	2577.52	-2549.61	-1159.97	1560.16	5766760.09	608429.11
3332	33.50	132.05	2578.35	-2550.44	-1160.34	1560.57	5766759.72	608429.52
3333	33.43	132.11	2579.18	-2551.27	-1160.71	1560.98	5766759.35	608429.93
3334	33.37	132.17	2580.01	-2552.10	-1161.08	1561.40	5766758.98	608430.35
3335	33.31	132.23	2580.85	-2552.94	-1161.45	1561.81	5766758.61	608430.76
3336	33.24	132.29	2581.68	-2553.77	-1161.82	1562.22	5766758.24	608431.17
3337	33.18	132.35	2582.51	-2554.60	-1162.19	1562.63	5766757.87	608431.59
3338	33.12	132.40	2583.34	-2555.43	-1162.56	1563.05	5766757.50	608432.00
3339	33.05	132.46	2584.18	-2556.27	-1162.93	1563.46	5766757.13	608432.41
3340	32.99	132.52	2585.01	-2557.10	-1163.30	1563.87	5766756.76	608432.82
3341	32.92	132.58	2585.84	-2557.93	-1163.67	1564.28	5766756.39	608433.24
3342	32.86	132.64	2586.67	-2558.76	-1164.04	1564.70	5766756.02	608433.65
3343	32.80	132.70	2587.51	-2559.60	-1164.41	1565.11	5766755.65	608434.06
3344	32.76	132.74	2588.34	-2560.43	-1164.78	1565.51	5766755.28	608434.47
3345	32.74	132.76	2589.18	-2561.27	-1165.15	1565.91	5766754.91	608434.86
3346	32.73	132.78	2590.03	-2562.12	-1165.52	1566.30	5766754.54	608435.25
3347	32.72	132.81	2590.87	-2562.96	-1165.89	1566.70	5766754.18	608435.65
3348	32.71	132.83	2591.71	-2563.80	-1166.25	1567.09	5766753.81	608436.04
3349	32.70	132.85	2592.55	-2564.64	-1166.62	1567.48	5766753.44	608436.43
3350	32.69	132.88	2593.40	-2565.49	-1166.99	1567.88	5766753.07	608436.83
3351	32.68	132.90	2594.24	-2566.33	-1167.36	1568.27	5766752.71	608437.22
3352	32.66	132.92	2595.08	-2567.17	-1167.72	1568.66	5766752.34	608437.62
3353	32.65	132.94	2595.92	-2568.01	-1168.09	1569.06	5766751.97	608438.01
3354	32.64	132.97	2596.77	-2568.86	-1168.46	1569.45	5766751.60	608438.40
3355	32.63	132.99	2597.61	-2569.70	-1168.83	1569.85	5766751.23	608438.80
3356	32.62	133.01	2598.45	-2570.54	-1169.20	1570.24	5766750.87	608439.19
3357	32.61	133.03	2599.29	-2571.38	-1169.56	1570.63	5766750.50	608439.58
3358	32.60	133.06	2600.14	-2572.23	-1169.93	1571.03	5766750.13	608439.98
3359	32.59	133.08	2600.98	-2573.07	-1170.30	1571.42	5766749.76	608440.37
3360	32.57	133.10	2601.82	-2573.91	-1170.67	1571.81	5766749.40	608440.77
3361	32.56	133.12	2602.66	-2574.75	-1171.03	1572.21	5766749.03	608441.16
3362	32.55	133.15	2603.51	-2575.60	-1171.40	1572.60	5766748.66	608441.55
3363	32.54	133.17	2604.35	-2576.44	-1171.77	1572.99	5766748.29	608441.95
3364	32.53	133.19	2605.19	-2577.28	-1172.14	1573.39	5766747.92	608442.34
3365	32.52	133.21	2606.03	-2578.12	-1172.51	1573.78	5766747.56	608442.73
3366	32.51	133.24	2606.88	-2578.97	-1172.87	1574.18	5766747.19	608443.13

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
3367	32.50	133.26	2607.72	-2579.81	-1173.24	1574.57	5766746.82	608443.52
3368	32.48	133.28	2608.56	-2580.65	-1173.61	1574.96	5766746.45	608443.91
3369	32.47	133.30	2609.40	-2581.49	-1173.98	1575.36	5766746.09	608444.31
3370	32.46	133.33	2610.25	-2582.34	-1174.34	1575.75	5766745.72	608444.70
3371	32.45	133.35	2611.09	-2583.18	-1174.71	1576.14	5766745.35	608445.10
3372	32.44	133.37	2611.93	-2584.02	-1175.08	1576.54	5766744.98	608445.49
3373	32.43	133.40	2612.78	-2584.87	-1175.45	1576.92	5766744.61	608445.88
3374	32.43	133.43	2613.62	-2585.71	-1175.82	1577.31	5766744.24	608446.26
3375	32.42	133.45	2614.47	-2586.56	-1176.19	1577.70	5766743.87	608446.65
3376	32.41	133.48	2615.31	-2587.40	-1176.56	1578.08	5766743.50	608447.03
3377	32.41	133.51	2616.15	-2588.24	-1176.93	1578.47	5766743.13	608447.42
3378	32.40	133.54	2617.00	-2589.09	-1177.30	1578.86	5766742.76	608447.81
3379	32.39	133.56	2617.84	-2589.93	-1177.67	1579.24	5766742.39	608448.19
3380	32.38	133.59	2618.69	-2590.78	-1178.04	1579.63	5766742.02	608448.58
3381	32.38	133.62	2619.53	-2591.62	-1178.41	1580.01	5766741.65	608448.97
3382	32.37	133.64	2620.38	-2592.47	-1178.78	1580.40	5766741.28	608449.35
3383	32.36	133.67	2621.22	-2593.31	-1179.15	1580.79	5766740.91	608449.74
3384	32.36	133.70	2622.07	-2594.16	-1179.52	1581.17	5766740.54	608450.12
3385	32.35	133.72	2622.91	-2595.00	-1179.89	1581.56	5766740.17	608450.51
3386	32.34	133.75	2623.76	-2595.85	-1180.26	1581.95	5766739.80	608450.90
3387	32.34	133.78	2624.60	-2596.69	-1180.63	1582.33	5766739.43	608451.28
3388	32.33	133.81	2625.45	-2597.54	-1181.00	1582.72	5766739.06	608451.67
3389	32.32	133.83	2626.29	-2598.38	-1181.37	1583.11	5766738.69	608452.06
3390	32.32	133.86	2627.14	-2599.23	-1181.74	1583.49	5766738.32	608452.44
3391	32.31	133.89	2627.98	-2600.07	-1182.11	1583.88	5766737.95	608452.83
3392	32.30	133.91	2628.83	-2600.92	-1182.48	1584.26	5766737.58	608453.22
3393	32.30	133.94	2629.67	-2601.76	-1182.85	1584.65	5766737.21	608453.60
3394	32.29	133.97	2630.52	-2602.61	-1183.22	1585.04	5766736.84	608453.99
3395	32.28	134.00	2631.36	-2603.45	-1183.59	1585.42	5766736.47	608454.37
3396	32.27	134.02	2632.21	-2604.30	-1183.96	1585.81	5766736.10	608454.76
3397	32.27	134.05	2633.05	-2605.14	-1184.33	1586.20	5766735.73	608455.15
3398	32.26	134.08	2633.90	-2605.99	-1184.70	1586.58	5766735.36	608455.53
3399	32.25	134.10	2634.74	-2606.83	-1185.07	1586.97	5766734.99	608455.92
3400	32.25	134.13	2635.59	-2607.68	-1185.44	1587.35	5766734.62	608456.31
3401	32.24	134.16	2636.43	-2608.52	-1185.81	1587.74	5766734.25	608456.69
3402	32.22	134.20	2637.28	-2609.37	-1186.18	1588.12	5766733.88	608457.07
3403	32.21	134.24	2638.13	-2610.22	-1186.56	1588.50	5766733.51	608457.45
3404	32.19	134.28	2638.98	-2611.07	-1186.93	1588.87	5766733.13	608457.82
3405	32.18	134.32	2639.82	-2611.91	-1187.30	1589.25	5766732.76	608458.20
3406	32.16	134.37	2640.67	-2612.76	-1187.67	1589.63	5766732.39	608458.58
3407	32.14	134.41	2641.52	-2613.61	-1188.05	1590.00	5766732.01	608458.95
3408	32.13	134.45	2642.37	-2614.46	-1188.42	1590.38	5766731.64	608459.33
3409	32.11	134.49	2643.21	-2615.30	-1188.79	1590.76	5766731.27	608459.71
3410	32.09	134.53	2644.06	-2616.15	-1189.17	1591.13	5766730.89	608460.09
3411	32.08	134.58	2644.91	-2617.00	-1189.54	1591.51	5766730.52	608460.46
3412	32.06	134.62	2645.76	-2617.85	-1189.91	1591.89	5766730.15	608460.84
3413	32.05	134.66	2646.61	-2618.70	-1190.29	1592.26	5766729.78	608461.22
3414	32.03	134.70	2647.45	-2619.54	-1190.66	1592.64	5766729.40	608461.59
3415	32.01	134.74	2648.30	-2620.39	-1191.03	1593.02	5766729.03	608461.97
3416	32.00	134.78	2649.15	-2621.24	-1191.41	1593.40	5766728.66	608462.35
3417	31.98	134.83	2650.00	-2622.09	-1191.78	1593.77	5766728.28	608462.72
3418	31.96	134.87	2650.85	-2622.94	-1192.15	1594.15	5766727.91	608463.10
3419	31.95	134.91	2651.69	-2623.78	-1192.52	1594.53	5766727.54	608463.48
3420	31.93	134.95	2652.54	-2624.63	-1192.90	1594.90	5766727.16	608463.85
3421	31.91	134.99	2653.39	-2625.48	-1193.27	1595.28	5766726.79	608464.23
3422	31.90	135.03	2654.24	-2626.33	-1193.64	1595.66	5766726.42	608464.61
3423	31.88	135.08	2655.08	-2627.17	-1194.02	1596.03	5766726.05	608464.98
3424	31.87	135.12	2655.93	-2628.02	-1194.39	1596.41	5766725.67	608465.36
3425	31.85	135.16	2656.78	-2628.87	-1194.76	1596.79	5766725.30	608465.74
3426	31.83	135.20	2657.63	-2629.72	-1195.14	1597.16	5766724.93	608466.12
3427	31.82	135.24	2658.48	-2630.57	-1195.51	1597.54	5766724.55	608466.49
3428	31.79	135.29	2659.33	-2631.42	-1195.88	1597.91	5766724.18	608466.86
3429	31.77	135.34	2660.18	-2632.27	-1196.26	1598.27	5766723.80	608467.22
3430	31.74	135.39	2661.03	-2633.12	-1196.63	1598.63	5766723.43	608467.58
3431	31.71	135.44	2661.89	-2633.98	-1197.01	1598.99	5766723.05	608467.95
3432	31.69	135.48	2662.74	-2634.83	-1197.38	1599.36	5766722.68	608468.31

MD	Angle	Direction	TVDRT	TVDSS	Dnorth	Deast	Northing	Easting
3433	31.66	135.53	2663.60	-2635.69	-1197.76	1599.72	5766722.31	608468.67
3434	31.63	135.58	2664.45	-2636.54	-1198.13	1600.08	5766721.93	608469.03
3435	31.61	135.63	2665.30	-2637.39	-1198.51	1600.44	5766721.56	608469.39
3436	31.58	135.68	2666.16	-2638.25	-1198.88	1600.80	5766721.18	608469.75
3437	31.55	135.73	2667.01	-2639.10	-1199.25	1601.16	5766720.81	608470.12
3438	31.53	135.78	2667.86	-2639.95	-1199.63	1601.53	5766720.43	608470.48
3439	31.50	135.83	2668.72	-2640.81	-1200.00	1601.89	5766720.06	608470.84
3440	31.47	135.88	2669.57	-2641.66	-1200.38	1602.25	5766719.68	608471.20
3441	31.45	135.92	2670.42	-2642.51	-1200.75	1602.61	5766719.31	608471.56
3442	31.42	135.97	2671.28	-2643.37	-1201.13	1602.97	5766718.93	608471.93
3443	31.39	136.02	2672.13	-2644.22	-1201.50	1603.34	5766718.56	608472.29
3444	31.36	136.07	2672.99	-2645.08	-1201.88	1603.70	5766718.18	608472.65
3445	31.34	136.12	2673.84	-2645.93	-1202.25	1604.06	5766717.81	608473.01
3446	31.31	136.17	2674.69	-2646.78	-1202.63	1604.42	5766717.43	608473.37
3447	31.28	136.22	2675.55	-2647.64	-1203.00	1604.78	5766717.06	608473.73
3448	31.26	136.27	2676.40	-2648.49	-1203.38	1605.14	5766716.68	608474.10
3449	31.23	136.31	2677.25	-2649.34	-1203.75	1605.51	5766716.31	608474.46
3450	31.20	136.36	2678.11	-2650.20	-1204.13	1605.87	5766715.93	608474.82
3451	31.18	136.41	2678.96	-2651.05	-1204.50	1606.23	5766715.56	608475.18
3452	31.15	136.46	2679.81	-2651.90	-1204.88	1606.59	5766715.19	608475.54
3453	31.12	136.51	2680.67	-2652.76	-1205.25	1606.95	5766714.81	608475.90
3454	31.10	136.56	2681.52	-2653.61	-1205.63	1607.31	5766714.44	608476.27
3455	31.07	136.61	2682.37	-2654.46	-1206.00	1607.68	5766714.06	608476.63
3456	31.04	136.66	2683.23	-2655.32	-1206.37	1608.04	5766713.69	608476.99
3457	31.02	136.70	2684.08	-2656.17	-1206.75	1608.40	5766713.31	608477.35
3458	30.99	136.75	2684.94	-2657.03	-1207.12	1608.76	5766712.94	608477.71
3459	30.93	136.82	2685.79	-2657.88	-1207.50	1609.11	5766712.56	608478.06
3460	30.85	136.89	2686.66	-2658.75	-1207.87	1609.46	5766712.19	608478.41
3461	30.77	136.97	2687.52	-2659.61	-1208.24	1609.80	5766711.82	608478.75
3462	30.69	137.04	2688.38	-2660.47	-1208.61	1610.15	5766711.45	608479.10
3463	30.61	137.11	2689.24	-2661.33	-1208.99	1610.49	5766711.07	608479.44
3464	30.53	137.19	2690.10	-2662.19	-1209.36	1610.84	5766710.70	608479.79
3465	30.44	137.26	2690.96	-2663.05	-1209.73	1611.18	5766710.33	608480.13
3466	30.36	137.34	2691.83	-2663.92	-1210.10	1611.53	5766709.96	608480.48
3467	30.28	137.41	2692.69	-2664.78	-1210.48	1611.87	5766709.58	608480.82
3468	30.20	137.48	2693.55	-2665.64	-1210.85	1612.21	5766709.21	608481.17
3469	30.12	137.56	2694.41	-2666.50	-1211.22	1612.56	5766708.84	608481.51
3470	30.04	137.63	2695.27	-2667.36	-1211.59	1612.90	5766708.47	608481.86
3471	30.00	137.67	2696.14	-2668.23	-1211.96	1613.24	5766708.10	608482.20
3472	30.00	137.67	2697.00	-2669.09	-1212.33	1613.58	5766707.73	608482.53
3473	30.00	137.67	2697.87	-2669.96	-1212.70	1613.92	5766707.36	608482.87
3474	30.00	137.67	2698.73	-2670.82	-1213.07	1614.26	5766706.99	608483.21
3475	30.00	137.67	2699.60	-2671.69	-1213.44	1614.59	5766706.62	608483.54
3476	30.00	137.67	2700.47	-2672.56	-1213.81	1614.93	5766706.25	608483.88
3477	30.00	137.67	2701.33	-2673.42	-1214.18	1615.27	5766705.88	608484.22
3478	30.00	137.67	2702.20	-2674.29	-1214.55	1615.60	5766705.51	608484.55
3479	30.00	137.67	2703.06	-2675.15	-1214.92	1615.94	5766705.14	608484.89
3480	30.00	137.67	2703.93	-2676.02	-1215.29	1616.28	5766704.77	608485.23
3481	30.00	137.67	2704.80	-2676.89	-1215.66	1616.61	5766704.40	608485.56
3482	30.00	137.67	2705.66	-2677.75	-1216.03	1616.95	5766704.03	608485.90
3483	30.00	137.67	2706.53	-2678.62	-1216.40	1617.29	5766703.66	608486.24
3484	30.00	137.67	2707.39	-2679.48	-1216.77	1617.62	5766703.29	608486.57
3485	30.00	137.67	2708.26	-2680.35	-1217.14	1617.96	5766702.92	608486.91
3486	30.00	137.67	2709.13	-2681.22	-1217.51	1618.30	5766702.55	608487.25
3487	30.00	137.67	2709.99	-2682.08	-1217.88	1618.63	5766702.18	608487.58
3488	30.00	137.67	2710.86	-2682.95	-1218.25	1618.97	5766701.81	608487.92
3489	30.00	137.67	2711.72	-2683.81	-1218.62	1619.31	5766701.44	608488.26
3490	30.00	137.67	2712.59	-2684.68	-1218.99	1619.64	5766701.07	608488.59
3491	30.00	137.67	2713.46	-2685.55	-1219.36	1619.98	5766700.70	608488.93



## **APPENDIX 2a**

### **MARLIN A-10A**

#### **Petrophysics Evaluation Summary**

**Esso Australia Pty Ltd.**  
Exploration Department

**Marlin A10A  
Formation Evaluation  
Log Interpretation Report**

**Petrophysicist: J. Lawer**

**December 2004**

## Marlin A10A Log Interpretation

Marlin A10A was drilled as a directional well designed to develop the L500 reservoir in the Turrum Field. The objective of this well was to drill the L500 sand and test the Upper reservoir, then plug back and drill a sidetrack to the L500 sand and test the Middle L500 reservoir.

The well spudded on the 9th of August 2004 through the Marlin A10 at 844mMDRT with an 8 1/2" steerable / MWD drilling assembly. The well was drilled to a total depth of 3248mMDRT in 8 1/2" hole on 23rd August.

The 8 1/2" open-hole was logged with Reeves Shuttle Logging System (on drill-pipe) from 3245mMDRT to 1650mMDRT. Formation pressure testing was conducted with Schlumberger's MDT run on drill pipe. A total of 58 pretests were attempted over the Turrum and Marlin reservoirs. An evaluation and interpretation of the pressure data is the subject of another report and will not be covered by this report.

The Reeves data have been analysed for porosity, water saturation and net pay over the interval 1700.0 - 3210.0 mMDRT.

Note that all depths quoted in this report are logged mMDRT unless otherwise specified.

### DATA

Data from the following logging surveys were used in this interpretation:

Survey/Log	Company	Top (m MDRT)	Bottom (m MDRT)
<b>RUN 1:</b> Compact Gamma Ray - Neutron -Density/Caliper - Laterolog - Compensated Sonic	Reeves	1650	3245

### Deviation

The well angle over the target zones ranged from 44 ° at 1800m (Marlin Reservoir) to 11 ° at 3100m (Turrum Reservoir).

### Mud Data

Mud Type :	KCl/Glycol/PHPA
Mud Weight:	10.00 ppg
Rm:	0.115 ohm-m @ 25 °C
Rmf:	0.088 ohm-m @ 25 °C
Rmc:	0.173 ohm-m @ 25 °C
BHT:	120 °C

### Hole Size

642.5 - 3248 m	8.5 inches
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## Data Acquisition & Log Quality

The deep and shallow resistivity (DDL and DSL), Bulk Density (DEN), Thermal Neutron Porosity (NPRL) and the 3-5" Compensated Sonic (DT35) were depth aligned to the environmentally corrected Gamma Ray (GGCE).

## Data Processing

No processing was undertaken in this analysis.

## INTERPRETATION

### Logs Used

The primary logs used in the interpretation were GGCE (GR), DDL (RESDEEP), DEN (RHOB) and NPRL (NPHI).

### Formation Water Salinity

Rwa analysis using  $a = 1$ ,  $m = 2$  and  $n = 2$  indicates clean water sands below the freshwater wedge have an apparent formation water salinity of 25,000 ppm NaCl equivalent. The water sands within the freshwater wedge have an apparent formation water salinity of 10,000 ppm NaCl equivalent. This is based on the Rwa analysis of clean water bearing sands within the same interval in nearby wells (e.g. MLA A23A). For all hydrocarbon bearing sands within the freshwater wedge and all sands below, a formation water salinity of 25,000 ppm NaCl equivalent was used in the analysis.

Salinity	Top (m)	Bottom (m)
25,000 ppm	1721	1940
10,000 ppm	1940	2100
25,000 ppm	2100	3220

### Hydrocarbon Type

All of the reservoir units were solved for gas and water. No oil zones were encountered in this well.

### Shale Volume, Porosity and Water Saturation

The Schlumberger Geoframe ELAN+ module was used to determine mineral and rock volumes of quartz, illite and feldspar; total porosity, effective porosity and effective water saturation. Details of the model are presented in the following figures and tables.

## Results and Discussion

The sand in the interval 1941-1960m is interpreted to have residual hydrocarbons (gas and oil) with a residual hydrocarbon saturation of 32% (refer to Figure 2 below).

The original field GOC in the Marlin reservoir was at 1556m TVDSS (1967.5mMDRT) and is below this reservoir. As a result of gas production the original 8m oil column has been smeared up into the overlying reservoirs and hence the interval 1941-1960m has been interpreted in this analysis as having a residual saturation of both oil and gas. (For graphical display purposes, this interval is shaded red and displayed as residual gas.)

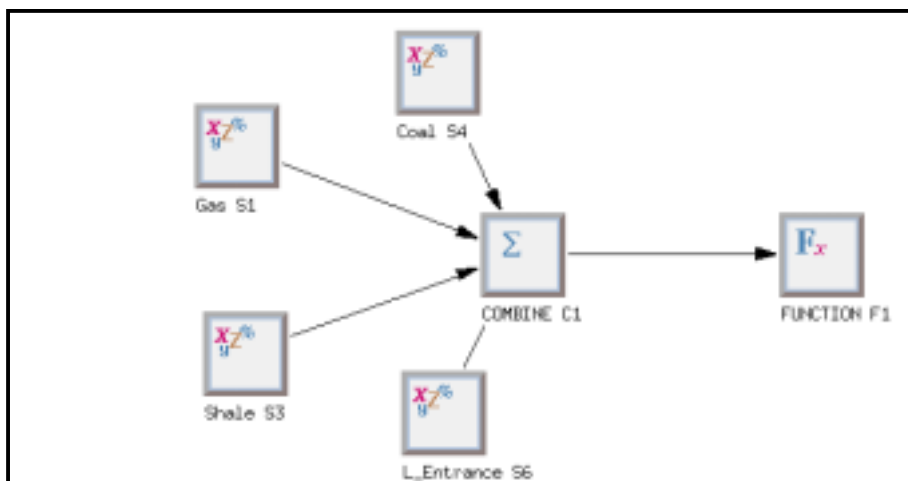
A GWC at 2115.5m MD (1691.36m TVDSS) is interpreted in the sand that extends from 2103-2119.5m MD.

The L500 Upper and middle sands that extend from 3185m MD to TD are all water bearing.

Graphical displays of the interpretation results are presented in Figures 1, 2, 3 & 4.

## ELAN MODEL

### Processes



### ELAN Input Channels

	Compound Name Spec	MARLIN A10A
TEMP_CH	TEMP;*	TEMP@ElanInput;3 .WELLEDIT [A1229222]
RHOB_IFAC_CH	IFRH;*	
NPHI_IFAC_CH	INPH;*	
RHOB_CH	DEN:BPB;*	DEN@ElanInput;0 .WELLEDIT [A1210620]
NPHI_CH	NPRL:BPB;*	NPRL@ElanInput;8 .WELLEDIT [A1218830]
DT_CH	DT35:BPB;*	DT35@ElanInput;8 .WELLEDIT [A1218832]
PHIT_CH	NPRL:BPB;*	NPRL@ElanInput;8 .WELLEDIT [A1218830]
CUDC_CH/RT_CH	DDLL:BPB;*	DDLL@ElanInput;8 .WELLEDIT [A1218834]
GR_CH	GGCE:BPB;*	GGCE@ElanInput;5 [A1210626]
M_CH	MXP;*	
N_CH	SXP;*	
PRB1_CH	PRB1;*	
PRB3_CH	PRB3;*	
PRB4_CH	FLAG_COAL;*	FLAG_COAL@ElanInput;4 .WELLEDIT [A1224909]
PRB6_CH	PRB6;*	

**ELAN Global Parameters**

Reference Index	MD
Processing Interval	1721.0001(m) To 3213.0000(m)
Sampling Rate	0.1 (m)
Uncertainty Channel	FALSE
Clay Input	DRY
Special Fluids	IMMOVABLE_HYDROCARBON

**ELAN Zone Definition**

Name	Bottom To Top
25K NaCl	3220.0000(m) To 2100.0000(m)
10K NaCl	2100.0000(m) To 1940.0000(m)
Marlin-25k NaCl	1940.0000(m) To 1721.0001(m)

**ELAN Process Definition**

Process	SOLVE1 "Gas"						
Equations	RHOB	NPHI	DT	CUDC_DWA	GR	CT1	CT3
Volumes	QUAR	ORTH	ILLI	XWAT	UWAT	XGAS	UGAS
User Constraints	constraint(maxDolomite, DOLO<0)						
Constraint Zones	Bottom		Top				
UNDEFINED	3220.0000(m )		1721.0001(m )				
Constraints Applied							
UNDEFINED	- IrreducibleXWater						
UNDEFINED	- IrreducibleUWater						
UNDEFINED	- WaterBaseMud_SXO_gt_SW						
Process	SOLVE3 "Shale"						
Equations	RHOB	CUDC_DWA	GR				
Volumes	QUAR	ILLI	XWAT	UWAT			
Constraint Zones	Bottom		Top				
UNDEFINED	3220.0000(m )		1721.0001(m )				
Process	SOLVE4 "Coal"						
Equations	RHOB						
Volumes	COAL						
Constraint Zones	Bottom		Top				
UNDEFINED	3220.0000(m )		1721.0001(m )				
Process	SOLVE6 "L_Entrance"						
Equations	RHOB						
Volumes	CALC						
Constraint Zones	Bottom		Top				
UNDEFINED	3220.0000(m )		1721.0001(m )				
Process	COMBINE 1 "COMBINE"						
Order	SOL.1	SOL.3	SOL.4	SOL.6			
Combine Method							
"UNDEFINED	" 10564.3047 (m ) Internal Average						
"Lakes Entran"	5682.4146 (m ) Sol.6						
Probability Functions							

<pre> probability(SOL.6, 0)  probability(SOL.4, PRB4_CH)  prob3 = linear(ILLI_VOL.SOL.3, 0.3, 0, 0.5, 1) probability(SOL.3, prob3) </pre>						
<b>Process</b>	<b>FUNCTION 1 "FUNCTION"</b>					
Outputs	VCL	SXWI	SWT	SUWI	PIGN	PHIT
User-defined Function/n      swt_cmp=if((PRB4_CH > 0),1,(UWAT_VOL + XBWA_VOL)/(UWAT_VOL + XBWA_VOL + UOIL_VOL + UGAS_VOL))						
output(SWT, swt_cmp)						

## ELAN Probability Expressions

<pre> probability(SOL.6, 0)  probability(SOL.4, PRB4_CH)  prob3 = linear(ILLI_VOL.SOL.3, 0.3, 0, 0.5, 1) probability(SOL.3, prob3) </pre>						
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## ELAN Model Constraints

Model 1:      Constraint Zones			
Name	Boundary	Temperature	
UNDEFINED	10564.3047	-999.25	
constraints			
UNDEFINED	- IrreducibleXWater		
UNDEFINED	- IrreducibleUWater		
UNDEFINED	- WaterBaseMud_SXO_gt_SW		

Model 3:      Constraint Zones			
Name	Boundary	Temperature	
UNDEFINED	10564.3047	-999.25	
constraints			

Model 4:      Constraint Zones			
Name	Boundary	Temperature	
UNDEFINED	10564.3047	-999.25	
constraints			

Model 6:      Constraint Zones			
Name	Boundary	Temperature	
UNDEFINED	10564.3047	-999.25	
constraints			

**ELAN Different Parameters**

Parameters n*****	25k *****	10K *****	Marlin-25 *****	*****
DT_ILLI (us/m )	60.000	60.000	60.000	
CXDC_XWAT (mS/m )	20.630	14.332	13.603	
CXDC_XBWA (mS/m )	11.780	8.204	7.782	
CUDC_UWAT (mS/m )	11.022	2.530	7.707	
CUDC_UBWA (mS/m )	2.540	1.810	1.705	
CT1_UGAS ( )	-0.200	-0.200	-0.600	
RW (ohm.m )	0.458	1.483	0.458	
CUDC_UNC_ZP (mS/m )	0.050	0.024	0.042	

**ELAN Same Parameters**

Parameter	Value	Parameter	Value
RHOB_QUAR	2.650 (g/cm3 )	RHOB_CALC	2.710 (g/cm3 )
RHOB_DOLO	2.847 (g/cm3 )	RHOB_ORTH	2.570 (g/cm3 )
RHOB_ILLI	2.780 (g/cm3 )	RHOB_KAOL	2.620 (g/cm3 )
RHOB_COAL	1.200 (g/cm3 )	RHOB_IGNE	3.000 (g/cm3 )
RHOB_XWAT	0.970 (g/cm3 )	RHOB_UWAT	0.970 (g/cm3 )
RHOB_XOIL	0.700 (g/cm3 )	RHOB_UOIL	0.700 (g/cm3 )
RHOB_XGAS	0.011 (g/cm3 )	RHOB_UGAS	0.095 (g/cm3 )
RHOB_XBWA	1.000 (g/cm3 )	NPHI_QUAR	-0.065 (m3/m3 )
NPHI_CALC	0.000 (m3/m3 )	NPHI_DOLO	0.032 (m3/m3 )
NPHI_ORTH	-0.010 (m3/m3 )	NPHI_ILLI	0.247 (m3/m3 )
NPHI_KAOL	0.450 (m3/m3 )	NPHI_COAL	0.450 (m3/m3 )
NPHI_XWAT	1.000 (m3/m3 )	NPHI_UWAT	1.000 (m3/m3 )
NPHI_XOIL	1.000 (m3/m3 )	NPHI_UOIL	1.000 (m3/m3 )
NPHI_XGAS	0.143 (m3/m3 )	NPHI_UGAS	0.270 (m3/m3 )
NPHI_XBWA	1.000 (m3/m3 )	DT_QUAR	55.500 (us/m )
DT_CALC	47.800 (us/m )	DT_DOLO	43.500 (us/m )
DT_ORTH	68.885 (us/m )	DT_KAOL	91.318 (us/m )
DT_COAL	121.920 (us/m )	DT_IGNE	16.916 (us/m )
DT_XWAT	0.000 (us/m )	DT_UWAT	220.000 (us/m )
DT_XOIL	0.000 (us/m )	DT_UOIL	240.000 (us/m )
DT_XGAS	0.000 (us/m )	DT_UGAS	289.865 (us/m )
DT_XBWA	189.000 (us/m )	U_QUAR	5.000 ( )
U_CALC	14.100 ( )	U_DOLO	9.100 ( )
U_ILLI	9.900 ( )	U_KAOL	5.100 ( )
U_COAL	1.000 ( )	U_XWAT	0.692 ( )
U_UWAT	0.000 ( )	U_XOIL	0.136 ( )
U_UOIL	0.000 ( )	U_XGAS	0.012 ( )
U_UGAS	0.000 ( )	U_XBWA	0.398 ( )
CXDC_ILLI	-999.250 (mS/m )	CXDC_KAOL	-999.250 (mS/m )
CUDC_ILLI	-999.250 (mS/m )	CUDC_KAOL	-999.250 (mS/m )
GR_QUAR	60.000 (gAPI )	GR_CALC	11.000 (gAPI )
GR_DOLO	3.000 (gAPI )	GR_ORTH	231.000 (gAPI )
GR_ILLI	242.000 (gAPI )	GR_KAOL	98.000 (gAPI )
GR_COAL	40.000 (gAPI )	GR_IGNE	40.000 (gAPI )
GR_XWAT	0.000 (gAPI )	GR_UWAT	0.000 (gAPI )
GR_XOIL	0.000 (gAPI )	GR_UOIL	0.000 (gAPI )
GR_XGAS	0.000 (gAPI )	GR_UGAS	0.000 (gAPI )
GR_XBWA	0.000 (gAPI )	CT1_QUAR	0.000 ( )
CT1_CALC	0.000 ( )	CT1_DOLO	0.000 ( )
CT1_ORTH	0.000 ( )	CT1_ILLI	0.000 ( )
CT1_KAOL	0.000 ( )	CT1_COAL	0.000 ( )
CT1_IGNE	0.000 ( )	CT1_XWAT	0.000 ( )
CT1_UWAT	0.000 ( )	CT1_XOIL	0.000 ( )
CT1_UOIL	0.000 ( )	CT1_XGAS	1.000 ( )
CT1_XBWA	0.000 ( )	CT2_QUAR	0.000 ( )
CT2_CALC	0.000 ( )	CT2_DOLO	0.000 ( )
CT2_ORTH	0.000 ( )	CT2_ILLI	0.000 ( )
CT2_KAOL	0.000 ( )	CT2_COAL	0.000 ( )



CT2_IGNE	0.000( )	CT2_XWAT	0.000( )
CT2_UWAT	0.000( )	CT2_XOIL	1.000( )
CT2_UOIL	-0.200( )	CT2_XGAS	0.000( )
CT2_UGAS	0.000( )	CT2_XBWA	0.000( )
CT3_QUAR	-0.050( )	CT3_CALC	0.000( )
CT3_ORTH	1.000( )	CT3_ILLI	0.000( )
CT3_KAOL	0.000( )	CT3_COAL	0.000( )
CT3_XWAT	0.000( )	CT3_UWAT	0.000( )
CT3_XOIL	0.000( )	CT3_UOIL	0.000( )
CT3_XGAS	0.000( )	CT3_UGAS	0.000( )
CT3_XBWA	0.000( )	ARHOB_ILLI	2.780(g/cm3 )
ARHOB_KAOL	2.620(g/cm3 )	WCLP_ILLI	0.154(m3/m3 )
WCLP_KAOL	0.058(m3/m3 )	CBWA_ILLI	-999.250(mS/m )
CBWA_KAOL	-999.250(mS/m )	CECA_ILLI	0.200(meq/g )
CECA_KAOL	0.090(meq/g )	RMF	0.160(ohm.m )
MST	61.880(degC )	RWT	-999.250(degC )
SALIN_ISOL	-999.250(ppk )	SALIN_PARA	-999.250(ppk )
SALIN_XWAT	12.924(ppk )	SALIN_UWAT	25.000(ppk )
SALIN_XIWA	-999.250(ppk )	SALIN_UIWA	-999.250(ppk )
SALIN_XOIL	0.000(ppk )	SALIN_UOIL	0.000(ppk )
SALIN_XGAS	0.000(ppk )	SALIN_UGAS	0.000(ppk )
SALIN_XSFL	-999.250(ppk )	SALIN_USFL	-999.250(ppk )
CT1_ZP	0.000( )	CT2_ZP	0.000( )
CT3_ZP	0.000( )	RHOB_UNC_ZP	0.027(g/cm3 )
NPHI_UNC_ZP	0.015(m3/m3 )	DT_UNC_ZP	2.250(us/m )
U_UNC_ZP	0.225( )	CXDC_UNC_ZP	0.072(mS/m )
GR_UNC_ZP	2.250(gAPI )	CT1_UNC_ZP	0.015( )
CT2_UNC_ZP	0.015( )	CT3_UNC_ZP	0.015( )
VOLS_UNC_ZP	0.015(m3/m3 )	RHOB_UNC_WM	1.000( )
NPHI_UNC_WM	1.000( )	DT_UNC_WM	0.300( )
U_UNC_WM	0.400( )	CXDC_UNC_WM	0.500( )
CUDC_UNC_WM	1.000( )	GR_UNC_WM	0.300( )
CT1_UNC_WM	0.200( )	CT2_UNC_WM	0.200( )
CT3_UNC_WM	0.300( )	VOLS_UNC_WM	1.000( )
RHOB_IFAC_ZP	1.000( )	NPHI_IFAC_ZP	1.000( )
A_ZP	1.000( )	N_ZP	2.000( )
C_DWA	0.000( )	M_DWA	2.000( )
BVIRR	0.004(m3/m3 )		

Results and Discussion

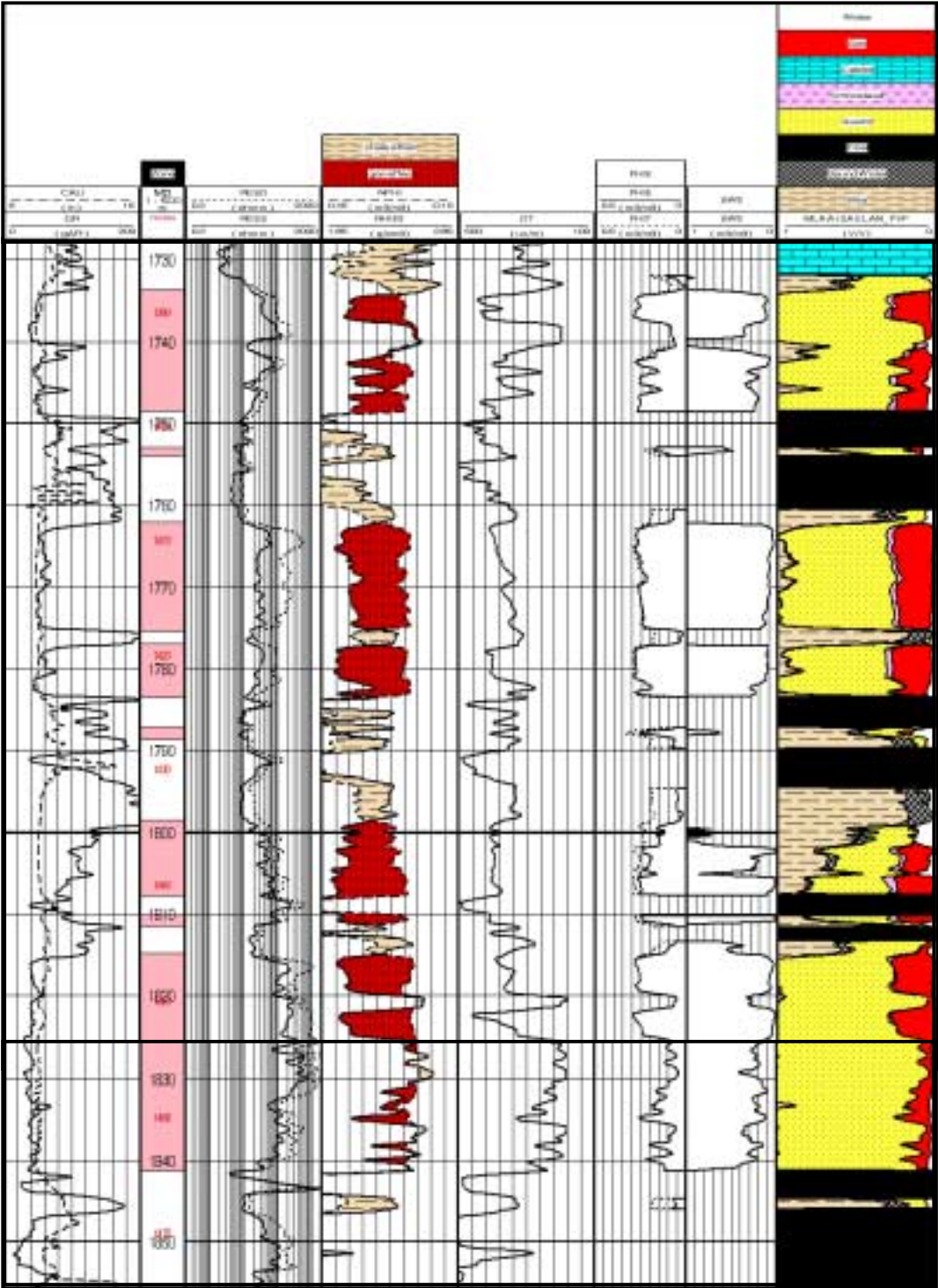
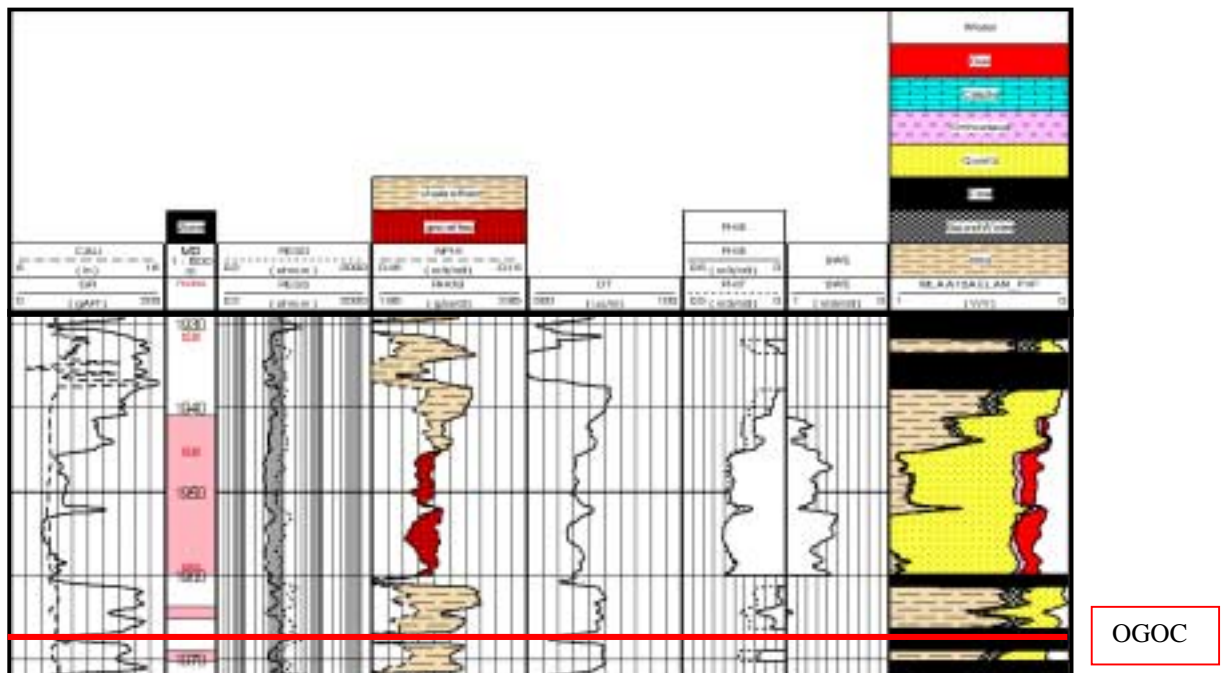
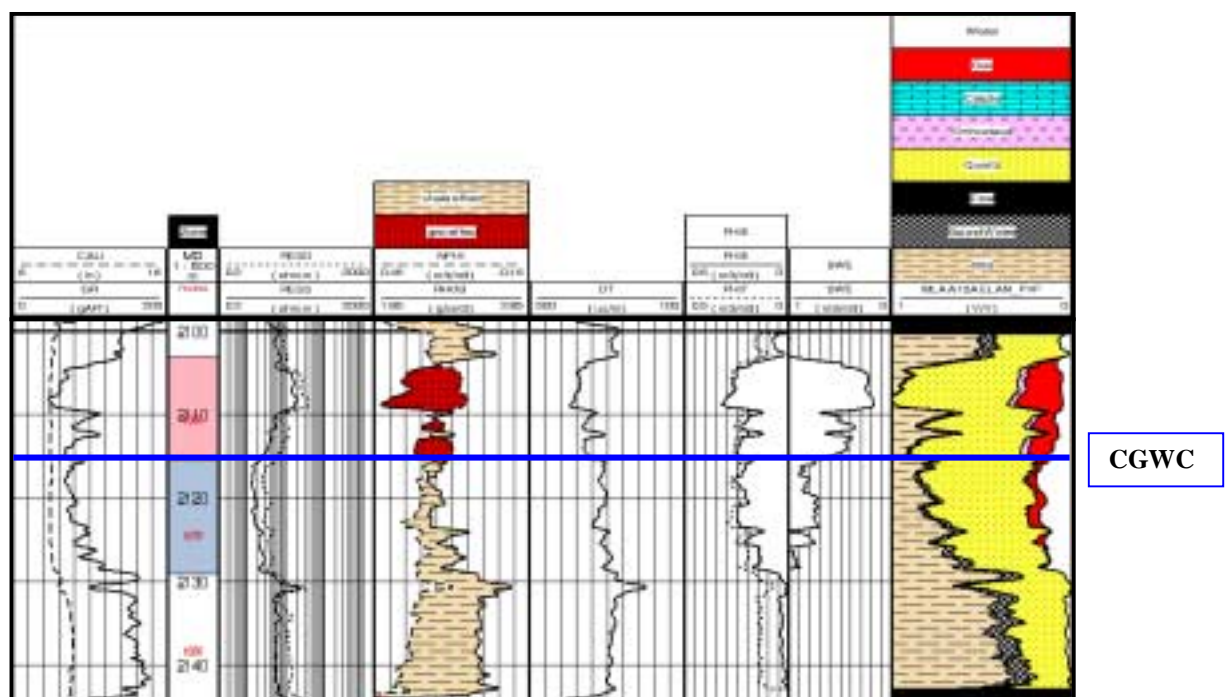


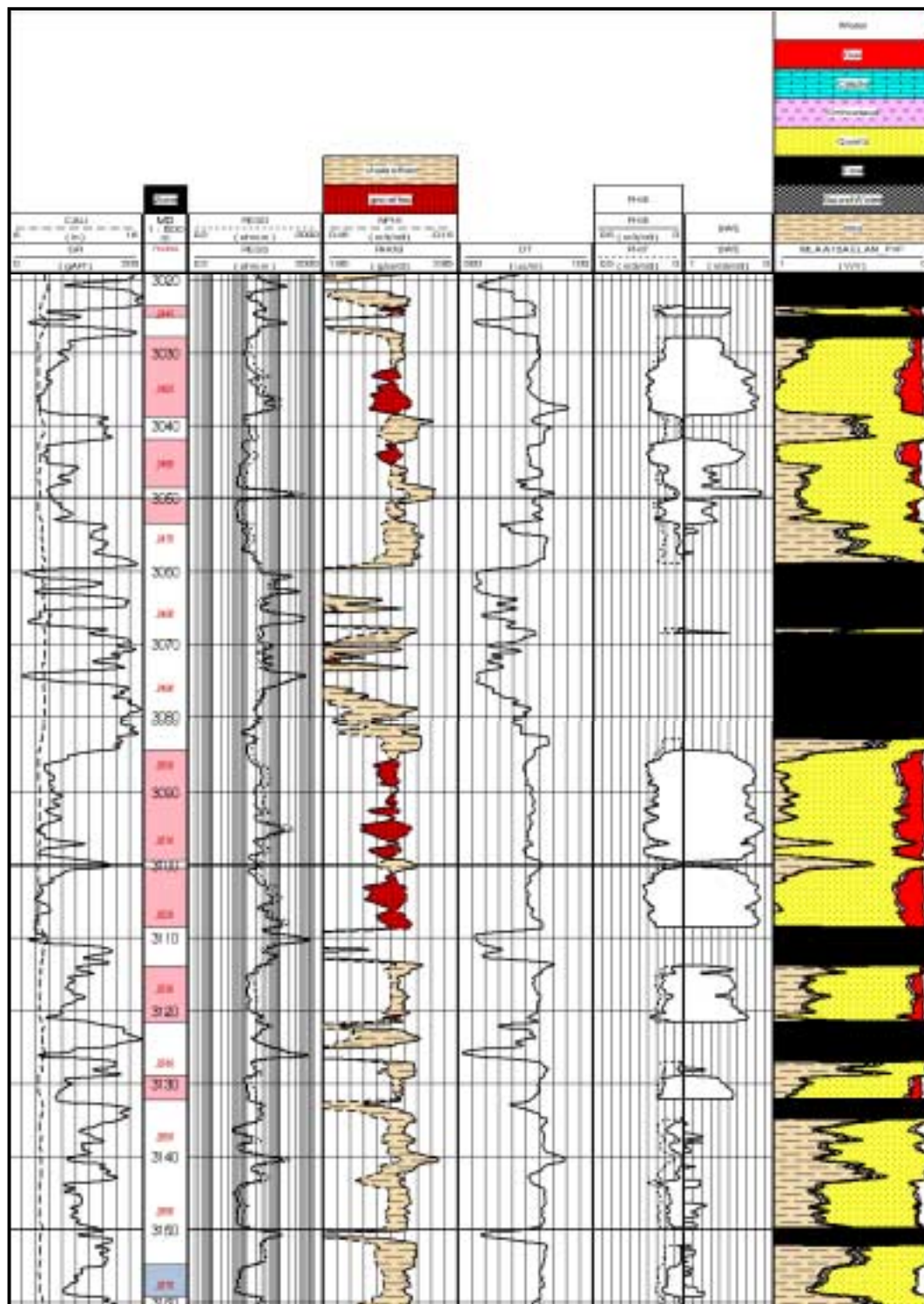
Figure 1. Marlin Reservoir Interval



**Figure 2.** Residual Gas and Oil Interval ( $S_w = 0.68$ ).  
Oil has been smeared upwards with gas production. OGOC at 1556m TVDSS (1967.5m MD)



**Figure 3.** GWC at 2115.5m MD (1691.36m TVD)



**Figure 4.** Turrum Reservoir Interval



## Reservoir Statistics

The quantitative summary of the interpreted reservoir parameters as presented in Table 1 below was based on PHIE cut-off of 8% for gas.

Net Pay was determined using a SWE cutoff of <65%.

**Net Reservoir Thickness is based on a PHIE Cut-off:**

**0.08 volume per volume for GAS**

Depth Reference

MDKB

Mean PHIE, Mean VCL, Mean SWE is of Net Reservoir Thickness Interval  
Curves - PIGN, VCL, SUWI (2003 ELAN Model)

Top depth (m)	Bottom depth (m)	Gross thickness (m)	Net thickness (m)	Net/Gross ratio	Mean VCL (m3/m3)	Mean PHIE (m3/m3)	Mean SWE (m3/m3)	Comments	Net pay thickness
2281.1	2281.7	0.60	0.60	1.00	0.315	0.156	0.744	Gas	
2285.8	2288.5	2.70	2.70	1.00	0.158	0.205	0.474	Gas	2.70
2383.1	2384.3	1.20	1.20	1.00	0.368	0.127	0.762	Gas	
2386.4	2390.5	4.10	4.10	1.00	0.210	0.190	0.443	Gas	4.10
2444.4	2446.0	1.60	1.60	1.00	0.281	0.171	0.710	Gas	
2454.3	2455.7	1.40	1.40	1.00	0.346	0.140	0.820	Gas	
2485.7	2486.7	1.00	1.00	1.00	0.267	0.148	0.788	Gas	
2488.4	2489.0	0.60	0.60	1.00	0.341	0.127	0.825	Gas	
2528.0	2531.7	3.70	3.70	1.00	0.325	0.158	0.368	Gas	3.70
2532.4	2534.0	1.60	1.55	0.97	0.298	0.151	0.549	Gas	1.55
2541.9	2543.6	1.70	1.70	1.00	0.348	0.127	0.745	Gas	
2544.8	2548.0	3.20	3.20	1.00	0.304	0.130	0.714	Gas	
2551.8	2552.8	1.00	0.95	0.95	0.337	0.119	0.813	Gas	
2565.8	2566.4	0.60	0.60	1.00	0.341	0.114	0.835	Gas	
2567.1	2568.5	1.40	1.40	1.00	0.382	0.111	0.809	Gas	
2573.9	2574.8	0.90	0.75	0.83	0.479	0.096	0.832	Gas	
2577.0	2578.0	1.00	1.00	1.00	0.364	0.117	0.543	Gas	1.00
2578.7	2579.7	1.00	1.00	1.00	0.329	0.117	0.632	Gas	1.00
2585.2	2586.3	1.10	1.10	1.00	0.316	0.152	0.483	Gas	1.10
2588.2	2589.0	0.80	0.75	0.94	0.415	0.091	0.825	Gas	
2591.7	2593.9	2.20	2.20	1.00	0.370	0.109	0.744	Gas	
2602.1	2603.8	1.70	1.70	1.00	0.313	0.139	0.576	Gas	1.70
2615.5	2616.9	1.40	1.35	0.96	0.290	0.121	0.765	Gas	
2631.0	2632.6	1.60	1.60	1.00	0.380	0.130	0.691	Gas	
2634.0	2636.4	2.40	2.35	0.98	0.338	0.119	0.775	Gas	
2638.6	2640.4	1.80	1.75	0.97	0.173	0.186	0.454	Gas	1.75
2656.6	2657.5	0.90	0.55	0.61	0.480	0.098	0.738	Gas	
2666.6	2668.0	1.40	1.40	1.00	0.343	0.118	0.696	Gas	
2675.9	2678.3	2.40	2.00	0.83	0.468	0.096	0.740	Gas	
2686.1	2687.4	1.30	1.25	0.96	0.336	0.131	0.563	Gas	1.25
2706.4	2709.2	2.80	2.80	1.00	0.273	0.146	0.396	Gas	2.80
2721.9	2723.3	1.40	1.40	1.00	0.192	0.152	0.565	Gas	1.40
2725.4	2727.6	2.20	2.15	0.98	0.136	0.170	0.412	Gas	2.15
2728.9	2732.1	3.20	3.15	0.98	0.287	0.146	0.553	Gas	3.15

2737.2	2739.4	2.20	2.20	1.00	0.290	0.148	0.641	Gas	2.20
2780.1	2781.2	1.10	0.90	0.82	0.352	0.098	0.680	Gas	
2789.5	2790.8	1.30	1.25	0.96	0.373	0.132	0.694	Gas	
2796.4	2797.4	1.00	0.95	0.95	0.386	0.101	0.794	Gas	
2812.7	2814.5	1.80	1.65	0.92	0.314	0.120	0.546	Gas	1.65
2825.5	2827.4	1.90	1.45	0.76	0.356	0.099	0.538	Gas	1.45
2851.1	2852.7	1.60	0.85	0.53	0.368	0.093	0.665	Gas	
2854.0	2855.0	1.00	0.85	0.85	0.379	0.091	0.655	Gas	
2877.3	2880.6	3.30	3.15	0.95	0.239	0.159	0.311	Gas	3.15
2905.9	2907.9	2.00	1.35	0.68	0.340	0.105	0.645	Gas	1.35
2937.0	2939.0	2.00	0.90	0.45	0.365	0.092	0.701	Gas	
2941.7	2945.0	3.30	0.60	0.18	0.333	0.088	0.733	Gas	
2972.1	2995.7	23.60	22.85	0.97	0.084	0.183	0.216	Gas	22.85
3014.8	3016.9	2.10	1.10	0.52	0.291	0.115	0.441	Gas	1.10
3048.1	3053.6	5.50	4.45	0.81	0.205	0.120	0.298	Gas	4.45
3054.0	3054.7	0.70	0.65	0.93	0.311	0.086	0.603	Gas	0.65
3086.5	3088.4	1.90	0.50	0.26	0.191	0.087	0.604	Gas	0.50
3110.6	3111.7	1.10	1.05	0.95	0.316	0.109	0.405	Gas	1.05
3112.8	3114.7	1.90	1.90	1.00	0.083	0.195	0.192	Gas	1.90
3118.3	3127.7	9.40	9.15	0.97	0.169	0.144	0.358	Gas	9.15
3155.4	3155.8	0.40	0.10	0.25	0.260	0.082	0.575	Gas	0.10
3156.8	3157.8	1.00	0.60	0.60	0.294	0.095	0.368	Gas	0.60
3158.3	3163.7	5.40	5.35	0.99	0.095	0.168	0.194	Gas	5.35
3174.5	3175.1	0.60	0.40	0.67	0.103	0.095	0.528	Gas	0.40
3177.0	3202.6	25.60	24.75	0.97	0.155	0.132	0.406	Gas	24.75
3239.7	3246.7	7.00	6.65	0.95	0.041	0.200	0.128	Gas	6.65
3254.1	3256.1	2.00	1.65	0.82	0.236	0.111	0.409	Gas	1.65
3285.3	3311.1	25.80	19.30	0.75	0.193	0.112	0.400	Gas	19.30
3329.0	3331.8	2.80	2.75	0.98	0.120	0.135	0.374	Gas	2.75
3344.4	3345.6	1.20	0.70	0.58	0.244	0.103	0.268	Gas	0.70
3346.4	3350.8	4.40	3.25	0.74	0.195	0.117	0.422	Gas	3.25
3351.7	3357.2	5.50	4.65	0.85	0.072	0.134	0.302	Water	
3359.6	3363.8	4.20	4.20	1.00	0.030	0.125	0.413	Water	
3365.3	3374.9	9.64	9.59	0.99	0.125	0.115	0.662	Water	
3374.9	3379.3	4.36	4.21	0.97	0.144	0.115	0.874	Water	
3381.0	3383.4	2.40	1.90	0.79	0.224	0.093	1.000	Water	
3387.8	3411.3	23.50	22.65	0.96	0.092	0.110	1.000	Water	
3415.2	3429.3	14.10	13.85	0.98	0.117	0.107	0.973	Water	
3433.3	3434.3	1.00	0.95	0.95	0.365	0.103	0.824	Water	
3436.0	3445.0	9.00	7.70	0.86	0.134	0.109	0.986	Water	

**Table 1.** MLA A10A reservoir statistics

## **APPENDIX 2b**

### **MARLIN A-10AST1**

#### **Petrophysics Evaluation Summary**

**Esso Australia Pty Ltd.**  
Exploration Department

**Marlin A10A-ST1  
Formation Evaluation  
Log Interpretation Report**

**Petrophysicists: A. Miller, K. Kuttan**

**December 2004**



## Marlin A10A ST1 Log Interpretation

Marlin A10A ST1 was drilled as a sidetrack after plugging back Marlin A10A. The target in the well is the L-500 upper and L-500 middle reservoirs. The sidetrack was spudded on the 5<sup>th</sup> of September 2004 after kicking off the cement plug in the Marlin A10A 8½" open hole.

The well was successfully kicked off from 2375m MD (on the third attempt) and drilled, steered and surveyed to a total depth of 3491 mMDRT (2713.48 mTVDRT) in an 8½" production hole.

The sidetrack well was logged using the Reeves Shuttle system, from 3491m up to 2275m. The drill pipe was temporarily stuck while attempting to take formation pressures with the MDT in the open hole. The pipe and the MDT were freed by rotating the pipe. A decision was made to take the pressures after the 7 inch production casing was run, using the CHDT.

Formation pressure testing was conducted with Schlumberger's CHDT run on wireline. A total of 7 pretests were conducted at 3362m, 3349m and 3363m. Attempts to take pressures and samples with the CHDT below 3363m MD were unsuccessful due to the presence of unidentifiable obstructions in the 7 inch casing.

An evaluation and interpretation of the pressure data is the subject of another report and will not be covered by this report. The Reeves data have been analysed for porosity, water saturation and net pay over the interval 2282 -3455 mMDRT.

Note that all depths quoted in this report are logged mMDRT unless otherwise specified.

### DATA

Data from the following logging surveys were used in this interpretation:

Survey/Log	Company	Top (m MDRT)	Bottom (m MDRT)
<b>RUN 1:</b> Compact Gamma Ray - Neutron -Density/Caliper - Laterolog - Compensated Sonic	Reeves	2275	3491

### Deviation

The well angle over the target zones ranged from an inclination of 42.24° and azimuth of 122.92° at 2339.7m to an inclination of 30.00° and azimuth of 137.67° at 3470.5m.

### Mud Data

Mud Type :	KCl/PHPA/GLY
Mud Weight:	9.90 ppg
Rm:	0.135 ohm-m @ 25 °C
Rmf:	0.098 ohm-m @ 25 °C
Rmc:	0.168 ohm-m @ 25 °C
BHT:	114 °C

### Hole Size

2375 - 3491 m	8.5 inches
---------------	------------

### Data Acquisition & Log Quality

The deep and shallow resistivity (DDL and DSL), Bulk Density (DEN), Thermal Neutron Porosity (NPRL) and the 3-5" Compensated Sonic (DT35) were depth aligned to the environmentally corrected Gamma Ray (GGCE).

### Data Processing

No processing was undertaken in this analysis.

## INTERPRETATION

### Logs Used

The primary logs used in the interpretation were GGCE (GR), DDL (RESDEEP), DEN (RHOB) and NPRL (NPHI).

### Formation Water Salinity

No clean water-bearing sands exist in the Marlin A10A-ST1 well. Rwa analysis of clean water-bearing sands within the same interval in nearby wells (e.g. MLA A23A) indicates an apparent formation water salinity of 25,000 ppm NaCl equivalent (using  $a = 1$ ,  $m = 2$  and  $n = 2$ ) below the fresh water wedge. Therefore, a formation water salinity of 25,000 ppm NaCl equivalent was used in the analysis for all hydrocarbon bearing sands in the Marlin A10A-ST1 well.

Salinity	Top (m)	Bottom (m)
25,000 ppm	2976	3455

### Hydrocarbon Type

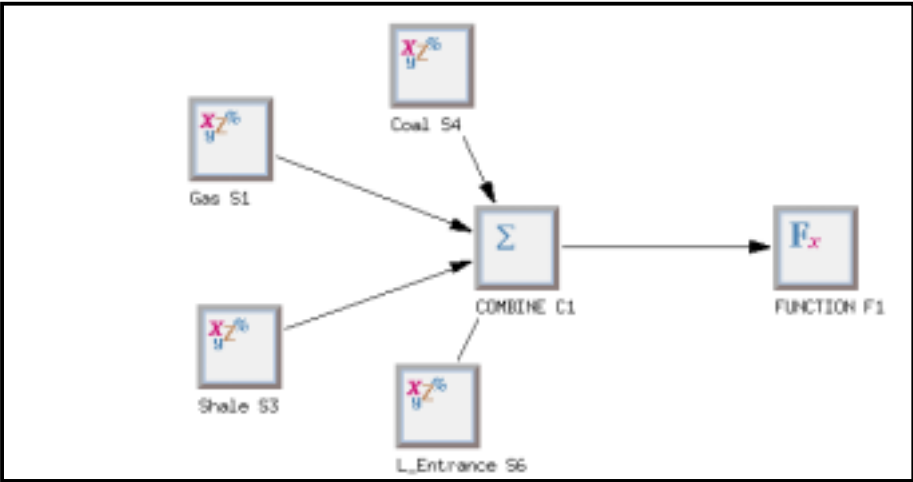
All of the reservoir units were solved for gas and water. No oil zones were encountered in this well.

### Shale Volume, Porosity and Water Saturation

The Schlumberger Geoframe ELAN+ module was used to determine mineral and rock volumes of quartz, illite and feldspar; total porosity, effective porosity and effective water saturation. Details of the model are presented in the following figures and tables.

ELAN MODEL

Processes



ELAN Input Channels

	Compound Name Spec	MARLIN A10AST1
TEMP_CH	TEMP;*	TEMP@Elan_Inputs;2 .WELLEDIT [A1354642]
RHOB_IFAC_CH	IFRH;*	
NPHI_IFAC_CH	INPH;*	
RHOB_CH	DEN:BPB;*	DEN@Elan_Inputs;10 .WELLEDIT [A1354630]
NPHI_CH	NPRL:BPB;*	NPRL@Elan_Inputs;10 .WELLEDIT [A1354634]
DT_CH	DT35:BPB;*	DT35@Elan_Inputs;10 .WELLEDIT [A1354628]
CUDC_CH/RT_CH	DDLL:BPB;*	DDLL@Elan_Inputs;7 .WELLEDIT [A1354632]
GR_CH	GGCE:BPB;*	GGCE@Elan_Inputs;4 [A1354636]
PRB1_CH	PRB1;*	
PRB3_CH	PRB3;*	
PRB4_CH	FLAG_COAL;*	FLAG_COAL@Elan_Inputs;4 .WELLEDIT [A1354631]
PRB6_CH	PRB6;*	
M_CH	MOGP;*	
N_CH	SXP;*	

ELAN Global Parameters

Reference Index	MD
Processing Interval	2276.0000(m) To 3455.0000(m)
Sampling Rate	0.1526 (m)
Uncertainty Channel	FALSE
Clay Input	DRY
Special Fluids	IMMOVABLE_HYDROCARBON

## ELAN Zone Definition

Name	Bottom To Top
Tururum- 25K	3459.9983(m) To 2976.0000(m)

## ELAN Process Definition

<b>Process</b>	<b>SOLVE1 "Gas"</b>
Equations	RHOB NPHI DT CUDC_DWA GR CT1 CT3
Volumes	QUAR ORTH ILLI XWAT UWAT XGAS UGAS
User Constraints	constraint(maxDolomite, DOLO<0)
Constraint Zones	Bottom Top
UNDEFINED	3459.9983(m ) 2276.0000(m )
Constraints Applied	
UNDEFINED	- IrreducibleXWater
UNDEFINED	- IrreducibleUWater
UNDEFINED	- WaterBaseMud_SX0_gt_SW
<b>Process</b>	<b>SOLVE3 "Shale"</b>
Equations	RHOB CUDC_DWA GR
Volumes	QUAR ILLI XWAT UWAT
Constraint Zones	Bottom Top
UNDEFINED	3459.9983(m ) 2276.0000(m )
<b>Process</b>	<b>SOLVE4 "Coal"</b>
Equations	RHOB
Volumes	COAL
Constraint Zones	Bottom Top
UNDEFINED	3459.9983(m ) 2276.0000(m )
<b>Process</b>	<b>SOLVE6 "L_Entrance"</b>
Equations	RHOB
Volumes	CALC
Constraint Zones	Bottom Top
UNDEFINED	3459.9983(m ) 2276.0000(m )
<b>Process</b>	<b>COMBINE 1 "COMBINE"</b>
Order	SOL.1 SOL.3 SOL.4 SOL.6
Combine Method	"UNDEFINED " 11351.7002 (m ) Internal Average
Probability Functions	probability(SOL.6, 0)
	probability(SOL.4, PRB4_CH)
	prob3 = linear(ILLI_VOL.SOL.3, 0.3, 0, 0.5, 1)
	probability(SOL.3, prob3)

Process	FUNCTION 1 "FUNCTION"					
Outputs	VCL	SXWI	SWT	SUWI	PIGN	PHIT
User-defined Function/n swt_cmp=if((PRB4_CH > 0),1,(UWAT_VOL + XBWA_VOL)/(UWAT_VOL + XBWA_VOL + UOIL_VOL + UGAS_VOL))						
output(SWT, swt_cmp)						

### ELAN Probability Expressions

```
probability(SOL.6, 0)

probability(SOL.4, PRB4_CH)

prob3 = linear(ILLI_VOL.SOL.3, 0.3, 0, 0.5, 1)
probability(SOL.3, prob3)
```

### ELAN Model Constraints

Model 1: Constraint Zones			
Name	Boundary	Temperature	
UNDEFINED	11351.7002	-999.25	
constraints			
UNDEFINED	- IrreducibleXWater		
UNDEFINED	- IrreducibleUWater		
UNDEFINED	- WaterBaseMud_SXO_gt_SW		

Model 3: Constraint Zones			
Name	Boundary	Temperature	
UNDEFINED	11351.7002	-999.25	
constraints			

Model 4: Constraint Zones			
Name	Boundary	Temperature	
UNDEFINED	11351.7002	-999.25	
constraints			

Model 6: Constraint Zones			
Name	Boundary	Temperature	
UNDEFINED	11351.7002	-999.25	
constraints			

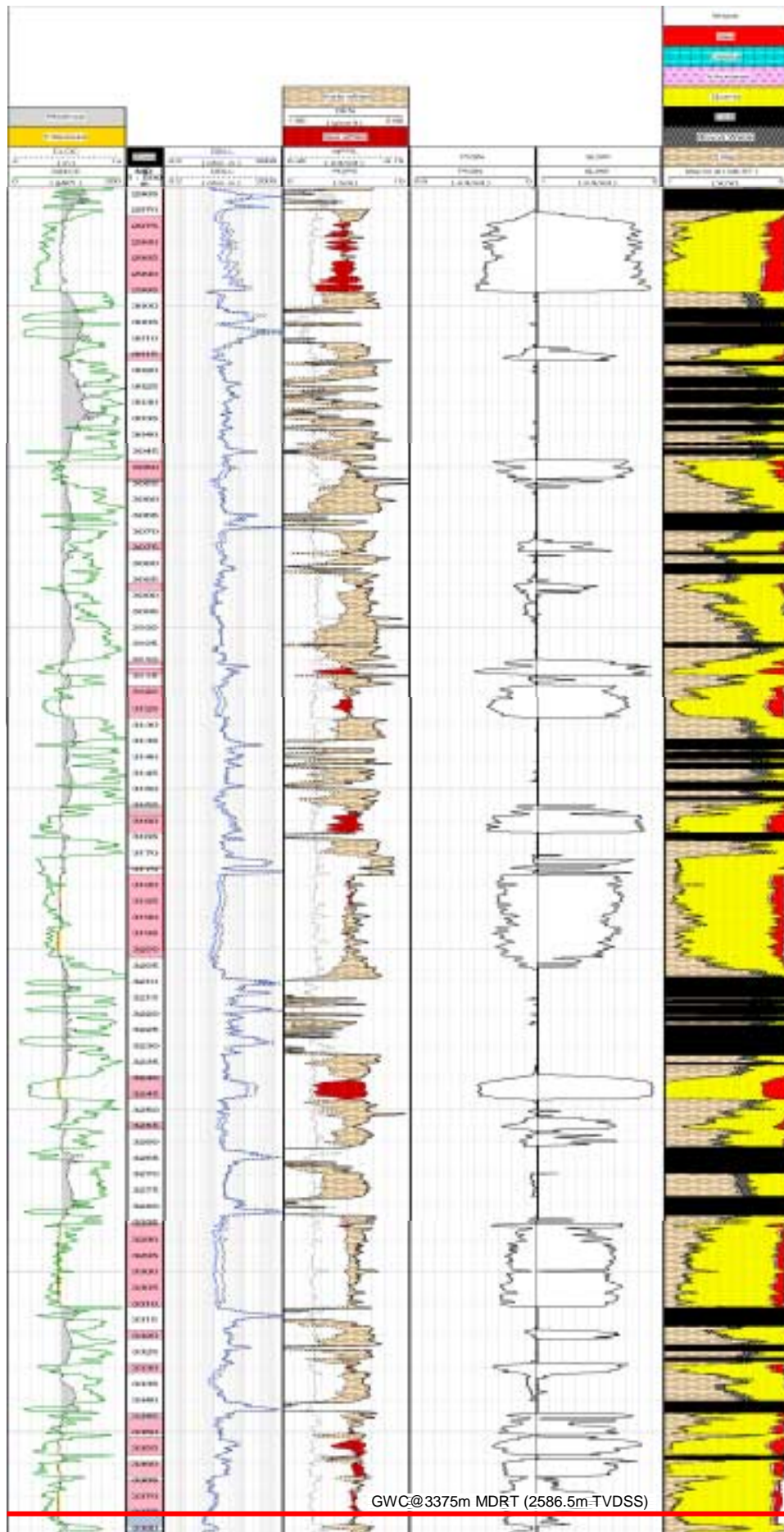
### ELAN Different Parameters

Parameters	Turrum- 2				
n*****	*****	*****	*****	*****	*****

## ELAN Same Parameters

Parameter	Value	Parameter	Value
RHOB_QUAR	2.650(g/cm <sup>3</sup> )	RHOB_CALC	2.710(g/cm <sup>3</sup> )
RHOB_DOLO	2.847(g/cm <sup>3</sup> )	RHOB_ORTH	2.570(g/cm <sup>3</sup> )
RHOB_ILLI	2.780(g/cm <sup>3</sup> )	RHOB_KAOL	2.620(g/cm <sup>3</sup> )
RHOB_COAL	1.200(g/cm <sup>3</sup> )	RHOB_IGNE	3.000(g/cm <sup>3</sup> )
RHOB_XWAT	0.970(g/cm <sup>3</sup> )	RHOB_UWAT	0.970(g/cm <sup>3</sup> )
RHOB_XOIL	0.700(g/cm <sup>3</sup> )	RHOB_UOIL	0.700(g/cm <sup>3</sup> )
RHOB_XGAS	0.011(g/cm <sup>3</sup> )	RHOB_UGAS	0.095(g/cm <sup>3</sup> )
RHOB_XBWA	1.000(g/cm <sup>3</sup> )	NPHI_QUAR	-0.065(m <sup>3</sup> /m <sup>3</sup> )
NPHI_CALC	0.000(m <sup>3</sup> /m <sup>3</sup> )	NPHI_DOLO	0.032(m <sup>3</sup> /m <sup>3</sup> )
NPHI_ORTH	-0.010(m <sup>3</sup> /m <sup>3</sup> )	NPHI_ILLI	0.247(m <sup>3</sup> /m <sup>3</sup> )
NPHI_KAOL	0.450(m <sup>3</sup> /m <sup>3</sup> )	NPHI_COAL	0.450(m <sup>3</sup> /m <sup>3</sup> )
NPHI_XWAT	1.000(m <sup>3</sup> /m <sup>3</sup> )	NPHI_UWAT	1.000(m <sup>3</sup> /m <sup>3</sup> )
NPHI_XOIL	1.000(m <sup>3</sup> /m <sup>3</sup> )	NPHI_UOIL	1.000(m <sup>3</sup> /m <sup>3</sup> )
NPHI_XGAS	0.143(m <sup>3</sup> /m <sup>3</sup> )	NPHI_UGAS	0.270(m <sup>3</sup> /m <sup>3</sup> )
NPHI_XBWA	1.000(m <sup>3</sup> /m <sup>3</sup> )	DT_QUAR	55.500(us/m )
DT_CALC	47.800(us/m )	DT_DOLO	43.500(us/m )
DT_ORTH	68.885(us/m )	DT_ILLI	60.000(us/m )
DT_KAOL	91.318(us/m )	DT_COAL	121.920(us/m )
DT_IGNE	16.916(us/m )	DT_XWAT	0.000(us/m )
DT_UWAT	220.000(us/m )	DT_XOIL	0.000(us/m )
DT_UOIL	240.000(us/m )	DT_XGAS	0.000(us/m )
DT_UGAS	289.865(us/m )	DT_XBWA	189.000(us/m )
U_QUAR	5.000( )	U_CALC	14.100( )
U_DOLO	9.100( )	U_ILLI	9.900( )
U_KAOL	5.100( )	U_COAL	1.000( )
U_XWAT	0.692( )	U_UWAT	0.000( )
U_XOIL	0.136( )	U_UOIL	0.000( )
U_XGAS	0.012( )	U_UGAS	0.000( )
U_XBWA	0.398( )	CXDC_ILLI	-999.250(mS/m )
CXDC_KAOL	-999.250(mS/m )	CXDC_XWAT	20.630(mS/m )
CXDC_XBWA	11.780(mS/m )	CUDC_ILLI	-999.250(mS/m )
CUDC_KAOL	-999.250(mS/m )	CUDC_UWAT	13.962(mS/m )
CUDC_UBWA	3.331(mS/m )	GR_QUAR	60.000(gAPI )
GR_CALC	11.000(gAPI )	GR_DOLO	3.000(gAPI )
GR_ORTH	231.000(gAPI )	GR_ILLI	242.000(gAPI )
GR_KAOL	98.000(gAPI )	GR_COAL	40.000(gAPI )
GR_IGNE	40.000(gAPI )	GR_XWAT	0.000(gAPI )
GR_UWAT	0.000(gAPI )	GR_XOIL	0.000(gAPI )
GR_UOIL	0.000(gAPI )	GR_XGAS	0.000(gAPI )
GR_UGAS	0.000(gAPI )	GR_XBWA	0.000(gAPI )
CT1_QUAR	0.000( )	CT1_CALC	0.000( )
CT1_DOLO	0.000( )	CT1_ORTH	0.000( )
CT1_ILLI	0.000( )	CT1_KAOL	0.000( )
CT1_COAL	0.000( )	CT1_IGNE	0.000( )
CT1_XWAT	0.000( )	CT1_UWAT	0.000( )
CT1_XOIL	0.000( )	CT1_UOIL	0.000( )
CT1_XGAS	1.000( )	CT1_UGAS	-0.200( )
CT1_XBWA	0.000( )	CT2_QUAR	0.000( )
CT2_CALC	0.000( )	CT2_DOLO	0.000( )
CT2_ORTH	0.000( )	CT2_ILLI	0.000( )
CT2_KAOL	0.000( )	CT2_COAL	0.000( )
CT2_IGNE	0.000( )	CT2_XWAT	0.000( )
CT2_UWAT	0.000( )	CT2_XOIL	1.000( )
CT2_UOIL	-0.200( )	CT2_XGAS	0.000( )
CT2_UGAS	0.000( )	CT2_XBWA	0.000( )

CT3_QUAR	-0.050( )	CT3_CALC	0.000( )
CT3_ORTH	1.000( )	CT3_ILLI	0.000( )
CT3_KAOL	0.000( )	CT3_COAL	0.000( )
CT3_XWAT	0.000( )	CT3_UWAT	0.000( )
CT3_XOIL	0.000( )	CT3_UOIL	0.000( )
CT3_XGAS	0.000( )	CT3_UGAS	0.000( )
CT3_XBWA	0.000( )	ARHOB_ILLI	2.780(g/cm3 )
ARHOB_KAOL	2.620(g/cm3 )	WCLP_ILLI	0.154(m3/m3 )
WCLP_KAOL	0.058(m3/m3 )	CBWA_ILLI	-999.250(mS/m )
CBWA_KAOL	-999.250(mS/m )	CECA_ILLI	0.200(meq/g )
CECA_KAOL	0.090(meq/g )	RMF	0.160(ohm.m )
MST	61.880(degC )	RW	0.458(ohm.m )
RWT	-999.250(degC )	SALIN_ISOL	-999.250(ppk )
SALIN_PARA	-999.250(ppk )	SALIN_XWAT	12.924(ppk )
SALIN_UWAT	30.000(ppk )	SALIN_XIWA	-999.250(ppk )
SALIN_UIWA	-999.250(ppk )	SALIN_XOIL	0.000(ppk )
SALIN_UOIL	0.000(ppk )	SALIN_XGAS	0.000(ppk )
SALIN_UGAS	0.000(ppk )	SALIN_XSFL	-999.250(ppk )
SALIN_USFL	-999.250(ppk )	CT1_ZP	0.000( )
CT2_ZP	0.000( )	CT3_ZP	0.000( )
RHOB_UNC_ZP	0.027(g/cm3 )	NPHI_UNC_ZP	0.015(m3/m3 )
DT_UNC_ZP	2.250(us/m )	U_UNC_ZP	0.225( )
CXDC_UNC_ZP	0.072(mS/m )	CUDC_UNC_ZP	0.050(mS/m )
GR_UNC_ZP	2.250(gAPI )	CT1_UNC_ZP	0.015( )
CT2_UNC_ZP	0.015( )	CT3_UNC_ZP	0.015( )
VOLS_UNC_ZP	0.015(m3/m3 )	RHOB_UNC_WM	1.000( )
NPHI_UNC_WM	1.000( )	DT_UNC_WM	0.300( )
U_UNC_WM	0.400( )	CXDC_UNC_WM	0.500( )
CUDC_UNC_WM	1.000( )	GR_UNC_WM	0.300( )
CT1_UNC_WM	0.200( )	CT2_UNC_WM	0.200( )
CT3_UNC_WM	0.300( )	VOLS_UNC_WM	1.000( )
RHOB_IFAC_ZP	1.000( )	NPHI_IFAC_ZP	1.000( )
A_ZP	1.000( )	N_ZP	2.000( )
C_DWA	0.000( )	M_DWA	2.000( )
BVIRR	0.004(m3/m3 )		

**RESULTS AND DISCUSSION**

**Figure 1:**  
Turrum Reservoir Interval



## 2282m - TD

All the reservoirs in the interpretation interval down to 3375m MD are interpreted to be gas-bearing. Below this depth, the sands are all wet. The Turrum reservoirs extend from 2972m (top of L100) to TD. In the interval 2280 - 2972m, the reservoirs tend to be thin and are of poorer reservoir quality, as indicated by the high apparent water saturations.

The L500 Upper sand, which extends from 3344 to 3364m is interpreted to be gas-bearing from log and MDT pressure data. This gas zone has an average PHIE of 12% and average SWE of 35%. The L500 Middle sand is interpreted to be present in the interval 3365.8 to 3379m. This sand is gas-bearing from 3365.8 to 3375m, with a GWC interpreted at 3375m MD (2586.5m TVDSS) as indicated by the high SWE below this depth.

## RESERVOIR STATISTICS

The quantitative summary of the interpreted reservoir parameters as presented in Table 1 below was based on PHIE cut-off of 8% for gas.

Net Pay was determined using a SWE cutoff of <65%.

**Net Reservoir Thickness is based on a PHIE Cut-off: 0.08 volume per volume for GAS**

Depth Reference: MDKB

Mean PHIE, Mean VCL, Mean SWE is of Net Reservoir Thickness Interval  
Curves - PIGN, VCL, SUWI (2004 ELAN Model)

Top depth (m)	Bottom depth (m)	Gross thickness (m)	Net thickness (m)	Net/Gross ratio	Mean VCL (m3/m3)	Mean PHIE (m3/m3)	Mean SWE (m3/m3)	Comments	Net pay thickness
2281.1	2281.7	0.60	0.60	1.00	0.315	0.156	0.744	Gas	
2285.8	2288.5	2.70	2.70	1.00	0.158	0.205	0.474	Gas	2.70
2383.1	2384.3	1.20	1.20	1.00	0.368	0.127	0.762	Gas	
2386.4	2390.5	4.10	4.10	1.00	0.210	0.190	0.443	Gas	4.10
2444.4	2446.0	1.60	1.60	1.00	0.281	0.171	0.710	Gas	
2454.3	2455.7	1.40	1.40	1.00	0.346	0.140	0.820	Gas	
2485.7	2486.7	1.00	1.00	1.00	0.267	0.148	0.788	Gas	
2488.4	2489.0	0.60	0.60	1.00	0.341	0.127	0.825	Gas	
2528.0	2531.7	3.70	3.70	1.00	0.325	0.158	0.368	Gas	3.70
2532.4	2534.0	1.60	1.55	0.97	0.298	0.151	0.549	Gas	1.55
2541.9	2543.6	1.70	1.70	1.00	0.348	0.127	0.745	Gas	
2544.8	2548.0	3.20	3.20	1.00	0.304	0.130	0.714	Gas	
2551.8	2552.8	1.00	0.95	0.95	0.337	0.119	0.813	Gas	
2565.8	2566.4	0.60	0.60	1.00	0.341	0.114	0.835	Gas	
2567.1	2568.5	1.40	1.40	1.00	0.382	0.111	0.809	Gas	
2573.9	2574.8	0.90	0.75	0.83	0.479	0.096	0.832	Gas	
2577.0	2578.0	1.00	1.00	1.00	0.364	0.117	0.543	Gas	1.00
2578.7	2579.7	1.00	1.00	1.00	0.329	0.117	0.632	Gas	1.00
2585.2	2586.3	1.10	1.10	1.00	0.316	0.152	0.483	Gas	1.10
2588.2	2589.0	0.80	0.75	0.94	0.415	0.091	0.825	Gas	
2591.7	2593.9	2.20	2.20	1.00	0.370	0.109	0.744	Gas	
2602.1	2603.8	1.70	1.70	1.00	0.313	0.139	0.576	Gas	1.70
2615.5	2616.9	1.40	1.35	0.96	0.290	0.121	0.765	Gas	
2631.0	2632.6	1.60	1.60	1.00	0.380	0.130	0.691	Gas	
2634.0	2636.4	2.40	2.35	0.98	0.338	0.119	0.775	Gas	
2638.6	2640.4	1.80	1.75	0.97	0.173	0.186	0.454	Gas	1.75
2656.6	2657.5	0.90	0.55	0.61	0.480	0.098	0.738	Gas	
2666.6	2668.0	1.40	1.40	1.00	0.343	0.118	0.696	Gas	
2675.9	2678.3	2.40	2.00	0.83	0.468	0.096	0.740	Gas	
2686.1	2687.4	1.30	1.25	0.96	0.336	0.131	0.563	Gas	1.25
2706.4	2709.2	2.80	2.80	1.00	0.273	0.146	0.396	Gas	2.80
2721.9	2723.3	1.40	1.40	1.00	0.192	0.152	0.565	Gas	1.40
2725.4	2727.6	2.20	2.15	0.98	0.136	0.170	0.412	Gas	2.15
2728.9	2732.1	3.20	3.15	0.98	0.287	0.146	0.553	Gas	3.15
2737.2	2739.4	2.20	2.20	1.00	0.290	0.148	0.641	Gas	2.20

Top depth (m)	Bottom depth (m)	Gross thickness (m)	Net thickness (m)	Net/Gross ratio	Mean VCL (m3/m3)	Mean PHIE (m3/m3)	Mean SWE (m3/m3)	Comments	Net pay thickness
2780.1	2781.2	1.10	0.90	0.82	0.352	0.098	0.680	Gas	
2789.5	2790.8	1.30	1.25	0.96	0.373	0.132	0.694	Gas	
2796.4	2797.4	1.00	0.95	0.95	0.386	0.101	0.794	Gas	
2812.7	2814.5	1.80	1.65	0.92	0.314	0.120	0.546	Gas	1.65
2825.5	2827.4	1.90	1.45	0.76	0.356	0.099	0.538	Gas	1.45
2851.1	2852.7	1.60	0.85	0.53	0.368	0.093	0.665	Gas	
2854.0	2855.0	1.00	0.85	0.85	0.379	0.091	0.655	Gas	
2877.3	2880.6	3.30	3.15	0.95	0.239	0.159	0.311	Gas	3.15
2905.9	2907.9	2.00	1.35	0.68	0.340	0.105	0.645	Gas	1.35
2937.0	2939.0	2.00	0.90	0.45	0.365	0.092	0.701	Gas	
2941.7	2945.0	3.30	0.60	0.18	0.333	0.088	0.733	Gas	
2972.1	2995.7	23.60	22.85	0.97	0.084	0.183	0.216	Gas	22.85
3014.8	3016.9	2.10	1.10	0.52	0.291	0.115	0.441	Gas	1.10
3048.1	3053.6	5.50	4.45	0.81	0.205	0.120	0.298	Gas	4.45
3054.0	3054.7	0.70	0.65	0.93	0.311	0.086	0.603	Gas	0.65
3086.5	3088.4	1.90	0.50	0.26	0.191	0.087	0.604	Gas	0.50
3110.6	3111.7	1.10	1.05	0.95	0.316	0.109	0.405	Gas	1.05
3112.8	3114.7	1.90	1.90	1.00	0.083	0.195	0.192	Gas	1.90
3118.3	3127.7	9.40	9.15	0.97	0.169	0.144	0.358	Gas	9.15
3155.4	3155.8	0.40	0.10	0.25	0.260	0.082	0.575	Gas	0.10
3156.8	3157.8	1.00	0.60	0.60	0.294	0.095	0.368	Gas	0.60
3158.3	3163.7	5.40	5.35	0.99	0.095	0.168	0.194	Gas	5.35
3174.5	3175.1	0.60	0.40	0.67	0.103	0.095	0.528	Gas	0.40
3177.0	3202.6	25.60	24.75	0.97	0.155	0.132	0.406	Gas	24.75
3239.7	3246.7	7.00	6.65	0.95	0.041	0.200	0.128	Gas	6.65
3254.1	3256.1	2.00	1.65	0.82	0.236	0.111	0.409	Gas	1.65
3285.3	3311.1	25.80	19.30	0.75	0.193	0.112	0.400	Gas	19.30
3329.0	3331.8	2.80	2.75	0.98	0.120	0.135	0.374	Gas	2.75
3344.4	3345.6	1.20	0.70	0.58	0.244	0.103	0.268	Gas	0.70
3346.4	3350.8	4.40	3.25	0.74	0.195	0.117	0.422	Gas	3.25
3351.7	3357.2	5.50	4.65	0.85	0.072	0.134	0.302	Gas	4.65
3359.6	3363.8	4.20	4.20	1.00	0.030	0.125	0.413	Gas	4.20
3365.3	3368.5	3.20	3.15	0.98	0.184	0.094	0.850	Gas	
3368.5	3374.9	6.44	6.44	1.00	0.097	0.125	0.592	Gas	6.44
3374.9	3379.3	4.36	4.21	0.97	0.144	0.115	0.874	Water	
3381.0	3383.4	2.40	1.90	0.79	0.224	0.093	1.036	Water	
3387.8	3411.3	23.50	22.65	0.96	0.092	0.110	1.000	Water	
3415.2	3429.3	14.10	13.85	0.98	0.117	0.107	0.973	Water	
3433.3	3434.3	1.00	0.95	0.95	0.365	0.103	0.824	Water	
3436.0	3445.0	9.00	7.70	0.86	0.134	0.109	0.986	Water	

Table 1. MLA A10A ST1 reservoir statistics

## **APPENDIX 3a**

### **MARLIN A-10A**

#### **Lithology/Show Descriptions**

## **Marlin A10A Lithology / Show Descriptions**

<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
690	720	100	<b>Geologist on board (9/08/04) from kick off to TD 8.5" Hole section.</b>
			<b>CALCAREOUS CLAYSTONE:</b> yellowish grey to light greenish grey, strongly calcareous, common fossil fragments, trace glauconite, trace carbonaceous fragments, soft to moderately firm, amorphous to sub blocky.
720	750	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
750	780	100	<b>CALCAREOUS CLAYSTONE:</b> generally as above, trace calcite.
780	810	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
810	840	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
840	870	100	<b>CALCAREOUS CLAYSTONE:</b> yellowish grey to light greenish grey, light olive grey, strongly calcareous, grading to argillaceous calcisiltite, common fossil fragments, trace pyrite, trace crystalline calcite, nil to trace glauconite, soft to moderately firm, amorphous to sub blocky.
870	900	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
900	930	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
930	960	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
960	990	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
990	1020	100	<b>CALCAREOUS CLAYSTONE:</b> yellowish grey to light greenish grey, light olive grey, strongly calcareous, grading to argillaceous calcisiltite, minor to common fossil fragments, Forams, ooids, trace pyrite, trace crystalline calcite, nil to trace glauconite, soft to moderately firm, amorphous to sub blocky.
1020	1050	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1050	1080	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1080	1110	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1110	1140	100	<b>CALCAREOUS CLAYSTONE:</b> light olive grey to light greenish grey, dark greenish grey, strongly calcareous, grading to argillaceous calcisiltite, minor to common fossil fragments, inc. Forams, ooids, trace pyrite, nil to trace crystalline calcite, nil to trace glauconite, soft to moderately firm, dispersive, amorphous to sub blocky.
1140	1170	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1170	1200	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1200	1230	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1230	1260	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1260	1290	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1290	1320	100	<b>CALCAREOUS CLAYSTONE:</b> medium dark grey to dark greenish grey, strongly calcareous, grading to argillaceous calcisiltite, trace fossil fragments, trace pyrite, soft to moderately firm, dispersive, amorphous to sub blocky.
1320	1350	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1350	1380	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
			**Baracarb added to mud system.
1380	1410	100	<b>CALCAREOUS CLAYSTONE:</b> generally as above, trace nodular pyrite.
1410	1440	100	<b>CALCAREOUS CLAYSTONE:</b> medium light grey to light greenish grey, strongly calcareous, grading to argillaceous calcisiltite, trace fossil fragments, trace to rare nodular pyrite, soft to moderately firm, dispersive, amorphous to sub blocky.
			Trip for bit @ 1459mMDRT
1440	1470	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1470	1500	100	<b>CALCAREOUS CLAYSTONE:</b> medium light grey to light greenish grey, strongly calcareous, grading to argillaceous calcisiltite, trace fossil fragments, inc. Forams, ooids, trace disseminated pyrite, trace to rare nodular pyrite, soft to moderately firm, dispersive, amorphous to sub blocky.

<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
1500	1530	100	<b>CALCAREOUS CLAYSTONE:</b> generally as above, medium light grey to light greenish grey, strongly calcareous, grading to argillaceous calcisiltite, trace fossil fragments, inc. Forams, ooids, trace disseminated pyrite, trace to rare nodular pyrite, soft to moderately firm, dispersive, amorphous to sub blocky.
1530	1560	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1560	1570	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1570	1580	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1580	1590	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1590	1600	100	<b>CALCAREOUS CLAYSTONE:</b> very light grey to medium light grey, trace light greenish grey, strongly calcareous, silty, grading in part to argillaceous siltstone, trace fossil fragments, trace disseminated pyrite, trace nodular pyrite, soft to moderately firm, dispersive, amorphous to sub blocky.
1600	1610	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1610	1620	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1620	1630	100	<b>CALCAREOUS CLAYSTONE:</b> light grey to medium light grey, becoming medium grey, strongly calcareous, silty, grading in part to argillaceous siltstone, trace fossil fragments, trace disseminated pyrite, trace nodular pyrite, trace carbonaceous specks, soft to moderately firm, dispersive, amorphous to sub blocky.
1630	1640	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1640	1650	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1650	1660	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1660	1670	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1670	1680	100	<b>CALCAREOUS CLAYSTONE:</b> medium light grey to medium grey, becoming medium dark grey, calcareous, commonly silty, grading in part to argillaceous siltstone, trace fossil fragments, trace disseminated pyrite, trace nodular pyrite, trace carbonaceous specks, soft to moderately firm, dispersive, amorphous to sub blocky.
1680	1690	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1690	1700	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1700	1710	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1710	1720	100	<b>CALCAREOUS CLAYSTONE:</b> as above.
1720	1730	100	<b>CALCAREOUS CLAYSTONE:</b> generally as above, rare nodular pyrite, trace glauconite..
1730	1735	90	<b>CLAYSTONE:</b> medium light grey to medium grey, becoming medium dark grey, moderately calcareous, commonly silty, grading in part to argillaceous siltstone, trace fossil fragments, trace disseminated pyrite, trace nodular pyrite, trace carbonaceous specks, nil to trace glauconite, soft to moderately firm, dispersive, amorphous to sub blocky.
		10	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, medium to predominantly coarse grained, trace very coarse, moderately well sorted, angular to sub angular, some bit fractured grains, trace silica cement, trace argillaceous matrix, trace nodular pyrite, returned loose, fair to good inferred porosity. Trace mineral fluorescence.
1735	1740	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
1740	1745	30	<b>CLAYSTONE:</b> as above.
		60	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, silty, lignitic.
1745	1750	10	<b>CLAYSTONE:</b> as above.
		70	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> as above.
1750	1755	10	<b>CLAYSTONE:</b> as above.
		60	<b>SANDSTONE:</b> as above.
		30	<b>COAL:</b> as above.

Interval (m)		%	Lithology / Show Description
From	To		
1755	1760	10	<b>CLAYSTONE:</b> light brownish grey to brownish grey, weakly calcareous, minor to common silt, grading to argillaceous siltstone, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated pyrite, very soft to moderately firm.
		90	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, medium to predominantly coarse grained, common very coarse, poorly sorted, angular to sub angular, minor sub rounded, trace bit fractured grains, trace silica cement, trace argillaceous matrix, trace nodular pyrite, generally returned loose, trace hard cemented aggregates, fair to good inferred porosity. Trace mineral fluorescence.
		Tr	<b>COAL:</b> brownish black to black, earthy lustre, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, silty, lignitic.
1760	1765	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
1765	1770	10	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, weakly calcareous, minor to common silt, grading to argillaceous siltstone, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated pyrite, very soft to moderately firm.
		90	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly coarse to very coarse grained, minor to common medium, moderately sorted, angular to sub angular, minor sub rounded, trace bit fractured grains, trace silica cement, trace argillaceous matrix, trace nodular pyrite, generally returned loose, trace hard cemented aggregates, fair to good inferred porosity. Trace mineral fluorescence.
1770	1775	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
1775	1780	10	<b>CLAYSTONE:</b> as above.
		80	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
1780	1785	20	<b>CLAYSTONE:</b> as above.
		60	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly coarse to very coarse grained, trace medium, moderately sorted, angular to sub angular, minor sub rounded, trace bit fractured grains, trace silica cement, trace argillaceous matrix, trace nodular pyrite, generally returned loose, trace hard cemented aggregates, fair to good inferred porosity. Trace mineral fluorescence.
		20	<b>COAL:</b> as above.
1785	1790	10	<b>CLAYSTONE:</b> as above.
		80	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
1790	1795	10	<b>CLAYSTONE:</b> as above.
		60	<b>SANDSTONE:</b> as above.
		30	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, silty, lignitic.
1795	1800	30	<b>CLAYSTONE:</b> as above.
		65	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> as above.

Interval (m)		%	Lithology / Show Description
From	To		
1800	1805	10	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, weakly calcareous, minor to common silt, grading to argillaceous siltstone, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated pyrite, very soft to moderately firm. Common bit generated texture.
		60	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly medium to coarse grained, trace very coarse, moderately sorted, angular to sub angular, minor to common sub rounded, trace bit fractured grains, trace silica cement, trace argillaceous matrix, trace nodular pyrite, generally returned loose, trace hard cemented aggregates, fair to good inferred porosity. Trace mineral fluorescence.
		30	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, silty, lignitic.
1805	1810	50	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly coarse to very coarse grained, trace medium, moderately sorted, angular to sub angular, minor sub rounded, trace bit fractured grains, trace silica cement, trace argillaceous matrix, trace nodular pyrite, returned loose, fair to good inferred porosity. Trace mineral fluorescence.
1810	1815	10	<b>COAL:</b> as above.
		30	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
1815	1820	40	<b>COAL:</b> as above.
		90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
1820	1825	Tr	<b>COAL:</b> as above.
		70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
1825	1830	Tr	<b>COAL:</b> as above.
			Sample consists of abundant rock flour.
		20	<b>CLAYSTONE:</b> as above.
1830	1835	80	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, coarse to predominantly very coarse grained, trace to minor medium, moderately sorted, sub angular to sub rounded, minor angular, trace bit fractured grains, trace to rare silica cement, trace argillaceous matrix, nil to trace nodular pyrite, fair to good inferred porosity. Trace mineral fluorescence. Abundant rock flour.
		Tr	<b>COAL:</b> as above.
		40	<b>CLAYSTONE:</b> as above.
1835	1838	60	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
		40	<b>CLAYSTONE:</b> as above.
1838	1840	60	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
			Trip for bit @ 1838mMDRT
1838	1840	100	<b>COAL:</b> brownish black to black, earthy lustre to sub vitreous, friable to brittle, sub fissile in part, sub blocky to blocky, uneven to angular fracture, trace sub conchoidal, silty in part, lignitic.
		Tr	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.



<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
1840	1845	95	<b>CLAYSTONE:</b> light brownish grey to brownish grey, weakly calcareous, minor to common silt, grading to argillaceous siltstone, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated pyrite, very soft to moderately firm. Predominantly bit generated texture.
		Tr	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, coarse to predominantly very coarse grained, trace to minor medium, moderately sorted, sub angular to sub rounded, minor angular, trace bit fractured grains, trace to rare silica cement, trace argillaceous matrix, nil to trace nodular pyrite, fair to good inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
		5	<b>COAL:</b> as above.
1845	1850	20	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		50	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
1850	1855	30	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		60	<b>COAL:</b> as above.
1855	1860	40	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		60	<b>COAL:</b> as above.
1860	1865	80	<b>CLAYSTONE:</b> light brownish grey to brownish grey, greyish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated pyrite, nil to trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Common bit generated texture.
		10	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
1865	1870	90	<b>CLAYSTONE:</b> as above.
		5	<b>SANDSTONE:</b> generally as above, trace hard cemented aggregates.
		5	<b>COAL:</b> as above.
1870	1875	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
1875	1880	100	<b>CLAYSTONE:</b> generally as above, sample predominantly soft bit generated texture.
		Tr	<b>SANDSTONE:</b> generally as above, trace hard cemented aggregates.
		Tr	<b>COAL:</b> as above.
1880	1885	100	<b>CLAYSTONE:</b> generally as above, sample predominantly soft bit generated texture.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
1885	1890	100	<b>CLAYSTONE:</b> generally as above, sample predominantly soft bit generated texture.
		Tr	<b>SANDSTONE:</b> generally as above, trace hard cemented aggregates.
		Tr	<b>COAL:</b> as above.
1890	1895	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
1895	1900	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
1900	1905	100	<b>CLAYSTONE:</b> as above, rare nodular pyrite.
		Tr	<b>SANDSTONE:</b> generally as above, trace inter granular pyrite cement.
		Tr	<b>COAL:</b> as above.

<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
1905	1910	100	<b>CLAYSTONE:</b> light brownish grey to brownish grey, greyish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Common bit generated texture.
		Tr	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
1910	1915	80	<b>CLAYSTONE:</b> as above.
		20	<b>COAL:</b> as above.
1915	1920	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
1920	1925	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
1925	1930	90	<b>CLAYSTONE:</b> as above.
		10	<b>COAL:</b> as above.
1930	1935	100	<b>CLAYSTONE:</b> generally light brownish grey to brownish grey, greyish brown, abundant white rock flour, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.
		Tr	<b>COAL:</b> as above.
1935	1940	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
1940	1945	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
1945	1950	40	<b>CLAYSTONE:</b> as above.
		60	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium grained, trace very fine, moderately well sorted, sub angular to sub rounded, trace to rare silica cement, trace argillaceous matrix, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
		Tr	<b>COAL:</b> as above.
1950	1955	30	<b>CLAYSTONE:</b> as above.
		70	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, medium to coarse grained, trace very coarse, moderately sorted, sub angular to sub rounded, trace to rare silica cement, trace pyrite cement, trace argillaceous matrix, trace nodular pyrite, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
		Tr	<b>COAL:</b> as above.
1955	1960	20	<b>CLAYSTONE:</b> as above.
		80	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
1960	1965	30	<b>CLAYSTONE:</b> as above.
		70	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
1965	1970	30	<b>CLAYSTONE:</b> as above.
		60	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
1970	1975	20	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		70	<b>COAL:</b> as above.
1975	1980	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.

Interval (m)		%	Lithology / Show Description
From	To		
1980	1985	60	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, greyish brown, abundant white rock flour, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, minor carbonaceous specks and fragments, nil to trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.
		30	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, medium to coarse grained, trace very coarse, moderately sorted, sub angular to sub rounded, trace to rare silica cement, trace pyrite cement, trace argillaceous matrix, trace nodular pyrite, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
		10	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
1985	1990	70	<b>CLAYSTONE:</b> as above.
		25	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> as above.
1990	1995	70	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
1995	2000	70	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> as above.
2000	2005	70	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium grained, trace coarse, moderately sorted, sub angular to sub rounded, trace to rare silica cement, trace pyrite cement, trace argillaceous matrix, trace nodular pyrite, returned loose, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
		20	<b>COAL:</b> as above.
2005	2010	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> generally as above, trace hard cemented aggregates.
		Tr	<b>COAL:</b> as above.
2010	2015	70	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
2015	2020	70	<b>CLAYSTONE:</b> as above.
		25	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> as above.
2020	2025	90	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, abundant white and light brown rock flour, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, nil to trace disseminated pyrite, nil to trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2025	2030	70	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
2030	2035	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2035	2040	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.

Interval (m)		%	Lithology / Show Description
From	To		
2040	2045	40	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, abundant white and light brown rock flour, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, nil to trace disseminated pyrite, nil to trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.
		60	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium grained, trace coarse, moderately sorted, sub angular to sub rounded, trace to rare silica cement, trace pyrite cement, trace argillaceous matrix, trace nodular pyrite, returned loose, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
		Tr	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
2045	2050	40	<b>CLAYSTONE:</b> as above.
		60	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2050	2055	40	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> as above.
2055	2060	70	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
2060	2065	70	<b>CLAYSTONE:</b> as above.
		25	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> as above.
2065	2070	70	<b>CLAYSTONE:</b> as above.
		25	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> as above.
2070	2075	70	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> as above.
2075	2080	55	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> generally as above, predominantly medium grained.
		15	<b>COAL:</b> as above.
2080	2085	40	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, abundant white and light brown rock flour, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, nil to trace disseminated pyrite, nil to trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.
		60	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace coarse, moderately well sorted, sub angular to sub rounded, trace to rare silica cement, trace pyrite cement, trace argillaceous matrix, trace nodular pyrite, returned loose, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
		Tr	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
2085	2090	50	<b>CLAYSTONE:</b> as above.
		50	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2090	2095	60	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.

Interval (m)		%	Lithology / Show Description
From	To		
2095	2100	75	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, abundant white and light brown rock flour, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, nil to trace disseminated pyrite, nil to trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.
		20	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace coarse, moderately well sorted, sub angular to sub rounded, trace to rare silica cement, trace pyrite cement, trace argillaceous matrix, trace nodular pyrite, returned loose, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
		5	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
2100	2105	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2105	2110	20	<b>CLAYSTONE:</b> as above.
		80	<b>SANDSTONE:</b> generally as above, predominantly medium to coarse grained.
		Tr	<b>COAL:</b> as above.
2110	2115	20	<b>CLAYSTONE:</b> as above.
		80	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly medium grained to coarse grained, trace fine and very coarse, moderately well sorted, sub angular to sub rounded, occasionally rounded, trace to rare silica cement, trace pyrite cement, trace argillaceous matrix, trace nodular pyrite, returned loose, poor inferred porosity. Trace mineral fluorescence. Common white rock flour.
		Tr	<b>COAL:</b> as above.
2115	2120	Tr	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		100	<b>COAL:</b> as above.
2120	2125	Tr	<b>CLAYSTONE:</b> as above.
		100	<b>SANDSTONE:</b> generally as above, predominantly medium grained, abundant white rock flour.
		Tr	<b>COAL:</b> as above.
2125	2130	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> generally as above, predominantly medium grained, abundant white rock flour.
		Tr	<b>COAL:</b> as above.
2130	2135	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> generally as above, predominantly medium grained, abundant white rock flour.
		Tr	<b>COAL:</b> as above.
2135	2140	70	<b>CLAYSTONE:</b> as above.
		25	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> as above.
2140	2145	50	<b>CLAYSTONE:</b> as above.
		50	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2145	2150	50	<b>CLAYSTONE:</b> as above.
		50	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2150	2155	50	<b>CLAYSTONE:</b> as above.
		50	<b>SANDSTONE:</b> generally as above, becoming fine to medium grained.
		Tr	<b>COAL:</b> as above.

Interval (m)		%	Lithology / Show Description
From	To		
2155	2160	60	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, abundant white and light brown rock flour, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, nil to trace disseminated pyrite, nil to trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.
		40	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace coarse, moderately well sorted, sub angular to sub rounded, trace to rare silica cement, trace pyrite cement, trace argillaceous matrix, trace nodular pyrite, returned loose, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
		Tr	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
2160	2165	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2165	2170	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2170	2175	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2175	2180	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2180	2185	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2185	2190	70	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
2190	2195	80	<b>CLAYSTONE:</b> as above.
		15	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> as above.
2195	2200	80	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
2200	2205	80	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
2205	2210	80	<b>CLAYSTONE:</b> as above.
		15	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> as above.
2210	2215	80	<b>CLAYSTONE:</b> as above.
		15	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> as above.
2215	2220	90	<b>CLAYSTONE:</b> as above.
		5	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> as above.
2220	2225	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.

Interval (m)		%	Lithology / Show Description
From	To		
2225	2230	80	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, abundant white and light brown rock flour, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, nil to trace disseminated pyrite, nil to trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.
		20	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace coarse, moderately well sorted, sub angular to sub rounded, trace to rare silica cement, trace argillaceous matrix, nil to trace nodular pyrite, returned loose, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
		Tr	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
2230	2235	80	<b>CLAYSTONE:</b> as above.
		15	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> as above.
2235	2240	10	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> generally as above, trace hard cemented aggregates, poor visible porosity.
		70	<b>COAL:</b> as above.
2240	2245	60	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
2245	2250	50	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above, predominantly white rock flour.
		10	<b>COAL:</b> as above.
2250	2255	75	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> as above.
2255	2260	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2260	2265	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2265	2270	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2270	2275	95	<b>CLAYSTONE:</b> as above.
		5	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2275	2280	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2280	2285	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2285	2290	75	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> as above.
2290	2295	95	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> as above.

Interval (m)		%	Lithology / Show Description
From	To		
2295	2300	75	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, light brown rock flour, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, nil to trace disseminated pyrite, nil to trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.
		5	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace coarse, moderately well sorted, sub angular to sub rounded, trace to rare silica cement, trace argillaceous matrix, nil to trace nodular pyrite, returned loose, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
		20	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
2300	2305	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2305	2310	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2310	2315	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2315	2320	95	<b>CLAYSTONE:</b> as above, trace nodular pyrite.
		5	<b>SANDSTONE:</b> as above.
2320	2325	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
2325	2340	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly fine to medium grained, nil to trace coarse, moderately well sorted, sub angular to sub rounded, trace to rare silica cement, trace argillaceous matrix, nil to trace nodular pyrite, returned loose, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
2340	2345	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2345	2350	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2350	2355	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2355	2360	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2360	2365	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2365	2370	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2370	2375	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2375	2380	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2380	2385	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2385	2390	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly fine to medium grained, trace to rare very fine, moderately well sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.



Interval (m)		%	Lithology / Show Description
From	To		
2390	2395	95	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, light brown rock flour, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, nil to trace disseminated pyrite, nil to trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.
		5	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly fine to medium grained, trace to rare very fine, moderately well sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
2395	2400	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2400	2405	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2405	2410	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2410	2415	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2415	2420	95	<b>CLAYSTONE:</b> as above.
		5	<b>SANDSTONE:</b> as above.
2420	2425	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2425	2430	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2430	2435	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2435	2440	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
2440	2445	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2445	2450	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
2450	2455	40	<b>CLAYSTONE:</b> as above.
		60	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, very fine to fine grained, trace medium, moderately well sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
2455	2460	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
2460	2465	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2465	2470	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2470	2470	90	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, very fine to fine grained, trace medium, moderately well sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
		10	
2470	2475	100	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, light brown rock flour, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, nil to trace disseminated pyrite, nil to trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.

Interval (m)		%	Lithology / Show Description
From	To		
2475	2480	95	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, light brown rock flour, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, nil to trace disseminated pyrite, nil to trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.
		5	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, very fine to fine grained, trace medium, moderately well sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
2480	2485	95	<b>CLAYSTONE:</b> as above.
		5	<b>SANDSTONE:</b> as above.
2485	2490	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2490	2495	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> generally as above, trace firm aggregates.
2495	2500	95	<b>CLAYSTONE:</b> as above.
		5	<b>SANDSTONE:</b> as above.
2500	2505	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2505	2510	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> generally as above, trace firm aggregates, trace carbonaceous specks.
2510	2515	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2515	2520	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> generally as above, trace firm aggregates, trace carbonaceous specks.
2520	2525	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> generally as above, predominantly medium grained.
2525	2530	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
2530	2535	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> generally as above, predominantly medium grained, trace coarse grains.
2535	2540	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> generally as above, predominantly medium grained, trace coarse grains.
2540	2545	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2545	2550	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> generally as above, predominantly fine medium grained, trace coarse grains, trace firm aggregates.
2550	2555	70	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, light brown rock flour, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, nil to trace disseminated pyrite, nil to trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.
		30	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium grained, trace very fine, moderately well sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
2555	2560	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> generally as above, trace firm aggregates, trace carbonaceous specks.
2560	2565	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above, sample predominantly rock flour.

Interval (m)		%	Lithology / Show Description
From	To		
2565	2570	80	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, light brown rock flour, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, nil to trace disseminated pyrite, nil to trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.
		20	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium grained, trace very fine and coarse, moderately well sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
2570	2575	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> generally as above, trace firm aggregates.
2575	2580	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> generally as above, trace firm aggregates.
2580	2585	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> generally as above, minor very fine.
2585	2590	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium grained, minor very fine, moderately well sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, trace firm aggregates, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour. (Sample has indications of fine interbedding)
2590	2595	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above.
2595	2600	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
2600	2605	60	<b>CLAYSTONE:</b> generally as above, trace nodular pyrite.
		40	<b>SANDSTONE:</b> as above.
2605	2610	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above.
2610	2615	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
2615	2620	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
2620	2625	70	<b>CLAYSTONE:</b> generally as above, trace coal interbeds.
		30	<b>SANDSTONE:</b> as above.
2625	2630	30	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, light brown rock flour, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, nil to trace disseminated pyrite, nil to trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.
		70	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, very fine to fine grained, minor medium, moderately well sorted, angular to sub rounded, trace silica cement, trace pyrite cement, trace argillaceous matrix, returned loose, trace firm aggregates, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
2630	2635	30	<b>CLAYSTONE:</b> as above.
		70	<b>SANDSTONE:</b> as above.
2635	2640	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above.
2640	2645	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above.

Interval (m)		%	Lithology / Show Description
From	To		
2645	2650	90	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, light brown rock flour, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, nil to trace disseminated pyrite, nil to trace nodular pyrite, very soft to moderately firm, blocky to sub blocky. Dominantly bit generated texture.
		10	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, very fine to fine grained, minor medium, moderately well sorted, angular to sub rounded, trace silica cement, trace pyrite cement, trace argillaceous matrix, returned loose, trace firm aggregates, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
2650	2655	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2655	2660	80	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
2660	2665	80	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above
2665	2670	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2670	2675	30	<b>CLAYSTONE:</b> as above.
		70	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium grained, minor very fine, trace coarse, moderately sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, trace finer grained firm aggregates, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
		Tr	<b>COAL:</b> as above.
2675	2680	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2680	2685	50	<b>CLAYSTONE:</b> as above.
		50	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2685	2690	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium grained, minor coarse to very coarse, trace very fine, poorly sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, trace finer grained firm aggregates, poor inferred porosity. Trace mineral fluorescence.
2690	2695	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above.
2695	2700	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
2700	2705	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.

<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
2705	2710	60	<b>CLAYSTONE:</b> light brownish grey to brownish grey, light brown rock flour, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, very soft to moderately firm, blocky to sub blocky, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite.
		Tr	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium grained, minor coarse to very coarse, trace very fine, poorly sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, trace finer grained firm aggregates, poor inferred porosity. Trace mineral fluorescence.
		40	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic
2710	2715	90	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above
2715	2720	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2720	2725	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2725	2730	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2730	2735	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2735	2740	90	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic
2740	2745	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2745	2750	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2750	2755	100	<b>CLAYSTONE:</b> as above, trace nodular pyrite.
		Tr	<b>SANDSTONE:</b> as above.
2755	2760	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2760	2765	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2765	2770	100	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, light brown rock flour, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		Tr	<b>SANDSTONE:</b> as above.
2770	2775	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2775	2780	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above
2780	2785	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2785	2790	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2790	2795	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.

<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
2795	2800	100	<b>CLAYSTONE:</b> light brownish grey to brownish grey, minor greyish brown, trace to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		Tr	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium grained, minor coarse to very coarse, trace very fine, poorly sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, trace finer grained firm aggregates, poor inferred porosity. Trace mineral fluorescence.
2800	2805	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2805	2810	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2810	2815	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2815	2820	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2820	2825	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2825	2830	10	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		90	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, minor silty, lignitic to sub bituminous
2830	2835	30	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		70	<b>COAL:</b> as above.
2835	2840	60	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
2840	2845	50	<b>CLAYSTONE:</b> as above.
		50	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, very fine to fine grained, minor medium, moderately well sorted, angular to sub rounded, trace silica cement, trace pyrite cement, trace argillaceous matrix, returned loose, trace firm aggregates, poor inferred porosity. Trace mineral fluorescence. Sample predominantly white rock flour.
		Tr	<b>COAL:</b> as above.
2845	2850	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2850	2855	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2855	2860	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above.
2860	2865	40	<b>CLAYSTONE:</b> as above.
		50	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace very fine, well sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace argillaceous matrix, returned loose, minor rock flour, fair inferred porosity. Trace mineral fluorescence.
		10	<b>COAL:</b> as above.
2865	2870	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> generally as above, trace coarse grains.
		Tr	<b>COAL:</b> as above.

Interval (m)		%	Lithology / Show Description
From	To		
2870	2875	30	<b>CLAYSTONE:</b> light brownish grey to brownish grey, minor greyish brown, trace to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		70	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace to rare coarse, trace very fine, moderately sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace argillaceous matrix, returned loose, minor rock flour, fair inferred porosity. Trace mineral fluorescence.
		Tr	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to commonly blocky, hackly to angular fracture, rare to minor silt, lignitic to sub bituminous.
2875	2880	50	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> as above.
2880	2885	Tr	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		100	<b>COAL:</b> as above.
2885	2890	20	<b>CLAYSTONE:</b> light brownish grey to brownish grey, minor greyish brown, trace to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		Tr	<b>SANDSTONE:</b> as above.
		80	<b>COAL:</b> as above.
2890	2895	20	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		80	<b>COAL:</b> as above.
2895	2900	10	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		90	<b>COAL:</b> as above.
2900	2905	90	<b>CLAYSTONE:</b> light brownish grey to brownish grey, minor greyish brown, trace to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		Tr	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
2905	2910	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2910	2915	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace very fine, well sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace argillaceous matrix, returned loose, minor rock flour, fair inferred porosity. Trace mineral fluorescence.
		Tr	<b>COAL:</b> as above.
2915	2920	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2920	2925	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.

<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
2925	2930	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2930	2935	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2935	2940	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2940	2945	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace very fine, well sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace argillaceous matrix, returned loose, minor rock flour, fair inferred porosity. Trace mineral fluorescence.
		Tr	<b>COAL:</b> as above.
2945	2950	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2950	2955	80	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky.
2955	2960	90	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
2960	2965	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2965	2970	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2970	2975	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace very fine, well sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace argillaceous matrix, predominantly loose grained, fair inferred porosity. Trace mineral fluorescence.
		Tr	<b>COAL:</b> as above.
2975	2980	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2980	2985	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2985	2990	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2990	2995	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2995	3000	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.



<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
3000	3005	50	<b>CLAYSTONE:</b> light brownish grey to brownish grey, minor greyish brown, trace to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		30	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace very fine, well sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace argillaceous matrix, predominantly loose grained, fair inferred porosity. Trace mineral fluorescence.
		20	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky.
3005	3010	40	<b>CLAYSTONE:</b> as above.
		60	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3010	3015	50	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> as above.
3015	3020	30	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		40	<b>COAL:</b> as above.
3020	3025	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3025	3030		Sample contains abundant Baracarb
		80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
3030	3035	Tr	<b>COAL:</b> as above.
			Sample contains abundant Baracarb
		30	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, trace to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
3035	3040	70	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace very fine, well sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace argillaceous matrix, returned loose, fair inferred porosity. Trace mineral fluorescence. Common rock flour in sample.
		10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
3040	3045	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
3045	3050	100	<b>SANDSTONE:</b> as above.
3050	3055	100	<b>SANDSTONE:</b> generally as above, trace coarse to very coarse.
3055	3060	80	<b>SANDSTONE:</b> as above.
		10	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, trace to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		10	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky.
3060	3065	30	<b>SANDSTONE:</b> as above.
		50	<b>CLAYSTONE:</b> as above.
		20	<b>COAL:</b> as above.

<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
3065	3070	20	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace very fine, well sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace argillaceous matrix, returned loose, fair inferred porosity. Trace mineral fluorescence. Common rock flour in sample.
		50	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, trace to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		30	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky.
3070	3075	20	<b>SANDSTONE:</b> as above.
		30	<b>CLAYSTONE:</b> as above.
		50	<b>COAL:</b> as above.
3075	3080	20	<b>SANDSTONE:</b> as above.
		70	<b>CLAYSTONE:</b> as above.
		10	<b>COAL:</b> as above.
3080	3085	40	<b>SANDSTONE:</b> as above.
		50	<b>CLAYSTONE:</b> as above.
		10	<b>COAL:</b> as above.
3085	3090	70	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace very fine, well sorted, sub angular to sub rounded, occasionally rounded, trace silica cement, nil to trace argillaceous matrix, returned loose, fair inferred porosity. Trace mineral fluorescence. Common rock flour in sample.
		20	<b>CLAYSTONE:</b> as above.
		10	<b>COAL:</b> as above.
3090	3095	90	<b>SANDSTONE:</b> as above.
		10	<b>CLAYSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3095	3100	90	<b>SANDSTONE:</b> as above.
		10	<b>CLAYSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3100	3105	90	<b>SANDSTONE:</b> generally as above, trace nodular pyrite.
		10	<b>CLAYSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3105	3110	30	<b>SANDSTONE:</b> as above.
		10	<b>CLAYSTONE:</b> as above.
		60	<b>COAL:</b> as above.
3110	3115	60	<b>SANDSTONE:</b> generally as above, becoming medium to coarse.
		20	<b>CLAYSTONE:</b> as above.
		20	<b>COAL:</b> as above.
3115	3120	50	<b>SANDSTONE:</b> as above.
		30	<b>CLAYSTONE:</b> as above.
		20	<b>COAL:</b> as above.
3120	3125	20	<b>SANDSTONE:</b> as above.
		60	<b>CLAYSTONE:</b> light brownish grey to brownish grey, minor greyish brown, trace to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		20	<b>COAL:</b> as above.

Interval (m)		%	Lithology / Show Description
From	To		
3125	3130	20	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace very fine, well sorted, sub angular to sub rounded, occasionally rounded, trace silica cement, nil to trace argillaceous matrix, returned loose, fair inferred porosity. Trace mineral fluorescence. Common rock flour in sample.
		70	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, trace to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		10	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky.
3130	3135	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3135	3140	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3140	3145	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3145	3150	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3150	3155	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3155	3160	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3160	3165	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to occasionally medium grained, trace very fine, well sorted, sub angular to sub rounded, occasionally rounded, trace silica cement, nil to trace argillaceous matrix, returned loose, fair inferred porosity. Trace mineral fluorescence.
		Tr	<b>COAL:</b> as above.
3165	3170	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above, rare coarse grains.
		Tr	<b>COAL:</b> as above.
3170	3175	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3175	3180	90	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky.
3180	3185	80	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> as above.
3185	3190	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to coarse grained, predominantly medium, trace very fine, well sorted, sub angular to sub rounded, occasionally rounded, trace silica cement, nil to trace argillaceous matrix, returned loose, fair inferred porosity. Trace mineral fluorescence.

Interval (m)		%	Lithology / Show Description
From	To		
3190	3195	40	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, trace to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		60	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to coarse grained, predominantly medium, trace very fine, well sorted, sub angular to sub rounded, occasionally rounded, trace silica cement, nil to trace argillaceous matrix, returned loose, fair inferred porosity. Trace mineral fluorescence.
3195	3200	40	<b>CLAYSTONE:</b> as above.
		60	<b>SANDSTONE:</b> as above, becoming coarse to very coarse grained.
3200	3205	30	<b>CLAYSTONE:</b> as above.
		70	<b>SANDSTONE:</b> as above.
3205	3210	40	<b>CLAYSTONE:</b> as above.
		60	<b>SANDSTONE:</b> as above.
3210	3215	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
3215	3220	20	<b>CLAYSTONE:</b> as above.
		80	<b>SANDSTONE:</b> as above.
3220	3225	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
3225	3230	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
3230	3235	60	<b>CLAYSTONE:</b> light brownish grey to brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks and fragments, trace micromica, trace nodular pyrite, very soft to moderately firm.
		40	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly coarse to very coarse grained, minor to common fine to medium, poorly sorted, sub angular to sub rounded, occasionally rounded, trace silica cement, nil to trace argillaceous matrix, returned loose, fair inferred porosity. Trace mineral fluorescence. Common rock flour in sample.
		Tr	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky.
3235	3240	30	<b>CLAYSTONE:</b> as above.
		70	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, minor coarse and very coarse, poorly sorted, sub angular to sub rounded, occasionally rounded, trace silica cement, nil to trace argillaceous matrix, returned loose, fair inferred porosity. Trace mineral fluorescence. Common rock flour in sample.
3240	3245	20	<b>CLAYSTONE:</b> as above.
		80	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly medium to coarse grained, minor fine and very coarse, poorly sorted, sub angular to sub rounded, occasionally rounded, trace silica cement, nil to trace argillaceous matrix, returned loose, fair inferred porosity. Trace mineral fluorescence. Common rock flour in sample.
3245	3248	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly medium to coarse grained, minor fine and very coarse, poorly sorted, sub angular to sub rounded, occasionally rounded, trace silica cement, trace pyrite cement, nil to trace argillaceous matrix, returned loose, fair inferred porosity. Trace mineral fluorescence. Common rock flour in sample.

**TD 3248mMDRT (2686.9mTVDRT) reached 05:10hrs August 23<sup>rd</sup> 2004.**

## **APPENDIX 3b**

### **MARLIN A-10AST1**

#### **Lithology/Show Descriptions**

## **Marlin A10A-ST1 Lithology / Show Descriptions**

<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
			<b>Kicked off from 2375 mMDRT at 03:30hrs on 5/9/2004.</b>
2325	2330	100	<b>CEMENT</b>
2330	2335	100	<b>CEMENT</b>
2335	2340	100	<b>CEMENT</b>
2340	2345	100	<b>CEMENT</b>
2345	2350	100	<b>CEMENT</b>
2350	2355	100	<b>CEMENT</b>
2355	2360	100	<b>CEMENT</b>
2360	2365	40	<b>CEMENT</b>
		60	<b>CLAYSTONE:</b> predominantly light brownish grey to brownish grey, minor greyish brown, medium light grey to medium grey, moderately calcareous, commonly silty, grading in part to argillaceous siltstone, trace disseminated pyrite, trace carbonaceous specks, soft to moderately firm, dispersive, amorphous to sub blocky.
2365	2370	50	<b>CEMENT</b>
		50	<b>CLAYSTONE:</b> as above.
2370	2375	Tr	<b>CEMENT</b>
		100	<b>CLAYSTONE:</b> as above.
2375	2380	100	<b>CLAYSTONE:</b> as above, trace nodular pyrite.
2380	2385	80	<b>CLAYSTONE:</b> as above.
		20	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
2385	2390	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly fine to medium grained, trace to rare very fine, moderately well sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, poor inferred porosity.
2390	2395	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2395	2400	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2400	2405	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2405	2410	80	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
2410	2415	40	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		60	<b>COAL:</b> as above.
2415	2420	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2420	2425	100	<b>CLAYSTONE:</b> as above.
2425	2430	100	<b>CLAYSTONE:</b> as above.
2430	2435	100	<b>CLAYSTONE:</b> as above.
2435	2440	100	<b>CLAYSTONE:</b> as above.
2440	2445	100	<b>CLAYSTONE:</b> as above.
2445	2450	100	<b>CLAYSTONE:</b> as above, trace nodular pyrite.

<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
2450	2455	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
2455	2460	100	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, light brown rock flour, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		Tr	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, very fine to fine grained, trace medium, moderately well sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, poor inferred porosity. Trace mineral fluorescence.
			<b>COAL:</b> as above.
2460	2465	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2465	2470	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2470	2475	100	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, minor greyish brown, weakly calcareous, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, very soft to moderately firm, blocky to sub blocky.
2475	2480	100	<b>CLAYSTONE:</b> as above.
2480	2485	100	<b>CLAYSTONE:</b> as above.
2485	2490	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, very fine to fine grained, trace medium, moderately well sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, fair inferred porosity. Trace mineral fluorescence.
2490	2495	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2495	2500	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> generally as above, trace firm aggregates.
2500	2505	95	<b>CLAYSTONE:</b> as above.
		5	<b>SANDSTONE:</b> as above.
2505	2510	95	<b>CLAYSTONE:</b> as above.
		5	<b>SANDSTONE:</b> as above.
2510	2515	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2515	2520	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> generally as above, trace firm aggregates.
2520	2525	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2525	2530	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly medium grained, trace coarse, trace fine on aggregates, moderately well sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, fair to good inferred porosity.
2530	2535	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> generally as above, predominantly medium grained, trace coarse grains.
2535	2540	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.

<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
2540	2545	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above, trace very coarse grains.
2545	2550	90	<b>CLAYSTONE:</b> light brownish grey to brownish grey, minor white to very light grey, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		10	<b>SANDSTONE:</b> as above.
2550	2555	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, medium to coarse grained, occasionally very coarse, trace very fine, moderately well sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, fair to good inferred porosity. Trace mineral fluorescence.
2555	2560	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above, trace firm aggregates.
2560	2565	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2565	2570	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2570	2575	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2575	2580	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2580	2585	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2585	2590	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2590	2595	100	<b>CLAYSTONE:</b> as above, common nodular pyrite.
		Tr	<b>SANDSTONE:</b> as above.
2595	2600	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2600	2605	80	<b>CLAYSTONE:</b> generally as above, trace nodular pyrite.
		20	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium grained, minor very fine, moderately well sorted, angular to sub rounded, trace silica cement, trace pyrite cement, trace argillaceous matrix, returned loose, trace firm aggregates, fair to good inferred porosity.
2605	2610	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2610	2615	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2615	2620	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2620	2625	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2625	2630	100	<b>CLAYSTONE:</b> as above, common nodular pyrite.
		Tr	<b>SANDSTONE:</b> as above.
2630	2635	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2635	2640	100	<b>CLAYSTONE:</b> light brownish grey to brownish grey, minor white to very light grey, common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		Tr	<b>SANDSTONE:</b> as above.



<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
2640	2645	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2645	2650	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2650	2655	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2655	2660	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2660	2665	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2665	2670	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2670	2675	80	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
2675	2680	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2680	2685	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2685	2690	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2690	2695	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2695	2700	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2700	2705	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2705	2710	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2710	2715	80	<b>CLAYSTONE:</b> light brownish grey to brownish grey, white to light grey, minor to common silt, grading to argillaceous siltstone in part, trace very fine quartz, very soft to moderately firm, blocky to sub blocky, trace carbonaceous specks, trace micromica, trace disseminated pyrite and common nodular pyrite.
		10	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium grained, trace very fine, moderately sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, trace finer grained firm aggregates, poor to fair inferred porosity. Trace mineral fluorescence.
		10	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic
2715	2720	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2720	2725	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2725	2730	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above, trace coarse grains.
2730	2735	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.

<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
2735	2740	50	<b>CLAYSTONE:</b> as above.
		50	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to coarse grained, predominantly medium, moderately well sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, trace firm aggregates, fair to good inferred porosity.
2740	2745	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above, common coarse grains.
2745	2750	55	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
2750	2755	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2755	2760	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2760	2765	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2765	2770	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2770	2775	90	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, commonly silty, lignitic.
2775	2780	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2780	2785	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2785	2790	90	<b>CLAYSTONE:</b> as above, trace yellowish orange dolomite.
		10	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, medium to coarse grained, trace fine, moderately well sorted, angular to sub rounded, trace silica cement, trace argillaceous matrix, returned loose, trace firm aggregates, fair to good inferred porosity.
2790	2795	90	<b>CLAYSTONE:</b> as above, trace yellowish orange dolomite.
		10	<b>SANDSTONE:</b> as above.
2795	2800	100	<b>CLAYSTONE:</b> light brownish grey to brownish grey, minor greyish brown, trace to common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		Tr	<b>SANDSTONE:</b> as above.
2800	2805	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2805	2810	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2810	2815	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2815	2820	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2820	2825	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.

<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
2825	2830	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2830	2835	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2835	2840	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above, trace very coarse sand grains.
2840	2845	80	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky to blocky, hackly to angular fracture, minor silty, lignitic to sub bituminous.
2845	2850	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above, trace very coarse sand grains.
2850	2855	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2855	2860	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2860	2865	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2865	2870	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above, trace very fine to fine sands.
2870	2875	80	<b>CLAYSTONE:</b> light brownish grey to brownish grey, minor greyish brown, common silt, grading to argillaceous siltstone in part, trace very fine quartz, trace carbonaceous specks and fragments, trace micromica, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		Tr	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> brownish black to black, earthy lustre to sub vitreous, friable to firm, sub fissile in part, sub blocky to commonly blocky, hackly to angular fracture, occasional conchoidal fracture, rare to minor silt, lignitic.
2875	2880	80	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> as above.
2880	2885	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2885	2890	100	<b>CLAYSTONE:</b> as above, common nodular pyrite.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2890	2895	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2895	2900	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2900	2905	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2905	2910	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2910	2915	100	<b>CLAYSTONE:</b> as above.
2915	2920	100	<b>CLAYSTONE:</b> as above.
2920	2925	100	<b>CLAYSTONE:</b> as above.

<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
2925	2930	30	<b>CLAYSTONE:</b> as above.
		70	<b>COAL:</b> brownish black to black, earthy lustre to sub vitreous, friable to firm, sub fissile in part, sub blocky to commonly blocky, hackly to angular fracture, occasional conchoidal fracture, rare to minor silt, lignitic.
2930	2935	50	<b>CLAYSTONE:</b> as above.
		50	<b>COAL:</b> as above.
2935	2940	90	<b>CLAYSTONE:</b> as above.
		10	<b>COAL:</b> as above.
2940	2945	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> light grey to white, clear to translucent grains, fine to medium grained, moderately well sorted, angular to sub rounded, trace silica cement, common argillaceous matrix, occasionally loose, poor inferred porosity.
2945	2950	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
2950	2955	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above, rare coarse grains.
2955	2960	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
2960	2965	80	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> brownish black to black, earthy lustre to sub vitreous, friable to firm, sub fissile in part, sub blocky to commonly blocky, hackly to angular fracture, occasional sub conchoidal fracture, rare to minor silt, lignitic.
2965	2970	80	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> as above.
2970	2975	40	<b>CLAYSTONE:</b> as above.
		60	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace coarse, moderately well sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace argillaceous matrix, predominantly loose grained, fair to good inferred porosity. Trace mineral fluorescence.
		Tr	<b>COAL:</b> as above.
2975	2980	30	<b>CLAYSTONE:</b> as above.
		70	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2980	2985	20	<b>CLAYSTONE:</b> as above.
		80	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2985	2990	20	<b>CLAYSTONE:</b> as above.
		80	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
2990	2995	20	<b>CLAYSTONE:</b> as above.
		70	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky.
2995	3000	50	<b>CLAYSTONE:</b> : light brownish grey to brownish grey, minor greyish brown, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		40	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.

<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
3000	3005	10	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		80	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky.
3005	3010	10	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		80	<b>COAL:</b> as above.
3010	3015	90	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace disseminated pyrite, very soft to moderately firm, blocky to sub blocky.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3015	3020	80	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> as above.
3020	3025	90	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
3025	3030	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3030	3035	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3035	3040	100	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3040	3045	30	<b>CLAYSTONE:</b> as above.
		70	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky.
3045	3050	90	<b>CLAYSTONE:</b> as above.
		10	<b>COAL:</b> as above.
3050	3055	50	<b>CLAYSTONE:</b> as above.
		50	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace very fine, well sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace argillaceous matrix, returned loose, fair to good inferred porosity.
		Tr	<b>COAL:</b> as above.
3055	3060	60	<b>CLAYSTONE:</b> as above, common to abundant nodular pyrite.
		40	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to predominantly medium grained, trace very fine, well sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace argillaceous matrix, returned loose, fair to good inferred porosity.
		Tr	<b>COAL:</b> as above.
3060	3065	60	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky.
3065	3070	70	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace disseminated pyrite, very soft to moderately firm, blocky to sub blocky.
		10	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> as above.

Interval (m)		%	Lithology / Show Description
From	To		
3070	3075	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3075	3080	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
3080	3085	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above, trace white, very fine to fine grained on aggregates, common siliceous cement, firm to moderately hard, poor visual porosity.
3085	3090	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above, trace white, very fine to fine grained on aggregates, common siliceous cement, firm to moderately hard, poor visual porosity.
3090	3095	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
3095	3100	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
3100	3105	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above, predominantly very fine to fine grained, trace siliceous cement, firm to moderately hard, loose, poor visual porosity.
3105	3110	70	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky.
3110	3115	60	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to coarse, predominantly medium grained, moderately well sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace argillaceous matrix, returned loose, fair to good inferred porosity. <b>FLUORESCENCE:</b> Trace pinpoint dull orange yellow fluorescence, moderately bright yellowish green, slow diffuse cut, moderately thick residue.
		10	<b>COAL:</b> as above.
3115	3120	60	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above. <b>FLUORESCENCE:</b> 5% as above.
		Tr	<b>COAL:</b> as above.
3120	3125	40	<b>CLAYSTONE:</b> as above.
		60	<b>SANDSTONE:</b> as above. <b>FLUORESCENCE:</b> 5% as above.
3125	3130	40	<b>CLAYSTONE:</b> as above.
		60	<b>SANDSTONE:</b> as above. <b>FLUORESCENCE:</b> trace as above.
3130	3135	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3135	3140	20	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		10	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to coarse, predominantly medium grained, moderately well sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace argillaceous matrix, predominantly returned loose, trace fine grained aggregates, fair to good inferred porosity.
		70	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky, sub conchoidal in part.

Interval (m)		%	Lithology / Show Description
From	To		
3140	3145	40	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace disseminated pyrite, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		10	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to coarse, predominantly medium grained, moderately well sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace argillaceous matrix, returned loose, fair to good inferred porosity.
		50	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky, sub conchoidal in part.
3145	3150	90	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
3150	3155	10	<b>COAL:</b> as above.
		80	<b>CLAYSTONE:</b> generally as above, minor nodular pyrite.
		15	<b>SANDSTONE:</b> as above, trace mineral fluorescence.
3155	3160	5	<b>COAL:</b> as above.
		10	<b>CLAYSTONE:</b> generally as above, minor nodular pyrite.
		90	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly medium to coarse grained, trace fine and very coarse, well sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace quartz overgrowths, nil to trace argillaceous matrix, returned loose, fair to good inferred porosity.
3160	3165	Tr	<b>COAL:</b> as above.
		10	<b>CLAYSTONE:</b> generally as above, minor nodular pyrite.
		80	<b>SANDSTONE:</b> as above, trace mineral fluorescence.
3165	3170	10	<b>COAL:</b> as above.
		20	<b>CLAYSTONE:</b> as above.
		70	<b>SANDSTONE:</b> as above.
3170	3175	10	<b>COAL:</b> as above.
		20	<b>CLAYSTONE:</b> light brownish grey to brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		80	<b>SANDSTONE:</b> as above.
3175	3180	Tr	<b>COAL:</b> as above.
		10	<b>CLAYSTONE:</b> generally as above, minor nodular pyrite.
		90	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly medium to coarse grained, trace fine and very coarse, moderately well sorted, angular to sub rounded, occasionally rounded, trace silica cement, trace quartz overgrowths, nil to trace argillaceous matrix, returned loose, good inferred porosity.
3180	3185	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
3185	3190	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
3190	3195	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
3195	3200	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above, predominantly medium grained.
3200	3205	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above, predominantly medium grained.
3205	3210	20	<b>CLAYSTONE:</b> as above.
		80	<b>SANDSTONE:</b> as above, predominantly medium grained.

<b>Interval (m)</b>		<b>%</b>	<b>Lithology / Show Description</b>
<b>From</b>	<b>To</b>		
3210	3215	10	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		80	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky, sub conchoidal in part.
3215	3220	30	<b>CLAYSTONE:</b> light brownish grey to brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		Tr	<b>SANDSTONE:</b> as above.
		70	<b>COAL:</b> as above.
3220	3225	50	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		50	<b>COAL:</b> as above.
3225	3230	20	<b>CLAYSTONE:</b> as above.
		Tr	<b>SANDSTONE:</b> as above.
		80	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky, sub conchoidal in part.
3230	3235	60	<b>CLAYSTONE:</b> light brownish grey to brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		Tr	<b>SANDSTONE:</b> as above.
		40	<b>COAL:</b> as above.
3235	3240	60	<b>CLAYSTONE:</b> light brownish grey to brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		20	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, very fine to fine, well sorted, angular to sub rounded, occasionally rounded, trace to common silica cement, trace argillaceous matrix, returned loose, poor inferred porosity.
		20	<b>COAL:</b> as above.
		40	<b>CLAYSTONE:</b> as above.
3240	3245	60	<b>SANDSTONE:</b> generally as above, predominantly medium grained, poor to fair inferred porosity.
		Tr	<b>COAL:</b> as above.
		60	<b>CLAYSTONE:</b> as above.
3245	3250	40	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
		90	<b>CLAYSTONE:</b> as above.
3250	3255	10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
		90	<b>CLAYSTONE:</b> as above.
3255	3260	10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
		10	<b>CLAYSTONE:</b> as above.
3260	3265	40	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium, well sorted, angular to sub rounded, occasionally rounded, trace to common silica cement, trace argillaceous matrix, returned loose, poor inferred porosity.
		50	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, friable to firm, sub fissile in part, sub blocky, sub conchoidal in part.
		60	<b>CLAYSTONE:</b> light brownish grey to brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
3265	3270	30	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.



Interval (m)		%	Lithology / Show Description
From	To		
3270	3275	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3275	3280	80	<b>CLAYSTONE:</b> as above.
		20	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3280	3285	50	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> as above.
3285	3290	40	<b>CLAYSTONE:</b> as above.
		50	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, very fine to fine, occasionally medium, well sorted, angular to sub rounded, occasionally rounded, trace to common silica cement, trace argillaceous matrix, returned loose, poor inferred porosity.
		10	<b>COAL:</b> as above.
3290	3295	30	<b>CLAYSTONE:</b> as above.
		70	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3295	3300	20	<b>CLAYSTONE:</b> as above.
		80	<b>SANDSTONE:</b> as above, becoming predominantly medium grained.
		Tr	<b>COAL:</b> as above.
3300	3305	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above, trace pyritic cement.
		Tr	<b>COAL:</b> as above.
3305	3310	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3310	3315	10	<b>CLAYSTONE:</b> as above.
		60	<b>SANDSTONE:</b> as above.
		30	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, very silty in part, friable to firm, sub fissile in part, sub blocky.
3315	3320	30	<b>CLAYSTONE:</b> light brownish grey to brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		70	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3320	3325	70	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		20	<b>COAL:</b> as above.
3325	3330	50	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium, occasionally very fine, well sorted, angular to sub rounded, occasionally rounded, trace to common silica cement, trace argillaceous matrix, returned loose, poor inferred porosity.
		10	<b>COAL:</b> as above.
3330	3335	50	<b>CLAYSTONE:</b> as above.
		40	<b>SANDSTONE:</b> as above.
		10	<b>COAL:</b> as above.
3335	3340	10	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		60	<b>COAL:</b> as above.

Interval (m)		%	Lithology / Show Description
From	To		
3340	3345	20	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		30	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium, occasionally very fine, trace medium to coarse, moderately well sorted, angular to sub rounded, occasionally rounded, trace to common silica cement, trace argillaceous matrix, returned loose, poor inferred porosity.
		50	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, very silty in part, friable to firm, sub fissile in part, sub blocky.
3345	3350	10	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace to rare nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		90	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, fine to medium, occasionally very fine, trace medium to coarse, moderately well sorted, angular to sub rounded, occasionally rounded, trace to common silica cement, trace quartz overgrowths, trace argillaceous matrix, returned loose, poor inferred porosity.
		Tr	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, very silty in part, friable to firm, sub fissile in part, sub blocky.
3350	3355	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3355	3360	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3360	3365	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, medium to coarse grained, minor fine, trace very coarse, moderately well sorted, angular to sub rounded, occasionally rounded, trace to common silica cement, trace quartz overgrowths, trace argillaceous matrix, returned loose, poor inferred porosity.
		Tr	<b>COAL:</b> as above.
3365	3370	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3370	3375	5	<b>CLAYSTONE:</b> as above.
		95	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3375	3380	5	<b>CLAYSTONE:</b> as above.
		95	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly medium to coarse grained, trace fine and very coarse, moderately well sorted, angular to sub rounded, occasionally rounded, trace to common silica cement, trace pyrite cement, trace quartz overgrowths, trace argillaceous matrix, returned loose, trace cemented aggregates, poor inferred porosity.
		Tr	<b>COAL:</b> as above.
3380	3385	30	<b>CLAYSTONE:</b> as above.
		70	<b>SANDSTONE:</b> generally as above, minor white rock flour.
		Tr	<b>COAL:</b> as above.
3385	3390	30	<b>CLAYSTONE:</b> as above.
		70	<b>SANDSTONE:</b> generally as above, minor white rock flour, becoming predominantly coarse to very coarse.
		Tr	<b>COAL:</b> as above.
3390	3393	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.

Interval (m)		%	Lithology / Show Description
From	To		
3393	3400	30	<b>CLAYSTONE:</b> as above.
		70	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly medium to coarse grained, trace fine and very coarse, moderately well sorted, angular to sub rounded, occasionally rounded, trace to common silica cement, trace pyrite cement, trace quartz overgrowths, trace argillaceous matrix, returned loose, trace cemented aggregates, poor inferred porosity.
3400	3405	Tr	<b>COAL:</b> as above.
		10	<b>CLAYSTONE:</b> as above.
3405	3410	90	<b>SANDSTONE:</b> as above, becoming predominantly medium to very coarse.
		10	<b>CLAYSTONE:</b> as above.
3410	3415	90	<b>SANDSTONE:</b> as above.
		10	<b>CLAYSTONE:</b> as above.
		85	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, very silty in part, friable to firm, sub fissile in part, sub blocky.
3415	3420	10	<b>CLAYSTONE:</b> as above.
		85	<b>SANDSTONE:</b> as above.
		5	<b>COAL:</b> as above.
3420	3425	5	<b>CLAYSTONE:</b> as above.
		95	<b>SANDSTONE:</b> as above.
3425	3430	5	<b>CLAYSTONE:</b> as above.
		95	<b>SANDSTONE:</b> as above.
3430	3435	5	<b>CLAYSTONE:</b> generally as above, light brownish grey to brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace to rare nodular pyrite, very soft to moderately firm, blocky to sub blocky.
		95	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly medium to coarse grained, trace fine and very coarse, moderately well sorted, angular to sub rounded, occasionally rounded, trace to common silica cement, nil to trace pyrite cement, trace quartz overgrowths, trace argillaceous matrix, returned loose, trace cemented aggregates, poor inferred porosity.
3435	3440	10	<b>CLAYSTONE:</b> as above.
		90	<b>SANDSTONE:</b> as above.
3440	3445	5	<b>CLAYSTONE:</b> as above.
		95	<b>SANDSTONE:</b> as above.
3445	3450	5	<b>CLAYSTONE:</b> as above.
		95	<b>SANDSTONE:</b> as above.
3450	3455	Tr	<b>CLAYSTONE:</b> as above.
		50	<b>SANDSTONE:</b> as above.
		50	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, very silty in part, friable to firm, sub fissile in part, sub blocky.
3455	3460	60	<b>CLAYSTONE:</b> brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace nodular pyrite, very soft to moderately firm, amorphous to sub blocky, predominantly bit generated texture.
		40	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3460	3465	70	<b>CLAYSTONE:</b> as above.
		30	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3465	3470	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.

Interval (m)		%	Lithology / Show Description
From	To		
3470	3475	80	<b>CLAYSTONE:</b> brownish grey, trace to common silt, grading to argillaceous siltstone in part, trace carbonaceous specks, trace micromica, trace nodular pyrite, very soft to moderately firm, amorphous to sub blocky, predominantly bit generated texture.
		20	<b>SANDSTONE:</b> white to very light grey, clear to translucent grains, predominantly medium to coarse grained, trace fine and very coarse, moderately well sorted, angular to sub rounded, occasionally rounded, trace to common silica cement, nil to trace pyrite cement, trace quartz overgrowths, trace argillaceous matrix, returned loose, trace cemented aggregates, poor inferred porosity.
		Tr	<b>COAL:</b> brownish black to black, earthy lustre, occasionally sub vitreous, very silty in part, friable to firm, sub fissile in part, sub blocky.
3475	3480	90	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3480	3485	95	<b>CLAYSTONE:</b> as above.
		5	<b>SANDSTONE:</b> as above.
		Tr	<b>COAL:</b> as above.
3485	3491	80	<b>CLAYSTONE:</b> as above.
		10	<b>SANDSTONE:</b> as above, minor white rock flour.
		10	<b>COAL:</b> as above.
<b>TD 3491mMDRT (2713.11mTVDRT) reached 02:10hrs August 14<sup>th</sup> 2004.</b>			

**APPENDIX 4a**

**MARLIN A-10A**

**Mud Log**



# MASTERLOG

## MLA A-10A



### GENERAL

Country : AUSTRALIA  
Permit : VIC L3/L4  
Field : TURRUM  
Basin : GIPPSLAND  
Well Type : DEVELOPMENT  
Rig Name : NABORS 453

### POSITION

Local Co-ord X : -28.35 mE  
Local Co-ord Y : 6.84 mN  
AMG Co-ord X : 606868.95 mE  
AMG Co-ord Y : 5767920.06 mN  
RT to MSL : 27.91 m  
RT to Sea Bed : 86.91 m

### HOLE / CASING INFO

8-1/2" Hole to 3248.0 m  
  
20" Conductor Shoe at 163.0 m  
13-3/8" Surface Casing at 642.5 m  
  
7" Production Casing at 2471.0 m

### DATE / DEPTH

Kick Off Date : 05-08-2004  
Total Depth Date : 23-08-2004  
Total Depth : 3248.00 m  
True Vertical Depth : 2686.99 m  
Log Scale : 1/ 500

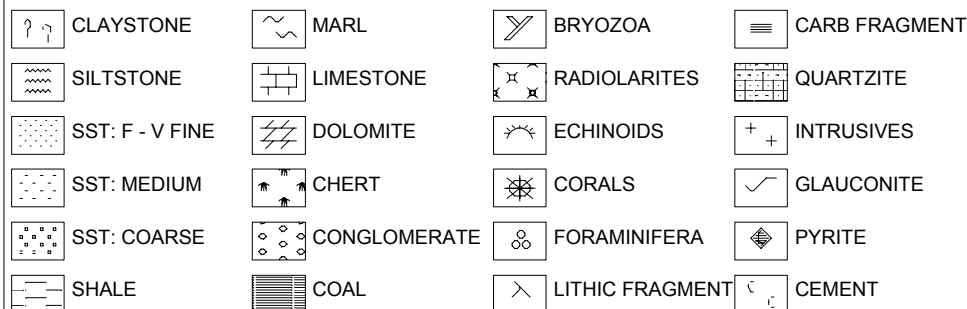
### ENGINEERS

Rohan Pereira  
Mark Smith  
Greg Fawns  
Steve Oades

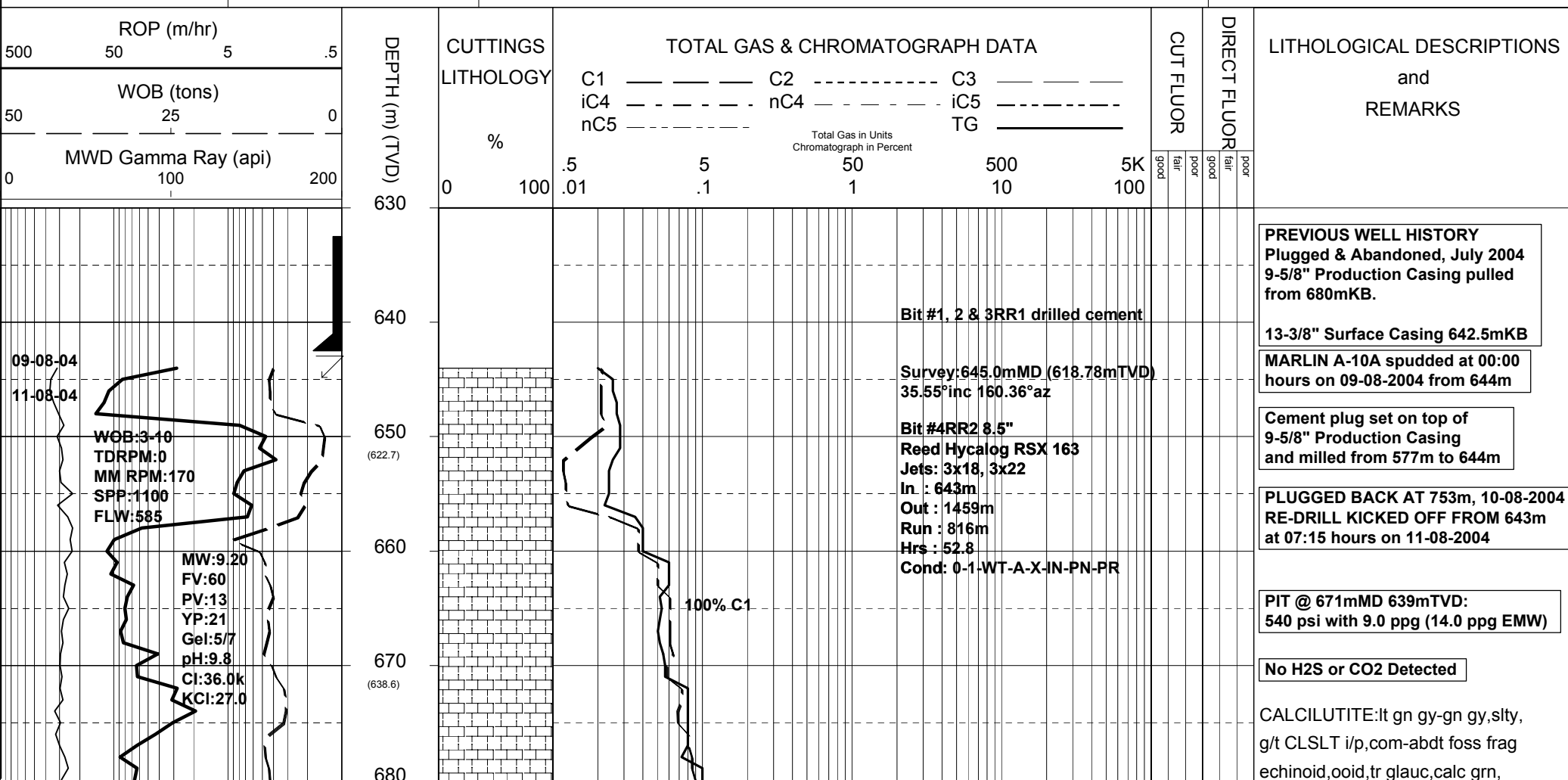
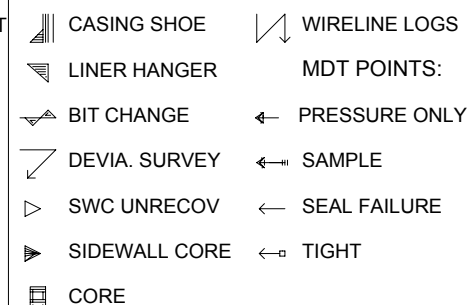
### ABBREVIATIONS

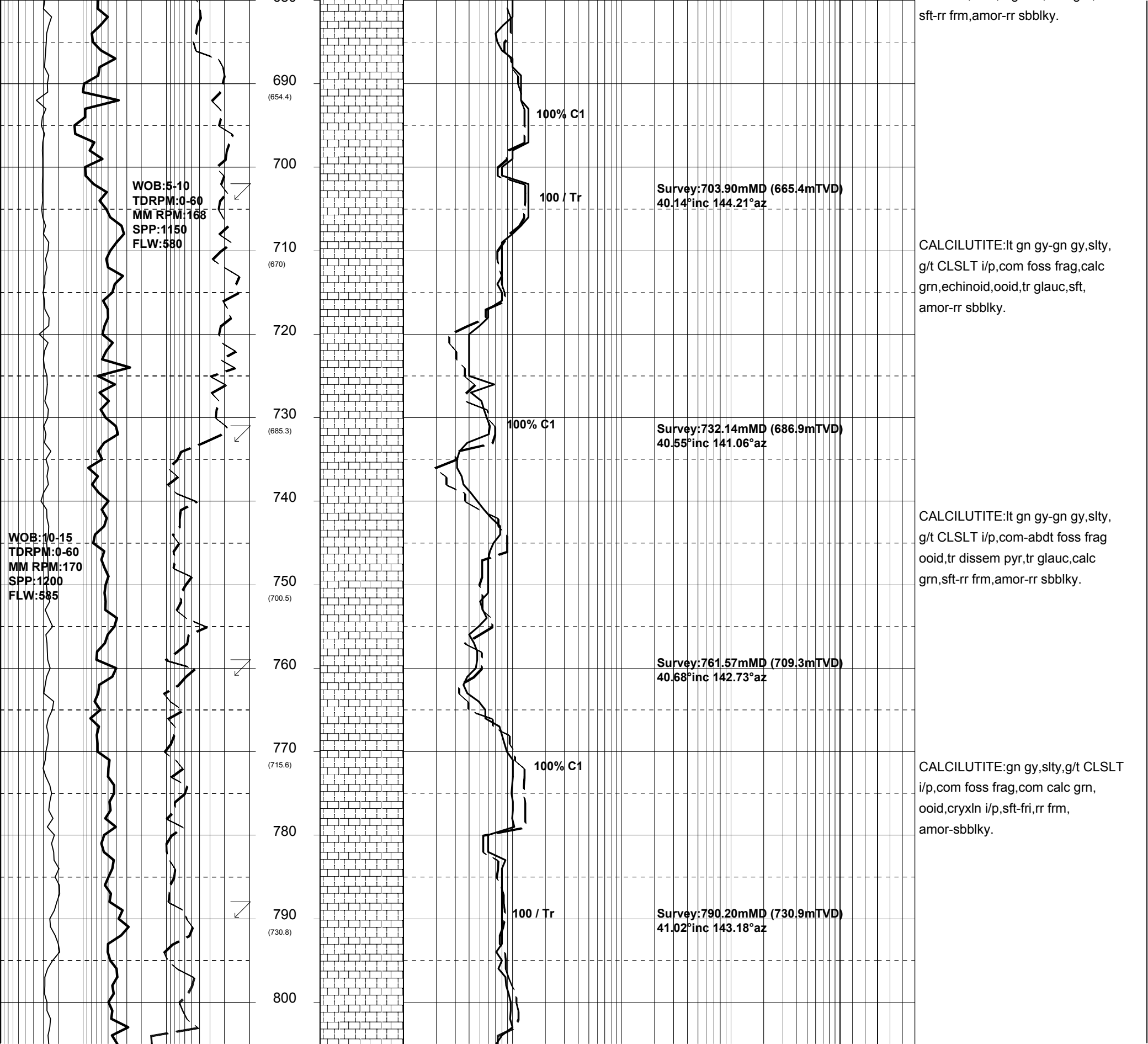
MW Mud Weight	WOB Weight on Bit (klbs)
FV Funnel Viscosity	RPM Rotations Per Min
PV Plastic Viscosity	FLW Flow Rate (gpm)
YP Yield Point	SPP Pump Pressure (psi)
Gel Gel Strength	RR Re-Run Bit
WL Water Loss	TG Trip Gas
KCl Potassium Chloride	CG Connection Gas
Cl Chlorides	BG Background Gas
Incl Inclination	DGP Drilled Gas Peak
Az Azimuth	MM Mud Motor

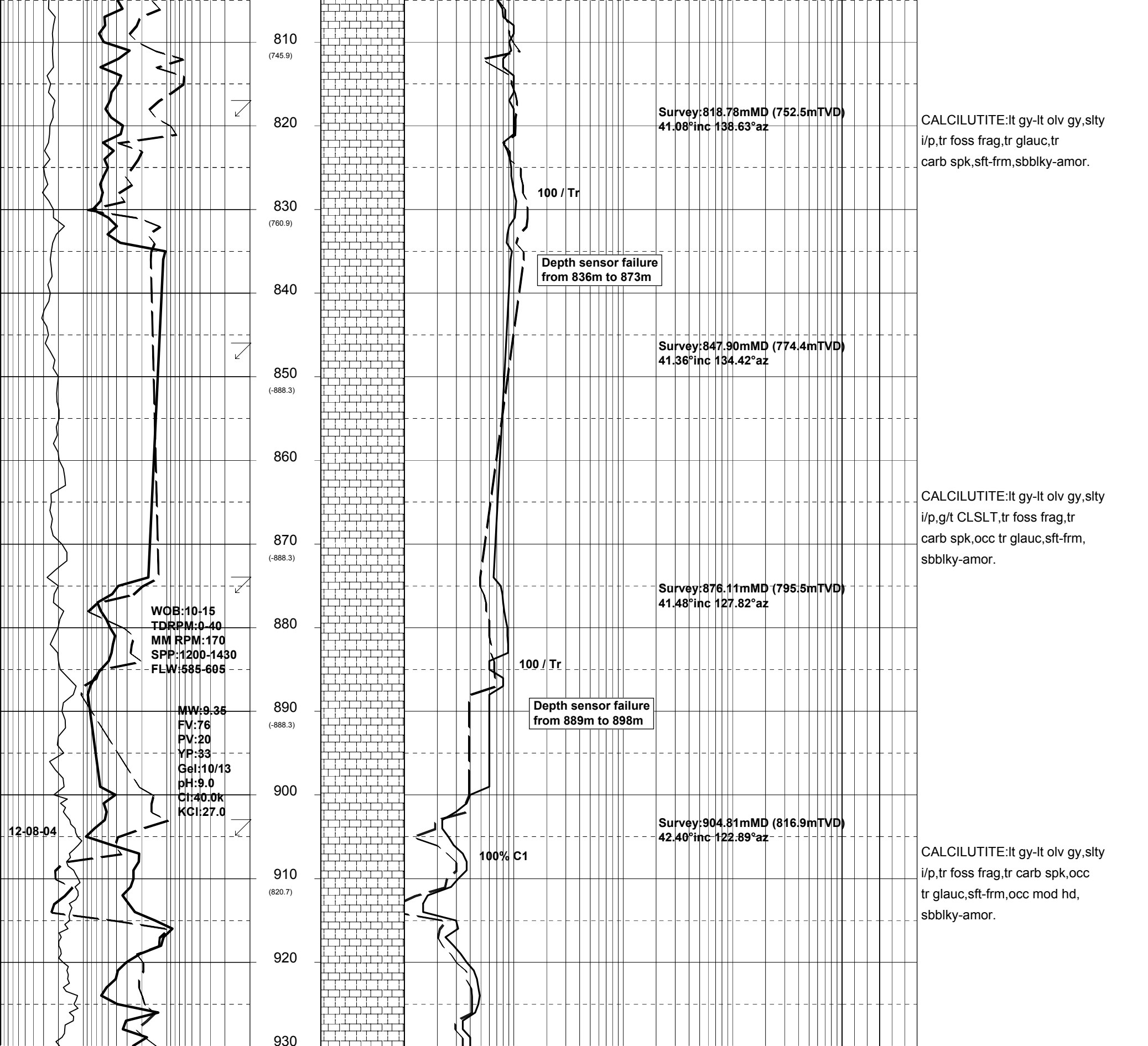
### LITHOLOGY LEGEND



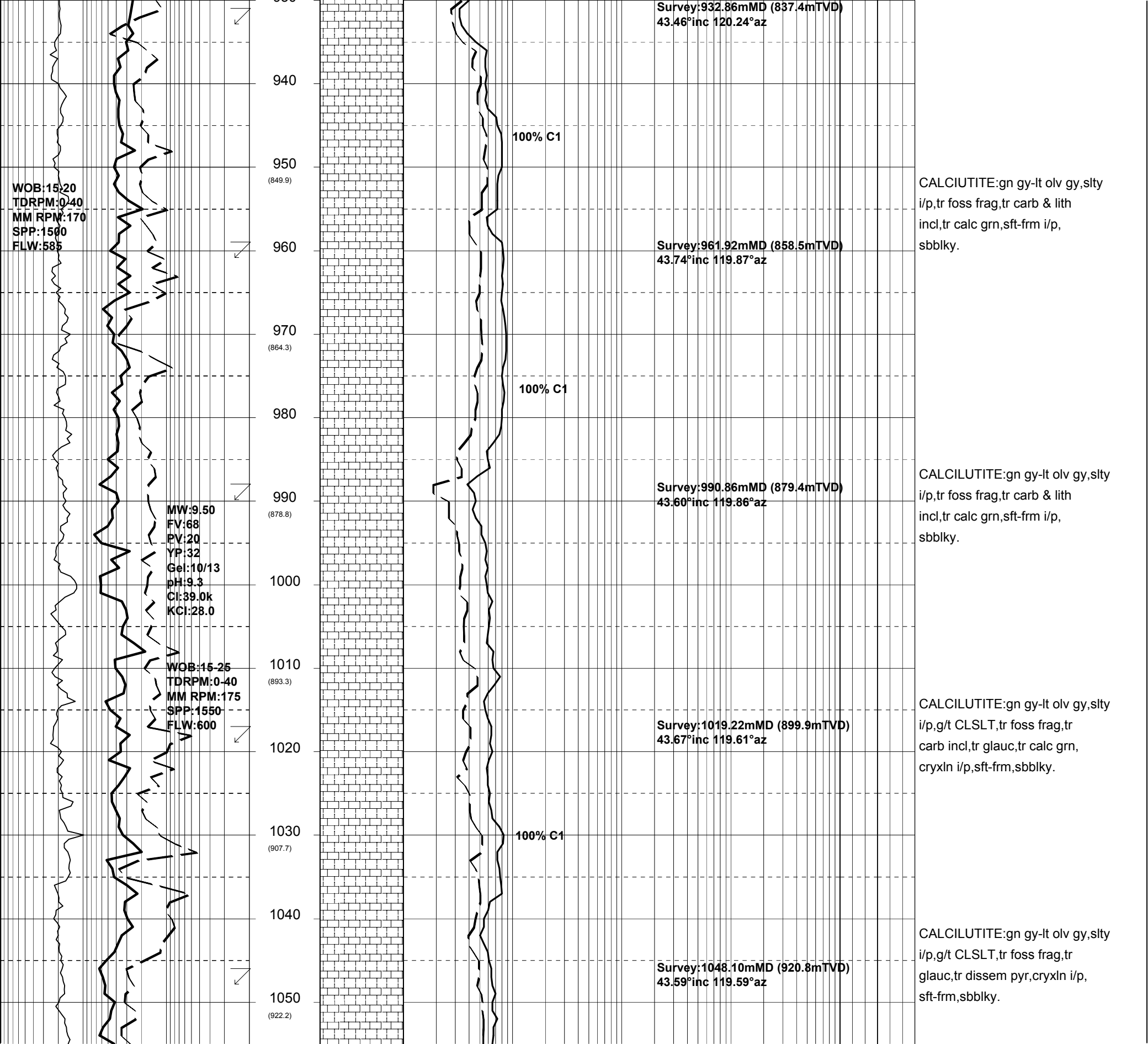
### ENGINEERING LEGEND

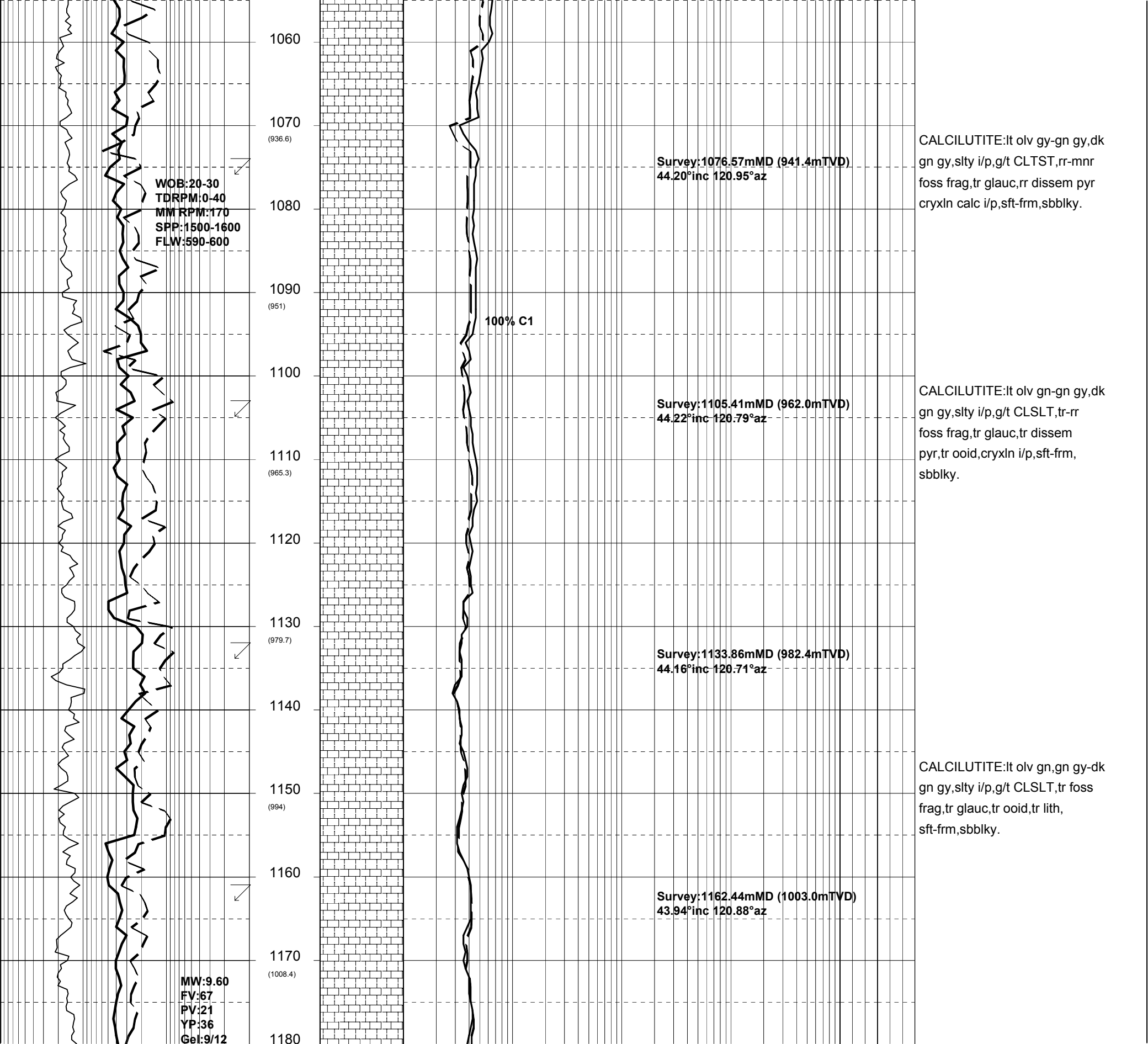


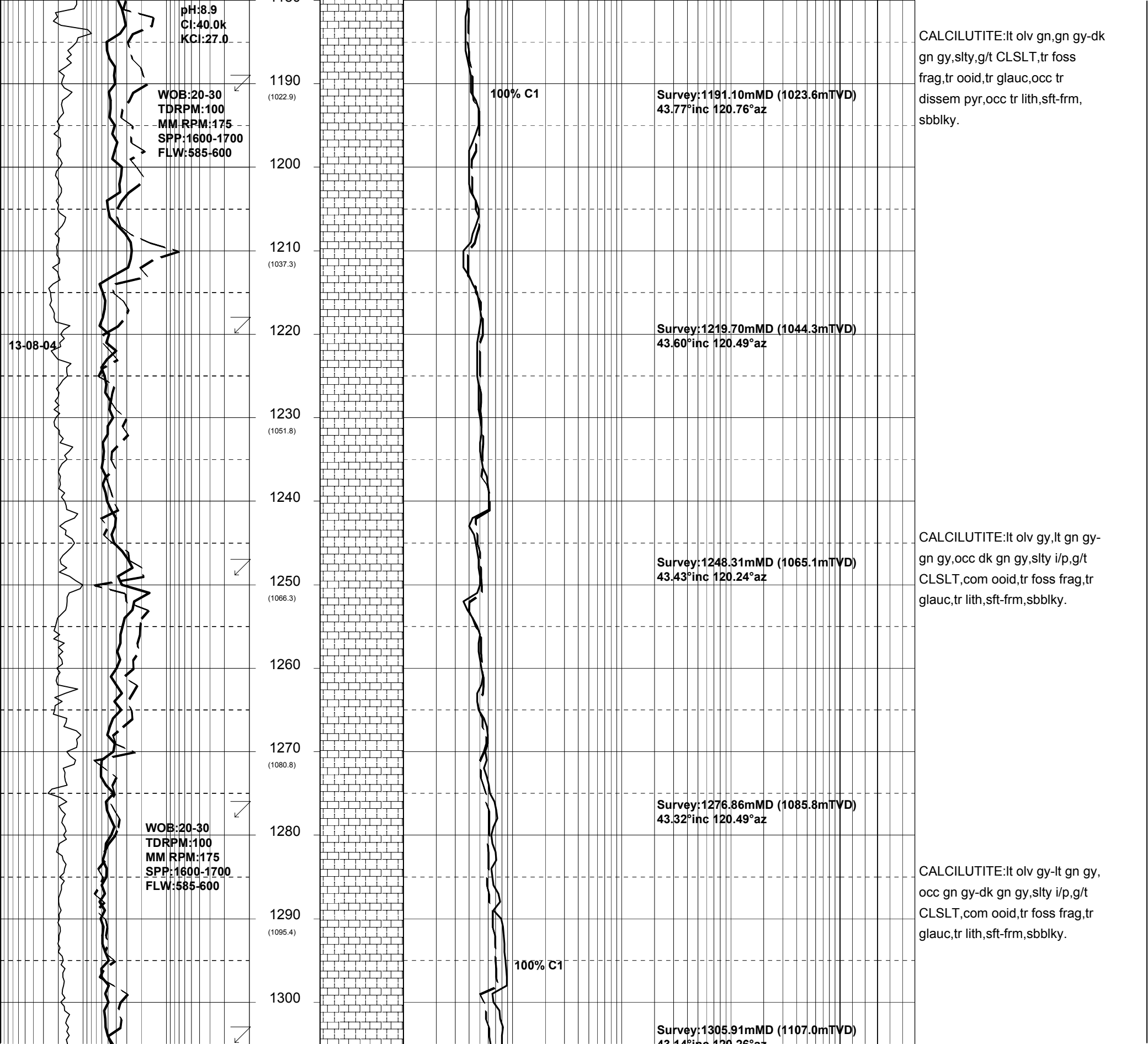


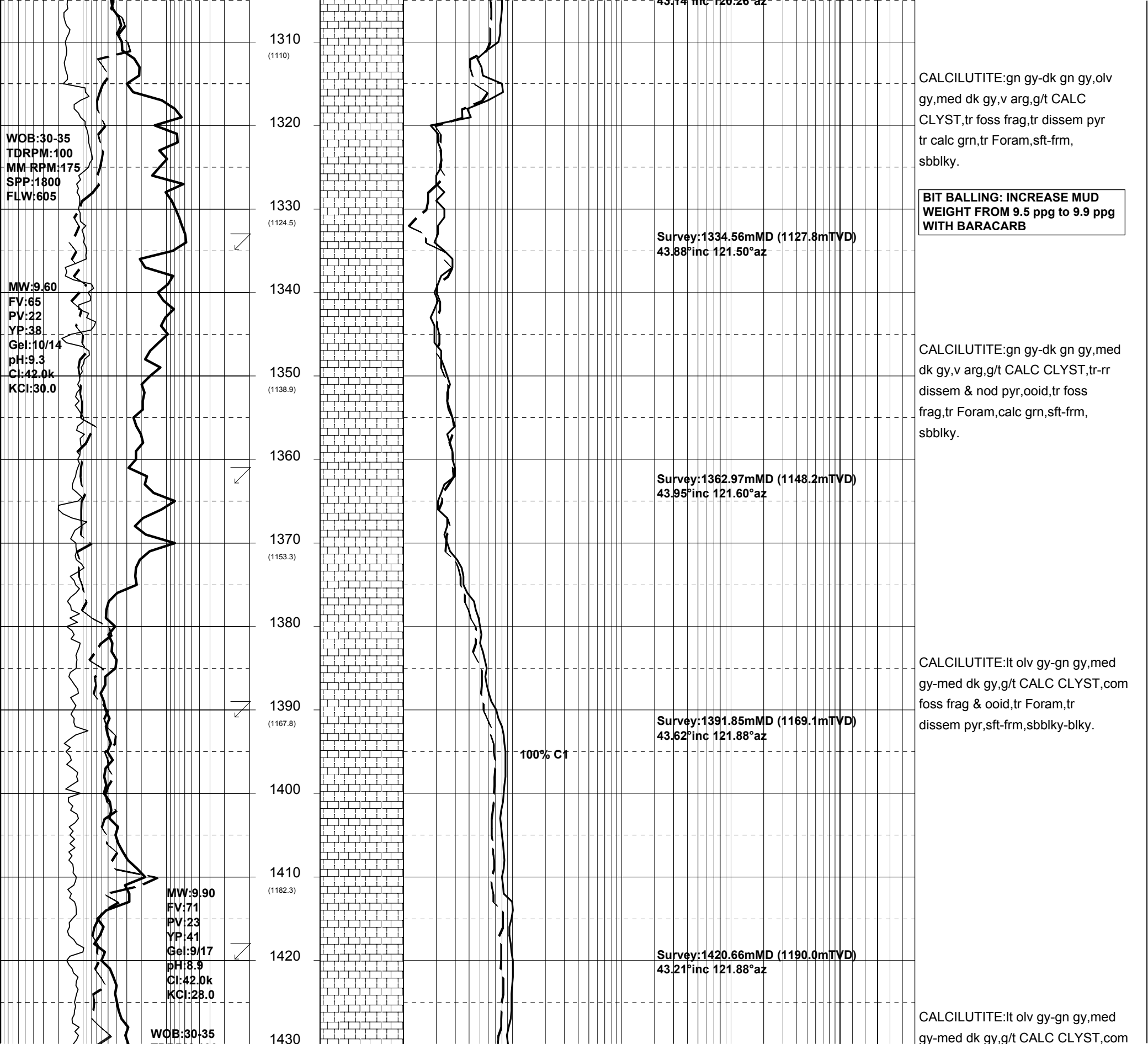


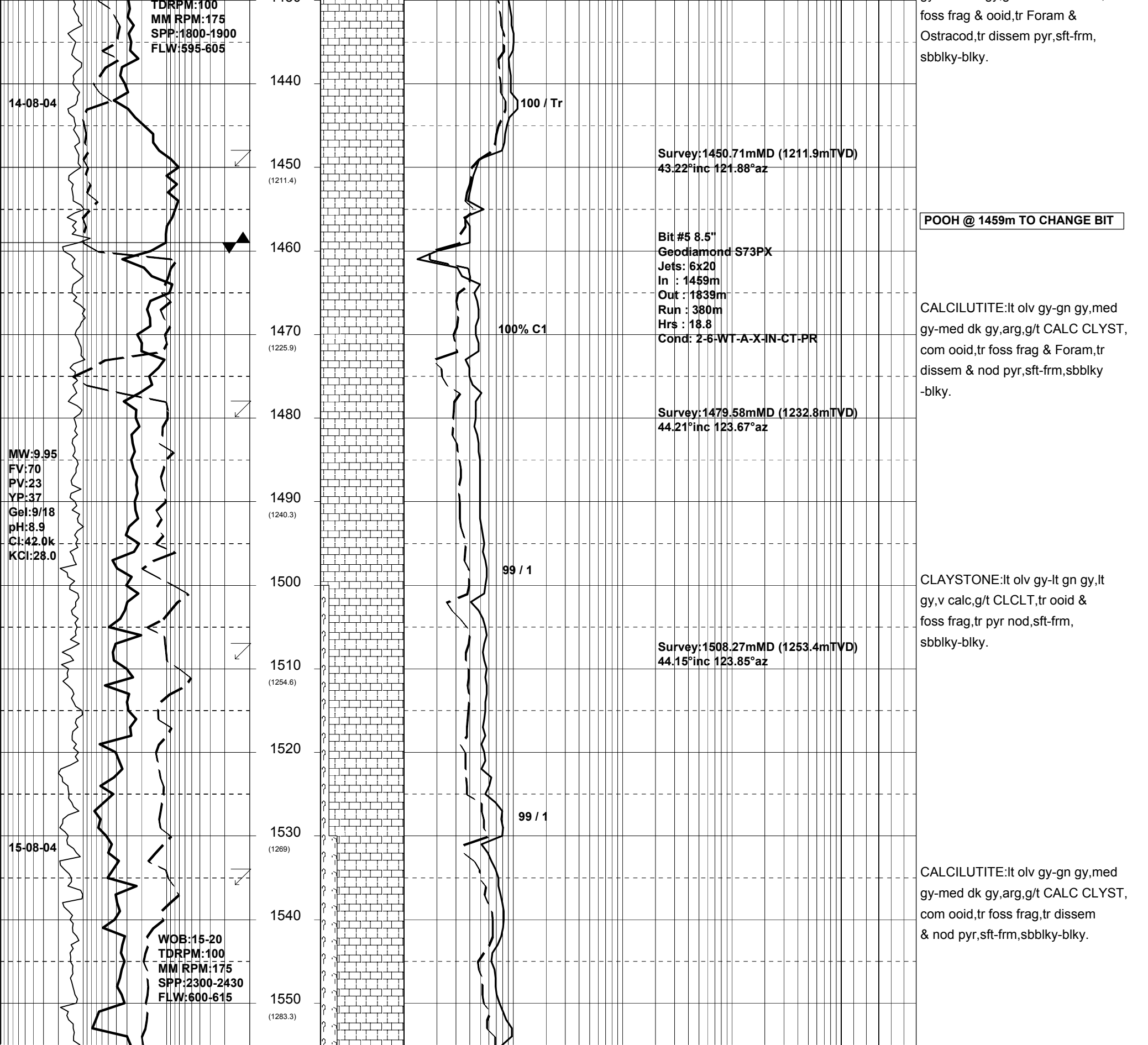


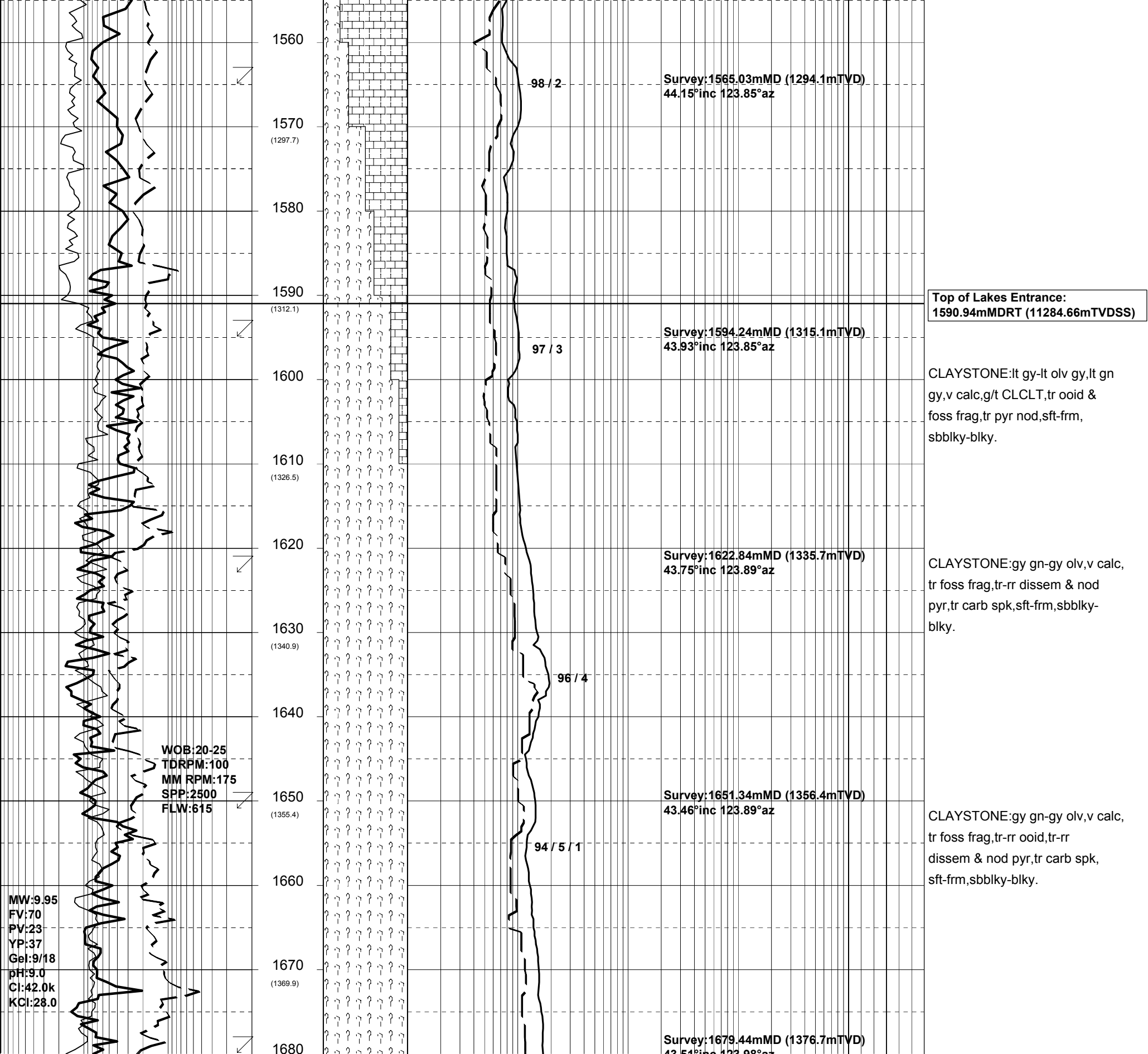


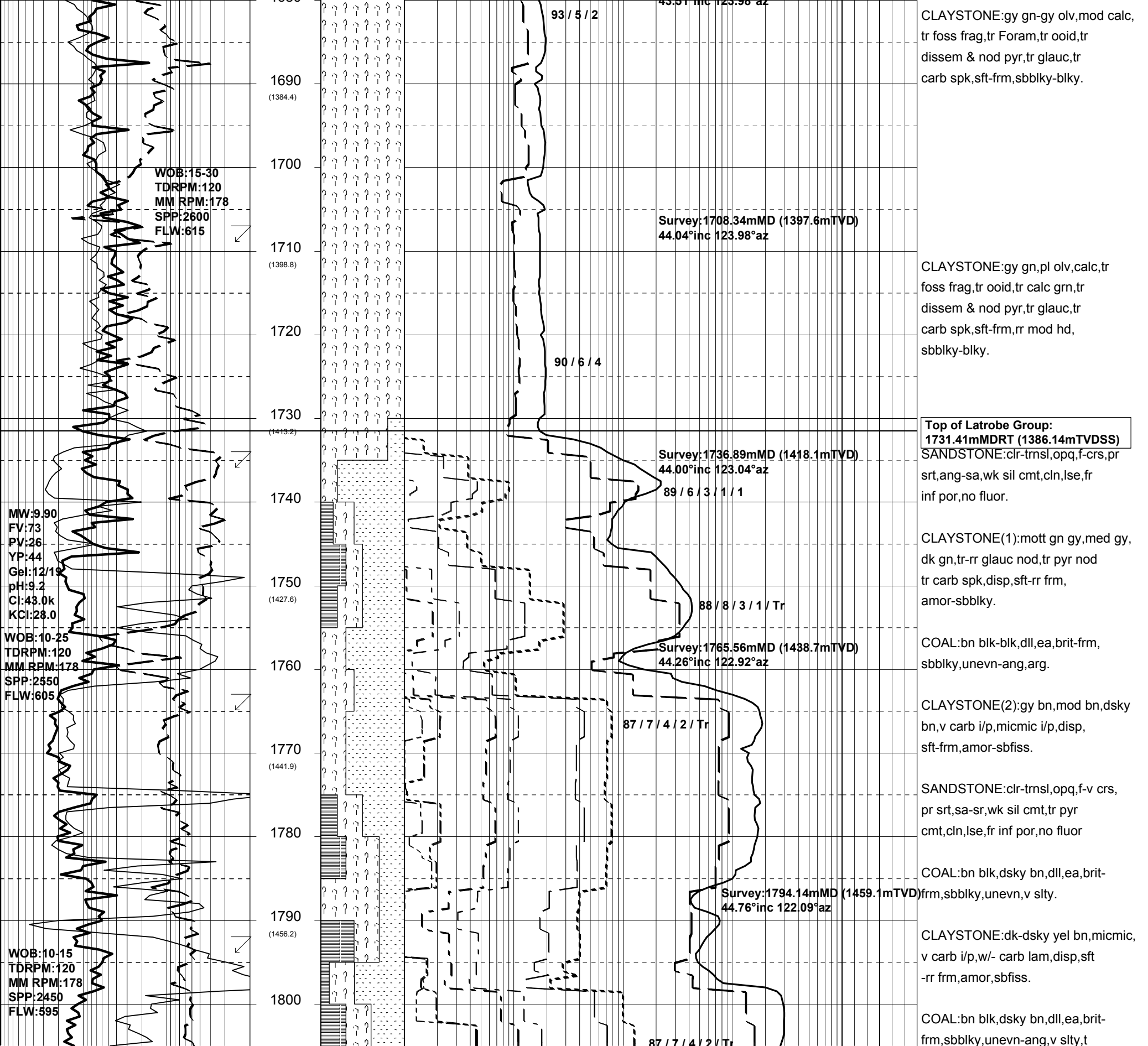


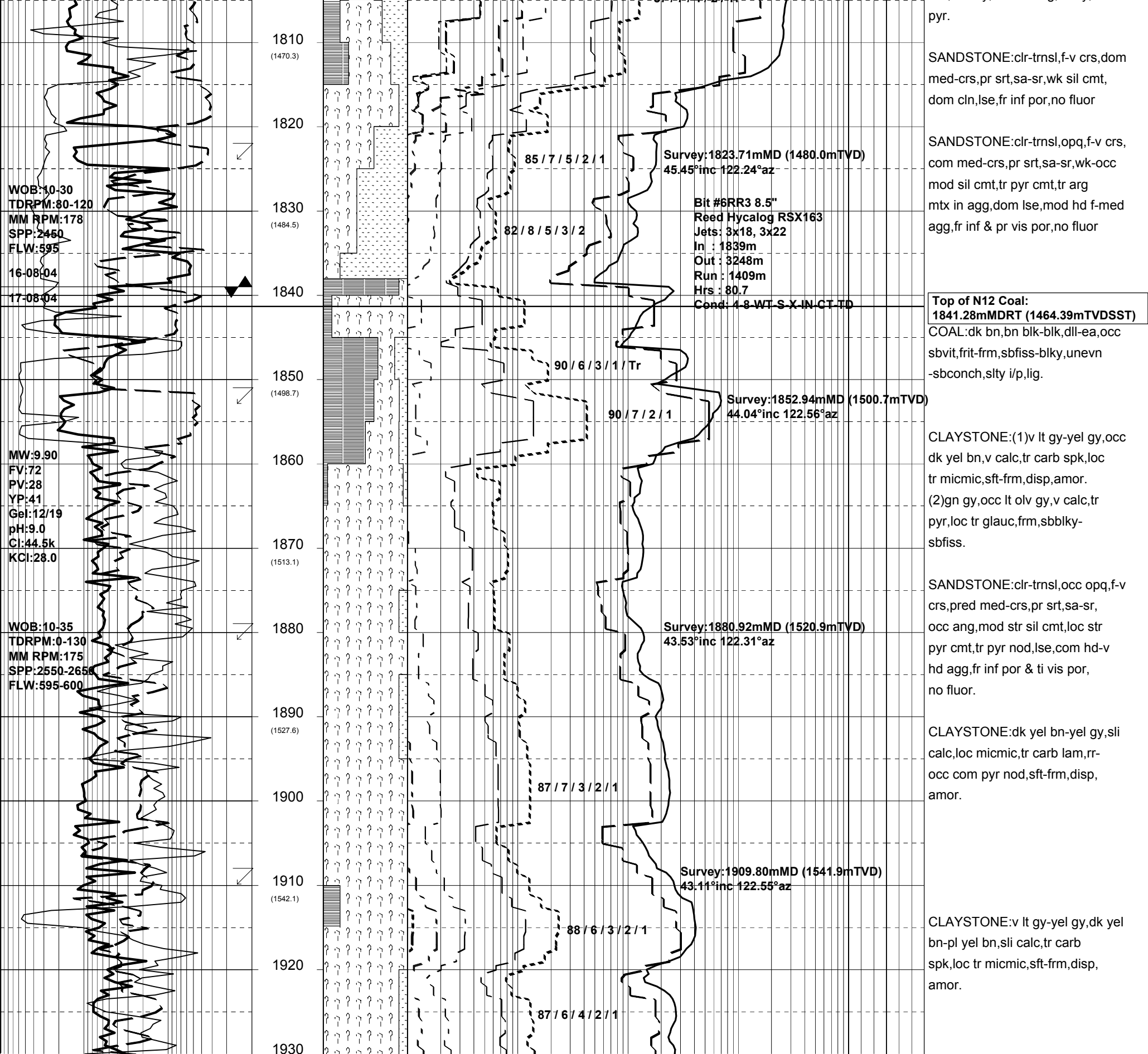




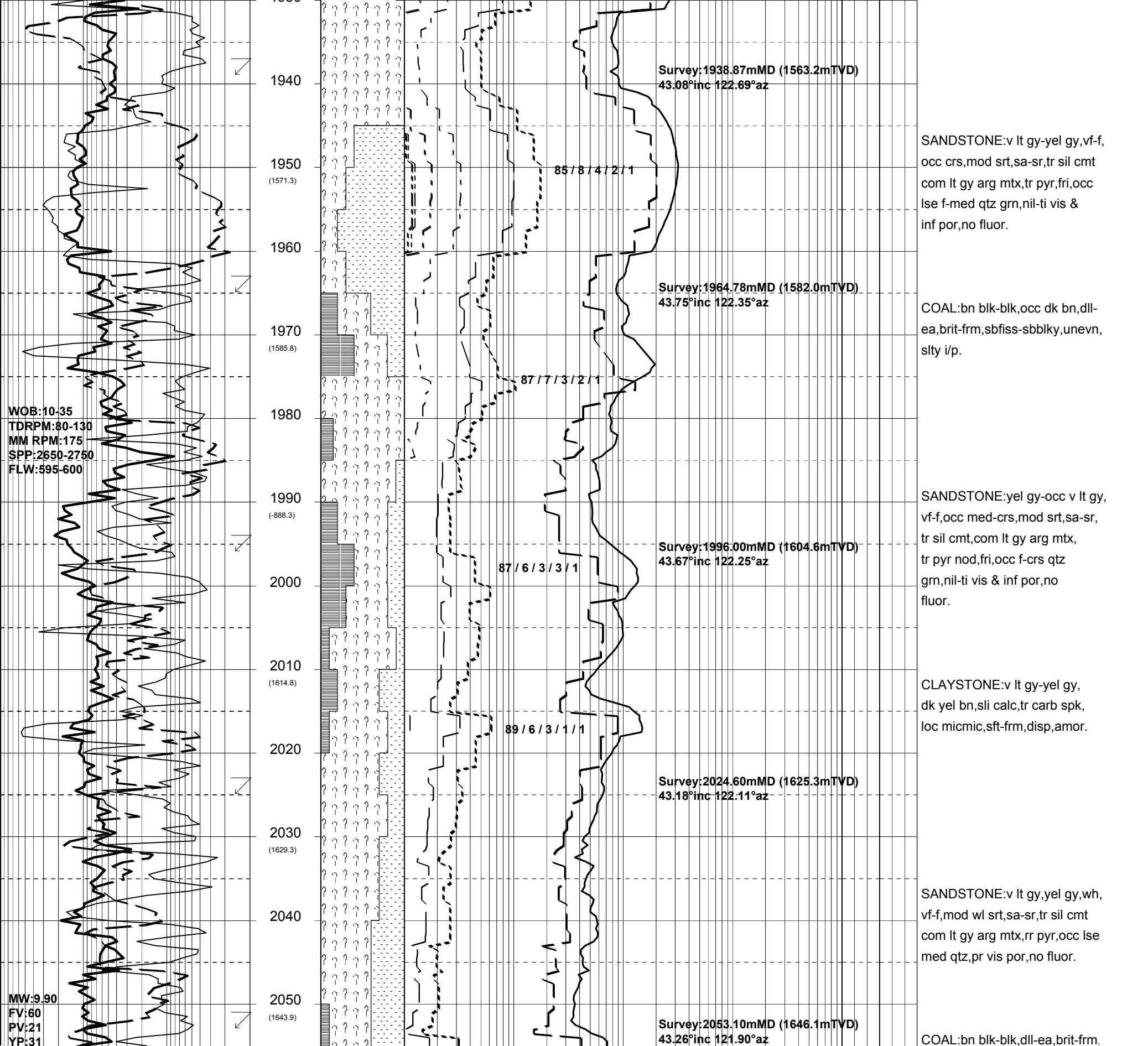


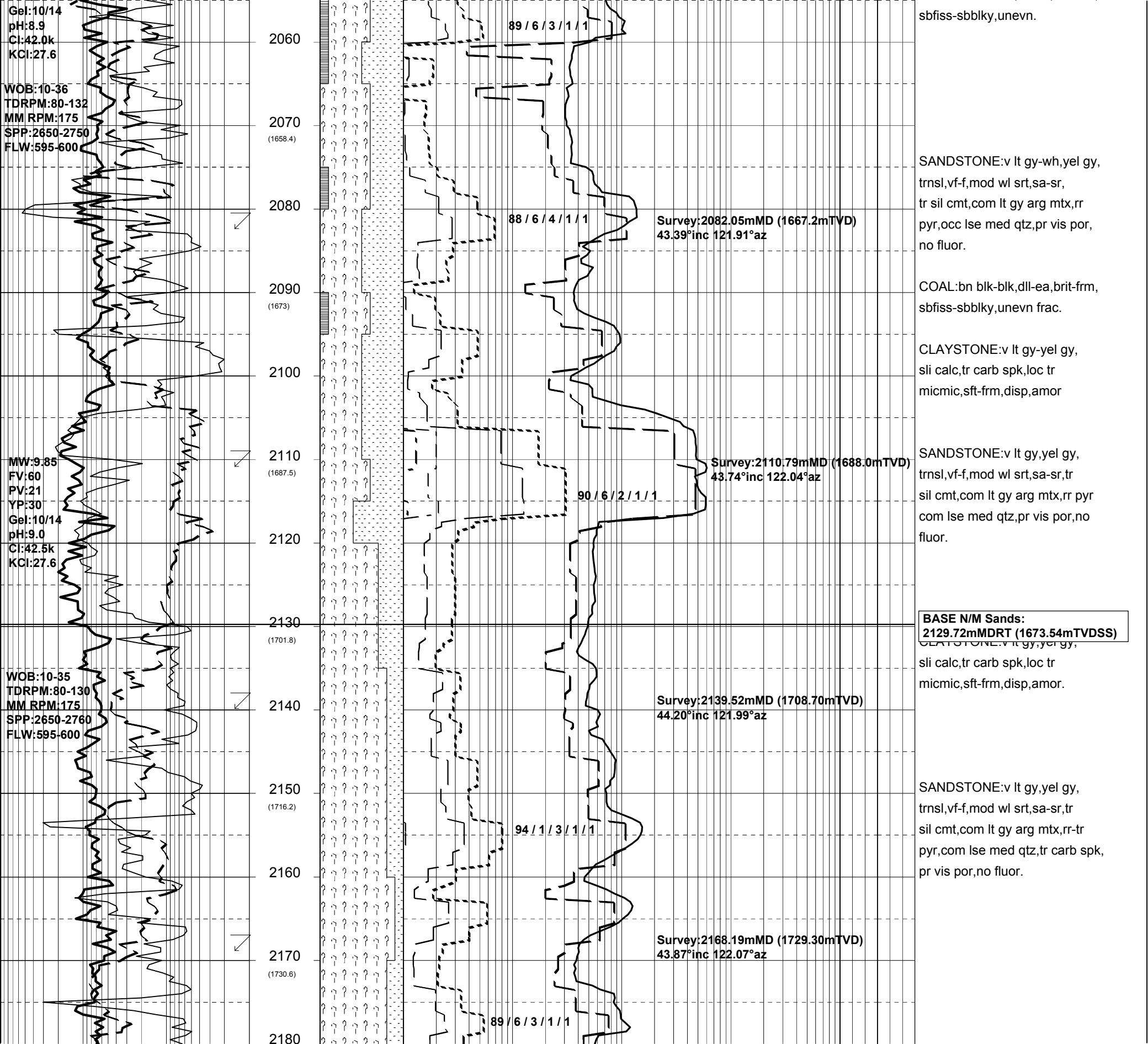


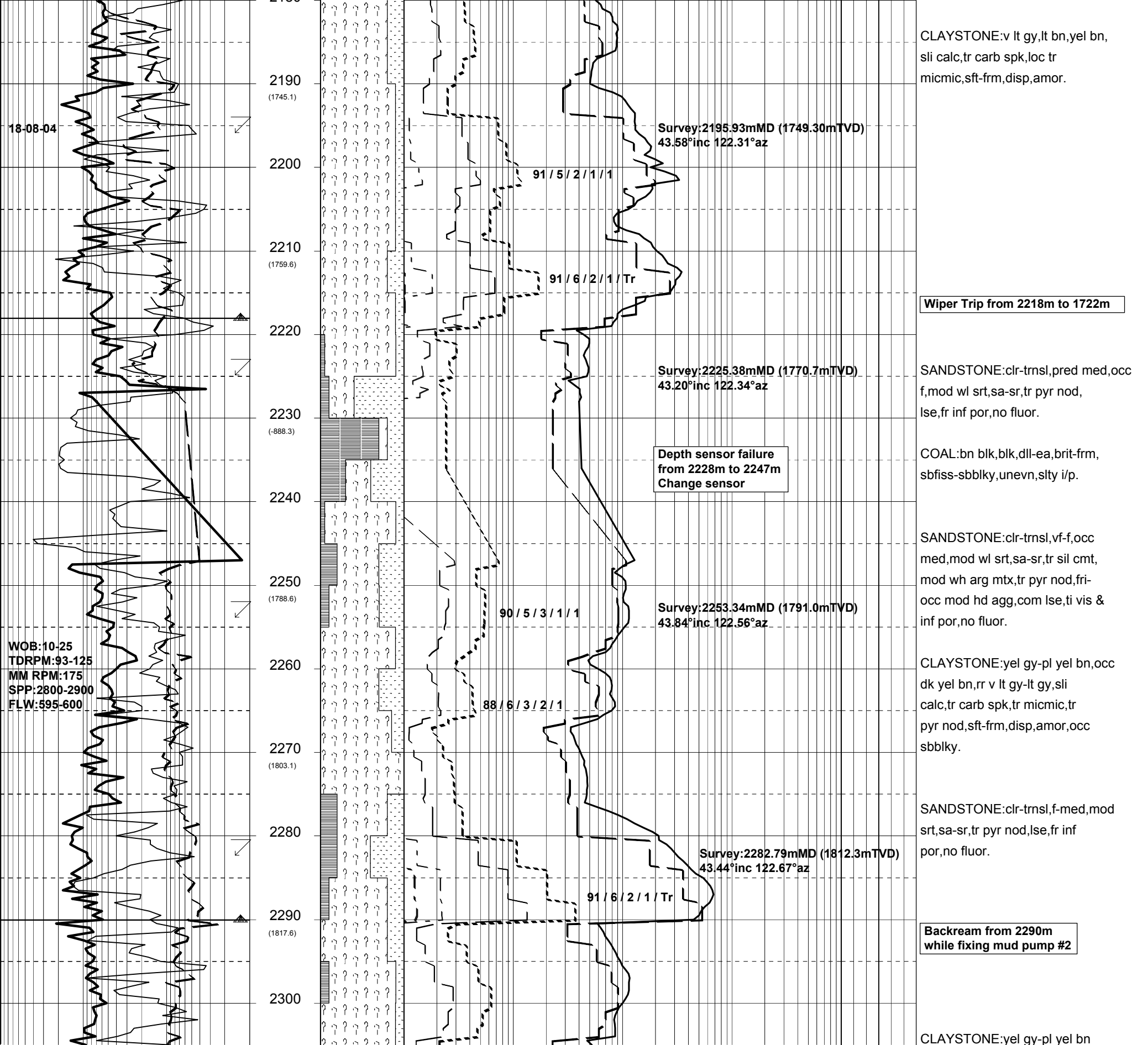


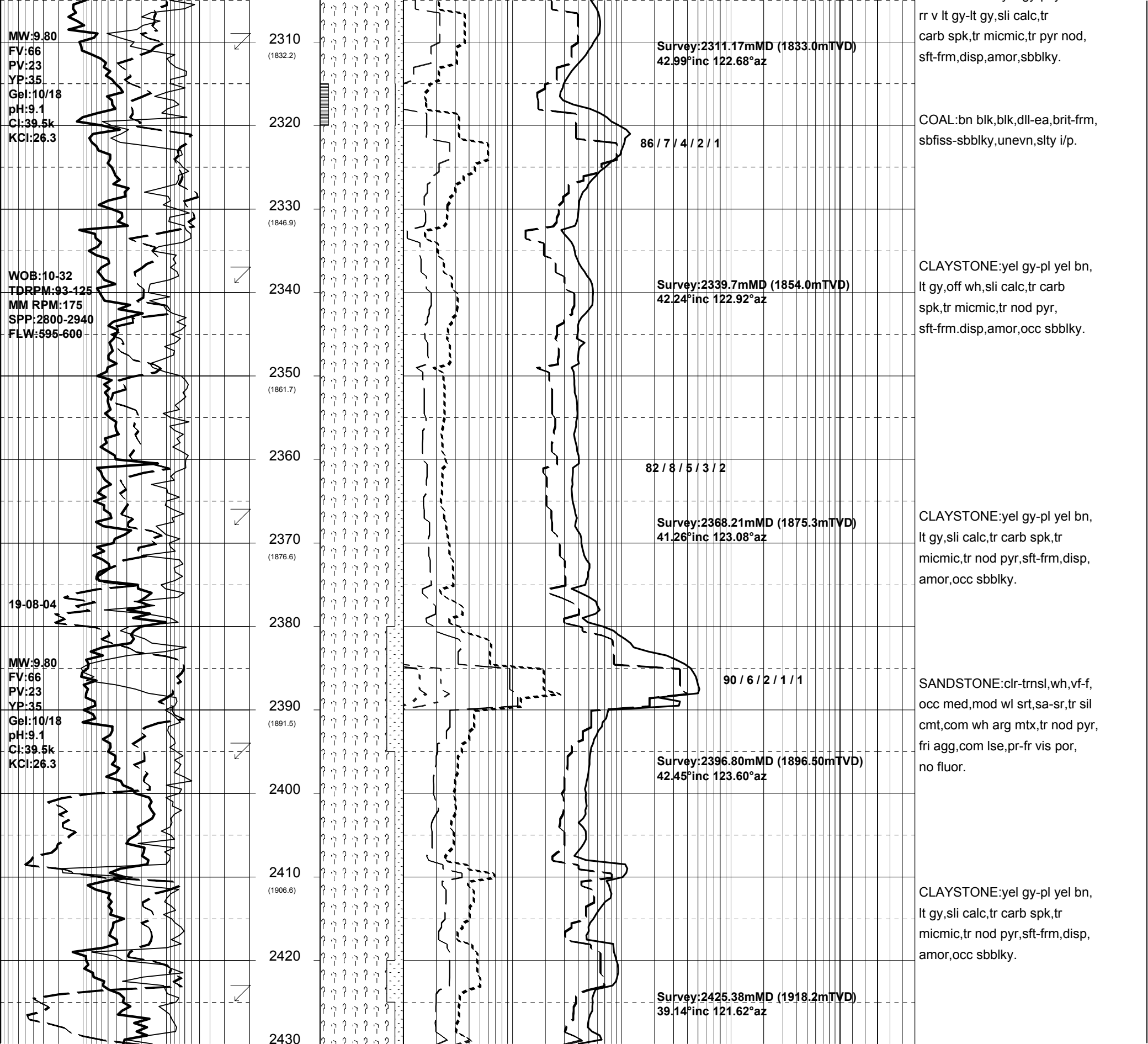


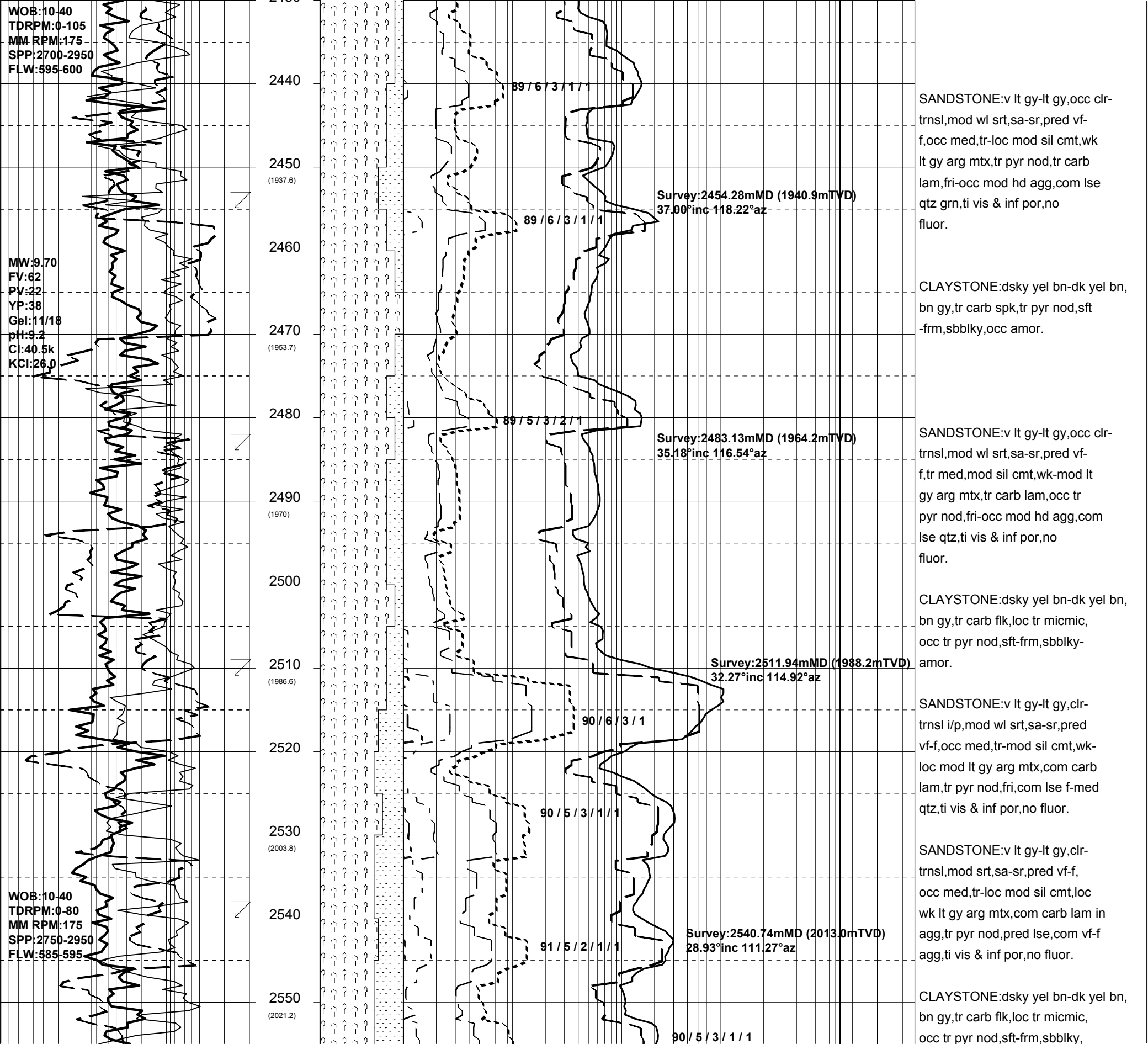


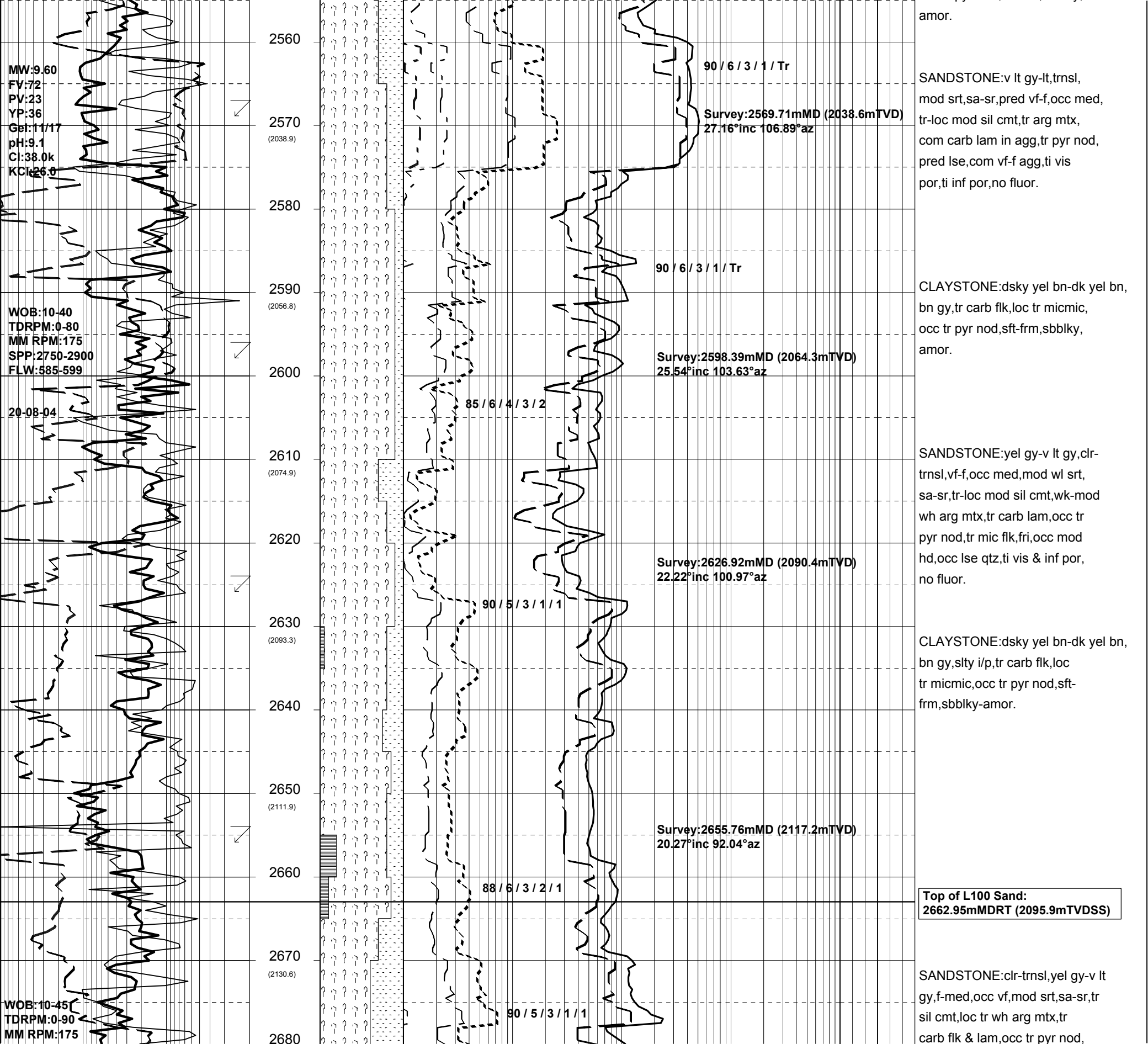












amor.

SANDSTONE:v lt gy-lt, trnsl,  
mod srt,sa-sr,pred vf-f,occ med,  
tr-loc mod sil cmt,tr arg mt,  
com carb lam in agg,tr pyr nod,  
pred lse,com vf-f agg,ti vis  
por,ti inf por,no fluor.

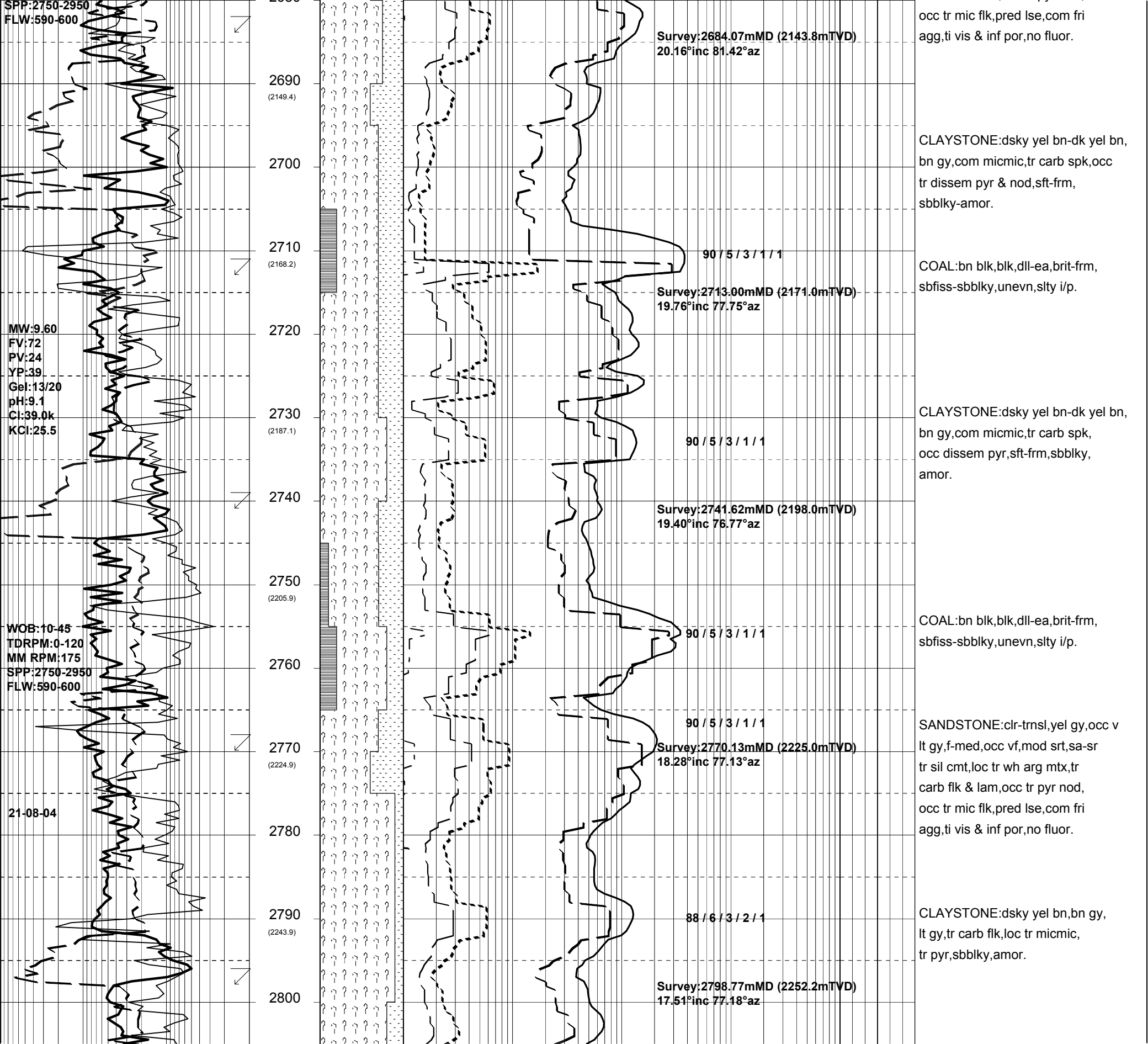
CLAYSTONE:ds,ky yel bn-dk yel bn,  
bn gy,tr carb flk,loc tr micmic,  
occ tr pyr nod,sft-frm,sbblky,  
amor.

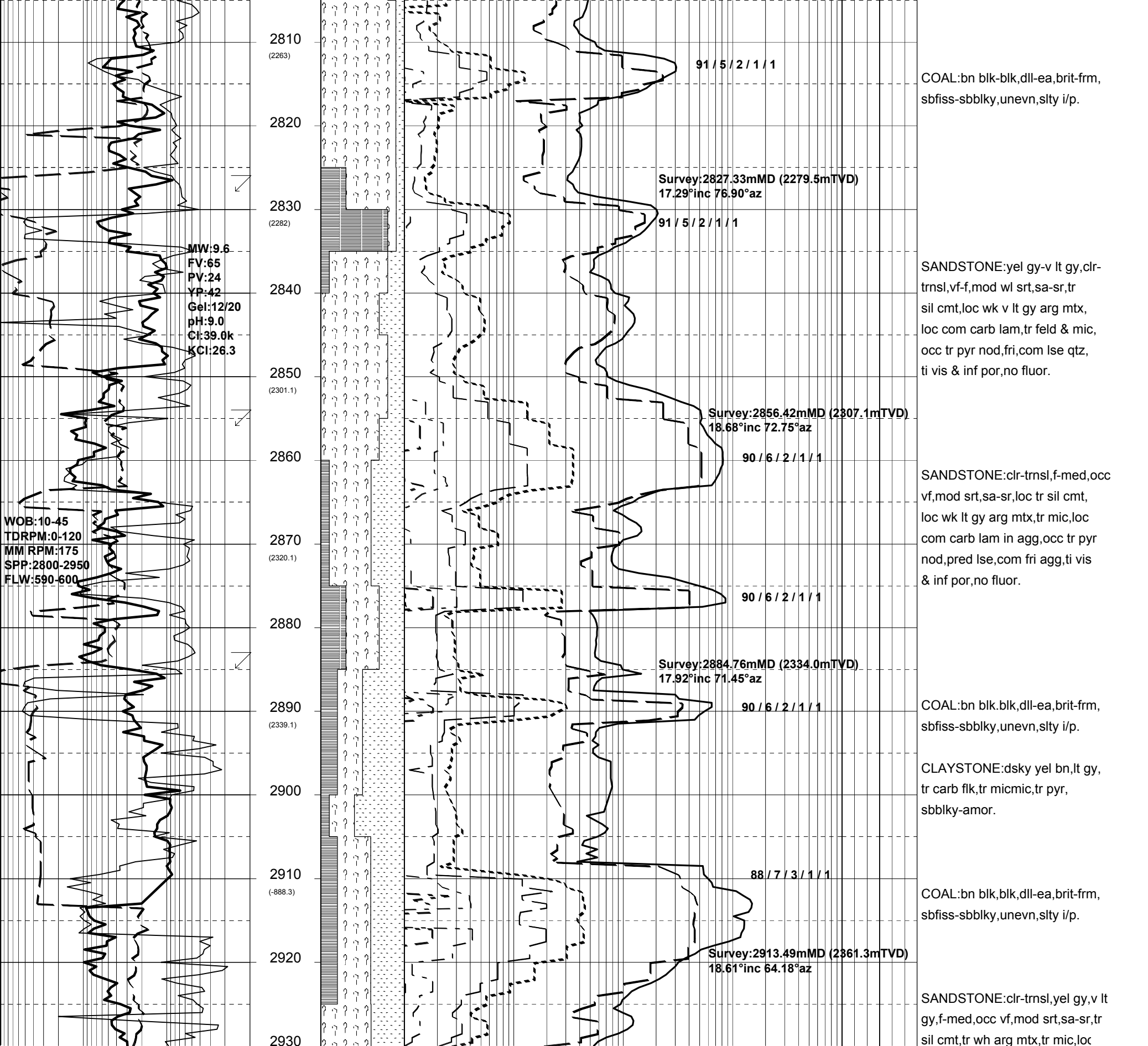
SANDSTONE:yel gy-v lt gy,clr-  
trnsl,vf-f,occ med,mod wl srt,  
sa-sr,tr-loc mod sil cmt,wk-mod  
wh arg mt, tr carb lam,occ tr  
pyr nod, tr mic flk,fri,occ mod  
hd,occ lse qtz,ti vis & inf por,  
no fluor.

CLAYSTONE:ds,ky yel bn-dk yel bn,  
bn gy,slty i/p,tr carb flk,loc  
tr micmic,occ tr pyr nod,sft-  
frm,sbblky-amor.

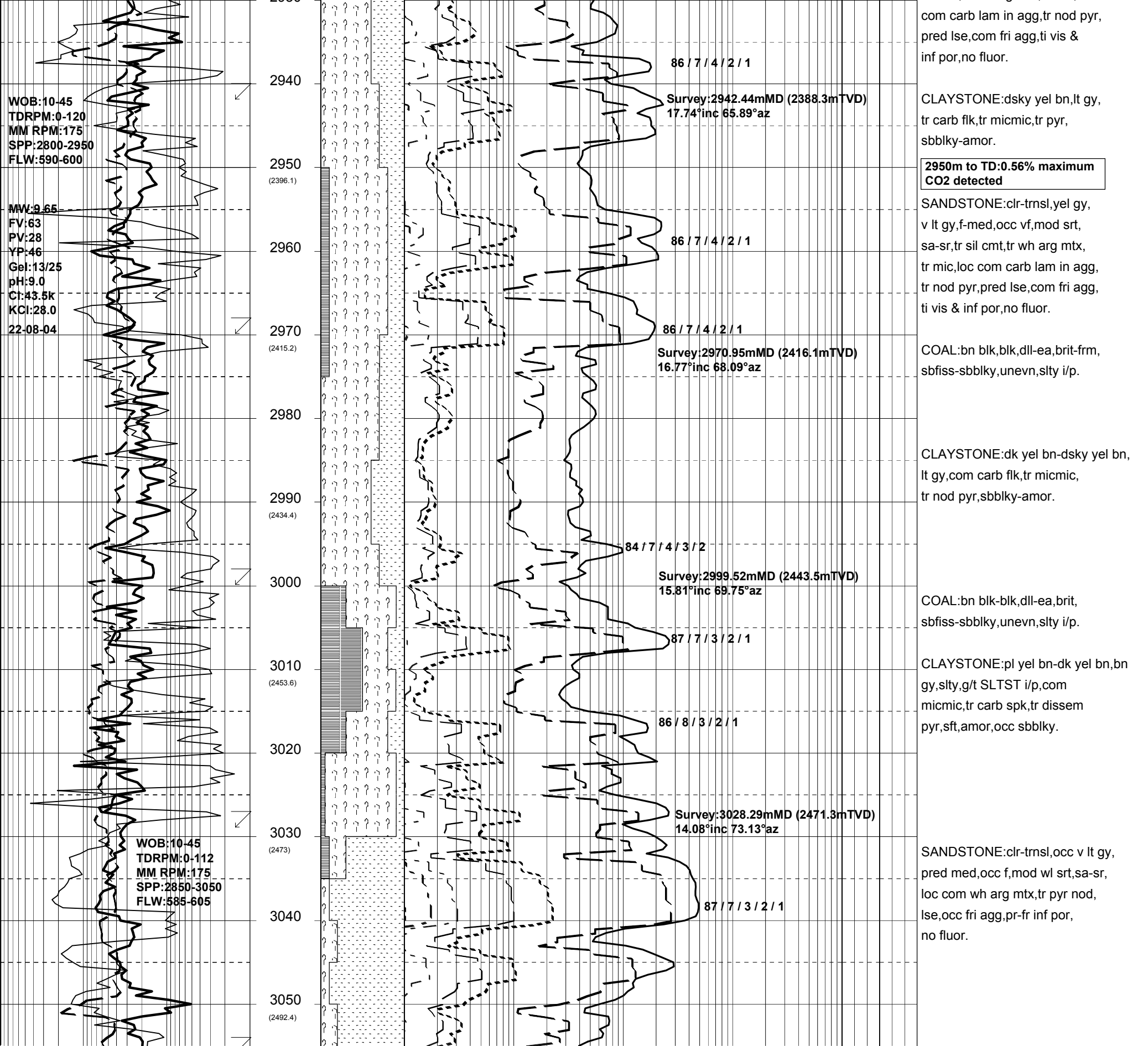
Top of L100 Sand:  
2662.95mMDRT (2095.9mTVDSS)

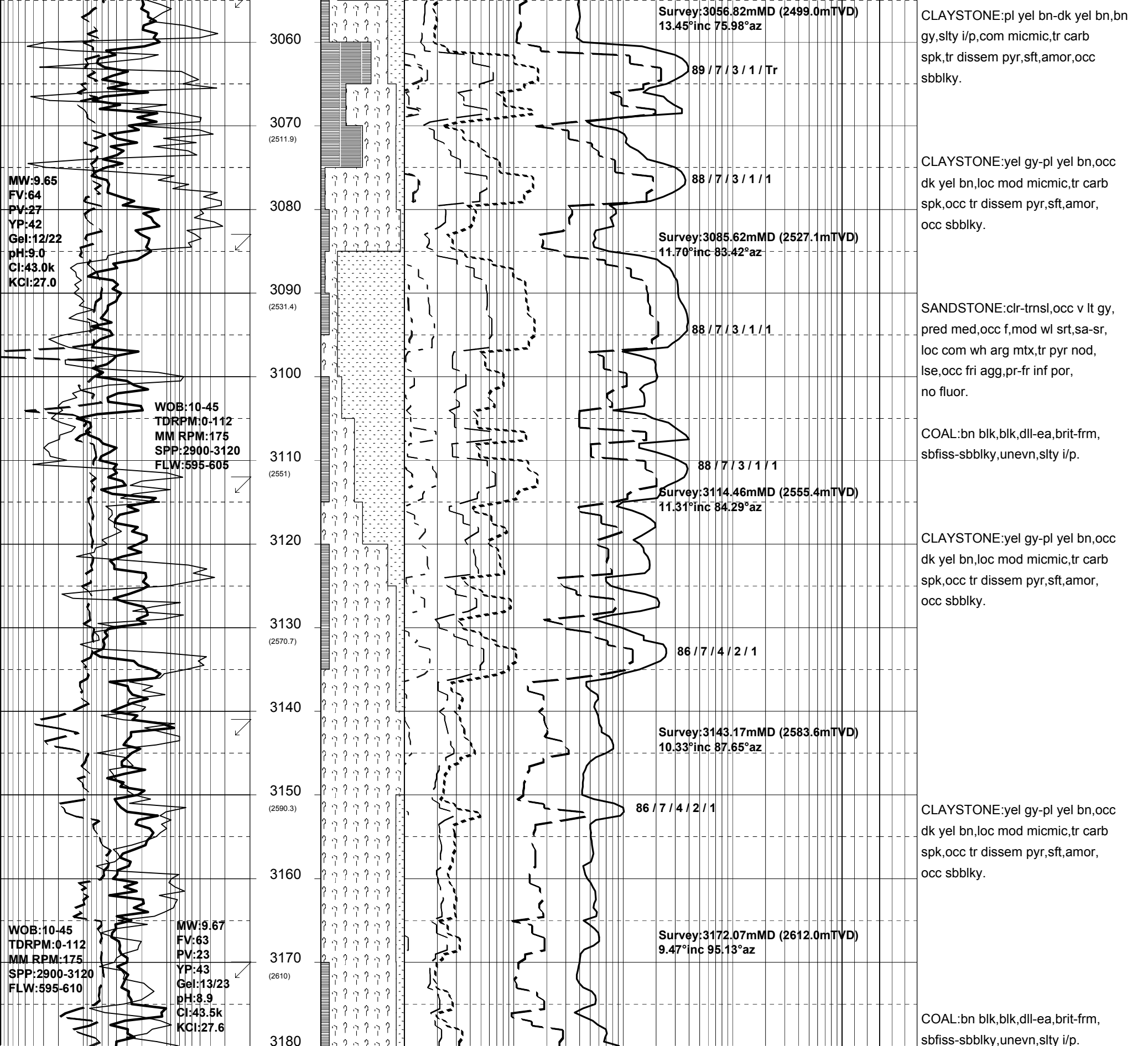
SANDSTONE:clr-trnsl,yel gy-v lt  
gy,f-med,occ vf,mod srt,sa-sr,tr  
sil cmt,loc tr wh arg mt, tr  
carb flk & lam,occ tr pyr nod,

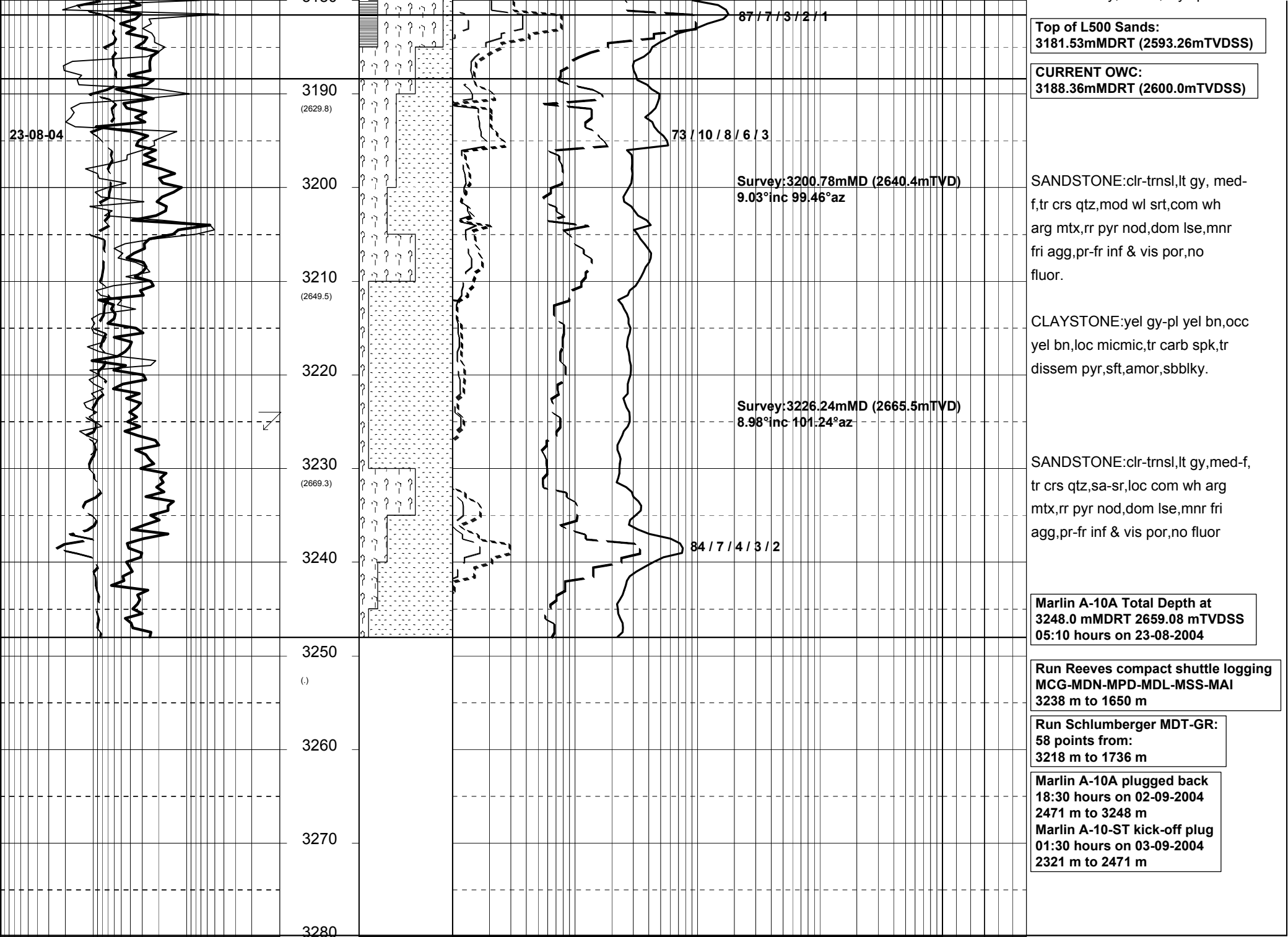












**APPENDIX 4b**  
**MARLIN A-10AST1**  
**Mud Log**



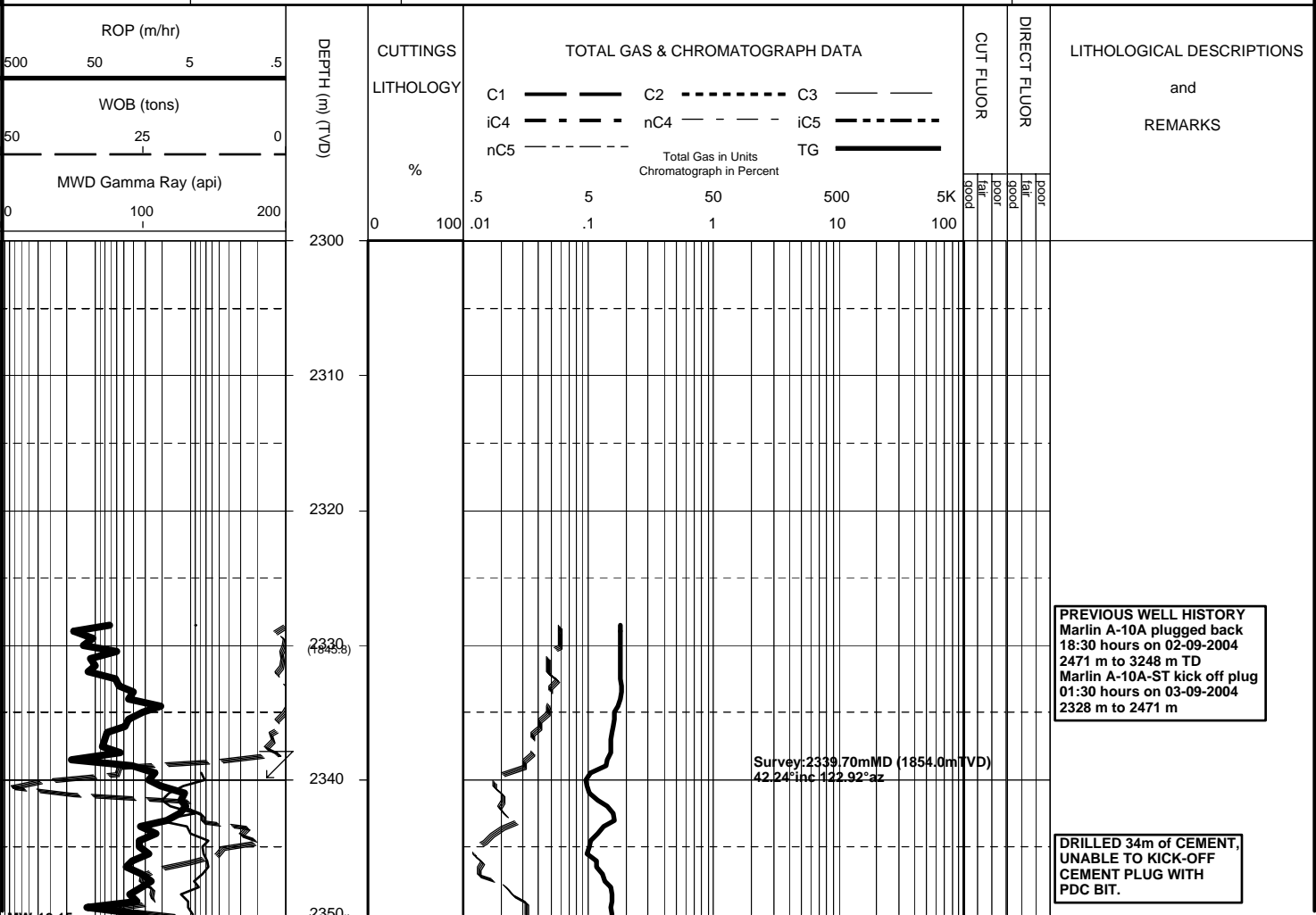
# MASTERLOG

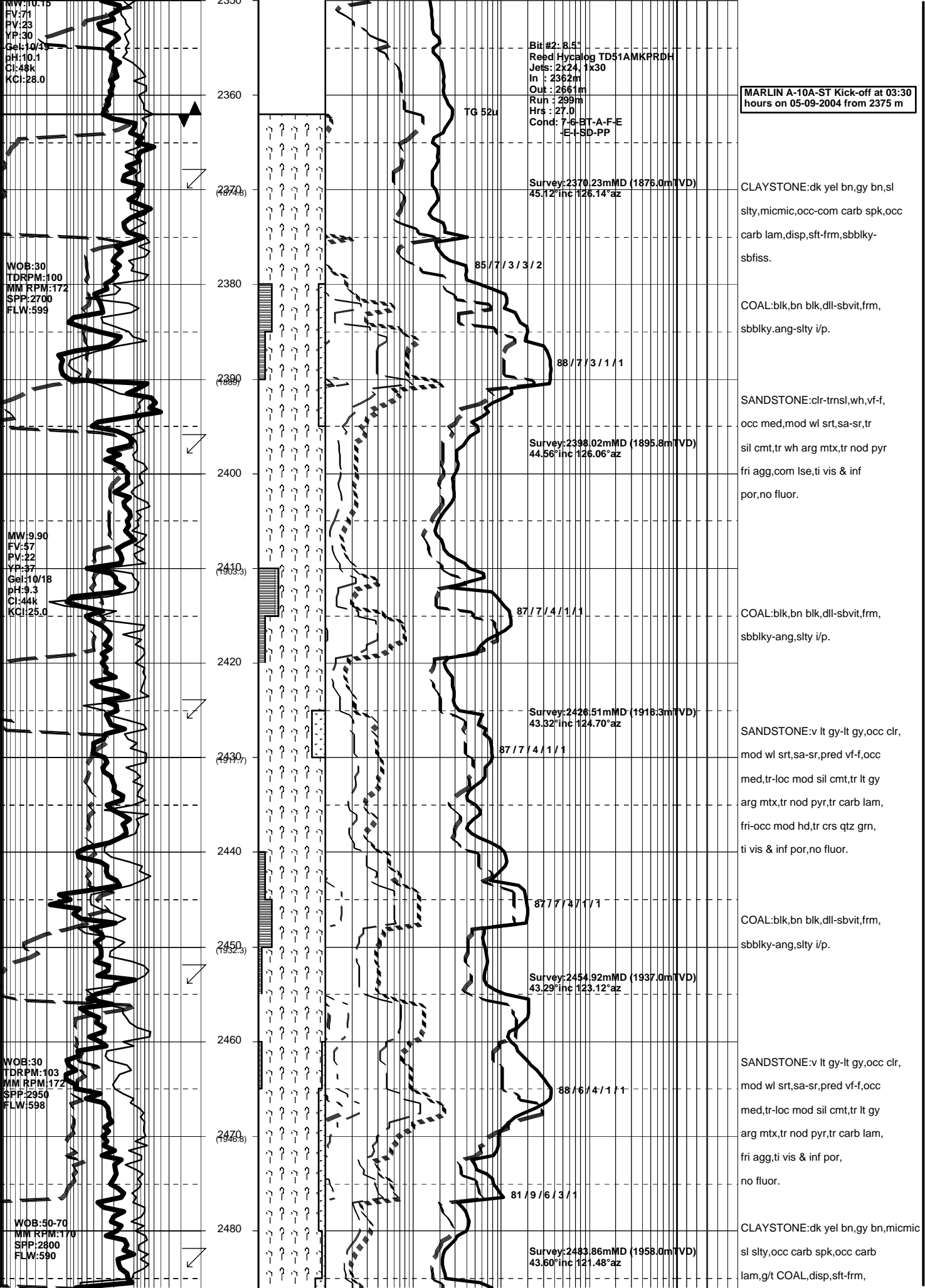
## MLA A-10A-ST1

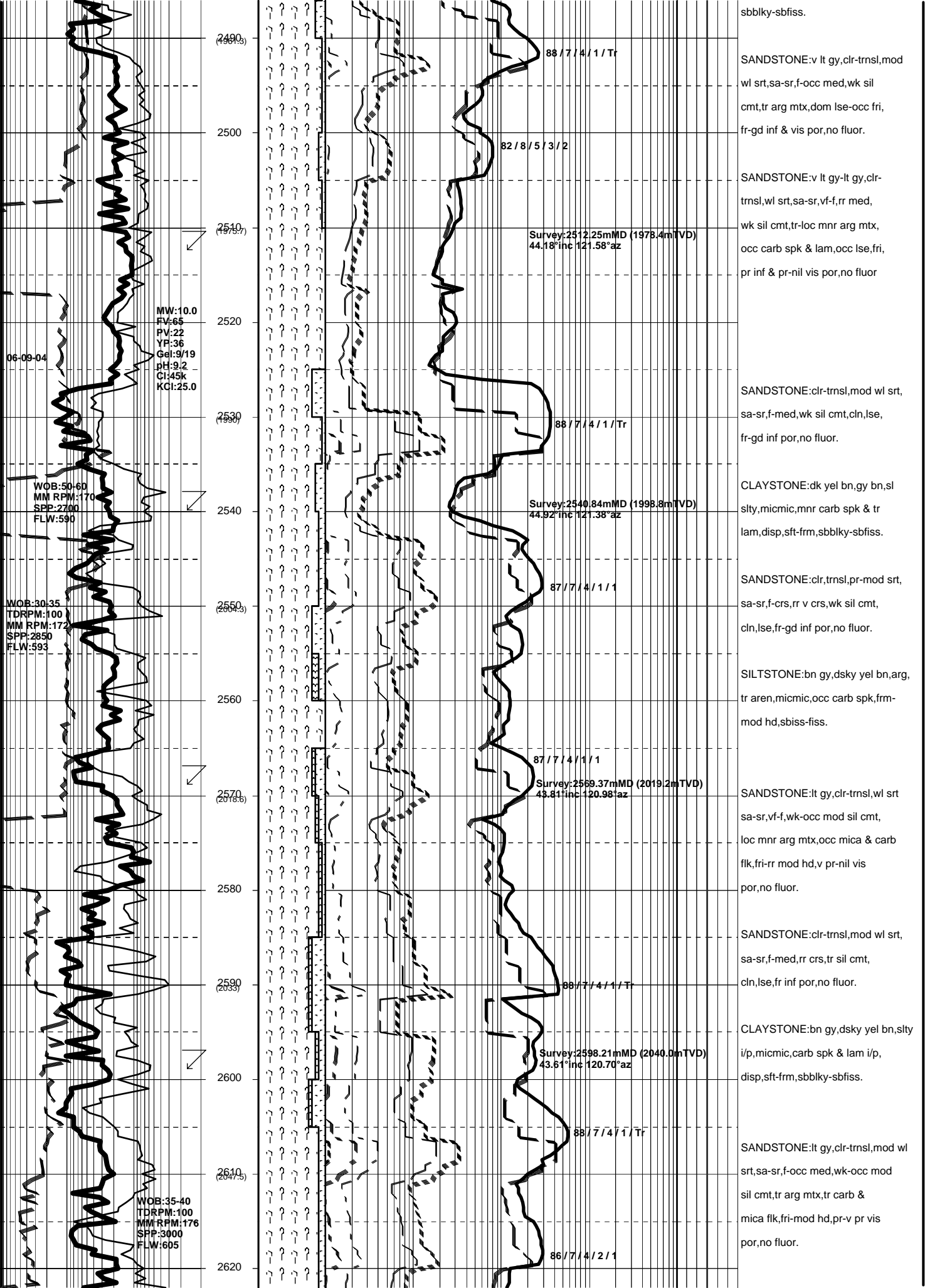


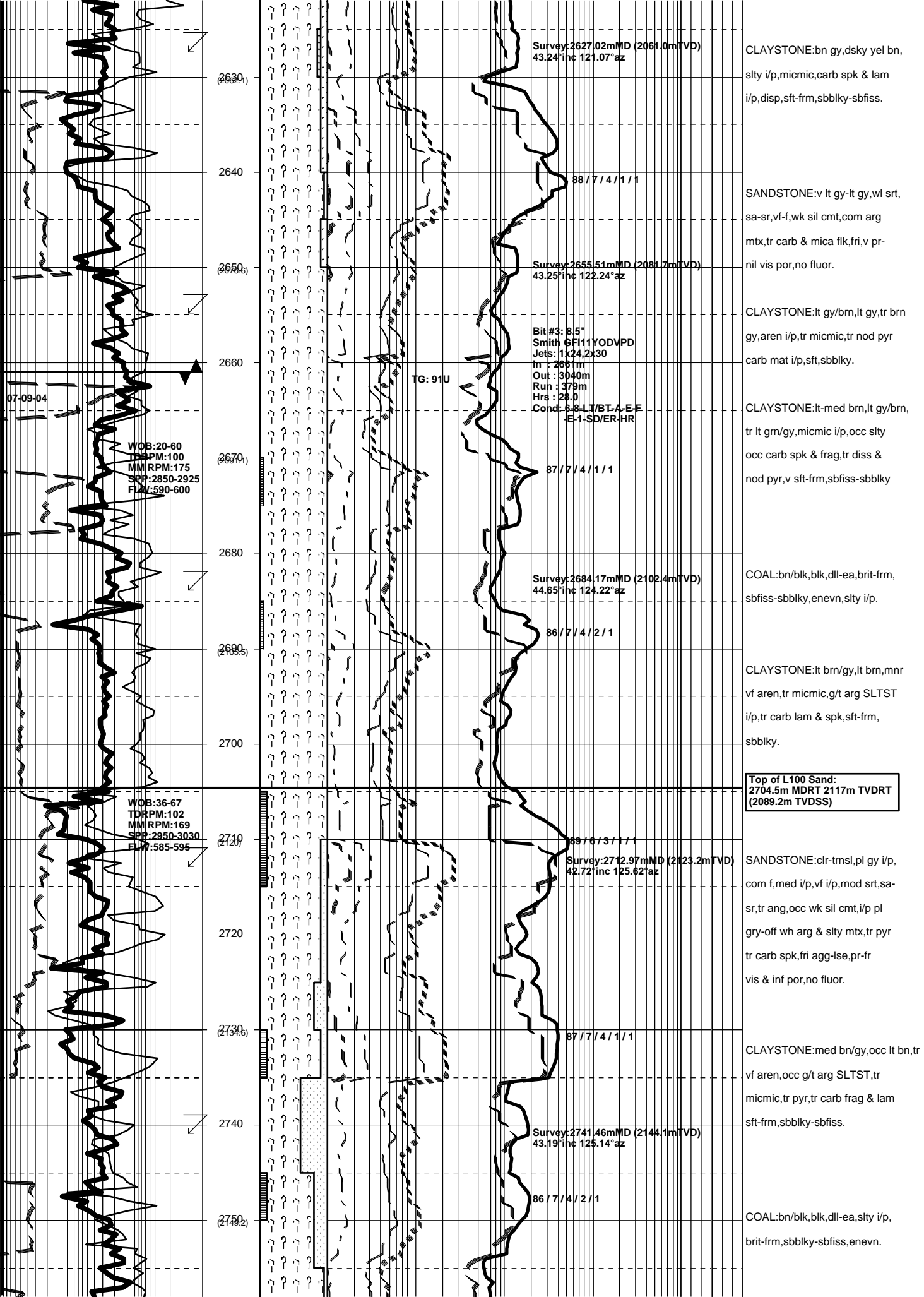
GENERAL	POSITION	HOLE / CASING INFO	DATE / DEPTH	ENGINEERS
Country : AUSTRALIA	Local Co-ord X : -28.35 mE	8-1/2" Hole to	Kick Off Date : 03-09-2004	Rohan Pereira
Permit : VIC L3/L4	Local Co-ord Y : 6.84 mN		Total Depth Date : ??-09-2004	Mark Smith
Field : TURRUM	AMG Co-ord X : 606868.95 mE	20" Conductor Shoe at 163.0 m	Total Depth :	Steve Oades
Basin : GIPPSLAND	AMG Co-ord Y : 5767920.06 mN	13-3/8" Surface Casing at 642.5 m	True Vertical Depth :	V.B. Jagarlamudi
Well Type : DEVELOPMENT	RT to MSL : 27.91 m	7" Production Casing at	Log Scale : 1/ 500	
Rig Name : NABORS 453	RT to Sea Bed : 86.91 m			

ABBREVIATIONS	LITHOLOGY LEGEND	ENGINEERING LEGEND
MW Mud Weight FV Funnel Viscosity PV Plastic Viscosity YP Yield Point Gel Gel Strength WL Water Loss KCl Potassium Chloride Cl Chlorides Incl Inclination Az Azimuth	WOB Weight on Bit (klbs) RPM Rotations Per Min FLW Flow Rate (gpm) SPP Pump Pressure (psi) RR Re-Run Bit TG Trip Gas CG Connection Gas BG Background Gas DGP Drilled Gas Peak MM Mud Motor	CLAYSTONE SILTSTONE SST: F - V FINE SST: MEDIUM SST: COARSE SHALE MARL LIMESTONE DOLOMITE CHERT CONGLOMERATE COAL BRYOZOA RADIOLARITES ECHINOIDES CORALS FORAMINIFERA LITHIC FRAGMENT CARB FRAGMENT QUARTZITE INTRUSIVES GLAUCONITE PYRITE CEMENT
		CASING SHOE LINER HANGER BIT CHANGE DEVI. SURVEY SWC UNRECOV SIDEWALL CORE WIRELINE LOGS MDT POINTS: PRESSURE ONLY SAMPLE SEAL FAILURE TIGHT CORE

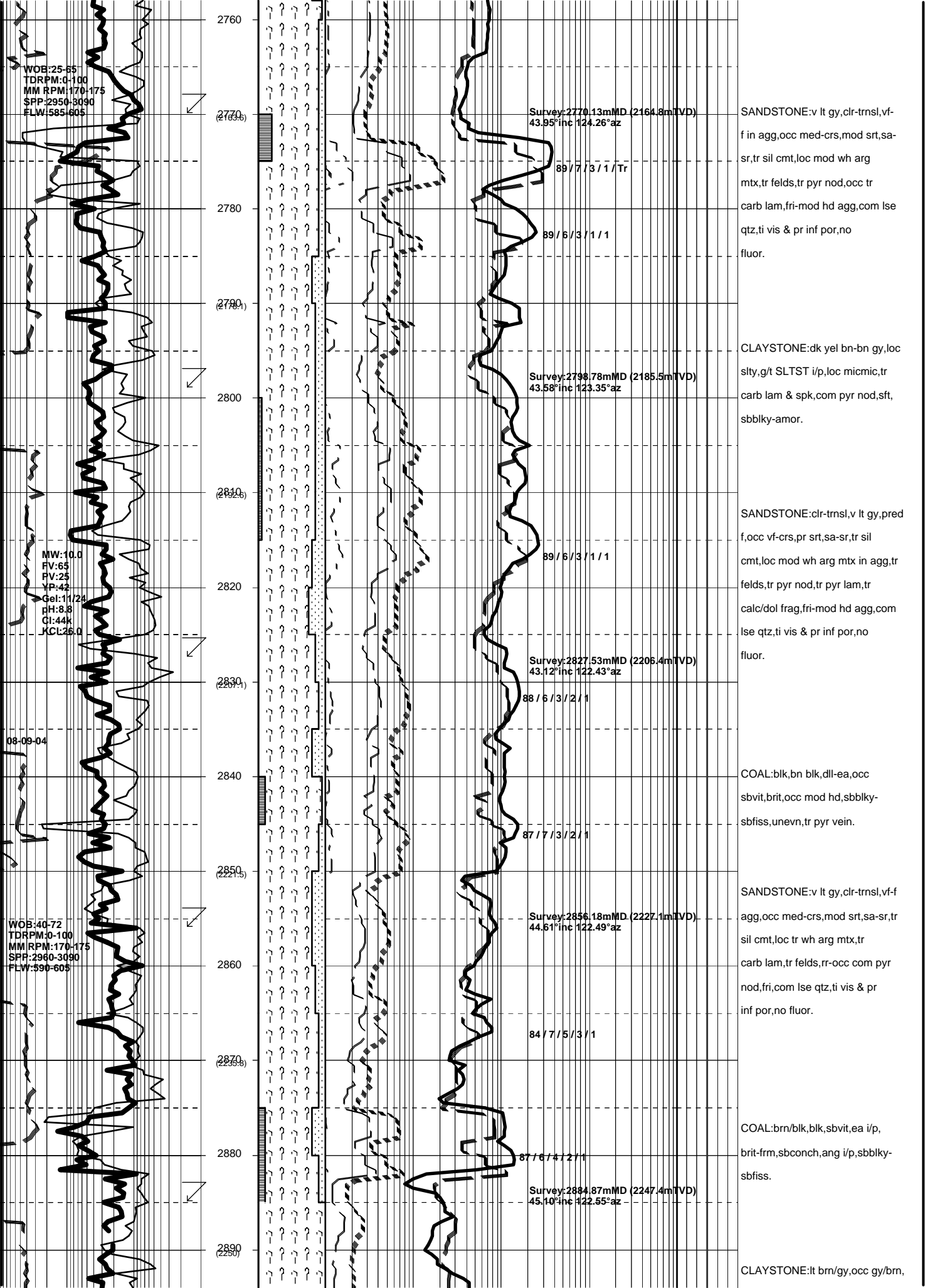


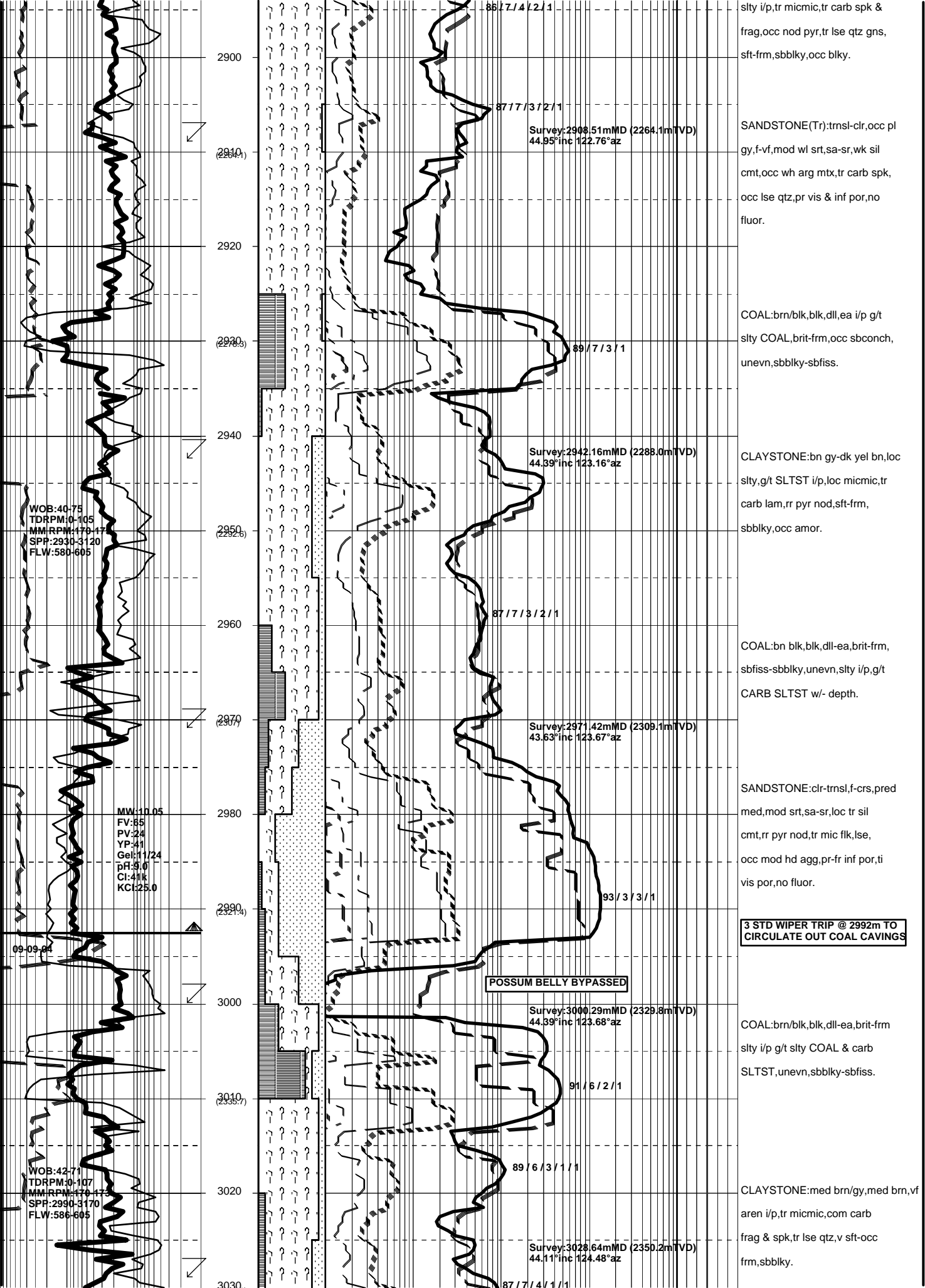


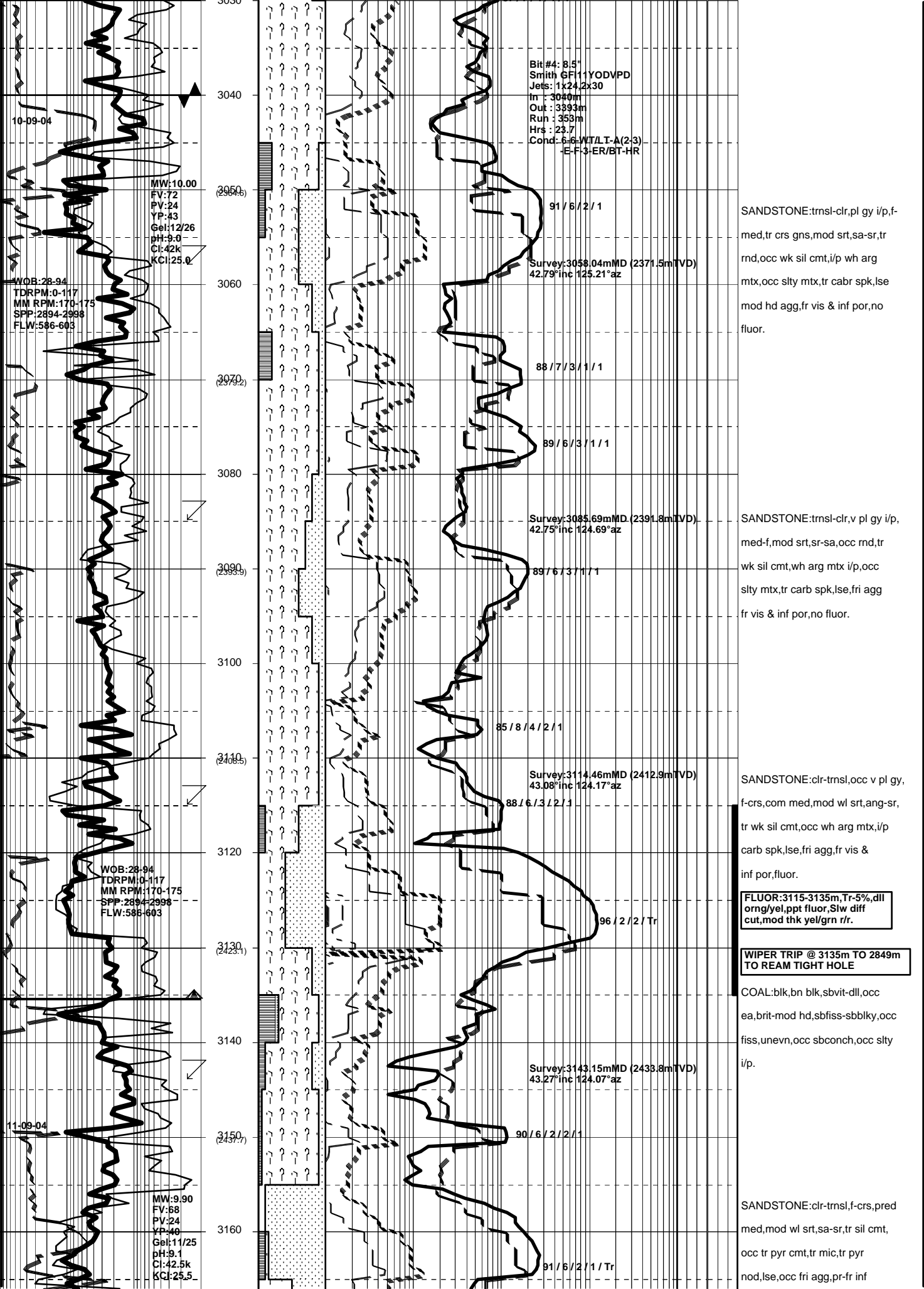


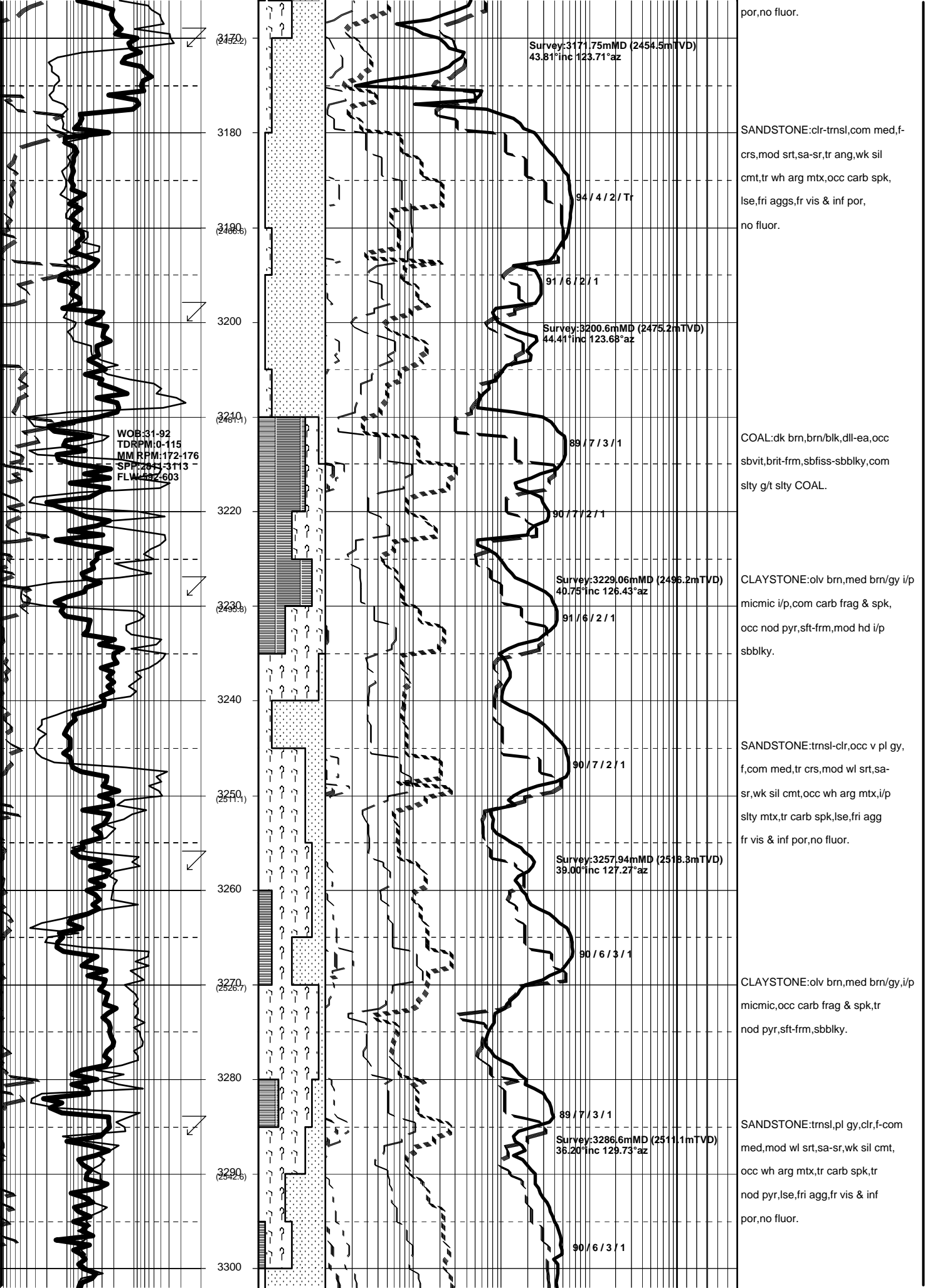












WOB:34-51  
TDRPM:111-120-  
MM RPM:171-176  
SPP:2906-3123  
FLW:582-610

3310  
(2556.9)

3320

3330  
(2563.5)

3340

3350  
(2569.2)

3360

3370  
(2575.9)

3380

3390  
(2582.5)

3400

3410  
(2589.2)

3420

3430  
(2595.8)

MW:9.90  
FLV:68  
PV:24  
YP:42  
Gel:11/26  
pH:8.8  
Cl:45.0k  
KCl:26

12-09-04

13-09-04

WOB:22-46  
TDRPM:99-102  
MM RPM:171-173  
SPP:3053-3127  
FLW:591-597

Survey:3315.17mMD (2564.3mTVD)  
34.57°inc 131.07°az

88 / 8 / 3 / 1

Survey:3343.58mMD (2588.0mTVD)  
32.76°inc 132.73°az

88 / 7 / 3 / 1 / 1

85 / 8 / 4 / 2 / 1

Survey:3371.90mMD (2611.8mTVD)  
32.44°inc 133.37°az

Bit #5: 8.5"  
Smith GF11YODVPD  
Jets: 1x24,2x30  
In : 3393m  
Out : xxxxm  
Run : xxxm  
Hrs : xx.x  
Cond:

Survey:3401.06mMD (2635.5mTVD)  
32.24°inc 134.16°az

88 / 6 / 3 / 2 / 1

Survey:3427.39mMD (2658.8mTVD)  
31.81°inc 135.26°az

84 / 6 / 4 / 4 / 2

SANDSTONE:clr-trnsl,f-pred med,  
occ crs,mod wl srt,sa-sr,wk sil  
cmt,loc tr pyr cmt,tr nod pyr,tr  
mic,tr carb spk,lse,tr fri agg,  
fr inf & pr vis por,no fluor.

COAL:blk,bn blk,dll-ea,occ  
sbvit,brit-frn,occ mod hd,sbfiss  
-sbbiky,unevn,occ sbconch,occ  
silty i/p.

Top of L500 Sand:  
3344.0m MDRT 2588.35m TVDRT  
(2560.44m TVDSS)

SANDSTONE:clr-trnsl,f-pred med,  
occ crs,mod wl srt,sa-sr,occ wk  
sil cmt,occ wk pyr cmt,tr nod  
pyr,tr mic flk,occ tr carb spk,  
occ fri agg,fr inf & pr vis por,  
no fluor.

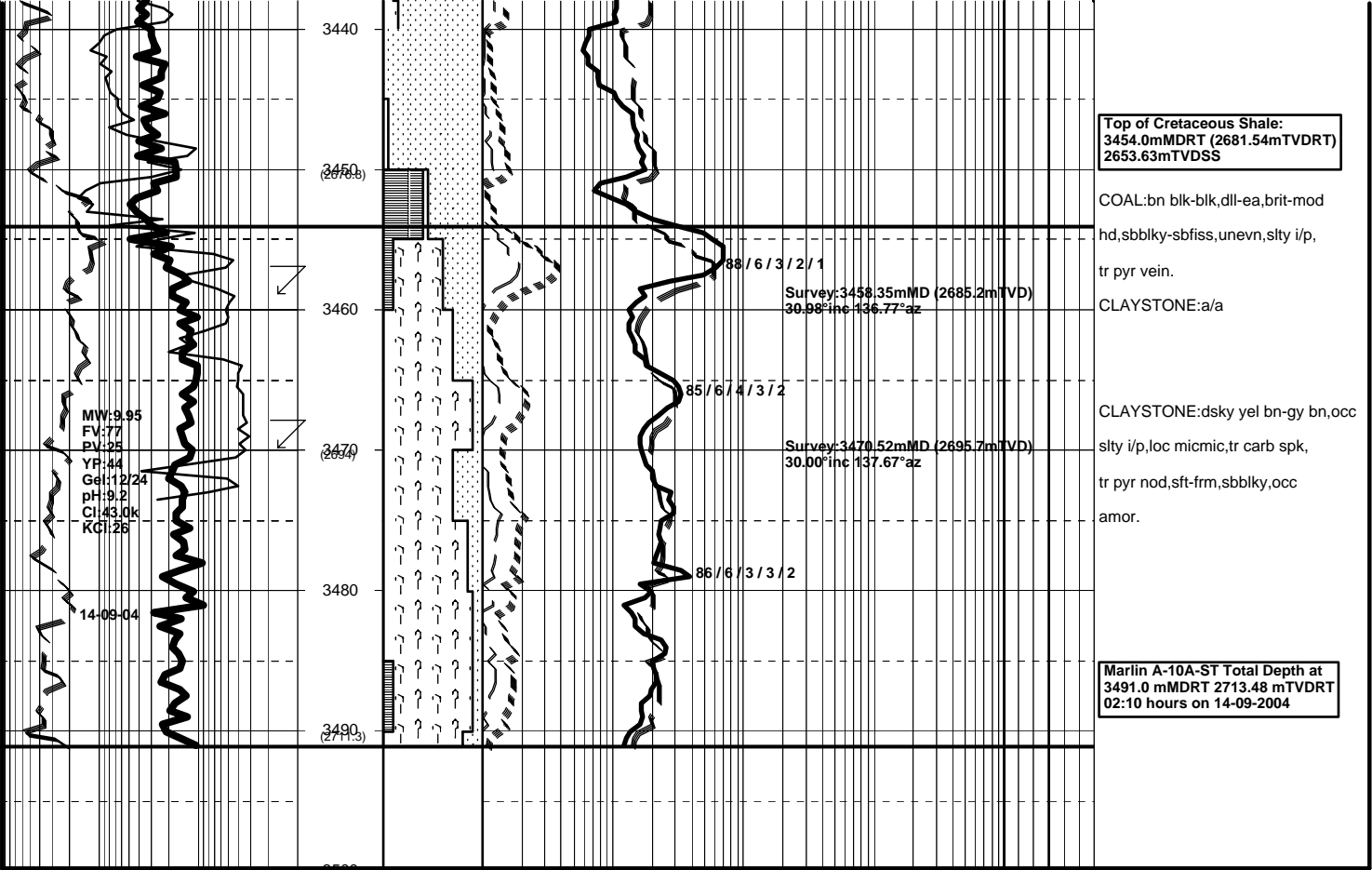
SANDSTONE:clr-trnsl,med-crs,occ  
f,mod srt,sa-sr,wk sil cmt,occ  
tr pyr cmt,tr mic,tr pyr nod,tr  
carb spk,tr glauc,tr fri agg,fr  
inf por,no fluor.

CLAYSTONE:bn gy,loc slty,micmic  
i/p,tr carb spk,tr pyr nod,sft-  
frm,sbbiky,occ amor.

SAMPLES CONTAMINATED WITH  
BARACARB & RADIAGREEN-EBL  
GIVING MINOR DULL FLUOR.

SANDSTONE:trnsl-clr,v pl gy-v pl  
bn i/p,com med,crs-f i/p,mod srt  
sa-sr,wk sil cmt,occ pl brn-off  
wh arg mtx,tr carb spk,gen lse,  
fri agg,fr vis & inf por,no  
fluor.

CLAYSTONE:bn gy,silty i/p,loc  
micmic,tr carb spk & lam,tr pyr  
nod,sft-frm,sbbiky,occ amor.



**APPENDIX 4c**

**MARLIN A-10A**

**Well Completion Log**

WELL COMPLETION LOG

Scale – 1:200

MARLIN A-10A

Gippsland Basin, Victoria  
Concession: VIC/L11

POST-DRILL LOCATION: (Top of Latrobe)	Latitude:	38° 14' 07.125" S	COMPILED BY:	Sheryl Sazenis
	Longitude:	148° 13' 42.522" E	DRAFTED BY:	Andrew Hodgson
(Top of L500 Sand)	MGA X:	607513.51 mE	DRILLED BY:	Nabors Rig 453
	MGA Y:	5767362.65 mN	ELEVATION:	G.L.: -59.00 m R.T.: 27.91 m above MSL Water Depth: 59.00 m
	Depth:	1731.4m MDRT (-1386.3 TVDSS)	TOTAL DEPTH:	3248.0m MDRT
			PLUGGED BACK T.D.:	2471.0m MDRT
	Datum:	GDA94 (GRS80)	CLASSIFICATION:	Development
	Projection:	MGA/ UTM Zone 55 (S)	STATUS:	Plugged & Sidetracked
DATES:	Spudded:	04/08/2004		
	Rig Released:	23/08/2004		

SERVICE COMPANIES:			
DRILLING CONTRACTOR:	ISDL Rig 453	PRODUCTION TESTING:	n/a
MWD (GR and Direct):	Schlumberger Anadrill	DIVERS:	n/a
GYRO SURVEYING:	SDI	MUD LOGGING:	Geoservices Overseas S.A.
CORING:	n/a	PRESSURE RECORDING:	n/a
LOGGING:	Reeves (Compact Shuttle Logging System)	WELL VELOCITY SURVEY:	n/a
CEMENTING:	Halliburton	MUD ENGINEERING:	Halliburton-Baroid
CASING:	Weatherford	LINER:	n/a
	Reeves (Shuttle)/Schlumberger (MDT-TLC & CHDT)		

LEGEND

2.7m NOS Ø = 17% Sw = 32%		LOG ANALYSIS DATA	SHOW OR STAIN
<div>No Rec.</div> <div>CORE</div> <div>Rec.</div>		NS - Net Sand NOS - Net Oil Sand NGS - Net Gas Sand Sw - Water Saturation	HYDROCARBON CUT
PERFORATED INTERVAL		MUD DATA	FLUORESCENCE
PLUG		Ø - Porosity Snd - Sand MW - Mud Weight FV - Funnel Velocity PV - Plastic Velocity YP - Yield Point Gel - Gel Strength pH - Acidity/Alkalinity WL - Water Loss Cl - Chloride Ca - Calcium Sol - Solids H2O - Water Oil -Oil	GAS SHOW
←SST		RECOVERED SIDE WALL CORE LITHOLOGY	OIL PRODUCTIVE
		SST - Sandstone SLST - Siltstone MST - Mudstone SH - Shale	GAS PRODUCTIVE
		CLST - Claystone LMST - Limestone ML - Marl COAL - Coal	INTERPRETED OIL PRODUCTION
←		SIDE WALL CORE - NO RECOVERY	INTERPRETED GAS PRODUCTION
←		FIT	INTERPRETED WATER PRODUCTION
←P2/11		MDT/RFT PRETEST RUN/SEAT NUMBER	WATER PRODUCTIVE
←S11/2		MDT/RFT SAMPLE RUN/SAMPLE NUMBER	CONDENSATE PRODUCTION
P2/40		MDT VERTICAL/HORIZONTAL PERMEABILITY TEST	INTEPRETED CONDENSATE BEARING
+		PACKER	DSTG DST WITH GAS RECOVERED
□		BRIDGE PLUG	DSTO DST WITH OIL RECOVERED
			▲ SURVEY POINT
			13-3/8" CASING SHOE
			↓ MUD

LITHOLOGICAL SYMBOLS

	Sandstone		Dolomite		Mica		Pelecypods
	Siltstone		Marl		Chert		Echinoids
	Mudstone		Anhydrite		Carbonaceous Matter		Fish Remains
	Claystone		Volcanics		Calcareous		Plant Remains
	Shale		Basement		Glauconite		Spores
	Coal		Granule		Corals		Leaves
	Limestone		Oolites		Bryozoans		Foram



Limestone

M

M

M

M

M

M

M

M

M

M

Micritic Limestone

G

G

G

G

G

G

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Grain Limestone

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Skeletal Limestone

Oolites

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Dolomitic

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Pyrite

Bryozoans

Brachiopods

Gastropods

Cephalopods

Foram

Fossils

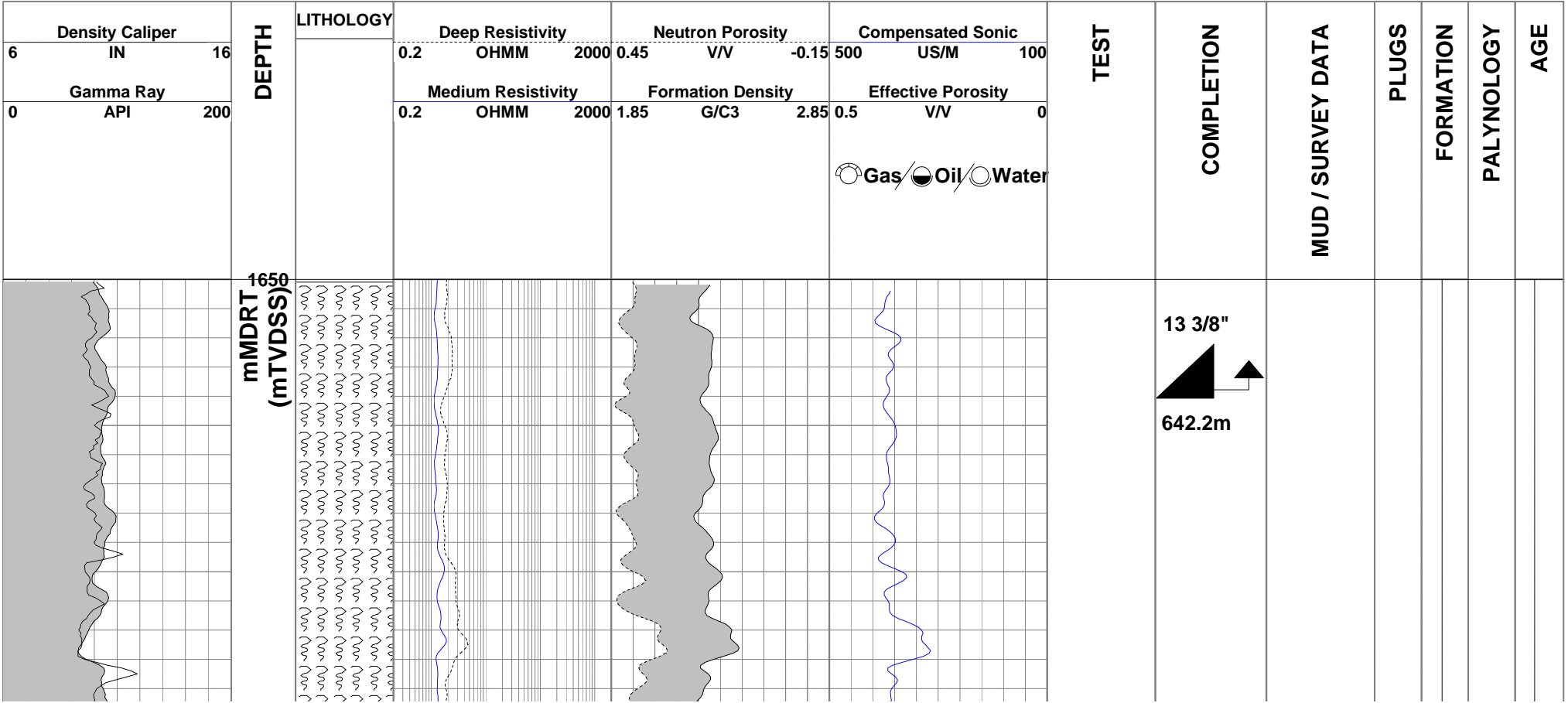
LOGGING AND SURVEYING			
Anadrill Schlumberger	Interval (mMDRT)	Reeves	Interval (mMDRT)
MWD (Directional & GR) – 5 Runs	644m - 3226.24m	MCG-MDN-MPD-MSS-MDL	2008.0m – 3248.0m
Wireline MDT – open hole and cased hole	3220.5m - 1645.0m		

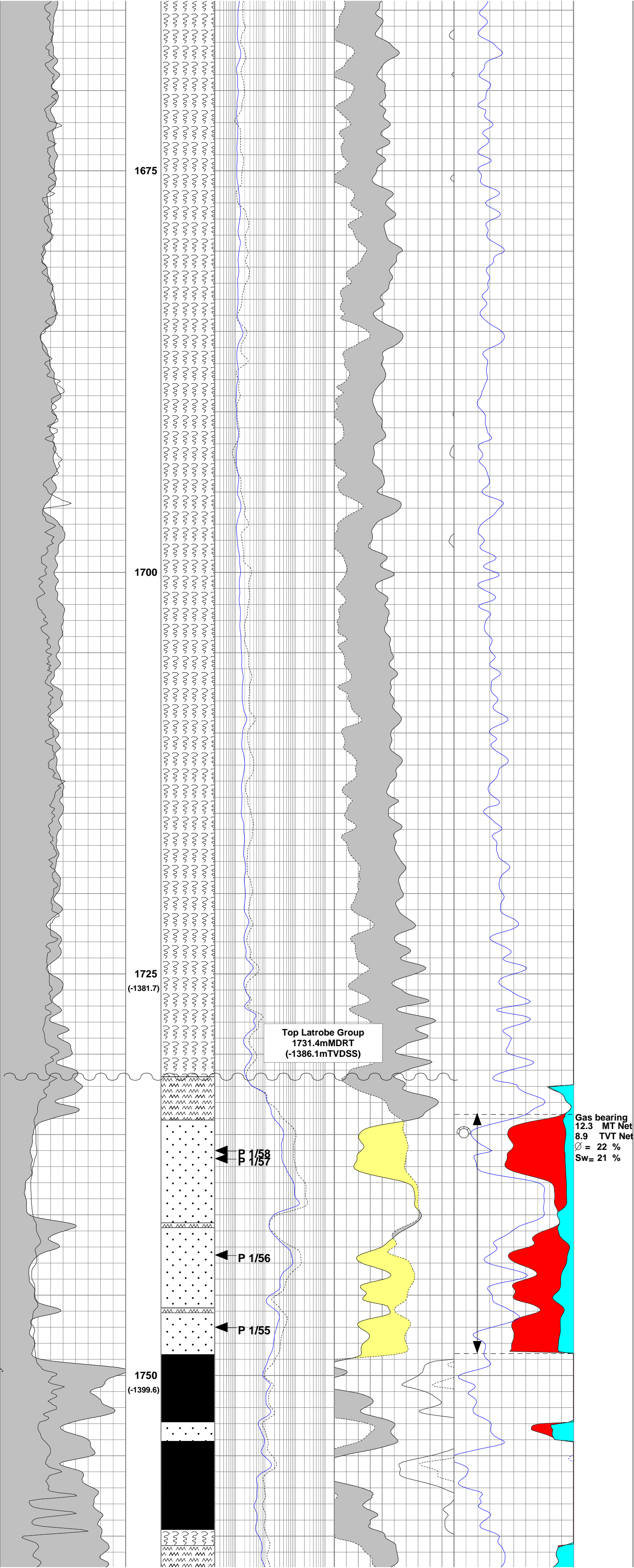
WELL DATA				
Date	8 - 10 August 2004	10 August 2004	11 - 14 August 2004	14 - 16 August 2004
Run	MWD #1	MWD #2	MWD #3	MWD #4
Log	Powerpulse Directional & GR	Powerpulse Directional & GR	Powerpulse Directional & GR	Powerpulse Directional & GR
Depth Driller	754 m MDRT	763 m MDRT	1459 m MDRT	1839 m MDRT
Depth Logger	754 m MDRT	763 m MDRT	1459 m MDRT	1839 m MDRT
Bottom Log Interval	734.36 m MDRT	743.36 m MDRT	1439.36 m MDRT	1819.36 m MDRT
Top Log Interval	644 m MDRT	734.36 m MDRT	743.36 m MDRT	1439.36 m MDRT
Casing Driller	642.5m MDRT	642.5 m MDRT	642.5 m MDRT	642.5 m MDRT
Casing Logger	----	----	----	----
Casing Size	13 3/8"	13 3/8"	13 3/8"	13 3/8"
Casing Weight	72.0ppf	72.0ppf	72.0ppf	72.0ppf
Bit Size	8.5"	8.5"	8.5"	8.5"
Type of Fluid in Hole	KCI/PHPA/GLYCOL	KCI/PHPA/GLYCOL	KCI/PHPA/GLYCOL	KCI/PHPA/GLYCOL
Density	9.2 ppg	9.2 ppg	9.2 ppg	10.0 ppg
Rm @ Measured Temp.	N/A	N/A	N/A	N/A
Rmf @ Measured Temp.	N/A	N/A	N/A	N/A
Rmc @ Measured Temp.	N/A	N/A	N/A	N/A
Max. Recorded Temp.	39.22°C	36.0°C	58.°C	69.0°C
Equipment / Location	Sale	Sale	Sale	Sale
Recorded By	J. Dolan/R. Borjas/L. Johnston	J. Dolan/R. Borjas/L. Johnston	J. Dolan/R. Borjas/L. Johnston	J. Dolan/R. Borjas/L. Johnston
Witnessed By	C. Menhennitt	C. Menhennitt	C. Menhennitt	C. Menhennitt

WELL DATA				
Date	16 - 24 August 2004	23 - 23 Aug 2004	24 - 27 Aug 2004	
Run	MWD #5	Wireline Run #1 on shuttle	Wireline Run #2(Suite 1)	
Log	Powerpulse Directional & GR	MCG-MDN-MPD-MSS-MDL	MDT on drill pipe	
Depth Driller	3248 m MDRT	3051 m MDRT	3051 m MDRT	
Depth Logger	3248 m MDRT	3051 m MDRT	----	
Bottom Log Interval	3228.36 m MDRT	3248.0 m MDRT	3220.5 m MDRT	
Top Log Interval	1819.36 m MDRT	2008m MDRT	1645.0 m MDRT	
Casing Driller	642.5 m MDRT	1368 m MDRT (Window)	1368 m MDRT (Window)	
Casing Logger	----	----	----	
Casing Size	13 3/8"	9 5/8"	9 5/8"	
Casing Weight	72.0ppf	47.0ppf	47.0ppf	
Bit Size	8.5"	8.5"	8.5"	
Type of Fluid in Hole	KCI/PHPA/GLYCOL	KCI/PHPA/GLYCOL	KCI/PHPA/GLYCOL	
Density	9.6 ppg	9.5 ppg	9.5 ppg	
Rm @ Measured Temp.	N/A	0.129 ohmm @ 25°C	0.129 ohmm @ 25°C	
Rmf @ Measured Temp.	N/A	0.105 ohmm @ 25°C	0.105 ohmm @ 25°C	
Rmc @ Measured Temp.	N/A	0.191 ohmm @ 25°C	0.191 ohmm @ 25°C	
Max. Recorded Temp.	94.12°C	111.5 °C	123.2°C @2944m	
Equipment / Location	Sale	Sale	Sale	
Recorded By	J. Dolan/R. Borjas/L. Johnston	G. McManus/R. Tench	J. Bell/K. Hermansen	
Witnessed By	C. Menhennitt	C. Menhennitt/A. Ribeiro	C. Menhennitt/A. Ribeiro	

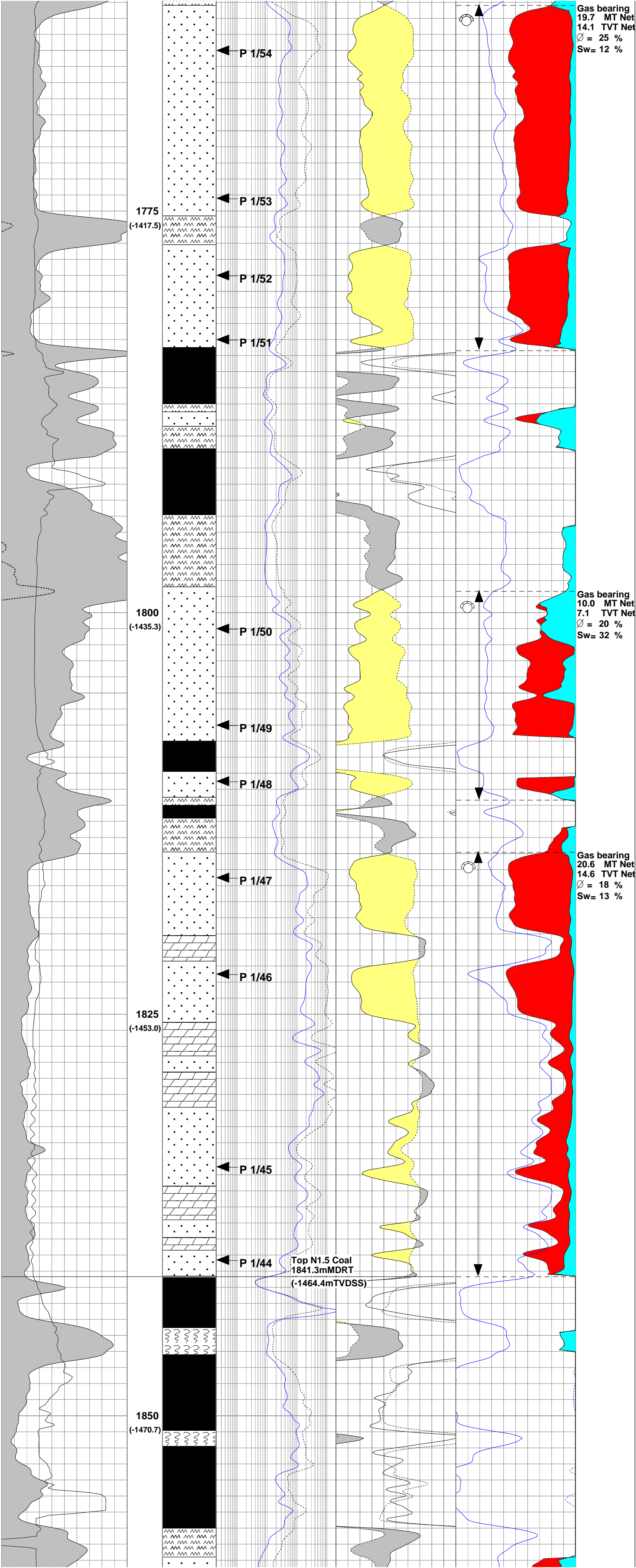
CORES			PERFORATIONS		
From (mMDRT)	To (mMDRT)	Rec %	From (mMDRT)	To (mMDRT)	Shots/ft
----	----	---	----	----	---

CASING				PLUGS		
Size	Set @ (mMDRT)	Sx Cmt	Formation	From (mMDRT)	To (mMDRT)	Sx Cmt
				2471	3248	655
13.375"	642.2	---	Gippsland Limestone	2328	2471	254



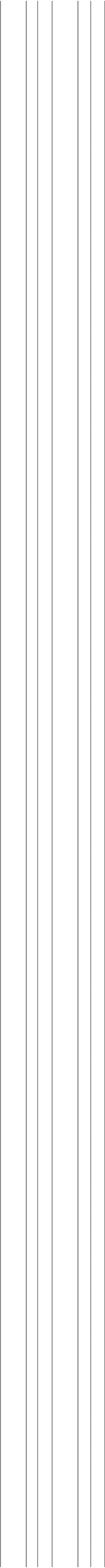
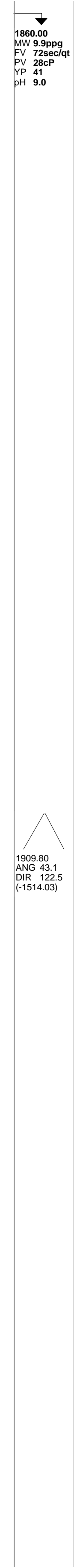
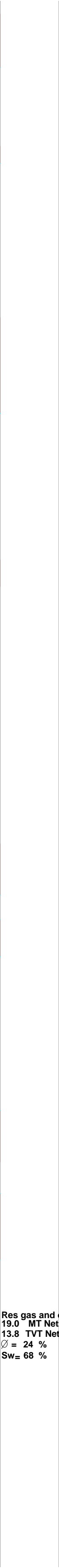
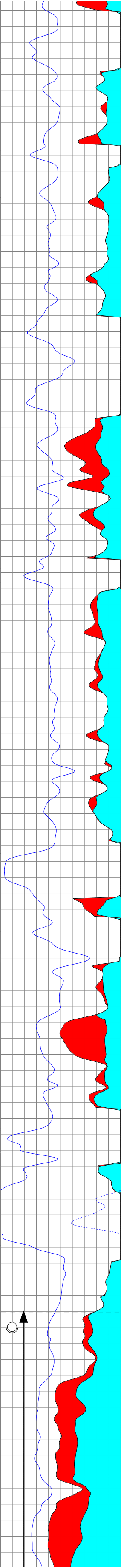
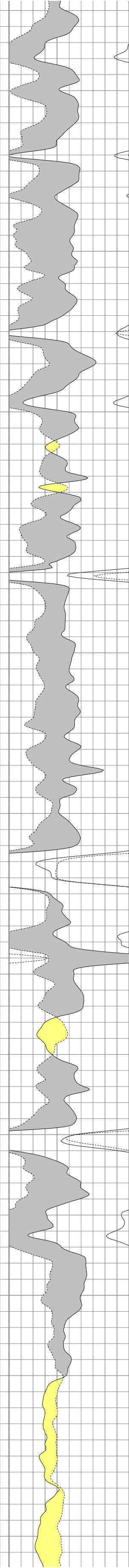
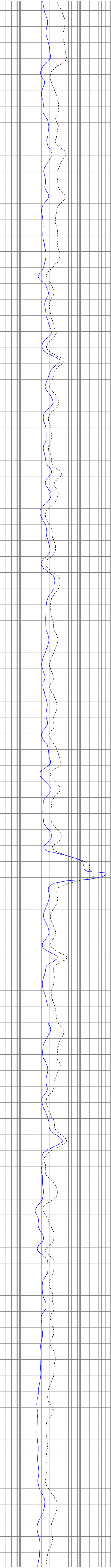
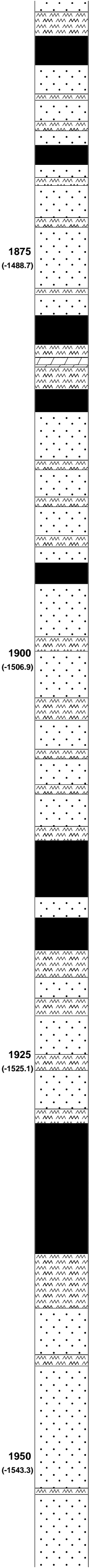
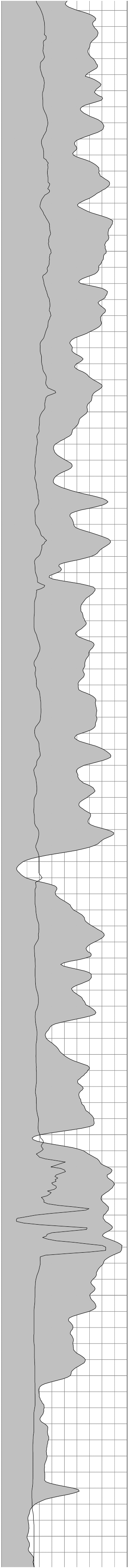


<div>1736.89 ANG 44.0 DIR 123.0 (-1390.22)</div>	LAKES ENTRANCE FM	
<div>1740.00 MW 9.9ppq FV 73sec/qt PV 26cP YP 44 pH 9.2</div>	MIOCENE-RECENT	

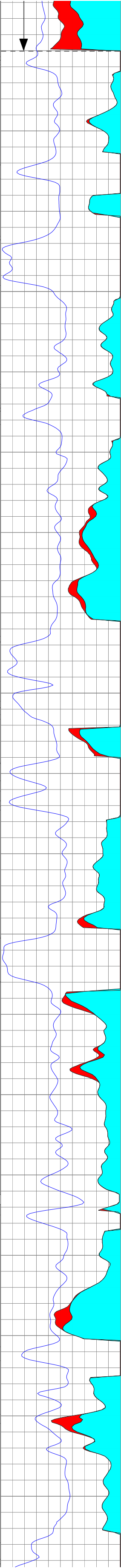
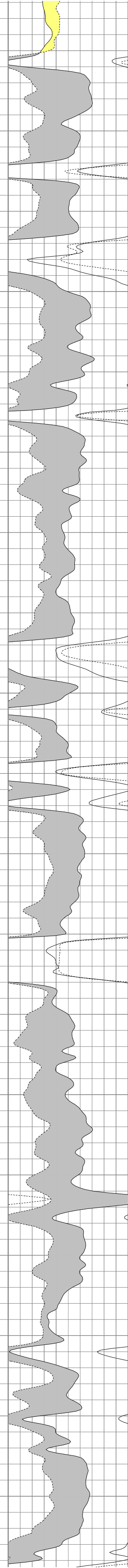
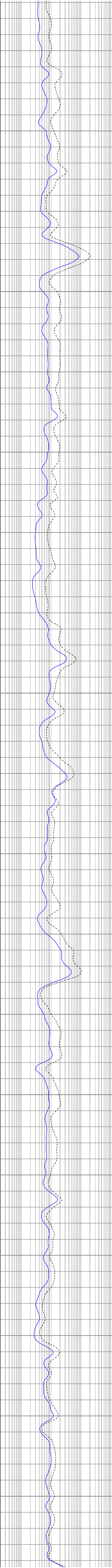
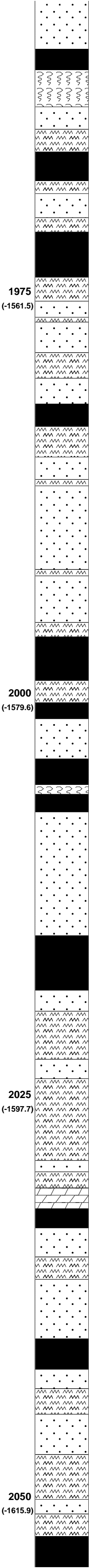
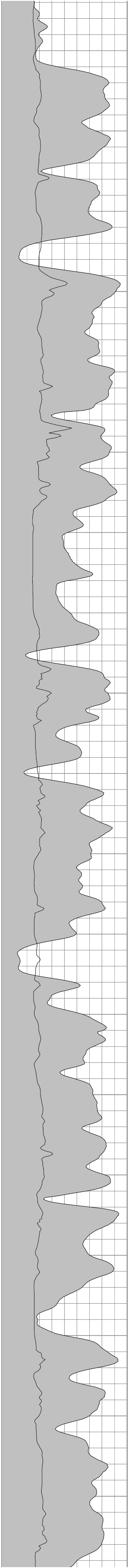


1823.71  
ANG 45.5  
DIR 122.2  
(-1452.05)





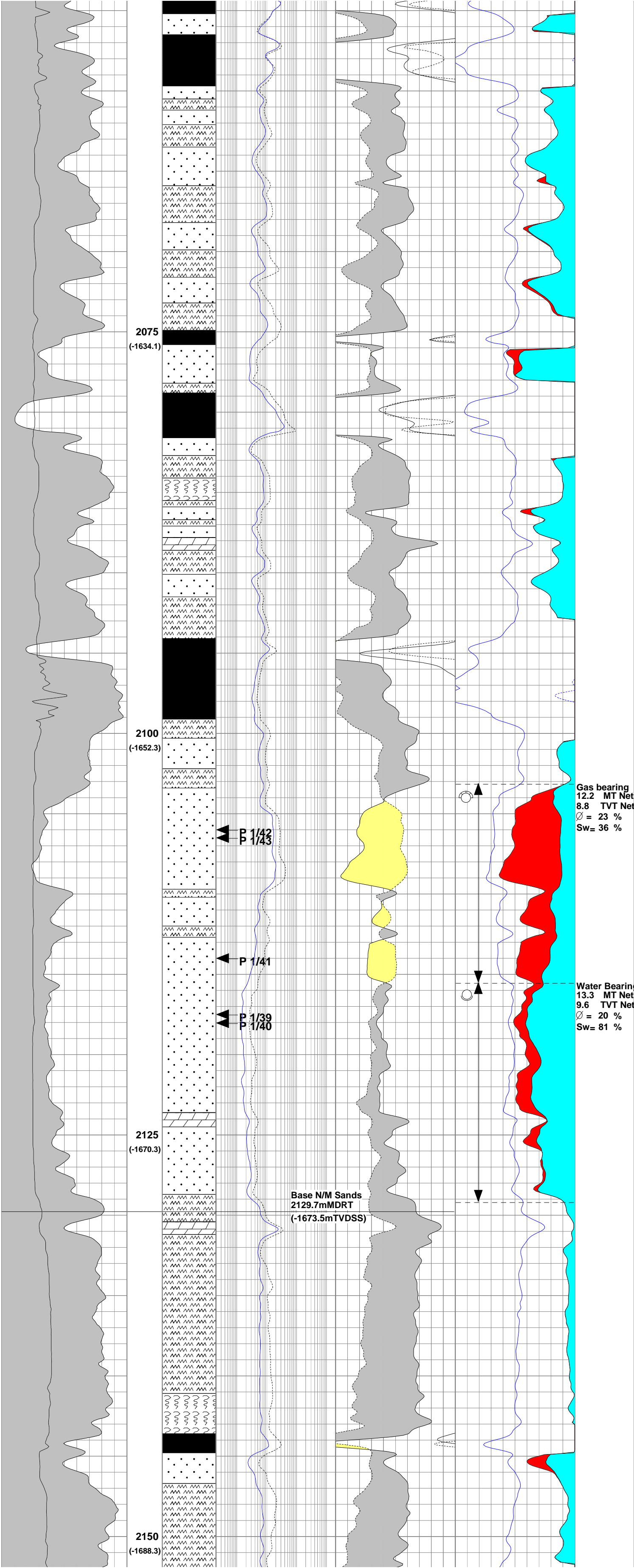
Res gas and oil  
19.0 MT Net  
13.8 TVT Net  
Ø = 24 %  
Sw= 68 %



1996.00  
ANG 43.7  
DIR 122.3  
(-1576.64)

2050.00  
MW 9.9ppg  
FV 60sec/qt  
PV 21cP  
YP 31  
L 8.0

EOCENE



pH 8.9

2082.05  
ANG 43.4  
DIR 121.9  
(-1639.24)

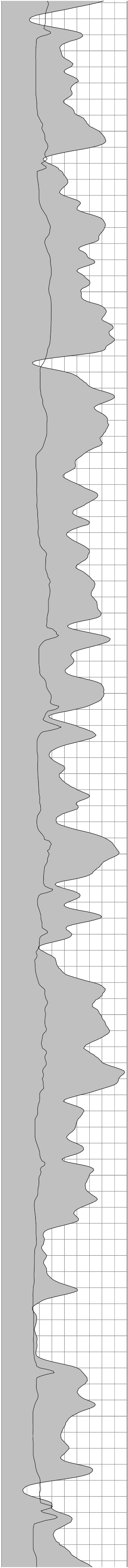
Gas bearing  
12.2 MT Net  
8.8 TVT Net  
Ø = 23 %  
Sw= 36 %

Water Bearing  
13.3 MT Net  
9.6 TVT Net  
Ø = 20 %  
Sw= 81 %

2110.79  
ANG 43.7  
DIR 122.0  
(-1660.06)

2110.00  
MW 9.9ppg  
FV 60sec/qt  
PV 21cP  
YP 30  
pH 9.0

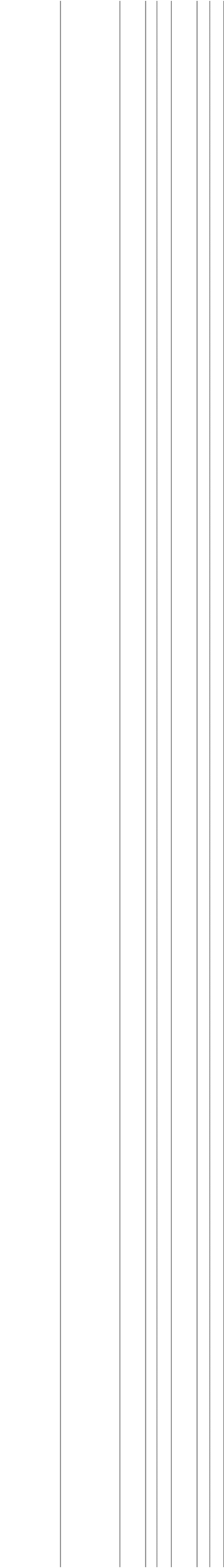
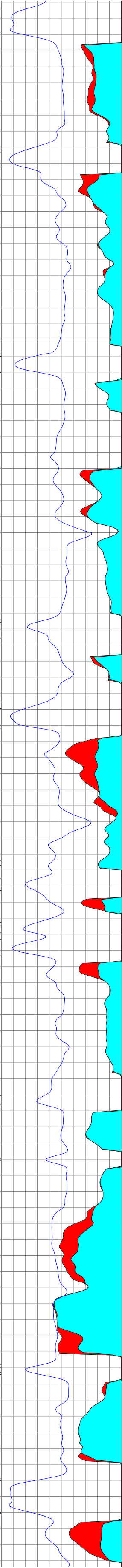
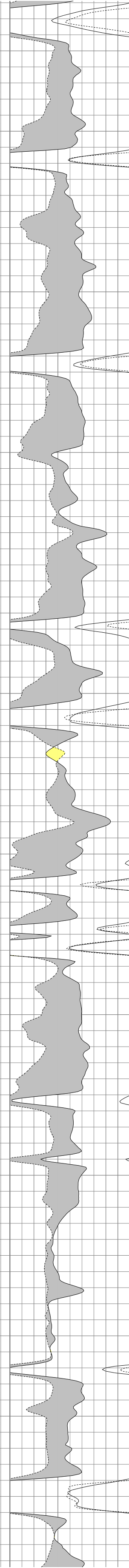
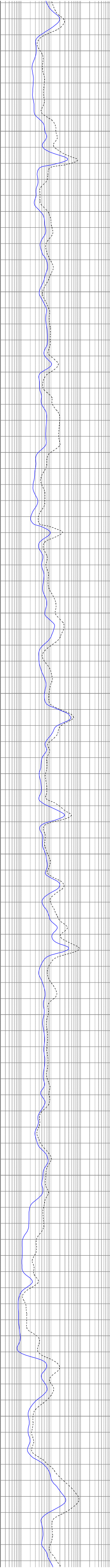
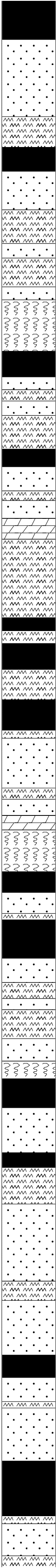


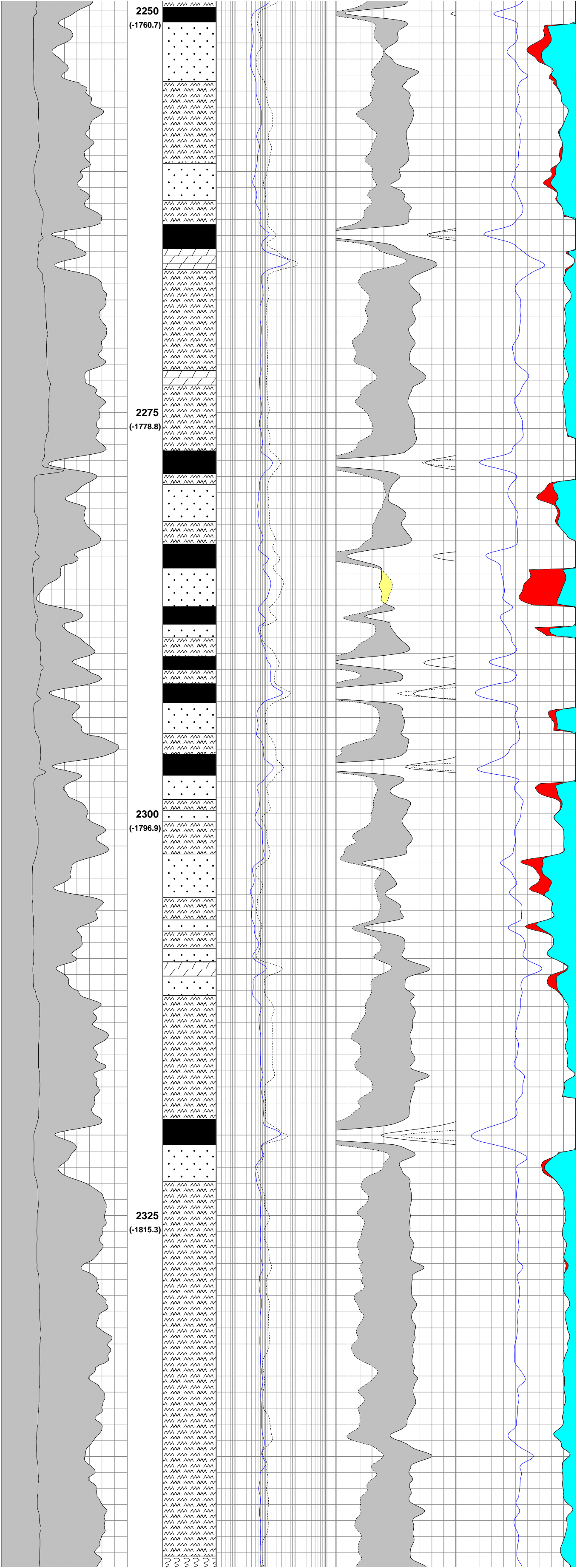


2175  
(-1706.3)

2200  
(-1724.4)

2225  
(-1741.8)

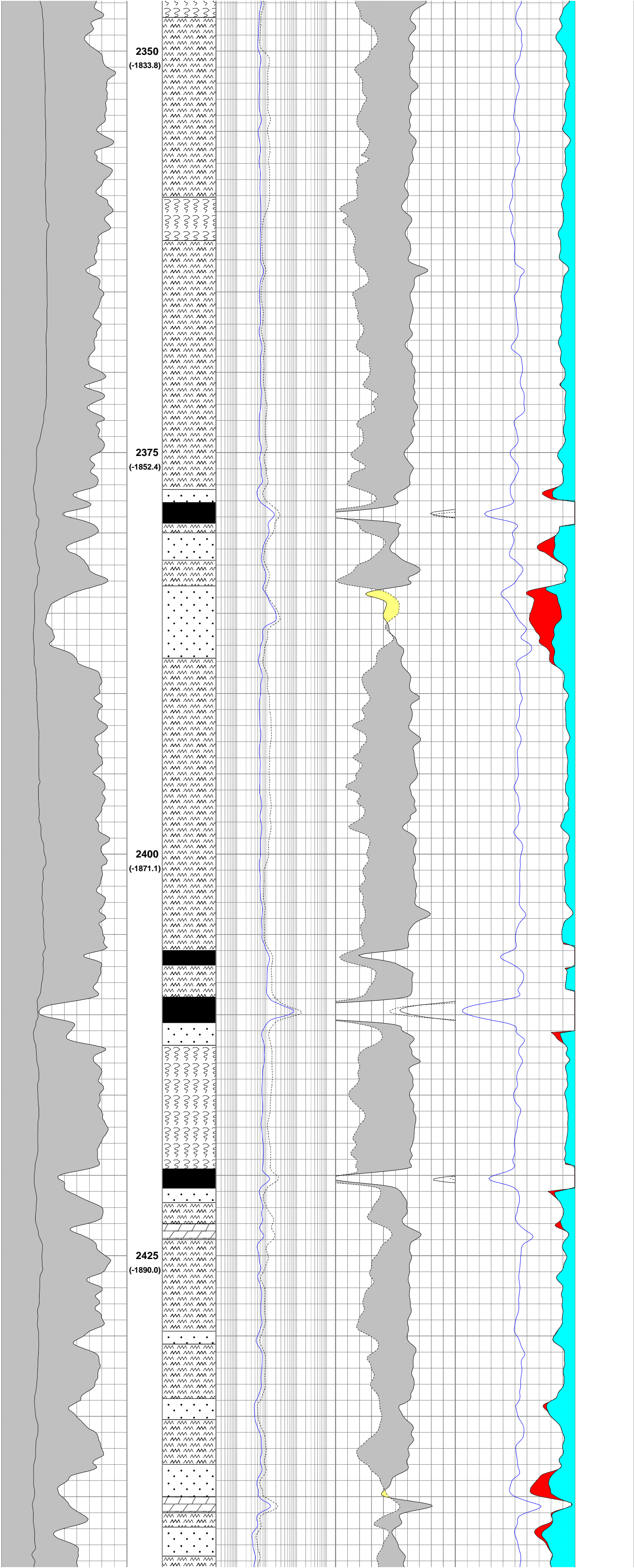




2282.79  
ANG 43.4  
DIR 122.7  
(-1784.39)

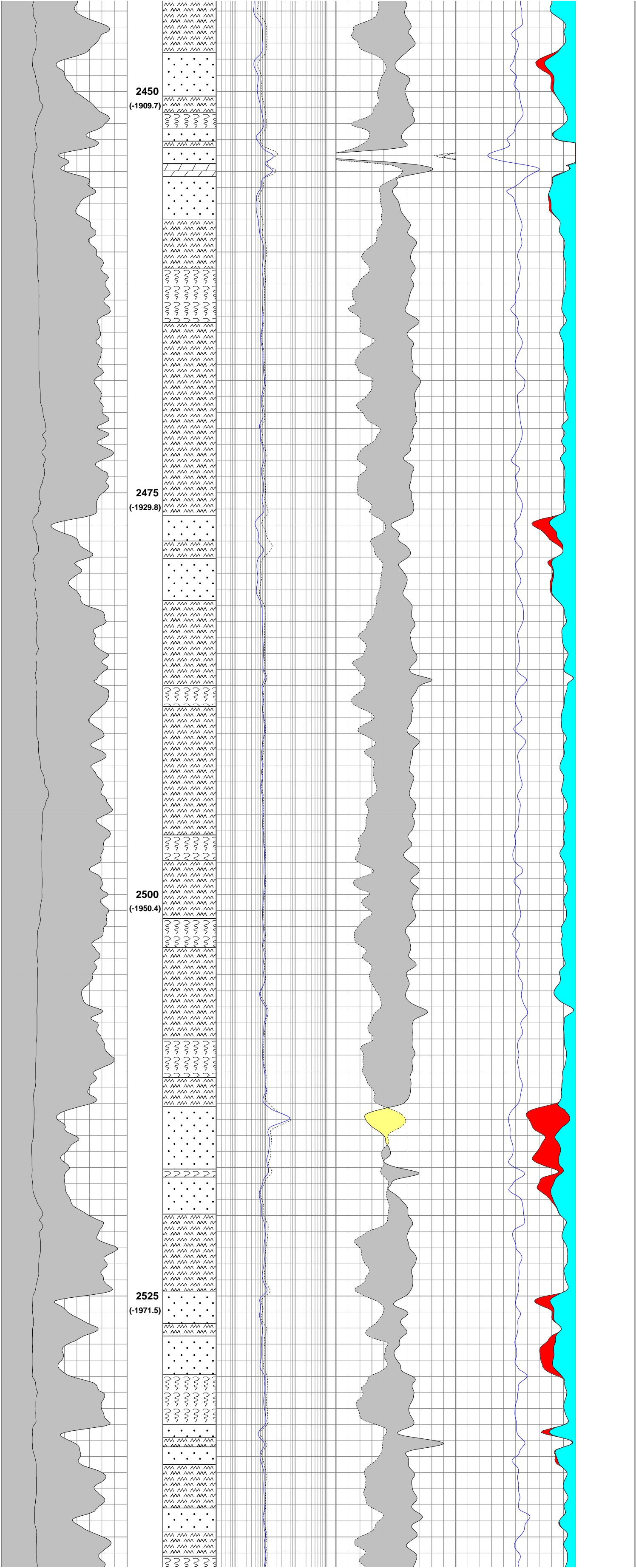
2310.00  
MW 9.8ppg  
FV 66sec/qt  
PV 23cP  
YP 35  
pH 9.1





2385.00  
MW 9.8ppg  
FV 66sec/qt  
PV 23cP  
YP 35  
pH 9.1

2396.80  
ANG 42.5  
DIR 123.6  
(-1868.63)

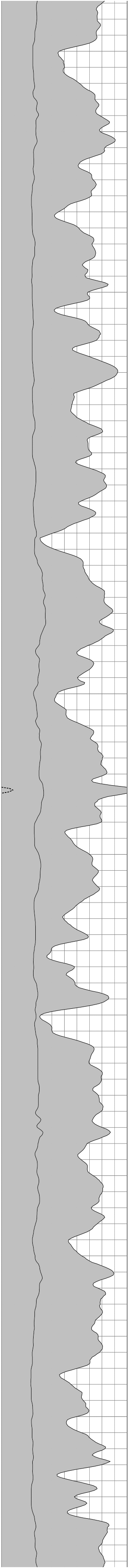


2462.00  
MW 9.7ppg  
FV 62sec/qt  
PV 22cP  
YP 38  
pH 9.2

2483.13  
ANG 35.2  
DIR 116.5  
(-1936.33)

LATROBE GROUP



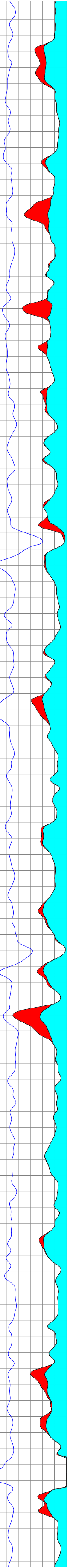
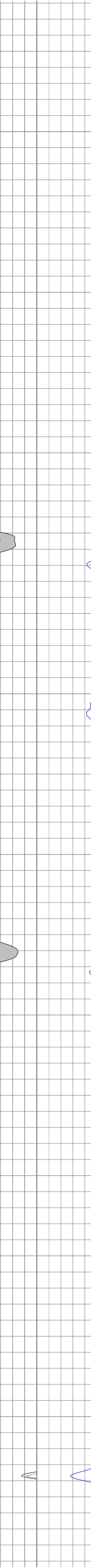
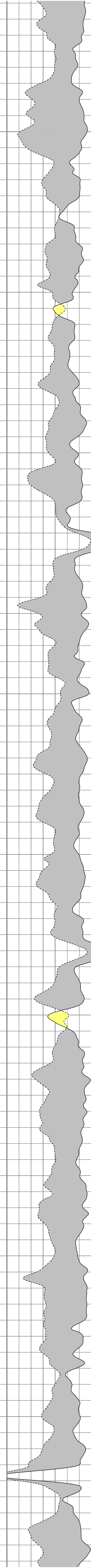
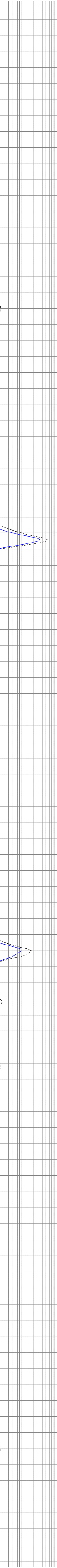
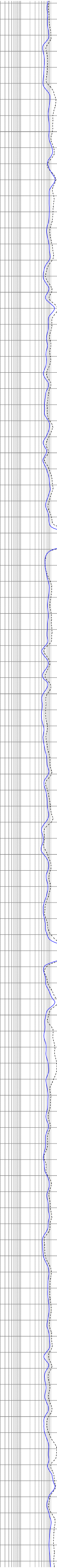
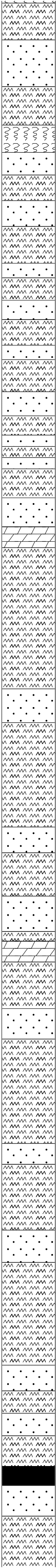


2550  
(-1993.3)

2575  
(-2015.4)

2600  
(-2037.8)

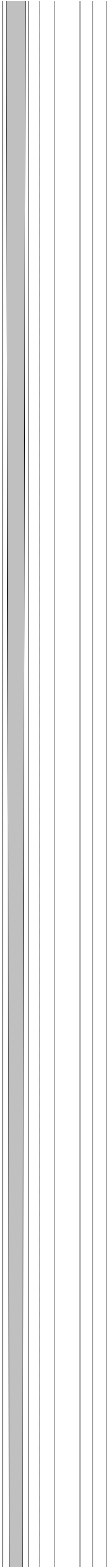
2625  
(-2060.7)

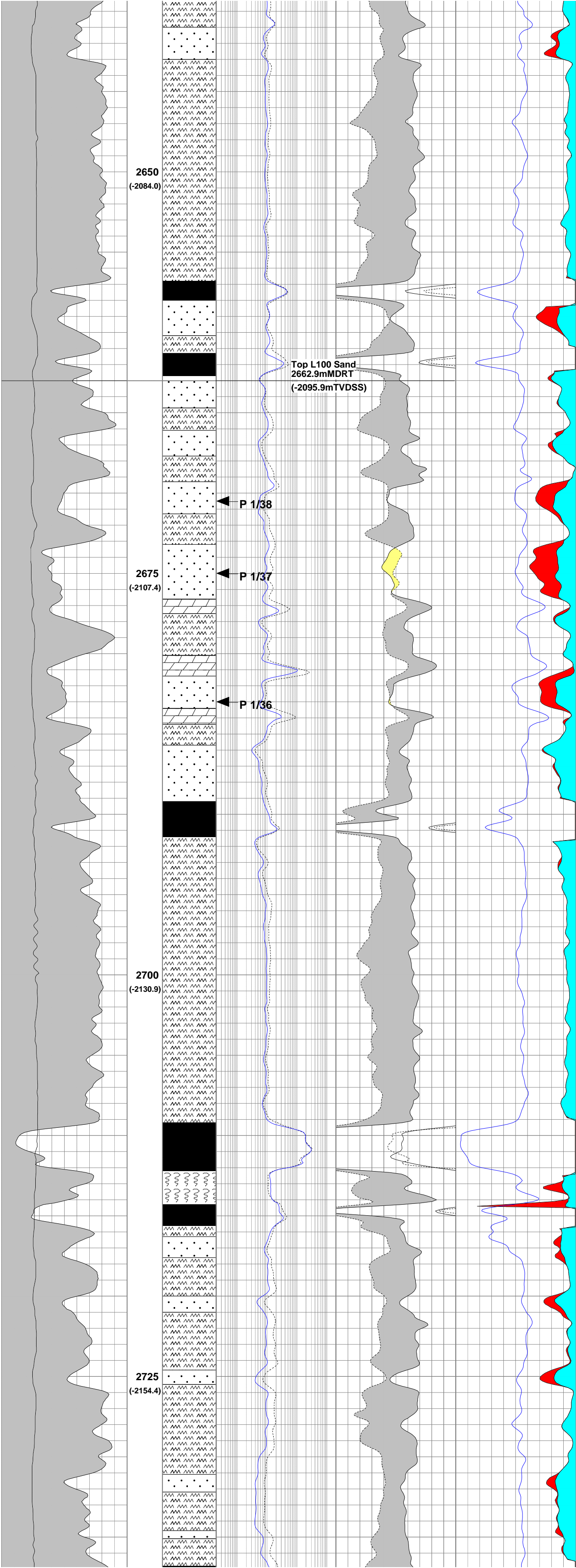


2564.00  
MW 9.6ppg  
FV 72sec/qt  
PV 23cP  
YP 36  
pH 9.1

2569.71  
ANG 27.2  
DIR 106.9  
(-2010.65)

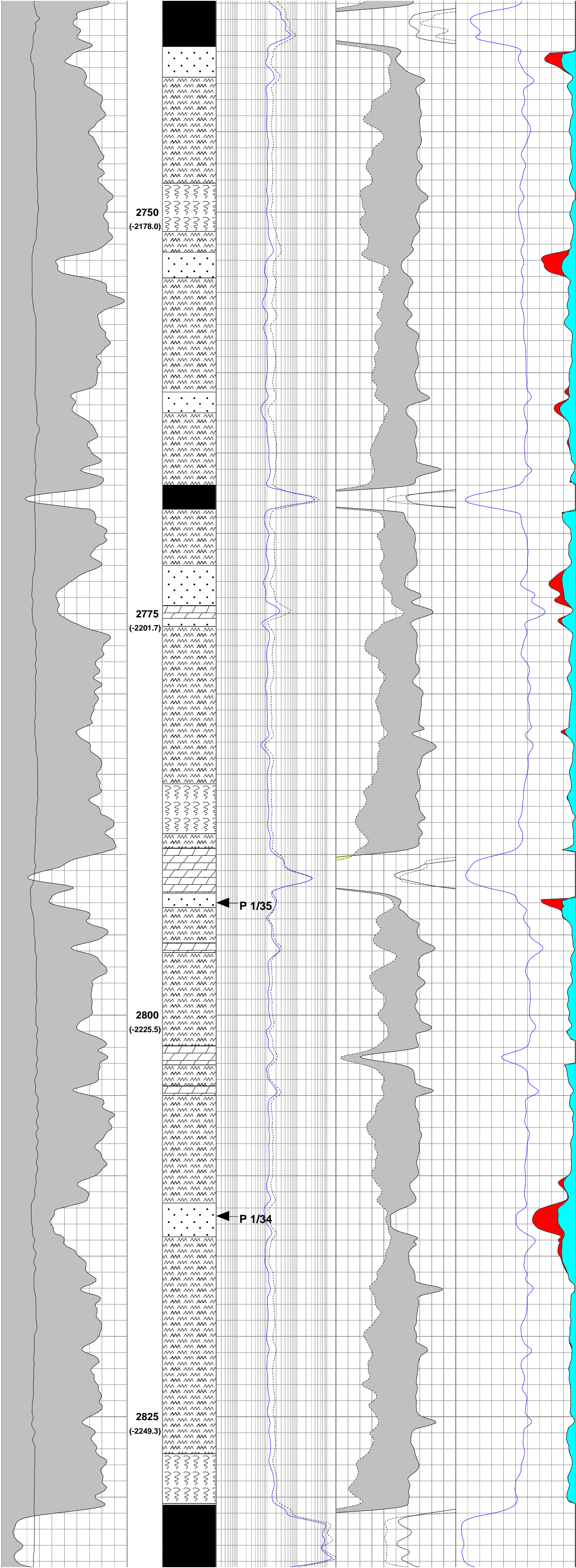
2626.92  
ANG 22.2  
DIR 101.0  
(-2062.43)





2718.00  
MW 9.6ppg  
FV 72sec/qt  
PV 24cP  
YP 39  
pH 9.1

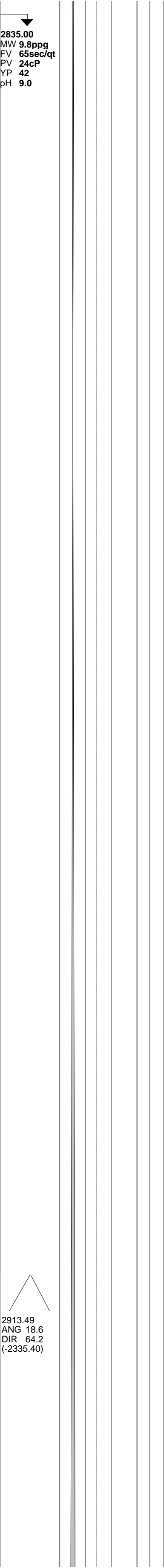
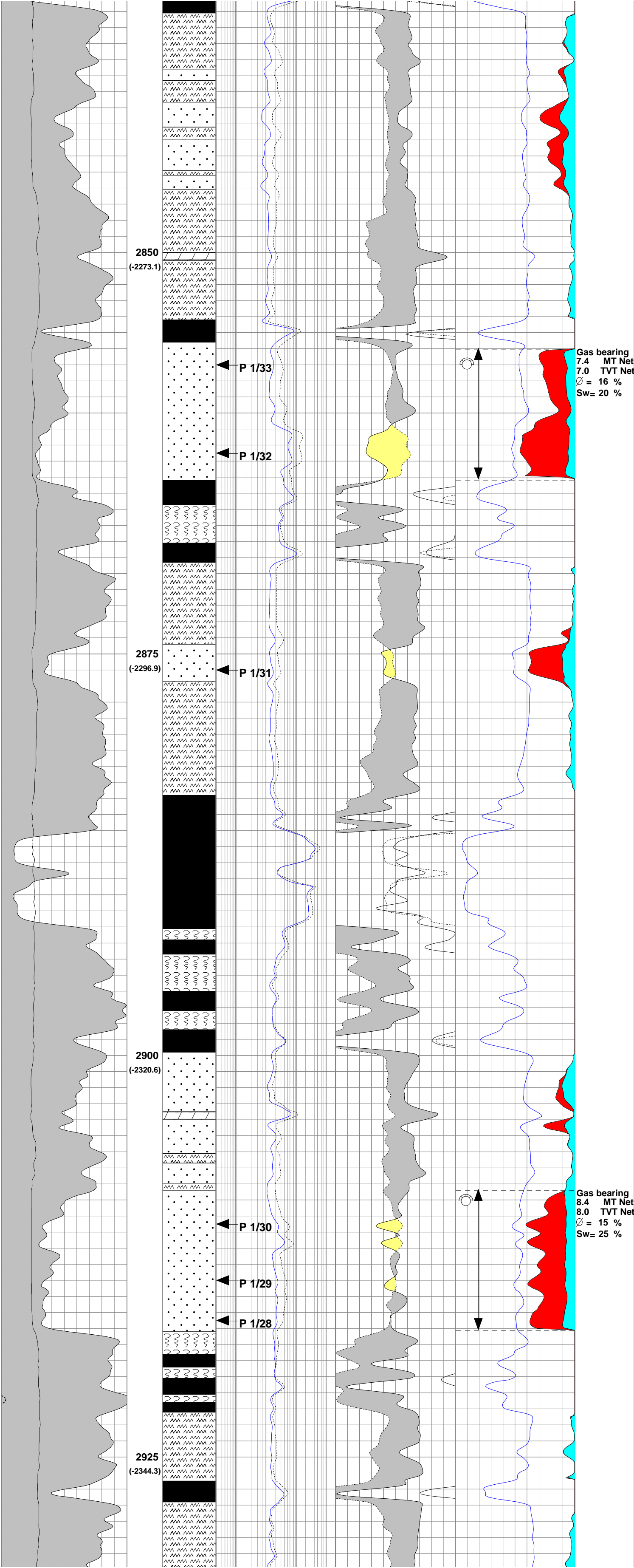




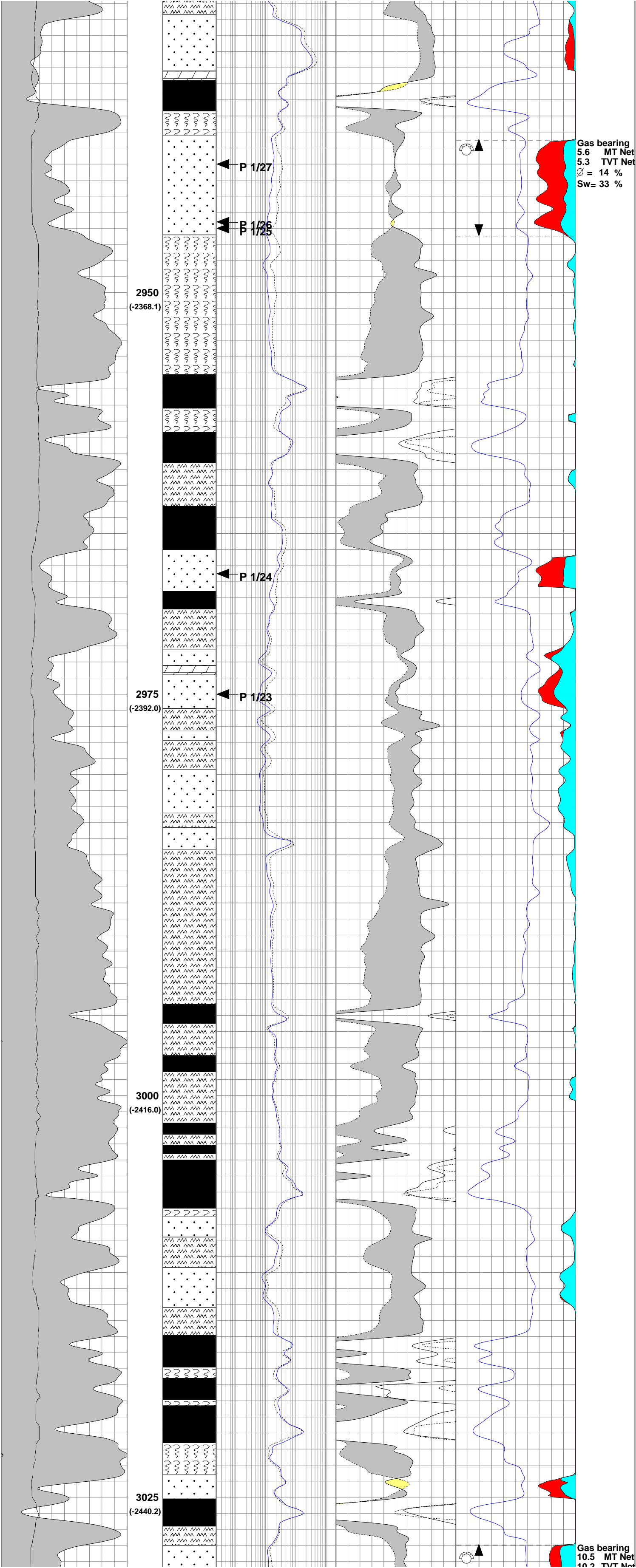
2741.62  
ANG 19.4  
DIR 76.8  
(-2170.05)

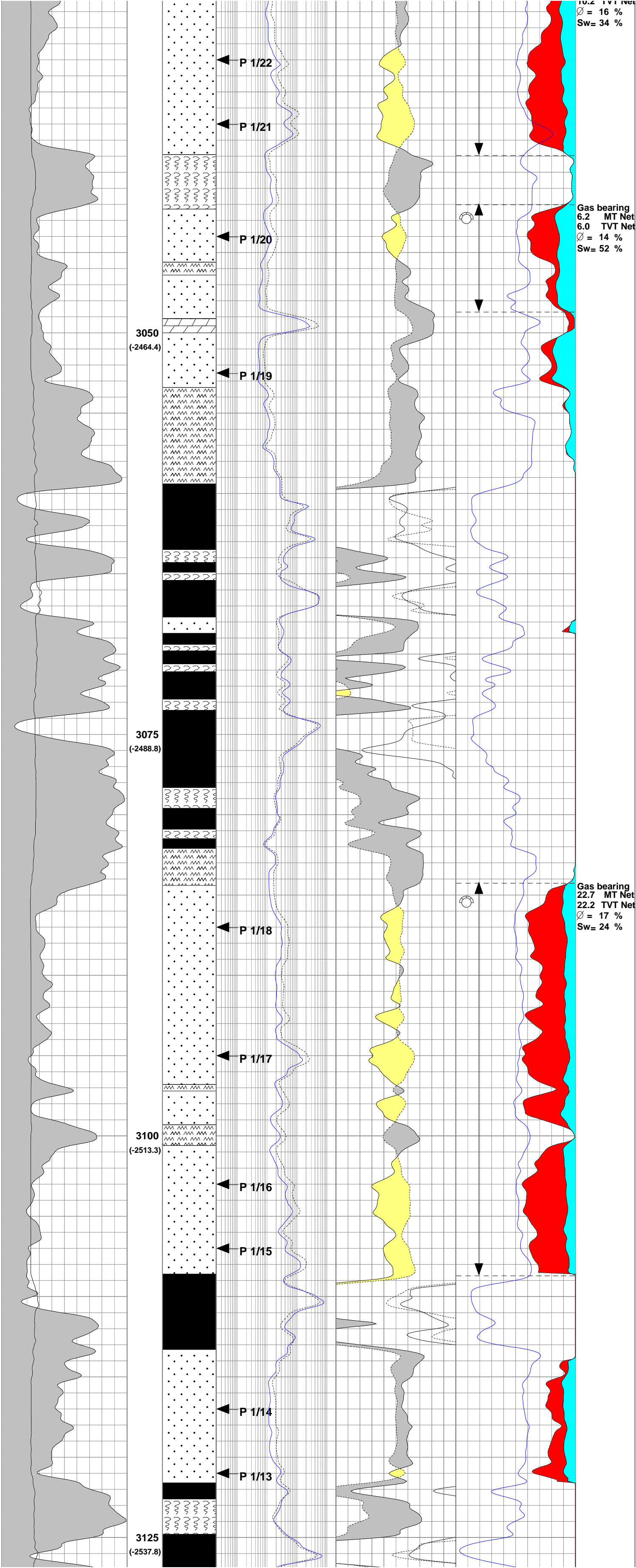
2827.33  
ANG 17.3  
DIR 76.9  
(-2251.54)

PALEOCENE





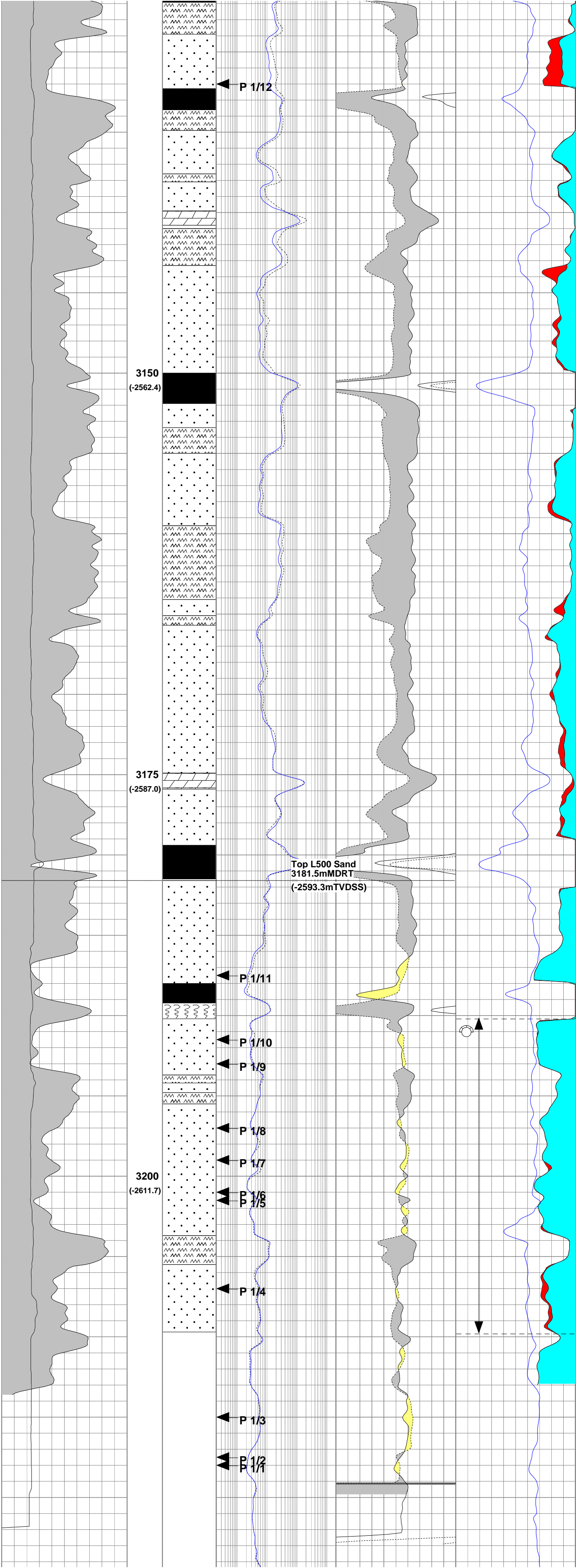




3028.29  
ANG 14.1  
DIR 73.1  
(-2443.36)

3076.00  
MW 9.7ppg  
FV 64sec/qt  
PV 27cP  
YP 42  
pH 9.0



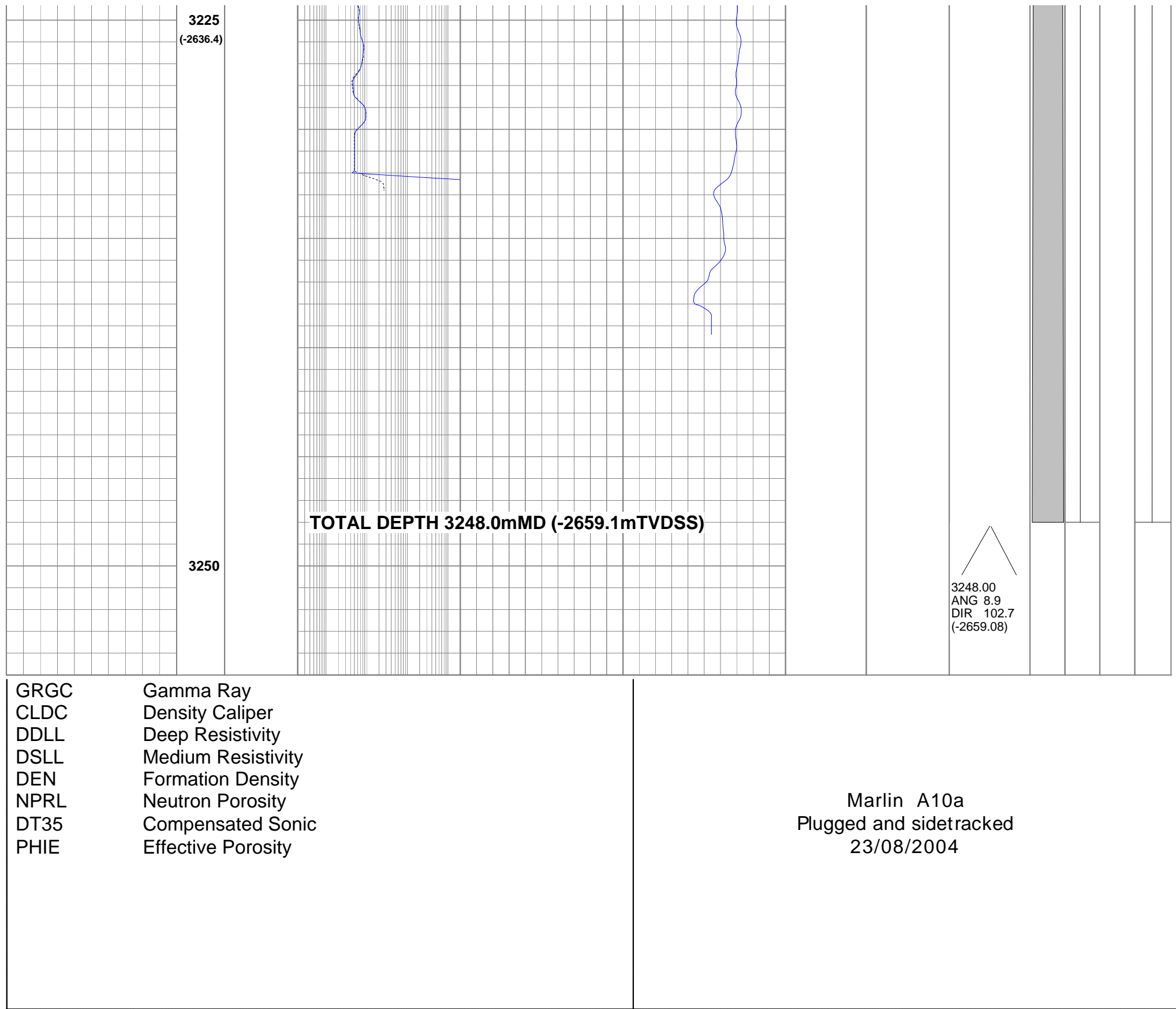


3143.17  
ANG 10.3  
DIR 87.7  
(-2555.64)

3166.00  
MW 9.7ppg  
FV 63sec/qt  
PV 23cP  
YP 43  
pH 8.9

Gas bearing  
16.4 MT Net  
16.2 TVT Net  
Ø = 13 %  
Sw= 97 %

3200.78  
ANG 9.0  
DIR 99.5  
(-2612.44)



**APPENDIX 4d**

**MARLIN A-10AST1**

**Well Completion Log**

WELL COMPLETION LOG

Scale – 1:200

MARLIN A-10A ST1

Gippsland Basin, Victoria  
Concession: VIC/L11

POST-DRILL  
LOCATION:  
(Top of L500 Sand)

Latitude: 38° 14' 26.429" S  
Longitude: 148° 14' 20.732" E  
MGA X: 608434.48 m E  
MGA Y: 5766755.27m N  
Depth: 3344.0m MDRT  
(-2560.5m TVDSS)  
Datum: GDA94 (GRS80)  
Projection: MGA/ UTM Zone 55 (S)

COMPILED BY: Sheryl Sazenis  
DRAFTED BY: Andrew Hodgson  
DRILLED BY: Nabors Rig 453  
TOTAL DEPTH: 3491.0m MDRT  
PLUGGED BACK T.D.: 3447.0m MDRT  
CLASSIFICATION: Development  
STATUS: Cased and Suspended

ELEVATION:

G.L.: -59.00 m  
R.T.: 27.91 m above MSL  
Water Depth: 59.00 m  
Kicked off: 05/09/2004  
Rig Released: 26/09/2004

DATES:

SERVICE COMPANIES:

DRILLING CONTRACTOR: Nabors Rig 453  
MWD (GR and Direct): Schlumberger Anadrill  
GYRO SURVEYING: SDI  
CORING: n/a  
LOGGING: Reeves (Compact Shuttle Logging System)  
CEMENTING: Halliburton  
CASING: Weatherford  
Reeves (Shuttle)/Schlumberger (MDT-TLC & CHDT)

PRODUCTION TESTING: n/a  
DIVERS: n/a  
MUD LOGGING: Geoservices Overseas S.A.  
PRESSURE RECORDING: n/a  
WELL VELOCITY SURVEY: n/a  
MUD ENGINEERING: Halliburton- Baroid  
LINER: n/a

LEGEND

2.7m NOS

Ø = 17%

Sw = 32%

No Rec.

Rec.

CORE

PERFORATED INTERVAL

PLUG

←SST

RECOVERED SIDE WALL CORE LITHOLOGY

SST - Sandstone  
SLST - Siltstone  
MST - Mudstone  
SH - Shale

CLST - Claystone  
LMST - Limestone  
ML - Marl  
COAL - Coal

←

SIDE WALL CORE - NO RECOVERY

←

FIT

←P2/11

MDT/RFT PRETEST RUN/SEAT NUMBER

←S11/2

MDT/RFT SAMPLE RUN/SAMPLE NUMBER

←P2/40

MDT VERTICAL/HORIZONTAL PERMEABILITY TEST

PACKER

BRIDGE PLUG

LOG ANALYSIS DATA

NS - Net Sand  
NOS - Net Oil Sand  
NGS - Net Gas Sand  
Sw - Water Saturation

MUD DATA

Ø - Porosity  
Snd - Sand  
MW - Mud Weight  
FV - Funnel Velocity  
PV - Plastic Velocity  
YP - Yield Point  
Gel - Gel Strength  
pH - Acidity/Alkalinity  
WL - Water Loss  
Cl - Chloride  
Ca - Calcium  
Sol - Solids  
H2O - Water  
Oil -Oil

SHOW OR STAIN

HYDROCARBON CUT

FLUORESCENCE

GAS SHOW

OIL PRODUCTIVE

GAS PRODUCTIVE

INTERPRETED OIL PRODUCTION

INTERPRETED GAS PRODUCTION

INTERPRETED WATER PRODUCTION

WATER PRODUCTIVE

CONDENSATE PRODUCTION

INTEPRETED CONDENSATE BEARING

DSTG  
DST WITH GAS RECOVERED

DSTO  
DST WITH OIL RECOVERED

SURVEY POINT

13-3/8"  
CASING SHOE

MUD

LITHOLOGICAL SYMBOLS

Sandstone

Siltstone

Mudstone

Claystone

Shale

Coal

Limestone

Micritic Limestone

Dolomite

Marl

Anhydrite

Volcanics

Basement

Granule

Oolites

Dolomitic

Mica

Chert

Carbonaceous Matter

Calcareous

Glauconite

Corals

Bryozoans

Brachiopods

Pelecypods

Echinoids

Fish Remains

Plant Remains

Spores

Leaves

Foram

Fossils

G

G

G

G

G

G

G

G

G

G

Grain Limestone

S

S

S

S

S

S

Skeletal Limestone

T

Pyrite

G

Gastropods

G

Cephalopods

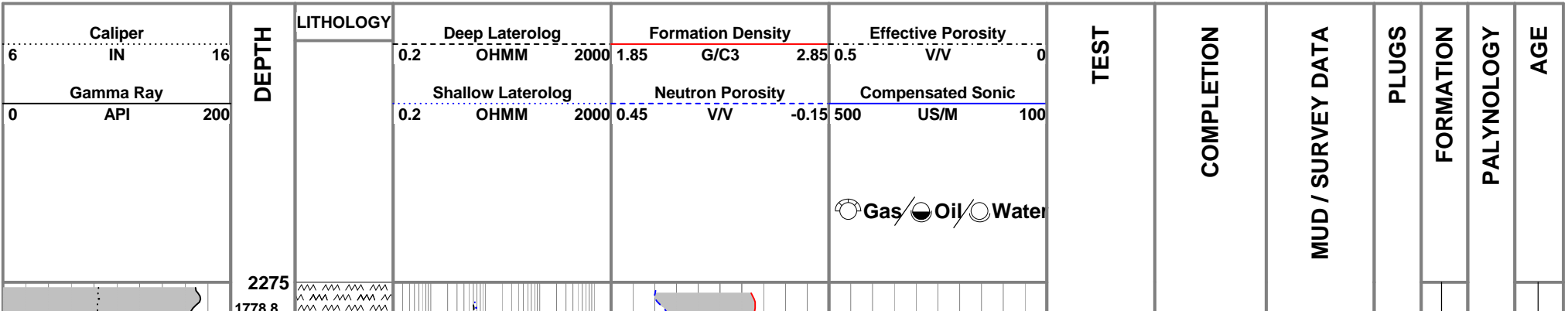
LOGGING AND SURVEYING				
Anadrill Schlumberger		Interval (mMDRT)	Reeves	Interval (mMDRT)
MWD (Directional & GR) – 5 Runs		2339.7m - 3470.52m	MCG-MDN-MPD-MSS-MDL	2275m – 3471.6m
Wireline MDT – open hole		3349.0m – 3363.0m		
WELL DATA				
Date	3 Sept 2004 - 4 Sept 2004	4 Sept 2004 - 6 Sept 2004	6 Sept 2004 - 9 Sept 2004	9 Sept 2004 - 12 Sept 2004
Run	MWD #1	MWD #2	MWD #3	MWD #4
Log	Powerpulse Directional & GR	Powerpulse Directional & GR	Powerpulse Directional & GR	Powerpulse Directional & GR
Depth Driller	2362 m MDRT	2662 m MDRT	3040 m MDRT	3393 m MDRT
Depth Logger	2362 m MDRT	2662 m MDRT	3040 m MDRT	3393 m MDRT
Bottom Log Interval	2362 m MDRT	2662 m MDRT	3040 m MDRT	3393 m MDRT
Top Log Interval	2339.7 m MDRT	2362 m MDRT	2662.0 m MDRT	3040 m MDRT
Casing Driller	642.5m MDRT	642.5 m MDRT	642.5 m MDRT	642.5 m MDRT
Casing Logger	----	----	----	----
Casing Size	13 3/8"	13 3/8"	13 3/8"	13 3/8"
Casing Weight	72.0ppf	72.0ppf	72.0ppf	72.0ppf
Bit Size	8.5"	8.5"	8.5"	8.5"
Type of Fluid in Hole	KCI/PHPA/GLYCOL	KCI/PHPA/GLYCOL	KCI/PHPA/GLYCOL	KCI/PHPA/GLYCOL
Density	10.3 ppg	10.1 ppg	10.0 ppg	9.9 ppg
Rm @ Measured Temp.	N/A	N/A	N/A	N/A
Rmf @ Measured Temp.	N/A	N/A	N/A	N/A
Rmc @ Measured Temp.	N/A	N/A	N/A	N/A
Max. Recorded Temp.	65.88°C	79.22°C	82.45°C	89.41°C
Equipment / Location	Sale	Sale	Sale	Sale
Recorded By	J. Dolan/R. Borjas/L. Johnston	J. Dolan/R. Borjas/L. Johnston	J. Dolan/R. Borjas/L. Johnston	J. Dolan/R. Borjas/L. Johnston
Witnessed By	A. Ribeiro	A. Ribeiro	A. Ribeiro	A. Ribeiro / C. Menhennitt

Date	12 Sept 2004 - 15 Sept 2004	15 Sept 2004 - 16 Sept 2004	15 Sept 2004 - 16 Sept 2004	21 Sept 2004 - 22 Sept 2004
Run	MWD #5	Wireline Run #1 on shuttle	Wireline Run #2 (Suite 1)	Wireline Run #3 (Suite 1)
Log	Powerpulse Directional & GR	MCG-MDN-MPD-MSS-MDL	MDT on drill pipe	CHDT on wireline (Run 1)
Depth Driller	3491 m MDRT	3491 m MDRT	3491 m MDRT	3491 m MDRT
Depth Logger	3491 m MDRT	3491 m MDRT	----	----
Bottom Log Interval	3470.52 m MDRT	3471.6 m MDRT	3391 m MDRT	3362 m MDRT
Top Log Interval	3393 m MDRT	2275 m MDRT	3122.5	3349 m MDRT
Casing Driller	642.5 m MDRT	642.5 m MDRT	642.5 m MDRT	3485m MDRT
Casing Logger	----	----	----	----
Casing Size	13 3/8"	13 3/8"	13 3/8"	7"
Casing Weight	72.0ppf	72.0ppf	72.0ppf	26.0ppf
Bit Size	8.5"	8.5"	8.5"	8.5"
Type of Fluid in Hole	KCI/PHPA/GLYCOL	KCI/PHPA/GLYCOL	KCI/PHPA/GLYCOL	KCI/PHPA/GLYCOL
Density	9.9 ppg	9.9 ppg	9.5 ppg	9.5 ppg
Rm @ Measured Temp.	N/A	0.135 ohmm @ 25°C	0.135 ohmm @ 25°C	0.135 ohmm @ 25°C
Rmf @ Measured Temp.	N/A	0.098 ohmm @ 25°C	0.098 ohmm @ 25°C	0.098 ohmm @ 25°C
Rmc @ Measured Temp.	N/A	0.168 ohmm @ 25°C	0.168 ohmm @ 25°C	0.168 ohmm @ 25°C
Max. Recorded Temp.	89.41°C	114 °C	119.1°C @3391m	125.04°C @3622m
Equipment / Location	Sale	Sale	Sale	Sale
Recorded By	J. Dolan/R. Borjas/L. Johnston	G. McManus / R. Tench	R. Clarke / A. Dickinson	J. Bell/Y. Yang/T.Glattetre.
Witnessed By	A. Ribeiro / C. Menhennitt	A. Ribeiro / C. Menhennitt	A. Ribeiro / C. Menhennitt	C. Menhennitt

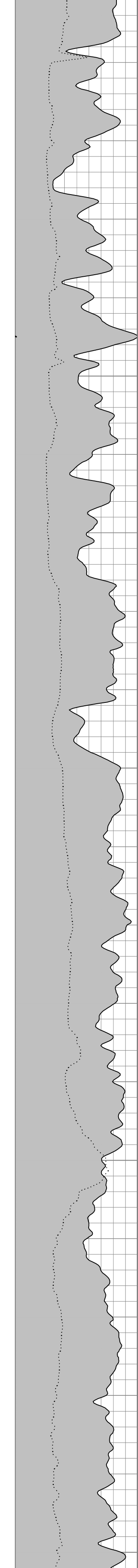
Date	22 Sept 2004 - 23 Sept 2004			
Run	Wireline Run #4 (Suite 1)			
Log	CHDT on wireline (Run 2)			
Depth Driller	3491 m MDRT			
Depth Logger	----			
Bottom Log Interval	3363 m MDRT			
Top Log Interval	3363 m MDRT			
Casing Driller	3485m MDRT			
Casing Logger	----			
Casing Size	7"			
Casing Weight	26.0ppf			
Bit Size	8.5"			
Type of Fluid in Hole	KCI/PHPA/GLYCOL			
Density	9.5 ppg			
Rm @ Measured Temp.	0.135 ohmm @ 25°C			
Rmf @ Measured Temp.	0.098 ohmm @ 25°C			
Rmc @ Measured Temp.	0.168 ohmm @ 25°C			
Max. Recorded Temp.	127.04°C @3391m			
Equipment / Location	Sale			
Recorded By	J. Bell/Y. Yang/T.Glattetre.			
Witnessed By	C. Menhennitt			

CORES			PERFORATIONS		
From (mMDRT)	To (mMDRT)	Rec %	From (mMDRT)	To (mMDRT)	Shots/ft
----	----	---	----	----	---

CASING				PLUGS		
Size	Set @ (mMDRT)	Sx Cmt	Formation	From (mMDRT)	To (mMDRT)	Sx Cmt
13.375"	642.2	---		3292.0	3294.0	--
7"	3485.0	860	Gippsland Limestone	3447.1	3485.0	--





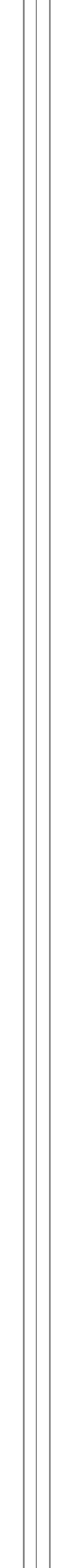
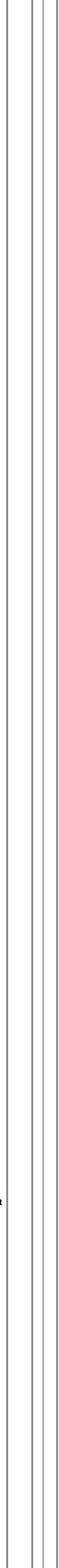
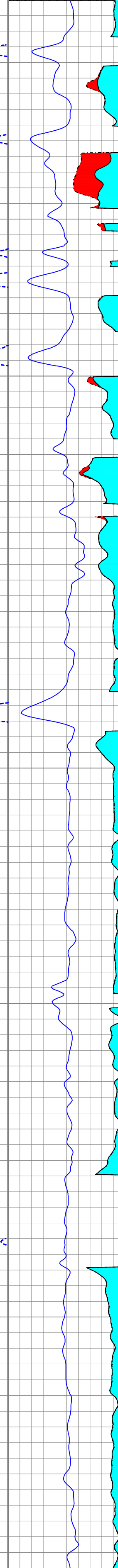
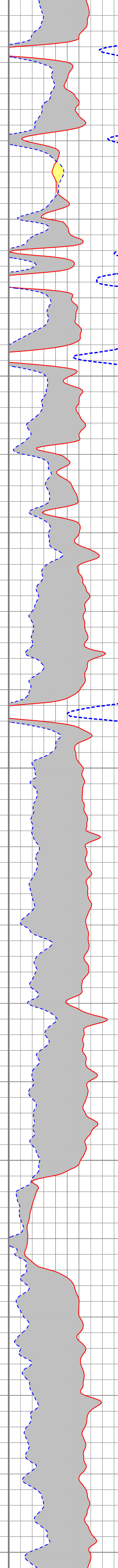
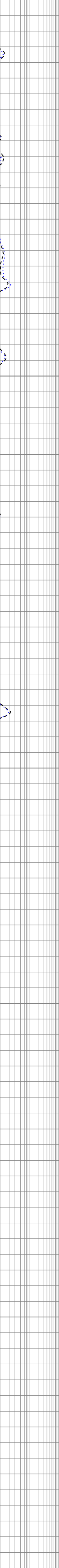
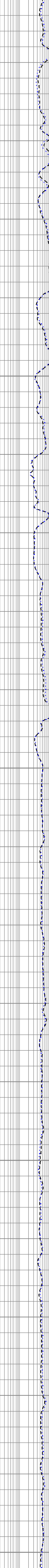
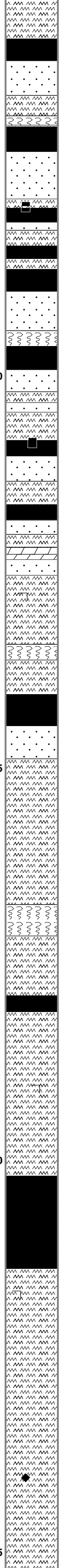


2300  
1796.9

2325  
1815.3

2350  
1833.5

2375  
1851.5

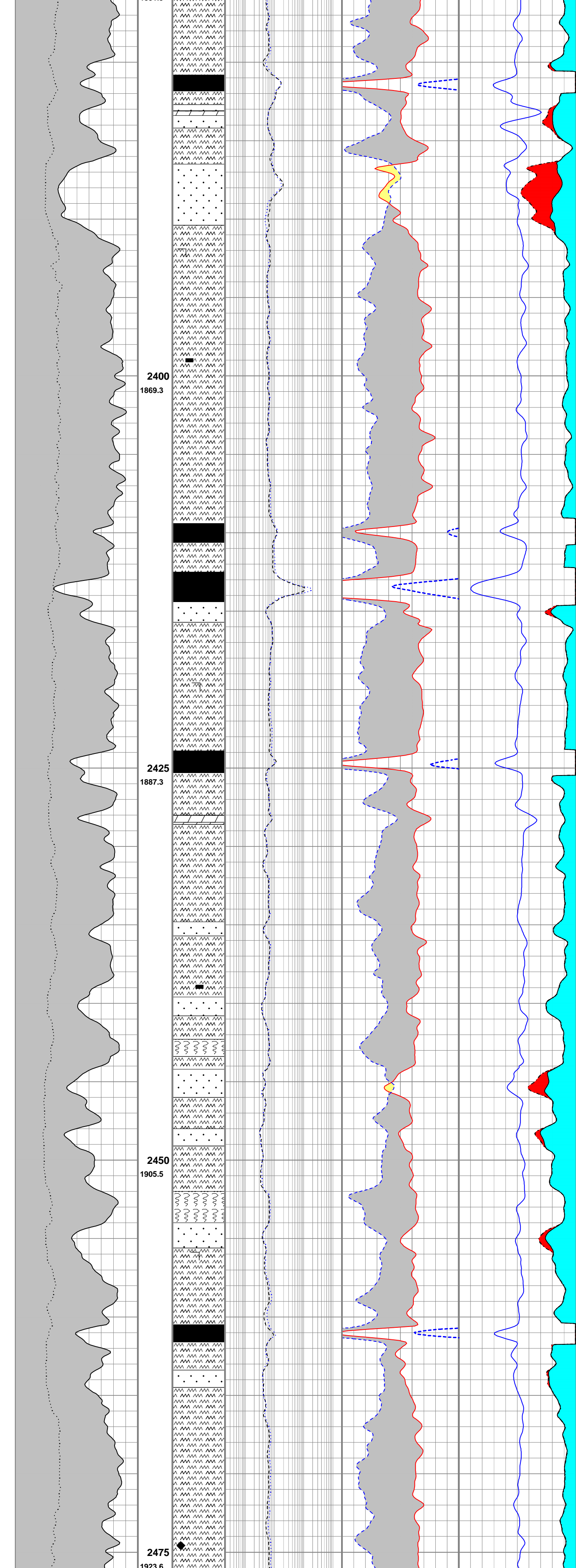


13 3/8"  
642.2m

2339.7  
ANG 42.2  
DIR 122.9  
(-1826.08)

2350  
MW 10.2ppg  
FV 71sec/qt  
PV 23.0cP  
YP 30  
pH 10.1

2370.2  
ANG 45.1  
DIR 126.1  
(-1848.16)

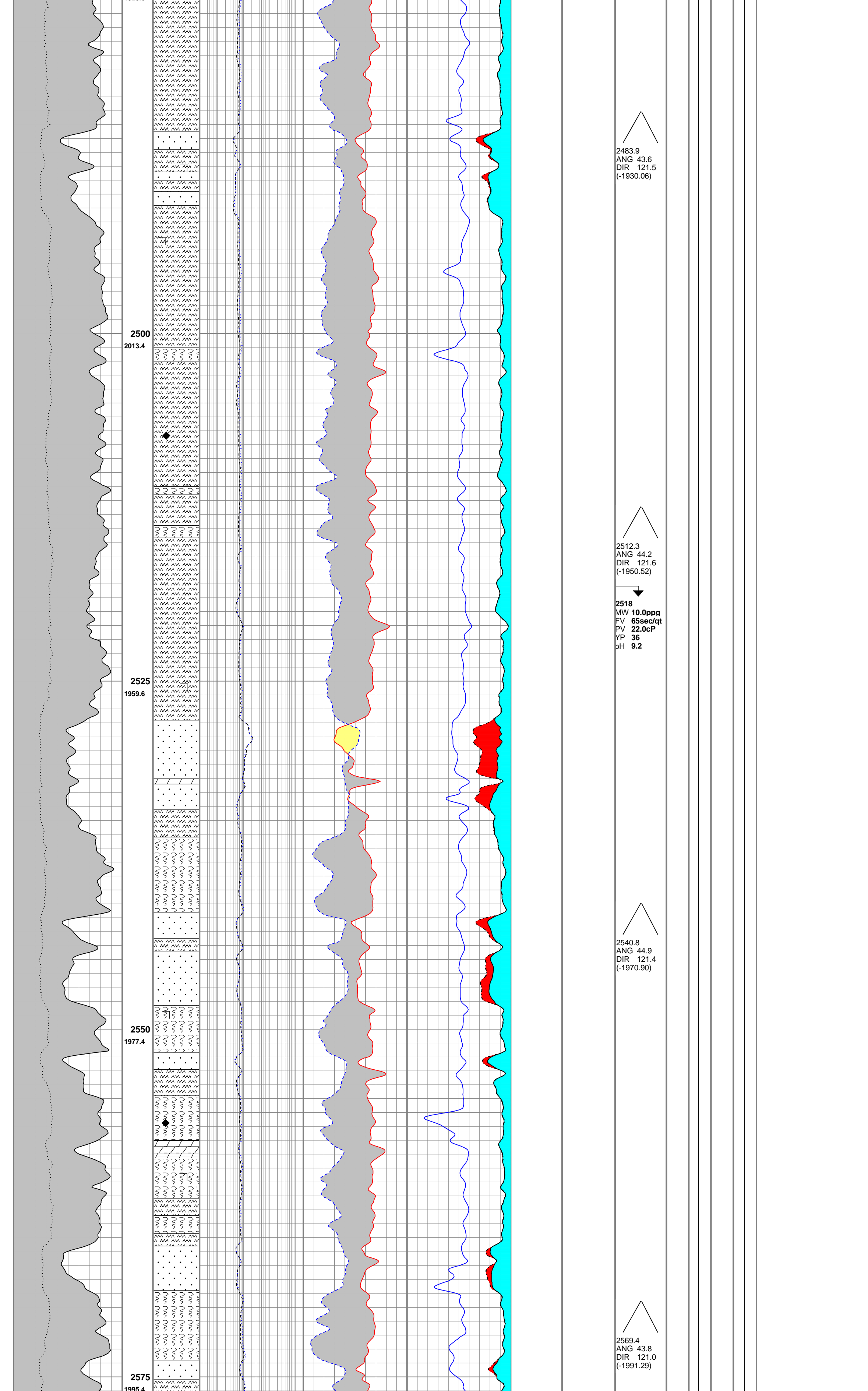


2398.0  
ANG 44.6  
DIR 126.1  
(-1867.86)

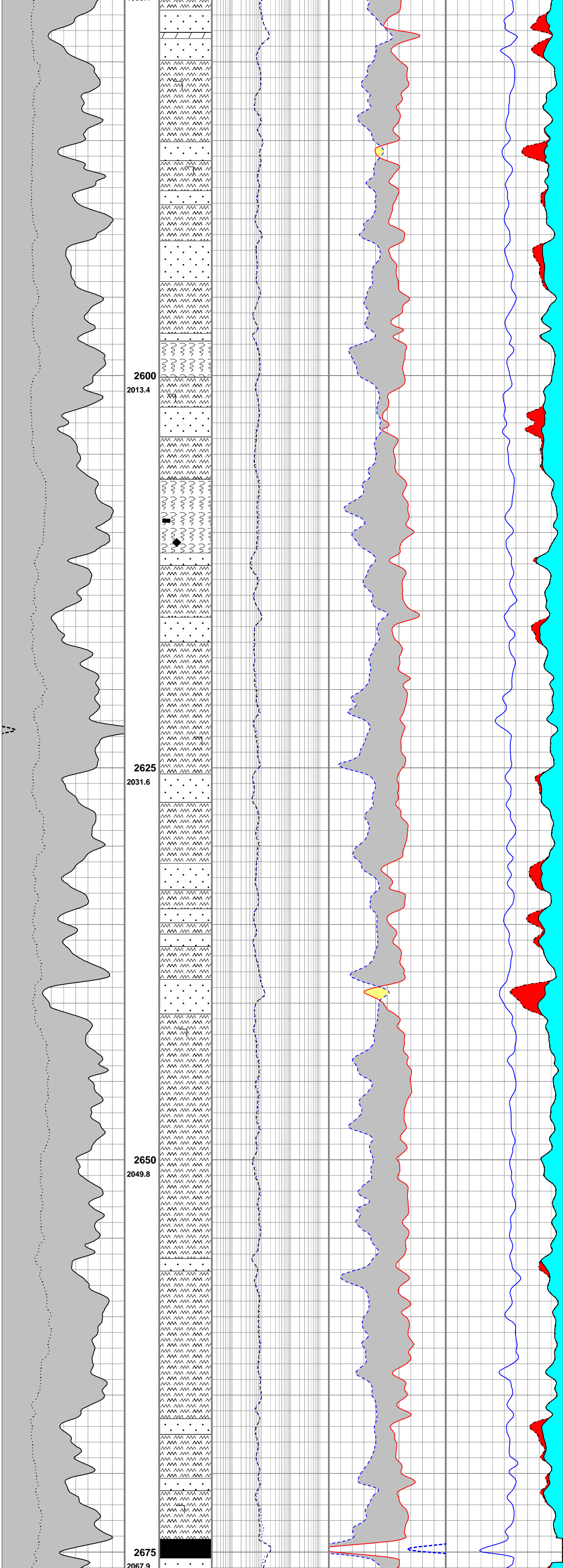
2410  
MW 9.9ppg  
FV 57sec/qt  
PV 22.0cP  
YP 37  
pH 9.3

2426.5  
ANG 43.3  
DIR 124.7  
(-1888.38)

2454.9  
ANG 43.3  
DIR 123.1  
(-1909.05)



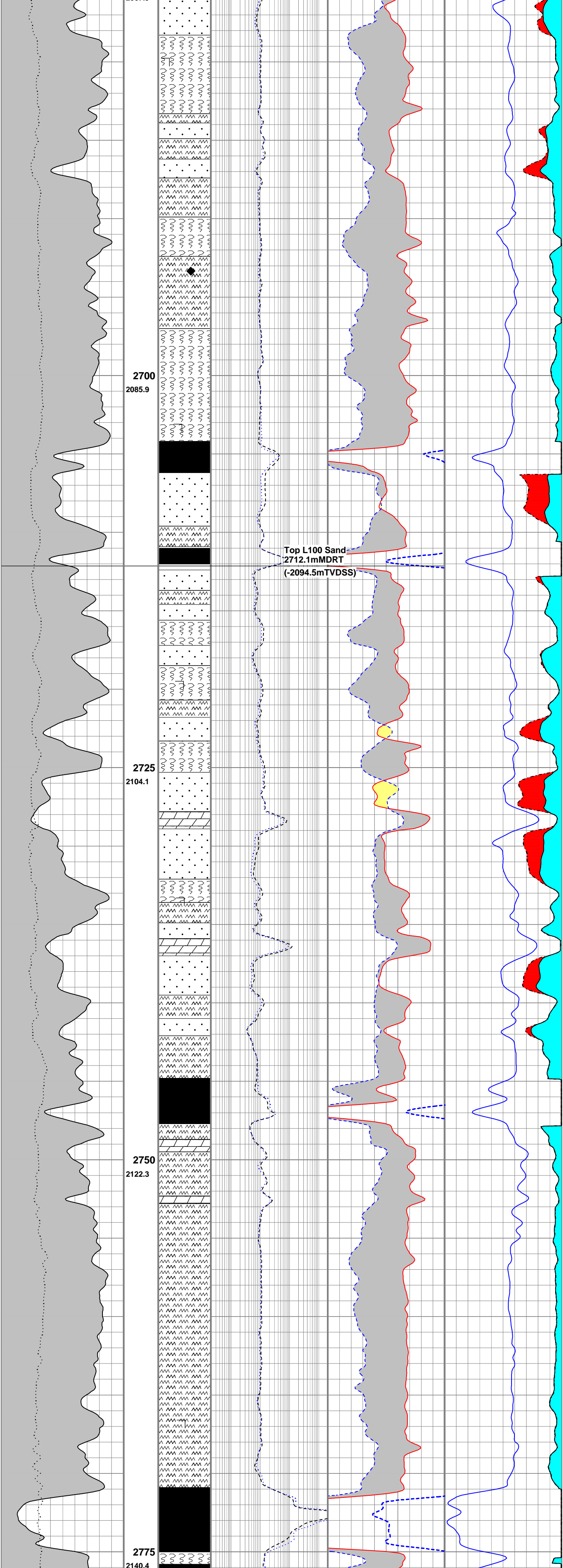




2598.2  
ANG 43.6  
DIR 120.7  
(-2012.14)

2627.0  
ANG 43.2  
DIR 121.1  
(-2033.06)

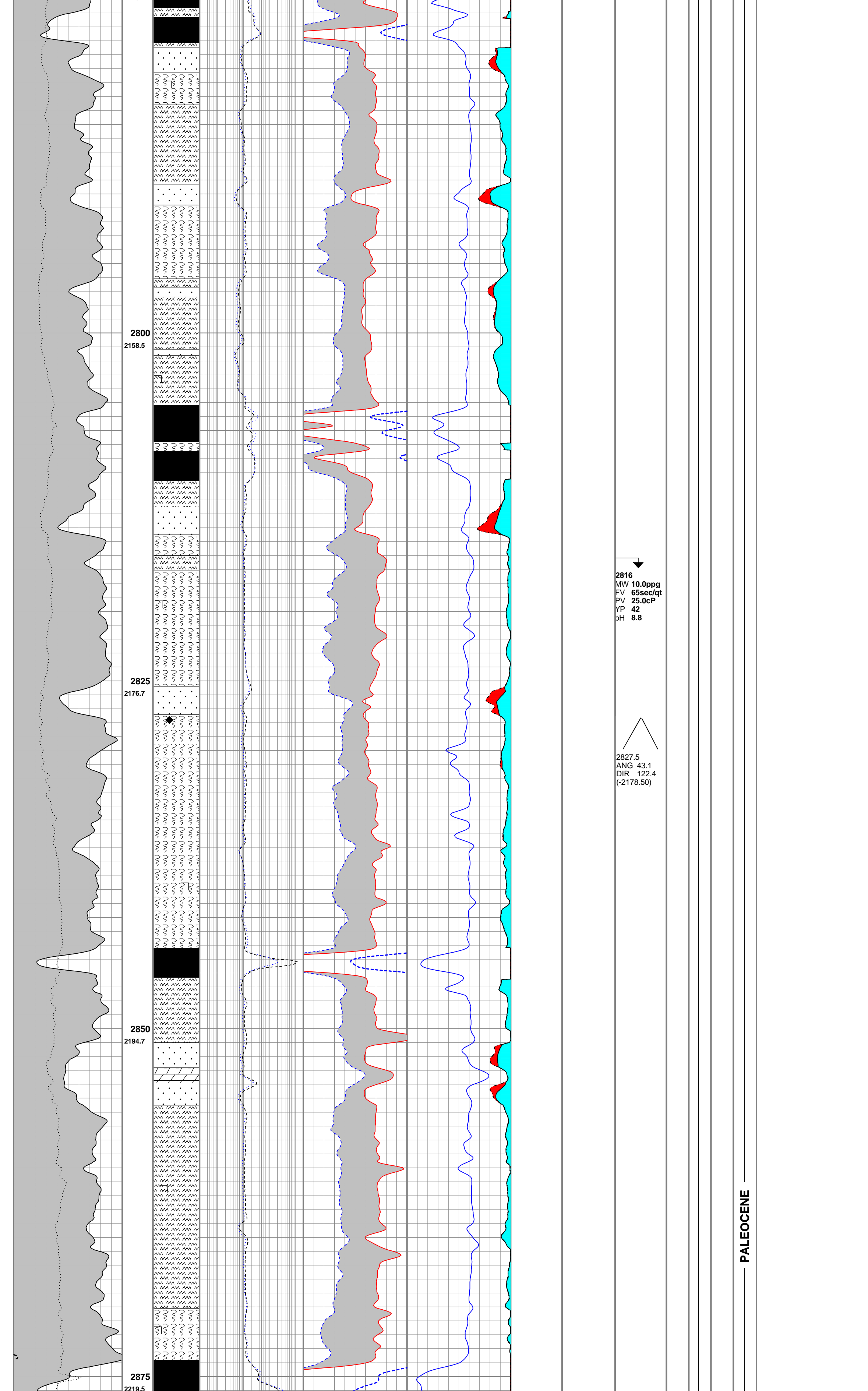
2655.5  
ANG 43.3  
DIR 122.2  
(-2053.82)



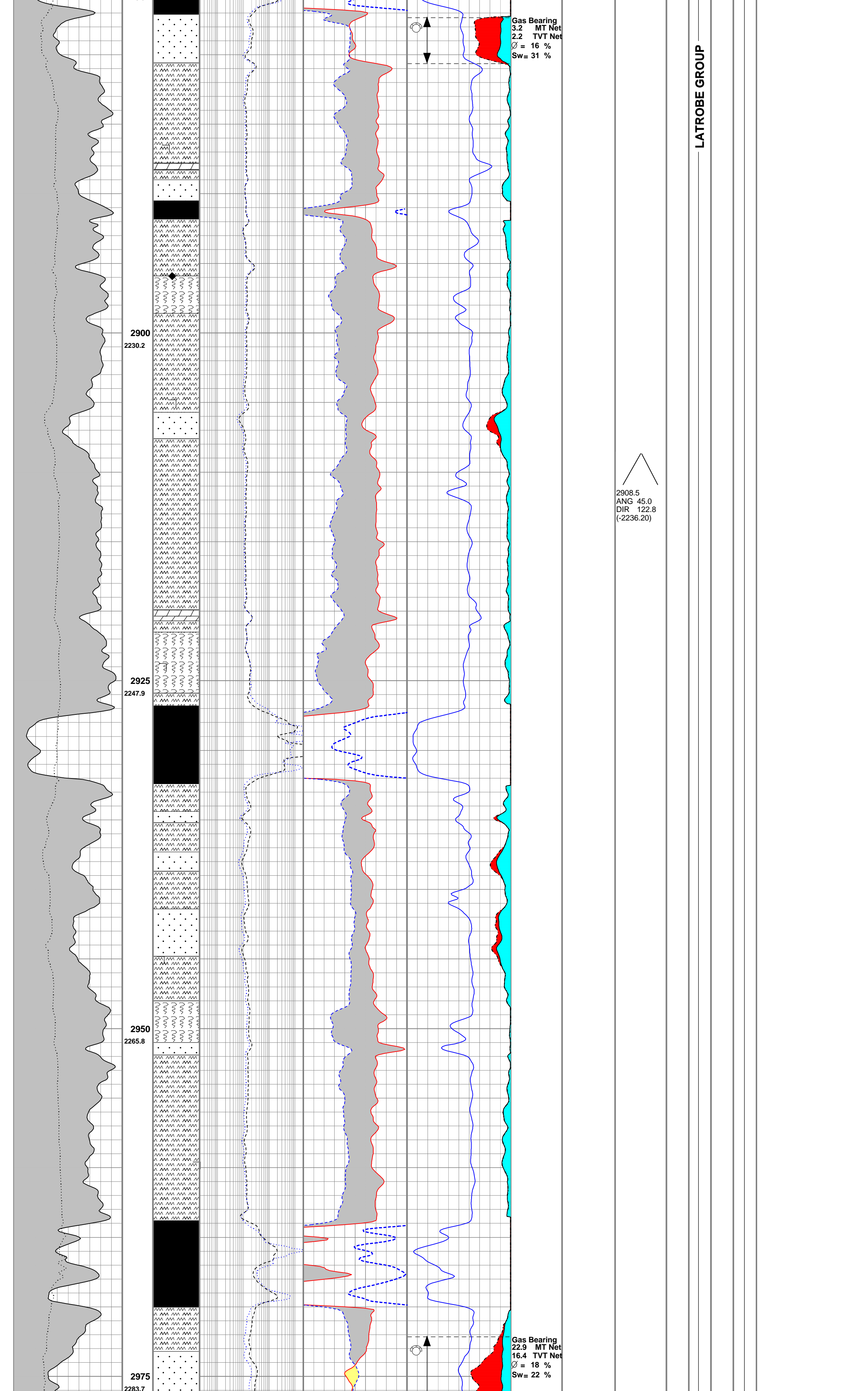
2684.2  
ANG 44.7  
DIR 124.2  
(-2074.45)

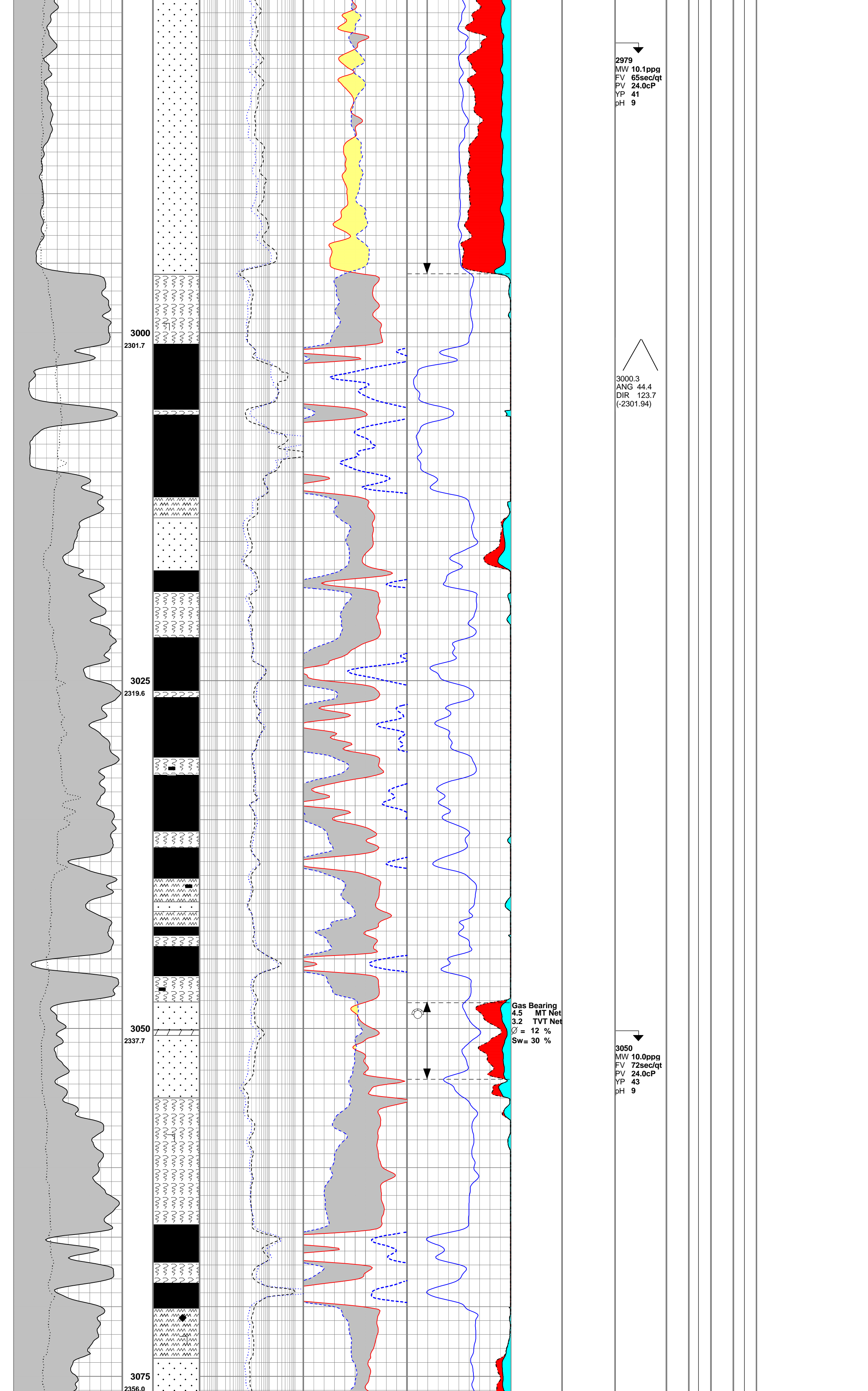
2713.0  
ANG 42.7  
DIR 125.6  
(-2095.28)

2770.1  
ANG 43.9  
DIR 124.3  
(-2136.90)







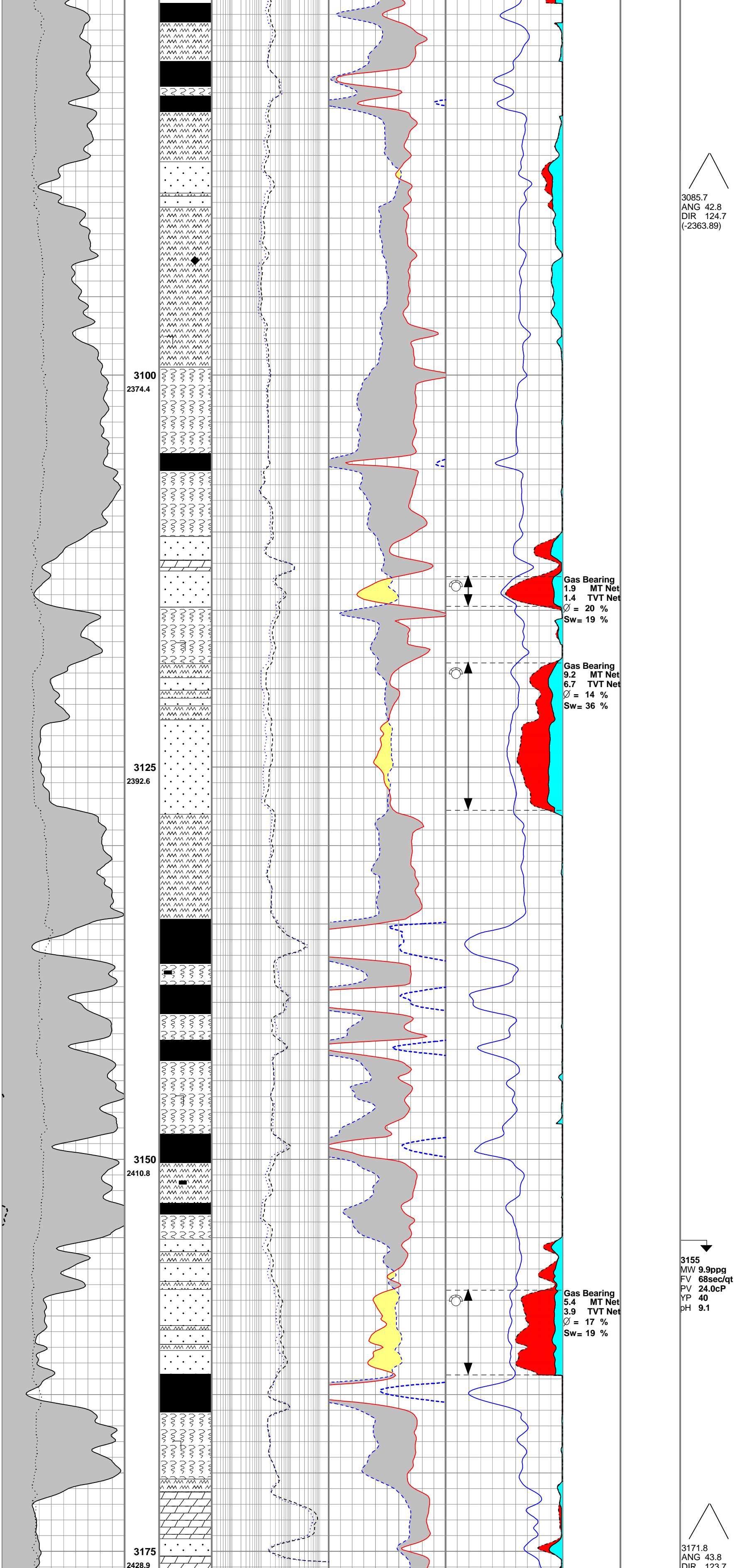


2979  
MW 10.1ppg  
FV 65sec/qt  
PV 24.0cP  
YP 41  
pH 9

3000.3  
ANG 44.4  
DIR 123.7  
(-2301.94)

Gas Bearing  
4.5 MT Net  
3.2 TVT Net  
Ø = 12 %  
Sw = 30 %

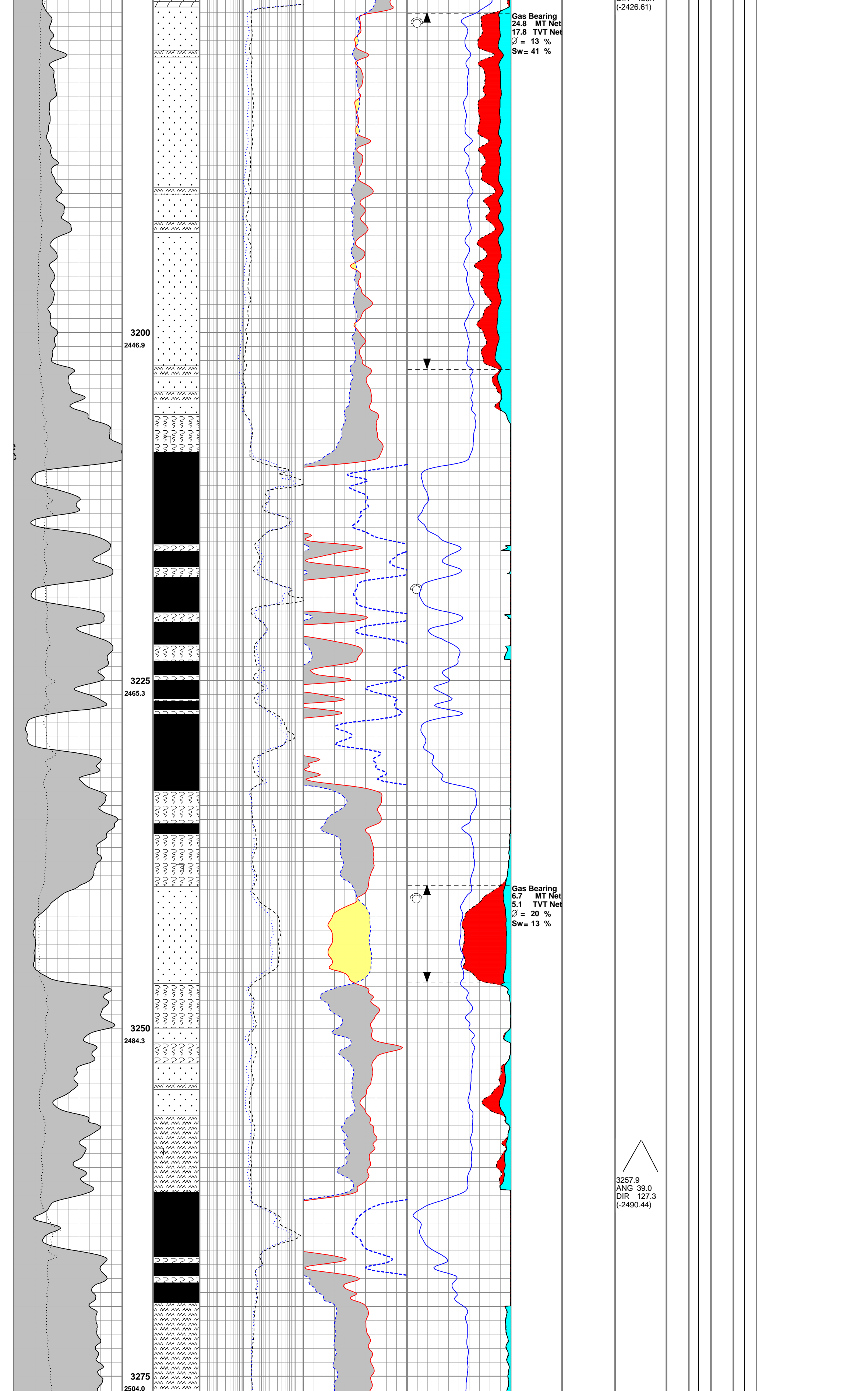
3050  
MW 10.0ppg  
FV 72sec/qt  
PV 24.0cP  
YP 43  
pH 9



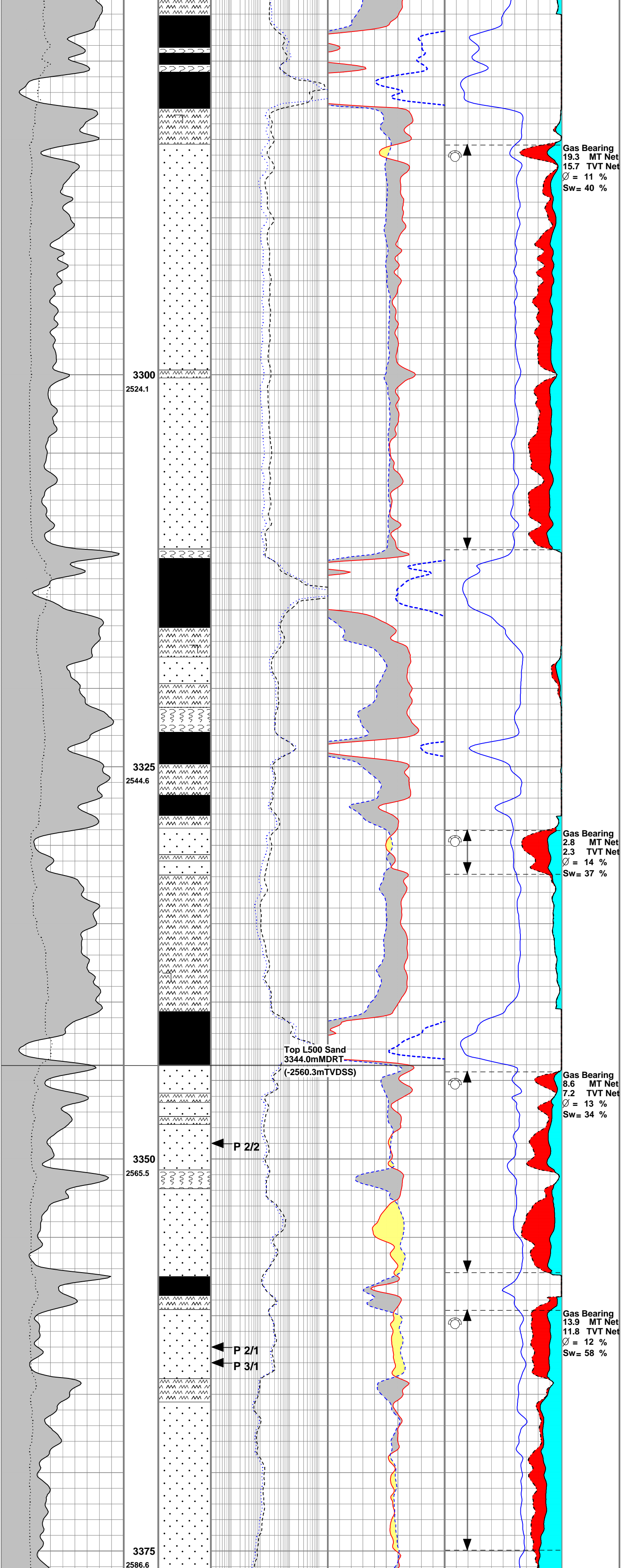
3085.7  
ANG 42.8  
DIR 124.7  
(-2363.89)

3155  
MW 9.9ppg  
FV 68sec/qt  
PV 24.0cP  
YP 40  
pH 9.1

3171.8  
ANG 43.8  
DIR 123.7



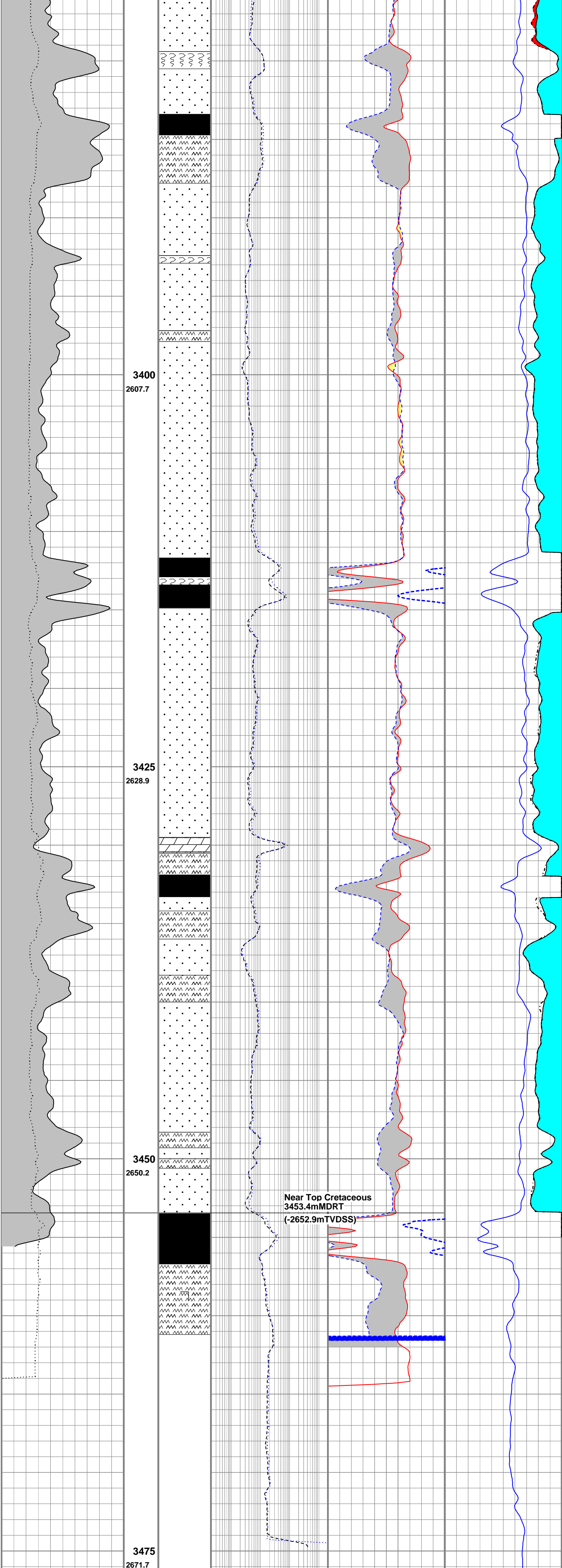




3343.6  
ANG 32.8  
DIR 132.7  
(-2560.09)

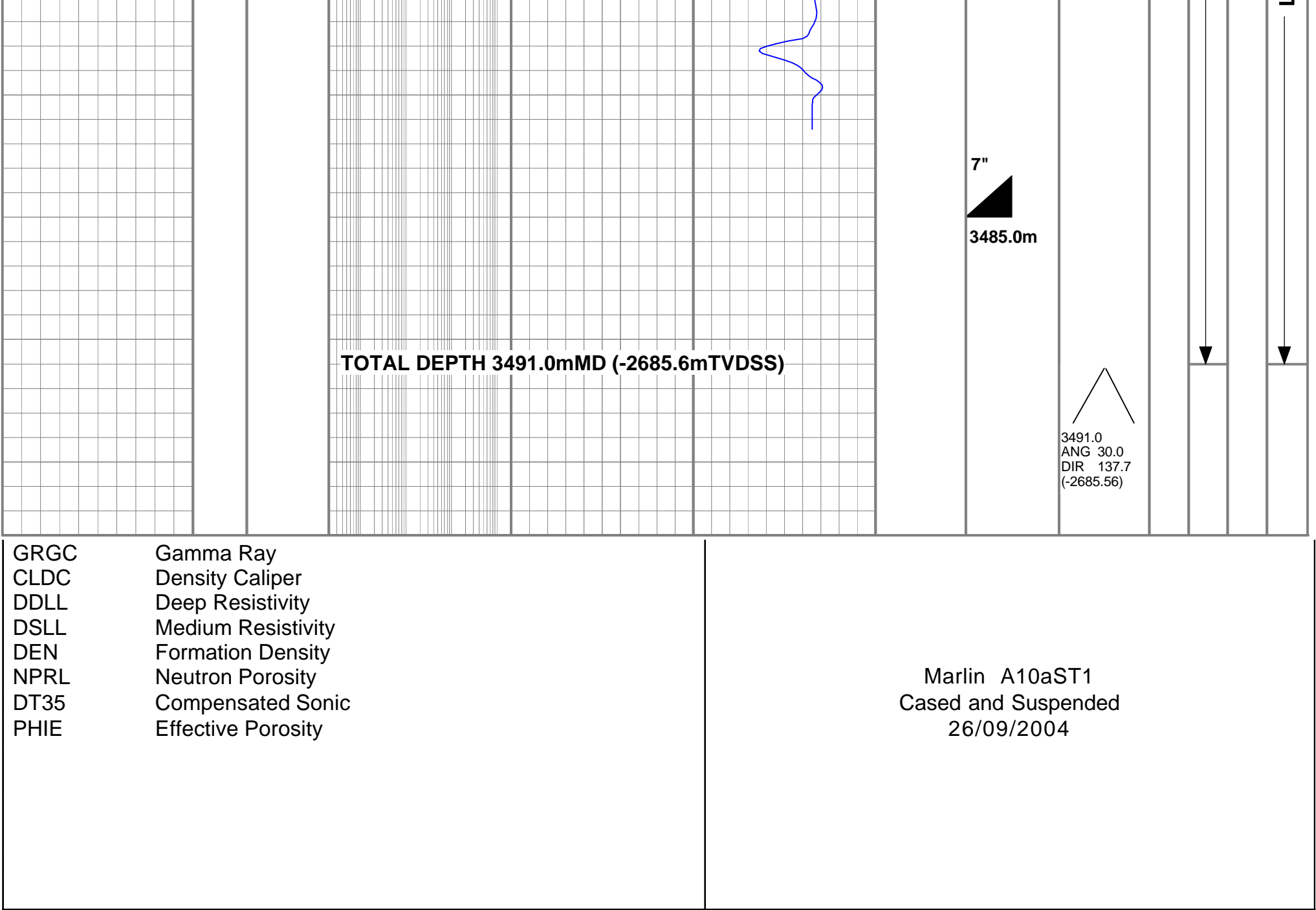
3364  
MW 9.9ppg  
FV 68sec/qt  
PV 24.0cP  
YP 42  
pH 8.8





3467  
MW 10.0ppg  
FV 77sec/qt  
PV 25.0cP  
YP 44  
pH 9.2

ATE CRETACEOUS



**APPENDIX 5a**  
**MARLIN A-10A**  
**OPEN HOLE DATA**

AUSTRALIA PTY LTD																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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**APPENDIX 5b**  
**MARLIN A-10AST1**  
**OPEN HOLE DATA**

Well: MLA\_A10AST1  
Date: 21-Sep-04  
Tool Type (CHDT-PO-GR-CO)  
Gauge Type: CQG  
Pressure units - psia

Deviated Well  
Inclination average 42.15deg

Geologist-Engineer	Cliff Menhennitt
KB (metres):	27.9
Probe type	Large
Temperature units	Deg C

[illegible]

Well:			MARLIN A10A ST1						
A. Sample Identification									
Run/seat number	02-Mar	1							
Sample depth	md m rkb	3363							
Pretest volume	cc	20 ccs							
Chamber size	gallon	2.75							
Chamber serial number	#								
Probe type		Large							
Choke size		n/a							
B. Sampling History									
Date	dd/mm/yy	22/09/04							
Initial hydrostatic	psia	4615.9							
Tool Set	hh:mm	19:01							
Pretest start	hh:mm	21:48							
Initial formation pressure (pretest)	psia	3685.1							
Pretest end	hh:mm	22:08							
Pretest duration	hh:mm	0:20							
Pumpout start	hh:mm	22:08							
Pumpout end	hh:mm	0:01							
Pumpout duration	hh:mm	1:53							
Pumpout volume	litres	50							
LFA indication	colour	pink/green							
Interpreted fluid at OFA	-	Gas							
Maximum resistivity at probe	ohm-m	n/a							
Chamber open	hh:mm	0:01							
Minimum sampling pressure	psia								
Final formation pressure	psia								
Seal chamber	hh:mm	0:35							
Chamber fill time	hh:mm	0:34							
Tool retract	hh:mm	2:01							
Final hydrostatic	psia	4555.44							
Total time	hh:mm								
C. Sample Downhole Temperature And Resistivity									
At sample depth (AMS)	degC								
Rm@sample depth (AMS)	ohm-m								
D. Sample Recovery At Surface									
Surface opening pressure	psig	2700							
Volume gas	cuft	766							
Volume oil/condensate	litres	0.45							
Volume water/filtrate	litres	0							
E. Sample Properties Measured On-Site									
Gas via ch	C1	Mole %	0	0	0	0	0	0	0
	C2	Mole %	0	0	0	0	0	0	0
	C3	Mole %	0	0	0	0	0	0	0
	C4	Mole %	0	0	0	0	0	0	0
	C5	Mole %	0	0	0	0	0	0	0
	C6+	Mole %							
	CO2	Mole %	0	0	0	0	0	0	0
	H2S	Mole %	0	0	0	0	0	0	0
Oil/Conder	API @ degC	degrees	0	0	0	0	0	0	0
	Colour								
	Fluorescence								
	GOR or CGR	cuft/bbl or mmscf/bbl	0	0	0	0	0	0	0
	Pour point	degC	0	0	0	0	0	0	0
Water/Filtr	Rmud @ degC	ohm-m@degC	0	0	0	0	0	0	0
	K+ ion calculated from	ppm	0	0	0	0	0	0	0
	Chlorides titrated	ppm	0	0	0	0	0	0	0
	Tritium	DPM							
	pH		0	0	0	0	0	0	0
	Type								
F. Mud Filtrate Properties									
Rmud @ degC	ohm-m@degC	0.168@25.0	0	0	0	0	0	0	0
K+ ion calculated from KCL%	ppm								