

Esso Australia Ltd.

WTN W33A

Tuna

Pool Rig 453 State: **Victoria**

Schlumberger

K.B. Top Drive

Elev.: 0

Driller's Pipe Tally

Longitude Latitude

Pool Rig 453
Tuna
Bass Strait
WTN W33A

Mag decl: 13.156°

Directional Drilling

Casing record

84 n	Dei
ize	

110111	10
0 m	157 m

0 m	195/1
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on record	
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1011	10
1957 m	2460

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Software record

Org

126-16-101

services from

DISCLAIMER

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Directional Surveys

OTHER SERVICES FOR RUN

OTHER SERVICES FOR RUN

8-1/2in Hole Section was logged from
2150 m to 2460 m MD.

Depth is referenced to the Driller's pipe tally.

All data presented is from tool memory.

GR is corrected for mud weight and bit size.
RAB6 Resistivity is corrected for the bit size,
mud resistivity and borehole temperature.

REMARKS: RUN NUMBER

REMARKS: RUN NUMBER

mud resistivity and borehole temperature.

Bottom quadrant density is presented.
Neutron porosity is calculated with limestone matrix and is corrected for the bit size borehome salinity, temperature and mud hydrogen index (from mud weight, temperature and pressure)

Mud type is water based KCl/PHPA.
Barite is present in the mud.

RAB6C Downhole Software 6C-V6.1
ADN6C Downhole Software 6.9B03

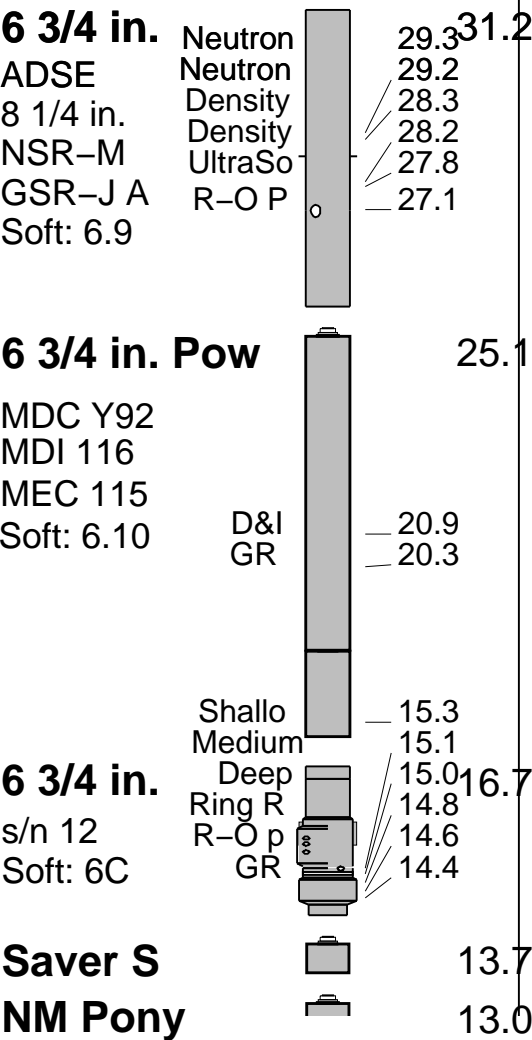
EQUIPMENT DESCRIPTION

RUN1

RUN

RUN

DOWNHOLE EQ



s/n 66



13.0

s/n H9



9.31

A675XP s/n J
1.15 deg



7.90

Bit-PD



0.00

0.20

MAXIMUM STRING DI

ALL LENGTHS I

Bit Run Summary

[illegible]

Environmental data

GR											
Mud weight	ppg	10.5									
Bit size	in.	8.5									
Resistivity											
Neutron porosity											
Hole Size	in.	8.5									
Mud weight	ppg	10.5									
Temperature	degC	53									
Mud salinity	mg/l	54,500									
Formation salinity											
Recording rate GR/Res		10 s									
Recording rate Dens/Neut		10 s									
Filtering GR		3 pt									
Filtering density		3 pt									
Filtering Neutron		3 pt									
Company representative		T. Basit	B. Davies								
Anadrill personnel		J. Chong	T. Ford	J. Walta							

IDEAL Version: ID7_0C_02

IDEAL

 RAB6-CA
ADN-CA

 unofficial
unofficial

MWD_10-A

unofficial

Format: TripleComboDepthLog

Vertical Scale: 1:200

Graphics File Created: 04-May-2002 22:45

Parameters
DLIS Name
Description
Value

	LWD RM: Generate techlog only?	0	
	LWD RM: Log direction	DOWN	
	LWD RM: Default directory	D:\users\ideal\fm\Clients\ESSO\WTN-W33A\LWD001\	
	LWD RM: Flush depth streams?	YES	
	RAB: Button Sleeve Diameter	RAB6: 8 1/8 IN	
	LWD RM: Depth file name	DEPTH	
	RAB: Stabilizer Diameter	RAB6: 8.25-8.5 IN	
	LWD RM: Default file extension	BIN_DB	
ADN_CHASSIS_STR	ADN Chassis Type String	Undefined	
ADN_COLLAR_STR	ADN Collar Type String	Undefined	
ADN_STAB_STR	ADN Stabilizer Type String	Undefined	
AVE_ADN	ADN/Array Channels: perform averaging(RM) :	YES	
A_DHS	ADN Down Hole Software Version String	Undefined	
BDBHCA	RAB: Button Deep Borehole A Factor	0.00485613	
BDBHCB	RAB: Button Deep Borehole B Factor	0	
BHA_COEF_VER	RAB: BHA Coef Generator Version	62011	
BHT_RM	Bottom Hole Temperature (RM)	158	DEGF
BMBHCA	RAB: Button Medium Borehole A Factor	0.0237626	
BMBHCB	RAB: Button Medium Borehole B Factor	0	
BSAL_RM	Mud Salinity (RM)	87.45	PPK
BSBHCA	RAB: Button Shallow Borehole A Factor	0.0241089	
BSBHCB	RAB: Button Shallow Borehole B Factor	0	
BS_RM	Bit Size (RM)	8.5	IN
BUT_KIMP_A	RAB: Button Impedance Coeff A	0	
BUT_KIMP_B	RAB: Button Impedance Coeff B	0	
DBUTTON_K_FACTOR	RAB: Button Deep K factor	0.00457077	
DEVI	Well Section Deviation	52	DEG
DHS_VERSION	RAB: DownHole Software Version	6.1012	
DTMUD	Delta-T for Mud	645.177	US/M
ENVCOR	Neutron Quadrant Processing: Environmental Correction?	YES	
IDQT	Image Derived Quality Threshold	0.4	
LITHO_TYPE_ADN	Lithology (RM)	LIME	
MBUTTON_K_FACTOR	RAB: Button Medium K Factor	0.00523925	
MST_RM	Mud Sample temperature (RM)	73.76	DEGF
MW_RM	Mud Weight (RM)	10.5	LB/G
OBM	RAB: Oil base Mud	NO	
OBMF_RM	Oil Based Mud	NO	
PP_RM	ADN: Porosity Processing for each bank :	YES	
RABEC	RAB: Resistivity Env-Cor	YES	
RAB_TEMP_SELECT	RAB Temperature Selection	MEASURED	

RABEC	RAB: Resistivity Env-Cor	YES
RAB_TEMP_SELECT	RAB Temperature Selection	MEASURED
READOUT_PORT_MP	RAB: ROP to Bit Face Distance	14.69
RHOF_RM	Mud Filtrate Density (RM)	1
RHOM_RM	Matrix density (RM)	2.71
RMS_RM	Resistivity of Mud Sample (RM)	0.1007
RWS_RM	Resistivity of Connate Water (RM)	1
SBUTTON_K_FACTOR	RAB: Button Shallow K Factor	0.00710512
SHT_RM	Surface Hole Temperature (RM)	75
SSIZ_ADN	ADN Stabilizer Size	8.25
STAB	RAB: Run with Stabilizer	YES
STOH	ADN Density Top of Hole Sector (Left Boundary):	SECTOR_0
TD_RM	Total Measured Depth (RM)	2460
TFF_OFFSET_ADN	ADN Time Frame File Time Offset	0
TOOLTYPE	RAB: Azimuthal Tool	YES
TRPM_RM	Average Tool Rotational Speed	20
TSIZ_ADN	ADN Tool Size	6.75
TS_VERSION	RAB: ToolScope Software Version	6.1014
TWS_RM	Temperature of Connate Water (RM)	75
USMIN_RM	ADN:Minimum Ultrasonic standoff (RM)	0.3
VERS_ADN	ADN Downhole Software Version	6.9
VRAB6	Rab Tool type (ENP/PILOT)	RAB6_C SERIES

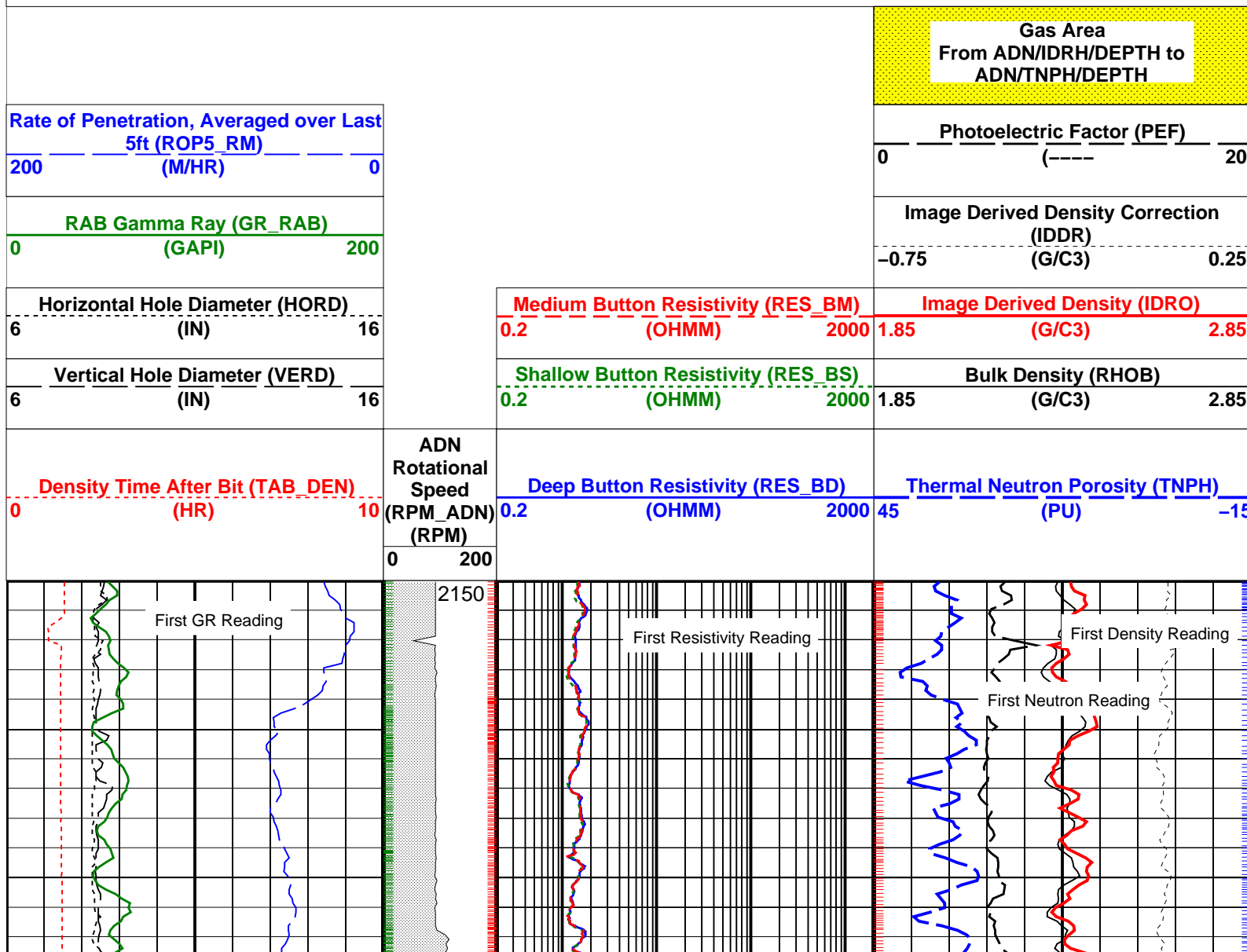
PIP SUMMARY

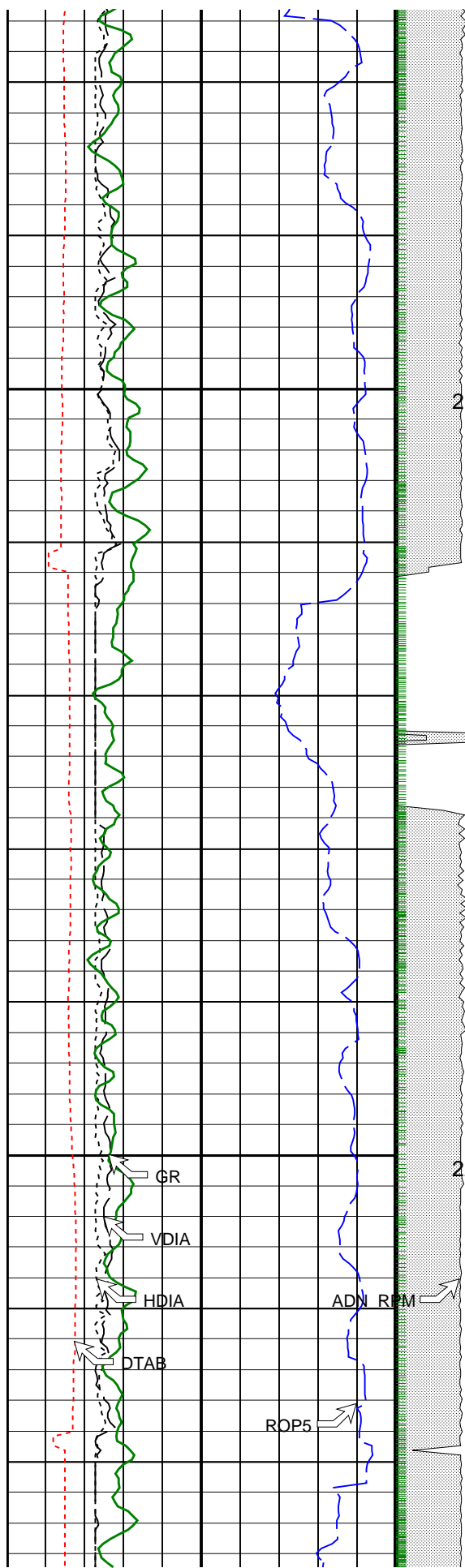
Density Samples +

Neutron Samples +

+ RAB samples

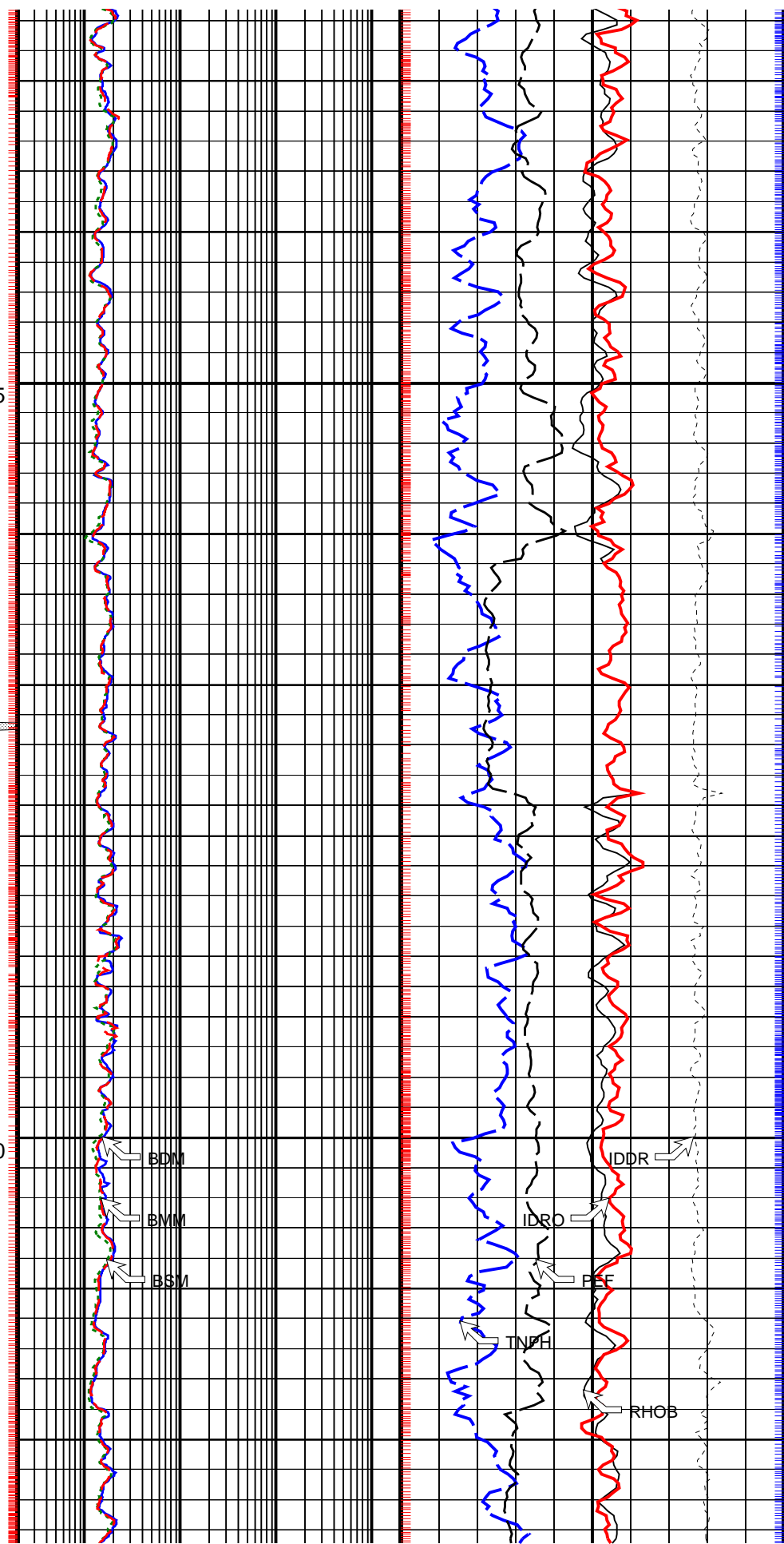
+ Gamma Ray Samples

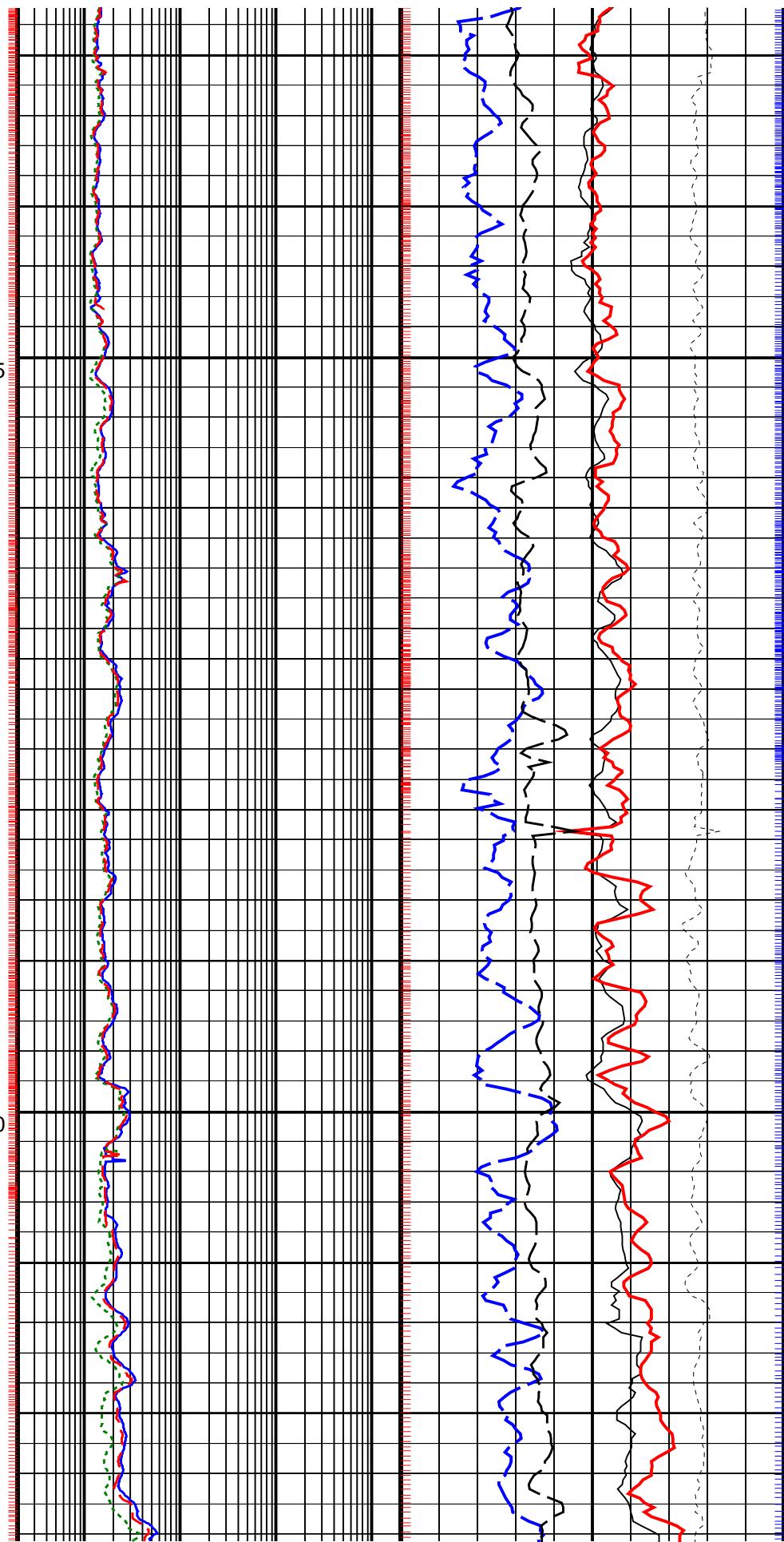
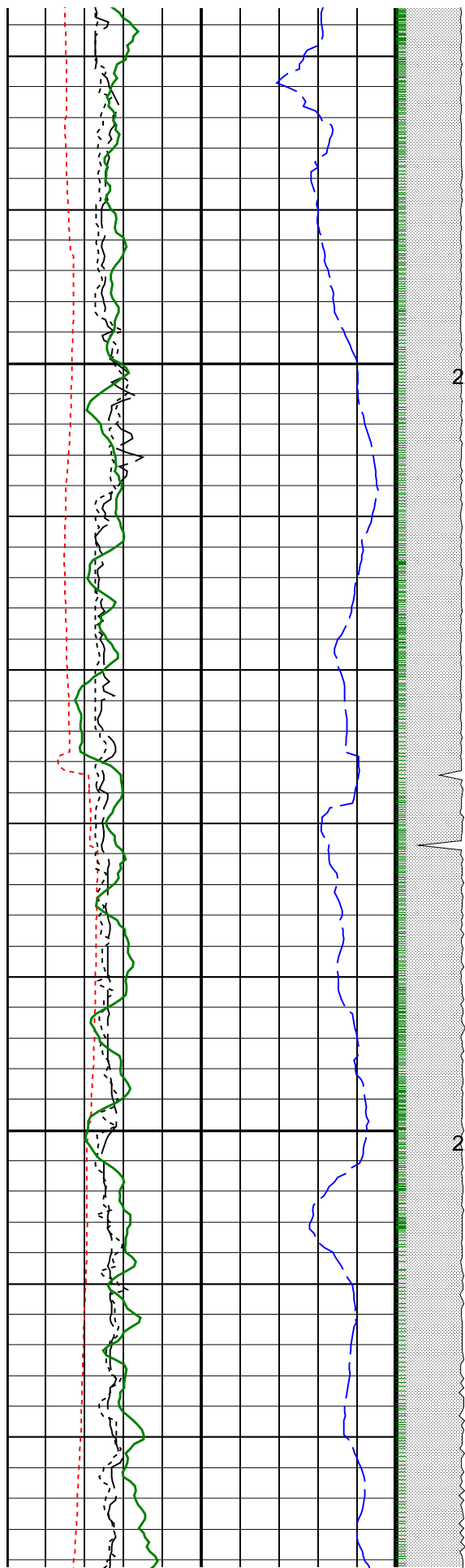


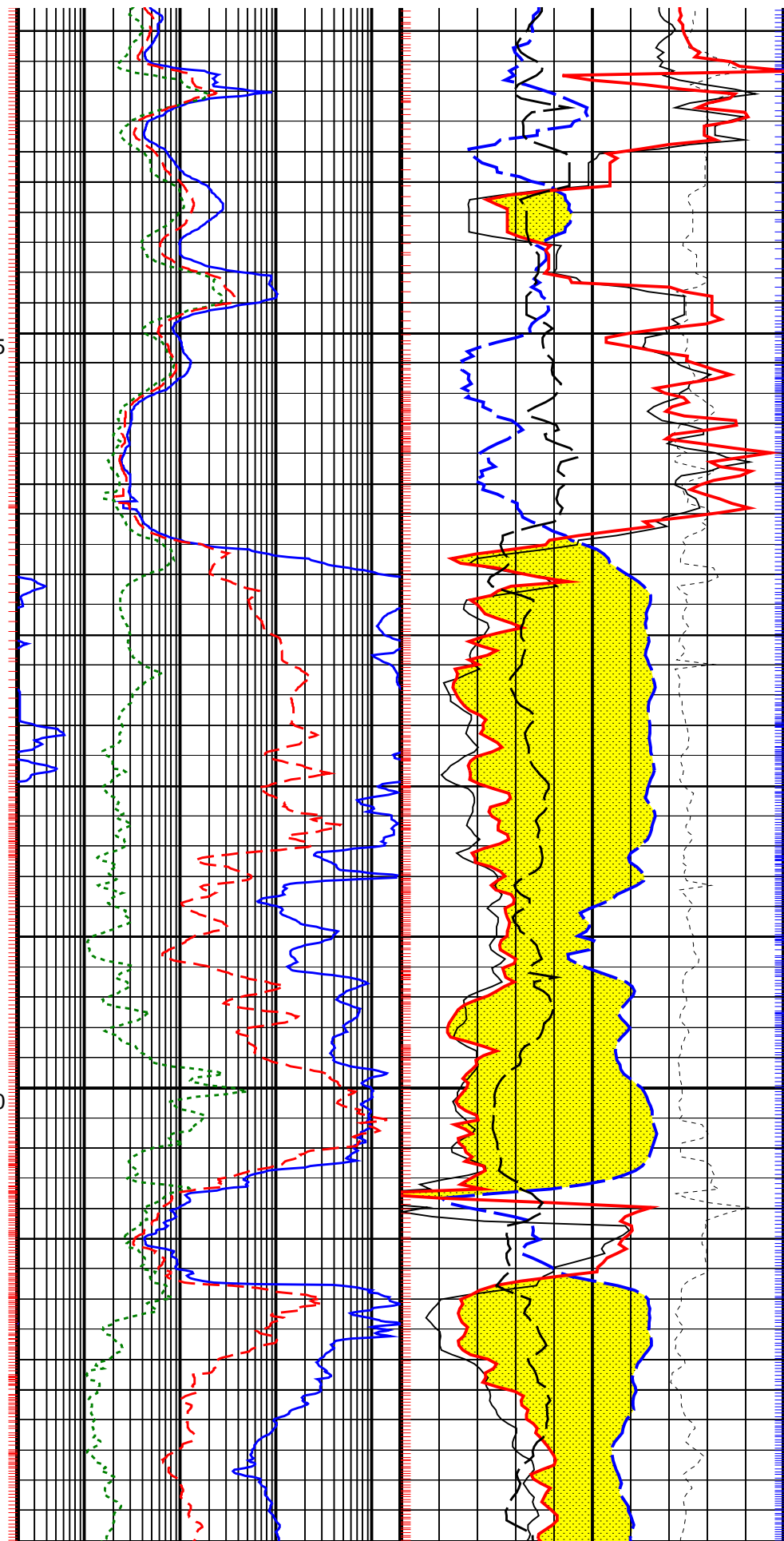
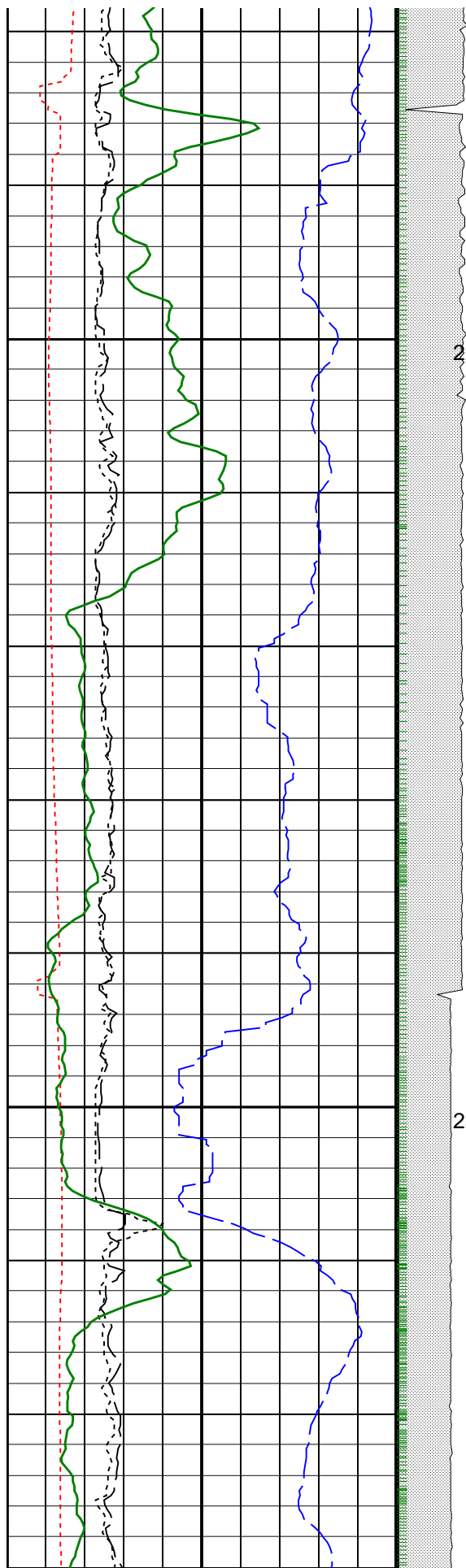


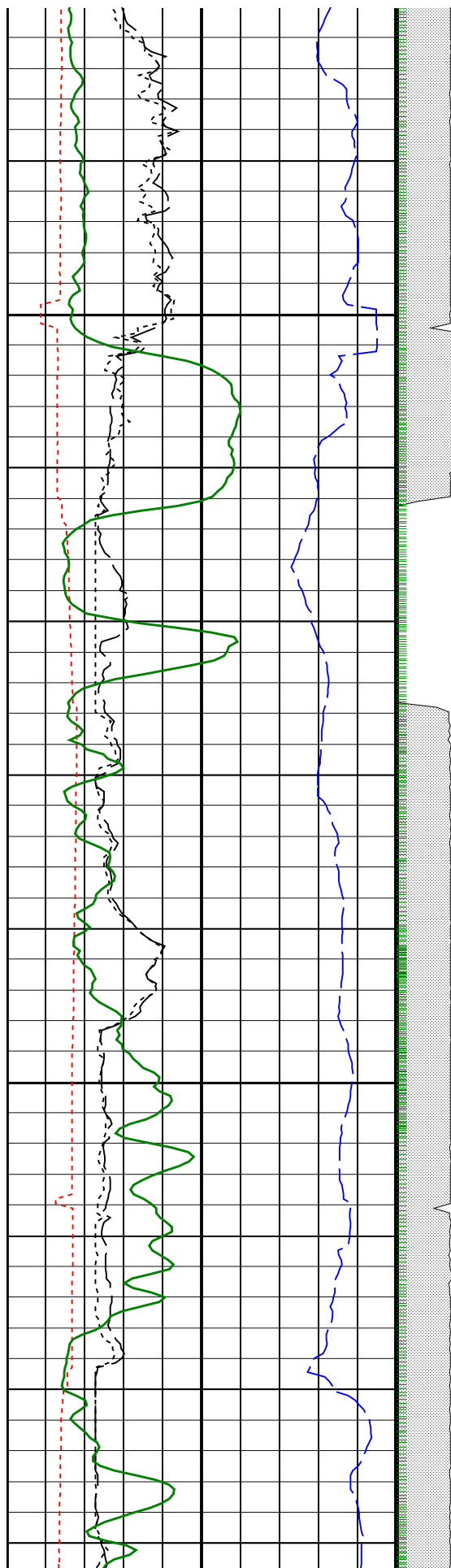
2175

2200



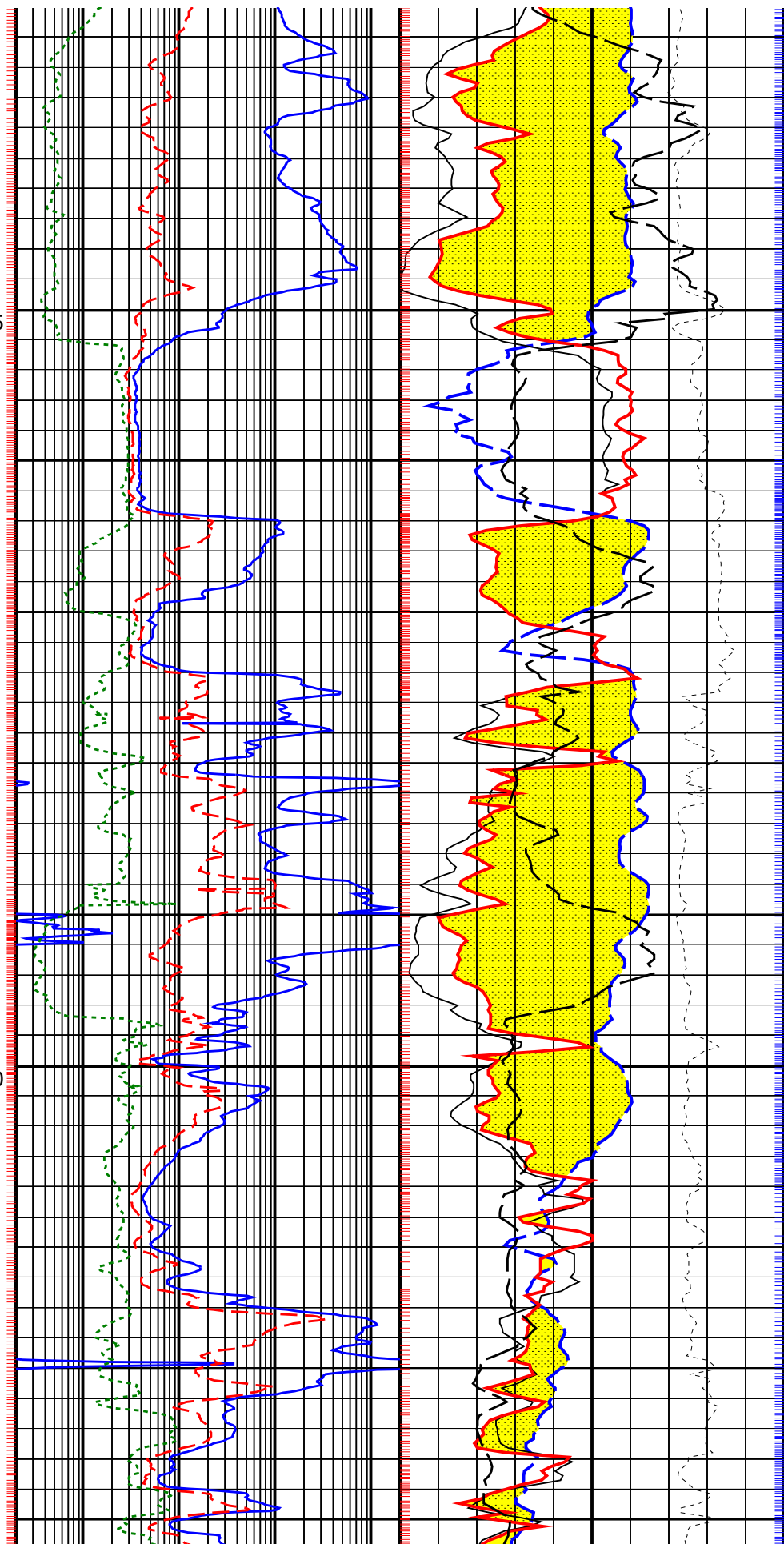


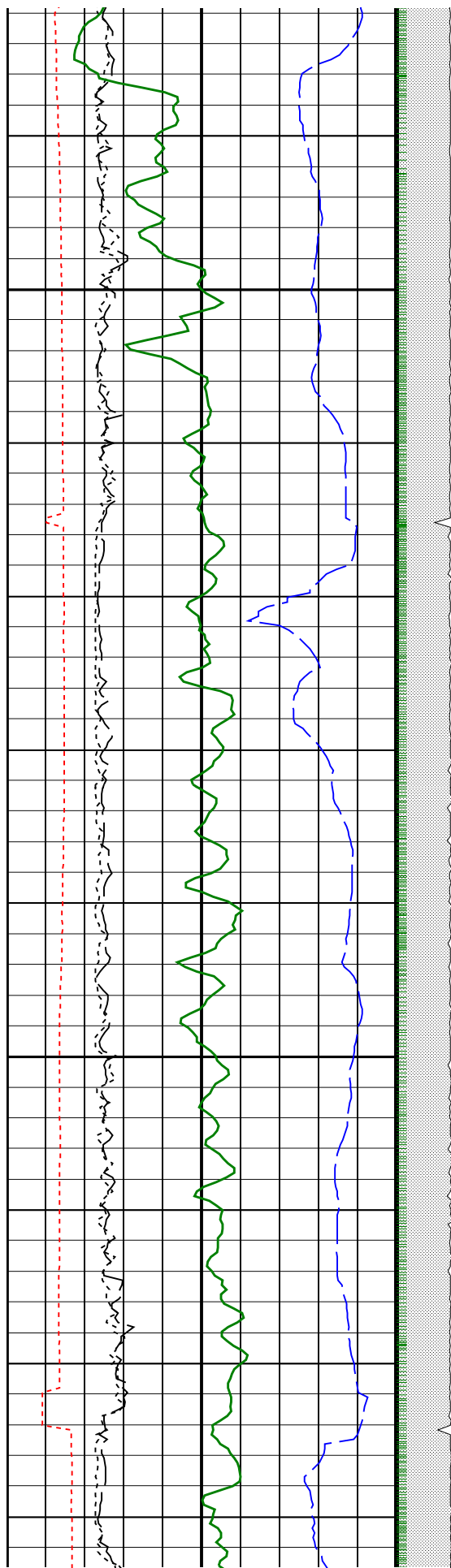




2325

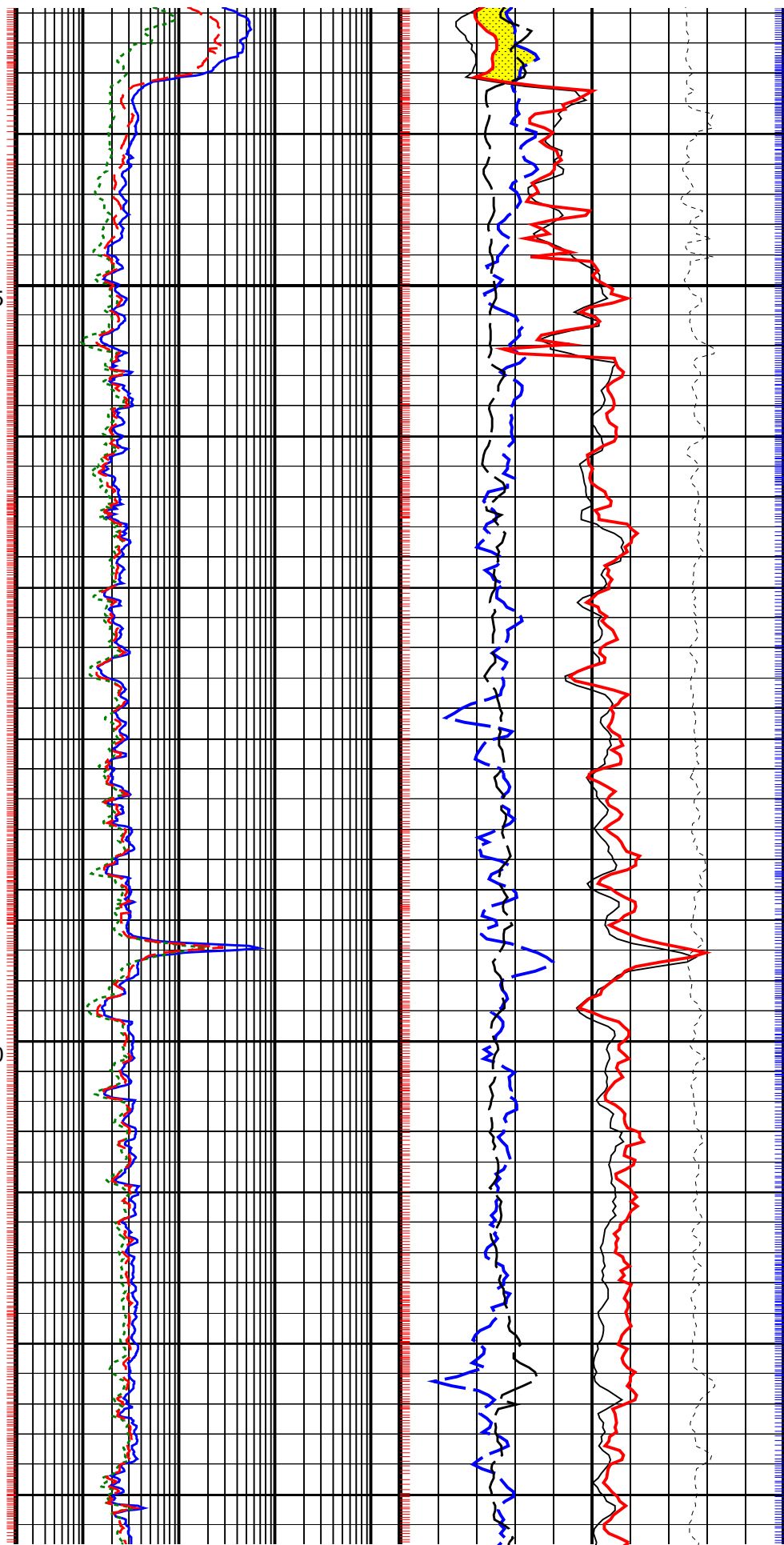
2350

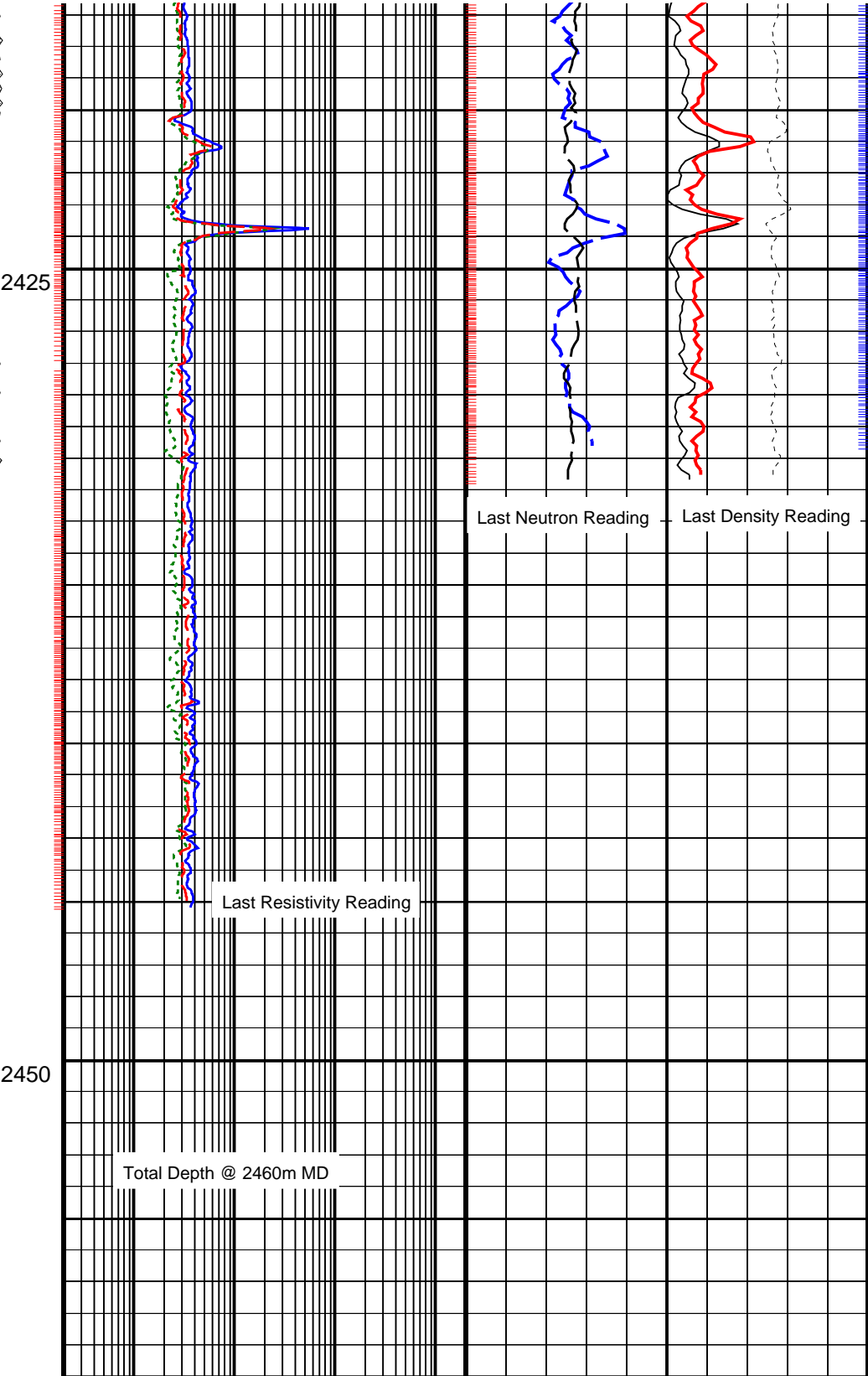
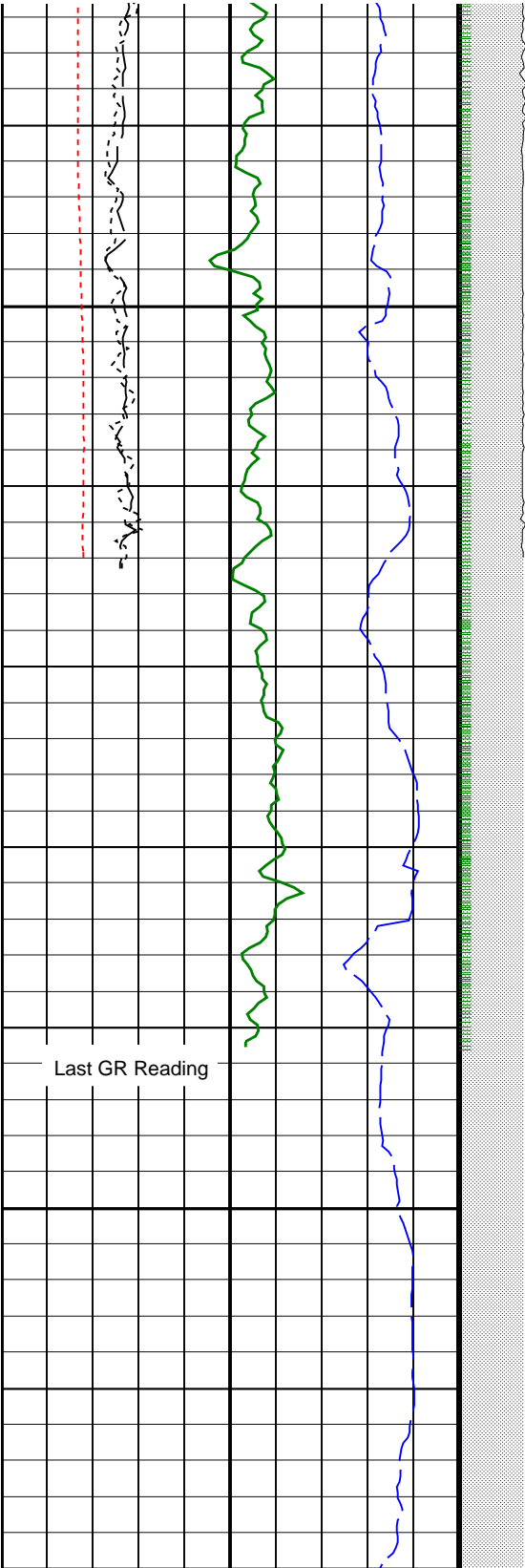




2375

2400








Density Time After Bit (TAB_DEN) (HR)		ADN Rotational Speed (RPM_ADN) (RPM)	Deep Button Resistivity (RES_BD) (OHMM)		Thermal Neutron Porosity (TNPH) (PU)	
0	10		0.2	2000	45	-15
Vertical Hole Diameter (VERD) (IN)		0	Shallow Button Resistivity (RES_BS) (OHMM)		Bulk Density (RHOB) (G/C3)	
6	16	200	0.2	2000	1.85	2.85
Horizontal Hole Diameter (HORD)			Medium Button Resistivity (RES_BM)		Image Derived Density (IDRO)	

<u>Medium Button Resistivity (RES_BM)</u> 0.2 (OHMM) 2000	<u>Image Derived Density (IDRO)</u> 1.85 (G/C3) 2.85
	<u>Image Derived Density Correction (IDDR)</u> ----- -0.75 (G/C3) 0.25
	<u>Photoelectric Factor (PEF)</u> 0 (-----) 20
	<div style="background-color: yellow; text-align: center; padding: 10px;"> Gas Area From ADN/IDRH/DEPTH to ADN/TNPH/DEPTH </div>




Neutron Samples

unofficial

ADN6 - 014
ADDC - AA
APSE - EA
Clamped On
NSR - M - A161
GSR - Z - A2125
8.25 - in.
Valid


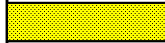
Phase	LS window 3 – Mg CPS	Value	Phase	SS window 1 – Mg CPS	Value	Phase	SS window 3 – Mg CPS	Value
Master		1323	Master		2920	Master		7699
	250.0 (Minimum) 4125 (Nominal) 8000 (Maximum)			700.0 (Minimum) 9350 (Nominal) 18000 (Maximum)			2500 (Minimum) 23750 (Nominal) 45000 (Maximum)	

Phase	LS window 3 – AI	CPS	Value	Phase	SS window 1 – AI	CPS	Value	Phase	SS window 3 – AI	CPS	Value
Master			201.5	Master			1508	Master			4850
	50.00 (Minimum)	725.0 (Nominal)	1400 (Maximum)		500.0 (Minimum)	4250 (Nominal)	8000 (Maximum)		1500 (Minimum)	15750 (Nominal)	30000 (Maximum)

Phase	LS window 3 – Background	CPS	Value	Phase	SS window 1 – Background	CPS	Value	Phase	SS window 3 – Background	CPS	Value
Master		48.41	Master		117.8	Master		520.6			
	15.00 (Minimum)	82.50 (Nominal)	150.0 (Maximum)		40.00 (Minimum)	220.0 (Nominal)	400.0 (Maximum)		150.0 (Minimum)	825.0 (Nominal)	1500 (Maximum)

6.75-in. Azimuthal Density Neutron Calibration

6.75-in. Azimuthal Density Neutron Calibration

Density: Water Block Check									
Phase	Long spacing water density G/C3			Value	Phase	Short spacing water density G/C3			Value
Master				1.040	Master				1.139
	1.016 (Minimum)	1.032 (Nominal)	1.047 (Maximum)			1.062 (Minimum)	1.107 (Nominal)	1.151 (Maximum)	



Master: Calibration date not found

6.75-in. Azimuthal Density Neutron Calibration

Neutron: Water Tank									
Phase		Far 1 tube 1 gain		Value	Phase		Far 1 tube 1 offset CPS		Value
Master				1.145	Master				-0.7860
0.9000 (Minimum)		1.100 (Nominal)		1.300 (Maximum)	-1.200 (Minimum)		-0.9000 (Nominal)		-0.6000 (Maximum)
Phase		Far 1 tube 2 gain		Value	Phase		Far 1 tube 2 offset CPS		Value
Master				1.073	Master				-0.7780
0.9000 (Minimum)		1.100 (Nominal)		1.300 (Maximum)	-1.200 (Minimum)		-0.9000 (Nominal)		-0.6000 (Maximum)
Phase		Far 1 tube 3 gain		Value	Phase		Far 1 tube 3 offset CPS		Value
Master				1.138	Master				-0.8870
0.9000 (Minimum)		1.100 (Nominal)		1.300 (Maximum)	-1.200 (Minimum)		-0.9000 (Nominal)		-0.6000 (Maximum)
Phase		Far 2 tube 1 gain		Value	Phase		Far 2 tube 1 offset CPS		Value
Master				1.137	Master				-0.6860
0.9000 (Minimum)		1.100 (Nominal)		1.300 (Maximum)	-1.200 (Minimum)		-0.9000 (Nominal)		-0.6000 (Maximum)
Phase		Far 2 tube 2 gain		Value	Phase		Far 2 tube 2 offset CPS		Value
Master				1.095	Master				-0.7400
0.9000 (Minimum)		1.100 (Nominal)		1.300 (Maximum)	-1.200 (Minimum)		-0.9000 (Nominal)		-0.6000 (Maximum)
Phase		Far 2 tube 3 gain		Value	Phase		Far 2 tube 3 offset CPS		Value
Master				1.167	Master		<div>EXCEEDS LIMIT</div>		-0.5990
0.9000 (Minimum)		1.100 (Nominal)		1.300 (Maximum)	-1.200 (Minimum)		-0.9000 (Nominal)		-0.6000 (Maximum)
Phase		Near 1 tube 1 gain		Value	Phase		Near 1 tube 1 offset CPS		Value
Master				1.101	Master				0
0.9000 (Minimum)		1.100 (Nominal)		1.300 (Maximum)	-50.00 (Minimum)		0 (Nominal)		50.00 (Maximum)
Phase		Near 2 tube 1 gain		Value	Phase		Near 2 tube 1 offset CPS		Value
Master				1.118	Master				0
0.9000 (Minimum)		1.100 (Nominal)		1.300 (Maximum)	-50.00 (Minimum)		0 (Nominal)		50.00 (Maximum)

Master: Calibration date not found

6.75-in. Azimuthal Density Neutron Calibration

Neutron: Water Block Check									
Phase	Far Neutron water porosity V/V			Value	Phase	Near Neutron water porosity V/V			Value
Master				1.000	Master				1.000
	0.9000 (Minimum)	1.000 (Nominal)	1.150 (Maximum)			0.9000 (Minimum)	1.000 (Nominal)	1.150 (Maximum)	

6.75-in. Resistivity At-the-Bit / Equipment Identification

Primary Equipment:

Tool Name and Serial Number

RAB6 - CA

127

Master: 12-Apr-2002 14:53

6.75-in. Resistivity At-the-Bit Calibration

Resistivity: Fixture

Phase	Ring/T1 factor	Value	Phase	Ring/T2 factor	Value	Phase	M0/T1 factor	Value
Master	EXCEEDS LIMIT	0.9620	Master	EXCEEDS LIMIT	0.9670	Master		0.9990
	0.9750 (Minimum)	1.000 (Nominal)		0.9750 (Minimum)	1.000 (Nominal)		0.9750 (Minimum)	1.000 (Nominal)
		1.025 (Maximum)			1.025 (Maximum)			1.025 (Maximum)
Phase	M0/T2 factor	Value	Phase	M2/T1 factor	Value	Phase	M2/T2 factor	Value
Master		1.007	Master		0.9940	Master		0.9970
	0.9750 (Minimum)	1.000 (Nominal)		0.9750 (Minimum)	1.000 (Nominal)		0.9750 (Minimum)	1.000 (Nominal)
		1.025 (Maximum)			1.025 (Maximum)			1.025 (Maximum)
Phase	BTN shallow/T1 factor	Value	Phase	BTN shallow/T2 factor	Value	Phase	BTN medium/T1 factor	Value
Master		1.020	Master	EXCEEDS LIMIT	1.028	Master		1.014
	0.9750 (Minimum)	1.000 (Nominal)		0.9750 (Minimum)	1.000 (Nominal)		0.9750 (Minimum)	1.000 (Nominal)
		1.025 (Maximum)			1.025 (Maximum)			1.025 (Maximum)
Phase	BTN medium/T2 factor	Value	Phase	BTN deep/T1 factor	Value	Phase	BTN deep/T2 factor	Value
Master		1.023	Master		1.014	Master		1.021
	0.9750 (Minimum)	1.000 (Nominal)		0.9750 (Minimum)	1.000 (Nominal)		0.9750 (Minimum)	1.000 (Nominal)
		1.025 (Maximum)			1.025 (Maximum)			1.025 (Maximum)

Master: Calibration date not found

6.75-in. Resistivity At-the-Bit Calibration

Gamma Ray: Blanket

Phase	Gamma ray factor	Value
Master		0.8760
	0.7500 (Minimum)	1.000 (Nominal)
		1.250 (Maximum)

ANADRILL

SCHLUMBERGER

Survey report

24-Apr-2002 21:10:53

Page 1 of 2

Client.....: ESSO AUSTRALIA LTD
Field.....: TUNA

Well.....: WTN-W33A
API number.....:
Engineer.....: JC/TF/JW

COUNTY.....: POOL RIG 453
VICTORIA.....:

Spud date.....: 23-Apr-02
Last survey date.....: 24-Apr-02
Total accepted surveys...: 19
MD of first survey.....: 1957.51 m
MD of last survey.....: 2460.00 m

----- Survey calculation methods-----
Method for positions.....: Minimum curvature
Method for DLS.....: Mason & Taylor

----- Depth reference -----
Permanent datum.....: RIG FLOOR
Depth reference.....:
GL above permanent.....: -61.00 m
KB above permanent.....: 34.69 m
DF above permanent.....: 34.69 m

----- Vertical section origin-----
Latitude (+N/S-).....: 0.00 m
Departure (+E/W-).....: 0.00 m

----- Platform reference point-----
Latitude (+N/S-).....: -304.57 m
Departure (+E/W-).....: -304.57 m

Azimuth from rotary table to target: 352.03 degrees

----- Geomagnetic data -----
Magnetic model.....: BGGM version 2001
Magnetic date.....: 20-Apr-2002
Magnetic field strength...: 1200.71 HCNT
Magnetic dec (+E/W-).....: 13.16 degrees
Magnetic dip.....: -68.71 degrees

----- MWD survey Reference Criteria -----
Reference G.....: 1000.02 mGal
Reference H.....: 1200.71 HCNT
Reference Dip.....: -68.71 degrees
Tolerance of G.....: (+/-) 2.50 mGal
Tolerance of H.....: (+/-) 6.00 HCNT
Tolerance of Dip.....: (+/-) 0.45 degrees

----- Corrections -----
Magnetic dec (+E/W-).....: 13.16 degrees
Grid convergence (+E/W-)..: -0.86 degrees
Total az corr (+E/W-).....: 14.02 degrees
(Total az corr = magnetic dec - grid conv)
Sag applied (Y/N).....: No degree: 0.00

Seq #	Measured depth (m)	Incl angle (deg)	Azimuth angle (deg)	Course length (m)	TVD depth (m)	Vertical section (m)	Displ +N/S- (m)	Displ +E/W- (m)	Total displ (m)	At Azim (deg)	DLS (deg/ 10m)	Srvy tool type	Tool qual type
1	1957.51	59.83	355.70	0.00	1178.14	1382.83	1387.57	-62.45	1388.97	357.42	0.00	TIP	-
2	1996.55	57.23	346.48	39.04	1198.55	1416.06	1420.41	-67.56	1422.02	357.28	2.12	MWD	6-axis
3	2013.81	55.78	347.88	17.26	1208.08	1430.40	1434.45	-70.76	1436.19	357.18	1.08	MWD	6-axis
4	2043.39	55.72	344.56	29.58	1224.73	1454.72	1458.19	-76.58	1460.20	356.99	0.93	MWD	6-axis
5	2071.65	55.31	342.51	28.26	1240.73	1477.76	1480.53	-83.18	1482.86	356.78	0.62	MWD	6-axis
6	2100.42	54.31	339.51	28.77	1257.31	1500.83	1502.76	-90.83	1505.50	356.54	0.92	MWD	6-axis
7	2129.98	53.14	336.66	29.56	1274.80	1523.96	1524.86	-99.71	1528.12	356.26	0.87	MWD	6-axis
8	2158.76	52.62	336.39	28.78	1292.17	1546.07	1545.91	-108.86	1549.74	355.97	0.20	MWD	6-axis
9	2187.60	52.02	336.16	28.84	1309.80	1568.04	1566.81	-118.04	1571.25	355.69	0.22	MWD	6-axis
10	2216.23	53.57	337.03	28.63	1327.11	1590.02	1587.73	-127.09	1592.81	355.42	0.59	MWD	6-axis
11	2245.01	53.13	336.69	28.78	1344.29	1612.30	1608.97	-136.17	1614.72	355.16	0.18	MWD	6-axis
12	2274.45	52.78	336.77	29.44	1362.03	1634.97	1630.55	-145.45	1637.03	354.90	0.12	MWD	6-axis
13	2303.44	53.50	337.36	28.99	1379.42	1657.38	1651.91	-154.49	1659.12	354.66	0.30	MWD	6-axis
14	2332.31	53.54	337.73	28.87	1396.58	1679.85	1673.37	-163.36	1681.32	354.42	0.10	MWD	6-axis
15	2360.71	53.49	336.74	28.40	1413.47	1701.93	1694.42	-172.19	1703.15	354.20	0.28	MWD	6-axis
16	2389.60	53.68	335.85	28.89	1430.62	1724.31	1715.71	-181.54	1725.29	353.96	0.26	MWD	6-axis
17	2418.63	53.23	335.53	29.03	1447.90	1746.69	1736.96	-191.14	1747.45	353.72	0.18	MWD	6-axis
18	2438.02	52.65	335.37	19.39	1459.59	1761.52	1751.04	-197.57	1762.15	353.56	0.31	MWD	6-axis
19	2460.00	52.10	335.20	21.98	1473.01	1778.19	1766.85	-204.85	1778.69	353.39	0.26	Bit	Projection

Company: Esso Australia Ltd.

Well: WTN W33A

Field: Tuna

Rig: Pool Rig 453

State: Victoria

GeoVision

1:200 Measured Depth

Recorded Mode Log

IDEAL services from Anadrill

Schlumberger