Schlumberger

Company: **ESSO Australia Pty Ltd**

8.5 in. Section

Well: **FTA A17A**

Field: **Fortescue**

Rig: **ISDL 175** State: **Victoria**

Rig: ISDL 175 Field: Fortescue Location: Bass Strait Well: FTA A17A Company: ESSO Australia Pty Ltd

VISION Resistivity
1:500 True Vertical Depth
Recorded Mode Log

Location

		Elevation		
Total depth:	3036.0 m		K.B.	Top Drive
Spud date:	02−Sep−07		G.L.	−69.0 m
Runs:	3 To 4		D.F.	42.5 m

Permanent datum:	Mean Sea Level	Elev.:	0.0 m
Log measured from:	Drill Floor	42.5 m	above Perm. datum
Depth reference:	Driller's Depth		

Service Order no.	X = E 611,592.60 m	Longitude	Latitude
07ASQ0020	Y = N 5,748,240.31 m	E 148° 16' 41.155"	S 38° 24' 25.599"

Depth logged:	727.5 m To 3025.6 m	Mag decl:	13.208 deg.	Other services:	
Date logged:	09−Sep−07 To 14−Sep−07	Mag dip:	−68.860 deg.	See Remarks	

Bore hole record

Hole size	from	to
8.5 in.	763.0 m	3036.0 m

Casing record

Size	Density	from	to
10.75 in.	40.5 lb/ft	21.0 m	656.0 m

Mud record

Type	from	to
Accolade SBM	763.0 m	3036.0 m

Borehole deviation record

Min	Max	from	to
34.84 deg	45.37 deg.	763.0 m	3036.0 m

Surface equipment		Software record			
Unit	ESSO Office Unit	IDEAL Wis	ID12_0c_12		
Depth system	PDA	SPM	hspm_12_0c_04		
		LWD	See Remarks		
		MWD	See Remarks		

Bit Run Summary

Run number		3	4	
Bit size	in.	8.5	8.5	
Bit start depth	m	763.0	812.0	
Bit end depth	m	812.0	3036.0	
Top interval logged	m	727.5	776.7	
Bottom interval logged	m	801.6	3025.6	
Begin log: time		15:04	02:10	
Begin log: date		09−Sep−07	11−Sep−07	
End log: time		20:51	17:48	
End log: date		09−Sep−07	14−Sep−07	
Mud data				
Depth	m	812.0	3036.0	
Type		Accolade SBM	Accolade SBM	
Mud weight	ppg	10.60	10.65	
Solids	%	13.5	15.0	
Chlorides	mg/L	44,673	43,918	
Rm	ohm.m@°C	n/a	n/a	
Rmf	ohm.m@°C	n/a	n/a	
Rmc	ohm.m@°C	n/a	n/a	

Potassium	%	n/a	n/a								
Environmental data											
GR											
Mud weight	ppg	10.60	10.65								
Bit size	in.	8.5	8.5								
Resistivity											
Neutron porosity											
Hole Size	in.	8.5	8.5								
Mud weight	ppg	10.60	10.65								
Temperature	°C	47.0	90.0								
Mud salinity	ppk	58.368	57.942								
Formation salinity		n/a	n/a								
Recording rate 1	SEC	5 (ADN, SON)	5 (ADN, SON)								
Recording rate 2	SEC	6 (ARC)	6 (ARC)								
Filtering GR		3 pts	3 pts								
Filtering density		3 pts	3 pts								
Filtering Neutron		3 pts	3 pts								
Company representative		D. Daniels	G. Campbell								
Schlumberger D&M Personnel		M. Y. Tan	M. Amarasena	M. Lu	C. Soper	M. How					

DISCLAIMER

THE USE OF AND RELIANCE UPON THIS RECORDED−DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED−DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED−DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED−DATA.

OTHER SERVICES FOR RUN 3	OTHER SERVICES FOR RUN 4	OTHER SERVICES FOR RUN
Directional Drilling Directional Surveys Annular Pressure & Temperature Shock & Vibrations	Directional Drilling Directional Surveys Annular Pressure & Temperature Shock & Vibrations	
REMARKS: RUN NUMBER 3	**REMARKS: RUN NUMBER 4**	**REMARKS: RUN NUMBER**
Depth is referenced to Driller's Depth. Gamma ray is corrected for mud weight, tool size and bit size. Resistivity is borehole compensated and environmentally corrected. Neutron porosity is corrected for the effects of borehole size (bit size), temperature, mud salinity, and mud hydrogen index (a factor of mud weight, mud temperature and pressure). Neutron porosity is calculated using a limestone matrix density of 2.71 g/cm3. POOH due to loss of MWD signal.	Depth is referenced to Driller's Depth. Gamma ray is corrected for mud weight, tool size and bit size. Resistivity is borehole compensated and environmentally corrected. Neutron porosity is corrected for the effects of borehole size (bit size), temperature, mud salinity, and mud hyrdrogen index (a factor of mud weight, mud temperature and pressure). Neutron porosity is calculated using a limestone matrix density of 2.71 g/cm3 POOH due to reaching TD of FTA A17A.	

EQUIPMENT DESCRIPTION

RUN 3	RUN 4	RUN

DOWNHOLE EQUIPMENT

6−3/4'' adnVISION*
DHS: 8.3A02
Blade OD: 8−1/4''
S/N: 373

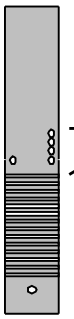
Neutron F 35.51
Neutron N 35.35
Density S 34.40
Density L 34.31
UltraSonic 33.92
R−O Port 33.16

37.13

6−3/4'' sonicVISION*
DHS: 6.6B04
S/N: 649

Delta−T 27.88
R−O port 27.48

31.15



8−3/8'' ILS
S/N: S−31746−4

23.71

6−3/4'' TelesScope
MDC: FA27
MEC: AB−232
MDI: CA−2084
MVC: PMVC−AA−109

D&I 18.48
MVC 17.83

22.82

8−3/4'' ILS
S/N: OSS0701135

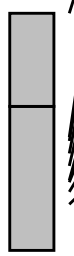
R−O Port 11.51
T5 11.41
T3 11.10
T1 10.80

14.82

6−3/4'' arcVISION*
DHS: 9.3b13
S/N: FY68

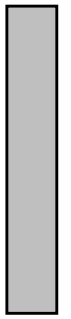
Gamma Ray 10.44
Receiver 10.39
T2 10.14
T4 9.83
ARC APRS 9.68

13.82



6−3/4'' PowerDrive Xceed*
S/N: 109

7.91



8−1/2'' Reed Hycalog PDC Bit
S/N: 215733

0.00

0.25

Maximum string diameter 8−1/2 in.

All lengths in Meters

DOWNHOLE EQUIPMENT

6−3/4'' adnVISION*
DHS: 8.3A02
Blade OD: 8−1/4''
S/N: AD41

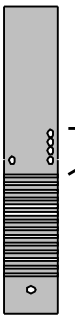
Neutron F 35.31
Neutron N 35.15
Density S 34.20
Density L 34.11
UltraSonic 33.72
R−O Port 32.96

37.13

6−3/4'' sonicVISION*
DHS: 6.6B04
S/N: 630

Delta−T 27.57
R−O port 27.17

30.94



8−3/8'' ILS
S/N: OSS060654C

23.35

6−3/4'' TeleScope
MDC: VC64
MEC: AB−373
MDI: CA−1841
MVC: PMVC−AA−282

D&I 17.89
MVC 17.24

22.24

R−O Port 11.51
T5 11.41
T3 11.10
T1 10.80

6−3/4'' arcVISION*
DHS: 9.3b13
S/N: 1191

Gamma Ray 10.44
Receiver 10.39
T2 10.14
T4 9.83
ARC APRS 9.68

13.75

6−3/4'' PowerDrive Xceed*
S/N: 111

7.91

8−1/2'' Reed Hycalog PDC Bit
S/N: 215733

0.00

0.25

Maximum string diameter 8−1/2 in.

All lengths in Meters

Variable Name	Variable Description	Run Name & Value	
Run Number		3	4
General Information			
BHT_RM	Bottom Hole Temperature (RM)	47.000000	90.000000
BSAL_RM	Mud Salinity (RM)	58.367577	57.291042
BS_RM	Bit Size (RM)	8.500000	8.500000
COEF_M	User Defined FEXP in Clean Sand	1.650000	1.650000
C_WS	Overpressure correction to Sw and M	1.000000	1.000000
FEXP	Formation Factor Exponent(RM)	2.000000	2.000000
FNUM	Formation Factor Enumerator(RM)	1.000000	1.000000
FPHI_RM	Formation Factor Porosity Source (RM)	XPLOT	XPLOT
MST_RM	Mud Sample temperature (RM)	23.88889	23.88889
MW_RM	Mud Weight (RM)	10.600000	10.650000
OBMF_RM	Oil Based Mud (RM)	YES	YES
RHOF_RM	Mud Filtrate Density (RM)	1.000000	1.000000
RHOM_RM	Matrix density (RM)	2.710000	2.710000
RMS_RM	Resistivity of Mud Sample (RM)	1000.000000	1000.000000
RWA_COMP_M	Rwa computation model	BASIC	BASIC
RWA_DEN_AD	Rwa Density Input ADN	ROBB	ROBB
RWA_DEN_CD	Rwa Density Input CDN	RHOB	RHOB
RWA_DEN_IN	Rwa Density Input	ROBB	ROBB
RWA_FORM_M	Rwa computation formation model	CLASTIC	CLASTIC
RWA_RES_IN	Rwa computation resistivity input	P34H	P34H
RWS_RM	Resistivity of Connate Water (RM)	1.000000	1.000000
SHT_RM	Surface Hole Temperature (RM)	10.000000	10.000000
TD_RM	Total Measured Depth (RM)	812.000000	3036.00000
TWS_RM	Temperature of Connate Water (RM)	23.88889	23.88889
VF_ILLI	Fraction of illite in shales	0.500000	0.500000
VF_KAOL	Fraction of kaolinite in shales	0.500000	0.500000
VF_MONT	Fraction of montmorillonite in shales	0.000000	0.000000
XPDM_RM	Cross plot density porosity multiplier	0.675000	0.675000
XPNM_RM	Cross plot neutron porosity multiplier	0.325000	0.325000
ARC			
LWD_RM/STATION_FILE/PARAMETERStation Time-frame file name		Station	Station
A12A	ARC Air Cal Attenuation From T1 at 2 MHz	8.980860	8.459310
A14A	ARC Air Cal Attenuation From T1 at 400 KHz	8.986440	8.437310
A22A	ARC Air Cal Attenuation From T2 at 2 MHz	5.964700	6.484980
A24A	ARC Air Cal Attenuation From T2 at 400 KHz	5.966310	6.515550
A32A	ARC Air Cal Attenuation From T3 at 2 MHz	5.607090	5.085840
A34A	ARC Air Cal Attenuation From T3 at 400 KHz	5.602970	5.054970
A42A	**ARC Air Cal Attenuation From T4 at 2 MHz**	**3.871990**	**4.389600**
A44A	**ARC Air Cal Attenuation From T4 at 400 KHz**	**3.869330**	**4.413140**
A52A	ARC Air Cal Attenuation From T5 at 2 MHz	4.157310	3.635930
A54A	ARC Air Cal Attenuation From T5 at 400 KHz	4.162690	3.617580
ABNT	Abnormal Transmitter Indicator	No_Tx_Failed	No_Tx_Failed
ADHS	ARC Down Hole Software Version	No_Tx_Failed	No_Tx_Failed
ANISO_COMP	Anisotropy Computation Option	YES	YES
APICG	ARC5 Gamma Ray Gain Factor	1.039250	1.095470
APIG	ARC Gamma Ray API Gain Factor	-1.000000	-1.000000
ATMP_ARC	ARC Select Temperature Channel	Annulus_Temp	Annulus_Temp
ATRN	ARC Tool Run Number	3	4
ATSN	ARC Tool Serial Number	Annulus_Temp	Annulus_Temp
AZMF	Formation DIP Azimuth	0.000000	0.000000
BH_COMPUTE	Borehole Inversion Computation Option	YES	YES
CALG	ARC Gamma Ray Cal Gain Factor	1.039250	1.095470
CALI_SLCT_	ARC Caliper Selection	BITSIZE	BITSIZE
CDPTH_ARC	Process Start Depth	100.000000	100.000000
DIELEC_COM	Dielectric Computation Option	YES	YES
DIPF	Formation DIP Angle	0.000000	0.000000
ERRCT	Percentage Error Cutoff	4.500000	4.500000
GRSH	GR Shale (Invasion Computation Cutoff)	1000.000000	1000.000000
HIGH_BLEND	High Resistivity Threshold for Blending	2.000000	2.000000
INCLIN_B0	ARC Bias Constant (mg)	0.000000	0.000000
INCLIN_B1	ARC Bias First-order Coefficient (mg/degC)	0.000000	0.000000
INCLIN_B2	ARC Bias Secod-order Coeeficient (mg/degC)	0.000000	0.000000
INCLIN_B3	ARC Bias Third-order Coeeficient (mg/degC)	0.000000	0.000000
INCLIN_C0	ARC Current Scale Factor Constant (mA/g)	1.000000	1.000000
INCLIN_C1	ARC Scale First-order Coeeficient (mA/g/degC)	0.000000	0.000000
INCLIN_C2	ARC Scale Second-order Coeeficient (mA/g/degC)	0.000000	0.000000
INCLIN_C3	ARC Scale Third-order Coeeficient (mA/g/degC)	0.000000	0.000000
INVAS_COMP	Invasion Computation Option	YES	YES
JSD_ARC	ARC Acquisition start date	YES	YES
KPER	Potassium Concentration (RM)	0.000000	0.000000
LOW_BLEND	Low Resistivity Threshold for Blending	1.000000	1.000000
MSWS	ARC Wizard Model Switch Window	5.000000	5.000000
MULTIEFFEC	Multi Effect Option	YES	YES
P12A	ARC Air Cal Phase-Shift From T1 at 2 MHz	1.019090	1.831860
P14A	ARC Air Cal Phase-Shift From T1 at 400 KHz	-0.350909	-0.359529
P22A	ARC Air Cal Phase-Shift From T2 at 2 MHz	-0.927967	-1.713500
P24A	ARC Air Cal Phase-Shift From T2 at 400 KHz	0.284876	0.241835
P32A	ARC Air Cal Phase-Shift From T3 at 2 MHz	0.923579	1.759360
P34A	ARC Air Cal Phase-Shift From T3 at 400 KHz	-0.322901	-0.329207
P42A	ARC Air Cal Phase-Shift From T4 at 2 MHz	-0.977645	-1.751440
P44A	ARC Air Cal Phase-Shift From T4 at 400 KHz	0.287438	0.229570
P52A	ARC Air Cal Phase-Shift From T5 at 2 MHz	0.906331	1.735070
P54A	ARC Air Cal Phase-Shift From T5 at 400 KHz	-0.357818	-0.326719
POFFSET_AR	ARC: Pressure Offset	0.000000	0.000000
PRTD	Preferred Resistivity Log for Rt Display while Multi-Effects	P34B	P34B
PSOF_ADJ_T	ARC: User Input Phase offset	0.000000	0.000000

RESTIK	ARC resistivity tick source	Phase	Phase
SHIG	ARC High Shock Risk Level	0.500000	0.500000
SHT_RM	Ground Level Temperature (Mud-Line When Offshore) (RM)	10.000000	10.000000
SMED	ARC Medium Shock Risk Level	0.330000	0.330000
SMIN	ARC Minimum Shock Risk Level	0.160000	0.160000
SUPD	ARC Real Time Shock Update Rate	30.000000	30.000000
TCODE_ARC	ARC Tool File Code	30.000000	30.000000
TSIZ_ARC	ARC Tool Size	6.750000	6.750000
UNIFORM_CO	Uniform Rock Option	YES	YES
VERS_ARC	ARC Down hole software version Number	9.300000	9.300000
WRK	Way to Report Potassium Concentration (RM)	K_by_Wgt_%	K_by_Wgt_%

ISONIC

FP_SD	First Sample delay	400.00	400.00
STC_CF	Center frequency of Filter	13.00	13.00
STC_BW	Bandwidth (kHz)	Default	Default
STC_RWI	Receiver waveform ignored	None	None
PM_TOFF	Tool Time offset from surface system	0.00	0.00
DT_COH	Delta-T Coherence Cutoff Value	0.70	0.70
PPC_PF	Porosity Formula	Raymer-Hunt	Raymer-Hunt
PPC_PS	Sonic Porosity Source	DTRA	DTRA
PPC_MDT	Matrix Delta-T	47.60	47.60
PPC_FDT	Fluid Delta-T	189.00	189.00

ADN

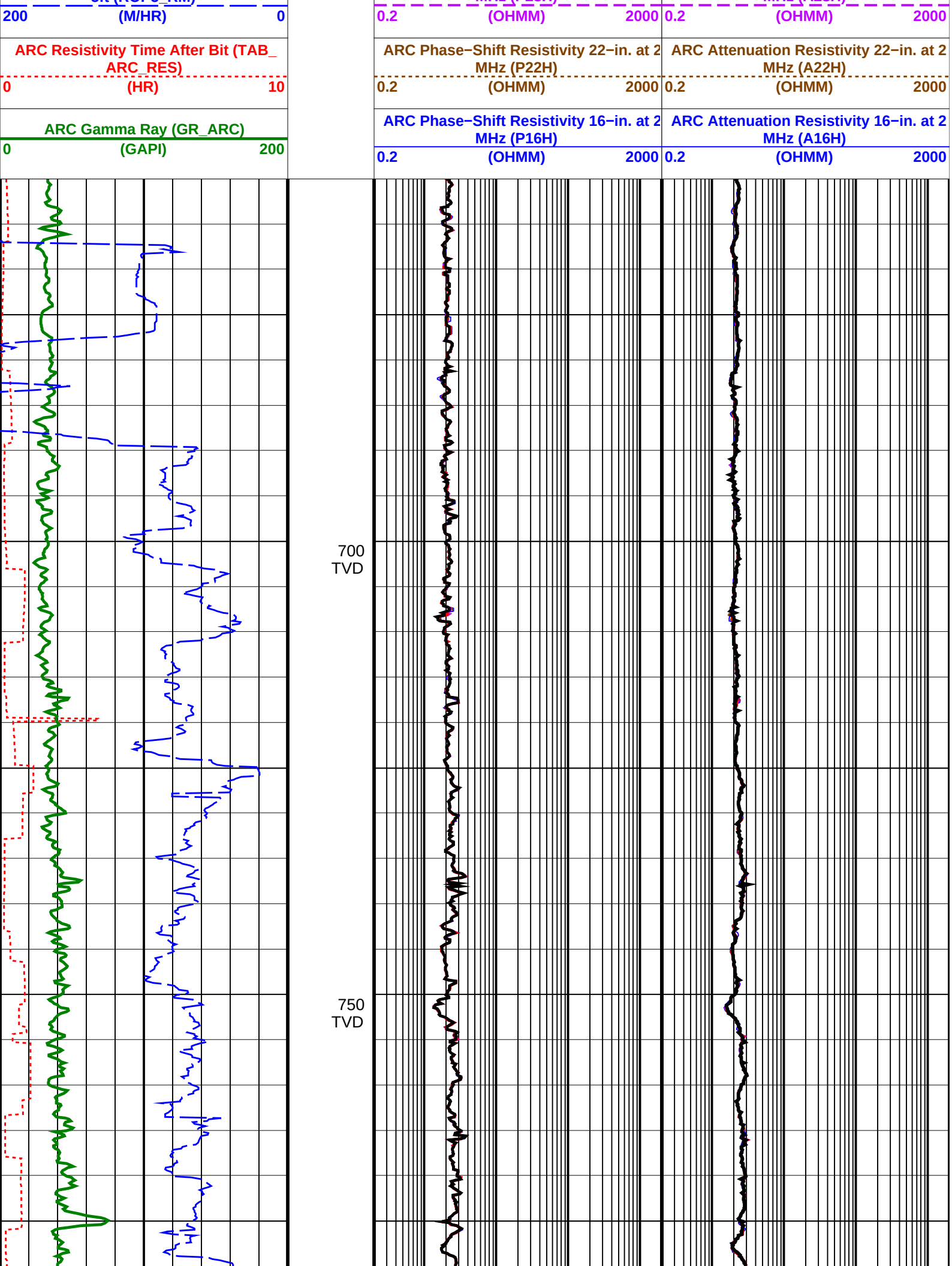
ADN_CHASSI	ADN Chassis Type String	ADN	ADN
ADN_COLLAR	ADN Collar Type String	ADN	ADN
ADN_STAB_S	ADN Stabilizer Type String	ADN	ADN
ALPHA_COMP	Perform Density Enhanced Vertical Resolution process ?	YES	YES
ALPHA_COMP	Perform Neutron Enhanced Vertical Resolution process ?	YES	YES
AVE_ADN	ADN/Array Channels: perform averaging(RM) :	YES	YES
A_DHS	ADN Down Hole Software Version String	YES	YES
CHI_RM	Caliper High limit from BS (RM)	3.000000	3.000000
CLO_RM	Caliper Low limit from BS (RM)	0.000000	0.000000
DEVI	Well Section Deviation	26.219999	35.270000
DTIK_SEL	ADN: Density Tick Channel Name	LSAZ	LSAZ
DTMUD	Delta-T for Mud	208.699997	210.020004
DYN_IMG_CO	Generate Dynamic Normalized Image?	YES	YES
ECC_CORR_A	Perform Eccentering Correction for TNPH?	YES	YES
ENVCOR	Neutron Quadrant Processing: Environmental Correction?	YES	YES
EVRL	EVR Process averaging number of samples (RM)	49	49
FCD	Future Casing (Outer) Diameter	0.000000	0.000000
GCSE	Generalized Caliper Selection	BS	BS
HPS	ADSE-EB (High Pressure Inconel Chassis)?	NO	NO
IBS	Intergal Blade Stabilizer Collar?	YES	YES
IDQT	Image Derived Quality Threshold	1.000000	1.000000
IHVS	Integrated Hole Volume Start Value(RM)	0.000000	0.000000
IMAGE_MAX_	**Image SOA (Quadrant) Right Scale**	**2.500000**	**2.500000**
IMAGE_MAX_	**Image PEF(Segment) Right Scale**	**6.000000**	**6.000000**
IMAGE_MAX_	Image RHOB(Segment) Right Scale	2.650000	2.650000
IMAGE_MIN_	Image SOA (Quadrant) Left Scale	0.000000	0.000000
IMAGE_MIN_	Image PEF(Segment) Left Scale	2.000000	2.000000
IMAGE_MIN_	Image RHOB(Segment) Left Scale	2.050000	2.050000
JSD_ADN	ADN Acquisition start date	2.050000	2.050000
LITHO_TYPE	Lithology (RM)	LIME	LIME
N1FTU_6_RM	ADN: Neutron Bank 1 Far Tubes used :	1-2-3	1-2-3
N2FTU_6_RM	ADN: Neutron Bank 2 Far Tubes used :	1-2-3	1-2-3
NNTU_RM	ADN Neutron Near Banks Used	1-2	1-2
NTIK_SEL	ADN: Neutron Tick Channel Name	FR11	FR11
SOCNL	Standoff Distance of the CNL Tool	1.000000	1.000000
SSIZ_ADN	ADN Stabilizer Size	8.250000	8.250000
STOH	ADN Density Top of Hole Sector (Left Boundary):	SECTOR_0	SECTOR_0
TRPM_RM	Average Tool Rotational Speed	20.000000	20.000000
USMIN_RM	ADN:Minimum Ultrasonic standoff (RM)	0.180000	0.180000
USWF_RM	ADN:Process Ultrasonic Waveform?	YES	YES
VERS_ADN	ADN Downhole Software Version	8.300000	8.300000
WSDI	Window Size of Dynamic Normalization Image	15.000000	15.000000

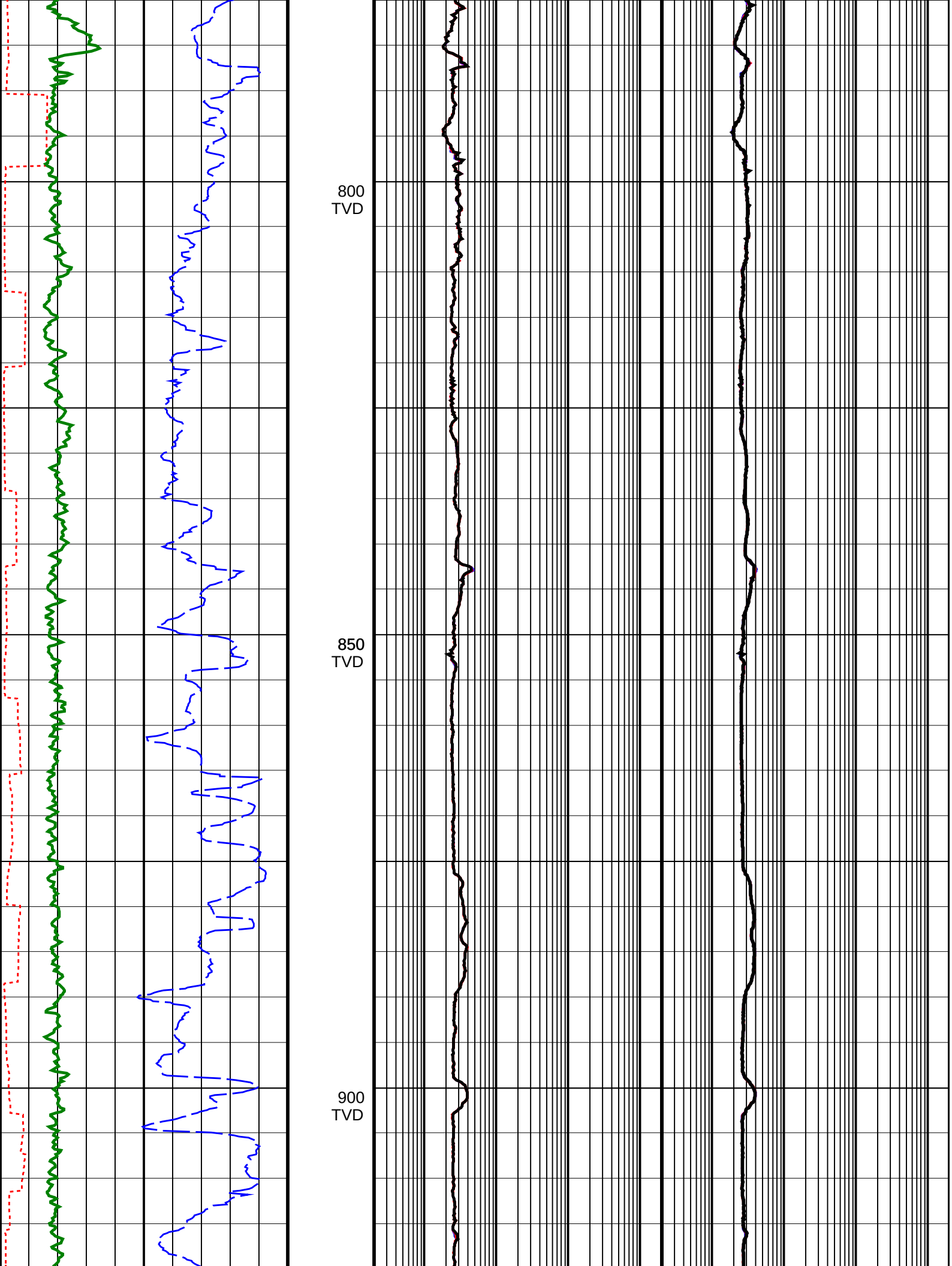
IDEAL Version: ID12_0C_11

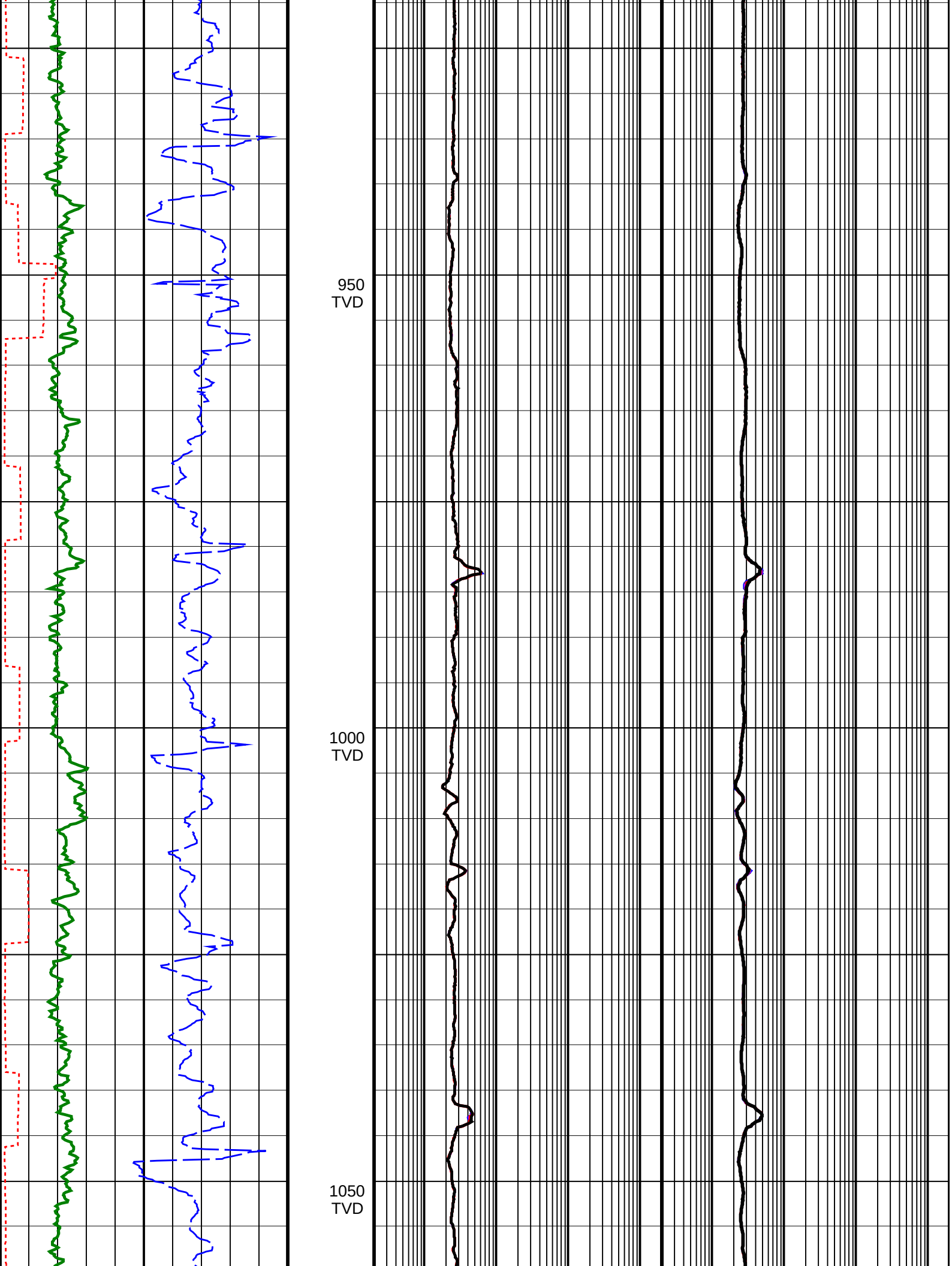
IDF

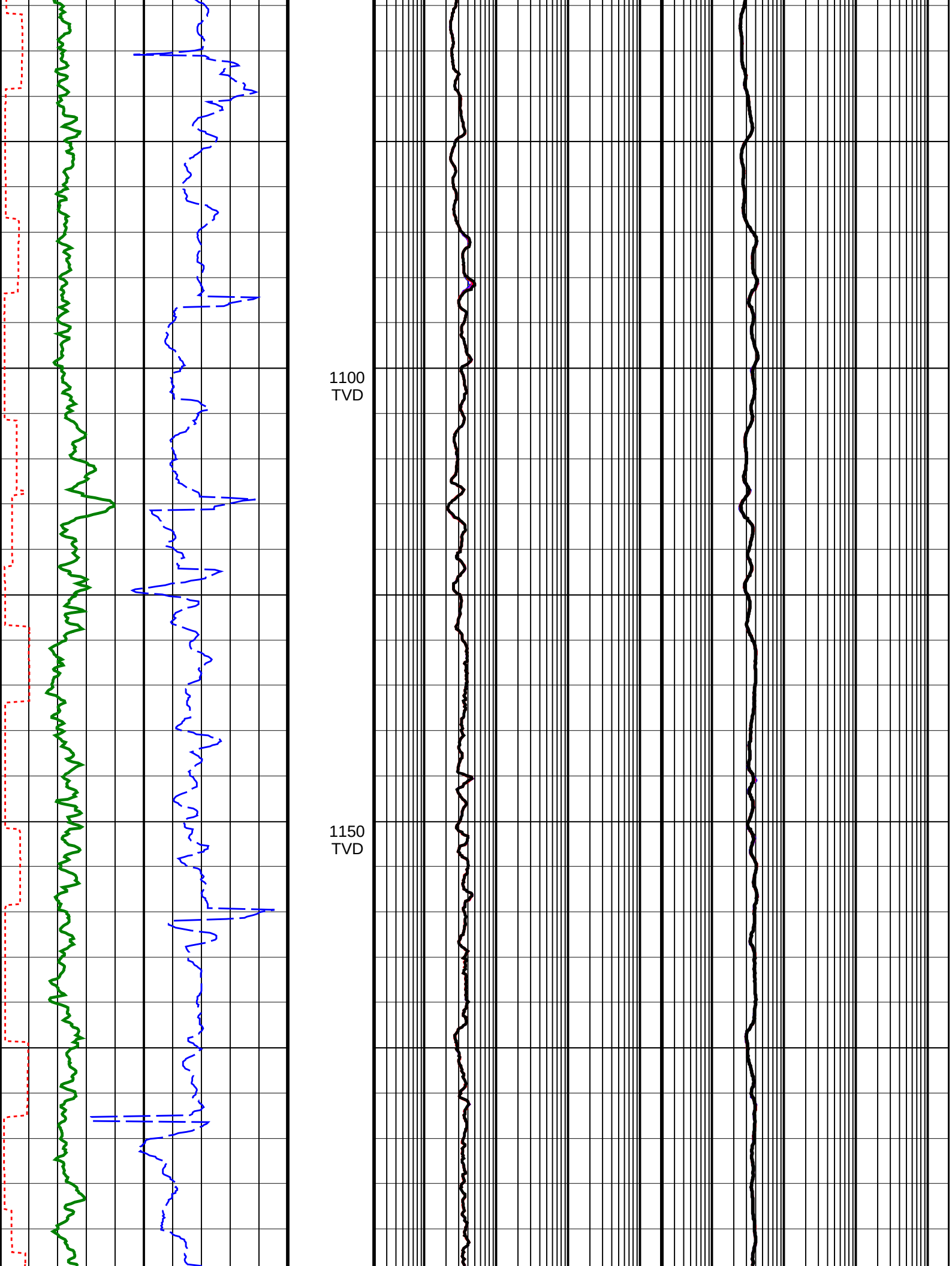
Format: VISION Resistivity 2MHz **Vertical Scale: 1:500** **Graphics File Created: 19-Sep-2007 15:16**

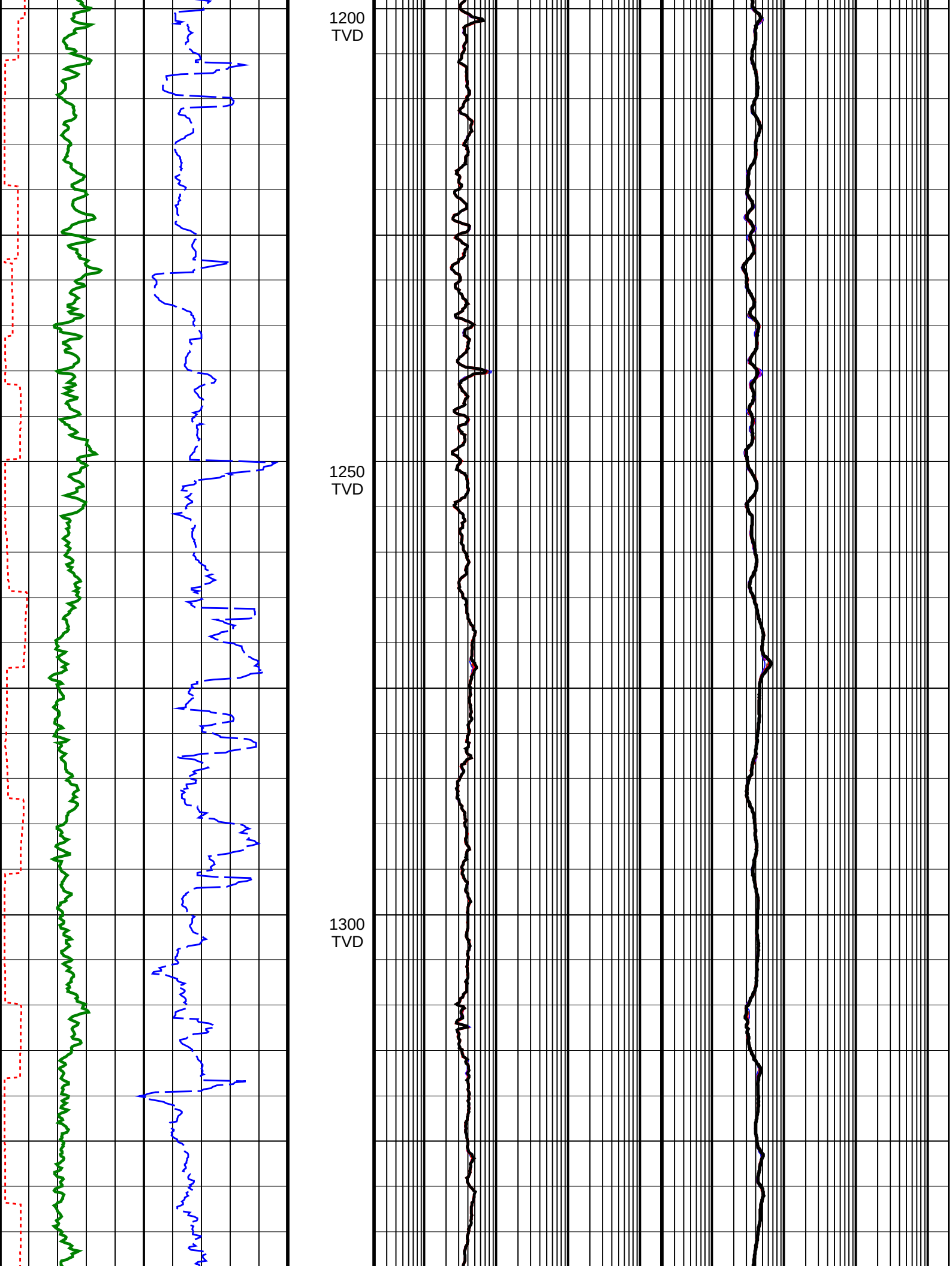
	ARC Phase-Shift Resistivity 40-in. at 2 MHz (P40H)	ARC Attenuation Resistivity 40-in. at 2 MHz (A40H)
	0.2 (OHMM) 2000	0.2 (OHMM) 2000
	ARC Phase-Shift Resistivity 34-in. at 2 MHz (P34H)	ARC Attenuation Resistivity 34-in. at 2 MHz (A34H)
	0.2 (OHMM) 2000	0.2 (OHMM) 2000
Rate of Penetration, Averaged over Last 5ft (ROP5_RM)	ARC Phase-Shift Resistivity 28-in. at 2 MHz (P28H)	ARC Attenuation Resistivity 28-in. at 2 MHz (A28H)

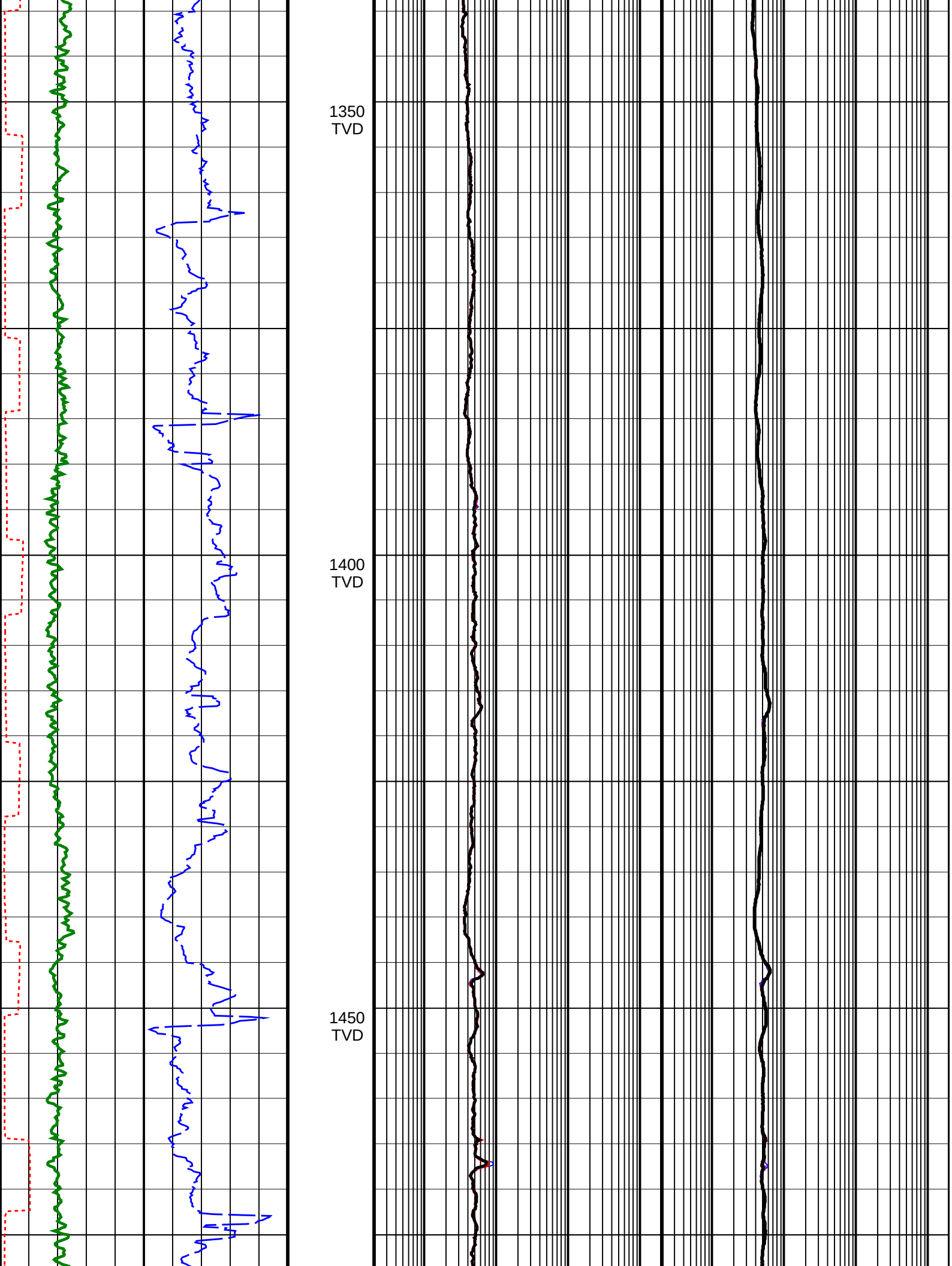

200
(M/HR)
0
ARC Resistivity Time After Bit (TAB_ARC_RES)
0
(HR)
10
ARC Gamma Ray (GR_ARC)
0
(GAPI)
200
0.2
(OHMM)
2000
ARC Phase−Shift Resistivity 22−in. at 2 MHz (P22H)
0.2
(OHMM)
2000
ARC Attenuation Resistivity 22−in. at 2 MHz (A22H)
0.2
(OHMM)
2000
ARC Phase−Shift Resistivity 16−in. at 2 MHz (P16H)
0.2
(OHMM)
2000
ARC Attenuation Resistivity 16−in. at 2 MHz (A16H)
0.2
(OHMM)
2000
700
TVD
750
TVD

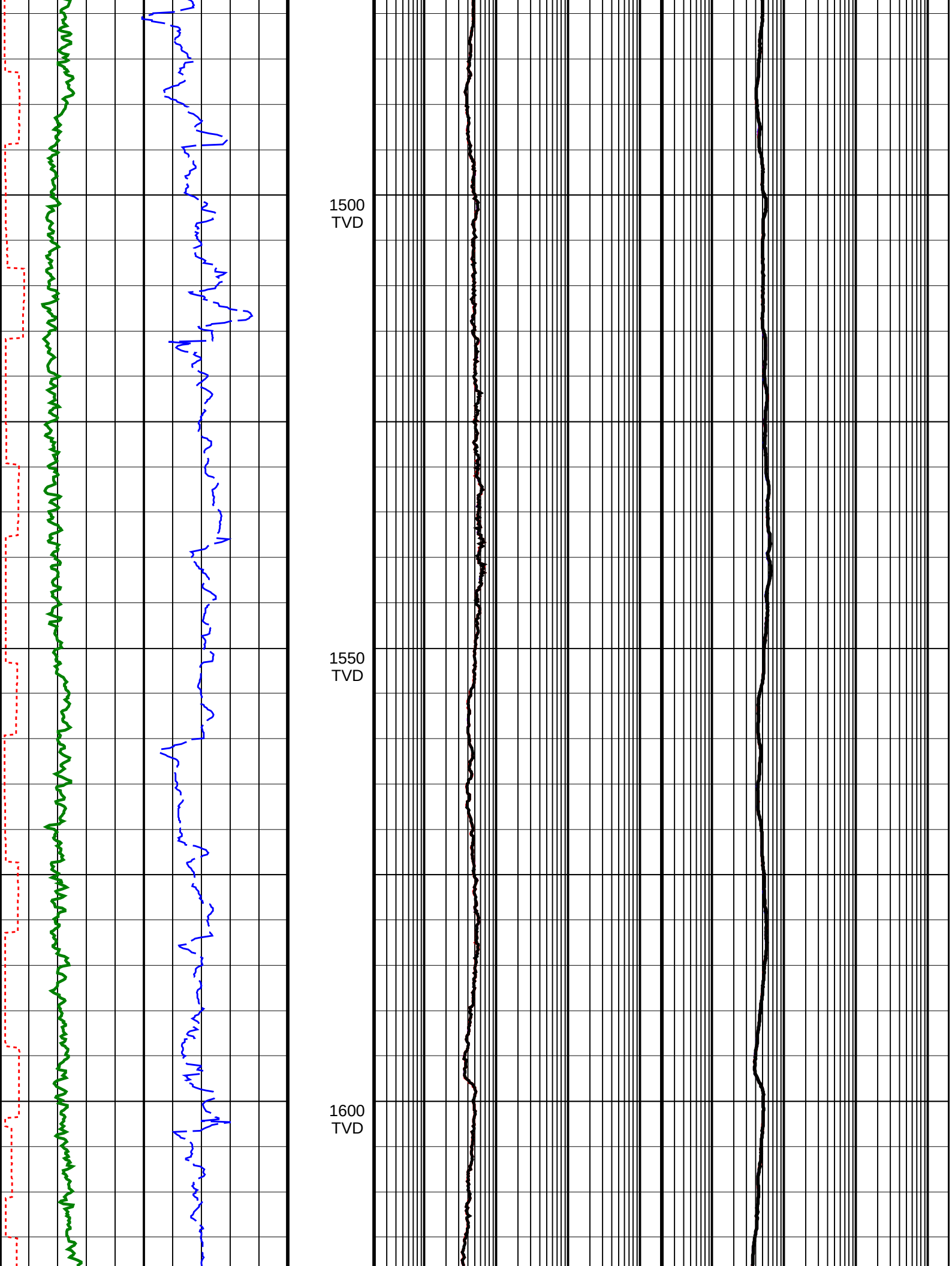

800
TVD
850
TVD
900
TVD

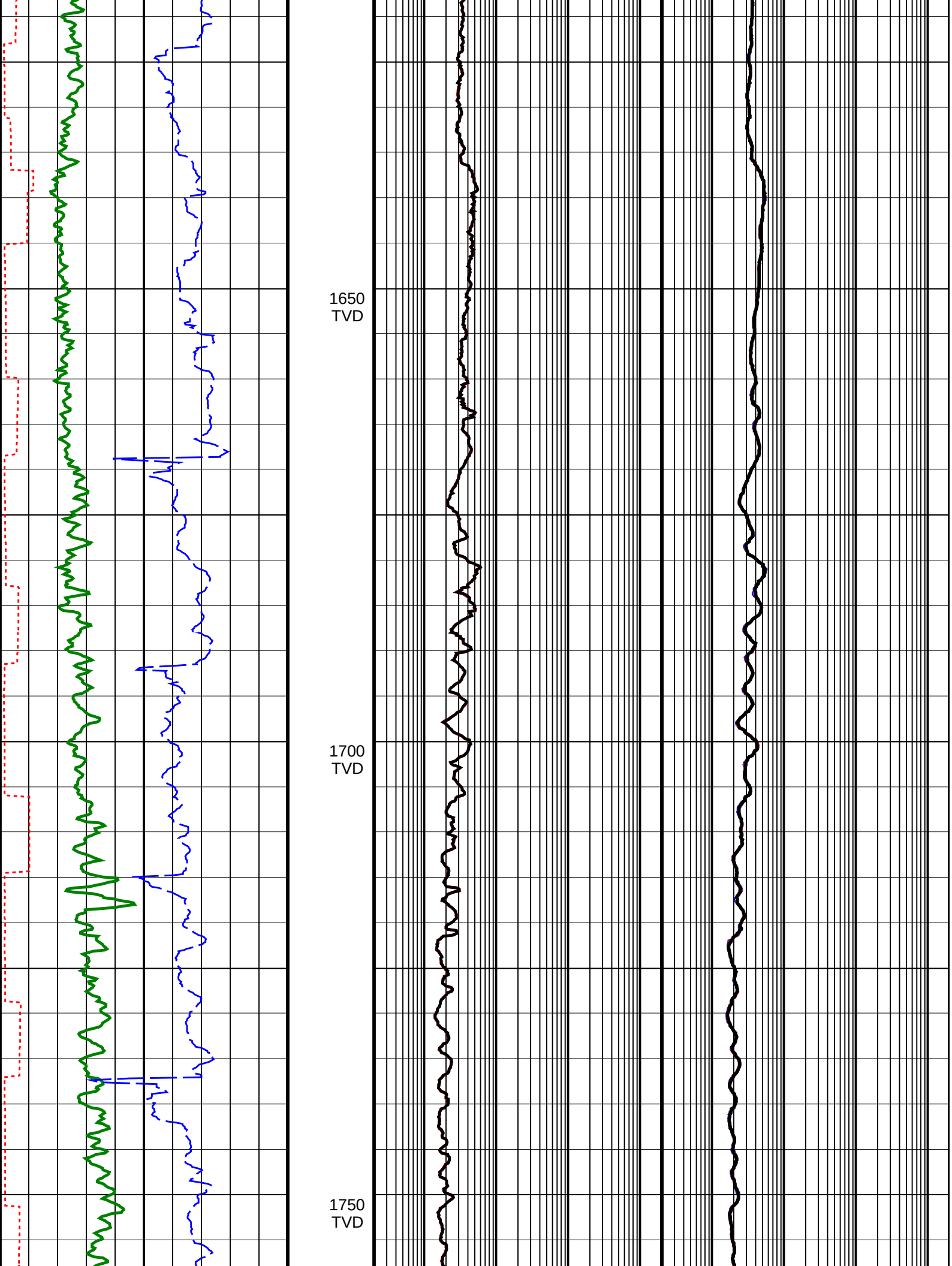

950
TVD
1000
TVD
1050
TVD

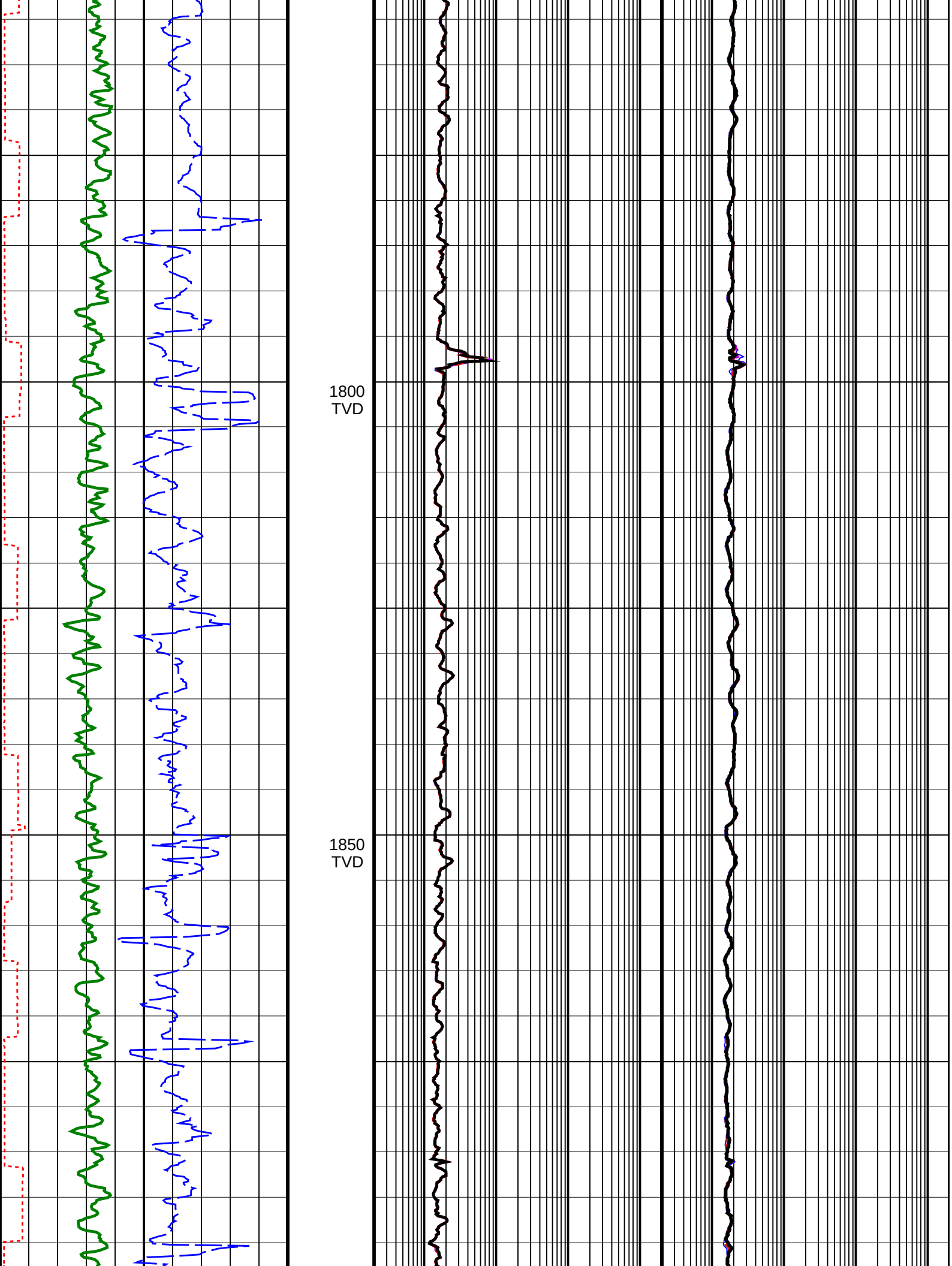

1100
TVD
1150
TVD

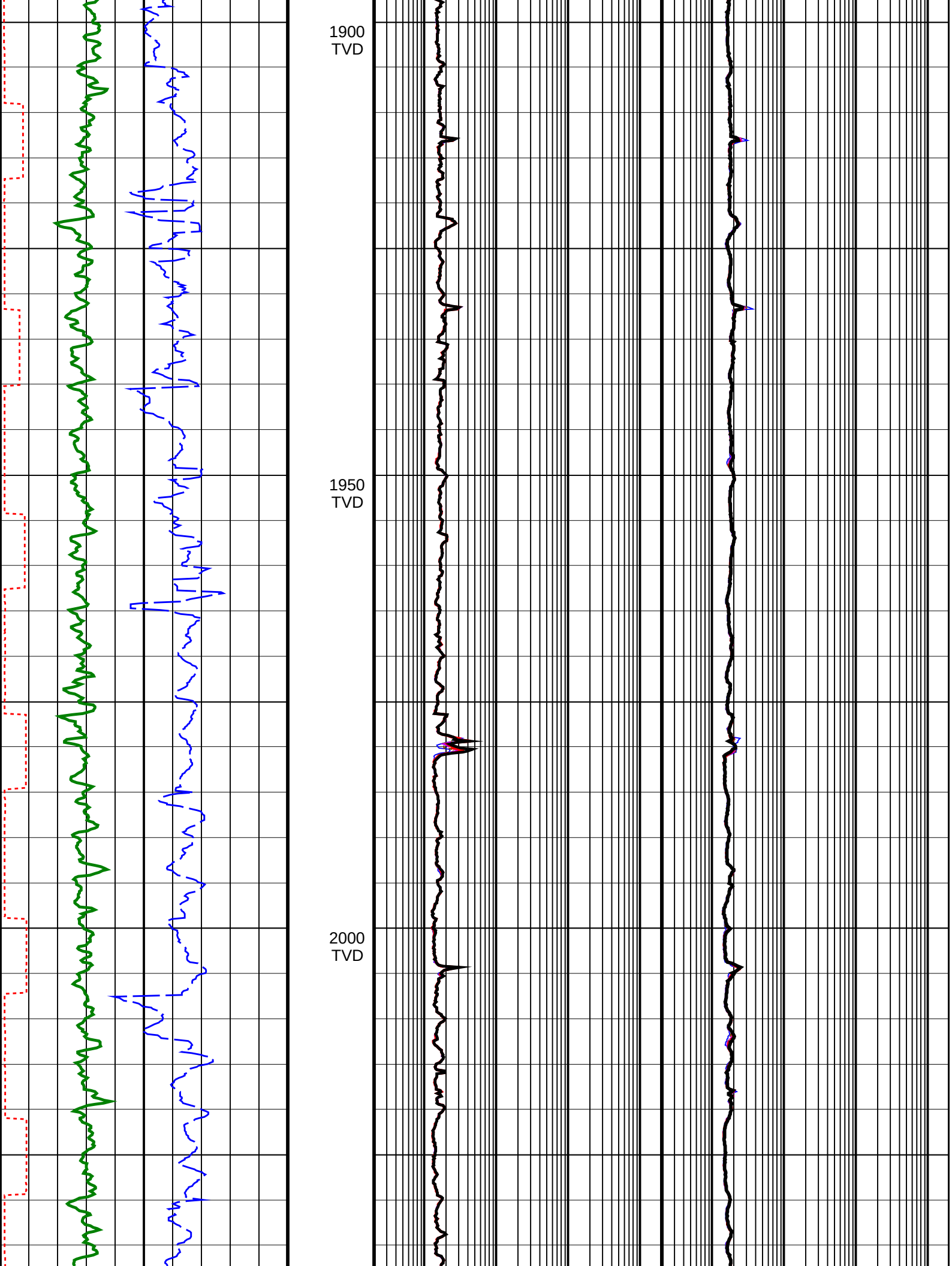

1200
TVD
1250
TVD
1300
TVD

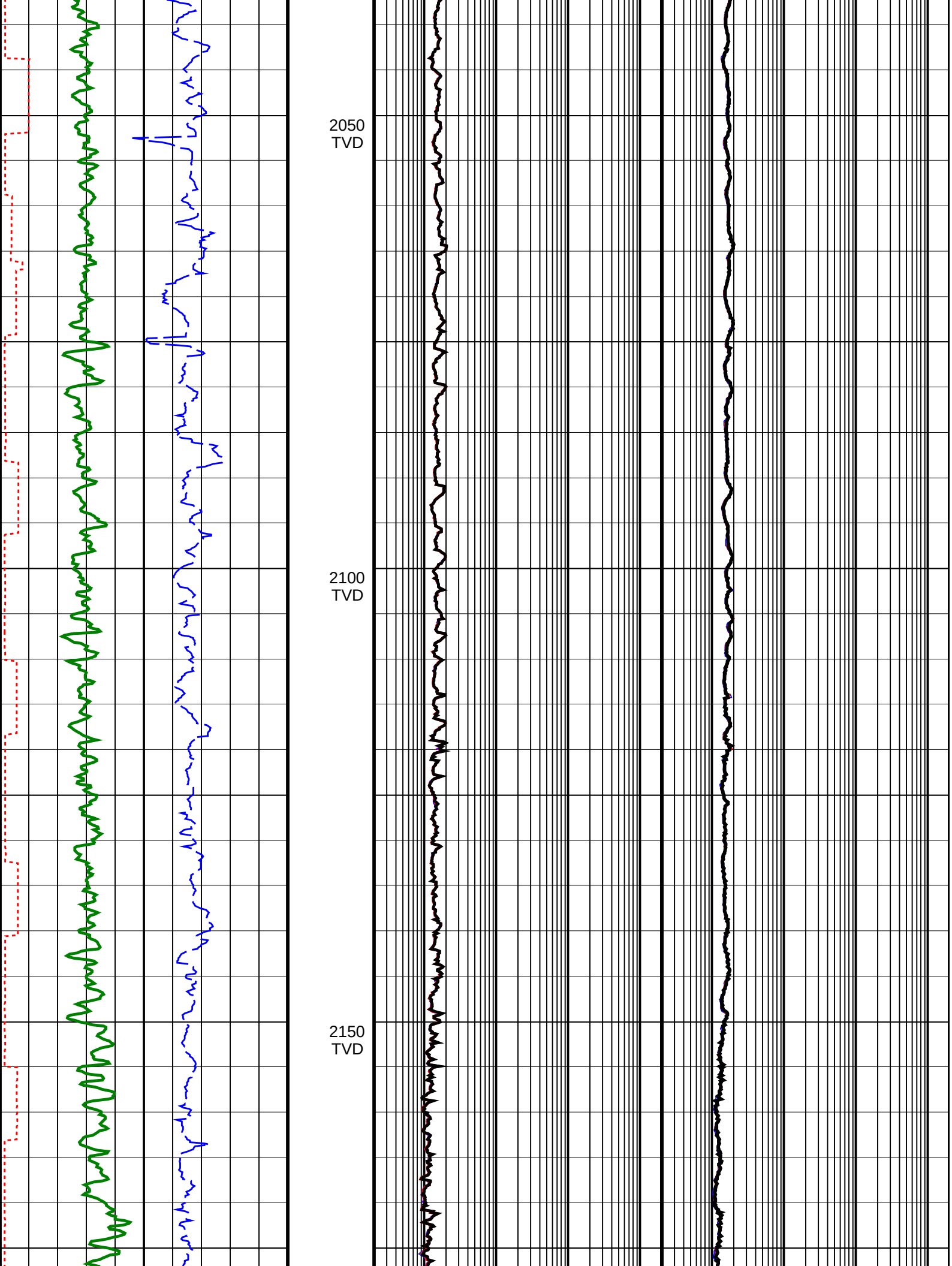

1350
TVD
1400
TVD
1450
TVD

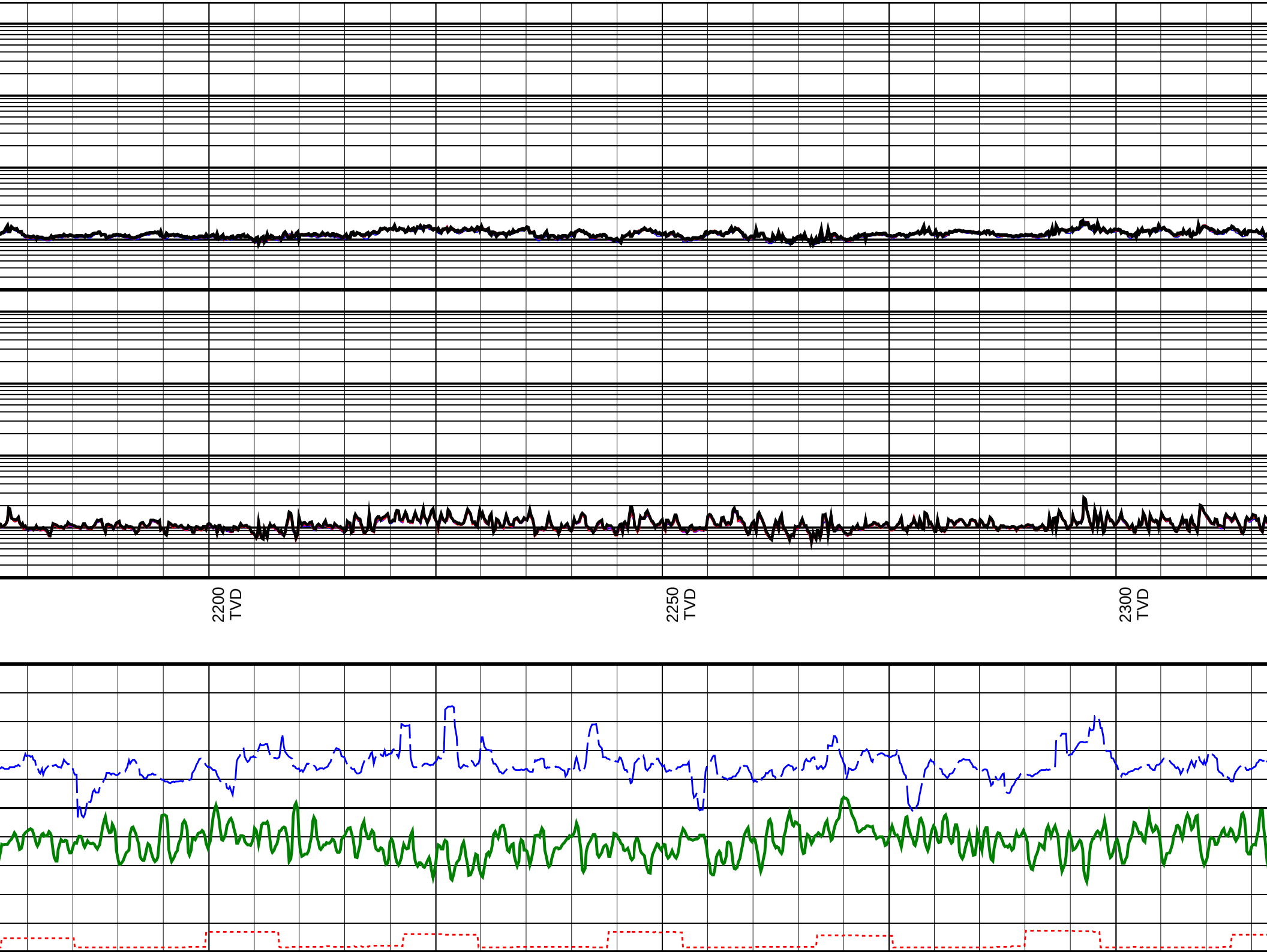

1500
TVD
1550
TVD
1600
TVD

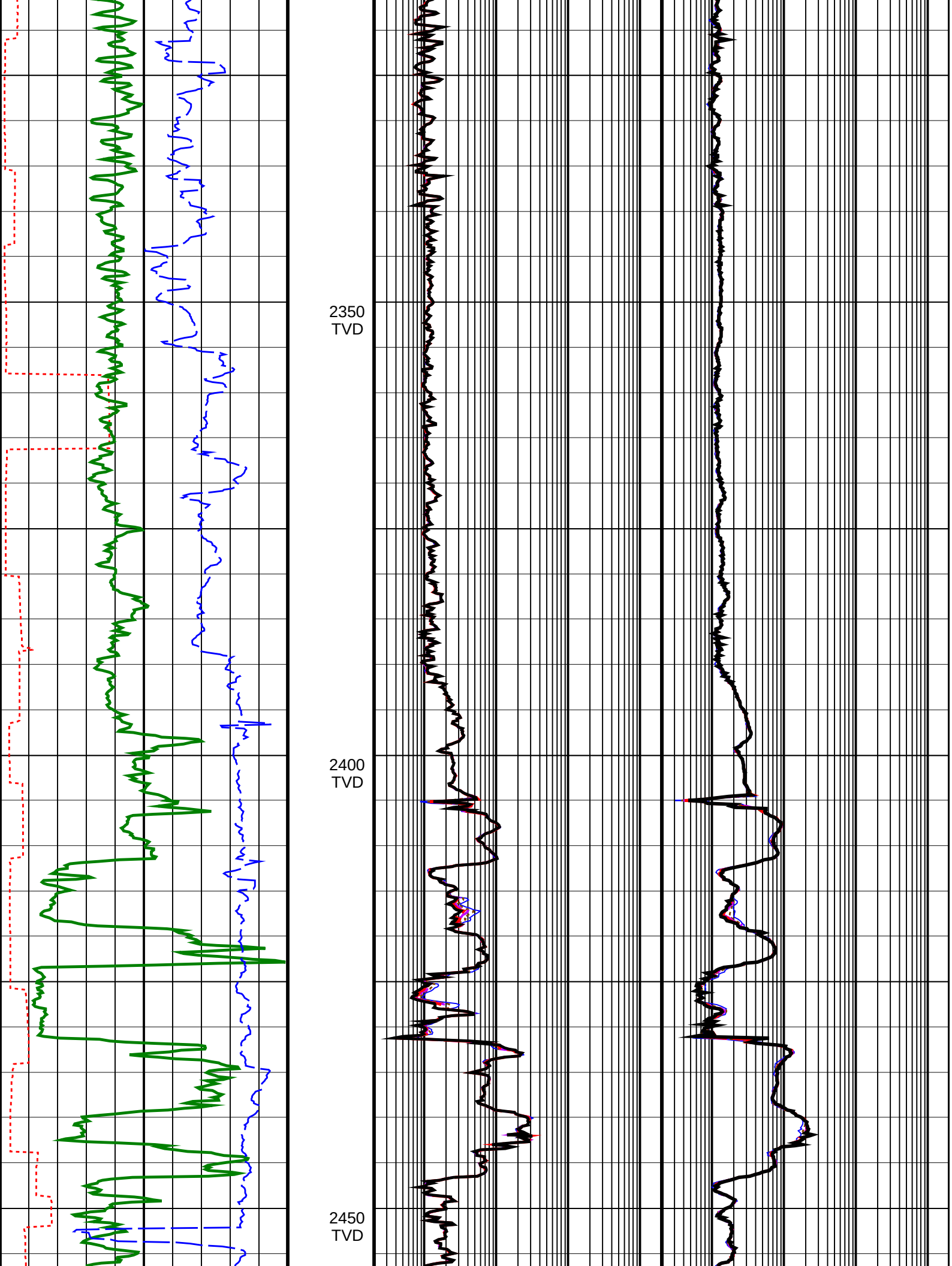

1650
TVD
1700
TVD
1750
TVD

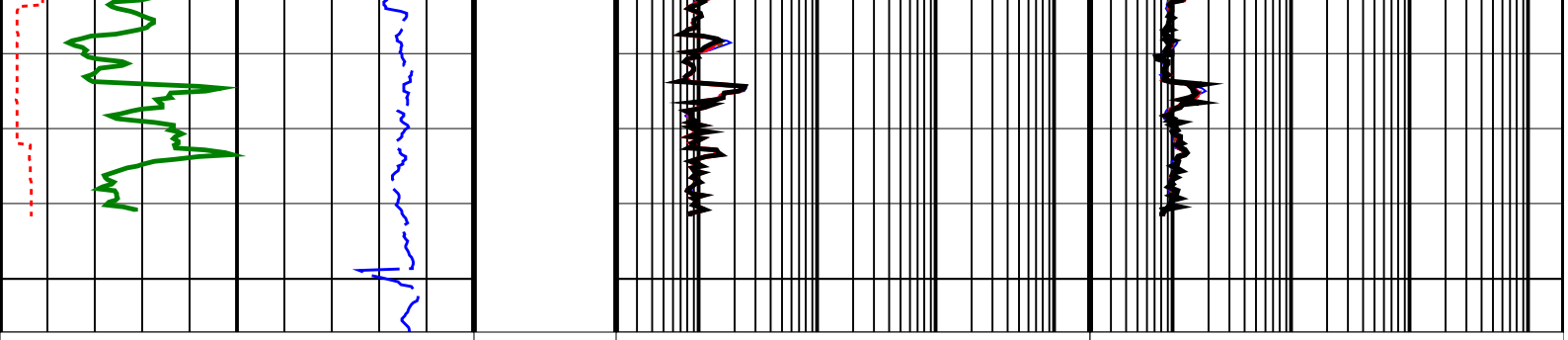

1800
TVD
1850
TVD


1900
TVD
1950
TVD
2000
TVD


2050
TVD
2100
TVD
2150
TVD


2200
TVD
2250
TVD
2300
TVD


2350
TVD
2400
TVD
2450
TVD



ARC Gamma Ray (GR_ARC)		
0	(GAPI)	200

ARC Resistivity Time After Bit (TAB_ARC_RES)		
0	(HR)	10

Rate of Penetration, Averaged over Last 5ft (ROP5_RM)		
200	(M/HR)	0

ARC Phase−Shift Resistivity 16−in. at 2 MHz (P16H)		
0.2	(OHMM)	2000

ARC Attenuation Resistivity 16−in. at 2 MHz (A16H)		
0.2	(OHMM)	2000

ARC Phase−Shift Resistivity 22−in. at 2 MHz (P22H)		
0.2	(OHMM)	2000

ARC Attenuation Resistivity 22−in. at 2 MHz (A22H)		
0.2	(OHMM)	2000

ARC Phase−Shift Resistivity 28−in. at 2 MHz (P28H)		
0.2	(OHMM)	2000

ARC Attenuation Resistivity 28−in. at 2 MHz (A28H)		
0.2	(OHMM)	2000

ARC Phase−Shift Resistivity 34−in. at 2 MHz (P34H)		
0.2	(OHMM)	2000

ARC Attenuation Resistivity 34−in. at 2 MHz (A34H)		
0.2	(OHMM)	2000

ARC Phase−Shift Resistivity 40−in. at 2 MHz (P40H)		
0.2	(OHMM)	2000

ARC Attenuation Resistivity 40−in. at 2 MHz (A40H)		
0.2	(OHMM)	2000

IDEAL Version: ID12_0C_11

IDF

6.75−in. Azimuthal Density Neutron / Equipment Identification

Primary Equipment:		
Tool Name and Serial Number	ADN6 − CA	373
Collar Type and Serial Number	ADDC − AA	
Chassis Type and Serial Number	ADSE − EA	
Stabilizer Type and Serial Number	IBS	
Neutron Logging Source	NSR − M	181
Density Logging Source	GSR − J/Z	2152
Stabilizer Size	8.25 − in.	
Calibration Status	Valid	

Master: 6−Jul−2007 23:40

6.75−in. Azimuthal Density Neutron Calibration

Density: Magnesium Block

Phase	LS window 3 − Mg CPS	Value	Phase	SS window 1 − Mg CPS	Value	Phase	SS window 3 − Mg CPS	Value
Master		1234	Master		3101	Master		7425
250.0 (Minimum)	4125 (Nominal)	8000 (Maximum)	700.0 (Minimum)	9350 (Nominal)	18000 (Maximum)	2500 (Minimum)	23750 (Nominal)	45000 (Maximum)

Master: 6−Jul−2007 23:40

6.75−in. Azimuthal Density Neutron Calibration

Density: Aluminum Block

Phase	LS window 3 − Al CPS	Value	Phase	SS window 1 − Al CPS	Value	Phase	SS window 3 − Al CPS	Value
Master		183.8	Master		1555	Master		4633
50.00 (Minimum)	725.0 (Nominal)	1400 (Maximum)	500.0 (Minimum)	4250 (Nominal)	8000 (Maximum)	1500 (Minimum)	15750 (Nominal)	30000 (Maximum)

Master: 6−Jul−2007 23:40

6.75−in. Azimuthal Density Neutron Calibration

Density: Background

Phase	LS window 3 − Background CPS	Value	Phase	SS window 1 − Background CPS	Value	Phase	SS window 3 − Background CPS	Value
Master		50.04	Master		117.0	Master		519.0
15.00	82.50	150.0	40.00	220.0	400.0	150.0	825.0	1500

(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)

Master: 6−Jul−2007 23:40

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		1.151
1.024 (Minimum)	1.039 (Nominal)	1.054 (Maximum)	1.096 (Minimum)	1.126 (Nominal)	1.156 (Maximum)

Master: 6−Jul−2007 23:40

6.75−in. Azimuthal Density Neutron Calibration

Neutron: 3−Point Calibration

Phase	Far 1 tube 1 Air Point Measure CPS	Value	Phase	Far 1 tube 1 Rod Point Measure CPS	Value	Phase	Far 1 tube 1 H2O Point Measure CPS	Value
Master		17.64	Master		4.361	Master		2.045
13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)	3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)
Phase	Far 1 tube 2 Air Point Measure CPS	Value	Phase	Far 1 tube 2 Rod Point Measure CPS	Value	Phase	Far 1 tube 2 H2O Point Measure CPS	Value
Master		18.63	Master		4.548	Master		2.193
13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)	3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)
Phase	Far 1 tube 3 Air Point Measure CPS	Value	Phase	Far 1 tube 3 Rod Point Measure CPS	Value	Phase	Far 1 tube 3 H2O Point Measure CPS	Value
Master		17.55	Master		4.417	Master		2.165
13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)	3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)
Phase	Far 2 tube 1 Air Point Measure CPS	Value	Phase	Far 2 tube 1 Rod Point Measure CPS	Value	Phase	Far 2 tube 1 H2O Point Measure CPS	Value
Master		17.33	Master		4.720	Master		2.210
13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)	3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)
Phase	Far 2 tube 2 Air Point Measure CPS	Value	Phase	Far 2 tube 2 Rod Point Measure CPS	Value	Phase	Far 2 tube 2 H2O Point Measure CPS	Value
Master		18.63	Master		4.693	Master		2.260
13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)	3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)
Phase	Far 2 tube 3 Air Point Measure CPS	Value	Phase	Far 2 tube 3 Rod Point Measure CPS	Value	Phase	Far 2 tube 3 H2O Point Measure CPS	Value
Master		17.85	Master		4.397	Master		2.199
13.30 (Minimum)	19.05 (Nominal)	24.70 (Maximum)	3.400 (Minimum)	4.857 (Nominal)	6.200 (Maximum)	1.600 (Minimum)	2.363 (Nominal)	3.100 (Maximum)
Phase	Near 1 tube 1 Air Point Measure CPS	Value	Phase	Near 1 tube 1 Rod Point Measure CPS	Value	Phase	Near 1 tube 1 H2O Point Measure CPS	Value
Master		478.6	Master		763.5	Master		336.3
345.0 (Minimum)	487.5 (Nominal)	595.0 (Maximum)	535.0 (Minimum)	768.8 (Nominal)	925.0 (Maximum)	230.0 (Minimum)	343.7 (Nominal)	430.0 (Maximum)
Phase	Near 2 tube 1 Air Point Measure CPS	Value	Phase	Near 2 tube 1 Rod Point Measure CPS	Value	Phase	Near 2 tube 1 H2O Point Measure CPS	Value
Master		484.6	Master		758.4	Master		337.5
345.0 (Minimum)	487.5 (Nominal)	595.0 (Maximum)	535.0 (Minimum)	768.8 (Nominal)	925.0 (Maximum)	230.0 (Minimum)	343.7 (Nominal)	430.0 (Maximum)

Master: 6−Jul−2007 23:40

6.75−in. Azimuthal Density Neutron Calibration

Neutron: Water Block Check

Phase	Far Neutron water porosity PU	Value
Master		99.51
90.00 (Minimum)	100.0 (Nominal)	125.0 (Maximum)

6.75−in. Array Resistivity Compensated / Equipment Identification

Primary Equipment:

Tool Name and Serial Number	ARC6 − BA	460
ARC675 Calibration Status	Valid	

Master: 6−Jul−2007 11:12

6.75−in. Array Resistivity Compensated Calibration

Resistivity: Air

Phase	Phase−Shift T1	Value
Master		1.019
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Phase	Phase−Shift T2	Value
Master		−0.9280
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Phase	Phase−Shift T3	Value
Master		0.9236
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Phase	Phase−Shift T4	Value
Master		−0.9776
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Phase	Phase−Shift T5	Value
Master		0.9063
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Phase	Phase−Shift T1 at 400KHz	Value
Master		−0.3509
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Phase	Phase−Shift T2 at 400KHz	Value
Master		0.2849
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Phase	Phase−Shift T3 at 400KHz	Value
Master		−0.3229
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Phase	Phase−Shift T4 at 400KHz	Value
Master		0.2874
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Phase	Phase−Shift T5 at 400KHz	Value
Master		−0.3578
−3.900 (Minimum)	0.1000 (Nominal)	4.100 (Maximum)

Master: 6−Jul−2007 11:12

6.75−in. Array Resistivity Compensated Calibration

Resistivity: Air

Phase	Attenuation T1	Value
Master		8.981
6.500 (Minimum)	8.500 (Nominal)	10.50 (Maximum)

Phase	Attenuation T2	Value
Master		5.965
4.500 (Minimum)	6.500 (Nominal)	8.500 (Maximum)

Phase	Attenuation T3	Value
Master		5.607
2.500 (Minimum)	4.500 (Nominal)	6.500 (Maximum)

Phase	Attenuation T4	Value
Master		3.872
2.600 (Minimum)	4.600 (Nominal)	6.600 (Maximum)

Phase	Attenuation T5	Value
Master		4.157
1.600 (Minimum)	3.600 (Nominal)	5.600 (Maximum)

Phase	Attenuation T1 at 400KHz	Value
Master		8.986
6.500 (Minimum)	8.500 (Nominal)	10.50 (Maximum)

Phase	Attenuation T2 at 400KHz	Value
Master		5.966
4.500 (Minimum)	6.500 (Nominal)	8.500 (Maximum)

Phase	Attenuation T3 at 400KHz	Value
Master		5.603
2.500 (Minimum)	4.500 (Nominal)	6.500 (Maximum)

Phase	Attenuation T4 at 400KHz	Value
Master		3.869
2.600 (Minimum)	4.600 (Nominal)	6.600 (Maximum)

Phase	Attenuation T5 at 400KHz	Value
Master		4.163
1.600 (Minimum)	3.600 (Nominal)	5.600 (Maximum)

Master: 6−Jul−2007 11:59

6.75−in. Array Resistivity Compensated Calibration

Gamma Ray: Blanket

Phase	Gamma ray factor (equals Calibration Gain multiplied by API Gain Factor) CPS	Value
Master		4.988
2.780 (Minimum)	4.800 (Nominal)	6.000 (Maximum)

6.75−in. Azimuthal Density Neutron / Equipment Identification

Primary Equipment:		
Tool Name and Serial Number	ADN6 − CA	437
Collar Type and Serial Number	ADDC − AA	
Chassis Type and Serial Number	ADSE − EA	
Stabilizer Type and Serial Number	IBS	AD41
Neutron Logging Source	NSR − M	A181
Density Logging Source	GSR − J/Z	A2152
Stabilizer Size	8.25 − in.	
Calibration Status	Valid	

Master: 12−Aug−2007 20:19

6.75−in. Azimuthal Density Neutron Calibration

Density: Magnesium Block

Phase	LS window 3 − Mg CPS	Value

Phase	SS window 1 − Mg CPS	Value

Phase	SS window 3 − Mg CPS	Value

Phase		Value
Master		1259
	250.0 (Minimum) 4125 (Nominal) 8000 (Maximum)	

Phase		Value
Master		3081
	700.0 (Minimum) 9350 (Nominal) 18000 (Maximum)	

Phase		Value
Master		7740
	2500 (Minimum) 23750 (Nominal) 45000 (Maximum)	

Master: 12−Aug−2007 20:19

6.75−in. Azimuthal Density Neutron Calibration

Density: Aluminum Block

Phase	LS window 3 − Al CPS	Value
Master		190.0
	50.00 (Minimum) 725.0 (Nominal) 1400 (Maximum)	

Phase	SS window 1 − Al CPS	Value
Master		1584
	500.0 (Minimum) 4250 (Nominal) 8000 (Maximum)	

Phase	SS window 3 − Al CPS	Value
Master		4908
	1500 (Minimum) 15750 (Nominal) 30000 (Maximum)	

Master: 12−Aug−2007 20:19

6.75−in. Azimuthal Density Neutron Calibration

Density: Background

Phase	LS window 3 − Background CPS	Value
Master		45.83
	15.00 (Minimum) 82.50 (Nominal) 150.0 (Maximum)	

Phase	SS window 1 − Background CPS	Value
Master		129.6
	40.00 (Minimum) 220.0 (Nominal) 400.0 (Maximum)	

Phase	SS window 3 − Background CPS	Value
Master		558.4
	150.0 (Minimum) 825.0 (Nominal) 1500 (Maximum)	

Master: 12−Aug−2007 20:19

6.75−in. Azimuthal Density Neutron Calibration

Density: Water Block Check

Phase	Long spacing water density G/C3	Value
Master		1.041
	1.024 (Minimum) 1.039 (Nominal) 1.054 (Maximum)	

Phase	Short spacing water density G/C3	Value
Master		1.145
	1.096 (Minimum) 1.126 (Nominal) 1.156 (Maximum)	

Master: 12−Aug−2007 20:19

6.75−in. Azimuthal Density Neutron Calibration

Neutron: 3−Point Calibration

Phase	Far 1 tube 1 Air Point Measure CPS	Value
Master		22.74
	13.30 (Minimum) 19.05 (Nominal) 24.70 (Maximum)	

Phase	Far 1 tube 1 Rod Point Measure CPS	Value
Master		5.557
	3.400 (Minimum) 4.857 (Nominal) 6.200 (Maximum)	

Phase	Far 1 tube 1 H2O Point Measure CPS	Value
Master		2.603
	1.600 (Minimum) 2.363 (Nominal) 3.100 (Maximum)	

Phase	Far 1 tube 2 Air Point Measure CPS	Value
Master		23.88
	13.30 (Minimum) 19.05 (Nominal) 24.70 (Maximum)	

Phase	Far 1 tube 2 Rod Point Measure CPS	Value
Master		5.851
	3.400 (Minimum) 4.857 (Nominal) 6.200 (Maximum)	

Phase	Far 1 tube 2 H2O Point Measure CPS	Value
Master		2.840
	1.600 (Minimum) 2.363 (Nominal) 3.100 (Maximum)	

Phase	Far 1 tube 3 Air Point Measure CPS	Value
Master		23.52
	13.30 (Minimum) 19.05 (Nominal) 24.70 (Maximum)	

Phase	Far 1 tube 3 Rod Point Measure CPS	Value
Master		5.821
	3.400 (Minimum) 4.857 (Nominal) 6.200 (Maximum)	

Phase	Far 1 tube 3 H2O Point Measure CPS	Value
Master		2.854
	1.600 (Minimum) 2.363 (Nominal) 3.100 (Maximum)	

Phase	Far 2 tube 1 Air Point Measure CPS	Value
Master		22.91
	13.30 (Minimum) 19.05 (Nominal) 24.70 (Maximum)	

Phase	Far 2 tube 1 Rod Point Measure CPS	Value
Master		5.718
	3.400 (Minimum) 4.857 (Nominal) 6.200 (Maximum)	

Phase	Far 2 tube 1 H2O Point Measure CPS	Value
Master		2.752
	1.600 (Minimum) 2.363 (Nominal) 3.100 (Maximum)	

Phase	Far 2 tube 2 Air Point Measure CPS	Value
Master		24.04
	13.30 (Minimum) 19.05 (Nominal) 24.70 (Maximum)	

Phase	Far 2 tube 2 Rod Point Measure CPS	Value
Master		5.735
	3.400 (Minimum) 4.857 (Nominal) 6.200 (Maximum)	

Phase	Far 2 tube 2 H2O Point Measure CPS	Value
Master		2.816
	1.600 (Minimum) 2.363 (Nominal) 3.100 (Maximum)	

Phase	Far 2 tube 3 Air Point Measure CPS	Value
Master		22.37
	13.30 (Minimum) 19.05 (Nominal) 24.70 (Maximum)	

Phase	Far 2 tube 3 Rod Point Measure CPS	Value
Master		5.544
	3.400 (Minimum) 4.857 (Nominal) 6.200 (Maximum)	

Phase	Far 2 tube 3 H2O Point Measure CPS	Value
Master		2.726
	1.600 (Minimum) 2.363 (Nominal) 3.100 (Maximum)	

Phase	Near 1 tube 1 Air Point Measure CPS	Value
Master		552.4
	345.0 (Minimum) 487.5 (Nominal) 595.0 (Maximum)	

Phase	Near 1 tube 1 Rod Point Measure CPS	Value
Master		870.0
	535.0 (Minimum) 768.8 (Nominal) 925.0 (Maximum)	

Phase	Near 1 tube 1 H2O Point Measure CPS	Value
Master		382.9
	230.0 (Minimum) 343.7 (Nominal) 430.0 (Maximum)	

Phase	Near 2 tube 1 Air Point Measure CPS	Value
Master		555.6
	345.0 (Minimum) 487.5 (Nominal) 595.0 (Maximum)	

Phase	Near 2 tube 1 Rod Point Measure CPS	Value
Master		862.9
	535.0 (Minimum) 768.8 (Nominal) 925.0 (Maximum)	

Phase	Near 2 tube 1 H2O Point Measure CPS	Value
Master		382.5
	230.0 (Minimum) 343.7 (Nominal) 430.0 (Maximum)	

Master: 12−Aug−2007 20:19

6.75−in. Azimuthal Density Neutron Calibration

Neutron: Water Block Check

Phase	Far Neutron water porosity PU	Value
Master		94.25
	90.00 (Minimum) / 100.0 (Nominal) / 125.0 (Maximum)	

6.75−in. Array Resistivity Compensated / Equipment Identification

Primary Equipment:

Tool Name and Serial Number	ARC6 − BA	1708
ARC675 Calibration Status	Valid	

Master: 13−Aug−2007 12:10

6.75−in. Array Resistivity Compensated Calibration

Resistivity: Air

Phase	Phase−Shift T1	Value	Phase	Phase−Shift T2	Value	Phase	Phase−Shift T3	Value
Master		1.832	Master		−1.714	Master		1.759
	−3.900 (Minimum) / 0.1000 (Nominal) / 4.100 (Maximum)			−3.900 (Minimum) / 0.1000 (Nominal) / 4.100 (Maximum)			−3.900 (Minimum) / 0.1000 (Nominal) / 4.100 (Maximum)	

Phase	Phase−Shift T4	Value	Phase	Phase−Shift T5	Value	Phase	Phase−Shift T1 at 400KHz	Value
Master		−1.751	Master		1.735	Master		−0.3595
	−3.900 (Minimum) / 0.1000 (Nominal) / 4.100 (Maximum)			−3.900 (Minimum) / 0.1000 (Nominal) / 4.100 (Maximum)			−3.900 (Minimum) / 0.1000 (Nominal) / 4.100 (Maximum)	

Phase	Phase−Shift T2 at 400KHz	Value	Phase	Phase−Shift T3 at 400KHz	Value	Phase	Phase−Shift T4 at 400KHz	Value
Master		0.2418	Master		−0.3292	Master		0.2296
	−3.900 (Minimum) / 0.1000 (Nominal) / 4.100 (Maximum)			−3.900 (Minimum) / 0.1000 (Nominal) / 4.100 (Maximum)			−3.900 (Minimum) / 0.1000 (Nominal) / 4.100 (Maximum)	

Phase	Phase−Shift T5 at 400KHz	Value
Master		−0.3267
	−3.900 (Minimum) / 0.1000 (Nominal) / 4.100 (Maximum)	

Master: 13−Aug−2007 12:10

6.75−in. Array Resistivity Compensated Calibration

Resistivity: Air

Phase	Attenuation T1	Value	Phase	Attenuation T2	Value	Phase	Attenuation T3	Value
Master		8.459	Master		6.485	Master		5.086
	6.500 (Minimum) / 8.500 (Nominal) / 10.50 (Maximum)			4.500 (Minimum) / 6.500 (Nominal) / 8.500 (Maximum)			2.500 (Minimum) / 4.500 (Nominal) / 6.500 (Maximum)	

Phase	Attenuation T4	Value	Phase	Attenuation T5	Value	Phase	Attenuation T1 at 400KHz	Value
Master		4.390	Master		3.636	Master		8.437
	2.600 (Minimum) / 4.600 (Nominal) / 6.600 (Maximum)			1.600 (Minimum) / 3.600 (Nominal) / 5.600 (Maximum)			6.500 (Minimum) / 8.500 (Nominal) / 10.50 (Maximum)	

Phase	Attenuation T2 at 400KHz	Value	Phase	Attenuation T3 at 400KHz	Value	Phase	Attenuation T4 at 400KHz	Value
Master		6.516	Master		5.055	Master		4.413
	4.500 (Minimum) / 6.500 (Nominal) / 8.500 (Maximum)			2.500 (Minimum) / 4.500 (Nominal) / 6.500 (Maximum)			2.600 (Minimum) / 4.600 (Nominal) / 6.600 (Maximum)	

Phase	Attenuation T5 at 400KHz	Value
Master		3.618
	1.600 (Minimum) / 3.600 (Nominal) / 5.600 (Maximum)	

Master: 12−Aug−2007 10:43

6.75−in. Array Resistivity Compensated Calibration

Gamma Ray: Blanket

Phase	Gamma ray factor (equals Calibration Gain multiplied by API Gain Factor) CPS	Value
Master		94.25
	90.00 (Minimum) / 100.0 (Nominal) / 125.0 (Maximum)	

SCHLUMBERGER

Survey report 15-Sep-2007 02:12:10 Page 1 of 4

Client.....: ESSO Australia Pty Ltd
Field.....: Fortescue

Well.....: FTA A17A
API number.....:
Engineer.....: MYT/MA/ML

RIG:.....: ISDL 175
STATE:.....: Victoria

Spud date.....: 02-Sep-07
Last survey date.....: 15-Sep-07
Total accepted surveys...: 85
MD of first survey.....: 660.00 m
MD of last survey.....: 3036.00 m

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

----- Depth reference -----
Permanent datum.....: Mean Sea Level
Depth reference.....: Driller's Depth
GL above permanent.....: -69.00 m
KB above permanent.....: Top Drive
DF above permanent.....: 42.50 m

----- Vertical section origin-----
Latitude (+N/S-).....: -4.05 m
Departure (+E/W-).....: 4.49 m

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

Azimuth from Vsect Origin to target: 126.84 degrees

----- Geomagnetic data -----
Magnetic model.....: BGGM version 2007
Magnetic date.....: 03-Sep-2007
Magnetic field strength..: 1199.44 HCNT
Magnetic dec (+E/W-).....: 13.21 degrees
Magnetic dip.....: -68.86 degrees

----- MWD survey Reference Criteria ---
Reference G.....: 1000.04 mGal
Reference H.....: 1199.44 HCNT
Reference Dip.....: -68.86 degrees
Tolerance of G.....: (+/-) 2.50 mGal
Tolerance of H.....: (+/-) 6.00 HCNT
Tolerance of Dip.....: (+/-) 0.45 degrees

----- Corrections -----
Magnetic dec (+E/W-).....: 13.21 degrees
Grid convergence (+E/W-).: -0.79 degrees
Total az corr (+E/W-)....: 14.00 degrees
(Total az corr = magnetic dec - grid conv)
Survey Correction Type ...:
I=Sag Corrected Inclination
M=Schlumberger Magnetic Correction
S=Shell Magnetic Correction
F=Failed Axis Correction
R=Magnetic Resonance Tool Correction
D=Dmag Magnetic Correction

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/ 100f)	Srvy tool type	Tool Corr (deg)
1	660.00	43.73	170.72	0.00	612.64	133.65	-180.10	39.59	184.40	167.60	0.00	TIP	None
2	687.00	45.37	160.65	27.00	631.90	148.38	-198.40	44.28	203.28	167.42	8.18	PUP	None
3	715.14	41.29	153.00	28.14	652.38	165.05	-216.14	51.83	222.27	166.52	7.20	PUP	None
4	743.13	38.36	149.47	27.99	673.88	181.36	-231.85	60.43	239.60	165.39	4.03	PUP	None
5	771.30	38.83	149.67	28.17	695.90	197.57	-247.01	69.33	256.55	164.32	0.53	PUP	None
6	799.42	39.10	149.36	28.12	717.76	213.88	-262.24	78.30	273.69	163.37	0.36	PUP	None
7	827.52	39.46	149.08	28.10	739.51	230.33	-277.53	87.41	290.97	162.52	0.44	PUP	None
8	856.31	40.00	148.79	28.79	761.65	247.38	-293.29	96.90	308.89	161.72	0.60	PUP	None
9	884.72	40.15	144.57	28.41	783.40	264.58	-308.57	106.95	326.57	160.88	2.92	PUP	None
10	913.55	39.38	139.55	28.83	805.56	282.36	-323.10	118.27	344.07	159.89	3.49	PUP	None
11	941.59	37.91	135.61	28.04	827.47	299.55	-336.03	130.07	360.33	158.84	3.11	PUP	None
12	969.73	35.92	129.16	28.14	849.97	316.35	-347.43	142.53	375.52	157.70	4.72	PUP	None
13	998.09	35.46	124.47	28.36	873.01	332.89	-357.34	155.76	389.81	156.45	2.98	PUP	None
14	1026.34	35.73	120.07	28.25	895.99	349.27	-366.11	169.66	403.51	155.14	2.78	PUP	None
15	1055.05	36.17	115.56	28.71	919.23	365.91	-373.97	184.56	417.03	153.73	2.85	PUP	None
16	1083.06	37.35	113.45	28.01	941.67	382.28	-380.91	199.81	430.14	152.32	1.88	PUP	None
17	1111.75	38.03	114.28	28.69	964.38	399.37	-388.01	215.85	444.01	150.91	0.90	PUP	None
18	1139.82	38.02	116.07	28.07	986.49	416.30	-395.37	231.50	458.15	149.65	1.20	PUP	None
19	1168.37	38.15	117.86	28.55	1008.96	433.65	-403.35	247.19	473.07	148.50	1.19	PUP	None
20	1196.91	38.43	118.41	28.54	1031.36	451.13	-411.69	262.79	488.41	147.45	0.47	PUP	None
21	1225.68	38.08	118.17	28.77	1053.95	468.75	-420.13	278.47	504.04	146.46	0.40	PUP	None
22	1254.40	37.78	118.21	28.72	1076.61	486.20	-428.47	294.03	519.66	145.54	0.32	PUP	None
23	1282.15	37.10	118.92	27.75	1098.64	502.89	-436.54	308.85	534.75	144.72	0.88	PUP	None
24	1310.69	35.83	119.76	28.54	1121.59	519.71	-444.85	323.63	550.12	143.96	1.46	PUP	None
25	1338.31	36.07	119.61	27.62	1143.95	535.80	-452.88	337.72	564.94	143.29	0.28	PUP	None
26	1367.80	36.15	119.73	29.49	1167.78	553.04	-461.48	352.82	580.90	142.60	0.11	PUP	None
27	1396.39	36.99	119.10	28.59	1190.74	569.93	-469.85	367.66	596.60	141.96	0.98	PUP	None
28	1424.23	38.52	117.23	27.84	1212.75	586.78	-477.89	382.69	612.23	141.31	2.09	PUP	None
29	1452.46	38.59	117.40	28.23	1234.83	604.13	-485.96	398.32	628.35	140.66	0.14	PUP	None
30	1481.68	37.43	117.54	29.22	1257.85	621.89	-494.26	414.29	644.92	140.03	1.21	PUP	None

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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/ 100f)	Srvy tool type	Tool Corr (deg)

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/ 100f)	Srvy tool type	Tool Corr (deg)
31	1510.46	37.27	117.52	28.78	1280.73	639.12	-502.33	429.77	661.09	139.45	0.17	PUP	None
32	1538.73	37.53	117.80	28.27	1303.18	656.07	-510.30	444.98	677.06	138.91	0.33	PUP	None
33	1566.81	38.82	118.34	28.08	1325.26	673.22	-518.47	460.29	693.31	138.40	1.45	PUP	None
34	1595.00	39.21	118.81	28.19	1347.16	690.78	-526.96	475.88	710.03	137.92	0.53	PUP	None
35	1623.56	38.55	118.75	28.56	1369.39	708.53	-535.59	491.59	726.99	137.45	0.71	PUP	None
36	1651.81	38.21	117.82	28.25	1391.54	725.88	-543.90	507.03	743.58	137.01	0.72	PUP	None
37	1680.22	38.26	117.49	28.41	1413.86	743.23	-552.06	522.61	760.19	136.57	0.23	PUP	None
38	1708.96	38.99	116.80	28.74	1436.31	760.92	-560.25	538.57	777.13	136.13	0.90	PUP	None
39	1737.21	39.94	115.58	28.25	1458.12	778.56	-568.17	554.68	794.03	135.69	1.32	PUP	None
40	1765.70	39.99	116.13	28.49	1479.95	796.53	-576.15	571.15	811.27	135.25	0.38	PUP	None
41	1793.80	40.23	117.14	28.10	1501.44	814.34	-584.26	587.33	828.45	134.85	0.75	PUP	None
42	1822.48	40.84	117.86	28.68	1523.24	832.74	-592.87	603.87	846.26	134.47	0.82	PUP	None
43	1851.42	40.26	118.35	28.94	1545.23	851.33	-601.73	620.46	864.32	134.12	0.70	PUP	None
44	1880.34	41.14	118.01	28.92	1567.16	869.97	-610.64	637.08	882.47	133.79	0.96	PUP	None
45	1907.88	41.63	117.36	27.54	1587.82	887.95	-619.10	653.21	899.98	133.46	0.72	PUP	None
46	1935.98	42.48	116.31	28.10	1608.68	906.48	-627.59	670.00	918.03	133.13	1.20	PUP	None
47	1965.09	39.30	113.83	29.11	1630.69	925.14	-635.68	687.25	936.16	132.77	3.74	PUP	None
48	1993.68	35.90	114.81	28.59	1653.34	942.16	-642.86	703.15	952.72	132.44	3.68	PUP	None
49	2022.04	34.84	117.69	28.36	1676.46	958.29	-650.11	717.87	968.49	132.16	2.12	PUP	None
50	2050.17	36.50	119.08	28.13	1699.32	974.52	-657.91	732.30	984.43	131.94	2.00	PUP	None
51	2079.41	37.84	119.35	29.24	1722.62	992.03	-666.53	747.72	1001.67	131.71	1.41	PUP	None
52	2107.37	38.50	118.68	27.96	1744.60	1009.14	-674.91	762.83	1018.53	131.50	0.85	PUP	None
53	2136.33	38.59	118.46	28.96	1767.25	1027.00	-683.54	778.68	1036.13	131.28	0.17	PUP	None
54	2164.51	37.93	118.78	28.18	1789.37	1044.27	-691.90	793.99	1053.16	131.07	0.75	PUP	None
55	2192.55	37.27	118.25	28.04	1811.59	1061.20	-700.07	809.03	1069.87	130.87	0.80	PUP	None
56	2220.97	36.42	118.58	28.42	1834.33	1078.06	-708.18	824.01	1086.52	130.68	0.94	PUP	None
57	2249.50	36.44	119.32	28.53	1857.29	1094.84	-716.38	838.84	1103.11	130.50	0.47	PUP	None
58	2277.75	36.84	121.02	28.25	1879.96	1111.58	-724.85	853.41	1119.70	130.34	1.18	PUP	None
59	2305.75	37.44	122.32	28.00	1902.28	1128.42	-733.73	867.80	1136.41	130.21	1.08	PUP	None
60	2334.40	37.22	121.22	28.65	1925.06	1145.73	-742.88	882.57	1153.60	130.09	0.75	PUP	None

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/ 100f)	Srvy tool type	Tool Corr (deg)
61	2362.79	36.69	117.35	28.39	1947.75	1162.64	-751.22	897.45	1170.36	129.93	2.56	PUP	None
62	2389.95	36.62	116.10	27.16	1969.54	1178.60	-758.52	911.93	1186.15	129.75	0.84	PUP	None
63	2417.94	37.08	116.97	27.99	1991.94	1195.11	-766.02	926.95	1202.50	129.57	0.76	PUP	None
64	2446.07	36.80	117.57	28.13	2014.42	1211.78	-773.76	941.97	1219.02	129.40	0.49	PUP	None
65	2474.11	36.23	117.97	28.04	2036.96	1228.26	-781.53	956.74	1235.37	129.24	0.67	PUP	None
66	**2502.44**	**38.25**	**117.50**	**28.33**	**2059.51**	**1245.19**	**-789.51**	**971.91**	**1252.17**	**129.09**	**2.19**	**PUP**	**None**
67	**2531.37**	**39.64**	**117.87**	**28.93**	**2082.01**	**1263.14**	**-797.96**	**988.01**	**1270.00**	**128.93**	**1.48**	**PUP**	**None**
68	2559.98	39.78	118.54	28.61	2104.02	1281.21	-806.60	1004.12	1287.97	128.77	0.48	PUP	None
69	2588.17	38.68	118.97	28.19	2125.85	1298.86	-815.18	1019.75	1305.53	128.64	1.23	PUP	None
70	2617.01	38.16	118.71	28.84	2148.45	1316.61	-823.82	1035.45	1323.19	128.51	0.58	PUP	None
71	2645.27	38.52	118.20	28.26	2170.61	1333.95	-832.17	1050.86	1340.46	128.38	0.52	PUP	None
72	2674.42	39.10	118.05	29.15	2193.33	1352.01	-840.78	1066.97	1358.44	128.24	0.61	PUP	None
73	2702.52	39.10	117.27	28.10	2215.14	1369.51	-849.01	1082.67	1375.86	128.10	0.53	PUP	None
74	2731.28	37.85	117.19	28.76	2237.65	1387.15	-857.20	1098.58	1393.44	127.96	1.33	PUP	None
75	2760.06	36.63	118.45	28.78	2260.56	1404.35	-865.32	1113.98	1410.58	127.84	1.52	PUP	None
76	2788.47	36.29	120.03	28.41	2283.41	1421.08	-873.57	1128.72	1427.28	127.74	1.07	PUP	None
77	2817.01	37.24	118.98	28.54	2306.28	1438.02	-881.98	1143.58	1444.19	127.64	1.22	PUP	None
78	2845.58	38.07	117.86	28.57	2328.89	1455.29	-890.29	1158.93	1461.41	127.53	1.15	PUP	None
79	2871.86	38.33	117.10	26.28	2349.55	1471.32	-897.78	1173.35	1477.42	127.42	0.62	PUP	None
80	2902.30	37.94	116.95	30.44	2373.49	1489.84	-906.33	1190.09	1495.91	127.29	0.40	PUP	None
81	2931.13	37.24	118.15	28.83	2396.33	1507.20	-914.46	1205.69	1513.25	127.18	1.07	PUP	None
82	2960.01	37.98	118.12	28.88	2419.21	1524.62	-922.77	1221.23	1530.65	127.07	0.78	PUP	None
83	2988.74	38.14	118.12	28.73	2441.83	1542.13	-931.12	1236.85	1548.15	126.97	0.17	PUP	None
84	3014.84	38.56	117.68	26.10	2462.30	1558.12	-938.69	1251.16	1564.15	126.88	0.58	PUP	None
85	3036.00	38.85	117.38	21.16	2478.81	1571.18	-944.81	1262.90	1577.20	126.80	0.50	Projected to TD	

Company: **ESSO Australia Pty Ltd**

Schlumberger

Well: **FTA A17A**

Field: **Fortescue**

Rig: **ISDL 175**

8.5 in. Section

State: **Victoria**

VISION Resistivity
1:500 True Vertical Depth
Recorded Mode Log