

Company: Essential Petroleum Resources Limited

Well: Killarney EPRL 1

Field: PEP 152

Rig: Hunt Rig #2

Country: Australia

HALS-BHC-PEX-HNG;

Resistivity Print

Scale 1:200

Datum GDA94 MGA94 Zone 54	Elev.: K.B. 5.49 m
Easting 609803.3	G.L. 1.6 m
Northing 5753917.2	D.F. 5.49 m

Permanent Datum: AHD	Elev.: 0 m
Log Measured From: ROTARY TABLE	5.5 m above Perm. Datum
Drilling Measured From: ROTARY TABLE	

State: Victoria	Max. Well Deviation 2 deg	Longitude 142° 15' 24.22" E	Latitude 38° 21' 22.24" S
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Logging Date

Run Number

Depth Driller

Schlumberger Depth

Bottom Log Interval

Top Log Interval

Casing Driller Size @ Depth

Casing Schlumberger

Bit Size

Type Fluid In Hole

Density

Fluid Loss

Source Of Sample

RM @ Measured Temperature

RMF @ Measured Temperature

RMF @ Measured Temperature

Source RMF

RM @ MRT

Maximum Recorded Temperatures

Circulation Stopped

Logger On Bottom

Unit Number

Recorded By

Witnessed By

Logging Date

Run Number

Depth Driller

Schlumberger Depth

Bottom Log Interval

Top Log Interval

Casing Driller Size @ Depth

Casing Schlumberger

Bit Size

Type Fluid In Hole

Density

Fluid Loss

Source Of Sample

RM @ Measured Temperature

RMF @ Measured Temperature

RMF @ Measured Temperature

Source RMF

RM @ MRT

Maximum Recorded Temperatures

Circulation Stopped

Logger On Bottom

Unit Number

Recorded By

Witnessed By

Run 1

Run 2

Run 3

Maximum recorded temperature of 63degC from thermometers in LEH-QT

Sonic check in casing reads 57 us/ft

Caliper Check in casing reads 8.5364 inch. 8.834 expected. Corrected for in final (this) log.

Additional Mud information:

Chloride: 21500 mg/L, Calcium: 320 mg/L, Sulphite: 80mg/L, KCl: 4.1%

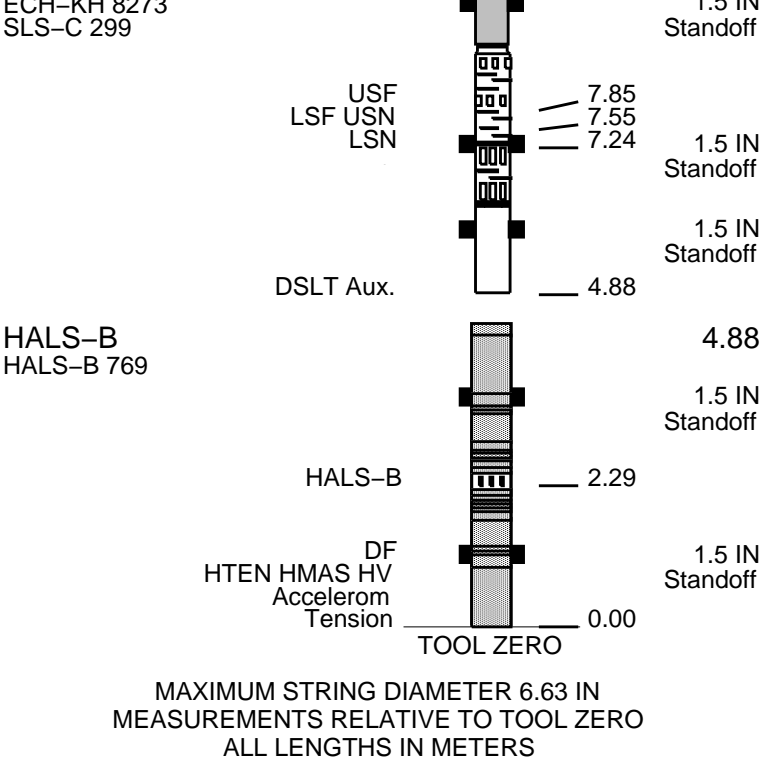
Barite present in mud

Elevation Rotary Table= 3.89m above Ground Level (GL= 1.6m AHD)

RUN 1			RUN 2		
SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:			SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
10C0-306					
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1			RUN 2		
SURFACE EQUIPMENT					
LCM-AA 2747 GSR-U/Y NCT-B CNB-AB	NCS-VB GSR-U WITM (DTS)-A				
DOWNHOLE EQUIPMENT					
BSP BRT-S 22		40.84			
SP SPARC		28.73			
LEH-QT 1570 LEH-QT 1570		22.56			
DTC-H ECH-KC	CTEM TelStatus ToolStatu	21.39 21.67 20.75			
HNGS-BA HNGS-BA 129 HNSH-BA 3	Upper_1 Lower_2	20.05 20.75 19.84			
HNGC-A HNGH-A HNGC-A 10	HNGC Stat HGNS HTEM HMCA	17.72 18.25 17.19			
HILTB-FTB HGNSD-B 1751 HMCA HGNS-H 1775 NLS-KL NSR-F 2111 HACCZ HCNT HGR HRCC-B 1769 HRMS-B 1765 HRGD-B 1760 GLS-VJ 3739 MCFL Device HILT Nucl. LS HILT Nucl. SS HILT Nucl. BS BOW-SPR	Gamma-Ray Neutron F Neutron N HGNS sens HRCC cart MCFL HILT cali HRDD-LS HRDD-SS HRDD-BS	16.96 17.19 15.18 15.03 14.32 13.10 11.44 11.30 11.18			
DSLT-H DSLC-HA 8223		10.59			



Client: Essential

Well: Kilarney-1

Field: Wildcat

State: Victoria

Country:Australia

Drawing Date: 6/18/2004

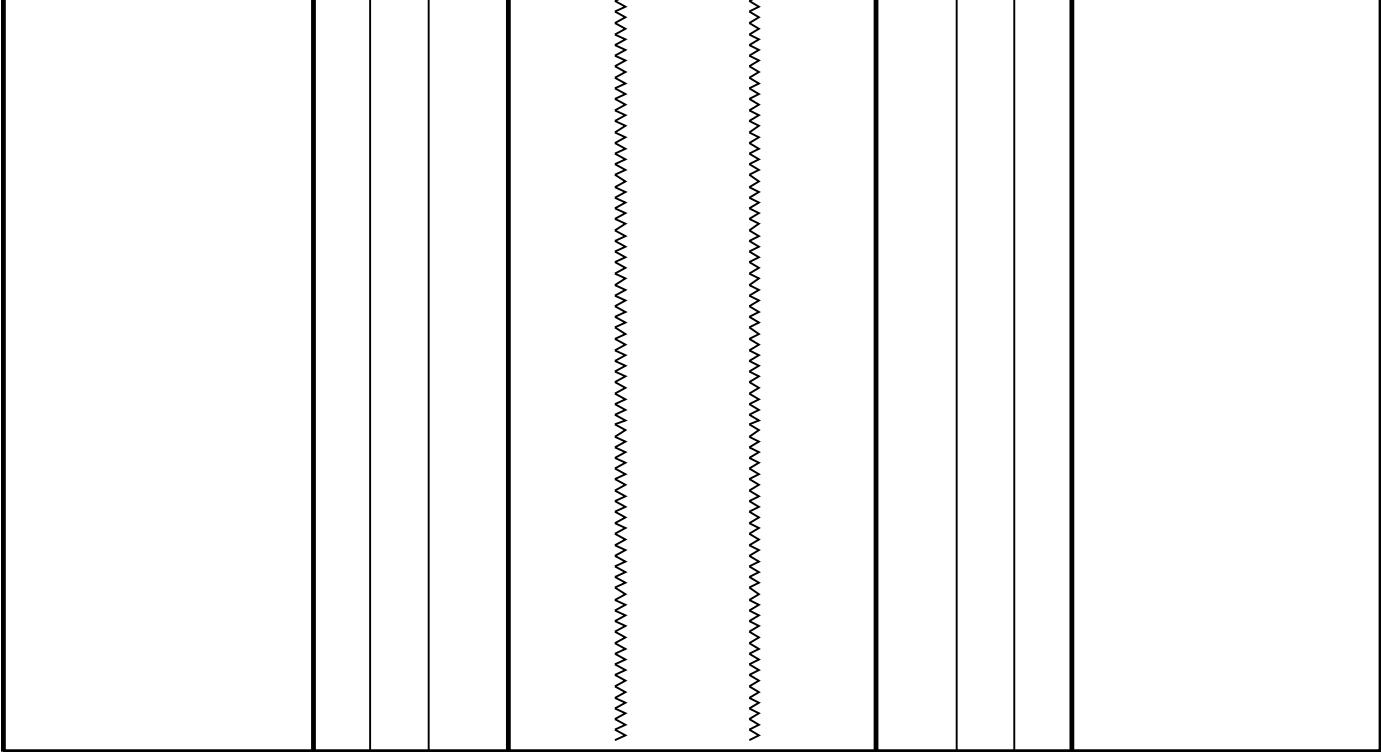
API #:

Rig Name: Hunt Rig 2

Reference Datum: KB

Elevation: 6.9 m

Production String	(in)		(m)	Well Schematic	(m)	(in)		Casing String
	OD	ID	MD		MD	OD	ID	
					0.0	17.500		Borehole Segment
					0.0	13.375		Casing String
					45.6	13.375		Casing Shoe
					45.9	12.250		Borehole Segment
					0.0	9.625		Casing String
					255.8	9.625		Casing Shoe
					258.0	8.500		Borehole Segment



Schlumberger

**Resistivity–Sonic
1:200 Scale**

MAXIS Field Log

Input DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_017LUP	FN:16	PRODUCER	21–Jun–2004 14:42	1636.8 M	20.8 M
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Output DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_101PUP	FN:100	PRODUCER	22–Jun–2004 10:45	1636.8 M	210.2 M
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OP System Version: 10C0–306
MCM

HALS–B	OP10–KP1	DSLT–H	OP10–KP1
HILTB–FTB	OP10–KP1	HNGC–A	OP10–KP1
HNGS–BA	OP10–KP1	DTC–H	10C0–306
BSP	10C0–306		

Changed Parameter Summary

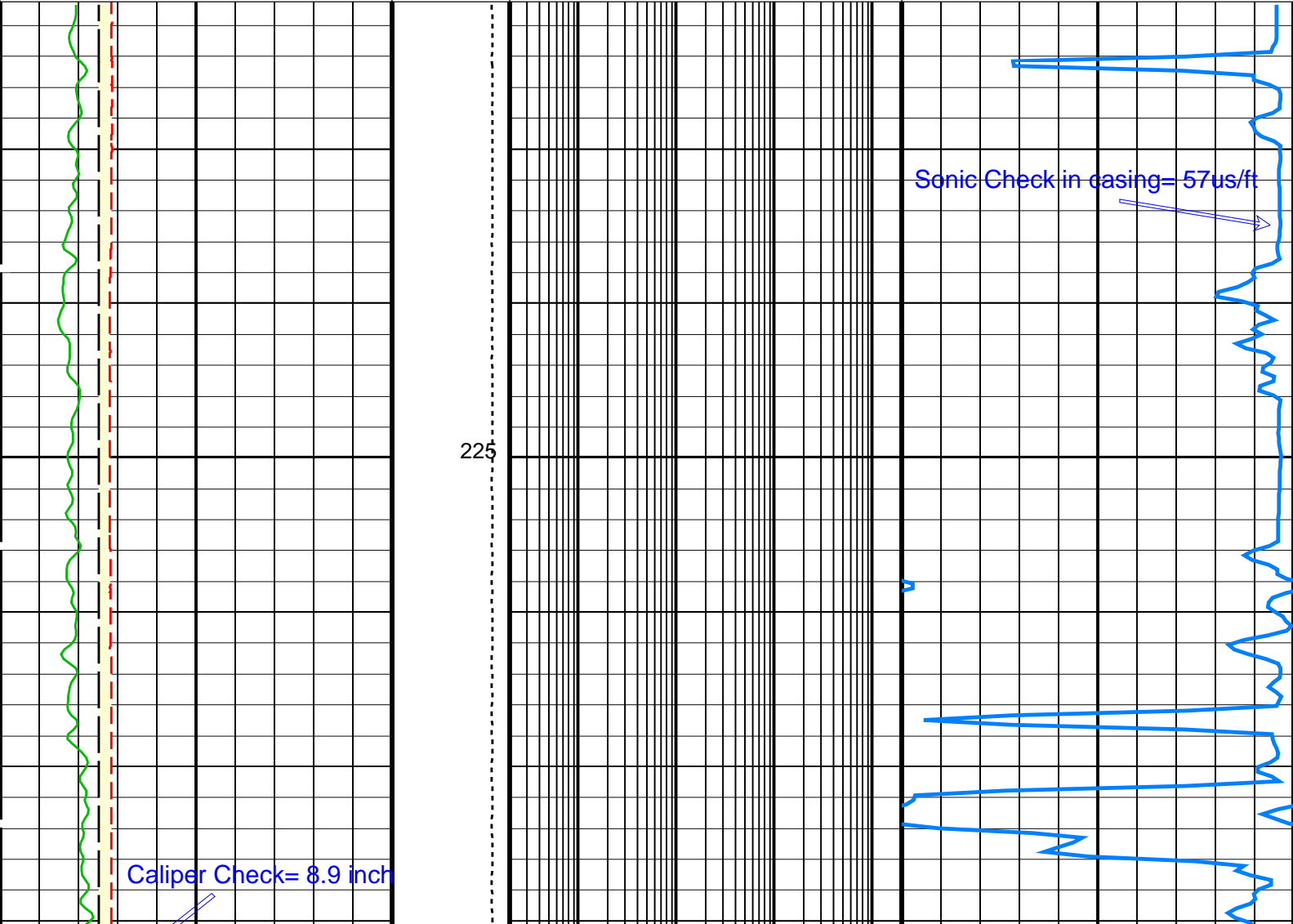
DLIS Name	New Value	Previous Value	Depth & Time
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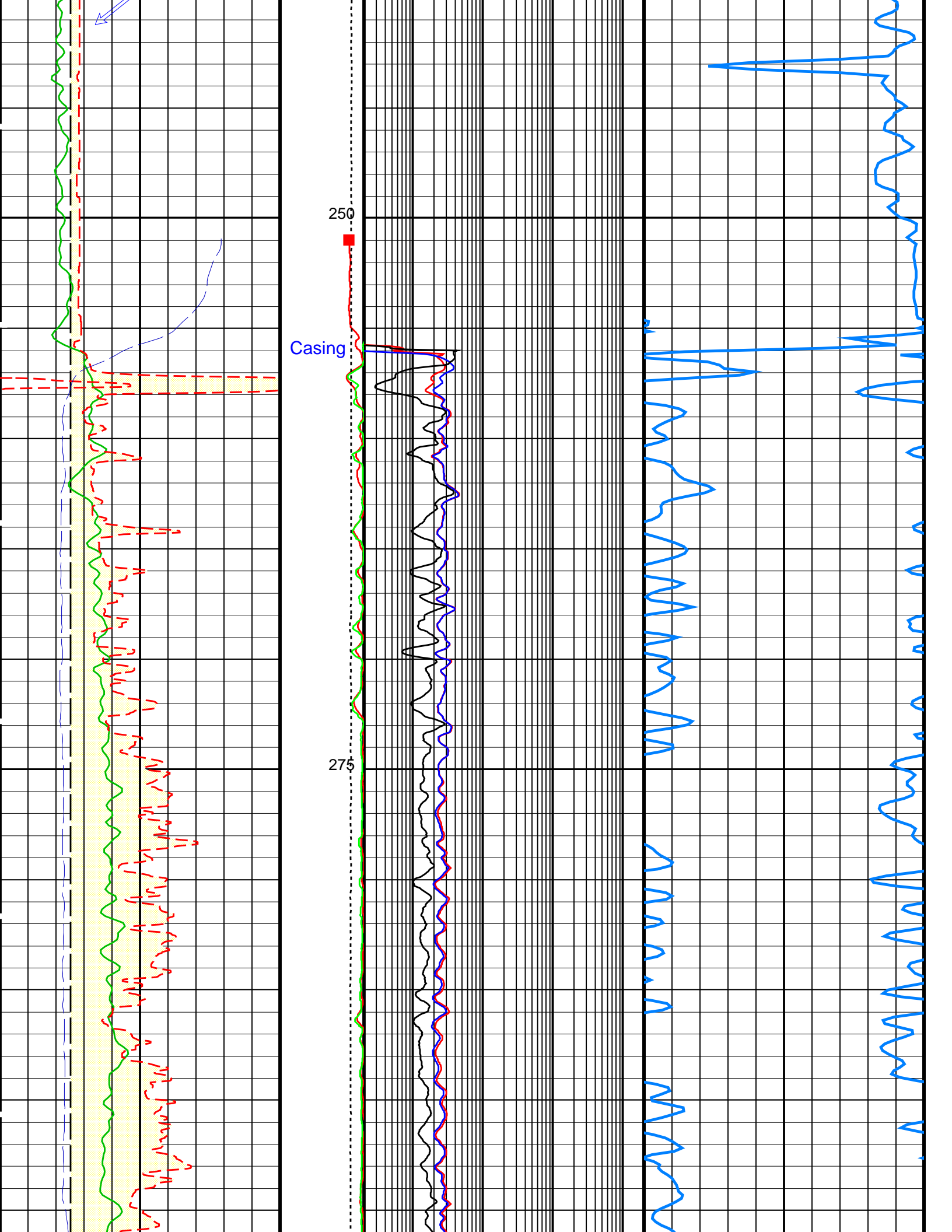
DEIS Name	Previous Value	Depth & Time
MAHTR	120	150 1636.8 10:46:19
MNHTR	100	140 1636.8 10:46:19
SGCL	100 US/F	135 1636.8 10:46:19
SLEV	2003	3000 1636.8 10:46:18

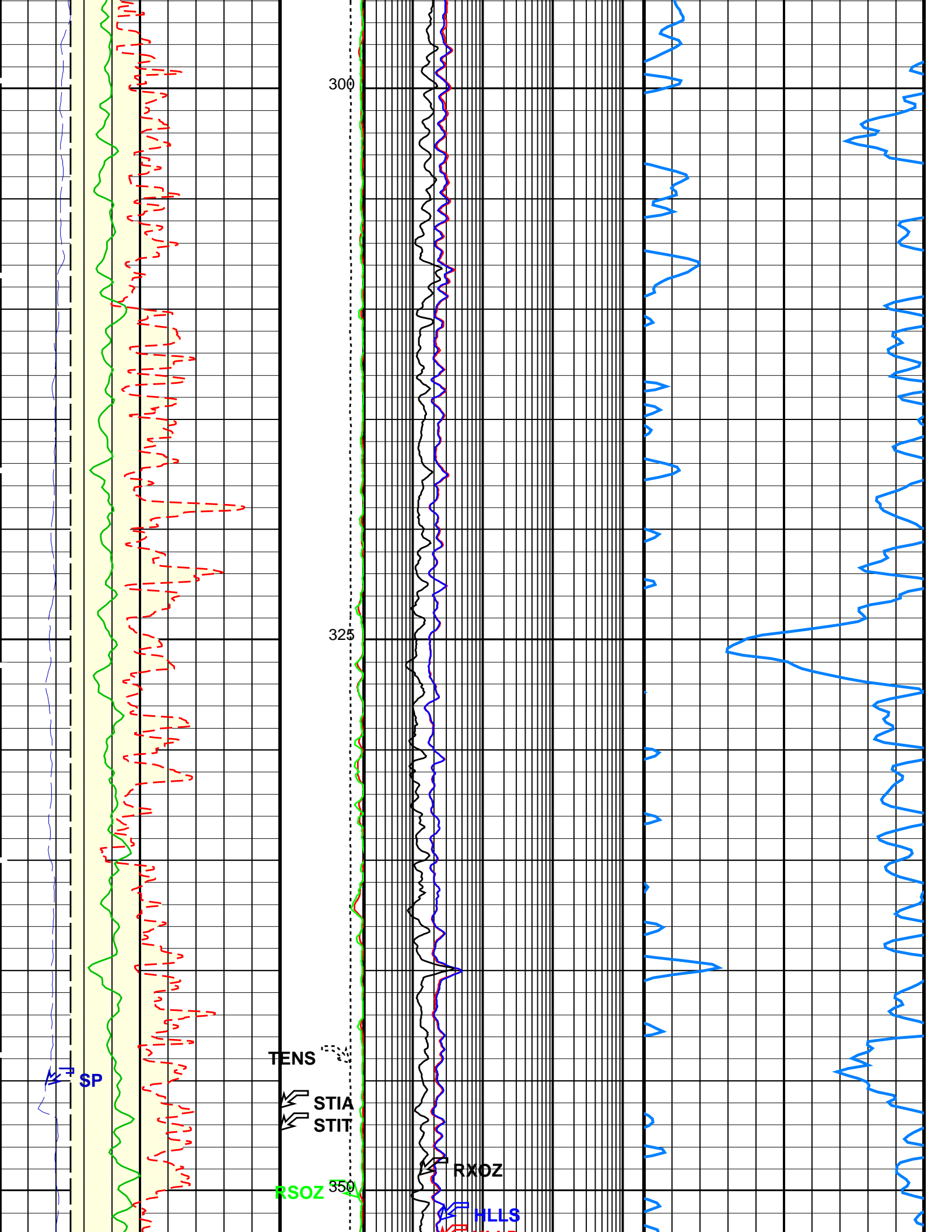
PIP SUMMARY

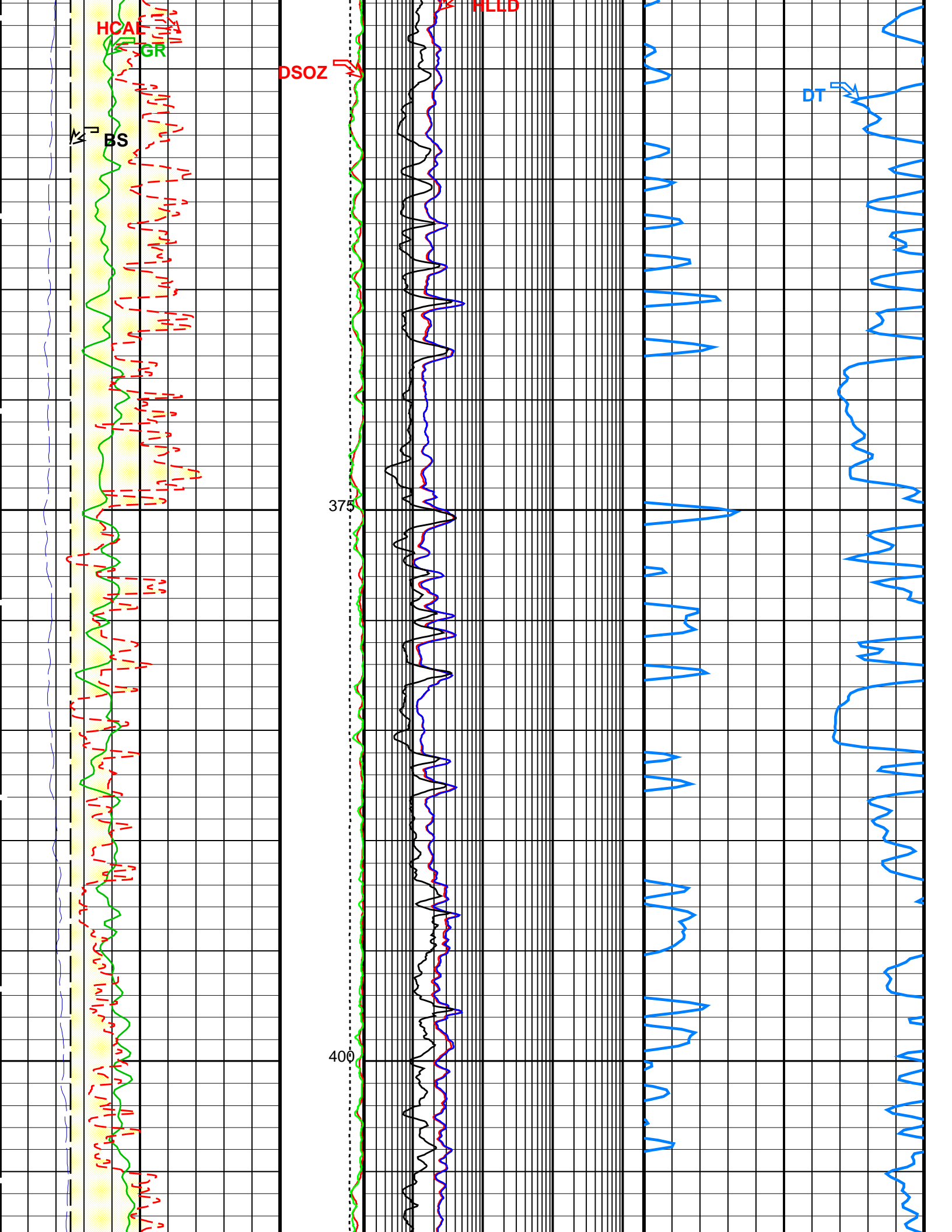
Time Mark Every 60 S

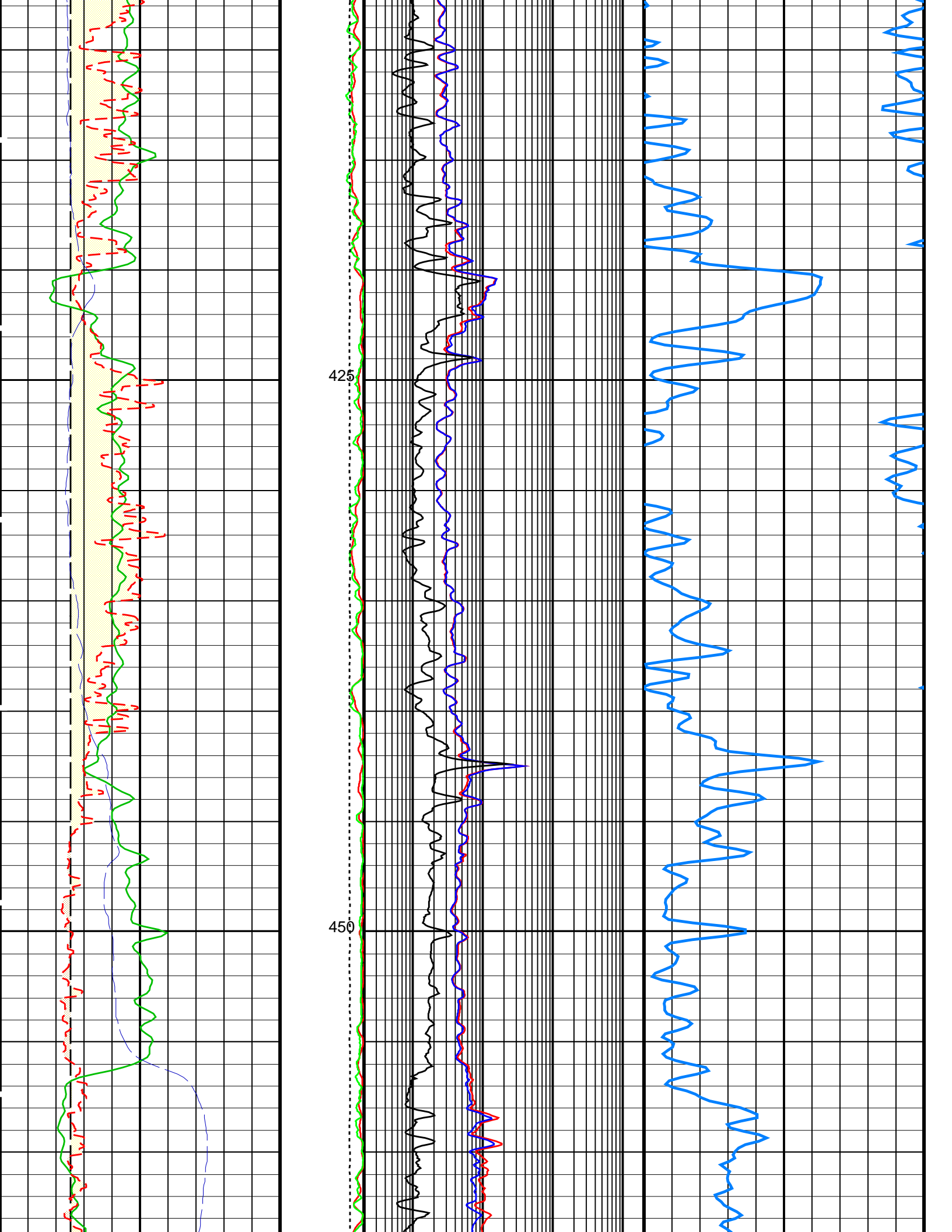
Washout From BS to HCAL				
Mudcake From HCAL to BS				
HILT Caliper (HCAL) (IN)	6	16		
Gamma Ray (GR) (GAPI)	0	150	Std. Res. Resistivity Standoff (RSOZ) 65 (MM) 0	Std. Res. Invaded Zone Resistivity (RXOZ) (OHMM) 2000
Bit Size (BS) (IN)	6	16	Std. Res. Density Standoff (DSOZ) 65 (MM) 0	Laterolog Shallow Resistivity (HLLS) (OHMM) 2000
SP (SP) (MV)	-80	20	Tension (TENS) (LBF) 10000 0	Laterolog Deep Resistivity (HLLD) (OHMM) 2000
				Delta-T (DT) (US/F) 150 50

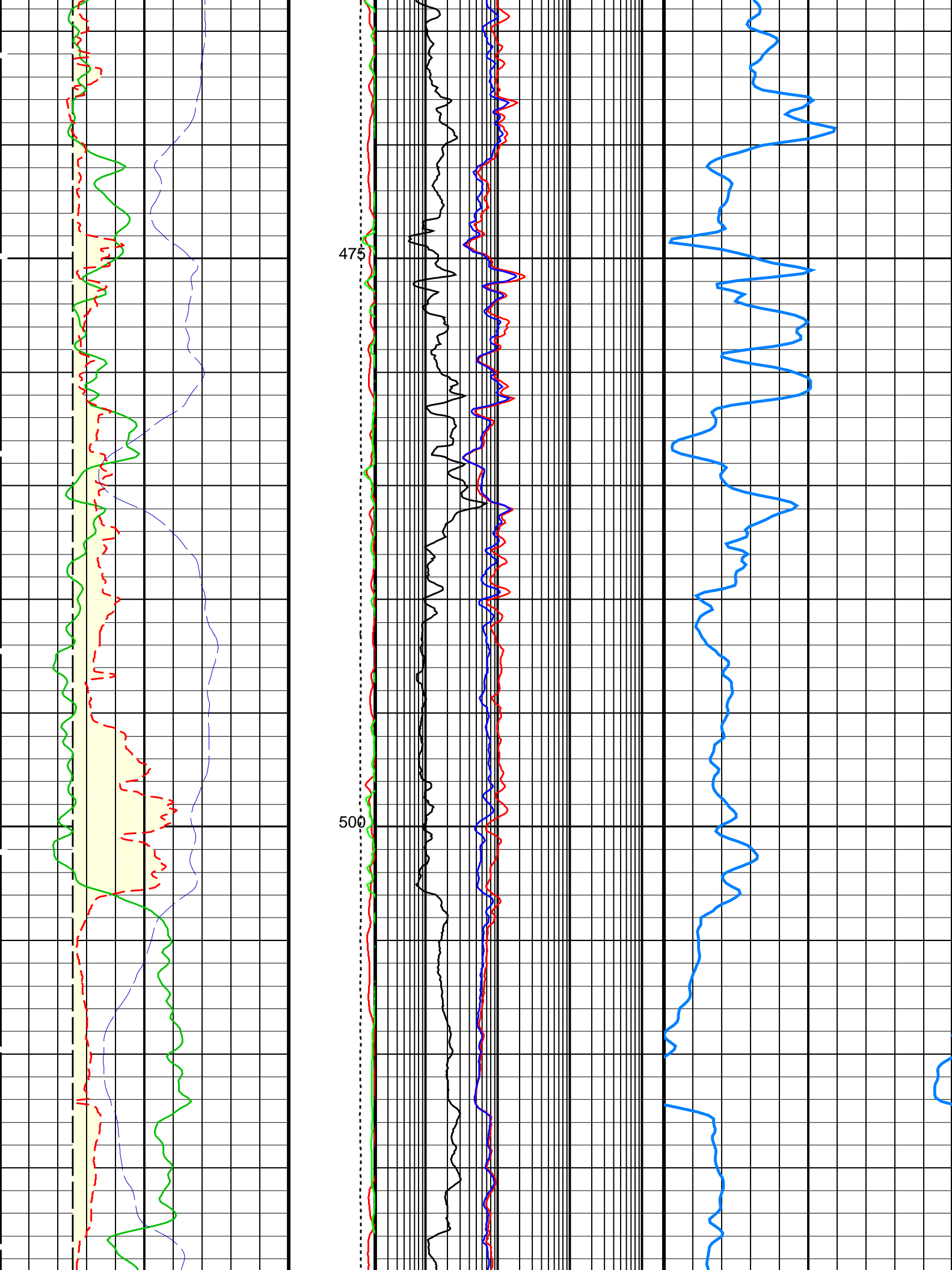


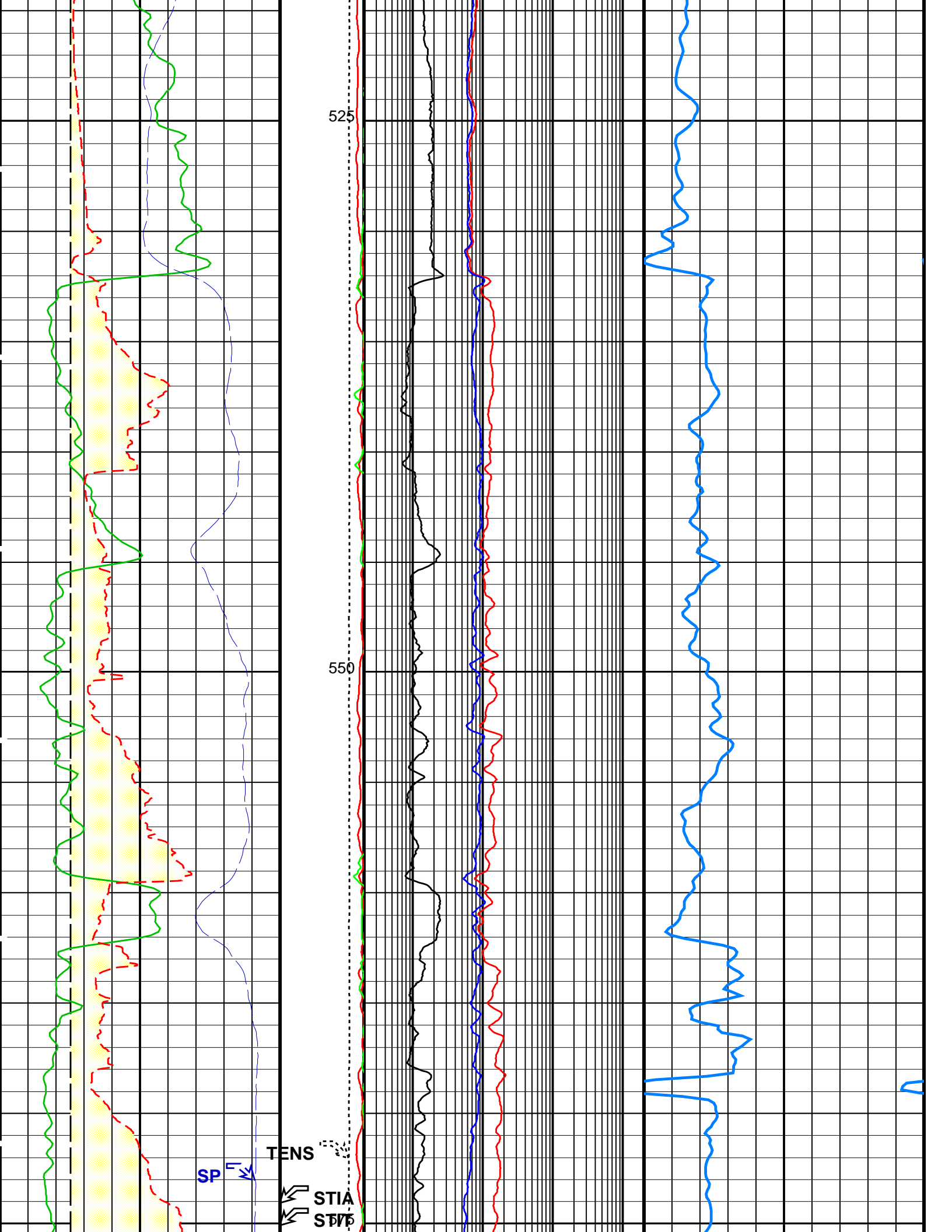


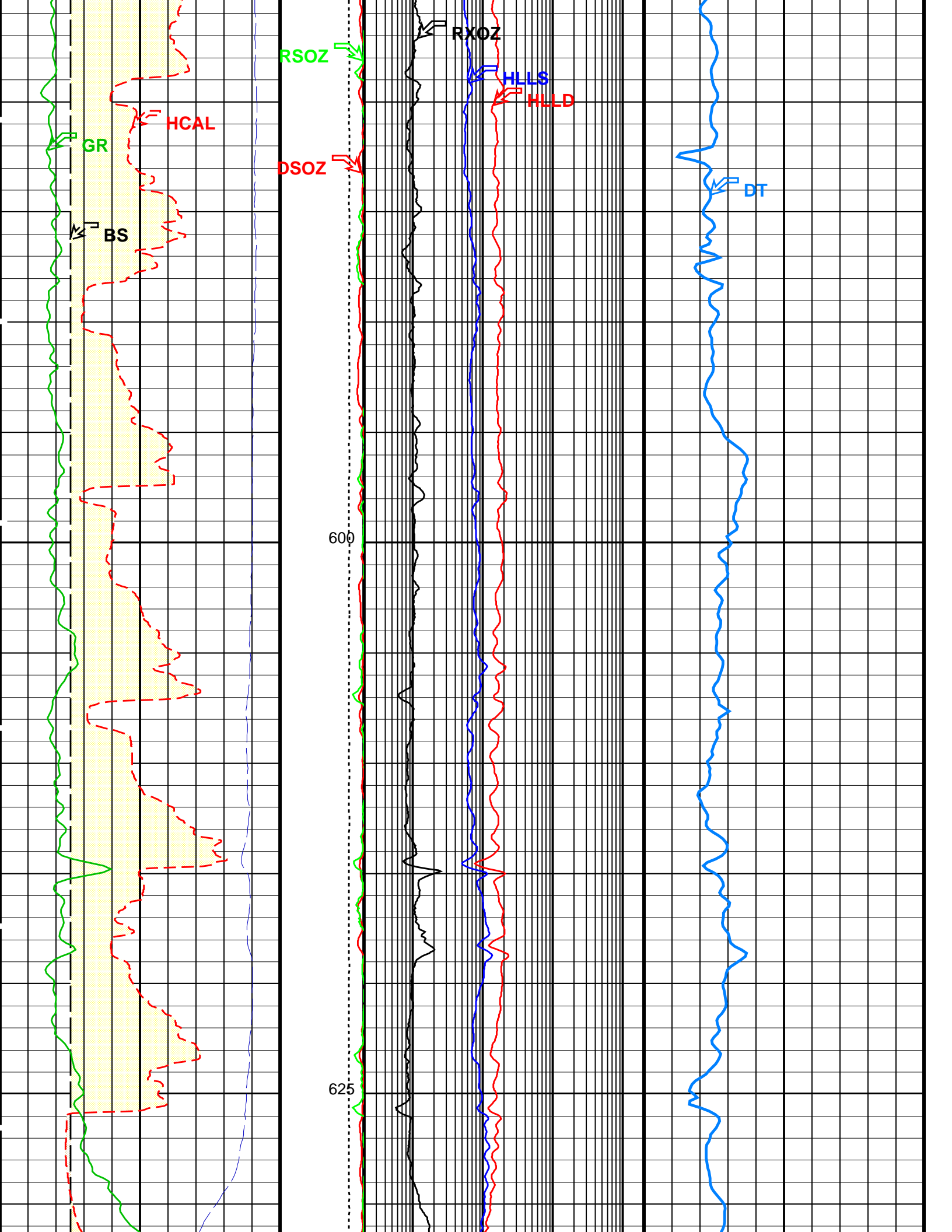


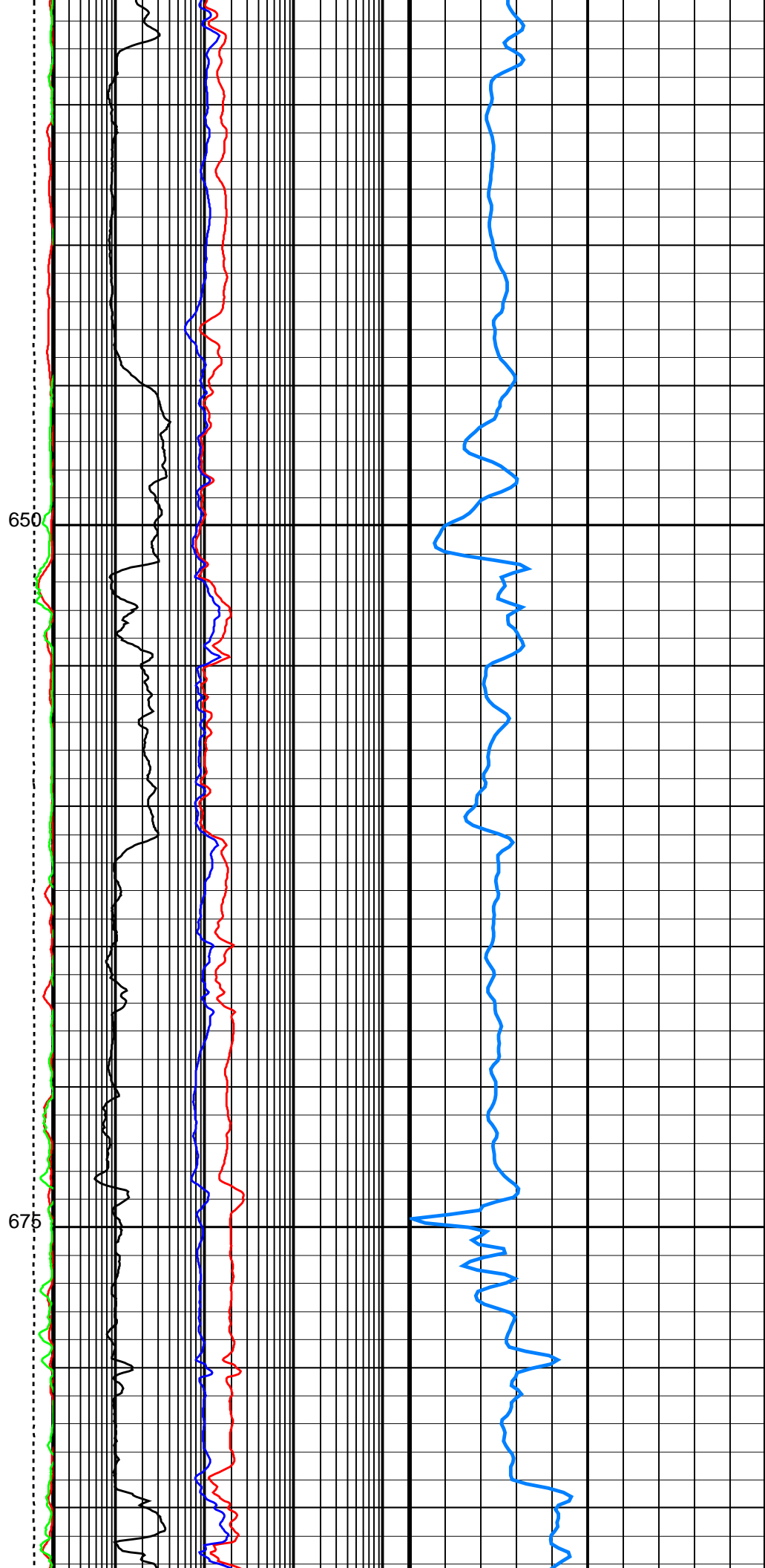
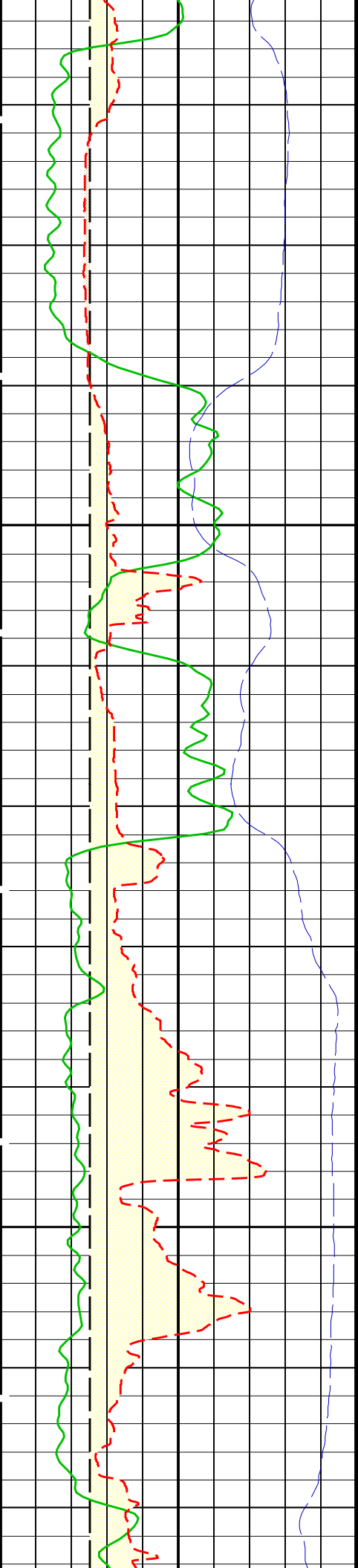


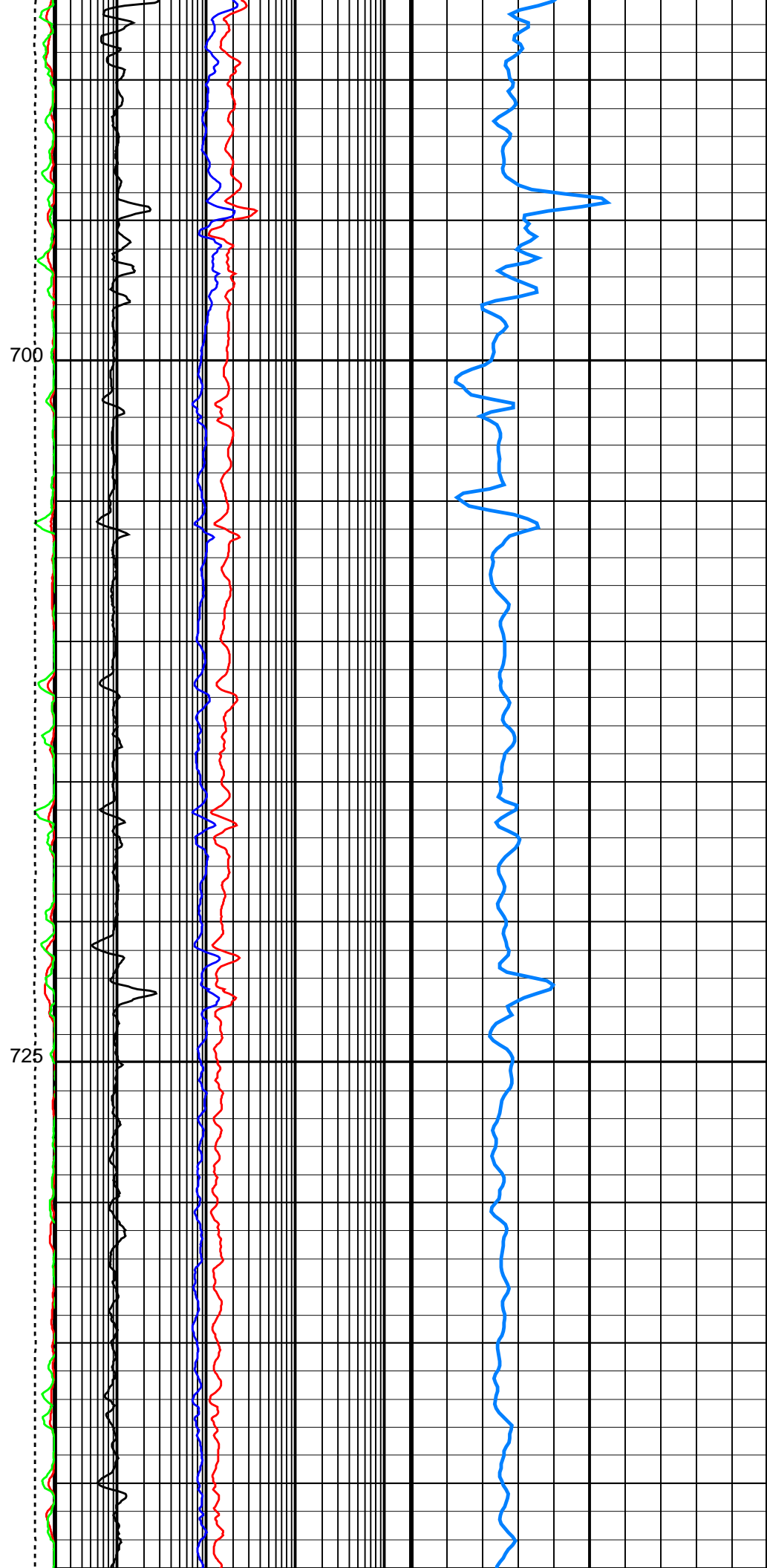
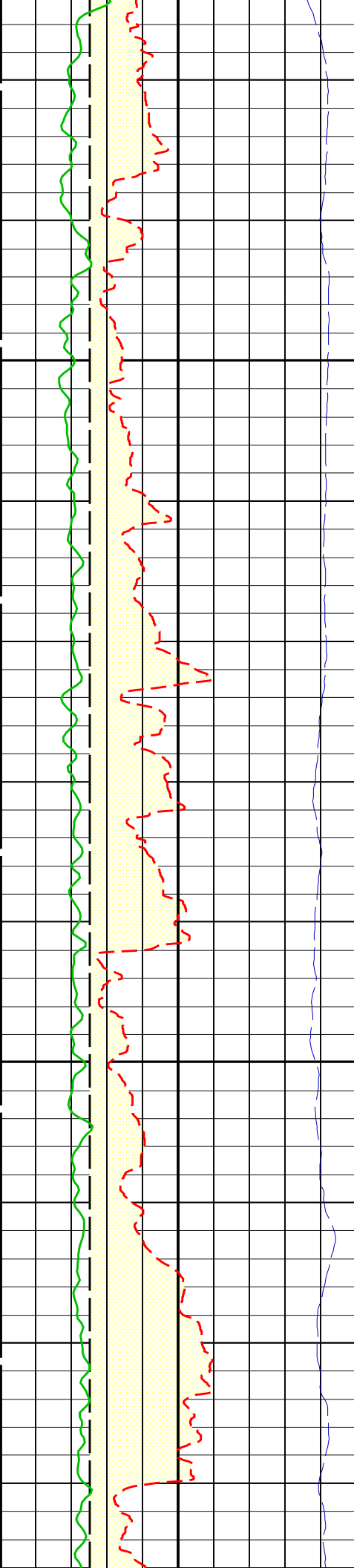


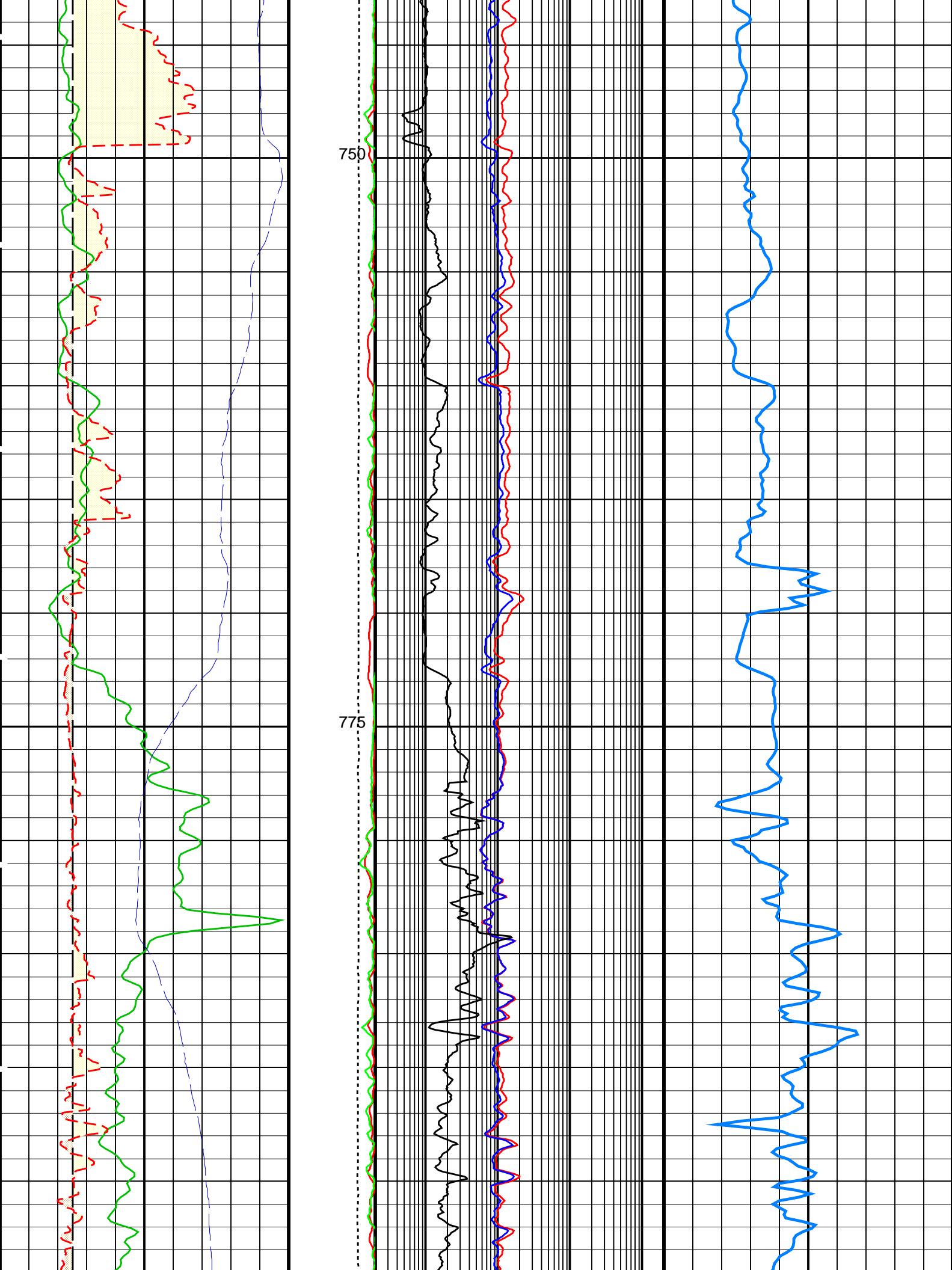


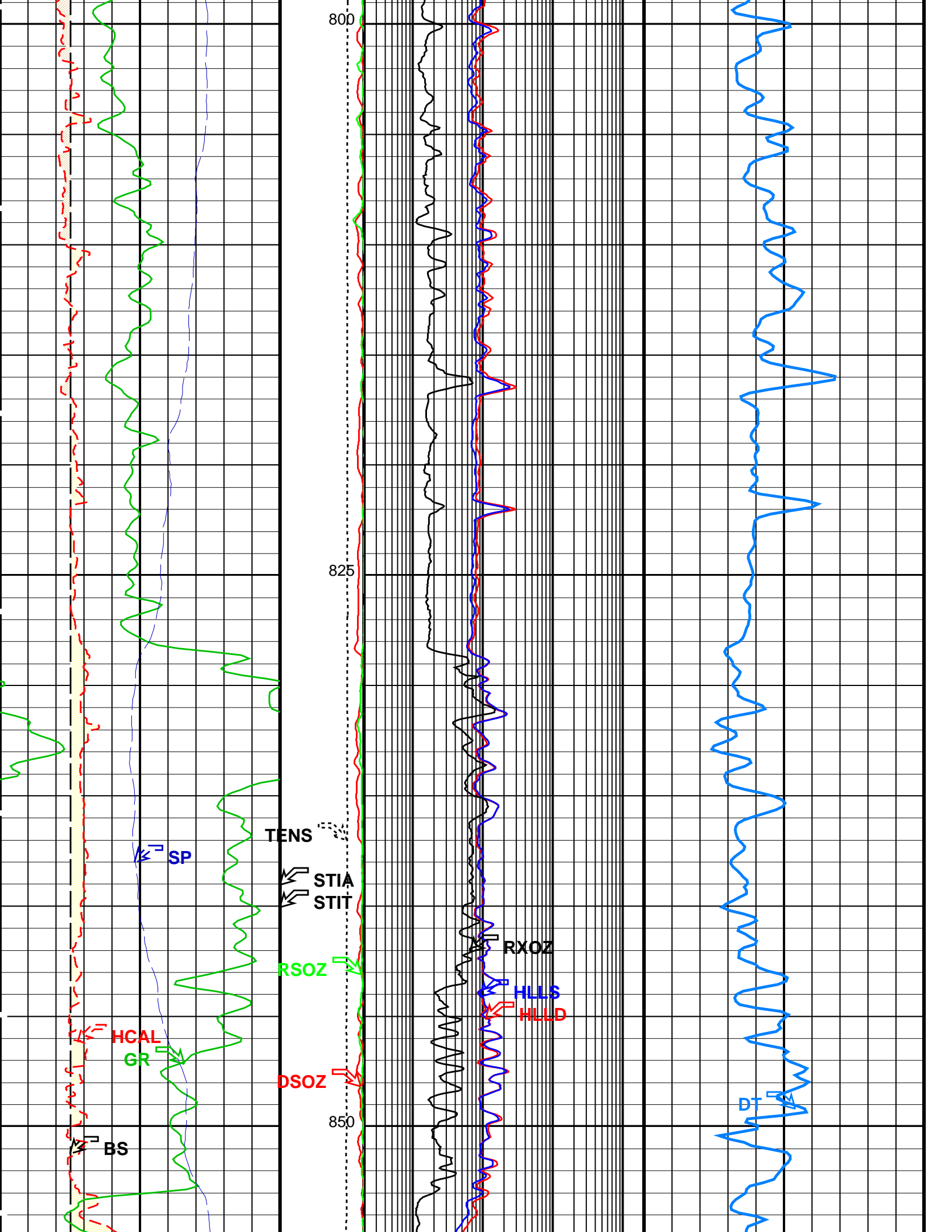


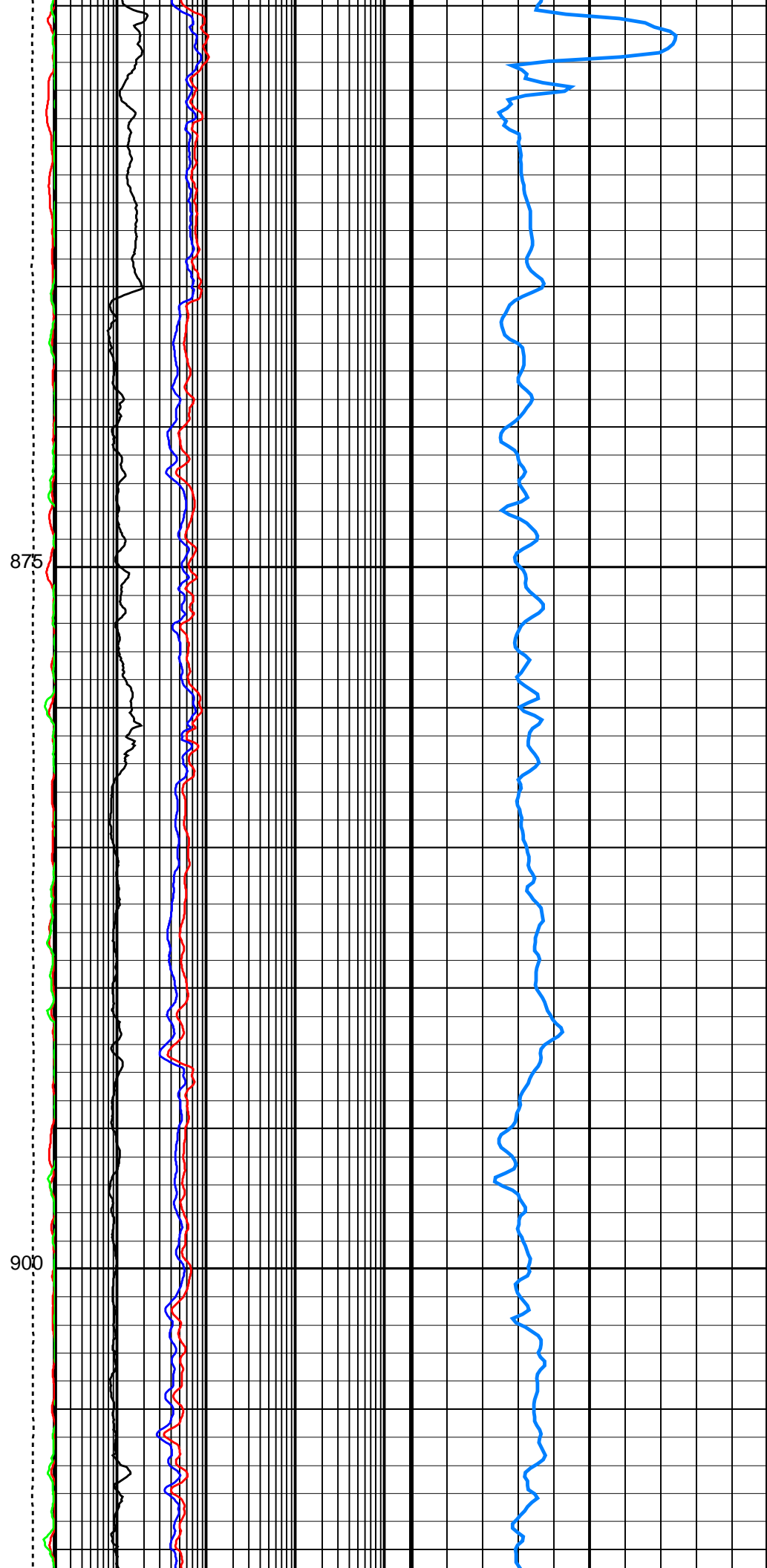
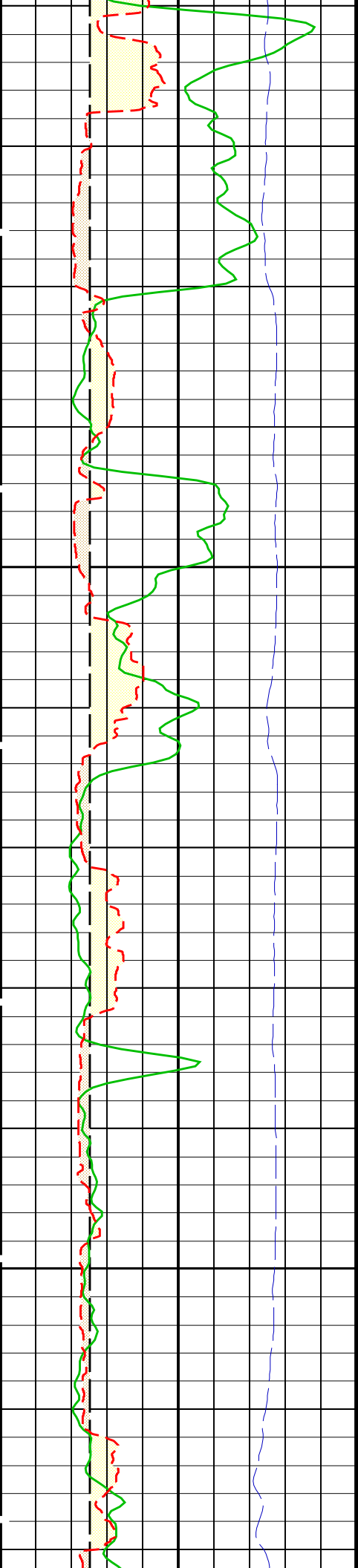


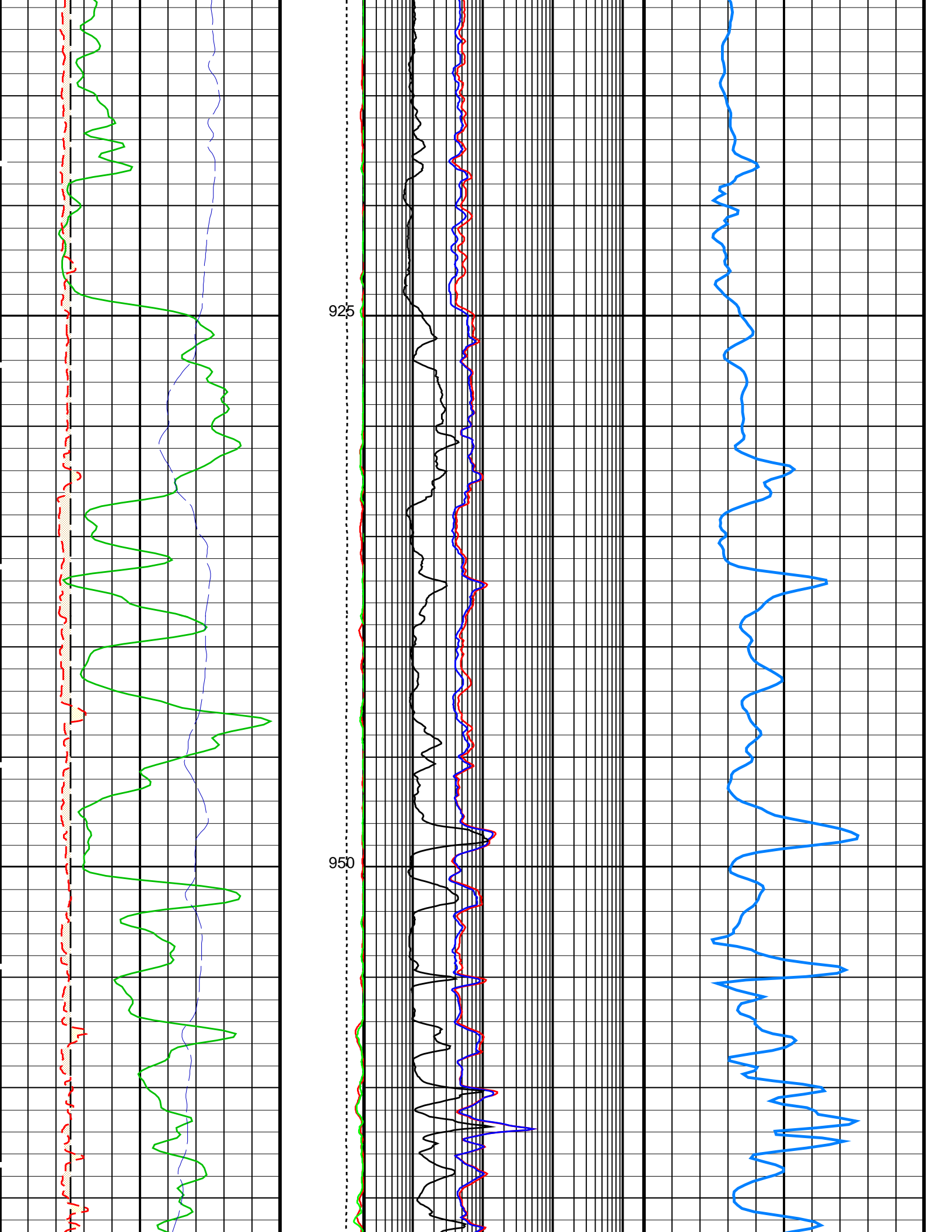


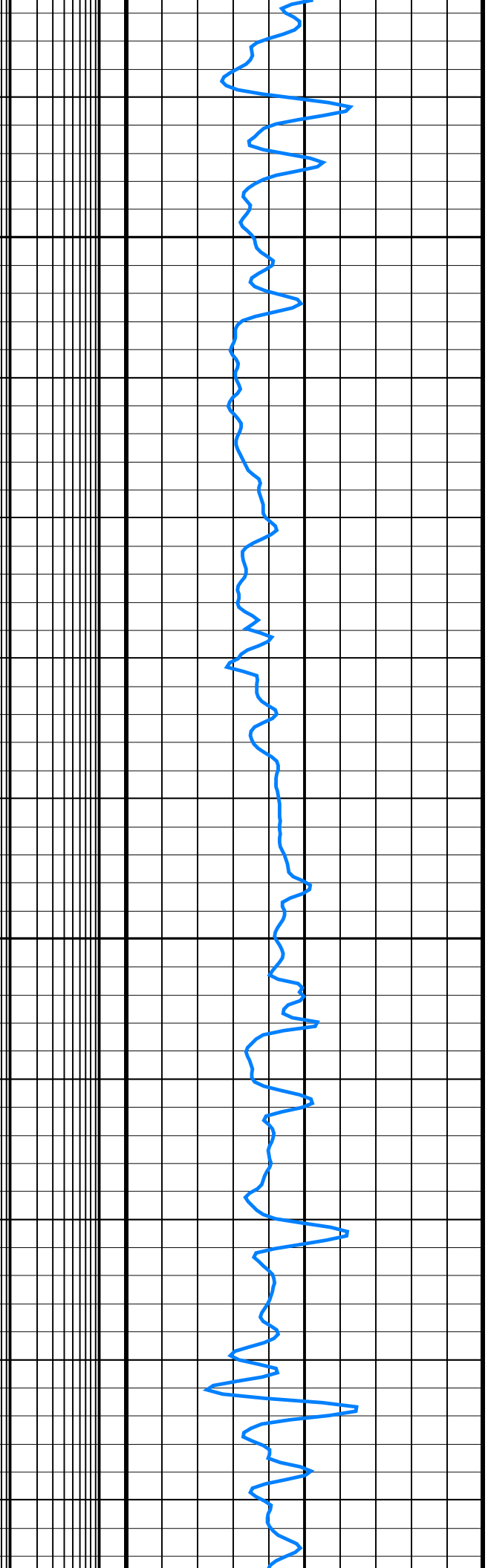
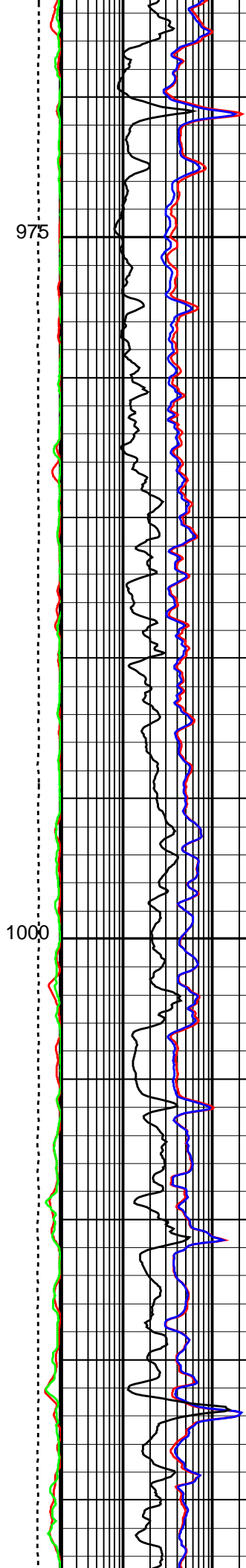
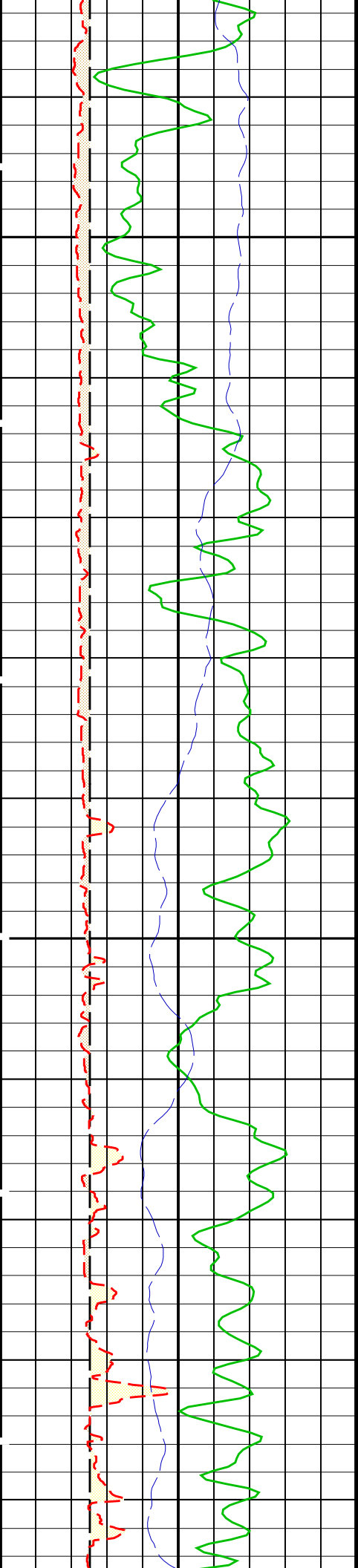


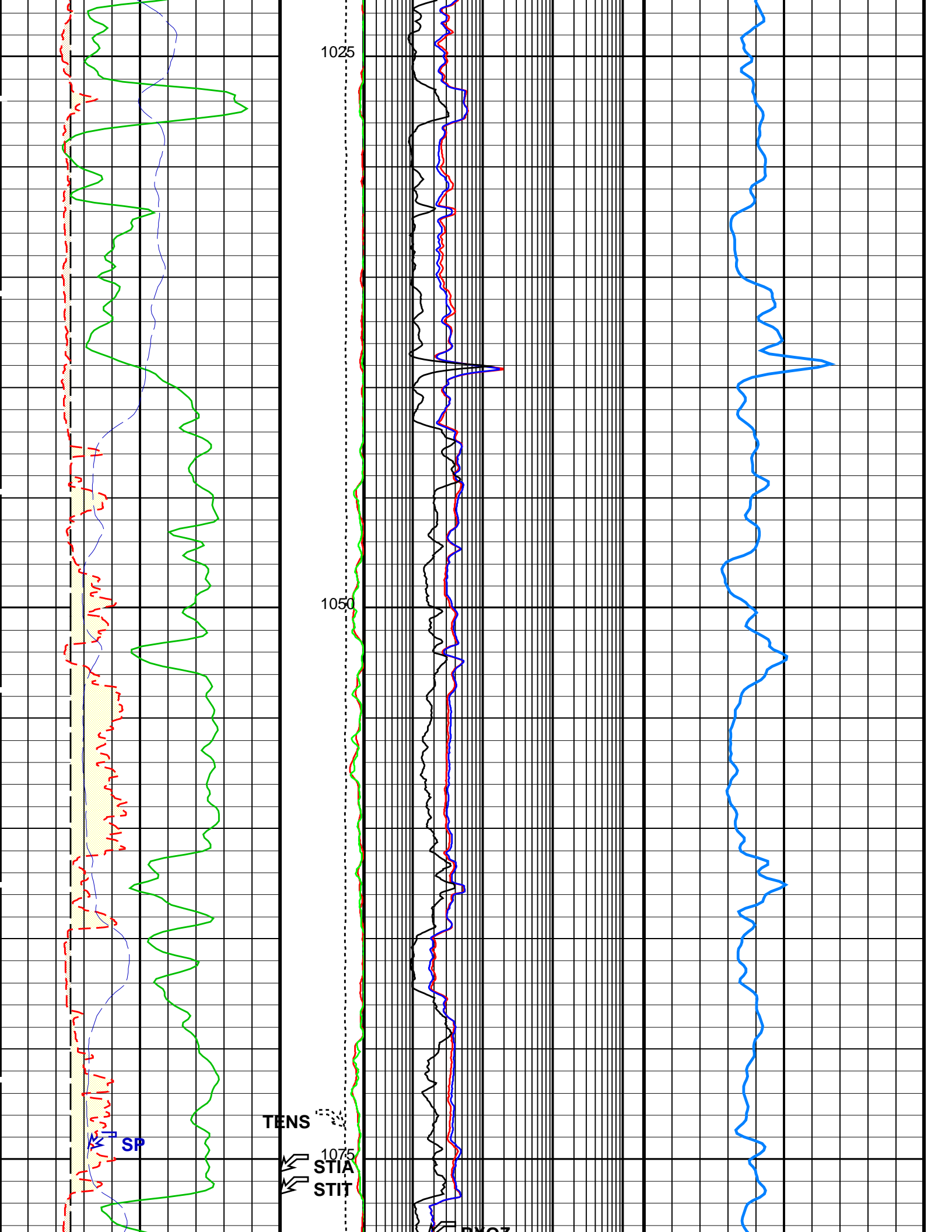


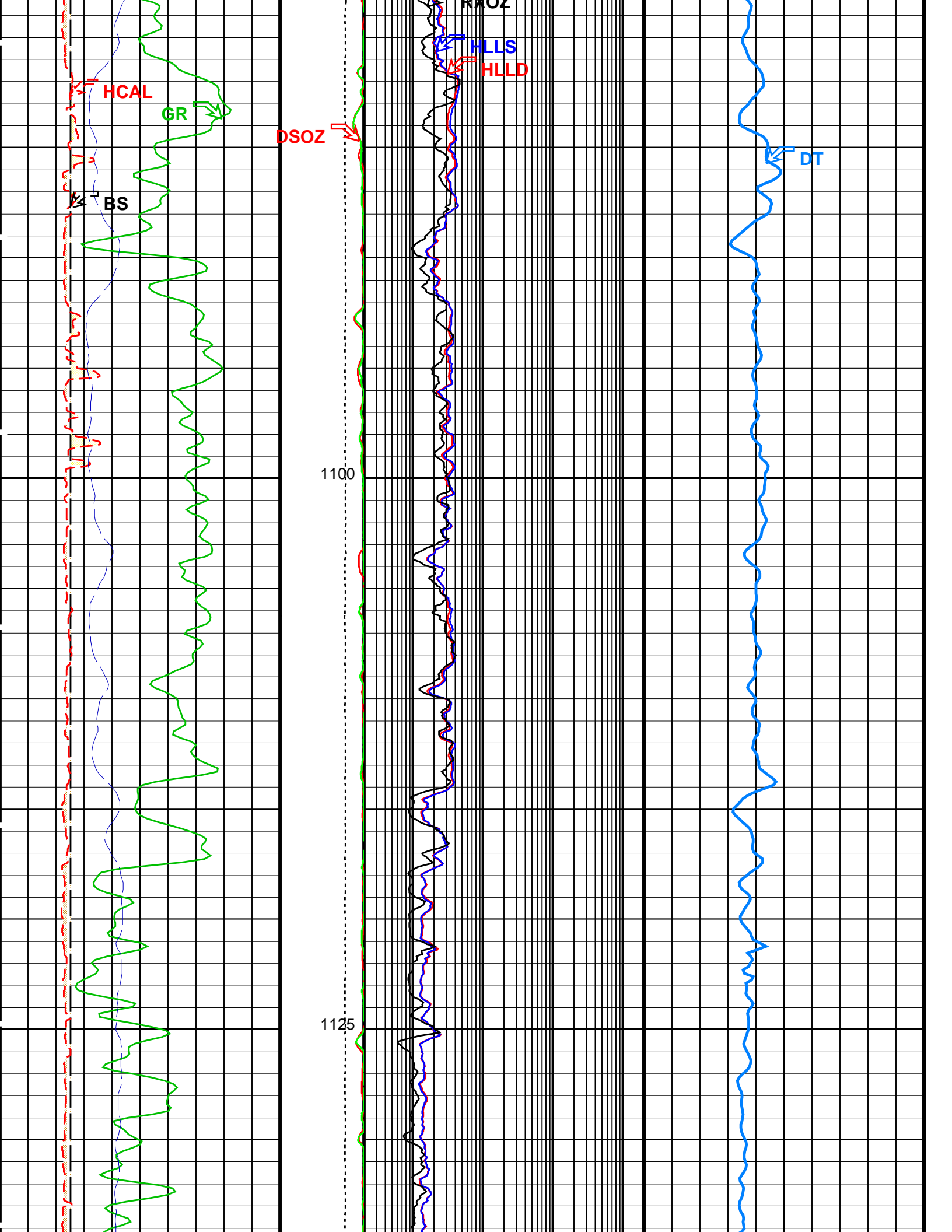


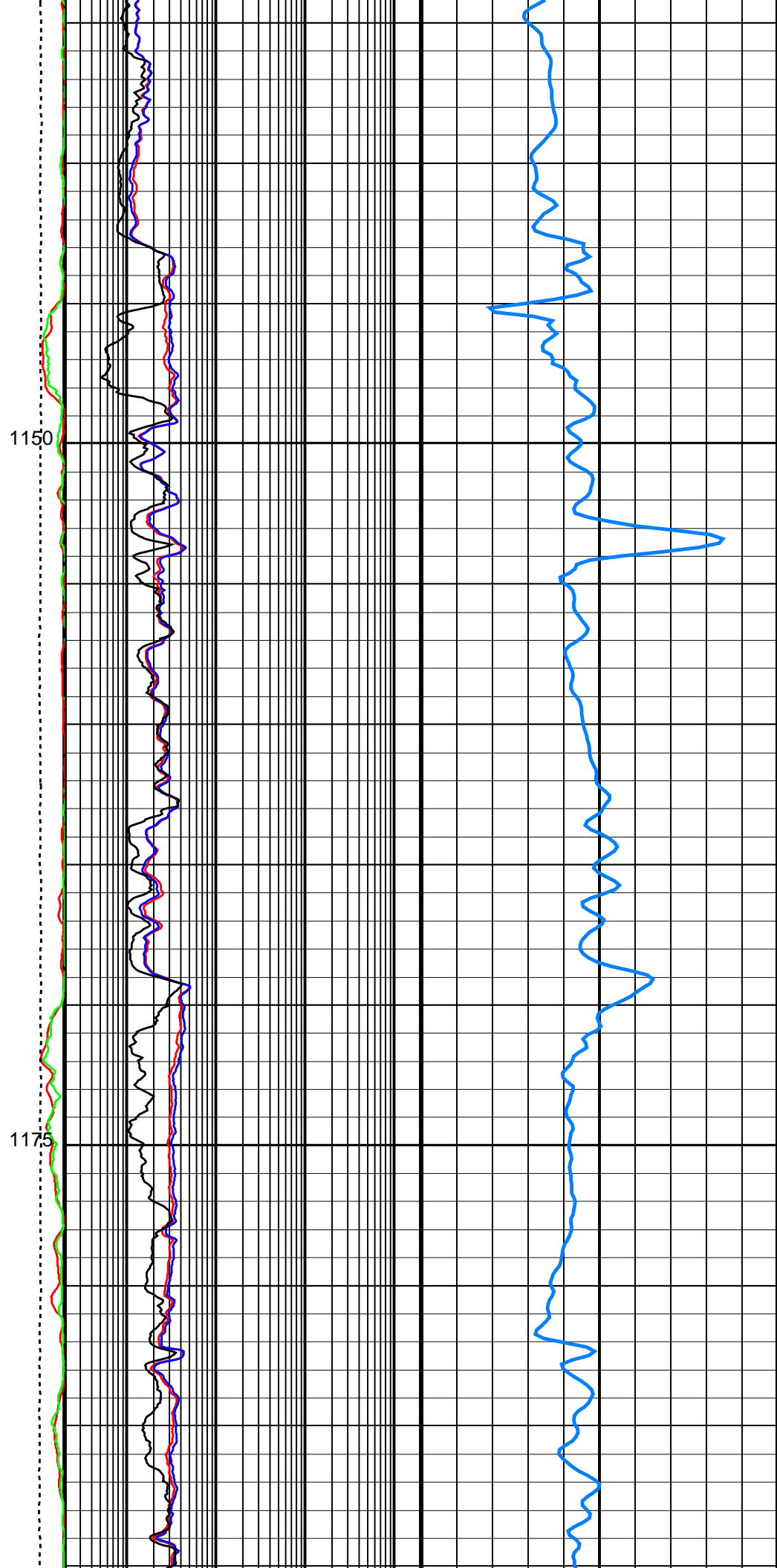
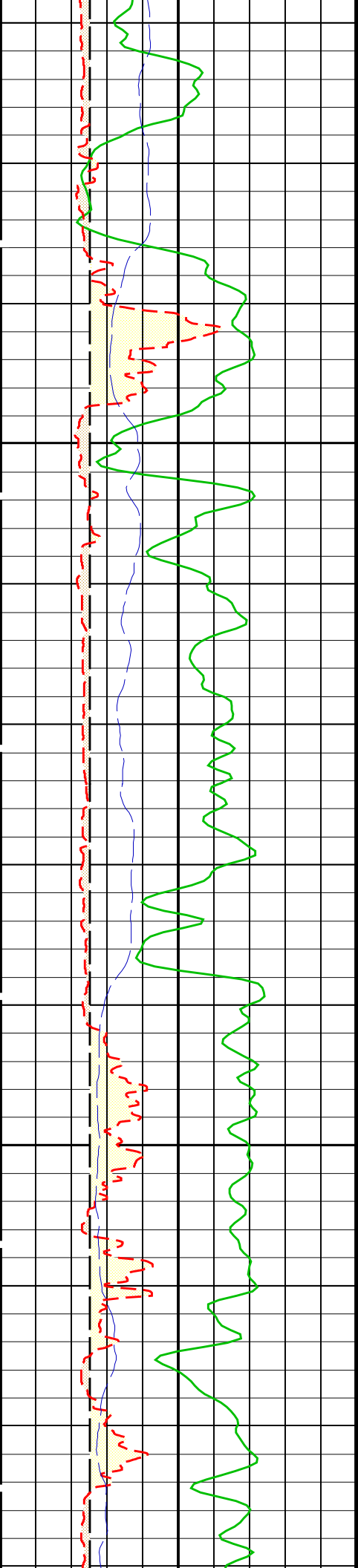


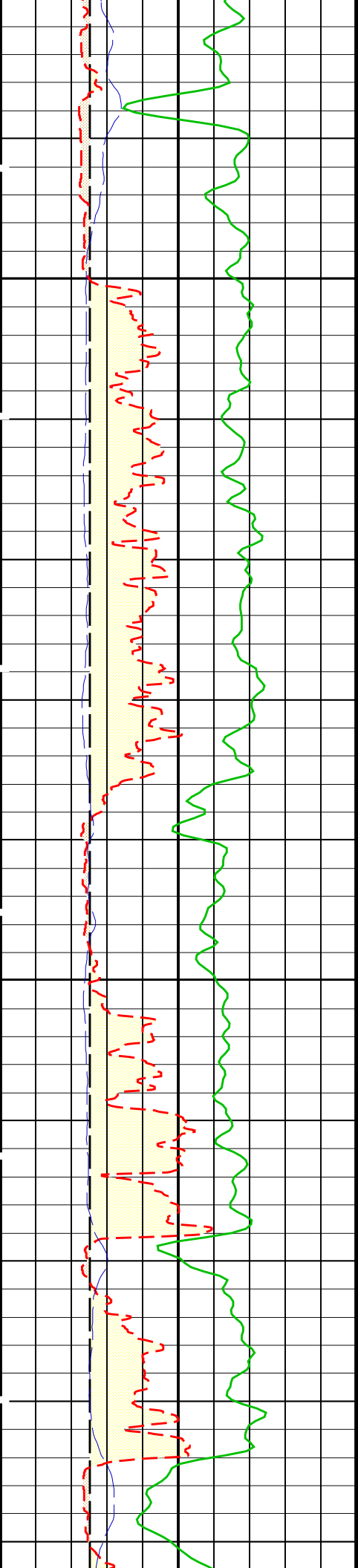






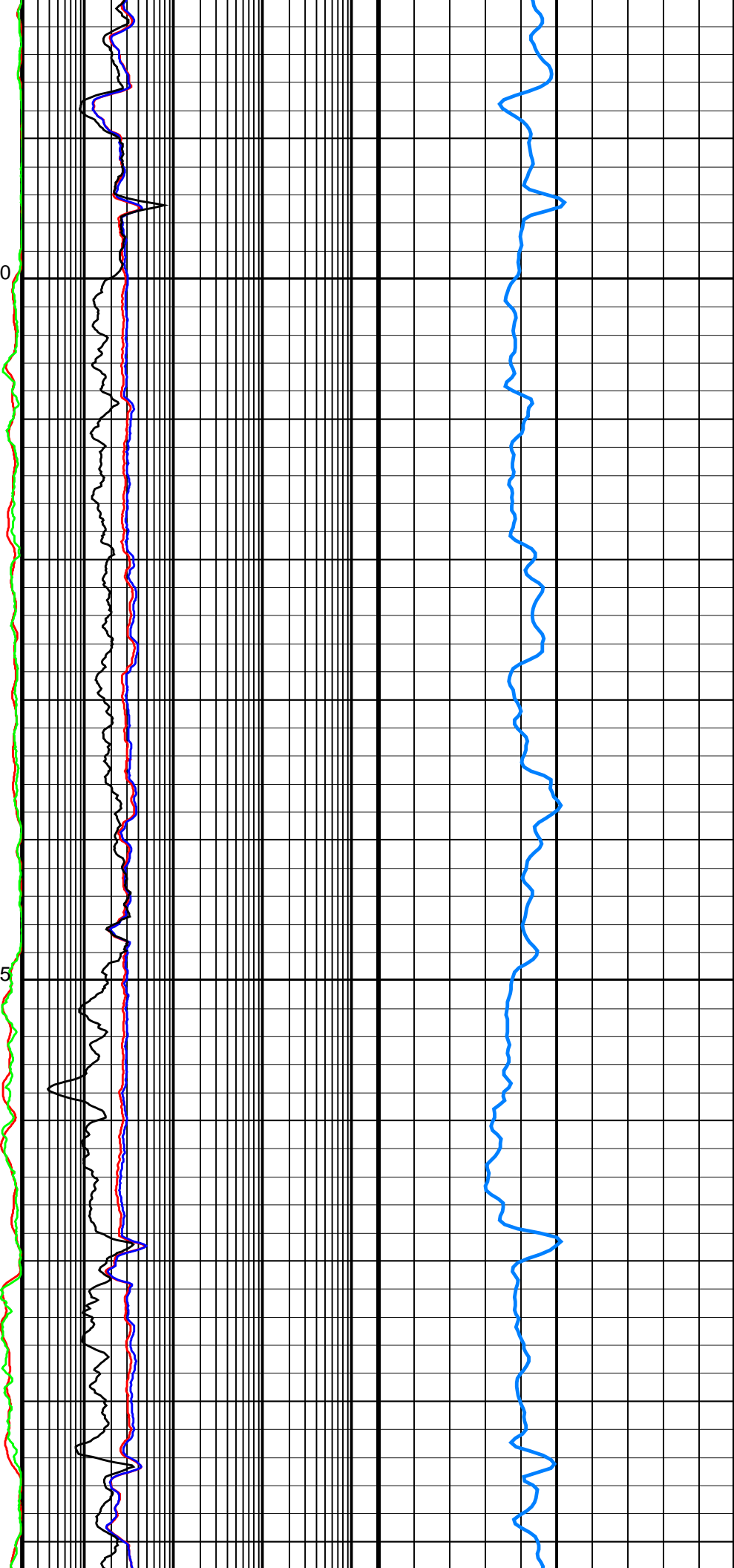


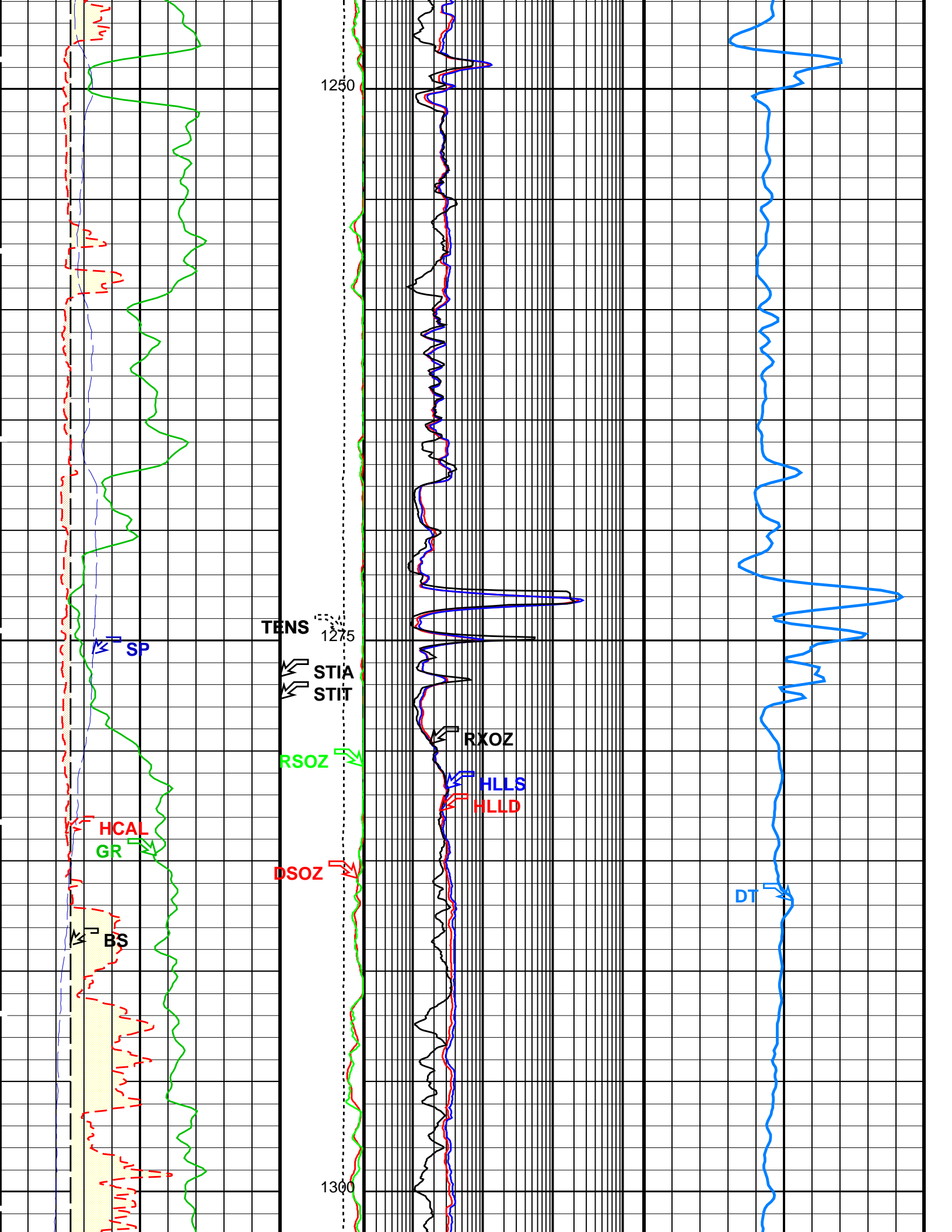


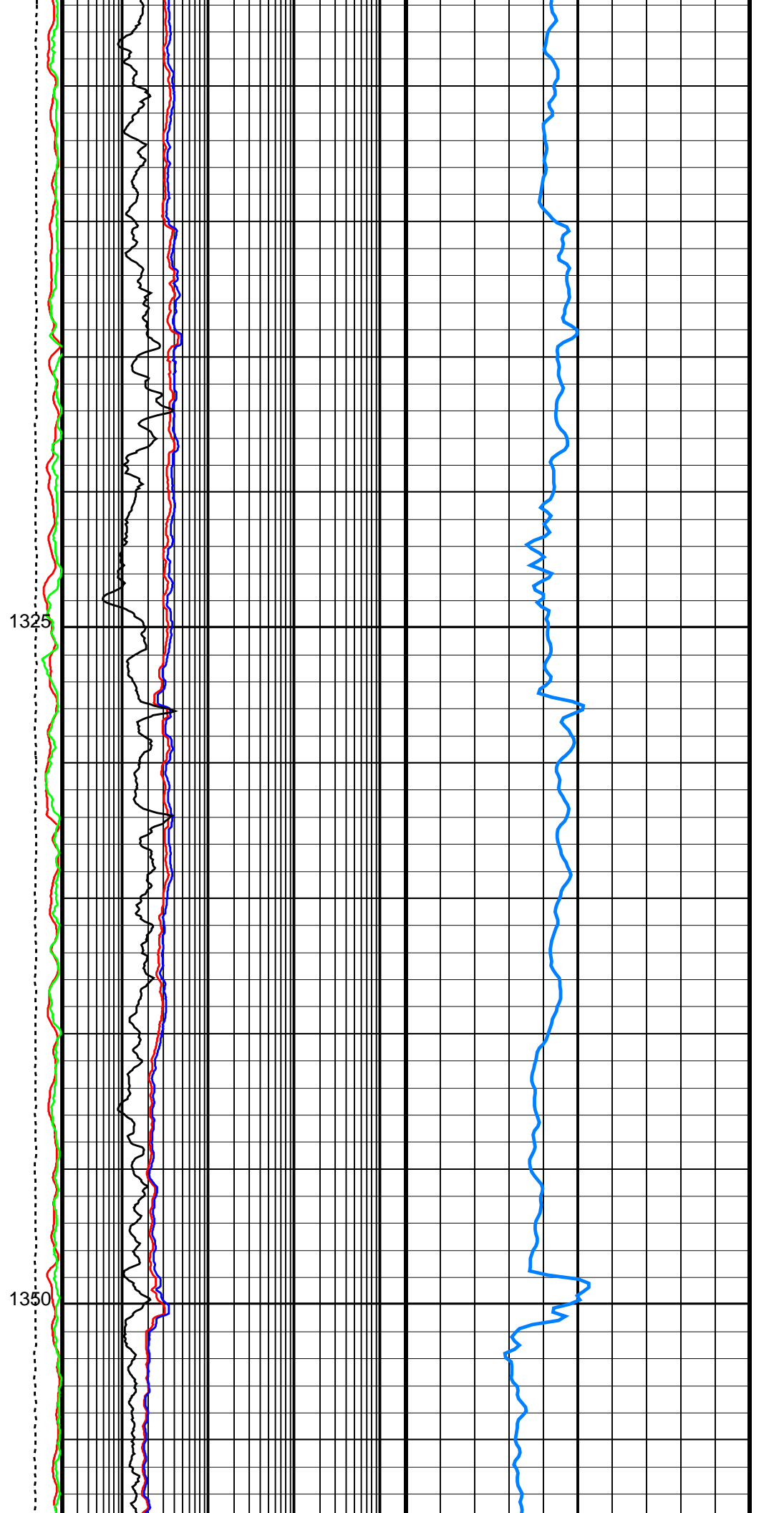
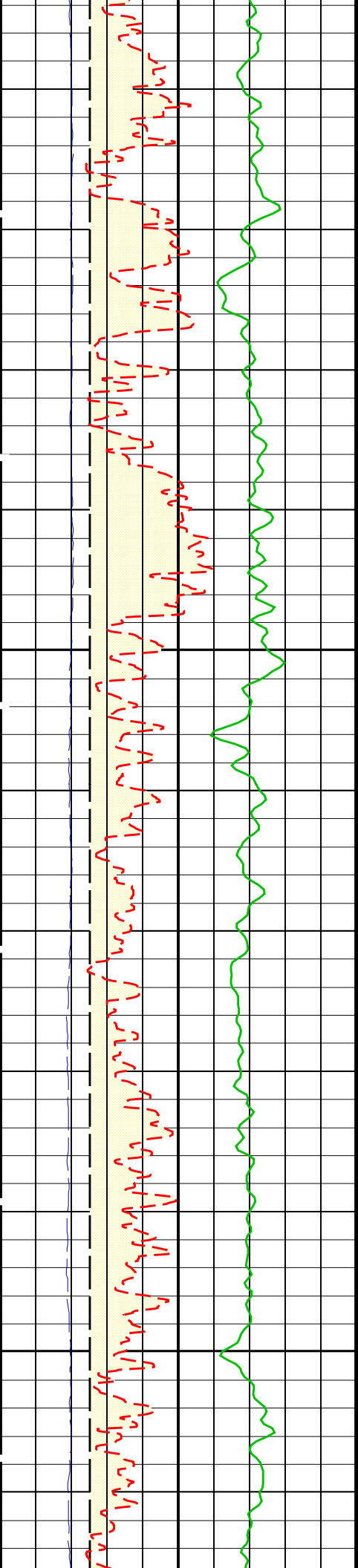


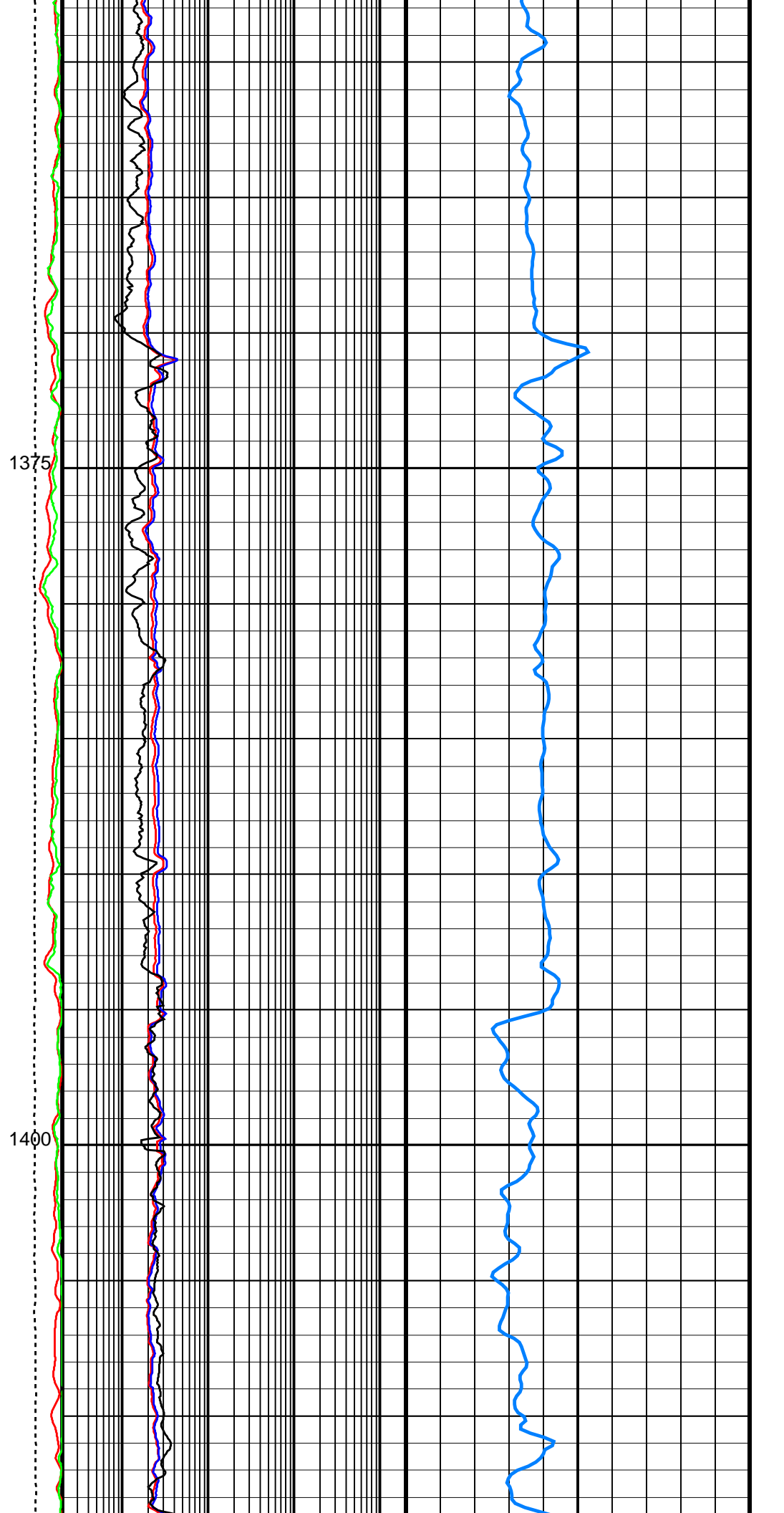
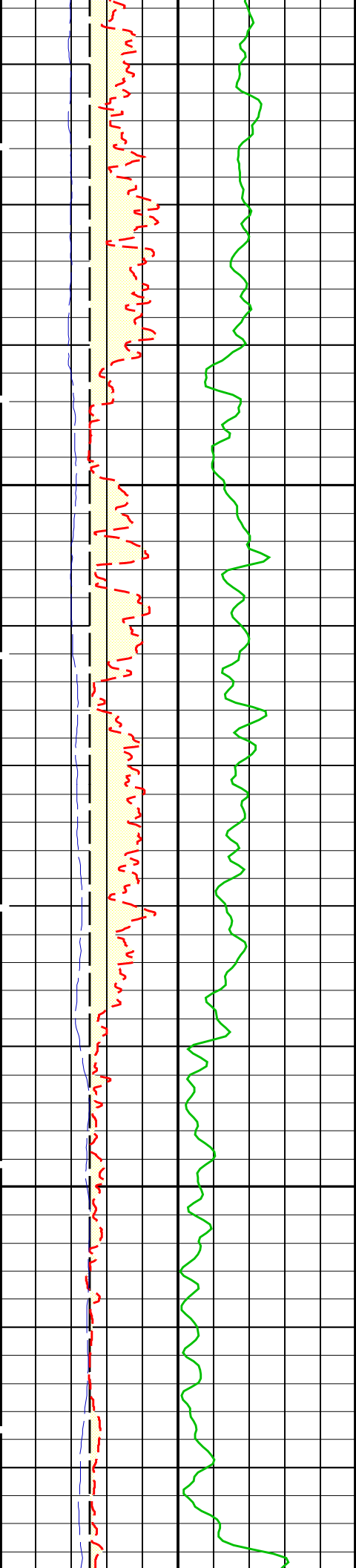
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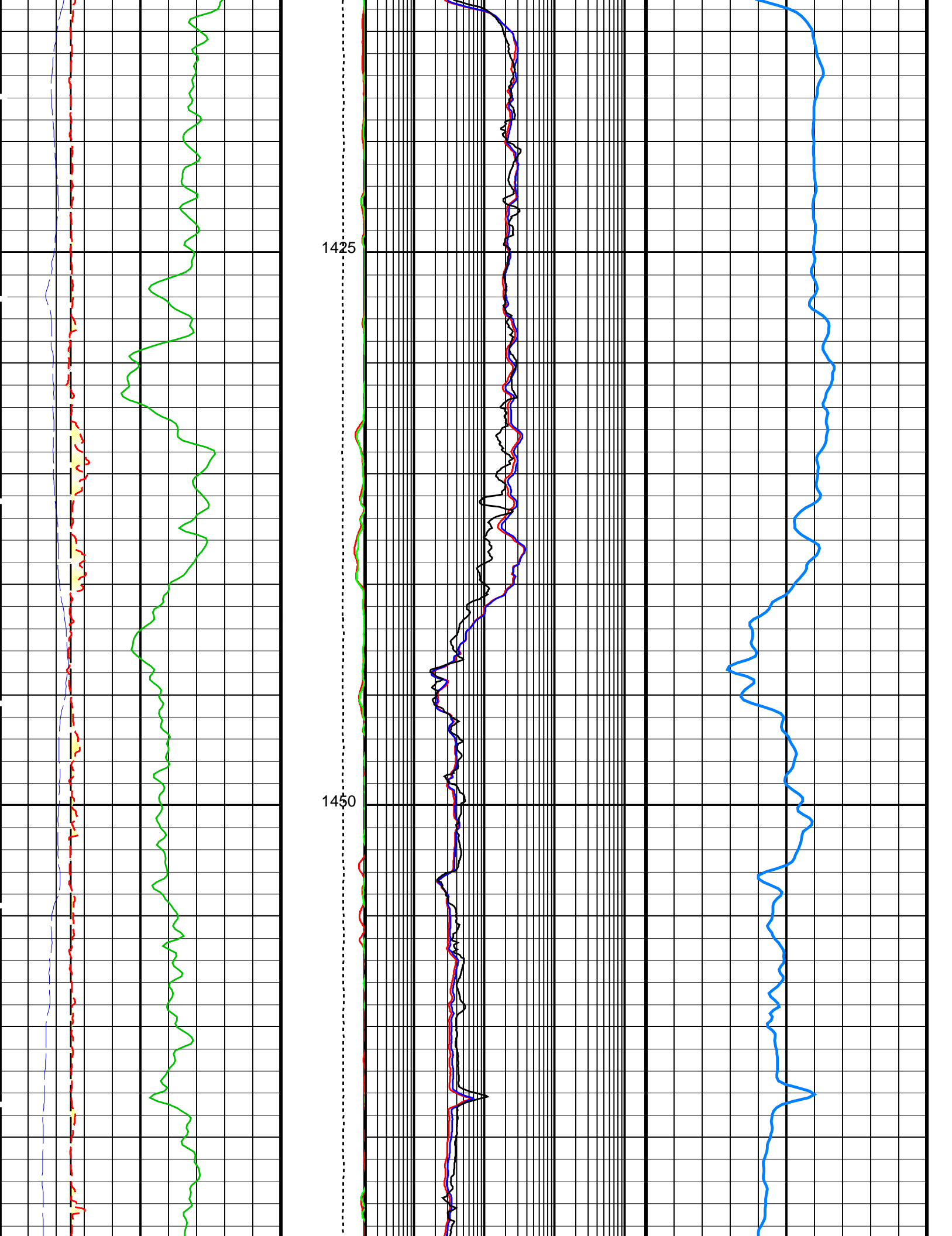
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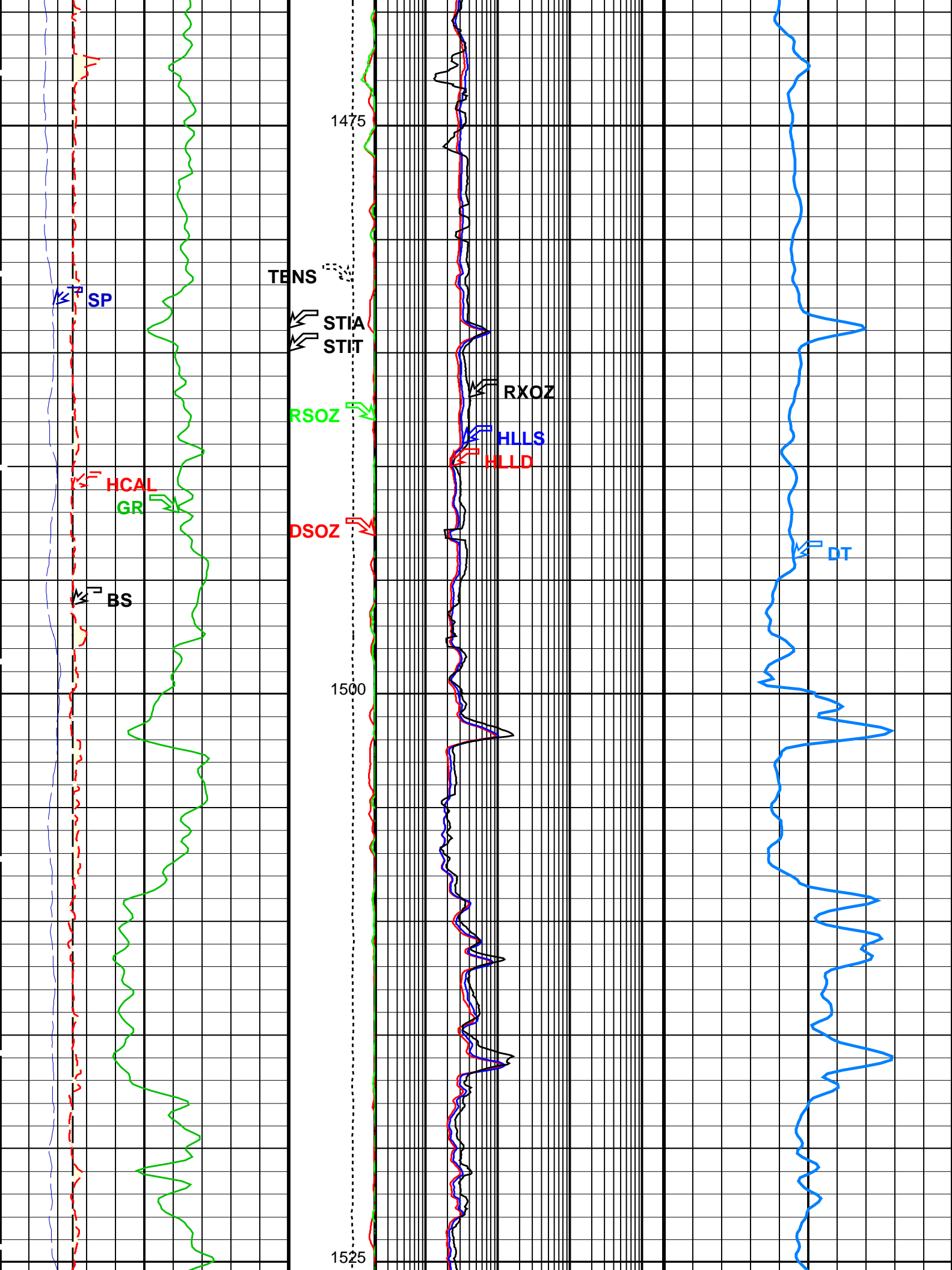


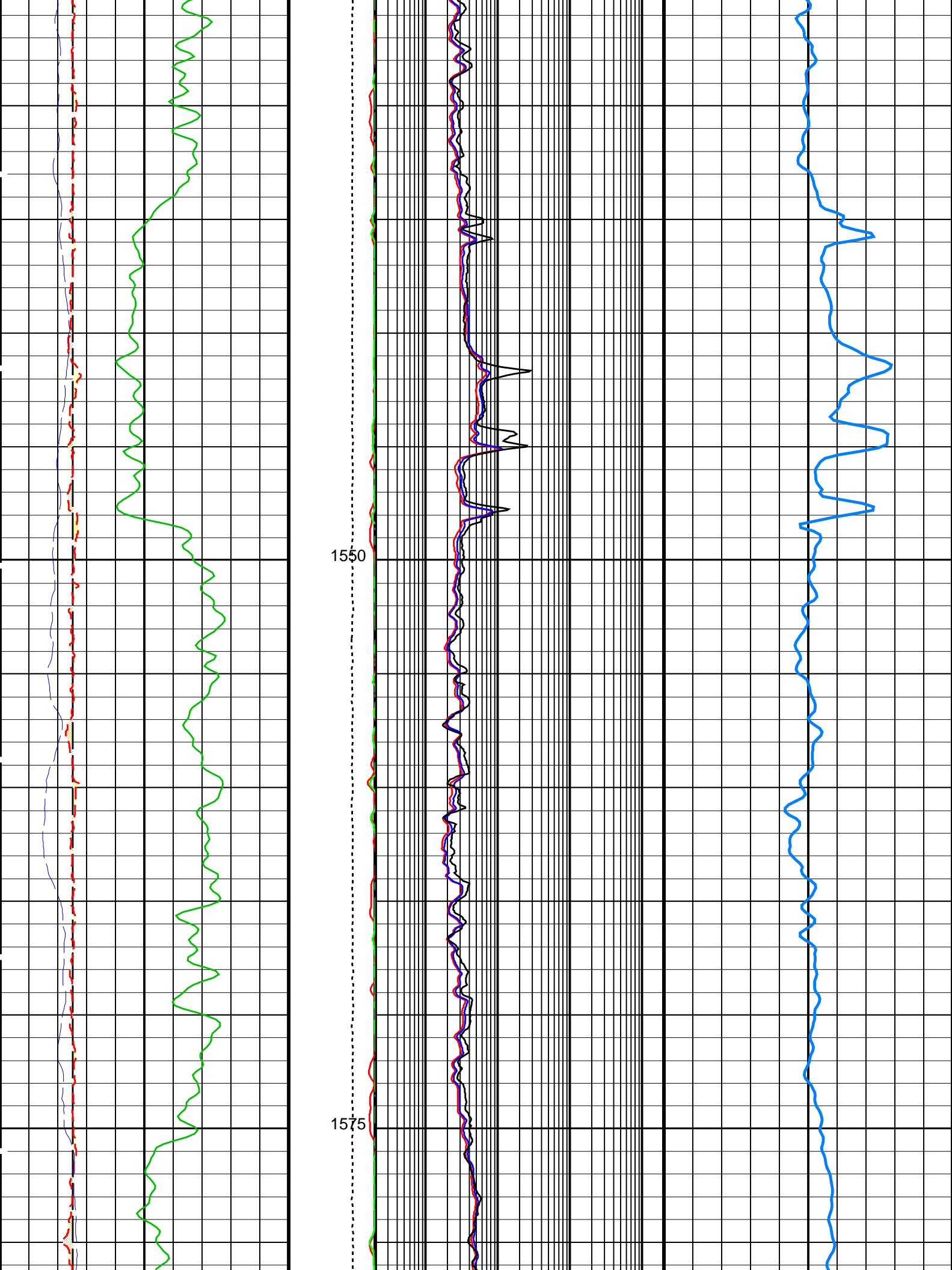


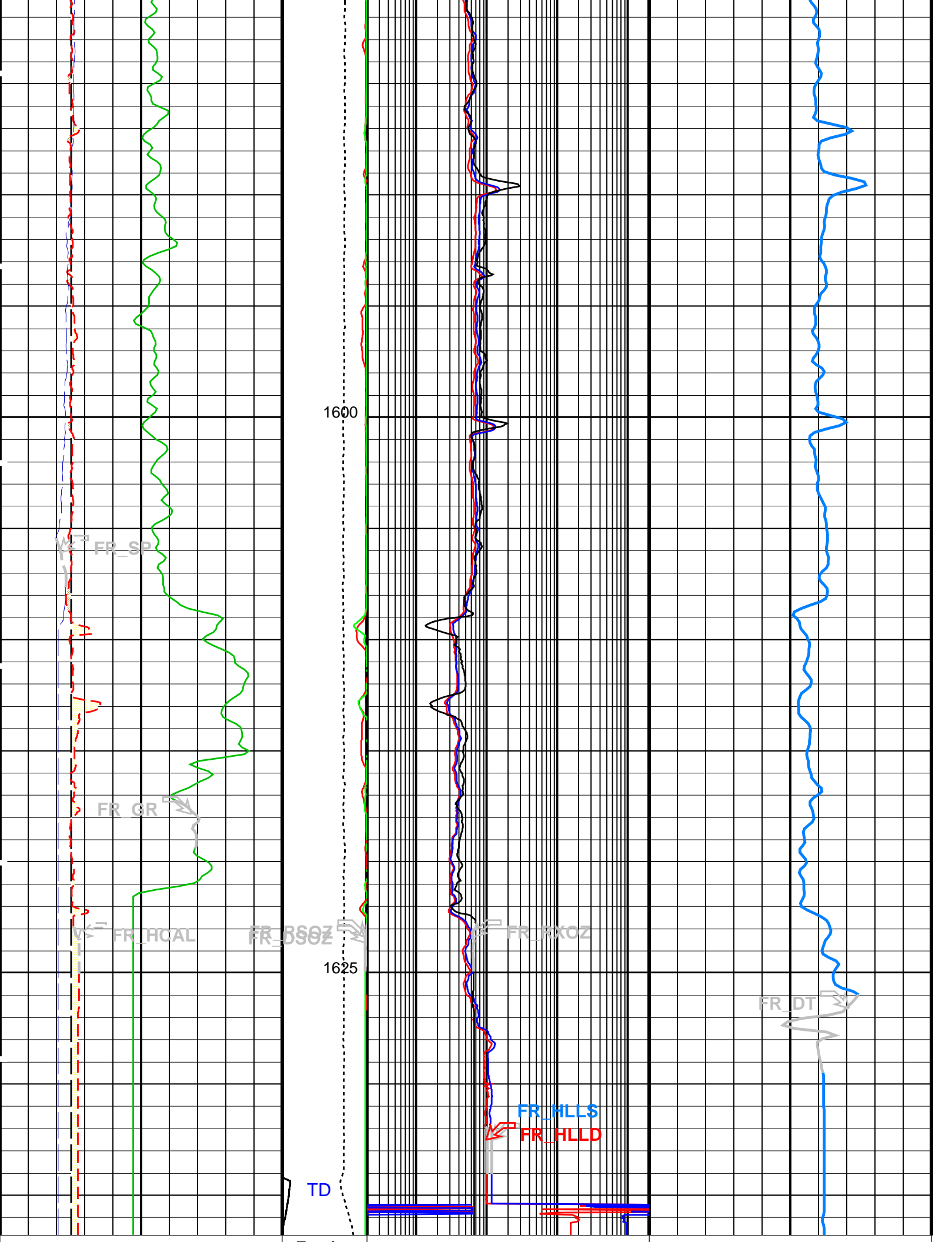












<div>SP (SP)</div> <div>(MV)</div> <div>-8020</div>		<div>Tension</div> <div>(TENS)</div> <div>(LBF)</div> <div>100000</div>	<div>Laterolog Deep Resistivity (HLLD)</div> <div>0.2(OHMM)2000</div>		<div>Delta-T (DT)</div> <div>(US/F)</div> <div>15050</div>	
<div>Bit Size (BS)</div> <div>(IN)</div> <div>616</div>		<div>Std. Res. Density Standoff (DSOZ)</div> <div>65 (MM) 0</div>	<div>Laterolog Shallow Resistivity (HLLS)</div> <div>0.2(OHMM)2000</div>			
<div>Gamma Ray (GR)</div> <div>(GAPI)</div> <div>0150</div>		<div>Std. Res. Resistivity Standoff (RSOZ)</div> <div>65 (MM) 0</div>	<div>Std. Res. Invaded Zone Resistivity (RXOZ)</div> <div>0.2(OHMM)2000</div>			
<div>HILT Caliper (HCAL)</div> <div>(IN)</div> <div>616</div>						
<div>Mudcake</div> <div>From HCAL to BS</div>						
<div>Washout</div> <div>From BS to HCAL</div>						

PIP SUMMARY									
Time Mark Every 60 S									

Parameters			
DLIS Name	Description	Value	
HALS-B: HILT Azimuthal Laterolog Sonde B			
A2EX	HALS Type of Image	Conductivities	
AGOS	HALS-B A2 Extended (Groningen effect)	OFF	
ARIP_LTS	HALS-GPIT OFFSET	-90	IN
ARIP_SHOULDER	HALS Long Tool String Correction	OFF	
BHCC	HALS Shoulder Correction	OFF	
BHS	HALS Borehole Correction	ON	
BHT	Borehole Status	OPEN	
DHOP	Bottom Hole Temperature (used in calculations)	63.3334	DEGC
	Diameter & Eccentering used in HALS Borehole Corrections	Caliper_Eccentered	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	2	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRCC	HALS Groningen Correction	OFF	
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HLAC	HALS-B Loop A Coefficient	LOW	
HLMO	HALS Logging Mode	HIRES	
HMSO	HALS Mechanical Standoff	1.5	IN
HRUN	HALS-B Record Uncalibrated Channels	NO	
IMOS	HALS Image Orientation	OFF	
LIMP	HALS Left Image Processing	DeepRaw	
LOP1	HALS-B Mode 1 Loop Mode	OFF	
LOP2	HALS-B Mode 2 Loop Mode	OFF	
LOP3	HALS-B Mode 3 Loop Mode	OFF	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
RIMP	HALS Right Image Processing	ShallowRaw	
RTCOMP	HALS Rt Computation	Hals_Highres	
RTRE	HALS Resistivity Threshold	100000	OHMM
SHT	Surface Hole Temperature	20	DEGC
SPCO	HALS-B Special Power Connection	OFF	
TCOR	HALS TLC Correction	OFF	
UNSPK	HALS Despiking Filter Option	OFF	
UNSPK_THOLD	HALS Despiking Filter Threshold (in %)	20	%
UNSPK_WINDOW	HALS Despiking Filter Window (inches)	6	IN
DSLTL-H: Digitizing Sonic Logging Tool			
	DSLTL Firing Mode	SDDDB	
	Telemetry Mode	DSLCL_FTB	
AGC	Automatic Gain Control Status	ON	
AMSG	Auxiliary Minimum Sliding Gate	140	US
BILI	Bond Index Level for Zone Isolation	0.8	
CBAF	CBL Adjustment Factor	1	
CBCF	CBL Correction Factor	4	
CBLG	CBL Gate Width	45	US
CBLT	CBL Delta T Shale	100	US/F

CDTS	C-Delta-T Shale	0	US/F
CSTR	Compressive Strength of Cement	0	KPAA
DDEL	Digitizing Delay	0	US
DETE	Delta-T Detection	E2	
DFAD	Digital First Arrival Detection Switch	HOST	
DFAD_TYPE	DFAD type	DFAD2	
DIVL	DSLT Depth Sampling Interval	20	
DRCS	DSLT DLIS Recording Size	140	
DSIN	Digitizing Sample Interval	10	
DTCM	Delta-T Computation Mode	FULL	
DTF	Delta-T Fluid	189	US/F
DTFS	DSLC Telemetry Frame Size	316	
DTM	Delta-T Matrix	56	US/F
DWCO	Digitizing Word Count	140	
FCF	CBL Fluid Compensation Factor	1	
GAI	Manual Gain	40	
GOBO	Good Bond	2	MV
ITTS	Integrated Transit Time Source	DT	
MAHTR	Manual High Threshold Reference	150	
MCI	Minimum Cemented Interval for Isolation	4.51523	M
MGAI	Maximum Gain	60	
MIGA	Minimum Gain	1	
MNHTR	Minimum High Threshold Reference	140	
MODE	Sonic Firing Mode	SDDB	
MSA	Minimum Sonic Amplitude	15.924	MV
NMSG	Near Minimum Sliding Gate	140	US
NMXG	Near Maximum Sliding Gate	850	US
NUMP	Number of Detection Passes	2	
RATE	Firing Rate	R15	
RDFA	Reset DFAD	OFF	
SDTH	Switch Down Threshold	20000	
SFAF	Sonic Formation Attenuation Factor	7	DB/M
SGAD	Sliding Gate Status	ON	
SGAI	Selectable Acquisition Gain	AUTO	
SGCL	Sliding Gate Closing Delta-T	135	US/F
SGCW	Sliding Gate Closing Width	55	US
SGDT	Sliding Gate Delta-T	60	US/F
SGW	Sliding Gate Width	100	US
SLEV	Signal Level for AGC	3000	
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPSO	Sonic Porosity Source	DT	
SUTH	Switch Up Threshold	1000	
VDLG	VDL Manual Gain	40	
WAGC	Waveform AGC Allow/Disallow	OFF	
WGAJ	Waveform Manual Gain	20	
WGDT	Waveform Gain Delta-T	240	US/F
WGIN	Waveform Gain Interval	2540	US
WMOD	Waveform Firing Mode	FULL	
HILTB-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	63.3334	DEGC
BSCO	Borehole Salinity Correction Option	YES	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
EXSICL	External Shale Indicator Clean Value	20	
EXSISH	External Shale Indicator Shale Value	150	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPHZ	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	2	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HACPP	Accelerometer PROM Presence	PRESENT_FILE	
HART	Accelerometer Reference Temperature	20	DEGC
HDCOD	HILT Density Coal detection	2	G/C3
HDSAD	HILT Density Salt detection	2.1	G/C3
HILT_GAS_DENSITY	HILT Gas Downhole Density	0	G/C3
HILT_GAS_OPTION	HILT Gas Computation Option	OFF	
HNCOD	HILT Neutron Coal detection	45	PU
HNSAD	HILT Neutron Salt detection	5	PU
HPHIECUT	HILT effective Porosity Cutoff	5	PU
HSCO	Hole Size Correction Option	YES	
HSIS	HILT Shale Indicator Selection	GR	
HSWCUT	HILT Water Saturation from AITH cutoff	50	%
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	YES	
MCOR	Mud Correction	BARI	
MDEN	Matrix Density	2.71	G/C3

MHCO	MCFL B0 Contrast Correction Coefficient	2.2e-005	OHMS
MHC1	MCFL B1 Contrast Correction Coefficient	3.2e-005	OHMS
MHCC	MCFL High Contrast Correction Switch	YES	
MPOF	MCFL Processing Operation Mode	ON	
MWCO	Mud Weight Correction Option	YES	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	BARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PHIMAX	HILT max porosity	35	PU
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SEXP_HILT	HILT Saturation Exponent	2	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	NO	
HNGS-BA: Hostile Natural Gamma Ray Sonde			
BAR1	HNGS Detector 1 Barite Constant	0.953764	
BAR2	HNGS Detector 2 Barite Constant	0.972514	
BHK	HNGS Borehole Potassium Correction Concentration	0.041	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	63.3334	DEGC
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	USER	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	2	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	0.0102828	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	USER	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	-999.25	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	-999.25	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.975731	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.994675	
BSP: Bridle SP			
SPNV	SP Next Value	0	MV
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	63.3334	DEGC
FCD	Future Casing (Outer) Diameter	5.5	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	2	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HVCS	Integrated Hole Volume Caliper Selection	LCAL	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	20	DEGC
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	0.762	M
TDD	Total Depth - Driller	1640.00	M
TDL	Total Depth - Logger	1634.80	M
System and Miscellaneous			
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	8.500	IN
BSAL	Borehole Salinity	41000.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	40.00	LB/F
DFD	Drilling Fluid Density	1.13	G/C3
DO	Depth Offset for Playback	0.0	M
MST	Mud Sample Temperature	12.50	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	0.2010	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	1634.8	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

HALS-B HILTB-FTB HNGS-BA BSP	OP10-KP1 OP10-KP1 OP10-KP1 10C0-306	DSLT-H HNGC-A DTC-H	OP10-KP1 OP10-KP1 10C0-306
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Input DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_017LUP FN:16	PRODUCER	21-Jun-2004 14:42	1636.8 M	20.8 M
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Output DLIS Files

DEFAULT	HALS_SONIC_TLD_MCFL_101PUP FN:100	PRODUCER	22-Jun-2004 10:45
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Schlumberger

Calibrations

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Total current mode 1							
Before: 18-Jun-2004 13:50							
Itot 1 Gain	1.000	N/A	0.998	N/A	N/A	0.026	MA
Itot 1 Phase	0.000	N/A	0.000	N/A	N/A	0.100	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Aux current mode 1							
Before: 18-Jun-2004 13:50							
Iaux 1 Gain	1.000	N/A	0.994	N/A	N/A	0.035	MA
Iaux 1 Phase	0.000	N/A	-0.144	N/A	N/A	1.900	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Aux current mode 2							
Before: 18-Jun-2004 13:50							
Iaux 2 Gain	1.000	N/A	0.975	N/A	N/A	0.048	MA
Iaux 2 Phase	0.000	N/A	0.000	N/A	N/A	0.100	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0 current mode 3A							
Before: 18-Jun-2004 13:50							
I0 3A Gain	1.000	N/A	0.984	N/A	N/A	0.036	UA
I0 3A Phase	0.000	N/A	0.000	N/A	N/A	0.100	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0 current mode 3B							
Before: 18-Jun-2004 13:50							
I0 3B Gain	1.000	N/A	0.979	N/A	N/A	0.036	UA
I0 3B Phase	0.000	N/A	-0.000	N/A	N/A	0.100	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Torpedo Voltage gains							
Before: 18-Jun-2004 13:50							
Zvt 1 Gain	1.000	N/A	0.994	N/A	N/A	0.025	MV
Zvt 2 Gain	1.000	N/A	0.997	N/A	N/A	0.045	MV
Zvt 3 Gain	1.000	N/A	1.004	N/A	N/A	0.045	MV
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Torpedo Voltage Phases							
Before: 18-Jun-2004 13:50							
Zvt 1 Phase	0.000	N/A	-0.098	N/A	N/A	2.300	DEG
Zvt 2 Phase	0.000	N/A	-0.000	N/A	N/A	0.800	DEG
Zvt 3 Phase	0.000	N/A	-0.128	N/A	N/A	0.500	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Upper Bridle Voltage mode 1							
Before: 18-Jun-2004 13:50							
Zvb 1 Gain	1.000	N/A	0.994	N/A	N/A	0.025	MV

Zvb 1 Phase	0.000	N/A	-0.125	N/A	N/A	2.300	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB M1–M2 Voltage gains							
Before: 18–Jun–2004 13:50							
ZVM 1 Gain	1.000	N/A	0.996	N/A	N/A	0.039	UV
ZVM 2 Gain	1.000	N/A	0.992	N/A	N/A	0.019	UV
ZVM 3 Gain	1.000	N/A	0.991	N/A	N/A	0.019	UV
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB M1–M2 Voltage Phases							
Before: 18–Jun–2004 13:50							
ZVM 1 Phase	0.000	N/A	0.229	N/A	N/A	3.800	DEG
ZVM 2 Phase	0.000	N/A	1.869	N/A	N/A	1.300	DEG
ZVM 3 Phase	0.000	N/A	1.017	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB M1–A0* Voltage gains							
Before: 18–Jun–2004 13:50							
ZVH 1 Gain	1.000	N/A	0.997	N/A	N/A	0.013	UV
ZVH 2 Gain	1.000	N/A	0.990	N/A	N/A	0.046	UV
ZVH 3 Gain	1.000	N/A	0.990	N/A	N/A	0.046	UV
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB M1–A0* Voltage Phases							
Before: 18–Jun–2004 13:50							
ZVH 1 Phase	0.000	N/A	0.111	N/A	N/A	3.800	DEG
ZVH 2 Phase	0.000	N/A	2.000	N/A	N/A	1.300	DEG
ZVH 3 Phase	0.000	N/A	1.019	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Aux Voltage gains							
Before: 18–Jun–2004 13:50							
ZVA 1 Gain	1.000	N/A	1.086	N/A	N/A	0.032	MV
ZVA 2 Gain	1.000	N/A	1.063	N/A	N/A	0.045	MV
ZVA 3 Gain	1.000	N/A	1.015	N/A	N/A	0.045	MV
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Aux Voltage Phases							
Before: 18–Jun–2004 13:50							
ZVA 1 Phase	0.000	N/A	0.572	N/A	N/A	2.300	DEG
ZVA 2 Phase	0.000	N/A	0.026	N/A	N/A	0.800	DEG
ZVA 3 Phase	0.000	N/A	0.128	N/A	N/A	0.500	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*–A0** Diff. Voltage mode 1							
Before: 18–Jun–2004 13:50							
ZVD 1 Gain	1.000	N/A	0.997	N/A	N/A	0.047	UV
ZVD 1 Phase	0.000	N/A	0.093	N/A	N/A	3.800	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*–A0** Diff. Voltage mode 2							
Before: 18–Jun–2004 13:50							
ZVD 2 Gain	1.000	N/A	0.983	N/A	N/A	0.056	UV
ZVD 2 Phase	0.000	N/A	1.294	N/A	N/A	1.300	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*–A0** Diff. Voltage mode 3A							
Before: 18–Jun–2004 13:50							
ZVD 3A Gain	1.000	N/A	0.987	N/A	N/A	0.056	UV
ZVD 3A Phase	0.000	N/A	0.601	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB A0*–A0** Diff. Voltage mode 3B							
Before: 18–Jun–2004 13:50							
ZVD 3B Gain	1.000	N/A	1.000	N/A	N/A	0.054	UV
ZVD 3B Phase	0.000	N/A	–0.028	N/A	N/A	1.000	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB vertical Voltage mode 1							
Before: 18–Jun–2004 13:50							
ZVV 1 Gain	1.000	N/A	0.997	N/A	N/A	0.022	UV
ZVV 1 Phase	0.000	N/A	0.164	N/A	N/A	2.800	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB vertical Voltage mode 2							
Before: 18–Jun–2004 13:50							
ZVV 2 Gain	1.000	N/A	0.983	N/A	N/A	0.036	UV
ZVV 2 Phase	0.000	N/A	2.642	N/A	N/A	1.300	DEG
HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 1							
Before: 18–Jun–2004 13:50							
Az 1 Gain – 0	1.000	N/A	0.999	N/A	N/A	0.047	UV
Az 1 Gain – 1	1.000	N/A	0.998	N/A	N/A	0.047	UV
Az 1 Gain – 2	1.000	N/A	0.999	N/A	N/A	0.047	UV
Az 1 Gain – 3	1.000	N/A	0.994	N/A	N/A	0.047	UV
Az 1 Gain – 4	1.000	N/A	1.000	N/A	N/A	0.047	UV
Az 1 Gain – 5	1.000	N/A	0.999	N/A	N/A	0.047	UV
Az 1 Gain – 6	1.000	N/A	0.997	N/A	N/A	0.047	UV
Az 1 Gain – 7	1.000	N/A	0.999	N/A	N/A	0.047	UV
Az 1 Gain – 8	1.000	N/A	0.997	N/A	N/A	0.047	UV
Az 1 Gain – 9	1.000	N/A	0.997	N/A	N/A	0.047	UV
Az 1 Gain – 10	1.000	N/A	1.001	N/A	N/A	0.047	UV
Az 1 Gain – 11	1.000	N/A	0.997	N/A	N/A	0.047	UV

AZ 1 Phase – 0	0.000	N/A	-0.004	N/A	N/A	3.800	DEG
AZ 1 Phase – 1	0.000	N/A	0.129	N/A	N/A	3.800	DEG
AZ 1 Phase – 2	0.000	N/A	0.100	N/A	N/A	3.800	DEG
AZ 1 Phase – 3	0.000	N/A	0.103	N/A	N/A	3.800	DEG
AZ 1 Phase – 4	0.000	N/A	0.205	N/A	N/A	3.800	DEG
AZ 1 Phase – 5	0.000	N/A	0.089	N/A	N/A	3.800	DEG
AZ 1 Phase – 6	0.000	N/A	0.067	N/A	N/A	3.800	DEG
AZ 1 Phase – 7	0.000	N/A	0.008	N/A	N/A	3.800	DEG
AZ 1 Phase – 8	0.000	N/A	0.122	N/A	N/A	3.800	DEG
AZ 1 Phase – 9	0.000	N/A	0.012	N/A	N/A	3.800	DEG
AZ 1 Phase – 10	0.000	N/A	0.123	N/A	N/A	3.800	DEG
AZ 1 Phase – 11	0.000	N/A	0.102	N/A	N/A	3.800	DEG

HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 2

Before: 18-Jun-2004 13:50

Az 2 Gain – 0	1.000	N/A	0.984	N/A	N/A	0.056	UV
Az 2 Gain – 1	1.000	N/A	0.983	N/A	N/A	0.056	UV
Az 2 Gain – 2	1.000	N/A	0.984	N/A	N/A	0.056	UV
Az 2 Gain – 3	1.000	N/A	0.979	N/A	N/A	0.056	UV
Az 2 Gain – 4	1.000	N/A	0.985	N/A	N/A	0.056	UV
Az 2 Gain – 5	1.000	N/A	0.984	N/A	N/A	0.056	UV
Az 2 Gain – 6	1.000	N/A	0.982	N/A	N/A	0.056	UV
Az 2 Gain – 7	1.000	N/A	0.984	N/A	N/A	0.056	UV
Az 2 Gain – 8	1.000	N/A	0.983	N/A	N/A	0.056	UV
Az 2 Gain – 9	1.000	N/A	0.982	N/A	N/A	0.056	UV
Az 2 Gain – 10	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 2 Gain – 11	1.000	N/A	0.982	N/A	N/A	0.056	UV
Az 2 Phase – 0	0.000	N/A	1.369	N/A	N/A	1.300	DEG
Az 2 Phase – 1	0.000	N/A	1.320	N/A	N/A	1.300	DEG
Az 2 Phase – 2	0.000	N/A	1.339	N/A	N/A	1.300	DEG
Az 2 Phase – 3	0.000	N/A	1.323	N/A	N/A	1.300	DEG
Az 2 Phase – 4	0.000	N/A	1.353	N/A	N/A	1.300	DEG
Az 2 Phase – 5	0.000	N/A	1.370	N/A	N/A	1.300	DEG
Az 2 Phase – 6	0.000	N/A	1.385	N/A	N/A	1.300	DEG
Az 2 Phase – 7	0.000	N/A	1.386	N/A	N/A	1.300	DEG
Az 2 Phase – 8	0.000	N/A	1.402	N/A	N/A	1.300	DEG
Az 2 Phase – 9	0.000	N/A	1.364	N/A	N/A	1.300	DEG
Az 2 Phase – 10	0.000	N/A	1.409	N/A	N/A	1.300	DEG
Az 2 Phase – 11	0.000	N/A	1.285	N/A	N/A	1.300	DEG

HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 3A

Before: 18-Jun-2004 13:50

Az 3A Gain – 0	1.000	N/A	0.989	N/A	N/A	0.056	UV
Az 3A Gain – 1	1.000	N/A	0.988	N/A	N/A	0.056	UV
Az 3A Gain – 2	1.000	N/A	0.989	N/A	N/A	0.056	UV
Az 3A Gain – 3	1.000	N/A	0.984	N/A	N/A	0.056	UV
Az 3A Gain – 4	1.000	N/A	0.990	N/A	N/A	0.056	UV
Az 3A Gain – 5	1.000	N/A	0.989	N/A	N/A	0.056	UV
Az 3A Gain – 6	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 3A Gain – 7	1.000	N/A	0.988	N/A	N/A	0.056	UV
Az 3A Gain – 8	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 3A Gain – 9	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 3A Gain – 10	1.000	N/A	0.991	N/A	N/A	0.056	UV
Az 3A Gain – 11	1.000	N/A	0.987	N/A	N/A	0.056	UV
Az 3A Phase – 0	0.000	N/A	0.617	N/A	N/A	1.000	DEG
Az 3A Phase – 1	0.000	N/A	0.607	N/A	N/A	1.000	DEG
Az 3A Phase – 2	0.000	N/A	0.611	N/A	N/A	1.000	DEG
Az 3A Phase – 3	0.000	N/A	0.607	N/A	N/A	1.000	DEG
Az 3A Phase – 4	0.000	N/A	0.640	N/A	N/A	1.000	DEG
Az 3A Phase – 5	0.000	N/A	0.631	N/A	N/A	1.000	DEG
Az 3A Phase – 6	0.000	N/A	0.631	N/A	N/A	1.000	DEG
Az 3A Phase – 7	0.000	N/A	0.623	N/A	N/A	1.000	DEG
Az 3A Phase – 8	0.000	N/A	0.639	N/A	N/A	1.000	DEG
Az 3A Phase – 9	0.000	N/A	0.597	N/A	N/A	1.000	DEG
Az 3A Phase – 10	0.000	N/A	0.650	N/A	N/A	1.000	DEG
Az 3A Phase – 11	0.000	N/A	0.588	N/A	N/A	1.000	DEG

HILT Azimuthal Laterolog Sonde B Wellsite Calibration – HALSB Azimuthal Voltages mode 3B

Before: 18-Jun-2004 13:50

Az 3B Gain – 0	1.000	N/A	1.008	N/A	N/A	0.054	UV
Az 3B Gain – 1	1.000	N/A	1.003	N/A	N/A	0.054	UV
Az 3B Gain – 2	1.000	N/A	1.005	N/A	N/A	0.054	UV
Az 3B Gain – 3	1.000	N/A	0.998	N/A	N/A	0.054	UV
Az 3B Gain – 4	1.000	N/A	1.005	N/A	N/A	0.054	UV
Az 3B Gain – 5	1.000	N/A	1.006	N/A	N/A	0.054	UV
Az 3B Gain – 6	1.000	N/A	1.005	N/A	N/A	0.054	UV
Az 3B Gain – 7	1.000	N/A	1.007	N/A	N/A	0.054	UV
Az 3B Gain – 8	1.000	N/A	1.006	N/A	N/A	0.054	UV
Az 3B Gain – 9	1.000	N/A	1.003	N/A	N/A	0.054	UV
Az 3B Gain – 10	1.000	N/A	1.010	N/A	N/A	0.054	UV
Az 3B Gain – 11	1.000	N/A	0.997	N/A	N/A	0.054	UV

Az 3B Phase – 0	0.000	N/A	0.204	N/A	N/A	1.000	DEG
Az 3B Phase – 1	0.000	N/A	0.090	N/A	N/A	1.000	DEG
Az 3B Phase – 2	0.000	N/A	0.036	N/A	N/A	1.000	DEG
Az 3B Phase – 3	0.000	N/A	0.098	N/A	N/A	1.000	DEG
Az 3B Phase – 4	0.000	N/A	0.050	N/A	N/A	1.000	DEG
Az 3B Phase – 5	0.000	N/A	0.185	N/A	N/A	1.000	DEG
Az 3B Phase – 6	0.000	N/A	0.127	N/A	N/A	1.000	DEG
Az 3B Phase – 7	0.000	N/A	0.255	N/A	N/A	1.000	DEG
Az 3B Phase – 8	0.000	N/A	0.175	N/A	N/A	1.000	DEG
Az 3B Phase – 9	0.000	N/A	0.198	N/A	N/A	1.000	DEG
Az 3B Phase – 10	0.000	N/A	0.193	N/A	N/A	1.000	DEG
Az 3B Phase – 11	0.000	N/A	-0.017	N/A	N/A	1.000	DEG

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Stab Measurement Summary

Before: 17–Jun–2004 22:47

BS Window Ratio	1.011	N/A	1.012	N/A	N/A	N/A	
BS Window Sum	16100	N/A	16100	N/A	N/A	N/A	CPS
SS Window Ratio	0.4808	N/A	0.4798	N/A	N/A	N/A	
SS Window Sum	10970	N/A	10980	N/A	N/A	N/A	CPS
LS Window Ratio	0.2955	N/A	0.2968	N/A	N/A	N/A	
LS Window Sum	1160	N/A	1161	N/A	N/A	N/A	CPS

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Photo–multiplier High Voltages Calibrations

Before: 17–Jun–2004 22:47

BS PM High Voltage (Command)	1495	N/A	1502	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1944	N/A	1945	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1839	N/A	1850	N/A	N/A	N/A	V

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Crystal Quality Resolutions Calibration

Before: 17–Jun–2004 22:47

BS Crystal Resolution	12.17	N/A	12.16	N/A	N/A	N/A	%
SS Crystal Resolution	11.48	N/A	11.68	N/A	N/A	N/A	%
LS Crystal Resolution	9.283	N/A	9.321	N/A	N/A	N/A	%

High resolution Integrated Logging Tool–DTS Wellsite Calibration – MCFL Calibration

Before: 17–Jun–2004 22:27

Raw B0 Resistivity	3875	N/A	3800	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3774	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3790	N/A	N/A	N/A	OHMM

High resolution Integrated Logging Tool–DTS Wellsite Calibration – HILT Caliper Calibration

Before: 17–Jun–2004 22:30

HILT Caliper Zero Measurement	8.000	N/A	8.227	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	12.35	N/A	N/A	N/A	IN

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Detector Calibration

Before: 17–Jun–2004 22:26

Gamma Ray Background	30.00	N/A	37.15	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkg)	177.4	N/A	177.4	N/A	N/A	16.12	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Zero Measurement

Master: 15–Jun–2004 17:21 Before: 17–Jun–2004 22:26

CNTC Background	32.30	32.30	31.19	N/A	N/A	4.845	CPS
CFTC Background	29.13	29.13	28.55	N/A	N/A	4.370	CPS

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Accelerometer Calibration

Before: 18–Jun–2004 13:50

Z–Axis Acceleration	9.810	N/A	9.803	N/A	N/A	N/A	M/S2
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High resolution Integrated Logging Tool–DTS Master Calibration – Inversion results

Master: 15–Jun–2004 11:26

Rho Aluminum	2.596	2.599	--	--	--	--	G/C3
Rho Magnesium	1.686	1.688	--	--	--	--	G/C3
Pe Aluminum	2.570	2.561	--	--	--	--	
Pe Magnesium	2.650	2.615	--	--	--	--	

High resolution Integrated Logging Tool–DTS Master Calibration – Deviation Summary

Master: 15–Jun–2004 11:26

BS Average Deviation	0	0.4141	--	--	--	--	%
BS Max Deviation	0	0.9721	--	--	--	--	%
SS Average Deviation	0	0.2442	--	--	--	--	%
SS Max Deviation	0	1.285	--	--	--	--	%
LS Average Deviation	0	0.4543	--	--	--	--	%
LS Max Deviation	0	0.9733	--	--	--	--	%

High resolution Integrated Logging Tool–DTS Master Calibration – Tank Measurement

Master: 15–Jun–2004 17:21

Thermal Near Corr. (Tank)	6031	5825	--	--	--	--	CPS
Thermal Far Corr. (Tank)	2793	2452	--	--	--	--	CPS
CNTC/CFTC (Tank)	2.159	2.376	--	--	--	--	

High resolution Integrated Logging Tool–DTS Master Calibration – Tank Measurement

Master: 15–Jun–2004 17:21							
Thermal Near Corr. (Tank)	6031	5825	--	--	--	--	CPS
Thermal Far Corr. (Tank)	2793	2452	--	--	--	--	CPS
CNTC/CFTC (Tank)	2.159	2.376	--	--	--	--	

Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 1 Check

Master: 17–Jun–2004 21:58 Before: 18–Jun–2004 13:56							
Na 511 Peak Loc	40.00	40.64	39.66	N/A	N/A	1.000	
Na 511 Peak Res	15.50	16.25	15.12	N/A	N/A	2.000	%
High Voltage	1150	1159	1153	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	145.9	141.9	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.737	8.471	N/A	N/A	2.000	%
Temperature	15.50	13.72	13.30	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	42.07	43.20	N/A	N/A	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check

Master: 17–Jun–2004 21:58 Before: 18–Jun–2004 13:56							
Na 511 Peak Loc	40.00	39.68	39.55	N/A	N/A	1.000	
Na 511 Peak Res	15.50	14.94	15.66	N/A	N/A	2.000	%
High Voltage	1150	1080	1081	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	143.0	142.3	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.683	7.777	N/A	N/A	2.000	%
Temperature	15.50	14.40	13.68	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	41.97	42.79	N/A	N/A	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2

Master: 17–Jun–2004 21:58 Before: 18–Jun–2004 13:56							
Coincidence Count Rate Ratio	1.000	1.006	1.012	N/A	N/A	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration – Detector 1 Calibration

Master: 17–Jun–2004 21:53							
Na 511 Peak Set Point	40.00	42.00	--	--	--	--	
Th Peak Loc	209.6	211.5	--	--	--	--	
Th Peak Res	7.000	7.826	--	--	--	--	%
Background Count Rate	142.5	140.0	--	--	--	--	CPS
Gain Ratio	1.000	0.9901	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration – Detector 2 Calibration

Master: 17–Jun–2004 21:53							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	207.7	--	--	--	--	
Th Peak Res	7.000	7.127	--	--	--	--	%
Background Count Rate	142.5	133.6	--	--	--	--	CPS
Gain Ratio	1.000	0.9954	--	--	--	--	

The GLS–VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :



NCT–B Water Temperature	11.1	DEGC.
Thermal Housing Size	3.369	IN.



HILT Azimuthal Laterolog Sonde B / Equipment Identification



Primary Equipment:

Auxiliary Equipment:

Laterolog Control Module LCM – AA 2747



HILT Azimuthal Laterolog Sonde B Wellsite Calibration			
HALSB Total current mode 1			
Itot 1 Gain MA	Value	Itot 1 Phase DEG	Value
	0.998		0.000
0.926 (Minimum)	1.000 (Nominal)	1.081 (Maximum)	
Before: 18–Jun–2004 13:50			



HILT Azimuthal Laterolog Sonde B Wellsite Calibration			
HALSB Aux current mode 1			
laux 1 Gain MA	Value	laux 1 Phase DEG	Value
	0.994		-0.144



HILT Azimuthal Laterolog Sonde B Wellsite Calibration			
HALSB Aux current mode 2			
laux 2 Gain MA	Value	laux 2 Phase DEG	Value
	0.975		0.000



0.854 (Minimum)	1.000 (Nominal)	1.180 (Maximum)	-4.600 (Minimum)	0.000 (Nominal)	4.600 (Maximum)
Before: 18-Jun-2004 13:50					



0.816 (Minimum)	1.000 (Nominal)	1.232 (Maximum)	-1.000 (Minimum)	0.000 (Nominal)	0.100 (Maximum)
Before: 18-Jun-2004 13:50					



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0 current mode 3A					
I0 3A Gain UA		Value	I0 3A Phase DEG		Value
		0.984			0.000
0.893 (Minimum)	1.000 (Nominal)	1.114 (Maximum)	-1.000 (Minimum)	0.000 (Nominal)	0.100 (Maximum)
Before: 18-Jun-2004 13:50					



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0 current mode 3B					
I0 3B Gain UA		Value	I0 3B Phase DEG		Value
		0.979			-0.000
0.893 (Minimum)	1.000 (Nominal)	1.114 (Maximum)	-1.000 (Minimum)	0.000 (Nominal)	0.100 (Maximum)
Before: 18-Jun-2004 13:50					



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Torpedo Voltage gains					
Zvt 1 Gain MV		Value	Zvt 2 Gain MV		Value
		0.994			0.997
0.925 (Minimum)	1.000 (Nominal)	1.078 (Maximum)	0.865 (Minimum)	1.000 (Nominal)	1.153 (Maximum)
Before: 18-Jun-2004 13:50					



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Torpedo Voltage Phases					
Zvt 1 Phase DEG		Value	Zvt 2 Phase DEG		Value
		-0.098			-0.000
-4.400 (Minimum)	0.000 (Nominal)	4.400 (Maximum)	-2.800 (Minimum)	0.000 (Nominal)	2.800 (Maximum)
Before: 18-Jun-2004 13:50					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Upper Bridle Voltage mode 1					
Zvb 1 Gain MV		Value	Zvb 1 Phase DEG		Value
		0.994			-0.125
0.925 (Minimum)	1.000 (Nominal)	1.078 (Maximum)	-4.400 (Minimum)	0.000 (Nominal)	4.400 (Maximum)
Before: 18-Jun-2004 13:50					




HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-M2 Voltage gains					
ZVM 1 Gain UV		Value	ZVM 2 Gain UV		Value
		0.996			0.992
0.895 (Minimum)	1.000 (Nominal)	1.117 (Maximum)	0.943 (Minimum)	1.000 (Nominal)	1.056 (Maximum)
Before: 18-Jun-2004 13:50					




HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-M2 Voltage Phases					
ZVM 1 Phase DEG		Value	ZVM 2 Phase DEG		Value
		0.229			1.869
-6.500 (Minimum)	0.000 (Nominal)	6.500 (Maximum)	-3.300 (Minimum)	0.000 (Nominal)	3.300 (Maximum)
Before: 18-Jun-2004 13:50					



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-A0* Voltage gains					
ZVH 1 Gain UV		Value	ZVH 2 Gain UV		Value
		0.997			0.990
0.962 (Minimum)	1.000 (Nominal)	1.039 (Maximum)	0.864 (Minimum)	1.000 (Nominal)	1.154 (Maximum)
Before: 18-Jun-2004 13:50					

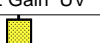

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB M1-A0* Voltage Phases					
ZVH 1 Phase DEG		Value	ZVH 2 Phase DEG		Value
		0.111			2.000
-6.500 (Minimum)	0.000 (Nominal)	6.500 (Maximum)	-3.300 (Minimum)	0.000 (Nominal)	3.300 (Maximum)
Before: 18-Jun-2004 13:50					



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Aux Voltage gains					
ZVA 1 Gain MV		Value	ZVA 2 Gain MV		Value

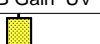

ZVA 1 Gain MV	Value	ZVA 2 Gain MV	Value	ZVA 3 Gain MV	Value
	1.086		1.063		1.015
0.905 (Minimum)	1.000 (Nominal)	1.103 (Maximum)	0.866 (Minimum)	1.000 (Nominal)	1.151 (Maximum)
Before: 18-Jun-2004 13:50					



HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Aux Voltage Phases					
ZVA 1 Phase DEG	Value	ZVA 2 Phase DEG	Value	ZVA 3 Phase DEG	Value
	0.572		0.026		0.128
-4.100 (Minimum)	0.000 (Nominal)	4.100 (Maximum)	-2.300 (Minimum)	0.000 (Nominal)	1.000 (Maximum)
Before: 18-Jun-2004 13:50					

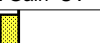

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0*-A0** Diff. Voltage mode 1					
ZVD 1 Gain UV		Value	ZVD 1 Phase DEG		Value
		0.997			0.093
0.874 (Minimum)	1.000 (Nominal)	1.147 (Maximum)	-6.300 (Minimum)	0.000 (Nominal)	6.300 (Maximum)
Before: 18-Jun-2004 13:50					

























HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0*--A0** Diff. Voltage mode 2					
ZVD 2 Gain UV	Value	ZVD 2 Phase DEG	Value		
	0.983		1.294		
0.842 (Minimum)	1.000 (Nominal)	1.187 (Maximum)	-3.300 (Minimum)	0.000 (Nominal)	3.300 (Maximum)
Before: 18-Jun-2004 13:50					

























HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0*-A0** Diff. Voltage mode 3A					
ZVD 3A Gain UV		Value	ZVD 3A Phase DEG		Value
		0.987			0.601
0.842 (Minimum)	1.000 (Nominal)	1.187 (Maximum)	-2.000 (Minimum)	0.000 (Nominal)	2.000 (Maximum)
Before: 18-Jun-2004 13:50					





HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB A0*-A0** Diff. Voltage mode 3B					
ZVD 3B Gain UV		Value	ZVD 3B Phase DEG		Value
		1.000			-0.028
0.845 (Minimum)	1.000 (Nominal)	1.183 (Maximum)	-2.000 (Minimum)	0.000 (Nominal)	2.000 (Maximum)
Before: 18-Jun-2004 13:50					





HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB vertical Voltage mode 1					
ZVV 1 Gain UV		Value	ZVV 1 Phase DEG		Value
		0.997			0.164
0.936 (Minimum)	1.000 (Nominal)	1.065 (Maximum)	-4.600 (Minimum)	0.000 (Nominal)	4.600 (Maximum)
Before: 18-Jun-2004 13:50					

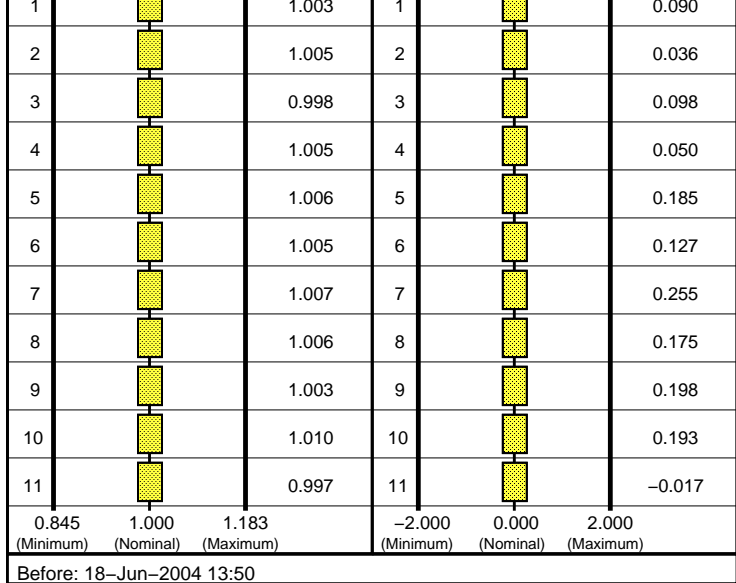
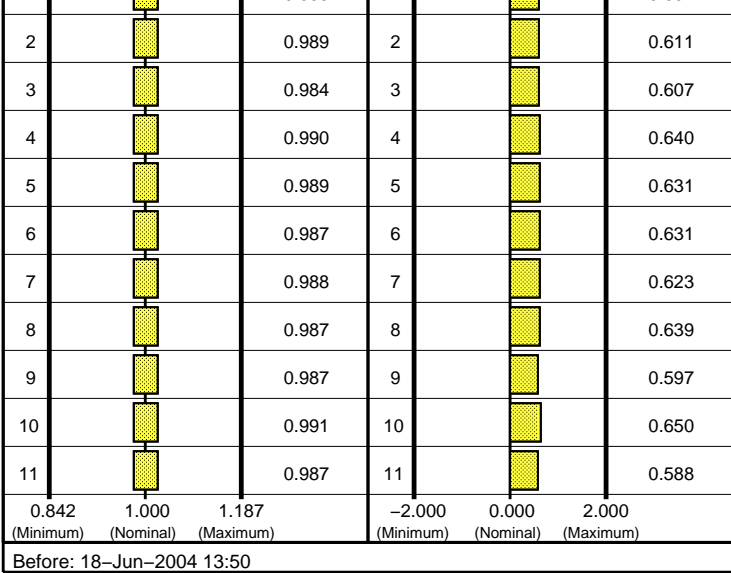
HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB vertical Voltage mode 2					
ZVV 2 Gain UV	Value	ZVV 2 Phase DEG	Value		
	0.983		2.642		
0.895 (Minimum)	1.000 (Nominal)	1.112 (Maximum)	-2.800 (Minimum)	0.000 (Nominal)	2.800 (Maximum)
Before: 18-Jun-2004 13:50					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration							
HALSB Azimuthal Voltages mode 1							
Idx	Az 1 Gain UV	Value	Idx	AZ 1 Phase DEG	Value		
0		0.999	0		-0.004		
1		0.998	1		0.129		
2		0.999	2		0.100		
3		0.994	3		0.103		
4		1.000	4		0.205		
5		0.999	5		0.089		
6		0.997	6		0.067		
7		0.999	7		0.008		
8		0.997	8		0.122		
9		0.997	9		0.012		
10		1.001	10		0.123		
11		0.997	11		0.102		
0.874 (Minimum)		1.000 (Nominal)	1.147 (Maximum)	-6.300 (Minimum)		0.000 (Nominal)	6.300 (Maximum)
Before: 18-Jun-2004 13:50							

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Azimuthal Voltages mode 2					
Idx	Az 2 Gain UV	Value	Idx	Az 2 Phase DEG	Value
0		0.984	0		1.369
1		0.983	1		1.320
2		0.984	2		1.339
3		0.979	3		1.323
4		0.985	4		1.353
5		0.984	5		1.370
6		0.982	6		1.385
7		0.984	7		1.386
8		0.983	8		1.402
9		0.982	9		1.364
10		0.987	10		1.409
11		0.982	11		1.285
0.842 (Minimum)		1.000 (Nominal)	1.187 (Maximum)		
			-3.300 (Minimum)		0.000 (Nominal)
					3.300 (Maximum)
Before: 18-Jun-2004 13:50					

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Azimuthal Voltages mode 3A					
Idx	Az 3A Gain UV	Value	Idx	Az 3A Phase DEG	Value
0		0.989	0		0.617
1		0.988	1		0.607

HILT Azimuthal Laterolog Sonde B Wellsite Calibration					
HALSB Azimuthal Voltages mode 3B					
Idx	Az 3B Gain UV	Value	Idx	Az 3B Phase DEG	Value
0		1.008	0		0.204
1		0.983	1		0.220



High resolution Integrated Logging Tool-DTS / Equipment Identification

Primary Equipment:

HILT high-Resolution Mechanical Sonde
HILT Rxo Gamma-ray Device
HILT Nuclear Back-Scatter Detector
HILT Nuclear Short-Spacing Detector
HILT Nuclear Long-Spacing Detector
Micro Cylindrically Focused Log Device
GR Logging Source
HILT High Res. Control Cartridge

HRMS - B 1765
HRGD - B 1760
HILT -
HILT -
HILT -
MCFL -
GLS - VJ 3739
HRCC - B 1769

Auxiliary Equipment:

High resolution Integrated Logging Tool-DTS Wellsite Calibration														
Stab Measurement Summary														
Phase	BS Window Ratio			Value	Phase	SS Window Ratio			Value	Phase	LS Window Ratio			Value
Before				1.012	Before				0.4798	Before				0.2968
	0.9600 (Minimum)	1.011 (Nominal)	1.061 (Maximum)		0.4567 (Minimum)	0.4808 (Nominal)	0.5048 (Maximum)			0.2808 (Minimum)	0.2955 (Nominal)	0.3103 (Maximum)		
Phase	BS Window Sum CPS			Value	Phase	SS Window Sum CPS			Value	Phase	LS Window Sum CPS			Value
Before				16100	Before				10980	Before				1161
	15290 (Minimum)	16100 (Nominal)	16900 (Maximum)		10420 (Minimum)	10970 (Nominal)	11520 (Maximum)			1102 (Minimum)	1160 (Nominal)	1218 (Maximum)		
Before: 17-Jun-2004 22:47														



High resolution Integrated Logging Tool–DTS Wellsite Calibration														
Photo–multiplier High Voltages Calibrations														
Phase	BS PM High Voltage (Command) V			Value	Phase	SS PM High Voltage (Command) V			Value	Phase	LS PM High Voltage (Command) V			Value
Before				1502	Before				1945	Before				1850
	1395 (Minimum)	1495 (Nominal)	1595 (Maximum)		1844 (Minimum)	1944 (Nominal)	2044 (Maximum)		1739 (Minimum)	1839 (Nominal)	1939 (Maximum)			
Before: 17–Jun–2004 22:47														

High resolution Integrated Logging Tool–DTS Wellsite Calibration											
Crystal Quality Resolutions Calibration											
Phase	BS Crystal Resolution %		Value	Phase	SS Crystal Resolution %		Value	Phase	LS Crystal Resolution %		Value
Before			12.16	Before			11.68	Before			9.321
	11.17 (Minimum)	12.17 (Nominal)	13.17 (Maximum)		10.48 (Minimum)	11.48 (Nominal)	12.48 (Maximum)		8.283 (Minimum)	9.283 (Nominal)	10.28 (Maximum)
Before: 17–Jun–2004 22:47											




High resolution Integrated Logging Tool–DTS Wellsite Calibration											
MCFL Calibration											
Phase	Raw B0 Resistivity OHMM		Value	Phase	Raw B1 Resistivity OHMM		Value	Phase	Raw B2 Resistivity OHMM		Value
Before			3800	Before			3774	Before			3790

3565 (Minimum)	3875 (Nominal)	4185 (Maximum)	3524 (Minimum)	3830 (Nominal)	4136 (Maximum)	3524 (Minimum)	3830 (Nominal)	4136 (Maximum)
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Before: 17-Jun-2004 22:27

High resolution Integrated Logging Tool-DTS Wellsite Calibration							
HILT Caliper Calibration							
Phase	HILT Caliper Zero Measurement IN		Value	Phase	HILT Caliper Plus Measurement IN		Value
Before			8.227	Before			12.35
	6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)		9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)
Before: 17-Jun-2004 22:30							

Before: 17-Jun-2004 22:30


High resolution Integrated Logging Tool-DTS Wellsite Calibration									
Detector Calibration									
Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig - Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value	
Before		37.15	Before		177.4	Before		165.0	
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	161.2 (Minimum)	177.4 (Nominal)	193.5 (Maximum)	150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)

Before: 17-Jun-2004 22:26





High resolution Integrated Logging Tool–DTS Wellsite Calibration									
Zero Measurement									
Phase	CNTC Background CPS			Value	Phase	CFTC Background CPS			Value
Master				32.30	Master				29.13
Before				31.19	Before				28.55
5.000 (Minimum)		32.30 (Nominal)		40.00 (Maximum)	5.000 (Minimum)		29.13 (Nominal)		40.00 (Maximum)
Master: 15–Jun–2004 17:21					Before: 17–Jun–2004 22:26				

Master: 15-Jun-2004 17:21

Before: 17-Jun-2004 22:26

High resolution Integrated Logging Tool-DTS Wellsite Calibration			
Accelerometer Calibration			
Phase	Z-Axis Acceleration M/S2	Value	
Before		9.803	
	9.610 (Minimum)	9.810 (Nominal)	10.01 (Maximum)
Before: 18-Jun-2004 13:50			

Before: 18-Jun-2004 13:50

High resolution Integrated Logging Tool—DTS Master Calibration							
Inversion results							
Phase	Rho Aluminum G/C3		Value	Phase	Rho Magnesium G/C3		Value
Master			2.599	Master			1.688
	2.586 (Minimum)	2.596 (Nominal)	2.606 (Maximum)		1.676 (Minimum)	1.686 (Nominal)	1.696 (Maximum)
Phase	Pe Aluminum		Value	Phase	Pe Magnesium		Value
Master			2.561	Master			2.615
	2.470 (Minimum)	2.570 (Nominal)	2.670 (Maximum)		2.550 (Minimum)	2.650 (Nominal)	2.750 (Maximum)
Master: 15—Jun—2004 11:26							

Master: 15-Jun-2004 11:26

High resolution Integrated Logging Tool-DTS Master Calibration											
Deviation Summary											
Phase	BS Average Deviation %		Value	Phase	SS Average Deviation %		Value	Phase	LS Average Deviation %		Value
Master	<div><div></div></div>		0.4141	Master	<div><div></div></div>		0.2442	Master	<div><div></div></div>		0.4543
	-0.6000 (Minimum)	0 (Nominal)	0.6000 (Maximum)		-1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)		-1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)
Phase	BS Max Deviation %		Value	Phase	SS Max Deviation %		Value	Phase	LS Max Deviation %		Value
Master	<div><div></div></div>		0.9721	Master	<div><div></div></div>		1.285	Master	<div><div></div></div>		0.9733
	-1.600 (Minimum)	0 (Nominal)	1.600 (Maximum)		-2.500 (Minimum)	0 (Nominal)	2.500 (Maximum)		-3.500 (Minimum)	0 (Nominal)	3.500 (Maximum)

Master: 15-Jun-2004 11:26

High resolution Integrated Logging Tool-DTS Master Calibration									
Tank Measurement									
Phase	Thermal Near Corr. (Tank) CPS	Value	Phase	Thermal Far Corr. (Tank) CPS	Value	Phase	CNTC/CFTC (Tank)	Value	

Master		5825	Master		2452	Master		2.376
5000 (Minimum)	6031 (Nominal)	7200 (Maximum)	2075 (Minimum)	2793 (Nominal)	3125 (Maximum)	2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)
Master: 15-Jun-2004 17:21								

High resolution Integrated Logging Tool–DTS Master Calibration														
Tank Measurement														
Phase	Thermal Near Corr. (Tank) CPS			Value	Phase	Thermal Far Corr. (Tank) CPS			Value	Phase	CNTC/CFTC (Tank)			Value
Master	<div><div></div><div></div><div></div></div>			5825	Master	<div><div></div><div></div><div></div></div>			2452	Master	<div><div></div><div></div><div></div></div>			2.376
5000 (Minimum)			6031 (Nominal)	7200 (Maximum)	2075 (Minimum)			2793 (Nominal)	3125 (Maximum)	2.120 (Minimum)			2.159 (Nominal)	2.540 (Maximum)
Master: 15–Jun–2004 17:21														

Hostile Natural Gamma Ray Cartridge – A / Equipment Identification		
Primary Equipment: HNGC Cartridge	HNGC – A	10
Auxiliary Equipment: HNGC Housing	HNGH – A	

Hostile Natural Gamma Ray Sonde / Equipment Identification		
Primary Equipment: HNGS Sonde	HNGS – BA	129
Auxiliary Equipment: HNGS Sonde Housing Gamma Source Radioactive	HNSH – BA GSR – U	3

Hostile Natural Gamma Ray Sonde Wellsite Calibration													
Detector 1 Check													
Phase	Na 511 Peak Loc			Value	Phase	Na 511 Peak Res %			Value	Phase	High Voltage V		Value
Master				40.64	Master				16.25	Master			1159
Before				39.66	Before				15.12	Before			1153
37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)					12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)					900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)			
Phase	Na 1785 Peak Loc			Value	Phase	Na 1785 Peak Res %			Value	Phase	Temperature DEGC		Value
Master				145.9	Master				8.737	Master			13.72
Before				141.9	Before				8.471	Before			13.30
135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)					7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)					-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)			
Phase	Na Count Rate CPS			Value									
Master				42.07									
Before				43.20									
10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)													
Master: 17-Jun-2004 21:58					Before: 18-Jun-2004 13:56								

Hostile Natural Gamma Ray Sonde Wellsite Calibration														
Detector 2 Check														
Phase	Na 511 Peak Loc			Value	Phase	Na 511 Peak Res %			Value	Phase	High Voltage V			Value
Master				39.68	Master				14.94	Master				1080
Before				39.55	Before				15.66	Before				1081
37.50 (Minimum)40.00 (Nominal)42.50 (Maximum)					12.00 (Minimum)15.50 (Nominal)19.00 (Maximum)					900.0 (Minimum)1150 (Nominal)1600 (Maximum)				
Phase	Na 1785 Peak Loc			Value	Phase	Na 1785 Peak Res %			Value	Phase	Temperature DEGC			Value
Master				143.0	Master				8.683	Master				14.40
Before				142.3	Before				7.777	Before				13.68
135.0 (Minimum)142.6 (Nominal)150.3 (Maximum)					7.000 (Minimum)8.500 (Nominal)11.00 (Maximum)					-28.89 (Minimum)15.50 (Nominal)60.00 (Maximum)				

Phase	Na Count Rate CPS	Value
Master		41.97
Before		42.79
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	
Master: 17-Jun-2004 21:58 Before: 18-Jun-2004 13:56		

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		1.006
Before		1.012
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	
Master: 17-Jun-2004 21:58		
Before: 18-Jun-2004 13:56		

Hostile Natural Gamma Ray Sonde Master Calibration												
Detector 1 Calibration												
Phase	Na 511 Peak Set Point		Value	Phase	Th Peak Loc		Value	Phase	Th Peak Res %		Value	
Master			42.00	Master			211.5	Master			7.826	
38.00 (Minimum)			40.00 (Nominal)	201.0 (Minimum)			209.6 (Nominal)	5.000 (Minimum)			7.000 (Nominal)	9.000 (Maximum)
Phase	Background Count Rate CPS		Value	Phase	Gain Ratio		Value					
Master			140.0	Master			0.9901					
20.00 (Minimum)			142.5 (Nominal)	0.9400 (Minimum)			1.000 (Nominal)					1.060 (Maximum)
Master: 17-Jun-2004 21:53												

Hostile Natural Gamma Ray Sonde Master Calibration											
Detector 2 Calibration											
Phase	Na 511 Peak Set Point		Value	Phase	Th Peak Loc		Value	Phase	Th Peak Res %		Value
Master			41.00	Master			207.7	Master			7.127
	38.00 (Minimum)	40.00 (Nominal)	42.00 (Maximum)		201.0 (Minimum)	209.6 (Nominal)	218.3 (Maximum)		5.000 (Minimum)	7.000 (Nominal)	9.000 (Maximum)
Phase	Background Count Rate CPS		Value	Phase	Gain Ratio		Value				
Master			133.6	Master			0.9954				
	20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)		0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)				
Master: 17-Jun-2004 21:53											

Company: **Essential Petroleum Resources Limited**

Schlumberger

Well: **Killarney EPRL 1**

Field: **PEP 152**

Rig: **Hunt Rig #2**

Country: **Australia**

HALS-BHC-PEX-HNG:
Resistivity Print
Scale 1:200