





DISCLAIMER

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REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Hole GC-01A Hole C was drilled with a 9 7/8" RCB bit to TDD of 1099mbrf.	
Hole depth referenced from sea floor based on driller measurement is 526m.	
Logs played back with a depth offset to match sea floor at depth = 0m.	
HRLA run centralized with 2 MCD centralizers using 4 knuckle joints separating the HLDS and DITE below.	
HRLA and DITE run together as a test to compare resistivity tools.	
Large hole sizes will affect the shallow HRLA curves. The quality control log will indicate these areas.	
All logs recorded via wireline thru 5.5" drillpipe and RCB coring BHA.	
consisting of a bit release sub, Kinley sub, drill collars. The rotary coring bit was released on bottom prior to logging.	
HRLA curves are affected by drill pipe.	

	EQUIPMENT	DESCRIPTION	
RUN 1			RUN 2

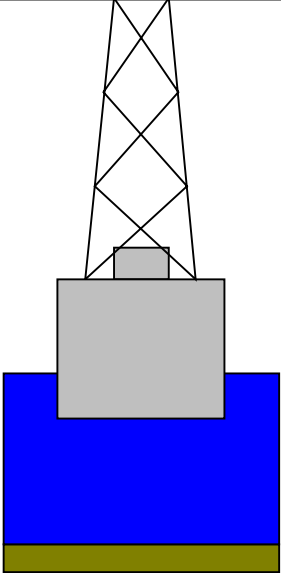
DOWNHOLE EQUIPMENT				
LEH-QT	MDSB_EDTC			37.87
AH-369	Mud Tempe		36.55	
	CTEM		35.48	36.99
EDTC-B	Gamma Ray		34.91	
EDTH-B 8528	EFTB DIAG			36.55
EDTC-B 8529	TelStatus			
	EDTCB Ele		34.57	

Kelly Bushing Elevation
Derrick Floor Elevation

Mean Sea Level

-573.2
-573.2

-562.2



4.1

0
102

526

3.80
9.875

Sea Floor
Open Hole

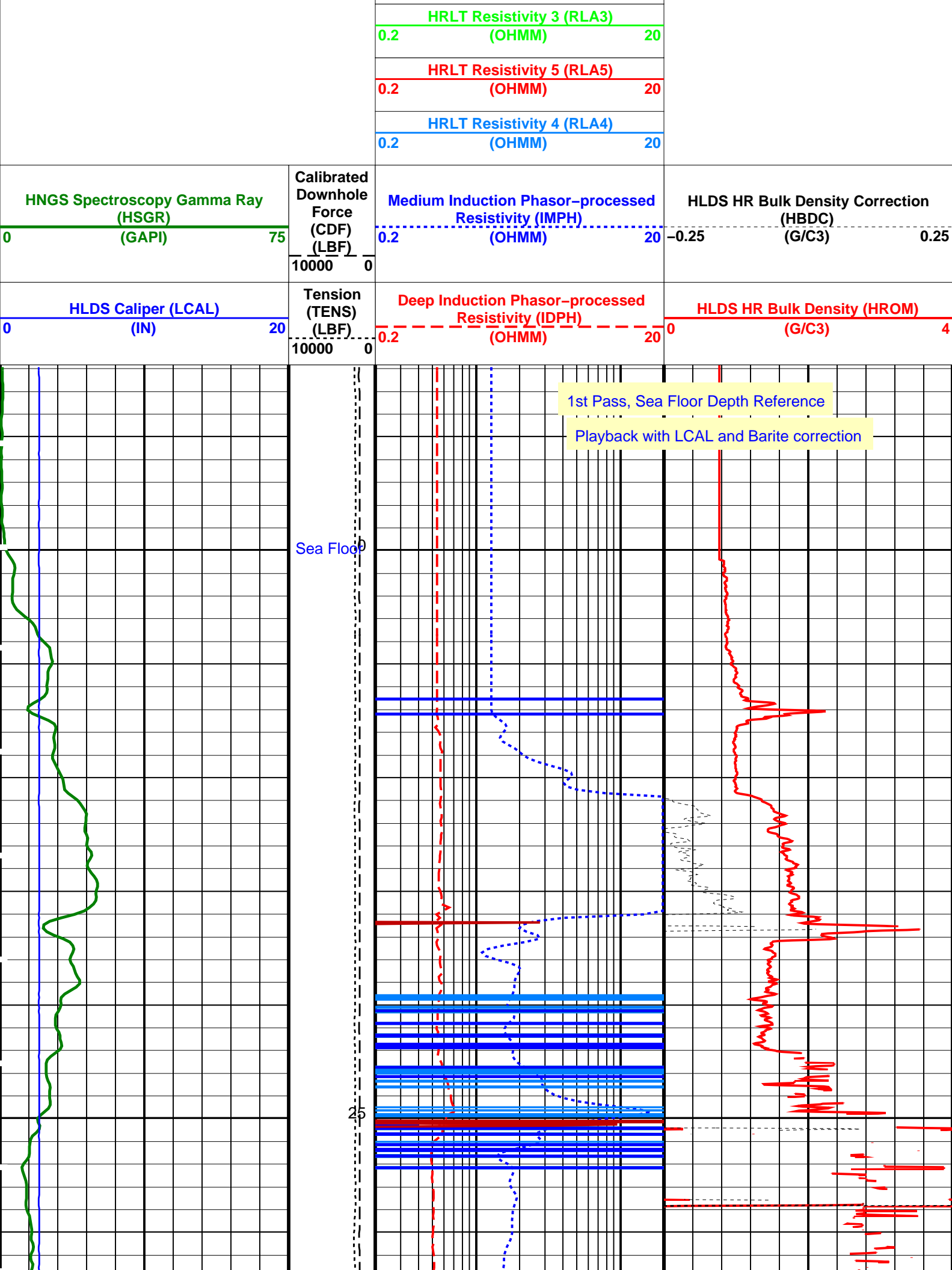
Total Depth

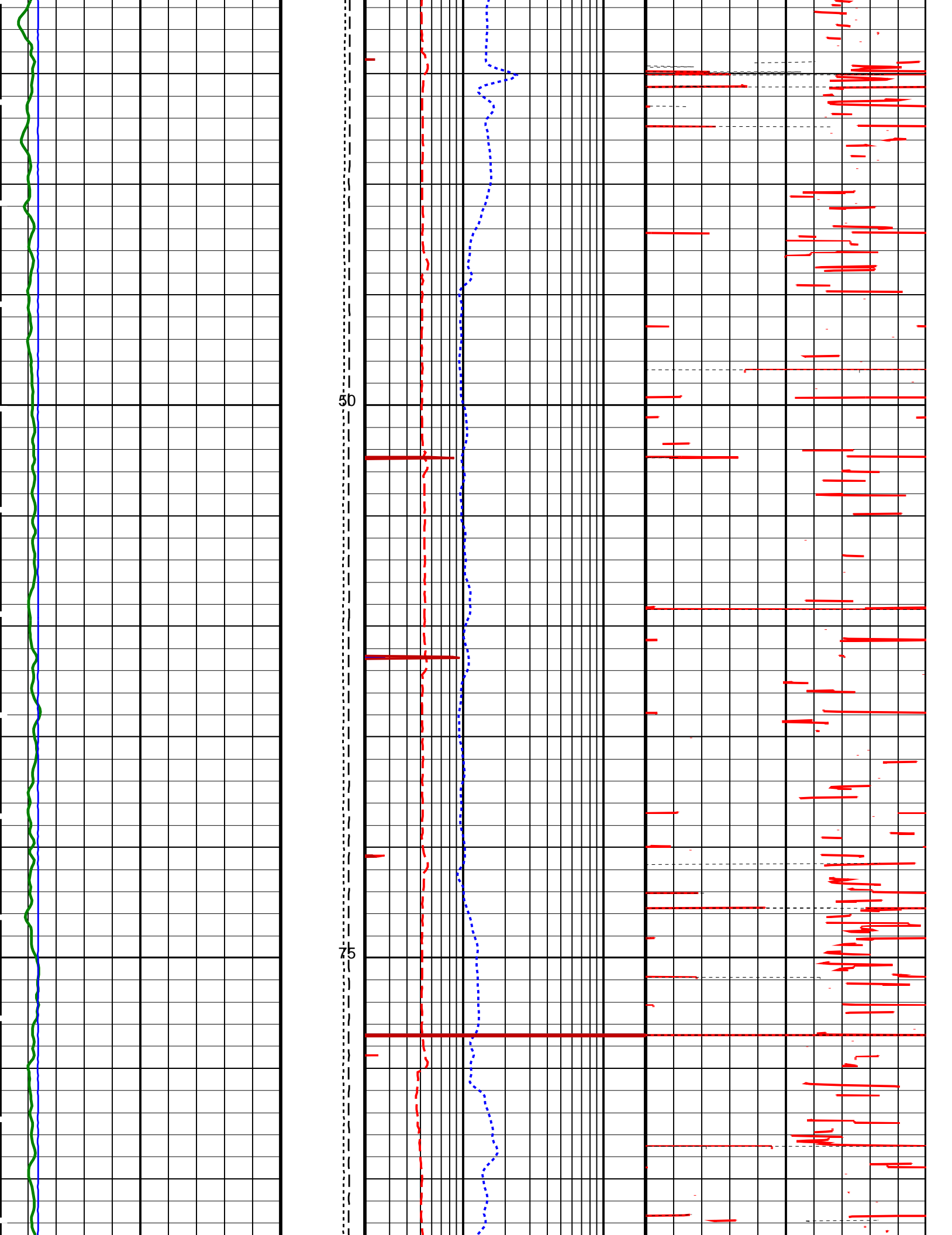
Input DLIS Files						
DEFAULT	PI_LDL_NGS_HRLA_038PUP	FN:5	PRODUCER	31-Dec-2011 05:10	524.3 M	-8.2 M
Output DLIS Files						
DEFAULT	PI_LDL_NGS_HRLA_045PUP	FN:11	PRODUCER	31-Dec-2011 07:57	524.3 M	-8.2 M

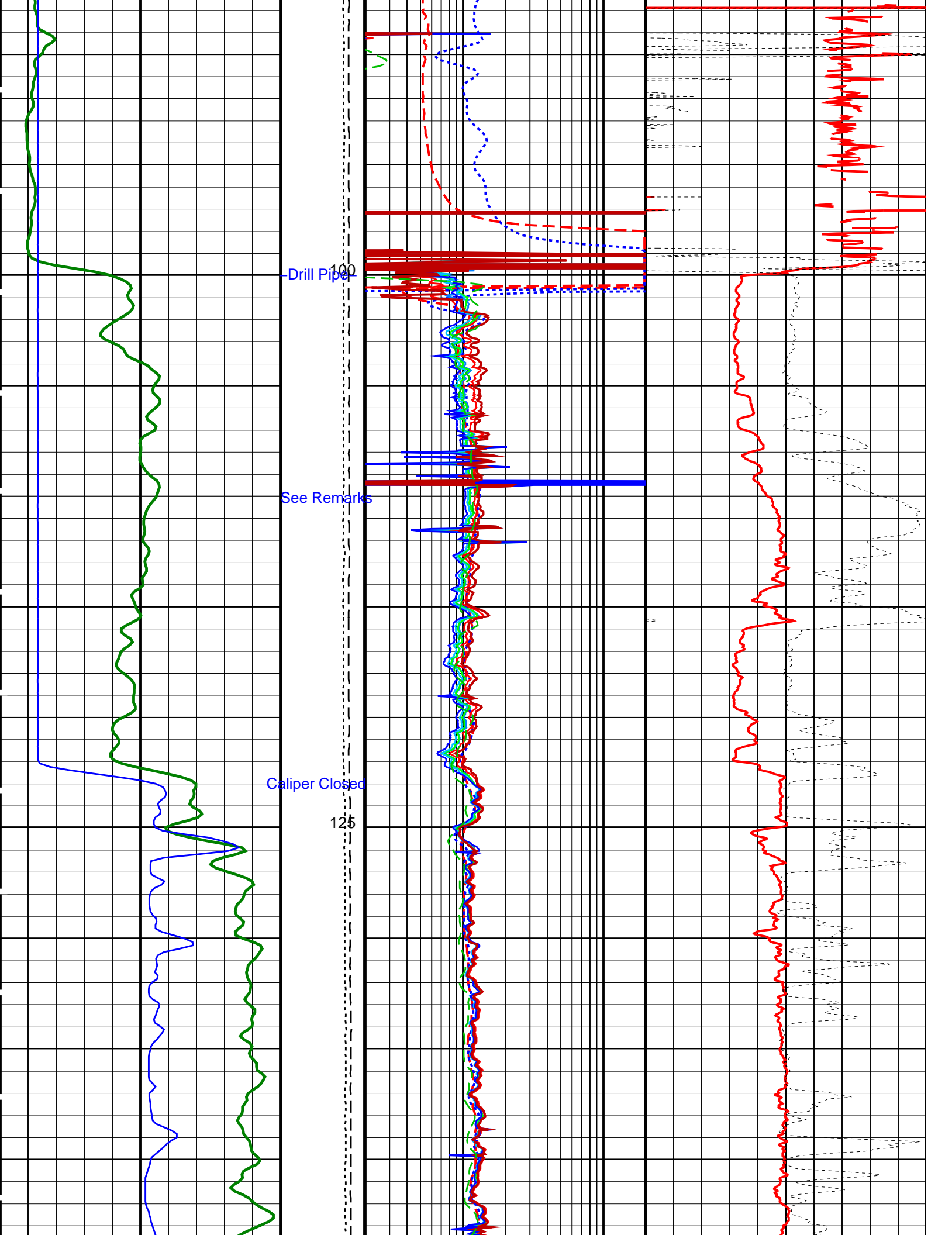
OP System Version: 19C0-187						
DIT-E	19C0-187		DTA-A	19C0-187		
HLDS	19C0-187		LDSC-B	19C0-187		
HNGC-B	19C0-187		HNGS-BA	19C0-187		
HRLT-B	19C0-187		EDTC-B	19C0-187		

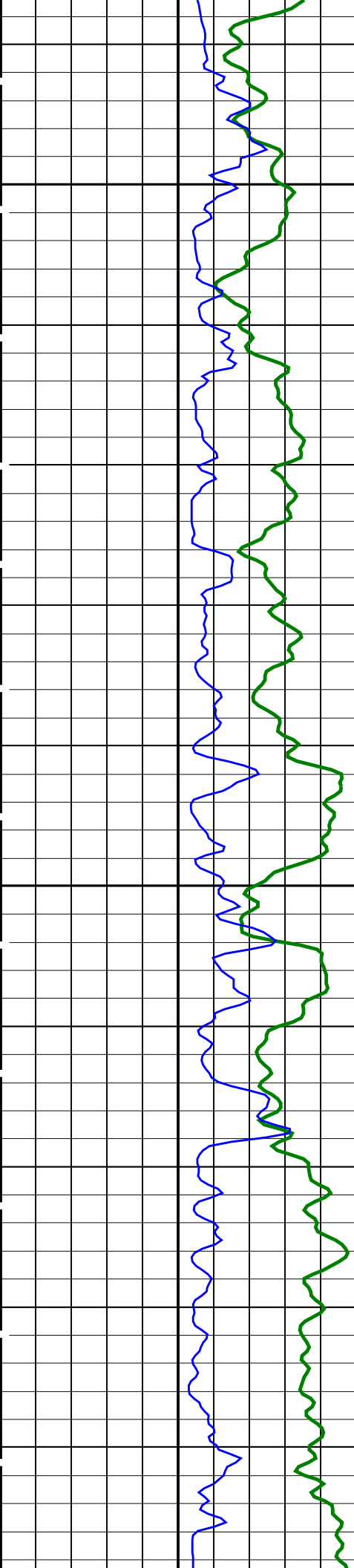
PIP SUMMARY						
Time Mark Every 60 S						

			HRLT True Resistivity (RT_HRLT)		
			0.2	(OHMM)	20
			SFL Unaveraged (SFLU)		
			0.2	(OHMM)	20
			HRLT Resistivity 1 (RLA1)		
			0.2	(OHMM)	20
			HRLT Resistivity 2 (RLA2)		
			0.2	(OHMM)	20



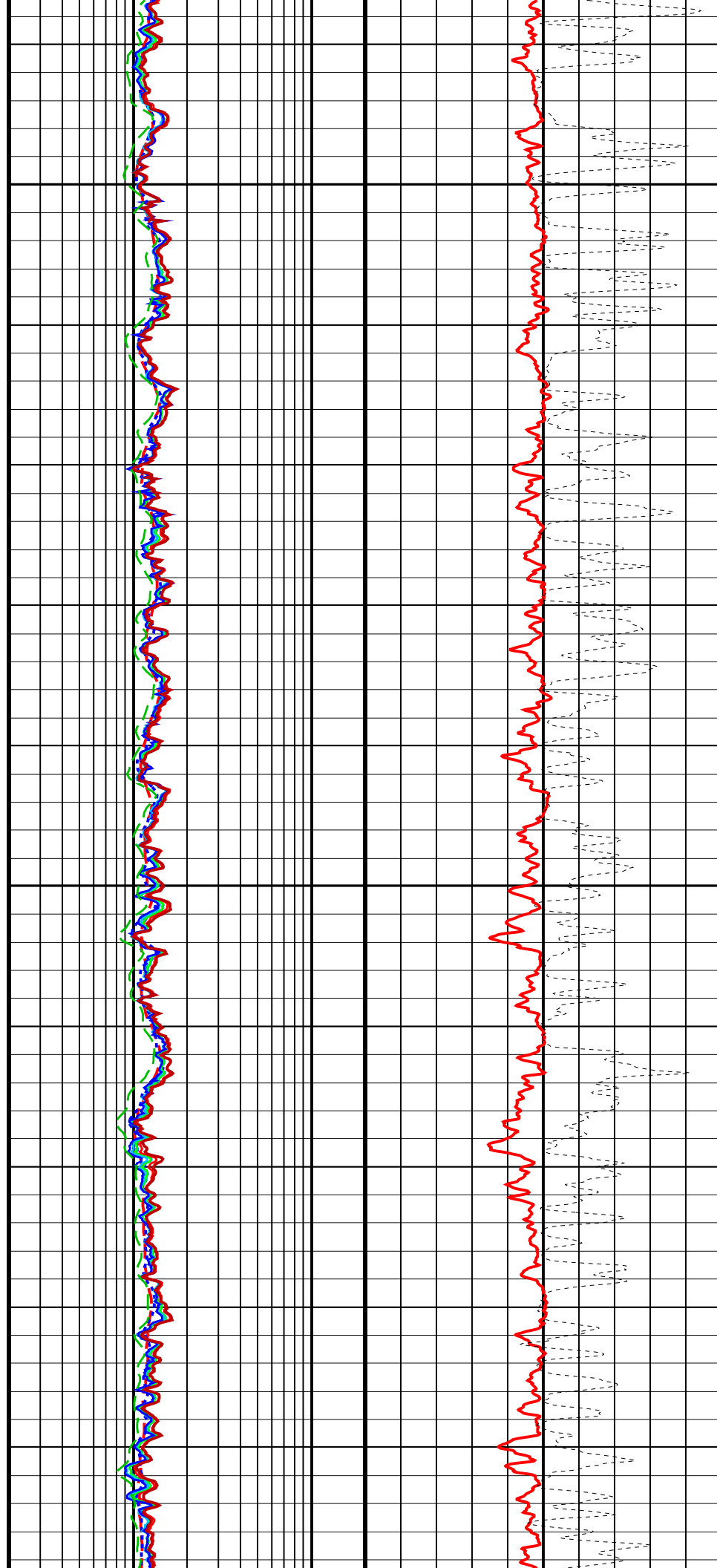


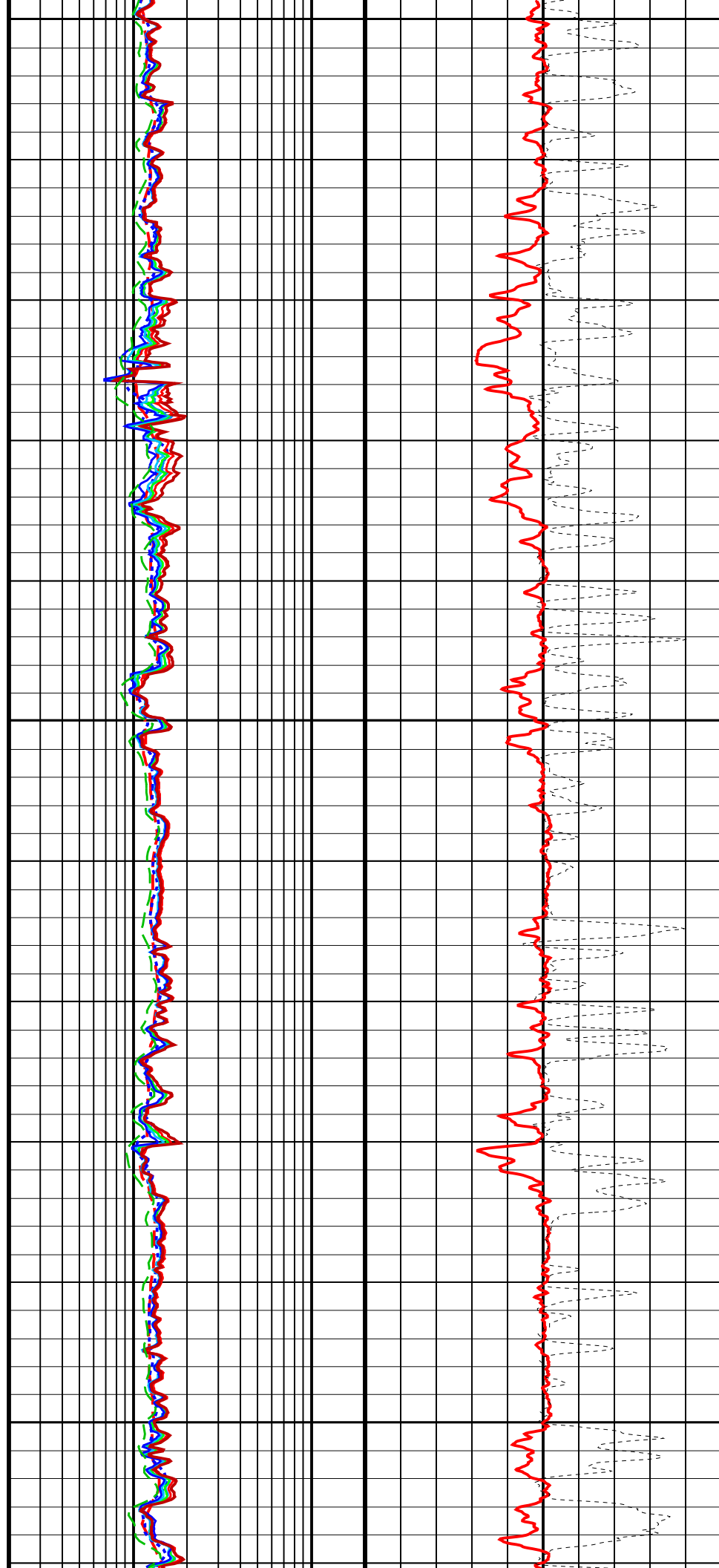
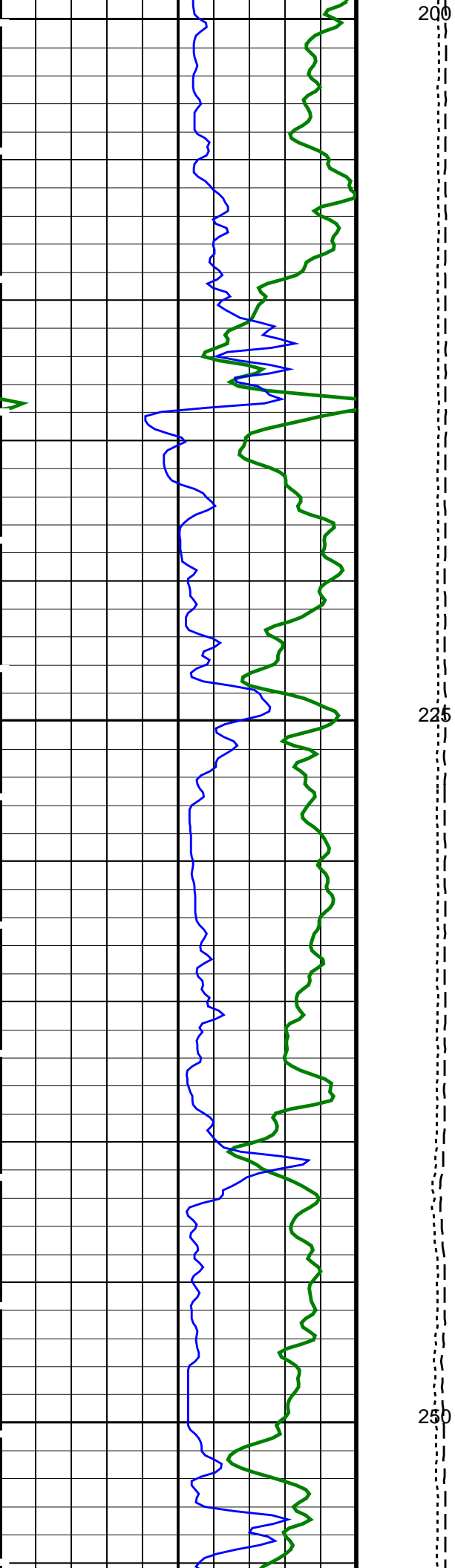


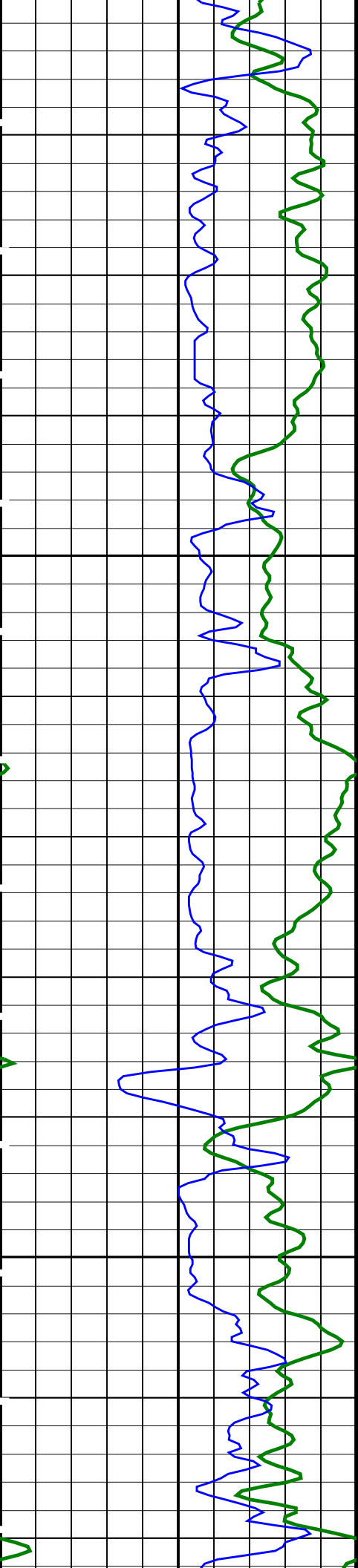


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175

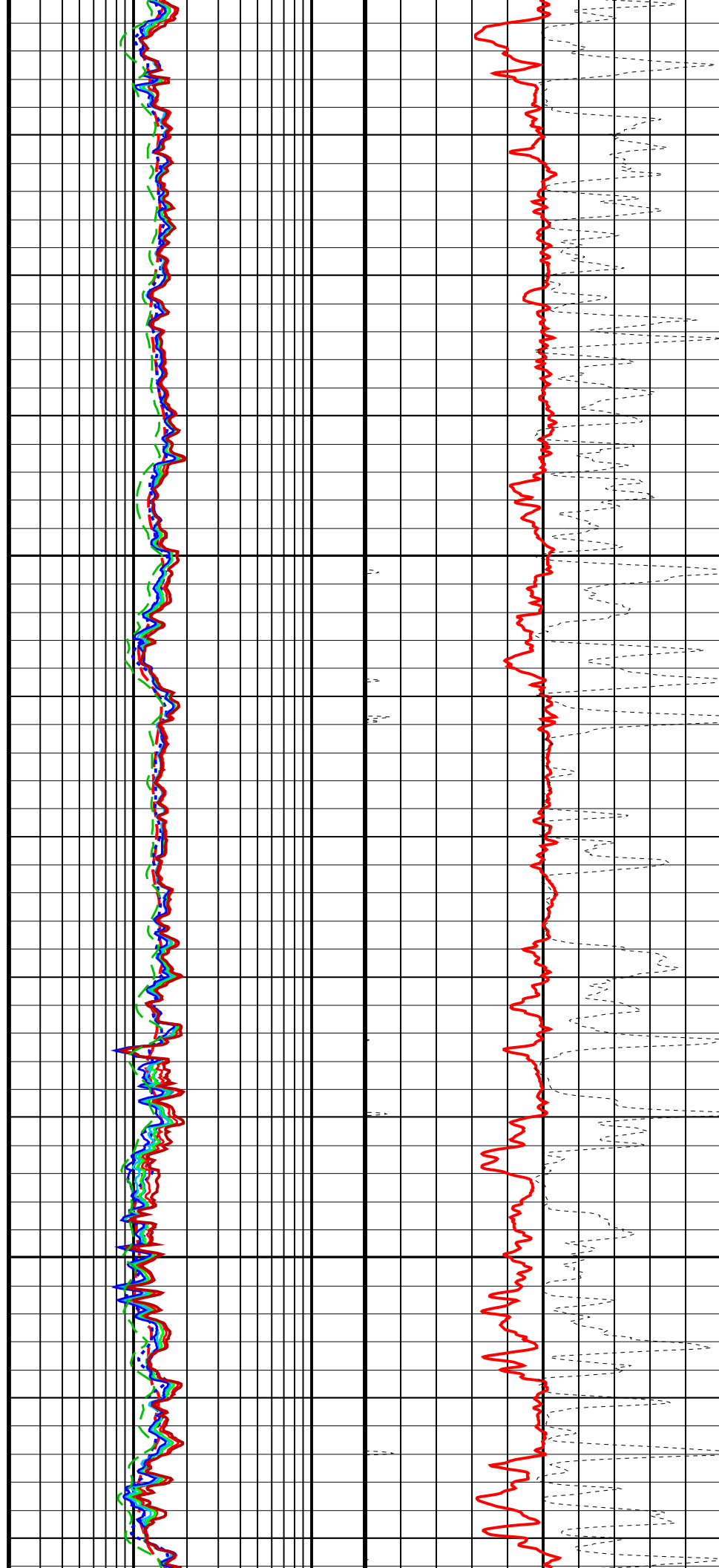


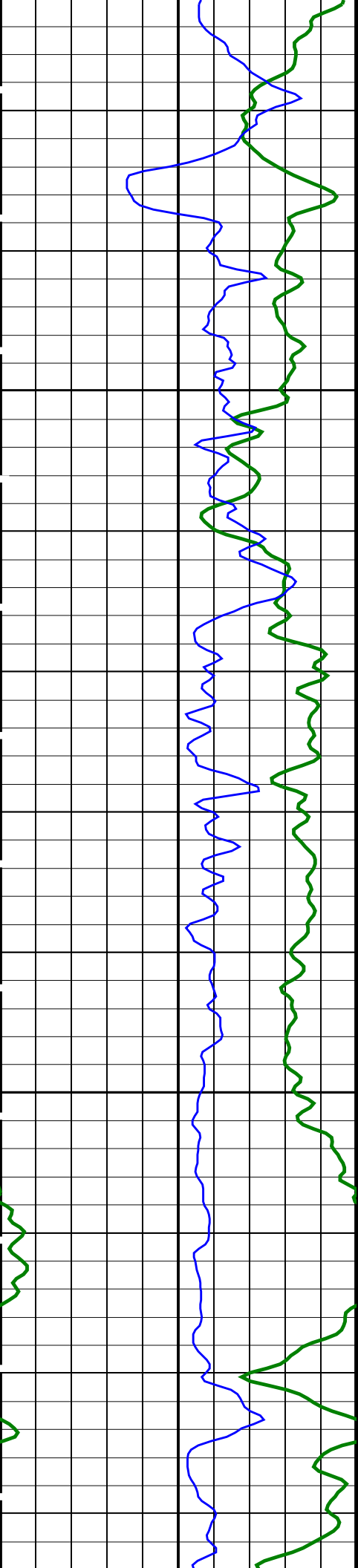




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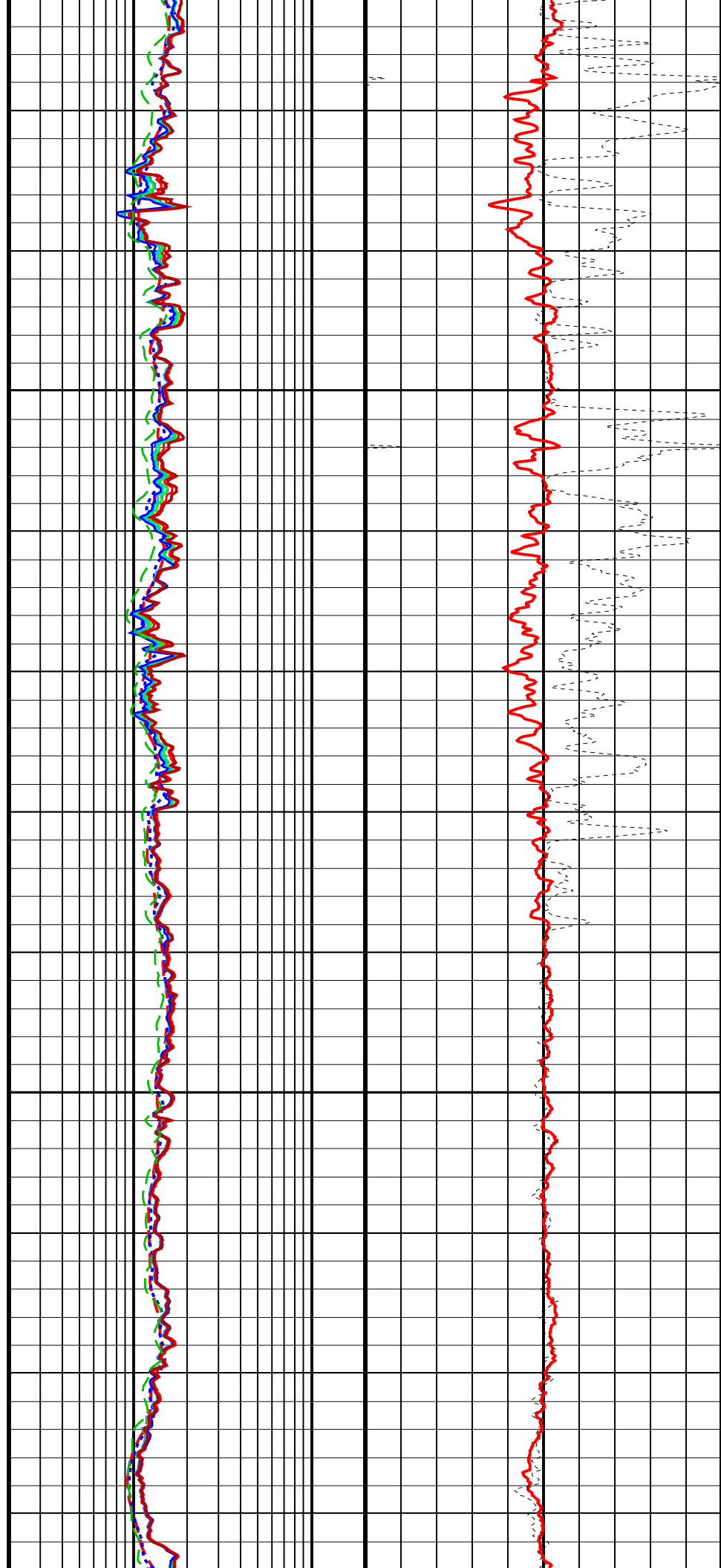
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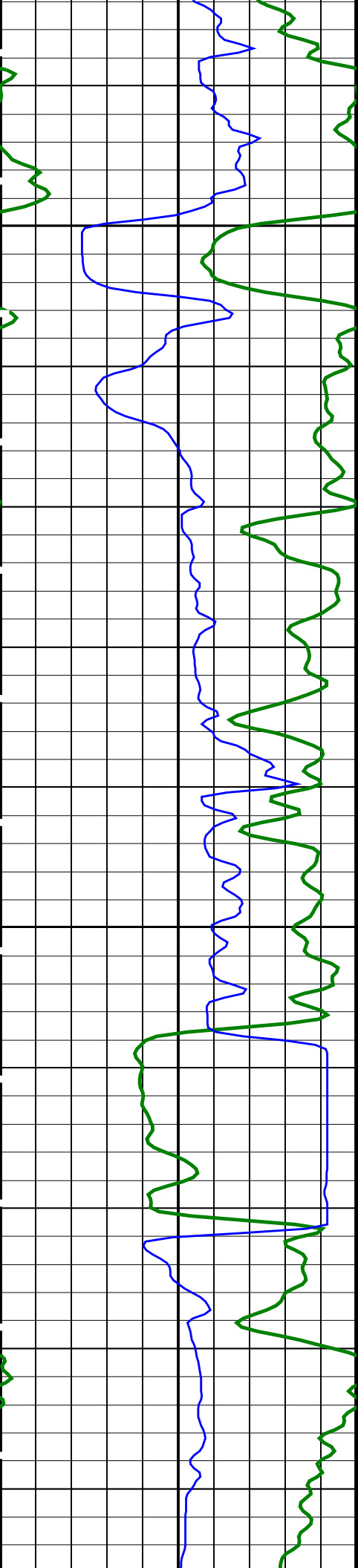




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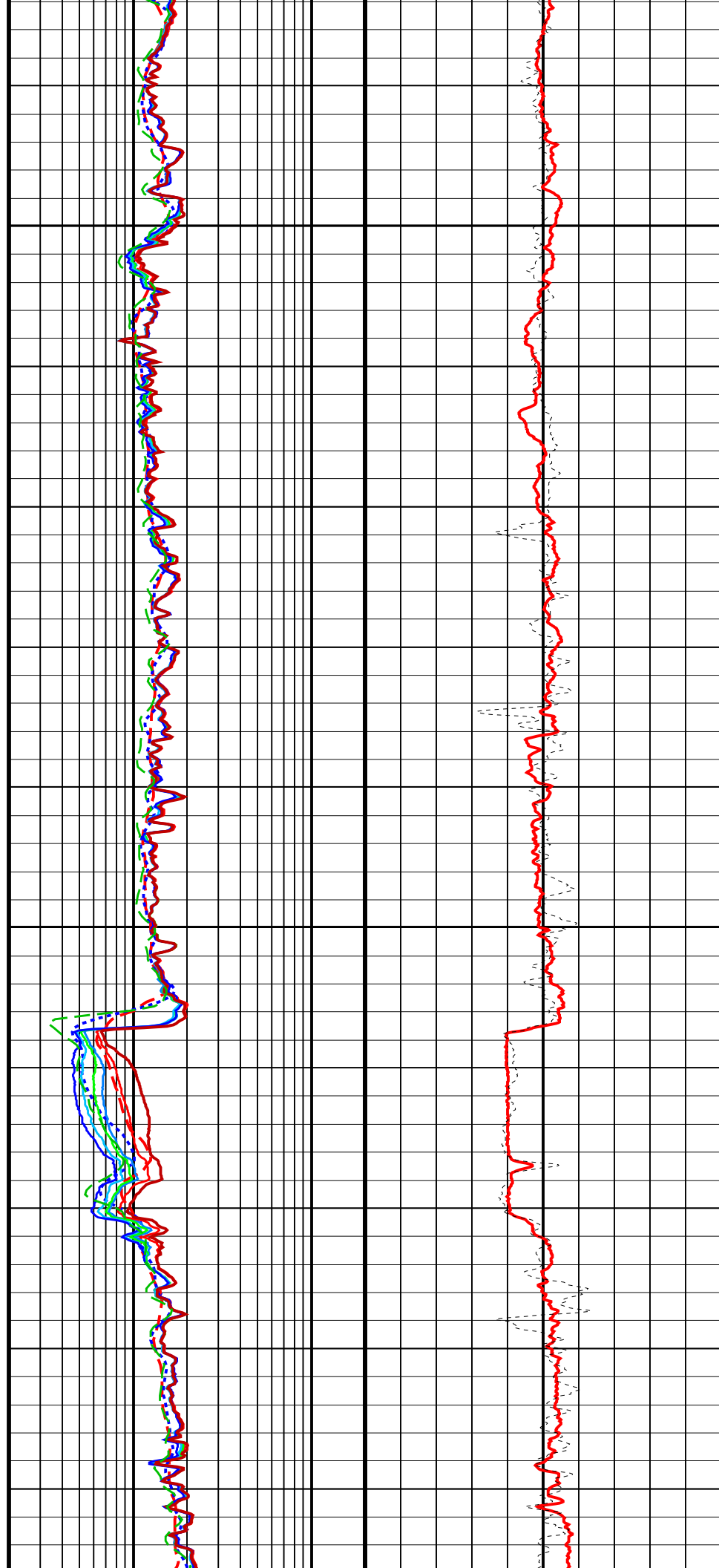
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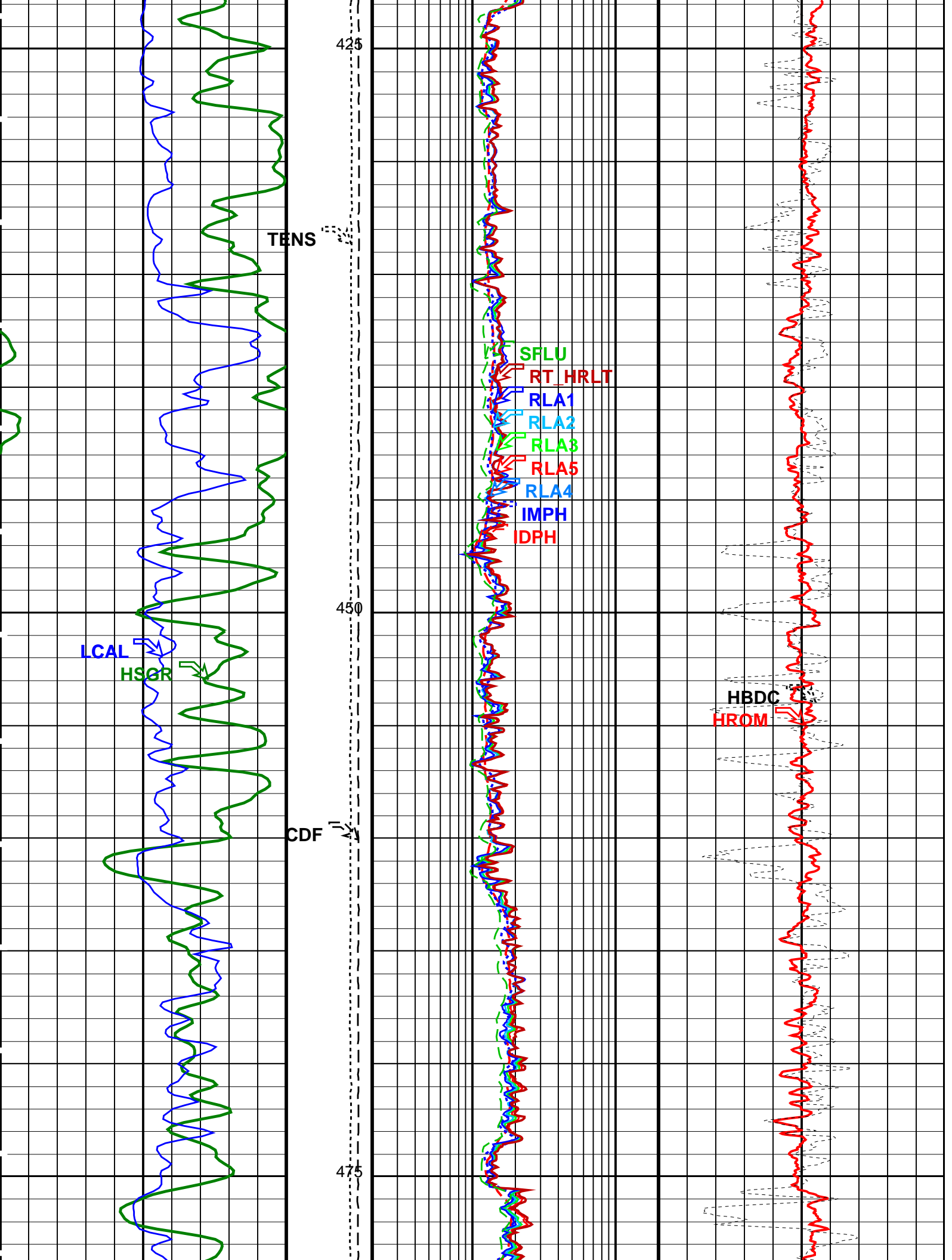


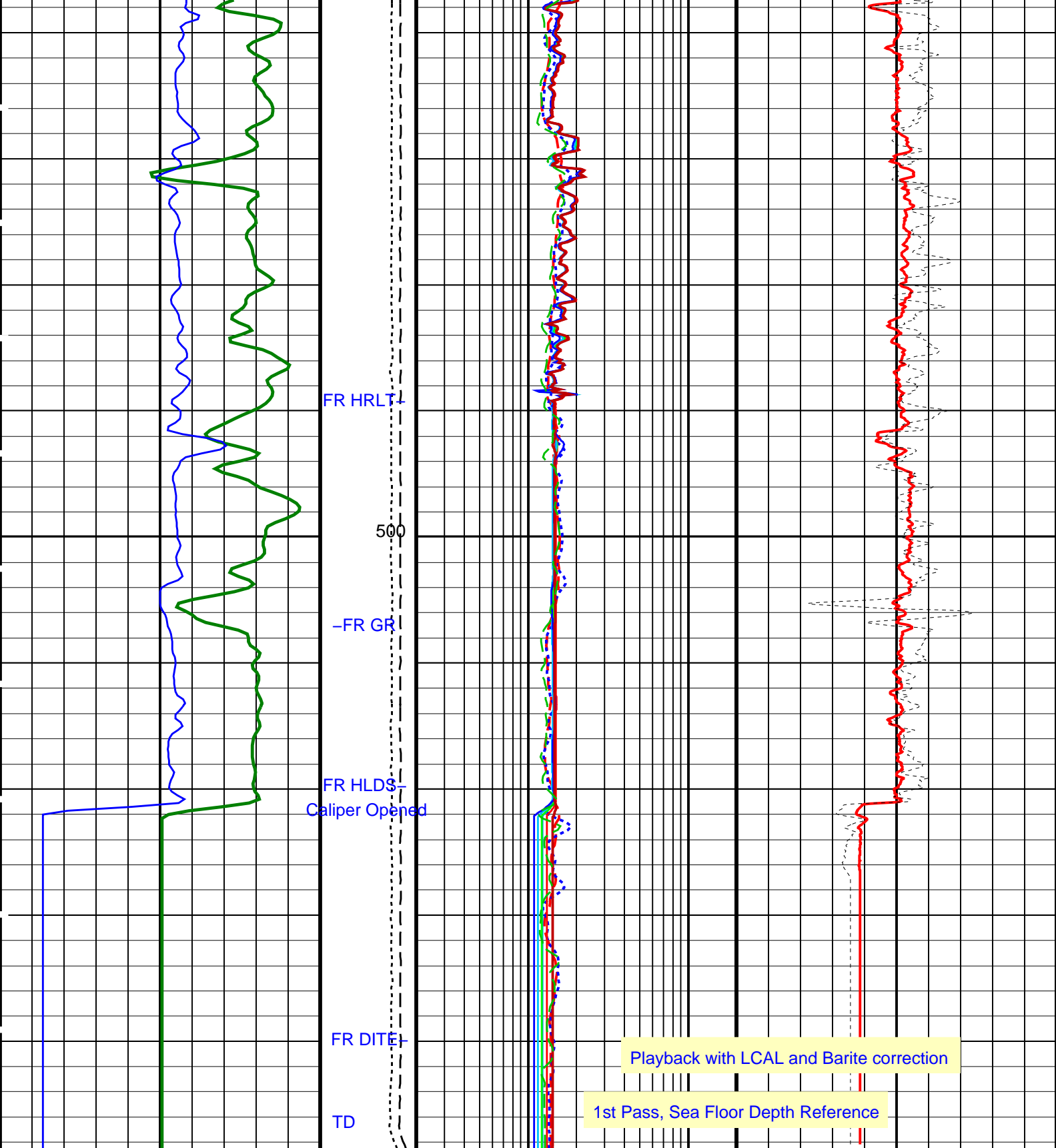


375

400







<p>HLDS Caliper (LCAL)</p> <p>(IN)</p> <p>0 20</p>	<p>Tension (TENS) (LBF)</p> <p>10000 0</p>	<p>Deep Induction Phasor-processed Resistivity (IDPH)</p> <p>(OHMM)</p> <p>0.2 20</p>	<p>HLDS HR Bulk Density (HROM)</p> <p>(G/C3)</p> <p>0 4</p>
<p>HNGS Spectroscopy Gamma Ray (HSGR)</p> <p>(GAPI)</p> <p>0 75</p>	<p>Calibrated Downhole Force (CDF) (LBF)</p> <p>10000 0</p>	<p>Medium Induction Phasor-processed Resistivity (IMPH)</p> <p>(OHMM)</p> <p>0.2 20</p>	<p>HLDS HR Bulk Density Correction (HBDC)</p> <p>(G/C3)</p> <p>-0.25 0.25</p>
		<p>HRLT Resistivity 4 (RLA4)</p> <p>(OHMM)</p> <p>0.2 20</p>	

0.2	(OHMM)	20
HRLT Resistivity 5 (RLA5)		
0.2	(OHMM)	20
HRLT Resistivity 3 (RLA3)		
0.2	(OHMM)	20
HRLT Resistivity 2 (RLA2)		
0.2	(OHMM)	20
HRLT Resistivity 1 (RLA1)		
0.2	(OHMM)	20
SFL Unaveraged (SFLU)		
0.2	(OHMM)	20
HRLT True Resistivity (RT_HRLT)		
0.2	(OHMM)	20

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
DIT-E: Dual Induction – E			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
DGF1	Deep 10 kHz Gain Factor	0.983944	
DGF2	Deep 20 kHz Gain Factor	0.994954	
DGF4	Deep 40 kHz Gain Factor	1.00592	
DPH1	Deep 10 kHz Phase Shift	0.168276	DEG
DPH2	Deep 20 kHz Phase Shift	0.0121563	DEG
DPH4	Deep 40 kHz Phase Shift	–1.03419	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	41.5527	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	17.216	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	5.26232	MM/M
DRIM	DIT-E Radial Invasion Mode	Rxo>Rt	
DSR1	Deep Sigma Reference (10 kHz)	7637	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DSR4	Deep Sigma Reference (40 kHz)	405	MM/M
DSTA	DIT-E Transversal Standoff	0	IN
DXE1	Deep Quad 10 kHz Sonde Error Correction	254.472	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	139.586	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	80.4475	MM/M
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
IFRS	DIT-E Induction Frequency Selector	20	
IPHA	DIT-E Phasor Processing Mode	ALL	
IPRO	DIT-E Induction Processing Selector	PHASOR	
ISSBAR	Barite Mud Switch	BARITE	
ITEN	DIT-E Temperature Enable	ENABLE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGF1	Medium 10 kHz Gain Factor	0.989571	
MGF2	Medium 20 kHz Gain Factor	0.993379	
MGF4	Medium 40 kHz Gain Factor	1.0135	
MPH1	Medium 10 kHz Phase Shift	–0.203288	DEG
MPH2	Medium 20 kHz Phase Shift	–0.886203	DEG
MPH4	Medium 40 kHz Phase Shift	–2.22812	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	30.326	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	9.52242	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	0.86266	MM/M
MSR1	Medium Sigma Reference (10 kHz)	13520	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MSR4	Medium Sigma Reference (40 kHz)	685	MM/M
MXE1	Medium Quad 10 kHz Sonde Error Correction	345.689	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	182.2	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	117.66	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	68	DEGF
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV

HLDS: Hostile Litho-Density Sonde

CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.71	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	V
PSDL	HLDS LS Pulse Shape Compensation DAC	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
HNGS-BA: Hostile Natural Gamma Ray Sonde			
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
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	NONE	
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
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	-0.00489121	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	68	DEGF
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.28118	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.991398	
HRLT-B: High Resolution Laterolog Array - B			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	18.9924	DEGC
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	
FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	BARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROGINV	Inversion Selection	ON	
PROCMFL	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	68	DEGF

EDTC-B: Enhanced DTS Cartridge	Temperature	50	DEGF
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	BARITE	
ISSBAR_EDTC	Nuclear Mud Type	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	
MWCO	Mud Weight Correction Option	YES	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Centered	
U-ETELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	
U-TELM_EDTS	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	10.750	IN
CWEI	Casing Weight	43.00	LB/F
DFD	Drilling Fluid Density	1.25	G/C3
DO	Depth Offset for Playback	0.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	-50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	-50000	FT
TDD	Total Depth - Driller	526.00	M
TDL	Total Depth - Logger	523.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo Vertical Scale: 1:200 Graphics File Created: 31-Dec-2011 07:57

OP System Version: 19C0-187

DIT-E	19C0-187	DTA-A	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	19C0-187

Input DLIS Files

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Output DLIS Files

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Input DLIS Files

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Output DLIS Files

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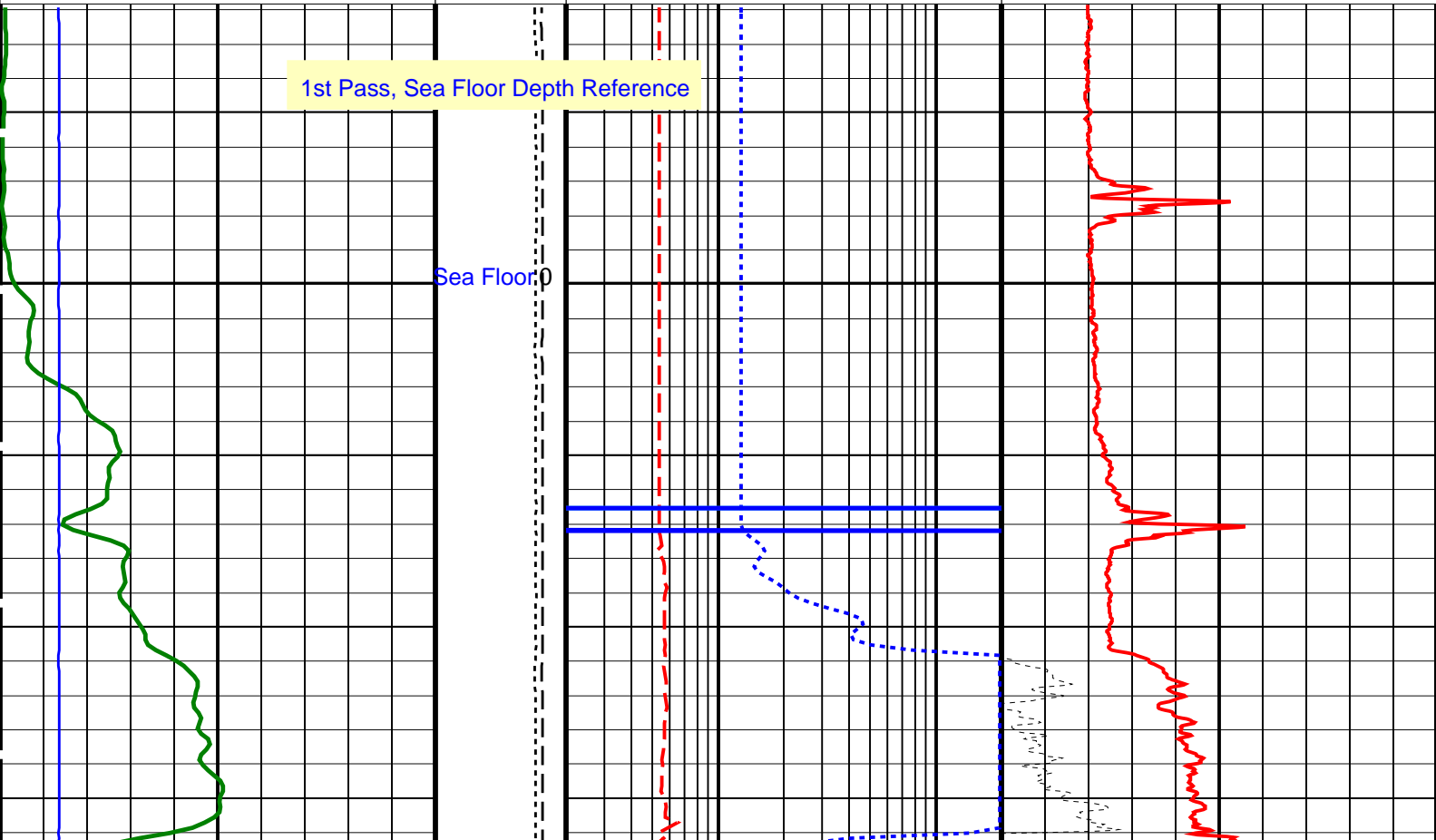
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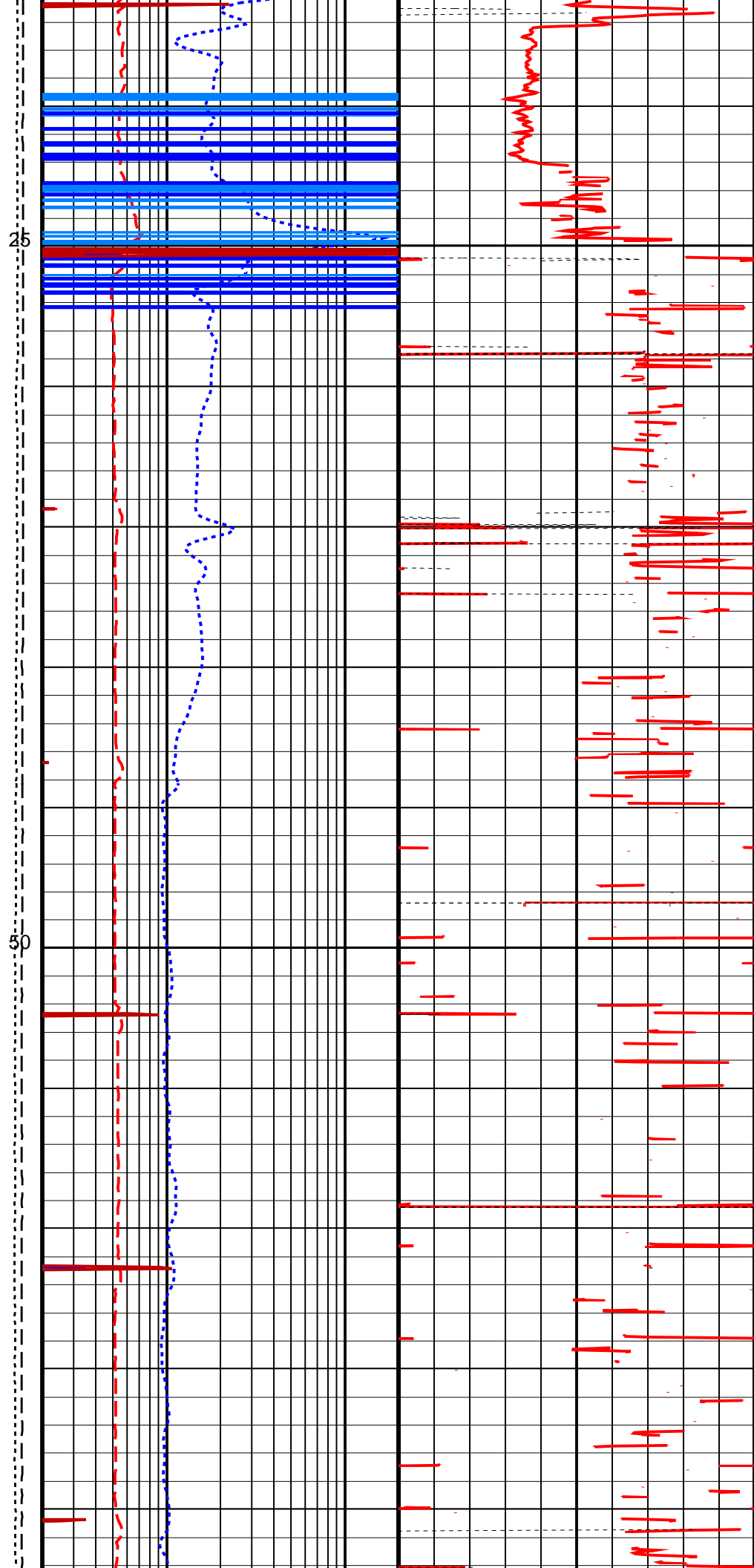
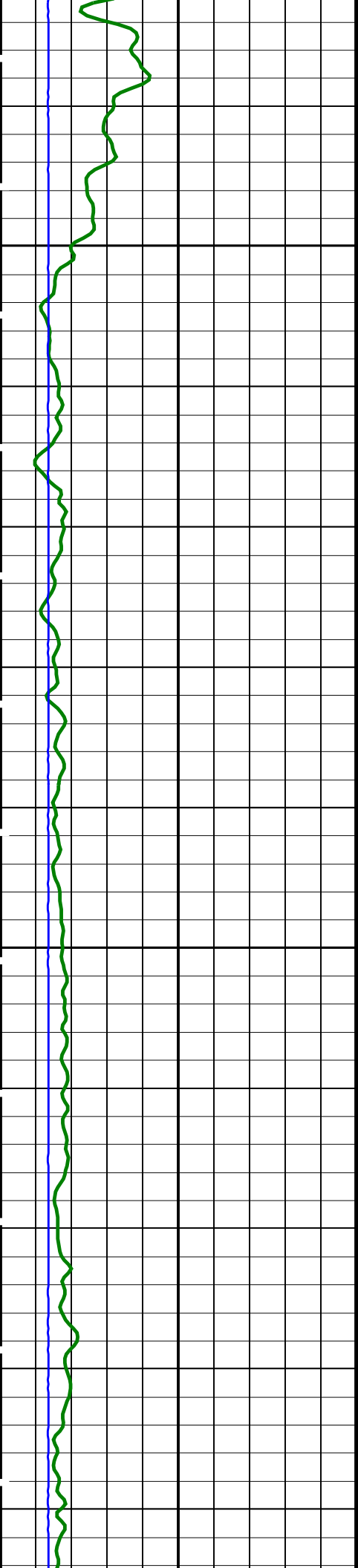
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HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	19C0-187

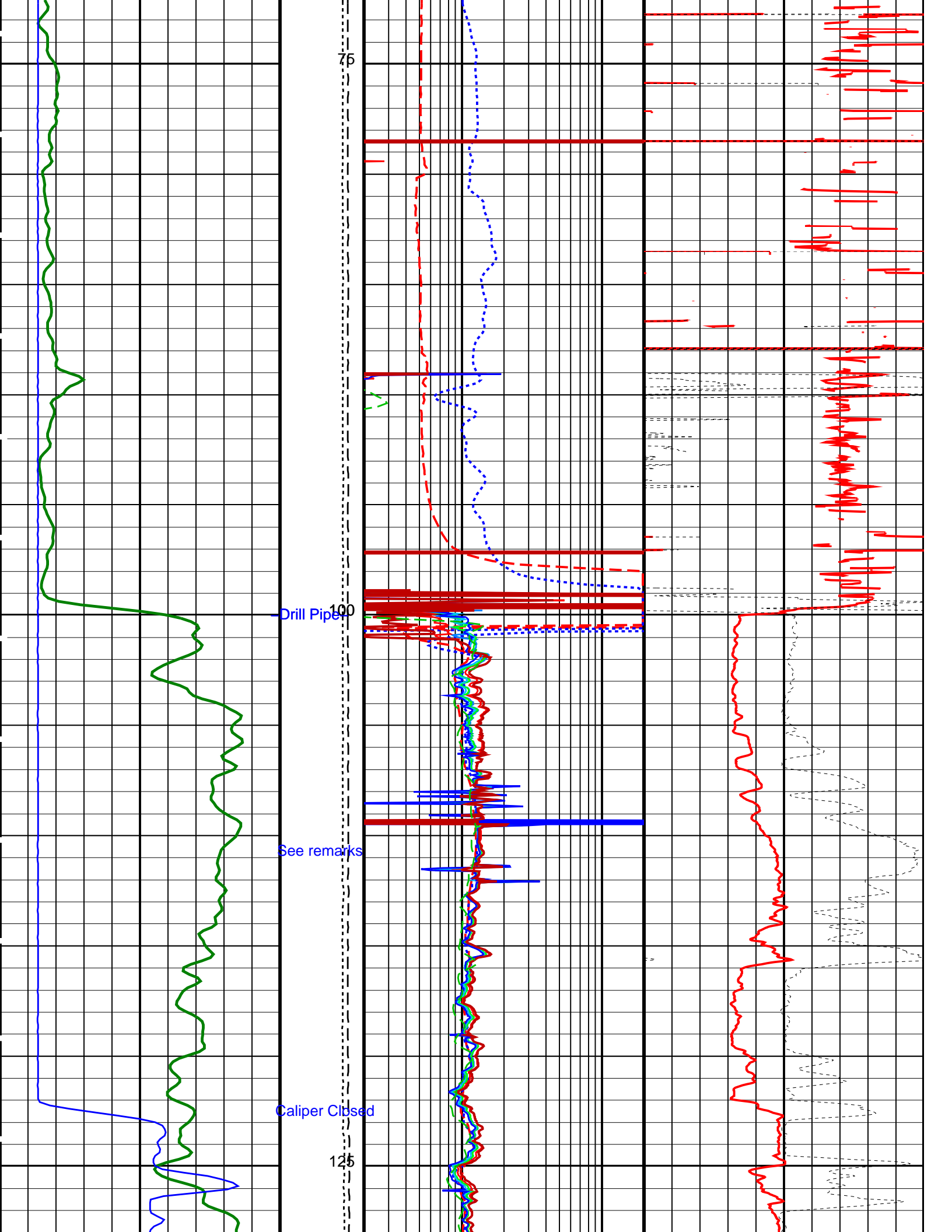
PIP SUMMARY

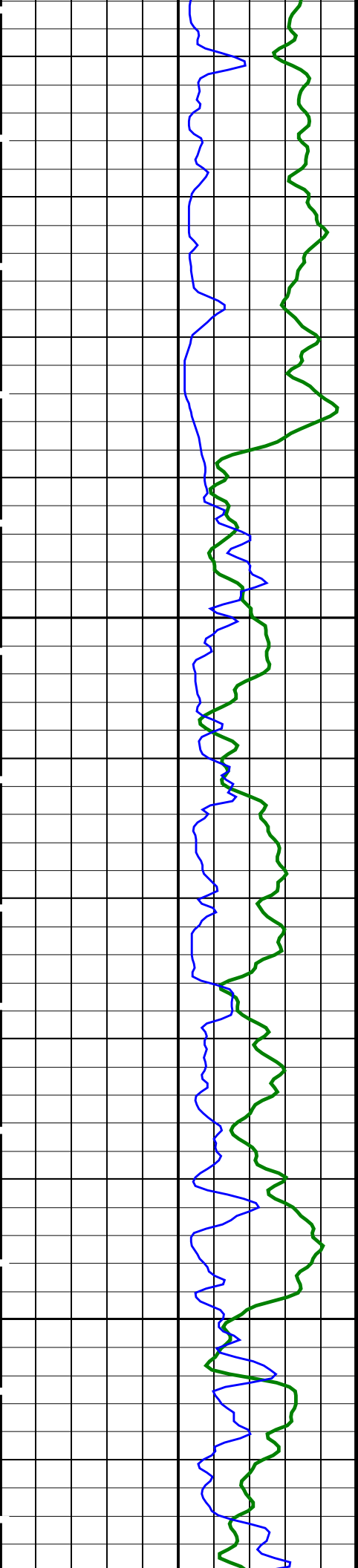
Time Mark Every 60 S

		<div>HRLT True Resistivity (RT_HRLT) 0.2 (OHMM) 20</div>	
		<div>SFL Unaveraged (SFLU) 0.2 (OHMM) 20</div>	
		<div>HRLT Resistivity 1 (RLA1) 0.2 (OHMM) 20</div>	
		<div>HRLT Resistivity 2 (RLA2) 0.2 (OHMM) 20</div>	
		<div>HRLT Resistivity 3 (RLA3) 0.2 (OHMM) 20</div>	
		<div>HRLT Resistivity 5 (RLA5) 0.2 (OHMM) 20</div>	
		<div>HRLT Resistivity 4 (RLA4) 0.2 (OHMM) 20</div>	
<div>HNGS Spectroscopy Gamma Ray (HSGR) 0 (GAPI) 75</div>	<div>Calibrated Downhole Force (CDF) (LBF) 10000 0</div>	<div>Medium Induction Phasor-processed Resistivity (IMPH) 0.2 (OHMM) 20</div>	<div>HLDS HR Bulk Density Correction (HBDC) -0.25 (G/C3) 0.25</div>
<div>HLDS Caliper (LCAL) 0 (IN) 20</div>	<div>Tension (TENS) (LBF) 10000 0</div>	<div>Deep Induction Phasor-processed Resistivity (IDPH) 0.2 (OHMM) 20</div>	<div>HLDS HR Bulk Density (HROM) 0 (G/C3) 4</div>



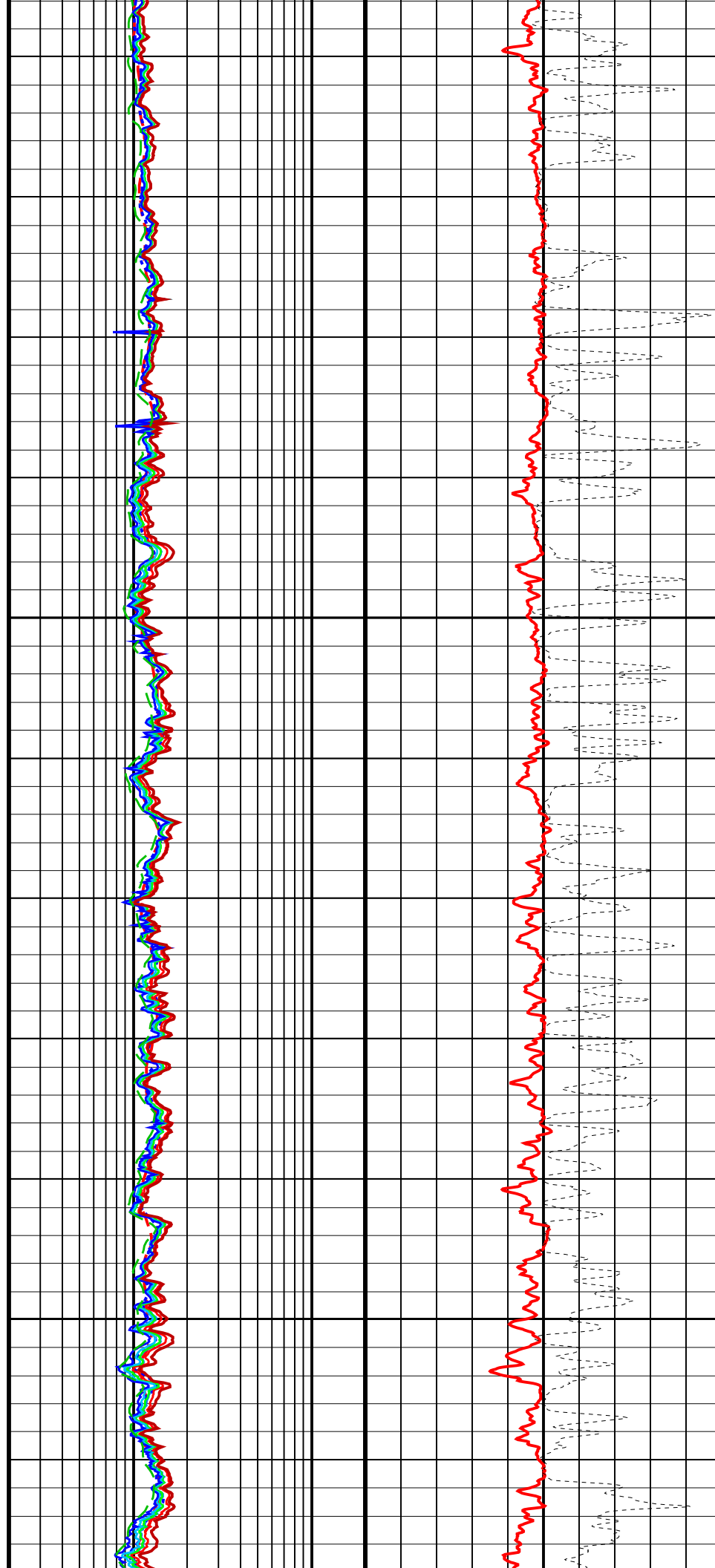


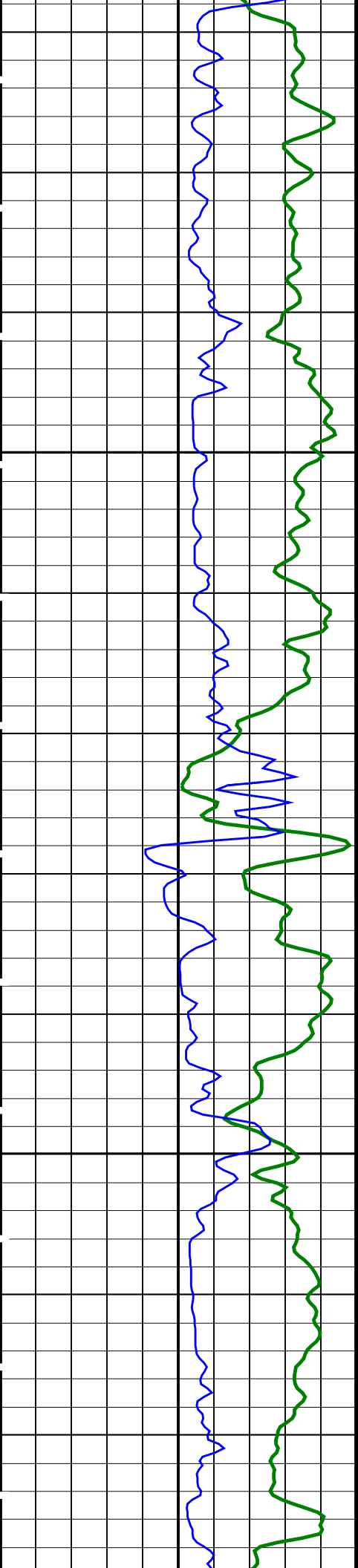




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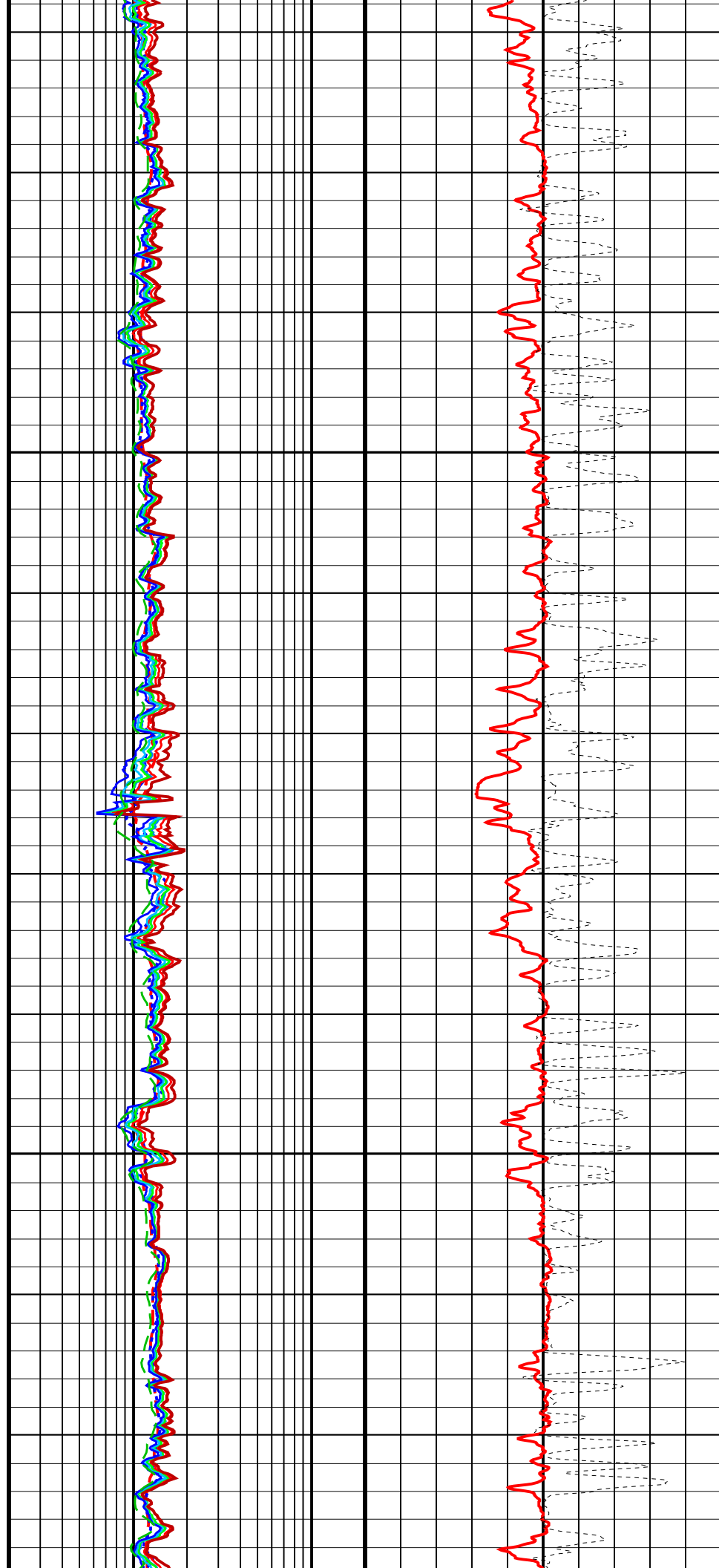
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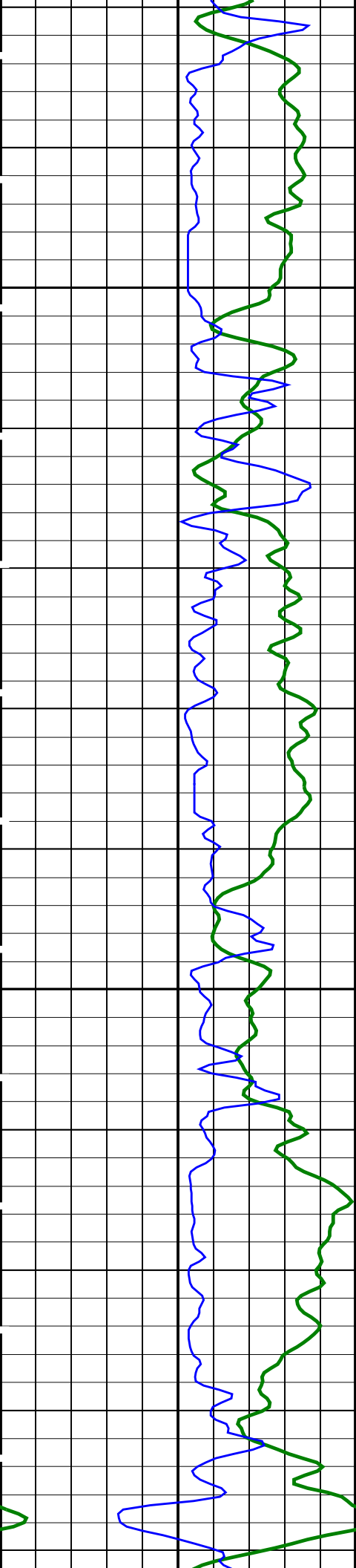




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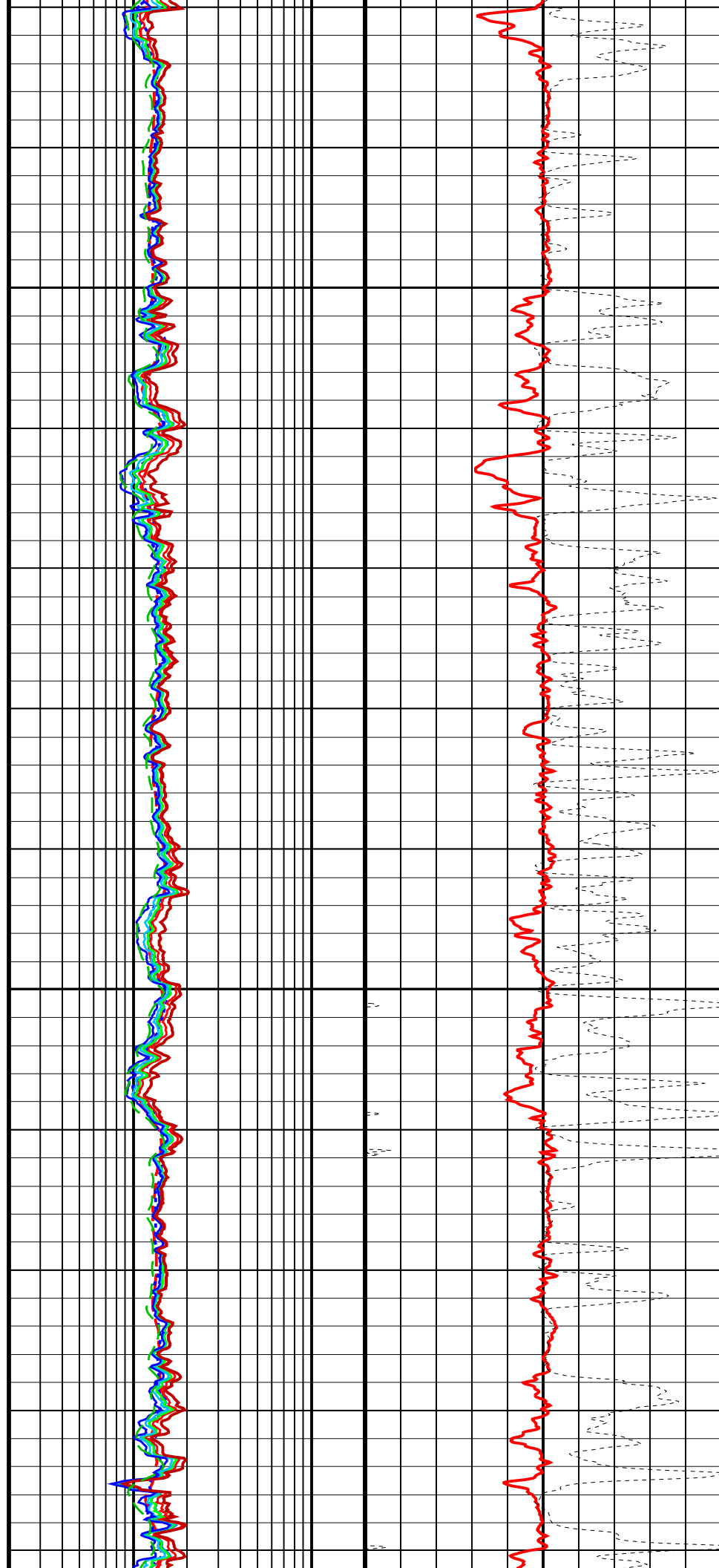
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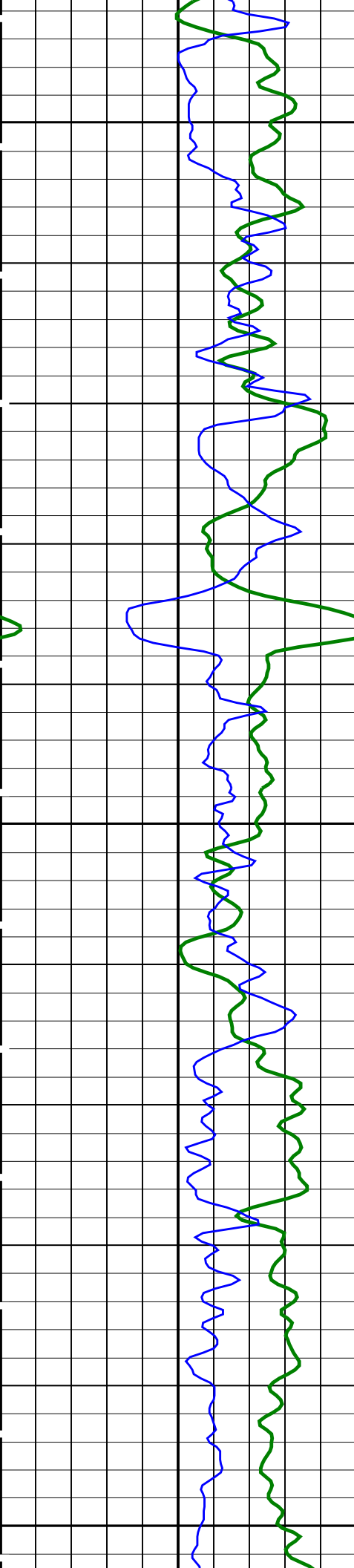




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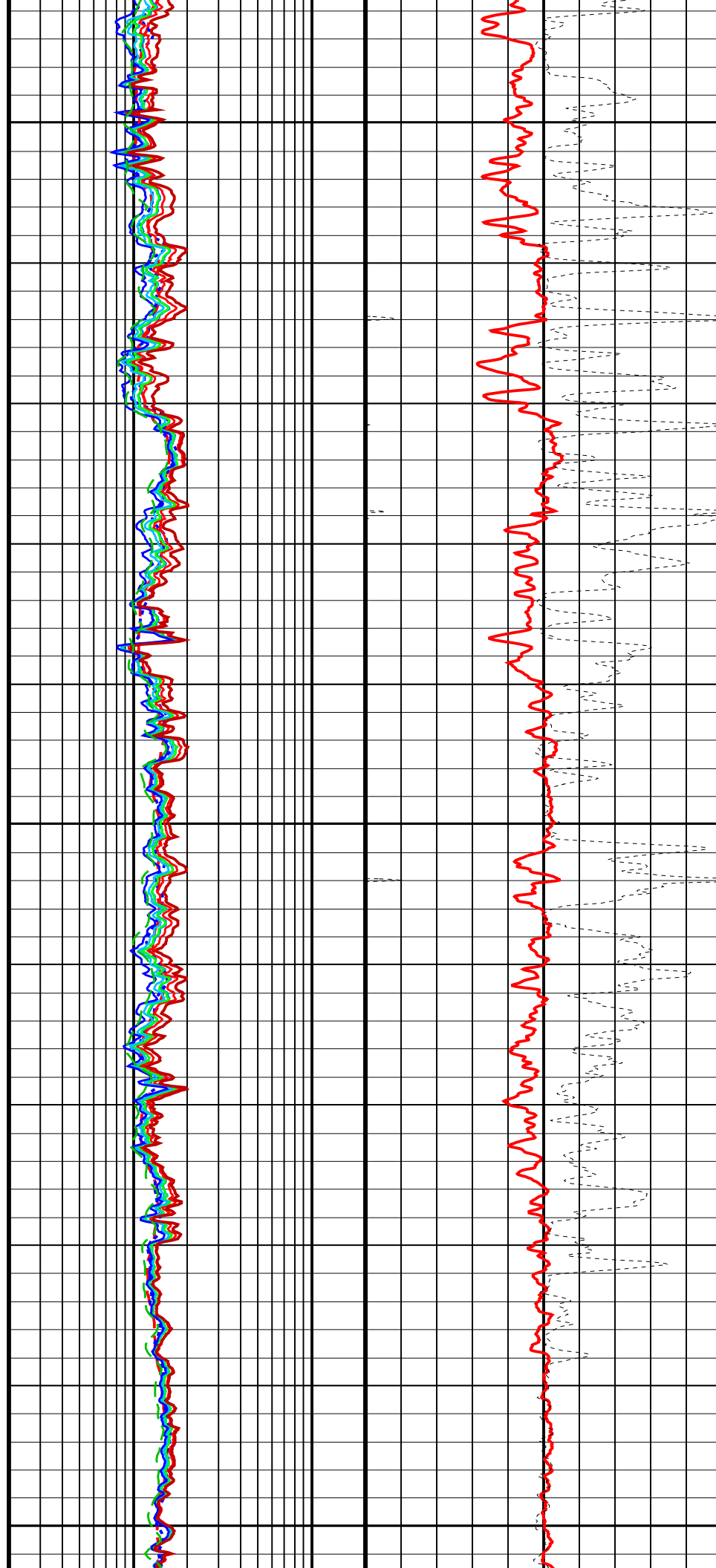


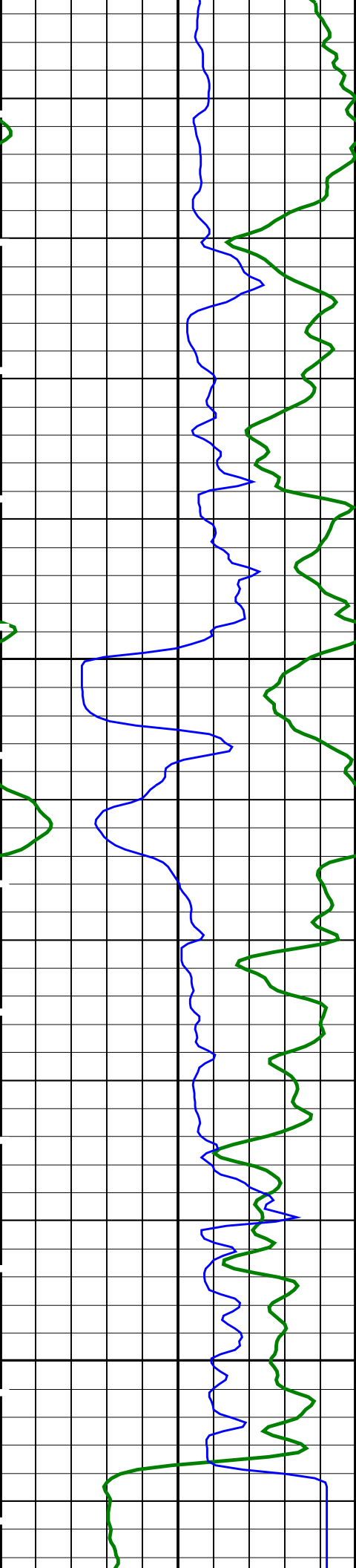


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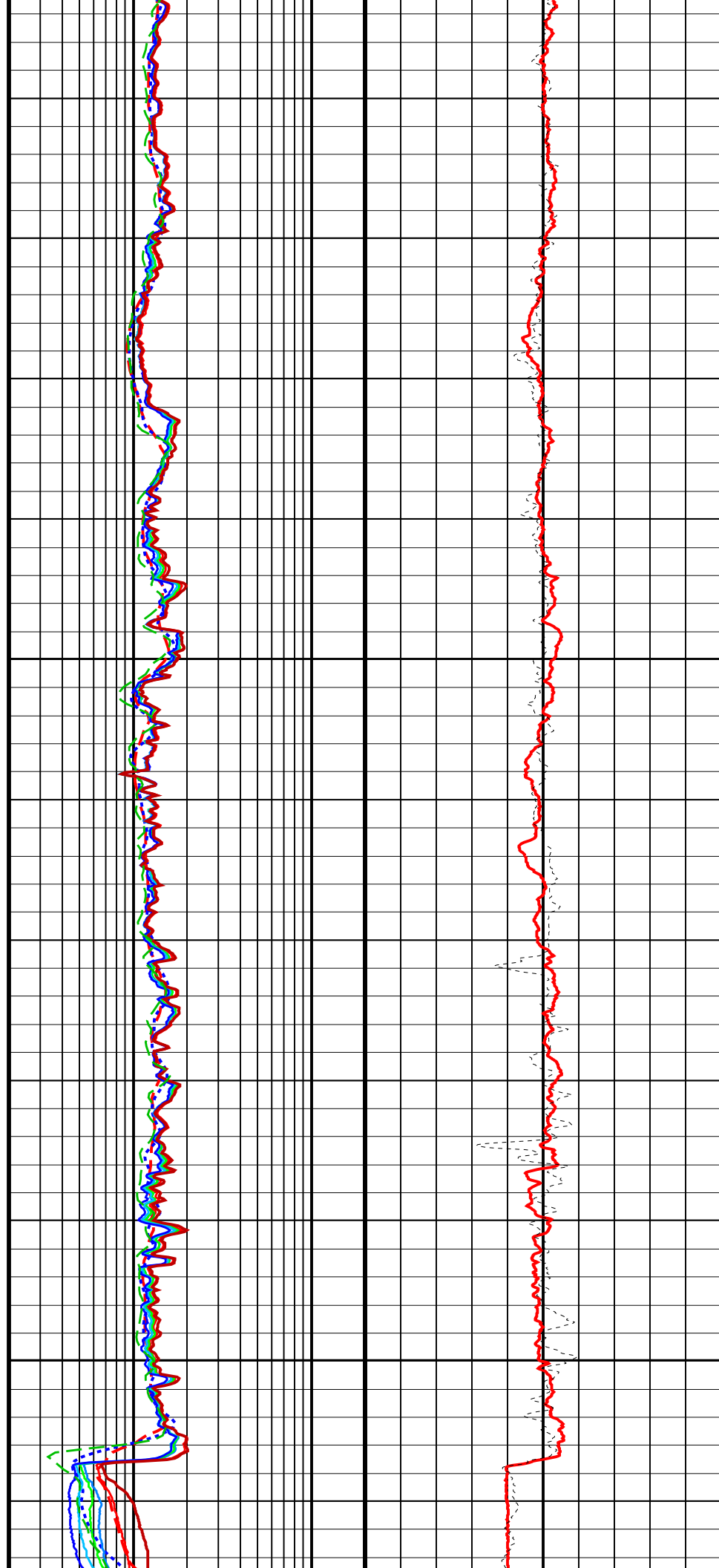
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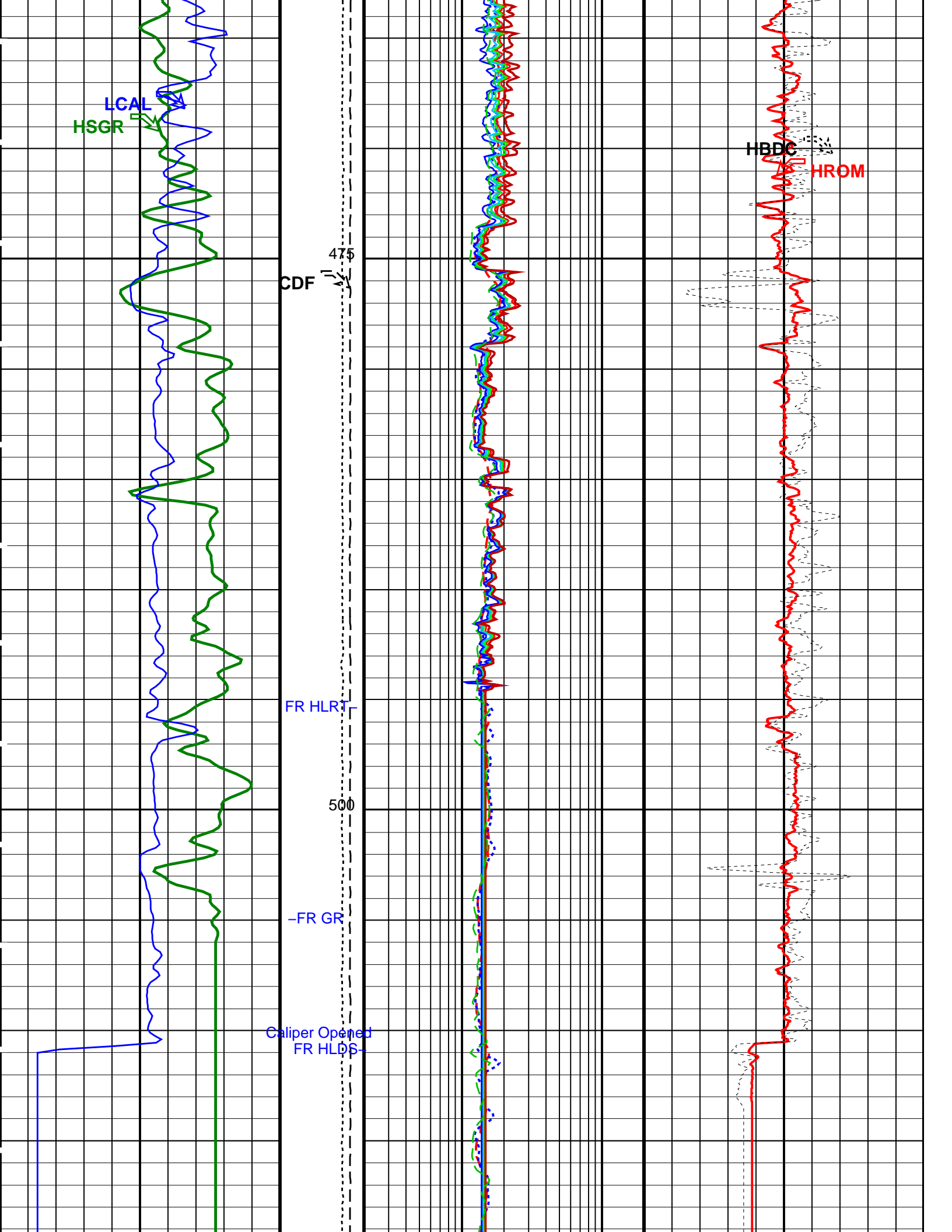
350





375
400





MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGF1	Medium 10 kHz Gain Factor	0.989571	
MGF2	Medium 20 kHz Gain Factor	0.993379	
MGF4	Medium 40 kHz Gain Factor	1.0135	
MPH1	Medium 10 kHz Phase Shift	-0.203288	DEG
MPH2	Medium 20 kHz Phase Shift	-0.886203	DEG
MPH4	Medium 40 kHz Phase Shift	-2.22812	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	30.326	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	9.52242	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	0.86266	MM/M
MSR1	Medium Sigma Reference (10 kHz)	13520	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MSR4	Medium Sigma Reference (40 kHz)	685	MM/M
MXE1	Medium Quad 10 kHz Sonde Error Correction	345.689	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	182.2	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	117.66	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	68	DEGF
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
HLDS: Hostile Litho-Density Sonde			
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.71	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	V
PSDL	HLDS LS Pulse Shape Compensation DAC	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
HNGS-BA: Hostile Natural Gamma Ray Sonde			
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
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	NONE	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
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	-0.00489121	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	68	DEGF
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.28118	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.991398	
HRLT-B: High Resolution Laterolog Array - B			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	18.9924	DEGC
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	
FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	

FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	NOBARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSP0	Sonde Position	Centered	
SHT	Surface Hole Temperature	68	DEGF
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
ISSBAR_EDTC	Nuclear Mud Type	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
U-ETELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	
U-TELM_EDTS	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	10.750	IN
CWEI	Casing Weight	43.00	LB/F
DFD	Drilling Fluid Density	1.25	G/C3
DO	Depth Offset for Playback	-575.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	-50000.00	DEGC
PBVSDAP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	-50000	FT
TDD	Total Depth - Driller	526.00	M
TDL	Total Depth - Logger	525.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo Vertical Scale: 1:200 Graphics File Created: 31-Dec-2011 05:10

OP System Version: 19C0-187

DIT-E	19C0-187	DTA-A	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	19C0-187

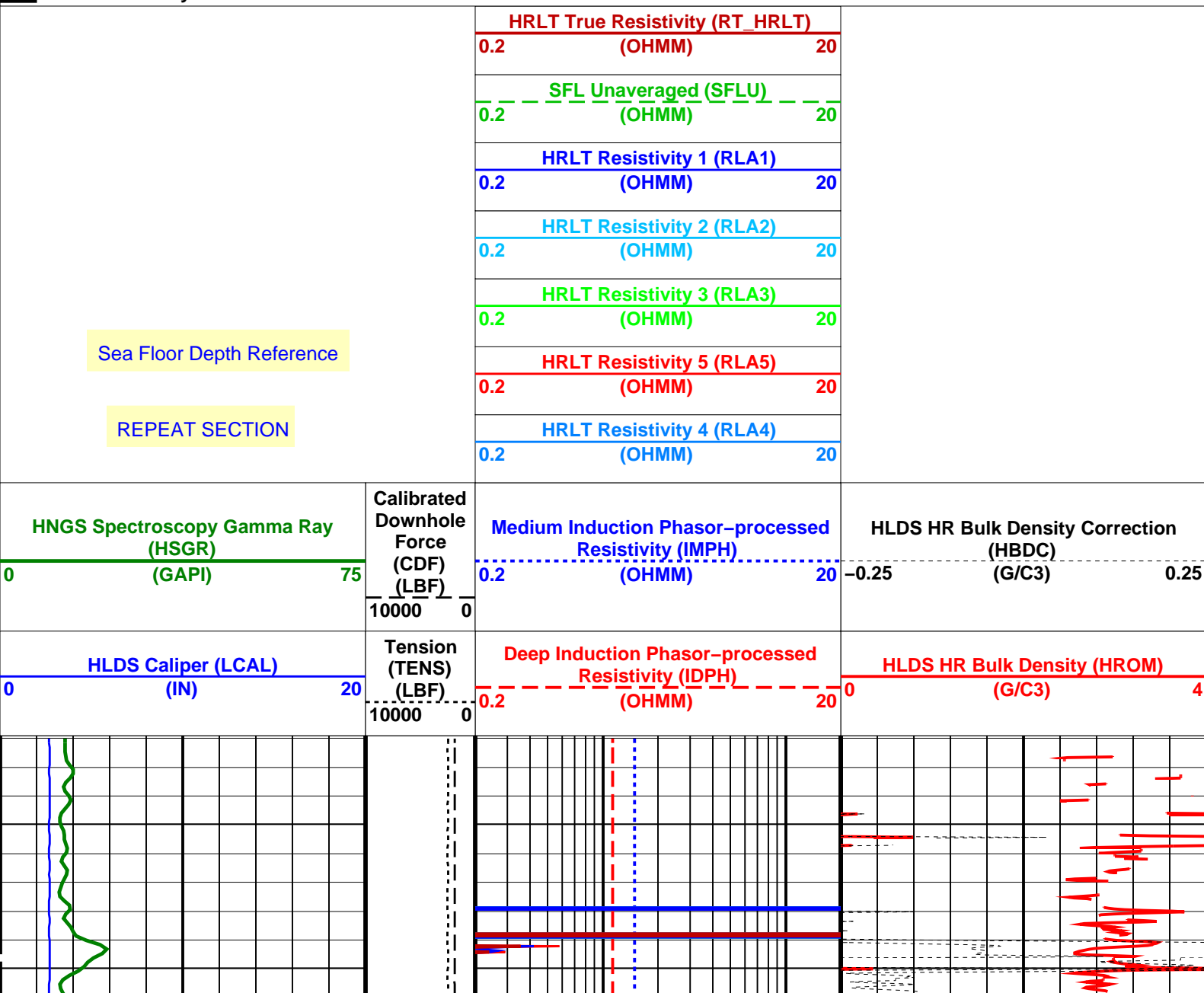
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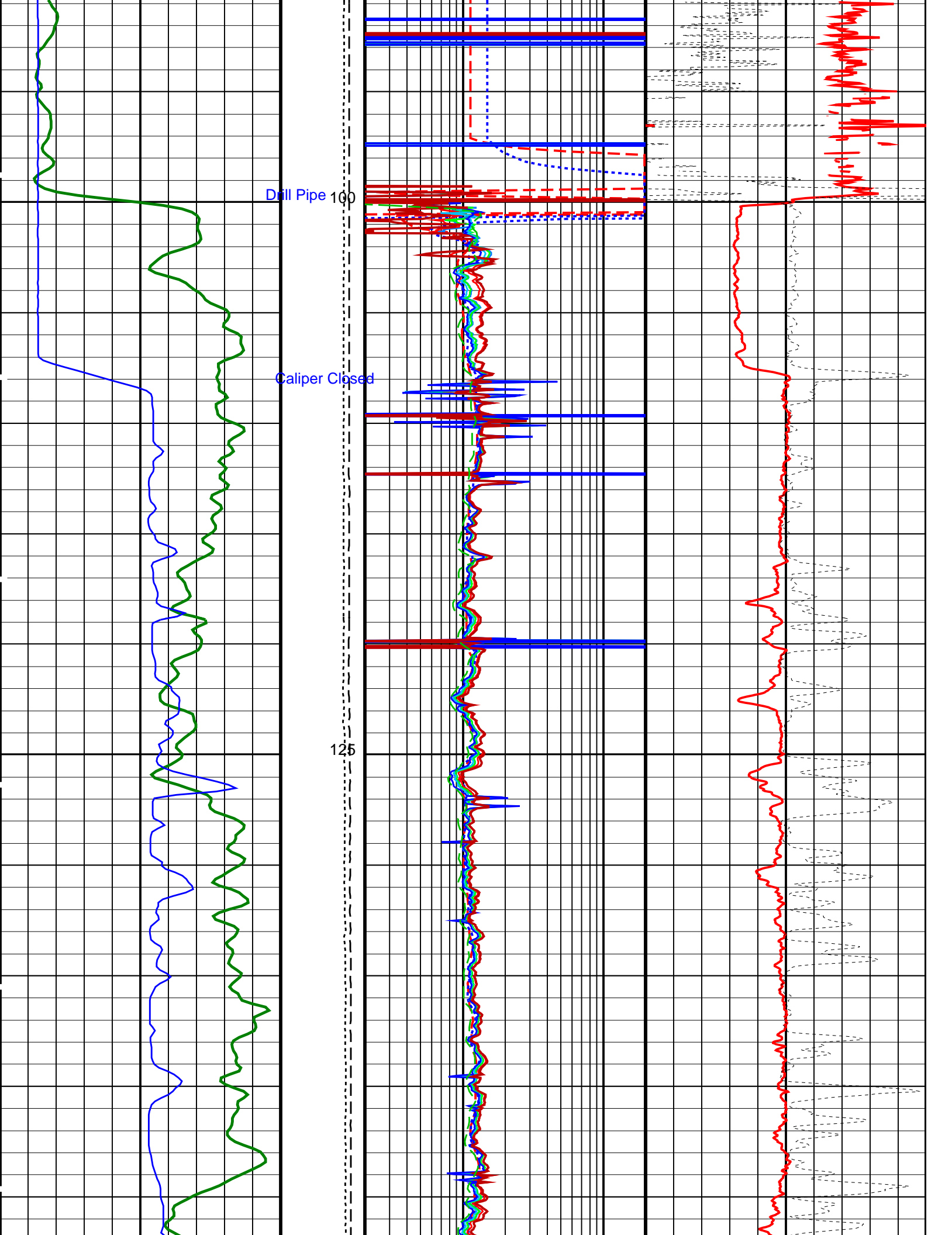
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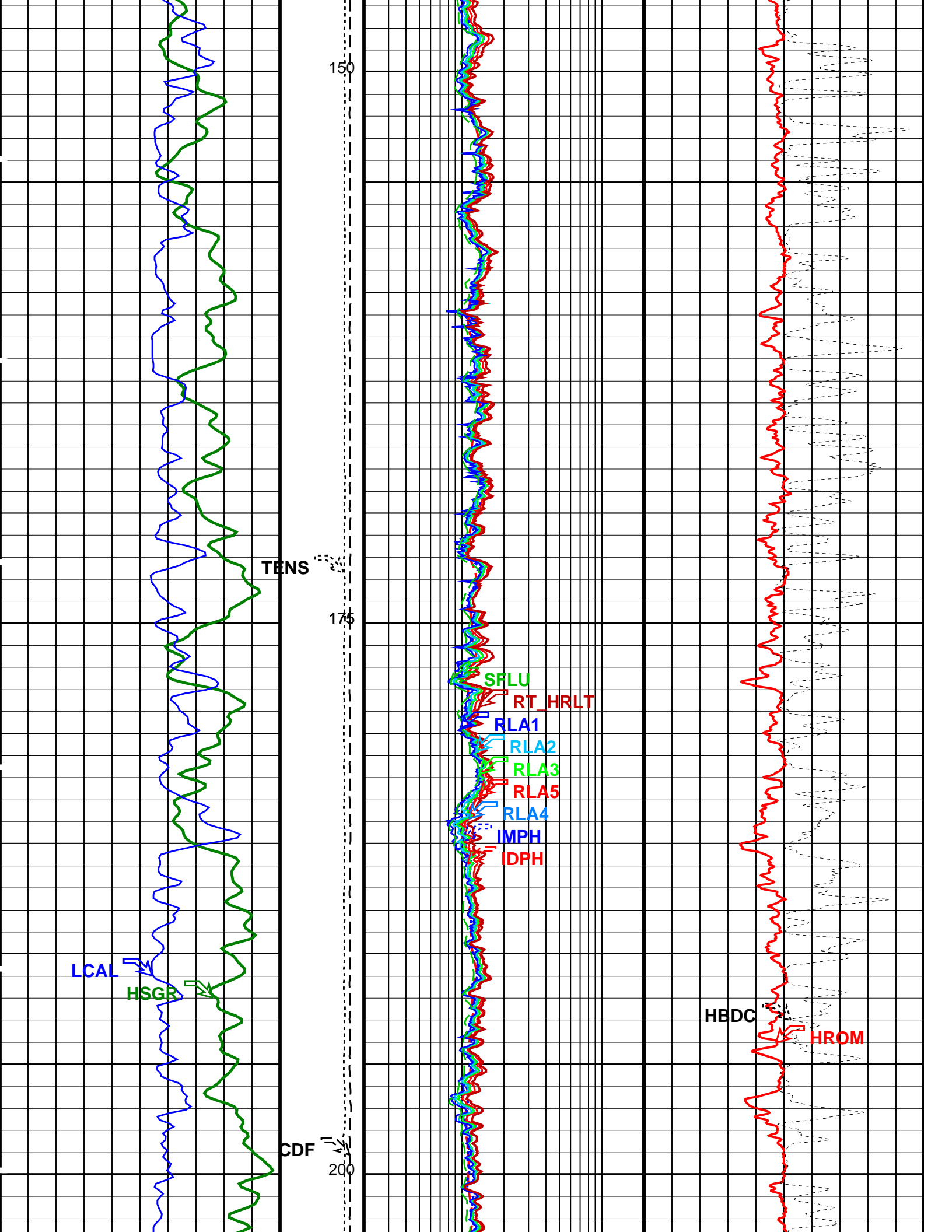
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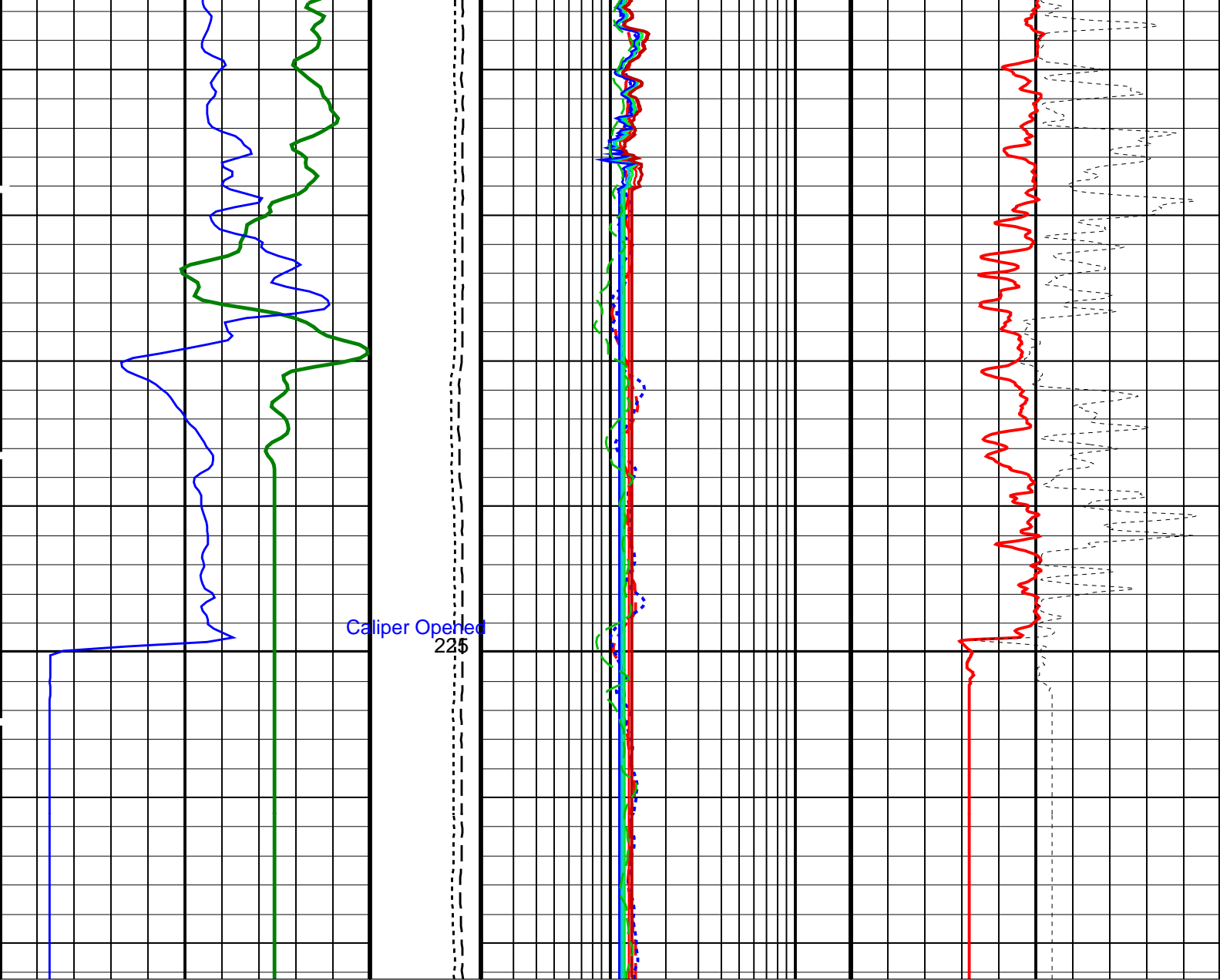
DIT-E	19C0-187	DTA-A	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	19C0-187

Time Mark Every 60 S









<div>HLDS Caliper (LCAL)</div> <div>(IN)</div> <div>020</div>	<div>Tension (TENS) (LBF)</div> <div>100000</div>	<div>Deep Induction Phasor-processed Resistivity (IDPH) (OHMM)</div> <div>0.220</div>	<div>HLDS HR Bulk Density (HROM) (G/C3)</div> <div>04</div>
<div>HNGS Spectroscopy Gamma Ray (HSGR) (GAPI)</div> <div>075</div>	<div>Calibrated Downhole Force (CDF) (LBF)</div> <div>100000</div>	<div>Medium Induction Phasor-processed Resistivity (IMPH) (OHMM)</div> <div>0.220</div>	<div>HLDS HR Bulk Density Correction (HBDC) (G/C3)</div> <div>-0.250.25</div>

<div>REPEAT SECTION</div> <div>Sea Floor Depth Reference</div>	<div>HRLT Resistivity 4 (RLA4) (OHMM)</div> <div>0.220</div>	
	<div>HRLT Resistivity 5 (RLA5) (OHMM)</div> <div>0.220</div>	
	<div>HRLT Resistivity 3 (RLA3) (OHMM)</div> <div>0.220</div>	
	<div>HRLT Resistivity 2 (RLA2) (OHMM)</div> <div>0.220</div>	
	<div>HRLT Resistivity 1 (RLA1) (OHMM)</div> <div>0.220</div>	
	<div>SFL Unaveraged (SFLU) (OHMM)</div> <div>0.220</div>	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
DIT-E: Dual Induction – E			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
DGF1	Deep 10 kHz Gain Factor	0.983944	
DGF2	Deep 20 kHz Gain Factor	0.994954	
DGF4	Deep 40 kHz Gain Factor	1.00592	
DPH1	Deep 10 kHz Phase Shift	0.168276	DEG
DPH2	Deep 20 kHz Phase Shift	0.0121563	DEG
DPH4	Deep 40 kHz Phase Shift	-1.03419	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	41.5527	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	17.216	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	5.26232	MM/M
DRIM	DIT-E Radial Invasion Mode	Rxo>Rt	
DSR1	Deep Sigma Reference (10 kHz)	7637	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DSR4	Deep Sigma Reference (40 kHz)	405	MM/M
DSTA	DIT-E Transversal Standoff	0	IN
DXE1	Deep Quad 10 kHz Sonde Error Correction	254.472	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	139.586	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	80.4475	MM/M
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
IFRS	DIT-E Induction Frequency Selector	20	
IPHA	DIT-E Phasor Processing Mode	ALL	
IPRO	DIT-E Induction Processing Selector	PHASOR	
ISSBAR	Barite Mud Switch	NOBARITE	
ITEN	DIT-E Temperature Enable	ENABLE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGF1	Medium 10 kHz Gain Factor	0.989571	
MGF2	Medium 20 kHz Gain Factor	0.993379	
MGF4	Medium 40 kHz Gain Factor	1.0135	
MPH1	Medium 10 kHz Phase Shift	-0.203288	DEG
MPH2	Medium 20 kHz Phase Shift	-0.886203	DEG
MPH4	Medium 40 kHz Phase Shift	-2.22812	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	30.326	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	9.52242	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	0.86266	MM/M
MSR1	Medium Sigma Reference (10 kHz)	13520	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MSR4	Medium Sigma Reference (40 kHz)	685	MM/M
MXE1	Medium Quad 10 kHz Sonde Error Correction	345.689	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	182.2	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	117.66	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	68	DEGF
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
HLDS: Hostile Litho-Density Sonde			
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.71	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	V
PSDL	HLDS LS Pulse Shape Compensation DAC	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	

PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
HNGBA: Hostile Natural Gamma Ray Sonde			
BAR1	HNGB Detector 1 Barite Constant	1	
BAR2	HNGB Detector 2 Barite Constant	1	
BHK	HNGB Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
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	HNGB Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGB Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGB Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGB Borehole Potassium Running Average	-0.00489121	
HALF	HNGB Alpha Filter Length	60	IN
HCRB	HNGB Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGB Processing Enable	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGB Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGB Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGB Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	68	DEGF
TPOS	Tool Position	ECCE	
VBA1	HNGB Detector 1 Variable Barite Factor Running Average	1.28118	
VBA2	HNGB Detector 2 Variable Barite Factor Running Average	0.991398	
HRLTB: High Resolution Laterolog Array - B			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	18.9924	DEGC
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	
FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	NOBARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROGINV	Inversion Selection	ON	
PROCMFL	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSP0	Sonde Position	Centered	
SHT	Surface Hole Temperature	68	DEGF
EDTCB: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
ISSBAR_EDTC	Nuclear Mud Type	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	

MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
U-ETELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	
U-TELM_EDTS	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	10.750	IN
CWEI	Casing Weight	43.00	LB/F
DFD	Drilling Fluid Density	1.25	G/C3
DO	Depth Offset for Playback	-575.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	-50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	-50000	FT
TDD	Total Depth - Driller	526.00	M
TDL	Total Depth - Logger	525.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo Vertical Scale: 1:200 Graphics File Created: 31-Dec-2011 06:32

OP System Version: 19C0-187

DIT-E	19C0-187	DTA-A	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	19C0-187

Input DLIS Files

DEFAULT	PI_LDL_NGS_HRLA_012LUP	FN:15	PRODUCER	07-Dec-2011 23:47	811.5 M	656.7 M
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Output DLIS Files

DEFAULT	PI_LDL_NGS_HRLA_039PUP	FN:6	PRODUCER	31-Dec-2011 06:32
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Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement							
Master: 16-Sep-2011 11:31 Before: 26-Nov-2011 0:20 After: 8-Dec-2011 1:10							
SS Cs Resolution Bkg	9.000	7.738	7.637	7.628	-0.008544	1.800	%
LS Cs Resolution Bkg	9.000	8.115	7.989	8.008	0.01843	1.800	%
LSW1 Background	100.0	90.00	87.28	87.65	0.3727	3.000	CPS
LSW2 Background	100.0	79.46	78.77	79.96	1.194	3.000	CPS
LSW3 Background	200.0	182.4	178.8	179.9	1.048	6.000	CPS
LSW4 Background	250.0	223.0	225.1	223.3	-1.839	7.500	CPS
LSW5 Background	600.0	526.1	523.2	522.2	-1.040	18.00	CPS
SSW1 Background	100.0	84.99	86.55	85.71	-0.8459	3.000	CPS
SSW2 Background	200.0	147.1	147.2	146.8	-0.4662	6.000	CPS
SSW3 Background	500.0	413.1	412.9	409.3	-3.584	15.00	CPS
SSW4 Background	270.0	220.0	219.5	220.8	1.294	8.100	CPS
SSW5 Background	200.0	157.9	158.0	157.1	-0.8188	6.000	CPS
Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement							
Master: 16-Sep-2011 11:31							
LSW1 Aluminum	600.0	554.8	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	809.5	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	975.9	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	495.9	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	452.5	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2638	N/A	N/A	N/A	N/A	CPS

SSW2 Aluminum	8000	7210	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	10070	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	4124	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	502.8	N/A	N/A	N/A	N/A	CPS
Hostile Litho-Density Sonde Wellsite Calibration – Lithology Measurement							
Master: 16-Sep-2011 11:31							
LSW1 Iron	400.0	383.3	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	664.3	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	884.0	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	466.3	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	427.8	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1972	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	6170	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	9403	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3878	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	460.6	N/A	N/A	N/A	N/A	CPS
Hostile Litho-Density Sonde Wellsite Calibration – Caliper Calibration							
Before: 26-Nov-2011 0:25							
HLDS Caliper Small Ring	11.88	N/A	14.04	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	17.89	N/A	N/A	N/A	IN
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 1 Check							
Master: 17-Nov-2011 7:57 Before: 26-Nov-2011 0:21 After: 8-Dec-2011 1:11							
Na 511 Peak Loc	40.00	39.70	39.69	39.60	-0.09224	1.000	
Na 511 Peak Res	15.50	15.50	15.07	14.85	-0.2178	2.000	%
High Voltage	1150	1176	1168	1164	-3.540	N/A	V
Na 1785 Peak Loc	142.6	142.1	141.8	143.0	1.198	7.000	
Na 1785 Peak Res	8.500	8.309	8.731	7.037	-1.693	2.000	%
Temperature	15.50	29.76	21.55	20.40	-1.158	N/A	DEGC
Na Count Rate	45.00	20.77	21.01	20.72	-0.2956	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check							
Master: 17-Nov-2011 7:57 Before: 26-Nov-2011 0:21 After: 8-Dec-2011 1:11							
Na 511 Peak Loc	40.00	39.60	39.49	39.54	0.04988	1.000	
Na 511 Peak Res	15.50	16.99	15.91	15.93	0.01764	2.000	%
High Voltage	1150	1109	1091	1088	-3.384	N/A	V
Na 1785 Peak Loc	142.6	142.6	142.3	140.3	-1.968	7.000	
Na 1785 Peak Res	8.500	9.914	8.591	8.815	0.2231	2.000	%
Temperature	15.50	29.91	21.84	22.02	0.1821	N/A	DEGC
Na Count Rate	45.00	21.44	20.97	21.04	0.06492	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2							
Master: 17-Nov-2011 7:57 Before: 26-Nov-2011 0:21 After: 8-Dec-2011 1:11							
Coincidence Count Rate Ratio	1.000	0.9705	1.004	0.9862	-0.01783	0.05000	
Hostile Natural Gamma Ray Sonde Master Calibration – Detector 1 Calibration							
Master: 17-Nov-2011 7:52							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	210.8	--	--	--	--	
Th Peak Res	7.000	6.865	--	--	--	--	%
Background Count Rate	142.5	24.91	--	--	--	--	CPS
Gain Ratio	1.000	1.010	--	--	--	--	
Hostile Natural Gamma Ray Sonde Master Calibration – Detector 2 Calibration							
Master: 17-Nov-2011 7:52							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	208.5	--	--	--	--	
Th Peak Res	7.000	6.879	--	--	--	--	%
Background Count Rate	142.5	24.15	--	--	--	--	CPS
Gain Ratio	1.000	1.001	--	--	--	--	
High Resolution Laterolog Array – B Wellsite Calibration – HRLT M01							
Before: 7-Dec-2011 19:08 After: 8-Dec-2011 1:07							
HRLT M0-M1 Voltage Plus – 0	0	N/A	-319.6	-319.2	0.3889	9.681	UV
HRLT M0-M1 Voltage Plus – 1	0	N/A	-335.3	-333.4	1.836	9.681	UV
HRLT M0-M1 Voltage Plus – 2	0	N/A	-335.7	-335.0	0.7762	9.681	UV
HRLT M0-M1 Voltage Plus – 3	0	N/A	-339.0	-337.9	1.180	9.681	UV
HRLT M0-M1 Voltage Plus – 4	0	N/A	-326.6	-326.0	0.6113	9.681	UV
HRLT M0-M1 Voltage Plus – 5	0	N/A	-322.5	-322.1	0.4281	9.681	UV
HRLT M0-M1 Voltage Plus – 6	0	N/A	326.9	325.4	-1.551	9.681	UV
HRLT M0-M1 Voltage Plus – 7	0	N/A	-322.7	-322.7	0	9.681	UV
High Resolution Laterolog Array – B Wellsite Calibration – HRLT M12							
Before: 7-Dec-2011 19:08 After: 8-Dec-2011 1:07							
HRLT M1-M2 Voltage Plus – 0	0	N/A	1757	1755	-1.700	53.42	UV
HRLT M1-M2 Voltage Plus – 1	0	N/A	1842	1832	-9.815	53.42	UV
HRLT M1-M2 Voltage Plus – 2	0	N/A	1840	1836	-4.018	53.42	UV
HRLT M1-M2 Voltage Plus – 3	0	N/A	1858	1852	-6.104	53.42	UV
HRLT M1-M2 Voltage Plus – 4	0	N/A	1792	1789	-3.083	53.42	UV
HRLT M1-M2 Voltage Plus – 5	0	N/A	1792	1789	-3.083	53.42	UV
HRLT M1-M2 Voltage Plus – 6	0	N/A	1792	1789	-3.083	53.42	UV
HRLT M1-M2 Voltage Plus – 7	0	N/A	1792	1789	-3.083	53.42	UV

HRLT M1-M2 Voltage Plus - 5	0	N/A	1771	1769	-2.217	53.42	UV
HRLT M1-M2 Voltage Plus - 6	0	N/A	-1804	-1796	8.353	53.42	UV
HRLT M1-M2 Voltage Plus - 7	0	N/A	1781	1781	0	53.42	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT M23

Before: 7-Dec-2011 19:08 After: 8-Dec-2011 1:07

HRLT M2-M3 Voltage Plus - 0	0	N/A	1743	1740	-2.779	53.42	UV
HRLT M2-M3 Voltage Plus - 1	0	N/A	1841	1829	-11.54	53.42	UV
HRLT M2-M3 Voltage Plus - 2	0	N/A	1840	1834	-5.252	53.42	UV
HRLT M2-M3 Voltage Plus - 3	0	N/A	1862	1855	-7.341	53.42	UV
HRLT M2-M3 Voltage Plus - 4	0	N/A	1788	1784	-3.986	53.42	UV
HRLT M2-M3 Voltage Plus - 5	0	N/A	1769	1766	-3.264	53.42	UV
HRLT M2-M3 Voltage Plus - 6	0	N/A	-1792	-1782	9.410	53.42	UV
HRLT M2-M3 Voltage Plus - 7	0	N/A	1781	1781	0	53.42	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT V34

Before: 7-Dec-2011 19:08 After: 8-Dec-2011 1:07

HRLT A3-A4 Voltage Plus - 0	0	N/A	68510	68440	-60.21	2100	UV
HRLT A3-A4 Voltage Plus - 1	0	N/A	72130	71740	-384.0	2100	UV
HRLT A3-A4 Voltage Plus - 2	0	N/A	72370	72210	-152.0	2100	UV
HRLT A3-A4 Voltage Plus - 3	0	N/A	73500	73270	-234.5	2100	UV
HRLT A3-A4 Voltage Plus - 4	0	N/A	70580	70470	-107.6	2100	UV
HRLT A3-A4 Voltage Plus - 5	0	N/A	69830	69750	-79.61	2100	UV
HRLT A3-A4 Voltage Plus - 6	0	N/A	-69190	-68860	325.0	2100	UV
HRLT A3-A4 Voltage Plus - 7	0	N/A	70000	70000	0	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT V45

Before: 7-Dec-2011 19:08 After: 8-Dec-2011 1:07

HRLT A4-A5 Voltage Plus - 0	0	N/A	68780	68710	-69.01	2100	UV
HRLT A4-A5 Voltage Plus - 1	0	N/A	72490	72110	-377.6	2100	UV
HRLT A4-A5 Voltage Plus - 2	0	N/A	72730	72560	-161.0	2100	UV
HRLT A4-A5 Voltage Plus - 3	0	N/A	73850	73610	-236.8	2100	UV
HRLT A4-A5 Voltage Plus - 4	0	N/A	70870	70760	-106.3	2100	UV
HRLT A4-A5 Voltage Plus - 5	0	N/A	70100	70020	-78.96	2100	UV
HRLT A4-A5 Voltage Plus - 6	0	N/A	-69560	-69240	324.2	2100	UV
HRLT A4-A5 Voltage Plus - 7	0	N/A	70000	70000	0	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT V56

Before: 7-Dec-2011 19:08 After: 8-Dec-2011 1:07

HRLT A5-A6 Voltage Plus - 0	0	N/A	68680	68610	-66.48	2100	UV
HRLT A5-A6 Voltage Plus - 1	0	N/A	72210	71840	-371.2	2100	UV
HRLT A5-A6 Voltage Plus - 2	0	N/A	72490	72330	-158.6	2100	UV
HRLT A5-A6 Voltage Plus - 3	0	N/A	73650	73430	-226.9	2100	UV
HRLT A5-A6 Voltage Plus - 4	0	N/A	70740	70630	-109.0	2100	UV
HRLT A5-A6 Voltage Plus - 5	0	N/A	69990	69910	-81.55	2100	UV
HRLT A5-A6 Voltage Plus - 6	0	N/A	-69290	-68970	311.2	2100	UV
HRLT A5-A6 Voltage Plus - 7	0	N/A	70000	70000	0	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT VTP

Before: 7-Dec-2011 19:08 After: 8-Dec-2011 1:07

HRLT Torpedo-M0 Voltage - 0	0	N/A	-68390	-68290	100.6	2100	UV
HRLT Torpedo-M0 Voltage - 1	0	N/A	-72590	-72160	430.3	2100	UV
HRLT Torpedo-M0 Voltage - 2	0	N/A	-72820	-72640	180.7	2100	UV
HRLT Torpedo-M0 Voltage - 3	0	N/A	-73990	-73710	279.2	2100	UV
HRLT Torpedo-M0 Voltage - 4	0	N/A	-70980	-70820	158.3	2100	UV
HRLT Torpedo-M0 Voltage - 5	0	N/A	-70170	-70060	106.9	2100	UV
HRLT Torpedo-M0 Voltage - 6	0	N/A	69590	69240	-356.2	2100	UV
HRLT Torpedo-M0 Voltage - 7	0	N/A	-70000	-70000	0	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT VBD

Before: 7-Dec-2011 19:08 After: 8-Dec-2011 1:07

HRLT Bridle#9-M0 Voltage - 0	0	N/A	-68370	-68290	81.47	2100	UV
HRLT Bridle#9-M0 Voltage - 1	0	N/A	-72550	-72140	405.1	2100	UV
HRLT Bridle#9-M0 Voltage - 2	0	N/A	-72800	-72610	186.9	2100	UV
HRLT Bridle#9-M0 Voltage - 3	0	N/A	-73940	-73690	253.9	2100	UV
HRLT Bridle#9-M0 Voltage - 4	0	N/A	-70940	-70820	125.7	2100	UV
HRLT Bridle#9-M0 Voltage - 5	0	N/A	-70160	-70050	108.2	2100	UV
HRLT Bridle#9-M0 Voltage - 6	0	N/A	69560	69210	-345.5	2100	UV
HRLT Bridle#9-M0 Voltage - 7	0	N/A	-70000	-70000	0	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT ISO

Before: 7-Dec-2011 19:08 After: 8-Dec-2011 1:07

HRLT Source Current Plus - 0	0	N/A	285.0	284.8	-0.1969	8.520	UA
HRLT Source Current Plus - 1	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus - 2	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus - 3	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus - 4	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus - 5	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus - 6	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus - 7	0	N/A	281.1	281.1	0	8.520	UA

High Resolution Laterolog Array - B Wellsite Calibration - HRLT MV

HRLT Vertical Voltage PI – 0	0	N/A	–322.0	–321.4	0.6434	9.681	UV
HRLT Vertical Voltage PI – 1	0	N/A	–329.4	–327.4	2.087	9.681	UV
HRLT Vertical Voltage PI – 2	0	N/A	–329.2	–328.1	1.134	9.681	UV
HRLT Vertical Voltage PI – 3	0	N/A	–330.8	–329.4	1.335	9.681	UV
HRLT Vertical Voltage PI – 4	0	N/A	–316.0	–315.2	0.7563	9.681	UV
HRLT Vertical Voltage PI – 5	0	N/A	–327.2	–326.6	0.6006	9.681	UV
HRLT Vertical Voltage PI – 6	0	N/A	334.1	332.2	–1.851	9.681	UV
HRLT Vertical Voltage PI – 7	0	N/A	–322.7	–322.7	0	9.681	UV

EDTC Z-Axis Acceleration	9.810	N/A	9.822	N/A	N/A	N/A	M/S2
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





Gamma Ray (Jig – Bkg)	163.8	N/A	163.8	N/A	N/A	14.89	GAPI
Gamma Ray (Calibrated)	164.0	N/A	164.0	N/A	N/A	15.00	GAPI

Mass Isolated Housing	MIH – ZA	342
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Before: 26-Nov-2011 0:18

2014-01-01







Before: 26-Nov-2011 0:19

Dual Induction – E Wellsite Calibration									
Induction Electronics (40 kHz)									
Phase	ID Elect Real Offset 40 kHz MM/M			Value	Phase	ID Elect Real Gain 40 kHz			Value
Before				7.840	Before				0.9507
	-85.00 (Minimum)	0 (Nominal)	85.00 (Maximum)			0.8500 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	
Phase	ID Elect Quad Offset 40 kHz MM/M			Value	Phase	ID Elect Quad Gain 40 kHz			Value
Before				6.874	Before				0.9780
	-85.00 (Minimum)	0 (Nominal)	85.00 (Maximum)			0.8500 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	
Phase	IM Elect Real Offset 40 kHz MM/M			Value	Phase	IM Elect Real Gain 40 kHz			Value
Before				21.97	Before				0.9917
	-130.0 (Minimum)	0 (Nominal)	130.0 (Maximum)			0.8500 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	
Phase	IM Elect Quad Offset 40 kHz MM/M			Value	Phase	IM Elect Quad Gain 40 kHz			Value
Before				11.70	Before				0.9714
	-130.0 (Minimum)	0 (Nominal)	130.0 (Maximum)			0.8500 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	










Before: 26-Nov-2011 0:20

Dual Induction – E Wellsite Calibration							
SFL Electronics							
Phase	SFL Voltage Offset MV		Value	Phase	SFL Voltage Gain		Value
Before			-0.3954	Before			0.9815
	-15.00 (Minimum)	0 (Nominal)	15.00 (Maximum)		0.8500 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
Phase	SFL Current Offset MA		Value	Phase	SFL Current Gain		Value
Before			-0.01740	Before			0.9830
	-0.6000 (Minimum)	0 (Nominal)	0.6000 (Maximum)		0.8500 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
Before: 26–Nov–2011 0:20							

Before: 26-Nov-2011 0:20

Dual Induction – E Wellsite Calibration									
Electronics Calibration Changes Files/Depth Intervals: 10: 507.5 – 1058.7 11: 1099.6 – 566.8 12: 811.5 – 656.8									
Phase	ID (R > 27 OHM-M) MM/M			Value	Phase	ID (R < 27 OHM-M) %			Value
After				0	After				0.0001941
	0 (Minimum)	0 (Nominal)	0.7500 (Maximum)			0 (Minimum)	0 (Nominal)	2.000 (Maximum)	
Phase	IM (R > 27 OHM-M) MM/M			Value	Phase	IM (R < 27 OHM-M) %			Value
After				0	After				0.0001442
	0 (Minimum)	0 (Nominal)	0.7500 (Maximum)			0 (Minimum)	0 (Nominal)	2.000 (Maximum)	
Phase	SFL (R > 27 OHM-M) MM/M			Value	Phase	SFL (R < 27 OHM-M) %			Value
After				0	After				0.0007470
	0 (Minimum)	0 (Nominal)	0.7500 (Maximum)			0 (Minimum)	0 (Nominal)	2.000 (Maximum)	
After: 8-Dec-2011 0:21									

After: 8-Dec-2011 0:21

Dual Induction – E Master Calibration														
Test Loop Calibration: Calibration of Internal Reference to Test Loop Standard														
Phase	Deep 10 kHz Gain Factor		Value	Phase	Deep 20 kHz Gain Factor		Value	Phase	Deep 40 kHz Gain Factor		Value			
Master			0.9839	Master			0.9950	Master			1.006			
0.9000 (Minimum)			1.000 (Nominal)	1.100 (Maximum)	0.9000 (Minimum)			1.000 (Nominal)	1.100 (Maximum)	0.9000 (Minimum)			1.000 (Nominal)	1.100 (Maximum)
Phase	Medium 10 kHz Gain Factor		Value	Phase	Medium 20 kHz Gain Factor		Value	Phase	Medium 40 kHz Gain Factor		Value			
Master			0.9896	Master			0.9934	Master			1.014			
0.9000 (Minimum)			1.000 (Nominal)	1.100 (Maximum)	0.9000 (Minimum)			1.000 (Nominal)	1.100 (Maximum)	0.9000 (Minimum)			1.000 (Nominal)	1.100 (Maximum)
Phase	Deep 10 kHz Phase Shift		Value	Phase	Deep 20 kHz Phase Shift		Value	Phase	Deep 40 kHz Phase Shift		Value			
Master			0.1683	Master			0.01216	Master			-1.034			
-1.500 (Minimum)			0 (Nominal)	1.500 (Maximum)	-2.000 (Minimum)			0 (Nominal)	2.000 (Maximum)	-4.000 (Minimum)			-1.000 (Nominal)	2.000 (Maximum)
Phase	Medium 10 kHz Phase Shift		Value	Phase	Medium 20 kHz Phase Shift		Value	Phase	Medium 40 kHz Phase Shift		Value			

Master		-0.2033	Master		-0.8862	Master		-2.228			
	-1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)		-3.000 (Minimum)	-1.000 (Nominal)	1.000 (Maximum)		-5.000 (Minimum)	-2.000 (Nominal)	1.000 (Maximum)
Master: Calibration out of date 8-Jun-2010 11:23											

Dual Induction – E Master Calibration											
Sonde Error Corrections: Correction for sonde response in zero conductivity environment. (Normalized to 25C).											
Phase	Real Deep 10 kHz S.E. Corr.		Value	Phase	Real Deep 20 kHz S.E. Corr.		Value	Phase	Real Deep 40 kHz S.E. Corr.		Value
Master			41.55	Master			17.22	Master			5.262
	-50.00 (Minimum)	0 (Nominal)	125.0 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)		-15.00 (Minimum)	0 (Nominal)	15.00 (Maximum)
Phase	Quad Deep 10 kHz S.E. Corr.		Value	Phase	Quad Deep 20 kHz S.E. Corr.		Value	Phase	Quad Deep 40 kHz S.E. Corr.		Value
Master			254.5	Master			139.6	Master			80.45
	-250.0 (Minimum)	0 (Nominal)	350.0 (Maximum)		-125.0 (Minimum)	0 (Nominal)	200.0 (Maximum)		-75.00 (Minimum)	0 (Nominal)	125.0 (Maximum)
Phase	Real Medium 10 kHz S.E. Corr.		Value	Phase	Real Medium 20 kHz S.E. Corr.		Value	Phase	Real Medium 40 kHz S.E. Corr.		Value
Master			30.33	Master			9.522	Master			0.8627
	-50.00 (Minimum)	0 (Nominal)	140.0 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
Phase	Quad Medium 10 kHz S.E. Corr.		Value	Phase	Quad Medium 20 kHz S.E. Corr.		Value	Phase	Quad Medium 40 kHz S.E. Corr.		Value
Master			345.7	Master			182.2	Master			117.7
	-1300 (Minimum)	0 (Nominal)	1300 (Maximum)		-650.0 (Minimum)	0 (Nominal)	650.0 (Maximum)		-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
Master: Calibration out of date 8-Jun-2010 11:38											

Hostile Litho-Density Sonde / Equipment Identification

Primary Equipment:

Hostile Litho Density Sonde

HLDS – D 45

Hostile Litho Density High Voltage

HLDV – D 45

Gamma Source Radioactive

GSR – Z 2397

Auxiliary Equipment:







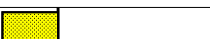
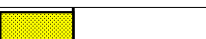


Hostile Litho Density Pad

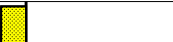


















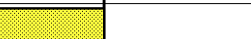

HLDP – C 45




Hostile Litho Density High Voltage Housi

HEH – H 47

Hostile Litho-Density Sonde Wellsite Calibration											
Background Measurement											
Phase	SS Cs Resolution Bkg %		Value	Phase	LS Cs Resolution Bkg %		Value	Phase	LSW1 Background CPS		Value
Master			7.738	Master			8.115	Master			90.00
Before			7.637	Before			7.989	Before			87.28
After			7.628	After			8.008	After			87.65
	7.000 (Minimum)	9.000 (Nominal)	11.00 (Maximum)		7.000 (Minimum)	9.000 (Nominal)	11.00 (Maximum)		55.00 (Minimum)	100.0 (Nominal)	150.0 (Maximum)
Phase	LSW2 Background CPS		Value	Phase	LSW3 Background CPS		Value	Phase	LSW4 Background CPS		Value
Master			79.46	Master			182.4	Master			223.0
Before			78.77	Before			178.8	Before			225.1
After			79.96	After			179.9	After			223.3
	50.00 (Minimum)	100.0 (Nominal)	140.0 (Maximum)		110.0 (Minimum)	200.0 (Nominal)	290.0 (Maximum)		140.0 (Minimum)	250.0 (Nominal)	360.0 (Maximum)
Phase	LSW5 Background CPS		Value	Phase	SSW1 Background CPS		Value	Phase	SSW2 Background CPS		Value
Master			526.1	Master			84.99	Master			147.1
Before			523.2	Before			86.55	Before			147.2
After			522.2	After			85.71	After			146.8
	330.0 (Minimum)	600.0 (Nominal)	830.0 (Maximum)		55.00 (Minimum)	100.0 (Nominal)	150.0 (Maximum)		100.0 (Minimum)	200.0 (Nominal)	260.0 (Maximum)
Phase	SSW3 Background CPS		Value	Phase	SSW4 Background CPS		Value	Phase	SSW5 Background CPS		Value
Master			413.1	Master			220.0	Master			157.9
Before			412.9	Before			219.5	Before			158.0
After			409.3	After			220.8	After			157.1
	330.0 (Minimum)	600.0 (Nominal)	830.0 (Maximum)		330.0 (Minimum)	600.0 (Nominal)	830.0 (Maximum)		330.0 (Minimum)	600.0 (Nominal)	830.0 (Maximum)

Hostile Litho-Density Sonde Master Calibration														
Detector Aluminum Measurement (bkgd-subtracted)														
Phase	LSW1 Aluminum CPS			Value	Phase	LSW2 Aluminum CPS			Value	Phase	LSW3 Aluminum CPS			Value
Master				554.8	Master				809.5	Master				975.9
	420.0 (Minimum)	600.0 (Nominal)	770.0 (Maximum)			650.0 (Minimum)	900.0 (Nominal)	1150 (Maximum)			800.0 (Minimum)	1100 (Nominal)	1450 (Maximum)	
Phase	LSW4 Aluminum CPS			Value	Phase	LSW5 Aluminum CPS			Value	Phase	SSW1 Aluminum CPS			Value
Master				495.9	Master				452.5	Master				2638
	410.0 (Minimum)	580.0 (Nominal)	740.0 (Maximum)			410.0 (Minimum)	570.0 (Nominal)	740.0 (Maximum)			2000 (Minimum)	2800 (Nominal)	3200 (Maximum)	
Phase	SSW2 Aluminum CPS			Value	Phase	SSW3 Aluminum CPS			Value	Phase	SSW4 Aluminum CPS			Value
Master				7210	Master				10070	Master				4124
	5800 (Minimum)	8000 (Nominal)	9300 (Maximum)			8300 (Minimum)	11600 (Nominal)	13500 (Maximum)			3500 (Minimum)	5000 (Nominal)	5800 (Maximum)	
Phase	SSW5 Aluminum CPS			Value										
Master				502.8										
	430.0 (Minimum)	660.0 (Nominal)	770.0 (Maximum)											
Master: 16-Sep-2011 11:31														




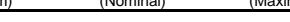

Hostile Natural Gamma Ray Sonde Wellsite Calibration											
Detector 2 Check											
Phase	Na 511 Peak Loc		Value	Phase	Na 511 Peak Res %		Value	Phase	High Voltage V		Value
Master			39.60	Master			16.99	Master			1109
Before			39.49	Before			15.91	Before			1091
After			39.54	After			15.93	After			1088
37.50 (Minimum) 40.00 (Nominal) 43.50 (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			142.6	Master			9.914	Master			29.91
Before			142.3	Before			8.591	Before			21.84
After			140.3	After			8.815	After			22.02
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			21.44								
Before			20.97								
After			21.04								
10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)											
Master: 17-Nov-2011 7:57				Before: 26-Nov-2011 0:21				After: 8-Dec-2011 1:11			






Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		0.9705
Before		1.004
After		0.9862
<div> <div>0.9500</div> <div>1.000</div> <div>1.050</div> </div> <div> <div>(Minimum)</div> <div>(Nominal)</div> <div>(Maximum)</div> </div>		

Master: 17-Nov-2011 7:57

Before: 26-Nov-2011 0:21

After: 8-Dec-2011 1:11

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			41.00	Master			210.8	Master			6.865
	38.00 (Minimum)	40.00 (Nominal)	43.00 (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			24.91	Master			1.010				
	10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)		0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)				
Master: 17-Nov-2011 7:52											

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				208.5	Master				6.879
	38.00 (Minimum)	40.00 (Nominal)	43.00 (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				24.15	Master				1.001					
	10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)		0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)							
Master: 17-Nov-2011 7:52														

High Resolution Laterolog Array – B / Equipment Identification

Primary Equipment:

HRLT Sonde

HRLS – B

969

Auxiliary Equipment:

HRLT lower Housing

HRLH – B

759

HRLT Lower Cartridge

HRLC – B

759

HRLT upper Housing

















HRUH – B















769



HRLT Upper Cartridge

















HRUC – B

















769

High Resolution Laterolog Array – B Wellsite Calibration							
HRLT M01							
Idx	Phase	HRLT M0–M1 Voltage Plus UV	Value	Nominal	Maximum	Minimum	
0	Before		-319.6	-322.7	-280.7	-379.7	
	After		-319.2				
1	Before		-335.3	-322.7	-280.7	-379.7	
	After		-333.4				
2	Before		-335.7	-322.7	-280.7	-379.7	
	After		-335.0				
3	Before		-339.0	-322.7	-280.7	-379.7	
	After		-337.9				
4	Before		-326.6	-322.7	-280.7	-379.7	
	After		-326.0				
5	Before		-322.5	-322.7	-280.7	-379.7	
	After		-322.1				
6	Before		326.9	322.7	379.7	280.7	
	After		325.4				
7	Before		-322.7	-322.7	-280.7	-379.7	
	After		-322.7				
		(Minimum) (Nominal) (Maximum)					
Before: 7-Dec-2011 19:08							
After: 8-Dec-2011 1:07							

















High Resolution Laterolog Array – B Wellsite Calibration							
HRLT M12							
Idx	Phase	HRLT M1–M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum	
0	Before		1757	1781	2095	1549	
	After		1755				
1	Before		1842	1781	2095	1549	
	After		1832				
2	Before		1840	1781	2095	1549	
	After		1836				
3	Before		1858	1781	2095	1549	
	After		1852				
4	Before		1792	1781	2095	1549	
	After		1789				
5	Before		1771	1781	2095	1549	
	After		1769				
6	Before		-1804	-1781	-1549	-2095	
	After		-1796				

7	Before		1781	1781	2095	1549
	After		1781			
(Minimum) (Nominal) (Maximum)						
Before: 7-Dec-2011 19:08						
After: 8-Dec-2011 1:07						

















High Resolution Laterolog Array – B Wellsite Calibration						
HRLT M23						
Idx	Phase	HRLT M2–M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1743	1781	2095	1549
	After		1740			
1	Before		1841	1781	2095	1549
	After		1829			
2	Before		1840	1781	2095	1549
	After		1834			
3	Before		1862	1781	2095	1549
	After		1855			
4	Before		1788	1781	2095	1549
	After		1784			
5	Before		1769	1781	2095	1549
	After		1766			
6	Before		-1792	-1781	-1549	-2095
	After		-1782			
7	Before		1781	1781	2095	1549
	After		1781			
(Minimum) (Nominal) (Maximum)						
Before: 7-Dec-2011 19:08						
After: 8-Dec-2011 1:07						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V34						
Idx	Phase	HRLT A3–A4 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68510	70000	82360	60900
	After		68440			
1	Before		72130	70000	82360	60900
	After		71740			
2	Before		72370	70000	82360	60900
	After		72210			
3	Before		73500	70000	82360	60900
	After		73270			
4	Before		70580	70000	82360	60900
	After		70470			
5	Before		69830	70000	82360	60900
	After		69750			
6	Before		-69190	-70000	-60900	-82360
	After		-68860			
7	Before		70000	70000	82360	60900
	After		70000			

















	(Minimum)	(Nominal)	(Maximum)	
Before: 7-Dec-2011 19:08				
After: 8-Dec-2011 1:07				

















High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V45						
Idx	Phase	HRLT A4–A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68780	70000	82360	60900
	After		68710			
1	Before		72490	70000	82360	60900
	After		72110			
2	Before		72730	70000	82360	60900
	After		72560			
3	Before		73850	70000	82360	60900
	After		73610			
4	Before		70870	70000	82360	60900
	After		70760			
5	Before		70100	70000	82360	60900
	After		70020			
6	Before		–69560	–70000	–60900	–82360
	After		–69240			
7	Before		70000	70000	82360	60900
	After		70000			
		(Minimum) (Nominal) (Maximum)				

Before: 7-Dec-2011 19:08				
After: 8-Dec-2011 1:07				

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V56						
Idx	Phase	HRLT A5–A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68680	70000	82360	60900
	After		68610			
1	Before		72210	70000	82360	60900
	After		71840			
2	Before		72490	70000	82360	60900
	After		72330			
3	Before		73650	70000	82360	60900
	After		73430			
4	Before		70740	70000	82360	60900
	After		70630			
5	Before		69990	70000	82360	60900
	After		69910			
6	Before		–69290	–70000	–60900	–82360
	After		–68970			
7	Before		70000	70000	82360	60900
	After		70000			
		(Minimum) (Nominal) (Maximum)				

Before: 7-Dec-2011 19:08				
After: 8-Dec-2011 1:07				

Idx	Phase	HRLT Source Current Plus UA	Value	Nominal	Maximum	Minimum
0	Before		285.0	284.0	334.1	247.0
	After		284.8			
1	Before		281.1	281.1	330.7	244.4
	After		281.1			
2	Before		281.1	281.1	330.7	244.4
	After		281.1			
3	Before		281.1	281.1	330.7	244.4
	After		281.1			
4	Before		281.1	281.1	330.7	244.4
	After		281.1			
5	Before		281.1	281.1	330.7	244.4
	After		281.1			
6	Before		281.1	281.1	330.7	244.4
	After		281.1			
7	Before		281.1	281.1	330.7	244.4
	After		281.1			
		(Minimum) (Nominal) (Maximum)				
Before: 7-Dec-2011 19:08						
After: 8-Dec-2011 1:07						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT MV						
Idx	Phase	HRLT Vertical Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-322.0	-322.7	-280.7	-379.7
	After		-321.4			
1	Before		-329.4	-322.7	-280.7	-379.7
	After		-327.4			
2	Before		-329.2	-322.7	-280.7	-379.7
	After		-328.1			
3	Before		-330.8	-322.7	-280.7	-379.7
	After		-329.4			
4	Before		-316.0	-322.7	-280.7	-379.7
	After		-315.2			
5	Before		-327.2	-322.7	-280.7	-379.7
	After		-326.6			
6	Before		334.1	322.7	379.7	280.7
	After		332.2			
7	Before		-322.7	-322.7	-280.7	-379.7
	After		-322.7			
	(Minimum) (Nominal) (Maximum)					
Before: 7-Dec-2011 19:08						
After: 8-Dec-2011 1:07						

Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:
EDTC Gamma Ray Detector

EDTG – A/B

77693

Enhanced DTS Cartridge

EDTC – B

8529

Auxiliary Equipment:


EDTC Housing

EDTH – B

8528

Enhanced DTS Cartridge Wellsite Calibration




EDTC Accelerometer Calibration

Phase	EDTC Z-Axis Acceleration M/S2	Value
Before		9.822
	9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)	

Before: 7-Dec-2011 19:06

Enhanced DTS Cartridge Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig – Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		9.201	Before		163.8	Before		164.0
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)			148.9 (Minimum) 163.8 (Nominal) 178.7 (Maximum)			149.0 (Minimum) 164.0 (Nominal) 179.0 (Maximum)	

Before: 26-Nov-2011 0:18

Company: **Lamont Doherty****Schlumberger**Well: **Expedition 339, Site U1386 GC-01A**Field: **Mediterranean Outflow (Portugal)**Rig: **JOIDES Resolution**Ocean: **Atlantic**

Phasor Induction

High Resolution Laterolog Array

Hostile Litho Density / GR