

Rig: **JOIDES Resolution** Country: **USA**

Rig: JOIDES Resolution Field: Baffin Bay Location: Latitude: N 75° 42' 21.85" Well: Expedition 344S, U0070A (USC7070) Company: Lamont Doherty Earth Observatory	HRLA Resistivity			
	LOCATION	Latitude: N 75° 42' 21.85" Longitude: W 65° 43' 46.32"		Elev.: K.B. −592.00 m G.L. −603.00 m D.F. −592.00 m
		Permanent Datum: <u>Mean Sea Level</u>		Elev.: <u>0.00 m</u>
		Log Measured From: <u>Sea Floor</u>		11.00 m above Perm. Datum
		Drilling Measured From: <u>Drill Floor</u>		
	Ocean: Atlantic	Max. Well Deviation 0 deg	Longitude N 75° 42' 21.85"	Latitude W 65° 43' 46.32"

Logging Date			20-Sep-2012					
Run Number			1					
Depth Driller			303.6 m					
Schlumberger Depth			258.3 m					
Bottom Log Interval			249.8 m					
Top Log Interval			31 m					
Casing Driller Size @ Depth			7.000 in @ 33 m			@		
Casing Schlumberger			31 m					
Bit Size			9.875 in					
Type Fluid In Hole			Seawater					
MUD	Density	Viscosity	1.05 g/cm3					
	Fluid Loss	PH						
	Source Of Sample		N/A					
	RM @ Measured Temperature		@			@		
RMF @ Measured Temperature		@			@			
RMC @ Measured Temperature		@			@			
Source RMF	RMC	N/A	N/A					
RM @ MRT	RMF @ MRT	@ 9	@ 9	@	@			
Maximum Recorded Temperatures			9 degC					
Circulation Stopped		Time	20-Sep-2012 14:00					
Logger On Bottom		Time	20-Sep-2012 17:20					
Unit Number	Location	625003 Houston						
Recorded By			C. Furman					
Witnessed By			G. Guerin, H. Evans					

[illegible]

Run 4

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

OS1:	MSS
OS2:	HLDS
OS3:	DSI
OS4:	FMS
OS5:	HNGS

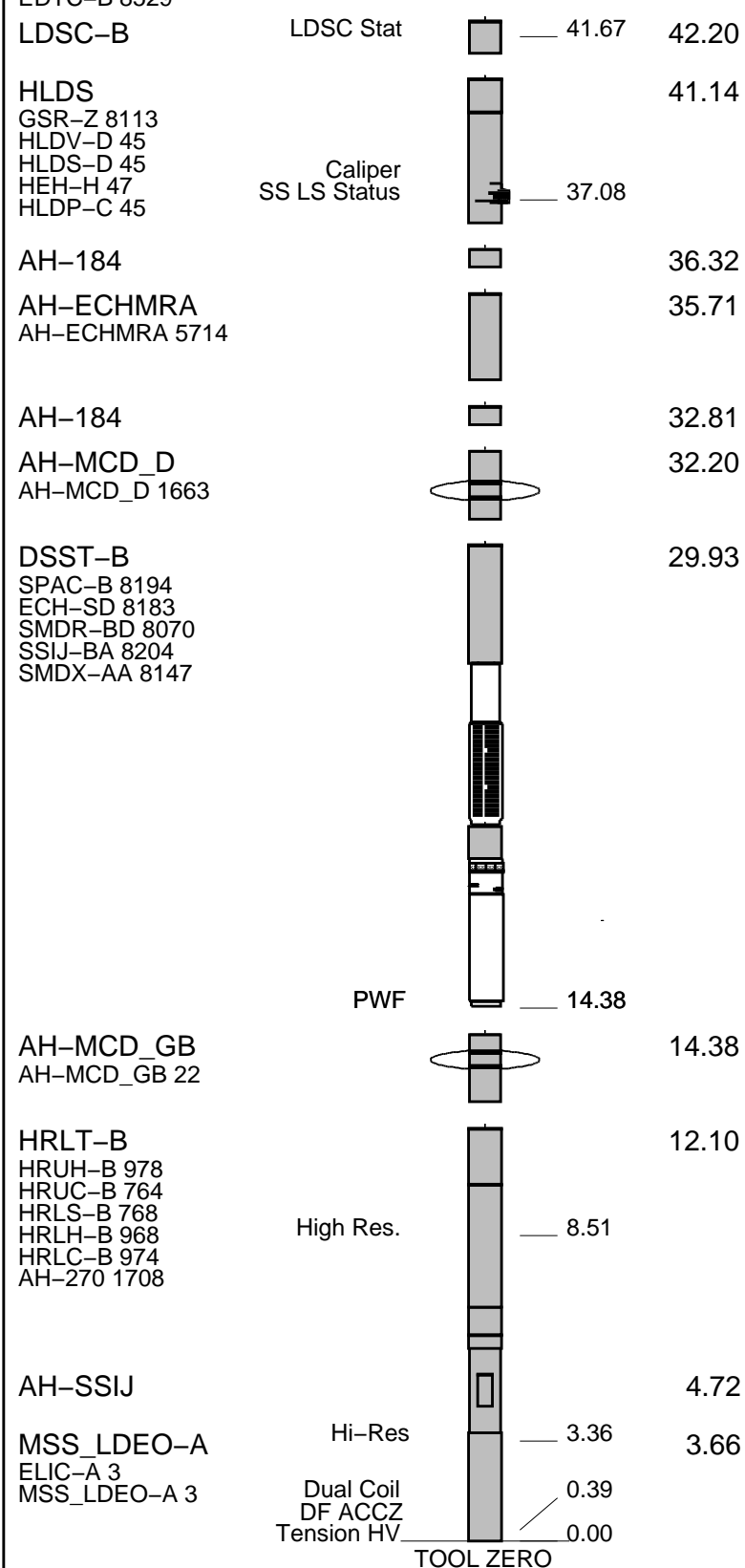
HRLA Centralized at top of tool only using MCD inline centralizer.

STOP

RUN 2

WITM (EDTS)-A

LEH-MT	MDSB_EDTC		45.58
	Mud Tempe		44.19
AH-369	CTEM		43.12
	Gamma Ray		42.55
EDTC-B	EFTB DIAG		44.19
EDTH-B 8528	TelStatus		
EDTC-B 8520	EDTCB Ele		42.20



MAXIMUM STRING DIAMETER 4.50 IN  
MEASUREMENTS RELATIVE TO TOOL ZERO  
ALL LENGTHS IN METERS

Client: LDEO / Shell  
Well: USC 70  
Field: Baffin Bay  
State:  
Country: Greenland

Rig Name: JOIDES Resolution  
Reference Datum: Sea Floor  
Elevation: -603.0 m

Drawing Date: 9/23/2012  
API #:

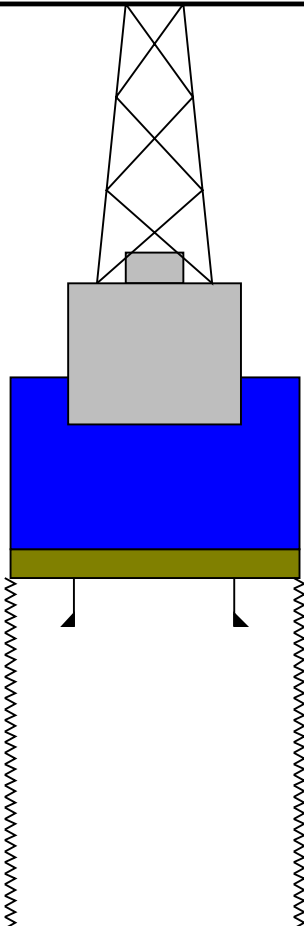
Production String

(in) (m)

Well Schematic

(m) (in)

Casing String

								
Kelly Bushing Elevation			-603.0		0.0		Sea Floor Pipe Shoe	
Derrick Floor Elevation			-603.0		33.0	5.500		
Mean Sea Level			-592.0					
					303.6	9.875	Total Depth – Driller	



Up Log

MAXIS Field Log

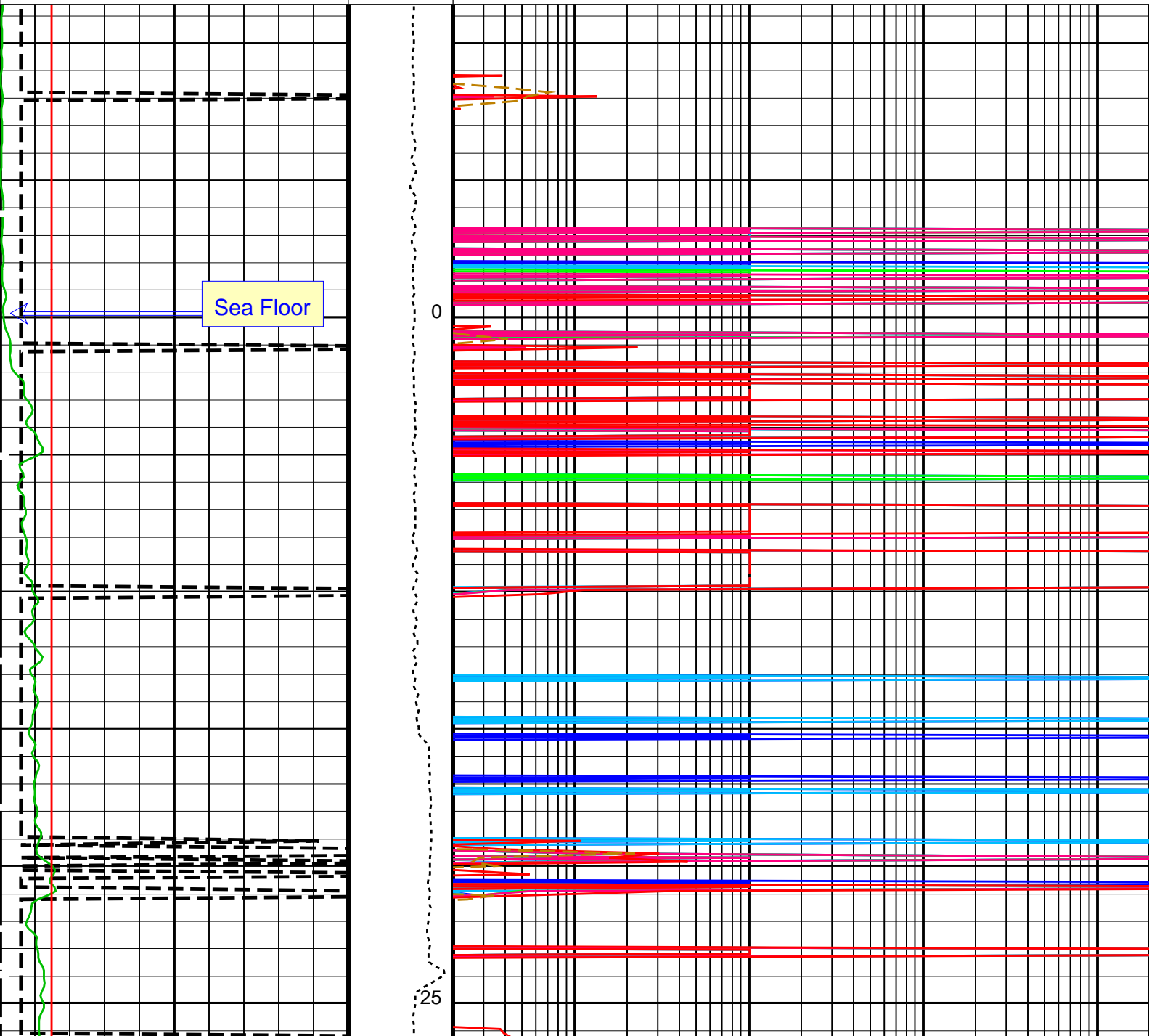
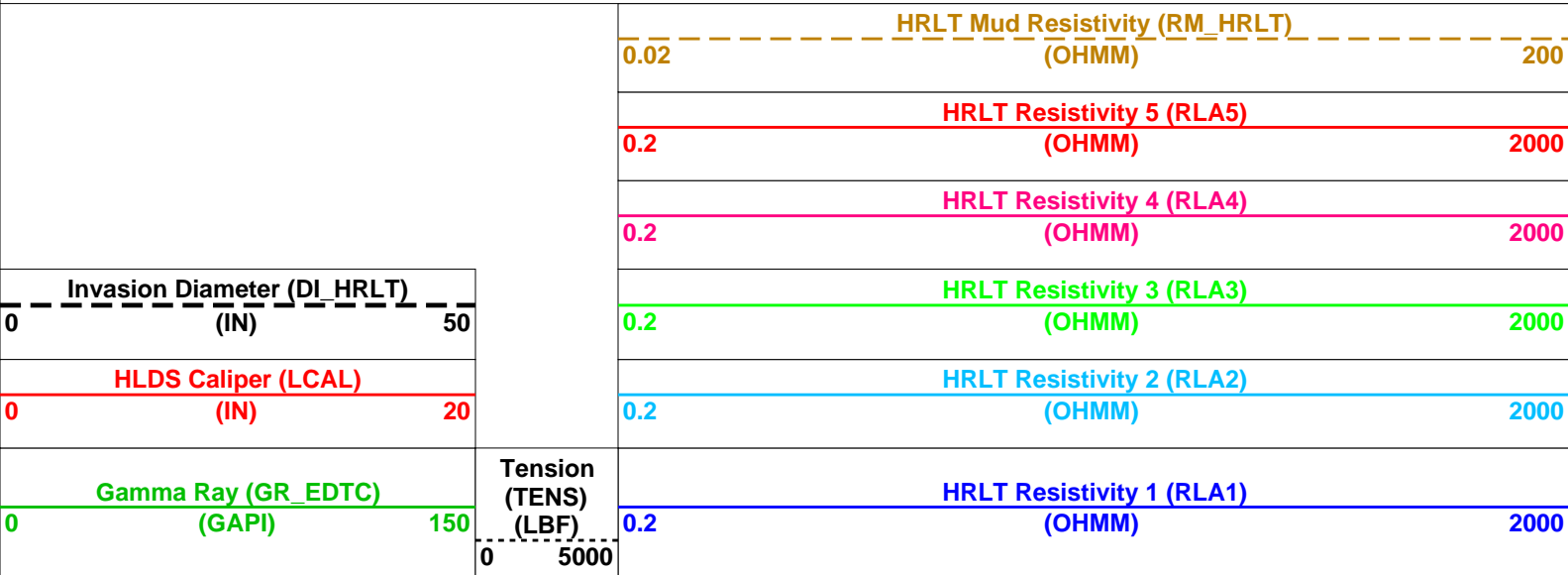
Company: Lamont Doherty Earth Observatory Well: Expedition 344S, U0080A (USC70)

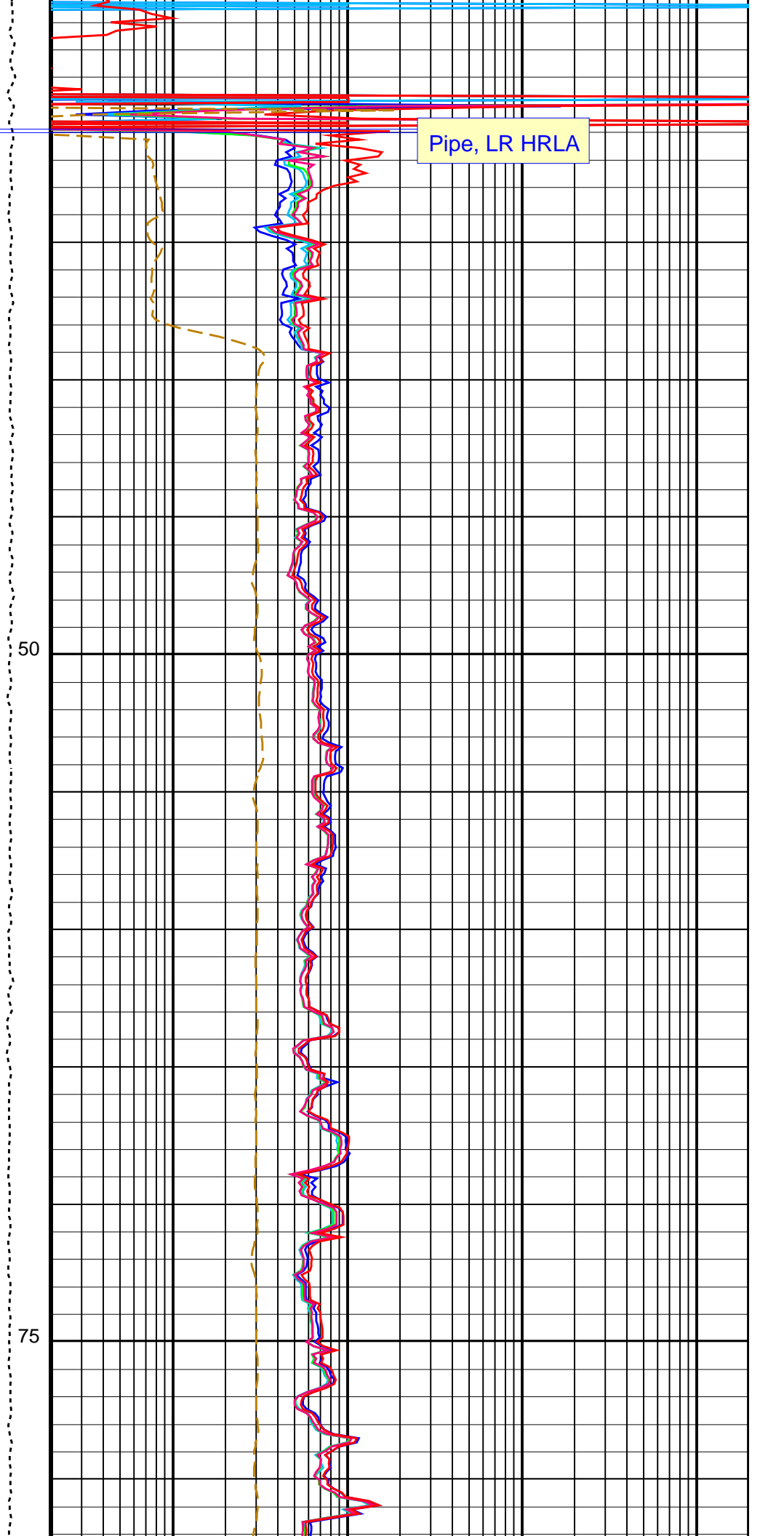
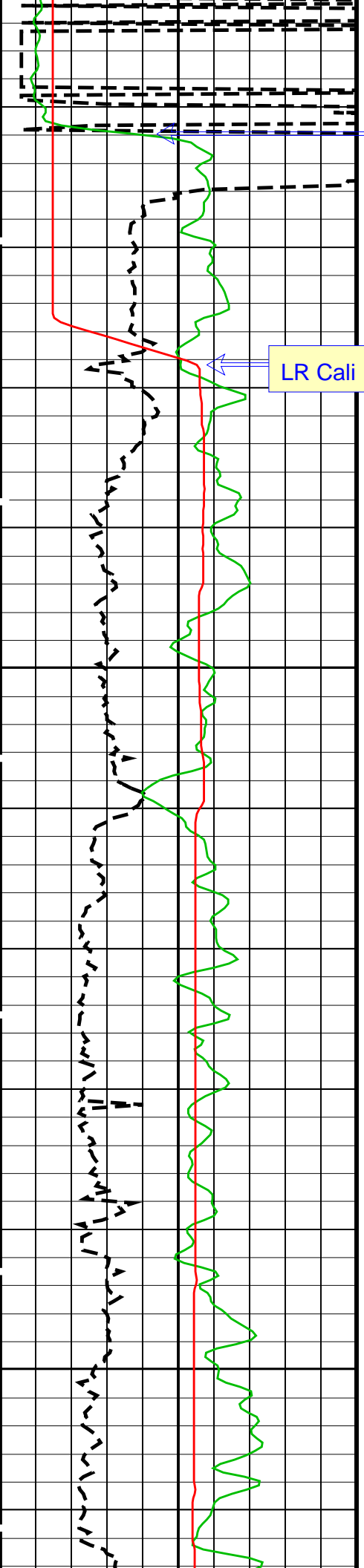
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Output DLIS Files						
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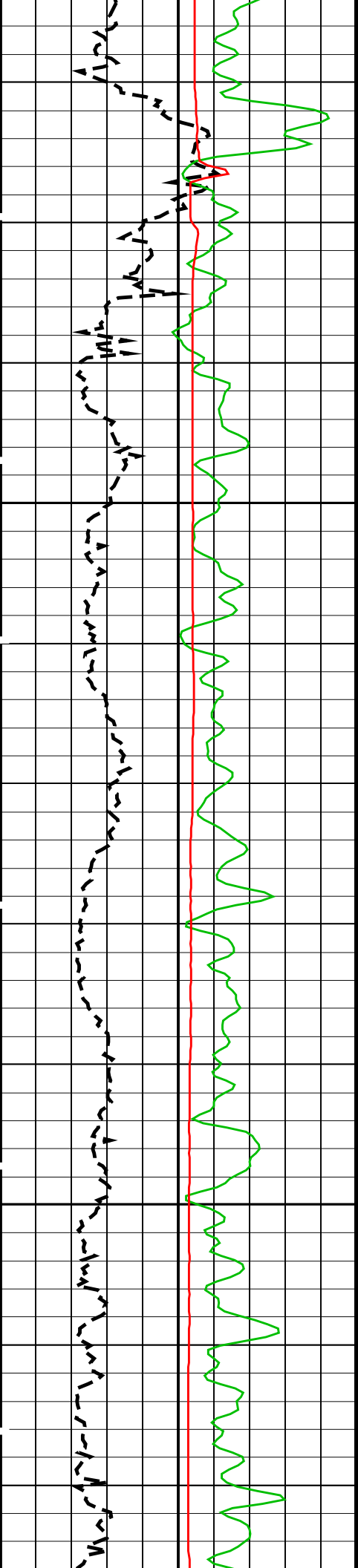
OP System Version: 19C0-187					
MSS_LDEO-A	19C0-187	HRLT-B	19C0-187		
DSST-B	19C0-187	HLDS	19C0-187		
LDSC-B	19C0-187	EDTC-B	SKK-5169-EDTCB		

PIP SUMMARY

Time Mark Every 60 S

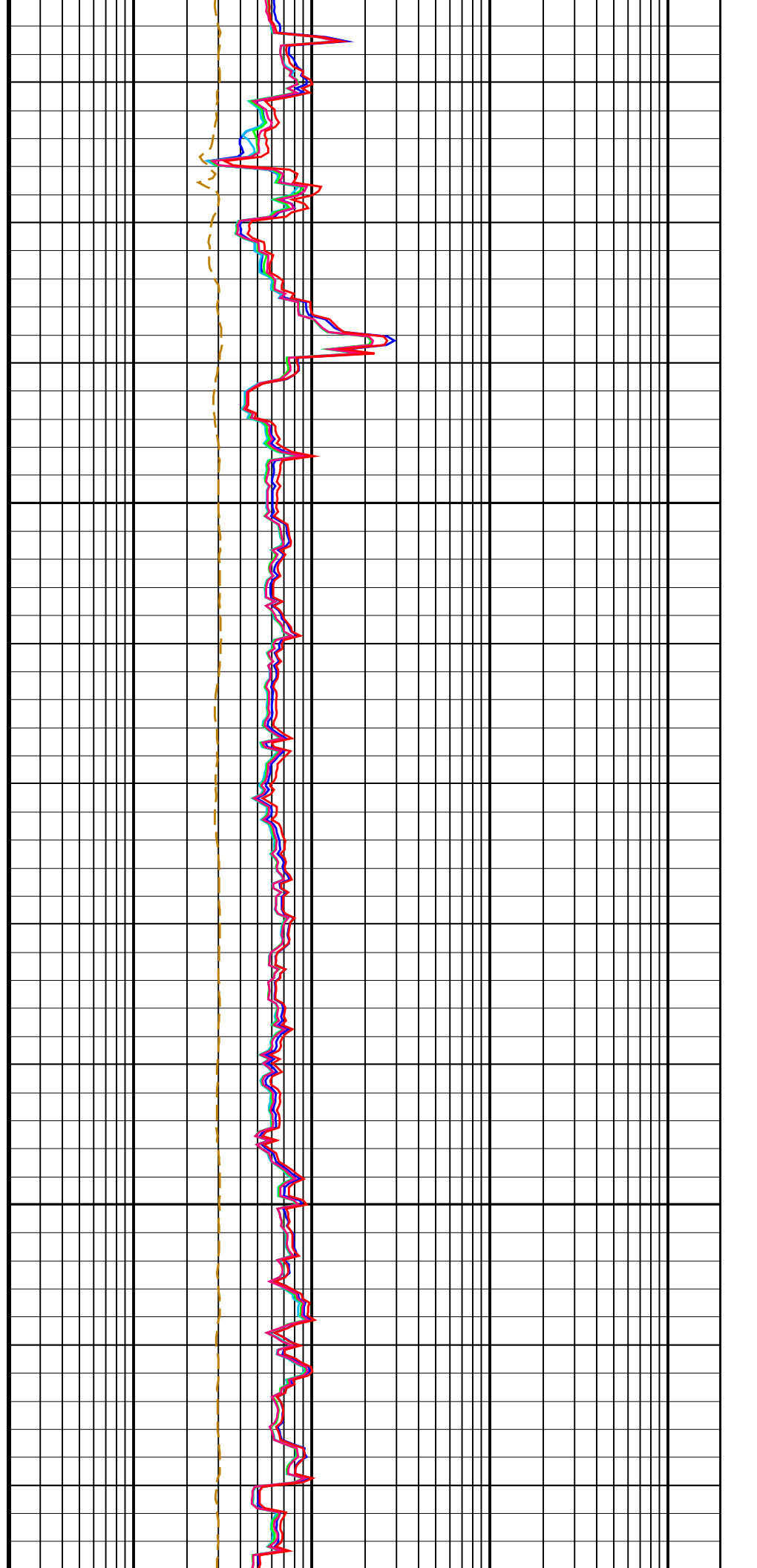




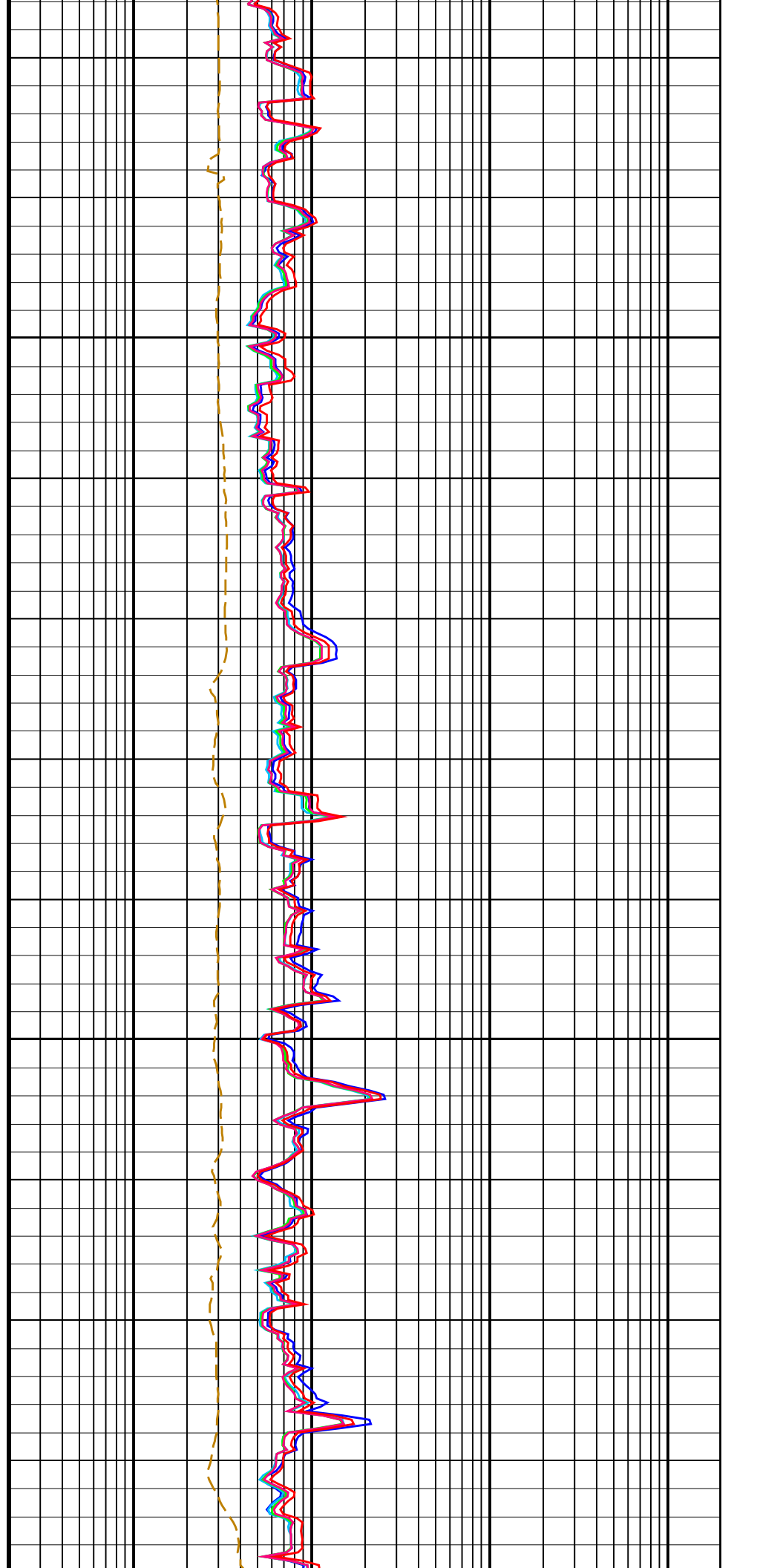
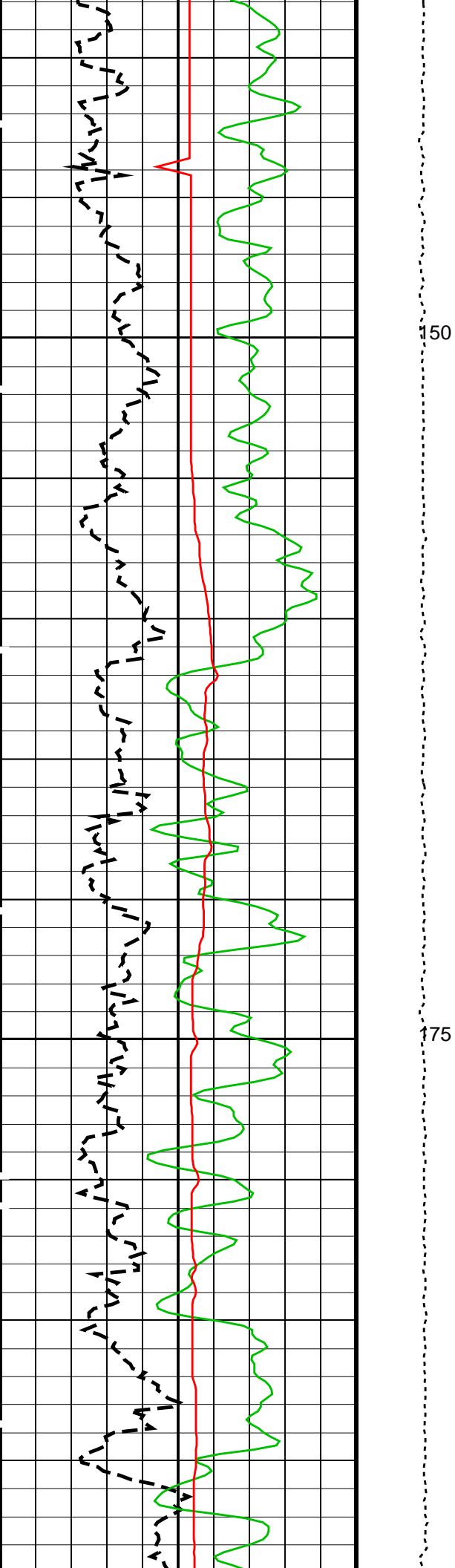


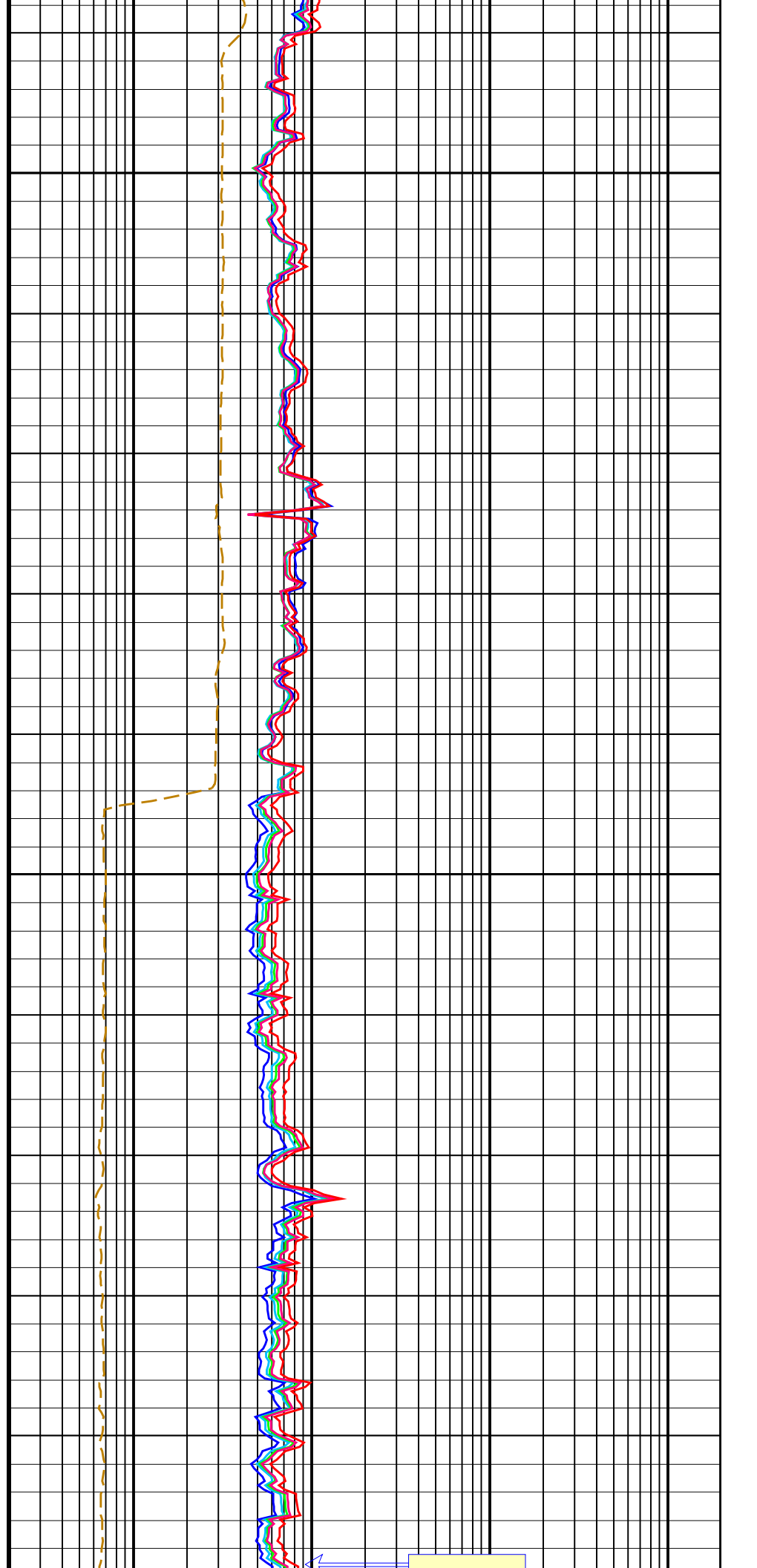
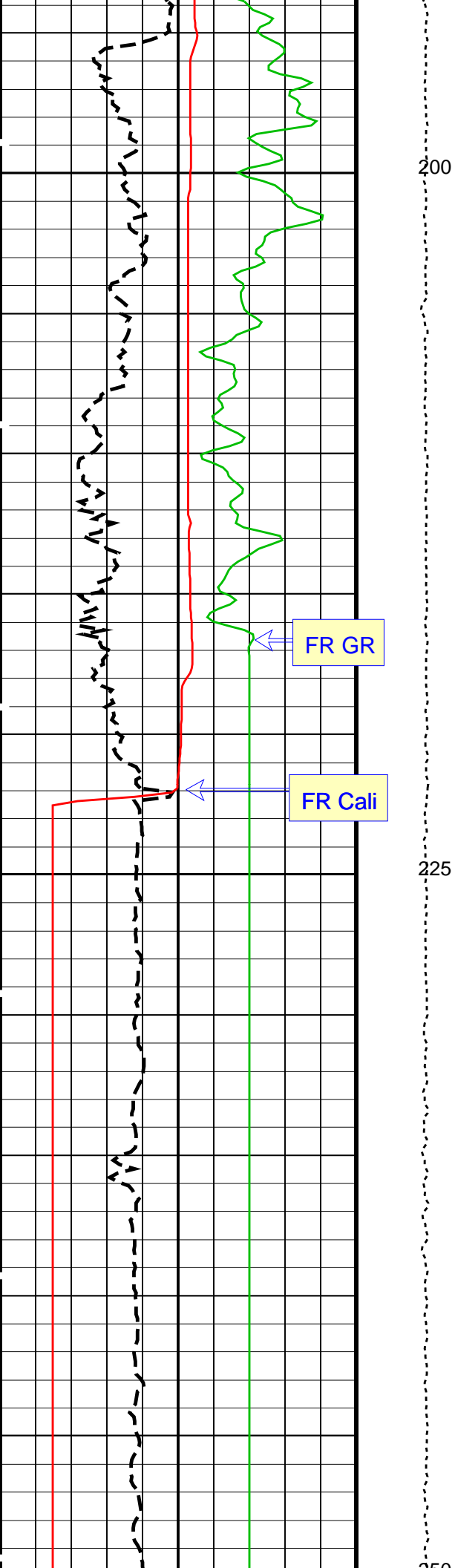
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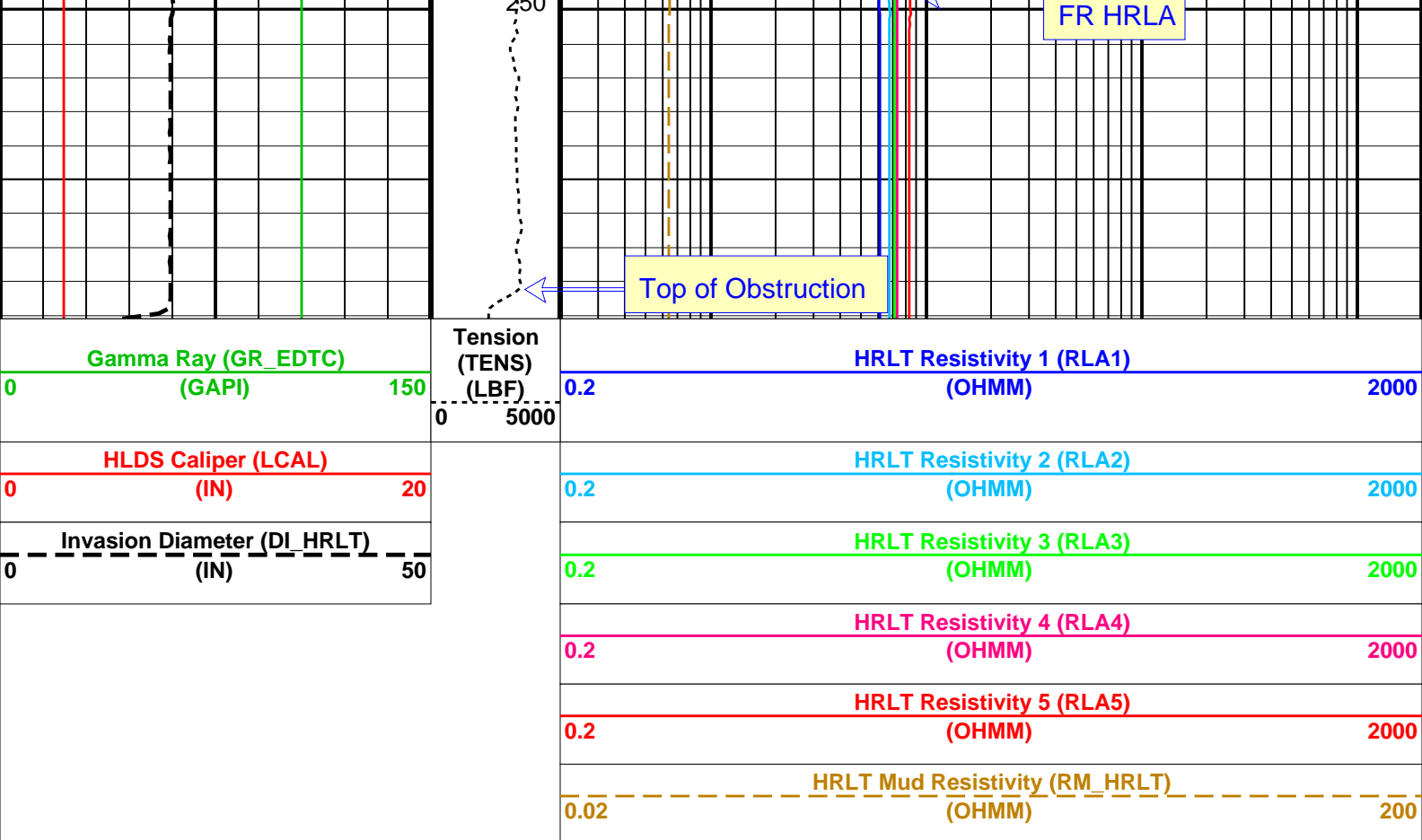
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#### PIP SUMMARY

Time Mark Every 60 S

### Parameters

DLIS Name	Description	Value
<b>HRLT-B: High Resolution Laterolog Array - B</b>		
BHT	Bottom Hole Temperature (used in calculations)	9 DEGC
GCSE	Generalized Caliper Selection	LCAL
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
KFAC_HRLT	HRLT K Factor Option	SONDE
PROCINV	Inversion Selection	ON
PROCML	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO
PROCMSO	Mechanical Standoff Fin Size	1.5 IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute
PROCSP0	Sonde Position	Eccentered
SHT	Surface Hole Temperature	-2 DEGC
<b>DSST-B: Dipole Shear Imager - B</b>		
BHT	Bottom Hole Temperature (used in calculations)	9 DEGC
GCSE	Generalized Caliper Selection	LCAL
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
SHT	Surface Hole Temperature	-2 DEGC
<b>EDTC-B: Enhanced DTS Cartridge</b>		
BHT	Bottom Hole Temperature (used in calculations)	9 DEGC
GCSE	Generalized Caliper Selection	LCAL
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
SHT	Surface Hole Temperature	-2 DEGC
<b>System and Miscellaneous</b>		
BS	Bit Size	9.875 IN
DO	Depth Offset for Playback	-603.0 M
MST	Mud Sample Temperature	-50000.00 DEGC
PP	Playback Processing	RECOMPUTE
TD	Total Depth	303.6 M

Format: HRLT Vertical Scale: 1:200

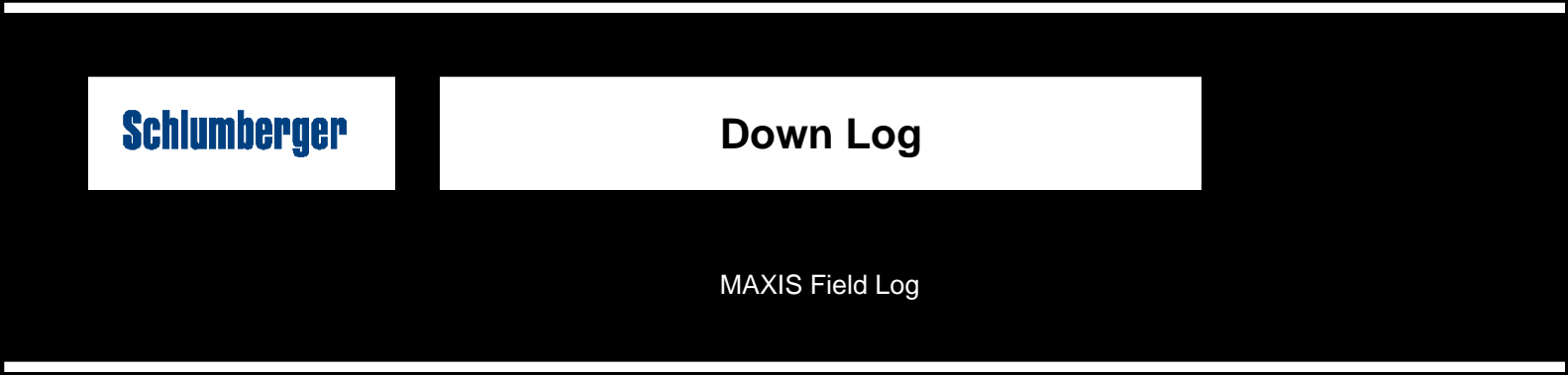
Graphics File Created: 23-Sep-2012 02:33

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DSST-B	19C0-187	HLDS	19C0-187
LDSC-B	19C0-187	EDTC-B	SKK-5169-EDTCB

Input DLIS Files						
DEFAULT	MSS_LDEO_HRLA_DSI_010LUP	FN:11	PRODUCER	20-Sep-2012 19:23	861.8 M	591.6 M
Output DLIS Files						
DEFAULT	MSS_LDEO_HRLA_DSI_028PUP	FN:33	PRODUCER	23-Sep-2012 02:33		
CLIENT	MSS_LDEO_HRLA_DSI_028PUC	FN:34	CUSTOMER	23-Sep-2012 02:33		



Down Log

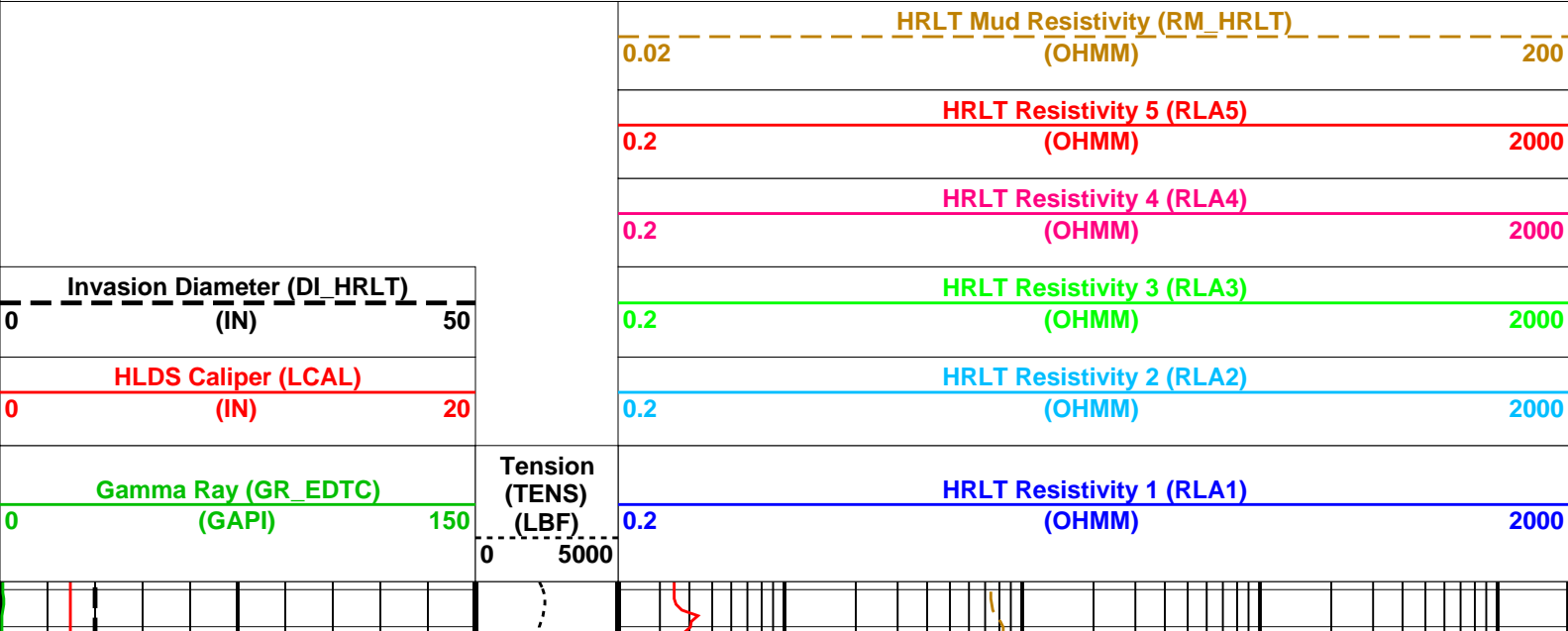


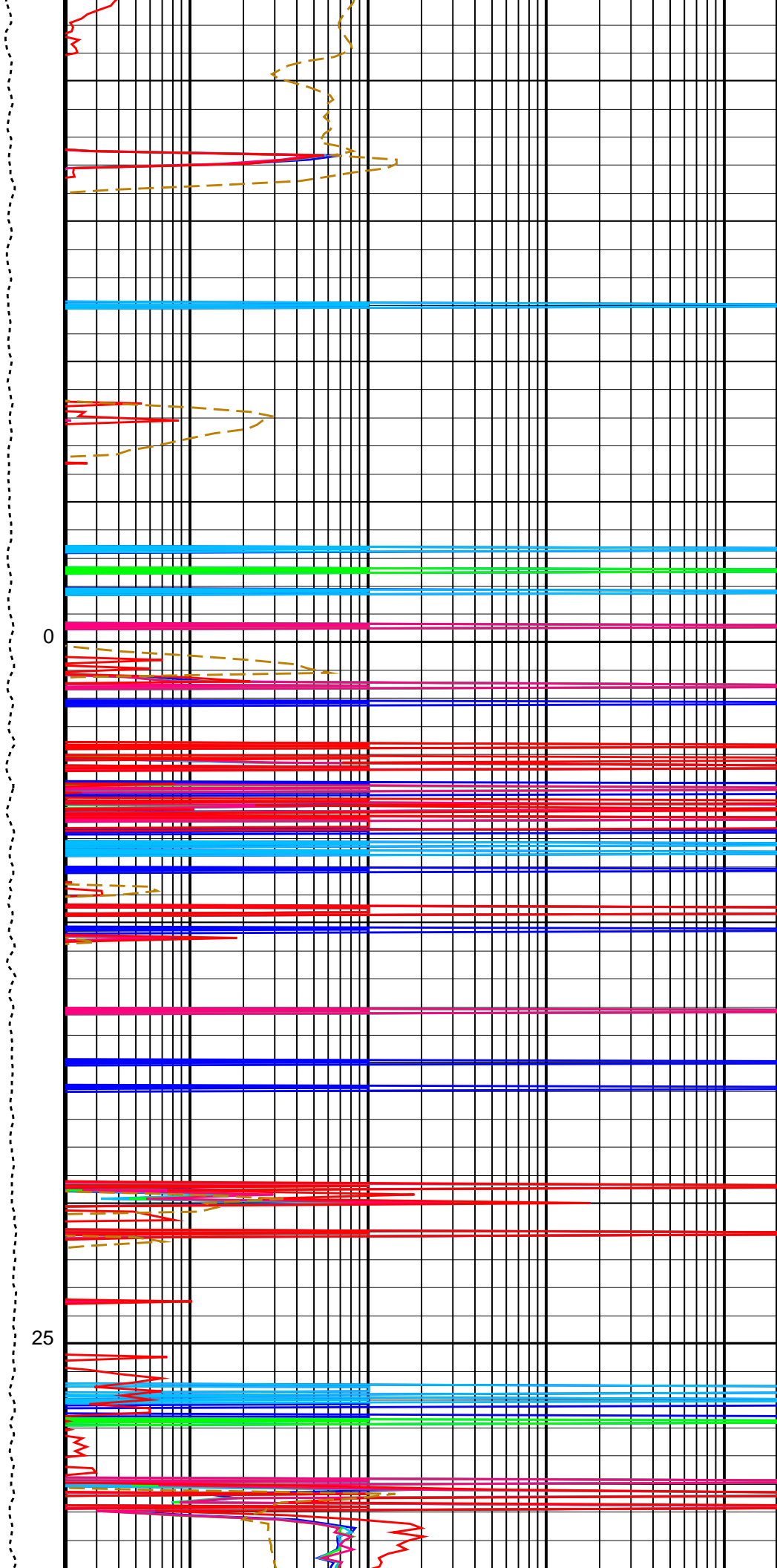
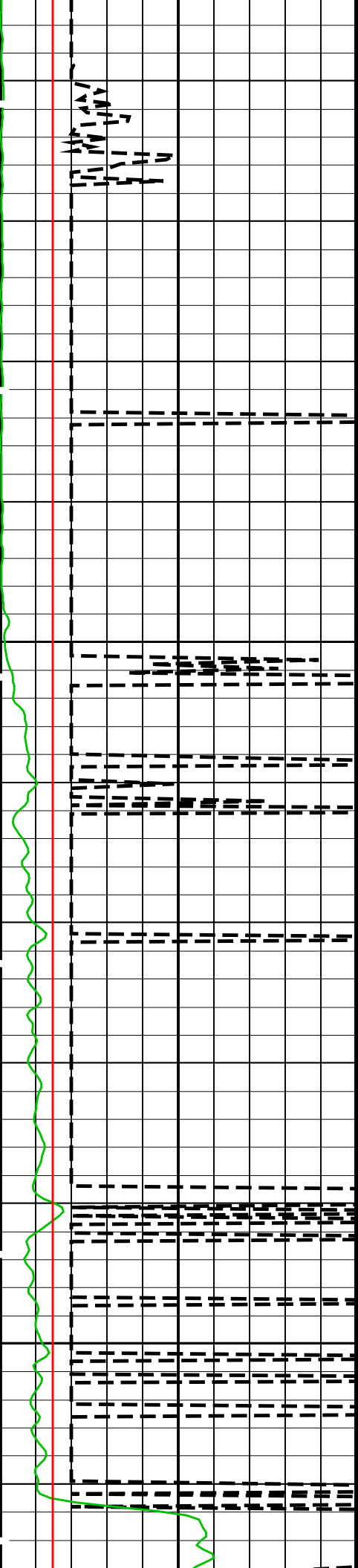
Company: Lamont Doherty Earth Observatory	Well: Expedition 344S, U0080A (USC70)
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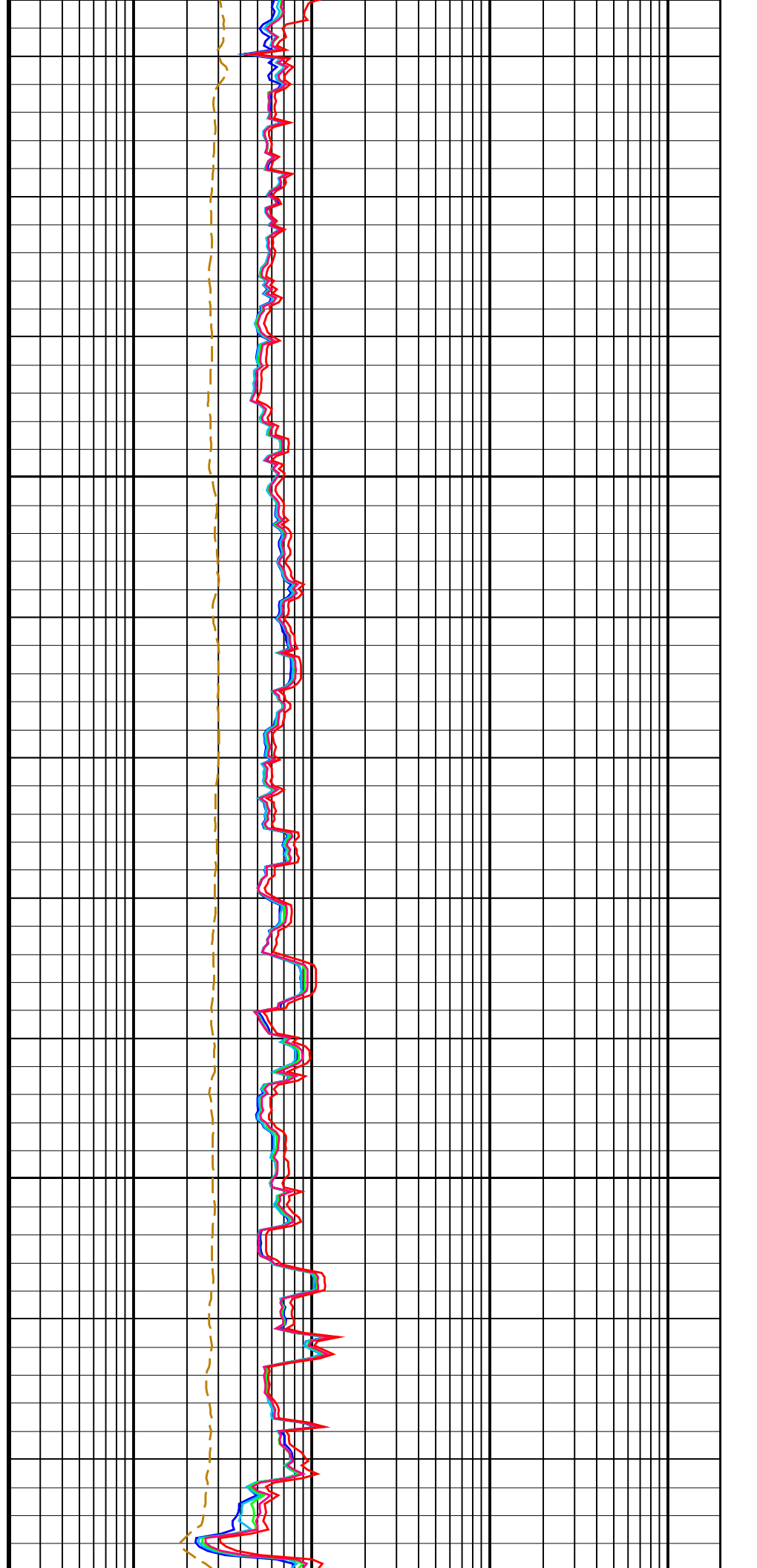
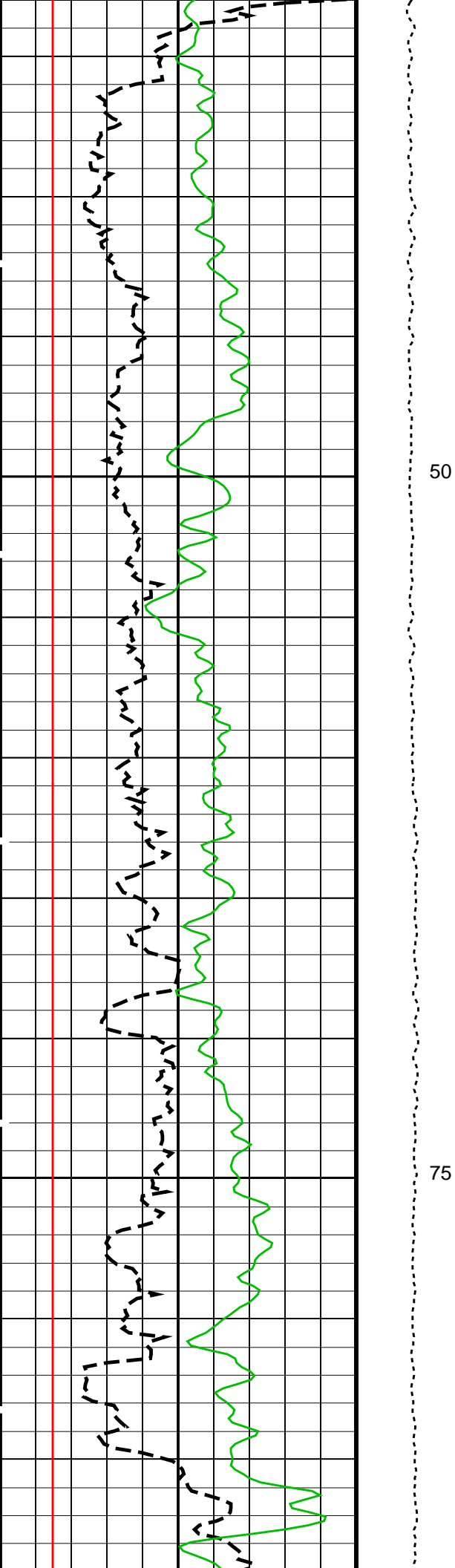
Input DLIS Files						
DEFAULT	Flip_MSS_LDEO_HRLA_026LUP		PRODUCER	23-Sep-2012 02:30	862.6 M	506.7 M
Output DLIS Files						
DEFAULT	MSS_LDEO_HRLA_DSI_029PUP	FN:35	PRODUCER	23-Sep-2012 02:41	259.2 M	-24.2 M
CLIENT	MSS_LDEO_HRLA_DSI_029PUC	FN:36	CUSTOMER	23-Sep-2012 02:41	259.2 M	-24.2 M

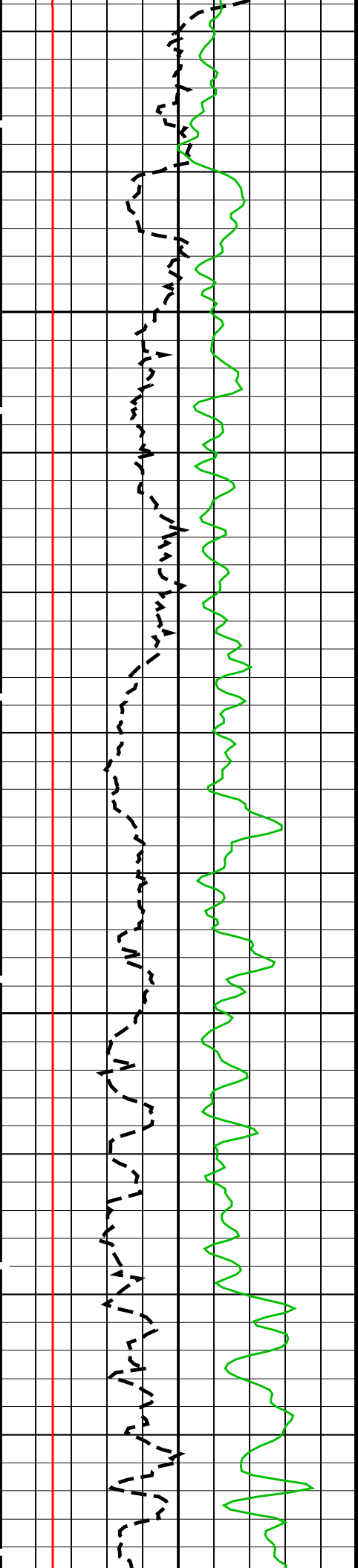
OP System Version: 19C0-187				
MSS_LDEO-A	19C0-187	HRLT-B	19C0-187	
DSST-B	19C0-187	HLDS	19C0-187	
LDSC-B	19C0-187	EDTC-B	SKK-5169-EDTCB	

PIP SUMMARY	
Time Mark Every 60 S	



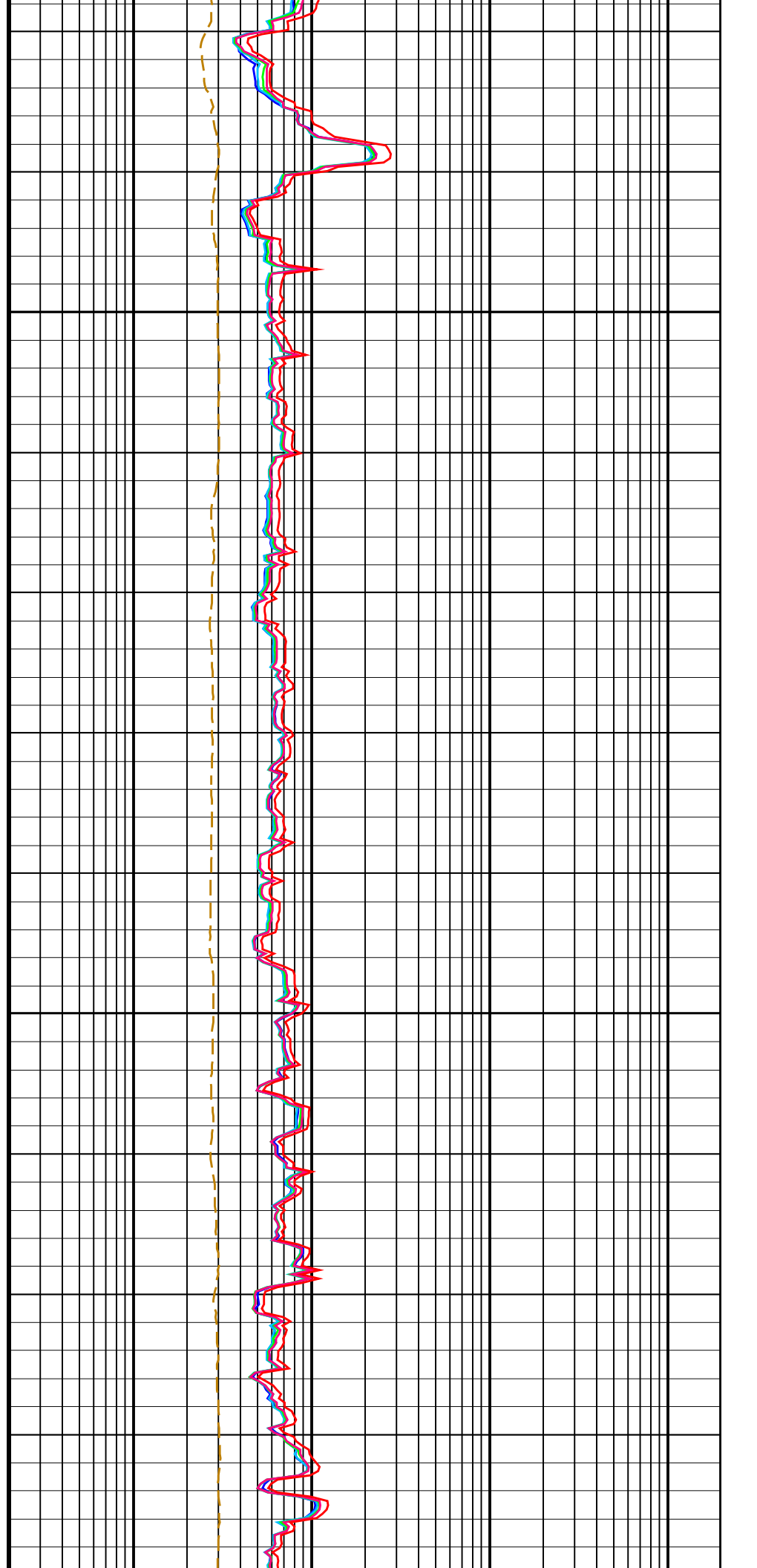


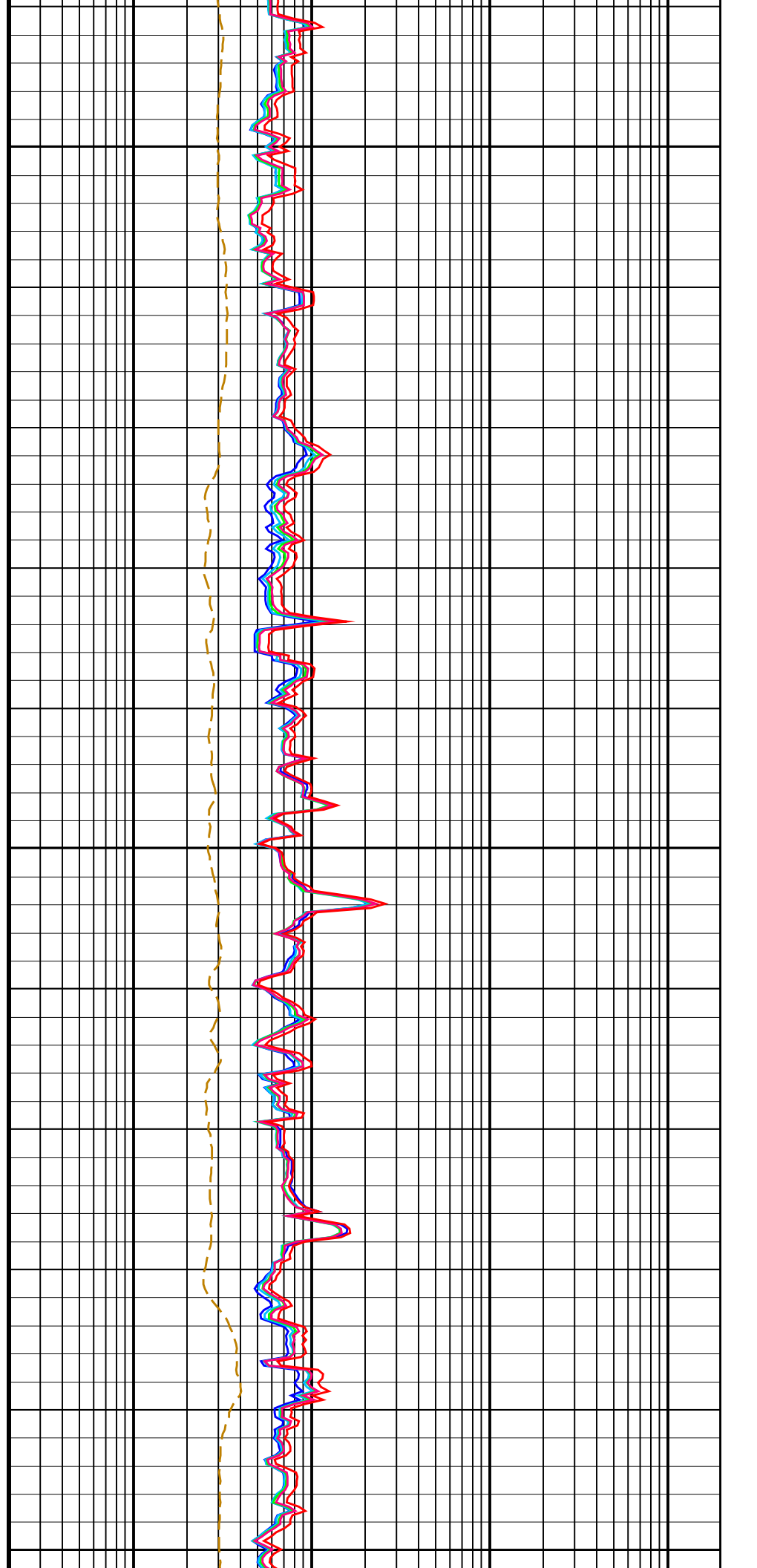
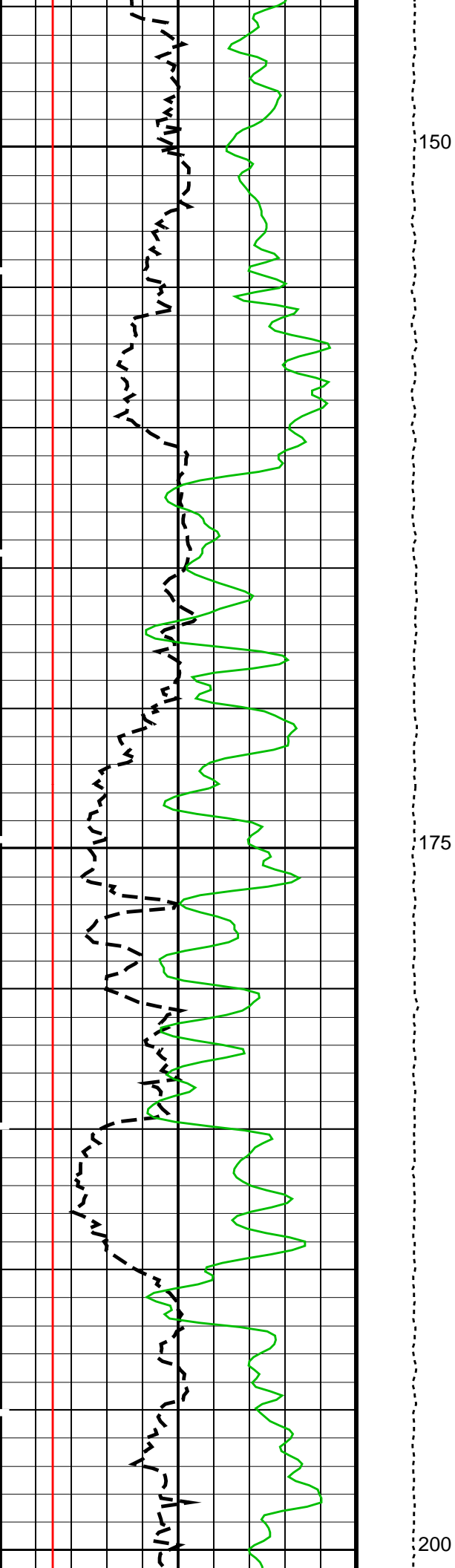




100

125









<div> <div>Gamma Ray (GR_EDTC)</div> <div>(GAPI)</div> <div>150</div> </div>	<div> <div>Tension (TENS)</div> <div>(LBF)</div> <div>0</div> <div>5000</div> </div>	<div> <div>HRLT Resistivity 1 (RLA1)</div> <div>(OHMM)</div> <div>2000</div> </div>
<div> <div>HLDS Caliper (LCAL)</div> <div>(IN)</div> <div>20</div> </div>		<div> <div>HRLT Resistivity 2 (RLA2)</div> <div>(OHMM)</div> <div>2000</div> </div>
<div> <div>Invasion Diameter (DI_HRLT)</div> <div>(IN)</div> <div>50</div> </div>		<div> <div>HRLT Resistivity 3 (RLA3)</div> <div>(OHMM)</div> <div>2000</div> </div>
		<div> <div>HRLT Resistivity 4 (RLA4)</div> <div>(OHMM)</div> <div>2000</div> </div>
		<div> <div>HRLT Resistivity 5 (RLA5)</div> <div>(OHMM)</div> <div>2000</div> </div>
		<div> <div>HRLT Mud Resistivity (RM_HRLT)</div> <div>(OHMM)</div> <div>200</div> </div>

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HRLT-B: High Resolution Laterolog Array - B		
BHT	Bottom Hole Temperature (used in calculations)	9 DEGC
GCSE	Generalized Caliper Selection	BS
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
KFAC_HRLT	HRLT K Factor Option	SONDE
PROCINV	Inversion Selection	ON
PROCMFL	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO
PROCMSO	Mechanical Standoff Fin Size	1.5 IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute
PROCSP0	Sonde Position	Eccentered
SHT	Surface Hole Temperature	-2 DEGC
DSST-B: Dipole Shear Imager - B		
BHT	Bottom Hole Temperature (used in calculations)	9 DEGC
GCSE	Generalized Caliper Selection	BS
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
SHT	Surface Hole Temperature	-2 DEGC
EDTC-B: Enhanced DTS Cartridge		
BHT	Bottom Hole Temperature (used in calculations)	9 DEGC
GCSE	Generalized Caliper Selection	BS
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
SHT	Surface Hole Temperature	-2 DEGC
System and Miscellaneous		
BS	Bit Size	9.875 IN
DO	Depth Offset for Playback	-603.4 M
MST	Mud Sample Temperature	-50000.00 DEGC
PP	Playback Processing	RECOMPUTE
TD	Total Depth	303.6 M

Format: HRLT    Vertical Scale: 1:200    Graphics File Created: 23-Sep-2012 02:41

OP System Version: 19C0-187

MSS_LDEO-A	19C0-187	HRLT-B	19C0-187
DSST-B	19C0-187	HLDS	19C0-187
LDSC-B	19C0-187	EDTC-B	SKK-5169-EDTCB

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_HRLA_026LUP	PRODUCER	23-Sep-2012 02:30	862.6 M	506.7 M
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# Output DLIS Files

**DEFAULT**      **MSS\_LDEO\_HRLA\_DSI\_029PUP**      **FN:35**      **PRODUCER**      **23-Sep-2012 02:41**  
**CLIENT**      **MSS\_LDEO\_HRLA\_DSI\_029PUC**      **FN:36**      **CUSTOMER**      **23-Sep-2012 02:41**

**Schlumberger**

## Calibrations

MAXIS Field Log

### Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High Resolution Laterolog Array – B Wellsite Calibration – HRLT M01							
Before: 20-Sep-2012 18:03 After: 20-Sep-2012 20:45							
HRLT M0-M1 Voltage Plus – 0	0	N/A	-320.1	-319.3	0.7999	9.681	UV
HRLT M0-M1 Voltage Plus – 1	0	N/A	-341.6	-338.6	2.980	9.681	UV
HRLT M0-M1 Voltage Plus – 2	0	N/A	-339.5	-337.3	2.248	9.681	UV
HRLT M0-M1 Voltage Plus – 3	0	N/A	-342.4	-340.5	1.922	9.681	UV
HRLT M0-M1 Voltage Plus – 4	0	N/A	-328.1	-327.0	1.090	9.681	UV
HRLT M0-M1 Voltage Plus – 5	0	N/A	-323.6	-322.7	0.8422	9.681	UV
HRLT M0-M1 Voltage Plus – 6	0	N/A	332.2	329.8	-2.436	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: 20-Sep-2012 18:03 After: 20-Sep-2012 20:45							
HRLT M1-M2 Voltage Plus – 0	0	N/A	1758	1755	-2.932	53.42	UV
HRLT M1-M2 Voltage Plus – 1	0	N/A	1876	1860	-16.31	53.42	UV
HRLT M1-M2 Voltage Plus – 2	0	N/A	1860	1848	-11.92	53.42	UV
HRLT M1-M2 Voltage Plus – 3	0	N/A	1876	1866	-9.832	53.42	UV
HRLT M1-M2 Voltage Plus – 4	0	N/A	1799	1794	-5.057	53.42	UV
HRLT M1-M2 Voltage Plus – 5	0	N/A	1776	1772	-3.489	53.42	UV
HRLT M1-M2 Voltage Plus – 6	0	N/A	-1832	-1820	12.60	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: 20-Sep-2012 18:03 After: 20-Sep-2012 20:45							
HRLT M2-M3 Voltage Plus – 0	0	N/A	1745	1741	-3.911	53.42	UV
HRLT M2-M3 Voltage Plus – 1	0	N/A	1875	1857	-17.45	53.42	UV
HRLT M2-M3 Voltage Plus – 2	0	N/A	1860	1847	-13.26	53.42	UV
HRLT M2-M3 Voltage Plus – 3	0	N/A	1879	1868	-10.97	53.42	UV
HRLT M2-M3 Voltage Plus – 4	0	N/A	1796	1789	-6.424	53.42	UV
HRLT M2-M3 Voltage Plus – 5	0	N/A	1773	1769	-4.405	53.42	UV
HRLT M2-M3 Voltage Plus – 6	0	N/A	-1819	-1805	13.85	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: 20-Sep-2012 18:03 After: 20-Sep-2012 20:45							
HRLT A3-A4 Voltage Plus – 0	0	N/A	68580	68470	-107.9	2100	UV
HRLT A3-A4 Voltage Plus – 1	0	N/A	73460	72830	-631.8	2100	UV
HRLT A3-A4 Voltage Plus – 2	0	N/A	73170	72710	-458.4	2100	UV
HRLT A3-A4 Voltage Plus – 3	0	N/A	74220	73830	-386.3	2100	UV
HRLT A3-A4 Voltage Plus – 4	0	N/A	70890	70690	-197.9	2100	UV
HRLT A3-A4 Voltage Plus – 5	0	N/A	70020	69890	-123.6	2100	UV
HRLT A3-A4 Voltage Plus – 6	0	N/A	-70280	-69810	468.9	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: 20-Sep-2012 18:03 After: 20-Sep-2012 20:45

HRLT A4-A5 Voltage Plus – 0	0	N/A	68870	68760	-110.4	2100	UV
HRLT A4-A5 Voltage Plus – 1	0	N/A	73860	73240	-616.3	2100	UV
HRLT A4-A5 Voltage Plus – 2	0	N/A	73540	73080	-459.3	2100	UV
HRLT A4-A5 Voltage Plus – 3	0	N/A	74570	74180	-394.7	2100	UV
HRLT A4-A5 Voltage Plus – 4	0	N/A	71190	70890	-300.0	2100	UV

HRLT A4-A5 Voltage Plus - 4	0	N/A	71190	70990	-199.9	2100	UV
HRLT A4-A5 Voltage Plus - 5	0	N/A	70310	70180	-130.1	2100	UV
HRLT A4-A5 Voltage Plus - 6	0	N/A	-70670	-70200	471.5	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: 20-Sep-2012 18:03 After: 20-Sep-2012 20:45

HRLT A5-A6 Voltage Plus - 0	0	N/A	68760	68650	-113.5	2100	UV
HRLT A5-A6 Voltage Plus - 1	0	N/A	73580	72960	-610.8	2100	UV
HRLT A5-A6 Voltage Plus - 2	0	N/A	73290	72840	-458.4	2100	UV
HRLT A5-A6 Voltage Plus - 3	0	N/A	74370	74000	-375.0	2100	UV
HRLT A5-A6 Voltage Plus - 4	0	N/A	71050	70850	-198.5	2100	UV
HRLT A5-A6 Voltage Plus - 5	0	N/A	70190	70050	-145.6	2100	UV
HRLT A5-A6 Voltage Plus - 6	0	N/A	-70390	-69900	494.1	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: 20-Sep-2012 18:03 After: 20-Sep-2012 20:45

HRLT Torpedo-M0 Voltage - 0	0	N/A	-68440	-68340	106.0	2100	UV
HRLT Torpedo-M0 Voltage - 1	0	N/A	-73930	-73290	640.7	2100	UV
HRLT Torpedo-M0 Voltage - 2	0	N/A	-73610	-73150	462.2	2100	UV
HRLT Torpedo-M0 Voltage - 3	0	N/A	-74670	-74280	396.4	2100	UV
HRLT Torpedo-M0 Voltage - 4	0	N/A	-71250	-71050	203.0	2100	UV
HRLT Torpedo-M0 Voltage - 5	0	N/A	-70360	-70210	147.7	2100	UV
HRLT Torpedo-M0 Voltage - 6	0	N/A	70680	70180	-490.6	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: 20-Sep-2012 18:03 After: 20-Sep-2012 20:45

HRLT Bridle#9-M0 Voltage - 0	0	N/A	-68430	-68320	110.2	2100	UV
HRLT Bridle#9-M0 Voltage - 1	0	N/A	-73910	-73280	637.2	2100	UV
HRLT Bridle#9-M0 Voltage - 2	0	N/A	-73590	-73130	456.7	2100	UV
HRLT Bridle#9-M0 Voltage - 3	0	N/A	-74650	-74260	384.8	2100	UV
HRLT Bridle#9-M0 Voltage - 4	0	N/A	-71250	-71040	204.3	2100	UV
HRLT Bridle#9-M0 Voltage - 5	0	N/A	-70340	-70210	134.8	2100	UV
HRLT Bridle#9-M0 Voltage - 6	0	N/A	70650	70160	-490.6	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: 20-Sep-2012 18:03 After: 20-Sep-2012 20:45

HRLT Source Current Plus - 0	0	N/A	285.3	284.9	-0.3990	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

Before: 20-Sep-2012 18:03 After: 20-Sep-2012 20:45

HRLT Vertical Voltage PI - 0	0	N/A	-322.3	-321.4	0.8523	9.681	UV
HRLT Vertical Voltage PI - 1	0	N/A	-335.6	-332.5	3.175	9.681	UV
HRLT Vertical Voltage PI - 2	0	N/A	-332.8	-330.4	2.353	9.681	UV
HRLT Vertical Voltage PI - 3	0	N/A	-333.9	-331.9	2.034	9.681	UV
HRLT Vertical Voltage PI - 4	0	N/A	-317.3	-316.2	1.169	9.681	UV
HRLT Vertical Voltage PI - 5	0	N/A	-328.1	-327.2	0.9027	9.681	UV
HRLT Vertical Voltage PI - 6	0	N/A	339.4	336.7	-2.633	9.681	UV
HRLT Vertical Voltage PI - 7	0	N/A	-322.7	-322.7	0	9.681	UV

#### Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement

Master: 3-Aug-2012 12:38 Before: 20-Sep-2012 18:06 After: 20-Sep-2012 21:14

SS Cs Resolution Bkg	9.000	7.952	8.050	8.000	-0.05026	1.800	%
LS Cs Resolution Bkg	9.000	8.109	8.189	8.101	-0.08724	1.800	%
LSW1 Background	100.0	71.68	71.68	71.86	0.1790	3.000	CPS
LSW2 Background	100.0	68.54	66.66	66.34	-0.3285	3.000	CPS
LSW3 Background	200.0	146.7	145.5	147.5	1.967	6.000	CPS
LSW4 Background	250.0	177.8	179.7	178.5	-1.147	7.500	CPS
LSW5 Background	600.0	409.7	409.8	411.6	1.815	18.00	CPS
SSW1 Background	100.0	81.22	80.50	80.07	-0.4239	3.000	CPS
SSW2 Background	200.0	145.7	143.5	142.3	-1.204	6.000	CPS
SSW3 Background	500.0	389.5	388.2	387.2	-0.9963	15.00	CPS
SSW4 Background	270.0	200.9	200.6	199.1	-1.489	8.100	CPS
SSW5 Background	200.0	146.3	146.0	145.3	-0.7189	6.000	CPS

#### Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement

Master: 3-Aug-2012 13:08

LSW1 Aluminum	600.0	531.2	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	759.6	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	924.3	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	467.3	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	427.7	N/A	N/A	N/A	N/A	CPS

SSW1 Aluminum	2800	2539	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6810	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9419	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	3830	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	469.0	N/A	N/A	N/A	N/A	CPS

#### Hostile Litho–Density Sonde Wellsite Calibration – Lithology Measurement

Master: 3–Aug–2012 13:03

LSW1 Iron	400.0	367.3	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	618.0	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	815.0	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	424.5	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	392.6	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1845	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5678	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8586	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3500	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	417.1	N/A	N/A	N/A	N/A	CPS

#### Hostile Litho–Density Sonde Wellsite Calibration – Caliper Calibration

Before: 3–Aug–2012 13:28

HLDS Caliper Small Ring	12.00	N/A	15.62	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	19.44	N/A	N/A	N/A	IN

#### Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration

Before: 20–Sep–2012 18:08

EDTC Z–Axis Acceleration	9.810	N/A	9.852	N/A	N/A	N/A	M/S2
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#### Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration

Before: 20–Sep–2012 18:08 After: 20–Sep–2012 21:12

Gamma Ray (Jig – Bkg)	159.7	N/A	159.7	162.2	2.544	14.52	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	167.6	2.629	15.00	GAPI

#### High Resolution Laterolog Array – B / Equipment Identification

##### Primary Equipment:

HRLT Sonde

HRLS – B 768

##### Auxiliary Equipment:

HRLT lower Housing

HRLH – B 968

HRLT Lower Cartridge

HRLC – B 974

HRLT upper Housing
















HRUH – B 978

















HRLT Upper Cartridge

HRUC – B 764

#### High Resolution Laterolog Array – B Wellsite Calibration

##### HRLT M01

Idx	Phase	HRLT M0–M1 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		–320.1	–322.7	–280.7	–379.7
	After		–319.3			
1	Before		–341.6	–322.7	–280.7	–379.7
	After		–338.6			
2	Before		–339.5	–322.7	–280.7	–379.7
	After		–337.3			
3	Before		–342.4	–322.7	–280.7	–379.7
	After		–340.5			
4	Before		–328.1	–322.7	–280.7	–379.7
	After		–327.0			
5	Before		–323.6	–322.7	–280.7	–379.7
	After		–322.7			
6	Before		332.2	322.7	379.7	280.7
	After		329.8			
7	Before		–322.7	–322.7	–280.7	–379.7
	After		–322.7			

















High Resolution Laterolog Array – B Wellsite Calibration						
HRLT M12						
Idx	Phase	HRLT M1–M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1758	1781	2095	1549
	After		1755			
1	Before		1876	1781	2095	1549
	After		1860			
2	Before		1860	1781	2095	1549
	After		1848			
3	Before		1876	1781	2095	1549
	After		1866			
4	Before		1799	1781	2095	1549
	After		1794			
5	Before		1776	1781	2095	1549
	After		1772			
6	Before		–1832	–1781	–1549	–2095
	After		–1820			
7	Before		1781	1781	2095	1549
	After		1781			
		(Minimum) (Nominal) (Maximum)				

















Before: 20–Sep–2012 18:03

After: 20–Sep–2012 20:45

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT M23						
Idx	Phase	HRLT M2–M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1745	1781	2095	1549
	After		1741			
1	Before		1875	1781	2095	1549
	After		1857			
2	Before		1860	1781	2095	1549
	After		1847			
3	Before		1879	1781	2095	1549
	After		1868			
4	Before		1796	1781	2095	1549
	After		1789			
5	Before		1773	1781	2095	1549
	After		1769			
6	Before		-1819	-1781	-1549	-2095
	After		-1805			
7	Before		1781	1781	2095	1549
	After		1781			
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After: 20-Sep-2012 20:45

















High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V34						
Idx	Phase	HRLT A3–A4 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68580	70000	82360	60900
	After		68470			
1	Before		73460	70000	82360	60900
	After		72830			
2	Before		73170	70000	82360	60900
	After		72710			
3	Before		74220	70000	82360	60900
	After		73830			
4	Before		70890	70000	82360	60900
	After		70690			
5	Before		70020	70000	82360	60900
	After		69890			
6	Before		-70280	-70000	-60900	-82360
	After		-69810			
7	Before		70000	70000	82360	60900
	After		70000			
		(Minimum) (Nominal) (Maximum)				
Before: 20-Sep-2012 18:03						
After: 20-Sep-2012 20:45						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V45						
Idx	Phase	HRLT A4–A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68870	70000	82360	60900
	After		68760			
1	Before		73860	70000	82360	60900
	After		73240			
2	Before		73540	70000	82360	60900
	After		73080			
3	Before		74570	70000	82360	60900
	After		74180			
4	Before		71190	70000	82360	60900
	After		70990			
5	Before		70310	70000	82360	60900
	After		70180			
6	Before		-70670	-70000	-60900	-82360
	After		-70200			
7	Before		70000	70000	82360	60900
	After		70000			
		(Minimum) (Nominal) (Maximum)				
Before: 20-Sep-2012 18:03						
After: 20-Sep-2012 20:45						

High Resolution Laterolog Array – B Wellsite Calibration

## High Resolution Laterolog Array – B Wellsite Calibration

## HRLT V56

















Idx	Phase	HRLT A5–A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68760	70000	82360	60900
	After		68650			
1	Before		73580	70000	82360	60900
	After		72960			
2	Before		73290	70000	82360	60900
	After		72840			
3	Before		74370	70000	82360	60900
	After		74000			
4	Before		71050	70000	82360	60900
	After		70850			
5	Before		70190	70000	82360	60900
	After		70050			
6	Before		-70390	-70000	-60900	-82360
	After		-69900			
7	Before		70000	70000	82360	60900
	After		70000			
(Minimum) (Nominal) (Maximum)						

Before: 20-Sep-2012 18:03

After: 20-Sep-2012 20:45

## High Resolution Laterolog Array – B Wellsite Calibration

## HRLT VTP


Idx	Phase	HRLT Torpedo–M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-68440	-70000	-60900	-82360
	After		-68340			
1	Before		-73930	-70000	-60900	-82360
	After		-73290			
2	Before		-73610	-70000	-60900	-82360
	After		-73150			
3	Before		-74670	-70000	-60900	-82360
	After		-74280			
4	Before		-71250	-70000	-60900	-82360
	After		-71050			
5	Before		-70360	-70000	-60900	-82360
	After		-70210			
6	Before		70680	70000	82360	60900
	After		70180			
7	Before		-70000	-70000	-60900	-82360
	After		-70000			
(Minimum) (Nominal) (Maximum)						

Before: 20-Sep-2012 18:03


















After: 20-Sep-2012 20:45

















## High Resolution Laterolog Array – B Wellsite Calibration




## HRLT VBD

Idx	Phase	HRLT Bridle#9–M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		70000	70000	82360	60900
	After		70000			



0	Before		-68430	-70000	-60900	-82360
1	After		-68320	-70000	-60900	-82360
	Before		-73910			
2	After		-73280	-70000	-60900	-82360
	Before		-73590			
3	After		-73130	-70000	-60900	-82360
	Before		-74650			
4	After		-74260	-70000	-60900	-82360
	Before		-71250			
5	After		-71040	-70000	-60900	-82360
	Before		-70340			
6	After		-70210	-70000	-60900	-82360
	Before		70650			
7	After		70160	70000	82360	60900
	Before		-70000			
	After		-70000	-70000	-60900	-82360
	Before		-70000			
(Minimum) (Nominal) (Maximum)						
Before: 20-Sep-2012 18:03						
After: 20-Sep-2012 20:45						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT ISO						
Idx	Phase	HRLT Source Current Plus UA	Value	Nominal	Maximum	Minimum
0	Before		285.3	284.0	334.1	247.0
	After		284.9			
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: 20-Sep-2012 18:03						
After: 20-Sep-2012 20:45						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT MV						
Idx	Phase	HRLT Vertical Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-322.3	-322.7	-280.7	-379.7
	After		-321.4			
						

1	Before		-335.6	-322.7	-280.7	-379.7
	After		-332.5			
2	Before		-332.8	-322.7	-280.7	-379.7
	After		-330.4			
3	Before		-333.9	-322.7	-280.7	-379.7
	After		-331.9			
4	Before		-317.3	-322.7	-280.7	-379.7
	After		-316.2			
5	Before		-328.1	-322.7	-280.7	-379.7
	After		-327.2			
6	Before		339.4	322.7	379.7	280.7
	After		336.7			
7	Before		-322.7	-322.7	-280.7	-379.7
	After		-322.7			
(Minimum) (Nominal) (Maximum)						
Before: 20-Sep-2012 18:03						
After: 20-Sep-2012 20:45						

### Hostile Litho-Density Sonde / Equipment Identification

#### Primary Equipment:

Hostile Litho Density Sonde  
Hostile Litho Density High Voltage  
Gamma Source Radioactive

HLDS – D 45  
HLDV – D 45  
GSR – Z 8113

#### Auxiliary Equipment:

Hostile Litho Density Pad  
Hostile Litho Density High Voltage Housi

HLDP – C 45  
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		7.952	Master		8.109	Master		71.68
Before		8.050	Before		8.189	Before		71.68
After		8.000	After		8.101	After		71.86
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		68.54	Master		146.7	Master		177.8
Before		66.66	Before		145.5	Before		179.7
After		66.34	After		147.5	After		178.5
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		409.7	Master		81.22	Master		145.7
Before		409.8	Before		80.50	Before		143.5
After		411.6	After		80.07	After		142.3
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		389.5	Master		200.9	Master		146.3
Before		388.2	Before		200.6	Before		146.0
After		387.2	After		199.1	After		145.3
280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)			150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)			110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)		

Litho-Density Spectroscopy Cartridge – B / Equipment Identification


Primary Equipment:		
LDSC Cartridge	LDSC – B	521
Auxiliary Equipment:		
LDSC Housing	LDSH – A	319

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




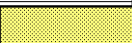


EDTC Accelerometer Calibration

Phase	EDTC Z-Axis Acceleration M/S2	Value
Before		9.852
	9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)	

Before: 20-Sep-2012 18:08

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		4.007	Before		159.7	Before		165.0
After		4.426	After		162.2	After		167.6
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)			145.2 (Minimum) 159.7 (Nominal) 174.2 (Maximum)			150.0 (Minimum) 165.0 (Nominal) 180.0 (Maximum)	

Before: 20-Sep-2012 18:08

After: 20-Sep-2012 21:12

Company: **Lamont Doherty Earth Observatory**  
**Shell**  
 Well: **Expedition 344S, U0070A (USC70)**  
 Field: **Baffin Bay**  
 Rig: **JOIDES Resolution**  
 Country: **USA**

**Schlumberger**

HRLA Resistivity