

Schlumberger

Company: Lamont Doherty Earth Observatory

Well: Expedition 340, Site U1397B

Field: Lesser Antilles Volcanism and Landslides

Rig: JOIDES Resolution Ocean: Caribbean

High Resolution Laterolog Array (HRLA)
 Hostile Natural Gamma Sonde (HNGS)
 HLDS Caliper

Latitude: N 14° 54.41'	Elev.: K.B. -2492.90 m
Longitude: W 61° 25.35'	G.L. 0.00 m
	D.F. -2492.90 m
Permanent Datum: Sea Floor	Elev.: 0.00 m
Log Measured From: Sea Floor	0.00 m above Perm. Datum
Drilling Measured From: Sea Floor	

JOIDES Resolution
 Lesser Antilles Volcanism and Landslides
 Location: Latitude: N 14° 54.41'
 Expedition 340, Site U1397B
 Well:
 Company: Lamont Doherty Earth Observatory

LOCATION

API Serial No.	Max. Hole Devi. 0 deg	Longitude W 61° 25.35	Latitude N 14° 54.41'
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Logging Date	23-Mar-2012		
Run Number	1		
Depth Driller	253 m		
Schlumberger Depth	223 m		
Bottom Log Interval	223 m		
Top Log Interval	0 m		
Casing Driller Size @ Depth	13.375 in	@	81 m
Casing Schlumberger	80 m		
Bit Size	11.438 in		
Type Fluid In Hole	Seawater		
MUD	Density	Viscosity	1.078 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	@ 21	@ 21
Maximum Recorded Temperatures	21 degC		
Circulation Stopped	Time	23-Mar-2012	3:00
Logger On Bottom	Time	23-Mar-2012	8:18
Unit Number	Location	625003	Houston
Recorded By	K. Swain		
Witnessed By	A. Slagle, S. Morgan		

	Run 1	Run 2	Run 3
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth		@	
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
Density			
Viscosity			
Fluid Loss			
PH			
Source Of Sample			
RM @ Measured Temperature		@	
RMF @ Measured Temperature		@	
RMC @ Measured Temperature		@	
Source RMF			
RMC			
RM @ MRT		@	
RMF @ MRT		@	
Maximum Recorded Temperatures			
Circulation Stopped	Time		
Logger On Bottom	Time		
Unit Number	Location		
Recorded By			
Witnessed By			

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OTHER SERVICES1
 OS1: FMS
 OS2: DSI
 OS3: MSS
 OS4:
 OS5:

OTHER SERVICES2
 OS1:
 OS2:
 OS3:
 OS4:
 OS5:

REMARKS: RUN NUMBER 1
 Hole drilled with APC/XCB coring bit and bottom hole assembly (BHA). 11 7/16" BS
 Lamont Magnetic Susceptibility (MSS) tool run in combination with HRLA/HLDS/HNGS
 4 knuckle joints decouple the eccentered HLDS and HNGS from the centered HRLA and MSS.
 HLDS density data not valid as gamma source was not installed due to the assumed high risk of losing the tools in this hole based on drilling experience expressed by the drilling team.
 Two MCD centralizer tools centralize the MSS and HRLA.
 Large holesize will affect the HRLA response with the shallow arrays (RLA0-RLA5) being affected the most. Actual holesize is not known as the caliper was reading mostly at the maximum reach of the tool.

REMARKS: RUN NUMBER 2

RUN 1		
SERVICE ORDER #:		
PROGRAM VERSION:	19C0-187	
FLUID LEVEL:		
LOGGED INTERVAL	START	STOP

RUN 2		
SERVICE ORDER #:		
PROGRAM VERSION:		
FLUID LEVEL:		
LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION




RUN 1

SURFACE EQUIPMENT

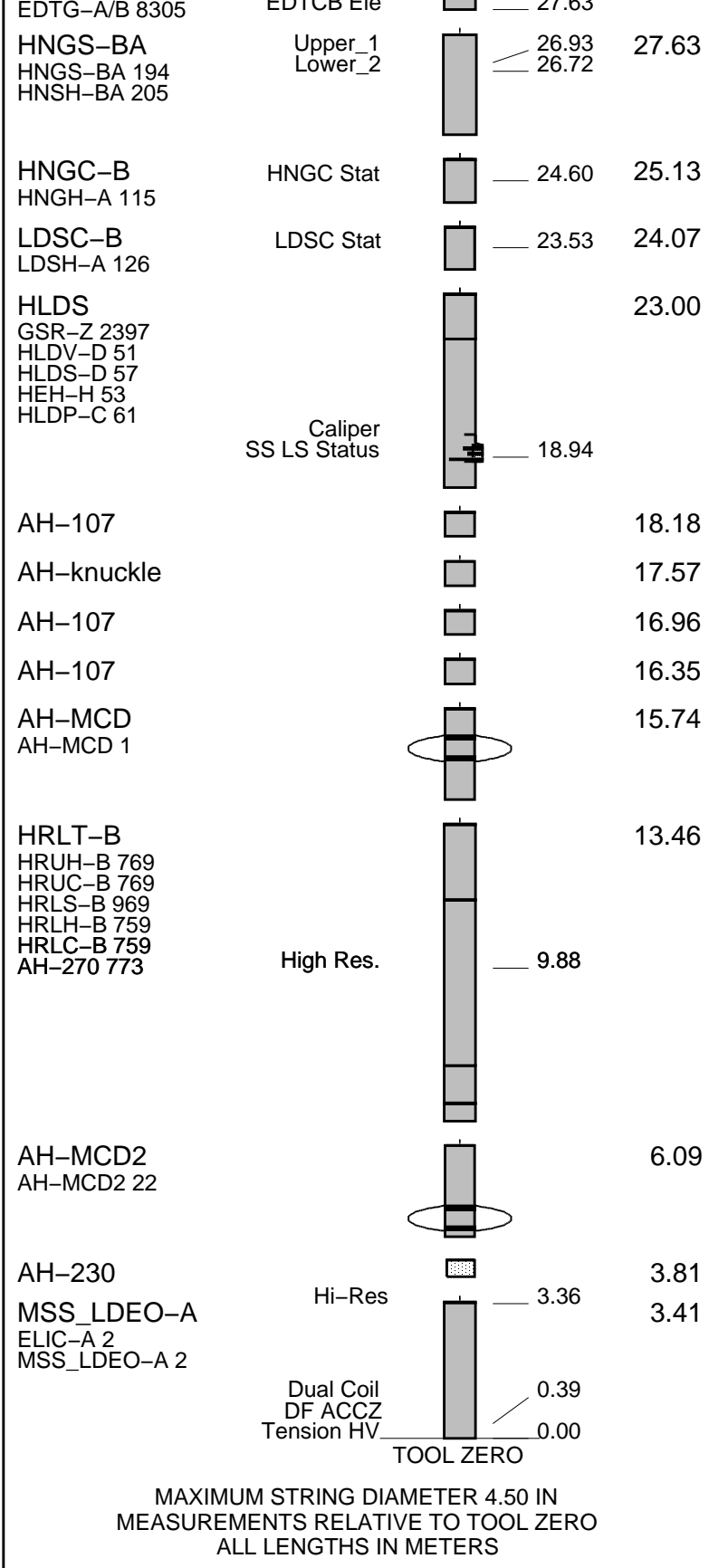
GSR-U 616008
 WITM (EDTS)-A 1

RUN 2

DOWNHOLE EQUIPMENT

LEH-QT				30.94
LEH-QT 301	MDSB_EDTC			
AH-369	Mud Tempe		29.61	30.05
	CTEM		28.55	
EDTC-B	Gamma Ray		27.98	29.61
EDTH-B 8303	EFTB DIAG			
EDTC-B 8317	TelStatus			
	EDTC-Fls		27.62	

LOGGED INTERVAL	START	STOP



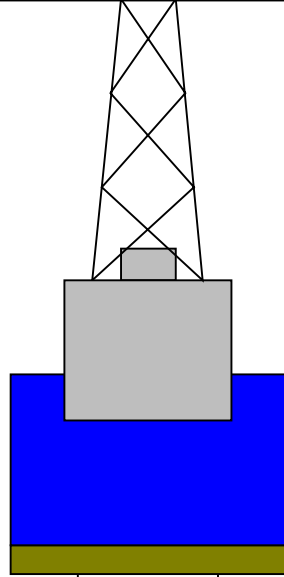
Production String	(in)	(M)	Well Schematic	(M)	(in)	Casing String
	OD	ID		MD	MD	

Kelly Bushing Elevation
Derrick Floor Elevation

-2492.9
-2492.9

Mean Sea Level

-2481.9



4.1



0

3.80

Sea Floor

81

11.43

Open Hole

253

Total Depth

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_040PUP	FN:57	PRODUCER	24-Mar-2012 20:37	2713.5 M	2478.6 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_042PUP	FN:59	PRODUCER	24-Mar-2012 20:46	224.0 M	-11.4 M
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OP System Version: 19C0-187

MSS_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
EDTC-B	SKK-5169-EDTCB		

Changed Parameter Summary

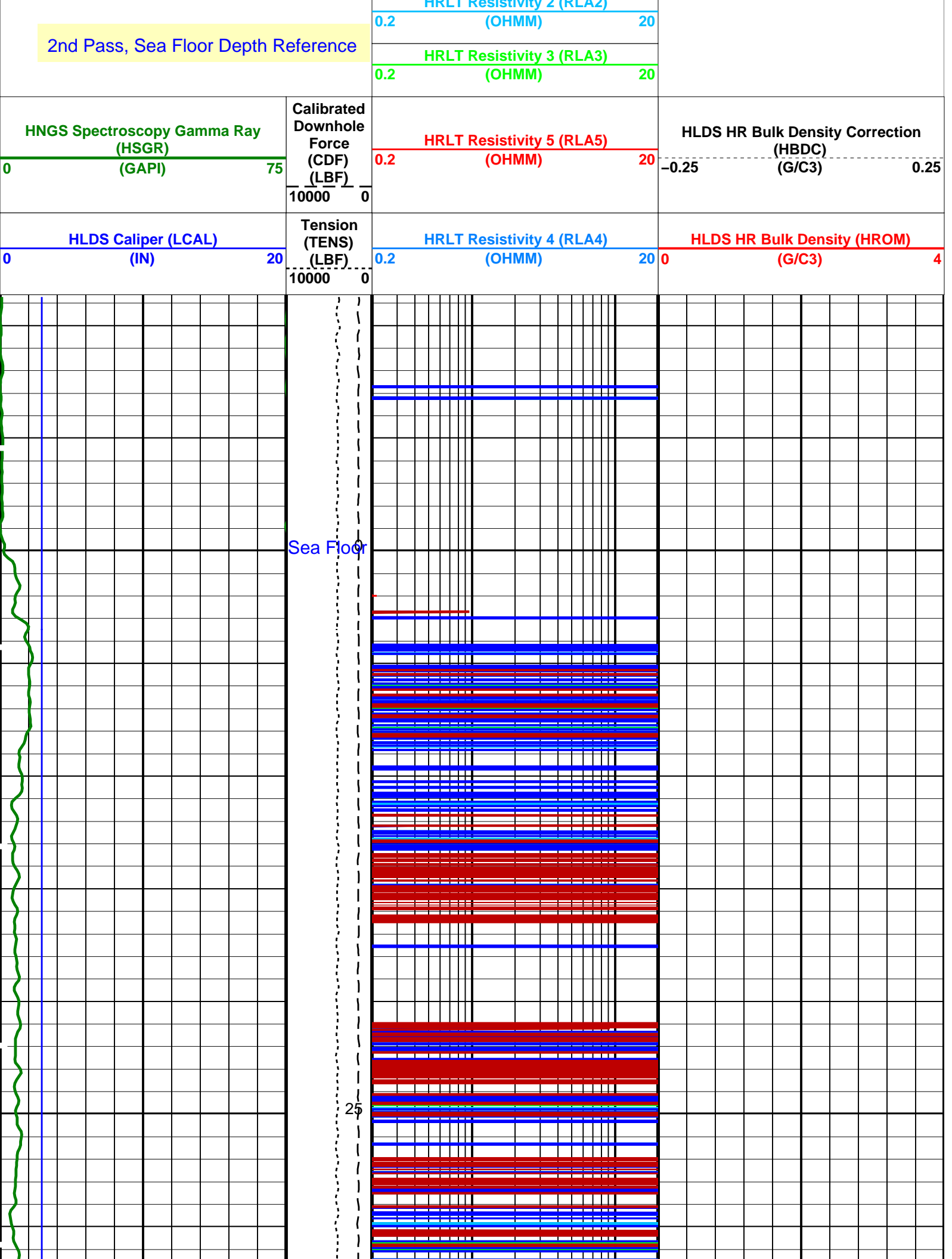
DLIS Name	New Value	Previous Value	Depth & Time
GCSE	BS	BS	224.0 20:46:17

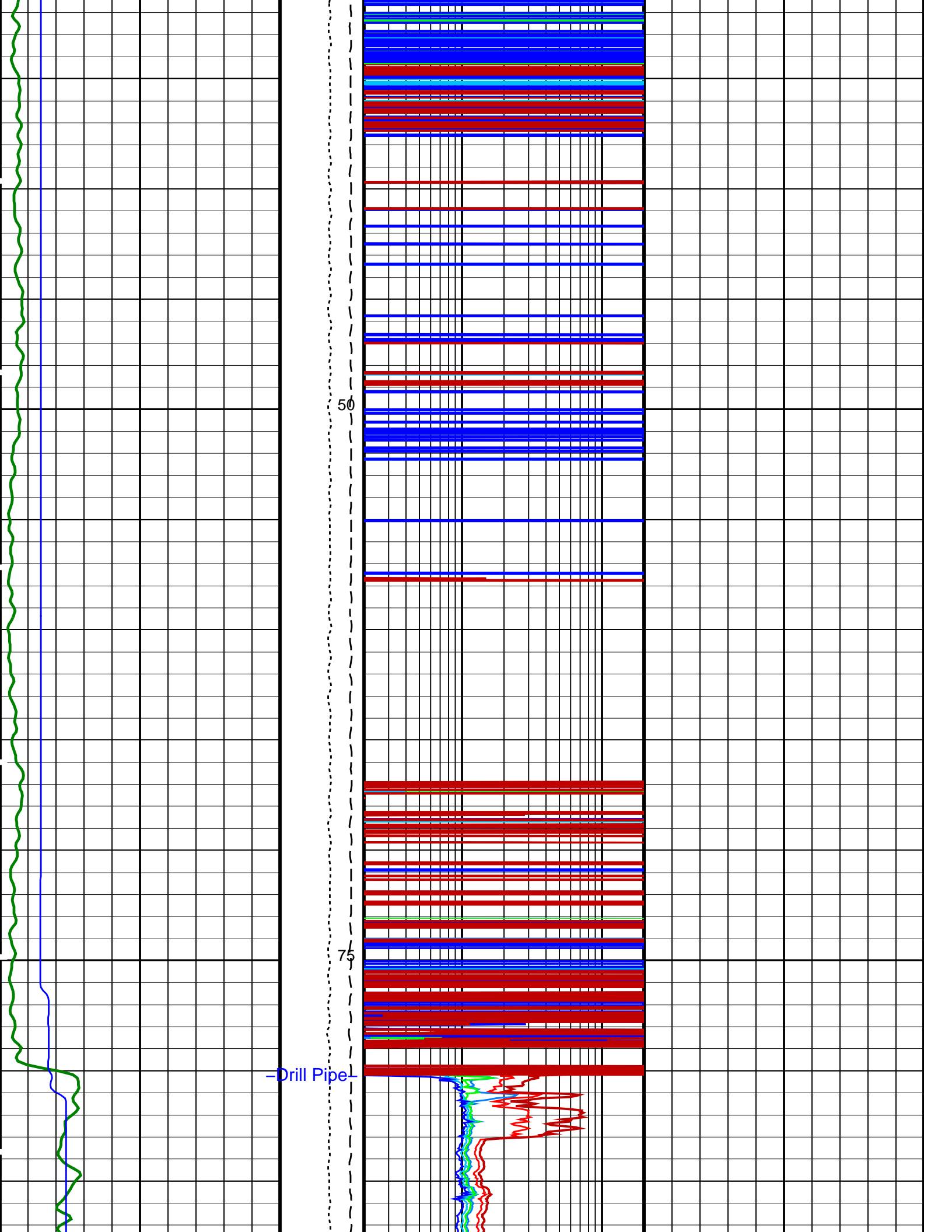
PIP SUMMARY

Time Mark Every 60 S

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

2nd Pass, Sea Floor Depth Reference

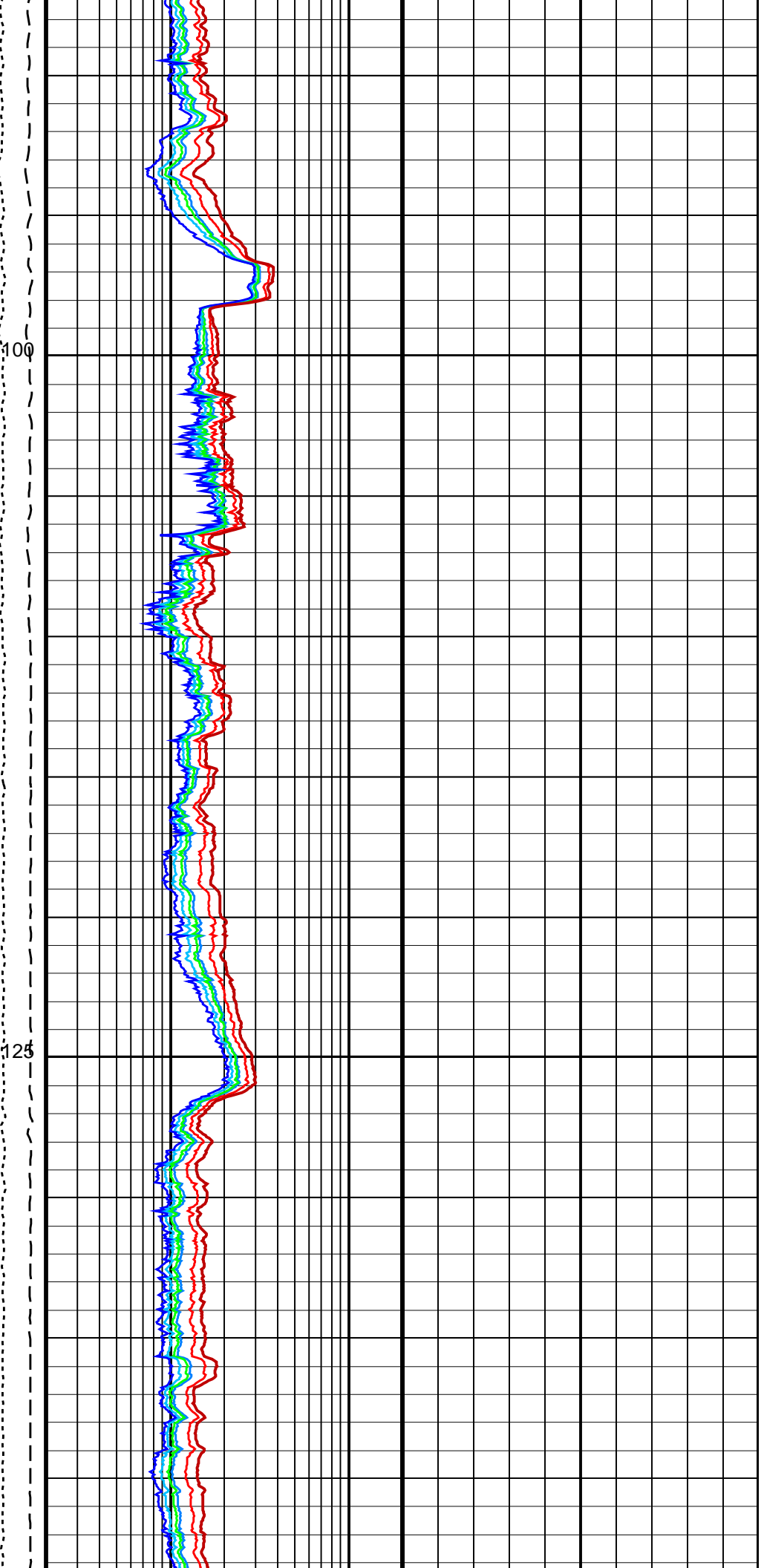
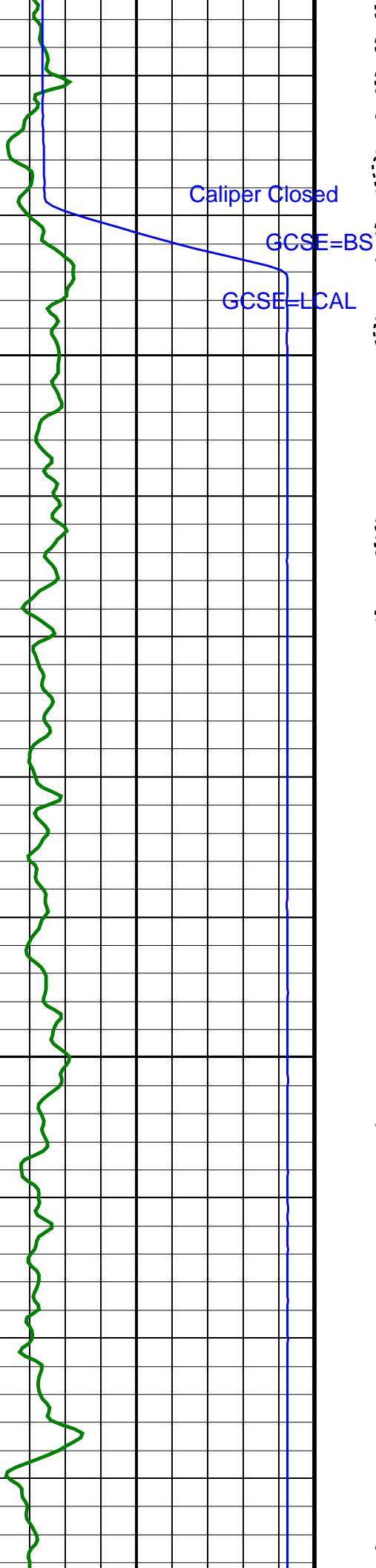


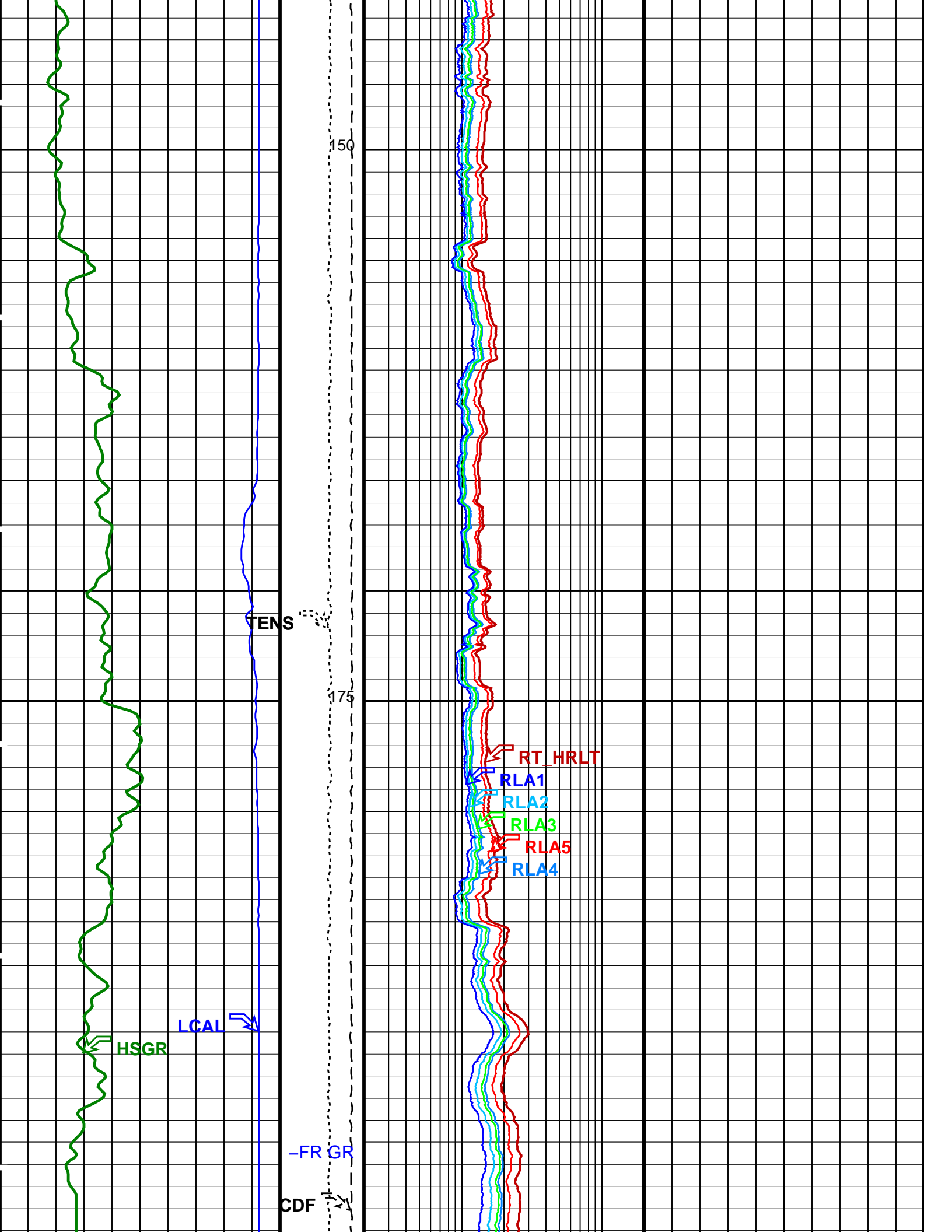


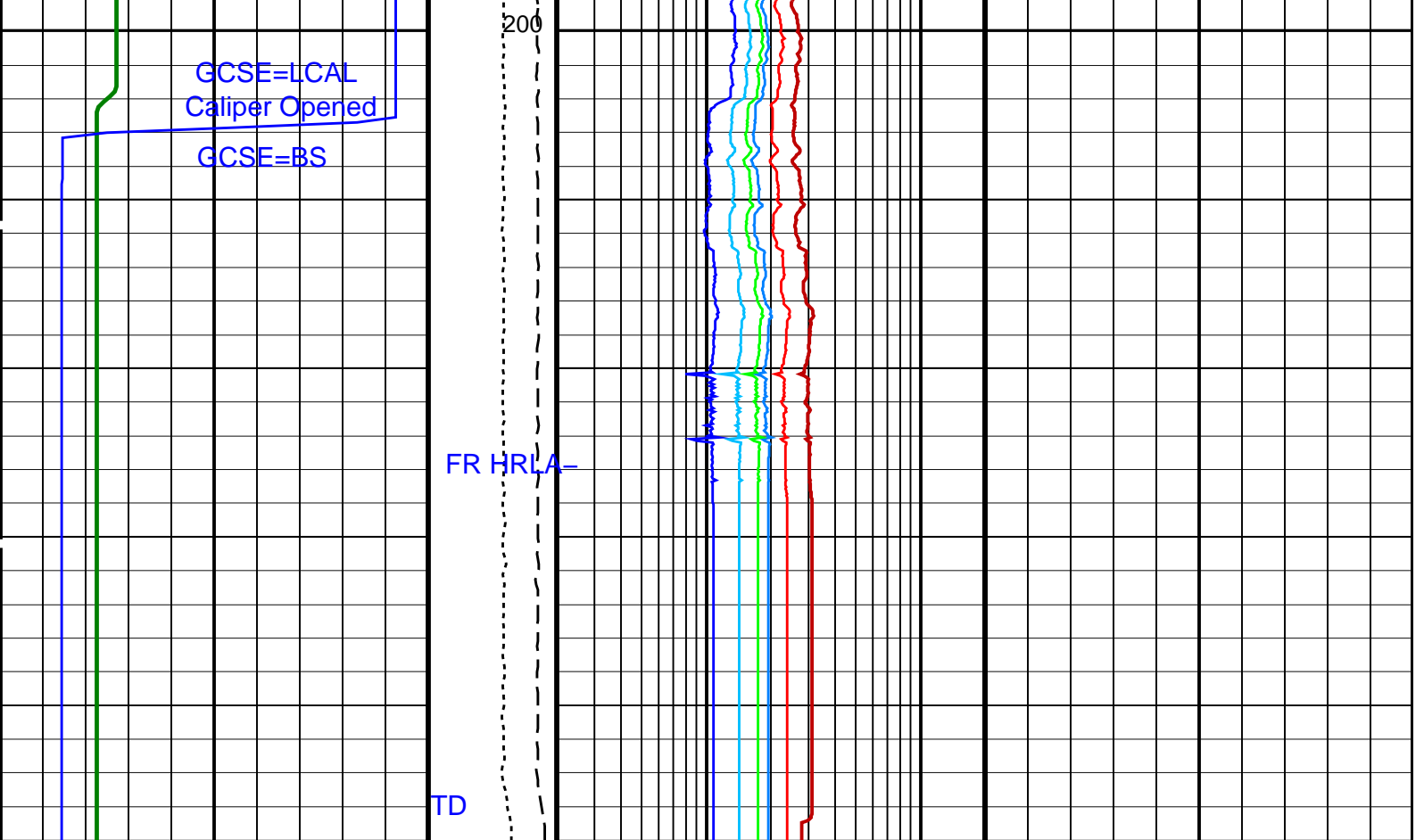
50

75

-Drill Pipe







<p>HLDS Caliper (LCAL) (IN) 0 20</p>	<p>Tension (TENS) (LBF) 10000 0</p>	<p>HRLT Resistivity 4 (RLA4) (OHMM) 0.2 20</p>	<p>HLDS HR Bulk Density (HROM) (G/C3) 0 4</p>
<p>HNGS Spectroscopy Gamma Ray (HSGR) (GAPI) 0 75</p>	<p>Calibrated Downhole Force (CDF) (LBF) 10000 0</p>	<p>HRLT Resistivity 5 (RLA5) (OHMM) 0.2 20</p>	<p>HLDS HR Bulk Density Correction (HBDC) (G/C3) -0.25 0.25</p>
<p>2nd Pass, Sea Floor Depth Reference</p>		<p>HRLT Resistivity 3 (RLA3) (OHMM) 0.2 20</p>	
		<p>HRLT Resistivity 2 (RLA2) (OHMM) 0.2 20</p>	
		<p>HRLT Resistivity 1 (RLA1) (OHMM) 0.2 20</p>	
		<p>HRLT True Resistivity (RT_HRLT) (OHMM) 0.2 20</p>	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HRLT-B: High Resolution Laterolog Array - B		
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	100 DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE
CALTEMP	HRLTB Calibration Temperature	27.7815 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	0.018227	DC/M
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	
PROCML	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	20	DEGC
	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)	100	DEGC
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.00196772	
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	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.01997	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.01506	
	EDTC-B: Enhanced DTS Cartridge		
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	100	DEGC
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	0.018227	DC/M
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	20	DEGC
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	11.438	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	13.375	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.08	G/C3
DO	Depth Offset for Playback	-2490.0	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	OFF	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	2720	M
TDD	Total Depth - Driller	3300.00	M
TDL	Total Depth - Logger	2760.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo Vertical Scale: 1:200 Graphics File Created: 24-Mar-2012 20:46

OP System Version: 19C0-187

MSS_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
EDTC-B	SKK-5169-EDTCB		

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_040PUP	FN:57	PRODUCER	24-Mar-2012 20:37	2713.5 M	2478.6 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_042PUP	FN:59	PRODUCER	24-Mar-2012 20:46		
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Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_039PUP	FN:56	PRODUCER	24-Mar-2012 20:33	2713.5 M	2606.2 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_041PUP	FN:58	PRODUCER	24-Mar-2012 20:44	224.0 M	116.1 M
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OP System Version: 19C0-187

MSS_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
EDTC-B	SKK-5169-EDTCB		

Changed Parameter Summary

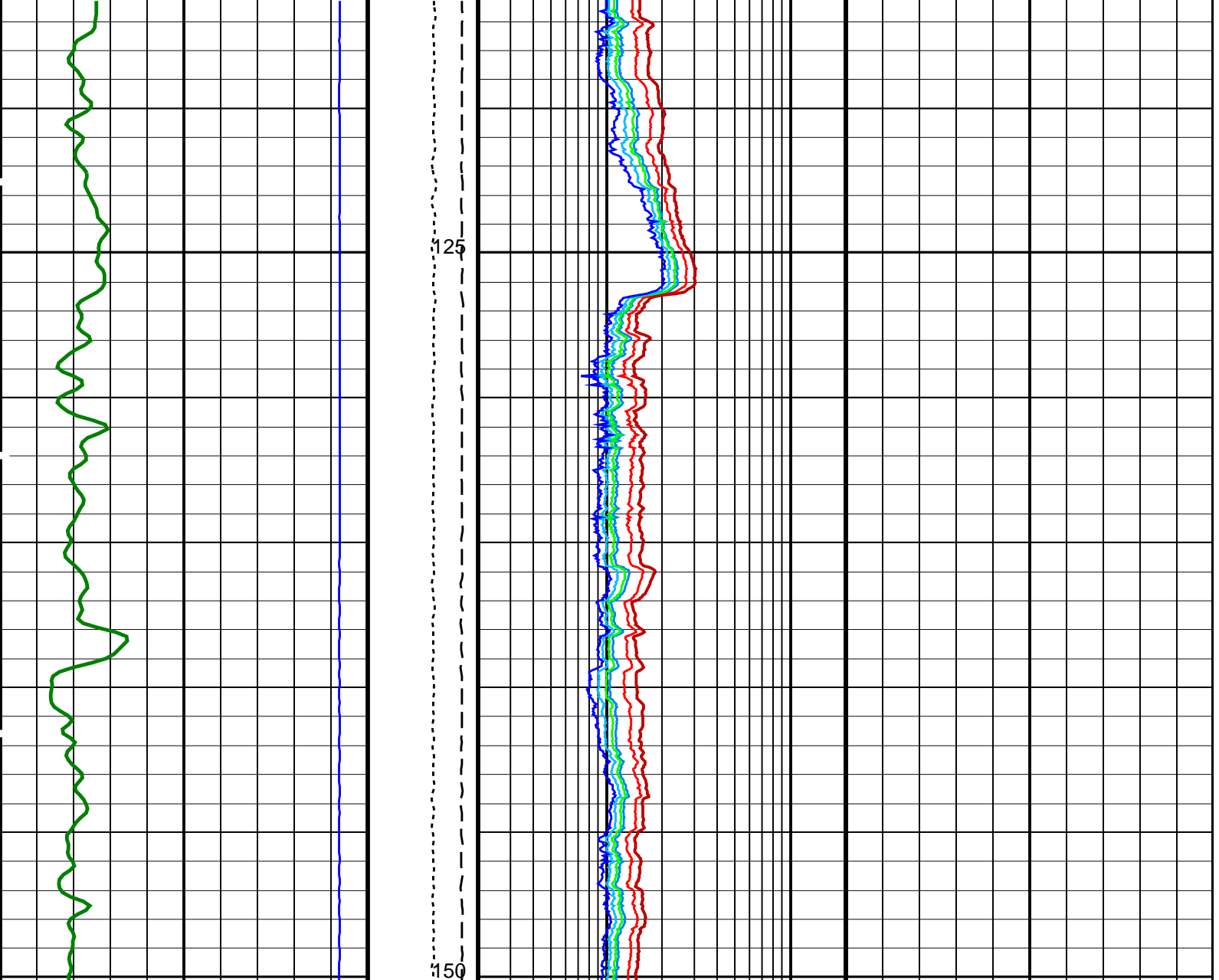
DLIS Name New Value Previous Value Depth & Time

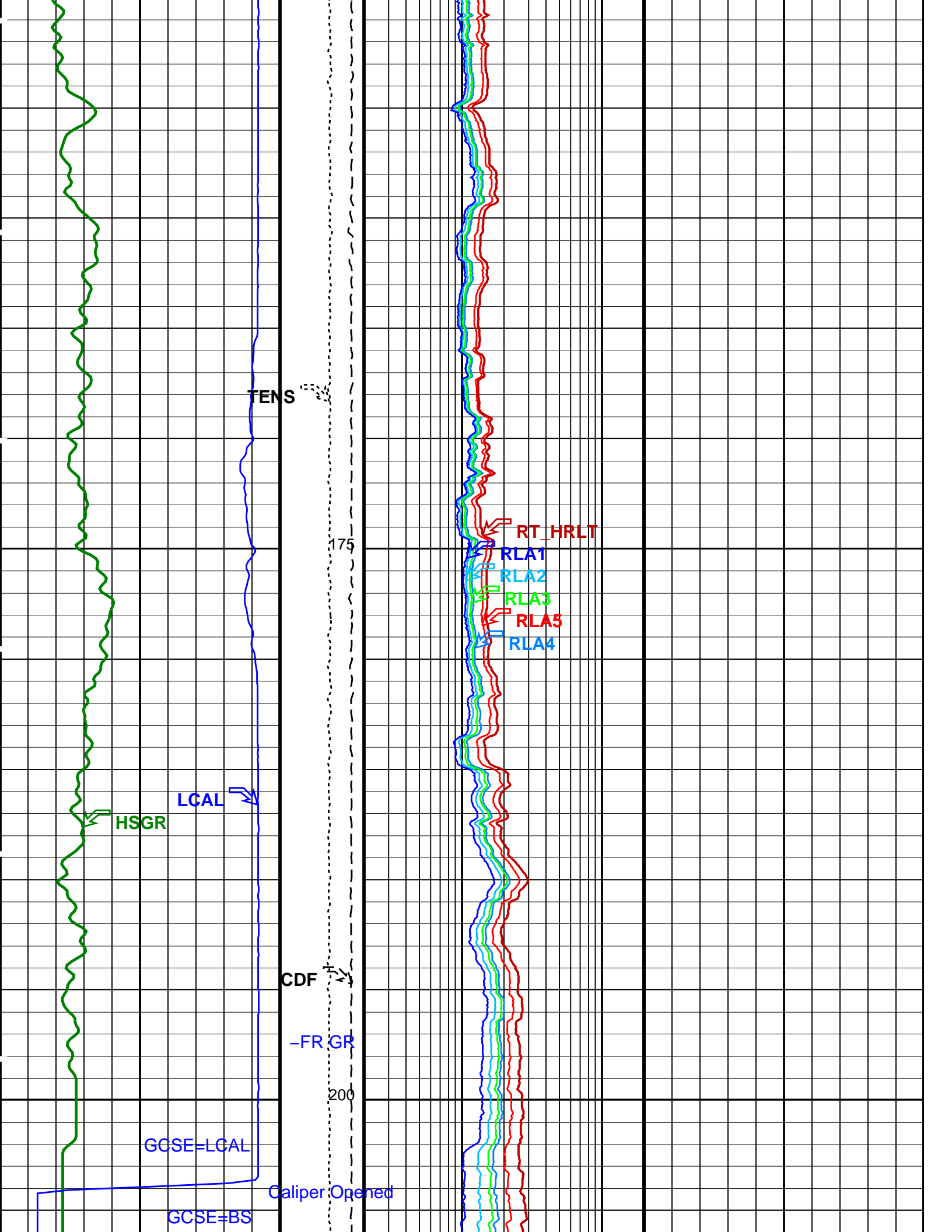
PIP SUMMARY

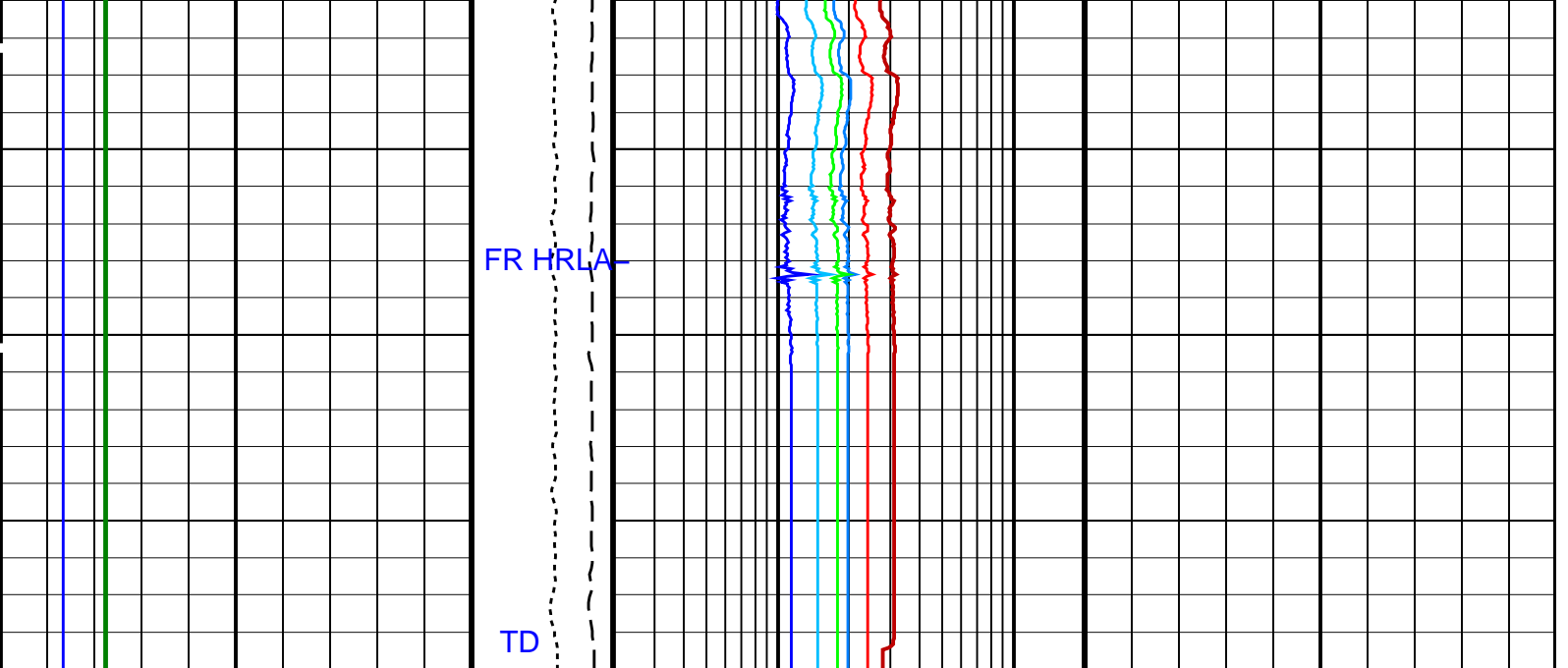
Time Mark Every 60 S

1st Pass, Sea Floor Depth Reference

		HRLT True Resistivity (RT_HRLT)				
		0.2	(OHMM)	20		
		HRLT Resistivity 1 (RLA1)				
		0.2	(OHMM)	20		
		HRLT Resistivity 2 (RLA2)				
		0.2	(OHMM)	20		
		HRLT Resistivity 3 (RLA3)				
		0.2	(OHMM)	20		
HNGS Spectroscopy Gamma Ray (HSGR)		Calibrated Downhole Force (CDF) (LBF)		HRLT Resistivity 5 (RLA5)		
0	(GAPI)	75		0.2	(OHMM)	20
		10000	0			HLDS HR Bulk Density Correction (HBDC)
						-0.25
						(G/C3)
						0.25
HLDS Caliper (LCAL)		Tension (TENS) (LBF)		HRLT Resistivity 4 (RLA4)		HLDS HR Bulk Density (HROM)
0	(IN)	20		0.2	(OHMM)	20
		10000	0			0
						(G/C3)
						4







HLDS Caliper (LCAL) 0 (IN) 20	Tension (TENS) (LBF) 10000 0	HRLT Resistivity 4 (RLA4) 0.2 (OHMM) 20	HLDS HR Bulk Density (HROM) 0 (G/C3) 4
HNGS Spectroscopy Gamma Ray (HSGR) (GAPI) 0 75	Calibrated Downhole Force (CDF) (LBF) 10000 0	HRLT Resistivity 5 (RLA5) 0.2 (OHMM) 20	HLDS HR Bulk Density Correction (HBDC) -0.25 (G/C3) 0.25
1st Pass, Sea Floor Depth Reference		HRLT Resistivity 3 (RLA3) 0.2 (OHMM) 20	
		HRLT Resistivity 2 (RLA2) 0.2 (OHMM) 20	
		HRLT Resistivity 1 (RLA1) 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	
HRLT-B: High Resolution Laterolog Array - B			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	100	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	27.7815	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
GRGD	Geothermal Gradient	0.018227	DC/M
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	
PROCNFL	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	20	DEGC
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	
HNGB-BA: 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)	100	DEGC
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGB Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
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	-0.00196772	
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	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGB Detector 1 Variable Barite Factor Running Average	1.01997	
VBA2	HNGB Detector 2 Variable Barite Factor Running Average	1.01506	
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	100	DEGC
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	0.018227	DC/M
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	
MCOB	Mud Correction	NATU	

MWCO	Mud Correction	NO	
PTCO	Mud Weight Correction Option	NO	
SDAT	Pressure/Temperature Correction Option	NO	
SHT	Standoff Data Source	SOCN	
SOCN	Surface Hole Temperature	20	DEGC
SOCO	Standoff Distance	0	IN
TPOS_EDTC	Standoff Correction Option	NO	
U-ETELM_EDTS	EDTC Tool Centered/Eccentered	Eccentered	
U-TELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	
	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	13.375	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.08	G/C3
DO	Depth Offset for Playback	-2490.0	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	OFF	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	2720	M
TDD	Total Depth - Driller	3300.00	M
TDL	Total Depth - Logger	2760.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo Vertical Scale: 1:200 Graphics File Created: 24-Mar-2012 20:44

OP System Version: 19C0-187

MSS_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
EDTC-B	SKK-5169-EDTCB		

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_039PUP	FN:56	PRODUCER	24-Mar-2012 20:33	2713.5 M	2606.2 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_041PUP	FN:58	PRODUCER	24-Mar-2012 20:44
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Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High Resolution Laterolog Array - B Wellsite Calibration - HRLT M01							
Before: 23-Mar-2012 6:19 After: 23-Mar-2012 10:12							
HRLT M0-M1 Voltage Plus - 0	0	N/A	-318.5	-318.7	-0.1793	9.681	UV
HRLT M0-M1 Voltage Plus - 1	0	N/A	-325.9	-328.3	-2.351	9.681	UV
HRLT M0-M1 Voltage Plus - 2	0	N/A	-328.8	-330.6	-1.802	9.681	UV
HRLT M0-M1 Voltage Plus - 3	0	N/A	-334.0	-335.2	-1.195	9.681	UV
HRLT M0-M1 Voltage Plus - 4	0	N/A	-324.3	-324.8	-0.4844	9.681	UV
HRLT M0-M1 Voltage Plus - 5	0	N/A	-320.8	-321.2	-0.3915	9.681	UV
HRLT M0-M1 Voltage Plus - 6	0	N/A	317.1	320.5	3.338	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: 23-Mar-2012 6:19 After: 23-Mar-2012 10:12							
HRLT M1-M2 Voltage Plus - 0	0	N/A	1752	1752	0.01233	53.42	UV
HRLT M1-M2 Voltage Plus - 1	0	N/A	1791	1803	12.27	53.42	UV
HRLT M1-M2 Voltage Plus - 2	0	N/A	1802	1811	9.416	53.42	UV
HRLT M1-M2 Voltage Plus - 3	0	N/A	1831	1837	6.161	53.42	UV
HRLT M1-M2 Voltage Plus - 4	0	N/A	1780	1782	1.948	53.42	UV
HRLT M1-M2 Voltage Plus - 5	0	N/A	1762	1764	1.738	53.42	UV
HRLT M1-M2 Voltage Plus - 6	0	N/A	-1750	-1768	-17.94	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: 23-Mar-2012 6:19 After: 23-Mar-2012 10:12							
HRLT M2-M3 Voltage Plus - 0	0	N/A	1738	1737	-1.184	53.42	UV

HRLT M2-M3 Voltage Plus - 1	0	N/A	1790	1800	10.38	53.42	UV
HRLT M2-M3 Voltage Plus - 2	0	N/A	1802	1810	7.970	53.42	UV
HRLT M2-M3 Voltage Plus - 3	0	N/A	1835	1840	5.106	53.42	UV
HRLT M2-M3 Voltage Plus - 4	0	N/A	1777	1777	0.7261	53.42	UV
HRLT M2-M3 Voltage Plus - 5	0	N/A	1759	1760	0.7565	53.42	UV
HRLT M2-M3 Voltage Plus - 6	0	N/A	-1739	-1754	-15.87	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: 23-Mar-2012 6:19 After: 23-Mar-2012 10:12

HRLT A3-A4 Voltage Plus - 0	0	N/A	68270	68310	40.15	2100	UV
HRLT A3-A4 Voltage Plus - 1	0	N/A	70080	70600	523.0	2100	UV
HRLT A3-A4 Voltage Plus - 2	0	N/A	70860	71260	396.0	2100	UV
HRLT A3-A4 Voltage Plus - 3	0	N/A	72410	72690	279.3	2100	UV
HRLT A3-A4 Voltage Plus - 4	0	N/A	70090	70200	111.0	2100	UV
HRLT A3-A4 Voltage Plus - 5	0	N/A	69420	69530	111.3	2100	UV
HRLT A3-A4 Voltage Plus - 6	0	N/A	-67110	-67810	-698.6	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: 23-Mar-2012 6:19 After: 23-Mar-2012 10:12

HRLT A4-A5 Voltage Plus - 0	0	N/A	68530	68580	53.32	2100	UV
HRLT A4-A5 Voltage Plus - 1	0	N/A	70490	70980	491.0	2100	UV
HRLT A4-A5 Voltage Plus - 2	0	N/A	71230	71610	383.7	2100	UV
HRLT A4-A5 Voltage Plus - 3	0	N/A	72750	73030	280.1	2100	UV
HRLT A4-A5 Voltage Plus - 4	0	N/A	70390	70500	114.3	2100	UV
HRLT A4-A5 Voltage Plus - 5	0	N/A	69700	69810	103.5	2100	UV
HRLT A4-A5 Voltage Plus - 6	0	N/A	-67480	-68190	-715.1	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: 23-Mar-2012 6:19 After: 23-Mar-2012 10:12

HRLT A5-A6 Voltage Plus - 0	0	N/A	68430	68480	52.69	2100	UV
HRLT A5-A6 Voltage Plus - 1	0	N/A	70190	70700	514.8	2100	UV
HRLT A5-A6 Voltage Plus - 2	0	N/A	70980	71390	408.3	2100	UV
HRLT A5-A6 Voltage Plus - 3	0	N/A	72550	72840	289.2	2100	UV
HRLT A5-A6 Voltage Plus - 4	0	N/A	70240	70380	134.4	2100	UV
HRLT A5-A6 Voltage Plus - 5	0	N/A	69600	69700	104.2	2100	UV
HRLT A5-A6 Voltage Plus - 6	0	N/A	-67210	-67920	-710.8	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: 23-Mar-2012 6:19 After: 23-Mar-2012 10:12

HRLT Torpedo-M0 Voltage - 0	0	N/A	-68140	-68160	-23.36	2100	UV
HRLT Torpedo-M0 Voltage - 1	0	N/A	-70540	-71040	-498.1	2100	UV
HRLT Torpedo-M0 Voltage - 2	0	N/A	-71290	-71680	-385.6	2100	UV
HRLT Torpedo-M0 Voltage - 3	0	N/A	-72870	-73120	-252.4	2100	UV
HRLT Torpedo-M0 Voltage - 4	0	N/A	-70470	-70560	-99.58	2100	UV
HRLT Torpedo-M0 Voltage - 5	0	N/A	-69760	-69850	-87.16	2100	UV
HRLT Torpedo-M0 Voltage - 6	0	N/A	67500	68180	676.2	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: 23-Mar-2012 6:19 After: 23-Mar-2012 10:12

HRLT Bridle#9-M0 Voltage - 0	0	N/A	-68140	-68150	-10.78	2100	UV
HRLT Bridle#9-M0 Voltage - 1	0	N/A	-70510	-71010	-499.8	2100	UV
HRLT Bridle#9-M0 Voltage - 2	0	N/A	-71270	-71660	-391.8	2100	UV
HRLT Bridle#9-M0 Voltage - 3	0	N/A	-72850	-73110	-258.2	2100	UV
HRLT Bridle#9-M0 Voltage - 4	0	N/A	-70460	-70560	-100.8	2100	UV
HRLT Bridle#9-M0 Voltage - 5	0	N/A	-69750	-69840	-87.17	2100	UV
HRLT Bridle#9-M0 Voltage - 6	0	N/A	67480	68160	675.3	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: 23-Mar-2012 6:19 After: 23-Mar-2012 10:12

HRLT Source Current Plus - 0	0	N/A	284.1	284.2	0.1523	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: 23-Mar-2012 6:19 After: 23-Mar-2012 10:12

HRLT Vertical Voltage PI - 0	0	N/A	-321.0	-320.8	0.2527	9.681	UV
HRLT Vertical Voltage PI - 1	0	N/A	-320.2	-322.3	-2.091	9.681	UV
HRLT Vertical Voltage PI - 2	0	N/A	-322.4	-323.7	-1.374	9.681	UV
HRLT Vertical Voltage PI - 3	0	N/A	-325.9	-326.8	-0.8481	9.681	UV
HRLT Vertical Voltage PI - 4	0	N/A	-313.8	-314.1	-0.2372	9.681	UV
HRLT Vertical Voltage PI - 5	0	N/A	225.5	225.6	0.1270	9.681	UV

HRLT Vertical Voltage PI - 5	0	N/A	-325.3	-325.6	-0.1370	9.681	UV
HRLT Vertical Voltage PI - 6	0	N/A	324.1	327.3	3.177	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: 28-Feb-2012 2:19	Before: 28-Feb-2012 2:36	After: 23-Mar-2012 10:26					
SS Cs Resolution Bkg	9.000	8.563	8.511	8.496	-0.01511	1.800	%
LS Cs Resolution Bkg	9.000	8.637	8.632	8.647	0.01452	1.800	%
LSW1 Background	100.0	71.69	71.37	70.24	-1.134	3.000	CPS
LSW2 Background	100.0	65.72	64.67	64.96	0.2939	3.000	CPS
LSW3 Background	200.0	147.7	146.0	145.8	-0.2027	6.000	CPS
LSW4 Background	250.0	178.3	178.0	179.0	0.9563	7.500	CPS
LSW5 Background	600.0	402.3	401.7	401.2	-0.4990	18.00	CPS
SSW1 Background	100.0	68.69	69.17	67.93	-1.243	3.000	CPS
SSW2 Background	200.0	121.6	122.1	122.8	0.7064	6.000	CPS
SSW3 Background	500.0	321.9	321.7	320.7	-0.9835	15.00	CPS
SSW4 Background	270.0	172.2	173.0	172.1	-0.9365	8.100	CPS
SSW5 Background	200.0	123.5	123.8	122.3	-1.475	6.000	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement

Master: 28-Feb-2012 2:19							
LSW1 Aluminum	600.0	521.9	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	758.2	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	921.8	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	463.1	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	428.2	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2229	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6354	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9261	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	3871	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	518.3	N/A	N/A	N/A	N/A	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement

Master: 28-Feb-2012 2:19							
LSW1 Iron	400.0	352.2	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	613.7	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	811.4	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	425.3	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	389.1	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1664	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5327	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8450	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3532	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	458.1	N/A	N/A	N/A	N/A	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration

Before: 28-Feb-2012 2:41							
HLDS Caliper Small Ring	12.00	N/A	13.84	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	17.47	N/A	N/A	N/A	IN

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check

Master: 26-Feb-2012 20:15	Before: 6-Mar-2012 18:49	After: 23-Mar-2012 10:25					
Na 511 Peak Loc	40.00	39.64	39.54	39.65	0.1075	1.000	
Na 511 Peak Res	15.50	14.75	15.72	15.01	-0.7085	2.000	%
High Voltage	1150	1169	1182	1178	-4.063	N/A	V
Na 1785 Peak Loc	142.6	141.6	141.5	142.1	0.6576	7.000	
Na 1785 Peak Res	8.500	8.869	8.671	8.080	-0.5915	2.000	%
Temperature	15.50	26.03	31.35	29.99	-1.353	N/A	DEGC
Na Count Rate	45.00	19.34	19.64	19.32	-0.3184	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check

Master: 26-Feb-2012 20:15	Before: 6-Mar-2012 18:49	After: 23-Mar-2012 10:25					
Na 511 Peak Loc	40.00	39.65	39.61	39.84	0.2272	1.000	
Na 511 Peak Res	15.50	16.96	15.84	16.07	0.2299	2.000	%
High Voltage	1150	1100	1109	1111	1.639	N/A	V
Na 1785 Peak Loc	142.6	142.2	141.4	143.1	1.635	7.000	
Na 1785 Peak Res	8.500	7.801	8.832	7.500	-1.332	2.000	%
Temperature	15.50	26.16	31.73	31.41	-0.3105	N/A	DEGC
Na Count Rate	45.00	19.53	20.28	19.70	-0.5755	8.000	CPS

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

Master: 26-Feb-2012 20:15	Before: 6-Mar-2012 18:49	After: 23-Mar-2012 10:25				
Coincidence Count Rate Ratio	1.000	0.9899	0.9701	0.9835	0.01340	0.05000

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration

Master: 26-Feb-2012 20:03							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	210.0	--	--	--	--	
Th Peak Res	7.000	6.521	--	--	--	--	%
Background Count Rate	142.5	18.97	--	--	--	--	CPS
Gain Ratio	1.000	1.008	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration – Detector 2 Calibration

Master: 26-Feb-2012 20:03

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	207.8	--	--	--	--	
Th Peak Res	7.000	6.775	--	--	--	--	%
Background Count Rate	142.5	18.84	--	--	--	--	CPS
Gain Ratio	1.000	0.9969	--	--	--	--	

Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration

Before: 23-Mar-2012 6:19

EDTC Z-Axis Acceleration	9.810	N/A	9.742	N/A	N/A	N/A	M/S2
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Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration

Before: 4-Mar-2012 17:35

Gamma Ray (Jig – Bkg)	159.9	N/A	159.9	N/A	N/A	14.53	GAPI
Gamma Ray (Calibrated)	164.0	N/A	164.0	N/A	N/A	15.00	GAPI

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		-318.5	-322.7	-280.7	-379.7
	After		-318.7			
1	Before		-325.9	-322.7	-280.7	-379.7
	After		-328.3			
2	Before		-328.8	-322.7	-280.7	-379.7
	After		-330.6			
3	Before		-334.0	-322.7	-280.7	-379.7
	After		-335.2			
4	Before		-324.3	-322.7	-280.7	-379.7
	After		-324.8			
5	Before		-320.8	-322.7	-280.7	-379.7
	After		-321.2			
6	Before		317.1	322.7	379.7	280.7
	After		320.5			
7	Before		-322.7	-322.7	-280.7	-379.7
	After		-322.7			
		(Minimum) (Nominal) (Maximum)				

Before: 23-Mar-2012 6:19

After: 23-Mar-2012 10:12

High Resolution Laterolog Array – B Wellsite Calibration

HRLT M12

Idx	Phase	HRLT M1-M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1752	1781	2095	1549
	After		1752			
1	Before		1791	1781	2095	1549
	After					

Idx	Phase	HRLT M2-M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
2	After		1803	1781	2095	1549
	Before		1802			
3	After		1811	1781	2095	1549
	Before		1831			
4	After		1782	1781	2095	1549
	Before		1780			
5	After		1764	1781	2095	1549
	Before		1762			
6	After		-1768	-1781	-1549	-2095
	Before		-1750			
7	After		1781	1781	2095	1549
	Before		1781			
			(Minimum)	(Nominal)	(Maximum)	

Before: 23-Mar-2012 6:19

After: 23-Mar-2012 10:12

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT M23						
Idx	Phase	HRLT M2-M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	After		1738	1781	2095	1549
	Before		1737			
1	After		1800	1781	2095	1549
	Before		1790			
2	After		1810	1781	2095	1549
	Before		1802			
3	After		1840	1781	2095	1549
	Before		1835			
4	After		1777	1781	2095	1549
	Before		1777			
5	After		1760	1781	2095	1549
	Before		1759			
6	After		-1754	-1781	-1549	-2095
	Before		-1739			
7	After		1781	1781	2095	1549
	Before		1781			
			(Minimum)	(Nominal)	(Maximum)	

Before: 23-Mar-2012 6:19

After: 23-Mar-2012 10:12

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V34						
Idx	Phase	HRLT A3-A4 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	After		68310	70000	82360	60900
	Before		68270			
1	After		70600	70000	82360	60900
	Before		70080			
2	After		70860	70000	82360	60900
	Before		70860			

Idx	Phase	HRLT A4-A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
3	After		71260	70000	82360	60900
	Before		72410			
	After		72690			
4	Before		70090	70000	82360	60900
	After		70200			
5	Before		69420	70000	82360	60900
	After		69530			
6	Before		-67110	-70000	-60900	-82360
	After		-67810			
7	Before		70000	70000	82360	60900
	After		70000			
(Minimum) (Nominal) (Maximum)						

Before: 23-Mar-2012 6:19
After: 23-Mar-2012 10:12

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V45						
Idx	Phase	HRLT A4-A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68530	70000	82360	60900
	After		68580			
1	Before		70490	70000	82360	60900
	After		70980			
2	Before		71230	70000	82360	60900
	After		71610			
3	Before		72750	70000	82360	60900
	After		73030			
4	Before		70390	70000	82360	60900
	After		70500			
5	Before		69700	70000	82360	60900
	After		69810			
6	Before		-67480	-70000	-60900	-82360
	After		-68190			
7	Before		70000	70000	82360	60900
	After		70000			
(Minimum) (Nominal) (Maximum)						

Before: 23-Mar-2012 6:19
After: 23-Mar-2012 10:12

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V56						
Idx	Phase	HRLT A5-A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68430	70000	82360	60900
	After		68480			
1	Before		70190	70000	82360	60900
	After		70700			
2	Before		70980	70000	82360	60900
	After		71390			
3	Before		72550	70000	82360	60900
	After		72550			

	Phase	HRLT Torpedo-M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
4	Before		72840	70000	82360	60900
	After		70380			
5	Before		69600	70000	82360	60900
	After		69700			
6	Before		-67210	-70000	-60900	-82360
	After		-67920			
7	Before		70000	70000	82360	60900
	After		70000			
			(Minimum)	(Nominal)	(Maximum)	
Before: 23-Mar-2012 6:19						
After: 23-Mar-2012 10:12						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT VTP						
Idx	Phase	HRLT Torpedo-M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-68140	-70000	-60900	-82360
	After		-68160			
1	Before		-70540	-70000	-60900	-82360
	After		-71040			
2	Before		-71290	-70000	-60900	-82360
	After		-71680			
3	Before		-72870	-70000	-60900	-82360
	After		-73120			
4	Before		-70470	-70000	-60900	-82360
	After		-70560			
5	Before		-69760	-70000	-60900	-82360
	After		-69850			
6	Before		67500	70000	82360	60900
	After		68180			
7	Before		-70000	-70000	-60900	-82360
	After		-70000			
			(Minimum)	(Nominal)	(Maximum)	
Before: 23-Mar-2012 6:19						
After: 23-Mar-2012 10:12						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT VBD						
Idx	Phase	HRLT Torpedo-M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-68140	-70000	-60900	-82360
	After		-68150			
1	Before		-70510	-70000	-60900	-82360
	After		-71010			
2	Before		-71270	-70000	-60900	-82360
	After		-71660			
3	Before		-72850	-70000	-60900	-82360
	After		-73110			
4	Before		-70460	-70000	-60900	-82360
	After		-70460			

	After		-70560	-70000	-60900	-82360
5	Before		-69750	-70000	-60900	-82360
	After		-69840			
6	Before		67480	70000	82360	60900
	After		68160			
7	Before		-70000	-70000	-60900	-82360
	After		-70000			
(Minimum) (Nominal) (Maximum)						

Before: 23-Mar-2012 6:19
 After: 23-Mar-2012 10:12

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT ISO						
Idx	Phase	HRLT Source Current Plus UA	Value	Nominal	Maximum	Minimum
0	Before		284.1	284.0	334.1	247.0
	After		284.2			
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: 23-Mar-2012 6:19
 After: 23-Mar-2012 10:12

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT MV						
Idx	Phase	HRLT Vertical Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-321.0	-322.7	-280.7	-379.7
	After		-320.8			
1	Before		-320.2	-322.7	-280.7	-379.7
	After		-322.3			
2	Before		-322.4	-322.7	-280.7	-379.7
	After		-323.7			
3	Before		-325.9	-322.7	-280.7	-379.7
	After		-326.8			
4	Before		-313.8	-322.7	-280.7	-379.7
	After		-314.1			
5	Before		-325.5	-322.7	-280.7	-379.7

6	After		-325.6	322.7	379.7	280.7	
	Before		324.1				
	After		327.3				
7	Before		-322.7	-322.7	-280.7	-379.7	
	After		-322.7				
		(Minimum)	(Nominal)	(Maximum)			
Before: 23-Mar-2012 6:19							
After: 23-Mar-2012 10:12							

Hostile Litho-Density Sonde / Equipment Identification

Primary Equipment:

Hostile Litho Density Sonde	HLDS - D	57
Hostile Litho Density High Voltage	HLDV - D	51
Gamma Source Radioactive	GSR - Z	2397

Auxiliary Equipment:

Hostile Litho Density Pad	HLDP - C	61
Hostile Litho Density High Voltage Housi	HEH - H	53

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		8.563	Master		8.637	Master		71.69
Before		8.511	Before		8.632	Before		71.37
After		8.496	After		8.647	After		70.24
7.000 (Minimum) 9.000 (Nominal) 11.000 (Maximum)			7.000 (Minimum) 9.000 (Nominal) 11.000 (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		65.72	Master		147.7	Master		178.3
Before		64.67	Before		146.0	Before		178.0
After		64.96	After		145.8	After		179.0
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		402.3	Master		68.69	Master		121.6
Before		401.7	Before		69.17	Before		122.1
After		401.2	After		67.93	After		122.8
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		321.9	Master		172.2	Master		123.5
Before		321.7	Before		173.0	Before		123.8
After		320.7	After		172.1	After		122.3
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)		
Master: 28-Feb-2012 2:19			Before: 28-Feb-2012 2:36			After: 23-Mar-2012 10:26		

Hostile Litho-Density Sonde Master Calibration

Detector Background Measurement

Phase	LSW1 Background CPS	Value	Phase	LSW2 Background CPS	Value	Phase	LSW3 Background CPS	Value
Master		71.69	Master		65.72	Master		147.7
55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)			50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)			110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)		
Phase	LSW4 Background CPS	Value	Phase	LSW5 Background CPS	Value	Phase	LS Cs Resolution Bkg %	Value
Master		178.3	Master		402.3	Master		8.637
140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)			330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)			7.000 (Minimum) 9.000 (Nominal) 11.000 (Maximum)		

Phase	SSW1 Background CPS	Value	Phase	SSW2 Background CPS	Value	Phase	SSW3 Background CPS	Value
Master		68.69	Master		121.6	Master		321.9
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)			100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)			280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)	
Phase	SSW4 Background CPS	Value	Phase	SSW5 Background CPS	Value	Phase	SS Cs Resolution Bkg %	Value
Master		172.2	Master		123.5	Master		8.563
	150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)			110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)			7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Master: 28-Feb-2012 2:19

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		521.9	Master		758.2	Master		921.8
	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		463.1	Master		428.2	Master		2229
	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		6354	Master		9261	Master		3871
	5800 (Minimum) 8000 (Nominal) 9300 (Maximum)			8300 (Minimum) 11600 (Nominal) 13500 (Maximum)			3500 (Minimum) 5000 (Nominal) 5800 (Maximum)	
Phase	SSW5 Aluminum CPS	Value						
Master		518.3						
	430.0 (Minimum) 660.0 (Nominal) 770.0 (Maximum)							

Master: 28-Feb-2012 2:19

Hostile Litho-Density Sonde Master Calibration								
Detector Litholog Measurement (bkgd-subtracted)								
Phase	LSW1 Iron CPS	Value	Phase	LSW2 Iron CPS	Value	Phase	LSW3 Iron CPS	Value
Master		352.2	Master		613.7	Master		811.4
	290.0 (Minimum) 400.0 (Nominal) 560.0 (Maximum)			520.0 (Minimum) 730.0 (Nominal) 950.0 (Maximum)			720.0 (Minimum) 1000 (Nominal) 1350 (Maximum)	
Phase	LSW4 Iron CPS	Value	Phase	LSW5 Iron CPS	Value	Phase	SSW1 Iron CPS	Value
Master		425.3	Master		389.1	Master		1664
	370.0 (Minimum) 520.0 (Nominal) 700.0 (Maximum)			340.0 (Minimum) 470.0 (Nominal) 750.0 (Maximum)			1500 (Minimum) 2100 (Nominal) 2400 (Maximum)	
Phase	SSW2 Iron CPS	Value	Phase	SSW3 Iron CPS	Value	Phase	SSW4 Iron CPS	Value
Master		5327	Master		8450	Master		3532
	4900 (Minimum) 6800 (Nominal) 7900 (Maximum)			7800 (Minimum) 10800 (Nominal) 12600 (Maximum)			3300 (Minimum) 4600 (Nominal) 5400 (Maximum)	
Phase	SSW5 Iron CPS	Value						
Master		458.1						
	420.0 (Minimum) 580.0 (Nominal) 680.0 (Maximum)							

Master: 28-Feb-2012 2:19

Hostile Litho-Density Sonde Master Calibration								
Quality Ratios								
Phase	AL CALIBRATION RATIO 1	Value	Phase	AL CALIBRATION RATIO 2	Value	Phase	AL CALIBRATION RATIO 3	Value
Master		1.034	Master		2.110	Master		0.5856
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			1.900 (Minimum) 2.100 (Nominal) 2.300 (Maximum)			0.4500 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)	
Phase	AL CALIBRATION RATIO 4	Value	Phase	Pad-Wear SS Ratio	Value	Phase	Pad-Wear LS Ratio	Value
Master		0.5078	Master		0.9947	Master		0.9873
	0.4000 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)			0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)			0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)	
Phase	Pad-Position SS Ratio	Value	Phase	Pad-Position LS Ratio	Value			
Master		1.002	Master		0.9860			
	0.9900 (Minimum) 0.9940 (Nominal) 1.015 (Maximum)			0.9850 (Minimum) 0.9940 (Nominal) 1.010 (Maximum)				

Master: 28-Feb-2012 2:19

Litho-Density Spectroscopy Cartridge - B / Equipment Identification

Primary Equipment: LDSC Cartridge	LDSC - B	366
Auxiliary Equipment: LDSC Housing	LDSH - A	126

Hostile Natural Gamma Ray Cartridge - B / Equipment Identification

Primary Equipment: HNGC Cartridge	HNGC - B	300
Auxiliary Equipment: HNGC Housing	HNGH - A	115

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment: HNGS Sonde	HNGS - BA	194
Auxiliary Equipment: HNGS Sonde Housing Gamma Source Radioactive	HNSH - BA GSR - U	205 616008

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value	
Master		39.64	Master		14.75	Master		1169	
Before		39.54	Before		15.72	Before		1182	
After		39.65	After		15.01	After		1178	
	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		141.6	Master		8.869	Master		26.03	
Before		141.5	Before		8.671	Before		31.35	
After		142.1	After		8.080	After		29.99	
	135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)	7.000 (Minimum)	8.500 (Nominal)	11.000 (Maximum)	-28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)
Phase	Na Count Rate CPS	Value							
Master		19.34							
Before		19.64							
After		19.32							
	10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)						
Master: 26-Feb-2012 20:15			Before: 6-Mar-2012 18:49			After: 23-Mar-2012 10:25			

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		39.65	Master		16.96	Master		1100	
Before		39.61	Before		15.84	Before		1109	
After		39.84	After		16.07	After		1111	
	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		142.2	Master		7.801	Master		26.16	

Before		141.4	Before		8.832	Before		31.73
After		143.1	After		7.500	After		31.41
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		19.53						
Before		20.28						
After		19.70						
10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)								
Master: 26-Feb-2012 20:15			Before: 6-Mar-2012 18:49			After: 23-Mar-2012 10:25		

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		0.9899
Before		0.9701
After		0.9835
0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		
Master: 26-Feb-2012 20:15		
Before: 6-Mar-2012 18:49		
After: 23-Mar-2012 10:25		

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		210.0	Master		6.521
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		18.97	Master		1.008			
10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)					
Master: 26-Feb-2012 20:03								

Hostile Natural Gamma Ray Sonde Master Calibration								
Detector 2 Calibration								
Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value
Master		41.00	Master		207.8	Master		6.775
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		18.84	Master		0.9969			
10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)					
Master: 26-Feb-2012 20:03								

Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:
 EDTC Gamma Ray Detector EDTG - A/B 8305
 Enhanced DTS Cartridge EDTC - B 8317

Auxiliary Equipment:
 EDTC Housing EDTH - B 8303

Enhanced DTS Cartridge Wellsite Calibration		
EDTC Accelerometer Calibration		
Phase	EDTC Z-Axis Acceleration M/S2	Value
Before		9.742
9.610 9.810 10.01		

(Minimum) (Nominal) (Maximum)

Before: 23-Mar-2012 6:19

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		7.622	Before		159.9	Before		164.0
	0 (Minimum)			145.3 (Minimum)			149.0 (Minimum)	
	30.00 (Nominal)			159.9 (Nominal)			164.0 (Nominal)	
	120.0 (Maximum)			174.4 (Maximum)			179.0 (Maximum)	

Before: 4-Mar-2012 17:35

Company: **Lamont Doherty Earth Observatory**

Schlumberger

Well: **Expedition 340, Site U1397B**

Field: **Lesser Antilles Volcanism and Landslides**

Rig: **JOIDES Resolution**

Ocean: **Caribbean**

High Resolution Laterolog Array (HRLA)

Hostile Natural Gamma Sonde (HNGS)

HLDS Caliper