

**Company:** Lamont Doherty  
**Well:** Expedition 320, Site U1332A  
**Field:** PEAT  
**Rig:** JOIDES Resolution      **Country:** USA

**Rig:** JOIDES Resolution  
**Field:** PEAT  
**Location:** Pacific Ocean  
**Well:** Expedition 320, Site U1332A  
**Company:** Lamont Doherty

**Lamont Doherty**  
**Magnetic Susceptibility**  
**Uplog**

Pacific Ocean SE of Hawaii	Elev.:	K.B.    11.20 m	G.L.    -4923.90 m
		D.F.    11.20 m	
Permanent Datum: _____		MEAN SEA LEVEL _____	
Log Measured From: _____		DRILL FLOOR _____	
Drilling Measured From: _____		DRILL FLOOR _____	
Ocean: Pacific	Max. Well Deviation 0 deg	Longitude 141° 02.742' W	Latitude 11° 54.707' N

Logging Date	24-Mar-2009		
Run Number	1		
Depth Driller	5087.5 m		
Schlumberger Depth	5087.5 m		
Bottom Log Interval	5086 m		
Top Log Interval	5012 m		
Casing Driller Size @ Depth	5.875 in @ 5127.3 m		
Casing Schlumberger	5127.3 m		
Bit Size	9.875 in		
Type Fluid In Hole	WBM		
Density	1.1 g/cm3		
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	23:00
Unit Number	625003	Location	Houston
Recorded By	C. Furman		
Witnessed By	H. Evans, T. Williams		

Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth		@	
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
Density			
Fluid Loss	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			

Run 1

Run 2

R

DISCLAIMER

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


REMARKS: RUN NUMBER 1

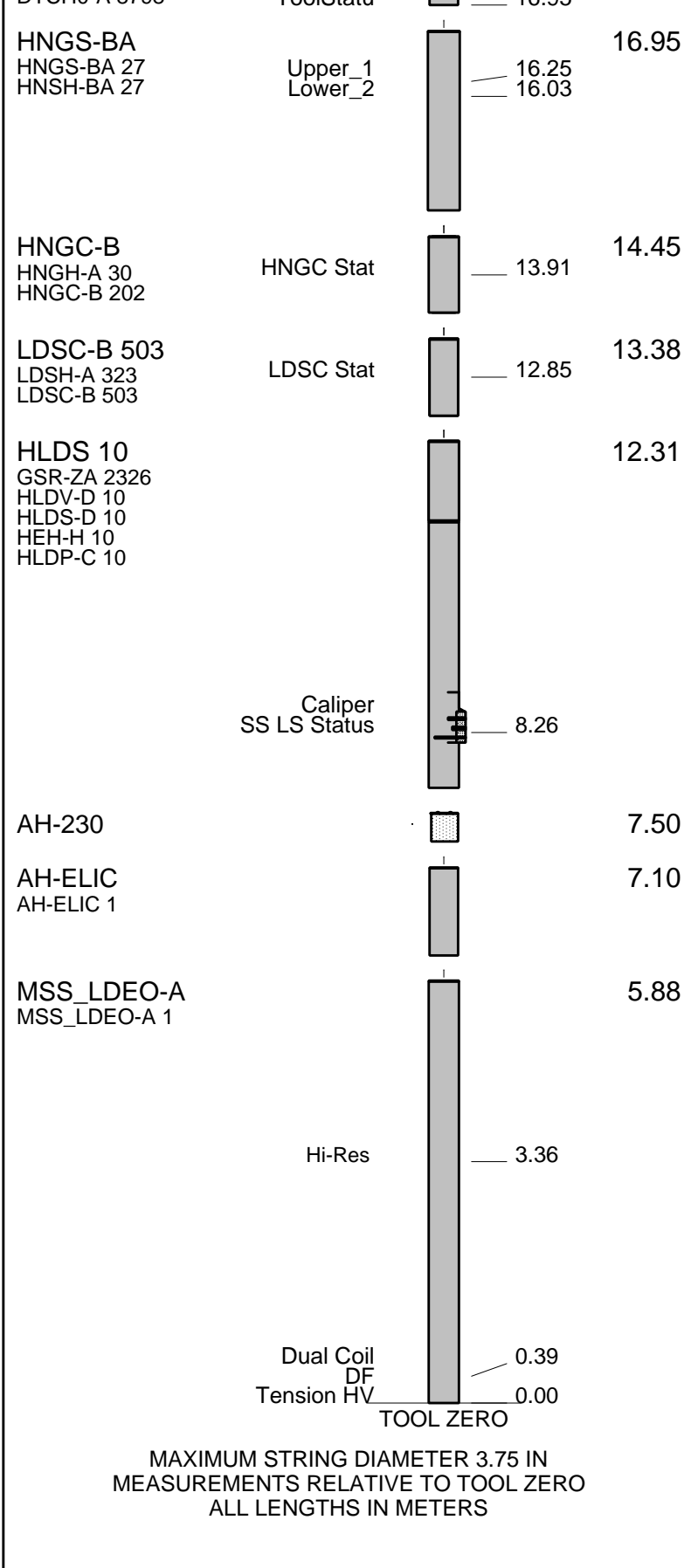
Tools run as per tool sketch with MSS eccentered using integral bowspring devices.  
Logging objective was to verify stratigraphic data in comparison to cores collected immediately prior to logging on Well A of Site U1332.  
Logs run through drill pipe; GR recorded from TD to bottom of drill pipe.  
Tools became stuck on bit or flapper valve at bottom of tool string; cable severed just above head during recovery effort.  
Logs presented over OH interval recorded prior to cable damage.

RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:	17C0-154		PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1	RUN 2
<b>SURFACE EQUIPMENT</b>	
GSR-U 1154 WITM (DTS)-A	

DOWNHOLE EQUIPMENT	
LEH-QT LEH-QT 1726	 18.75
DTC-H ECH-KC 1777 DTCH0-A 8798	CTEM TelStatus ToolStatu 17.58 17.86 16.95



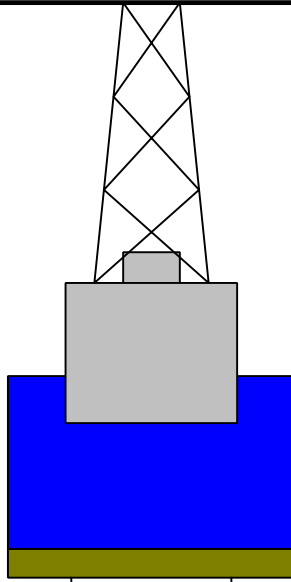
Production String	(in)	(m)	Well Schematic	(m)	(in)	Casing String
	OD	ID		MD	MD	

Kelly Bushing Elevation  
Derrick Floor Elevation

11.2  
11.2

Mean Sea Level

0.0



0.0

5.500

Casing String

All depths are  
in meters,  
measured  
from the drill  
floor



4935.1  
5012.0  
5087.5

9.875  
5.500  
9.875

Sea Bed  
Pipe Bottom  
Total Depth

**Schlumberger**

First Pass

MAXIS Field Log

Company: Lamont Doherty

Well: Expedition 320, Site U1331A

Output DLIS Files

DEFAULT	MSS_LDEO_LDL_NGS_009LUP	FN:8	PRODUCER	24-Mar-2009 23:51	5086.4 M	5010.3 M
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OP System Version: 17C0-154

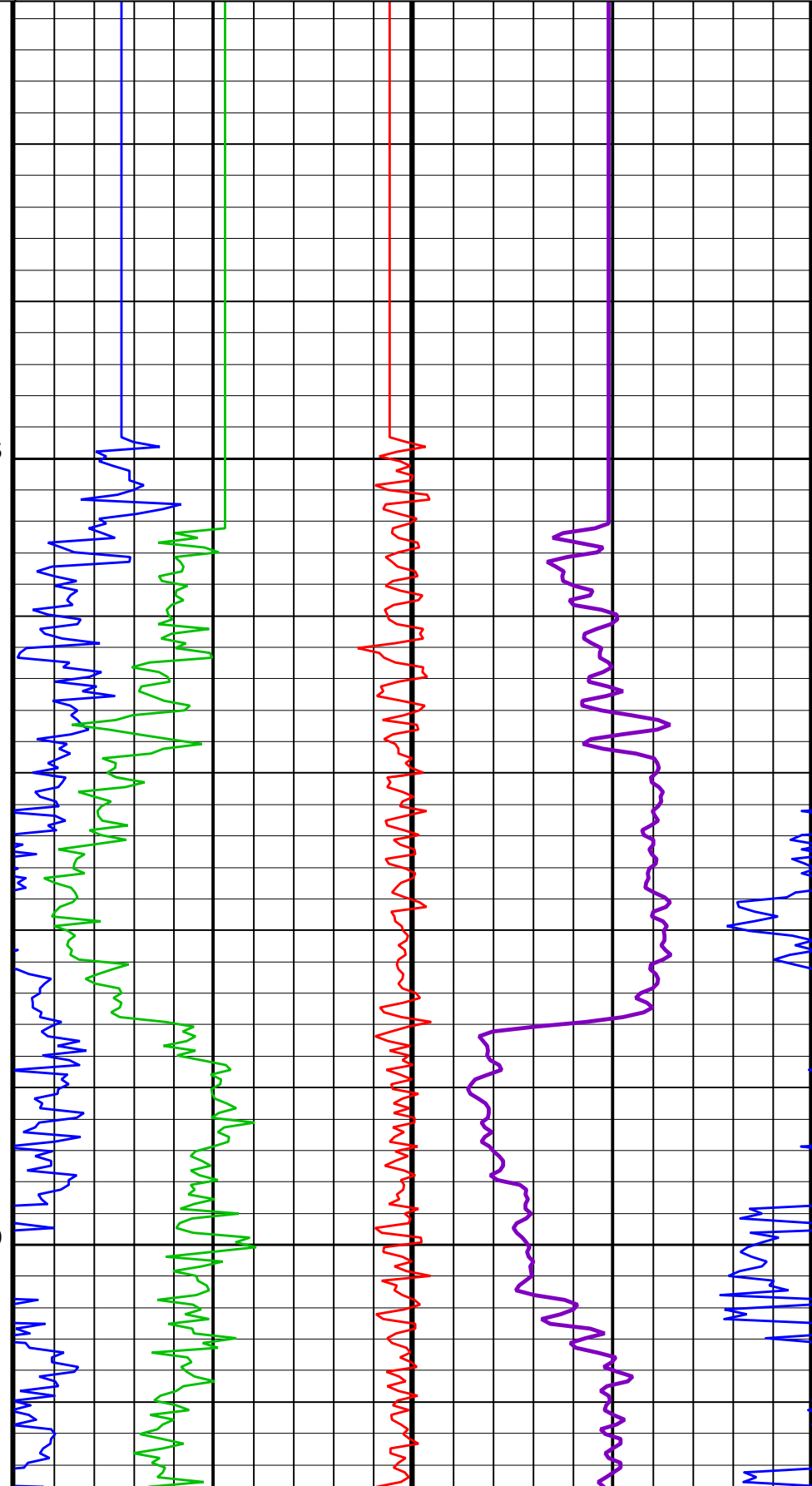
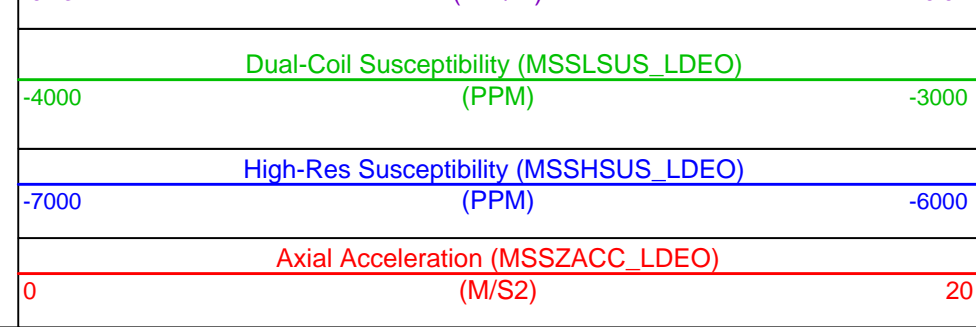
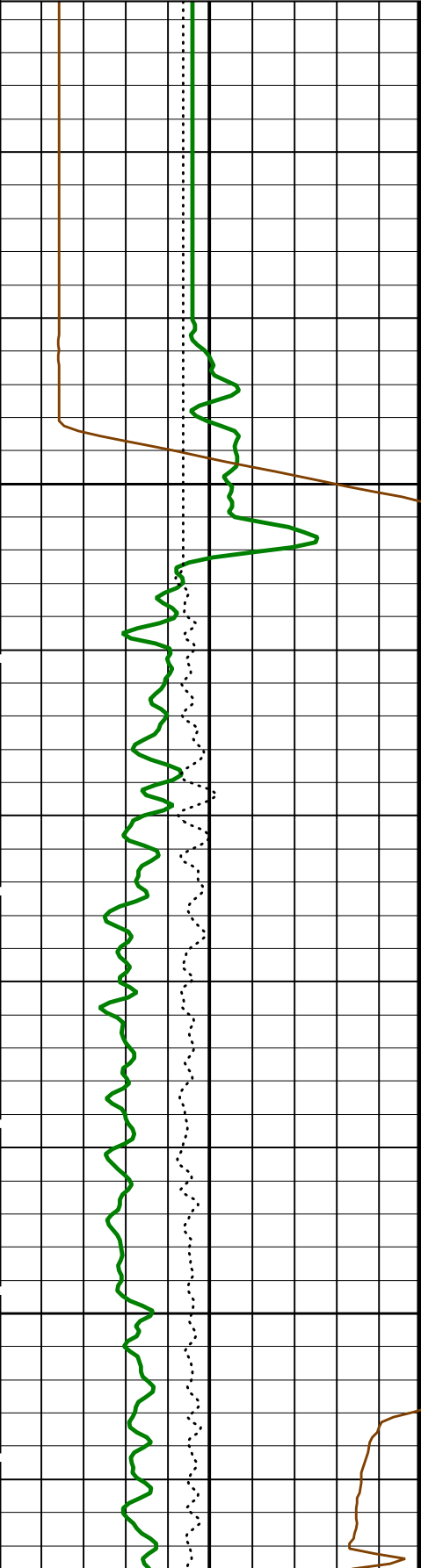
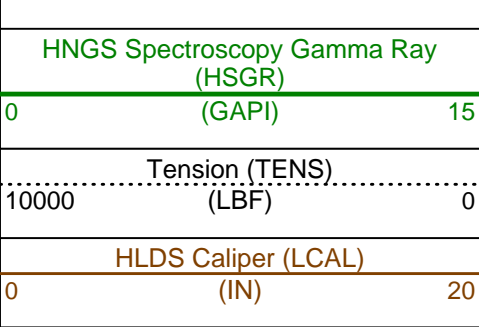
MSS_LDEO-A	17C0-154	HLDS	17C0-154
LDSC-B	17C0-154	HNGC-B	17C0-154
HNGS-BA	17C0-154	DTC-H	17C0-154

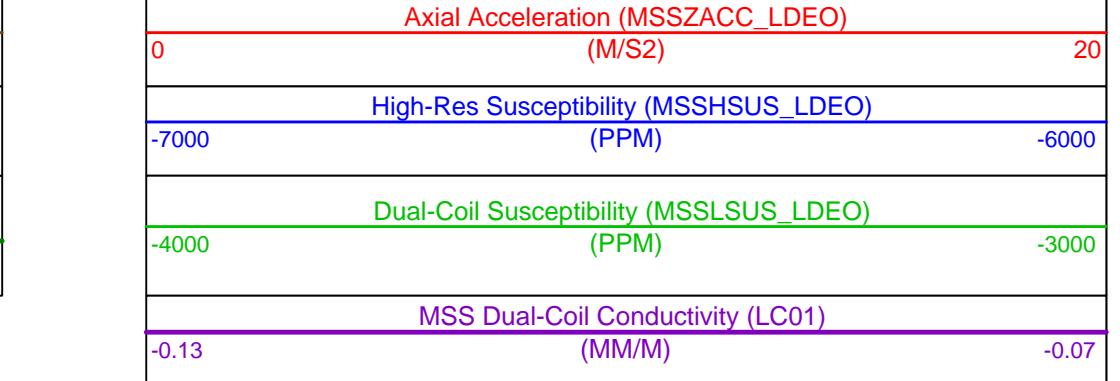
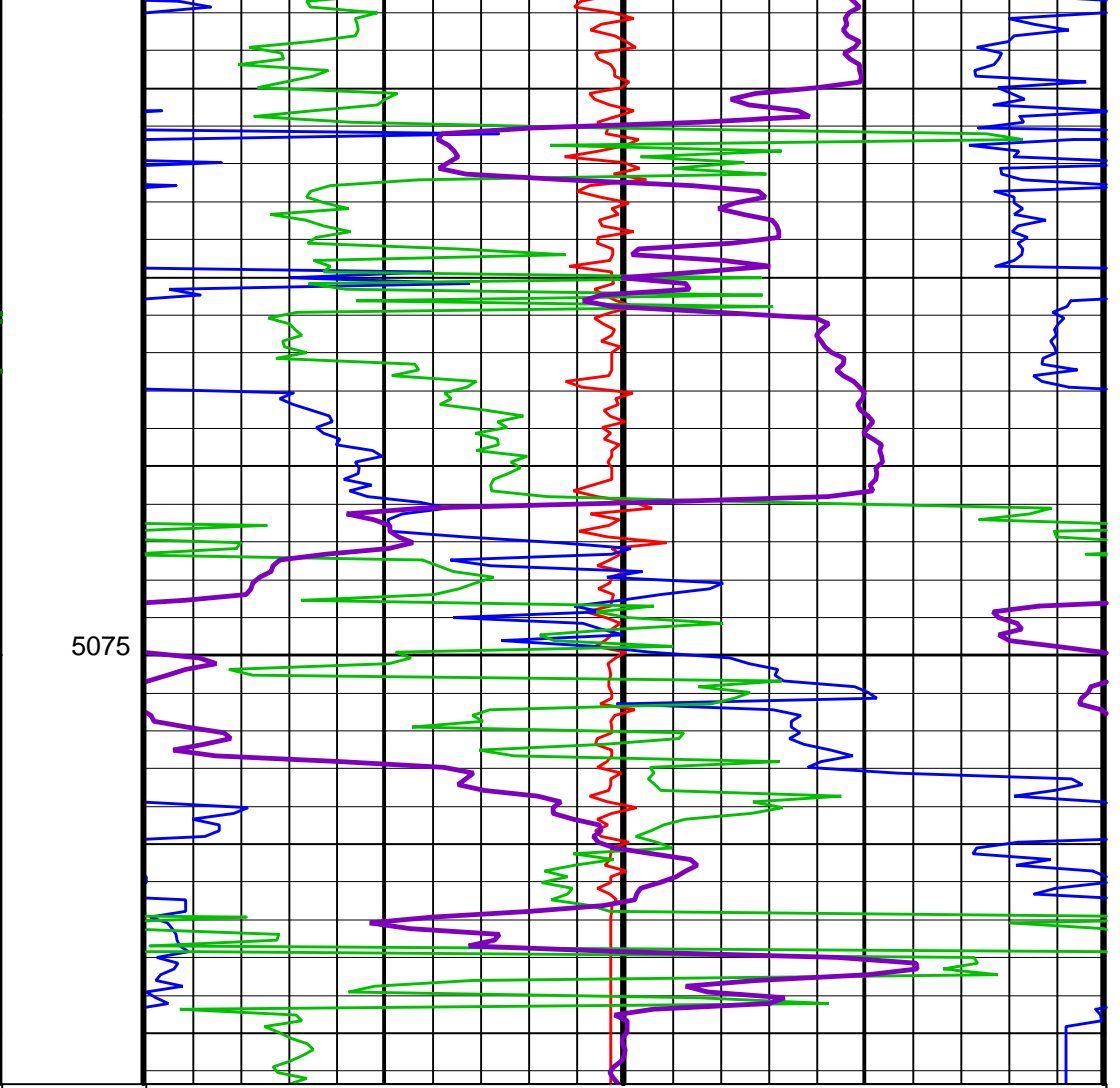
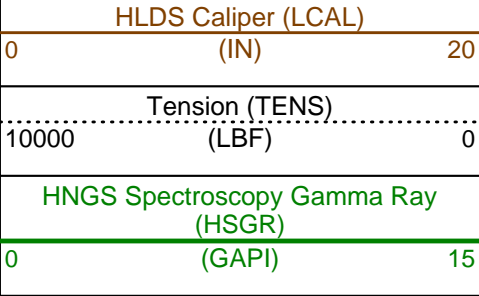
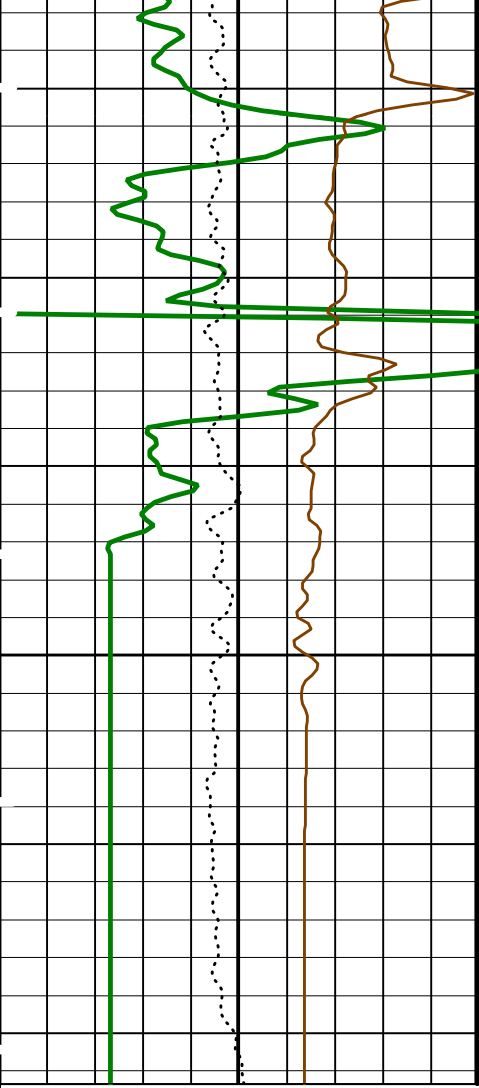
PIP SUMMARY

Time Mark Every 60 S

MSS Dual-Coil Conductivity (LC01)

-0.13	(MM/M)	-0.07
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Time Mark Every 60 S

### Parameters

DLIS Name	Description	Value
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
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
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW
HABK	HNGS Borehole Potassium Running Average	-0.00157452
HALF	HNGS Alpha Filter Length	60 IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE
HMWM	Mud Weighting Material	NATU

HNPE	HNGS Processing Enable	YES	
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	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.11953	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.01889	
BS	System and Miscellaneous Bit Size	9.875	IN

Format: MSS\_Logging Vertical Scale: 1:200 Graphics File Created: 24-Mar-2009 23:51

### OP System Version: 17C0-154

MSS_LDEO-A	17C0-154	HLDS	17C0-154
LDSC-B	17C0-154	HNGC-B	17C0-154
HNGS-BA	17C0-154	DTC-H	17C0-154

### Output DLIS Files

DEFAULT MSS\_LDEO\_LDL\_NGS\_009LUP FN:8 PRODUCER 24-Mar-2009 23:51



## Second Pass

### MAXIS Field Log

Company: Lamont Doherty Well: Expedition 320, Site U1331A

### Output DLIS Files

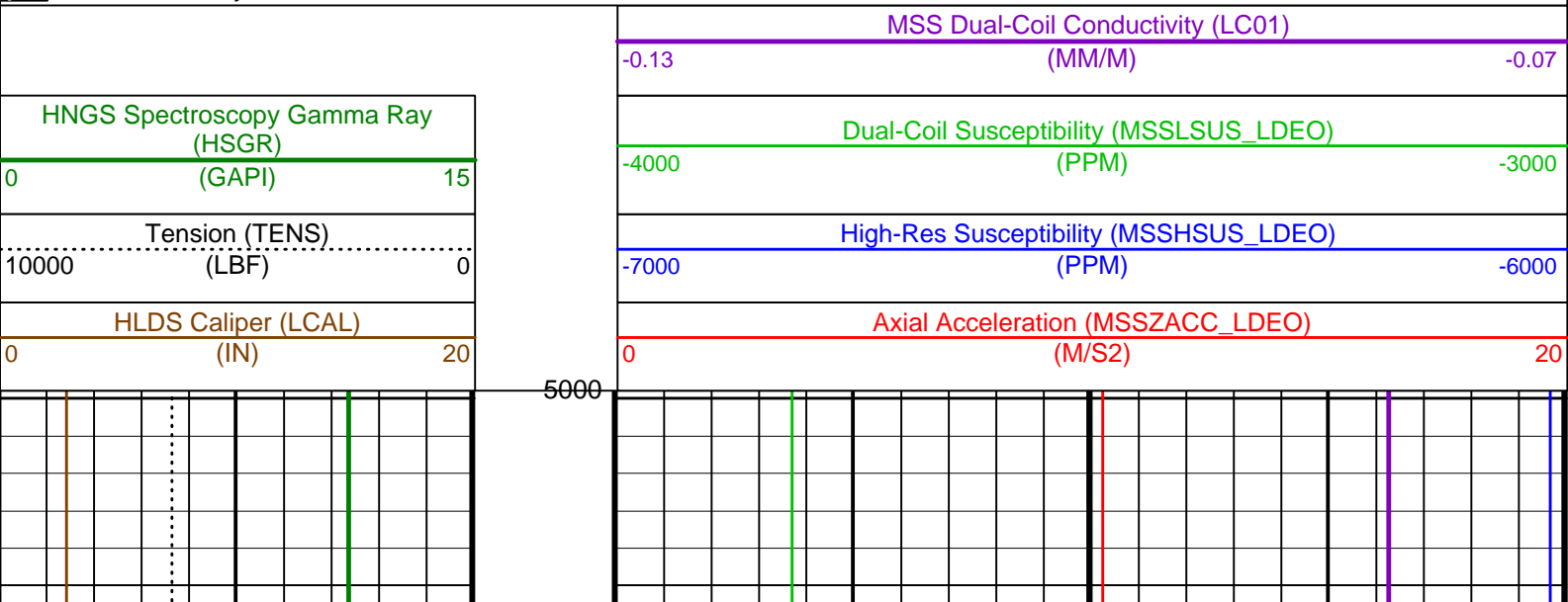
DEFAULT MSS\_LDEO\_LDL\_NGS\_010LUP FN:9 PRODUCER 25-Mar-2009 00:11 5086.4 M 4999.8 M

### OP System Version: 17C0-154

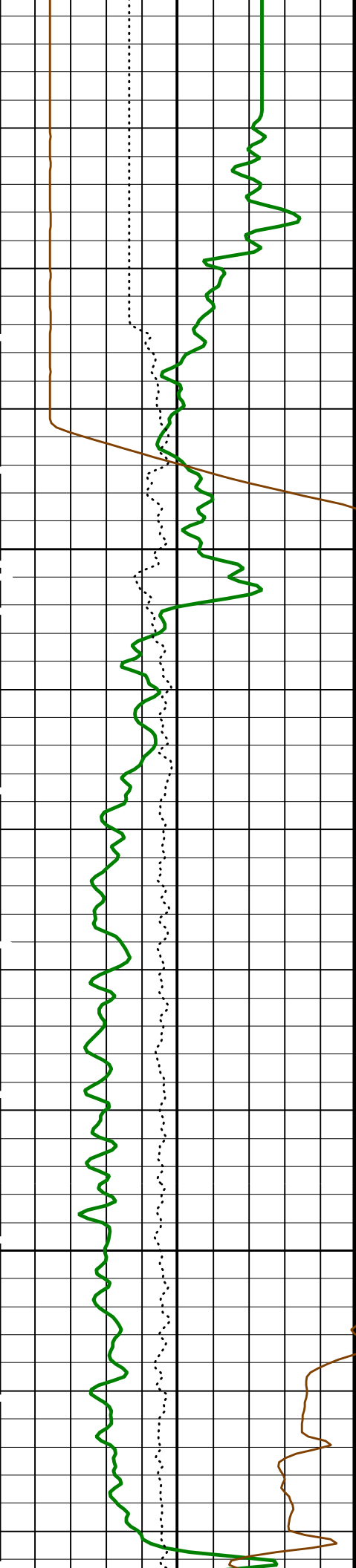
MSS_LDEO-A	17C0-154	HLDS	17C0-154
LDSC-B	17C0-154	HNGC-B	17C0-154
HNGS-BA	17C0-154	DTC-H	17C0-154

### PIP SUMMARY

Time Mark Every 60 S

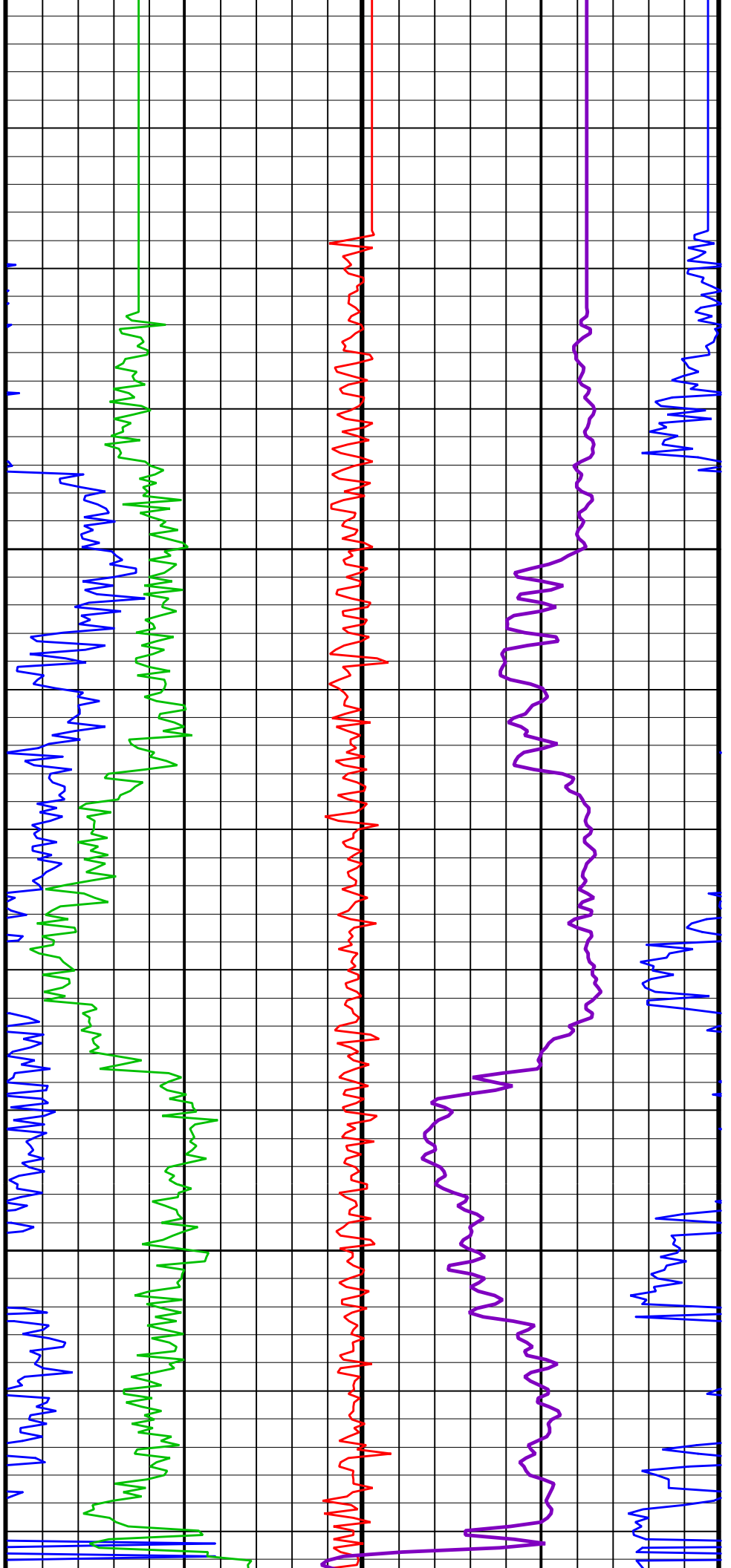


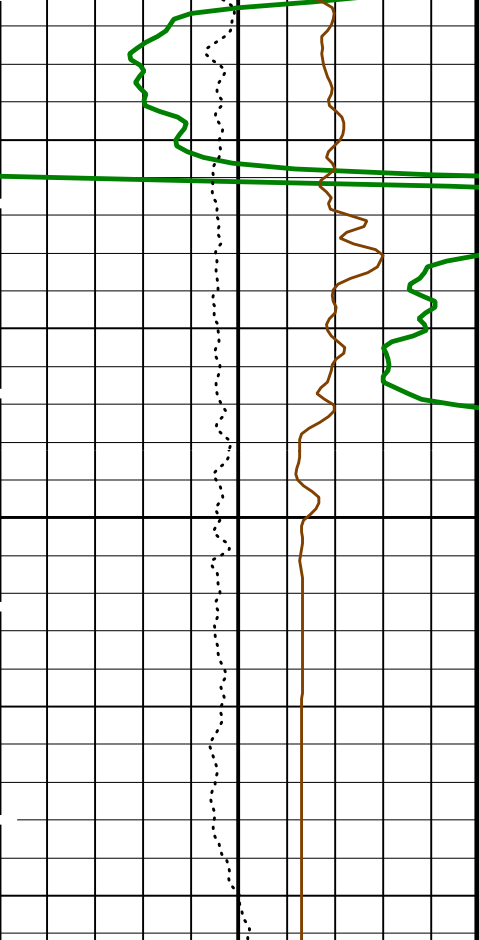




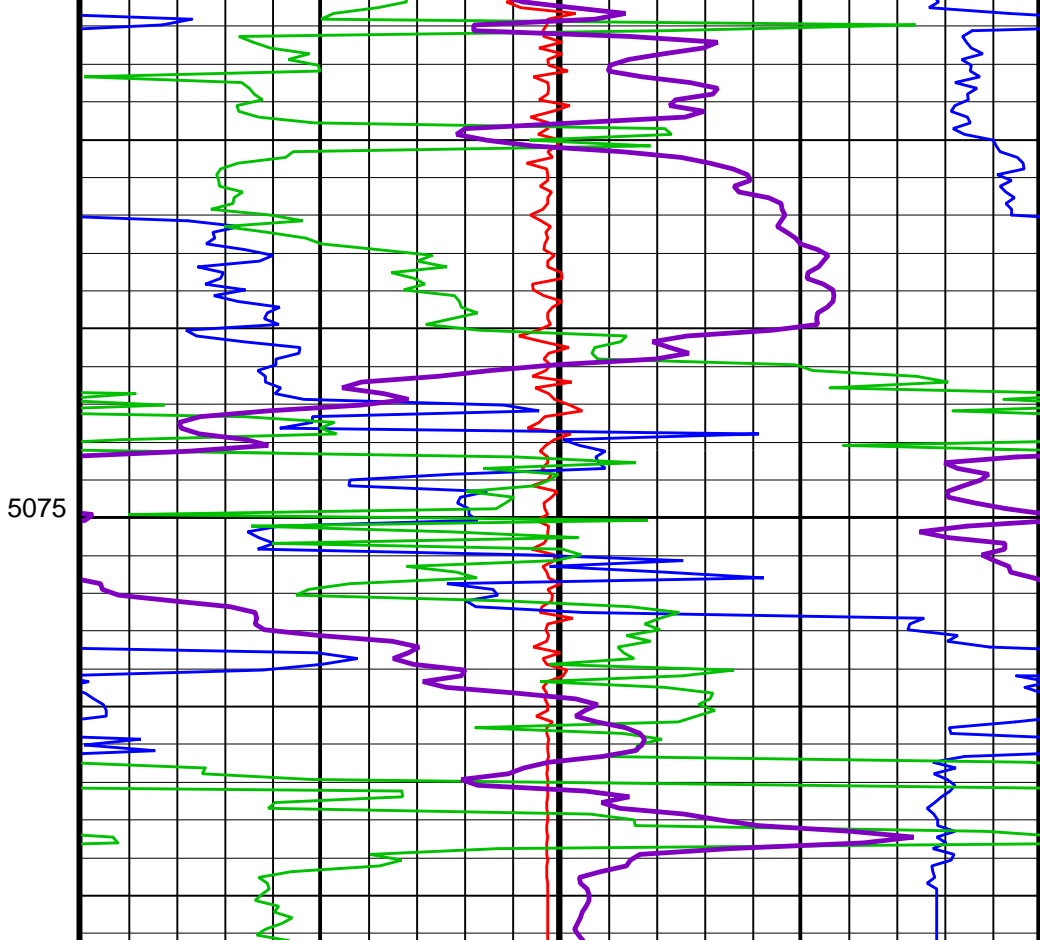
5025

5050





HLDS Caliper (LCAL)	(IN)	0	20
Tension (TENS)	(LBF)	0	10000
HNGS Spectroscopy Gamma Ray (HSGR)	(GAPI)	0	15



Axial Acceleration (MSSZACC_LDEO)	(M/S <sup>2</sup> )	0	20
High-Res Susceptibility (MSSHUSUS_LDEO)	(PPM)	-7000	-6000
Dual-Coil Susceptibility (MSSLUSUS_LDEO)	(PPM)	-4000	-3000
MSS Dual-Coil Conductivity (LC01)	(MM/M)	-0.13	-0.07

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
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
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
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW
HABK	HNGS Borehole Potassium Running Average	-0.00157452
HALF	HNGS Alpha Filter Length	60 IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE
HMWM	Mud Weighting Material	NATU
HNPE	HNGS Processing Enable	YES
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
TPOS	Tool Position	ECCE
VP04	HNGS Detector 1 Variable Barite Factor Running Average	1.4452

## OP System Version: 17C0-154

MSS_LDEO-A	17C0-154	HLDS	17C0-154
LDSC-B	17C0-154	HNGC-B	17C0-154
HNGS-BA	17C0-154	DTC-H	17C0-154

## Output DLIS Files

DEFAULT	MSS_LDEO_LDL_NGS_010LUP	FN:9	PRODUCER	25-Mar-2009 00:11
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# Calibrations

## MAXIS Field Log

### Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
<b>Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement</b>							
Master: 15-Mar-2009 16:10							
SS Cs Resolution Bkg	9.000	8.618	N/A	N/A	N/A	1.800	%
LS Cs Resolution Bkg	9.000	9.098	N/A	N/A	N/A	1.800	%
LSW1 Background	100.0	79.21	N/A	N/A	N/A	3.000	CPS
LSW2 Background	100.0	74.14	N/A	N/A	N/A	3.000	CPS
LSW3 Background	200.0	164.6	N/A	N/A	N/A	6.000	CPS
LSW4 Background	250.0	195.8	N/A	N/A	N/A	7.500	CPS
LSW5 Background	600.0	447.4	N/A	N/A	N/A	18.00	CPS
SSW1 Background	100.0	77.96	N/A	N/A	N/A	3.000	CPS
SSW2 Background	200.0	139.8	N/A	N/A	N/A	6.000	CPS
SSW3 Background	500.0	379.0	N/A	N/A	N/A	15.00	CPS
SSW4 Background	270.0	199.4	N/A	N/A	N/A	8.100	CPS
SSW5 Background	200.0	142.5	N/A	N/A	N/A	6.000	CPS
<b>Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement</b>							
Master: 15-Mar-2009 16:10							
LSW1 Aluminum	600.0	586.6	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	803.3	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	953.5	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	475.3	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	431.2	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2521	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6772	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9333	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	3817	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	462.9	N/A	N/A	N/A	N/A	CPS
<b>Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement</b>							
Master: 15-Mar-2009 16:10							
LSW1 Iron	400.0	396.0	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	647.3	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	837.7	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	426.5	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	391.2	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1839	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5630	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8456	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	2456	N/A	N/A	N/A	N/A	CPS

SSW4 Iron	4800	3436	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	406.9	N/A	N/A	N/A	N/A	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check

Master: 12-Mar-2009 19:24

Na 511 Peak Loc	40.00	40.60	N/A	N/A	N/A	1.000	
Na 511 Peak Res	15.50	16.66	N/A	N/A	N/A	2.000	%
High Voltage	1150	1174	N/A	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	145.7	N/A	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	9.231	N/A	N/A	N/A	2.000	%
Temperature	15.50	27.43	N/A	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	37.76	N/A	N/A	N/A	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check

Master: 12-Mar-2009 19:24

Na 511 Peak Loc	40.00	40.61	N/A	N/A	N/A	1.000	
Na 511 Peak Res	15.50	14.67	N/A	N/A	N/A	2.000	%
High Voltage	1150	1250	N/A	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	143.6	N/A	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.251	N/A	N/A	N/A	2.000	%
Temperature	15.50	26.37	N/A	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	38.49	N/A	N/A	N/A	8.000	CPS

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

Master: 12-Mar-2009 19:24

Coincidence Count Rate Ratio	1.000	0.9811	N/A	N/A	N/A	0.05000	
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Hostile Litho-Density Sonde / Equipment Identification

Primary Equipment:

Hostile Litho Density Sonde	HLDS - D	10
Hostile Litho Density High Voltage	HLDV - D	10
Gamma Source Radioactive	GSR - ZA	2326

Auxiliary Equipment:

Hostile Litho Density Pad	HLDP - C	10
Hostile Litho Density High Voltage Housi	HEH - H	10

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		8.618	Master		9.098	Master		79.21
	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		74.14	Master		164.6	Master		195.8
	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		447.4	Master		77.96	Master		139.8
	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		379.0	Master		199.4	Master		142.5
	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: 15-Mar-2009 16:10

Litho-Density Spectroscopy Cartridge - B / Equipment Identification

Primary Equipment:

LDSC Cartridge	LDSC - B	503
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Auxiliary Equipment:

LDSC Housing	LDSH - A	323
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Hostile Natural Gamma Ray Cartridge - B / Equipment Identification

Hostile Natural Gamma Ray Cartridge / Equipment Identification

Primary Equipment: HNGC Cartridge	HNGC - B	202
Auxiliary Equipment: HNGC Housing	HNGH - A	30

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment: HNGS Sonde	HNGS - BA	27
Auxiliary Equipment: HNGS Sonde Housing Gamma Source Radioactive	HNSH - BA GSR - U	27 1154

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value
Master		40.60	Master		16.66	Master		1174
	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		145.7	Master		9.231	Master		27.43
	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		37.76						
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)							

Master: 12-Mar-2009 19:24

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		40.61	Master		14.67	Master		1250
	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		143.6	Master		8.251	Master		26.37
	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		38.49						
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)							

Master: 12-Mar-2009 19:24

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		0.9811
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	

Master: 12-Mar-2009 19:24

DTS Telemetry Tool / Equipment Identification

Primary Equipment: DTC-H Auxiliary Cartridge DTC-H Telemetry Cartridge	DTCH - A DTCH - A	8789 8798
Auxiliary Equipment: DTCH Telemetry Cartridge Housing	ECH - KC	1777

Company: Lamont Doherty

**Schlumberger**

Well: Expedition 320, Site U1332A

Field: PEAT

Rig: JOIDES Resolution

Country: USA

Lamont Doherty  
Magnetic Susceptibility