Schlumberger

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

Litho-Density

Uplog

LOCATION

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

Elev.: 0.00 m
11.20 m above Perm. Datum

Ocean:	Max. Well Deviation	Longitude	Latitude
Pacific	0 deg	141* 02.742' W	11* 54.707' N

	Run 1	Run 2	Run 3
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		
MUD Density / Viscosity	1.1 g/cm3		
MUD Fluid Loss / PH			
MUD 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	17-Mar-2009 23:00		
Unit Number / Location	625003 Houston		
Recorded By	C. Furman		
Witnessed By	H. Evans, T. Williams		

	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			
MUD Density / Viscosity			
MUD Fluid Loss / PH			
MUD 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			

REMARKS: RUN NUMBER 1

Tools run as per tool sketch with MSS eccentered using integral bowspring devices.

Logging objective was to verify statigraphic 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

SERVICE ORDER #:
PROGRAM VERSION: 17C0-154
FLUID LEVEL:

LOGGED INTERVAL	START	STOP

RUN 2

SERVICE ORDER #:
PROGRAM VERSION:
FLUID LEVEL:

LOGGED INTERVAL	START	STOP

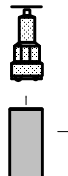
EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT

GSR-U 1154
WITM (DTS)-A

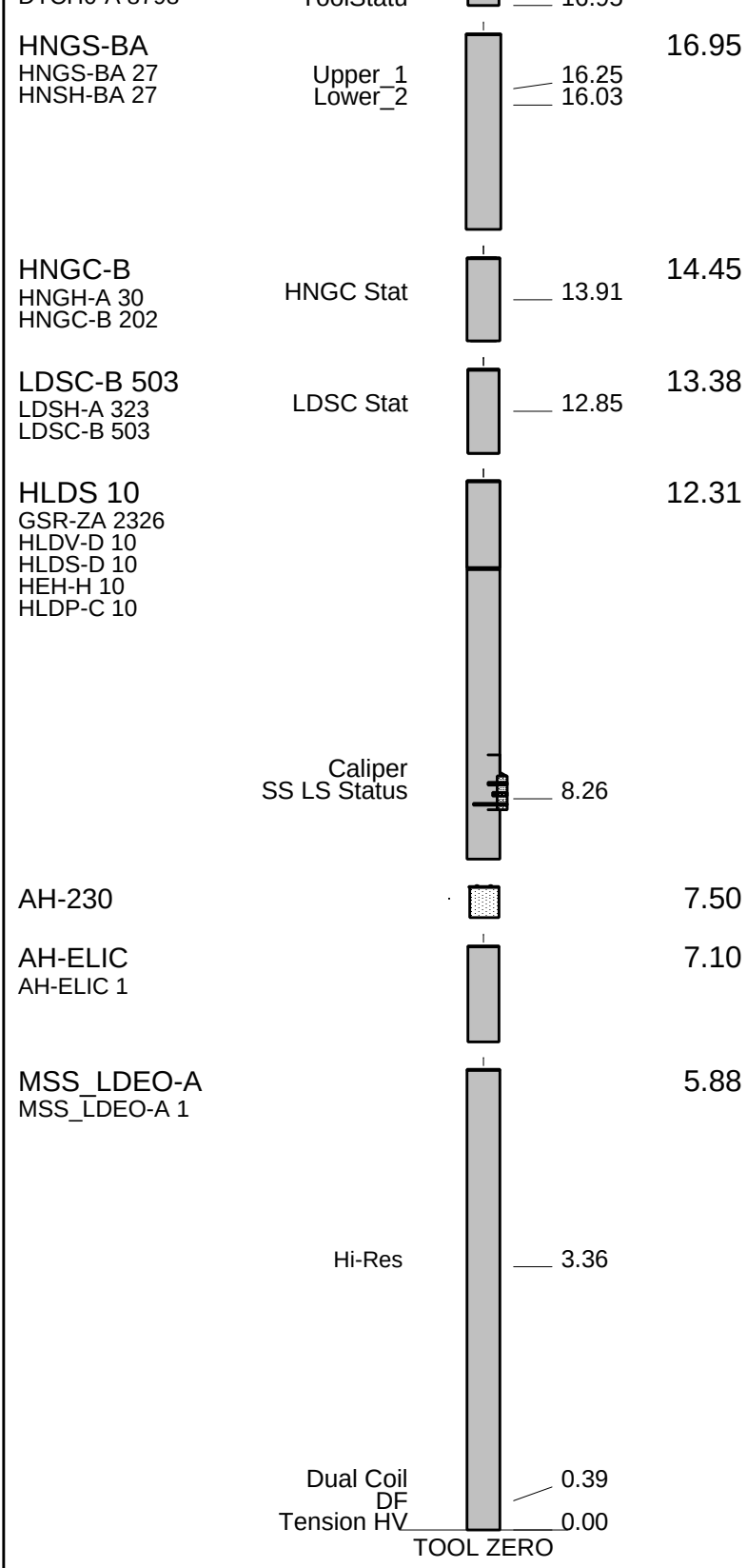
DOWNHOLE EQUIPMENT



LEH-QT 18.75
LEH-QT 1726

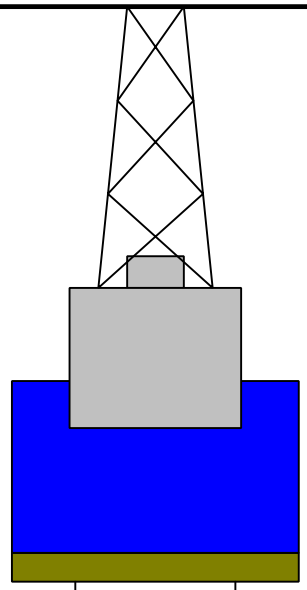
DTC-H CTEM 17.58 17.86
ECH-KC 1777 TelStatus
DTCH0-A 8798 ToolStatu 16.95

RUN 2



MAXIMUM STRING DIAMETER 3.75 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

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

Kelly Bushing Elevation			11.2					
Derrick Floor Elevation			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	9.875		Sea Bed
					5012.0	5.500		Pipe Bottom
					5087.5	9.875		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

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

HNGS Spectroscopy Gamma Ray (HSGR)	

0 (GAPI) 15

HLDS Long Spacing Quality Indicator (LQLS)

-0.25 (----) 0.25

HLDS Short Spacing Quality Indicator (LQSS)

-0.25 (----) 0.25

HLDS Caliper (LCAL)

0 (IN) 20

HLDS Long Spaced Photoelectric Effect (PEFL)

0 (----) 10

HLDS Volumetric Photoelectric Factor (ULDS)

0 (----) 10

HLDS Bulk Density Correction (DRH)

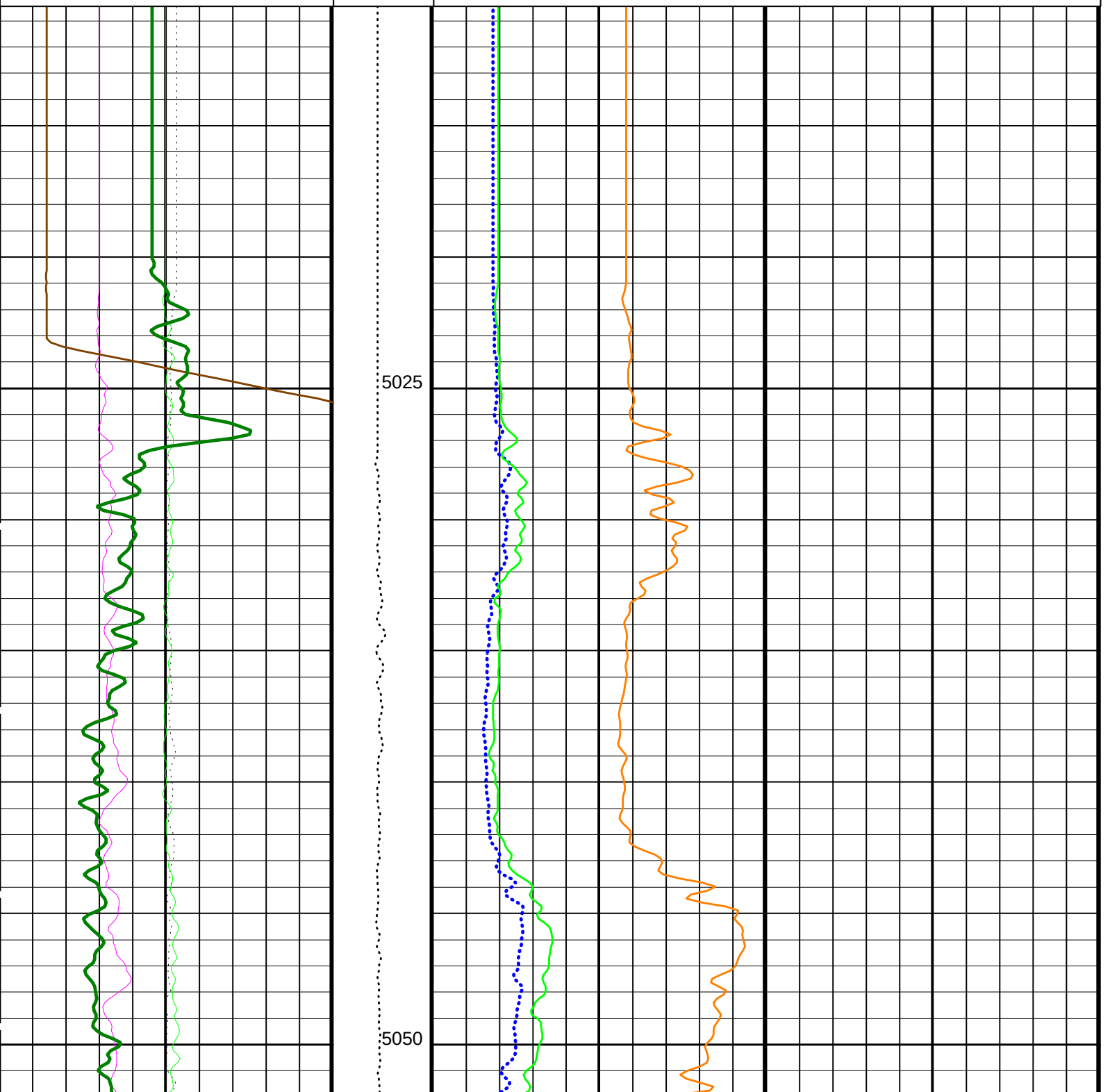
-0.25 (G/C3) 0.25

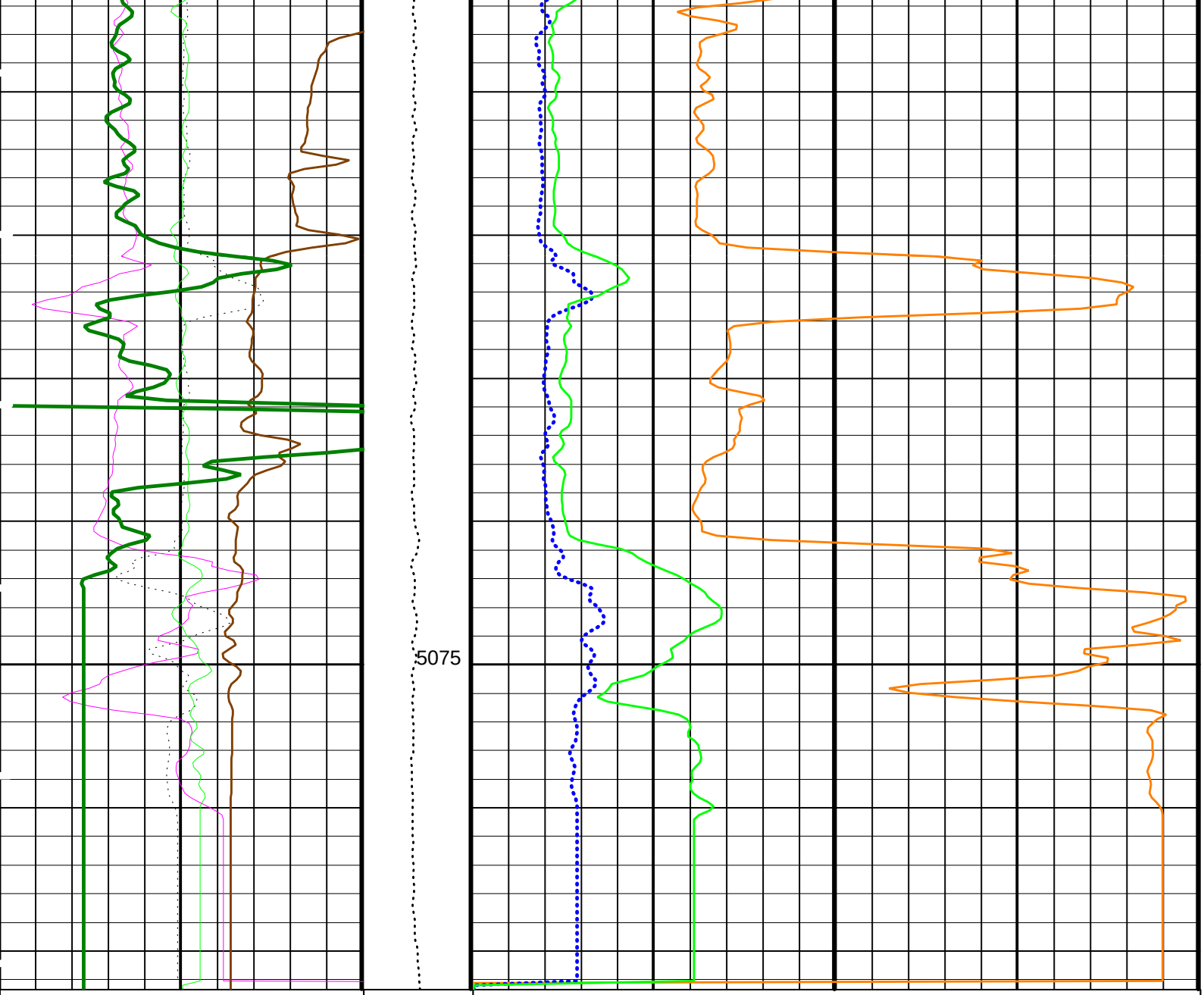
Tension (TENS) (LBF)

10000 0

HLDS Bulk Density (RHOM)

2 (G/C3) 3





HLDS Bulk Density Correction (DRH)
-0.25 (G/C3) 0.25

Tension (TENS) (LBF)
10000 0

HLDS Bulk Density (RHOM)
2 (G/C3) 3

HLDS Caliper (LCAL)
0 (IN) 20

HLDS Volumetric Photoelectric Factor (ULDS)
0 (----) 10

HLDS Short Spacing Quality Indicator (LQSS)
-0.25 (----) 0.25

HLDS Long Spaced Photoelectric Effect (PEFL)
0 (----) 10

HLDS Long Spacing Quality Indicator (LQLS)
-0.25 (----) 0.25

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 15

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value

	HLDS: Hostile Litho-Density Sonde		
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
MDEN	Matrix Density	2.71	G/C3
	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	
	System and Miscellaneous		
BS	Bit Size	9.875	IN

Format: HLDSDensityPE 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		

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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

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 15

HLDS Long Spacing Quality Indicator (LQLS)
-0.25 (----) 0.25

HLDS Short Spacing Quality Indicator (LQSS)
-0.25 (----) 0.25

HLDS Caliper (LCAL)
0 (IN) 20

HLDS Long Spaced Photoelectric Effect (PEFL)
0 (----) 10

HLDS Volumetric Photoelectric Factor (ULDS)
0 (----) 10

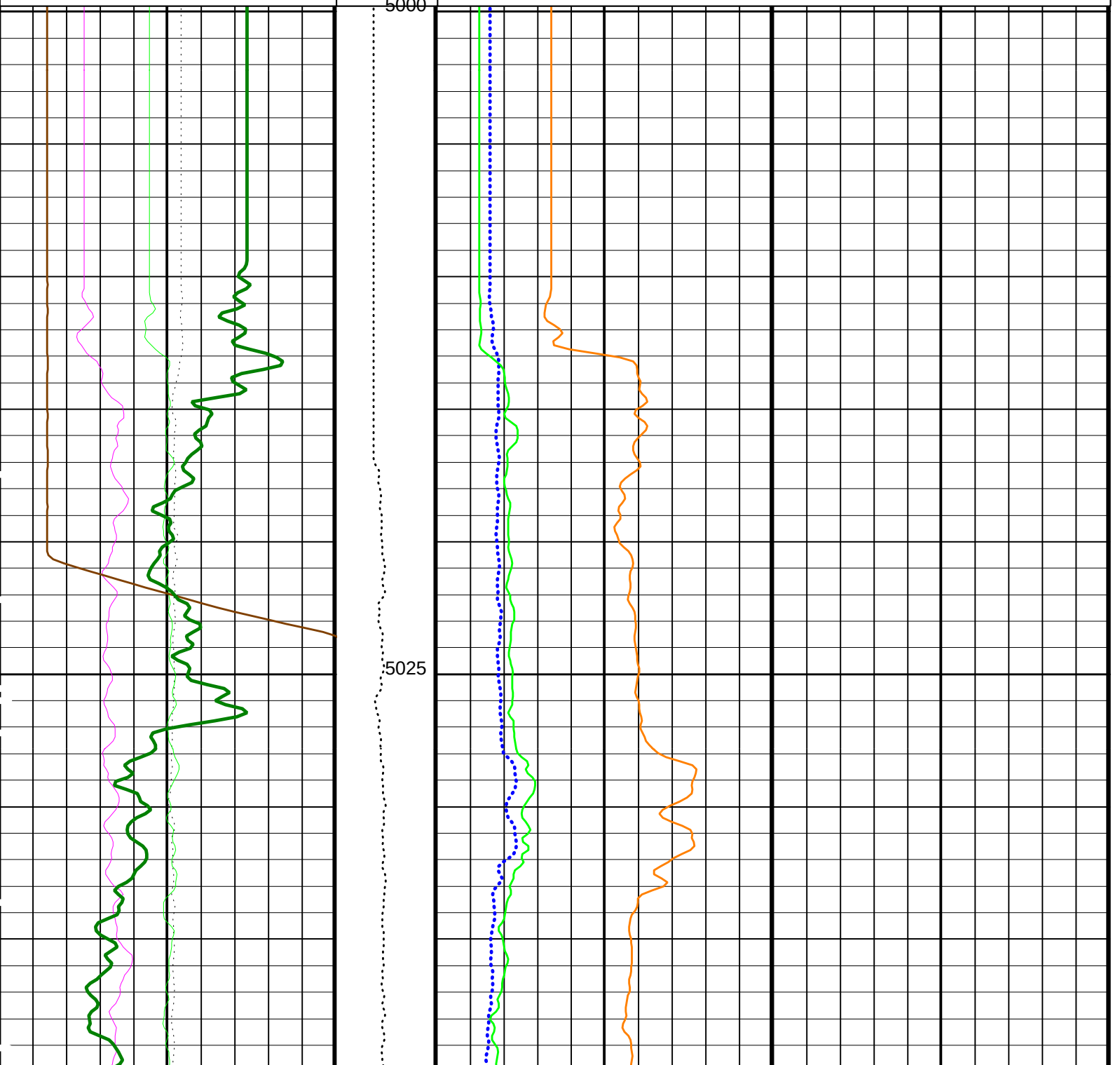
HLDS Bulk Density Correction (DRH)
-0.25 (G/C3) 0.25

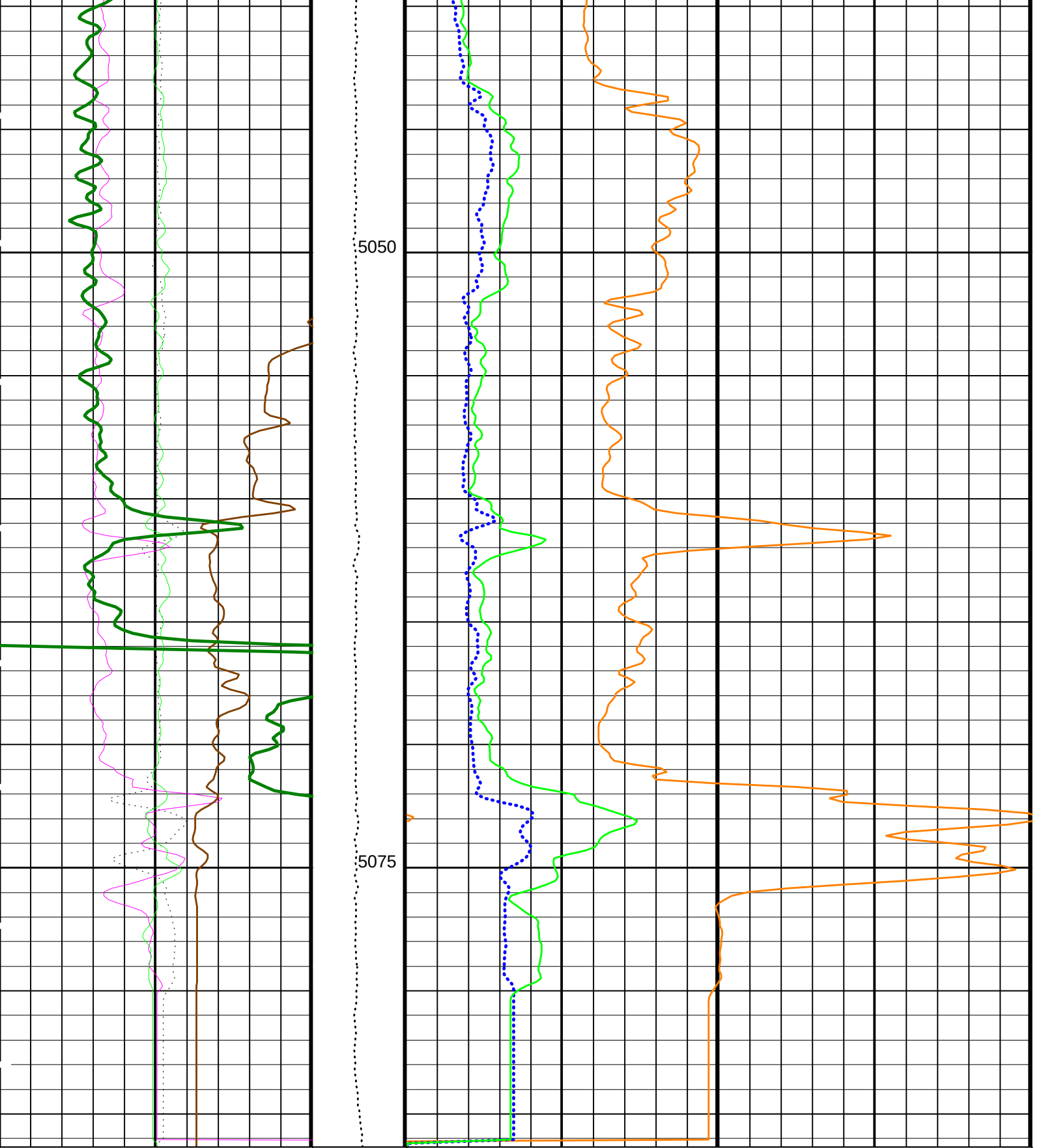
Tension (TENS) (LBF)
10000 0

HLDS Bulk Density (RHOM)
2 (G/C3) 3

5000

5025





HLDS Bulk Density Correction (DRH)
-0.25 (G/C3) 0.25

Tension (TENS) (LBF)
10000 0

HLDS Bulk Density (RHOM)
2 (G/C3) 3

HLDS Caliper (LCAL)
0 (IN) 20

HLDS Volumetric Photoelectric Factor (ULDS)
0 (----) 10

HLDS Short Spacing Quality Indicator (LQSS)
-0.25 (----) 0.25

HLDS Long Spaced Photoelectric Effect (PEFL)
0 (----) 10

HLDS Long Spacing Quality Indicator (LQLS)		
-0.25	(----)	0.25

HNGS Spectroscopy Gamma Ray (HSGR)		
0	(GAPI)	15

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HLDS: Hostile Litho-Density Sonde		
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
MDEN	Matrix Density	2.71	G/C3
	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	
	System and Miscellaneous		
BS	Bit Size	9.875	IN

Format: HLDSDensityPE Vertical Scale: 1:200 Graphics File Created: 25-Mar-2009 00:11

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
Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement							
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
Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement							
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
Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement							
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	3456	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	

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

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
Master		8.618
	7.000 (Minimum) / 9.000 (Nominal) / 11.00 (Maximum)	

Phase	LS Cs Resolution Bkg %	Value
Master		9.098
	7.000 (Minimum) / 9.000 (Nominal) / 11.00 (Maximum)	

Phase	LSW1 Background CPS	Value
Master		79.21
	55.00 (Minimum) / 100.0 (Nominal) / 150.0 (Maximum)	

Phase	LSW2 Background CPS	Value
Master		74.14
	50.00 (Minimum) / 100.0 (Nominal) / 140.0 (Maximum)	

Phase	LSW3 Background CPS	Value
Master		164.6
	110.0 (Minimum) / 200.0 (Nominal) / 290.0 (Maximum)	

Phase	LSW4 Background CPS	Value
Master		195.8
	140.0 (Minimum) / 250.0 (Nominal) / 360.0 (Maximum)	

Phase	LSW5 Background CPS	Value
Master		447.4
	330.0 (Minimum) / 600.0 (Nominal) / 830.0 (Maximum)	

Phase	SSW1 Background CPS	Value
Master		77.96
	55.00 (Minimum) / 100.0 (Nominal) / 150.0 (Maximum)	

Phase	SSW2 Background CPS	Value
Master		139.8
	100.0 (Minimum) / 200.0 (Nominal) / 260.0 (Maximum)	

Phase	SSW3 Background CPS	Value
Master		379.0
	280.0 (Minimum) / 500.0 (Nominal) / 700.0 (Maximum)	

Phase	SSW4 Background CPS	Value
Master		199.4
	150.0 (Minimum) / 270.0 (Nominal) / 380.0 (Maximum)	

Phase	SSW5 Background CPS	Value
Master		142.5
	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

Auxiliary Equipment:

LDSC Housing	LDSH - A	323

Hostile Natural Gamma Ray Cartridge - B / 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	HNSH - BA	27
Gamma Source Radioactive	GSR - U	1154

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value
Master		40.60
	37.50 (Minimum) / 40.00 (Nominal) / 43.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		16.66
	12.00 (Minimum) / 15.50 (Nominal) / 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1174
	900.0 (Minimum) / 1150 (Nominal) / 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		145.7
	135.0 (Minimum) / 142.6 (Nominal) / 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		9.231
	7.000 (Minimum) / 8.500 (Nominal) / 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		27.43
	-28.89 (Minimum) / 15.50 (Nominal) / 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		37.76

Phase	Na 511 Peak Loc	Value
Master		40.61
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		14.67
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1250
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		143.6
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		8.251
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		26.37
	-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

Detector 2 Check

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	DTCH - A	8789
DTC-H Telemetry Cartridge	DTCH - A	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
Litho-Density