Schlumberger

Company: Lamont Doherty

Well: ODP Leg 209, Site 1275D
Field: Mid Atlantic Ridge
Country: Ocean: Atlantic

Country: Mid Atlantic Ridge
Field: Rig- Joides Resolution
Location: ODP Leg 209, Site 1275D
Well: Lamont Doherty
Company:

Phasor Induction
HNGS Natural Gamma Ray

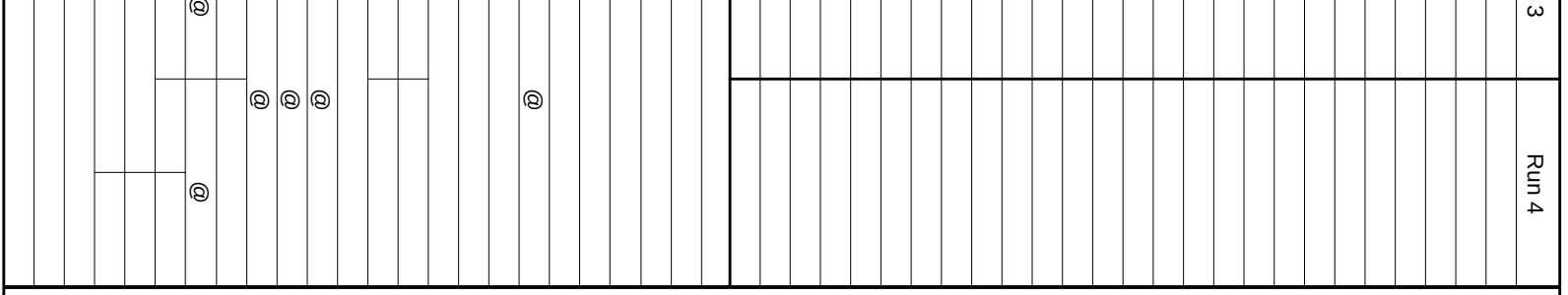
LOCATION

Rig- Joides Resolution	Elev.: K.B.	11.3 m
46Deg 54.2178'	G.L.	-1565 m
15Deg 44.4424'	D.F.	11 m
Permanent Datum: MSL	Elev.:	0 m
Log Measured From: DES	11.3 m	above Perm. Datum
Drilling Measured From: DES		

API Serial No.	Max. Hole Devi.	Longitude	Latitude
		46.90363W	15.7407 N

	Run 1	Run 2	Run 3
Logging Date	30-Jun-2003		
Run Number	1		
Depth Driller	1774 m		
Schlumberger Depth	1668 m		
Bottom Log Interval	1662 m		
Top Log Interval	1550 m		
Casing Driller Size @ Depth	0.000 in @ 1596 m	@	@
Casing Schlumberger	1591 m		
Bit Size	9.875 in		
Type Fluid In Hole	Sepiolite		
MUD Density / Viscosity	1.066 g/cm3		
MUD Fluid Loss / PH			
MUD Source Of Sample			
RM @ Measured Temperature	0.322 ohm.m @ 23 degC	@	@
RMF @ Measured Temperature	@	@	@
RMC @ Measured Temperature	@	@	@
Source RMF / RMC			
RM @ MRT / RMF @ MRT	0.528 @ 6	@ 6	@ @
Maximum Recorded Temperatures	6 degC		
Circulation Stopped / Time	30-Jun-2003		
Logger On Bottom / Time	30-Jun-2003	See Log	
Unit Number / Location	99	Houston	
Recorded By	K. Swain		
Witnessed By	G. Iturrino		

	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			



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.

OTHER SERVICES1	OTHER SERVICES2
OS1: HLDS	OS1:
OS2: APS	OS2:
OS3: FMS	OS3:
OS4: DSI	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Hole cored with RCB, BS=9 7/8"	
All depths in Meters Below Rig Floor (MBRF).	
Sepiolite mud was used.	
WHC was run.	

RUN 1

SERVICE ORDER #:
PROGRAM VERSION: 10C0-306
FLUID LEVEL:

LOGGED INTERVAL	START	STOP

RUN 2

SERVICE ORDER #:
PROGRAM VERSION:
FLUID LEVEL:

LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

SFT-281 1
SFT-178 13
GSR-U 135
WITM (DTS)-A

DOWNHOLE EQUIPMENT

LEH-QT 31.40
LEH-QT 1494

CTEM
DTC-H TelStatus 30.23 30.51
ECH-KC 9343 ToolStatu 29.60

HNGS-BA Upper_1 28.90 29.60
HNGS-BA 77 Lower_2 28.69

HNSH-BA 79

ILE-D 27.10
ILE-D 25

Status
Minitron
Near TD
Near Arr
Near
Far Arr
Far
Far TD

APS-C 24.66
APH-AC 104
APS-C 202
MNTR-F 5124

22.22
22.14
22.01
21.91

NPLC-B 20.72
NPLC-B 79
NPH-B 82

Status 19.49

HLDS 18.27
GSR-Z 1846
HLDV-D 35
HLDS-D 45
HEH-H 35
HLDP-C 45

Caliper
SS LS Status 14.22

DTA-A 13.45
ECH-KE 8231
DTA-A 8231

DIT-E 12.24
DIC-EB 438
MIH-ZA 417
DIS-HB 442

SP 5.86
Deep Ind 5.61
Aux Meas SFL 4.69
Med Ind 4.54

Status 2.71

AH-TAP 2.71
AH-TAP

DF
Tension HV 0.00

TOOL ZERO

MAXIMUM STRING DIAMETER 3.88 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_007LUP	FN:9	PRODUCER	30-Jun-2003 15:42	1668.8 M	1549.9 M
REDUCED	PI_LDL_APS_NGS_007LUP	FN:10	PRODUCER	30-Jun-2003 15:42	1668.8 M	1547.9 M

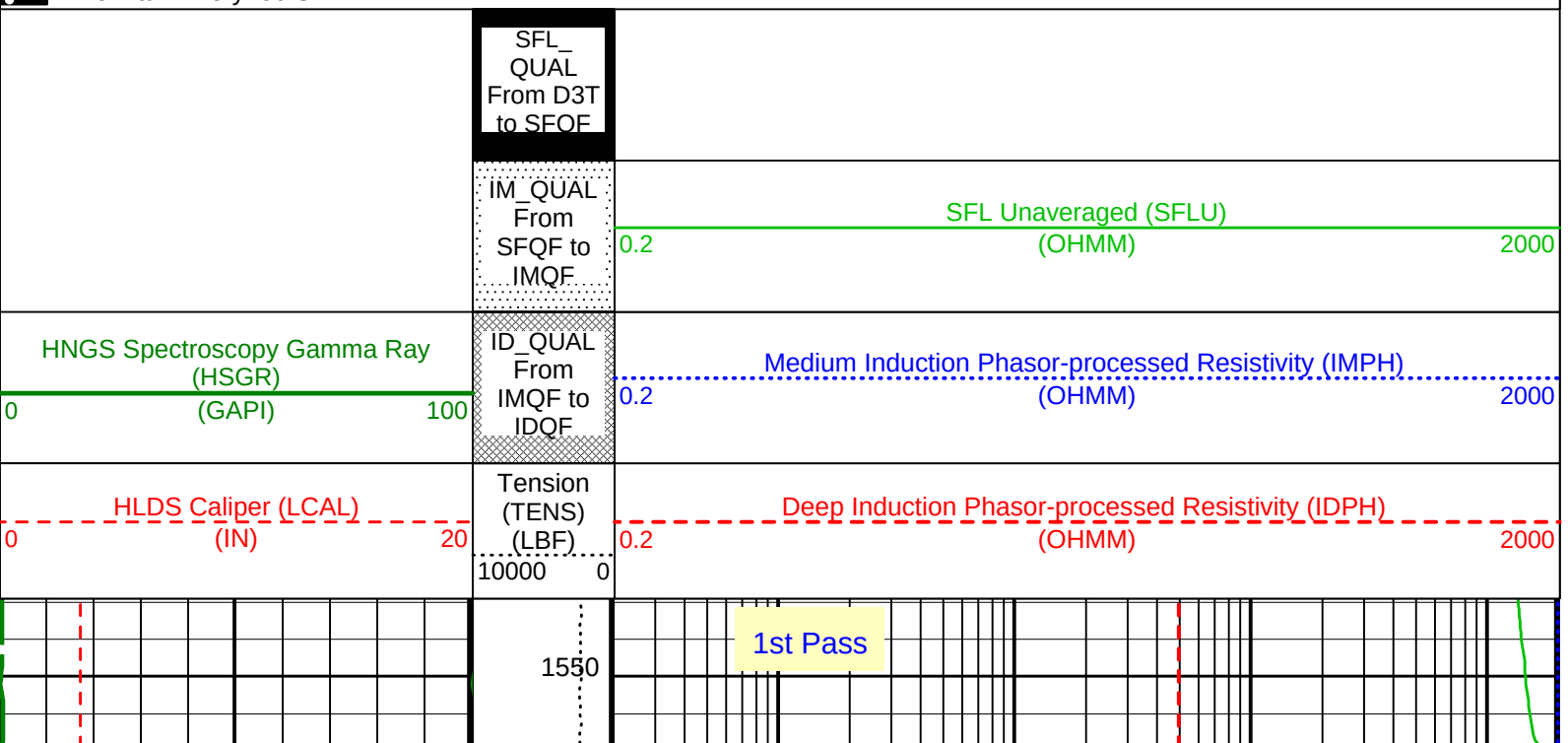
OP System Version: 10C0-306

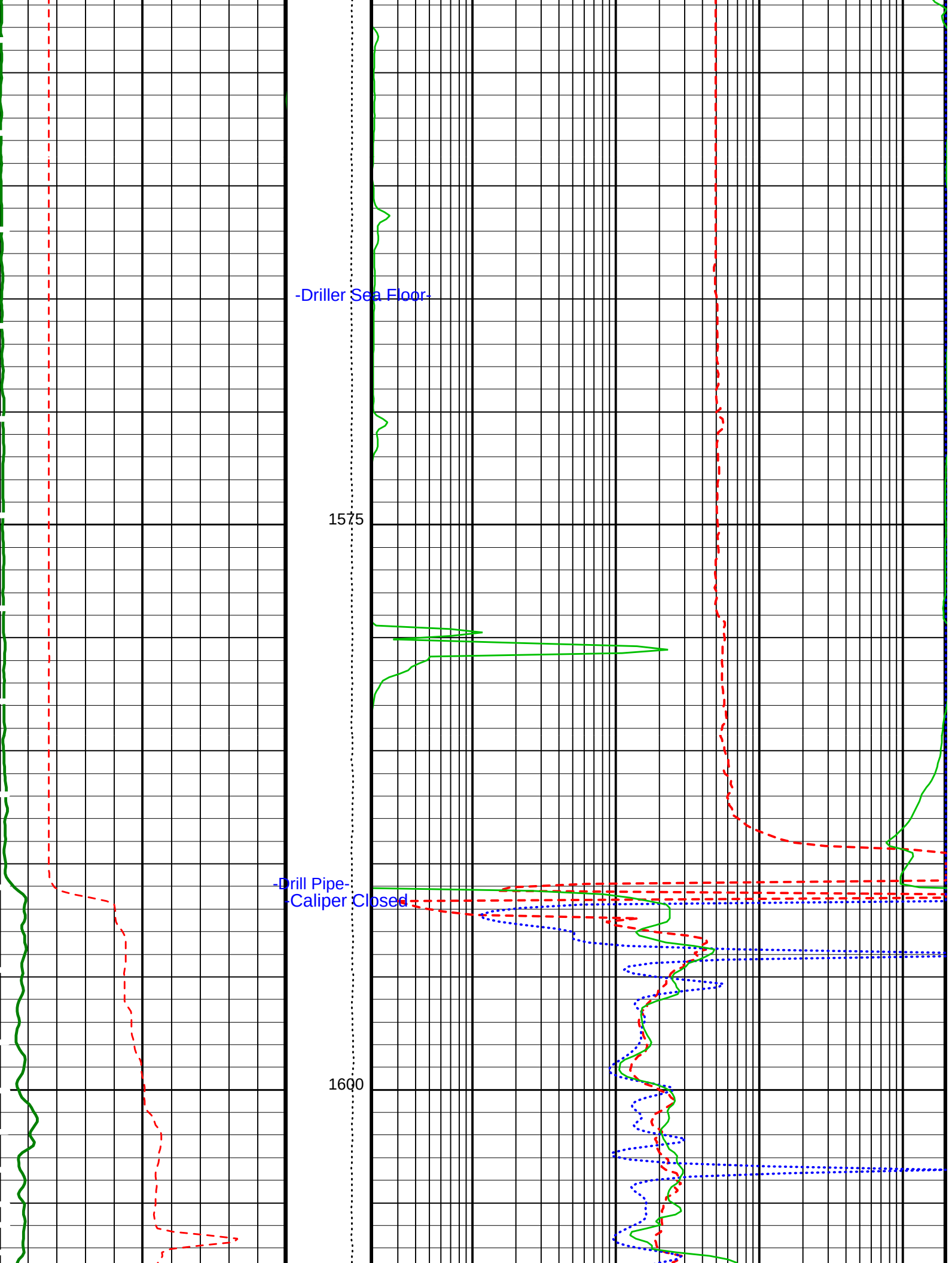
MCM

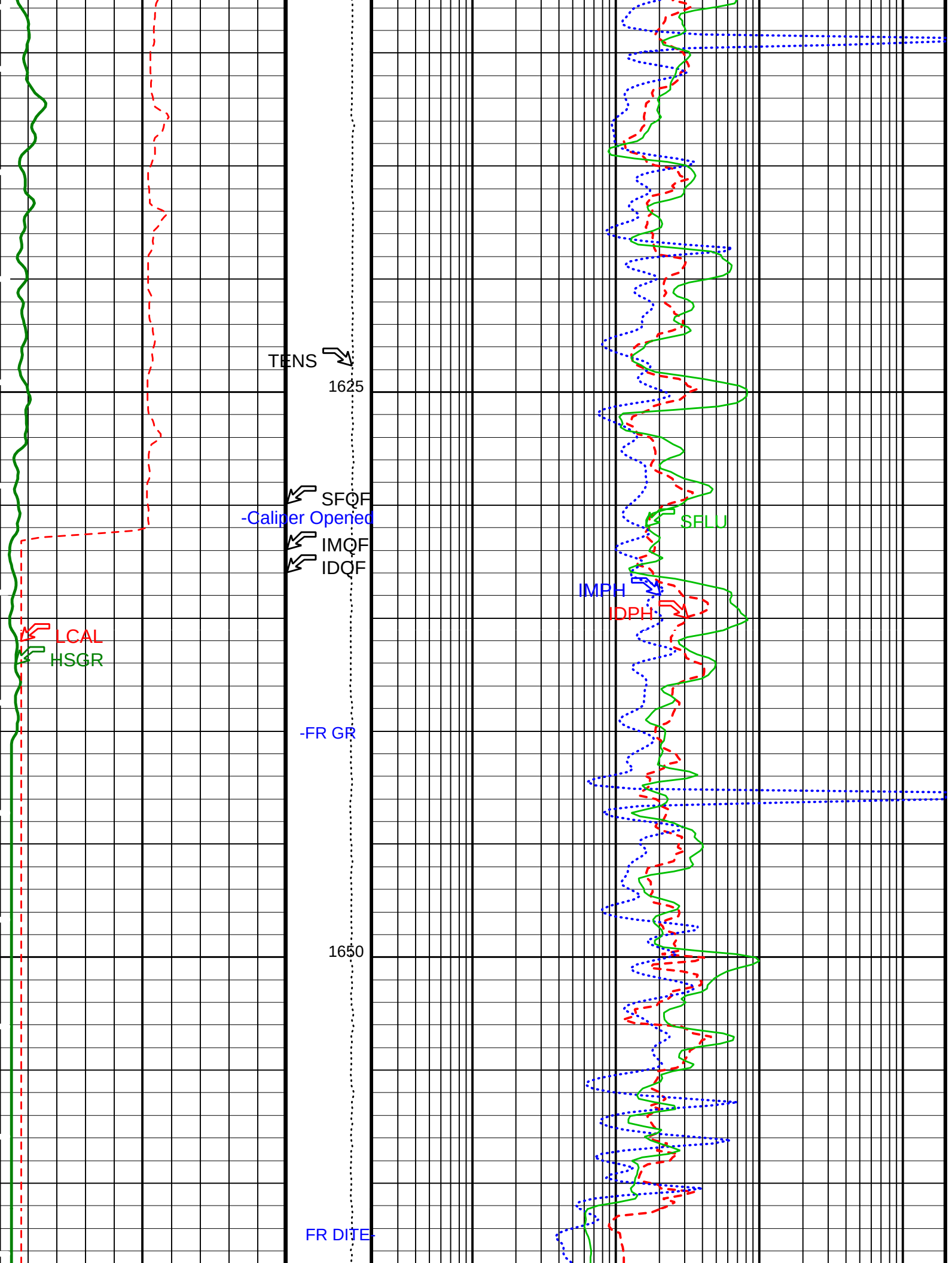
DIT-E	10C0-306	DTA-A	10C0-306
HLDS	SPC-2277-NUCL_b	NPLC-B	OP10-KP1
APS-C	SPC-2277-NUCL_b	HNGS-BA	SPC-2277-NUCL_b
DTC-H	10C0-306		

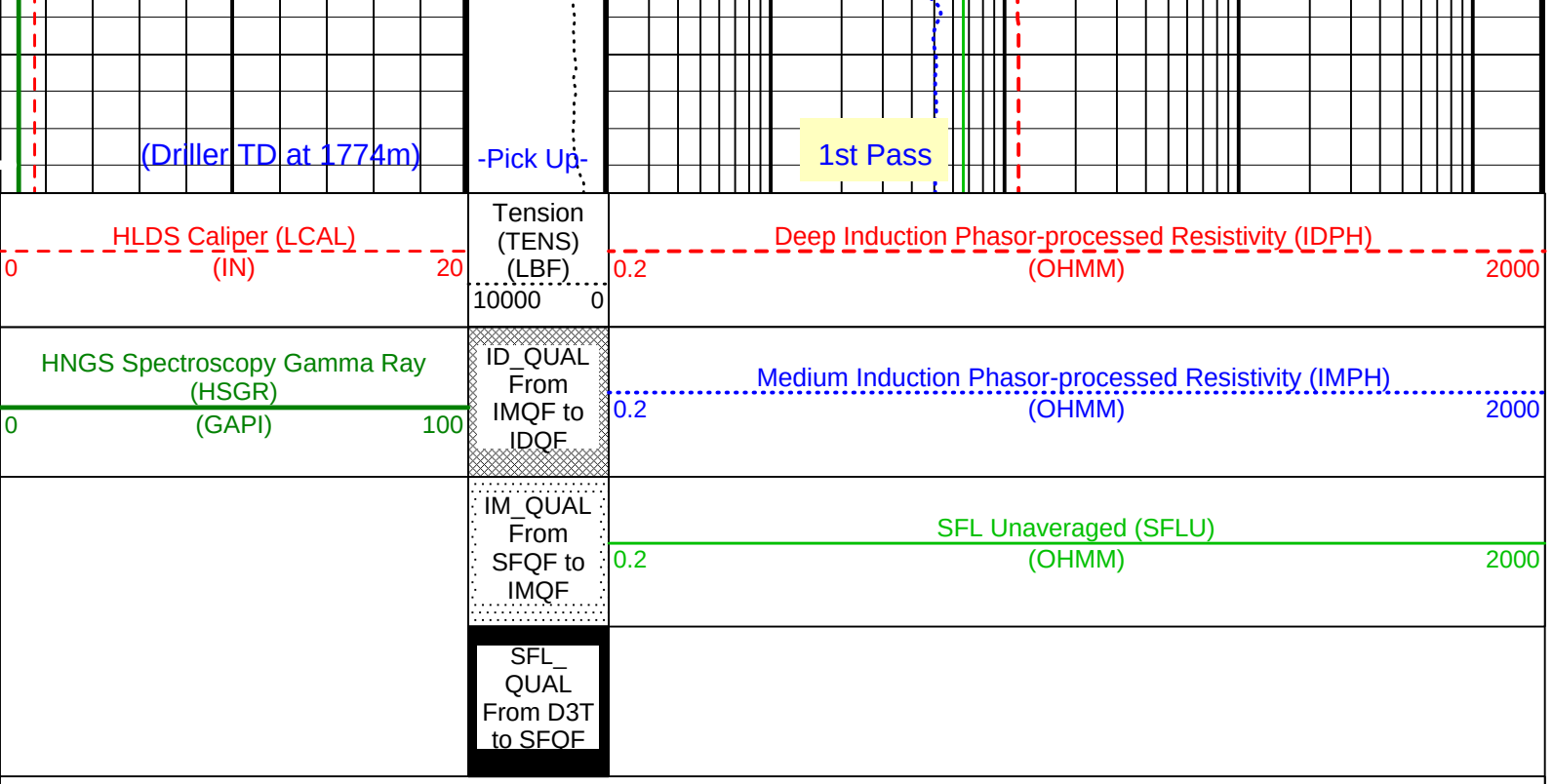
PIP SUMMARY

Time Mark Every 60 S




-Driller Sea Floor-
1575
-Drill Pipe-
-Caliper Closed
1600


TENS
1625
SFQF
-Caliper Opened
IMQF
IDQF
SFLU
IMPH
IDPH
LCAL
HSGR
-FR GR
1650
FR DITE-



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	DIT-E: Dual Induction - E		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	15	DEGC
DGF2	Deep 20 kHz Gain Factor	1.00789	
DPH2	Deep 20 kHz Phase Shift	-0.152394	DEG
DRE2	Deep Real 20 kHz Sonde Error Correction	16.357	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	64.6326	MM/M
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
IFRS	DIT-E Induction Frequency Selector	20	
IPHA	DIT-E Phasor Processing Mode	ALL	
IPRO	DIT-E Induction Processing Selector	PHASOR	
ITEN	DIT-E Temperature Enable	ENABLE	
MGF2	Medium 20 kHz Gain Factor	1.02964	
MPH2	Medium 20 kHz Phase Shift	-0.933067	DEG
MRE2	Medium Real 20 kHz Sonde Error Correction	-1.78642	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	-34.2041	MM/M
SFCR	SFL Channel Ratio	1000	
SHT	Surface Hole Temperature	20	DEGC
	APS-C: Accelerator-Porosity Tool		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	15	DEGC
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT	Surface Hole Temperature	20	DEGC
	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)	15	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	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG

GGRD	Geothermal Gradient	0.018227	DC/M
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	-0.023782	
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	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.874359	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	-6.54212	
System and Miscellaneous			
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.07	G/C3
TD	Total Depth	1774	M

Format: DITE_LogPhasor Vertical Scale: 1:200 Graphics File Created: 30-Jun-2003 15:42

OP System Version: 10C0-306

MCM

DIT-E	10C0-306	DTA-A	10C0-306
HLDS	SPC-2277-NUCL_b	NPLC-B	OP10-KP1
APS-C	SPC-2277-NUCL_b	HNGS-BA	SPC-2277-NUCL_b
DTC-H	10C0-306		

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_007LUP	FN:9	PRODUCER	30-Jun-2003 15:42
REDUCED	PI_LDL_APS_NGS_007LUP	FN:10	PRODUCER	30-Jun-2003 15:42

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement							
Master: 23-Apr-2003 18:32 Before: 18-May-2003 21:52 After: 30-Jun-2003 18:20							
SS Cs Resolution Bkg	9.000	8.094	8.097	8.112	0.01500	1.800	%
LS Cs Resolution Bkg	9.000	8.143	8.212	8.152	-0.05971	1.800	%
LSW1 Background	100.0	86.47	86.14	86.58	0.4417	0.03000	CPS
LSW2 Background	100.0	80.63	80.44	79.95	-0.4846	0.03000	CPS
LSW3 Background	200.0	177.7	178.3	179.2	0.8939	0.03000	CPS
LSW4 Background	250.0	218.9	217.1	217.6	0.5543	0.03000	CPS
LSW5 Background	600.0	499.0	499.9	502.2	2.245	0.03000	CPS
SSW1 Background	100.0	97.29	95.44	96.25	0.8063	0.03000	CPS
SSW2 Background	200.0	175.4	174.0	174.5	0.5470	0.03000	CPS
SSW3 Background	500.0	475.0	475.2	472.1	-3.036	0.03000	CPS
SSW4 Background	270.0	242.4	242.8	241.7	-1.018	0.03000	CPS
SSW5 Background	200.0	176.0	175.7	176.3	0.6386	0.03000	CPS
Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement							
Master: 23-Apr-2003 19:33							
LSW1 Aluminum	600.0	604.1	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	860.3	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	1017	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	498.2	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	473.1	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2618	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	7129	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9926	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	4181	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	547.6	N/A	N/A	N/A	N/A	CPS
Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement							
Master: 23-Apr-2003 19:29							
LSW1 Iron	400.0	418.2	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	721.5	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	941.8	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	481.5	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	449.9	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1956	N/A	N/A	N/A	N/A	CPS

SSW1 Iron	2100	1956	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	6092	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	9264	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3922	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	501.5	N/A	N/A	N/A	N/A	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration
Before: 18-May-2003 21:24

HLDS Caliper Small Ring	12.00	N/A	14.48	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.00	N/A	17.56	N/A	N/A	N/A	IN

Accelerator-Porosity Tool Wellsite Calibration - Detector Background
Master: 16-Jun-2003 5:03 Before: 30-Jun-2003 14:50 After: Calibration not done

Near Det Bkg Cntrate	30.00	25.98	25.04	N/A	N/A	N/A	CPS
Far Det Bkg Cntrate	30.00	25.85	26.68	N/A	N/A	N/A	CPS
Array-1 Det Bkg Cntrate	30.00	26.41	27.48	N/A	N/A	N/A	CPS
Array-2 Det Bkg Cntrate	30.00	26.14	25.66	N/A	N/A	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	24.69	24.22	N/A	N/A	N/A	CPS

Accelerator-Porosity Tool Wellsite Calibration - Calibration Ratios
Master: 16-Jun-2003 5:03

Near/Far Calibration Ratio	0.9250	0.9613	N/A	N/A	N/A	N/A	
Near/Array Calibration Ratio	1.030	0.9877	N/A	N/A	N/A	N/A	
Near/Array Cal Ratio Up/Down	1.000	1.006	N/A	N/A	N/A	N/A	

Accelerator-Porosity Tool Wellsite Calibration - Tank Check
Master: 16-Jun-2003 5:03

Array-1 Standoff Porosity	11.75	12.26	N/A	N/A	N/A	N/A	PU
Array-2 Standoff Porosity	11.75	11.73	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	5.784	N/A	N/A	N/A	N/A	US
Array-1 SDT Ratio Up/Down	1.000	0.9947	N/A	N/A	N/A	N/A	
Array-2 SDT Ratio Up/Down	1.000	0.9903	N/A	N/A	N/A	N/A	
Sigma Formation	27.50	27.67	N/A	N/A	N/A	N/A	CU

Accelerator-Porosity Tool Wellsite Calibration - CCR7 signal boxes
Master: 16-Jun-2003 5:03

Near Detector Plateau Setting	1650	1736	N/A	N/A	N/A	N/A	V
Far Detector Plateau Setting	2000	2078	N/A	N/A	N/A	N/A	V
Array Detector Plateau Setting	2000	1966	N/A	N/A	N/A	N/A	V

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check
Master: 10-Jun-2003 10:13 Before: 8-Apr-2003 3:33 After: 30-Jun-2003 18:17

Na 511 Peak Loc	40.00	40.65	40.63	40.83	0.2025	1.000	
Na 511 Peak Res	15.50	16.98	16.69	15.90	-0.7865	2.000	%
High Voltage	1150	1208	1207	1213	6.075	30.00	V
Na 1785 Peak Loc	142.6	145.2	145.2	146.1	0.8881	7.000	
Na 1785 Peak Res	8.500	8.982	9.496	9.445	-0.05032	2.000	%
Temperature	15.50	33.02	27.12	31.05	3.935	N/A	DEGC
Na Count Rate	45.00	40.11	41.75	39.41	-2.338	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check
Master: 10-Jun-2003 10:13 Before: 8-Apr-2003 3:33 After: 30-Jun-2003 18:17

Na 511 Peak Loc	40.00	40.56	40.51	40.64	0.1280	1.000	
Na 511 Peak Res	15.50	17.13	16.55	16.71	0.1606	2.000	%
High Voltage	1150	1234	1235	1239	4.644	30.00	V
Na 1785 Peak Loc	142.6	144.4	144.2	144.9	0.7337	7.000	
Na 1785 Peak Res	8.500	9.188	9.586	9.197	-0.3887	2.000	%
Temperature	15.50	32.54	26.30	31.53	5.231	N/A	DEGC
Na Count Rate	45.00	40.04	41.81	39.20	-2.615	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2
Master: 10-Jun-2003 10:13 Before: 8-Apr-2003 3:33 After: 30-Jun-2003 18:17

Coincidence Count Rate Ratio	1.000	1.001	0.9991	1.004	0.005333	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration
Master: 10-Jun-2003 9:55

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	209.0	--	--	--	--	
Th Peak Res	7.000	8.425	--	--	--	--	%
Background Count Rate	142.5	19.30	--	--	--	--	CPS
Gain Ratio	1.000	0.9783	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration
Master: 10-Jun-2003 9:55

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	209.4	--	--	--	--	
Th Peak Res	7.000	8.230	--	--	--	--	%
Background Count Rate	142.5	18.75	--	--	--	--	CPS
Gain Ratio	1.000	0.9823	--	--	--	--	

Accelerator-Porosity Tool - Detector Plateau Settings :

Near Detector Plateau Setting 1736 V
Far Detector Plateau Setting 2078 V
Array Detector Plateau Setting 1966 V

Dual Induction - E / Equipment Identification

Primary Equipment:

Dual Induction Sonde	DIS - HB	442
Dual Induction Cartridge	DIC - EB	438

Auxiliary Equipment:

Mass Isolated Housing	MIH - ZA	417

Dual Induction - E Wellsite Calibration

Induction Electronics (10 kHz)

Phase	ID Elect Real Offset 10 kHz MM/M	Value	Phase	ID Elect Real Gain 10 kHz	Value	Phase	ID Elect Phase 10 kHz DEG	Value
Before		39.11	Before		1.008	Before		8.931
	-300.0 (Minimum) 0 (Nominal) 300.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-10.00 (Minimum) 0 (Nominal) 10.00 (Maximum)	
Phase	ID Elect Quad Offset 10 kHz MM/M	Value	Phase	ID Elect Quad Gain 10 kHz	Value	Phase	IM Elect Phase 10 kHz DEG	Value
Before		24.21	Before		0.9961	Before	EXCEEDS LIMIT	13.46
	-300.0 (Minimum) 0 (Nominal) 300.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-10.00 (Minimum) 0 (Nominal) 10.00 (Maximum)	
Phase	IM Elect Real Offset 10 kHz MM/M	Value	Phase	IM Elect Real Gain 10 kHz	Value			
Before		97.65	Before		0.9505			
	-550.0 (Minimum) 0 (Nominal) 550.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				
Phase	IM Elect Quad Offset 10 kHz MM/M	Value	Phase	IM Elect Quad Gain 10 kHz	Value			
Before		96.54	Before		0.9481			
	-550.0 (Minimum) 0 (Nominal) 550.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				

10khz not used.

Before: 18-May-2003 21:19

Dual Induction - E Wellsite Calibration

Induction Electronics (20 kHz)

Phase	ID Elect Real Offset 20 kHz MM/M	Value	Phase	ID Elect Real Gain 20 kHz	Value	Phase	ID Elect Phase 20 kHz DEG	Value
Before		15.17	Before		1.018	Before		7.778
	-125.0 (Minimum) 0 (Nominal) 125.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-15.00 (Minimum) 0 (Nominal) 15.00 (Maximum)	
Phase	ID Elect Quad Offset 20 kHz MM/M	Value	Phase	ID Elect Quad Gain 20 kHz	Value	Phase	IM Elect Phase 20 kHz DEG	Value
Before		9.581	Before		1.006	Before		12.48
	-125.0 (Minimum) 0 (Nominal) 125.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-15.00 (Minimum) 0 (Nominal) 15.00 (Maximum)	
Phase	IM Elect Real Offset 20 kHz MM/M	Value	Phase	IM Elect Real Gain 20 kHz	Value			
Before		40.79	Before		1.011			
	-225.0 (Minimum) 0 (Nominal) 225.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				
Phase	IM Elect Quad Offset 20 kHz MM/M	Value	Phase	IM Elect Quad Gain 20 kHz	Value			
Before		40.43	Before		1.009			
	-225.0 (Minimum) 0 (Nominal) 225.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				

Before: 18-May-2003 21:20

Dual Induction - E Wellsite Calibration

Induction Electronics (40 kHz)

Phase	ID Elect Real Offset 40 kHz MM/M	Value	Phase	ID Elect Real Gain 40 kHz	Value	Phase	ID Elect Phase 40 kHz DEG	Value
Before		9.909	Before		0.9935	Before	EXCEEDS LIMIT	28.32
	-85.00 (Minimum) 0 (Nominal) 85.00 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-20.00 (Minimum) 0 (Nominal) 20.00 (Maximum)	
Phase	ID Elect Quad Offset 40 kHz MM/M	Value	Phase	ID Elect Quad Gain 40 kHz	Value	Phase	IM Elect Phase 40 kHz DEG	Value
Before		6.231	Before		0.9807	Before	EXCEEDS LIMIT	32.92

Phase	IM Elect Real Offset 40 kHz MM/M	Value	Phase	IM Elect Real Gain 40 kHz	Value
Before		26.67	Before		1.026
	-130.0 (Minimum) 0 (Nominal) 130.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)	
Phase	IM Elect Quad Offset 40 kHz MM/M	Value	Phase	IM Elect Quad Gain 40 kHz	Value
Before		26.51	Before		1.023
	-130.0 (Minimum) 0 (Nominal) 130.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)	

40khz not used.

Before: 18-May-2003 21:21

Dual Induction - E Wellsite Calibration

SFL Electronics

Phase	SFL Voltage Offset MV	Value	Phase	SFL Voltage Gain	Value
Before		1.302	Before		1.020
	-15.00 (Minimum) 0 (Nominal) 15.00 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)	
Phase	SFL Current Offset MA	Value	Phase	SFL Current Gain	Value
Before		0.005040	Before		0.9969
	-0.6000 (Minimum) 0 (Nominal) 0.6000 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)	

Before: 18-May-2003 21:22

Dual Induction - E Wellsite Calibration

Electronics Calibration Changes Files/Depth Intervals: 6: 1536.2 - 1639.7 7: 1668.8 - 1547.9

Phase	ID (R > 27 OHM-M) MM/M	Value	Phase	ID (R < 27 OHM-M) %	Value	Phase	SFL (R < 1 OHM-M) OHMM	Value
After		0.02729	After		0.0005810	After		0
	0 (Minimum) 0 (Nominal) 0.7500 (Maximum)			0 (Minimum) 0 (Nominal) 2.000 (Maximum)			0 (Minimum) 0 (Nominal) 0.02000 (Maximum)	
Phase	IM (R > 27 OHM-M) MM/M	Value	Phase	IM (R < 27 OHM-M) %	Value			
After		0.02769	After		0.0006187			
	0 (Minimum) 0 (Nominal) 0.7500 (Maximum)			0 (Minimum) 0 (Nominal) 2.000 (Maximum)				
Phase	SFL (R > 27 OHM-M) MM/M	Value	Phase	SFL (R < 27 OHM-M) %	Value			
After		0.003812	After		0.0001530			
	0 (Minimum) 0 (Nominal) 0.7500 (Maximum)			0 (Minimum) 0 (Nominal) 2.000 (Maximum)				

After: 30-Jun-2003 17:21

Dual Induction - E Master Calibration

Test Loop Calibration: Calibration of Internal Reference to Test Loop Standard

Phase	Deep 10 kHz Gain Factor	Value	Phase	Deep 20 kHz Gain Factor	Value	Phase	Deep 40 kHz Gain Factor	Value
Master		0.9956	Master		1.008	Master		1.026
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)	
Phase	Medium 10 kHz Gain Factor	Value	Phase	Medium 20 kHz Gain Factor	Value	Phase	Medium 40 kHz Gain Factor	Value
Master		1.022	Master		1.030	Master		1.061
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)	
Phase	Deep 10 kHz Phase Shift	Value	Phase	Deep 20 kHz Phase Shift	Value	Phase	Deep 40 kHz Phase Shift	Value
Master		0.1143	Master		-0.1524	Master		-1.426
	-1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)			-2.000 (Minimum) 0 (Nominal) 2.000 (Maximum)			-4.000 (Minimum) -1.000 (Nominal) 2.000 (Maximum)	
Phase	Medium 10 kHz Phase Shift	Value	Phase	Medium 20 kHz Phase Shift	Value	Phase	Medium 40 kHz Phase Shift	Value
Master		-0.2558	Master		-0.9331	Master		-2.461
	-1.500 (Minimum) 0 (Nominal) 1.500 (Maximum)			-3.000 (Minimum) -1.000 (Nominal) 1.000 (Maximum)			-5.000 (Minimum) -2.000 (Nominal) 1.000 (Maximum)	

Master: Calibration out of date 5-Oct-2001 20:50

Dual Induction - E Master Calibration

Sonde Error Corrections: Correction for sonde response in zero conductivity environment. (Normalized to 25C).

Phase	Real Deep 10 kHz S.E. Corr.	Value	Phase	Real Deep 20 kHz S.E. Corr.	Value	Phase	Real Deep 40 kHz S.E. Corr.	Value
Master		44.95	Master		16.36	Master		4.690
	-50.00 0 125.0			-30.00 0 30.00			-15.00 0 15.00	

Phase	Quad Deep 10 kHz S.E. Corr.	Value
Master		108.9
	-250.0 (Minimum) 0 (Nominal) 350.0 (Maximum)	

Phase	Quad Deep 20 kHz S.E. Corr.	Value
Master		64.63
	-125.0 (Minimum) 0 (Nominal) 200.0 (Maximum)	

Phase	Quad Deep 40 kHz S.E. Corr.	Value
Master		46.10
	-75.00 (Minimum) 0 (Nominal) 125.0 (Maximum)	

Phase	Real Medium 10 kHz S.E. Corr.	Value
Master		20.73
	-50.00 (Minimum) 0 (Nominal) 140.0 (Maximum)	

Phase	Real Medium 20 kHz S.E. Corr.	Value
Master		-1.786
	-50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	

Phase	Real Medium 40 kHz S.E. Corr.	Value
Master		-10.46
	-30.00 (Minimum) 0 (Nominal) 30.00 (Maximum)	

Phase	Quad Medium 10 kHz S.E. Corr.	Value
Master		-105.8
	-1300 (Minimum) 0 (Nominal) 1300 (Maximum)	

Phase	Quad Medium 20 kHz S.E. Corr.	Value
Master		-34.20
	-650.0 (Minimum) 0 (Nominal) 650.0 (Maximum)	

Phase	Quad Medium 40 kHz S.E. Corr.	Value
Master		11.45
	-350.0 (Minimum) 0 (Nominal) 350.0 (Maximum)	

Master: Calibration out of date 5-Oct-2001 21:22

Hostile Litho-Density Sonde / Equipment Identification

Primary Equipment:		
Hostile Litho Density Sonde	HLDS - D	45
Hostile Litho Density High Voltage	HLDV - D	35
Gamma Source Radioactive	GSR - Z	1846
Auxiliary Equipment:		
Hostile Litho Density Pad	HLDP - C	45
Hostile Litho Density High Voltage Housi	HEH - H	35

Nuclear Porosity Lithology Cartridge - B / Equipment Identification

Primary Equipment:		
NPLC Cartridge	NPLC - B	79
Auxiliary Equipment:		
NPLC Housing	NPH - B	82

Accelerator-Porosity Tool / Equipment Identification

Primary Equipment:		
Accelerator-Porosity Sonde	APS - C	202
APS Minitron	MNTR - F	5124
Auxiliary Equipment:		
Accelerator-Porosity Housing	APH - AC	104
APS Calibration Water Tank	SFT - 178	13
APS Aluminum Calibrator Sleeve	SFT - 281	1

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:		
HNGS Sonde	HNGS - BA	77
Auxiliary Equipment:		
HNGS Sonde Housing	HNSH - BA	79
Gamma Source Radioactive	GSR - U	135

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value
Master		40.65
Before		40.63
After		40.83
	37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)	

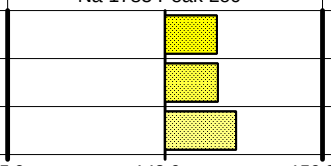
Phase	Na 511 Peak Res %	Value
Master		16.98
Before		16.69
After		15.90
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

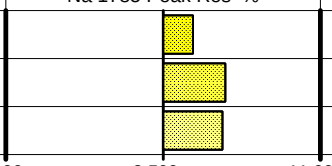
Phase	High Voltage V	Value
Master		1208
Before		1207
After		1213
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

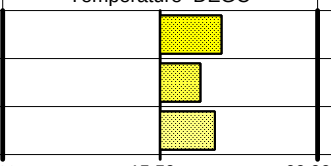
Phase	Na 1785 Peak Loc	Value

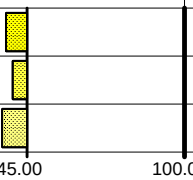
Phase	Na 1785 Peak Res %	Value

Phase	Temperature DEGC	Value

Phase	Na 1785 Peak Loc	Value
Master		145.2
Before		145.2
After		146.1
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		8.982
Before		9.496
After		9.445
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

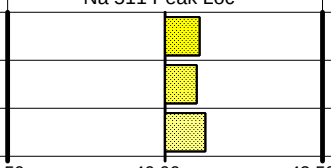
Phase	Temperature DEGC	Value
Master		33.02
Before		27.12
After		31.05
	-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

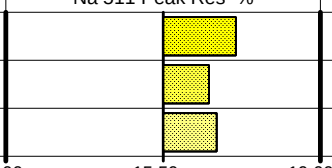
Phase	Na Count Rate CPS	Value
Master		40.11
Before		41.75
After		39.41
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

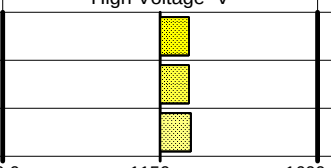
Master: 10-Jun-2003 10:13 Before: 8-Apr-2003 3:33 After: 30-Jun-2003 18:17

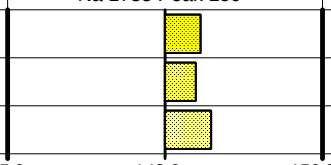
Hostile Natural Gamma Ray Sonde Wellsite Calibration

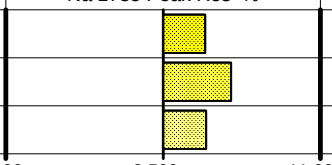
Detector 2 Check

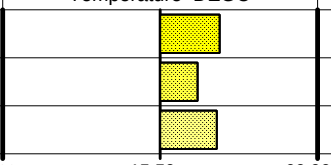
Phase	Na 511 Peak Loc	Value
Master		40.56
Before		40.51
After		40.64
	37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)	

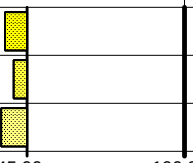
Phase	Na 511 Peak Res %	Value
Master		17.13
Before		16.55
After		16.71
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1234
Before		1235
After		1239
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		144.4
Before		144.2
After		144.9
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		9.188
Before		9.586
After		9.197
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

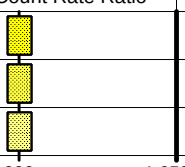
Phase	Temperature DEGC	Value
Master		32.54
Before		26.30
After		31.53
	-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		40.04
Before		41.81
After		39.20
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: 10-Jun-2003 10:13 Before: 8-Apr-2003 3:33 After: 30-Jun-2003 18:17

Hostile Natural Gamma Ray Sonde Wellsite Calibration

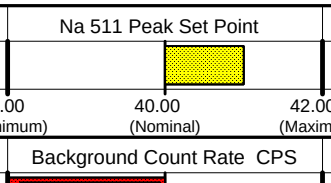
Ratio Of Detector 1 To Detector 2

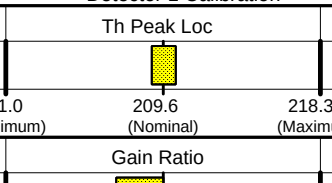
Phase	Coincidence Count Rate Ratio	Value
Master		1.001
Before		0.9991
After		1.004
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	

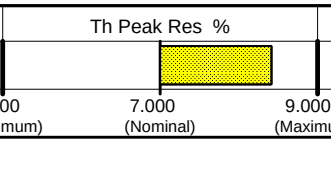
Master: 10-Jun-2003 10:13
Before: 8-Apr-2003 3:33
After: 30-Jun-2003 18:17

Hostile Natural Gamma Ray Sonde Master Calibration

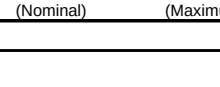
Detector 1 Calibration

Phase	Na 511 Peak Set Point	Value
Master		41.00
	38.00 (Minimum) 40.00 (Nominal) 42.00 (Maximum)	

Phase	Th Peak Loc	Value
Master		209.0
	201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)	

Phase	Th Peak Res %	Value
Master		8.425
	5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)	

Phase	Background Count Rate CPS	Value
Master	EXCEEDS LIMIT	19.30
	20.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)	

Phase	Gain Ratio	Value
Master		0.9783
	0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)	

Master: 10-Jun-2003 9:55

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 2 Calibration

Phase	Na 511 Peak Set Point	Value
Master		41.00
	38.00 (Minimum) 40.00 (Nominal) 42.00 (Maximum)	

Phase	Th Peak Loc	Value
Master		209.4
	201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)	

Phase	Th Peak Res %	Value
Master		8.230
	5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)	

Phase	Background Count Rate CPS	Value
Master	EXCEEDS LIMIT	18.75
	20.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)	

Phase	Gain Ratio	Value
Master		0.9823
	0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)	

Master: 10-Jun-2003 9:55

Company: Lamont Doherty

Schlumberger

Well: ODP Leg 209, Site 1275D

Field: Mid Atlantic Ridge

Country:

Ocean: Atlantic

Phasor Induction

HNGS Natural Gamma Ray