Schlumberger

Company: Lamont Doherty

Well: ODP Leg 203 Site1243B
Field: Equatorial Pacific IMO
Country: Panama Ocean: Pacific

Country: Panama
Field: Equatorial Pacific IMO
Location: Rig...Joides Resolution
Well: ODP Leg 203 Site1243B
Company: Lamont Doherty

Phasor Induction
Natural Gamma Ray

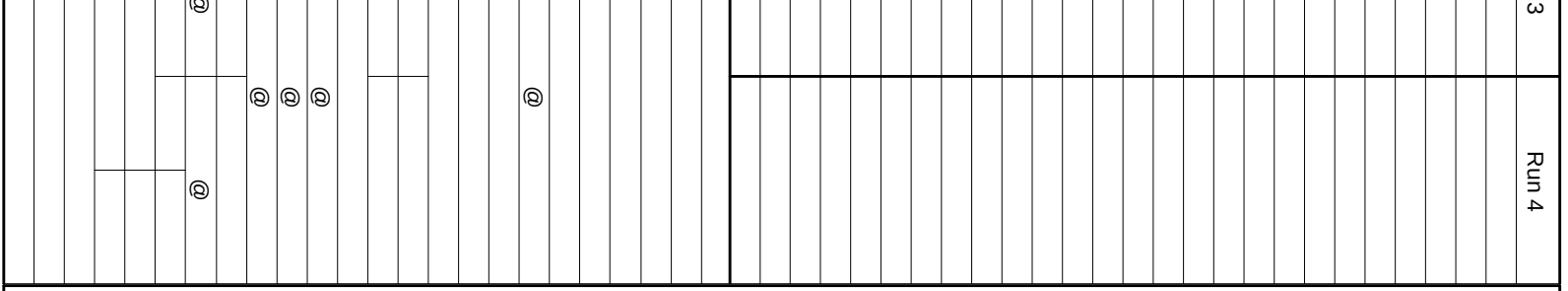
LOCATION

Rig...Joides Resolution		Elev.: K.B.	11.3 m
Lat: N 5 Deg 18.0551'			G.L. -3868 m
Long: W 110 Deg 4.2542'			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. 0 deg	Longitude	Latitude

	Run 1	Run 2	Run
Logging Date	23-Jun-2002		
Run Number	1		
Depth Driller	4063.2 m		
Schlumberger Depth	4049 m		
Bottom Log Interval	4044 m		
Top Log Interval	3968 m		
Casing Driller Size @ Depth	0.000 in @ 3947 m	@	@
Casing Schlumberger	3950 m		
Bit Size	9.875 in		
Type Fluid In Hole	Sepiolite		
MUD Density / Viscosity	1.1 g/cm3		
MUD Fluid Loss / PH			
MUD Source Of Sample	Mudpit		
RM @ Measured Temperature	0.250 ohm.m @ 30 degC	@	@
RMF @ Measured Temperature	@	@	@
RMC @ Measured Temperature	@	@	@
Source RMF / RMC			
RM @ MRT / RMF @ MRT	@ / @	@ / @	@ / @
Maximum Recorded Temperatures			
Circulation Stopped / Time	23-Jun-2002 13:00		
Logger On Bottom / Time	23-Jun-2002 20:48		
Unit Number / Location	99 Houston ODP		
Recorded By	K. Swain		
Witnessed By	A. Buysch		

	Run 1	Run 2	Run
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/APS/HNGS	OS1:
OS2: FMS/DSST	OS2:
OS3: WST	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Hole cored with RCB.	
Sea Floor at 3968 mbrf per HLDS density curve.	
Log measured in meters below rig floor.	
Lamont temperature tool was run but no data was recovered so no official	
bottom hole temperature is given.	
Wireline heave compensator used on all runs.	
Sepiolite mud was used to displace the hole.	
Driller TD=4063mbrf	
Schlumberger TD=4049mbrf	
Drill pipe Schlumberger=3950mbrf.	
HNGS calibration shows a weak stabilization source but does not affect	
calibration or log operation.	

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

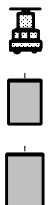
EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

SFT-281 24
SFT-178 4722
GSR-U 135
WITM (DTS)-A

DOWNHOLE EQUIPMENT



LEH-QT LEH-QT 1494			31.40
DTC-H ECH-KC 9841	CTEM TelStatus ToolStatu	30.23 29.60	30.51
HNGS-BA HNGS-BA 77	Upper_1 Lower_2	28.90 28.69	29.60

HNSH-BA 79

ILE-D 27.10
ILE-D 25

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

APS-BA 24.66
APS-BA 22
APH-AC 22
MNTR-F 4185

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 35
HEH-H 35
HLDP-C 35

Caliper
SS LS Status 14.22

DTA-A 13.45
ECH-KE 8455
DTA-A 8261

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

Input DLIS Files

DEFAULT	PI_LDL_APS_NGS_007LUP	FN:8	PRODUCER	23-Jun-2002 20:48	4050.8 M	3830.0 M

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_031PUP	FN:30	PRODUCER	26-Jun-2002 20:57	4050.8 M	3836.1 M
RED2	PI_LDL_APS_NGS_031PUP	FN:31	PRODUCER	26-Jun-2002 20:57	4050.8 M	3836.1 M

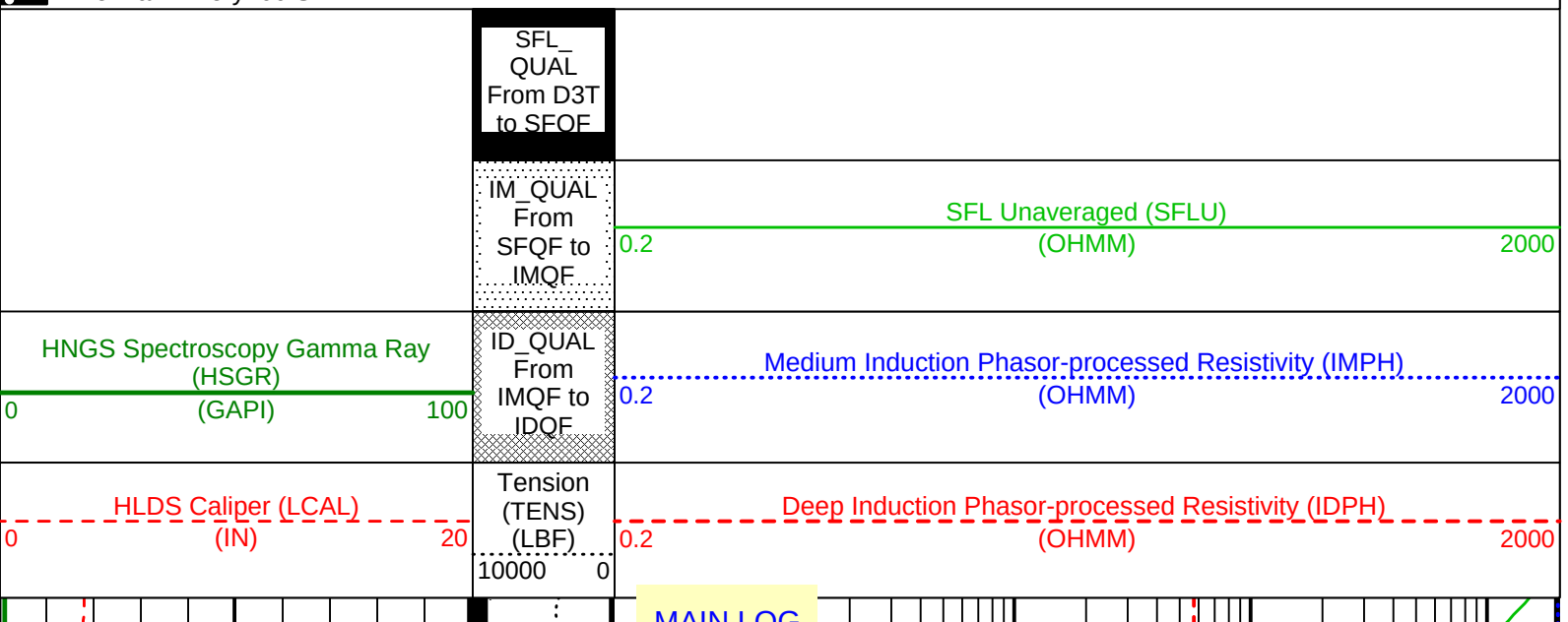
OP System Version: 10C0-306

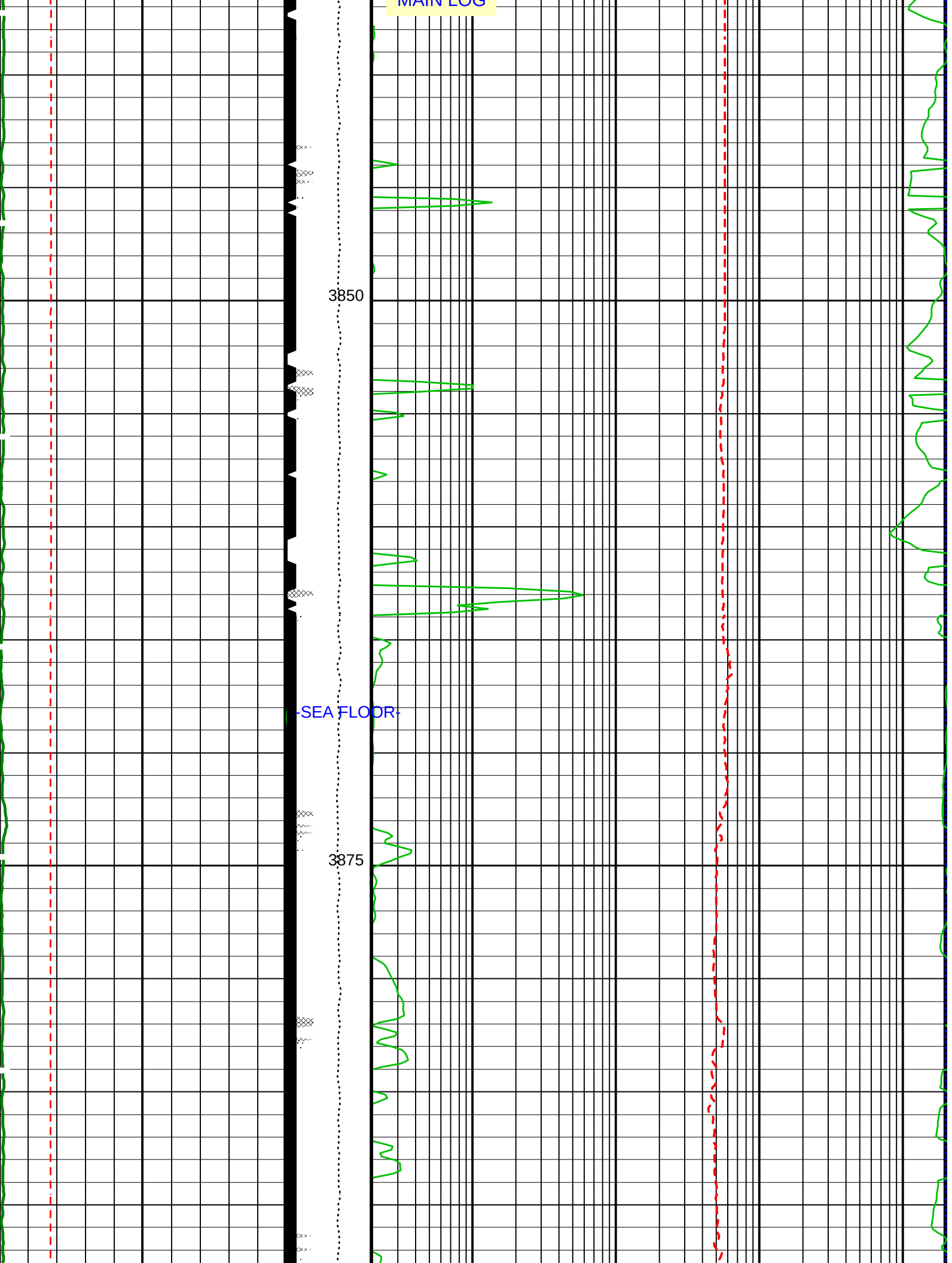
MCM

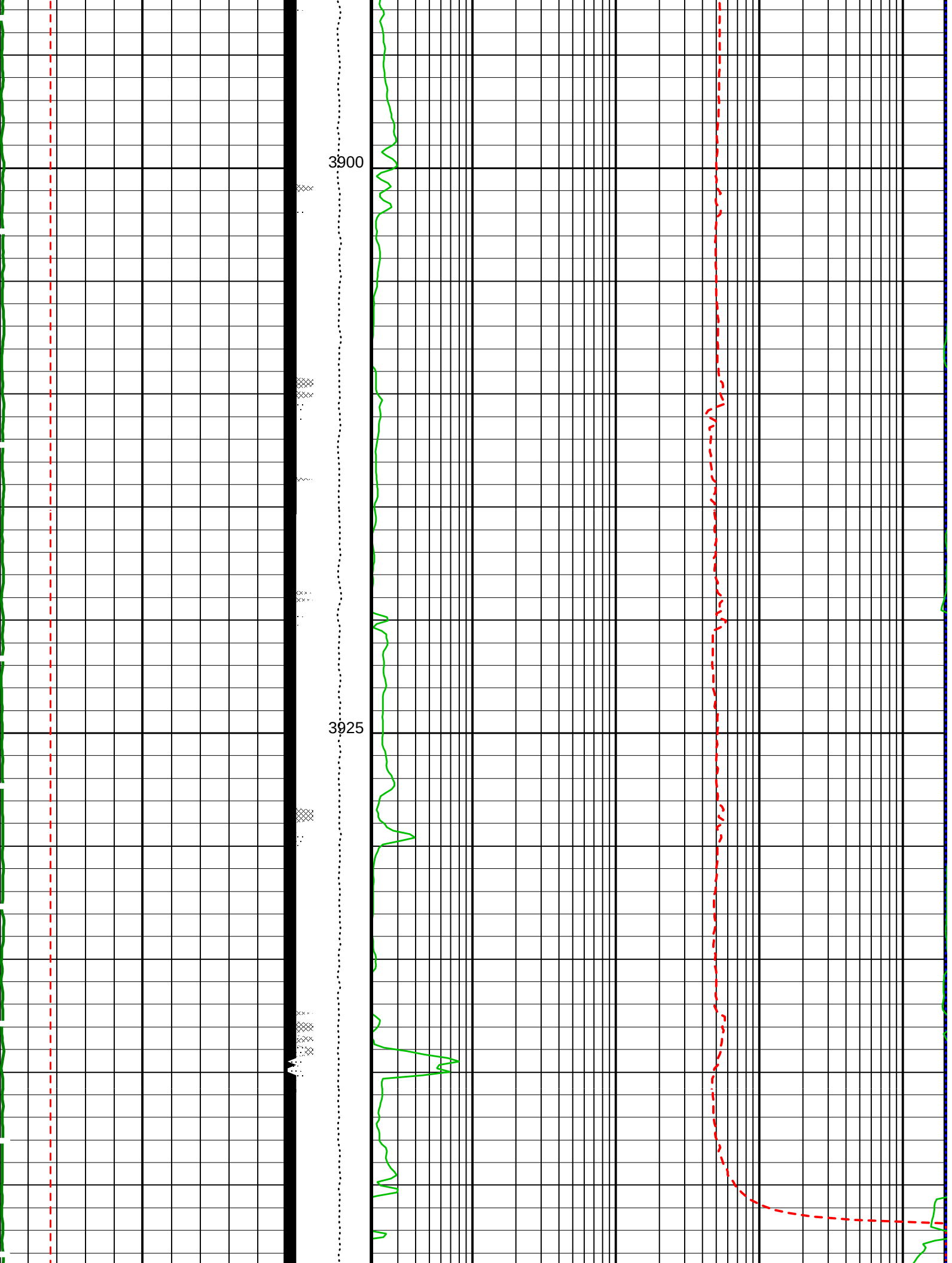
DIT-E	10C0-306	DTA-A	10C0-306
HLDS	OP10-KP1	NPLC-B	OP10-KP1
APS-BA	OP10-KP1	HNGS-BA	OP10-KP1
DTC-H	10C0-306		

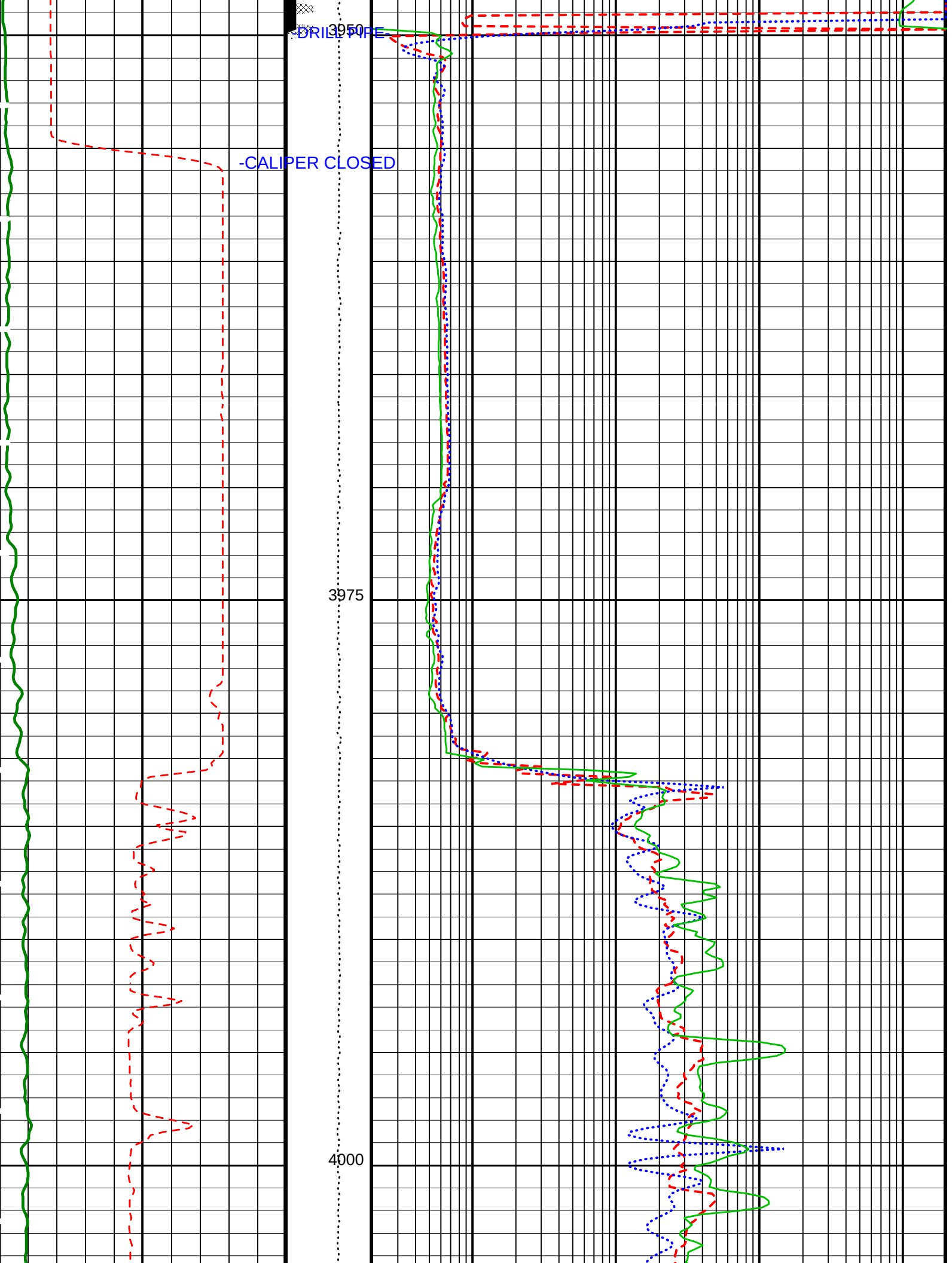
PIP SUMMARY

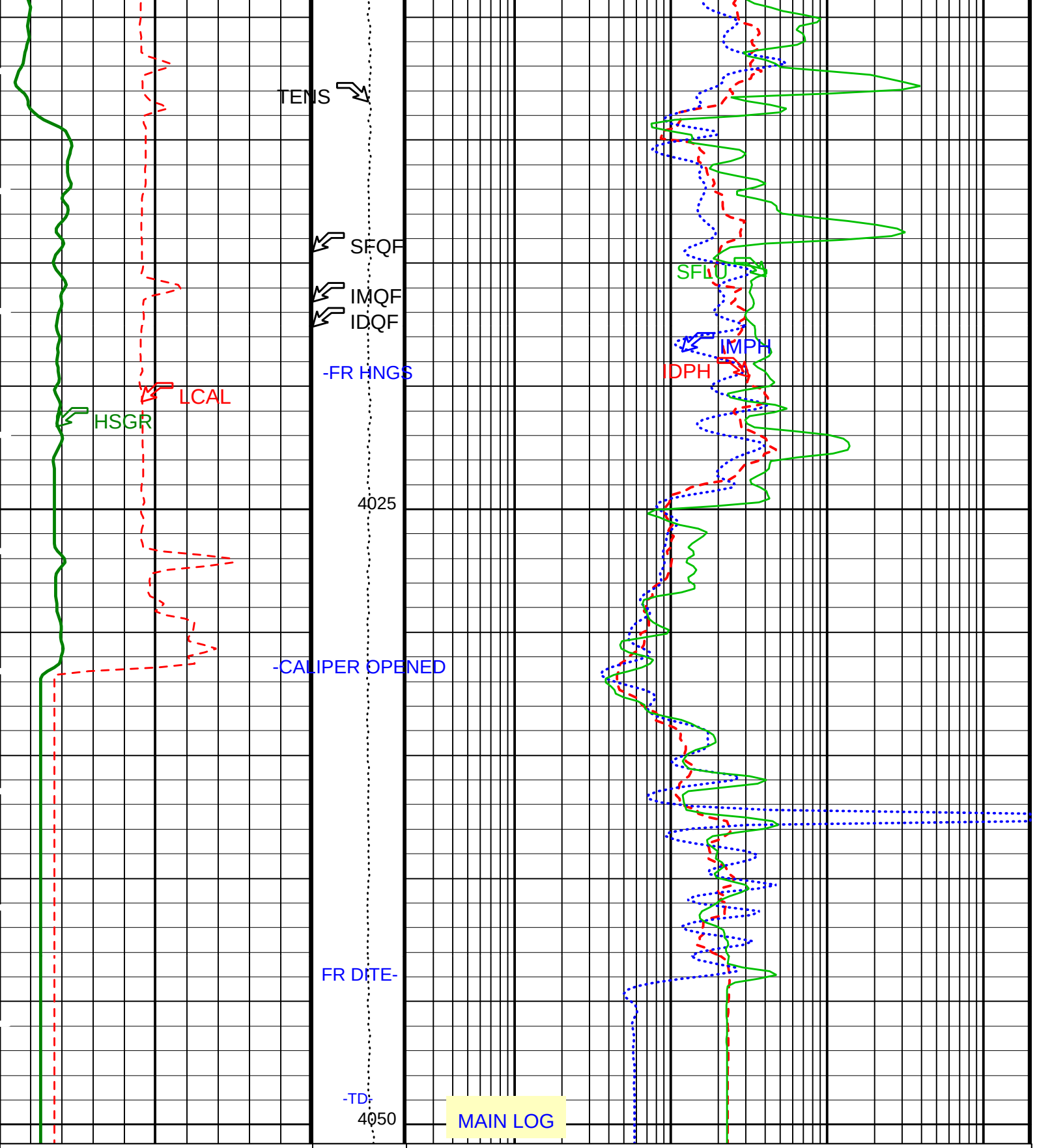
Time Mark Every 60 S




MAIN LOG
3850
-SEA FLOOR-
3875


3900
3925


-DRILL PIPE
-CALIPER CLOSED
3950
3975
4000



HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

Deep Induction Phasor-processed Resistivity (IDPH)
0.2 (OHMM) 2000

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

ID_QUAL From IMQF to IDQF

Medium Induction Phasor-processed Resistivity (IMPH)
0.2 (OHMM) 2000

IM_QUAL From

SFL Unaveraged (SFLU)

From SFQF to IMQF	0.2 (OHMM)	2000
SFL_ QUAL From D3T to SFQF		

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)	100	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-BA: Accelerator-Porosity Tool		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	100	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)	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	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	-0.00686141	
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	0.893746	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.35167	
	System and Miscellaneous		
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.10	G/C3
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	4049	M

Format: DITE_LogPhasor Vertical Scale: 1:200 Graphics File Created: 26-Jun-2002 20:57

OP System Version: 10C0-306

MCM

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

Input DLIS Files

DEFAULT	PI_LDL_APS_NGS_007LUP	FN:8	PRODUCER	23-Jun-2002 20:48	4050.8 M	3830.0 M

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_031PUP	FN:30	PRODUCER	26-Jun-2002 20:57		
RED2	PI_LDL_APS_NGS_031PUP	FN:31	PRODUCER	26-Jun-2002 20:57		

Input DLIS Files

DEFAULT	PI_LDL_APS_NGS_008LUP	FN:10	PRODUCER	23-Jun-2002 21:36	4050.8 M	3948.2 M

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_032PUP	FN:32	PRODUCER	26-Jun-2002 22:56	4050.8 M	3954.9 M
RED2	PI_LDL_APS_NGS_032PUP	FN:33	PRODUCER	26-Jun-2002 22:56	4050.8 M	3954.9 M

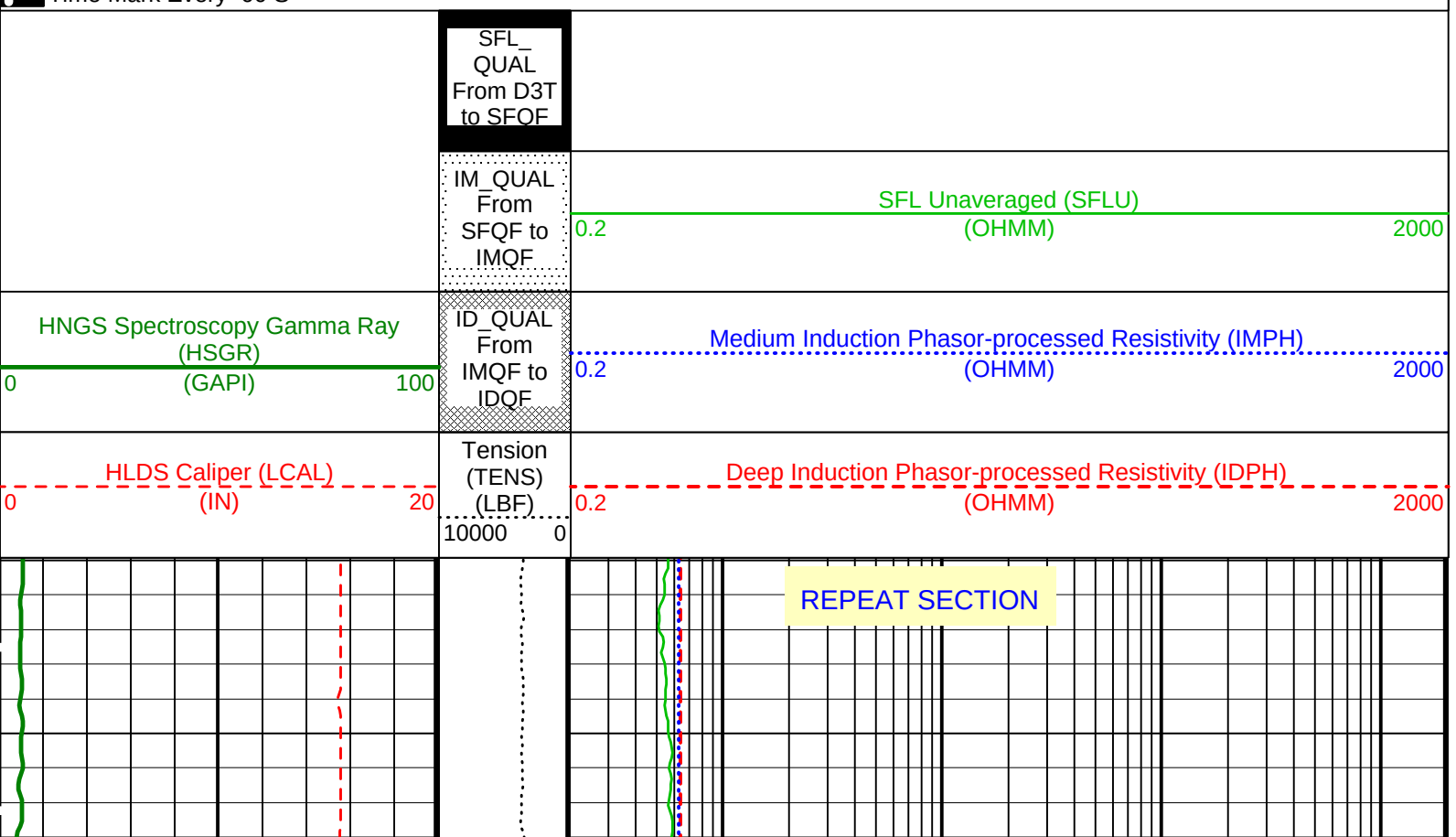
OP System Version: 10C0-306

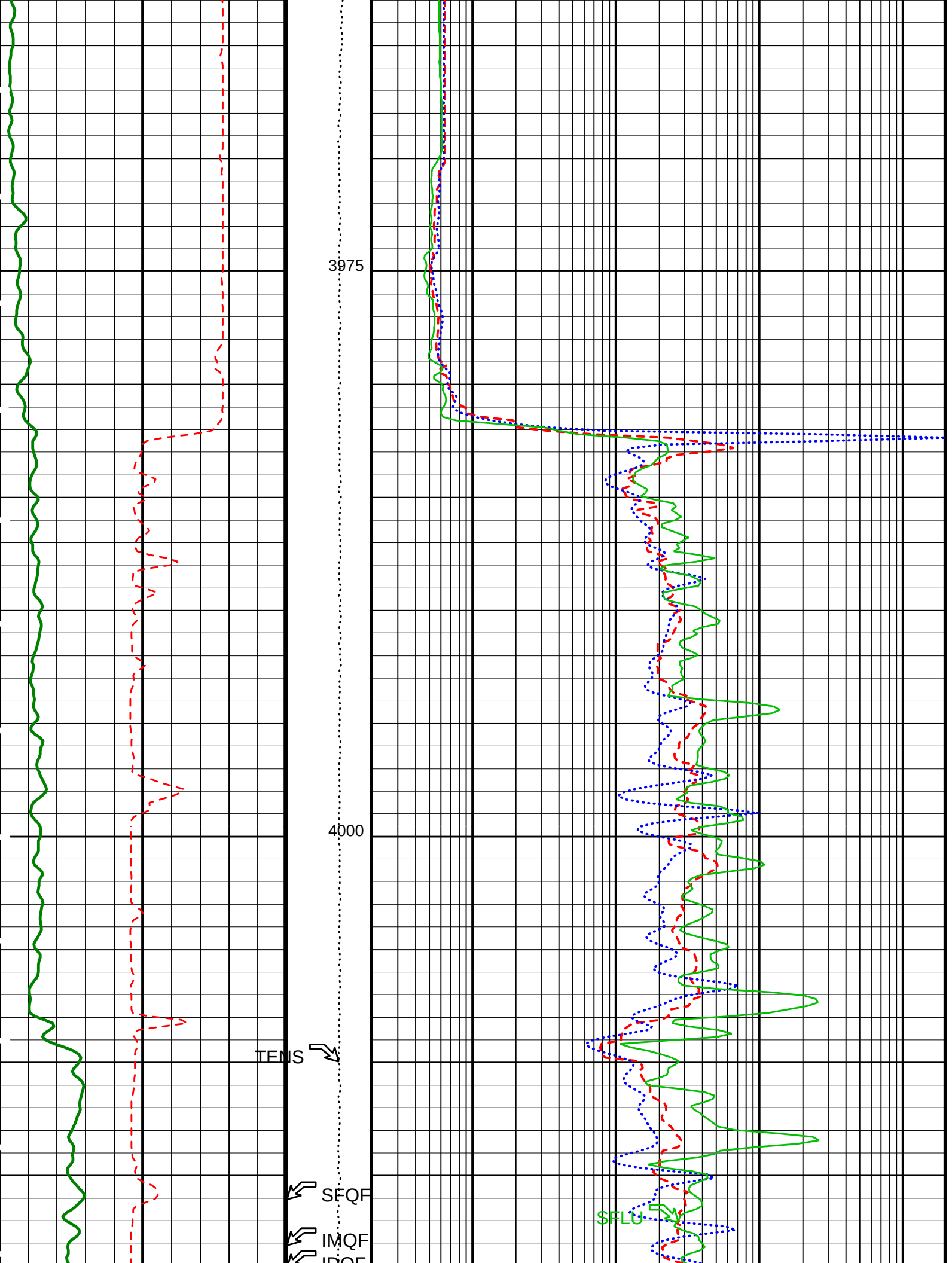
MCM

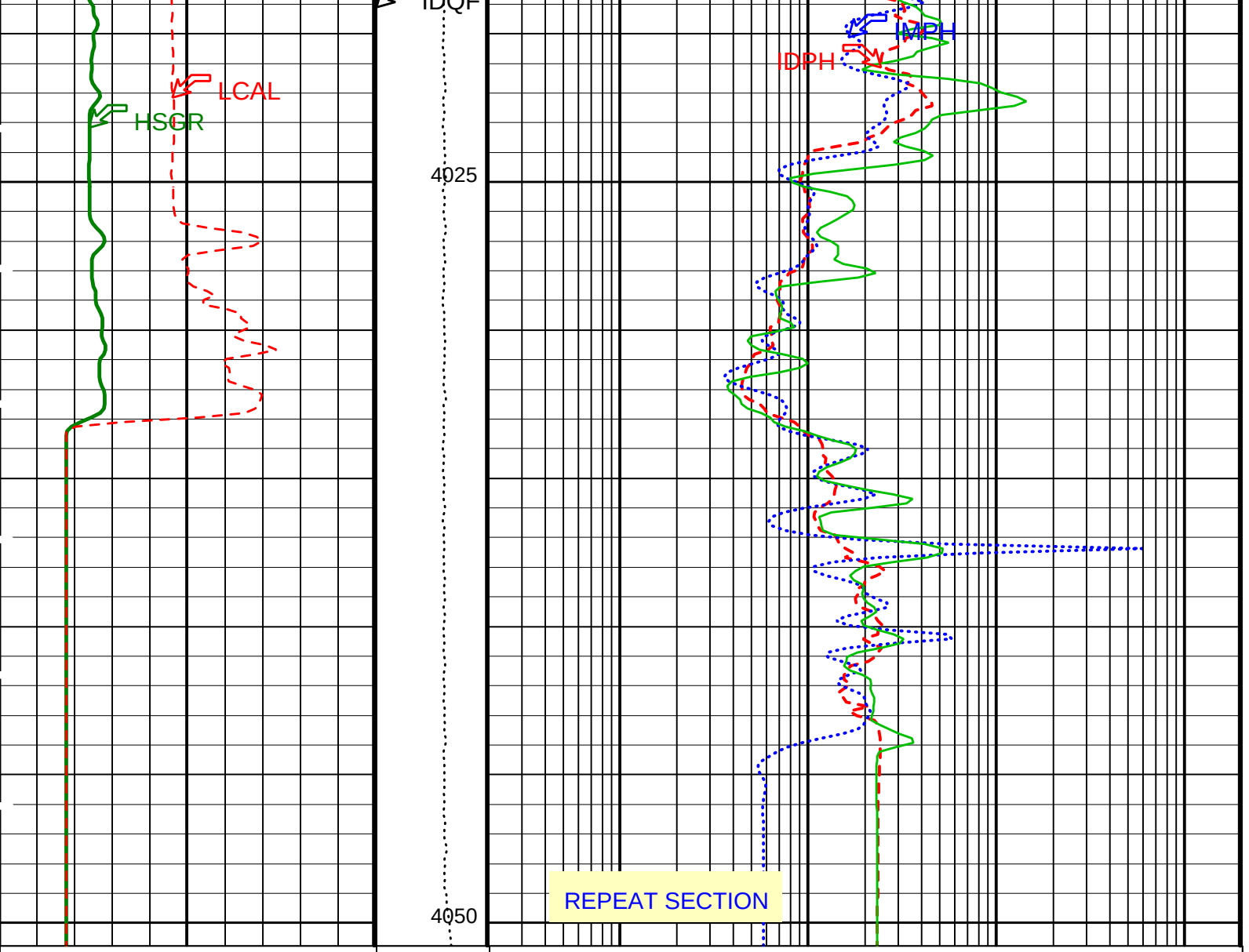
DIT-E	10C0-306	DTA-A	10C0-306
HLDS	OP10-KP1	NPLC-B	OP10-KP1
APS-BA	OP10-KP1	HNGS-BA	OP10-KP1
DTC-H	10C0-306		

PIP SUMMARY

Time Mark Every 60 S




3975
4000
TENS
SFQF
IMQF
SFLU



HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

Deep Induction Phasor-processed Resistivity (IDPH)
0.2 (OHMM) 2000

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 100

ID_QUAL From IMQF to IDQF

Medium Induction Phasor-processed Resistivity (IMPH)
0.2 (OHMM) 2000

IM_QUAL From SFQF to IMQF

SFL Unaveraged (SFLU)
0.2 (OHMM) 2000

SFL_ QUAL From D3T to SFQF

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)	100	DEGC
DGF2	Deep 20 kHz Gain Factor	1.00789	

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-BA: Accelerator-Porosity Tool			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	100	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)	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	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	-0.00686141	
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	0.893746	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.35167	
System and Miscellaneous			
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.10	G/C3
DO	Depth Offset for Playback	0.0	M
PP	Playback Processing	RECOMPUTE	
TD	Total Depth	4049	M

Format: DITE_LogPhasor Vertical Scale: 1:200 Graphics File Created: 26-Jun-2002 22:56

OP System Version: 10C0-306

MCM

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

Input DLIS Files

DEFAULT	PI_LDL_APS_NGS_008LUP	FN:10	PRODUCER	23-Jun-2002 21:36	4050.8 M	3948.2 M

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_032PUP	FN:32	PRODUCER	26-Jun-2002 22:56	
RED2	PI_LDL_APS_NGS_032PUP	FN:33	PRODUCER	26-Jun-2002 22:56	

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement							
Master: 10-Jun-2002 14:44 Before: 16-Jun-2002 1:29 After: Calibration not done							
SS Cs Resolution Bkg	9.000	8.597	8.483	N/A	N/A	1.800	%
LS Cs Resolution Bkg	9.000	8.877	8.855	N/A	N/A	1.800	%
LSW1 Background	100.0	84.35	83.41	N/A	N/A	0.03000	CPS
LSW2 Background	100.0	77.56	77.44	N/A	N/A	0.03000	CPS
LSW3 Background	200.0	173.7	172.0	N/A	N/A	0.03000	CPS
LSW4 Background	250.0	210.5	208.9	N/A	N/A	0.03000	CPS
LSW5 Background	600.0	479.0	478.5	N/A	N/A	0.03000	CPS
SSW1 Background	100.0	84.27	84.23	N/A	N/A	0.03000	CPS
SSW2 Background	200.0	150.1	150.3	N/A	N/A	0.03000	CPS
SSW3 Background	500.0	405.7	401.7	N/A	N/A	0.03000	CPS
SSW4 Background	270.0	212.9	215.0	N/A	N/A	0.03000	CPS
SSW5 Background	200.0	154.2	157.4	N/A	N/A	0.03000	CPS
Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement							
Master: 10-Jun-2002 19:13							
LSW1 Aluminum	600.0	527.6	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	777.6	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	958.6	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	487.5	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	467.5	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2215	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6437	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9368	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	4038	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	581.9	N/A	N/A	N/A	N/A	CPS
Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement							
Master: 10-Jun-2002 19:08							
LSW1 Iron	400.0	368.0	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	634.5	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	865.9	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	456.7	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	438.3	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1655	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5408	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8603	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3720	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	518.6	N/A	N/A	N/A	N/A	CPS
Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration							
Before: 16-Jun-2002 1:23							
HLDS Caliper Small Ring	12.00	N/A	15.82	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.38	N/A	20.89	N/A	N/A	N/A	IN
Accelerator-Porosity Tool Wellsite Calibration - Detector Background							
Master: 26-May-2002 23:31 Before: 23-Jun-2002 20:37 After: Calibration not done							
Near Det Bkg Cntrate	30.00	31.44	31.62	N/A	N/A	N/A	CPS
Far Det Bkg Cntrate	30.00	32.29	33.97	N/A	N/A	N/A	CPS
Array-1 Det Bkg Cntrate	30.00	28.05	29.84	N/A	N/A	N/A	CPS
Array-2 Det Bkg Cntrate	30.00	30.70	30.52	N/A	N/A	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	31.77	30.80	N/A	N/A	N/A	CPS
Accelerator-Porosity Tool Wellsite Calibration - Calibration Ratios							
Master: 26-May-2002 23:32							
Near/Far Calibration Ratio	0.9250	0.8992	N/A	N/A	N/A	N/A	
Near/Array Calibration Ratio	1.030	1.062	N/A	N/A	N/A	N/A	
Near/Array Cal Ratio Up/Down	1.000	1.007	N/A	N/A	N/A	N/A	
Accelerator-Porosity Tool Wellsite Calibration - Tank Check							
Master: 26-May-2002 23:33							
Array-1 Standoff Porosity	11.75	12.00	N/A	N/A	N/A	N/A	PU
Array-2 Standoff Porosity	11.75	11.45	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	5.854	N/A	N/A	N/A	N/A	US
Array-1 SDT Ratio Up/Down	1.000	0.9981	N/A	N/A	N/A	N/A	
Array-2 SDT Ratio Up/Down	1.000	0.9978	N/A	N/A	N/A	N/A	
Sigma Formation	27.50	27.57	N/A	N/A	N/A	N/A	CU
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check							
Master: 26-Jun-2002 19:50 Before: 26-Jun-2002 20:00 After: 26-Jun-2002 20:21							
Na-511 Peak Loc	40.00	40.52	40.57	40.54	0.03000	1.000	

Na 511 Peak Loc	40.00	40.53	40.57	40.54	-0.03688	1.000	
Na 511 Peak Res	15.50	16.57	16.35	16.38	0.03455	2.000	%
High Voltage	1150	1202	1203	1203	-0.08899	30.00	V
Na 1785 Peak Loc	142.6	145.8	145.6	145.4	-0.2063	7.000	
Na 1785 Peak Res	8.500	9.282	9.387	9.258	-0.1286	2.000	%
Temperature	15.50	32.17	32.19	32.21	0.01600	N/A	DEGC
Na Count Rate	45.00	35.72	35.35	36.12	0.7698	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check
Master: 26-Jun-2002 19:50 Before: 26-Jun-2002 20:00 After: 26-Jun-2002 20:21

Na 511 Peak Loc	40.00	40.64	40.57	40.73	0.1571	1.000	
Na 511 Peak Res	15.50	16.86	16.23	16.78	0.5520	2.000	%
High Voltage	1150	1233	1232	1232	-0.2640	30.00	V
Na 1785 Peak Loc	142.6	144.9	144.3	144.5	0.2225	7.000	
Na 1785 Peak Res	8.500	9.410	9.624	10.07	0.4489	2.000	%
Temperature	15.50	31.66	31.72	31.85	0.1242	N/A	DEGC
Na Count Rate	45.00	35.81	35.12	35.81	0.6894	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2
Master: 26-Jun-2002 19:50 Before: 26-Jun-2002 20:00 After: 26-Jun-2002 20:21

Coincidence Count Rate Ratio	1.000	0.9971	1.005	1.007	0.001825	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration
Master: 26-Jun-2002 19:36

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	209.0	--	--	--	--	
Th Peak Res	7.000	7.963	--	--	--	--	%
Background Count Rate	142.5	21.13	--	--	--	--	CPS
Gain Ratio	1.000	0.9809	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration
Master: 26-Jun-2002 19:36

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	209.8	--	--	--	--	
Th Peak Res	7.000	7.951	--	--	--	--	%
Background Count Rate	142.5	19.47	--	--	--	--	CPS
Gain Ratio	1.000	0.9820	--	--	--	--	

Accelerator-Porosity Tool - Detector Plateau Settings :

Near Detector Plateau Setting 1748 V
Far Detector Plateau Setting 2052 V
Array Detector Plateau Setting 1969 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
Before		37.46
-262.8 (Minimum)	37.15 (Nominal)	337.2 (Maximum)

Phase	ID Elect Real Gain 10 kHz	Value
Before		0.9749
0.8294 (Minimum)	0.9794 (Nominal)	1.171 (Maximum)

Phase	ID Elect Phase 10 kHz DEG	Value
Before		10.88
0.6325 (Minimum)	10.63 (Nominal)	20.63 (Maximum)

Phase	ID Elect Quad Offset 10 kHz MM/M	Value
Before		22.87
-277.5 (Minimum)	22.53 (Nominal)	322.5 (Maximum)

Phase	ID Elect Quad Gain 10 kHz	Value
Before		0.9640
0.8193 (Minimum)	0.9693 (Nominal)	1.157 (Maximum)

Phase	IM Elect Phase 10 kHz DEG	Value
Before		13.53
3.310 (Minimum)	13.31 (Nominal)	23.31 (Maximum)

Phase	IM Elect Real Offset 10 kHz MM/M	Value
Before		96.87
-453.5 (Minimum)	96.54 (Nominal)	646.5 (Maximum)

Phase	IM Elect Real Gain 10 kHz	Value
Before		0.9505
0.8074 (Minimum)	0.9574 (Nominal)	1.140 (Maximum)

Phase	IM Elect Quad Offset 10 kHz MM/M	Value
Before		95.53
-454.8	95.18	645.2

Phase	IM Elect Quad Gain 10 kHz	Value
Before		0.9482
0.8055	0.9555	1.137

(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)

Before: 16-Jun-2002 1:25

Dual Induction - E Wellsite Calibration

Induction Electronics (20 kHz)

Phase	ID Elect Real Offset 20 kHz MM/M	Value
Before		14.77
-110.3 (Minimum)	14.68 (Nominal)	139.7 (Maximum)

Phase	ID Elect Real Gain 20 kHz	Value
Before		1.001
0.8551 (Minimum)	1.005 (Nominal)	1.207 (Maximum)

Phase	ID Elect Phase 20 kHz DEG	Value
Before		9.314
-5.718 (Minimum)	9.282 (Nominal)	24.28 (Maximum)

Phase	ID Elect Quad Offset 20 kHz MM/M	Value
Before		9.164
-115.9 (Minimum)	9.089 (Nominal)	134.1 (Maximum)

Phase	ID Elect Quad Gain 20 kHz	Value
Before		0.9893
0.8445 (Minimum)	0.9945 (Nominal)	1.192 (Maximum)

Phase	IM Elect Phase 20 kHz DEG	Value
Before		12.36
-2.653 (Minimum)	12.35 (Nominal)	27.35 (Maximum)

Phase	IM Elect Real Offset 20 kHz MM/M	Value
Before		40.27
-184.7 (Minimum)	40.31 (Nominal)	265.3 (Maximum)

Phase	IM Elect Real Gain 20 kHz	Value
Before		1.007
0.8587 (Minimum)	1.009 (Nominal)	1.212 (Maximum)

Phase	IM Elect Quad Offset 20 kHz MM/M	Value
Before		39.76
-185.2 (Minimum)	39.80 (Nominal)	264.8 (Maximum)

Phase	IM Elect Quad Gain 20 kHz	Value
Before		1.004
0.8566 (Minimum)	1.007 (Nominal)	1.209 (Maximum)

Before: 16-Jun-2002 1:19

Dual Induction - E Wellsite Calibration

Induction Electronics (40 kHz)

Phase	ID Elect Real Offset 40 kHz MM/M	Value
Before		9.708
-75.43 (Minimum)	9.570 (Nominal)	94.57 (Maximum)

Phase	ID Elect Real Gain 40 kHz	Value
Before		0.9886
0.8395 (Minimum)	0.9895 (Nominal)	1.185 (Maximum)

Phase	ID Elect Phase 40 kHz DEG	Value
Before		28.60
9.068 (Minimum)	29.07 (Nominal)	49.07 (Maximum)

Phase	ID Elect Quad Offset 40 kHz MM/M	Value
Before		5.997
-79.10 (Minimum)	5.897 (Nominal)	90.90 (Maximum)

Phase	ID Elect Quad Gain 40 kHz	Value
Before		0.9762
0.8281 (Minimum)	0.9781 (Nominal)	1.169 (Maximum)

Phase	IM Elect Phase 40 kHz DEG	Value
Before		32.20
12.68 (Minimum)	32.68 (Nominal)	52.68 (Maximum)

Phase	IM Elect Real Offset 40 kHz MM/M	Value
Before		26.33
-103.8 (Minimum)	26.19 (Nominal)	156.2 (Maximum)

Phase	IM Elect Real Gain 40 kHz	Value
Before		1.023
0.8673 (Minimum)	1.017 (Nominal)	1.224 (Maximum)

Phase	IM Elect Quad Offset 40 kHz MM/M	Value
Before		26.09
-104.1 (Minimum)	25.92 (Nominal)	155.9 (Maximum)

Phase	IM Elect Quad Gain 40 kHz	Value
Before		1.020
0.8649 (Minimum)	1.015 (Nominal)	1.221 (Maximum)

Before: 16-Jun-2002 1:24

Dual Induction - E Wellsite Calibration

SFL Electronics

Phase	SFL Voltage Offset MV	Value
Before		1.250
-15.00 (Minimum)	0 (Nominal)	15.00 (Maximum)

Phase	SFL Voltage Gain	Value
Before		1.018
0.8500 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Phase	SFL Current Offset MA	Value
Before		0.004724
-0.6000 (Minimum)	0 (Nominal)	0.6000 (Maximum)

Phase	SFL Current Gain	Value
Before		0.9955
0.8500 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Before: 16-Jun-2002 1:21

Dual Induction - E Wellsite Calibration

Electronics Calibration Changes

Files/Depth Intervals: 27: 4050.8 - 3836.1 28: 4050.8 - 3836.1 29: 4050.8 - 3836.1 30: 4050.8 - 3836.1 31: 4050.8 - 3836.1 32: 4050.8 - 3954.9

Phase	ID (R > 27 OHM-M) MM/M	Value
After		0.2861
0 (Minimum)	0 (Nominal)	0.7500 (Maximum)

Phase	ID (R < 27 OHM-M) %	Value
After		0.0009259
0 (Minimum)	0 (Nominal)	2.000 (Maximum)

Phase	SFL (R < 1 OHM-M) OHMM	Value
After		0.0004949
0 (Minimum)	0 (Nominal)	0.02000 (Maximum)

Phase	IM (R > 27 OHM-M) MM/M	Value
After		0.1843
0	0	0.7500

Phase	IM (R < 27 OHM-M) %	Value
After		0.0006779
0	0	2.000

(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)

Phase	SFL (R > 27 OHM-M) MM/M	Value	Phase	SFL (R < 27 OHM-M) %	Value
After		0.003370	After		0.0001805
	0 (Minimum) 0 (Nominal) 0.7500 (Maximum)			0 (Minimum) 0 (Nominal) 2.000 (Maximum)	

After: 26-Jun-2002 22:56

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 18:50

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 (Minimum) 0 (Nominal) 125.0 (Maximum)			-30.00 (Minimum) 0 (Nominal) 30.00 (Maximum)			-15.00 (Minimum) 0 (Nominal) 15.00 (Maximum)	

Phase	Quad Deep 10 kHz S.E. Corr.	Value	Phase	Quad Deep 20 kHz S.E. Corr.	Value	Phase	Quad Deep 40 kHz S.E. Corr.	Value
Master		108.9	Master		64.63	Master		46.10
	-250.0 (Minimum) 0 (Nominal) 350.0 (Maximum)			-125.0 (Minimum) 0 (Nominal) 200.0 (Maximum)			-75.00 (Minimum) 0 (Nominal) 125.0 (Maximum)	

Phase	Real Medium 10 kHz S.E. Corr.	Value	Phase	Real Medium 20 kHz S.E. Corr.	Value	Phase	Real Medium 40 kHz S.E. Corr.	Value
Master		20.73	Master		-1.786	Master		-10.46
	-50.00 (Minimum) 0 (Nominal) 140.0 (Maximum)			-50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)			-30.00 (Minimum) 0 (Nominal) 30.00 (Maximum)	

Phase	Quad Medium 10 kHz S.E. Corr.	Value	Phase	Quad Medium 20 kHz S.E. Corr.	Value	Phase	Quad Medium 40 kHz S.E. Corr.	Value
Master		-105.8	Master		-34.20	Master		11.45
	-1300 (Minimum) 0 (Nominal) 1300 (Maximum)			-650.0 (Minimum) 0 (Nominal) 650.0 (Maximum)			-350.0 (Minimum) 0 (Nominal) 350.0 (Maximum)	

Master: Calibration out of date 5-Oct-2001 19:22

Hostile Litho-Density Sonde / Equipment Identification

Primary Equipment:		
Hostile Litho Density Sonde	HLDS - D	35
Hostile Litho Density High Voltage	HLDV - D	35
Gamma Source Radioactive	GSR - Z	1846
Auxiliary Equipment:		
Hostile Litho Density Pad	HLDP - C	35
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 - BA	22
APS Minitron	MNTR - F	4185
Auxiliary Equipment:		
Accelerator-Porosity Housing	APH - AC	22
APS Calibration Water Tank	SFT - 178	4722
APS Aluminium Calibrator Sleeve	SFT - 281	24

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		40.53
Before		40.57
After		40.54
	37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		16.57
Before		16.35
After		16.38
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1202
Before		1203
After		1203
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		145.8
Before		145.6
After		145.4
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		9.282
Before		9.387
After		9.258
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		32.17
Before		32.19
After		32.21
	-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		35.72
Before		35.35
After		36.12
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: 26-Jun-2002 19:50 Before: 26-Jun-2002 20:00 After: 26-Jun-2002 20:21

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value
Master		40.64
Before		40.57
After		40.73
	37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		16.86
Before		16.23
After		16.78
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1233
Before		1232
After		1232
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		144.9
Before		144.3
After		144.5
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		9.410
Before		9.624
After		10.07
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		31.66
Before		31.72
After		31.85
	-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value

Phase		Value
Master		35.81
Before		35.12
After		35.81

10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)

Master: 26-Jun-2002 19:50 Before: 26-Jun-2002 20:00 After: 26-Jun-2002 20:21

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		0.9971
Before		1.005
After		1.007

0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)

Master: 26-Jun-2002 19:50

Before: 26-Jun-2002 20:00

After: 26-Jun-2002 20:21

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		7.963

5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)

Phase	Background Count Rate CPS	Value
Master		21.13

20.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)

Phase	Gain Ratio	Value
Master		0.9809

0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)

Master: 26-Jun-2002 19:36

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		209.8

201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)

Phase	Th Peak Res %	Value
Master		7.951

5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)

Phase	Background Count Rate CPS	Value
Master	EXCEEDS LIMIT	19.47

20.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)

Phase	Gain Ratio	Value
Master		0.9820

0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)

See Remarks

Master: 26-Jun-2002 19:36

Company: Lamont Doherty

Schlumberger

Well: ODP Leg 203 Site1243B
Field: Equatorial Pacific IMO
Country: Panama
Ocean: Pacific

Phasor Induction
Natural Gamma Ray