Schlumberger

Company: Lamont Doherty

Well: ODP Leg 201, Site 1225A EQP-2A
Field: Equatorial Pacific
Rig: JOIDES Resolution Ocean: Pacific

Phasor Induction
Natural Gamma Ray

Rig: JOIDES Resolution
Field: Equatorial Pacific
Location: 2 Deg 46.22' N Latitude
Well: ODP Leg 201, Site 1225A EQP-2
Company: Lamont Doherty

LOCATION

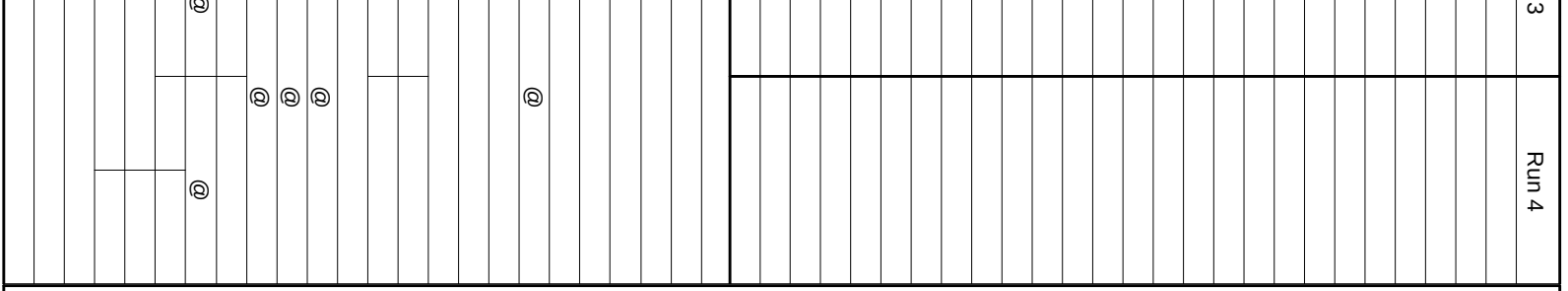
2 Deg 46.22' N Latitude
110 Deg 34.29' W Longitude

Elev.: K.B. 11.3 m
G.L. -3772 m
D.F. 11 m

Permanent Datum: MSL — Elev.: 0 m
Log Measured From: RKB — 11.3 m above Perm. Datum
Drilling Measured From: RKB

API Serial No.	Max. Hole Devi. 0 deg	Longitude	Latitude

	Run 1	Run 2	Run 3
Logging Date	11-Feb-2002		
Run Number	1		
Depth Driller	4091 m		
Schlumberger Depth	4092 m		
Bottom Log Interval	4087 m		
Top Log Interval	3772 m		
Casing Driller Size @ Depth	0.000 in @ 3852 m	@	@
Casing Schlumberger	3852 m		
Bit Size	11.438 in		
Type Fluid In Hole	Sepiolite/Saltwater		
MUD Density / Viscosity	1.07 g/cm3		
MUD Fluid Loss / PH			
MUD Source Of Sample	mudpit		
RM @ Measured Temperature	0.235 ohm.m @ 33 degC	@	@
RMF @ Measured Temperature	@	@	@
RMC @ Measured Temperature	@	@	@
Source RMF / RMC	none / none		
RM @ MRT / RMF @ MRT	0.434 @ 8 / @ 8	@ / @	@ / @
Maximum Recorded Temperatures	8 degC		
Circulation Stopped / Time	10-Feb-2002 / 20:00		
Logger On Bottom / Time	11-Feb-2002 / 5:15		
Unit Number / Location	99 / Houston ODP		
Recorded By	K. Swain		
Witnessed By	Gilles Guerin		



DISCLAIMER

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OTHER SERVICES1	OTHER SERVICES2
OS1: HLDT/APS/HNGS	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Hole cored with APC, XCB, BCS.	
Log presented in meters below rig floor.	
Lamont Temperature tool (TAP) was run on Triple Combo.	
Wireline Heave Compensator (WHC) was used on all descents.	
Sepliolite mud was used to displace the hole during the wiper trip after drillin	
Drillers TD 4091 mbrf, Driller pipe depth: 3852 mbrf, Sea Floor: 3772 mbrf.	
Schlumberger TD 4092 mbrf.	
Drill Pipe Schlumberger 3852 mbrf.	
Sea Floor Schlumberger 3772 mbrf.	
10khz and 40khz induction frequencies not used in resistivity measurement.	
Software bug shows APS calibration not done for part of calibration.	
Low background countrate on HNGS master calibration significes a weak internal	
source used for check of detector and not used in calibration.	

RUN 1		RUN 2	
SERVICE ORDER #:		SERVICE ORDER #:	
PROGRAM VERSION:	10C0-306	PROGRAM VERSION:	
FLUID LEVEL:		FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

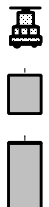
RUN 1 RUN 2

SURFACE EQUIPMENT

SFT-281 24
SFT-178 4722
GSR-U 135
GSR-U/Y

WITM (DTS)-A

DOWNHOLE EQUIPMENT



LEH-QT 35.14
LEH-QT 1726

CTEM 33.98
TelStatus
ToolStatu 33.34

DTC-H 34.25
ECH-KC 9343

Gamma Ray 33.06

SGT-N 33.34
SGH-K 2448
SGC-TR 9582

SGC-TB 9582

HNGS-BA 31.66
HNGS-BA 77
HNSH-BA 79
Upper_1 30.96
Lower_2 30.75

ILE-D 29.16
ILE-D 25
Status
Minitron
Near TD

APS-BA 26.73
APS-BA 22
APH-AC 22
MNTR-F 4185
Near Arr
Near 24.28
Far Arr 24.20
Far 24.08
Far TD 23.98

NPLC-B 22.78
NPLC-B 79
NPH-B 82
Status 21.56

DTA-A 20.34
ECH-KE 8231

HLDT-A 19.12
GSR-Z 1846
HLDC-AA 11
HLDV-A 10
HLDS-B 10
HLDP-B 10
HEH-G 11
HEH-H 12
LS 13.17
SS 13.05
Caliper 13.00

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_016LUP	FN:15	PRODUCER	11-Feb-2002 05:19	4091.9 M	3751.3 M
REDUCE	PI_LDL_APS_NGS_016LUP	FN:16	PRODUCER	11-Feb-2002 05:19	4091.9 M	3749.3 M

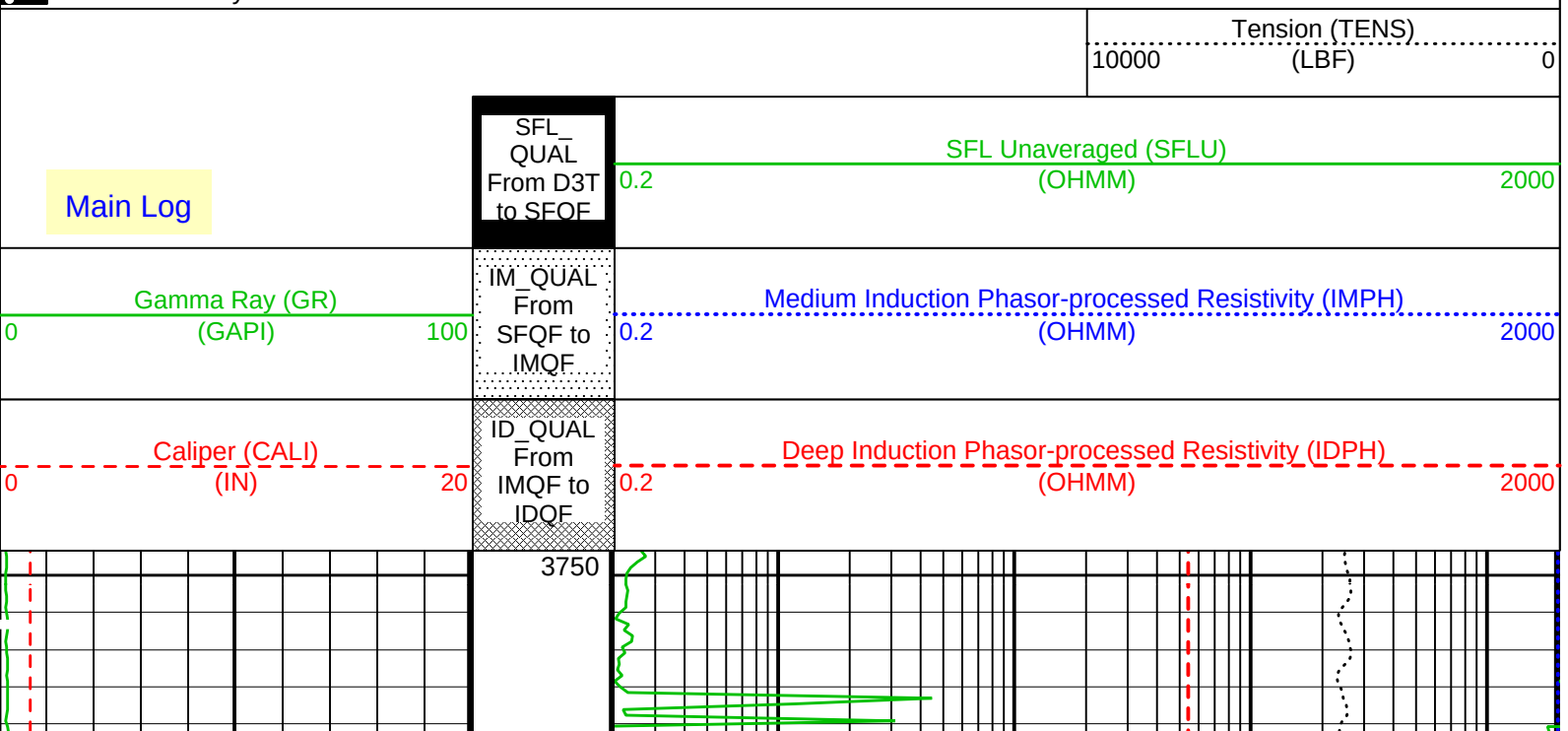
OP System Version: 10C0-306

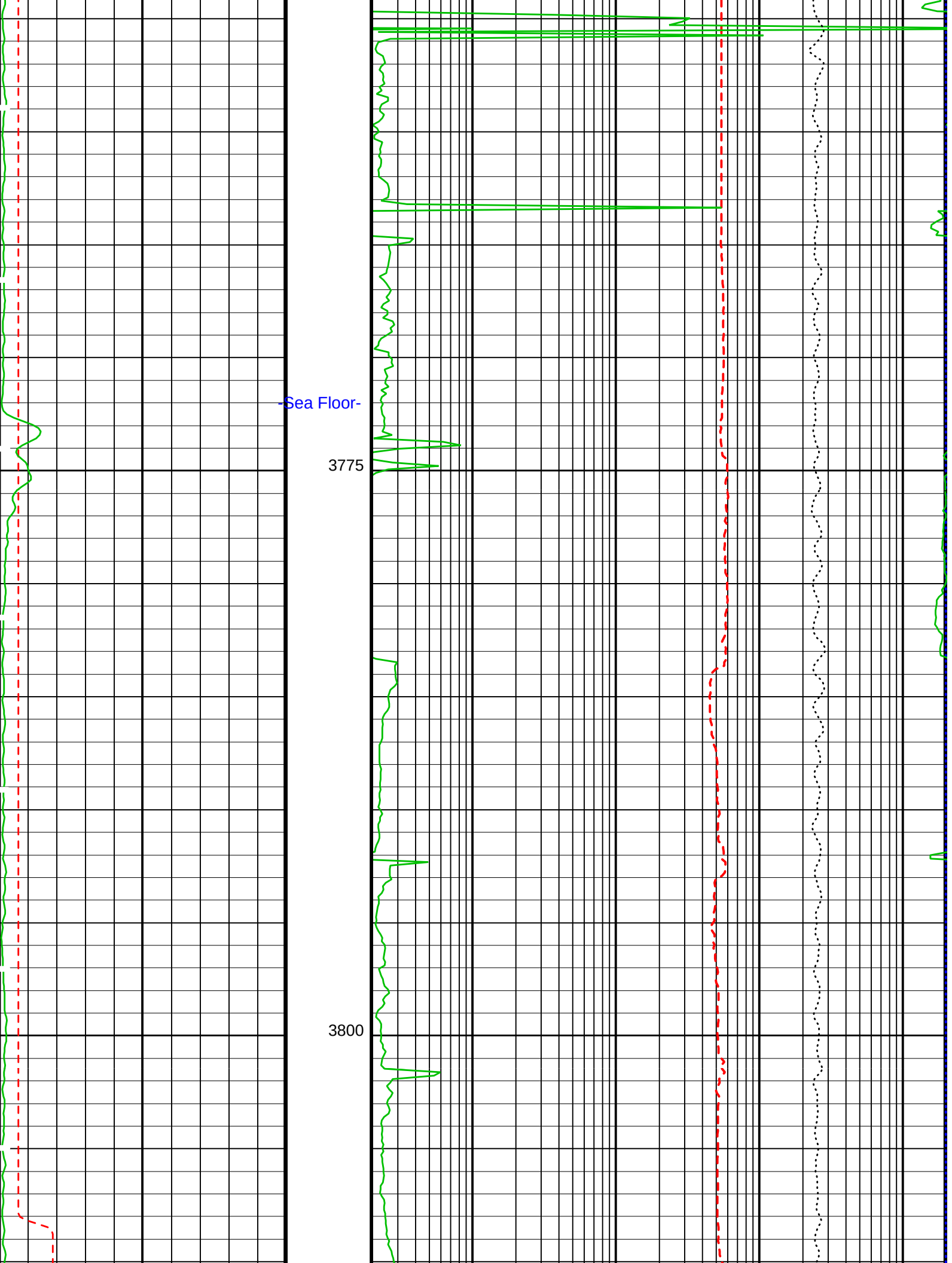
MCM

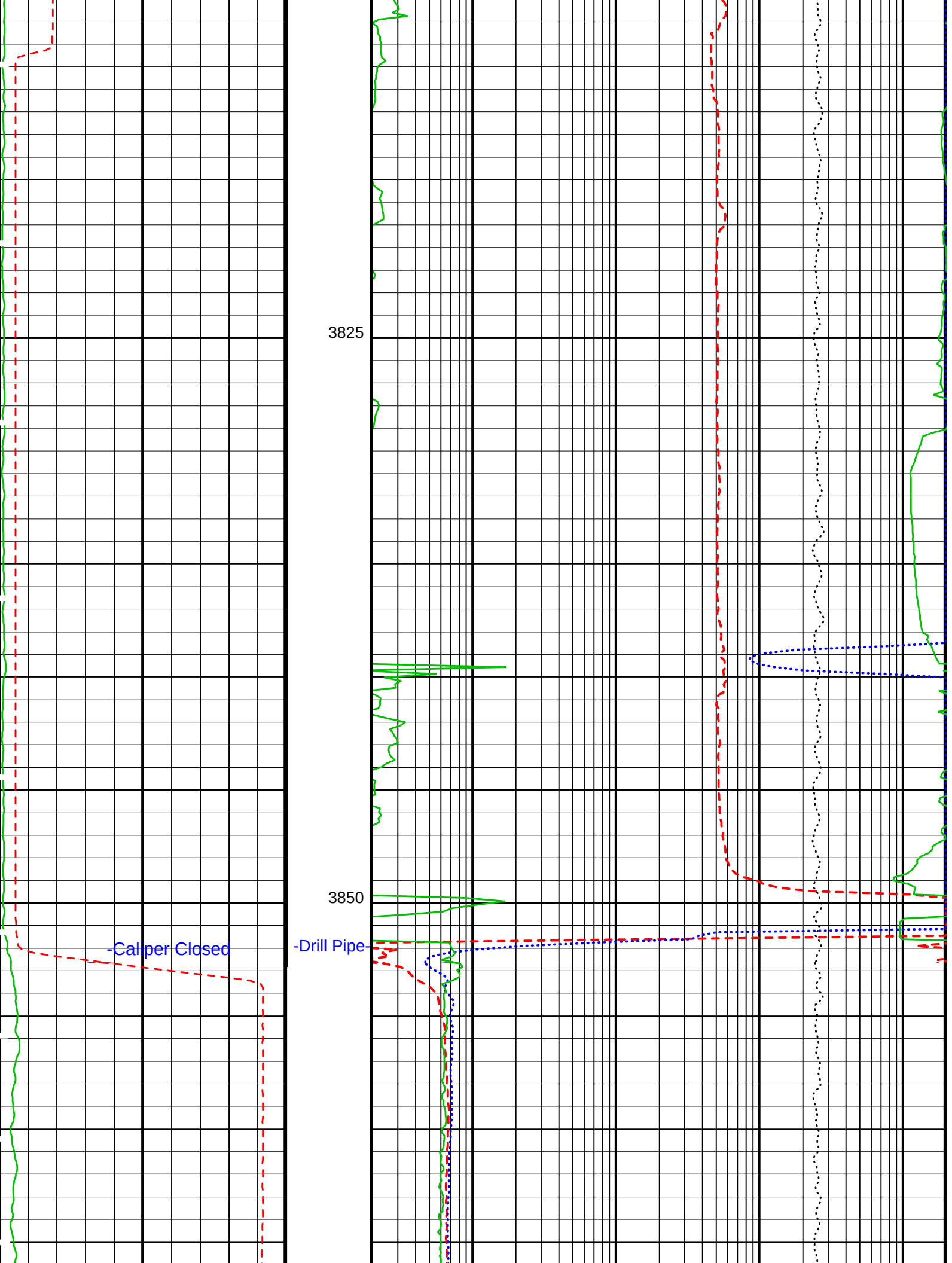
DIT-E	10C0-306	HLDT-A	10C0-306
DTA-A	10C0-306	NPLC-B	10C0-306
APS-BA	10C0-306	HNGS-BA	10C0-306
SGT-N	10C0-306	DTC-H	10C0-306

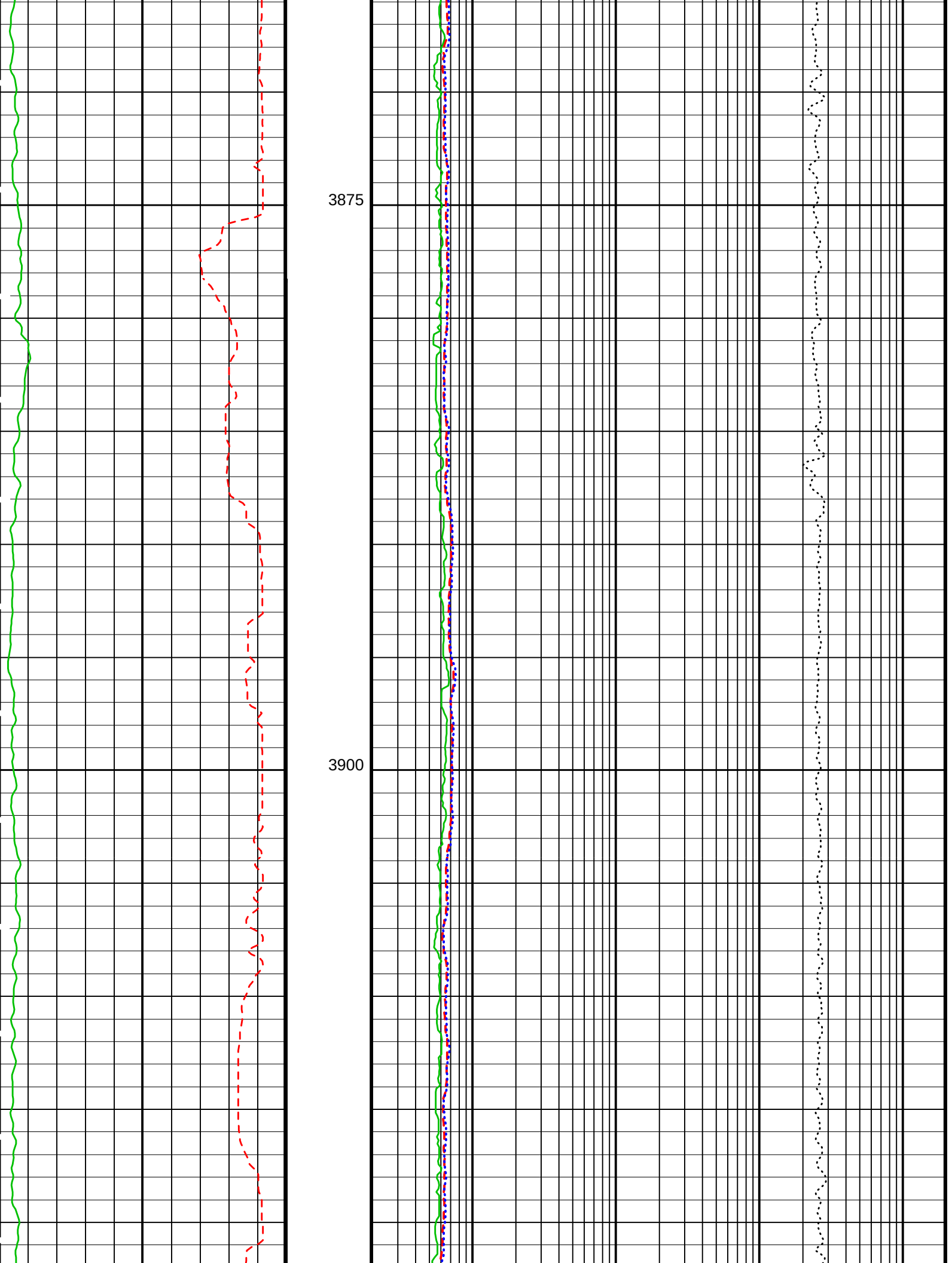
PIP SUMMARY

Time Mark Every 60 S




-Sea Floor-
3775
3800


3825
3850
-Caliper Closed
-Drill Pipe-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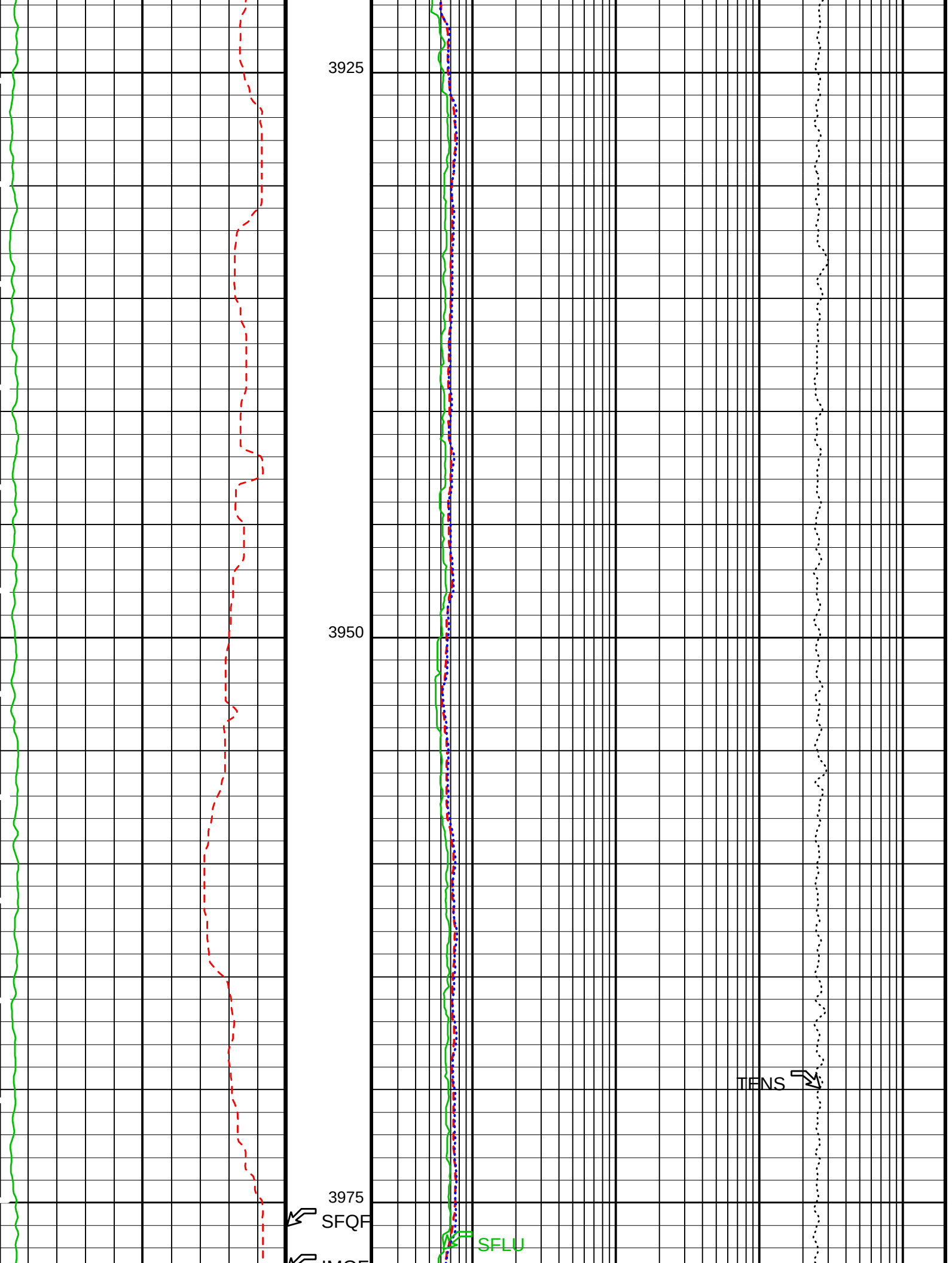
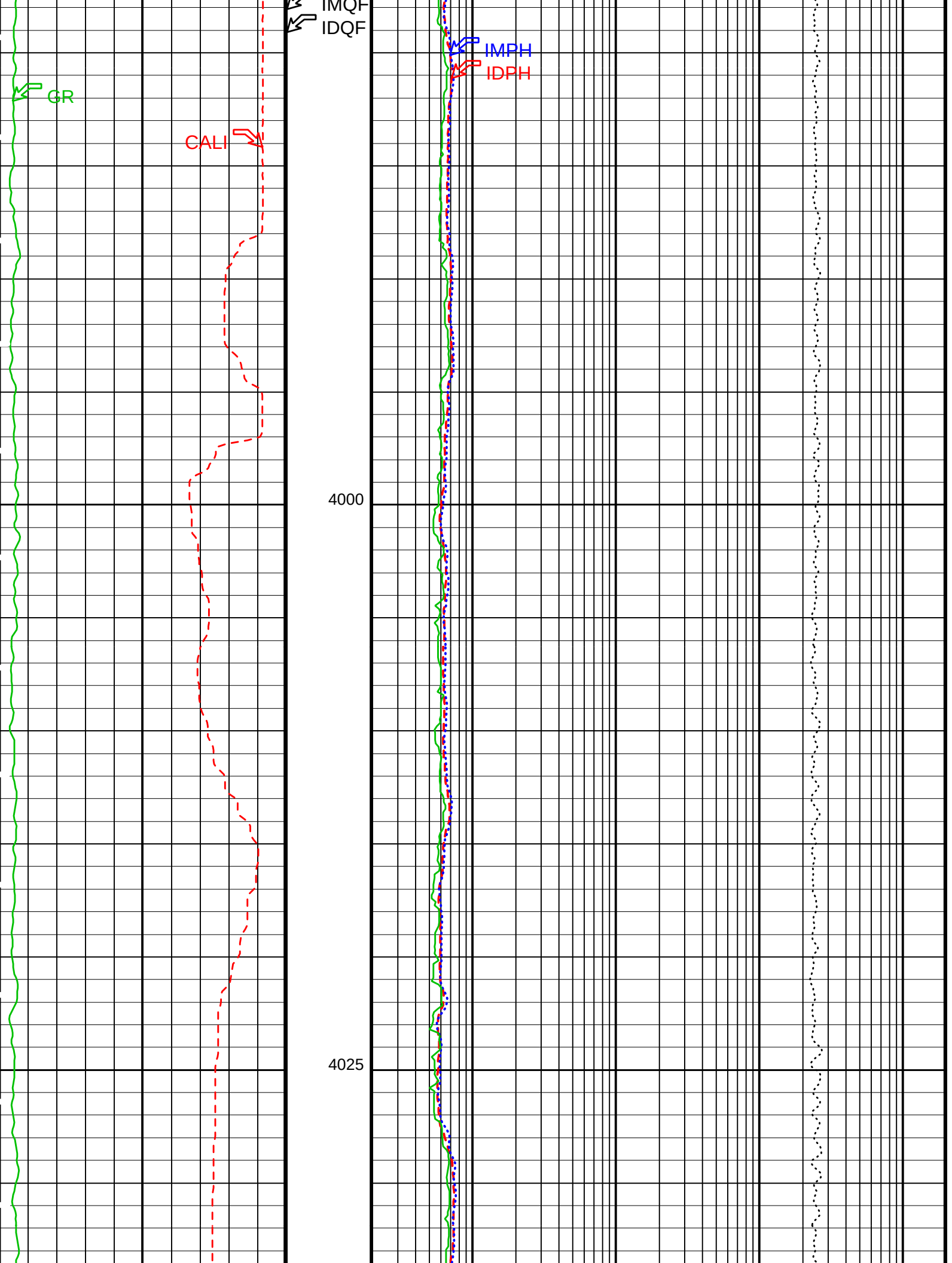
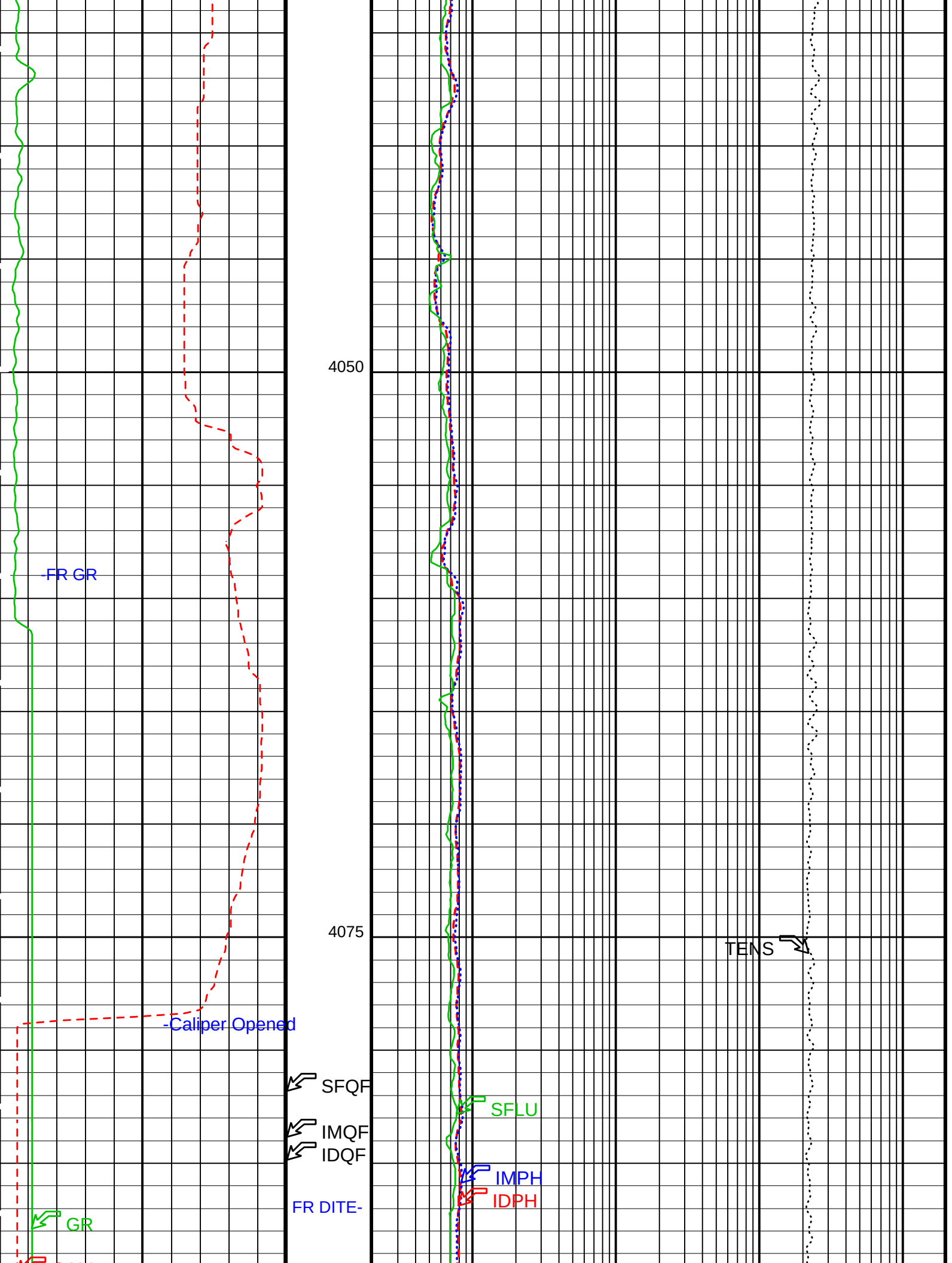
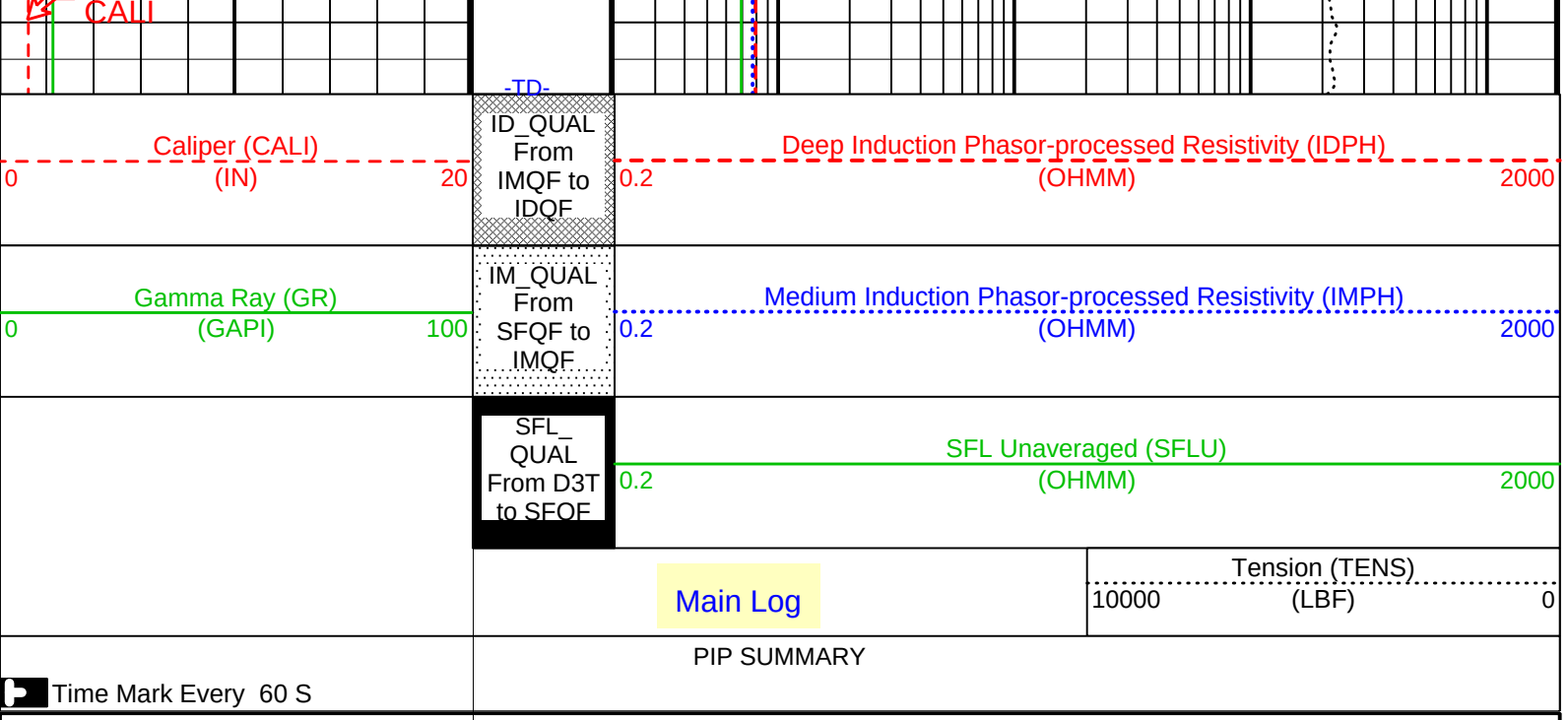
3900


3925
3950
3975
SFQP
SFLU
TENS


IMQF
IDQF
IMPH
IDPH
GR
CALI
4000
4025


4050
4075
-FR GR
-Caliper Opened
SFQF
IMQF
IDQF
FR DITE-
GR
SFLU
IMPH
IDPH
TENS



Parameters

DLIS Name	Description	Value	
	DIT-E: Dual Induction - E		
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
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
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
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	68	DEGF
	APS-BA: Accelerator-Porosity Tool		
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT	Surface Hole Temperature	68	DEGF
	HNGS-BA: Hostile Natural Gamma Ray Sonde		
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT	Surface Hole Temperature	68	DEGF
	SGT-N: Scintillation Gamma-Ray - N		
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT	Surface Hole Temperature	68	DEGF
	System and Miscellaneous		
DFD	Drilling Fluid Density	1.07	G/C3
TD	Total Depth	13421.9	FT

Format: DITE_LogPhasor Vertical Scale: 1:200 Graphics File Created: 11-Feb-2002 05:19

OP System Version: 10C0-306

MCM

DIT-E	10C0-306	HLDT-A	10C0-306
DTA-A	10C0-306	NPLC-B	10C0-306

APS-BA	10C0-306	HNGS-BA	10C0-306
SGT-N	10C0-306	DTC-H	10C0-306

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_016LUP	FN:15	PRODUCER	11-Feb-2002 05:19		
REDUCE	PI_LDL_APS_NGS_016LUP	FN:16	PRODUCER	11-Feb-2002 05:19		

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_017LUP	FN:17	PRODUCER	11-Feb-2002 06:40	4094.2 M	3927.7 M
REDUCE	PI_LDL_APS_NGS_017LUP	FN:18	PRODUCER	11-Feb-2002 06:40	4094.2 M	3927.7 M

OP System Version: 10C0-306

MCM

DIT-E	10C0-306	HLDT-A	10C0-306
DTA-A	10C0-306	NPLC-B	10C0-306
APS-BA	10C0-306	HNGS-BA	10C0-306
SGT-N	10C0-306	DTC-H	10C0-306

PIP SUMMARY

Time Mark Every 60 S

Tension (TENS)
10000 (LBF) 0

REPEAT SECTION

SFL_ QUAL From D3T to SFQF

SFL Unaveraged (SFLU)
0.2 (OHMM) 2000

Gamma Ray (GR)
0 (GAPI) 100

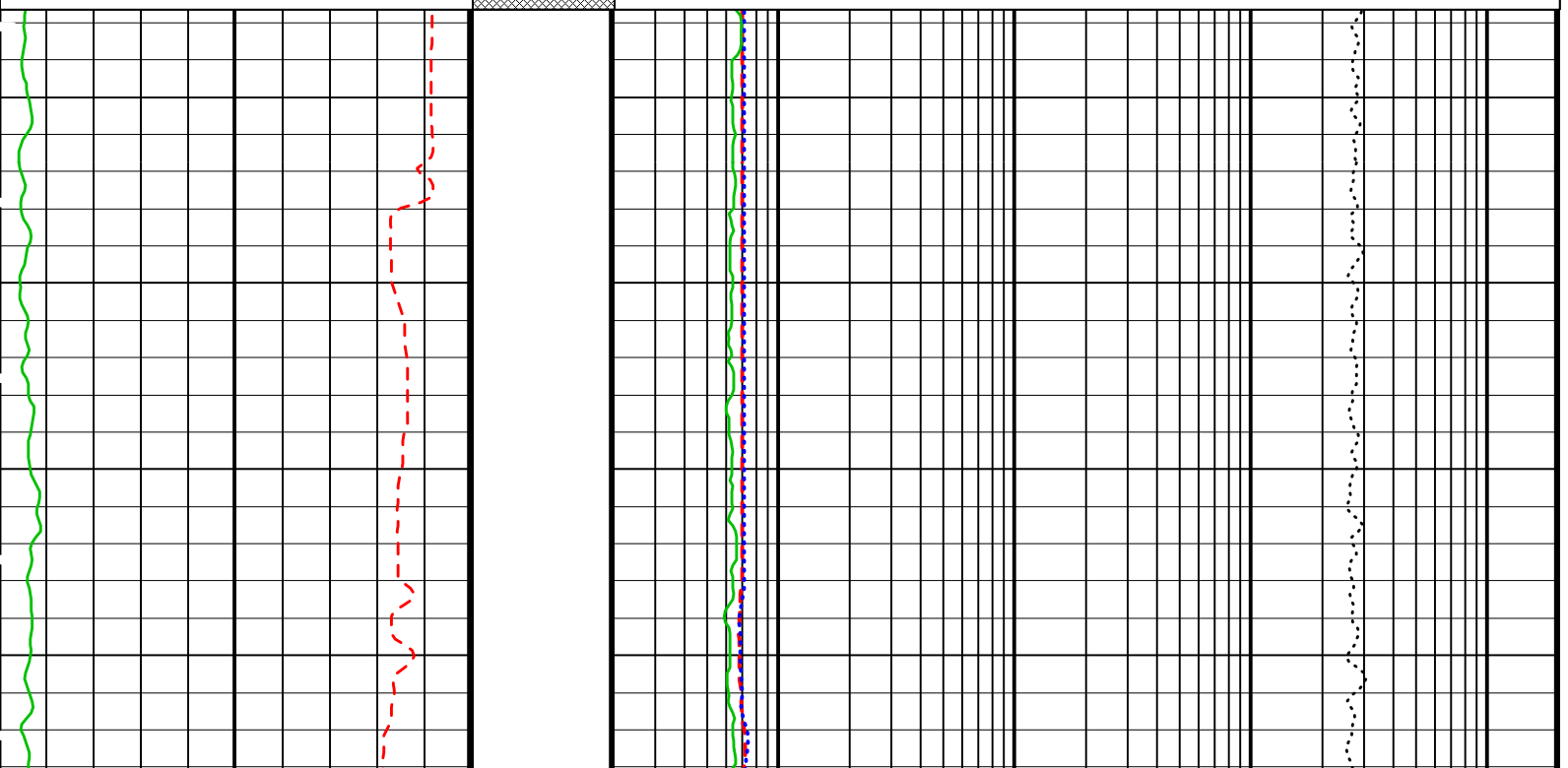
IM_QUAL From SFQF to IMQF

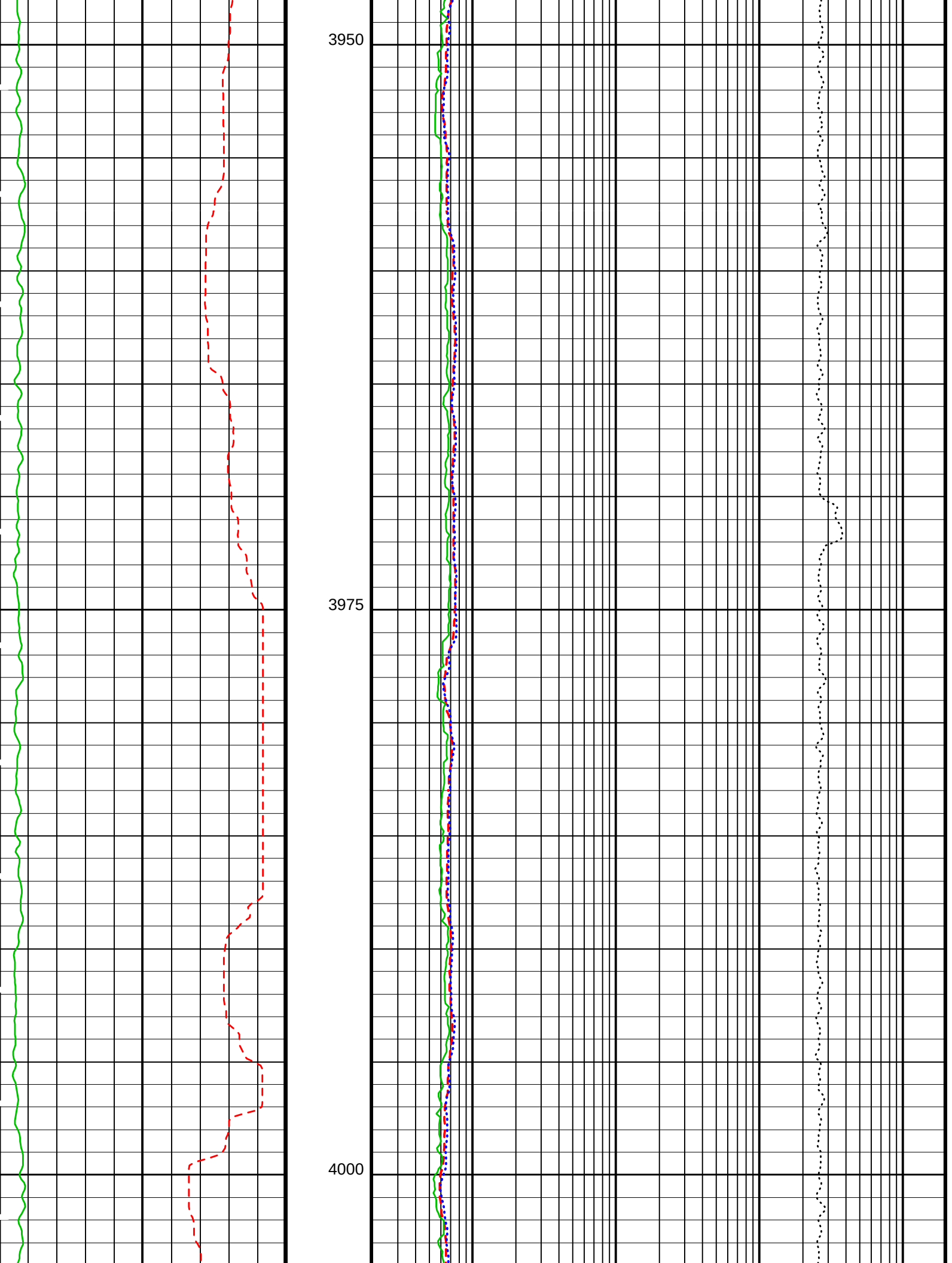
Medium Induction Phasor-processed Resistivity (IMPH)
0.2 (OHMM) 2000

Caliper (CALI)
0 (IN) 20

ID_QUAL From IMQF to IDQF

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

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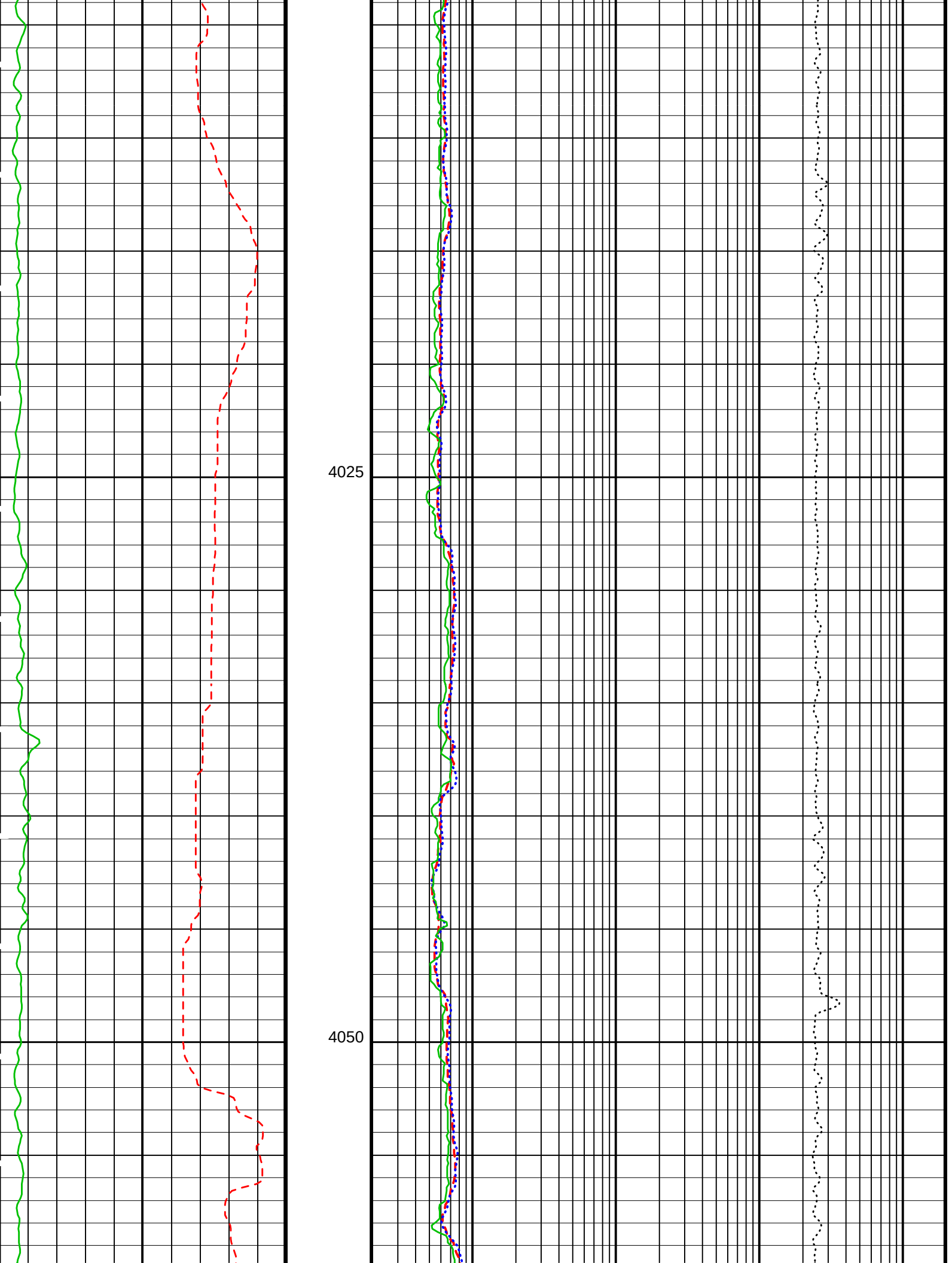
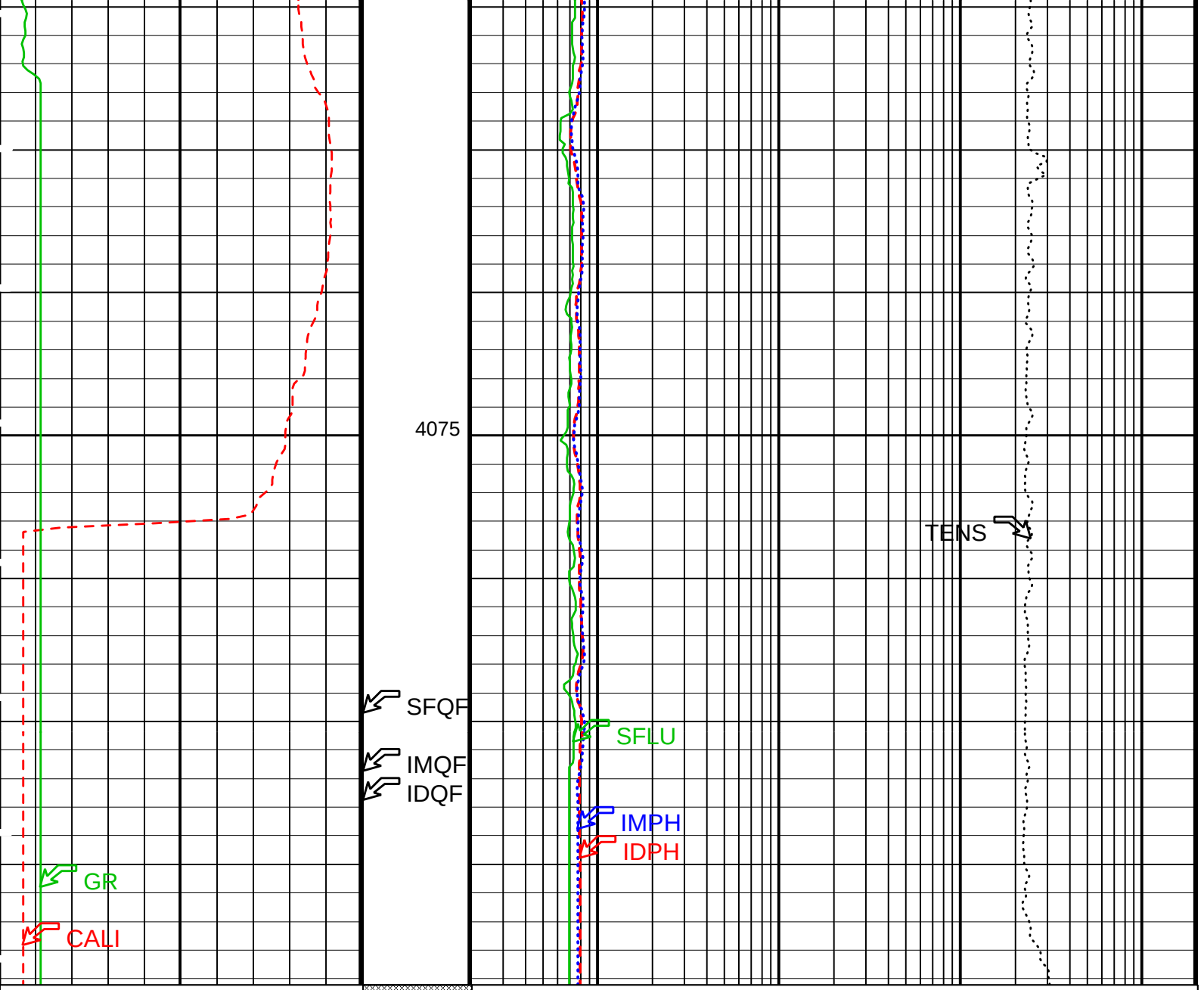
3975
4000


4025
4050



Caliper (CALI)
0 (IN) 20

ID_QUAL From IMQF to IDQF

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

Gamma Ray (GR)
0 (GAPI) 100

IM_QUAL From SFQF to IMQF

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

REPEAT SECTION

SFL_ QUAL From D3T to SFQF

SFL Unaveraged (SFLU)
0.2 (OHMM) 2000

Tension (TENS)
10000 (LBF) 0

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
DIT-E: Dual Induction - E			
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF

BHT		Bottom Hole Temperature (used in calculations)	40	DEGF
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
GDEV		Average Angular Deviation of Borehole from Normal	0	DEG
GGRD		Geothermal Gradient	0.01	DF/F
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	68	DEGF
	APS-BA: Accelerator-Porosity Tool			
BHT		Bottom Hole Temperature (used in calculations)	40	DEGF
GDEV		Average Angular Deviation of Borehole from Normal	0	DEG
GGRD		Geothermal Gradient	0.01	DF/F
GTSE		Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT		Surface Hole Temperature	68	DEGF
	HNGS-BA: Hostile Natural Gamma Ray Sonde			
BHT		Bottom Hole Temperature (used in calculations)	40	DEGF
GDEV		Average Angular Deviation of Borehole from Normal	0	DEG
GGRD		Geothermal Gradient	0.01	DF/F
GTSE		Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT		Surface Hole Temperature	68	DEGF
	SGT-N: Scintillation Gamma-Ray - N			
BHT		Bottom Hole Temperature (used in calculations)	40	DEGF
GDEV		Average Angular Deviation of Borehole from Normal	0	DEG
GGRD		Geothermal Gradient	0.01	DF/F
GTSE		Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT		Surface Hole Temperature	68	DEGF
	System and Miscellaneous			
DFD		Drilling Fluid Density	1.07	G/C3
TD		Total Depth	13435	FT

Format: DITE_LogPhasor Vertical Scale: 1:200 Graphics File Created: 11-Feb-2002 06:40

OP System Version: 10C0-306

MCM

DIT-E	10C0-306	HLDT-A	10C0-306
DTA-A	10C0-306	NPLC-B	10C0-306
APS-BA	10C0-306	HNGS-BA	10C0-306
SGT-N	10C0-306	DTC-H	10C0-306

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_017LUP	FN:17	PRODUCER	11-Feb-2002 06:40
REDUCE	PI_LDL_APS_NGS_017LUP	FN:18	PRODUCER	11-Feb-2002 06:40

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Hostile Environment Litho Density - A Wellsite Calibration - Background Measurement							
Master: 25-Jan-2002 14:22 Before: 7-Feb-2002 0:58 After: 11-Feb-2002 9:52							
LSW1 Background	100.0	89.06	87.47	89.64	2.167	0.03000	CPS
LSW2 Background	105.0	93.23	91.17	92.99	1.817	0.03000	CPS
LSW3 Background	210.0	180.0	176.6	182.0	5.359	0.03000	CPS
LSW4 Background	290.0	237.9	239.0	237.2	-1.791	0.03000	CPS
LSW5 Background	610.0	529.6	526.4	521.4	-4.967	0.03000	CPS
SSW1 Background	100.0	85.18	85.40	85.92	0.5192	0.03000	CPS
SSW2 Background	200.0	166.8	166.6	167.4	0.8174	0.03000	CPS
SSW3 Background	530.0	446.5	442.1	446.0	3.897	0.03000	CPS
SSW4 Background	280.0	235.8	234.6	234.8	0.2077	0.03000	CPS
SSW5 Background	205.0	176.3	175.3	174.5	-0.8091	0.03000	CPS
Hostile Environment Litho Density - A Wellsite Calibration - Tool Quality Control Information High Voltage							
Master: 25-Jan-2002 14:22 Before: 7-Feb-2002 0:58 After: 11-Feb-2002 9:52							
LS Pkg. High Voltage	1130	1130	1134	1133	-0.250	N/A	V

LS Bkg. High Voltage	1129	1129	1134	1132	-2.350	N/A	V
SS Bkg. High Voltage	1173	1173	1179	1177	-1.431	N/A	V

Hostile Environment Litho Density - A Wellsite Calibration - Detectors Resolution From BKG Measurments
Master: 25-Jan-2002 14:22 Before: 7-Feb-2002 0:58 After: 11-Feb-2002 9:52

LS Background Resolution	1.000	1.042	1.040	0.9556	-0.08410	N/A	
SS Background Resolution	1.000	0.9530	0.9559	0.9384	-0.01746	N/A	

Hostile Environment Litho Density - A Wellsite Calibration - Caliper Calibration
Before: 7-Feb-2002 1:47

Caliper Small Ring	12.00	N/A	16.99	N/A	N/A	N/A	IN
Caliper Large Ring	18.25	N/A	23.87	N/A	N/A	N/A	IN

Accelerator-Porosity Tool Wellsite Calibration - Detector Background
Master: 25-Jan-2002 18:34 Before: 11-Feb-2002 3:57 After: 11-Feb-2002 7:56

Near Det Bkg Cntrate	30.00	32.90	31.70	33.22	1.518	N/A	CPS
Far Det Bkg Cntrate	30.00	34.46	33.01	33.68	0.6677	N/A	CPS
Array-1 Det Bkg Cntrate	30.00	28.56	29.66	30.21	0.5505	N/A	CPS
Array-2 Det Bkg Cntrate	30.00	30.78	29.65	29.56	-0.08341	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	32.89	28.53	30.92	2.393	N/A	CPS

Accelerator-Porosity Tool Wellsite Calibration - Calibration Ratios
Master: 25-Jan-2002 18:35

Near/Far Calibration Ratio	0.9250	0.9022	N/A	N/A	N/A	N/A	
Near/Array Calibration Ratio	1.030	1.063	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: Calibration not done

Array-1 Standoff Porosity	11.10	11.94	N/A	N/A	N/A	N/A	PU
Array-2 Standoff Porosity	11.10	11.71	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	N/A	N/A	N/A	N/A	N/A	US
Array-1 SDT Ratio Up/Down	1.000	N/A	N/A	N/A	N/A	N/A	
Array-1 SDT Ratio Up/Down	1.000	N/A	N/A	N/A	N/A	N/A	
Sigma Formation	27.50	27.64	N/A	N/A	N/A	N/A	CU

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check
Master: 23-Jan-2002 11:37 Before: 7-Feb-2002 1:13 After: 11-Feb-2002 9:48

Na 511 Peak Loc	40.00	40.51	40.71	40.59	-0.1251	1.000	
Na 511 Peak Res	15.50	15.75	17.24	16.93	-0.3119	2.000	%
High Voltage	1150	1203	1207	1209	2.906	30.00	V
Na 1785 Peak Loc	142.6	144.6	146.2	145.6	-0.6078	7.000	
Na 1785 Peak Res	8.500	9.254	9.073	8.861	-0.2121	2.000	%
Temperature	15.50	21.86	29.34	28.89	-0.4552	N/A	DEGC
Na Count Rate	45.00	39.29	40.56	40.16	-0.3936	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check
Master: 23-Jan-2002 11:37 Before: 7-Feb-2002 1:13 After: 11-Feb-2002 9:48

Na 511 Peak Loc	40.00	40.54	40.54	40.61	0.07089	1.000	
Na 511 Peak Res	15.50	16.19	16.67	16.58	-0.08610	2.000	%
High Voltage	1150	1233	1236	1240	4.142	30.00	V
Na 1785 Peak Loc	142.6	143.9	144.1	144.6	0.4818	7.000	
Na 1785 Peak Res	8.500	9.453	8.968	9.434	0.4660	2.000	%
Temperature	15.50	21.24	29.04	29.55	0.5074	N/A	DEGC
Na Count Rate	45.00	39.11	40.36	39.62	-0.7354	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2
Master: 23-Jan-2002 11:37 Before: 7-Feb-2002 1:13 After: 11-Feb-2002 9:48

Coincidence Count Rate Ratio	1.000	1.004	1.005	1.013	0.007621	0.05000	

Scintillation Gamma-Ray - N Wellsite Calibration - Detector Calibration
Before: 7-Feb-2002 1:09

Gamma Ray (Jig - Bkg)	167.5	N/A	167.5	N/A	N/A	15.23	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

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		37.20
	-300.0 (Minimum) / 0 (Nominal) / 300.0 (Maximum)	

Phase	ID Elect Real Gain 10 kHz	Value
Before		0.9756
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Phase	ID Elect Phase 10 kHz DEG	Value
Before	EXCEEDS LIMIT	10.64
	-10.00 (Minimum) / 0 (Nominal) / 10.00 (Maximum)	

Phase	ID Elect Quad Offset 10 kHz MM/M	Value
Before		22.47
	-300.0 (Minimum) / 0 (Nominal) / 300.0 (Maximum)	

Phase	ID Elect Quad Gain 10 kHz	Value
Before		0.9637
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Phase	IM Elect Phase 10 kHz DEG	Value
Before	EXCEEDS LIMIT	13.32
	-10.00 (Minimum) / 0 (Nominal) / 10.00 (Maximum)	

Phase	IM Elect Real Offset 10 kHz MM/M	Value
Before		96.46
	-550.0 (Minimum) / 0 (Nominal) / 550.0 (Maximum)	

Phase	IM Elect Real Gain 10 kHz	Value
Before		0.9498
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

10khz not used in measurement

Phase	IM Elect Quad Offset 10 kHz MM/M	Value
Before		95.06
	-550.0 (Minimum) / 0 (Nominal) / 550.0 (Maximum)	

Phase	IM Elect Quad Gain 10 kHz	Value
Before		0.9476
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Before: Calibration out of date 5-Oct-2001 13:57

Dual Induction - E Wellsite Calibration
Induction Electronics (20 kHz)

Phase	ID Elect Real Offset 20 kHz MM/M	Value
Before		14.67
	-125.0 (Minimum) / 0 (Nominal) / 125.0 (Maximum)	

Phase	ID Elect Real Gain 20 kHz	Value
Before		1.001
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Phase	ID Elect Phase 20 kHz DEG	Value
Before		9.784
	-15.00 (Minimum) / 0 (Nominal) / 15.00 (Maximum)	

Phase	ID Elect Quad Offset 20 kHz MM/M	Value
Before		9.083
	-125.0 (Minimum) / 0 (Nominal) / 125.0 (Maximum)	

Phase	ID Elect Quad Gain 20 kHz	Value
Before		0.9891
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Phase	IM Elect Phase 20 kHz DEG	Value
Before		12.07
	-15.00 (Minimum) / 0 (Nominal) / 15.00 (Maximum)	

Phase	IM Elect Real Offset 20 kHz MM/M	Value
Before		40.06
	-225.0 (Minimum) / 0 (Nominal) / 225.0 (Maximum)	

Phase	IM Elect Real Gain 20 kHz	Value
Before		1.011
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Phase	IM Elect Quad Offset 20 kHz MM/M	Value
Before		39.84
	-225.0 (Minimum) / 0 (Nominal) / 225.0 (Maximum)	

Phase	IM Elect Quad Gain 20 kHz	Value
Before		1.009
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Before: 7-Feb-2002 1:10

Dual Induction - E Wellsite Calibration
Induction Electronics (40 kHz)

Phase	ID Elect Real Offset 40 kHz MM/M	Value
Before		9.567
	-85.00 (Minimum) / 0 (Nominal) / 85.00 (Maximum)	

Phase	ID Elect Real Gain 40 kHz	Value
Before		0.9871
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Phase	ID Elect Phase 40 kHz DEG	Value
Before	EXCEEDS LIMIT	29.04
	-20.00 (Minimum) / 0 (Nominal) / 20.00 (Maximum)	

Phase	ID Elect Quad Offset 40 kHz MM/M	Value
Before		5.882
	-85.00 (Minimum) / 0 (Nominal) / 85.00 (Maximum)	

Phase	ID Elect Quad Gain 40 kHz	Value
Before		0.9737
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Phase	IM Elect Phase 40 kHz DEG	Value
Before	EXCEEDS LIMIT	32.65
	-20.00 (Minimum) / 0 (Nominal) / 20.00 (Maximum)	

Phase	IM Elect Real Offset 40 kHz MM/M	Value
Before		26.16
	-130.0 (Minimum) / 0 (Nominal) / 130.0 (Maximum)	

Phase	IM Elect Real Gain 40 kHz	Value
Before		1.020
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

40khz not used in measurement

Phase	IM Elect Quad Offset 40 kHz MM/M	Value
Before		25.90
	-130.0 (Minimum) / 0 (Nominal) / 130.0 (Maximum)	

Phase	IM Elect Quad Gain 40 kHz	Value
Before		1.017
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Before: Calibration out of date 5-Oct-2001 14:00

Dual Induction - E Wellsite Calibration

Dual Induction - E Wellsite Calibration

SFL Electronics

Phase	SFL Voltage Offset MV	Value
Before		1.280
	-15.00 (Minimum) 0 (Nominal) 15.00 (Maximum)	

Phase	SFL Voltage Gain	Value
Before		1.019
	0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)	

Phase	SFL Current Offset MA	Value
Before		0.002773
	-0.6000 (Minimum) 0 (Nominal) 0.6000 (Maximum)	

Phase	SFL Current Gain	Value
Before		0.9960
	0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)	

Before: 7-Feb-2002 1:14

Dual Induction - E Wellsite Calibration

Electronics Calibration Changes Files/Depth Intervals: 15: 3840.5 - 4060.5 16: 4091.9 - 3749.3 17: 4094.2 - 3927.7 18: 3886.2 - 3758.0

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

Phase	ID (R < 27 OHM-M) %	Value
After		0.0001507
	0 (Minimum) 0 (Nominal) 2.000 (Maximum)	

Phase	SFL (R < 1 OHM-M) OHMM	Value
After		0.0005827
	0 (Minimum) 0 (Nominal) 0.02000 (Maximum)	

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

Phase	IM (R < 27 OHM-M) %	Value
After		0.0001106
	0 (Minimum) 0 (Nominal) 2.000 (Maximum)	

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

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

After: 11-Feb-2002 7:48

Hostile Environment Litho Density - A / Equipment Identification

Primary Equipment:		
HOSTILE ENVIRONMENT LITHO DENSITY HIGH V	HLDV - A	10
HOSTILE ENVIRONMENT LITHO DENSITY CARTRI	HLDC - AA	11
Gamma Source Radioactive	GSR - Z	1846
Auxiliary Equipment:		
HOSTILE ENVIRONMENT LITHO DENSITY SONDE	HLDS - B	10
HOSTILE ENVIRONMENT ELECTRONICS CARTRIDG	HEH - H	12
HOSTILE ENVIRONMENT ELECTRONICS CARTRIDG	HEH - G	11
HOSTILE ENVIRONMENT LITHO DENSITY PAD	HLDP - B	10

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		40.51
Before		40.71
After		40.59
	37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		15.75
Before		17.24
After		16.93
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1203
Before		1207
After		1209
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		144.6
Before		146.2
After		145.6
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		9.254
Before		9.073
After		8.861
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		21.86
Before		29.34
After		28.89
	-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		39.29
Before		40.56
After		40.16
	15.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: 23-Jan-2002 11:37 Before: 7-Feb-2002 1:13 After: 11-Feb-2002 9:48

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value
Master		40.54
Before		40.54
After		40.61
	37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		16.19
Before		16.67
After		16.58
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1233
Before		1236
After		1240
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		143.9
Before		144.1
After		144.6
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		9.453
Before		8.968
After		9.434
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		21.24
Before		29.04
After		29.55
	-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		39.11
Before		40.36
After		39.62
	15.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: 23-Jan-2002 11:37 Before: 7-Feb-2002 1:13 After: 11-Feb-2002 9:48

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		1.004
Before		1.005
After		1.013
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	

Master: 23-Jan-2002 11:37

Before: 7-Feb-2002 1:13

After: 11-Feb-2002 9:48

Scintillation Gamma-Ray - N / Equipment Identification

Primary Equipment:		
Scintillation Gamma Cartridge	SGC - TB	9582
Scintillation Gamma Detector	SGD - TAA	
Auxiliary Equipment:		
Scintillation Gamma Housing	SGH - K	2448
Gamma Source Radioactive	GSR - U/Y	

Scintillation Gamma-Ray - N Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value
Before		4.502
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)	

Phase	Gamma Ray (Jig - Bkg) GAPI	Value
Before		167.5
	152.3 (Minimum) 167.5 (Nominal) 182.7 (Maximum)	

Phase	Gamma Ray (Calibrated) GAPI	Value
Before		165.0
	150.0 (Minimum) 165.0 (Nominal) 180.0 (Maximum)	

Before: 7-Feb-2002 1:09

Company: Lamont Doherty

Schlumberger

Well: ODP Leg 201, Site 1225A EQP-2A

Field: Equatorial Pacific

Rig: JOIDES Resolution

Ocean: Pacific

Phasor Induction

Natural Gamma Ray