

Company: Lamont Doherty

Well: ODP Leg 201, Site 1230A PRU-4A

Field: Peru Margin

Rig: JOIDES Resolution Ocean: Pacific

Rig: JOIDES Resolution		Company: Lamont Doherty	
Field: Peru Margin		Location: 9 Deg 06.7529' S Latitude	
Well: ODP Leg 201, Site 1230A PRU-4A		Elev.: K.B. 11.3 m	
Permanent Datum: _____ MSL _____		G.L. -5097 m	
Log Measured From: _____ RKB _____		D.F. 11 m	
Drilling Measured From: _____ RKB _____		Elev.: 0 m _____	
API Serial No. _____		11.3 m above Perm. Datum	
Max. Hole Devi. 0 deg		Longitude _____	
Latitude _____		Latitude _____	

HLDT/APS Porosity Natural Gamma Ray

LOCATION		9 Deg 06.7529' S Latitude		Elev.: K.B. 11.3 m	
80 Deg 35.01' W Longitude		G.L. -5097 m		D.F. 11 m	

Logging Date	16-Mar-2002	Longitude		Latitude	
Run Number	1				
Depth Driller	5375 m				
Schlumberger Depth	5379 m				
Bottom Log Interval	5373 m				
Top Log Interval	5099 m				
Casing Driller Size @ Depth	0.000 in @ 5178 m				
Casing Schlumberger	5179 m				
Bit Size	11.438 in				
Type Fluid In Hole	Seppolite/Saltwater				

MUD		Density		Viscosity	
Fluid Loss		1.07 g/cm3			
PH					
Source Of Sample		mudpit			
RM @ Measured Temperature		0.235 ohm.m @ 33 degC			
RMF @ Measured Temperature		@ @			
RMC @ Measured Temperature		@ @			

Source RMF	RMC	none	none	@ 9	@
RM @ MRT	RMF @ MRT	0.421 @ 9		@ 9	@
Maximum Recorded Temperatures					
Circulation Stopped	Time	16-Mar-2002		3:00	
Logger On Bottom	Time	16-Mar-2002		8:45	
Unit Number	Location	99	Houston ODP		
Recorded By		K. Swain			
Witnessed By		Gilles Guerin			

Logging Date	16-Mar-2002	Longitude		Latitude	
Run Number	1				
Depth Driller	5375 m				
Schlumberger Depth	5379 m				
Bottom Log Interval	5373 m				
Top Log Interval	5099 m				
Casing Driller Size @ Depth	0.000 in @ 5178 m				
Casing Schlumberger	5179 m				
Bit Size	11.438 in				
Type Fluid In Hole	Seppolite/Saltwater				
MUD		Density		Viscosity	
Fluid Loss		1.07 g/cm3			
PH					
Source Of Sample		mudpit			
RM @ Measured Temperature		0.235 ohm.m @ 33 degC			
RMF @ Measured Temperature		@ @			
RMC @ Measured Temperature		@ @			
Source RMF	RMC	none	none	@ 9	@
RM @ MRT	RMF @ MRT	0.421 @ 9		@ 9	@
Maximum Recorded Temperatures					
Circulation Stopped	Time	16-Mar-2002		3:00	
Logger On Bottom	Time	16-Mar-2002		8:45	
Unit Number	Location	99	Houston ODP		
Recorded By		K. Swain			
Witnessed By		Gilles Guerin			

Logging Date	16-Mar-2002	Longitude		Latitude	
Run Number	1				
Depth Driller	5375 m				
Schlumberger Depth	5379 m				
Bottom Log Interval	5373 m				
Top Log Interval	5099 m				
Casing Driller Size @ Depth	0.000 in @ 5178 m				
Casing Schlumberger	5179 m				
Bit Size	11.438 in				
Type Fluid In Hole	Seppolite/Saltwater				
MUD		Density		Viscosity	
Fluid Loss		1.07 g/cm3			
PH					
Source Of Sample		mudpit			
RM @ Measured Temperature		0.235 ohm.m @ 33 degC			
RMF @ Measured Temperature		@ @			
RMC @ Measured Temperature		@ @			
Source RMF	RMC	none	none	@ 9	@
RM @ MRT	RMF @ MRT	0.421 @ 9		@ 9	@
Maximum Recorded Temperatures					
Circulation Stopped	Time	16-Mar-2002		3:00	
Logger On Bottom	Time	16-Mar-2002		8:45	
Unit Number	Location	99	Houston ODP		
Recorded By		K. Swain			
Witnessed By		Gilles Guerin			

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 OS1: DITE OS2: MEST/DSST OS3: OS4: OS5:	OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:
--	---

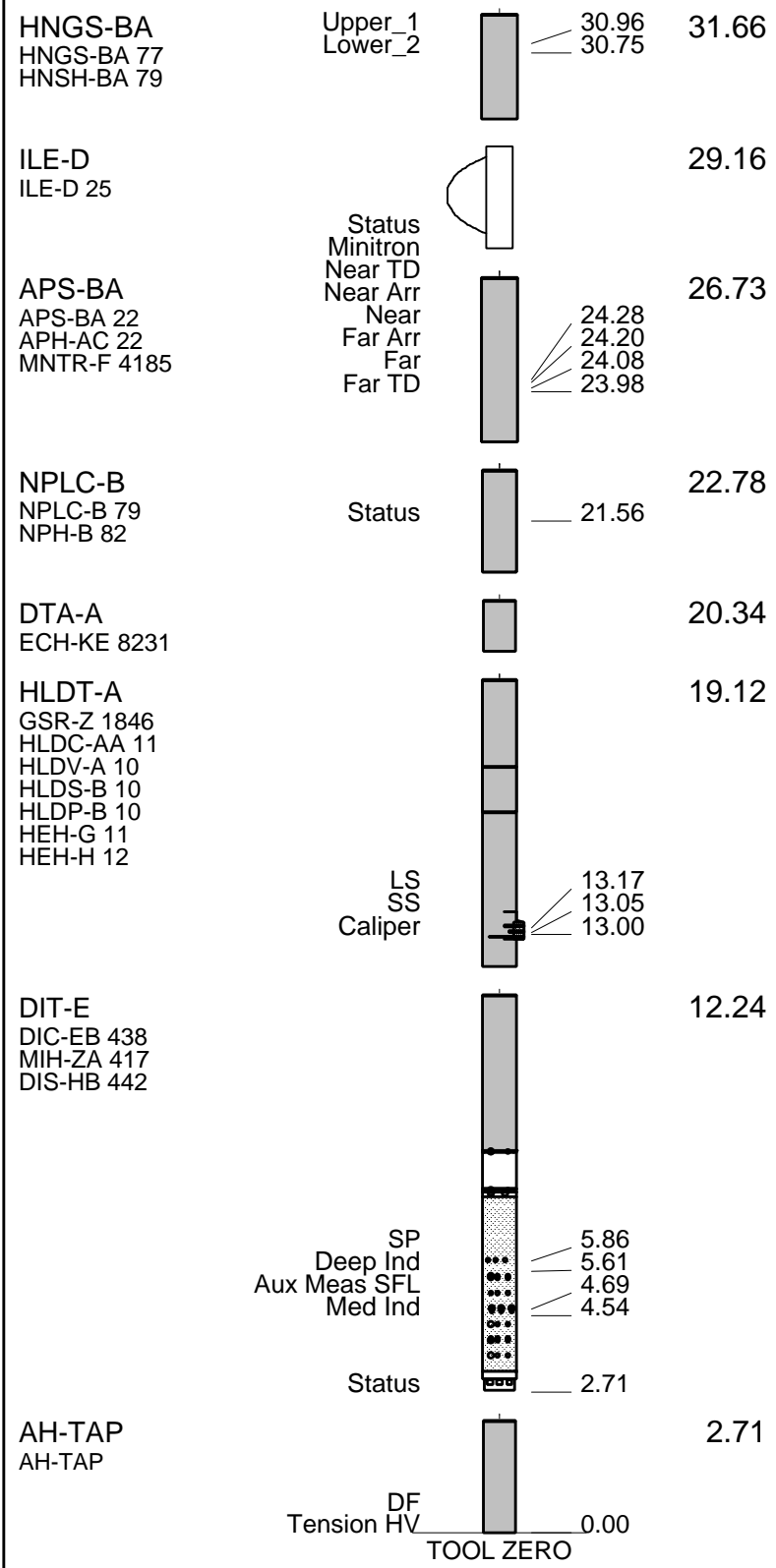
REMARKS: RUN NUMBER 1 Hole cored with APC, XCB Log presented in meters below rig floor. Lamont Temperature tool (TAP) was run on Triple Combo. Wireline Heave Compensator (WHC) was used on all descents. Sepiolite mud was used to displace the hole during the wiper trip. Drillers TD 5375 mbrf, Driller pipe depth: 5178 mbrf, Sea Floor: 5097 mbrf. Drill Pipe Schlumberger 5179 mbrf. Sea Floor Schlumberger 5099 mbrf.	REMARKS: RUN NUMBER 2
Software bug shows APS calibration not done for part of master calibration. Low background countrate on HNGS master calibration signifies 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	

DOWNHOLE EQUIPMENT	
LEH-QT 35.14	
LEH-QT 1726	
CTEM 33.98	
DTC-H 34.25	
ECH-KC 9343 33.34	
SGT-N 33.34	
SGH-K 2448	
SCC TR 0582	
Gamma Ray	



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_006LUP	FN:8	PRODUCER	16-Mar-2002 08:47	5383.5 M	5079.3 M
---------	-----------------------	------	----------	-------------------	----------	----------

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_021PUP	FN:32	PRODUCER	17-Mar-2002 13:54	5383.5 M	5084.2 M
TCOM	PI_LDL_APS_NGS_021PUP	FN:33	PRODUCER	17-Mar-2002 13:54	5383.5 M	5084.2 M

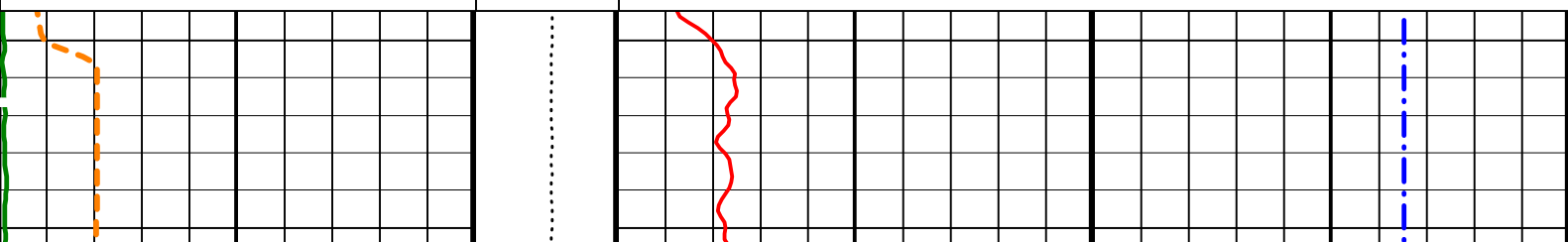
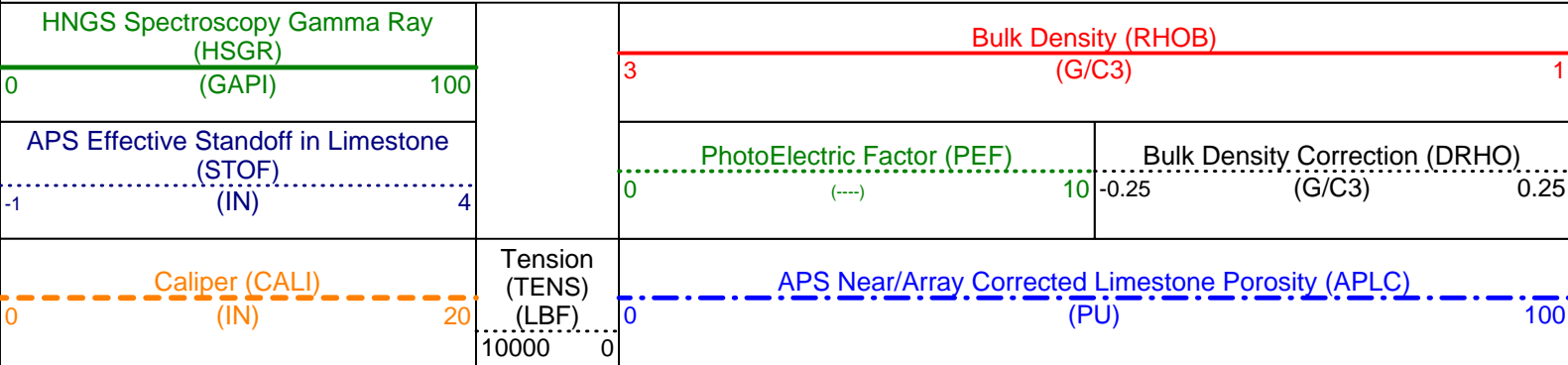
OP System Version: 10C0-306 MCM

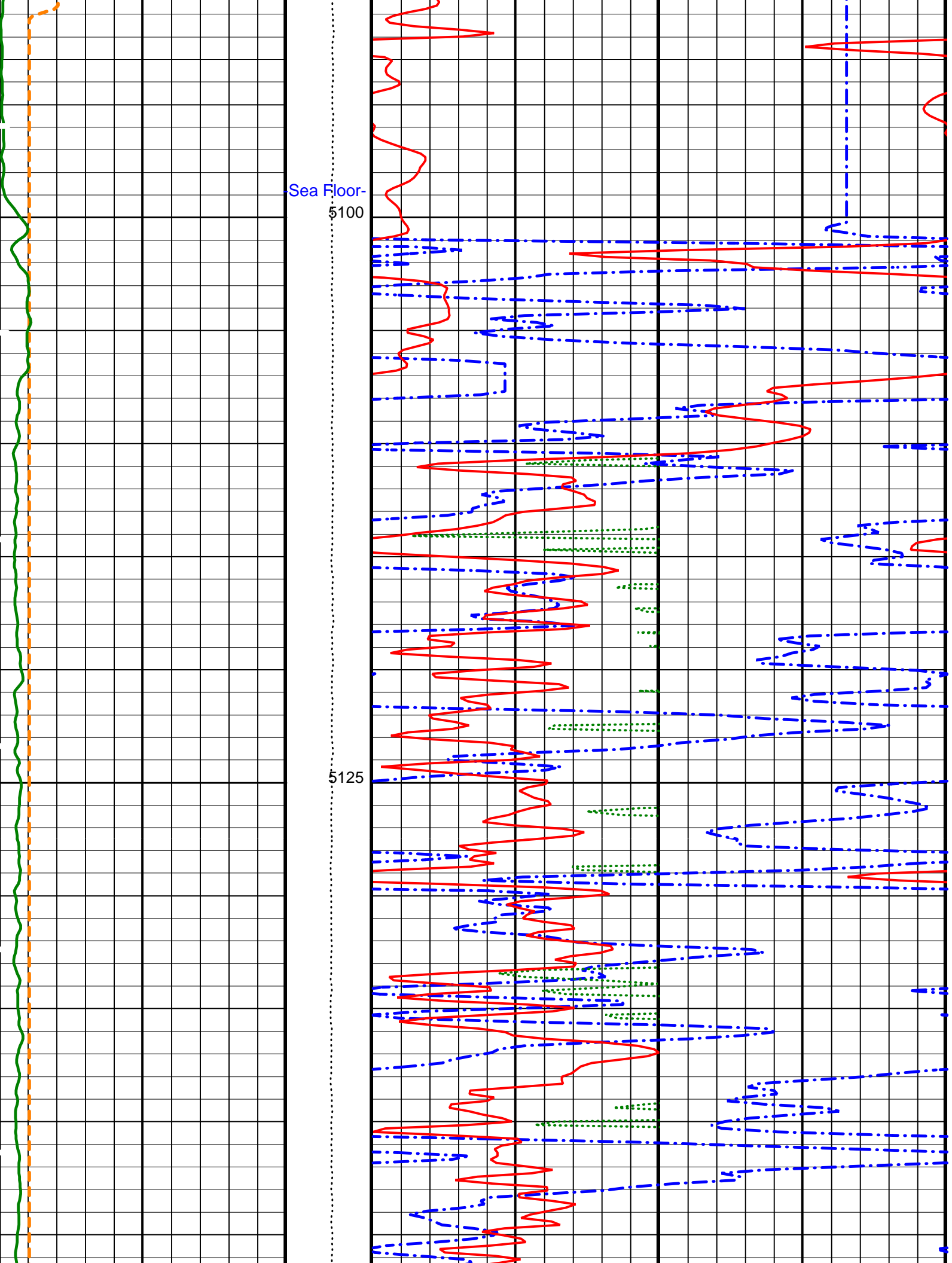
DIT-E	10C0-306	HLDT-A	10C0-306
DTA-A	10C0-306	NPLC-B	10C0-306
APS-BA	10C0-306	HNGS-BA	10C0-306
SGT-N	10C0-306	DTC-H	10C0-306

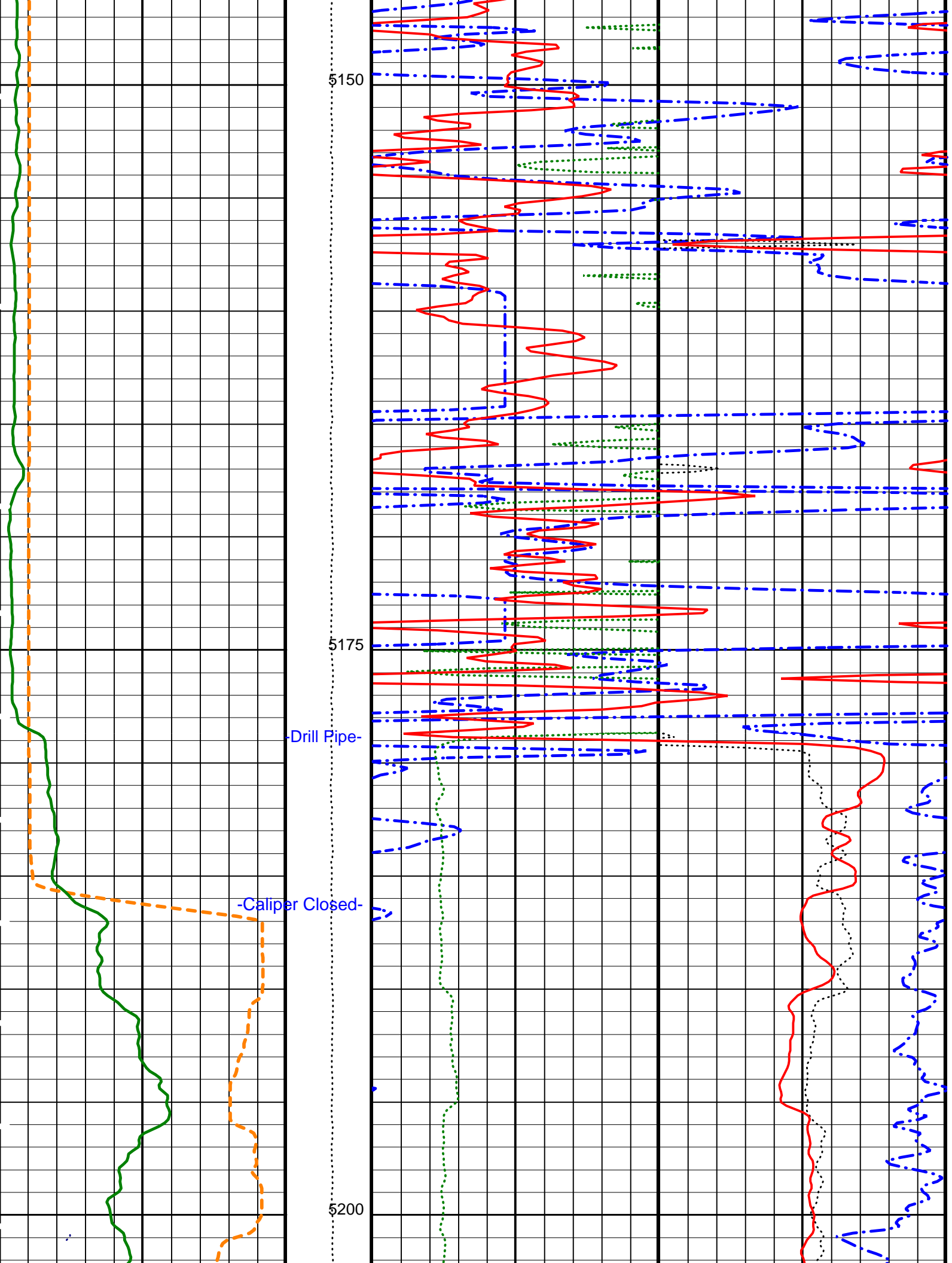
PIP SUMMARY

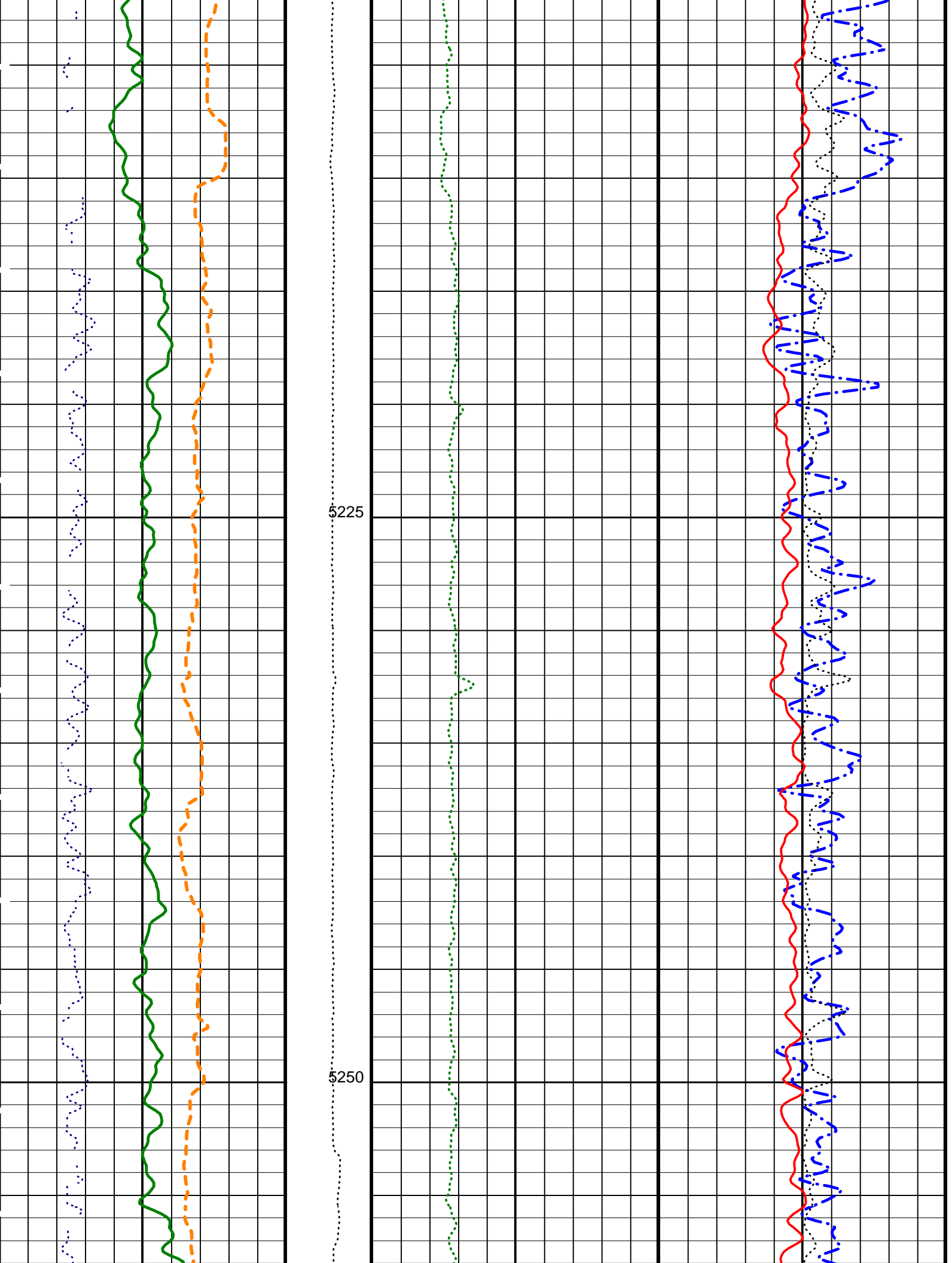
Main Pass

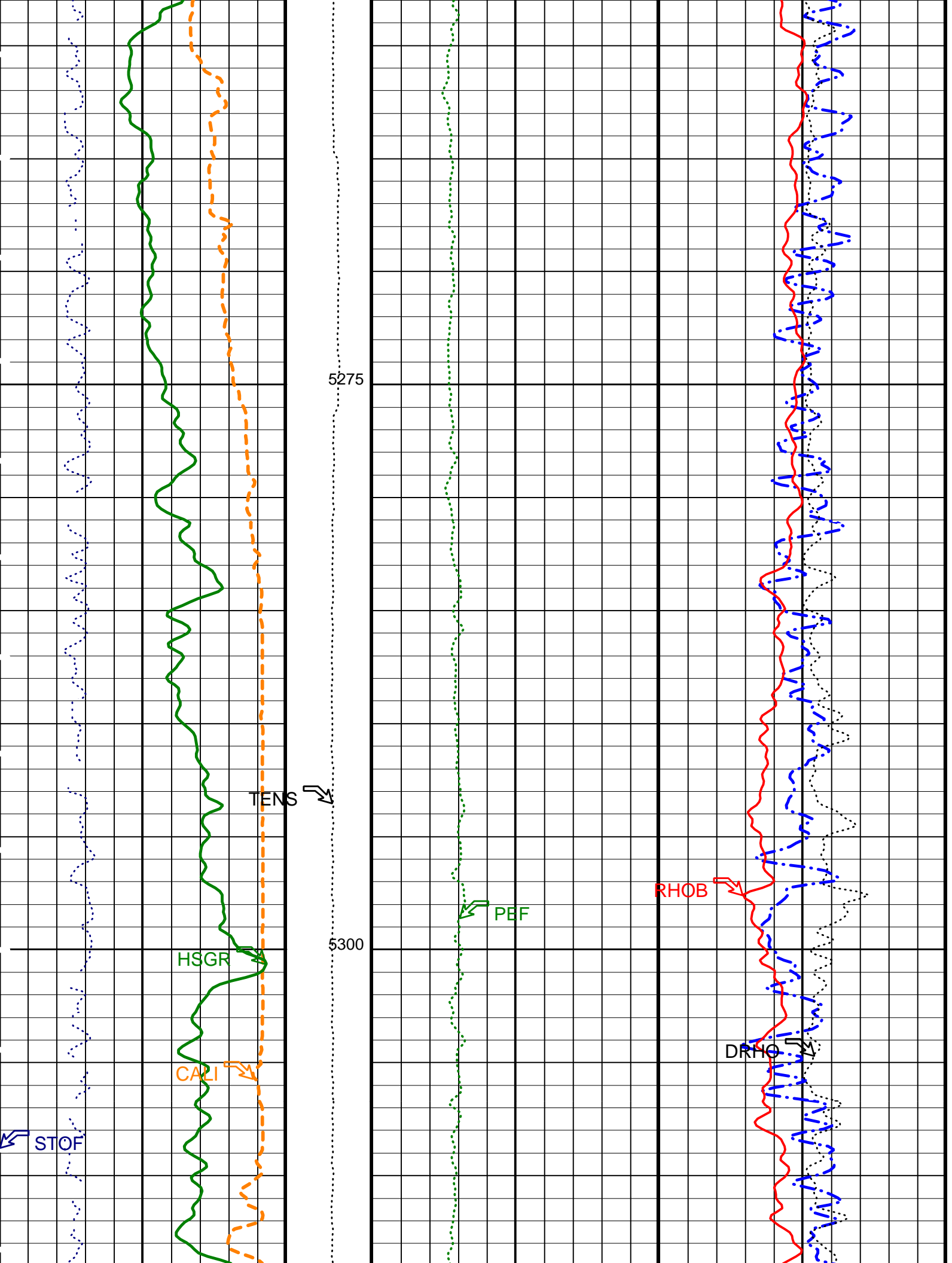
Time Mark Every 60 S

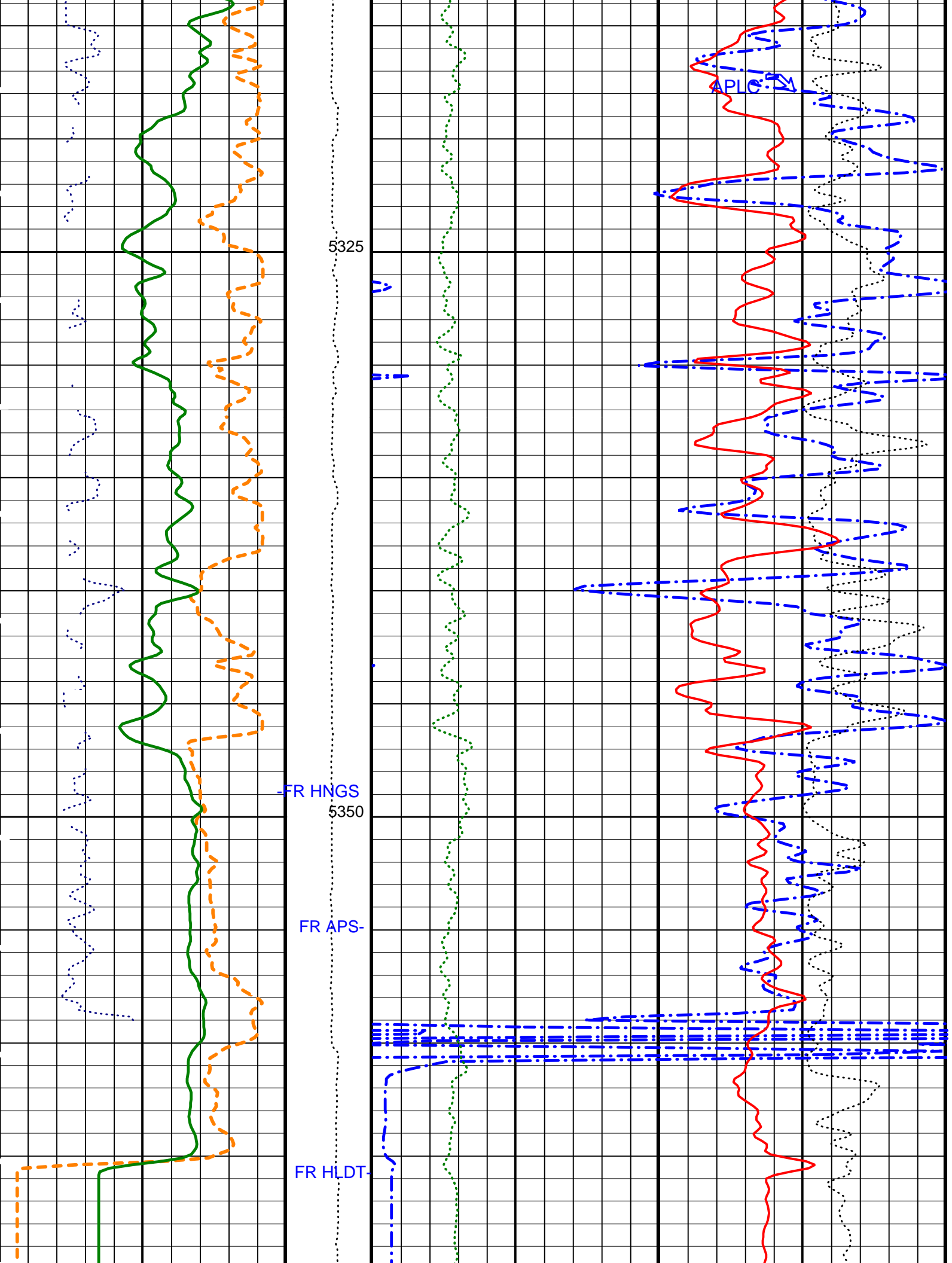


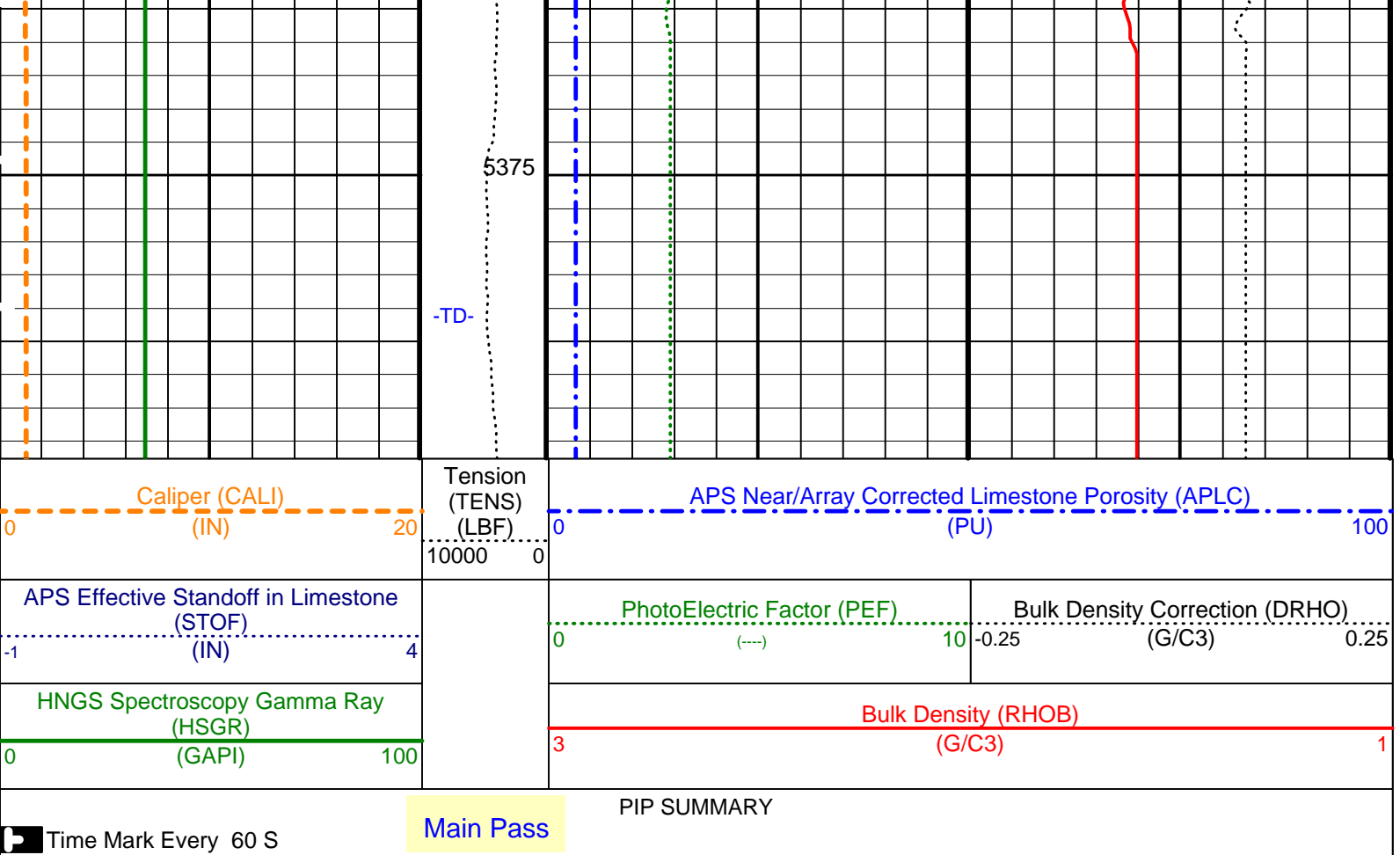












Parameters

DLIS Name	Description	Value	
	DIT-E: Dual Induction - E		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
DGF1	Deep 10 kHz Gain Factor	0.995593	
DGF2	Deep 20 kHz Gain Factor	1.00789	
DGF4	Deep 40 kHz Gain Factor	1.02614	
DPH1	Deep 10 kHz Phase Shift	0.114289	DEG
DPH2	Deep 20 kHz Phase Shift	-0.152394	DEG
DPH4	Deep 40 kHz Phase Shift	-1.42629	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	44.9501	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	16.357	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	4.69026	MM/M
DRIM	DIT-E Radial Invasion Mode	Rxo>Rt	
DSR1	Deep Sigma Reference (10 kHz)	7637	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DSR4	Deep Sigma Reference (40 kHz)	405	MM/M
DSTA	DIT-E Transversal Standoff	0	IN
DXE1	Deep Quad 10 kHz Sonde Error Correction	108.903	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	64.6326	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	46.096	MM/M
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
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	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGF1	Medium 10 kHz Gain Factor	1.02182	
MGF2	Medium 20 kHz Gain Factor	1.02964	
MGF4	Medium 40 kHz Gain Factor	1.06122	
MPH1	Medium 10 kHz Phase Shift	-0.255819	DEG
MPH2	Medium 20 kHz Phase Shift	-0.933067	DEG
MPH4	Medium 40 kHz Phase Shift	-2.46117	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	20.7292	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	-1.78642	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	-10.4594	MM/M
MSR1	Medium Sigma Reference (10 kHz)	13520	MM/M

MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MSR4	Medium Sigma Reference (40 kHz)	685	MM/M
MXE1	Medium Quad 10 kHz Sonde Error Correction	-105.752	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	-34.2041	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	11.4521	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	68	DEGF
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
	HLDT-A: Hostile Environment Litho Density - A		
BFM	Borehole Fluid Medium	LIQUID	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LSHC	LS Hardware Loop Control	DISALLOW	
MDEN	Matrix Density	2.71	G/C3
QPPS	Quicklook Processing Pe Select	PEFL	
SSHC	SS Hardware Loop Control	DISALLOW	
WMUD	Mud Weight	1.07	G/C3
	NPLC-B: Nuclear Porosity Lithology Cartridge - B		
NOTS	NPLC Old Temperature Sensor	NO	
	APS-BA: Accelerator-Porosity Tool		
	APS Software Version	5	
AASD	APS Thermal and Array Detectors High Voltage Setting	1968.98	V
ABOS	APS Neutron Burst-Off Background Subtraction Switch	ON	
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2052.03	V
AHCS	APS Holesize Correction Source	GCSE	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1748.3	V
AOTS	APS Old Temperature Sensor Switch	NO	
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature-Pressure-Salinity Correction Switch	OFF	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	-50000	PPM
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
NARC	APS Near/Array Calibration Ratio	1.0631	
NFRC	APS Near/Far Calibration Ratio	0.902243	
SHT	Surface Hole Temperature	68	DEGF
	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)	40	DEGF
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	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
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	0.000145375	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
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	68	DEGF
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.973008	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.974631	
	SGT-N: Scintillation Gamma-Ray - N		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
DPPM	Density Porosity Processing Mode	HIRS	
GCSE	Generalized Caliper Selection	CALI	

GCSE	Generalized Caliper Selection	CALI	0	DEG
GDEV	Average Angular Deviation of Borehole from Normal		0.01	DF/F
GGRD	Geothermal Gradient			
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9		
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE		
ISSBAR	SGT Nuclear Mud Type	NOBARITE		
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE		
SHT	Surface Hole Temperature		68	DEGF
SOGR	SGT Standoff Distance		0	IN
HOLEV: Integrated Hole/Cement Volume				
BHS	Borehole Status		OPEN	
BHT	Bottom Hole Temperature (used in calculations)		40	DEGF
FCD	Future Casing (Outer) Diameter		0	IN
GCSE	Generalized Caliper Selection	CALI		
GDEV	Average Angular Deviation of Borehole from Normal		0	DEG
GGRD	Geothermal Gradient		0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9		
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE		
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC		
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE		
SHT	Surface Hole Temperature		68	DEGF
System and Miscellaneous				
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth		
BS	Bit Size		11.438	IN
BSAL	Borehole Salinity		-50000.00	PPM
CSIZ	Current Casing Size		0.000	IN
CWEI	Casing Weight		0.00	LB/F
DFD	Drilling Fluid Density		1.07	G/C3
DO	Depth Offset for Playback		0.0	M
MST	Mud Sample Temperature		33.00	DEGC
PBVSADP	Use alternate depth channel for playback		NO	
PP	Playback Processing	RECOMPUTE		
RMFS	Resistivity of Mud Filtrate Sample		-50000.0000	OHMM
RW	Resistivity of Connate Water		1.0000	OHMM
TD	Total Depth		17647.6	FT
TDD	Total Depth - Driller		5377.00	M
TDL	Total Depth - Logger		5377.00	M
TWS	Temperature of Connate Water Sample		37.78	DEGC

Format: APSLiquidPorosity_1 Vertical Scale: 1:200 Graphics File Created: 17-Mar-2002 13:54

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

Input DLIS Files

DEFAULT	PI_LDL_APS_NGS_006LUP	FN:8	PRODUCER	16-Mar-2002 08:47	5383.5 M	5079.3 M
---------	-----------------------	------	----------	-------------------	----------	----------

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_021PUP	FN:32	PRODUCER	17-Mar-2002 13:54		
TCOM	PI_LDL_APS_NGS_021PUP	FN:33	PRODUCER	17-Mar-2002 13:54		

Input DLIS Files

DEFAULT	PI_LDL_APS_NGS_008LUP	FN:11	PRODUCER	16-Mar-2002 09:52	5383.5 M	5202.5 M
---------	-----------------------	-------	----------	-------------------	----------	----------

Output DLIS Files

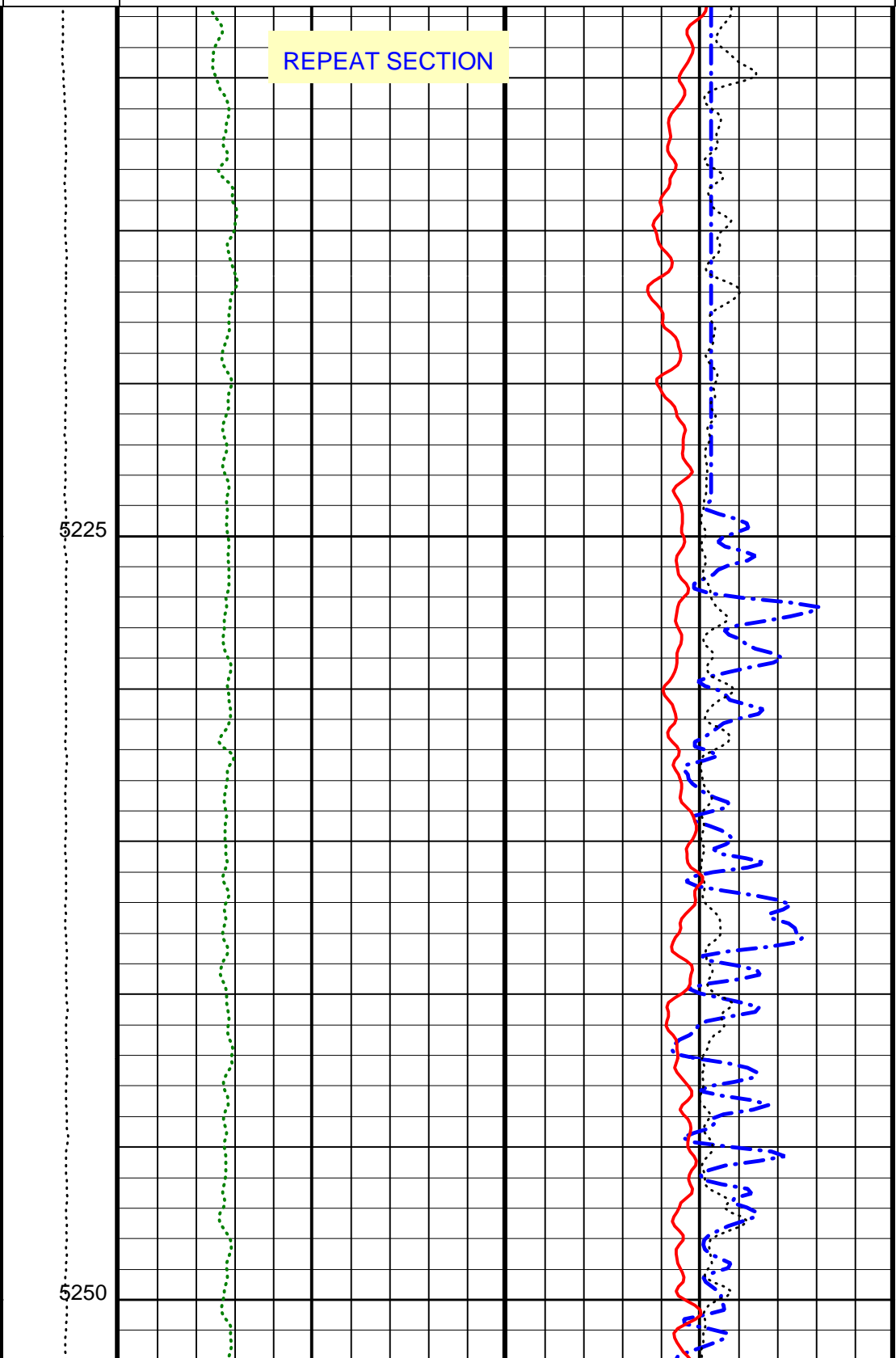
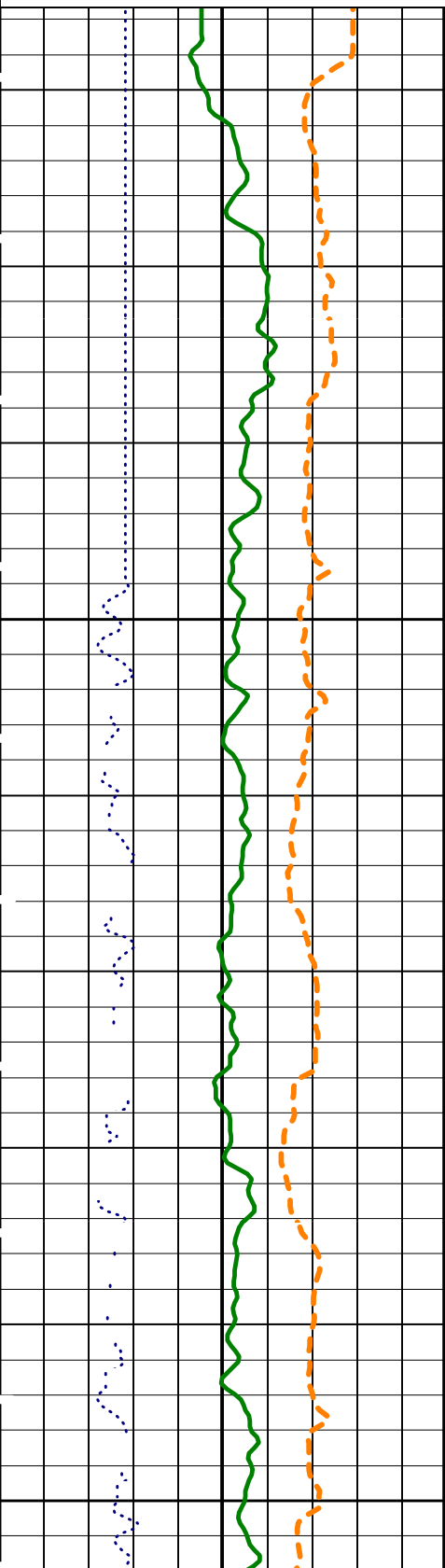
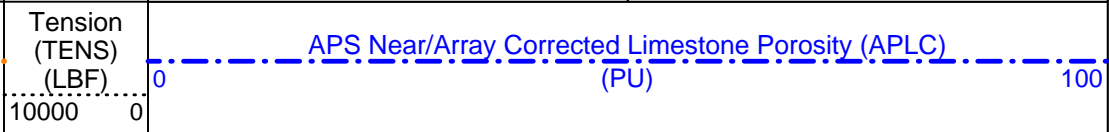
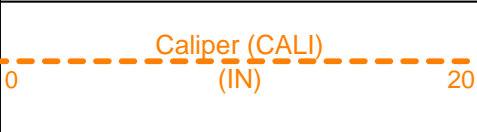
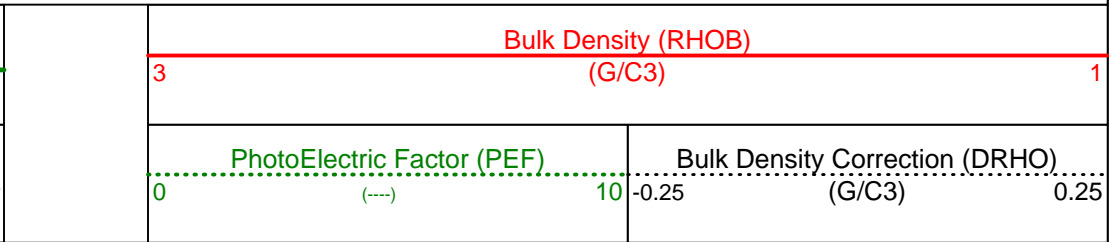
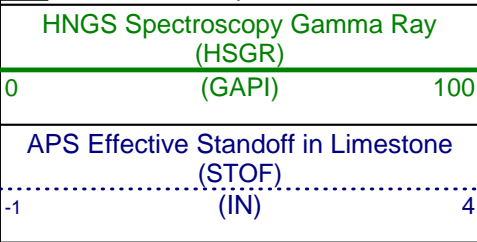
DEFAULT	PI_LDL_APS_NGS_023PUP	FN:35	PRODUCER	17-Mar-2002 14:07	5383.5 M	5207.7 M
TCOM	PI_LDL_APS_NGS_023PUP	FN:36	PRODUCER	17-Mar-2002 14:07	5383.5 M	5207.7 M

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

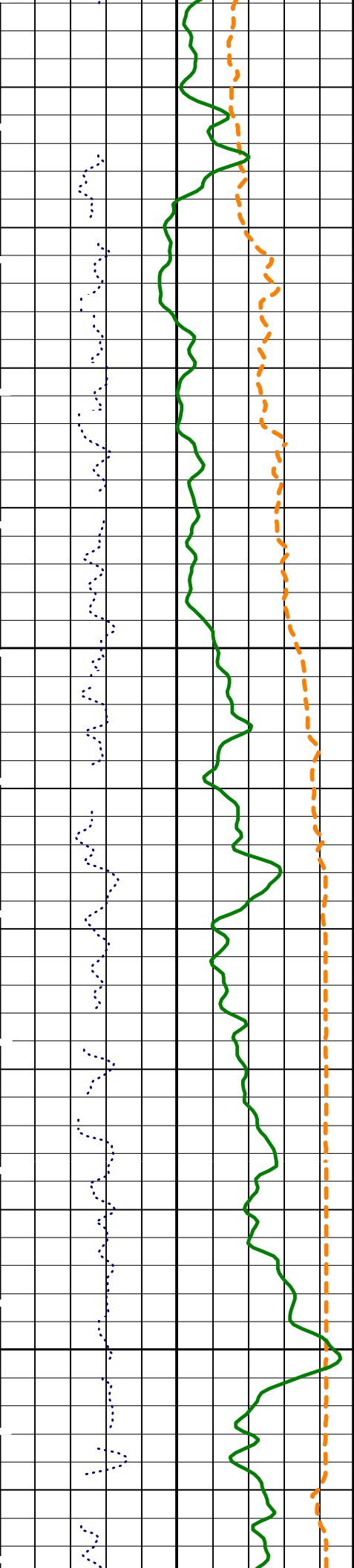
Time Mark Every 60 S



REPEAT SECTION

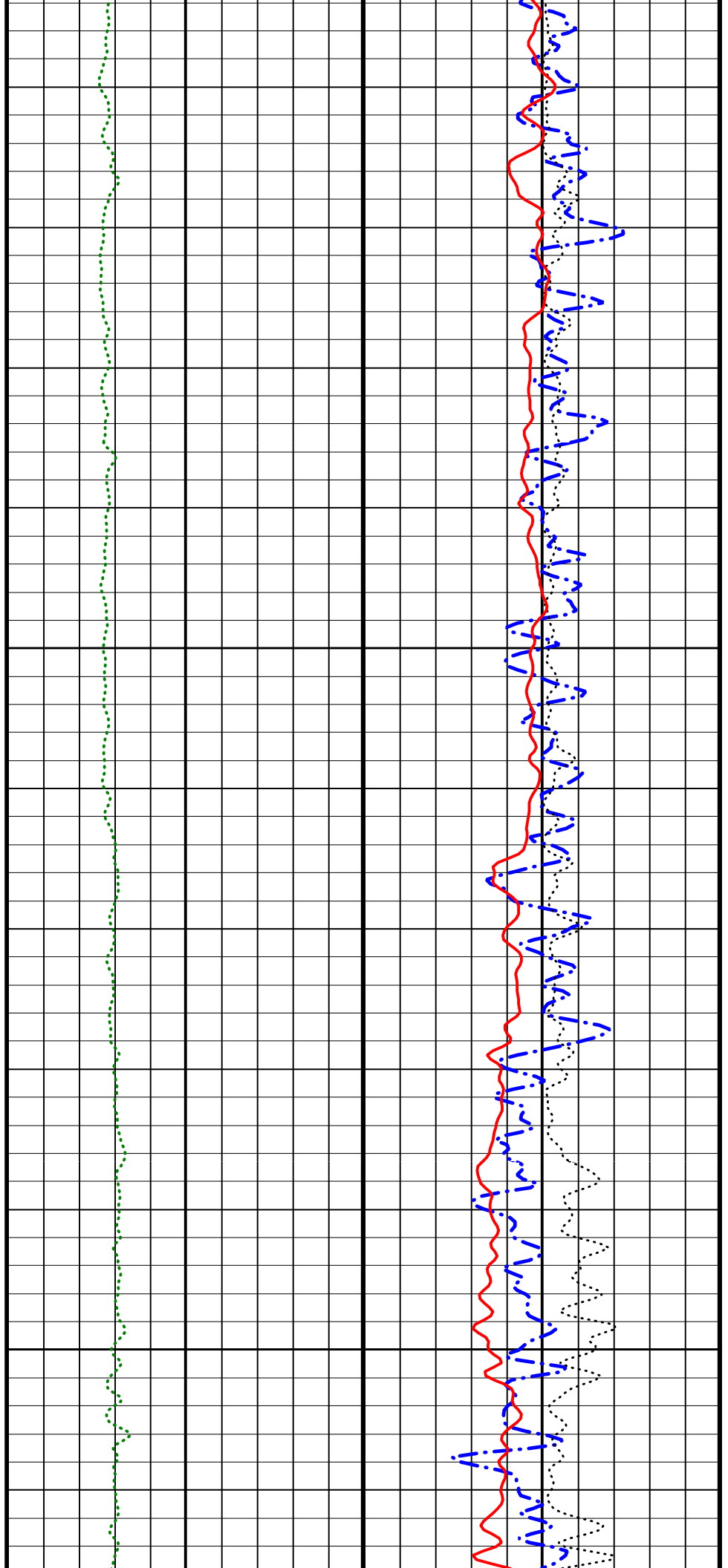
5225

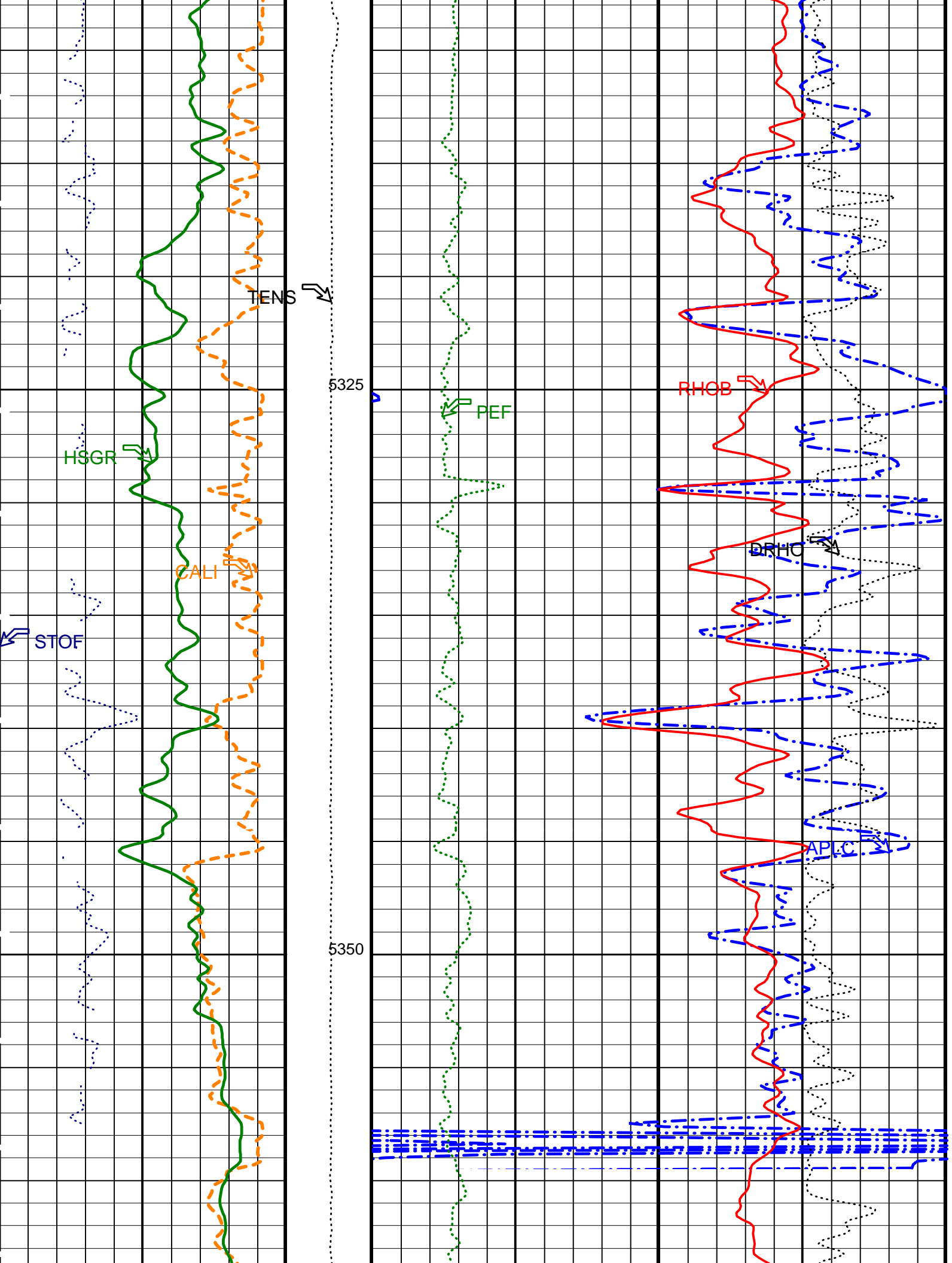
5250

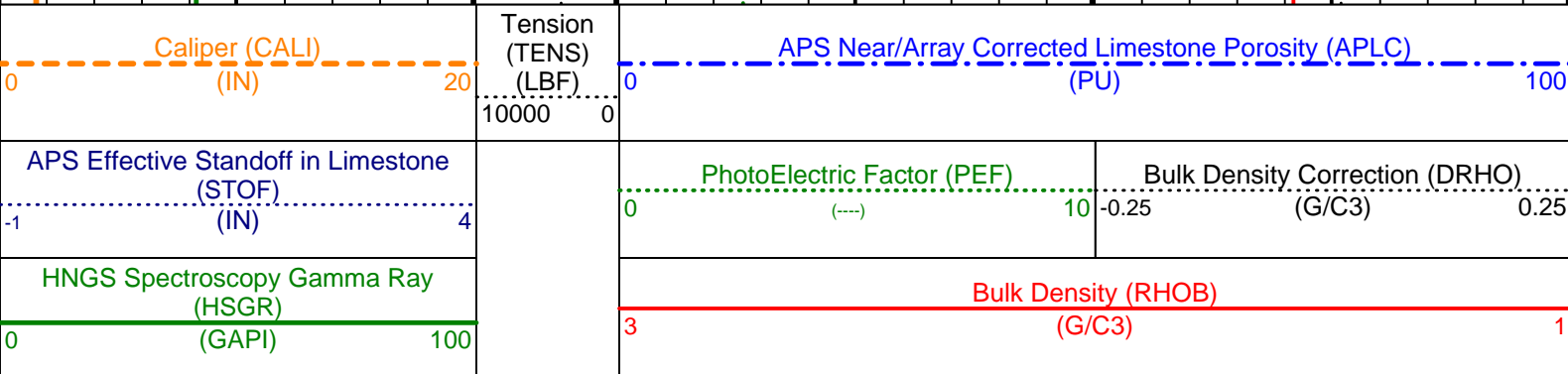
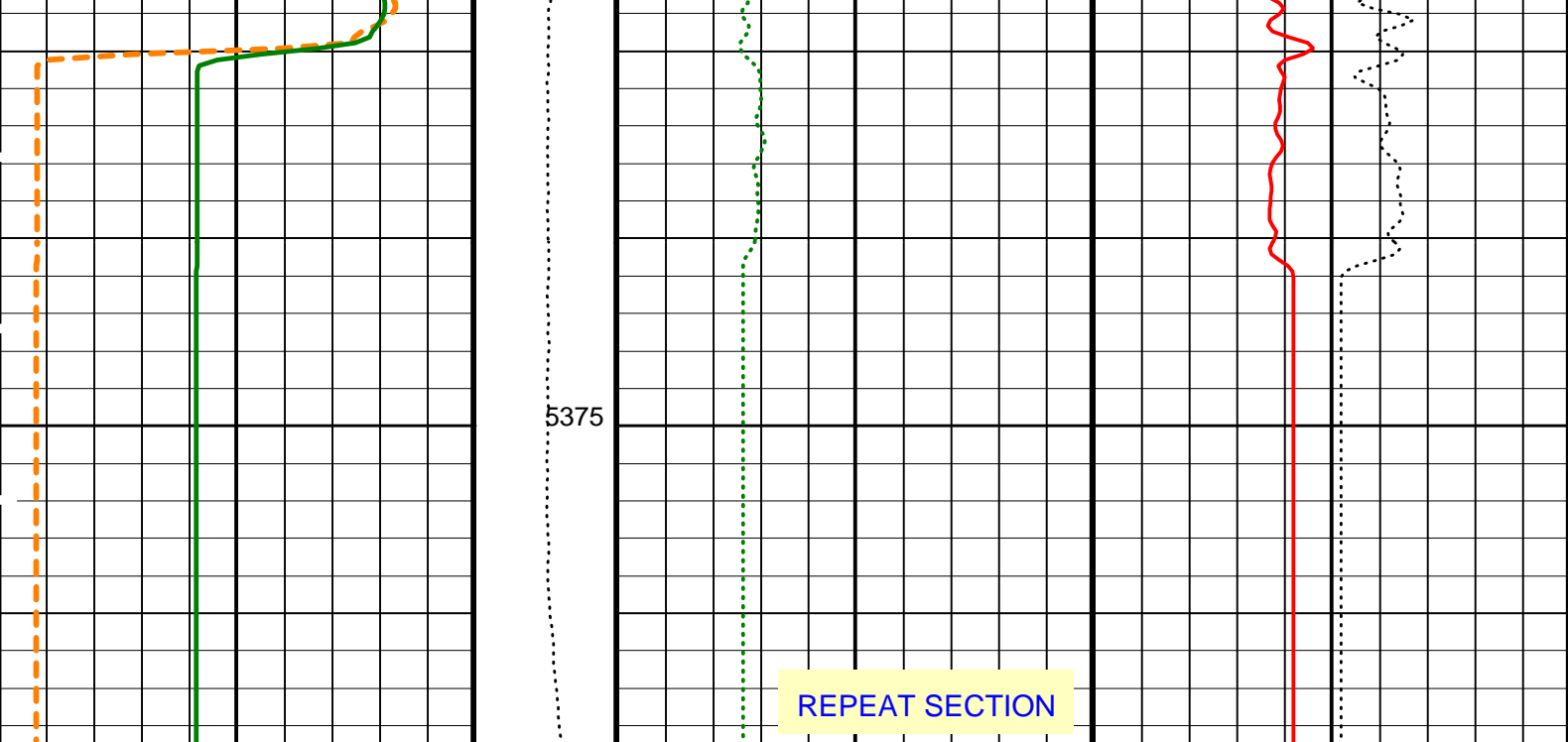


5275

5300







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)	40	DEGF
DGF1	Deep 10 kHz Gain Factor	0.995593	
DGF2	Deep 20 kHz Gain Factor	1.00789	
DGF4	Deep 40 kHz Gain Factor	1.02614	
DPH1	Deep 10 kHz Phase Shift	0.114289	DEG
DPH2	Deep 20 kHz Phase Shift	-0.152394	DEG
DPH4	Deep 40 kHz Phase Shift	-1.42629	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	44.9501	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	16.357	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	4.69026	MM/M
DRIM	DIT-E Radial Invasion Mode	Rxo>Rt	
DSR1	Deep Sigma Reference (10 kHz)	7637	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DSR4	Deep Sigma Reference (40 kHz)	405	MM/M
DSTA	DIT-E Transversal Standoff	0	IN
DXE1	Deep Quad 10 kHz Sonde Error Correction	108.903	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	64.6326	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	46.096	MM/M
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
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	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGE1	Medium 10 kHz Gain Factor	1.02182	

MGF2	Medium 20 kHz Gain Factor	1.02964	
MGF4	Medium 40 kHz Gain Factor	1.06122	
MPH1	Medium 10 kHz Phase Shift	-0.255819	DEG
MPH2	Medium 20 kHz Phase Shift	-0.933067	DEG
MPH4	Medium 40 kHz Phase Shift	-2.46117	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	20.7292	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	-1.78642	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	-10.4594	MM/M
MSR1	Medium Sigma Reference (10 kHz)	13520	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MSR4	Medium Sigma Reference (40 kHz)	685	MM/M
MXE1	Medium Quad 10 kHz Sonde Error Correction	-105.752	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	-34.2041	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	11.4521	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	68	DEGF
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
	HLDT-A: Hostile Environment Litho Density - A		
BFM	Borehole Fluid Medium	LIQUID	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LSHC	LS Hardware Loop Control	DISALLOW	
MDEN	Matrix Density	2.71	G/C3
QPPS	Quicklook Processing Pe Select	PEFL	
SSHC	SS Hardware Loop Control	DISALLOW	
WMUD	Mud Weight	1.07	G/C3
	NPLC-B: Nuclear Porosity Lithology Cartridge - B		
NOTS	NPLC Old Temperature Sensor	NO	
	APS-BA: Accelerator-Porosity Tool		
	APS Software Version	5	
AASD	APS Thermal and Array Detectors High Voltage Setting	1968.98	V
ABOS	APS Neutron Burst-Off Background Subtraction Switch	ON	
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2052.03	V
AHCS	APS Holesize Correction Source	GCSE	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1748.3	V
AOTS	APS Old Temperature Sensor Switch	NO	
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature-Pressure-Salinity Correction Switch	OFF	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	-50000	PPM
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
NARC	APS Near/Array Calibration Ratio	1.0631	
NFRC	APS Near/Far Calibration Ratio	0.902243	
SHT	Surface Hole Temperature	68	DEGF
	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)	40	DEGF
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	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
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	0.000145375	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
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	68	DEGF
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.973008	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.974631	
SGT-N: Scintillation Gamma-Ray - N			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
DPPM	Density Porosity Processing Mode	HIRS	
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	SGT Nuclear Mud Type	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
SOGR	SGT Standoff Distance	0	IN
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGF
FCD	Future Casing (Outer) Diameter	0	IN
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
System and Miscellaneous			
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	0.000	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.07	G/C3
DO	Depth Offset for Playback	0.0	M
MST	Mud Sample Temperature	33.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	17647.6	FT
TDD	Total Depth - Driller	5377.00	M
TDL	Total Depth - Logger	5377.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: APSLiquidPorosity_1 Vertical Scale: 1:200 Graphics File Created: 17-Mar-2002 14:07

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

Input DLIS Files

DEFAULT	PI_LDL_APS_NGS_008LUP	FN:11	PRODUCER	16-Mar-2002 09:52	5383.5 M	5202.5 M
---------	-----------------------	-------	----------	-------------------	----------	----------

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_023PUP	FN:35	PRODUCER	17-Mar-2002 14:07		
TCOM	PI_LDL_APS_NGS_023PUP	FN:36	PRODUCER	17-Mar-2002 14:07		

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: 21-Feb-2002 4:36 After: 16-Mar-2002 13:35							
LSW1 Background	100.0	89.06	86.19	87.21	1.019	3.000	CPS
LSW2 Background	105.0	93.23	91.94	91.16	-0.7827	3.150	CPS
LSW3 Background	110.0	100.0	100.0	100.0	0.000	3.300	CPS

LSW3 Background	210.0	177.0	178.4	178.4	1.486	8.500	CPS
LSW4 Background	290.0	237.9	235.4	237.0	1.540	8.700	CPS
LSW5 Background	610.0	529.6	525.7	526.2	0.5357	18.30	CPS
SSW1 Background	100.0	85.18	85.99	85.89	-0.09821	3.000	CPS
SSW2 Background	200.0	166.8	165.6	167.1	1.530	6.000	CPS
SSW3 Background	530.0	446.5	445.9	441.3	-4.582	15.90	CPS
SSW4 Background	280.0	235.8	234.2	233.3	-0.9212	8.400	CPS
SSW5 Background	205.0	176.3	175.5	177.7	2.273	6.150	CPS

Hostile Environment Litho Density - A Wellsite Calibration - Tool Quality Control Information High Voltage

Master: 25-Jan-2002 14:22 Before: 21-Feb-2002 4:36 After: 16-Mar-2002 13:35

LS Bkg. High Voltage	1129	1129	1134	1135	0.8025	N/A	V
SS Bkg. High Voltage	1173	1173	1180	1178	-2.820	N/A	V

Hostile Environment Litho Density - A Wellsite Calibration - Detectors Resolution From BKG Measurements

Master: 25-Jan-2002 14:22 Before: 21-Feb-2002 4:36 After: 16-Mar-2002 13:35

LS Background Resolution	1.000	1.042	1.032	1.052	0.01986	N/A
SS Background Resolution	1.000	0.9530	0.9479	0.9570	0.009117	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

Hostile Environment Litho Density - A Master Calibration - Aluminum Measurement

Master: 25-Jan-2002 15:58

LSW1 Aluminum	648.4	632.3	--	--	--	--	CPS
LSW2 Aluminum	1018	998.4	--	--	--	--	CPS
LSW3 Aluminum	1105	1037	--	--	--	--	CPS
LSW4 Aluminum	609.5	564.9	--	--	--	--	CPS
LSW5 Aluminum	533.8	497.5	--	--	--	--	CPS
SSW1 Aluminum	2664	2526	--	--	--	--	CPS
SSW2 Aluminum	7731	7417	--	--	--	--	CPS
SSW3 Aluminum	10380	9945	--	--	--	--	CPS
SSW4 Aluminum	4574	4376	--	--	--	--	CPS
SSW5 Aluminum	745.2	731.3	--	--	--	--	CPS

Hostile Environment Litho Density - A Master Calibration - Tool Quality Control Information: High Voltage

Master: 25-Jan-2002 15:58

LS Alum. High Voltage	1129	1130	--	--	--	--	V
SS Alum. High Voltage	1173	1161	--	--	--	--	V

Hostile Environment Litho Density - A Master Calibration - Detectors Resolution From Aluminum Measurement

Master: 25-Jan-2002 15:58

LS Aluminum Resolution	1.000	1.032	--	--	--	--
SS Aluminum Resolution	1.000	1.050	--	--	--	--

Hostile Environment Litho Density - A Master Calibration - Aluminum Measurement (Window Ratios)

Master: 25-Jan-2002 15:58

LSW1/(LSW4 + LSW5) Calc.	0.5400	0.5952	--	--	--	--
LSW3/(LSW4 + LSW5) Calc.	0.9600	0.9762	--	--	--	--
SSW1/(SSW4 + SSW5) Calc.	0.4600	0.4946	--	--	--	--
SSW3/(SSW4 + SSW5) Calc.	1.900	1.947	--	--	--	--

Hostile Environment Litho Density - A Master Calibration - Litholog Measurement

Master: 25-Jan-2002 15:52

LSW1 Iron	410.0	450.3	--	--	--	--	CPS
LSW2 Iron	870.0	861.2	--	--	--	--	CPS
LSW3 Iron	1030	996.5	--	--	--	--	CPS
LSW4 Iron	590.0	556.0	--	--	--	--	CPS
LSW5 Iron	530.0	490.9	--	--	--	--	CPS
SSW1 Iron	1850	1931	--	--	--	--	CPS
SSW2 Iron	6500	6497	--	--	--	--	CPS
SSW3 Iron	10000	9541	--	--	--	--	CPS
SSW4 Iron	4500	4223	--	--	--	--	CPS
SSW5 Iron	750.0	684.9	--	--	--	--	CPS

Hostile Environment Litho Density - A Master Calibration - Tool Quality Control Information: High Voltage

Master: 25-Jan-2002 15:52

LS Lith High Voltage	1129	1130	--	--	--	--	V
SS Lith High Voltage	1173	1163	--	--	--	--	V

Hostile Environment Litho Density - A Master Calibration - Detectors Resolution From Litholog Measurement

Master: 25-Jan-2002 15:52

LS Lith Resolution	1.000	1.033	--	--	--	--
SS Lith Resolution	1.000	1.016	--	--	--	--

Accelerator-Porosity Tool Wellsite Calibration - Detector Background

Master: 25-Jan-2002 18:34 Before: 16-Mar-2002 6:13 After: 16-Mar-2002 11:12

Near Det Bkg Cntrate	30.00	32.90	31.64	32.59	0.9511	N/A	CPS
Far Det Bkg Cntrate	30.00	34.46	32.77	32.64	-0.1335	N/A	CPS
Array-1 Det Bkg Cntrate	30.00	28.56	29.11	29.15	0.03336	N/A	CPS

Array-2 Det Bkg Cntrate	30.00	30.78	28.66	29.48	0.8174	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	32.89	34.90	31.52	-3.376	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: 16-Mar-2002 13:31							
Na 511 Peak Loc	40.00	40.51	40.71	40.60	-0.1139	1.000	
Na 511 Peak Res	15.50	15.75	17.24	16.36	-0.8792	2.000	%
High Voltage	1150	1203	1207	1211	4.461	30.00	V
Na 1785 Peak Loc	142.6	144.6	146.2	145.3	-0.8852	7.000	
Na 1785 Peak Res	8.500	9.254	9.073	9.056	-0.01723	2.000	%
Temperature	15.50	21.86	29.34	29.05	-0.2867	N/A	DEGC
Na Count Rate	45.00	39.29	40.56	38.30	-2.263	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: 16-Mar-2002 13:31							
Na 511 Peak Loc	40.00	40.54	40.54	40.49	-0.04351	1.000	
Na 511 Peak Res	15.50	16.19	16.67	16.83	0.1667	2.000	%
High Voltage	1150	1233	1236	1241	4.679	30.00	V
Na 1785 Peak Loc	142.6	143.9	144.1	144.7	0.6076	7.000	
Na 1785 Peak Res	8.500	9.453	8.968	9.504	0.5361	2.000	%
Temperature	15.50	21.24	29.04	29.75	0.7097	N/A	DEGC
Na Count Rate	45.00	39.11	40.36	38.11	-2.251	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: 16-Mar-2002 13:31							
Coincidence Count Rate Ratio	1.000	1.004	1.005	1.005	-0.0001048	0.05000	
Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration							
Master: 23-Jan-2002 11:31							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	209.7	--	--	--	--	
Th Peak Res	7.000	7.364	--	--	--	--	%
Background Count Rate	142.5	19.66	--	--	--	--	CPS
Gain Ratio	1.000	0.9848	--	--	--	--	
Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration							
Master: 23-Jan-2002 11:31							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	208.7	--	--	--	--	
Th Peak Res	7.000	7.834	--	--	--	--	%
Background Count Rate	142.5	17.61	--	--	--	--	CPS
Gain Ratio	1.000	0.9795	--	--	--	--	
Scintillation Gamma-Ray - N Wellsite Calibration - Detector Calibration							
Before: Calibration out of date 7-Feb-2002 1:09 After: Calibration not done							
Gamma Ray (Jig - Bkg)	167.5	N/A	167.5	N/A	N/A	0.09091	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:

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

Hostile Environment Litho Density - A Wellsite Calibration

Background Measurement

Phase	LSW1 Background CPS	Value	Phase	LSW2 Background CPS	Value	Phase	LSW3 Background CPS	Value
Master		89.06	Master		93.23	Master		180.0
Before		86.19	Before		91.94	Before		177.0
After		87.21	After		91.16	After		178.4
65.00 (Minimum) 100.0 (Nominal) 125.0 (Maximum)			70.00 (Minimum) 105.0 (Nominal) 130.0 (Maximum)			150.0 (Minimum) 210.0 (Nominal) 250.0 (Maximum)		
Phase	LSW4 Background CPS	Value	Phase	LSW5 Background CPS	Value	Phase	SSW1 Background CPS	Value
Master		237.9	Master		529.6	Master		85.18
Before		235.4	Before		525.7	Before		85.99
After		237.0	After		526.2	After		85.89
220.0 (Minimum) 290.0 (Nominal) 330.0 (Maximum)			430.0 (Minimum) 610.0 (Nominal) 730.0 (Maximum)			70.00 (Minimum) 100.0 (Nominal) 120.0 (Maximum)		
Phase	SSW2 Background CPS	Value	Phase	SSW3 Background CPS	Value	Phase	SSW4 Background CPS	Value
Master		166.8	Master		446.5	Master		235.8
Before		165.6	Before		445.9	Before		234.2
After		167.1	After		441.3	After		233.3
140.0 (Minimum) 200.0 (Nominal) 240.0 (Maximum)			380.0 (Minimum) 530.0 (Nominal) 630.0 (Maximum)			190.0 (Minimum) 280.0 (Nominal) 340.0 (Maximum)		
Phase	SSW5 Background CPS	Value						
Master		176.3						
Before		175.5						
After		177.7						
140.0 (Minimum) 205.0 (Nominal) 250.0 (Maximum)								
Master: 25-Jan-2002 14:22			Before: 21-Feb-2002 4:36			After: 16-Mar-2002 13:35		

Hostile Environment Litho Density - A Wellsite Calibration

Detectors Resolution From BKG Measurements

Phase	LS Background Resolution	Value	Phase	SS Background Resolution	Value
Master		1.042	Master		0.9530
Before		1.032	Before		0.9479
After		1.052	After		0.9570
0.7000 (Minimum) 1.000 (Nominal) 1.111 (Maximum)			0.7000 (Minimum) 1.000 (Nominal) 1.111 (Maximum)		
Master: 25-Jan-2002 14:22			Before: 21-Feb-2002 4:36		
After: 16-Mar-2002 13:35					

Hostile Environment Litho Density - A Master Calibration

Aluminum Measurement

Phase	LSW1 Aluminum CPS	Value	Phase	LSW2 Aluminum CPS	Value	Phase	LSW3 Aluminum CPS	Value
Master		632.3	Master		998.4	Master		1037
440.0 (Minimum) 648.4 (Nominal) 840.0 (Maximum)			840.0 (Minimum) 1018 (Nominal) 1200 (Maximum)			920.0 (Minimum) 1105 (Nominal) 1280 (Maximum)		

Phase	LSW4 Aluminum CPS	Value	Phase	LSW5 Aluminum CPS	Value	Phase	SSW1 Aluminum CPS	Value
Master		564.9	Master		497.5	Master		2526
	520.0 (Minimum) 609.5 (Nominal) 720.0 (Maximum)			450.0 (Minimum) 533.8 (Nominal) 670.0 (Maximum)			1850 (Minimum) 2664 (Nominal) 2900 (Maximum)	
Phase	SSW2 Aluminum CPS	Value	Phase	SSW3 Aluminum CPS	Value	Phase	SSW4 Aluminum CPS	Value
Master		7417	Master		9945	Master		4376
	6200 (Minimum) 7731 (Nominal) 8500 (Maximum)			8750 (Minimum) 10380 (Nominal) 11750 (Maximum)			4000 (Minimum) 4574 (Nominal) 5400 (Maximum)	
Phase	SSW5 Aluminum CPS	Value						
Master		731.3						
	570.0 (Minimum) 745.2 (Nominal) 1110 (Maximum)							

Master: 25-Jan-2002 15:58

Hostile Environment Litho Density - A Master Calibration					
Detectors Resolution From Aluminum Measurement					
Phase	LS Aluminum Resolution	Value	Phase	SS Aluminum Resolution	Value
Master		1.032	Master		1.050
	0.7000 (Minimum) 1.000 (Nominal) 1.111 (Maximum)			0.7000 (Minimum) 1.000 (Nominal) 1.111 (Maximum)	

Master: 25-Jan-2002 15:58

Hostile Environment Litho Density - A Master Calibration					
Aluminum Measurement (Window Ratios)					
Phase	LSW1/(LSW4 + LSW5) Calc.	Value	Phase	SSW3/(SSW4 + SSW5) Calc.	Value
Master		0.5952	Master		1.947
	0.3400 (Minimum) 0.5400 (Nominal) 0.7400 (Maximum)			0.7600 (Minimum) 0.9600 (Nominal) 1.160 (Maximum)	
Phase	SSW1/(SSW4 + SSW5) Calc.	Value	Phase	SSW3/(SSW4 + SSW5) Calc.	Value
Master		0.4946	Master		1.947
	0.3600 (Minimum) 0.4600 (Nominal) 0.5600 (Maximum)			1.700 (Minimum) 1.900 (Nominal) 2.100 (Maximum)	

Master: 25-Jan-2002 15:58

Hostile Environment Litho Density - A Master Calibration									
Litholog Measurement									
Phase	LSW1 Iron CPS	Value	Phase	LSW2 Iron CPS	Value	Phase	LSW3 Iron CPS	Value	
Master		450.3	Master		861.2	Master		996.5	
	310.0 (Minimum) 410.0 (Nominal) 510.0 (Maximum)			660.0 (Minimum) 870.0 (Nominal) 980.0 (Maximum)			810.0 (Minimum) 1030 (Nominal) 1170 (Maximum)		
Phase	LSW4 Iron CPS	Value	Phase	LSW5 Iron CPS	Value	Phase	SSW1 Iron CPS	Value	
Master		556.0	Master		490.9	Master		1931	
	470.0 (Minimum) 590.0 (Nominal) 670.0 (Maximum)			400.0 (Minimum) 530.0 (Nominal) 620.0 (Maximum)			1400 (Minimum) 1850 (Nominal) 2120 (Maximum)		
Phase	SSW2 Iron CPS	Value	Phase	SSW3 Iron CPS	Value	Phase	SSW4 Iron CPS	Value	
Master		6497	Master		9541	Master		4223	
	5170 (Minimum) 6500 (Nominal) 7270 (Maximum)			8100 (Minimum) 10000 (Nominal) 11000 (Maximum)			3620 (Minimum) 4500 (Nominal) 5020 (Maximum)		
Phase	SSW5 Iron CPS	Value							
Master		684.9							
	470.0 (Minimum) 750.0 (Nominal) 10100 (Maximum)								

Master: 25-Jan-2002 15:52

Hostile Environment Litho Density - A Master Calibration					
Detectors Resolution From Litholog Measurement					
Phase	LS Lith Resolution	Value	Phase	SS Lith Resolution	Value
Master		1.033	Master		1.016
	0.7000 (Minimum) 1.000 (Nominal) 1.111 (Maximum)			0.7000 (Minimum) 1.000 (Nominal) 1.111 (Maximum)	

Master: 25-Jan-2002 15:52

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 Minitron

APS - BA
MNTR - F

22
4185

Auxiliary Equipment:

Accelerator-Porosity Housing
APS Calibration Water Tank
APS Aluminium Calibrator Sleeve

APH - AC
SFT - 178
SFT - 281

22
4722
24

Accelerator-Porosity Tool Wellsite Calibration

Detector Background

Phase	Near Det Bkg Cntrate CPS	Value	Phase	Far Det Bkg Cntrate CPS	Value	Phase	Array-1 Det Bkg Cntrate CPS	Value
Master		32.90	Master		34.46	Master		28.56
Before		31.64	Before		32.77	Before		29.11
After		32.59	After		32.64	After		29.15
	0 (Minimum) 30.00 (Nominal) 50.00 (Maximum)			0 (Minimum) 30.00 (Nominal) 50.00 (Maximum)			0 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	
Phase	Array-2 Det Bkg Cntrate CPS	Value	Phase	Array Therm Det Bkg Cntrate CPS	Value			
Master		30.78	Master		32.89			
Before		28.66	Before		34.90			
After		29.48	After		31.52			
	0 (Minimum) 30.00 (Nominal) 50.00 (Maximum)			0 (Minimum) 30.00 (Nominal) 50.00 (Maximum)				

Master: 25-Jan-2002 18:34

Before: 16-Mar-2002 6:13

After: 16-Mar-2002 11:12

Accelerator-Porosity Tool Wellsite Calibration

Calibration Ratios

Phase	Near/Far Calibration Ratio	Value	Phase	Near/Array Calibration Ratio	Value	Phase	Near/Array Cal Ratio Up/Down	Value
Master		0.9022	Master		1.063	Master		1.007
	0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum)			0.9000 (Minimum) 1.030 (Nominal) 1.170 (Maximum)			0.9700 (Minimum) 1.000 (Nominal) 1.030 (Maximum)	

Master: 25-Jan-2002 18:35

Accelerator-Porosity Tool Wellsite Calibration

Tank Check

Phase	Array-1 Standoff Porosity PU	Value	Phase	Array-2 Standoff Porosity PU	Value	Phase	Average Slowing Down Time US	Value
Master		11.94	Master		11.71	Master	NOT DONE	N/A
	9.900 (Minimum) 11.10 (Nominal) 12.30 (Maximum)			9.900 (Minimum) 11.10 (Nominal) 12.30 (Maximum)			5.750 (Minimum) 6.000 (Nominal) 6.250 (Maximum)	
Phase	Array-1 SDT Ratio Up/Down	Value	Phase	Array-1 SDT Ratio Up/Down	Value	Phase	Sigma Formation CU	Value
Master	NOT DONE	N/A	Master	NOT DONE	N/A	Master		27.64
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)			0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)			20.00 (Minimum) 27.50 (Nominal) 35.00 (Maximum)	

Master: Calibration not done

See Remarks

Accelerator-Porosity Tool Master Calibration

Detector Calibration

Phase	Near/Far Calibration Ratio	Value	Phase	Near/Array Calibration Ratio	Value	Phase	Near/Array Cal Ratio Up/Down	Value
Master		0.9022	Master		1.063	Master		1.007
	0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum)			0.9000 (Minimum) 1.030 (Nominal) 1.170 (Maximum)			0.9700 (Minimum) 1.000 (Nominal) 1.030 (Maximum)	

Master: 25-Jan-2002 18:35

Accelerator-Porosity Tool Master Calibration

Tank Check

Tank Check								
Phase	Array-1 Standoff Porosity PU	Value	Phase	Array-2 Standoff Porosity PU	Value	Phase	Average Slowing Down Time US	Value
Master		11.94	Master		11.71	Master	NOT DONE	N/A
	9.900 (Minimum) 11.10 (Nominal) 12.30 (Maximum)			9.900 (Minimum) 11.10 (Nominal) 12.30 (Maximum)			5.750 (Minimum) 6.000 (Nominal) 6.250 (Maximum)	
Phase	Array-1 SDT Ratio Up/Down	Value	Phase	Array-1 SDT Ratio Up/Down	Value	Phase	Sigma Formation CU	Value
Master	NOT DONE	N/A	Master	NOT DONE	N/A	Master		27.64
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)			0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)			20.00 (Minimum) 27.50 (Nominal) 35.00 (Maximum)	


Master: Calibration not done

[See Remarks](#)




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	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value	
Master		40.51	Master		15.75	Master		1203	
Before		40.71	Before		17.24	Before		1207	
After		40.60	After		16.36	After		1211	
	37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)		
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value	
Master		144.6	Master		9.254	Master		21.86	
Before		146.2	Before		9.073	Before		29.34	
After		145.3	After		9.056	After		29.05	
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)			7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)			-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)		
Phase	Na Count Rate CPS	Value							
Master		39.29							
Before		40.56							
After		38.30							
	15.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)								
Master: 23-Jan-2002 11:37			Before: 7-Feb-2002 1:13			After: 16-Mar-2002 13:31			





Hostile Natural Gamma Ray Sonde Wellsite Calibration									
Detector 2 Check									
Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value	
Master		40.54	Master		16.19	Master		1233	
Before		40.54	Before		16.67	Before		1236	
After		40.49	After		16.83	After		1241	
	37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)		
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value	
Master		143.9	Master		9.453	Master		21.24	
Before		144.1	Before		8.968	Before		29.04	
After		144.7	After		9.504	After		29.75	
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)			7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)			-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)		
Phase	Na Count Rate CPS	Value							
Master		39.11							
Before		40.36							

After		38.11
15.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)

Master: 23-Jan-2002 11:37 Before: 7-Feb-2002 1:13 After: 16-Mar-2002 13:31

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		1.005
0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)
Master: 23-Jan-2002 11:37		
Before: 7-Feb-2002 1:13		
After: 16-Mar-2002 13:31		

Hostile Natural Gamma Ray Sonde Master Calibration								
Detector 1 Calibration								
Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value
Master		41.00	Master		209.7	Master		7.364
38.00 (Minimum)	40.00 (Nominal)	42.00 (Maximum)	201.0 (Minimum)	209.6 (Nominal)	218.3 (Maximum)	5.000 (Minimum)	7.000 (Nominal)	9.000 (Maximum)
Phase	Background Count Rate CPS	Value	Phase	Gain Ratio	Value	See Remarks		
Master	EXCEEDS LIMIT	19.66	Master		0.9848			
20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)	0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)			
Master: 23-Jan-2002 11:31								

Hostile Natural Gamma Ray Sonde Master Calibration								
Detector 2 Calibration								
Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value
Master		41.00	Master		208.7	Master		7.834
38.00 (Minimum)	40.00 (Nominal)	42.00 (Maximum)	201.0 (Minimum)	209.6 (Nominal)	218.3 (Maximum)	5.000 (Minimum)	7.000 (Nominal)	9.000 (Maximum)
Phase	Background Count Rate CPS	Value	Phase	Gain Ratio	Value	See Remarks		
Master	EXCEEDS LIMIT	17.61	Master		0.9795			
20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)	0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)			
Master: 23-Jan-2002 11:31								

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	

Field: Peru Margin

Rig: JOIDES Resolution

Ocean: Pacific

HLDT/APS Porosity

Natural Gamma Ray