Schlumberger

Company: Lamont Doherty

Well: ODP Leg 207 Site 1258C
Field: Demarara Rise
Country: Venezuela Ocean: Atlantic

Country: Venezuela
Field: Demarara Rise
Location: 9.433 Deg North, 54.7327 Deg W
Well: ODP Leg 207 Site 1258C
Company: Lamont Doherty

Phasor Induction
HLDS/APS Density/Porosity
Natural Gamma Ray

LOCATION

9.433 Deg North, 54.7327 Deg West

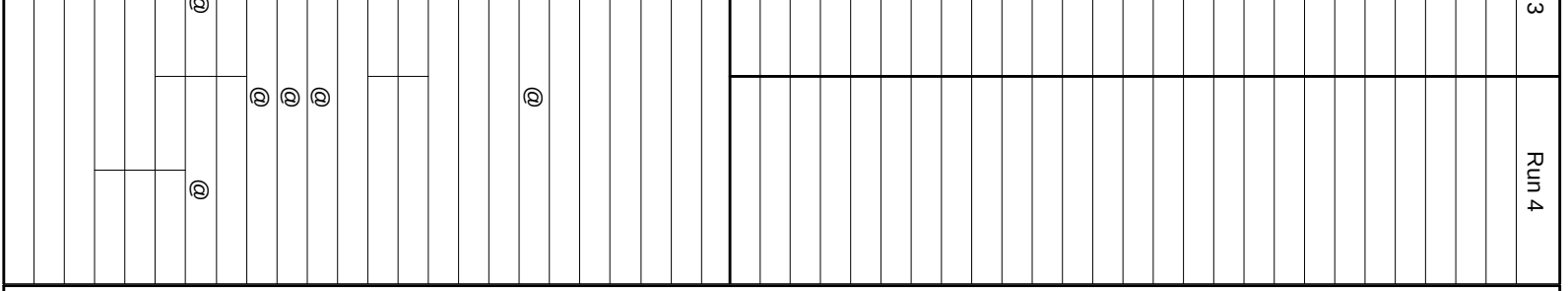
Elev.: K.B. 11.3 m
G.L. -3203 m
D.F. 11 m

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

API Serial No.	Max. Hole Devi.	Longitude	Latitude

	Run 1	Run 2	Run 3
Logging Date	31-Jan-2003		
Run Number	1		
Depth Driller	3688 m		
Schlumberger Depth	3683 m		
Bottom Log Interval	3677 m		
Top Log Interval	3196 m		
Casing Driller Size @ Depth	0.000 in @ 3283 m	@	@
Casing Schlumberger	3281 m		
Bit Size	9.875 in		
Type Fluid In Hole	Sepiolite Salt Water		
MUD Density / Viscosity	1.1 g/cm3		
MUD Fluid Loss / PH			
MUD Source Of Sample	Mudpit		
RM @ Measured Temperature	0.258 ohm.m @ 32 degC	@	@
RMF @ Measured Temperature	@	@	@
RMC @ Measured Temperature	@	@	@
Source RMF / RMC			
RM @ MRT / RMF @ MRT	0.383 @ 15	@ 15 @	@ @
Maximum Recorded Temperatures	15 degC		
Circulation Stopped / Time			
Logger On Bottom / Time	31-Jan-2003	07:13	
Unit Number / Location	99	Houston, TX ODP	
Recorded By	K. Swain		
Witnessed By	B. Rea, F. Heidersdorf		

	Run 1	Run 2	Run 3
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth	@		
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
MUD Density / Viscosity			
MUD Fluid Loss / PH			
MUD Source Of Sample			
RM @ Measured Temperature	@		
RMF @ Measured Temperature	@		
RMC @ Measured Temperature	@		
Source RMF / RMC			
RM @ MRT / RMF @ MRT	@	@	@
Maximum Recorded Temperatures			
Circulation Stopped / Time			
Logger On Bottom / Time			
Unit Number / Location			
Recorded By			
Witnessed By			



DISCLAIMER

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OTHER SERVICES1	OTHER SERVICES2
OS1: FMS/LSS	OS1:
OS2: HLDS/APS	OS2:
OS3: WST	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Hole cored with RCB, 9 7/8 bit.	
Sea Floor at:3203 mbrf.	
Log measured in meters below rig floor.	
Lamont TAP tool run at bottom of DITE for temperature/pressure data.	
Wireline heave compensator used on all runs.	
Sepiolite mud was used to displace the hole.	
Driller TD= 3688 mbrf.	
Schlumberger TD= 3683 mbrf.	
Drill pipe Schlumberger= 3281 mbrf.	

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

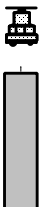
SURFACE EQUIPMENT

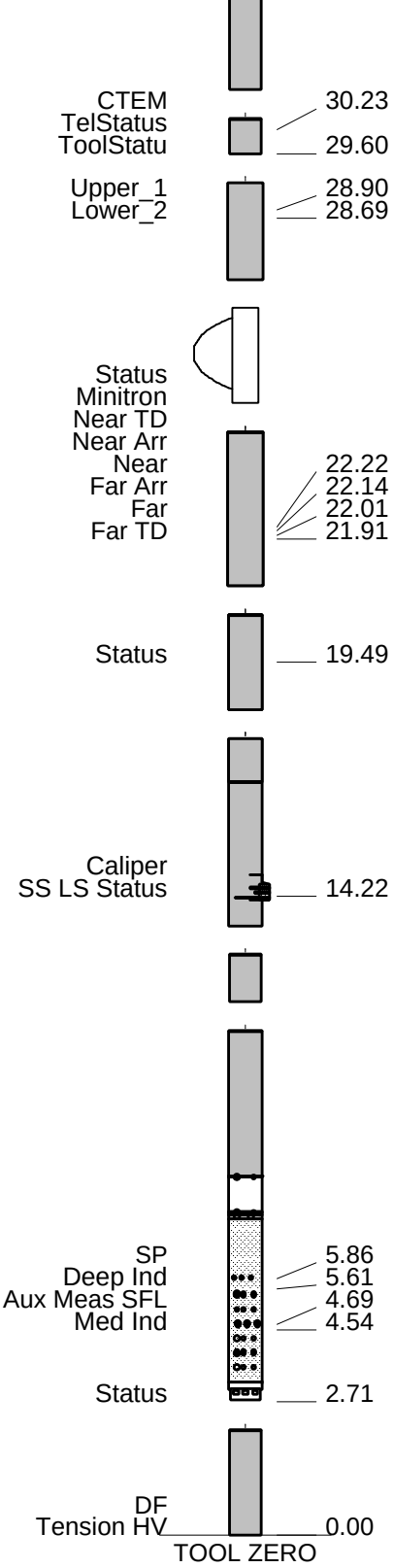
SFT-281 24
SFT-178 4722
GSR-U 135
WITM (DTS)-A

DOWNHOLE EQUIPMENT

LEH-QT 37.04
LEH-QT 1497

AH-MGT 36.15
AH-MGT





DTC-H
ECH-KC 9343

30.51

HNGS-BA
HNGS-BA 77
HNSH-BA 79

29.60

ILE-D
ILE-D 25

27.10

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

24.66

NPLC-B
NPLC-B 79
NPH-B 82

20.72

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

18.27

DTA-A
ECH-KE 8231

13.45

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

12.23

AH-TAP
AH-TAP 1

2.71

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

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_006LUP	FN:8	PRODUCER	31-Jan-2003 09:09	3685.0 M	3261.4 M
REDUCE	PI_LDL_APS_NGS_006LUP	FN:9	PRODUCER	31-Jan-2003 09:09	3685.0 M	3261.4 M

OP System Version: 10C0-306

MCM

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

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 150

Tension (TENS)
10000 (LBF) 0

HLDS Caliper (LCAL)
0 (IN) 20

SFL Unaveraged (SFLU)
0.2 (OHMM) 20

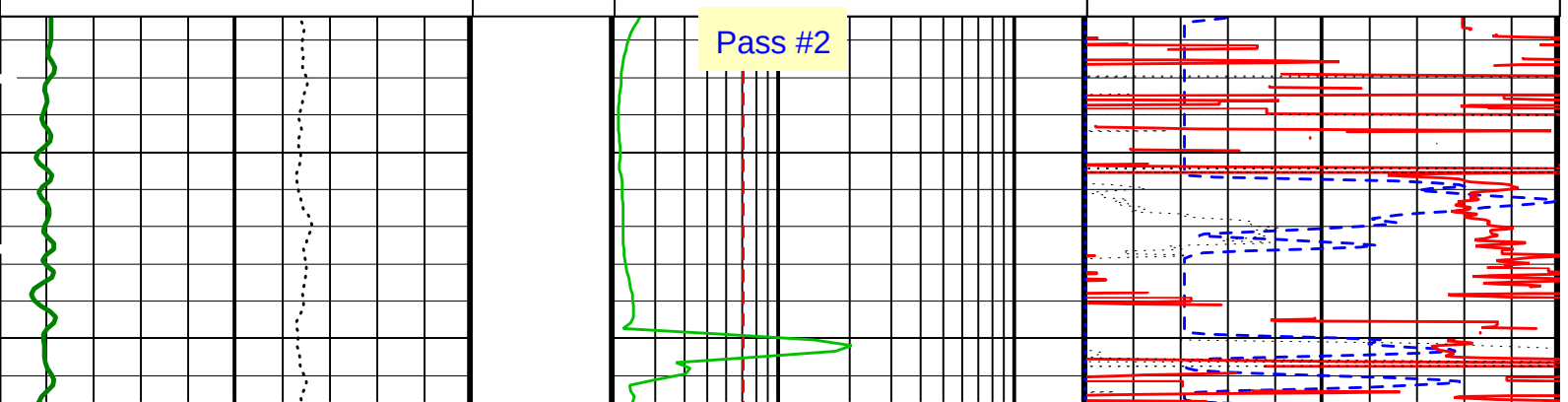
Medium Induction Phasor-processed Resistivity (IMPH)
0.2 (OHMM) 20

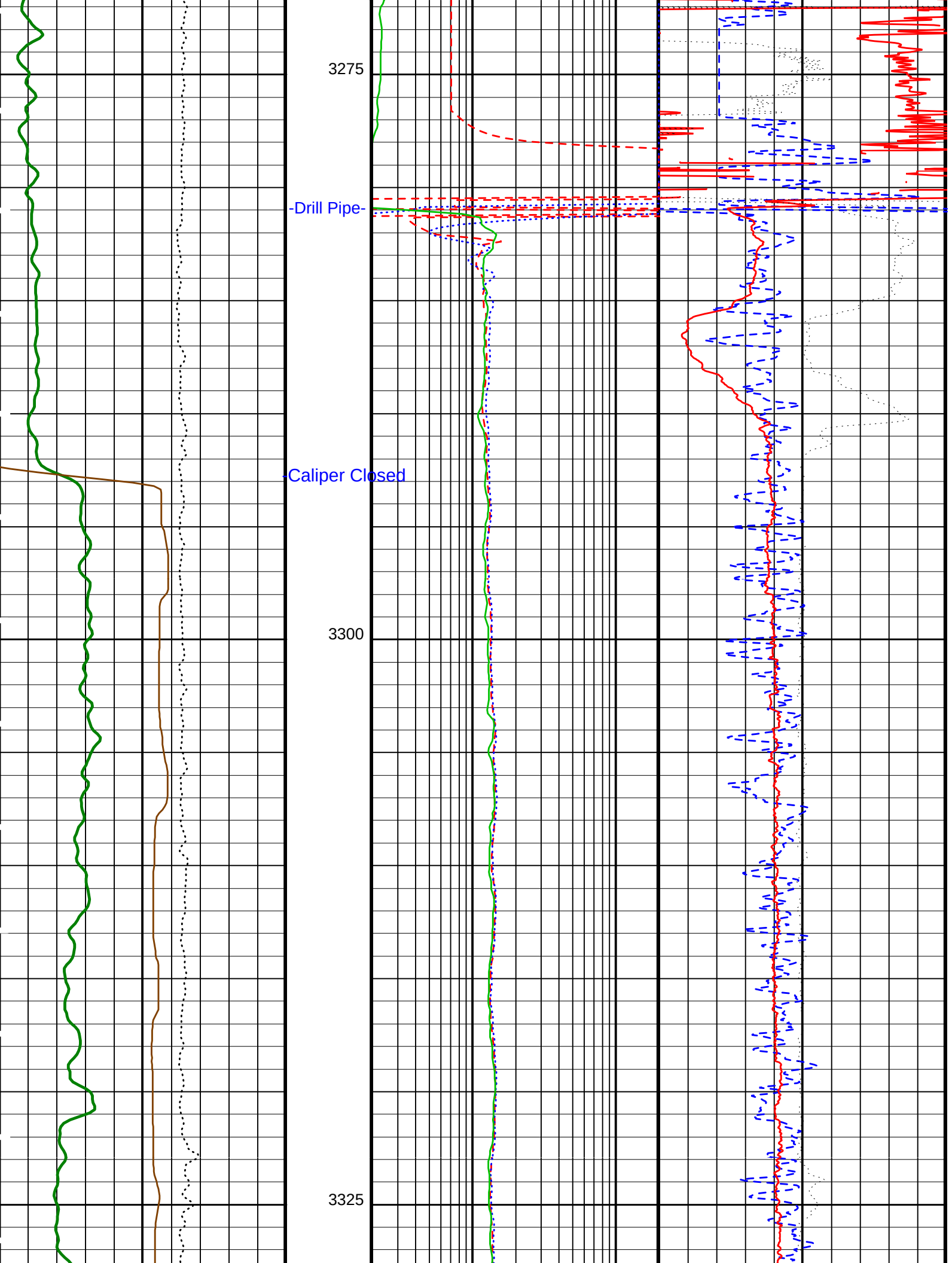
Deep Induction Phasor-processed Resistivity (IDPH)
0.2 (OHMM) 20

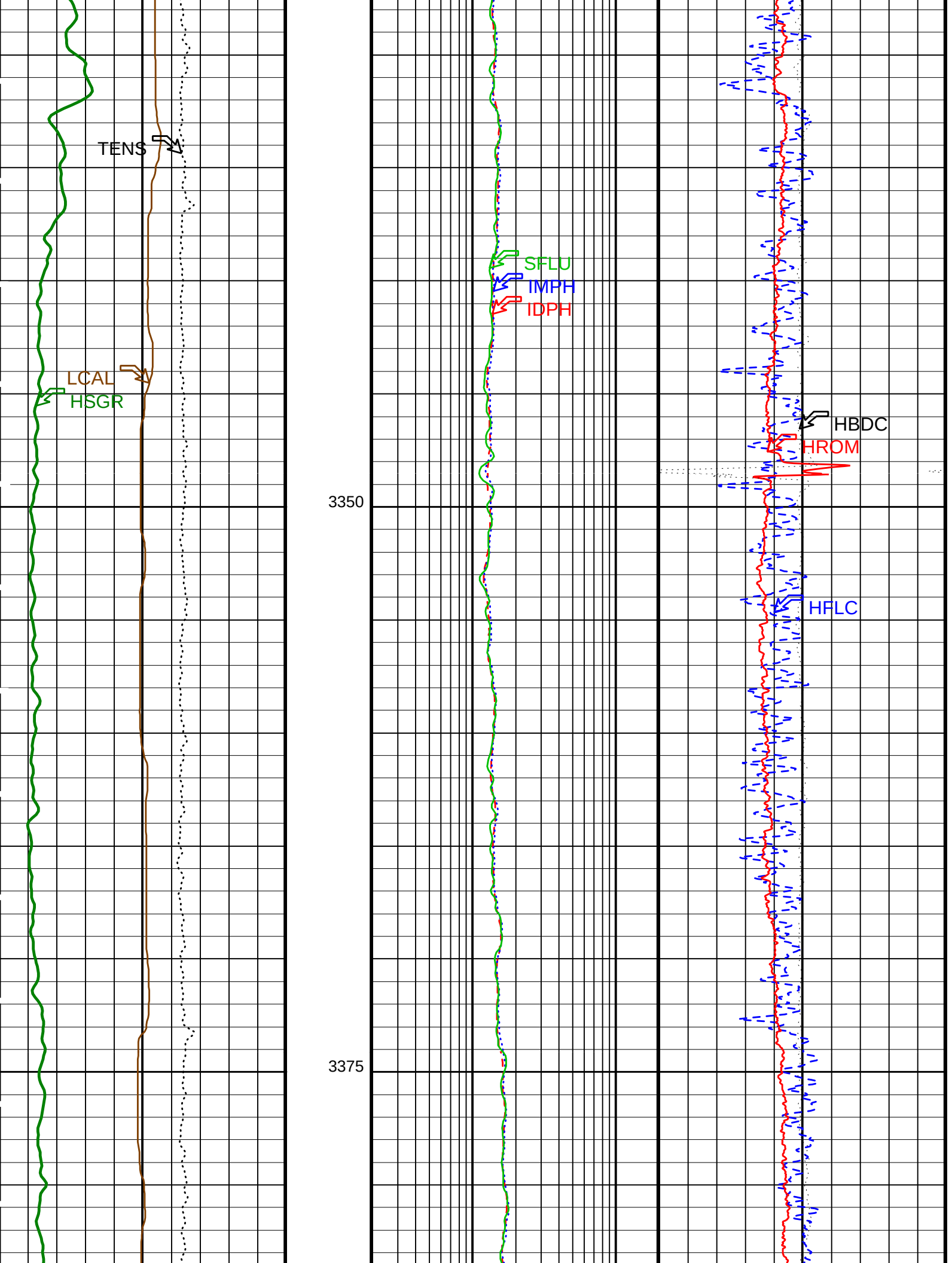
HLDS HR Bulk Density Correction (HBDC)
-0.25 (G/C3) 0.25

HLDS HR Bulk Density (HROM)
1 (G/C3) 3

APS HR Near/Far Corrected Limestone Porosity (HFLC)
100 (PU) 0




3275
-Drill Pipe-
-Caliper Closed
3300
3325


TENS
LCAL
HSGR
SFLU
IMPH
IDPH
HBDC
HROM
HFLC
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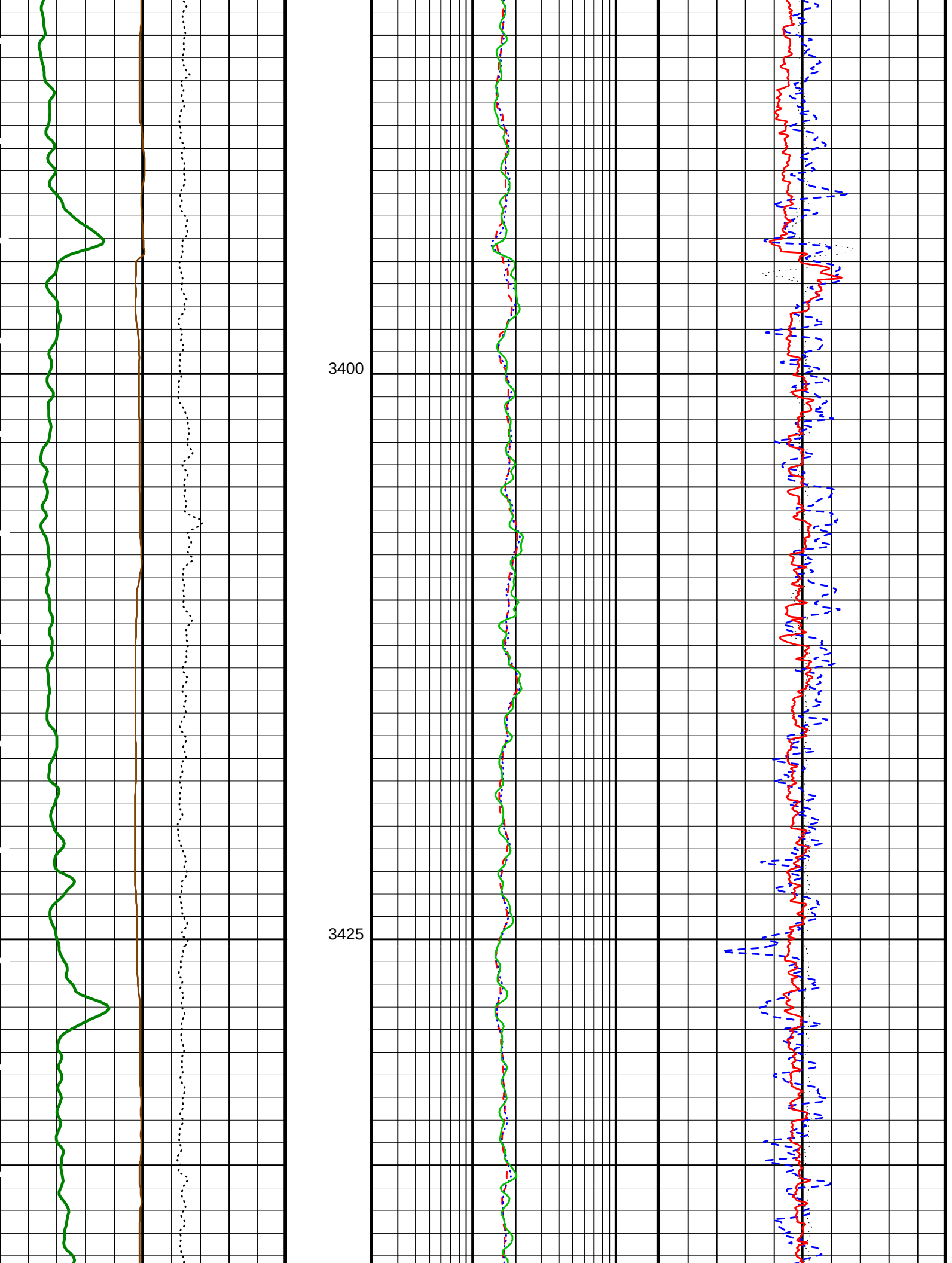
3375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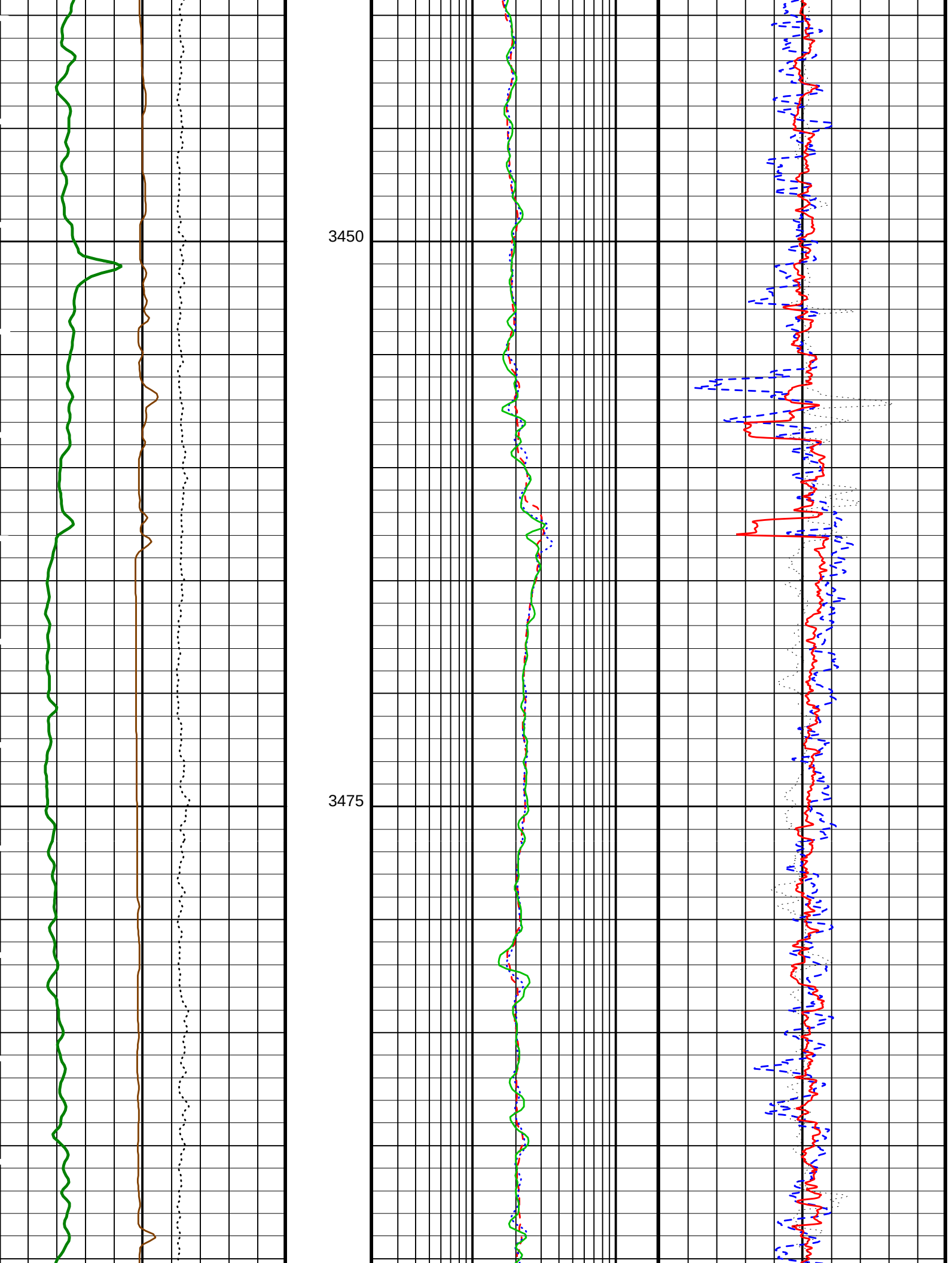
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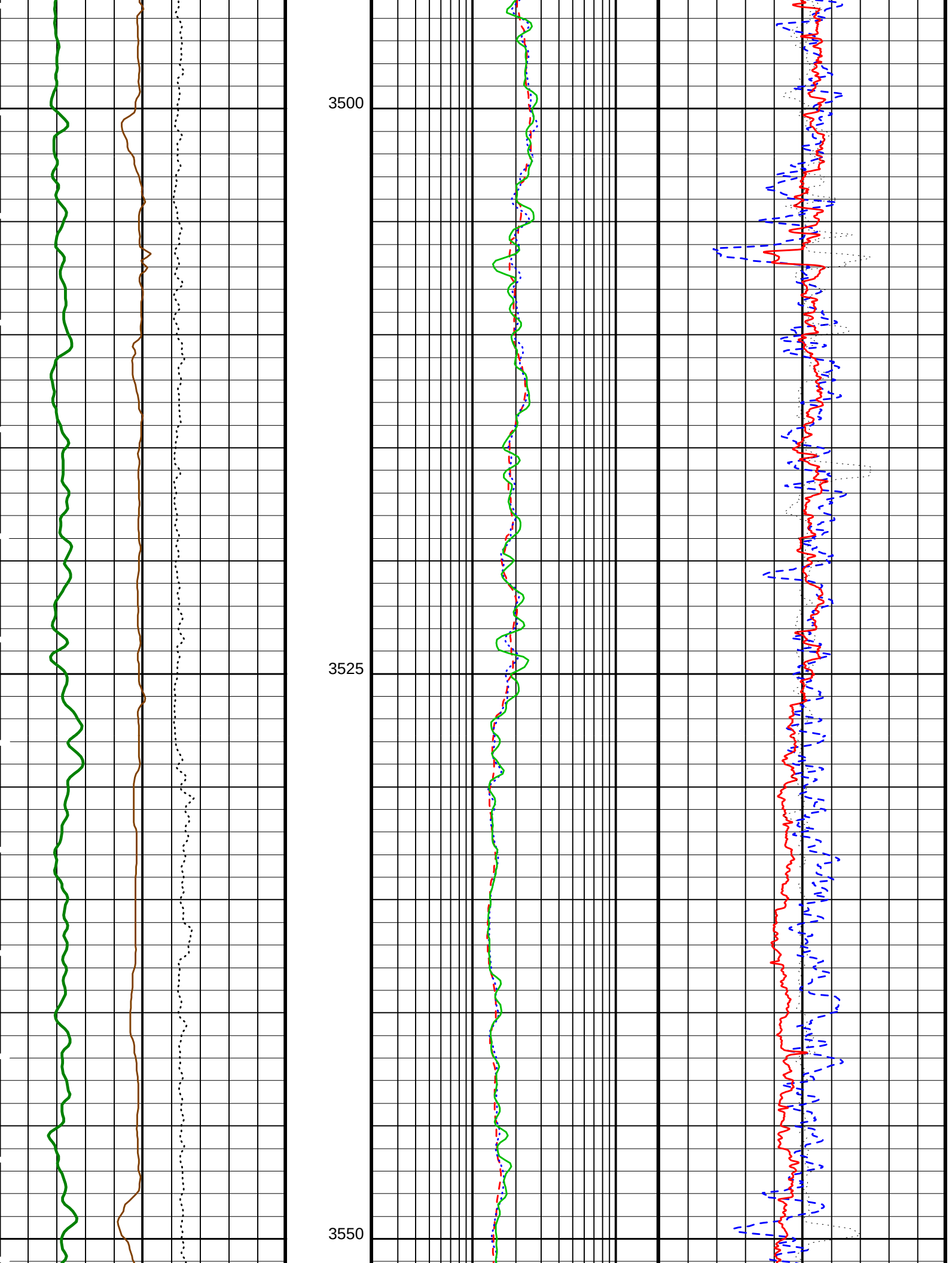
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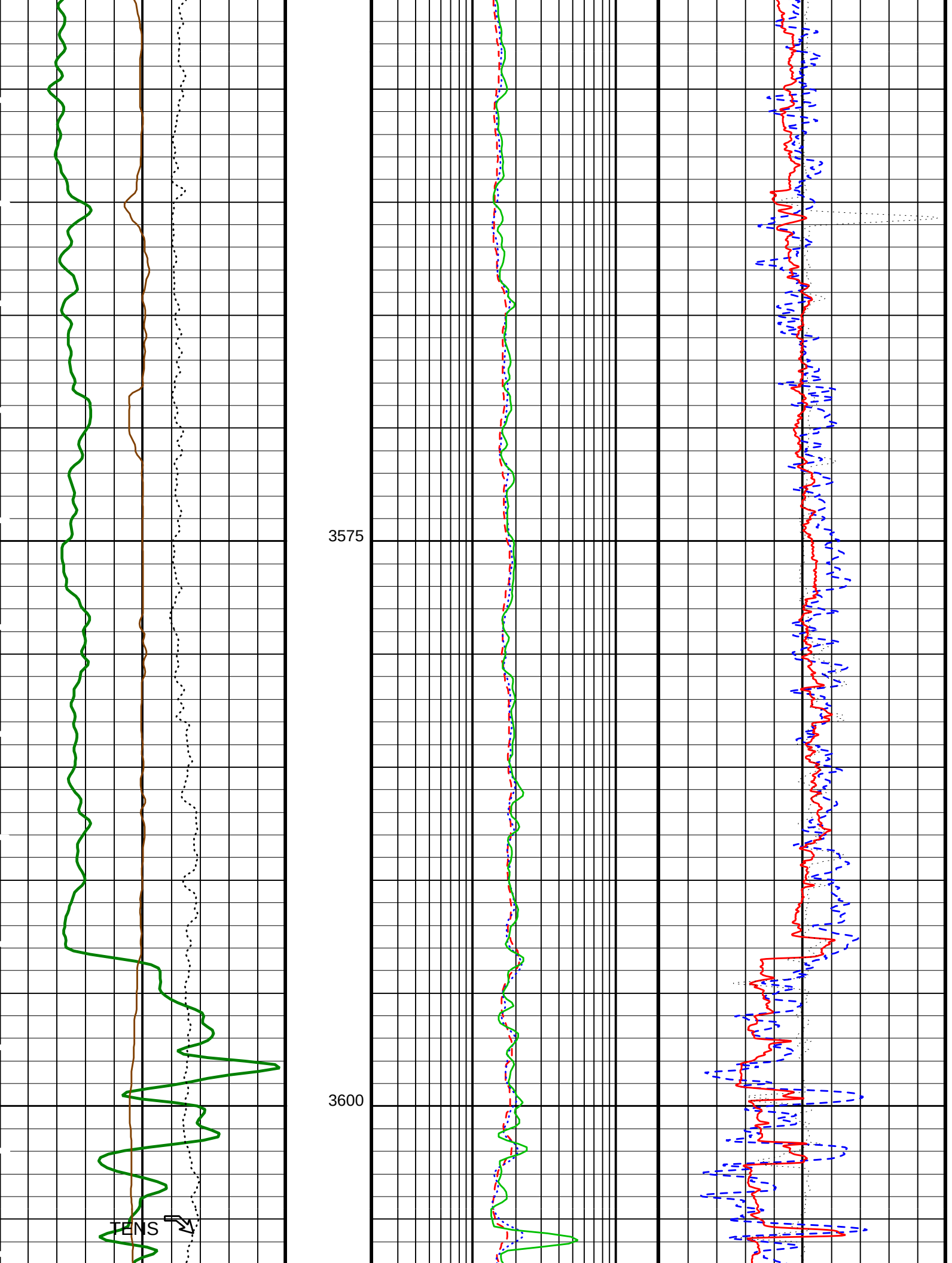
3525
3550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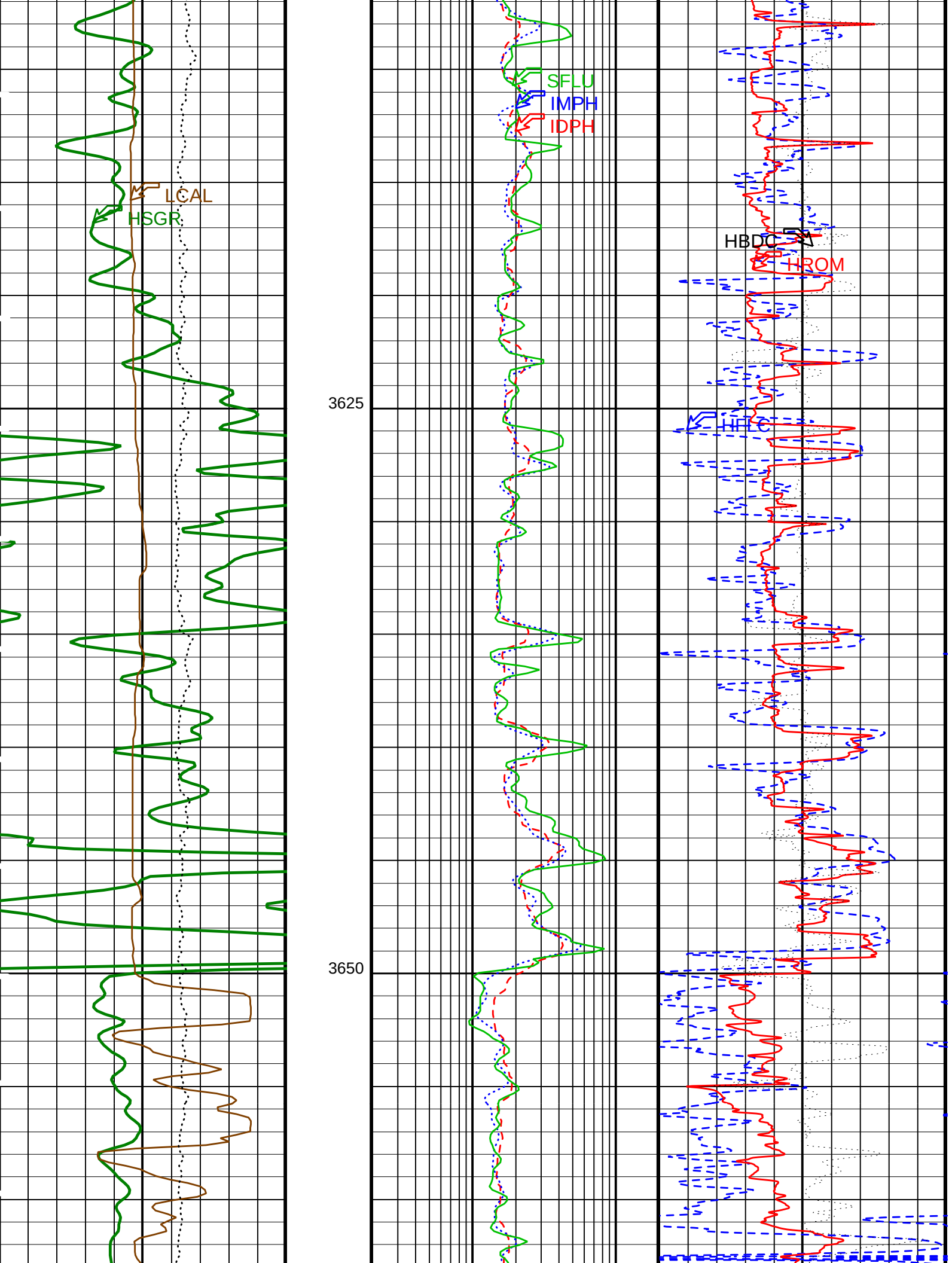
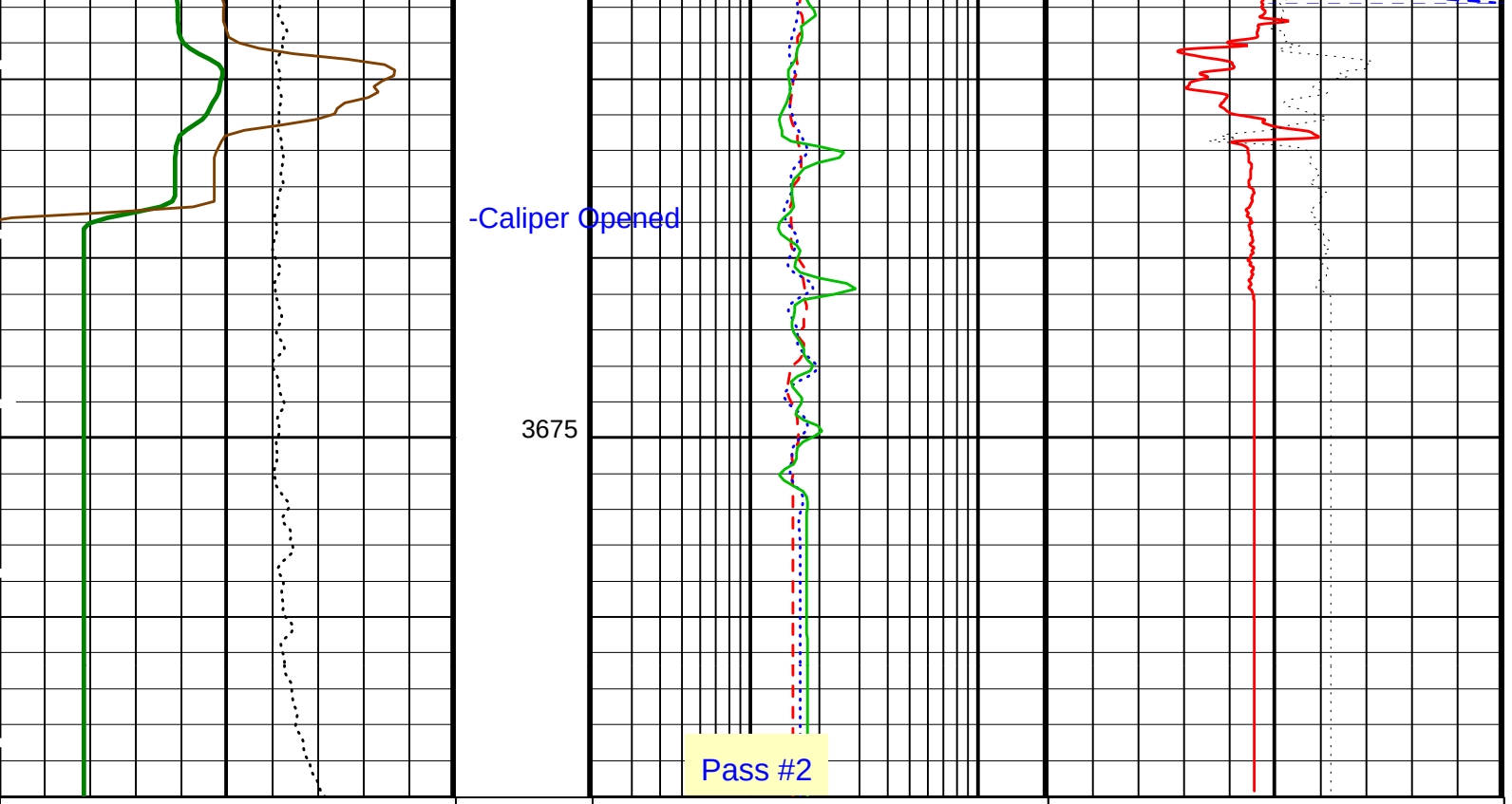
3600
TENS


LCAL
HSGR
SFLU
IMPH
IDPH
HBDC
HROM
HFLC
3625
3650



HLDS Caliper (LCAL)		Deep Induction Phasor-processed Resistivity (IDPH)	APS HR Near/Far Corrected Limestone Porosity (HFLC)
0 (IN) 20		0.2 (OHMM) 20	100 (PU) 0
Tension (TENS)		Medium Induction Phasor-processed Resistivity (IMPH)	HLDS HR Bulk Density (HROM)
10000 (LBF) 0		0.2 (OHMM) 20	1 (G/C3) 3
HNGS Spectroscopy Gamma Ray (HSGR)		SFL Unaveraged (SFLU)	HLDS HR Bulk Density Correction (HBDC)
0 (GAPI) 150		0.2 (OHMM) 20	-0.25 (G/C3) 0.25

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)	12	DEGC
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	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
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	20	DEGC
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
HLDS: Hostile Litho-Density Sonde			
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.71	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	V
PSDL	HLDS LS Pulse Shape Compensation DAC	16000	
PSDS	HLDS SS Pulse Shape Compensation DAC	16000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
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	1958.44	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2072.71	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	1727.99	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)	12	DEGC
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	-50000	PPM
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
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	1.05147	
NFRC	APS Near/Far Calibration Ratio	0.886931	
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)	12	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
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	

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	-0.0152604	
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	-999.25	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	-999.25	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	0.972818	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.982813	

System and Miscellaneous

ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	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	1.10	G/C3
MST	Mud Sample Temperature	32.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	-50000	M
TDD	Total Depth - Driller	3700.00	M
TDL	Total Depth - Logger	3700.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo Vertical Scale: 1:200 Graphics File Created: 31-Jan-2003 09:09

OP System Version: 10C0-306

MCM

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

Output DLIS Files

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REDUCE	PI_LDL_APS_NGS_006LUP	FN:9	PRODUCER	31-Jan-2003 09:09	

Output DLIS Files

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REDUCE	PI_LDL_APS_NGS_005LUP	FN:7	PRODUCER	31-Jan-2003 07:13	3685.0 M	3164.4 M

OP System Version: 10C0-306

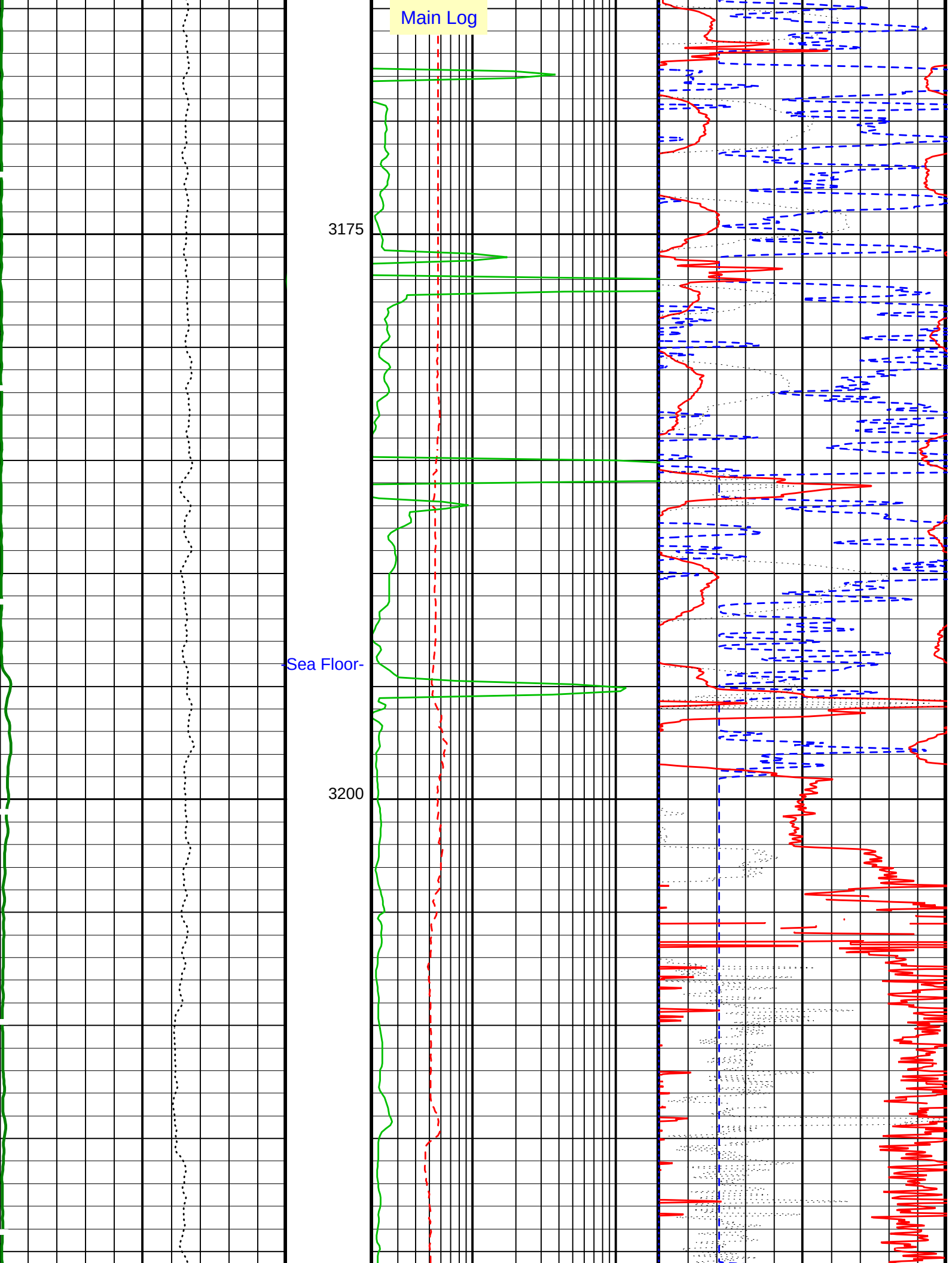
MCM

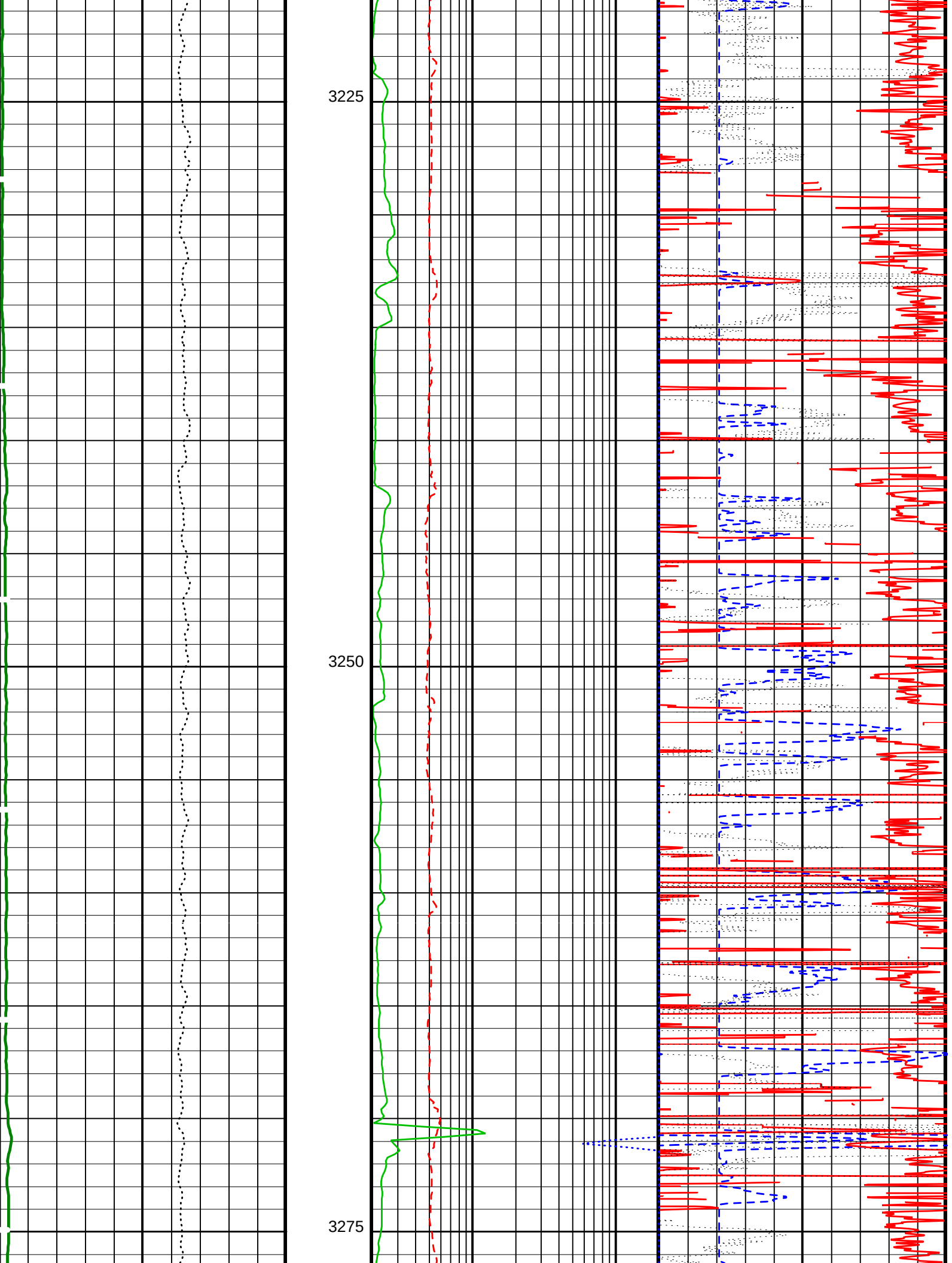
DIT-E	10C0-306	DTA-A	10C0-306
HLDS	SPC-2277-NUCL_b	NPLC-B	OP10-KP1
APS-BA	SPC-2277-NUCL_b	HNGS-BA	SPC-2277-NUCL_b
DTC-H	10C0-306		

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR) 0 (GAPI) 150	SFL Unaveraged (SFLU) 0.2 (OHMM) 20	HLDS HR Bulk Density Correction (HBDC) -0.25 (G/C3) 0.25
Tension (TENS) 10000 (LBF) 0	Medium Induction Phasor-processed Resistivity (IMPH) 0.2 (OHMM) 20	HLDS HR Bulk Density (HROM) 1 (G/C3) 3
HLDS Caliper (LCAL) 0 (IN) 20	Deep Induction Phasor-processed Resistivity (IDPH) 0.2 (OHMM) 20	APS HR Near/Far Corrected Limestone Porosity (HFLC) 100 (PU) 0


Main Log
3175
-Sea Floor-
3200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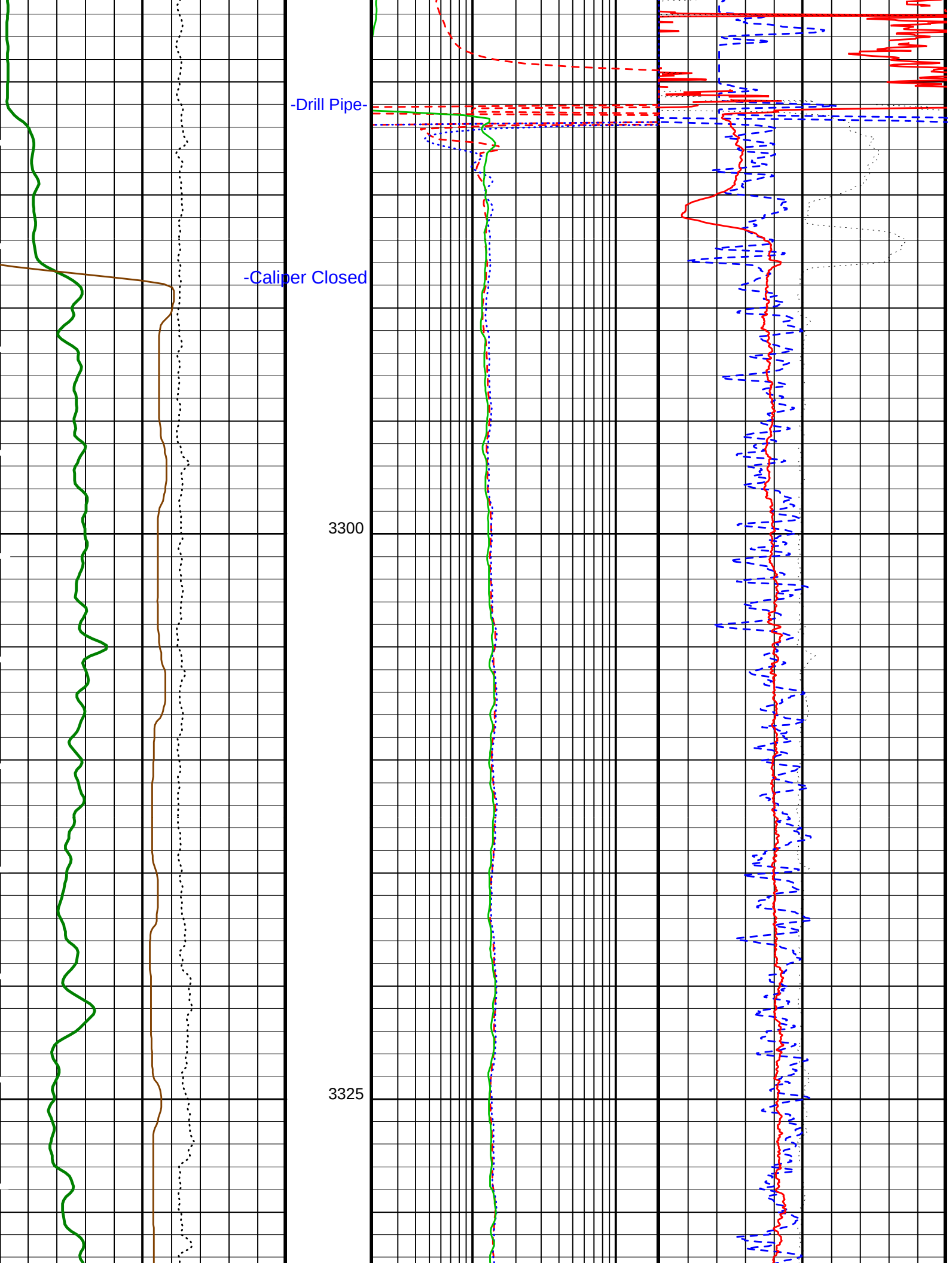
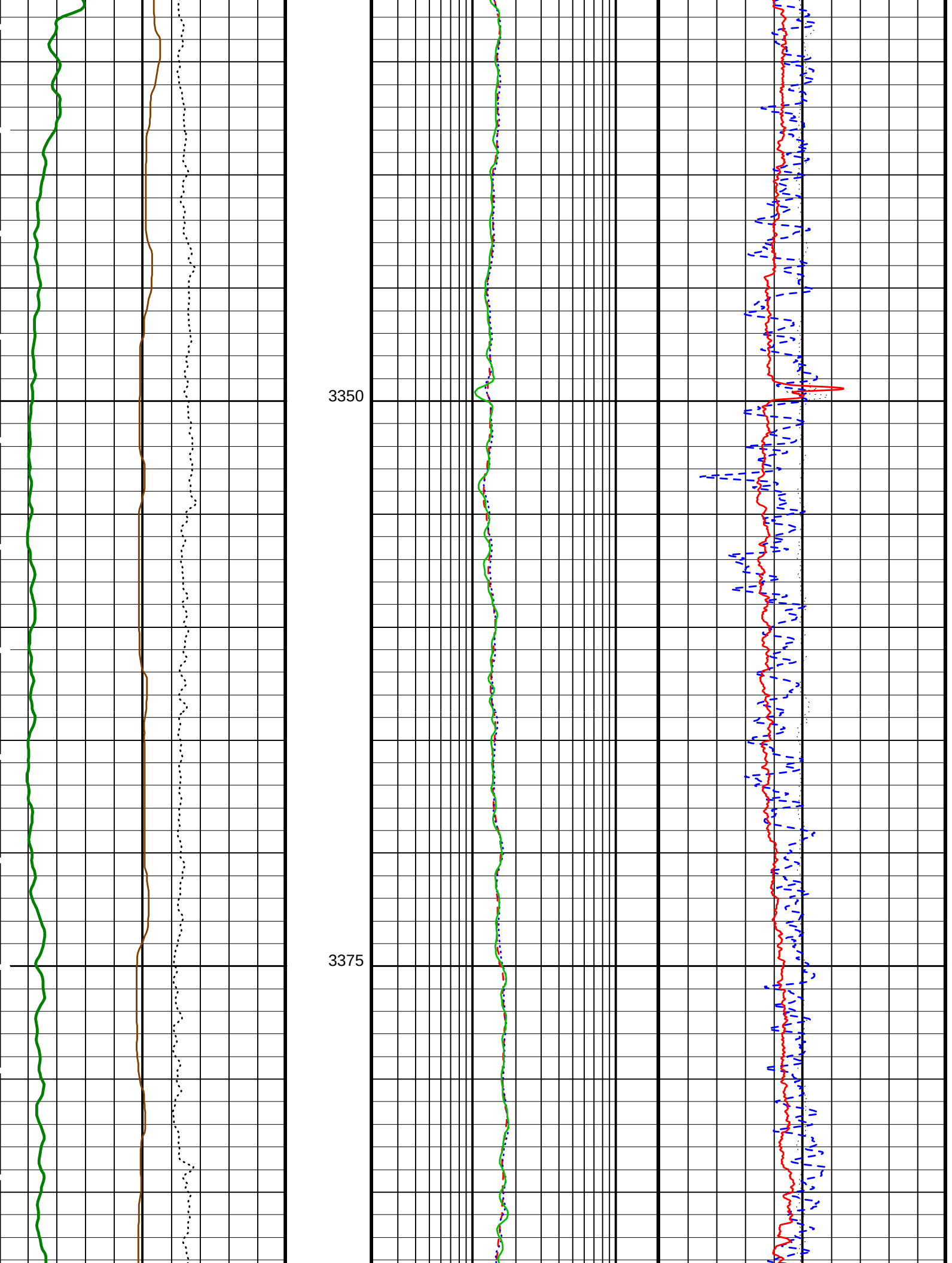

-Drill Pipe-
-Caliper Closed
3300
3325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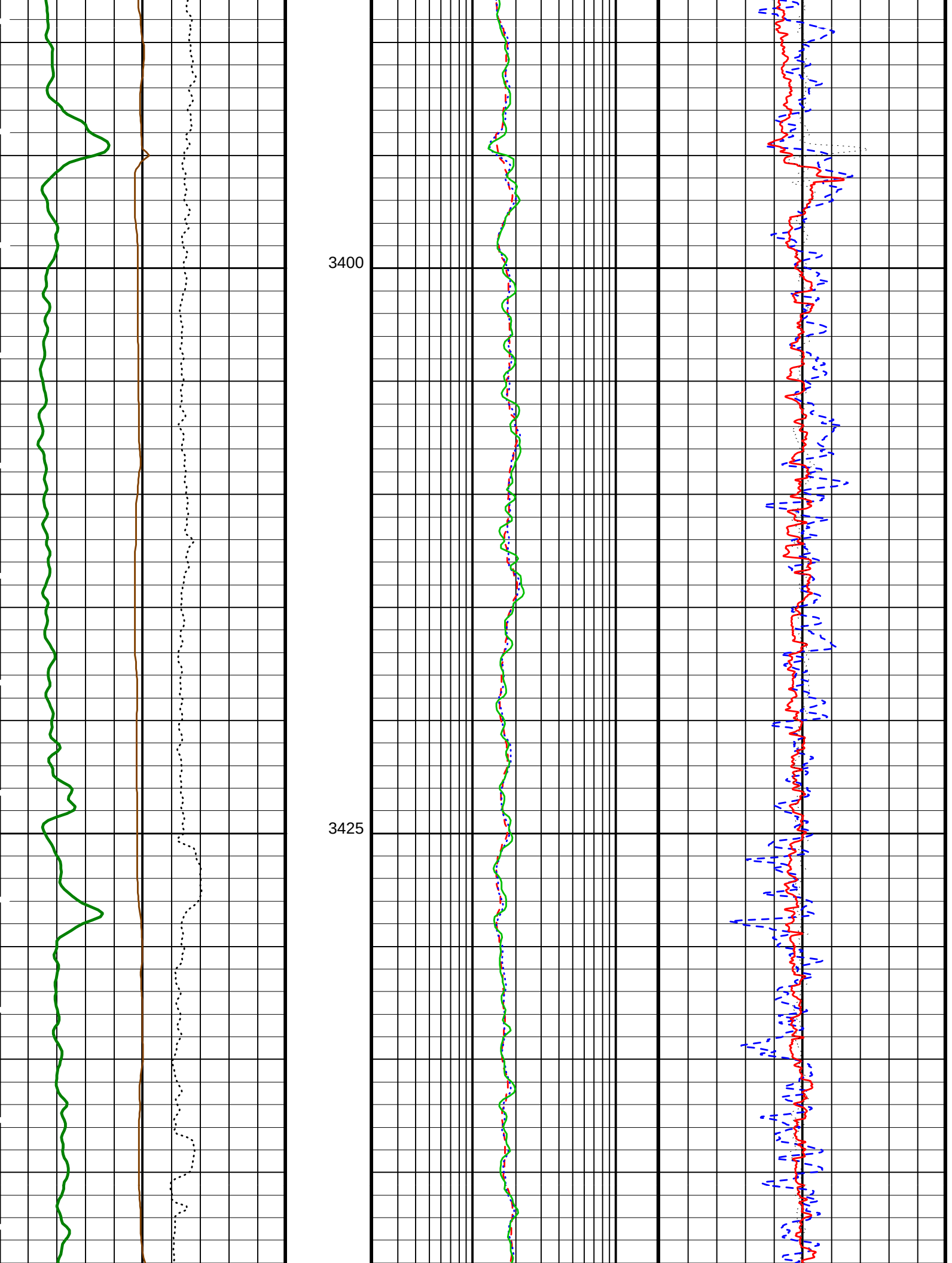
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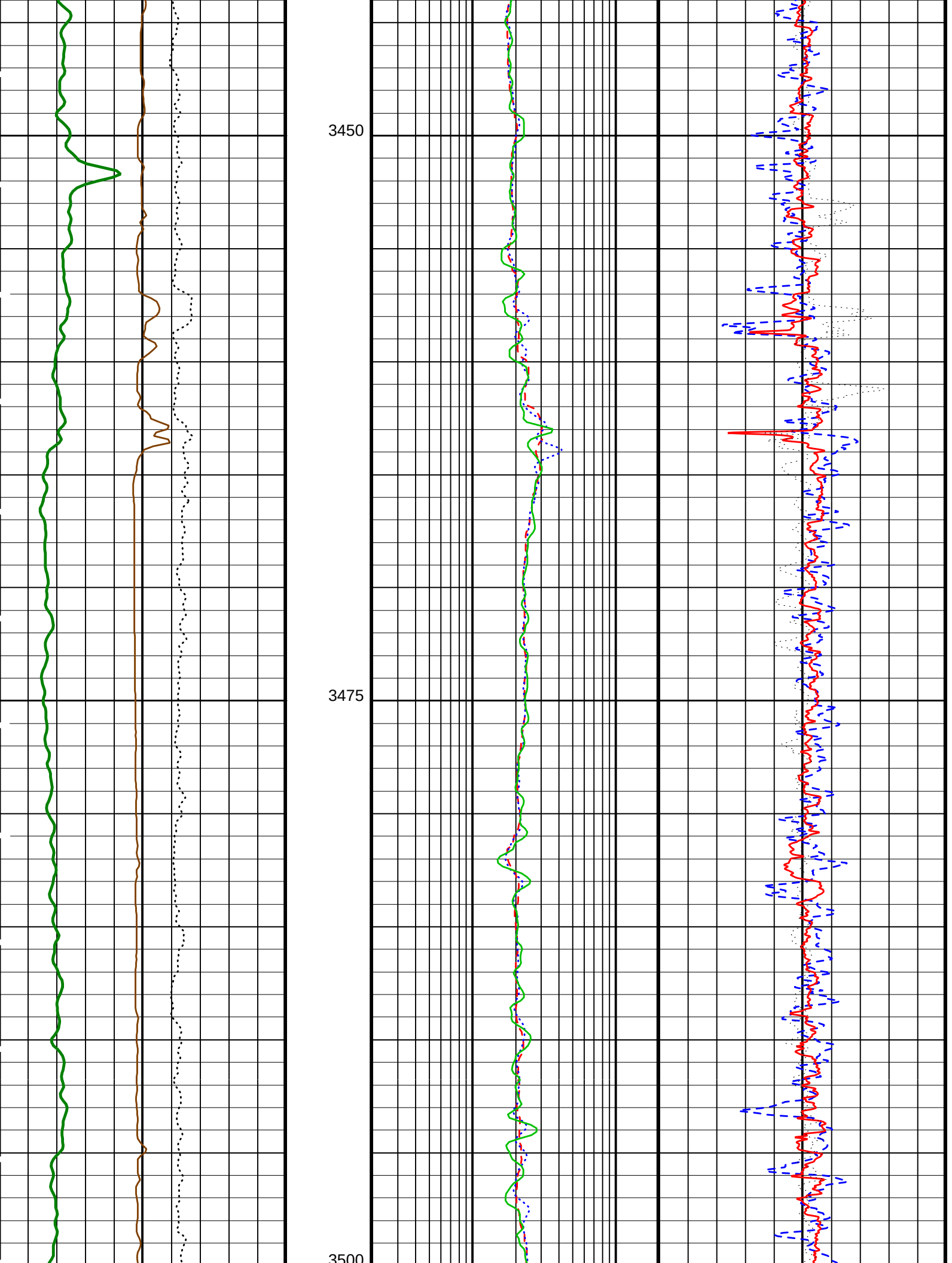
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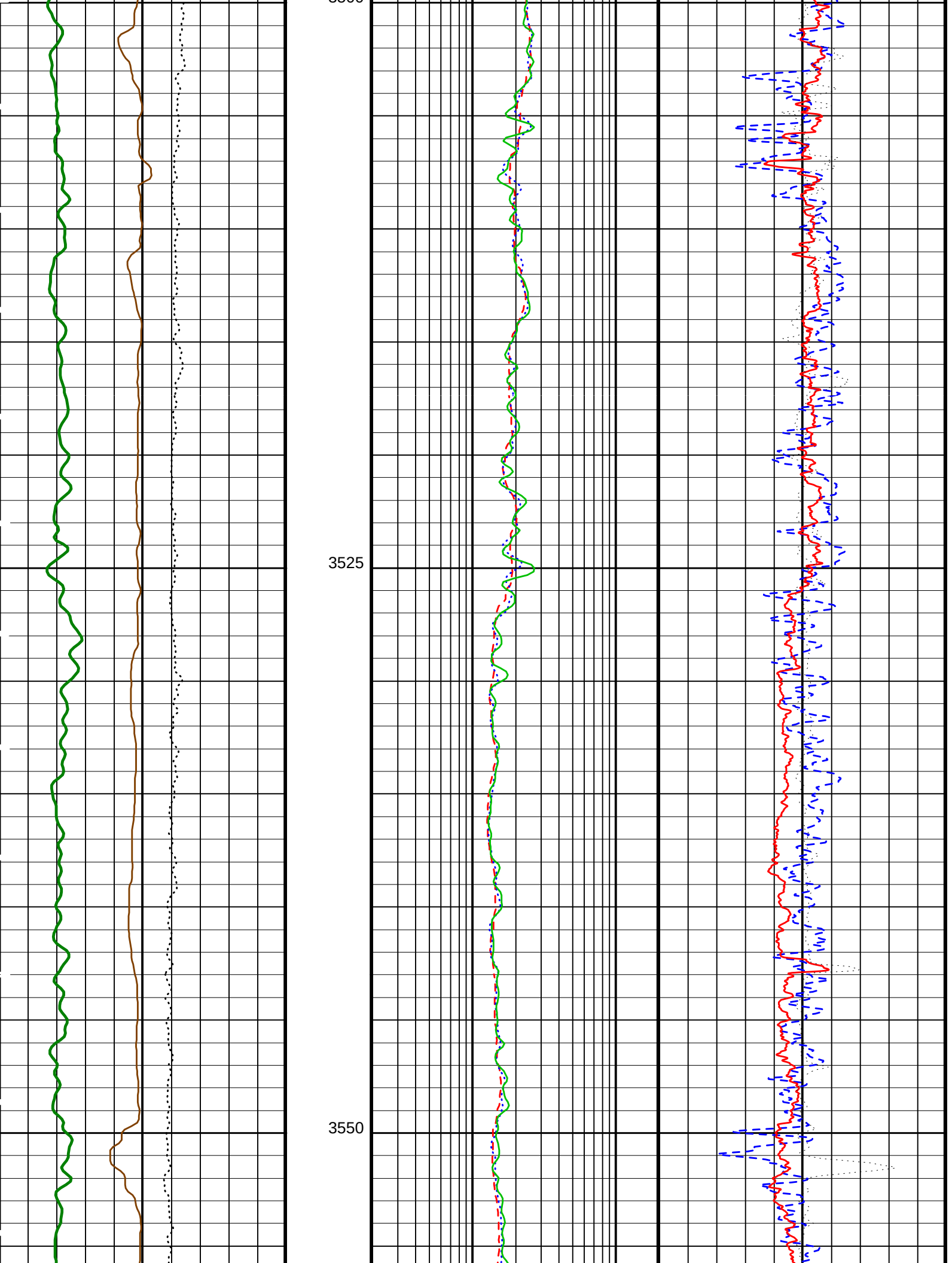
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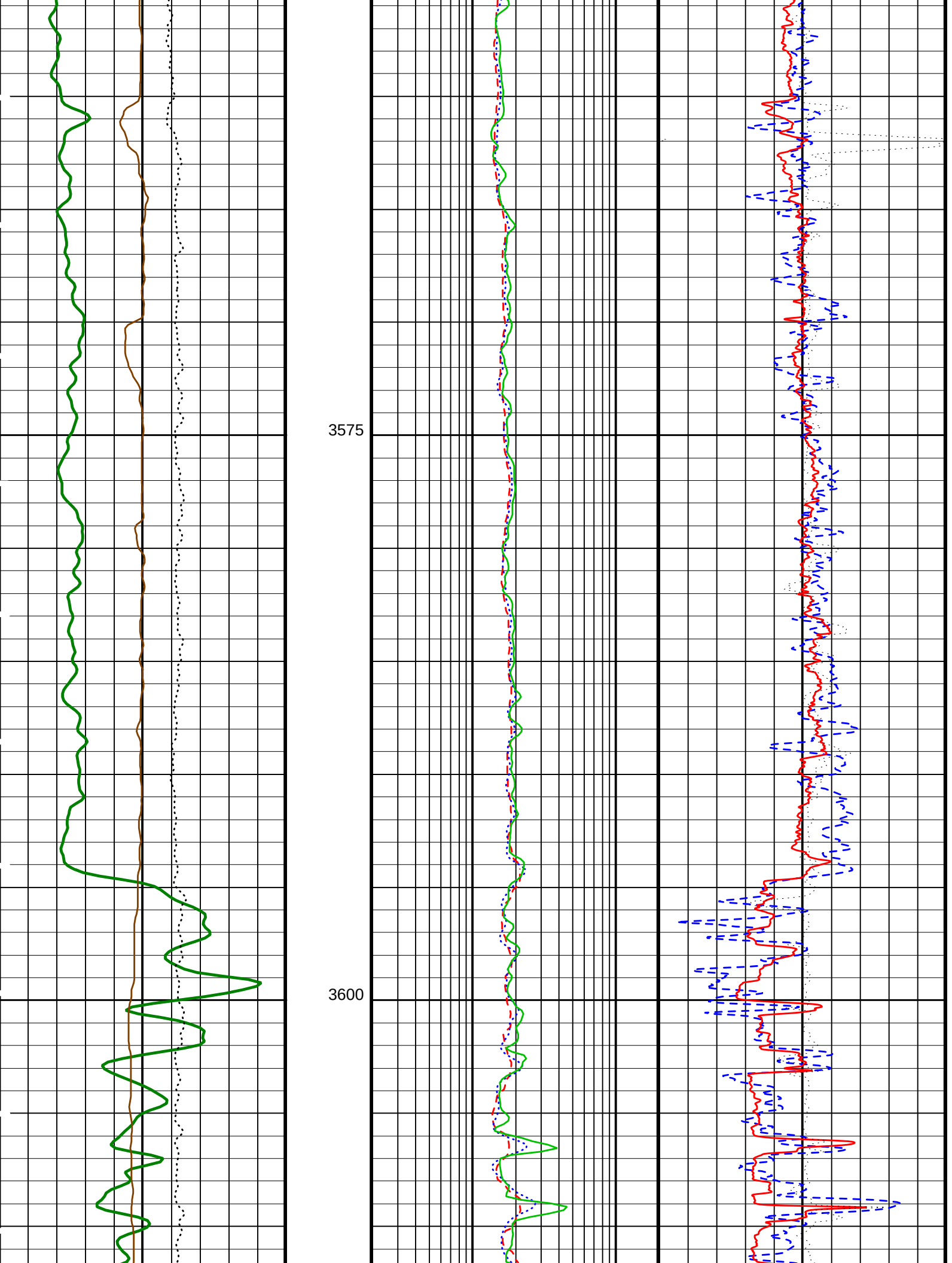
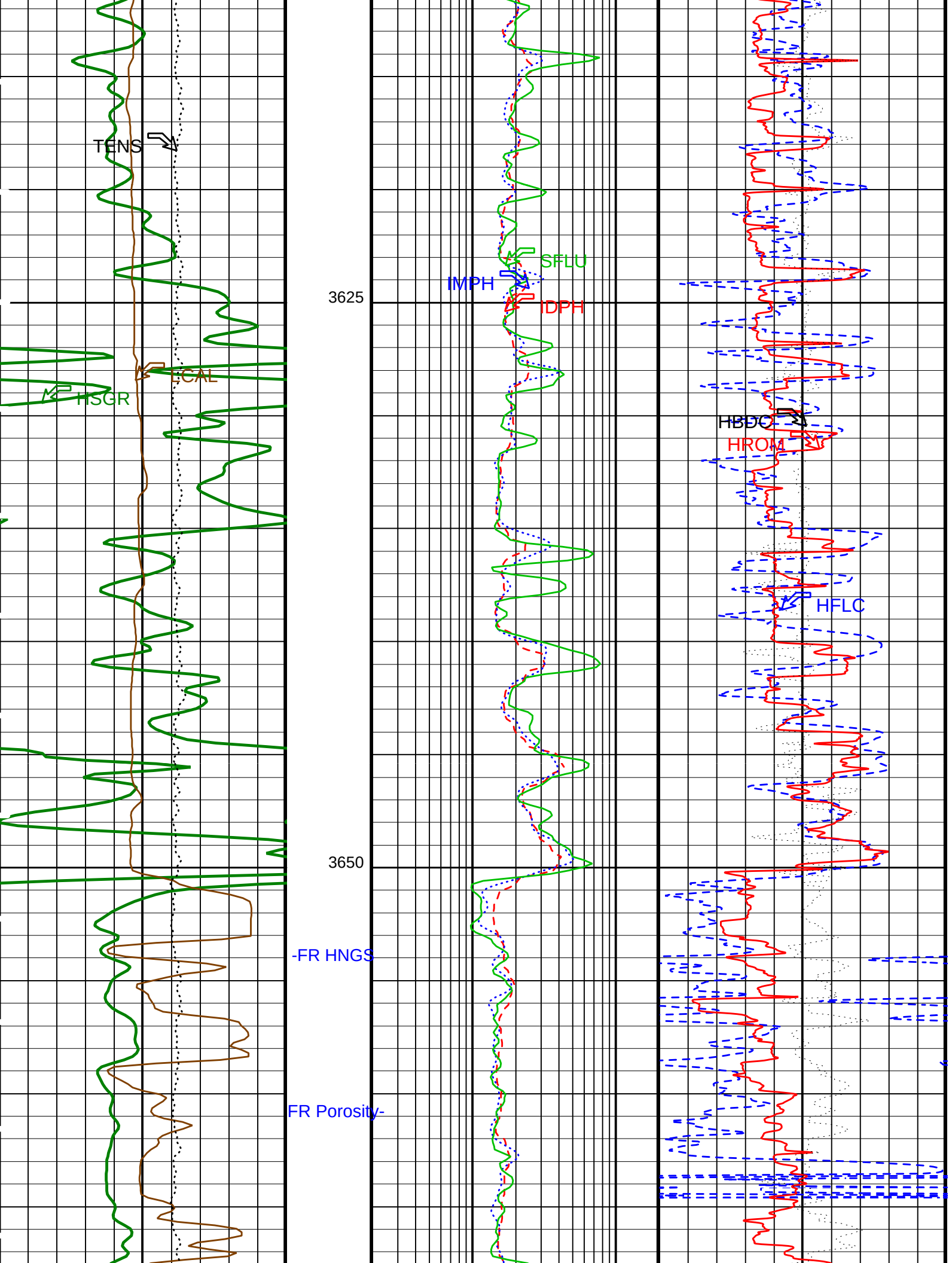
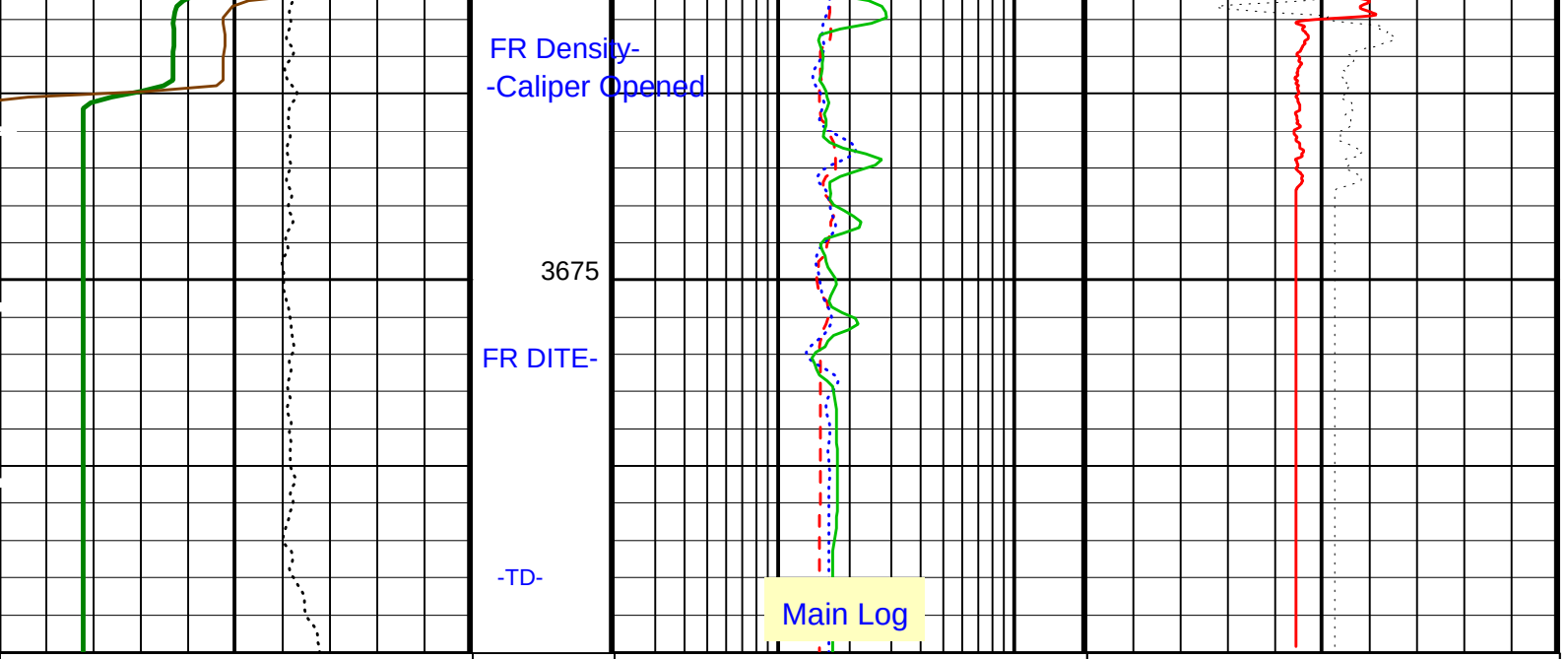

3575
3600


TENS
SFLU
IMPH
IDPH
3625
CAL
HSGR
HBDC
HROM
HFLC
3650
-FR HNGS
FR Porosity-



HLDS Caliper (LCAL)		Deep Induction Phasor-processed Resistivity (IDPH)	APS HR Near/Far Corrected Limestone Porosity (HFLC)
0 (IN) 20		0.2 (OHMM) 20	100 (PU) 0
Tension (TENS)		Medium Induction Phasor-processed Resistivity (IMPH)	HLDS HR Bulk Density (HROM)
10000 (LBF) 0		0.2 (OHMM) 20	1 (G/C3) 3
HNGS Spectroscopy Gamma Ray (HSGR)		SFL Unaveraged (SFLU)	HLDS HR Bulk Density Correction (HBDC)
0 (GAPI) 150		0.2 (OHMM) 20	-0.25 (G/C3) 0.25

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)	12	DEGC
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	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
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	20	DEGC
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
HLDS: Hostile Litho-Density Sonde			
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.71	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	V
PSDL	HLDS LS Pulse Shape Compensation DAC	16000	
PSDS	HLDS SS Pulse Shape Compensation DAC	16000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
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	1958.44	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2072.71	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	1727.99	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)	12	DEGC
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	-50000	PPM
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
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	1.05147	
NFRC	APS Near/Far Calibration Ratio	0.886931	
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)	12	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
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	-0.0398722	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATL	

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	-999.25	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	-999.25	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	0.960314	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.969236	

System and Miscellaneous

ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	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	1.10	G/C3
MST	Mud Sample Temperature	32.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	-50000	M
TDD	Total Depth - Driller	3700.00	M
TDL	Total Depth - Logger	3700.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo Vertical Scale: 1:200 Graphics File Created: 31-Jan-2003 07:13

OP System Version: 10C0-306

MCM

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

Output DLIS Files

DEFAULT	PI_LDL_APS_NGS_005LUP	FN:6	PRODUCER	31-Jan-2003 07:13
REDUCE	PI_LDL_APS_NGS_005LUP	FN:7	PRODUCER	31-Jan-2003 07:13

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement							
Master: 13-Dec-2002 14:00 Before: 15-Jan-2003 11:10 After: 19-Jan-2003 2:14							
SS Cs Resolution Bkg	9.000	8.065	8.135	8.044	-0.09056	1.800	%
LS Cs Resolution Bkg	9.000	8.249	8.108	8.124	0.01535	1.800	%
LSW1 Background	100.0	86.88	86.46	86.16	-0.2965	3.000	CPS
LSW2 Background	100.0	82.90	80.84	81.32	0.4762	3.000	CPS
LSW3 Background	200.0	182.1	179.4	180.0	0.5779	6.000	CPS
LSW4 Background	250.0	221.9	216.6	220.1	3.541	7.500	CPS
LSW5 Background	600.0	510.1	505.1	504.0	-1.098	18.00	CPS
SSW1 Background	100.0	96.14	98.01	96.03	-1.977	3.000	CPS
SSW2 Background	200.0	176.7	177.3	173.7	-3.596	6.000	CPS
SSW3 Background	500.0	478.2	477.6	477.4	-0.1395	15.00	CPS
SSW4 Background	270.0	244.1	244.0	242.2	-1.773	8.100	CPS
SSW5 Background	200.0	177.5	175.7	176.8	1.105	6.000	CPS
Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement							
Master: 13-Dec-2002 15:15							
LSW1 Aluminum	600.0	580.8	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	822.1	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	985.4	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	489.2	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	453.3	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2597	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	7087	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9849	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	4127	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	537.2	N/A	N/A	N/A	N/A	CPS
Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement							
Master: 13-Dec-2002 15:11							
LSW1 Iron	400.0	401.7	N/A	N/A	N/A	N/A	CPS

LSW2 Iron	730.0	683.6	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	900.2	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	465.6	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	434.8	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1961	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	6103	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	9305	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3921	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	502.8	N/A	N/A	N/A	N/A	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration
Before: 15-Jan-2003 11:25

HLDS Caliper Small Ring	15.00	N/A	18.20	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	17.50	N/A	20.31	N/A	N/A	N/A	IN

Accelerator-Porosity Tool Wellsite Calibration - Detector Background
Master: 28-Nov-2002 19:52 Before: 31-Jan-2003 6:16 After: 19-Jan-2003 0:35

Near Det Bkg Cntrate	30.00	32.65	33.77	31.59	-2.184	N/A	CPS
Far Det Bkg Cntrate	30.00	31.56	32.99	33.02	0.02923	N/A	CPS
Array-1 Det Bkg Cntrate	30.00	29.11	28.51	28.71	0.1973	N/A	CPS
Array-2 Det Bkg Cntrate	30.00	29.96	30.18	29.94	-0.2416	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	32.97	31.86	32.50	0.6338	N/A	CPS

Accelerator-Porosity Tool Wellsite Calibration - Calibration Ratios
Master: 28-Nov-2002 19:53

Near/Far Calibration Ratio	0.9250	0.8869	N/A	N/A	N/A	N/A	
Near/Array Calibration Ratio	1.030	1.051	N/A	N/A	N/A	N/A	
Near/Array Cal Ratio Up/Down	1.000	1.002	N/A	N/A	N/A	N/A	

Accelerator-Porosity Tool Wellsite Calibration - Tank Check
Master: 28-Nov-2002 19:54

Array-1 Standoff Porosity	11.75	11.90	N/A	N/A	N/A	N/A	PU
Array-2 Standoff Porosity	11.75	11.44	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	5.850	N/A	N/A	N/A	N/A	US
Array-1 SDT Ratio Up/Down	1.000	0.9966	N/A	N/A	N/A	N/A	
Array-2 SDT Ratio Up/Down	1.000	0.9889	N/A	N/A	N/A	N/A	
Sigma Formation	27.50	27.81	N/A	N/A	N/A	N/A	CU

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check
Master: 15-Jan-2003 16:08 Before: 15-Jan-2003 16:17 After: 19-Jan-2003 2:15

Na 511 Peak Loc	40.00	40.59	40.72	40.70	-0.02711	1.000	
Na 511 Peak Res	15.50	17.05	17.42	16.61	-0.8152	2.000	%
High Voltage	1150	1212	1212	1215	2.189	30.00	V
Na 1785 Peak Loc	142.6	145.6	145.3	145.8	0.5008	7.000	
Na 1785 Peak Res	8.500	9.037	9.666	9.711	0.04524	2.000	%
Temperature	15.50	32.69	32.84	29.54	-3.307	N/A	DEGC
Na Count Rate	45.00	44.80	43.98	43.51	-0.4779	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check
Master: 15-Jan-2003 16:08 Before: 15-Jan-2003 16:17 After: 19-Jan-2003 2:15

Na 511 Peak Loc	40.00	40.55	40.57	40.61	0.03738	1.000	
Na 511 Peak Res	15.50	16.60	16.91	17.25	0.3423	2.000	%
High Voltage	1150	1239	1239	1242	2.449	30.00	V
Na 1785 Peak Loc	142.6	144.7	144.4	144.4	0.07025	7.000	
Na 1785 Peak Res	8.500	9.925	9.708	9.893	0.1852	2.000	%
Temperature	15.50	32.80	32.89	29.63	-3.265	N/A	DEGC
Na Count Rate	45.00	44.45	43.98	43.50	-0.4887	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2
Master: 15-Jan-2003 16:08 Before: 15-Jan-2003 16:17 After: 19-Jan-2003 2:15

Coincidence Count Rate Ratio	1.000	1.008	1.0000	1.001	0.001407	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration
Master: 15-Jan-2003 16:01

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	209.3	--	--	--	--	
Th Peak Res	7.000	8.207	--	--	--	--	%
Background Count Rate	142.5	23.15	--	--	--	--	CPS
Gain Ratio	1.000	0.9810	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration
Master: 15-Jan-2003 16:01

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	209.3	--	--	--	--	
Th Peak Res	7.000	7.848	--	--	--	--	%
Background Count Rate	142.5	21.80	--	--	--	--	CPS
Gain Ratio	1.000	0.9821	--	--	--	--	

Accelerator-Porosity Tool - Detector Plateau Settings :

Near Detector Plateau Setting	1728 V
Far Detector Plateau Setting	2073 V
Array Detector Plateau Setting	1958 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		37.75
	-300.0 (Minimum) / 0 (Nominal) / 300.0 (Maximum)	

Phase	ID Elect Real Gain 10 kHz	Value
Before		0.9757
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Phase	ID Elect Phase 10 kHz DEG	Value
Before	EXCEEDS LIMIT	10.92
	-10.00 (Minimum) / 0 (Nominal) / 10.00 (Maximum)	

Phase	ID Elect Quad Offset 10 kHz MM/M	Value
Before		23.35
	-300.0 (Minimum) / 0 (Nominal) / 300.0 (Maximum)	

Phase	ID Elect Quad Gain 10 kHz	Value
Before		0.9643
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Phase	IM Elect Phase 10 kHz DEG	Value
Before	EXCEEDS LIMIT	13.55
	-10.00 (Minimum) / 0 (Nominal) / 10.00 (Maximum)	

Phase	IM Elect Real Offset 10 kHz MM/M	Value
Before		97.69
	-550.0 (Minimum) / 0 (Nominal) / 550.0 (Maximum)	

Phase	IM Elect Real Gain 10 kHz	Value
Before		0.9506
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

10Khz not used

Phase	IM Elect Quad Offset 10 kHz MM/M	Value
Before		96.41
	-550.0 (Minimum) / 0 (Nominal) / 550.0 (Maximum)	

Phase	IM Elect Quad Gain 10 kHz	Value
Before		0.9483
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Before: 15-Jan-2003 15:40

Dual Induction - E Wellsite Calibration

Induction Electronics (20 kHz)

Phase	ID Elect Real Offset 20 kHz MM/M	Value
Before		14.96
	-125.0 (Minimum) / 0 (Nominal) / 125.0 (Maximum)	

Phase	ID Elect Real Gain 20 kHz	Value
Before		1.007
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Phase	ID Elect Phase 20 kHz DEG	Value
Before		9.501
	-15.00 (Minimum) / 0 (Nominal) / 15.00 (Maximum)	

Phase	ID Elect Quad Offset 20 kHz MM/M	Value
Before		9.431
	-125.0 (Minimum) / 0 (Nominal) / 125.0 (Maximum)	

Phase	ID Elect Quad Gain 20 kHz	Value
Before		0.9950
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Phase	IM Elect Phase 20 kHz DEG	Value
Before		12.55
	-15.00 (Minimum) / 0 (Nominal) / 15.00 (Maximum)	

Phase	IM Elect Real Offset 20 kHz MM/M	Value
Before		40.85
	-225.0 (Minimum) / 0 (Nominal) / 225.0 (Maximum)	

Phase	IM Elect Real Gain 20 kHz	Value
Before		1.012
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Phase	IM Elect Quad Offset 20 kHz MM/M	Value
Before		40.40
	-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: 15-Jan-2003 15:41

Dual Induction - E Wellsite Calibration

Induction Electronics (40 kHz)

Phase	ID Elect Real Offset 40 kHz MM/M	Value
Before		9.829
	-85.00 (Minimum) / 0 (Nominal) / 85.00 (Maximum)	

Phase	ID Elect Real Gain 40 kHz	Value
Before		0.9926
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Phase	ID Elect Phase 40 kHz DEG	Value
Before	EXCEEDS LIMIT	29.37
	-20.00 (Minimum) / 0 (Nominal) / 20.00 (Maximum)	

Phase	ID Elect Quad Offset 40 kHz MM/M	Value
Before		6.156
	-85.00 (Minimum) / 0 (Nominal) / 85.00 (Maximum)	

Phase	ID Elect Quad Gain 40 kHz	Value
Before		0.9797
	0.8500 (Minimum) / 1.000 (Nominal) / 1.200 (Maximum)	

Phase	IM Elect Phase 40 kHz DEG	Value
Before	EXCEEDS LIMIT	33.01
	-20.00 (Minimum) / 0 (Nominal) / 20.00 (Maximum)	

Phase	IM Elect Real Offset 40 kHz MM/M	Value	Phase	IM Elect Real Gain 40 kHz	Value
Before		26.65	Before		1.027
	-130.0 (Minimum) 0 (Nominal) 130.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)	
Phase	IM Elect Quad Offset 40 kHz MM/M	Value	Phase	IM Elect Quad Gain 40 kHz	Value
Before		26.47	Before		1.024
	-130.0 (Minimum) 0 (Nominal) 130.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)	

40Khz not used

Before: 15-Jan-2003 15:42

Dual Induction - E Wellsite Calibration

SFL Electronics

Phase	SFL Voltage Offset MV	Value	Phase	SFL Voltage Gain	Value
Before		1.294	Before		1.021
	-15.00 (Minimum) 0 (Nominal) 15.00 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)	
Phase	SFL Current Offset MA	Value	Phase	SFL Current Gain	Value
Before		0.004236	Before		0.9971
	-0.6000 (Minimum) 0 (Nominal) 0.6000 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)	

Before: 15-Jan-2003 15:43

Dual Induction - E Wellsite Calibration

Electronics Calibration Changes Files/Depth Intervals:

Phase	ID (R > 27 OHM-M) MM/M	Value	Phase	ID (R < 27 OHM-M) %	Value	Phase	SFL (R < 1 OHM-M) OHMM	Value
After		0	After		0.0001666	After		0.0004445
	0 (Minimum) 0 (Nominal) 0.7500 (Maximum)			0 (Minimum) 0 (Nominal) 2.000 (Maximum)			0 (Minimum) 0 (Nominal) 0.02000 (Maximum)	
Phase	IM (R > 27 OHM-M) MM/M	Value	Phase	IM (R < 27 OHM-M) %	Value			
After		0	After		0.0001334			
	0 (Minimum) 0 (Nominal) 0.7500 (Maximum)			0 (Minimum) 0 (Nominal) 2.000 (Maximum)				
Phase	SFL (R > 27 OHM-M) MM/M	Value	Phase	SFL (R < 27 OHM-M) %	Value			
After		0	After		0.0004537			
	0 (Minimum) 0 (Nominal) 0.7500 (Maximum)			0 (Minimum) 0 (Nominal) 2.000 (Maximum)				

After: 31-Jan-2003 10:50

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 21:50

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

Phase		Value
Master		108.9
	-250.0 (Minimum) 0 (Nominal) 350.0 (Maximum)	

Phase		Value
Master		64.63
	-125.0 (Minimum) 0 (Nominal) 200.0 (Maximum)	

Phase		Value
Master		46.10
	-75.00 (Minimum) 0 (Nominal) 125.0 (Maximum)	

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

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

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

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

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

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

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

Hostile Litho-Density Sonde / Equipment Identification

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

Hostile Litho-Density Sonde Wellsite Calibration

Background Measurement

Phase	SS Cs Resolution Bkg %	Value
Master		8.065
Before		8.135
After		8.044
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	LS Cs Resolution Bkg %	Value
Master		8.249
Before		8.108
After		8.124
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	LSW1 Background CPS	Value
Master		86.88
Before		86.46
After		86.16
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	LSW2 Background CPS	Value
Master		82.90
Before		80.84
After		81.32
	50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)	

Phase	LSW3 Background CPS	Value
Master		182.1
Before		179.4
After		180.0
	110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)	

Phase	LSW4 Background CPS	Value
Master		221.9
Before		216.6
After		220.1
	140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)	

Phase	LSW5 Background CPS	Value
Master		510.1
Before		505.1
After		504.0
	330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)	

Phase	SSW1 Background CPS	Value
Master		96.14
Before		98.01
After		96.03
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	SSW2 Background CPS	Value
Master		176.7
Before		177.3
After		173.7
	100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)	

Phase	SSW3 Background CPS	Value
Master		478.2
Before		477.6
After		477.4
	280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)	

Phase	SSW4 Background CPS	Value
Master		244.1
Before		244.0
After		242.2
	150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)	

Phase	SSW5 Background CPS	Value
Master		177.5
Before		175.7
After		176.8
	110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)	

Master: 13-Dec-2002 14:00 Before: 15-Jan-2003 11:10 After: 19-Jan-2003 2:14

Hostile Litho-Density Sonde Master Calibration

Detector Background Measurement

Phase	LSW1 Background CPS	Value
Master		86.88
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	LSW2 Background CPS	Value
Master		82.90
	50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)	

Phase	LSW3 Background CPS	Value
Master		182.1
	110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)	

Phase	LSW4 Background CPS	Value
Master		221.9
	140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)	

Phase	LSW5 Background CPS	Value
Master		510.1
	330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)	

Phase	LS Cs Resolution Bkg %	Value
Master		8.249
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

140.0 (Minimum)	250.0 (Nominal)	360.0 (Maximum)	330.0 (Minimum)	600.0 (Nominal)	830.0 (Maximum)	7.000 (Minimum)	9.000 (Nominal)	11.00 (Maximum)

Phase	SSW1 Background CPS	Value	Phase	SSW2 Background CPS	Value	Phase	SSW3 Background CPS	Value
Master		96.14	Master		176.7	Master		478.2
55.00 (Minimum)	100.0 (Nominal)	150.0 (Maximum)	100.0 (Minimum)	200.0 (Nominal)	260.0 (Maximum)	280.0 (Minimum)	500.0 (Nominal)	700.0 (Maximum)

Phase	SSW4 Background CPS	Value	Phase	SSW5 Background CPS	Value	Phase	SS Cs Resolution Bkg %	Value
Master		244.1	Master		177.5	Master		8.065
150.0 (Minimum)	270.0 (Nominal)	380.0 (Maximum)	110.0 (Minimum)	200.0 (Nominal)	270.0 (Maximum)	7.000 (Minimum)	9.000 (Nominal)	11.00 (Maximum)

Master: 13-Dec-2002 14:00

Hostile Litho-Density Sonde Master Calibration

Detector Aluminum Measurement (bkgd-subtracted)

Phase	LSW1 Aluminum CPS	Value	Phase	LSW2 Aluminum CPS	Value	Phase	LSW3 Aluminum CPS	Value
Master		580.8	Master		822.1	Master		985.4
420.0 (Minimum)	600.0 (Nominal)	700.0 (Maximum)	650.0 (Minimum)	900.0 (Nominal)	1050 (Maximum)	800.0 (Minimum)	1100 (Nominal)	1300 (Maximum)

Phase	LSW4 Aluminum CPS	Value	Phase	LSW5 Aluminum CPS	Value	Phase	SSW1 Aluminum CPS	Value
Master		489.2	Master		453.3	Master		2597
410.0 (Minimum)	580.0 (Nominal)	670.0 (Maximum)	410.0 (Minimum)	570.0 (Nominal)	660.0 (Maximum)	2000 (Minimum)	2800 (Nominal)	3200 (Maximum)

Phase	SSW2 Aluminum CPS	Value	Phase	SSW3 Aluminum CPS	Value	Phase	SSW4 Aluminum CPS	Value
Master		7087	Master		9849	Master		4127
5800 (Minimum)	8000 (Nominal)	9300 (Maximum)	8300 (Minimum)	11600 (Nominal)	13500 (Maximum)	3500 (Minimum)	5000 (Nominal)	5800 (Maximum)

Phase	SSW5 Aluminum CPS	Value
Master		537.2
470.0 (Minimum)	660.0 (Nominal)	770.0 (Maximum)

Master: 13-Dec-2002 15:15

Hostile Litho-Density Sonde Master Calibration

Detector Litholog Measurement (bkgd-subtracted)

Phase	LSW1 Iron CPS	Value	Phase	LSW2 Iron CPS	Value	Phase	LSW3 Iron CPS	Value
Master		401.7	Master		683.6	Master		900.2
290.0 (Minimum)	400.0 (Nominal)	470.0 (Maximum)	520.0 (Minimum)	730.0 (Nominal)	850.0 (Maximum)	720.0 (Minimum)	1000 (Nominal)	1160 (Maximum)

Phase	LSW4 Iron CPS	Value	Phase	LSW5 Iron CPS	Value	Phase	SSW1 Iron CPS	Value
Master		465.6	Master		434.8	Master		1961
370.0 (Minimum)	520.0 (Nominal)	600.0 (Maximum)	340.0 (Minimum)	470.0 (Nominal)	550.0 (Maximum)	1500 (Minimum)	2100 (Nominal)	2400 (Maximum)

Phase	SSW2 Iron CPS	Value	Phase	SSW3 Iron CPS	Value	Phase	SSW4 Iron CPS	Value
Master		6103	Master		9305	Master		3921
4900 (Minimum)	6800 (Nominal)	7900 (Maximum)	7800 (Minimum)	10800 (Nominal)	12600 (Maximum)	3300 (Minimum)	4600 (Nominal)	5400 (Maximum)

Phase	SSW5 Iron CPS	Value
Master		502.8
420.0 (Minimum)	580.0 (Nominal)	680.0 (Maximum)

Master: 13-Dec-2002 15:11

Hostile Litho-Density Sonde Master Calibration

Quality Ratios

Phase	AL CALIBRATION RATIO 1	Value	Phase	AL CALIBRATION RATIO 2	Value	Phase	AL CALIBRATION RATIO 3	Value
Master		1.046	Master		2.112	Master		0.6163
0.9000 (Minimum)	1.000 (Nominal)	1.100 (Maximum)	1.800 (Minimum)	2.000 (Nominal)	2.200 (Maximum)	0.4500 (Minimum)	0.5500 (Nominal)	0.6500 (Maximum)

Phase	AL CALIBRATION RATIO 4	Value	Phase	Pad-Wear SS Ratio	Value	Phase	Pad-Wear LS Ratio	Value
Master		0.5569	Master		0.9905	Master		0.9885
0.4000 (Minimum)	0.5000 (Nominal)	0.6000 (Maximum)	0.9800 (Minimum)	0.9880 (Nominal)	0.9960 (Maximum)	0.9800 (Minimum)	0.9880 (Nominal)	0.9960 (Maximum)

Phase	Pad-Position SS Ratio	Value	Phase	Pad-Position LS Ratio	Value
Master		0.9979	Master	EXCEEDS LIMIT	0.9509
0.9900	0.9940	1.015	0.9850	0.9940	1.010

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

Master: 14-Dec-2002 14:24

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

Accelerator-Porosity Tool Wellsite Calibration

Detector Background

Phase	Near Det Bkg Cntrate CPS	Value
Master		32.65
Before		33.77
After		31.59
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	

Phase	Far Det Bkg Cntrate CPS	Value
Master		31.56
Before		32.99
After		33.02
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	

Phase	Array-1 Det Bkg Cntrate CPS	Value
Master		29.11
Before		28.51
After		28.71
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	

Phase	Array-2 Det Bkg Cntrate CPS	Value
Master		29.96
Before		30.18
After		29.94
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	

Phase	Array Therm Det Bkg Cntrate CPS	Value
Master		32.97
Before		31.86
After		32.50
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	

Master: 28-Nov-2002 19:52 Before: 31-Jan-2003 6:16 After: 19-Jan-2003 0:35

Accelerator-Porosity Tool Wellsite Calibration

Calibration Ratios

Phase	Near/Far Calibration Ratio	Value
Master		0.8869
	0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum)	

Phase	Near/Array Calibration Ratio	Value
Master		1.051
	0.9000 (Minimum) 1.030 (Nominal) 1.170 (Maximum)	

Phase	Near/Array Cal Ratio Up/Down	Value
Master		1.002
	0.9700 (Minimum) 1.000 (Nominal) 1.030 (Maximum)	

Master: 28-Nov-2002 19:53

Accelerator-Porosity Tool Wellsite Calibration

Tank Check

Phase	Array-1 Standoff Porosity PU	Value
Master		11.90
	9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)	

Phase	Array-2 Standoff Porosity PU	Value
Master		11.44
	9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)	

Phase	Average Slowing Down Time US	Value
Master		5.850
	5.500 (Minimum) 6.000 (Nominal) 6.250 (Maximum)	

Phase	Array-1 SDT Ratio Up/Down	Value
Master		0.9966
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	

Phase	Array-2 SDT Ratio Up/Down	Value
Master		0.9889
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	

Phase	Sigma Formation CU	Value
Master		27.81
	20.00 (Minimum) 27.50 (Nominal) 35.00 (Maximum)	

Master: 28-Nov-2002 19:54

Accelerator-Porosity Tool Master Calibration

Detector Calibration

Phase	Near/Far Calibration Ratio	Value
Master		0.8869

Phase	Near/Array Calibration Ratio	Value
Master		1.051

Phase	Near/Array Cal Ratio Up/Down	Value
Master		1.002

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: 28-Nov-2002 19:53

Accelerator-Porosity Tool Master Calibration

Tank Check

Phase	Array-1 Standoff Porosity PU	Value
Master		11.90
	9.900 (Minimum) / 11.75 (Nominal) / 13.60 (Maximum)	

Phase	Array-2 Standoff Porosity PU	Value
Master		11.44
	9.900 (Minimum) / 11.75 (Nominal) / 13.60 (Maximum)	

Phase	Average Slowing Down Time US	Value
Master		5.850
	5.500 (Minimum) / 6.000 (Nominal) / 6.250 (Maximum)	

Phase	Array-1 SDT Ratio Up/Down	Value
Master		0.9966
	0.9500 (Minimum) / 1.000 (Nominal) / 1.050 (Maximum)	

Phase	Array-2 SDT Ratio Up/Down	Value
Master		0.9889
	0.9500 (Minimum) / 1.000 (Nominal) / 1.050 (Maximum)	

Phase	Sigma Formation CU	Value
Master		27.81
	20.00 (Minimum) / 27.50 (Nominal) / 35.00 (Maximum)	

Master: 28-Nov-2002 19:54

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		40.59
Before		40.72
After		40.70
	37.50 (Minimum) / 40.00 (Nominal) / 42.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		17.05
Before		17.42
After		16.61
	12.00 (Minimum) / 15.50 (Nominal) / 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1212
Before		1212
After		1215
	900.0 (Minimum) / 1150 (Nominal) / 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		145.6
Before		145.3
After		145.8
	135.0 (Minimum) / 142.6 (Nominal) / 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		9.037
Before		9.666
After		9.711
	7.000 (Minimum) / 8.500 (Nominal) / 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		32.69
Before		32.84
After		29.54
	-28.89 (Minimum) / 15.50 (Nominal) / 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		44.80
Before		43.98
After		43.51
	10.00 (Minimum) / 45.00 (Nominal) / 100.0 (Maximum)	

Master: 15-Jan-2003 16:08 Before: 15-Jan-2003 16:17 After: 19-Jan-2003 2:15

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value
Master		40.55
Before		40.57
After		40.61
	37.50 (Minimum) / 40.00 (Nominal) / 42.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		16.60
Before		16.91
After		17.25
	12.00 (Minimum) / 15.50 (Nominal) / 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1239
Before		1239
After		1242
	900.0 (Minimum) / 1150 (Nominal) / 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		144.7
Before		144.4
After		144.4

Phase	Na 1785 Peak Res %	Value
Master		9.925
Before		9.708
After		9.893

Phase	Temperature DEGC	Value
Master		32.80
Before		32.89
After		29.63

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		44.45
Before		43.98
After		43.50

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

Master: 15-Jan-2003 16:08 Before: 15-Jan-2003 16:17 After: 19-Jan-2003 2:15

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		1.008
Before		1.0000
After		1.001

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

Master: 15-Jan-2003 16:08
Before: 15-Jan-2003 16:17
After: 19-Jan-2003 2:15

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		209.3	Master		8.207
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
Master		23.15	Master		0.9810
20.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)		

Master: 15-Jan-2003 16:01

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		209.3	Master		7.848
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
Master		21.80	Master		0.9821
20.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)		

Master: 15-Jan-2003 16:01

Company: Lamont Doherty

Schlumberger

Well: ODP Leg 207 Site 1258C
Field: Demarara Rise
Country: Venezuela
Ocean: Atlantic

Phasor Induction

Phasor Induction
HLDS/APS Density/Porosity
Natural Gamma Ray