

Company: Lamont Doherty

Well: IODP EXP 305 Site U1309D

Field: Atlantis Massif

Rig: Joides Resolution Ocean: Atlantic Ocean

**Hostile Litho-Density  
Accelerator Porosity  
Gamma Ray**

<b>LOCATION</b>		Mid-Atlantic Ridge  Permanent Datum: _____ Mean Sea Level Log Measured From: _____ Rig Floor Drilling Measured From: _____ Rig Floor	Elev.: K.B. 11.3 m G.L. -1656 m D.F. 11 m  Elev.: 0 m 11.3 m above Perm. Datum
Logging Date: 31-Jan-2005 Run Number: Two Depth Driller: 2493.4 m Schlumberger Depth: 2493.4 m Bottom Log Interval: 2490 m Top Log Interval: 1826 m Casing Driller Size @ Depth: 0.000 in @ 1826 m Casing Schlumberger: 1826 m Bit Size: 9.875 in Type Fluid In Hole: Fresh Water	API Serial No. _____ Max. Hole Devi. _____ Longitude 42.11865 W Latitude 30.16847 N		

Logging Date		31-Jan-2005	
Run Number		Two	
Depth Driller		2493.4 m	
Schlumberger Depth		2493.4 m	
Bottom Log Interval		2490 m	
Top Log Interval		1826 m	
Casing Driller Size @ Depth		0.000 in @ 1826 m	
Casing Schlumberger		1826 m	
Bit Size		9.875 in	
Type Fluid In Hole		Fresh Water	
Density		1.2 g/cm3	
Fluid Loss		0 cm3	
Source Of Sample			
RM @ Measured Temperature		0.322 ohm.m @ 50 degC	
RMF @ Measured Temperature		@ @	
RMC @ Measured Temperature		@ @	
Source RMF		RMC	
RM @ MRT		0.322 @ 50 @ 50	
Maximum Recorded Temperatures		50 degC	
Circulation Stopped		30-Jan-2005 Time 23:00	
Logger On Bottom		31-Jan-2005 Time 8:50	
Unit Number		2082 Houston	
Recorded By		Javier Espinosa	
Witnessed By		Heike Dellius, Margarete Linek	

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

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			
Density			
Fluid Loss			
Source Of Sample			
RM @ Measured Temperature			
RMF @ Measured Temperature			
RMC @ Measured Temperature			
Source RMF			
RM @ MRT			
Maximum Recorded Temperatures			
Circulation Stopped			
Logger On Bottom			
Unit Number			
Recorded By			
Witnessed By			

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**OTHER SERVICES1**  
 OS1: DLT, HNGS  
 OS2: MEST, DSST  
 OS3: UBI  
 OS4: WST  
 OS5:

**OTHER SERVICES2**  
 OS1:  
 OS2:  
 OS3:  
 OS4:  
 OS5:

**REMARKS: RUN NUMBER 1**  
 Hole Cored with RCB  
 All depths in Meters Below Rig Floor (MBRF).  
 Hole flushed with fresh water  
 Tool ran as per tool sketch below

**REMARKS: RUN NUMBER 2**

**RUN 1**  
 SERVICE ORDER #:  
 PROGRAM VERSION: 12C0-301  
 FLUID LEVEL:

**RUN 2**  
 SERVICE ORDER #:  
 PROGRAM VERSION:  
 FLUID LEVEL:

LOGGED INTERVAL	START	STOP

LOGGED INTERVAL	START	STOP

**EQUIPMENT DESCRIPTION**

**RUN 1**  
**SURFACE EQUIPMENT**  
 LCM-AA  
 SFT-281 6250  
 SFT-178 6250  
 GSR-U 135  
 WITM (DTS)-A

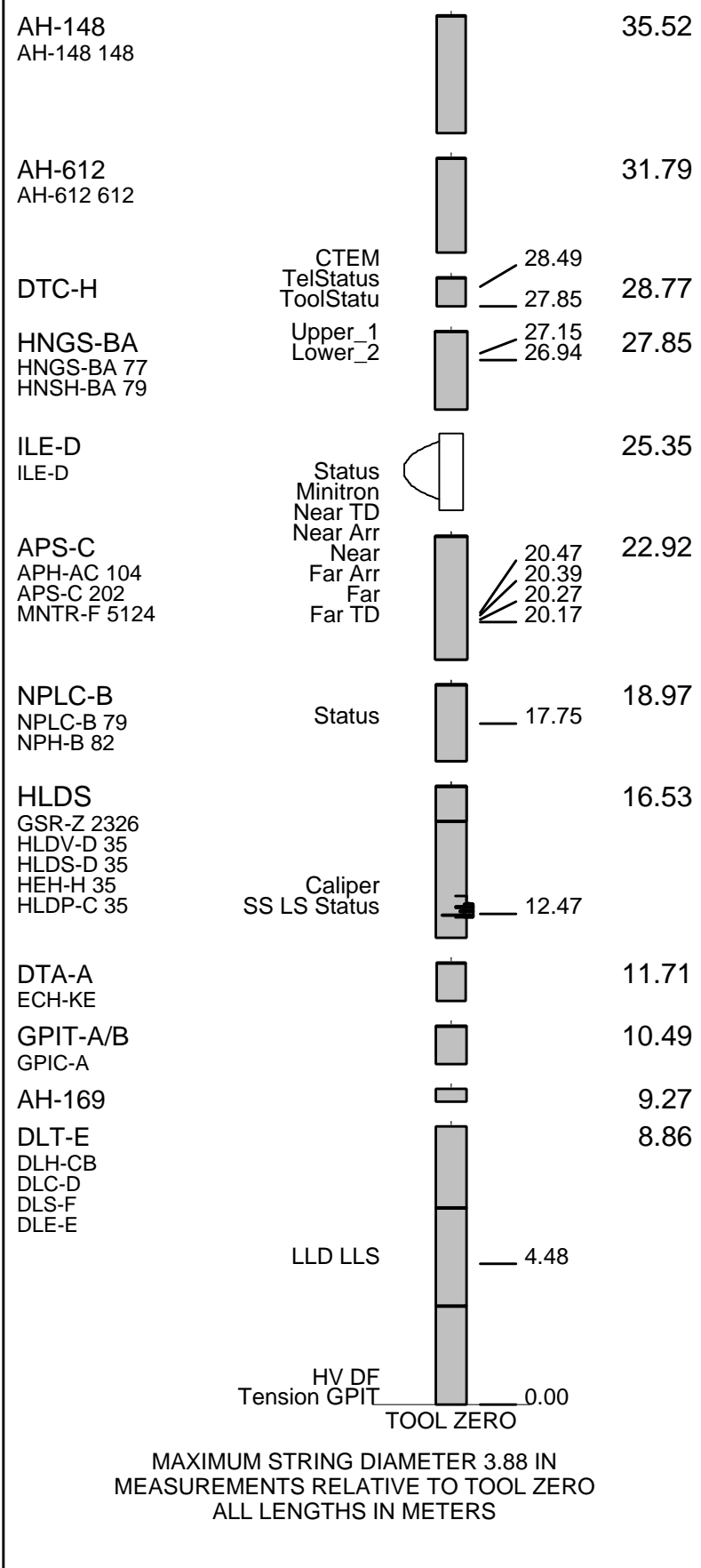
**RUN 2**

**DOWNHOLE EQUIPMENT**

BSP 60.80  
 BRT-S

SP SPARC 39.74

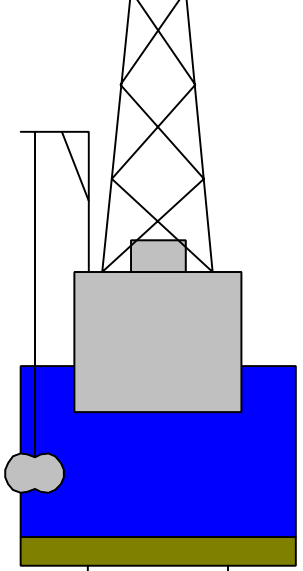
LEH-QT 36.41



Production String	(in)	(m)	Well Schematic	(m)	(in)	Casing String
	OD	ID		MD	MD	

Kelly Bushing Elevation  
Derrick Floor Elevation  
Mean Sea Level  
Seismic Gun depth below MSL

11.8  
11.8  
0.0  
-304.6



0.0 5.000

Casing String

1656.0 9.875  
1826.0 5.000

Borehole Segment  
Casing Shoe

**Schlumberger**

MAIN PASS

MAXIS Field Log

Output DLIS Files

DEFAULT	DLL_LDL_APS_NGS_011LUP	FN:13	PRODUCER	31-Jan-2005 08:52	2489.5 M	1784.0 M
REDUCED	DLL_LDL_APS_NGS_011LUP	FN:14	PRODUCER	31-Jan-2005 08:52	2489.5 M	1784.0 M

OP System Version: 12C0-301

MCM

DLT-E	12C0-301	GPIT-A/B	12C0-301
DTA-A	12C0-301	HLDS	12C0-301
NPLC-B	12C0-301	APS-C	12C0-301
HNGS-BA	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
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LLOO

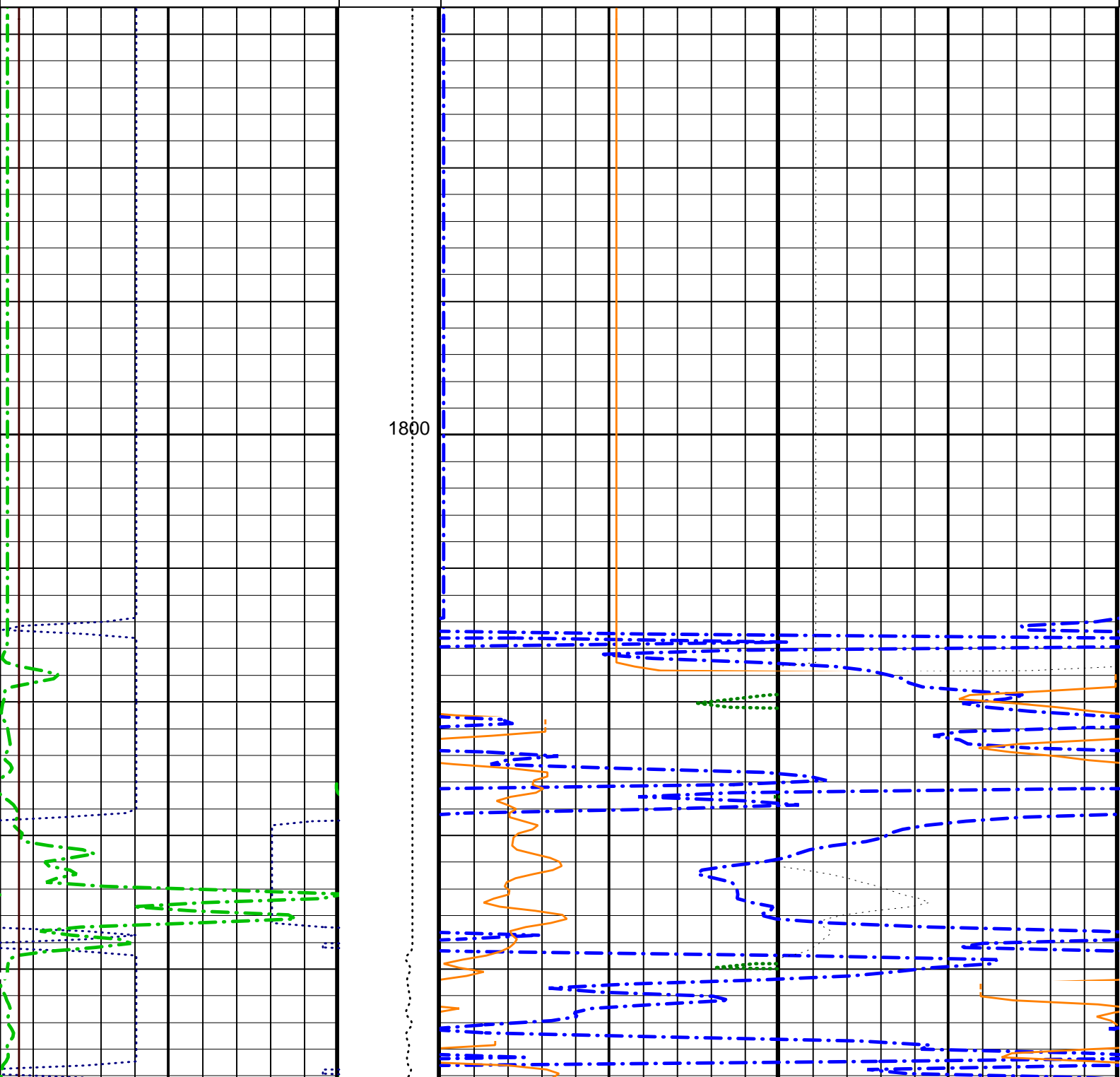
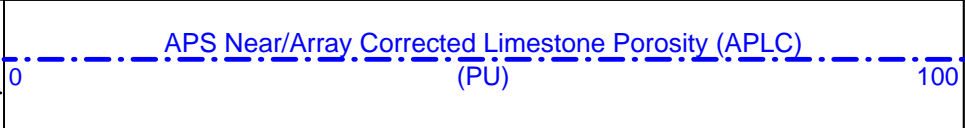
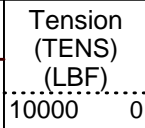
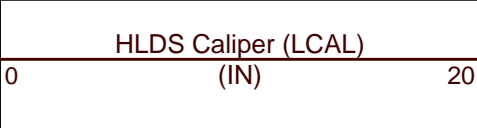
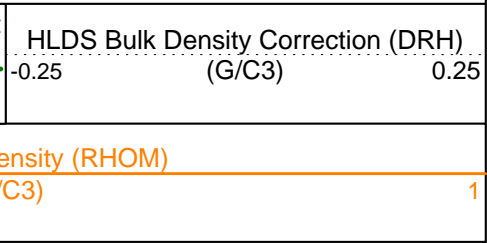
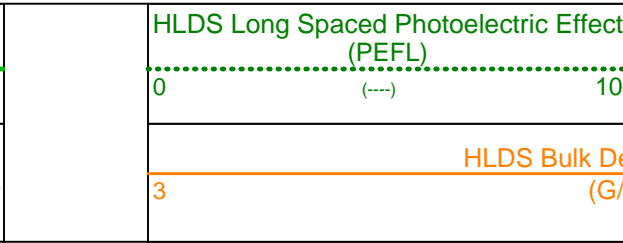
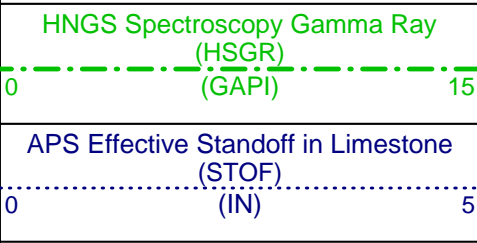
OFF  
BOTH  
OFF  
BOTH  
OFF

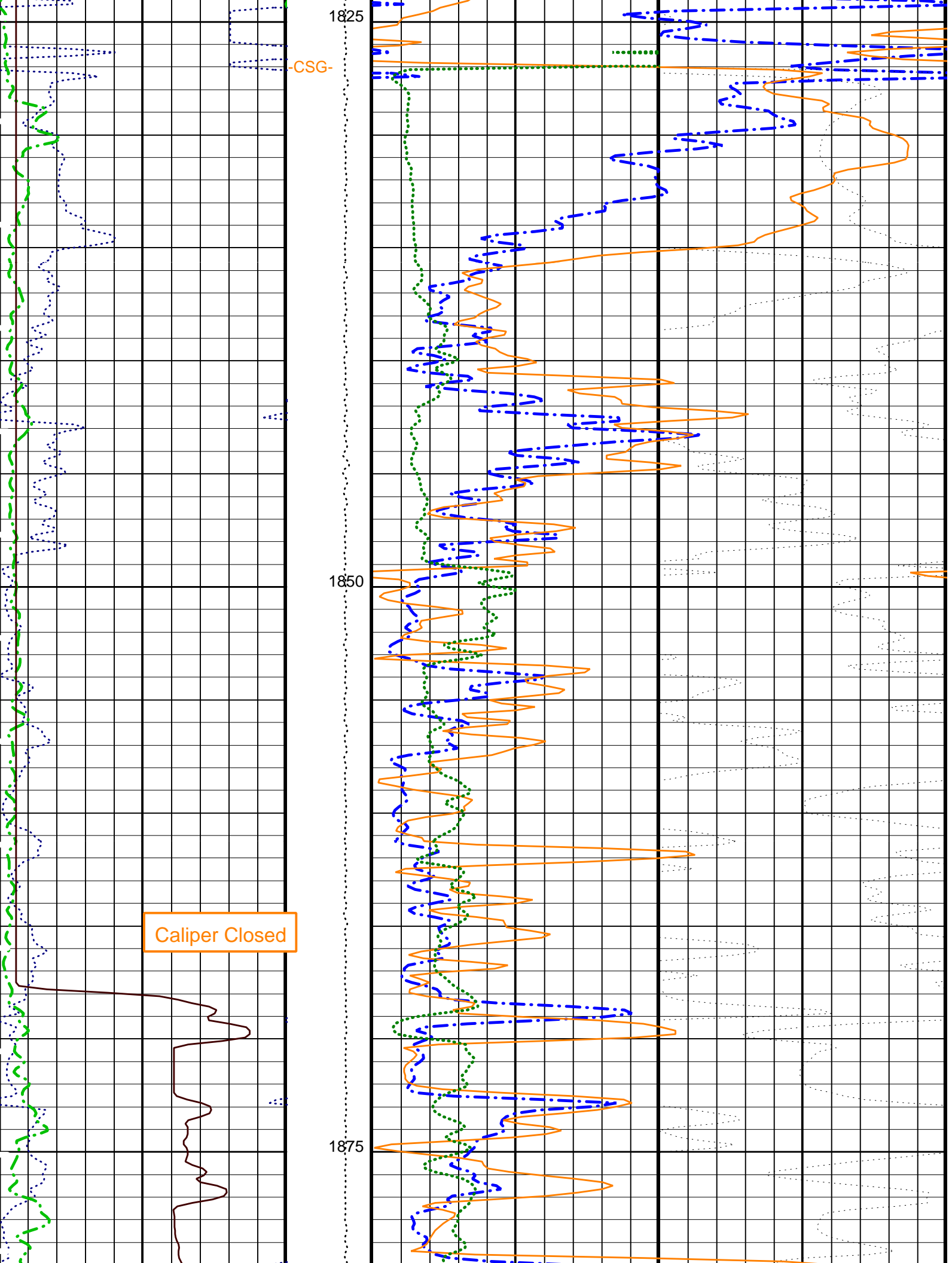
BOTH  
OFF  
BOTH  
OFF  
BOTH

2489.9 08:53:36  
2487.7 08:54:06  
1881.4 11:08:07  
1880.0 11:08:53  
1824.2 11:21:25

PIP SUMMARY

Time Mark Every 60 S





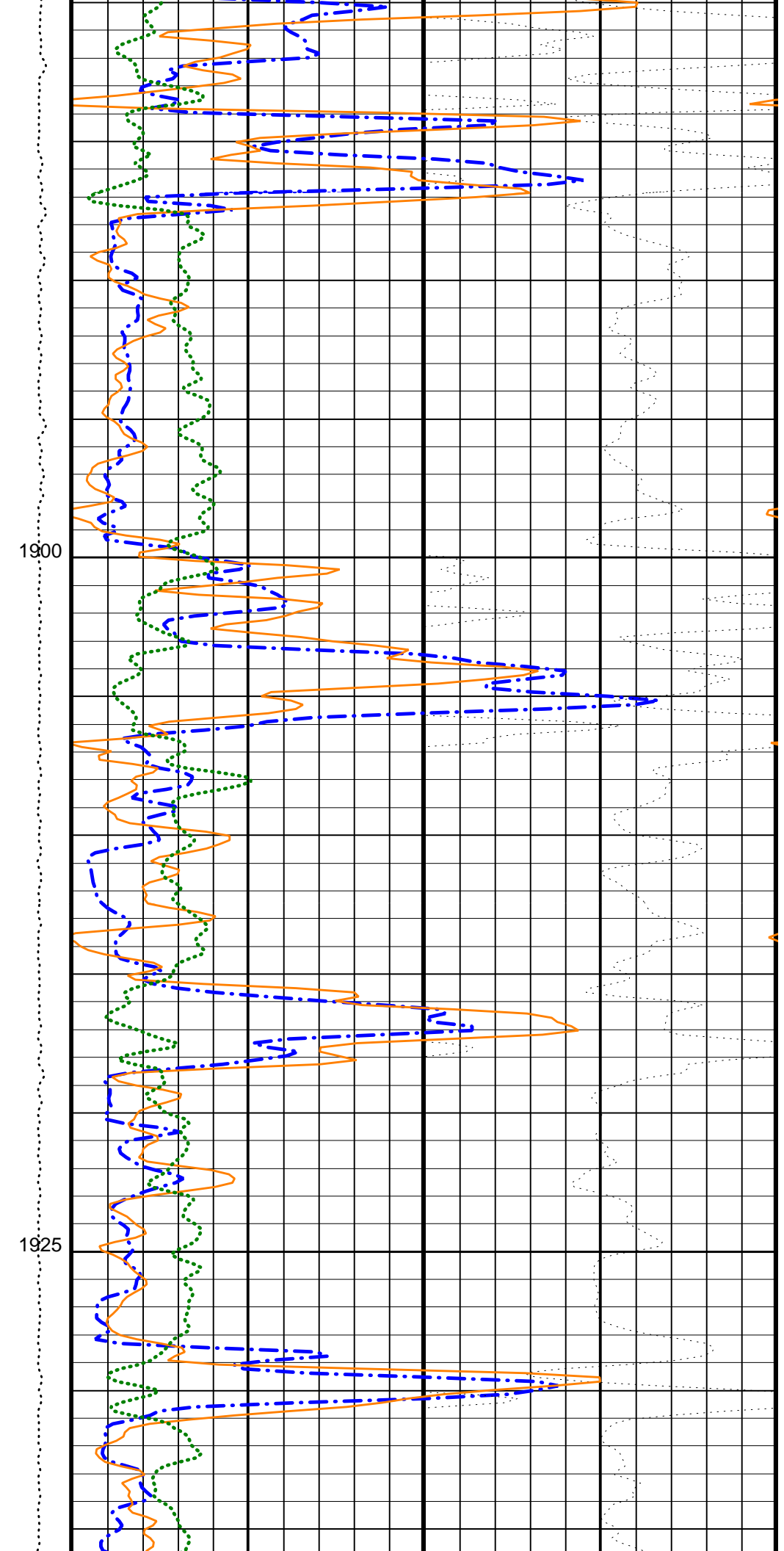
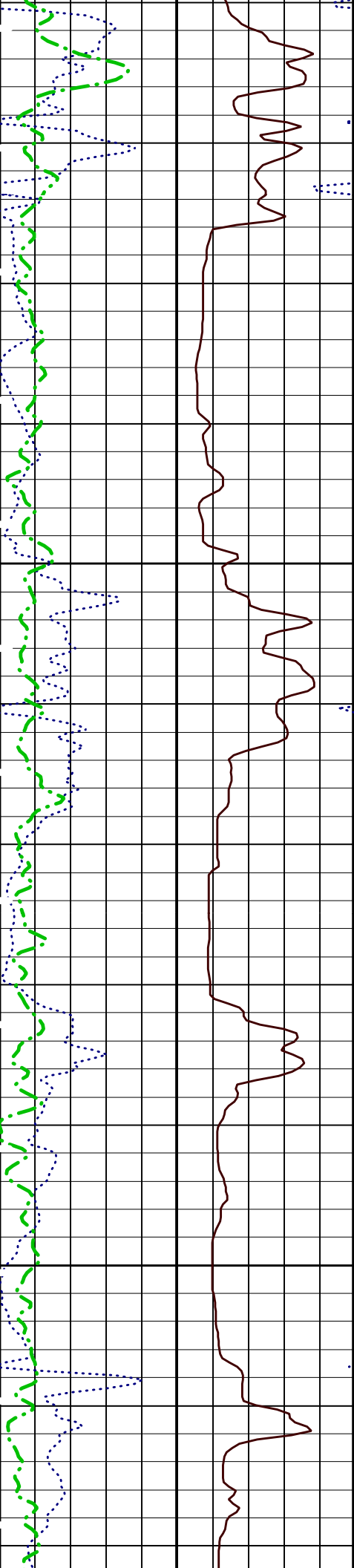
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CSG

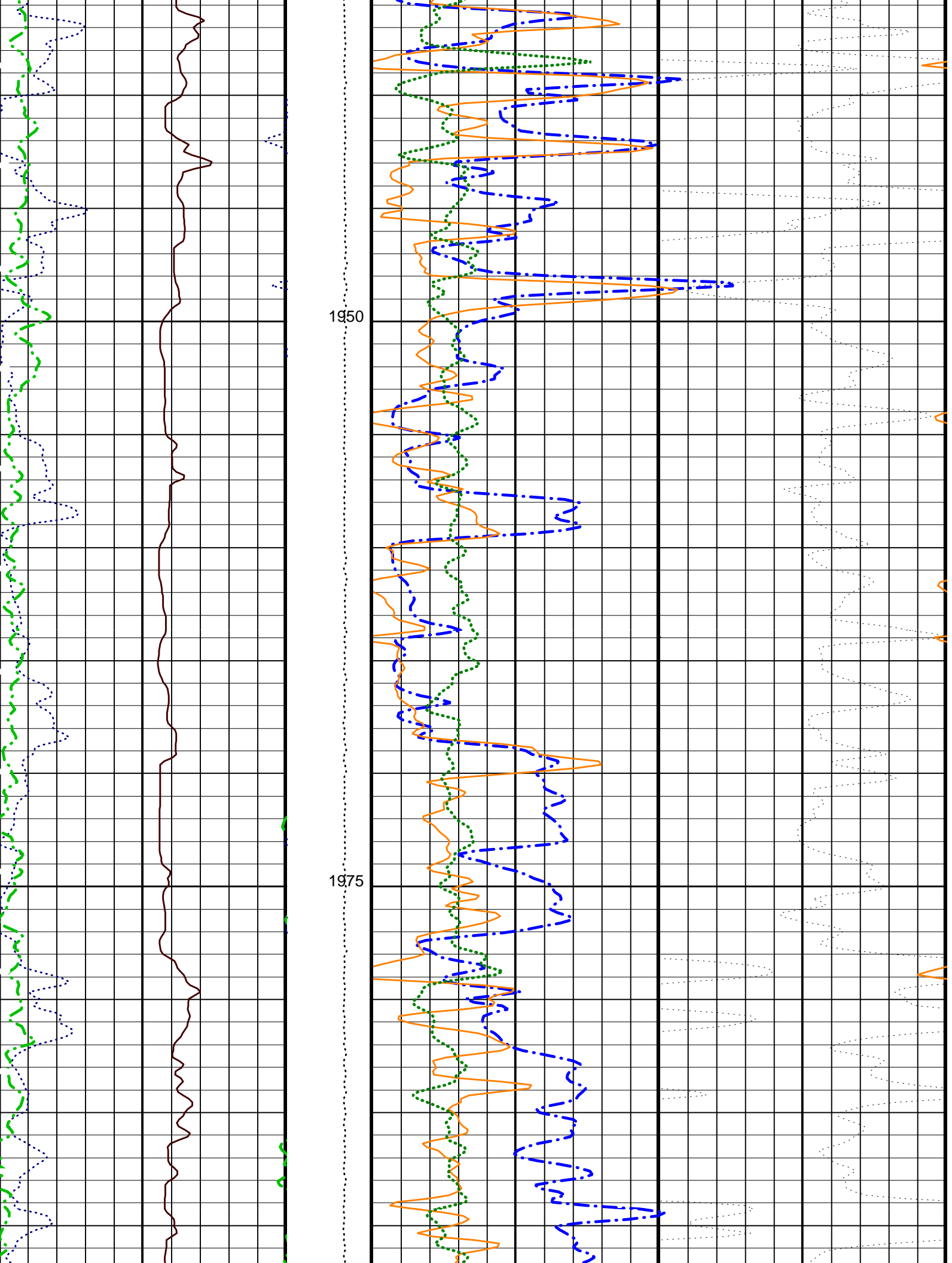
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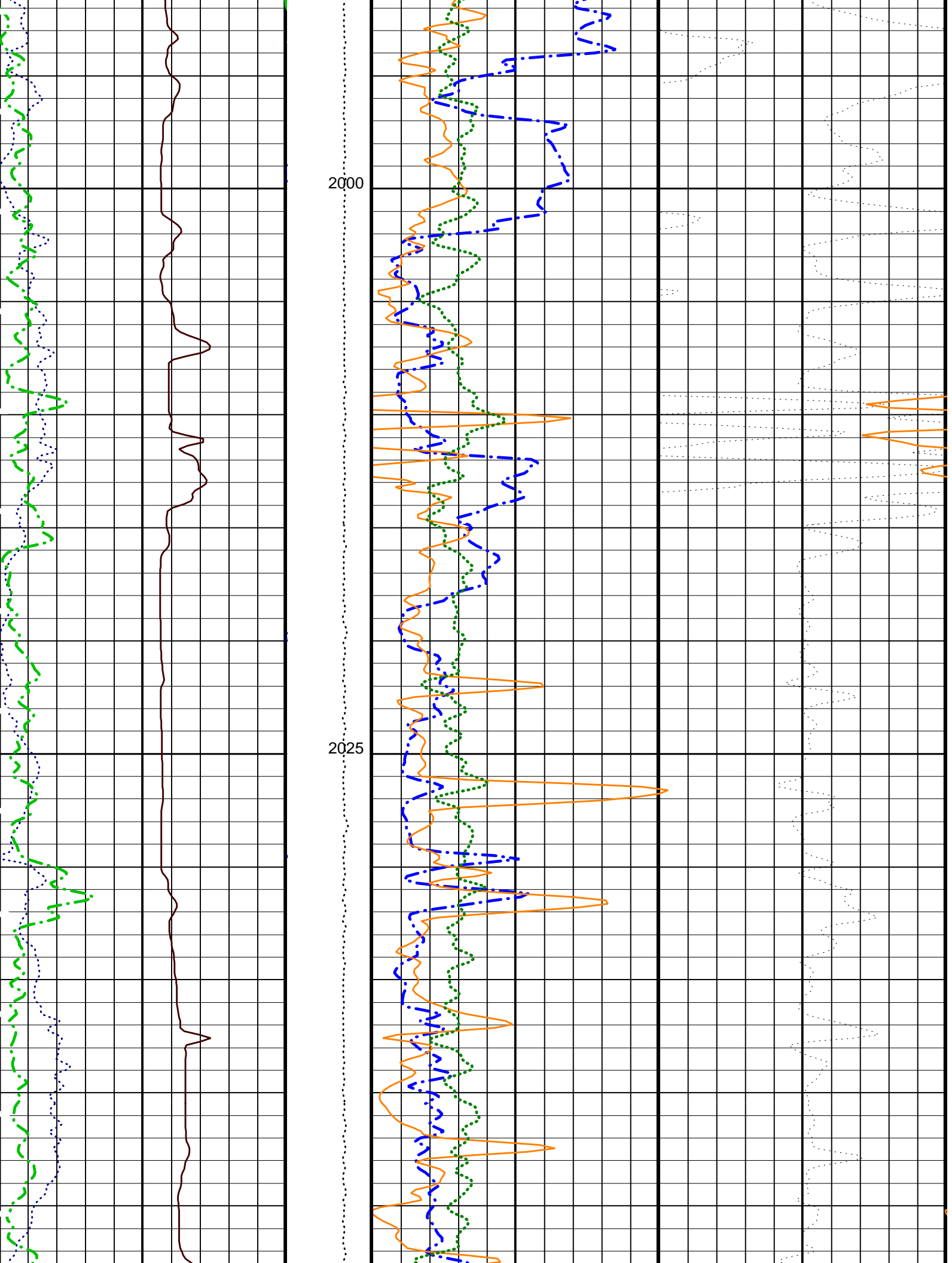
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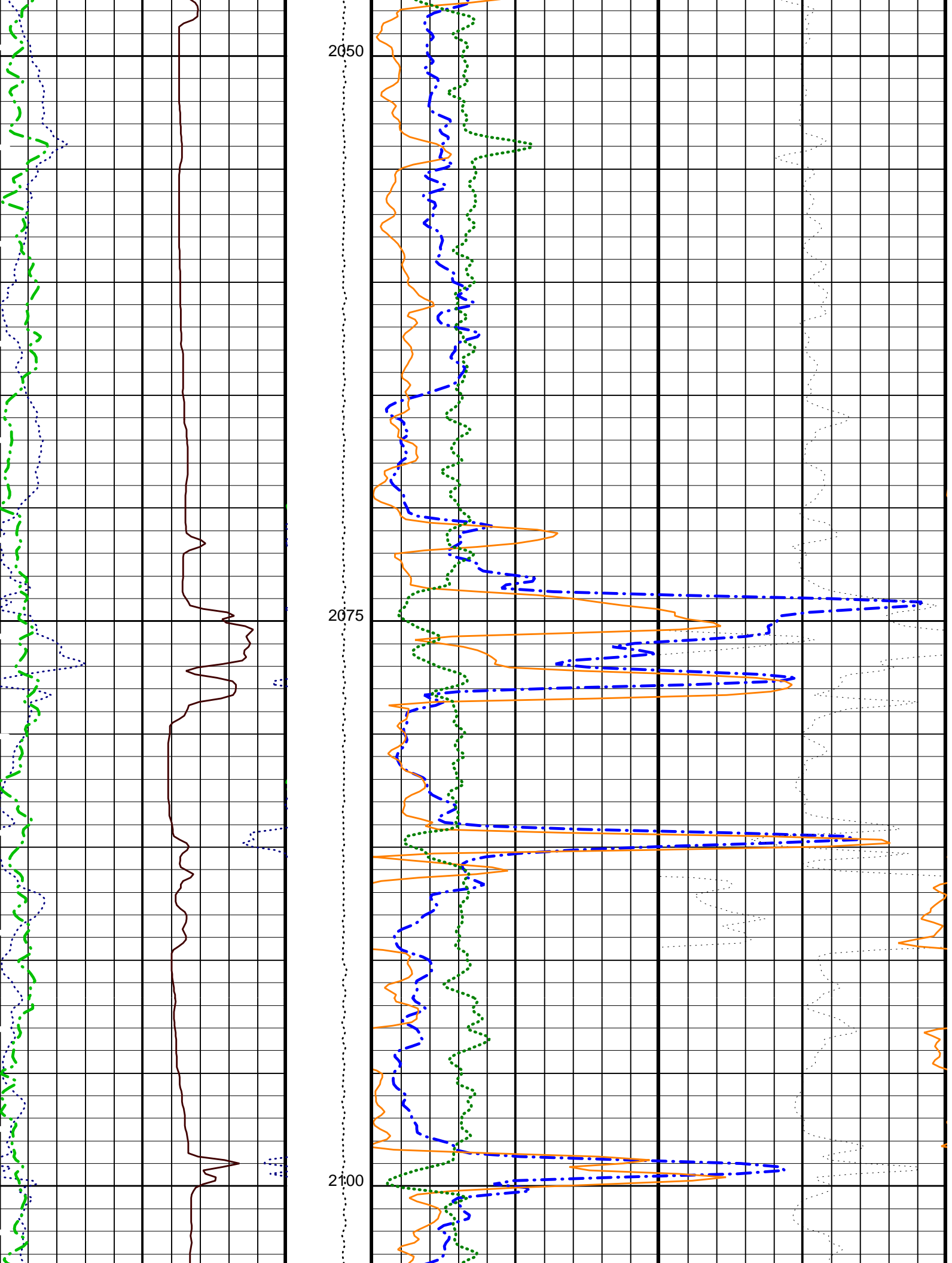
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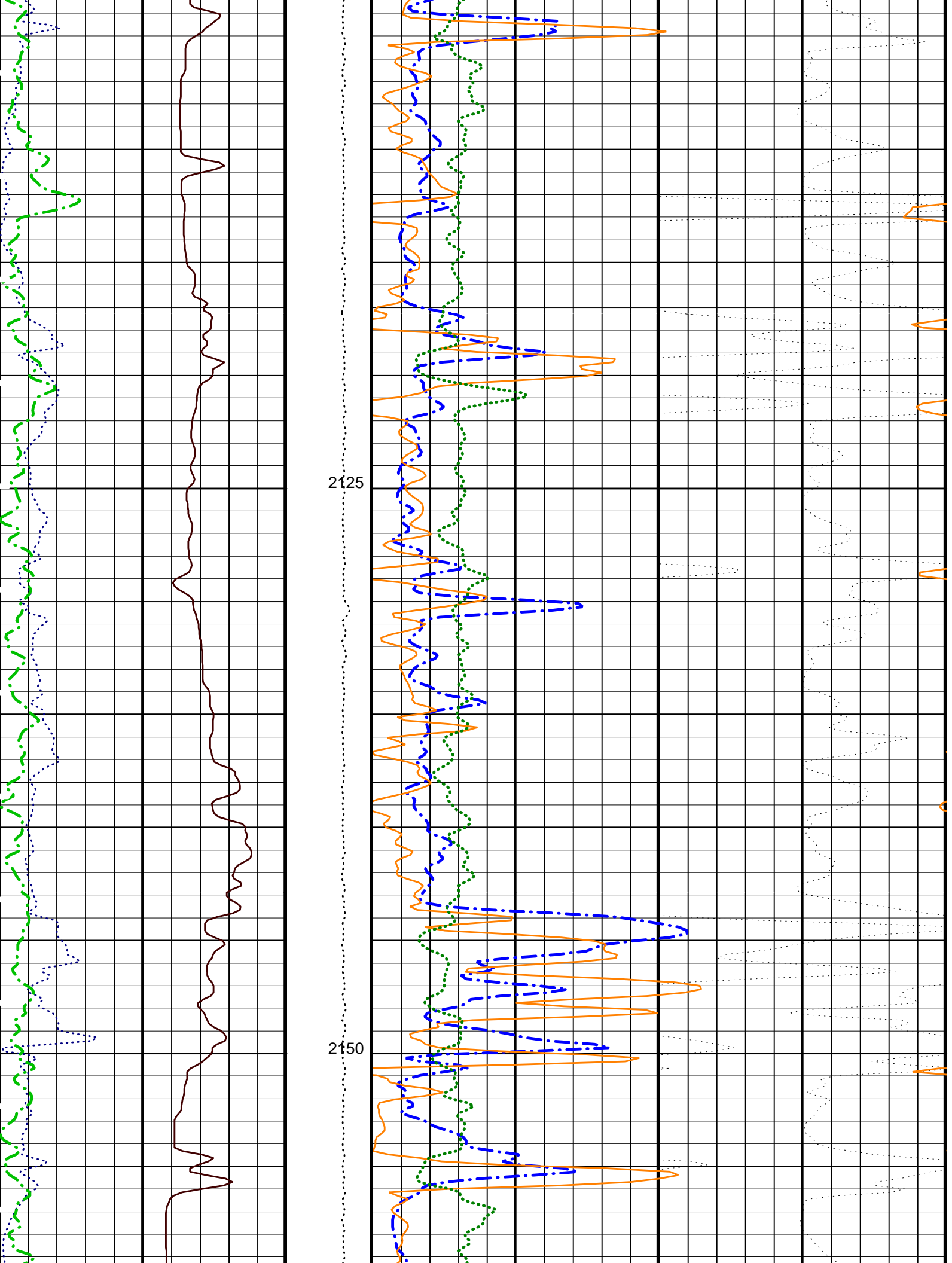


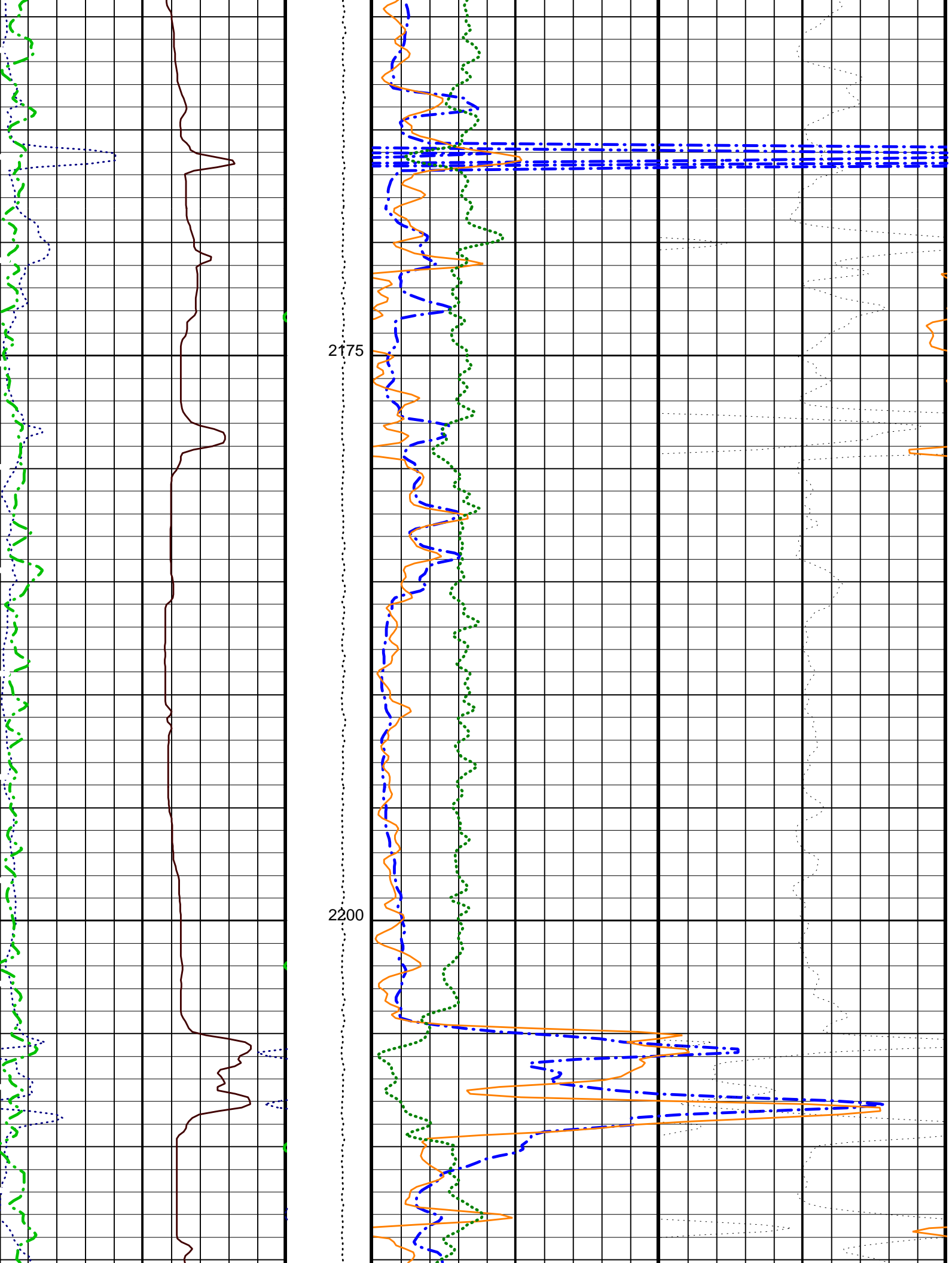


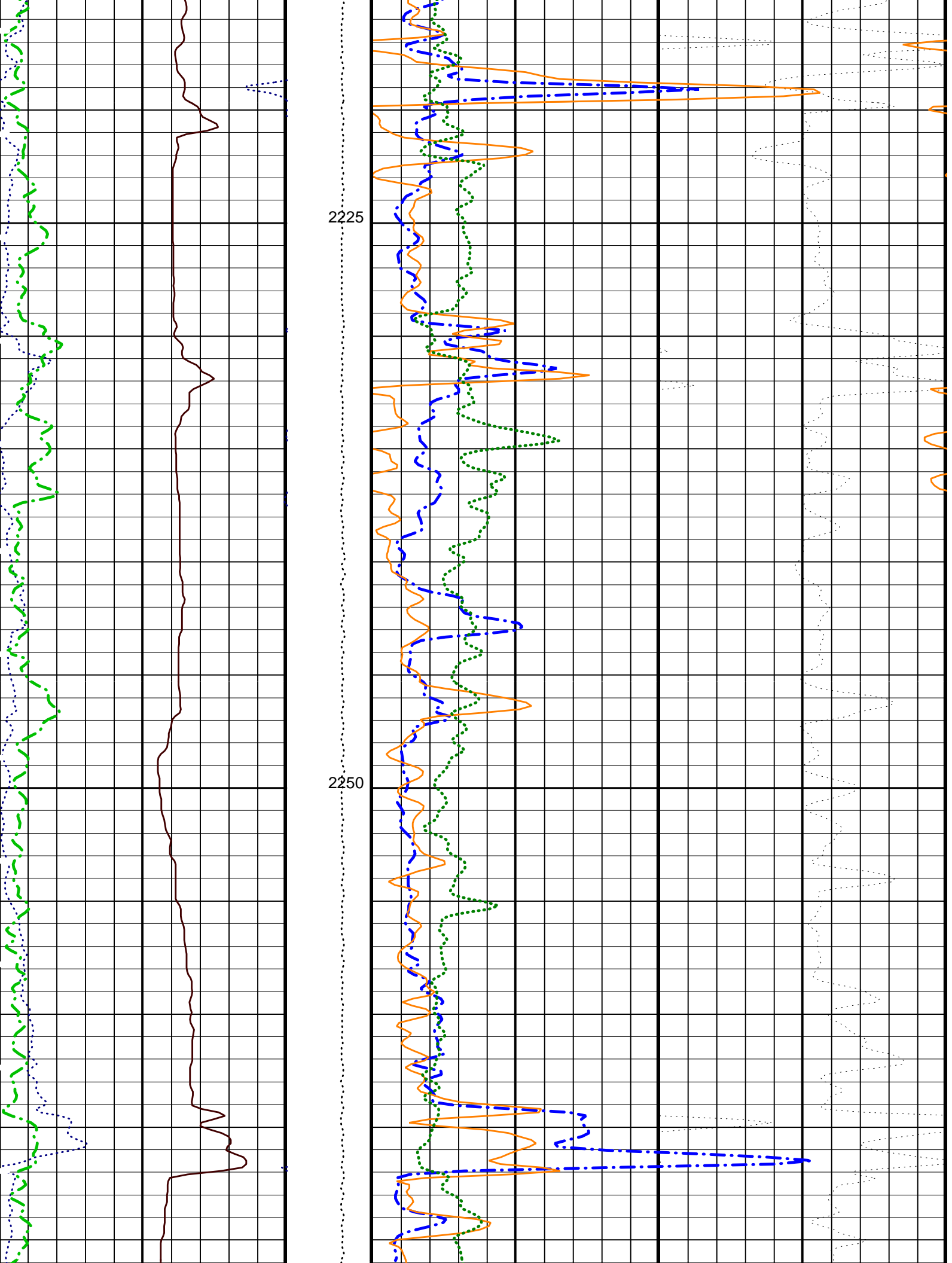


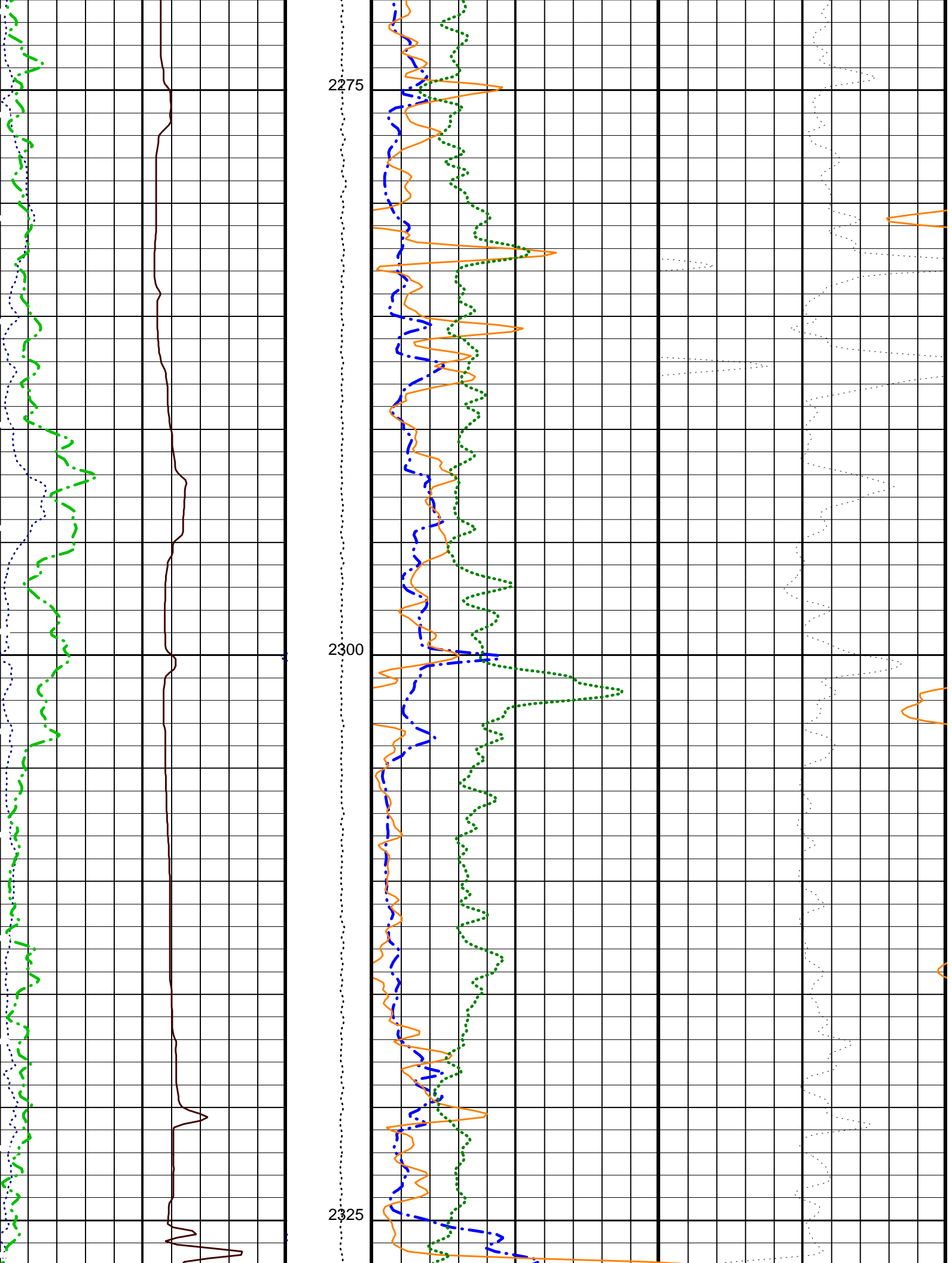


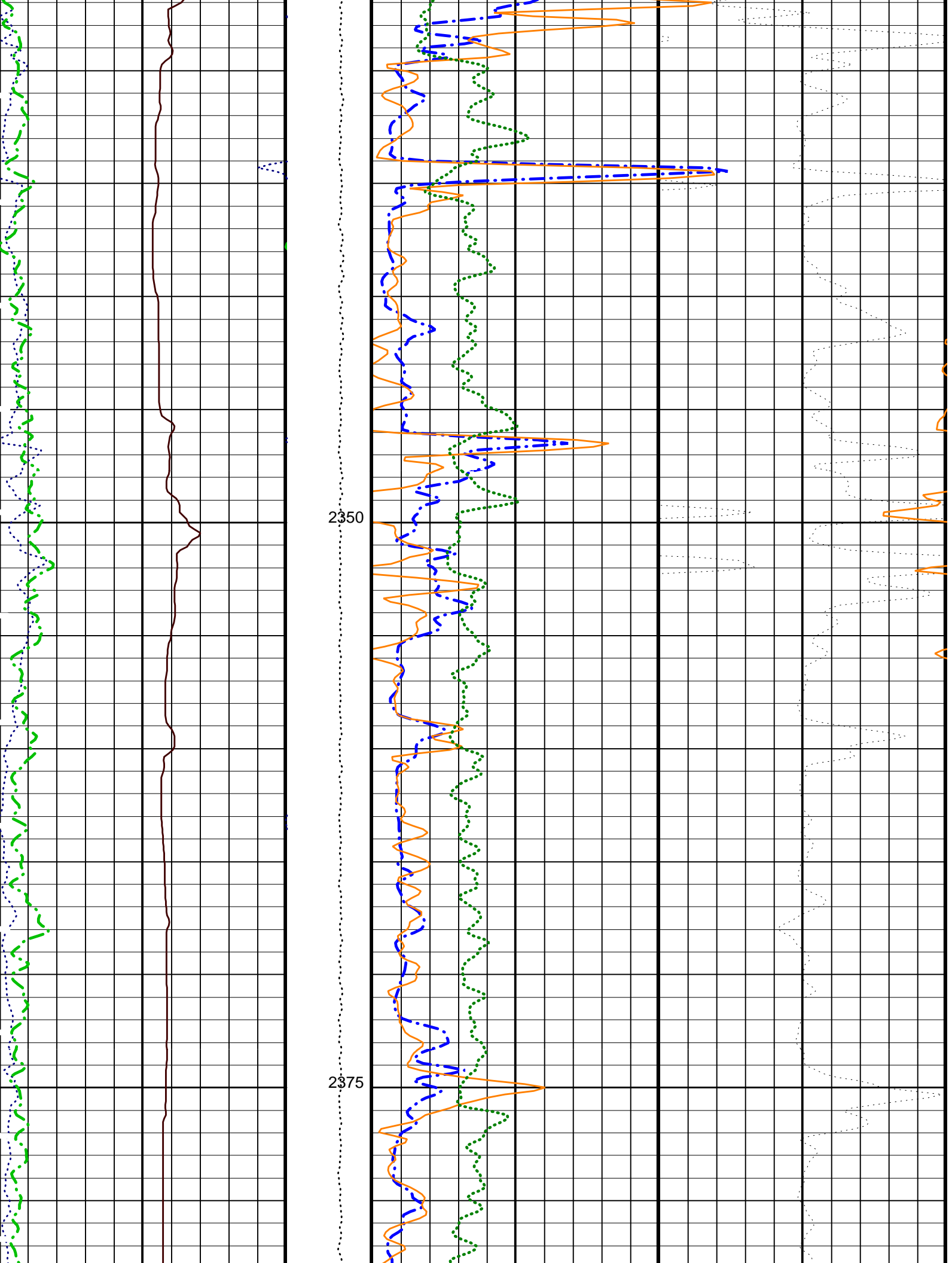




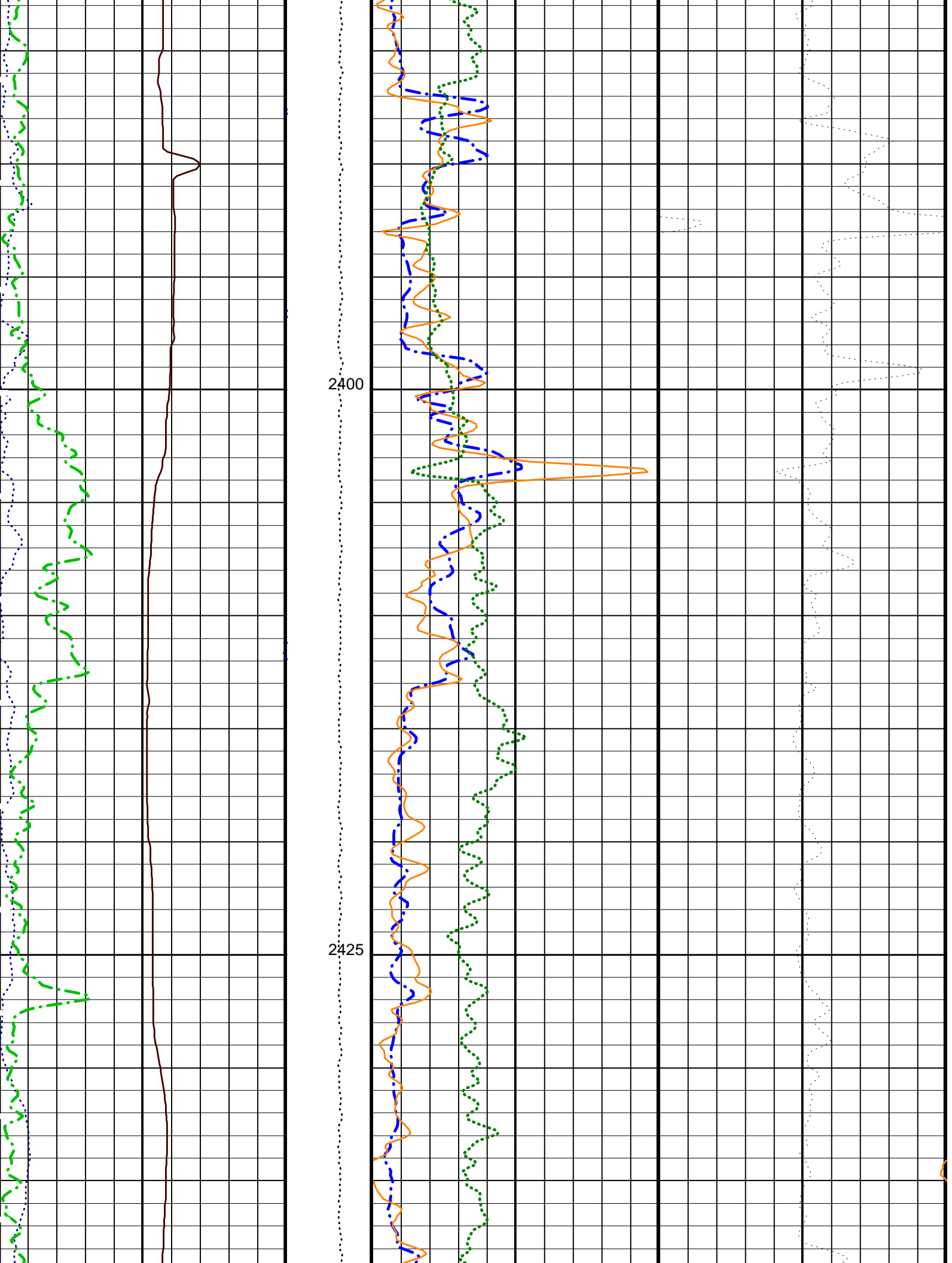


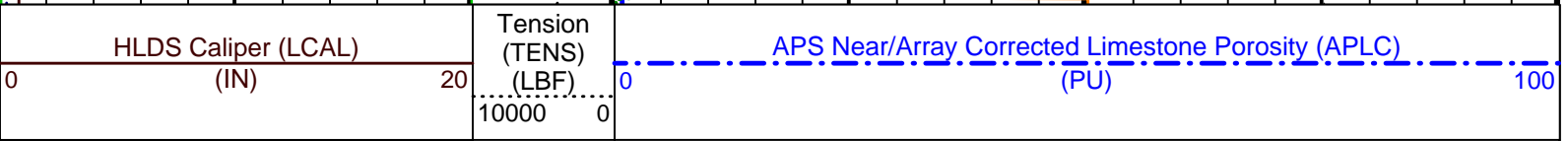
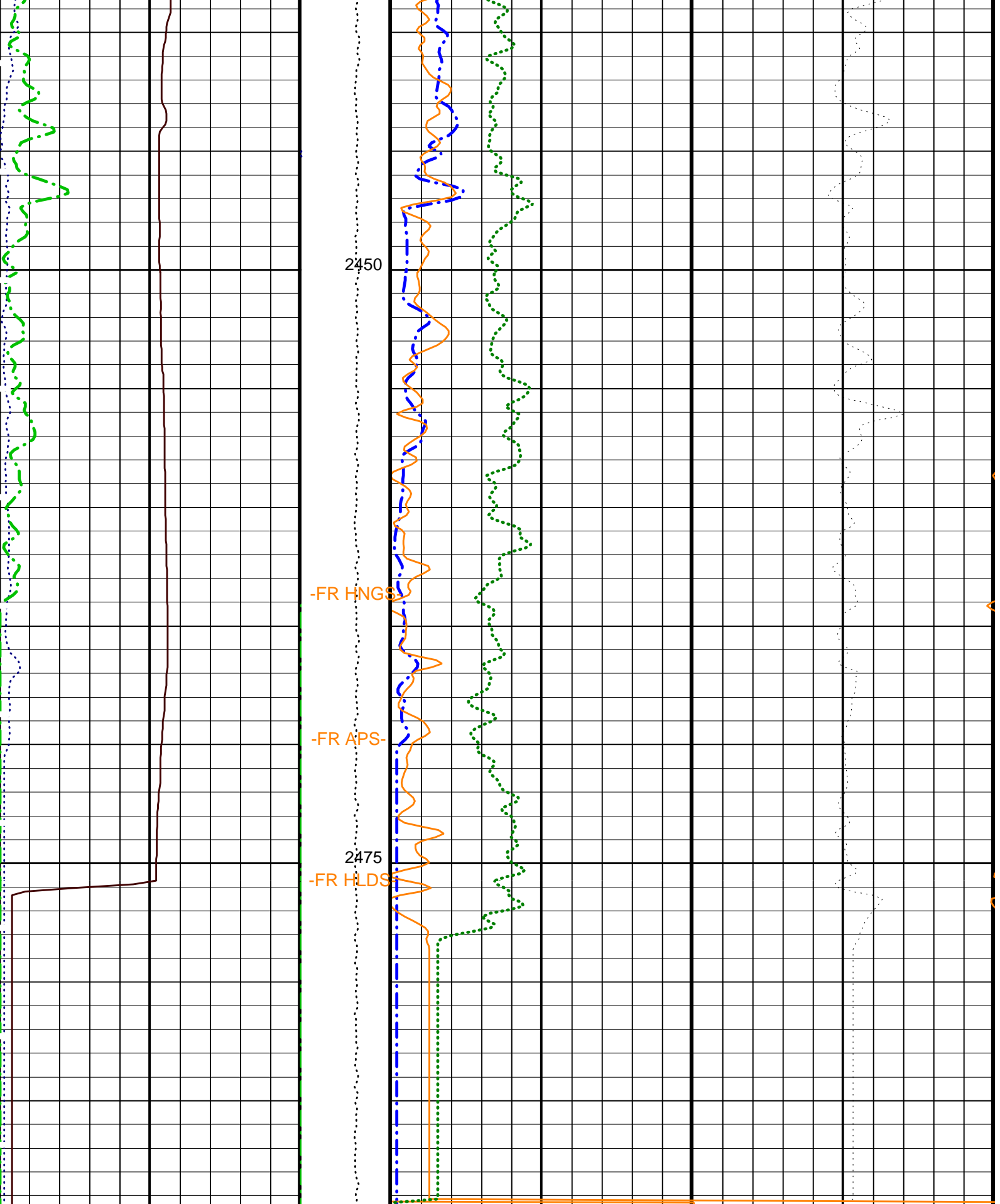












0	(IN)	5	3	(G/C3)	1
HNGS Spectroscopy Gamma Ray (HSGR) (GAPI)			HLDS Long Spaced Photoelectric Effect (PEFL) (---)		HLDS Bulk Density Correction (DRH) (G/C3)
0		15	0		10 -0.25 0.25

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
DLT-E: DUAL LATEROLOG - E			
DPRF	DEEP REFERENCE POWER	550	NW
KFAC	K FACTOR	SOND	
LLOO	LATEROLOG LOOP	BOTH	
PLRM	POWER LOOP REFERENCE MODE	DEEP	
SPRF	SHALLOW REFERENCE POWER	550	NW
GPIT-A/B: General Purpose Inclinometer			
ACPP	Accelerometer PROM Presence	PRESENT	
AFMO	Accelerometer Filtering Mode	MOVING_AVERAGE	
ART	Accelerometer Reference Temperature	20	DEGC
GLM	GPIT Logging Mode	DIPM	
ICMO	Inclinometry Computation Mode	AUTOMATIC_SELECTION	
MAPP	Magnetometer PROM Presence	PRESENT	
MDEC	Magnetic Field Declination	-15.7	DEG
MRTE	Magneto Reference Temperature	19	DEGC
TEMS	GPIT Temperature Sensor Used	BOTH	
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-C: Accelerator-Porosity Tool			
	APS Software Version	5	
AASD	APS Thermal and Array Detectors High Voltage Setting	1971.68	V
AFSD	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2078.39	V
AHCS	APS Holesize Correction Source	BS	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1740.46	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature-Pressure-Salinity Correction Switch	ON	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	20	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	0.98841	
NFRC	APS Near/Far Calibration Ratio	0.956625	
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)	20	DEGC
CSD1	Inner Casing Outer Diameter	0	IN

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	
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	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0	
BSP: Bridle SP			
SPNV	SP Next Value	0	MV
System and Miscellaneous			
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	35000.00	PPM
CSIZ	Current Casing Size	0.000	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.07	G/C3
MST	Mud Sample Temperature	23.00	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	2493.4	M
TDD	Total Depth - Driller	2493.40	M
TDL	Total Depth - Logger	2493.40	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: APS\_HLDS\_PORO    Vertical Scale: 1:200    Graphics File Created: 31-Jan-2005 08:53

**OP System Version: 12C0-301**  
MCM

DLT-E	12C0-301	GPIT-A/B	12C0-301
DTA-A	12C0-301	HLDS	12C0-301
NPLC-B	12C0-301	APS-C	12C0-301
HNGS-BA	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

**Output DLIS Files**

DEFAULT	DLL_LDL_APS_NGS_011LUP	FN:13	PRODUCER	31-Jan-2005 08:52
REDUCED	DLL_LDL_APS_NGS_011LUP	FN:14	PRODUCER	31-Jan-2005 08:52



**REPEAT SECTION**

MAXIS Field Log

**Output DLIS Files**

DEFAULT	DLL_LDL_APS_NGS_012LUP	FN:15	PRODUCER	31-Jan-2005 11:57	2491.7 M	2335.8 M
REDUCED	DLL_LDL_APS_NGS_012LUP	FN:16	PRODUCER	31-Jan-2005 11:57	2491.7 M	2335.8 M

# OP System Version: 12C0-301

MCM

DLT-E	12C0-301	GPIT-A/B	12C0-301
DTA-A	12C0-301	HLDS	12C0-301
NPLC-B	12C0-301	APS-C	12C0-301
HNGS-BA	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

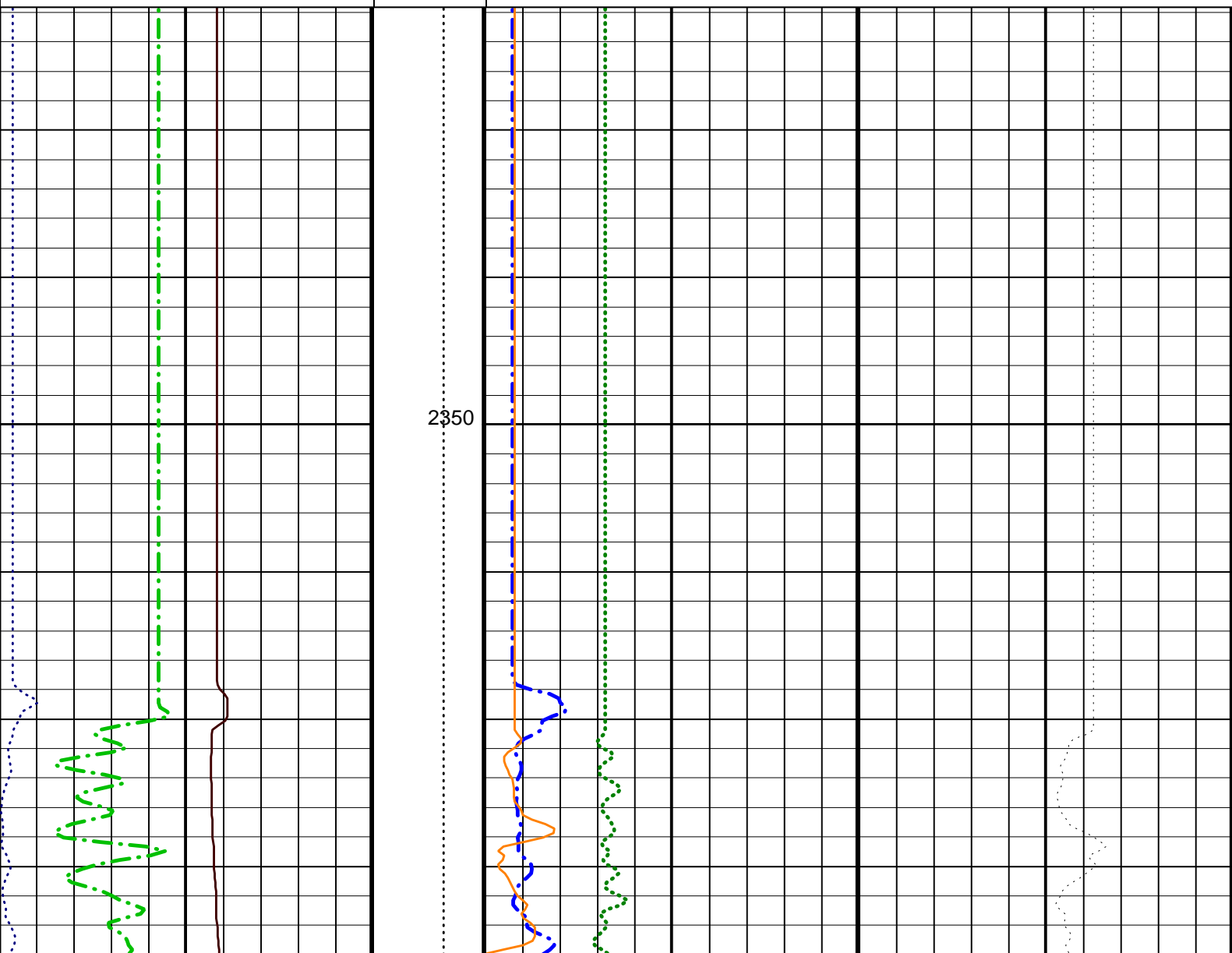
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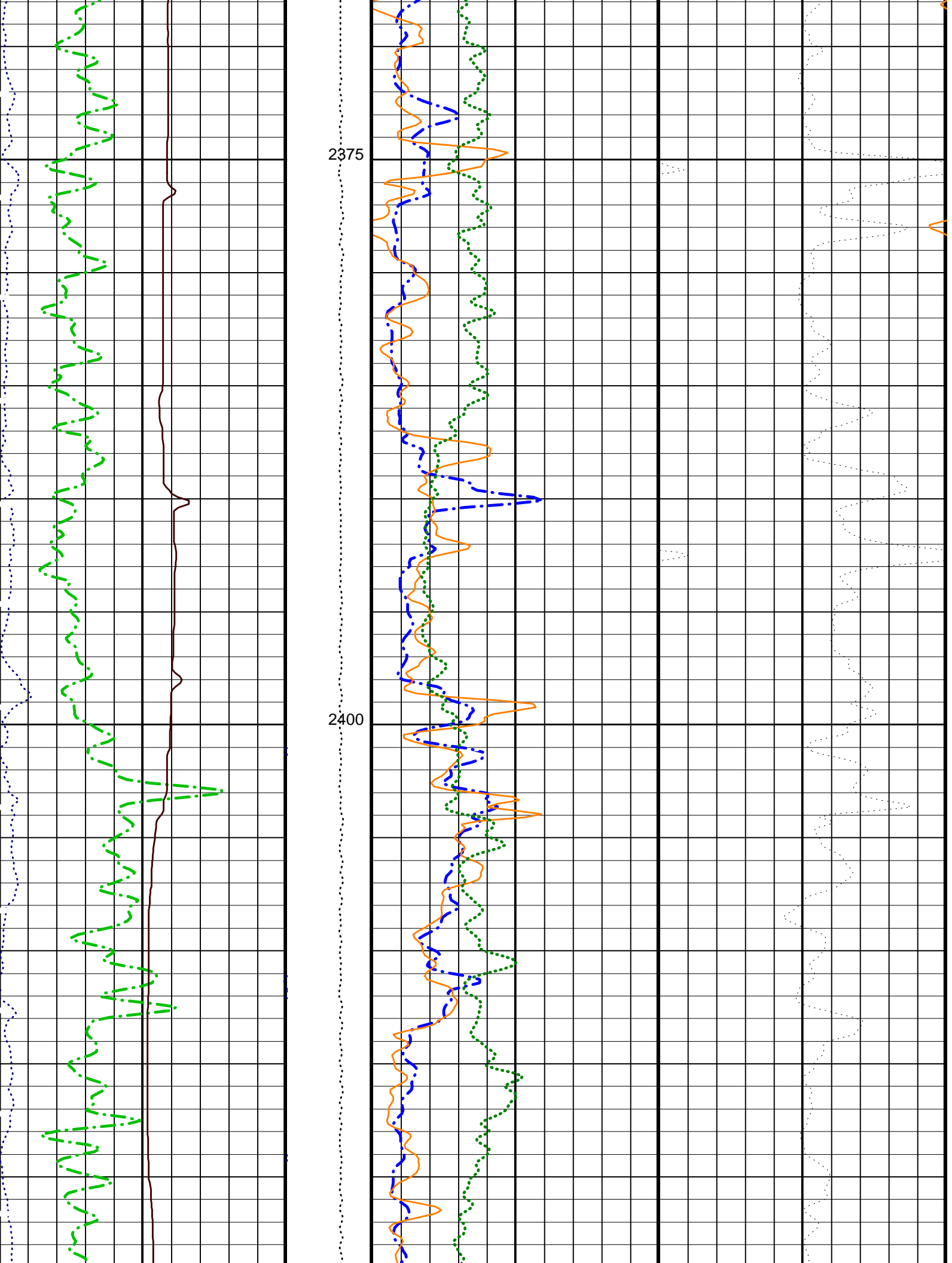
DLIS Name	New Value	Previous Value	Depth & Time
LLOO	OFF BOTH	BOTH OFF	2491.0 12:00:42 2489.7 12:01:01

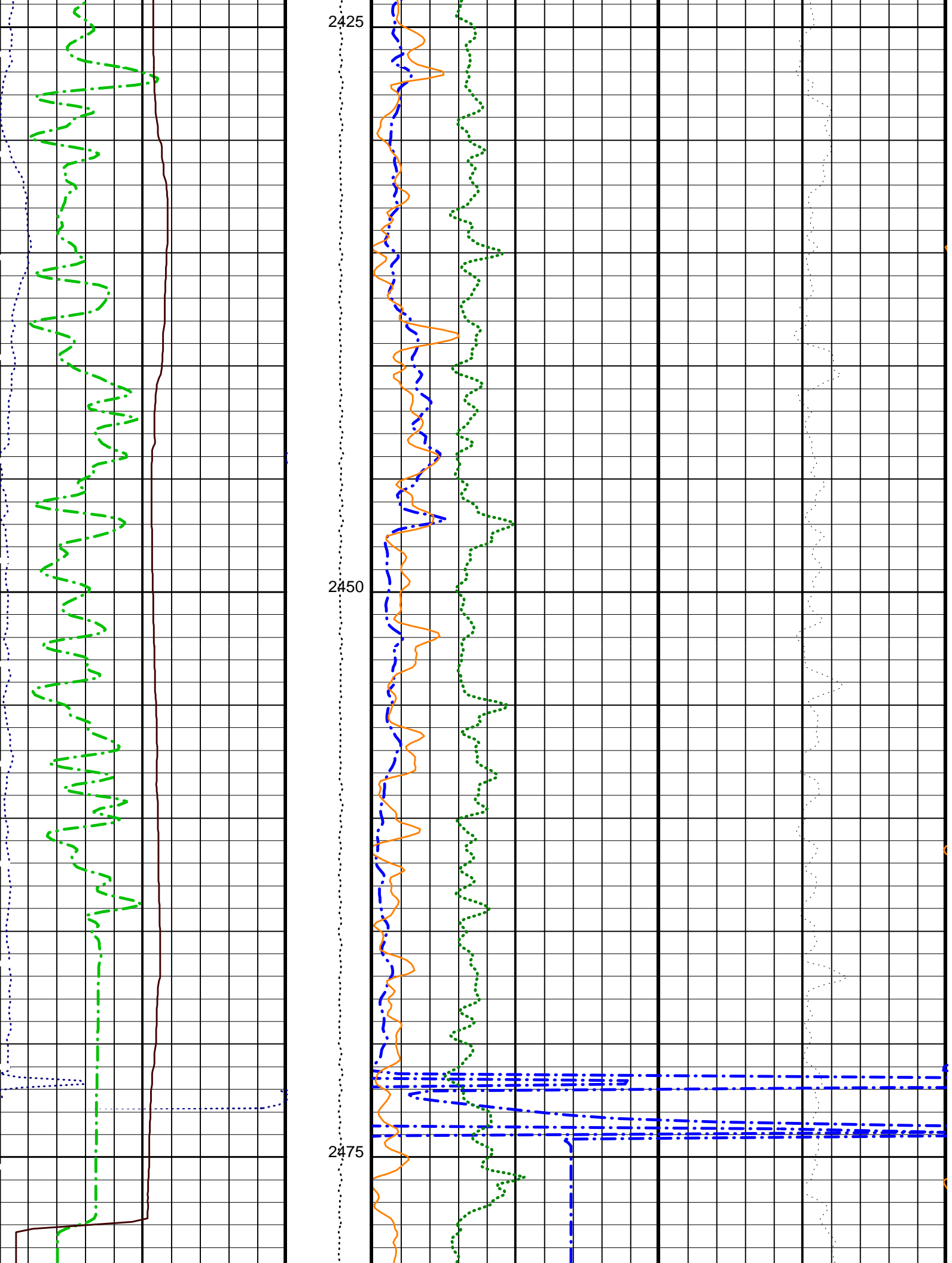
### PIP SUMMARY

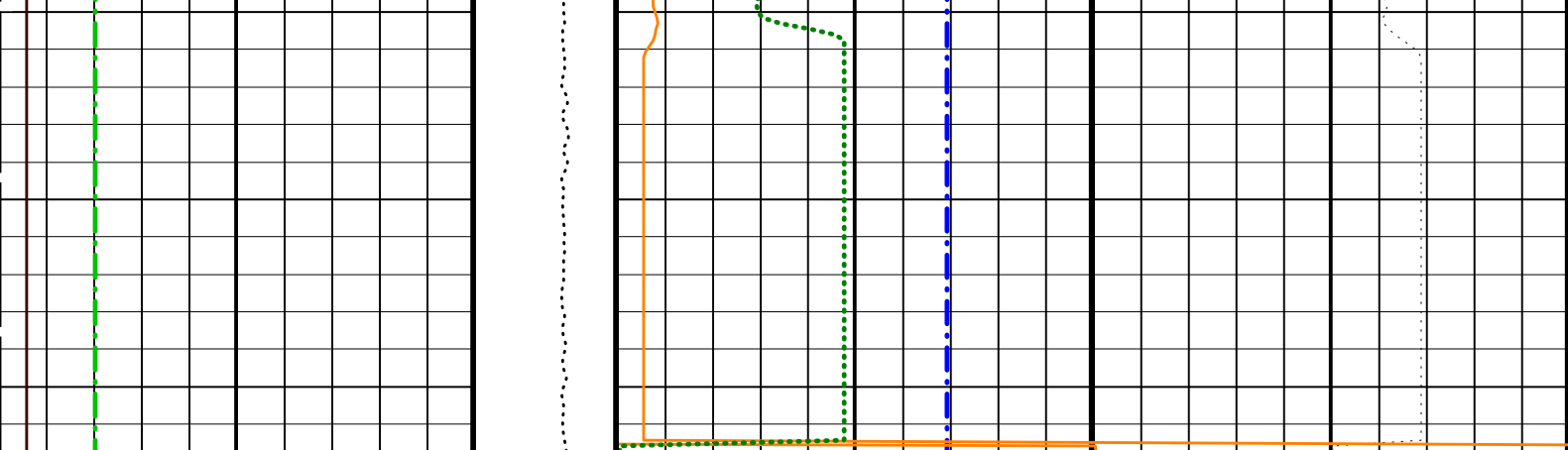
Time Mark Every 60 S

<p style="color: green; font-weight: bold;">HNGS Spectroscopy Gamma Ray</p> <p style="text-align: center;">(HSGR) ----- (GAPI) 0 15</p>	<p style="color: green; font-weight: bold;">HLDS Long Spaced Photoelectric Effect</p> <p style="text-align: center;">(PEFL) ----- (---) 0 10</p>	<p style="color: gray; font-weight: bold;">HLDS Bulk Density Correction (DRH)</p> <p style="text-align: center;">----- (G/C3) -0.25 0.25</p>
<p style="color: blue; font-weight: bold;">APS Effective Standoff in Limestone</p> <p style="text-align: center;">(STOF) ----- (IN) 0 5</p>	<p style="color: orange; font-weight: bold;">HLDS Bulk Density (RHOM)</p> <p style="text-align: center;">----- (G/C3) 3 1</p>	
<p style="font-weight: bold;">HLDS Caliper (LCAL)</p> <p style="text-align: center;">----- (IN) 0 20</p>	<p style="font-weight: bold;">Tension (TENS)</p> <p style="text-align: center;">(LBF) 0 10000</p>	<p style="color: blue; font-weight: bold;">APS Near/Array Corrected Limestone Porosity (APLC)</p> <p style="text-align: center;">----- (PU) 0 100</p>









HLDS Caliper (LCAL) (IN)	0 20	Tension (TENS) (LBF)	0 10000	APS Near/Array Corrected Limestone Porosity (APLC) (PU)	0 100
APS Effective Standoff in Limestone (STOF) (IN)	0 5			HLDS Bulk Density (RHOM) (G/C3)	3 1
HNGS Spectroscopy Gamma Ray (HSGR) (GAPI)	0 15			HLDS Long Spaced Photoelectric Effect (PEFL) (---)	0 10
				HLDS Bulk Density Correction (DRH) (G/C3)	-0.25 0.25

PIP SUMMARY

Time Mark Every 60 S

### Parameters

DLIS Name	Description	Value	
DLT-E: DUAL LATEROLOG - E			
DPRF	DEEP REFERENCE POWER	550	NW
KFAC	K FACTOR	SOND	
LLOO	LATEROLOG LOOP	BOTH	
PLRM	POWER LOOP REFERENCE MODE	DEEP	
SPRF	SHALLOW REFERENCE POWER	550	NW
GPIT-A/B: General Purpose Inclinometer			
ACPP	Accelerometer PROM Presence	PRESENT	
AFMO	Accelerometer Filtering Mode	MOVING_AVERAGE	
ART	Accelerometer Reference Temperature	20	DEGC
GLM	GPIT Logging Mode	DIPM	
ICMO	Inclinometry Computation Mode	AUTOMATIC_SELECTION	
MAPP	Magnetometer PROM Presence	PRESENT	
MDEC	Magnetic Field Declination	-15.7	DEG
MRTE	Magneto Reference Temperature	19	DEGC
TEMS	GPIT Temperature Sensor Used	BOTH	
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-C: Accelerator-Porosity Tool			
	APS Software Version	5	
AASD	APS Thermal and Array Detectors High Voltage Setting	1971.68	V
ADSD	APS Array Detectors Data Source Switch	Both	
AEVD	APS Ear Detector High Voltage Setting	2078.39	V



ATSD	APS Near Detector High Voltage Setting	2078.39	V
AHCS	APS Holesize Correction Source	BS	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSD	APS Near Detector High Voltage Setting	1740.46	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature-Pressure-Salinity Correction Switch	ON	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	20	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	0.98841	
NFRC	APS Near/Far Calibration Ratio	0.956625	
SHT	Surface Hole Temperature	20	DEGC
HNCS-BA: Hostile Natural Gamma Ray Sonde			
BAR1	HNCS Detector 1 Barite Constant	1	
BAR2	HNCS Detector 2 Barite Constant	1	
BHK	HNCS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	20	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	HNCS 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	HNCS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNCS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNCS Borehole Potassium Running Average	-0.0036242	
HALF	HNCS Alpha Filter Length	60	IN
HCRB	HNCS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNCS Processing Enable	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNCS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNCS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNCS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNCS Detector 1 Variable Barite Factor Running Average	2.21066	
VBA2	HNCS Detector 2 Variable Barite Factor Running Average	1.10497	
BSP: Bridle SP			
SPNV	SP Next Value	0	MV
System and Miscellaneous			
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	35000.00	PPM
CSIZ	Current Casing Size	0.000	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.07	G/C3
MST	Mud Sample Temperature	23.00	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	2493.4	M
TDD	Total Depth - Driller	2493.40	M
TDL	Total Depth - Logger	2493.40	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: APS\_HLDS\_PORO Vertical Scale: 1:200 Graphics File Created: 31-Jan-2005 11:57

## OP System Version: 12C0-301

MCM

DLT-E	12C0-301	GPIT-A/B	12C0-301
DTA-A	12C0-301	HLDS	12C0-301
NPLC-B	12C0-301	APS-C	12C0-301
HNCS-BA	12C0-301	DTC-H	12C0-301
BSP	12C0-301		

## Output DLIS Files

DEFAULT DLL\_LDL\_APS\_NGS\_012LUP FN:15 PRODUCER 31-Jan-2005 11:57



# CALIBRATIONS

## MAXIS Field Log

### Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
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#### DUAL LATEROLOG - E Wellsite Calibration - DLT ELECTRONICS CALIBRATION Laterolog Measurement

Before: 31-Jan-2005 8:20 After: 31-Jan-2005 12:31

MEASURED LLD	31.62	N/A	31.98	31.92	-0.06243	0.9000	OHMM
MEASURED LLS	31.62	N/A	31.23	31.16	-0.06590	0.9000	OHMM

#### General Purpose Inclinator Wellsite Calibration - CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY

Before: 31-Jan-2005 5:39

TEMPERATURE REFERENCE :	N/A	N/A	20	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	92	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	10	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	448	N/A	N/A	N/A	

#### General Purpose Inclinator Wellsite Calibration - CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY

Before: 31-Jan-2005 5:39

TEMPERATURE REFERENCE :	N/A	N/A	19	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	99	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	12	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	428	N/A	N/A	N/A	

#### Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement

Master: 18-Jan-2005 10:17 Before: 28-Jan-2005 16:13

SS Cs Resolution Bkg	9.000	8.392	8.384	N/A	N/A	1.800	%
LS Cs Resolution Bkg	9.000	8.031	8.019	N/A	N/A	1.800	%
LSW1 Background	100.0	82.46	81.89	N/A	N/A	3.000	CPS
LSW2 Background	100.0	74.65	74.90	N/A	N/A	3.000	CPS
LSW3 Background	200.0	168.0	166.9	N/A	N/A	6.000	CPS
LSW4 Background	250.0	211.4	207.8	N/A	N/A	7.500	CPS
LSW5 Background	600.0	472.3	473.9	N/A	N/A	18.00	CPS
SSW1 Background	100.0	79.79	79.97	N/A	N/A	3.000	CPS
SSW2 Background	200.0	142.9	140.1	N/A	N/A	6.000	CPS
SSW3 Background	500.0	377.8	376.3	N/A	N/A	15.00	CPS
SSW4 Background	270.0	202.0	201.5	N/A	N/A	8.100	CPS
SSW5 Background	200.0	147.1	146.8	N/A	N/A	6.000	CPS

#### Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement

Master: 18-Jan-2005 11:11

LSW1 Aluminum	600.0	548.6	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	836.5	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	1031	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	521.0	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	484.2	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2443	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	7110	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	10290	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	4376	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	601.1	N/A	N/A	N/A	N/A	CPS

#### Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement

Master: 18-Jan-2005 10:52

LSW1 Iron	400.0	384.7	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	686.2	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	913.5	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	468.3	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	445.5	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1801	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5860	N/A	N/A	N/A	N/A	CPS

SSW2 Iron	6800	5868	N/A	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	9265	N/A	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3942	N/A	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	520.1	N/A	N/A	N/A	N/A	N/A	CPS
Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration								
Before: 28-Jan-2005 16:17								
HLDS Caliper Small Ring	8.000	N/A	10.65	N/A	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	12.00	N/A	14.72	N/A	N/A	N/A	N/A	IN
Accelerator-Porosity Tool Wellsite Calibration - Detector Background								
Master: 19-Dec-2004 17:47 Before: 28-Jan-2005 16:14 After: 31-Jan-2005 13:39								
Near Det Bkg Cntrate	30.00	24.76	26.15	24.31	-1.836	N/A	N/A	CPS
Far Det Bkg Cntrate	30.00	26.62	25.11	25.91	0.7930	N/A	N/A	CPS
Array-1 Det Bkg Cntrate	30.00	26.08	25.48	25.90	0.4258	N/A	N/A	CPS
Array-2 Det Bkg Cntrate	30.00	26.48	25.39	28.16	2.768	N/A	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	25.45	25.75	26.88	1.127	N/A	N/A	CPS
Accelerator-Porosity Tool Wellsite Calibration - Calibration Ratios								
Master: 19-Dec-2004 17:47								
Near/Far Calibration Ratio	0.9250	0.9566	N/A	N/A	N/A	N/A	N/A	
Near/Array Calibration Ratio	1.030	0.9884	N/A	N/A	N/A	N/A	N/A	
Near/Array Cal Ratio Up/Down	1.000	1.009	N/A	N/A	N/A	N/A	N/A	
Accelerator-Porosity Tool Wellsite Calibration - Tank Check								
Master: 19-Dec-2004 17:47								
Array-1 Standoff Porosity	11.75	11.79	N/A	N/A	N/A	N/A	N/A	PU
Array-2 Standoff Porosity	11.75	11.76	N/A	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	5.823	N/A	N/A	N/A	N/A	N/A	US
Array-1 SDT Ratio Up/Down	1.000	0.9860	N/A	N/A	N/A	N/A	N/A	
Array-2 SDT Ratio Up/Down	1.000	0.9960	N/A	N/A	N/A	N/A	N/A	
Sigma Formation	27.50	27.47	N/A	N/A	N/A	N/A	N/A	CU
Accelerator-Porosity Tool Wellsite Calibration - CCR7 signal boxes								
Master: 19-Dec-2004 17:47								
Near Detector Plateau Setting	1650	1740	N/A	N/A	N/A	N/A	N/A	V
Far Detector Plateau Setting	2000	2078	N/A	N/A	N/A	N/A	N/A	V
Array Detector Plateau Setting	2000	1972	N/A	N/A	N/A	N/A	N/A	V
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check								
Master: 28-Jan-2005 16:09 Before: 28-Jan-2005 16:15								
Na 511 Peak Loc	40.00	40.45	40.48	N/A	N/A	1.000		
Na 511 Peak Res	15.50	18.38	18.14	N/A	N/A	2.000		%
High Voltage	1150	1253	1254	N/A	N/A	N/A		V
Na 1785 Peak Loc	142.6	144.8	145.1	N/A	N/A	7.000		
Na 1785 Peak Res	8.500	10.31	10.95	N/A	N/A	2.000		%
Temperature	15.50	26.30	26.34	N/A	N/A	N/A		DEGC
Na Count Rate	45.00	46.37	45.19	N/A	N/A	8.000		CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check								
Master: 28-Jan-2005 16:09 Before: 28-Jan-2005 16:15								
Na 511 Peak Loc	40.00	40.54	40.55	N/A	N/A	1.000		
Na 511 Peak Res	15.50	18.78	18.40	N/A	N/A	2.000		%
High Voltage	1150	1274	1274	N/A	N/A	N/A		V
Na 1785 Peak Loc	142.6	145.2	145.3	N/A	N/A	7.000		
Na 1785 Peak Res	8.500	10.55	10.38	N/A	N/A	2.000		%
Temperature	15.50	25.45	25.46	N/A	N/A	N/A		DEGC
Na Count Rate	45.00	46.31	45.33	N/A	N/A	8.000		CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2								
Master: 28-Jan-2005 16:09 Before: 28-Jan-2005 16:15								
Coincidence Count Rate Ratio	1.000	1.000	0.9959	N/A	N/A	0.05000		
Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration								
Master: 28-Jan-2005 16:03								
Na 511 Peak Set Point	40.00	41.00	--	--	--	--		
Th Peak Loc	209.6	208.2	--	--	--	--		
Th Peak Res	7.000	8.691	--	--	--	--		%
Background Count Rate	142.5	21.41	--	--	--	--		CPS
Gain Ratio	1.000	0.9790	--	--	--	--		
Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration								
Master: 28-Jan-2005 16:03								
Na 511 Peak Set Point	40.00	41.00	--	--	--	--		
Th Peak Loc	209.6	207.6	--	--	--	--		
Th Peak Res	7.000	8.966	--	--	--	--		%
Background Count Rate	142.5	22.37	--	--	--	--		CPS
Gain Ratio	1.000	0.9745	--	--	--	--		

Accelerator-Porosity Tool - Detector Plateau Settings :

Near Detector Plateau Setting 1740 V  
 Far Detector Plateau Setting 2078 V  
 Array Detector Plateau Setting 1972 V

DUAL LATEROLOG - E / Equipment Identification

Primary Equipment:

Auxiliary Equipment:

Dual Laterolog Electrode	DLE - E
Dual Laterolog Sonde	DLS - F
Dual Laterolog Housing	DLH - CB
Dual Laterolog Cartridge	DLC - D
Laterolog Control Module	LCM - AA

DUAL LATEROLOG - E Wellsite Calibration					
DLT ELECTRONICS CALIBRATION Laterolog Measurement					
Phase	MEASURED LLD OHMM	Value	Phase	MEASURED LLS OHMM	Value
Before		31.98	Before		31.23
After		31.92	After		31.16
	29.00 (Minimum) 31.62 (Nominal) 40.00 (Maximum)			29.00 (Minimum) 31.62 (Nominal) 40.00 (Maximum)	
Before: 31-Jan-2005 8:20			After: 31-Jan-2005 12:31		

DUAL LATEROLOG - E Wellsite Calibration								
DLT Electronics Calibration Plus Measurement								
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV	Value	Phase	Groningen Voltage Plus MV	Value
Before		341.2	Before		10.91	Before		11.39
After		341.5	After		10.90	After		11.38
	317.5 (Minimum) 342.5 (Nominal) 367.5 (Maximum)			9.830 (Minimum) 10.83 (Nominal) 11.83 (Maximum)			9.830 (Minimum) 10.83 (Nominal) 11.83 (Maximum)	
Phase	Shallow Current Plus UA	Value	Phase	Shallow Voltage Plus MV	Value			
Before		344.1	Before		10.74			
After		344.2	After		10.73			
	317.5 (Minimum) 342.5 (Nominal) 367.5 (Maximum)			9.830 (Minimum) 10.83 (Nominal) 11.83 (Maximum)				
Before: 31-Jan-2005 8:20			After: 31-Jan-2005 12:31					

DUAL LATEROLOG - E Wellsite Calibration								
DLT Electronics Calibration Zero Measurement								
Phase	Deep Current Zero UA	Value	Phase	Deep Voltage Zero MV	Value	Phase	Groningen Voltage Zero MV	Value
Before		-0.1174	Before		-0.01155	Before		-0.006245
After		-0.1072	After		-0.01155	After		-0.007697
	-1.000 (Minimum) 0 (Nominal) 1.000 (Maximum)			-0.1000 (Minimum) 0 (Nominal) 0.1000 (Maximum)			-0.1000 (Minimum) 0 (Nominal) 0.1000 (Maximum)	
Phase	Shallow Current Zero UA	Value	Phase	Shallow Voltage Zero MV	Value			
Before		-0.1288	Before		-0.008029			
After		-0.1285	After		-0.007672			
	-1.000 (Minimum) 0 (Nominal) 1.000 (Maximum)			-0.1000 (Minimum) 0 (Nominal) 0.1000 (Maximum)				
Before: 31-Jan-2005 8:20			After: 31-Jan-2005 12:31					

General Purpose Inclinerometer / Equipment Identification

Primary Equipment:

GPIT Cartridge - A GPIC - A

Auxiliary Equipment:

GPIT Housing GPIH - A

**Hostile Litho-Density Sonde / Equipment Identification**

**Primary Equipment:**

Hostile Litho Density Sonde	HLDS - D	35
Hostile Litho Density High Voltage	HLDV - D	35
Gamma Source Radioactive	GSR - Z	2326

**Auxiliary Equipment:**

Hostile Litho Density Pad	HLDP - C	35
Hostile Litho Density High Voltage Housi	HEH - H	35

Hostile Litho-Density Sonde Wellsite Calibration									
Background Measurement									
Phase	SS Cs Resolution Bkg %	Value	Phase	LS Cs Resolution Bkg %	Value	Phase	LSW1 Background CPS	Value	
Master		8.392	Master		8.031	Master		82.46	
Before		8.384	Before		8.019	Before		81.89	
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)			7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)			55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)		
Phase	LSW2 Background CPS	Value	Phase	LSW3 Background CPS	Value	Phase	LSW4 Background CPS	Value	
Master		74.65	Master		168.0	Master		211.4	
Before		74.90	Before		166.9	Before		207.8	
	50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)			110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)			140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)		
Phase	LSW5 Background CPS	Value	Phase	SSW1 Background CPS	Value	Phase	SSW2 Background CPS	Value	
Master		472.3	Master		79.79	Master		142.9	
Before		473.9	Before		79.97	Before		140.1	
	330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)			55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)			100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)		
Phase	SSW3 Background CPS	Value	Phase	SSW4 Background CPS	Value	Phase	SSW5 Background CPS	Value	
Master		377.8	Master		202.0	Master		147.1	
Before		376.3	Before		201.5	Before		146.8	
	280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)			150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)			110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)		
Master: 18-Jan-2005 10:17					Before: 28-Jan-2005 16:13				

Hostile Litho-Density Sonde Master Calibration									
Detector Background Measurement									
Phase	LSW1 Background CPS	Value	Phase	LSW2 Background CPS	Value	Phase	LSW3 Background CPS	Value	
Master		82.46	Master		74.65	Master		168.0	
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)			50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)			110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)		
Phase	LSW4 Background CPS	Value	Phase	LSW5 Background CPS	Value	Phase	LS Cs Resolution Bkg %	Value	
Master		211.4	Master		472.3	Master		8.031	
	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		79.79	Master		142.9	Master		377.8	
	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		202.0	Master		147.1	Master		8.392	
	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: 18-Jan-2005 10:17									

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		548.6	Master		836.5	Master		1031	
	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		751.6	Master		1016.6	Master		211.4	
	420.0 (Minimum) 600.0 (Nominal) 700.0 (Maximum)			650.0 (Minimum) 900.0 (Nominal) 1050 (Maximum)			420.0 (Minimum) 600.0 (Nominal) 700.0 (Maximum)		

Master		521.0	Master		484.2	Master		2443			
	410.0 (Minimum)	580.0 (Nominal)	670.0 (Maximum)		410.0 (Minimum)	570.0 (Nominal)	660.0 (Maximum)				
Phase	SSW2 Aluminum CPS		Value	Phase	SSW3 Aluminum CPS		Value	Phase	SSW4 Aluminum CPS		Value
Master			7110	Master			10290	Master			4376
	5800 (Minimum)	8000 (Nominal)	9300 (Maximum)		8300 (Minimum)	11600 (Nominal)	13500 (Maximum)		3500 (Minimum)	5000 (Nominal)	5800 (Maximum)
Phase	SSW5 Aluminum CPS		Value								
Master			601.1								
	470.0 (Minimum)	660.0 (Nominal)	770.0 (Maximum)								

Master: 18-Jan-2005 11:11

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			384.7	Master			686.2	Master			913.5
	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			468.3	Master			445.5	Master			1801
	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			5868	Master			9265	Master			3942
	4900 (Minimum)	6800 (Nominal)	7900 (Maximum)		7800 (Minimum)	10800 (Nominal)	12600 (Maximum)		3300 (Minimum)	4600 (Nominal)	5400 (Maximum)
Phase	SSW5 Iron CPS		Value								
Master			520.1								
	420.0 (Minimum)	580.0 (Nominal)	680.0 (Maximum)								

Master: 18-Jan-2005 10:52

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			1.025	Master			2.067	Master			0.5457
	0.9000 (Minimum)	1.000 (Nominal)	1.100 (Maximum)		1.900 (Minimum)	2.100 (Nominal)	2.300 (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			0.4909	Master			0.9881	Master			0.9884
	0.4500 (Minimum)	0.5500 (Nominal)	0.6500 (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			1.001	Master			1.001				
	0.9900 (Minimum)	0.9940 (Nominal)	1.015 (Maximum)		0.9850 (Minimum)	0.9940 (Nominal)	1.010 (Maximum)				

Master: 18-Jan-2005 10:43

### Nuclear Porosity Lithology Cartridge - B / Equipment Identification

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

### Accelerator-Porosity Tool / Equipment Identification

Primary Equipment:	Accelerator-Porosity Sonde	APS - C	202
	APS Minitron	MNTR - F	5124
Auxiliary Equipment:	Accelerator-Porosity Housing	APH - AC	104

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			24.76	Master			26.62	Master			26.08
Before			26.15	Before			25.11	Before			25.48
After			24.31	After			25.91	After			25.90
	1.000 (Minimum)	30.00 (Nominal)	50.00 (Maximum)		1.000 (Minimum)	30.00 (Nominal)	50.00 (Maximum)		1.000 (Minimum)	30.00 (Nominal)	50.00 (Maximum)
Phase	Array-2 Det Bkg Cntrate CPS		Value	Phase	Array Therm Det Bkg Cntrate CPS		Value				
Master			26.48	Master			25.45				
Before			25.39	Before			25.75				
After			28.16	After			26.88				
	1.000 (Minimum)	30.00 (Nominal)	50.00 (Maximum)		1.000 (Minimum)	30.00 (Nominal)	50.00 (Maximum)				
Master: 19-Dec-2004 17:47				Before: 28-Jan-2005 16:14				After: 31-Jan-2005 13:39			

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			0.9566	Master			0.9884	Master			1.009
	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: 19-Dec-2004 17:47											

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			11.79	Master			11.76	Master			5.823
	9.900 (Minimum)	11.75 (Nominal)	13.60 (Maximum)		9.900 (Minimum)	11.75 (Nominal)	13.60 (Maximum)		5.500 (Minimum)	6.000 (Nominal)	6.250 (Maximum)
Phase	Array-1 SDT Ratio Up/Down		Value	Phase	Array-2 SDT Ratio Up/Down		Value	Phase	Sigma Formation CU		Value
Master			0.9860	Master			0.9960	Master			27.47
	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: 19-Dec-2004 17:47											

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			0.9566	Master			0.9884	Master			1.009
	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: 19-Dec-2004 17:47											

Accelerator-Porosity Tool Master 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			11.79	Master			11.76	Master			5.823
	9.900 (Minimum)	11.75 (Nominal)	13.60 (Maximum)		9.900 (Minimum)	11.75 (Nominal)	13.60 (Maximum)		5.500 (Minimum)	6.000 (Nominal)	6.250 (Maximum)
Phase	Array-1 SDT Ratio Up/Down		Value	Phase	Array-2 SDT Ratio Up/Down		Value	Phase	Sigma Formation CU		Value
Master			0.9860	Master			0.9960	Master			27.47
	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: 19-Dec-2004 17:47											

Primary Equipment:  
 HNGS Sonde  
 Auxiliary Equipment:  
 HNGS Sonde Housing  
 Gamma Source Radioactive

HNGS - BA 77  
 HNSH - BA 79  
 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			40.45	Master			18.38	Master			1253	
Before			40.48	Before			18.14	Before			1254	
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			144.8	Master			10.31	Master			26.30	
Before			145.1	Before			10.95	Before			26.34	
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			46.37									
Before			45.19									
10.00 (Minimum)			45.00 (Nominal)	100.0 (Maximum)								
Master: 28-Jan-2005 16:09						Before: 28-Jan-2005 16:15						

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			18.78	Master			1274	
Before			40.55	Before			18.40	Before			1274	
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			145.2	Master			10.55	Master			25.45	
Before			145.3	Before			10.38	Before			25.46	
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			46.31									
Before			45.33									
10.00 (Minimum)			45.00 (Nominal)	100.0 (Maximum)								
Master: 28-Jan-2005 16:09						Before: 28-Jan-2005 16:15						

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		1.000
Before		0.9959
0.9500 (Minimum)		1.000 (Nominal)
		1.050 (Maximum)
Master: 28-Jan-2005 16:09		
Before: 28-Jan-2005 16:15		



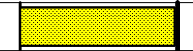


Hostile Natural Gamma Ray Sonde Master Calibration												
Detector 1 Calibration												
Phase	Na 511 Peak Set Point		Value	Phase	Th Peak Loc		Value	Phase	Th Peak Res %		Value	
Master			41.00	Master			208.2	Master			8.691	
38.00 (Minimum)			40.00 (Nominal)	42.00 (Maximum)			201.0 (Minimum)			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				Master								
Before				Before								



Master		21.41	Master		1.000	0.9790
	20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)	0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)

Master: 28-Jan-2005 16:03

**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		207.6	Master		8.966	
	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		22.37	Master		0.9745				
	20.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)	0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)			

Master: 28-Jan-2005 16:03

Company: Lamont Doherty



Well: IODP EXP 305 Site U1309D

Field: Atlantis Massif

Rig: Joides Resolution

Ocean: Atlantic Ocean

Hostile Litho-Density  
Accelerator Porosity  
Gamma Ray