Schlumberger

Company: Lamont Doherty

Well: Site 1301B
Field: Expedition 301
County: Juan de Fuca State: Oregon

Hostile Litho-Density Sonde
Accelerator Porosity Sonde
Hostile Natural Gamma Ray.

County: Juan de Fuca
Field: Expedition 301
Location:
Well: Site 1301B
Company: Lamont Doherty

LOCATION

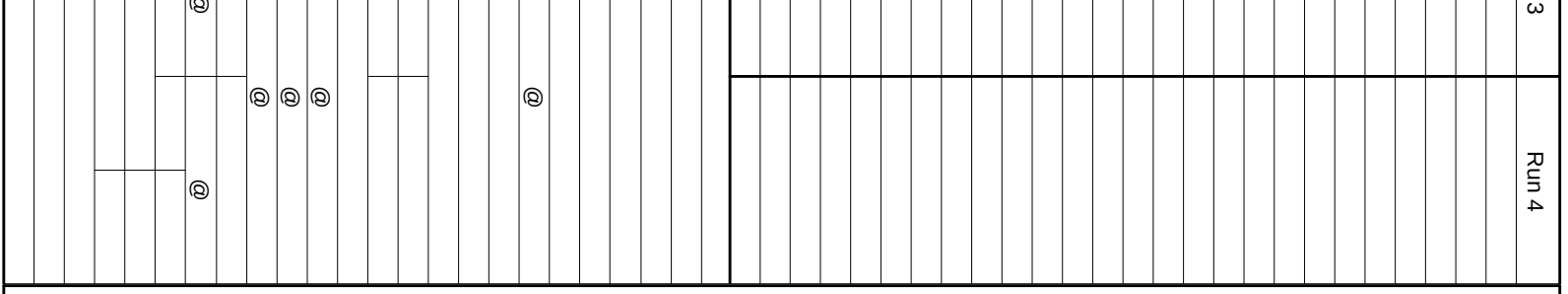
Elev.: K.B. 11.3 m
G.L. -2667.8 m
D.F. 11.3 m

Permanent Datum: Mean Sea Level Elev.: 0 m
Log Measured From: Drill Floor 11.3 m above Perm. Datum
Drilling Measured From: Drill Floor

API Serial No.	Max. Hole Devi.	Longitude	Latitude

	Run 1	Run 2	Run
Logging Date	1-Aug-2004		
Run Number	One		
Depth Driller	3250.67 m		
Schlumberger Depth	3245 m		
Bottom Log Interval	3237 m		
Top Log Interval	2667.8 m		
Casing Driller Size @ Depth	10.750 in @ 3014 m	@	@
Casing Schlumberger	3014 m		
Bit Size	9.875 in		
Type Fluid In Hole	Sepiolite		
MUD Density / Viscosity	1.1 g/cm3		
MUD Fluid Loss / PH			
MUD Source Of Sample			
RM @ Measured Temperature	0.322 ohm.m @ 23 degC	@	@
RMF @ Measured Temperature	@	@	@
RMC @ Measured Temperature	@	@	@
Source RMF / RMC			
RM @ MRT / RMF @ MRT	@ @	@ @	@ @
Maximum Recorded Temperatures			
Circulation Stopped / Time			
Logger On Bottom / Time	1-Aug-2004 8:00		
Unit Number / Location	2082 Webster		
Recorded By	Javier Espinosa		
Witnessed By	Gerardo Iturrino		

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



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OTHER SERVICES1	OTHER SERVICES2
OS1: QAIT	OS1:
OS2: UBI	OS2:
OS3: FMS	OS3:
OS4: DSI	OS4:
OS5: WST	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Parameters and Presentations as per IODP standards	
Tool ran as per tool sketch below.	
Caliper opened at maximum	
Thanks for choosing Schlumberger	

RUN 1		RUN 2	
SERVICE ORDER #:		SERVICE ORDER #:	
PROGRAM VERSION:	12C0-301	PROGRAM VERSION:	
FLUID LEVEL:		FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

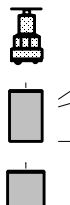
EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

SFT-281 6250
SFT-178 6250
GSR-U 135
WITM (DTS)-A

DOWNHOLE EQUIPMENT



LEH-MT LEH-MT		27.78
DTC-H ECH-KC		26.82
HNGS-BA		25.90

HNGS-BA 77
HNSH-BA 79

Lower_2 — 24.99

ILE-D — 23.41
ILE-D

Status
Minitron
Near TD — 18.52
Near Arr — 18.45
Near — 18.32
Far Arr — 18.22
Far — 18.22
Far TD

APS-C — 20.97
APH-AC 104
APS-C 202
MNTR-F 5124

NPLC-B — 17.02
NPLC-B 79
NPH-B

Status — 15.80

HLDS — 14.58
GSR-Z 2326
HLDV-D 35
HLDS-D 35
HEH-H 35
HLDP-C 35

Caliper
SS LS Status — 10.52

AH-234 — 9.76

QAIT-A — 9.40
SAIC-AA
UDFH-PLB
QAIS-AA 19

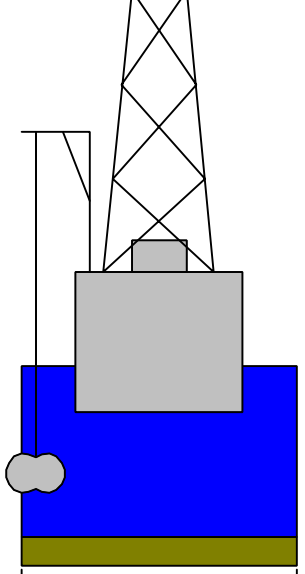
Induction
Temperatu
Power Sup — 3.02

DF
Mud Resis HV
Tension — 0.00

TOOL ZERO

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

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

Kelly Bushing Elevation		11.3				
Derrick Floor Elevation		11.3				
Mean Sea Level		0.0				
Seismic Gun depth below MSL		3.0				
				11.3	10.750	Casing String
				3013.0	10.750	Casing Shoe
				3013.0	9.875	Borehole Segment

Schlumberger

Main Pass

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_LDL_APS_NGS_021LUP	FN:21	PRODUCER	01-Aug-2004 09:00	3246.1 M	2959.2 M

Output DLIS Files

DEFAULT	AIT_LDL_APS_NGS_062PUP	FN:72	PRODUCER	02-Aug-2004 18:20	3246.1 M	2965.4 M
REDUCED	AIT_LDL_APS_NGS_062PUP	FN:73	PRODUCER	02-Aug-2004 18:20	3246.1 M	2965.1 M

OP System Version: 12C0-301

MCM

QAIT-A	12C0-301	HLDS	12C0-301
NPLC-B	12C0-301	APS-C	12C0-301
HNGS-BA	12C0-301	DTC-H	12C0-301

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 20

APS Effective Standoff in Limestone (STOF)
0 (IN) 5

SP (SP)
-80 (MV) 20

HLDS Caliper (LCAL)
0 (IN) 20

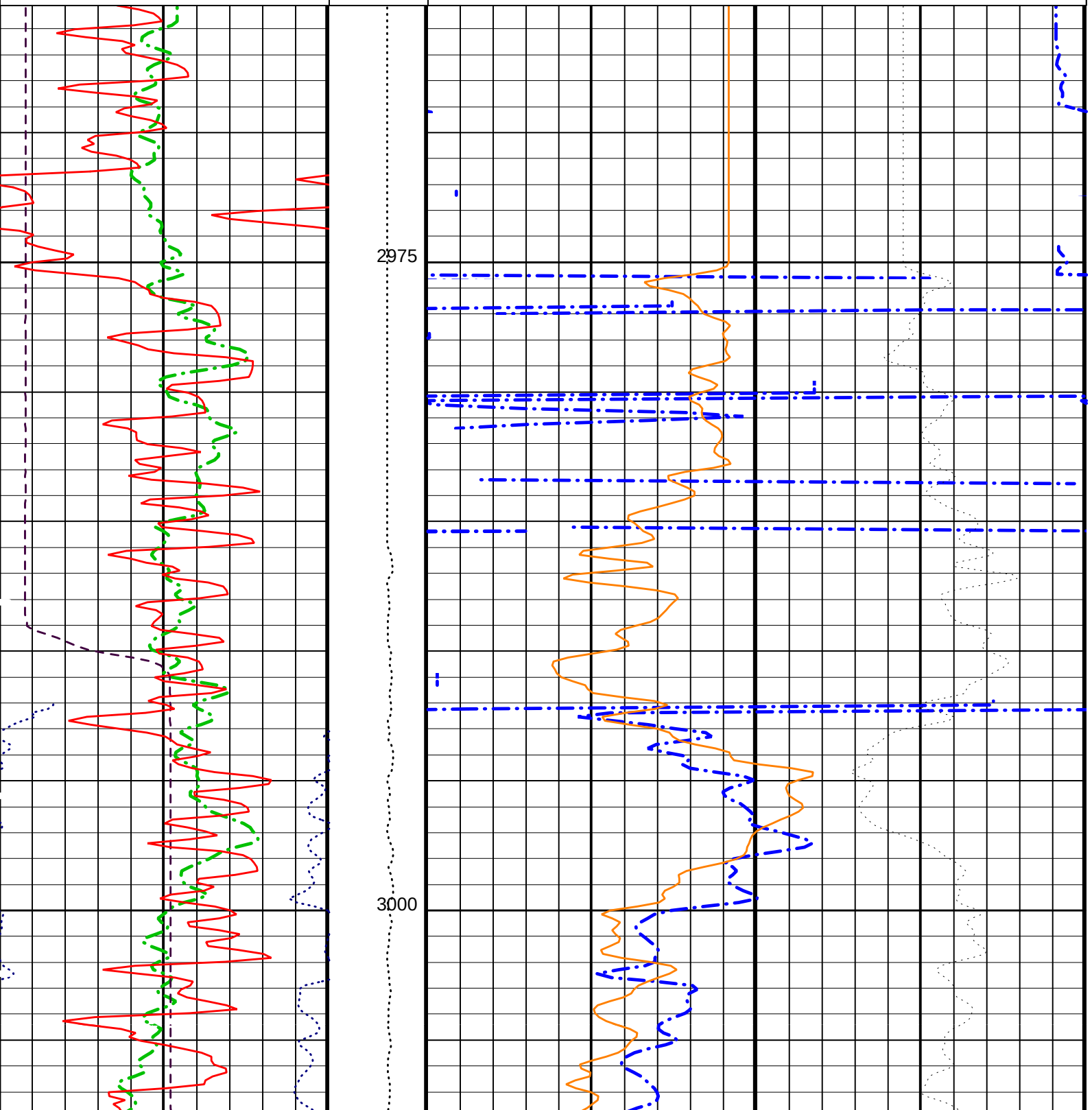
Tension (TENS) (LBF)
10000 0

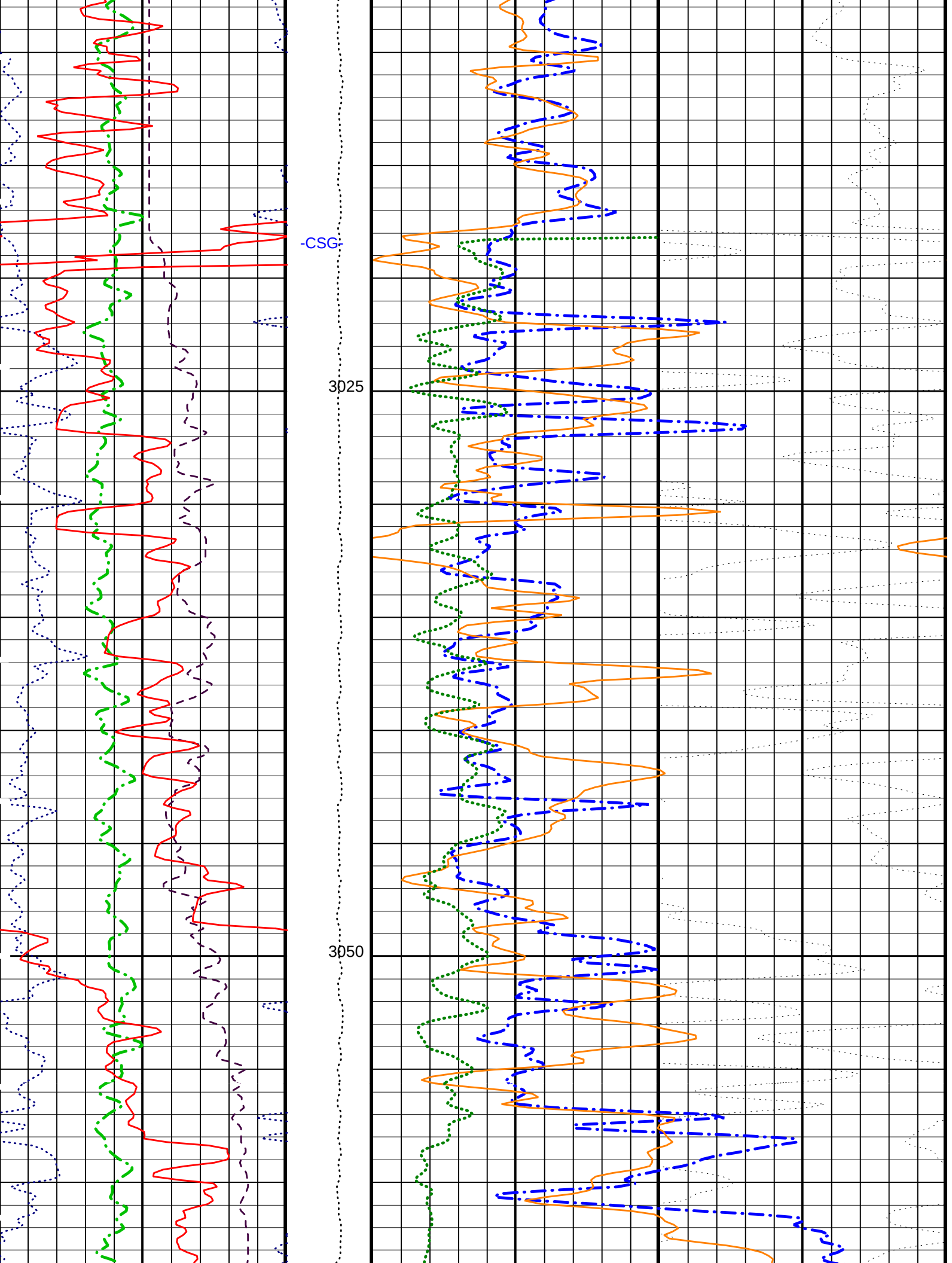
HLDS Long Spaced Photoelectric Effect (PEFL)
0 (----) 10

HLDS Bulk Density Correction (DRH)
-0.25 (G/C3) 0.25

HLDS Bulk Density (RHOM)
3 (G/C3) 1

APS Near/Array Corrected Limestone Porosity (APLC)
0 (PU) 100

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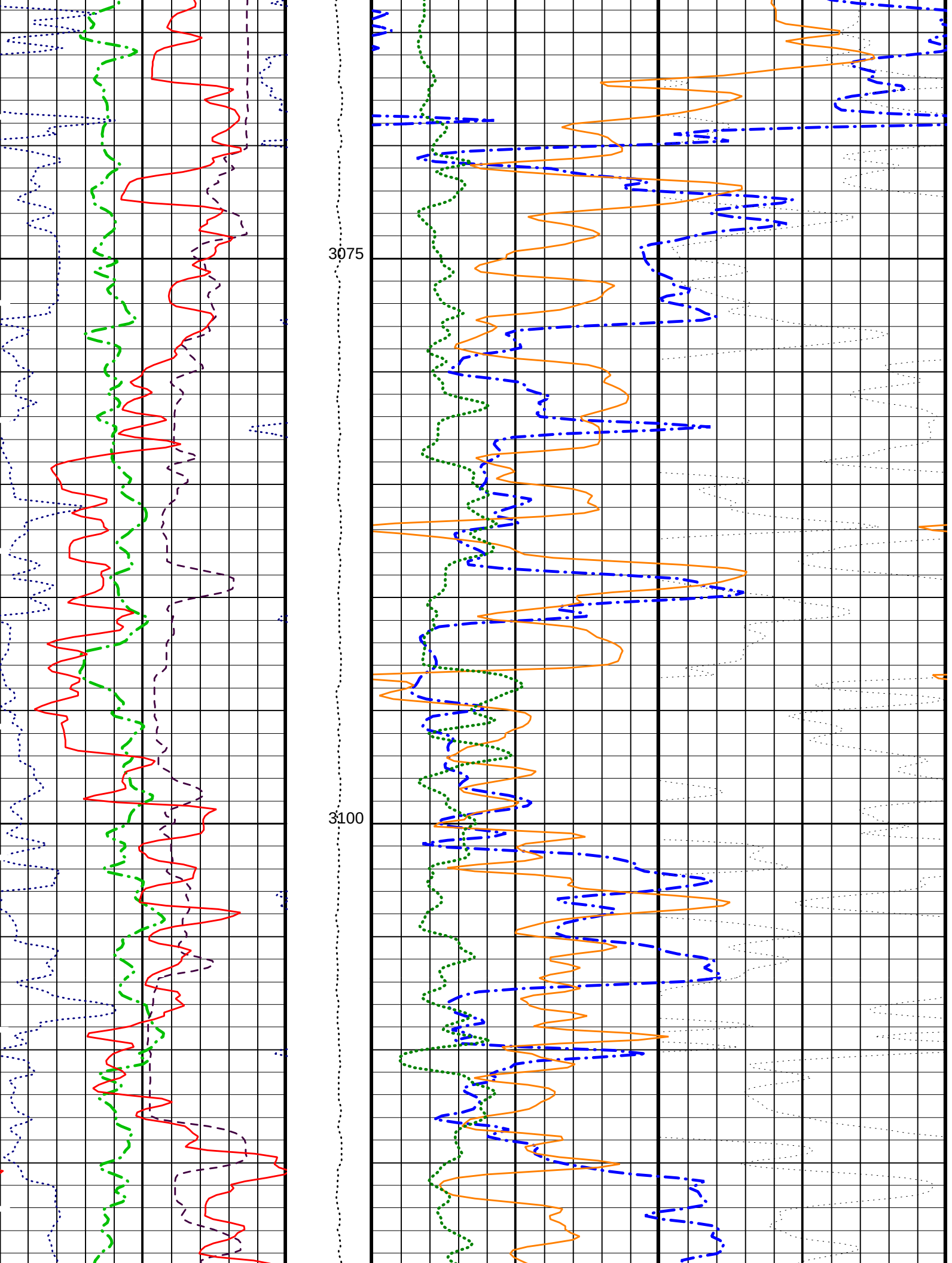
3050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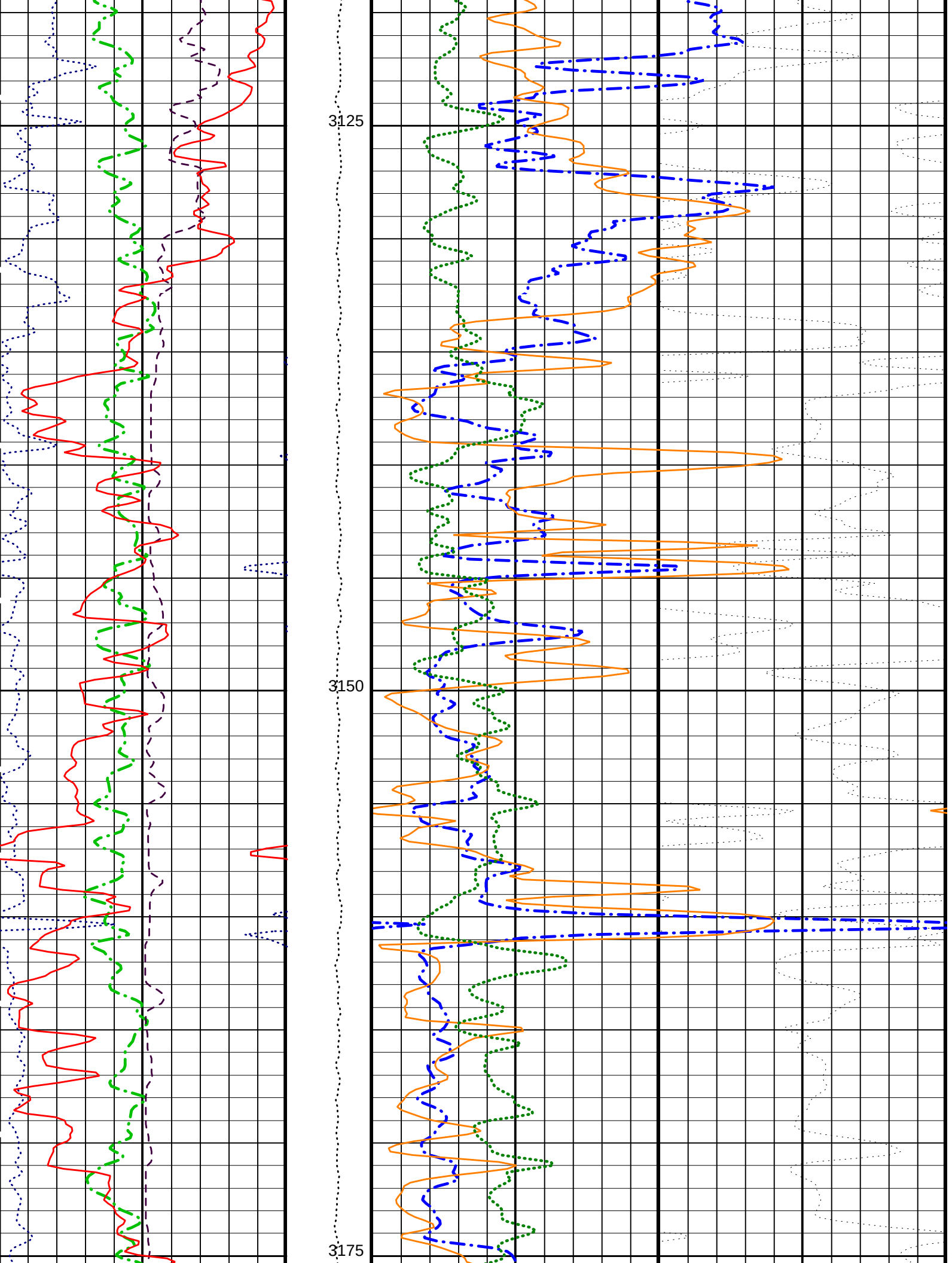
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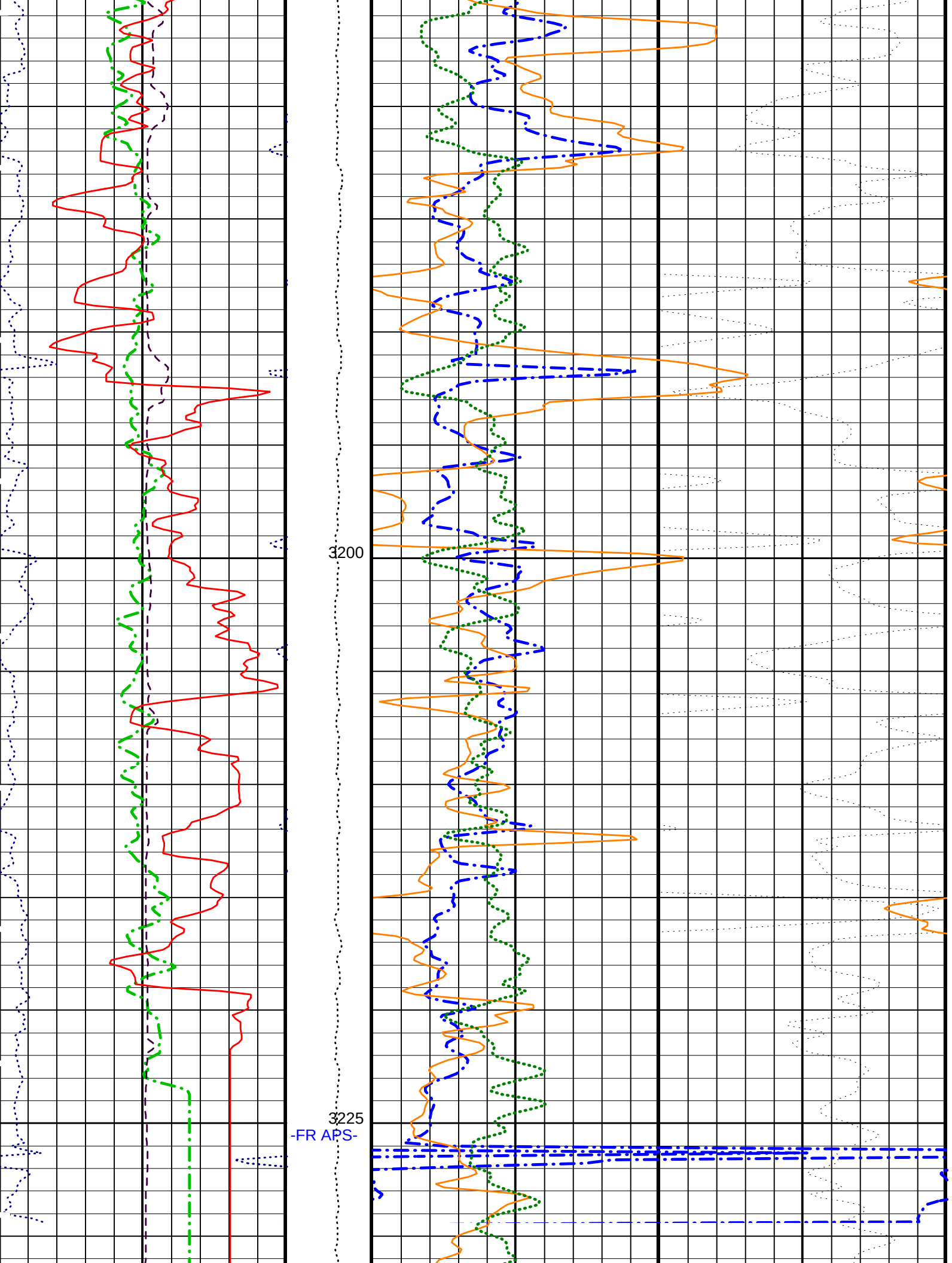
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3225
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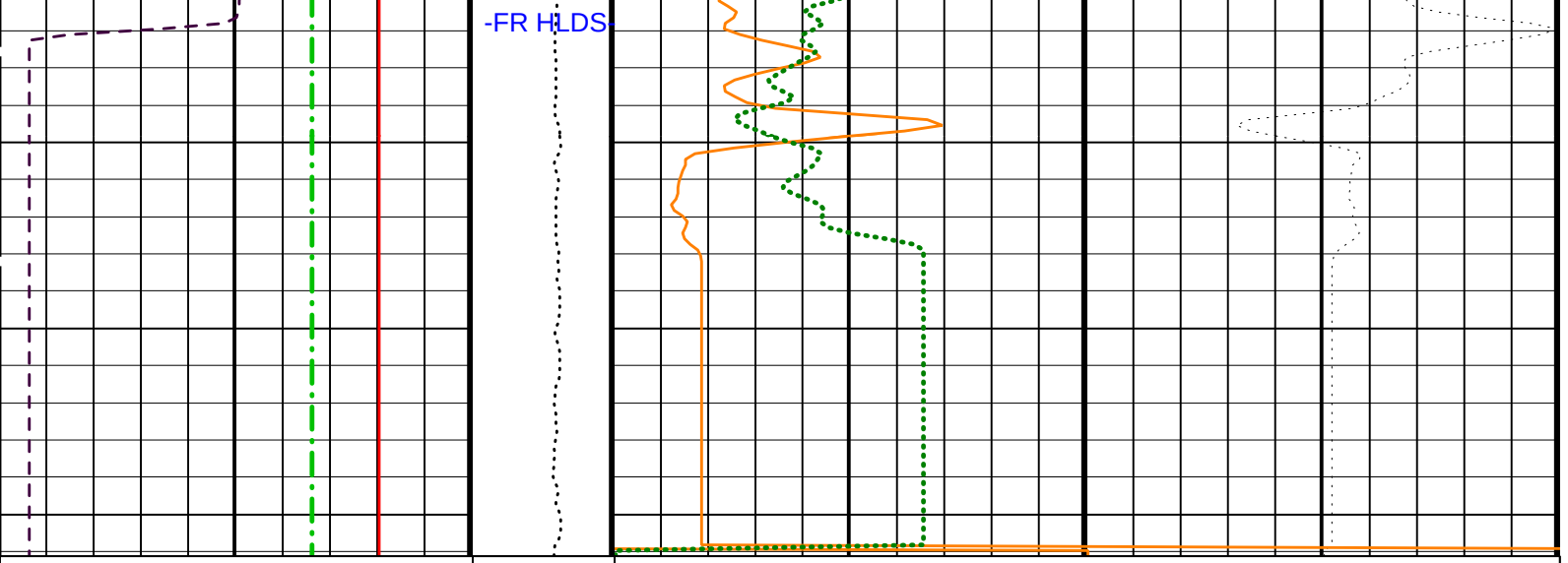


HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

APS Near/Array Corrected Limestone Porosity (APLC)
0 (PU) 100

SP (SP)
-80 (MV) 20

HLDS Bulk Density (RHOM)
3 (G/C3) 1

APS Effective Standoff in Limestone (STOF)
0 (IN) 5

HLDS Long Spaced Photoelectric Effect (PEFL)
0 (----) 10

HLDS Bulk Density Correction (DRH)
-0.25 (G/C3) 0.25

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 20

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	QAIT-A: Slim Hostile Array Induction Tool - A		
AAPL	Array Induction Answer Product Level(Depth Log/View only)	2_BholeCorr_BasicLogs	
ABHM	Array Induction Borehole Correction Mode	0_ComputeMudResistivity	
ABHV	Array Induction Borehole Correction Code Version Number	880	
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
ABLV	Array Induction Basic Logs Code Version Number	108	
ACDE	Array Induction Casing Detection Enable	Yes	
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
ACSED	Array Induction Casing Shoe Estimated Depth	-50000	M
ADITM	Array Induction Desired Tool Mode	0x00_Log_000	
AEBC	Array Induction Enable Borehole Correction	Yes	
AEBL	Array Induction Enable Basic Logs	Yes	
AERP	Array Induction Enable Radial Processing	Yes	
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes	
AFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AFVN	Array Induction Firmware Code Version Number	0	
AIGS	Array Induction Select Akima Interpolation Gating	On	
ALNV	Array Induction Log Not Valid Flag	Log_Valid-No_Default_Parameters	
AMRD	Array Induction Mud Resistivity Calibration Depth	0	M
AMRF	Array Induction Mud Resistivity Factor	1	
AORSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	
ARFV	Array Induction Radial Profiling Code Version Number	700	
ARPM	Array Induction Radial Processing Mode	6_One_Two_and_Four	
ARPV	Array Induction Radial Parametrization Code Version Number	223	
ARTS	AIT Rt Selection (for ALLRES computation)	QAIT_OneResA90	
ASTA	Array Induction Tool Standoff	0.25	IN
ATRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal	
ATTY	Array Induction Tool Type (of acquired data)	QAIT	
AULV	Array Induction User Level Control	Normal	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	1	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	

FNUM	Form Factor Numerator	1	
FPHI	Form Factor Porosity Source	DPO	
GCSE	Generalized Caliper Selection	BS	
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	GRADIENT_FROM_BOTTOM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
RTCO	RTCO - Rt Invasion Correction	YES	
SHT	Surface Hole Temperature	20	DEGC
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-C: Accelerator-Porosity Tool			
	APS Software Version	5	
AASD	APS Thermal and Array Detectors High Voltage Setting	1970.77	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2083.02	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	1737.1	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)	1	DEGC
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	-50000	PPM
GCSE	Generalized Caliper Selection	BS	
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	GRADIENT_FROM_BOTTOM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
NARC	APS Near/Array Calibration Ratio	0.986525	
NFRC	APS Near/Far Calibration Ratio	0.955235	
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)	1	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	BS	
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	GRADIENT_FROM_BOTTOM	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.00404965	
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	0.747517	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.701546	
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	10.750	IN
CWEI	Casing Weight	40.50	LB/F
DFD	Drilling Fluid Density	1.10	G/C3
DO	Depth Offset for Playback	0.0	M
MST	Mud Sample Temperature	23.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	3250.67	M
TDD	Total Depth - Driller	3250.67	M
TDL	Total Depth - Logger	-50000.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: APS_HLDS_PORO Vertical Scale: 1:200 Graphics File Created: 02-Aug-2004 18:20

OP System Version: 12C0-301

MCM

QAIT-A	12C0-301	HLDS	12C0-301
NPLC-B	12C0-301	APS-C	12C0-301
HNGS-BA	12C0-301	DTC-H	12C0-301

Input DLIS Files

DEFAULT	AIT_LDL_APS_NGS_021LUP	FN:21	PRODUCER	01-Aug-2004 09:00	3246.1 M	2959.2 M

Output DLIS Files

DEFAULT	AIT_LDL_APS_NGS_062PUP	FN:72	PRODUCER	02-Aug-2004 18:20		
REDUCED	AIT_LDL_APS_NGS_062PUP	FN:73	PRODUCER	02-Aug-2004 18:20		

Schlumberger

Repeat Pass

MAXIS Field Log

Input DLIS Files

DEFAULT	AIT_LDL_APS_NGS_024LUP	FN:27	PRODUCER	01-Aug-2004 10:09	3122.7 M	2555.6 M

Output DLIS Files

DEFAULT	AIT_LDL_APS_NGS_063PUP	FN:74	PRODUCER	02-Aug-2004 18:21	3122.7 M	2560.5 M
REDUCED	AIT_LDL_APS_NGS_063PUP	FN:75	PRODUCER	02-Aug-2004 18:21	3122.7 M	2560.5 M

OP System Version: 12C0-301

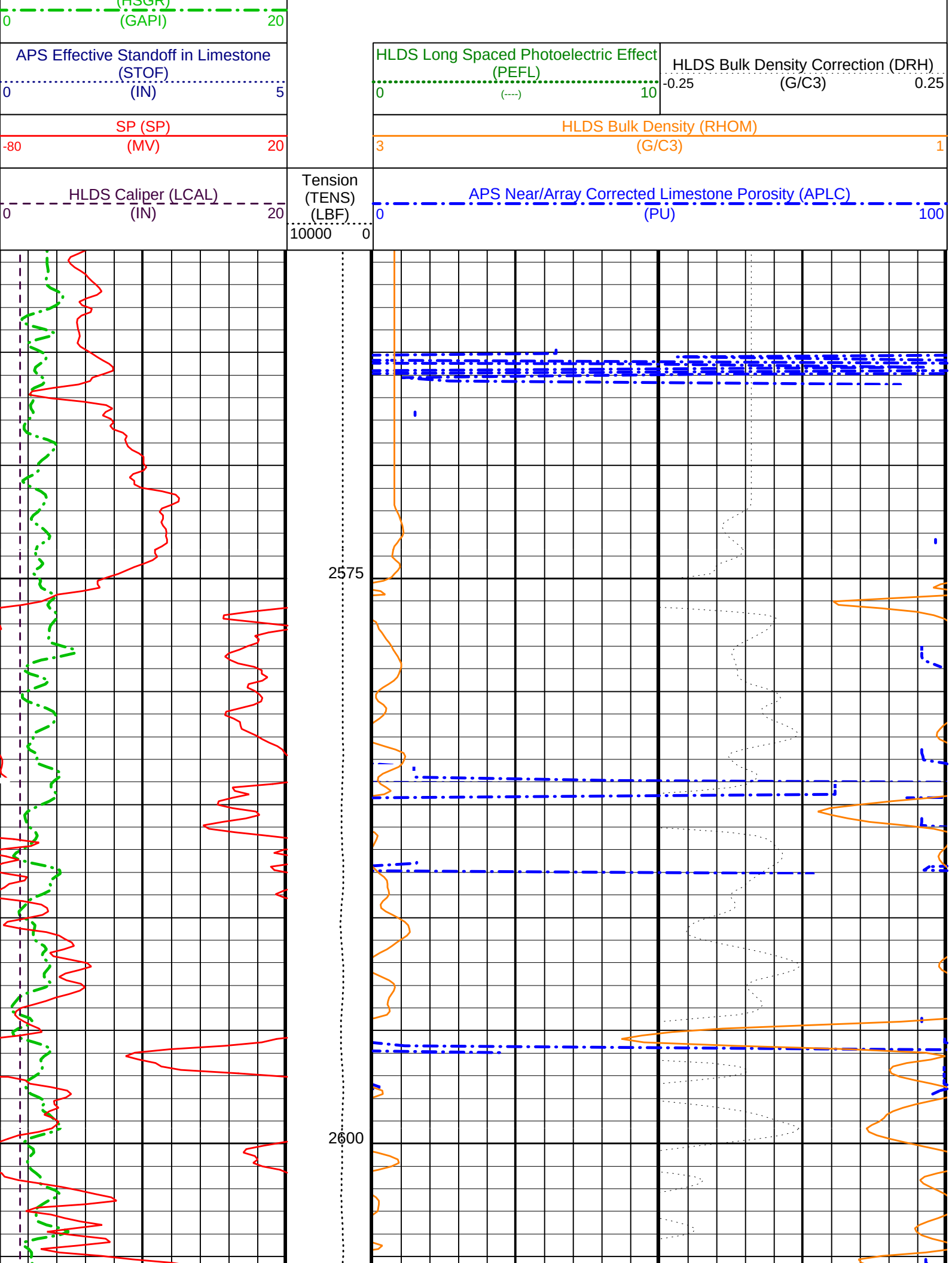
MCM

QAIT-A	12C0-301	HLDS	12C0-301
NPLC-B	12C0-301	APS-C	12C0-301
HNGS-BA	12C0-301	DTC-H	12C0-301

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)	


(HSGR)
0
(GAPI)
20
APS Effective Standoff in Limestone (STOF)
0
(IN)
5
HLDS Long Spaced Photoelectric Effect (PEFL)
0
(----)
10
HLDS Bulk Density Correction (DRH)
-0.25
(G/C3)
0.25
SP (SP)
-80
(MV)
20
HLDS Bulk Density (RHOM)
3
(G/C3)
1
HLDS Caliper (LCAL)
0
(IN)
20
Tension (TENS) (LBF)
10000
0
APS Near/Array Corrected Limestone Porosity (APLC)
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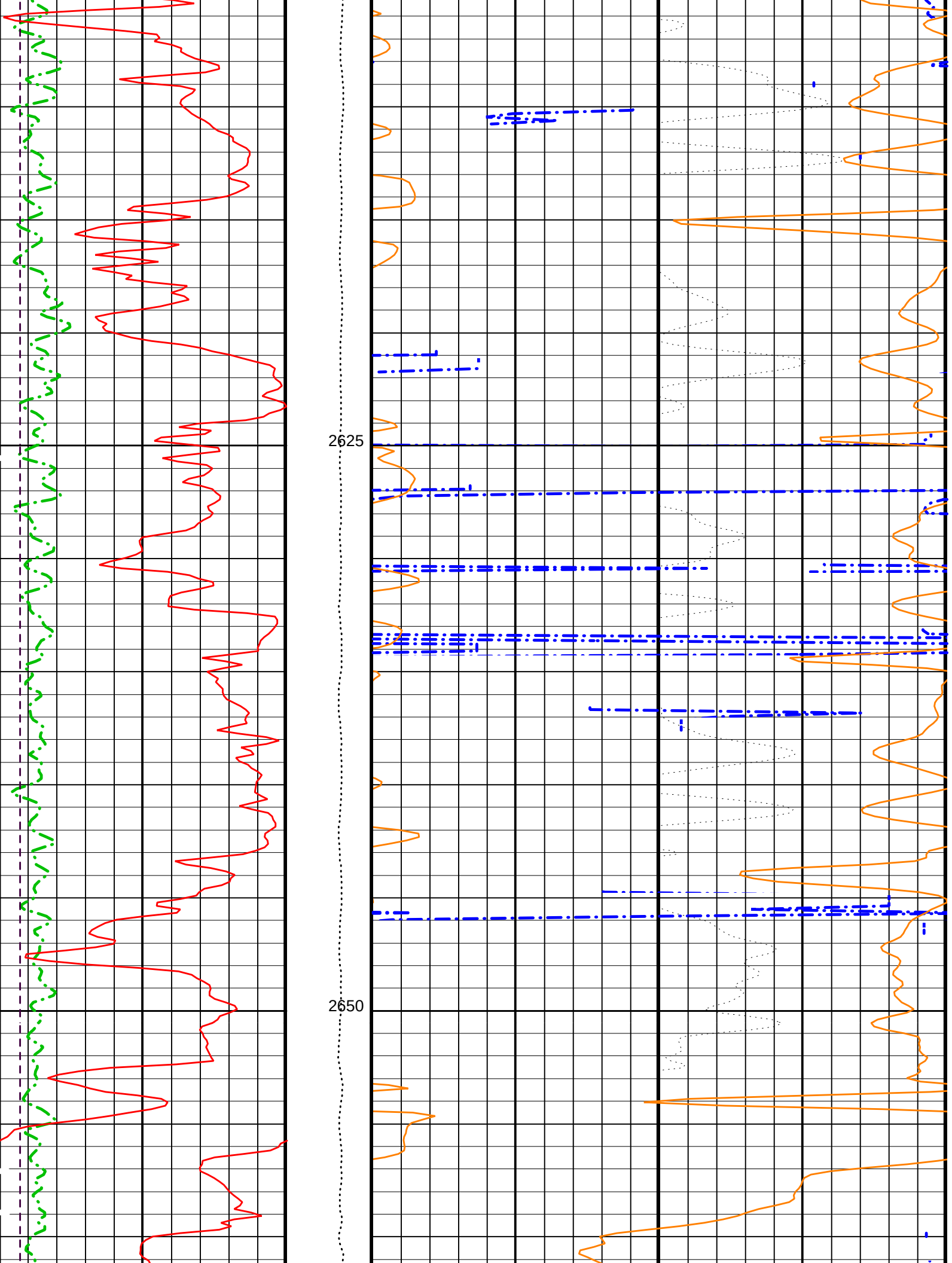
(PU)
100
2575
2600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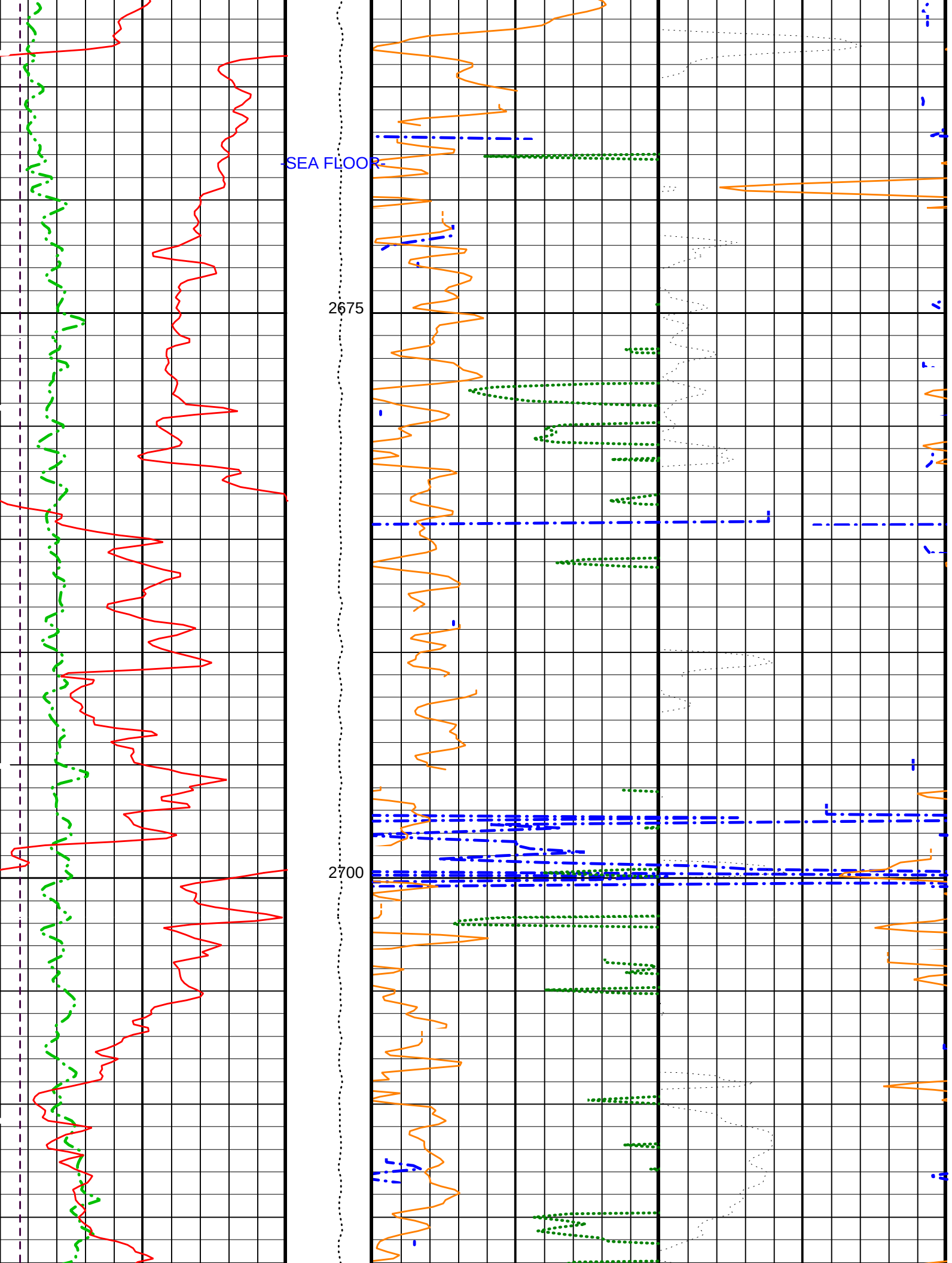
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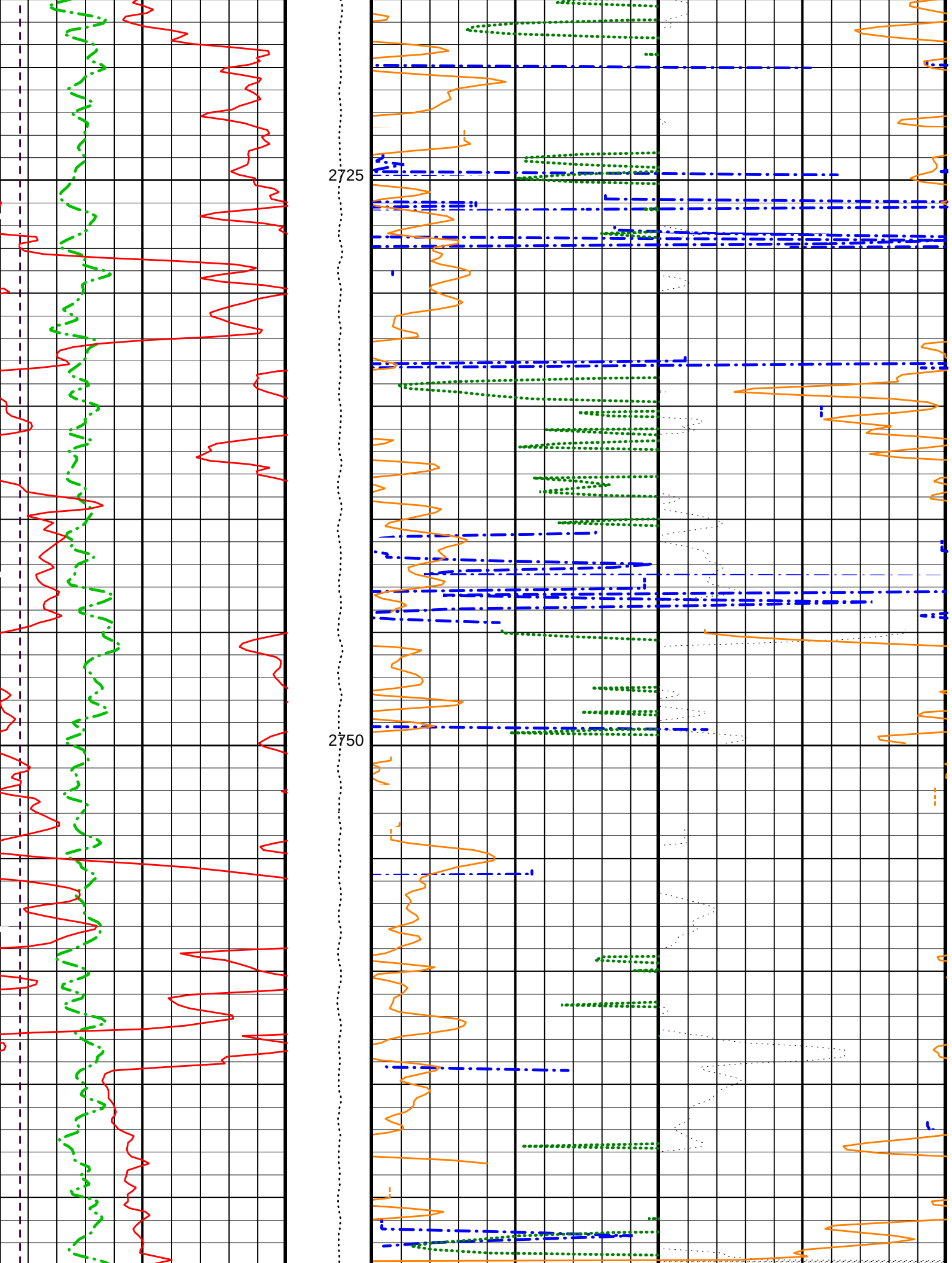
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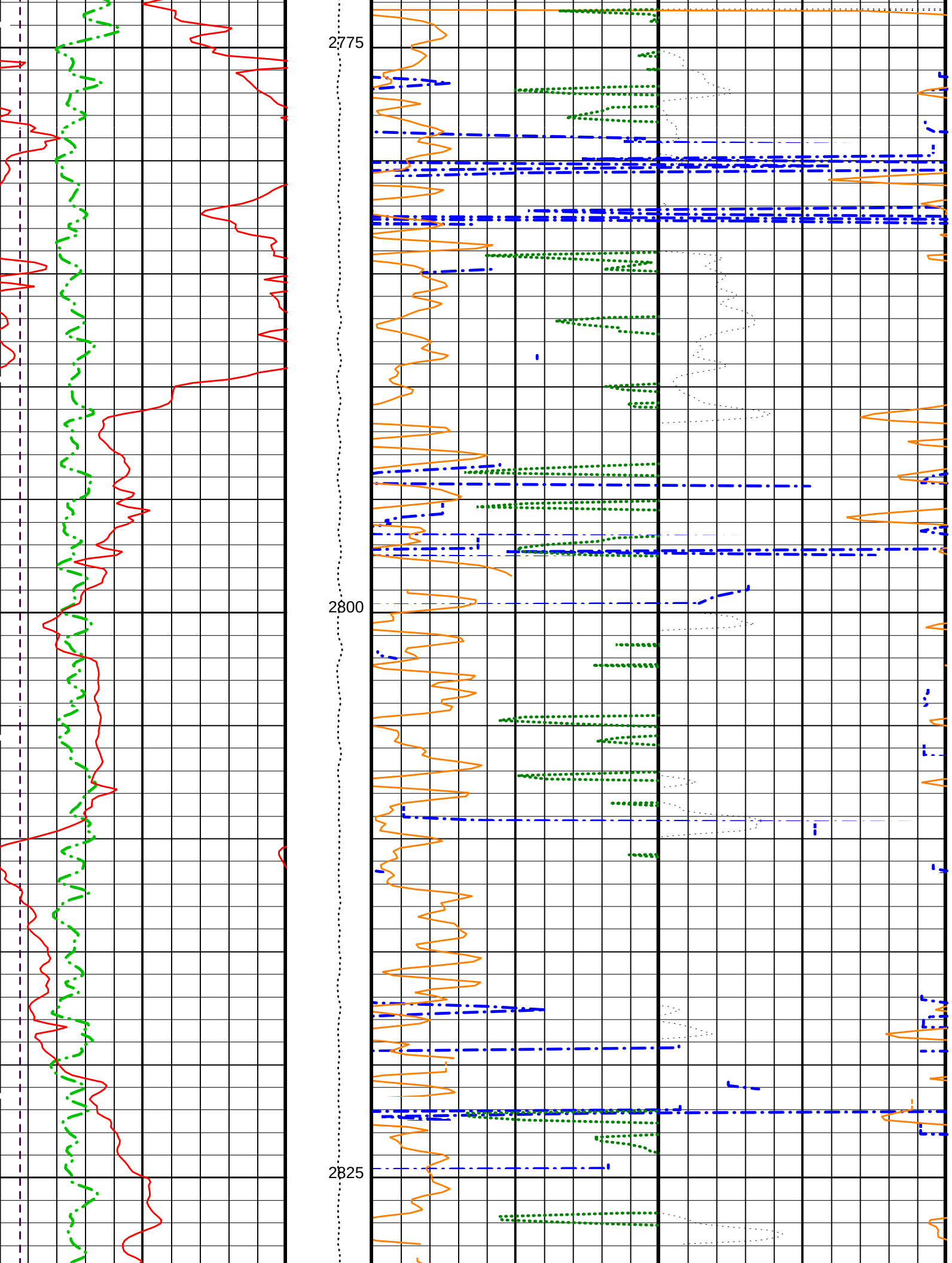
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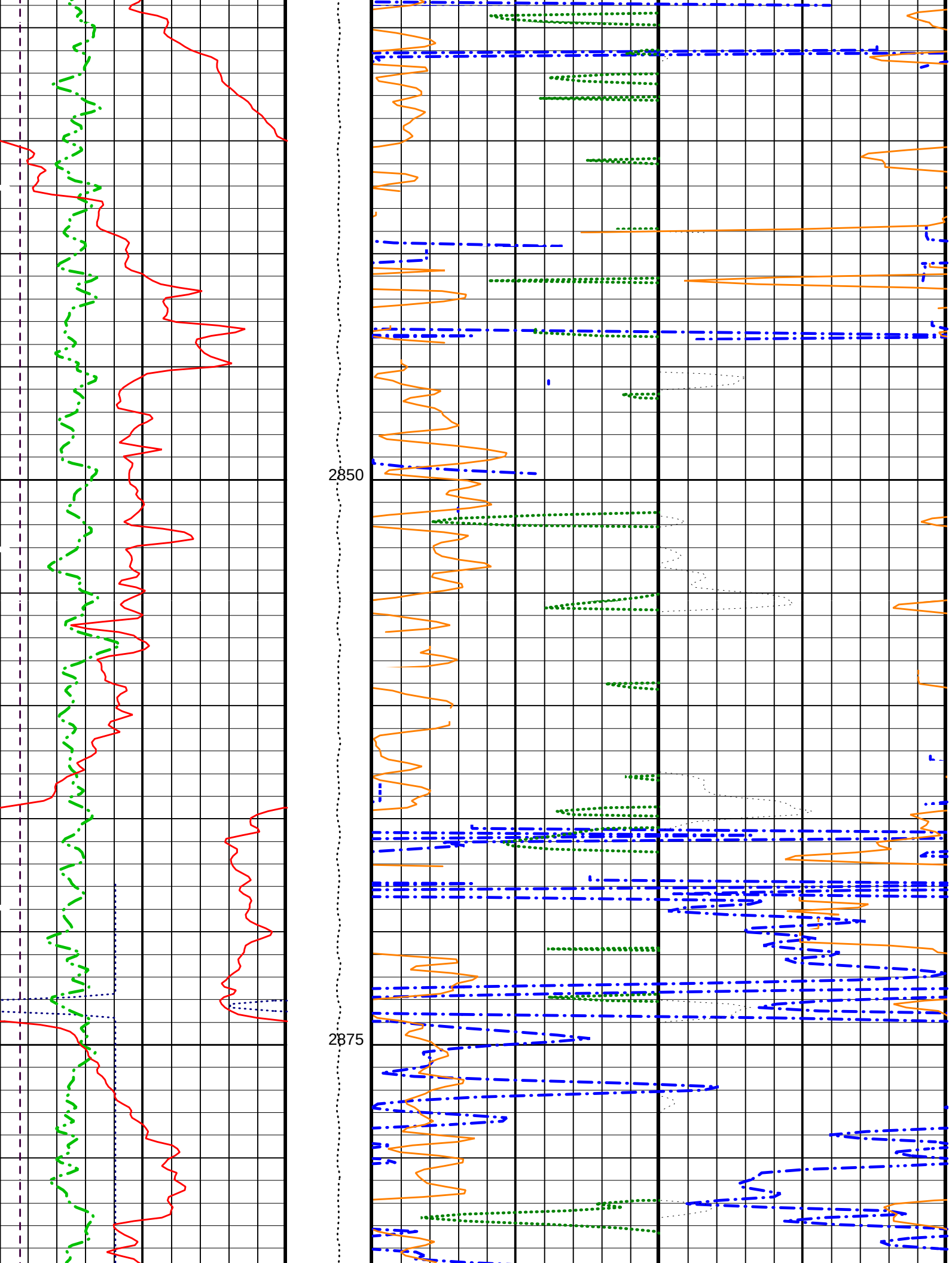
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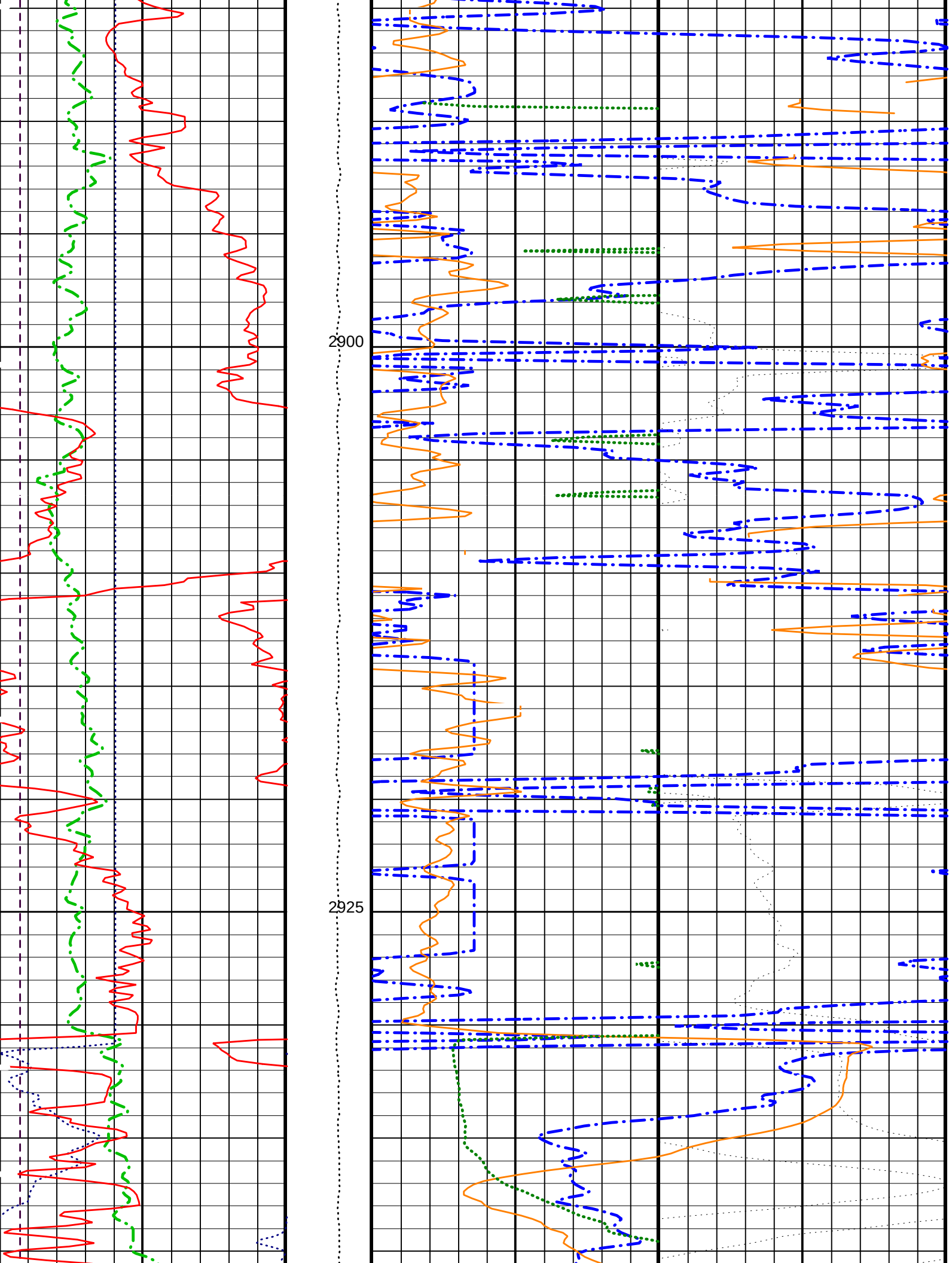
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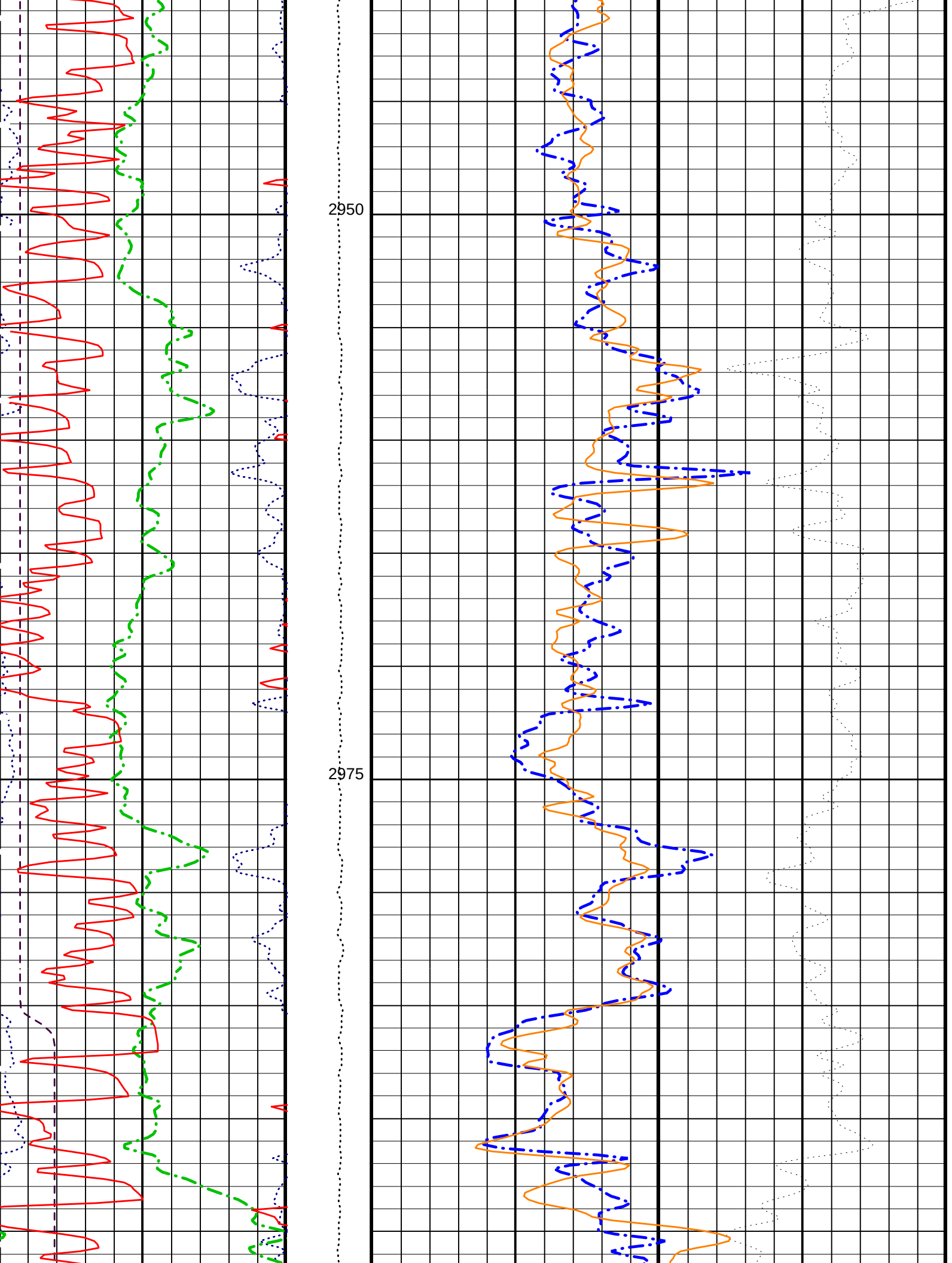
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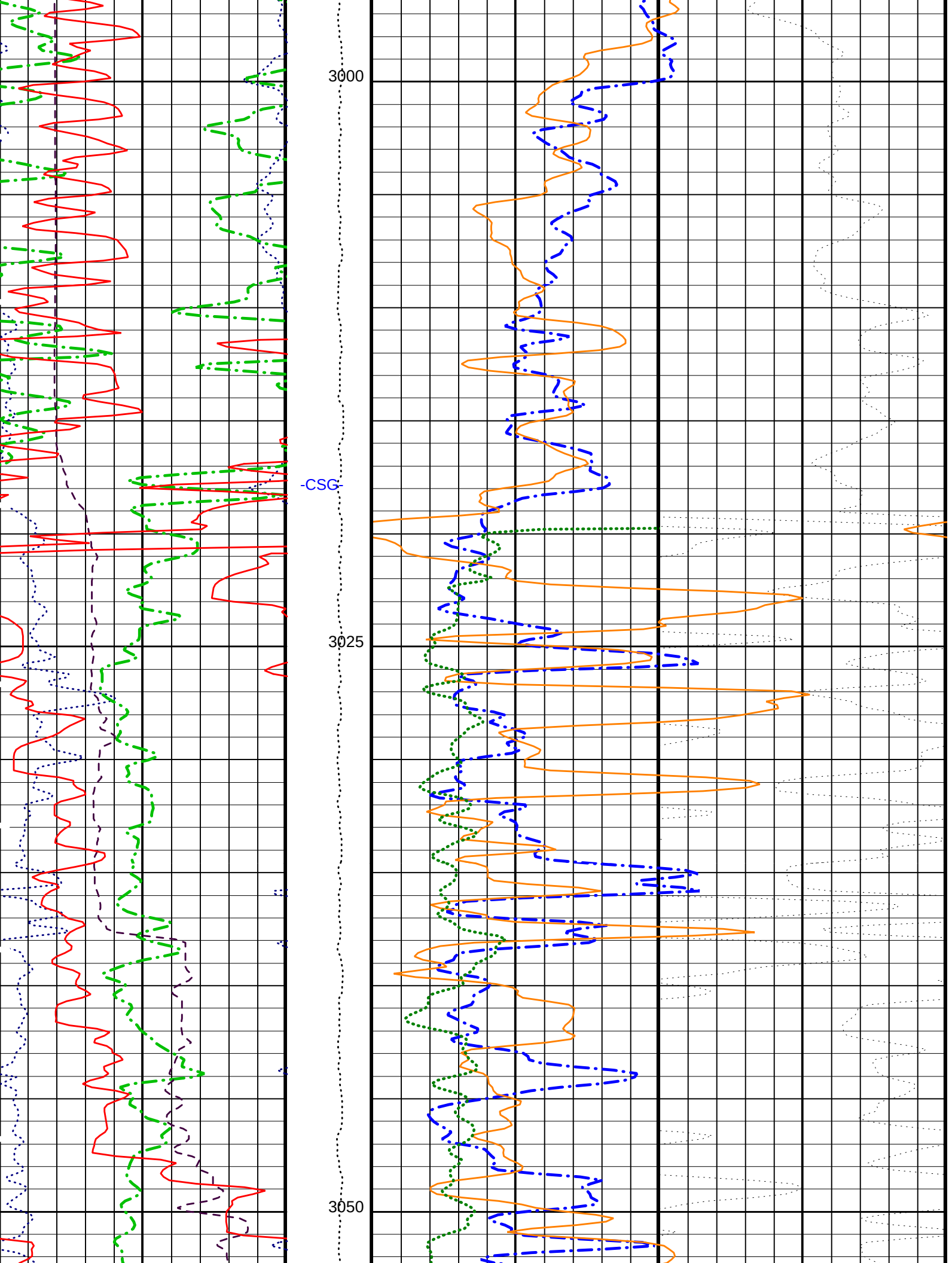
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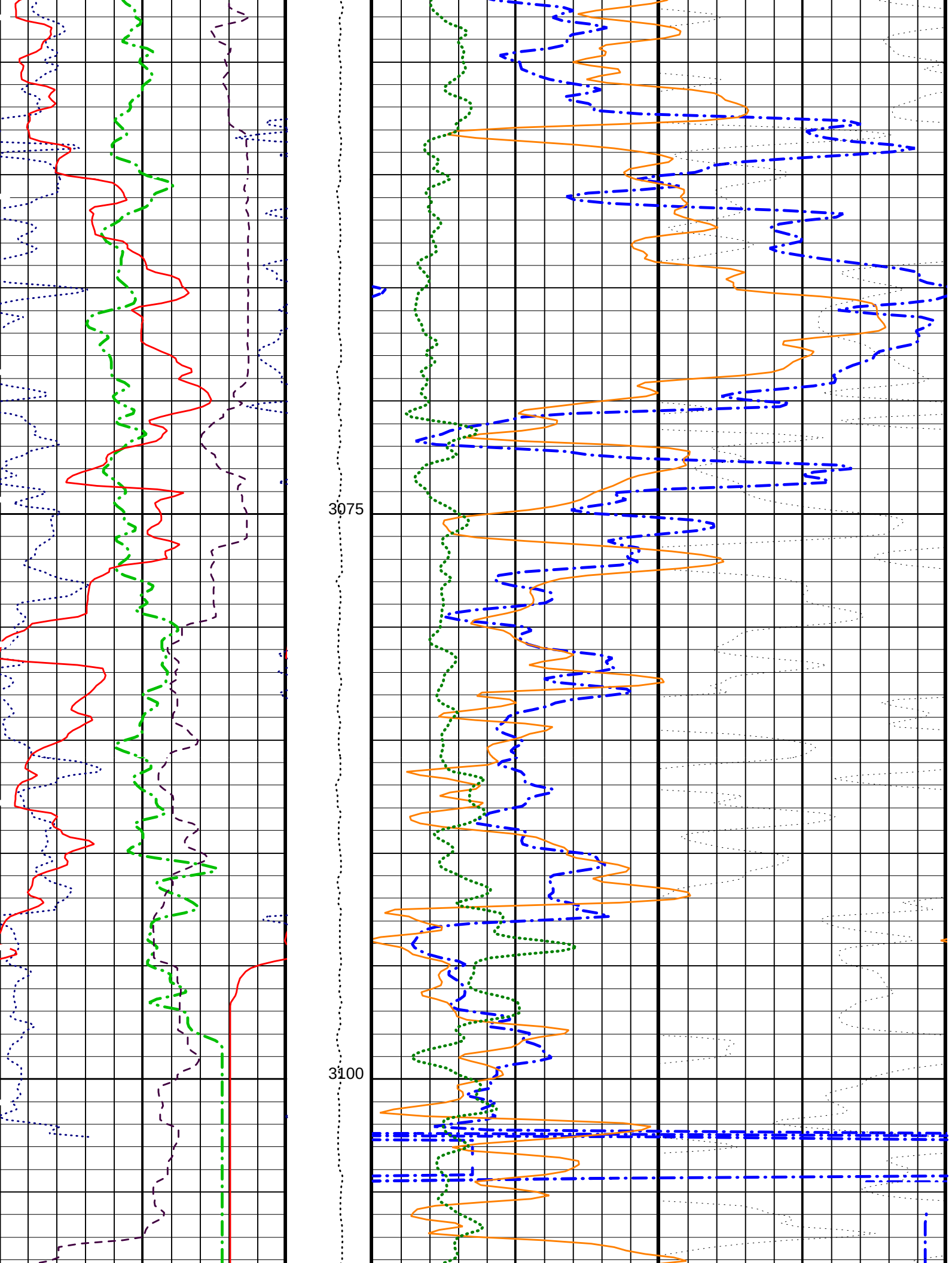
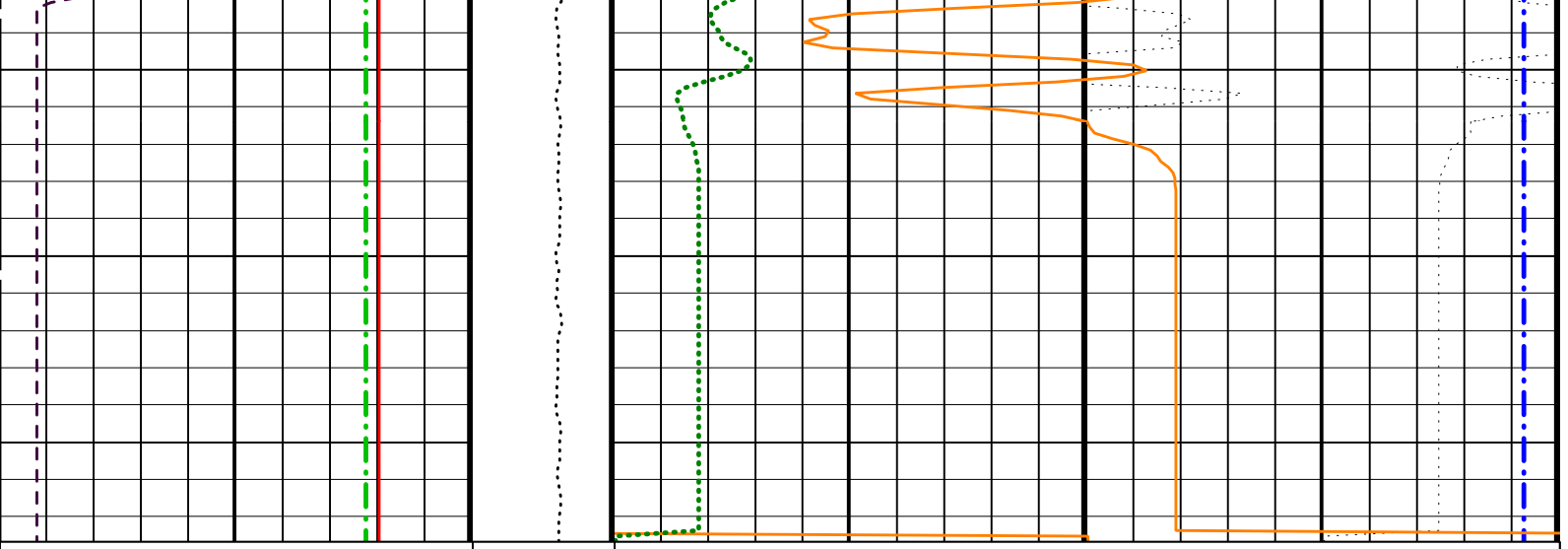
-CSG-
3025
3050


3075
3100



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	QAIT-A: Slim Hostile Array Induction Tool - A		
AAPL	Array Induction Answer Product Level(Depth Log/View only)	2_BholeCorr_BasicLogs	
ABHM	Array Induction Borehole Correction Mode	0_ComputeMudResistivity	
ABHV	Array Induction Borehole Correction Code Version Number	880	
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
ABLV	Array Induction Basic Logs Code Version Number	108	
ACDE	Array Induction Casing Detection Enable	Yes	
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
ACSED	Array Induction Casing Shoe Estimated Depth	-50000	M
ADITM	Array Induction Desired Tool Mode	0x00_Log_000	
AEBC	Array Induction Enable Borehole Correction	Yes	
AEBL	Array Induction Enable Basic Logs	Yes	
AERP	Array Induction Enable Radial Processing	Yes	
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes	
AFRSV	Array Induction Response Set Version for Four ft Resolution	40.70.24.21	
AFVN	Array Induction Firmware Code Version Number	0	
AIGS	Array Induction Select Akima Interpolation Gating	On	
ALNV	Array Induction Log Not Valid Flag	Log_Valid-No_Default_Parameters	
AMRD	Array Induction Mud Resistivity Calibration Depth	0	M
AMRF	Array Induction Mud Resistivity Factor	1	
AORSV	Array Induction Response Set Version for One ft Resolution	40.70.24.21	
ARFV	Array Induction Radial Profiling Code Version Number	700	
ARPM	Array Induction Radial Processing Mode	6_One_Two_and_Four	
ARPV	Array Induction Radial Parametrization Code Version Number	223	
ARTS	AIT Rt Selection (for ALLRES computation)	QAIT_OneResA90	
ASTA	Array Induction Tool Standoff	0.25	IN
ATRSV	Array Induction Response Set Version for Two ft Resolution	40.70.24.21	
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal	
ATTY	Array Induction Tool Type (of acquired data)	QAIT	
AULV	Array Induction User Level Control	Normal	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	1	DEGC
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	

FPHI	Form Factor Porosity Source	DPO	
GCSE	Generalized Caliper Selection	BS	
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	GRADIENT_FROM_BOTTOM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
RTCO	RTCO - Rt Invasion Correction	YES	
SHT	Surface Hole Temperature	20	DEGC
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-C: Accelerator-Porosity Tool			
	APS Software Version	5	
AASD	APS Thermal and Array Detectors High Voltage Setting	1970.77	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2083.02	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	1737.1	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)	1	DEGC
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	-50000	PPM
GCSE	Generalized Caliper Selection	BS	
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	GRADIENT_FROM_BOTTOM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
NARC	APS Near/Array Calibration Ratio	0.986525	
NFRC	APS Near/Far Calibration Ratio	0.955235	
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)	1	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	BS	
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	GRADIENT_FROM_BOTTOM	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.00365202	
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	0.879779	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.829927	
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	10.750	IN
CWEI	Casing Weight	40.50	LB/F
DFD	Drilling Fluid Density	1.10	G/C3
DO	Depth Offset for Playback	0.0	M
MST	Mud Sample Temperature	23.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	3250.67	M
TDD	Total Depth - Driller	3250.67	M
TDL	Total Depth - Logger	-50000.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: APS_HLDS_PORO Vertical Scale: 1:200 Graphics File Created: 02-Aug-2004 18:21

OP System Version: 12C0-301

MCM

QAIT-A	12C0-301	HLDS	12C0-301
NPLC-B	12C0-301	APS-C	12C0-301
HNGS-BA	12C0-301	DTC-H	12C0-301

Input DLIS Files

DEFAULT	AIT_LDL_APS_NGS_024LUP	FN:27	PRODUCER	01-Aug-2004 10:09	3122.7 M	2555.6 M

Output DLIS Files

DEFAULT	AIT_LDL_APS_NGS_063PUP	FN:74	PRODUCER	02-Aug-2004 18:21
REDUCED	AIT_LDL_APS_NGS_063PUP	FN:75	PRODUCER	02-Aug-2004 18:21

Schlumberger

Calibrations

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Slim Hostile Array Induction Tool - A Wellsite Calibration - Electronics Calibration Check - Thru Cal Mag. & Phase							
Master: 11-Jun-2004 18:01 Before: 8-Jul-2004 16:50							
Thru Cal Magnitude - 0	0	0.5636	0.5634	N/A	N/A	N/A	V
Thru Cal Magnitude - 1	0	1.009	1.009	N/A	N/A	N/A	V
Thru Cal Magnitude - 2	0	0.5293	0.5292	N/A	N/A	N/A	V
Thru Cal Magnitude - 3	0	0.6441	0.6440	N/A	N/A	N/A	V
Thru Cal Magnitude - 4	0	1.169	1.169	N/A	N/A	N/A	V
Thru Cal Magnitude - 5	0	1.678	1.678	N/A	N/A	N/A	V
Thru Cal Magnitude - 6	0	1.817	1.817	N/A	N/A	N/A	V
Thru Cal Magnitude - 7	0	1.248	1.252	N/A	N/A	N/A	V
Thru Cal Phase - 0	0	194.1	195.0	N/A	N/A	N/A	DEG
Thru Cal Phase - 1	0	193.0	193.9	N/A	N/A	N/A	DEG
Thru Cal Phase - 2	0	187.2	188.1	N/A	N/A	N/A	DEG
Thru Cal Phase - 3	0	185.1	186.0	N/A	N/A	N/A	DEG
Thru Cal Phase - 4	0	175.0	176.0	N/A	N/A	N/A	DEG
Thru Cal Phase - 5	0	172.2	173.2	N/A	N/A	N/A	DEG
Thru Cal Phase - 6	0	170.1	171.1	N/A	N/A	N/A	DEG

Thru Cal Phase - 7	0	163.4	164.5	N/A	N/A	N/A	DEG

Slim Hostile Array Induction Tool - A Wellsite Calibration - Electronics Calibration Check - Auxiliary
Master: 11-Jun-2004 18:01 Before: 8-Jul-2004 16:50

Array Induction SPA Plus	991.0	983.6	983.4	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	0.1053	0.1010	N/A	N/A	N/A	MV
Array Induction Temperature Pl	0.9170	0.9106	0.9105	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	0.0001035	0.00009976	N/A	N/A	N/A	V

Slim Hostile Array Induction Tool - A Wellsite Calibration - Test Loop Gain Correction
Master: 11-Jun-2004 18:01

Test Loop Gain Correctio - 0	0	1.002	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio - 1	0	1.030	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio - 2	0	1.008	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio - 3	0	1.001	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio - 4	0	0.9987	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio - 5	0	0.9951	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio - 6	0	1.001	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio - 7	0	0.9957	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio - 0	0	0.6556	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio - 1	0	0.8656	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio - 2	0	0.2043	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio - 3	0	0.1728	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio - 4	0	0.1930	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio - 5	0	0.06180	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio - 6	0	0.1537	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio - 7	0	-0.4079	N/A	N/A	N/A	N/A	DEG

Slim Hostile Array Induction Tool - A Wellsite Calibration - Sonde Error Correction
Master: 11-Jun-2004 18:01

R Sonde Error Correction - 0	0	-566.5	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 1	0	266.6	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 2	0	105.3	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 3	0	54.58	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 4	0	16.88	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 5	0	4.192	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 6	0	3.815	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction - 7	0	-0.3850	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 0	0	-1455	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 1	0	348.1	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 2	0	-77.81	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 3	0	82.35	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 4	0	15.71	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 5	0	-41.87	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 6	0	1.960	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction - 7	0	-8.263	N/A	N/A	N/A	N/A	MM/M

Slim Hostile Array Induction Tool - A Wellsite Calibration - Mud Gain Correction
Master: 11-Jun-2004 18:01

Coarse - Mag, Real, Imag - 0	0	1.021	N/A	N/A	N/A	N/A	
Coarse - Mag, Real, Imag - 1	0	1.021	N/A	N/A	N/A	N/A	
Coarse - Mag, Real, Imag - 2	0	1.021	N/A	N/A	N/A	N/A	
Fine - Mag, Real, Imag - 0	0	1.020	N/A	N/A	N/A	N/A	
Fine - Mag, Real, Imag - 1	0	1.020	N/A	N/A	N/A	N/A	
Fine - Mag, Real, Imag - 2	0	1.020	N/A	N/A	N/A	N/A	

Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement
Master: 12-Jun-2004 14:54 Before: 8-Jul-2004 16:52

SS Cs Resolution Bkg	9.000	8.422	8.375	N/A	N/A	1.800	%
LS Cs Resolution Bkg	9.000	8.036	7.997	N/A	N/A	1.800	%
LSW1 Background	100.0	82.68	82.70	N/A	N/A	3.000	CPS
LSW2 Background	100.0	76.07	75.57	N/A	N/A	3.000	CPS
LSW3 Background	200.0	172.2	170.1	N/A	N/A	6.000	CPS
LSW4 Background	250.0	212.4	210.6	N/A	N/A	7.500	CPS
LSW5 Background	600.0	473.3	475.6	N/A	N/A	18.00	CPS
SSW1 Background	100.0	80.33	80.89	N/A	N/A	3.000	CPS
SSW2 Background	200.0	142.1	143.3	N/A	N/A	6.000	CPS
SSW3 Background	500.0	384.0	382.8	N/A	N/A	15.00	CPS
SSW4 Background	270.0	206.5	205.6	N/A	N/A	8.100	CPS
SSW5 Background	200.0	146.5	148.8	N/A	N/A	6.000	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement
Master: 12-Jun-2004 15:48

LSW1 Aluminum	600.0	569.4	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	857.9	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	1046	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	524.0	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	489.0	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2464	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	7163	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	10360	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	4401	N/A	N/A	N/A	N/A	CPS

SSW5 Aluminum	660.0	606.5	N/A	N/A	N/A	N/A	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement
Master: 12-Jun-2004 15:42

LSW1 Iron	400.0	386.4	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	683.9	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	917.1	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	479.7	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	448.7	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1828	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5944	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	9382	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3978	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	535.3	N/A	N/A	N/A	N/A	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration
Before: 8-Jul-2004 17:09

HLDS Caliper Small Ring	8.000	N/A	10.42	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	12.00	N/A	14.63	N/A	N/A	N/A	IN

Accelerator-Porosity Tool Wellsite Calibration - Detector Background
Master: 7-Jul-2004 21:59 Before: 8-Jul-2004 16:56

Near Det Bkg Cntrate	30.00	25.97	26.03	N/A	N/A	N/A	CPS
Far Det Bkg Cntrate	30.00	26.06	27.83	N/A	N/A	N/A	CPS
Array-1 Det Bkg Cntrate	30.00	27.53	26.21	N/A	N/A	N/A	CPS
Array-2 Det Bkg Cntrate	30.00	26.25	27.33	N/A	N/A	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	23.56	23.53	N/A	N/A	N/A	CPS

Accelerator-Porosity Tool Wellsite Calibration - Calibration Ratios
Master: 7-Jul-2004 21:59

Near/Far Calibration Ratio	0.9250	0.9552	N/A	N/A	N/A	N/A	
Near/Array Calibration Ratio	1.030	0.9865	N/A	N/A	N/A	N/A	
Near/Array Cal Ratio Up/Down	1.000	1.011	N/A	N/A	N/A	N/A	

Accelerator-Porosity Tool Wellsite Calibration - Tank Check
Master: 7-Jul-2004 21:59

Array-1 Standoff Porosity	11.75	12.35	N/A	N/A	N/A	N/A	PU
Array-2 Standoff Porosity	11.75	11.95	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	5.772	N/A	N/A	N/A	N/A	US
Array-1 SDT Ratio Up/Down	1.000	1.003	N/A	N/A	N/A	N/A	
Array-2 SDT Ratio Up/Down	1.000	0.9959	N/A	N/A	N/A	N/A	
Sigma Formation	27.50	27.17	N/A	N/A	N/A	N/A	CU

Accelerator-Porosity Tool Wellsite Calibration - CCR7 signal boxes
Master: 7-Jul-2004 21:59

Near Detector Plateau Setting	1650	1737	N/A	N/A	N/A	N/A	V
Far Detector Plateau Setting	2000	2083	N/A	N/A	N/A	N/A	V
Array Detector Plateau Setting	2000	1971	N/A	N/A	N/A	N/A	V

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check
Master: 5-Jul-2004 18:53 Before: 8-Jul-2004 16:53

Na 511 Peak Loc	40.00	40.71	40.63	N/A	N/A	1.000	
Na 511 Peak Res	15.50	17.54	17.28	N/A	N/A	2.000	%
High Voltage	1150	1250	1255	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	144.2	145.0	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	10.18	10.15	N/A	N/A	2.000	%
Temperature	15.50	21.21	20.28	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	53.01	53.43	N/A	N/A	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check
Master: 5-Jul-2004 18:53 Before: 8-Jul-2004 16:53

Na 511 Peak Loc	40.00	40.45	40.58	N/A	N/A	1.000	
Na 511 Peak Res	15.50	17.86	17.14	N/A	N/A	2.000	%
High Voltage	1150	1272	1277	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	144.8	144.4	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	9.592	10.89	N/A	N/A	2.000	%
Temperature	15.50	20.08	19.40	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	53.19	53.46	N/A	N/A	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2
Master: 5-Jul-2004 18:53 Before: 8-Jul-2004 16:53

Coincidence Count Rate Ratio	1.000	0.9966	1.000	N/A	N/A	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration
Master: 5-Jul-2004 18:48

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	208.8	--	--	--	--	
Th Peak Res	7.000	8.676	--	--	--	--	%
Background Count Rate	142.5	25.70	--	--	--	--	CPS
Gain Ratio	1.000	0.9764	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration

Master: 5-Jul-2004 18:48

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	208.1	--	--	--	--	
Th Peak Res	7.000	8.030	--	--	--	--	%
Background Count Rate	142.5	25.73	--	--	--	--	CPS
Gain Ratio	1.000	0.9786	--	--	--	--	

Accelerator-Porosity Tool - Detector Plateau Settings :

Near Detector Plateau Setting 1737 V
Far Detector Plateau Setting 2083 V
Array Detector Plateau Setting 1971 V

Slim Hostile Array Induction Tool - A / Equipment Identification

Primary Equipment:

Slim Hostile Array Induction Sonde	QAIS - AA	19
Slim Array Induction Cartridge	SAIC - AA	

Auxiliary Equipment:

Slim Hostile Cartridge Flask	UDFH - PLB

Slim Hostile Array Induction Tool - A Wellsite Calibration

Electronics Calibration Check - Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Thru Cal Phase DEG	Nominal
0	Master	0.5636		0.5510	194.1		197.0
	Before	0.5634			195.0		
1	Master	1.009		0.9860	193.0		196.0
	Before	1.009			193.9		
2	Master	0.5293		0.5220	187.2		192.0
	Before	0.5292			188.1		
3	Master	0.6441		0.6370	185.1		191.0
	Before	0.6440			186.0		
4	Master	1.169		1.214	175.0		185.0
	Before	1.169			176.0		
5	Master	1.678		1.777	172.2		182.0
	Before	1.678			173.2		
6	Master	1.817		1.945	170.1		181.0
	Before	1.817			171.1		
7	Master	1.248		1.416	163.4		175.0
	Before	1.252			164.5		
		60.00 % (Minimum)	140.0 % (Maximum)	(Nominal)	Nom -60.00 (Minimum)	Nom + 60.00 (Maximum)	(Nominal)

Master: 11-Jun-2004 18:01 Before: 8-Jul-2004 16:50

Slim Hostile Array Induction Tool - A Wellsite Calibration

Electronics Calibration Check - Auxiliary

Phase	Array Induction SPA Plus MV	Value
Master		983.6
Before		983.4
	941.0 (Minimum) 991.0 (Nominal) 1040 (Maximum)	

Phase	Array Induction SPA Zero MV	Value
Master		0.1053
Before		0.1010
	-50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	

Phase	Array Induction Temperature Plus V	Value
Master		0.9106
Before		0.9105

Phase	Array Induction Temperature Zero V	Value
Master		0.0001035
Before		9.976E-00

	0.8710 (Minimum)	0.9170 (Nominal)	0.9630 (Maximum)		-0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)

Master: 11-Jun-2004 18:01 Before: 8-Jul-2004 16:50

Slim Hostile Array Induction Tool - A Wellsite Calibration

Test Loop Gain Correction

Idx	Value	Test Loop Gain Correction Magnitude			V	Value	Test Loop Gain Correction Phase DEG		
0	1.002					0.6556			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.030					0.8656			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.008					0.2043			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
3	1.001					0.1728			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
4	0.9987					0.1930			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
5	0.9951					0.06180			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
6	1.001					0.1537			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
7	0.9957					-0.4079			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)			-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

Master: 11-Jun-2004 18:01

Slim Hostile Array Induction Tool - A Wellsite Calibration

Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	-566.5				-1455			
		-876.0 (Minimum)	-701.0 (Nominal)	-526.0 (Maximum)		-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	266.6				348.1			
		232.0 (Minimum)	277.0 (Nominal)	322.0 (Maximum)		-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	105.3				-77.81			
		52.30 (Minimum)	97.30 (Nominal)	142.3 (Maximum)		-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	54.58				82.35			
		19.30 (Minimum)	44.30 (Nominal)	69.30 (Maximum)		-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	16.88				15.71			
		9.800 (Minimum)	19.80 (Nominal)	29.80 (Maximum)		-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	4.192				-41.87			
		-6.500 (Minimum)	3.500 (Nominal)	13.50 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	3.815				1.960			
		-0.7000 (Minimum)	4.300 (Nominal)	9.300 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-0.3850				-8.263			
		-4.670 (Minimum)	0.3300 (Nominal)	5.330 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

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Slim Hostile Array Induction Tool - A Wellsite Calibration

Mud Gain Correction

Idx	Value	Coarse - Mag, Real, Imag	Value	Fine - Mag, Real, Imag
0	1.021		1.020	

		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.021				1.020			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	1.021				1.020			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

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Slim Hostile Array Induction Tool - A Master Calibration

Electronics Calibration Check - Thru Cal Mag. & Phase

Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Thru Cal Phase DEG	Nominal
0	Master	0.5636		0.5510	194.1		197.0
1	Master	1.009		0.9860	193.0		196.0
2	Master	0.5293		0.5220	187.2		192.0
3	Master	0.6441		0.6370	185.1		191.0
4	Master	1.169		1.214	175.0		185.0
5	Master	1.678		1.777	172.2		182.0
6	Master	1.817		1.945	170.1		181.0
7	Master	1.248		1.416	163.4		175.0
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)		Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)

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Slim Hostile Array Induction Tool - A Master Calibration

Electronics Calibration Check - Auxiliary

Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Master		983.6	Master		0.1053
941.0 (Minimum)	991.0 (Nominal) 1040 (Maximum)		-50.00 (Minimum)	0 (Nominal) 50.00 (Maximum)	
Phase	Array Induction Temperature Plus V	Value	Phase	Array Induction Temperature Zero V	Value
Master		0.9106	Master		0.0001035
0.8710 (Minimum)	0.9170 (Nominal) 0.9630 (Maximum)		-0.05000 (Minimum)	0 (Nominal) 0.05000 (Maximum)	

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Slim Hostile Array Induction Tool - A Master Calibration

Test Loop Gain Correction

Idx	Value	Test Loop Gain Correction Magnitude V	Value	Test Loop Gain Correction Phase DEG
0	1.002		0.6556	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
1	1.030		0.8656	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
2	1.008		0.2043	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
3	1.001		0.1728	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
4	0.9987		0.1930	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
5	0.9951		0.06180	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
6	1.001		0.1537	
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		-3.000 (Minimum) 0 (Nominal) 3.000 (Maximum)	
7	0.9957		-0.4079	

		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

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Slim Hostile Array Induction Tool - A Master Calibration

Sonde Error Correction

Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M		
0	-566.5				-1455			
		-876.0 (Minimum)	-701.0 (Nominal)	-526.0 (Maximum)		-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	266.6				348.1			
		232.0 (Minimum)	277.0 (Nominal)	322.0 (Maximum)		-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	105.3				-77.81			
		52.30 (Minimum)	97.30 (Nominal)	142.3 (Maximum)		-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	54.58				82.35			
		19.30 (Minimum)	44.30 (Nominal)	69.30 (Maximum)		-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	16.88				15.71			
		9.800 (Minimum)	19.80 (Nominal)	29.80 (Maximum)		-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	4.192				-41.87			
		-6.500 (Minimum)	3.500 (Nominal)	13.50 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	3.815				1.960			
		-0.7000 (Minimum)	4.300 (Nominal)	9.300 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-0.3850				-8.263			
		-4.670 (Minimum)	0.3300 (Nominal)	5.330 (Maximum)		-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

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Slim Hostile Array Induction Tool - A Master Calibration

Mud Gain Correction

Idx	Value	Coarse - Mag, Real, Imag			Value	Fine - Mag, Real, Imag		
0	1.021				1.020			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	1.021				1.020			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	1.021				1.020			
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

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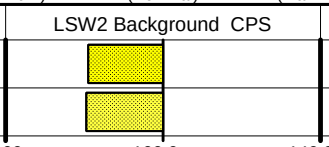
Hostile Litho-Density Sonde / Equipment Identification

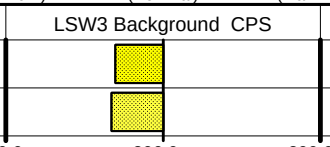
Primary Equipment:		
Hostile Litho Density Sonde	HLDS - D	35
Hostile Litho Density High Voltage	HLDV - D	35
Gamma Source Radioactive	GSR - Z	2326
Auxiliary Equipment:		
Hostile Litho Density Pad	HLDP - C	35
Hostile Litho Density High Voltage Housi	HEH - H	35

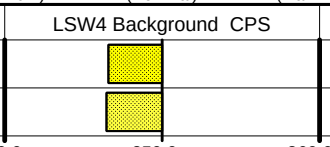
Hostile Litho-Density Sonde Wellsite Calibration

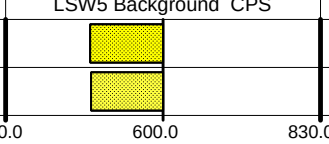
Background Measurement

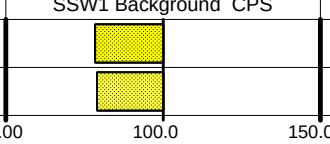
Phase	SS Cs Resolution Bkg %	Value	Phase	LS Cs Resolution Bkg %	Value	Phase	LSW1 Background CPS	Value
Master		8.422	Master		8.036	Master		82.68
Before		8.375	Before		7.997	Before		82.70
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)			7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)			55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

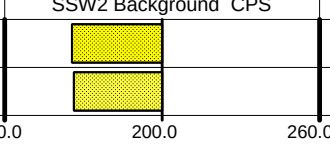
Phase	LSW2 Background CPS	Value
Master		76.07
Before		75.57
50.00 (Minimum)	100.0 (Nominal)	140.0 (Maximum)

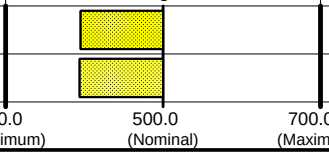
Phase	LSW3 Background CPS	Value
Master		172.2
Before		170.1
110.0 (Minimum)	200.0 (Nominal)	290.0 (Maximum)

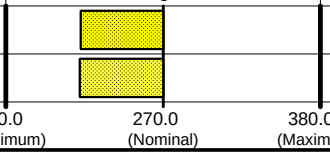
Phase	LSW4 Background CPS	Value
Master		212.4
Before		210.6
140.0 (Minimum)	250.0 (Nominal)	360.0 (Maximum)

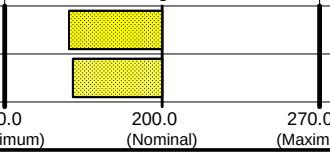
Phase	LSW5 Background CPS	Value
Master		473.3
Before		475.6
330.0 (Minimum)	600.0 (Nominal)	830.0 (Maximum)

Phase	SSW1 Background CPS	Value
Master		80.33
Before		80.89
55.00 (Minimum)	100.0 (Nominal)	150.0 (Maximum)

Phase	SSW2 Background CPS	Value
Master		142.1
Before		143.3
100.0 (Minimum)	200.0 (Nominal)	260.0 (Maximum)

Phase	SSW3 Background CPS	Value
Master		384.0
Before		382.8
280.0 (Minimum)	500.0 (Nominal)	700.0 (Maximum)

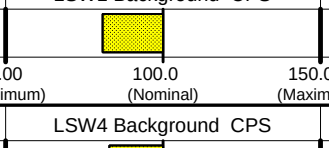
Phase	SSW4 Background CPS	Value
Master		206.5
Before		205.6
150.0 (Minimum)	270.0 (Nominal)	380.0 (Maximum)

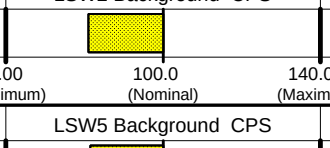
Phase	SSW5 Background CPS	Value
Master		146.5
Before		148.8
110.0 (Minimum)	200.0 (Nominal)	270.0 (Maximum)

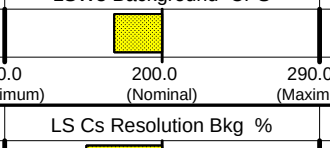
Master: 12-Jun-2004 14:54 Before: 8-Jul-2004 16:52

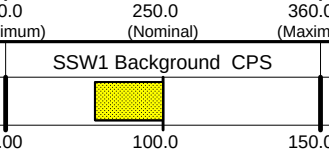
Hostile Litho-Density Sonde Master Calibration

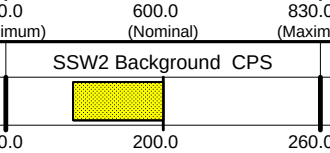
Detector Background Measurement

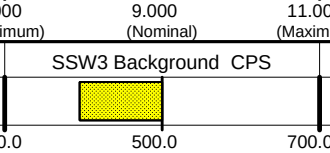
Phase	LSW1 Background CPS	Value
Master		82.68
55.00 (Minimum)	100.0 (Nominal)	150.0 (Maximum)

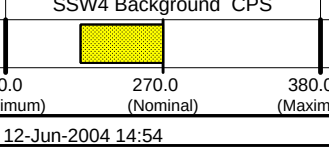
Phase	LSW2 Background CPS	Value
Master		76.07
50.00 (Minimum)	100.0 (Nominal)	140.0 (Maximum)

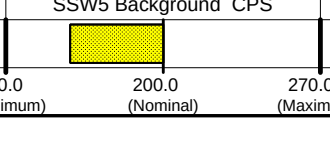
Phase	LSW3 Background CPS	Value
Master		172.2
110.0 (Minimum)	200.0 (Nominal)	290.0 (Maximum)

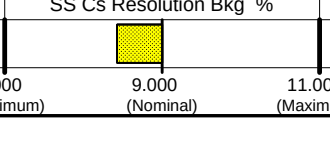
Phase	LSW4 Background CPS	Value
Master		212.4
140.0 (Minimum)	250.0 (Nominal)	360.0 (Maximum)

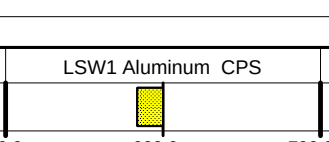
Phase	LSW5 Background CPS	Value
Master		473.3
330.0 (Minimum)	600.0 (Nominal)	830.0 (Maximum)

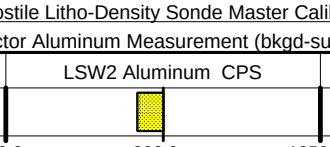
Phase	LS Cs Resolution Bkg %	Value
Master		8.036
7.000 (Minimum)	9.000 (Nominal)	11.00 (Maximum)

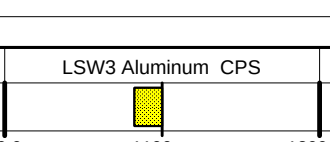
Phase	SSW1 Background CPS	Value
Master		80.33
55.00 (Minimum)	100.0 (Nominal)	150.0 (Maximum)

Phase	SSW2 Background CPS	Value
Master		142.1
100.0 (Minimum)	200.0 (Nominal)	260.0 (Maximum)

Phase	SSW3 Background CPS	Value
Master		384.0
280.0 (Minimum)	500.0 (Nominal)	700.0 (Maximum)

Phase	SSW4 Background CPS	Value
Master		206.5
150.0 (Minimum)	270.0 (Nominal)	380.0 (Maximum)

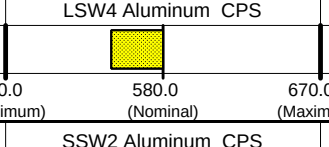
Phase	SSW5 Background CPS	Value
Master		146.5
110.0 (Minimum)	200.0 (Nominal)	270.0 (Maximum)

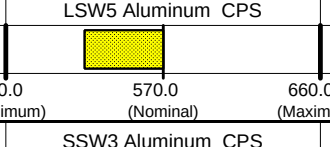
Phase	SS Cs Resolution Bkg %	Value
Master		8.422
7.000 (Minimum)	9.000 (Nominal)	11.00 (Maximum)

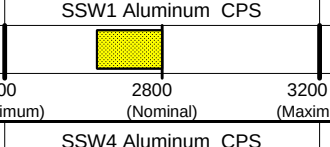
Master: 12-Jun-2004 14:54

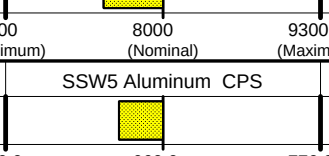
Hostile Litho-Density Sonde Master Calibration

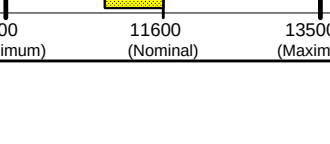
Detector Aluminum Measurement (bkgd-subtracted)

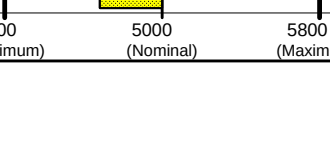
Phase	LSW1 Aluminum CPS	Value
Master		569.4
420.0 (Minimum)	600.0 (Nominal)	700.0 (Maximum)

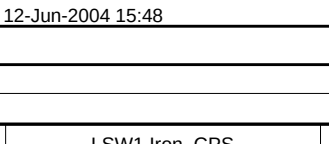
Phase	LSW2 Aluminum CPS	Value
Master		857.9
650.0 (Minimum)	900.0 (Nominal)	1050 (Maximum)

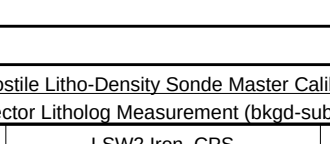
Phase	LSW3 Aluminum CPS	Value
Master		1046
800.0 (Minimum)	1100 (Nominal)	1300 (Maximum)

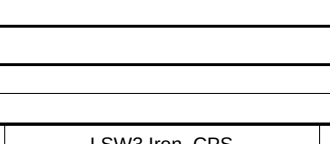
Phase	LSW4 Aluminum CPS	Value
Master		524.0
410.0 (Minimum)	580.0 (Nominal)	670.0 (Maximum)

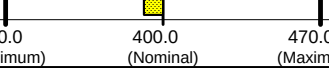
Phase	LSW5 Aluminum CPS	Value
Master		489.0
410.0 (Minimum)	570.0 (Nominal)	660.0 (Maximum)

Phase	SSW1 Aluminum CPS	Value
Master		2464
2000 (Minimum)	2800 (Nominal)	3200 (Maximum)

Phase	SSW2 Aluminum CPS	Value
Master		7163
5800 (Minimum)	8000 (Nominal)	9300 (Maximum)

Phase	SSW3 Aluminum CPS	Value
Master		10360
8300 (Minimum)	11600 (Nominal)	13500 (Maximum)

Phase	SSW4 Aluminum CPS	Value
Master		4401
3500 (Minimum)	5000 (Nominal)	5800 (Maximum)

Phase	SSW5 Aluminum CPS	Value
Master		606.5
470.0 (Minimum)	660.0 (Nominal)	770.0 (Maximum)

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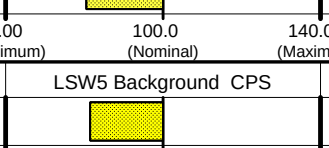
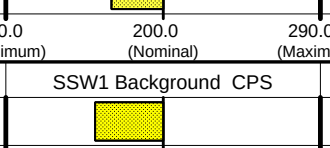
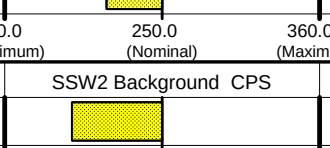
Hostile Litho-Density Sonde Master Calibration

Detector Litholog Measurement (bkgd-subtracted)

Phase	LSW1 Iron CPS	Value
Master		386.4
290.0 (Minimum)	400.0 (Nominal)	470.0 (Maximum)

Phase	LSW2 Iron CPS	Value
Master		683.9
520.0 (Minimum)	730.0 (Nominal)	850.0 (Maximum)

Phase	LSW3 Iron CPS	Value
Master		917.1
720.0 (Minimum)	1000 (Nominal)	1160 (Maximum)

Phase	LSW4 Iron CPS	Value
Master		479.7
	370.0 (Minimum) 520.0 (Nominal) 600.0 (Maximum)	

Phase	LSW5 Iron CPS	Value
Master		448.7
	340.0 (Minimum) 470.0 (Nominal) 550.0 (Maximum)	

Phase	SSW1 Iron CPS	Value
Master		1828
	1500 (Minimum) 2100 (Nominal) 2400 (Maximum)	

Phase	SSW2 Iron CPS	Value
Master		5944
	4900 (Minimum) 6800 (Nominal) 7900 (Maximum)	

Phase	SSW3 Iron CPS	Value
Master		9382
	7800 (Minimum) 10800 (Nominal) 12600 (Maximum)	

Phase	SSW4 Iron CPS	Value
Master		3978
	3300 (Minimum) 4600 (Nominal) 5400 (Maximum)	

Phase	SSW5 Iron CPS	Value
Master		535.3
	420.0 (Minimum) 580.0 (Nominal) 680.0 (Maximum)	

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Hostile Litho-Density Sonde Master Calibration

Quality Ratios

Phase	AL CALIBRATION RATIO 1	Value
Master		1.032
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)	

Phase	AL CALIBRATION RATIO 2	Value
Master		2.068
	1.900 (Minimum) 2.100 (Nominal) 2.300 (Maximum)	

Phase	AL CALIBRATION RATIO 3	Value
Master		0.5621
	0.4500 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)	

Phase	AL CALIBRATION RATIO 4	Value
Master		0.4920
	0.4500 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)	

Phase	Pad-Wear SS Ratio	Value
Master		0.9885
	0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)	

Phase	Pad-Wear LS Ratio	Value
Master		0.9858
	0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)	

Phase	Pad-Position SS Ratio	Value
Master		1.014
	0.9900 (Minimum) 0.9940 (Nominal) 1.015 (Maximum)	

Phase	Pad-Position LS Ratio	Value
Master		1.001
	0.9850 (Minimum) 0.9940 (Nominal) 1.010 (Maximum)	

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Nuclear Porosity Lithology Cartridge - B / Equipment Identification

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

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
APS Calibration Water Tank	SFT - 178	6250
APS Aluminum Calibrator Sleeve	SFT - 281	6250

Accelerator-Porosity Tool Wellsite Calibration

Detector Background

Phase	Near Det Bkg Cntrate CPS	Value
Master		25.97
Before		26.03
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	

Phase	Far Det Bkg Cntrate CPS	Value
Master		26.06
Before		27.83
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	

Phase	Array-1 Det Bkg Cntrate CPS	Value
Master		27.53
Before		26.21
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	

Phase	Array-2 Det Bkg Cntrate CPS	Value
Master		26.25
Before		27.33
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	

Phase	Array Therm Det Bkg Cntrate CPS	Value
Master		23.56
Before		23.53
	1.000 (Minimum) 30.00 (Nominal) 50.00 (Maximum)	

Master: 7-Jul-2004 21:59 Before: 8-Jul-2004 16:56

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		0.9552	Master		0.9865	Master		1.011
	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: 7-Jul-2004 21:59

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		12.35	Master		11.95	Master		5.772
	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		1.003	Master		0.9959	Master		27.17
	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: 7-Jul-2004 21:59

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		0.9552	Master		0.9865	Master		1.011
	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: 7-Jul-2004 21:59

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		12.35	Master		11.95	Master		5.772
	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		1.003	Master		0.9959	Master		27.17
	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: 7-Jul-2004 21:59

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:		
HNGS Sonde	HNGS - BA	77
Auxiliary Equipment:		
HNGS Sonde Housing	HNSH - BA	79
Gamma Source Radioactive	GSR - U	135

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value
Master		40.71	Master		17.54	Master		1250
Before		40.63	Before		17.28	Before		1255
	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		144.2	Master		10.18	Master		21.21
Before		145.0	Before		10.15	Before		20.28
	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		53.01

Phase		Value
Before		53.43

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

Master: 5-Jul-2004 18:53 Before: 8-Jul-2004 16:53

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value
Master		40.45
Before		40.58

37.50 (Minimum) 40.00 (Nominal) 42.50 (Maximum)

Phase	Na 511 Peak Res %	Value
Master		17.86
Before		17.14

12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)

Phase	High Voltage V	Value
Master		1272
Before		1277

900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)

Phase	Na 1785 Peak Loc	Value
Master		144.8
Before		144.4

135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)

Phase	Na 1785 Peak Res %	Value
Master		9.592
Before		10.89

7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)

Phase	Temperature DEGC	Value
Master		20.08
Before		19.40

-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)

Phase	Na Count Rate CPS	Value
Master		53.19
Before		53.46

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

Master: 5-Jul-2004 18:53 Before: 8-Jul-2004 16:53

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		0.9966
Before		1.000

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

Master: 5-Jul-2004 18:53

Before: 8-Jul-2004 16:53

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 1 Calibration

Phase	Na 511 Peak Set Point	Value
Master		41.00

38.00 (Minimum) 40.00 (Nominal) 42.00 (Maximum)

Phase	Th Peak Loc	Value
Master		208.8

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

Phase	Th Peak Res %	Value
Master		8.676

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

Phase	Background Count Rate CPS	Value
Master		25.70

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

Phase	Gain Ratio	Value
Master		0.9764

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

Master: 5-Jul-2004 18:48

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 2 Calibration

Phase	Na 511 Peak Set Point	Value
Master		41.00

38.00 (Minimum) 40.00 (Nominal) 42.00 (Maximum)

Phase	Th Peak Loc	Value
Master		208.1

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

Phase	Th Peak Res %	Value
Master		8.030

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

Phase	Background Count Rate CPS	Value
Master		25.73

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

Phase	Gain Ratio	Value
Master		0.9786

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

Master: 5-Jul-2004 18:48

Company:	Lamont Doherty
Well:	Site 1301B
Field:	Expedition 301
County:	Juan de Fuca
State:	Oregon

Schlumberger

Hostile Litho-Density Sonde
Accelerator Porosity Sonde
Hostile Natural Gamma Ray.