Schlumberger

Company: Lamont Doherty

Well: Expedition 321 Site U1337A
Field: PEAT
Rig: JOIDES Resolution Ocean: Pacific

Rig: JOIDES Resolution
Field: PEAT
Location: Latitude: N 3* 50.009'
Well: Expedition 321 Site U1337A
Company: Lamont Doherty

Hostile
Natural Gamma
Spectroscopy

LOCATION

Latitude: N 3* 50.009'
Longitude: W 123* 12.352'

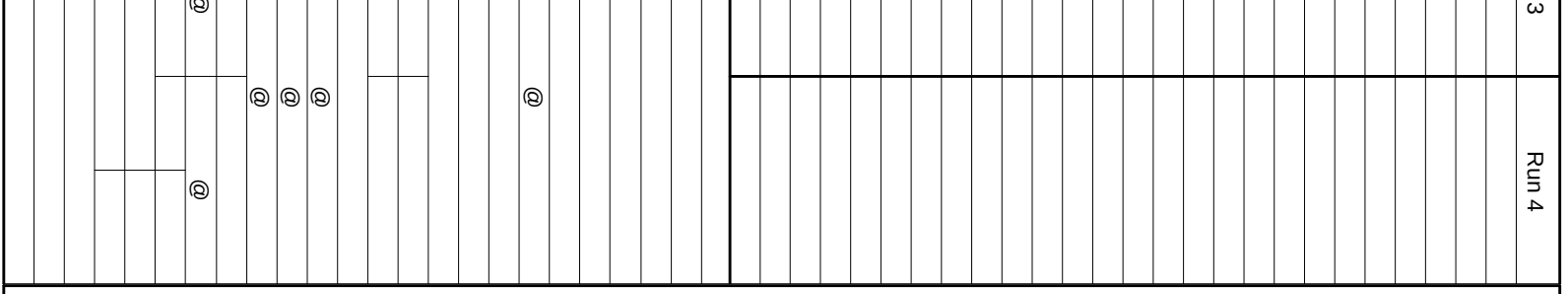
Elev.: K.B. 11.00 m
G.L. -4461.00 m
D.F. 11.00 m

Permanent Datum: Mean Sea Level
Elev.: 0.00 m
Log Measured From: Drill Floor
11.00 m above Perm. Datum
Drilling Measured From: Drill Floor

API Serial No.	N 3* 50.009'	123* 12.352'	

	Run 1	Run 2	Run
Logging Date	23-May-2009		
Run Number	1		
Depth Driller	4922 m		
Schlumberger Depth	4917 m		
Bottom Log Interval	4897 m		
Top Log Interval	4472 m		
Casing Driller Size @ Depth	4.500 in @ 4555 m	@	
Casing Schlumberger	4472 m		
Bit Size	11.438 in		
Type Fluid In Hole	Seawater Gel		
MUD Density / Viscosity	1.258 g/cm3		
MUD Fluid Loss / PH			
MUD Source Of Sample	N/A		
RM @ Measured Temperature	@	@	
RMF @ Measured Temperature	@	@	
RMC @ Measured Temperature	@	@	
Source RMF / RMC	N/A / N/A		
RM @ MRT / RMF @ MRT	@ 7 / @ 7	@ / @	
Maximum Recorded Temperatures	7 degC		
Circulation Stopped / Time	23-May-2009 / 11:00		
Logger On Bottom / Time	23-May-2009 / 17:16		
Unit Number / Location	625003 Houston		
Recorded By	K. Swain		
Witnessed By	Alberto Malinverno, Louise Anderson		

	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			



DISCLAIMER

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OTHER SERVICES1	OTHER SERVICES2
OS1: FMS/HNGS/DSI	OS1:
OS2: DITE/HLDS	OS2:
OS3: VSI	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Logging tools deployed inside drillpipe with wireline.	
BHA consisted of LFV and seal bore collar at 3.80" ID.	
HLDS caliper calibration used 12" and 15.19" rings as reference to	
improve large hole size accuracy.	
Depths referenced from drill floor which is 11m above sea level.	
Pipe depth set at 4555 mbrf.	
While descending with Tcombo log, the depth became inaccurate due to	
the close rig up of the winch and the heave compensator causing	
broken safety axles in the depth system. This caused the Tcombo logs to	
be approximately 32m shallow in depth to driller depth and the FMS and VSI logs.	
The Tcombo logs presented here are the original log files that are not depth	
shifted. LDEO has depth shifted the log data and the original depth was used	
in this log to reduce confusion for the original data.	
However the HLDS caliper was recomputed using the 12" and 15.19" calibration	
reference to improve large hole accuracy.	

RUN 1

SERVICE ORDER #:
PROGRAM VERSION: 17C0-154
FLUID LEVEL:

LOGGED INTERVAL	START	STOP

RUN 2

SERVICE ORDER #:
PROGRAM VERSION:
FLUID LEVEL:

LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1 RUN 2

SURFACE EQUIPMENT

GSR-U 616008
WITM (DTS)-A

DOWNHOLE EQUIPMENT

LEH-QT 23.22
LEH-QT 301

DTC-H 22.33
ECH-KC 2304
DTCH0-A 8798

CTEM
TelStatus 22.05
ToolStatu 21.41

HNGS-BA 194 21.41

HNGS-BA 194
HNSH-BA 205

Upper_1 20.71
Lower_2 20.50

HNGC-B 300
HNGH-A 115
HNGC-B 300

HNGC Stat 18.38 — 18.92

LDSC-B
LDSH-A 319
LDSC-B 326

LDSC Stat 17.32 — 17.85

HLDS
GSR-Z 2397
HLDV-D 51
HLDS-D 57
HEH-H 53
HLDP-C 61

16.78

Caliper
SS LS Status 12.73

DTA-A
ECH-KE 8231
DTA-A 8231

11.96

GPIT-A/B
GPIC-A 719
GPIH-A 2864

10.74

DIT-E
DIC-EB 171
MIH-ZA 342
DIS-HB 129

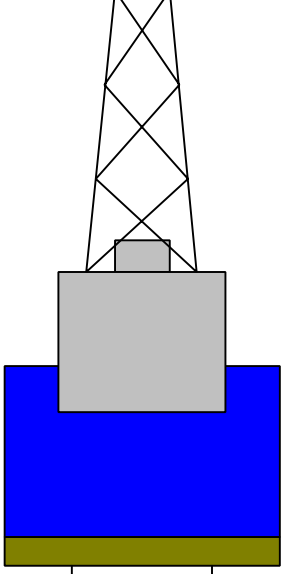
9.52

SP 3.15
Deep Ind 2.90
Aux Meas SFL 1.98
Med Ind 1.83
HV DF
Status GPIT
Tension 0.00

TOOL ZERO

MAXIMUM STRING DIAMETER 3.75 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		11.0				
Derrick Floor Elevation		11.0				
Mean Sea Level		0.0				
				4472	4.20	Sea Floor
				4472	9.875	Borehole Segment
				4555	3.80	Open Hole
				4922		

Input DLIS Files

DEFAULT	PI_LDL_NGS_033PUP	FN:49	PRODUCER	03-Jun-2009 12:03	4885.2 M	4424.9 M

Output DLIS Files

DEFAULT	PI_LDL_NGS_042PUP	FN:3	PRODUCER	22-Jun-2009 15:28	4885.2 M	4424.9 M

OP System Version: 17C0-154

DIT-E	17C0-154	GPIT-A/B	SRPC-3762-Q1_2009_OP17
DTA-A	17C0-154	HLDS	17C0-154
LDSC-B	17C0-154	HNGC-B	17C0-154
HNGS-BA	17C0-154	DTC-H	17C0-154

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)

0 (GAPI) 15

See Remarks for Depth Shift

Uplog #2

Area1
From HCGR to HSGR

HNGS Borehole Potassium (HBHK)

-0.05 (----) 0.05

HNGS Computed Gamma Ray (HCGR)

0 (GAPI) 15

HNGS Uranium (HURA)

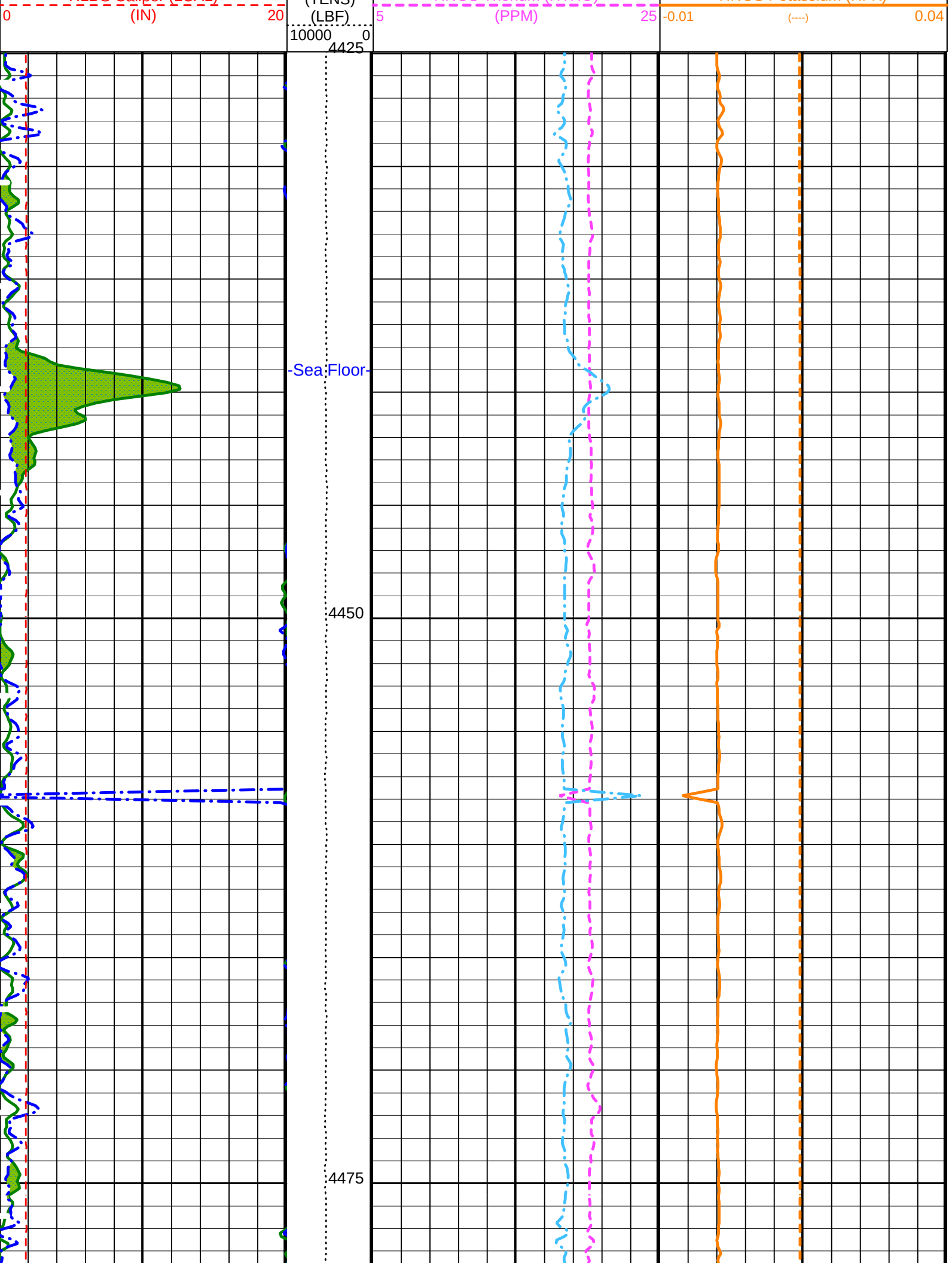
-5 (PPM) 10

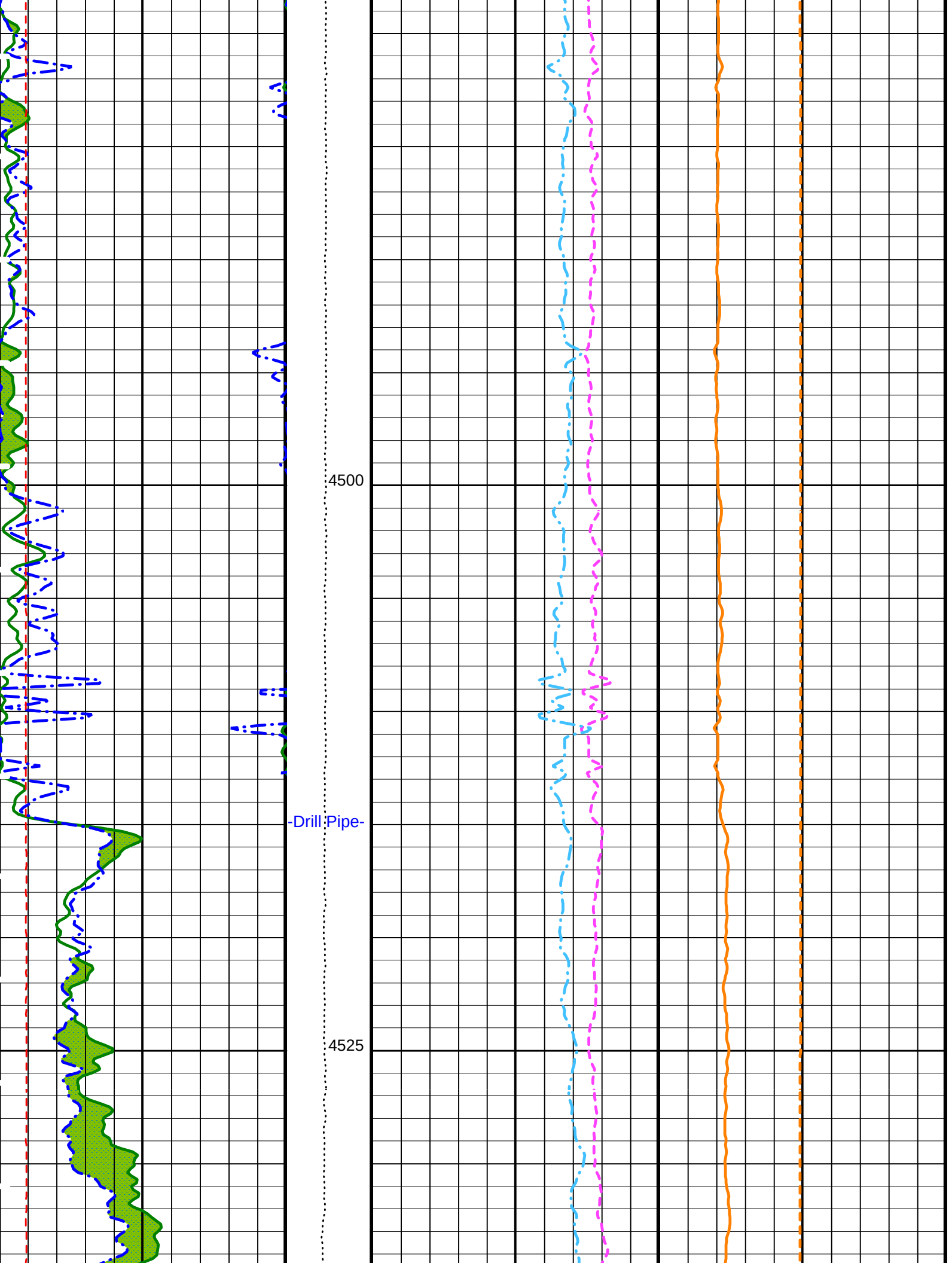
HLDS Caliper (LCAL)

Tension (TENS)

HNGS Thorium (HTHO)

HNGS Potassium (HFK)


0
(IN)
20
(TENS)
(LBF)
10000
0
5
(PPM)
25
-0.01
(----)
0.04
4425
-Sea Floor-
4450
4475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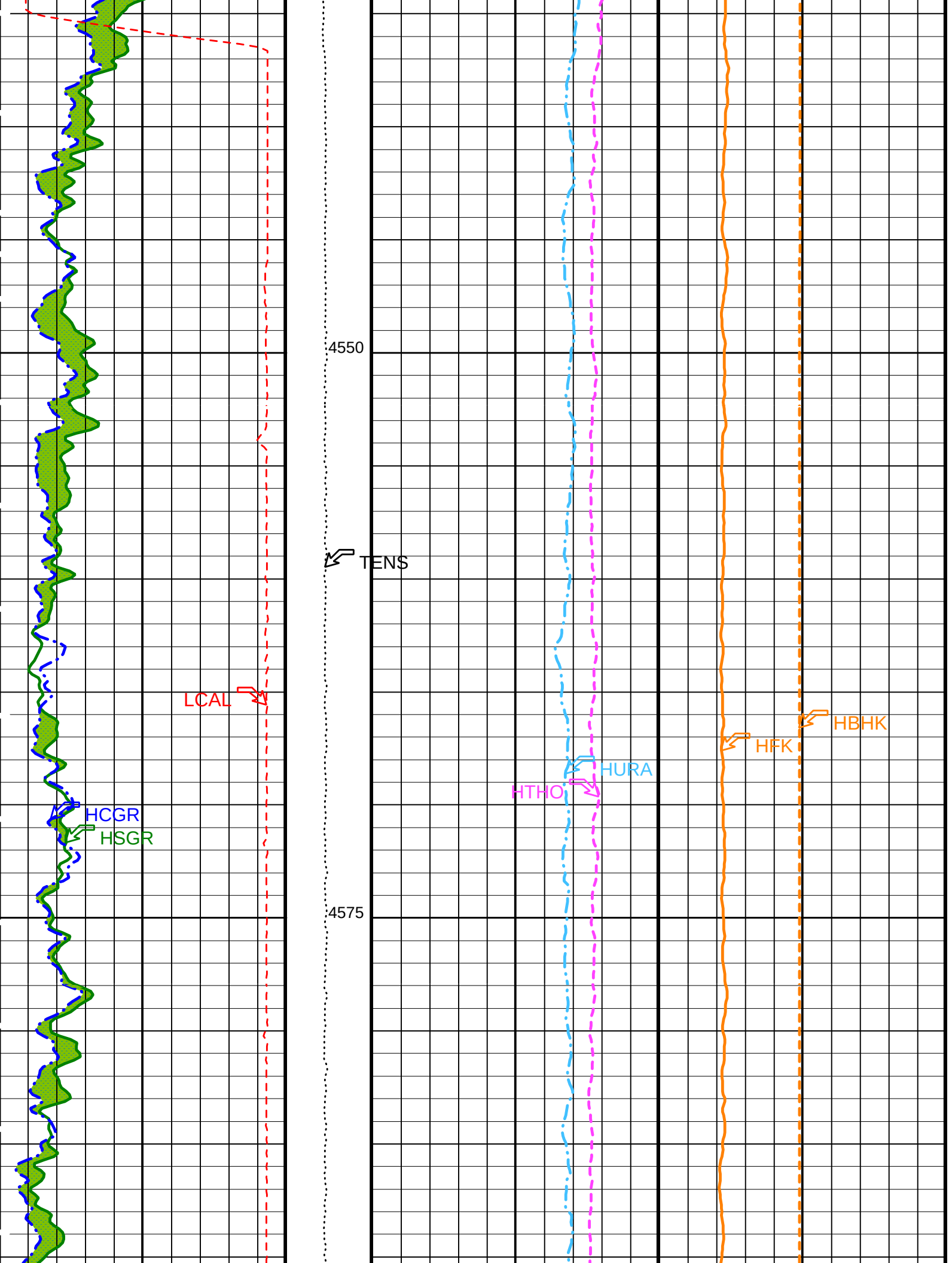
-Drill Pipe-
4525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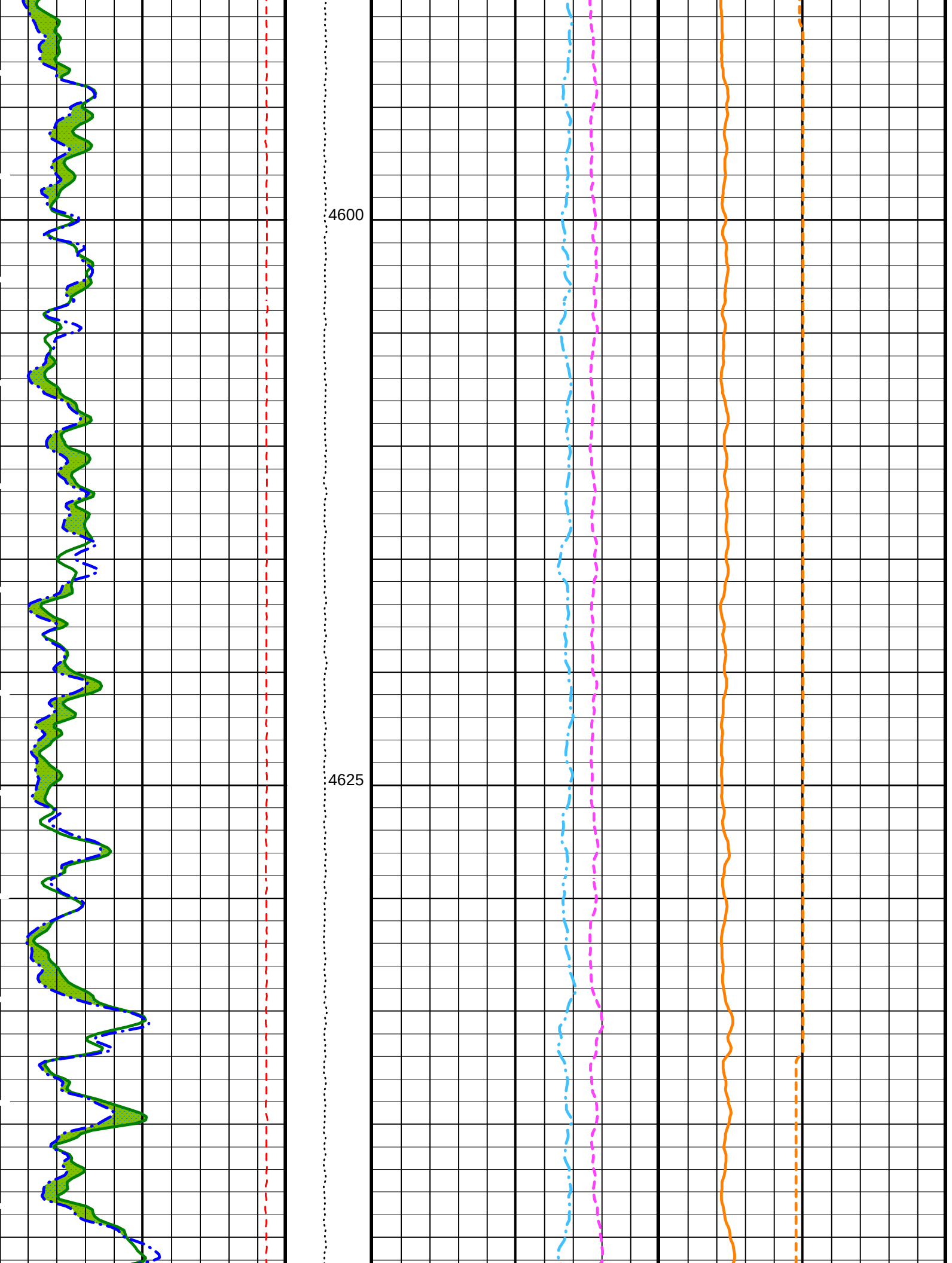
TENS
LCAL
HCGR
HSGR
4575
HTHO
HURA
HFK
HBHK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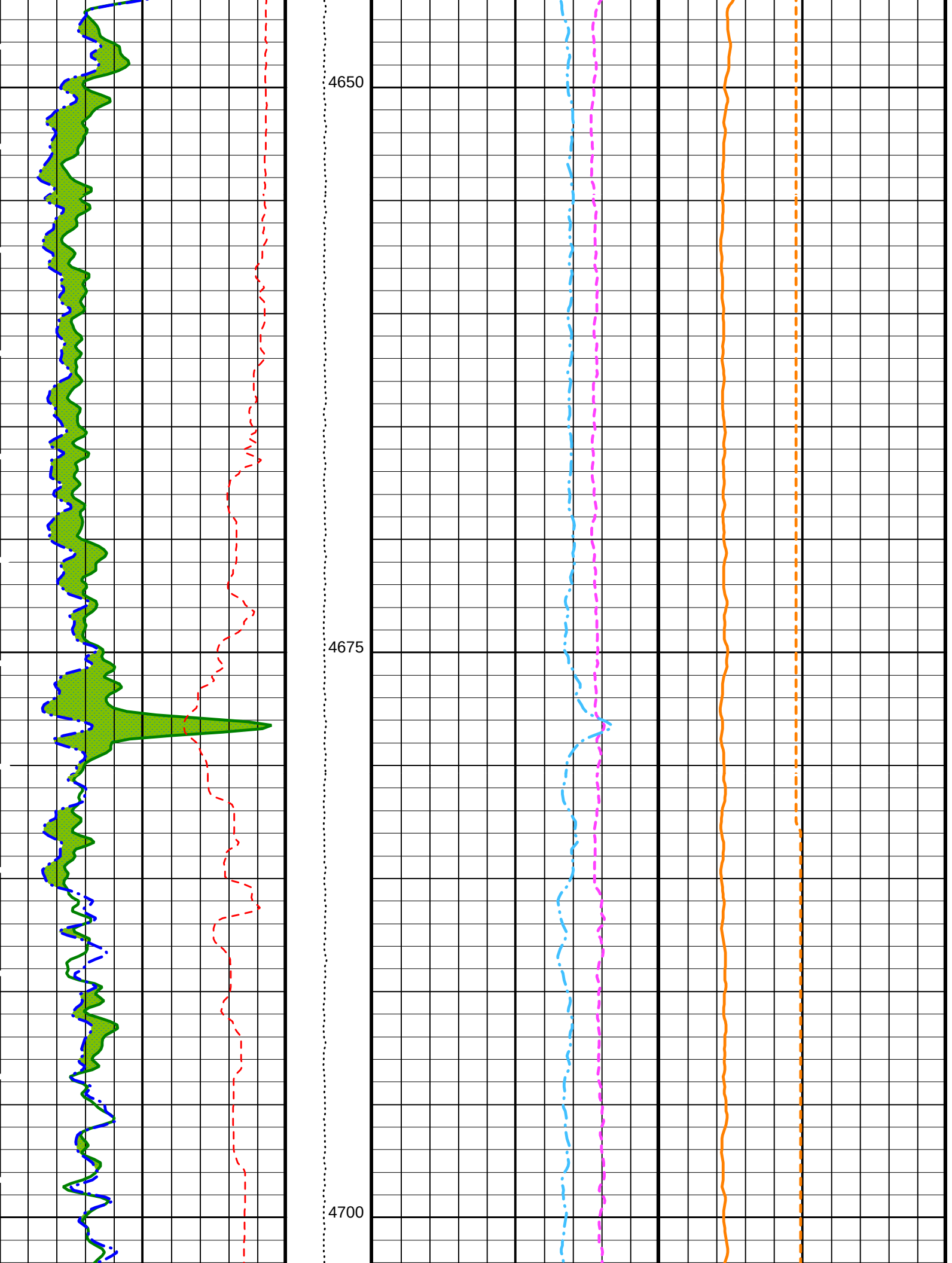
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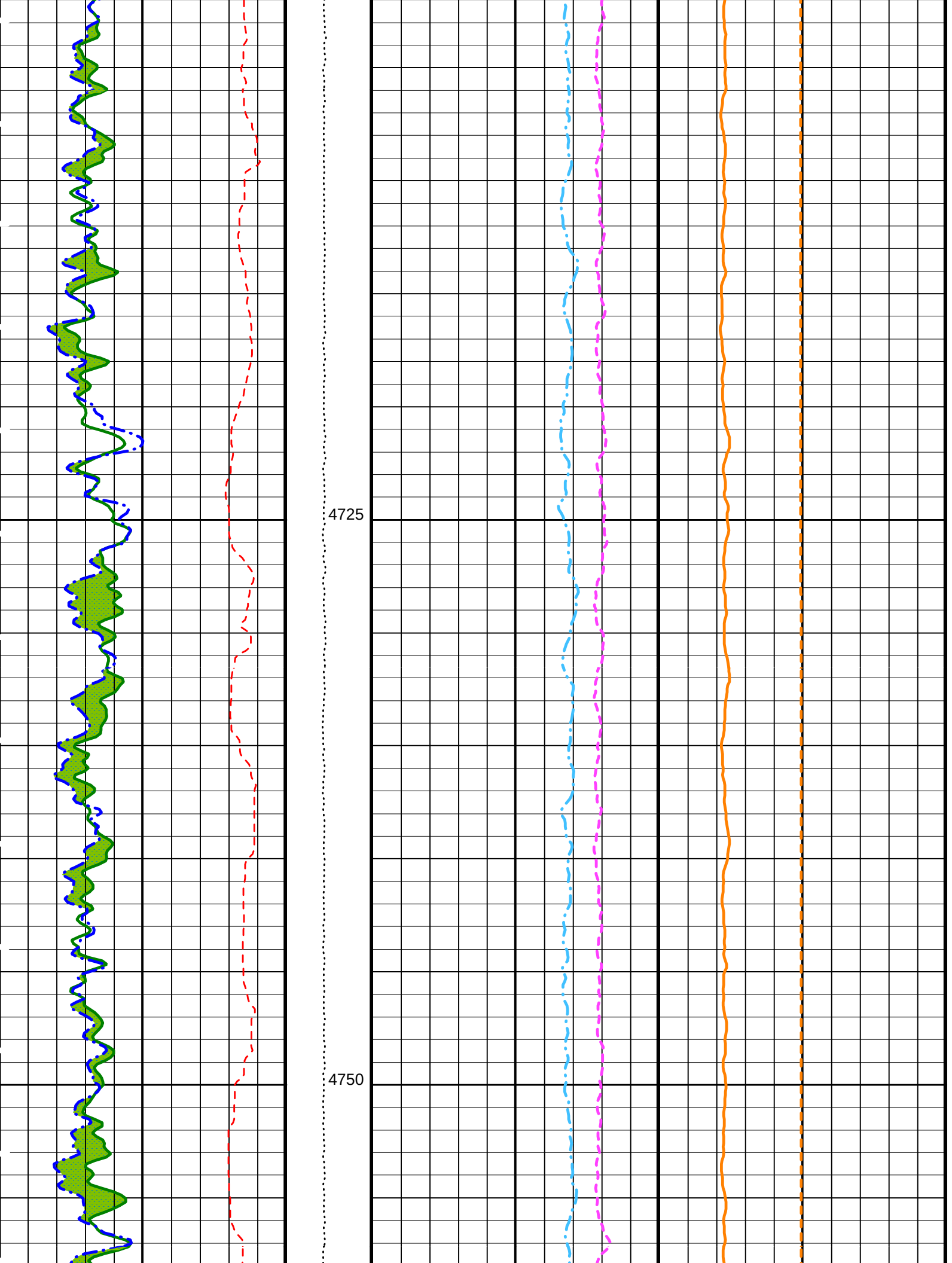
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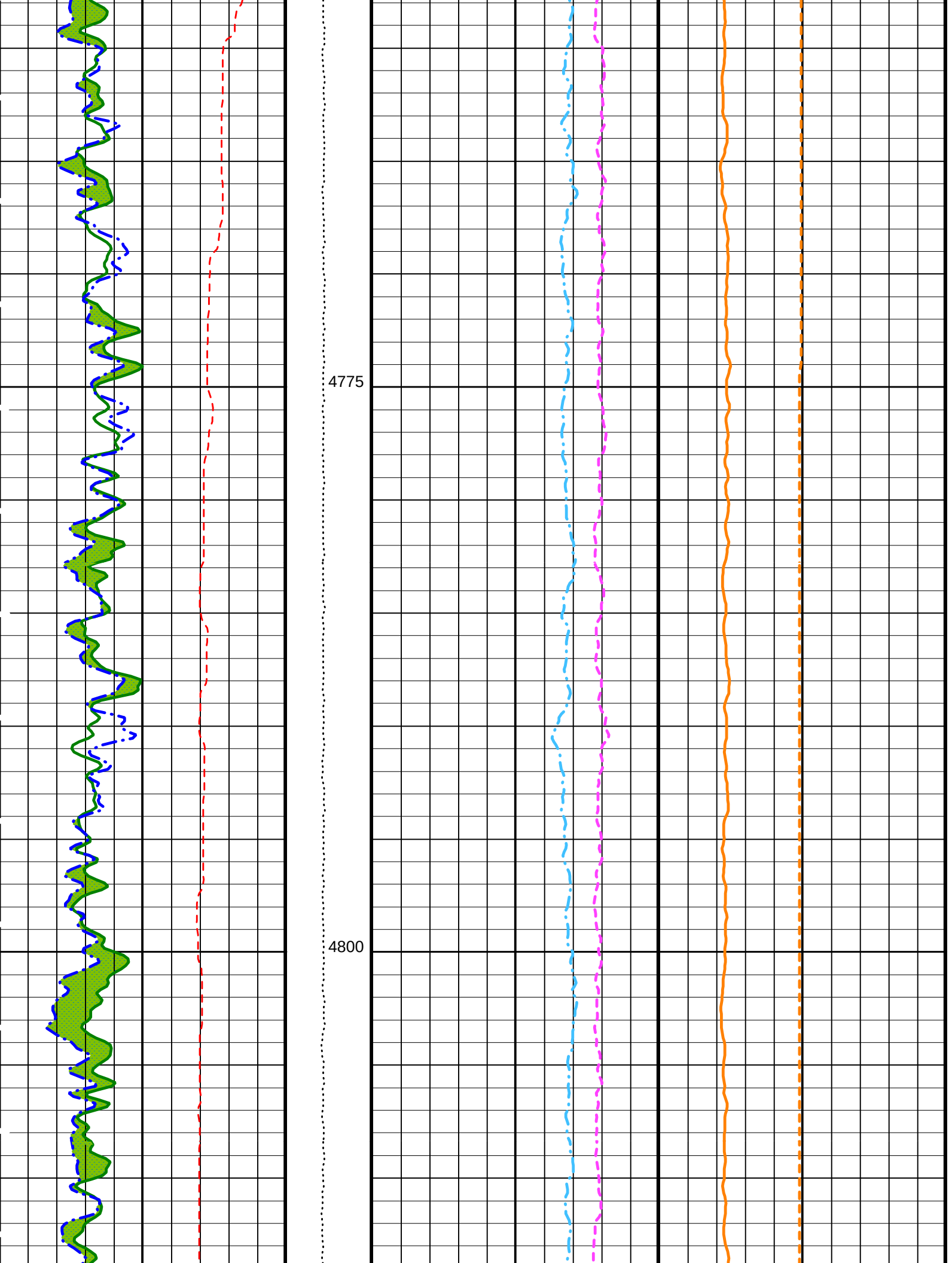
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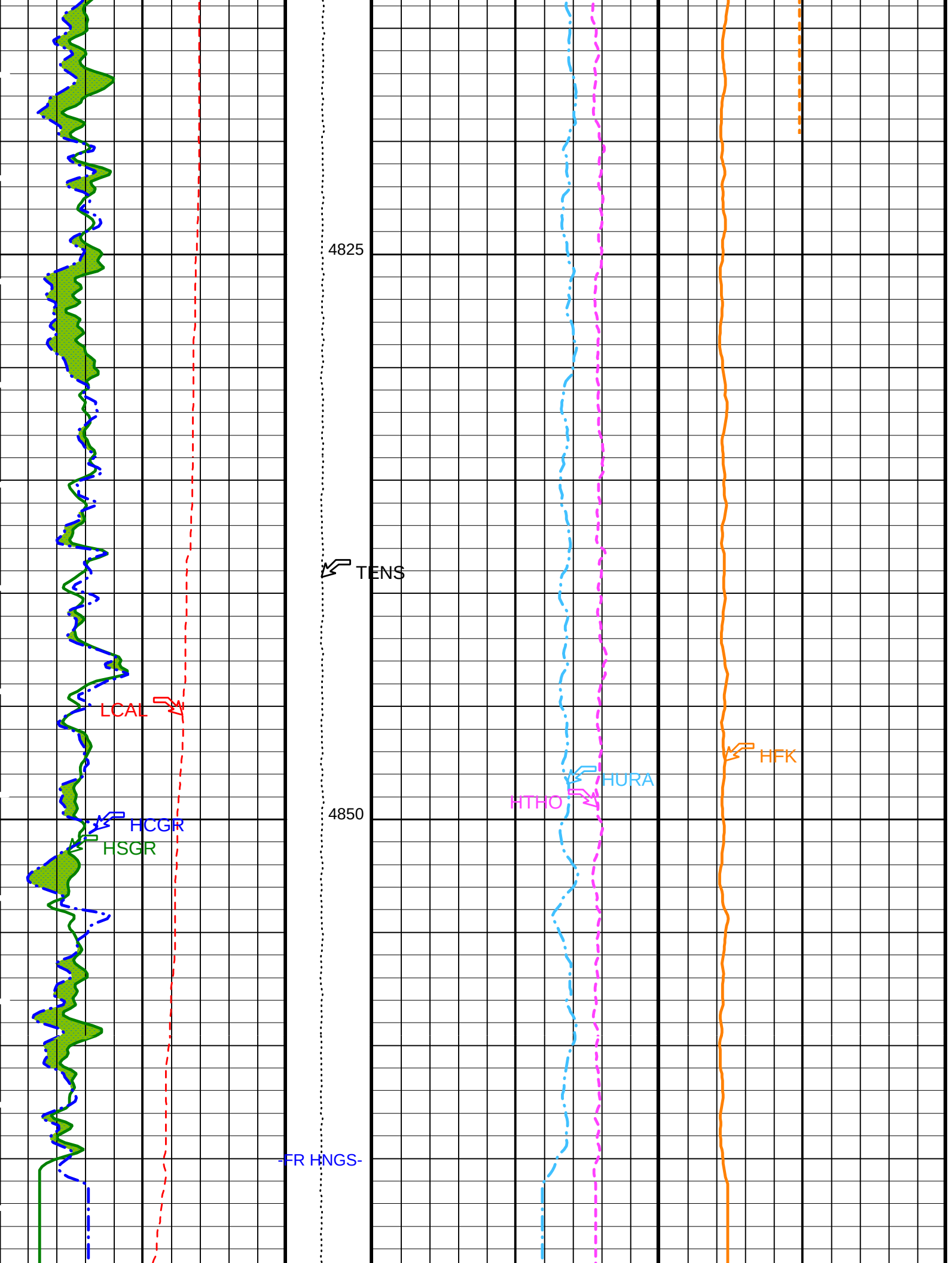
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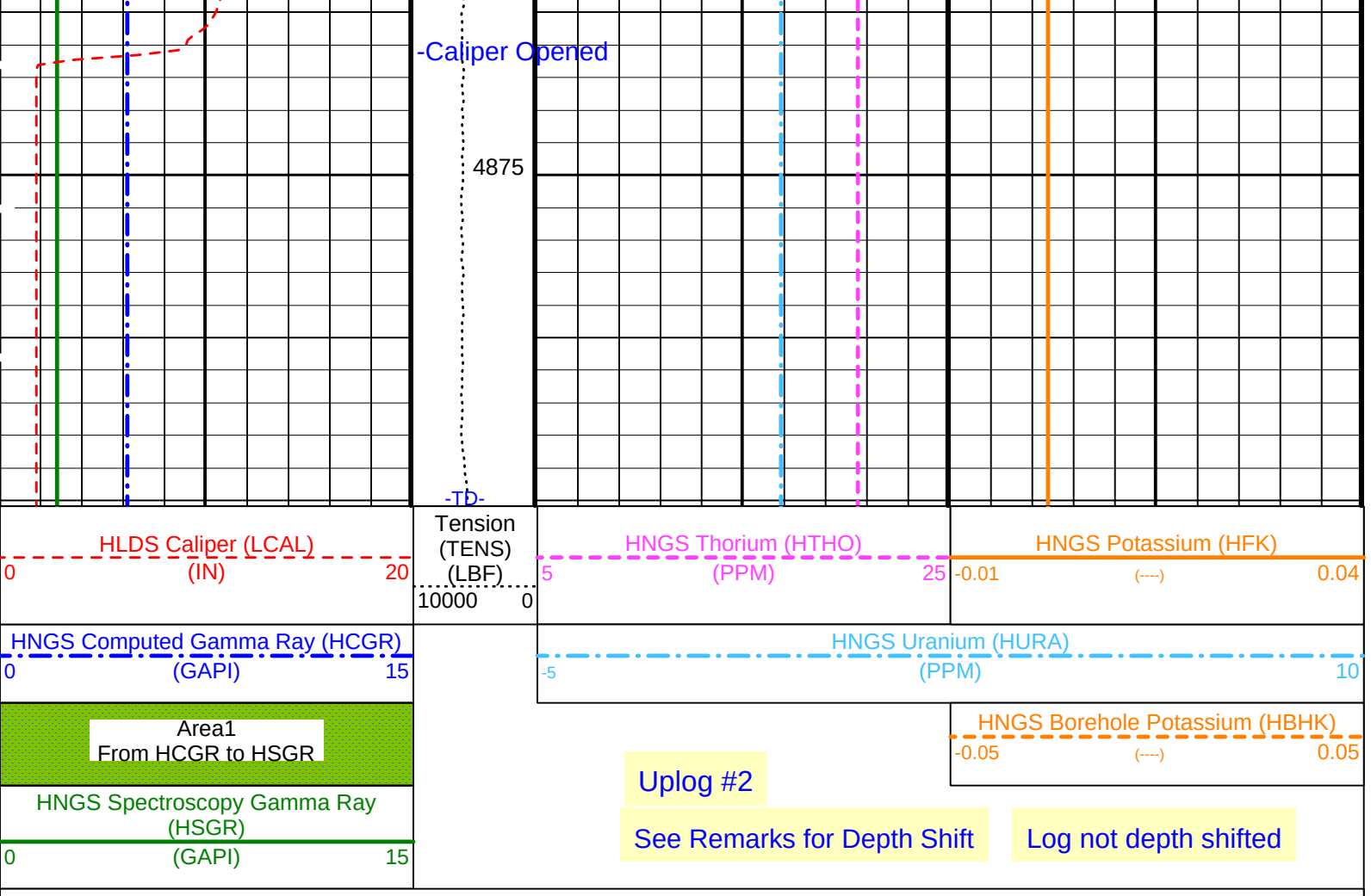
TENS
LCAL
HCGR
HSGR
4850
HTHO
HURA
HFK
-FR HNGS-



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	DIT-E: Dual Induction - E		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	17	DEGC
DGF2	Deep 20 kHz Gain Factor	0.979119	
DPH2	Deep 20 kHz Phase Shift	0.0159963	DEG
DRE2	Deep Real 20 kHz Sonde Error Correction	17.0457	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	136.154	MM/M
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	LINEAR_ESTIMATE	
IFRS	DIT-E Induction Frequency Selector	20	
IPHA	DIT-E Phasor Processing Mode	ALL	
IPRO	DIT-E Induction Processing Selector	PHASOR	
ISSBAR	Barite Mud Switch	NOBARITE	
ITEN	DIT-E Temperature Enable	ENABLE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGF2	Medium 20 kHz Gain Factor	0.974788	
MPH2	Medium 20 kHz Phase Shift	-0.199528	DEG
MRE2	Medium Real 20 kHz Sonde Error Correction	11.3259	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	172.606	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	20	DEGC
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
	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	9.01564	DEG
MRTE	Magneto Reference Temperature	23	DEGC
TEMS	GPIT Temperature Sensor Used	BOTH	
U-GPOF	Playback OLD VERSION GPIT FILE (BEFORE OP14 + SRPC-3098-FEB_2006_C) ?	NO	
	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	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
	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)	17	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	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	-0.00144603	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
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	1.15575	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.921105	
	System and Miscellaneous		
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	-50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	OFF	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	-50000	M
TDD	Total Depth - Driller	4922.00	M
TDL	Total Depth - Logger	4950.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

OP System Version: 17C0-154

DIT-E 17C0-154 GPIT-A/B SRPC-3762-Q1_2009_OP17

DTA-A	17C0-154	HLDS	17C0-154
LDSC-B	17C0-154	HNGC-B	17C0-154
HNGS-BA	17C0-154	DTC-H	17C0-154

Input DLIS Files

DEFAULT	PI_LDL_NGS_033PUP	FN:49	PRODUCER	03-Jun-2009 12:03	4885.2 M	4424.9 M

Output DLIS Files

DEFAULT	PI_LDL_NGS_042PUP	FN:3	PRODUCER	22-Jun-2009 15:28		

Input DLIS Files

DEFAULT	PI_LDL_NGS_032PUP	FN:48	PRODUCER	03-Jun-2009 11:57	4887.5 M	4546.1 M

Output DLIS Files

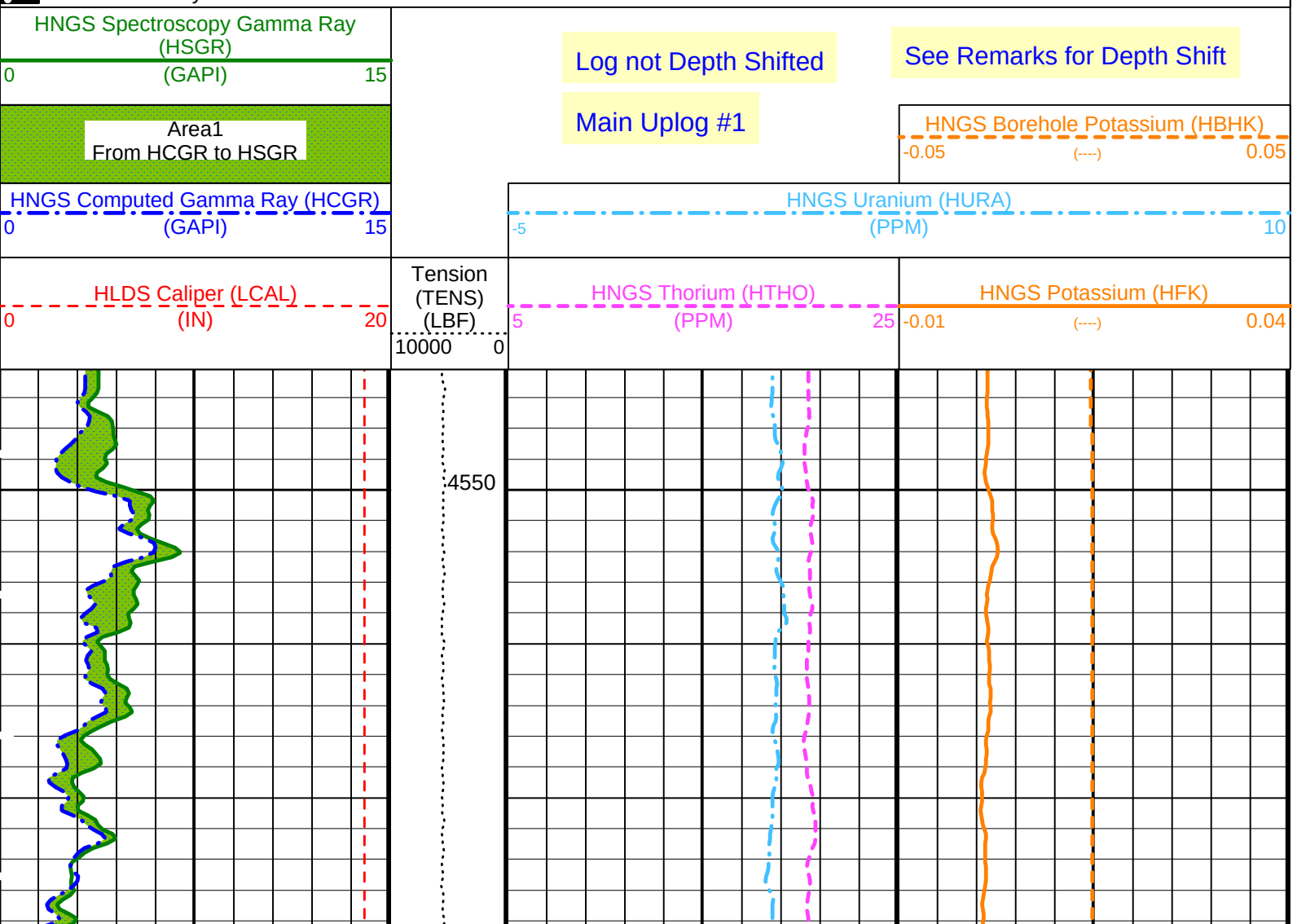
DEFAULT	PI_LDL_NGS_041PUP	FN:2	PRODUCER	22-Jun-2009 15:21	4887.5 M	4546.1 M

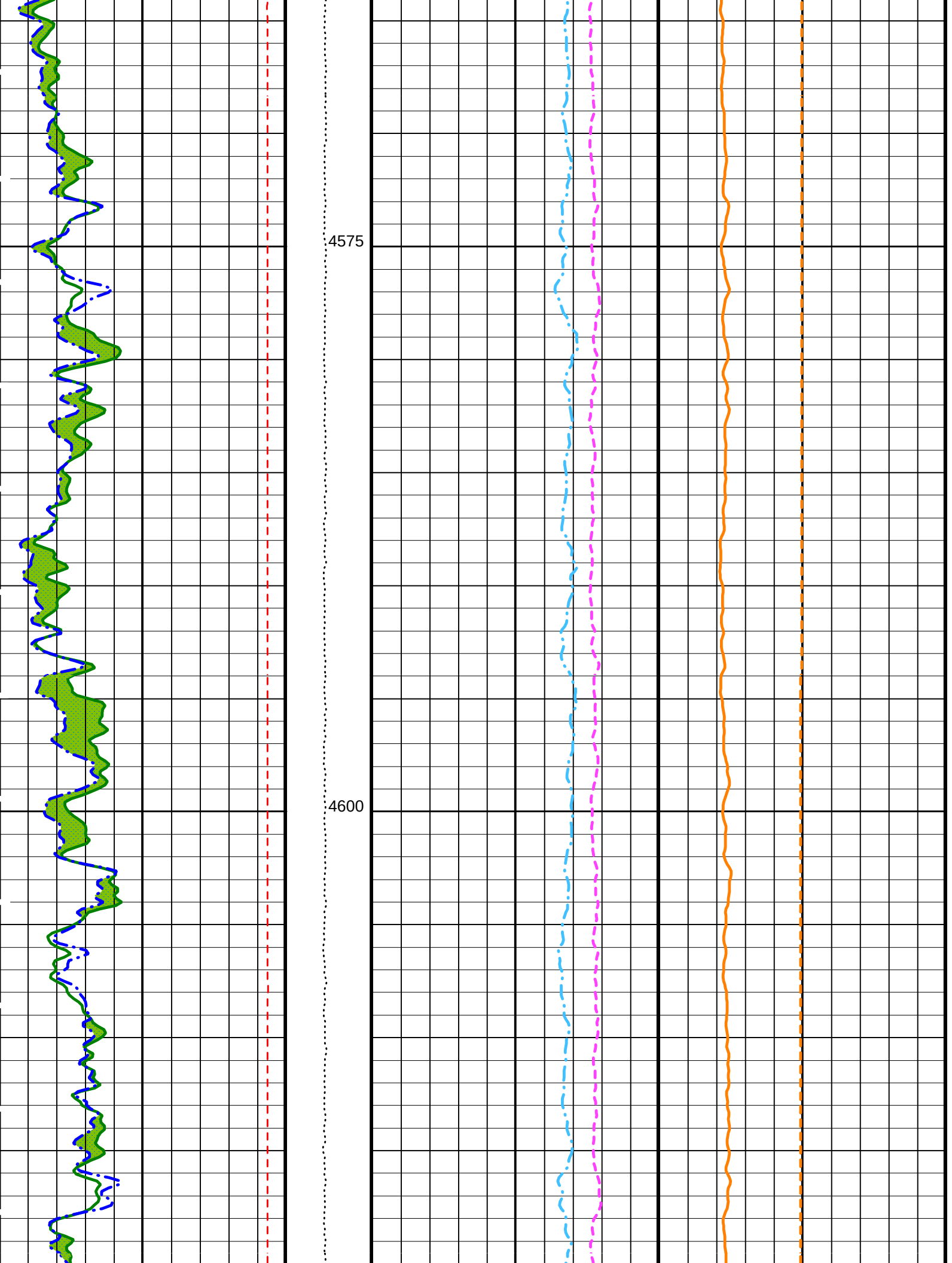
OP System Version: 17C0-154

DIT-E	17C0-154	GPIT-A/B	SRPC-3762-Q1_2009_OP17
DTA-A	17C0-154	HLDS	17C0-154
LDSC-B	17C0-154	HNGC-B	17C0-154
HNGS-BA	17C0-154	DTC-H	17C0-154

PIP SUMMARY

Time Mark Every 60 S

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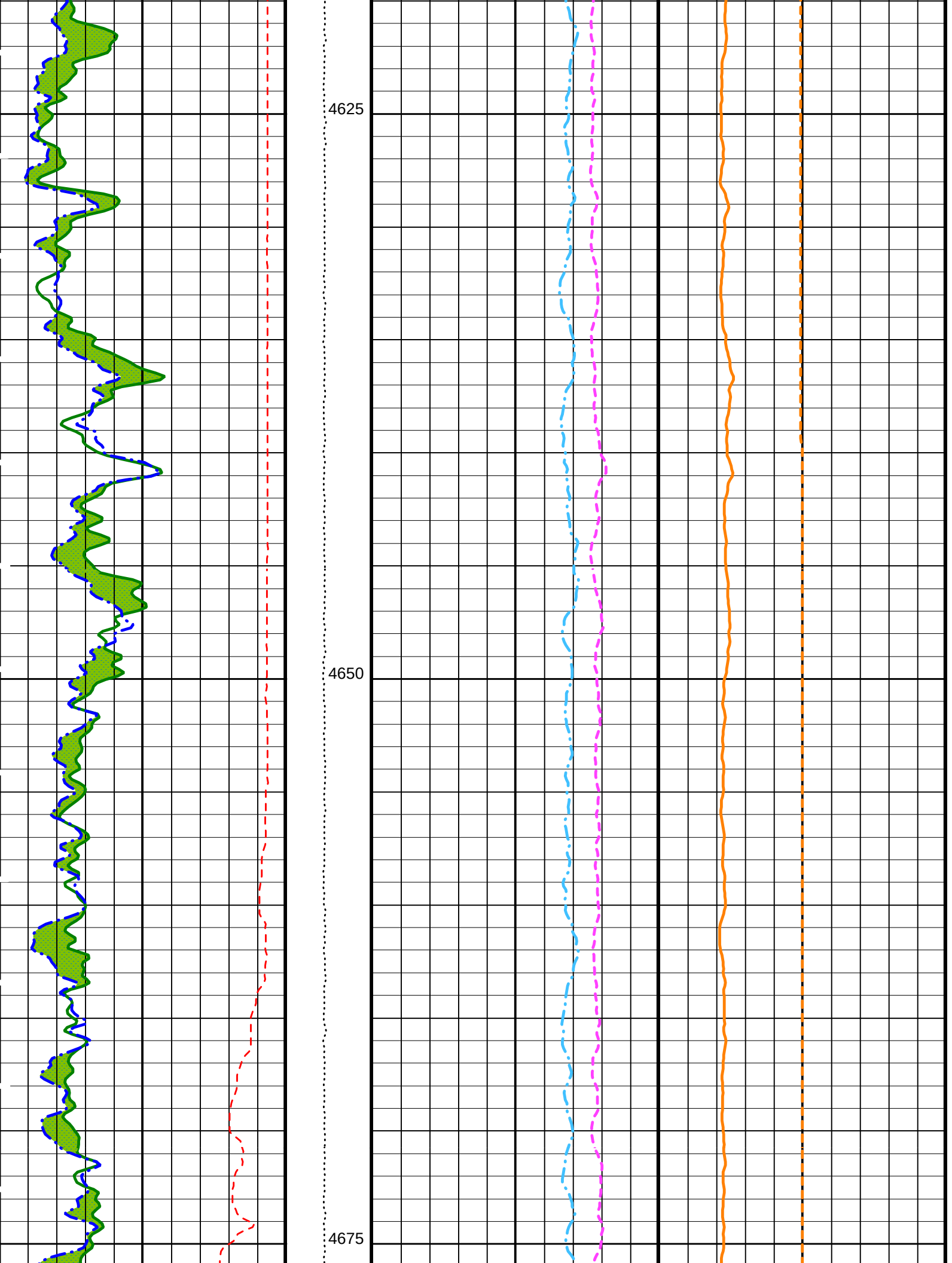
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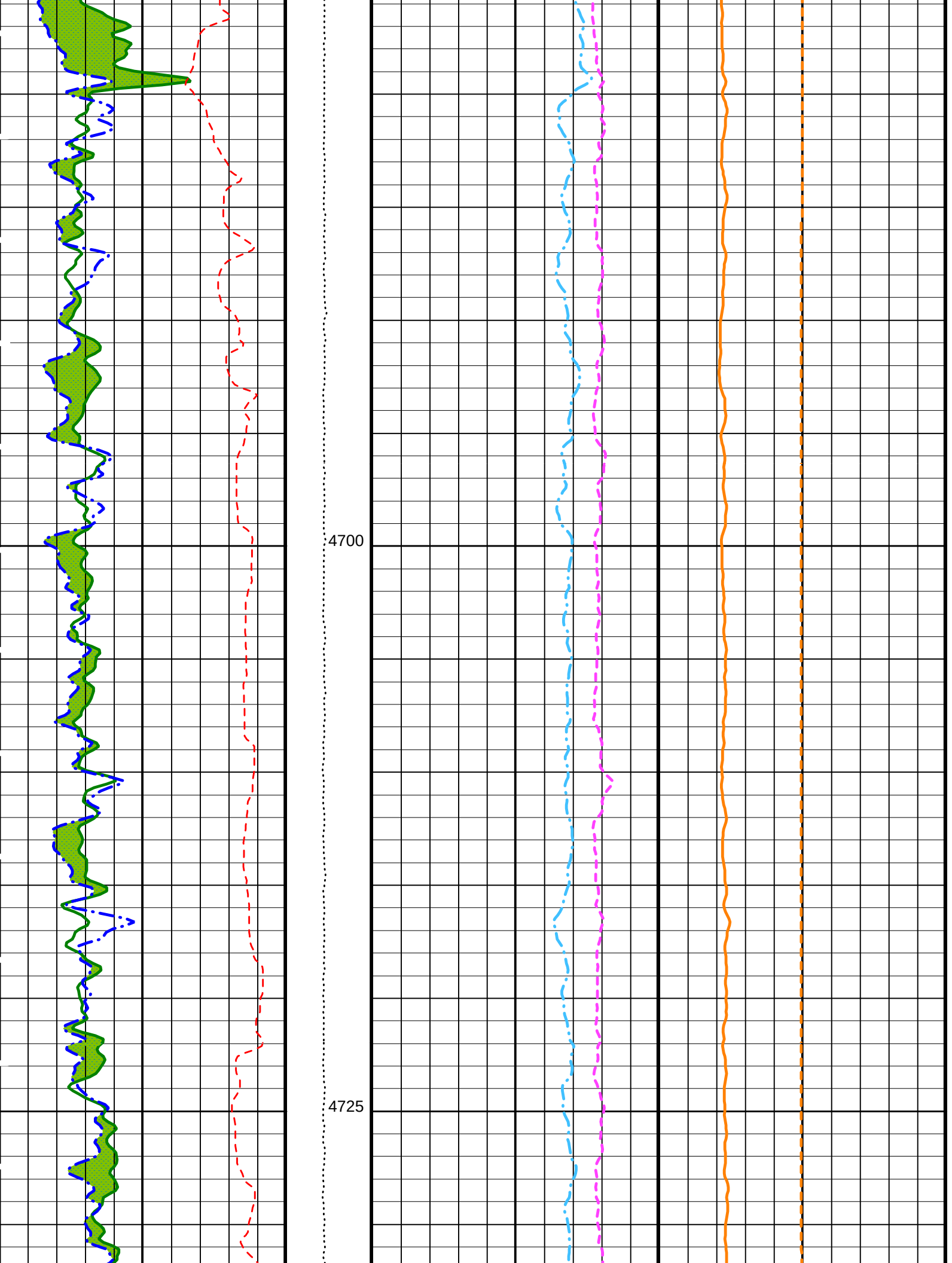
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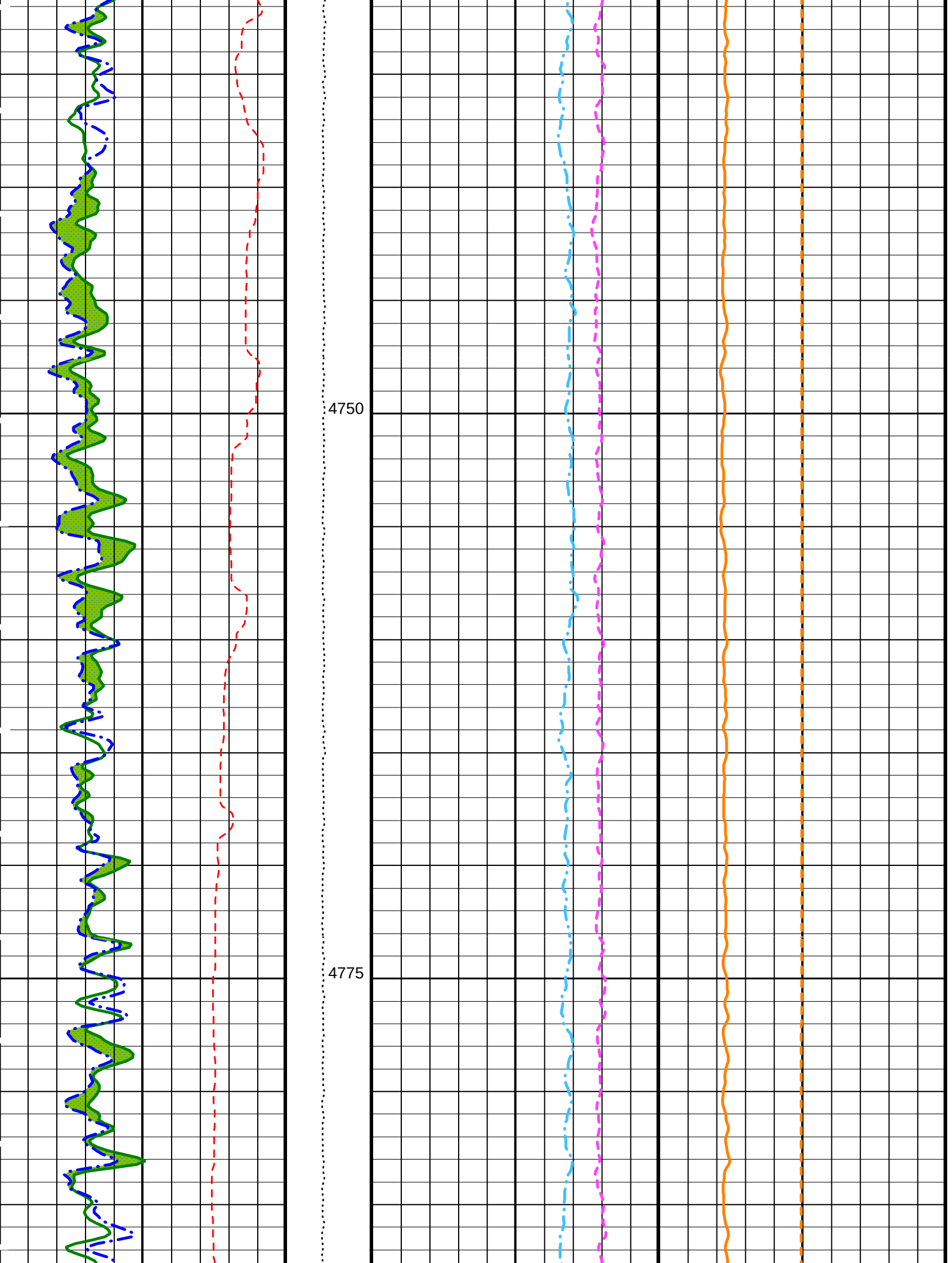
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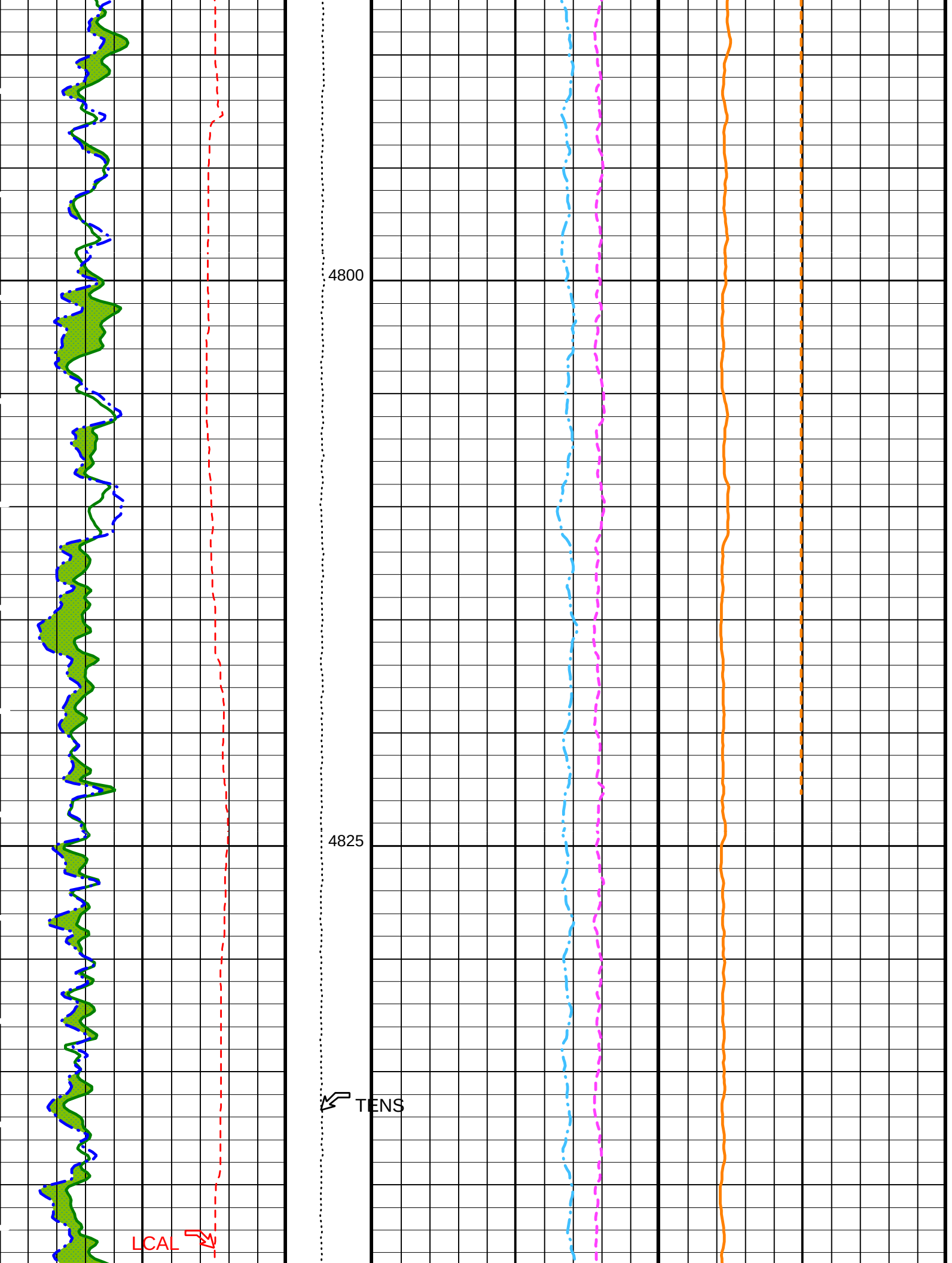
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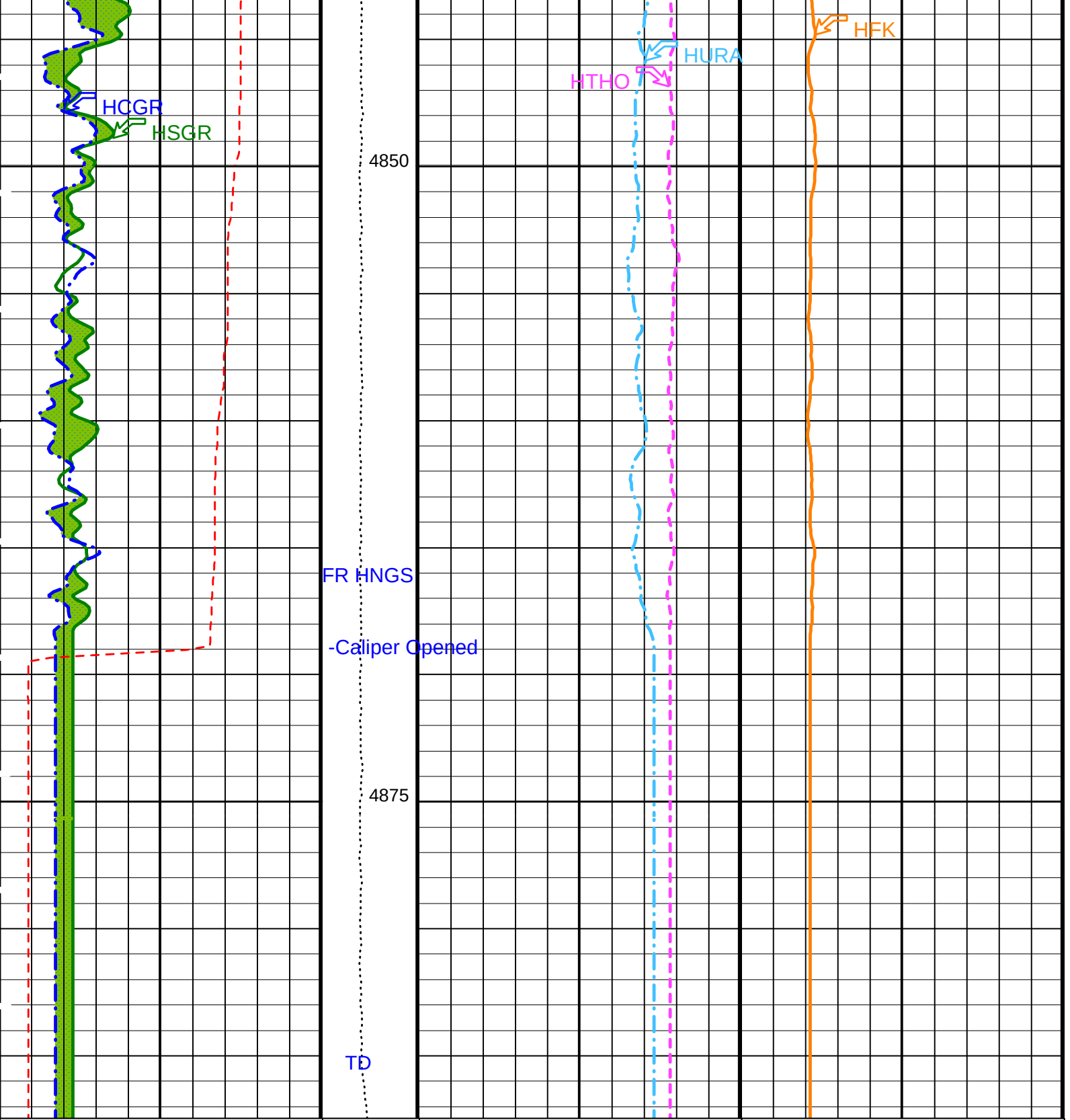
TENS
LCAL



HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
5 (PPM) 25

HNGS Potassium (HFK)
-0.01 (----) 0.04

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 15

HNGS Uranium (HURA)
-5 (PPM) 10

Area1
From HCGR to HSGR

HNGS Borehole Potassium (HBHK)
-0.05 (----) 0.05

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 15

Main Uplog #1

See Remarks for Depth Shift

Log not Depth Shifted

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	DIT-E: Dual Induction - E		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	17	DEGC
DGF2	Deep 20 kHz Gain Factor	0.979119	
DPH2	Deep 20 kHz Phase Shift	0.0159963	DEG
DRE2	Deep Real 20 kHz Sonde Error Correction	17.0457	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	136.154	MM/M
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	LINEAR_ESTIMATE	
IFRS	DIT-E Induction Frequency Selector	20	
IPHA	DIT-E Phasor Processing Mode	ALL	
IPRO	DIT-E Induction Processing Selector	PHASOR	
ISSBAR	Barite Mud Switch	NOBARITE	
ITEN	DIT-E Temperature Enable	ENABLE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGF2	Medium 20 kHz Gain Factor	0.974788	
MPH2	Medium 20 kHz Phase Shift	-0.199528	DEG
MRE2	Medium Real 20 kHz Sonde Error Correction	11.3259	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	172.606	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	20	DEGC
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
	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	9.01564	DEG
MRTE	Magneto Reference Temperature	23	DEGC
TEMS	GPIT Temperature Sensor Used	BOTH	
U-GPOF	Playback OLD VERSION GPIT FILE (BEFORE OP14 + SRPC-3098-FEB_2006_C) ?	NO	
	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	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
	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)	17	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	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	-0.00144603	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
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	1.15575	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.921105	

System and Miscellaneous

ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	4.500	IN
CWEI	Casing Weight	0.00	LB/F
DFD	Drilling Fluid Density	1.26	G/C3
DO	Depth Offset for Playback	0.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	-50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	OFF	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	-50000	M
TDD	Total Depth - Driller	4922.00	M
TDL	Total Depth - Logger	4950.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 22-Jun-2009 15:21

OP System Version: 17C0-154

DIT-E	17C0-154	GPIT-A/B	SRPC-3762-Q1_2009_OP17
DTA-A	17C0-154	HLDS	17C0-154
LDSC-B	17C0-154	HNGC-B	17C0-154
HNGS-BA	17C0-154	DTC-H	17C0-154

Input DLIS Files

DEFAULT	PI_LDL_NGS_032PUP	FN:48	PRODUCER	03-Jun-2009 11:57	4887.5 M	4546.1 M

Output DLIS Files

DEFAULT	PI_LDL_NGS_041PUP	FN:2	PRODUCER	22-Jun-2009 15:21

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
General Purpose Inclinometer Wellsite Calibration - CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY							
Before: Calibration out of date 16-May-2009 6:55							
TEMPERATURE REFERENCE :	N/A	N/A	20	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	3	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	743	N/A	N/A	N/A	
General Purpose Inclinometer Wellsite Calibration - CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY							
Before: Calibration out of date 16-May-2009 6:56							
TEMPERATURE REFERENCE :	N/A	N/A	23	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	3	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	9	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	507	N/A	N/A	N/A	
Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement							
Master: 22-Apr-2009 13:53 Before: 16-May-2009 7:00 After: 24-May-2009 0:42							

SS Cs Resolution Bkg	9.000	7.759	7.744	7.812	0.06878	1.800	%
LS Cs Resolution Bkg	9.000	8.110	8.072	8.111	0.03907	1.800	%
LSW1 Background	100.0	93.49	92.71	93.03	0.3278	0.03000	CPS
LSW2 Background	100.0	85.73	84.14	83.64	-0.5016	0.03000	CPS
LSW3 Background	200.0	192.7	191.4	192.8	1.409	0.03000	CPS
LSW4 Background	250.0	235.8	233.7	235.8	2.164	0.03000	CPS
LSW5 Background	600.0	552.3	550.2	547.0	-3.192	0.03000	CPS
SSW1 Background	100.0	90.71	90.74	90.86	0.1250	0.03000	CPS
SSW2 Background	200.0	156.2	156.2	156.5	0.2310	0.03000	CPS
SSW3 Background	500.0	436.6	432.7	435.4	2.637	0.03000	CPS
SSW4 Background	270.0	234.8	232.3	232.1	-0.1494	0.03000	CPS
SSW5 Background	200.0	168.2	167.2	166.2	-0.9471	0.03000	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement

Master: 22-Apr-2009 14:54

LSW1 Aluminum	600.0	576.2	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	831.7	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	999.8	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	502.6	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	456.4	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2571	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	7074	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9869	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	4093	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	501.7	N/A	N/A	N/A	N/A	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement

Master: 22-Apr-2009 14:47

LSW1 Iron	400.0	396.8	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	672.9	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	883.7	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	454.8	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	415.6	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1882	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5884	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8992	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3724	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	443.2	N/A	N/A	N/A	N/A	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration

Before: 3-Jun-2009 11:40

HLDS Caliper Small Ring	12.00	N/A	14.14	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	17.61	N/A	N/A	N/A	IN

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check

Master: Calibration out of date 12-Mar-2009 20:35 Before: 16-May-2009 19:11 After: 24-May-2009 0:43

Na 511 Peak Loc	40.00	39.63	39.53	39.69	0.1544	1.000	
Na 511 Peak Res	15.50	14.89	16.37	15.16	-1.211	2.000	%
High Voltage	1150	1168	1179	1182	2.899	N/A	V
Na 1785 Peak Loc	142.6	142.1	141.7	142.3	0.5758	7.000	
Na 1785 Peak Res	8.500	8.613	9.055	8.876	-0.1792	2.000	%
Temperature	15.50	27.34	32.56	31.31	-1.242	N/A	DEGC
Na Count Rate	45.00	41.11	38.79	38.87	0.08134	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check

Master: Calibration out of date 12-Mar-2009 20:35 Before: 16-May-2009 19:11 After: 24-May-2009 0:43

Na 511 Peak Loc	40.00	39.72	39.75	39.57	-0.1780	1.000	
Na 511 Peak Res	15.50	15.49	15.15	16.24	1.096	2.000	%
High Voltage	1150	1102	1113	1115	1.885	N/A	V
Na 1785 Peak Loc	142.6	142.7	142.3	142.0	-0.3518	7.000	
Na 1785 Peak Res	8.500	7.944	8.759	8.750	-0.008512	2.000	%
Temperature	15.50	27.88	33.15	33.20	0.05202	N/A	DEGC
Na Count Rate	45.00	41.22	39.43	39.10	-0.3307	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2

Master: Calibration out of date 12-Mar-2009 20:35 Before: 16-May-2009 19:11 After: 24-May-2009 0:43

Coincidence Count Rate Ratio	1.000	0.9971	0.9835	0.9958	0.01234	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration

Master: Calibration out of date 12-Mar-2009 20:35

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	211.0	--	--	--	--	
Th Peak Res	7.000	6.897	--	--	--	--	%
Background Count Rate	142.5	19.53	--	--	--	--	CPS
Gain Ratio	1.000	1.013	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration

Master: Calibration out of date 12-Mar-2009 20:35

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	208.9	--	--	--	--	
Th Peak Res	7.000	7.130	--	--	--	--	%
Background Count Rate	142.5	20.80	--	--	--	--	CPS

Gain Ratio	1.000	1.001	--	--	--	--

Dual Induction - E / Equipment Identification

Primary Equipment:		
Dual Induction Sonde	DIS - HB	442
Dual Induction Cartridge	DIC - EB	438
Auxiliary Equipment:		
Mass Isolated Housing	MIH - ZA	417

Dual Induction - E Wellsite Calibration

Induction Electronics (10 kHz)

Phase	ID Elect Real Offset 10 kHz MM/M	Value
Before		40.13
	-261.2 (Minimum) 38.83 (Nominal) 338.8 (Maximum)	

Phase	ID Elect Real Gain 10 kHz	Value
Before		1.010
	0.8436 (Minimum) 0.9936 (Nominal) 1.191 (Maximum)	

Phase	ID Elect Phase 10 kHz DEG	Value
Before		8.883
	0.1759 (Minimum) 10.18 (Nominal) 20.18 (Maximum)	

Phase	ID Elect Quad Offset 10 kHz MM/M	Value
Before		25.41
	-276.0 (Minimum) 23.99 (Nominal) 324.0 (Maximum)	

Phase	ID Elect Quad Gain 10 kHz	Value
Before		0.9974
	0.8333 (Minimum) 0.9833 (Nominal) 1.176 (Maximum)	

Phase	IM Elect Phase 10 kHz DEG	Value
Before		13.32
	3.625 (Minimum) 13.63 (Nominal) 23.63 (Maximum)	

Phase	IM Elect Real Offset 10 kHz MM/M	Value
Before		99.84
	-452.1 (Minimum) 97.90 (Nominal) 647.9 (Maximum)	

Phase	IM Elect Real Gain 10 kHz	Value
Before		0.9508
	0.8095 (Minimum) 0.9595 (Nominal) 1.143 (Maximum)	

Phase	IM Elect Quad Offset 10 kHz MM/M	Value
Before		98.48
	-453.6 (Minimum) 96.36 (Nominal) 646.4 (Maximum)	

Phase	IM Elect Quad Gain 10 kHz	Value
Before		0.9481
	0.8070 (Minimum) 0.9570 (Nominal) 1.139 (Maximum)	

Before: 31-May-2009 8:10

Dual Induction - E Wellsite Calibration

Induction Electronics (20 kHz)

Phase	ID Elect Real Offset 20 kHz MM/M	Value
Before		15.55
	-109.8 (Minimum) 15.15 (Nominal) 140.2 (Maximum)	

Phase	ID Elect Real Gain 20 kHz	Value
Before		1.018
	0.8559 (Minimum) 1.006 (Nominal) 1.208 (Maximum)	

Phase	ID Elect Phase 20 kHz DEG	Value
Before		7.910
	-6.430 (Minimum) 8.570 (Nominal) 23.57 (Maximum)	

Phase	ID Elect Quad Offset 20 kHz MM/M	Value
Before		10.06
	-115.5 (Minimum) 9.522 (Nominal) 134.5 (Maximum)	

Phase	ID Elect Quad Gain 20 kHz	Value
Before		1.005
	0.8453 (Minimum) 0.9953 (Nominal) 1.193 (Maximum)	

Phase	IM Elect Phase 20 kHz DEG	Value
Before		12.63
	-2.601 (Minimum) 12.40 (Nominal) 27.40 (Maximum)	

Phase	IM Elect Real Offset 20 kHz MM/M	Value
Before		41.68
	-184.3 (Minimum) 40.66 (Nominal) 265.7 (Maximum)	

Phase	IM Elect Real Gain 20 kHz	Value
Before		1.011
	0.8562 (Minimum) 1.006 (Nominal) 1.209 (Maximum)	

Phase	IM Elect Quad Offset 20 kHz MM/M	Value
Before		41.27
	-184.8 (Minimum) 40.18 (Nominal) 265.2 (Maximum)	

Phase	IM Elect Quad Gain 20 kHz	Value
Before		1.008
	0.8534 (Minimum) 1.003 (Nominal) 1.205 (Maximum)	

Before: 31-May-2009 8:11

Dual Induction - E Wellsite Calibration

Induction Electronics (40 kHz)

Phase	ID Elect Real Offset 40 kHz MM/M	Value
Before		10.13
	-75.13 (Minimum) 9.871 (Nominal) 94.87 (Maximum)	

Phase	ID Elect Real Gain 40 kHz	Value
Before		0.9949
	0.8385 (Minimum) 0.9885 (Nominal) 1.184 (Maximum)	

Phase	ID Elect Phase 40 kHz DEG	Value
Before		29.02
	8.300 (Minimum) 28.30 (Nominal) 48.30 (Maximum)	

Phase	ID Elect Quad Offset 40 kHz MM/M	Value
Before		6.544
	-78.79 (Minimum) 6.213 (Nominal) 91.21 (Maximum)	

Phase	ID Elect Quad Gain 40 kHz	Value
Before		0.9814
	0.8272 (Minimum) 0.9772 (Nominal) 1.168 (Maximum)	

Phase	IM Elect Phase 40 kHz DEG	Value
Before		33.63
	12.35 (Minimum) 32.35 (Nominal) 52.35 (Maximum)	

Phase	IM Elect Real Offset 40 kHz MM/M	Value
Before		27.30

Phase	IM Elect Real Gain 40 kHz	Value
Before		1.029

Before		27.30	Before		1.029
-103.5 (Minimum)	26.51 (Nominal)	156.5 (Maximum)	0.8684 (Minimum)	1.018 (Nominal)	1.226 (Maximum)

Phase	IM Elect Quad Offset 40 kHz MM/M	Value	Phase	IM Elect Quad Gain 40 kHz	Value
Before		27.10	Before		1.026
-103.7 (Minimum)	26.25 (Nominal)	156.3 (Maximum)	0.8652 (Minimum)	1.015 (Nominal)	1.221 (Maximum)

Before: 31-May-2009 8:12

Dual Induction - E Wellsite Calibration

SFL Electronics

Phase	SFL Voltage Offset MV	Value	Phase	SFL Voltage Gain	Value
Before		1.372	Before		1.023
-15.00 (Minimum)	0 (Nominal)	15.00 (Maximum)	0.8500 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Phase	SFL Current Offset MA	Value	Phase	SFL Current Gain	Value
Before		0.005820	Before		0.9989
-0.6000 (Minimum)	0 (Nominal)	0.6000 (Maximum)	0.8500 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Before: 31-May-2009 8:13

Dual Induction - E Wellsite Calibration

Electronics Calibration Changes Files/Depth Intervals:

Phase	ID (R > 27 OHM-M) MM/M	Value	Phase	ID (R < 27 OHM-M) %	Value	Phase	SFL (R < 1 OHM-M) OHMM	Value
After		0	After		0.0001670	After		0.0004919
0 (Minimum)	0 (Nominal)	0.7500 (Maximum)	0 (Minimum)	0 (Nominal)	2.000 (Maximum)	0 (Minimum)	0 (Nominal)	0.02000 (Maximum)

Phase	IM (R > 27 OHM-M) MM/M	Value	Phase	IM (R < 27 OHM-M) %	Value
After		0	After		0.0001361
0 (Minimum)	0 (Nominal)	0.7500 (Maximum)	0 (Minimum)	0 (Nominal)	2.000 (Maximum)

Phase	SFL (R > 27 OHM-M) MM/M	Value	Phase	SFL (R < 27 OHM-M) %	Value
After		0	After		0.0004194
0 (Minimum)	0 (Nominal)	0.7500 (Maximum)	0 (Minimum)	0 (Nominal)	2.000 (Maximum)

After: Calibration out of date 8-Oct-2005 3:53

Dual Induction - E Master Calibration

Test Loop Calibration: Calibration of Internal Reference to Test Loop Standard

Phase	Deep 10 kHz Gain Factor	Value	Phase	Deep 20 kHz Gain Factor	Value	Phase	Deep 40 kHz Gain Factor	Value
Master		0.9680	Master		0.9816	Master		1.004
0.9000 (Minimum)	1.000 (Nominal)	1.100 (Maximum)	0.9000 (Minimum)	1.000 (Nominal)	1.100 (Maximum)	0.9000 (Minimum)	1.000 (Nominal)	1.100 (Maximum)

Phase	Medium 10 kHz Gain Factor	Value	Phase	Medium 20 kHz Gain Factor	Value	Phase	Medium 40 kHz Gain Factor	Value
Master		1.002	Master		1.011	Master		1.048
0.9000 (Minimum)	1.000 (Nominal)	1.100 (Maximum)	0.9000 (Minimum)	1.000 (Nominal)	1.100 (Maximum)	0.9000 (Minimum)	1.000 (Nominal)	1.100 (Maximum)

Phase	Deep 10 kHz Phase Shift	Value	Phase	Deep 20 kHz Phase Shift	Value	Phase	Deep 40 kHz Phase Shift	Value
Master		0.5195	Master		0.5823	Master		-0.02310
-1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)	-2.000 (Minimum)	0 (Nominal)	2.000 (Maximum)	-4.000 (Minimum)	-1.000 (Nominal)	2.000 (Maximum)

Phase	Medium 10 kHz Phase Shift	Value	Phase	Medium 20 kHz Phase Shift	Value	Phase	Medium 40 kHz Phase Shift	Value
Master		0.1902	Master		-0.1392	Master		-1.016
-1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)	-3.000 (Minimum)	-1.000 (Nominal)	1.000 (Maximum)	-5.000 (Minimum)	-2.000 (Nominal)	1.000 (Maximum)

Master: Calibration out of date 1-May-2008 9:35

Dual Induction - E Master Calibration

Sonde Error Corrections: Correction for sonde response in zero conductivity environment. (Normalized to 25C).

Phase	Real Deep 10 kHz S.E. Corr.	Value	Phase	Real Deep 20 kHz S.E. Corr.	Value	Phase	Real Deep 40 kHz S.E. Corr.	Value
Master		47.03	Master		16.79	Master		5.701
-50.00 (Minimum)	0 (Nominal)	125.0 (Maximum)	-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)	-15.00 (Minimum)	0 (Nominal)	15.00 (Maximum)

Phase	Quad Deep 10 kHz S.E. Corr.	Value	Phase	Quad Deep 20 kHz S.E. Corr.	Value	Phase	Quad Deep 40 kHz S.E. Corr.	Value
Master		100.5	Master		62.19	Master		44.67

Phase	Real Medium 10 kHz S.E. Corr.	Value
Master		17.11
	-50.00 (Minimum) 0 (Nominal) 140.0 (Maximum)	

Phase	Real Medium 20 kHz S.E. Corr.	Value
Master		-2.080
	-50.00 (Minimum) 0 (Nominal) 50.00 (Maximum)	

Phase	Real Medium 40 kHz S.E. Corr.	Value
Master		-9.895
	-30.00 (Minimum) 0 (Nominal) 30.00 (Maximum)	

Phase	Quad Medium 10 kHz S.E. Corr.	Value
Master		-94.74
	-1300 (Minimum) 0 (Nominal) 1300 (Maximum)	

Phase	Quad Medium 20 kHz S.E. Corr.	Value
Master		-32.09
	-650.0 (Minimum) 0 (Nominal) 650.0 (Maximum)	

Phase	Quad Medium 40 kHz S.E. Corr.	Value
Master		12.90
	-350.0 (Minimum) 0 (Nominal) 350.0 (Maximum)	

Master: Calibration out of date 1-May-2008 9:49

General Purpose Inclinometer / Equipment Identification

Primary Equipment:		
GPIT Cartridge - A	GPIC - A	719
Auxiliary Equipment:		
GPIT Housing	GPIH - A	2864

Hostile Litho-Density Sonde / Equipment Identification

Primary Equipment:		
Hostile Litho Density Sonde	HLDS - D	57
Hostile Litho Density High Voltage	HLDV - D	51
Gamma Source Radioactive	GSR - Z	2397
Auxiliary Equipment:		
Hostile Litho Density Pad	HLDP - C	61
Hostile Litho Density High Voltage Housi	HEH - H	53

Litho-Density Spectroscopy Cartridge - B / Equipment Identification

Primary Equipment:		
LDSC Cartridge	LDSC - B	326
Auxiliary Equipment:		
LDSC Housing	LDSH - A	319

Hostile Natural Gamma Ray Cartridge - B / Equipment Identification

Primary Equipment:		
HNGC Cartridge	HNGC - B	300
Auxiliary Equipment:		
HNGC Housing	HNGH - A	115

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:		
HNGS Sonde	HNGS - BA	194
Auxiliary Equipment:		
HNGS Sonde Housing	HNSH - BA	205
Gamma Source Radioactive	GSR - U	616008

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		39.63	Master		14.89	Master		1168
Before		39.53	Before		16.37	Before		1179

After		39.69

37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)

After		15.16

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

After		1182

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

Phase	Na 1785 Peak Loc	Value
Master		142.1
Before		141.7
After		142.3

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

Phase	Na 1785 Peak Res %	Value
Master		8.613
Before		9.055
After		8.876

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

Phase	Temperature DEGC	Value
Master		27.34
Before		32.56
After		31.31

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

Phase	Na Count Rate CPS	Value
Master		41.11
Before		38.79
After		38.87

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

Master: Calibration out of date 12-Mar-2009 20:35 Before: 16-May-2009 19:11 After: 24-May-2009 0:43

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value
Master		39.72
Before		39.75
After		39.57

37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)

Phase	Na 511 Peak Res %	Value
Master		15.49
Before		15.15
After		16.24

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

Phase	High Voltage V	Value
Master		1102
Before		1113
After		1115

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

Phase	Na 1785 Peak Loc	Value
Master		142.7
Before		142.3
After		142.0

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

Phase	Na 1785 Peak Res %	Value
Master		7.944
Before		8.759
After		8.750

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

Phase	Temperature DEGC	Value
Master		27.88
Before		33.15
After		33.20

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

Phase	Na Count Rate CPS	Value
Master		41.22
Before		39.43
After		39.10

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

Master: Calibration out of date 12-Mar-2009 20:35 Before: 16-May-2009 19:11 After: 24-May-2009 0:43

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		0.9971
Before		0.9835
After		0.9958

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

Master: Calibration out of date 12-Mar-2009 20:35
Before: 16-May-2009 19:11
After: 24-May-2009 0:43

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) 43.00 (Maximum)

Phase	Th Peak Loc	Value
Master		211.0

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

Phase	Th Peak Res %	Value
Master		6.897

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

Phase	Background Count Rate CPS	Value
Master		19.53

Phase	Gain Ratio	Value
Master		1.013

10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)	0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)			

Master: Calibration out of date 12-Mar-2009 20:35

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 2 Calibration

Phase	Na 511 Peak Set Point			Value	Phase	Th Peak Loc			Value	Phase	Th Peak Res %			Value
Master				41.00	Master				208.9	Master				7.130
38.00 (Minimum)	40.00 (Nominal)	43.00 (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				20.80	Master				1.001
10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)			0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)		

Master: Calibration out of date 12-Mar-2009 20:35

DTS Telemetry Tool / Equipment Identification

Primary Equipment:		
DTC-H Auxiliary Cartridge	DTCH - A	
DTC-H Telemetry Cartridge	DTCH - A	8798
Auxiliary Equipment:		
DTCH Telemetry Cartridge Housing	ECH - KC	2304

Company: Lamont Doherty

Schlumberger

Well: Expedition 321 Site U1337A
Field: PEAT
Rig: JOIDES Resolution
Ocean: Pacific

Hostile
Natural Gamma
Spectroscopy