

Schlumberger

Company: **Lamont Doherty**

Well: **Expedition 318 Site U1361A**

Field: **Wilkes Land**

Rig: **JOIDES Resolution** Country: **Antarctica**

Natural Gamma
Spectroscopy

Rig: JOIDES Resolution
Field: Wilkes Land
Location: Latitude: S 64.4095 Deg
Well: Expedition 318 Site U1361A
Company: Lamont Doherty

LOCATION		Elev.:	K.B.	11.00 m
Latitude: S 64.4095 Deg		G.L. 3454.00 m		
Longitude: E 143.0033 Deg		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.				

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

Logging Date	1-Mar-2010		
Run Number	1		
Depth Driller	3853.5 m		
Schlumberger Depth	3861 m		
Bottom Log Interval	3828 m		
Top Log Interval	3434 m		
Casing Driller Size @ Depth	0.000 in @ 3568.7 m		
Casing Schlumberger	3572 m		
Bit Size	11.438 in		
Type Fluid In Hole	Sepiolite Sea Water Gel + Barite		
Density	1.22 g/cm3		
Fluid Loss	PH		
Source Of Sample			
RM @ Measured Temperature	@	@	
RMF @ Measured Temperature	@	@	
RMC @ Measured Temperature	@	@	
Source RMF	RMC		
RM @ MRT	RMF @ MRT	@ 9	@ 9
Maximum Recorded Temperatures	9 degC		
Circulation Stopped	1-Mar-2010	5:00	
Logger On Bottom	1-Mar-2010	21:00	
Unit Number	625003	Webster	
Recorded By	K. Swain		
Witnessed By	T. Williams, A. Fehr		

DISCLAIMER
 THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

OTHER SERVICES1
 OS1: APS/HLDS/DITE
 OS2: FMS/DSI
 OS3:
 OS4:
 OS5:

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

REMARKS: RUN NUMBER 1
 Depths referenced from rig floor in meters below rig floor (MBRF)
 2 centralizer tools (MCD-G thru wired) located above and below DSI
 Tools run slick without stand offs as per normal operation to fit inside pipe.
 Logging is performed through drill pipe for open hole logging.

REMARKS: RUN NUMBER 2

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

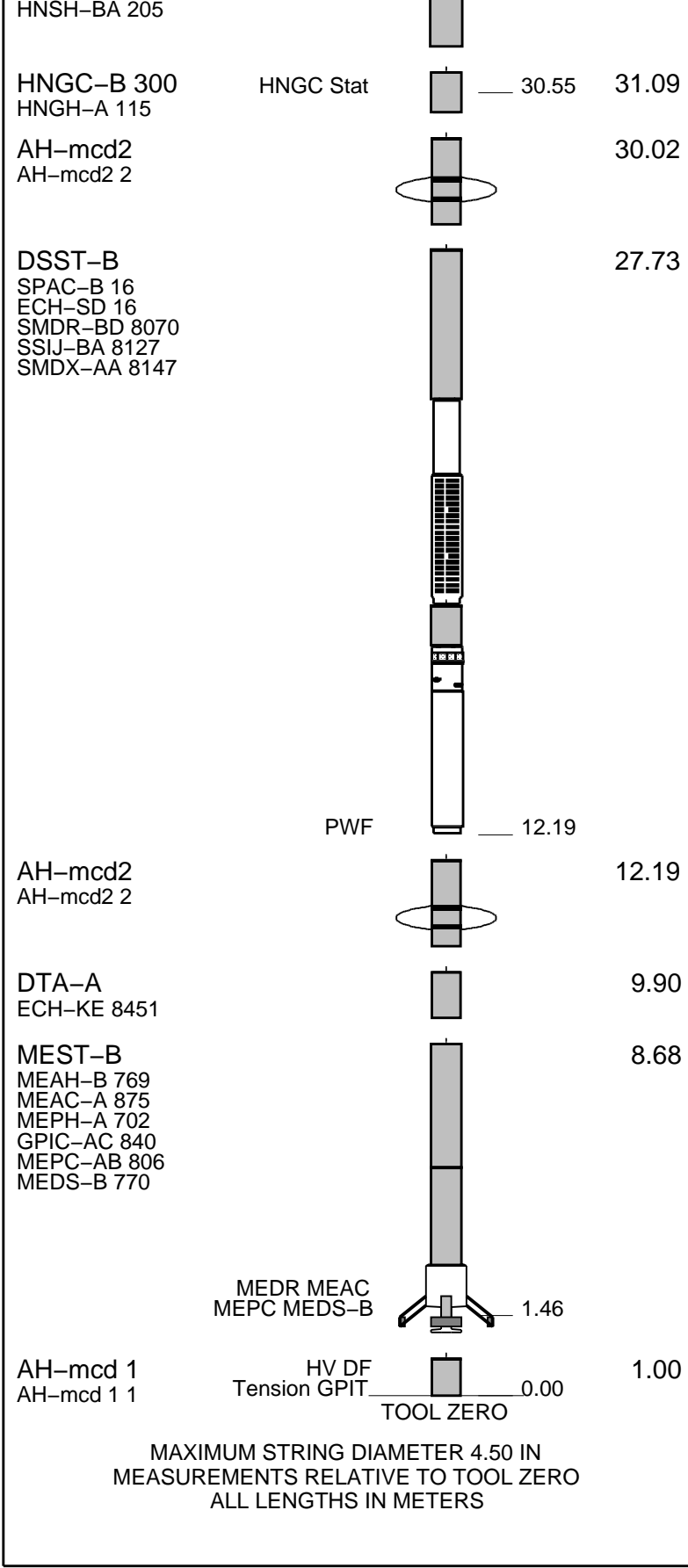
SURFACE EQUIPMENT

GSR-U 616008
 WITM (DTS)-A

DOWNHOLE EQUIPMENT

LEH-QT			35.39
LEH-QT 1750			
DTC-H	CTEM		
ECH-KC 9842	TelStatus		34.22
	ToolStatu	—	34.50
			33.59
HNGS-BA 194	Upper_1		32.89
HNGS-BA 194	Lower_2	—	32.67
			33.59

RUN 2



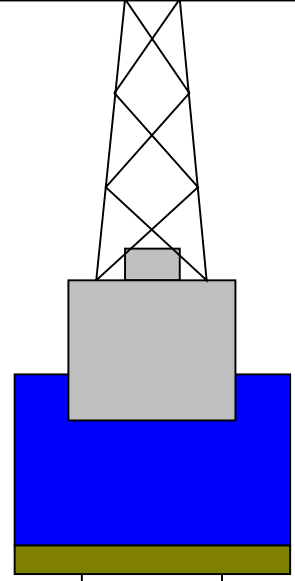
Production String	(in)	(M)	Well Schematic	(M)	(in)	Casing String
	OD	ID		MD	MD	

Kelly Bushing Elevation
Derrick Floor Elevation

11.0
11.0

Mean Sea Level

0.0



3465.5.20

Sea Floor



3465.5 3.80

Borehole Segment

3568.7 11.4375

Open Hole

3853.5

Output DLIS Files

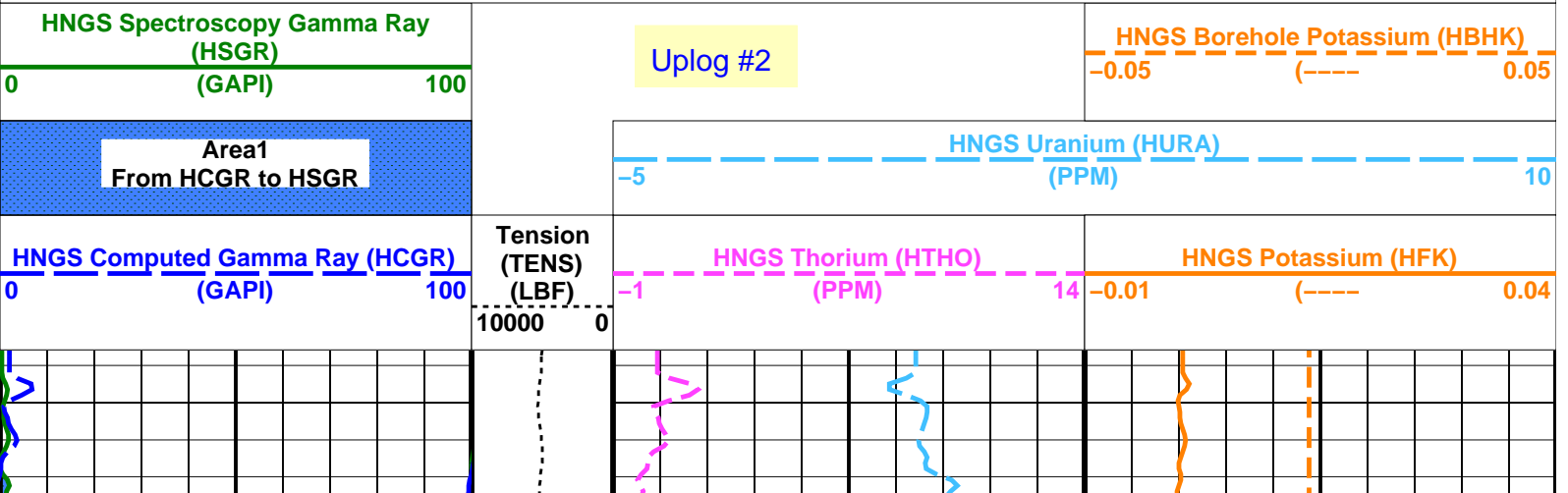
DEFAULT FMS_DSI_NGS_019LUP FN:27 PRODUCER 01-Mar-2010 21:36 3863.3 M 3433.5 M

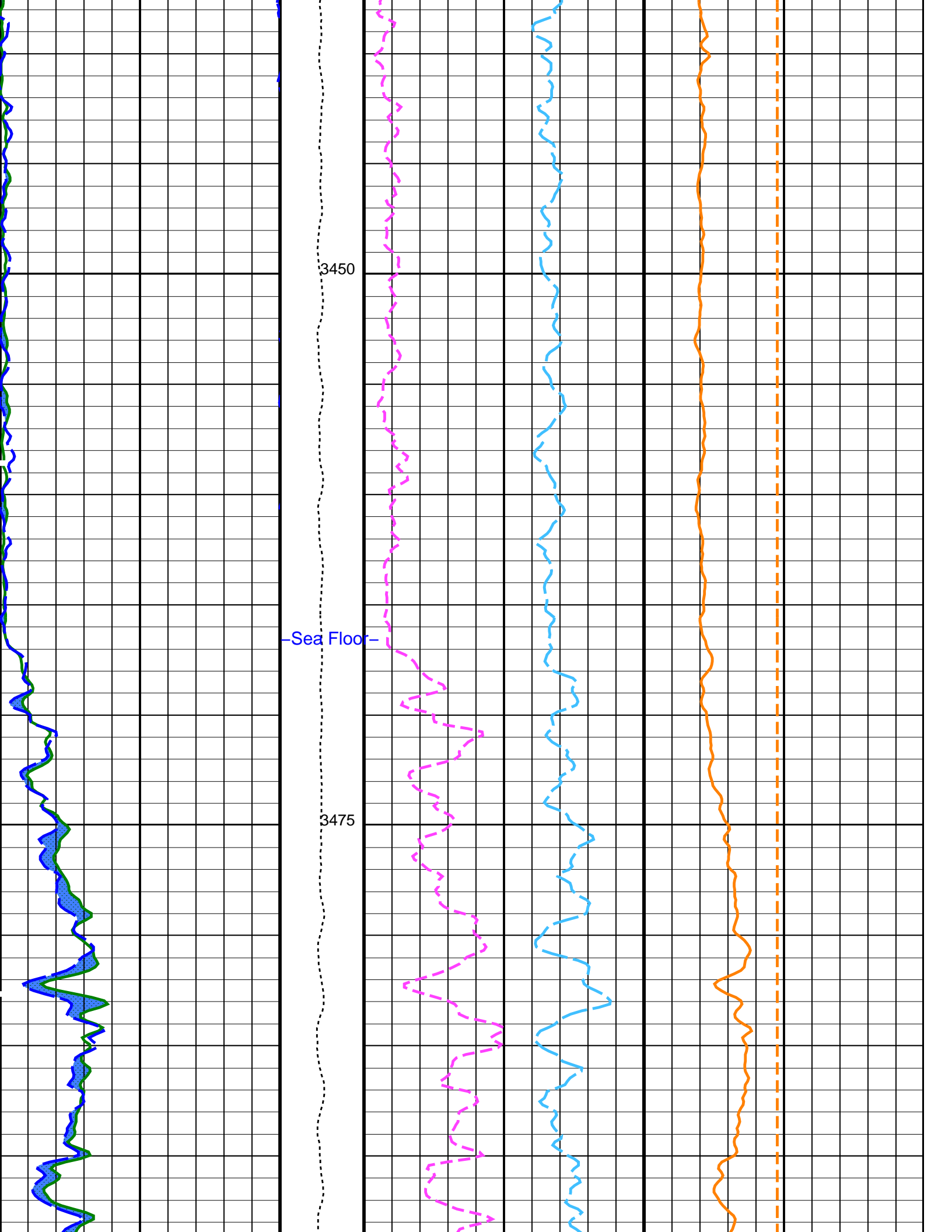
OP System Version: 17C0-154

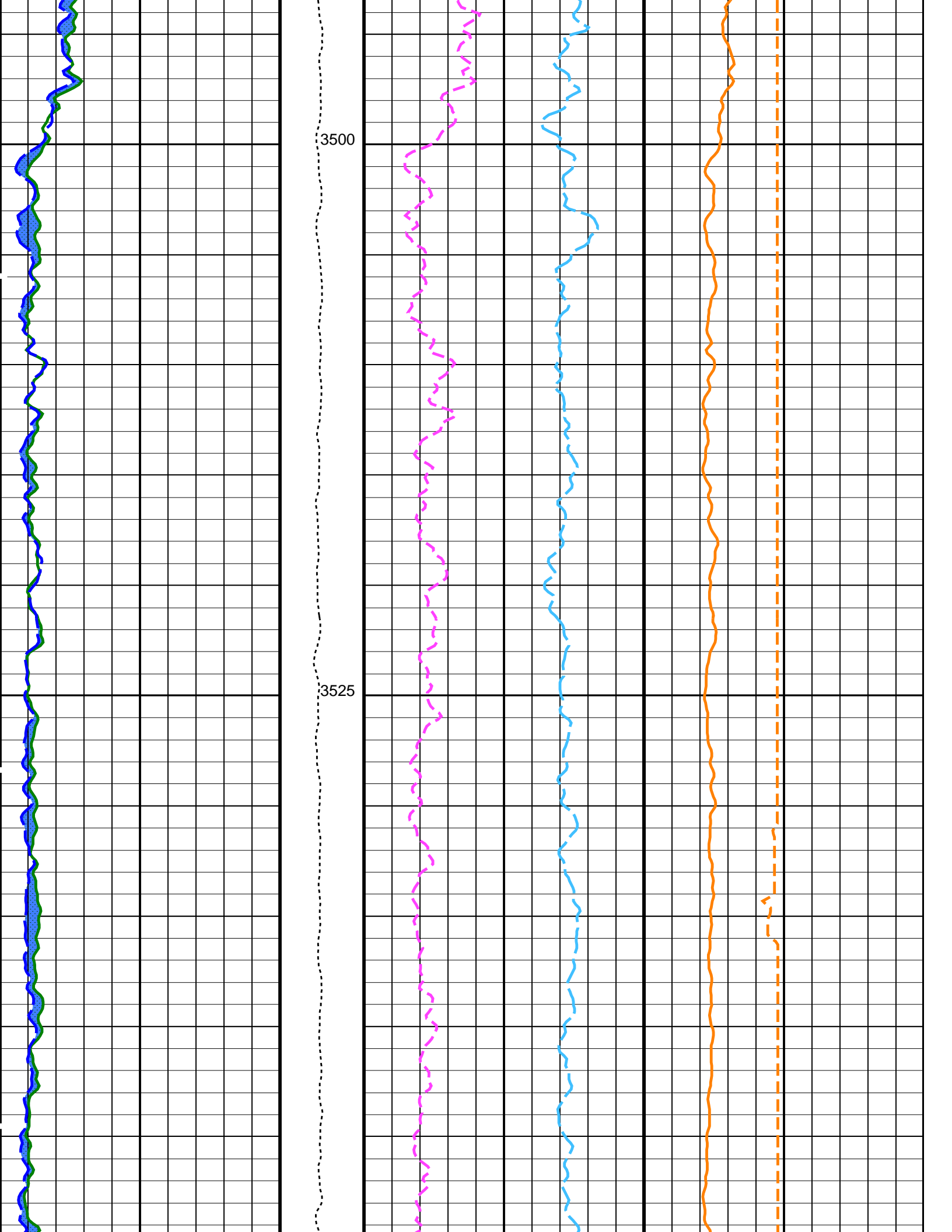
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DSST-B	17C0-154	HNGC-B	17C0-154
HNGS-BA	17C0-154	DTC-H	17C0-154

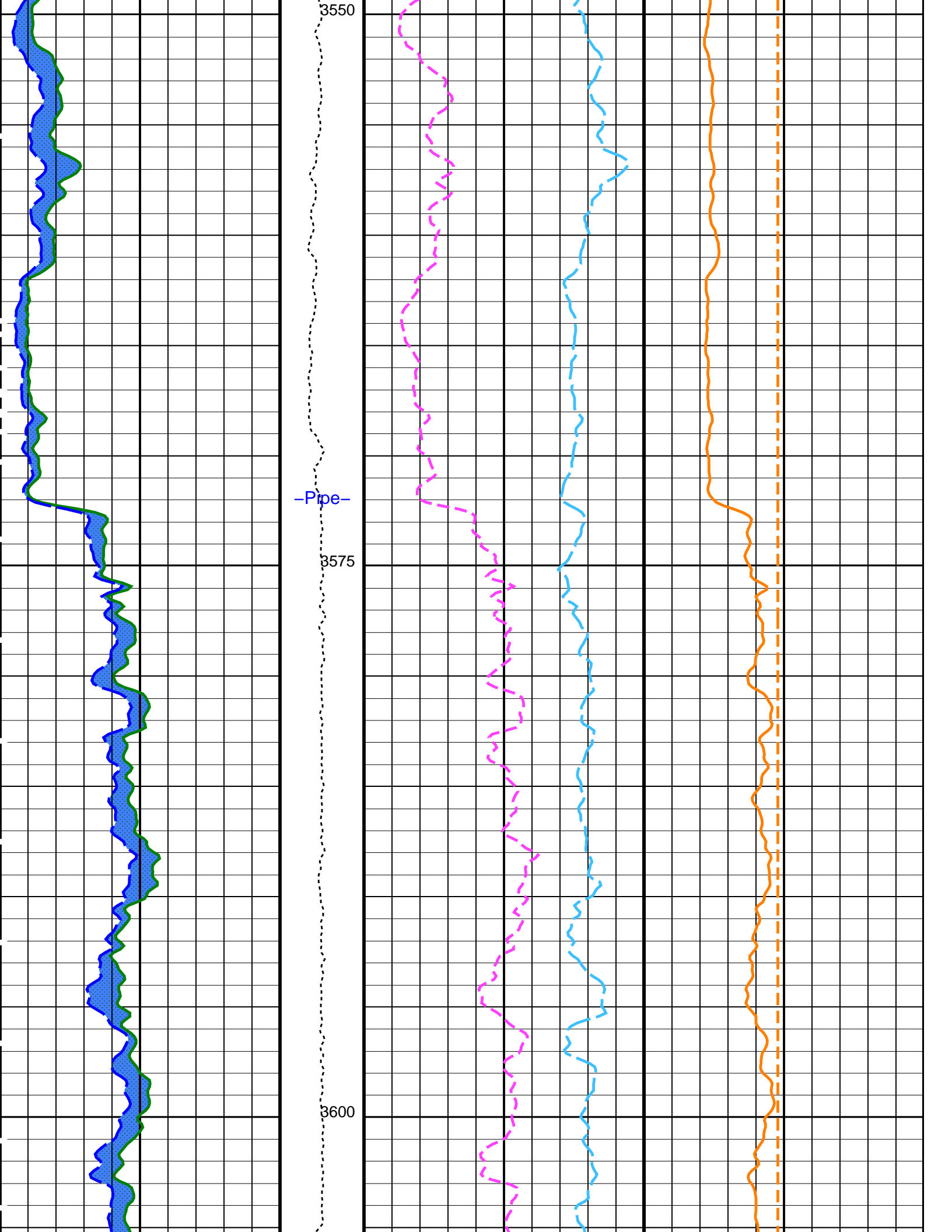
PIP SUMMARY

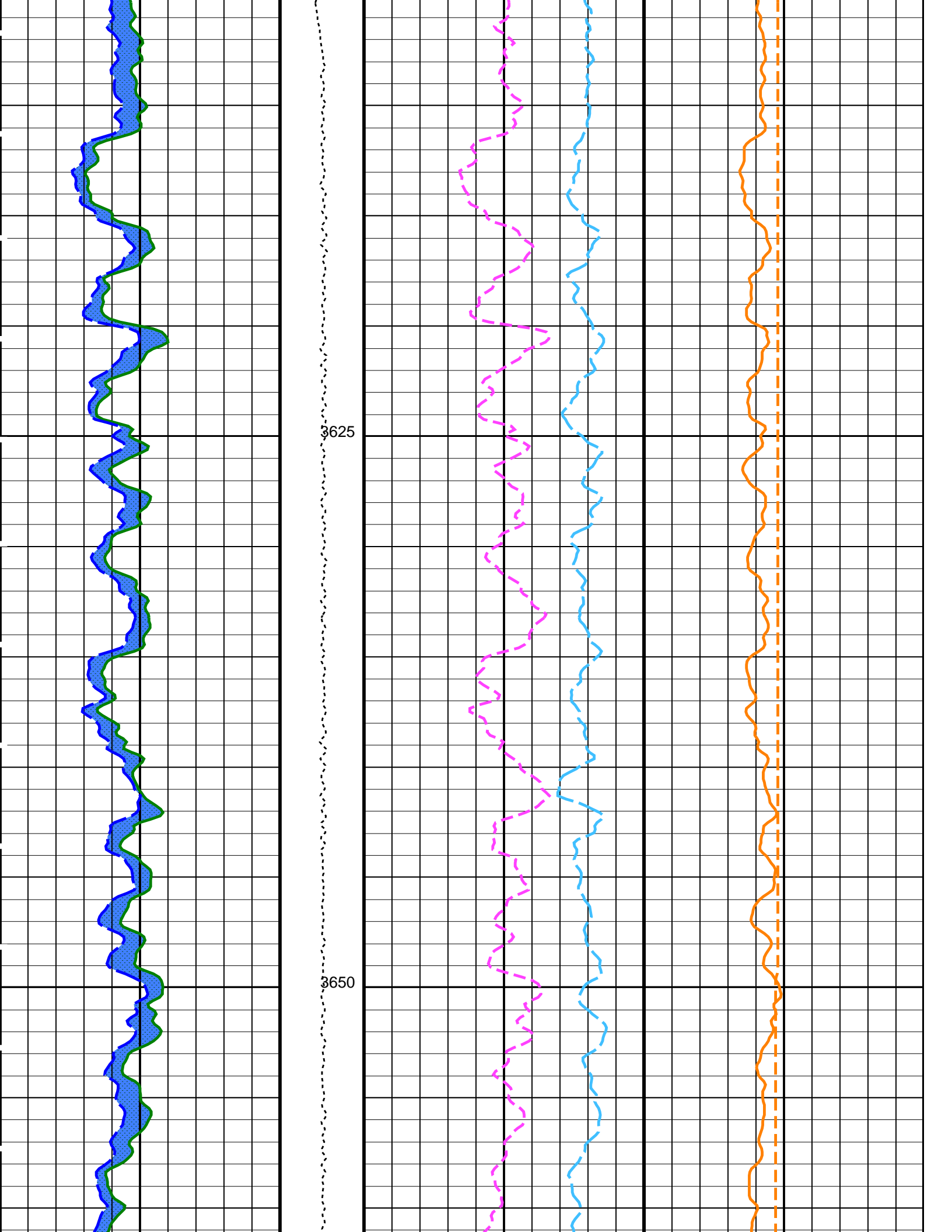
Time Mark Every 60 S

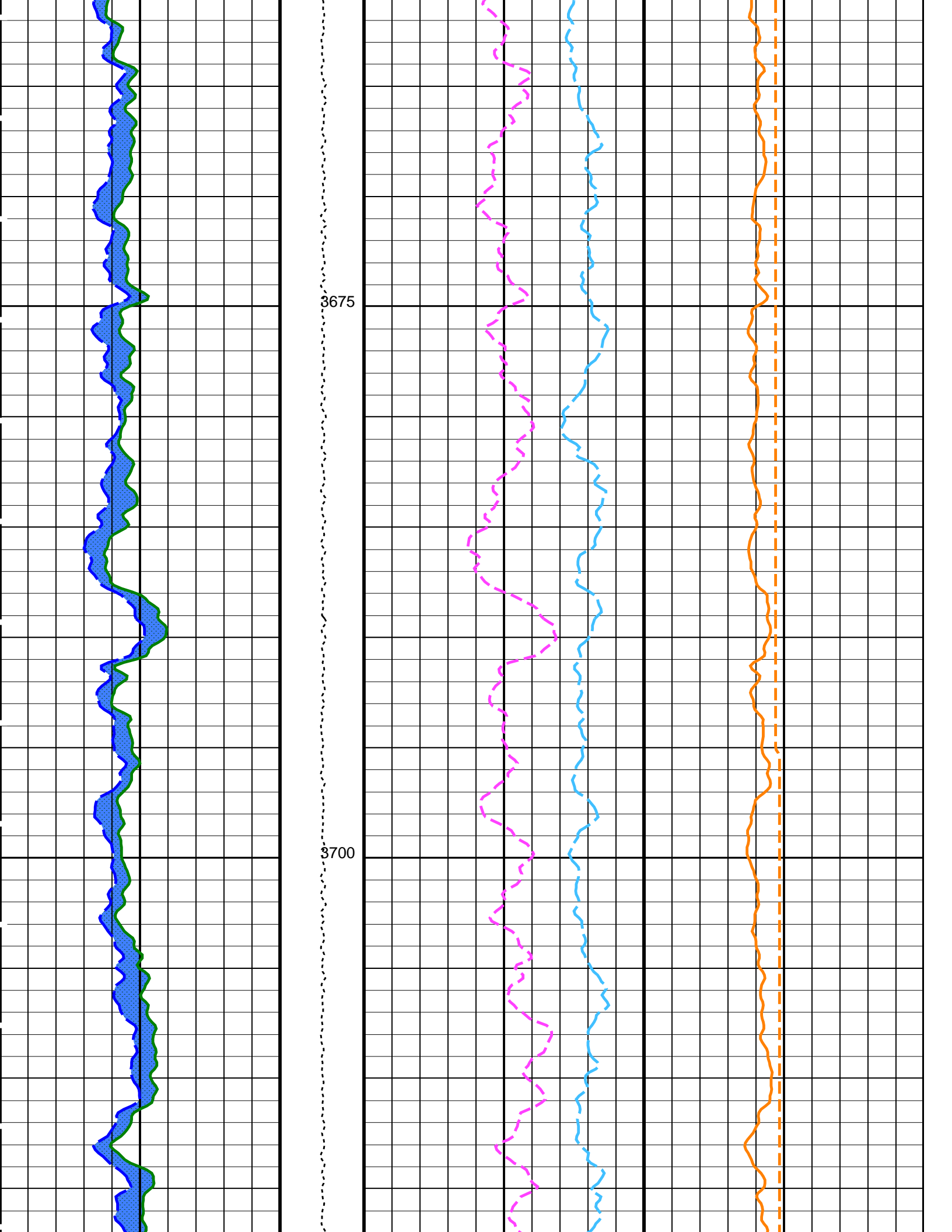


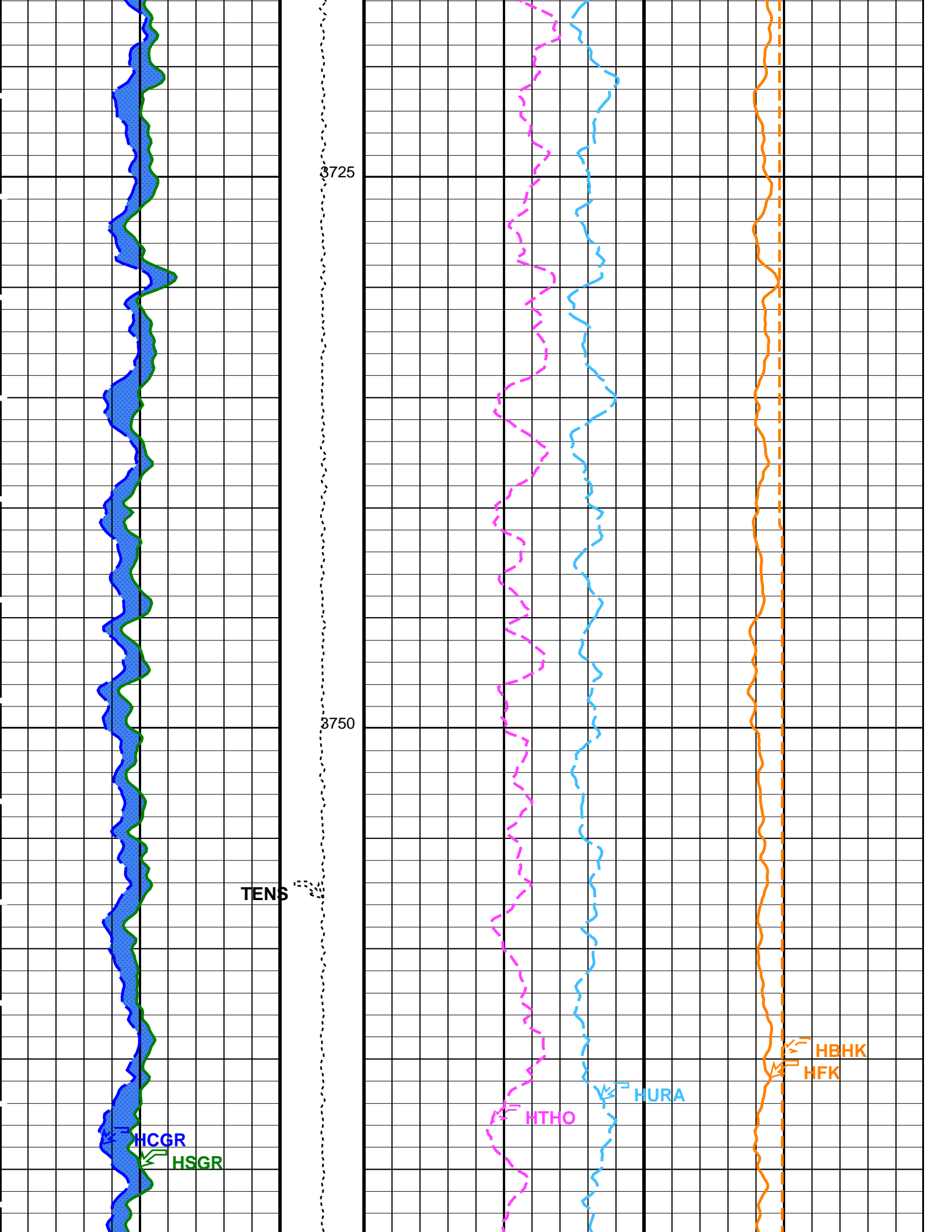


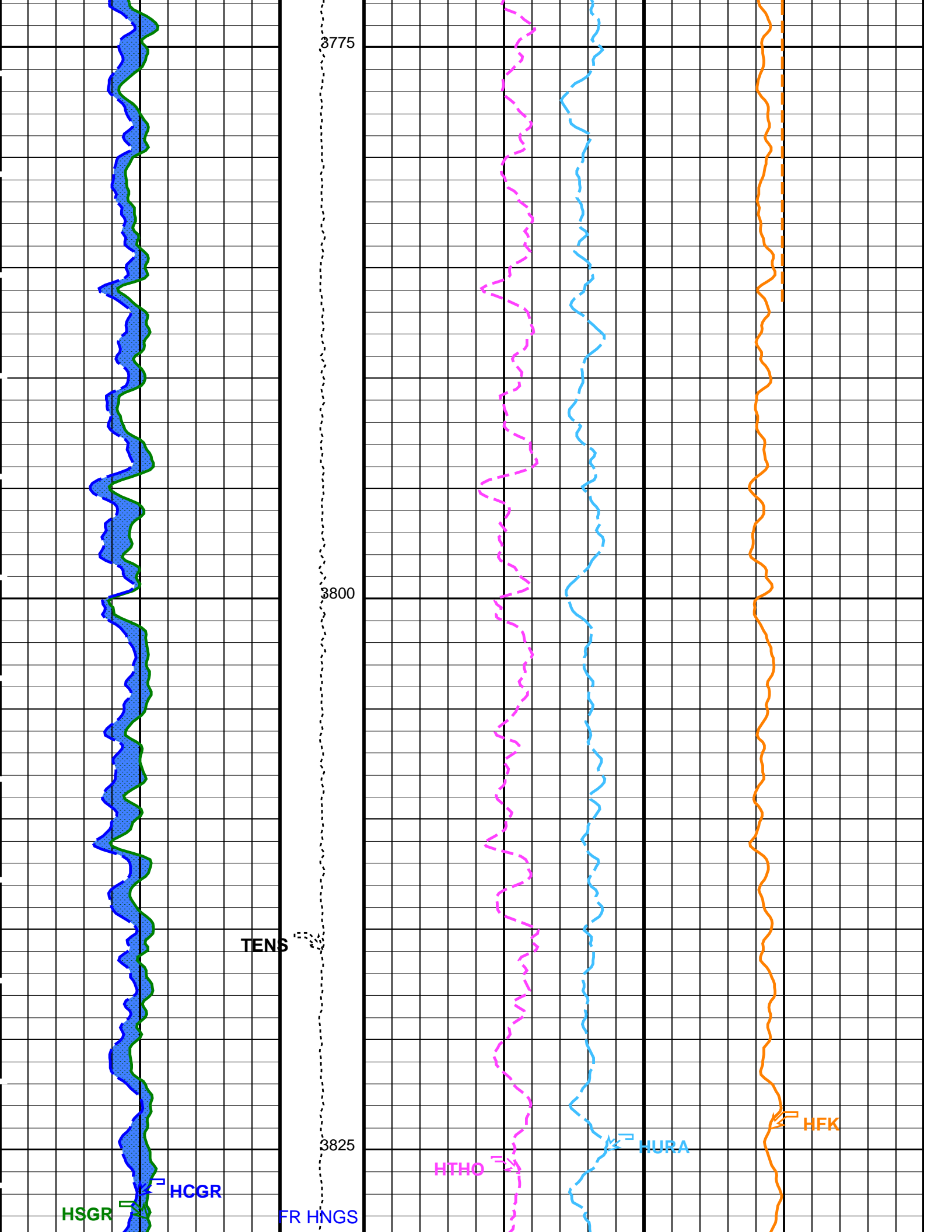












3775

3800

3825

TENS

HSGR

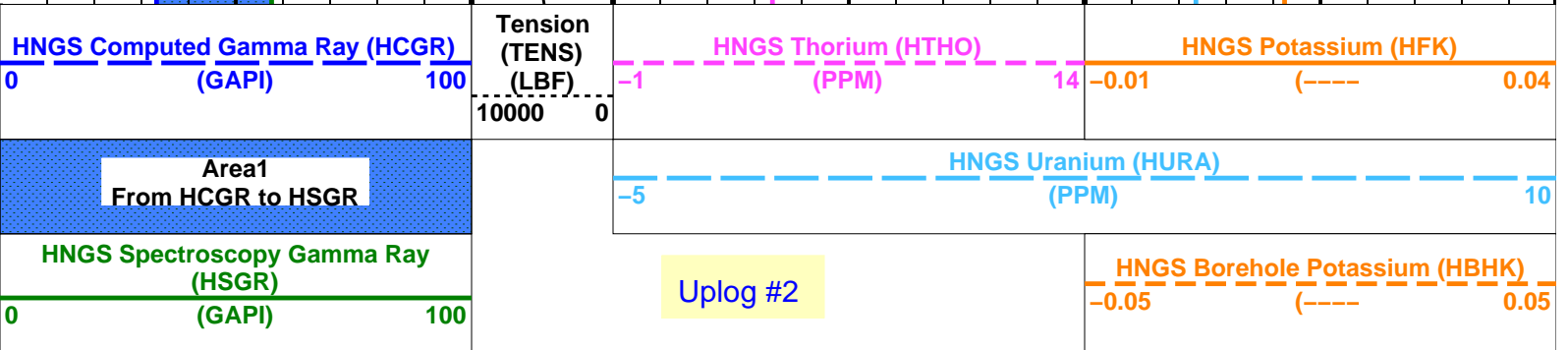
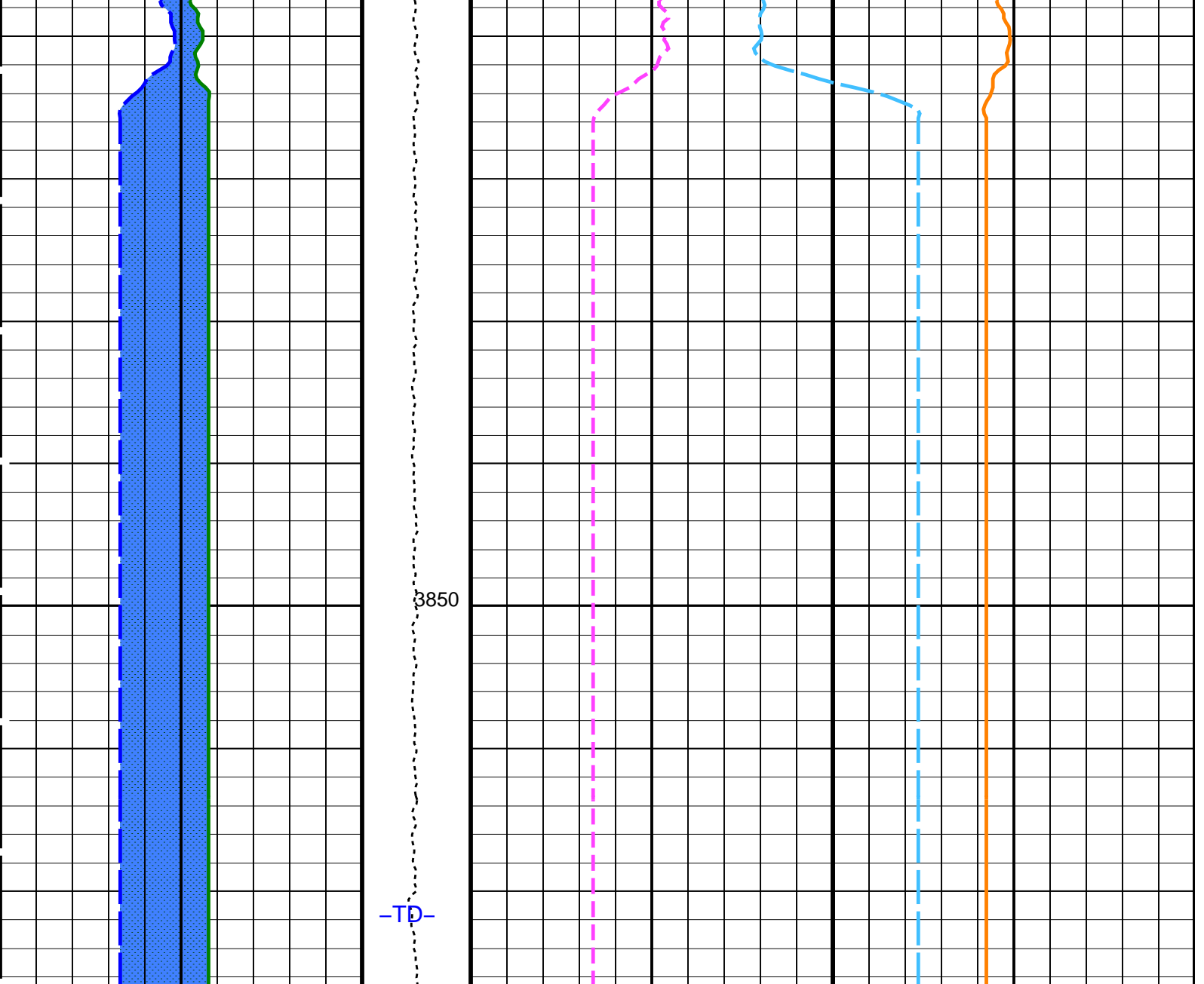
HCGR

FR HNGS

HTHO

HURA

HFK



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
BHS	DSST-B: Dipole Shear Imager - B	
GCSE	Borehole Status	OPEN
	Generalized Caliper Selection	BS
	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
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	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.00326979	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
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	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.967773	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.962066	
System and Miscellaneous			
BS	Bit Size	11.438	IN
DFD	Drilling Fluid Density	1.22	G/C3

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 01-Mar-2010 21:36

OP System Version: 17C0-154			
MEST-B	SRPC-3870_Q3_2009_OP17_V3_b	DTA-A	17C0-154
DSST-B	17C0-154	HNGC-B	17C0-154
HNGS-BA	17C0-154	DTC-H	17C0-154

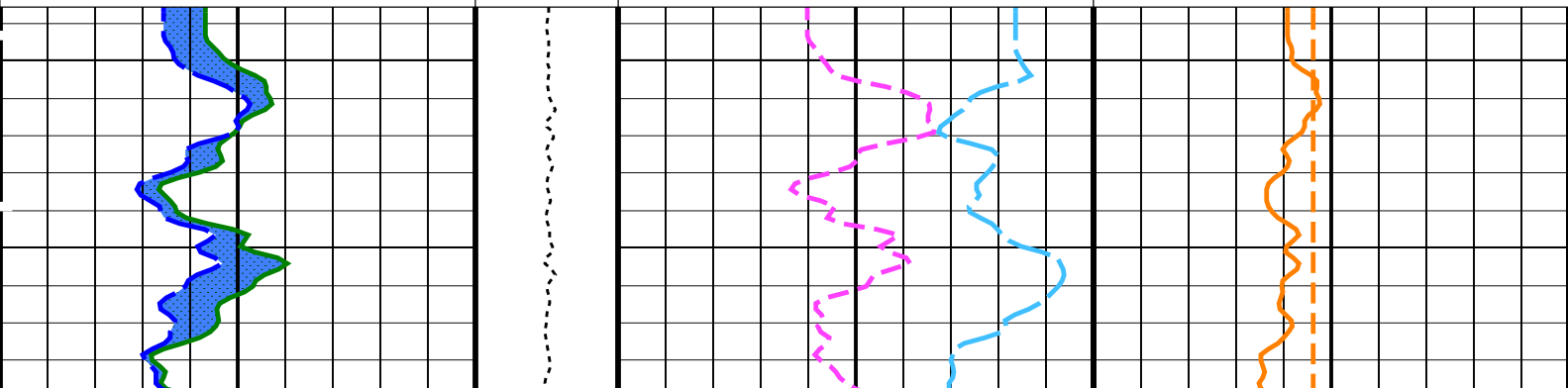
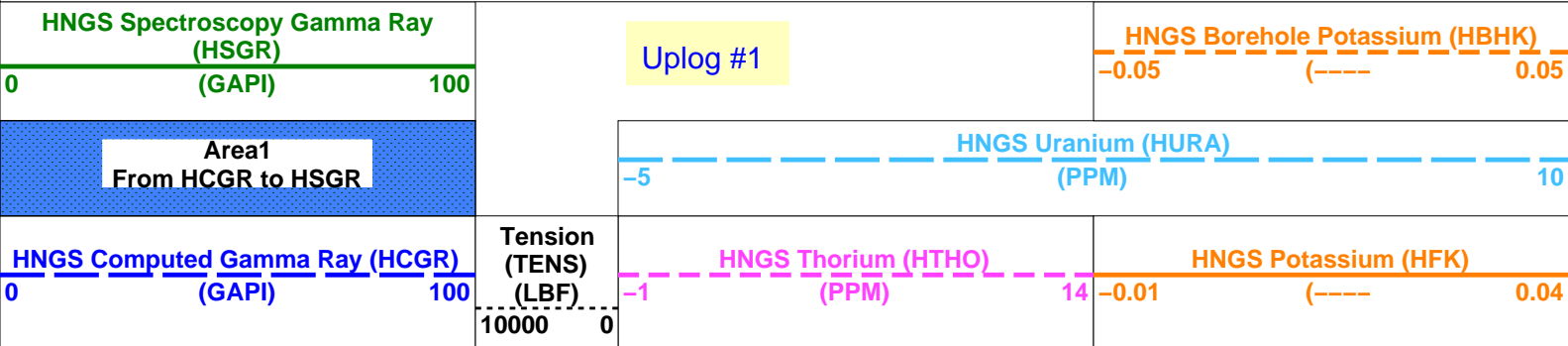
Output DLIS Files			
DEFAULT	FMS_DSI_NGS_019LUP	FN:27 PRODUCER	01-Mar-2010 21:36

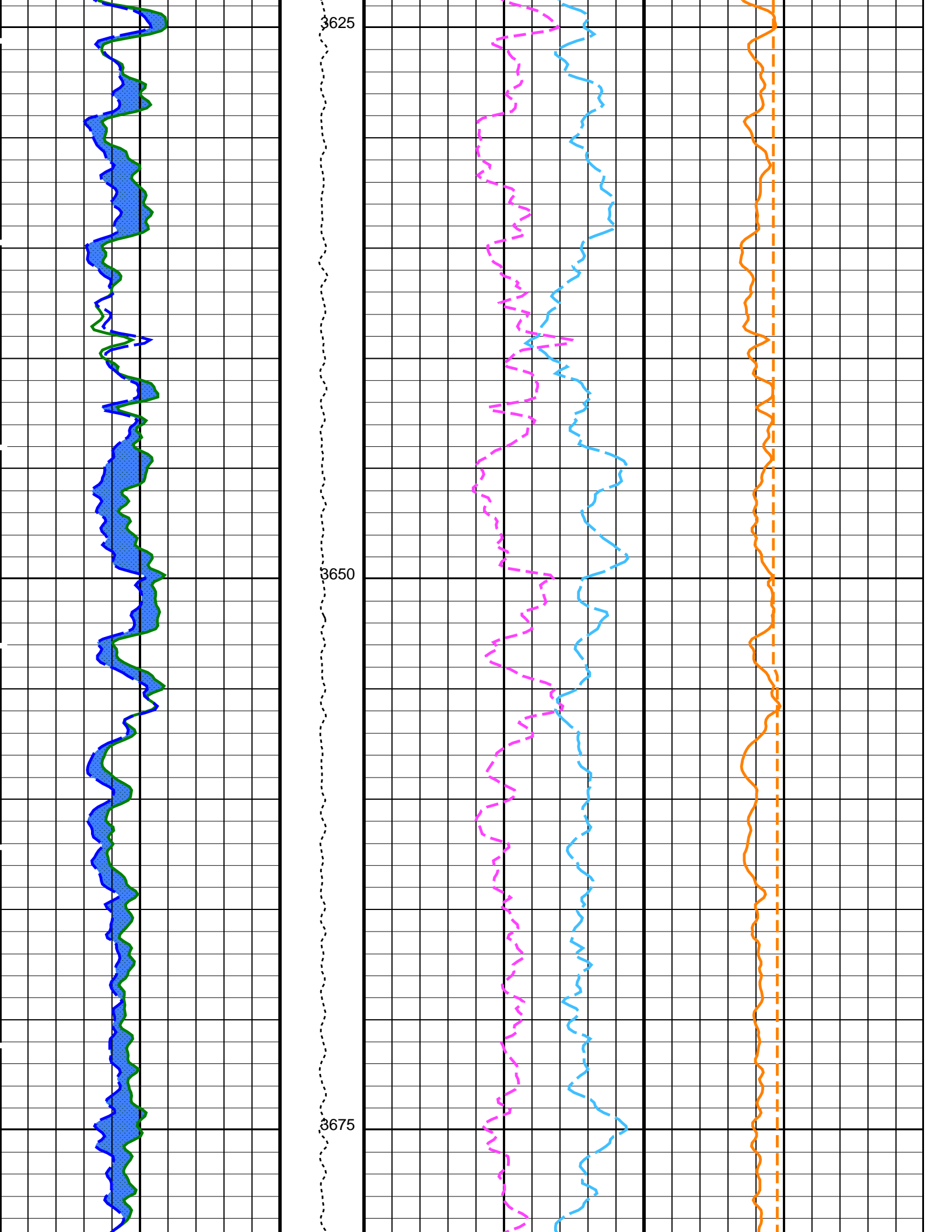
Output DLIS Files			
DEFAULT	FMS_DSI_NGS_018LUP	FN:26 PRODUCER	01-Mar-2010 20:56 3863.3 M 3613.6 M

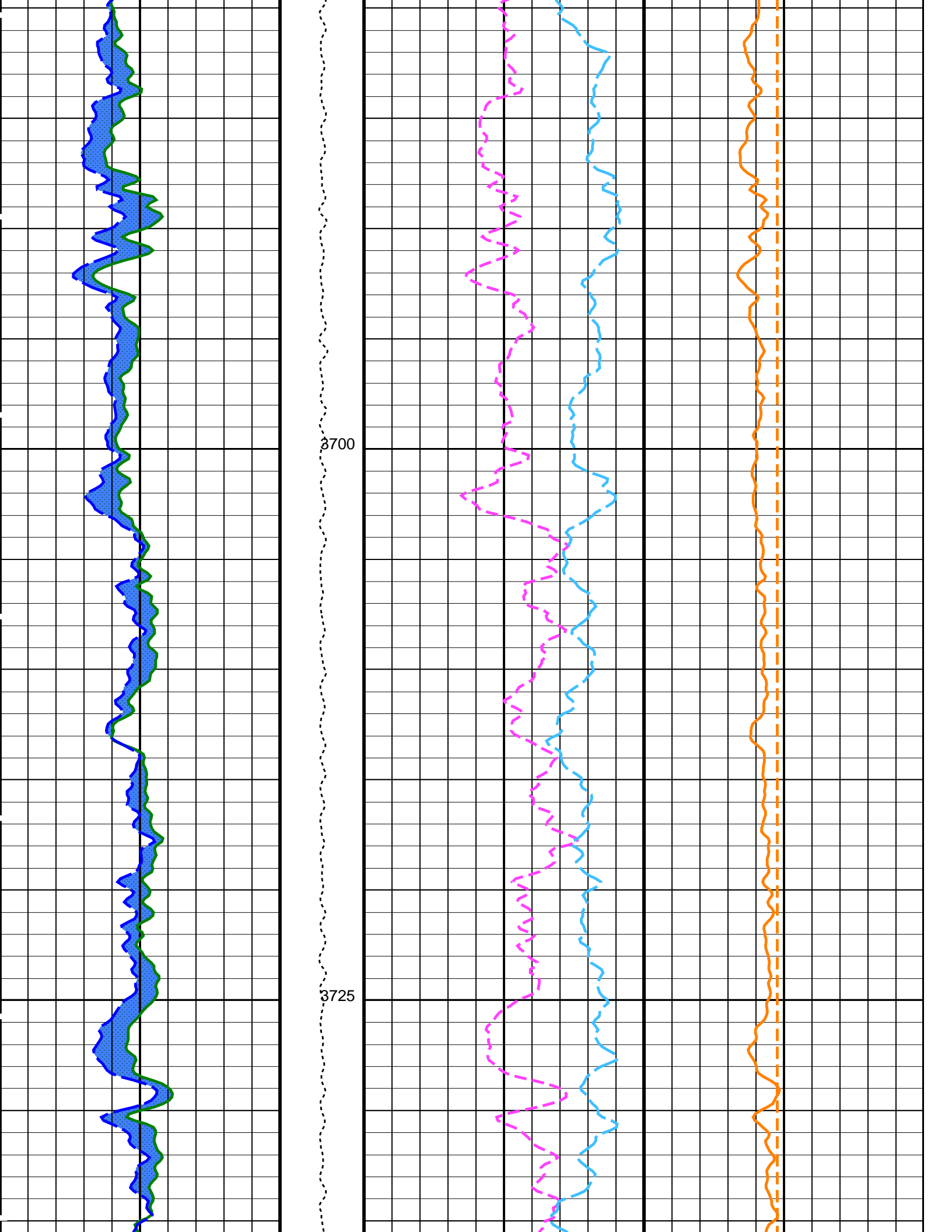
OP System Version: 17C0-154			
MEST-B	SRPC-3870_Q3_2009_OP17_V3_b	DTA-A	17C0-154
DSST-B	17C0-154	HNGC-B	17C0-154
HNGS-BA	17C0-154	DTC-H	17C0-154

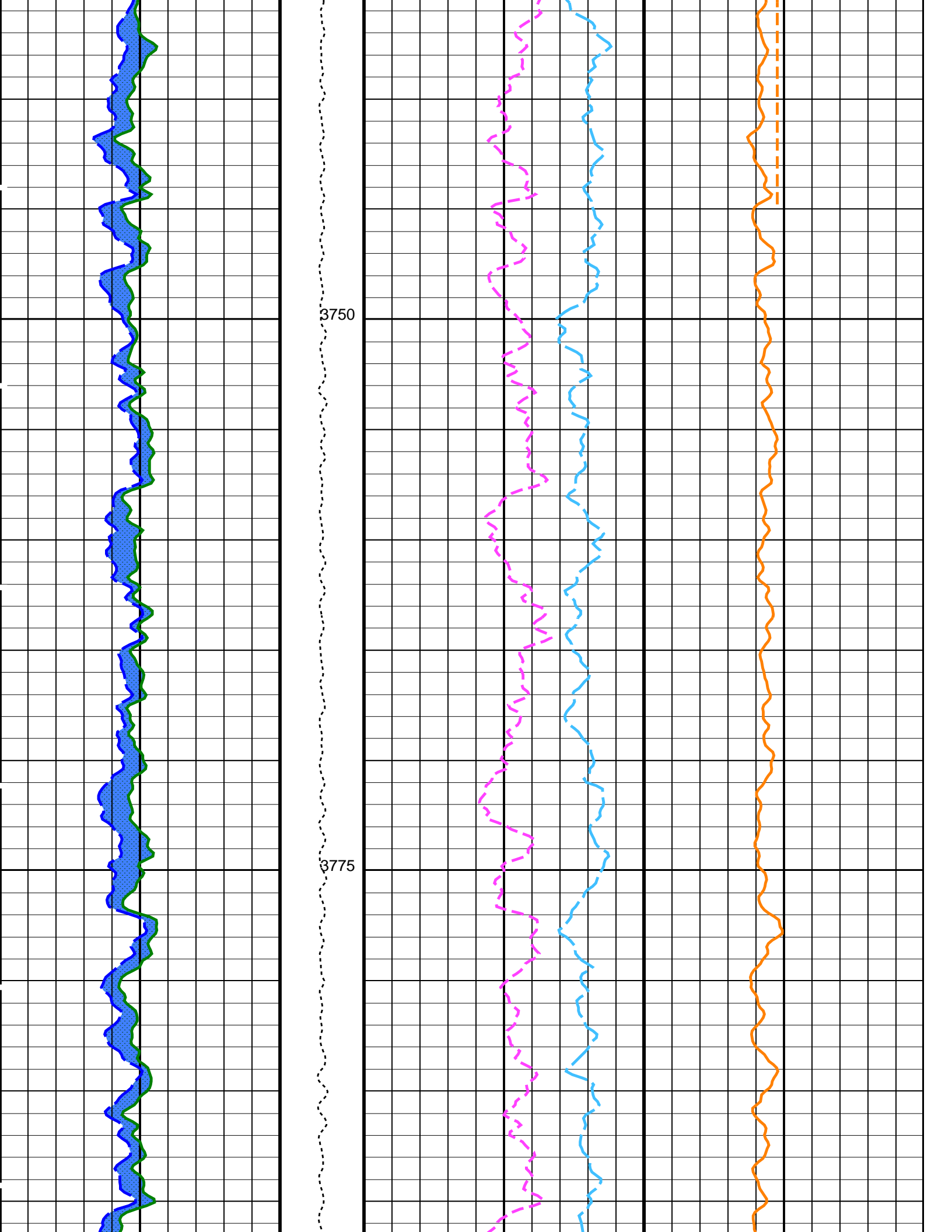
PIP SUMMARY

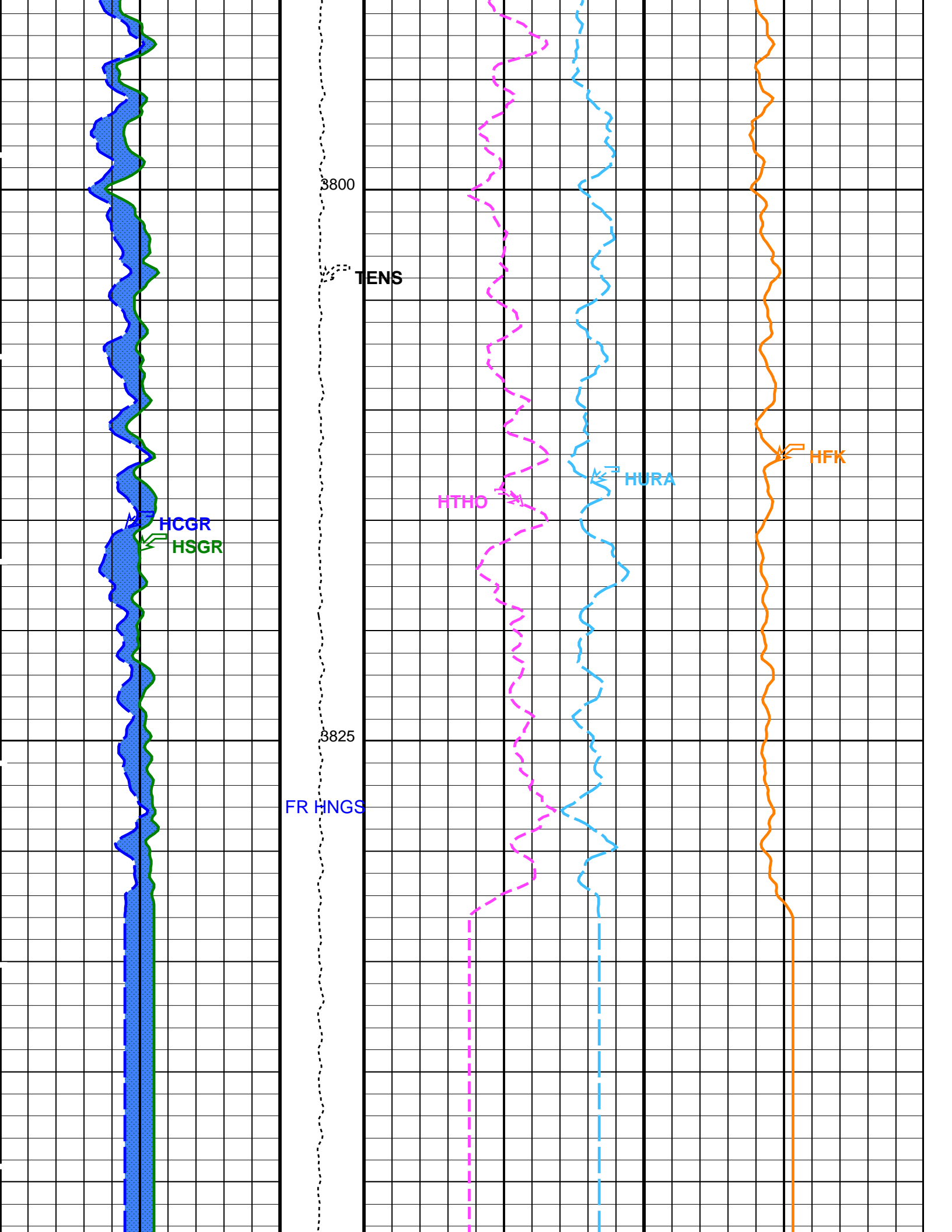
Time Mark Every 60 S

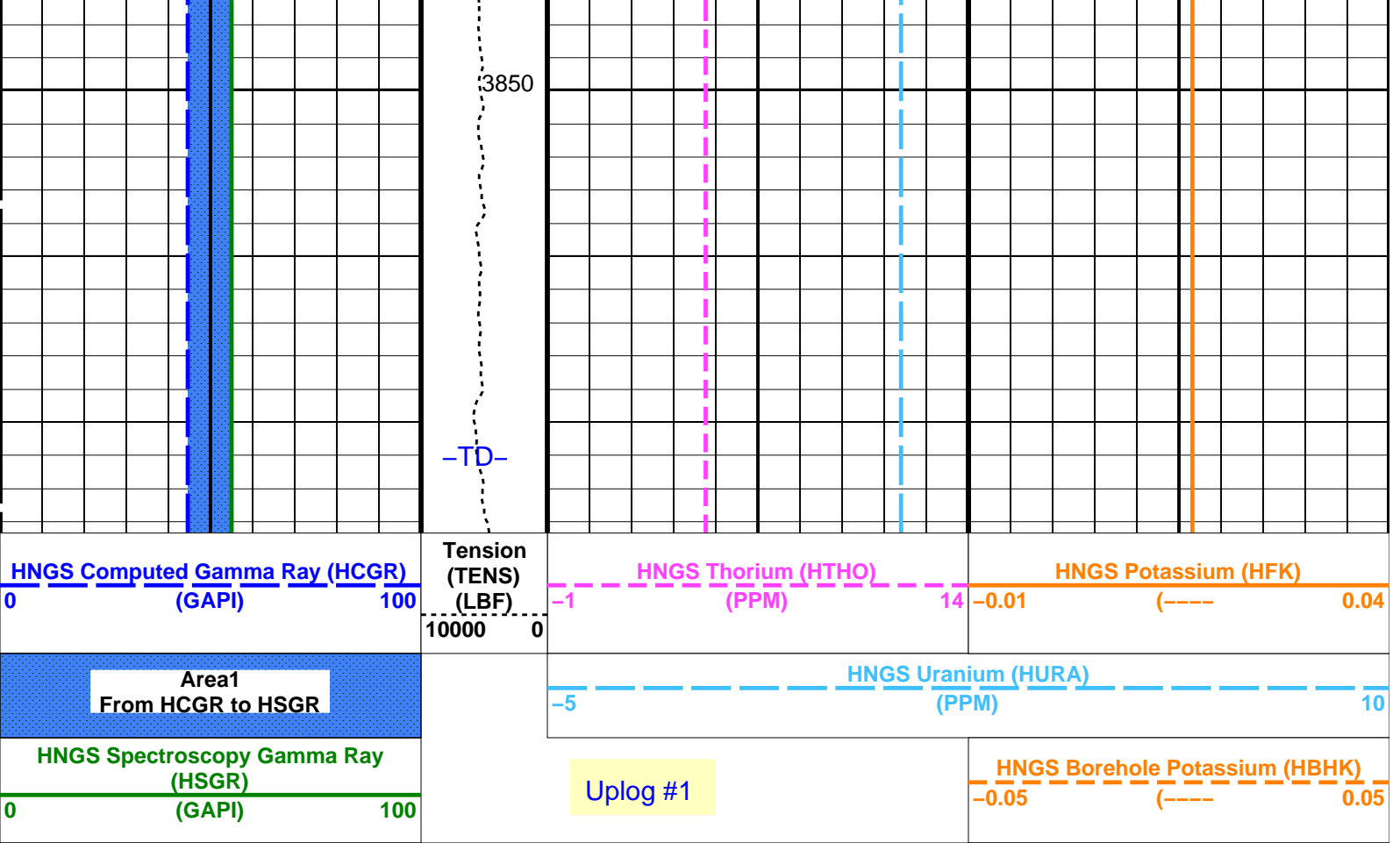












PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
BHS	DSST-B: Dipole Shear Imager - B	
GCSE	Borehole Status	OPEN
	Generalized Caliper Selection	BS
	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
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
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW
HABK	HNGS Borehole Potassium Running Average	0.000333756
HALF	HNGS Alpha Filter Length	60 IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE
HMWM	Mud Weighting Material	BARI
HNPE	HNGS Processing Enable	YES
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
TPOS	Tool Position	ECCE
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.969578
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.961988
	System and Miscellaneous	
BS	Bit Size	11.438 IN
DFD	Drilling Fluid Density	1.22 G/C3

Format: HNGSYields Vertical Scale: 1:200

Graphics File Created: 01-Mar-2010 20:56

OP System Version: 17C0-154

Output DLIS Files

DEFAULT FMS_DSI_NGS_018LUP FN:26 PRODUCER 01-Mar-2010 20:56

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Micro Electrical Scanner – B (Slim) Wellsite Calibration – Caliper Calibration							
Before: Calibration out of date 17-Jan-2010 19:12							
Caliper 1 Zero Measurement	12.00	N/A	12.69	N/A	N/A	N/A	IN
Caliper 2 Zero Measurement	12.00	N/A	12.42	N/A	N/A	N/A	IN
Caliper 1 Plus Measurement	15.19	N/A	15.94	N/A	N/A	N/A	IN
Caliper 2 Plus Measurement	15.19	N/A	15.71	N/A	N/A	N/A	IN
Micro Electrical Scanner – B (Slim) Wellsite Calibration – CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY							
Before: 1-Mar-2010 20:56							
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	
Micro Electrical Scanner – B (Slim) Wellsite Calibration – CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY							
Before: 1-Mar-2010 20:56							
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 Natural Gamma Ray Sonde Wellsite Calibration – Detector 1 Check							
Master: 1-Jan-2010 19:23 Before: 16-Jan-2010 20:44							
Na 511 Peak Loc	40.00	39.63	39.63	N/A	N/A	1.000	
Na 511 Peak Res	15.50	15.18	14.78	N/A	N/A	2.000	%
High Voltage	1150	1161	1177	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	142.1	142.4	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.816	10.01	N/A	N/A	2.000	%
Temperature	15.50	22.69	14.92	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	33.90	33.64	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check							
Master: 1-Jan-2010 19:23 Before: 16-Jan-2010 20:44							
Na 511 Peak Loc	40.00	39.69	39.65	N/A	N/A	1.000	
Na 511 Peak Res	15.50	15.48	14.73	N/A	N/A	2.000	%
High Voltage	1150	1095	1081	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	142.2	141.8	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.546	8.949	N/A	N/A	2.000	%
Temperature	15.50	23.40	15.62	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	33.69	33.51	N/A	N/A	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2							
Master: 1-Jan-2010 19:23 Before: 16-Jan-2010 20:44							
Coincidence Count Rate Ratio	1.000	1.006	1.005	N/A	N/A	0.05000	
Hostile Natural Gamma Ray Sonde Master Calibration – Detector 1 Calibration							
Master: 1-Jan-2010 19:02							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	210.4	--	--	--	--	
Th Peak Res	7.000	6.564	--	--	--	--	%
Background Count Rate	142.5	18.85	--	--	--	--	CPS
Gain Ratio	1.000	1.010	--	--	--	--	
Hostile Natural Gamma Ray Sonde Master Calibration – Detector 2 Calibration							
Master: 1-Jan-2010 19:02							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	209.1	--	--	--	--	
Th Peak Res	7.000	6.559	--	--	--	--	%
Background Count Rate	142.5	18.64	--	--	--	--	CPS
Gain Ratio	1.000	1.002	--	--	--	--	

Micro Electrical Scanner – B (Slim) / Equipment Identification

Primary Equipment:

MEST Sonde – B	MEDS – B	770
MEST Preamplifier Cartridge – AB	MEPC – AB	806
GPIT Cartridge – AC	GPIC – AC	840
MEST Acquisition Cartridge – A	MEAC – A	875

Auxiliary Equipment:

MEST–B Preamplifier Cartridge Housing	MEPH – A	702
MEST Acquisition Cartridge Housing (Slim)	MEAH – B	769

Hostile Natural Gamma Ray Cartridge – B / Equipment Identification

Primary Equipment:

HNGC Cartridge	HNGC – B	300
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Auxiliary Equipment:

HNGC Housing	HNGH – A	115
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Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:

HNGS Sonde	HNGS – BA	194
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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		15.18	Master		1161	
Before		39.63	Before		14.78	Before		1177	
	37.50 (Minimum) 40.00 (Nominal) 43.50 (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		142.1	Master		8.816	Master		22.69	
Before		142.4	Before		10.01	Before		14.92	
	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		33.90							
Before		33.64							
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)								
Master: 1–Jan–2010 19:23				Before: 16–Jan–2010 20:44					

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value
Master		39.69	Master		15.48	Master		1095
Before		39.65	Before		14.73	Before		1081
	37.50 (Minimum) 40.00 (Nominal) 43.50 (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		142.2	Master		8.546	Master		23.40
Before		141.8	Before		8.949	Before		15.62
	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		33.69						

Before		33.51
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	

Master: 1-Jan-2010 19:23 Before: 16-Jan-2010 20:44

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		1.006
Before		1.005
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	

Master: 1-Jan-2010 19:23
Before: 16-Jan-2010 20:44

Hostile Natural Gamma Ray Sonde Master Calibration								
Detector 1 Calibration								
Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value
Master		41.00	Master		210.4	Master		6.564
	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		18.85	Master		1.010			
	10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)				

Master: 1-Jan-2010 19:02

Hostile Natural Gamma Ray Sonde Master Calibration								
Detector 2 Calibration								
Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value
Master		41.00	Master		209.1	Master		6.559
	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		18.64	Master		1.002			
	10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)				

Master: 1-Jan-2010 19:02


DTS Telemetry Tool / Equipment Identification		
Primary Equipment:		
DTC-H Auxiliary Cartridge	DTCH - A	8799
DTC-H Telemetry Cartridge	DTCH - A	8799
Auxiliary Equipment:		
DTCH Telemetry Cartridge Housing	ECH - KC	9842

Company: Lamont Doherty

Well: Expedition 318 Site U1361A

Field: Wilkes Land

Rig: JOIDES Resolution



Country: **Antarctica**

Natural Gamma
Spectroscopy