

**Schlumberger**

Company: **Conoco Phillips Company**

Well: **State of Colorado 36-1P**

Field: **Wildcat**

County: **Adams**

State: **Colorado**

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Field: **Wildcat**  
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County: **Adams** State: **Colorado**

[illegible]

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

[illegible]

## DEPTH SUMMARY LISTING

Date Created: 9-JAN-2013 3:52:01

## Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-B/A	Type:	7-46P-XS
Serial Number:	6515	Serial Number:	1919	Serial Number:	711057
Calibration Date:	23-Oct-12	Calibration Date:	2-Jan-13	Length:	20000 FT
Calibrator Serial Number:	33	Calibrator Serial Number:	78510	Conveyance Method:	Wireline
Calibration Cable Type:	7-46P-XS	Number of Calibration Points:	10	Rig Type:	LAND
Wheel Correction 1:	-7	Calibration RMS:	14		
Wheel Correction 2:	-5	Calibration Peak Error:	23		

## Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	0.00 FT
Rig Up Length At Bottom:	0.00 FT
Rig Up Length Correction:	0.00 FT
Stretch Correction:	3.00 FT
Tool Zero Check At Surface:	

### Depth Control Remarks

1. All Schlumberger Depth Policy procedures were followed
2. IDW is primary depth measurement, Z-chart is secondary
- 3.
- 4.
- 5.
- 6.

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OTHER SERVICES1	OTHER SERVICES2
OS1: MSIP	OS1:
OS2: HNGS	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
This is the first run in hole.	
Toolstring run as per tool sketch.	
Matrix: Limestone (2.71g/cc)	

Rig: H&P 280	
Crew: Ian Derry, Alonzo Carrera	

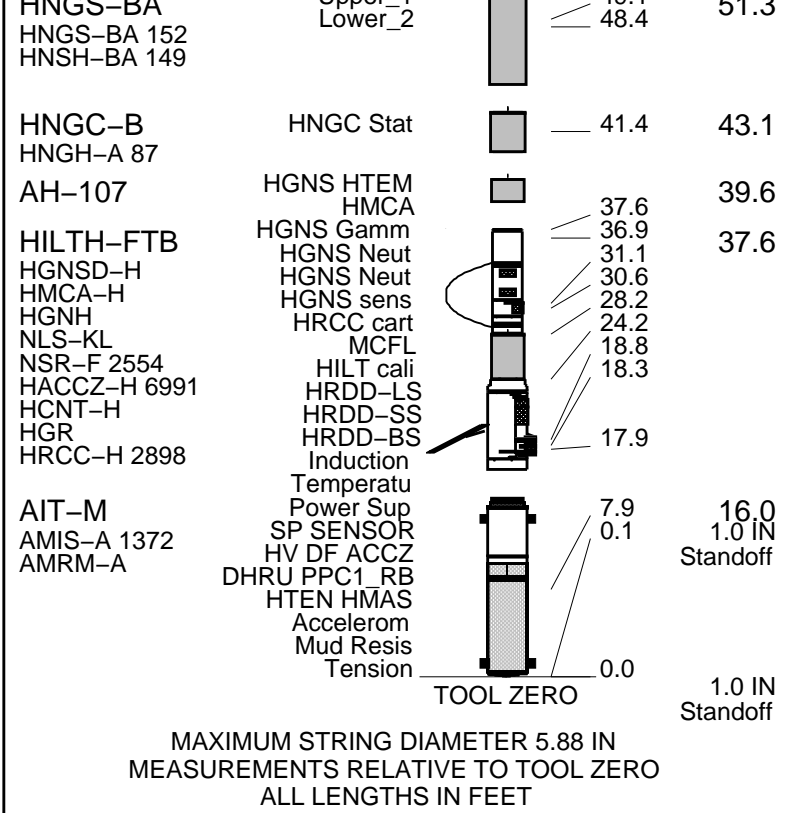
RUN 1			RUN 2		
SERVICE ORDER #:		BHDJ-00199	SERVICE ORDER #:		
PROGRAM VERSION:		19C1-222	PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		

SURFACE EQUIPMENT	
GSR-U/Y NCT-B CNB-AB NCS-VB	GSR-U 599 WITM (EDTS)-A

DOWNHOLE EQUIPMENT	
LEH-QT	MDSB_EDTC Mud Tempe
EDTC-B	CTEM
EDTH-B	Gamma Ray
EDTC-B	EFTB DIAG
	TelStatus
	EDTCB Ele
MAPC-B	
MAPC-BA	
ECH-SF	
MAMS-BA	
	MAMS-PS
MAXS-B	
MASS-BA	
MAXS-BA	
	MAXS-PS
	Calipers
PPC1	PPC_Cartr
PPC1-B	
PPC_CAL_STD	
AH-nonmag	
AH-nonmag	
GPIT-F	
GPIH-B	
AH-nonmag	
AH-nonmag	
AH-107	
UNCS-BA	Upper 1





**Schlumberger**

## MAIN DENSITY LOG 5" = 100'

MAXIS Field Log

### Input DLIS Files

DEFAULT AIT\_TLD\_MCFL\_CNL\_IS\_017PUP FN:16 PRODUCER 09-Jan-2013 03:36 7717.5 FT 1767.5 FT

### Output DLIS Files

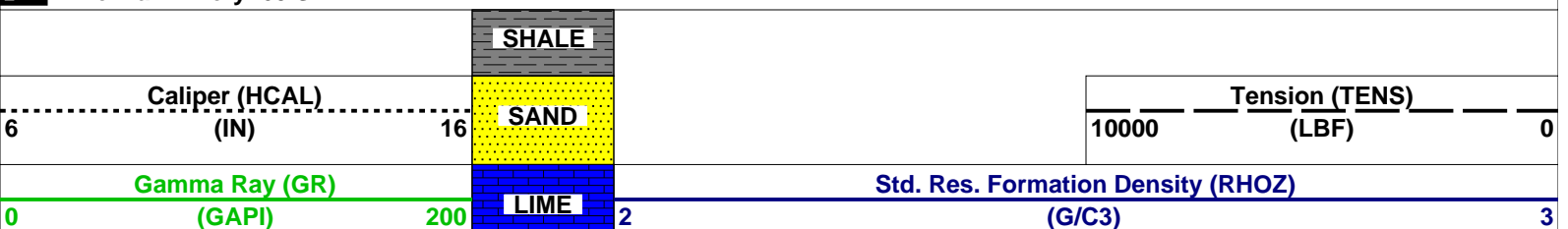
DEFAULT AIT\_TLD\_MCFL\_CNL\_IS\_019PUP FN:18 PRODUCER 09-Jan-2013 03:46

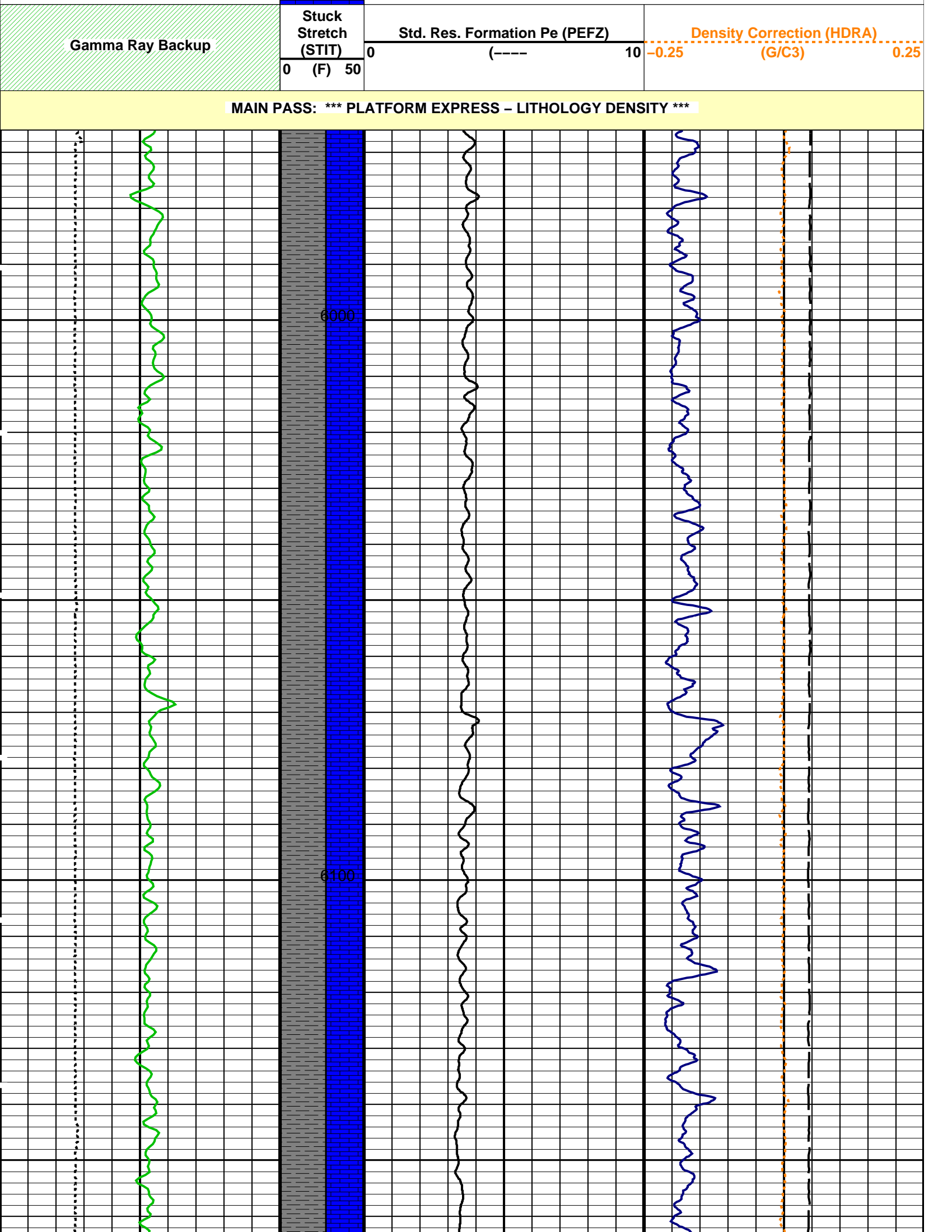
### OP System Version: 19C1-222

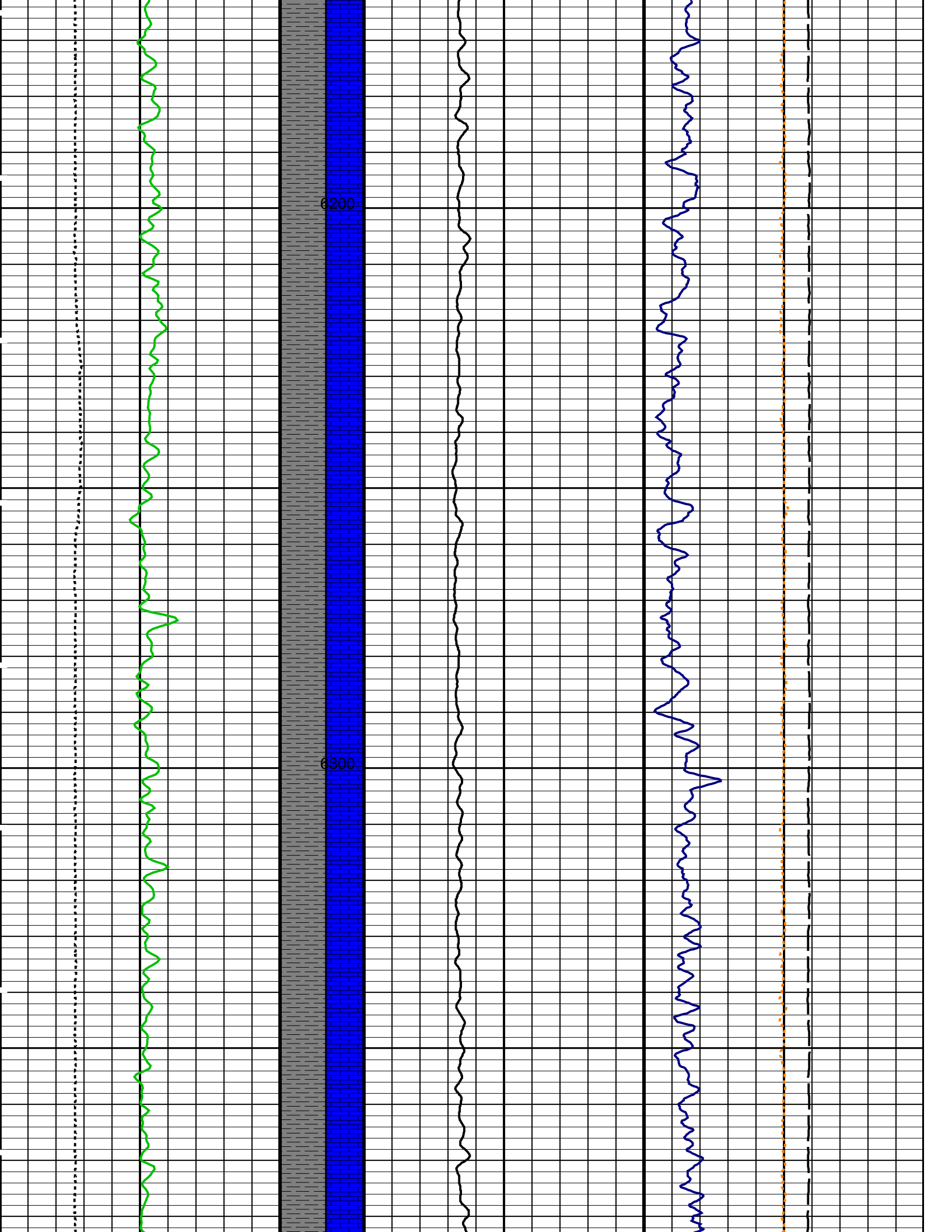
AIT-M	19C1-222	HILTH-FTB	19C1-222
HNGC-B	HFE-5203-OP19.1-NUCL	HNGS-BA	HFE-5203-OP19.1-NUCL
GPIT-F	19C1-222	PPC1	19C1-222
MAXS-B	19C1-222	MAPC-B	19C1-222
EDTC-B	19C1-222		

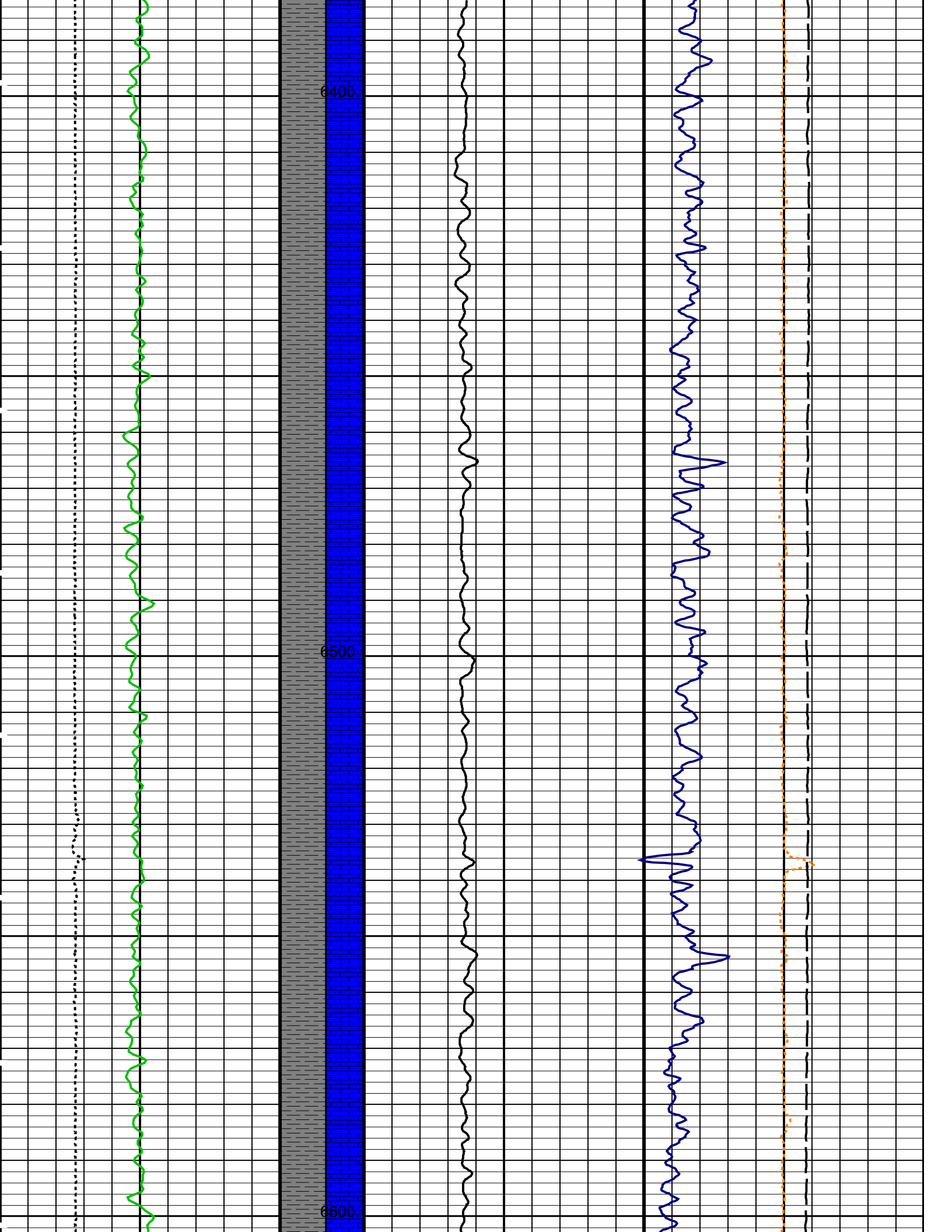
### PIP SUMMARY

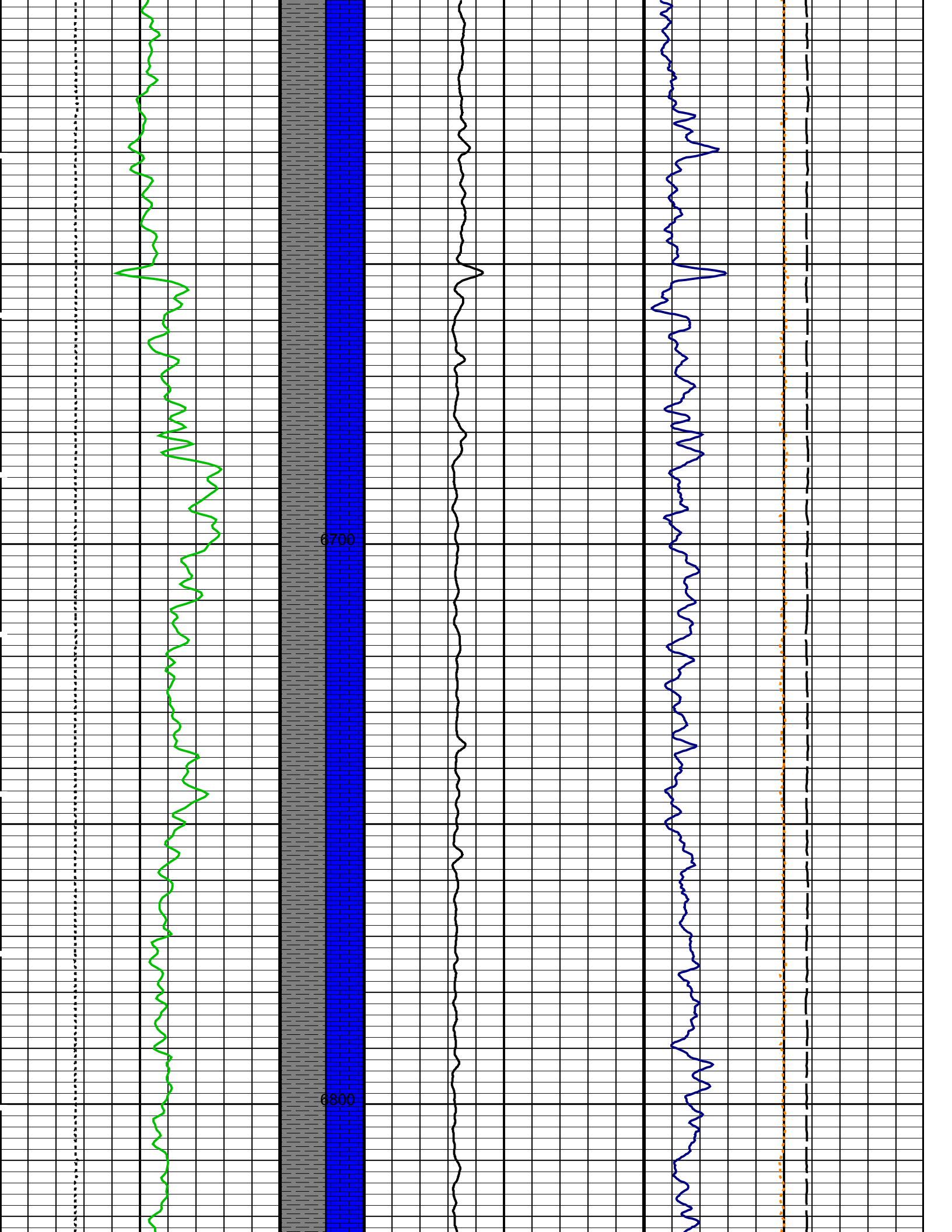
Time Mark Every 60 S



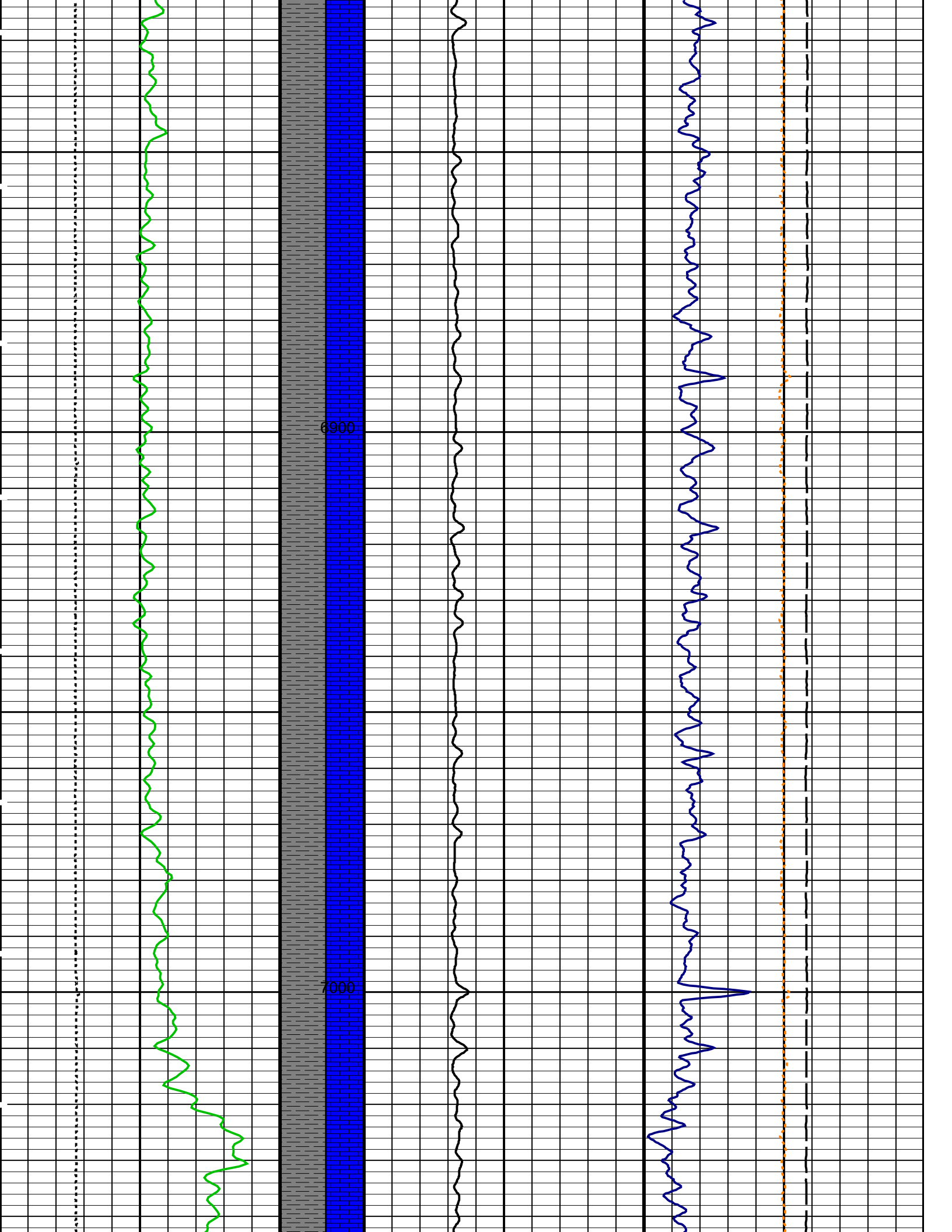


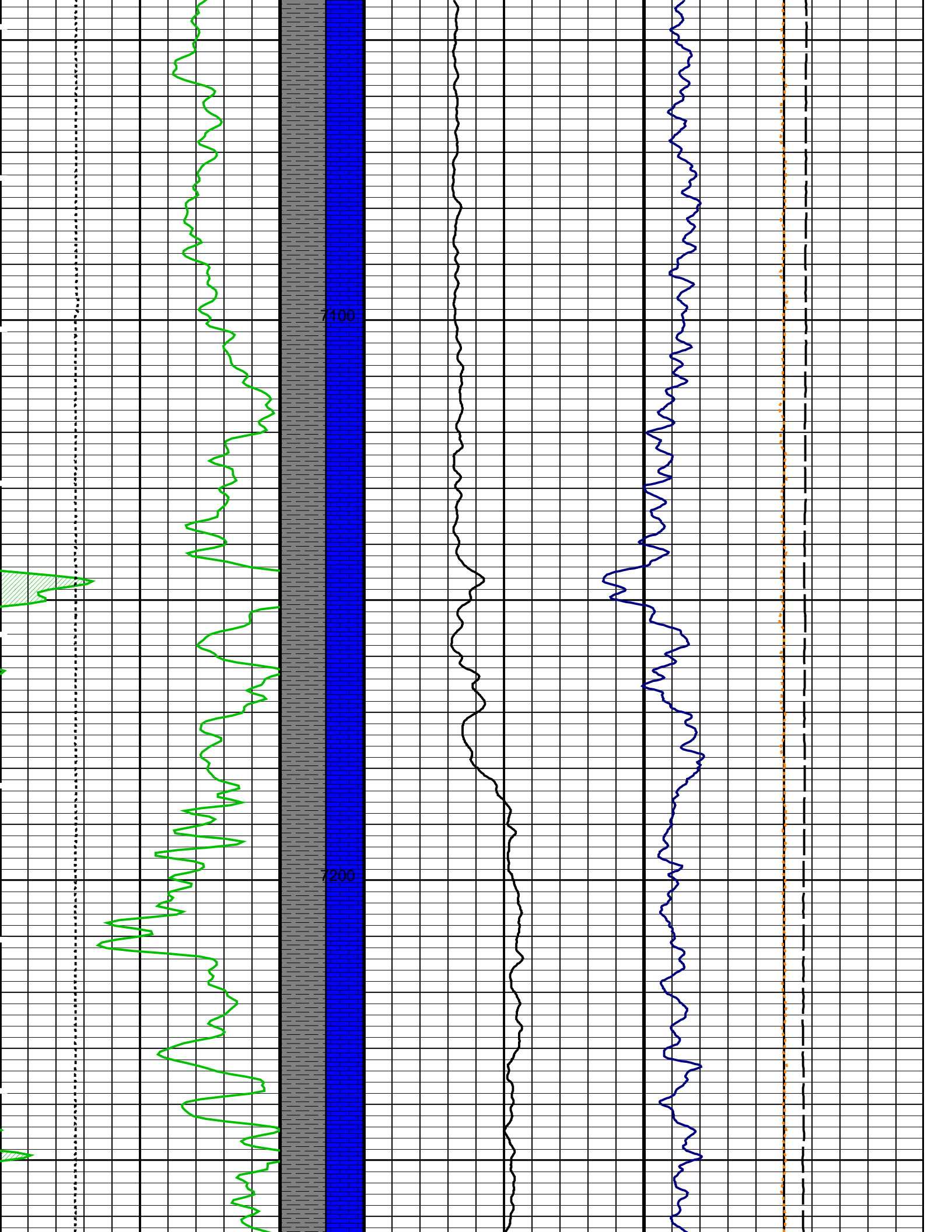


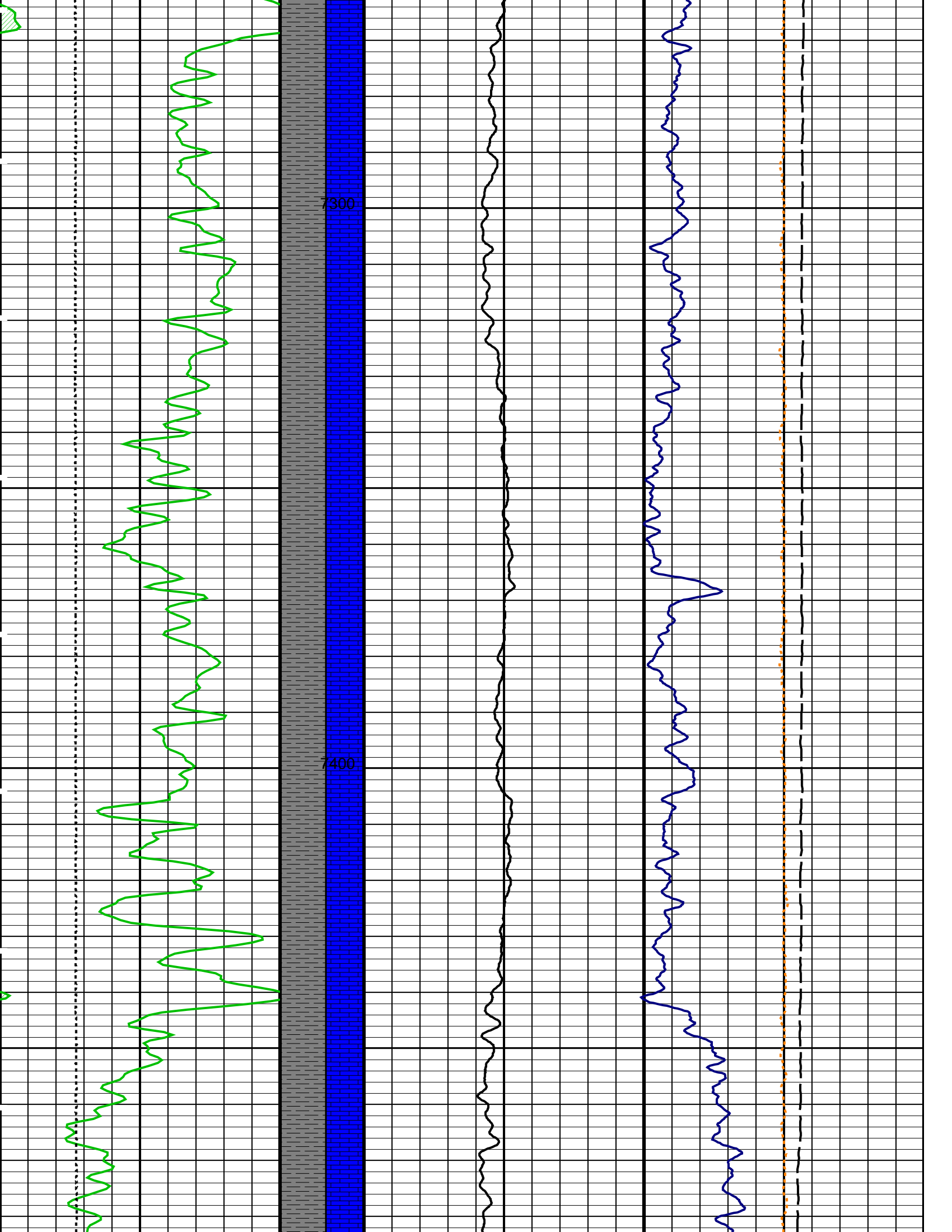


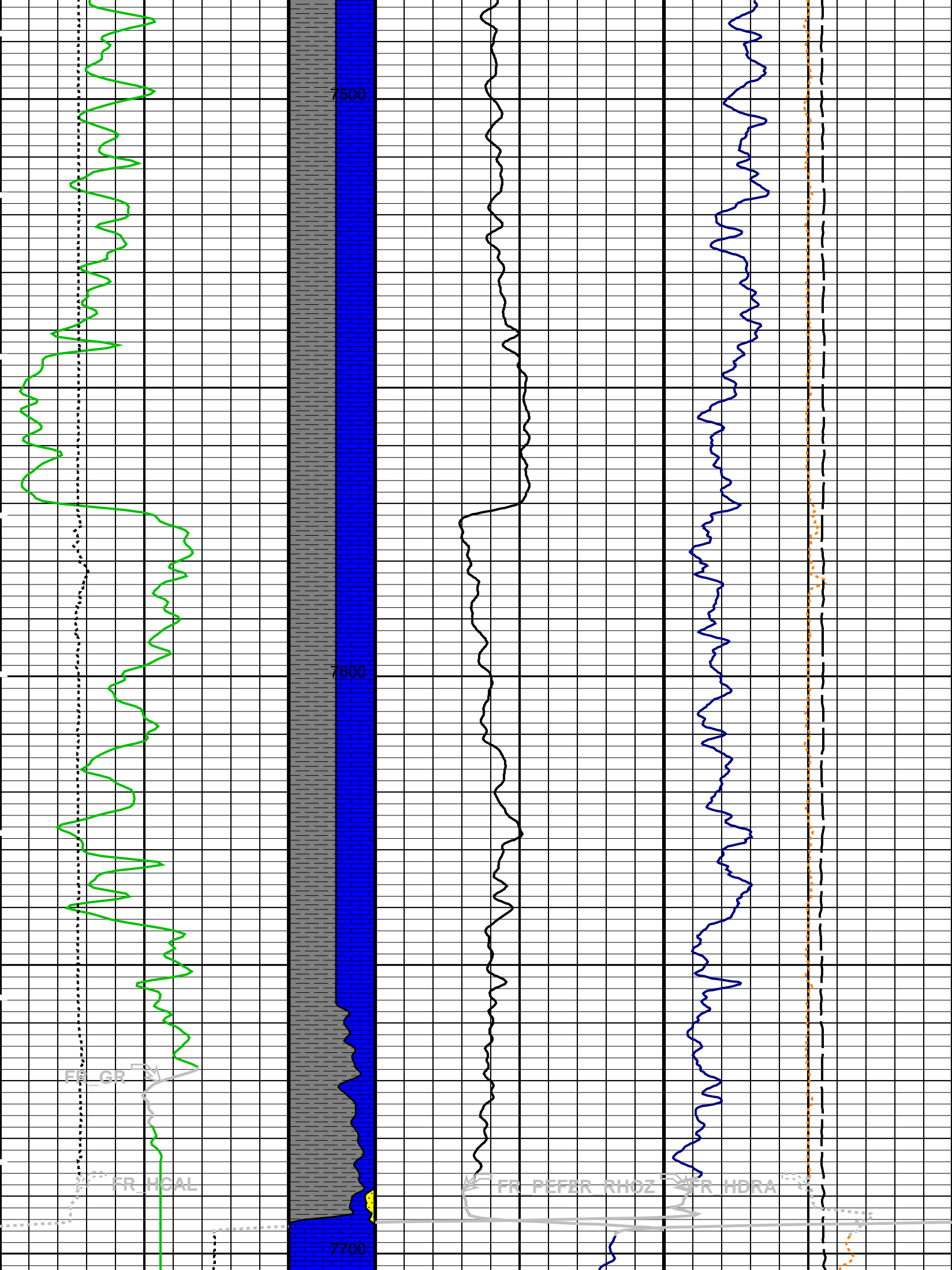


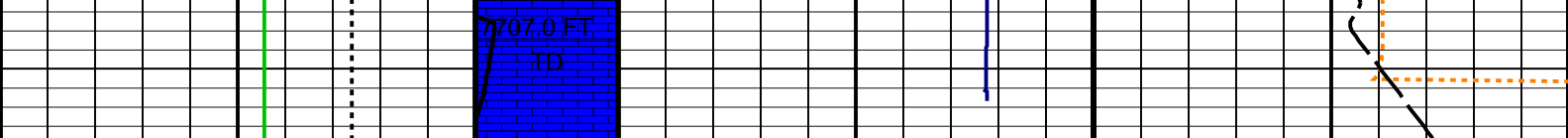












MAIN PASS: \*\*\* PLATFORM EXPRESS – LITHOLOGY DENSITY \*\*\*

Gamma Ray Backup	Stuck Stretch (STIT)	Std. Res. Formation Pe (PEFZ)		Density Correction (HDRA)	
	0 (F) 50	0	(----) 10	-0.25 (G/C3)	0.25
Gamma Ray (GR) (GAPI)	0 200	LIME	Std. Res. Formation Density (RHOZ) (G/C3)		
			2		3
Caliper (HCAL) (IN)	6 16	SAND	Tension (TENS) (LBF)		
			10000		0
		SHALE			

PIP SUMMARY

Time Mark Every 60 S

Parameters			
DLIS Name	Description	Value	
AIT-M: Array Induction Tool – M			
BHT	Bottom Hole Temperature (used in calculations)	208	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
HILTH-FTB: High resolution Integrated Logging Tool-DTS			
BHFL_TLD	HILT Nuclear Mud Base	OIL	
BHT	Bottom Hole Temperature (used in calculations)	208	DEGF
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCLF	Germany Coal-like Formation Option	NO	
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
SHT	Surface Hole Temperature	68	DEGF
HNGBS-BA: Hostile Natural Gamma Ray Sonde			
BHT	Bottom Hole Temperature (used in calculations)	208	DEGF
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
MAPC-B: Multimode Array Sonic Power Cartridge			
BHT	Bottom Hole Temperature (used in calculations)	208	DEGF
BS	Bit Size	8.750	IN
CDTS	C-Delta-T Shale	100	US/F
DTF	Delta-T Fluid	221.6	US/F
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
SPFS	Sonic Porosity Formula	RAYMER_HUNT	
SPSO	Sonic Porosity Source	DTCO	
EDTC-B: Enhanced DTS Cartridge			
BHT	Bottom Hole Temperature (used in calculations)	208	DEGF
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
DIR: Directional Survey Computation			
SPVD	TVD of Starting Point	0	FT
TIMD	Along-hole depth of Tie-in Point	0	FT
TIVD	TVD of Tie-in Point	0	FT
DIRPLOT: Enhanced Directional Plots			

BHT	Bottom Hole Temperature (used in calculations)	208	DEGF
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
FEQL: Formation Evaluation Quick Look			
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
HOLEV: Integrated Hole/Cement Volume			
BHT	Bottom Hole Temperature (used in calculations)	208	DEGF
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
PERT: Preliminary Evaluation – Real Time			
BDPS	Bulk Density Processing Selector	Standard	
BHT	Bottom Hole Temperature (used in calculations)	208	DEGF
CLIM	Caliper Limit for Bad Hole	999	IN
CNPS	Corrected Neutron Porosity Selector	NPHI	
DRUL	DRHO Upper Limit	999	G/C3
FCAL	Caliper Presence Flag	PRESENT	
FCGR	CGR Presence Flag	PRESENT	
FEXP	Form Factor Exponent	2	
FLDT	Bulk Density Presence Flag	PRESENT	
FNUM	Form Factor Numerator	1	
FSON	Sonic Presence Flag	ABSENT	
GGRD	Geothermal Gradient	0.01	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PMAX	PHI Maximum	0.5	CFCF
POUT	Porosity Output Lithology	LIMESTONE	
RG21	RHO Grain (2–Mineral Model, Min–1)	2.71	G/C3
RG22	RHO Grain (2–Mineral Model, Min–2)	2.644	G/C3
RG23	RHO Grain (2–Mineral Model, Min–3)	2.877	G/C3
RG31	RHO Grain (3–Mineral Model, Min–1)	2.71	G/C3
RG32	RHO Grain (3–Mineral Model, Min–2)	2.644	G/C3
RG33	RHO Grain (3–Mineral Model, Min–3)	2.877	G/C3
RTLF	RT Limit Flag	NO_LIMIT	
RWF	Resistivity of Free Water	0.02	OHMM
SHT	Surface Hole Temperature	68	DEGF
UF	U Fluid	0.398	
UM21	U Matrix (2–Mineral Model, Min–1)	13.77	
UM22	U Matrix (2–Mineral Model, Min–2)	4.779	
UM23	U Matrix (2–Mineral Model, Min–3)	8.997	
UM31	U Matrix (3–Mineral Model, Min–1)	13.77	
UM32	U Matrix (3–Mineral Model, Min–2)	4.779	
UM33	U Matrix (3–Mineral Model, Min–3)	8.997	
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth – Driller	7700.00	FT
TDL	Total Depth – Logger	7707.00	FT
System and Miscellaneous			
DFD	Drilling Fluid Density	9.20	LB/G
DO	Depth Offset for Playback	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
PP	Playback Processing	OFF	
RMFS	Resistivity of Mud Filtrate Sample	–50000.0000	OHMM
TD	Total Depth	7707	FT
TWS	Temperature of Connate Water Sample	100.00	DEGF

Format: DENS    Vertical Scale: 5" per 100'    Graphics File Created: 09–Jan–2013 03:46

## OP System Version: 19C1–222

AIT–M	19C1–222	HILTH–FTB	19C1–222
HNGC–B	HFE–5203–OP19.1–NUCL	HNGS–BA	HFE–5203–OP19.1–NUCL
GPIT–F	19C1–222	PPC1	19C1–222
MAXS–B	19C1–222	MAPC–B	19C1–222
EDTC–B	19C1–222		

## Input DLIS Files

DEFAULT    AIT\_TLD\_MCFL\_CNL\_IS\_017PUP    FN:16    PRODUCER    09–Jan–2013 03:36    7717.5 FT    1767.5 FT

## Output DLIS Files

DEFAULT    AIT\_TLD\_MCFL\_CNL\_IS\_019PUP    FN:18    PRODUCER    09–Jan–2013 03:46

## MAXIS Field Log

## Input DLIS Files

DEFAULT AIT\_TLD\_MCFL\_CNL\_IS\_017PUP FN:16 PRODUCER 09-Jan-2013 03:36 7717.5 FT 1767.5 FT

## Output DLIS Files

DEFAULT AIT\_TLD\_MCFL\_CNL\_IS\_019PUP FN:18 PRODUCER 09-Jan-2013 03:46

## Integrated Hole/Cement Volume Summary

Hole Volume = 302.65 F3

Cement Volume = 102.35 F3 (assuming 7.00 IN casing O.D.)

Computed from 7705.5 FT to 6956.5 FT using data channel(s) CRD1\_PPC1 CRD2\_PPC1 CRD3\_PPC1 CRD4\_PPC1

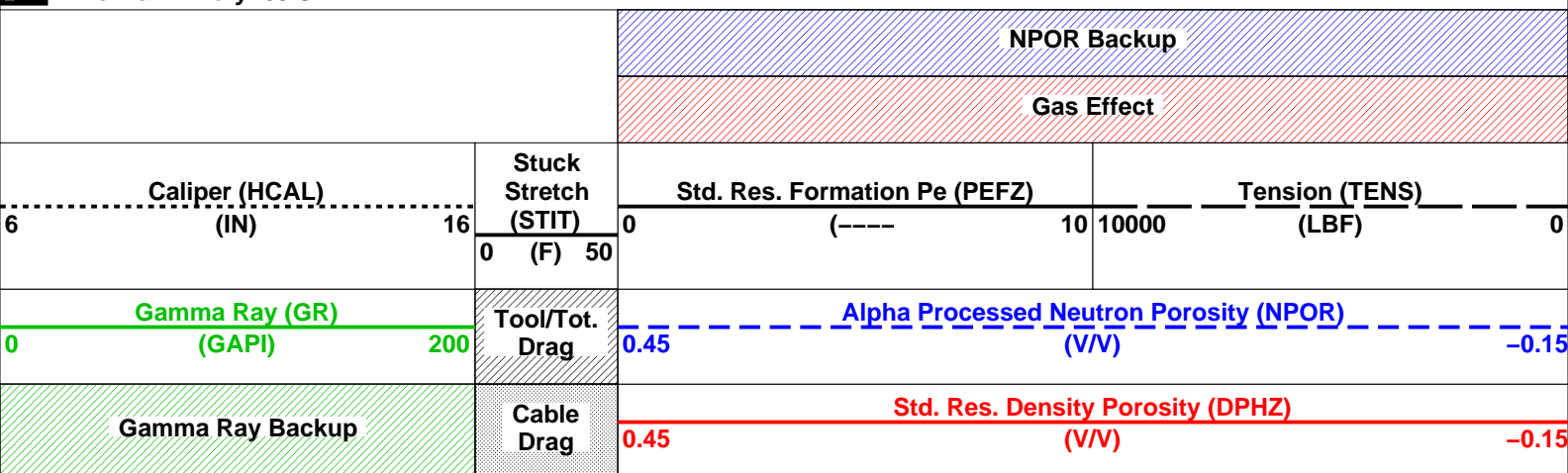
## OP System Version: 19C1-222

AIT-M	19C1-222	HILTH-FTB	19C1-222
HNGC-B	HFE-5203-OP19.1-NUCL	HNGS-BA	HFE-5203-OP19.1-NUCL
GPIT-F	19C1-222	PPC1	19C1-222
MAXS-B	19C1-222	MAPC-B	19C1-222
EDTC-B	19C1-222		

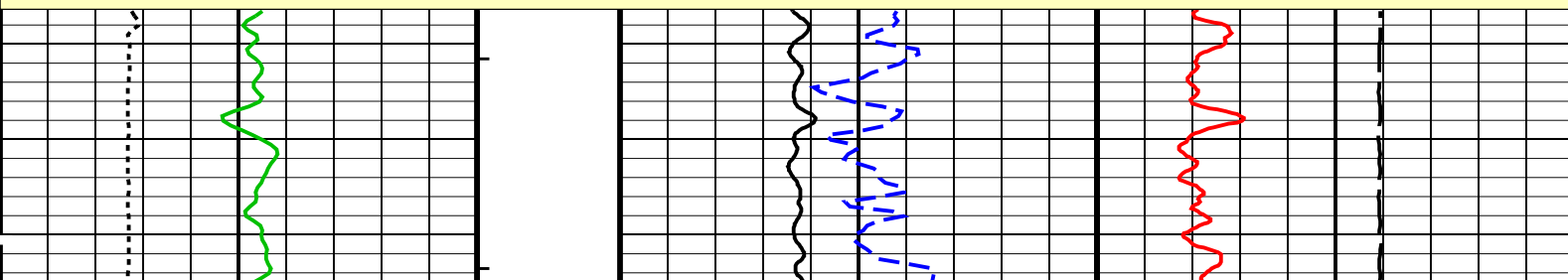
## PIP SUMMARY

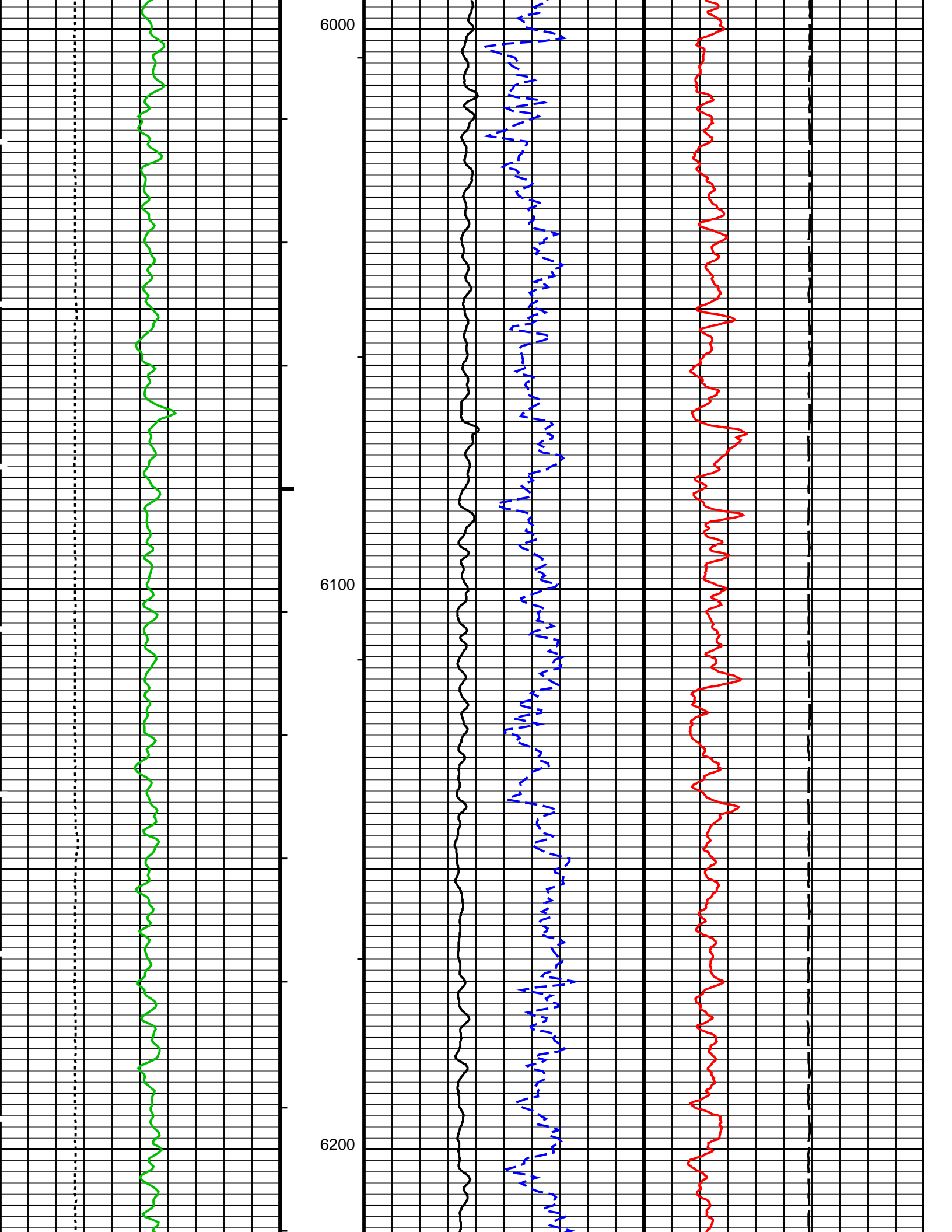
- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
- └ Integrated Cement Volume Minor Pip Every 10 F3
- └ Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

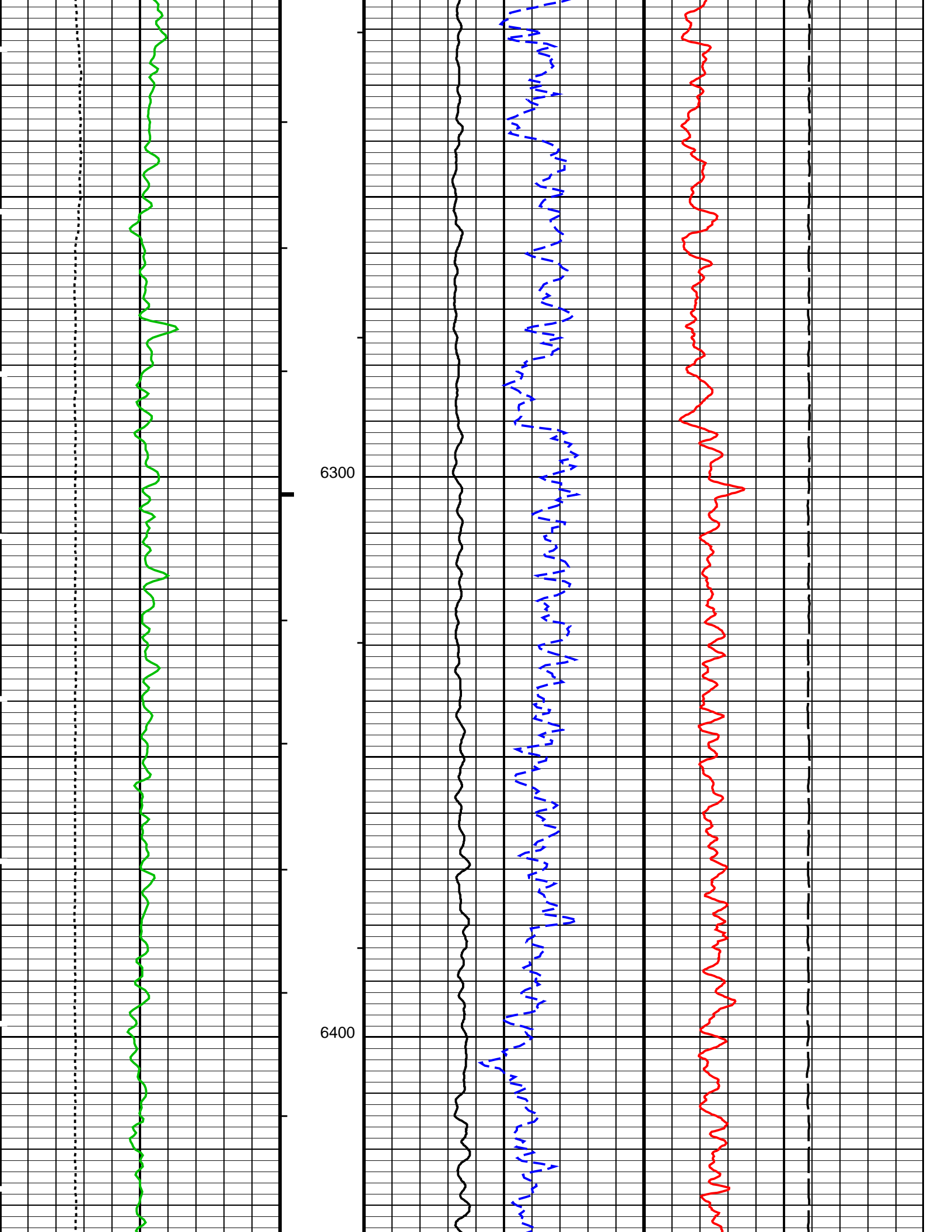


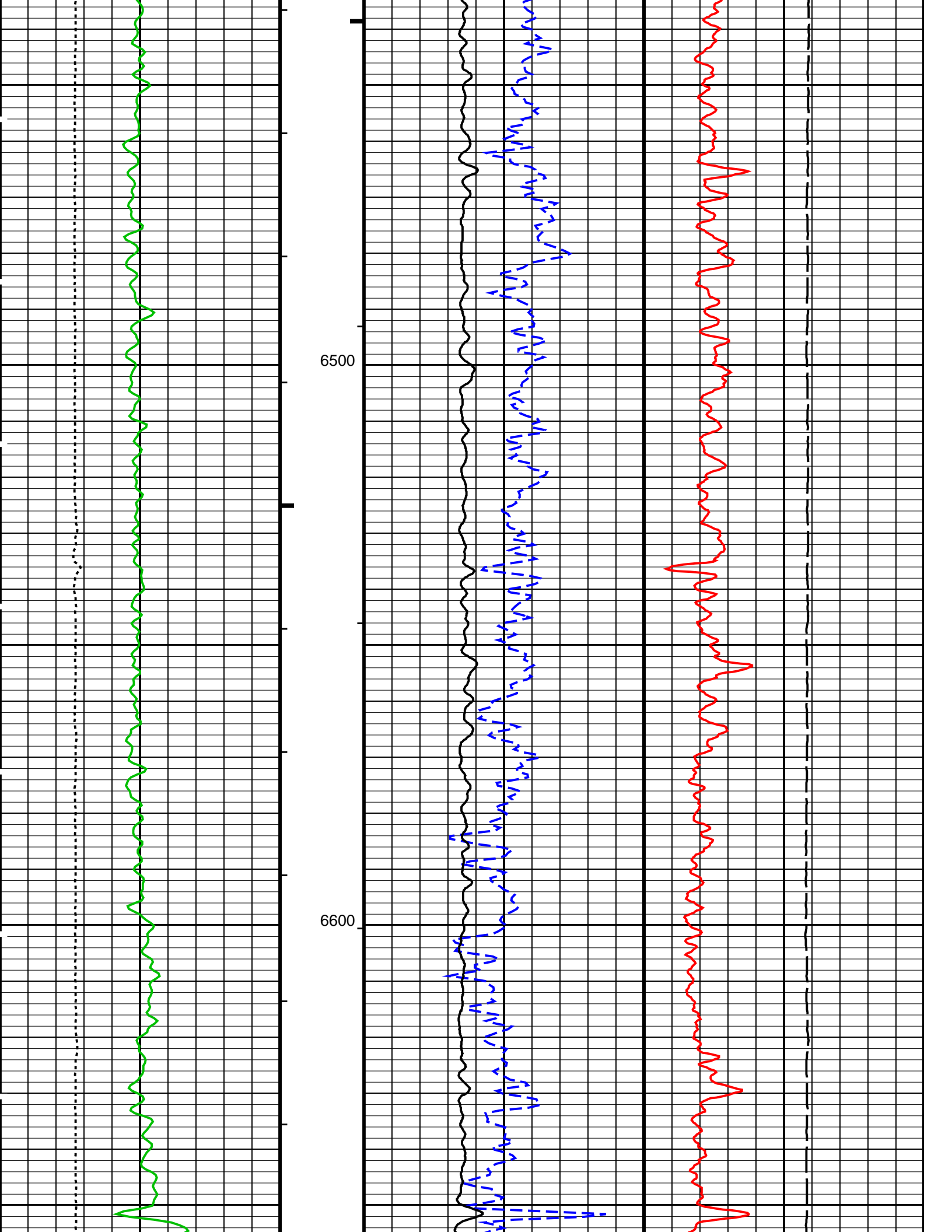
MAIN PASS: \*\*\* PLATFORM EXPRESS - NUCLEAR POROSITY \*\*\*

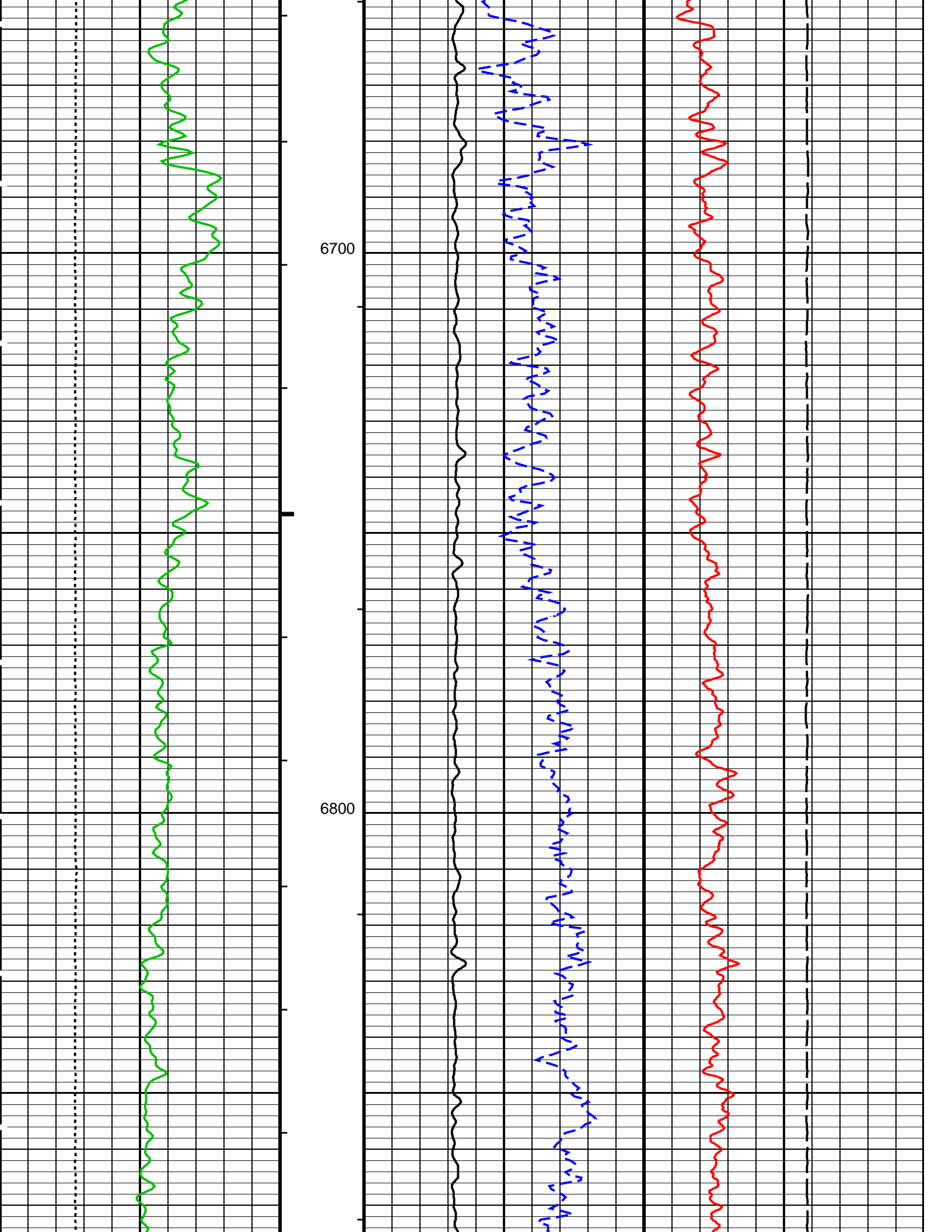


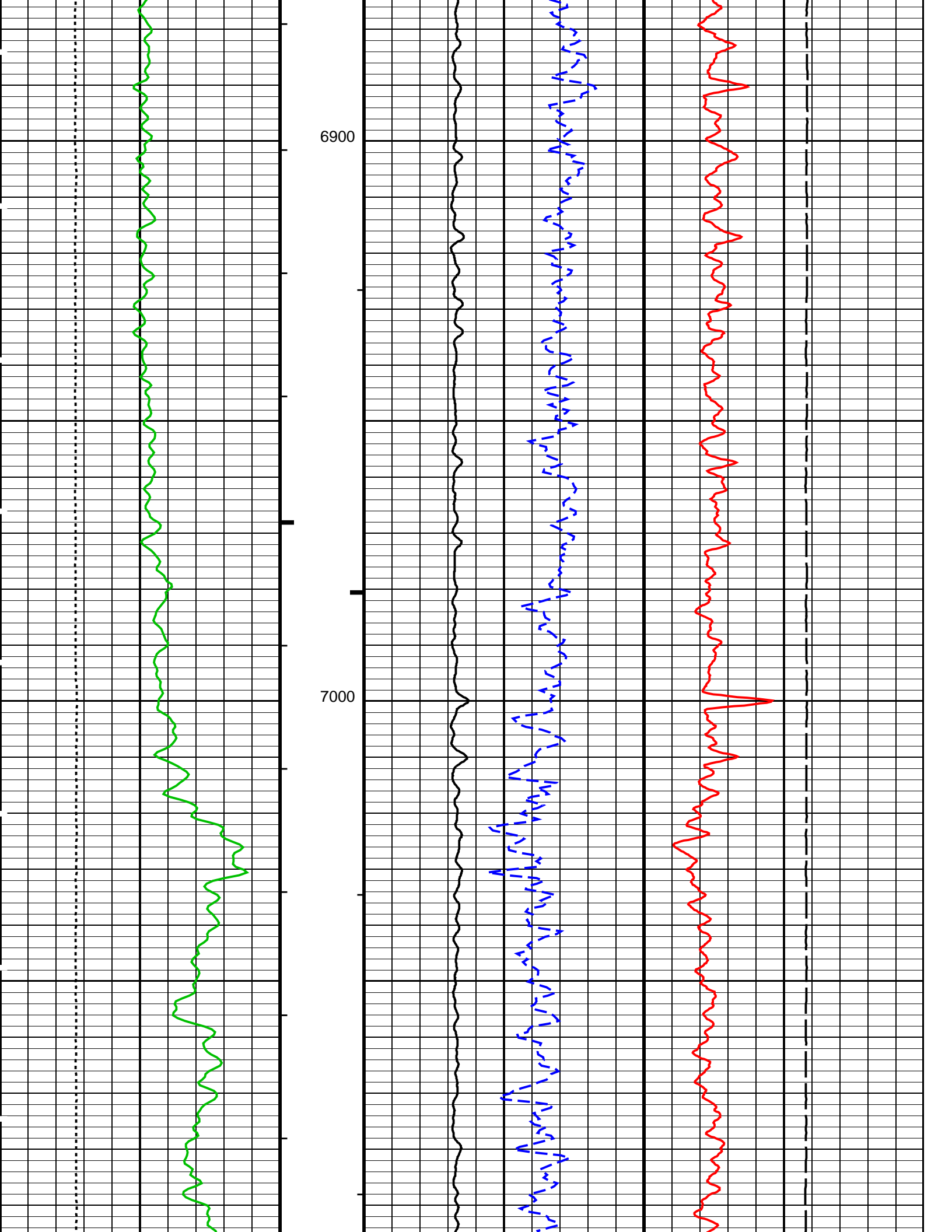


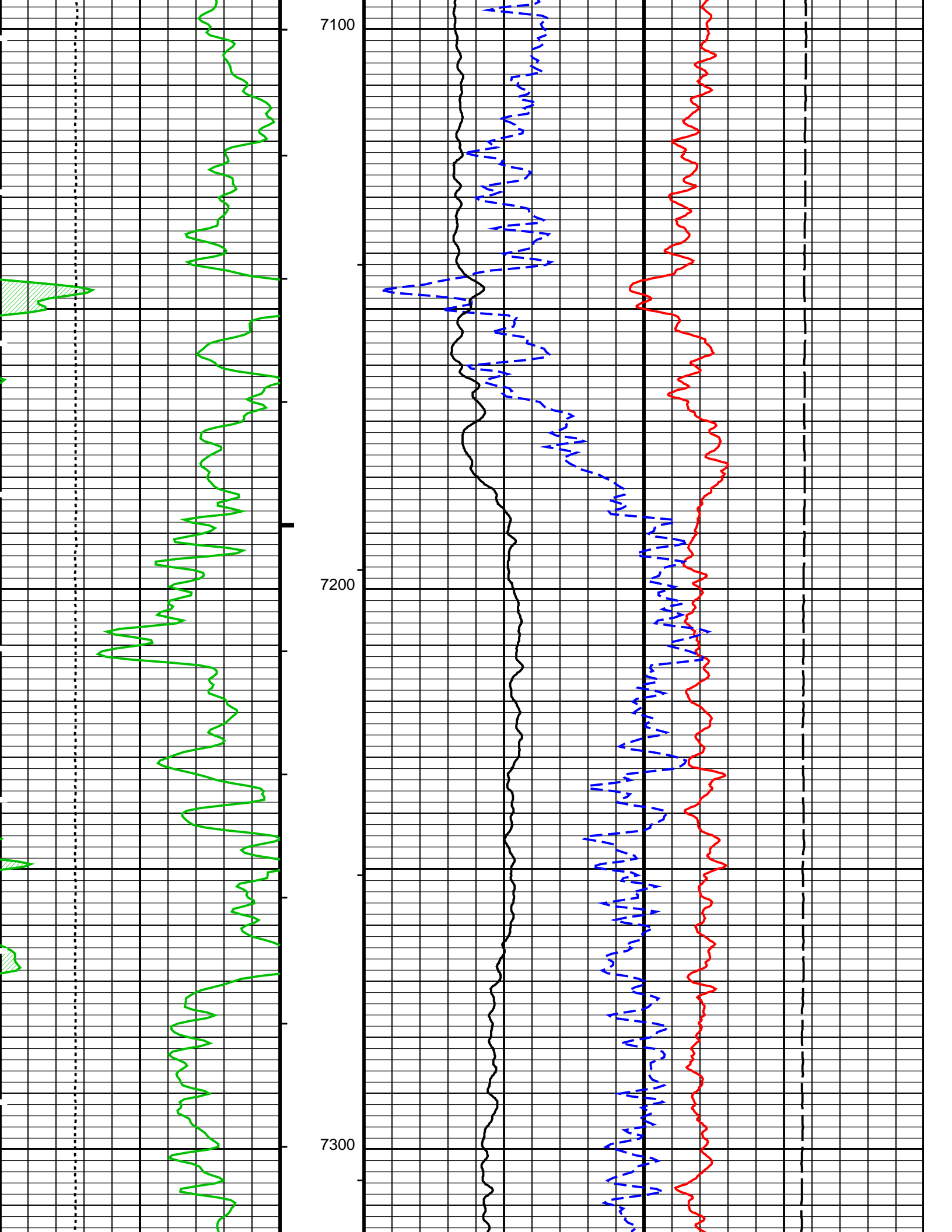


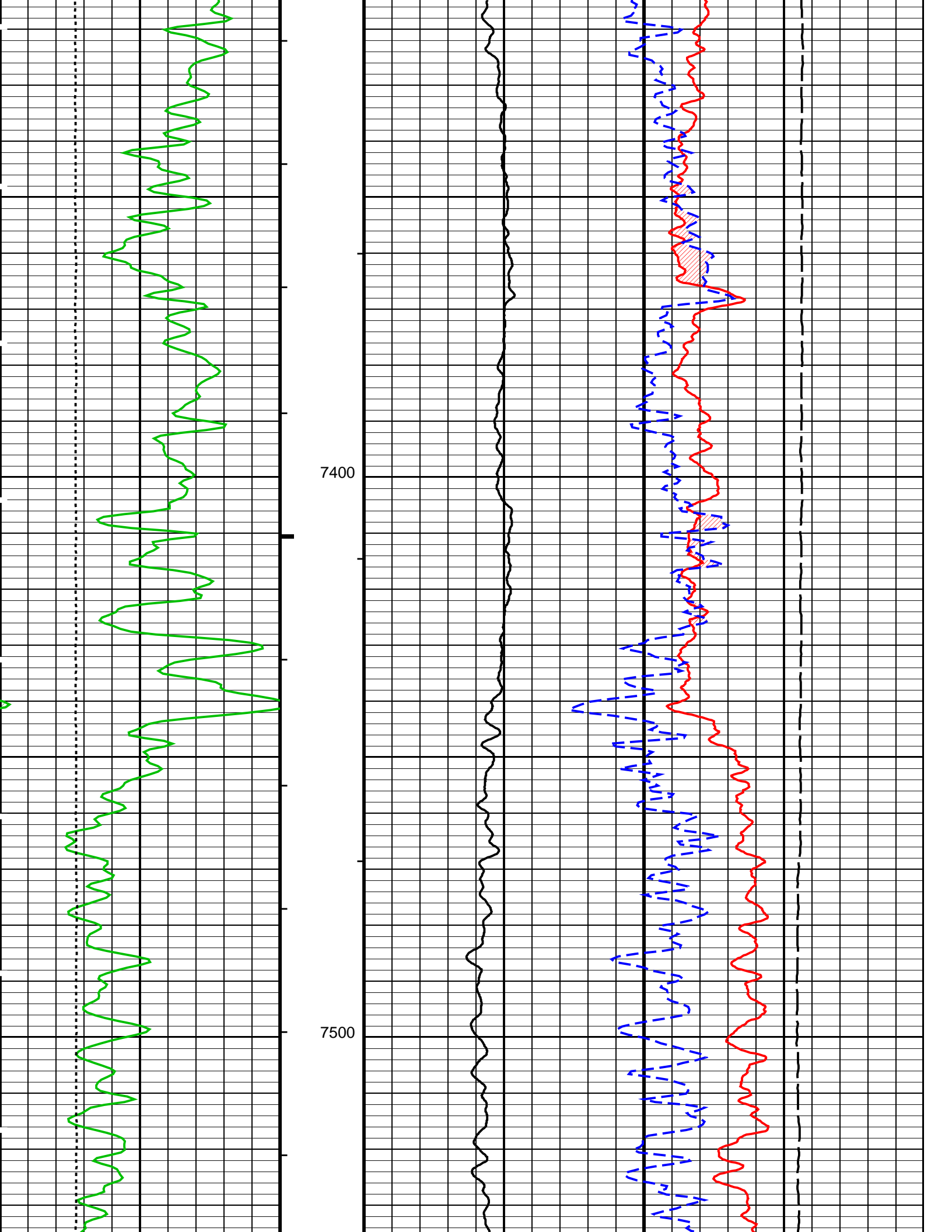


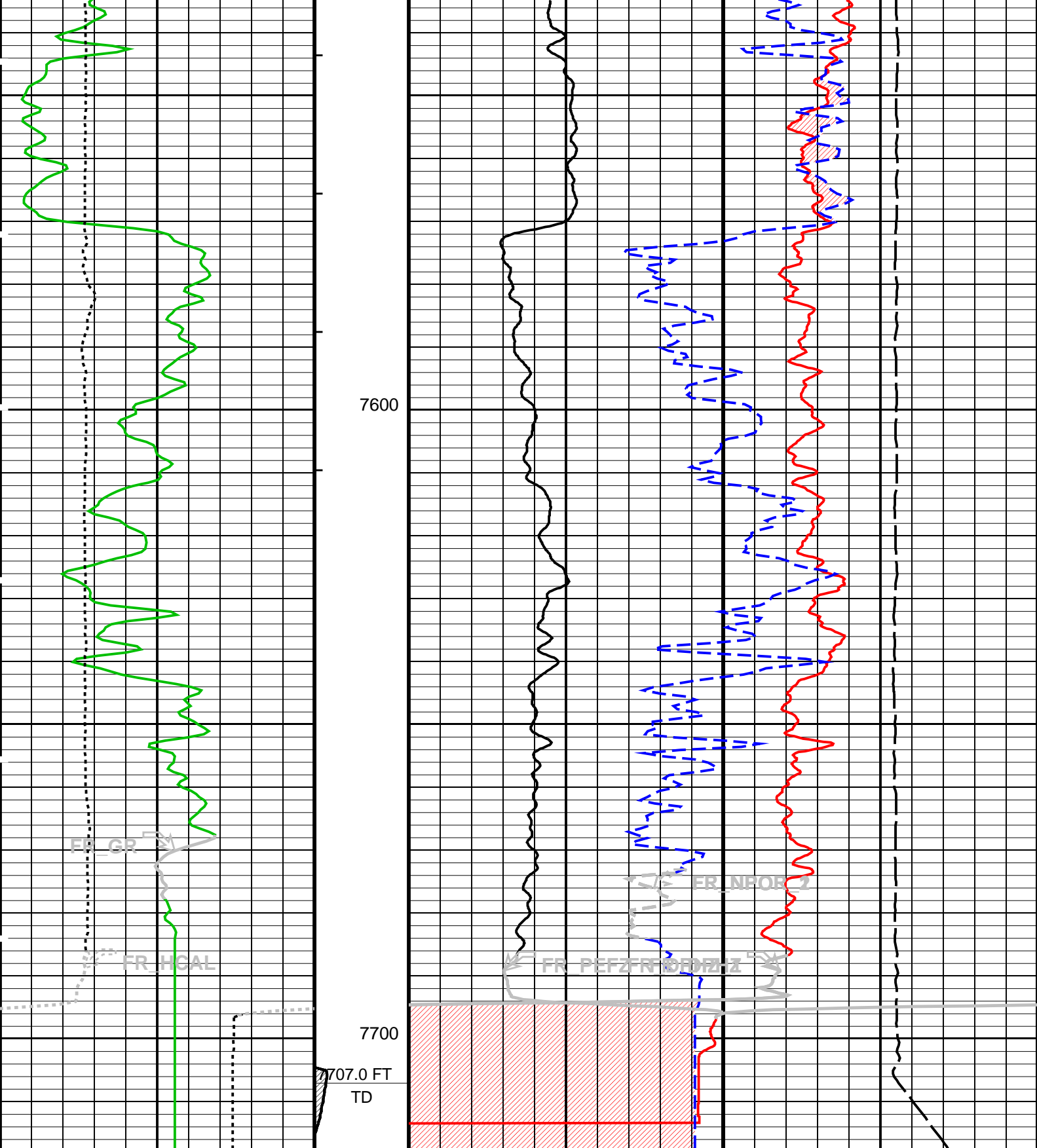












MAIN PASS: \*\*\* PLATFORM EXPRESS - NUCLEAR POROSITY \*\*\*

Gamma Ray Backup	Cable Drag	Std. Res. Density Porosity (DPHZ)			
		0.45	(V/V)	-0.15	
Gamma Ray (GR) (GAPI)	Tool/Tot. Drag	Alpha Processed Neutron Porosity (NPOR)			
		0.45	(V/V)	-0.15	
Caliper (HCAL) (IN)	Stuck Stretch (STIT)	Std. Res. Formation Pe (PEFZ)		Tension (TENS)	
		0	(----	10 10000	(LBF)

0	(F)	50	
			Gas Effect
			NPOR Backup
PIP SUMMARY			
└ Integrated Hole Volume Minor Pip Every 10 F3 ┐ Integrated Hole Volume Major Pip Every 100 F3 └ Integrated Cement Volume Minor Pip Every 10 F3 ┐ Integrated Cement Volume Major Pip Every 100 F3			
Time Mark Every 60 S			

Parameters			
DLIS Name	Description	Value	
AIT-M: Array Induction Tool – M			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
HILTH-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	OIL	
BHFL_TLD	HILT Nuclear Mud Base	OIL	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal-like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.71	G/C3
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
HNCS-BA: Hostile Natural Gamma Ray Sonde			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
MAPC-B: Multimode Array Sonic Power Cartridge			
BHS	Borehole Status	OPEN	
BS	Bit Size	8.750	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	OIL	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	



MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
DIR: Directional Survey Computation			
SPVD	TVD of Starting Point	0	FT
TIMD	Along-hole depth of Tie-in Point	0	FT
TIVD	TVD of Tie-in Point	0	FT
DIRPLOT: Enhanced Directional Plots			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
FCD	Future Casing (Outer) Diameter	7	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
PERT: Preliminary Evaluation - Real Time			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth - Driller	7700.00	FT
TDL	Total Depth - Logger	7707.00	FT
System and Miscellaneous			
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	36.00	LB/F
DFD	Drilling Fluid Density	9.20	LB/G
DO	Depth Offset for Playback	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
MST	Mud Sample Temperature	-50000.00	DEGF
PP	Playback Processing	OFF	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
TD	Total Depth	7707	FT

Format: PORO      Vertical Scale: 5" per 100'      Graphics File Created: 09-Jan-2013 03:46

## OP System Version: 19C1-222

AIT-M	19C1-222	HILTH-FTB	19C1-222
HNGC-B	HFE-5203-OP19.1-NUCL	HNGS-BA	HFE-5203-OP19.1-NUCL
GPIT-F	19C1-222	PPC1	19C1-222
MAXS-B	19C1-222	MAPC-B	19C1-222
EDTC-B	19C1-222		

## Input DLIS Files

DEFAULT      AIT\_TLD\_MCFL\_CNL\_IS\_017PUP      FN:16      PRODUCER      09-Jan-2013 03:36      7717.5 FT      1767.5 FT

## Output DLIS Files

DEFAULT      AIT\_TLD\_MCFL\_CNL\_IS\_019PUP      FN:18      PRODUCER      09-Jan-2013 03:46



## POROSITY REPEAT ANALYSIS

## Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_IS_018PUP	FN:17	PRODUCER	09-Jan-2013 03:43	7705.5 FT	6956.5 FT
DEFAULT	AIT_TLD_MCFL_CNL_IS_017PUP	FN:16	PRODUCER	09-Jan-2013 03:36	7717.5 FT	1767.5 FT

## Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_IS_019PUP	FN:18	PRODUCER	09-Jan-2013 03:46
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## Integrated Hole/Cement Volume Summary

Hole Volume = 302.65 F3

Cement Volume = 102.35 F3 (assuming 7.00 IN casing O.D.)

Computed from 7705.5 FT to 6956.5 FT using data channel(s) CRD1\_PPC1 CRD2\_PPC1 CRD3\_PPC1 CRD4\_PPC1

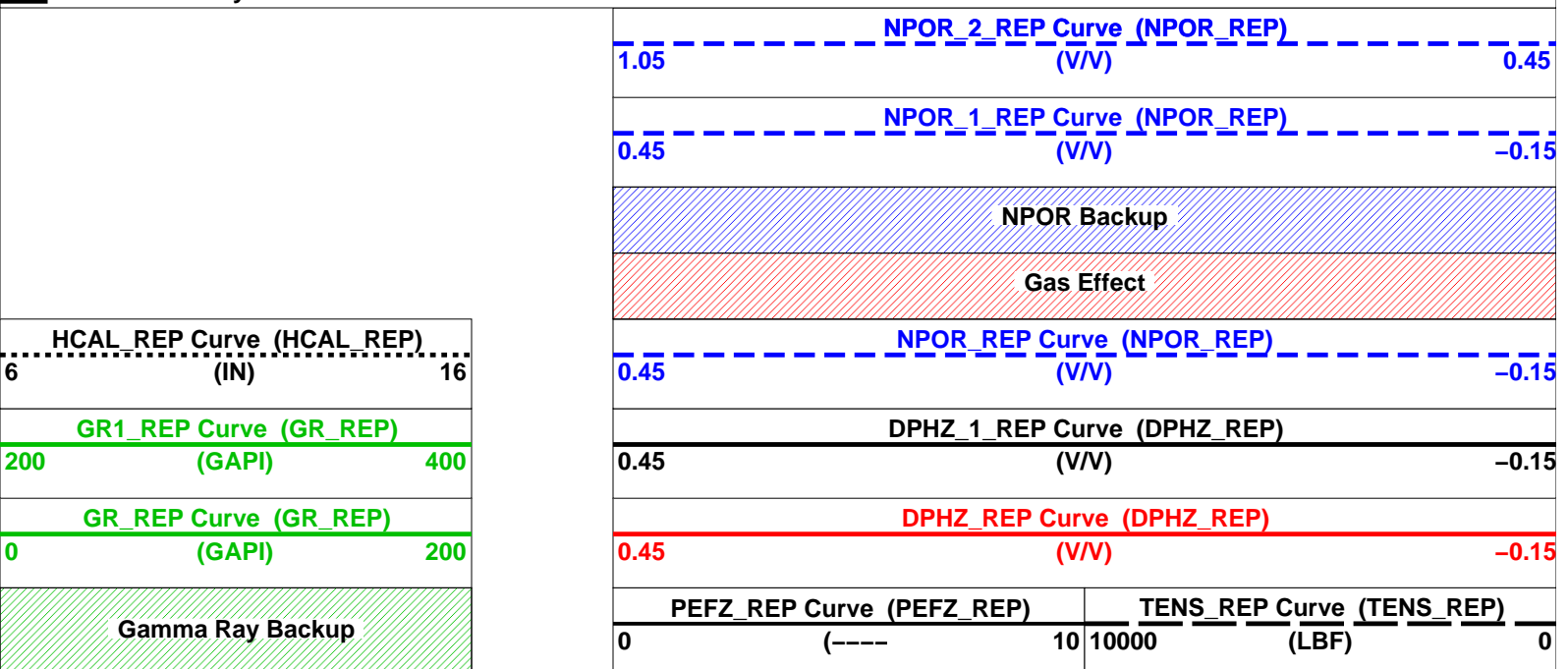
## OP System Version: 19C1-222

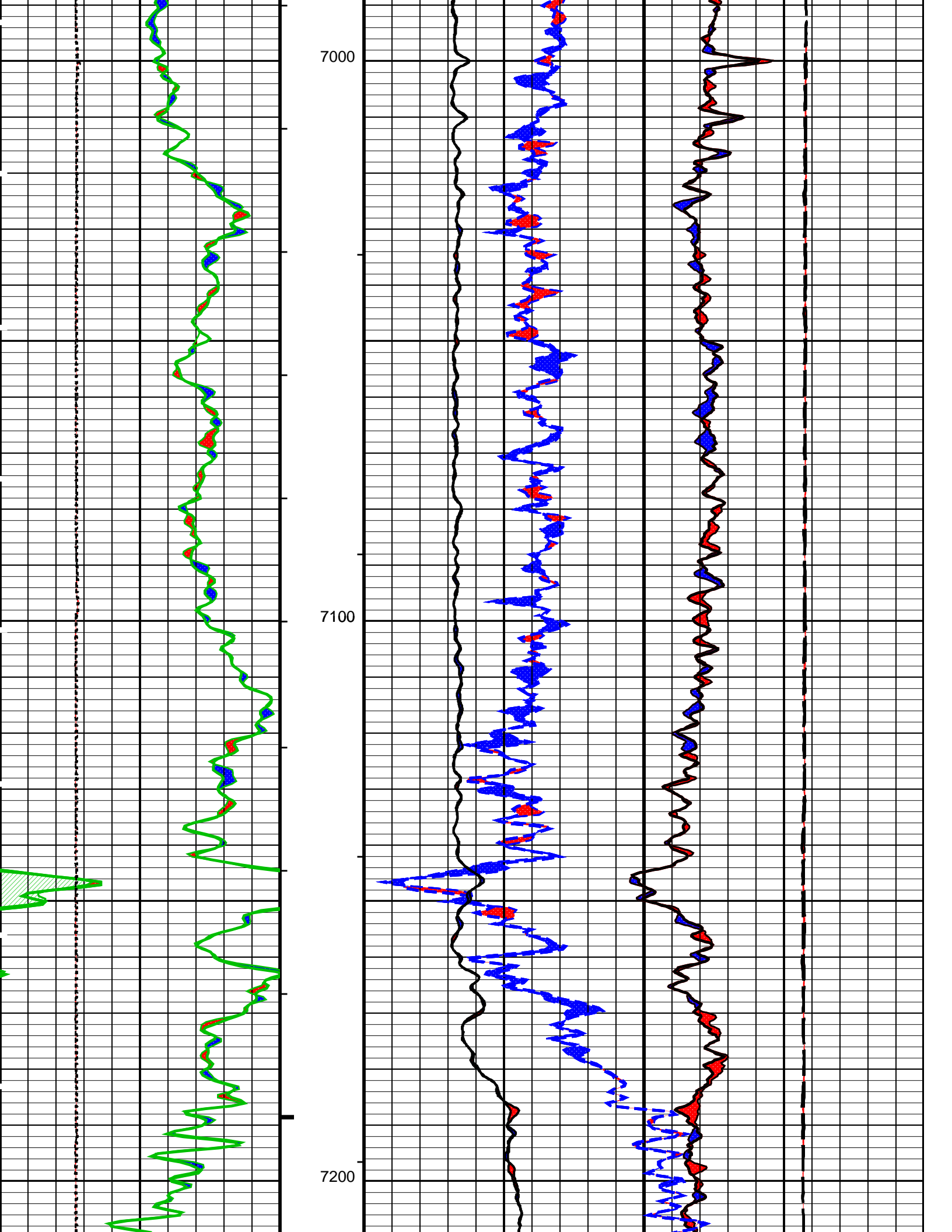
AIT-M	19C1-222	HILTH-FTB	19C1-222
HNGC-B	HFE-5203-OP19.1-NUCL	HNGS-BA	HFE-5203-OP19.1-NUCL
GPIT-F	19C1-222	PPC1	19C1-222
MAXS-B	19C1-222	MAPC-B	19C1-222
EDTC-B	19C1-222		

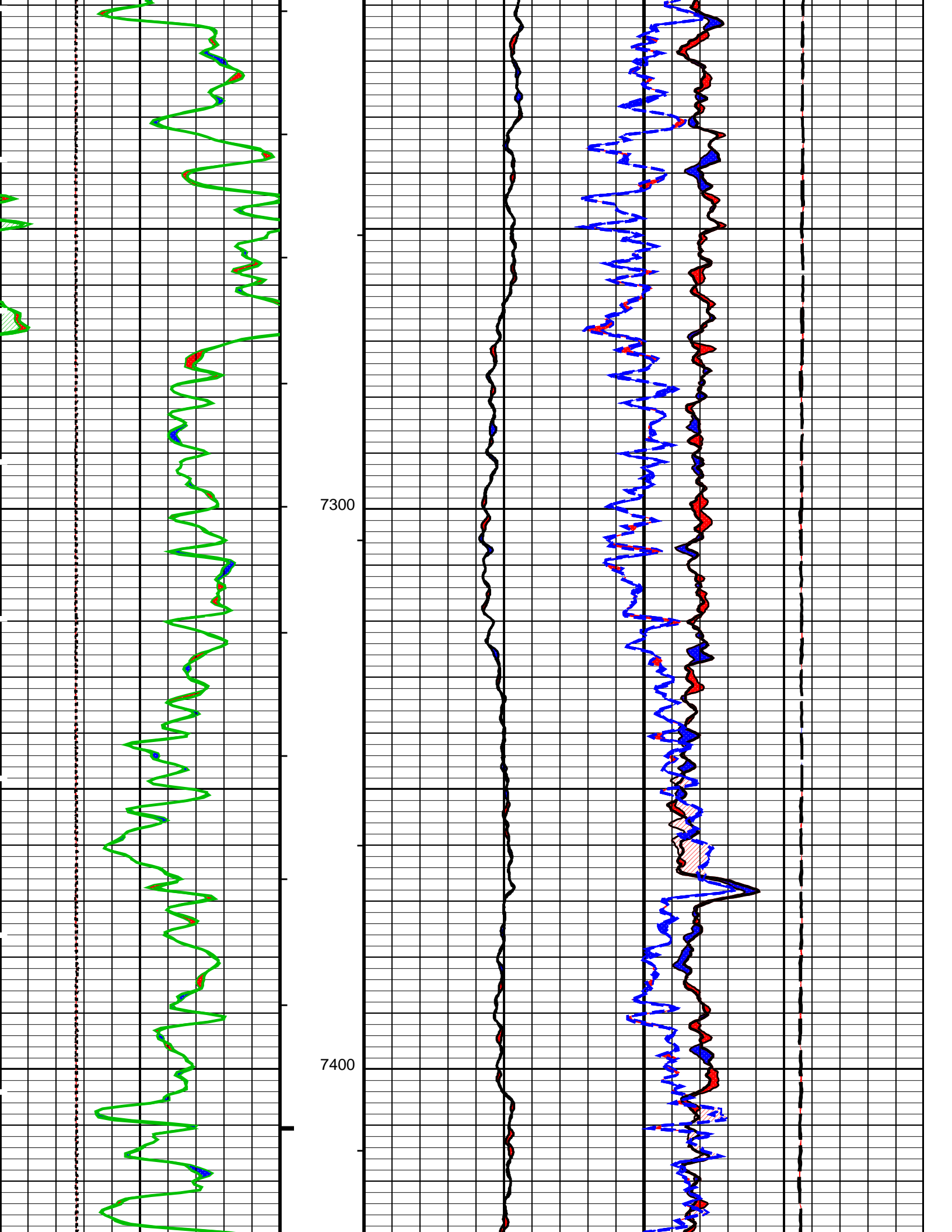
### PIP SUMMARY

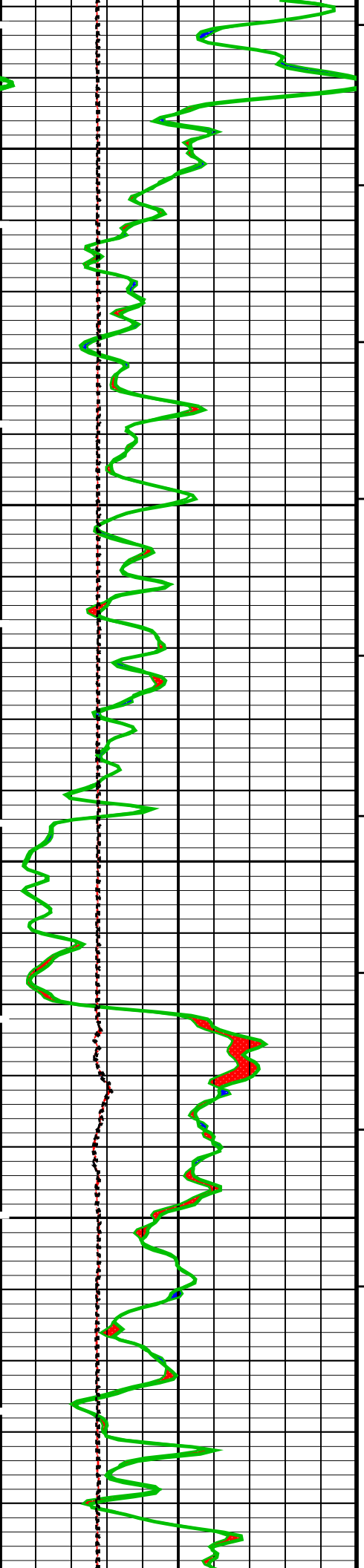
- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
- └ Integrated Cement Volume Minor Pip Every 10 F3
- └ Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S



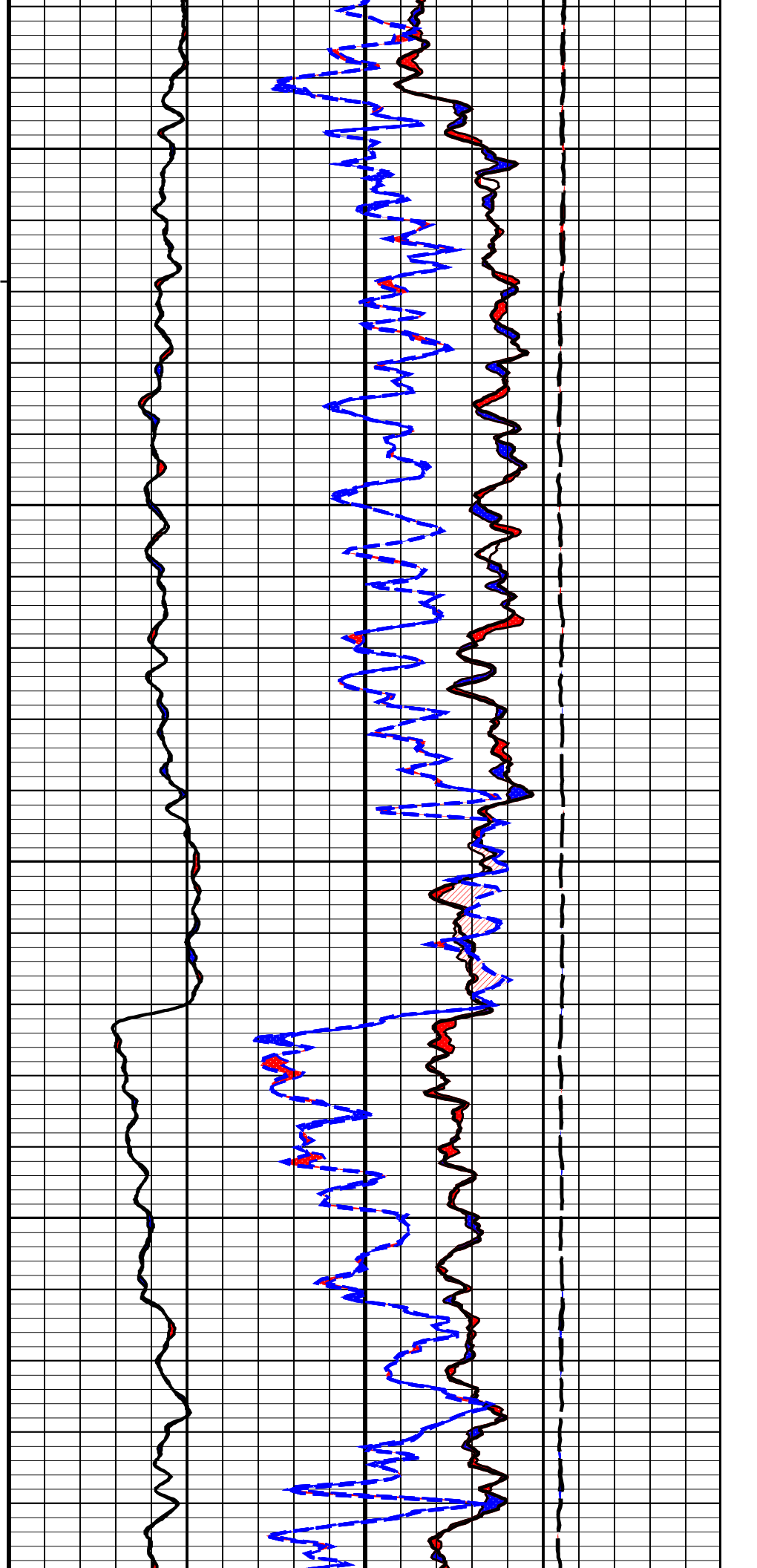


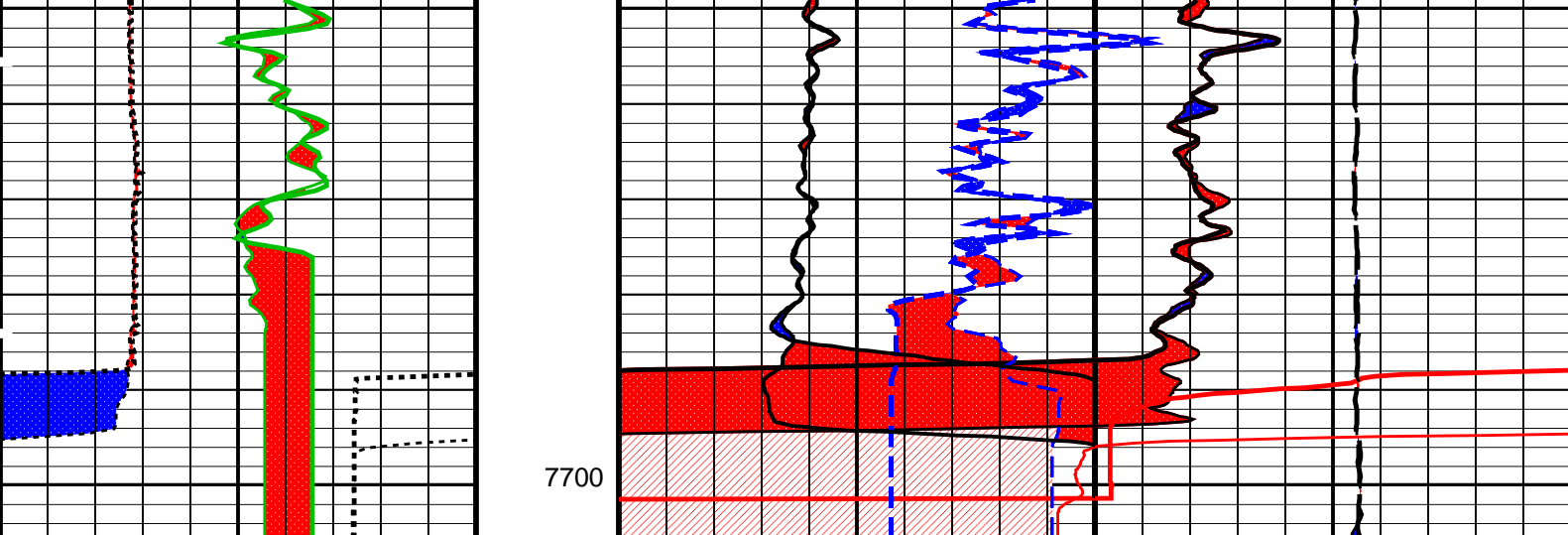




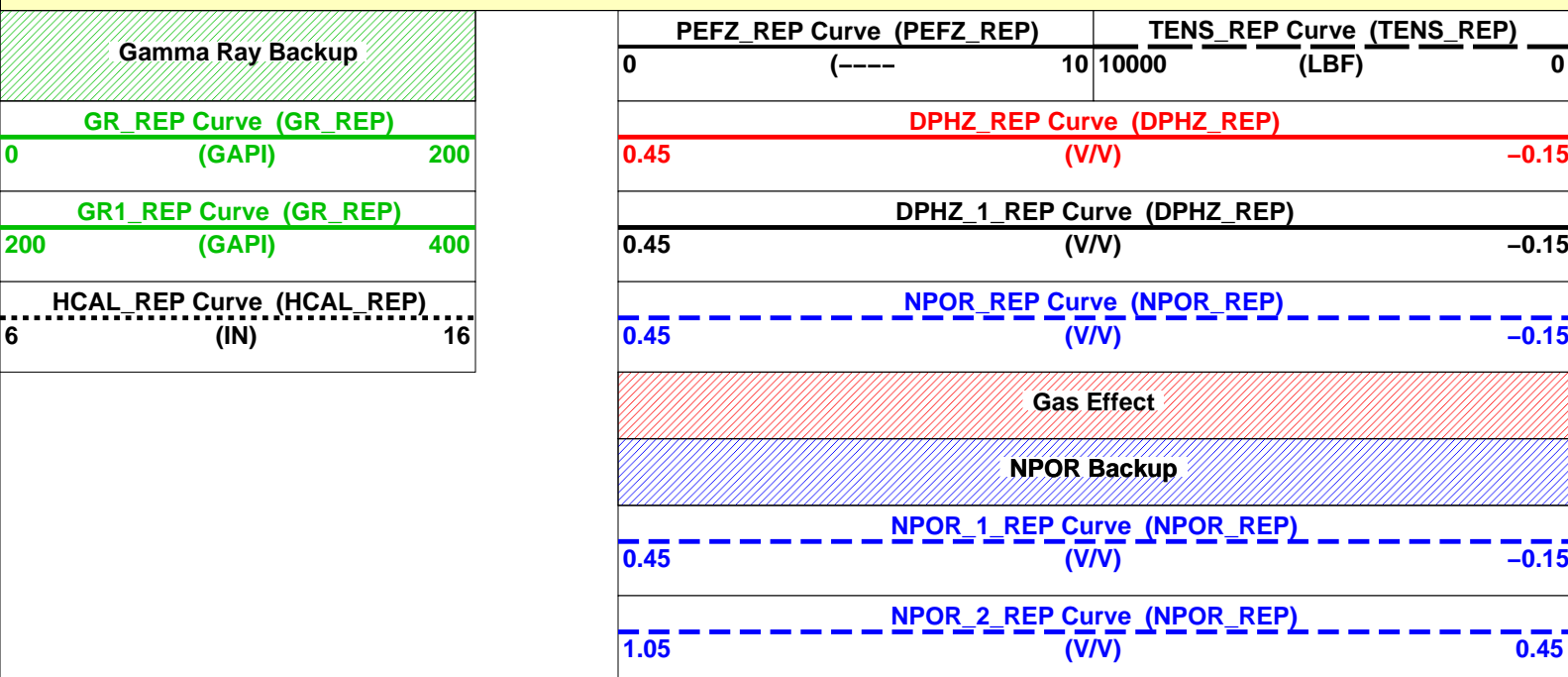
7500

7600





MAIN PASS: \*\*\* PLATFORM EXPRESS – NUCLEAR POROSITY \*\*\*



#### PIP SUMMARY

- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
- └ Integrated Cement Volume Minor Pip Every 10 F3
- └ Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

#### Parameters

DLIS Name	Description	Value	
AIT-M: Array Induction Tool – M			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
HILTH-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	OIL	
BHFL_TLD	HILT Nuclear Mud Base	OIL	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal-like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG

GDEV	Average Angular Deviation of Borehole from Normal	0.01	DEG
GGRD	Geothermal Gradient		DF/F
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.71	G/C3
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
HNGBA: Hostile Natural Gamma Ray Sonde			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
MAPCB: Multimode Array Sonic Power Cartridge			
BHS	Borehole Status	OPEN	
BS	Bit Size	8.750	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
EDTCB: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	OIL	
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
DIR: Directional Survey Computation			
SPVD	TVD of Starting Point	0	FT
TIMD	Along-hole depth of Tie-in Point	0	FT
TIVD	TVD of Tie-in Point	0	FT
DIRPLOT: Enhanced Directional Plots			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
FCD	Future Casing (Outer) Diameter	7	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
PERT: Preliminary Evaluation - Real Time			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
SHT	Surface Hole Temperature	68	DEGF
STI: Stuck Tool Indicator			
TDL	Total Depth - Logger	7707.00	FT
System and Miscellaneous			
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	9.625	IN
CWEI	Casing Weight	36.00	LB/F
DFD	Drilling Fluid Density	9.20	LB/G

DO	Depth Offset for Playback	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
MST	Mud Sample Temperature	-50000.00	DEGF
PP	Playback Processing	OFF	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
TD	Total Depth	7707	FT

Format: PORO_REP		Vertical Scale: 5" per 100'		Graphics File Created: 09-Jan-2013 03:46		
OP System Version: 19C1-222						
AIT-M	19C1-222	HILTH-FTB	19C1-222			
HNGC-B	HFE-5203-OP19.1-NUCL	HNGS-BA	HFE-5203-OP19.1-NUCL			
GPIT-F	19C1-222	PPC1	19C1-222			
MAXS-B	19C1-222	MAPC-B	19C1-222			
EDTC-B	19C1-222					
Input DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_IS_018PUP	FN:17	PRODUCER	09-Jan-2013 03:43	7705.5 FT	6956.5 FT
DEFAULT	AIT_TLD_MCFL_CNL_IS_017PUP	FN:16	PRODUCER	09-Jan-2013 03:36	7717.5 FT	1767.5 FT
Output DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_IS_019PUP	FN:18	PRODUCER	09-Jan-2013 03:46		



BEFORE CALIBRATIONS

MAXIS Field Log

Calibration and Check Summary							
Measurement	Nominal	Master	Before	After	Change	Limit	Units
Array Induction Tool – M Wellsite Calibration – Electronics Calibration Check – Thru Cal Mag. & Phase							
Master: 19-Nov-2012 15:21 Before: 7-Jan-2013 16:55							
Thru Cal Magnitude – 0	0	0.6205	0.6202	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	1.271	1.271	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	0.6319	0.6316	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	0.7133	0.7130	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	1.335	1.334	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	1.955	1.954	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	1.951	1.950	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	1.423	1.423	N/A	N/A	N/A	V
Thru Cal Phase – 0	0	180.7	180.4	N/A	N/A	N/A	DEG
Thru Cal Phase – 1	0	179.6	179.4	N/A	N/A	N/A	DEG
Thru Cal Phase – 2	0	176.0	175.8	N/A	N/A	N/A	DEG
Thru Cal Phase – 3	0	175.3	175.0	N/A	N/A	N/A	DEG
Thru Cal Phase – 4	0	169.1	168.9	N/A	N/A	N/A	DEG
Thru Cal Phase – 5	0	167.4	167.2	N/A	N/A	N/A	DEG
Thru Cal Phase – 6	0	167.5	167.2	N/A	N/A	N/A	DEG
Thru Cal Phase – 7	0	166.7	166.4	N/A	N/A	N/A	DEG
Array Induction Tool – M Wellsite Calibration – Electronics Calibration Check – Auxiliary							
Master: 19-Nov-2012 15:21 Before: 7-Jan-2013 16:55							
Array Induction SPA Plus	991.0	991.9	992.0	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	0.1681	0.2254	N/A	N/A	N/A	MV
Array Induction Temperature PI	0.9170	0.9188	0.9188	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	0.0001712	0.0001620	N/A	N/A	N/A	V
Array Induction Tool – M Wellsite Calibration – Test Loop Gain Correction							
Master: 19-Nov-2012 15:21							
Test Loop Gain Correction	0	1.917	N/A	N/A	N/A	N/A	V



Test Loop Gain Correctio – 0	0	1.017	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 1	0	1.012	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 2	0	1.015	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 3	0	1.011	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 4	0	0.9926	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 5	0	0.9879	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 6	0	1.004	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 7	0	1.006	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 0	0	0.5584	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 1	0	0.5864	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 2	0	0.03871	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 3	0	0.1097	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 4	0	0.08555	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 5	0	-0.1304	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 6	0	0.2583	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 7	0	-0.05734	N/A	N/A	N/A	N/A	DEG

#### Array Induction Tool – M Wellsite Calibration – Sonde Error Correction

Master: 19–Nov–2012 15:21

R Sonde Error Correction – 0	0	-68.09	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 1	0	173.0	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 2	0	118.0	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 3	0	64.68	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 4	0	26.07	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 5	0	11.33	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 6	0	9.470	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 7	0	-0.3643	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 0	0	-545.4	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 1	0	62.32	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 2	0	21.21	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 3	0	-45.12	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 4	0	10.81	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 5	0	-17.56	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 6	0	-7.318	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 7	0	-14.17	N/A	N/A	N/A	N/A	MM/M

#### Array Induction Tool – M Wellsite Calibration – Mud Gain Correction

Master: 19–Nov–2012 15:21

Coarse – Mag, Real, Imag – 0	0	0.8211	N/A	N/A	N/A	N/A
Coarse – Mag, Real, Imag – 1	0	1.126	N/A	N/A	N/A	N/A
Coarse – Mag, Real, Imag – 2	0	0.8211	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 0	0	0.8235	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 1	0	1.125	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 2	0	0.8236	N/A	N/A	N/A	N/A

#### High resolution Integrated Logging Tool–DTS Wellsite Calibration – Stab Measurement Summary

Before: 7–Jan–2013 16:56

BS Window Ratio	0.7386	N/A	0.7395	N/A	N/A	N/A	
BS Window Sum	24580	N/A	24680	N/A	N/A	N/A	CPS
SS Window Ratio	0.4926	N/A	0.4922	N/A	N/A	N/A	
SS Window Sum	14040	N/A	14030	N/A	N/A	N/A	CPS
LS Window Ratio	0.3017	N/A	0.3027	N/A	N/A	N/A	
LS Window Sum	1264	N/A	1257	N/A	N/A	N/A	CPS

#### High resolution Integrated Logging Tool–DTS Wellsite Calibration – Photo–multiplier High Voltages Calibrations

Before: 7–Jan–2013 16:56

BS PM High Voltage (Command)	1572	N/A	1593	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1666	N/A	1679	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1323	N/A	1329	N/A	N/A	N/A	V

#### High resolution Integrated Logging Tool–DTS Wellsite Calibration – Crystal Quality Resolutions Calibration

Before: 7–Jan–2013 16:56

BS Crystal Resolution	11.19	N/A	11.27	N/A	N/A	N/A	%
SS Crystal Resolution	10.38	N/A	10.48	N/A	N/A	N/A	%
LS Crystal Resolution	7.934	N/A	8.181	N/A	N/A	N/A	%

#### High resolution Integrated Logging Tool–DTS Wellsite Calibration – MCFL Calibration

Before: 7–Jan–2013 16:57

Raw B0 Resistivity	3875	N/A	3910	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3858	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3869	N/A	N/A	N/A	OHMM

#### High resolution Integrated Logging Tool–DTS Wellsite Calibration – HILT Caliper Calibration

Before: 7–Jan–2013 16:52

HILT Caliper Zero Measurement	8.000	N/A	7.832	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	12.16	N/A	N/A	N/A	IN

#### High resolution Integrated Logging Tool–DTS Wellsite Calibration – Detector Calibration

Before: 7–Jan–2013 16:51

Gamma Ray Background	30.00	N/A	74.78	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkgd)	165.0	N/A	184.1	N/A	N/A	15.00	GAPI

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Zero Measurement

Master: 29–Oct–2012 12:30 Before: 7–Jan–2013 16:54

CNTC Background	28.19	28.19	27.09	N/A	N/A	4.229	CPS
CFTC Background	28.82	28.82	27.31	N/A	N/A	4.323	CPS

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Ratio Measurement

Master: 29–Oct–2012 12:30

Thermal Near Corr. (Tank)	5800	5780	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2407	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.401	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Accelerometer Calibration

Before: 8–Jan–2013 21:41

Z–Axis Acceleration	32.19	N/A	32.09	N/A	N/A	N/A	F/S2
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Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 1 Check

Master: 7–Jan–2013 17:22 Before: 7–Jan–2013 17:30

Na 511 Peak Loc	40.00	38.55	38.53	N/A	N/A	1.000	
Na 511 Peak Res	15.50	14.07	14.00	N/A	N/A	2.000	%
High Voltage	1150	1046	1046	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	139.2	139.1	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.556	8.058	N/A	N/A	2.000	%
Temperature	59.90	70.09	70.02	N/A	N/A	N/A	DEGF
Na Count Rate	45.00	12.47	12.69	N/A	N/A	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check

Master: 7–Jan–2013 17:22 Before: 7–Jan–2013 17:30

Na 511 Peak Loc	40.00	39.40	39.87	N/A	N/A	1.000	
Na 511 Peak Res	15.50	17.15	16.01	N/A	N/A	2.000	%
High Voltage	1150	990.2	990.9	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	141.8	142.4	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	7.696	8.722	N/A	N/A	2.000	%
Temperature	59.90	75.78	75.79	N/A	N/A	N/A	DEGF
Na Count Rate	45.00	12.44	12.73	N/A	N/A	8.000	CPS

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

Master: 7–Jan–2013 17:22 Before: 7–Jan–2013 17:30

Coincidence Count Rate Ratio	1.000	0.9991	0.9932	N/A	N/A	0.05000	
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Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration

Before: 8–Jan–2013 21:41

EDTC Z–Axis Acceleration	32.19	N/A	32.14	N/A	N/A	N/A	F/S2
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Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration

Before: 7–Jan–2013 16:52

Gamma Ray (Jig – Bkg)	154.7	N/A	154.7	N/A	N/A	14.06	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

The GLS–VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT–B Water Temperature 57.2 DEGF.  
Thermal Housing Size 3.375 IN.  
NSR–F serial number 2554

Array Induction Tool – M / Equipment Identification

Primary Equipment:  
Rm/SP Bottom Nose AMRM – A  
Array Induction Sonde AMIS – A 1372

Auxiliary Equipment:

Array Induction Tool – M 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	0.6205		0.6100	180.7		197.0
	Before	0.6202			180.4		
	Master	1.271			179.6		

1	Master	1.271		1.270	179.4		196.0
2	Master	0.6319		0.6200	176.0		192.0
	Before	0.6316			175.8		
3	Master	0.7133		0.7000	175.3		191.0
	Before	0.7130			175.0		
4	Master	1.335		1.340	169.1		185.0
	Before	1.334			168.9		
5	Master	1.955		1.960	167.4		182.0
	Before	1.954			167.2		
6	Master	1.951		1.960	167.5		181.0
	Before	1.950			167.2		
7	Master	1.423		1.410	166.7		175.0
	Before	1.423			166.4		
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)
Master: 19-Nov-2012 15:21				Before: 7-Jan-2013 16:55			

Array Induction Tool – M Wellsite Calibration					
Electronics Calibration Check – Auxiliary					
Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Master		991.9	Master		0.1681
Before		992.0	Before		0.2254
		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		0.9188	Master		0.0001712
Before		0.9188	Before		0.0001620
		0.8710 (Minimum)	0.9170 (Nominal)	0.9630 (Maximum)	
					-0.05000 (Minimum)
					0 (Nominal)
					0.05000 (Maximum)
Master: 19-Nov-2012 15:21			Before: 7-Jan-2013 16:55		

Array Induction Tool – M Wellsite Calibration					
Test Loop Gain Correction					
Idx	Value	Test Loop Gain Correction Magnitude V	Value	Test Loop Gain Correction Phase DEG	
0	1.017		0.5584		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	
					-3.000 (Minimum)
					0 (Nominal)
					3.000 (Maximum)
1	1.012		0.5864		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	
					-3.000 (Minimum)
					0 (Nominal)
					3.000 (Maximum)
2	1.015		0.03871		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	
					-3.000 (Minimum)
					0 (Nominal)
					3.000 (Maximum)
3	1.011		0.1097		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	
					-3.000 (Minimum)
					0 (Nominal)
					3.000 (Maximum)
4	0.9926		0.08555		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	
					-3.000 (Minimum)
					0 (Nominal)
					3.000 (Maximum)
5	0.9879		-0.1304		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	
					-3.000 (Minimum)
					0 (Nominal)
					3.000 (Maximum)
6	1.004		0.2583		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	
					-3.000 (Minimum)
					0 (Nominal)
					3.000 (Maximum)
7	1.006		-0.05734		
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	
					-3.000 (Minimum)
					0 (Nominal)
					3.000 (Maximum)

Array Induction Tool – M Wellsite Calibration							
Sonde Error Correction							
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M	
0	–68.09				–545.4		
		–231.0 (Minimum)	–56.00 (Nominal)	119.0 (Maximum)		–2250 (Minimum)	0 (Nominal) 2250 (Maximum)
1	173.0				62.32		
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		–625.0 (Minimum)	0 (Nominal) 625.0 (Maximum)
2	118.0				21.21		
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		–350.0 (Minimum)	0 (Nominal) 350.0 (Maximum)
3	64.68				–45.12		
		39.00 (Minimum)	64.00 (Nominal)	89.30 (Maximum)		–250.0 (Minimum)	0 (Nominal) 250.0 (Maximum)
4	26.07				10.81		
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		–63.00 (Minimum)	0 (Nominal) 63.00 (Maximum)
5	11.33				–17.56		
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		–50.00 (Minimum)	0 (Nominal) 50.00 (Maximum)
6	9.470				–7.318		
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		–30.00 (Minimum)	0 (Nominal) 30.00 (Maximum)
7	–0.3643				–14.17		
		–5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		–30.00 (Minimum)	0 (Nominal) 30.00 (Maximum)

Master: 9–Nov–2012 15:21

Master: 19–Nov–2012 15:21

Array Induction Tool – M Wellsite Calibration							
Mud Gain Correction							
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag	
0	0.8211				0.8235		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
1	1.126				1.125		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
2	0.8211				0.8236		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
Master: 19–Nov–2012 15:21							

Master: 19–Nov–2012 15:21

## High resolution Integrated Logging Tool–DTS / Equipment Identification

## Primary Equipment:

HILT high–Resolution Mechanical Sonde  
 HILT Rxo Gamma–ray Device  
 HILT Micro Cylindrically Focused Log Dev  
 GR Logging Source  
 HILT High Res. Control Cartridge  
 HILT Gamma–Ray Neutron Sonde–DTS  
 HGNS Gamma–Ray Device  
 HGNS Neutron Detector with Alpha Source




HRMS – H 3863  
 HRGD – H 3870  
 MCFL – H  
 GLS – VJ 5471  
 HRCC – H 2898  
 HGNS – H  
 HGR –  
 HCNT – H

## Auxiliary Equipment:




Neutron Calibration Tank  
 Gamma Source Radioactive  
 HGNS Housing

NCT – B  
 GSR – U/Y  
 HGNH –




High resolution Integrated Logging Tool–DTS Wellsite Calibration								
Stab Measurement Summary								
Phase	BS Window Ratio	Value	Phase	SS Window Ratio	Value	Phase	LS Window Ratio	Value
Before		0.7395	Before		0.4922	Before		0.3027

0.7016 (Minimum)			0.7386 (Nominal)			0.7755 (Maximum)			0.4679 (Minimum)			0.4926 (Nominal)			0.5172 (Maximum)			0.2866 (Minimum)			0.3017 (Nominal)			0.3168 (Maximum)					
Phase		BS Window		Sum		CPS		Value		Phase		SS Window		Sum		CPS		Value		Phase		LS Window		Sum		CPS		Value	
Before								24680		Before								14030		Before								1257	
23350 (Minimum)		24580 (Nominal)		25810 (Maximum)						13340 (Minimum)		14040 (Nominal)		14740 (Maximum)						1201 (Minimum)		1264 (Nominal)		1327 (Maximum)					




Before: 7-Jan-2013 16:56

High resolution Integrated Logging Tool-DTS Wellsite Calibration											
Photo-multiplier High Voltages Calibrations											
Phase	BS PM High Voltage (Command)	V	Value	Phase	SS PM High Voltage (Command)	V	Value	Phase	LS PM High Voltage (Command)	V	Value
Before			1593	Before			1679	Before			1329
	1472 (Minimum)	1572 (Nominal)	1672 (Maximum)		1566 (Minimum)	1666 (Nominal)	1766 (Maximum)		1223 (Minimum)	1323 (Nominal)	1423 (Maximum)



Before: 7-Jan-2013 16:56

High resolution Integrated Logging Tool-DTS Wellsite Calibration											
Crystal Quality Resolutions Calibration											
Phase	BS Crystal Resolution	%	Value	Phase	SS Crystal Resolution	%	Value	Phase	LS Crystal Resolution	%	Value
Before			11.27	Before			10.48	Before			8.181
	10.19 (Minimum)	11.19 (Nominal)	12.19 (Maximum)		9.376 (Minimum)	10.38 (Nominal)	11.38 (Maximum)		6.934 (Minimum)	7.934 (Nominal)	8.934 (Maximum)



Before: 7-Jan-2013 16:56

High resolution Integrated Logging Tool-DTS Wellsite Calibration											
MCFL Calibration											
Phase	Raw B0 Resistivity	OHMM	Value	Phase	Raw B1 Resistivity	OHMM	Value	Phase	Raw B2 Resistivity	OHMM	Value
Before			3910	Before			3858	Before			3869
	3565 (Minimum)	3875 (Nominal)	4185 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)





Before: 7-Jan-2013 16:57

High resolution Integrated Logging Tool-DTS Wellsite Calibration							
HILT Caliper Calibration							
Phase	HILT Caliper Zero Measurement IN		Value	Phase	HILT Caliper Plus Measurement IN		Value
Before			7.832	Before			12.16
	6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)		9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)
Before: 7-Jan-2013 16:52							

Before: 7-Jan-2013 16:52



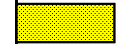
High resolution Integrated Logging Tool-DTS Wellsite Calibration									
Detector Calibration									
Phase	Gamma Ray Background		GAPI	Value	Phase	Gamma Ray (Jig - Bkgd)		GAPI	Value
Before				74.78	Before				184.1
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		157.1 (Minimum)	165.0 (Nominal)	206.3 (Maximum)		
Before: 7-Jan-2013 16:51									

Before: 7-Jan-2013 16:51


High resolution Integrated Logging Tool–DTS Wellsite Calibration							
Zero Measurement							
Phase	CNTC Background CPS			Phase	CFTC Background CPS		
Master				Master			
Before				Before			
5.000 (Minimum)			28.19 (Nominal)	5.000 (Minimum)			28.82 (Nominal)
			40.00 (Maximum)				40.00 (Maximum)
Master: 29-Oct-2012 12:30				Before: 7-Jan-2013 16:54			

Master: 29-Oct-2012 12:30

Before: 7-Jan-2013 16:54


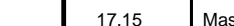


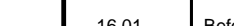


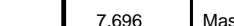


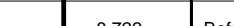

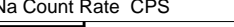

High resolution Integrated Logging Tool-DTS Wellsite Calibration											
Ratio Measurement											
Phase	Thermal Near Corr. (Tank)	CPS	Value	Phase	Thermal Far Corr. (Tank)	CPS	Value	Phase	CNTC/CFTC (Tank)		Value
Master			5780	Master			2407	Master			2.401
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)		1900 (Minimum)	2400 (Nominal)	2900 (Maximum)		2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)

Master: 29-Oct-2012 12:30

Phase	Z-Axis Acceleration F/S2	Value
Before		32.09
	31.53 (Minimum)	32.19 (Nominal)
		32.84 (Maximum)



Before: 8-Jan-2013 21:41

Detector A Check														
Phase		Na 511 Peak Loc		Value	Phase		Na 511 Peak Res %		Value	Phase		High Voltage V		Value
Master		<div><div></div></div>		38.55	Master		<div><div></div></div>		14.07	Master		<div><div></div></div>		1046
Before		<div><div></div></div>		38.53	Before		<div><div></div></div>		14.00	Before		<div><div></div></div>		1046
37.50 (Minimum)		40.00 (Nominal)		43.50 (Maximum)	12.00 (Minimum)		15.50 (Nominal)		19.00 (Maximum)	850.0 (Minimum)		1150 (Nominal)		1600 (Maximum)
Phase		Na 1785 Peak Loc		Value	Phase		Na 1785 Peak Res %		Value	Phase		Temperature DEGF		Value
Master		<div><div></div></div>		139.2	Master		<div><div></div></div>		8.556	Master		<div><div></div></div>		70.09
Before		<div><div></div></div>		139.1	Before		<div><div></div></div>		8.058	Before		<div><div></div></div>		70.02
135.0 (Minimum)		142.6 (Nominal)		150.3 (Maximum)	7.000 (Minimum)		8.500 (Nominal)		11.00 (Maximum)	-20.00 (Minimum)		59.90 (Nominal)		140.0 (Maximum)
Phase		Na Count Rate CPS		Value										
Master		<div><div></div></div>		12.47										
Before		<div><div></div></div>		12.69										
10.00 (Minimum)		45.00 (Nominal)		100.0 (Maximum)										
Master: 7-Jan-2013 17:22					Before: 7-Jan-2013 17:30									

Na 511 Peak Loc			Value	Na 511 Peak Res %			Value	High Voltage V			Value
Phase				Phase				Phase			
Master			39.40	Master			17.15	Master			990.2
Before			39.87	Before			16.01	Before			990.9
37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)				12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)				850.0 (Minimum) 1150 (Nominal) 1600 (Maximum)			
Na 1785 Peak Loc			Value	Na 1785 Peak Res %			Value	Temperature DEGF			Value
Phase				Phase				Phase			
Master			141.8	Master			7.696	Master			75.78
Before			142.4	Before			8.722	Before			75.79
135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)				7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)				-20.00 (Minimum) 59.90 (Nominal) 140.0 (Maximum)			
Na Count Rate CPS			Value								
Phase											
Master			12.44								
Before			12.73								
12.00 (Minimum) 15.00 (Nominal) 18.00 (Maximum)											

10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)	
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Master: 7-Jan-2013 17:22	Before: 7-Jan-2013 17:30
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
Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		0.9991
Before		0.9932
	0.9500 (Minimum)      1.000 (Nominal)      1.050 (Maximum)	
Master: 7-Jan-2013 17:22		
Before: 7-Jan-2013 17:30		




General Purpose Inclinomater / Equipment Identification	
Primary Equipment: GPIT Cartridge – F	GPIC – F
Auxiliary Equipment: GPIT Housing – F	GPIH – B

Powered Positioning Device/Caliper 1 / Equipment Identification	
Primary Equipment: PPC Powered Positioning Device/Caliper PPC1 Caliper Standard	PPC1 – B PPC_ –
Auxiliary Equipment:	

Multimode Array Sonic Power Cartridge / Equipment Identification	
Primary Equipment: Multimode Array Sonic Minimum Service So Multimode Array Sonic Control Cartridge	MAMS – BA MAPC – BA
Auxiliary Equipment: Electronics Cartridge Housing	ECH – SF

Enhanced DTS Cartridge / Equipment Identification	
Primary Equipment: EDTC Gamma Ray Detector Enhanced DTS Cartridge	EDTG – A/B EDTC – B
Auxiliary Equipment: EDTC Housing	EDTH – B

Enhanced DTS Cartridge Wellsite Calibration		
EDTC Accelerometer Calibration		
Phase	EDTC Z-Axis Acceleration F/S2	Value
Before		32.14
	31.53 (Minimum)      32.19 (Nominal)      32.84 (Maximum)	
Before: 8-Jan-2013 21:41		

Enhanced DTS Cartridge Wellsite Calibration														
Detector Calibration														
Phase	Gamma Ray Background GAPI			Value	Phase	Gamma Ray (Jig – Bkg) GAPI			Value	Phase	Gamma Ray (Calibrated) GAPI			Value
Before				77.86	Before				154.7	Before				165.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		140.6 (Minimum)	154.7 (Nominal)	168.8 (Maximum)			150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)		

Before: 7-Jan-2013 16:52

Company: **Conoco Phillips Company**

**Schlumberger**

Well: **State of Colorado 36-1P**

Field: **Wildcat**

County: **Adams**

State: **Colorado**

Platform Express  
Compensated Neutron  
Litho Density