Schlumberger

Company: **SANDIA TECHNOLOGIES, LLC**

Well: **NYSTA TANDEM LOT 1**
Field: **WILDCAT**
County: **ROCKLAND** State: **NEW YORK**

SPECTRAL GAMMA RAY
HOSTILE NATURAL GAMMA RAY

County: ROCKLAND
Field: WILDCAT
Location: LAT: 41.1039
Well: NYSTA TANDEM LOT 1
Company: SANDIA TECHNOLOGIES, LLC

LOCATION

LAT: 41.1039
LONG: −74.027

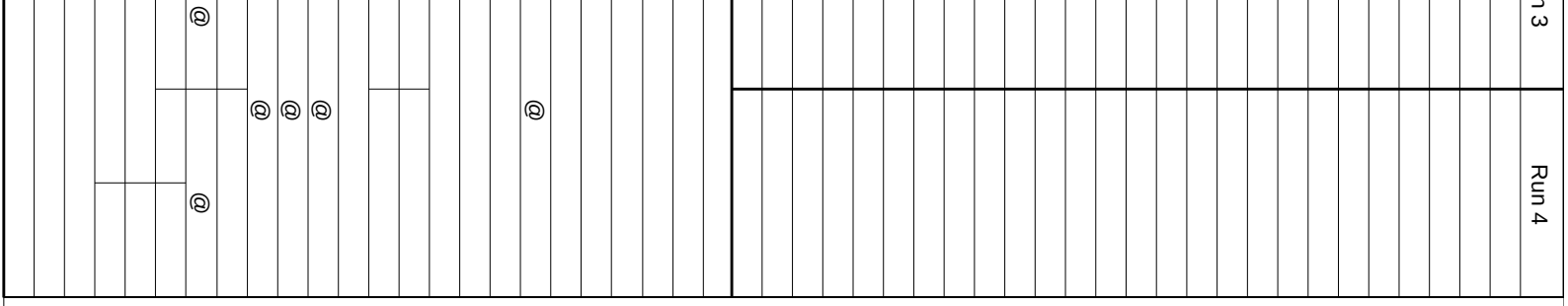
Elev.: K.B. 402.00 ft
G.L. 386.00 ft
D.F. 402.00 ft

Permanent Datum: GROUND LEVEL Elev.: 386.00 ft
Log Measured From: KELLY BUSHING 16.00 ft above Perm. Datum
Drilling Measured From: KELLY BUSHING

API Serial No.	Section	Township	QUAD
31−087−27016−00−00		CLARKSTOWN	

	Run 1	Run 2	Run 3
Logging Date	1−Sep−2011		
Run Number	1		
Depth Driller	1528 ft		
Schlumberger Depth	1500 ft		
Bottom Log Interval	1458 ft		
Top Log Interval	0 ft		
Casing Driller Size @ Depth	13.375 in @ 603 ft	@	@
Casing Schlumberger	602 ft		
Bit Size	12.250 in		
Type Fluid In Hole	FRESH WATER BASED MUD		
MUD Density / Viscosity	9.3 lbm/gal		
MUD Fluid Loss / PH			
MUD Source Of Sample	MEASURED		
RM @ Measured Temperature	6.690 ohm.m @ 77 degF	@	@
RMF @ Measured Temperature	5.017 ohm.m @ 77 degF	@	@
RMC @ Measured Temperature	10.035 ohm.m @ 77 degF	@	@
Source RMF / RMC	CALCULATED / CALCULATED		
RM @ MRT / RMF @ MRT	7.490 @ 68 / 5.617 @ 68	@ / @	@ / @
Maximum Recorded Temperatures	68 degF		
Circulation Stopped / Time			
Logger On Bottom / Time	1−Sep−2011 / 18:25		
Unit Number / Location	3039 / BRADFORD		
Recorded By	TIM ZOTARA		
Witnessed By	DAN COLLINS		

	Run 1	Run 2	Run 3
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			



DEPTH SUMMARY LISTING

Date Created: 1−SEP−2011 17:30:17

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−B	Type:	CMTD−B/A	Type:	7−39P LXS
Serial Number:	2828	Serial Number:	2929	Serial Number:	3039
Calibration Date:	1−Jan−2011	Calibration Date:	2−Aug−2011	Length:	16000 FT
Calibrator Serial Number:	33	Calibrator Serial Number:	1095		
Calibration Cable Type:	7−39P LXS	Number of Calibration Points:	10	Conveyance Method:	Wireline
Wheel Correction 1:	−5	Calibration RMS:	45	Rig Type:	LAND
Wheel Correction 2:	−4	Calibration Peak Error:	71		

Depth Control Parameters

Log Sequence:	Subsequent Log In the Well
Reference Log Name:	PLATFORM EXPRESS
Reference Log Run Number:	ONE
Reference Log Date:	31−Aug−2011

Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH CONTROL POLICIES FOLLOWED
2. IDW USED AS PRIMARY DEPTH DEVICE
3. Z−CHART USED AS SECONDARY DEPTH DEVICE
4.
5.
6.

OTHER SERVICES1	OTHER SERVICES2
OS1: PEX−AIT	OS1:
OS2: CMR−ECS−HNGS	OS2:
OS3: PPC−SSCAN−FMI	OS3:
OS4: MDT−MSCT	OS4:
OS5: CBL/VDL−USIT	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
THANK YOU FOR CHOOSING SCHLUMBERGER	
TOOLS RUN AS PER TOOL SKETCH, W/BOWSPRING & STANDOFFS ON AIT	
ALL WELLSITE DATA, PERMIT, MUD REPORT, SOP PROVIDED BY CLIENT	
RUN1: PEX−AIT RUN2: CMR−ECS−HNGS RUN3: PPC−SSCAN−FMI	
RUN4: MSCT RUN5: MDT RUN6: CBL/VDL−USIT	

RUN4: MSCT RUN5: MDT RUN6: CBL/VDL USIT

GEO REQUESTED MATR = SANDSTONE / MDEN = 2.65 G/CC

3 MAX TEMP THERMOMETERS RUN IN HEAD, PER RUN, MAX TEMP FROM HTEM.

SLB CREW: THIMLAR / CANNON

RUN 1			RUN 2		
SERVICE ORDER #:	AXPS−00185		SERVICE ORDER #:		
PROGRAM VERSION:	19C0−187		PROGRAM VERSION:		
FLUID LEVEL:	0 ft		FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

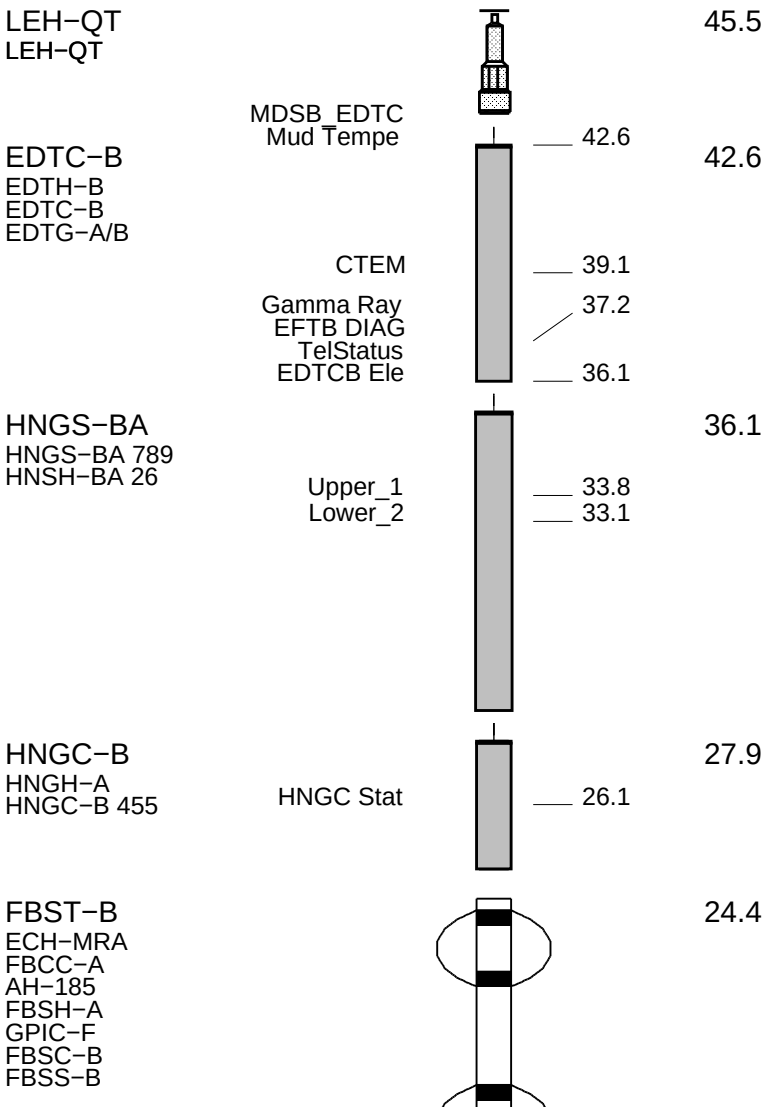
EQUIPMENT DESCRIPTION

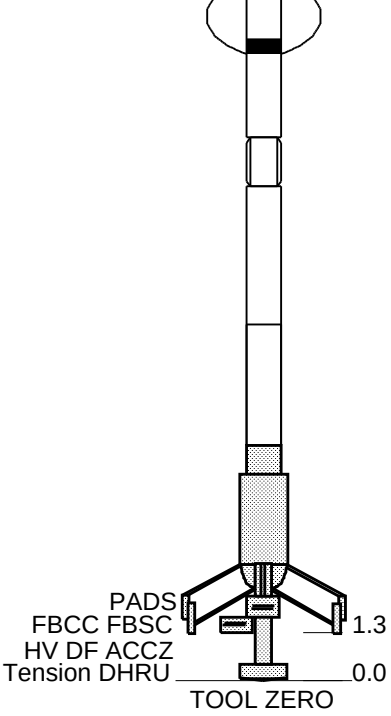
RUN 1 RUN 2

SURFACE EQUIPMENT

GSR−U 1389
WITM (EDTS)−A

DOWNHOLE EQUIPMENT





MAXIMUM STRING DIAMETER 5.00 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Schlumberger

MAIN 5"

MAXIS Field Log

Company: SANDIA TECHNOLOGIES, LLC **Well: NYSTA TANDEM LOT 1**

Output DLIS Files

DEFAULT	FMI_NGS_130LUP	FN:198	PRODUCER	01−Sep−2011 18:25	1500.0 FT	42.5 FT
RTB	FMI_NGS_130LUP	FN:199	PRODUCER	01−Sep−2011 18:25	1500.0 FT	42.5 FT

OP System Version: 19C0−187

FBST−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	19C0−187

PIP SUMMARY

Time Mark Every 60 S

	Tool/Tot. Drag From D3T to STIA		Area2 From HTHO to HFK
HNGS Spectroscopy Gamma Ray (HSGR) 0 (GAPI) 150	Cable Drag From STIA to STIT		HNGS Thorium (HTHO) −20 (PPM) 20
	Stuck Stretch	HNGS Thorium / Potassium Ratio	HNGS Uranium (HURA)

Area1
From HCGR to HSGR

Stretch (STIT)
0 (F) 50

(HTPR)
0.1 (----) 1000

HNGS Uranium (HURA)
−5 (PPM) 15

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 150

Tension (TENS) (LBF)
10000 0

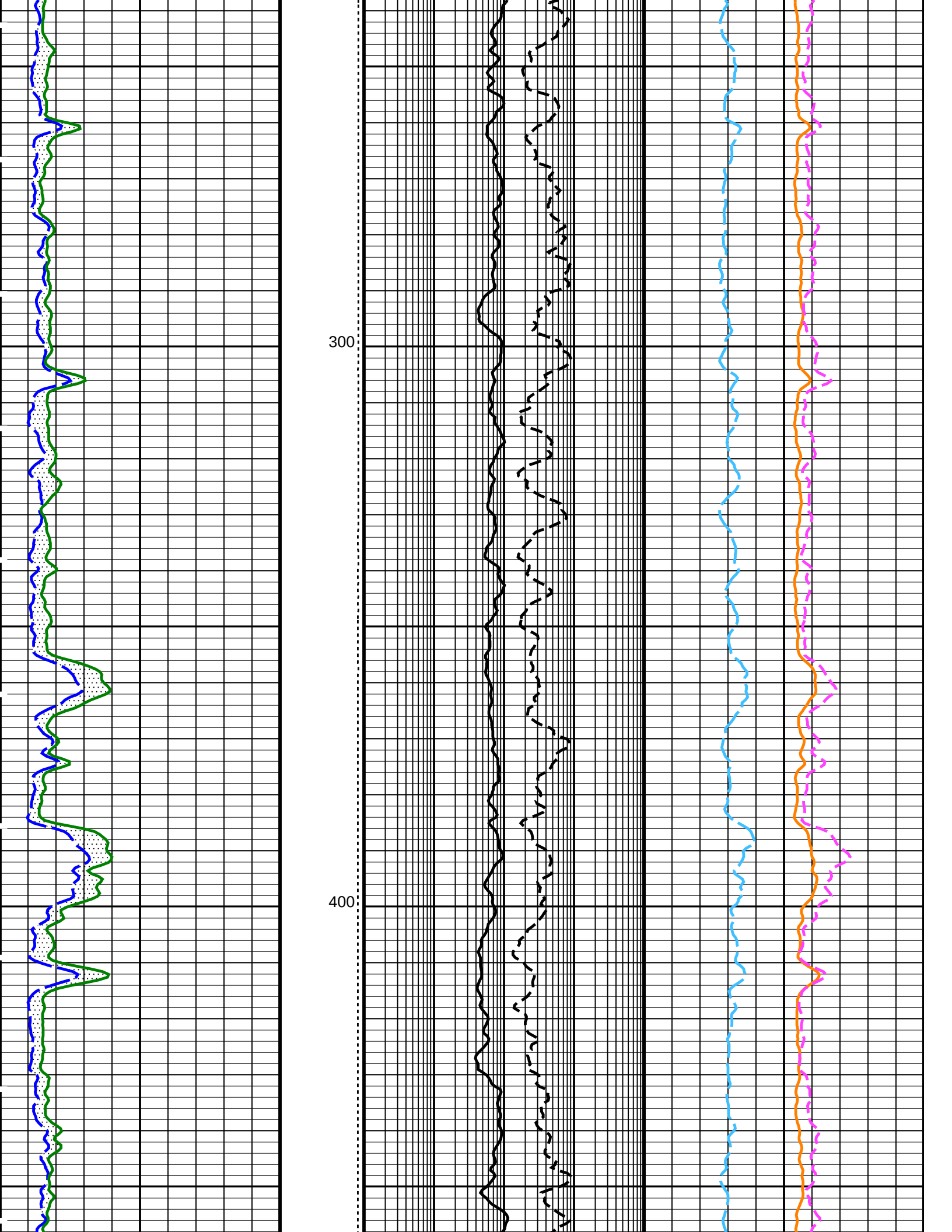
HNGS Thorium / Uranium Ratio (HTUR)
0.01 (----) 100

HNGS Potassium (HFK)
−0.05 (V/V) 0.05

MAIN PASS

100

200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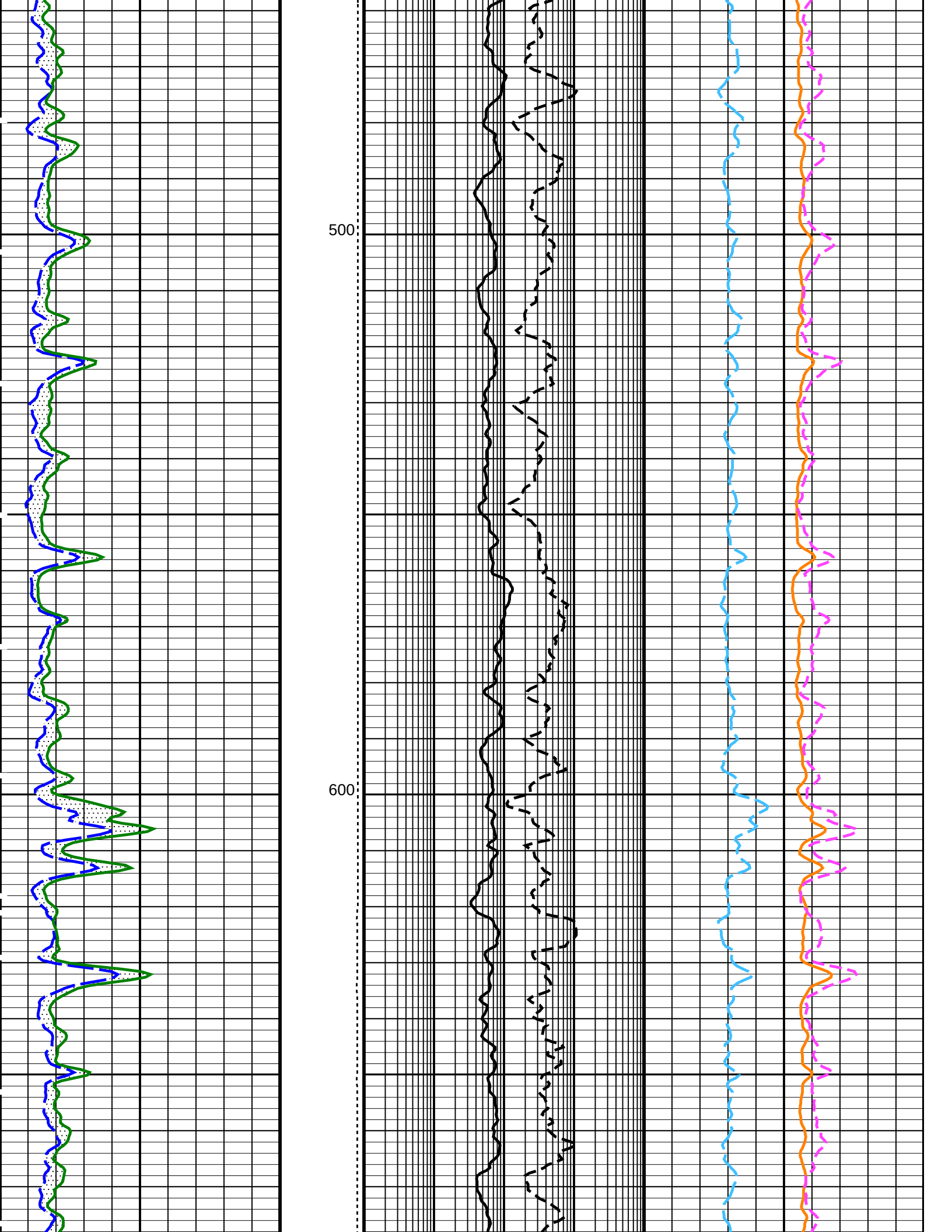
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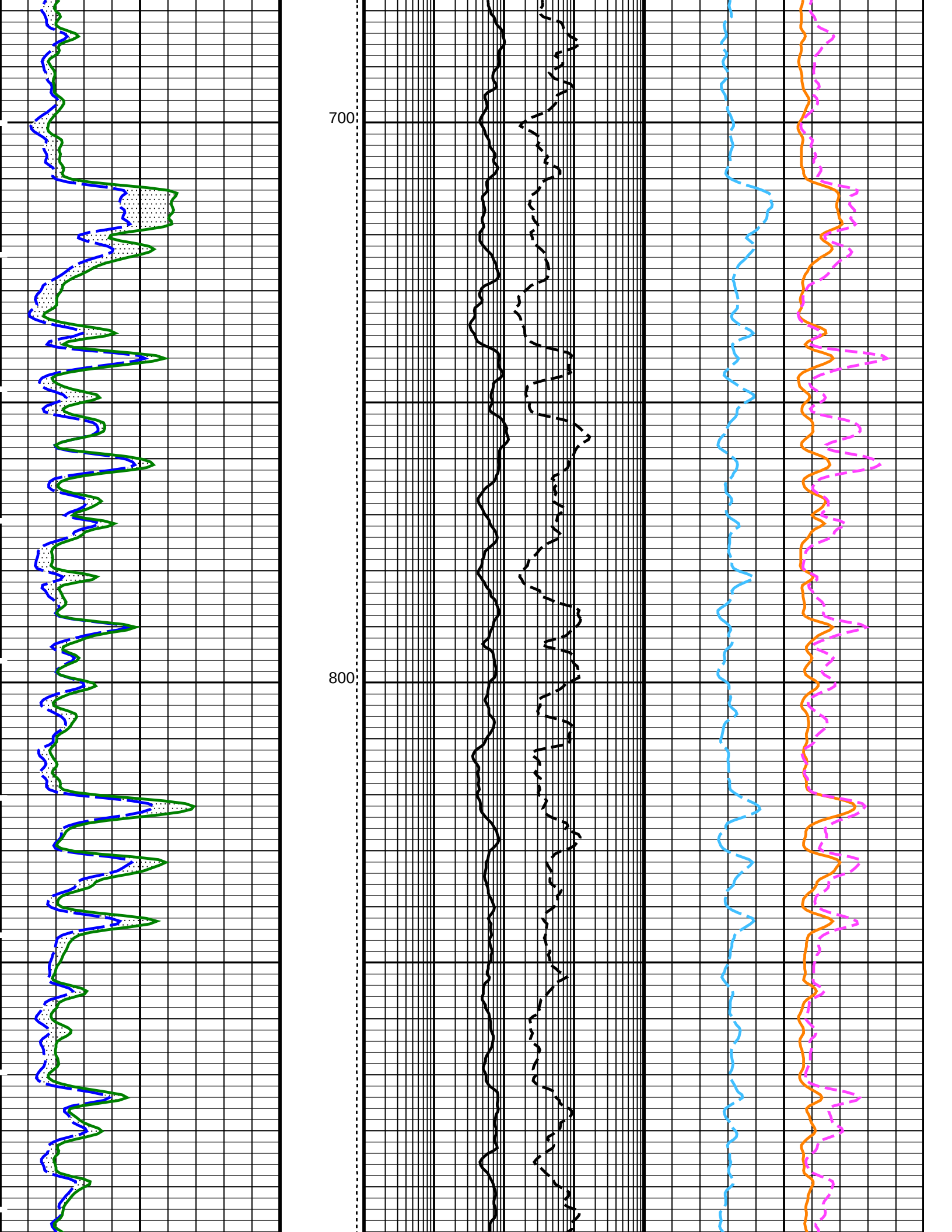
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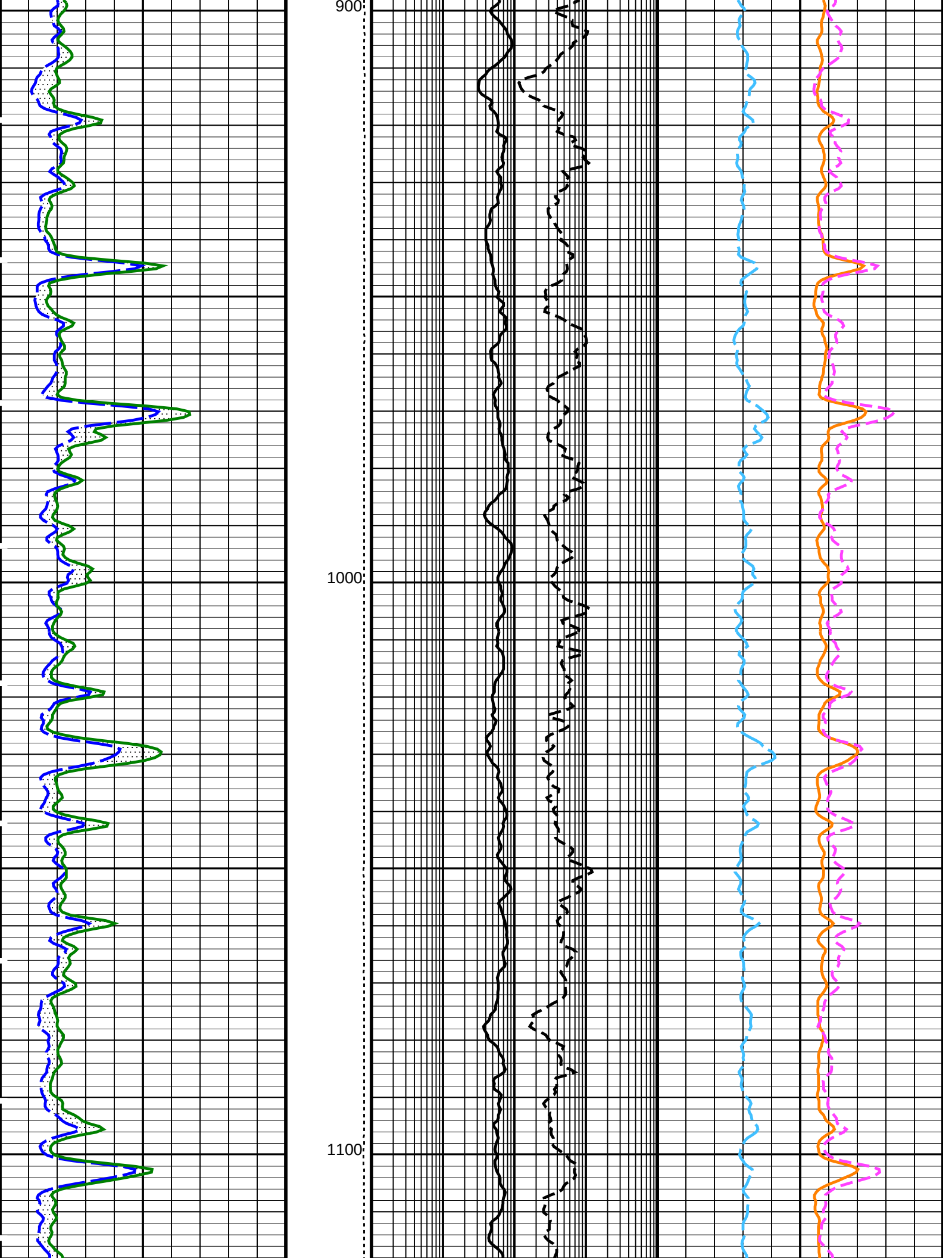
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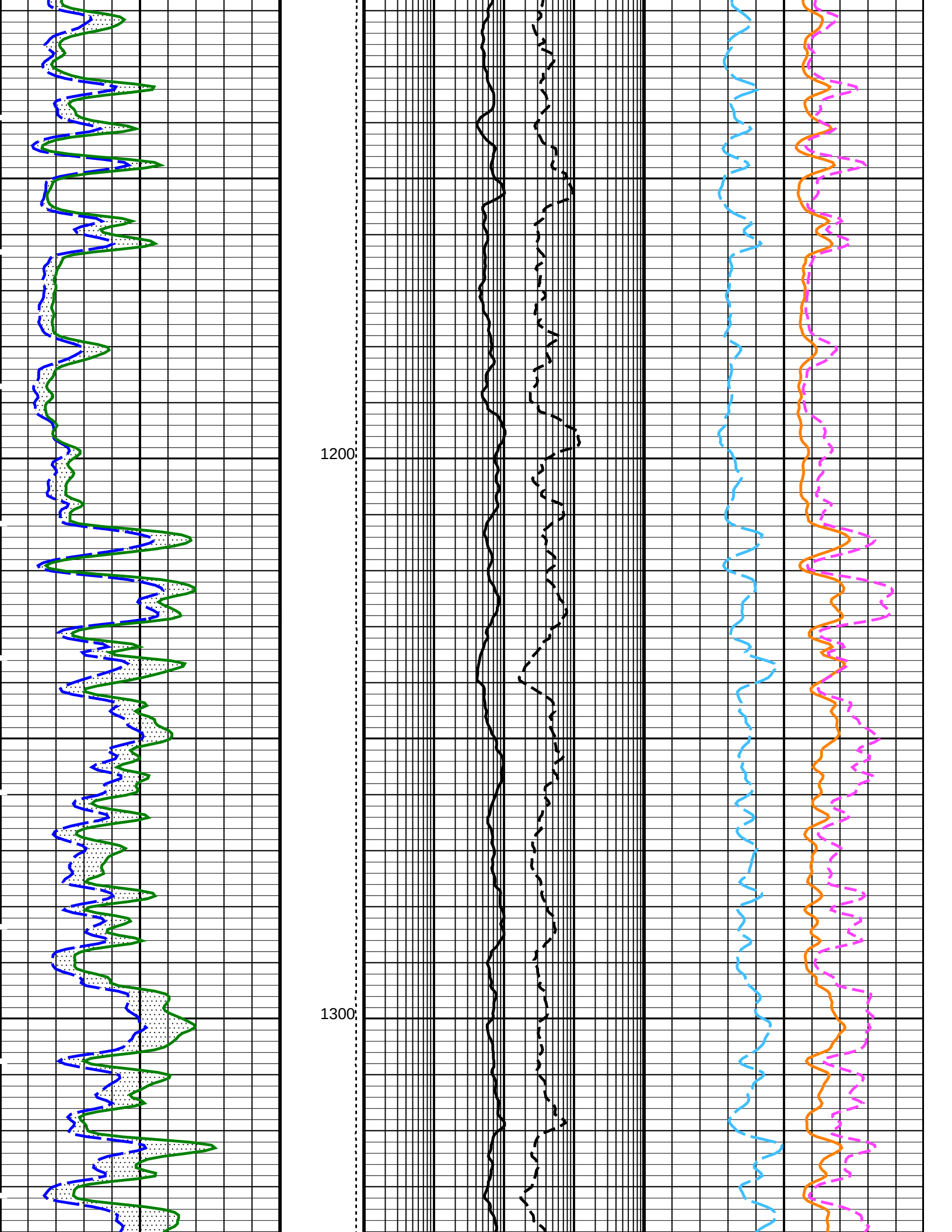
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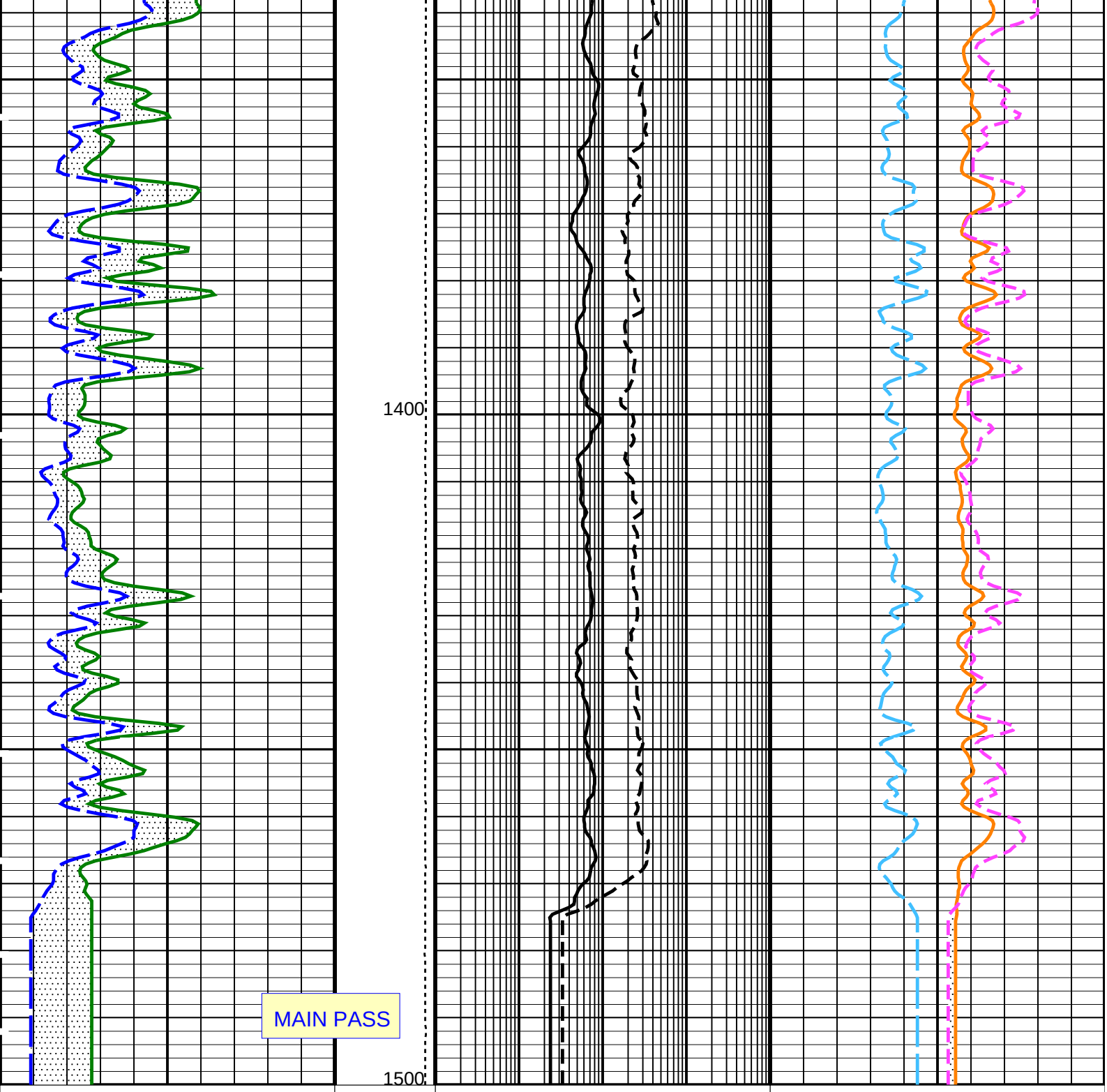


HNGS Computed Gamma Ray (HCGR) 0 (GAPI) 150	Tension (TENS) (LBF) 10000 0	HNGS Thorium / Uranium Ratio (HTUR) 0.01 (----) 100	HNGS Potassium (HFK) −0.05 (V/V) 0.05
Area1 From HCGR to HSGR	Stuck Stretch (STIT) 0 (F) 50	HNGS Thorium / Potassium Ratio (HTPR) 0.1 (----) 1000	HNGS Uranium (HURA) −5 (PPM) 15
HNGS Spectroscopy Gamma Ray (HSGR) 0 (GAPI) 150	Cable Drag From STIA to STIT		HNGS Thorium (HTHO) −20 (PPM) 20
	Tool/Tot. Drag From D3T to STIA		Area2 From HTHO to HFK

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	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	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.33	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.33	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	DIRPLOT: Enhanced Directional Plots		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth − Driller	1528.00	FT
TDL	Total Depth − Logger	1500.00	FT
	System and Miscellaneous		
BS	Bit Size	12.250	IN

Format: HNGSRatios Vertical Scale: 5" per 100' Graphics File Created: 01−Sep−2011 18:25

OP System Version: 19C0−187

FBST−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	19C0−187

Output DLIS Files

DEFAULT	FMI_NGS_130LUP	FN:198	PRODUCER	01−Sep−2011 18:25		
RTB	FMI_NGS_130LUP	FN:199	PRODUCER	01−Sep−2011 18:25		

Company: SANDIA TECHNOLOGIES, LLC Well: NYSTA TANDEM LOT 1

Output DLIS Files

DEFAULT	FMI_NGS_130LUP	FN:198	PRODUCER	01−Sep−2011 18:25	1500.0 FT	42.5 FT
RTB	FMI_NGS_130LUP	FN:199	PRODUCER	01−Sep−2011 18:25	1500.0 FT	42.5 FT

OP System Version: 19C0−187

FBST−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	19C0−187

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 150

HNGS Det.2 Resolution Degradation Factor (RDF2)
0 (----) 10

HNGS Det.1 Resolution Degradation Factor (RDF1)
0 (----) 10

HNGS Det.2 Gain Correction Factor (GCF2)
0.9 (----) 1.1

HNGS Det.1 Gain Correction Factor (GCF1)
0.9 (----) 1.1

Area1
From HCGR to HSGR

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 150

Caliper (BS)
6 (IN) 16

Tool/Tot. Drag From D3T to STIA

Bit Size (BS)
6 (IN) 16

Cable Drag From STIA to STIT

HNGS Borehole Potassium (HBHK)
−0.05 (V/V) 0.05

HNGS Det.2 Chi Squared (CHI2)
10 (----) 0

Stuck Stretch (STIT)
0 (F) 50

HNGS Uranium (HURA)
−10 (PPM) 30

HNGS Det.1 Chi Squared (CHI1)
10 (----) 0

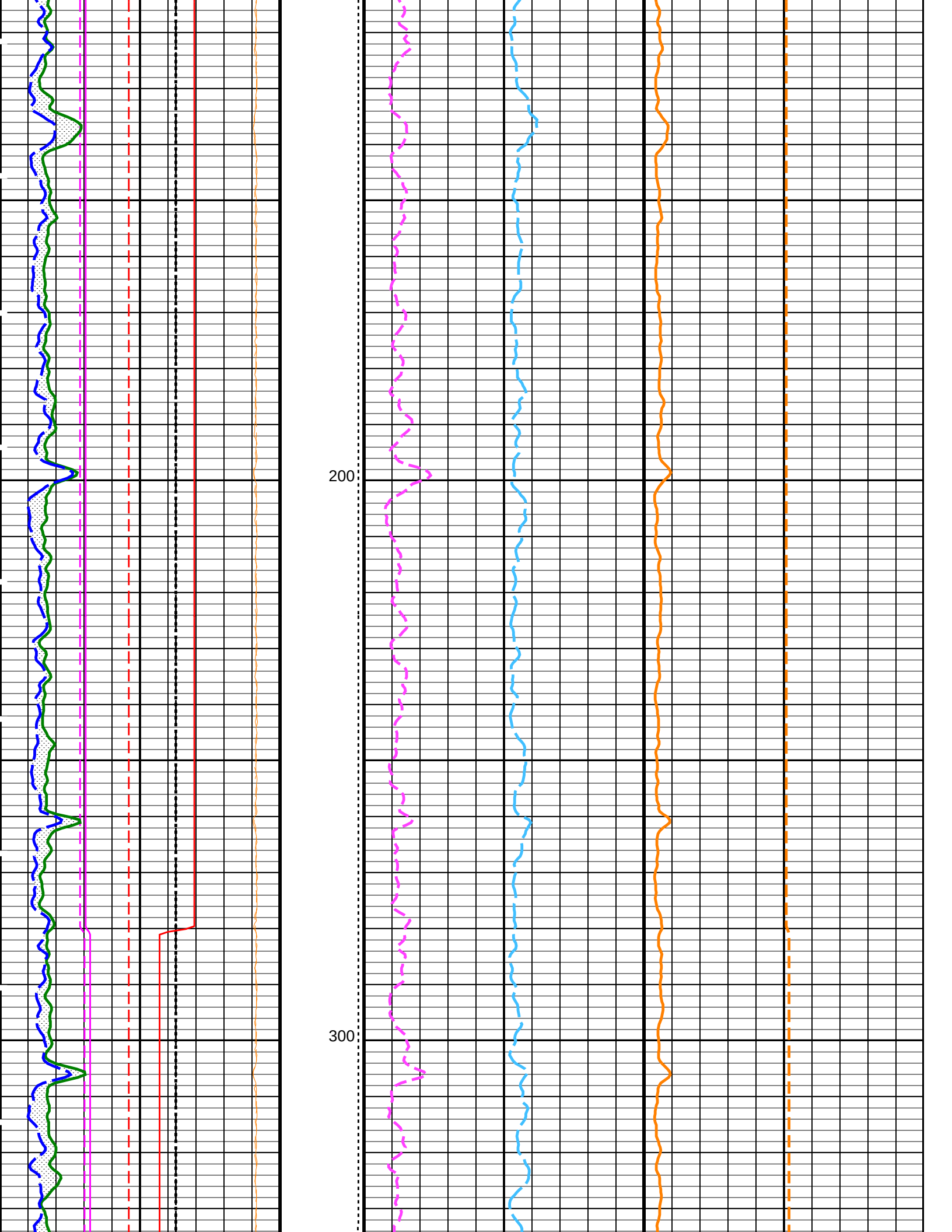
Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
0 (PPM) 30

HNGS Potassium (HFK)
0 (V/V) 0.1

MAIN PASS

100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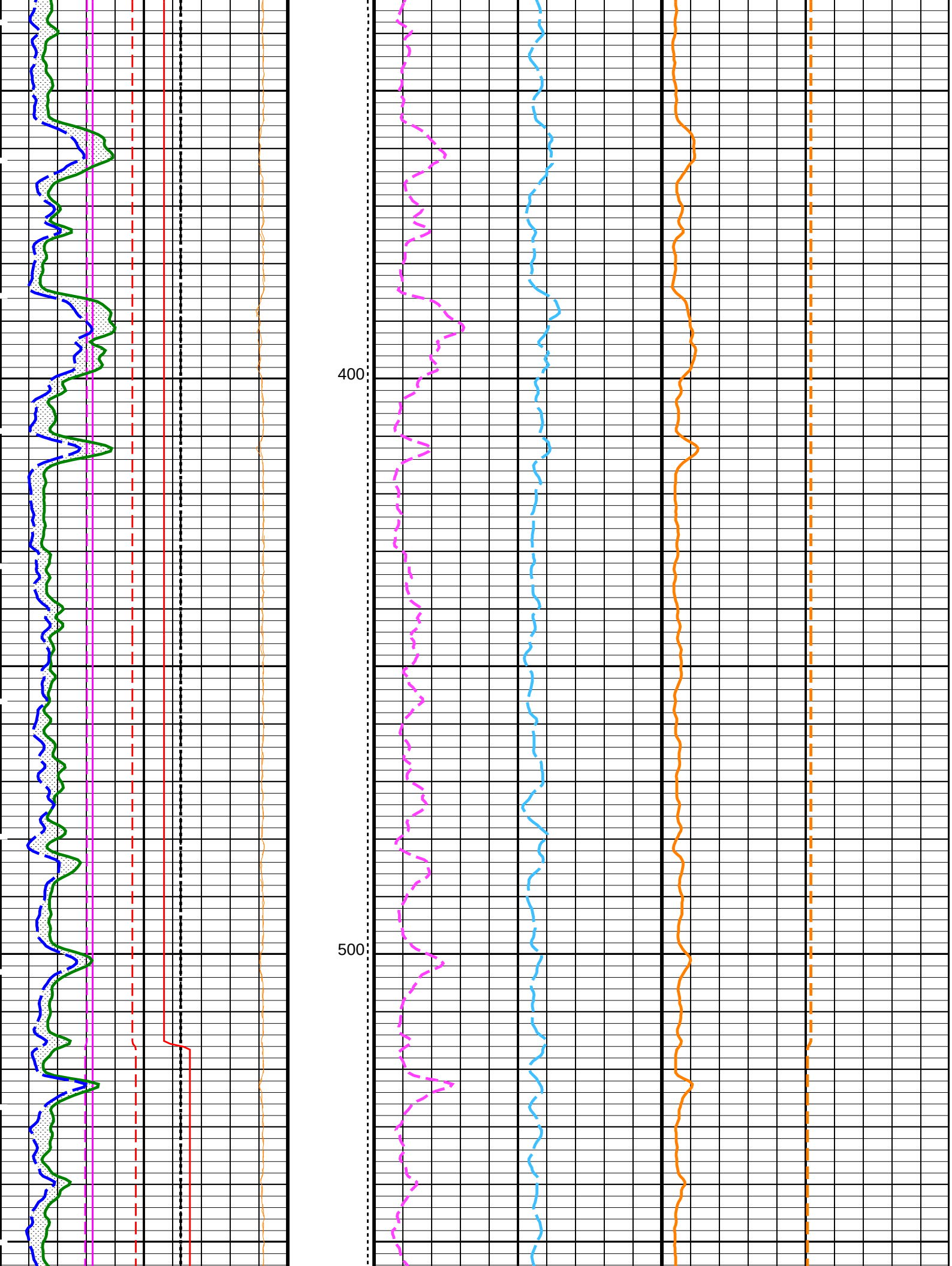
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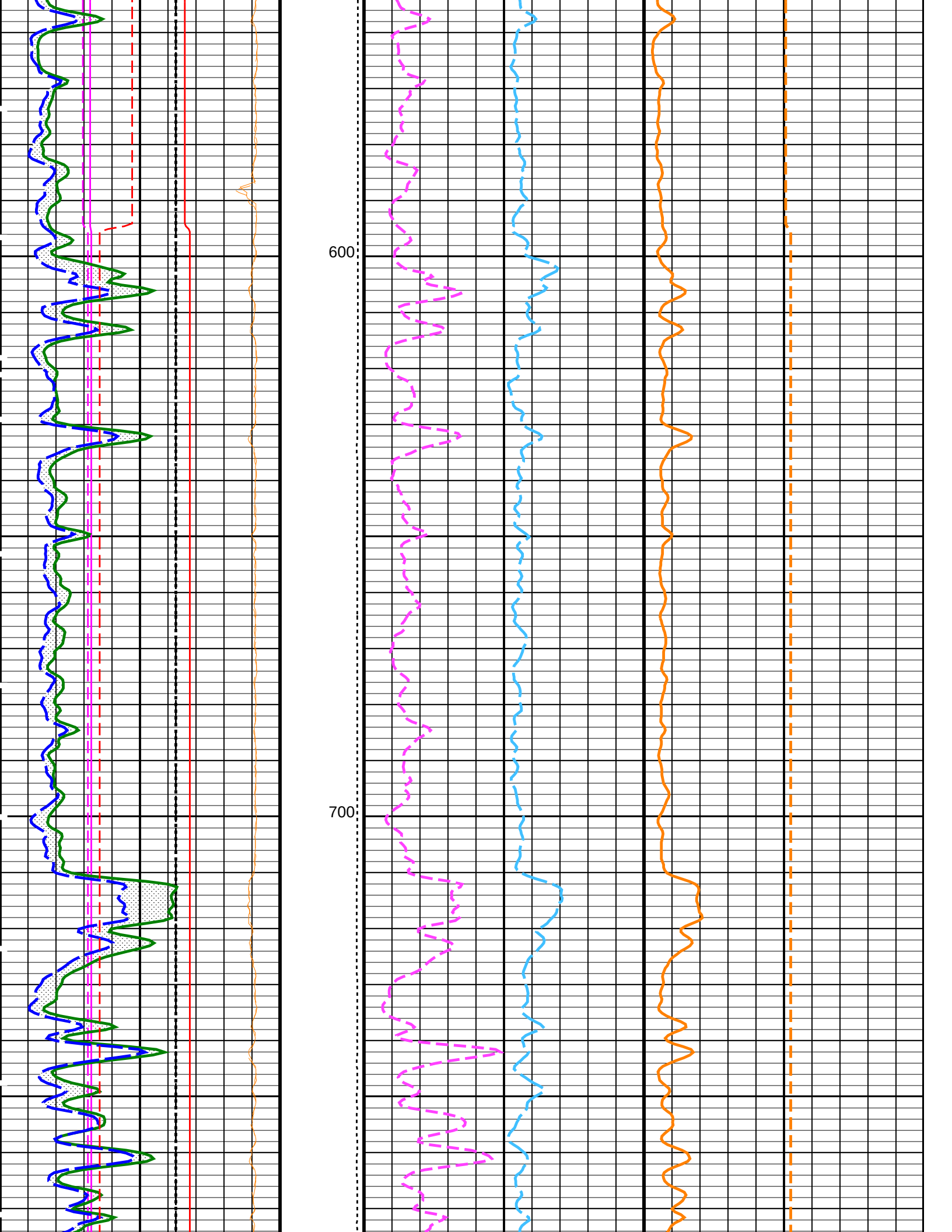
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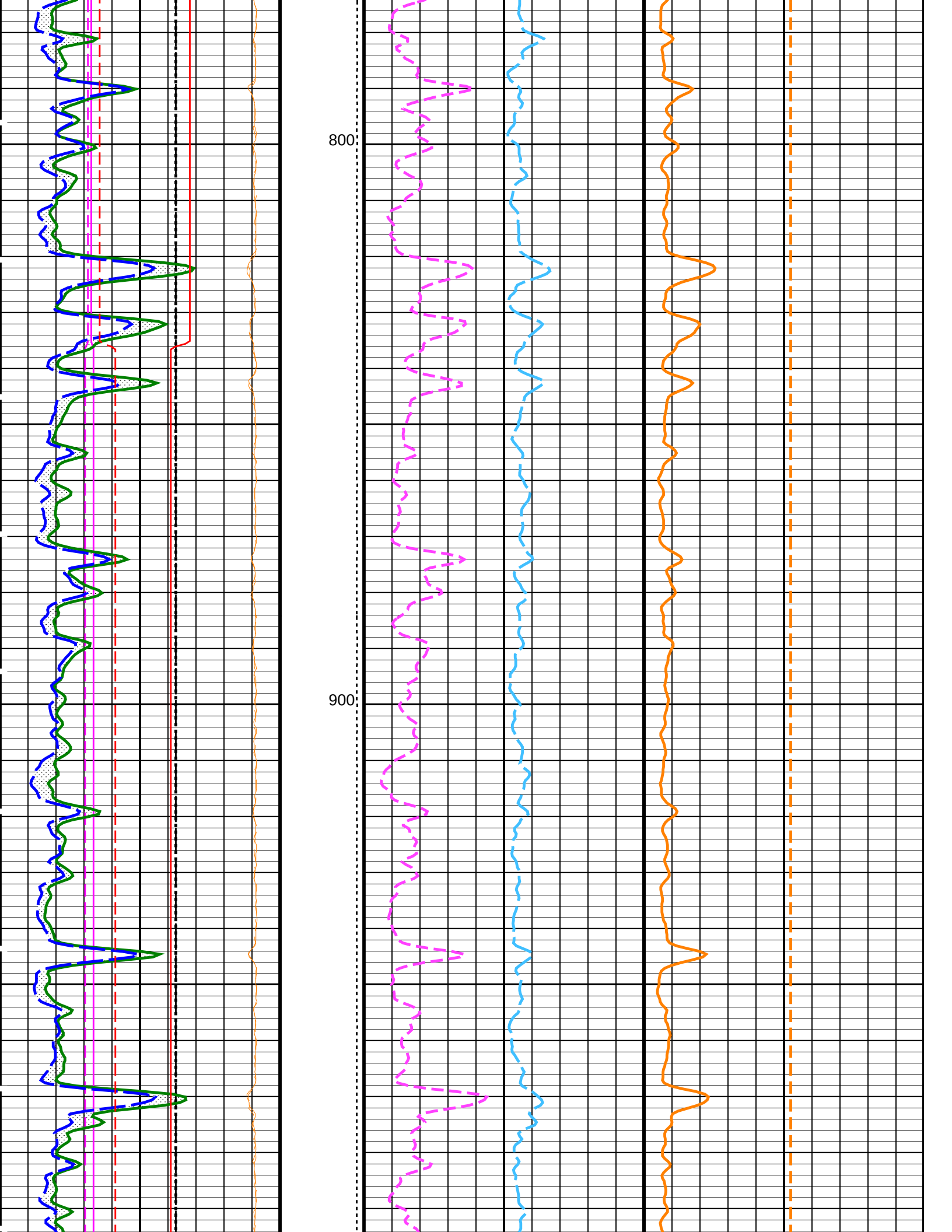
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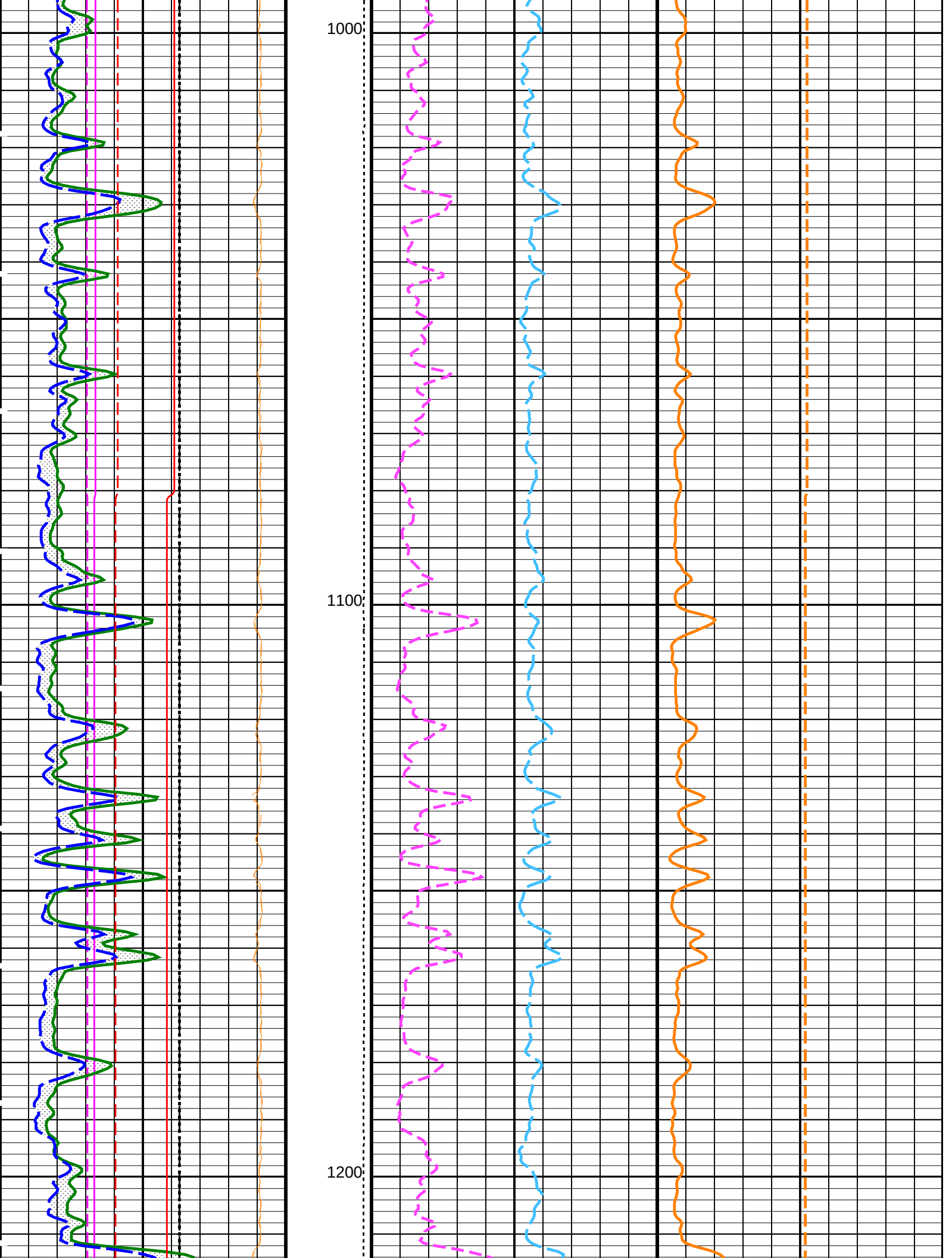
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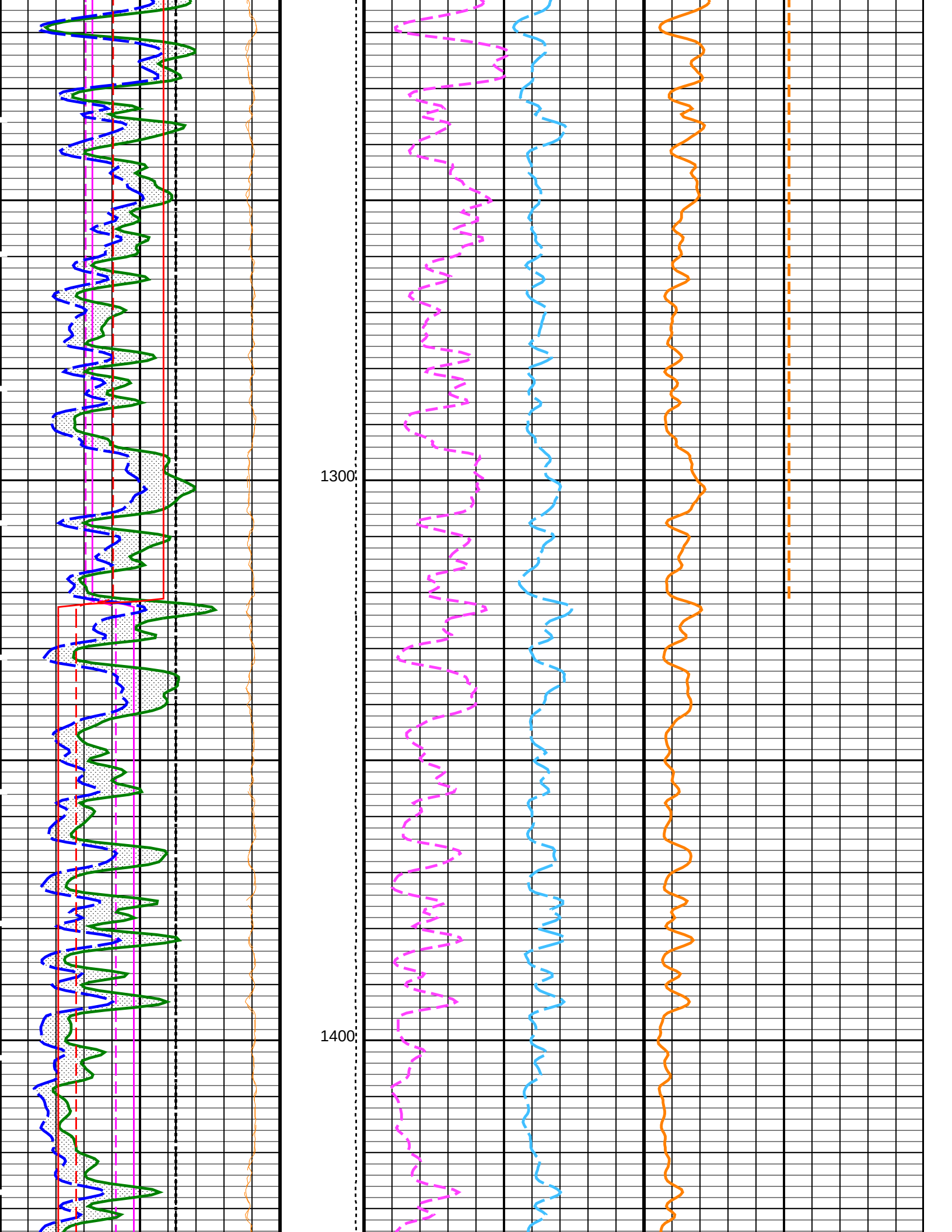
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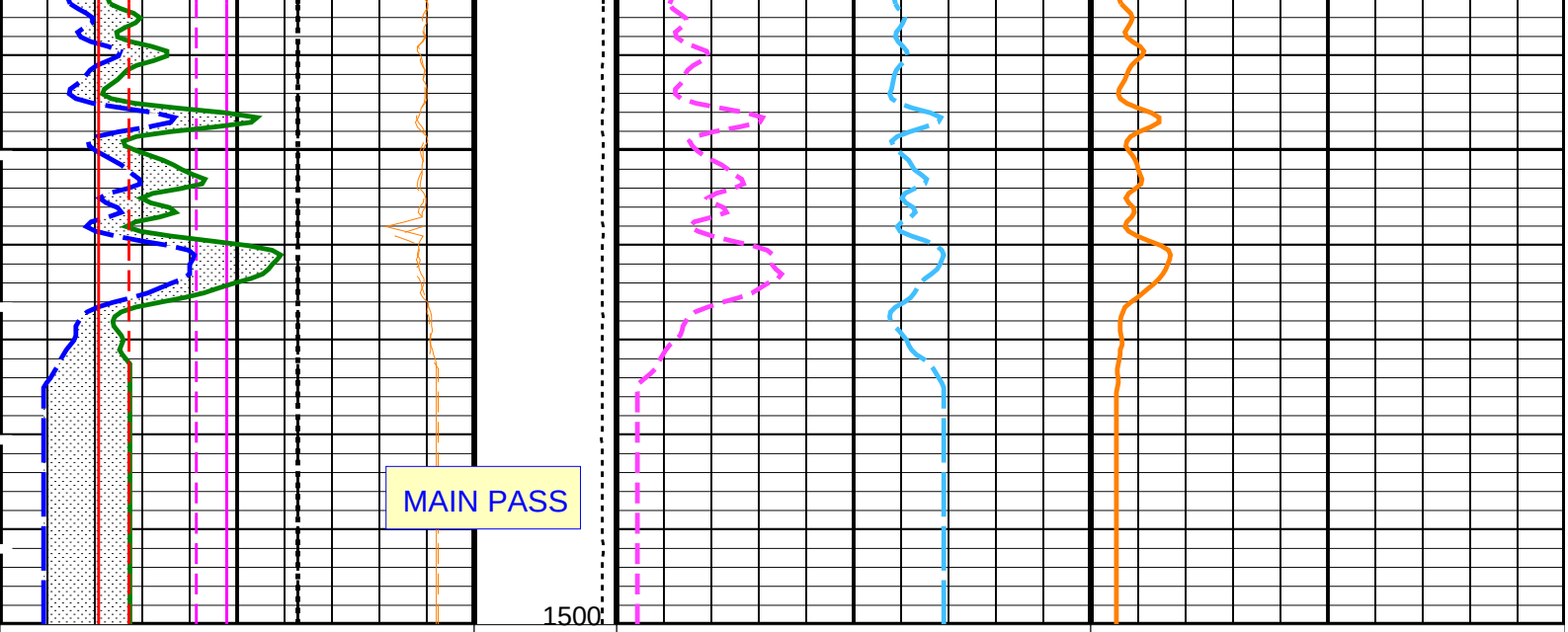


HNGS Det.1 Chi Squared (CHI1)
10 (----) 0

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
0 (PPM) 30

HNGS Potassium (HFK)
0 (V/V) 0.1

HNGS Det.2 Chi Squared (CHI2)
10 (----) 0

Stuck Stretch (STIT)
0 (F) 50

HNGS Uranium (HURA)
−10 (PPM) 30

Bit Size (BS)
6 (IN) 16

Cable Drag From STIA to STIT

HNGS Borehole Potassium (HBHK)
−0.05 (V/V) 0.05

Caliper (BS)
6 (IN) 16

Tool/Tot. Drag From D3T to STIA

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 150

Area1
From HCGR to HSGR

HNGS Det.1 Gain Correction Factor (GCF1)
0.9 (----) 1.1

HNGS Det.2 Gain Correction Factor (GCF2)
0.9 (----) 1.1

HNGS Det.1 Resolution Degradation Factor (RDF1)
0 (----) 10

HNGS Det.2 Resolution Degradation Factor (RDF2)
0 (----) 10

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 150

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	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	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.33	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.33	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	DIRPLOT: Enhanced Directional Plots		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth − Driller	1528.00	FT
TDL	Total Depth − Logger	1500.00	FT
	System and Miscellaneous		
BS	Bit Size	12.250	IN

Format: HNGSYields **Vertical Scale: 5" per 100'** **Graphics File Created: 01−Sep−2011 18:25**

OP System Version: 19C0−187

FBST−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	19C0−187

Output DLIS Files

DEFAULT	FMI_NGS_130LUP	FN:198	PRODUCER	01−Sep−2011 18:25		
RTB	FMI_NGS_130LUP	FN:199	PRODUCER	01−Sep−2011 18:25		

Company: SANDIA TECHNOLOGIES, LLC **Well: NYSTA TANDEM LOT 1**

Output DLIS Files

DEFAULT	FMI_NGS_130LUP	FN:198	PRODUCER	01−Sep−2011 18:25	1500.0 FT	42.5 FT
RTB	FMI_NGS_130LUP	FN:199	PRODUCER	01−Sep−2011 18:25	1500.0 FT	42.5 FT

OP System Version: 19C0−187

FBST−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	19C0−187

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)		
0	(GAPI)	150

HNGS Det.2 Resolution Degradation Factor (RDF2)
0 (----) 10

HNGS Det.1 Resolution Degradation Factor (RDF1)
0 (----) 10

HNGS Det.2 Gain Correction Factor (GCF2)
0.9 (----) 1.1

HNGS Det.1 Gain Correction Factor (GCF1)
0.9 (----) 1.1

HBHK +/− One Sigma From MBHK to PBHK

HFK +/− One Sigma From MFK to PFK

HNGS Computed Gamma Ray Plus Error (PCGR)
0 (GAPI) 150

HNGS Borehole Potassium Plus Error (PBHK)
−0.05 (V/V) 0.05

HNGS Spectroscopy Gamma Ray Plus Error (PSGR)
0 (GAPI) 150

HNGS Potassium Plus Error (PFK)
0 (V/V) 0.1

HNGS Computed Gamma Ray Minus Error (MCGR)
0 (GAPI) 150

HURA +/− One Sigma From MURA to PURA

HNGS Spectroscopy Gamma Ray Minus Error (MSGR)
0 (GAPI) 150

HTHO +/− One Sigma From MTHO to PTHO

HNGS Borehole Potassium Minus Error (MBHK)
−0.05 (V/V) 0.05

HCGR +/− One Sigma From MCGR to PCGR

HNGS Uranium Plus Error (PURA)
−10 (PPM) 30

HSGR +/− One Sigma From MSGR to PSGR

HNGS Thorium Plus Error (PTHR)
0 (PPM) 30

HNGS Potassium Minus Error (MFK)
0 (V/V) 0.1

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 150

Caliper (BS)
6 (IN) 16

Tool/Tot. Drag From D3T to STIA

HNGS Uranium Minus Error (MURA)
−10 (PPM) 30

Bit Size (BS)
6 (IN) 16

Cable Drag From STIA to STIT

HNGS Thorium Minus Error (MTHO)
0 (PPM) 30

HNGS Borehole Potassium (HBHK)
−0.05 (V/V) 0.05

HNGS Det.2 Chi Squared (CHI2)
10 (----) 0

Stuck Stretch (STIT)
0 (F) 50

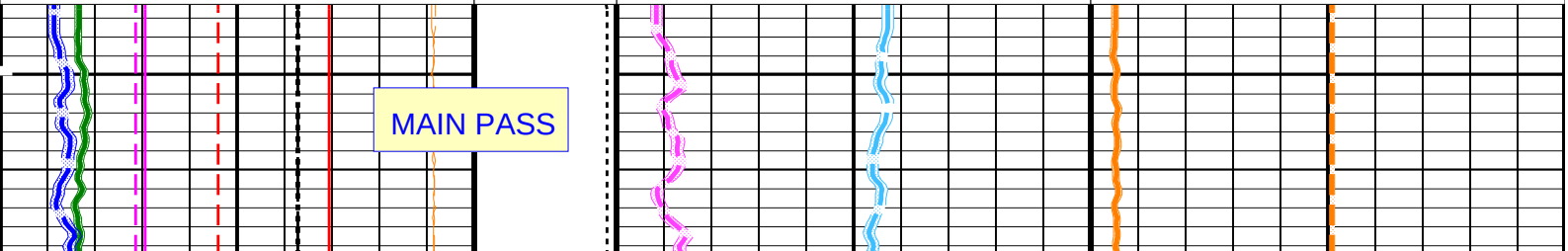
HNGS Uranium (HURA)
−10 (PPM) 30

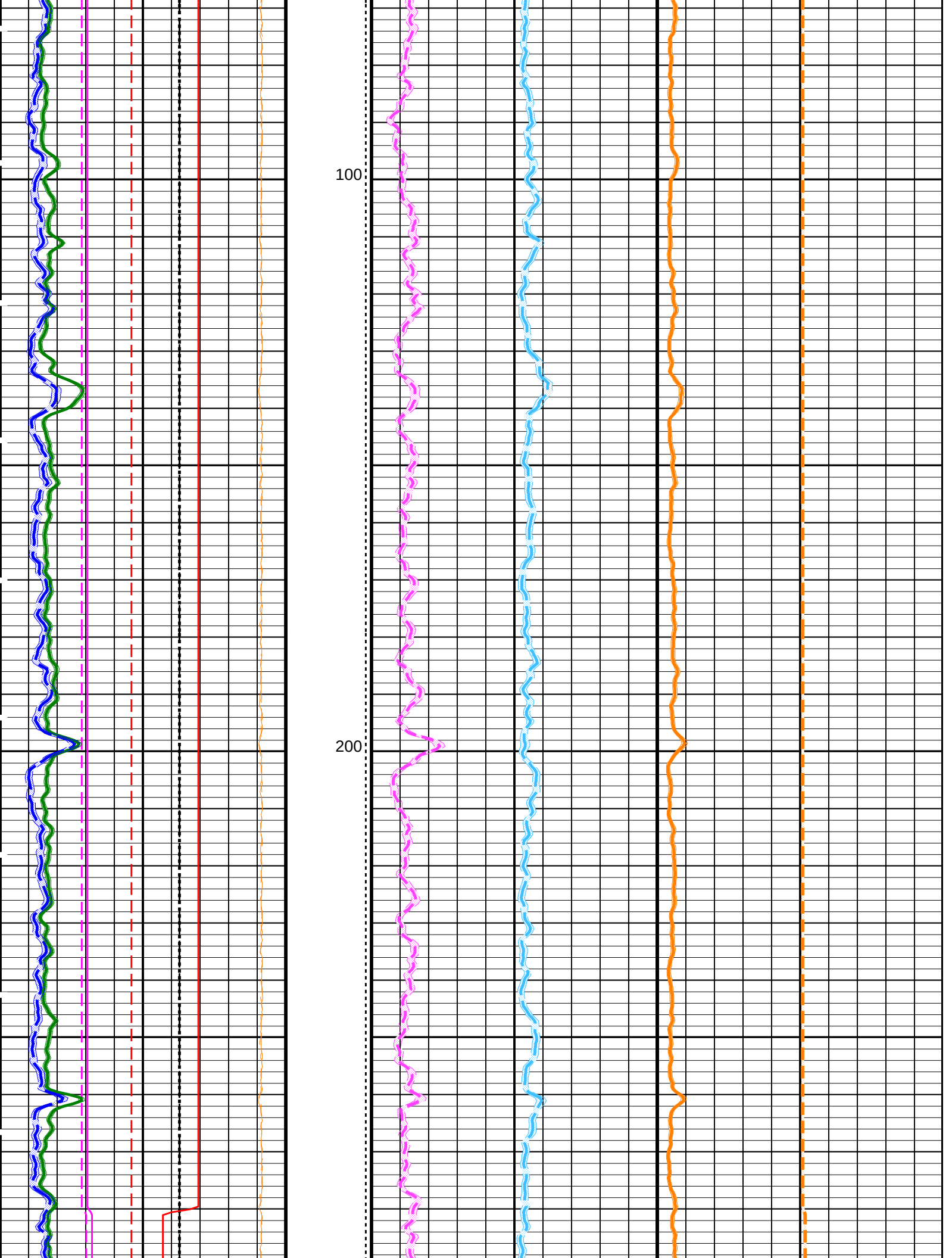
HNGS Det.1 Chi Squared (CHI1)
10 (----) 0

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
0 (PPM) 30

HNGS Potassium (HFK)
0 (V/V) 0.1

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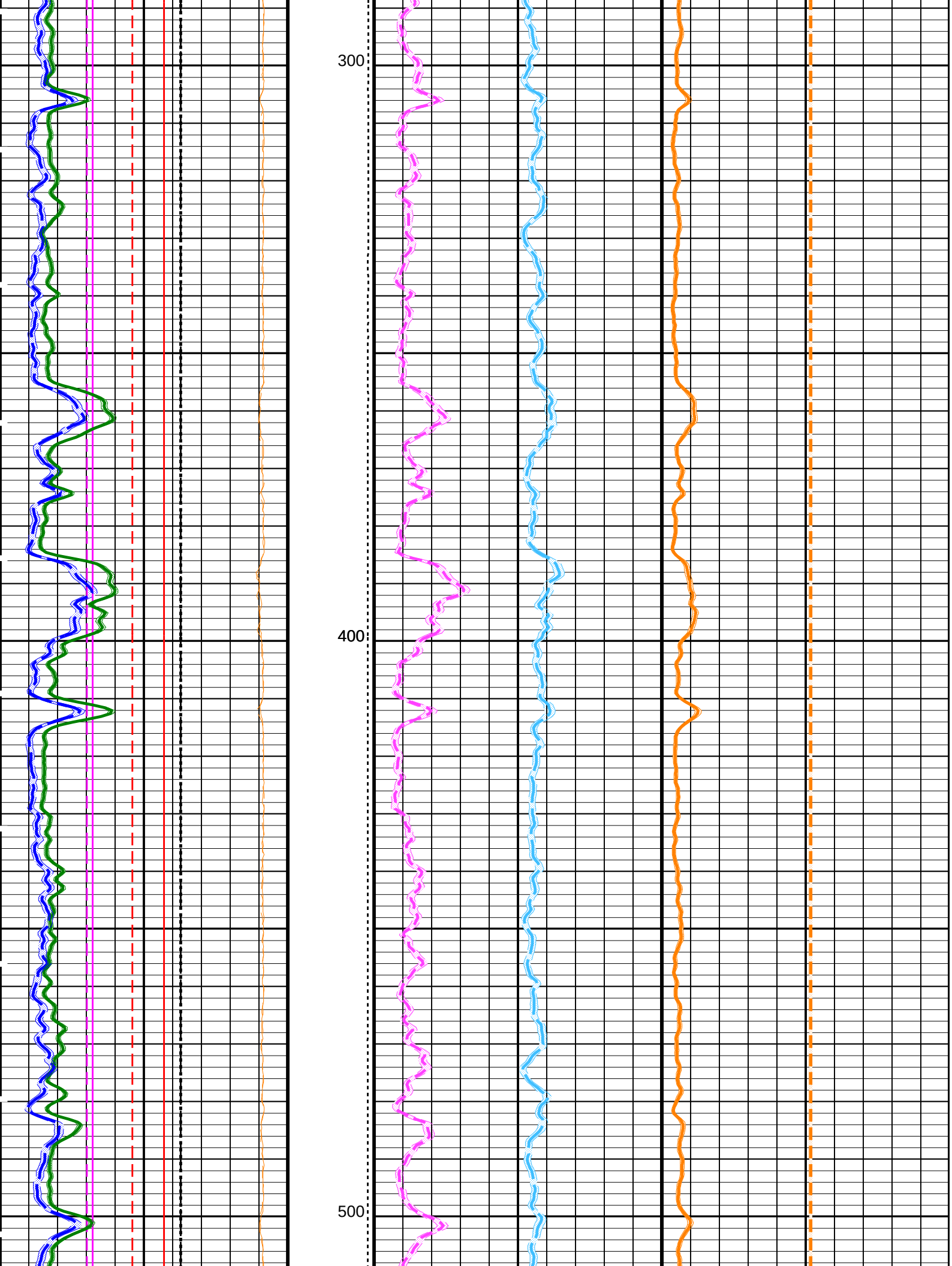
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400
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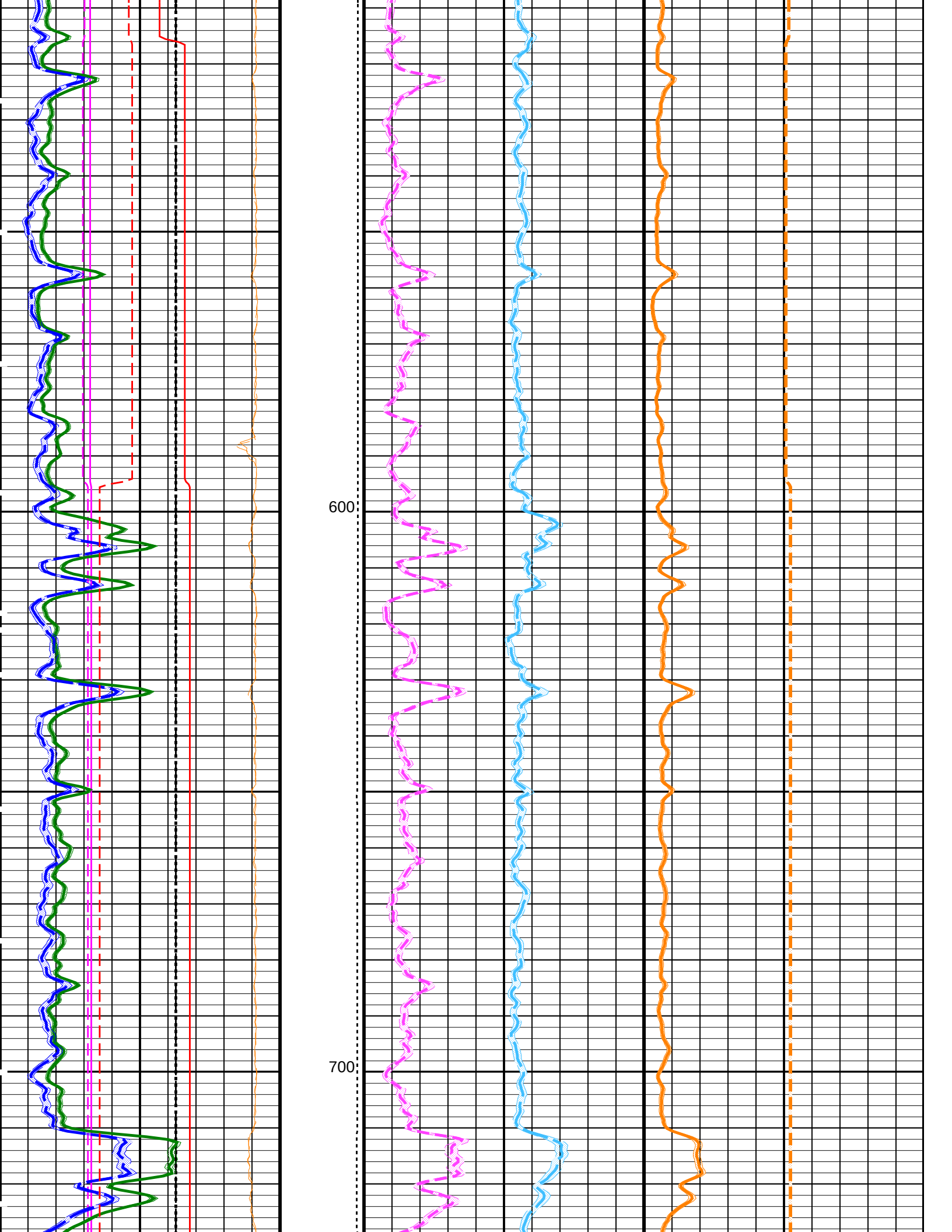
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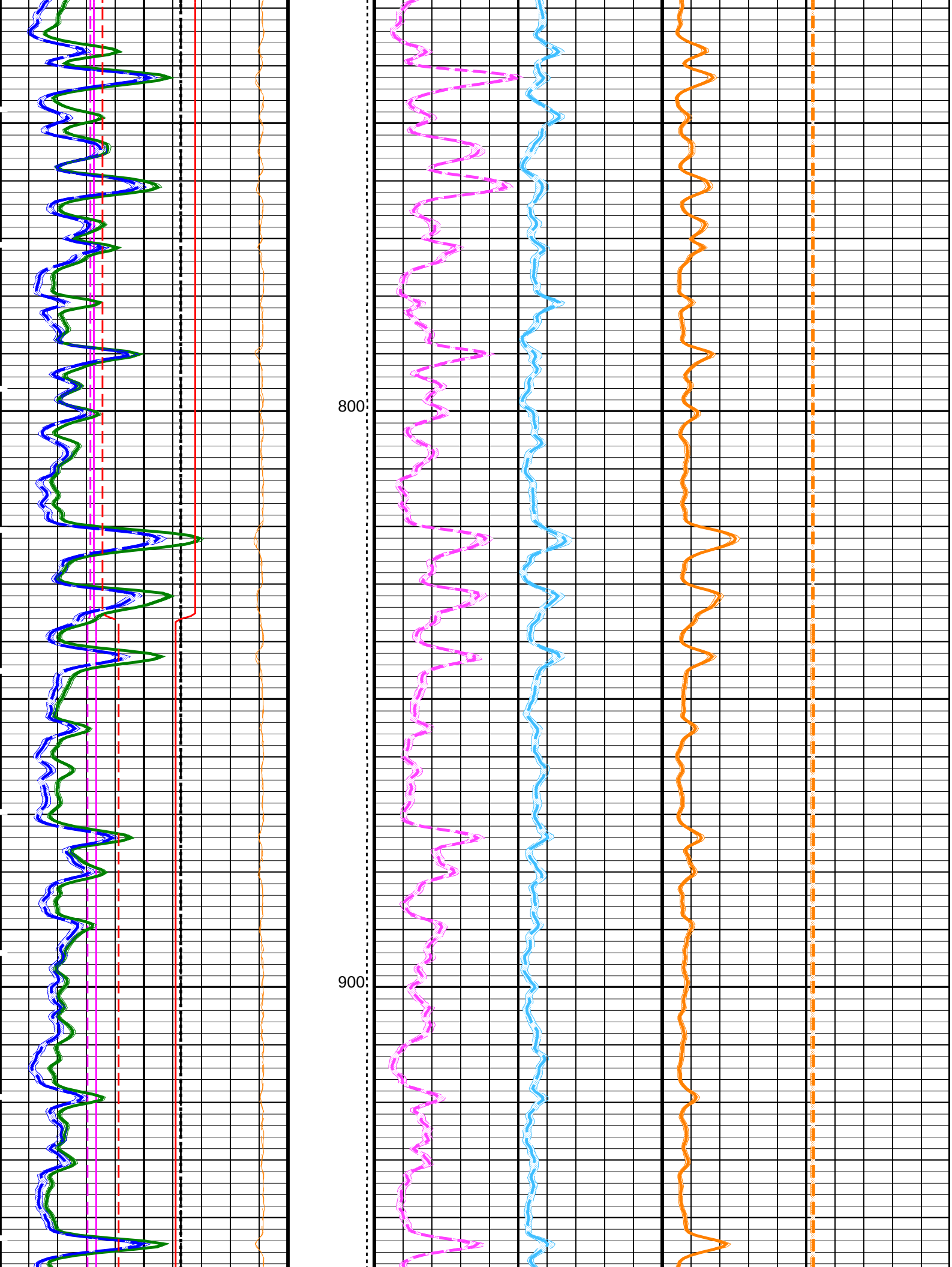
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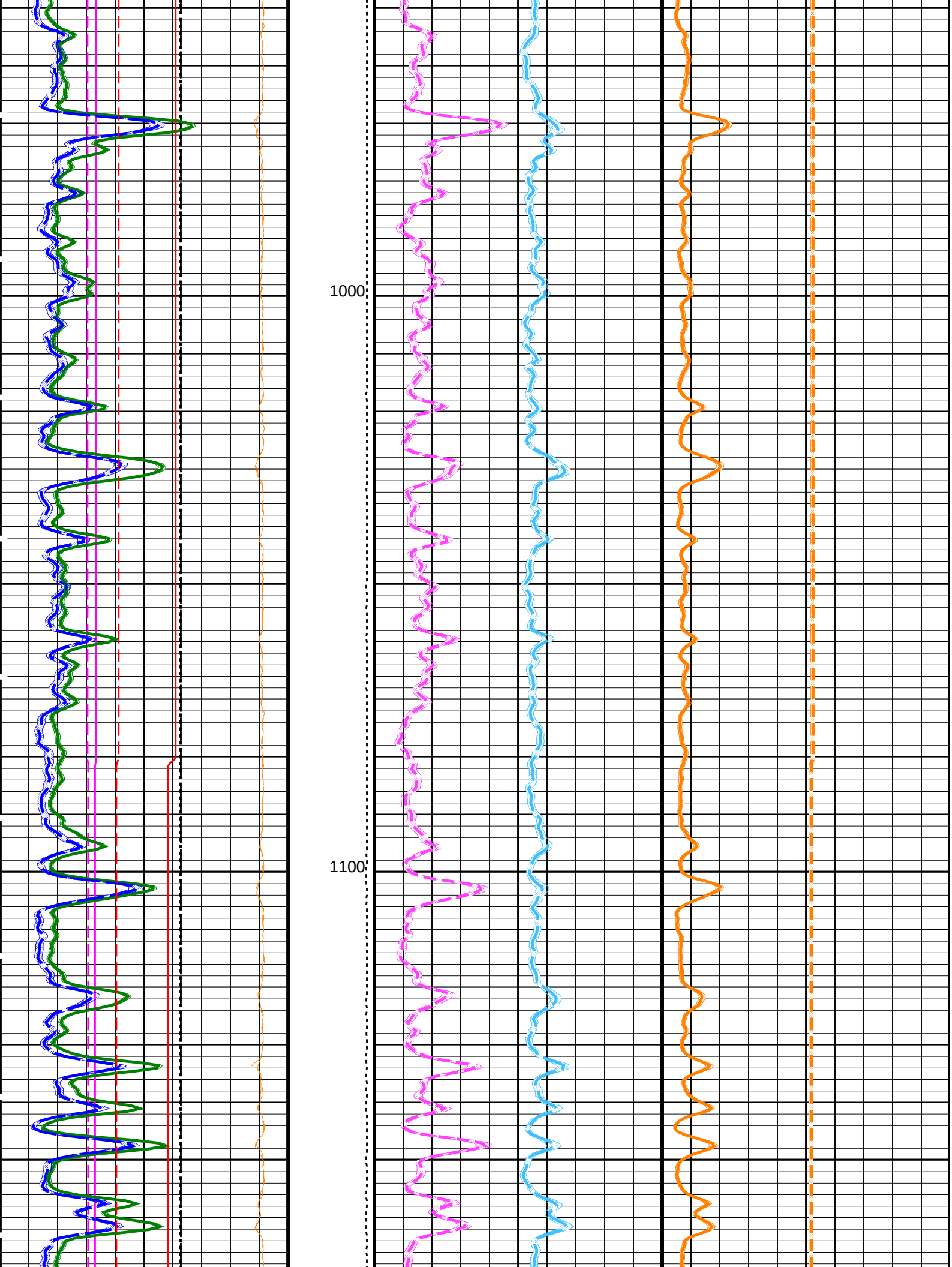
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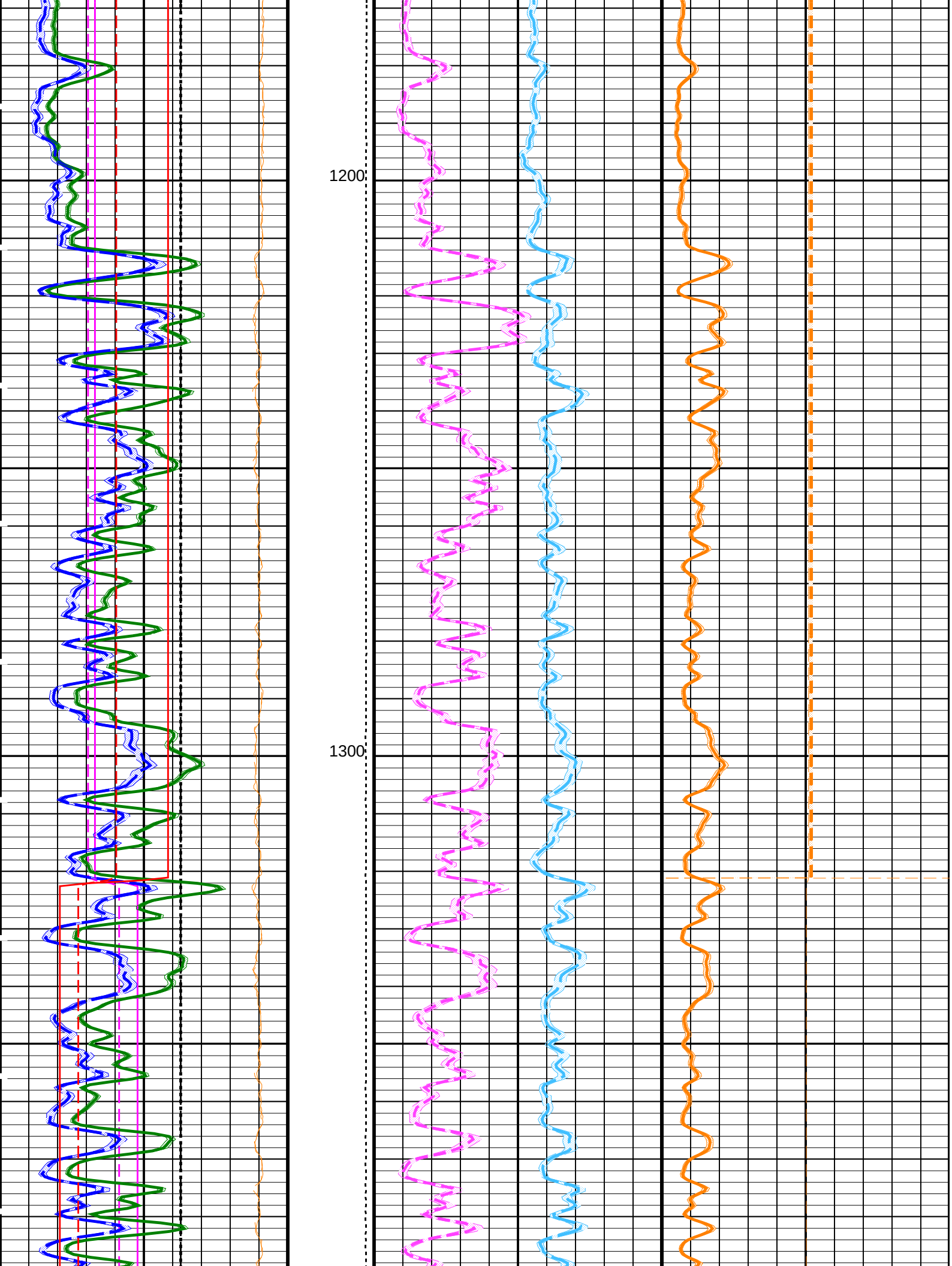
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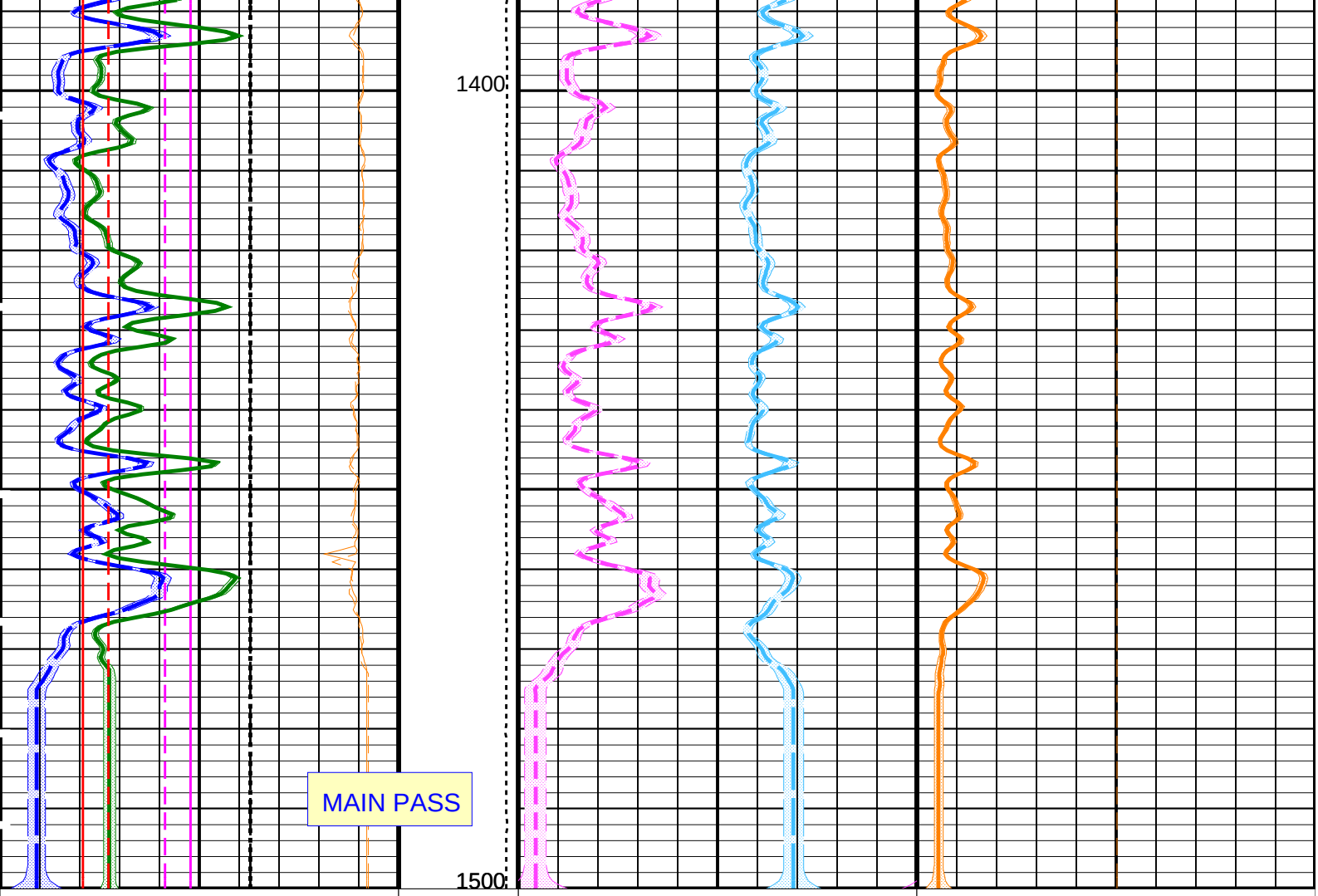


HNGS Det.1 Chi Squared (CHI1)
10 (----) 0

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
0 (PPM) 30

HNGS Potassium (HFK)
0 (V/V) 0.1

HNGS Det.2 Chi Squared (CHI2)
10 (----) 0

Stuck Stretch (STIT)
0 (F) 50

HNGS Uranium (HURA)
−10 (PPM) 30

Bit Size (BS)
6 (IN) 16

Cable Drag From STIA to STIT

HNGS Thorium Minus Error (MTHO)
0 (PPM) 30

HNGS Borehole Potassium (HBHK)
−0.05 (V/V) 0.05

Caliper (BS)
6 (IN) 16

Tool/Tot. Drag From D3T to STIA

HNGS Uranium Minus Error (MURA)
−10 (PPM) 30

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 150

HNGS Thorium Plus Error (PTHR)
0 (PPM) 30

HNGS Potassium Minus Error (MFK)
0 (V/V) 0.1

HSGR +/− One Sigma From MSGR to PSGR

HNGS Uranium Plus Error (PURA)
−10 (PPM) 30

HCGR +/− One Sigma From MCGR to PCGR

HTHO +/− One Sigma From MTHO to PTHO

HNGS Borehole Potassium Minus Error (MBHK)
−0.05 (V/V) 0.05

HNGS Spectroscopy Gamma Ray Minus Error (MSGR)
0 (GAPI) 150

HURA +/− One Sigma From MURA to PURA

HNGS Computed Gamma Ray Minus

Error (MCGR)
0 (GAPI) 150

HNGS Spectroscopy Gamma Ray Plus Error (PSGR)
0 (GAPI) 150

HNGS Computed Gamma Ray Plus Error (PCGR)
0 (GAPI) 150

HNGS Det.1 Gain Correction Factor (GCF1)
0.9 (----) 1.1

HNGS Det.2 Gain Correction Factor (GCF2)
0.9 (----) 1.1

HNGS Det.1 Resolution Degradation Factor (RDF1)
0 (----) 10

HNGS Det.2 Resolution Degradation Factor (RDF2)
0 (----) 10

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 150

HNGS Potassium Plus Error (PFK)
0 (V/V) 0.1

HNGS Borehole Potassium Plus Error (PBHK)
−0.05 (V/V) 0.05

HFK +/− One Sigma From MFK to PFK

HBHK +/− One Sigma From MBHK to PBHK

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	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	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.33	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.33	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	DIRPLOT: Enhanced Directional Plots		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth − Driller	1528.00	FT
TDL	Total Depth − Logger	1500.00	FT
	System and Miscellaneous		
BS	Bit Size	12.250	IN

BS	Bit Size	12.250	IN

Format: HNGSQuality Vertical Scale: 5" per 100' Graphics File Created: 01−Sep−2011 18:25

OP System Version: 19C0−187

FBST−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	19C0−187

Output DLIS Files

DEFAULT	FMI_NGS_130LUP	FN:198	PRODUCER	01−Sep−2011 18:25	
RTB	FMI_NGS_130LUP	FN:199	PRODUCER	01−Sep−2011 18:25	

Schlumberger

REPEAT SECTION

MAXIS Field Log

Company: SANDIA TECHNOLOGIES, LLC Well: NYSTA TANDEM LOT 1

Output DLIS Files

DEFAULT	FMI_NGS_131LUP	FN:200	PRODUCER	01−Sep−2011 19:46	1507.5 FT	612.5 FT
RTB	FMI_NGS_131LUP	FN:201	PRODUCER	01−Sep−2011 19:46	1507.5 FT	612.5 FT

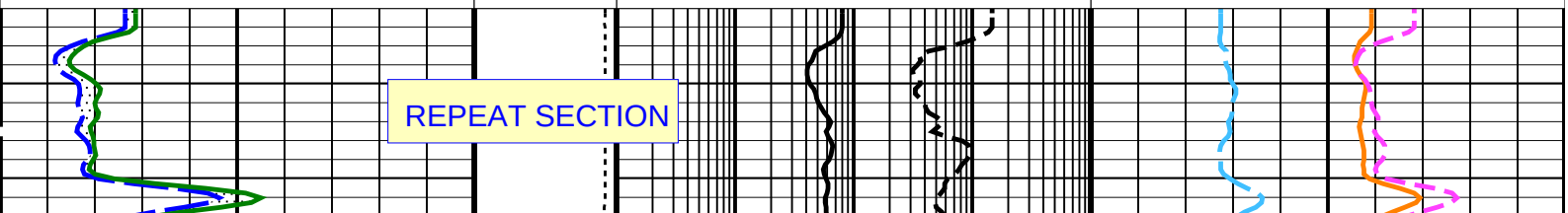
OP System Version: 19C0−187

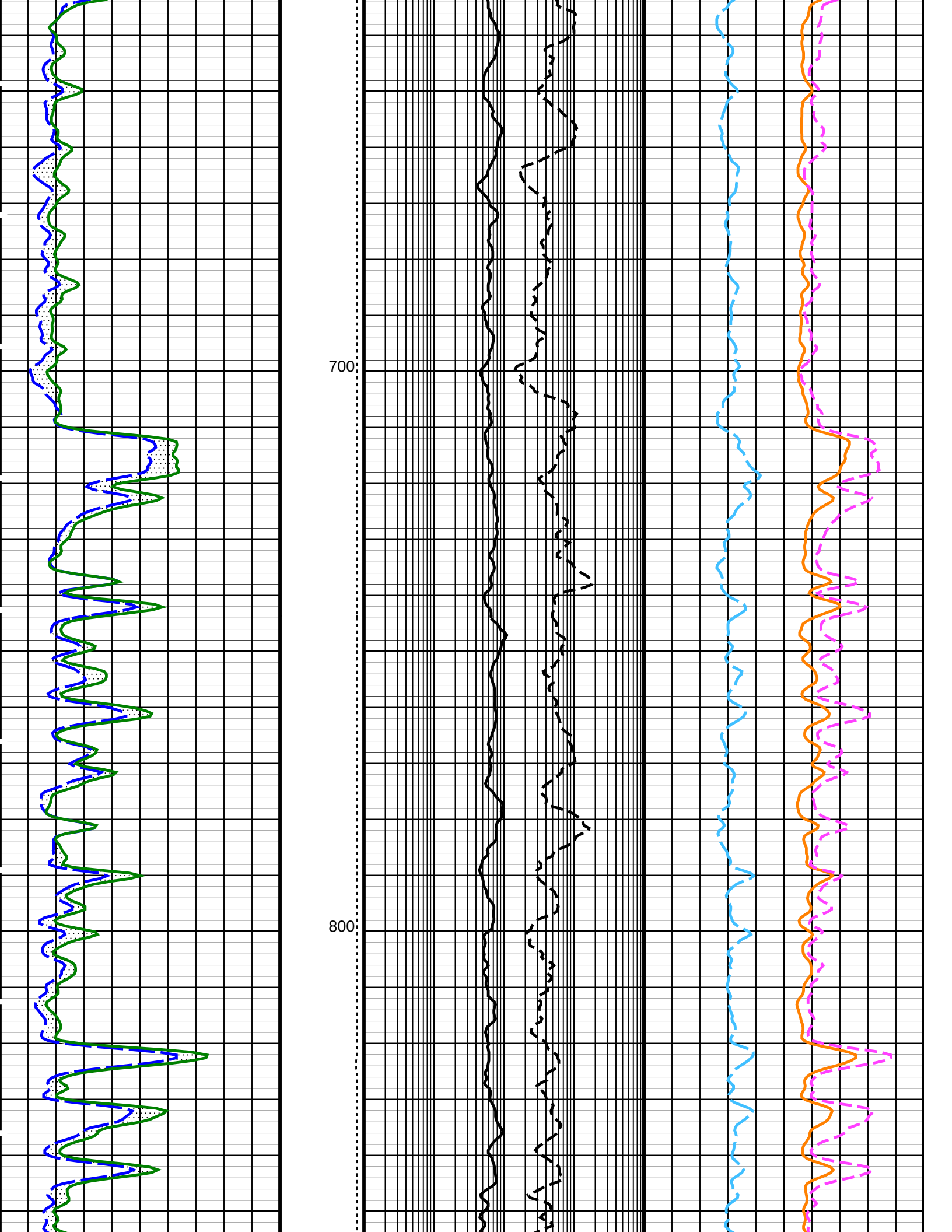
FBST−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	19C0−187

PIP SUMMARY

Time Mark Every 60 S

	Tool/Tot. Drag From D3T to STIA		Area2 From HTHO to HFK
HNGS Spectroscopy Gamma Ray (HSGR) 0 (GAPI) 150	Cable Drag From STIA to STIT		HNGS Thorium (HTHO) −20 (PPM) 20
Area1 From HCGR to HSGR	Stuck Stretch (STIT) 0 (F) 50	HNGS Thorium / Potassium Ratio (HTPR) 0.1 (−−−−) 1000	HNGS Uranium (HURA) −5 (PPM) 15
HNGS Computed Gamma Ray (HCGR) 0 (GAPI) 150	Tension (TENS) (LBF) 10000 0	HNGS Thorium / Uranium Ratio (HTUR) 0.01 (−−−−) 100	HNGS Potassium (HFK) −0.05 (V/V) 0.05

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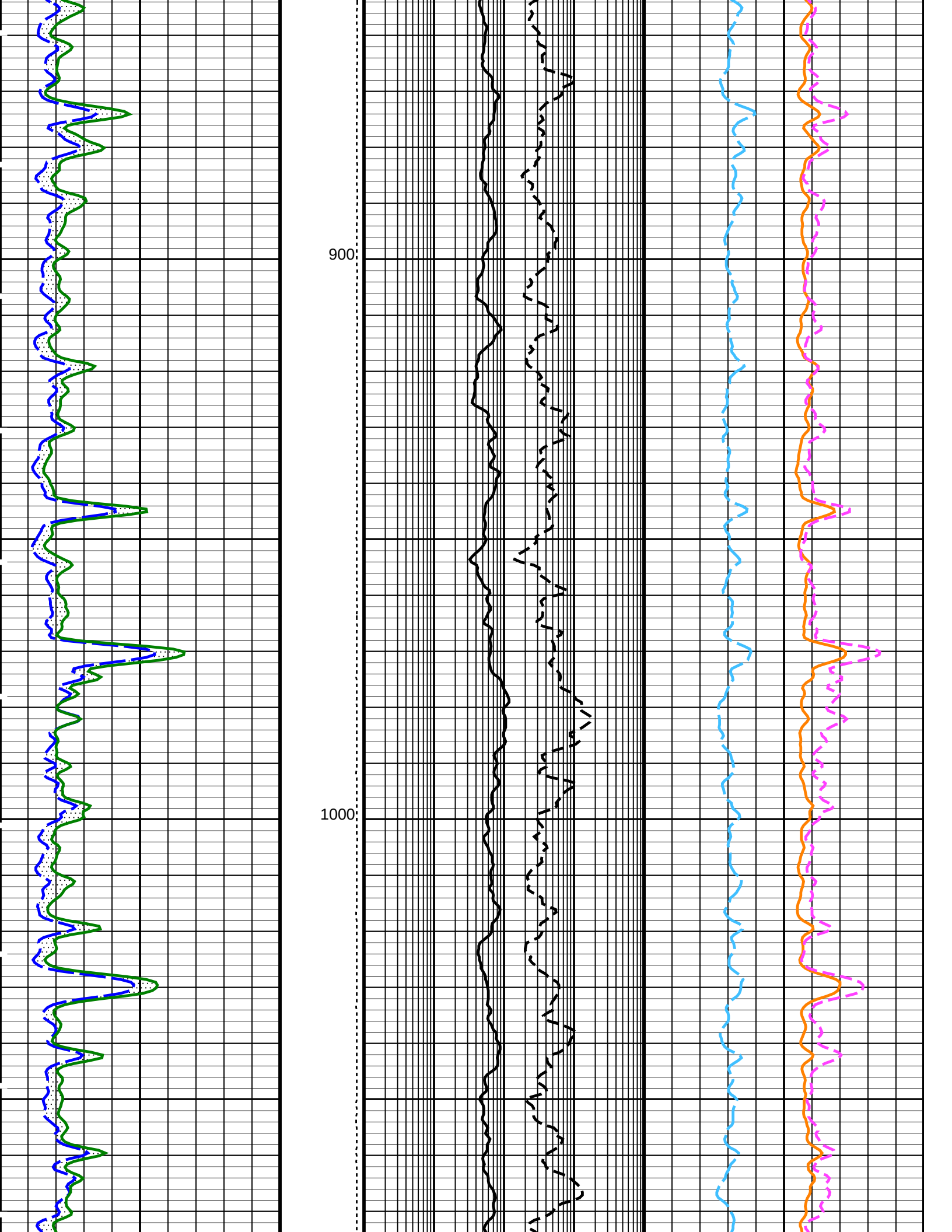
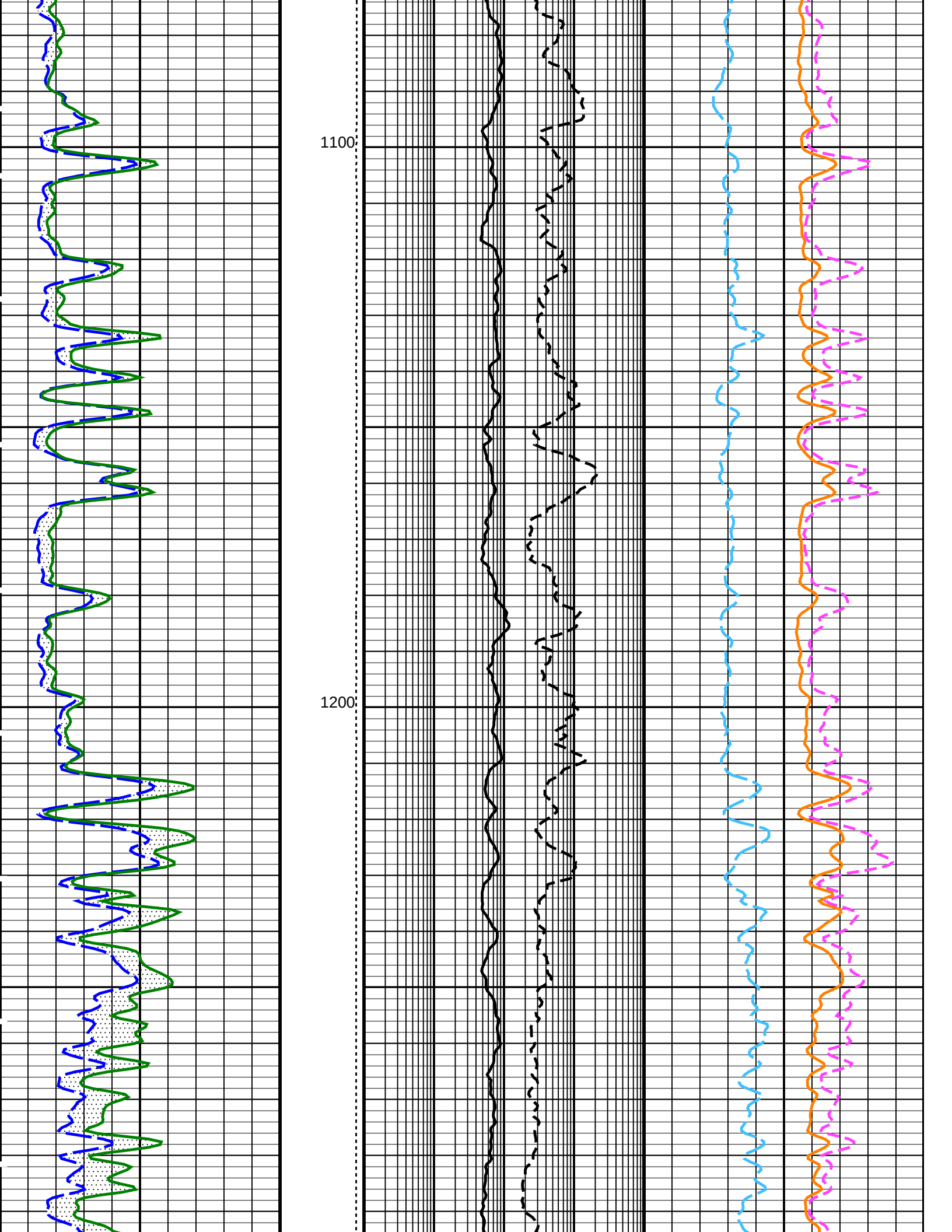
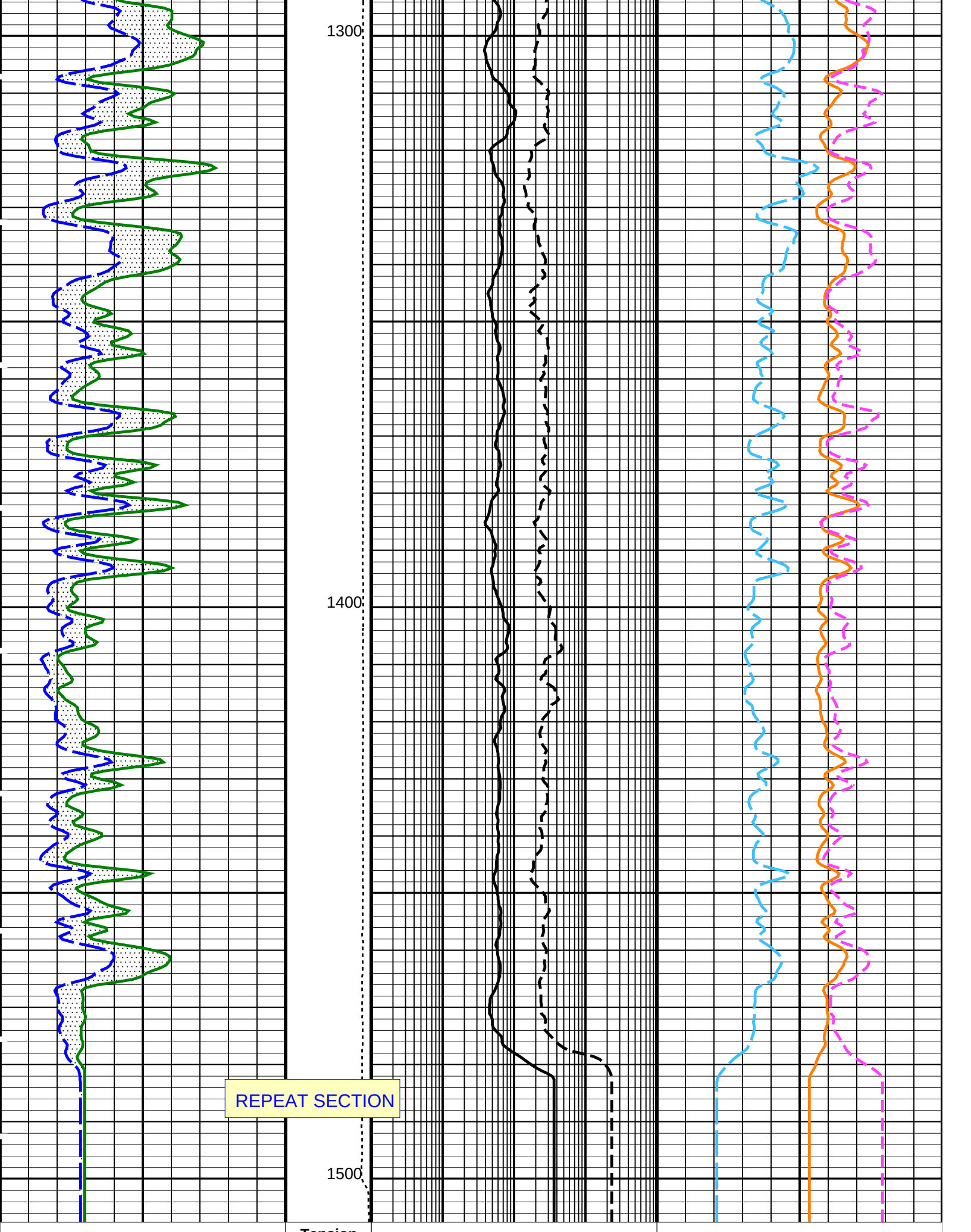
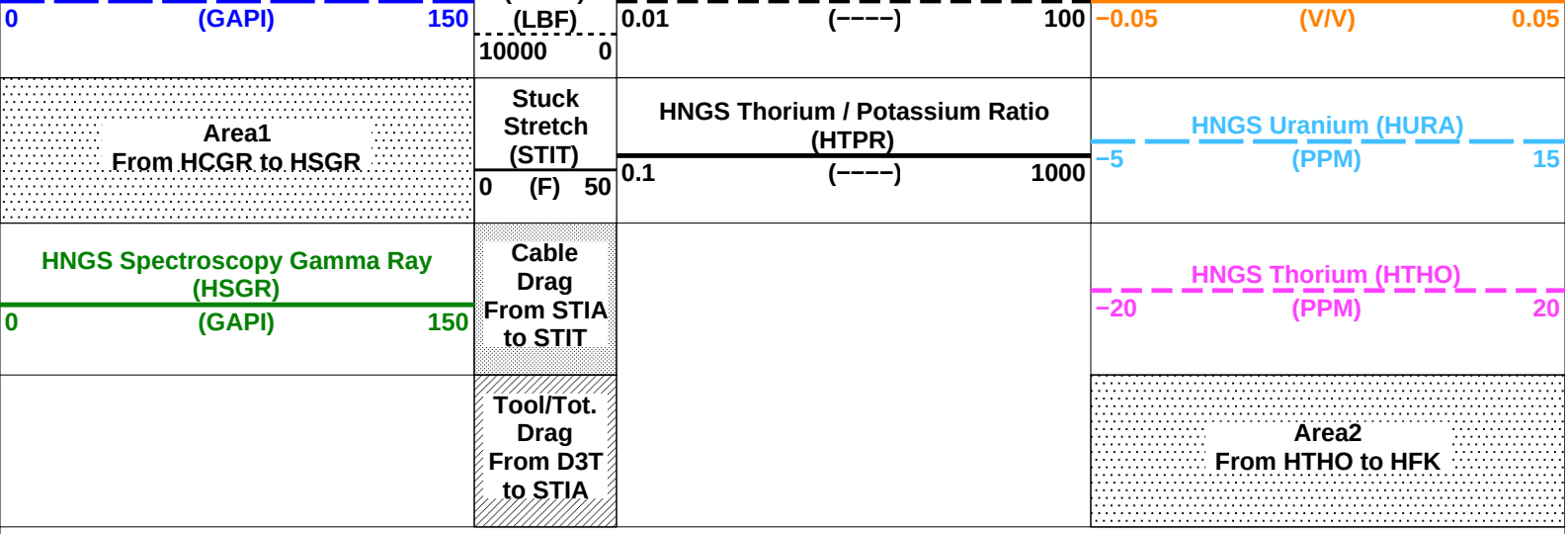
800


900
1000


1100
1200


1300
1400
1500
REPEAT SECTION
HNGS Computed Gamma Ray (HCGR)
Tension (TENS)
HNGS Thorium / Uranium Ratio (HTUR)
HNGS Potassium (HFK)



Parameters

DLIS Name	Description	Value	
	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	0.00140109	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.33	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.33	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.920025	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.908236	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	DIRPLOT: Enhanced Directional Plots		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth − Driller	1528.00	FT
TDL	Total Depth − Logger	1500.00	FT
	System and Miscellaneous		
BS	Bit Size	12.250	IN

Format: HNGSRatios Vertical Scale: 5" per 100' Graphics File Created: 01−Sep−2011 19:46

OP System Version: 19C0−187

FBST−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	19C0−187

Output DLIS Files

DEFAULT	FMI_NGS_131LUP	FN:200	PRODUCER	01−Sep−2011 19:46

RTB	FMI_NGS_131LUP	FN:201	PRODUCER	01−Sep−2011 19:46		

Company: SANDIA TECHNOLOGIES, LLC | Well: NYSTA TANDEM LOT 1

Output DLIS Files

DEFAULT	FMI_NGS_131LUP	FN:200	PRODUCER	01−Sep−2011 19:46	1507.5 FT	612.5 FT
RTB	FMI_NGS_131LUP	FN:201	PRODUCER	01−Sep−2011 19:46	1507.5 FT	612.5 FT

OP System Version: 19C0−187

FBST−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	19C0−187

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 150

HNGS Det.2 Resolution Degradation Factor (RDF2)
0 (−−−−) 10

HNGS Det.1 Resolution Degradation Factor (RDF1)
0 (−−−−) 10

HNGS Det.2 Gain Correction Factor (GCF2)
0.9 (−−−−) 1.1

HNGS Det.1 Gain Correction Factor (GCF1)
0.9 (−−−−) 1.1

Area1
From HCGR to HSGR

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 150

Caliper (BS)
6 (IN) 16

Tool/Tot. Drag From D3T to STIA

Bit Size (BS)
6 (IN) 16

Cable Drag From STIA to STIT

HNGS Borehole Potassium (HBHK)
−0.05 (V/V) 0.05

HNGS Det.2 Chi Squared (CHI2)
10 (−−−−) 0

Stuck Stretch (STIT)
0 (F) 50

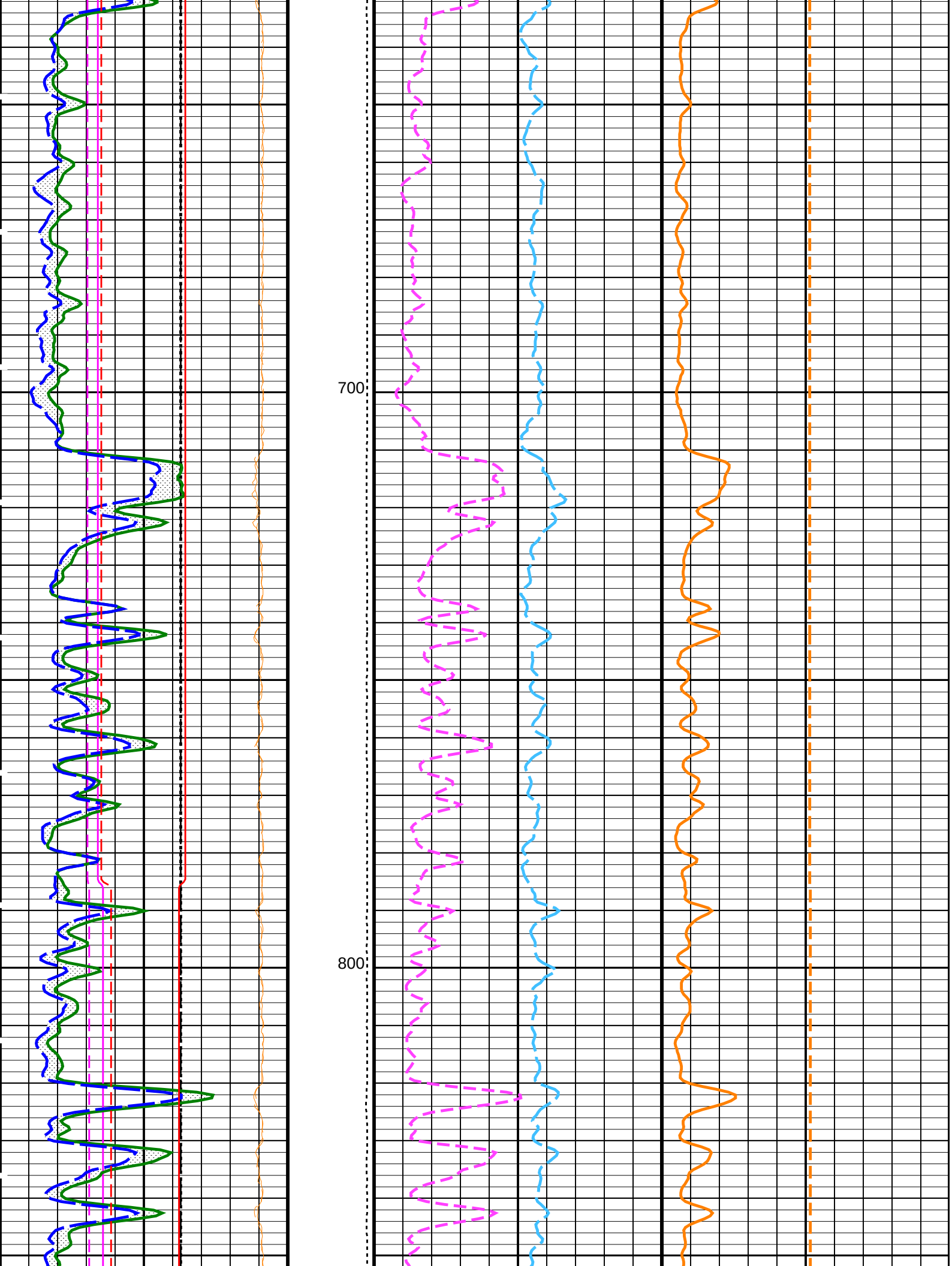
HNGS Uranium (HURA)
−10 (PPM) 30

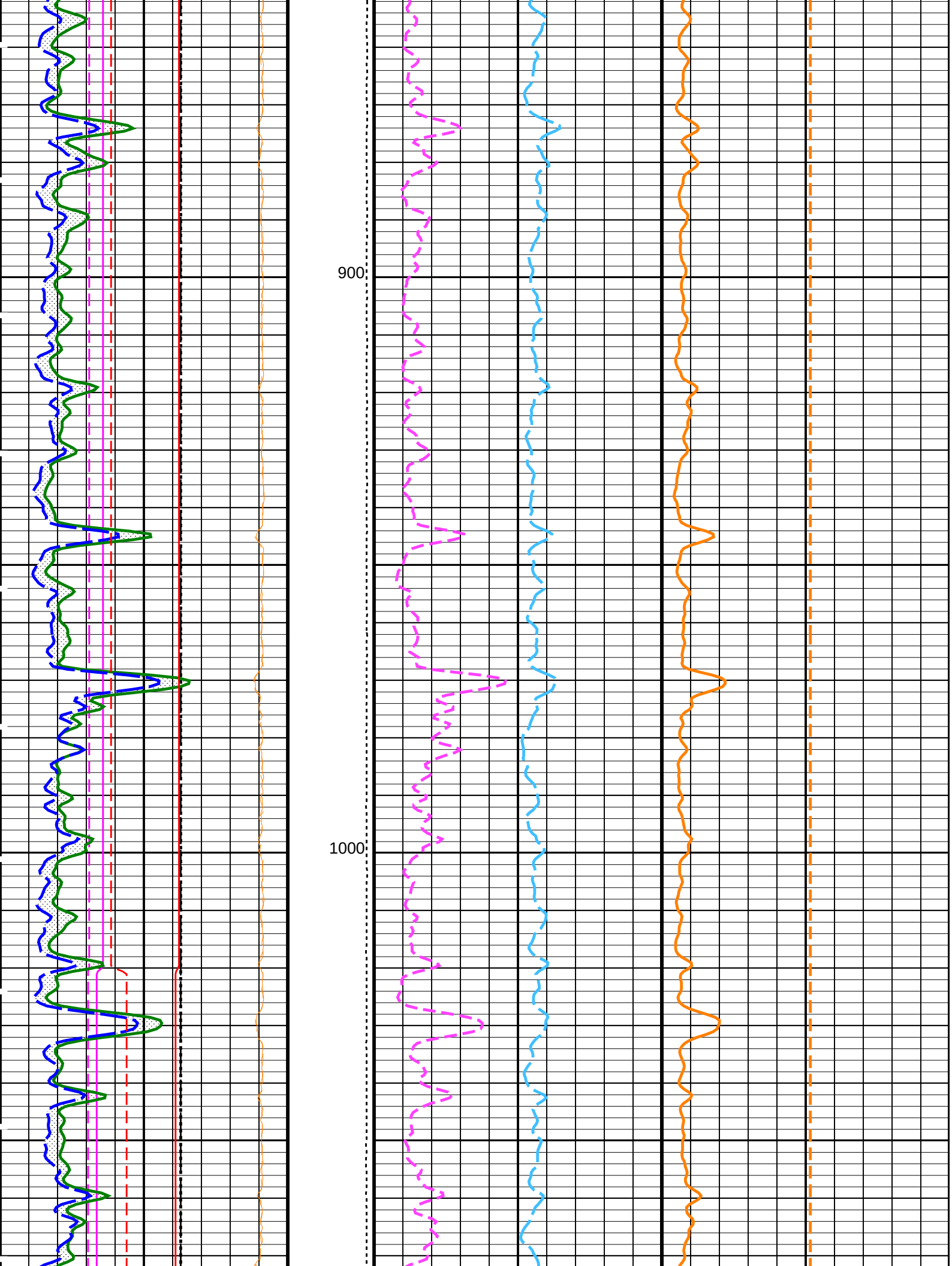
HNGS Det.1 Chi Squared (CHI1)
10 (−−−−) 0

Tension (TENS) (LBF)
10000 0

HNGS Thorium (HTHO)
0 (PPM) 30

HNGS Potassium (HFK)
0 (V/V) 0.1


700
800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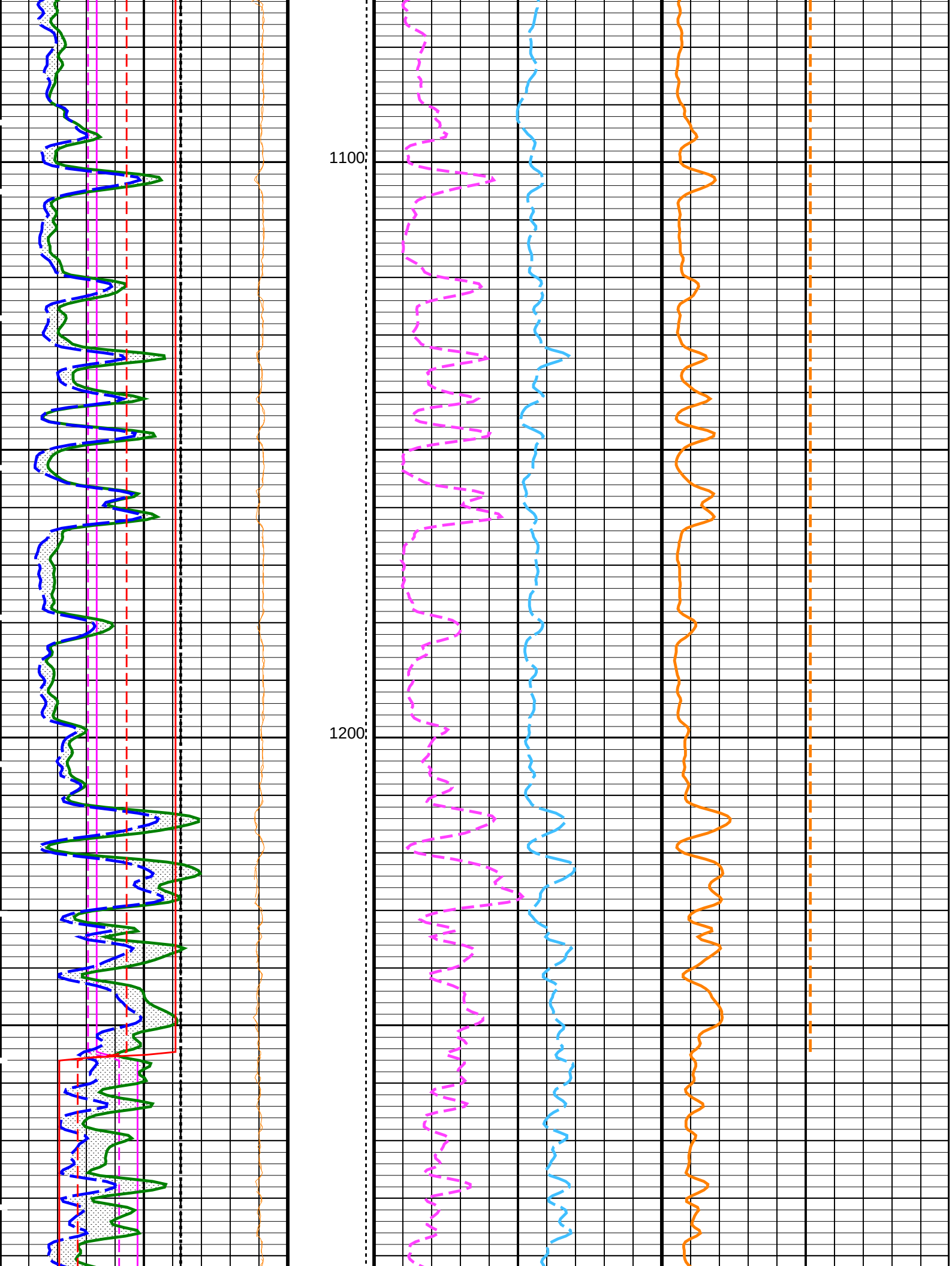
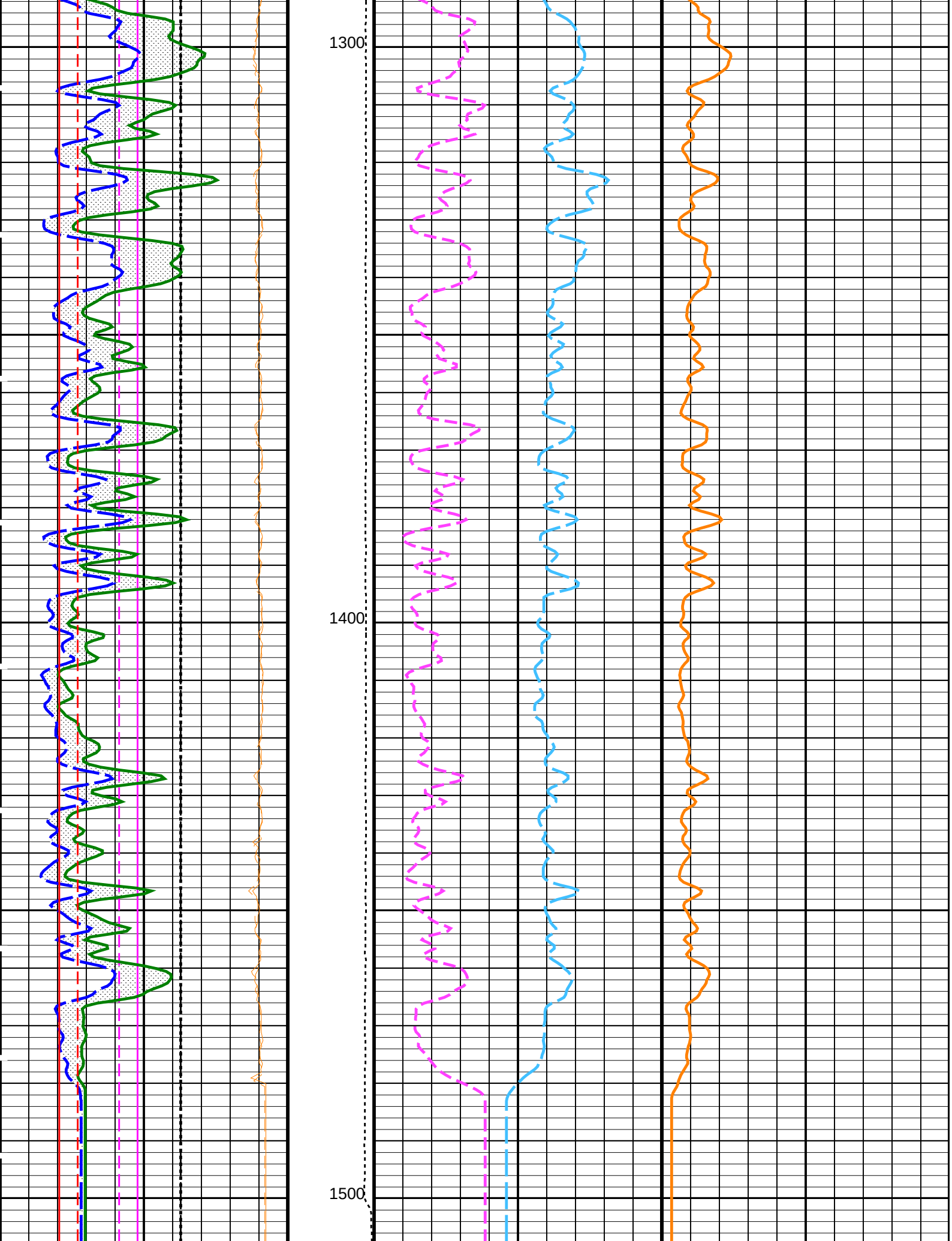
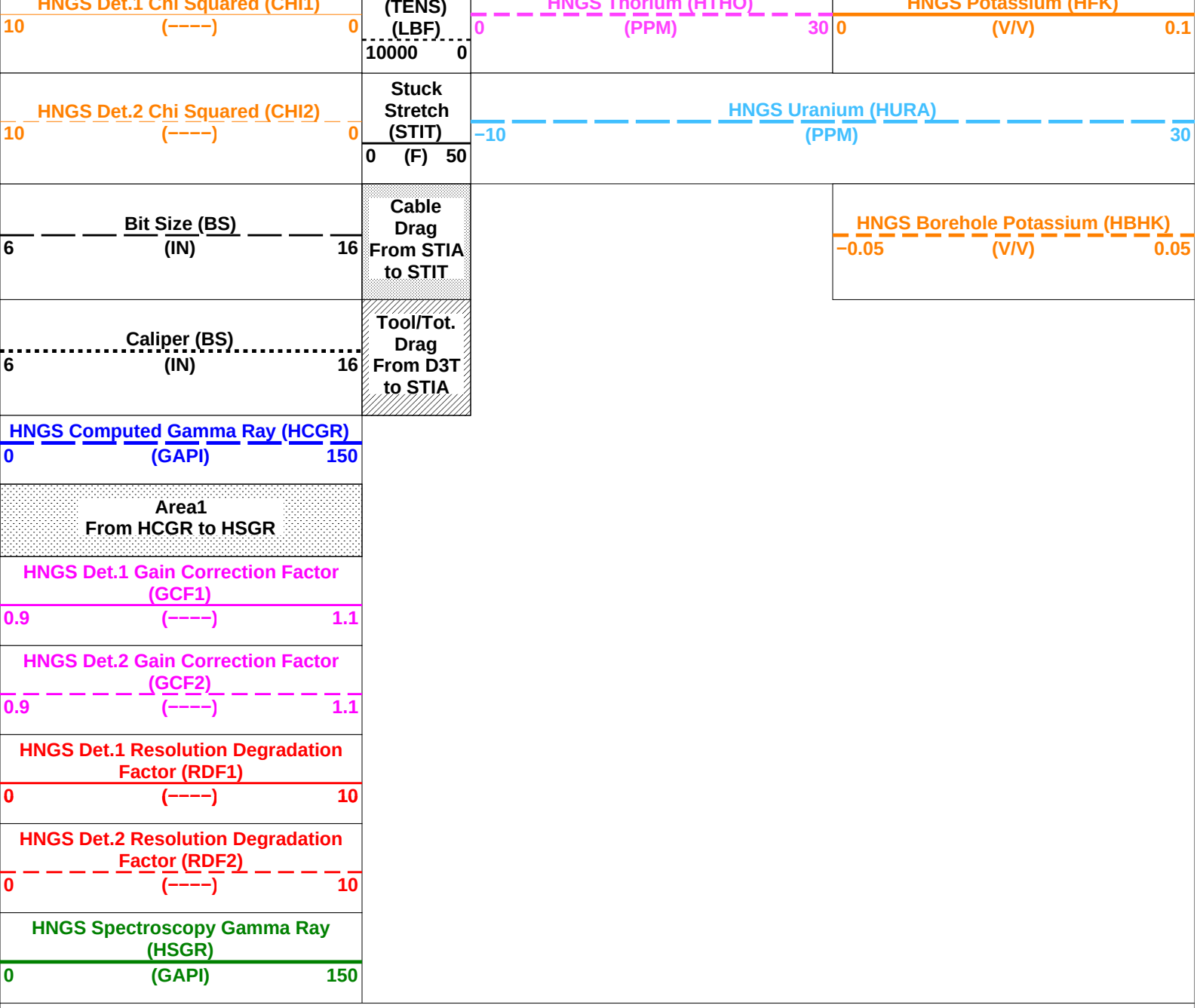

1100
1200


1300
1400
1500
Tension



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	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	0.00140109	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.33	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.33	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.920025	

VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.920025	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.908236	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	DIRPLOT: Enhanced Directional Plots		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	STI: Stuck Tool Indicator		
LBFR	Trigger for MAXIS First Reading Label	TDL	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth − Driller	1528.00	FT
TDL	Total Depth − Logger	1500.00	FT
	System and Miscellaneous		
BS	Bit Size	12.250	IN

Format: HNGSYields Vertical Scale: 5" per 100' Graphics File Created: 01−Sep−2011 19:46

OP System Version: 19C0−187

FBST−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	19C0−187

Output DLIS Files

DEFAULT	FMI_NGS_131LUP	FN:200	PRODUCER	01−Sep−2011 19:46		
RTB	FMI_NGS_131LUP	FN:201	PRODUCER	01−Sep−2011 19:46		

Company: SANDIA TECHNOLOGIES, LLC Well: NYSTA TANDEM LOT 1

Output DLIS Files

DEFAULT	FMI_NGS_131LUP	FN:200	PRODUCER	01−Sep−2011 19:46	1507.5 FT	612.5 FT
RTB	FMI_NGS_131LUP	FN:201	PRODUCER	01−Sep−2011 19:46	1507.5 FT	612.5 FT

OP System Version: 19C0−187

FBST−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	19C0−187

PIP SUMMARY

Time Mark Every 60 S

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 150

HNGS Det.2 Resolution Degradation Factor (RDF2)
0 (−−−−) 10

HNGS Det.1 Resolution Degradation Factor (RDF1)
0 (−−−−) 10

HNGS Det.2 Gain Correction Factor (GCF2)
0.9 (−−−−) 1.1

HNGS Det.1 Gain Correction Factor (GCF1)
0.9 (−−−−) 1.1

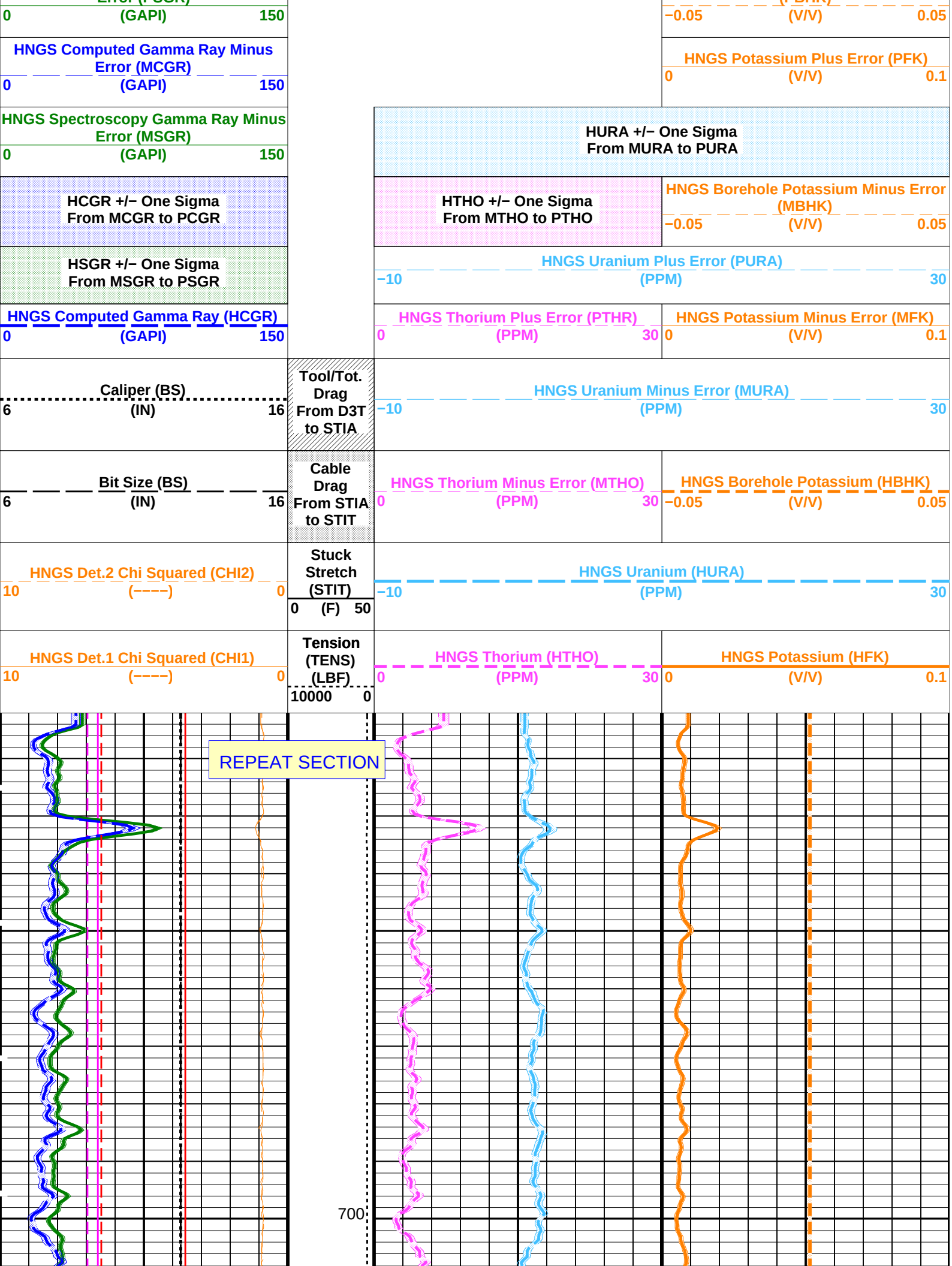
HNGS Computed Gamma Ray Plus Error (PCGR)
0 (GAPI) 150

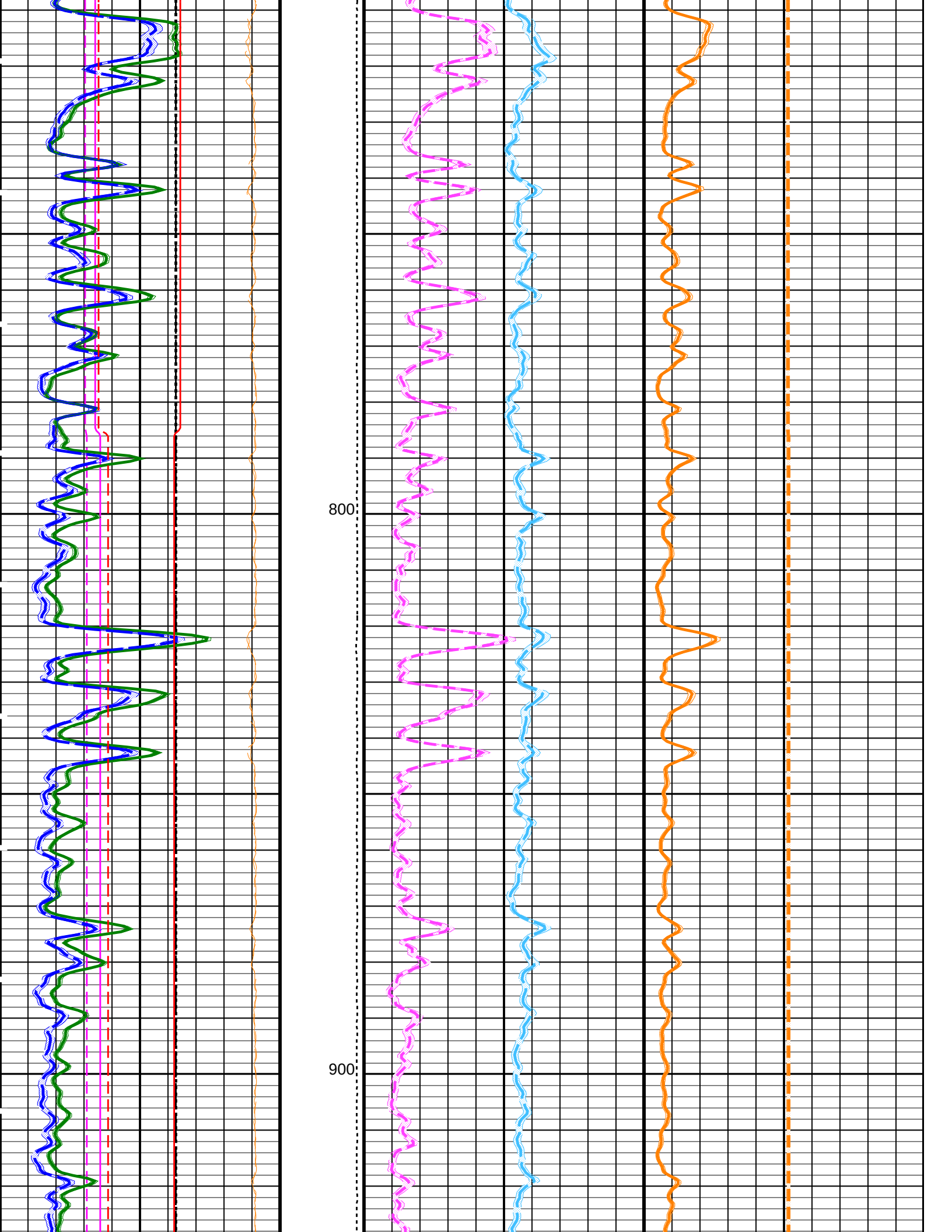
HNGS Spectroscopy Gamma Ray Plus Error (PSGR)

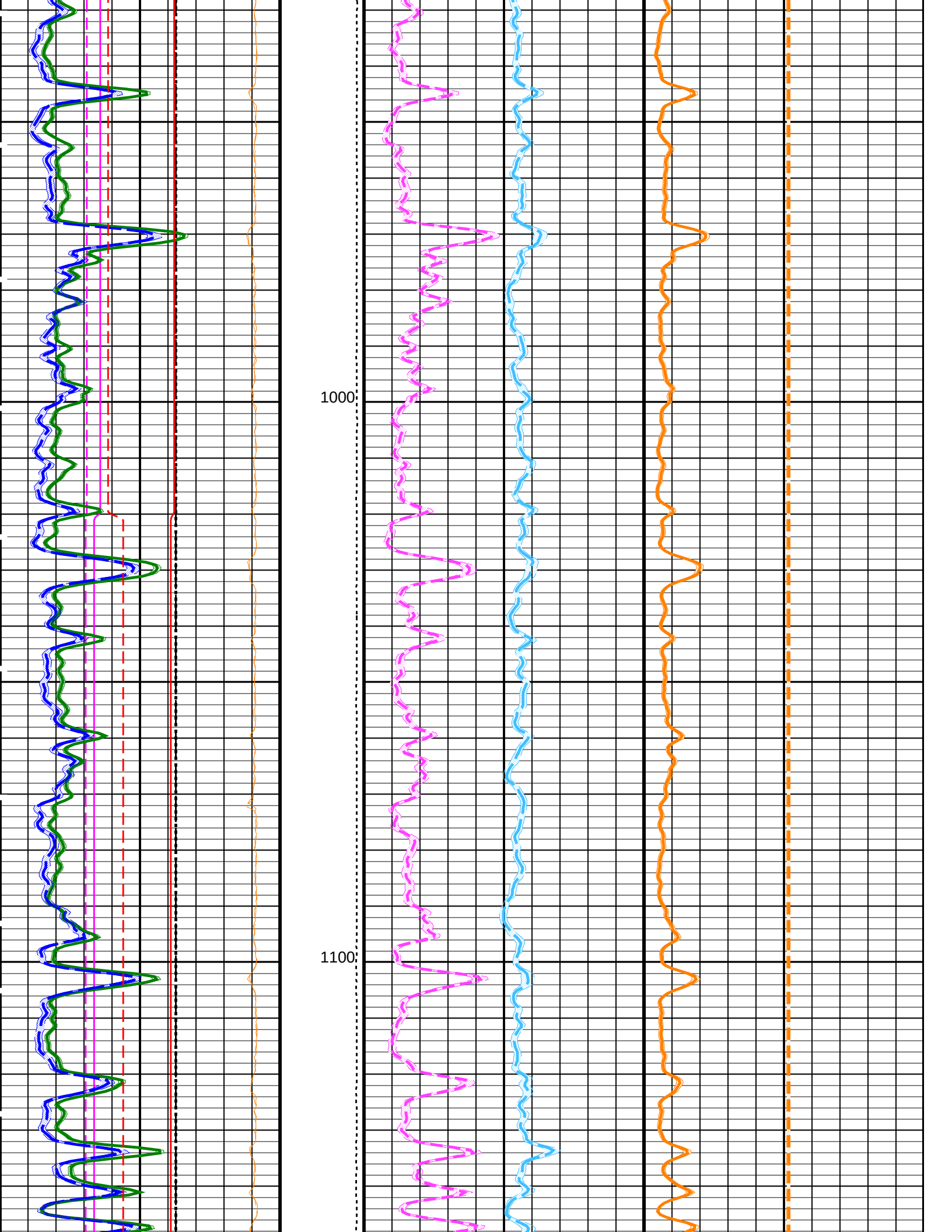
HBHK +/− One Sigma From MBHK to PBHK

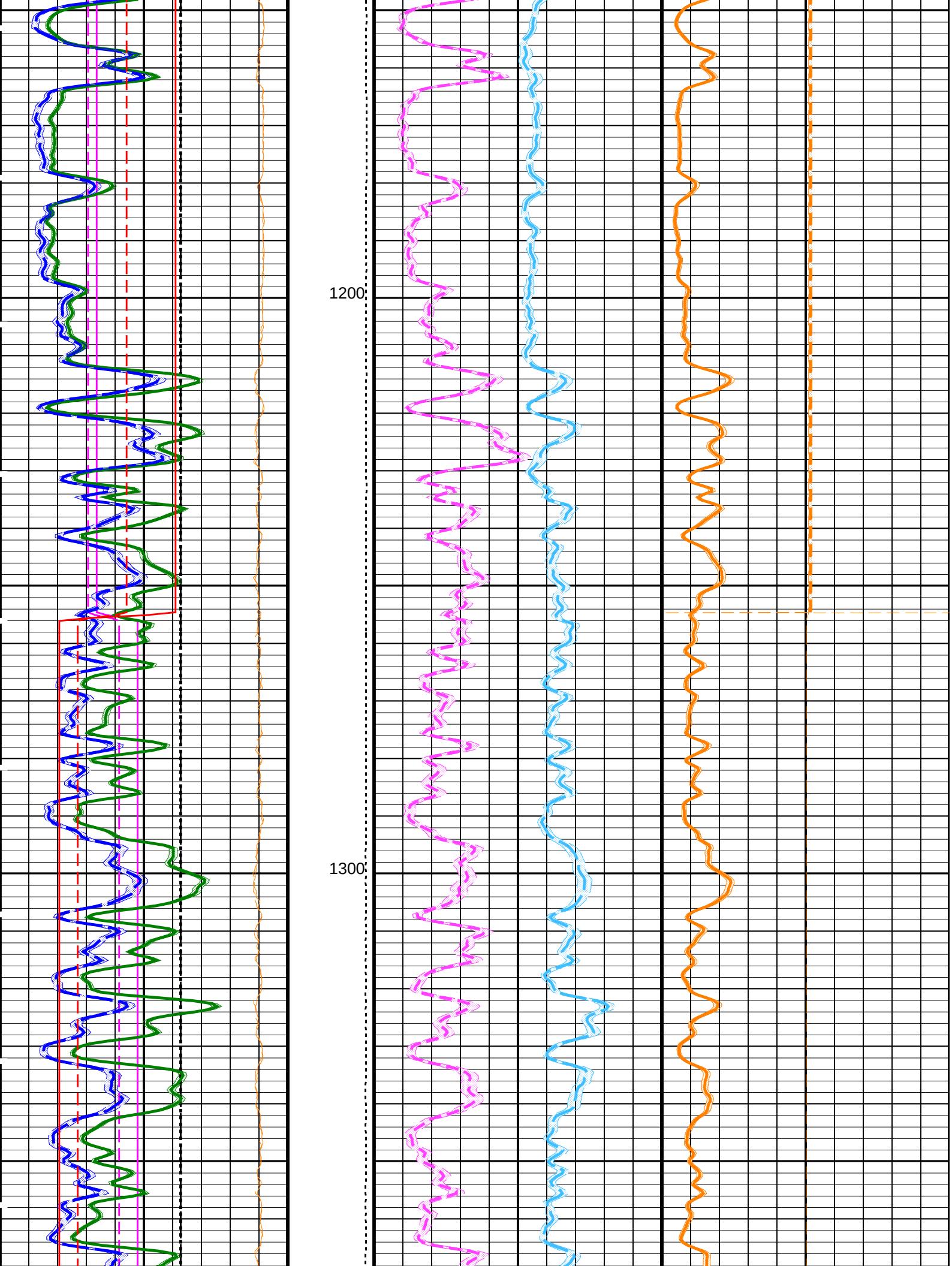
HFK +/− One Sigma From MFK to PFK

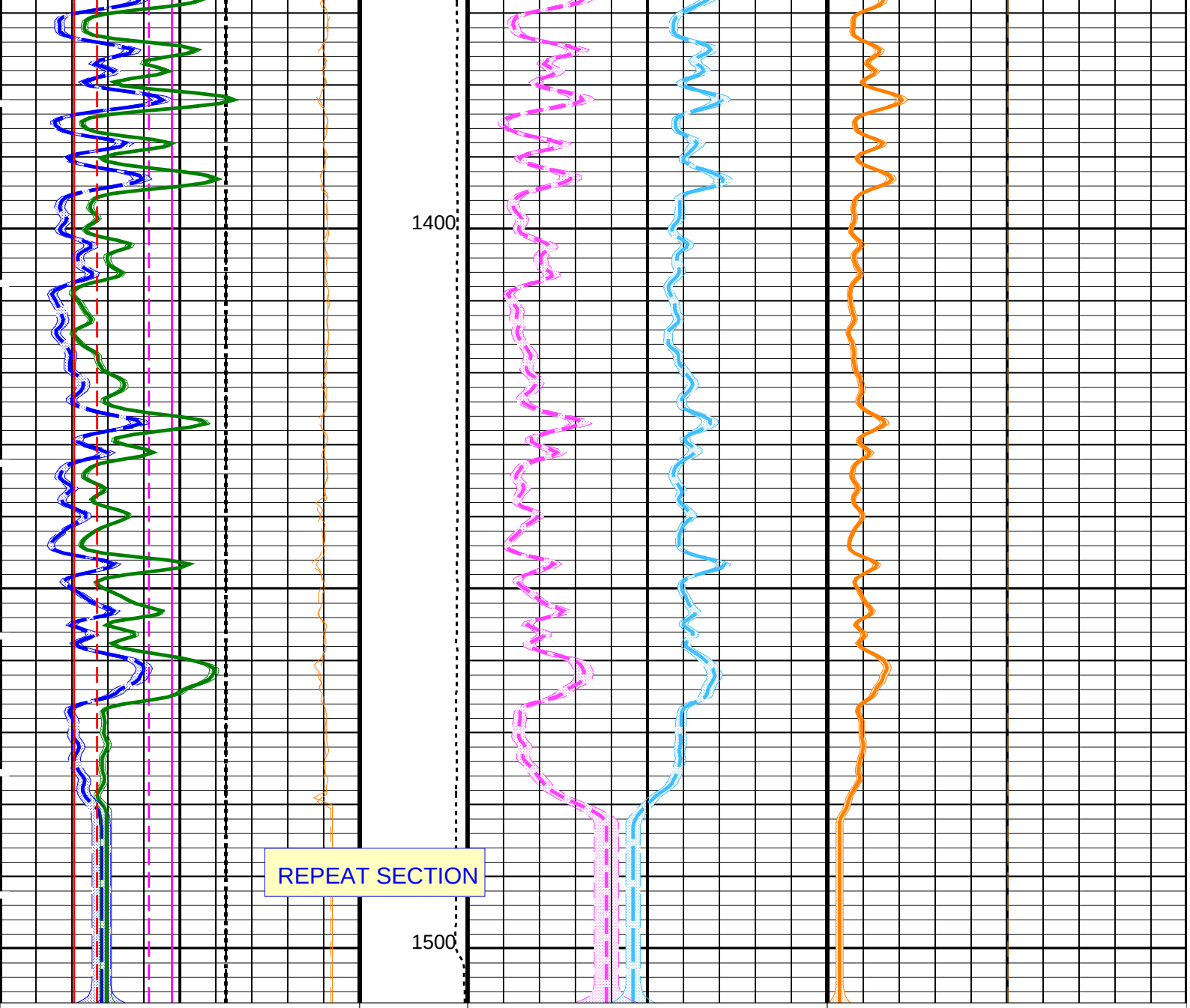
HNGS Borehole Potassium Plus Error (PBHK)


0 (GAPI) 150
HNGS Computed Gamma Ray Minus Error (MCGR)
0 (GAPI) 150
HNGS Spectroscopy Gamma Ray Minus Error (MSGR)
0 (GAPI) 150
HCGR +/− One Sigma From MCGR to PCGR
HSGR +/− One Sigma From MSGR to PSGR
HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 150
Caliper (BS)
6 (IN) 16
Bit Size (BS)
6 (IN) 16
HNGS Det.2 Chi Squared (CHI2)
10 (----) 0
HNGS Det.1 Chi Squared (CHI1)
10 (----) 0
Tool/Tot. Drag From D3T to STIA
Cable Drag From STIA to STIT
Stuck Stretch (STIT)
0 (F) 50
Tension (TENS) (LBF)
10000 0
−0.05 (V/V) 0.05
HNGS Potassium Plus Error (PFK)
0 (V/V) 0.1
HURA +/− One Sigma From MURA to PURA
HTHO +/− One Sigma From MTHO to PTHO
HNGS Borehole Potassium Minus Error (MBHK)
−0.05 (V/V) 0.05
HNGS Uranium Plus Error (PURA)
−10 (PPM) 30
HNGS Thorium Plus Error (PTHR)
0 (PPM) 30
HNGS Potassium Minus Error (MFK)
0 (V/V) 0.1
HNGS Uranium Minus Error (MURA)
−10 (PPM) 30
HNGS Thorium Minus Error (MTHO)
0 (PPM) 30
HNGS Borehole Potassium (HBHK)
−0.05 (V/V) 0.05
HNGS Uranium (HURA)
−10 (PPM) 30
HNGS Thorium (HTHO)
0 (PPM) 30
HNGS Potassium (HFK)
0 (V/V) 0.1
REPEAT SECTION
700

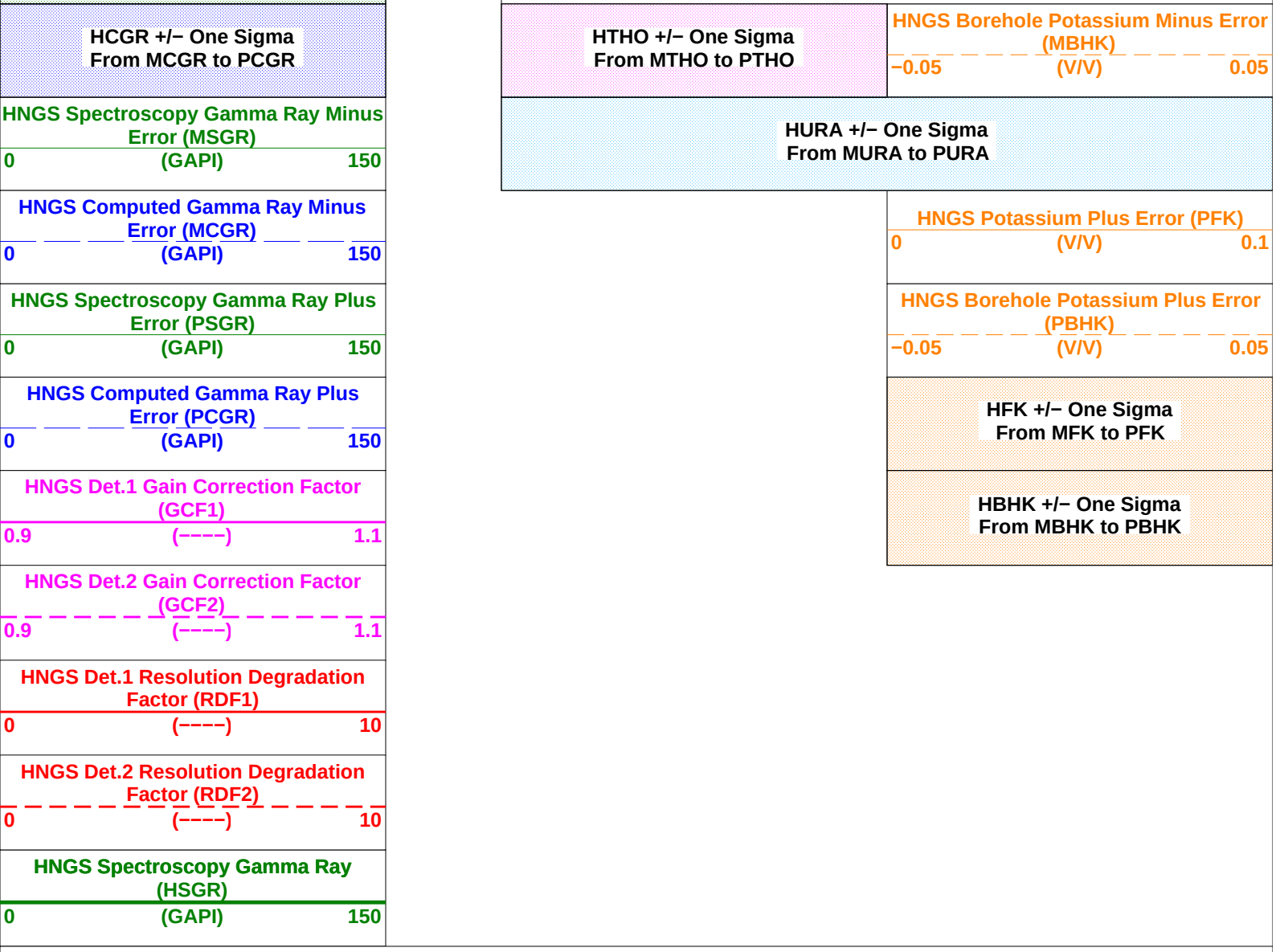

800
900


1000
1100


1200
1300



HNGS Det.1 Chi Squared (CHI1) 10 (----) 0	Tension (TENS) (LBF) 10000 0	HNGS Thorium (HTHO) 0 (PPM) 30
		HNGS Potassium (HFK) 0 (V/V) 0.1
HNGS Det.2 Chi Squared (CHI2) 10 (----) 0	Stuck Stretch (STIT) 0 (F) 50	HNGS Uranium (HURA) −10 (PPM) 30
Bit Size (BS) 6 (IN) 16	Cable Drag From STIA to STIT	HNGS Thorium Minus Error (MTHO) 0 (PPM) 30
		HNGS Borehole Potassium (HBHK) −0.05 (V/V) 0.05
Caliper (BS) 6 (IN) 16	Tool/Tot. Drag From D3T to STIA	HNGS Uranium Minus Error (MURA) −10 (PPM) 30
HNGS Computed Gamma Ray (HCGR) 0 (GAPI) 150		HNGS Thorium Plus Error (PTHR) 0 (PPM) 30
		HNGS Potassium Minus Error (MFK) 0 (V/V) 0.1
HSGR +/− One Sigma From MSGR to PSGR		HNGS Uranium Plus Error (PURA) −10 (PPM) 30



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	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	0.00140109	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.33	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.33	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.920025	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.908236	
	EDTC−B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
	DIRPLOT: Enhanced Directional Plots		
BHS	Borehole Status	OPEN	

GCSE	Generalized Caliper Selection	BS		
	HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN		
GCSE	Generalized Caliper Selection	BS		
	STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	TDL		
STKT	STI Stuck Threshold	2.5	FT	
TDD	Total Depth − Driller	1528.00	FT	
TDL	Total Depth − Logger	1500.00	FT	
	System and Miscellaneous			
BS	Bit Size	12.250	IN	

Format: HNGSQuality **Vertical Scale: 5" per 100'** **Graphics File Created: 01−Sep−2011 19:46**

OP System Version: 19C0−187

FBST−B	19C0−187	HNGC−B	19C0−187
HNGS−BA	19C0−187	EDTC−B	19C0−187

Output DLIS Files

DEFAULT	FMI_NGS_131LUP	FN:200	PRODUCER	01−Sep−2011 19:46
RTB	FMI_NGS_131LUP	FN:201	PRODUCER	01−Sep−2011 19:46

Schlumberger

CALIBRATIONS

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Full−Bore Scanner − B Wellsite Calibration − Caliper Calibration							
Before: 29−Aug−2011 22:36							
Caliper 1 Small Jig	8.000	N/A	7.820	N/A	N/A	N/A	IN
Caliper 2 Small Jig	8.000	N/A	7.892	N/A	N/A	N/A	IN
Caliper 1 Large Jig	12.00	N/A	11.55	N/A	N/A	N/A	IN
Caliper 2 Large Jig	12.00	N/A	11.62	N/A	N/A	N/A	IN
Powered Positioning Device/Caliper 1 Wellsite Calibration − PPC1 Caliper Calibration							
Before: 8−Aug−2011 18:12							
PPC1 Radius 1 Raw Small Radius	3.500	N/A	4.431	N/A	N/A	0.5000	IN
PPC1 Radius 1 Raw Large Radius	8.000	N/A	8.755	N/A	N/A	0.5000	IN
PPC1 Radius 2 Raw Small Radius	3.500	N/A	3.392	N/A	N/A	0.5000	IN
PPC1 Radius 2 Raw Large Radius	8.000	N/A	7.980	N/A	N/A	0.5000	IN
PPC1 Radius 3 Raw Small Radius	3.500	N/A	4.363	N/A	N/A	0.5000	IN
PPC1 Radius 3 Raw Large Radius	8.000	N/A	8.694	N/A	N/A	0.5000	IN
PPC1 Radius 4 Raw Small Radius	3.500	N/A	3.375	N/A	N/A	0.5000	IN
PPC1 Radius 4 Raw Large Radius	8.000	N/A	7.750	N/A	N/A	0.5000	IN
Multimode Array Sonic Power Cartridge Master Calibration − SSCF Sensor Sensitivity Correction Factor							
Master: 21−Jun−2011 16:50							
SSCF Minimum	1.000	0.9018	−−	−−	−−	−−	−−−
SSCF Maximum	1.000	1.193	−−	−−	−−	−−	−−−
Multimode Array Sonic Power Cartridge Master Calibration − SSCR Sensor Sensitivity Correction Factor LF to HF Ratio							
Master: 21−Jun−2011 16:50							
SSCR Minimum	1.000	0.9286	−−	−−	−−	−−	−−−
SSCR Maximum	1.000	1.063	−−	−−	−−	−−	−−−
Multimode Array Sonic Power Cartridge Master Calibration − STDF Sensor Time Delay Factor							
Master: 21−Jun−2011 16:50							
STDF Minimum	0	−0.8196	−−	−−	−−	−−	US

STDF Maximum	0	0.6982	−−	−−	−−	−−	US

Powered Positioning Device/Caliper 2 Wellsite Calibration − PPC2 Caliper Calibration
Before: 8−Aug−2011 22:31

PPC2 Radius 1 Raw Small Radius	3.500	N/A	4.115	N/A	N/A	0.5000	IN
PPC2 Radius 1 Raw Large Radius	8.000	N/A	8.152	N/A	N/A	0.5000	IN
PPC2 Radius 2 Raw Small Radius	3.500	N/A	4.030	N/A	N/A	0.5000	IN
PPC2 Radius 2 Raw Large Radius	8.000	N/A	8.095	N/A	N/A	0.5000	IN
PPC2 Radius 3 Raw Small Radius	3.500	N/A	4.240	N/A	N/A	0.5000	IN
PPC2 Radius 3 Raw Large Radius	8.000	N/A	8.295	N/A	N/A	0.5000	IN
PPC2 Radius 4 Raw Small Radius	3.500	N/A	3.942	N/A	N/A	0.5000	IN
PPC2 Radius 4 Raw Large Radius	8.000	N/A	8.035	N/A	N/A	0.5000	IN

Enhanced DTS Cartridge Wellsite Calibration − EDTC Accelerometer Calibration
Before: 31−Aug−2011 0:09

EDTC Z−Axis Acceleration	32.19	N/A	32.11	N/A	N/A	N/A	F/S2

Enhanced DTS Cartridge Wellsite Calibration − Detector Calibration
Before: 29−Aug−2011 17:01

Gamma Ray (Jig − Bkg)	147.5	N/A	147.5	N/A	N/A	13.41	GAPI
Gamma Ray (Calibrated)	160.0	N/A	160.0	N/A	N/A	15.00	GAPI

Full−Bore Scanner − B / Equipment Identification

Primary Equipment:

FullBore Scanner Sonde	FBSS − B	1796
FullBore Scanner Sonde Upper part	FBSH − A	
FullBore Scanner Sonde Cartridge	FBSC − B	
GPIT Cartridge − F	GPIC − F	847
Insulating Sub	AH − 185	
FullBore Scanner Control Cartridge	FBCC − A	1797

Auxiliary Equipment:

Electronics Cartridge Housing	ECH − MRA

Full−Bore Scanner − B Wellsite Calibration

Caliper Calibration

Phase	Caliper 1 Small Jig IN	Value	Phase	Caliper 2 Small Jig IN	Value
Before	7.820		Before	7.892	
	6.800 (Minimum) 8.000 (Nominal) 9.200 (Maximum)			6.800 (Minimum) 8.000 (Nominal) 9.200 (Maximum)	

Phase	Caliper 1 Large Jig IN	Value	Phase	Caliper 2 Large Jig IN	Value
Before	11.55		Before	11.62	
	10.20 (Minimum) 12.00 (Nominal) 13.80 (Maximum)			10.20 (Minimum) 12.00 (Nominal) 13.80 (Maximum)	

Before: 29−Aug−2011 22:36

Powered Positioning Device/Caliper 1 / Equipment Identification

Primary Equipment:

PPC Powered Positioning Device/Caliper	PPC1 − B	8334
PPC1 Caliper Standard	PPC_ −	

Auxiliary Equipment:

Powered Positioning Device/Caliper 1 Wellsite Calibration

PPC1 Caliper Calibration

Phase	PPC1 Radius 1 Raw Small Radius IN	Value	Phase	PPC1 Radius 1 Raw Large Radius IN	Value
Before	4.431		Before	8.755	
	1.200 (Minimum) 3.500 (Nominal) 5.600 (Maximum)			6.100 (Minimum) 8.000 (Nominal) 9.700 (Maximum)	

Phase	PPC1 Radius 2 Raw Small Radius IN	Value	Phase	PPC1 Radius 2 Raw Large Radius IN	Value
Before	3.392		Before	7.980	
	1.200 (Minimum) 3.500 (Nominal) 5.600 (Maximum)			6.100 (Minimum) 8.000 (Nominal) 9.700 (Maximum)	

Phase	PPC1 Radius 3 Raw Small Radius IN	Value	Phase	PPC1 Radius 3 Raw Large Radius IN	Value
Before	4.363		Before	8.694	

Phase	PPC1 Radius 4 Raw Small Radius IN	Value	Phase	PPC1 Radius 4 Raw Large Radius IN	Value
Before		3.375	Before		7.750
	1.200 (Minimum) 3.500 (Nominal) 5.600 (Maximum)			6.100 (Minimum) 8.000 (Nominal) 9.700 (Maximum)	

Before: 8−Aug−2011 18:12

Multimode Array Sonic Power Cartridge / Equipment Identification

Primary Equipment:

Multimode Array Sonic Minimum Service So	MAMS − BA	8235
Multimode Array Sonic Control Cartridge	MAPC − BA	8088

Auxiliary Equipment:

Electronics Cartridge Housing	ECH − SF

Multimode Array Sonic Power Cartridge Master Calibration

SSCF Sensor Sensitivity Correction Factor

Phase	SSCF Minimum −−−	Value	Phase	SSCF Maximum −−−	Value
Master		0.9018	Master		1.193
	0.5000 (Minimum) 1.000 (Nominal) 1.700 (Maximum)			0.5000 (Minimum) 1.000 (Nominal) 1.700 (Maximum)	

Master: 21−Jun−2011 16:50

Multimode Array Sonic Power Cartridge Master Calibration

SSCR Sensor Sensitivity Correction Factor LF to HF Ratio

Phase	SSCR Minimum −−−	Value	Phase	SSCR Maximum −−−	Value
Master		0.9286	Master		1.063
	0.9000 (Minimum) 1.000 (Nominal) 1.700 (Maximum)			0.9000 (Minimum) 1.000 (Nominal) 1.700 (Maximum)	

Master: 21−Jun−2011 16:50

Multimode Array Sonic Power Cartridge Master Calibration

STDF Sensor Time Delay Factor

Phase	STDF Minimum US	Value	Phase	STDF Maximum US	Value
Master		−0.8196	Master		0.6982
	−2.000 (Minimum) 0 (Nominal) 2.000 (Maximum)			−2.000 (Minimum) 0 (Nominal) 2.000 (Maximum)	

Master: 21−Jun−2011 16:50

Powered Positioning Device/Caliper 2 / Equipment Identification

Primary Equipment:

PPC Powered Positioning Device/Caliper	PPC2 − B	8239
PPC2 Caliper Standard	PPC_ −	

Auxiliary Equipment:

Powered Positioning Device/Caliper 2 Wellsite Calibration

PPC2 Caliper Calibration

Phase	PPC2 Radius 1 Raw Small Radius IN	Value	Phase	PPC2 Radius 1 Raw Large Radius IN	Value
Before		4.115	Before		8.152
	1.200 (Minimum) 3.500 (Nominal) 5.600 (Maximum)			6.100 (Minimum) 8.000 (Nominal) 9.700 (Maximum)	
Phase	PPC2 Radius 2 Raw Small Radius IN	Value	Phase	PPC2 Radius 2 Raw Large Radius IN	Value
Before		4.030	Before		8.095
	1.200 (Minimum) 3.500 (Nominal) 5.600 (Maximum)			6.100 (Minimum) 8.000 (Nominal) 9.700 (Maximum)	
Phase	PPC2 Radius 3 Raw Small Radius IN	Value	Phase	PPC2 Radius 3 Raw Large Radius IN	Value
Before		4.240	Before		8.295
	1.200 (Minimum) 3.500 (Nominal) 5.600 (Maximum)			6.100 (Minimum) 8.000 (Nominal) 9.700 (Maximum)	
Phase	PPC2 Radius 4 Raw Small Radius IN	Value	Phase	PPC2 Radius 4 Raw Large Radius IN	Value

Phase	PS2 Radius 4 Raw Small Radius 4	Value	Phase	PS2 Radius 4 Raw Large Radius 4	Value
Before		3.942	Before		8.035
	1.200 (Minimum) / 3.500 (Nominal) / 5.600 (Maximum)			6.100 (Minimum) / 8.000 (Nominal) / 9.700 (Maximum)	

Before: 8−Aug−2011 22:31

Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:

EDTC Gamma Ray Detector	EDTG − A/B	
Enhanced DTS Cartridge	EDTC − B	8001

Auxiliary Equipment:

EDTC Housing	EDTH − B	

Enhanced DTS Cartridge Wellsite Calibration

EDTC Accelerometer Calibration

Phase	EDTC Z−Axis Acceleration F/S2	Value
Before		32.11
	31.53 (Minimum) / 32.19 (Nominal) / 32.84 (Maximum)	

Before: 31−Aug−2011 0:09

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		36.36	Before		147.5	Before		160.0
	0 (Minimum) / 30.00 (Nominal) / 120.0 (Maximum)			134.1 (Minimum) / 147.5 (Nominal) / 160.9 (Maximum)			145.0 (Minimum) / 160.0 (Nominal) / 175.0 (Maximum)	

Before: 29−Aug−2011 17:01

Company: **SANDIA TECHNOLOGIES, LLC**

Schlumberger

Well: **NYSTA TANDEM LOT 1**
Field: **WILDCAT**
County: **ROCKLAND**
State: **NEW YORK**

SPECTRAL GAMMA RAY
HOSTILE NATURAL GAMMA RAY