

# Schlumberger

Company: **Kerr-McGee Oil & Gas Onshore LP**

Well: **Cannon 36N-11HZ**

Field: **Wattenberg**

County: **Weld**

State: **Colorado**

## HNGS Xtreme Gammarr Ray Spectroscopy

County: Weld  
 Field: Wattenberg  
 Location: SHL: 610' FNL X 676' FWL NWNW  
 Well: Cannon 36N-11HZ  
 Company: Kerr-McGee Oil & Gas Onshore

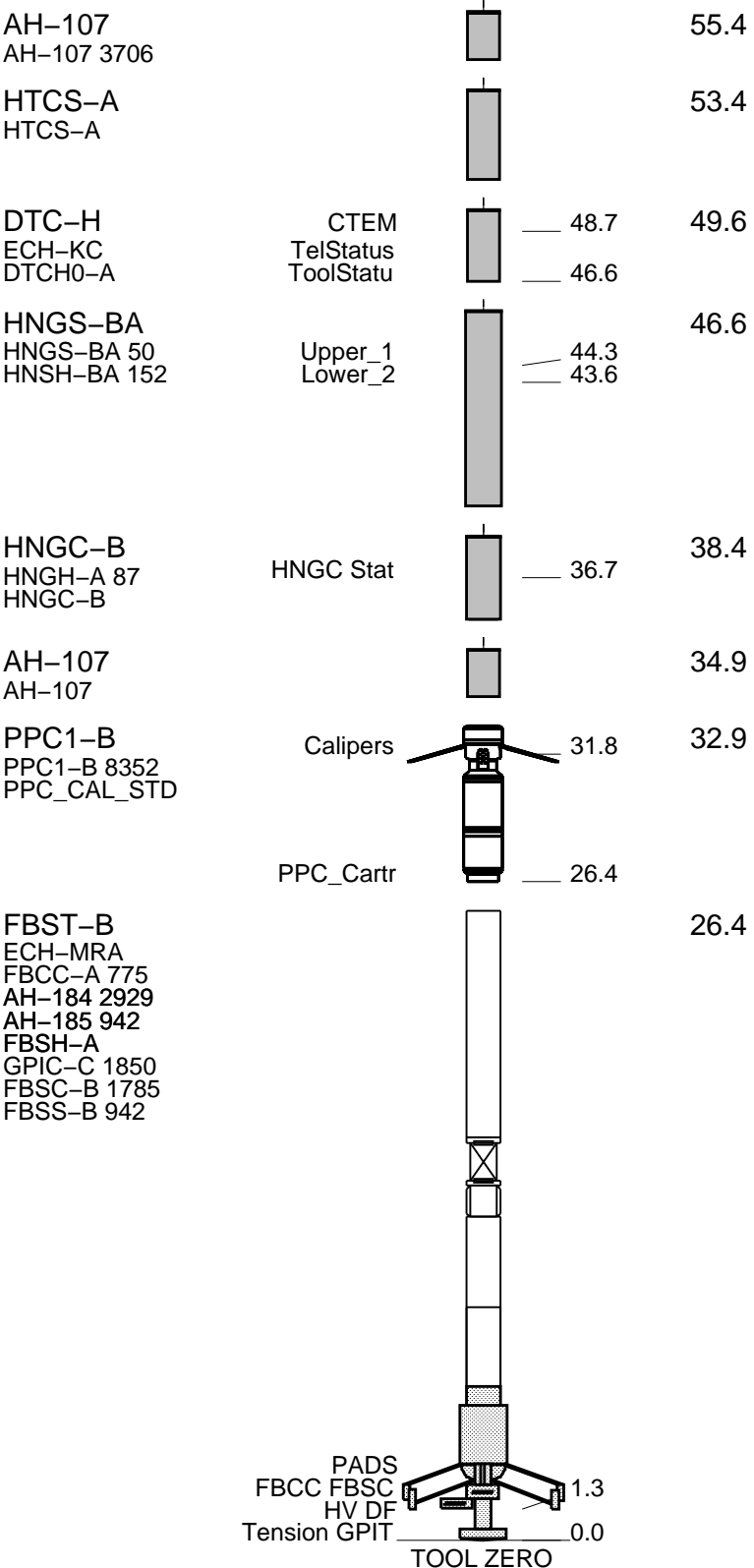
LOCATION		Elev.: K.B. 5059.00 ft
SHL: 610' FNL X 676' FWL NWNW		G.L. 5042.00 ft
Lat/Long: 40.158321/-104.751377		D.F. 5058.00 ft
Permanent Datum:	Ground Level	Elev.: 5042.00 ft
Log Measured From:	Kelly Bushing	17.00 ft above Perm. Datum
Drilling Measured From:	Kelly Bushing	
API Serial No.	Section 11	Township 2N
05123343300000		Range 66W

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

Logging Date	16-Jan-2012		
Run Number	1		
Depth Driller	12028 ft		
Schlumberger Depth	1200 ft		
Bottom Log Interval	12000 ft		
Top Log Interval	7802 ft		
Casing Driller Size @ Depth	7,000 in @ 7814 ft		
Casing Schlumberger	7802 ft		
Bit Size	6.125 in		
Type Fluid In Hole	WBM		
Density	10.2 lbm/gal	41 s	
Fluid Loss	PH		
Source Of Sample	Mud Pit		
RM @ Measured Temperature	1,450 ohm.m @ 65 degF		
RMF @ Measured Temperature	1,087 ohm.m @ 65 degF		
RMC @ Measured Temperature	2,175 ohm.m @ 65 degF		
Source RMF	Calculated	Calculated	
RM @ MRT	0.491 @ 205	0.369 @ 205	
Maximum Recorded Temperatures	205 degF		
Circulation Stopped	30-Jan-2012	0:00	
Logger On Bottom	1-Feb-2012	9:00	
Unit Number	3021	Ft. Morgan	
Recorded By	Todd Johnson		
Witnessed By	George Hine		

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





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

### Input DLIS Files

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### Output DLIS Files

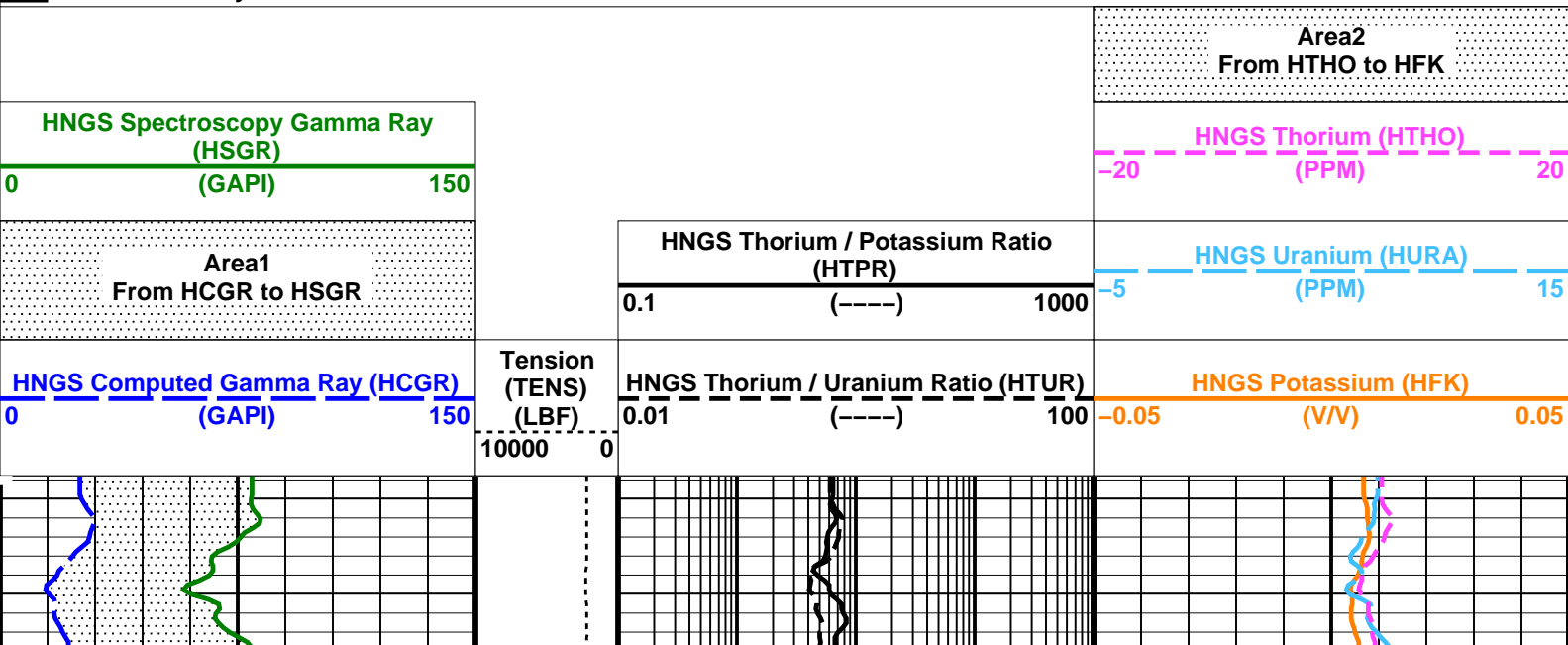
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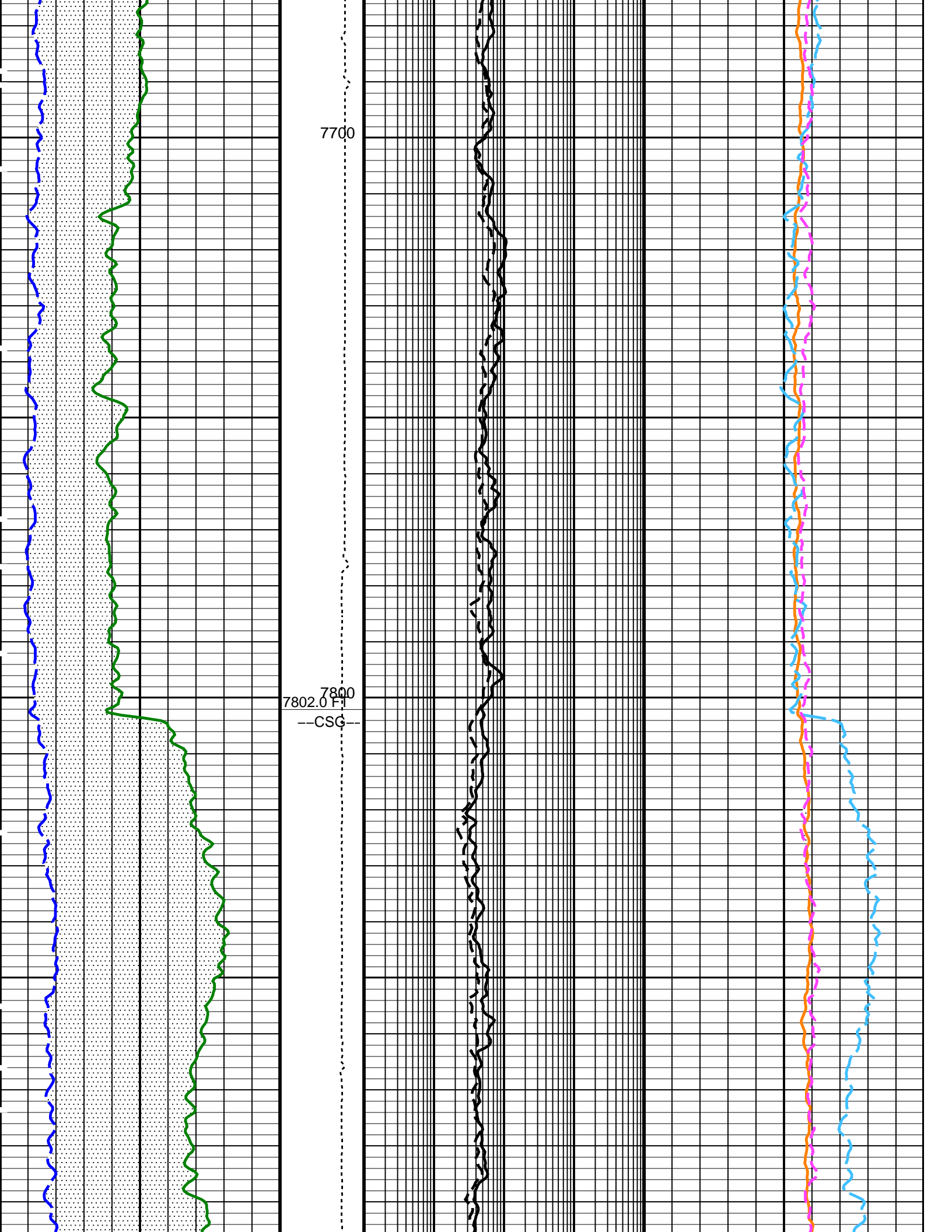
### OP System Version: 18C0-147

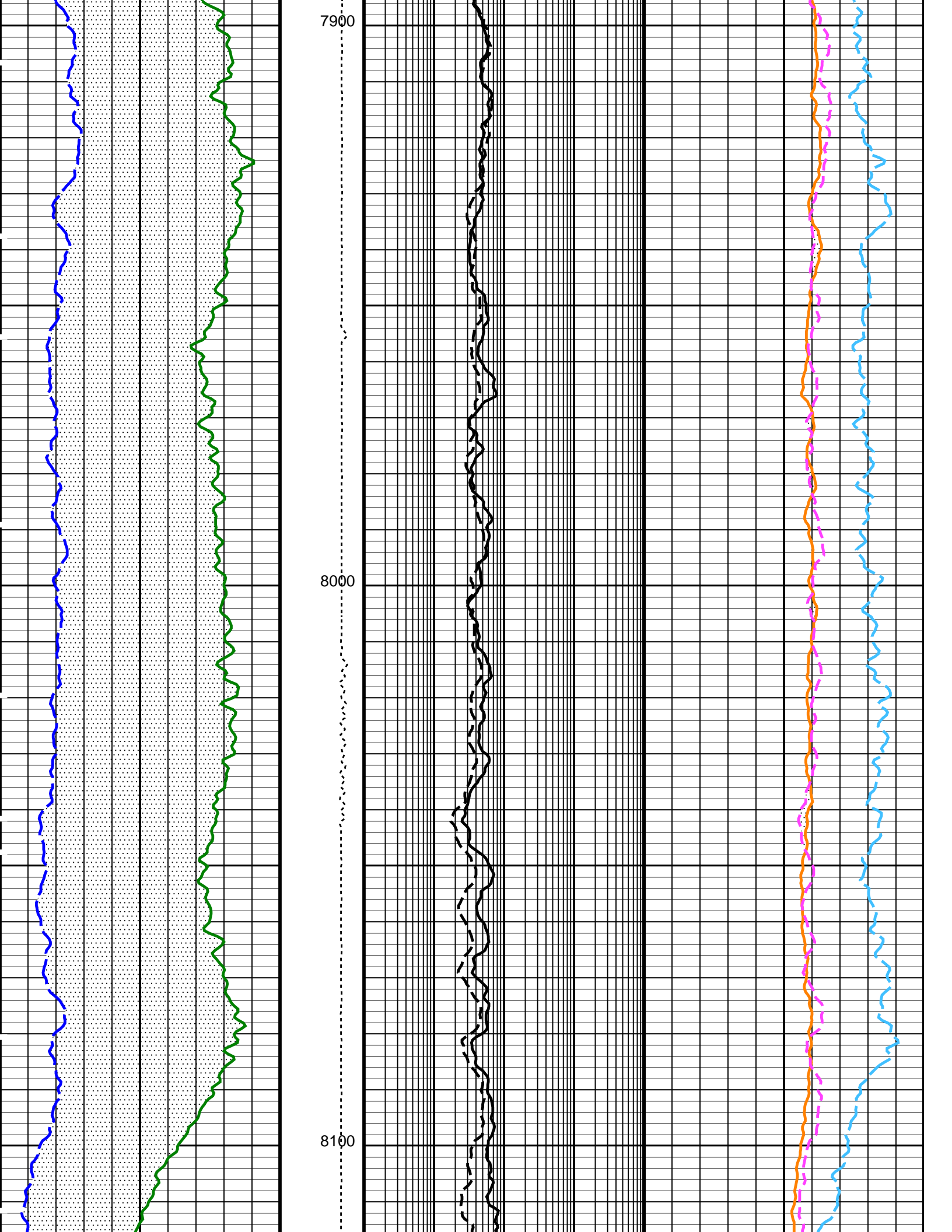
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HNGC-B	HFE-4001-OP18-NUCL	HNGS-BA	HFE-4001-OP18-NUCL
DTC-H	18C0-147		

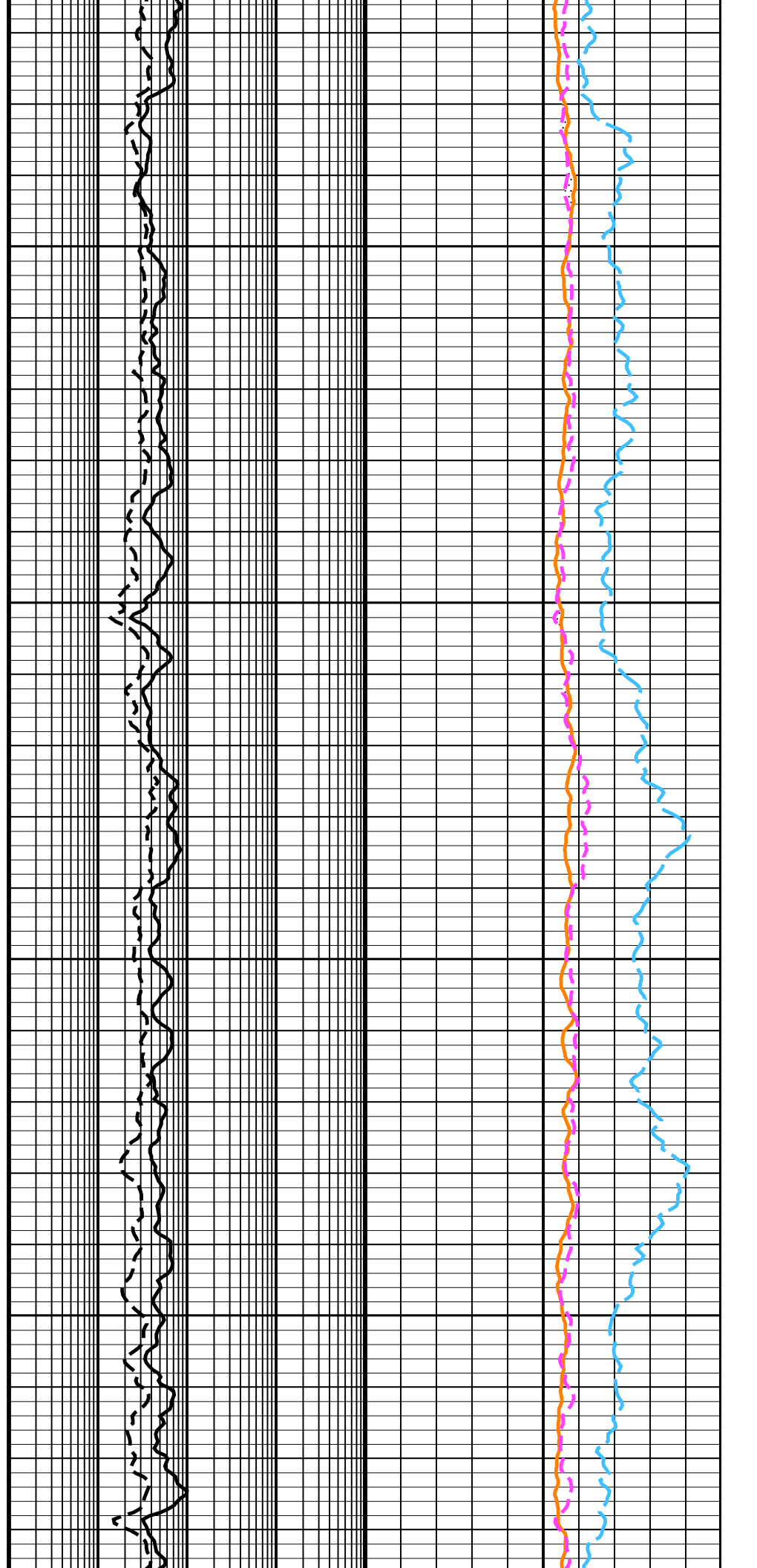
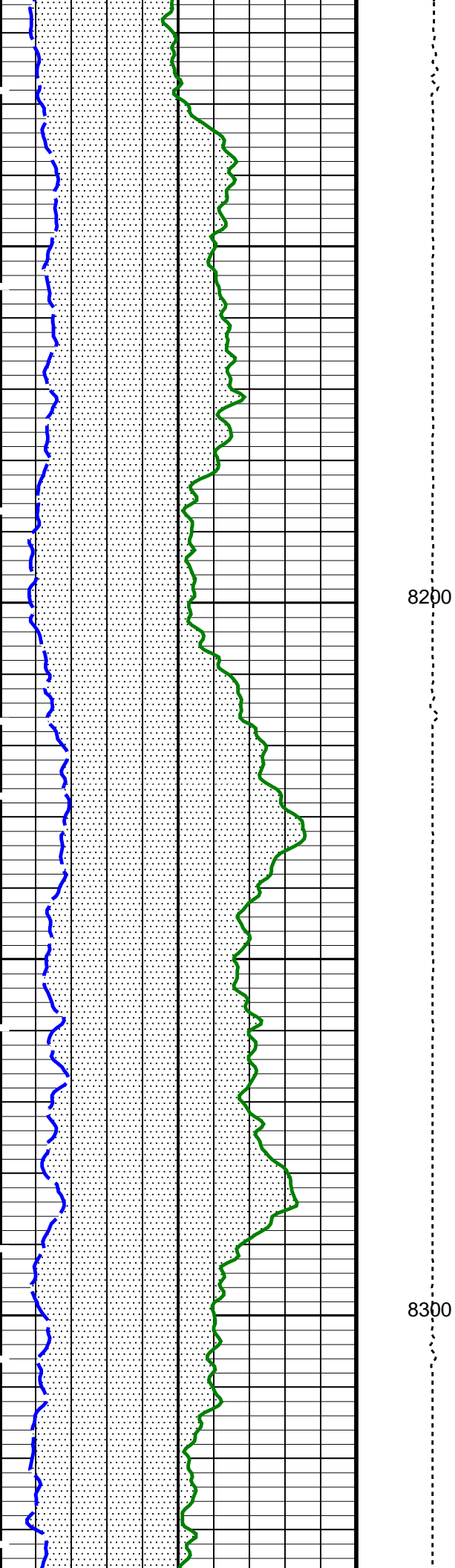
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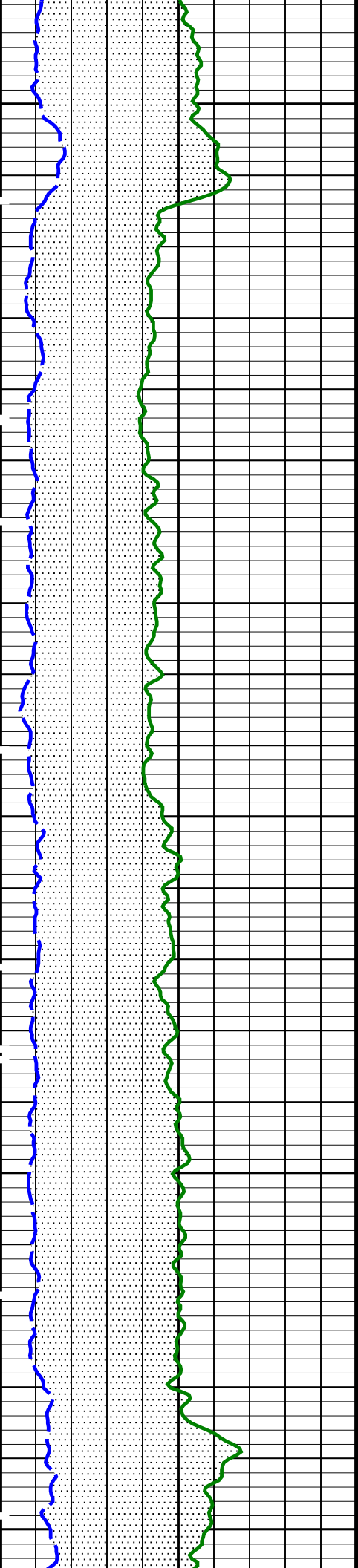
Time Mark Every 60 S





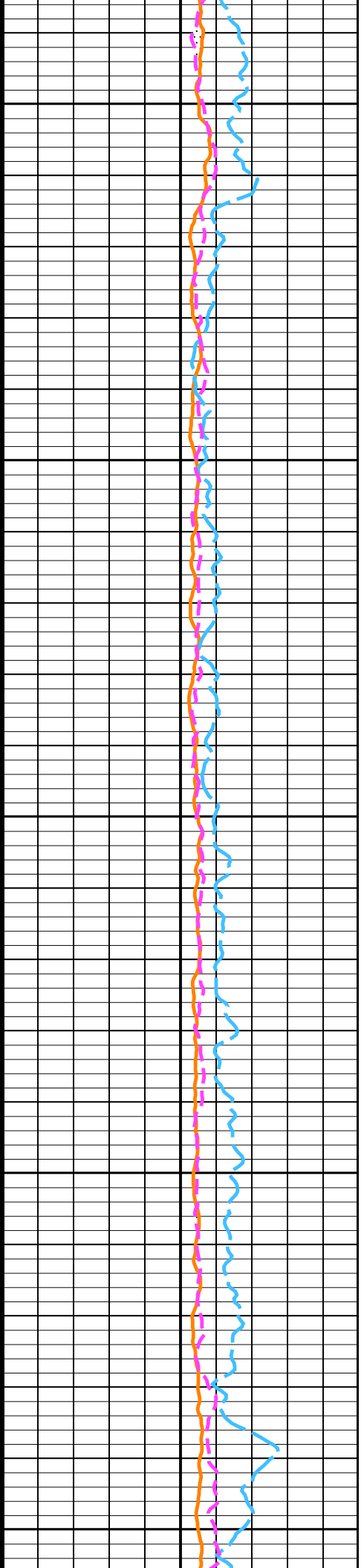
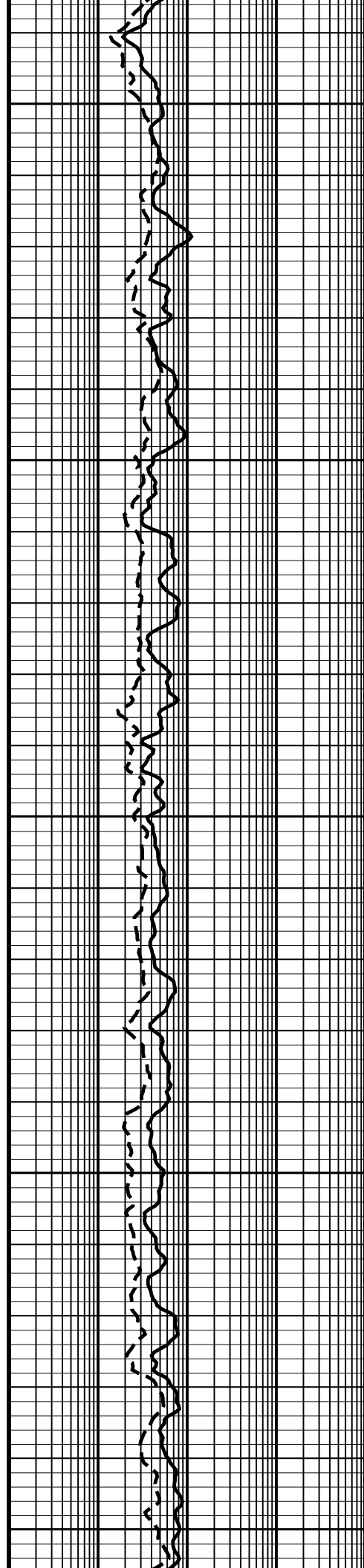


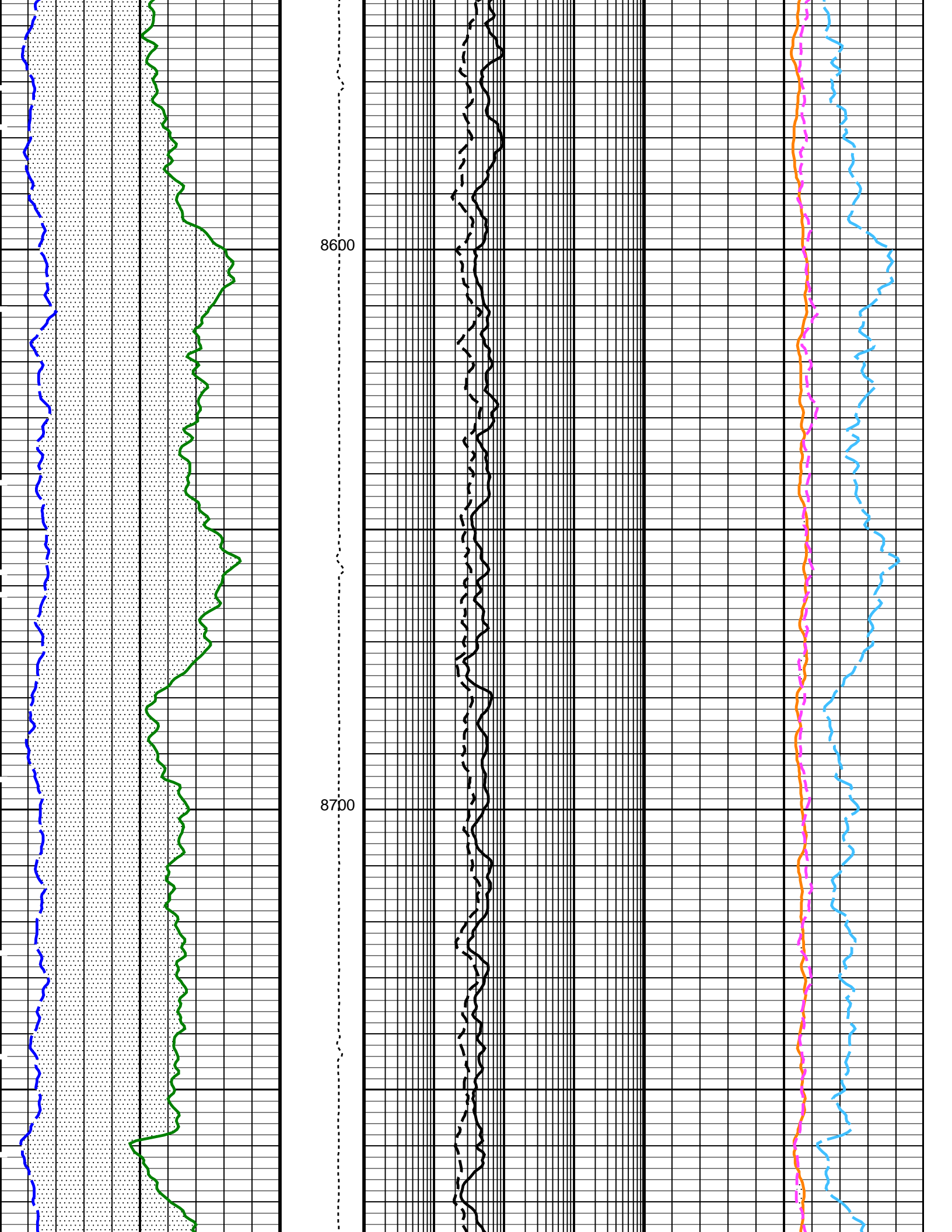


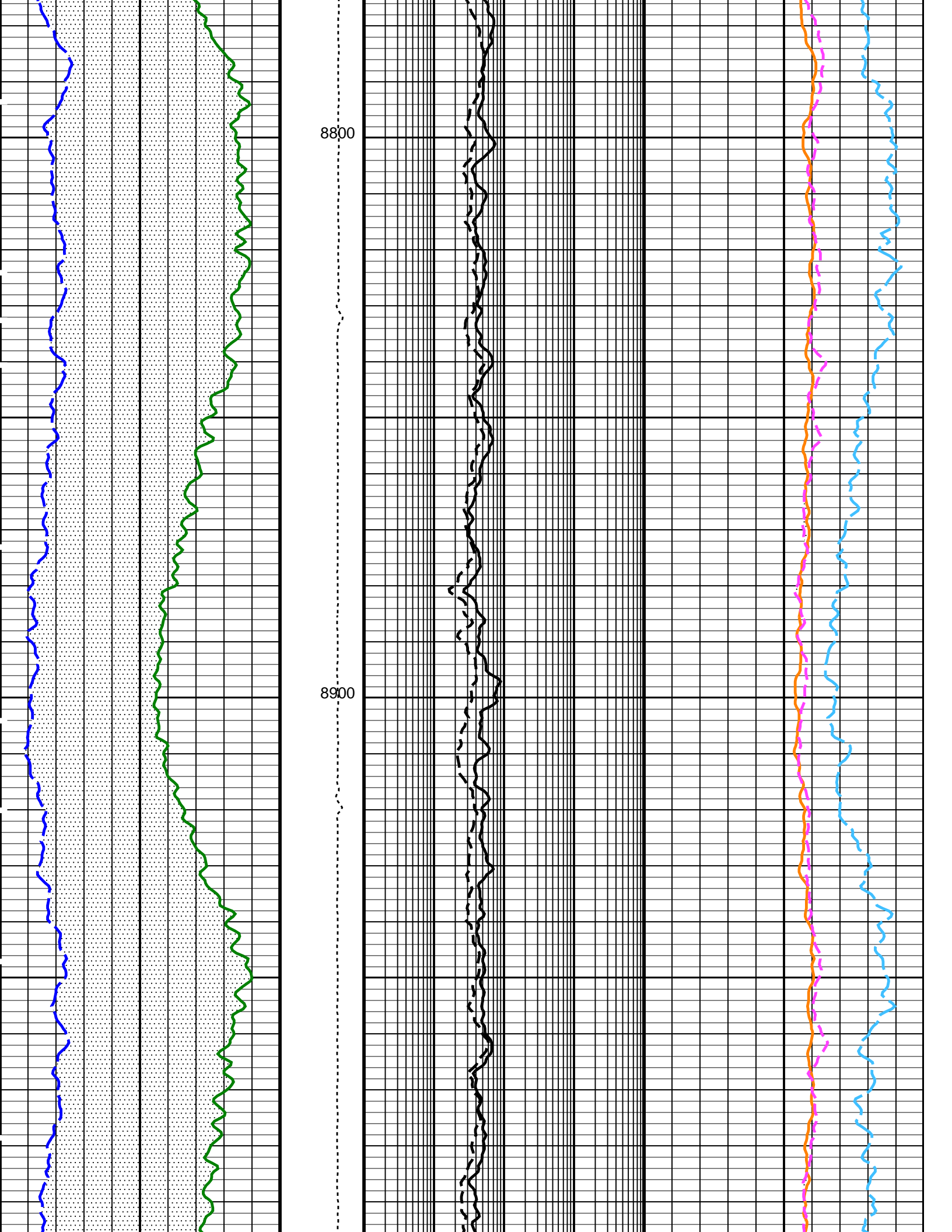


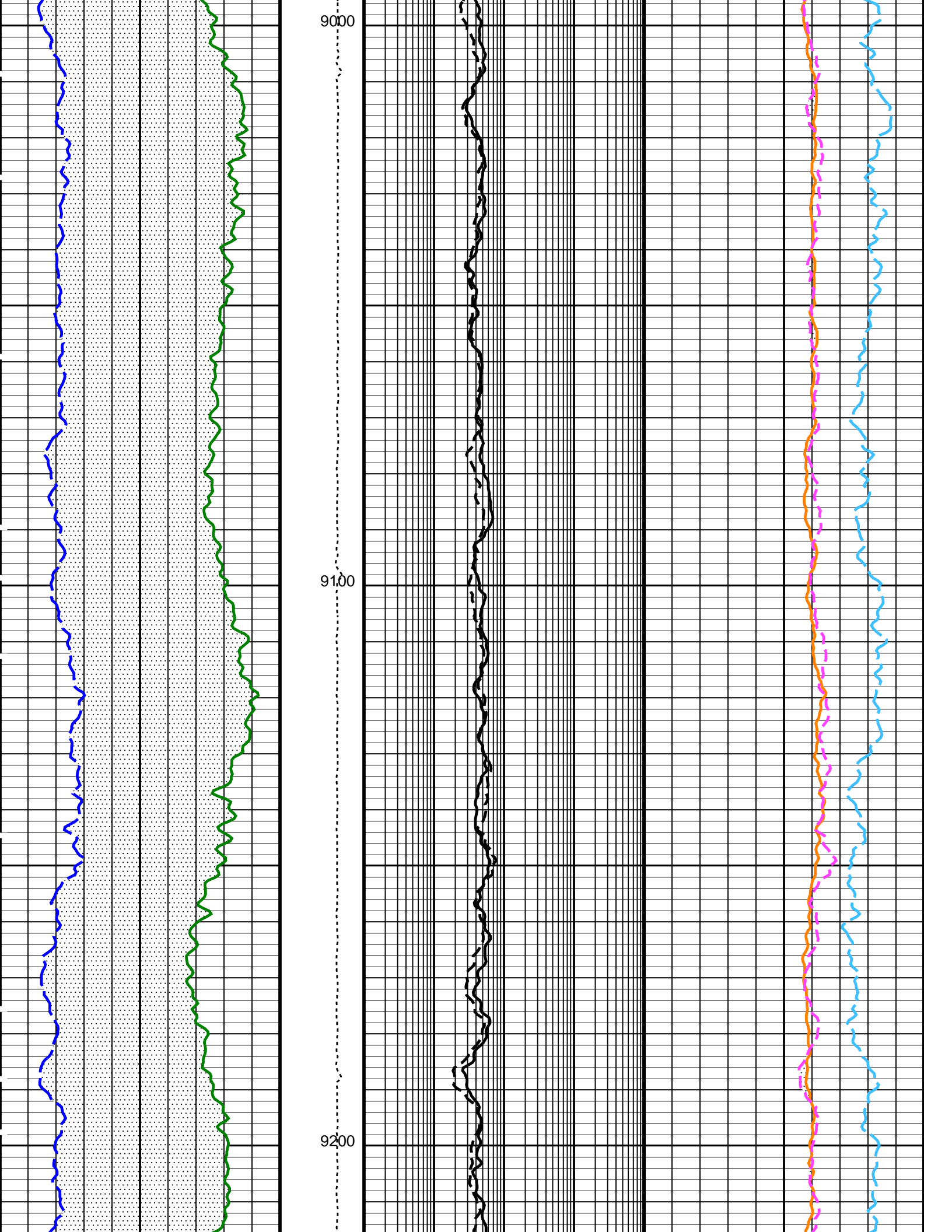
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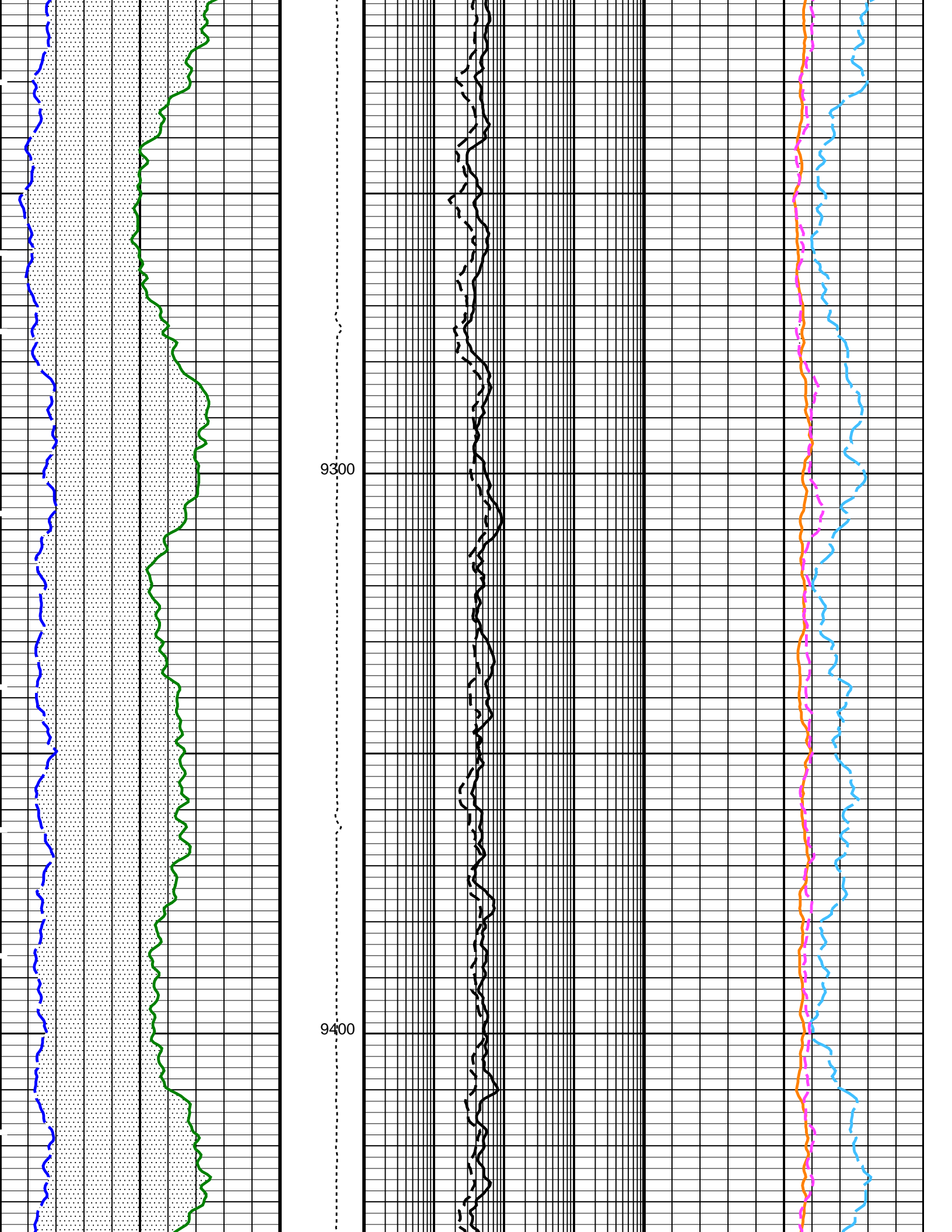
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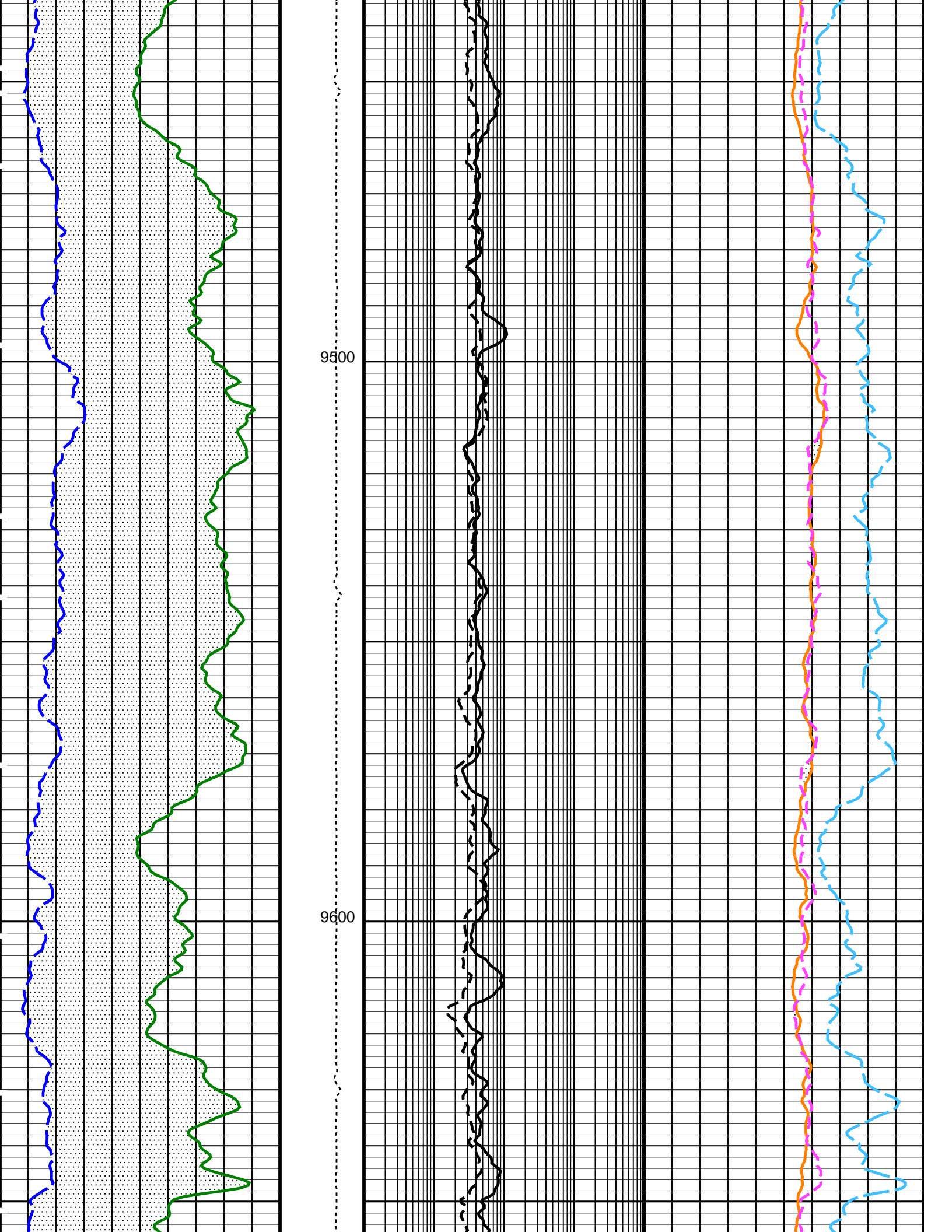


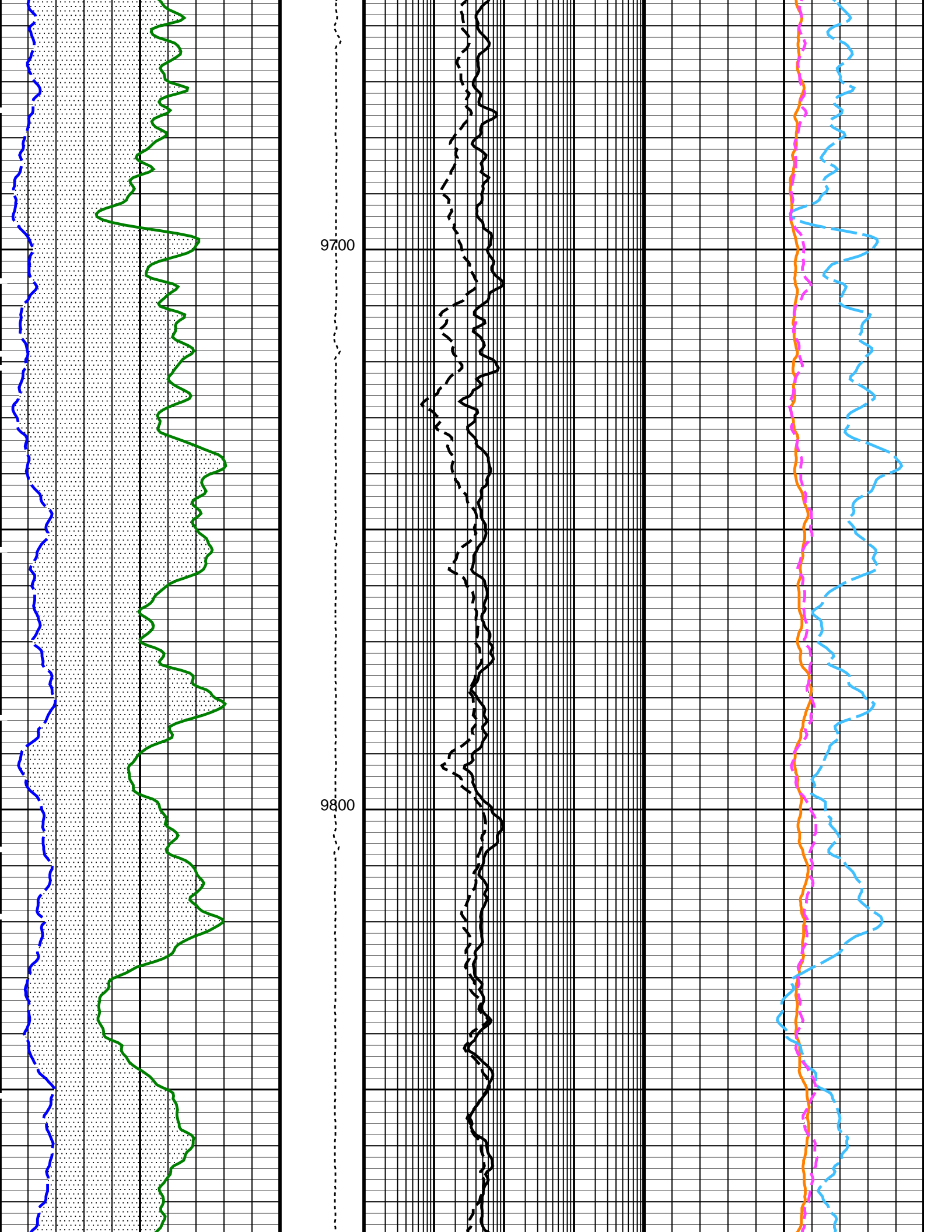




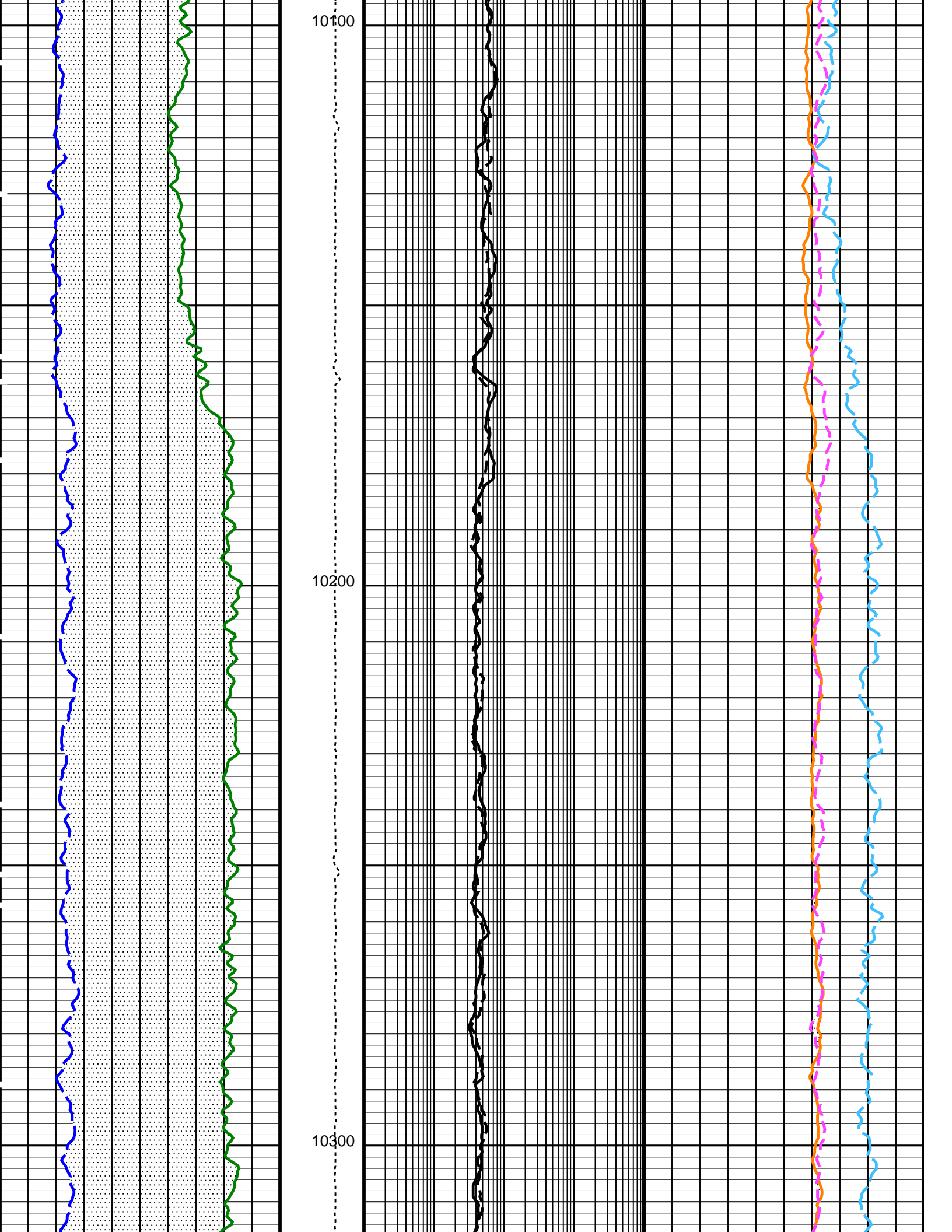


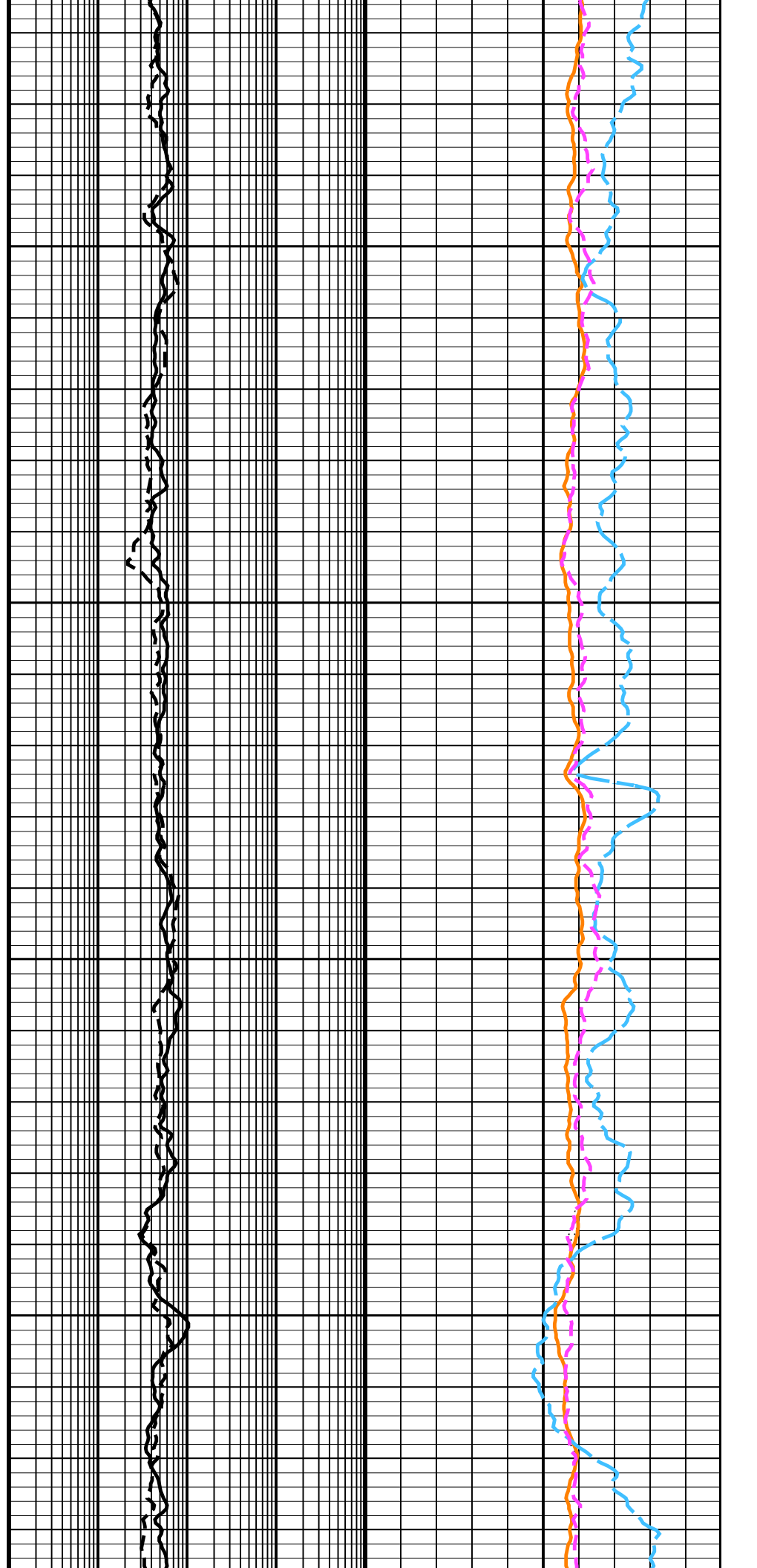
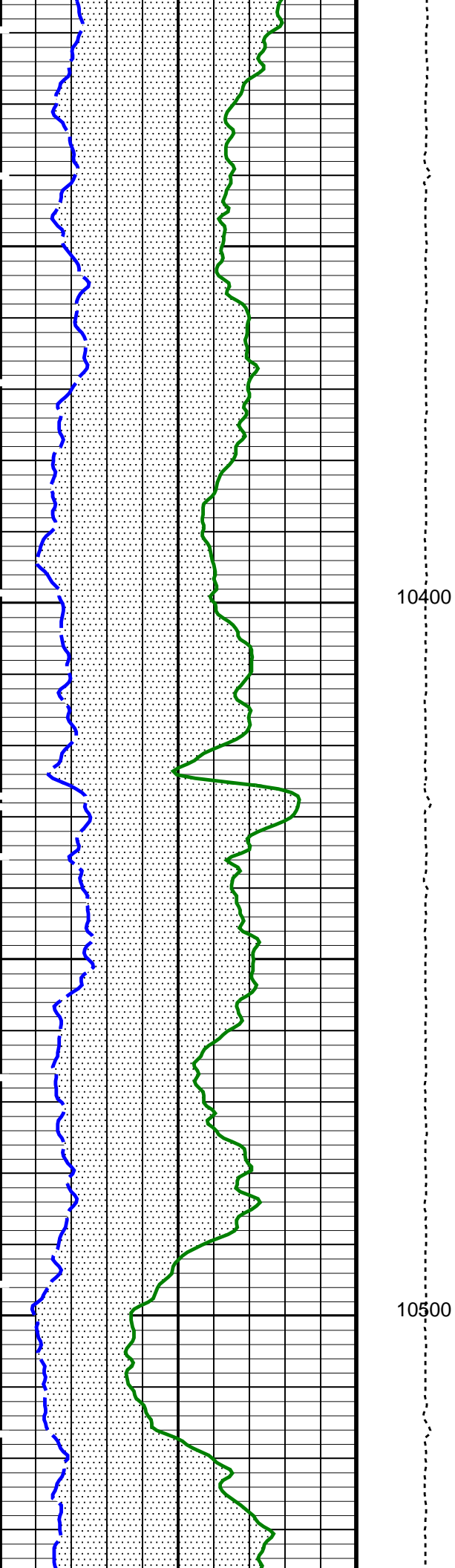


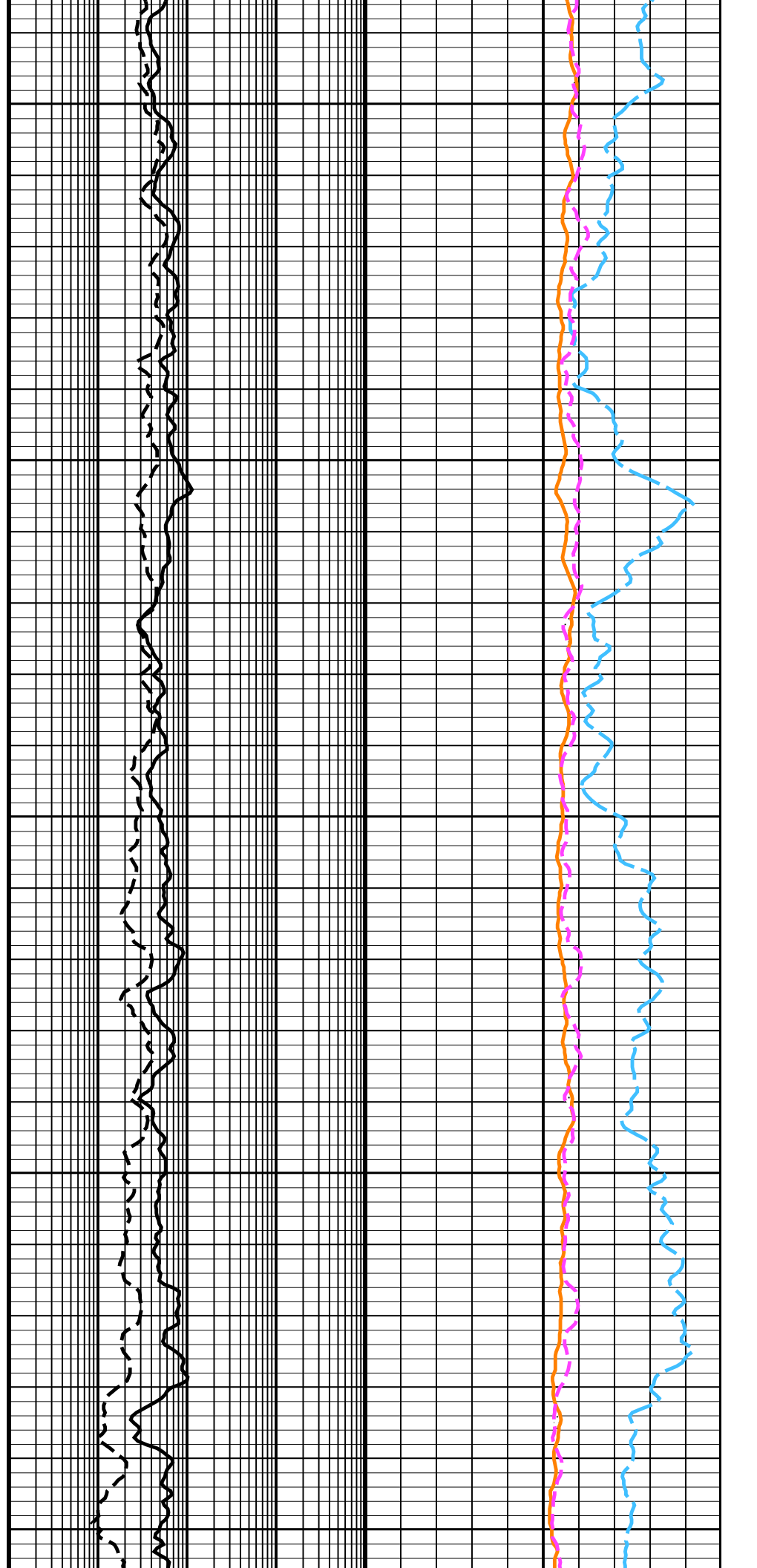
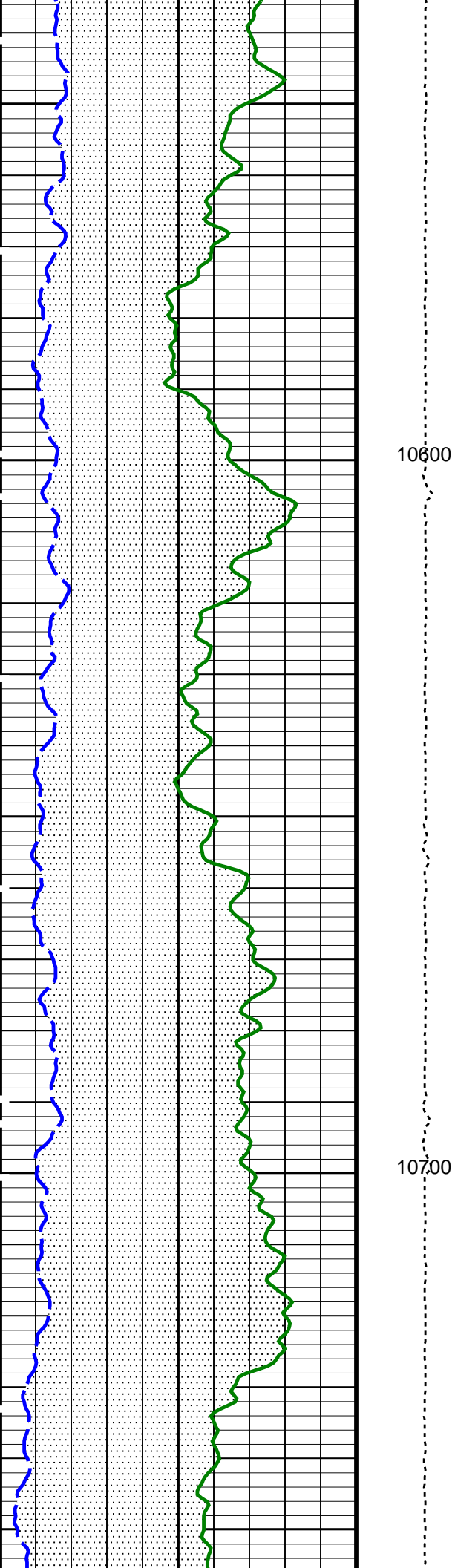


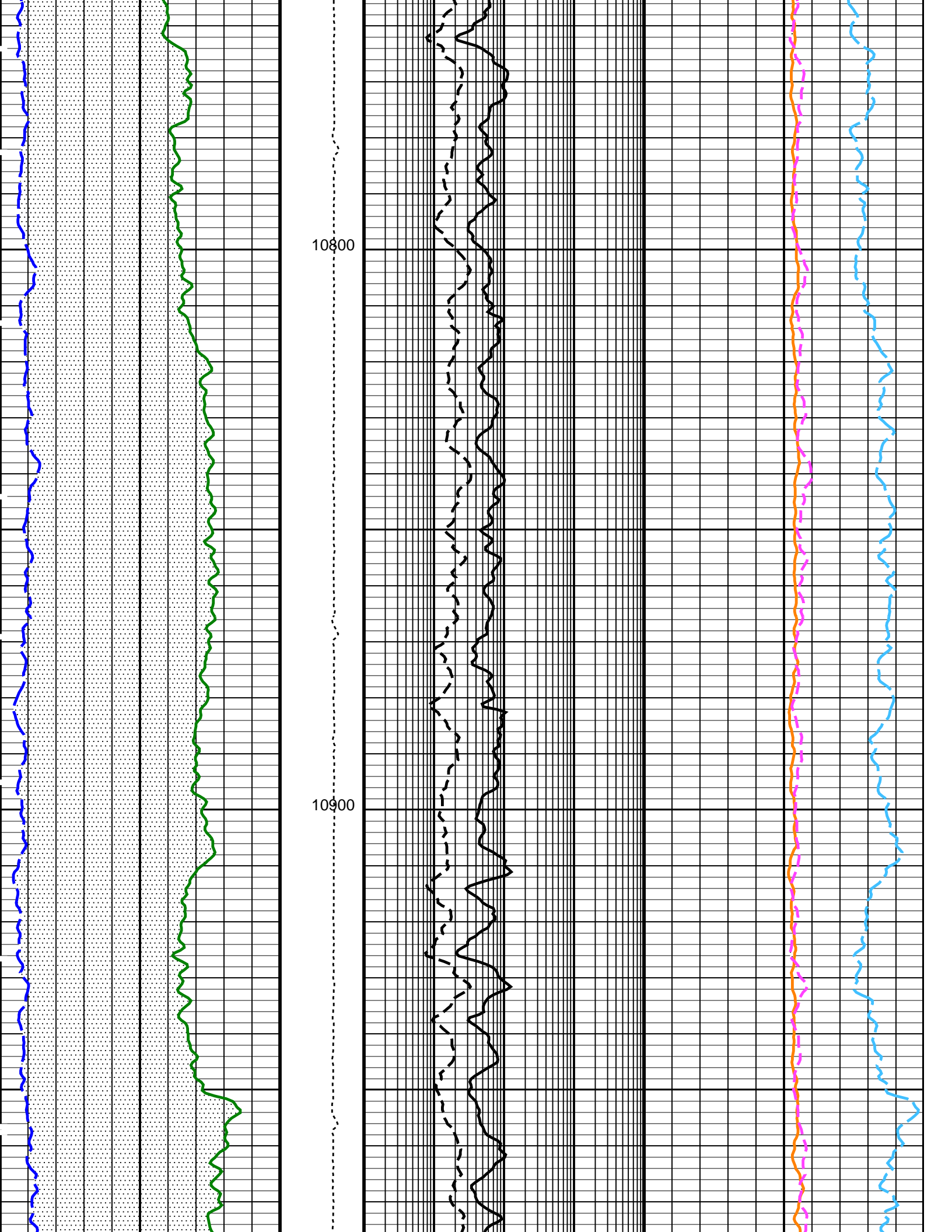


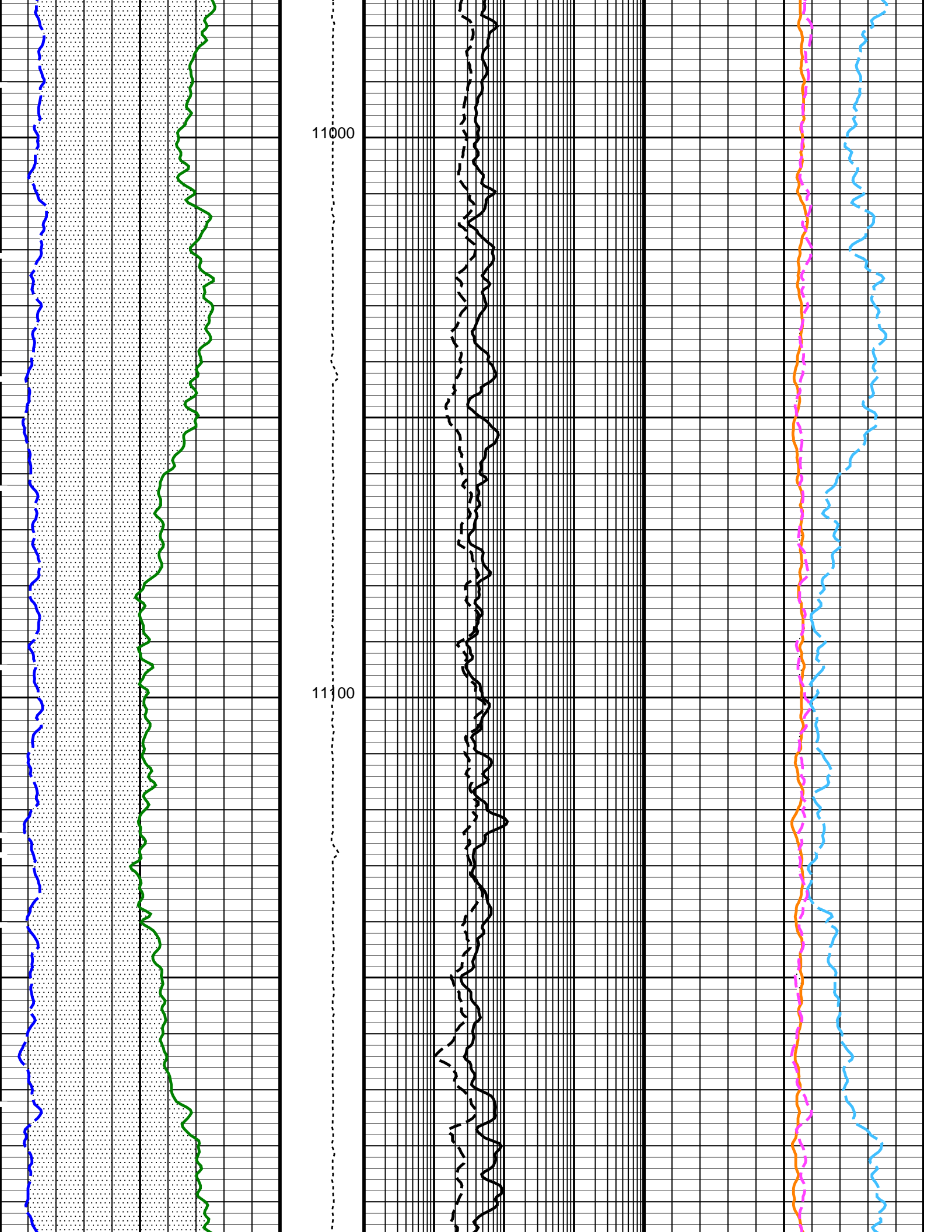


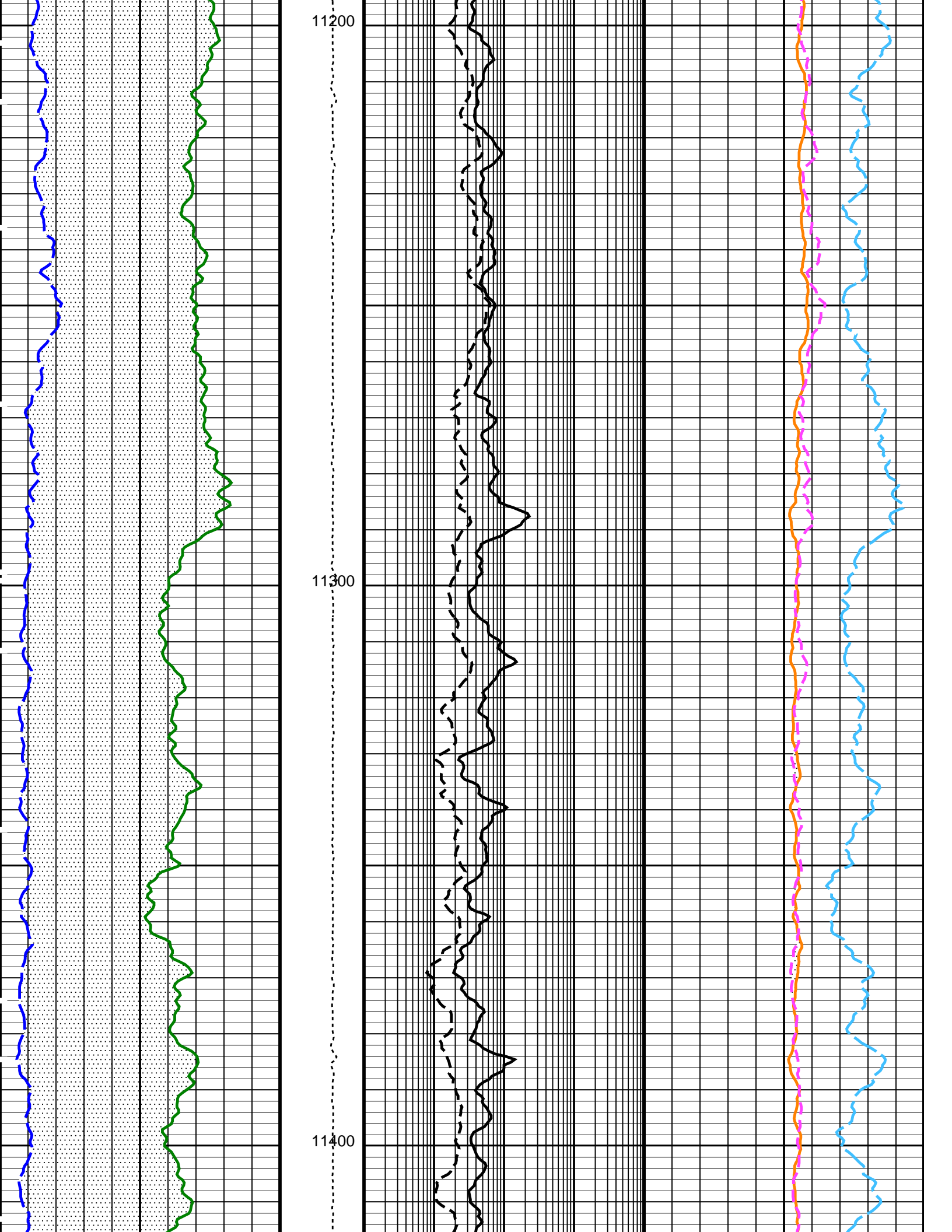


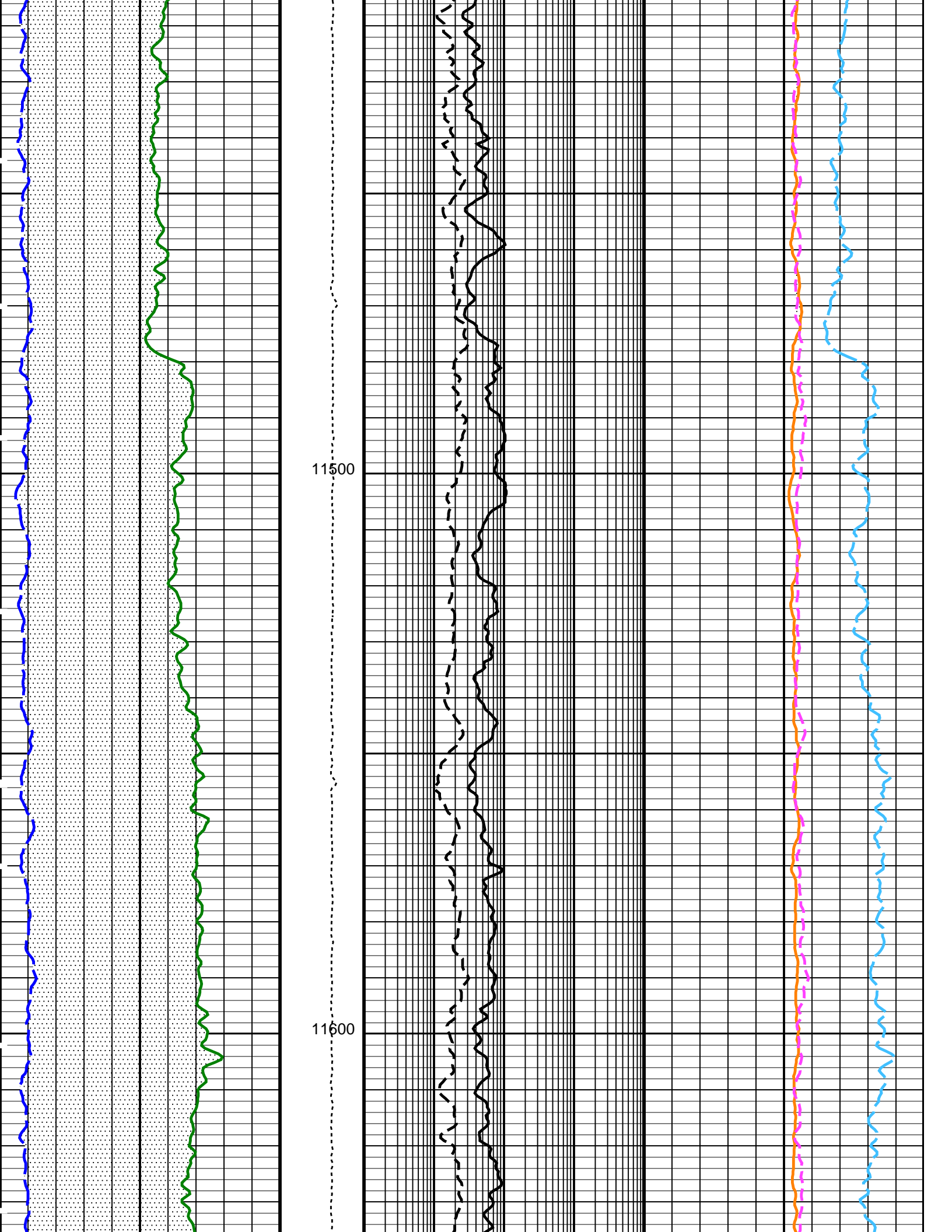


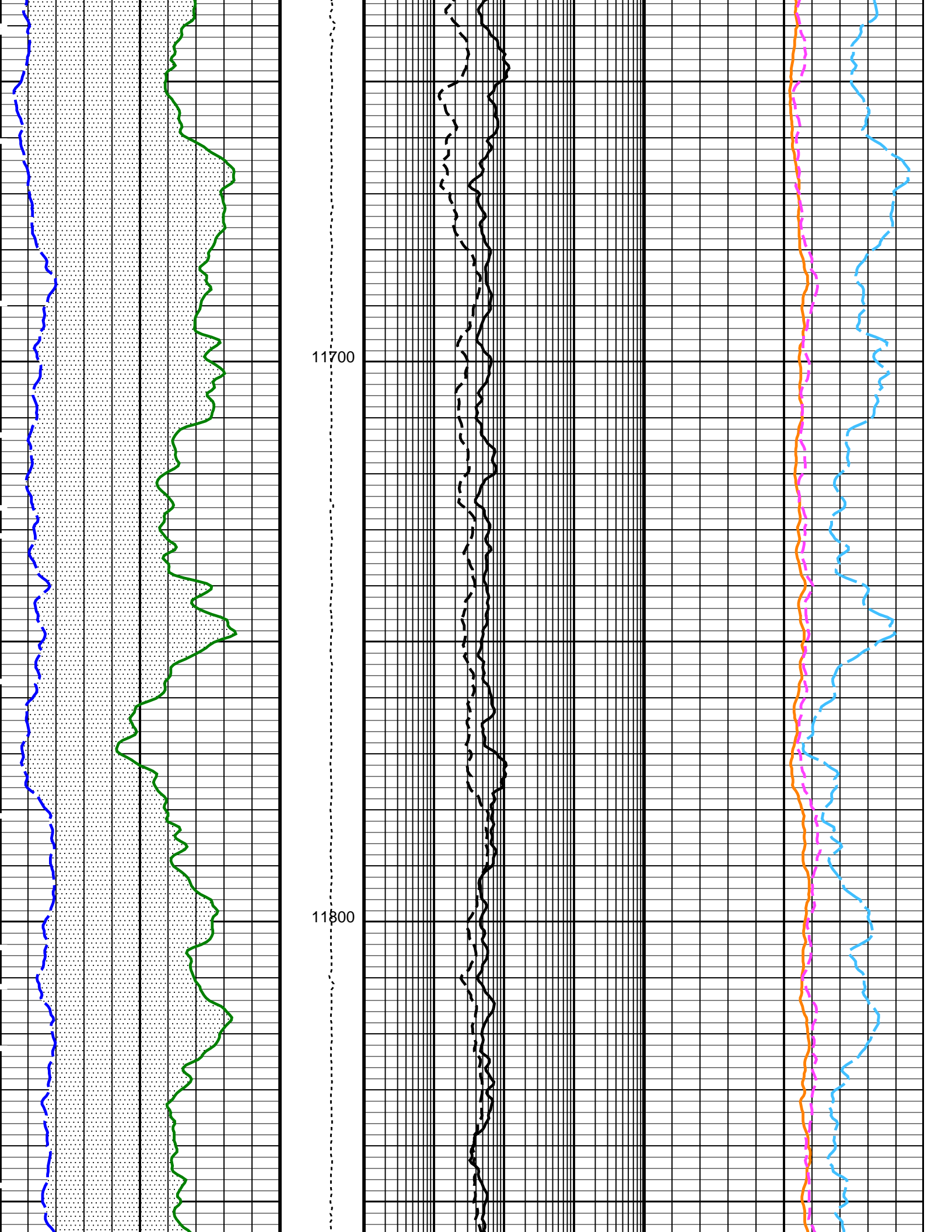


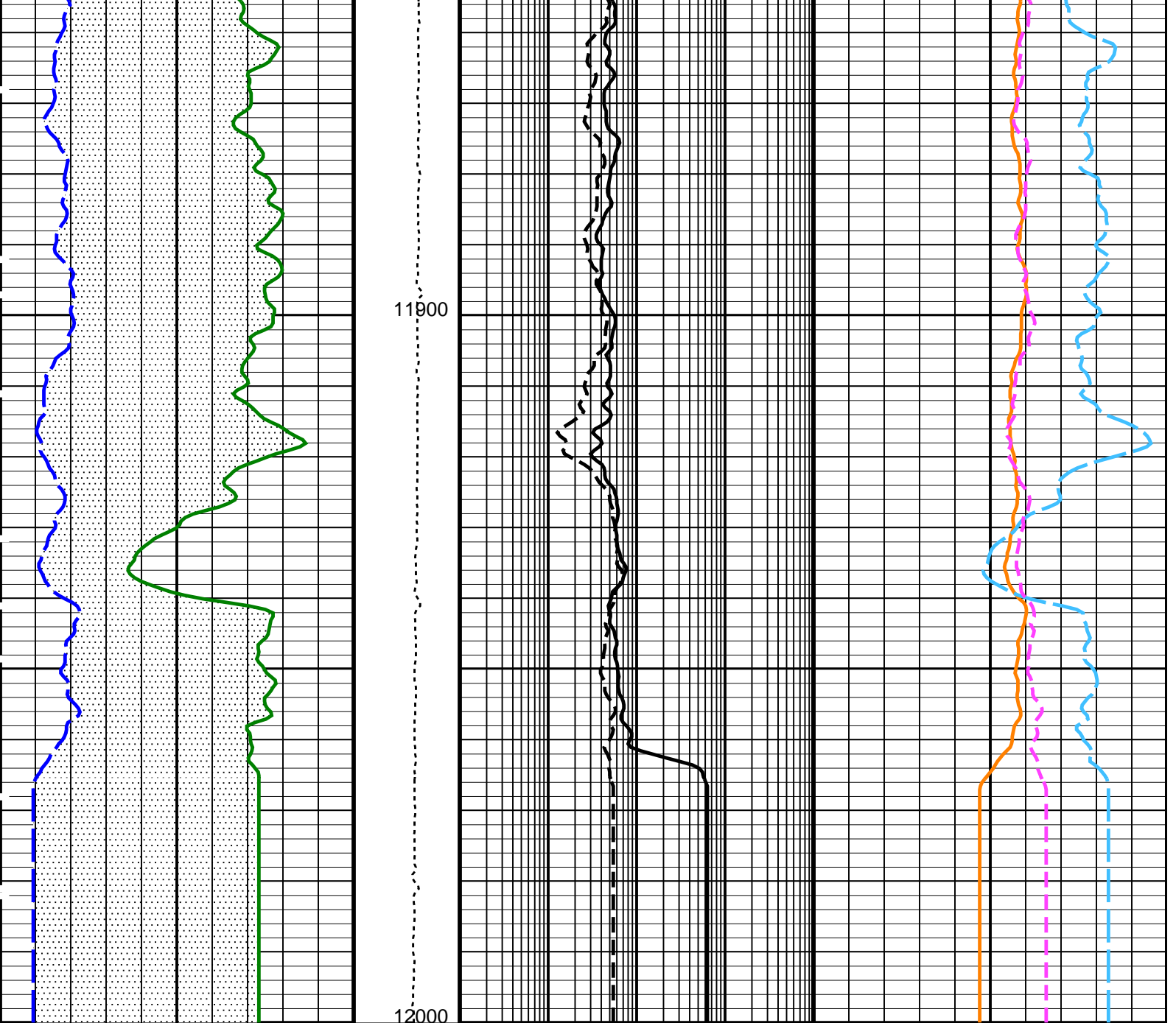












<p><b>HNGS Computed Gamma Ray (HCGR)</b> (GAPI) 0 150</p>	<p>Tension (TENS) (LBF) 10000 0</p>	<p><b>HNGS Thorium / Uranium Ratio (HTUR)</b> (----) 0.01 100</p>	<p><b>HNGS Potassium (HFK)</b> (V/V) -0.05 0.05</p>
<p>Area1 From HCGR to HSGR</p>		<p><b>HNGS Thorium / Potassium Ratio (HTPR)</b> (----) 0.1 1000</p>	<p><b>HNGS Uranium (HURA)</b> (PPM) -5 15</p>
<p><b>HNGS Spectroscopy Gamma Ray (HSGR)</b> (GAPI) 0 150</p>			<p><b>HNGS Thorium (HTHO)</b> (PPM) -20 20</p>
		<p>Area2 From HTHO to HFK</p>	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
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HNGS-BA: Hostile Natural Gamma Ray Sonde		
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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	-0.011388	
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	-999.25	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	-999.25	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.98141	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.988575	
<b>System and Miscellaneous</b>			
BS	Bit Size	6.125	IN
DFD	Drilling Fluid Density	10.20	LB/G
DO	Depth Offset for Playback	8.0	FT
PP	Playback Processing	NORMAL	

Format: HNGSRatios    Vertical Scale: 5" per 100'    Graphics File Created: 01-Feb-2012 13:06

### OP System Version: 18C0-147

FBST-B	18C0-147	PPC1-B	18C0-147
HNGC-B	HFE-4001-OP18-NUCL	HNGS-BA	HFE-4001-OP18-NUCL
DTC-H	18C0-147		

### Input DLIS Files

DEFAULT	FMI_CAL_NGS_007LUP	FN:6	PRODUCER	01-Feb-2012 08:58	11992.5 FT	7649.5 FT
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### Output DLIS Files

DEFAULT	FMI_CAL_NGS_009PUP	FN:8	PRODUCER	01-Feb-2012 13:06		
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Company: Kerr-McGee Oil & Gas Onshore LP    Well: Cannon 36C-11HZ

### Input DLIS Files

DEFAULT	FMI_CAL_NGS_007LUP	FN:6	PRODUCER	01-Feb-2012 08:58	11992.5 FT	7649.5 FT
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### Output DLIS Files

DEFAULT	FMI_CAL_NGS_009PUP	FN:8	PRODUCER	01-Feb-2012 13:06	12000.0 FT	7657.5 FT
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### OP System Version: 18C0-147

FBST-B	18C0-147	PPC1-B	18C0-147
HNGC-B	HFE-4001-OP18-NUCL	HNGS-BA	HFE-4001-OP18-NUCL
DTC-H	18C0-147		

### PIP SUMMARY

Time Mark Every 60 S

<b>HNGS Spectroscopy Gamma Ray (HSGR)</b>		
0	(GAPI)	150
<b>HNGS Det.2 Resolution Degradation Factor (RDF2)</b>		
0	(----)	10
<b>HNGS Det.1 Resolution Degradation Factor (RDF1)</b>		

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

Bit Size (BS)		
6	(IN)	16

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

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

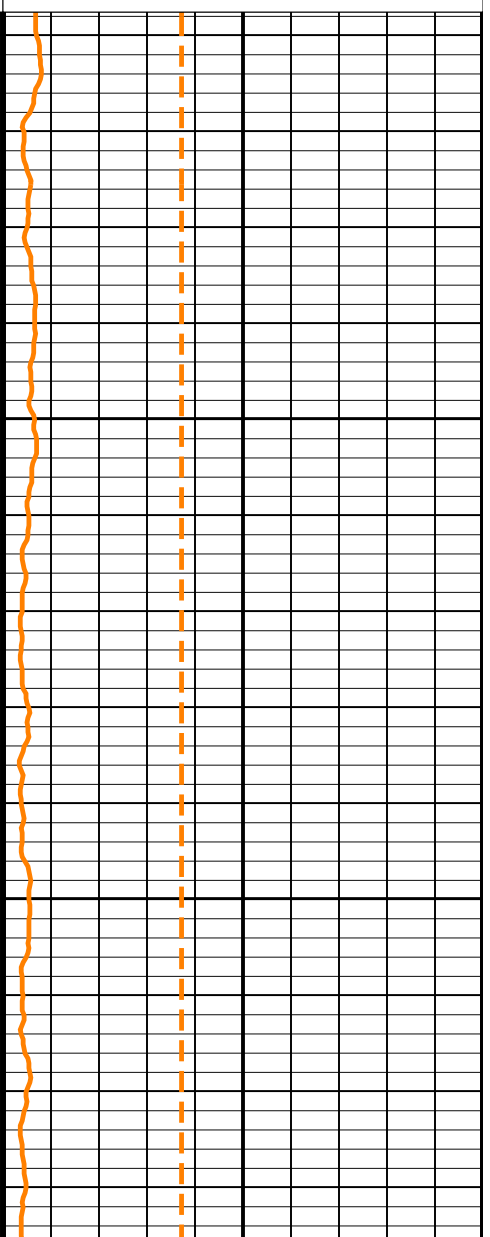
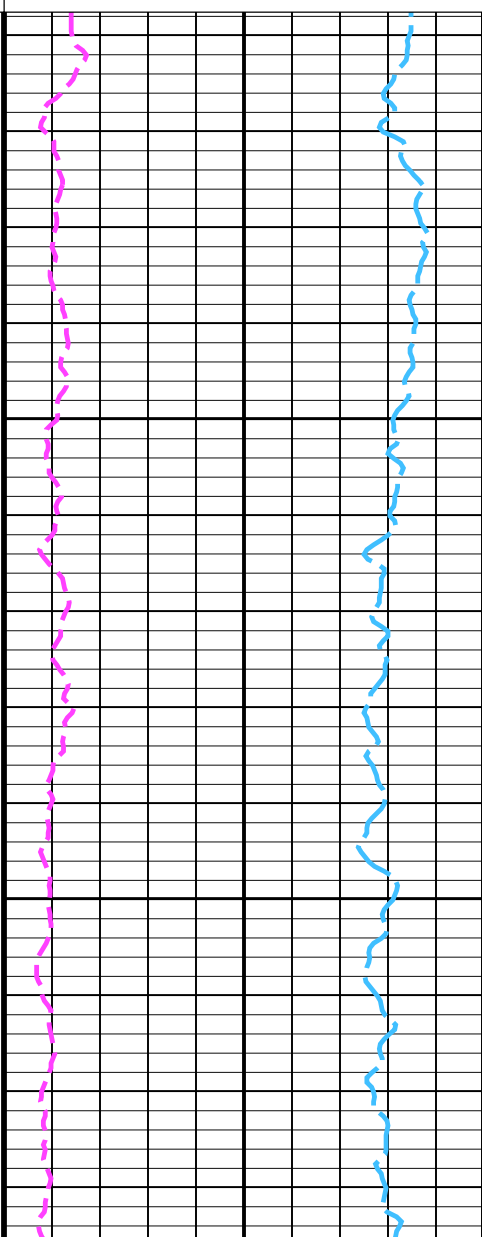
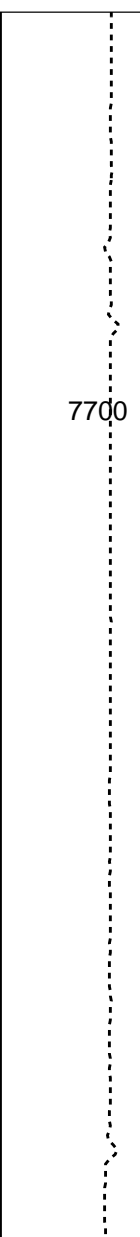
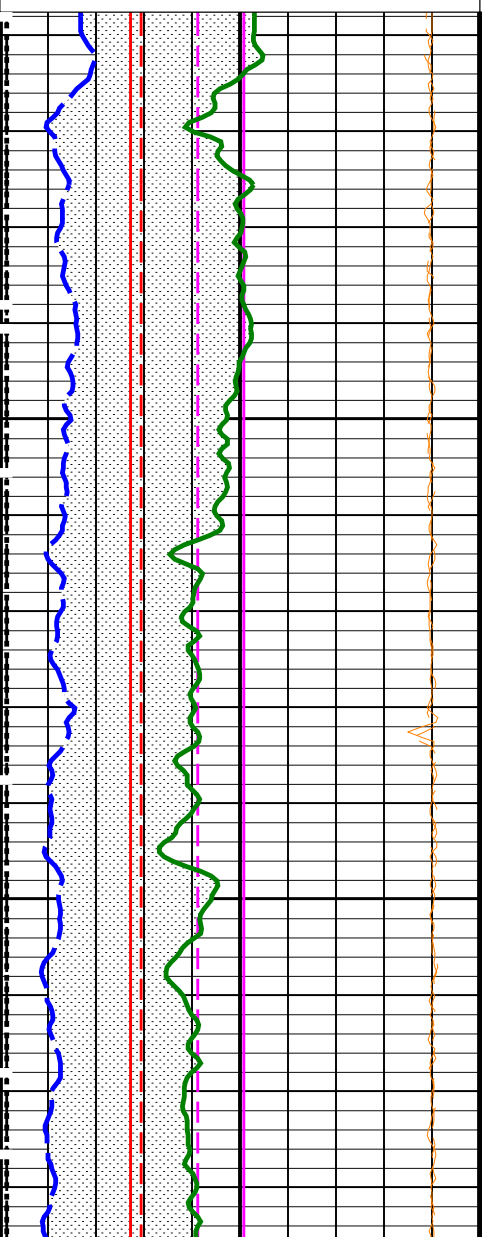
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(TENS)  
(LBF)

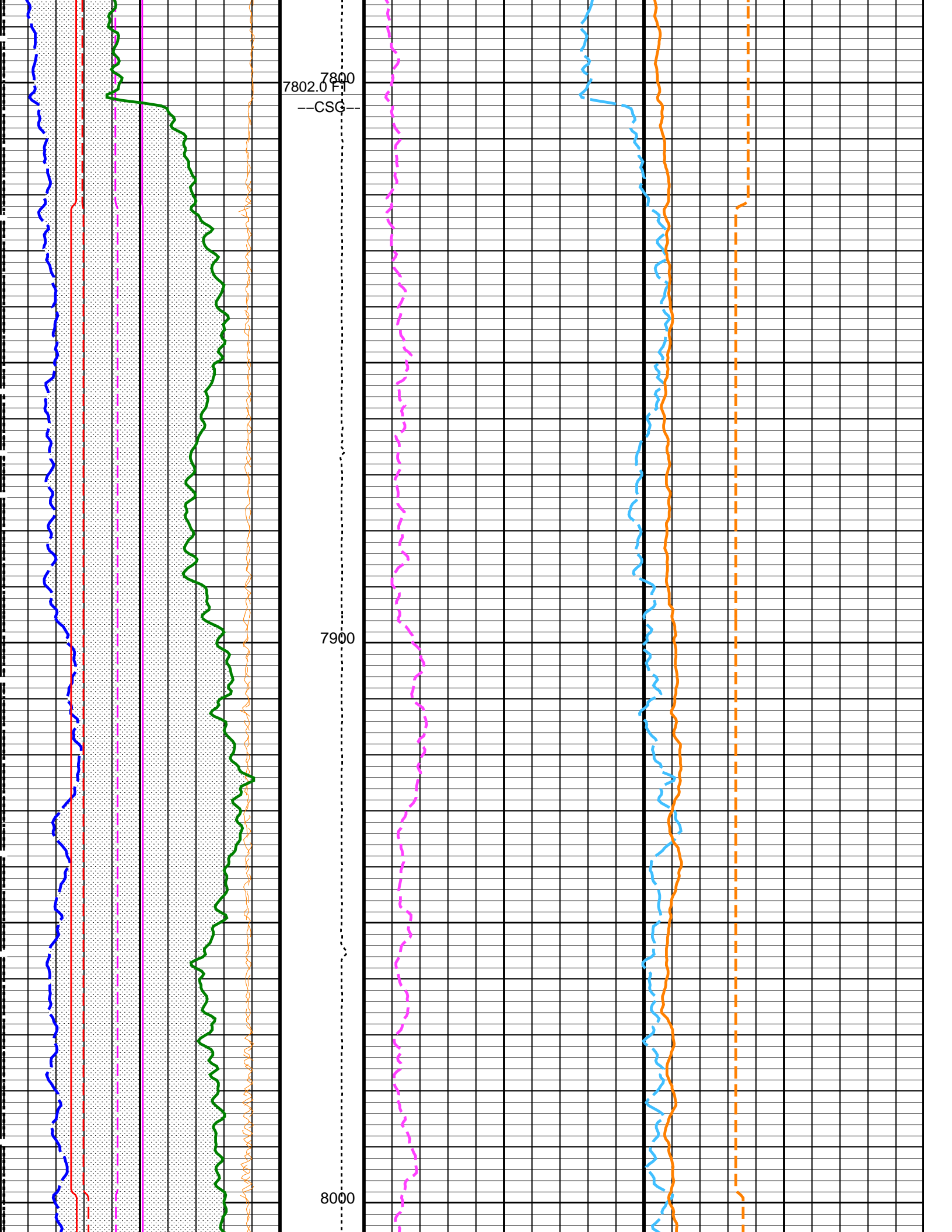
HNGS Uranium (HURA)		
-10	(PPM)	30

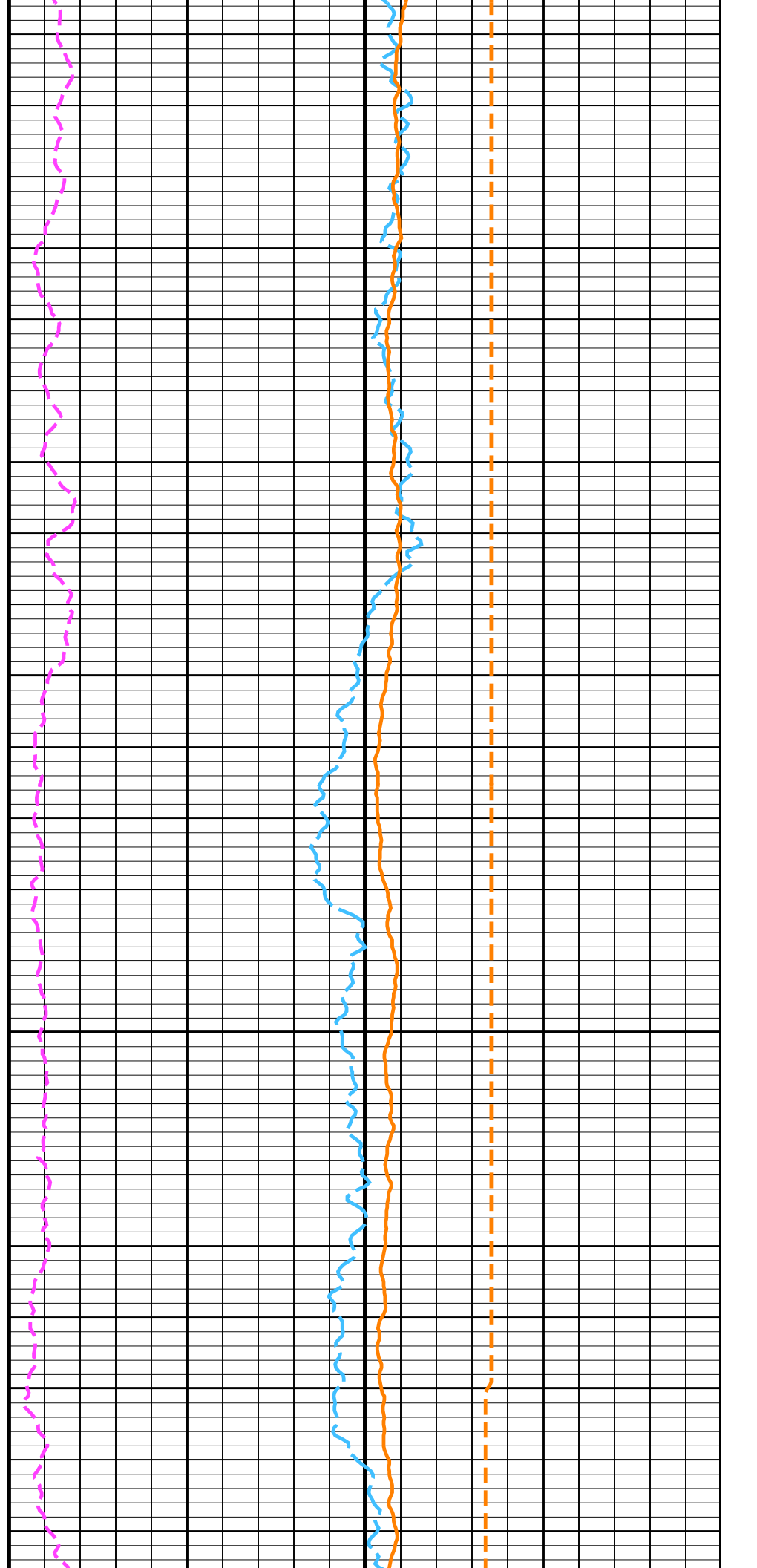
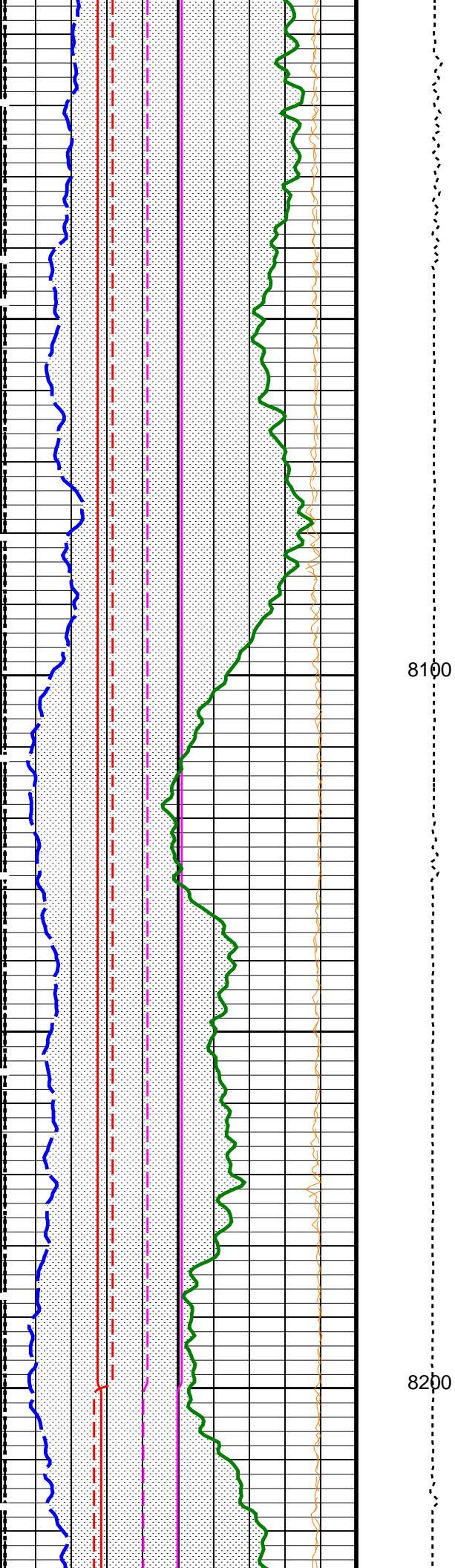
HNGS Thorium (HTHO)		
0	(PPM)	30

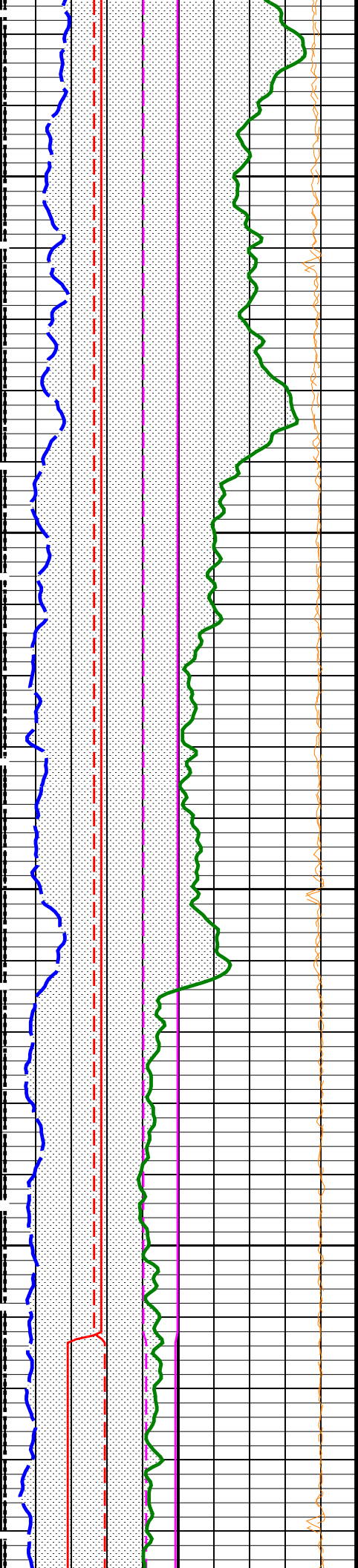
HNGS Borehole Potassium (HBHK)		
-0.05	(V/V)	0.05

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



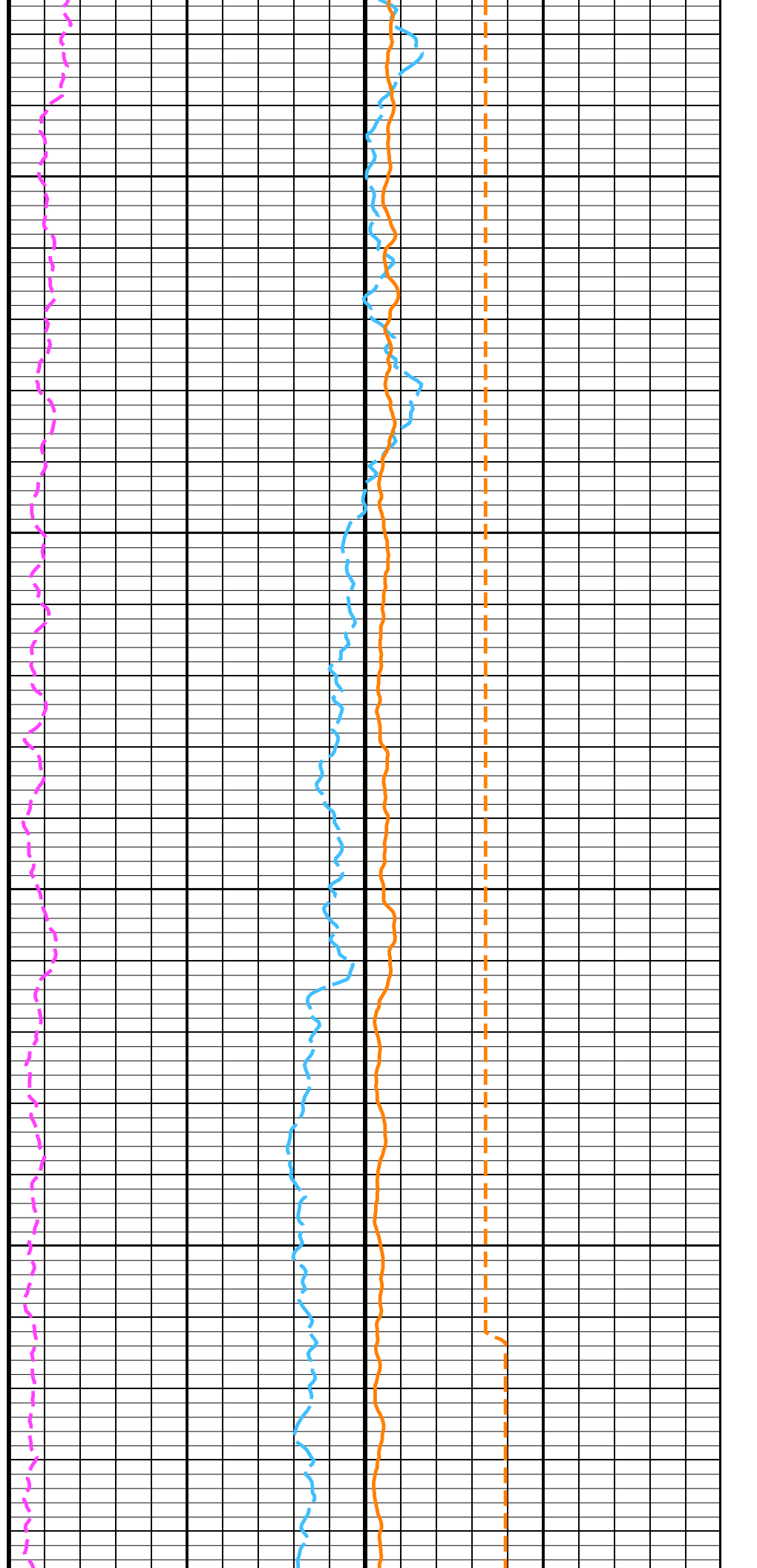


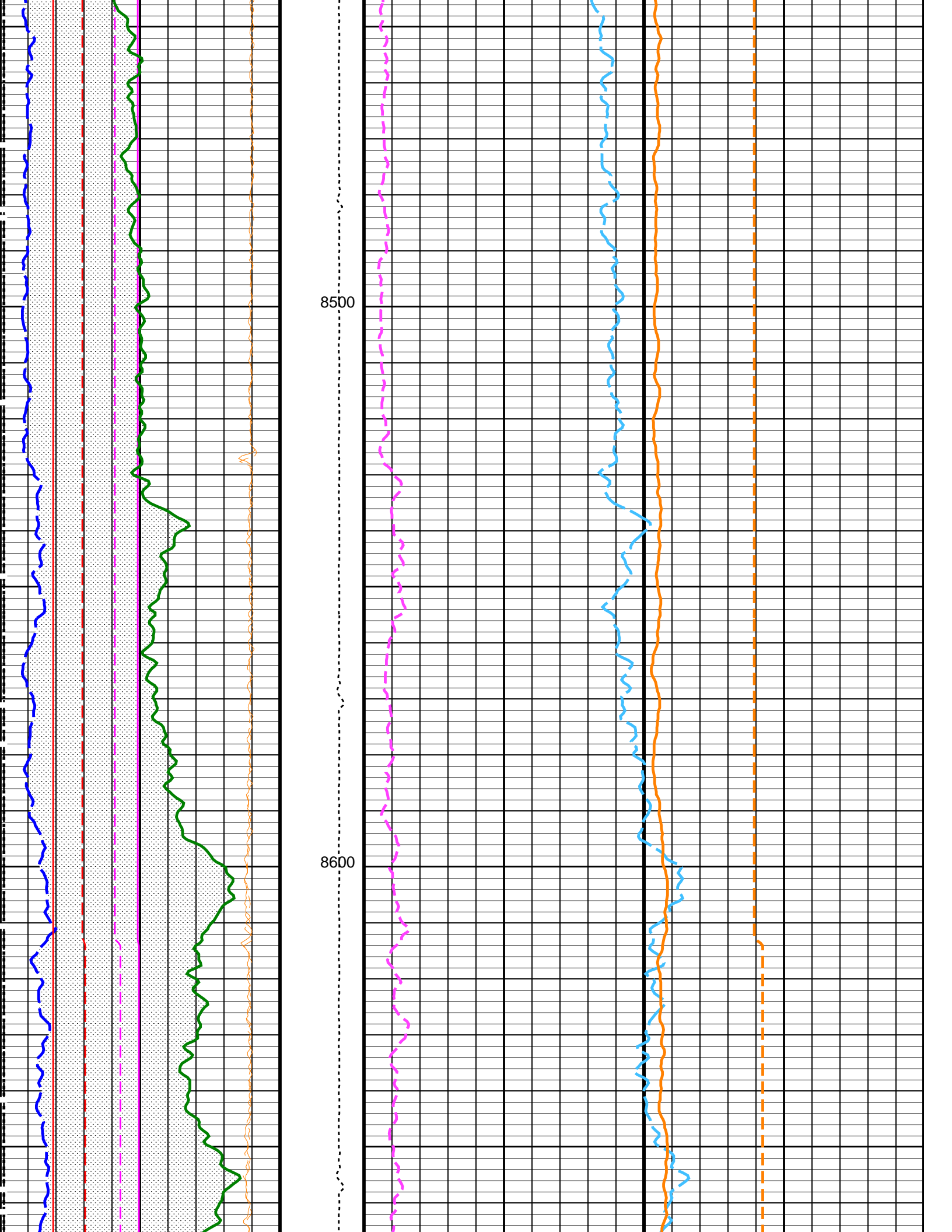


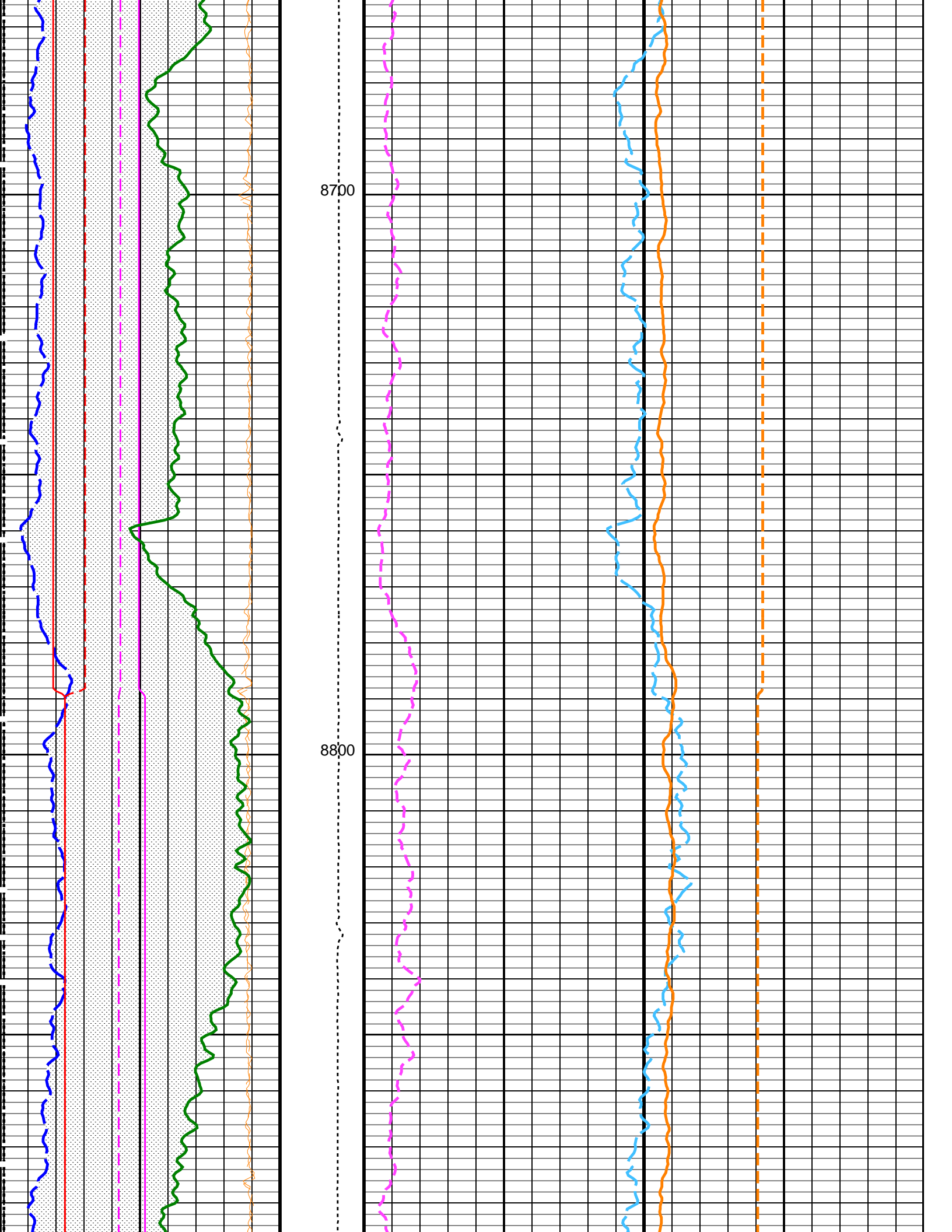


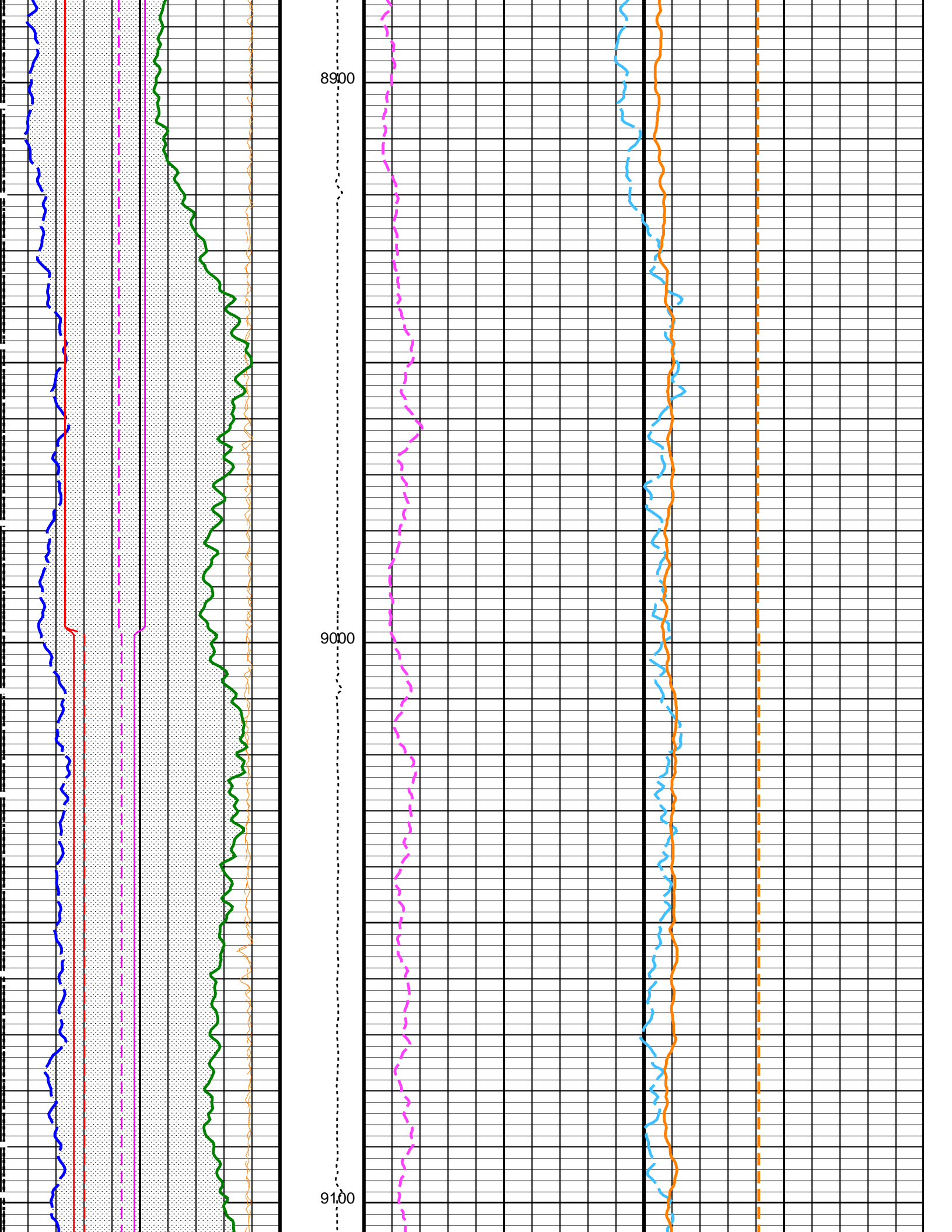
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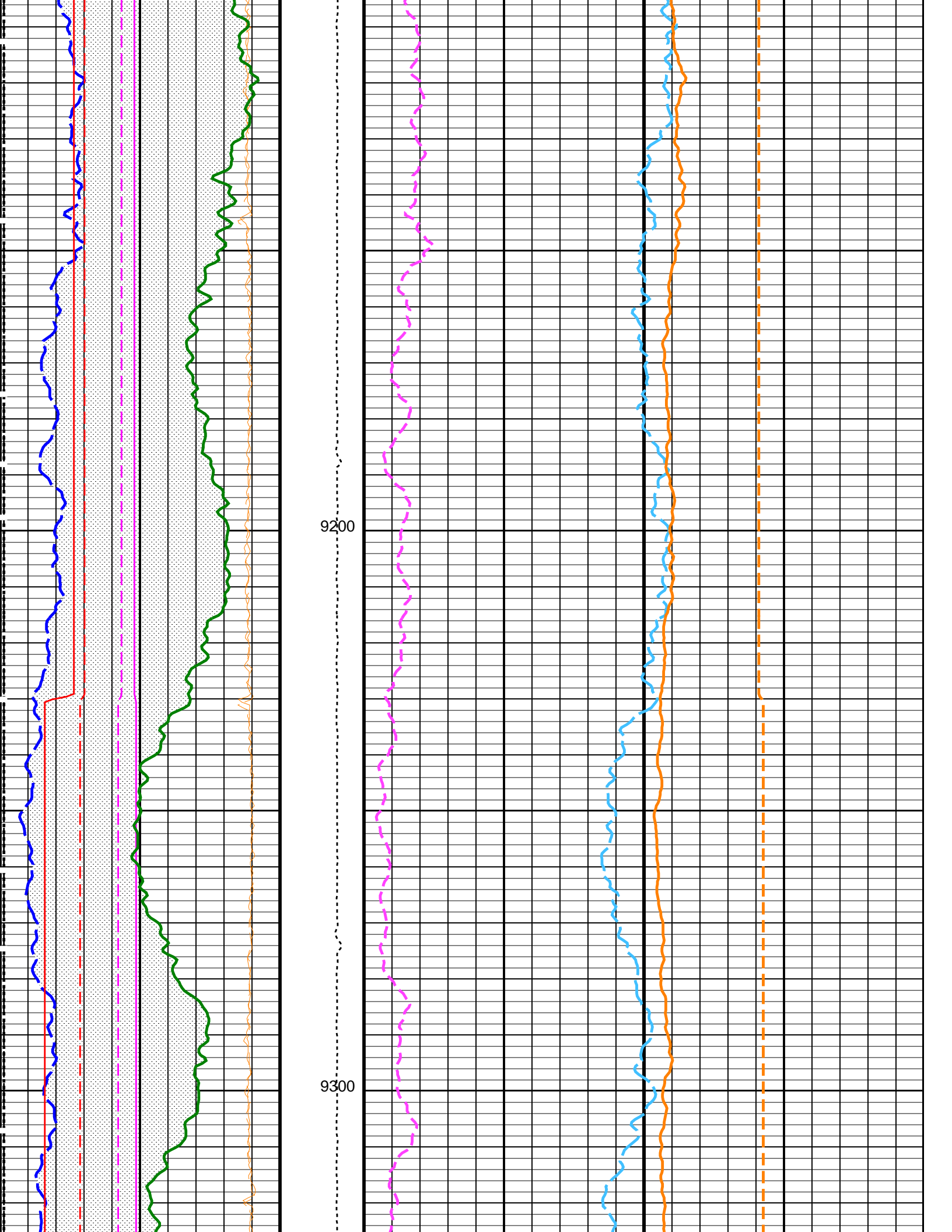
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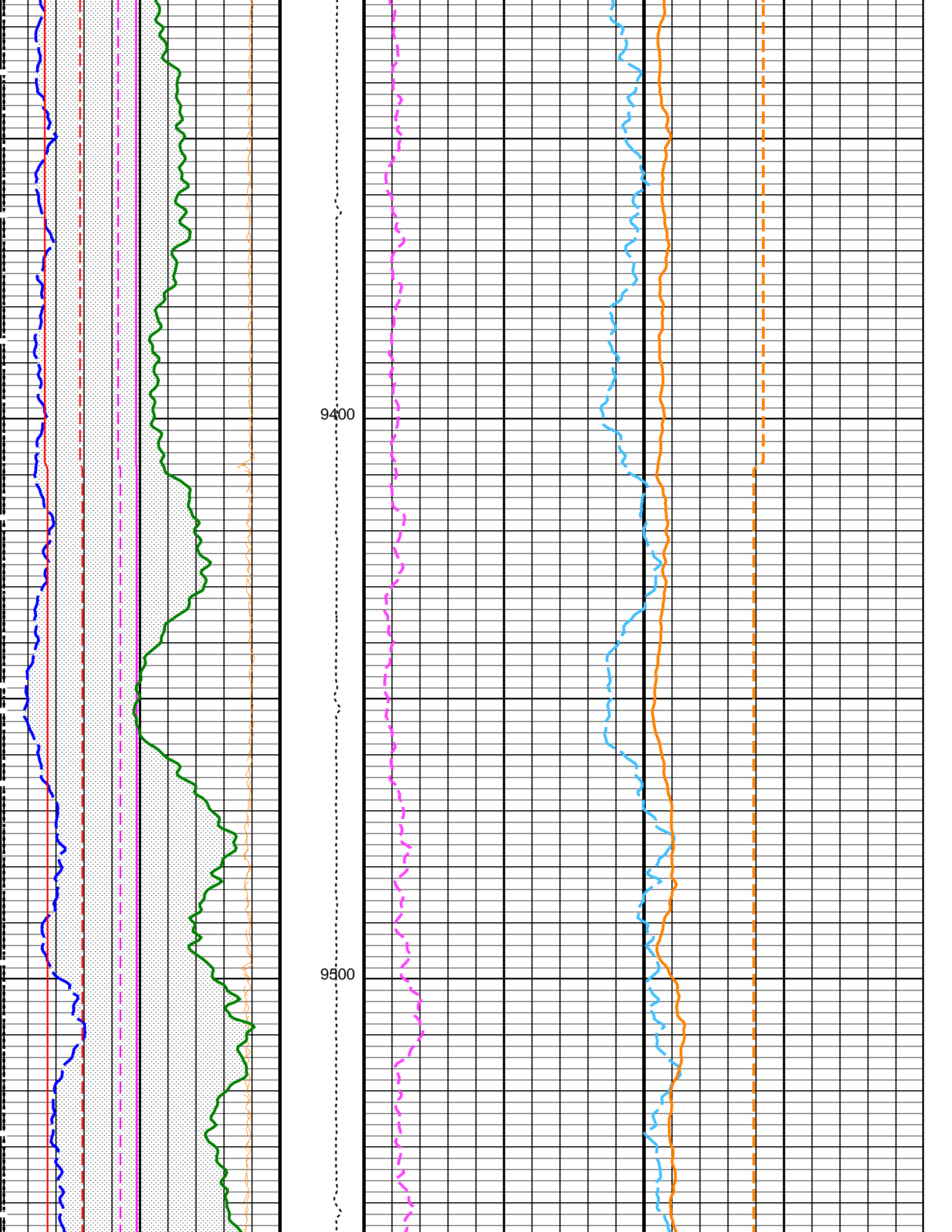


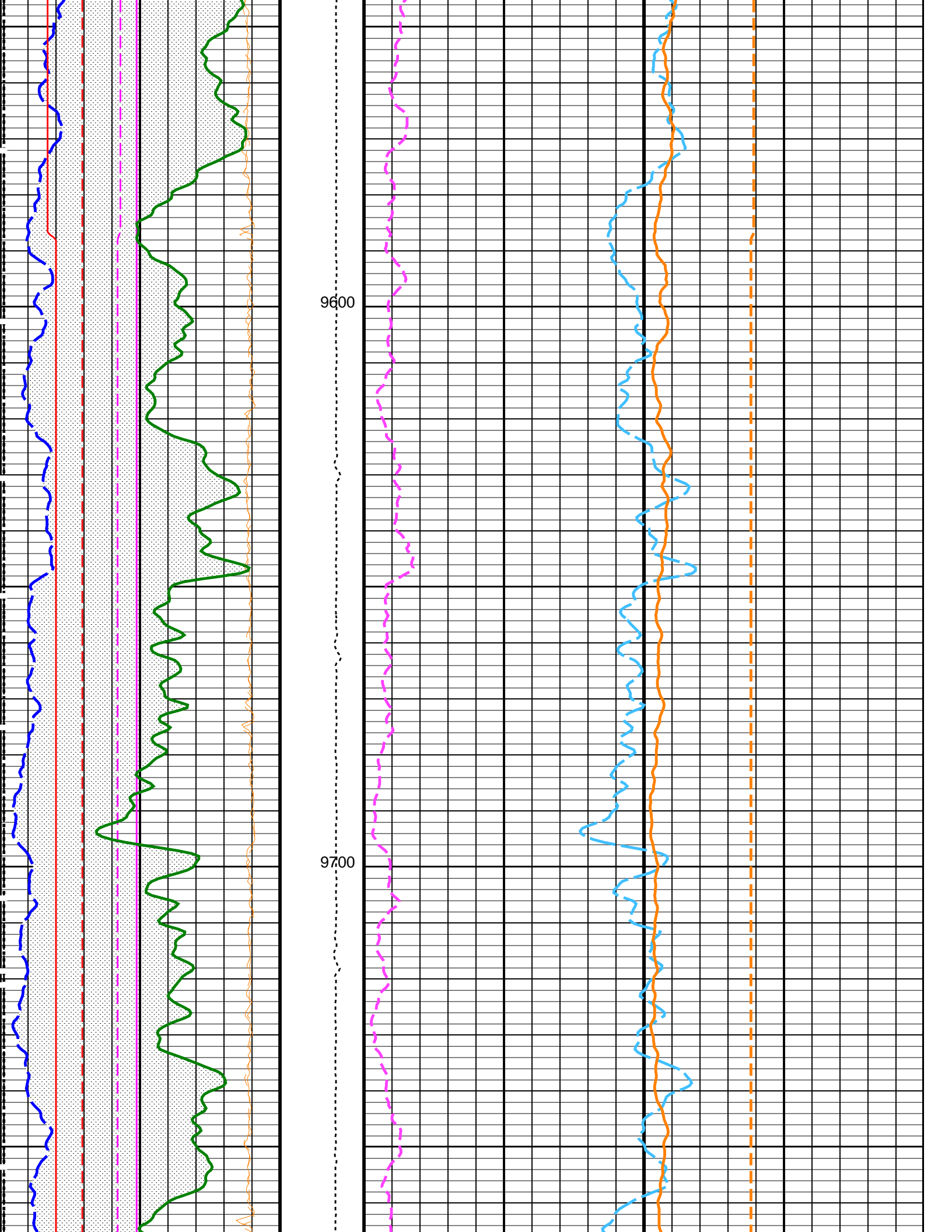


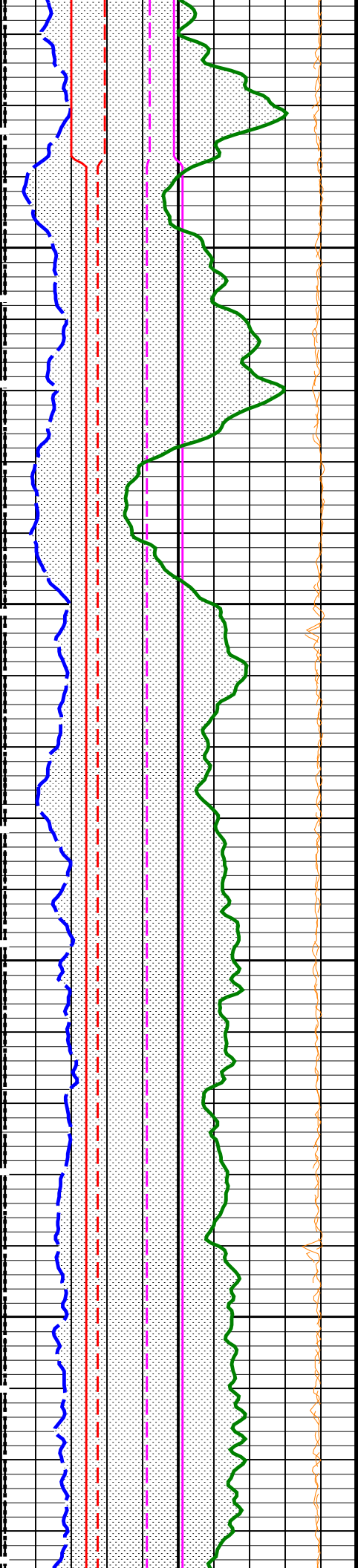






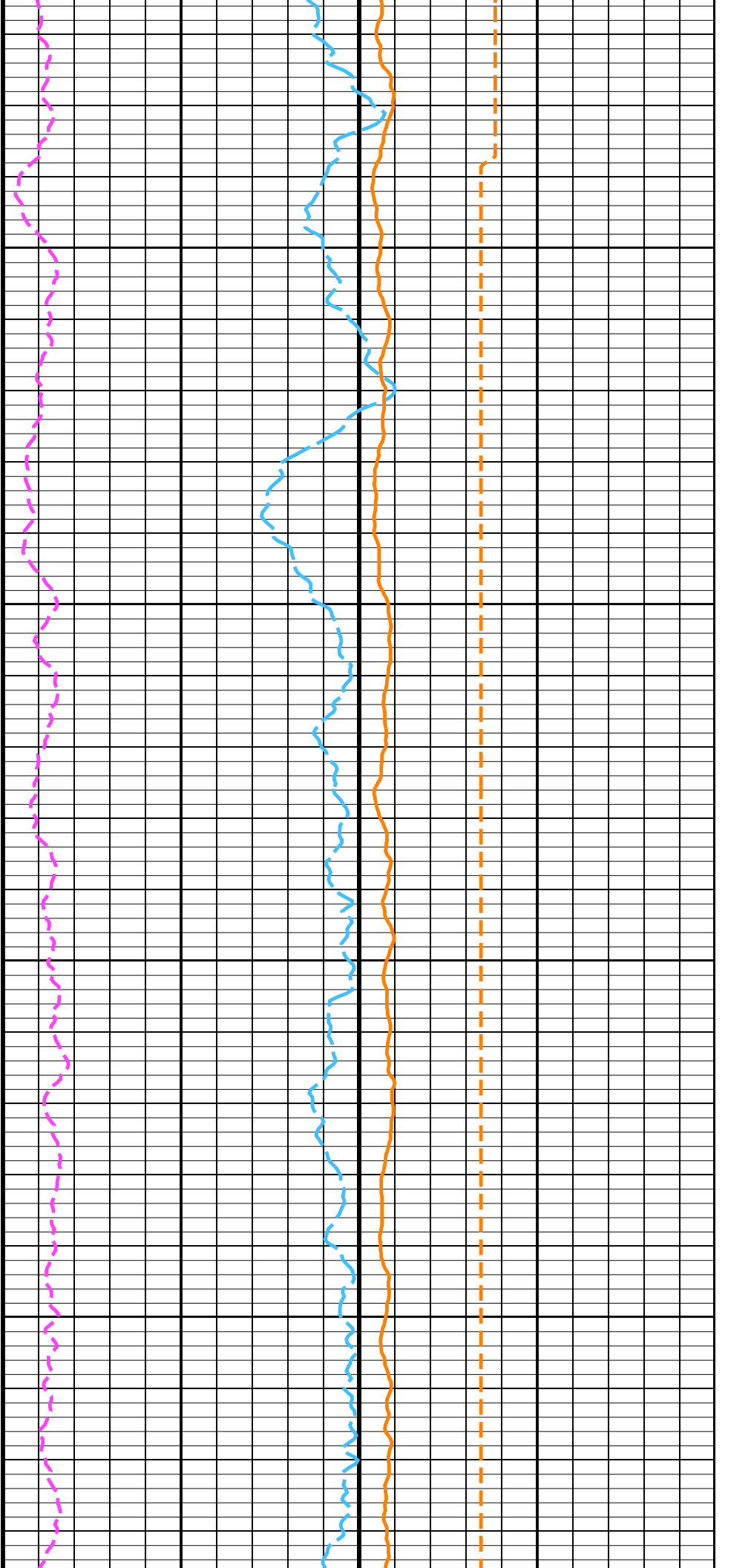


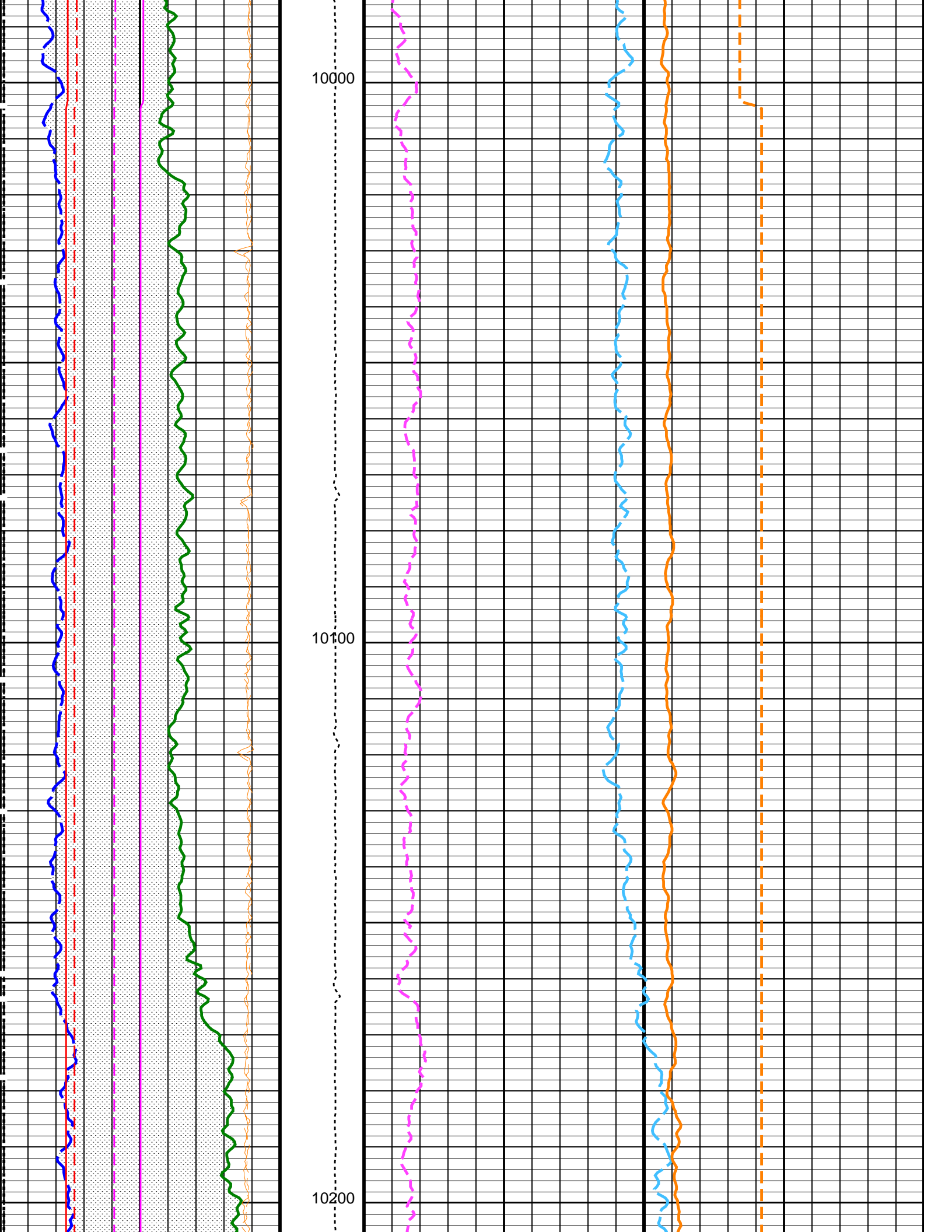


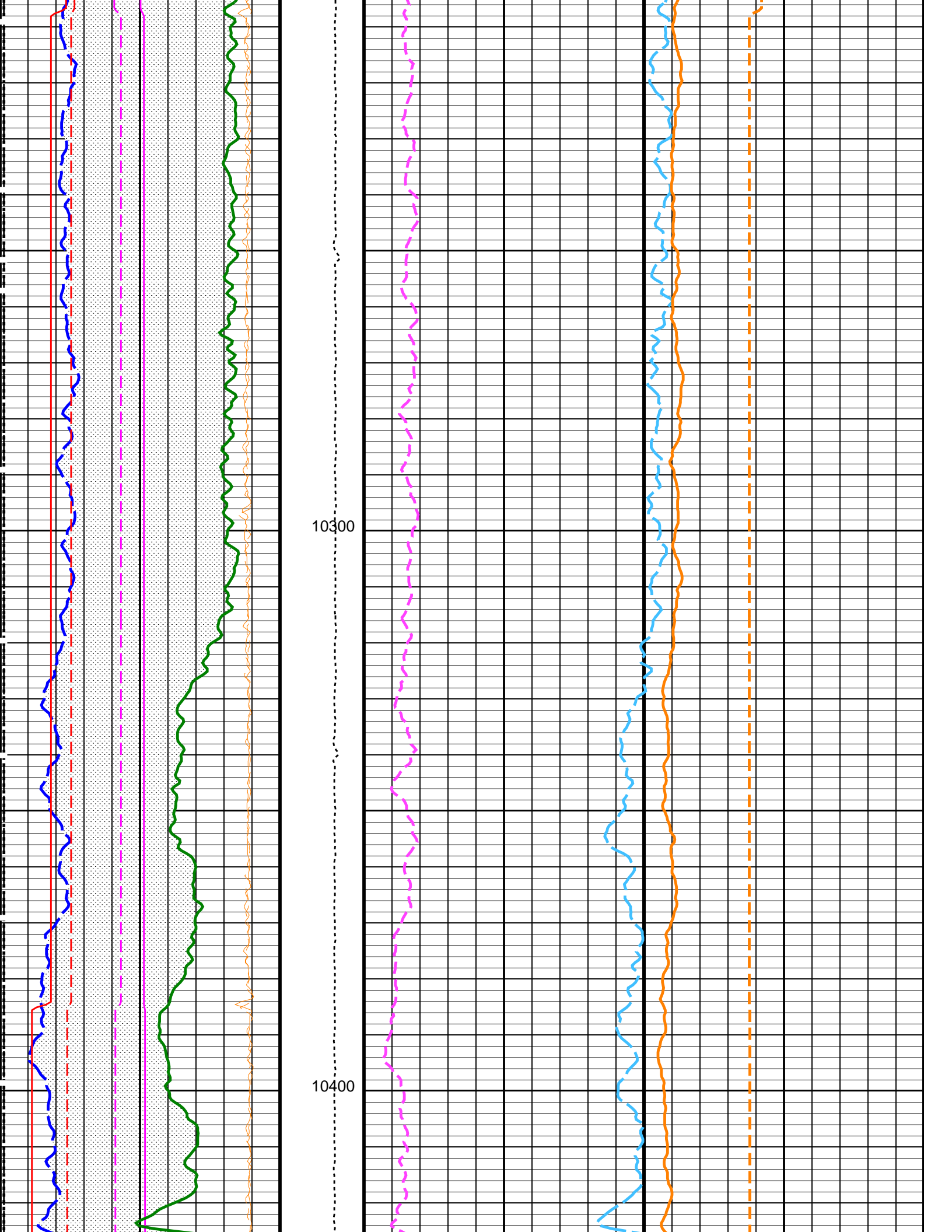


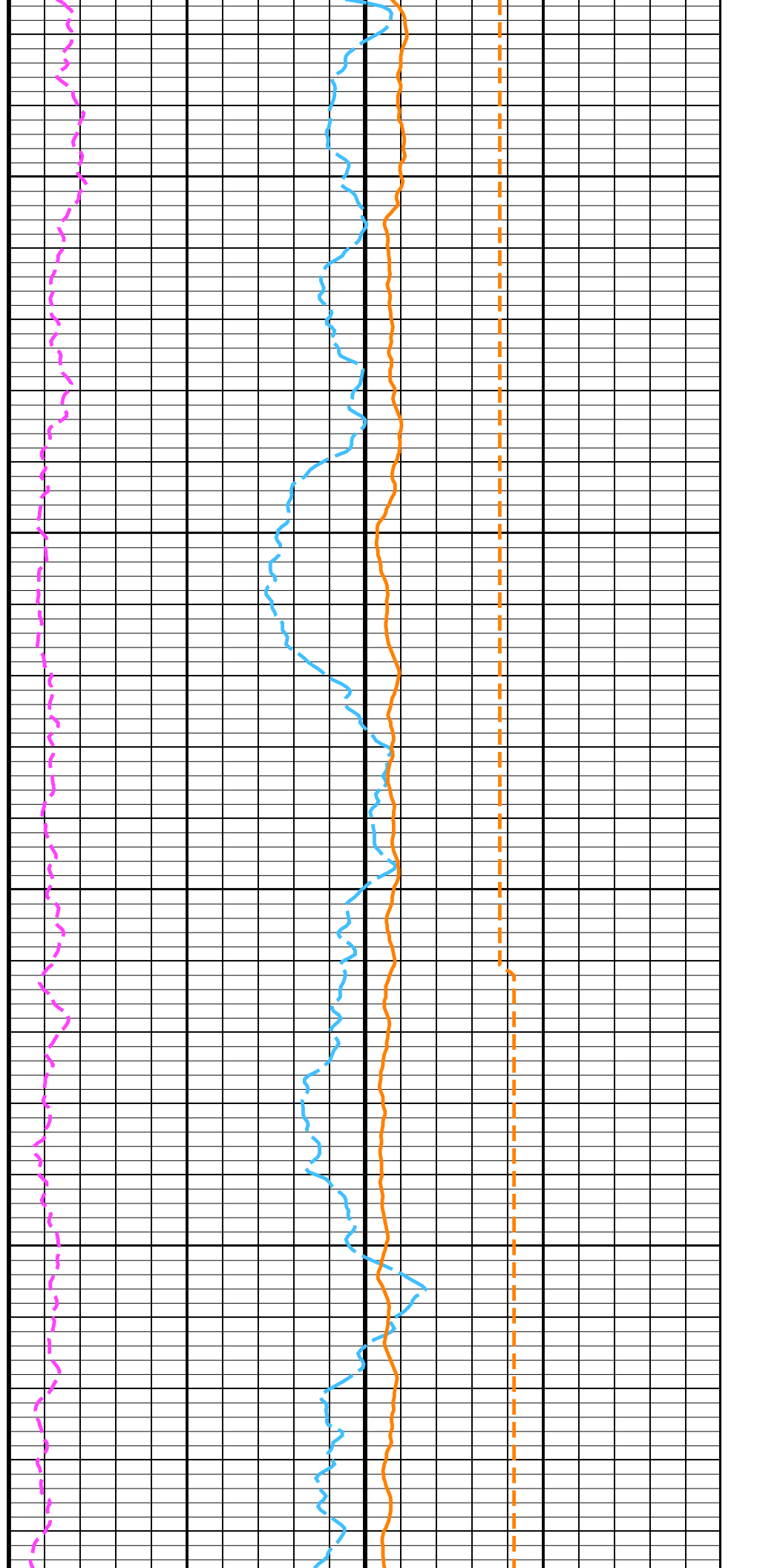
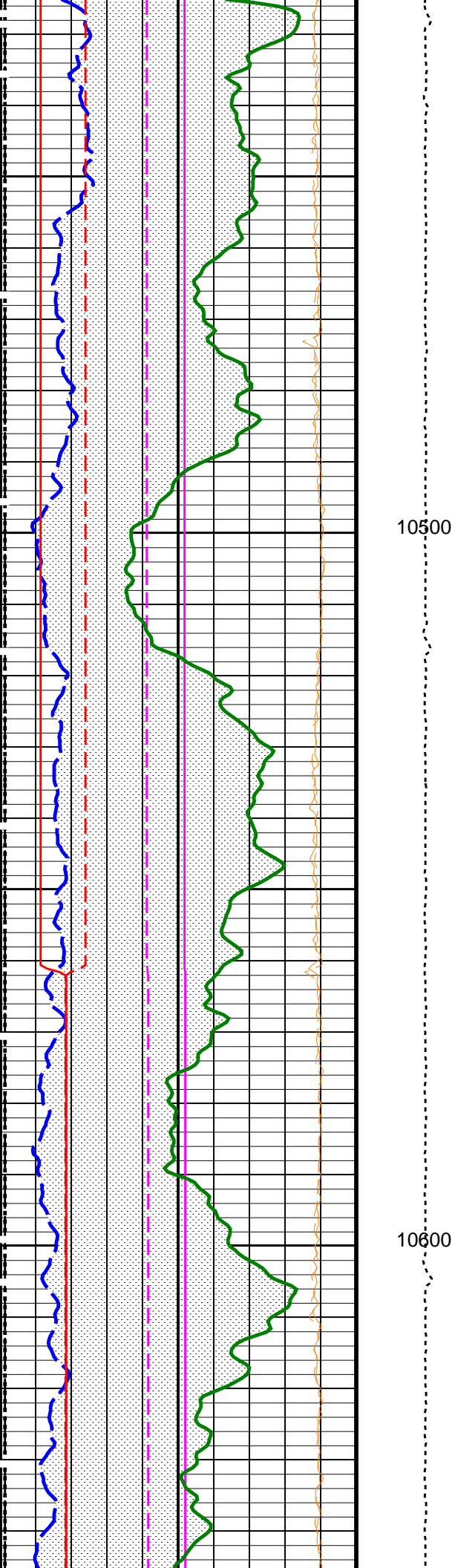
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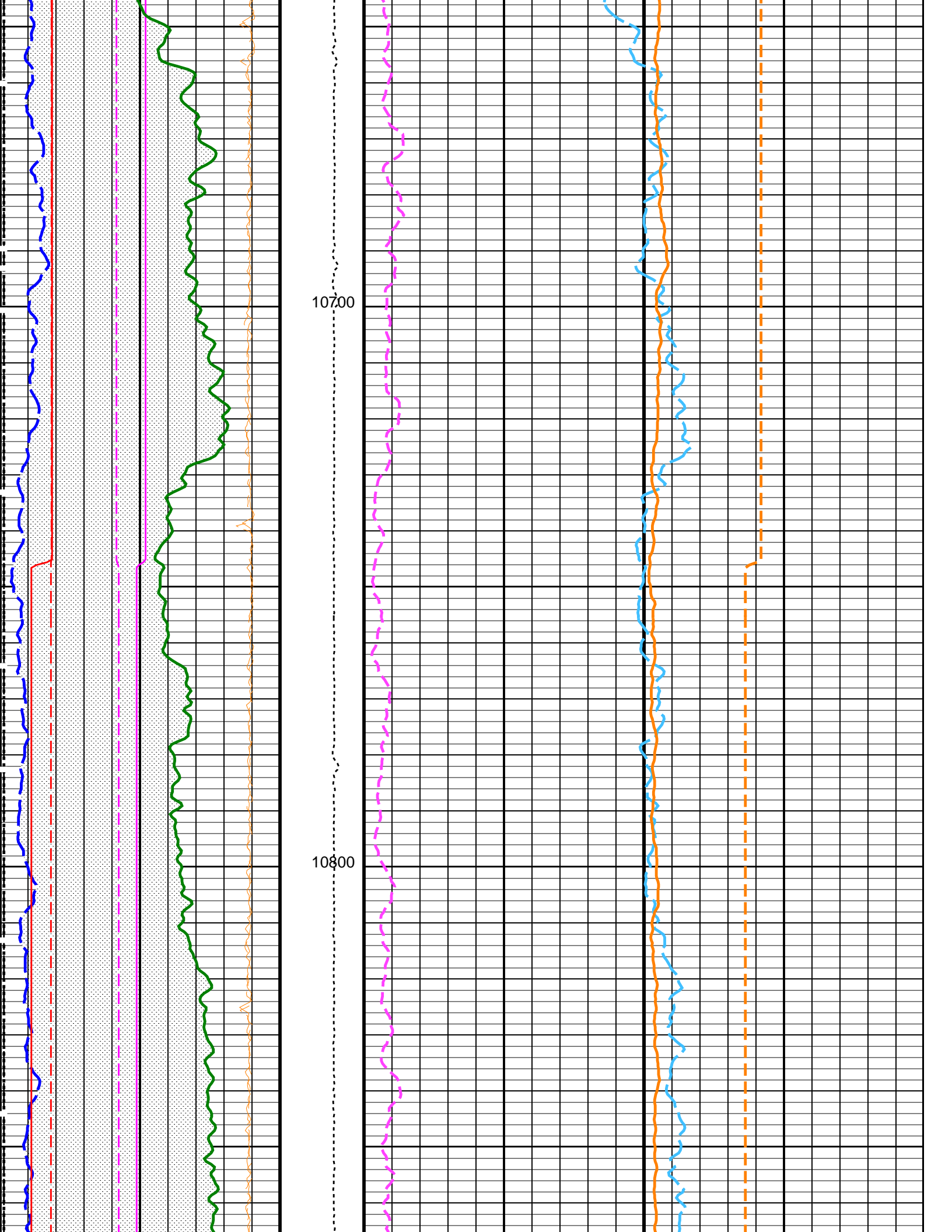
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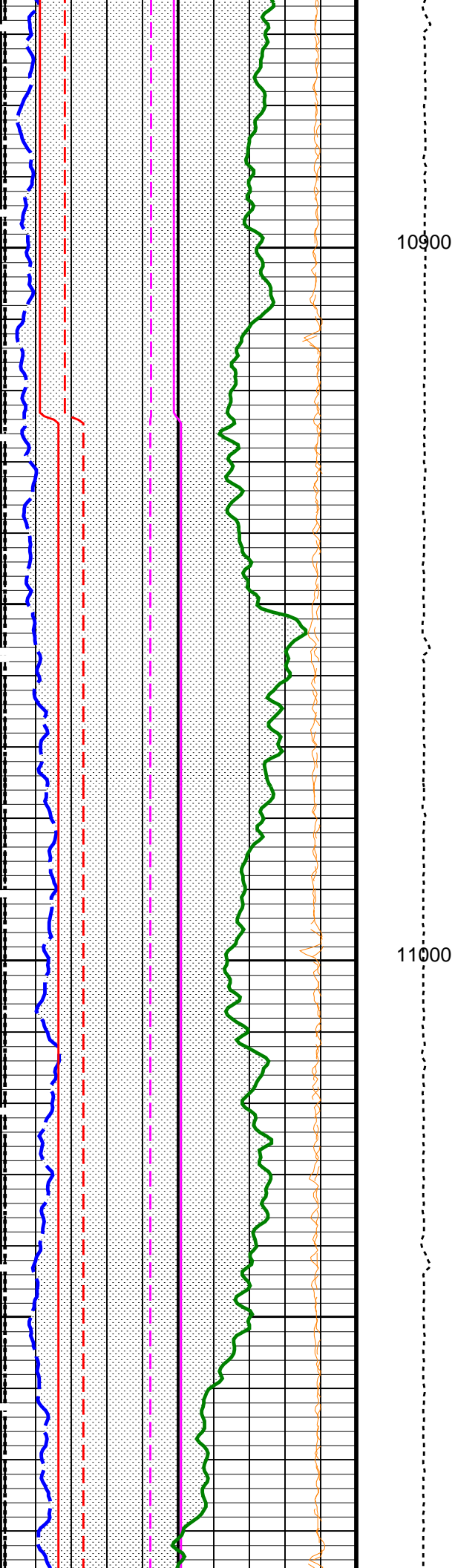






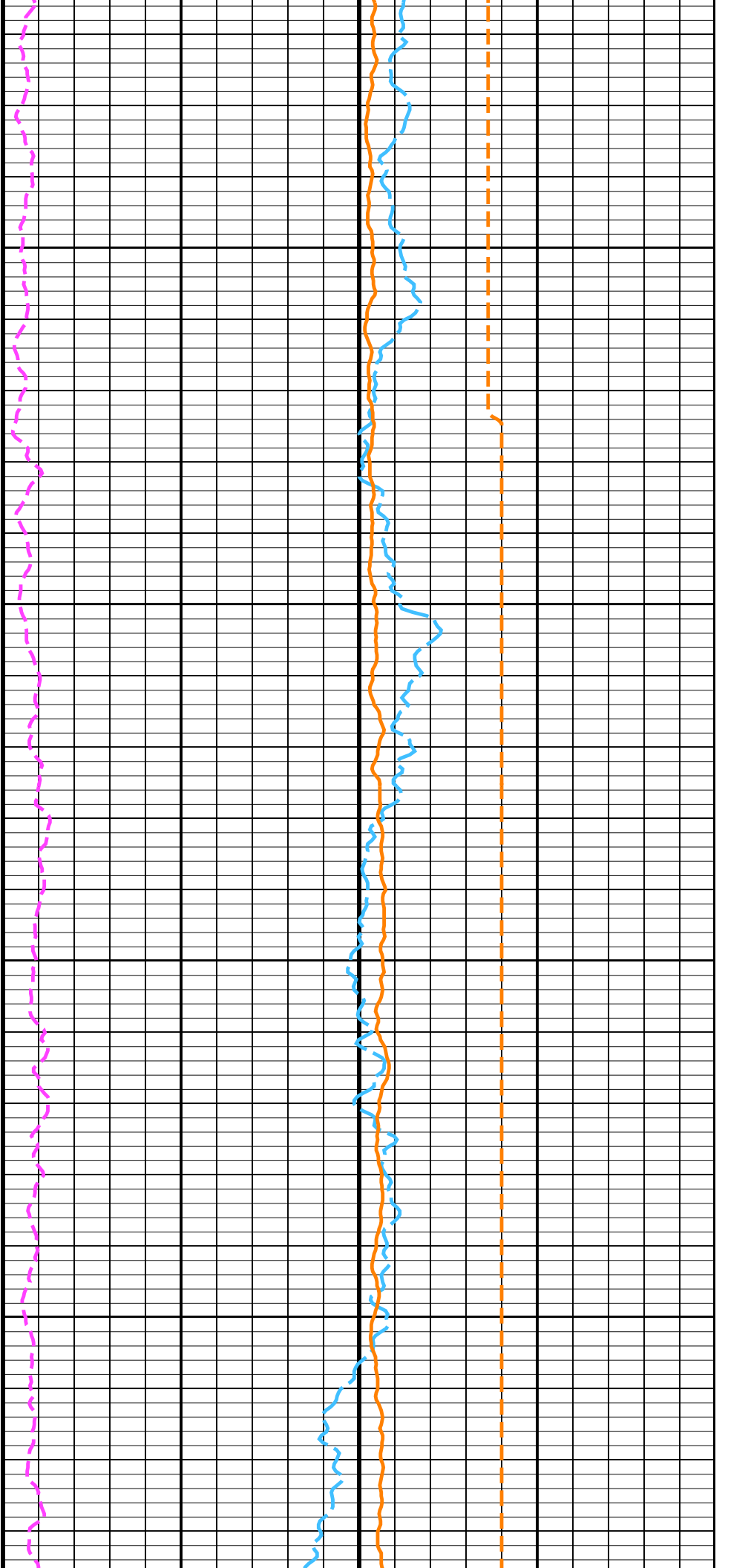


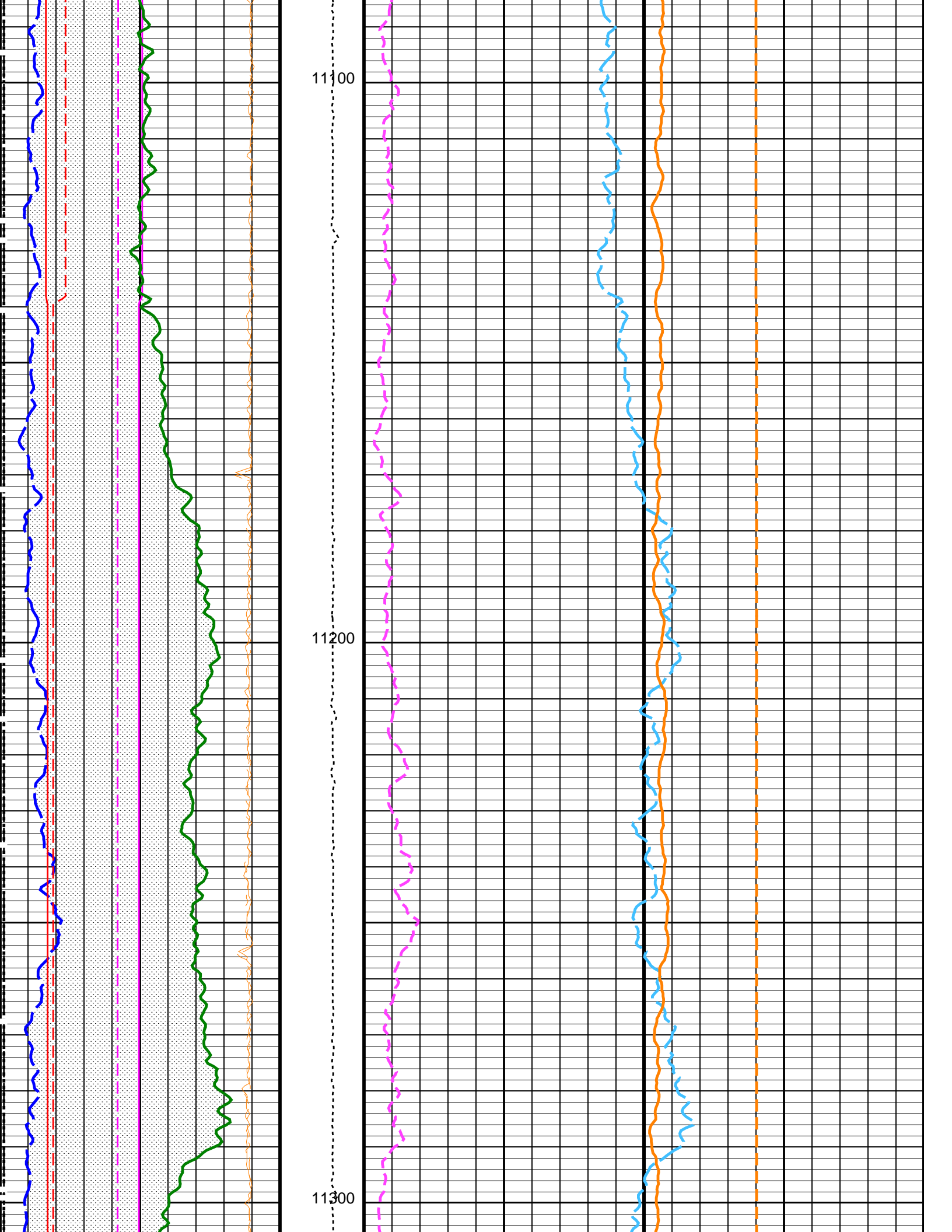


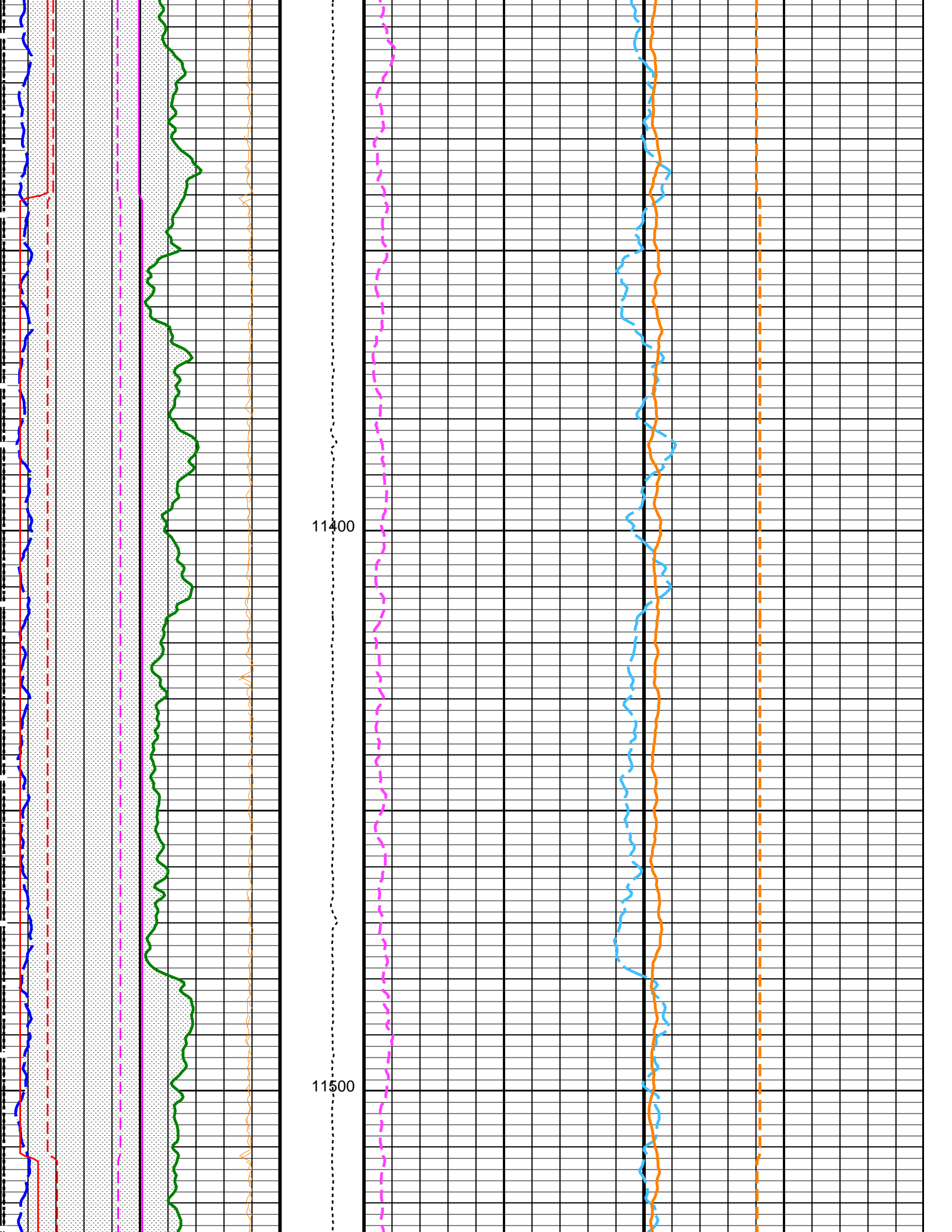


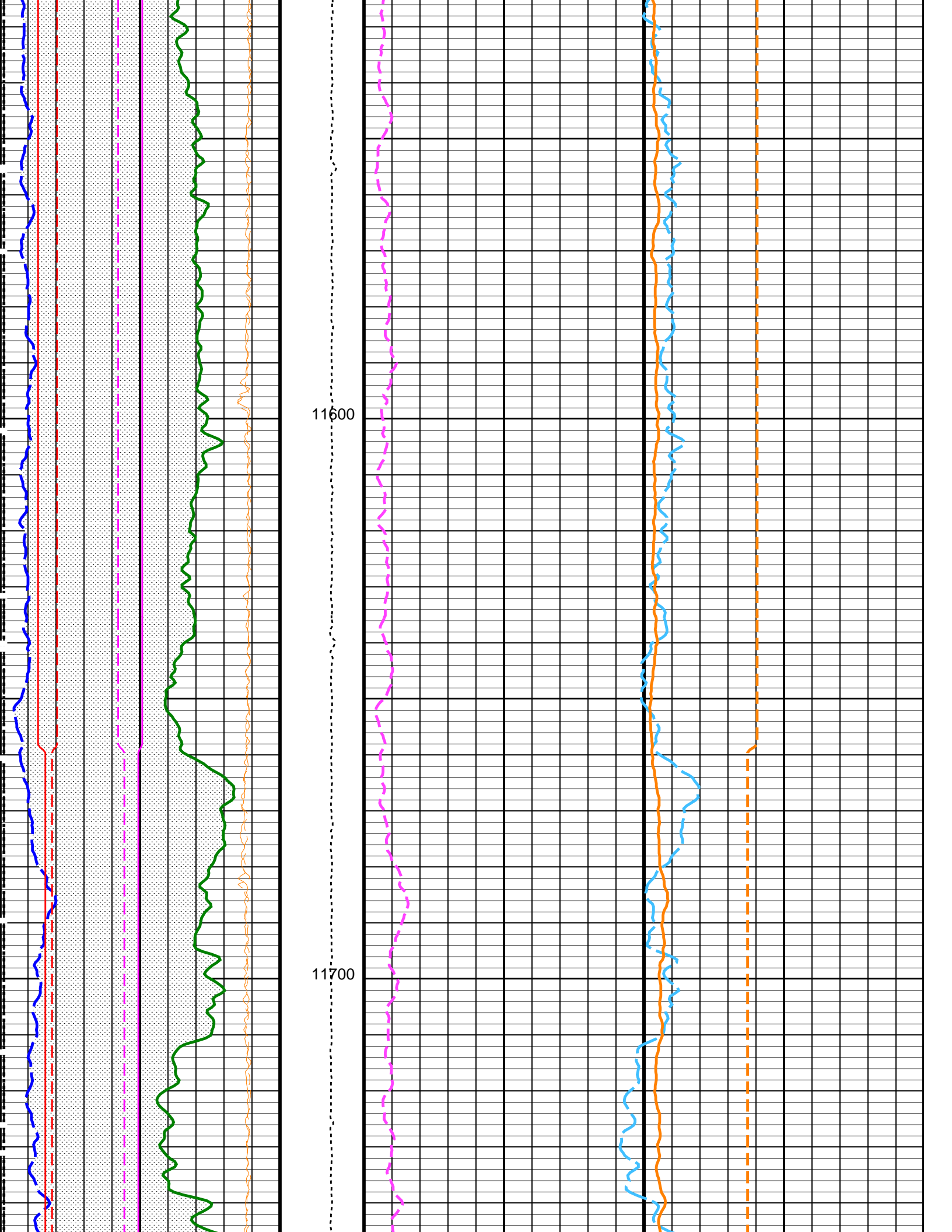
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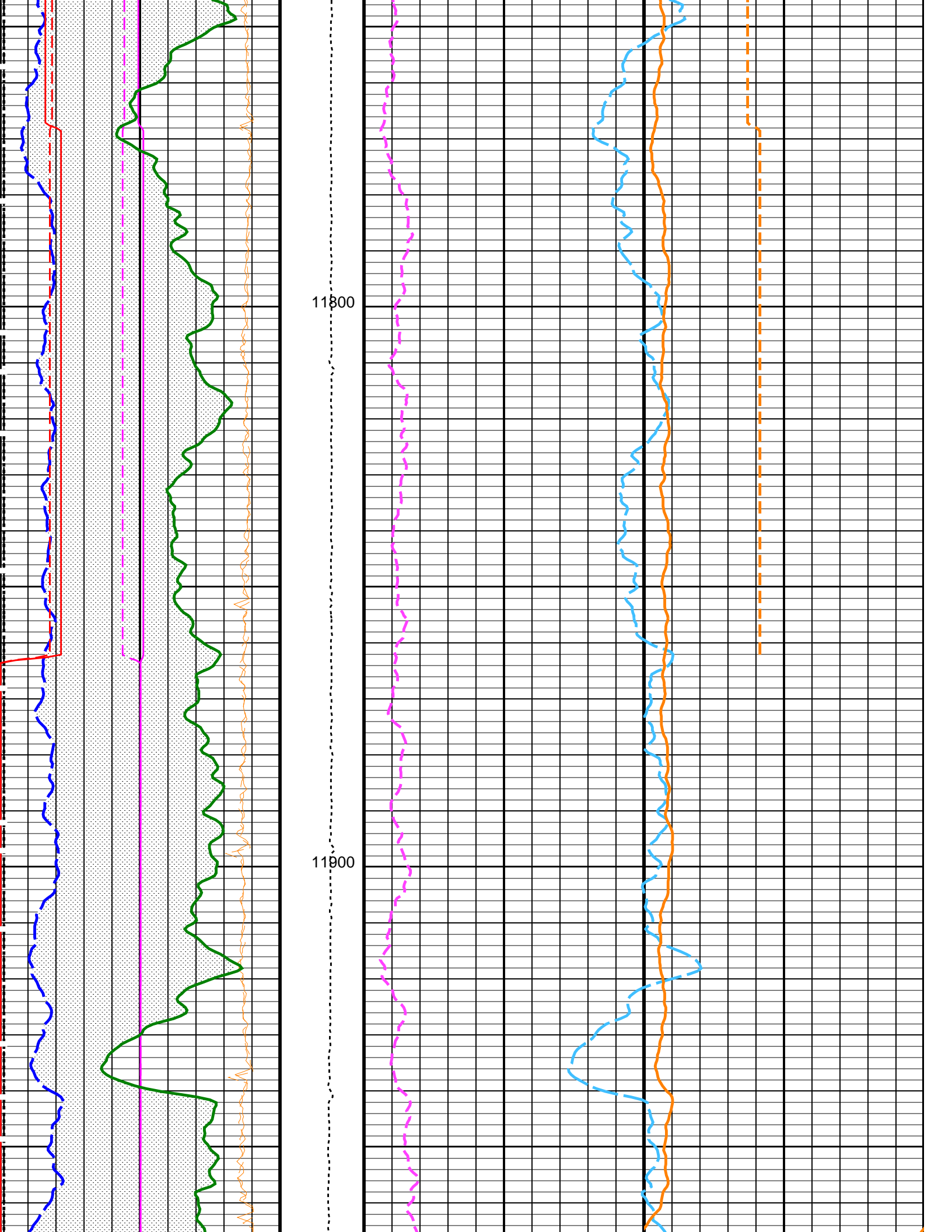
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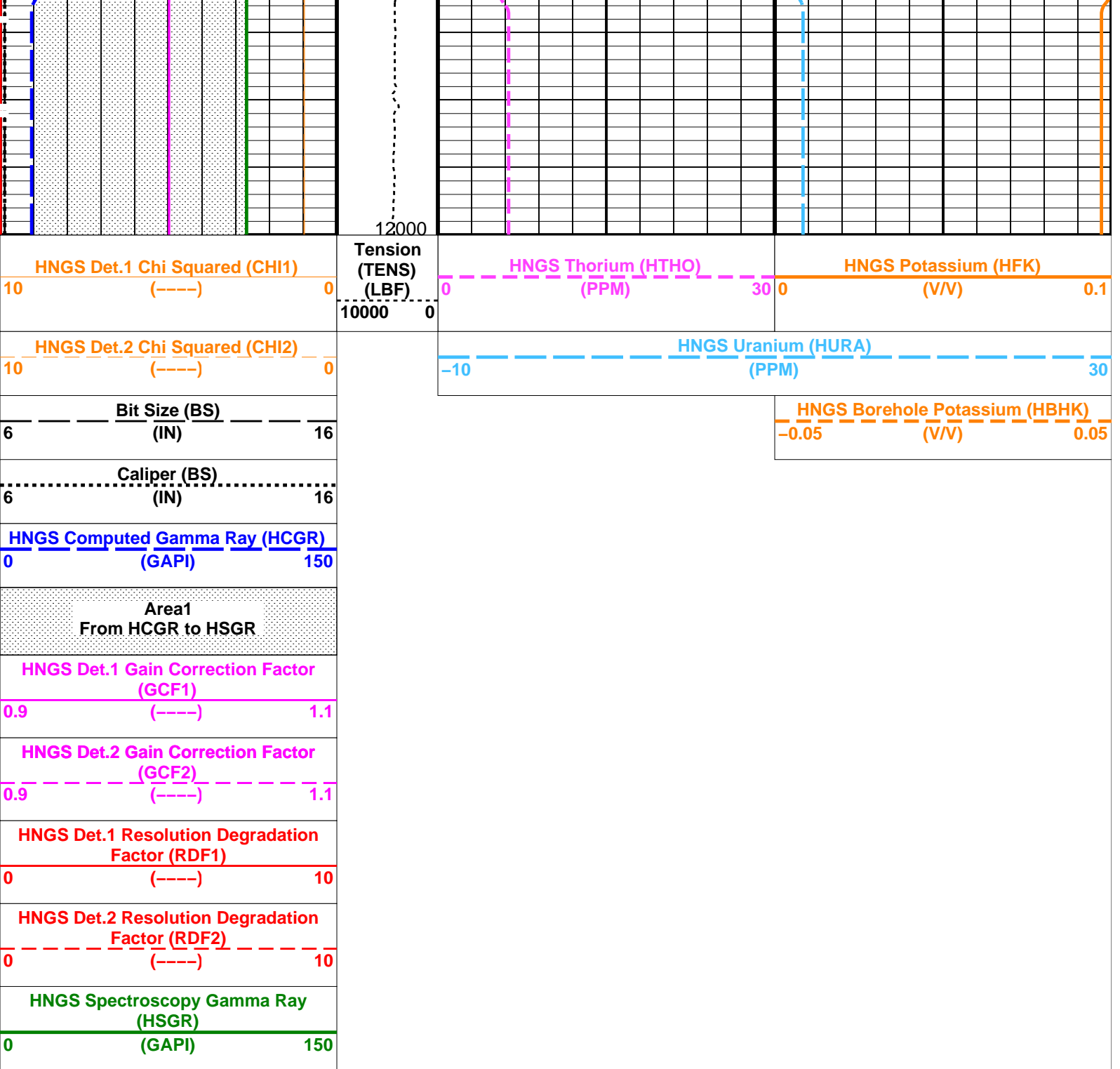












PIP SUMMARY

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	-0.011388
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	-999.25	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	-999.25	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.98141	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.988575	
<b>System and Miscellaneous</b>			
BS	Bit Size	6.125	IN
DFD	Drilling Fluid Density	10.20	LB/G
DO	Depth Offset for Playback	8.0	FT
PP	Playback Processing	NORMAL	

Format: HNGSYields    Vertical Scale: 5" per 100'    Graphics File Created: 01-Feb-2012 13:06

### OP System Version: 18C0-147

FBST-B	18C0-147	PPC1-B	18C0-147
HNGC-B	HFE-4001-OP18-NUCL	HNGS-BA	HFE-4001-OP18-NUCL
DTC-H	18C0-147		

#### Input DLIS Files

DEFAULT	FMI_CAL_NGS_007LUP	FN:6	PRODUCER	01-Feb-2012 08:58	11992.5 FT	7649.5 FT
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#### Output DLIS Files

DEFAULT	FMI_CAL_NGS_009PUP	FN:8	PRODUCER	01-Feb-2012 13:06
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**Company: Kerr-McGee Oil & Gas Onshore LP**



**Well: Cannon 36N-11HZ**

**Field: Wattenberg**

**County: Weld**

**State: Colorado**

HNGS  
Xtreme Gammar Ray Spectroscopy