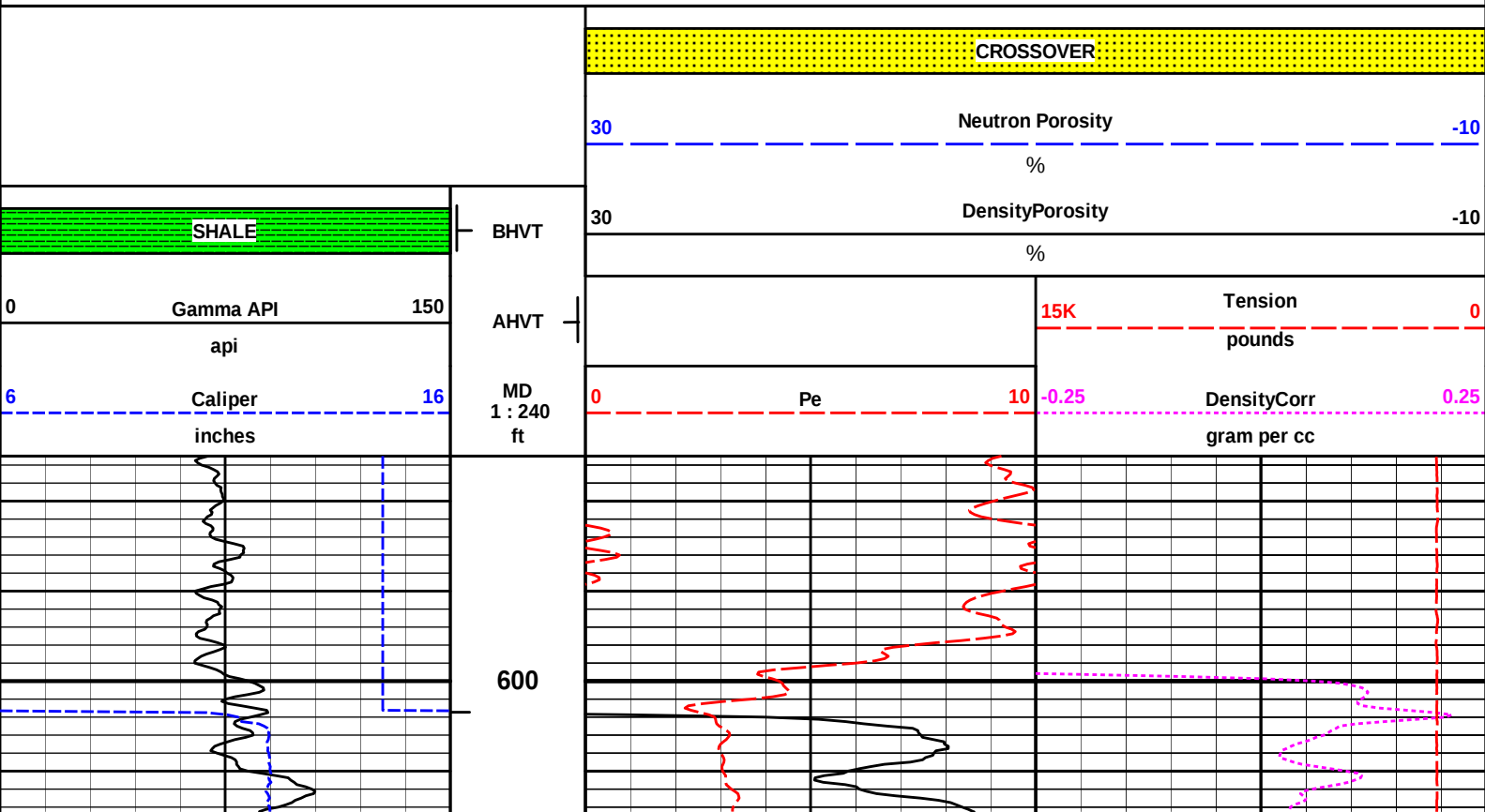
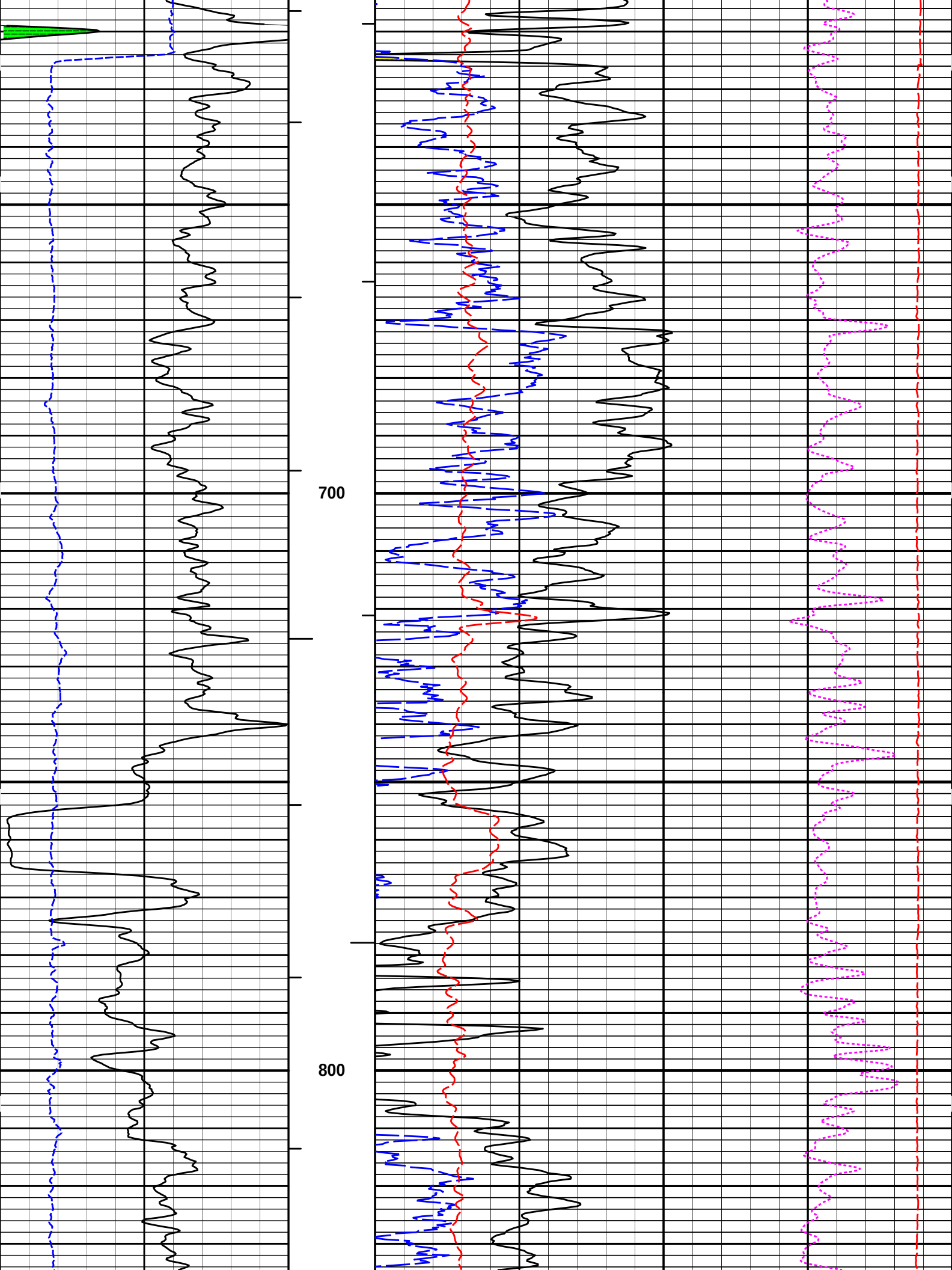


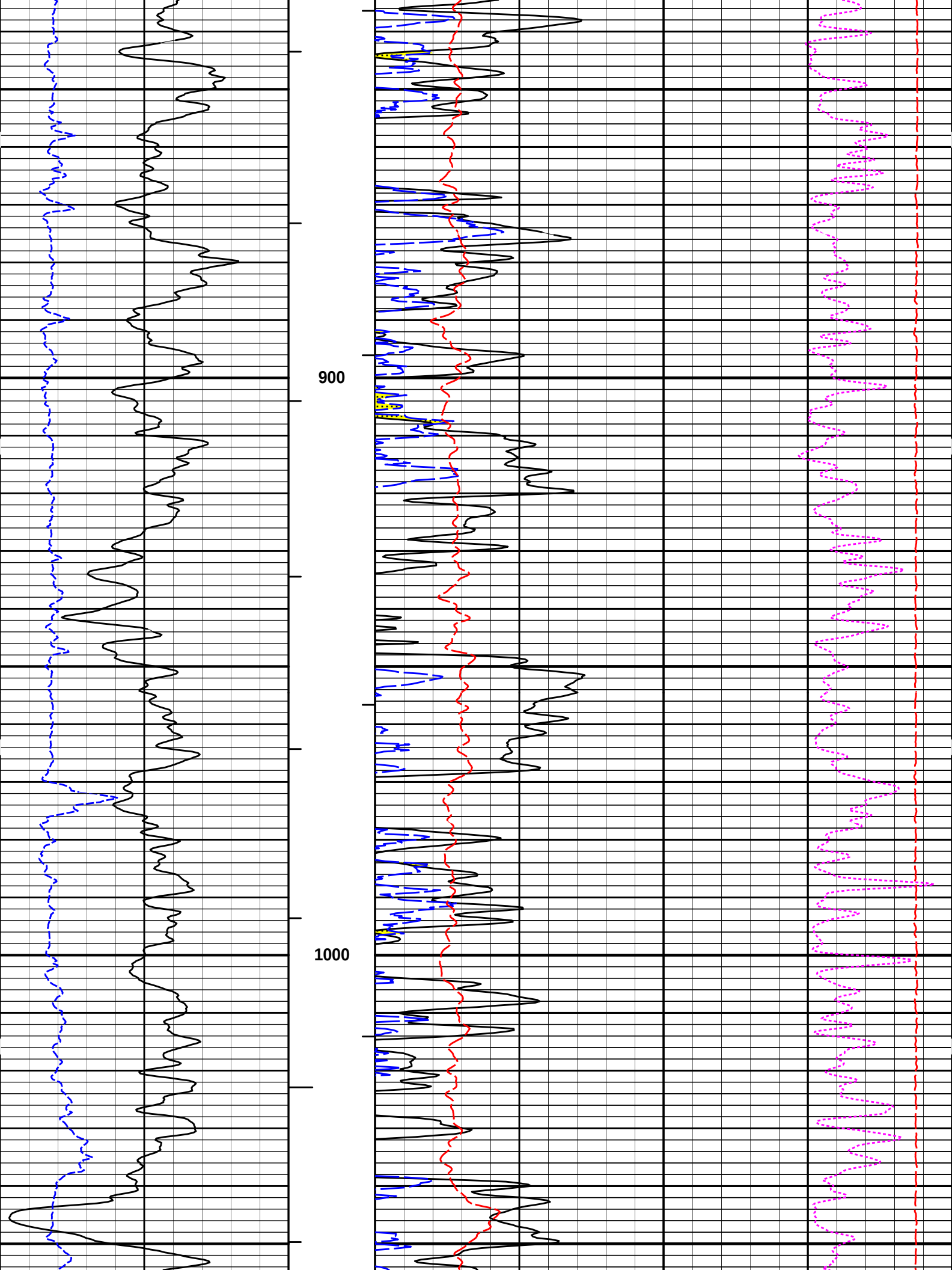
DUAL SPACED NEUTRON SPECTRAL DENSITY LOG

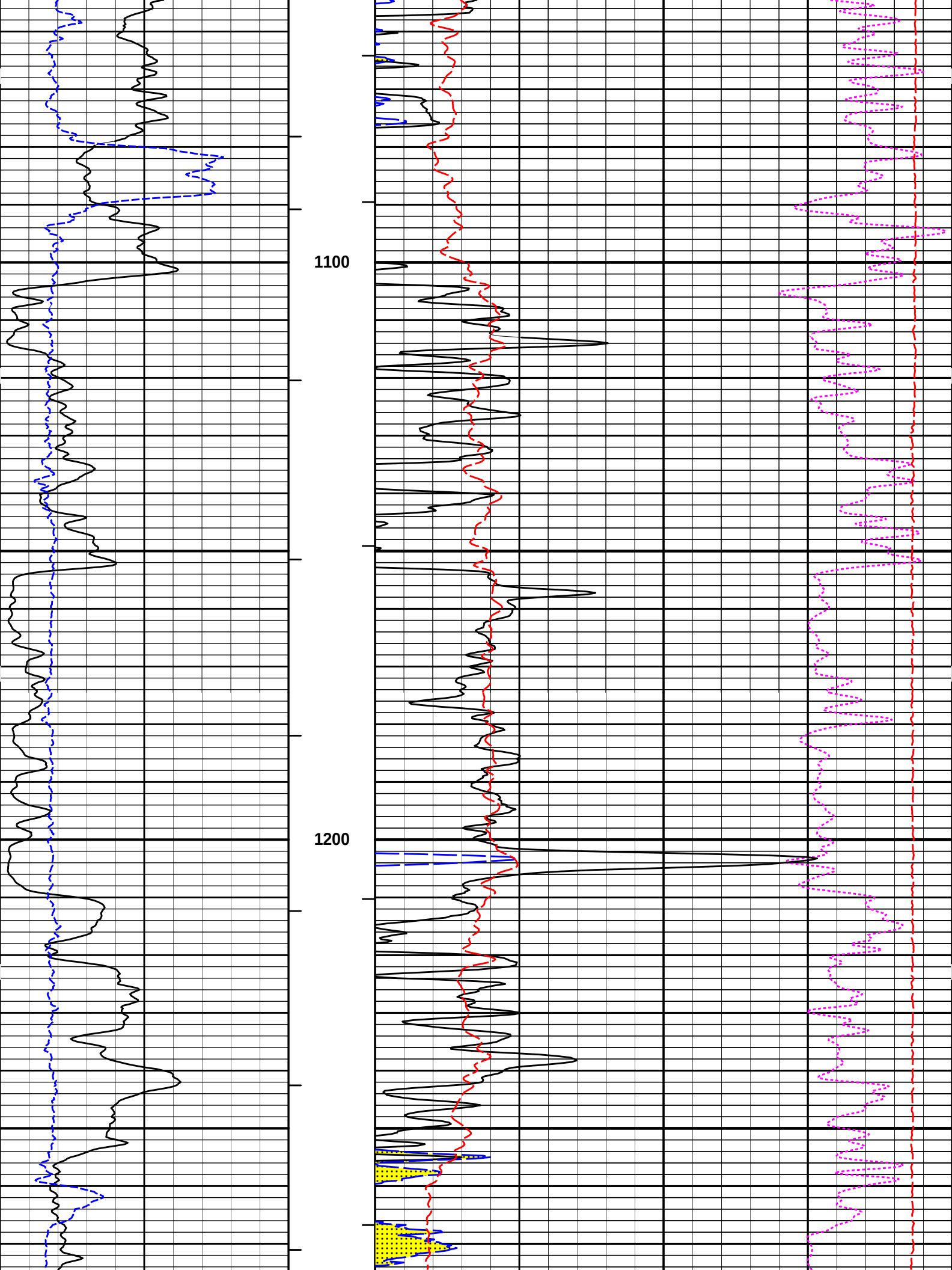
Fold here

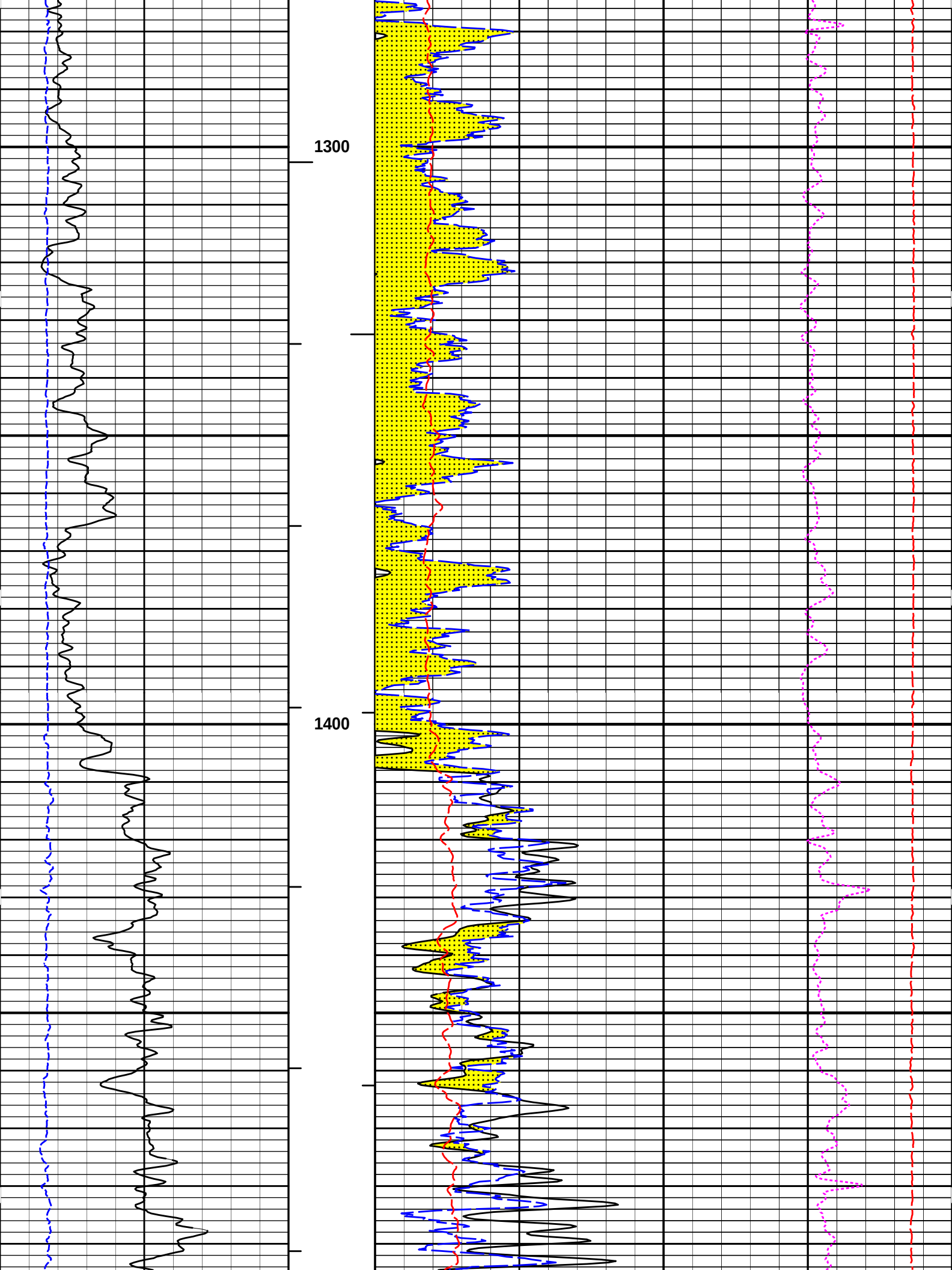
LOGGING DATA

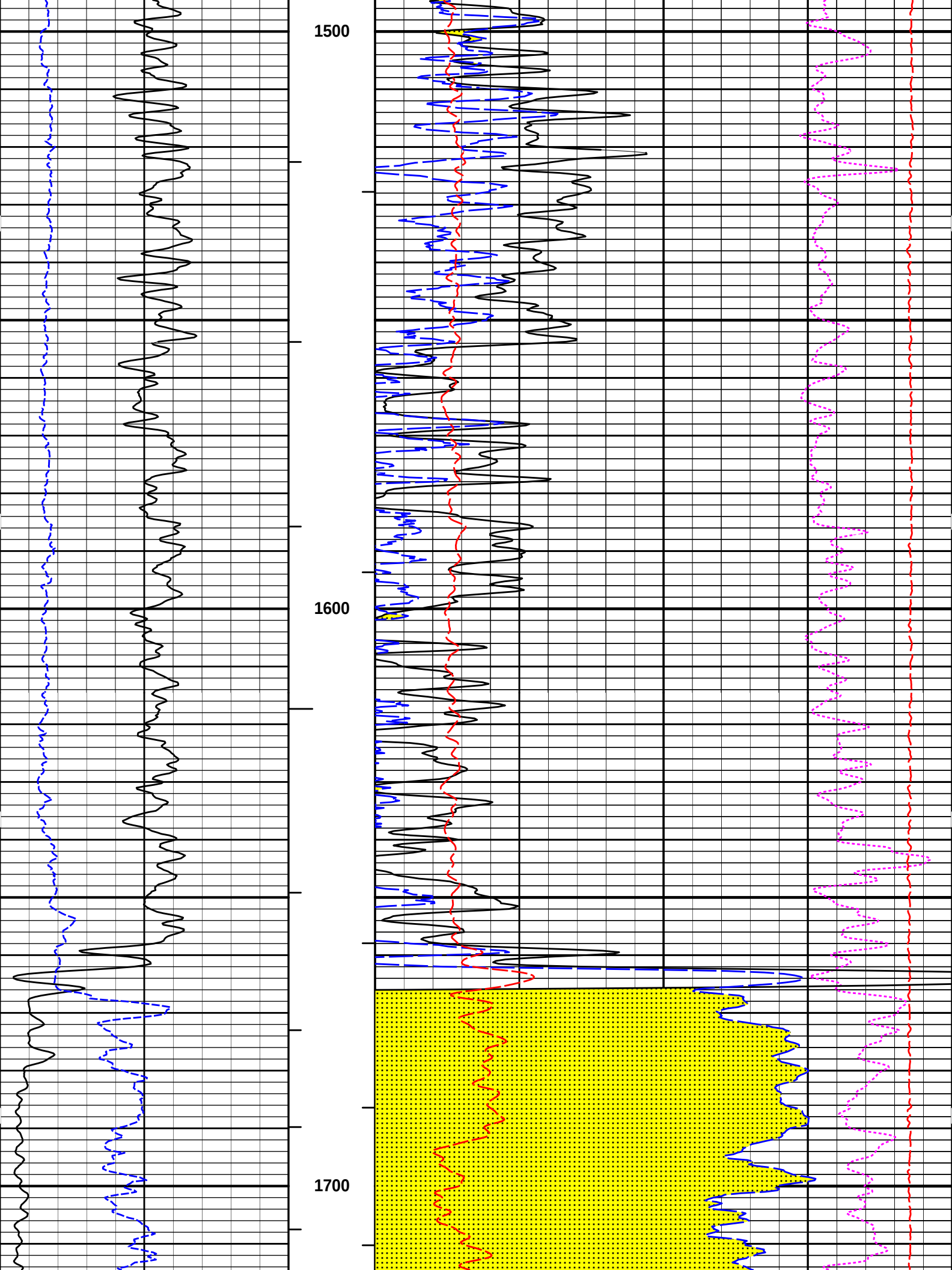
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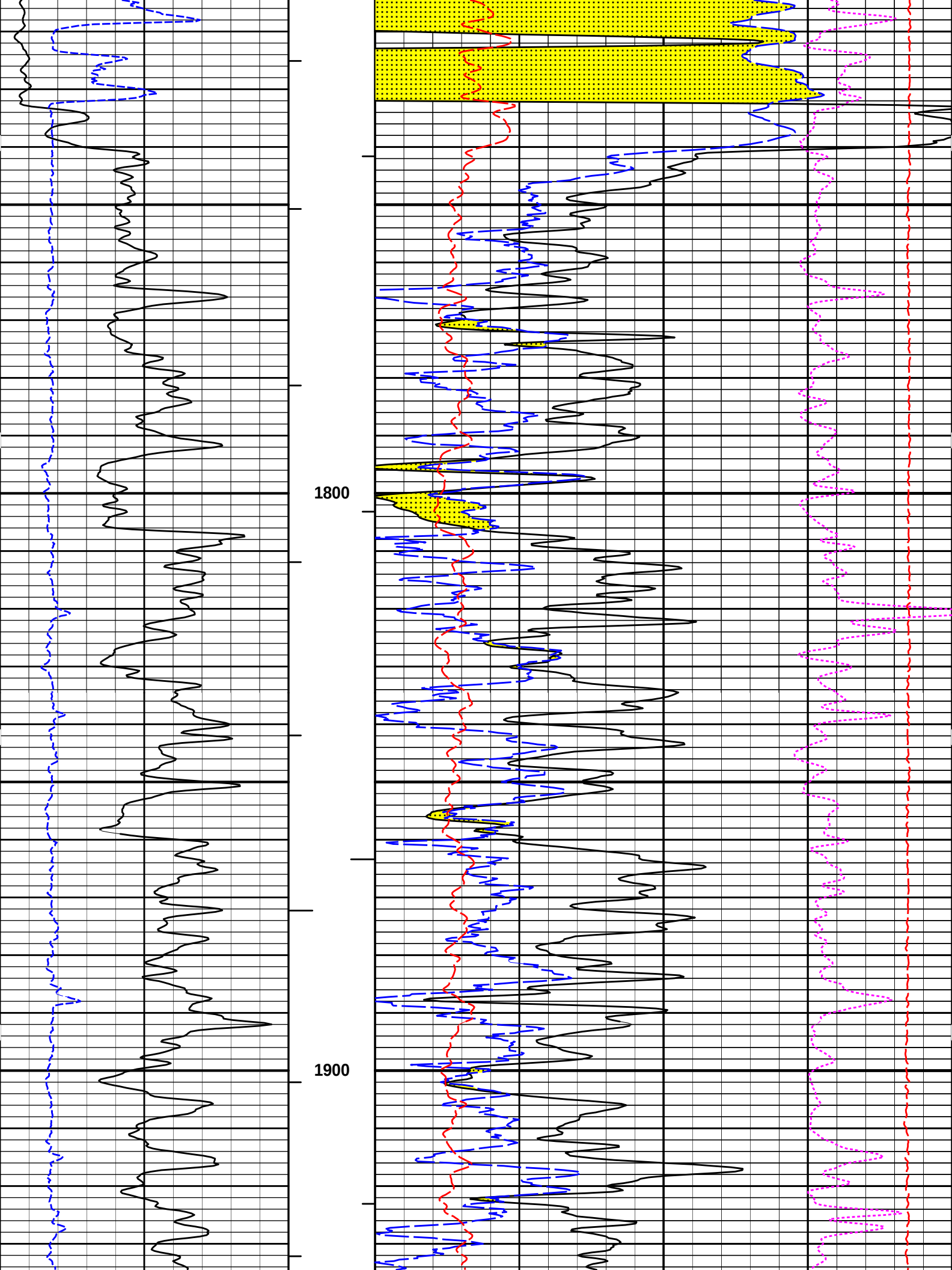


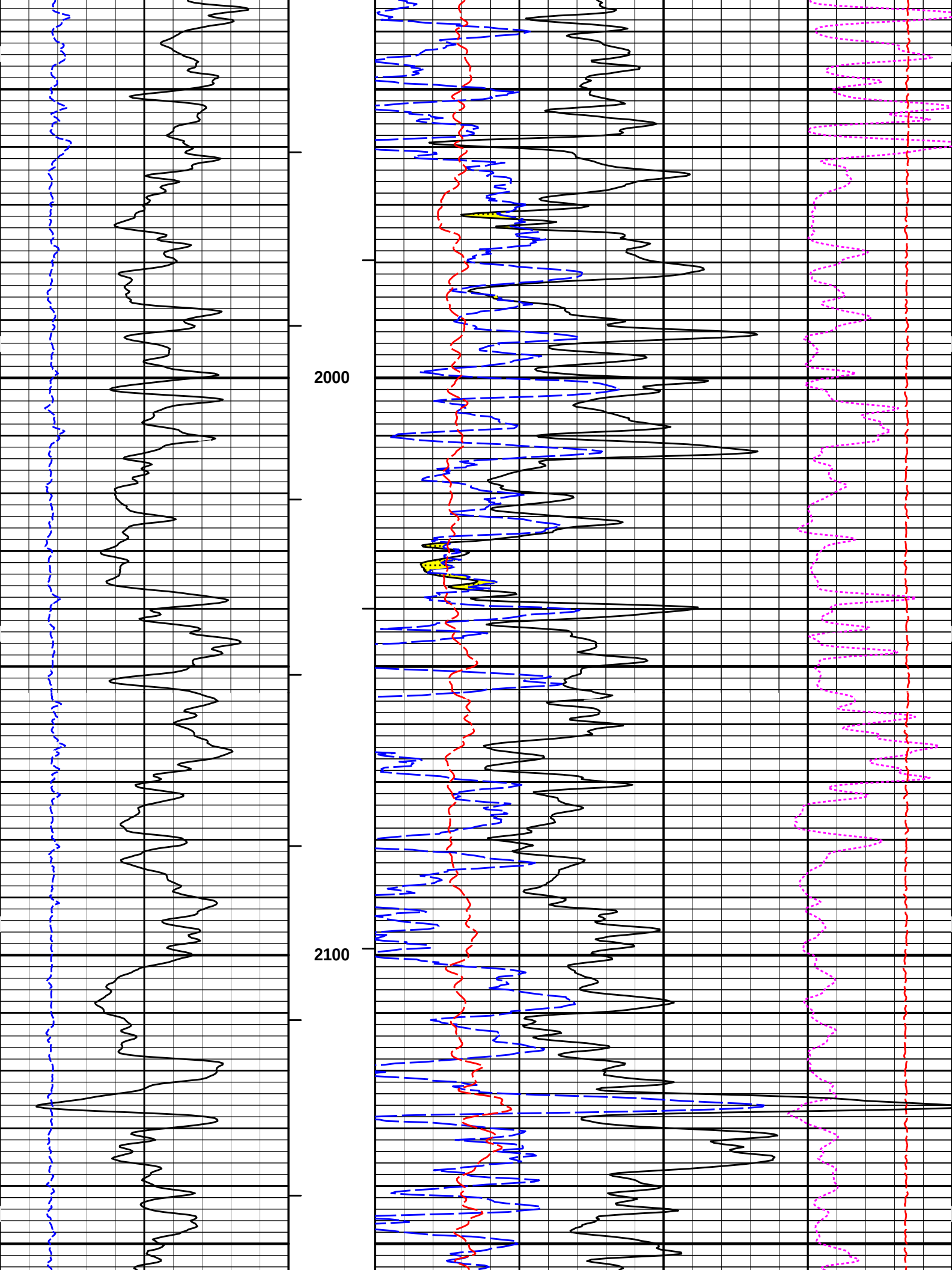


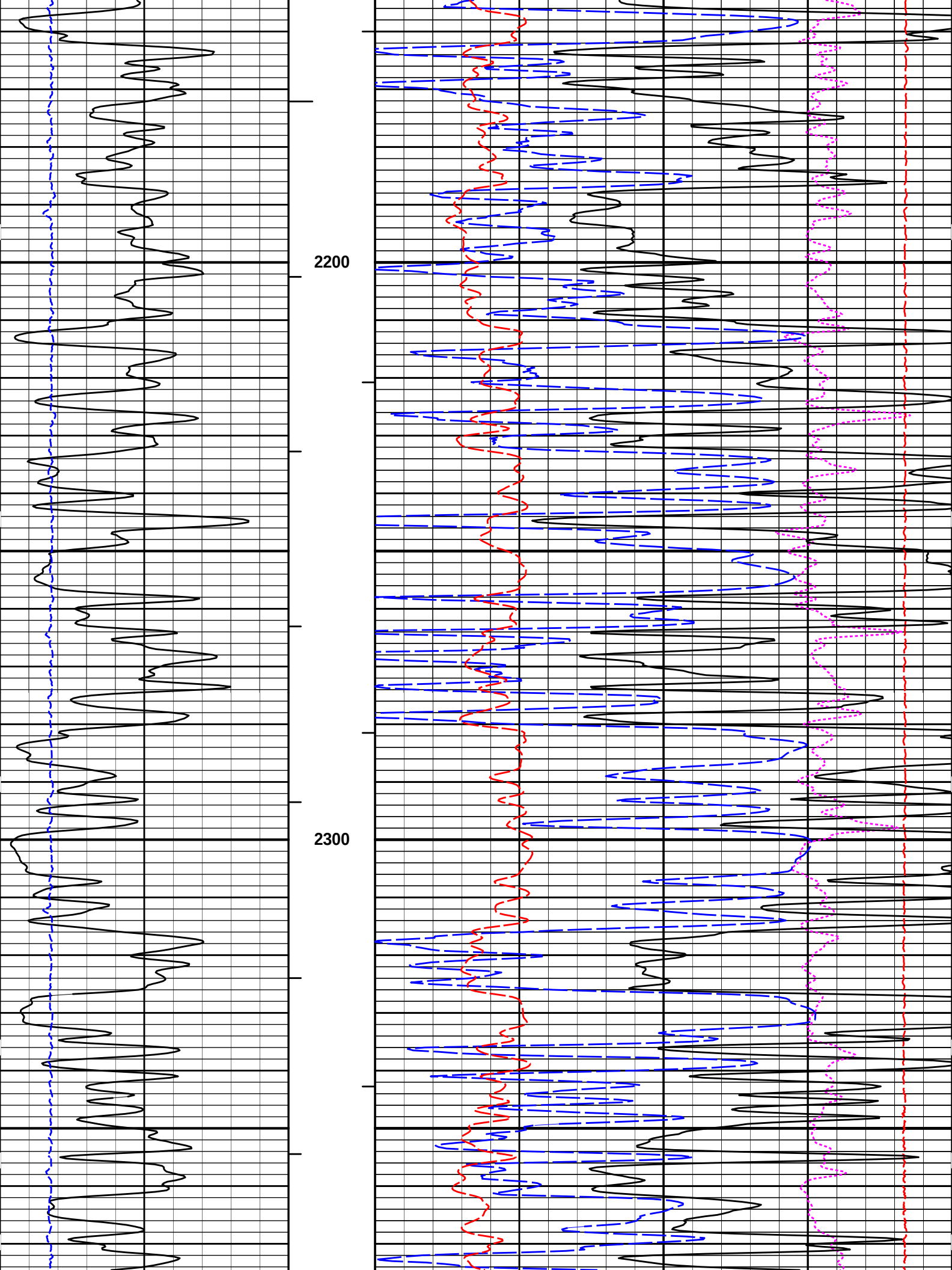


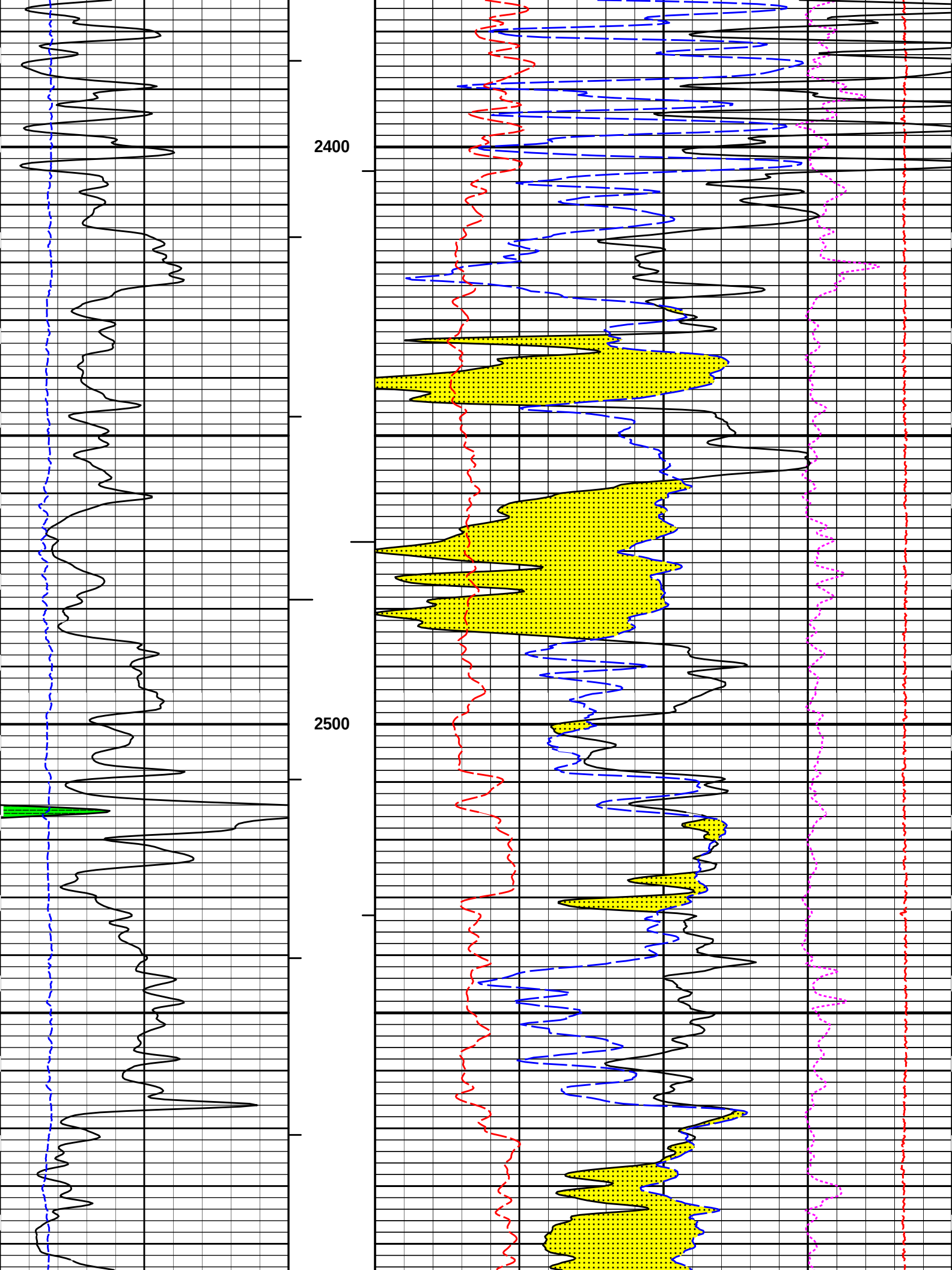


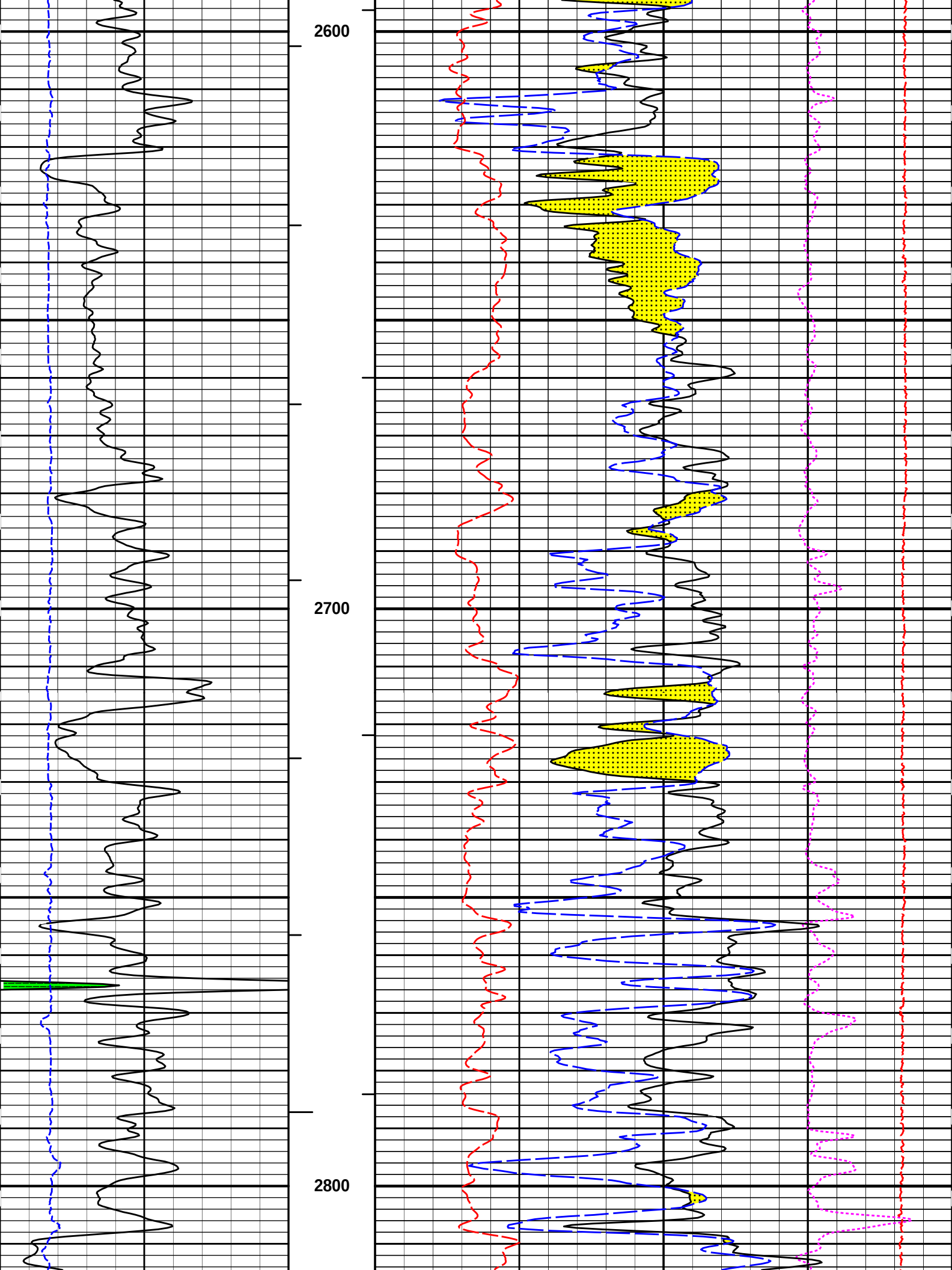


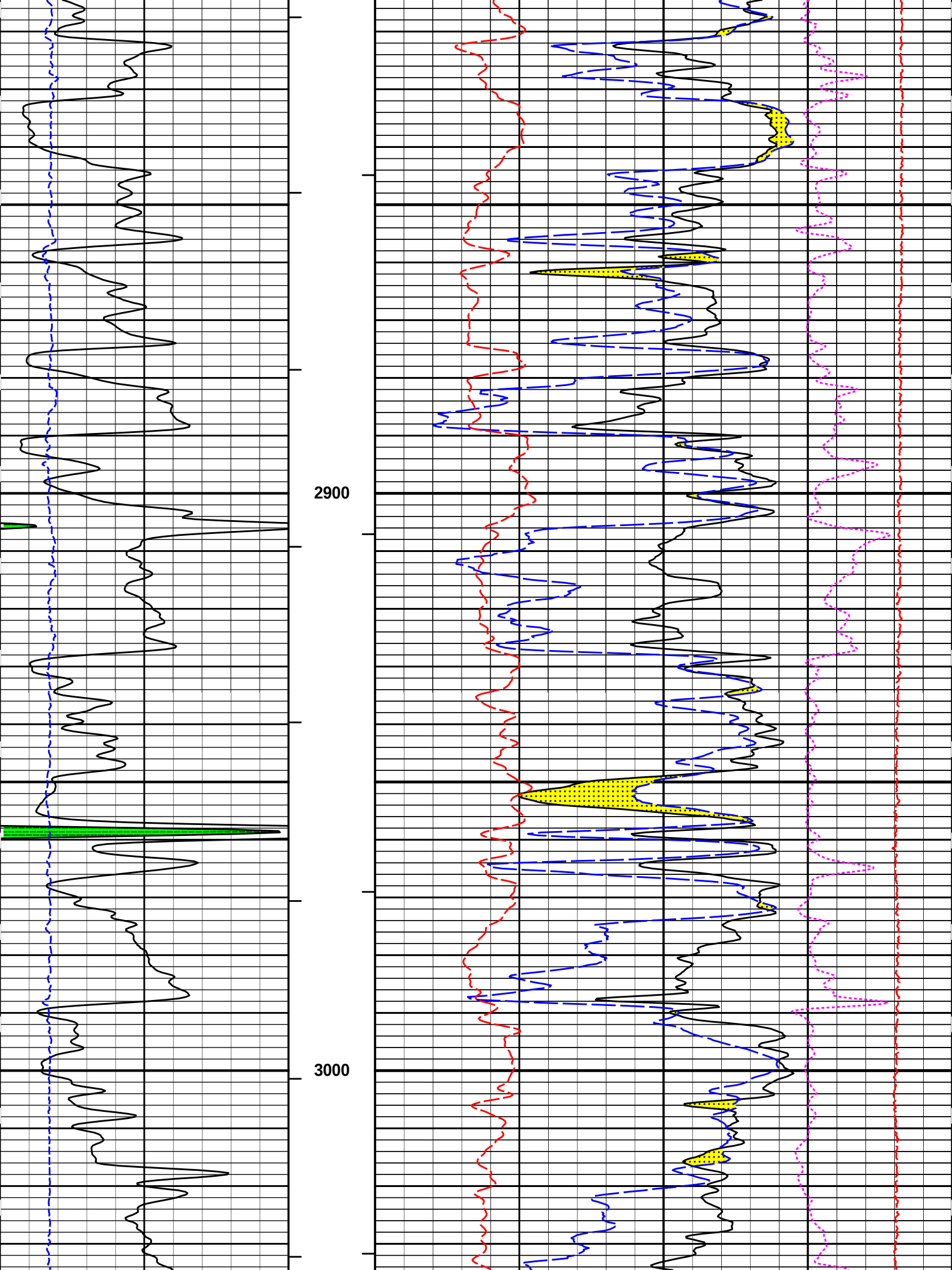


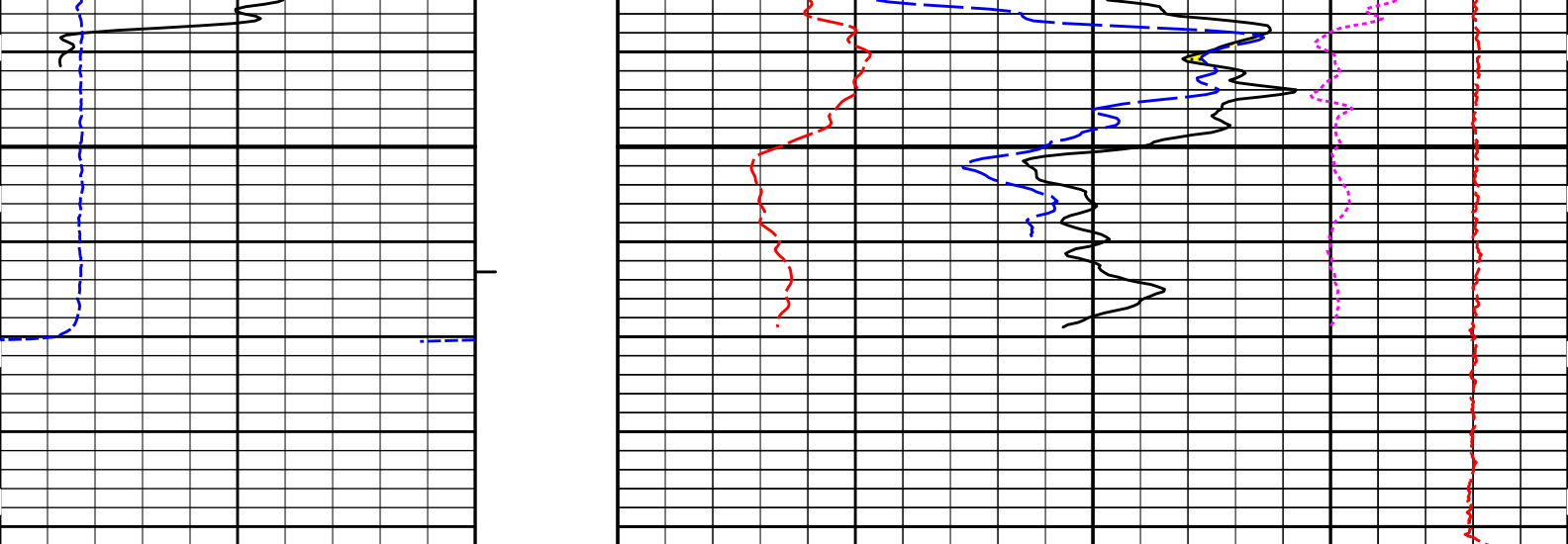












6	Caliper	16	MD 1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25	
	inches							gram per cc		
	Gamma API	150					15K	Tension	0	
	api							pounds		
SHALE			BHVT	30	DensityPorosity				-10	
					%					
				30	Neutron Porosity				-10	
					%					
				CROSSOVER						

HALLIBURTON

Plot Time: 14-Aug-13 16:51:55
Plot Range: 575 ft to 3092.67 ft
Data: DUNN_ATU1\Well Based\IR1 CASING\
Plot File: \\POROSITY\Porosity_Q_5_MAIN_LIB

5 INCH MAIN LOG

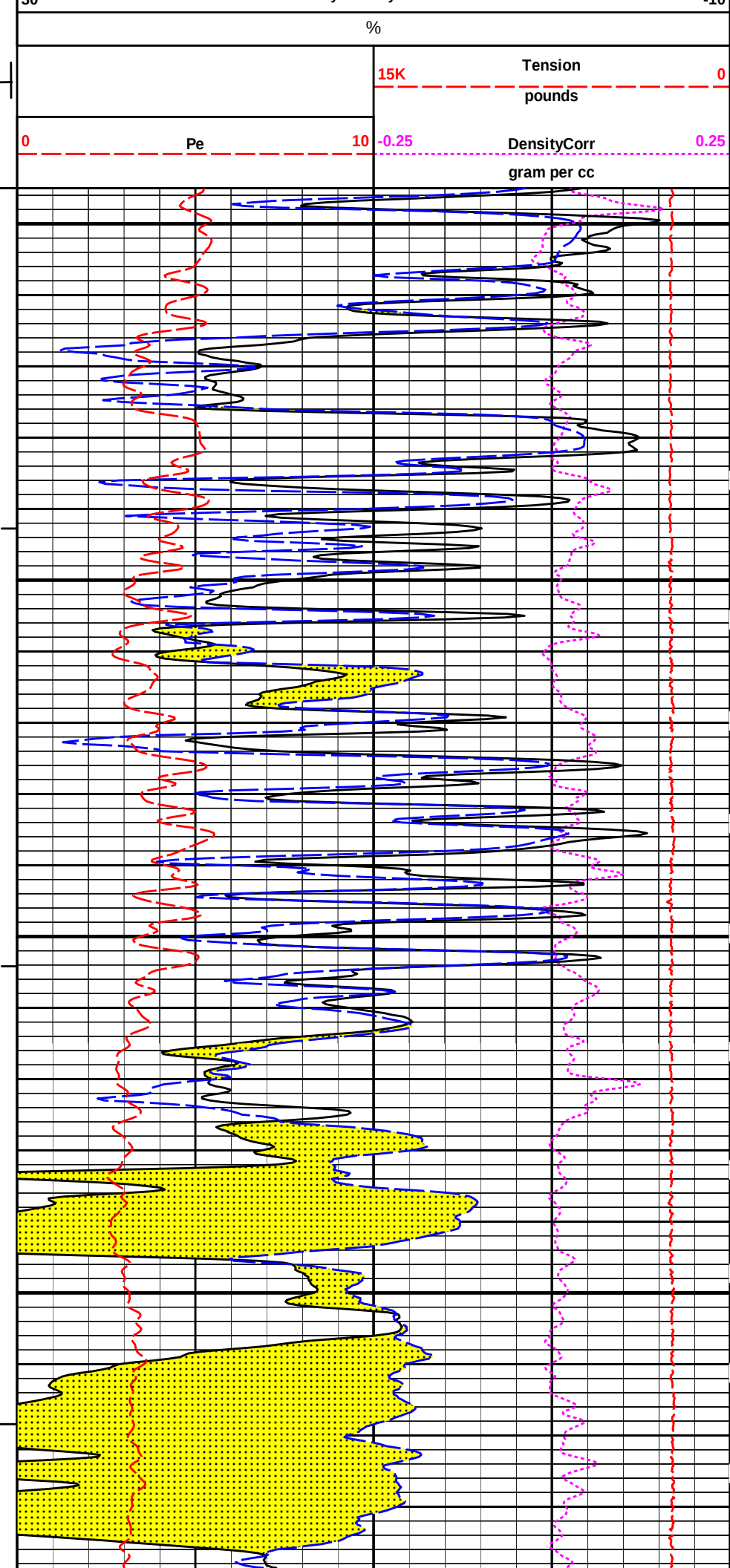
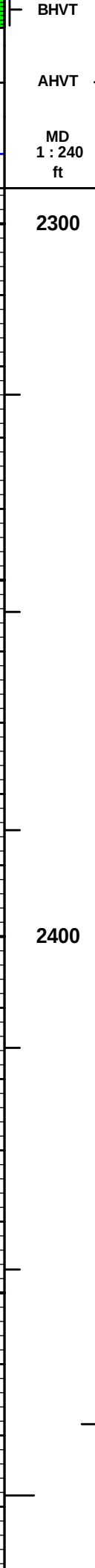
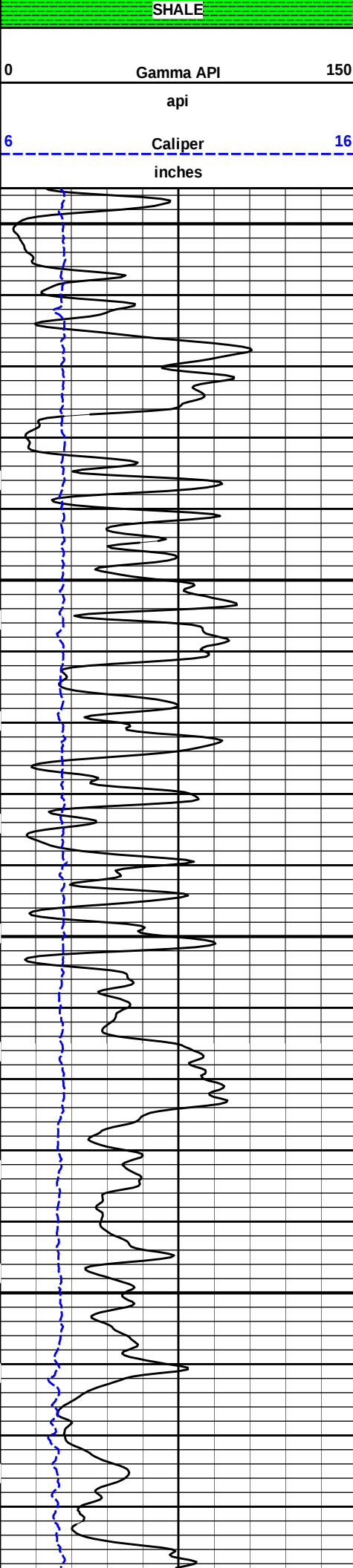
HALLIBURTON

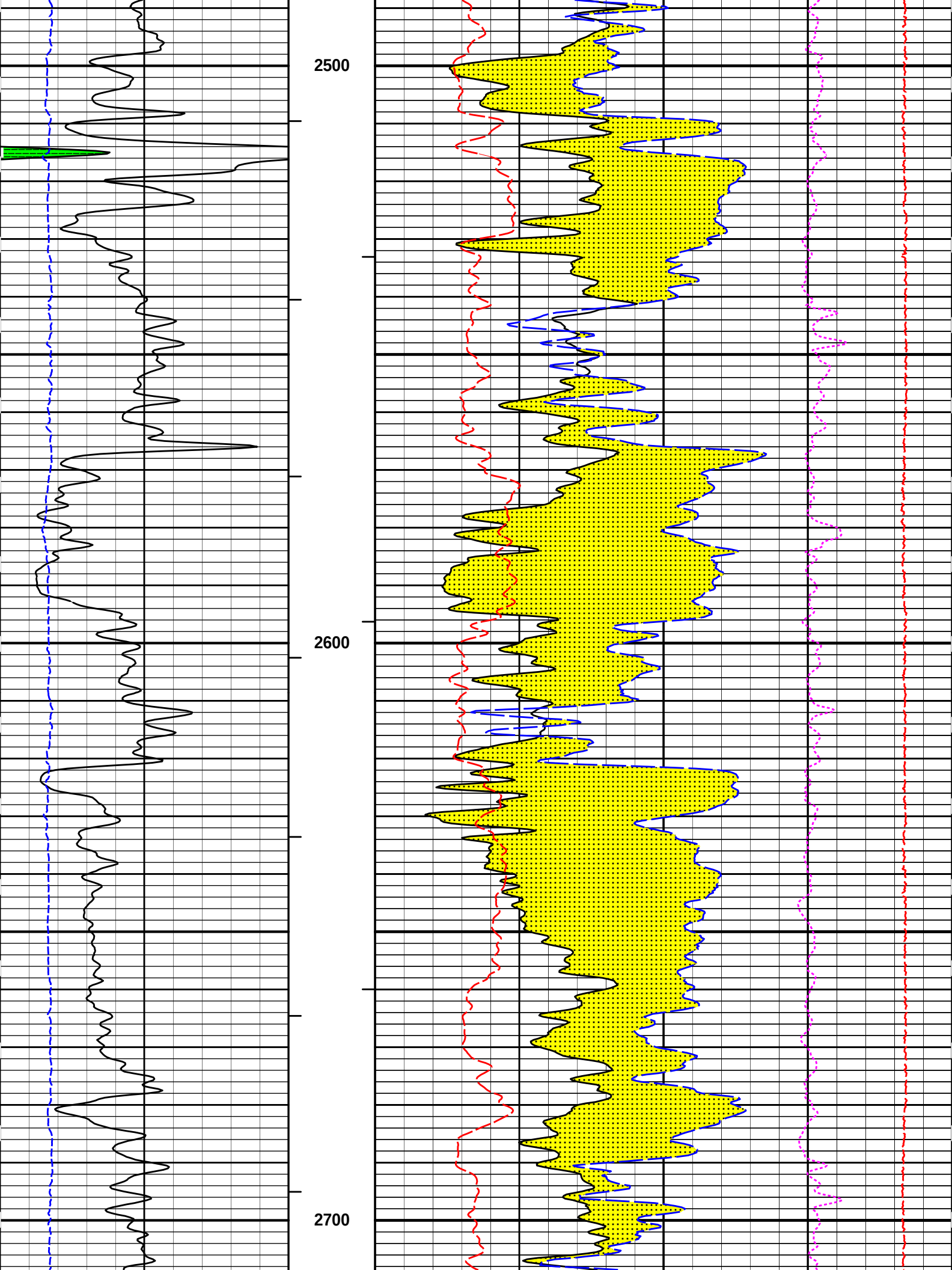
Plot Time: 14-Aug-13 16:51:55
Plot Range: 2295 ft to 3092.67 ft
Data: DUNN_ATU1\Well Based\IR1 DOLO\
Plot File: \\POROSITY\Porosity_Q_5_MAIN_LIB

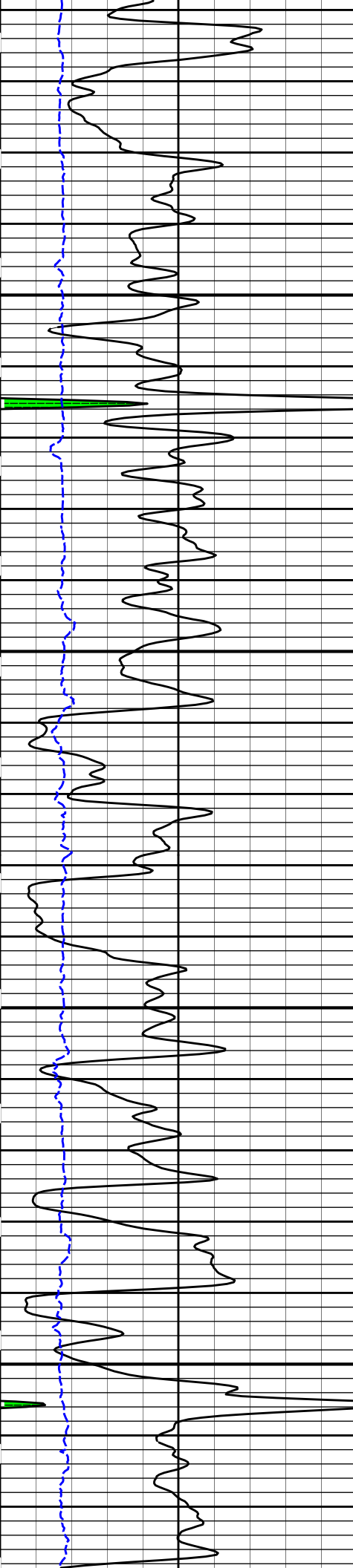
5 INCH MAIN LOG

DOLOMITE SECTION 5" PER 100'

				CROSSOVER					
				30	Neutron Porosity Dolomite				-10
				%					
				30	Density Porosity Dolomite				-10

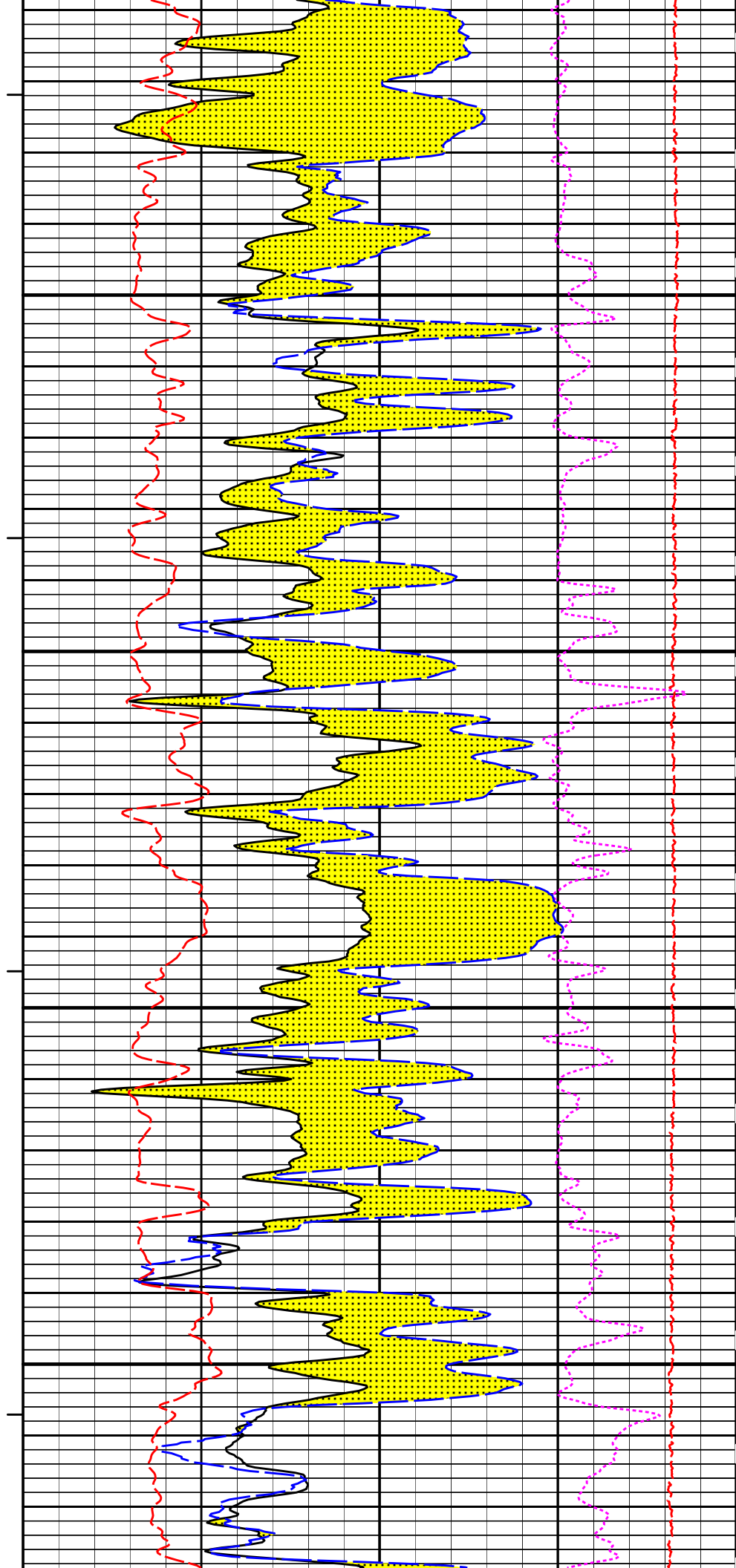


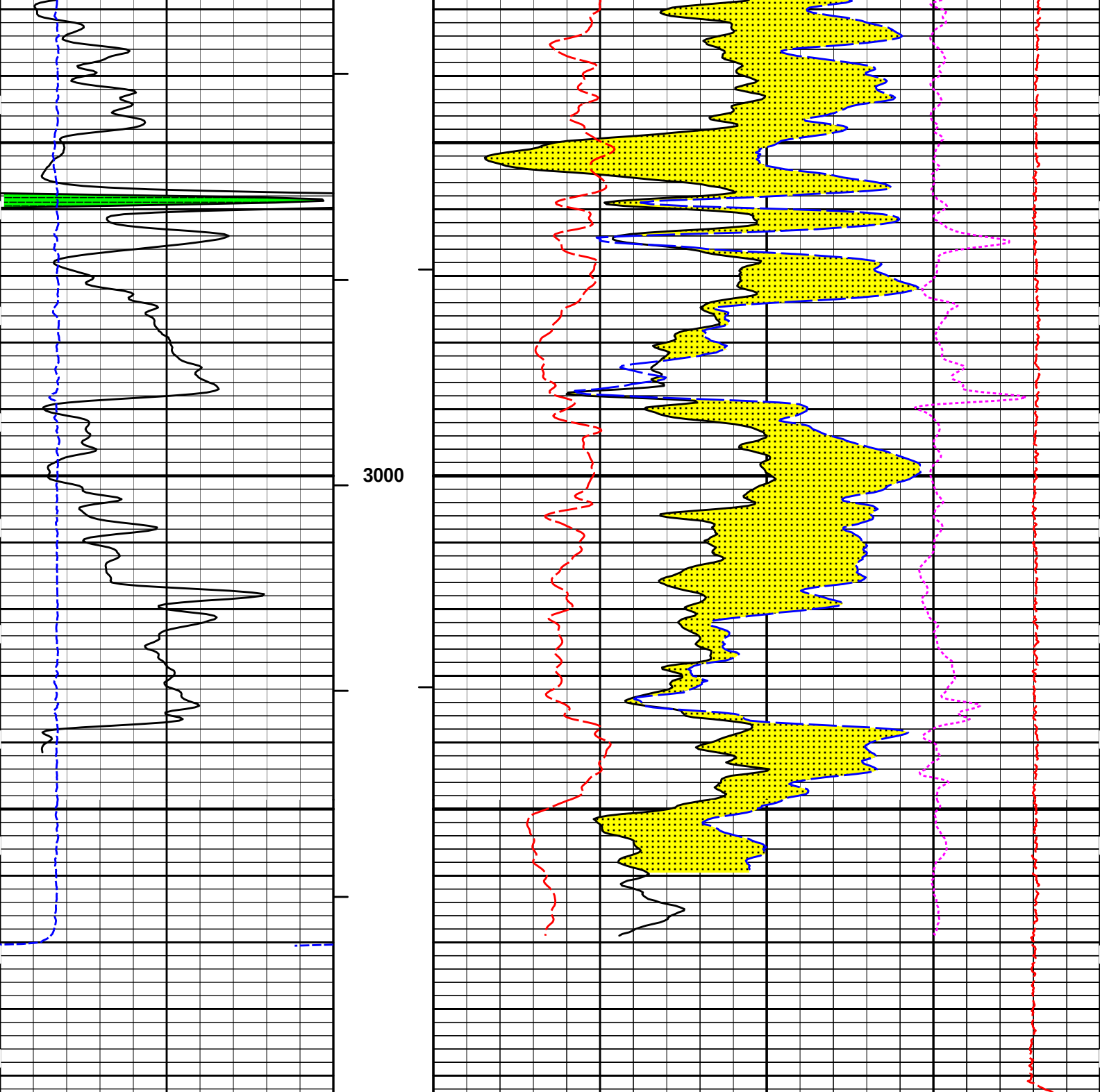




2800

2900





6		Caliper	16	MD 1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25
		inches							gram per cc	
0		Gamma API	150					15K	Tension	0
		api		AHVT					pounds	
		SHALE		BHVT	30	Density Porosity Dolomite			-10	
						%				
					30	Neutron Porosity Dolomite			-10	
						%				
						CROSSOVER				

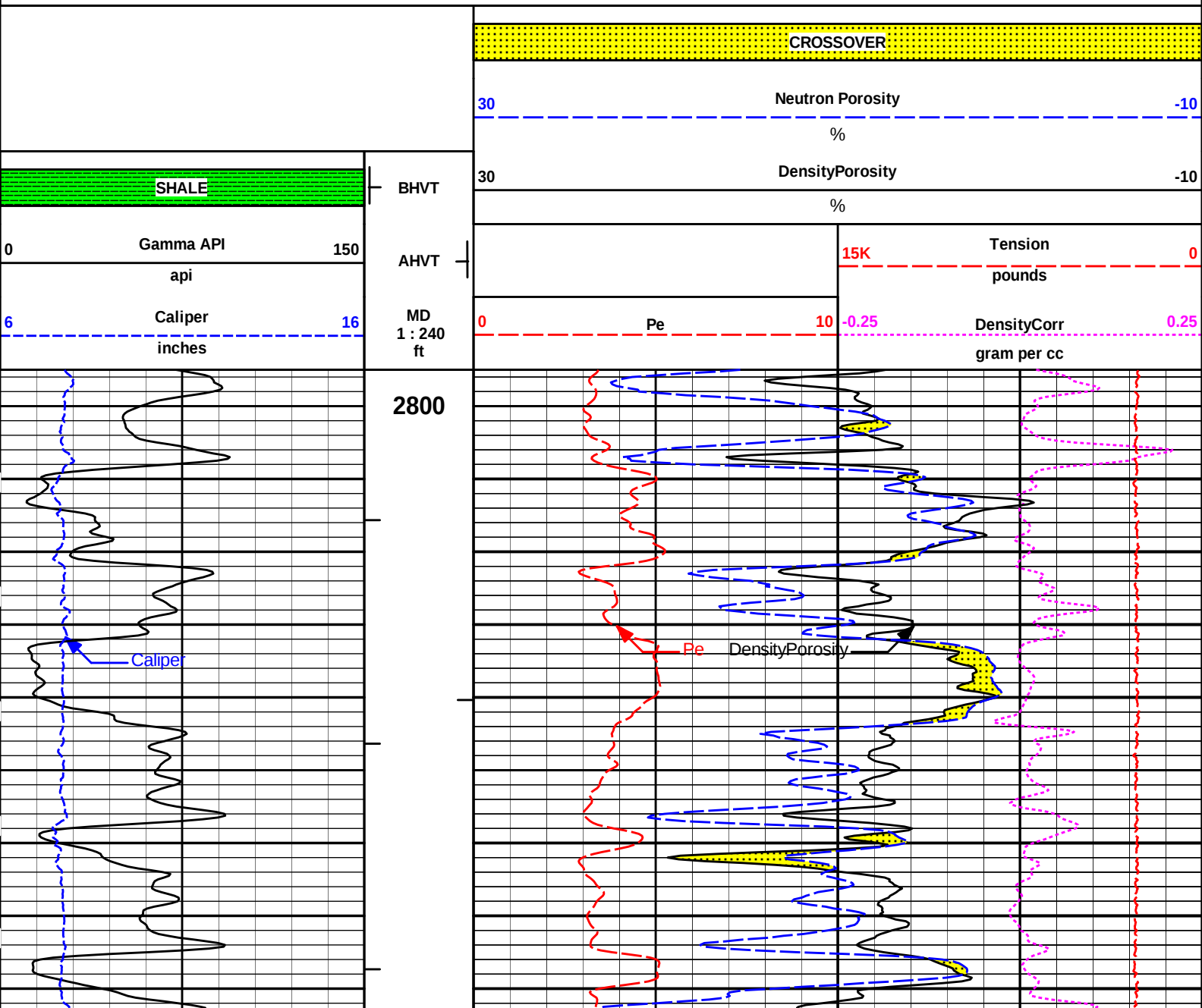
5 INCH MAIN LOG

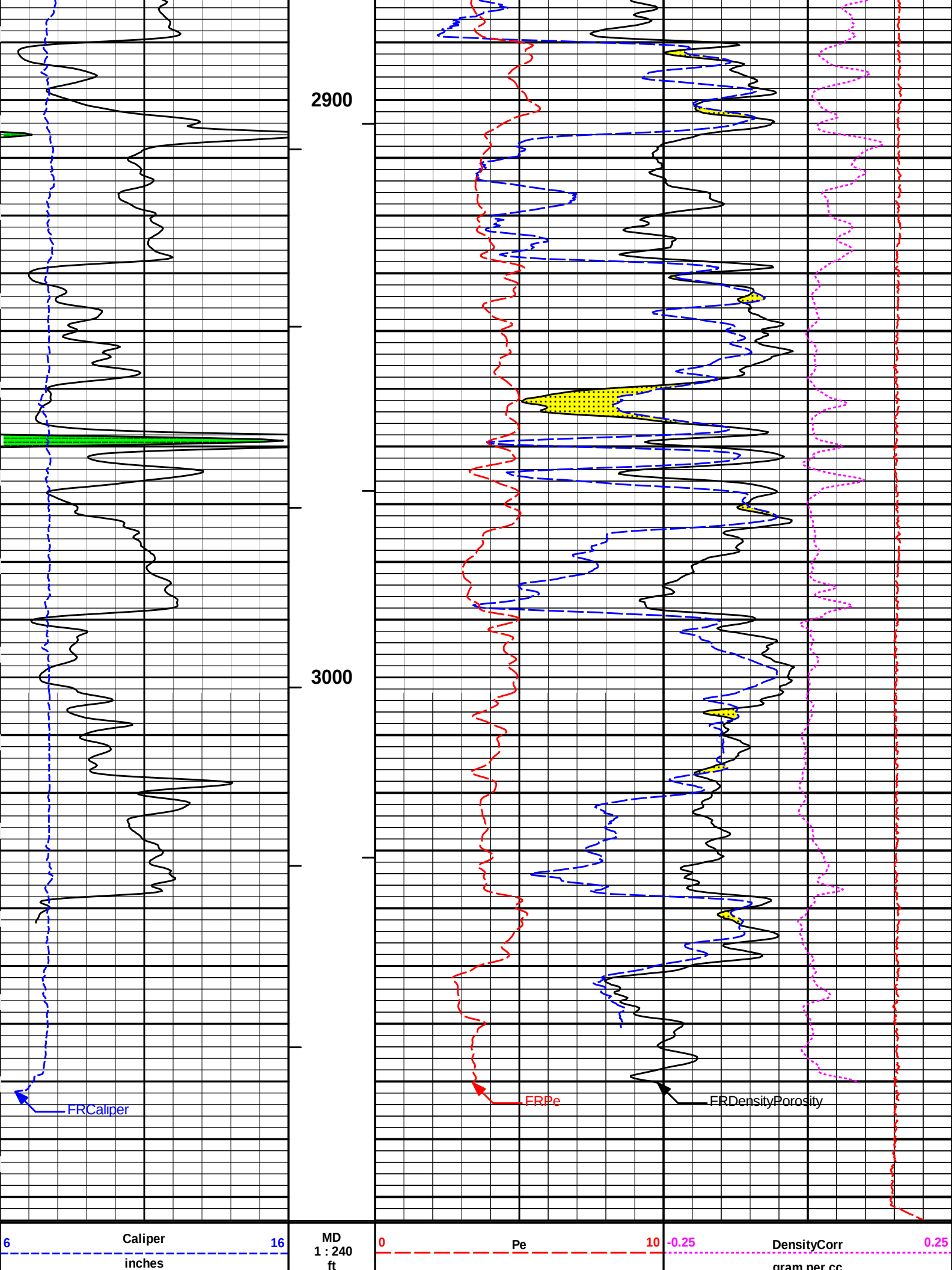
DOLOMITE SECTION 5" PER 100'

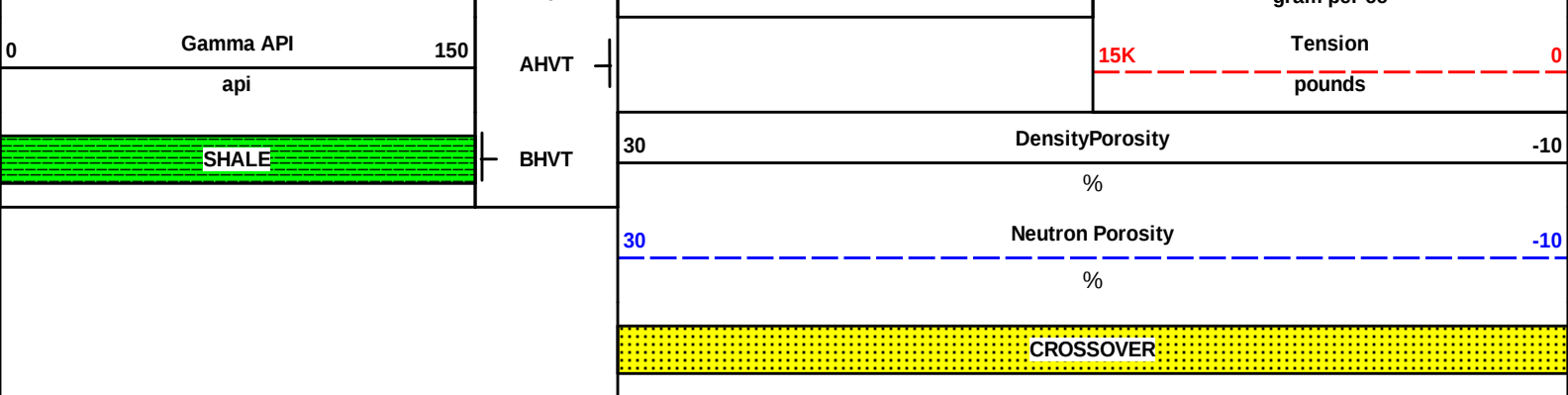
HALLIBURTON

Plot Time: 14-Aug-13 16:52:03
Plot Range: 2795 ft to 3094.17 ft
Data: DUNN_ATU1\Well Based\IR1 REPEAT\
Plot File: \\POROSITY\Porosity_Q_5_REP_LIB

REPEAT SECTION







HALLIBURTON

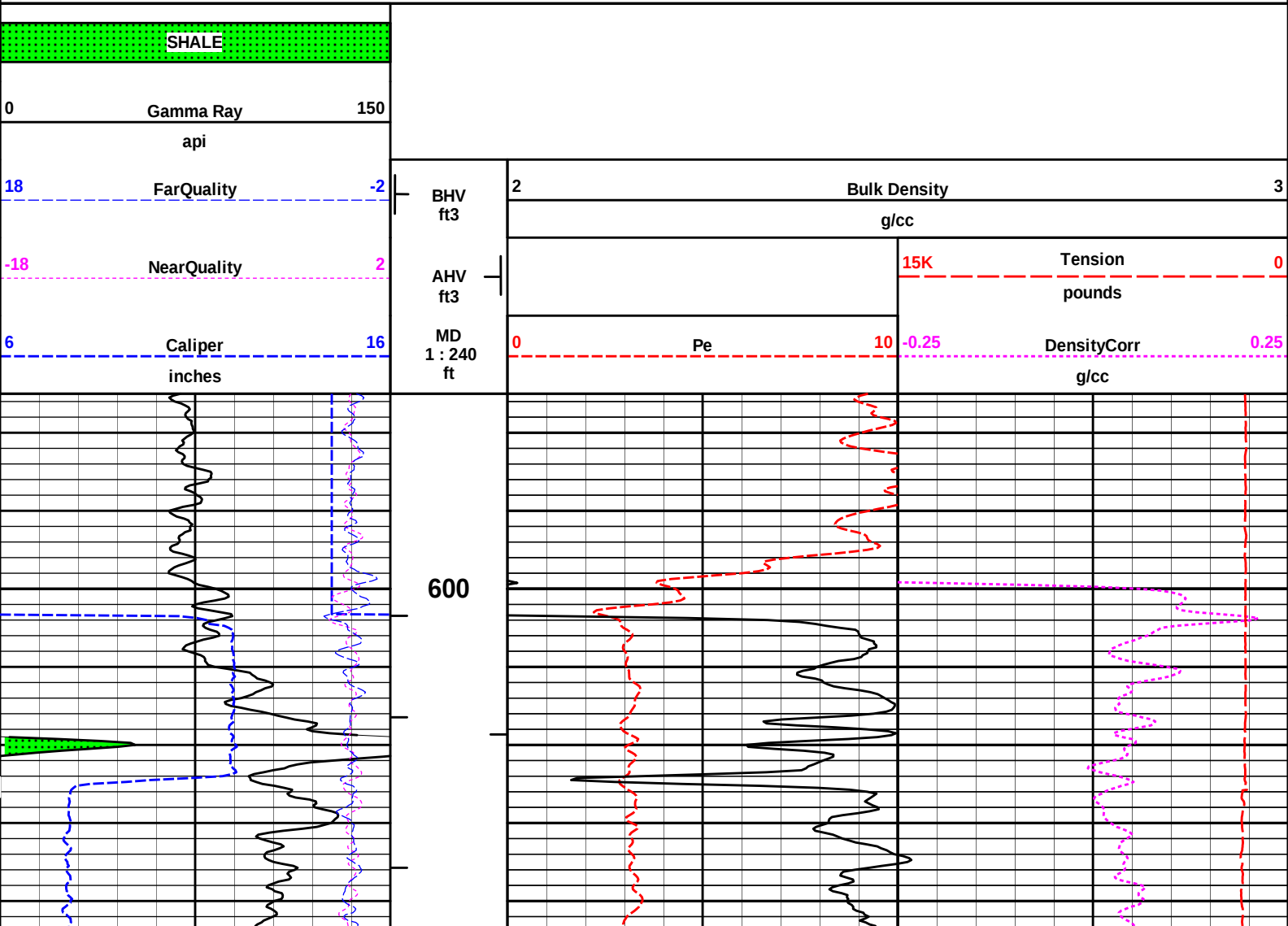
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Data: DUNN_ATU1\Well Based\R1 REPEAT\
Plot File: \\POROSITY\Porosity_IQ_5_REP_LIB

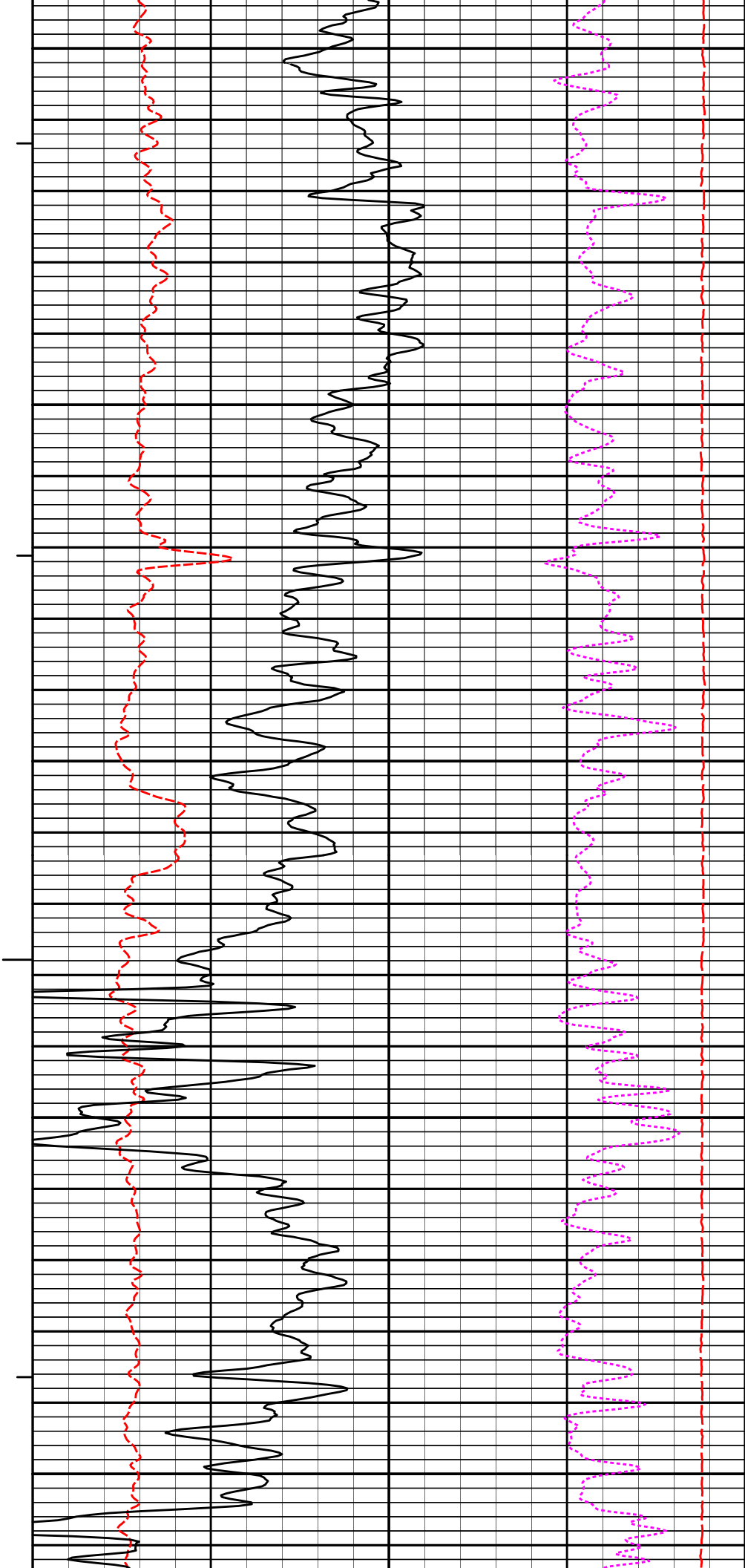
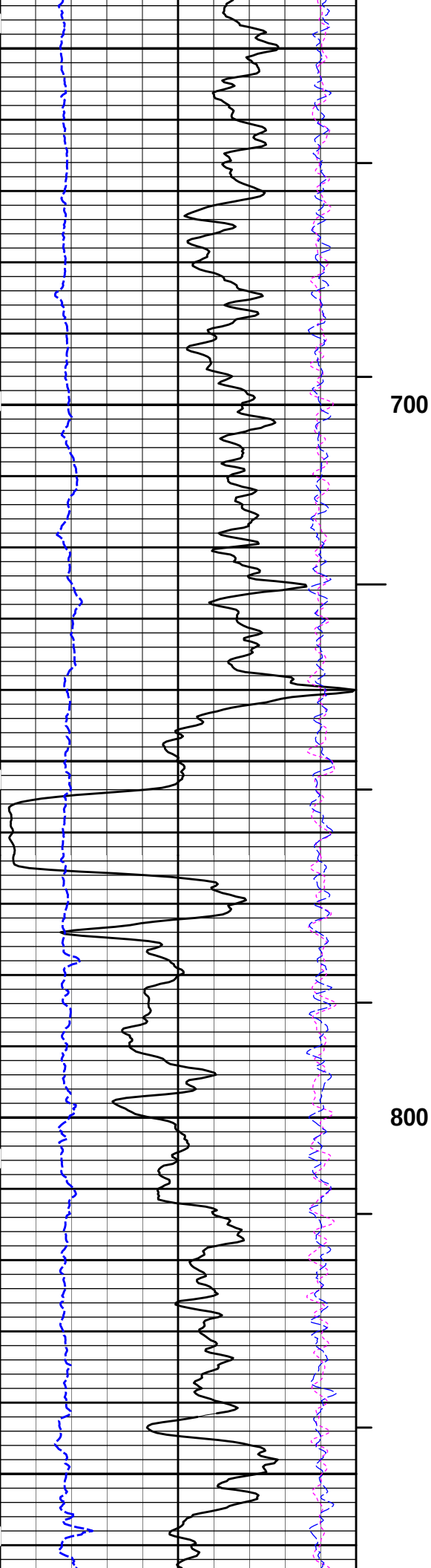
REPEAT SECTION

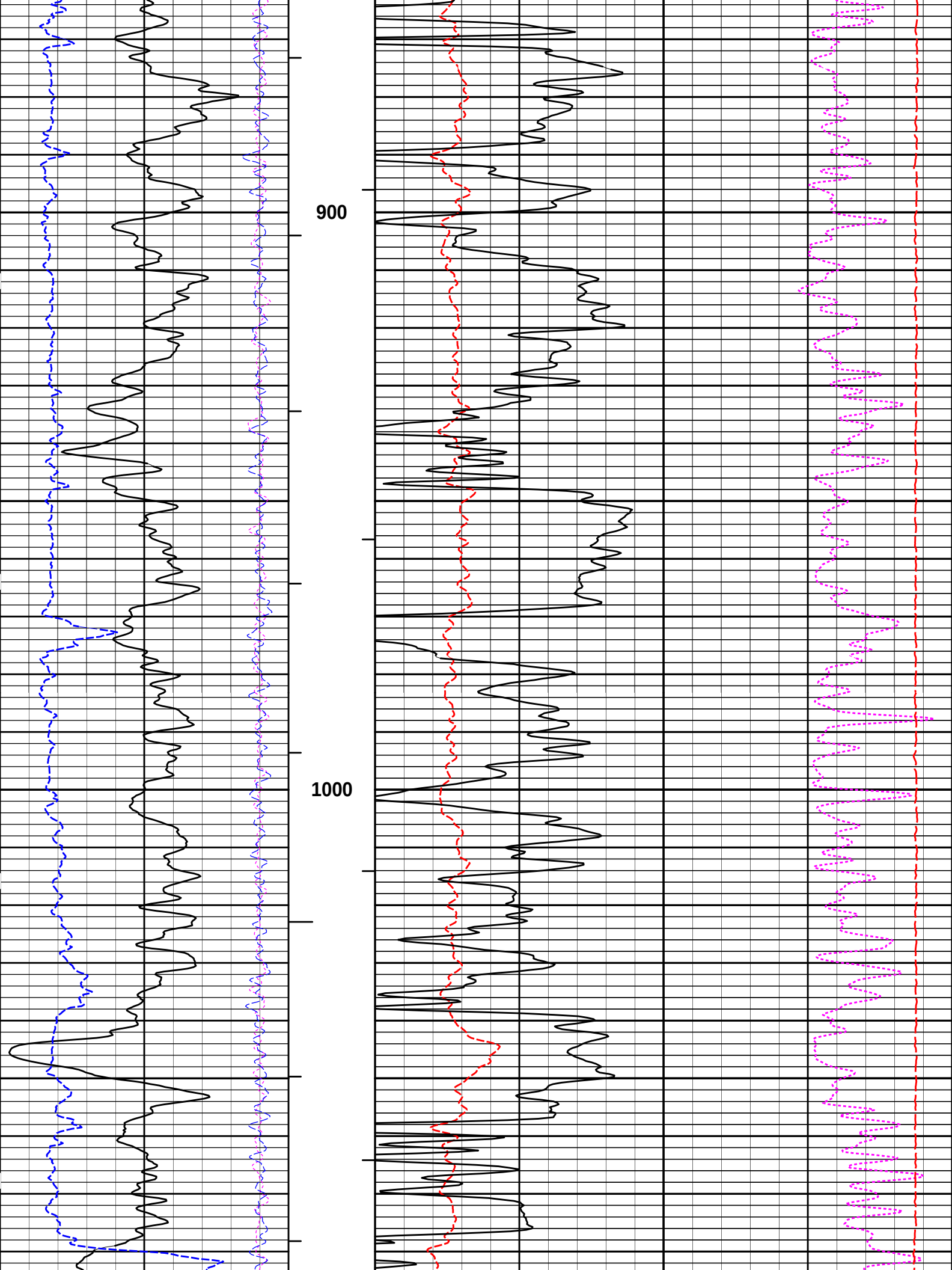
HALLIBURTON

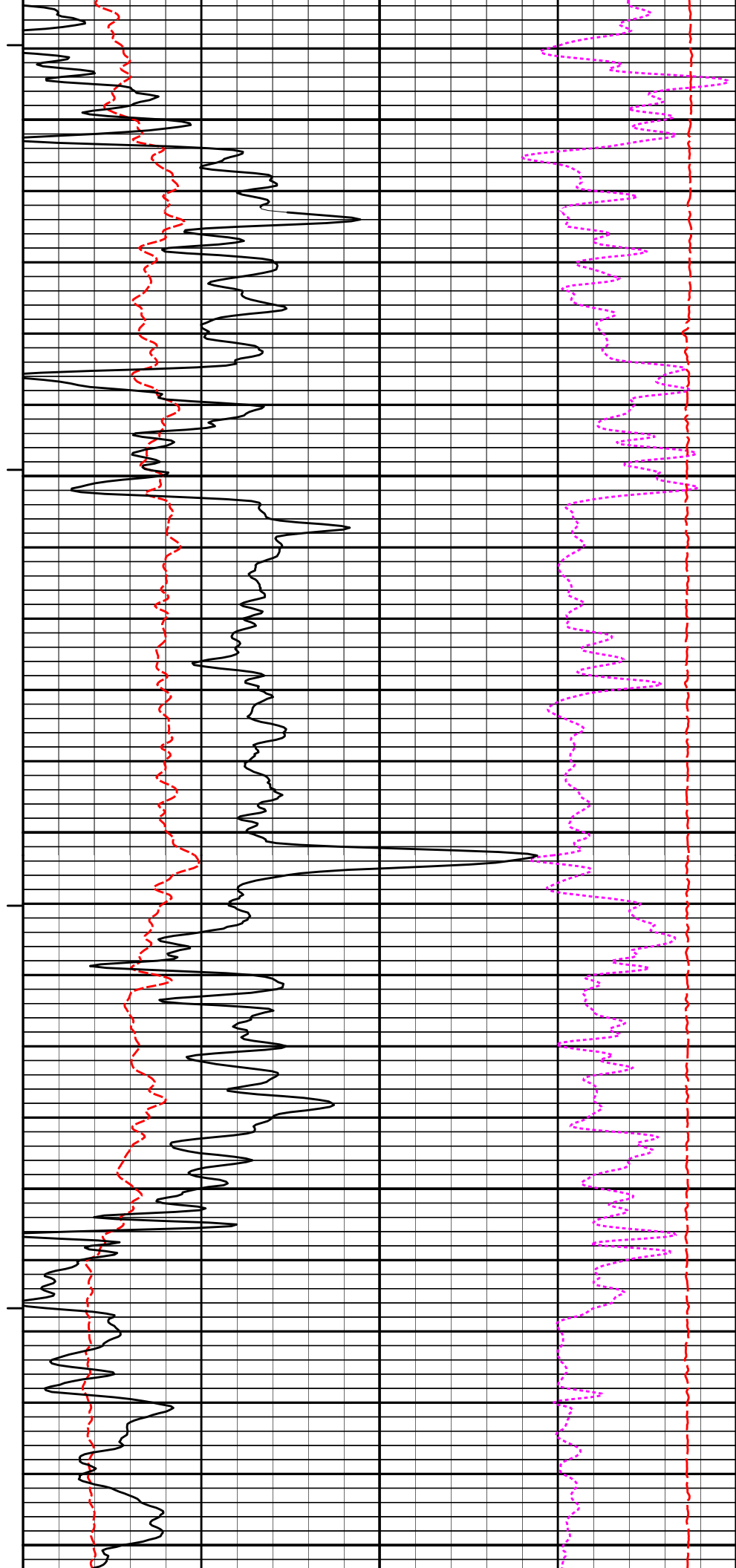
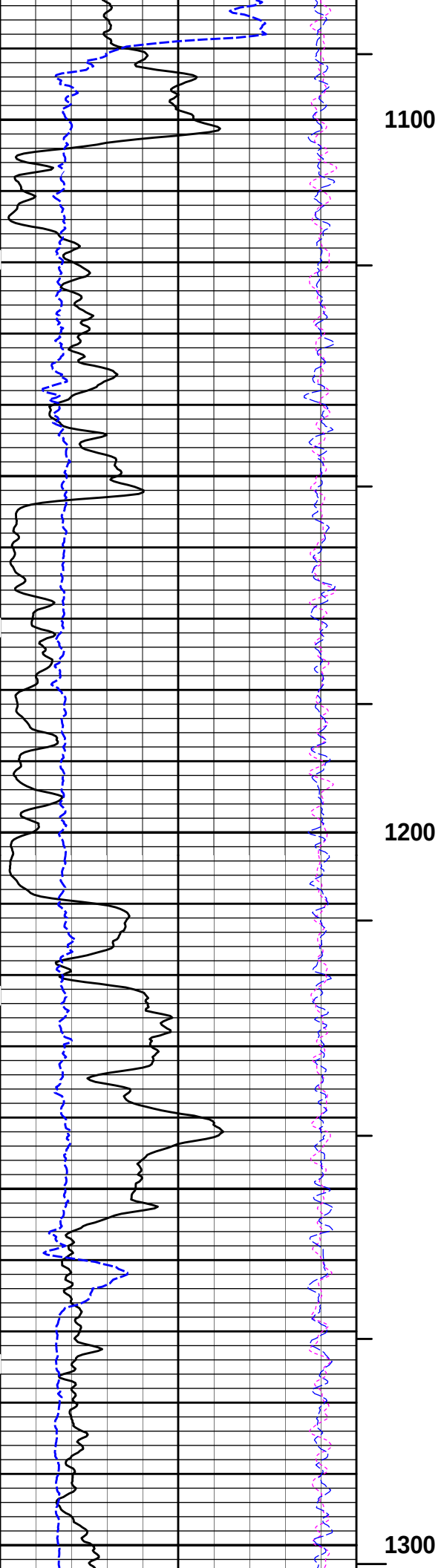
Plot Time: 14-Aug-13 16:52:12
Plot Range: 575 ft to 3092.67 ft
Data: DUNN_ATU1\Well Based\R1 CASING\
Plot File: \\LOCAL-IDUNN_ATU1\Well Based\POROSITY\BULKD_5_MAIN_LIB

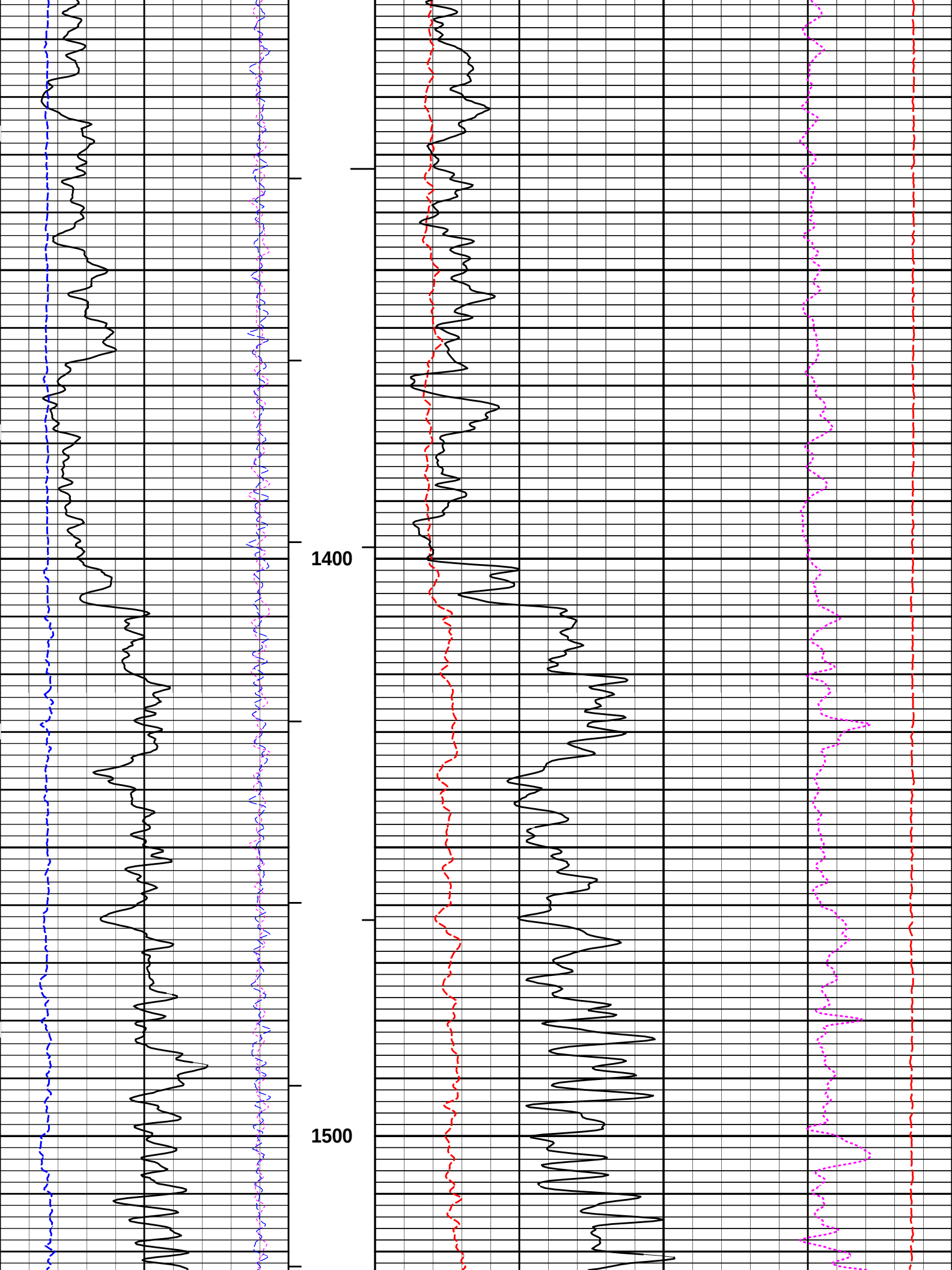
5 INCH MAIN LOG

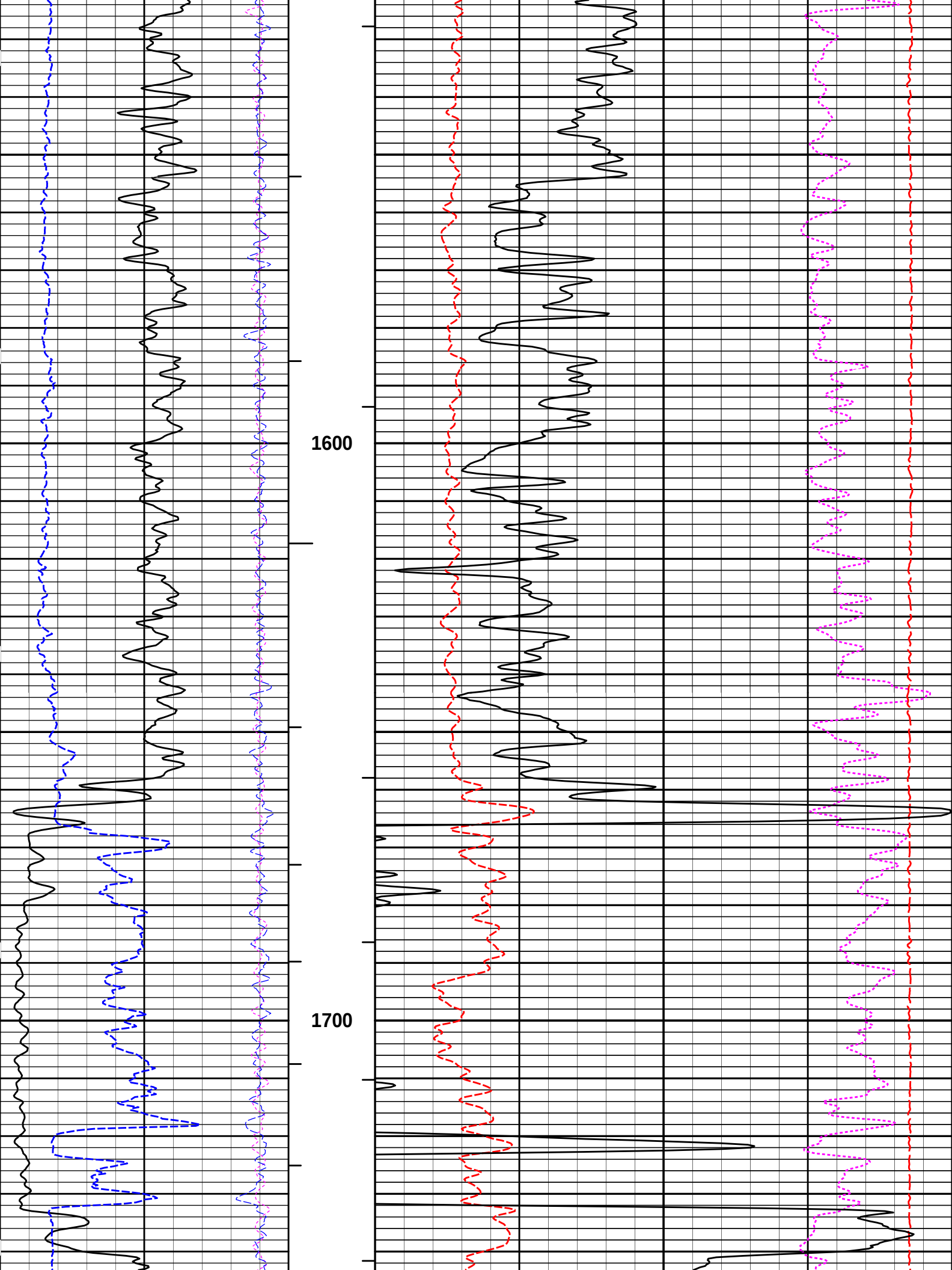


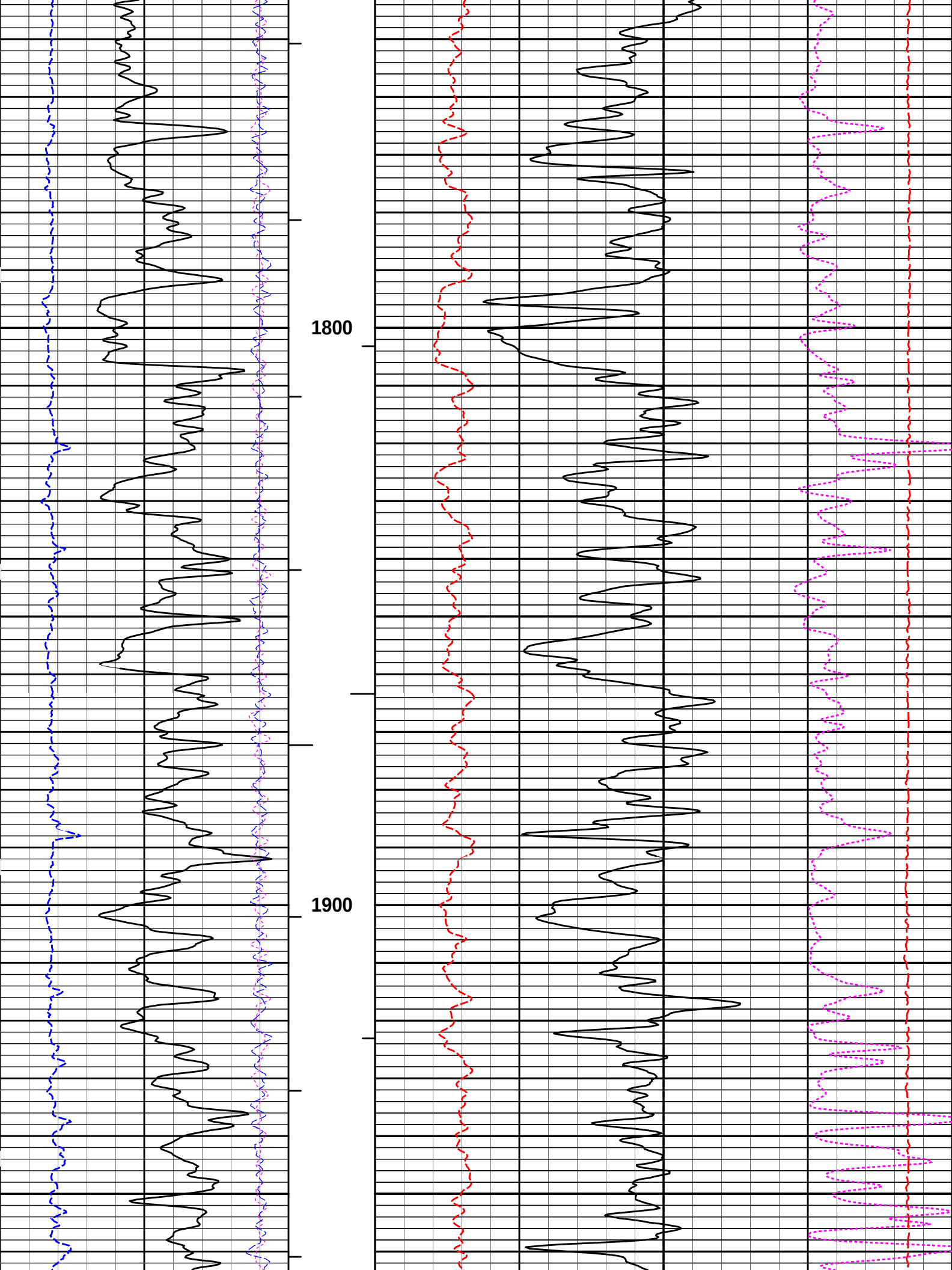


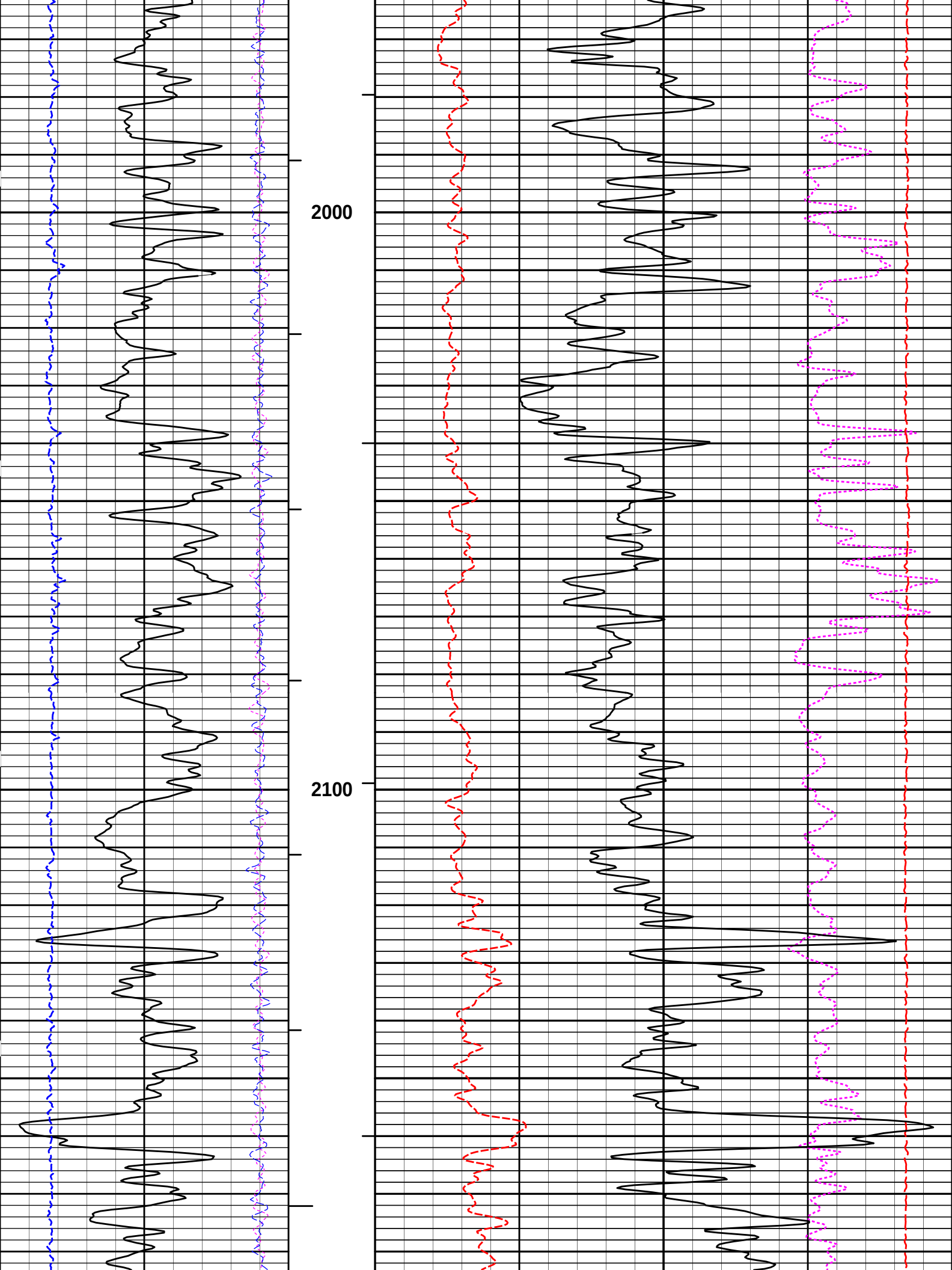


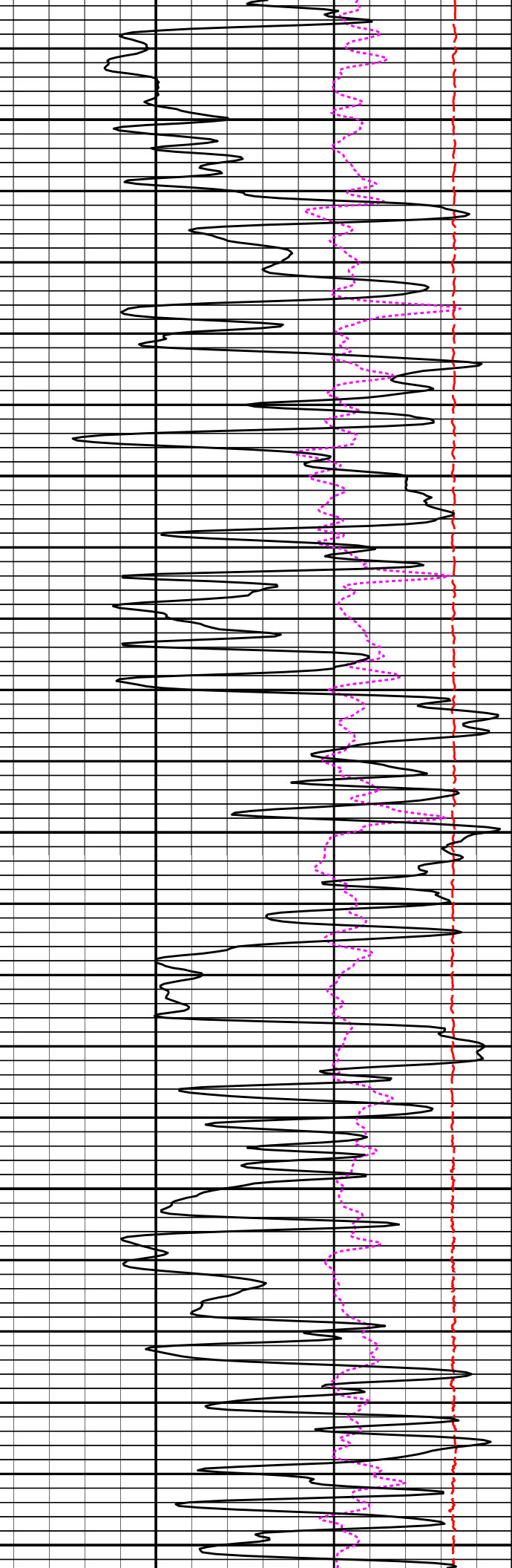
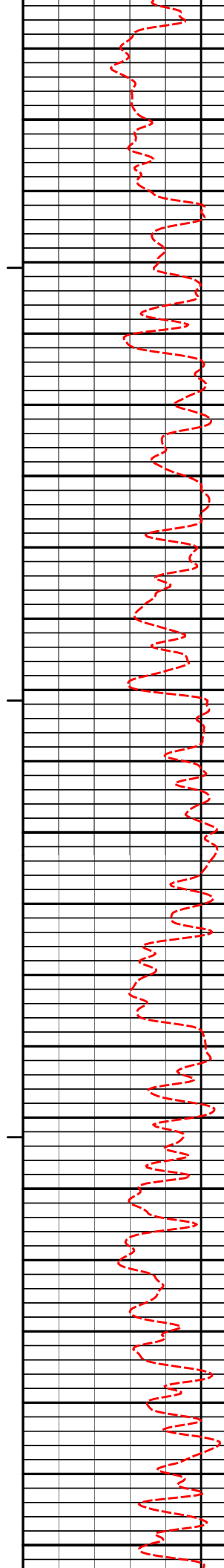
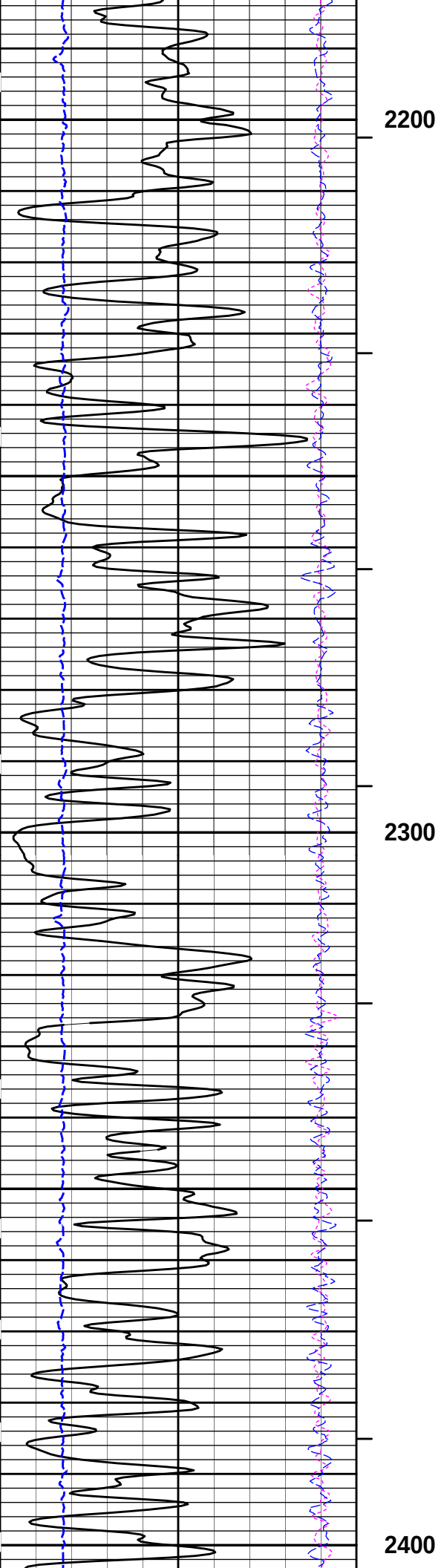


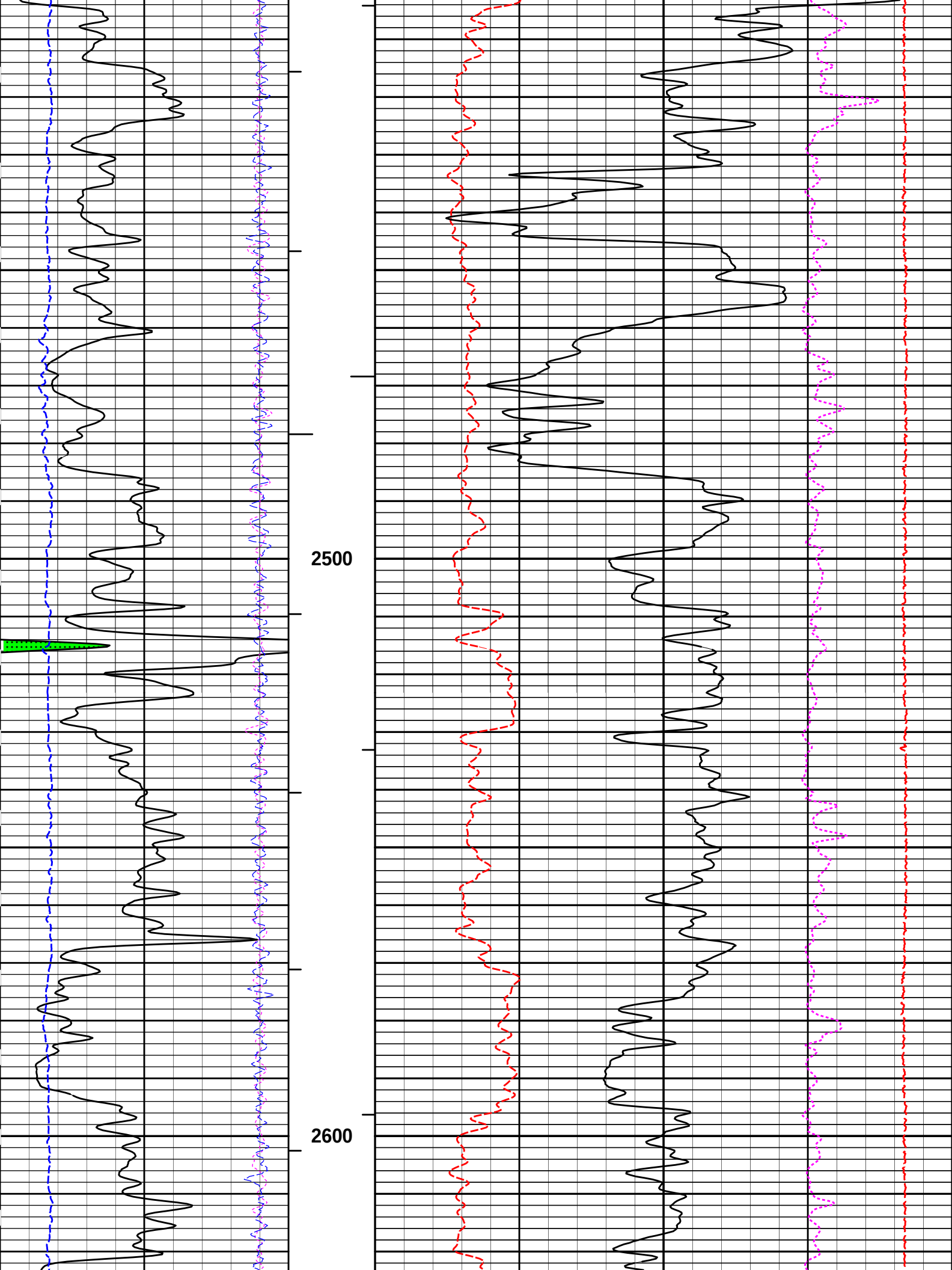


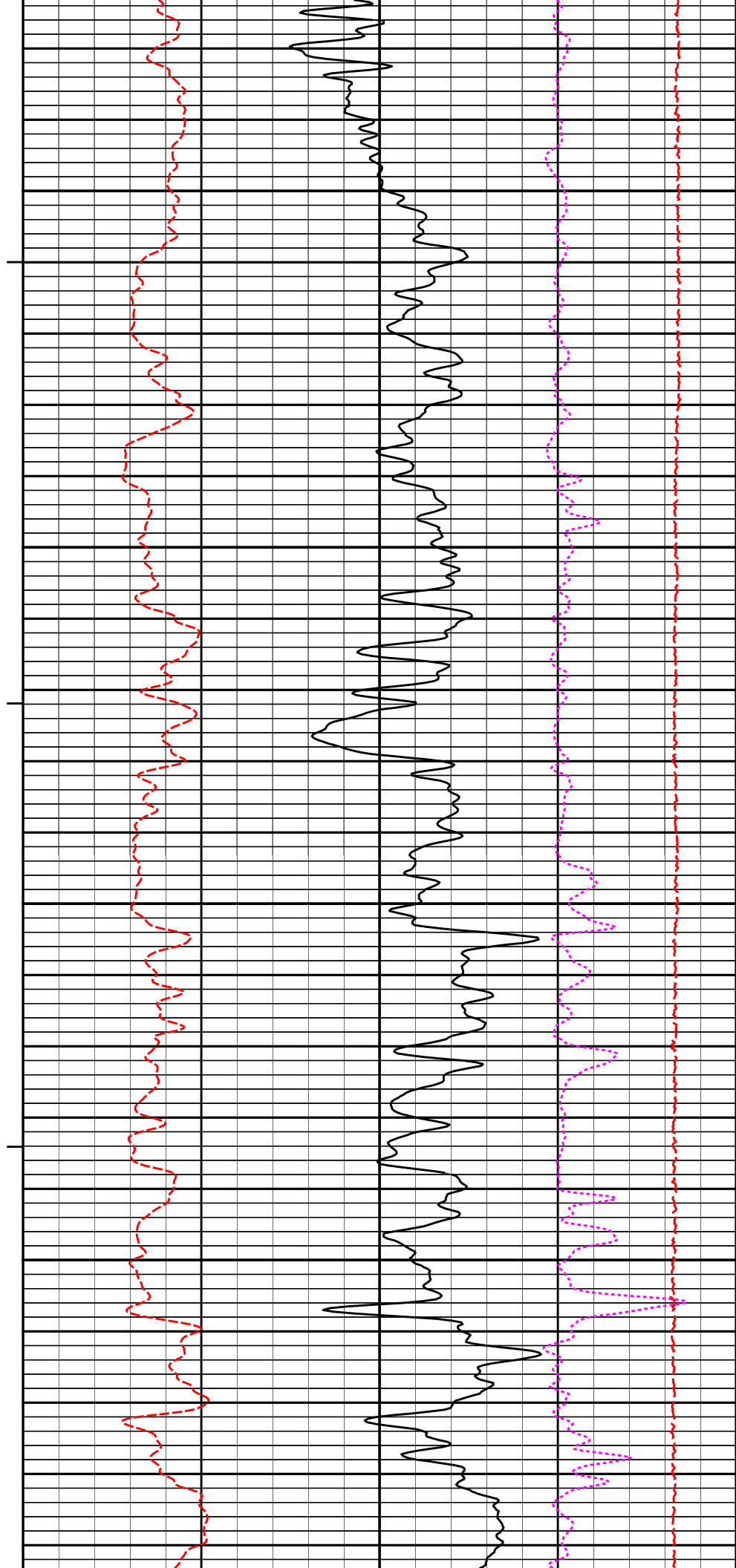
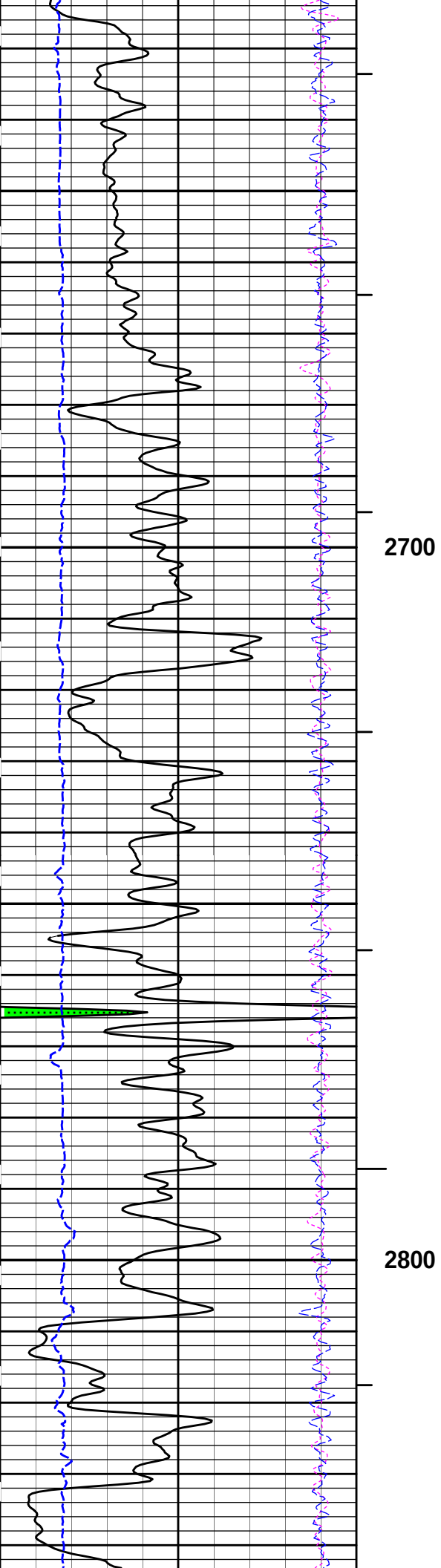


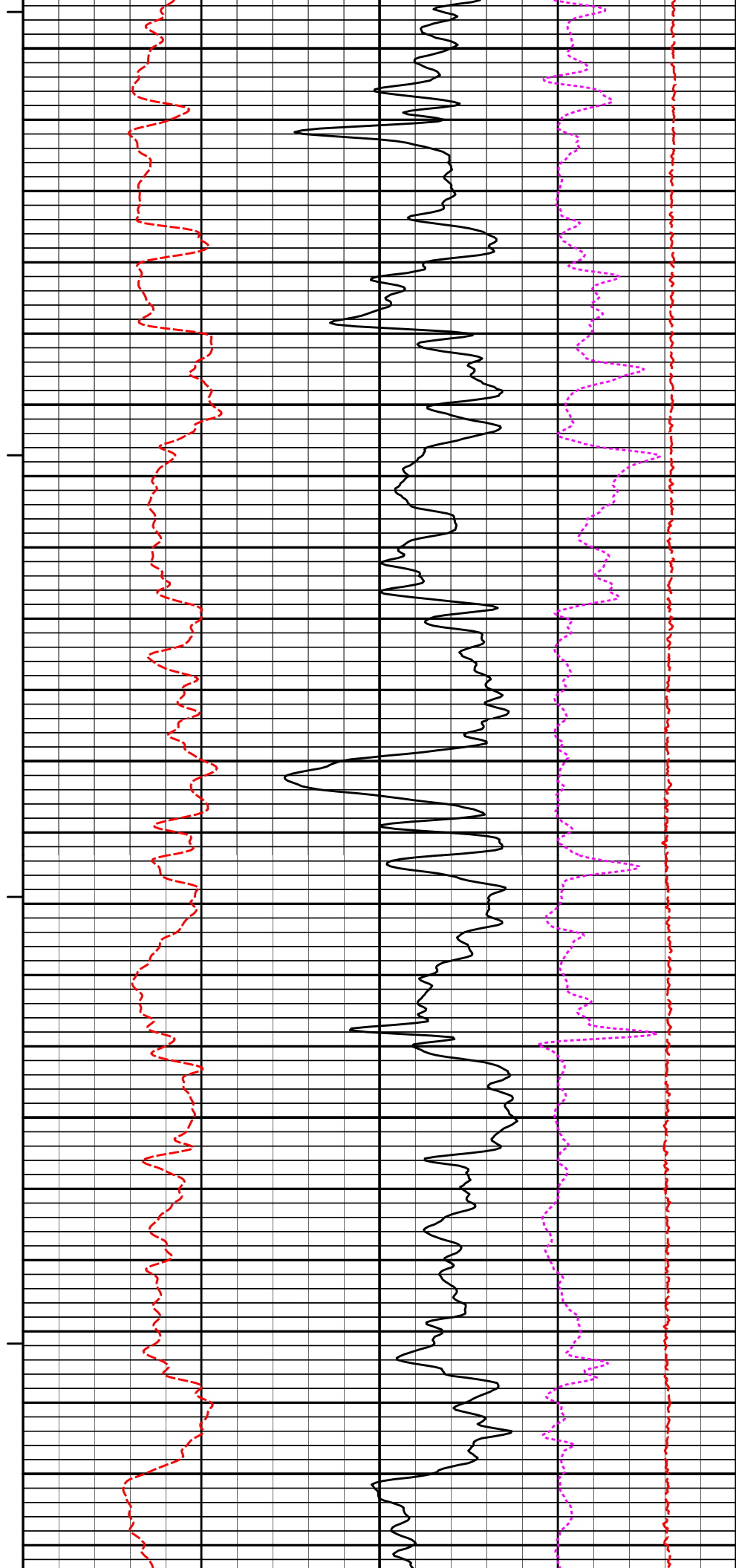
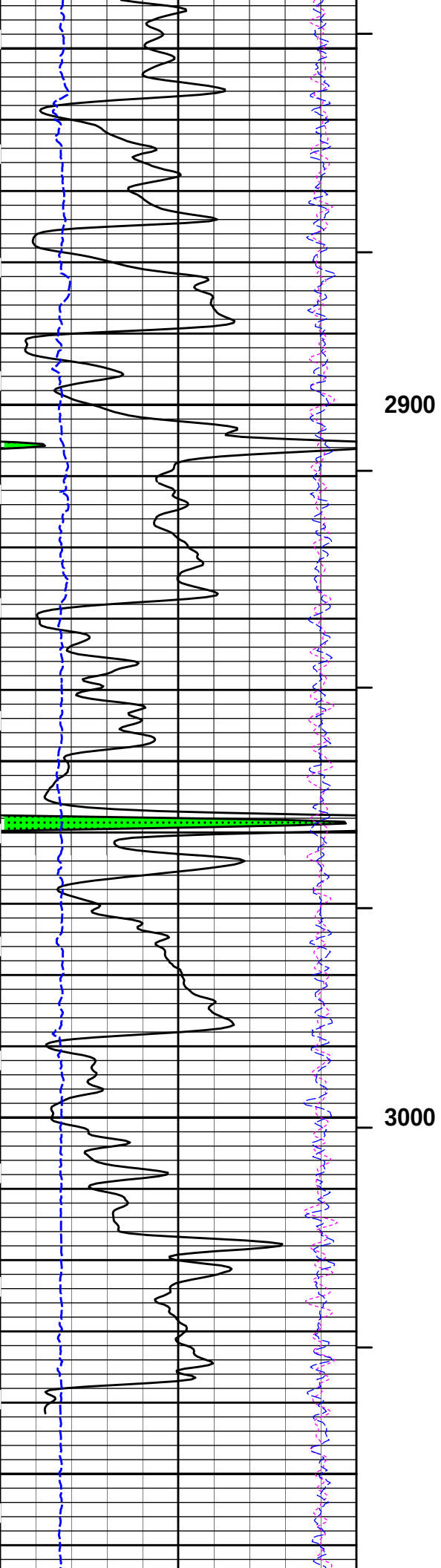


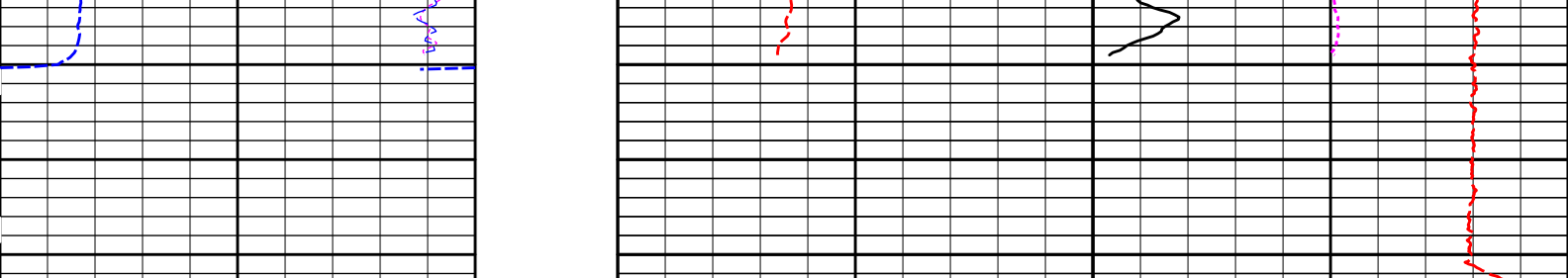












6	Caliper	16	MD 1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25	
	inches								g/cc	
	-18	NearQuality			2	AHV ft3		15K	Tension	0
									pounds	
18	FarQuality	-2	BHV ft3	2	Bulk Density			3		
					g/cc					
0	Gamma Ray	150								
	api									
SHALE										

HALLIBURTON

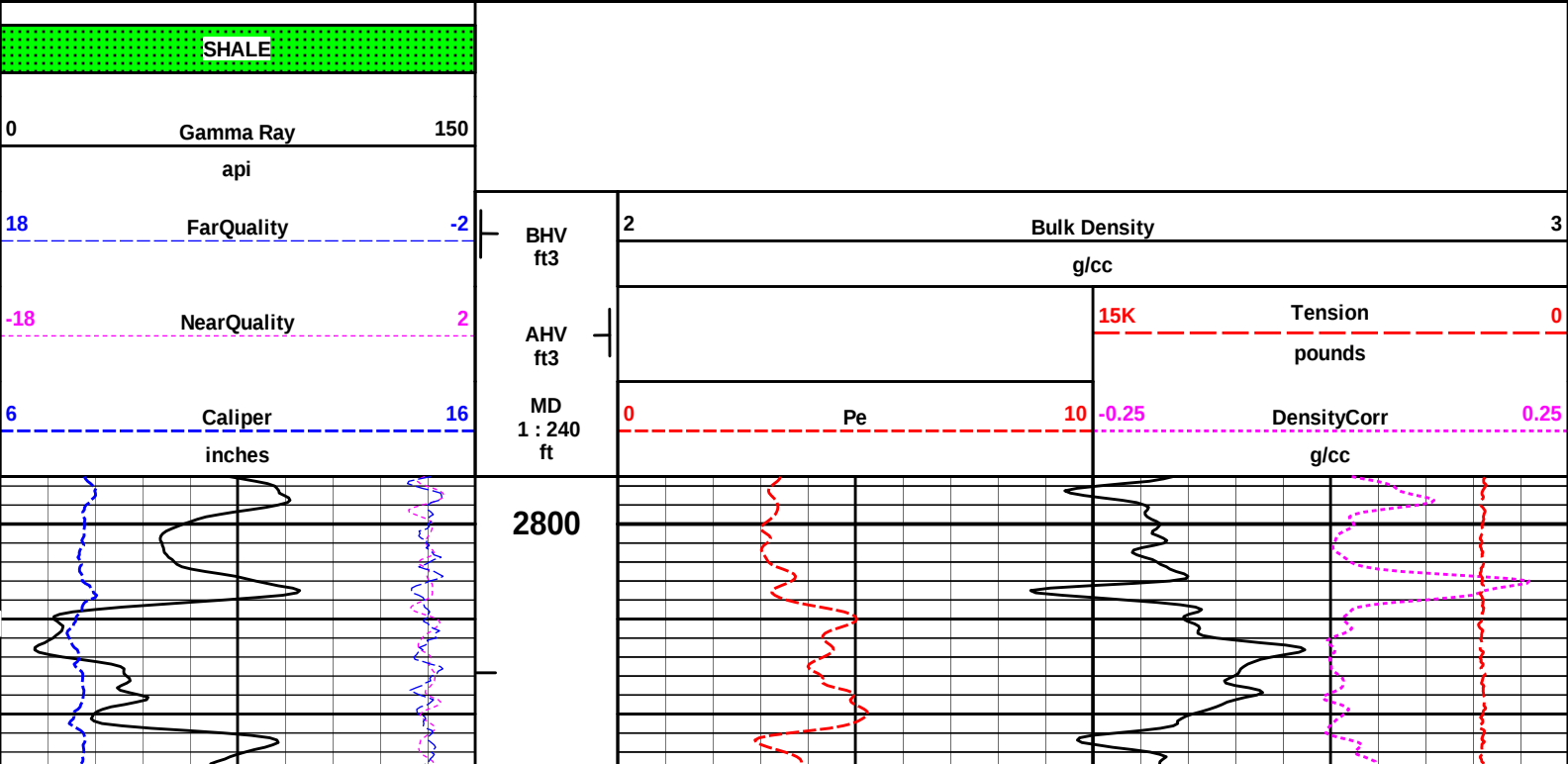
Plot Time: 14-Aug-13 16:52:39
Plot Range: 575 ft to 3092.67 ft
Data: DUNN_ATU1\Well Based\R1 CASING\
Plot File: \\-LOCAL-IDUNN_ATU1\Well Based\POROSITY\BULKD_5_MAIN_LIB

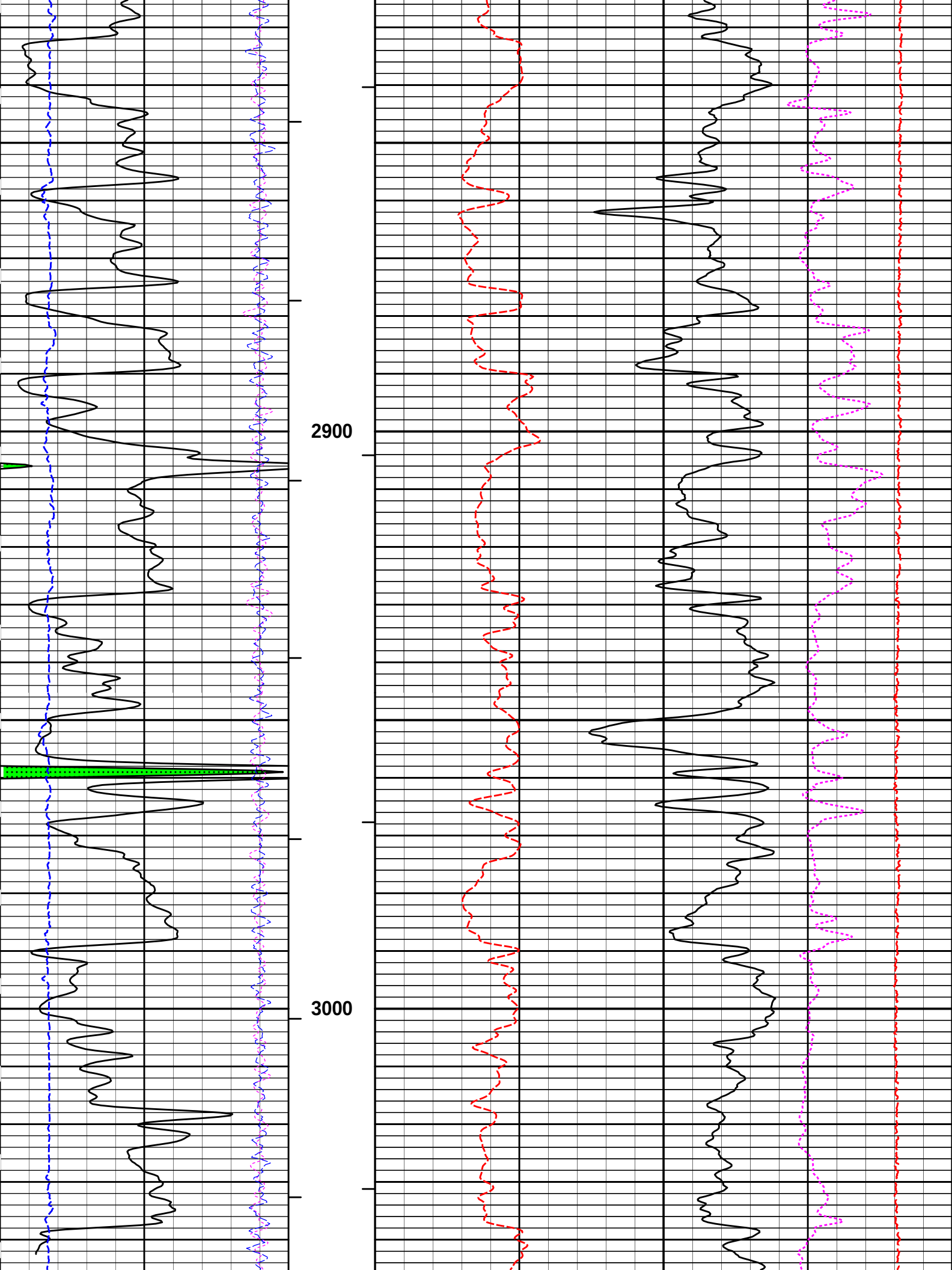
5 INCH MAIN LOG

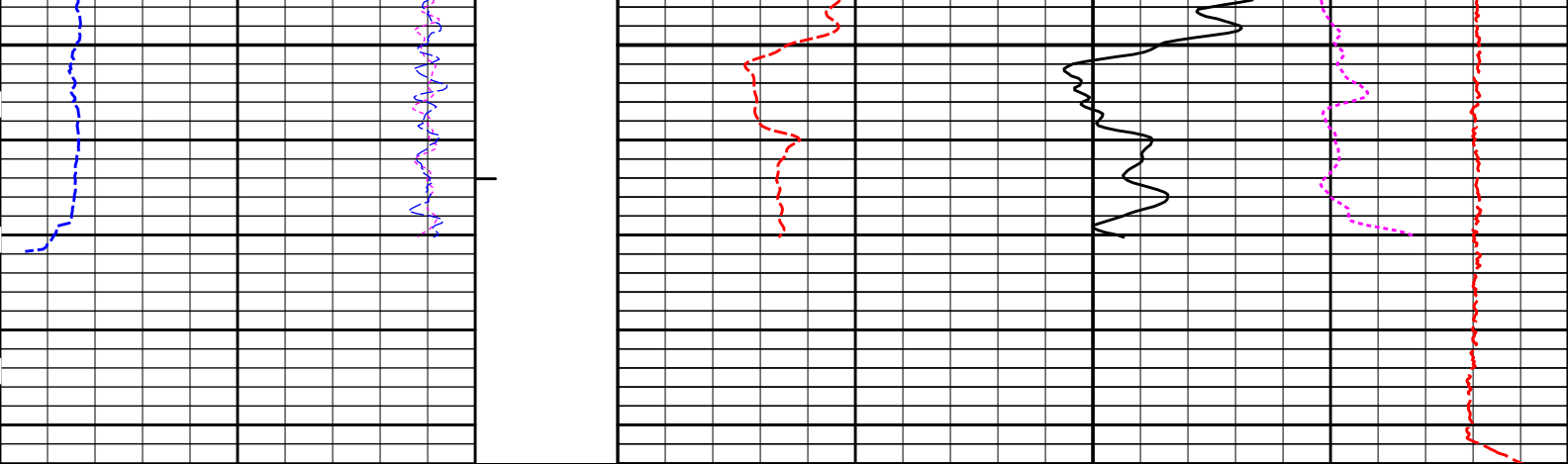
HALLIBURTON

Plot Time: 14-Aug-13 16:52:39
Plot Range: 2795 ft to 3094.17 ft
Data: DUNN_ATU1\Well Based\R1 REPEAT\
Plot File: \\-LOCAL-IDUNN_ATU1\Well Based\POROSITY\BULKD_5_REP_LIB

REPEAT SECTION







6	Caliper	16	MD 1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25
	inches								
-18	NearQuality	2							
			AHV ft3	15K	Tension	0		pounds	
18	FarQuality	-2							
			BH ft3	2	Bulk Density			3	
					g/cc				
0	Gamma Ray	150							
	api								
	SHALE								

HALLIBURTON

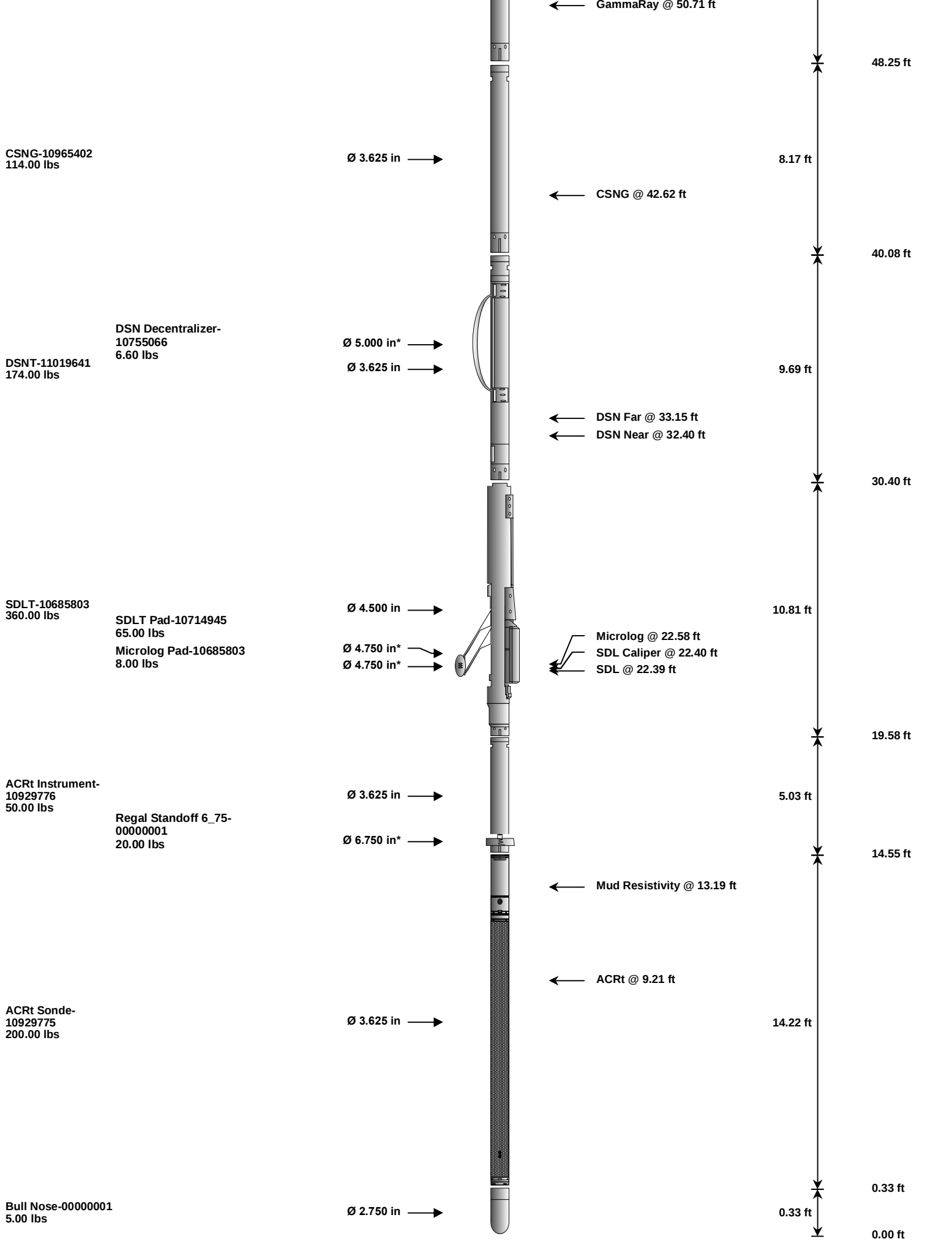
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Plot Range: 2795 ft to 3094.17 ft
Data: DUNN_ATU1\Well Based\R1 REPEAT\
Plot File: \\-LOCAL-\\DUNN_ATU1\Well Based\POROSITY\BULKD_5_REP_LIB

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
RWCH-12027542 135.00 lbs		Ø 3.625 in →		← Load Cell @ 63.07 ft ← BH Temperature @ 62.51 ft	6.25 ft	66.76 ft
SP Sub-12345678 60.00 lbs		Ø 3.625 in →		← SP @ 58.73 ft	3.74 ft	60.51 ft
GTET-10748374 165.00 lbs		Ø 3.625 in →			8.52 ft	56.77 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
----------	-----------	---------------	--------------	-------------	-------------------------	----------------------

RWCH	Releasable Wireline Cable Head	12027542	135.00	6.25	60.51	300.00
SP	SP Sub	12345678	60.00	3.74	56.77	300.00
GTET	Gamma Telemetry Tool	10748374	165.00	8.52	48.25	60.00
CSNG	Compensated Spectral Natural Gamma	10965402	114.00	8.17	40.08	15.00
DSNT	Dual Spaced Neutron	11019641	174.00	9.69	30.40	60.00
DCNT	DSN Decentralizer	10755066	6.60	5.13 *	33.73	300.00
SDLT	Spectral Density Tool	10685803	360.00	10.81	19.58	60.00
SDLP	Density Insite Pad	10714945	65.00	2.55 *	21.79	60.00
MICP	Microlog Pad	10685803	8.00	1.00 *	22.08	60.00
ACRt	Array Compensated True Resistivity Instrument Section	10929776	50.00	5.03	14.55	300.00
RSOF	Regal Standoff 6.75in	00000001	20.00	0.52 *	14.87	300.00
ACRt	Array Compensated True Resistivity Sonde Section	10929775	200.00	14.22	0.33	300.00
BLNS	Bull Nose	00000001	5.00	0.33	0.00	300.00
Total			1,362.60	66.76		
* Not included in Total Length and Length Accumulation.						
Data: DUNN_ATU1\0001 SP-GTET-CSNG-DSN-SDL-ACRT-BN\IDLE						
Date: 14-Aug-13 12:41:27						



PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.200	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	1.000	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	3089.00	ft
	SHARED	BHT	Bottom Hole Temperature	110.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size Master Tool	NONE	
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
	Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	

GTET	GROK	Process Gamma Ray?	Yes	
GTET	GRSO	Gamma Tool Standoff	0.000	in
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
CSNG	CGOK	Process CSNG Data?	Yes	
CSNG	CENT	Is Tool Centralized?	No	
CSNG	GBOK	Gamma Enviromental Corrections?	Yes	
CSNG	BARF	Barite Correction Factor	1.00	
CSNG	ORDG	Use Fixed Gain	No	
CSNG	ORDO	Use Fixed Offset	No	
CSNG	ORDR	Use Fixed Resolution Degradation Factor	No	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
DSNT	DNTP	Temperature Correction Type	None	
DSNT	DPRS	DSN Pressure Correction Type	None	
DSNT	SHCO	View More Correction Options	No	
DSNT	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT Pad	DNOK	Process Density?	Yes	
SDLT Pad	DNOK	Process Density EVR?	No	
SDLT Pad	CB	Logging Calibration Blocks?	No	
SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	DTWN	Disable temperature warning	No	
SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt Sonde	TPOS	Tool Position	Free Hanging	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
BOTTOM				
Data: DUNN_ATU1\0001 SP-GTET-CSNG-DSN-SDLT-ACRT-BN\005 14-Aug-13 14:27 Up @3093.3f			Date: 14-Aug-13 15:38:47	

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	GTET - 10748374	Reference Calibration Date:	25-Jul-13 22:09:38
Engineer:	THOMAS HYDE	Calibration Date:	02-Aug-13 14:20:06
Software Version:	WL INSITE R3.8.4 (Build 5)	Calibration Version:	1

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Measurement	Measured	Calibrated	Units
-------------	----------	------------	-------

Background	41.8	41.9	api
Background + Calibrator	273.2	273.9	api
Calibrator	231.4	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 10748374

Reference Calibration Date: 02-Aug-13 14:20:06

Engineer: S. INGERSOLL

Calibration Date: 14-Aug-13 12:44:26

Software Version: WL INSITE R3.8.4 (Build 5)

Calibration Version: 1

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Field Verification	Shop	Field	Units
Background	41.9	56.8	api
Background + Calibrator	273.9	290.3	api
Calibrator	232.0	233.5	api

Shop	Field	Difference	Tolerance
232.0	233.5	-1.5	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 11019641

Reference Calibration Date: 25-Jul-13 21:50:26

Engineer: THOMAS HYDE

Calibration Date: 25-Jul-13 22:02:36

Software Version: WL INSITE R3.8.4 (Build 5)

Calibration Version: 1

Logging Source S/N: DSN-436

Tank Serial Number: 105060

Reference value assigned to Tank: 51.680

Snow Block S/N: 08910

Calibration Tank Water Temperature: 68 degF

Min. Tool Housing Outside Diameter: 3.620 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.941	0.941	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)				
Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change	Control Limit On Change
Porosity (decp):	0.2106	0.2107	0.0000	+/- 0.0020
Calibrated Ratio:	9.72	9.72	0.001	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0601	0.02000 - 0.09000

PASS/FAIL SUMMARY	
Background Check:	Passed
Gain-Range Check:	Passed
Snow-Block Check:	Passed

DUAL SPACED NEUTRON FIELD CALIBRATION

Tool Name: DSNT - 11019641

Reference Calibration Date: 25-Jul-13 22:02:36

Engineer: S. INGERSOLL		Calibration Date: 10-Aug-13 10:44:19		
Software Version: WL INSITE R3.8.4 (Build 5)		Calibration Version: 1		
Logging Source S/N: DSN-436				
Snow Block S/N: 08910				
NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0601	0.0726	0.0125	+/- 0.0150
PASS/FAIL SUMMARY				
Block Change Check:			Passed	
Snow Block Stat Check:			Passed	
Temperature Check:			Passed	

DENSITY CALIPER SHOP CALIBRATION				
Tool Name:	SDLT - 10685803		Reference Calibration Date:	07-Aug-13 13:48:16
Engineer:	S. INGERSOLL		Calibration Date:	07-Aug-13 14:09:51
Software Version:	WL INSITE R3.8.4 (Build 5)		Calibration Version:	1
Host Tool Name:	DSNT - 11019641			

CALIBRATION COEFFICIENTS				
Measurement	Previous Value	New Value	Control Limit On New Value	
Pad Offset	-4676.75	-4646.73	-7000.00 - -1000.00	
Pad Gain	0.0003849	0.0003849	0.000200 - 0.000600	
Arm Offset	-2740.75	-1909.26	-5000.00 - 3000.00	
Arm Gain	0.0005601	0.0004592	0.000300 - 0.000700	
Arm Power	-0.000007798	-0.000001398	-0.000010000 - 0.000010000	
The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER				
Tool Diameter: 4.50 in				
CALIBRATION RINGS				
Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	1.99	2.00	0.01	+/- 0.20
Medium Ring (in)	3.74	3.75	0.01	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.43	6.50	0.07	+/- 0.20
Medium Ring (in)	8.40	8.25	-0.15	+/- 0.20
Large Ring (in)	15.00	15.00	0.00	+/- 0.20
PASS/FAIL SUMMARY				
Calibration-Coefficients Range Check:			Passed	
Ring-Measurement Check:			Passed	
PASS/FAIL SUMMARY				
Calibration-Coefficients Range Check:			Passed	

SDLT CALIPER FIELD CALIBRATION				
Tool Name:	SDLT - 10685803		Reference Calibration Date:	07-Aug-13 14:09:51
Engineer:	S. INGERSOLL		Calibration Date:	14-Aug-13 12:40:14
Software Version:	WL INSITE R3.8.4 (Build 5)		Calibration Version:	1

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On

Measurement	Shop	Field	Change	New Value
Pad Extension	3.75	3.74	-0.01	+/- 0.10
Ring Diameter	8.25	8.24	-0.01	+/- 0.15

PASS/FAIL SUMMARY	
Pad Extension Check:	Passed
Diameter Check:	Passed

SPECTRAL DENSITY SHOP CALIBRATION				
Tool Name:	SDLT Pad - 10714945	Reference Calibration Date:	01-Jul-13 14:08:35	
Engineer:	S. INGERSOLL	Calibration Date:	08-Aug-13 14:33:02	
Software Version:	WL INSITE R3.8.4 (Build 5)	Calibration Version:	1	

Logging Source S/N: 5073GW				
Aluminum Block S/N: LIBERAL ALUMINUM		Density: 2.598g/cc		Pe: 3.170
Magnesium Block S/N: LIBERAL MAG BLOCK		Density: 1.684g/cc		Pe: 2.598

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0190	1.0388	0.90 - 1.10
Near Dens Gain	1.0055	1.0170	0.90 - 1.10
Near Peak Gain	0.9973	1.0228	0.90 - 1.10
Near Lith Gain	0.9673	0.9941	0.90 - 1.10
Far Bar Gain	1.0096	1.0113	0.90 - 1.10
Far Dens Gain	0.9992	1.0021	0.90 - 1.10
Far Peak Gain	0.9922	0.9966	0.90 - 1.10
Far Lith Gain	0.9685	0.9720	0.90 - 1.10
Near Bar Offset	0.1073	-0.0733	NONE
Near Dens Offset	0.1984	0.0979	NONE
Near Peak Offset	0.2397	0.0284	NONE
Near Lith Offset	0.4494	0.2218	NONE
Far Bar Offset	0.1082	0.0922	NONE
Far Dens Offset	0.1856	0.1623	NONE
Far Peak Offset	0.2417	0.2014	NONE
Far Lith Offset	0.3935	0.3537	NONE
Near Bar Background	968.09	969.80	700 - 1450
Near Dens Background	321.51	321.20	230 - 480
Near Peak Background	140.99	141.23	100 - 210
Near Lith Background	172.42	172.03	125 - 260
Far Bar Background	497.07	493.95	450 - 900
Far Dens Background	191.83	192.00	175 - 345
Far Peak Background	75.56	75.79	70 - 140
Far Lith Background	79.53	79.52	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.682	1.684	0.002	+/- 0.015
Pe	2.550	2.562	0.012	+/- 0.150
ALUMINUM				
Density (g/cc)	2.597	2.598	0.001	+/- 0.01500

Pe

3.100

3.131

0.031

+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0006	+/- 0.0110	-0.0000	+/- 0.0140
Magnesium Block	-0.0008	+/- 0.0110	0.0010	+/- 0.0140
Aluminum Block	0.0018	+/- 0.0110	0.0018	+/- 0.0140
Resolution	9.81	6.00 - 11.50	9.23	6.00 - 11.50
Internal Verifier(B+D+P+L)	1604	1200 - 2700	841	800 - 1700

PASS/FAIL SUMMARY	
Background Quality Check:	Passed
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed
Aluminum Quality Check:	Passed
Gains Check:	Passed
Changes in Calibration Blocks:	Passed

SPECTRAL DENSITY FIELD CHECK

Tool Name: SDLT Pad - 10714945

Reference Calibration Date: 08-Aug-13 14:33:02

Engineer: S. INGERSOLL

Calibration Date: 14-Aug-13 12:32:20

Software Version: WL INSITE R3.8.4 (Build 5)

Calibration Version: 1

Pad Temperature: 78.8 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1604.262	1601.088	-3.174	16.105
Far (B+D+P+L) cps	841.262	841.663	0.401	15.938
Near Resolution	9.81	9.93	0.120	0.50
Far Resolution	9.23	9.50	0.270	1.00

PASS/FAIL SUMMARY	
Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10748374						
Gamma Ray Calibrator	232.0	233.5	-----	-1.5	+/- 9.00	api
DSNT-11019641						
Snow-Block Porosity	0.0601	0.0726	-----	-0.0125	+/- 0.0150	decg
SDLT-10685803						
Pad Extension	3.75	3.74	-----	0.01	+/-0.10	in
Ring Diameter	8.25	8.24	-----	0.01	+/-0.15	in
SDLT Pad-10714945						
Near(B+D+P+L)	1604.262	1601.088	-----	3.174	+/-16.105	cps
Far (B+D+P+L)	841.262	841.663	-----	0.401	+/-15.938	cps
Near Resolution	9.81	9.93	-----	0.120	+/-0.50	
Far Resolution	9.23	9.50	-----	0.270	+/-1.00	

Far(B+D+P+L)	841.262	841.663	-----	-0.401	+/-15.938	cps
Data: DIUNN ATU110001 SP-GTET-CSNG-DSN-SDI-ACRT-BM005 14-Aug-13 14:27 Un @3093.3f					Date: 14-Aug-13 15:39:51	
HALLIBURTON						
INPUTS, DELAYS AND FILTERS TABLE						
Mnemonic		Input Description	Delay (ft)	Filter Type	Filter Length (ft)	
Depth Panel						
TENS	Tension		0.00	NO		
RWCH						
DHTN	DownholeTension		0.00	BLK	0.000	
SP Sub						
PLTC	Plot Control Mask		58.73	NO		
SP	Spontaneous Potential		58.73	BLK	1.250	
SPR	Raw Spontaneous Potential		58.73	NO		
SPO	Spontaneous Potential Offset		58.73	NO		
GTET						
TPUL	Tension Pull		50.71	NO		
GR	Natural Gamma Ray API		50.71	TRI	1.750	
GRU	Unfiltered Natural Gamma Ray API		50.71	NO		
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution		50.71	W	1.416 , 0.750	
ACCZ	Accelerometer Z		0.00	BLK	0.083	
DEVI	Inclination		0.00	NO		
CSNG						
TPUL	Tension Pull		42.62	NO		
STAT	Status		42.62	NO		
FRMC	Tool Frame Count		42.62	BLK	0.250	
TFRM	Total Frames		42.62	NO		
LSPD	Line Speed		42.62	BLK	0.250	
CTIM	Accumulation time for sample		42.62	BLK	0.250	
NOIS	Spectral Noise		42.62	BLK	0.250	
STAB	Stabilizer Voltage in mv		42.62	BLK	0.250	
STBP	Stabilizer 60 KEV Peak		42.62	BLK	0.250	
AMER	Americium		42.62	BLK	0.250	
FTMP	Flask PCB Temperature		42.62	BLK	0.250	
SPEL	Low Energy Spectrum		42.62	BLK	0.250	
SPEH	High Energy Spectrum		42.62	BLK	0.250	
SSP	Stabilization Energy Spectrum		42.62	BLK	0.250	
CSPC	CSNG Lo Hi Spectrum Data		42.62	NO		
DSNT						
TPUL	Tension Pull		32.30	NO		
RNDS	Near Detector Telemetry Counts		32.40	BLK	1.417	
RFDS	Far Detector Telemetry Counts		33.15	TRI	0.583	
DNTT	DSN Tool Temperature		32.40	NO		
DSNS	DSN Tool Status		32.30	NO		
ERND	Near Detector Telemetry Counts EVR		32.40	BLK	0.000	
ERFD	Far Detector Telemetry Counts EVR		33.15	BLK	0.000	
ENTM	DSN Tool Temperature EVR		32.40	NO		
SDLT						
TPUL	Tension Pull		32.40	NO		

TPUL	Tension Pull	22.40	NO	
PCAL	Pad Caliper	22.40	TRI	0.250
ACAL	Arm Caliper	22.40	TRI	0.250
ACRt Sonde				
TPUL	Tension Pull	2.73	NO	
F1R1	ACRT 12KHz - 80in R value	8.98	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	8.98	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.48	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.48	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	4.98	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	4.98	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	3.98	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	3.98	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.48	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.48	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.23	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.23	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	8.98	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	8.98	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.48	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.48	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	4.98	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	4.98	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	3.98	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	3.98	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.48	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.48	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.23	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.23	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	8.98	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	8.98	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.48	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.48	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	4.98	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	4.98	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	3.98	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	3.98	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.48	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.48	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.23	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.23	BLK	0.000
RMUD	Mud Resistivity	12.52	BLK	0.000
F1RT	Transmitter Current Raw 12K X Receiver	2.73	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.73	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.73	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.73	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.73	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.73	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.73	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.73	BLK	0.000
ITMP	Instrument Temperature	2.73	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.73	NO	
TIDV	Instrument Temperature Derivative	2.73	NO	
TUDV	Upper Temperature Derivative	2.73	NO	
TLDV	Lower Temperature Derivative	2.73	NO	

TRBD	Receiver Board Temperature	2.73	NO
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SDLT Pad				
TPUL	Tension Pull	22.39	NO	
NAB	Near Above	22.21	BLK	0.920
NHI	Near Cesium High	22.21	BLK	0.920
NLO	Near Cesium Low	22.21	BLK	0.920
NVA	Near Valley	22.21	BLK	0.920
NBA	Near Barite	22.21	BLK	0.920
NDE	Near Density	22.21	BLK	0.920
NPK	Near Peak	22.21	BLK	0.920
NLI	Near Lithology	22.21	BLK	0.920
NBAU	Near Barite Unfiltered	22.21	BLK	0.250
NLIU	Near Lithology Unfiltered	22.21	BLK	0.250
FAB	Far Above	22.56	BLK	0.250
FHI	Far Cesium High	22.56	BLK	0.250
FLO	Far Cesium Low	22.56	BLK	0.250
FVA	Far Valley	22.56	BLK	0.250
FBA	Far Barite	22.56	BLK	0.250
FDE	Far Density	22.56	BLK	0.250
FPK	Far Peak	22.56	BLK	0.250
FLI	Far Lithology	22.56	BLK	0.250
PTMP	Pad Temperature	22.40	BLK	0.920
NHV	Near Detector High Voltage	21.79	NO	
FHV	Far Detector High Voltage	21.79	NO	
ITMP	Instrument Temperature	21.79	NO	
DDHV	Detector High Voltage	21.79	NO	

Microlog Pad				
TPUL	Tension Pull	22.58	NO	
MINV	Microlog Lateral	22.58	BLK	0.750
MNOR	Microlog Normal	22.58	BLK	0.750

Data: DUNN_ATU1\0001 SP-GTET-CSNG-DSN-SDL-ACRT-BN\005 14-Aug-13 14:27 Up @3093.3f

Date: 14-Aug-13 15:38:11

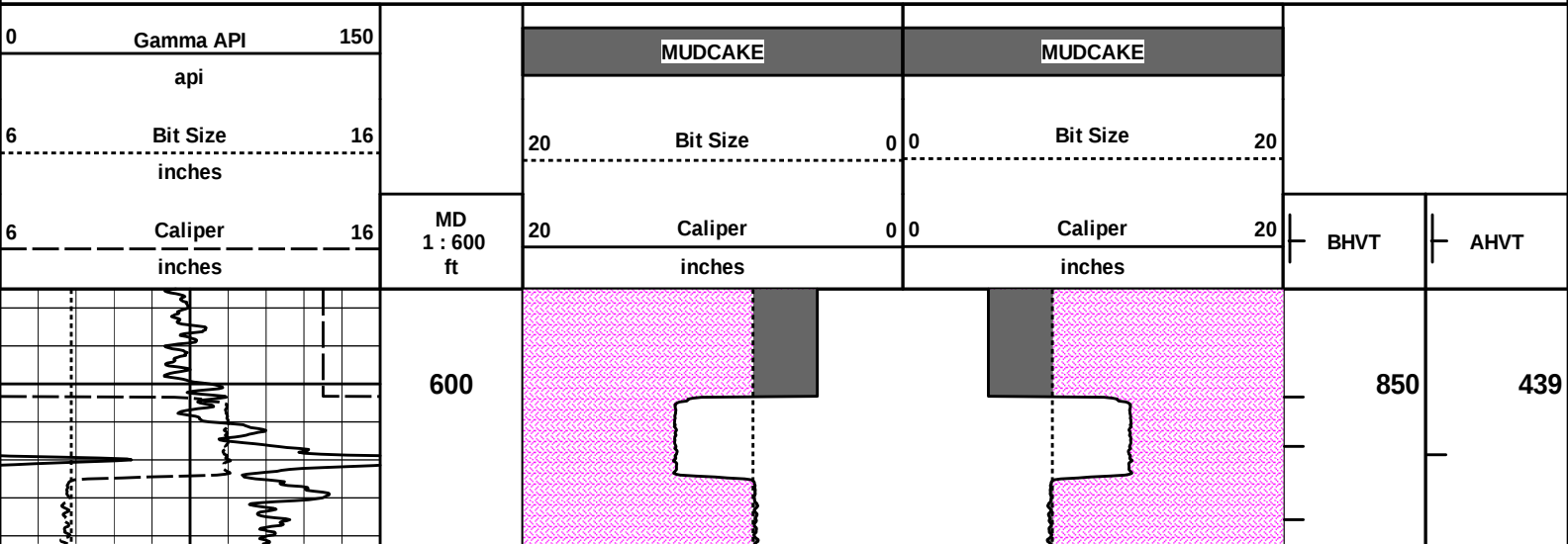
Plot Time: 14-Aug-13 16:52:45

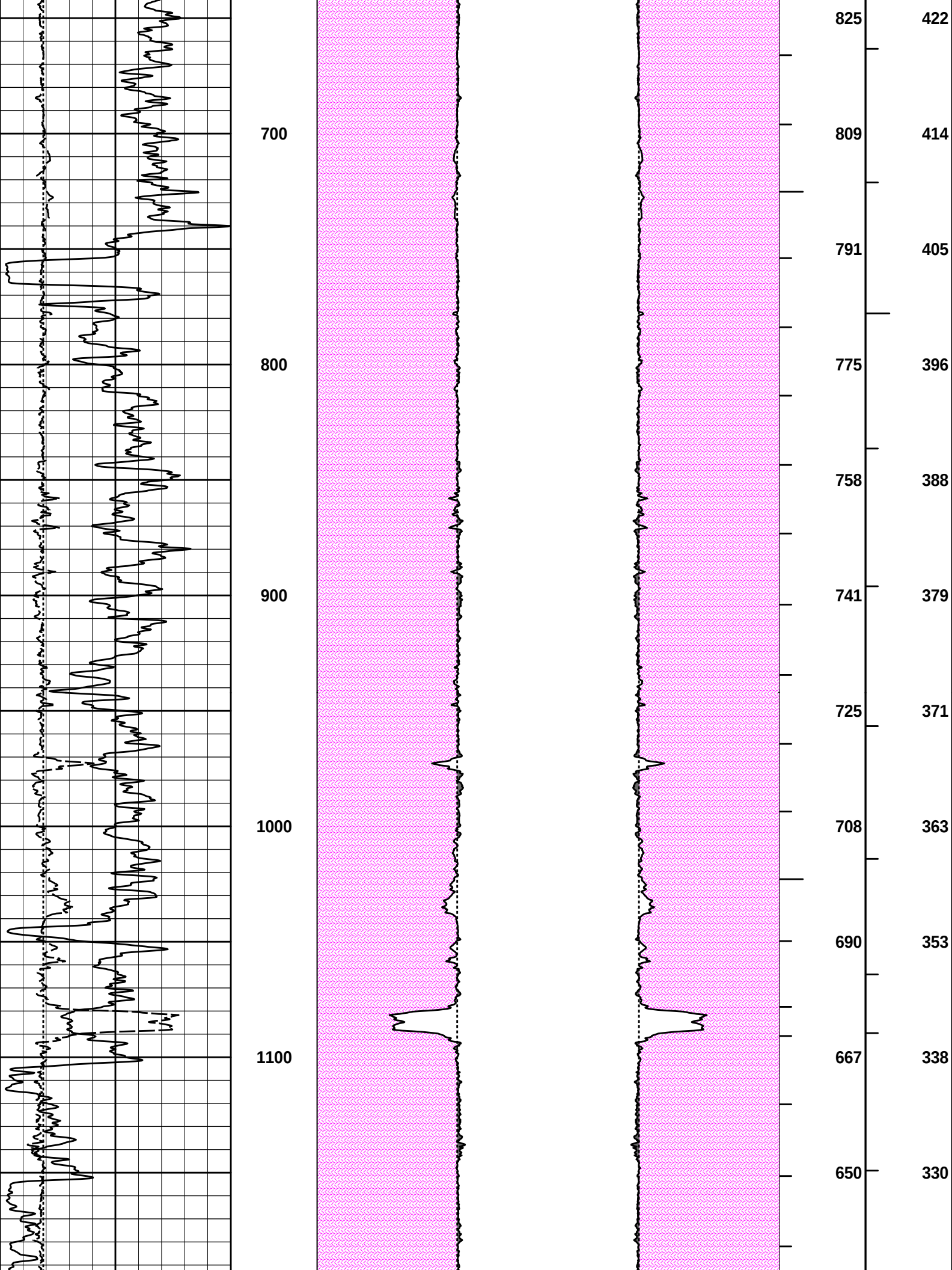
Plot Range: 575 ft to 3092.67 ft

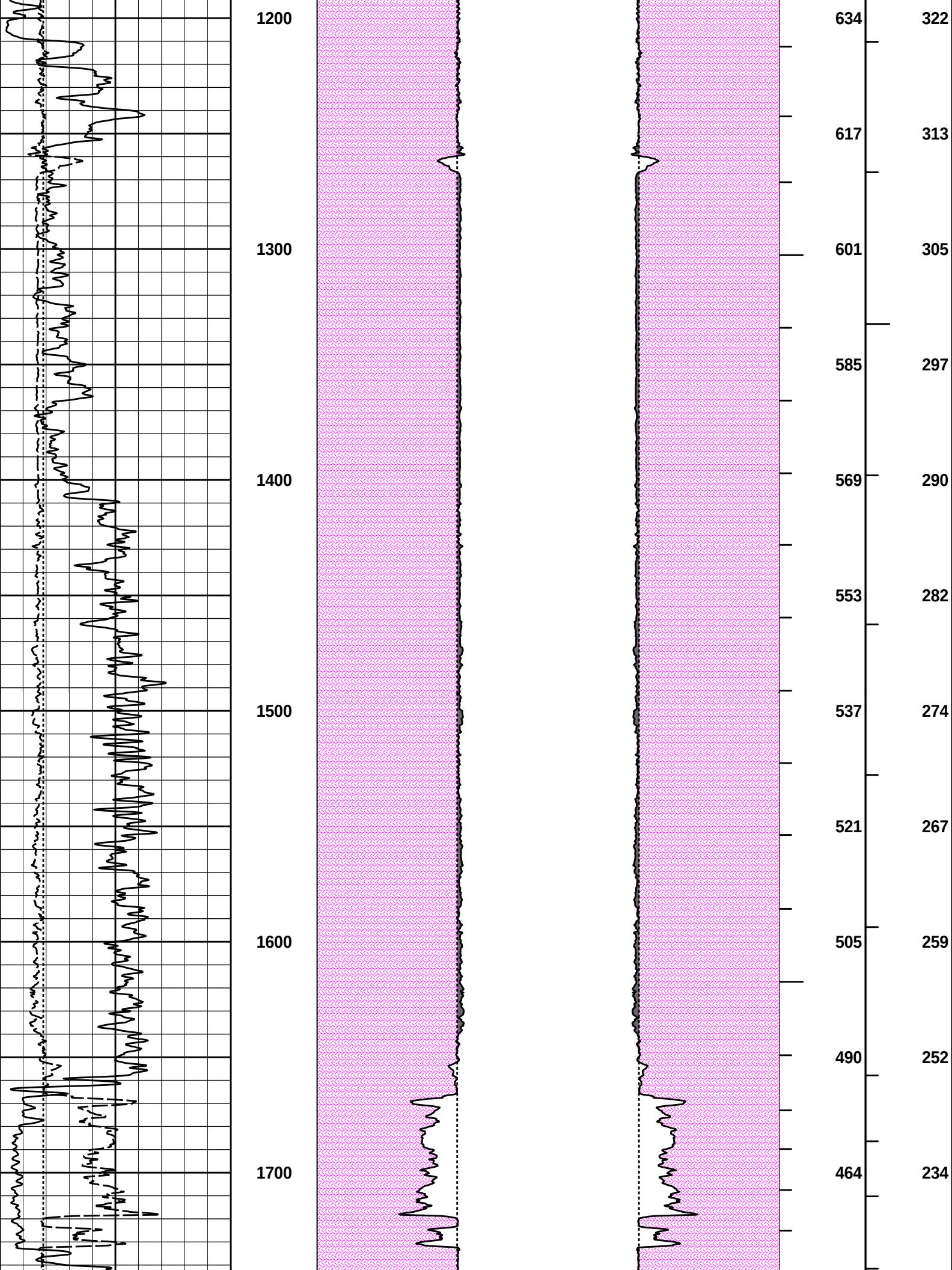
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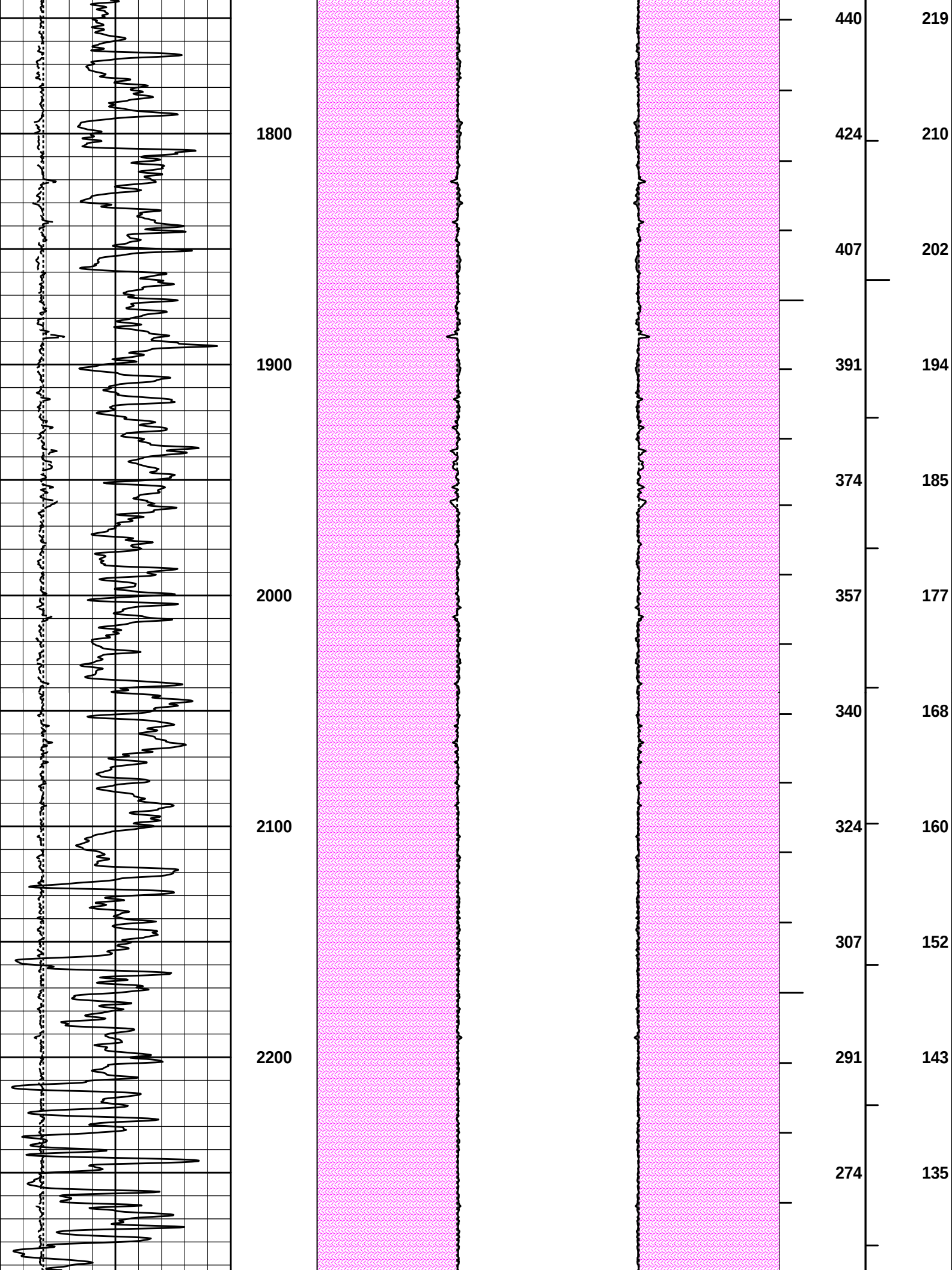
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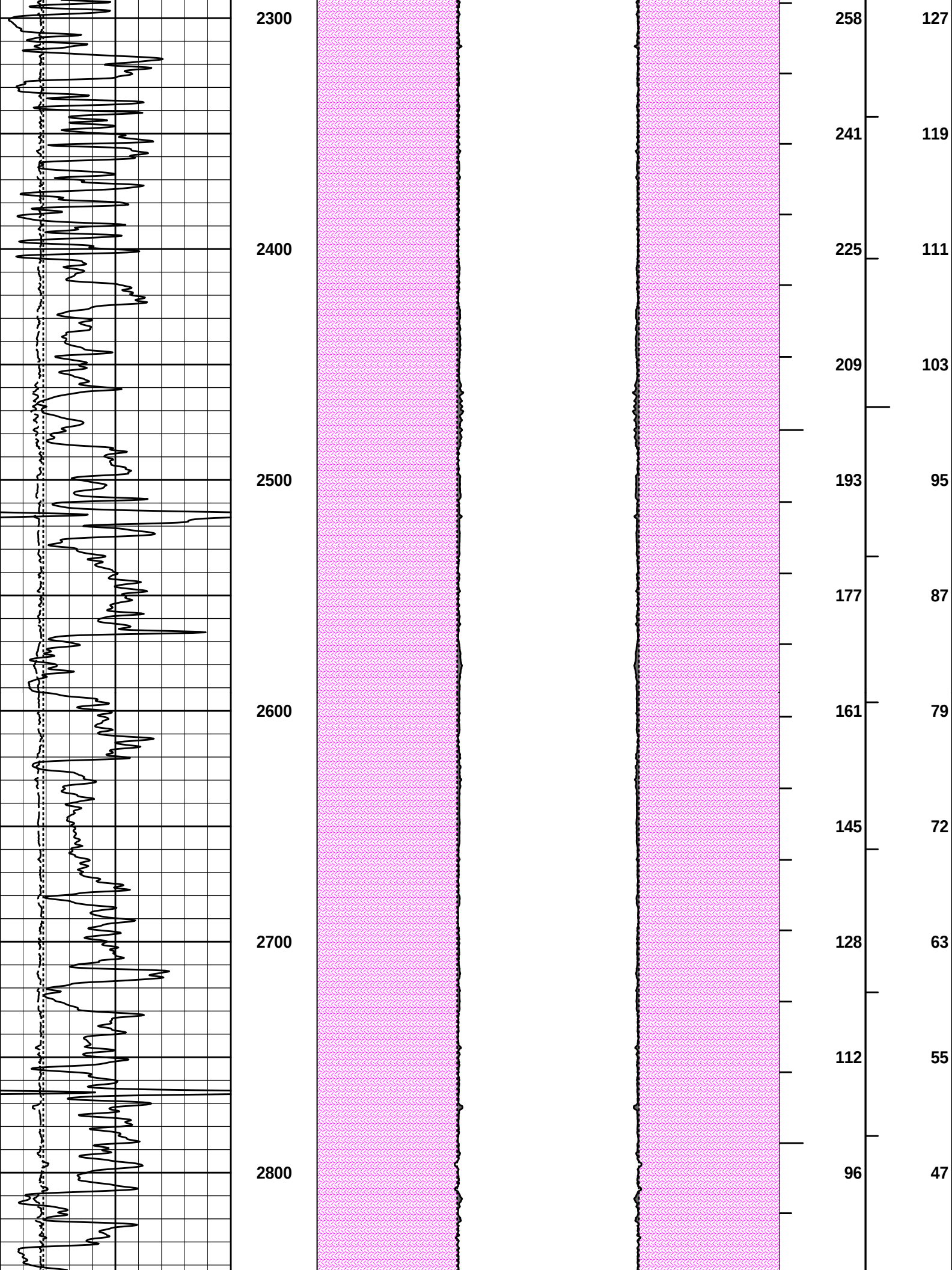
ANNULAR HOLE VOLUME PLOT

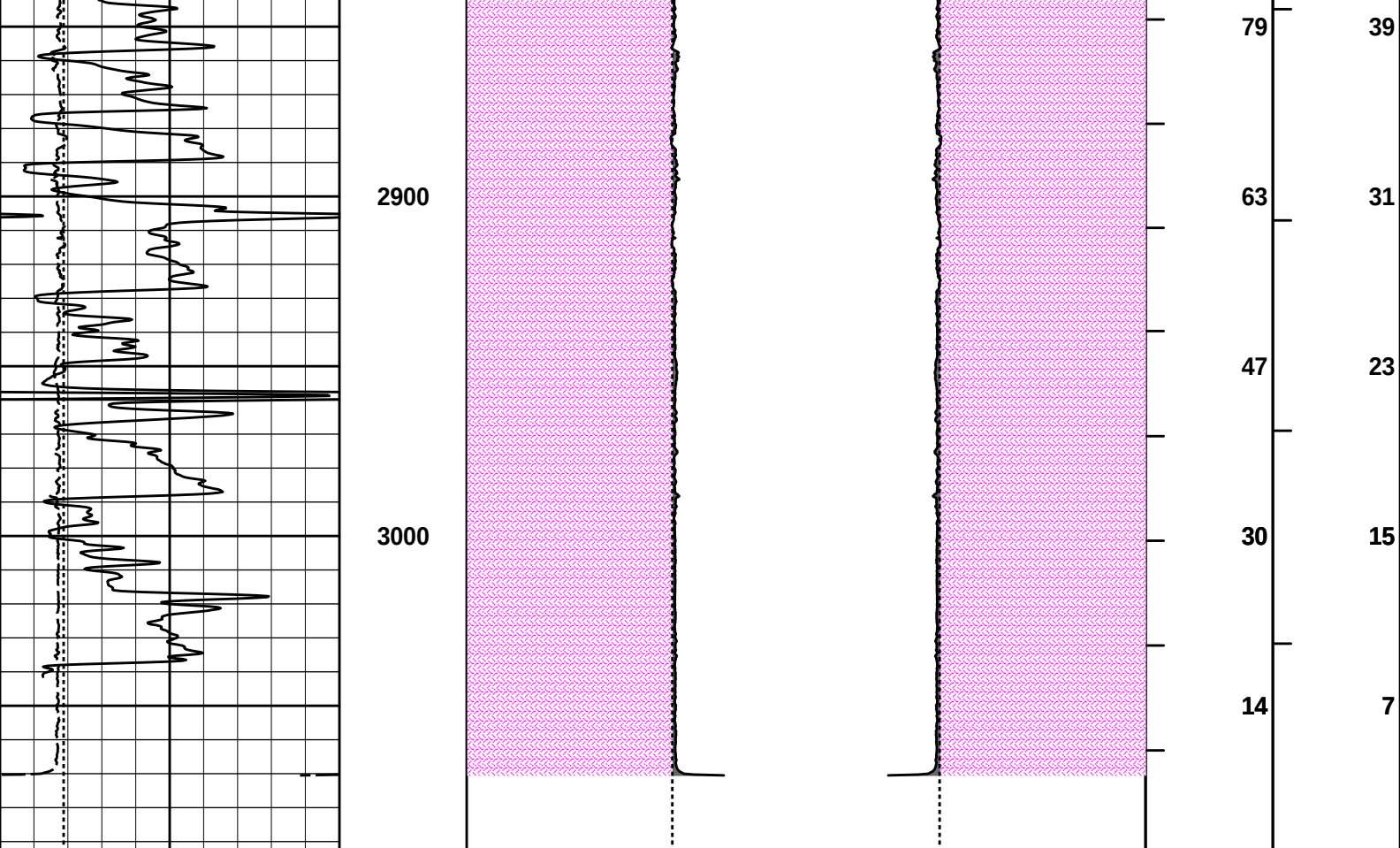












6	Caliper	16	MD 1 : 600 ft	20	Caliper	0 0	20	BHVT	AHVT
6	inches	16		20	inches	0 0	20		
6	Bit Size	16		20	Bit Size	0 0	20		
6	inches	16							
0	Gamma API	150							
	api								

HALLIBURTON

Plot Time: 14-Aug-13 16:52:51
Plot Range: 575 ft to 3092.67 ft
Data: DUNN_ATU1\Well Based\R1 CASING\
Plot File: \\-LOCAL-\\DUNN_ATU1\Well Based\POROSITY\AHV_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT

COMPANY	PIONEER NATURAL RESOURCES USA, INC.
WELL	DUNN ATU 1
FIELD	HUGOTON PONOMA
COUNTY	STEVENS
STATE	KANSAS
HALLIBURTON	DUAL SPACED NEUTRON SPECTRAL DENSITY LOG