

**SPECTRAL DENSITY
DUAL SPACED NEUTRON
LOG**

----- Fold here -----

Service Ticket No.: 902179941						API Serial No.: 15-153-21109-00-00						PGM Version: WL INSITE R4.6.4 (Build 3)					
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE								RESISTIVITY SCALE CHANGES									
Date	Sample No.						Type Log	Depth		Scale Up Hole			Scale Down Hole				
Depth-Driller																	
Type Fluid in Hole																	
Density	Viscosity																
Ph	Fluid Loss																
Source of Sample									RESISTIVITY EQUIPMENT DATA								
Rm @ Meas. Temp			@			@			Run No.	Tool Type & No.		Pad Type		Tool Pos.		Other	
Rmf @ Meas. Temp.			@			@			ONE	ACRT		N/A		CENT		N/A	
Rmc @ Meas. Temp.			@			@				I962_S909							
Source Rmf	Rmc						ONE	MICROLOG		RUBBER		ADJ				N/A	
Rm @ BHT			@			@				11014296							
Rmf @ BHT			@			@											
Rmc @ BHT			@			@											
EQUIPMENT DATA																	
GAMMA				ACOUSTIC				DENSITY				NEUTRON					
Run No.		ONE		Run No.		ONE		Run No.		ONE		Run No.		ONE			
Serial No.		11048627		Serial No.		10747683		Serial No.		10865884		Serial No.		11055304			
Model No.		GTET		Model No.		BSAT		Model No.		SDLT-I		Model No.		DSNT-I			
Diameter		3.625"		No. of Cent.		2		Diameter		4.5"		Diameter		3.625"			
Detector Model No.		T-102		Spacing		6"		Log Type		GAM-GAM		Log Type		NEU-NEU			
Type		SCINT						Source Type		CS137		Source Type		AM241BE			
Length		8'		LSA [Y/N]		NO		Serial No.		5168GW		Serial No.		DSN-424			
Distance to Source		10'		FWDA [Y/N]		NO		Strength		1.5 CI		Strength		15 CI			
LOGGING DATA																	
GENERAL				GAMMA		ACOUSTIC			DENSITY				NEUTRON				
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix			
No.	From	To	ft/min	L	R	L	R		L	R		L	R				
ONE	4864	3500	REC	0	150	30	-10	47.6	30	-10	2.71	30	-10	LIME			

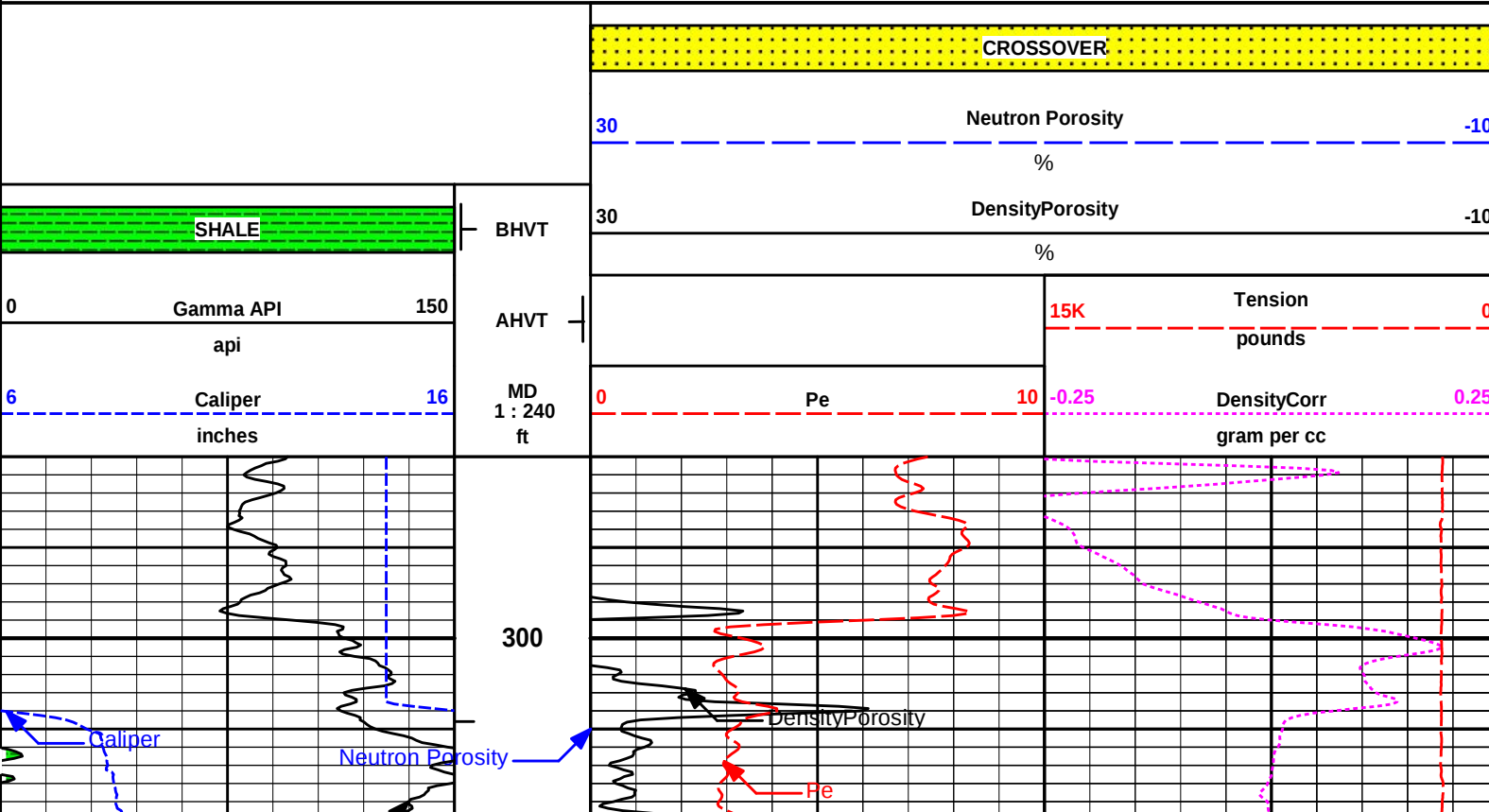
ONE	2950	297	REC	0	150	30	-10	47.6	30	-10	2.71	30	-10	LIME		
DIRECTIONAL INFORMATION																
Maximum Deviation								@	KOP							@
Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5-INCH CASING																
CHLORIDES REPORTED AT 1,000 PPM																
LCM REPORTED AT 10 LB/BBL																
GTET-DSNT-SDLT-IDT-BSAT-ACRT RUN IN COMBINATION																
TODAY'S CREW: F. VILLA & M. GONZALEZ																
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KS. 620-624-8123																
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.																
														HALLIBURTON		

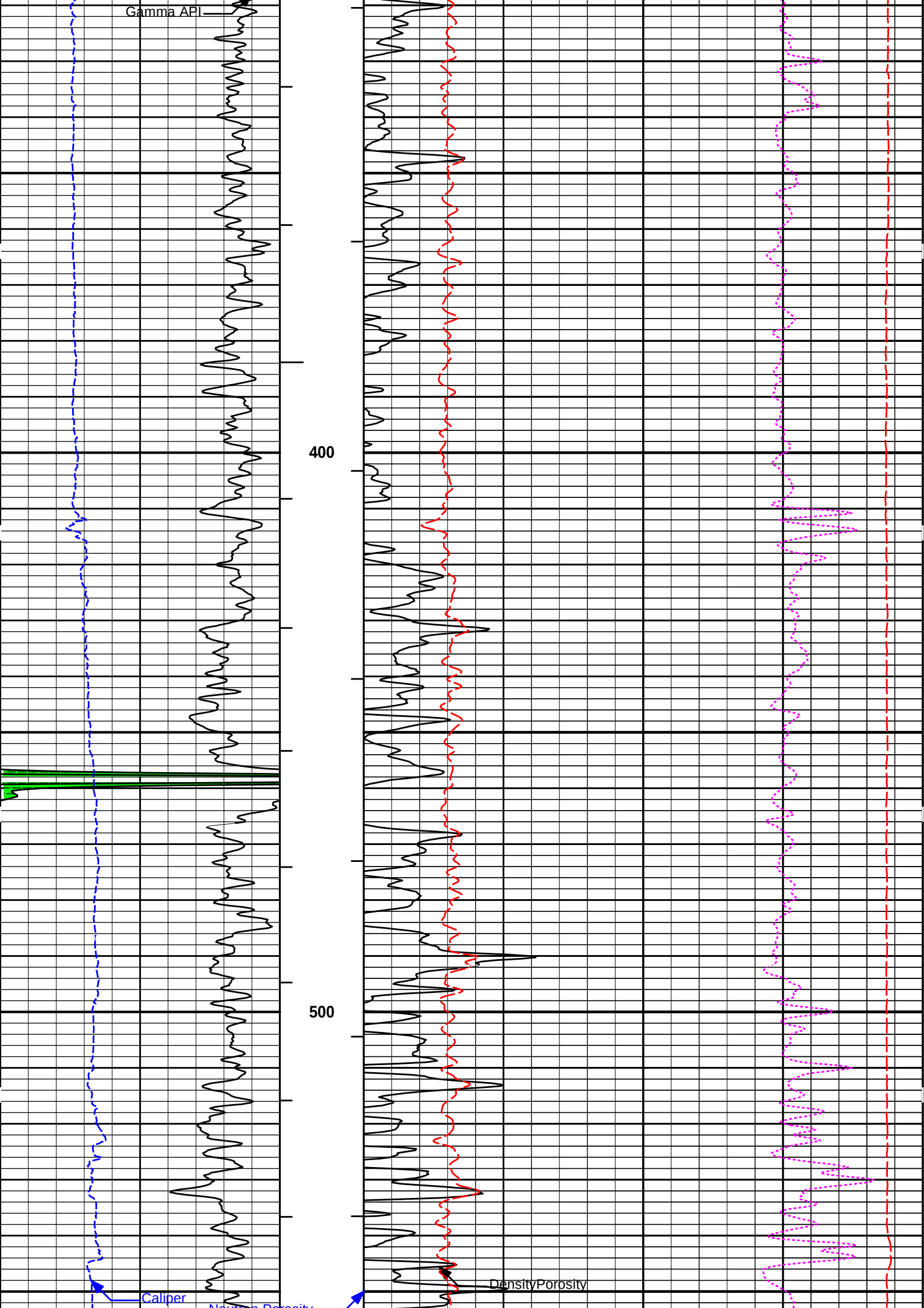


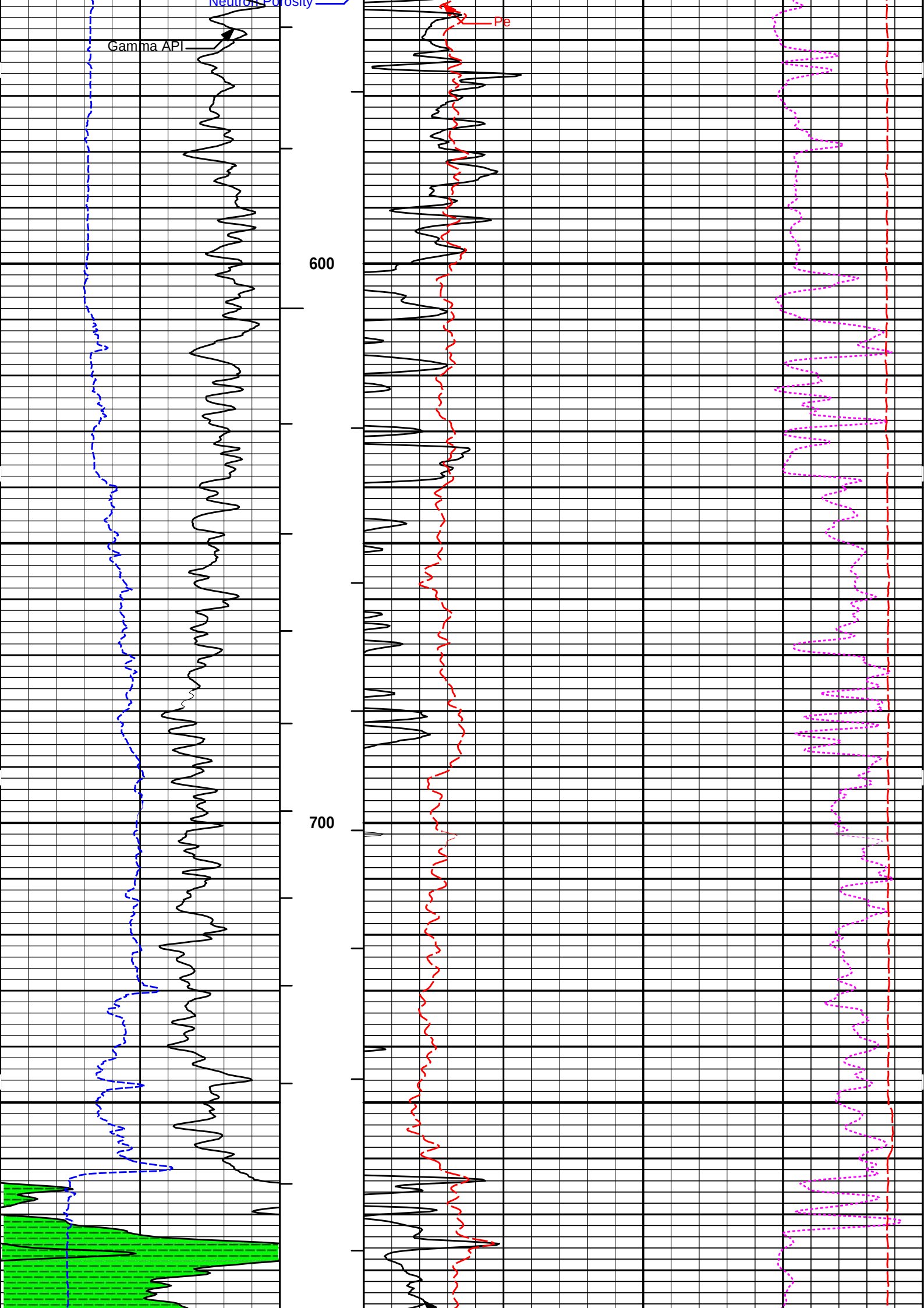
Plot Time: 03-Mar-15 03:13:32
 Plot Range: 280 ft to 2950 ft
 Data: DEWEY_TRUST_1-7\Well Based\DETAIL_TOP\
 Plot File: \\PORO\Porosity_IQ_5_MAIN_LIB

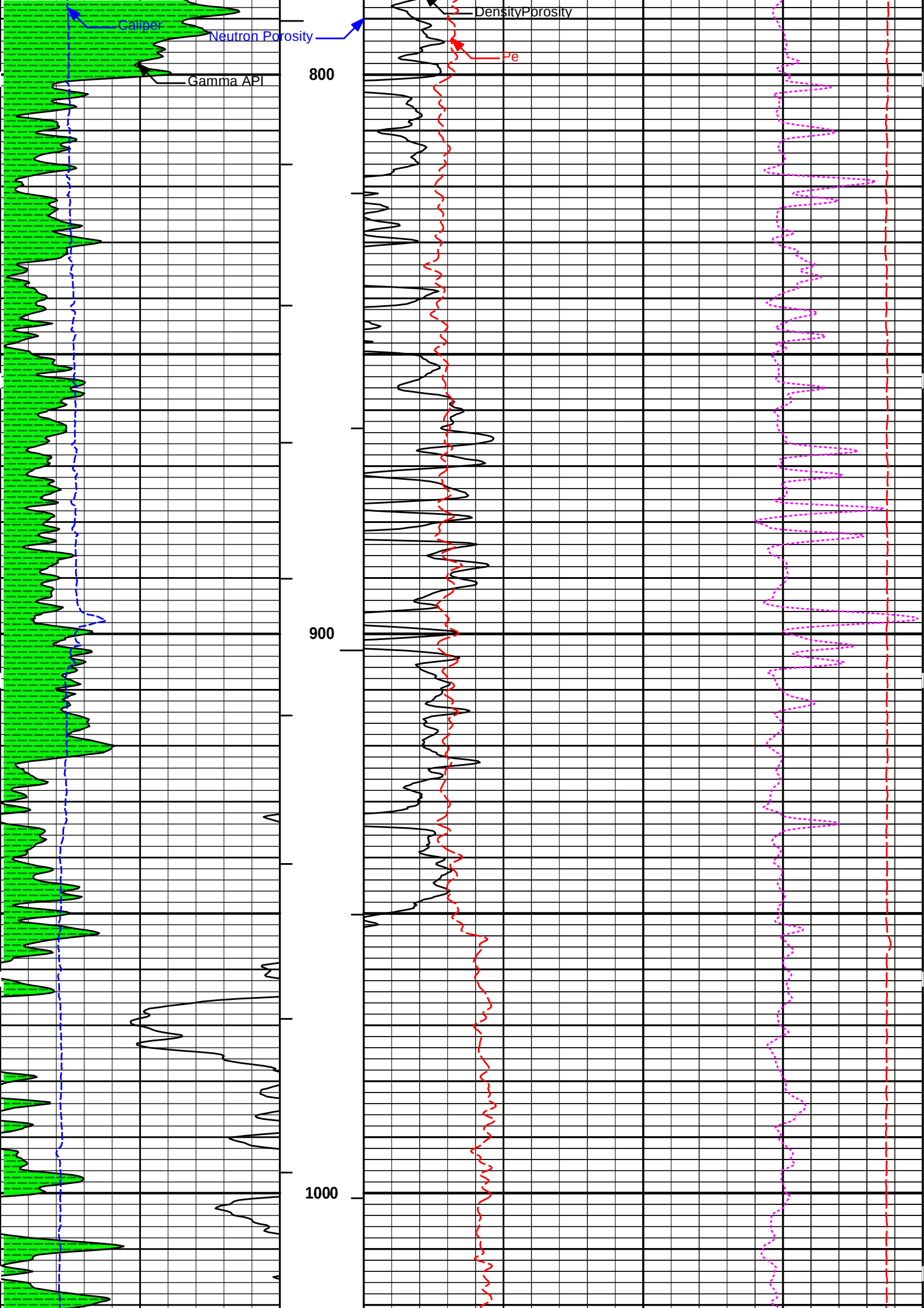
5 INCH MAIN LOG

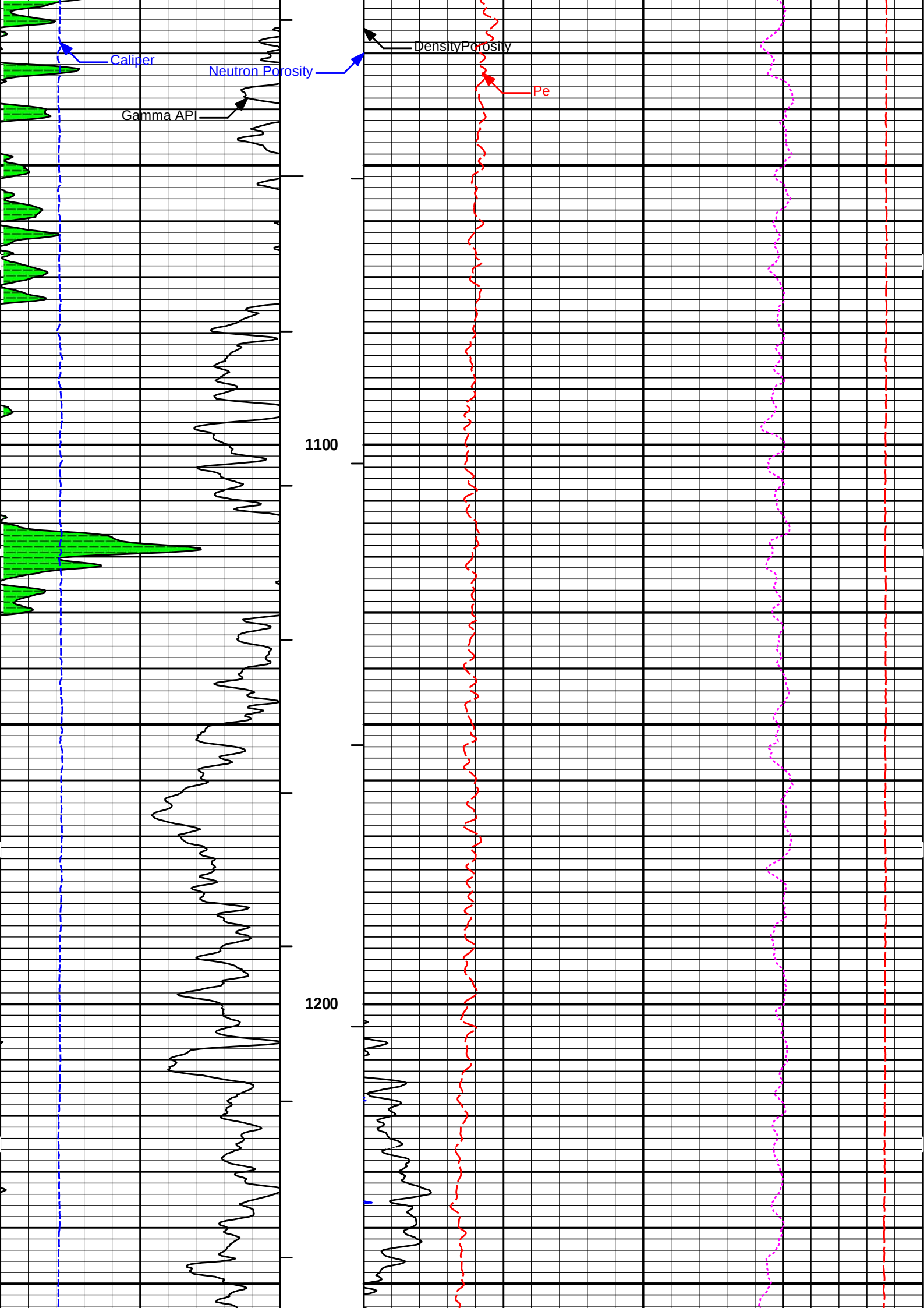
MEASURED DEPTH
MAIN SECTION 5" PER 100'

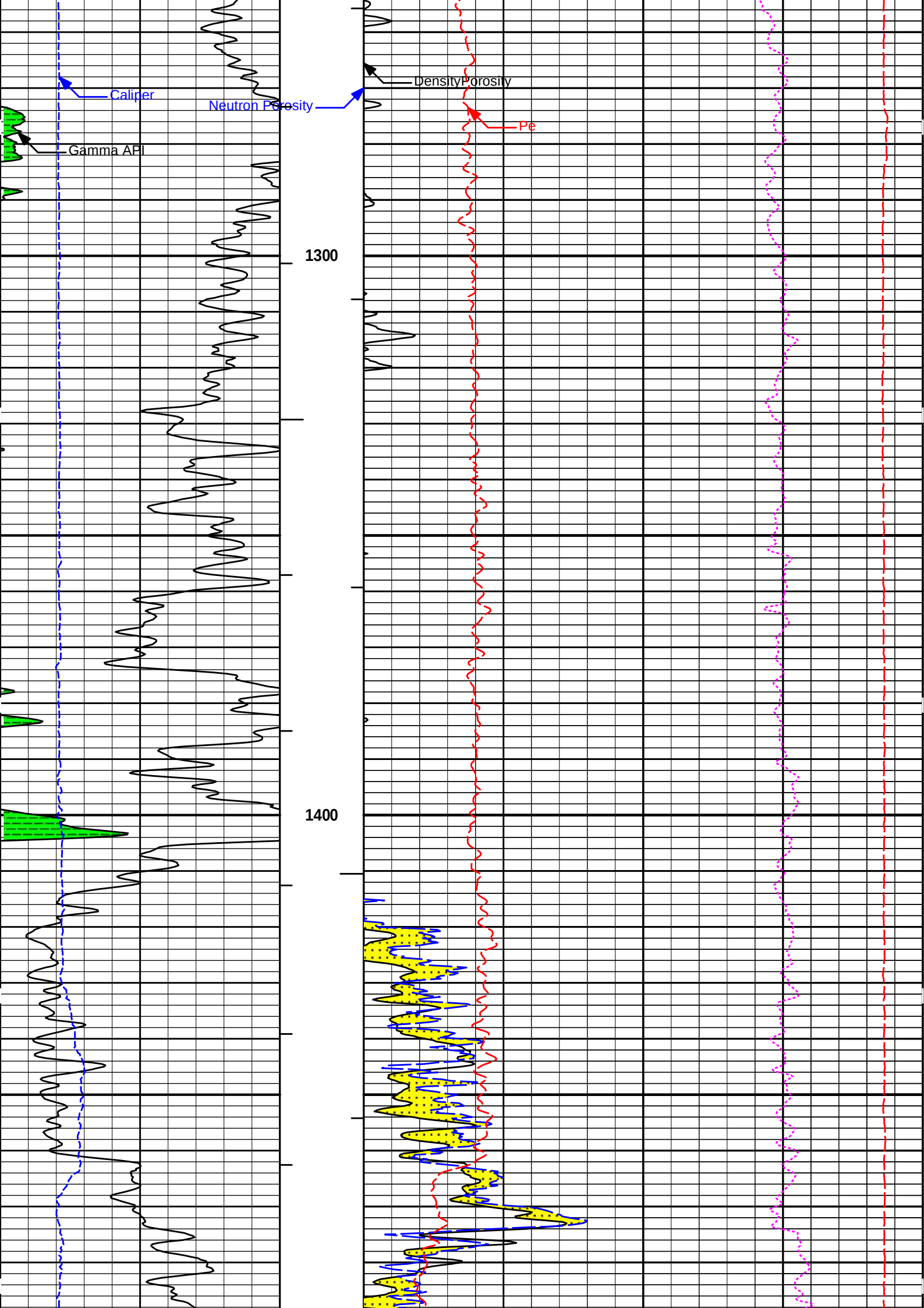


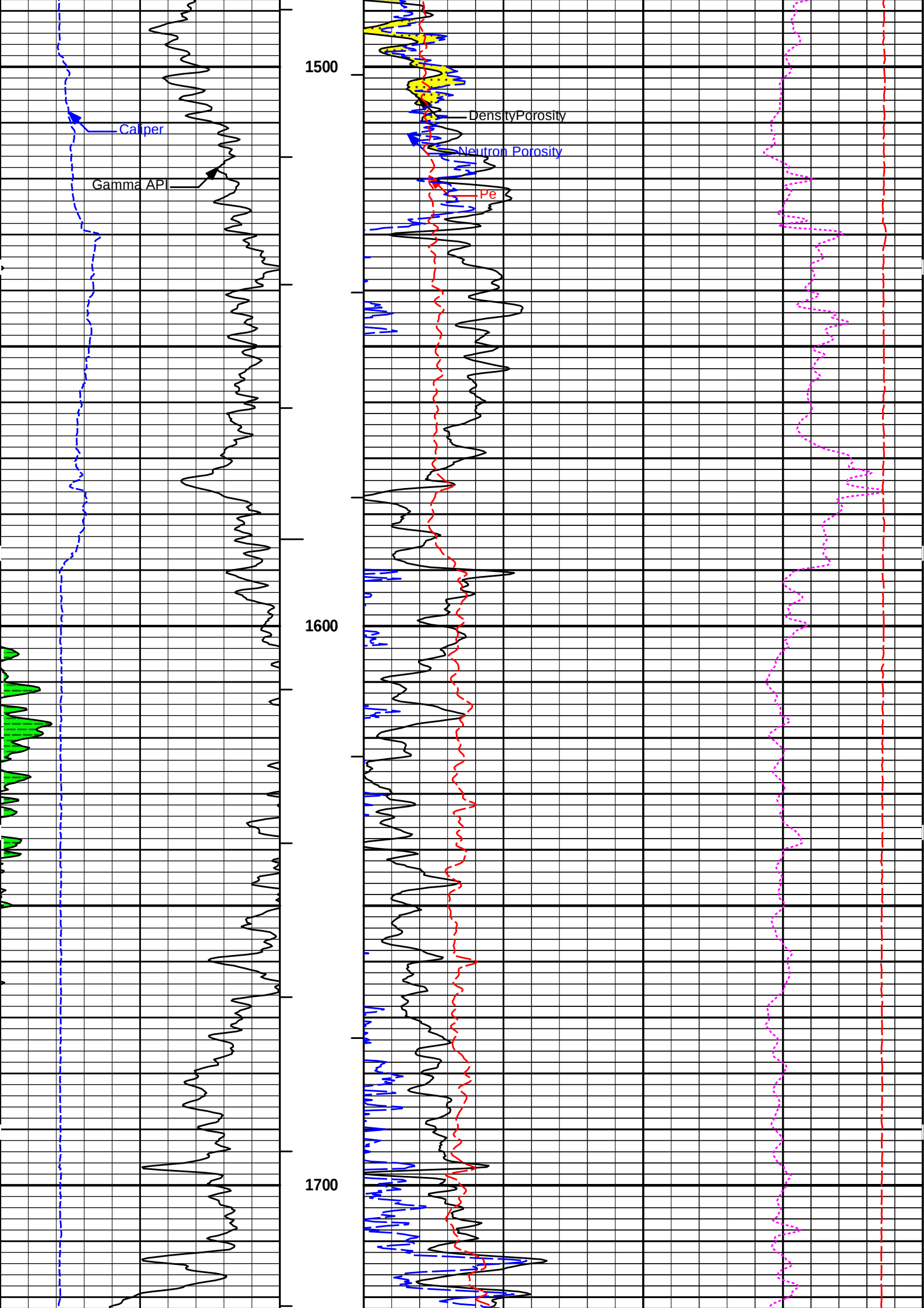


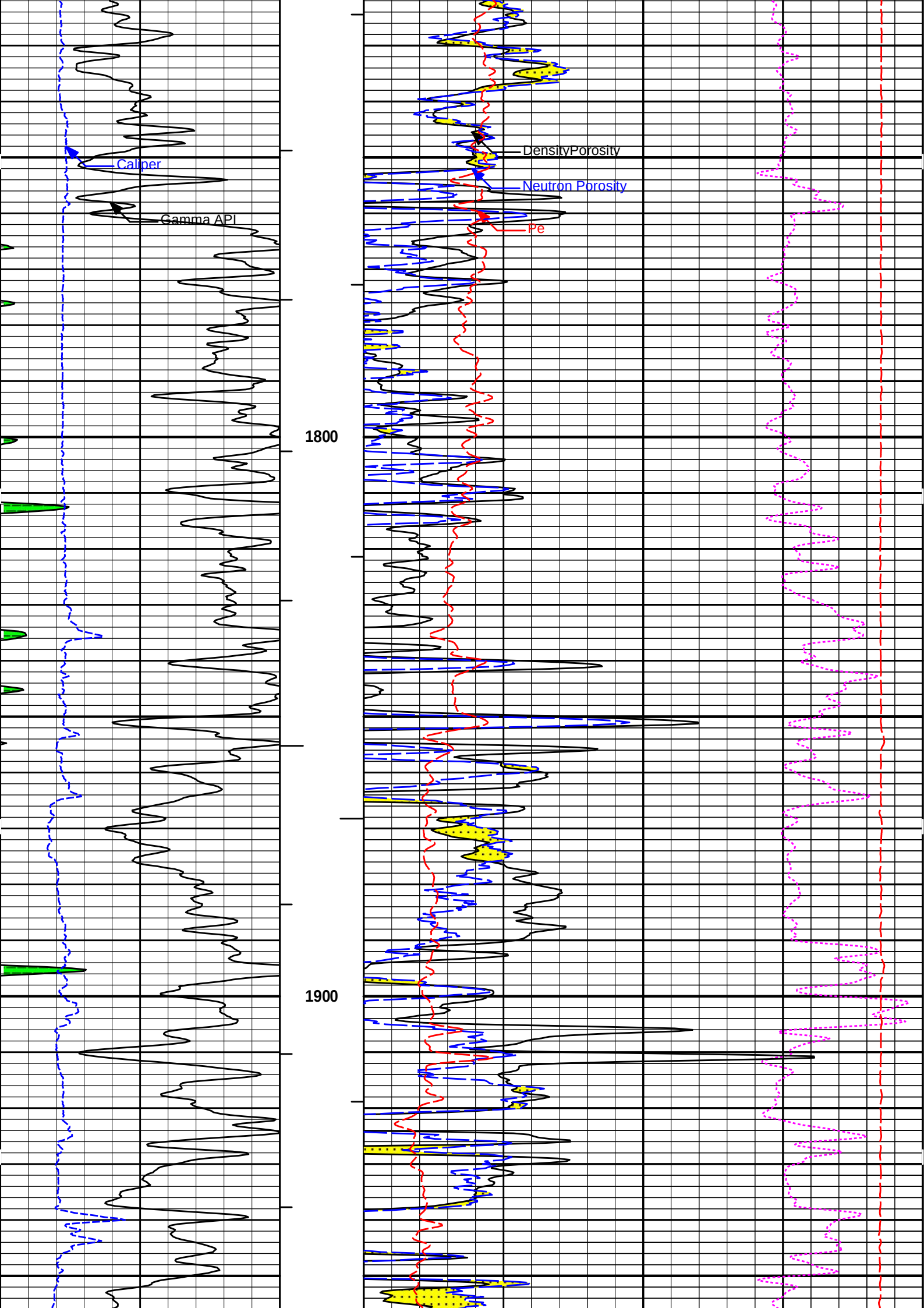


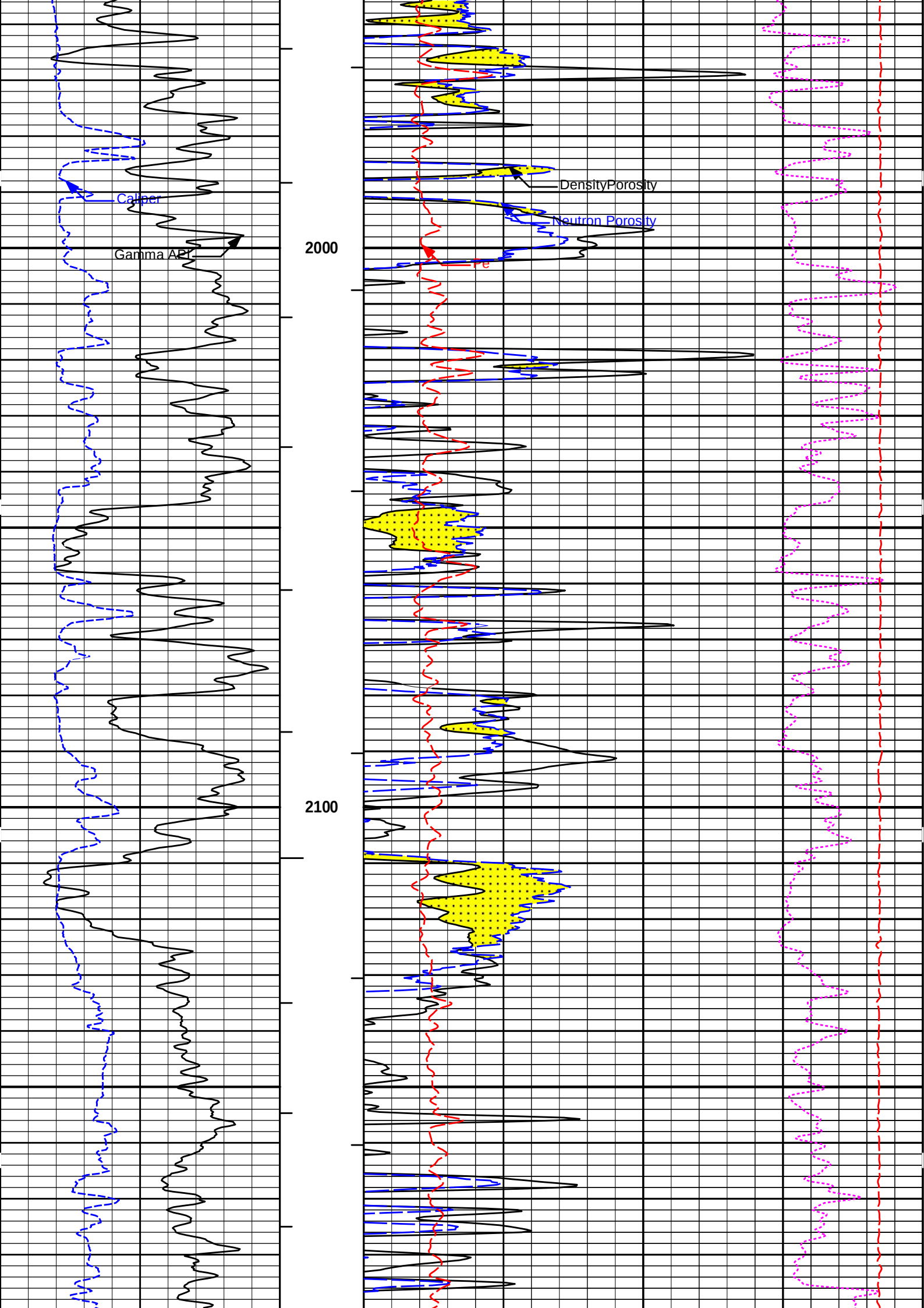


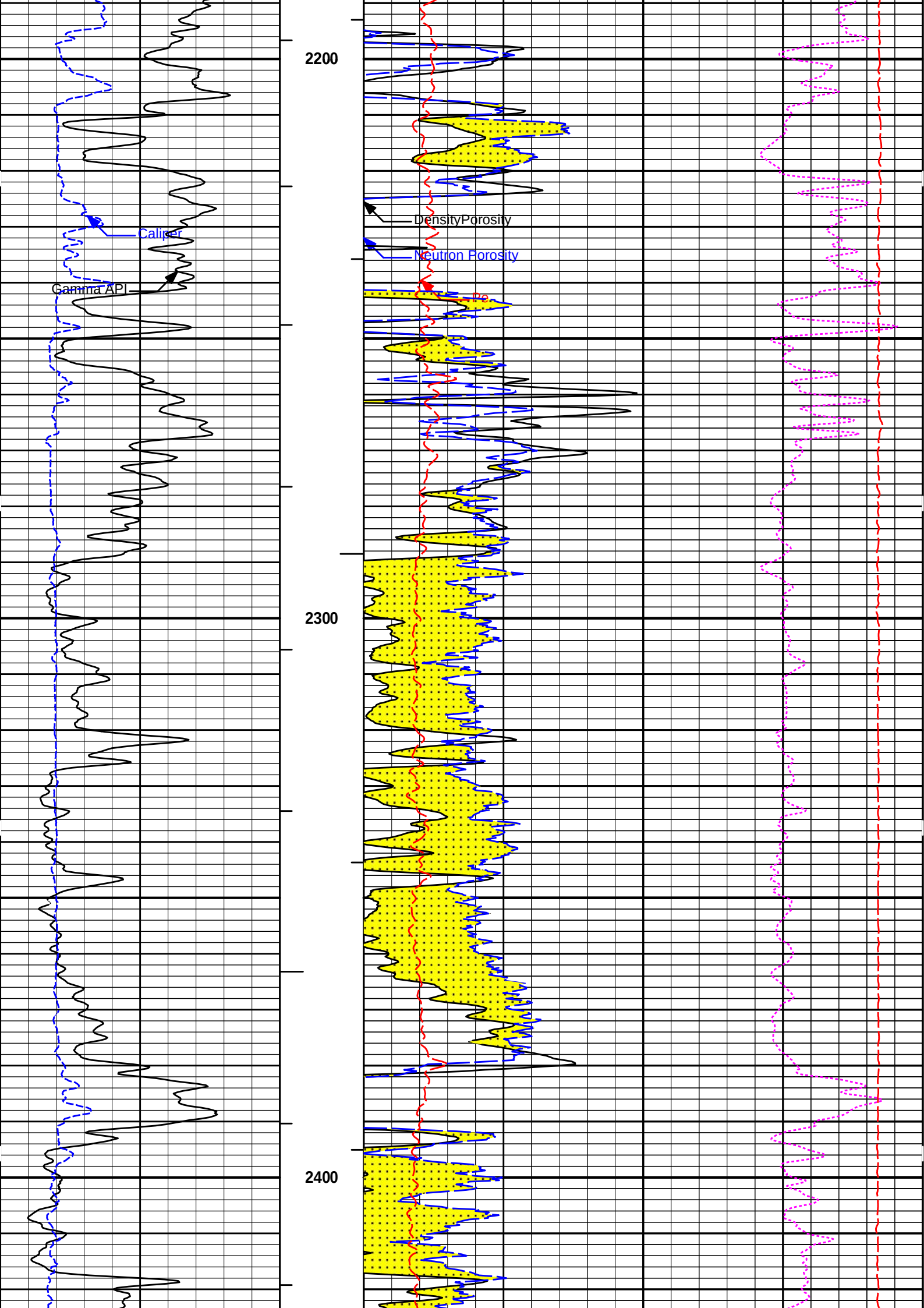


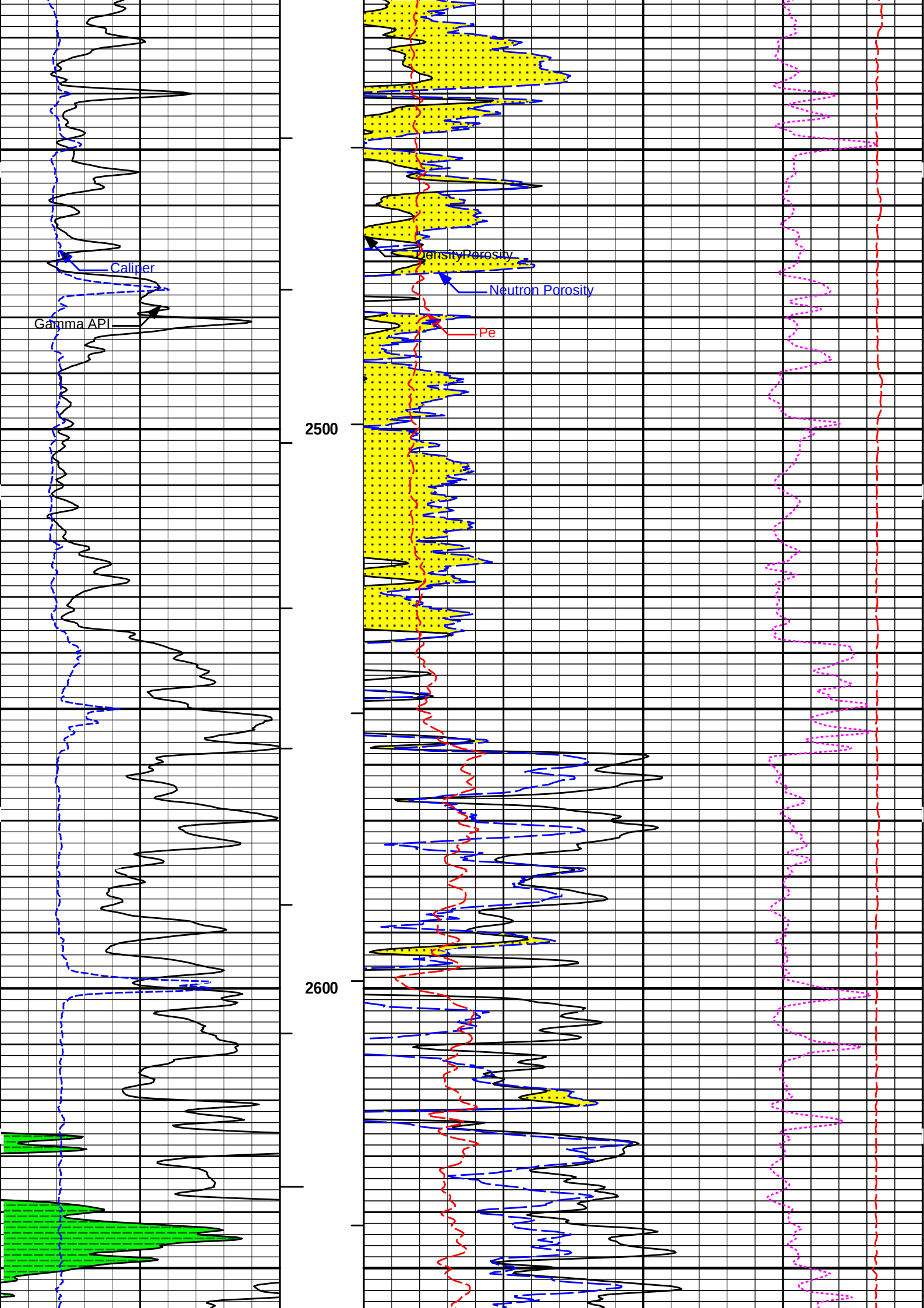


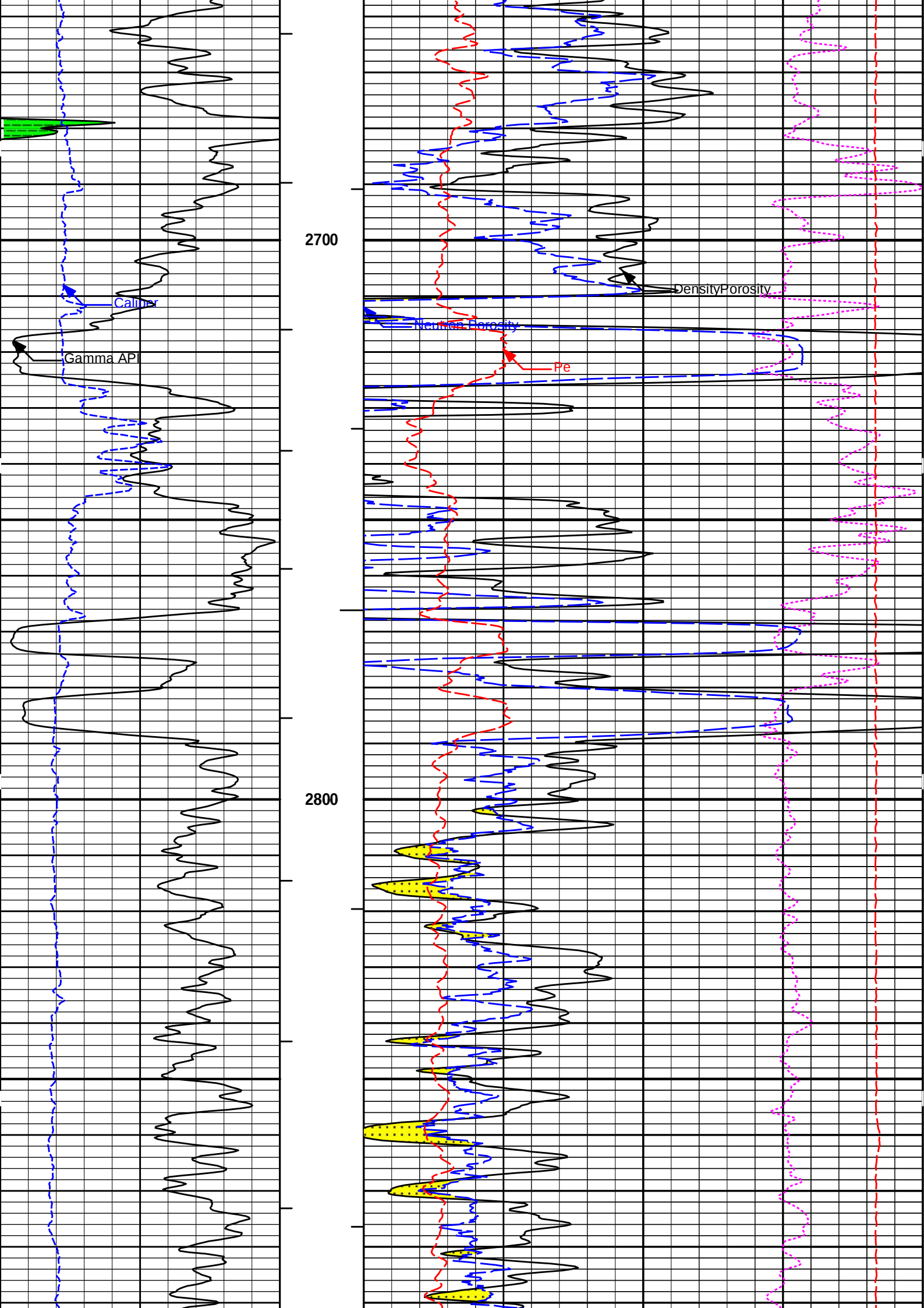


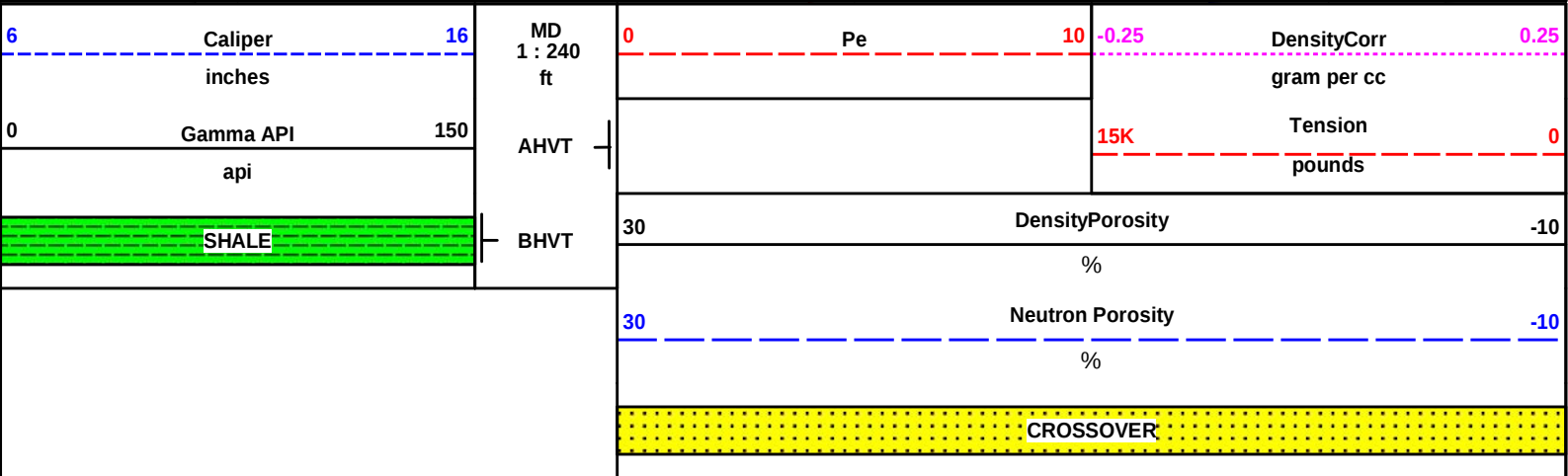












HALLIBURTON

Plot Time: 03-Mar-15 03:13:35
Plot Range: 280 ft to 2950 ft
Data: DEWEY_TRUST_1-7\Well Based\DETAIL_TOP\
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

5 INCH MAIN LOG

MEASURED DEPTH
MAIN SECTION 5" PER 100'

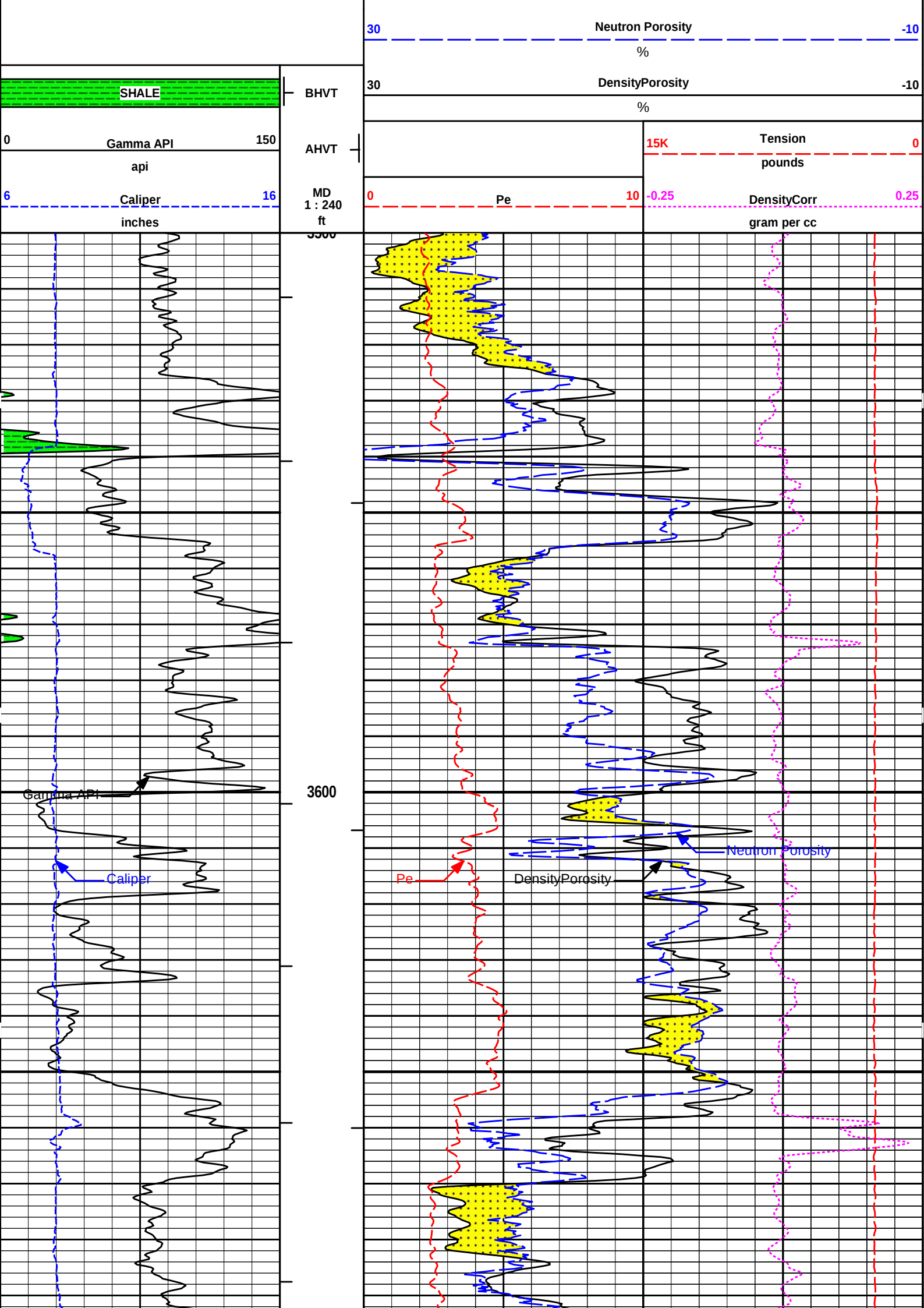
HALLIBURTON

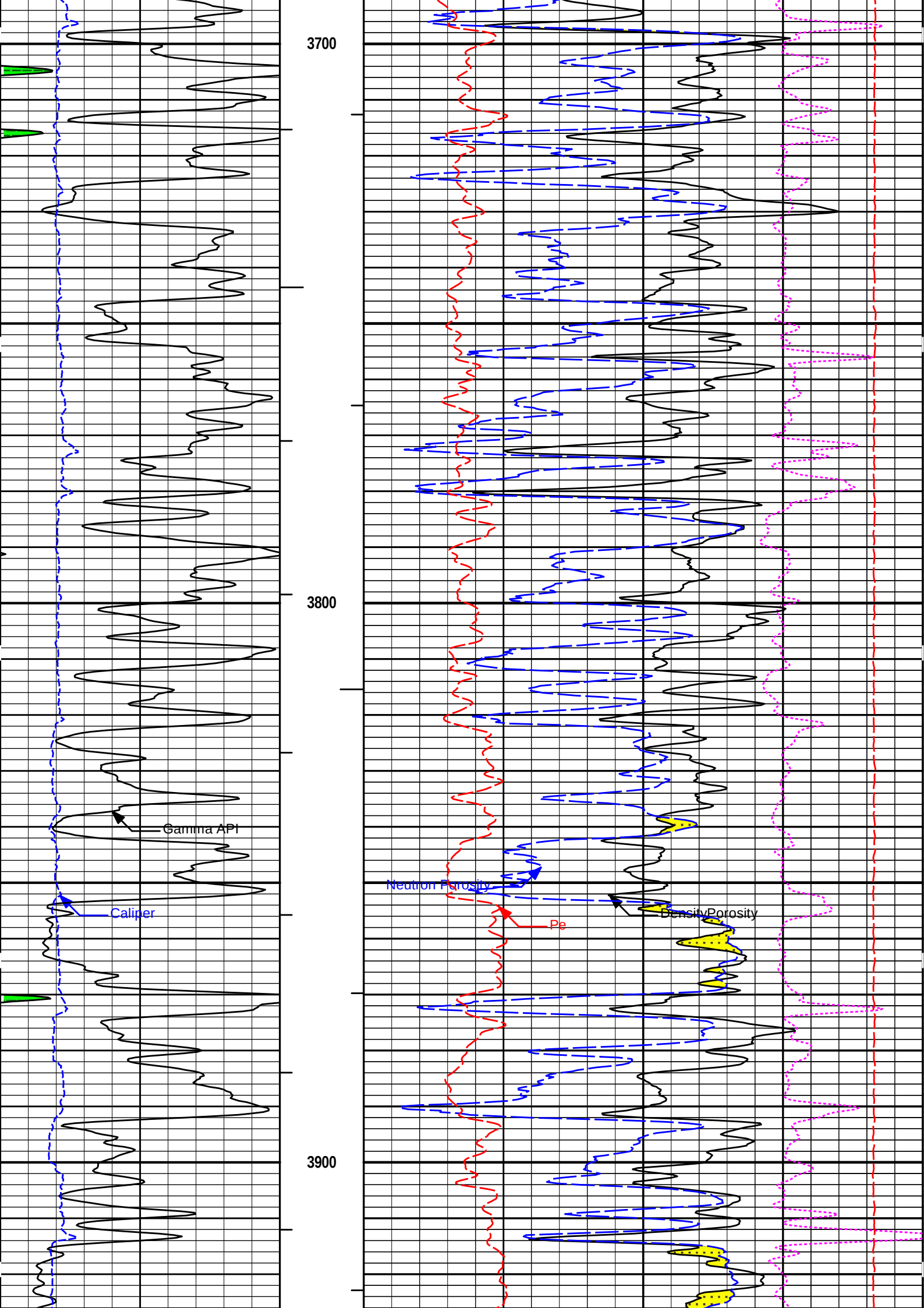
Plot Time: 03-Mar-15 03:13:36
Plot Range: 3500 ft to 4869.92 ft
Data: DEWEY_TRUST_1-7\Well Based\DETAIL_BOTTOMM
Plot File: \\POROI\Poro_IQ_5_MAIN_LIB

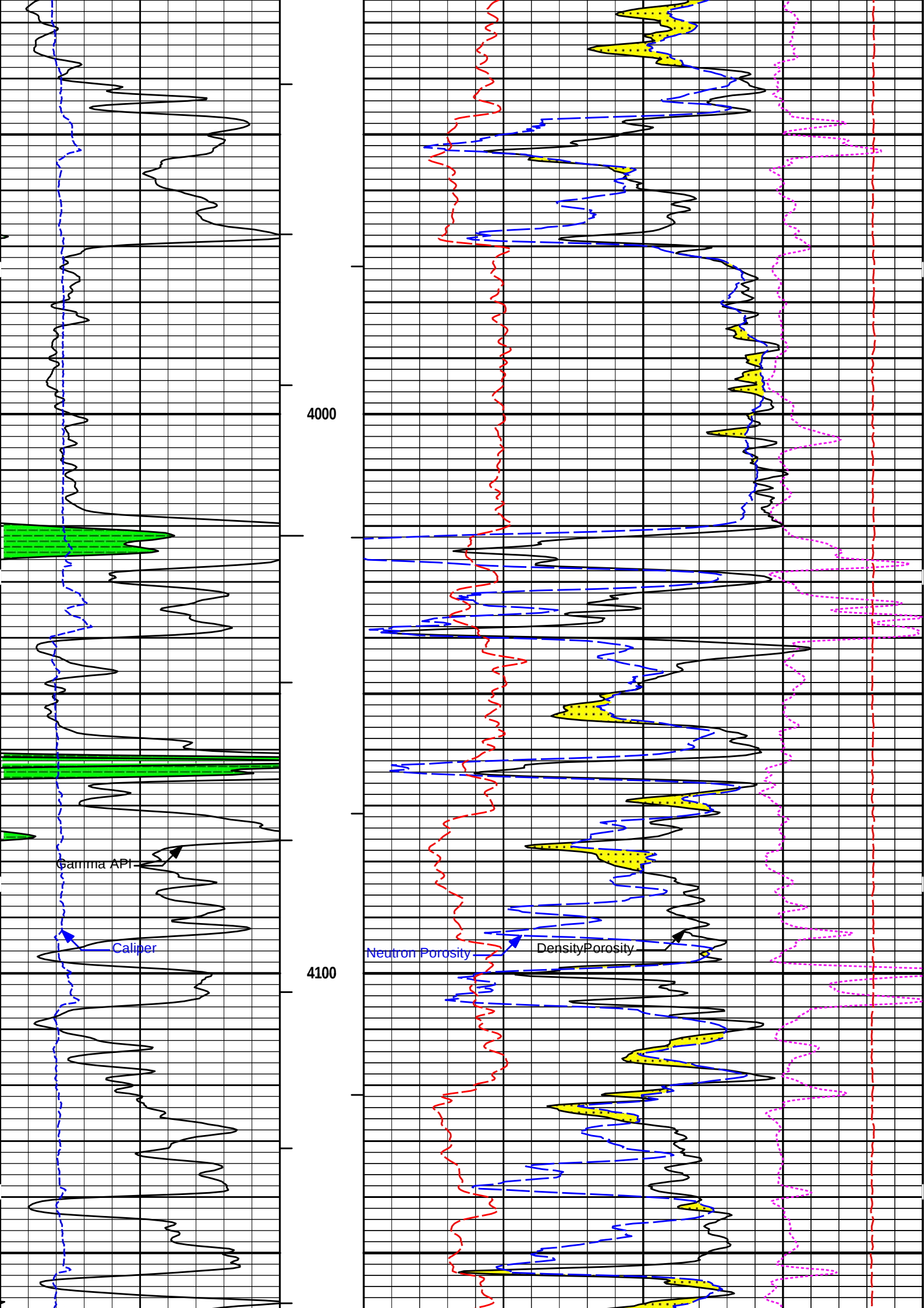
5 INCH MAIN LOG

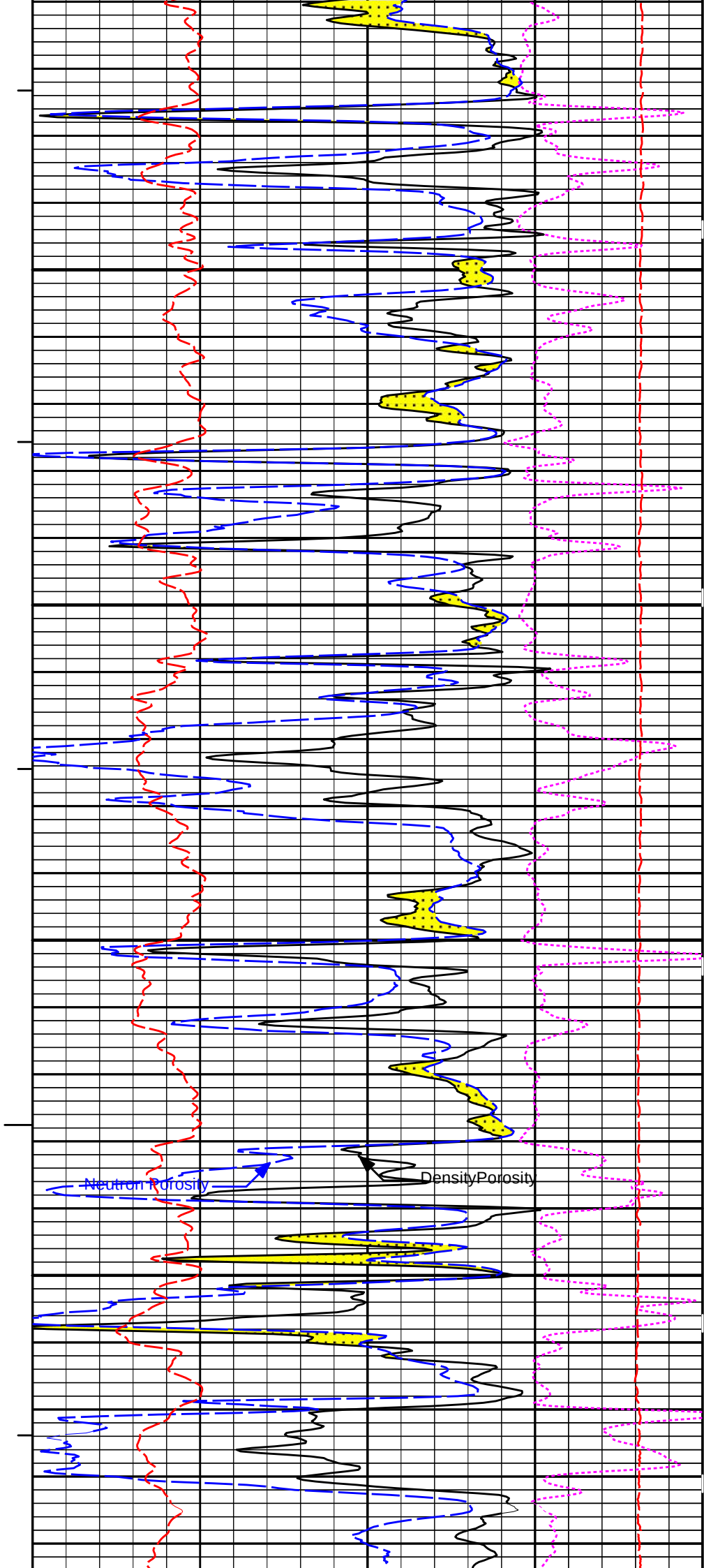
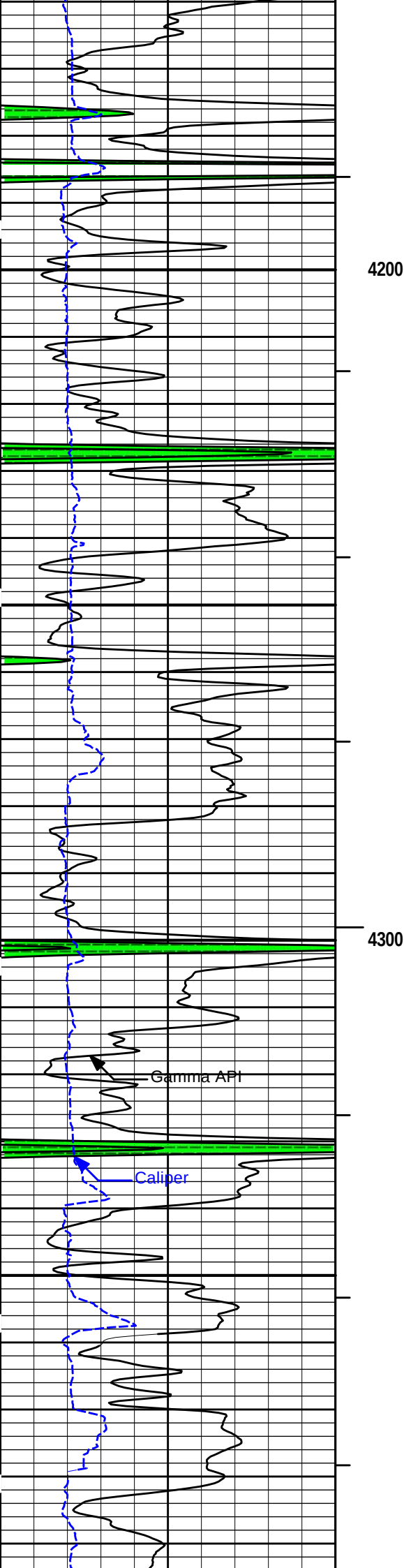
MEASURED DEPTH
MAIN SECTION 5" PER 100'

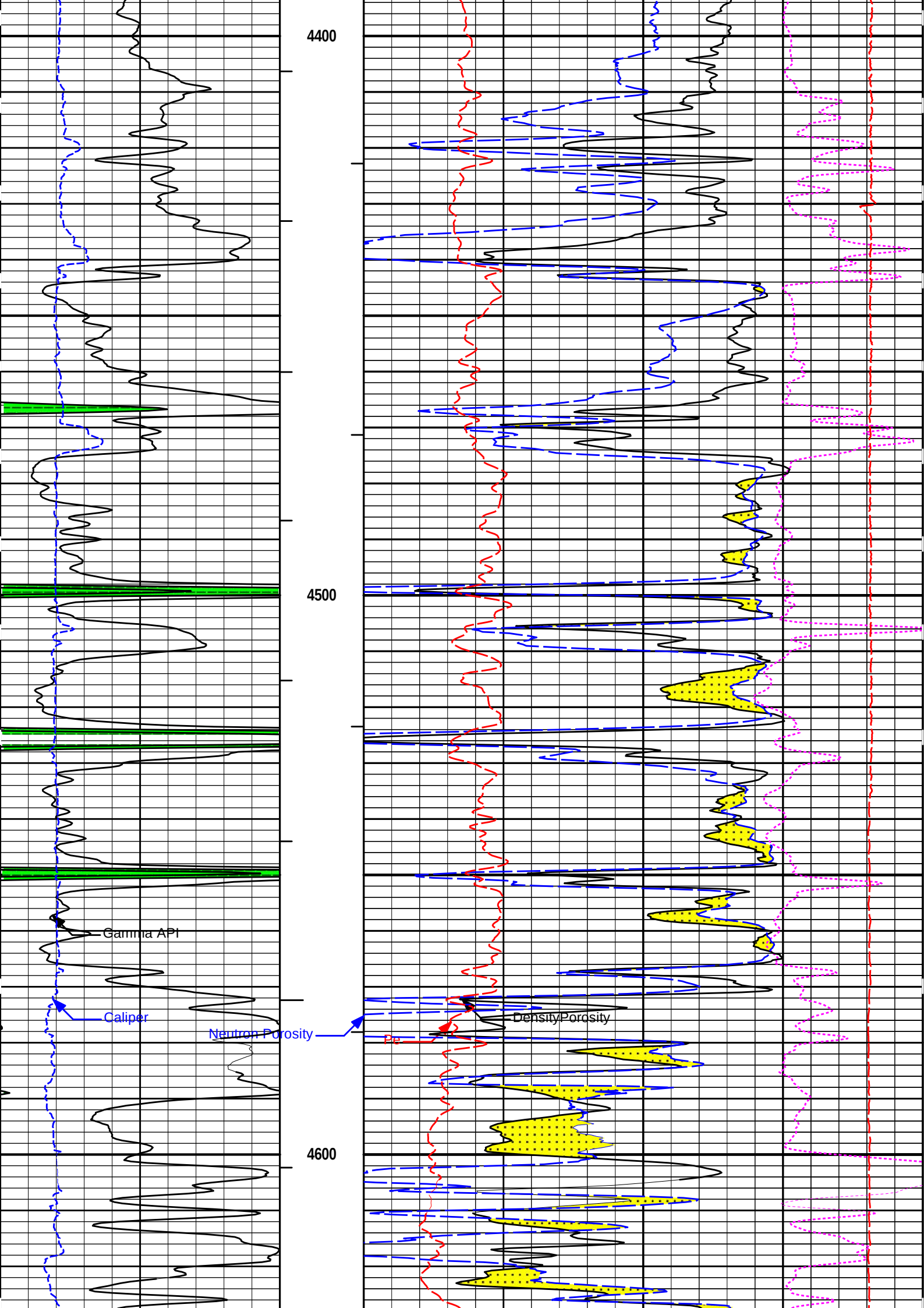
CROSSOVER

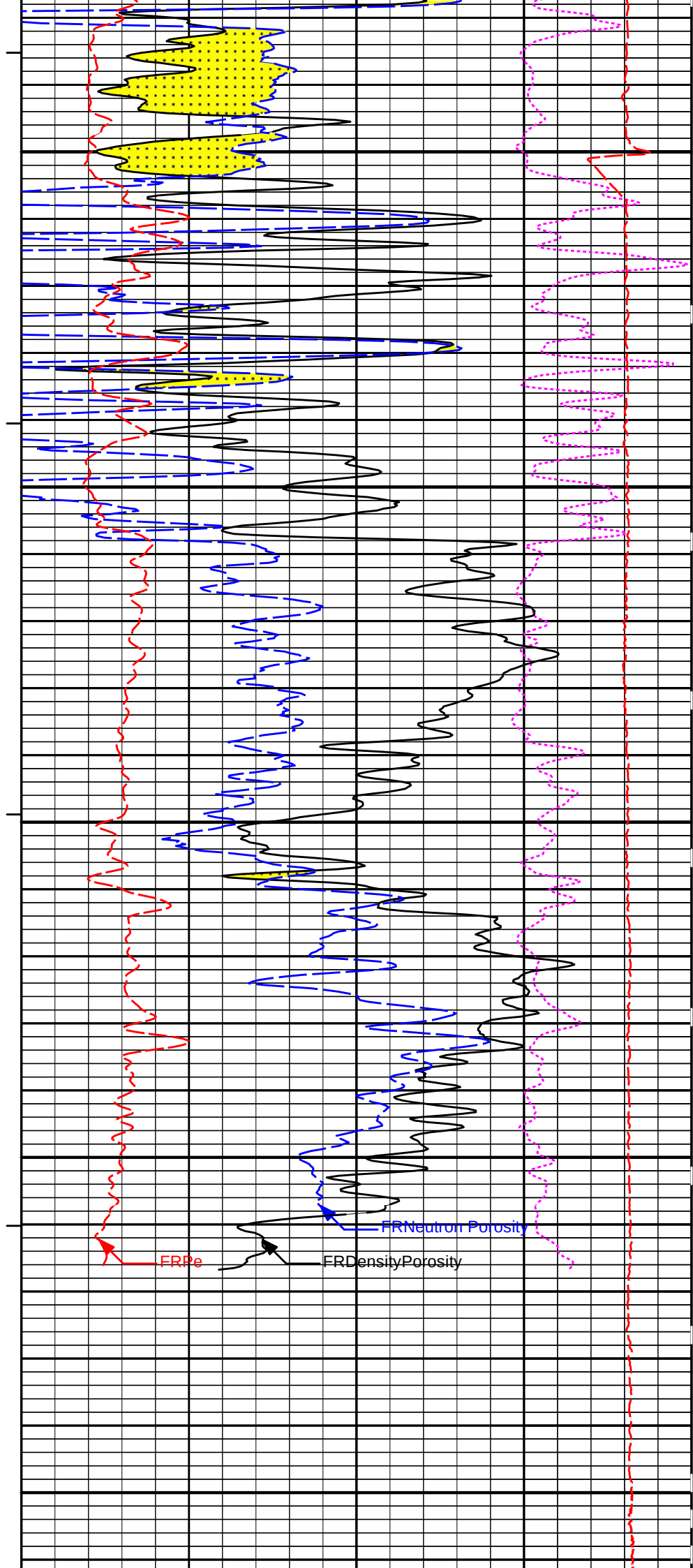
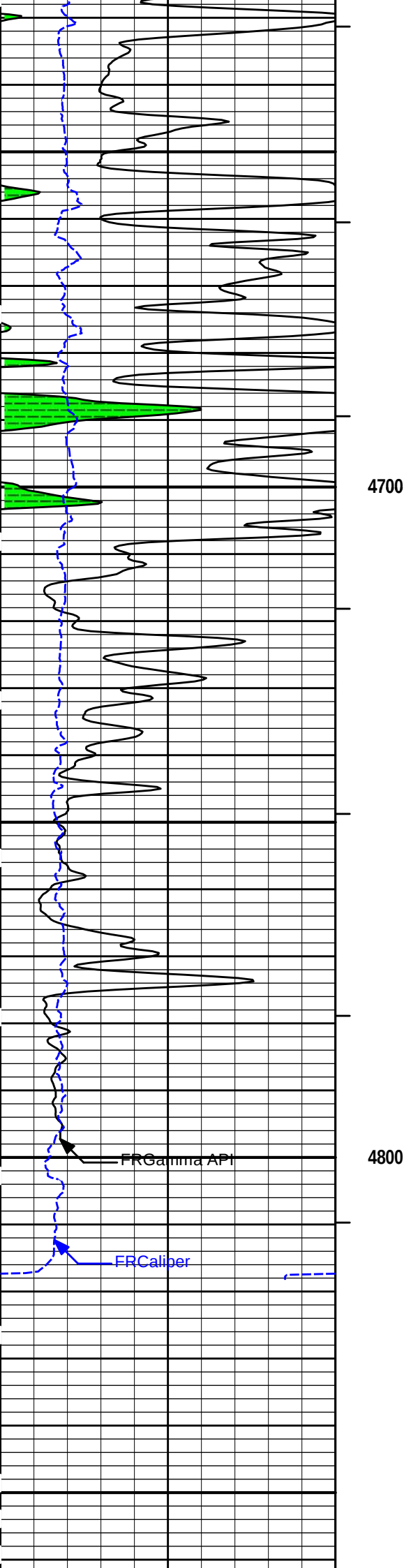


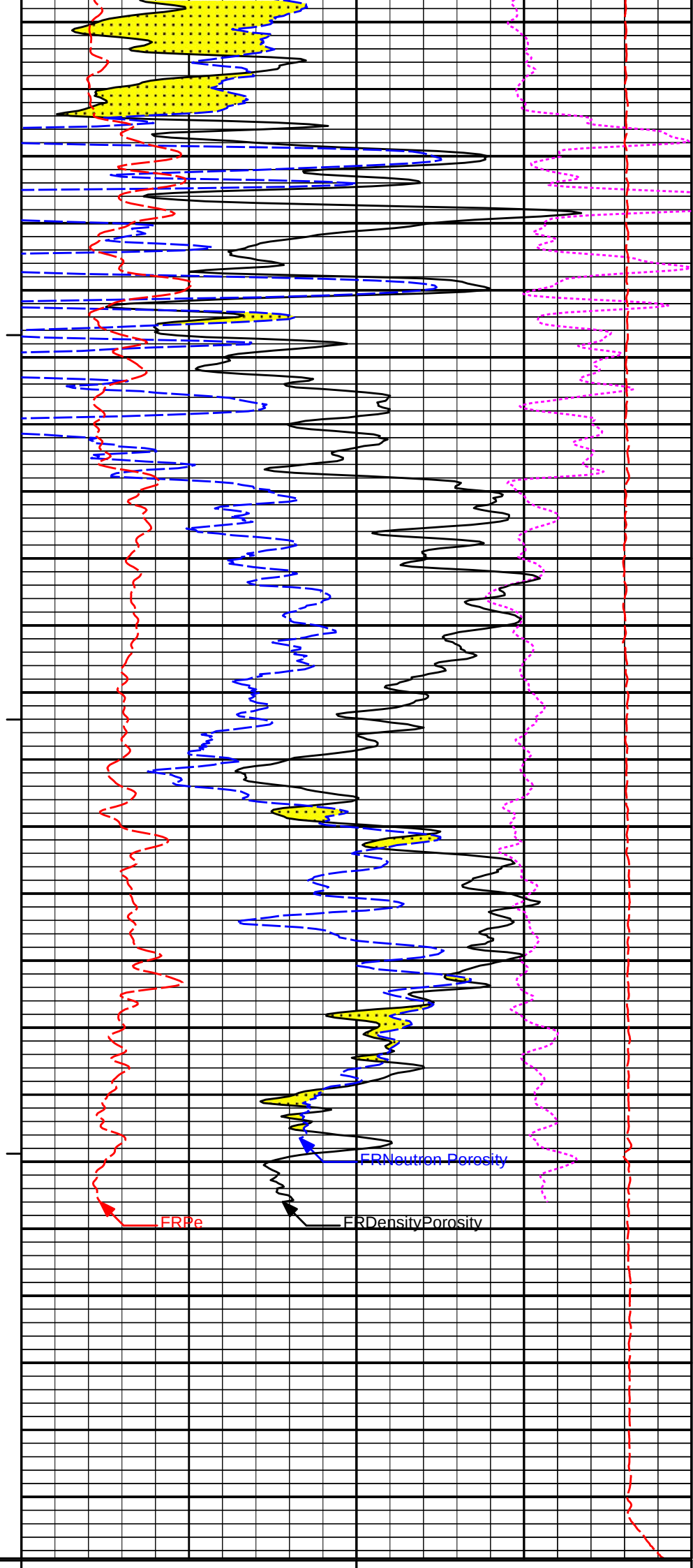
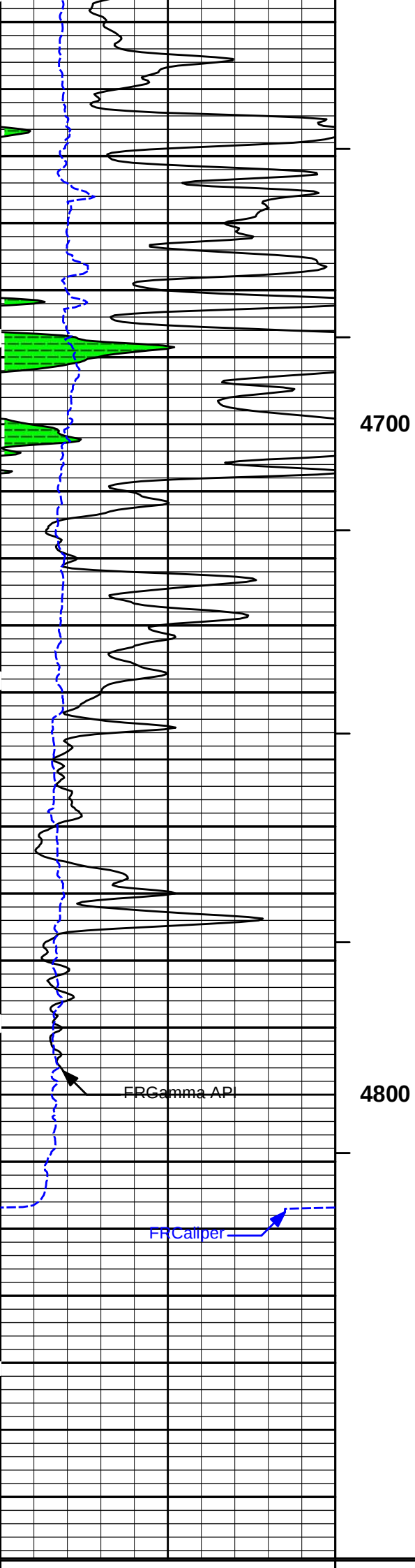












6	Caliper	16	MD 1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25
	inches							gram per cc	
0	Gamma API	150	AHVT				15K	Tension	0
	api							pounds	
	SHALE		BHVT	30	DensityPorosity				-10
					%				
				30	Neutron Porosity				-10
					%				
					CROSSOVER				

HALLIBURTON

Plot Time: 03-Mar-15 03:13:39
Plot Range: 4600 ft to 4869.17 ft
Data: DEWEY_TRUST_1-7\Well Based\REPEAT\
Plot File: \\PORO\Porosity_Q_5_REP_LIB

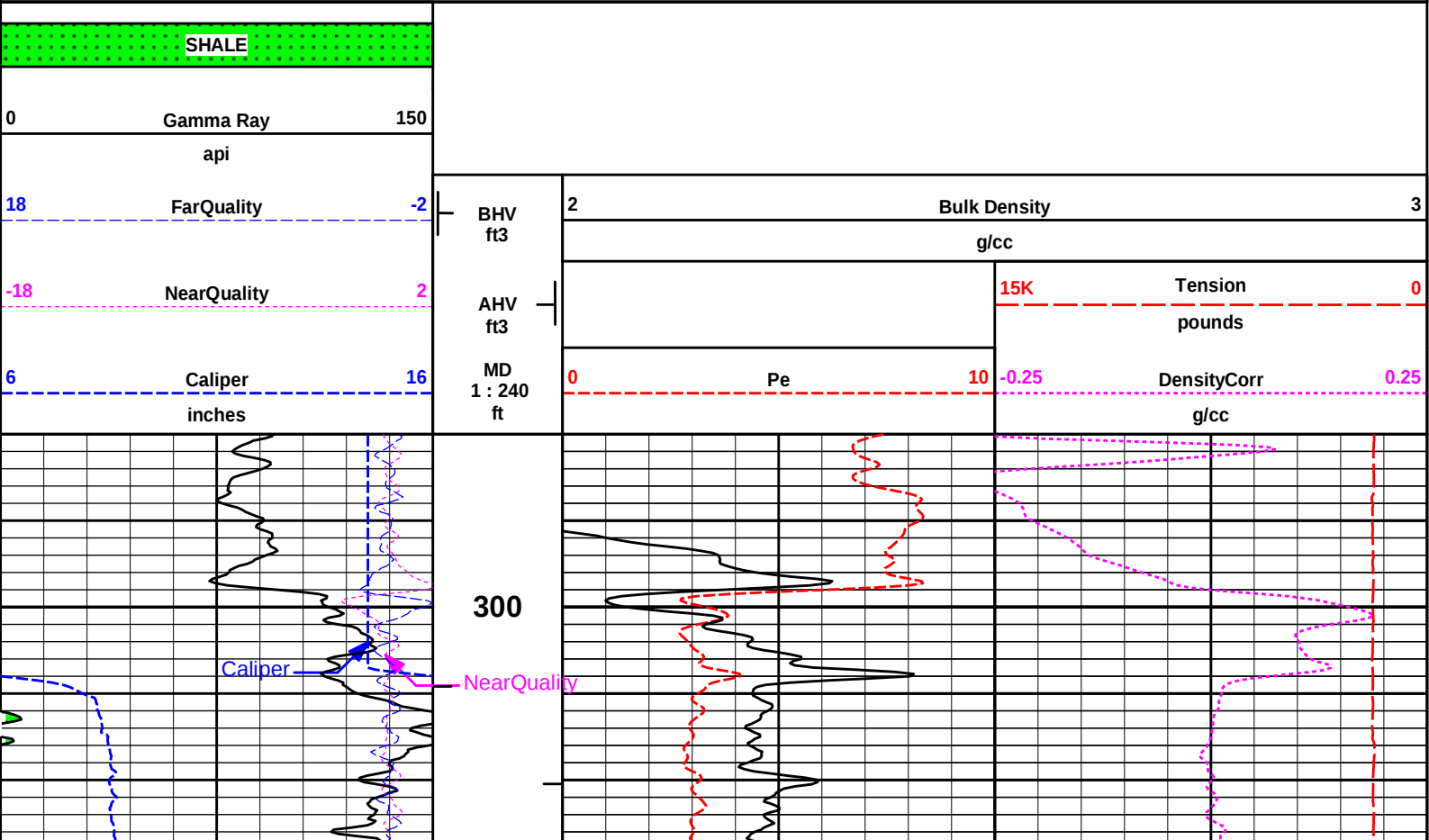
REPEAT SECTION

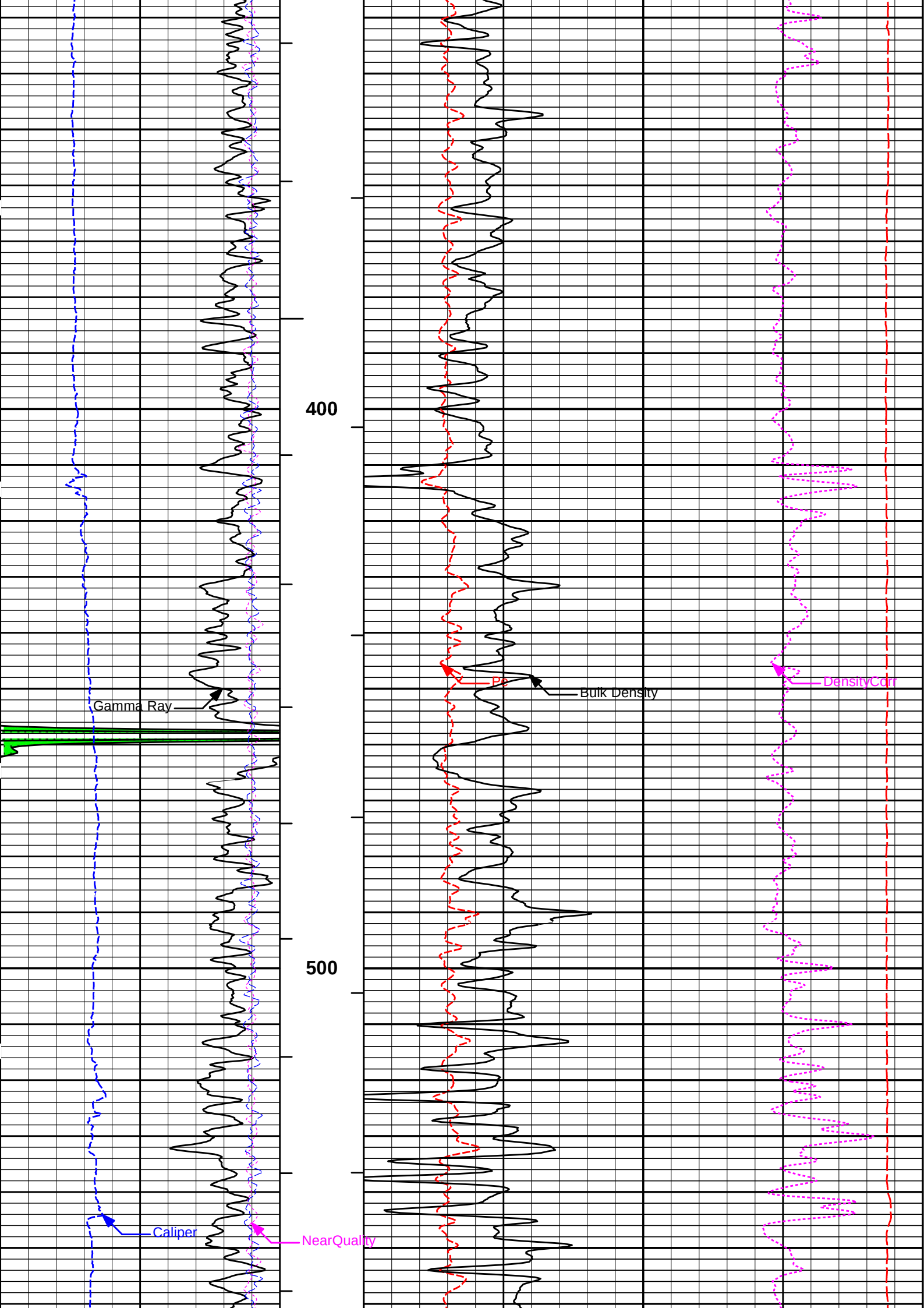
HALLIBURTON

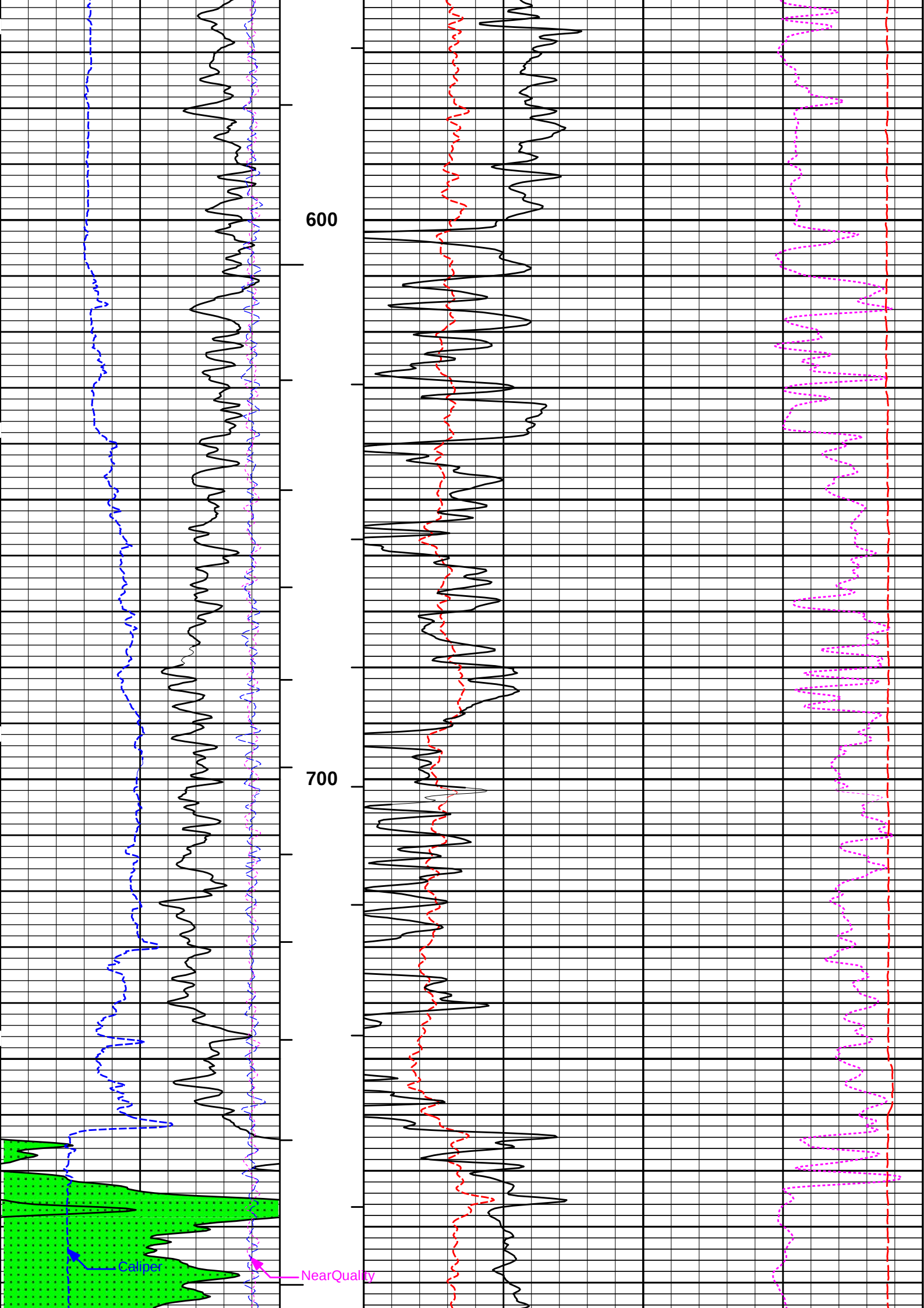
Plot Time: 03-Mar-15 03:13:40
Plot Range: 280 ft to 2950 ft
Data: DEWEY_TRUST_1-7\Well Based\DETAIL_TOP\
Plot File: \\LOCAL\DEWEY_TRUST_1-7\0001 SP-GTET-DSN-SDL-FLEX-IDT-BSAT-ACRT-BN\PORO\BULKD_5_MAIN_LIB

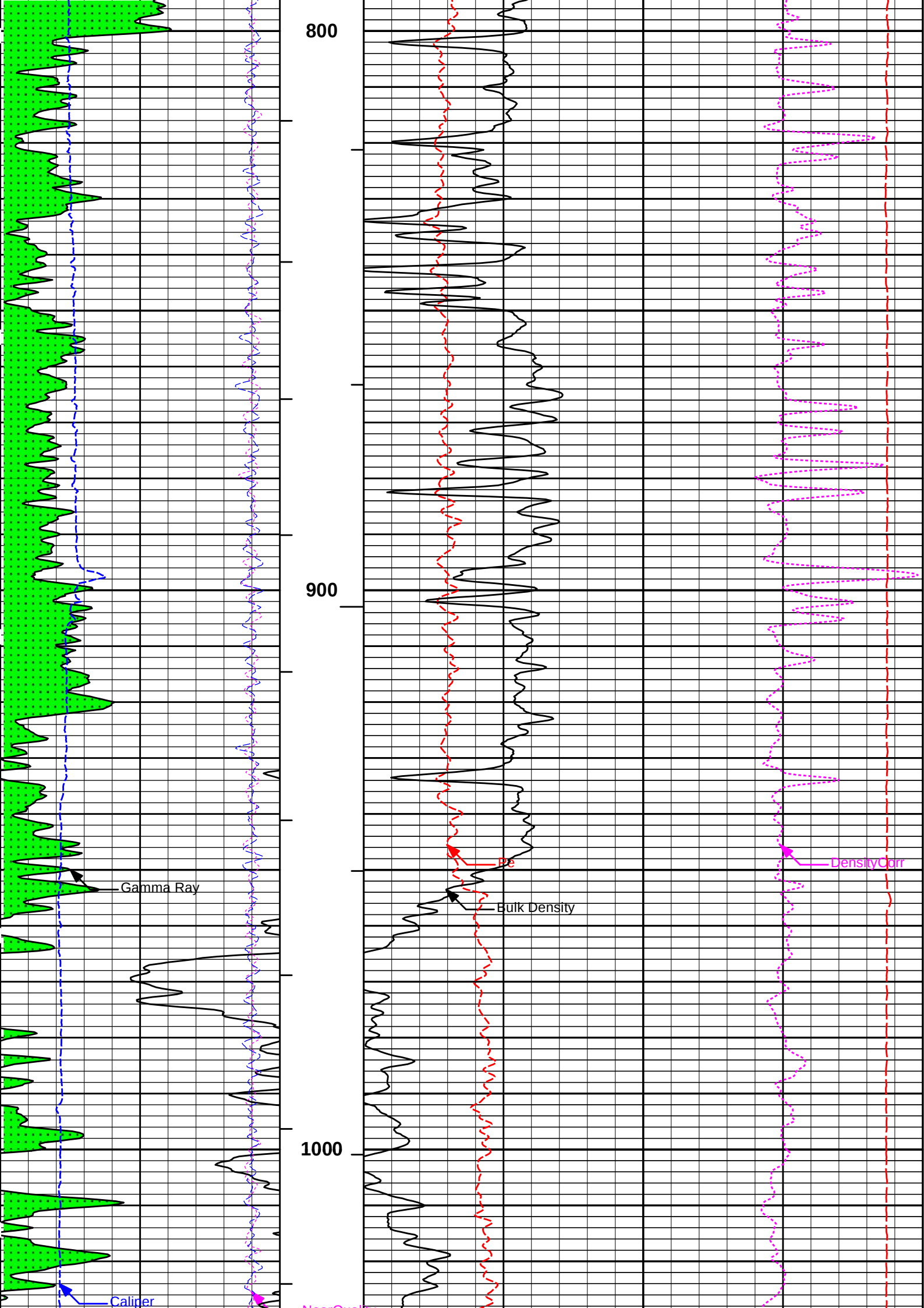
5 INCH MAIN LOG

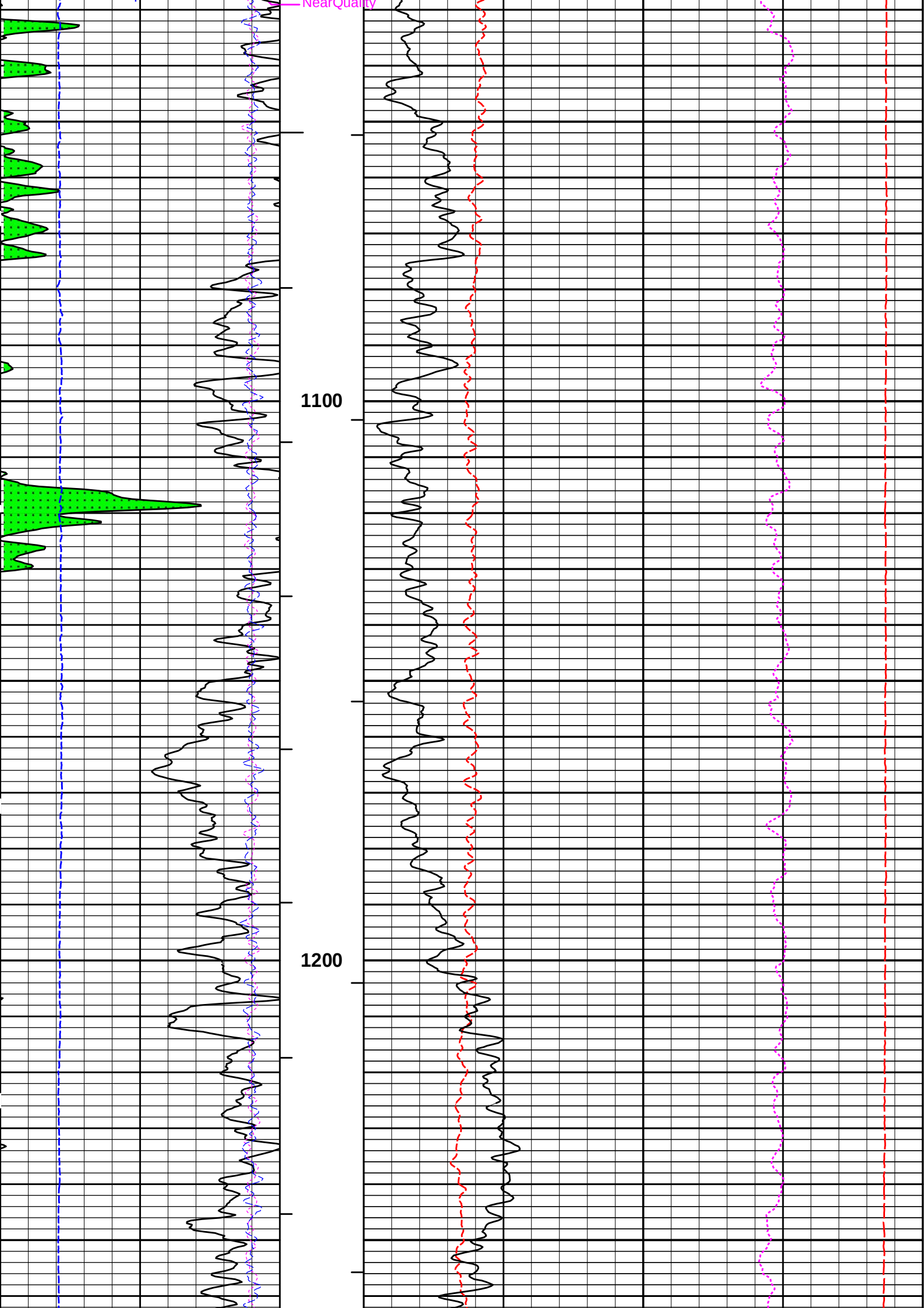
MEASURED DEPTH
MAIN SECTION 5" PER 100'

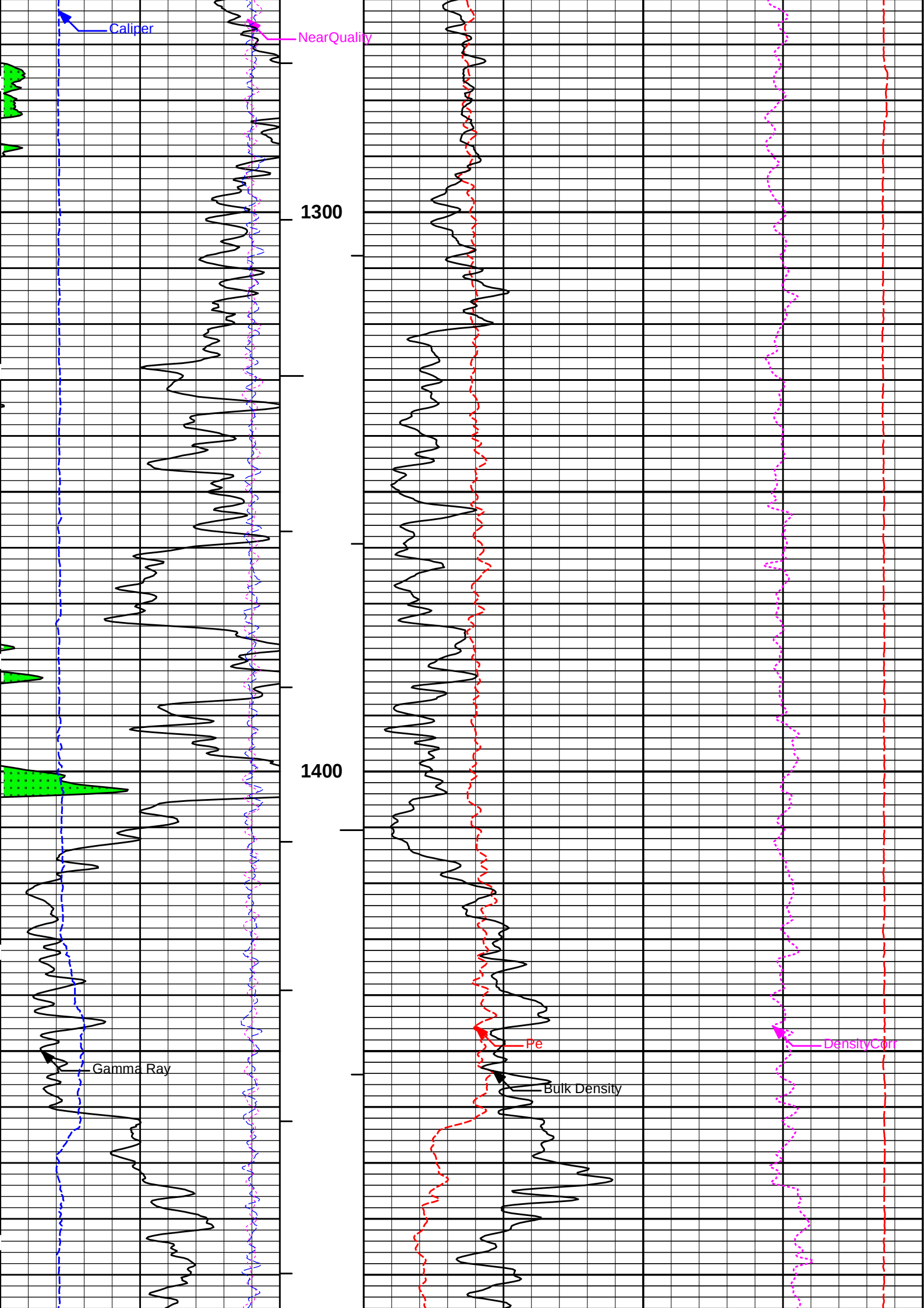


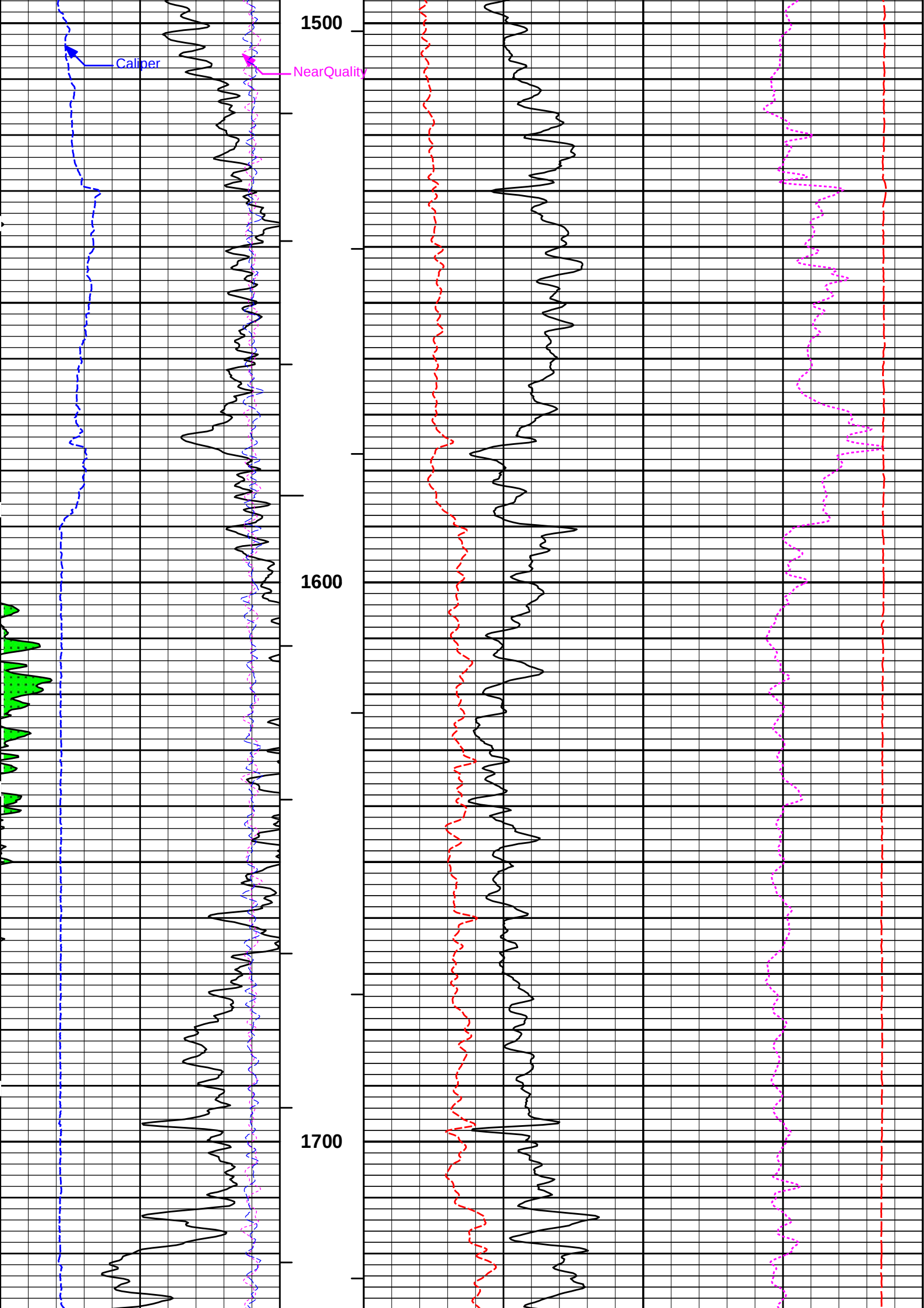


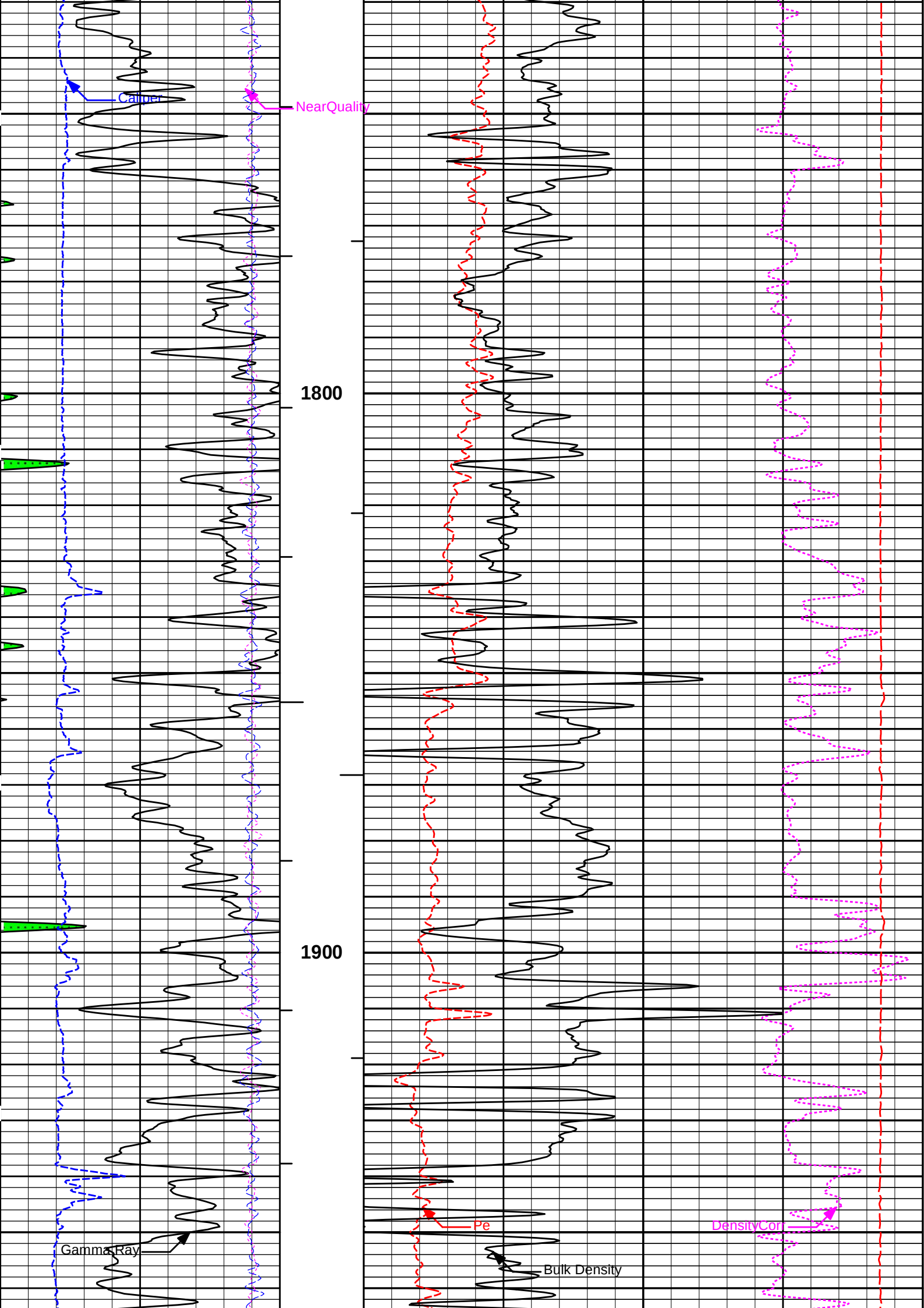


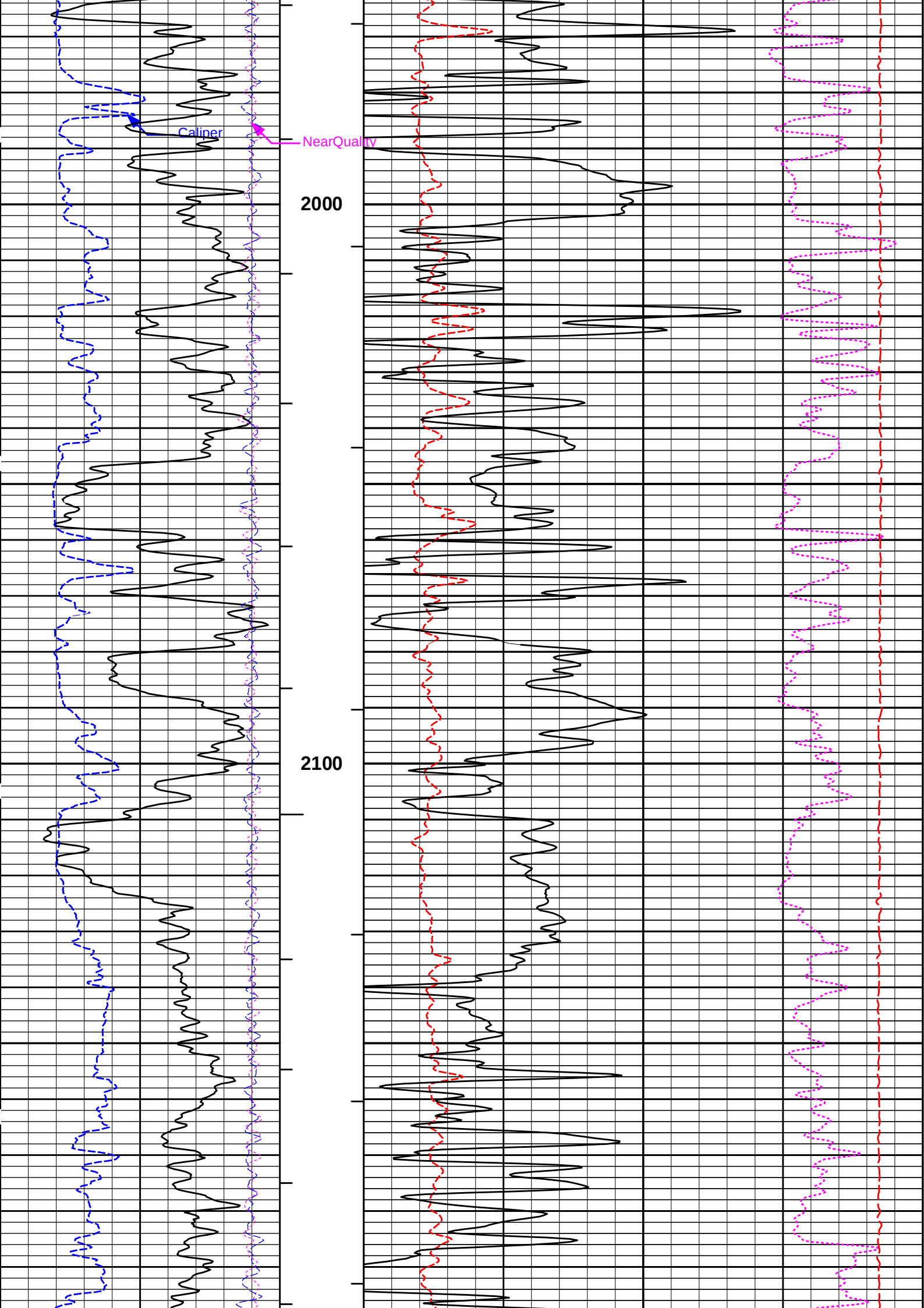


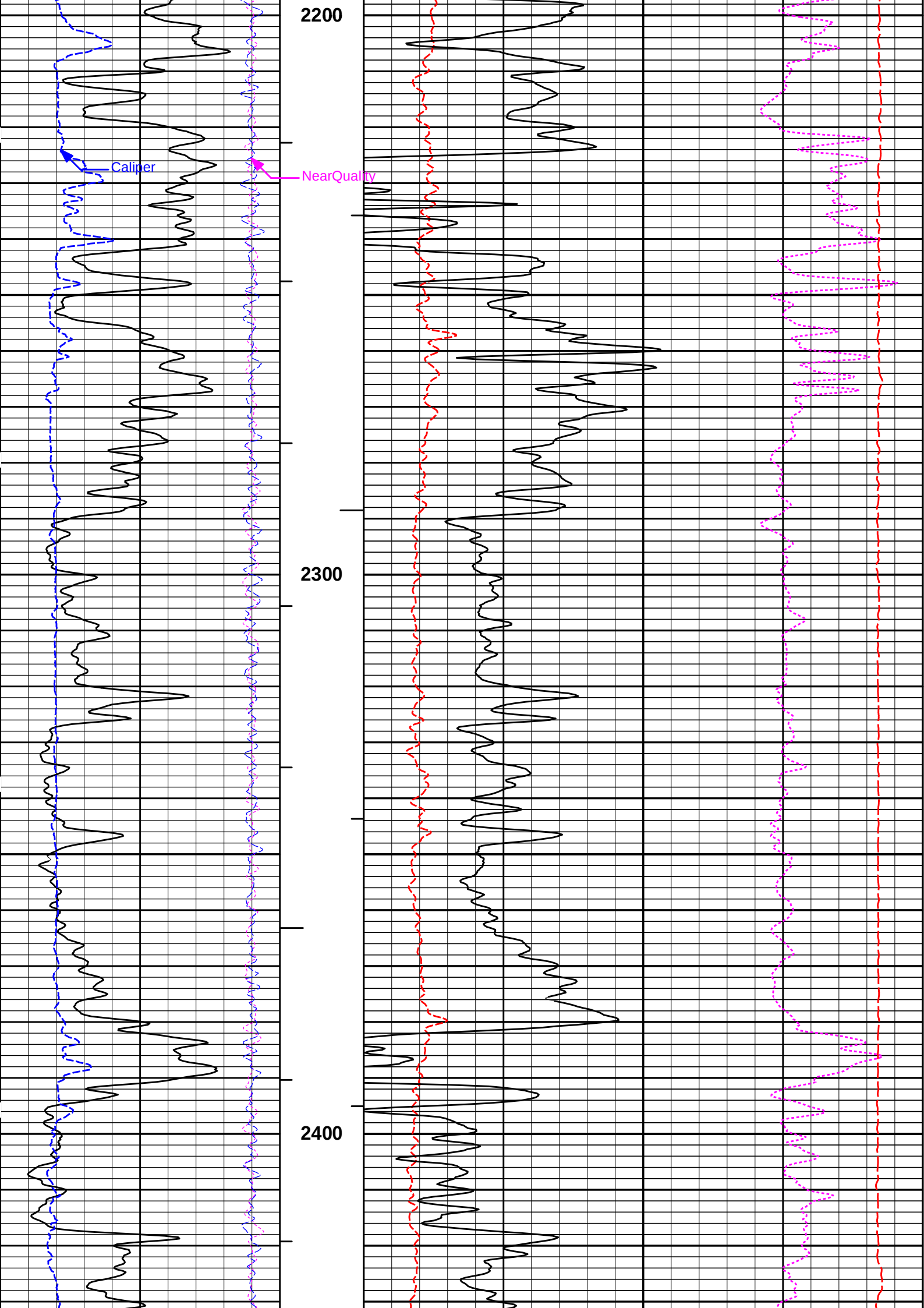


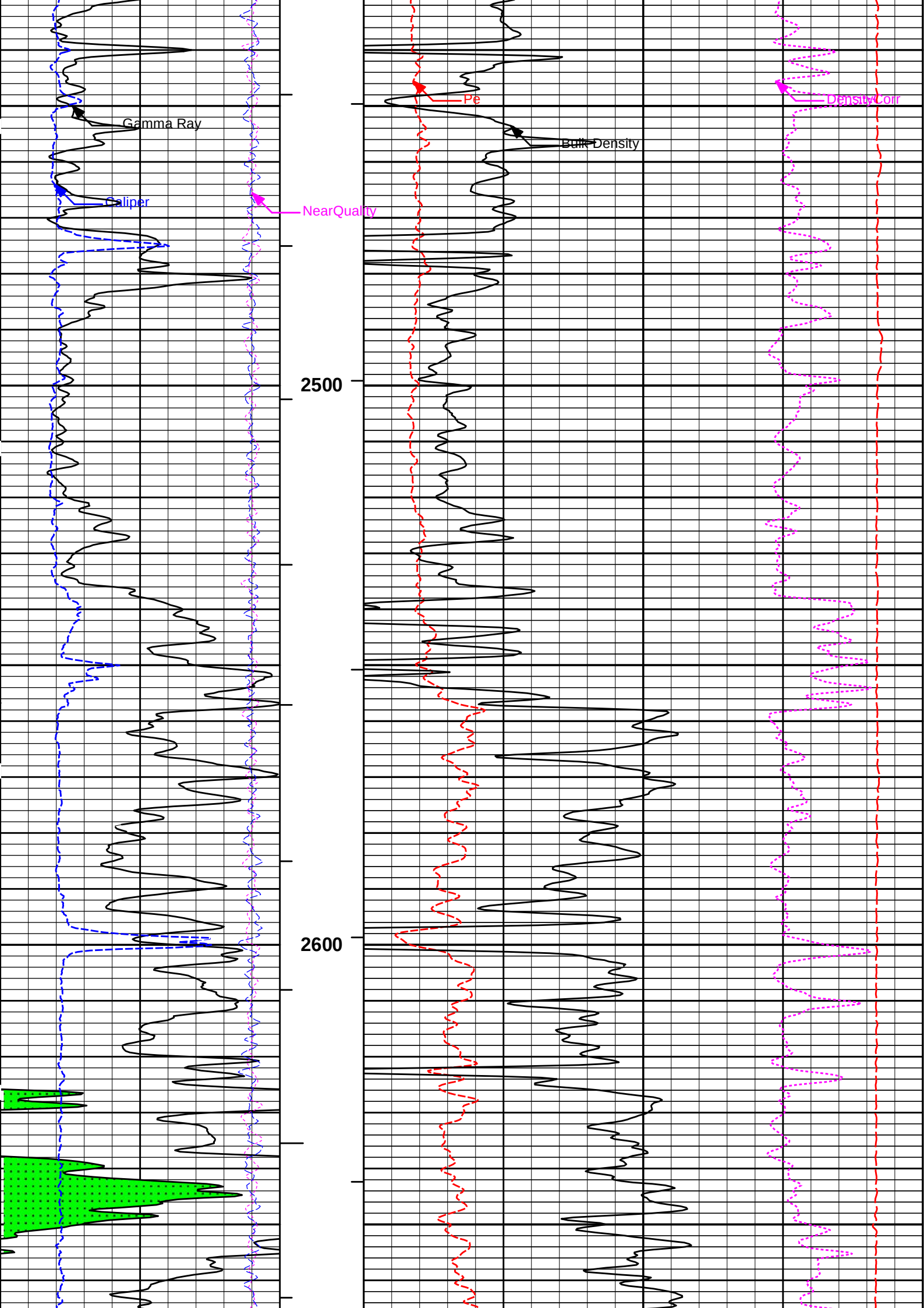


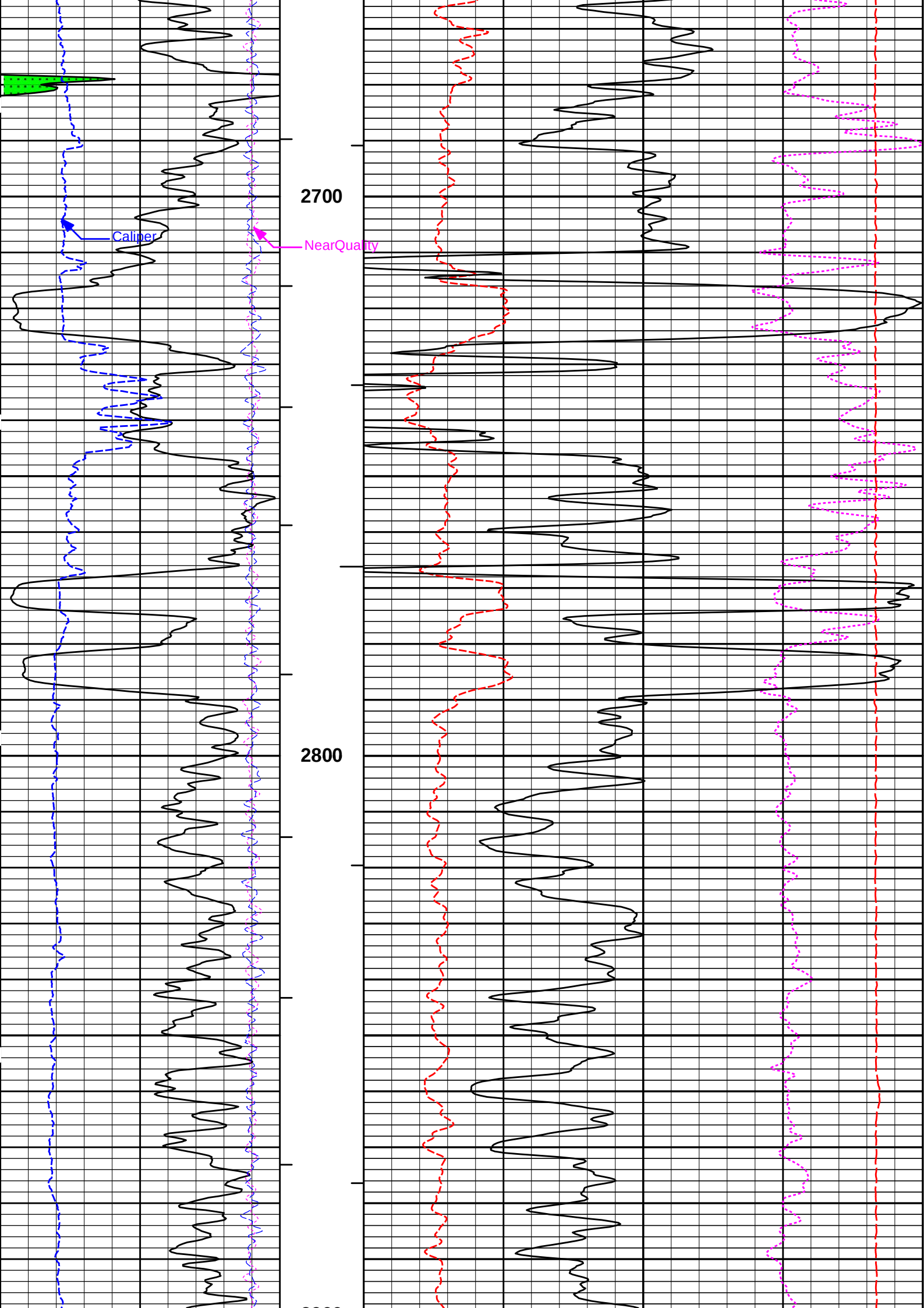


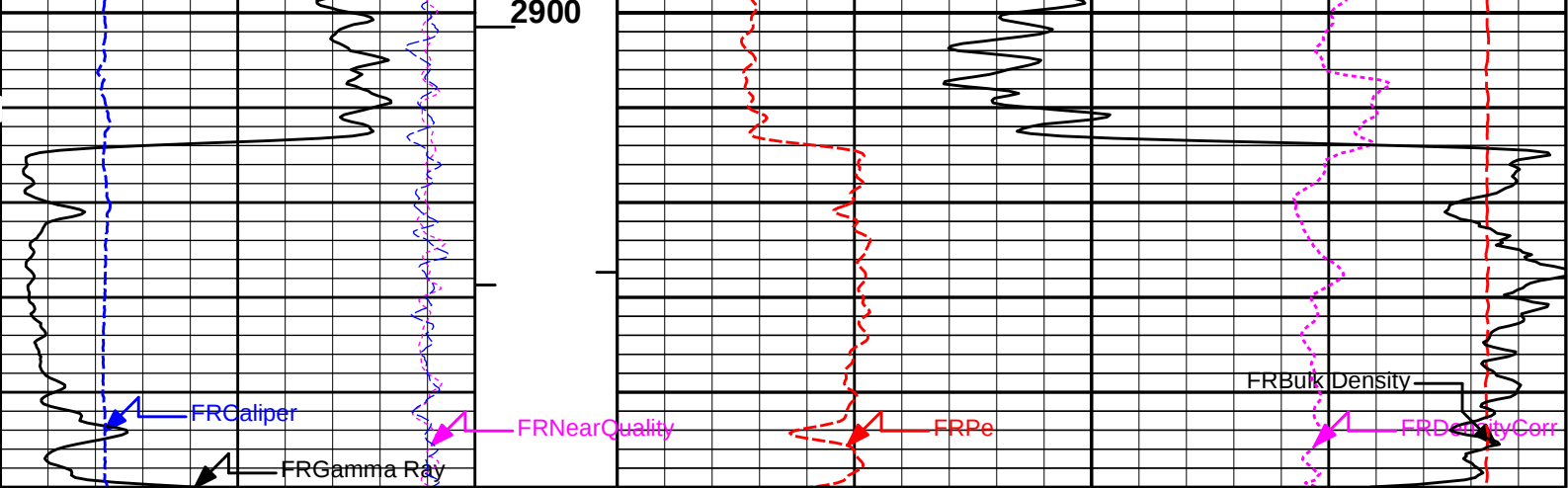












6	Caliper	16	MD 1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25
	inches								
	NearQuality	2							
	FarQuality	-2							
18			AHV ft3	2	Bulk Density	3			
			BHV ft3						
0	Gamma Ray	150							
	api								
SHALE									

HALLIBURTON

Plot Time: 03-Mar-15 03:13:43
Plot Range: 280 ft to 2950 ft
Data: DEWEY_TRUST_1-7\Well Based\DETAIL_TOP\
Plot File: \\-LOCAL-IDEWY_TRUST_1-7\0001 SP-GTET-DSN-SDL-FLEX-IDT-BSAT-ACRT-BNIPORO\BULKD_5_MAIN_LIB

5 INCH MAIN LOG

MEASURED DEPTH
MAIN SECTION 5" PER 100'

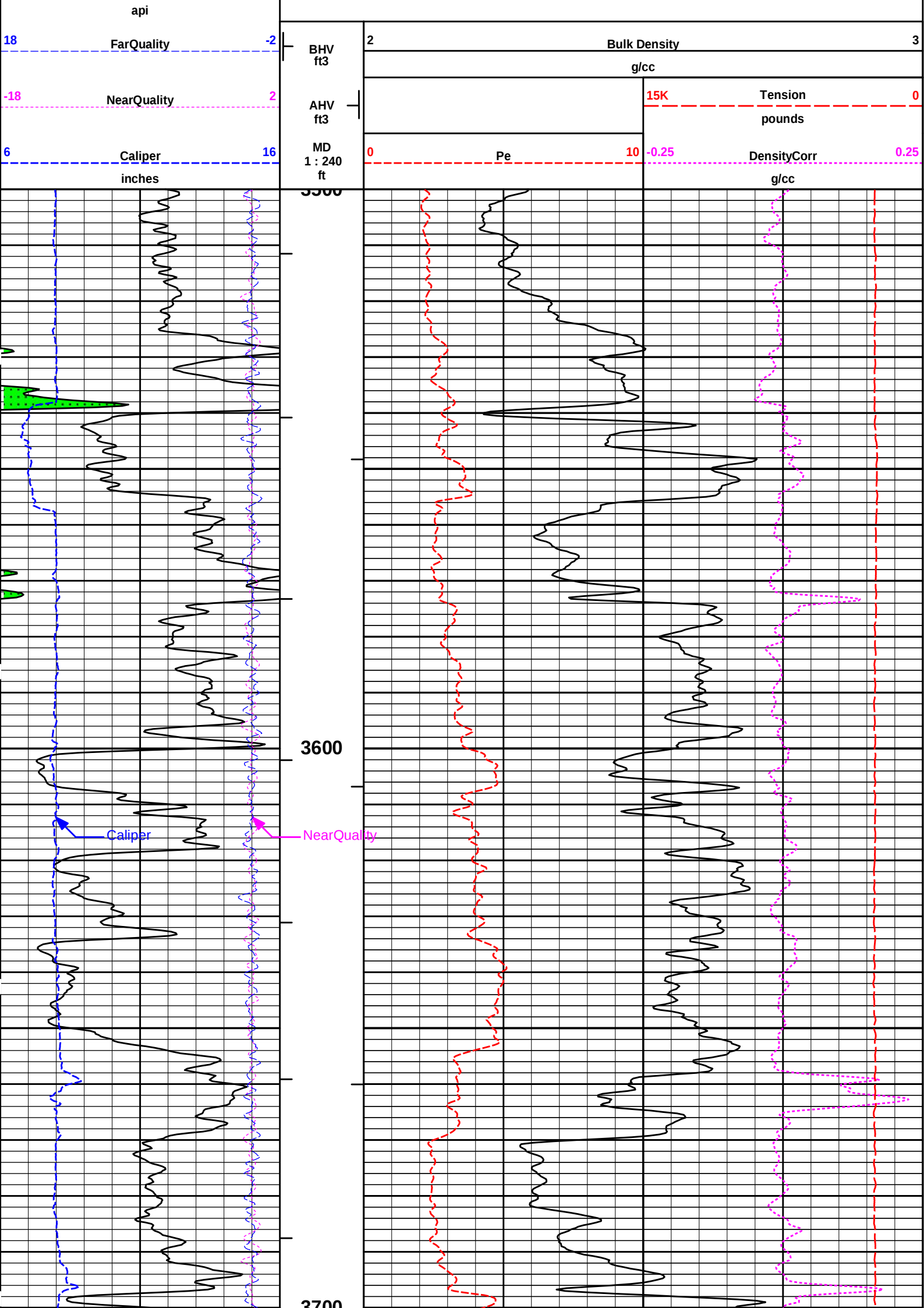
HALLIBURTON

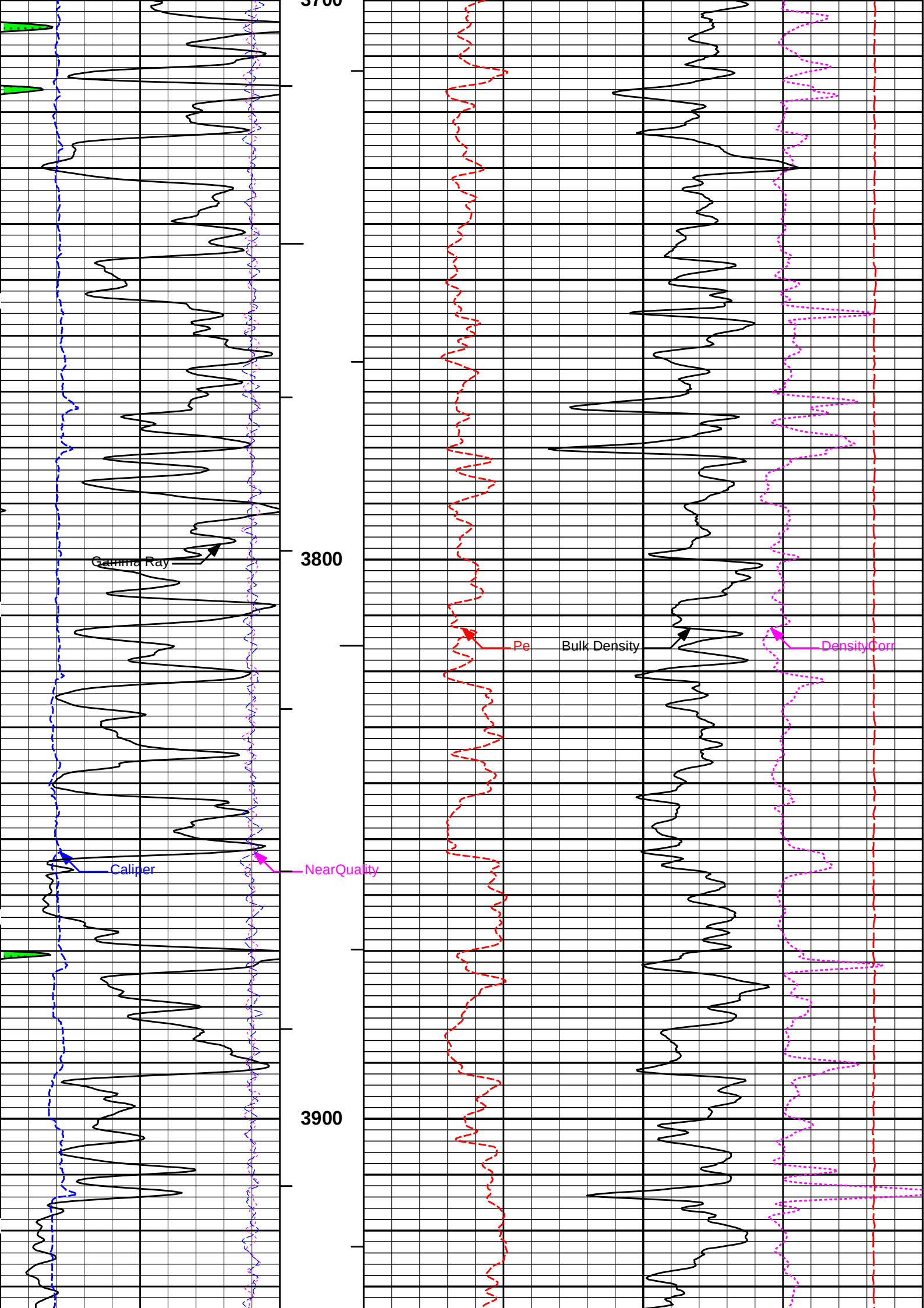
Plot Time: 03-Mar-15 03:13:43
Plot Range: 3500 ft to 4869.92 ft
Data: DEWEY_TRUST_1-7\Well Based\DETAIL_BOTTOM\
Plot File: \\-LOCAL-IDEWY_TRUST_1-7\0001 SP-GTET-DSN-SDL-FLEX-IDT-BSAT-ACRT-BNIPORO\BULKD_5_MAIN_LIB

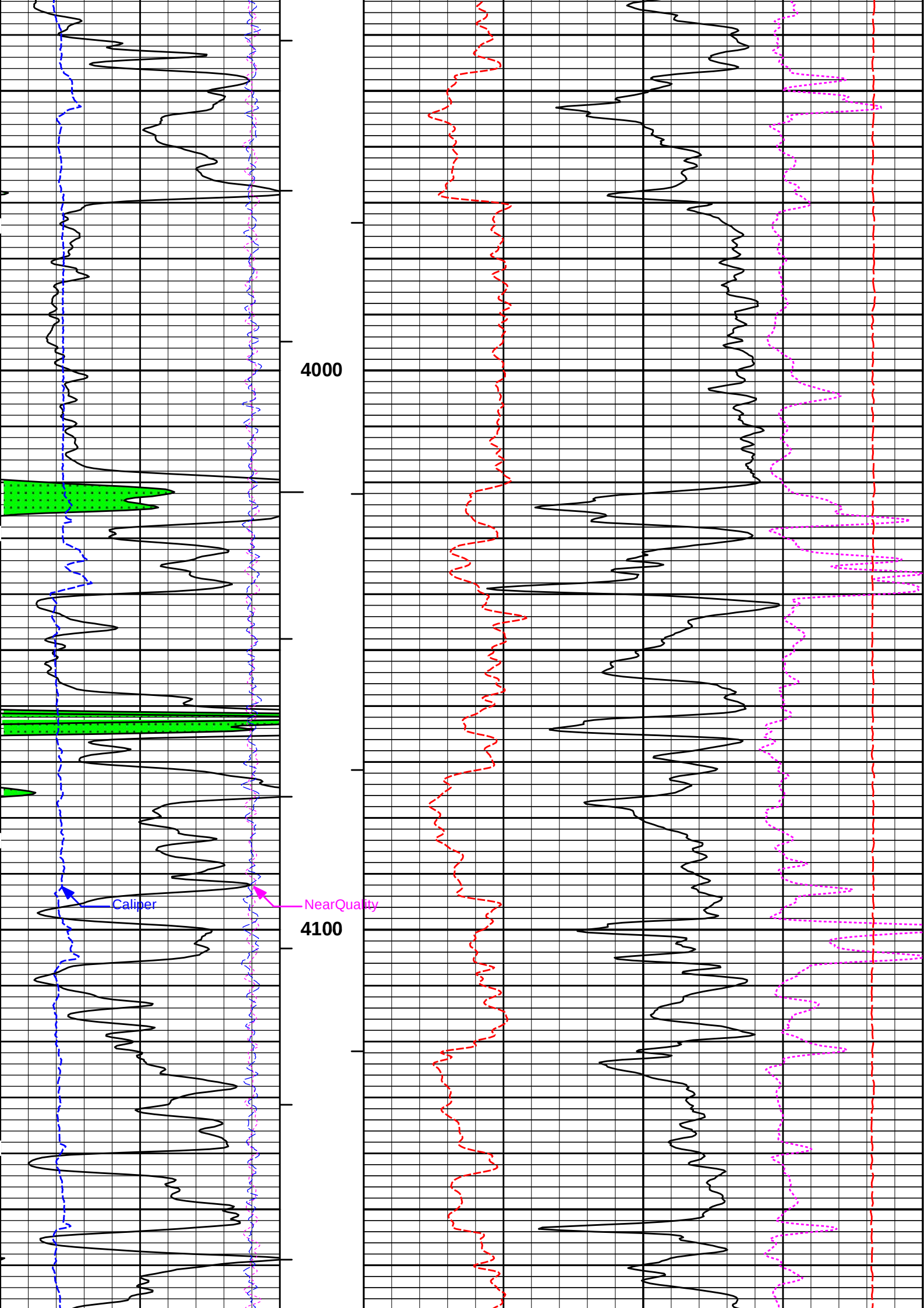
5 INCH MAIN LOG

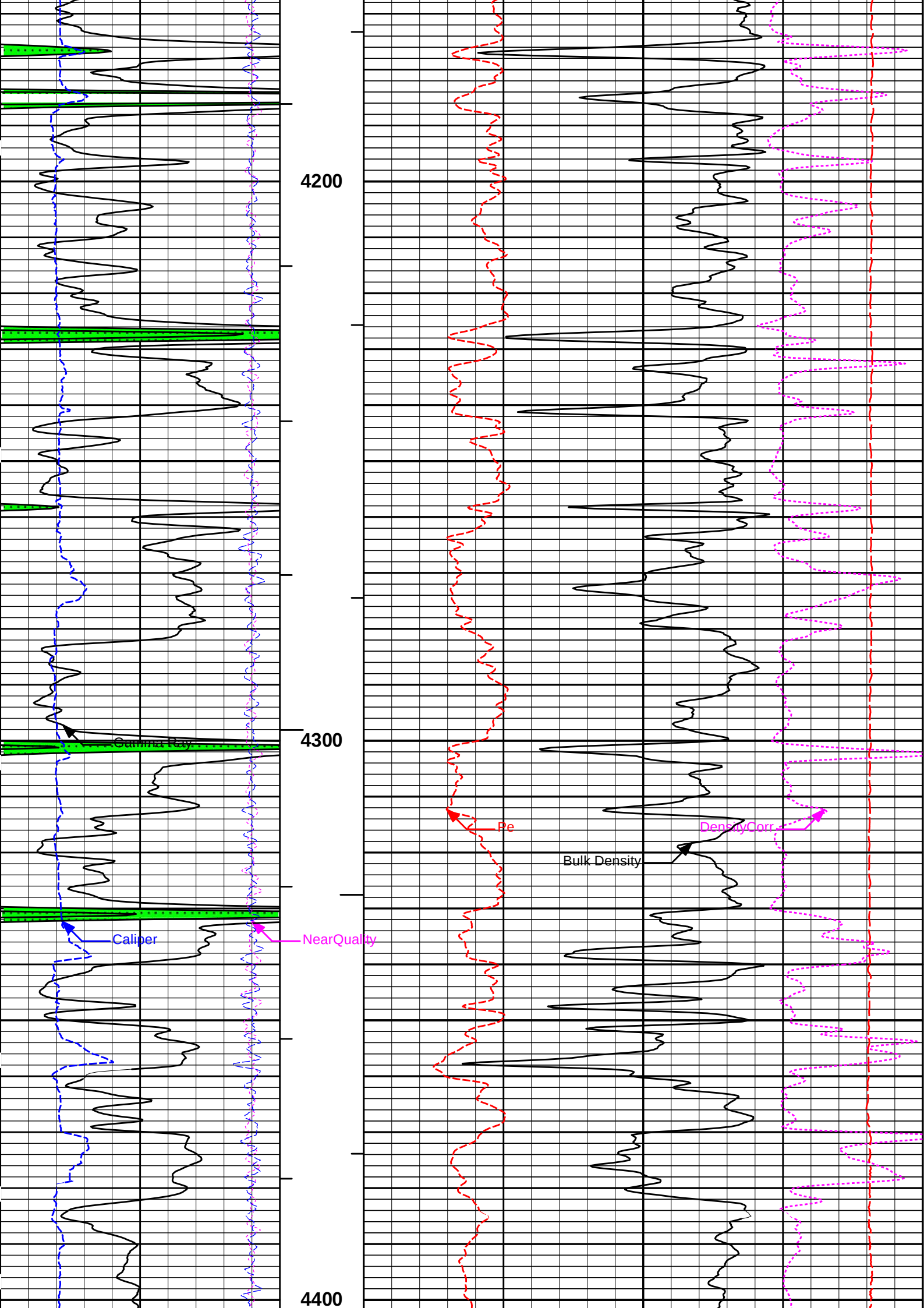
MEASURED DEPTH
MAIN SECTION 5" PER 100'

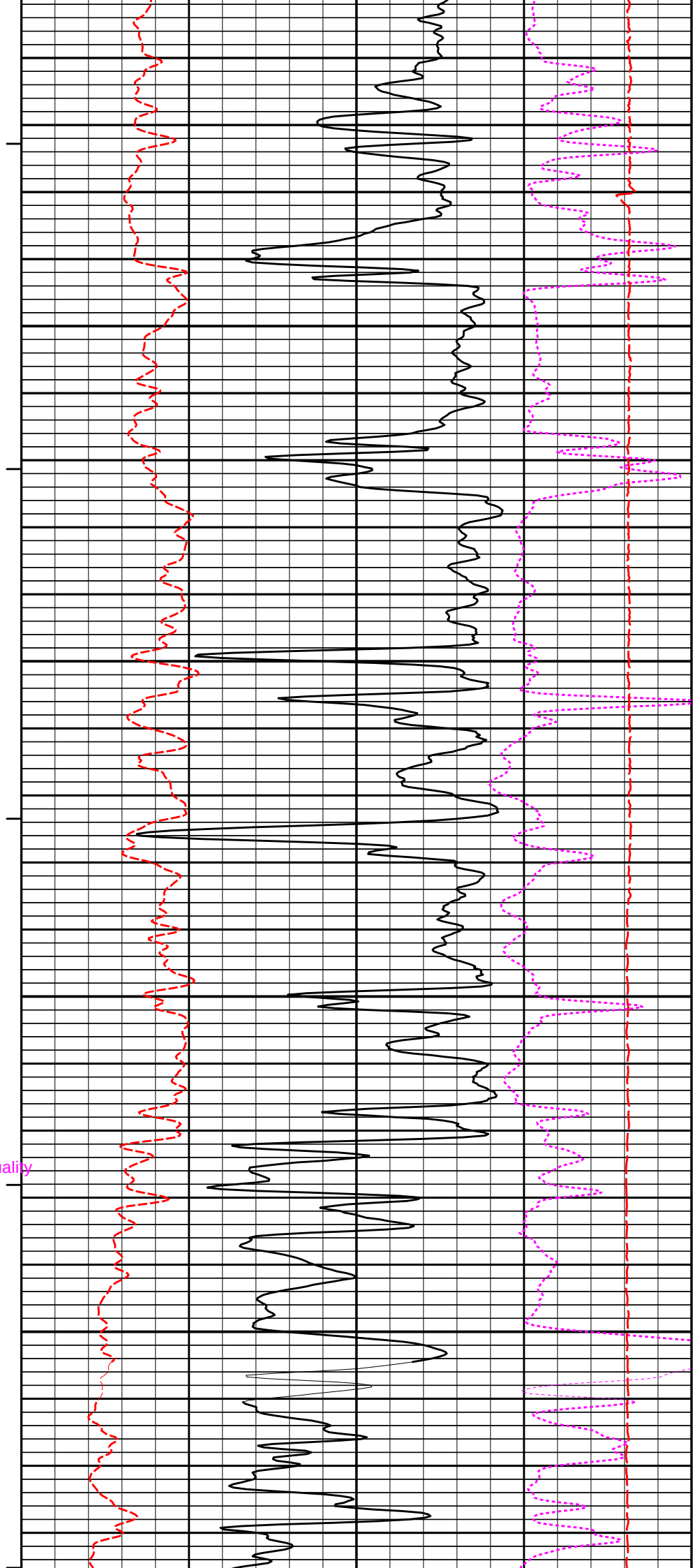
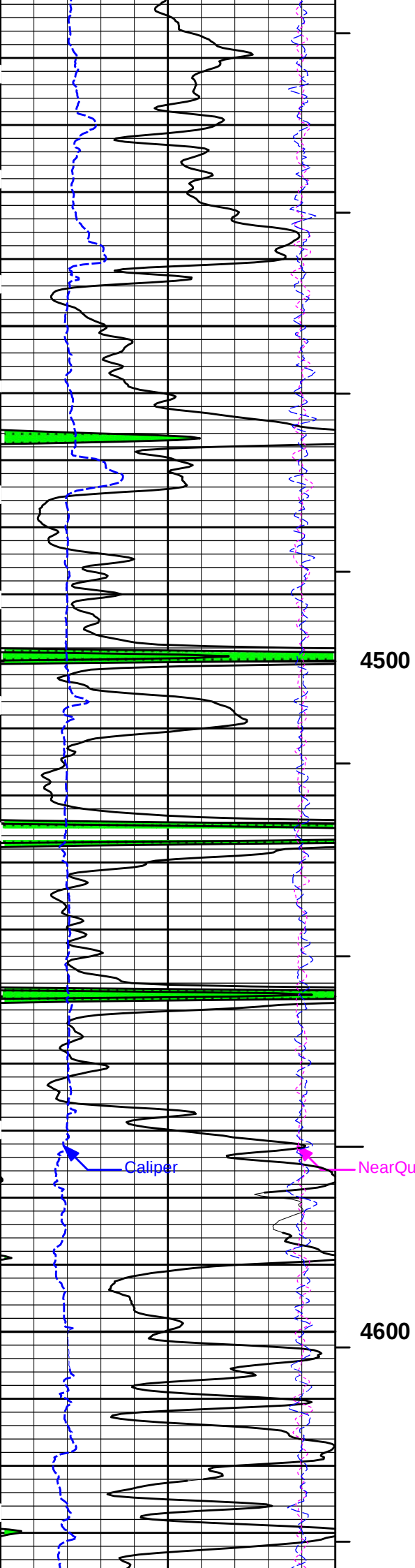
	SHALE	
0	Gamma Ray	150

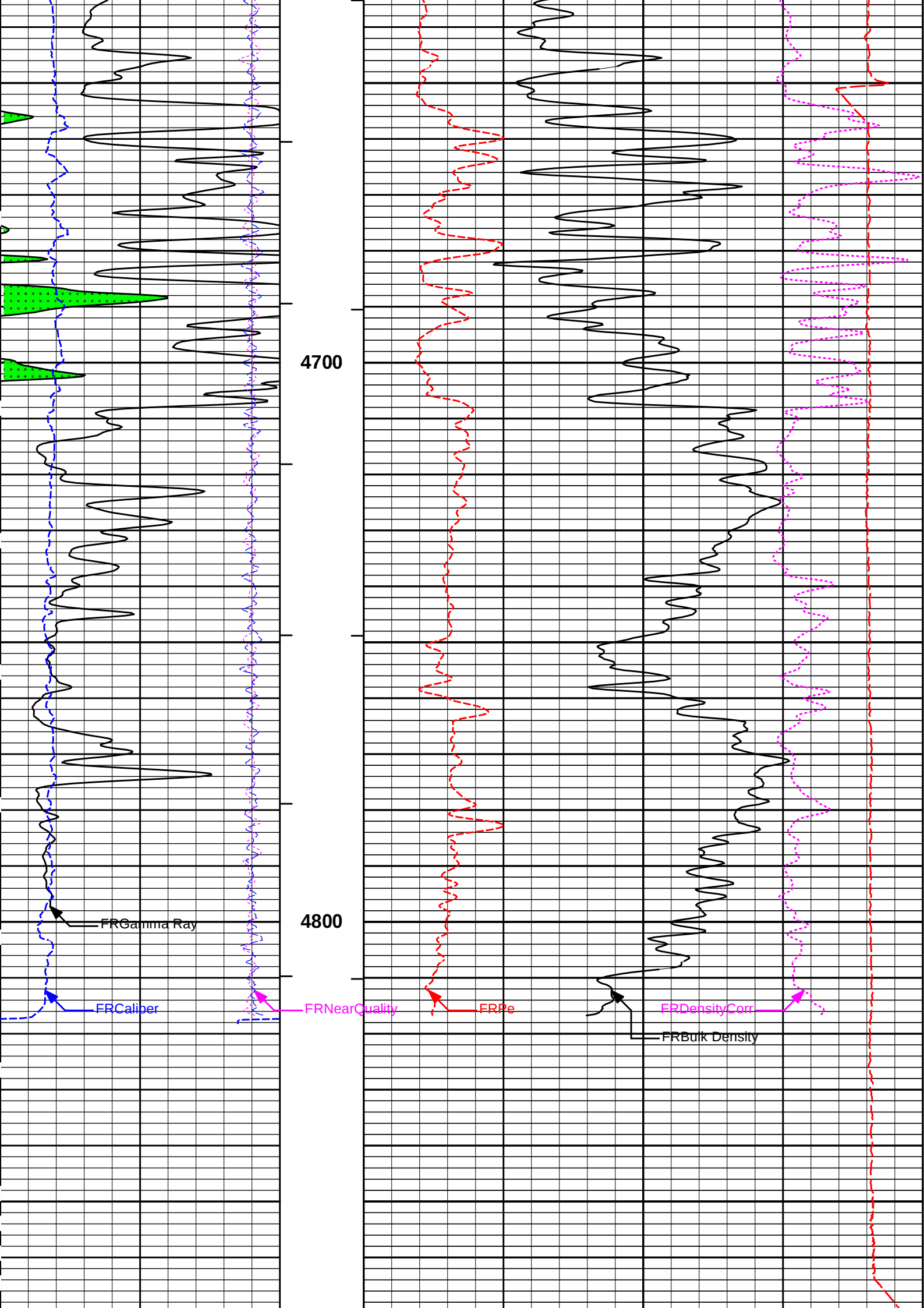












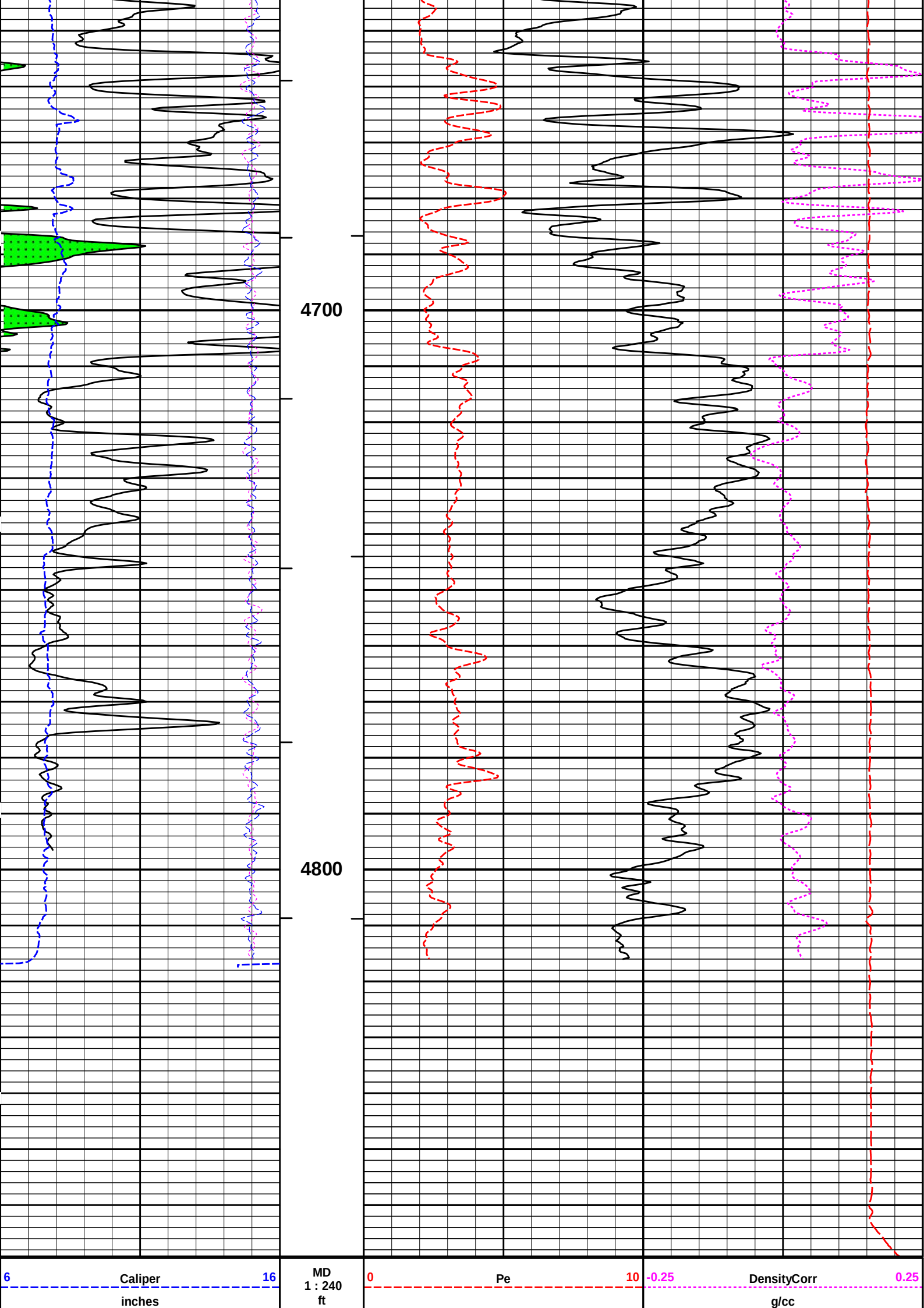
6 Caliper 16 inches -18 NearQuality 2 18 FarQuality -2 0 Gamma Ray 150 api SHALE	MD 1 : 240 ft AHV ft3 BHV ft3	0 Pe 10	-0.25 DensityCorr 0.25 g/cc
		15K Tension 0 pounds	2 Bulk Density 3 g/cc

HALLIBURTON Plot Time: 03-Mar-15 03:13:45 Plot Range: 3500 ft to 4869.92 ft Data: DEWEY_TRUST_1-7\Well Based\DETAIL_BOTTOM\ Plot File: \\-LOCAL-IDEWY_TRUST_1-7\0001 SP-GTET-DSN-SDL-FLEX-IDT-BSAT-ACRT-BN\POROI\BULKD_5_MAIN_LIB 5 INCH MAIN LOG

MEASURED DEPTH MAIN SECTION 5" PER 100'

HALLIBURTON Plot Time: 03-Mar-15 03:13:45 Plot Range: 4600 ft to 4869.17 ft Data: DEWEY_TRUST_1-7\Well Based\REPEAT\ Plot File: \\-LOCAL-IDEWY_TRUST_1-7\0001 SP-GTET-DSN-SDL-FLEX-IDT-BSAT-ACRT-BN\POROI\BULKD_5_REP_LIB REPEAT SECTION
--

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

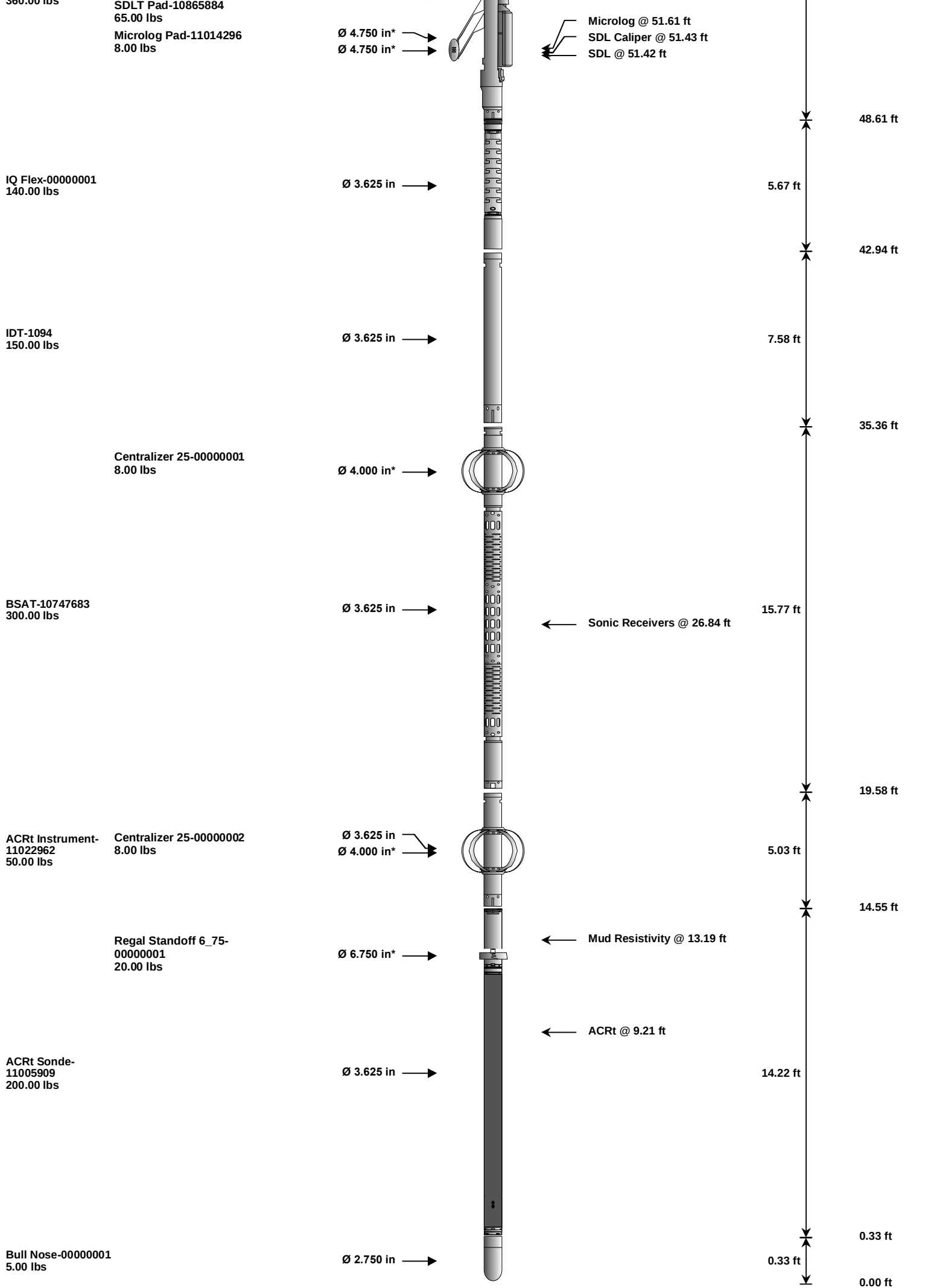
Plot Time: 03-Mar-15 03:13:46
Plot Range: 4600 ft to 4869.17 ft
Data: DEWEY_TRUST_1-7\Well Based\REPEAT\
Plot File: \\-LOCAL-DEWEY_TRUST_1-7\0001 SP-GTET-DSN-SDL-FLEX-IDT-BSAT-ACRT-BN\POROI\BULKD_5_REP_LIB

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
RWCH-12156658 135.00 lbs		Ø 3.625 in →		← Load Cell @ 83.94 ft ← BH Temperature @ 83.37 ft	6.25 ft	87.62 ft
SP Sub-12345678 60.00 lbs		Ø 3.625 in →		← SP @ 79.59 ft	3.74 ft	81.37 ft
GTET-11048627 165.00 lbs		Ø 3.625 in →		← GammaRay @ 71.57 ft	8.52 ft	77.63 ft
DSNT-11055304 174.00 lbs	DSN Decentralizer- 11019643 6.60 lbs	Ø 5.000 in* → Ø 3.625 in →		← DSN Far @ 62.17 ft ← DSN Near @ 61.42 ft	9.69 ft	69.11 ft
SDLT-11014296 360.00 lbs		Ø 4.500 in →			10.81 ft	59.42 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
SDLT Pad-10865884	SDLT Pad-10865884	65.00	8.00	48.61	51.61	
IQ Flex-00000001	IQ Flex-00000001	140.00	8.00	5.67	51.43	
IDT-1094	IDT-1094	150.00	8.00	7.58	51.42	
Centralizer 25-00000001	Centralizer 25-00000001	8.00	8.00	35.36		
BSAT-10747683	BSAT-10747683	300.00	8.00	15.77		
ACRT Instrument-11022962	ACRT Instrument-11022962	50.00	8.00	19.58		
Centralizer 25-00000002	Centralizer 25-00000002	8.00	8.00	5.03		
Regal Standoff 6_75-00000001	Regal Standoff 6_75-00000001	20.00	8.00	14.55		
ACRT Sonde-11005909	ACRT Sonde-11005909	200.00	8.00	14.22		
Bull Nose-00000001	Bull Nose-00000001	5.00	8.00	0.33		

RWCH	Releasable Wireline Cable Head	12156658	135.00	6.25	81.37	300.00
SP	SP Sub	12345678	60.00	3.74	77.63	300.00
GTET	Gamma Telemetry Tool	11048627	165.00	8.52	69.11	60.00
DSNT	Dual Spaced Neutron	11055304	174.00	9.69	59.42	60.00
DCNT	DSN Decentralizer	11019643	6.60	5.13 *	62.75	300.00
SDLT	Spectral Density Tool	11014296	360.00	10.81	48.61	60.00
SDLP	Density Insite Pad	10865884	65.00	2.55 *	50.82	60.00
MICP	Microlog Pad	11014296	8.00	1.00 *	51.11	60.00
IQF	IQ Flex tool	00000001	140.00	5.67	42.94	300.00
IDT	Insite Directional Tool	1094	150.00	7.58	35.36	60.00
BSAT	Borehole Sonic Array Tool	10747683	300.00	15.77	19.58	60.00
OBCEN	Centralizer - 25 in. Overbody	00000001	8.00	2.08 *	32.37	300.00
ACRt	Array Compensated True Resistivity Instrument Section	11022962	50.00	5.03	14.55	120.00
OBCEN	Centralizer - 25 in. Overbody	00000002	8.00	2.08 *	15.92	300.00
ACRt	Array Compensated True Resistivity Sonde Section	11005909	200.00	14.22	0.33	120.00
RSOF	Regal Standoff 6.75in	00000001	20.00	0.52 *	12.25	300.00
BLNS	Bull Nose	00000001	5.00	0.33	0.00	300.00
Total			1,854.60	87.62		
* Not included in Total Length and Length Accumulation.						
Data: DEWEY_TRUST_1-710001 SP-GTET-DSN-SDL-FLEX-IDT-BSAT-ACRT-BNIDLE					Date: 03-Mar-15 00:14:22	

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:GTET - 11048627

Engineer:SUHAIL BISHTI

Software Version:WL INSITE R4.4.3 (Build 6)

Reference Calibration Date:06-Jan-15 09:40:45

Calibration Date:27-Jan-15 10:59:27

Calibration Version:1

Calibrator Source S/N: Error

Calibrator API Reference:265.00 api

Equivalent Calibrator API Reference:269.6 api

Measurement	Measured	Calibrated	Units
Background	54.4	54.7	api
Background + Calibrator	322.3	324.4	api
Calibrator	267.9	269.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:GTET - 11048627

Engineer:J. BOLLOM

Software Version:WL INSITE R4.6.4 (Build 3)

Reference Calibration Date:27-Jan-15 10:59:27

Calibration Date:02-Mar-15 02:49:22

Calibration Version:1

Calibrator Source S/N: Error

Calibrator API Reference:265.00 api

Equivalent Calibrator API Reference:269.6 api

Field Verification	Shop	Field	Units
Background	54.7	51.4	api
Background + Calibrator	324.4	319.2	api
Calibrator	269.6	267.8	api

Shop	Field	Difference	Tolerance
269.6	267.8	1.8	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:DSNT - 11055304

Engineer:SUHAIL BISHTI

Software Version:WL INSITE R4.4.3 (Build 6)

Reference Calibration Date:17-Dec-14 11:14:27

Calibration Date:17-Dec-14 11:36:45

Calibration Version:1

Logging Source S/N: DSN-424

Tank Serial Number: LIBERAL WATER TANK
Reference value assigned to Tank: 51.680
Snow Block S/N: 10013313
Calibration Tank Water Temperature: 66 degF
Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value

Gain:	0.968	0.971	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):	0.2101	0.2110	0.0009	+/- 0.0020
Calibrated Ratio:	9.70	9.73	0.029	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0516	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 - 11055304	Reference Calibration Date:	17-Dec-14 11:36:45
Engineer:	J. BOLLLOM	Calibration Date:	02-Mar-15 03:00:14
Software Version:	WL INSITE R4.6.4 (Build 3)	Calibration Version:	1

Logging Source S/N: DSN-424
Snow Block S/N: 10013313

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change

Snow-Block Porosity (decp):	0.0516	0.0583	0.0067	+/- 0.0150
-----------------------------	--------	--------	--------	------------

PASS/FAIL SUMMARY	
Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	SDLT - 11014296	Reference Calibration Date:	25-Feb-15 19:41:02
Engineer:	J. BOLLLOM	Calibration Date:	25-Feb-15 19:46:54
Software Version:	WL INSITE R4.6.4 (Build 3)	Calibration Version:	1
Host Tool Name:	DSNT - 11055304		

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-3861.77	-4048.80	-7000.00 - -1000.00
Pad Gain	0.0003832	0.0003927	0.000200 - 0.000600
Arm Offset	-3084.17	-3051.62	-5000.00 - 3000.00
Arm Gain	0.0004914	0.0004840	0.000300 - 0.000700
Arm Power	-0.000003790	-0.000002972	-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)	2.02	2.00	-0.02	+/- 0.20
Medium Ring (in)	3.73	3.75	0.02	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.58	6.50	-0.08	+/- 0.20
Medium Ring (in)	8.34	8.25	-0.09	+/- 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 - 11014296	Reference Calibration Date:	25-Feb-15 19:46:54
Engineer:	J. BOLLUM	Calibration Date:	02-Mar-15 02:52:29
Software Version:	WL INSITE R4.6.4 (Build 3)	Calibration Version:	1

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.80	0.05	+/- 0.10
Ring Diameter	8.25	8.20	-0.05	+/- 0.15
PASS/FAIL SUMMARY				
Pad Extension Check:			Passed	
Diameter Check:			Passed	

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name:	SDLT Pad - 10865884	Reference Calibration Date:	17-Dec-14 12:33:56
Engineer:	SUHAIL BISHTI	Calibration Date:	17-Dec-14 12:54:47
Software Version:	WL INSITE R4.4.3 (Build 6)	Calibration Version:	1

Logging Source S/N: 5168 GW			
Aluminum Block S/N: LIBERAL ALUMINUM	Density: 2.598g/cc	Pe: 3.170	
Magnesium Block S/N: LIBERAL MAGNESIUM	Density: 1.684g/cc	Pe: 2.598	

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0410	1.0747	0.90 - 1.10
Near Dens Gain	1.0312	1.0461	0.90 - 1.10
Near Peak Gain	1.0303	1.0617	0.90 - 1.10
Near Lith Gain	1.0040	1.0051	0.90 - 1.10
Far Bar Gain	1.0145	1.0205	0.90 - 1.10
Far Dens Gain	1.0035	1.0053	0.90 - 1.10
Far Peak Gain	1.0007	1.0015	0.90 - 1.10
Far Lith Gain	0.9727	0.9728	0.90 - 1.10
Near Bar Offset	-0.1576	-0.4605	NONE
Near Dens Offset	-0.0828	-0.2093	NONE
Near Peak Offset	-0.0852	-0.3443	NONE
Near Lith Offset	0.1149	0.1051	NONE
Far Bar Offset	0.0352	-0.0122	NONE

Far Dens Offset	0.1064	0.0932	NONE
Far Peak Offset	0.0869	0.0801	NONE
Far Lith Offset	0.2443	0.2432	NONE
Near Bar Background	788.54	789.00	700 - 1450
Near Dens Background	263.02	262.51	230 - 480
Near Peak Background	116.99	115.51	100 - 210
Near Lith Background	142.21	143.14	125 - 260
Far Bar Background	490.12	489.46	450 - 900
Far Dens Background	192.35	191.99	175 - 345
Far Peak Background	74.44	76.26	70 - 140
Far Lith Background	78.96	79.45	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.680	1.684	0.004	+/- 0.015
Pe	2.508	2.552	0.044	+/- 0.150
ALUMINUM				
Density (g/cc)	2.596	2.598	0.002	+/- 0.01500
Pe	3.111	3.120	0.009	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0007	+/- 0.0110	0.0010	+/- 0.0140
Magnesium Block	0.0014	+/- 0.0110	-0.0007	+/- 0.0140
Aluminum Block	0.0004	+/- 0.0110	0.0003	+/- 0.0140
Resolution	8.52	6.00 - 11.50	8.94	6.00 - 11.50
Internal Verifier(B+D+P+L)	1310	1200 - 2700	837	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 - 10865884	Reference Calibration Date:	17-Dec-14 12:54:47
Engineer:	J. BOLLLOM	Calibration Date:	02-Mar-15 02:49:52
Software Version:	WL INSITE R4.6.4 (Build 3)	Calibration Version:	1

Pad Temperature: 54.1 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1310.169	1308.110	-2.059	14.650
Far (B+D+P+L) cps	837.156	834.343	-2.813	15.912
Near Resolution	8.52	8.53	0.010	0.50
Far Resolution	8.94	9.01	0.070	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-11048627						
Gamma Ray Calibrator	269.6	267.8	-----	1.8	+/- 9.00	api
DSNT-11055304						
Snow-Block Porosity	0.0516	0.0583	-----	-0.0067	+/- 0.0150	decp
SDLT-11014296						
Pad Extension	3.75	3.80	-----	-0.05	+/-0.10	in
Ring Diameter	8.25	8.20	-----	0.05	+/-0.15	in
SDLT Pad-10865884						
Near(B+D+P+L)	1310.169	1308.110	-----	2.059	+/-14.650	cps
Far(B+D+P+L)	837.156	834.343	-----	2.813	+/-15.912	cps
Data: DFEWEY TRUST 1-700001 SP-GTET-DSN-SDLI-FLEX-IDT-BSAT-ACRT-BNIDLE Date: 03-Mar-15 00:23:01						
HALLIBURTON 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	2.000	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	4870.00	ft	
	SHARED	BHT	Bottom Hole Temperature	200.0	degF	
	SHARED	SVTM	Navigation and Survey Master Tool	IDT		
	SHARED	AZTM	High Res Z Accelerometer Master Tool	IDT		
	SHARED	TEMM	Temperature 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		
	Rwa /	BUSM	Borehole Size Source Tool	SDLT		

CrossPlot	BHSM	Borehole Size Source Tool	SDLT	
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	
GTET	BHSM	Borehole Size Source Tool	SDLT	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DSNO	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	
DSNT	BHSM	Borehole Size Source Tool	SDLT	
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
SDLT Pad	BHSM	Borehole Size Source Tool	SDLT	
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
IDT	WRTI	Survey Writing Interval	30	ft
IDT	SOPT	Smoothing Option	None	
BSAT	MBOK	Compute BCAS Results?	Yes	
BSAT	FLLO	Frequency Filter Low Pass Value?	5000	Hz
BSAT	FLHI	Frequency Filter High Pass Value?	27000	Hz
BSAT	DTFL	Delta -T Fluid	189.00	uspf
BSAT	DTMT	Delta -T Matrix Type	User define	
BSAT	DTMA	Delta -T Matrix	47.60	uspf
BSAT	DTSH	Delta -T Shale	100.00	uspf
BSAT	SPEQ	Acoustic Porosity Equation	Wylie	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Up	
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
ACRt Sonde	BHSM	Borehole Size Source Tool	SDLT	
ACRt Sonde	MBFL	Apply Corkscrew Effect?	No	
BOTTOM				
Data: DEWEY_TRUST_1-710001 SP-GTET-DSN-SDL-FLEX-IDT-BSAT-ACRT-BNIDLE				Date: 03-Mar-15 00:20:10

INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel				
TENS	Tension	0.00	NO	

TPUL	Tension Pull	87.62	NO	
BS	Bit Size	87.62	NO	
HDIA	Measured Hole Diameter	0.00	NO	
RWCH				
DHTN	DownholeTension	0.00	BLK	0.000
SP Sub				
PLTC	Plot Control Mask	79.59	NO	
SP	Spontaneous Potential	79.59	BLK	1.250
SPR	Raw Spontaneous Potential	79.59	NO	
SPO	Spontaneous Potential Offset	79.59	NO	
GTET				
TPUL	Tension Pull	71.57	NO	
GR	Natural Gamma Ray API	71.57	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	71.57	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	71.57	W	1.416 , 0.750
HDIA	Measured Hole Diameter	0.00	NO	
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	61.32	NO	
RNDS	Near Detector Telemetry Counts	61.42	BLK	1.417
RFDS	Far Detector Telemetry Counts	62.17	TRI	0.583
DNTT	DSN Tool Temperature	61.42	NO	
DSNS	DSN Tool Status	61.32	NO	
ERND	Near Detector Telemetry Counts EVR	61.42	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	62.17	BLK	0.000
ENTM	DSN Tool Temperature EVR	61.42	NO	
HDIA	Measured Hole Diameter	0.00	NO	
SDLT				
TPUL	Tension Pull	51.43	NO	
PCAL	Pad Caliper	51.43	TRI	0.250
ACAL	Arm Caliper	51.43	TRI	0.250
IDT				
TPUL	Tension Pull	36.36	NO	
ACCX	Accelerometer X	36.36	NO	
ACCY	Accelerometer Y	36.36	NO	
ACCZ	Accelerometer Z	36.36	NO	
MAGX	magnetometer x with unit	36.36	NO	
MAGY	Magnetometer Y with unit	36.36	NO	
MAGZ	magnetometer z with unit	36.36	NO	
IAMP	Accelerometer Temperature	36.36	NO	
MTMP	Magnetometer Temperature	36.36	NO	
BSAT				
TPUL	Tension Pull	26.84	NO	
STAT	Status	26.84	NO	
DLYT	Delay Time	26.84	NO	
SI	Sample Interval	26.84	NO	
TXRX	Raw Telemetry 10 Receivers	26.84	NO	
FRMC	Tool Frame Count	26.84	NO	
GMOD	Gain processing mode	19.58	NO	

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 Reference 12 KHz Real Signal	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	
HDIA	Measured Hole Diameter	0.00	NO	
SDLT Pad				
TPUL	Tension Pull	51.42	NO	
NAB	Near Above	51.24	BLK	0.920
NUL	Near Null	51.84	BLK	0.980

NHI	Near Cesium High	51.24	BLK	0.920
NLO	Near Cesium Low	51.24	BLK	0.920
NVA	Near Valley	51.24	BLK	0.920
NBA	Near Barite	51.24	BLK	0.920
NDE	Near Density	51.24	BLK	0.920
NPK	Near Peak	51.24	BLK	0.920
NLI	Near Lithology	51.24	BLK	0.920
NBAU	Near Barite Unfiltered	51.24	BLK	0.250
NLIU	Near Lithology Unfiltered	51.24	BLK	0.250
FAB	Far Above	51.59	BLK	0.250
FHI	Far Cesium High	51.59	BLK	0.250
FLO	Far Cesium Low	51.59	BLK	0.250
FVA	Far Valley	51.59	BLK	0.250
FBA	Far Barite	51.59	BLK	0.250
FDE	Far Density	51.59	BLK	0.250
FPK	Far Peak	51.59	BLK	0.250
FLI	Far Lithology	51.59	BLK	0.250
PTMP	Pad Temperature	51.43	BLK	0.920
NHV	Near Detector High Voltage	50.82	NO	
FHV	Far Detector High Voltage	50.82	NO	
ITMP	Instrument Temperature	50.82	NO	
DDHV	Detector High Voltage	50.82	NO	
HDIA	Measured Hole Diameter	0.00	NO	

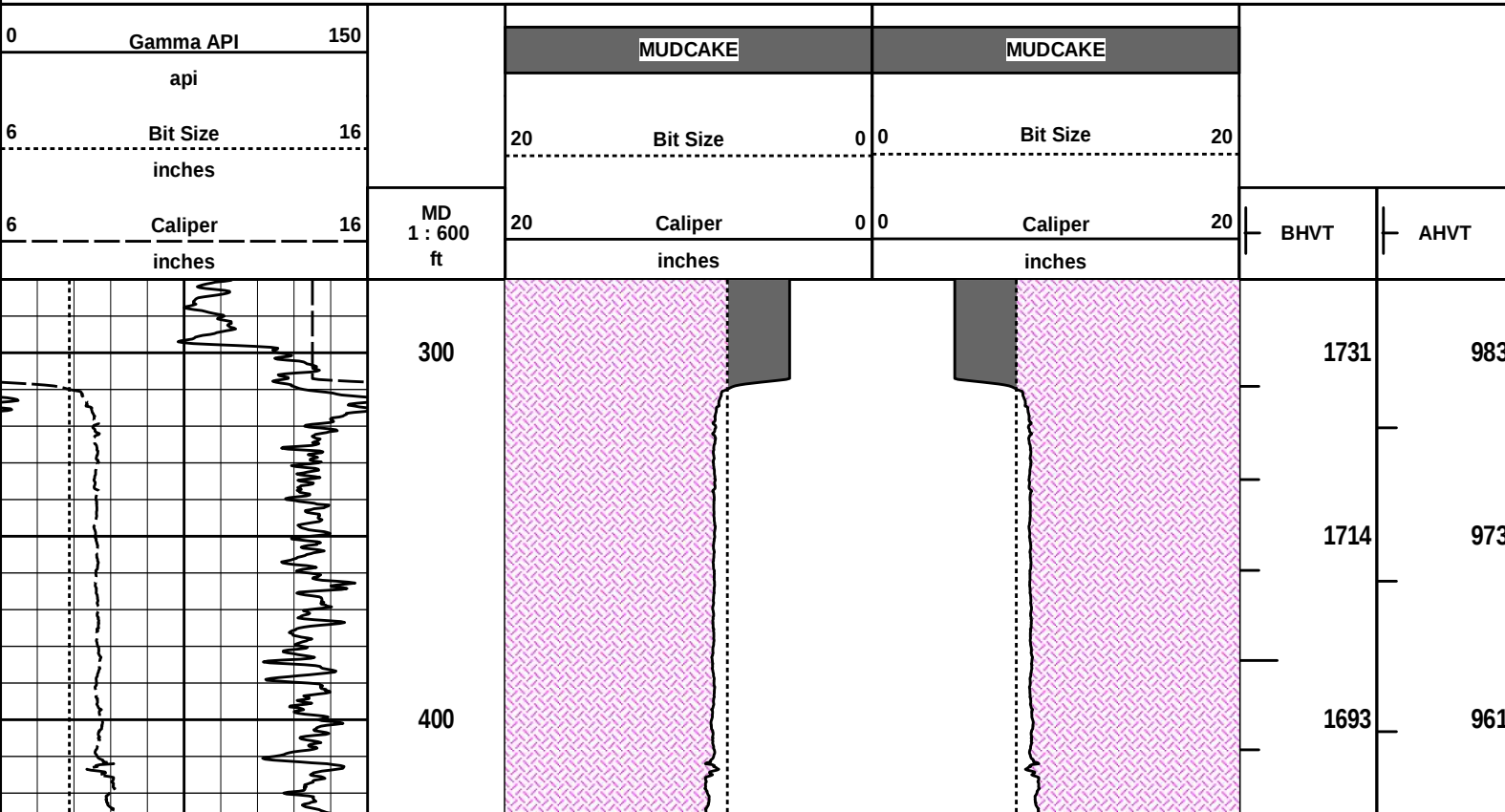


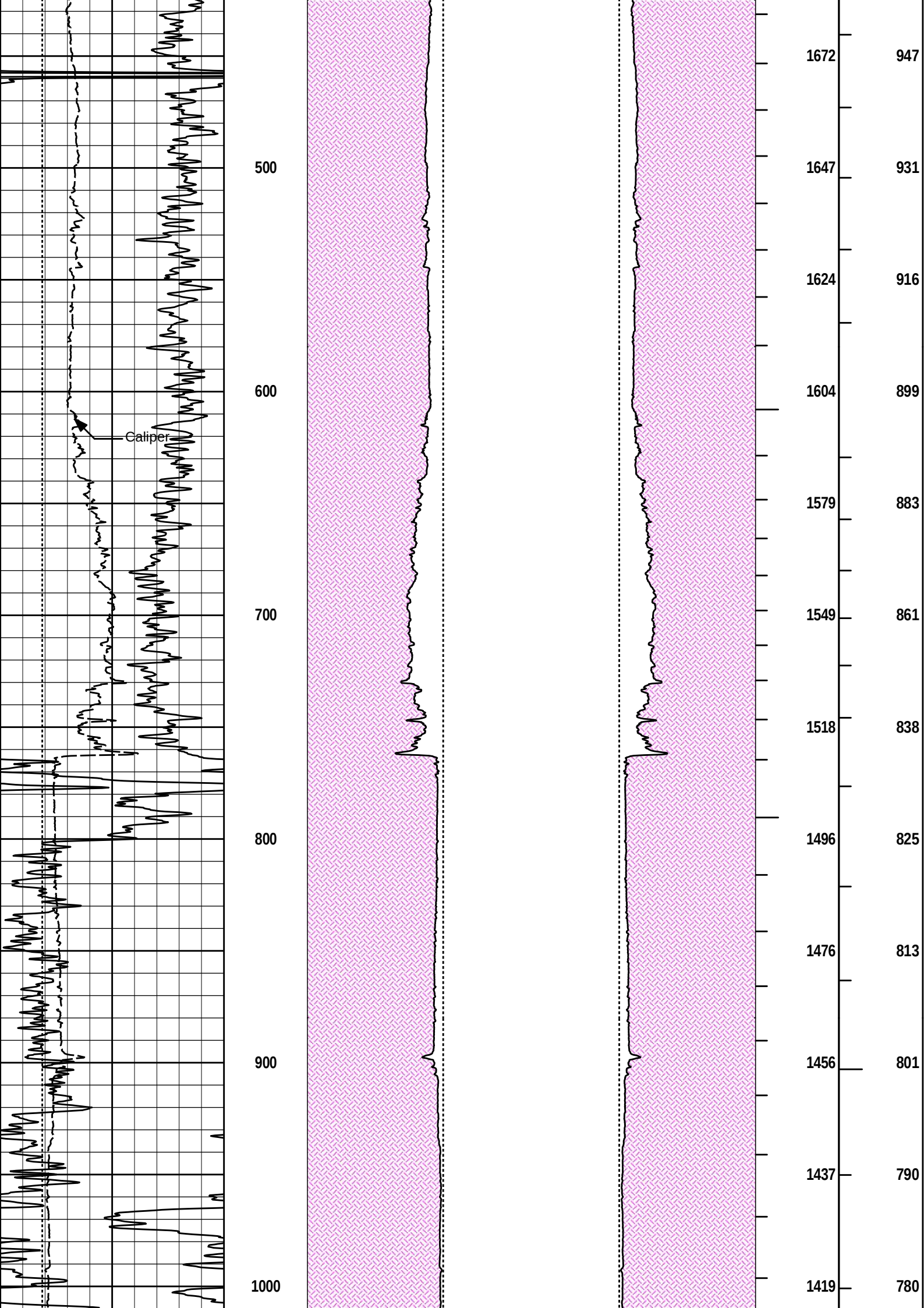
Plot Time: 03-Mar-15 03:13:55

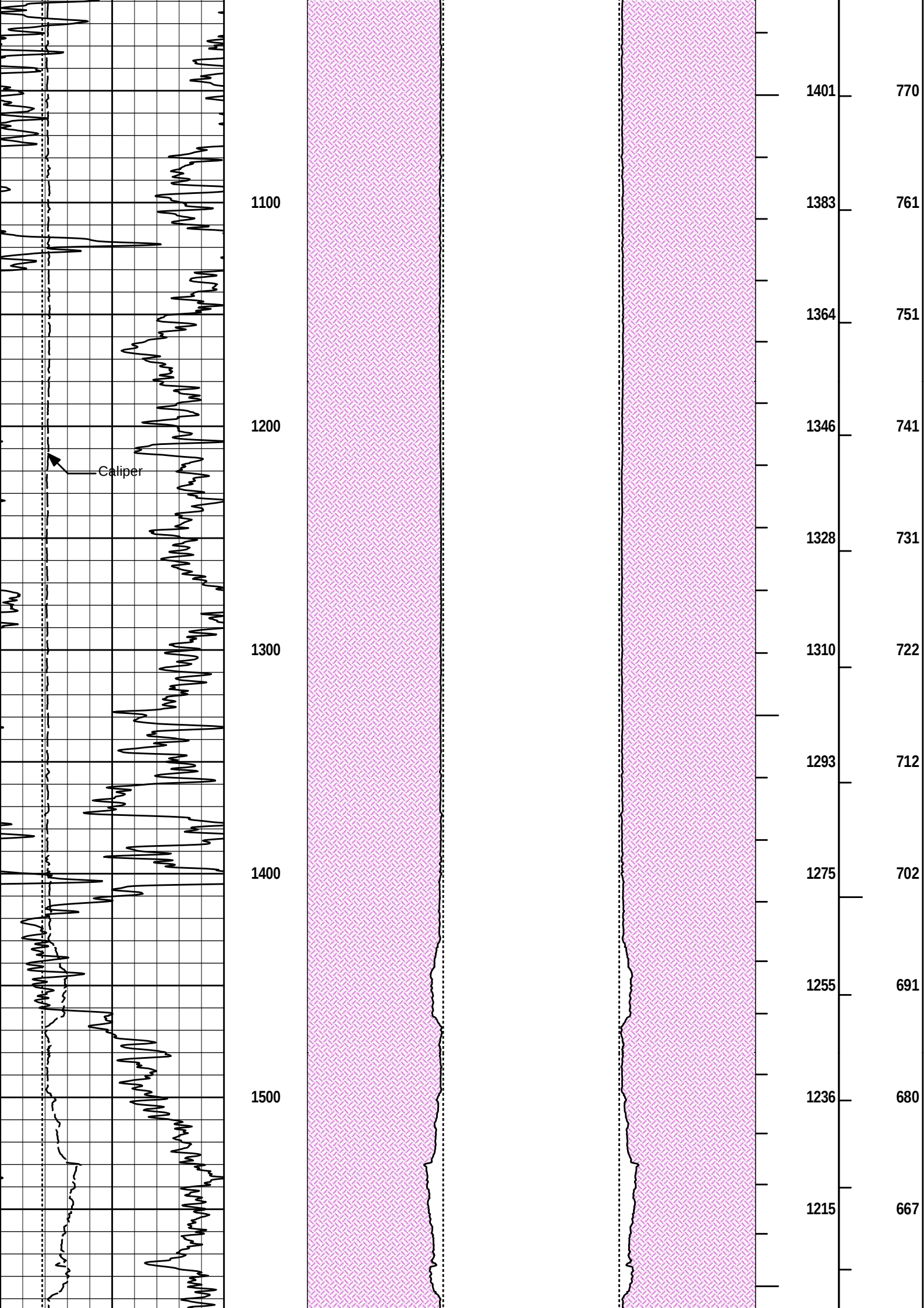
Plot Range: 280 ft to 4869.92 ft

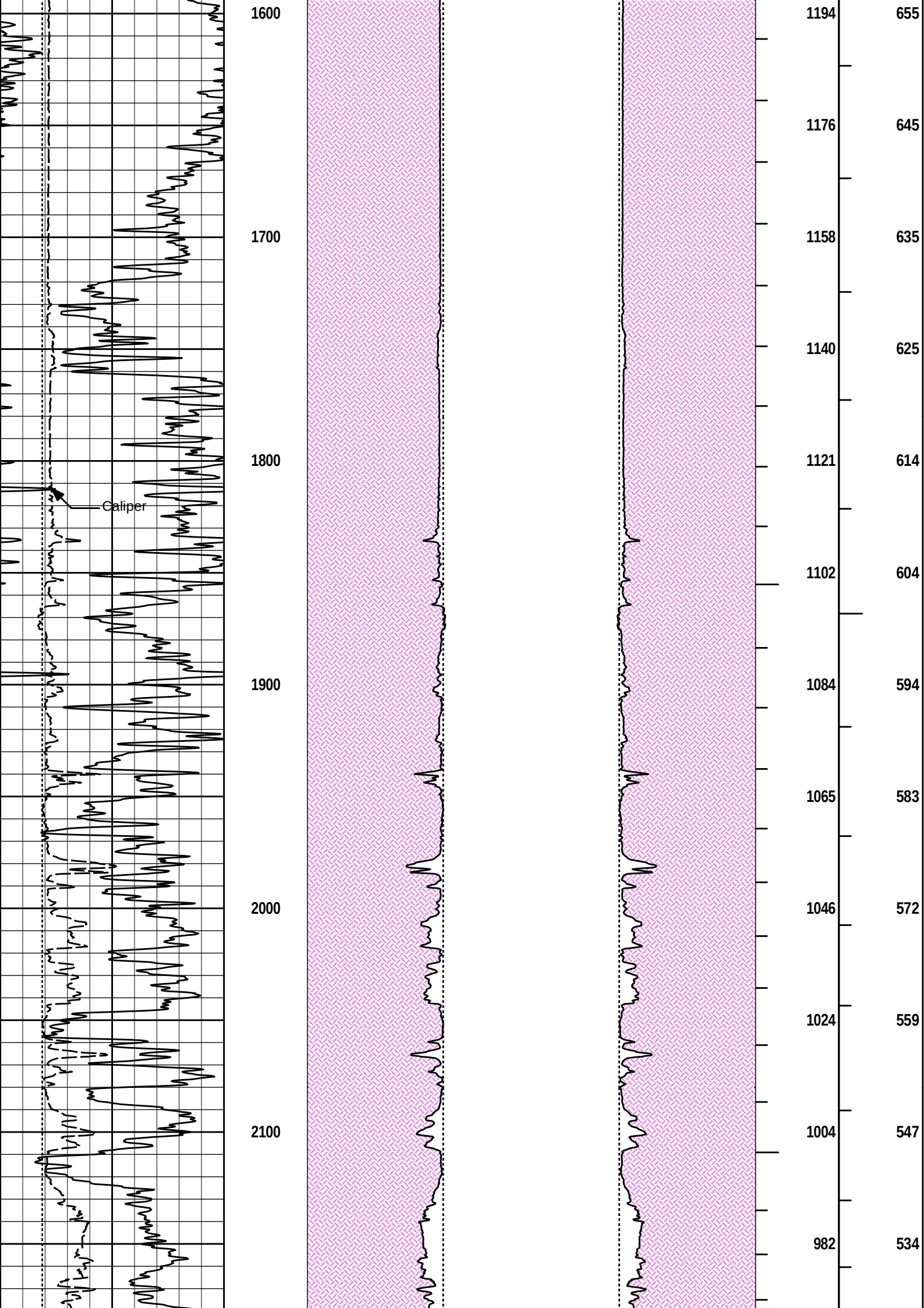
Data: DEWEY_TRUST_1-7\Well Based\CASING\

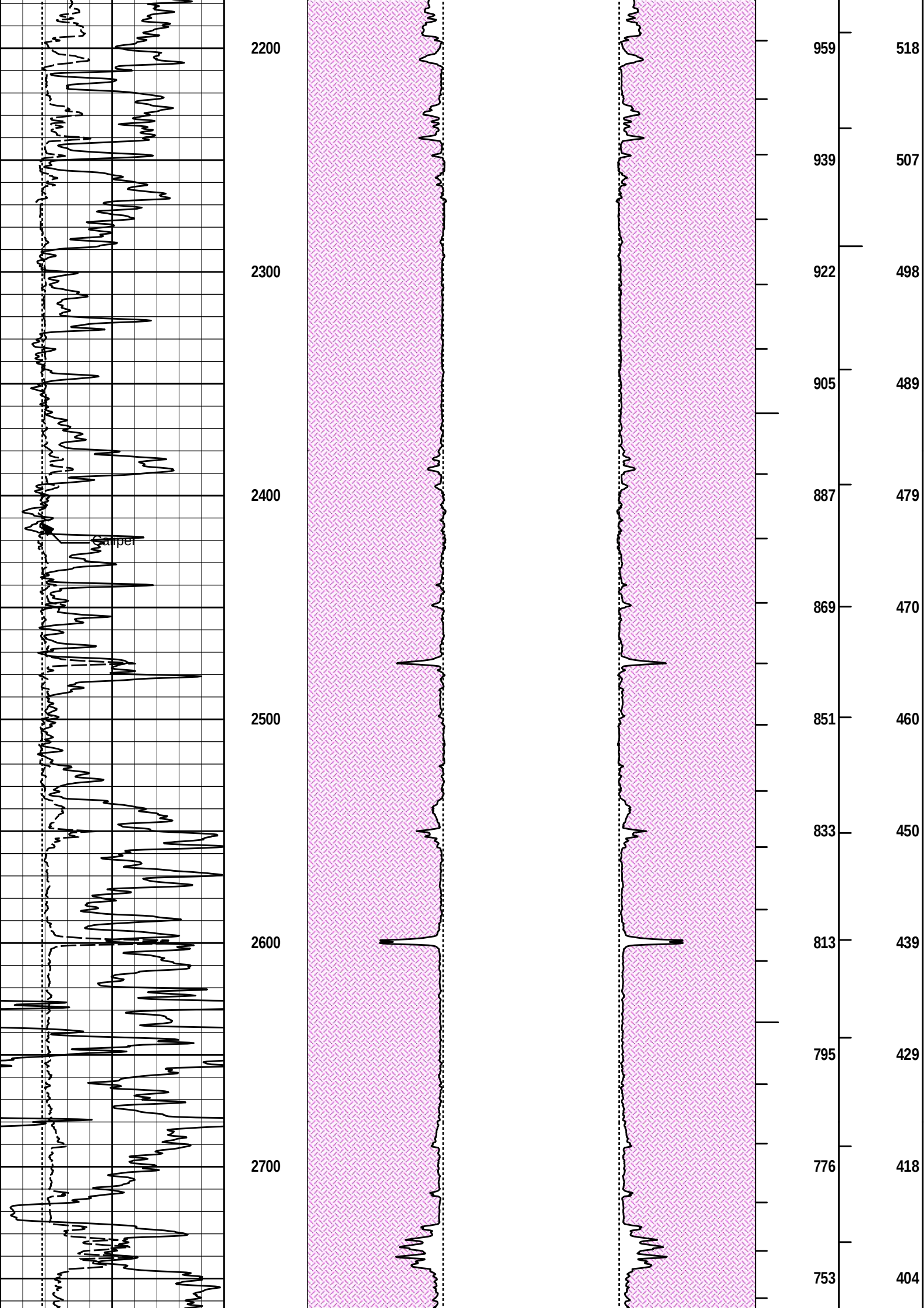
Plot File: \\LOCAL-IDEWEY_TRUST_1-7\0001 SP-GTET-DSN-SDL-FLEX-IDT-BSAT-ACRT-BNIPOROI\AHV_2_IQ_LIB

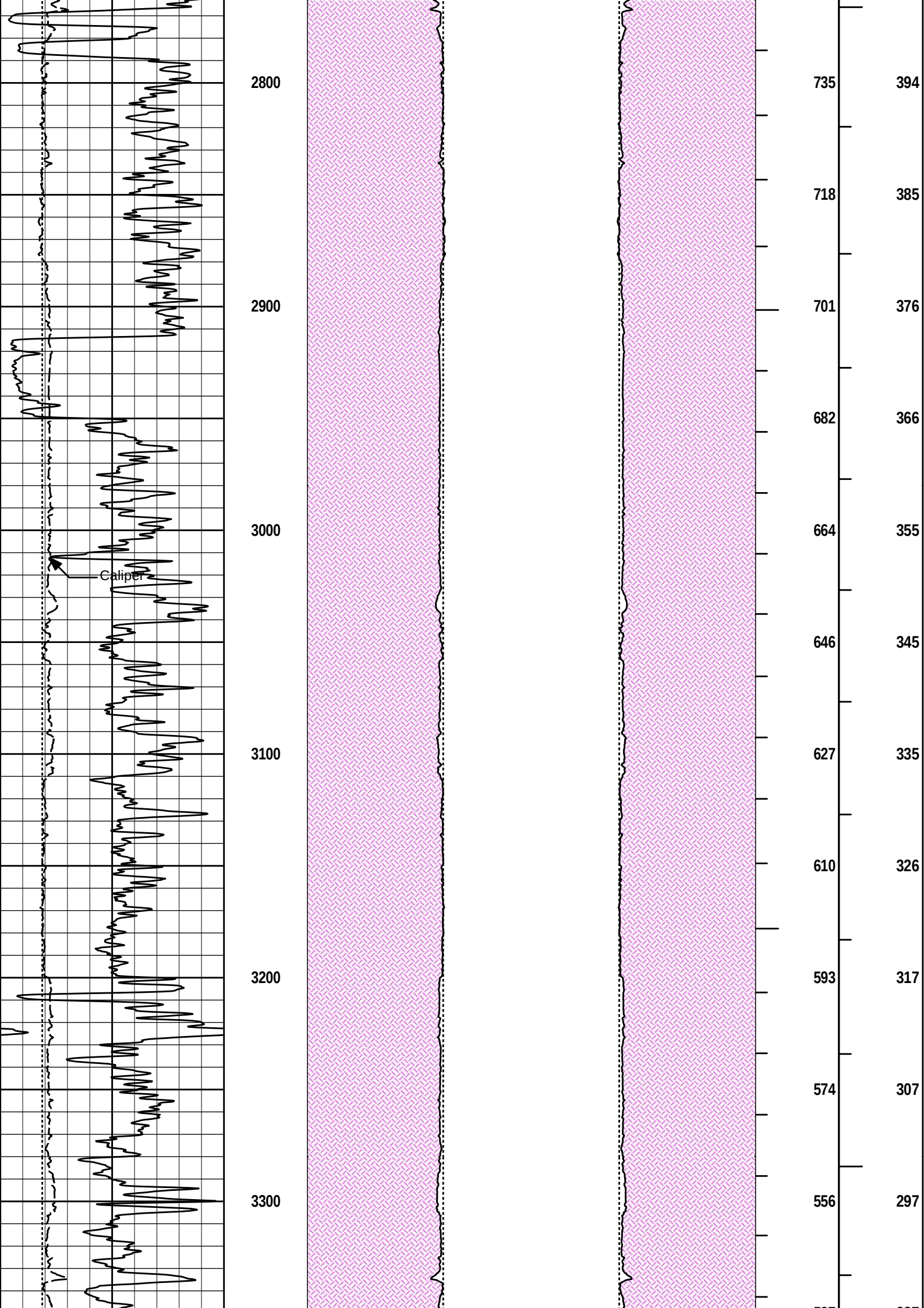


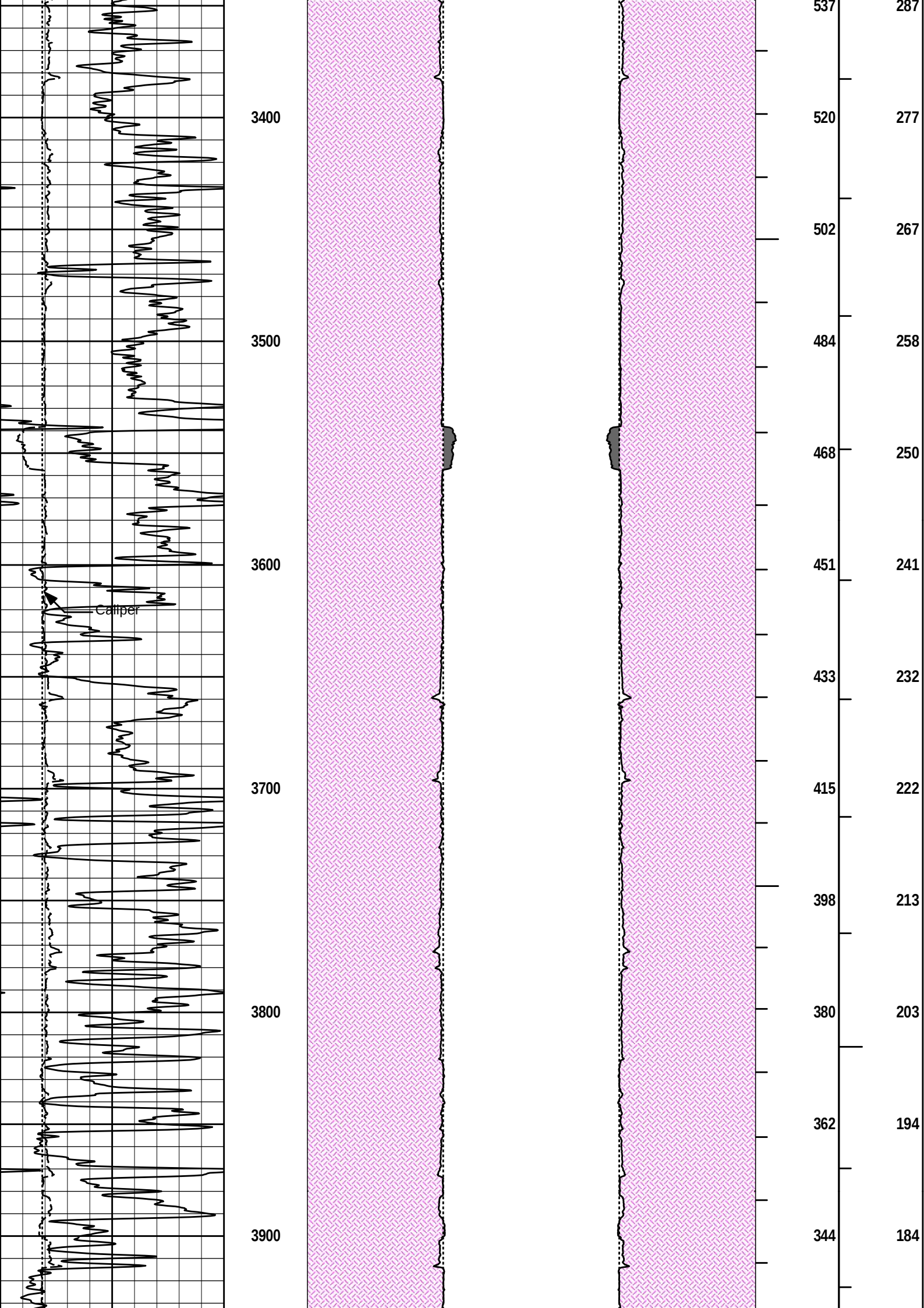


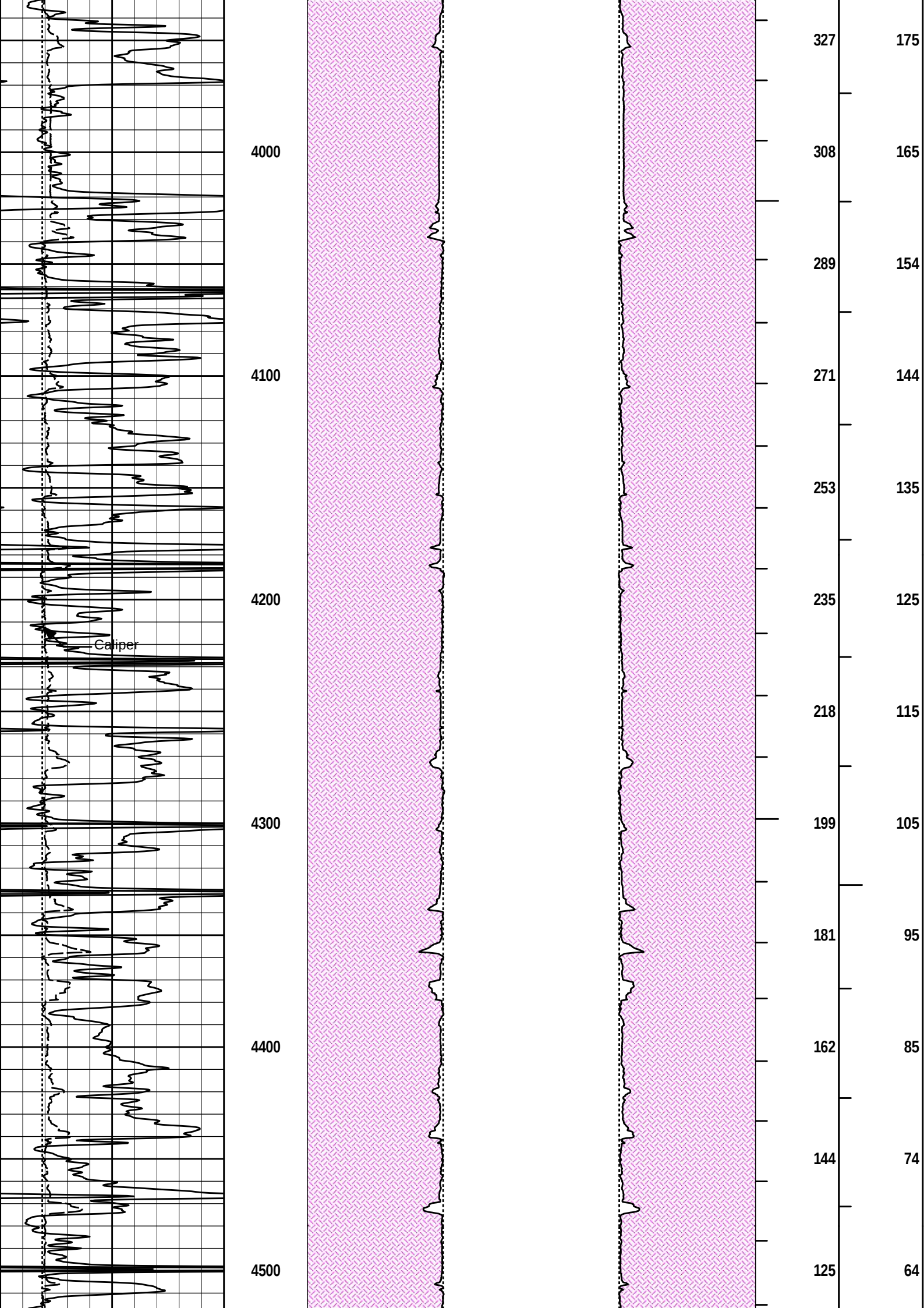


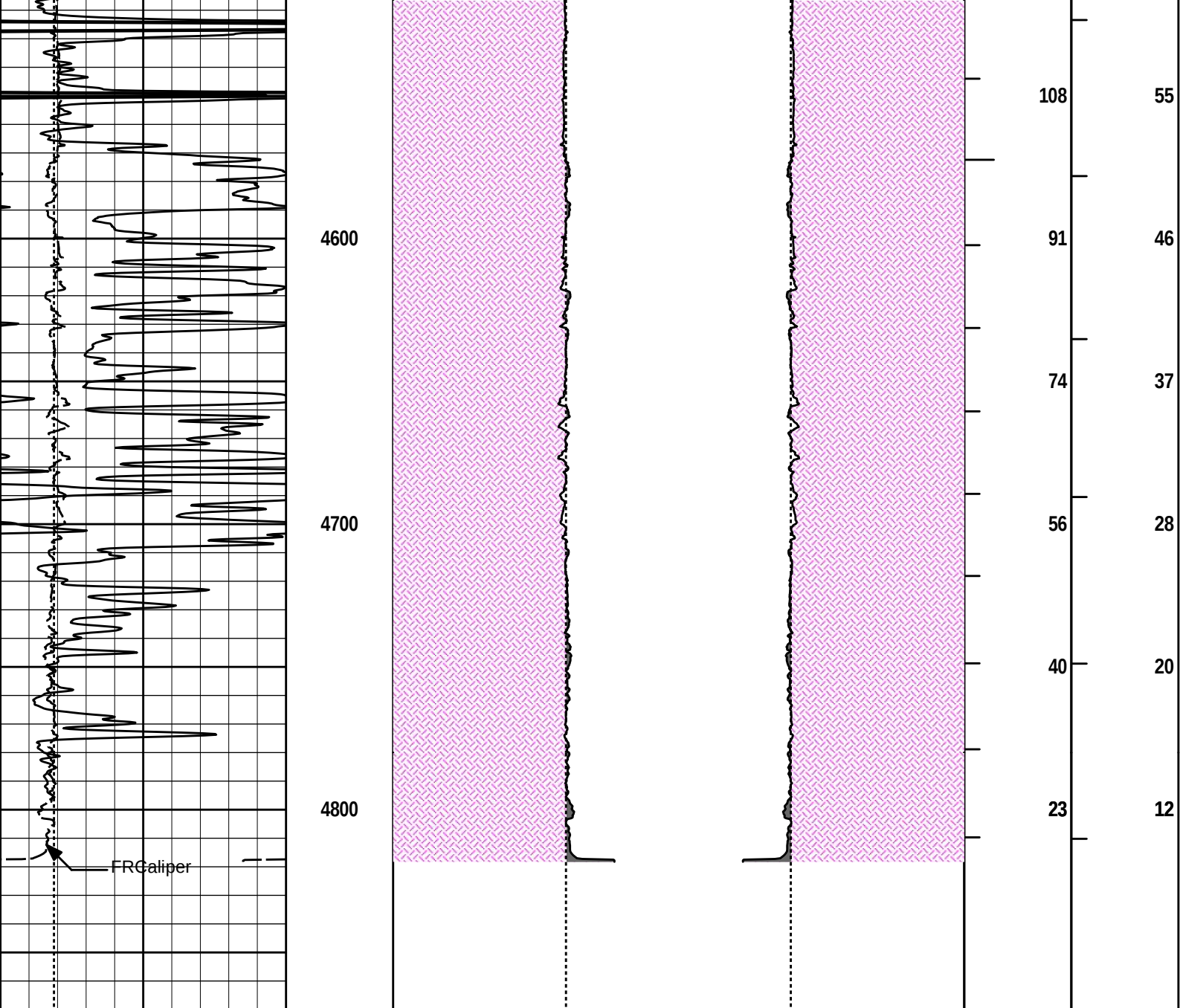












6	Caliper	16	MD 1 : 600 ft	20	Caliper	0 0	20	BHVT	AHVT
	inches				inches				
6	Bit Size	16		20	Bit Size	0 0	20		
	inches								
0	Gamma API	150			MUDCAKE		MUDCAKE		
	api								



Plot Time: 03-Mar-15 03:13:59

Plot Range: 280 ft to 4869.92 ft

Data: DEWEY_TRUST_1-7\Well Based\CASING\

Plot File: \\-LOCAL-IDEWY_TRUST_1-7\0001 SP-GTET-DSN-SDL-FLEX-IDT-BSAT-ACRT-BNIPOR\AHV_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT

COMPANY	CULBREATH OIL & GAS
WELL	DEWEY TRUST 1-7 'A' 1
FIELD	WILDCAT
COUNTY	RAWLINS
STATE	KANSAS

