HALLIBURTON

SPECTRAL DENSITY DUAL SPACED NEUTRON LOG

COMPANY	SANDRIDGE ENERGY
WELL	MURPHY SWD 3404 1-18
FIELD/BLOCK	BLUFF
COUNTY	SUMNER
STATE	KANSAS

COMPANY **SANDRIDGE ENERGY**

WELL **MURPHY SWD 3404 1-18**

FIELD/BLOCK **BLUFF**

COUNTY **SUMNER** STATE **KANSAS**

API No. 15-191-22733-00-00

Location (SHL) 350' FNL & 1559' FEL
SE-NE-NW-NE

Other Services:
MICROLOG
ACRT
WAVESONIC
MRIL
CSNG
IDT, ICT

Sect. 18 Twp. 34S Rge. 4W

Permanent Datum	GL	Elev. 1240.0 ft	Elev.: K.B. 1252.0 ft
Log measured from	KB	12.0 ft above perm. Datum	D.F. 1251.0 ft
Drilling measured from	KB		G.L. 1240.0 ft

Date	07-May-14				
Run No.	ONE				
Depth - Driller	5182.00 ft				
Depth - Logger	5172.0 ft				
Bottom - Logged Interval	5149.0 ft				
Top - Logged Interval	2500.0 ft				
Casing - Driller	8.625 in @ 543.0 ft		@		@
Casing - Logger	540.0 ft				
Bit Size	7.875 in		@		@
Type Fluid in Hole	Water Based Mud				
Density / Viscosity	9.5 ppg	48.00 s/qt			
PH / Fluid Loss	10.50 pH	4.0 cptm			
Source of Sample	MUD PIT				
Rm @ Meas. Temperature	0.730 ohmm @ 75.00 degF		@		@
Rmf @ Meas. Temperature	0.66 ohmm @ 75.00 degF		@		@
Rmc @ Meas. Temperature	0.890 ohmm @ 75.00 degF		@		@
Source Rmf / Rmc	MEASURED	MEASURED			
Rm @ BHT	0.40 ohmm @ 143.0 degF		@		@
Time Since Circulation	5.0000 hr				
Time on Bottom	07-May-14 11:16				
Max. Rec. Temperature	143.0 degF @ 5172.0 ft		@		@
Equipment / Location	11072142	LIBERAL			
Recorded By	J. BOLLOM				
Witnessed By	D. BARLOW				

Fold here

Service Ticket No.: 901329713 API Serial No.: 15-191-22733-00-00 PGM Version: WL INSITE R4.2.0 (Build 2)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE					
Date	Sample No.				
Depth-Driller					
Type Fluid in Hole					
Density	Viscosity				
Ph	Fluid Loss				
Source of Sample					
Rm @ Meas. Temp		@		@	
Rmf @ Meas. Temp.		@		@	
Rmc @ Meas. Temp.		@		@	
Source Rmf	Rmc				
Rm @ BHT		@		@	
Rmf @ BHT		@		@	
Rmc @ BHT		@		@	

RESISTIVITY SCALE CHANGES			
Type Log	Depth	Scale Up Hole	Scale Down Hole

RESISTIVITY EQUIPMENT DATA				
Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.	ONE	Run No.	ONE
Serial No.	11039640	Serial No.		Serial No.	10865884	Serial No.	11019643
Model No.	GTET	Model No.		Model No.	SDLT-I	Model No.	DSNT-I
Diameter	3.625"	No. of Cent.		Diameter	4.5"	Diameter	3.625"
Detector Model No.	T-102	Spacing		Log Type	GAM-GAM	Log Type	NEU-NEU
Type	SCINT			Source Type	CS137	Source Type	AM241BE
Length	8'	LSA [Y/N]		Serial No.	5168GW	Serial No.	DSN-424
Distance to Source	10'	FWDA [Y/N]		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	5172	2500	REC	0	150				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 3,000 MG/L

GTET-DSNT-SDLT-ACRT RUN IN COMBINATION

GTET-CSNG-IDT-ICT-WAVE RUN IN COMBINATION

TODAY'S CREW: F. VILLA & M. GRAHAM

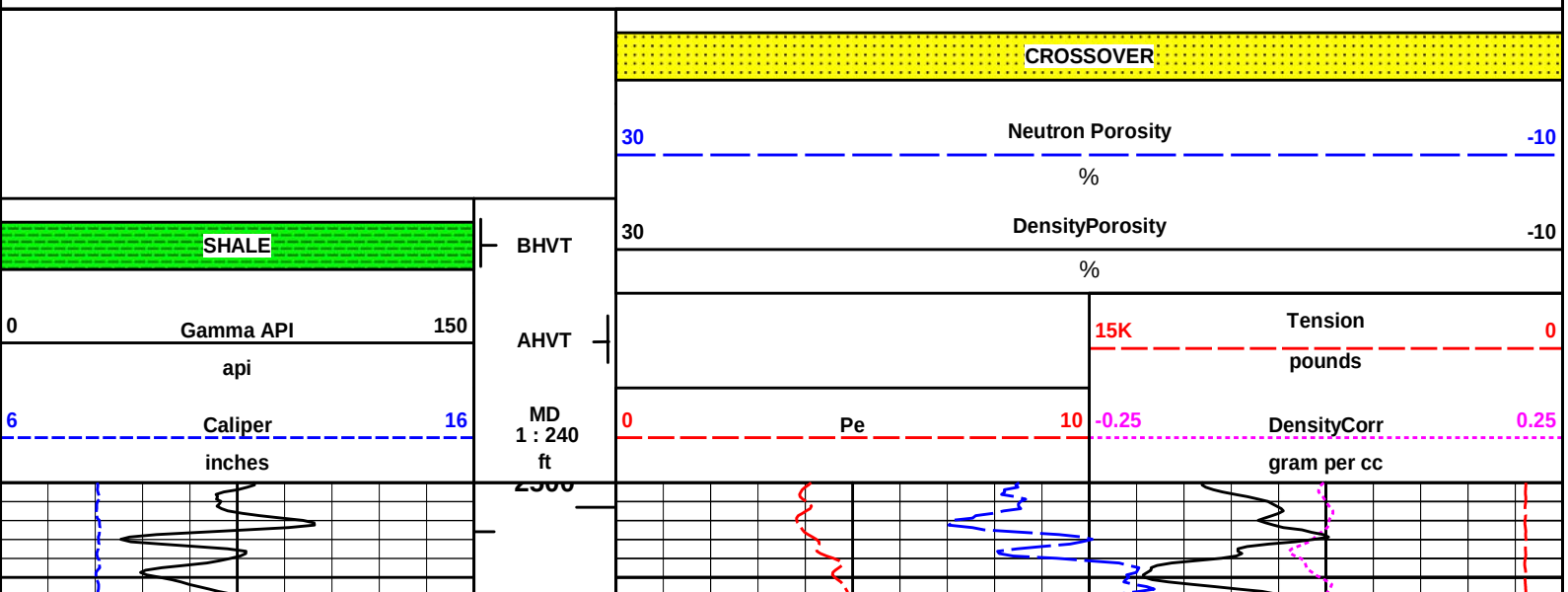
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KS. 620-624-8123

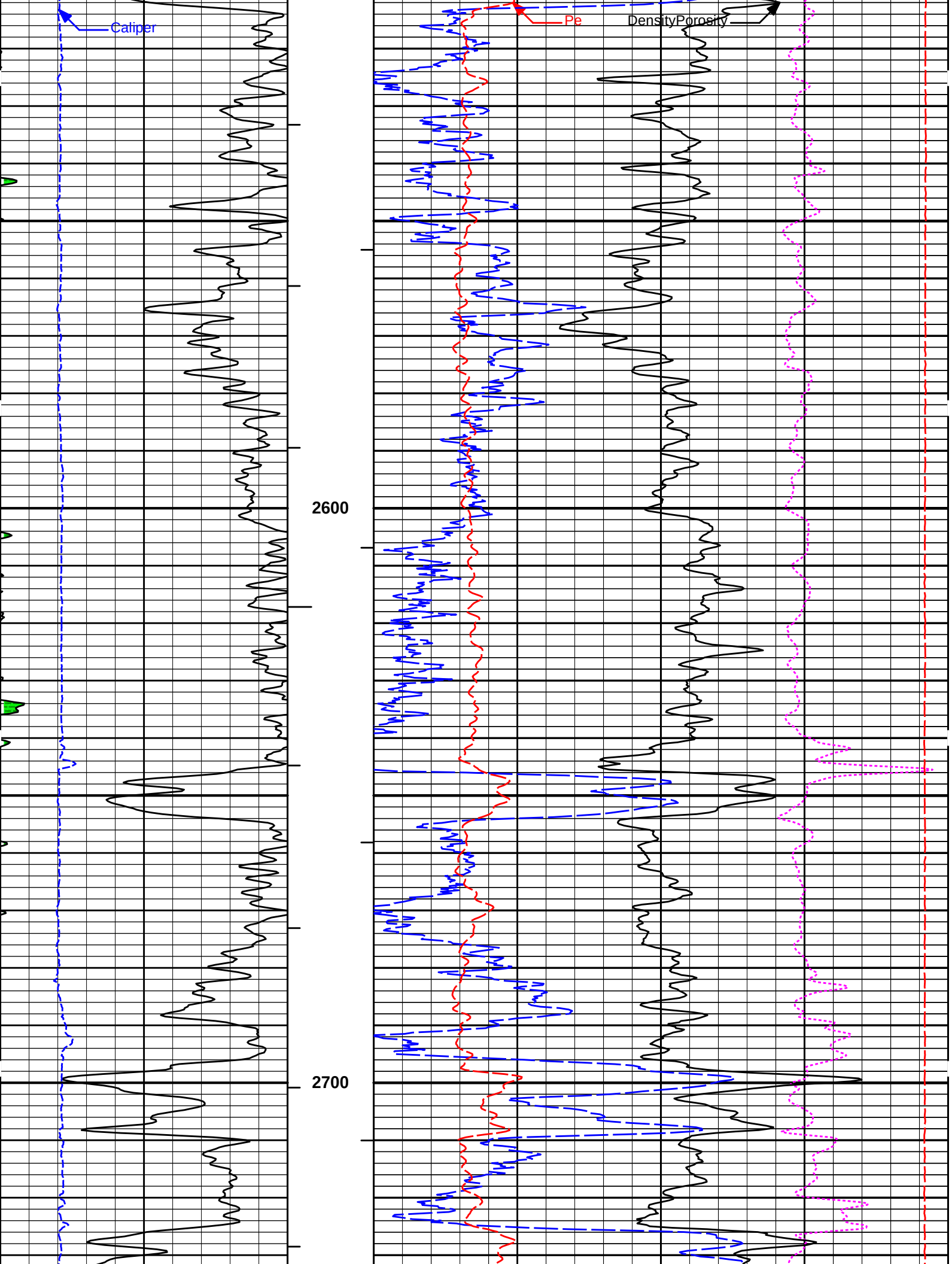
HALLIBURTON

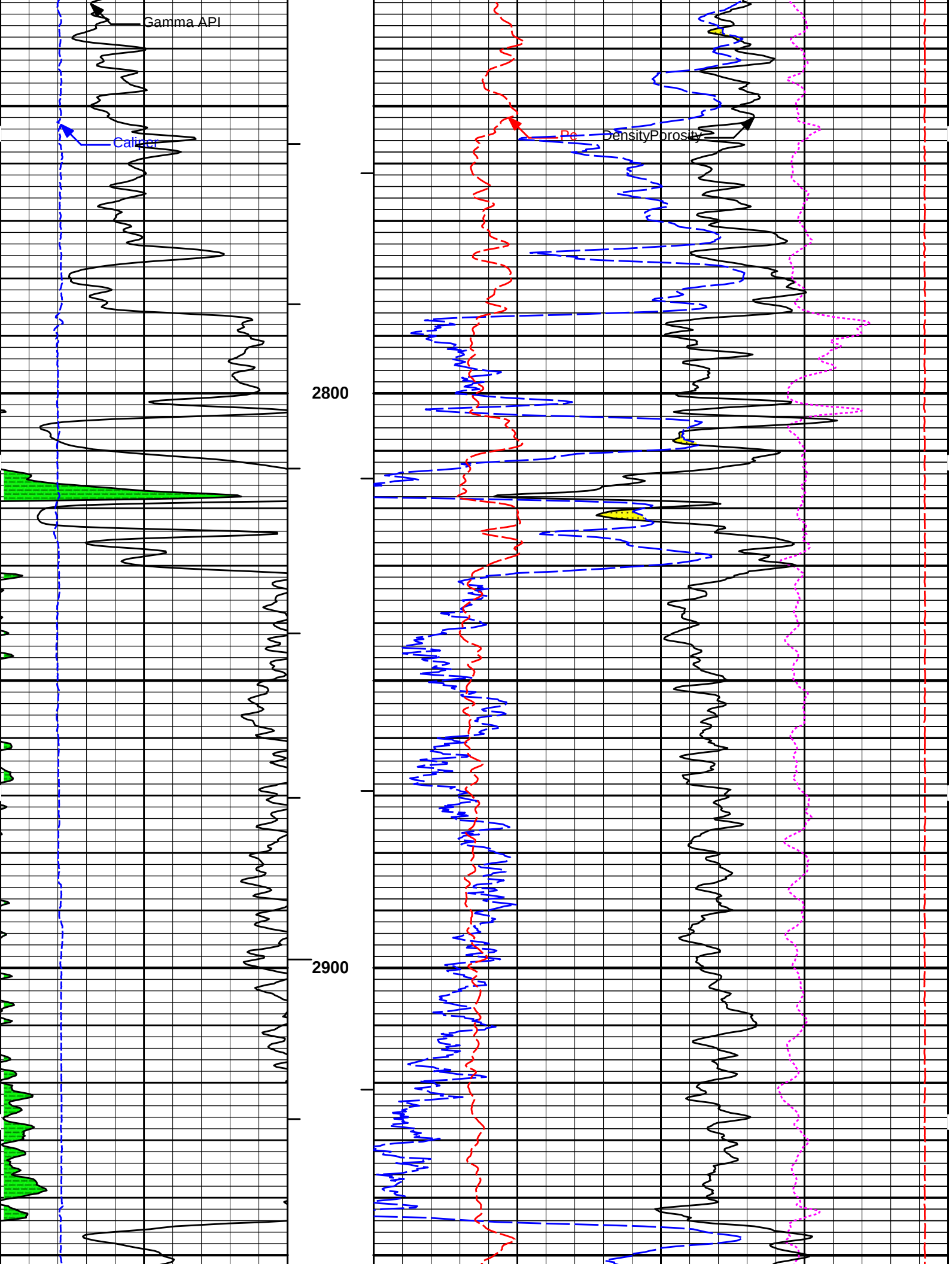
Plot Time: 07-May-14 12:15:43
Plot Range: 2500 ft to 5174.83 ft
Data: MURPHY_SWD_3404\Well Based\DETAIL1
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

5 INCH MAIN LOG

MEASURED DEPTH
MAIN SECTION 5" PER 100'




Caliper
Pe
DensityPorosity
2600
2700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Caliper
Pe
DensityPorosity
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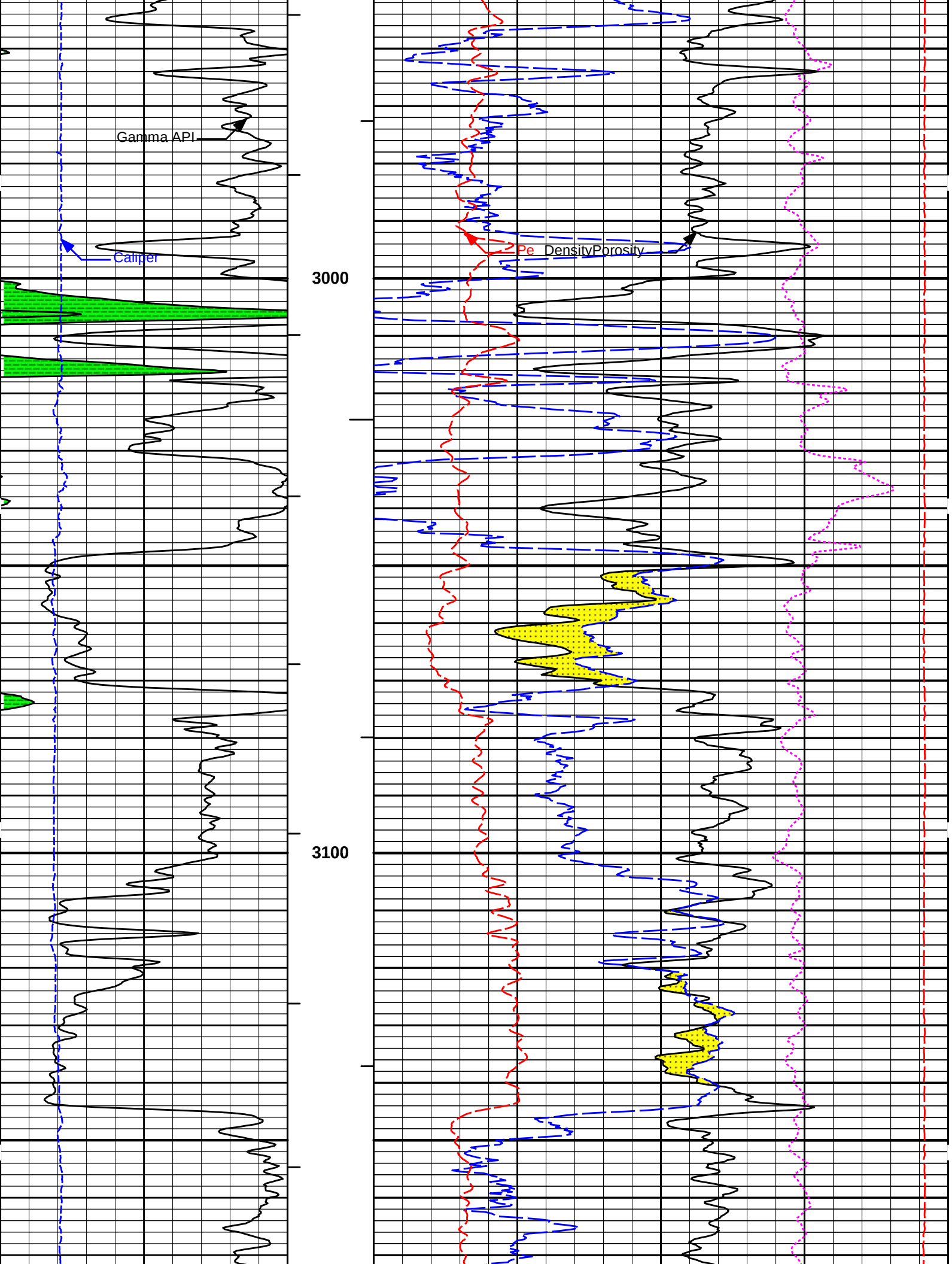
2900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Pe
DensityPorosity
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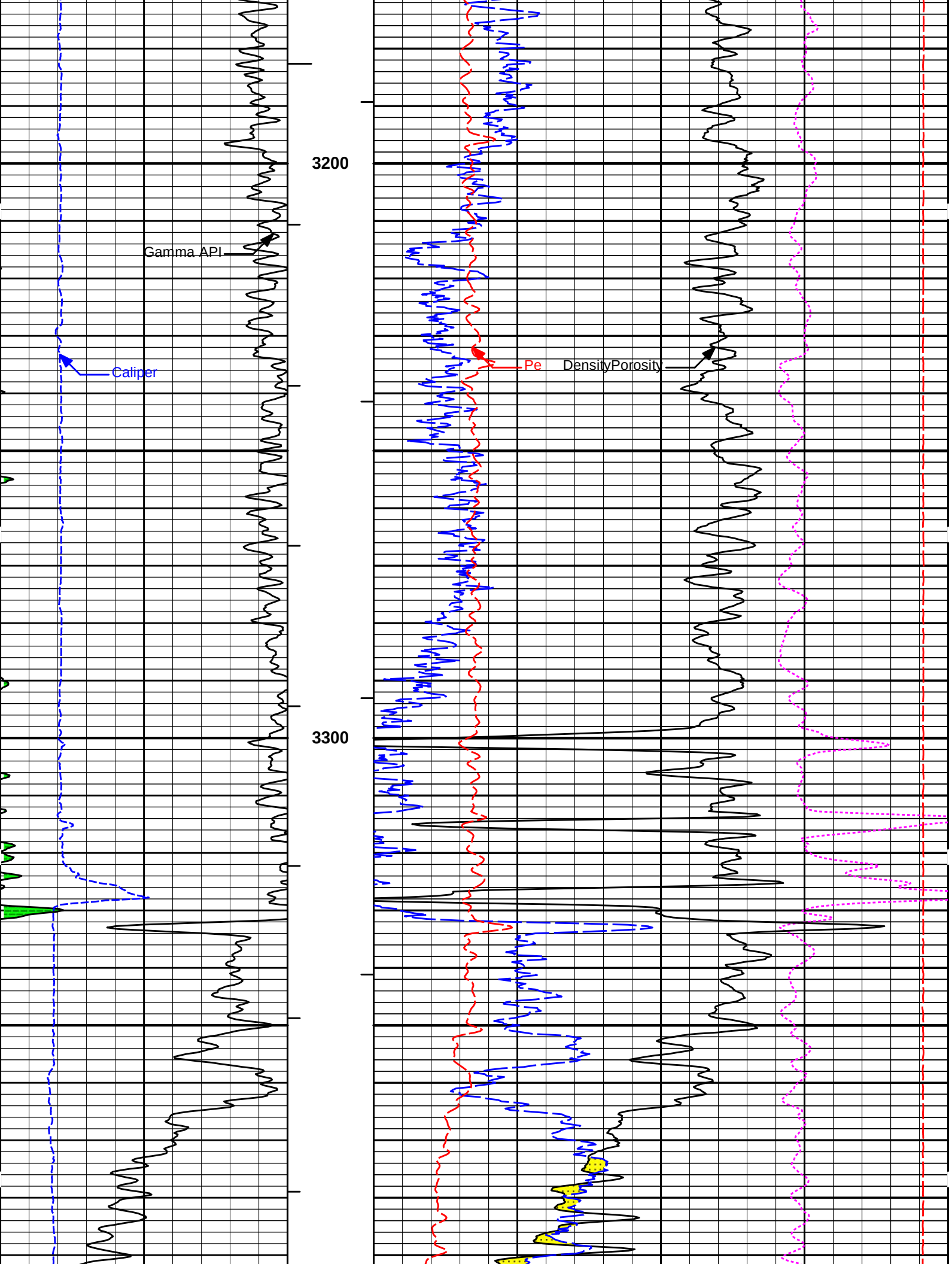
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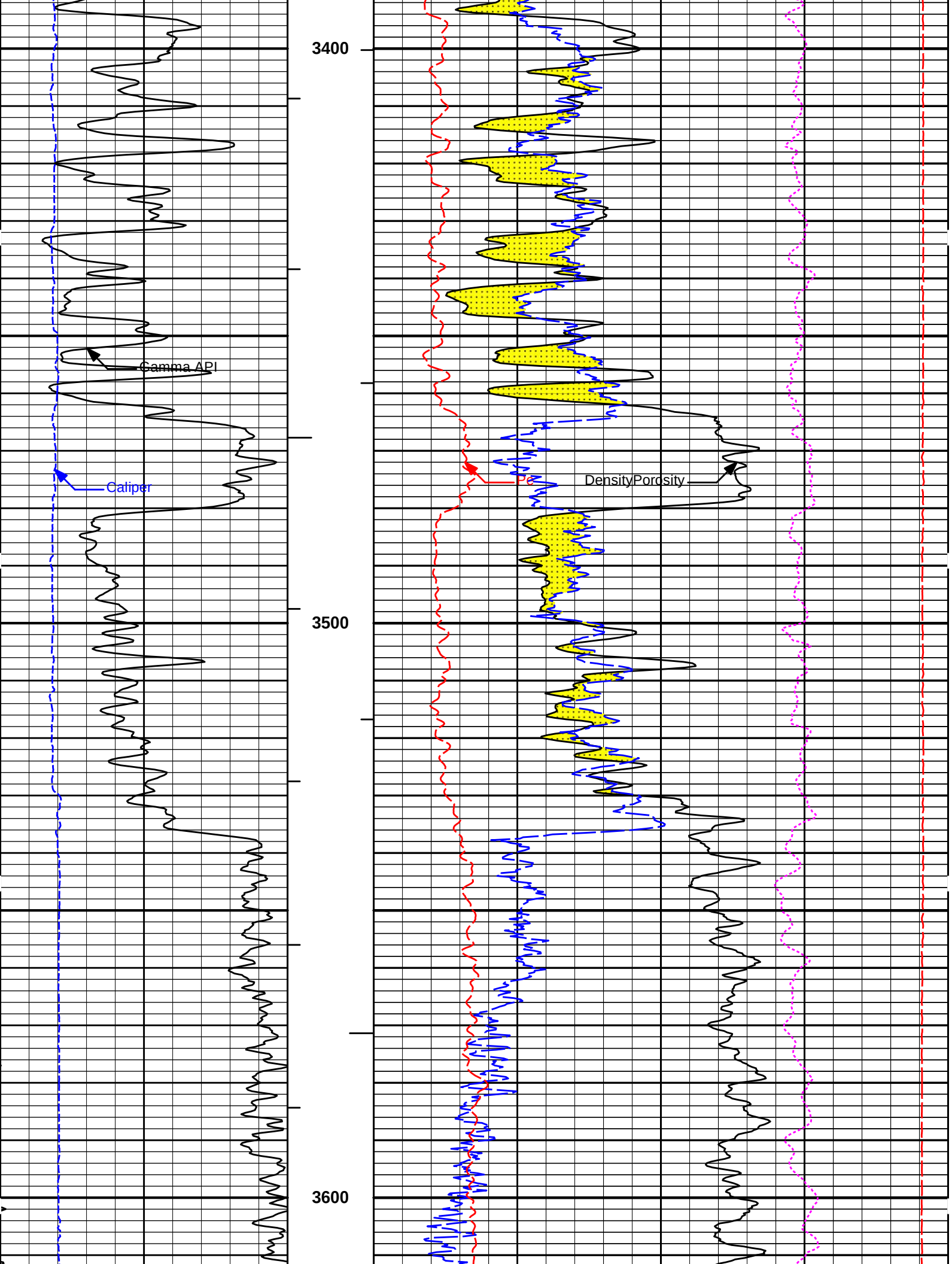
Gamma API
Caliper
Pe
DensityPorosity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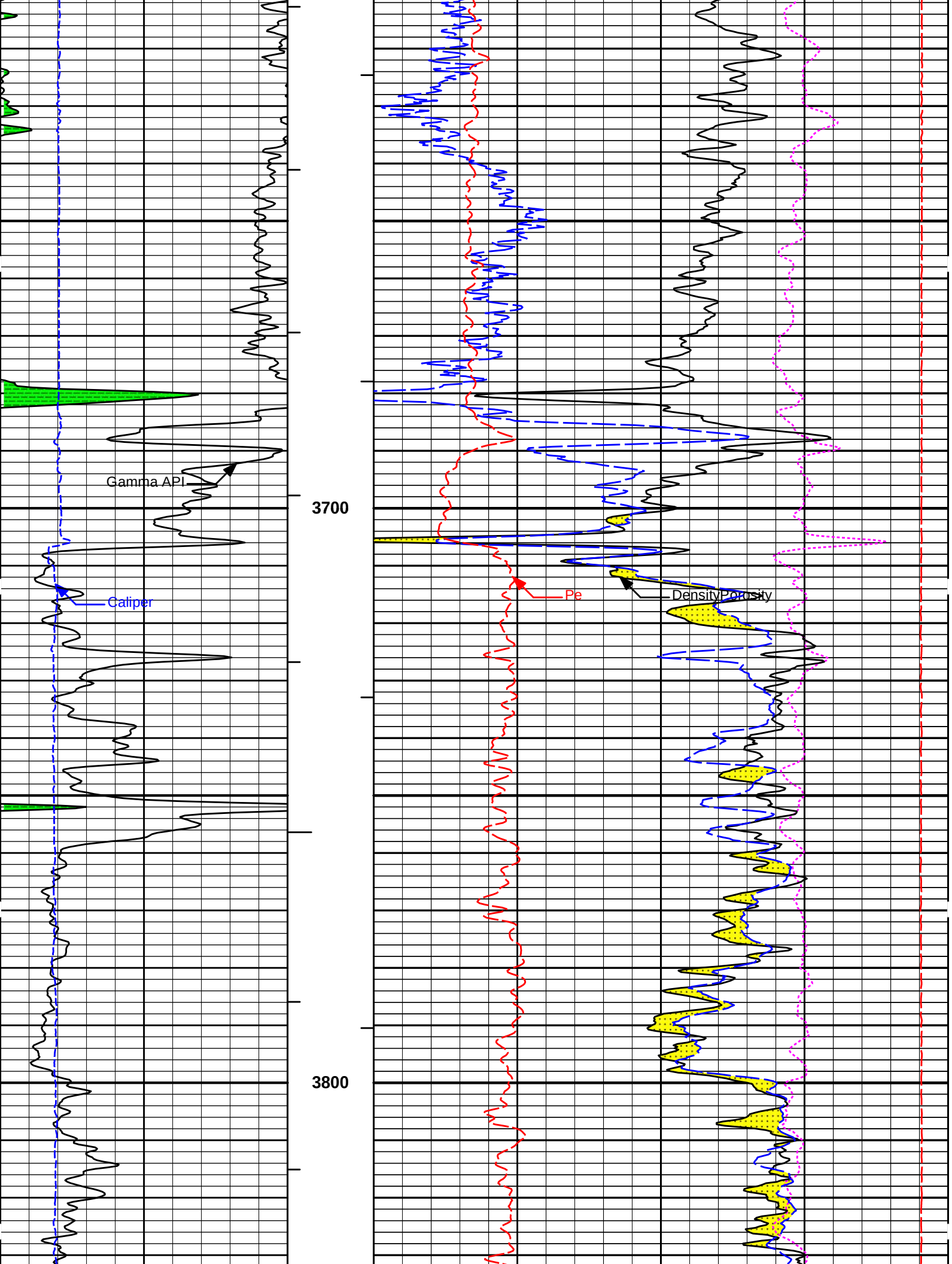
Caliper
Pe
DensityPorosity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Caliper
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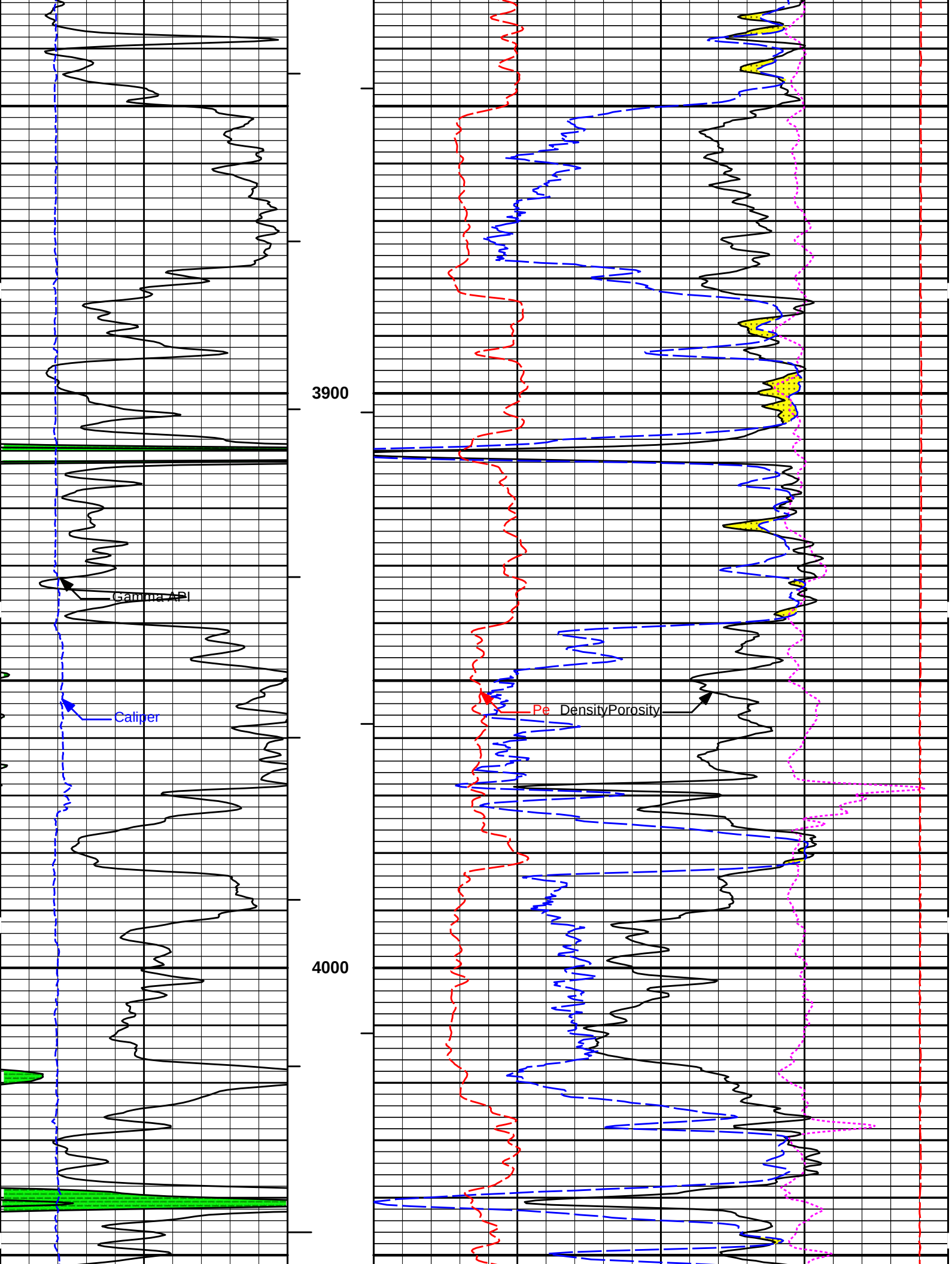
Pe
DensityPorosity
3800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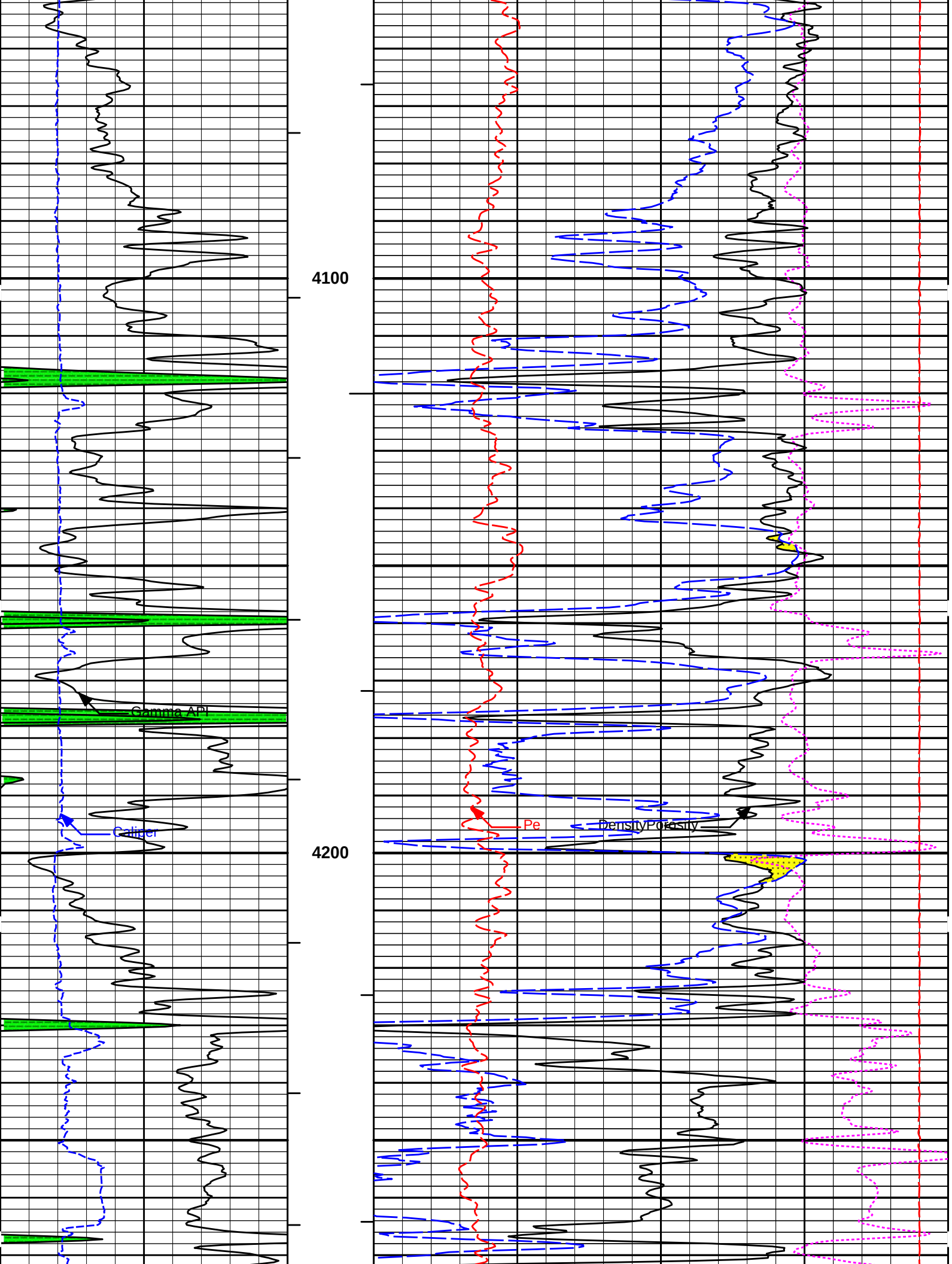
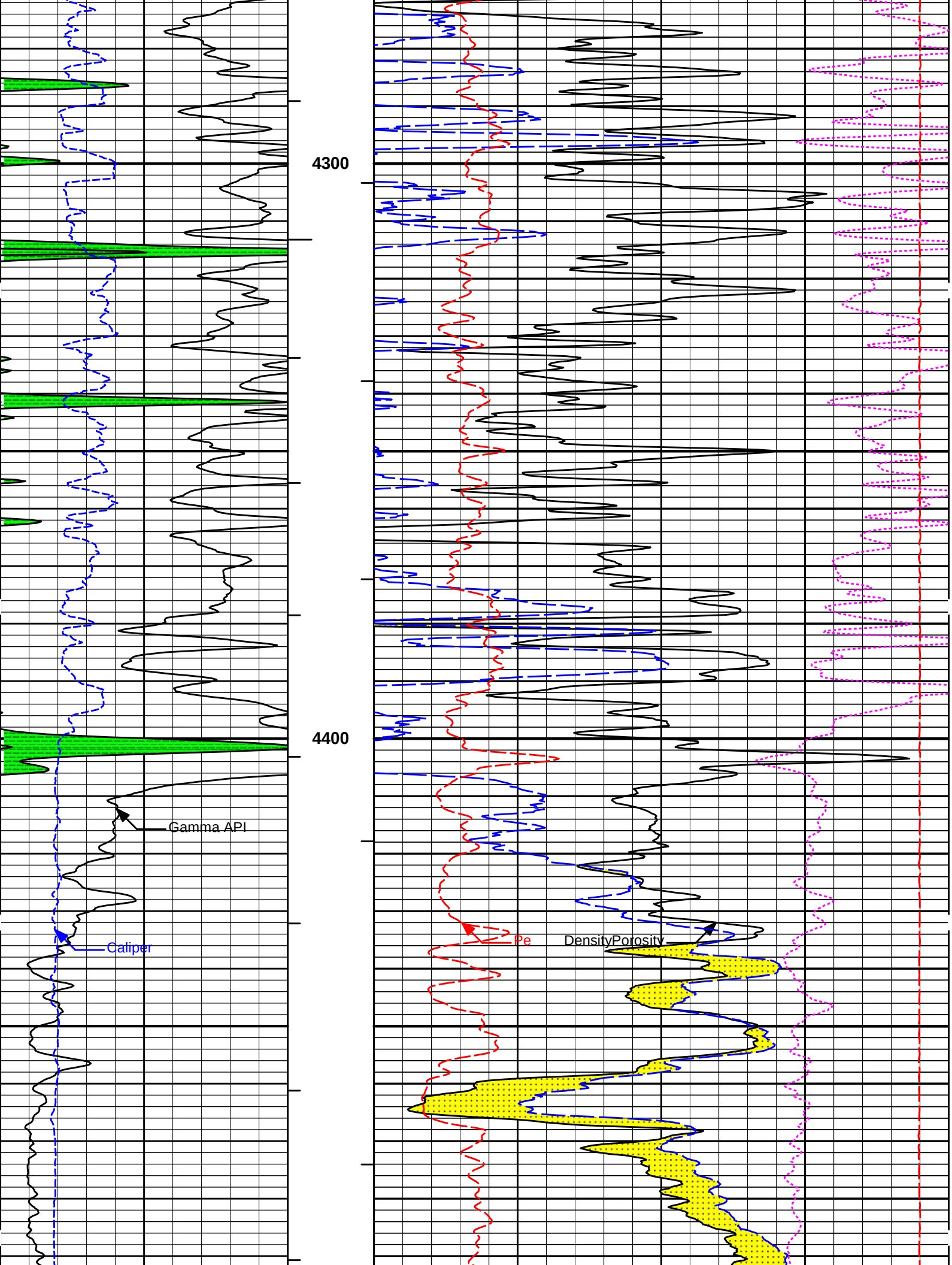
4000
Gamma API
Caliper
Pe
DensityPorosity


4100
4200
Gamma API
Caliper
Pe
DensityPorosity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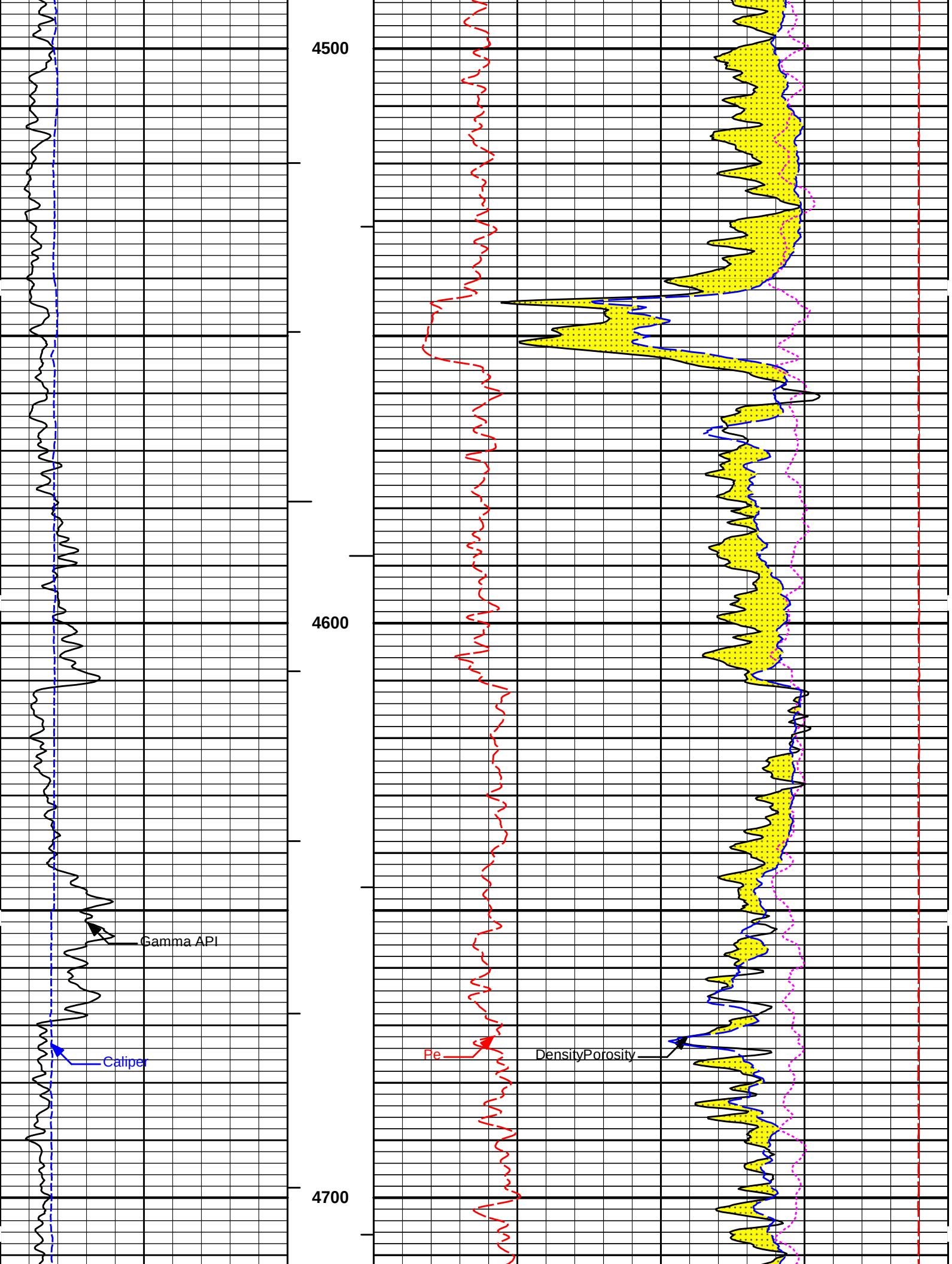
Gamma API
Caliper
Pe
DensityPorosity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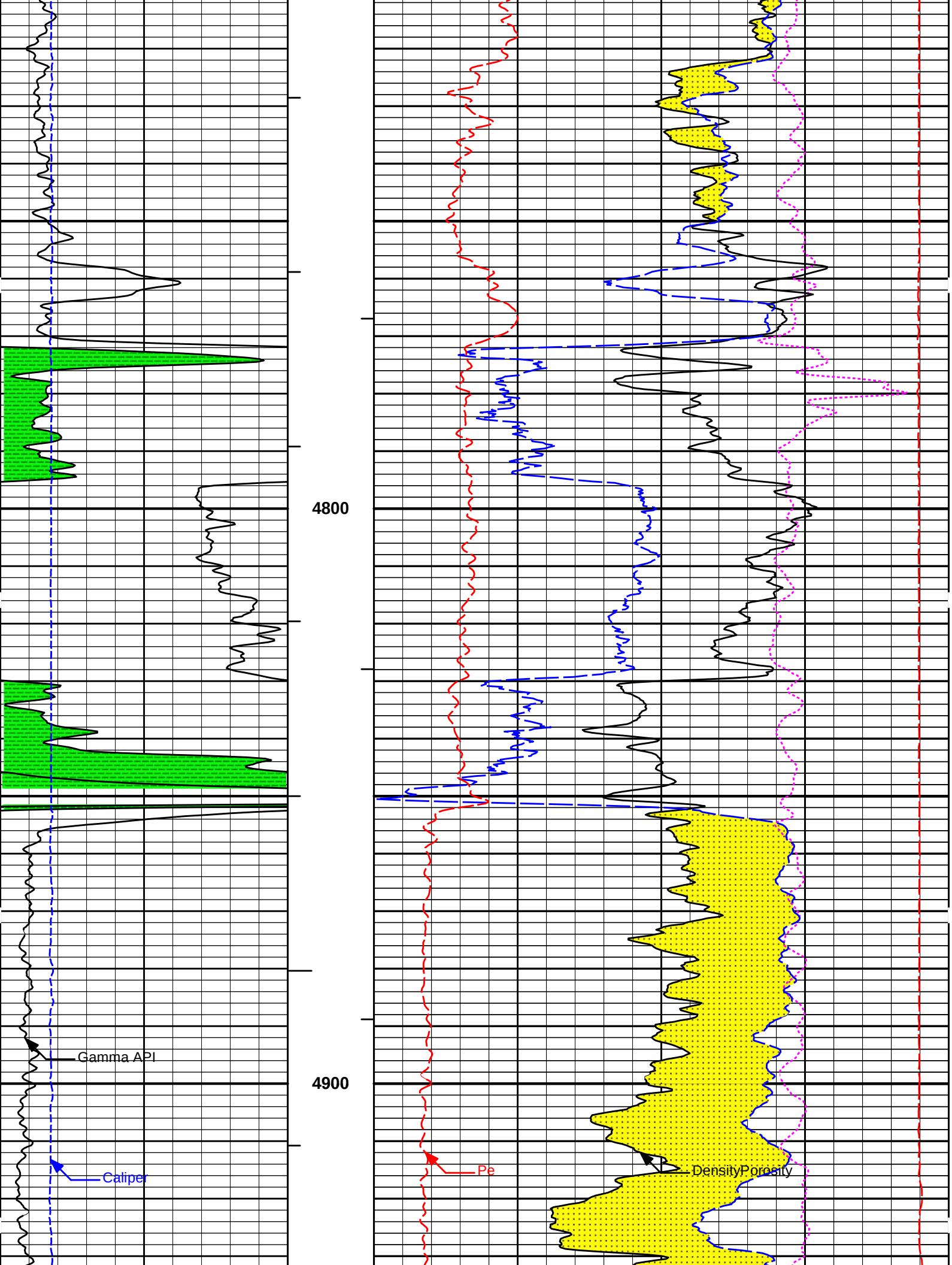
4600
4700
Gamma API
Caliper
Pe
DensityPorosity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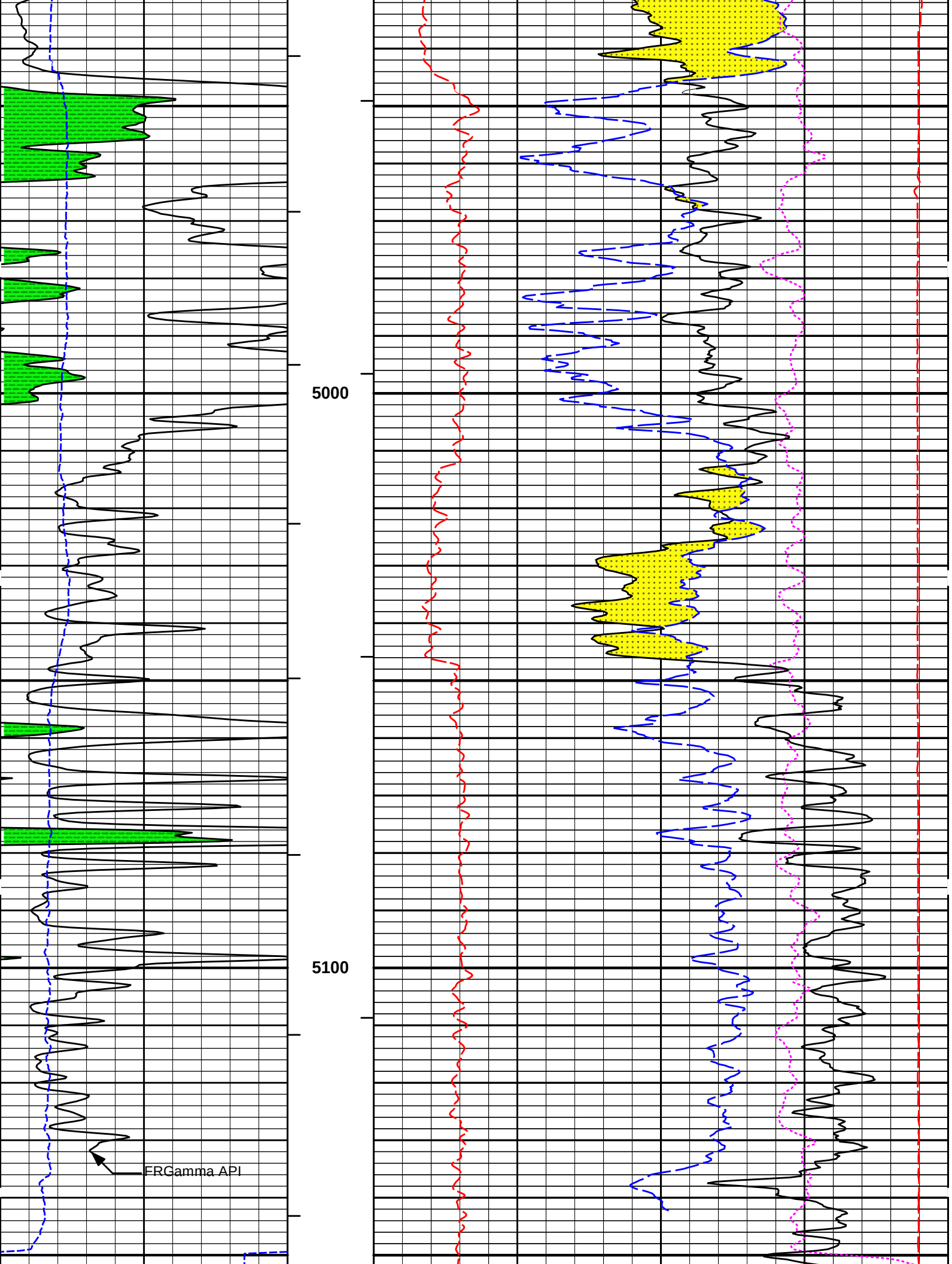
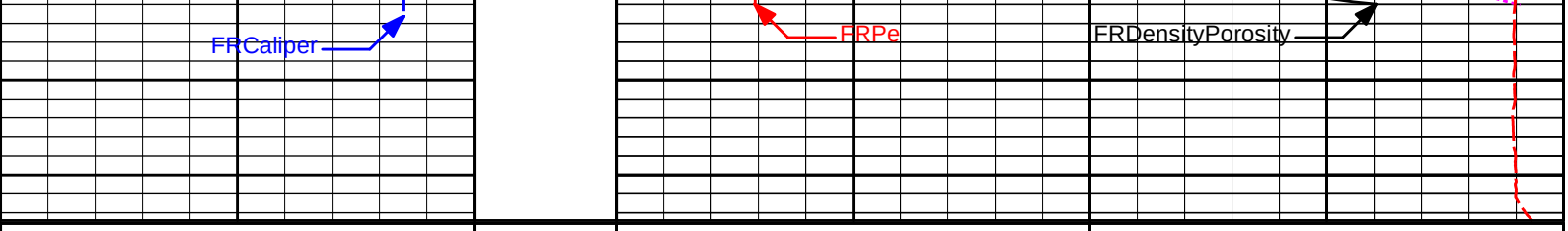
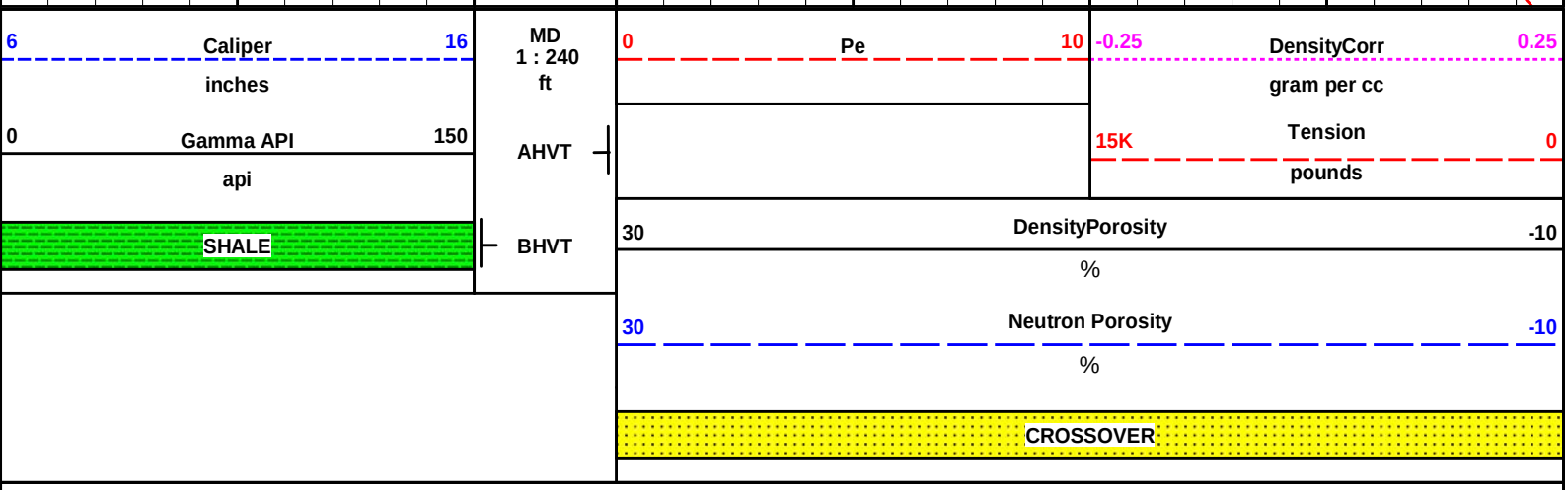
4900
Gamma API
Caliper
Pe
DensityPorosity


5000
5100
FRGamma API





HALLIBURTON

Plot Time: 07-May-14 12:15:45
Plot Range: 2500 ft to 5174.83 ft
Data: MURPHY_SWD_3404\Well Based\DETAIL1\
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

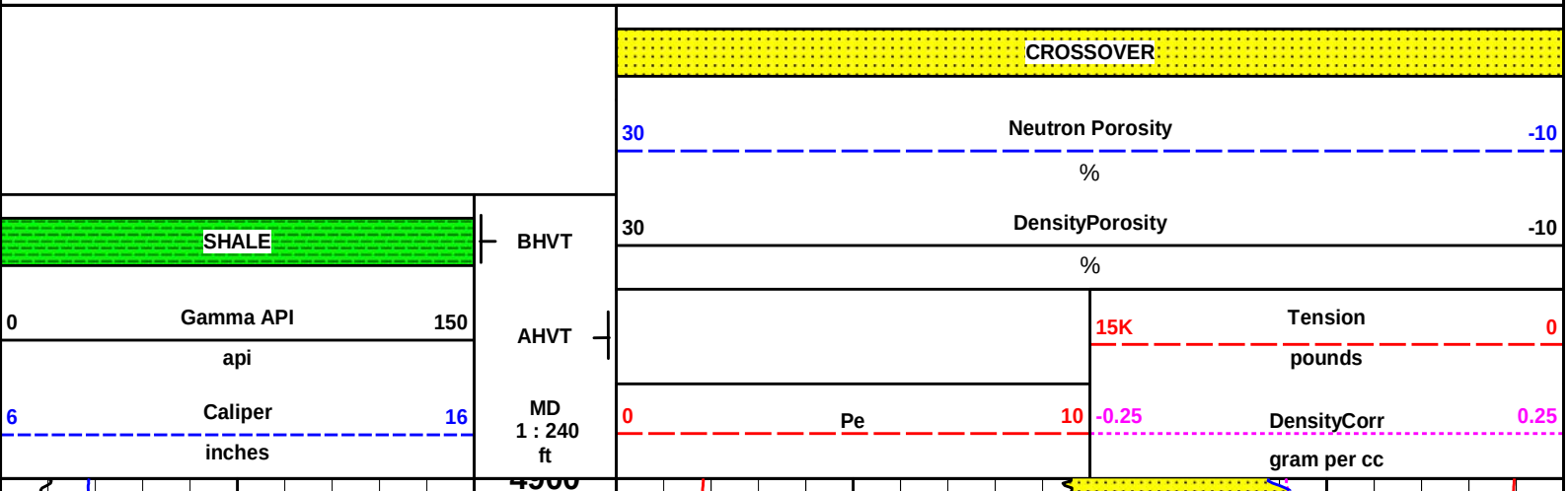
5 INCH MAIN LOG

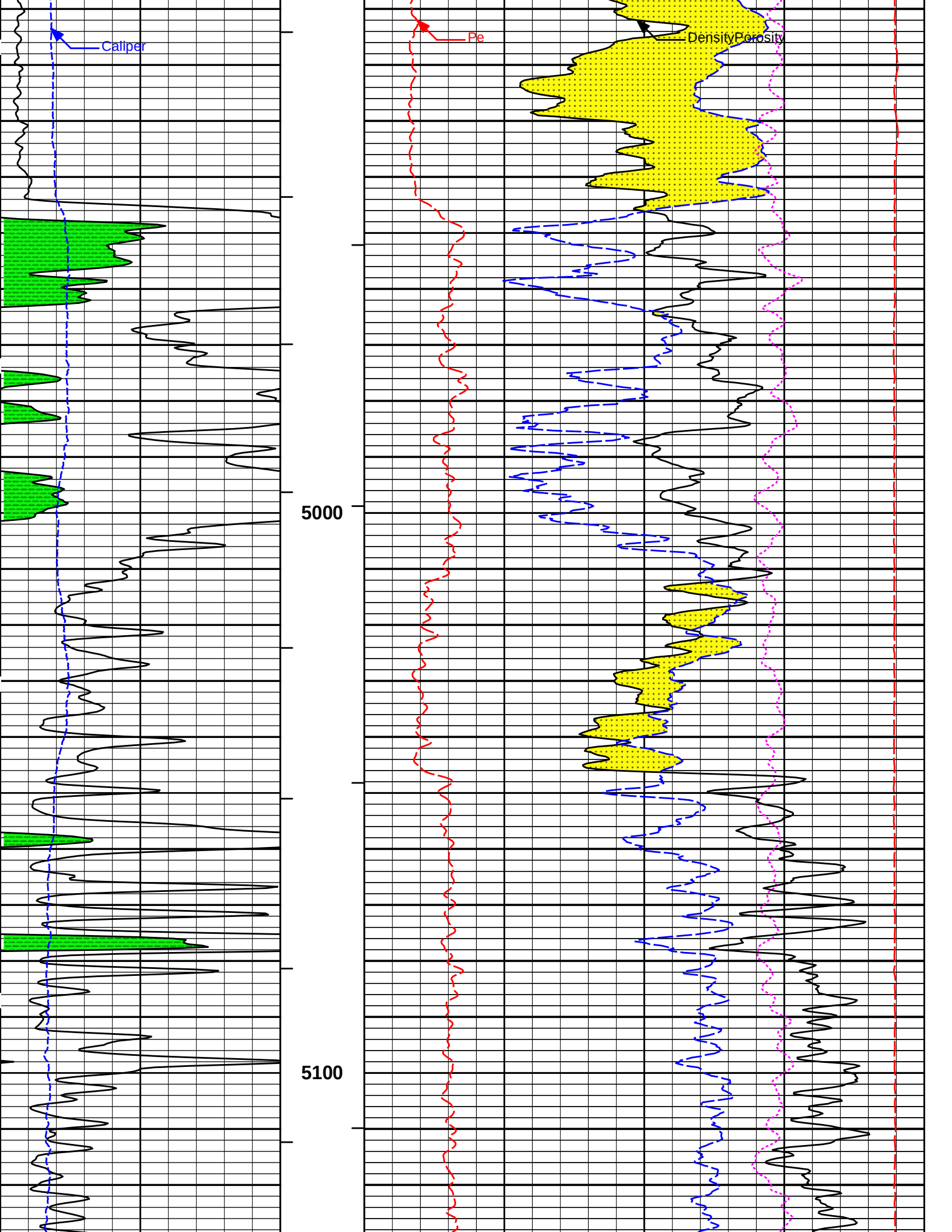
MEASURED DEPTH
MAIN SECTION 5" PER 100'

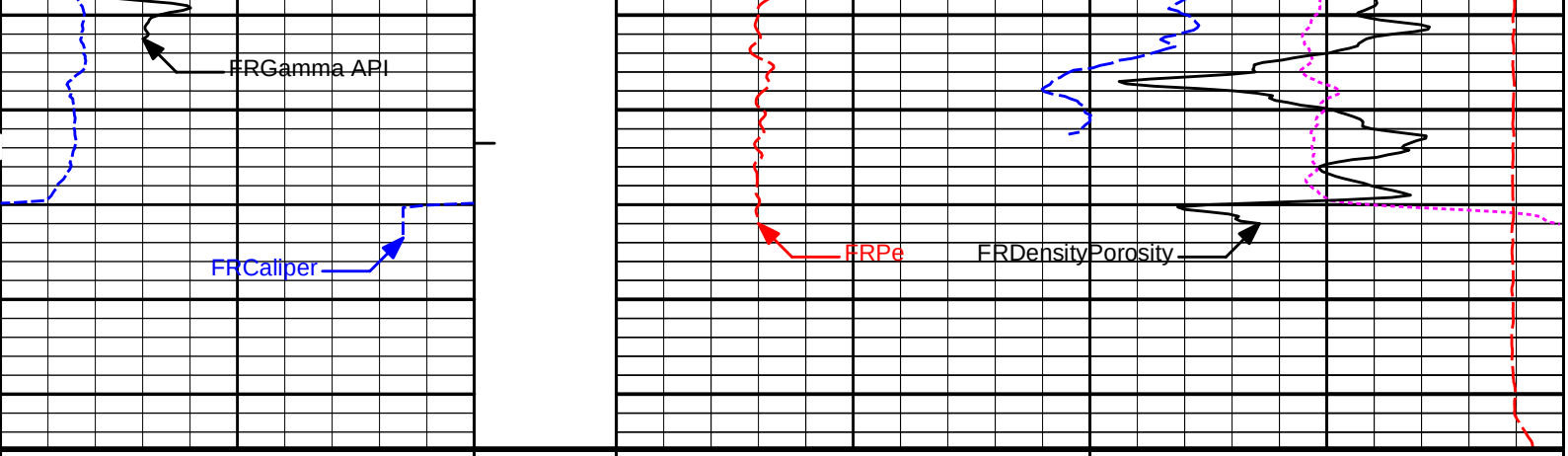
HALLIBURTON

Plot Time: 07-May-14 12:15:45
Plot Range: 4900 ft to 5175.67 ft
Data: MURPHY_SWD_3404\Well Based\REPEAT1\
Plot File: \\PORO\Poro_IQ_5_REP_LIB

REPEAT SECTION




Caliper
Pe
DensityPorosity
5000
5100



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

-0.25 DensityCorr 0.25
gram per cc

HALLIBURTON

Plot Time: 07-May-14 12:15:46
Plot Range: 4900 ft to 5175.67 ft
Data: MURPHY_SWD_3404\Well Based\REPEAT1\
Plot File: \\PORO\Poro_IQ_5_REP_LIB

REPEAT SECTION

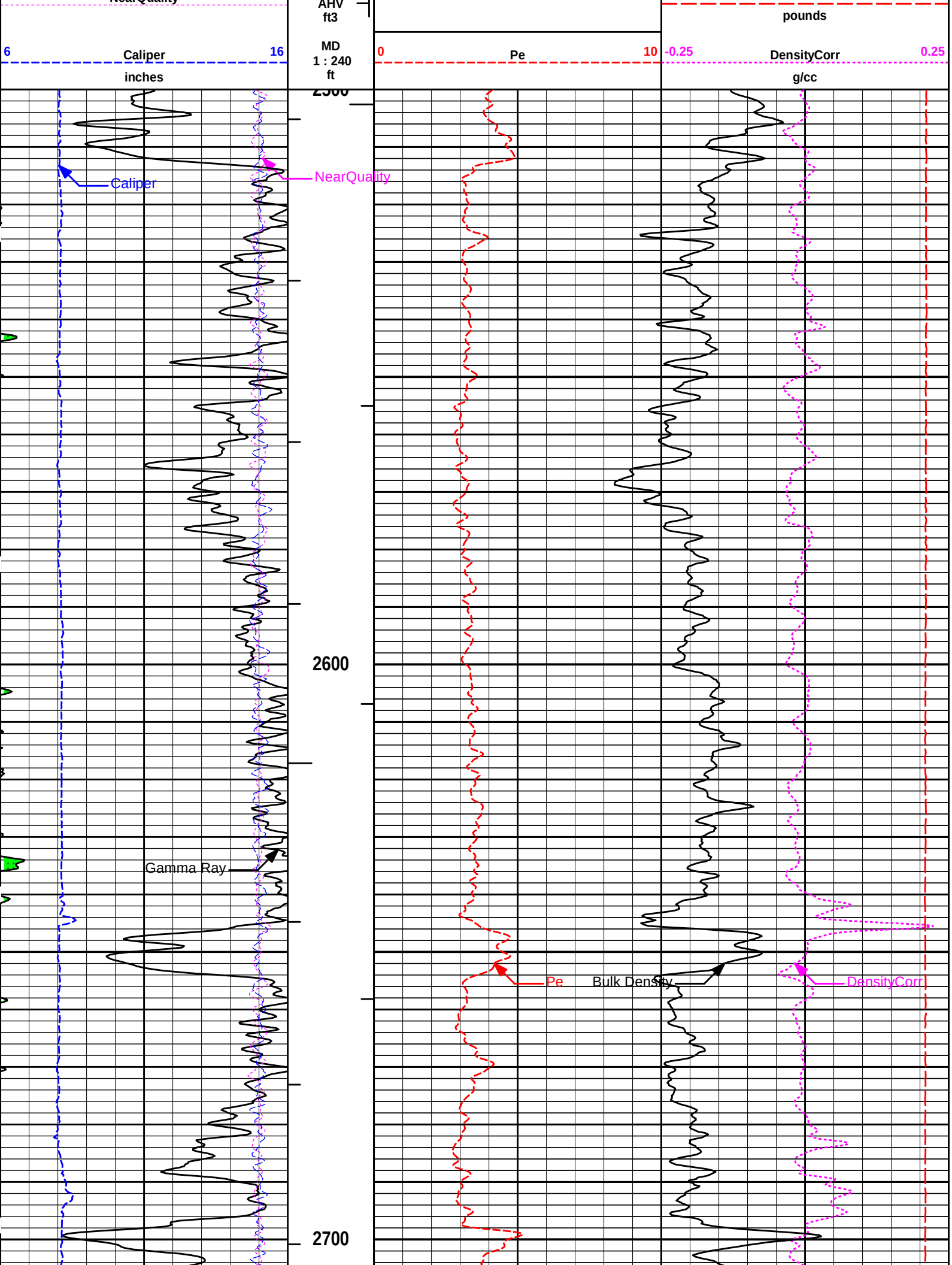
HALLIBURTON

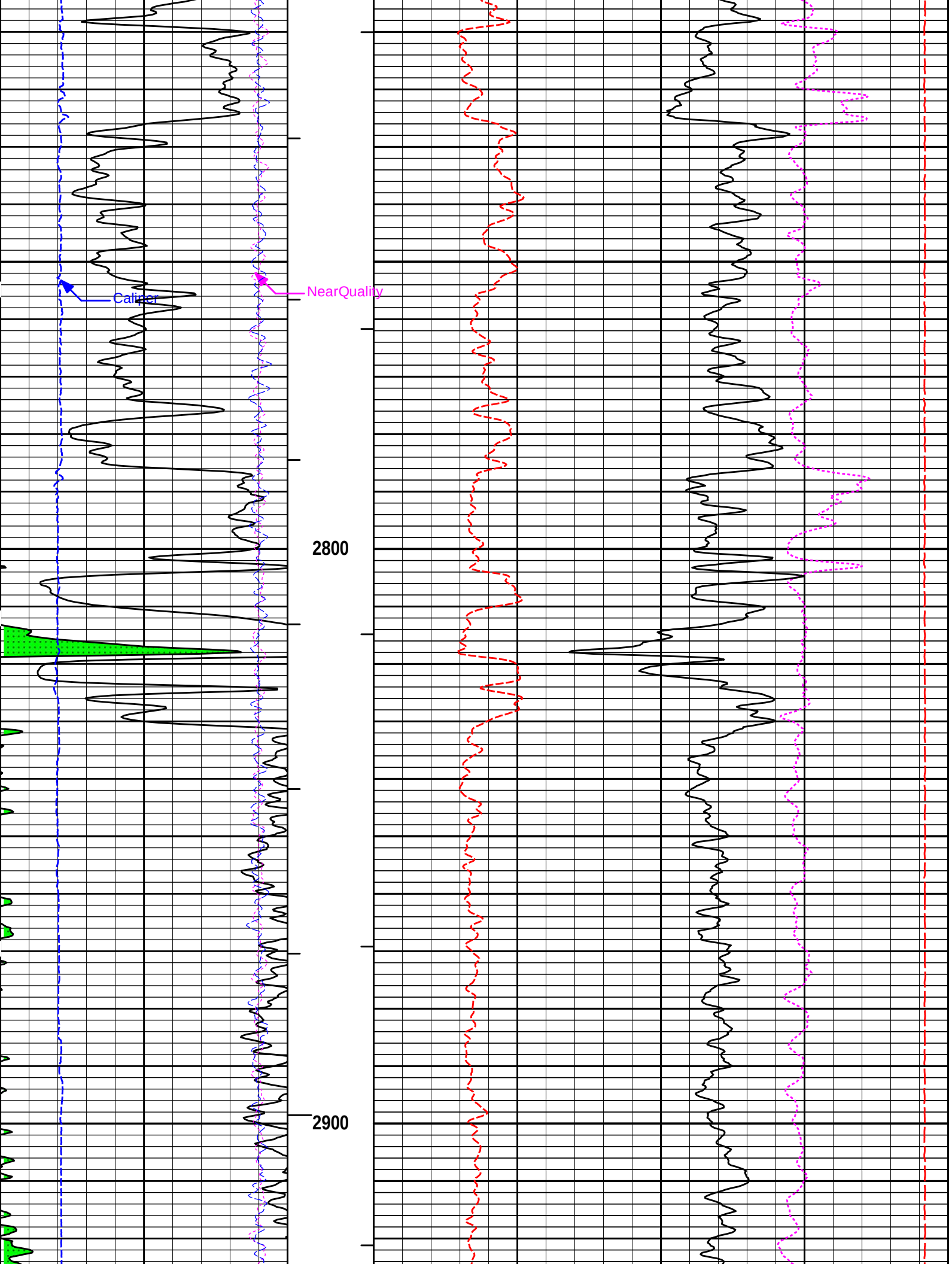
Plot Time: 07-May-14 12:15:47
Plot Range: 2500 ft to 5174.83 ft
Data: MURPHY_SWD_3404\Well Based\DETAIL1\
Plot File: \\-LOCAL-\MURPHY_SWD_3404\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\BULKD_5_MAIN_LIB

5 INCH MAIN LOG

MEASURED DEPTH
MAIN SECTION 5" PER 100'

SHALE		
0 Gamma Ray 150		
api		
18 FarQuality -2	BHV ft3	2 Bulk Density 3
		g/cc
-18 NearQuality 2		15K Tension 0


NearQuality
AHV
ft3
pounds
6
Caliper
16
MD
1 : 240
ft
0
Pe
10
-0.25
DensityCorr
0.25
inches
g/cc
Caliper
NearQuality
2600
Gamma Ray
Pe
Bulk Density
DensityCorr
2700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NearQuality
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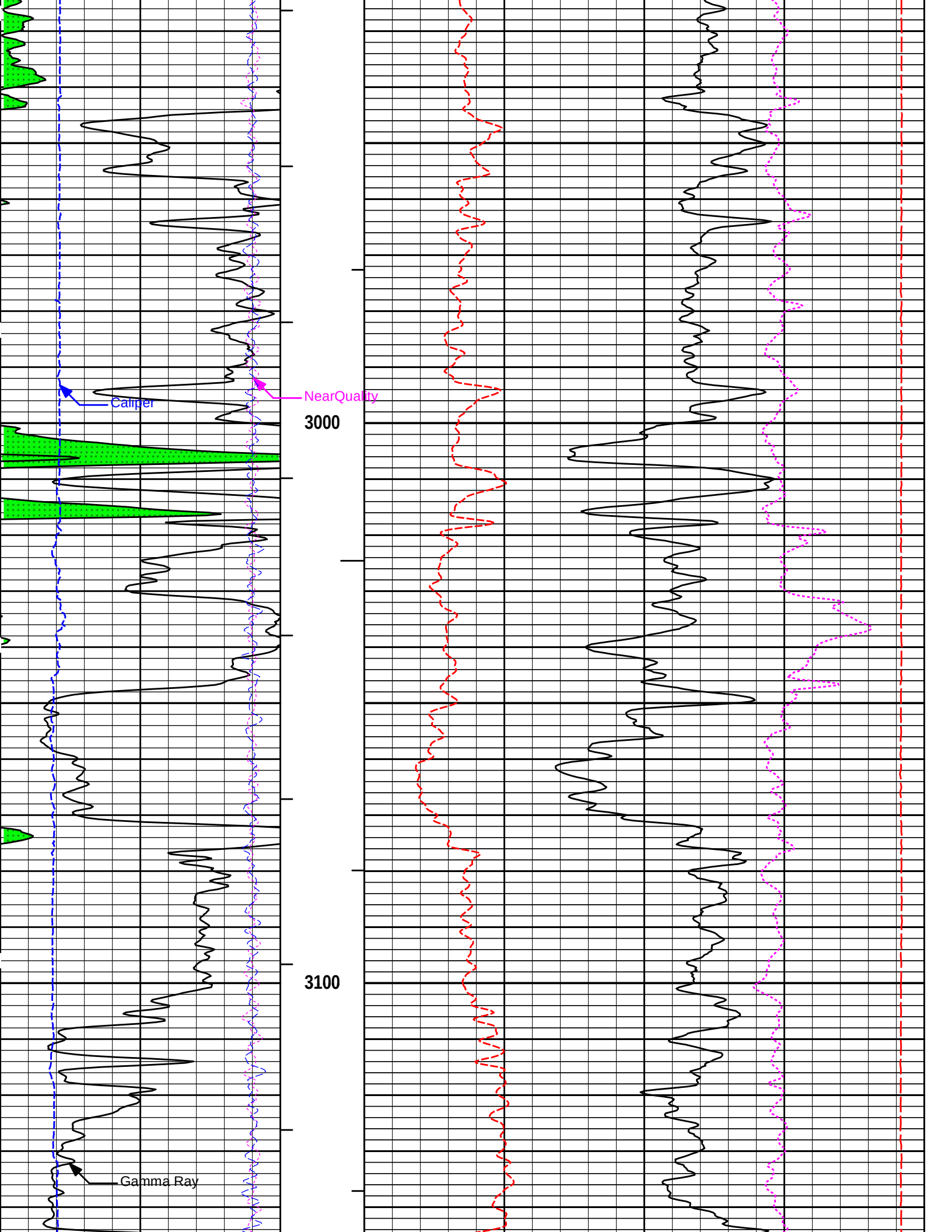
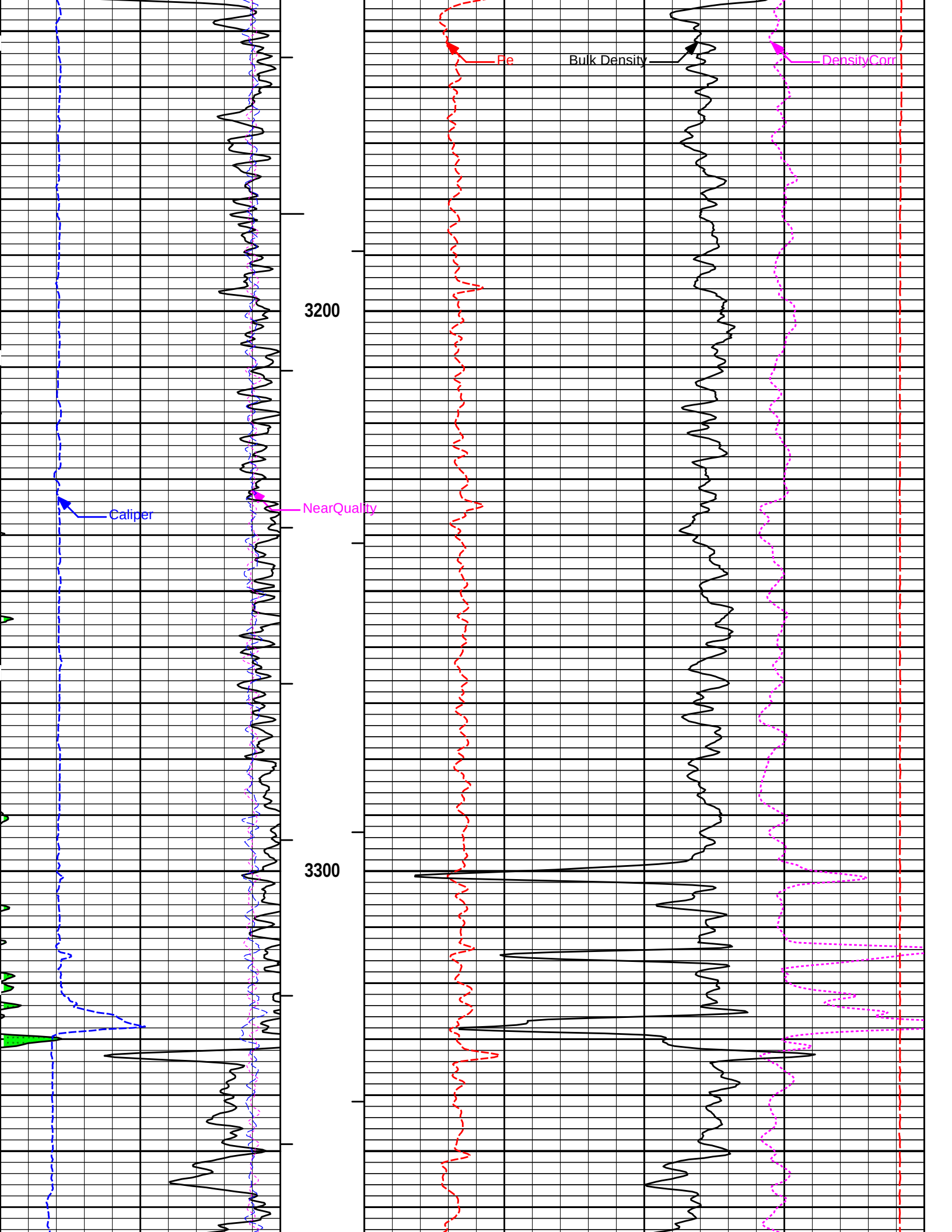
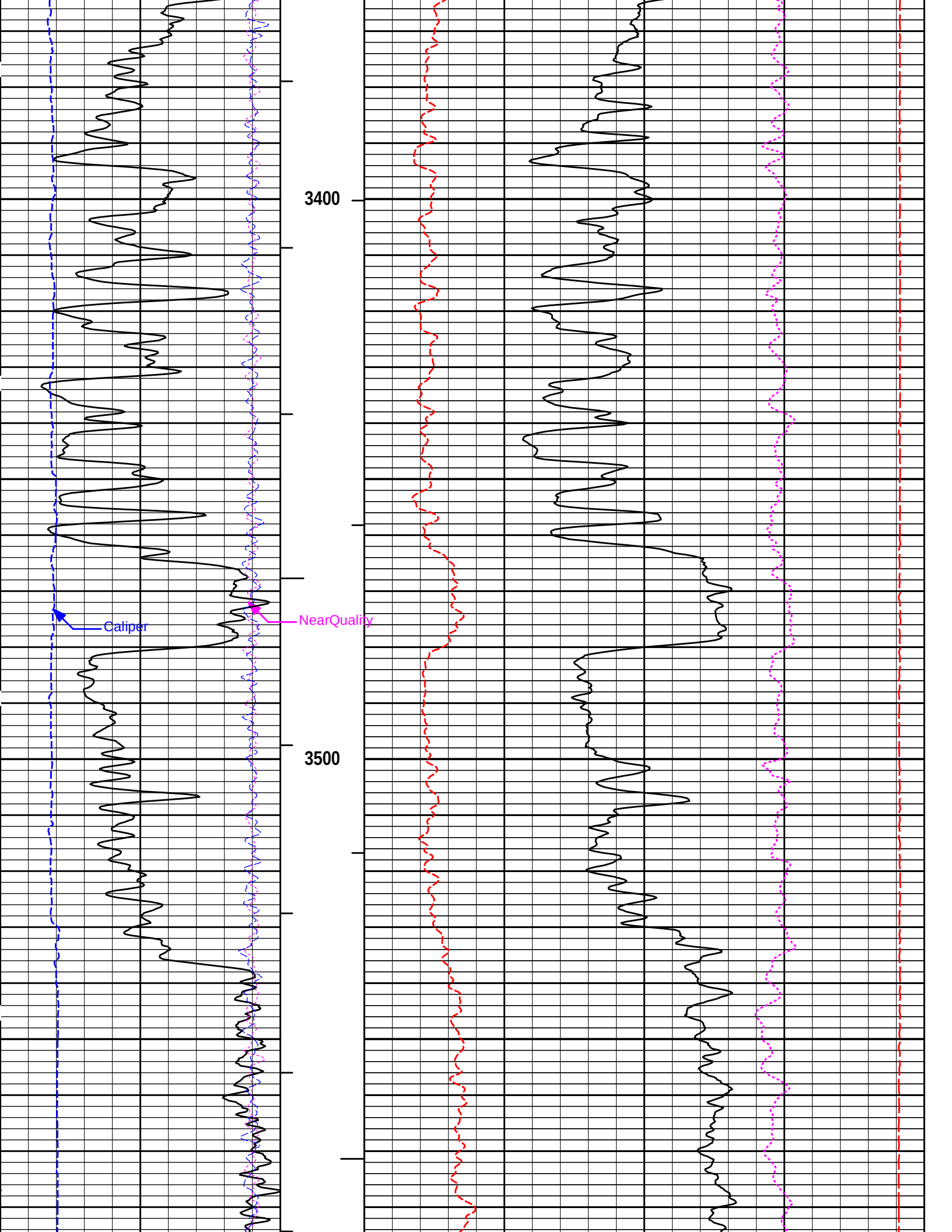
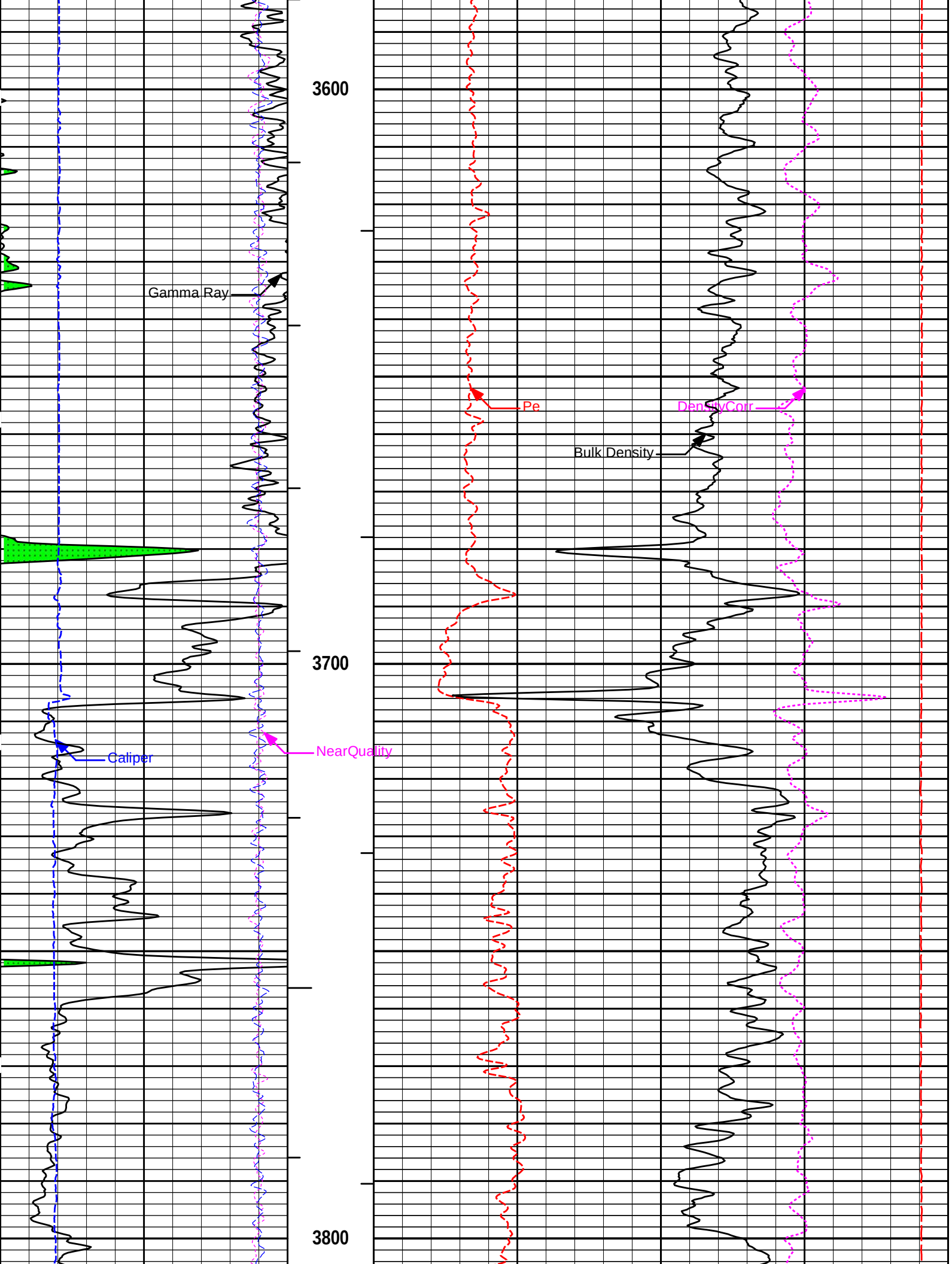
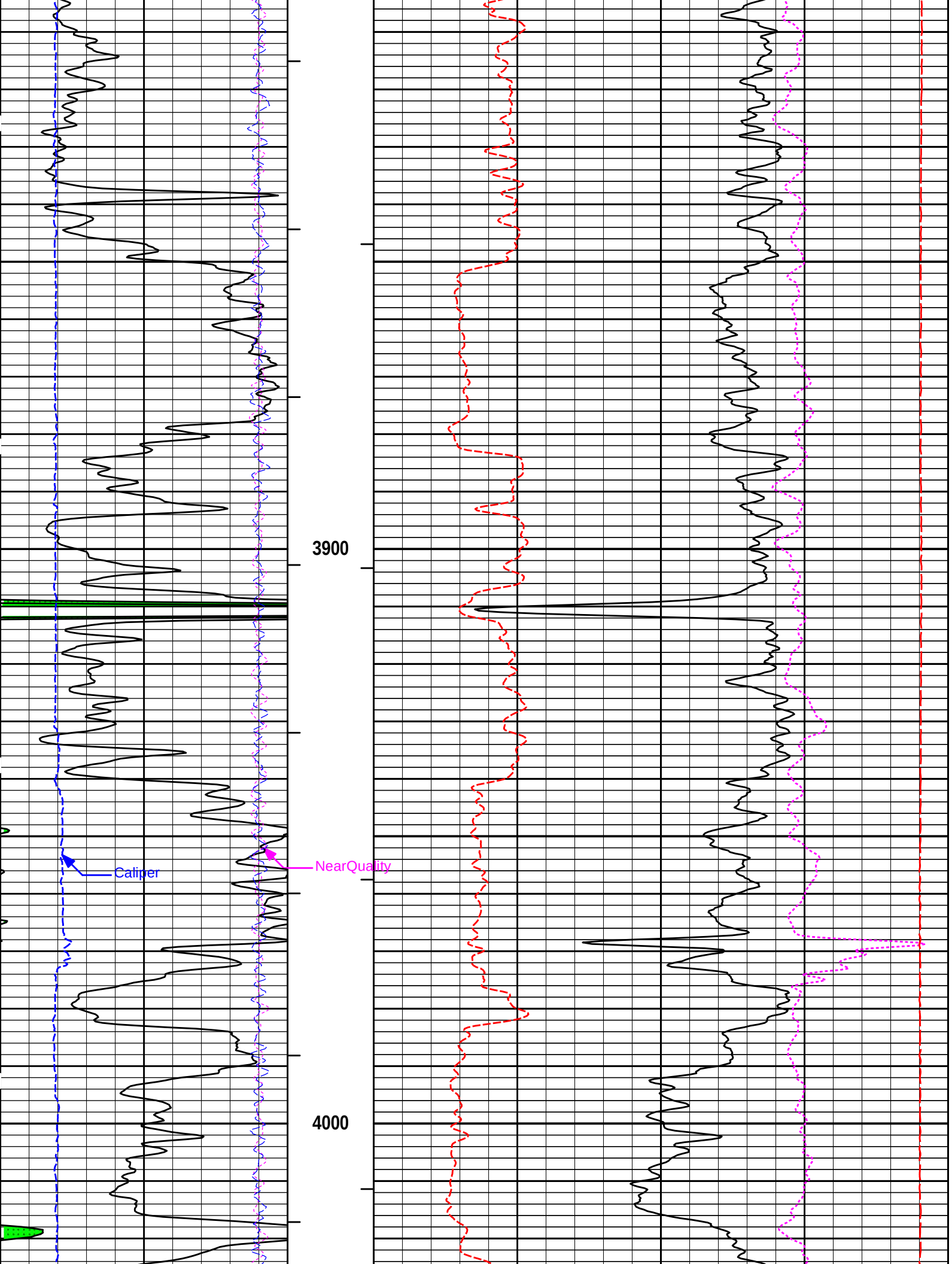
2900

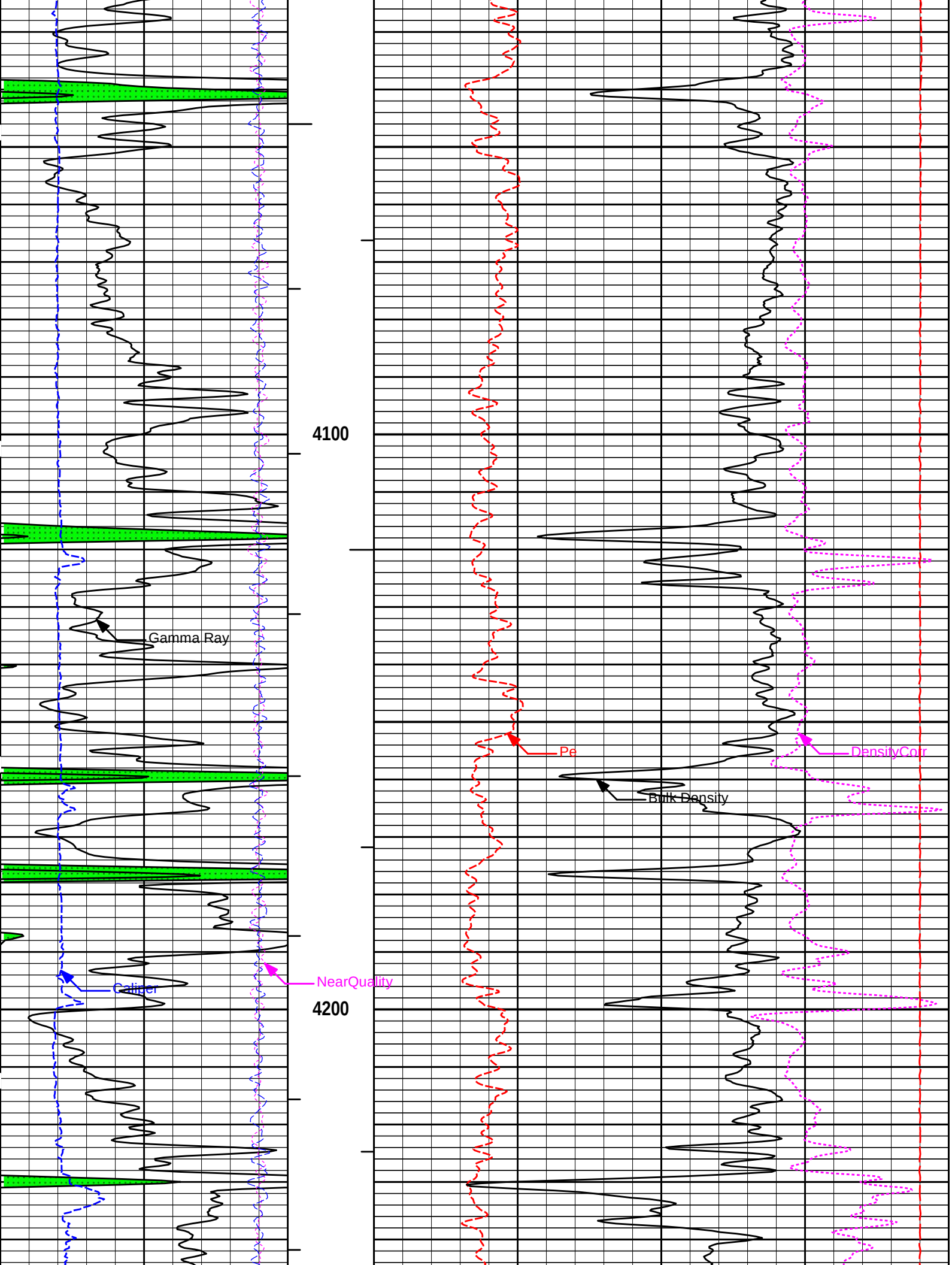

Caliper
NearQuality
3000
3100
Gamma Ray

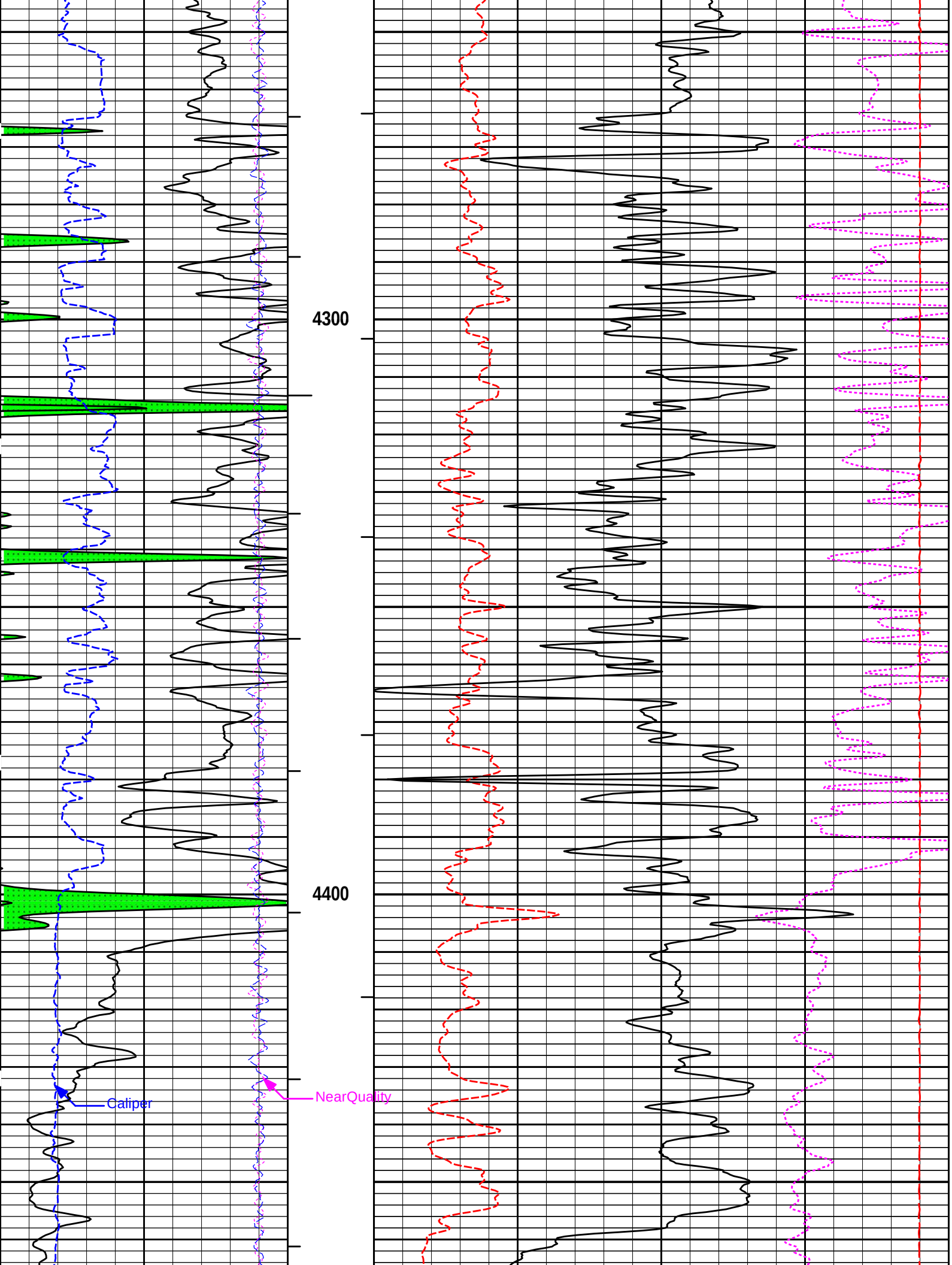

Pe
Bulk Density
DensityCorr
3200
Caliper
NearQuality
3300

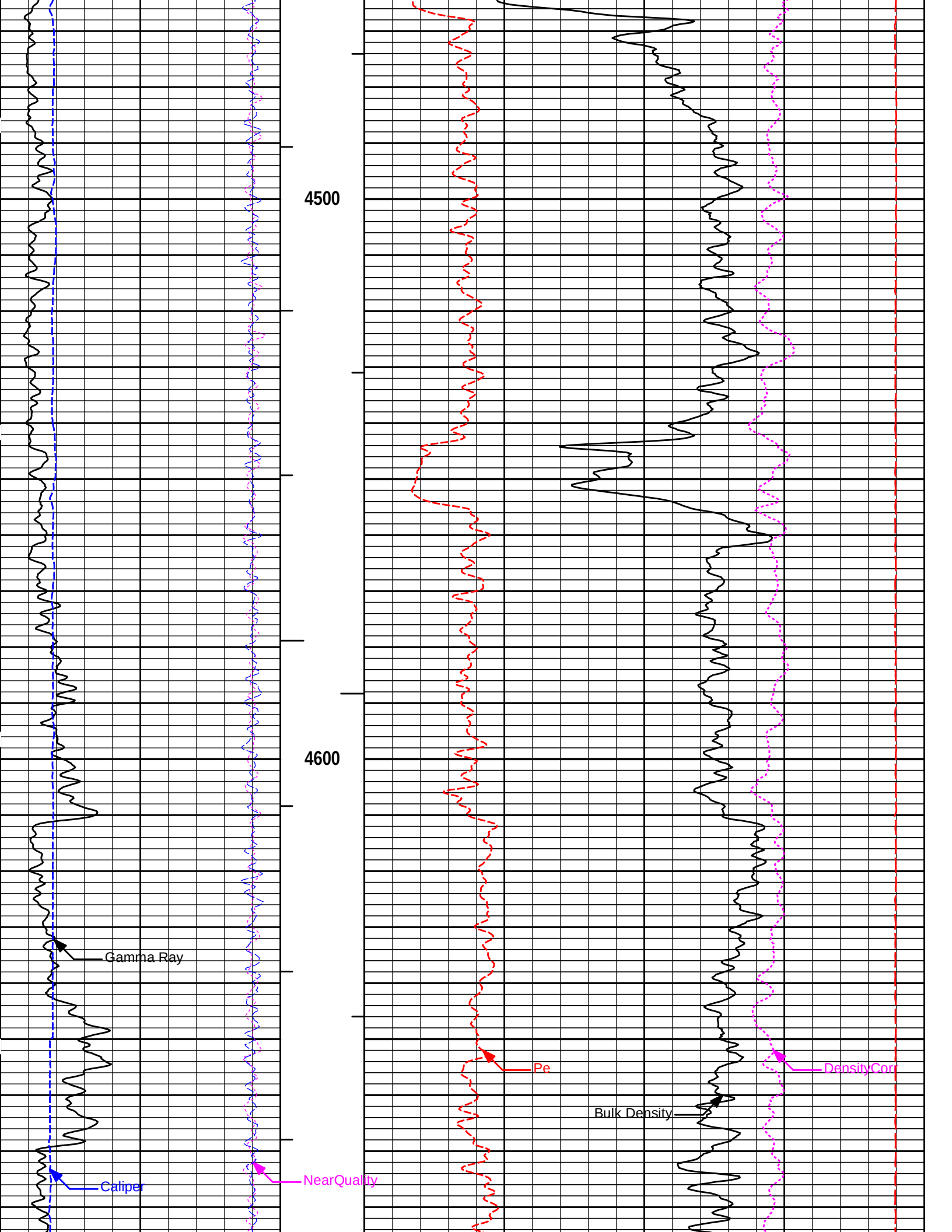

3400
3500
Caliper
NearQuality

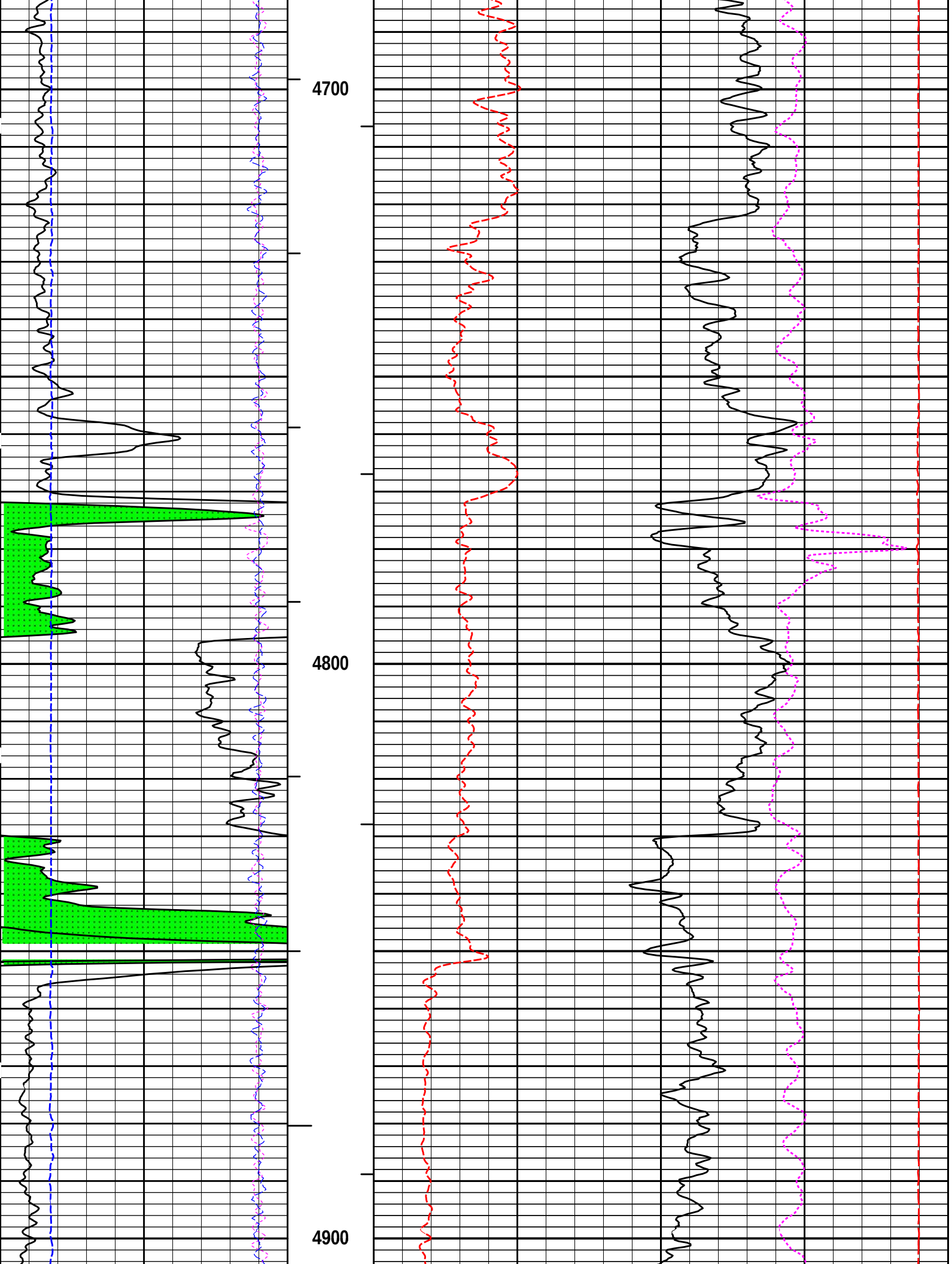

3600
3700
3800
Gamma Ray
Caliper
NearQuality
Pe
DensityCorr
Bulk Density


3900
4000
Caliper
NearQuality


4100
4200
Gamma Ray
Caliper
NearQuality
Pe
Bulk Density
DensityCorr


4300
4400
Caliper
NearQuality


4500
4600
Gamma Ray
Caliper
NearQuality
Pe
Bulk Density
DensityCorr


4700
4800
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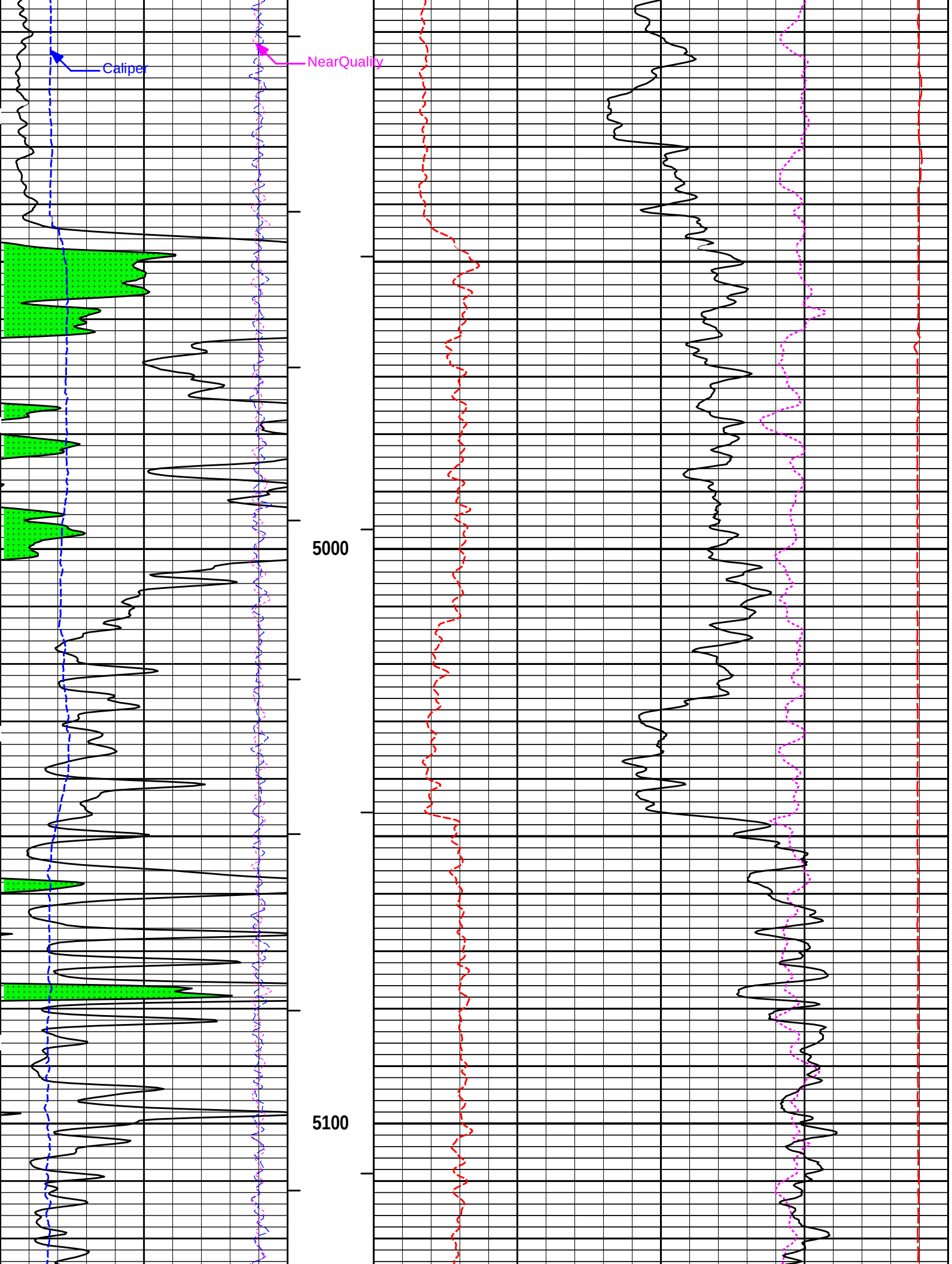
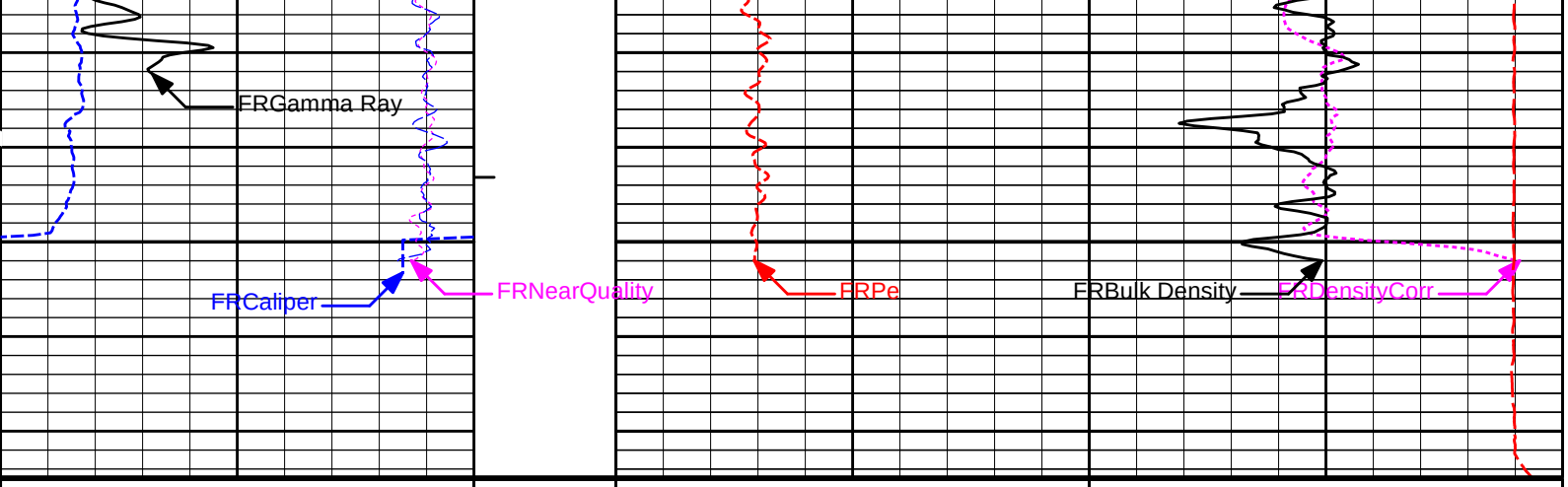

Caliper
NearQuality
5000
5100



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: 07-May-14 12:15:49
Plot Range: 2500 ft to 5174.83 ft
Data: MURPHY_SWD_3404\Well Based\DETAIL1\
Plot File: \\-LOCAL-\MURPHY_SWD_3404\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\BULKD_5_MAIN_LIB

5 INCH MAIN LOG

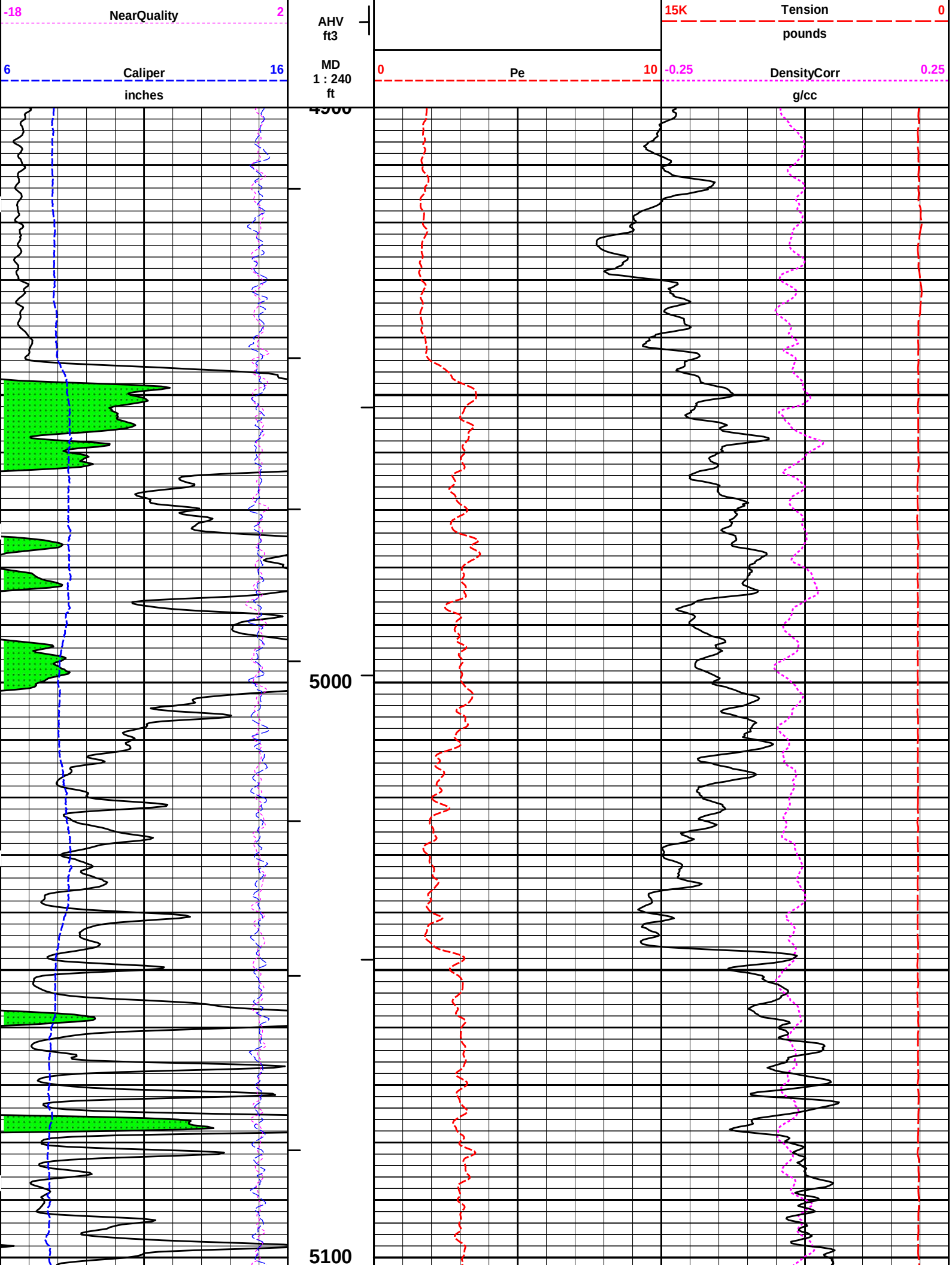
MEASURED DEPTH
MAIN SECTION 5" PER 100'

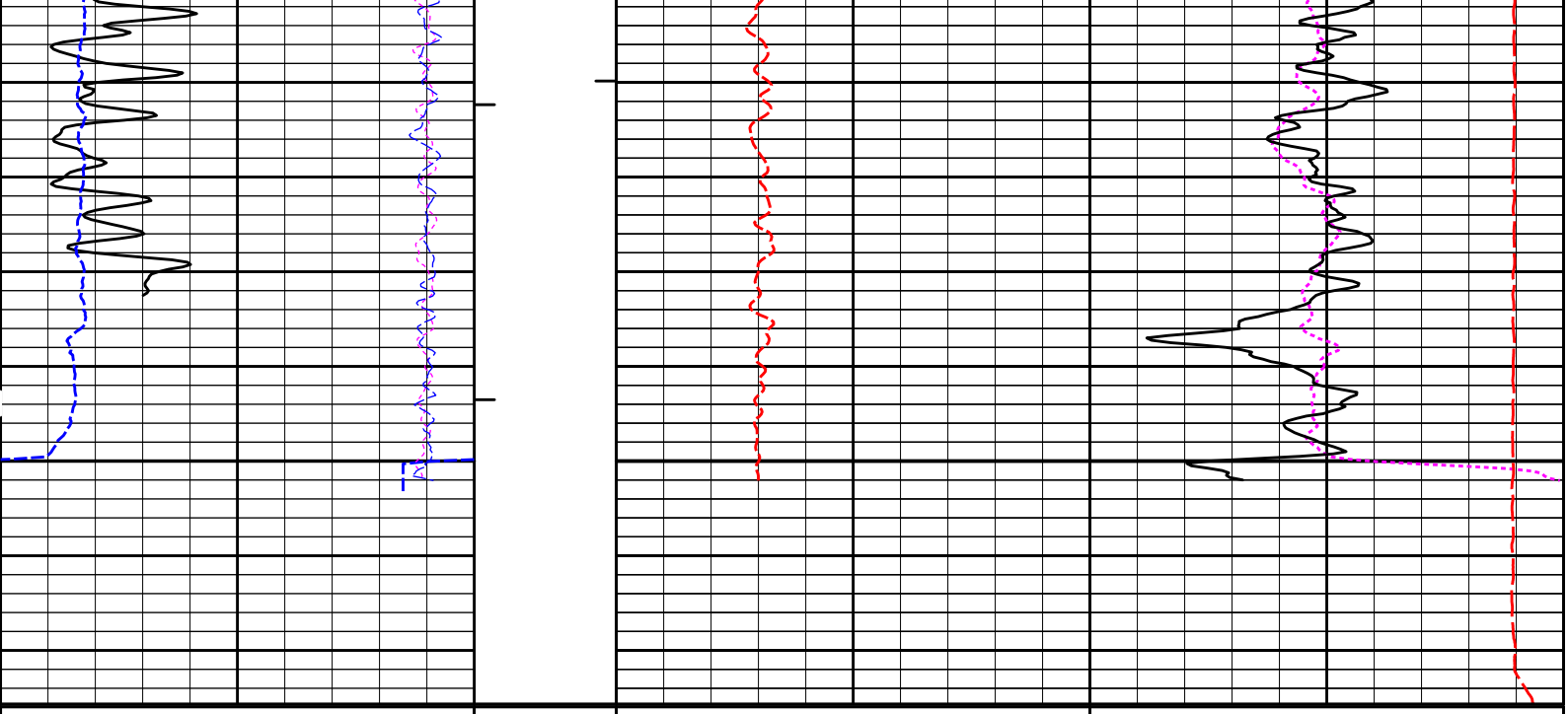
HALLIBURTON

Plot Time: 07-May-14 12:15:49
Plot Range: 4900 ft to 5175.67 ft
Data: MURPHY_SWD_3404\Well Based\REPEAT1\
Plot File: \\-LOCAL-\MURPHY_SWD_3404\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\BULKD_5_REP_LIB

REPEAT SECTION

SHALE		
0 Gamma Ray 150		
api		
18 FarQuality -2	BHV ft3	2 Bulk Density 3
		g/cc


-18
NearQuality
2
6
Caliper
16
inches
AHV
ft3
MD
1 : 240
ft
0
Pe
10
15K
Tension
0
pounds
-0.25
DensityCorr
0.25
g/cc
5000
5100



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

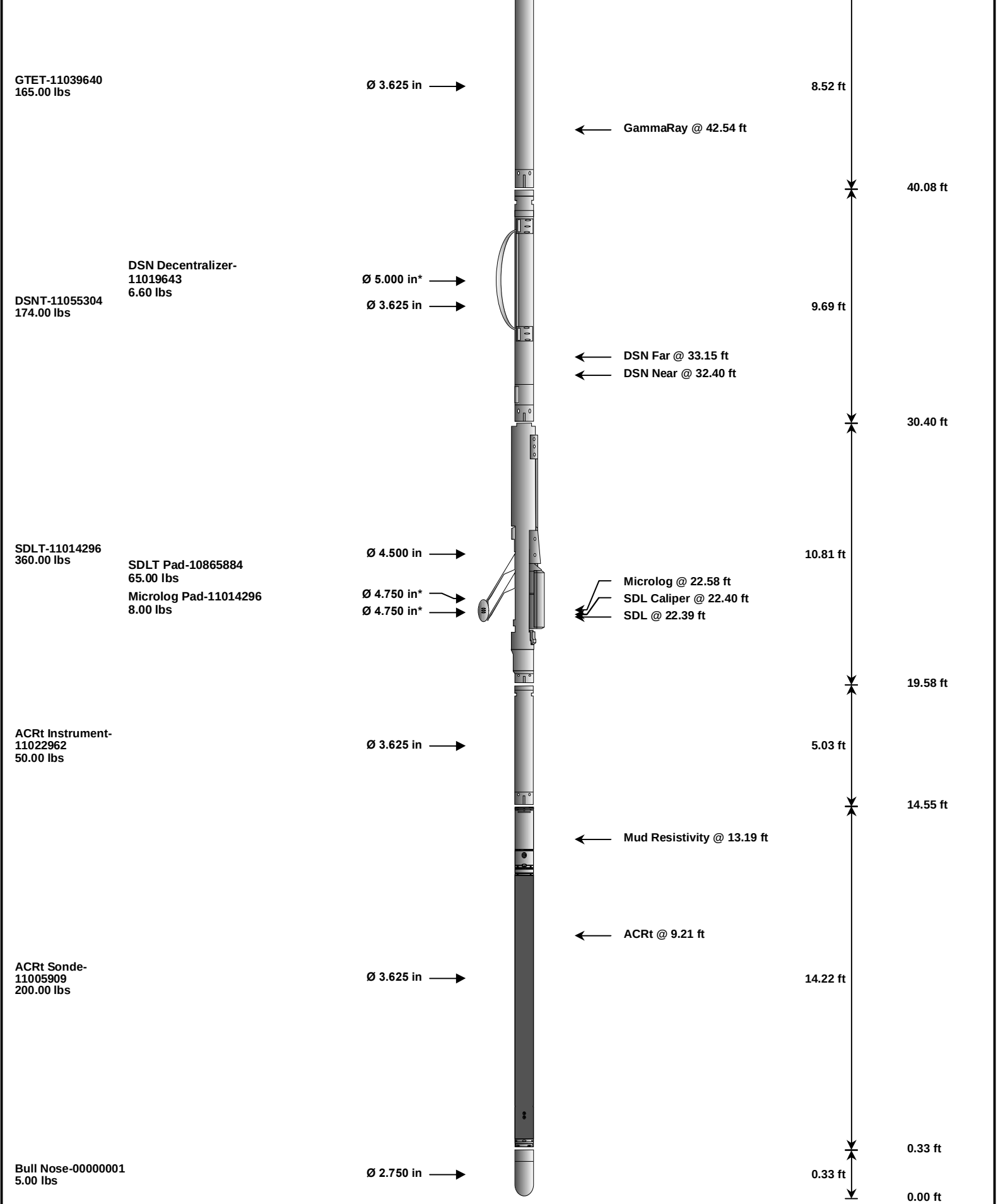
Plot Time: 07-May-14 12:15:50
Plot Range: 4900 ft to 5175.67 ft
Data: MURPHY_SWD_3404\Well Based\REPEAT1\
Plot File: \\-LOCAL-\MURPHY_SWD_3404\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\BULKD_5_REP_LIB

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						56.32 ft
CH_HOS-CH_696 37.50 lbs		Ø 2.750 in →		← Temperature @ 55.29 ft	3.03 ft	
						53.29 ft
XOHD-00000001 20.00 lbs		Ø 2.750 in Ø 3.625 in →			0.95 ft	
						52.34 ft
SP Sub-12345678 60.00 lbs		Ø 3.625 in →		← SP @ 50.56 ft	3.74 ft	
						48.60 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
CH_HOS	Hostile Cable Head with Load Cell	CH_696	37.50	3.03	53.29	300.00
XOHD	Hostile to Dits Cross Over	00000001	20.00	0.95	52.34	300.00
SP	SP Sub	12345678	60.00	3.74	48.60	300.00

GTET	Gamma Telemetry Tool	11039640	165.00	8.52		40.08	60.00
DSNT	Dual Spaced Neutron	11055304	174.00	9.69		30.40	60.00
DCNT	DSN Decentralizer	11019643	6.60	5.13	*	33.73	300.00
SDLT	Spectral Density Tool	11014296	360.00	10.81		19.58	60.00
SDLP	Density Insite Pad	10865884	65.00	2.55	*	21.79	60.00
MICP	Microlog Pad	11014296	8.00	1.00	*	22.08	60.00
ACRt	Array Compensated True Resistivity Instrument Section	11022962	50.00	5.03		14.55	120.00
ACRt	Array Compensated True Resistivity Sonde Section	11005909	200.00	14.22		0.33	120.00
BLNS	Bull Nose	00000001	5.00	0.33		0.00	300.00
Total			**1,151.10**	**56.32**			

* Not included in Total Length and Length Accumulation.

Data: MURPHY_SWD_3404\0001 SP-GTET-DSN-SDL-ACRT-BN\IDLE **Date: 07-May-14 09:54:18**

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CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11039640 **Reference Calibration Date:** 19-Sep-13 09:56:50

Engineer: SHELDON INGERSOLL **Calibration Date:** 25-Apr-14 12:27:40

Software Version: WL INSITE R4.2.0 (Build 2) **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	61.3	60.1	api
Background + Calibrator	336.2	329.8	api
Calibrator	274.9	269.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11039640 **Reference Calibration Date:** 25-Apr-14 12:27:40

Engineer: J. BOLLOM **Calibration Date:** 06-May-14 04:56:03

Software Version: WL INSITE R4.2.0 (Build 2) **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	60.1	54.9	api
Background + Calibrator	329.8	321.8	api
Calibrator	269.6	266.8	api

Shop	Field	Difference	Tolerance
269.6	266.8	2.8	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 11055304 **Reference Calibration Date:** 04-Apr-14 13:48:16

Engineer: SHELDON INGERSOLL **Calibration Date:** 24-Apr-14 11:58:00

Software Version: WL INSITE R4.2.0 (Build 2) **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: 68 degF

Min. Tool Housing Outside Diameter: 3.620 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.983	0.981	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):	0.2112	0.2107	0.0005	+/- 0.0020
Calibrated Ratio:	9.74	9.72	0.018	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0598	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:**	**24-Apr-14 11:58:00**
Engineer:	**J. BOLLOM**	**Calibration Date:**	**06-May-14 05:04:38**
Software Version:	**WL INSITE R4.2.0 (Build 2)**	**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):	0.0598	0.0747	0.0149	+/- 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:**	**24-Apr-14 11:13:15**
Engineer:	**SHELDON INGERSOLL**	**Calibration Date:**	**24-Apr-14 11:18:12**
Software Version:	**WL INSITE R4.2.0 (Build 2)**	**Calibration Version:**	**1**
Host Tool Name:	**DSNT - 11055304**		

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-4273.81	-4352.17	-7000.00 - -1000.00
Pad Gain	0.0003820	0.0003855	0.000200 - 0.000600
Arm Offset	-3754.58	-3933.66	-5000.00 - 3000.00
Arm Gain	0.0005334	0.0005985	0.000300 - 0.000700
Arm Power	-0.000005568	-0.000009614	-0.000010000 - 0.000010000

The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER

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)	2.01	2.00	-0.01	+/- 0.20
Medium Ring (in)	3.75	3.75	0.00	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.44	6.50	0.06	+/- 0.20
Medium Ring (in)	8.06	8.25	0.19	+/- 0.20
Large Ring (in)	15.01	15.00	-0.01	+/- 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:**	**24-Apr-14 11:18:12**
Engineer:	**J. BOLLOM**	**Calibration Date:**	**06-May-14 05:00:02**
Software Version:	**WL INSITE R4.2.0 (Build 2)**	**Calibration Version:**	**1**

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.69	-0.06	+/- 0.10
Ring Diameter	8.25	8.16	-0.09	+/- 0.15

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

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name:	**SDLT Pad - 10865884**	**Reference Calibration Date:**	**04-Apr-14 12:04:03**
Engineer:	**SHELDON INGERSOLL**	**Calibration Date:**	**24-Apr-14 10:38:11**
Software Version:	**WL INSITE R4.2.0 (Build 2)**	**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	1.0265	1.0858	0.90 - 1.10
Near Dens Gain	1.0105	1.0513	0.90 - 1.10
Near Peak Gain	1.0164	1.0506	0.90 - 1.10
Near Lith Gain	0.9796	1.0156	0.90 - 1.10
Far Bar Gain	1.0106	1.0182	0.90 - 1.10
Far Dens Gain	0.9984	1.0052	0.90 - 1.10
Far Peak Gain	0.9949	0.9999	0.90 - 1.10
Far Lith Gain	0.9683	0.9714	0.90 - 1.10
Near Bar Offset	-0.0423	-0.5820	NONE

Near Dens Offset	0.0836	-0.2722	NONE
Near Peak Offset	0.0108	-0.2631	NONE
Near Lith Offset	0.2912	0.0069	NONE
Far Bar Offset	0.0660	0.0021	NONE
Far Dens Offset	0.1441	0.0843	NONE
Far Peak Offset	0.1292	0.0890	NONE
Far Lith Offset	0.2757	0.2482	NONE

Near Bar Background	800.47	802.05	700 - 1450
Near Dens Background	267.16	268.42	230 - 480
Near Peak Background	118.01	117.52	100 - 210
Near Lith Background	143.93	144.57	125 - 260
Far Bar Background	500.98	501.73	450 - 900
Far Dens Background	196.18	194.75	175 - 345
Far Peak Background	77.32	77.99	70 - 140
Far Lith Background	80.70	79.60	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.677	1.684	0.007	+/- 0.015
Pe	2.638	2.555	-0.083	+/- 0.150
ALUMINUM				
Density (g/cc)	2.595	2.598	0.003	+/- 0.01500
Pe	3.221	3.124	-0.097	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0015	+/- 0.0110	-0.0007	+/- 0.0140
Magnesium Block	0.0000	+/- 0.0110	0.0006	+/- 0.0140
Aluminum Block	-0.0007	+/- 0.0110	-0.0001	+/- 0.0140
Resolution	8.51	6.00 - 11.50	8.94	6.00 - 11.50
Internal Verifier(B+D+P+L)	1333	1200 - 2700	854	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: 24-Apr-14 10:38:11
Engineer: J. BOLLOM
Calibration Date: 06-May-14 04:56:49
Software Version: WL INSITE R4.2.0 (Build 2)
Calibration Version: 1

Pad Temperature: 75.2 degF

Pad Temperature: 75.2 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1332.558	1335.348	2.790	14.767
Far (B+D+P+L) cps	854.074	857.044	2.970	16.021
Near Resolution	8.51	8.61	0.100	0.50
Far Resolution	8.94	8.97	0.030	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-11039640						
Gamma Ray Calibrator	269.6	266.8	----------	2.8	+/- 9.00	api
DSNT-11055304						
Snow-Block Porosity	0.0598	0.0747	----------	-0.0149	+/- 0.0150	decp
SDLT-11014296						
Pad Extension	3.75	3.69	----------	0.06	+/-0.10	in
Ring Diameter	8.25	8.16	----------	0.09	+/-0.15	in
SDLT Pad-10865884						
Near(B+D+P+L)	1332.558	1335.348	----------	-2.790	+/-14.767	cps
Far(B+D+P+L)	854.074	857.044	----------	-2.970	+/-16.021	cps

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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	9.500	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	5181.00	ft
	SHARED	BHT	Bottom Hole Temperature	200.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa /	ECHO	Select Source of E	Automatic	

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 / 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	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	
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	
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
ACRt Sonde	BHSM	Borehole Size Source Tool	SDLT	

BOTTOM

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INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel				
TENS	Tension	0.00	NO	
Rwa / CrossPlot				
TPUL	Tension Pull	56.32	NO	
BS	Bit Size	56.32	NO	
HDIA	Measured Hole Diameter	0.00	NO	
CH_HOS				
DHTN	DownholeTension	0.00	BLK	0.000
SP Sub				
PLTC	Plot Control Mask	50.56	NO	
SP	Spontaneous Potential	50.56	BLK	1.250
SPR	Raw Spontaneous Potential	50.56	NO	
SPO	Spontaneous Potential Offset	50.56	NO	
GTET				
TPUL	Tension Pull	42.54	NO	
GR	Natural Gamma Ray API	42.54	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	42.54	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	42.54	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	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	
HDIA	Measured Hole Diameter	0.00	NO	
SDLT				
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 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	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	
HDIA	Measured Hole Diameter	0.00	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: MURPHY_SWD_3404\0001 SP-GTET-DSN-SDL-ACRT-BN\001 07-May-14 10:14 Dn @407.8f **Date: 07-May-14 10:16:57**

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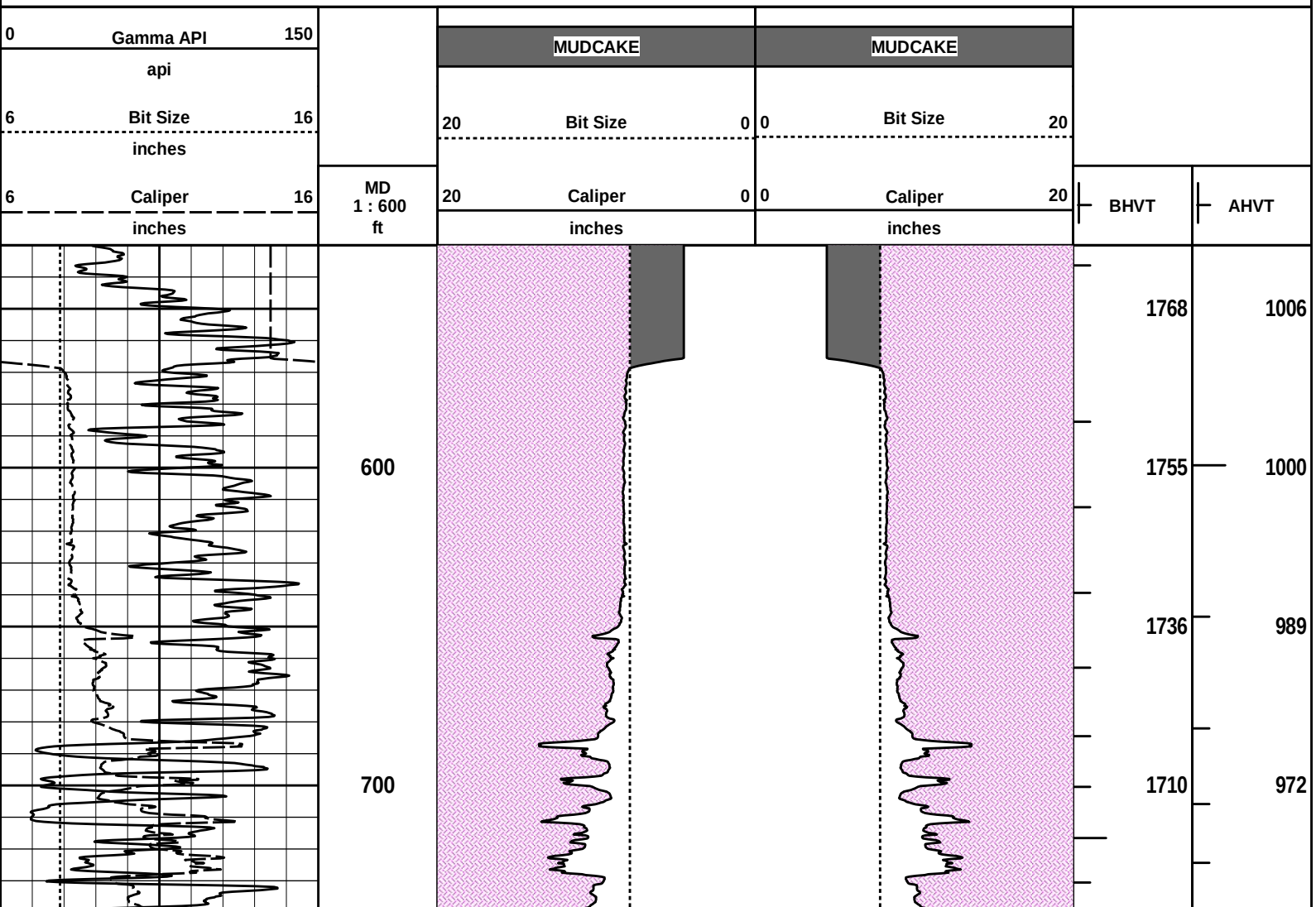
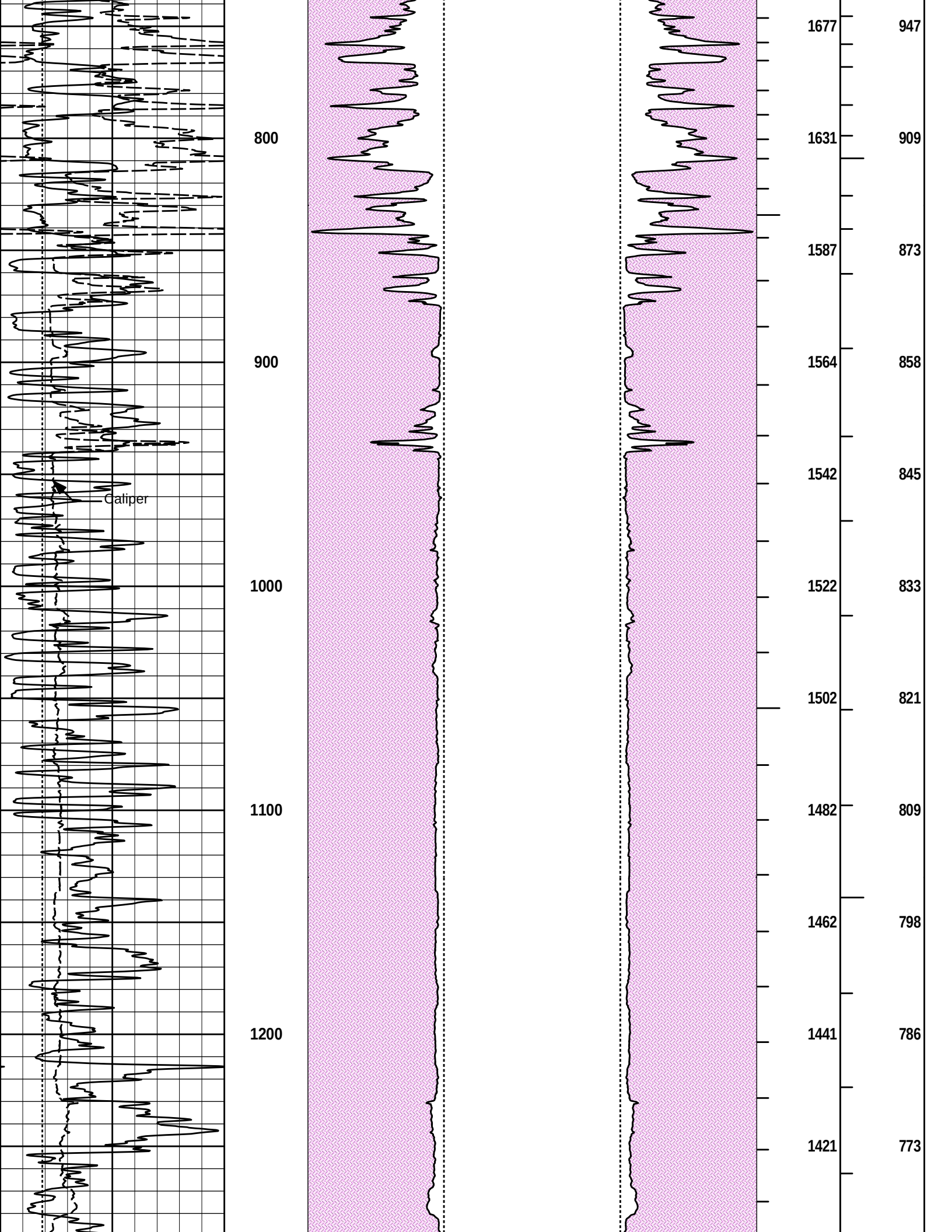
Plot Time: 07-May-14 12:15:50
Plot Range: 530 ft to 5174.83 ft
Data: MURPHY_SWD_3404\Well Based\CASING1
Plot File: \\-LOCAL-\MURPHY_SWD_3404\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\AHV_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT




800
900
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1100
1200
Caliper
1677
947
1631
909
1587
873
1564
858
1542
845
1522
833
1502
821
1482
809
1462
798
1441
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1421
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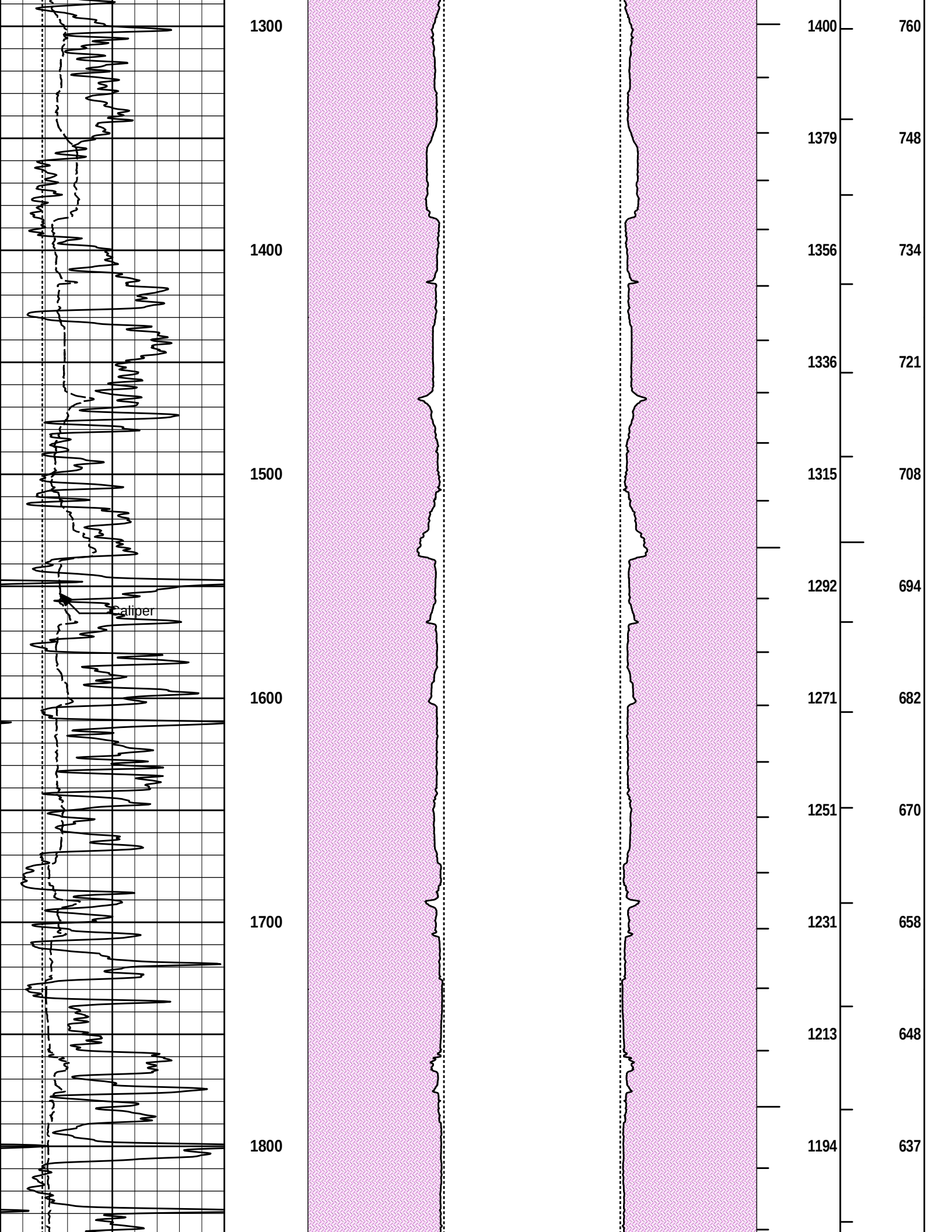
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1600
1700
1800
Caliper
1400
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1336
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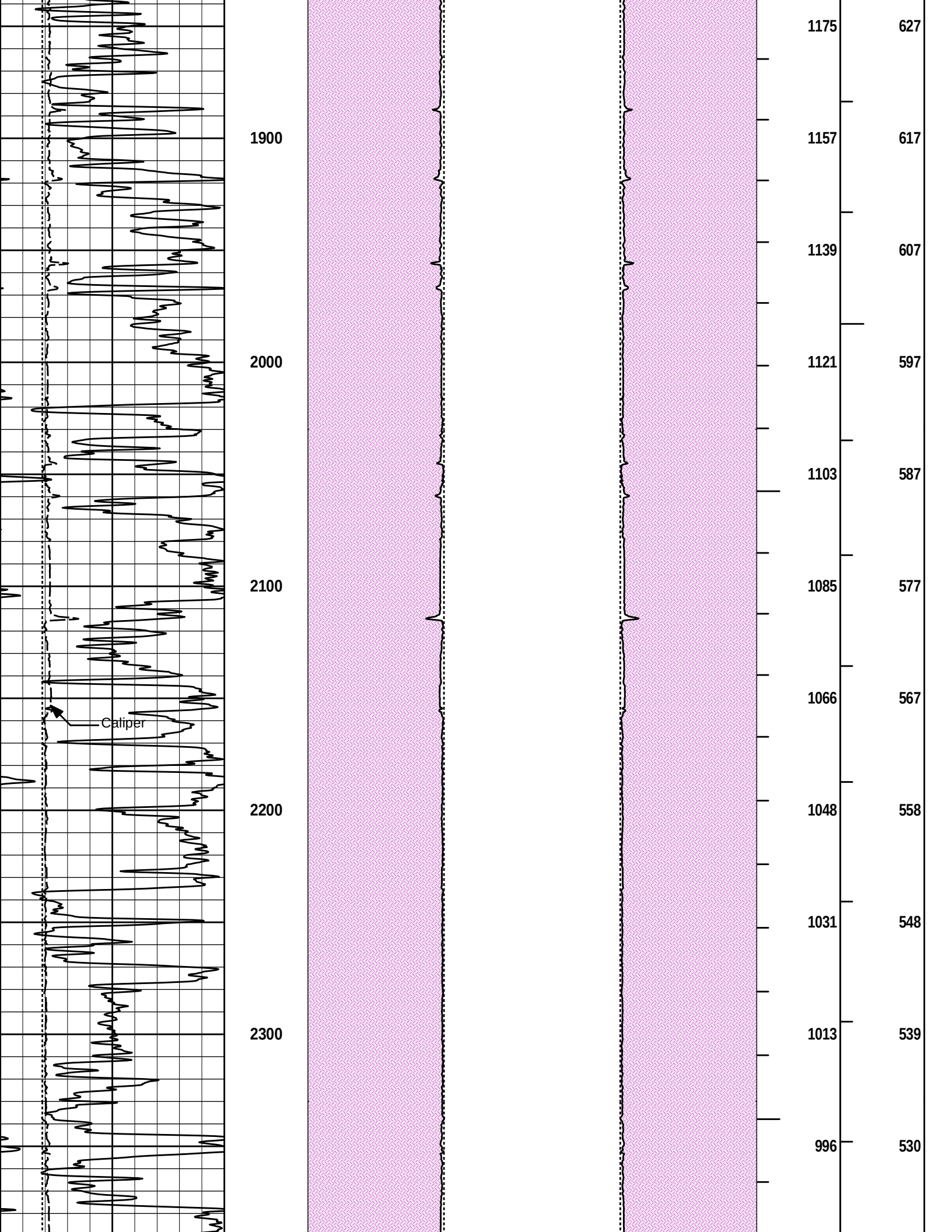
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2300
Caliper
1175
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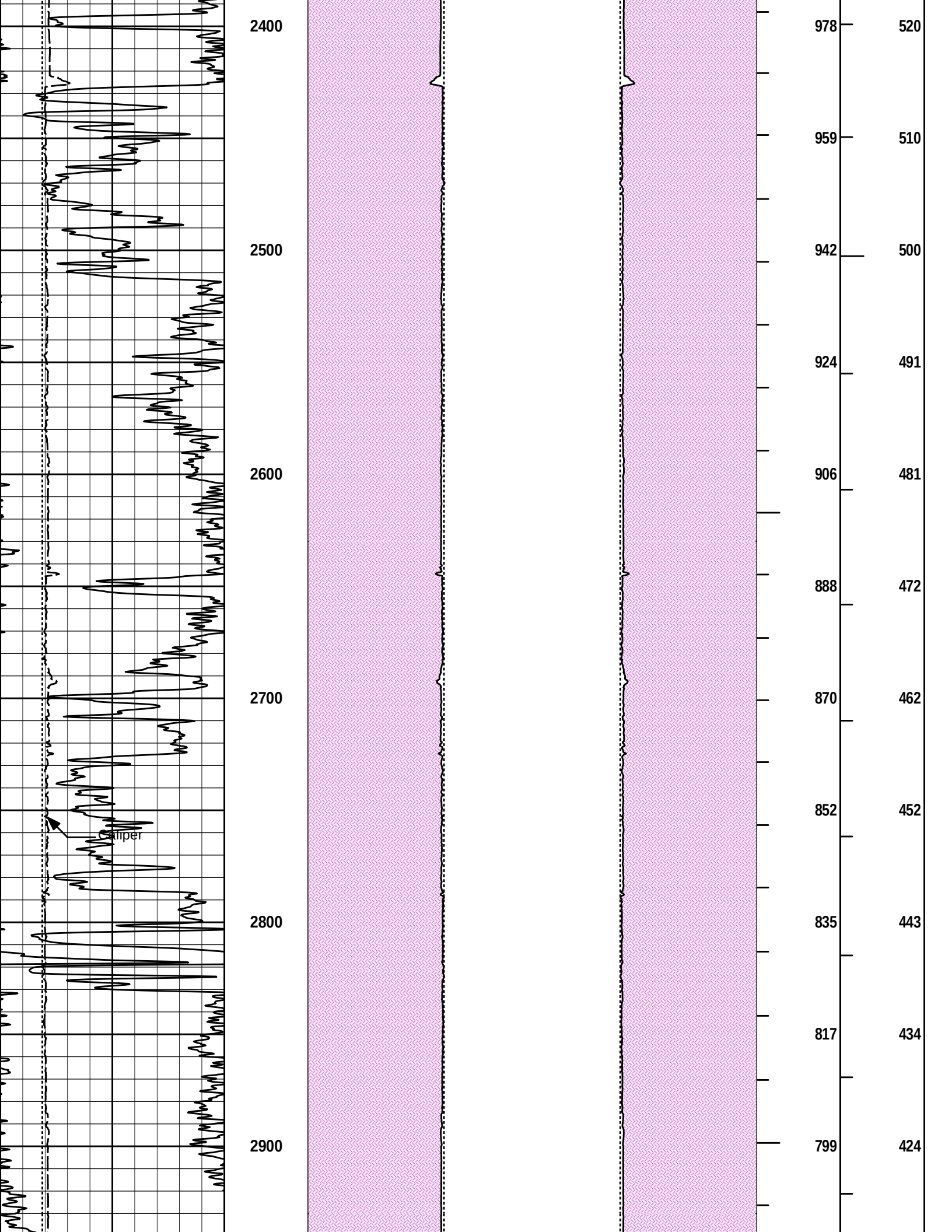
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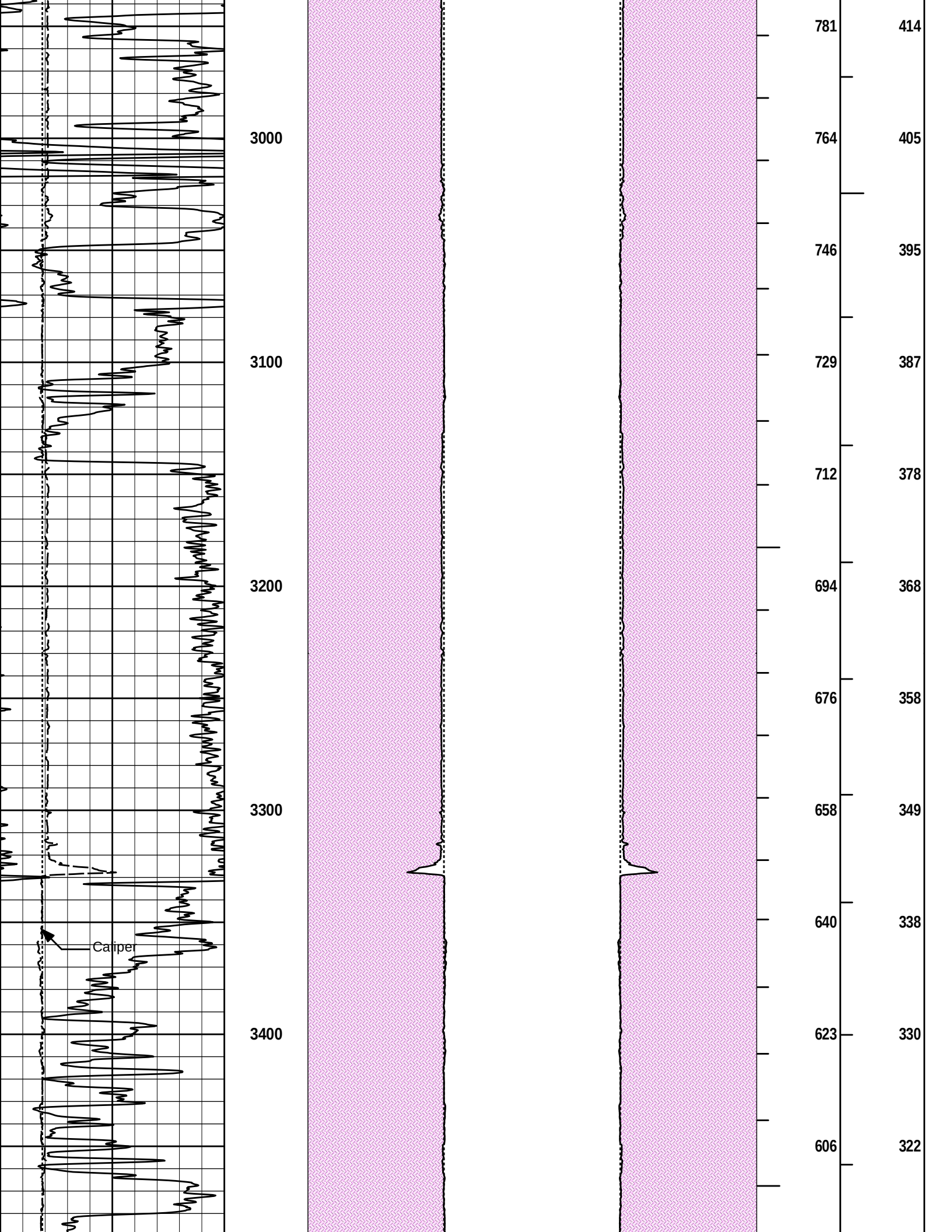
434
424
Caliper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3100
3200
3300
3400
Caliper
781
764
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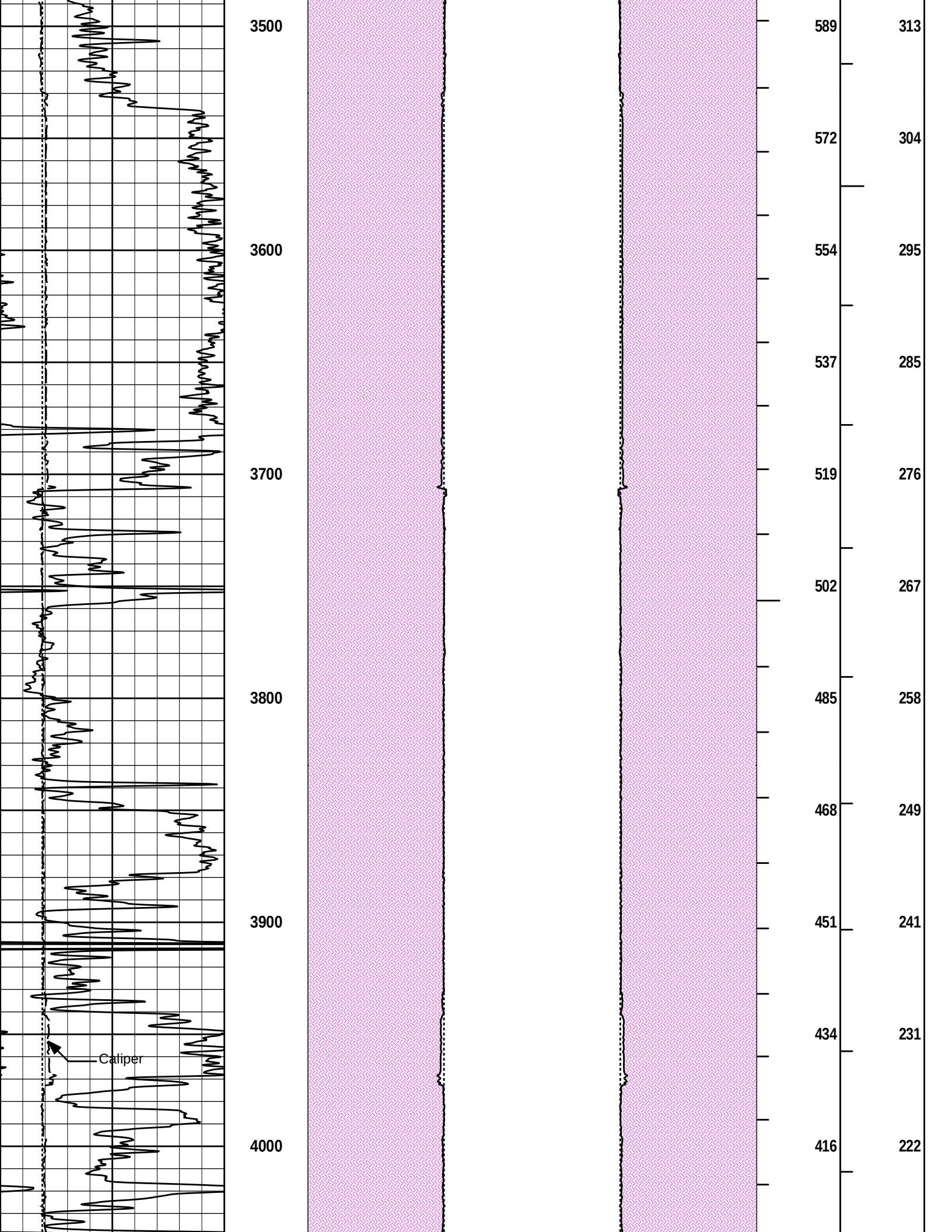
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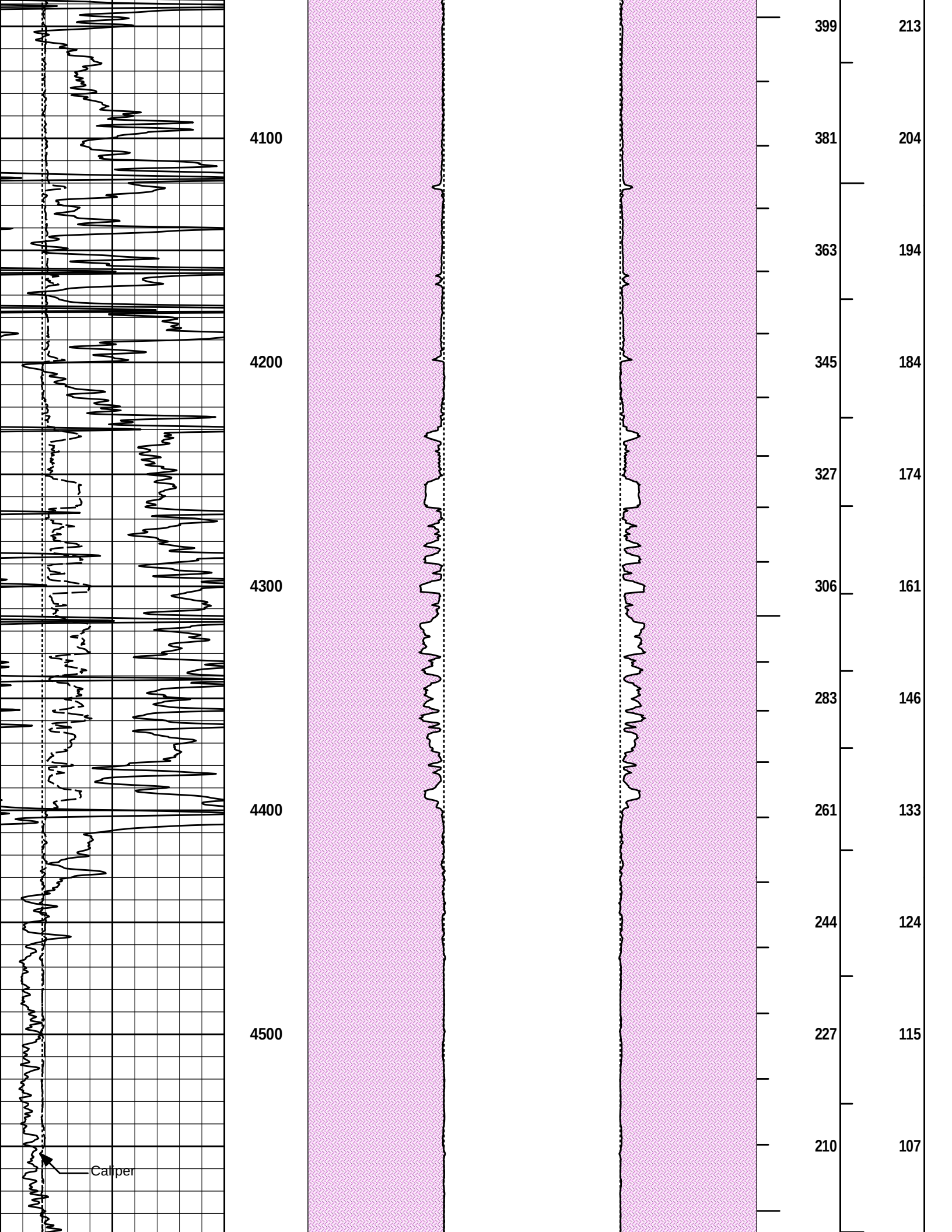
222
Caliper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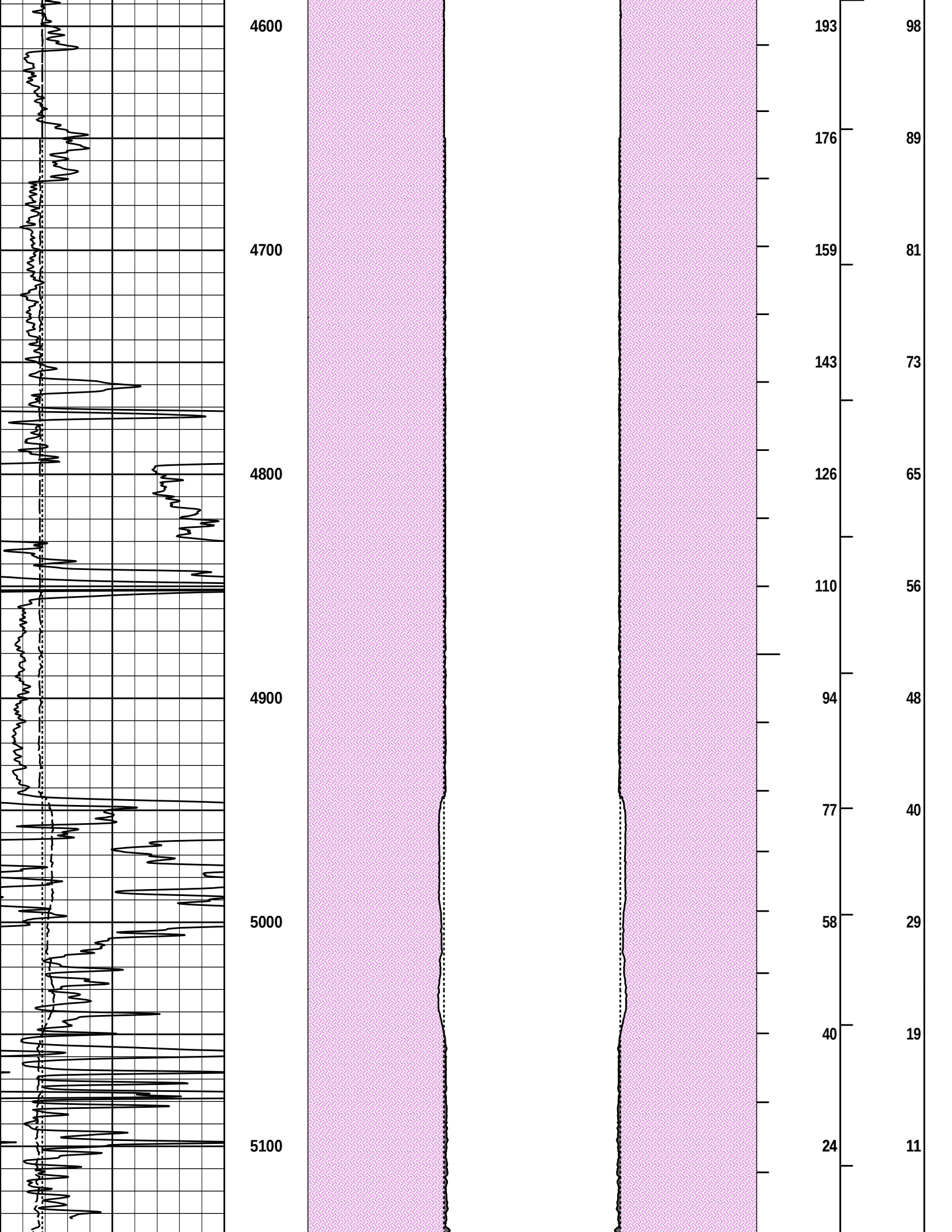
115
107
Caliper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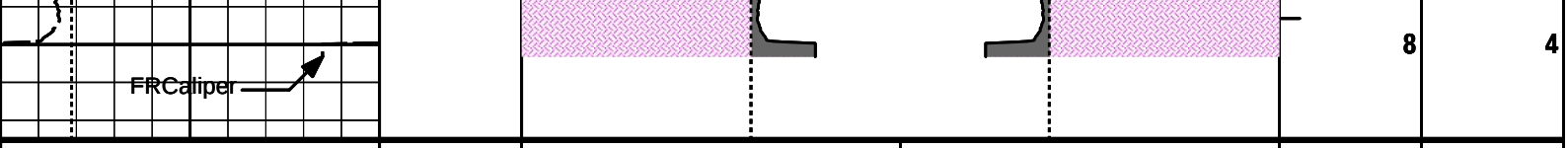
11



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

HALLIBURTON

Plot Time: 07-May-14 12:15:53
Plot Range: 530 ft to 5174.83 ft
Data: MURPHY_SWD_3404\Well Based\CASING1\
Plot File: \\-LOCAL-\MURPHY_SWD_3404\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\AHV_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT

COMPANY	SANDRIDGE ENERGY		
WELL	MURPHY SWD 3404 1-18		
FIELD	BLUFF		
COUNTY	SUMNER	STATE	KANSAS

HALLIBURTON

SPECTRAL DENSITY
DUAL SPACED NEUTRON
LOG