

DUAL SPACED NEUTRON SPECTRAL DENSITY LOG

Fold here

Service Ticket No.: 904583538						API No.: 15-081-22170-01						PGM Version: WL INSITE R5.0.5 (Build 8)							
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		1.50 in S.O.		N/A	
Rmc @ Meas. Temp.			@				@						I-12109517						
Source Rmf	Rmc												S-12109515						
Rm @ BHT			@				@												
Rmf @ BHT			@				@												
Rmc @ BHT			@				@												
EQUIPMENT DATA																			
GAMMA				ACOUSTIC				DENSITY				NEUTRON							
Run No.		ONE		Run No.		ONE		Run No.		ONE		Run No.		ONE					
Serial No.		11958947		Serial No.		10747683		Serial No.		10960494		Serial No.		11055304					
Model No.		GTET		Model No.		BSAT		Model No.		SDLT		Model No.		DSNT					
Diameter		3.625"		No. of Cent.		0		Diameter		5.5"		Diameter		3.625"					
Detector Model No.		T-102		Spacing		N/A		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		N/A		FWDA [Y/N]				Strength		1.5 Ci		Strength		15.0 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	TD	5250	REC	0	150	30	-10	47.6 us/ft	30	-10	2.71 gm/cc	30	-10	LIME					

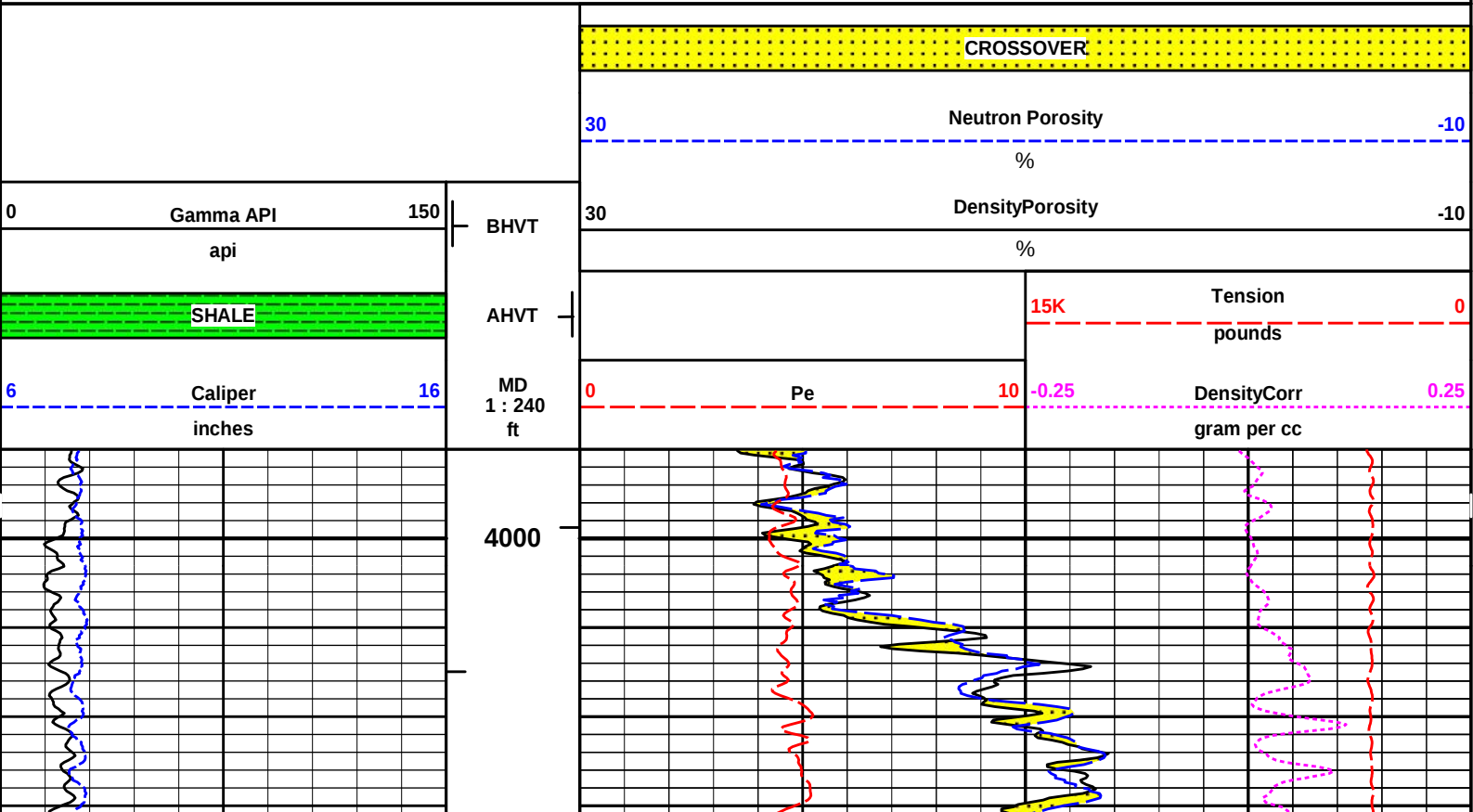
DIRECTIONAL INFORMATION																
Maximum Deviation @									KOP @							
Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING																
GTET-DSNT-SDLT-BSAT-ACRT RUN IN COMBINATION																
CHLORIDES REPORTED AT 1000 mg/L																
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY 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.																
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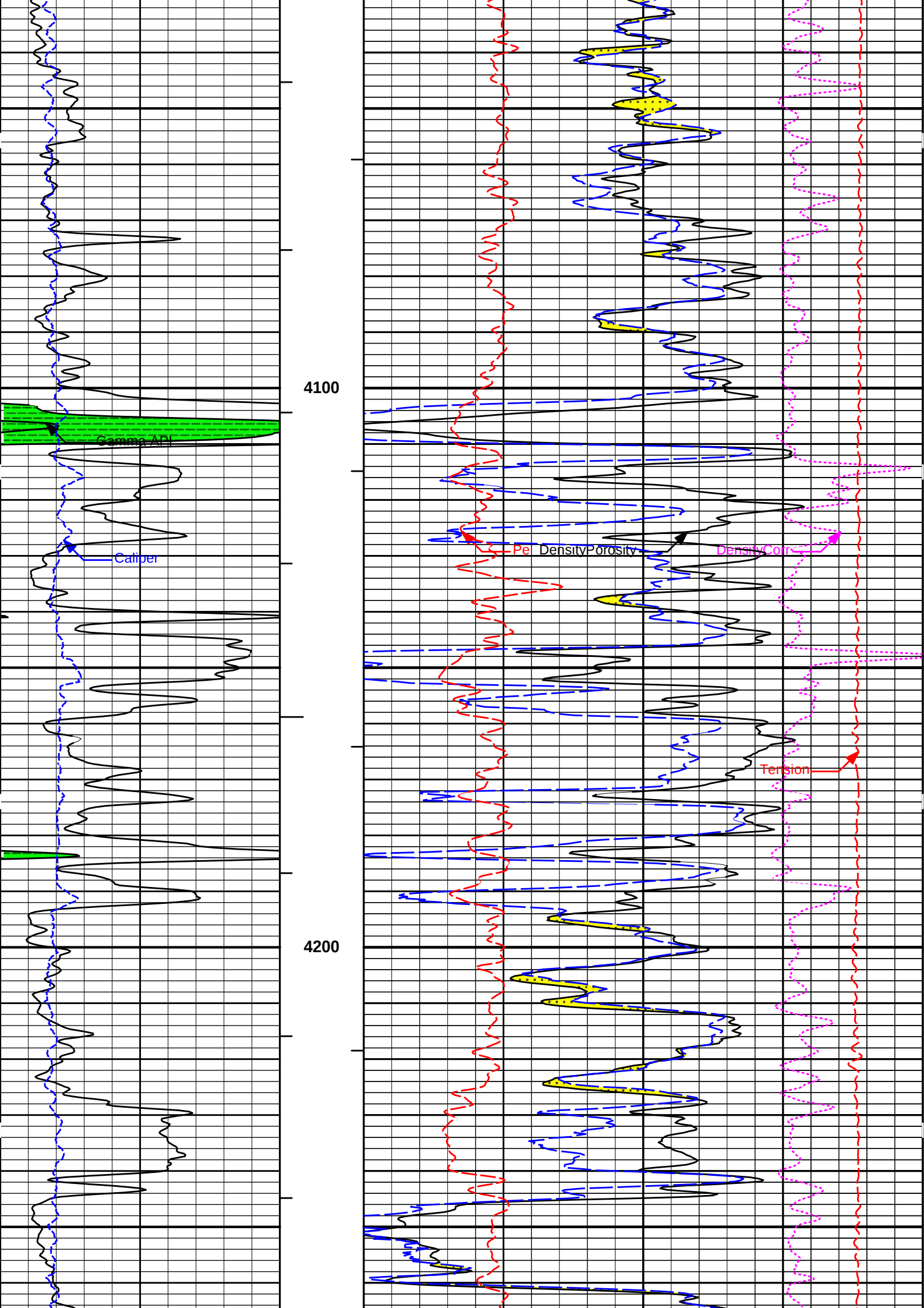
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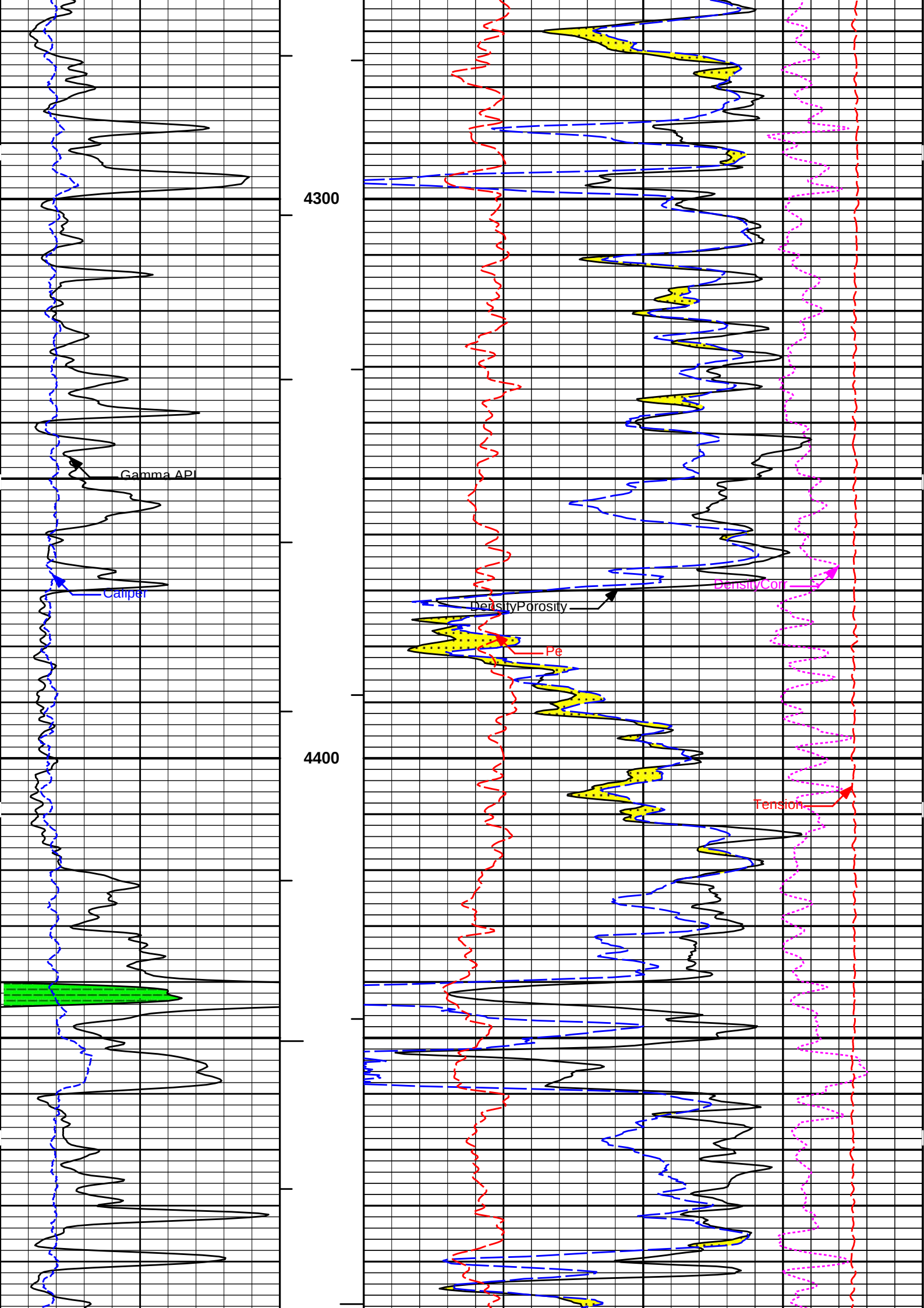
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Plot Range: 3990 ft to 5605.25 ft
Data: MERIT_UNRUH1-7\Well Based\MAIN\WELLHEAD.DAT
Plot File: \\PORO\Porosity_IQ_5_MAIN_LIB

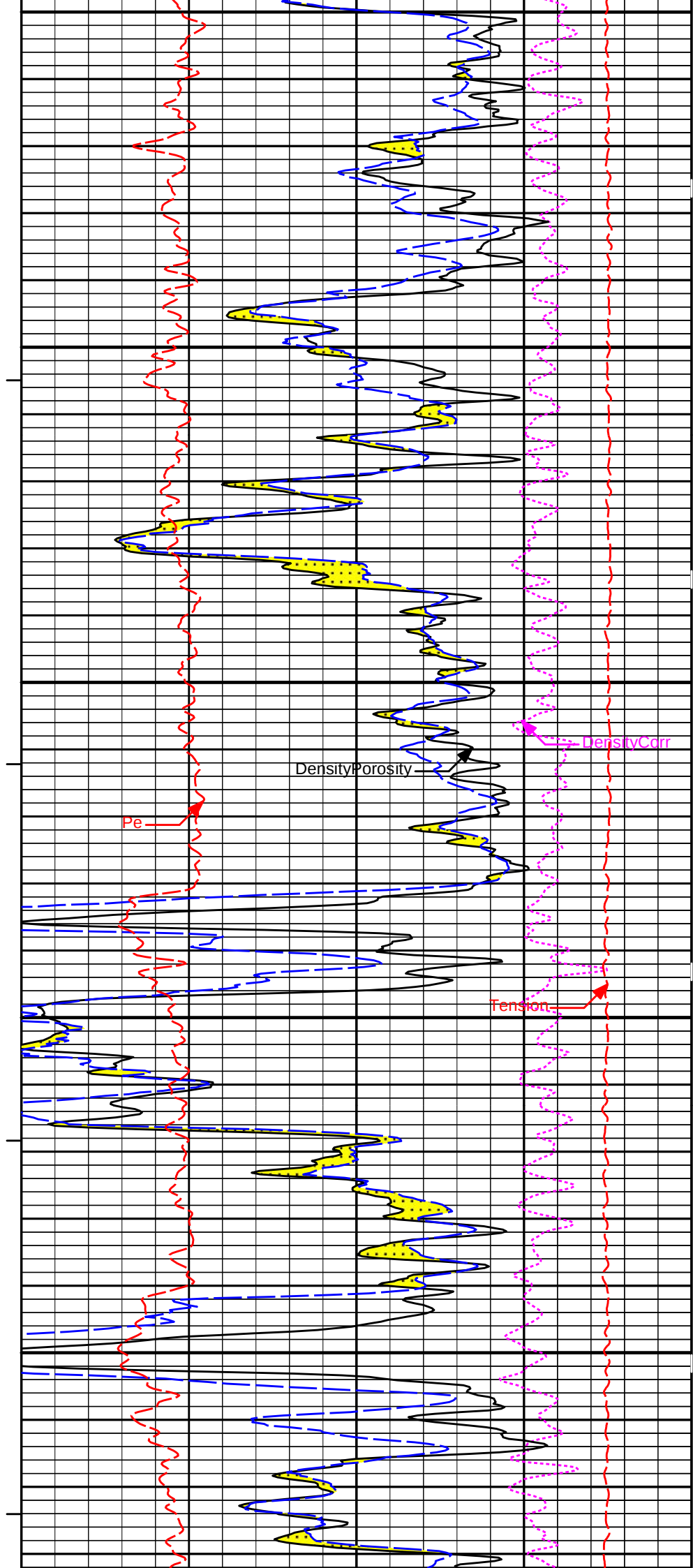
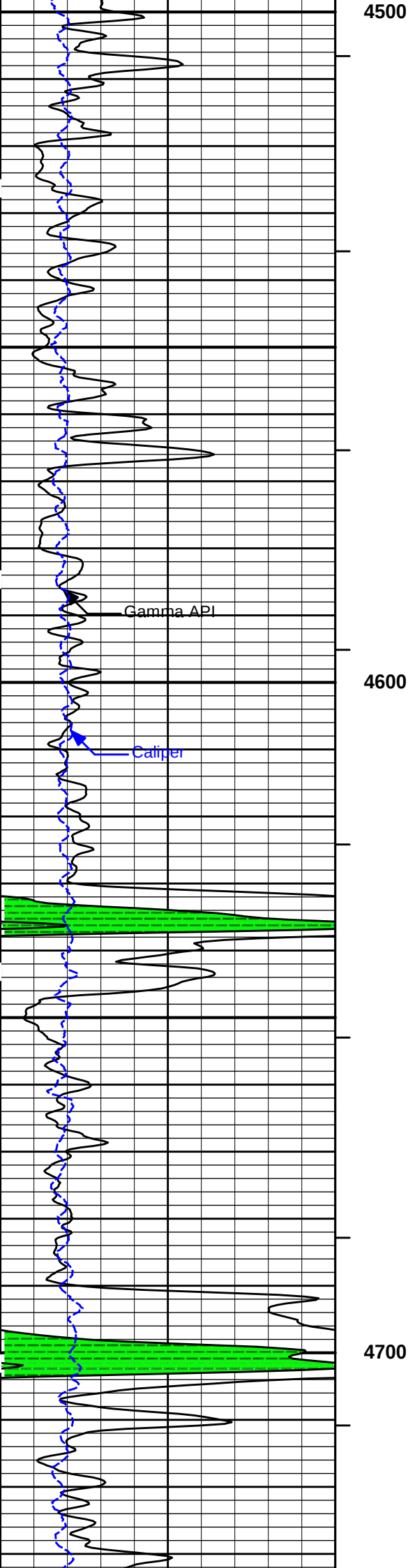
5 INCH MAIN LOG

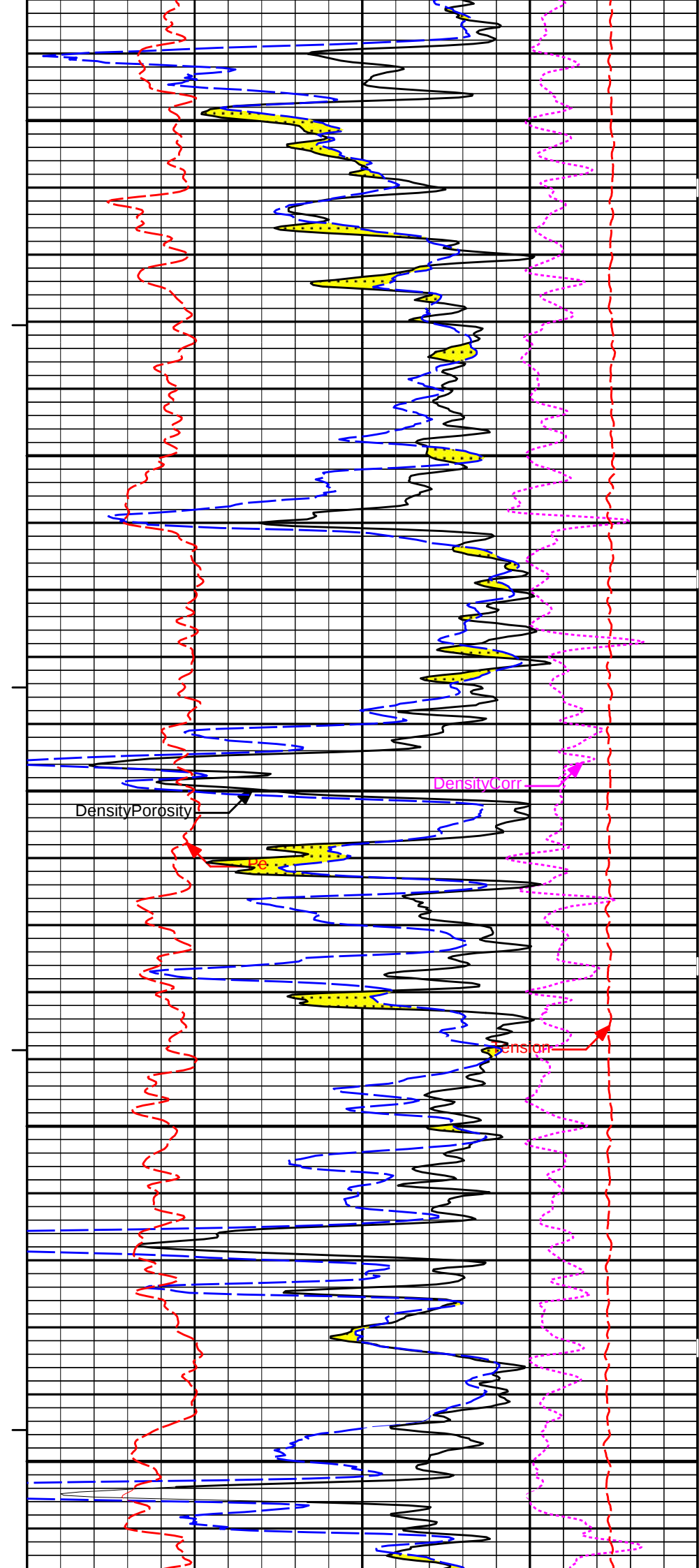
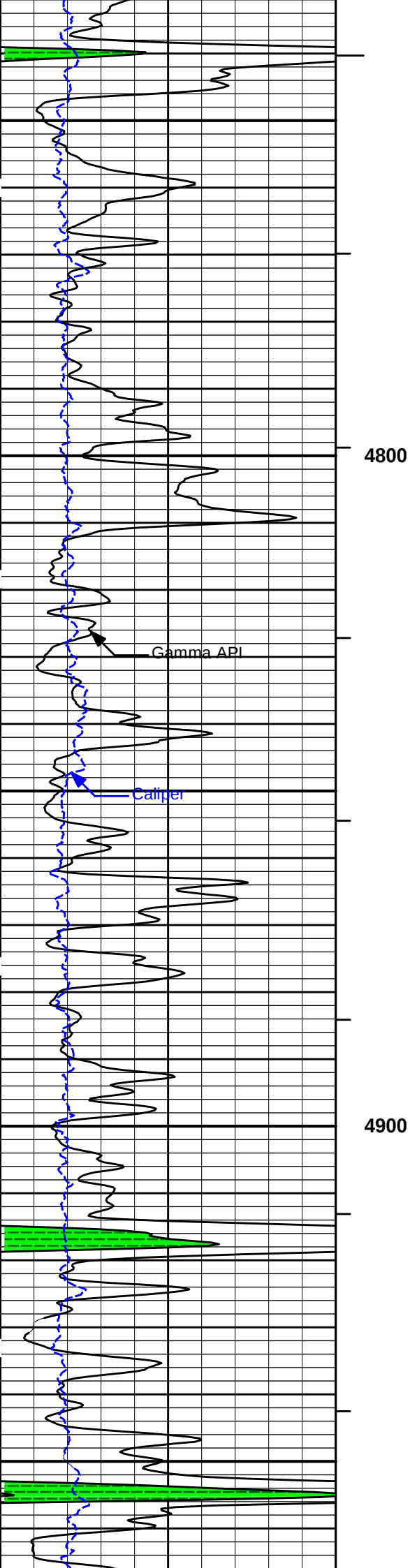
MEASURED DEPTH
MAIN SECTION 5" PER 100'

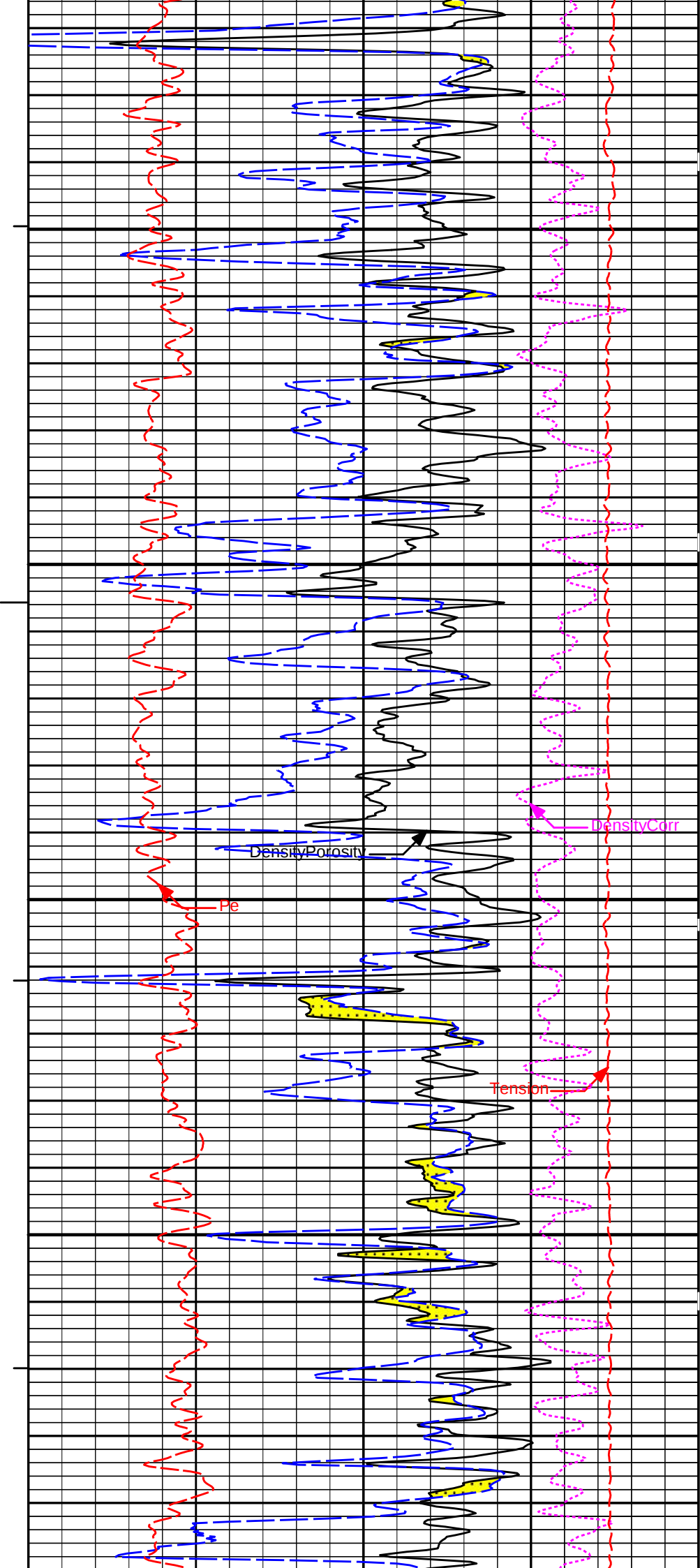
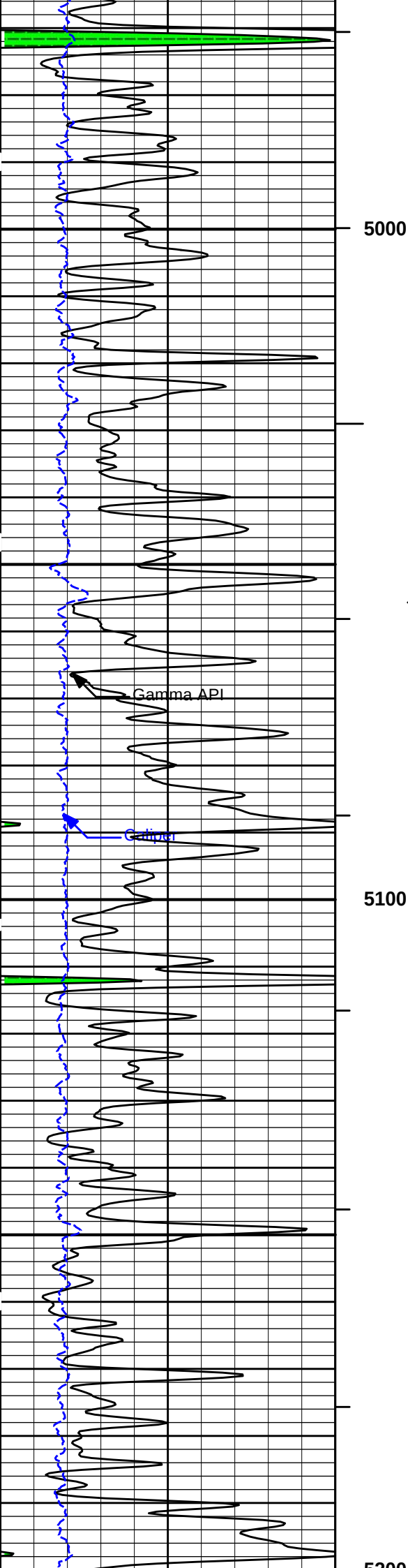


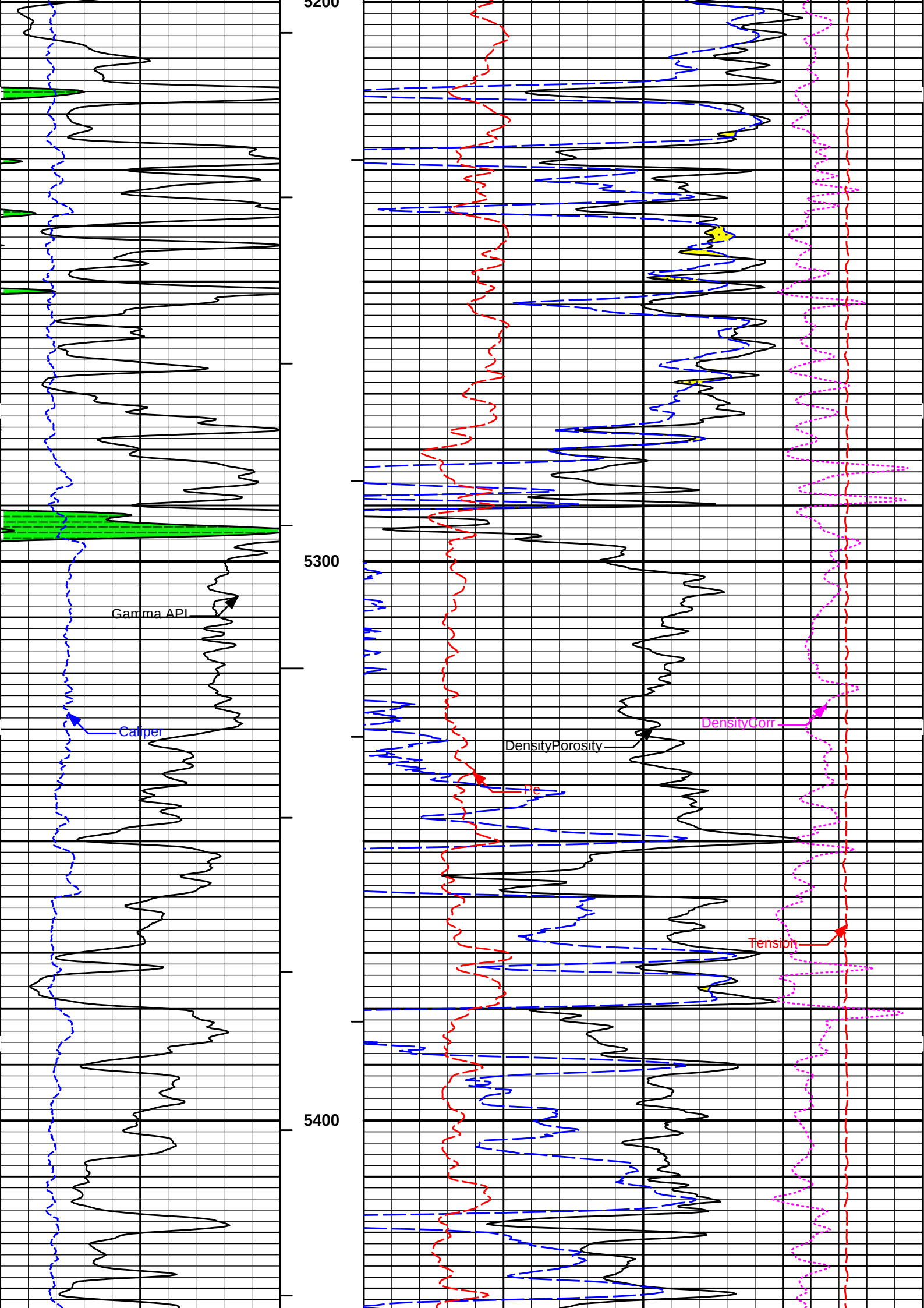


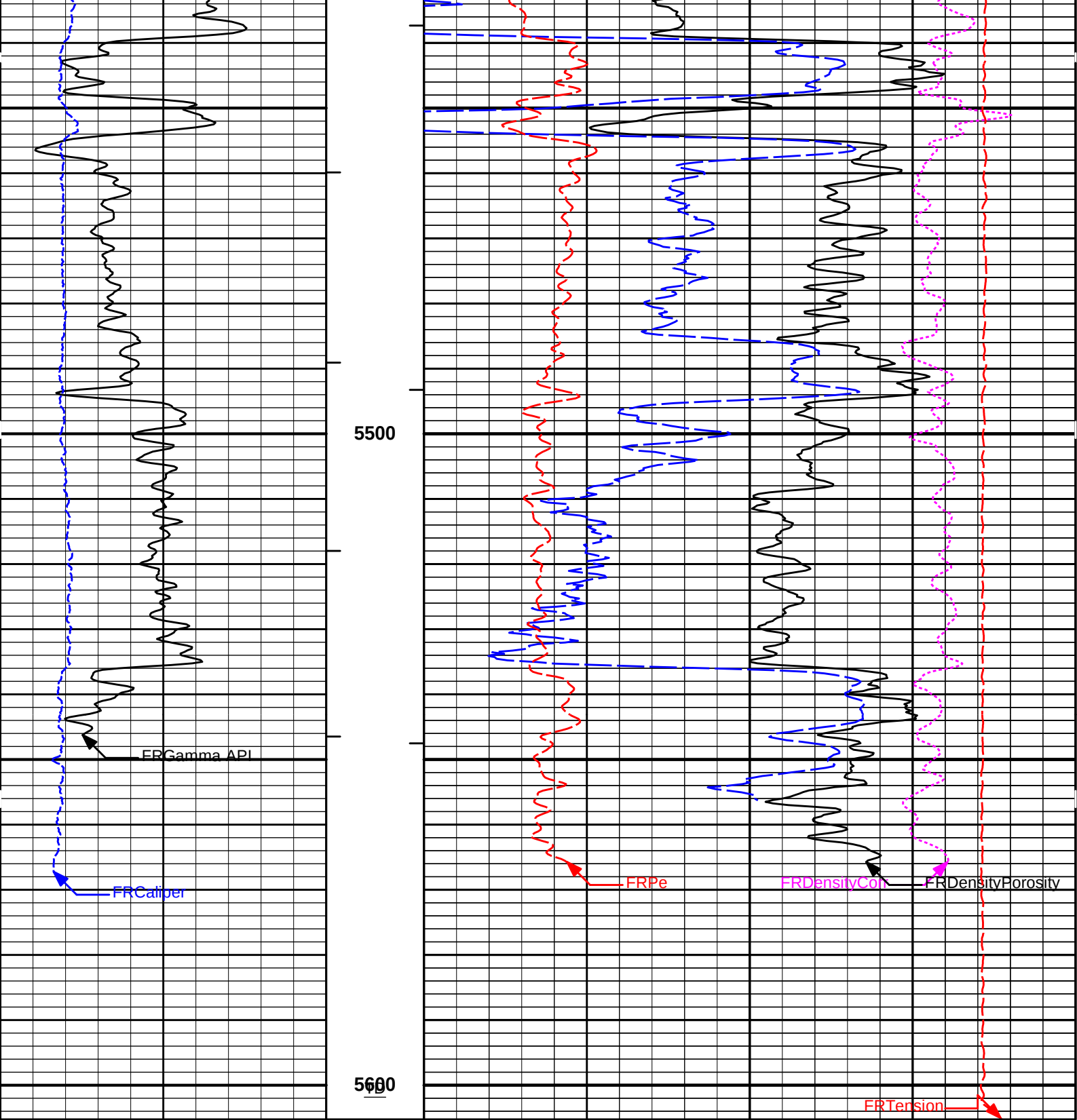












6	Caliper	16	MD 1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25
	inches								gram per cc
	SHALE		AHVT				15K	Tension	0
									pounds
0	Gamma API	150	BHVT	30	DensityPorosity				-10
	api				% Neutron Porosity				
				30	-10				
				% CROSSOVER					

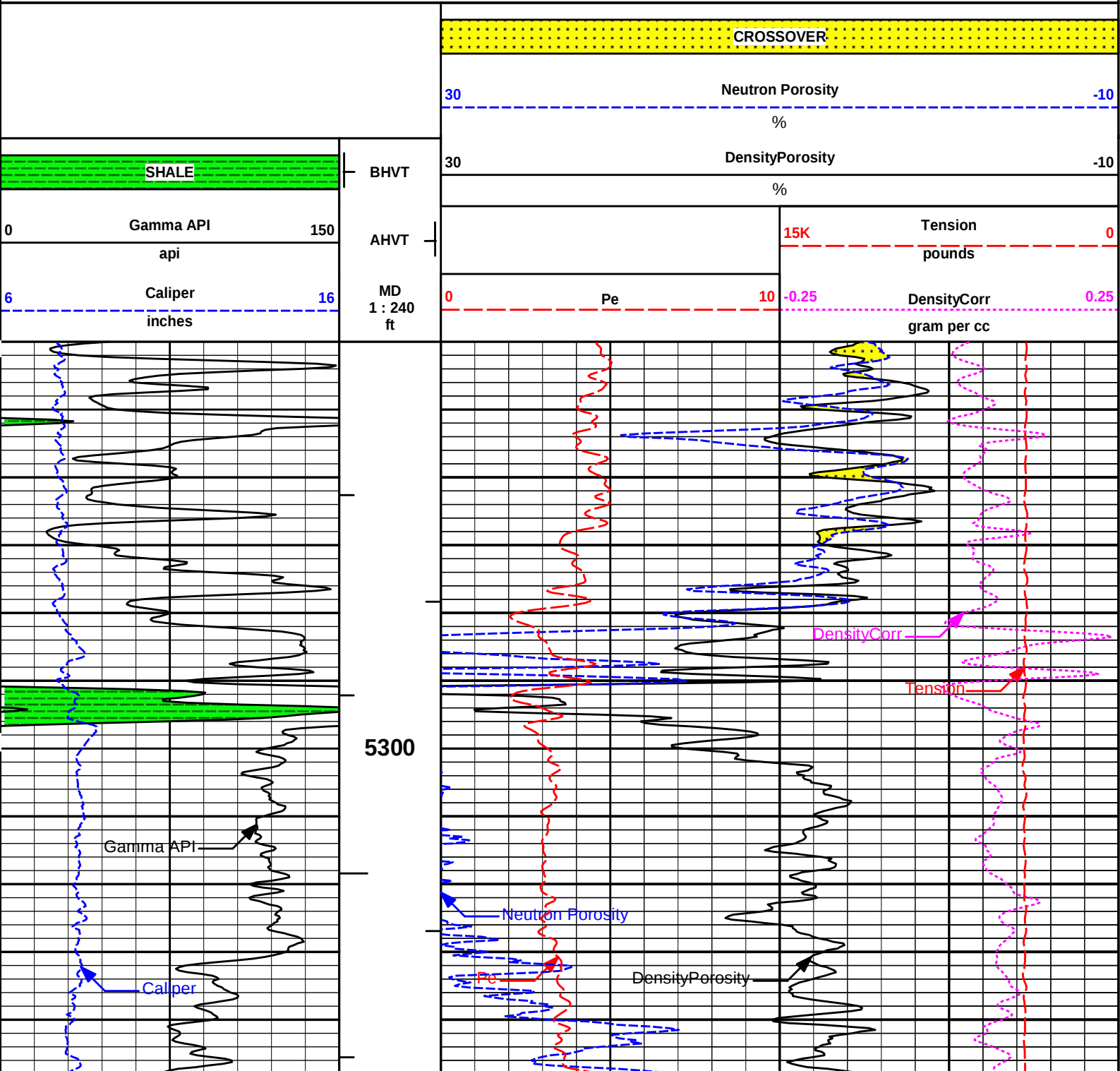
5 INCH MAIN LOG

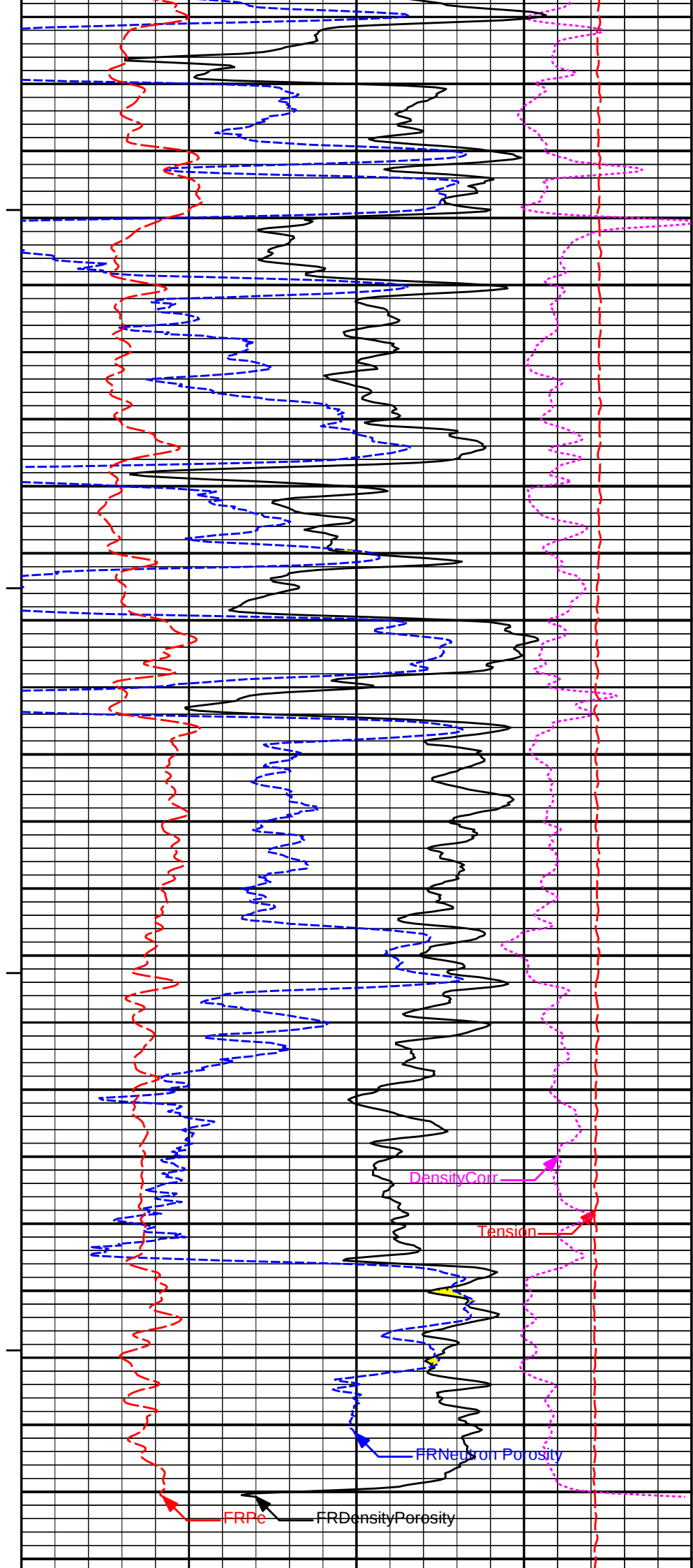
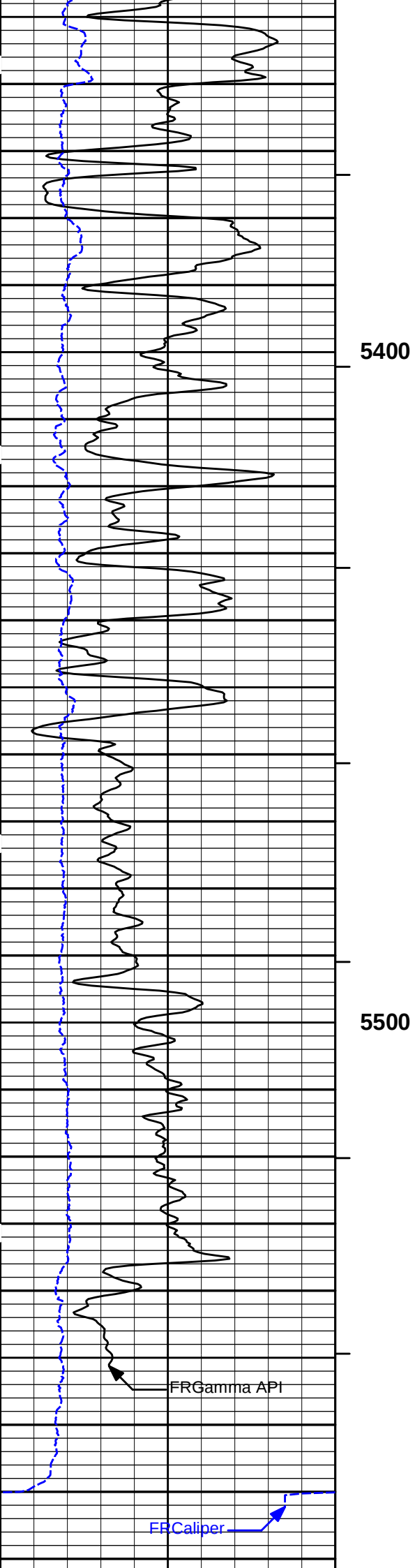
MEASURED DEPTH
MAIN SECTION 5" PER 100'

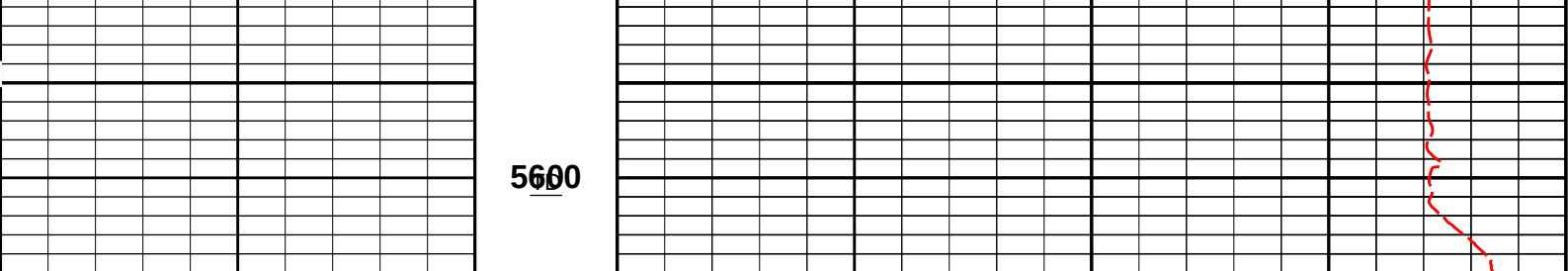
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Plot Time: 23-Jan-18 19:59:12
Plot Range: 5240 ft to 5610.08 ft
Data: MERIT_UNRUH1-7\Well Based\REPEAT\
Plot File: \\PORO\Porosity_IQ_5_REP_LIB

REPEAT SECTION







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

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Plot Time: 23-Jan-18 19:59:15
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Data: MERIT_UNRUH1-7\Well Based\REPEAT\
Plot File: \\PORO\Poro_IQ_5_REP_LIB

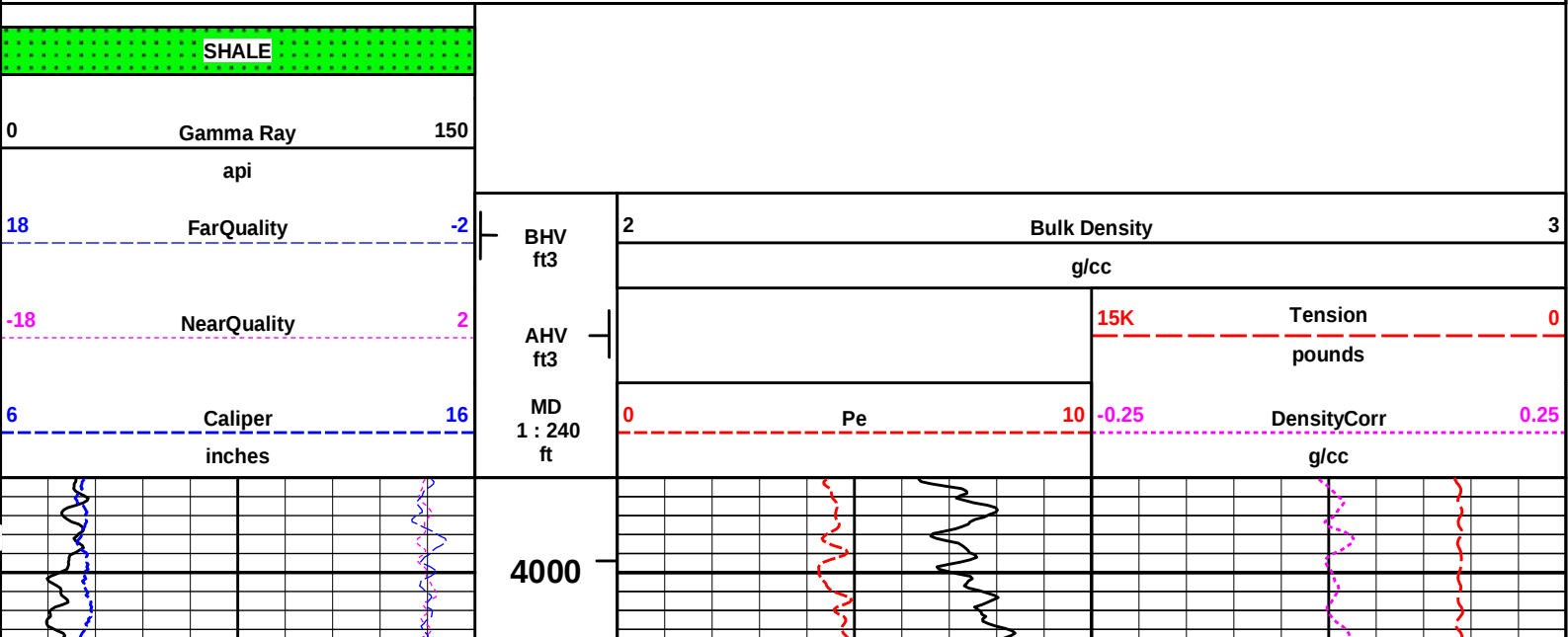
REPEAT SECTION

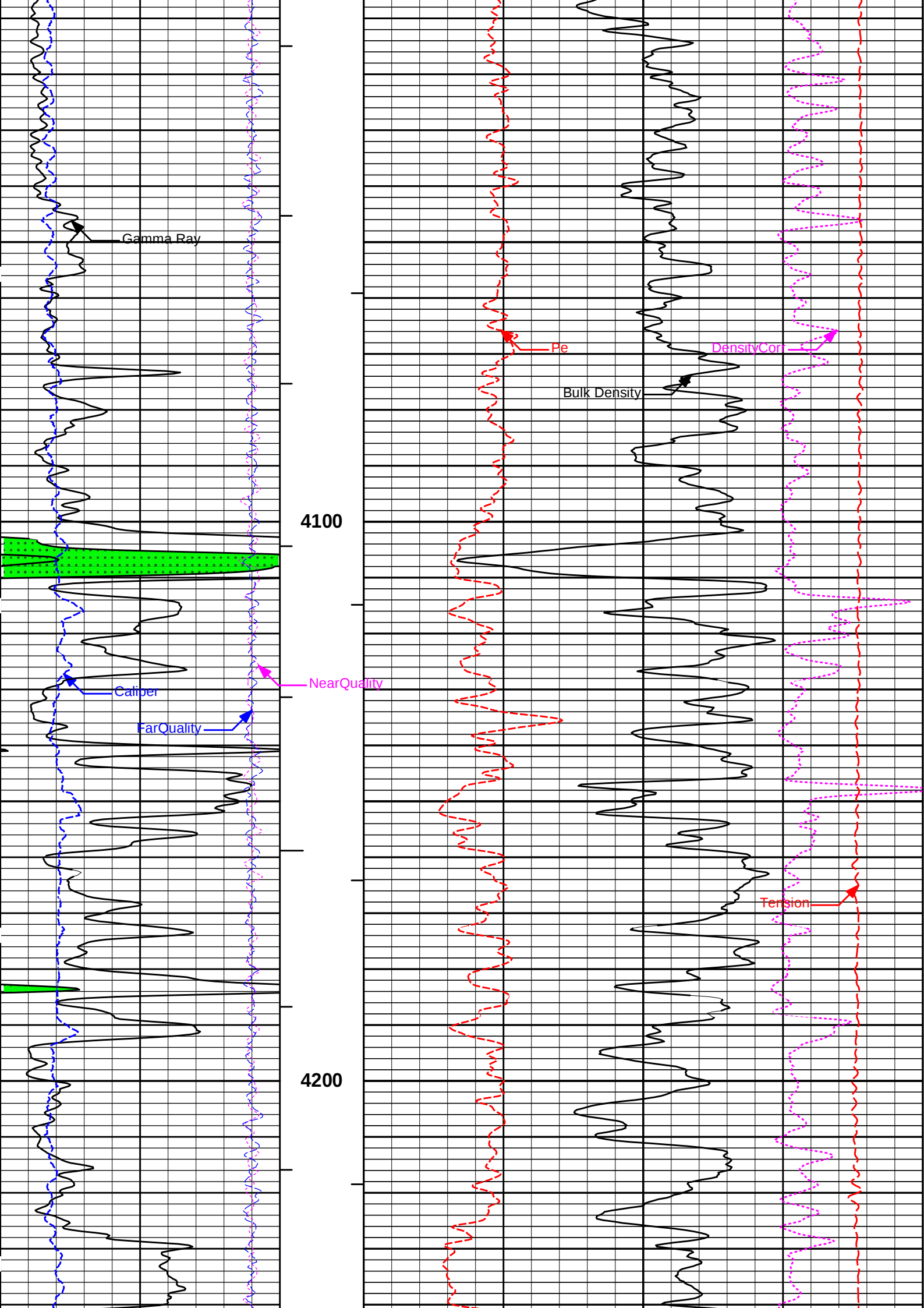
HALLIBURTON

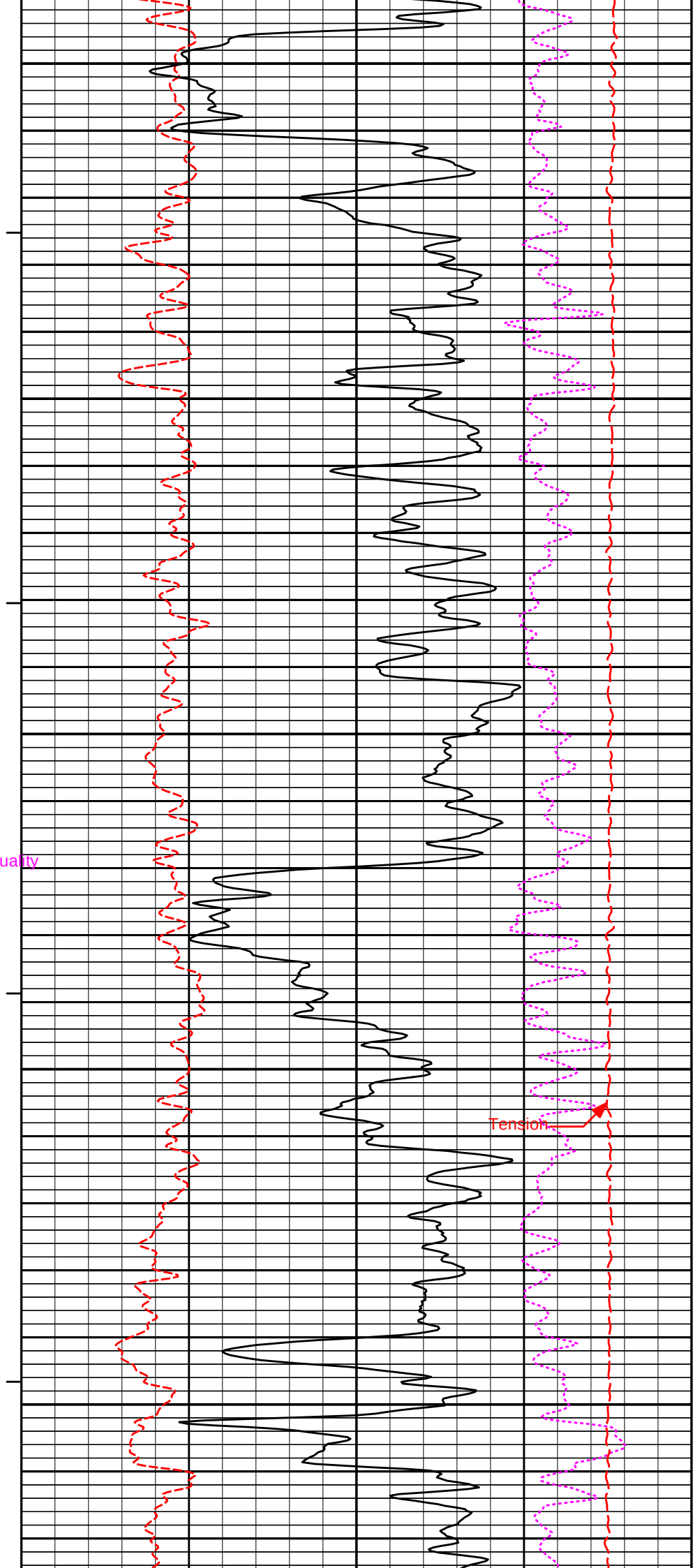
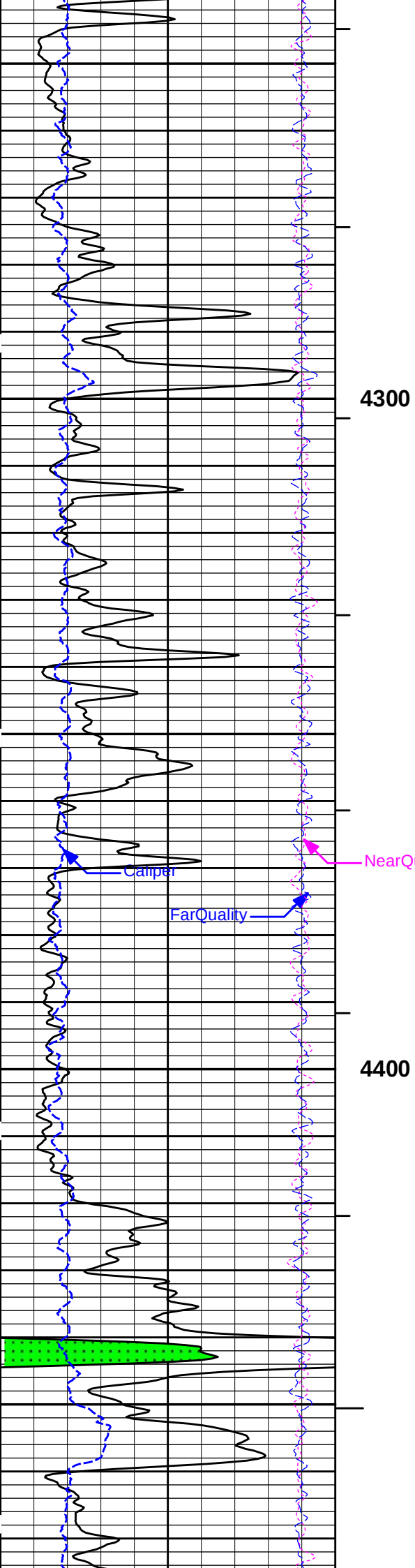
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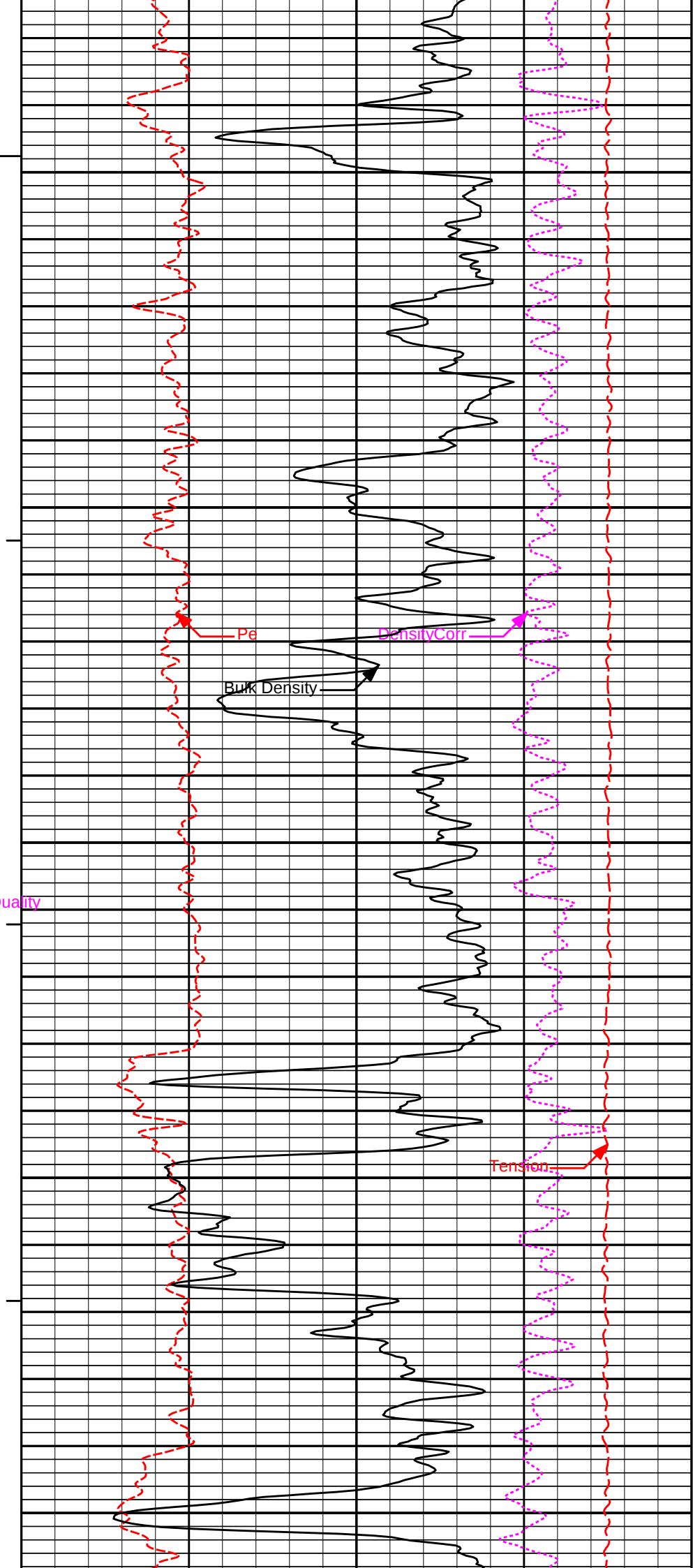
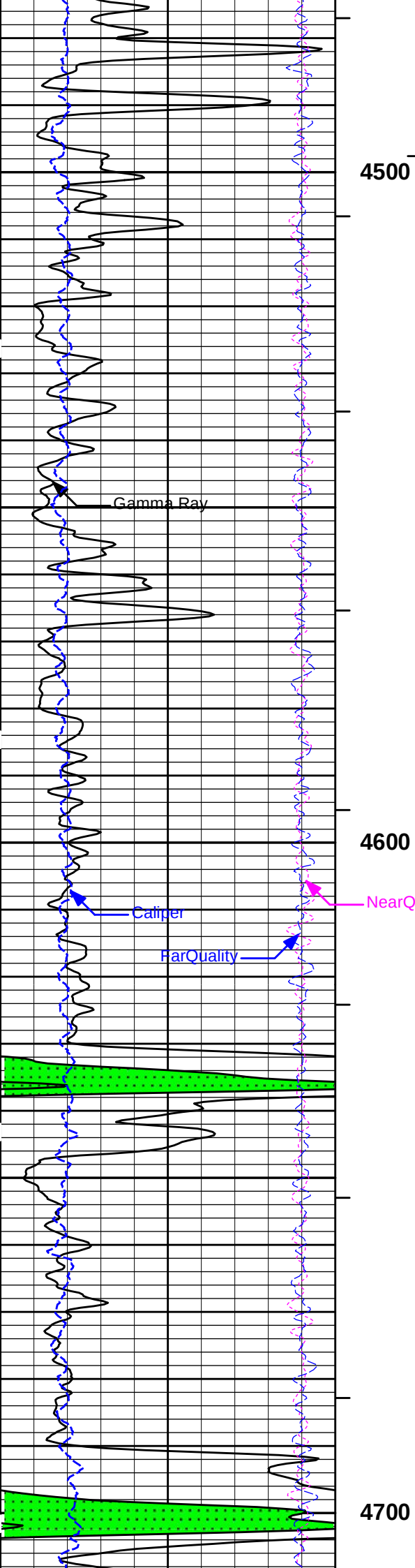
5 INCH MAIN LOG

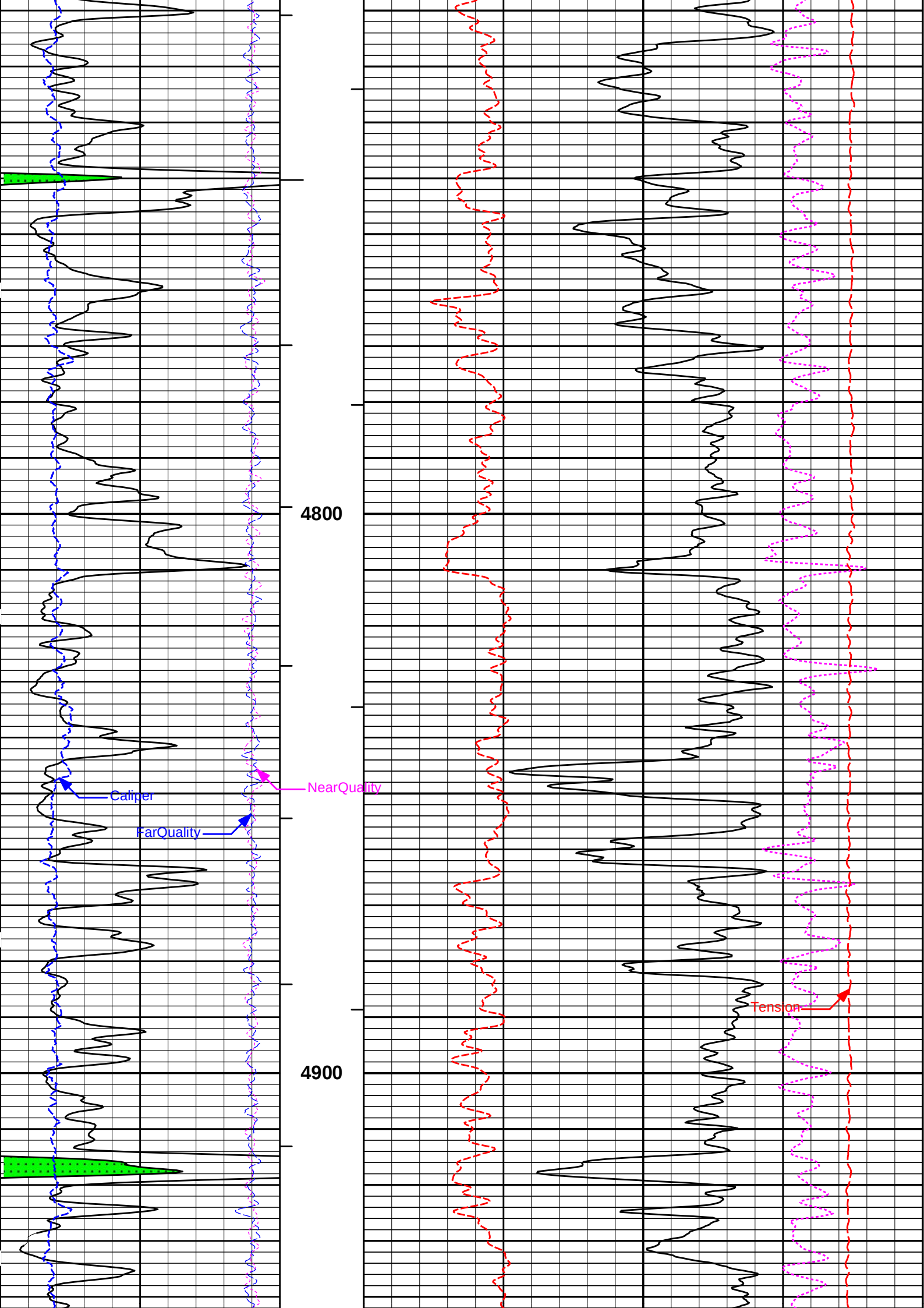
MEASURED DEPTH
MAIN SECTION 5" PER 100'

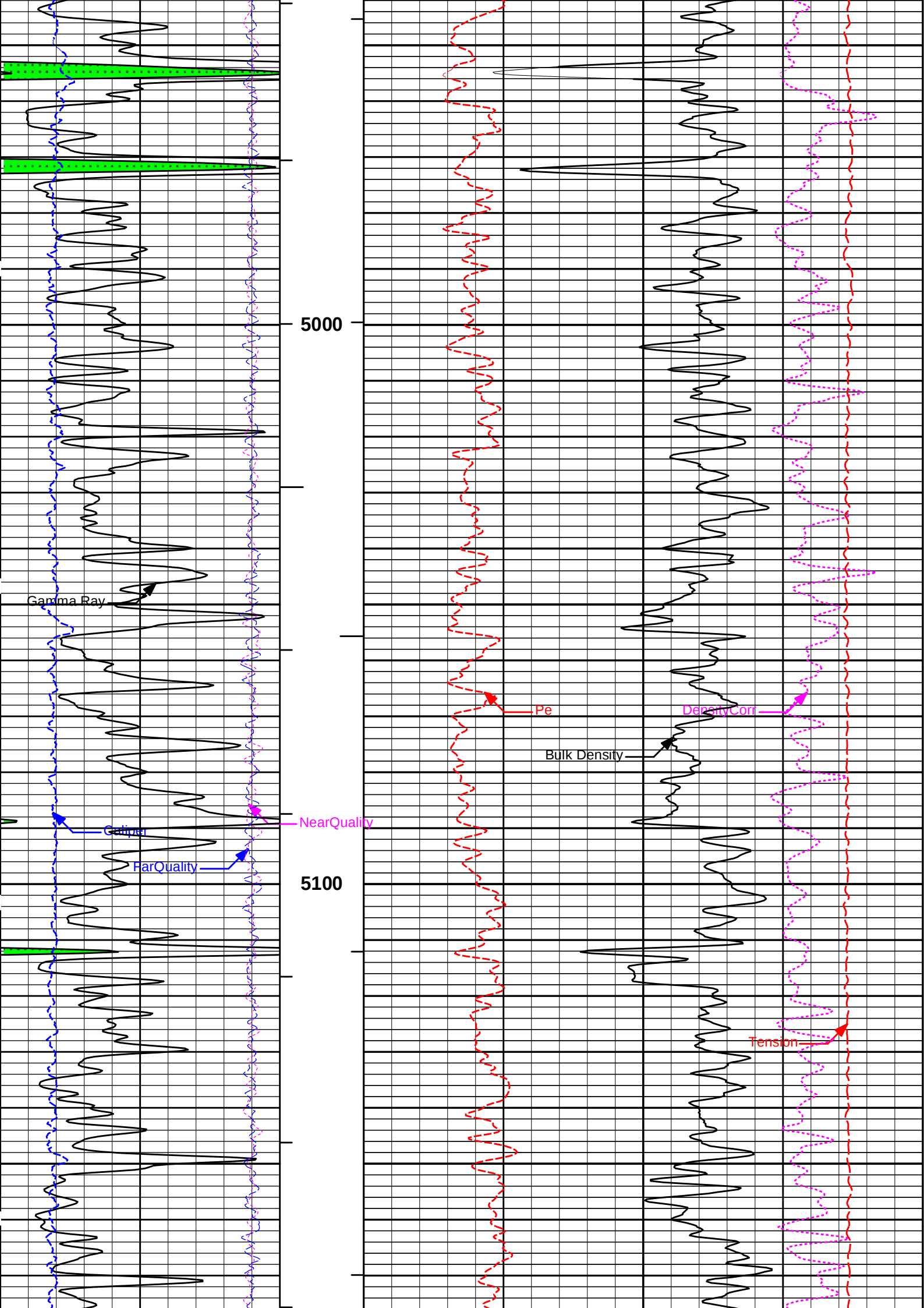


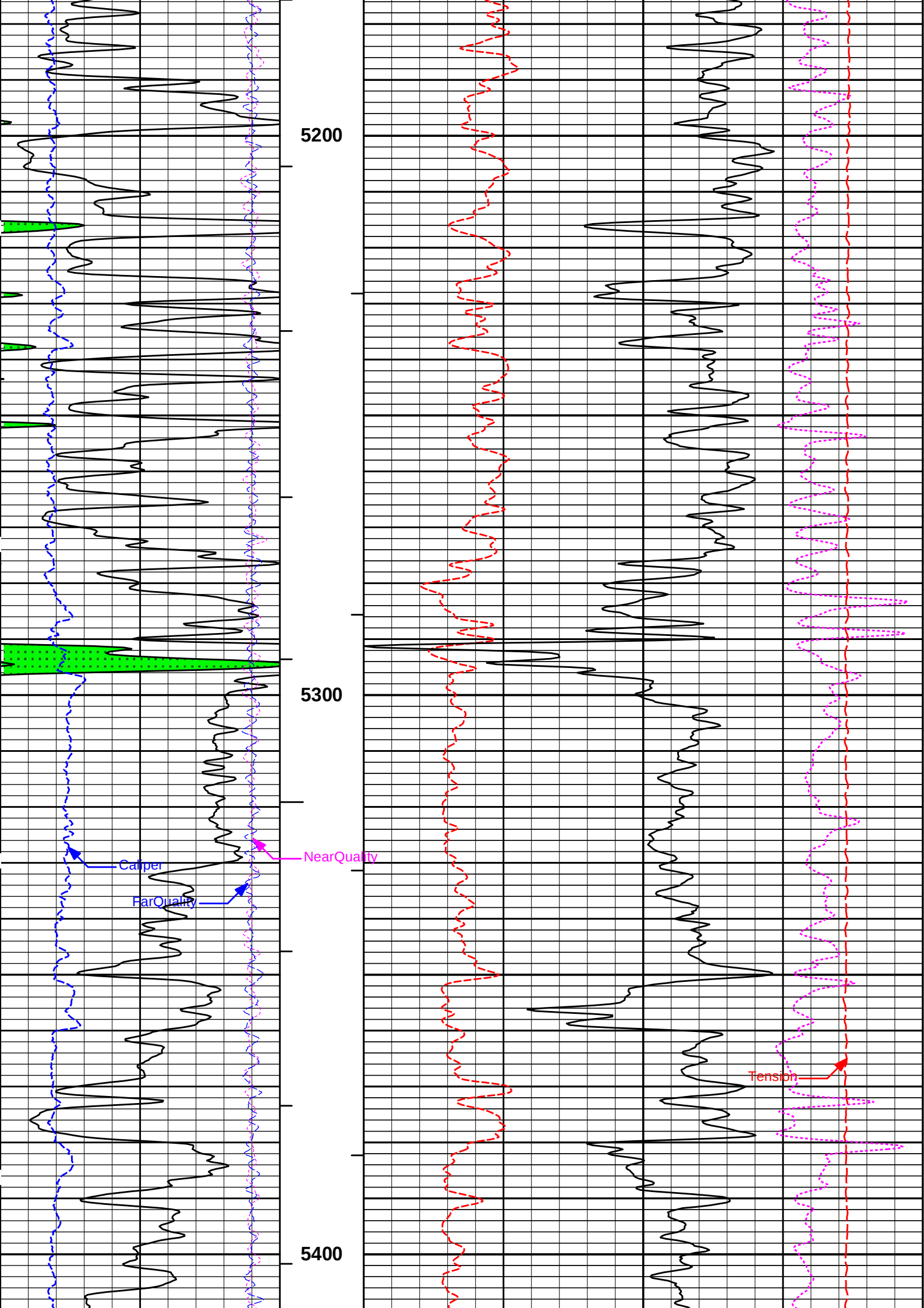


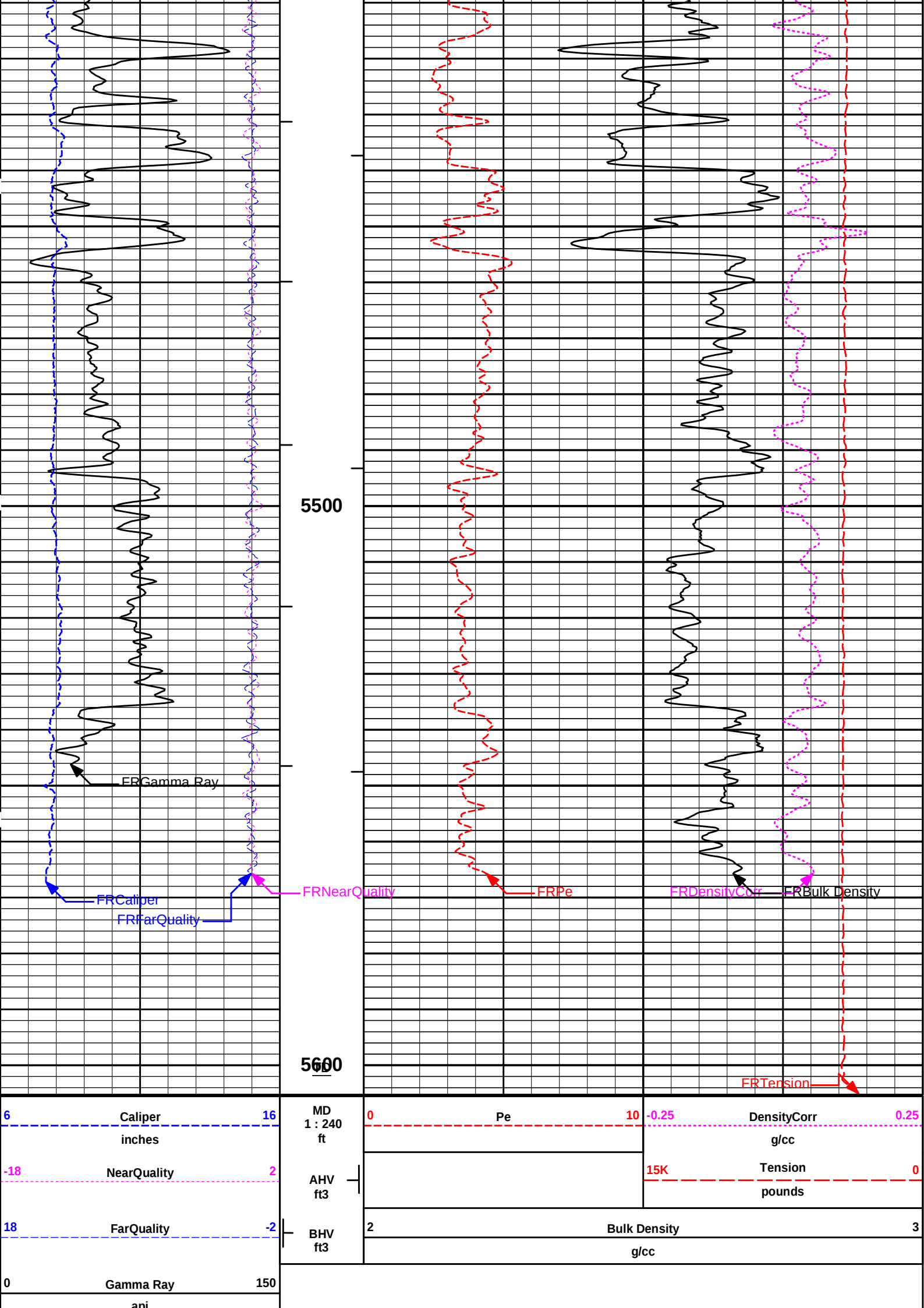












5500

5600

ERG Gamma Ray

FR Caliper

FR FarQuality

FR NearQuality

FR Pe

FR DensityCorr

FR Bulk Density

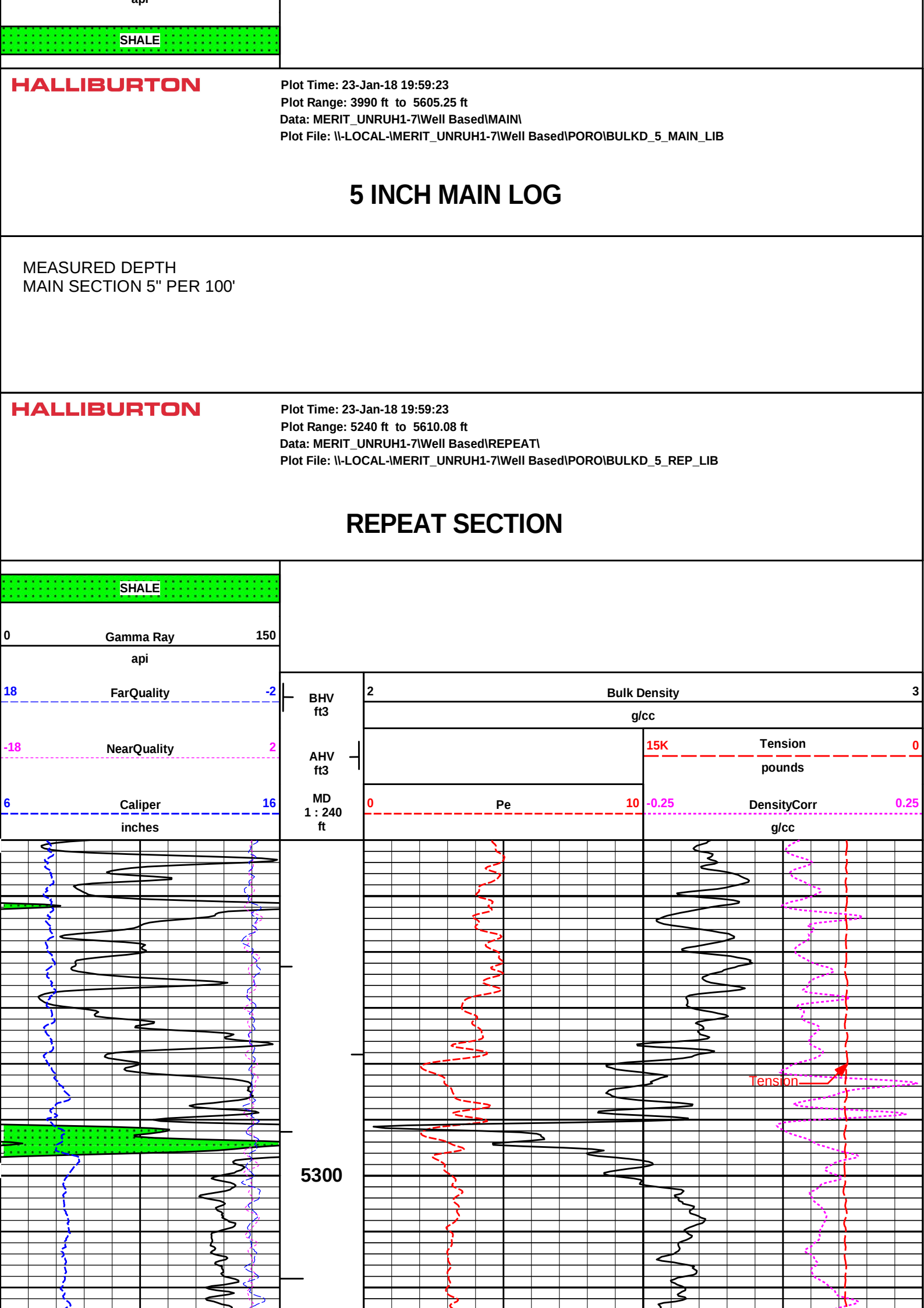
FR Tension

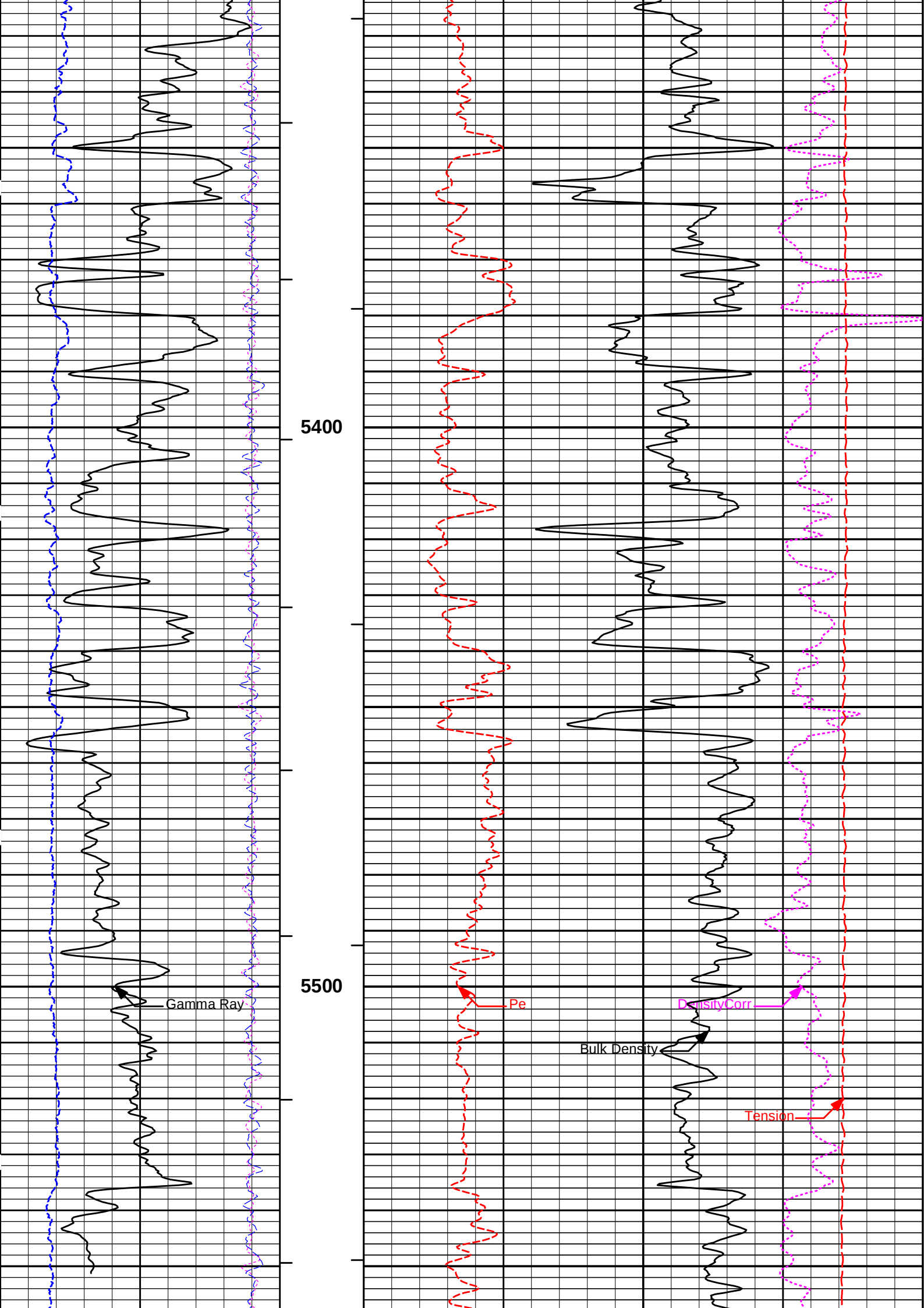
6	Caliper	16
	inches	
-18	NearQuality	2
18	FarQuality	-2
0	Gamma Ray	150
	api	

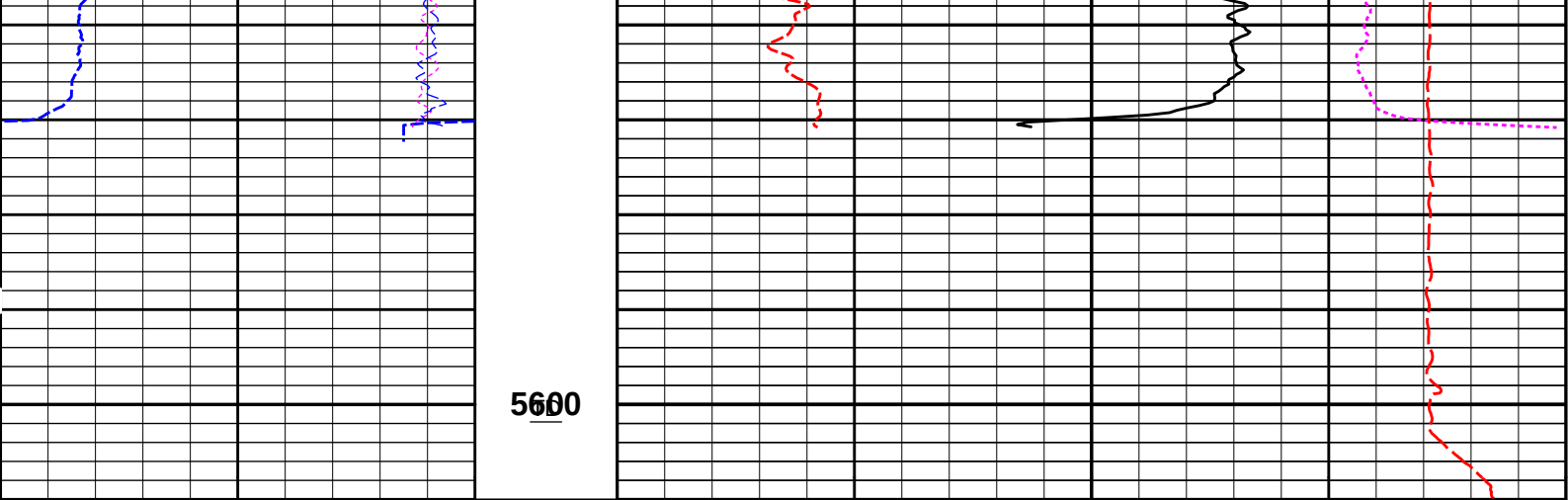
MD	1 : 240
ft	
AHV	ft3
BHV	ft3

0	Pe	10
2	Bulk Density	3
	g/cc	

-0.25	DensityCorr	0.25
	g/cc	
15K	Tension	0
	pounds	







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

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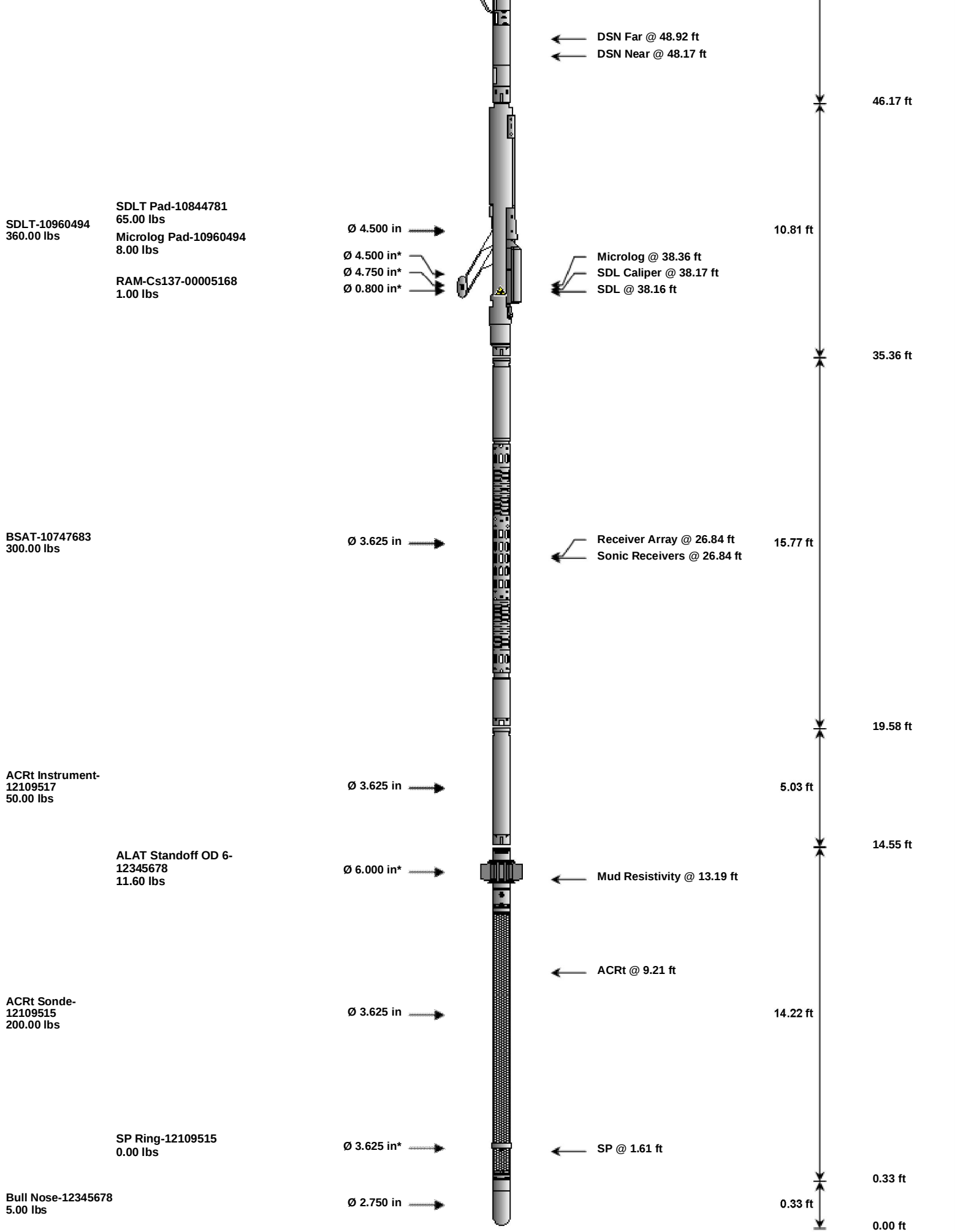
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Data: MERIT_UNRUH1-7\Well Based\REPEAT\
Plot File: \\-LOCAL-MERIT_UNRUH1-7\Well Based\PORO\BULKD_5_REP_LIB

REPEAT SECTION

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TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
CH_HOS-11459024 37.50 lbs		Ø 2.750 in		← Temperature @ 67.33 ft	2.50 ft	67.83 ft
XOHD-11572809 20.00 lbs		Ø 2.750 in Ø 3.625 in			0.95 ft	65.33 ft
				← Z-Accelerometer @ 63.93 ft		64.38 ft
GTET-11958947 165.00 lbs		Ø 3.625 in			8.52 ft	
				← GammaRay @ 58.32 ft		
						55.86 ft
DSN Decentralizer-11055304 6.60 lbs		Ø 5.000 in*				
DSNT-11055304 174.00 lbs		Ø 3.625 in			9.69 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	11459024	37.50	2.50	65.33	300.00
XOHD	Hostile to Dits Cross Over	11572809	20.00	0.95	64.38	300.00
GTET	Gamma Telemetry Tool	11958947	165.00	8.52	55.86	60.00
DSNT	Dual Spaced Neutron	11055304	174.00	9.69	46.17	60.00
BN	Bull Nose	11255221	5.00	5.19	41.52	300.00

DCNT	DSN Decentralizer	11055304	6.60	5.13	*	49.50	300.00
SDLT	Spectral Density Tool	10960494	360.00	10.81		35.36	60.00
SDLP	Density Insite Pad	10844781	65.00	2.55	*	37.57	60.00
Cs137	Logging Source, SDLT-I, 1.78 Ci - Cs137	00005168	1.00	0.80	*	37.80	300.00
MICP	Microlog Pad	10960494	8.00	1.00	*	37.86	60.00
BSAT	Borehole Sonic Array Tool	10747683	300.00	15.77		19.58	60.00
ACRt	Array Compensated True Resistivity Instrument Section	12109517	50.00	5.03		14.55	120.00
ACRt	Array Compensated True Resistivity Sonde Section	12109515	200.00	14.22		0.33	120.00
SP	SP Ring	12109515	0.00	0.25	*	1.61	300.00
ALATS	Array Laterolog Tool OD 6 Standoff	12345678	11.60	1.00	*	12.98	60.00
BLNS	Bull Nose	12345678	5.00	0.33		0.00	300.00
Total			1,403.70	67.83			
* Not included in Total Length and Length Accumulation.							
Data: MERIT_UNRUH1-7I0001 GTET-DSNT-SDLT-BSAT-ACRTI004 23-Jan-18 17:53 Up @5605.8f				Date: 23-Jan-18 18:06:27			

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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	9.200	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	CSTR	Compressive Strength	1000.00	psia
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	5600.00	ft
	SHARED	BHT	Bottom Hole Temperature	140.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	CBM Temperature Master Tool	GTET	
	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 / CrossPlot	BHSM	Borehole Size Source Tool	SDLT	
	Rwa / CrossPlot	ROIN	Input for RO Calculation	Rwa	
	GTET	GROK	Process Gamma Ray?	Yes	
	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	DNTT	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	
Microlog Pad	MLOK	Process MicroLog 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	
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 Pore 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	Eccentered	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMAX	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: MERIT_UNRUH1-7I0001 GTET-DSNT-SDLT-BSAT-ACRTI004 23-Jan-18 17:53 Up @5605.8f			Date: 23-Jan-18 18:29:56	

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CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:GTET - 11958947

Engineer:HARRIS

Software Version:WL INSITE R5.0.5 (Build 8)

Reference Calibration Date:08-Dec-17 09:10:57

Calibration Date:08-Dec-17 09:13:31

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	23.1	23.7	api

Background	33.1	32.7	api
Background + Calibrator	267.5	264.7	api
Calibrator	234.4	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION			
Tool Name:	GTET - 11958947	Reference Calibration Date:	08-Dec-17 09:13:31
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	14-Jan-18 10:40:47
Software Version:	WL INSITE R5.0.5 (Build 8)	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	32.7	22.9	api
Background + Calibrator	264.7	255.8	api
Calibrator	232.0	232.9	api
Shop	Field	Difference	Tolerance
232.0	232.9	-0.9	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION			
Tool Name:	DSNT - 11055304	Reference Calibration Date:	26-Dec-17 10:04:12
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	26-Dec-17 10:24:08
Software Version:	WL INSITE R5.0.5 (Build 8)	Calibration Version:	1

Logging Source S/N: DSN-424

Tank Serial Number: 12345678

Reference value assigned to Tank: 56.100

Snow Block S/N: 12345678

Calibration Tank Water Temperature: 68 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	1.03005	1.02655	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):	0.2368	0.2358	0.0011	+/- 0.0020
Calibrated Ratio:	10.5954	10.5595	0.036	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0338	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:	26-Dec-17 10:24:08
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	14-Jan-18 10:26:02
Software Version:	WL INSITE R5.0.5 (Build 8)	Calibration Version:	1

Logging Source S/N: DSN-424			
Snow Block S/N: 12345678			

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0338	0.0474	0.0136	+/- 0.0150
PASS/FAIL SUMMARY				
Block Change Check:			Passed	
Snow Block Stat Check:			Passed	
Temperature Check:			Passed	

DENSITY CALIPER SHOP CALIBRATION			
Tool Name:	SDLT - 10960494	Reference Calibration Date:	20-Aug-17 12:41:21
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	09-Dec-17 12:48:22
Software Version:	WL INSITE R5.0.5 (Build 8)	Calibration Version:	1
Host Tool Name:	DSNT - 11055304		

CALIBRATION COEFFICIENTS				
Measurement	Previous Value	New Value	Control Limit On New Value	
Pad Offset	-2993.12	-3003.48	-7000.00 - -1000.00	
Pad Gain	0.0003799	0.0003806	0.0002000 - 0.0006000	
Arm Offset	-746.82	-1647.28	-5000.00 - 3000.00	
Arm Gain	0.0004486	0.0005279	0.000300 - 0.000700	
Arm Power	-0.000001023	-0.000005848	-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)	2.00	2.00	0.00	+/- 0.20
Medium Ring (in)	3.75	3.75	0.00	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.64	6.50	-0.14	+/- 0.20
Medium Ring (in)	8.21	8.25	0.04	+/- 0.20
Large Ring (in)	14.95	15.00	0.05	+/- 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 - 10960494	Reference Calibration Date:	09-Dec-17 12:48:22	
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	14-Jan-18 09:50:40	
Software Version:	WL INSITE R5.0.5 (Build 8)	Calibration Version:	1	

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.75	-0.00	+/- 0.10
Ring Diameter	8.25	8.25	0.00	+/- 0.15
PASS/FAIL SUMMARY				
Pad Extension Check:			Passed	
Diameter Check:			Passed	

MICRO LOG SHOP CALIBRATION				
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Tool Name: Microlog Pad - 10960494			Reference Calibration Date: 24-Nov-17 11:21:38		
Engineer: JORGE ORLANDO PEREZ			Calibration Date: 24-Nov-17 11:23:09		
Software Version: WL INSITE R5.0.5 (Build 8)			Calibration Version: 1		
Host Tool Name: DSNT - 11055304					

	CALIBRATION COEFFICIENT SUMMARY					
	Measurement	Micro Log Normal		Micro Log Lateral		Units
		Measured	Calibrated	Measured	Calibrated	
	Tool Zero	-0.18	-0.17	-0.00	0.00	ohmm
	Calibration Point #1	-0.01	0.00	-0.00	0.00	ohmm
	Calibration Point #2	20.00	20.00	20.00	20.00	ohmm
	Internal Reference	19.83	19.83	19.99	19.99	ohmm
	Measurement	Micro Log Normal Tool Value		Micro Log Lateral Tool Value		Units
	Tool Zero		-1.46		0.65	V
	Calibration Point #1		44.89		0.58	V
	Calibration Point #2		5370.73		6909.13	V
	Internal Reference		5324.87		6905.27	V

MICRO LOG FIELD CHECK					
Tool Name: Microlog Pad - 10960494			Reference Calibration Date: 24-Nov-17 11:23:09		
Engineer: JORGE ORLANDO PEREZ			Calibration Date: 14-Jan-18 10:36:41		
Software Version: WL INSITE R5.0.5 (Build 8)			Calibration Version: 1		

	Measurement	Micro Log Normal		Micro Log Lateral		Units
		Shop	Field	Shop	Field	
	Tool Zero	-0.17	-0.17	0.00	-0.00	ohmm
	Internal Reference	19.83	19.77	19.99	19.93	ohmm
	Summary					
	Signal	Shop	Field	Difference	Tolerance	
	Microlog Normal	19.83	19.77	0.06	+/- 0.80	
	Microlog Lateral	19.99	19.93	0.06	+/- 0.80	

SPECTRAL DENSITY SHOP CALIBRATION					
Tool Name: SDLT Pad - 10844781			Reference Calibration Date: 13-Mar-17 10:24:03		
Engineer: JORGE ORLANDO PEREZ			Calibration Date: 09-Dec-17 11:03:23		
Software Version: WL INSITE R5.0.5 (Build 8)			Calibration Version: 1		

Logging Source S/N: 5168GW					
Aluminum Block S/N: EL RENO STD ALUMINUM			Density: 2.581g/cc		Pe: 3.170
Magnesium Block S/N: EL RENO			Density: 1.687g/cc		Pe: 2.594

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0364	1.0186	0.90 - 1.10
Near Dens Gain	1.0238	1.0069	0.90 - 1.10
Near Peak Gain	1.0221	1.0079	0.90 - 1.10
Near Lith Gain	1.0552	1.0294	0.90 - 1.10
Far Bar Gain	1.0145	1.0123	0.90 - 1.10
Far Dens Gain	1.0038	0.9989	0.90 - 1.10
Far Peak Gain	1.0000	0.9971	0.90 - 1.10
Far Lith Gain	0.9816	0.9753	0.90 - 1.10
Near Bar Offset	-0.0376	0.1365	NONE
Near Dens Offset	0.0482	0.2065	NONE
Near Peak Offset	0.0495	0.1754	NONE

Near Lith Offset	-0.2247	-0.0123	NONE
Far Bar Offset	0.1095	0.1369	NONE
Far Dens Offset	0.1904	0.2360	NONE
Far Peak Offset	0.2182	0.2309	NONE
Far Lith Offset	0.3442	0.3659	NONE
Near Bar Background	733.33	732.60	700 - 1450
Near Dens Background	239.77	241.62	230 - 480
Near Peak Background	105.24	104.56	100 - 210
Near Lith Background	129.58	128.06	125 - 260
Far Bar Background	478.31	473.96	450 - 900
Far Dens Background	188.83	186.91	175 - 345
Far Peak Background	74.80	74.19	70 - 140
Far Lith Background	77.92	76.67	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.675	1.687	0.012	+/- 0.015
Pe	2.474	2.559	0.085	+/- 0.150
ALUMINUM				
Density (g/cc)	2.566	2.581	0.015	+/- 0.01500
Pe	3.051	3.132	0.081	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0007	+/- 0.0110	-0.0009	+/- 0.0140
Magnesium Block	-0.0007	+/- 0.0110	-0.0029	+/- 0.0140
Aluminum Block	-0.0007	+/- 0.0110	0.0006	+/- 0.0140
Resolution	9.59	6.00 - 11.50	8.79	6.00 - 11.50
Internal Verifier(B+D+P+L)	1207	1200 - 2700	812	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 - 10844781	Reference Calibration Date:	09-Dec-17 11:03:23
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	14-Jan-18 10:40:37
Software Version:	WL INSITE R5.0.5 (Build 8)	Calibration Version:	1

Pad Temperature: 64.7 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1206.834	1193.624	-13.210	14.101
Far (B+D+P+L) cps	811.738	805.890	-5.848	15.745
Near Resolution	9.59	9.63	0.040	0.50

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

Tool Name:	ACRt Sonde - 12109515	Reference Calibration Date:	29-Oct-17 12:16:12
Engineer:	T. HYDE	Calibration Date:	29-Oct-17 12:24:54
are Version:	WL INSITE R5.0.5 (Build 8)	Calibration Version:	1
Tool Name:	ACRt Instrument - 12109517		

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0368	1.05	0.95	1.0182	1.05	0.95	1.0111	1.05
A2 (50")	0.95	1.0429	1.05	0.95	1.0254	1.05	0.95	1.0223	1.05
A3 (29")	0.95	1.0376	1.05	0.95	1.0194	1.05	0.95	1.0142	1.05
A4 (17")	0.95	1.0291	1.05	0.95	1.0092	1.05	0.95	1.0057	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0106	1.05	0.95	1.0054	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9936	1.05	0.95	0.9891	1.05

Subarray	R12KHz	R36KHz	R72KHz
	(mmho/m)	(mmho/m)	(mmho/m)
A1 (80")	0.969	-4.404	-5.779
A2 (50")	-0.369	-3.928	-4.960
A3 (29")	-14.206	-4.603	-3.606
A4 (17")	-109.510	-33.682	-25.617
A5 (10")	N/A	-87.571	-39.325
A6 (6")	N/A	296.317	152.747

Signal	Lower	R	Upper
12K	0.6	0.90	1.3
36K	1.0	1.90	2.0
72K	1.0	1.14	2.0

GAIN RANGE CHK	PASS
SONDE OFFSET CHK	PASS

Microlog Pad-10960494

MicroLog Pad-10844781						
MicroLog Normal	19.83	19.77	-----	0.06	+/-0.80	ohmm
MicroLog Lateral	19.99	19.93	-----	0.06	+/-0.80	ohmm
SDLT Pad-10844781						
Near(B+D+P+L)	1206.834	1193.624	-----	13.210	+/-14.101	cps
Far(B+D+P+L)	811.738	805.890	-----	5.848	+/-15.745	cps
ACRt Sonde-12109515						
Mud Cell	1.00	-----	-----	0	-----	ohm-m
Data: MERIT_UNRUH1-7\0001 GTET-DSNT-SDLT-BSAT-ACRT\IDLE						
Date: 23-Jan-18 18:30:47						

COMPANY	MERIT ENERGY COMPANY					
WELL	UNRUH 1-7					
FIELD	WILDCAT					
COUNTY	HASKELL	STATE	KANSAS			
HALLIBURTON			DUAL SPACED NEUTRON SPECTRAL DENSITY LOG			