

HALLIBURTON

DUAL SPACED NEUTRON
SPECTRAL DENSITY
LOG

MERIT ENERGY COMPANY					COMPANY		MERIT ENERGY COMPANY		
MCWILLIAMS E-7					WELL		MCWILLIAMS E-7		
COWGILL					FIELD/BLOCK		COWGILL		
FINNEY					COUNTY		FINNEY		
KANSAS					COUNTY		FINNEY		
STATE					COUNTY		STATE KANSAS		
COMPANY		WELL		FIELD/BLOCK		COUNTY		STATE	
Permanent Datum		GL		Sect. 21		Twp. 24S		Rge. 33W	
Log measured from		KB		KB		12.0 ft above perm. Datum		Elev. 2887.0 ft	
Drilling measured from		KB		KB				Elev.: K.B. 2899.0 ft D.F. 2899.0 ft G.L. 2887.0 ft	
Date		08-Apr-18							
Run No.		ONE							
Depth - Driller		5269.0 ft							
Depth - Logger		5268.0 ft							
Bottom - Logged Interval		5230.00 ft							
Top - Logged Interval		3800.00 ft							
Casing - Driller		8.625 in		@ 1704.0 ft				@	
Casing - Logger		1706.0 ft							
Bit Size		7.875 in				@		@	
Type Fluid in Hole		Water Based Mud							
Density		9.3 ppg		62.00 s/qt					
PH		11.00 pH		5.6 cphm					
Source of Sample		MUD PIT							
Rm @ Meas. Temperature		1.11 ohmm		@ 75.00 degF		@		@	
Rmf @ Meas. Temperature		0.94 ohmm		@ 75.00 degF		@		@	
Rmc @ Meas. Temperature		1.25 ohmm		@ 75.00 degF		@		@	
Source Rmf		MEAS		MEAS					
Rm @ BHT		0.65 ohmm		@ 132.0 degF		@		@	
Time Since Circulation		5.00 hr							
Time on Bottom		08-Apr-18 16:00							
Max. Rec. Temperature		132.00 degF		@ 5268.0 ft		@		@	
Equipment		12147634		EL RENO					
Recorded By		JORGE ORLANDO PEREZ							
Witnessed By		MARTIN LANGE		AUSTIN GARNER					

Service Ticket No.: 904762847						API No.: 15055224840100						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		1.5 S.O.		N/A				
Rmc @ Meas. Temp.			@		@		I-11026095										
Source Rmf	Rmc						S-11005908										
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.		10951315		Serial No.		11055304			
Model No.		GTET		Model No.		BSAT		Model No.		SDLT		Model No.		DSNT			
Diameter		3.625"		No. of Cent.		2		Diameter		5.5"		Diameter		3.625"			
Detector Model No.		T-102		Spacing		EVEN		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	CSG	REC	0	150	30	-10	47.6 uSec/ft	30	-10	2.71 gr/cc	30	-10	LIME			

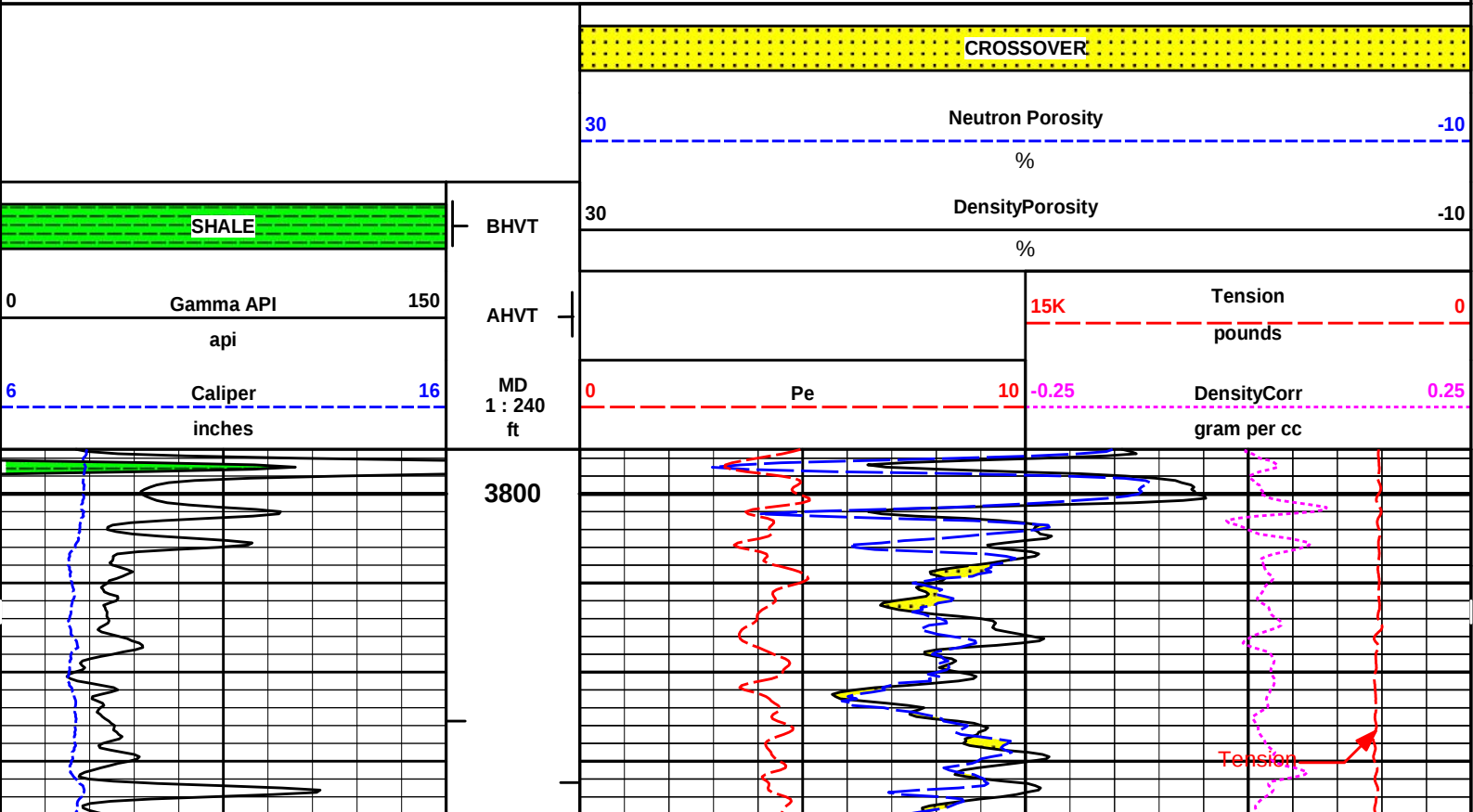
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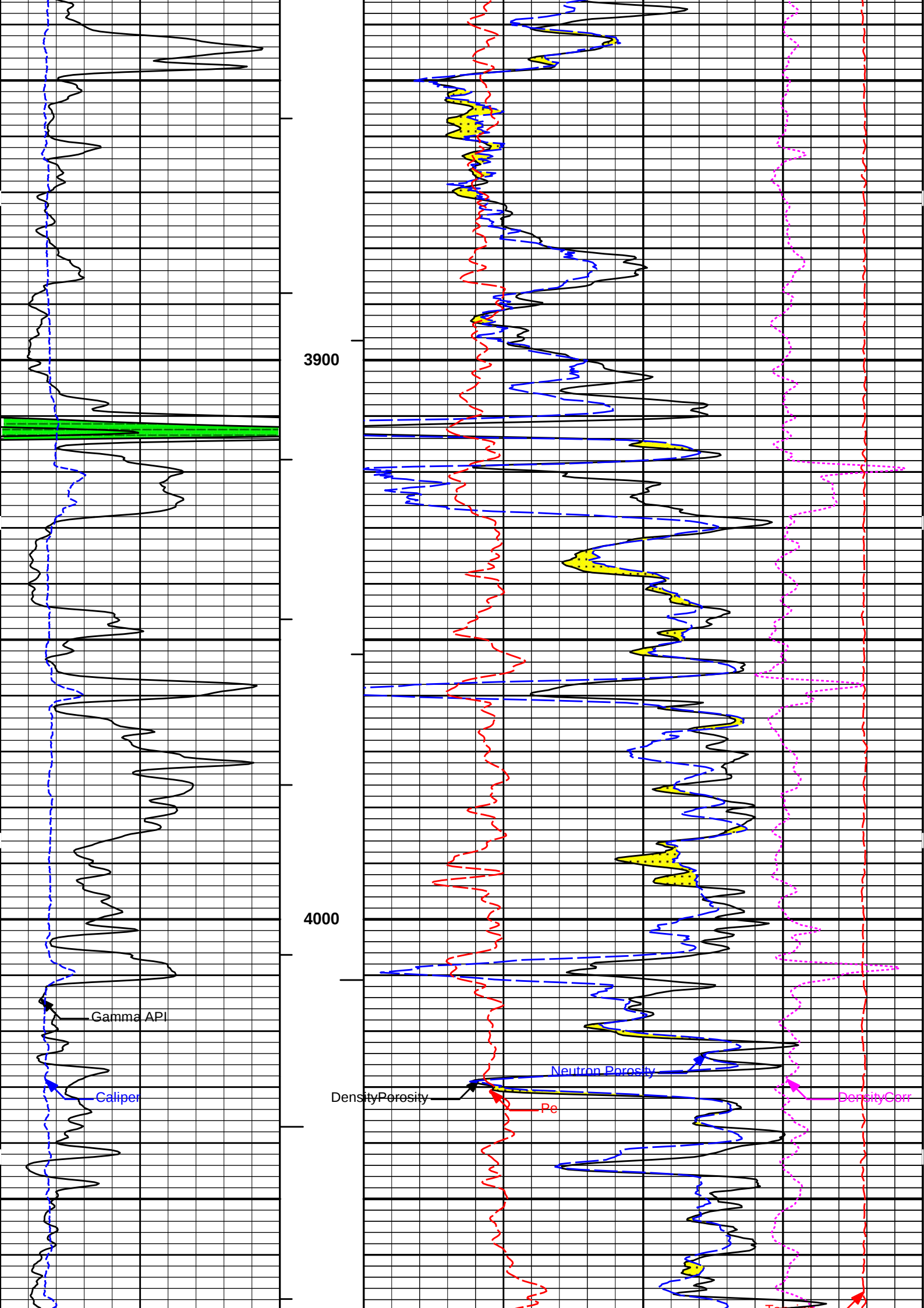
HALLIBURTON

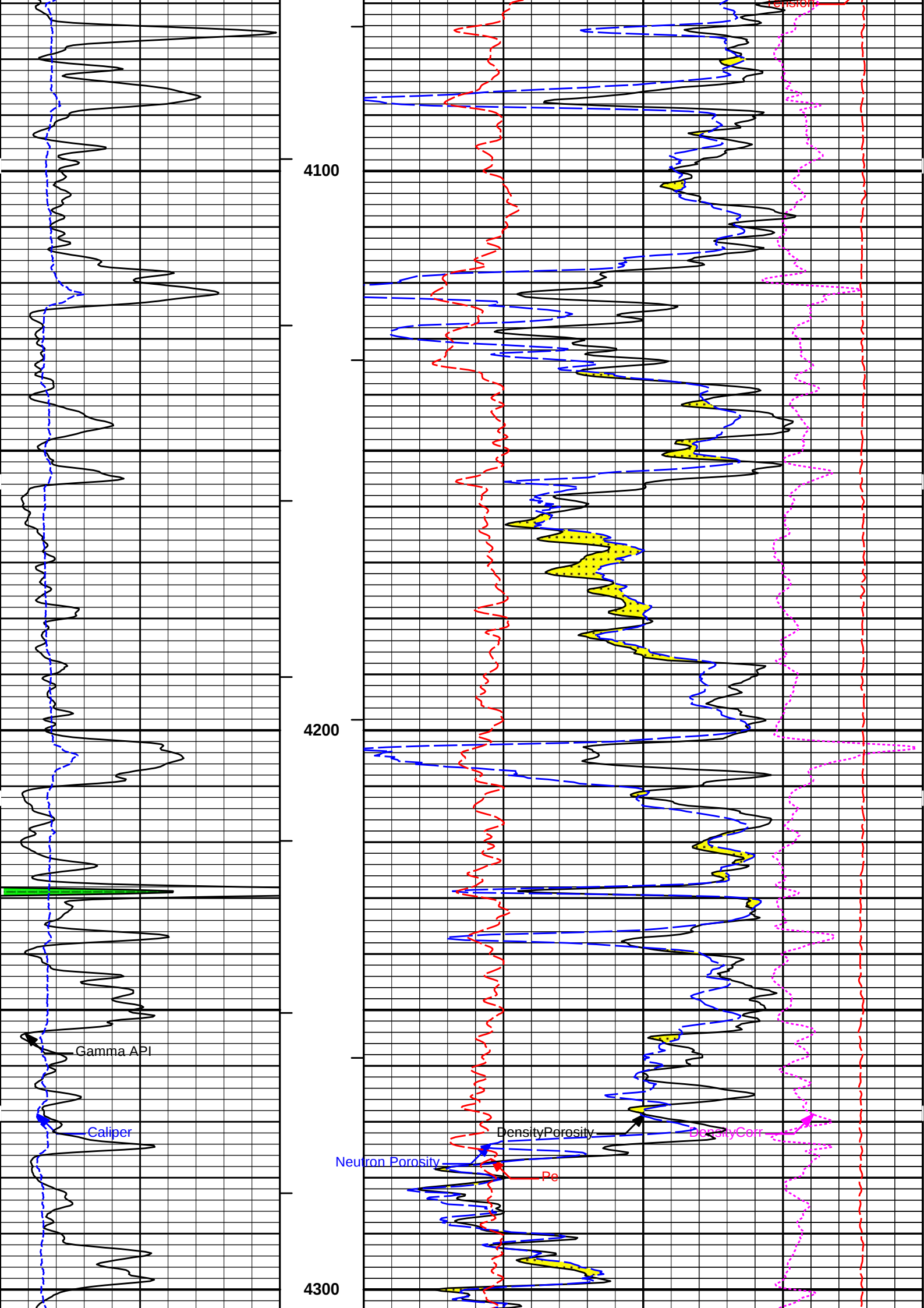
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Plot Range: 3795 ft to 5273.33 ft
Data: MCWILLIAMS_E7\Well Based\DETAILS\
Plot File: \\POROSITY\Porosity_Q_5_MAIN_LIB

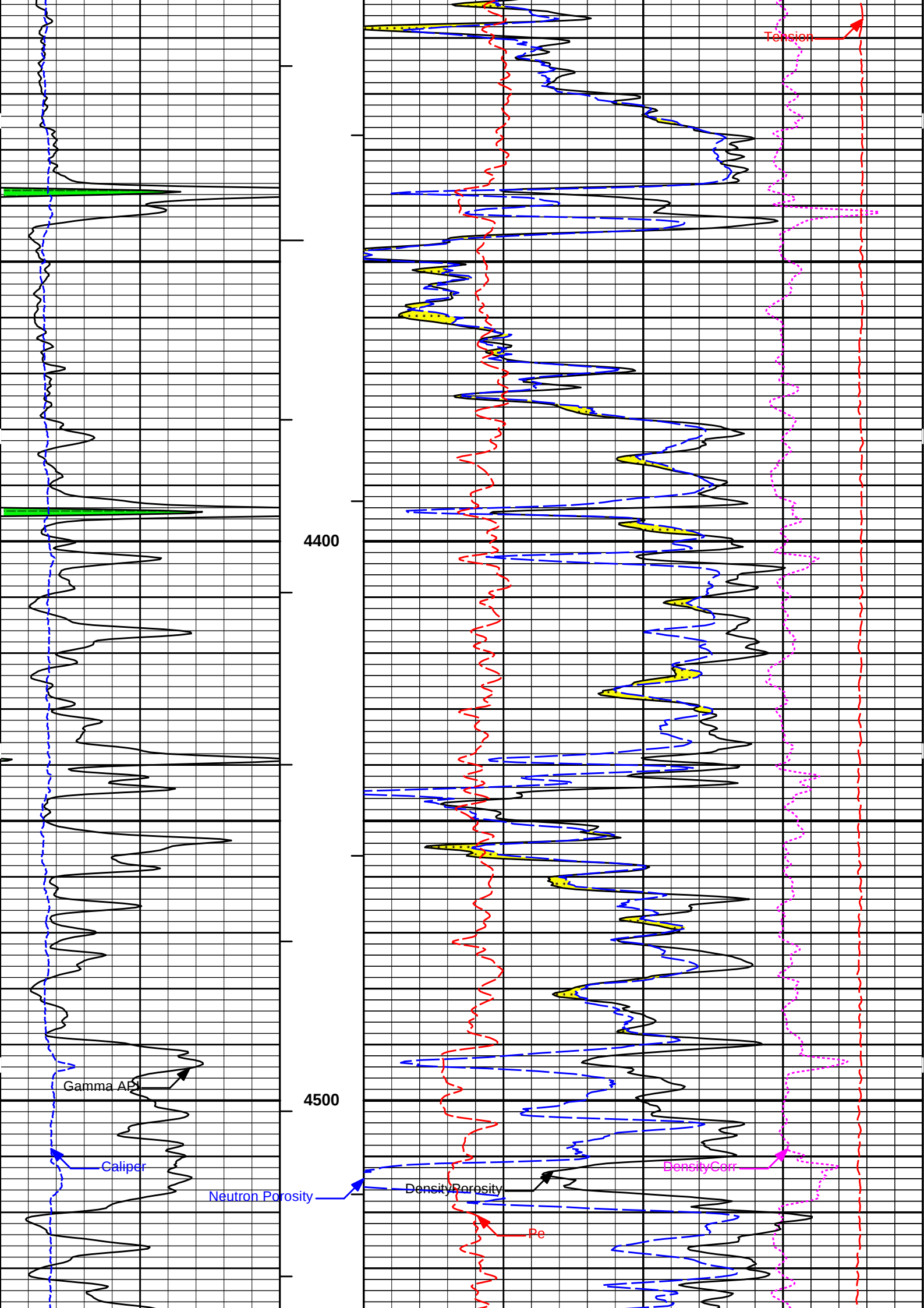
5 INCH MAIN LOG

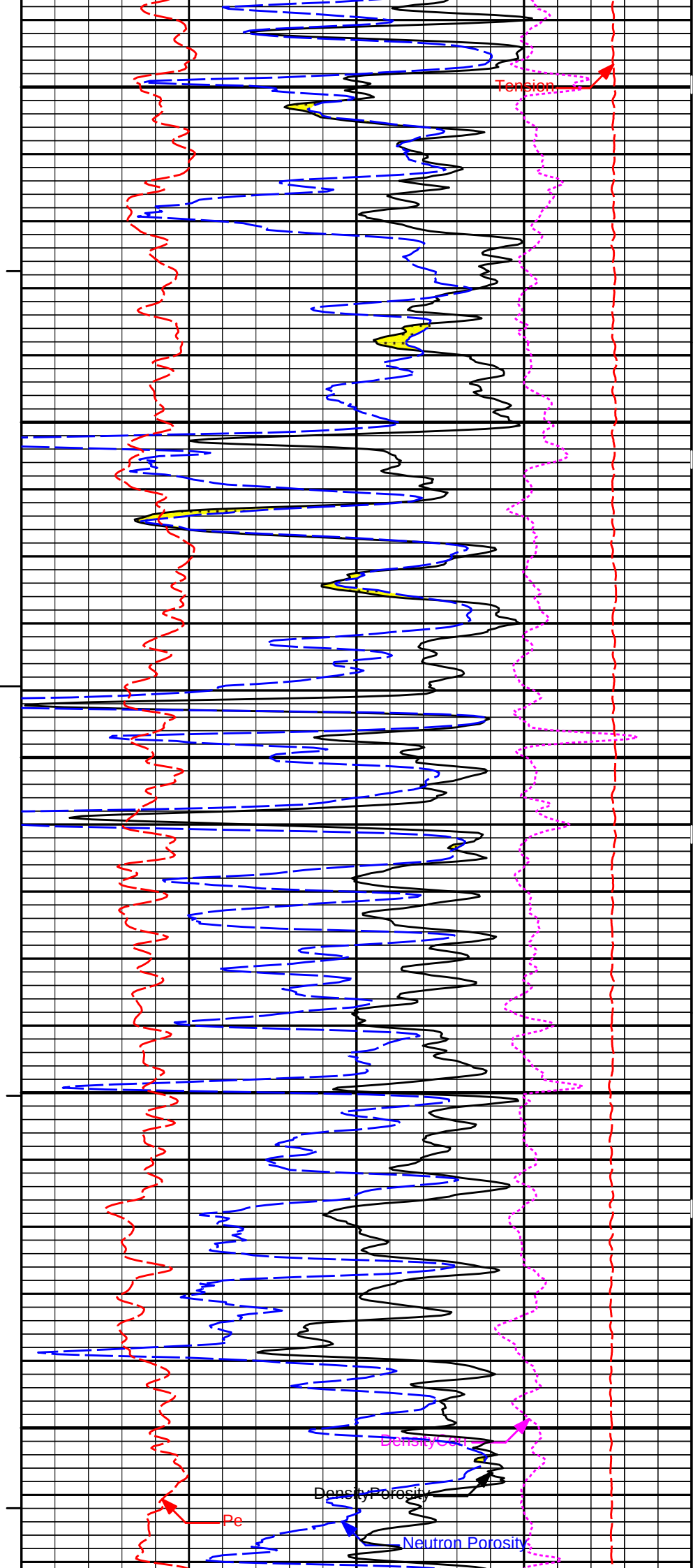
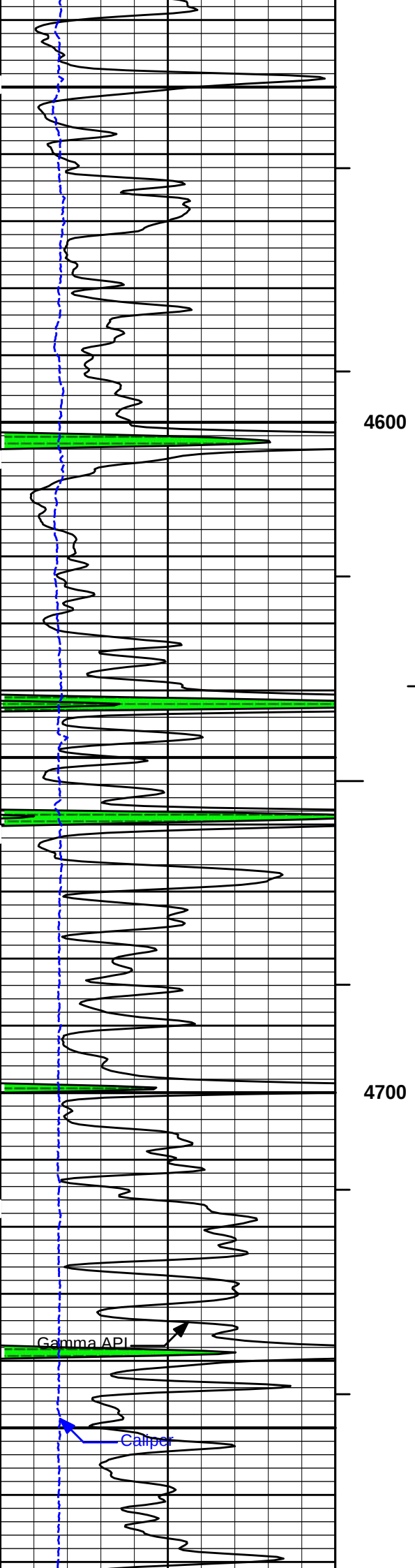
MEASURED DEPTH
MAIN SECTION 5" PER 100'

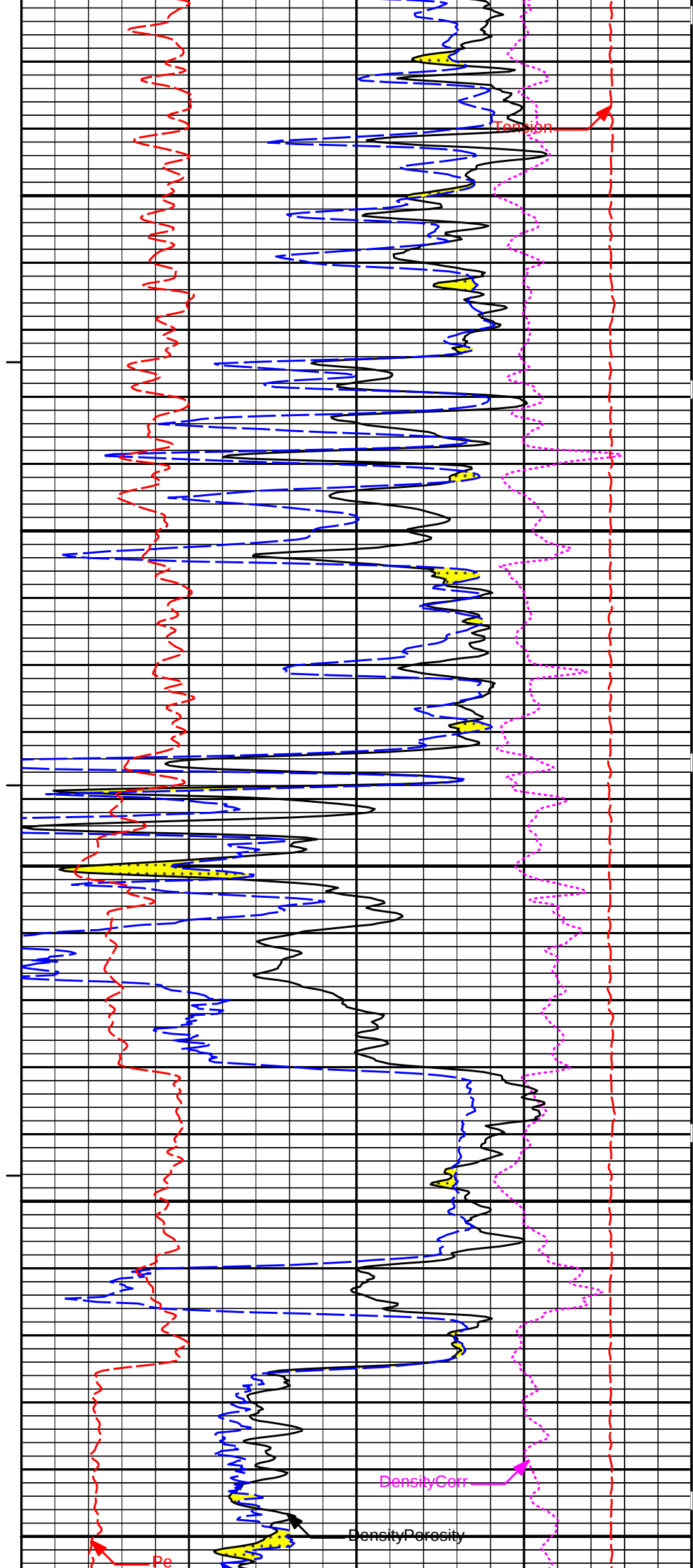
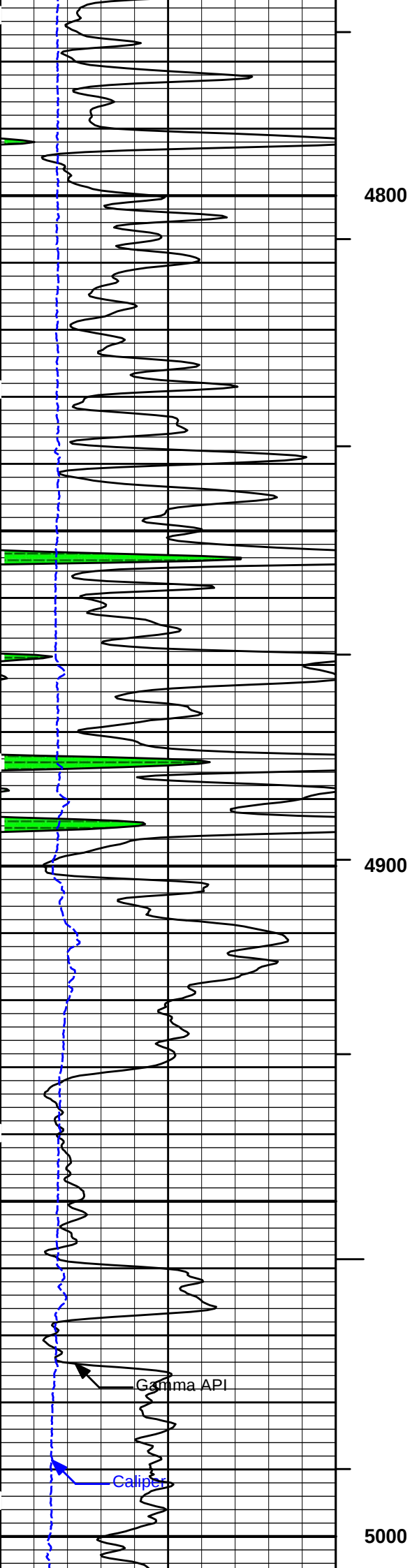


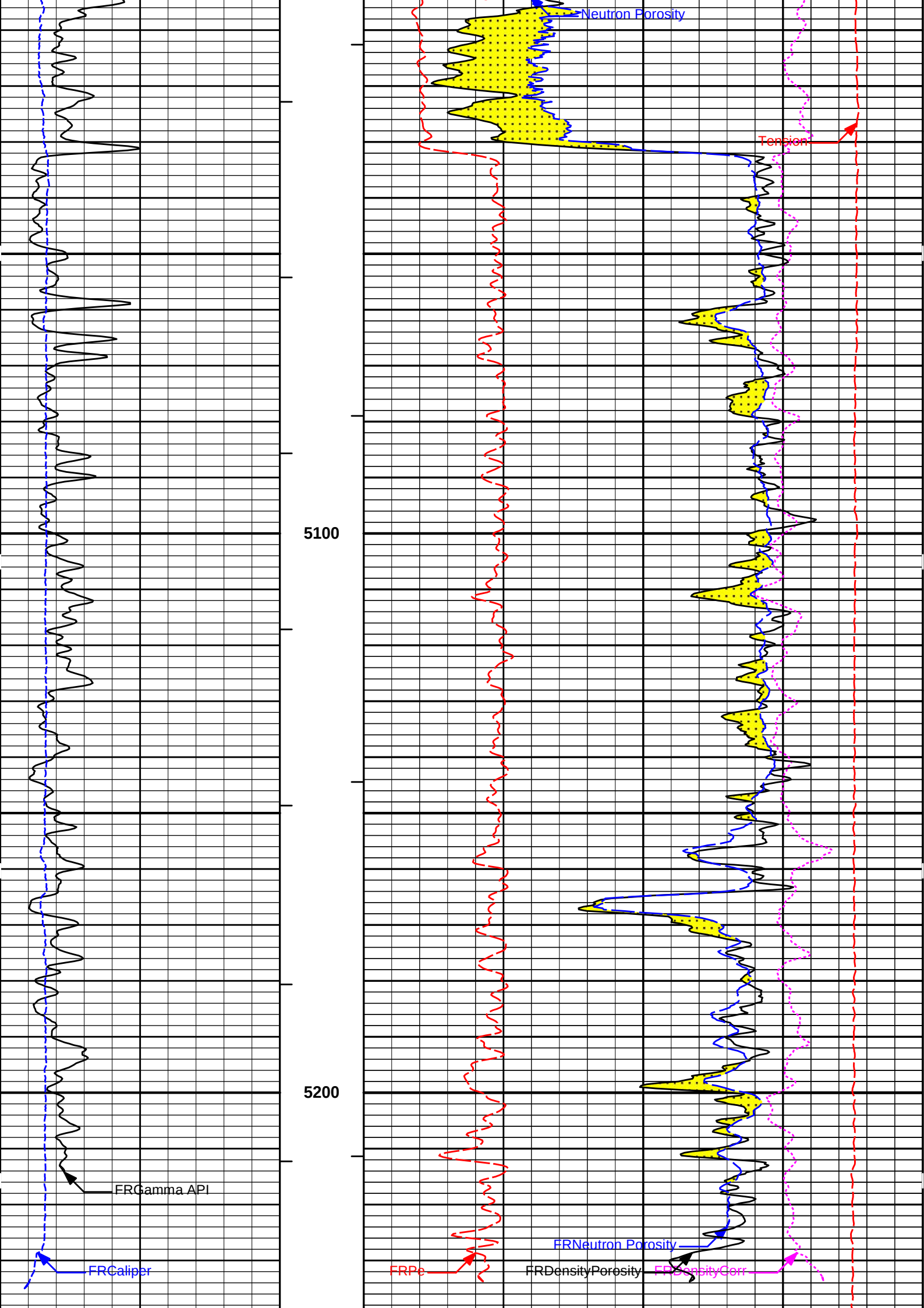


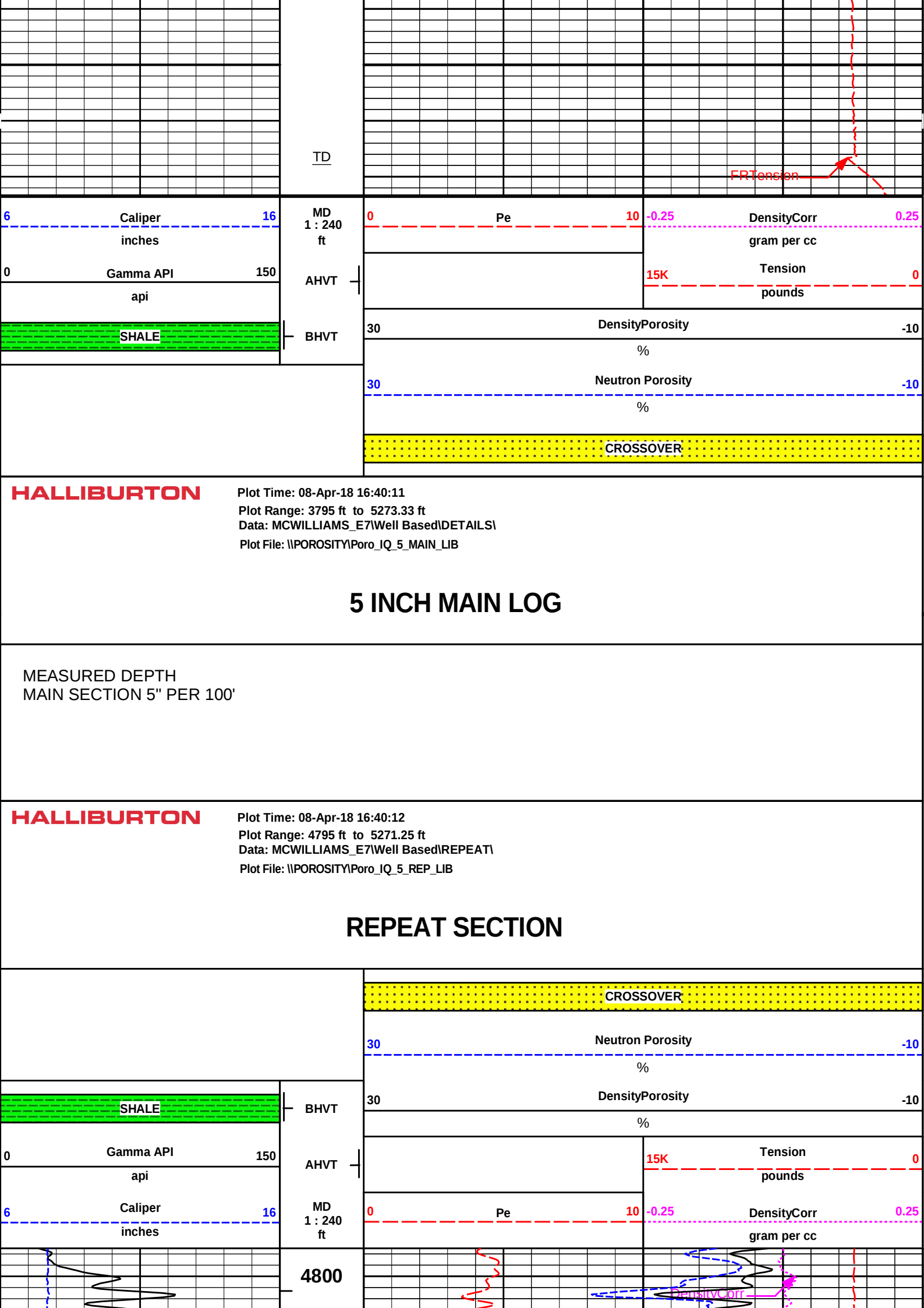


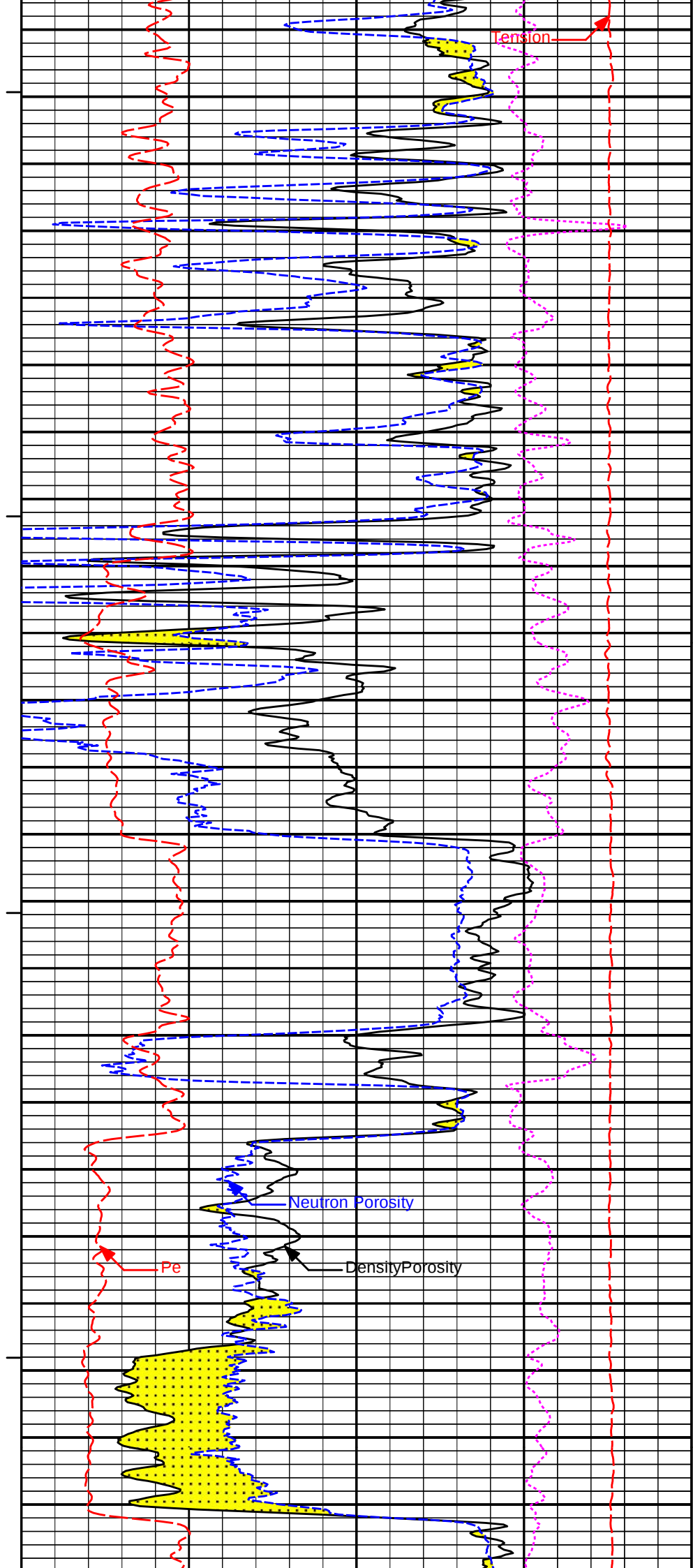
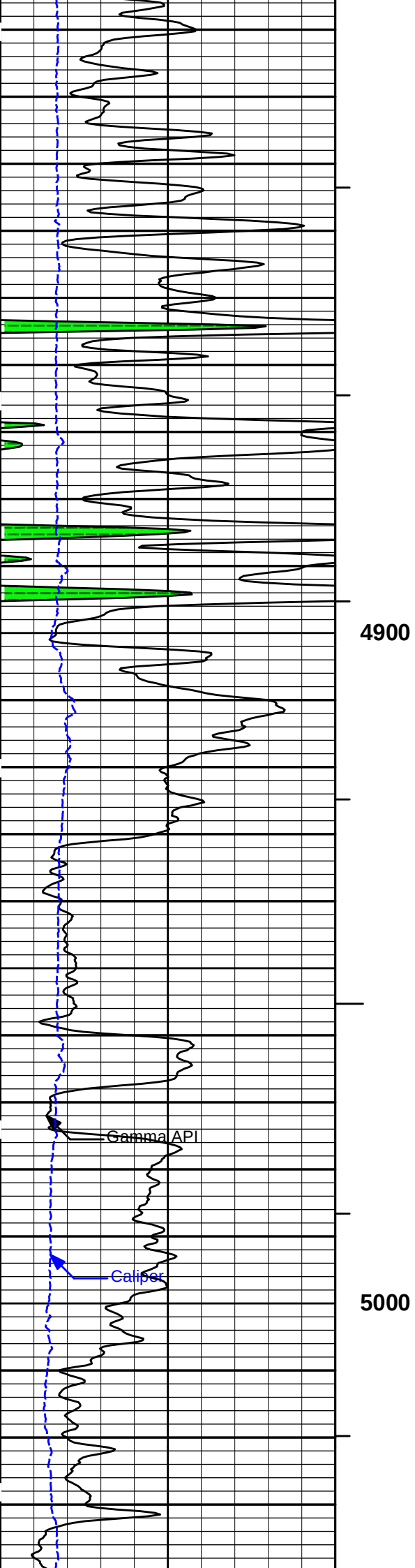


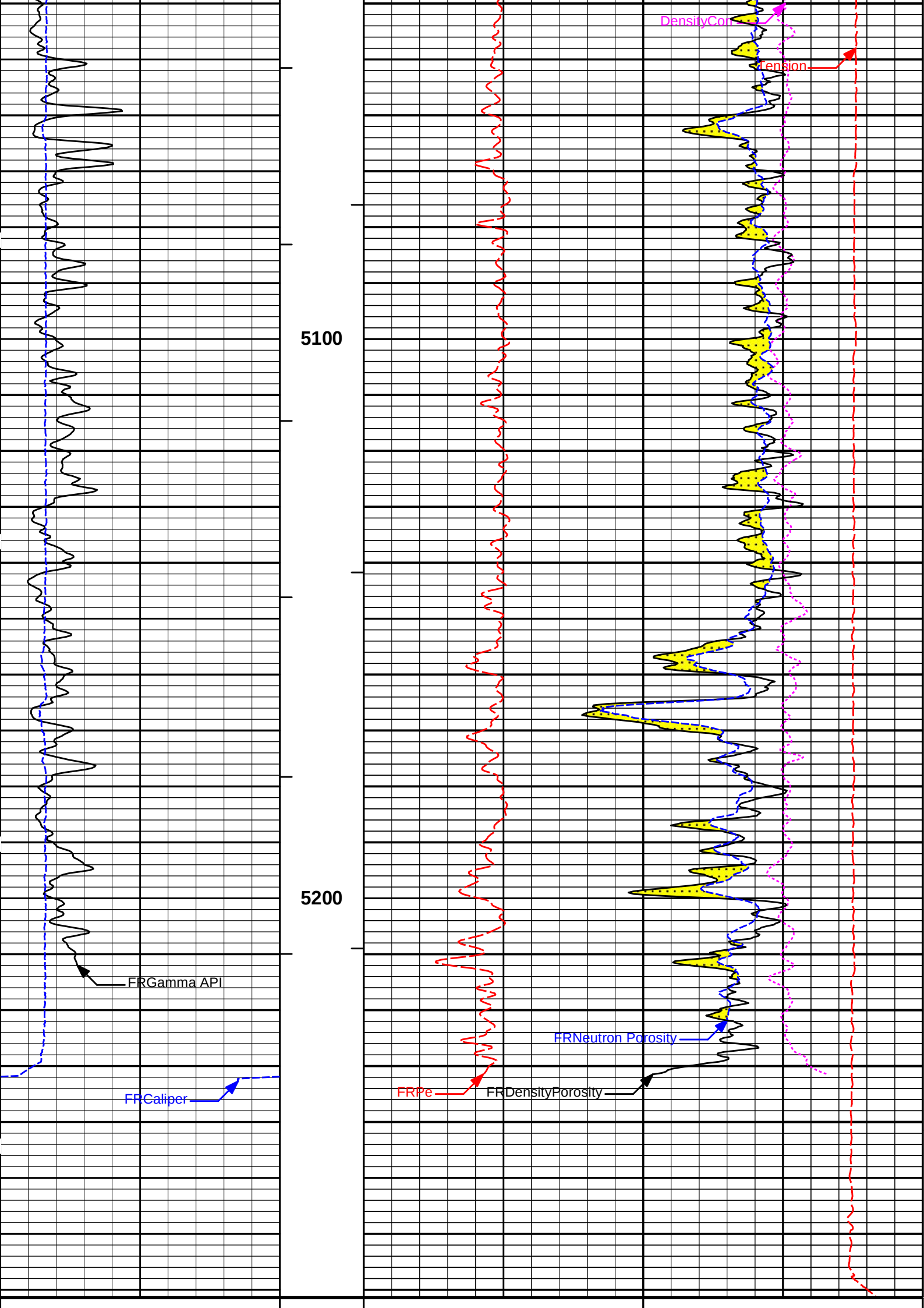












6	Caliper	16	MD 1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25
	inches							gram per cc	
0	Gamma API	150	AHVT				15K	Tension	0
	api							pounds	
	SHALE		BHVT	30	DensityPorosity				-10
					%				
				30	Neutron Porosity				-10
					%				
					CROSSOVER				

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Plot Time: 08-Apr-18 16:40:13
Plot Range: 4795 ft to 5271.25 ft
Data: MCWILLIAMS_E7\Well Based\REPEAT\
Plot File: \\POROSITY\Porosity_Q_5_REP_LIB

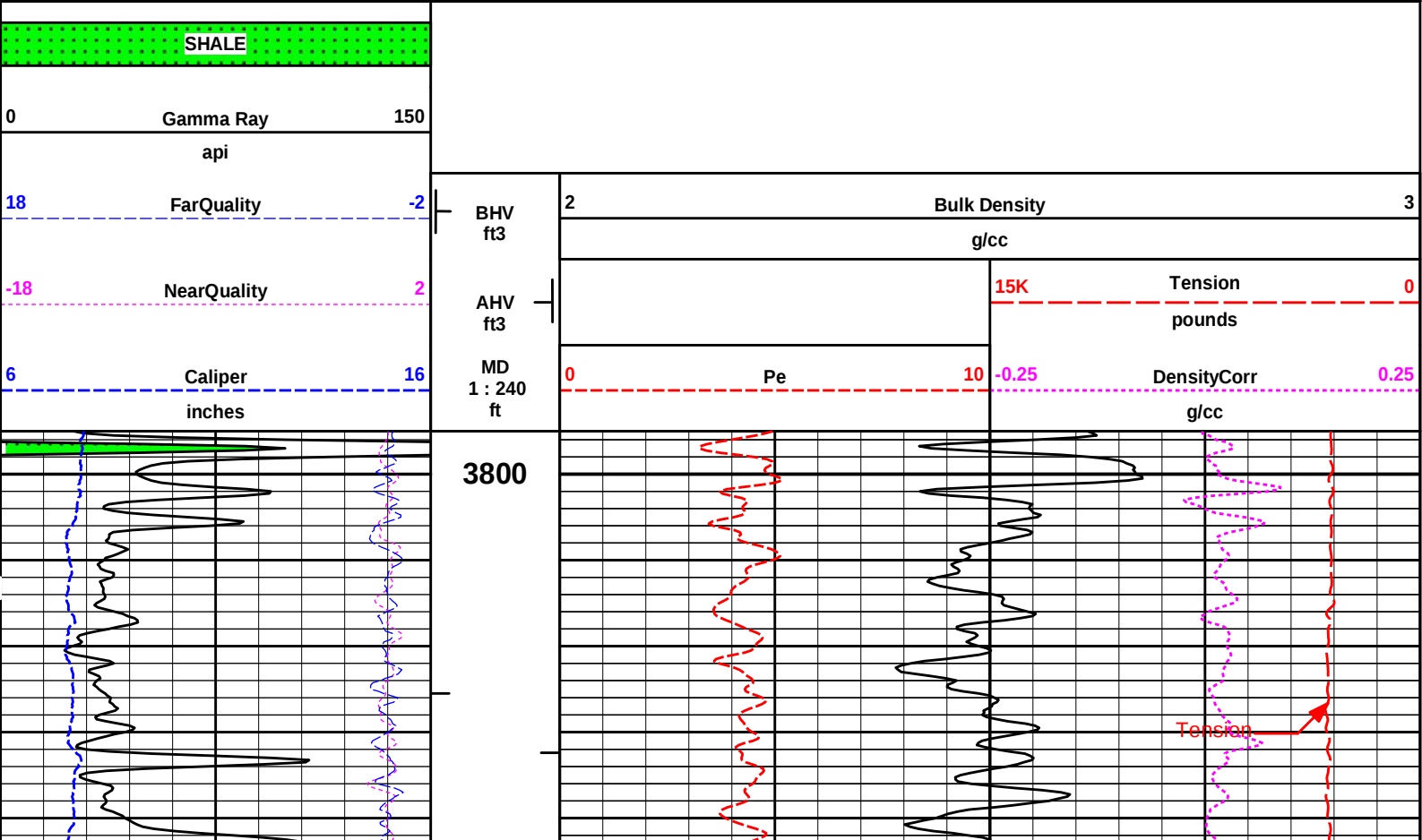
REPEAT SECTION

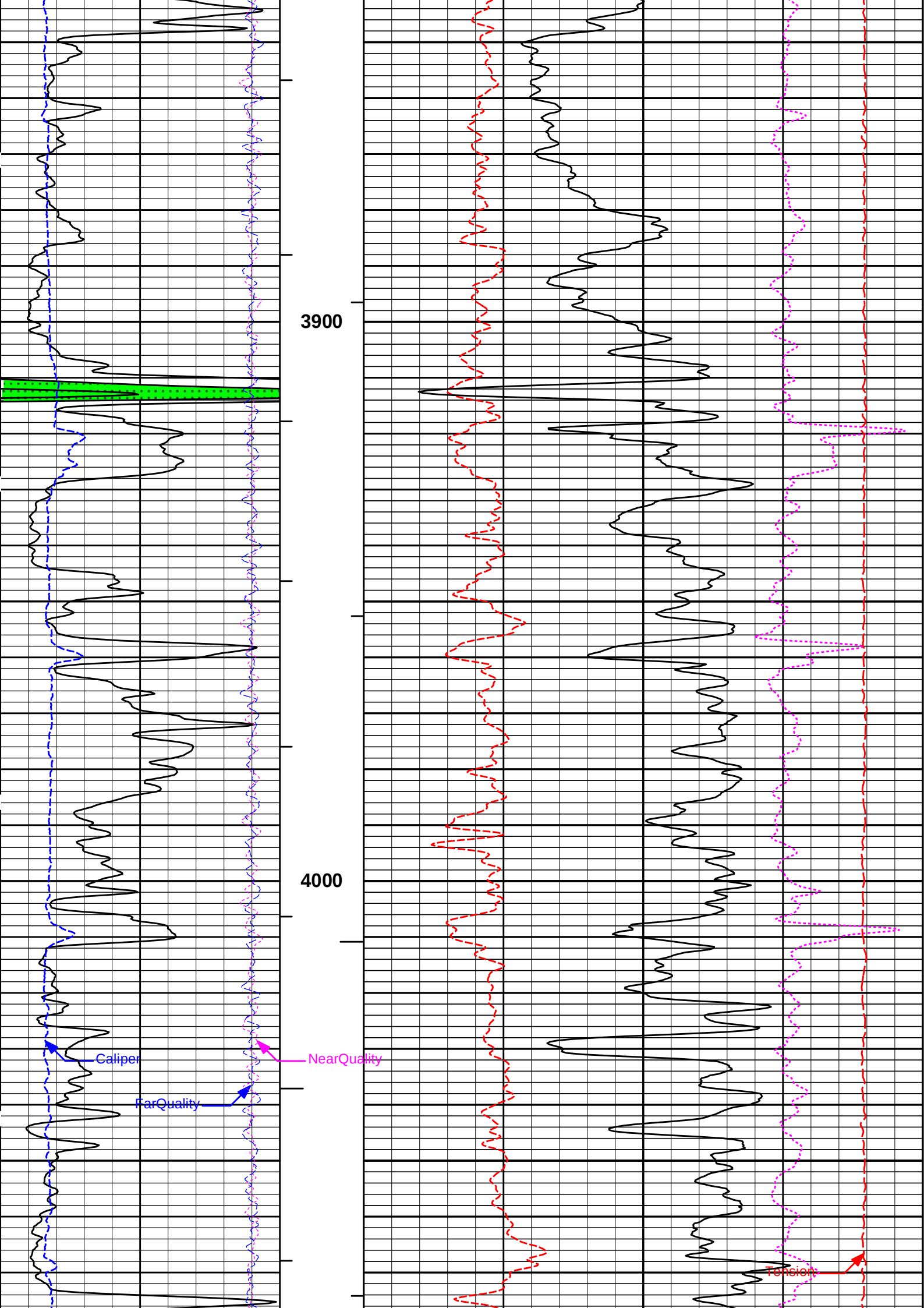
HALLIBURTON

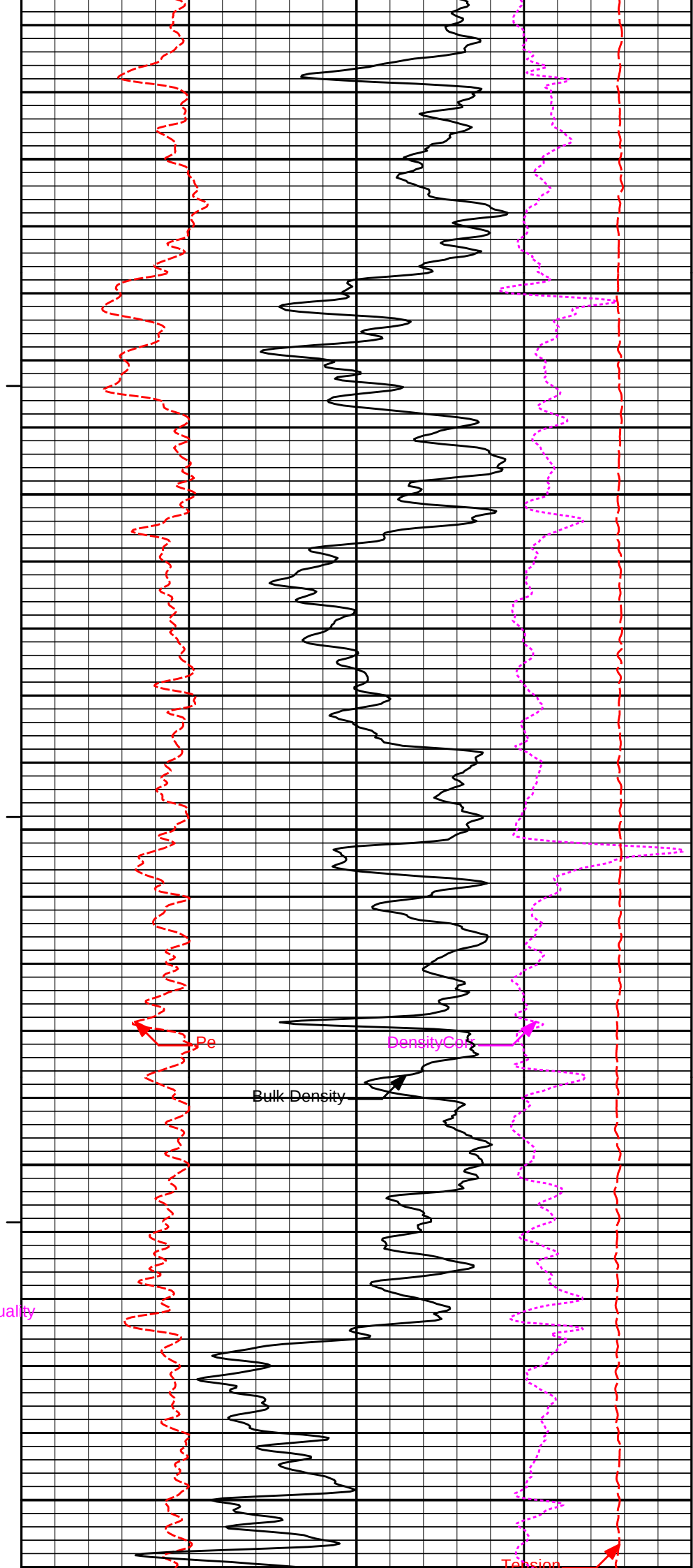
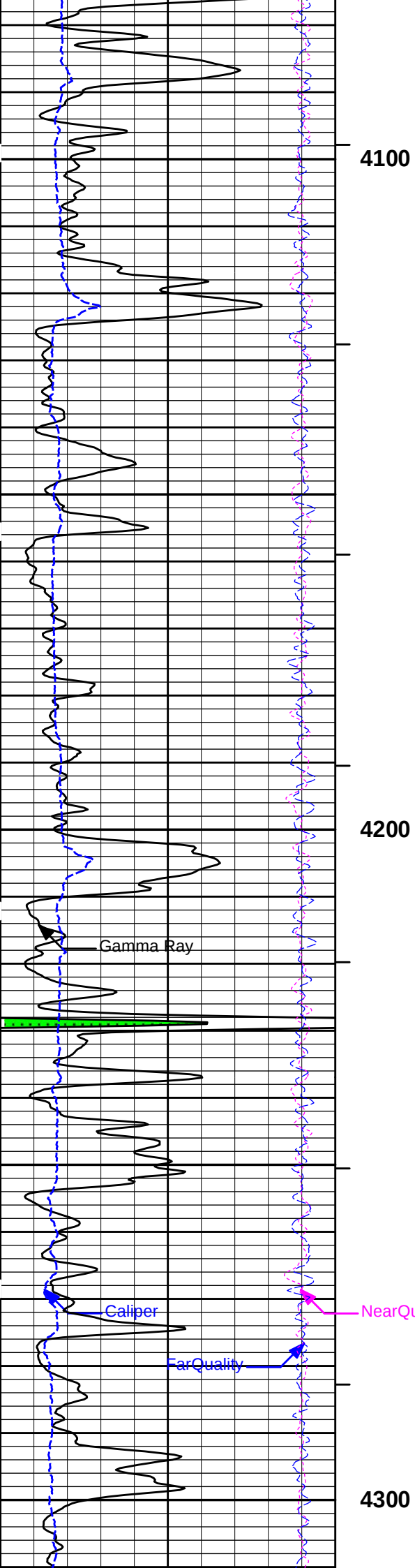
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Data: MCWILLIAMS_E7\Well Based\DETAILS\
Plot File: \\LOCAL-MCWILLIAMS_E7\Well Based\POROSITY\BULKD_5_MAIN_LIB

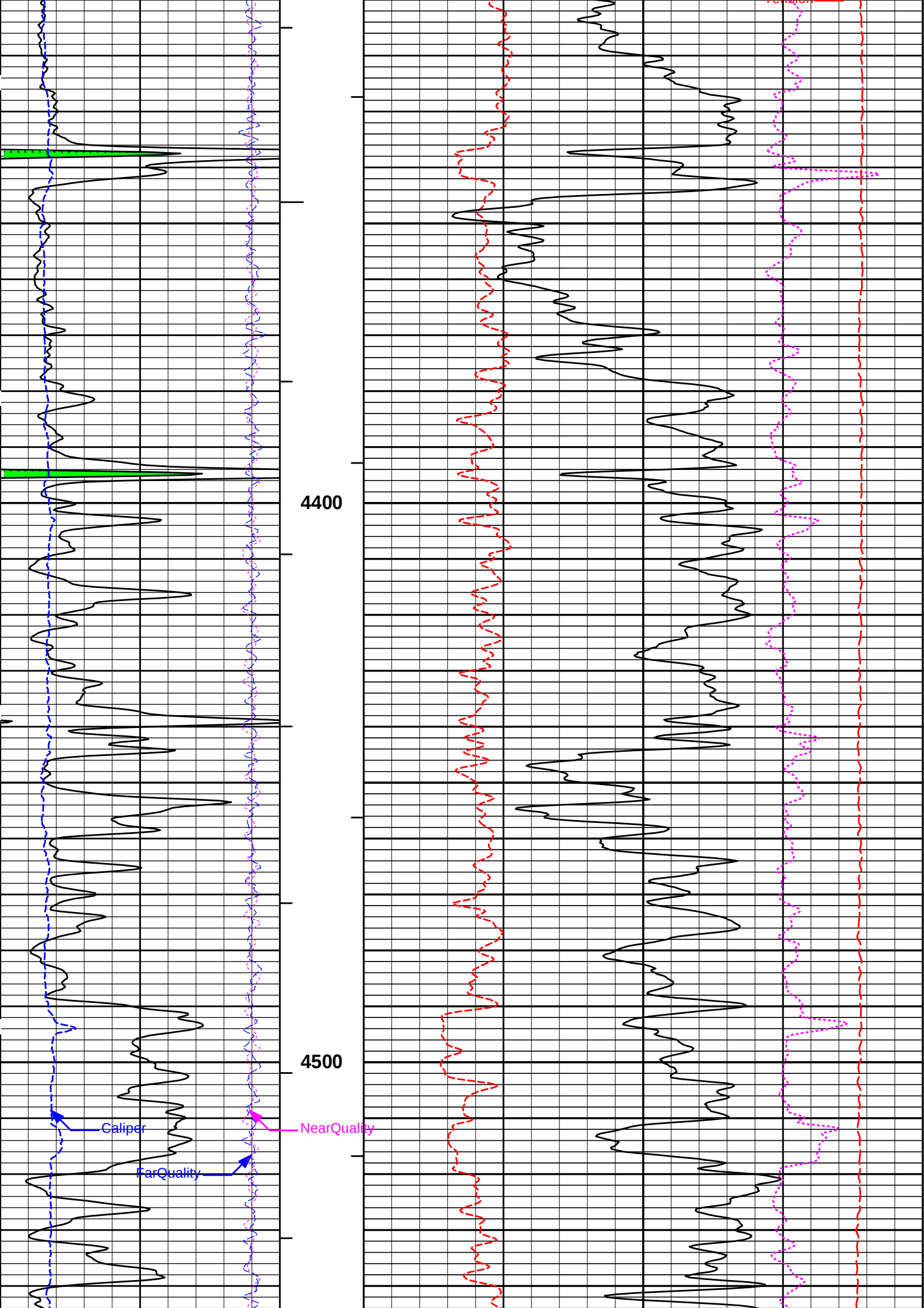
5 INCH MAIN LOG

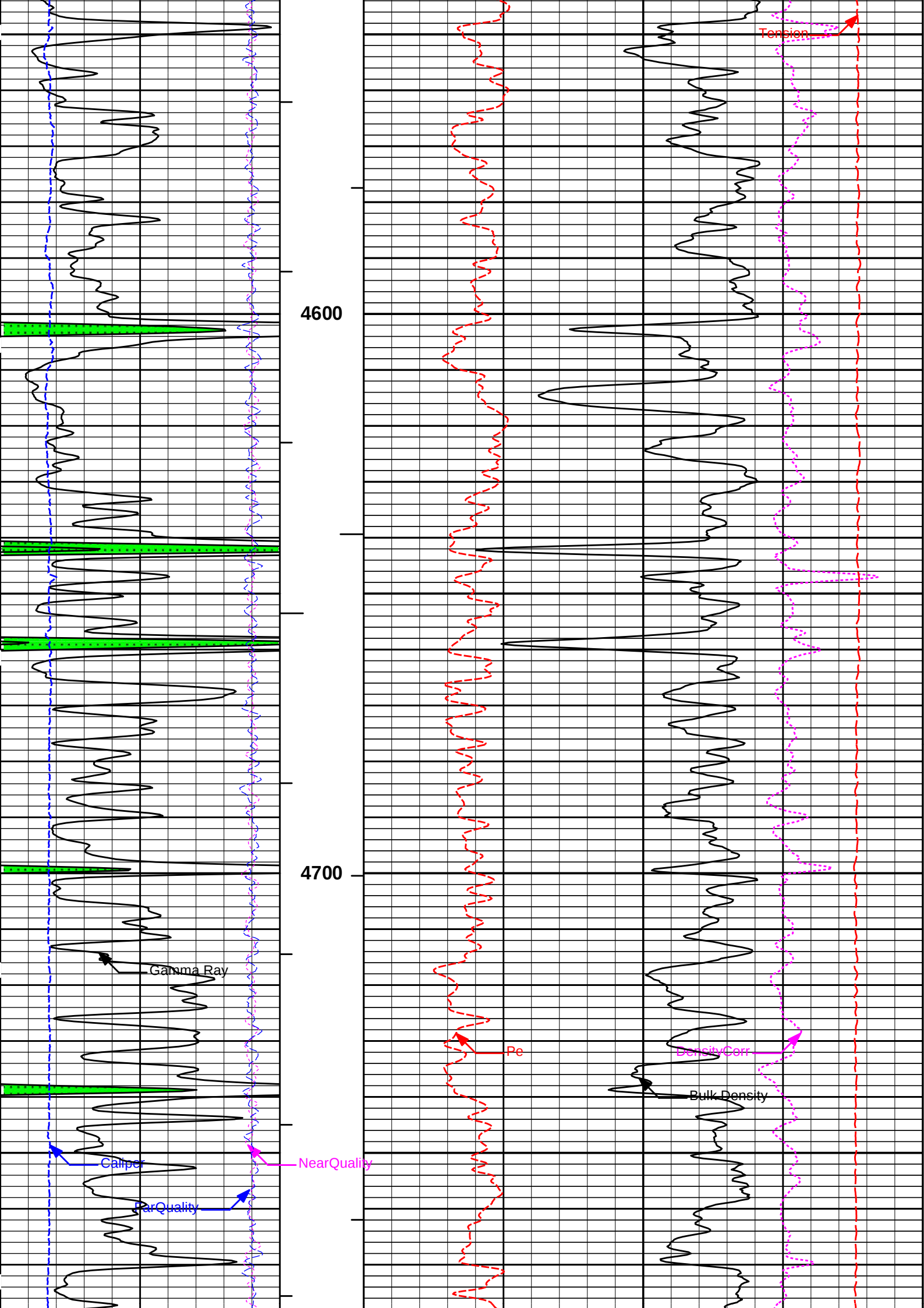
MEASURED DEPTH
MAIN SECTION 5" PER 100'

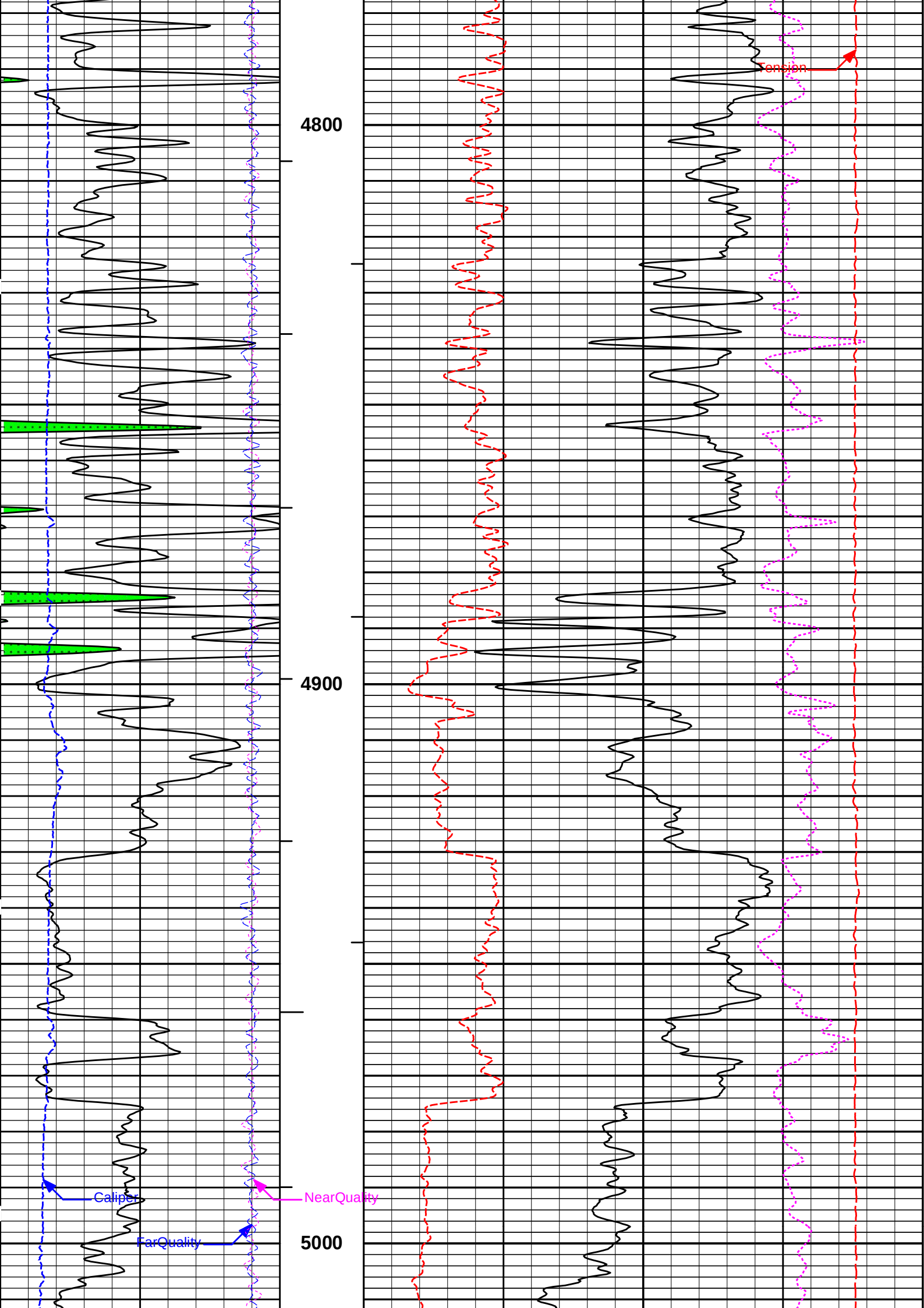


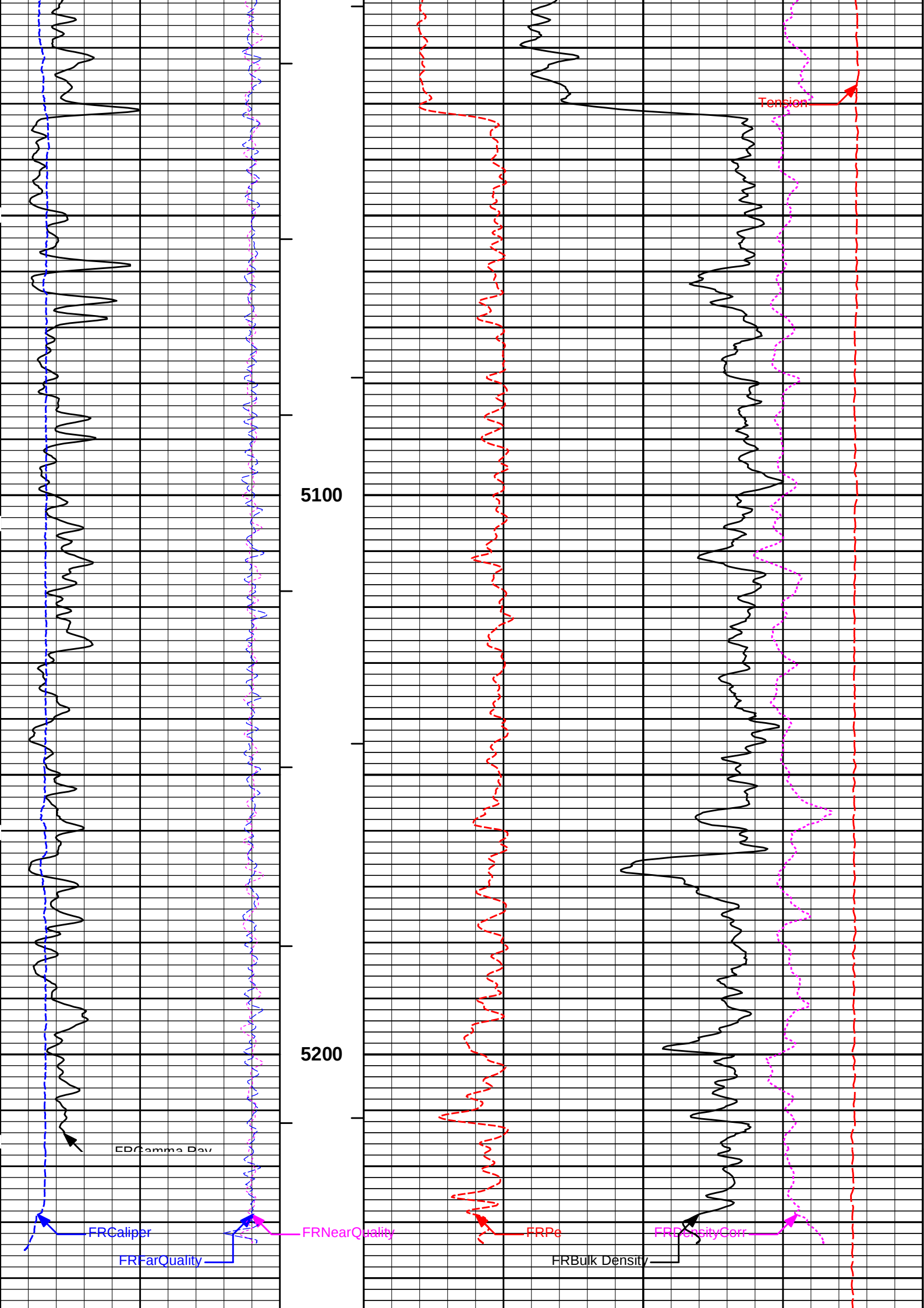












		TD			
6	Caliper	16	MD	0	10
	inches		1 : 240		
			ft		
-18	NearQuality	2	AHV		
			ft3		
18	FarQuality	-2	BHV	2	3
			ft3		
0	Gamma Ray	150			
	api				
SHAPE					

HALLIBURTON

Plot Time: 08-Apr-18 16:40:15
Plot Range: 3795 ft to 5273.33 ft
Data: MCWILLIAMS_E7\Well Based\DETAILS\
Plot File: \\LOCAL-MCWILLIAMS_E7\Well Based\POROSITY\BULKD_5_MAIN_LIB

5 INCH MAIN LOG

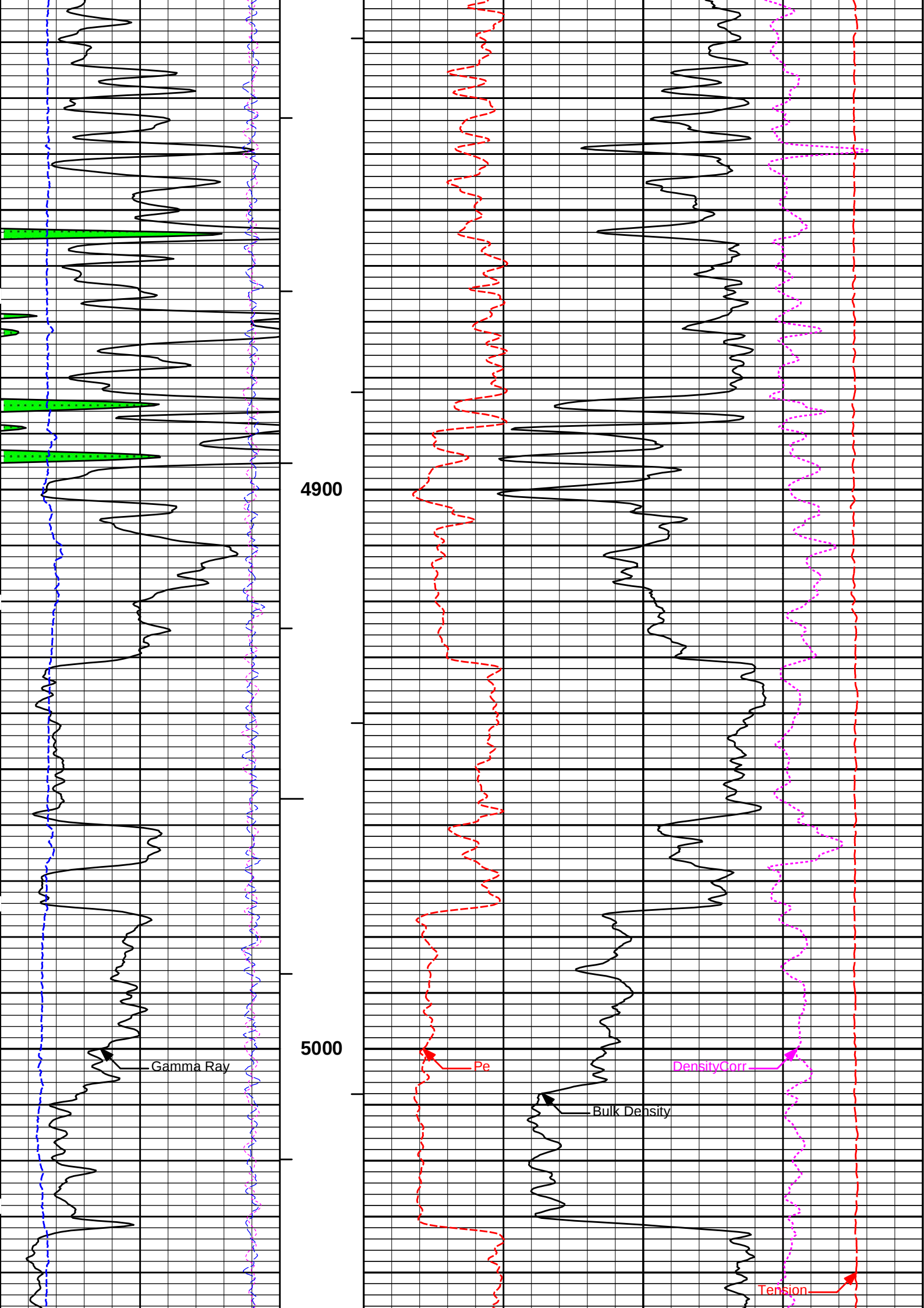
MEASURED DEPTH
MAIN SECTION 5" PER 100'

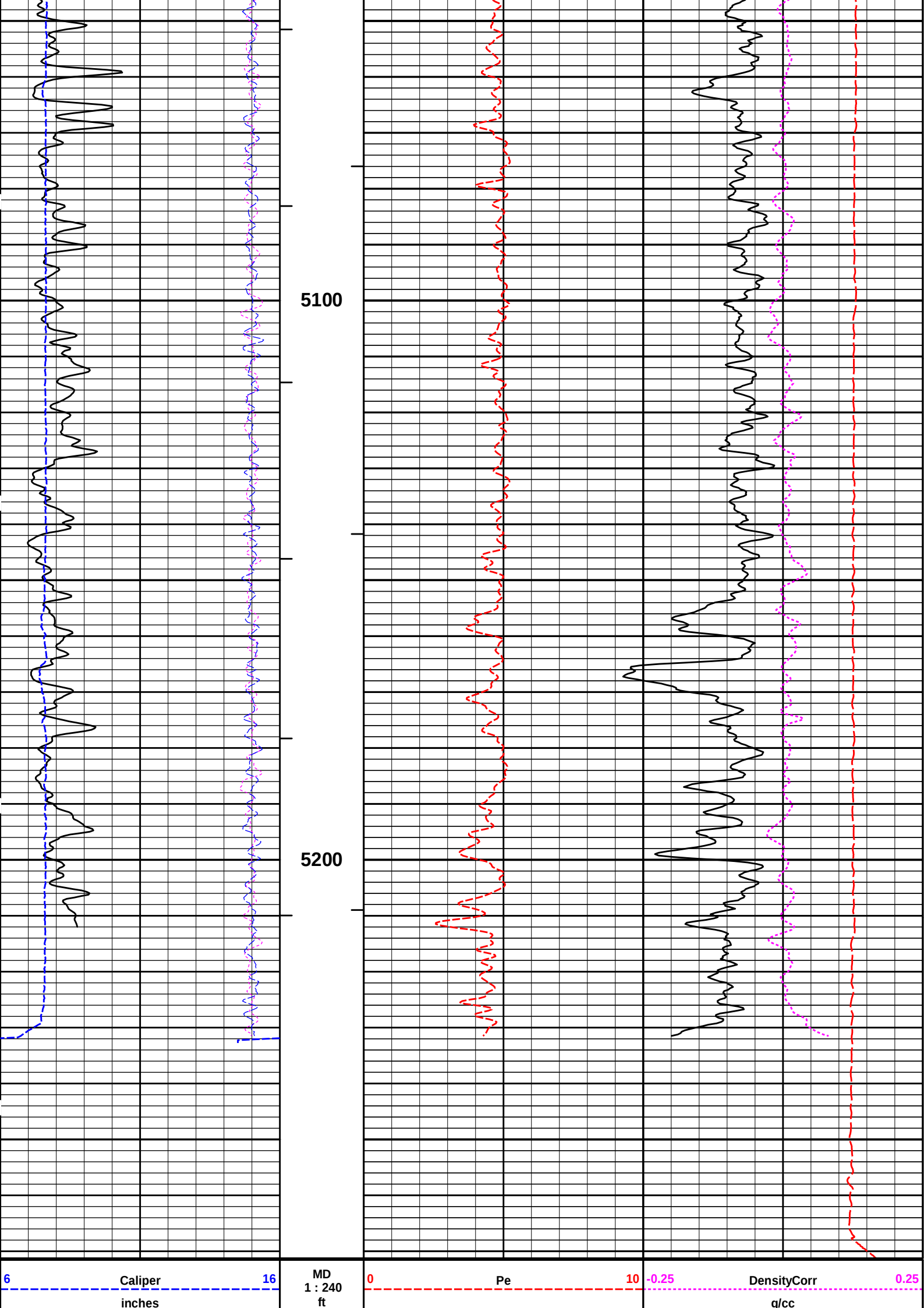
HALLIBURTON

Plot Time: 08-Apr-18 16:40:16
Plot Range: 4795 ft to 5271.25 ft
Data: MCWILLIAMS_E7\Well Based\REPEAT\
Plot File: \\-LOCAL-MCWILLIAMS_E7\Well Based\POROSITY\BULKD_5_REP_LIB

REPEAT SECTION

SHALE			
0	Gamma Ray	150	
api			
18	FarQuality	-2	
NearQuality		2	
-18			
6	Caliper	16	
inches			
4800			
BHV ft3		Bulk Density	
AHV ft3		g/cc	
MD 1 : 240 ft		Tension	
		pounds	
		DensityCorr	
		g/cc	
		Tension	





-18	NearQuality	2	AHV ft3 15K Tension pounds 0
18	FarQuality	-2	
0	Gamma Ray	150	BHV ft3 2 Bulk Density 3
api			
SHALE			

HALLIBURTON

Plot Time: 08-Apr-18 16:40:17
Plot Range: 4795 ft to 5271.25 ft
Data: MCWILLIAMS_E7\Well Based\REPEAT\
Plot File: \\-LOCAL-MCWILLIAMS_E7\Well Based\POROSITY\BULKD_5_REP_LIB

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length	
CH_HOS-11459024 37.50 lbs	Weak Point 7000 lbs- 00000025 0.01 lbs	Ø 2.750 in Ø 0.010 in*		Temperature @ 71.07 ft	2.50 ft	71.57 ft	
XOHD-11569312 20.00 lbs		Ø 2.750 in Ø 3.625 in				0.95 ft	69.07 ft
SP Sub-11153357 60.00 lbs		Ø 3.625 in			SP @ 66.34 ft	3.74 ft	68.12 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* Ø 3.625 in				9.69 ft	
DSNT-11055304 174.00 lbs					DSN Far @ 48.92 ft DSN Near @ 48.17 ft		46.17 ft
SDLT Pad-10865873 65.00 lbs		Ø 4.500 in				10.81 ft	
Microlog Pad-10951315 8.00 lbs		Ø 4.500 in* Ø 4.750 in*			Microlog @ 38.36 ft SDL Caliper @ 38.17 ft		

RAM-Cs137-00005168
1.00 lbs

Ø 0.800 in*

SDL Caliper @ 38.17 ft
SDL @ 38.16 ft

35.36 ft

BSAT-10747683
300.00 lbs

Ø 3.625 in

Receiver Array @ 26.84 ft
Sonic Receivers @ 26.84 ft

15.77 ft

19.58 ft

ACRt Instrument-
11026095
50.00 lbs

Ø 3.625 in

5.03 ft

14.55 ft

Mud Resistivity @ 13.19 ft

ACRt Sonde-
11005908
200.00 lbs

Ø 3.625 in

14.22 ft

ACRt @ 9.21 ft

Bull Nose-12345678
5.00 lbs

Ø 2.750 in

0.33 ft

0.33 ft

0.00 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	69.07	300.00
WP7K	Weak Point 7000 lbs	00000025	0.01	0.01	* 69.87	300.00
XOHD	Hostile to Dits Cross Over	11569312	20.00	0.95	68.12	300.00
SP	SP Sub	11153357	60.00	3.74	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
DCNT	DSN Decentralizer	11055304	6.60	5.13	* 49.50	300.00
SDLT	Spectral Density Tool	10951315	360.00	10.81	35.36	60.00
SDLP	Density Insite Pad	10865873	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	10951315	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	11026095	50.00	5.03	14.55	120.00
ACRt	Array Compensated True Resistivity Sonde Section	11005908	200.00	14.22	0.33	120.00
BLNS	Bull Nose	12345678	5.00	0.33	0.00	300.00
Total			1,452.11	71.57		

* Not included in Total Length and Length Accumulation.

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	9.300	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	1.112	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	5269.00	ft
	SHARED	BHT	Bottom Hole Temperature	138.0	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	0.93	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	DSNO	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	

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	Limestone 47.6	
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	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	



NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Calibrator Source S/N: TB-146
Calibrator API Reference:225.00 api
Equivalent Calibrator API Reference:228.9 api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Calibrator Source S/N: TB-146
Calibrator API Reference:225.00 api
Equivalent Calibrator API Reference:228.9 api

Background	29.5	23.3	api
Background + Calibrator	258.4	253.5	api
Calibrator	228.9	230.1	api
Shop	Field	Difference	Tolerance
228.9	230.1	-1.2	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	DSNT - 11055304	Reference Calibration Date:	13-Mar-18 15:42:08
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	13-Mar-18 16:05:22
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:	1.04035	1.03906	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):	0.2362	0.2358	0.0004	+/- 0.0020
Calibrated Ratio:	10.5726	10.5595	0.013	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0642	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:	13-Mar-18 16:05:22
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	13-Mar-18 16:06:43
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):	0.0642	0.0649	0.0007	+/- 0.0150
PASS/FAIL SUMMARY				
Block Change Check:	Passed			
Snow Block Stat Check:	Passed			
Temperature Check:	Passed			

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	SDLT - 10951315	Reference Calibration Date:	07-Mar-18 09:39:58
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	07-Mar-18 09:48:53

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

Host Tool Name: DSNT - 11055304

Calibration Version: 1

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-3522.85	-3549.59	-7000.00 - -1000.00
Pad Gain	0.0003722	0.0003749	0.0002000 - 0.0006000
Arm Offset	-3023.66	-2454.88	-5000.00 - 3000.00
Arm Gain	0.0005295	0.0004796	0.000300 - 0.000700
Arm Power	-0.000006101	-0.000003067	-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)	3.73	3.75	0.02	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.40	6.50	0.10	+/- 0.20
Medium Ring (in)	8.27	8.25	-0.02	+/- 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

Tool Name: SDLT - 10951315

Engineer: JORGE ORLANDO PEREZ

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

Reference Calibration Date: 07-Mar-18 09:48:53

Calibration Date: 07-Mar-18 09:51:03

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

Tool Name: SDLT Pad - 10865873

Engineer: JORGE ORLANDO PEREZ

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

Reference Calibration Date: 13-Mar-18 10:51:36

Calibration Date: 13-Mar-18 11:16:20

Calibration Version: 1

Logging Source S/N: 5168GW

Aluminum Block S/N: EL RENO STD ALUMINUM

Magnesium Block S/N: EL RENO

Density: 2.581g/cc

Density: 1.687g/cc

Pe: 3.170

Pe: 2.594

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0157	1.0357	0.90 - 1.10
Near Dens Gain	1.0196	1.0142	0.90 - 1.10

Near Peak Gain	1.0395	1.0317	0.90 - 1.10
Near Lith Gain	1.0541	1.0327	0.90 - 1.10
Far Bar Gain	1.0110	1.0122	0.90 - 1.10
Far Dens Gain	1.0025	1.0022	0.90 - 1.10
Far Peak Gain	0.9984	0.9998	0.90 - 1.10
Far Lith Gain	0.9749	0.9761	0.90 - 1.10
Near Bar Offset	0.1609	-0.0201	NONE
Near Dens Offset	0.1178	0.1665	NONE
Near Peak Offset	-0.0532	0.0109	NONE
Near Lith Offset	-0.1910	-0.0138	NONE
Far Bar Offset	0.1786	0.1672	NONE
Far Dens Offset	0.2184	0.2226	NONE
Far Peak Offset	0.2132	0.2040	NONE
Far Lith Offset	0.3427	0.3343	NONE
Near Bar Background	823.98	821.51	700 - 1450
Near Dens Background	269.05	269.15	230 - 480
Near Peak Background	119.85	118.90	100 - 210
Near Lith Background	144.86	144.31	125 - 260
Far Bar Background	600.14	599.08	450 - 900
Far Dens Background	236.51	236.11	175 - 345
Far Peak Background	92.88	92.59	70 - 140
Far Lith Background	96.04	96.48	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.687	1.687	0.000	+/- 0.015
Pe	2.525	2.551	0.026	+/- 0.150
ALUMINUM				
Density (g/cc)	2.580	2.581	0.001	+/- 0.01500
Pe	3.157	3.123	-0.034	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0003	+/- 0.0110	-0.0014	+/- 0.0140
Magnesium Block	-0.0011	+/- 0.0110	-0.0013	+/- 0.0140
Aluminum Block	-0.0011	+/- 0.0110	-0.0008	+/- 0.0140
Resolution	10.05	6.00 - 11.50	9.01	6.00 - 11.50
Internal Verifier(B+D+P+L)	1354	1200 - 2700	1024	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

Engineer: JORGE ORLANDO PEREZ			Calibration Date: 13-Mar-18 11:19:41			
Software Version: WL INSITE R5.0.5 (Build 8)			Calibration Version: 1			
Pad Temperature: 68.2 degF						
DENSITY FIELD CALIBRATION SUMMARY						
Measurement	Shop	Field	Change	Control Limit +/-		
Near (B+D+P+L) cps	1353.863	1357.958	4.095	14.876		
Far (B+D+P+L) cps	1024.257	1029.378	5.121	17.069		
Near Resolution	10.05	9.94	-0.110	0.50		
Far Resolution	9.01	8.96	-0.050	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-11958947						
Gamma Ray Calibrator	228.9	230.1	-----	-1.2	+/- 9.00	api
DSNT-11055304						
Snow-Block Porosity	0.0642	0.0649	-----	-0.0007	+/- 0.0150	decP
SDLT-10951315						
Pad Extension	3.75	3.75	-----	0.00	+/-0.10	in
Ring Diameter	8.25	8.25	-----	0.00	+/-0.15	in
SDLT Pad-10865873						
Near(B+D+P+L)	1353.863	1357.958	-----	-4.095	+/-14.876	cps
Far(B+D+P+L)	1024.257	1029.378	-----	-5.121	+/-17.069	cps
Data: MCWILLIAMS_E7I0001 GTET-DSNT-SDLT-BSAT-ACRT-634-DRIVERS\IDLE					Date: 08-Apr-18 14:51:36	
HALLIBURTON						
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			71.57	NO	
BS	Bit Size			71.57	NO	
HDIA	Measured Hole Diameter			0.00	NO	
CH_HOS						
DHTN	DownholeTension			0.00	BLK	0.000
SP Sub						
PLTC	Plot Control Mask			66.34	NO	
SP	Spontaneous Potential			66.34	BLK	1.250
SPR	Raw Spontaneous Potential			66.34	NO	
SPO	Spontaneous Potential Offset			66.34	NO	
GTET						
TPUL	Tension Pull			58.32	NO	
GR	Natural Gamma Ray API			58.32	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API			58.32	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution			58.32	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	48.07	NO	
RNDS	Near Detector Telemetry Counts	48.17	BLK	1.417
RFDS	Far Detector Telemetry Counts	48.92	TRI	0.583
DNTT	DSN Tool Temperature	48.17	NO	
DSNS	DSN Tool Status	48.07	NO	
ERND	Near Detector Telemetry Counts EVR	48.17	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	48.92	BLK	0.000
ENTM	DSN Tool Temperature EVR	48.17	NO	
HDIA	Measured Hole Diameter	0.00	NO	
SDLT				
TPUL	Tension Pull	38.17	NO	
PCAL	Pad Caliper	38.17	TRI	0.250
ACAL	Arm Caliper	38.17	TRI	0.250
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	
Microlog Pad				
TPUL	Tension Pull	38.36	NO	
MINV	Microlog Lateral	38.36	BLK	0.750
MNOR	Microlog Normal	38.36	BLK	0.750
SDLT Pad				
TPUL	Tension Pull	38.16	NO	
NAB	Near Above	37.99	BLK	0.920
NHI	Near Cesium High	37.99	BLK	0.920
NLO	Near Cesium Low	37.99	BLK	0.920
NVA	Near Valley	37.99	BLK	0.920
NBA	Near Barite	37.99	BLK	0.920
NDE	Near Density	37.99	BLK	0.920
NPK	Near Peak	37.99	BLK	0.920
NLI	Near Lithology	37.99	BLK	0.920
NBAU	Near Barite Unfiltered	37.99	BLK	0.250
NLIU	Near Lithology Unfiltered	37.99	BLK	0.250
FAB	Far Above	38.34	BLK	0.250
FHI	Far Cesium High	38.34	BLK	0.250
FLO	Far Cesium Low	38.34	BLK	0.250
FVA	Far Valley	38.34	BLK	0.250
FBA	Far Barite	38.34	BLK	0.250
FDE	Far Density	38.34	BLK	0.250
FPK	Far Peak	38.34	BLK	0.250
FLI	Far Lithology	38.34	BLK	0.250
PTMP	Pad Temperature	38.17	BLK	0.920
NHV	Near Detector High Voltage	37.57	NO	
FHV	Far Detector High Voltage	37.57	NO	
ITMP	Instrument Temperature	37.57	NO	
DDHV	Detector High Voltage	37.57	NO	
HDIA	Measured Hole Diameter	0.00	NO	
Data: MCWILLIAMS_E7I0001 GTET-DSNT-SDLT-BSAT-ACRT-634-DRIVERS\IDLE			Date: 08-Apr-18 14:50:12	

WELL		MCWILLIAMS E-7	
FIELD		COWGILL	
COUNTY	FINNEY	STATE	KANSAS
HALLIBURTON		DUAL SPACED NEUTRON SPECTRAL DENSITY LOG	