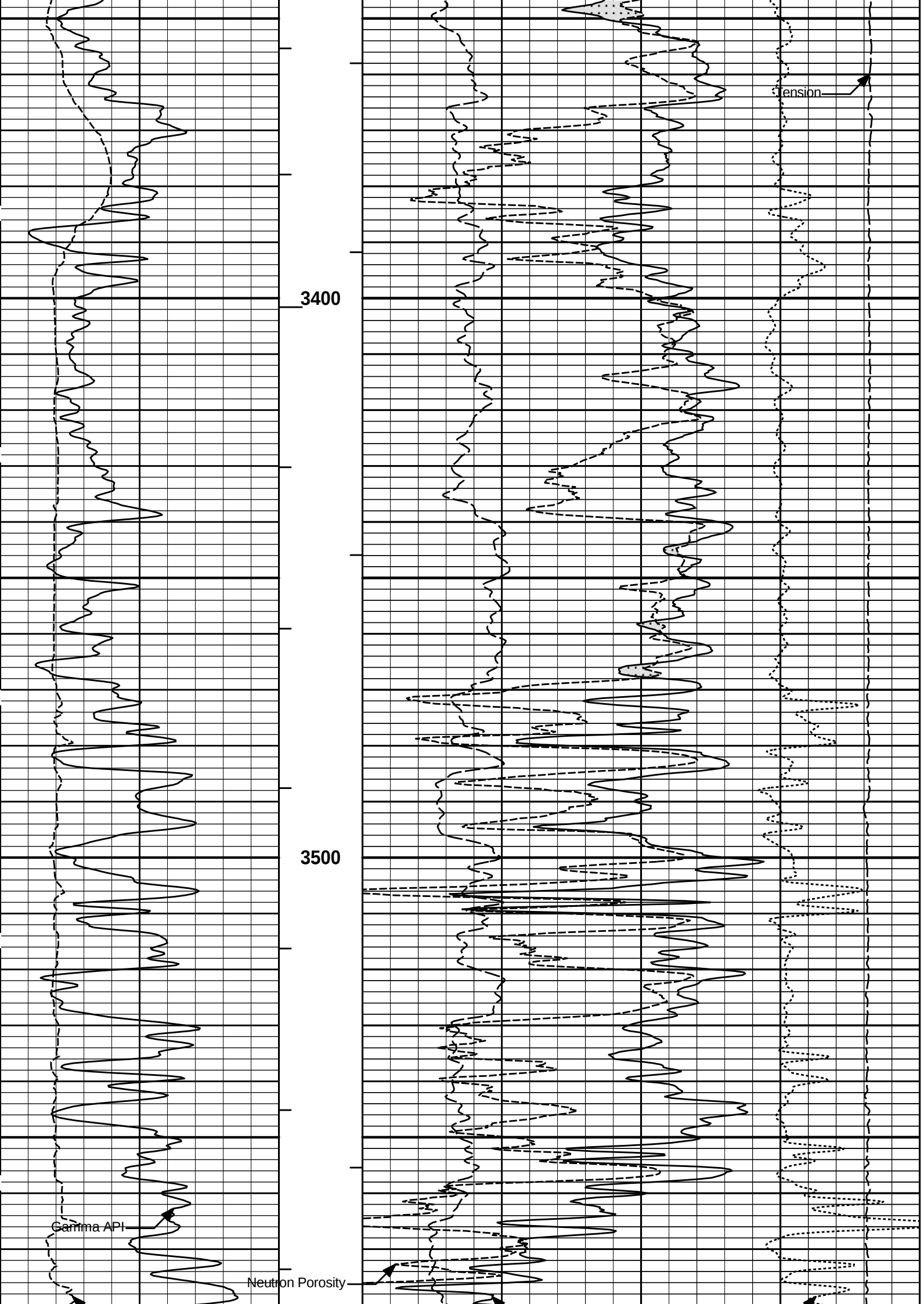


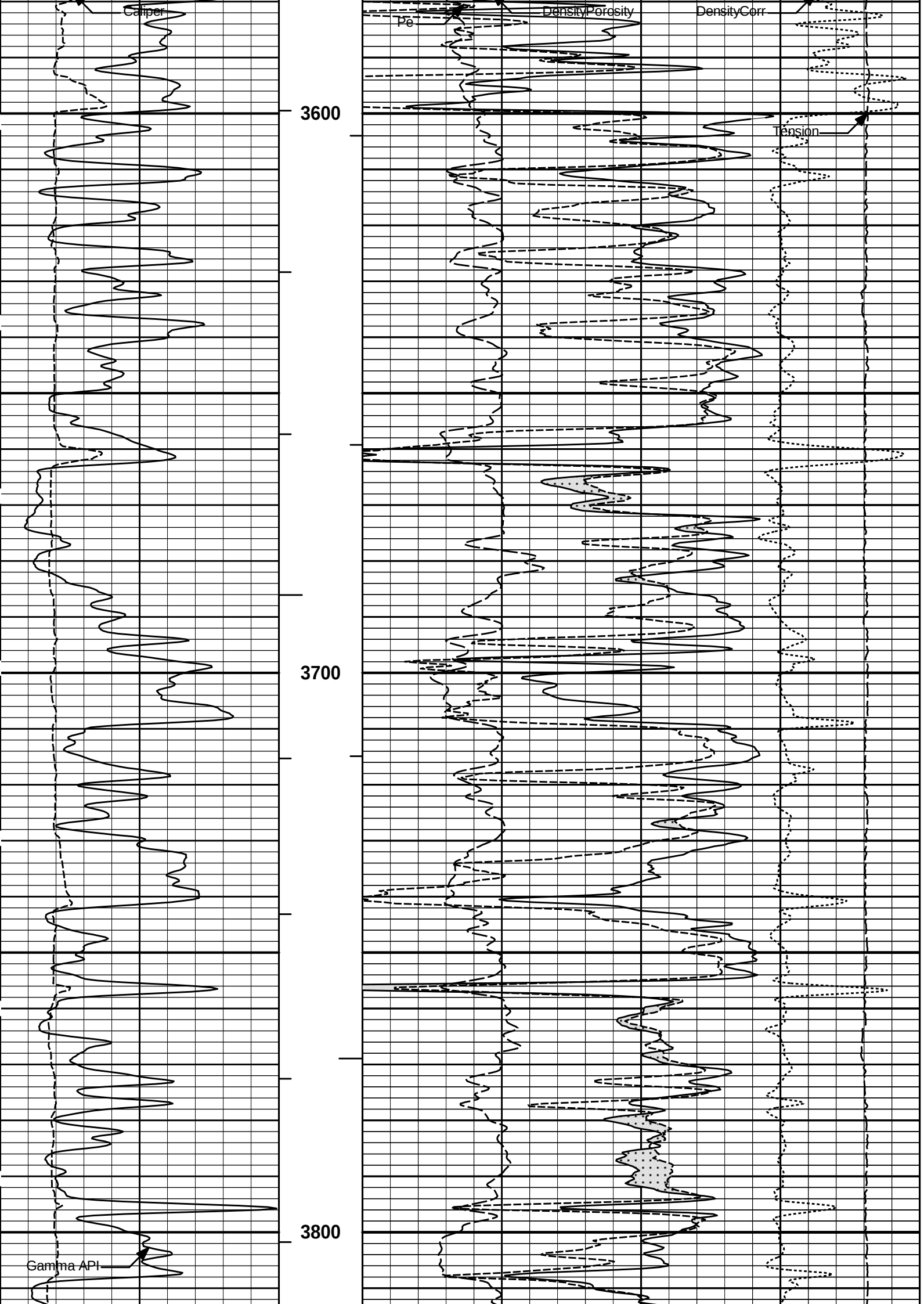
HALLIBURTON

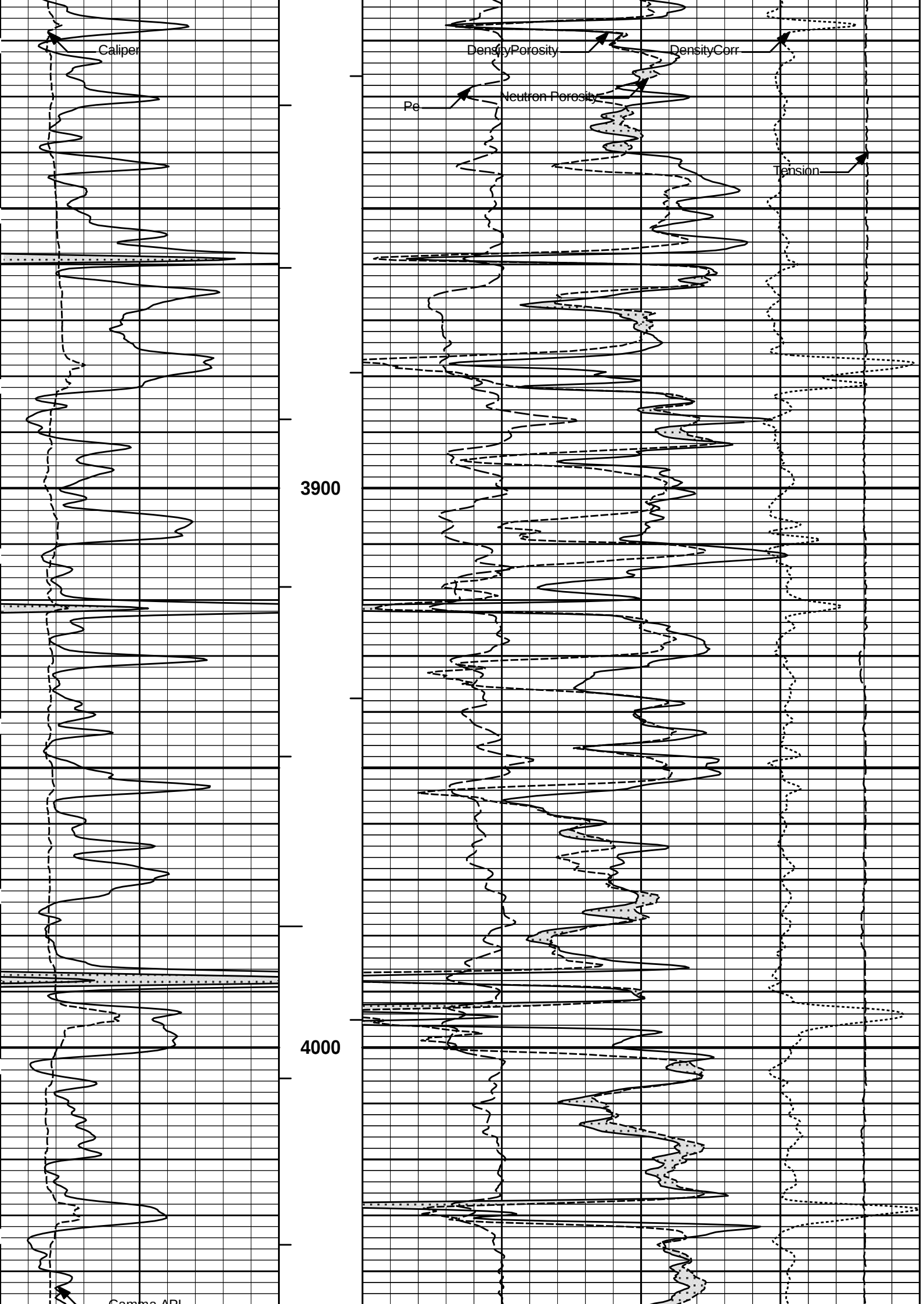
SPECTRAL DENSITY DUAL SPACED NEUTRON LOG

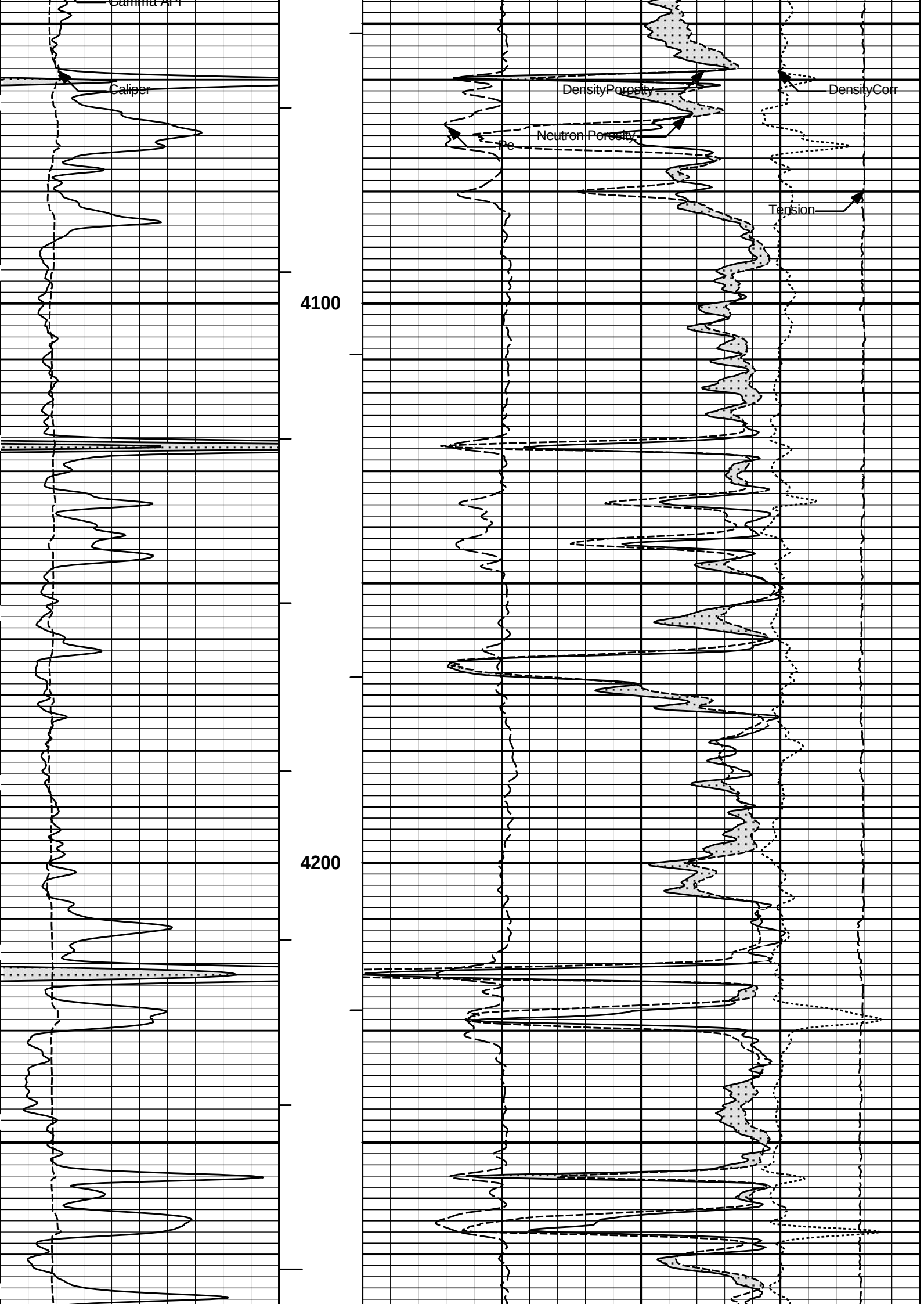
COMPANY				HARTMAN OIL COMPANY, INC.			
WELL				WILKINSON TRUST UNIT #1-21			
FIELD/BLOCK				ISBEL NORTH			
COUNTY				SCOTT			
STATE				KANSAS			
Permanent Datum		GL		Elev. 3102.0 ft		Elev.: K.B.	
Log measured from		KB		10.0 ft above perm. Datum		D.F.	
Drilling measured from		KB				G.L.	
Date		01-Jun-17					
Run No.		1					
Depth - Driller		4800.0 ft					
Depth - Logger		4801.0 ft					
Bottom - Logged Interval		4791					
Top - Logged Interval		3300					
Casing - Driller		8.625 in @ 347.0 ft				@	
Casing - Logger		345.0 ft					
Bit Size		7.875 in				@	
Type Fluid in Hole		Water Based Mud					
Density		9.0 ppq		56.00 s/qt			
PH		9.00 pH		10.4 cphm			
Source of Sample		MUD PIT					
Rm @ Meas. Temperature		0.48 ohmm @ 82.00 degF				@	
Rmf @ Meas. Temperature		0.39 ohmm @ 80.00 degF				@	
Rmc @ Meas. Temperature		0.61 ohmm @ 80.00 degF				@	
Source Rmf		MEAS					
Rm @ BHT		0.33 ohmm @ 122.0 degF				@	
Time Since Circulation		04:00 hr					
Time on Bottom		01-Jun-17 06:29					
Max. Rec. Temperature		122.00 degF @ 4801.0 ft				@	
Equipment		12156883		EL RENO			
Recorded By		WHITLOCK					
Witnessed By		CHRIS PETERS					

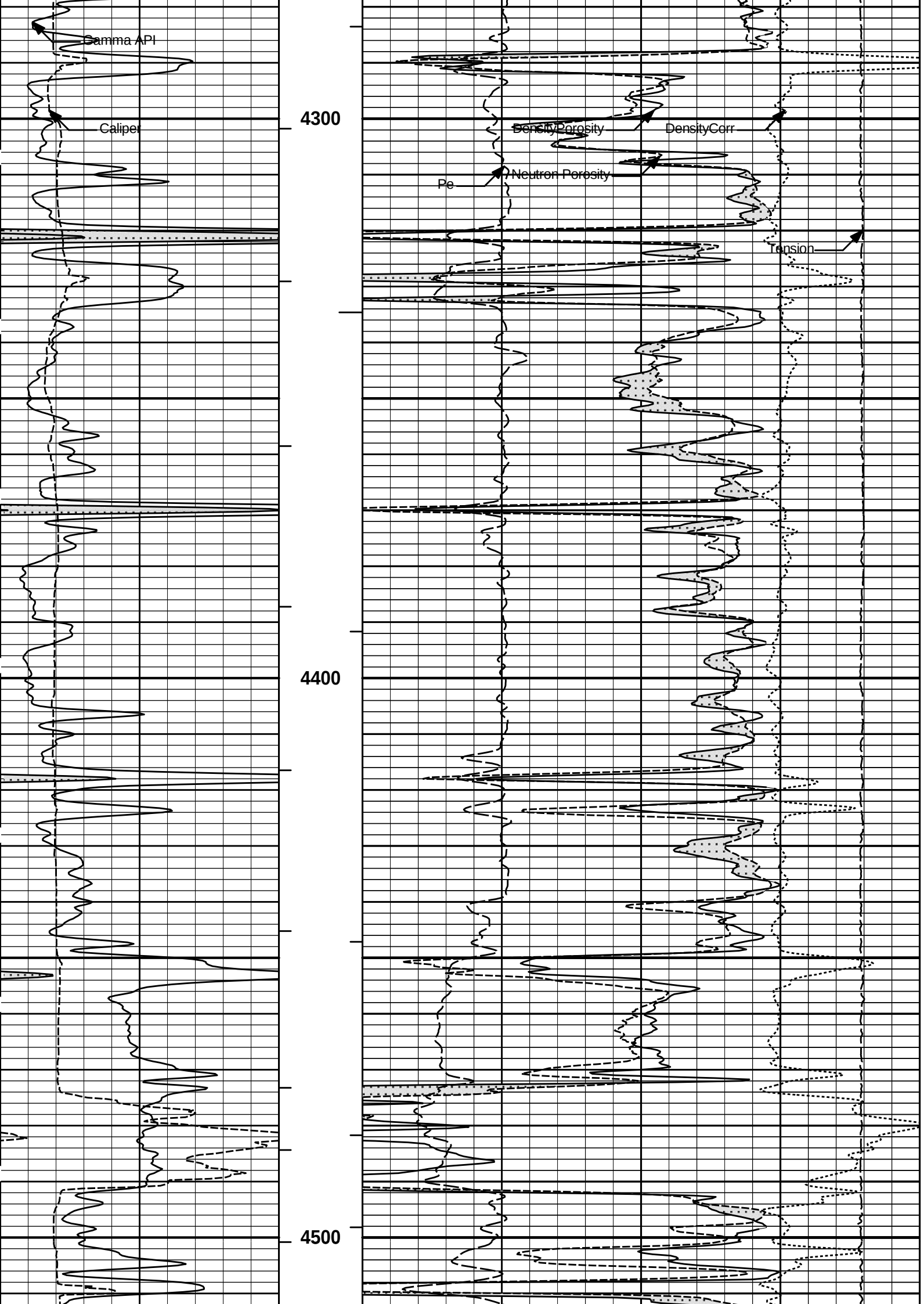
Service Ticket No.: 904068966				API No.: 15-171-21204-00-00				PGM Version: WL INSITE R5.0.5 (Build 8)											
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE								RESISTIVITY SCALE CHANGES											
Date		Sample No.						Type Log		Depth		Scale Up Hole		Scale Down Hole					
Depth-Driller																			
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.					
Rmf @ Meas. Temp.		@				@													
Rmc @ Meas. Temp.		@				@													
Source Rmf		Rmc																	
Rm @ BHT		@				@													
Rmf @ BHT		@				@													
Rmc @ BHT		@				@													
EQUIPMENT DATA																			
GAMMA				ACOUSTIC				DENSITY				NEUTRON							
Run No.				Run No.				Run No.				Run No.							
Serial No.				Serial No.				Serial No.				Serial No.							
Model No.				Model No.				Model No.				Model No.							
Diameter				No. of Cent.				Diameter				Diameter							
Detector Model No.				Spacing				Log Type				Log Type							
Type								Source Type				Source Type							
Length				LSA [Y/N]				Serial No.				Serial No.							
Distance to Source				FWDA [Y/N]				Strength				Strength							
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			

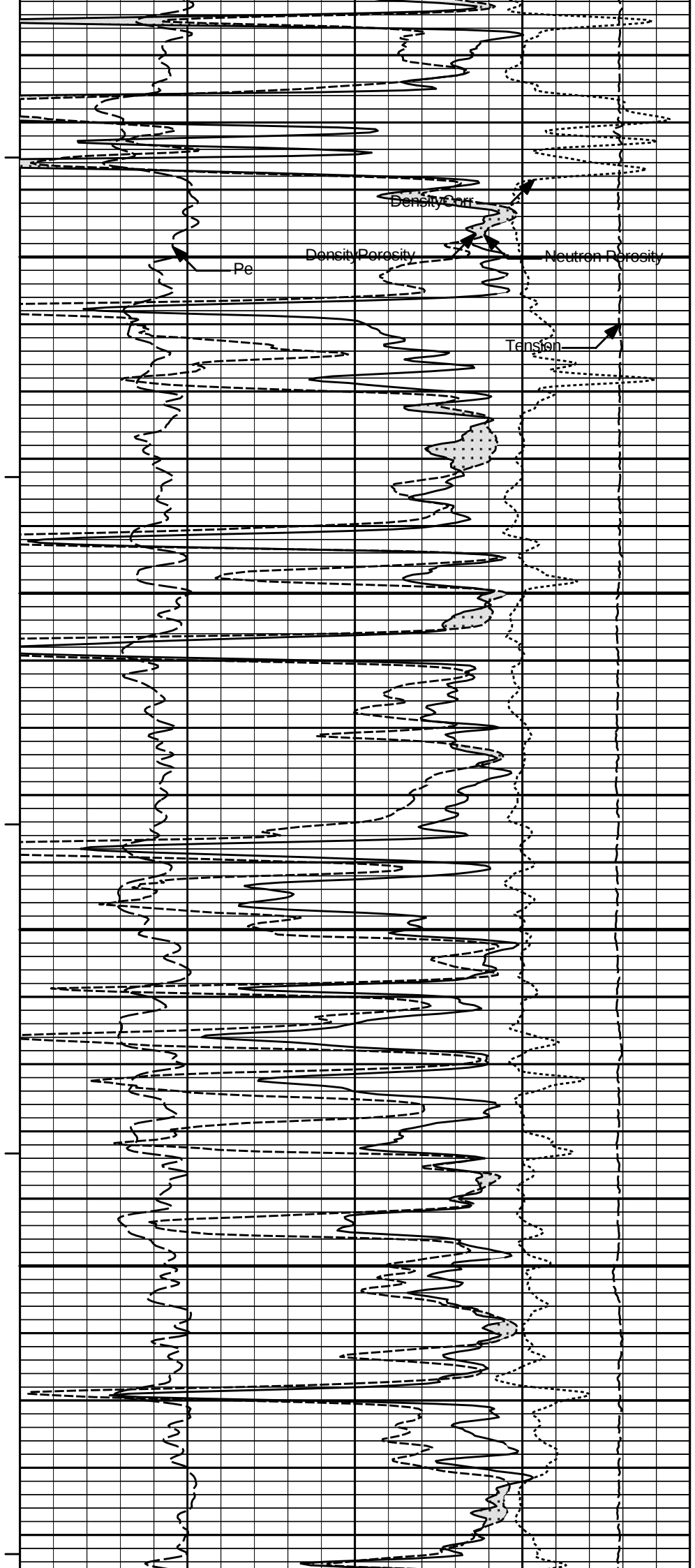
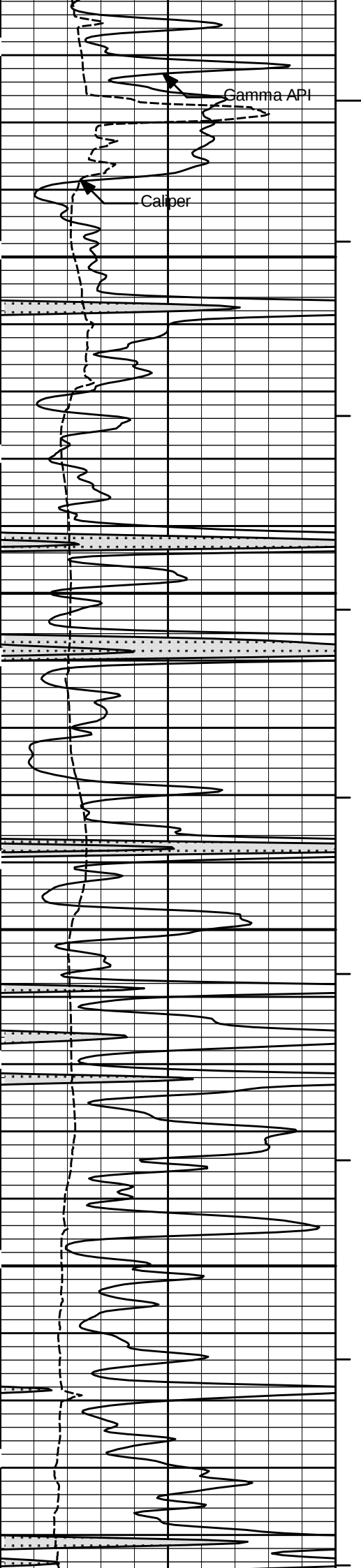


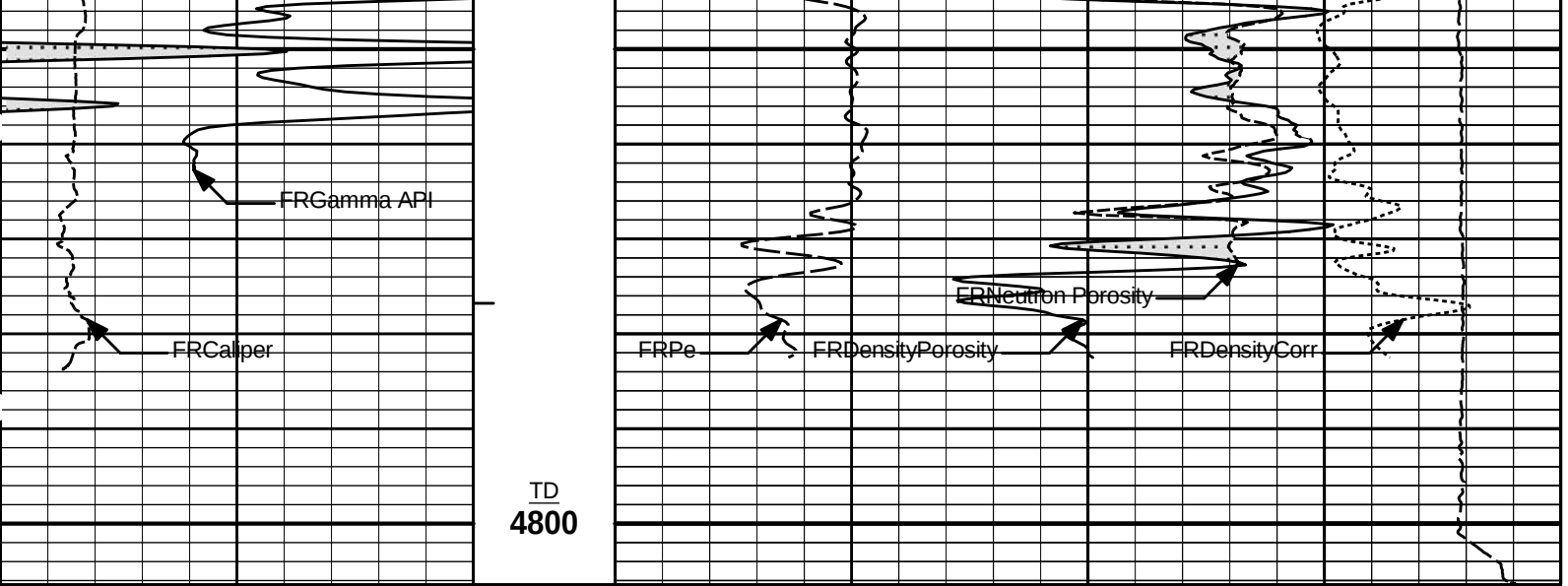












6	Caliper	16	1 : 240	0	Pe	10	-0.25	DensityCorr	0.25
	inches		ft					gram per cc	
0	Gamma API	150	AHVT				15K	Tension	0
	api							pounds	
			BHVT	30	DensityPorosity				-10
					%				
				30	Neutron Porosity				-10
					%				

HALLIBURTON

Plot Time: 01-Jun-17 08:42:55
Plot Range: 3300 ft to 4806.42 ft
Data: HART_WILKINSON\Well Based\DAQ-0001-004\
Plot File: \\SDL-DSN\Porosity_Q_5_MAIN

5 INCH MAIN LOG

MAIN SECTION 5" PER 100'

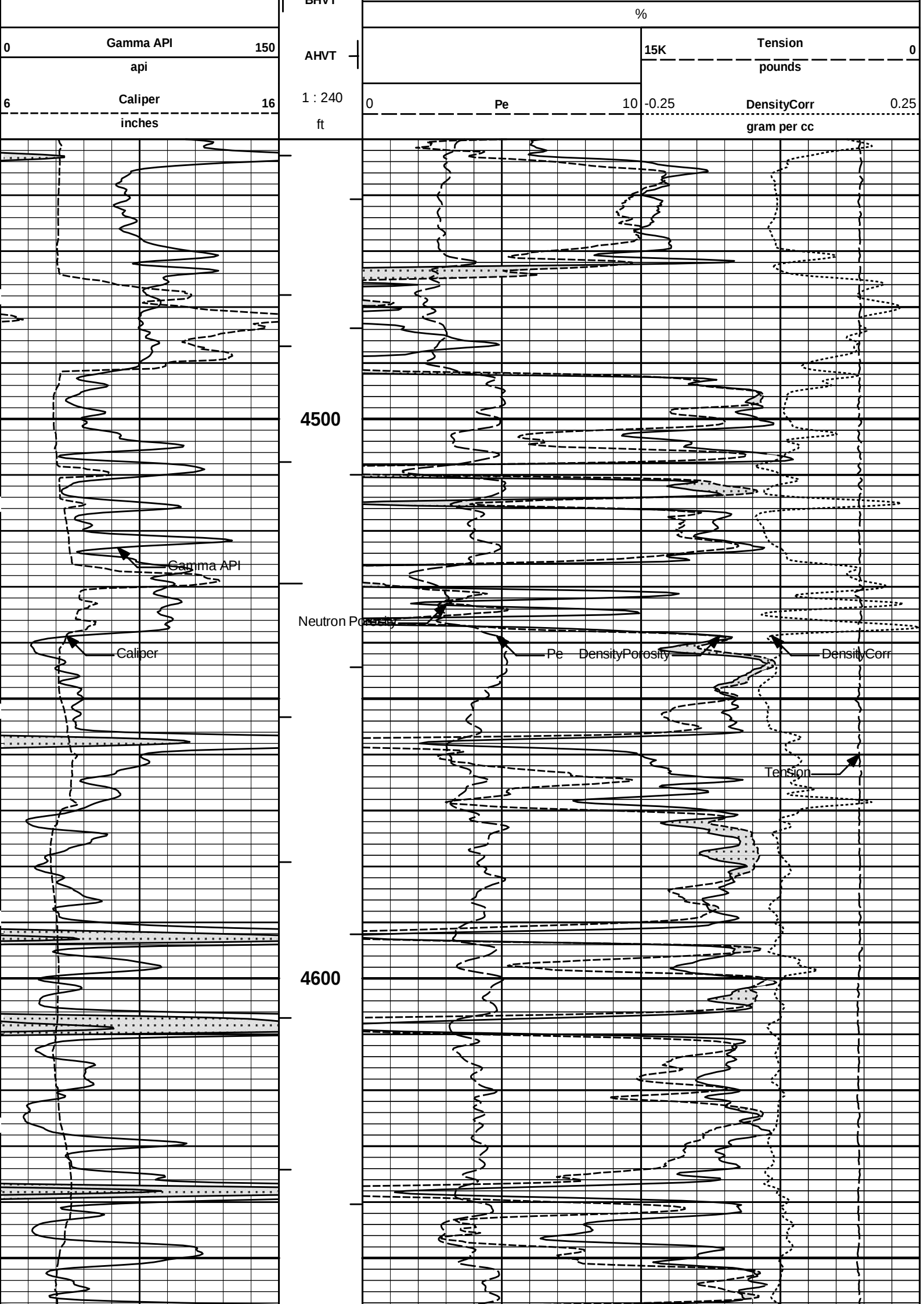
HALLIBURTON

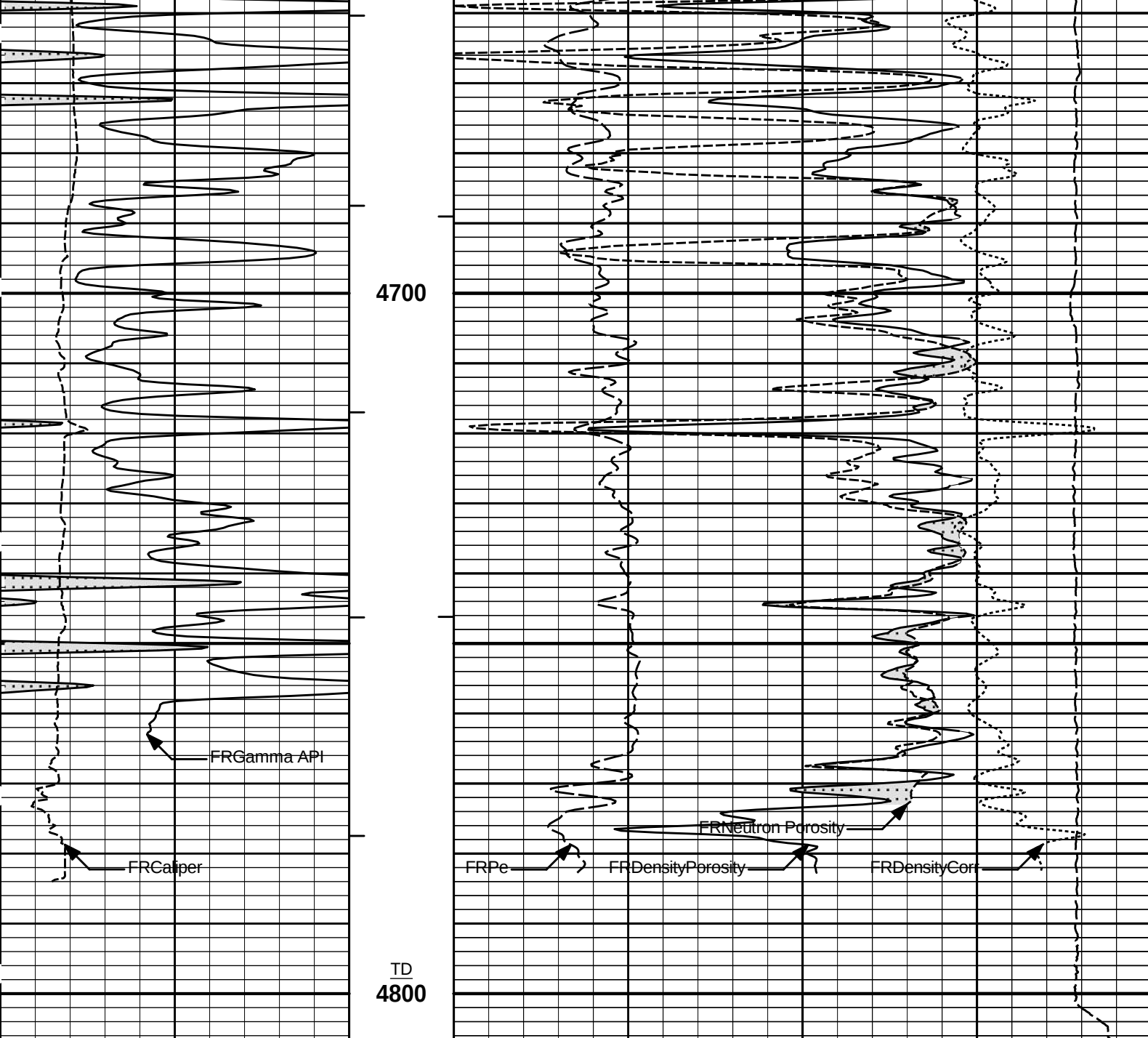
Plot Time: 01-Jun-17 08:42:56
Plot Range: 4450 ft to 4806.75 ft
Data: HART_WILKINSON\Well Based\DAQ-0001-003\
Plot File: \\SDL-DSN\Porosity_Q_5_MAIN

REPEAT SECTION

REPEAT SECTION

		30	Neutron Porosity	-10
			%	
		30	DensityPorosity	-10





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

HALLIBURTON

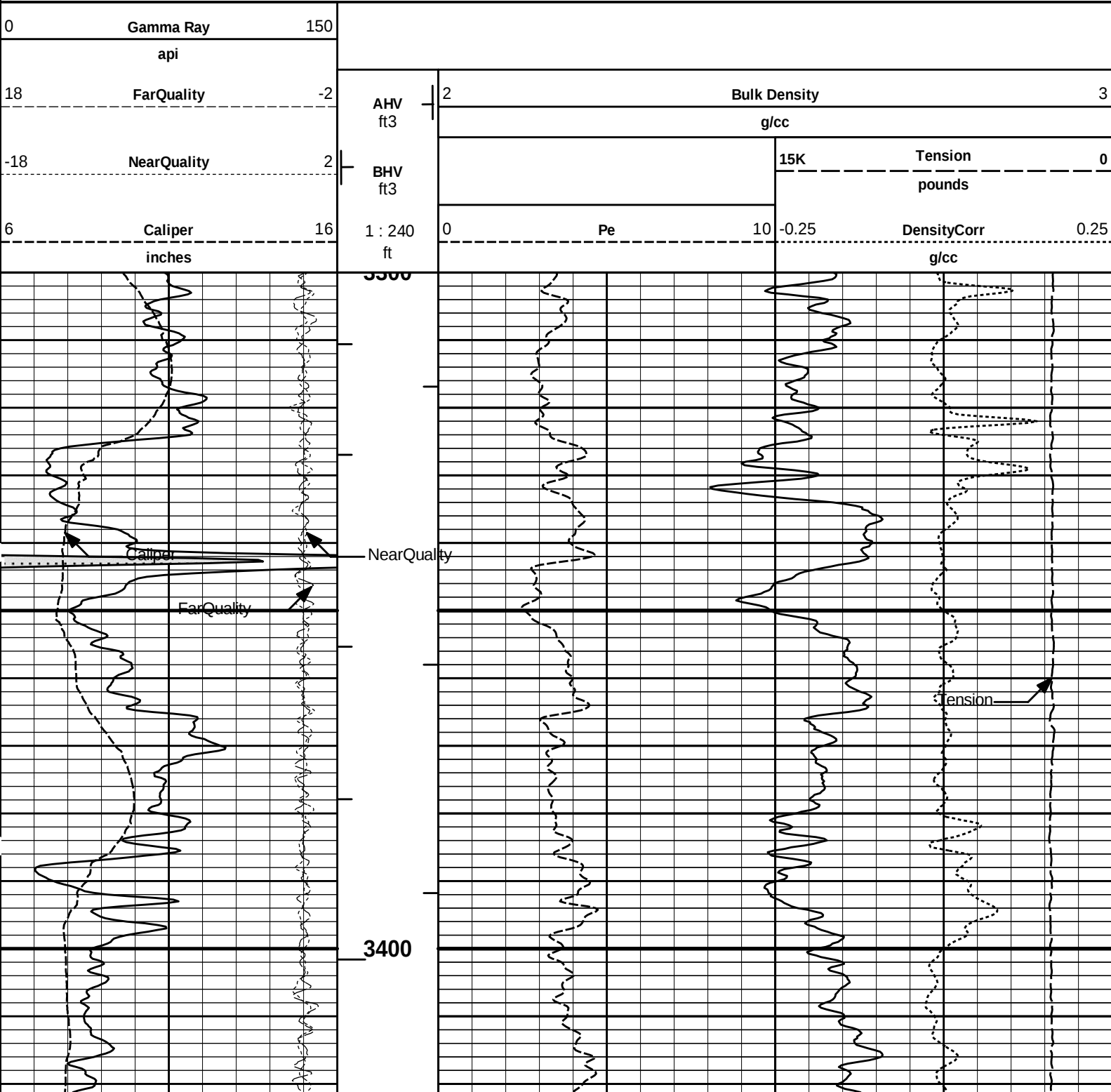
Plot Time: 01-Jun-17 08:42:57
Plot Range: 4450 ft to 4806.75 ft
Data: HART_WILKINSONWell Based\DAQ-0001-003\
Plot File: \\SDL-DSN\Porosity_5_MAIN

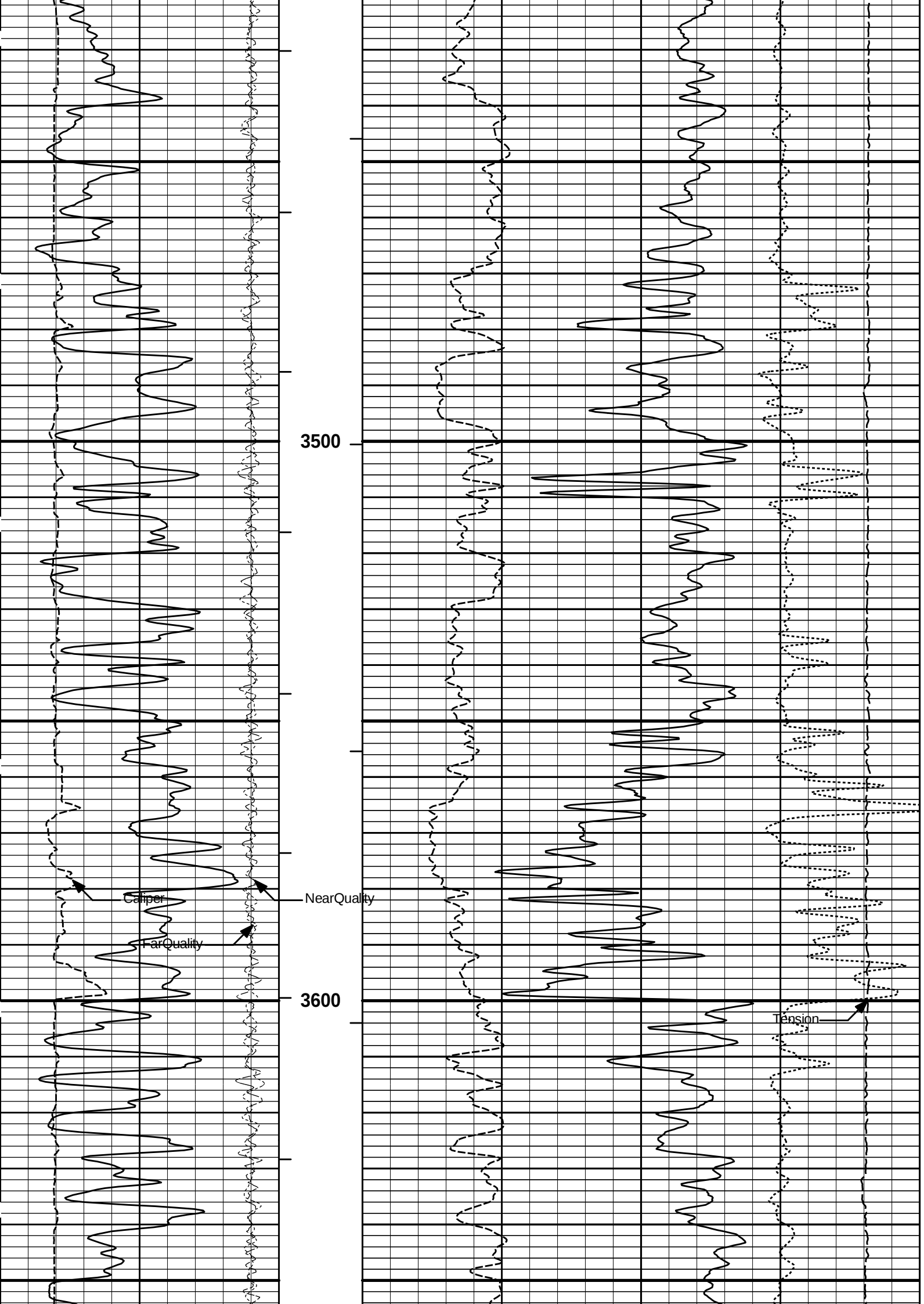
REPEAT SECTION

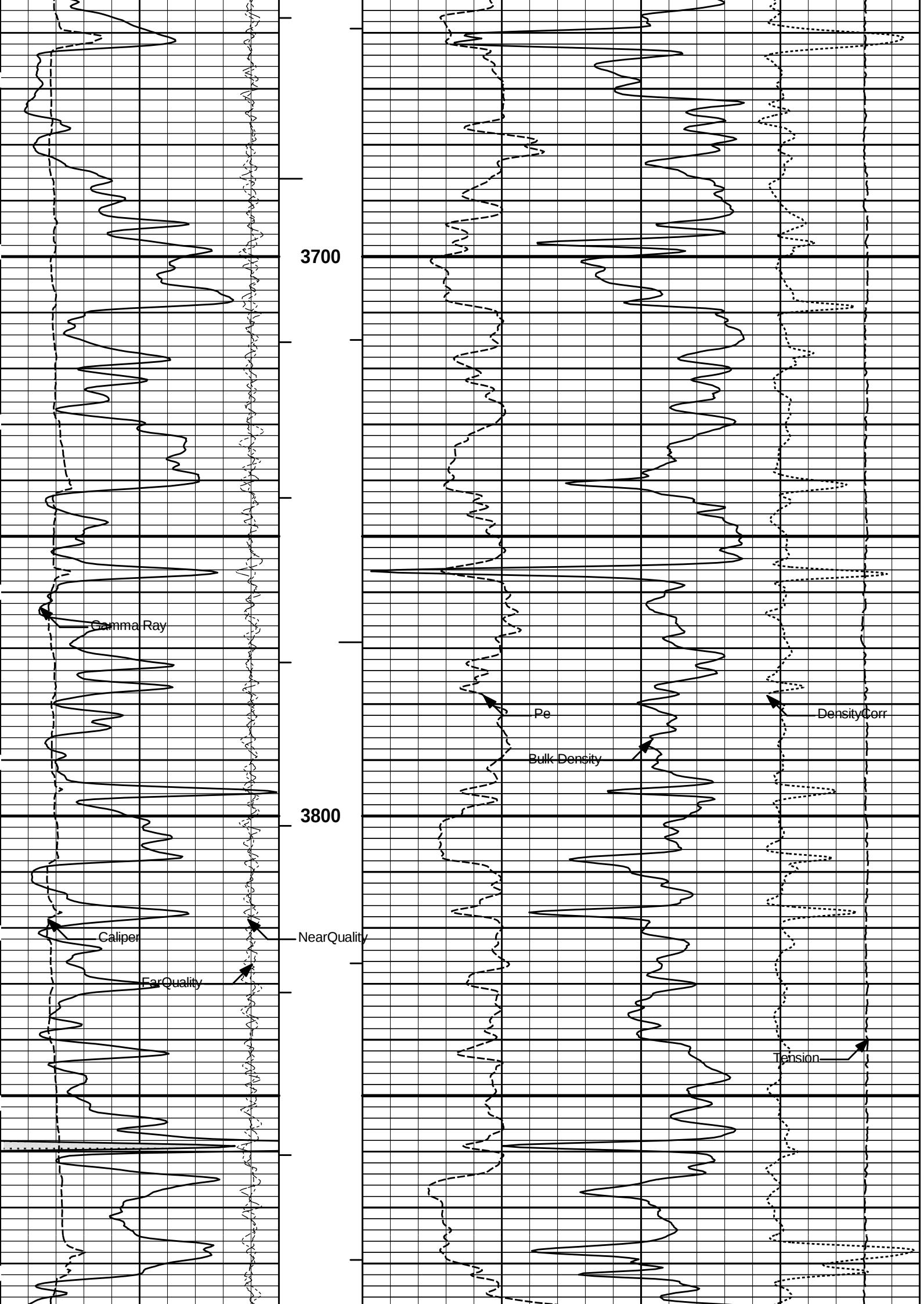
REPEAT SECTION

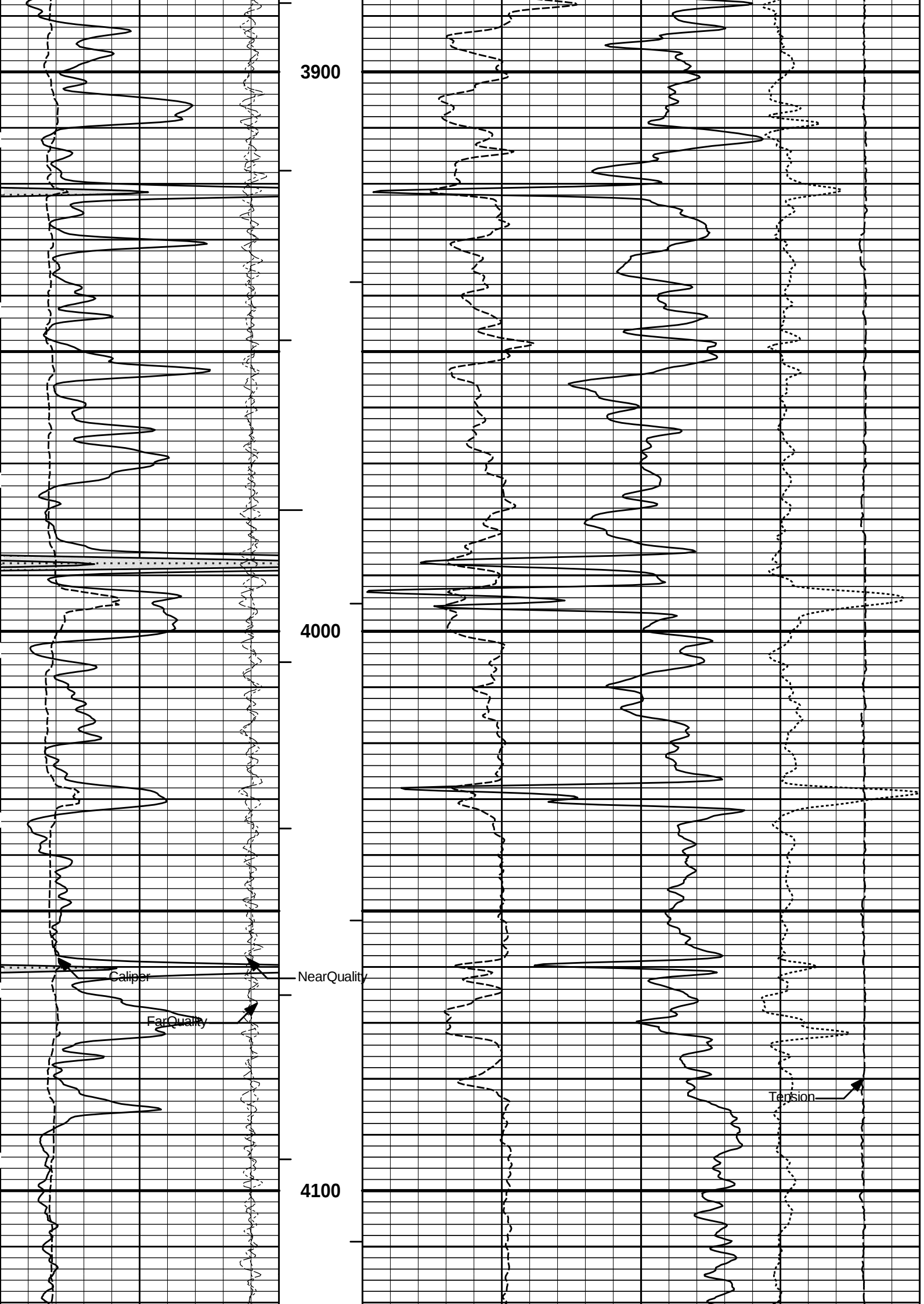
5 INCH MAIN LOG

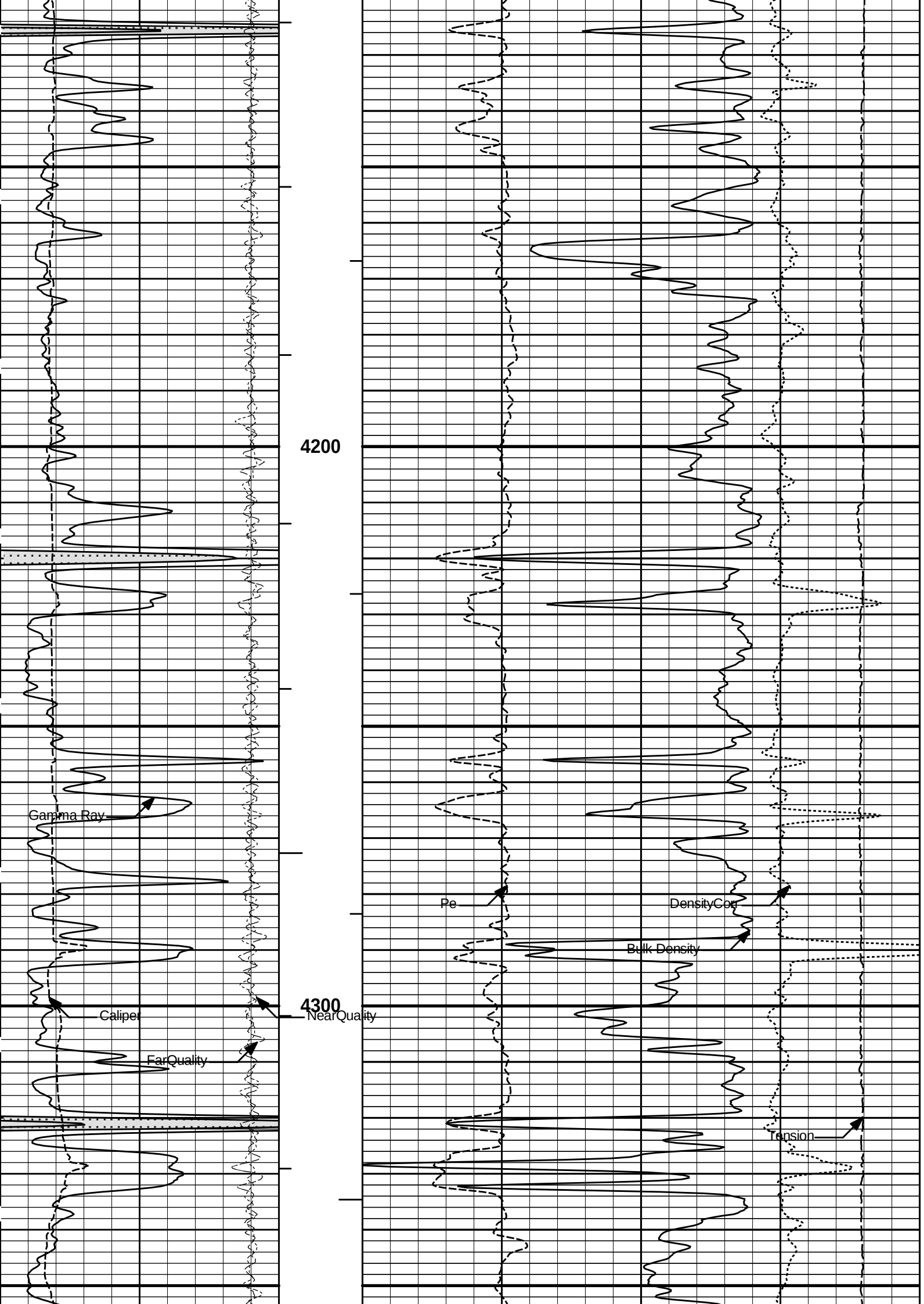
MAIN SECTION 5" PER 100'

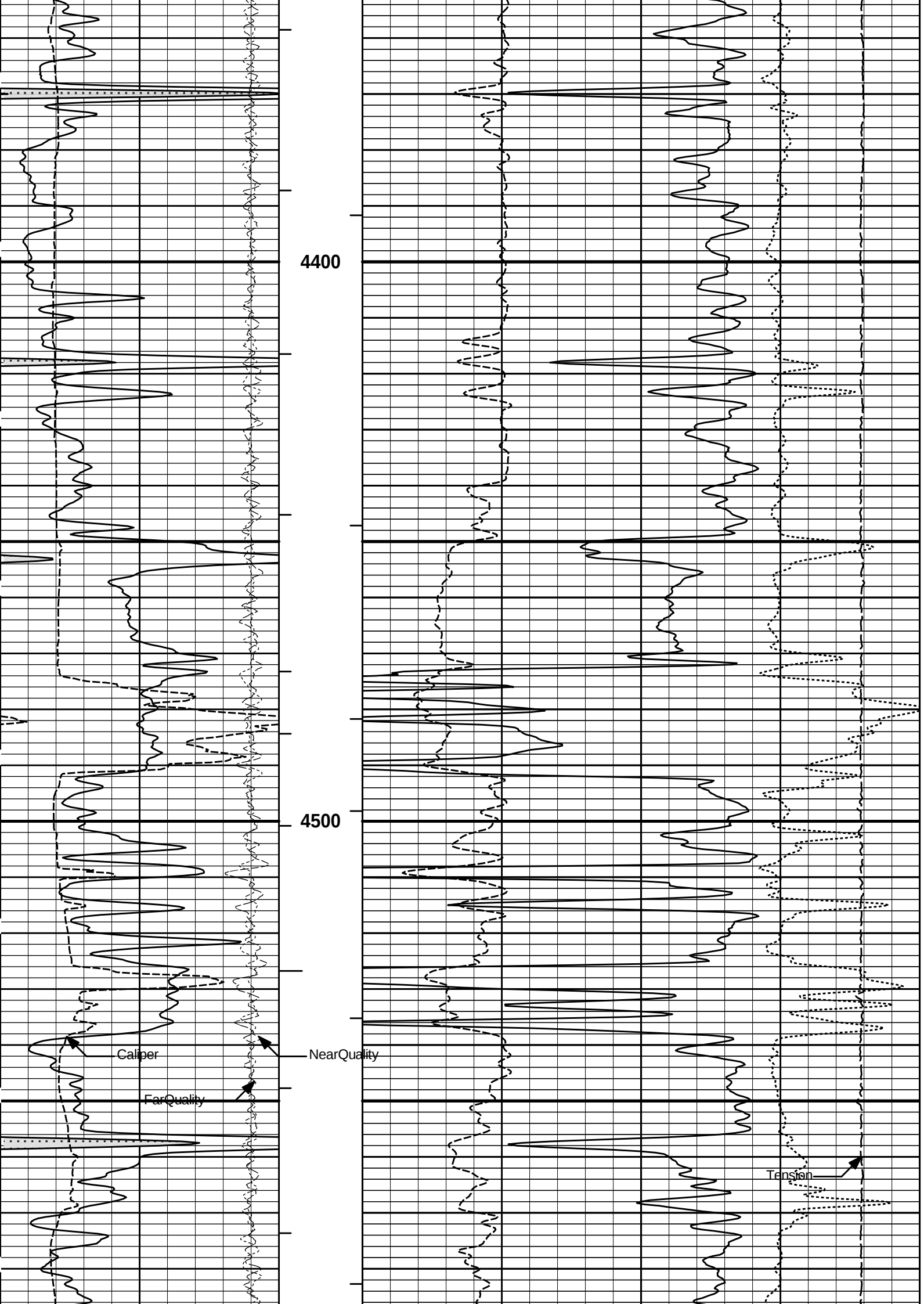


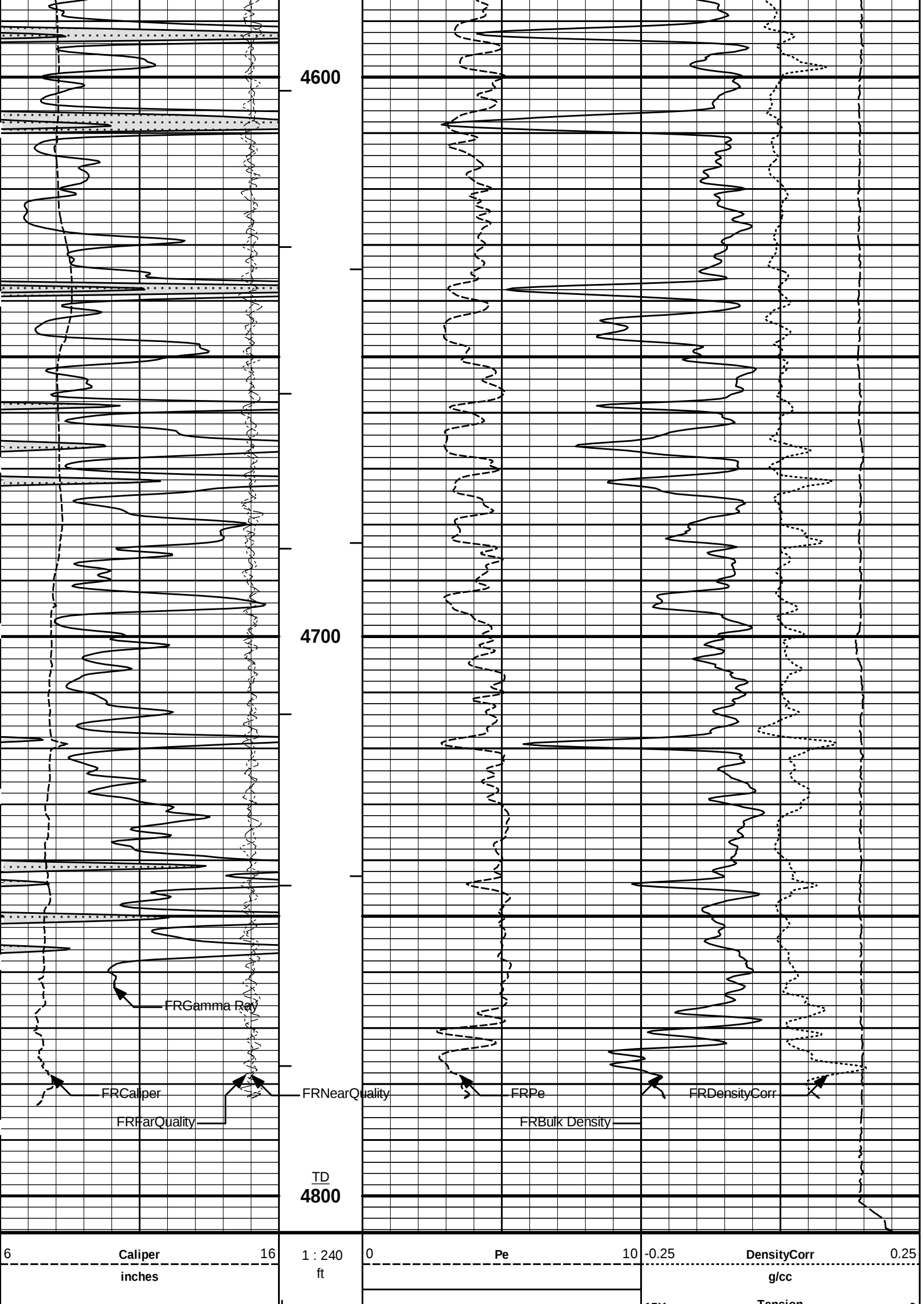












18	NearQuality	2	BHV ft3	15K	Tension	0
					pounds	
18	FarQuality	-2	AHV ft3	2	Bulk Density	3
					g/cc	
0	Gamma Ray	150				
	api					

HALLIBURTON

Plot Time: 01-Jun-17 08:42:59
Plot Range: 3300 ft to 4806.42 ft
Data: HART_WILKINSON\Well Based\DAQ-0001-004\
Plot File: \\-LOCAL-\\HART_WILKINSON\0001 GTET-DSNT-SDLT-ACRT\SDL-DSNIBULKD_5_MAIN_IQ

5 INCH MAIN LOG

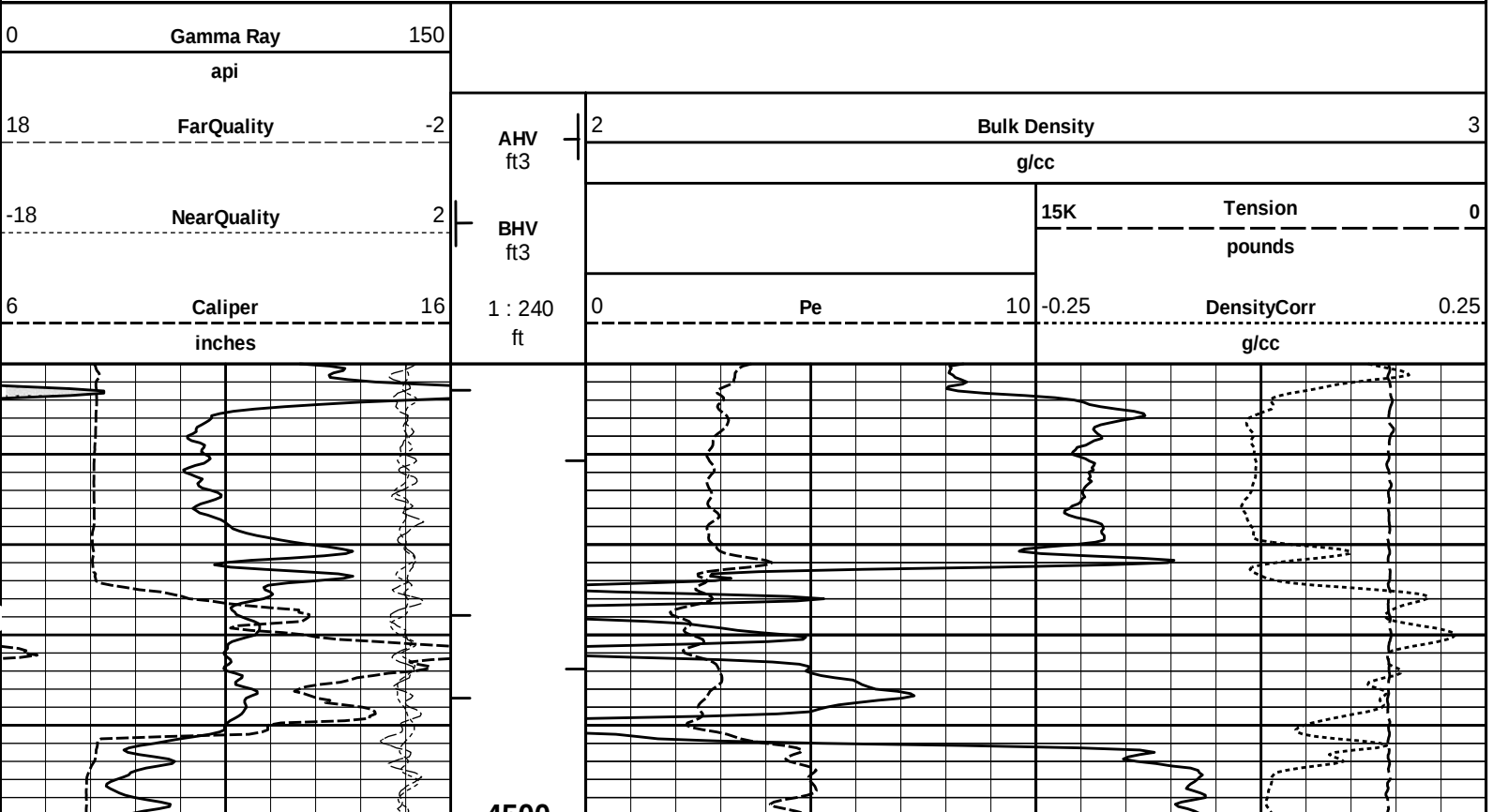
MAIN SECTION 5" PER 100'

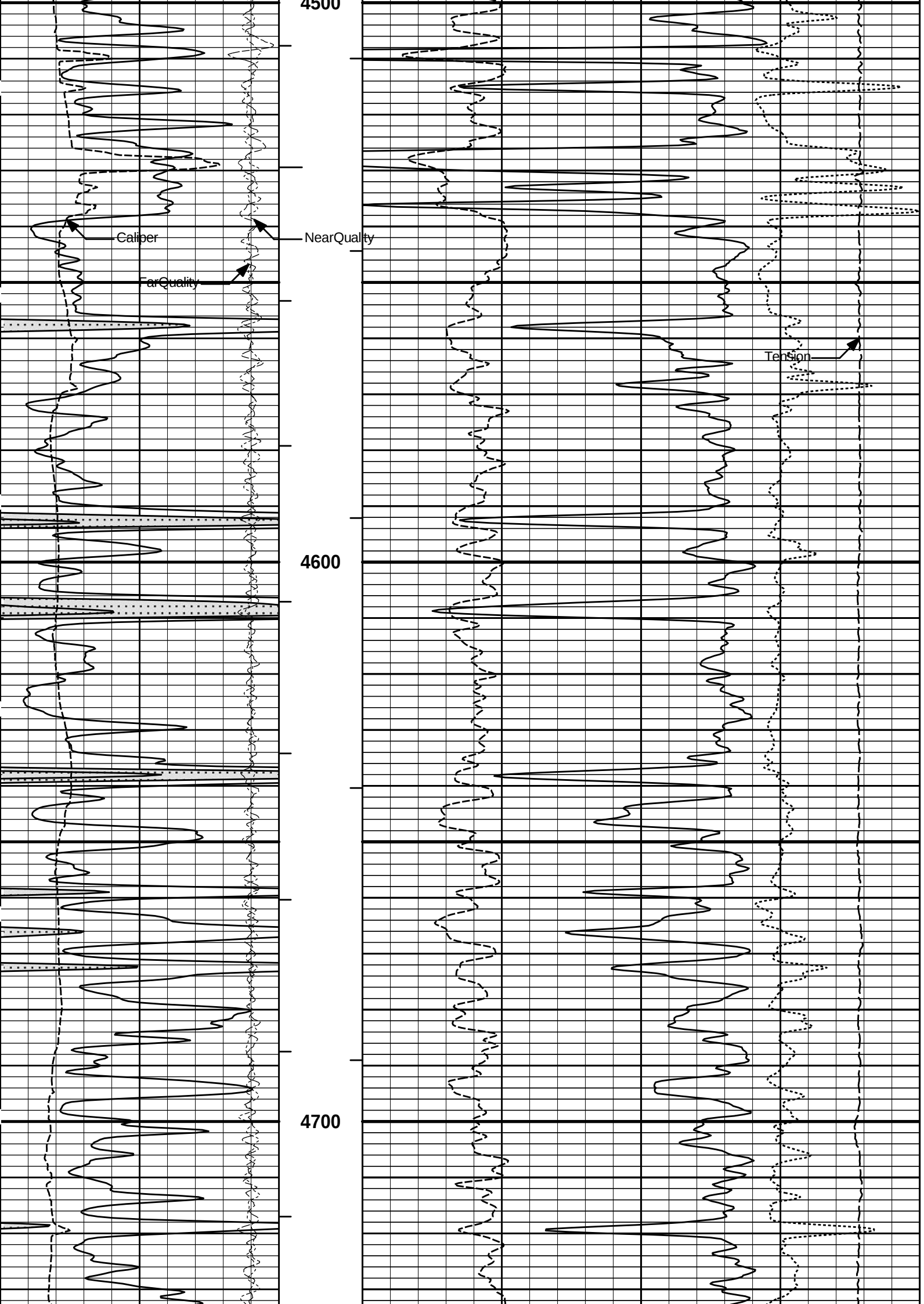
HALLIBURTON

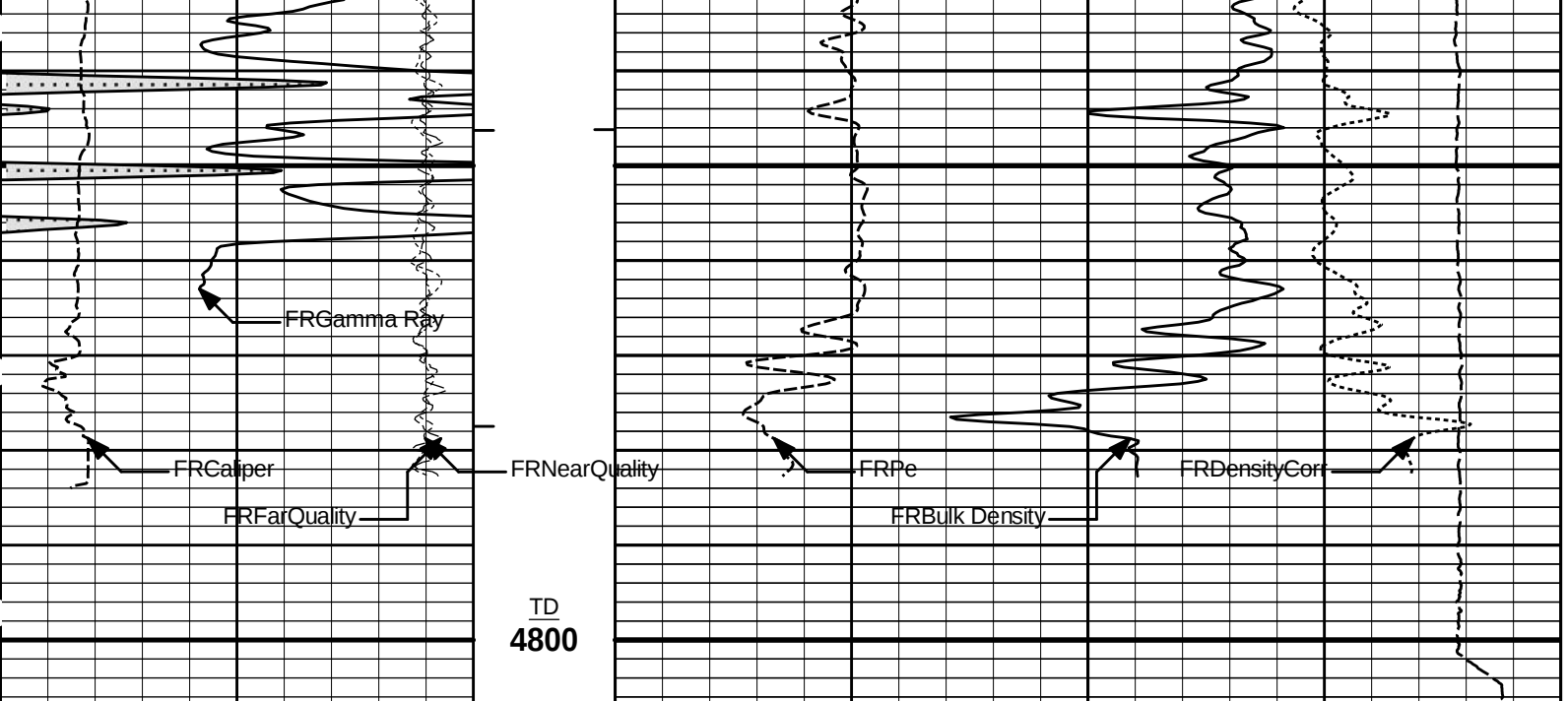
Plot Time: 01-Jun-17 08:43:00
Plot Range: 4450 ft to 4806.75 ft
Data: HART_WILKINSON\Well Based\DAQ-0001-003\
Plot File: \\-LOCAL-\\HART_WILKINSON\0001 GTET-DSNT-SDLT-ACRT\SDL-DSNIBULKD_5_MAIN_IQ

REPEAT SECTION

REPEAT SECTION







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

HALLIBURTON

Plot Time: 01-Jun-17 08:43:01
Plot Range: 4450 ft to 4806.75 ft
Data: HART_WILKINSON\Well Based\DAQ-0001-003\
Plot File: \\-LOCAL-\\HART_WILKINSON\0001 GTET-DSNT-SDLT-ACRT\SDL-DSN\BULKD_5_MAIN_IQ

REPEAT SECTION

REPEAT SECTION

HALLIBURTON

CALIBRATION REPORT

SURFACE TENSION SHOP CALIBRATION					
Tool Name:	Depth Panel - PROT01		Reference Calibration Date:	21-May-17 15:23:11	
Engineer:	WHITLOCK		Calibration Date:	23-May-17 22:58:00	
Software Version:	WL INSITE R5.0.5 (Build 8)		Calibration Version:	1	
SURFACE TENSION LOAD CELL					
	Measurement	Load Cell Value	Measurement	Calibrated	Units
	Low	10664.92	-64.08	0.00	lbs
	High	17305.42	7820.03	7830.00	lbs

DOWNHOLE TENSION SHOP CALIBRATION

Tool Name: CH_HOS - CH_HOS_I		Reference Calibration Date: 21-May-17 15:26:44	
Engineer: MICHAEL RICHTER		Calibration Date: 23-May-17 23:02:10	
Software Version: WL INSITE R5.0.5 (Build 8)		Calibration Version: 1	
DOWNHOLE LOAD CELL			
Measurement	Tool Value	Measurement	Calibrated Units
Low	-585.15	10.04	0.00 lbs
High	3602.14	1286.88	1230.00 lbs

NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name: GTET - 11021139		Reference Calibration Date: 25-May-17 10:51:04	
Engineer: WHITLOCK		Calibration Date: 30-May-17 09:48:08	
Software Version: WL INSITE R5.0.5 (Build 8)		Calibration Version: 1	
Calibrator Source S/N: TB79			
Calibrator API Reference:222.00 api			
Equivalent Calibrator API Reference:225.9 api			
Measurement	Measured	Calibrated	Units
Background	23.7	23.5	api
Background + Calibrator	251.3	249.4	api
Calibrator	227.6	225.9	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION			
Tool Name: GTET - 11021139		Reference Calibration Date: 30-May-17 09:48:08	
Engineer: WHITLOCK		Calibration Date: 31-May-17 11:14:24	
Software Version: WL INSITE R5.0.5 (Build 8)		Calibration Version: 1	
Calibrator Source S/N: TB79			
Calibrator API Reference:222.00 api			
Equivalent Calibrator API Reference:225.9 api			
Field Verification	Shop	Field	Units
Background	23.5	23.1	api
Background + Calibrator	249.4	241.8	api
Calibrator	225.9	218.8	api
Shop	Field	Difference	Tolerance
225.9	218.8	7.1	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION			
Tool Name: DSNT - 11019641		Reference Calibration Date: 09-Feb-17 10:58:20	
Engineer: WHITLOCK		Calibration Date: 09-Mar-17 12:55:14	
Software Version: WL INSITE R5.0.5 (Build 8)		Calibration Version: 1	
Logging Source S/N: DSN-436			
Tank Serial Number: EL RENO			
Reference value assigned to Tank: 56.100			
Snow Block S/N: 12156883			
Calibration Tank Water Temperature: 72 degF			
Min. Tool Housing Outside Diameter: 3.625 in			
CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.98465	0.98292	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):	0.2363	0.2358	0.0006 +/- 0.0020

Calibrated Ratio:		10.5782	10.5596	0.019	+/- 0.050
VERIFIER					
Measurement		Value	Control Limit		
Snow-Block Porosity (decp):		0.0781	0.02000 - 0.09000		
PASS/FAIL SUMMARY					
Background Check:		Passed			
Gain-Range Check:		Passed			
Snow-Block Check:		Passed			

DUAL SPACED NEUTRON FIELD CALIBRATION					
Tool Name:	DSNT - 11019641		Reference Calibration Date:	09-Mar-17 12:55:14	
Engineer:	WHITLOCK		Calibration Date:	31-May-17 11:23:52	
Software Version:	WL INSITE R5.0.5 (Build 8)		Calibration Version:	1	
Logging Source S/N: DSN-436					
Snow Block S/N: 12156883					
NEUTRON FIELD-CHECK SUMMARY					
	Shop	Field	Difference	Control Limit On Change	
Snow-Block Porosity (decp):	0.0781	0.0657	-0.0125	+/- 0.0150	
PASS/FAIL SUMMARY					
Block Change Check:		Passed			
Snow Block Stat Check:		Passed			
Temperature Check:		Passed			

DENSITY CALIPER SHOP CALIBRATION					
Tool Name:	SDLT - 10950477		Reference Calibration Date:	01-Jan-70 00:00:00	
Engineer:	WHITLOCK		Calibration Date:	04-Oct-16 17:51:54	
Software Version:	WL INSITE R5.0.5 (Build 8)		Calibration Version:	1	
Host Tool Name:	DSNT - 11019641				
CALIBRATION COEFFICIENTS					
Measurement	Previous Value	New Value	Control Limit On New Value		
Pad Offset	-4023.44	-4023.44	-7000.00 - -1000.00		
Pad Gain	0.0003896	0.0003896	0.0002000 - 0.0006000		
Arm Offset	-3983.20	-3983.20	-5000.00 - 3000.00		
Arm Gain	0.0005552	0.0005552	0.000300 - 0.000700		
Arm Power	-0.000008048	-0.000008048	-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)	6.50	6.50	0.00	+/- 0.20	
Medium Ring (in)	8.25	8.25	0.00	+/- 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 - 10950477

Reference Calibration Date: 04-Oct-16 17:51:54

Engineer: WHITLOCK

Calibration Date: 21-May-17 22:49:19

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	3.71	-0.04	+/- 0.10
Ring Diameter	8.25	8.25	-0.00	+/- 0.15

PASS/FAIL SUMMARY

Pad Extension Check:

Passed

Diameter Check:

Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name: ACRt Sonde - 11000156

Reference Calibration Date: 18-Jan-17 10:42:26

Engineer: **JORGE ORLANDO PEREZ**

Calibration Date: 10-Mar-17 16:00:02

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

Calibration Version: 1

Host Tool Name: ACRt Instrument - 10996989

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0330	1.05	0.95	1.0116	1.05	0.95	1.0043	1.05
A2 (50")	0.95	1.0428	1.05	0.95	1.0225	1.05	0.95	1.0152	1.05
A3 (29")	0.95	1.0325	1.05	0.95	1.0127	1.05	0.95	1.0046	1.05
A4 (17")	0.95	1.0420	1.05	0.95	1.0182	1.05	0.95	1.0129	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.9973	1.05	0.95	0.9910	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9898	1.05	0.95	0.9834	1.05

SONDE OFFSET

Subarray	R12KHz	R36KHz	R72KHz
	(mmho/m)	(mmho/m)	(mmho/m)
A1 (80")	2.726	-3.207	-6.040
A2 (50")	0.675	-4.130	-4.785
A3 (29")	-10.177	-2.998	-3.744
A4 (17")	-105.235	-32.362	-24.692
A5 (10")	N/A	-77.217	-35.884
A6 (6")	N/A	322.459	173.582

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.93	1.3
36K	1.0	1.41	2.0
72K	1.0	1.65	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	1.00	1.05

PASS/FAIL SUMMARY

GAIN RANGE CHK

PASS

SONDE OFFSET CHK

PASS

TOOL OK TO LOG

QUALITY CHECK SHOP CALIBRATION									
Tool Name:	ACRt Sonde - 11000156					Reference Calibration Date:	18-Jan-17 10:44:21		
Engineer:	JORGE ORLANDO PEREZ					Calibration Date:	10-Mar-17 16:02:10		
Software Version:	WL INSITE R5.0.5 (Build 8)					Calibration Version:	1		
Host Tool Name:	ACRt Instrument - 10996989								
STANDARD DEVIATIONS									
	R12KHz			R36KHz			R72KHz		
	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail
A1 (80")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A2 (50")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A3 (29")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A4 (17")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A5 (10")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A6 (6")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
AVERAGES									
	R12KHz			R36KHz			R72KHz		
	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail
A1 (80")	0.000	< 0.500	Pass	-0.001	> -0.500	Pass	-0.006	> -0.500	Pass
A2 (50")	0.000	< 0.500	Pass	-0.001	> -0.500	Pass	-0.004	> -0.500	Pass
A3 (29")	-0.000	< 0.500	Pass	-0.001	> -0.500	Pass	-0.003	> -0.500	Pass
A4 (17")	-0.003	> -0.500	Pass	-0.007	> -0.500	Pass	-0.024	> -0.500	Pass
A5 (10")	-0.011	> -0.500	Pass	-0.018	> -0.500	Pass	-0.036	> -0.500	Pass
A6 (6")	0.014	< 0.500	Pass	0.073	< 0.500	Pass	0.161	< 0.500	Pass
GAIN TOLERANCE									
	R12KHz								
	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail				
A1 (80")	-215480768.000	-214385984.000	1094784.000	10719299.200	Pass				
A2 (50")	-211891248.000	-210782480.000	1108768.000	10539124.000	Pass				
A3 (29")	-210958496.000	-209852992.000	1105504.000	10492649.600	Pass				
A4 (17")	-213608736.000	-212411760.000	1196976.000	10620588.000	Pass				
A5 (10")	-215382848.000	-214239584.000	1143264.000	10711979.200	Pass				
A6 (6")	-207876976.000	-206615920.000	1261056.000	10330796.000	Pass				
	R36KHz								
	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail				
A1 (80")	57760512.000	57004368.000	756144.000	2850218.400	Pass				
A2 (50")	54089236.000	53319468.000	769768.000	2665973.400	Pass				
A3 (29")	44064052.000	43277876.000	786176.000	2163893.800	Pass				
A4 (17")	48227896.000	47388224.000	839672.000	2369411.200	Pass				
A5 (10")	52355700.000	51523356.000	832344.000	2576167.800	Pass				
A6 (6")	43954020.000	43020756.000	933264.000	2151037.800	Pass				
	R72KHz								
	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail				
A1 (80")	-92226664.000	-92083472.000	143192.000	4604173.600	Pass				
A2 (50")	-88065152.000	-87916144.000	149008.000	4395807.200	Pass				
A3 (29")	-88130104.000	-87961488.000	168616.000	4398074.400	Pass				
A4 (17")	-87542952.000	-87369368.000	173584.000	4368468.400	Pass				
A5 (10")	-85906768.000	-85772992.000	133776.000	4288649.600	Pass				
A6 (6")	-88399528.000	-88188008.000	211520.000	4409400.400	Pass				

PASS/FAIL SUMMARY					
Std Deviation Verification			Pass		
Average Verification			Pass		
Gain Tolerance Verification			Pass		

MICRO LOG SHOP CALIBRATION					
Tool Name:	Microlog Pad - 10950477		Reference Calibration Date:	02-Dec-16 11:36:55	
Engineer:	WHITLOCK		Calibration Date:	31-May-17 11:11:14	
Software Version:	WL INSITE R5.0.5 (Build 8)		Calibration Version:	1	
Host Tool Name:	DSNT - 11019641				

CALIBRATION COEFFICIENT SUMMARY					
Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.16	-0.19	0.00	0.00	ohmm
Calibration Point #1	0.03	0.00	0.00	0.00	ohmm
Calibration Point #2	19.84	20.00	19.66	20.00	ohmm
Internal Reference	19.67	19.83	19.66	20.00	ohmm
Measurement	Micro Log Normal Tool Value		Micro Log Lateral Tool Value		Units
Tool Zero	-0.05		0.35		V
Calibration Point #1	49.41		0.10		V
Calibration Point #2	5369.11		6957.54		V
Internal Reference	5322.73		6957.27		V

MICRO LOG FIELD CHECK					
Tool Name:	Microlog Pad - 10950477		Reference Calibration Date:	31-May-17 11:11:14	
Engineer:	WHITLOCK		Calibration Date:	31-May-17 11:11:59	
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	-0.19	-0.19	0.00	0.00	ohmm
Internal Reference	19.83	19.82	20.00	20.00	ohmm
Summary					
Signal	Shop	Field	Difference	Tolerance	
Microlog Normal	19.83	19.82	0.01	+/- 0.80	
Microlog Lateral	20.00	20.00	0.00	+/- 0.80	

SPECTRAL DENSITY SHOP CALIBRATION					
Tool Name:	SDLT Pad - 10865881		Reference Calibration Date:	09-Mar-17 11:19:48	
Engineer:	WHITLOCK		Calibration Date:	25-May-17 13:00:56	
Software Version:	WL INSITE R5.0.5 (Build 8)		Calibration Version:	1	

Logging Source S/N: 5155GW					
Aluminum Block S/N: EL RENO			Density: 2.581g/cc	Pe: 3.170	
Magnesium Block S/N: EL RENO MG			Density: 1.687g/cc	Pe: 2.594	

DENSITY CALIBRATION SUMMARY					
Measurement	Previous Value		New Value		Control Limit
Near Bar Gain	1.0526		1.0463		0.90 - 1.10
Near Dens Gain	1.0243		1.0284		0.90 - 1.10
Near Peak Gain	1.0479		1.0729		0.90 - 1.10

Near Lith Gain	1.0542	1.0746	0.90 - 1.10
Far Bar Gain	1.0103	1.0129	0.90 - 1.10
Far Dens Gain	1.0015	1.0003	0.90 - 1.10
Far Peak Gain	1.0000	0.9976	0.90 - 1.10
Far Lith Gain	0.9831	0.9826	0.90 - 1.10
Near Bar Offset	-0.1941	-0.1428	NONE
Near Dens Offset	0.0300	-0.0128	NONE
Near Peak Offset	-0.1771	-0.3966	NONE
Near Lith Offset	-0.2721	-0.4539	NONE
Far Bar Offset	0.1039	0.0785	NONE
Far Dens Offset	0.1725	0.1829	NONE
Far Peak Offset	0.1856	0.2071	NONE
Far Lith Offset	0.2797	0.2879	NONE
Near Bar Background	947.94	945.33	700 - 1450
Near Dens Background	316.55	314.07	230 - 480
Near Peak Background	137.62	136.63	100 - 210
Near Lith Background	166.92	167.65	125 - 260
Far Bar Background	612.66	612.64	450 - 900
Far Dens Background	240.31	239.40	175 - 345
Far Peak Background	93.33	93.82	70 - 140
Far Lith Background	98.65	98.35	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.693	1.687	-0.006	+/- 0.015
Pe	2.517	2.554	0.037	+/- 0.150
ALUMINUM				
Density (g/cc)	2.584	2.581	-0.003	+/- 0.01500
Pe	3.061	3.127	0.066	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0003	+/- 0.0110	-0.0015	+/- 0.0140
Magnesium Block	-0.0002	+/- 0.0110	0.0006	+/- 0.0140
Aluminum Block	-0.0014	+/- 0.0110	0.0010	+/- 0.0140
Resolution	9.73	6.00 - 11.50	8.99	6.00 - 11.50
Internal Verifier(B+D+P+L)	1564	1200 - 2700	1044	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 - 10865881	Reference Calibration Date:	25-May-17 13:00:56
Engineer:	WHITLOCK	Calibration Date:	31-May-17 11:16:22

Engineer: WHITELOCK	Software Version: WL INSITE R5.0.5 (Build 8)	Calibration Date: 01 May 17 11:10:22	Calibration Version: 1
Pad Temperature: 82.3 degF			
DENSITY FIELD CALIBRATION SUMMARY			
Measurement	Shop	Field	Change Control Limit +/-
Near (B+D+P+L) cps	1563.693	1565.696	2.003 15.913
Far (B+D+P+L) cps	1044.216	1040.995	-3.221 17.186
Near Resolution	9.73	9.77	0.040 0.50
Far Resolution	8.99	8.92	-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
Depth Panel-PROT01						
Tension Zero	0.00	-----	-----	0.00	-----	lbs
Tension Cal	7830.00	-----	-----	0.00	-----	lbs
CH_HOS-CH_HOS_I						
DH Tension Zero	0.00	-----	-----	0.00	-----	lbs
DH Tension Cal	1230.00	-----	-----	0.00	-----	lbs
GTET-11021139						
Gamma Ray Calibrator	225.9	218.8	-----	7.1	+/- 9.00	api
DSNT-11019641						
Snow-Block Porosity	0.0781	0.0657	-----	0.0124	+/- 0.0150	decp
SDLT-10950477						
Pad Extension	3.75	3.71	-----	0.04	+/-0.10	in
Ring Diameter	8.25	8.25	-----	0.00	+/-0.15	in
ACRt Sonde-11000156						
Mud Cell	1.00	-----	-----	0	-----	ohm-m
Microlog Pad-10950477						
MicroLog Normal	19.83	19.82	-----	0.01	+/-0.80	ohmm
MicroLog Lateral	20.00	20.00	-----	0.00	+/-0.80	ohmm
SDLT Pad-10865881						
Near(B+D+P+L)	1563.693	1565.696	-----	-2.003	+/-15.913	cps
Far(B+D+P+L)	1044.216	1040.995	-----	3.221	+/-17.186	cps
Data: HART_WILKINSONI0001 GTET-DSNT-SDLT-ACRTIDLE					Date: 01-Jun-17 05:49:04	

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	9.000	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	DMUD	Mud Density	8.333	lb/gal	

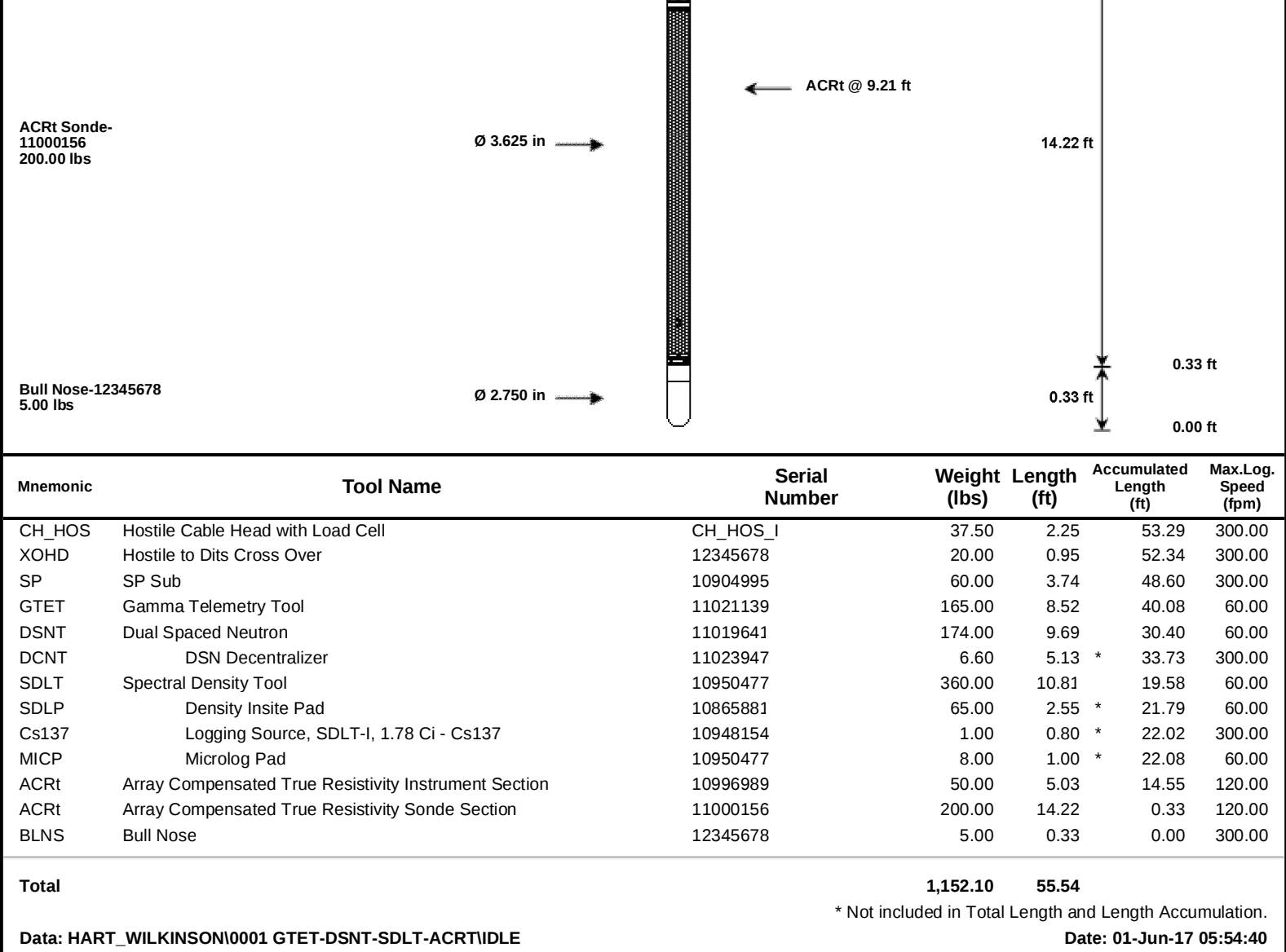
SHARED	RMUD	Mud Resistivity	2.000	ohmm
SHARED	TRM	Temperature of Mud	75.0	degF
SHARED	CSD	Logging Interval is Cased?	No	
SHARED	ICOD	AHV Casing OD	5.500	in
SHARED	CSTR	Compressive Strength	1000.00	psia
SHARED	ST	Surface Temperature	75.0	degF
SHARED	TD	Total Well Depth	4800.00	ft
SHARED	BHT	Bottom Hole Temperature	125.0	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	
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	RMAX	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MREF	Fixed mud resistivity	2000	ohmm

ACRt Sonde	MBFL	Fixed mud resistivity	2000	Ohmm
ACRt Sonde	BHSM	Borehole Size Source Tool	SDLT	
ACRt Sonde	MBFL	Apply Corkscrew Effect?	No	
BOTTOM_____				
Data: HART_WILKINSON\0001 GTET-DSNT-SDLT-ACRT\IDLE			Date: 01-Jun-17 05:50:33	

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
CH_HOS_I 37.50 lbs		Ø 2.750 in →		Temperature @ 55.29 ft	2.25 ft	55.54 ft
XOHD-12345678 20.00 lbs		Ø 2.750 in → Ø 3.625 in →			0.95 ft	53.29 ft
						52.34 ft
SP Sub-10904995 60.00 lbs		Ø 3.625 in →		SP @ 50.56 ft	3.74 ft	48.60 ft
				Z-Accelerometer @ 48.15 ft		
GTET-11021139 165.00 lbs		Ø 3.625 in →		GammaRay @ 42.54 ft	8.52 ft	40.08 ft
DSN Decentralizer-11023947 6.60 lbs		Ø 5.000 in* → Ø 3.625 in →		DSN Far @ 33.15 ft DSN Near @ 32.40 ft	9.69 ft	30.40 ft
SDLT-10950477 360.00 lbs	SDLT Pad-10865881 65.00 lbs Microlog Pad-10950477 8.00 lbs RAM-Cs137-10948154 1.00 lbs	Ø 4.500 in → Ø 4.500 in* → Ø 4.750 in* → Ø 0.800 in* →		Microlog @ 22.58 ft SDL Caliper @ 22.40 ft SDL @ 22.39 ft	10.81 ft	19.58 ft
ACRt Instrument-10996989 50.00 lbs		Ø 3.625 in →		Mud Resistivity @ 13.19 ft	5.03 ft	14.55 ft



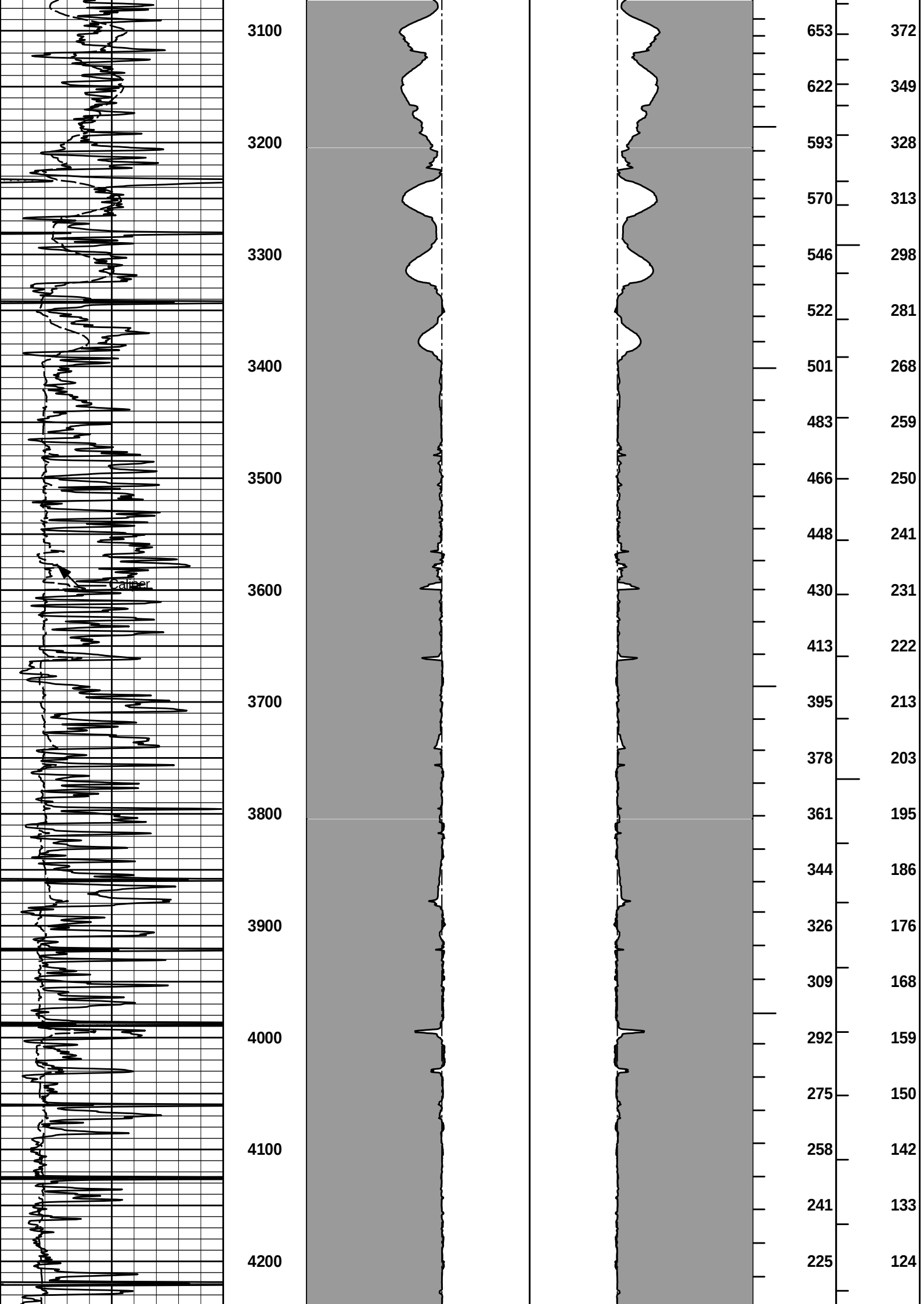
HALLIBURTON

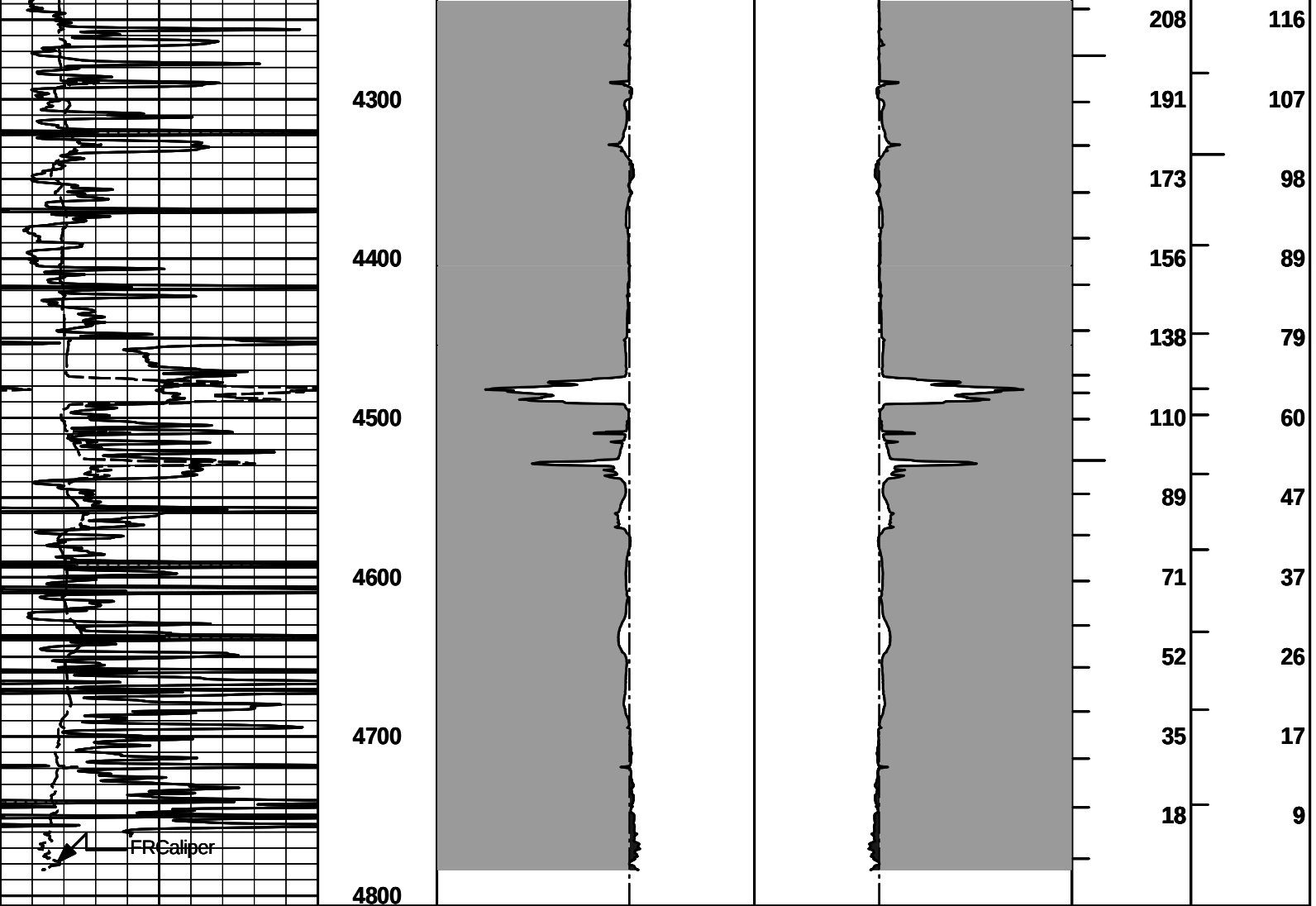
Plot Time: 01-Jun-17 08:43:09
Plot Range: 3000 ft to 4806.42 ft
Data: HART_WILKINSON\Well Based\DAQ-0001-004\
Plot File: \\-LOCAL-\\HART_WILKINSON\0001 GTET-DSNT-SDLT-ACRT\SDL-DSN\IAHV Plot_INSITE_IQ

ANNULAR HOLE VOLUME PLOT

AHV PLOT CALCULATED FOR 5 1/2" CASING

SHALE		1 : 1200 ft	MUDCAKE		MUDCAKE			
0	Gamma API 150		20	Bit Size 0	0	Bit Size 20		
api								
6	CALI 16	3000	20	CALI 0	0	CALI 20	BHVT	AHVT
inches			inches		inches			
							682	392





6	CALI	16	1 : 1200	20	CALI	0 0	20	BHVT	AHVT
	inches		ft		inches				
0	Gamma API	150		20	Bit Size	0 0	20		
	api								
	SHALE				MUDCAKE		MUDCAKE		

HALLIBURTON	Plot Time: 01-Jun-17 08:43:10 Plot Range: 3000 ft to 4806.42 ft Data: HART_WILKINSON\Well Based\DAQ-0001-004\ Plot File: \\LOCAL\HART_WILKINSON\0001 GTET-DSNT-SDLT-ACRT\SDL-DSM\AHV Plot_INSITE_IQ
ANNULAR HOLE VOLUME PLOT	

AHV PLOT CALCULATED FOR 5 1/2" CASING
