

HALIBURTON

SPECTRAL DENSITY
DUAL SPACED NEUTRON
MICROLOG

COMPANY				WOOD ENERGY, INC			
WELL				MILLER 9-1			
FIELD				UNKOWN			
COUNTY				SCOTT			
STATE				KANSAS			
COMPANY				WOOD ENERGY, INC			
WELL				MILLER 9-1			
FIELD				UNKOWN			
COUNTY				SCOTT			
STATE				KANSAS			
API No.				15-171-20884			
Location				(SHL) 1320' FNL & 1320' FWL			
Other Services:				ACRT SDLT / DSNT WAVE MRIL			
Sect. 9				Twp. 19 S		Rge. 33 W	
Permanent Datum				GL		Elev.: K.B. 2969.0 ft	
Log measured from				KB		D.F. 2967.0 ft	
Drilling measured from				KB		G.L. 2958.0 ft	
Date				30-May-12			
Run No.				1			
Depth - Driller				4800.00 ft			
Depth - Logger				4798.0 ft			
Bottom - Logged Interval				4792			
Top - Logged Interval				3750			
Casing - Driller				8.625 in @ 344.0 ft		@	
Casing - Logger				341.0 ft			
Bit Size				7.875 in		@	
Type Fluid in Hole				WATER			
Density		Viscosity	9.0 ppg		60.00 s/qt		
PH		Fluid Loss	10.00 pH		8.0 cpm		
Source of Sample				FLOWLINE			
Rm @ Meas. Temperature		0.150 ohmm @ 80.00 degF		@		@	
Rmf @ Meas. Temperature		0.12 ohmm @ 80.00 degF		@		@	
Rmc @ Meas. Temperature		0.170 ohmm @ 80.00 degF		@		@	
Source Rmf		Rmc	CALC		CALC		
Rm @ BHT		0.10 ohmm @ 120.0 degF		@		@	
Time Since Circulation				6.0 hr			
Time on Bottom				30-May-12 07:18			
Max. Rec. Temperature		120.0 degF @ 4798.0 ft		@		@	
Equipment		Location	336		HOFAKMP	FTSM	
Recorded By				T. PRONOID			

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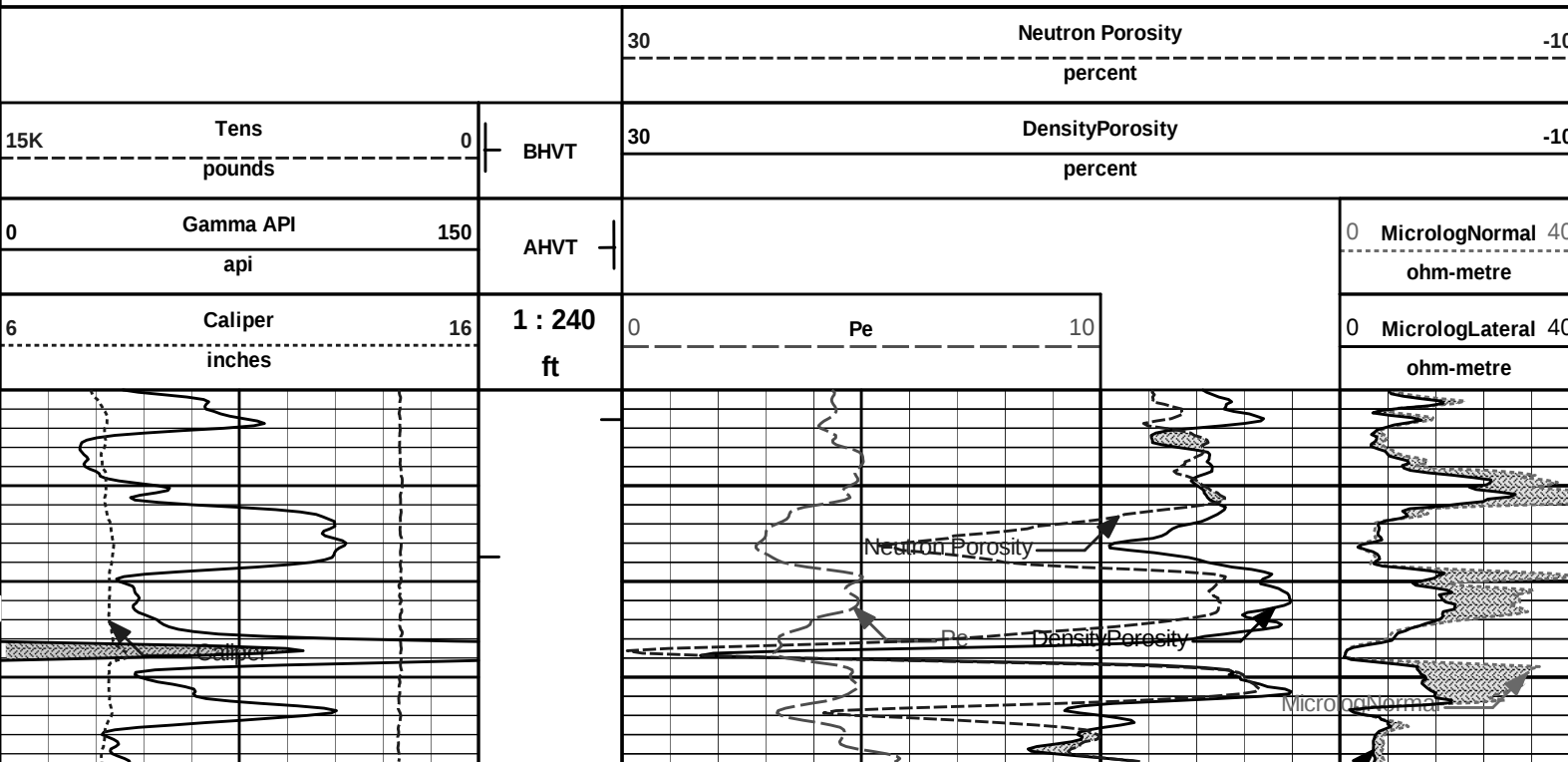
Service Ticket No.: N/A						API Serial No.: 15-171-20884						PGM Version: WL INSITE R3.4.2 (Build 2)					
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE								RESISTIVITY SCALE CHANGES									
Date	Sample No.					Type Log	Depth	Scale Up Hole		Scale Down Hole							
Depth-Driller																	
Type Fluid 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 9014838E	N/A	1.5 S.O.		N/A						
Rmc @ Meas. Temp.		@		@													
Source Rmf	Rmc																
Rm @ BHT		@		@													
Rmf @ BHT		@		@													
Rmc @ BHT		@		@													
EQUIPMENT DATA																	
GAMMA				ACOUSTIC				DENSITY				NEUTRON					
Run No.	ONE			Run No.				Run No.	ONE			Run No.	ONE				
Serial No.	11021039			Serial No.				Serial No.	I947M315P774			Serial No.	11023947				
Model No.	GTET			Model No.				Model No.	SDLT			Model No.	DSNT				
Diameter	3.625"			No. of Cent.				Diameter	4.5"			Diameter	3.625"				
Detector Model No.	A-102T			Spacing				Log Type	GAM-GAM			Log Type	NEU-NEU				
Type	SCINT							Source Type	Cs 137			Source Type	Am 241 Be				
Length	8"			LSA [Y/N]				Serial No.	5155 GW			Serial No.	DSN 439				
Distance to Source	N/A			FWDA [Y/N]				Strength	1.5 Ci			Strength	15 Ci				

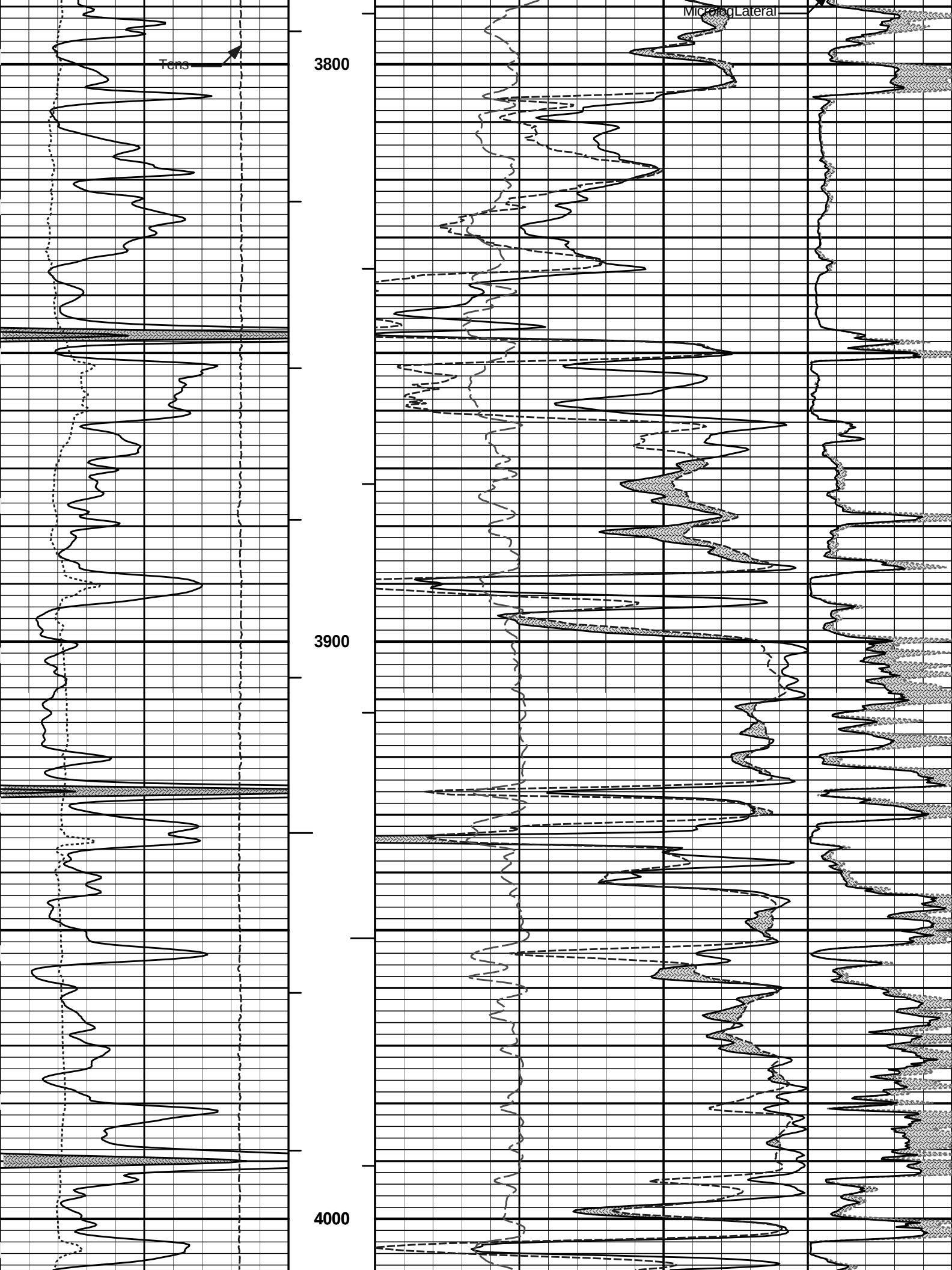
GENERAL			GAMMA		ACOUSTIC		DENSITY		NEUTRON							
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix		
No.	From	To	ft/min	L	R	L	R		L	R		L	R			
ONE	TD	CSG	REC	0	150				30	-10	2.71 gm/cc	30	-10	LIME		
DIRECTIONAL INFORMATION																
Maximum Deviation								@	KOP							@
Remarks:																
ANNULAR HOLE VOLUME CALCULATED FOR 4.5-INCH CASING																
CREW: HOFKAMP, HANCOX, DUNAWAY																
THANK YOU FOR USING HALLIBURTON ENERGY SERVICES																
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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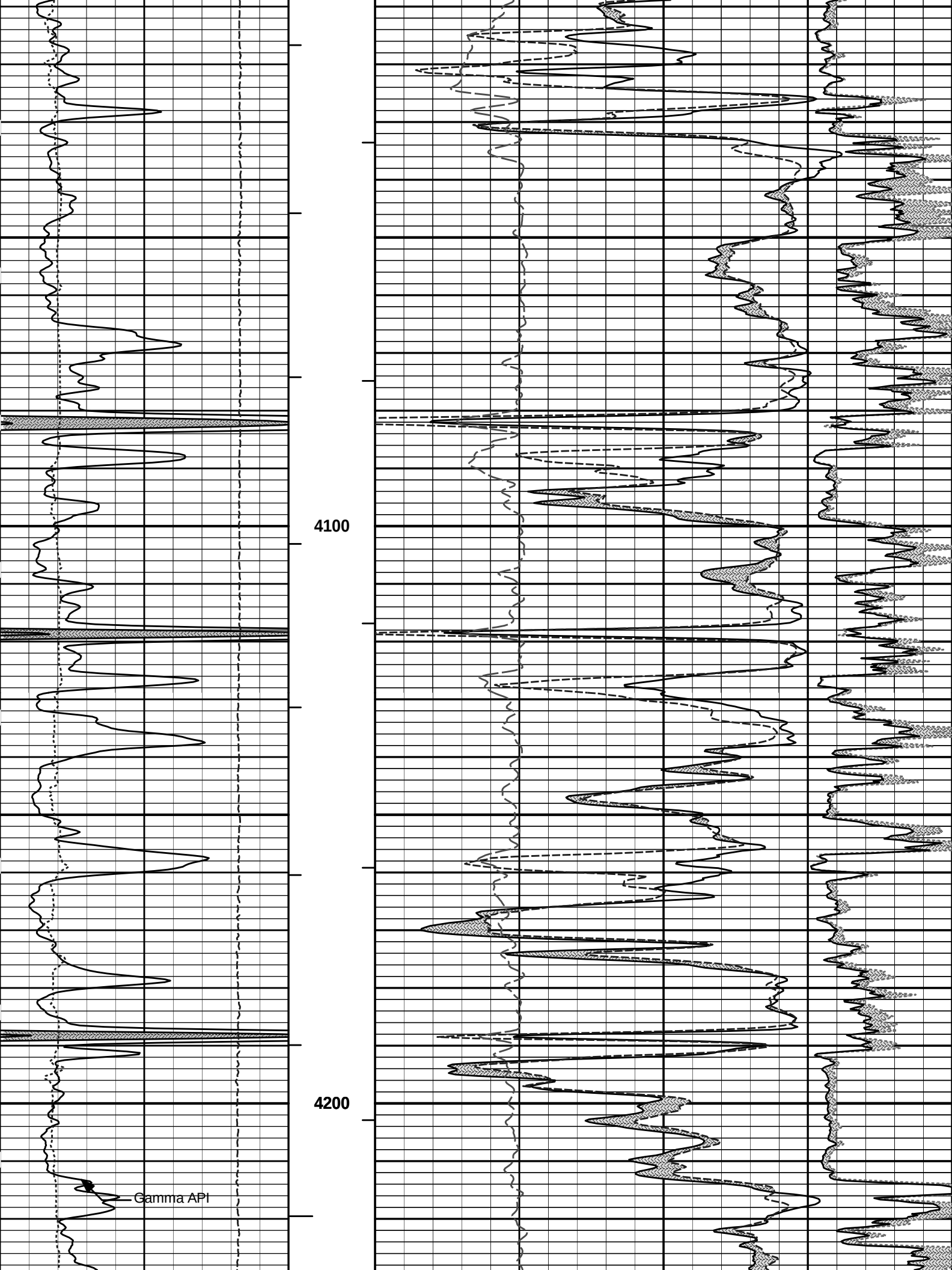


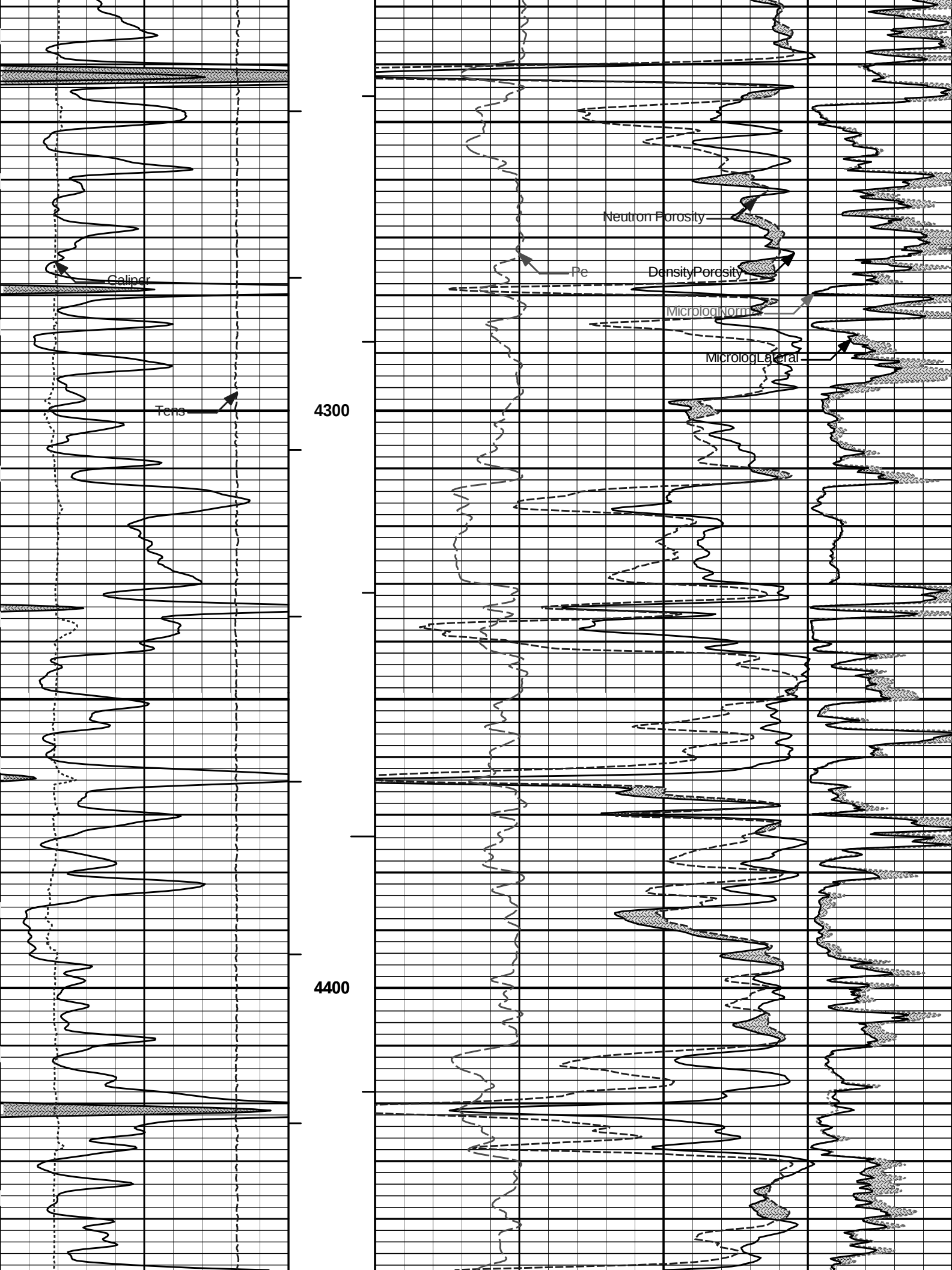
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 Data: WOOD_Miller9_1\Well Based\POROSITY\
 Plot File: \\PORI\Poromicrlog_5in

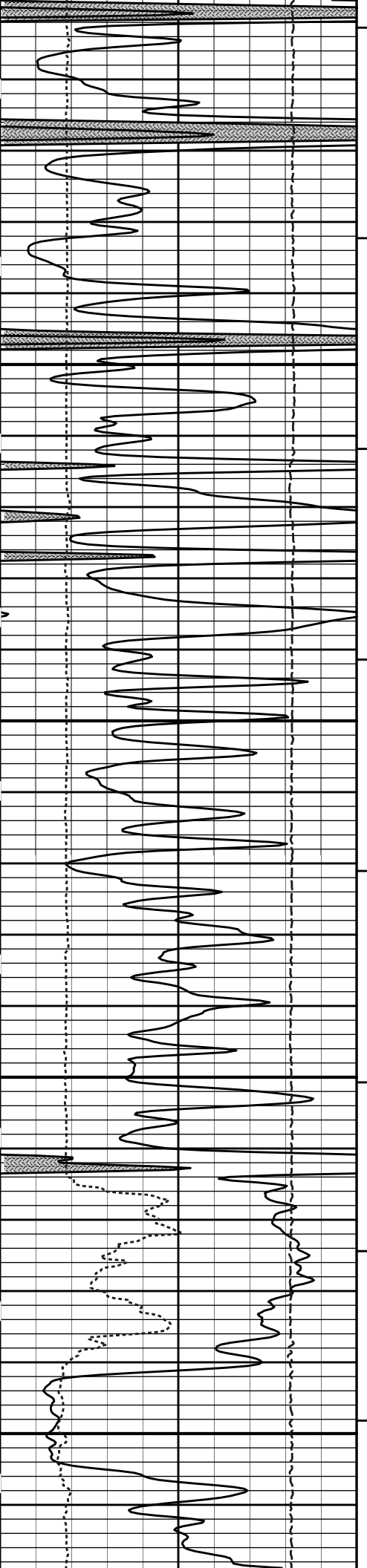
5 INCH MAIN LOG





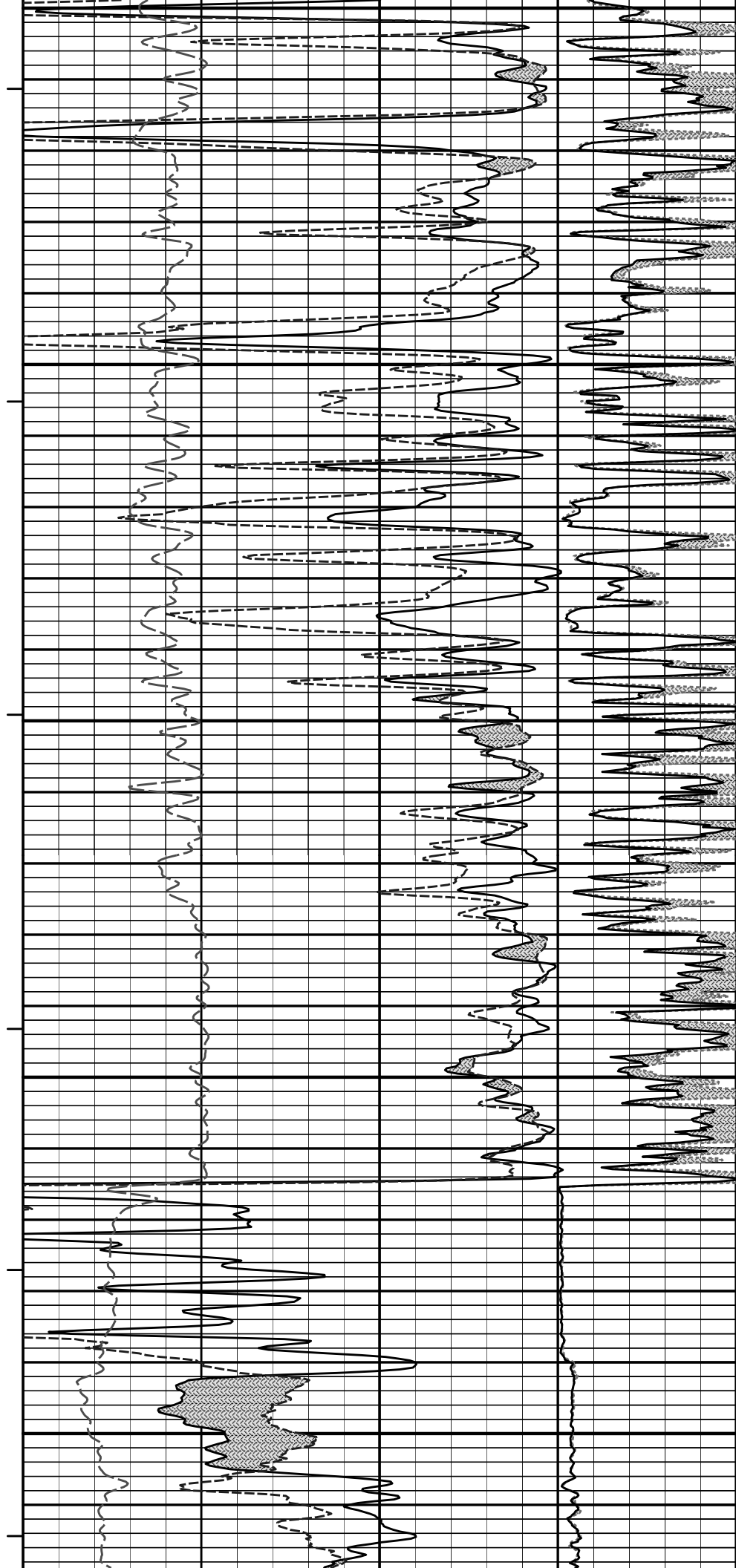


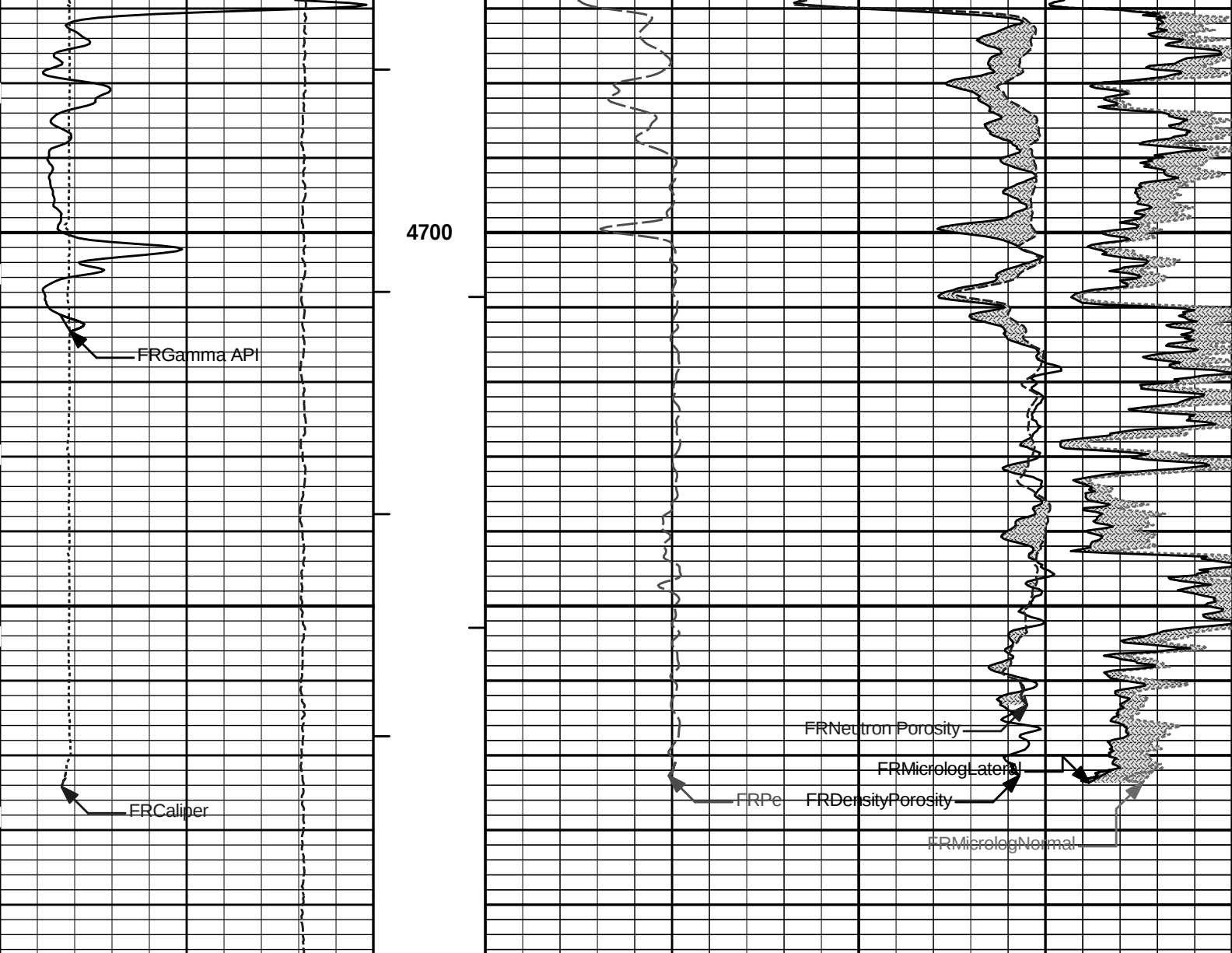




4500

4600





6	Caliper	16	1 : 240	0	Pe	10	0	MicrologLateral	40
	inches		ft					ohm-metre	
0	Gamma API	150	AHVT				0	MicrologNormal	40
	api							ohm-metre	
15K	Tens	0	BHVT	30	DensityPorosity	-10			
	pounds				percent				
				30	Neutron Porosity	-10			
					percent				

HALLIBURTON

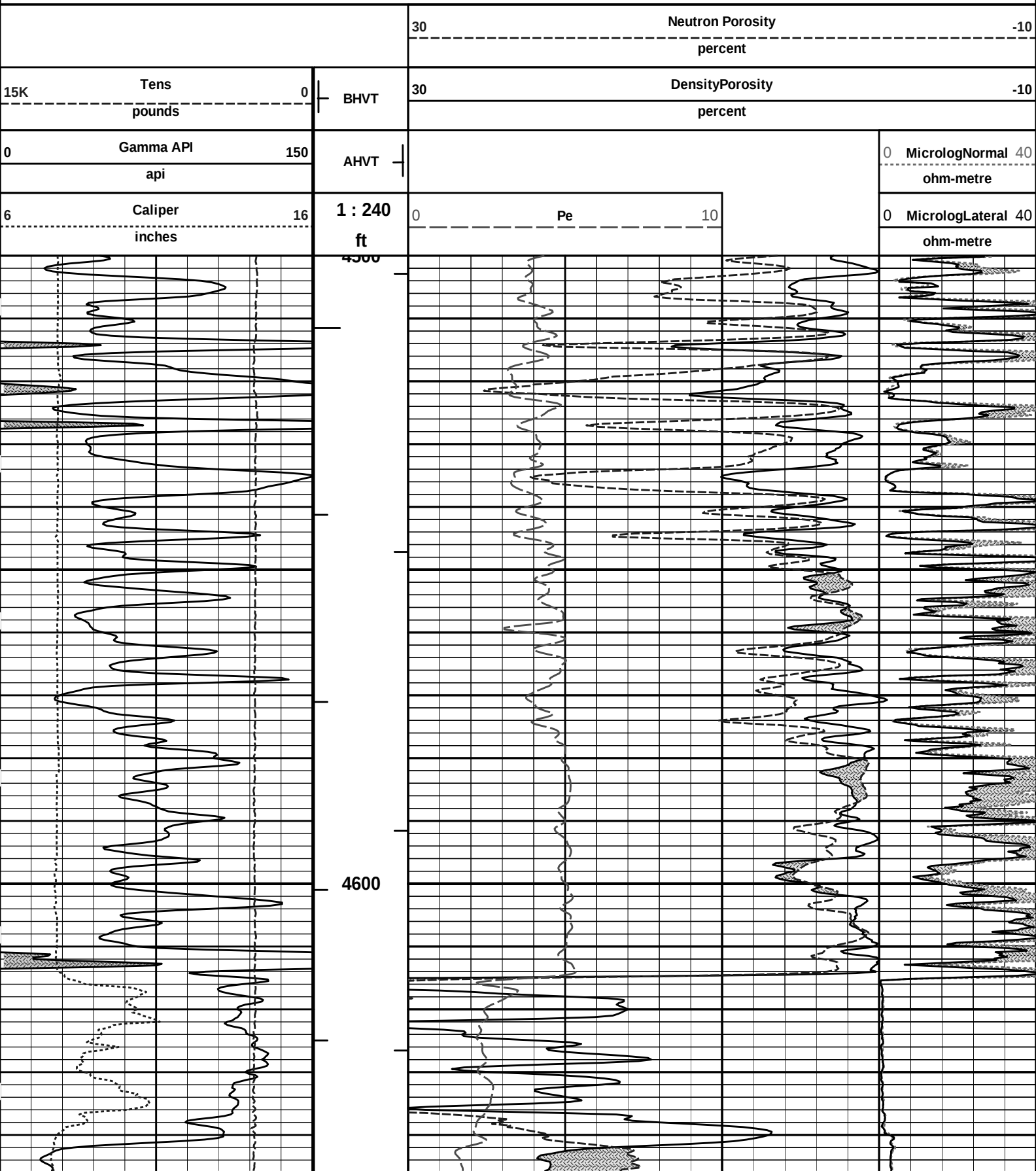
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Plot Range: 3750 ft to 4796.83 ft
Data: WOOD_Miller9_1\Well Based\POROSITY\
Plot File: \\POR\Poromiclog_5in

5 INCH MAIN LOG

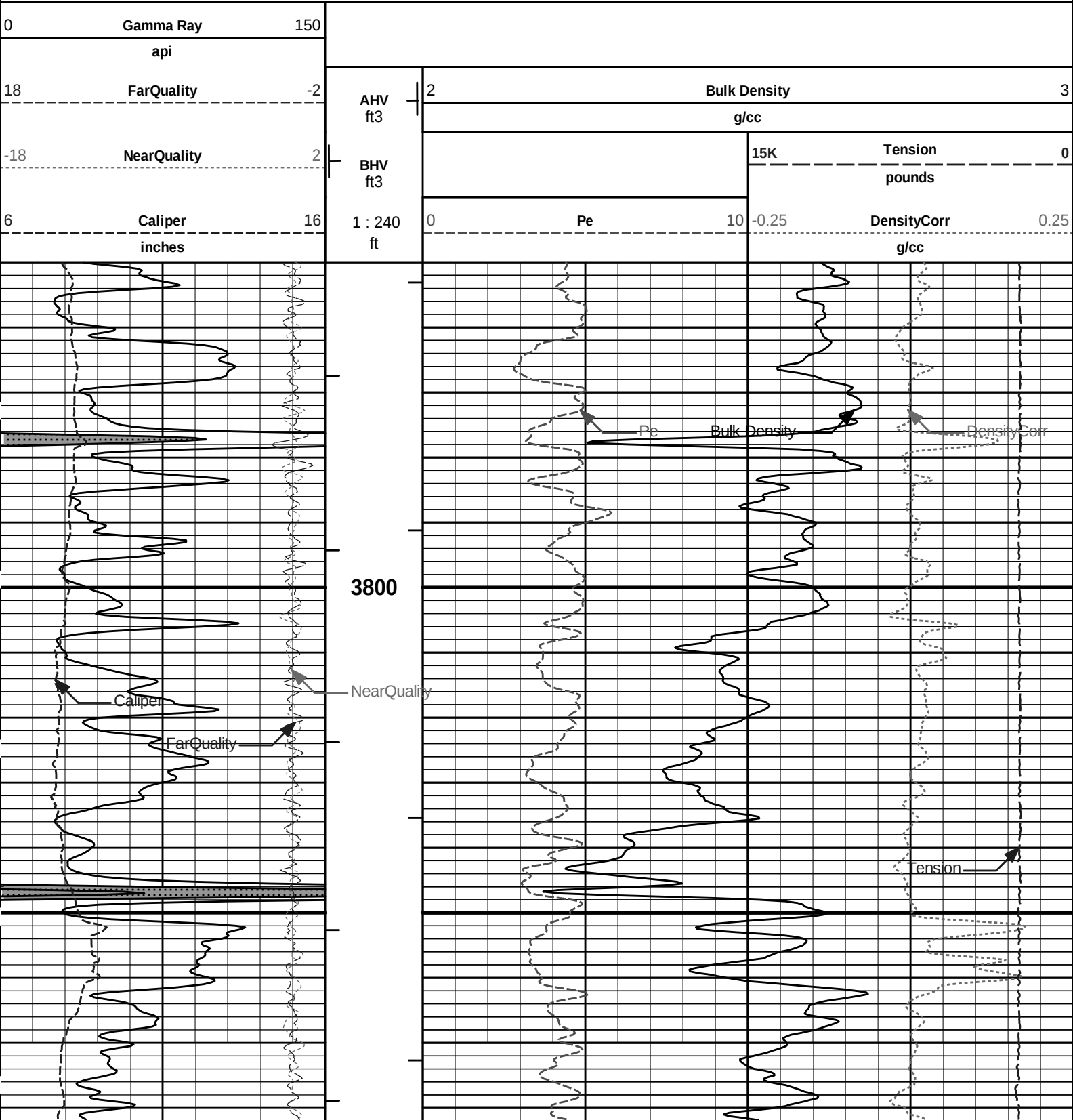
HALLIBURTON

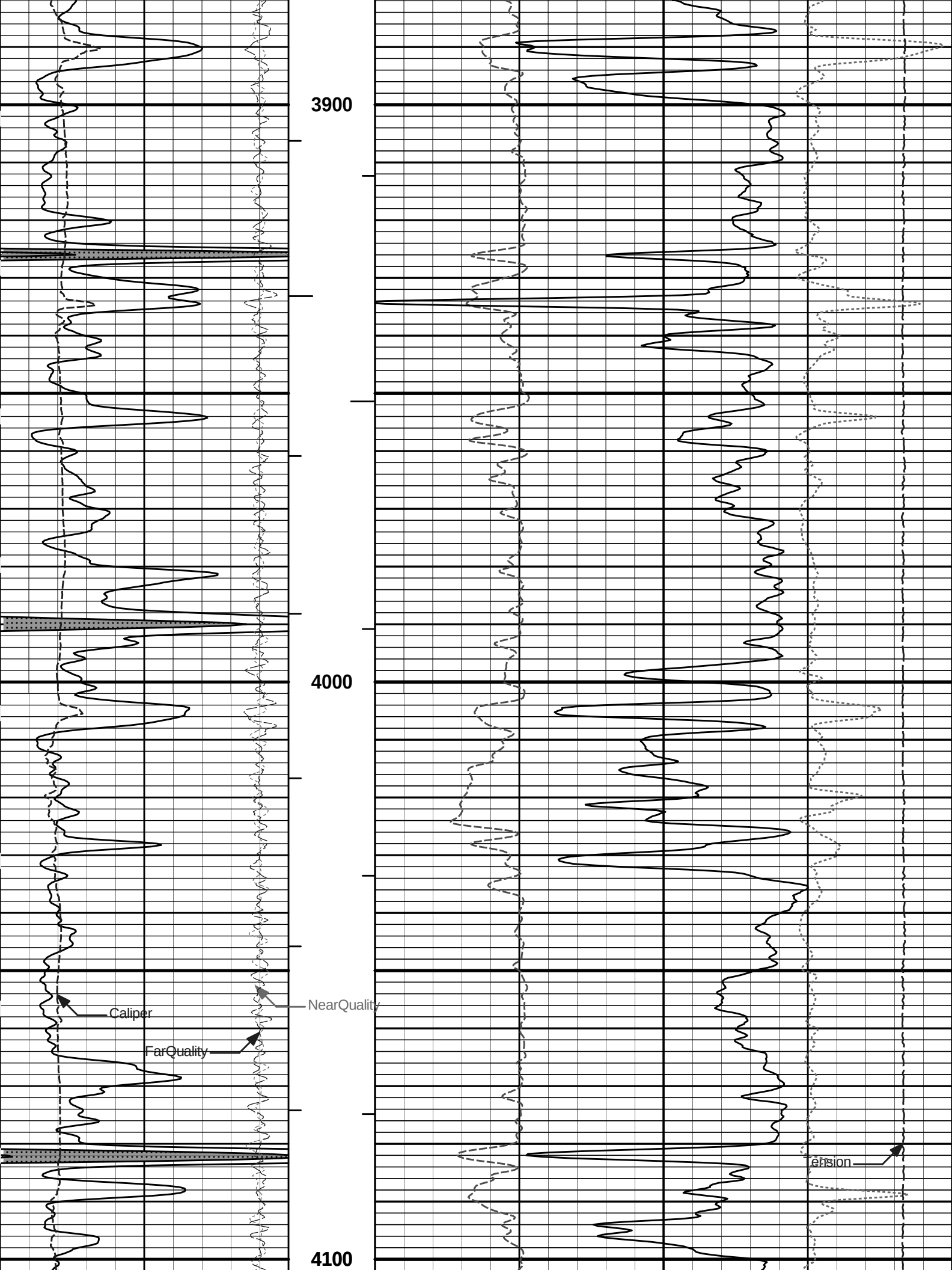
Plot Time: 30-May-12 08:15:47
Plot Range: 4500 ft to 4800.58 ft
Data: WOOD_Miller9_1\Well Based\DAQ 0001_002\
Plot File: \\POR\Poromiclog_5in

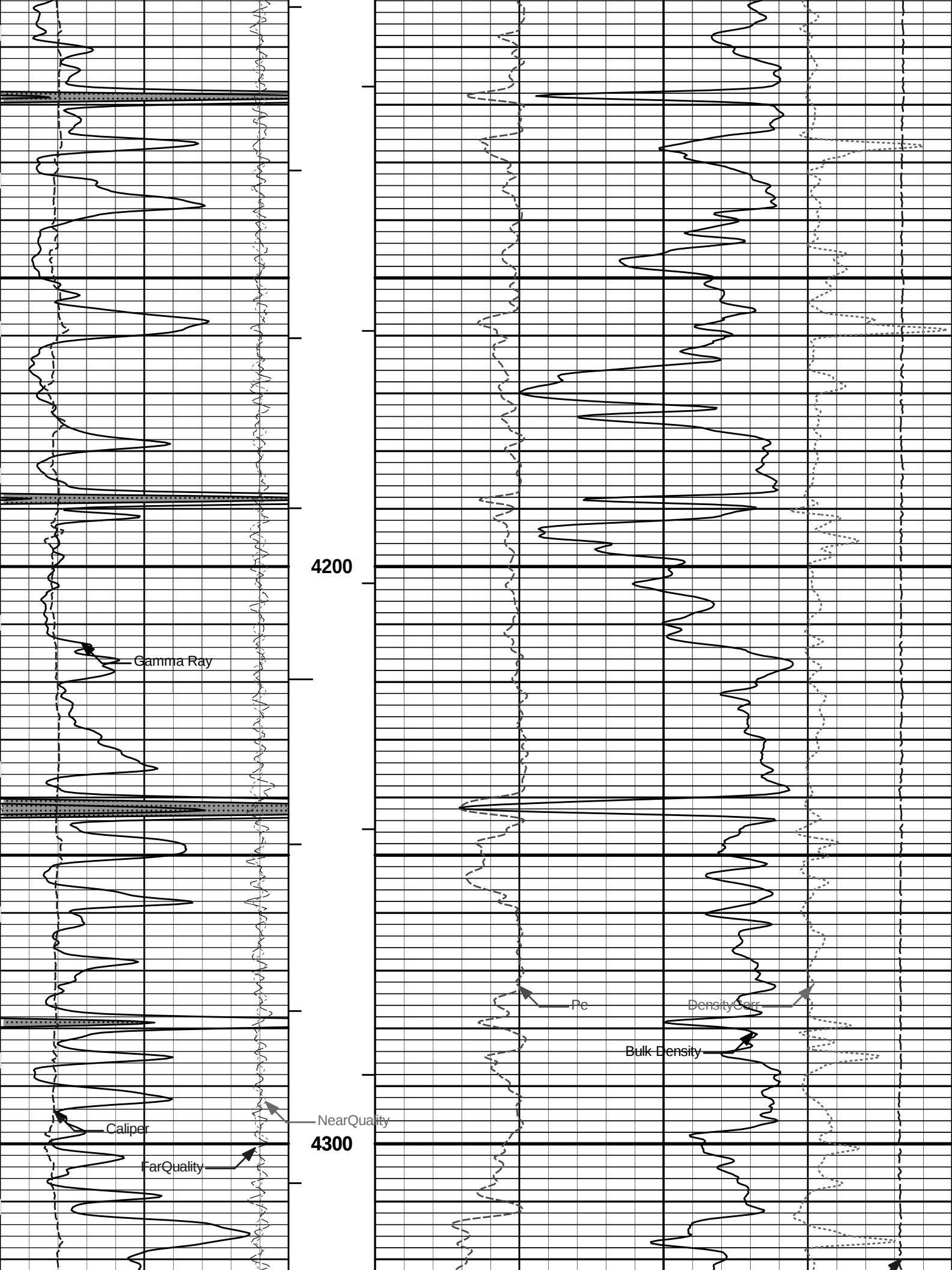
REPEAT SECTION

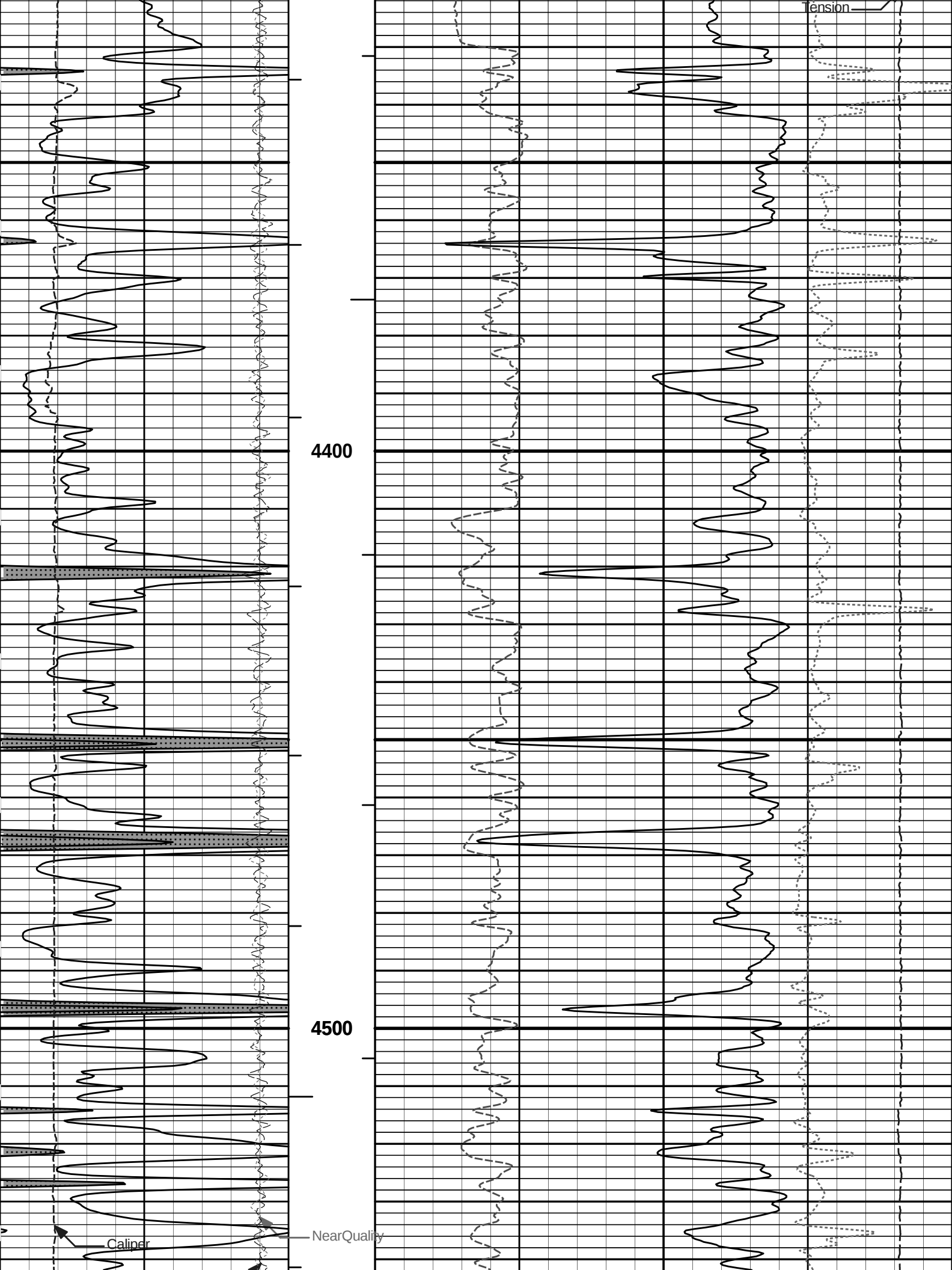


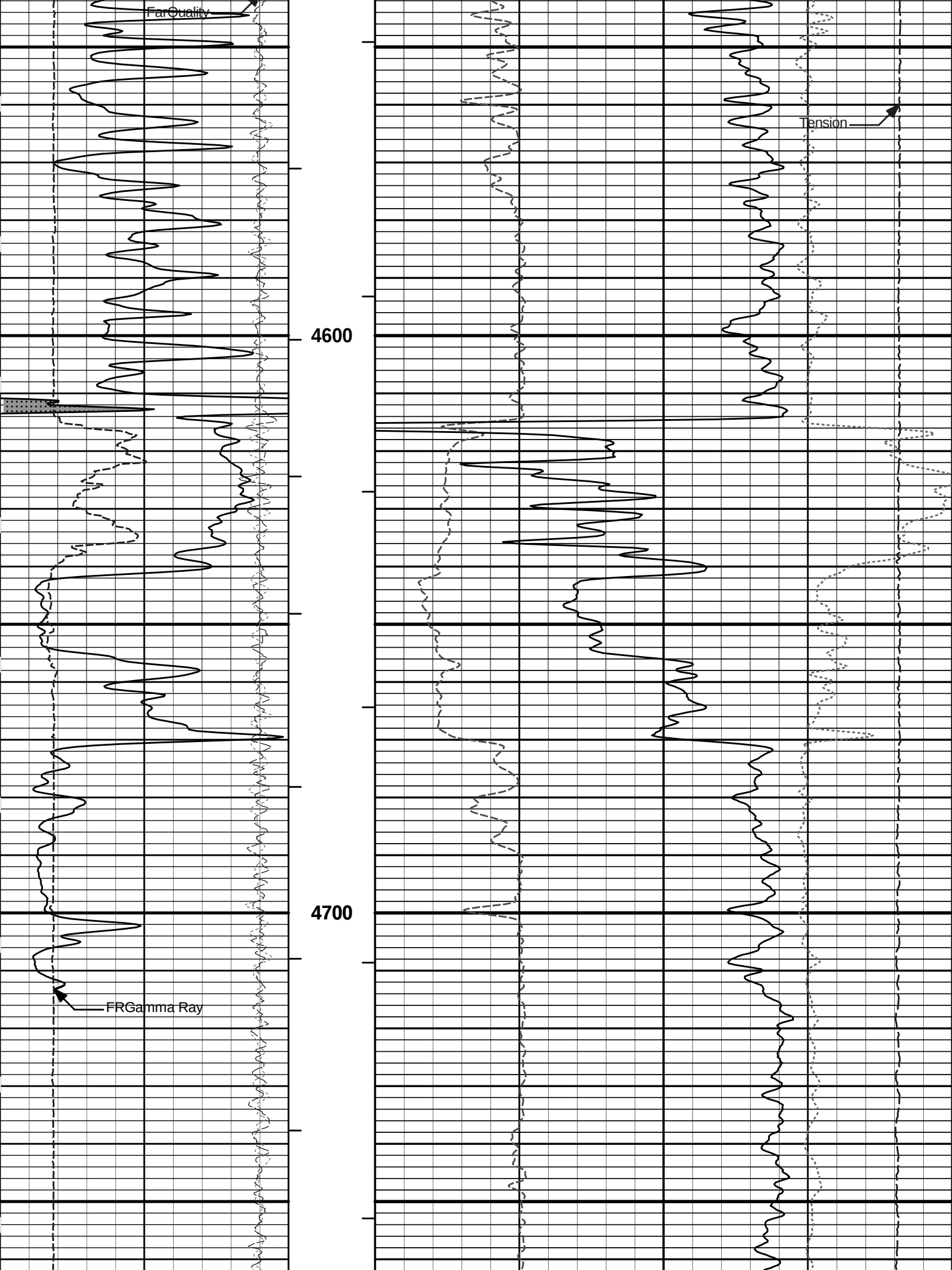
5 INCH MAIN LOG

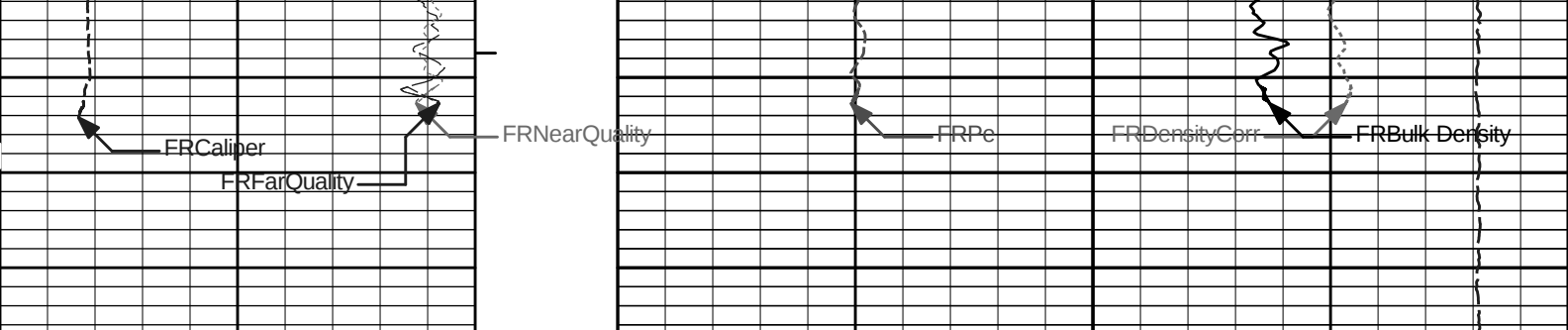












6	Caliper	16	1 : 240	0	Pe	10	-0.25	DensityCorr	0.25
	inches		ft					g/cc	
-18	NearQuality	2	BHV				15K	Tension	0
			ft3					pounds	
18	FarQuality	-2	AHV	2	Bulk Density				3
			ft3		g/cc				
0	Gamma Ray	150							
	api								

HALLIBURTON

Plot Time: 30-May-12 08:15:52

Plot Range: 3750 ft to 4796.83 ft

Data: WOOD_Miller9_1\Well Based\POROSITY\

Plot File: \\-LOCAL-\\WOOD_Miller9_1\0001 GTET-WAVE-DSNT-SDLT-ACRT\POR\BULKD_5_MAIN_IQ

5 INCH MAIN LOG

HALLIBURTON

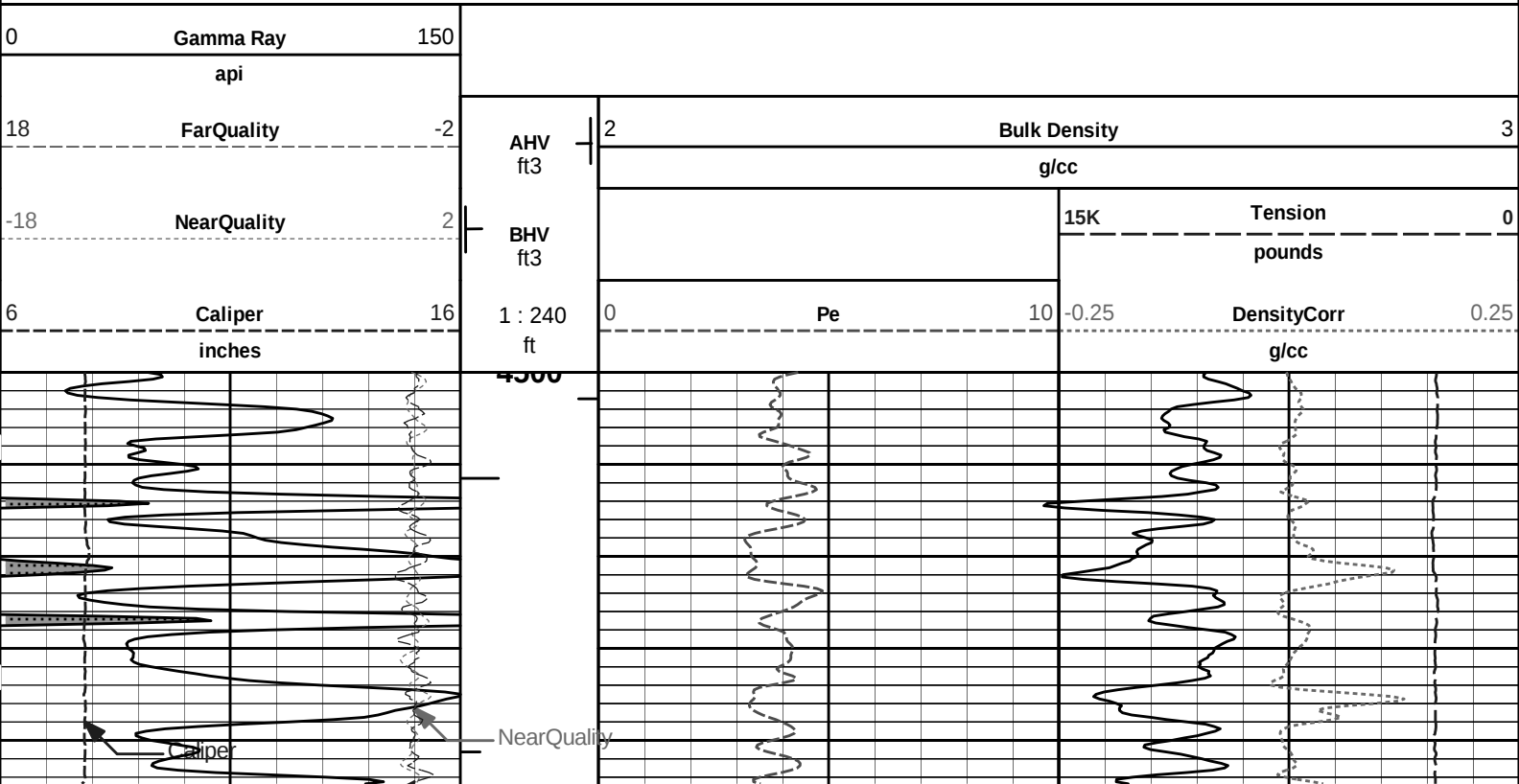
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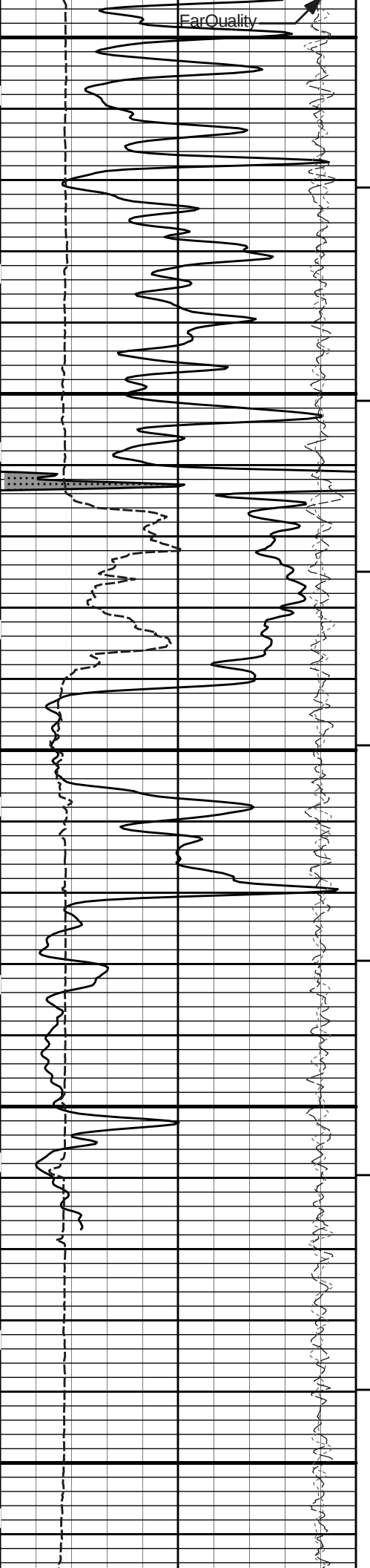
Plot Range: 4500 ft to 4800.58 ft

Data: WOOD_Miller9_1\Well Based\DAQ-0001-002\

Plot File: \\-LOCAL-\\WOOD_Miller9_1\0001 GTET-WAVE-DSNT-SDLT-ACRT\POR\BULKD_5_MAIN_IQ

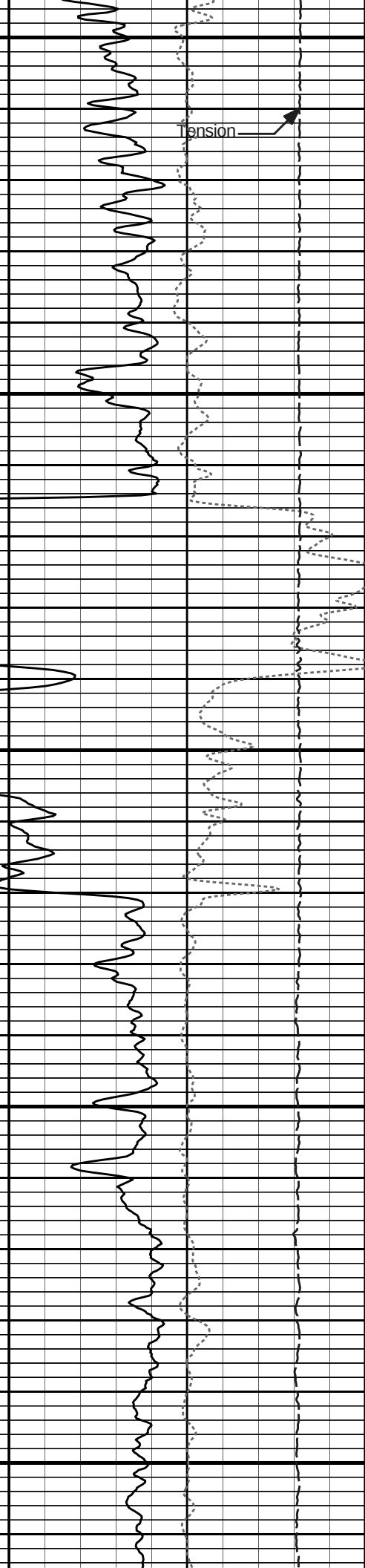
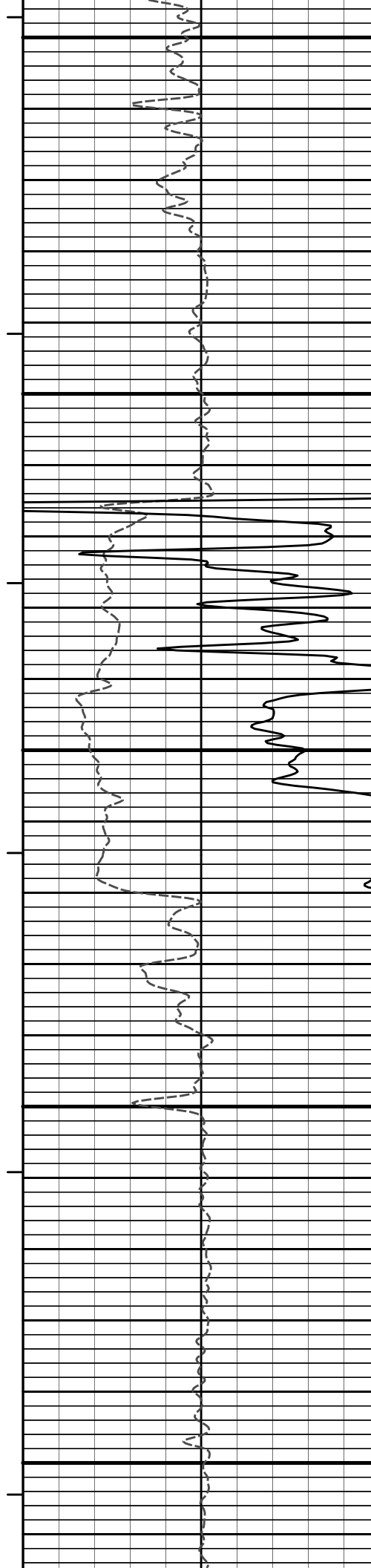
REPEAT SECTION

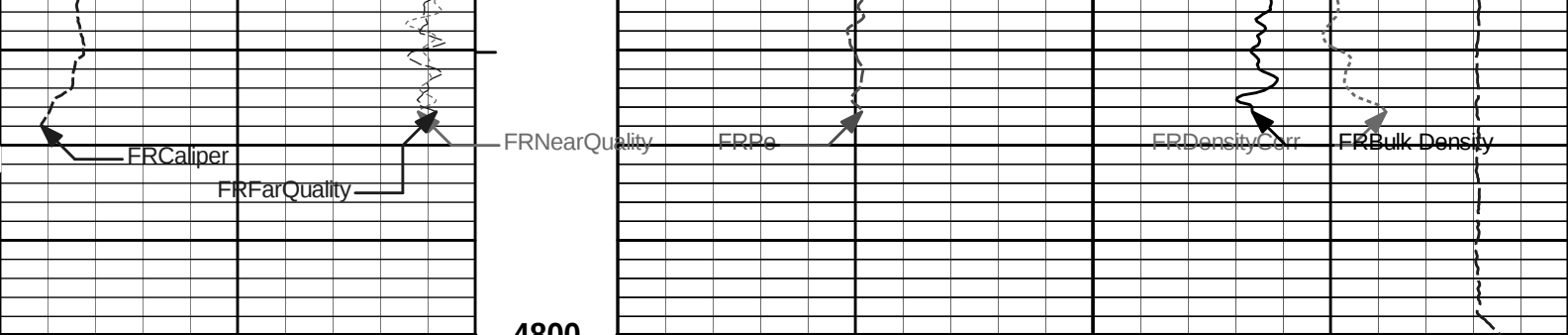




4600

4700





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

HALLIBURTON

Plot Time: 30-May-12 08:15:54

Plot Range: 4500 ft to 4800.58 ft

Data: WOOD_Miller9_1\Well Based\DAQ-0001-002\

Plot File: \\-LOCAL-\\WOOD_Miller9_1\0001 GTET-WAVE-DSNT-SDLT-ACRT\POR\BULKD_5_MAIN_IQ

REPEAT SECTION

HALLIBURTON

PARAMETERS REPORT

Depth (ft)	Tool Name	Description	Value	Units
TOP				
	SHARED	Bit Size	7.875	in
	SHARED	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	Mud Base	Water	
	SHARED	Borehole Fluid Weight	9.000	ppg
	SHARED	Weighting Agent	Natural	
	SHARED	Borehole salinity	0.00	ppm
	SHARED	Formation Salinity NaCl	0.00	ppm
	SHARED	Percent K in Mud by Weight?	0.00	%
	SHARED	Mud Resistivity	2.000	ohmm
	SHARED	Temperature of Mud	75.0	degF
	SHARED	Logging Interval is Cased?	No	
	SHARED	AHV Casing OD	4.500	in
	SHARED	Surface Temperature	75.0	degF
	SHARED	Total Well Depth	4800.00	ft
	SHARED	Bottom Hole Temperature	120.0	degF
	SHARED	Navigation and Survey Master Tool	NONE	
	SHARED	High Res Z Accelerometer Master Tool	GTET	
	SHARED	Temperature Master Tool	NONE	
	SHARED	Borehole Size Master Tool	NONE	
	Rwa / CrossPlot	Process Crossplot?	Yes	
	Rwa / CrossPlot	Select Source of F	Automatic	
	Rwa / CrossPlot	Archie A factor	0.6200	

Rwa / CrossPlot	Archie M factor	2.1500	
Rwa / CrossPlot	Rmf Reference	0.10	ohmm
Rwa / CrossPlot	Rmf Ref Temp	75.00	degF
Rwa / CrossPlot	Resistivity of Formation Water	0.05	ohmm
Rwa / CrossPlot	Use Air Porosity to calculate CrossplotPhi	No	
GTET	Process Gamma Ray?	Yes	
GTET	Gamma Tool Standoff	0.000	in
GTET	Process Gamma Ray EVR?	No	
GTET	Tool Position for Gamma Ray Tools.	Eccentered	
Wavesonic-I	Process WSTT?	Yes	
Wavesonic-I	Adaptive Filtering?	No	
Wavesonic-I	Process 1 Sample and Skip	0	
Wavesonic-I	Process Mode: M=1,MX=2,MY=3,MXY=4	4	
Wavesonic-I	Delta -T Shale	100.00	uspf
Wavesonic-I	Delta -T Matrix Type	Limestone 47.5	
Wavesonic-I	Delta -T Matrix	57.00	uspf
Wavesonic-I	Delta -T Fluid	189.00	uspf
Wavesonic-I	Matrix Density	2.7100	g/cc
Wavesonic-I	Fluid Density	1.0000	g/cc
Wavesonic-I	Semblance Threshold	0.25	
Wavesonic-I	VPVS Ratio for Porosity	1.40	
Wavesonic-I	Acoustic Porosity Equation	Wyllie	
Wavesonic-I	Navigation Source Tool	NONE	
DSNT	Process DSN?	Yes	
DSNT	Process DSN EVR?	No	
DSNT	Neutron Lithology	Limestone	
DSNT	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
DSNT	Temperature Correction Type	None	
DSNT	DSN Pressure Correction Type	None	
DSNT	View More Correction Options	No	
DSNT	Use TVD for Gradient Corrections?	No	
DSNT	Logging Horizontal Water Tank?	No	
SDLT	Process Caliper Outputs?	Yes	
SDLT Pad	Process Density?	Yes	
SDLT Pad	Process Density EVR?	No	
SDLT Pad	Logging Calibration Blocks?	No	
SDLT Pad	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	Disable temperature warning	No	
SDLT Pad	Formation Density Matrix	2.710	g/cc
SDLT Pad	Formation Density Fluid	1.000	g/cc
Microlog Pad	Process MicroLog Outputs?	Yes	
ACRt Sonde	Process ACRt?	Yes	
ACRt Sonde	Minimum Tool Standoff	1.50	in
ACRt Sonde	Temperature Correction Source	FP Lwr & FP Up	
ACRt Sonde	Tool Position	Free Hanging	
ACRt Sonde	Rmud Source	Mud Cell	
ACRt Sonde	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	Threshold Quality	0.50	

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11021039

Reference Calibration Date: 13-May-12 04:36:18

Engineer: HOFKAMP

Calibration Date: 26-May-12 10:02:33

Software Version: WL INSITE R3.4.2 (Build 2)

Calibration Version: 1

Calibrator Source S/N: MP051807-02

Calibrator API Reference:234.00 api

Equivalent Calibrator API Reference:238.1 api

Measurement	Measured	Calibrated	Units
Background	79.9	82.2	api
Background + Calibrator	307.4	316.2	api
Calibrator	236.3	234.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11021039

Reference Calibration Date: 26-May-12 10:02:33

Engineer: HOFKAMP

Calibration Date: 29-May-12 09:17:06

Software Version: WL INSITE R3.4.2 (Build 2)

Calibration Version: 1

Calibrator Source S/N: MP051807-02

Calibrator API Reference:234.00 api

Equivalent Calibrator API Reference:238.1 api

Field Verification	Shop	Field	Units
Background	82.2	72.3	api
Background + Calibrator	316.2	314.9	api
Calibrator	234.0	242.7	api

Shop	Field	Difference	Tolerance
234.0	242.7	-8.7	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 11023947

Reference Calibration Date: 29-Mar-12 10:32:54

Engineer: BOMAR

Calibration Date: 27-Apr-12 10:28:11

Software Version: WL INSITE R3.4.2 (Build 2)

Calibration Version: 1

Logging Source S/N: DSN_439

Tank Serial Number: FTSM

Reference value assigned to Tank: 56.100

Snow Block S/N: 336

Calibration Tank Water Temperature: 65 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.998	1.002	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):	0.2346	0.2358	0.0011	+/- 0.0020
Calibrated Ratio:	10.52	10.56	0.038	+/- 0.050

VERIFIER

				Measurement	Value	Control Limit				
				Snow-Block Porosity (decp):	0.0835	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 - 11023947				Reference Calibration Date:		27-Apr-12 10:28:11	
Engineer:		HOFKAMP				Calibration Date:		29-May-12 09:27:45	
Software Version:		WL INSITE R3.4.2 (Build 2)				Calibration Version:		1	

Logging Source S/N: DSN_439

Snow Block S/N: 336

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0835	0.0948	0.0113	+/- 0.0150
PASS/FAIL SUMMARY				
Block Change Check:			Passed	
Snow Block Stat Check:			Passed	
Temperature Check:			Passed	

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION									
Tool Name:		ACRt Sonde - 90148388-e095-s				Reference Calibration Date:		05-Apr-12 10:07:44	
Engineer:		C. HAVERKAMP				Calibration Date:		14-May-12 13:39:04	
Software Version:		WL INSITE R3.4.2 (Build 2)				Calibration Version:		1	

TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0374	1.05	0.95	1.0440	1.05	0.95	1.0421	1.05
A2 (50")	0.95	1.0207	1.05	0.95	1.0277	1.05	0.95	1.0279	1.05
A3 (29")	0.95	1.0290	1.05	0.95	1.0352	1.05	0.95	1.0330	1.05
A4 (17")	0.95	1.0151	1.05	0.95	1.0188	1.05	0.95	1.0173	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0136	1.05	0.95	1.0111	1.05
A6 (6")	N/A	N/A	N/A	0.95	1.0167	1.05	0.95	1.0141	1.05

TYPICAL SONDE OFFSET RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	-5	-0.677	2	-6	-4.123	-2	-8	-5.113	-2
A2 (50")	-7	-0.869	-1	-6	-2.695	-2	-7	-5.148	-2
A3 (29")	-27	-14.542	-9	-9	-3.830	-3	-7	-3.553	-1
A4 (17")	-180	-90.564	-60	-45	-27.891	-15	-39	-23.773	-13
A5 (10")	N/A	N/A	N/A	-150	-106.748	-50	-80	-49.988	-10
A6 (6")	N/A	N/A	N/A	175	330.237	525	90	161.307	270

TRANSMITTER CURRENT GAIN					R-MUD VERIFICATION			
Signal	Lower	R	Upper		Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)

12K	0.6	0.8675	1.3	Mud Cell	0.95	0.997	1.05
36K	1.0	1.3254	2.0				
72K	1.0	1.6124	2.0				
SPECTRAL DENSITY SHOP CALIBRATION							
Tool Name:	SDLT Pad - I947M315P774			Reference Calibration Date:	22-Apr-12 21:22:42		
Engineer:	BOMAR			Calibration Date:	22-Apr-12 21:41:22		
Software Version:	WL INSITE R3.4.2 (Build 2)			Calibration Version:	1		
Logging Source S/N: 5155GW							
Aluminum Block S/N: FTSM				Density: 2.581g/cc		Pe: 3.170	
Magnesium Block S/N: FTSM				Density: 1.687g/cc		Pe: 2.594	
DENSITY CALIBRATION SUMMARY							
Measurement		Previous Value	New Value	Control Limit			
Near Bar Gain		1.0272	1.0694	0.90 - 1.10			
Near Dens Gain		1.0112	1.0392	0.90 - 1.10			
Near Peak Gain		1.0148	1.0759	0.90 - 1.10			
Near Lith Gain		1.0312	1.0696	0.90 - 1.10			
Far Bar Gain		1.0071	1.0141	0.90 - 1.10			
Far Dens Gain		0.9946	1.0004	0.90 - 1.10			
Far Peak Gain		0.9935	0.9968	0.90 - 1.10			
Far Lith Gain		0.9769	0.9832	0.90 - 1.10			
Near Bar Offset		-0.0345	-0.4249	NONE			
Near Dens Offset		0.1079	-0.1425	NONE			
Near Peak Offset		0.0659	-0.4461	NONE			
Near Lith Offset		-0.0848	-0.4076	NONE			
Far Bar Offset		0.0469	-0.0184	NONE			
Far Dens Offset		0.1515	0.0965	NONE			
Far Peak Offset		0.1480	0.1189	NONE			
Far Lith Offset		0.2684	0.2153	NONE			
Near Bar Background		965.72	965.05	700 - 1450			
Near Dens Background		317.86	316.79	230 - 480			
Near Peak Background		139.53	138.63	100 - 210			
Near Lith Background		167.79	170.51	125 - 260			
Far Bar Background		522.89	523.46	450 - 900			
Far Dens Background		204.89	202.03	175 - 345			
Far Peak Background		80.59	80.91	70 - 140			
Far Lith Background		84.14	83.68	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	2.553	2.553	0.000	+/- 0.150			
ALUMINUM							
Density (g/cc)	2.580	2.581	0.001	+/- 0.01500			
Pe	3.117	3.125	0.008	+/- 0.150			
TOOL SUMMARY							
Measurement	Near Detector		Far Detector				

	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0005	+/- 0.0110	0.0001	+/- 0.0140
Magnesium Block	0.0001	+/- 0.0110	0.0009	+/- 0.0140
Aluminum Block	0.0004	+/- 0.0110	0.0008	+/- 0.0140
Resolution	9.34	6.00 - 11.50	9.11	6.00 - 11.50
Internal Verifier(B+D+P+L)	1591	1200 - 2700	890	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 - I947M315P774	Reference Calibration Date:	22-Apr-12 21:41:22
Engineer:	HOFKAMP	Calibration Date:	26-May-12 10:01:52
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

Pad Temperature: 82.3 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1590.987	1595.254	4.267	16.042
Far (B+D+P+L) cps	890.080	895.481	5.401	16.251
Near Resolution	9.34	9.42	0.080	0.50
Far Resolution	9.11	9.55	0.440	1.00

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

MICRO LOG SHOP CALIBRATION

Tool Name:	Microlog Pad - I947M315P774	Reference Calibration Date:	06-Apr-12 06:17:36
Engineer:	BOMAR	Calibration Date:	22-Apr-12 21:28:26
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

CALIBRATION COEFFICIENT SUMMARY					
Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.11	-0.18	-0.01	-0.01	ohmm
Calibration Point #1	0.07	0.00	0.00	0.00	ohmm
Calibration Point #2	20.18	20.00	20.08	20.00	ohmm
Internal Reference	19.98	19.80	20.09	20.01	ohmm

Measurement	Micro Log Normal Tool Value	Micro Log Lateral Tool Value	Units
Tool Zero	1.57	-0.83	V
Calibration Point #1	49.66	2.20	V

Calibration Point #2		5346.79	6925.38	V		
Internal Reference		5293.72	6928.27	V		
MICRO LOG FIELD CHECK						
Tool Name:	Microlog Pad - I947M315P774		Reference Calibration Date:	22-Apr-12 21:28:26		
Engineer:	HOFKAMP		Calibration Date:	29-May-12 09:14:42		
Software Version:	WL INSITE R3.4.2 (Build 2)		Calibration Version:	1		
	Measurement	Micro Log Normal		Micro Log Lateral		
		Shop	Field	Shop	Field	Units
	Tool Zero	-0.18	-0.19	-0.01	-0.01	ohmm
	Internal Reference	19.80	19.78	20.01	19.99	ohmm
	Summary					
	Signal	Shop	Field	Difference	Tolerance	
	Microlog Normal	19.80	19.78	0.02	+/- 0.80	
	Microlog Lateral	20.01	19.99	0.02	+/- 0.80	

CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11021039						
Gamma Ray Calibrator	234.0	242.7	-----	-8.7	+/- 9.00	api
DSNT-11023947						
Snow-Block Porosity	0.0835	0.0948	-----	-0.0113	+/- 0.0150	decP
ACRt Sonde-90148388-e095-s						
Mud Cell	0.997	-----	-----	0.000	-----	ohm-m
SDLT Pad-I947M315P774						
Near(B+D+P+L)	1590.987	1595.254	-----	-4.267	+/-16.042	cps
Far(B+D+P+L)	890.080	895.481	-----	-5.401	+/-16.251	cps
Microlog Pad-I947M315P774						
MicroLog Normal	19.80	19.78	-----	0.02	+/-0.80	ohmm
MicroLog Lateral	20.01	19.99	-----	0.02	+/-0.80	ohmm

Data: WOOD Miller9 1\0001 GTET-WAVE-DSNT-SDLT-ACRT\IDLE	Date: 30-May-12 05:42:58
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HALLIBURTON
TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
CH_HOS-336-I 37.50 lbs		Ø 2.750 in →		← Temperature @ 90.59 ft	3.03 ft	91.62 ft
						88.59 ft
GTET-11021039 165.00 lbs		Ø 3.625 in →		← GammaRay @ 82.53 ft	8.52 ft	
						80.07 ft

Wavesonic-I-FTSM
520.00 lbs

Ø 3.625 in →

34.07 ft

← Wavesonic Delay @ 57.50 ft

IQ Flex-1
140.00 lbs

Ø 3.625 in →

5.67 ft



46.00 ft



40.33 ft

DSNT-11023947
174.00 lbs

DSN Decentralizer-
PROT01
6.60 lbs

Ø 5.000 in* →

Ø 3.625 in →

9.69 ft

← DSN Far @ 33.39 ft

← DSN Near @ 32.64 ft



30.64 ft

SDLT-
I947M315P774
360.00 lbs

SDLT Pad-I947M315P774
65.00 lbs

Ø 4.500 in →

10.81 ft

Microlog Pad-
I947M315P774

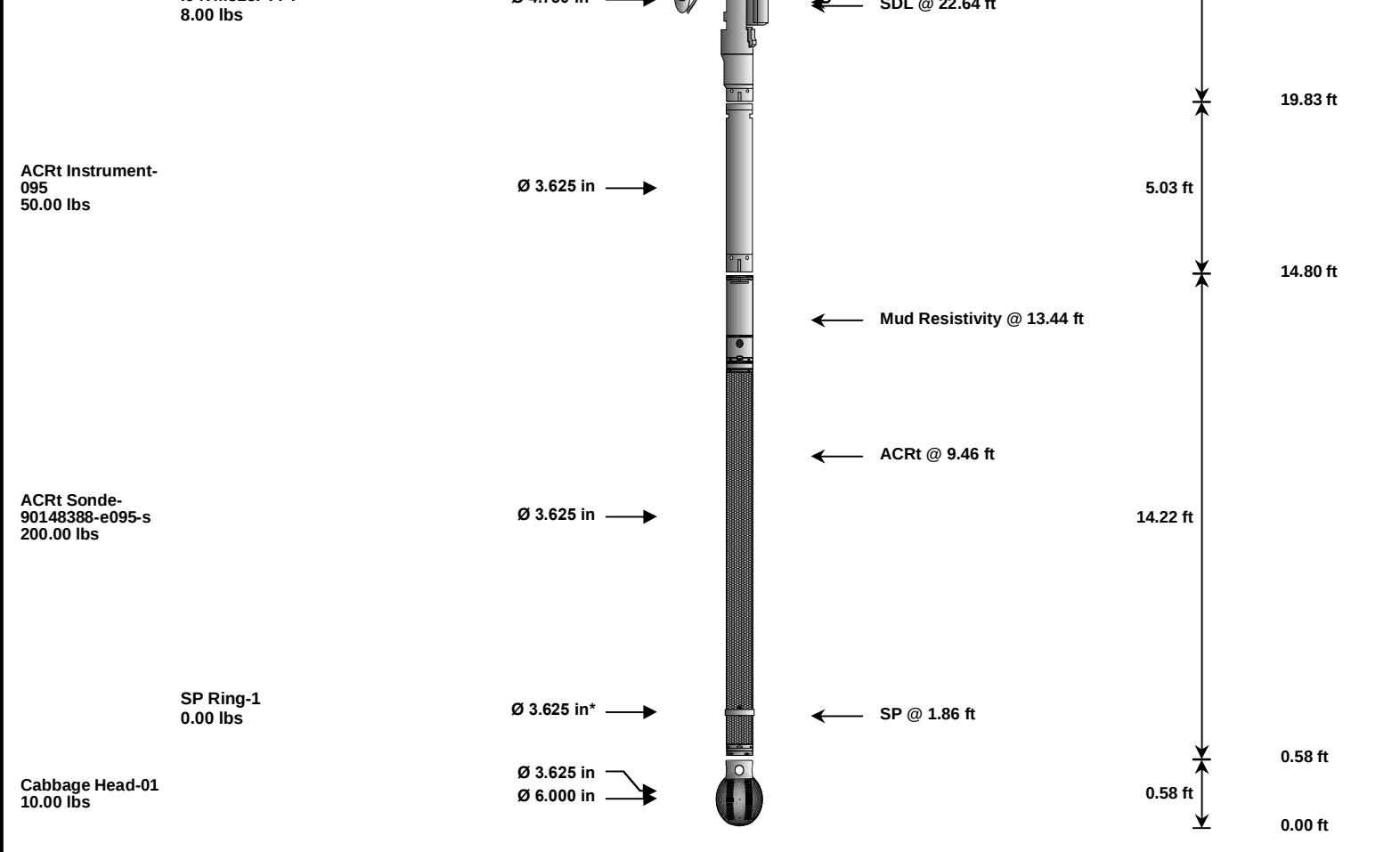
Ø 4.750 in* →

Ø 4.750 in* →

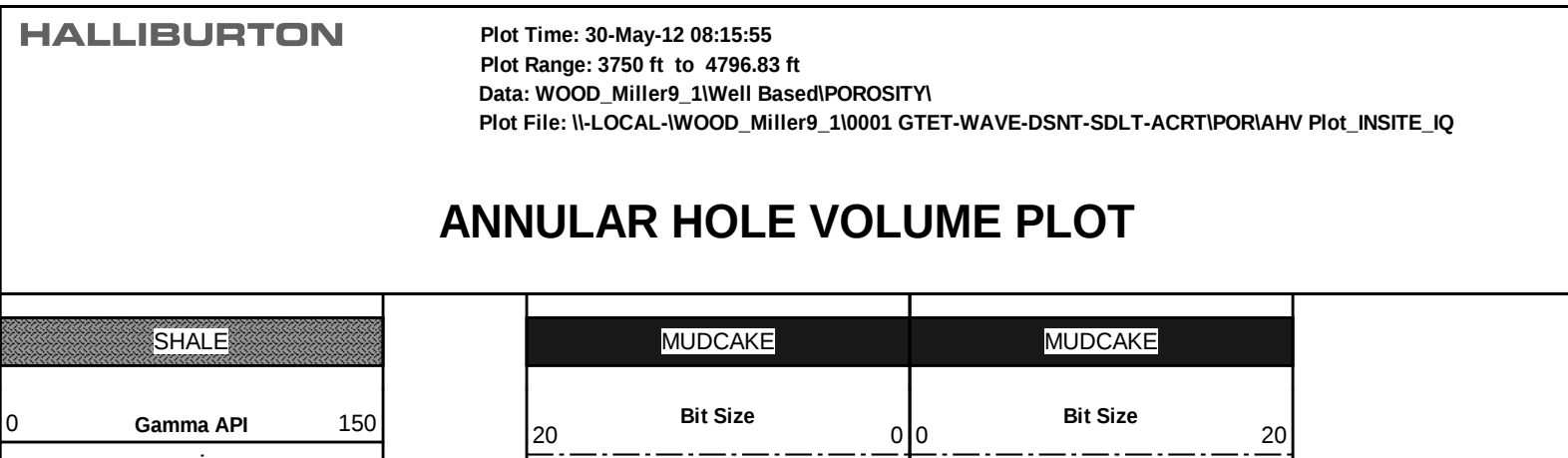
Microlog @ 22.83 ft

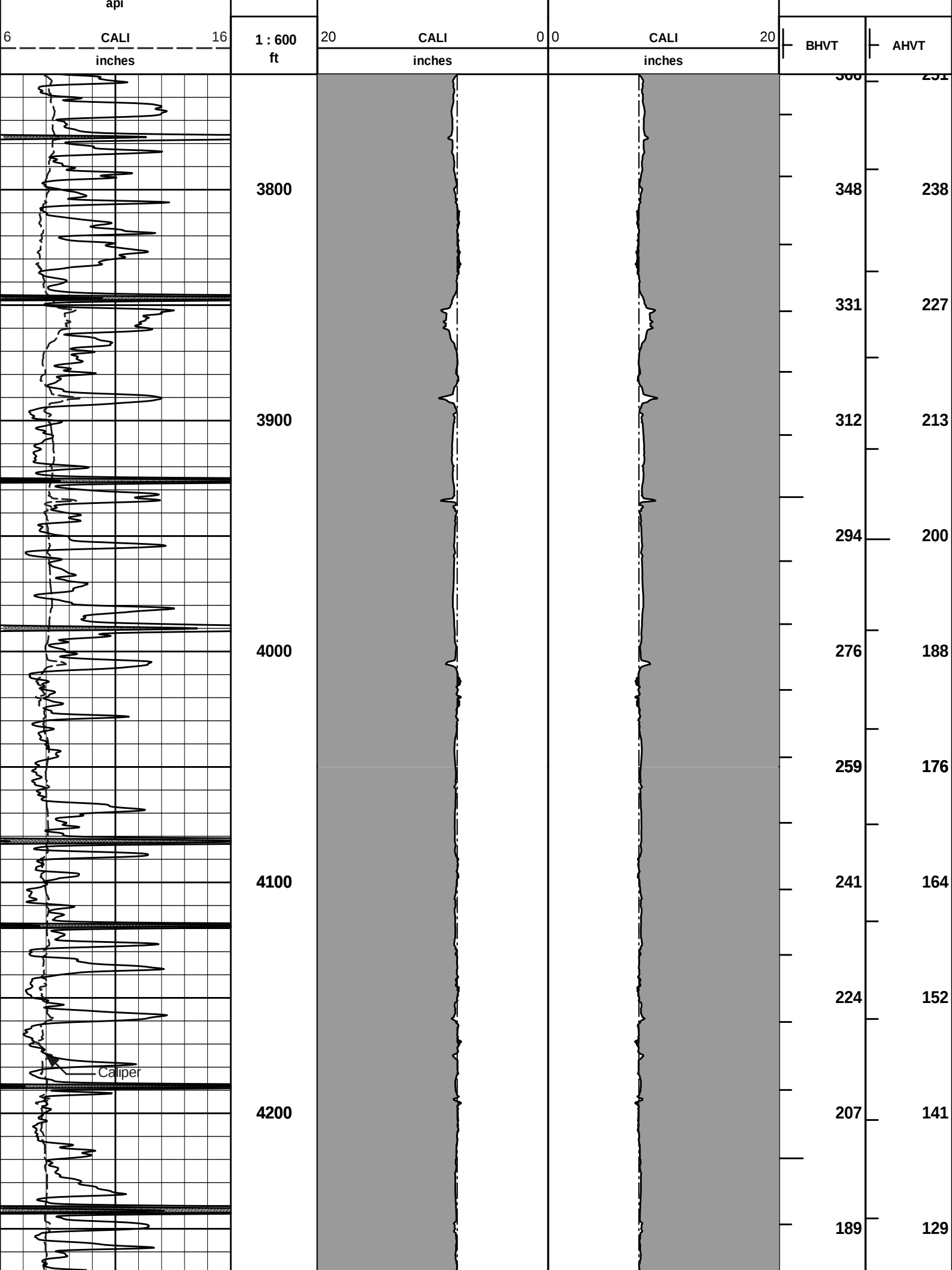
SDL Caliper @ 22.65 ft

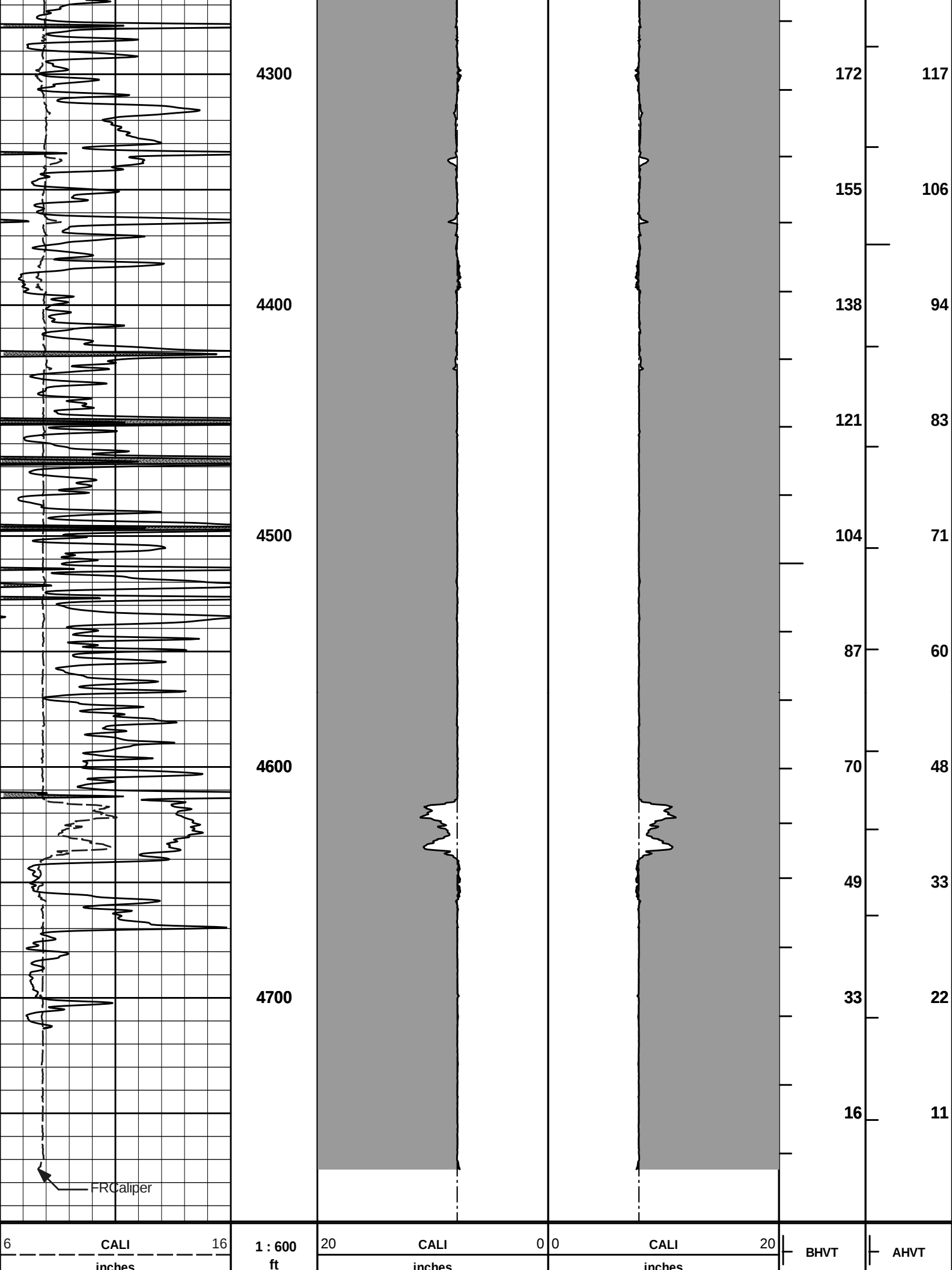
SDL @ 22.61 ft



Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)	
CH_HOS	Hostile Cable Head with Load Cell		336-I	37.50	3.03	88.59	300.00	
GTET	Gamma Telemetry Tool		11021039	165.00	8.52	80.07	60.00	
WSTT	WaveSonic Insite		FTSM	520.00	34.07	46.00	30.00	
IQF	IQ Flex tool		1	140.00	5.67	40.33	300.00	
DSNT	Dual Spaced Neutron		11023947	174.00	9.69	30.64	60.00	
DCNT	DSN Decentralizer		PROT01	6.60	5.13	*	33.97	300.00
SDLT	Spectral Density Tool		I947M315P774	360.00	10.81	19.83	60.00	
MICP	Microlog Pad		I947M315P774	8.00	1.00	*	22.33	60.00
SDLP	Density Insite Pad		I947M315P774	65.00	2.55	*	22.04	60.00
ACRt	Array Compensated True Resistivity Instrument Section		095	50.00	5.03	14.80	300.00	
ACRt	Array Compensated True Resistivity		90148388-e095-s	200.00	14.22	0.58	300.00	
SP	SP Ring		1	0.00	0.25	*	1.86	300.00
CBHD	Cabbage Head		01	10.00	0.58	0.00	300.00	
Total				1,736.10	91.62			
* Not included in Total Length and Length Accumulation.								
Data: WOOD_Miller9_1\0001 GTET-WAVE-DSNT-SDLT-ACRT\IDLE								
Date: 30-May-12 05:42:03								







6	CALI	16	1 : 600	20	CALI	0 0	CALI	20	BHVT	AHVT
	inches		ft		inches			inches		

