

HALLIBURTON

DUAL SPACED NEUTRON SPECTRAL DENSITY LOG

COMPANY		HARTMAN OIL CO., LLC	
WELL		WILKINSON 1-22	
FIELD		WILDCAT	
COUNTY		WICHITA	
STATE		KANSAS	
Permanent Datum		GL	
Log measured from		KB	
Drilling measured from		KB	
Date		06-Nov-12	
Run No.		ONE	
Depth - Driller		4950.00 ft	
Depth - Logger		4944.0 ft	
Bottom - Logged Interval		4900.0 ft	
Top - Logged Interval		2400.0 ft	
Casing - Driller		8.625 in @ 335.0 ft	
Casing - Logger		332.0 ft	
Bit Size		7.875 in @	
Type Fluid in Hole		WATER BASED	
Density		9.3 ppq @ 63.00 s/qt	
PH		10.00 pH @ 8.0 cp/m	
Source of Sample		FLOWLINE	
Rm @ Meas. Temperature		0.600 ohmm @ 70.00 degF @	
Rmf @ Meas. Temperature		0.48 ohmm @ 70.00 degF @	
Rmc @ Meas. Temperature		0.700 ohmm @ 70.00 degF @	
Source Rmf		MEASURED	
Rm @ BHT		0.39 ohmm @ 110.0 degF @	
Time Since Circulation		10.0 hr	
Time on Bottom		06-Nov-12 16:38	
Max. Rec. Temperature		110.0 degF @ 4944.0 ft @	
Equipment		10546696 LIBERAL	
Recorded By		T. HYDE	
Witnessed By		K. NOAH	

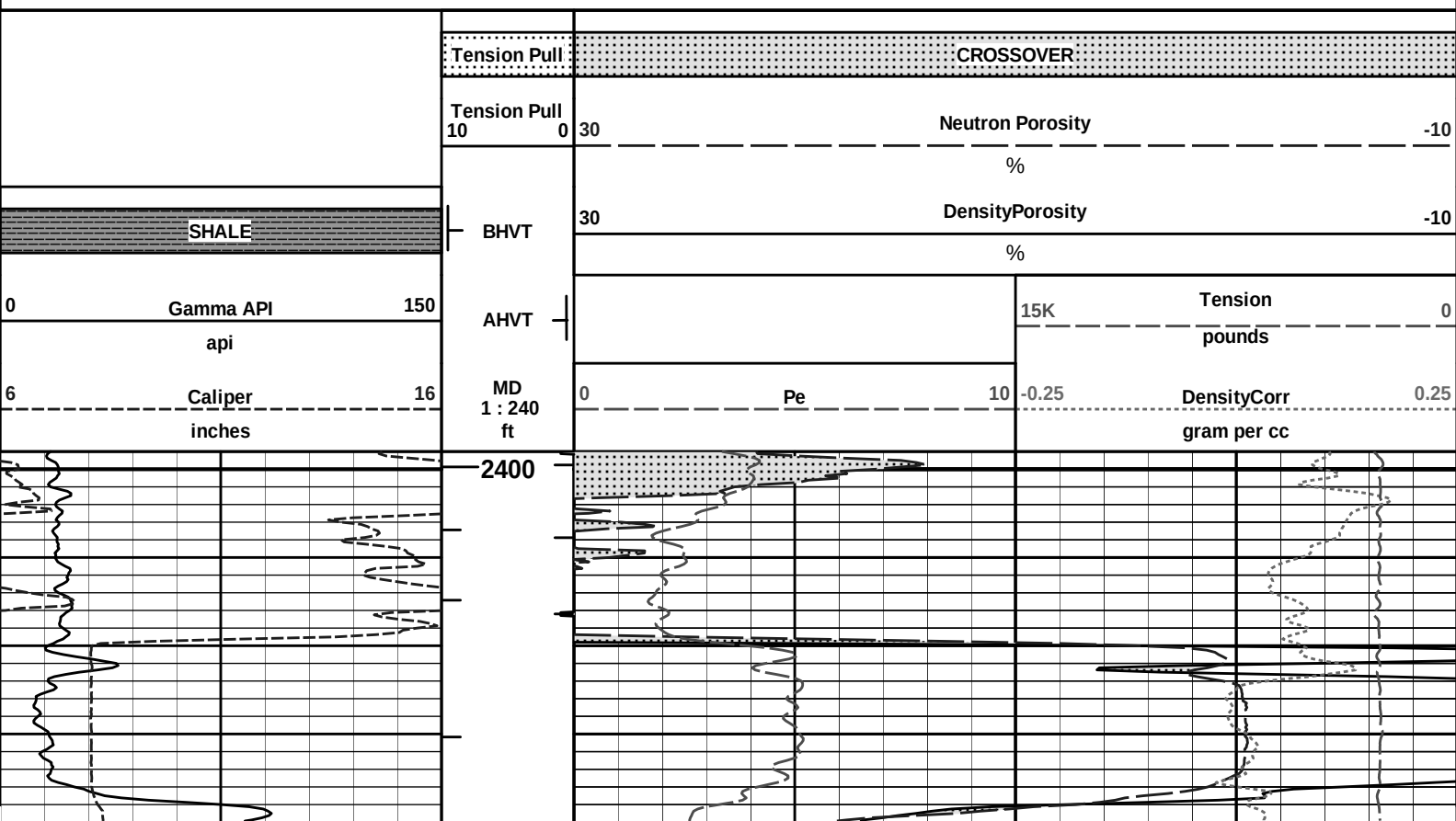
Service Ticket No.: 9926602		API Serial No.: 15-171-20913		PGM Version: WL INSITE R3.6.0 (Build 3)			
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE				RESISTIVITY SCALE CHANGES			
Date	Sample No.			Type Log	Depth	Scale Up Hole	Scale Down Hole
Depth-Driller							
Type Fluid in Hole							
Density	Viscosity						
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.	ONE	Run No.		Run No.	ONE	Run No.	ONE
Serial No.	11039640	Serial No.		Serial No.	11014296	Serial No.	11055304
Model No.	GTET	Model No.		Model No.	SDLT	Model No.	DSNT
Diameter	3.625"	No. of Cent.	2	Diameter	4.5"	Diameter	3.625"
Detector Model No.	T-102	Spacing		Log Type	GAM-GAM	Log Type	NEU-NEU
Type	SCINT			Source Type	Cs137	Source Type	Am241Be
Length	8"	LSA [Y/N]		Serial No.	5168GW	Serial No.	DSN-424
Distance to Source	10'	FWDA [Y/N]		Strength	1.5 Ci	Strength	15 Ci

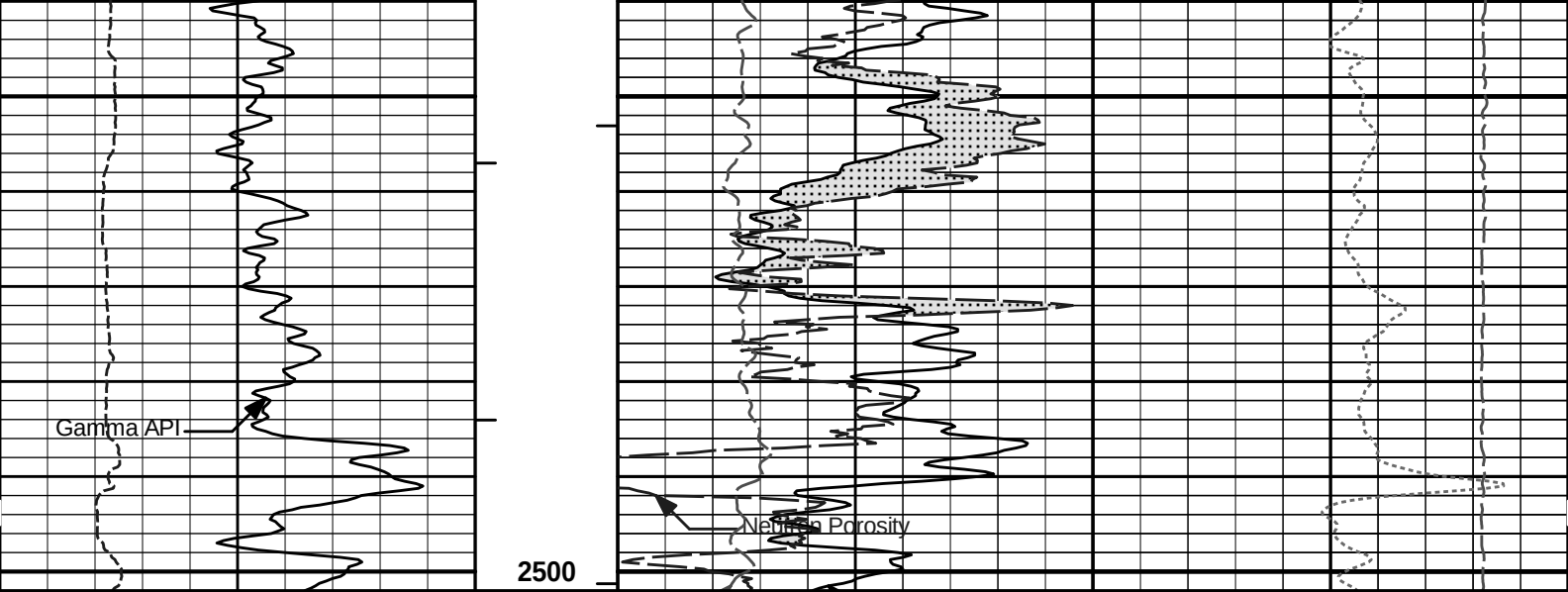
GENERAL			GAMMA	ACOUSTIC				DENSITY	NEUTRON					
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	4900	2400	REC	0	150				30	-10	2.71	30	-10	LIME
DIRECTIONAL INFORMATION														
Maximum Deviation @								KOP	@					
Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING														
CHLORIDES REPORTED AT 7500 MG/L														
LCM REPORTED AT 2 PPB														
TODAY'S CREW V. JAIME K. KING														
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KANSAS 620-624-8123														
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.														
HALLIBURTON														

HALLIBURTON

Plot Time: 06-Nov-12 17:26:07
Plot Range: 2398 ft to 2502 ft
Data: WILKINSON_1_22\Well Based\DAQ-0001-008\
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

5 INCH MAIN LOG





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

HALLIBURTON

Plot Time: 06-Nov-12 17:26:13
Plot Range: 2398 ft to 2502 ft
Data: WILKINSON_1_22\Well Based\DAQ-0001-008\
Plot File: \\PORO\Porosity_Q_5_MAIN_LIB

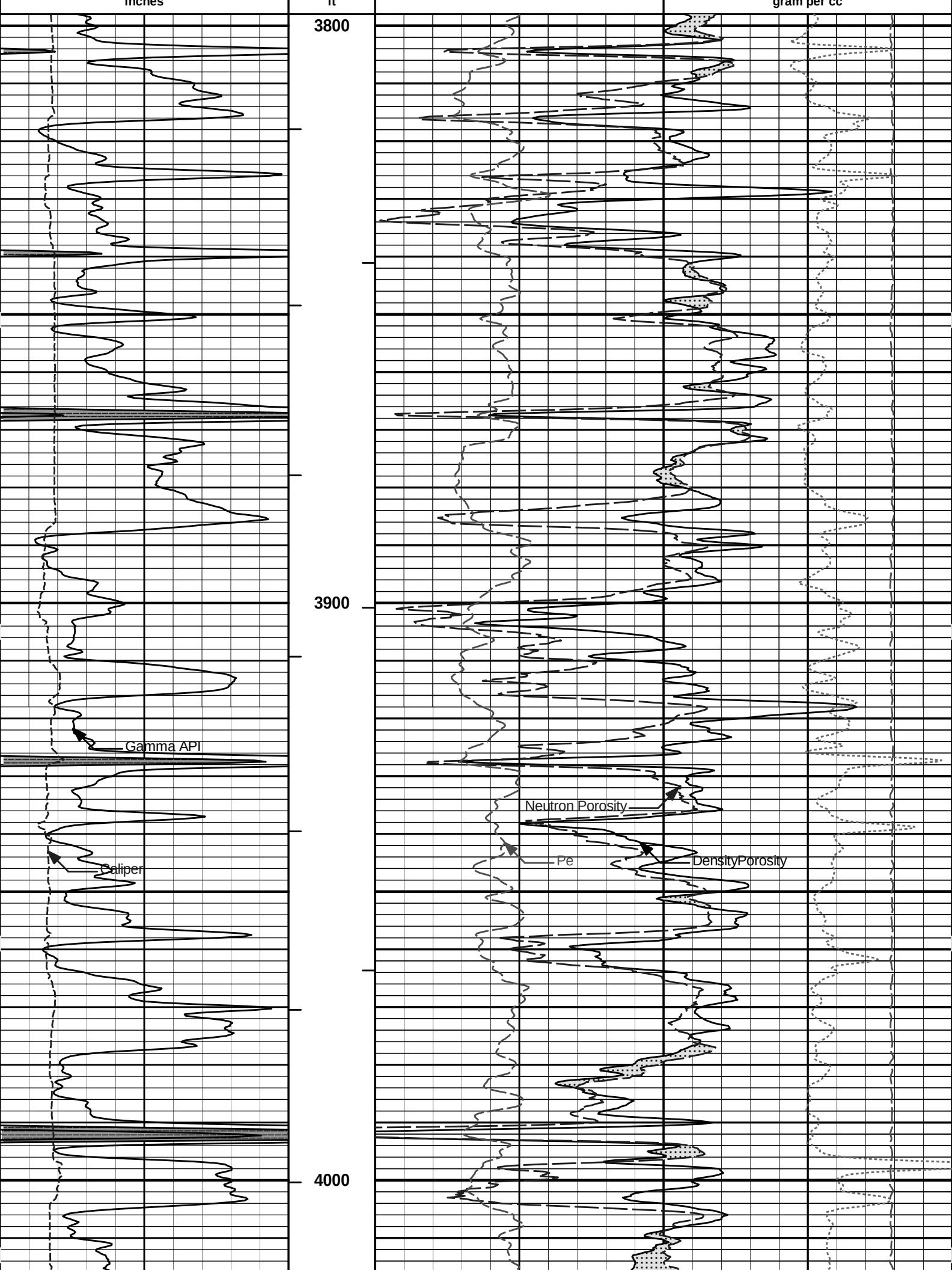
5 INCH MAIN LOG

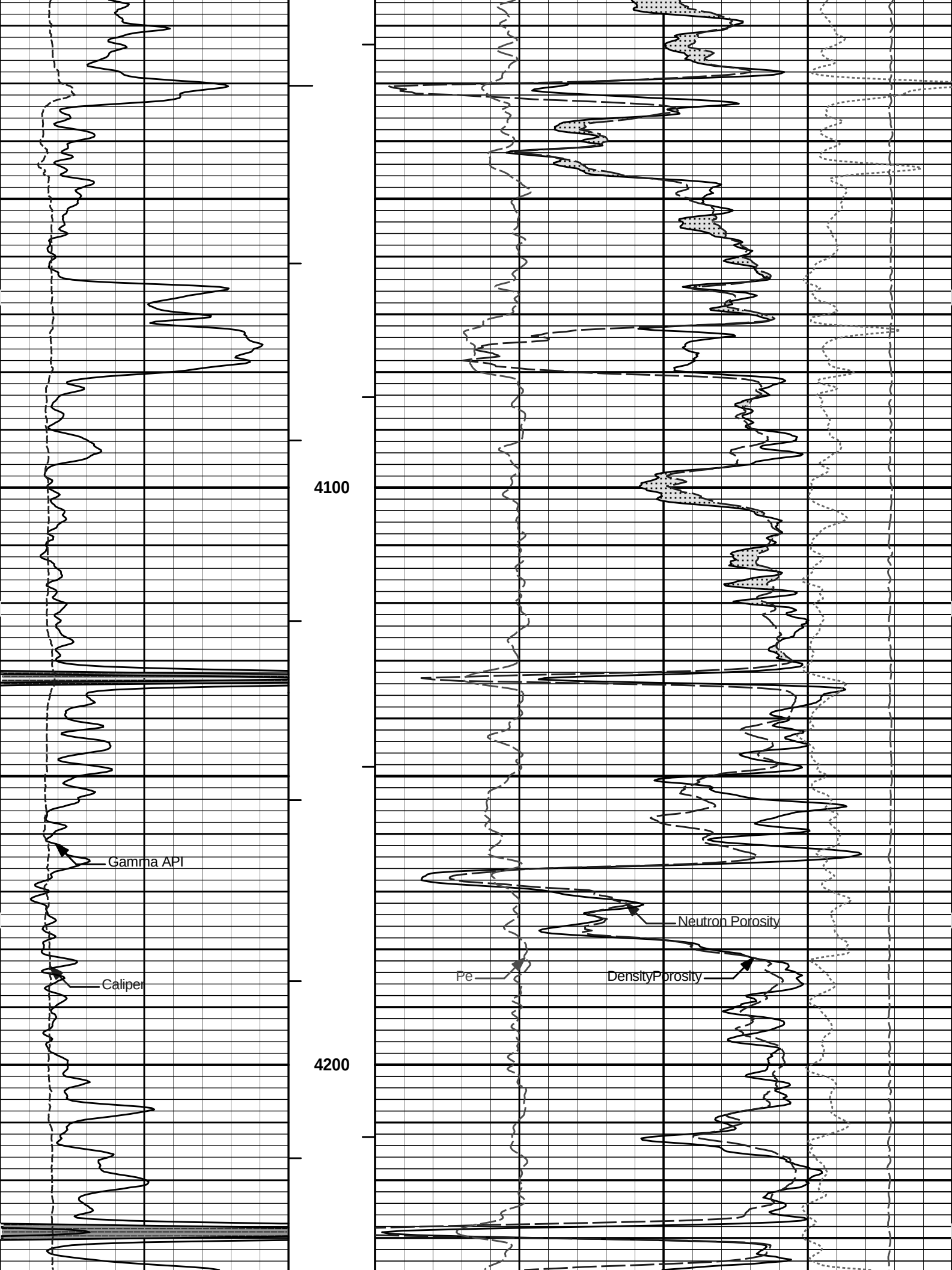
HALLIBURTON

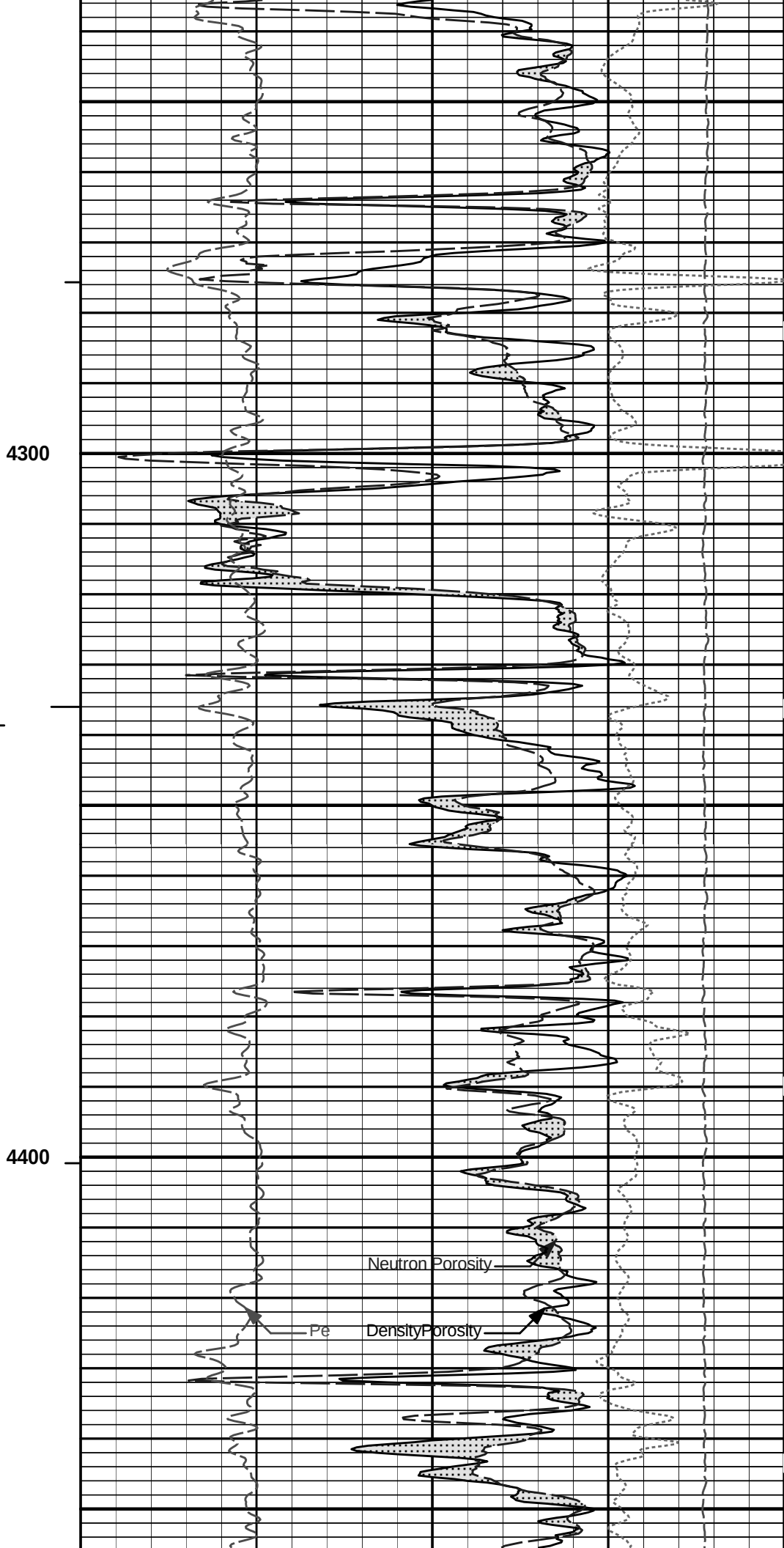
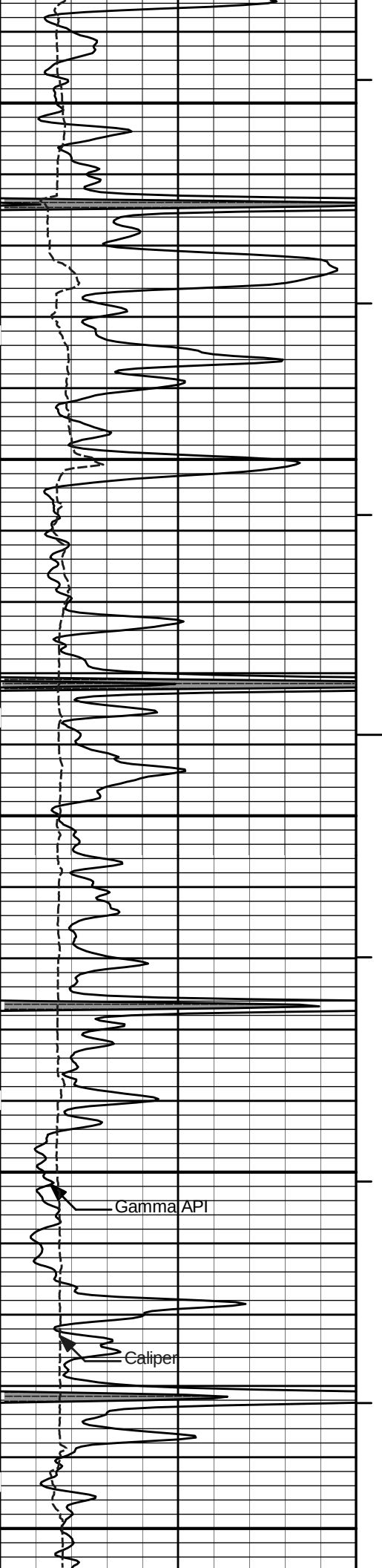
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Plot Range: 3798 ft to 4946.5 ft
Data: WILKINSON_1_22\Well Based\DAQ-0001-008\
Plot File: \\PORO\Porosity_Q_5_MAIN_LIB

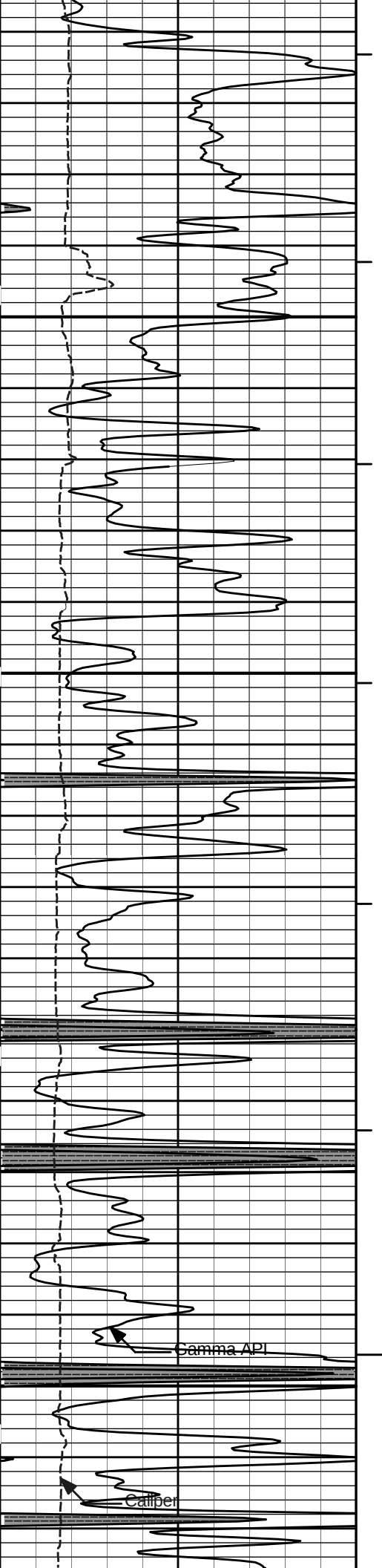
5 INCH MAIN LOG

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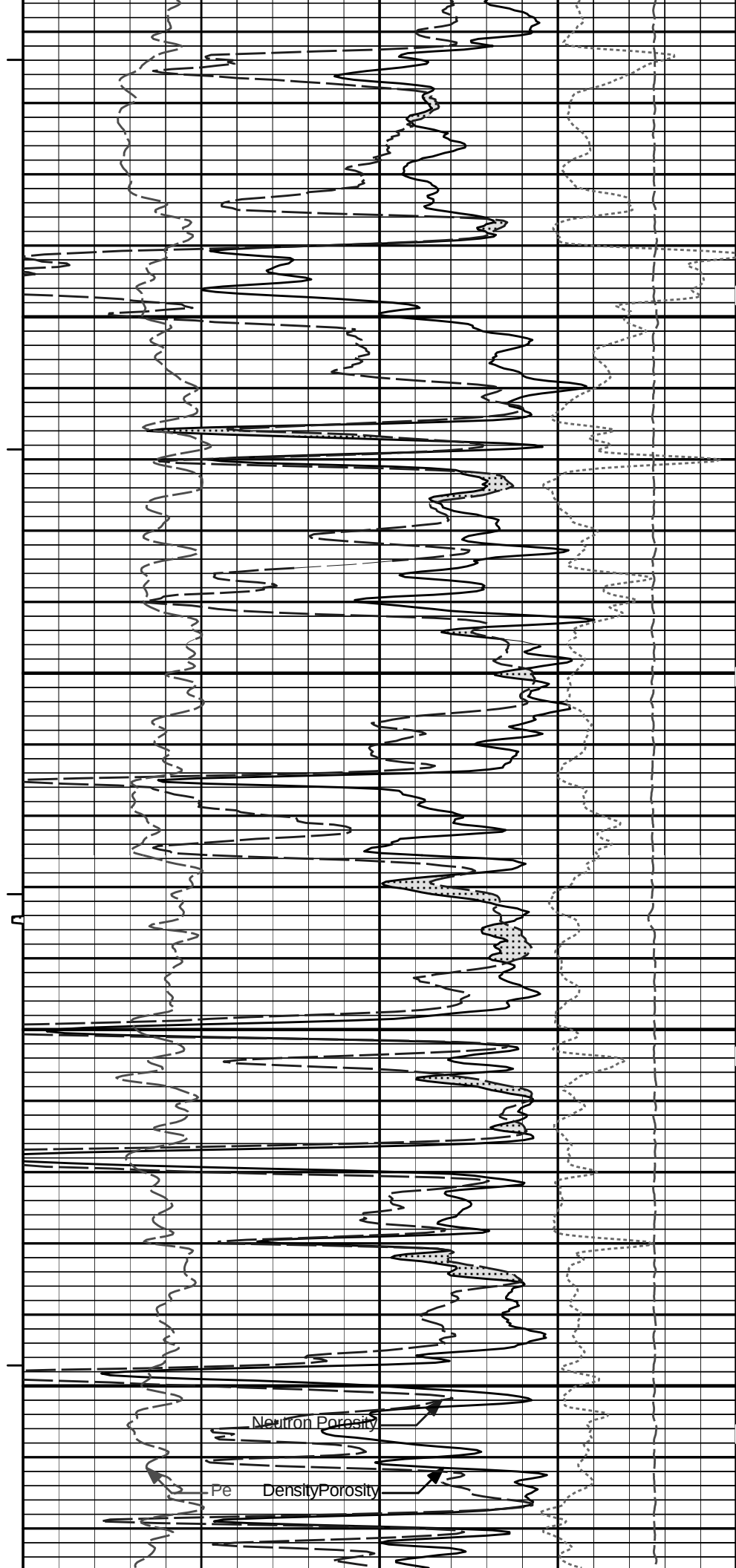


4500

4600

Gamma API

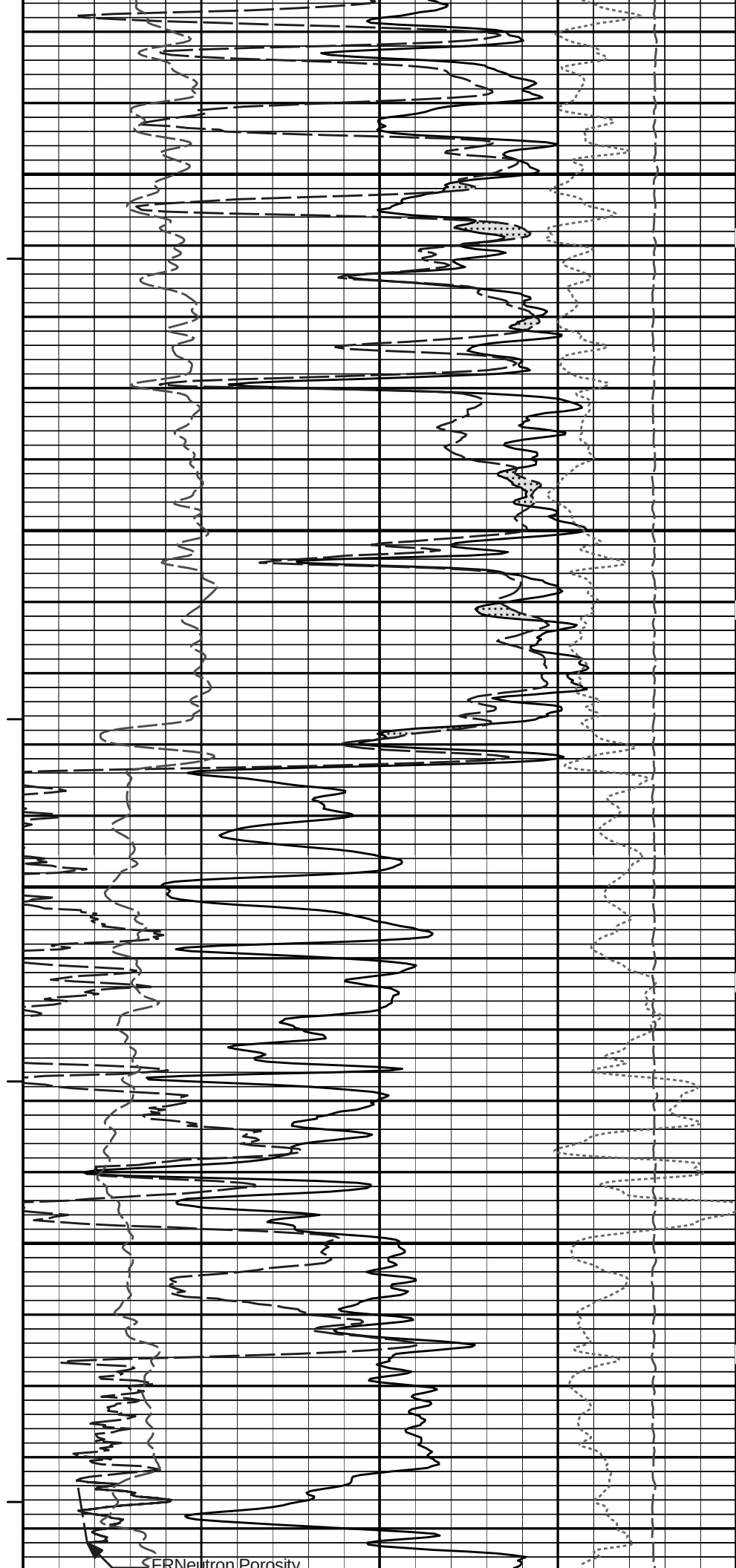
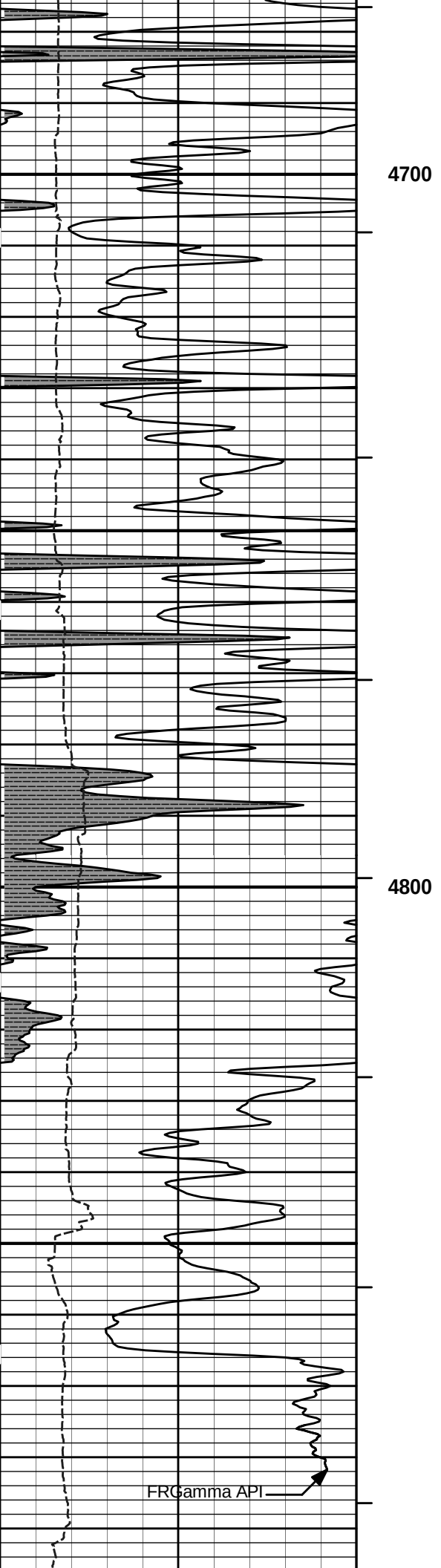
Caliper

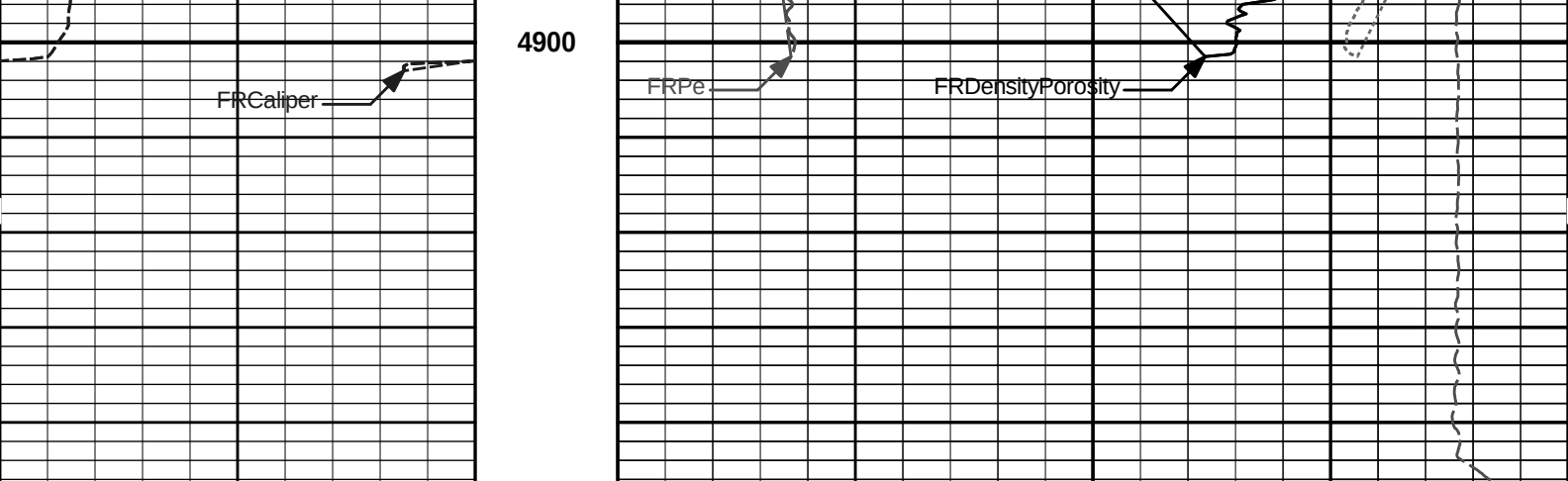


Neutron Porosity

Pe

Density Porosity





6	Caliper	16	MD 1 : 240 ft	0	Pe	10	-0.25	DensityCorr	0.25
0	Gamma API	150	AHVT	15K				Tension	0
	SHALE		BHVT	30				DensityPorosity	-10
			Tension Pull	10	0	30		Neutron Porosity	-10
	Tension Pull							CROSSOVER	

HALLIBURTON

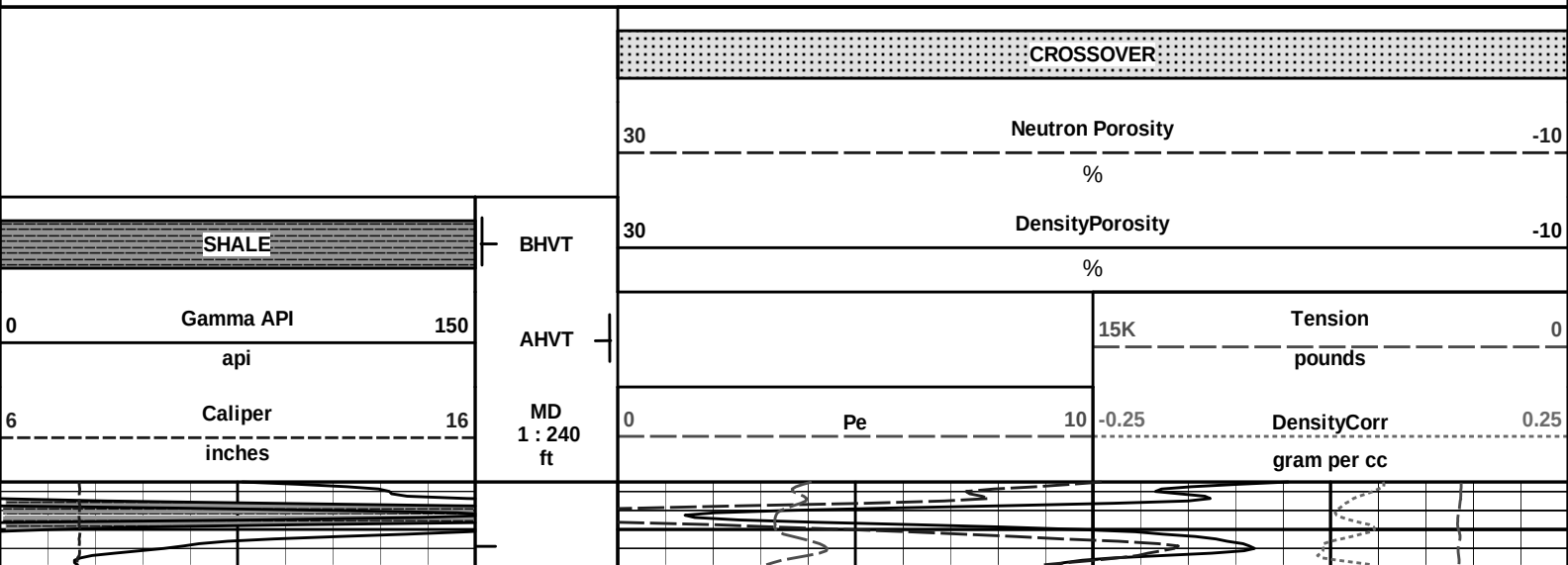
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Plot Range: 3798 ft to 4946.5 ft
Data: WILKINSON_1_22\Well Based\DAQ-0001-008\
Plot File: \\PORO\Porosity_Q_5_MAIN_LIB

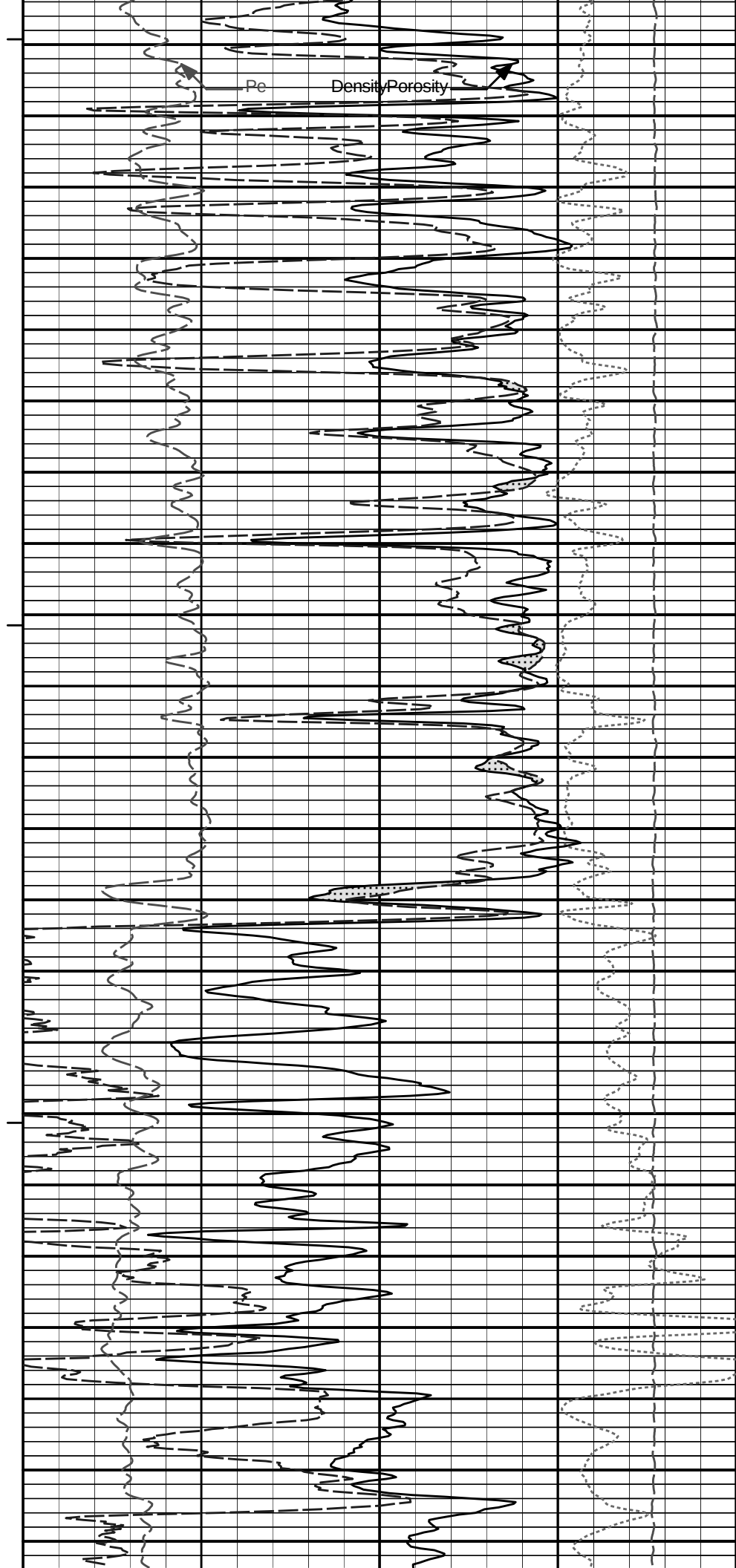
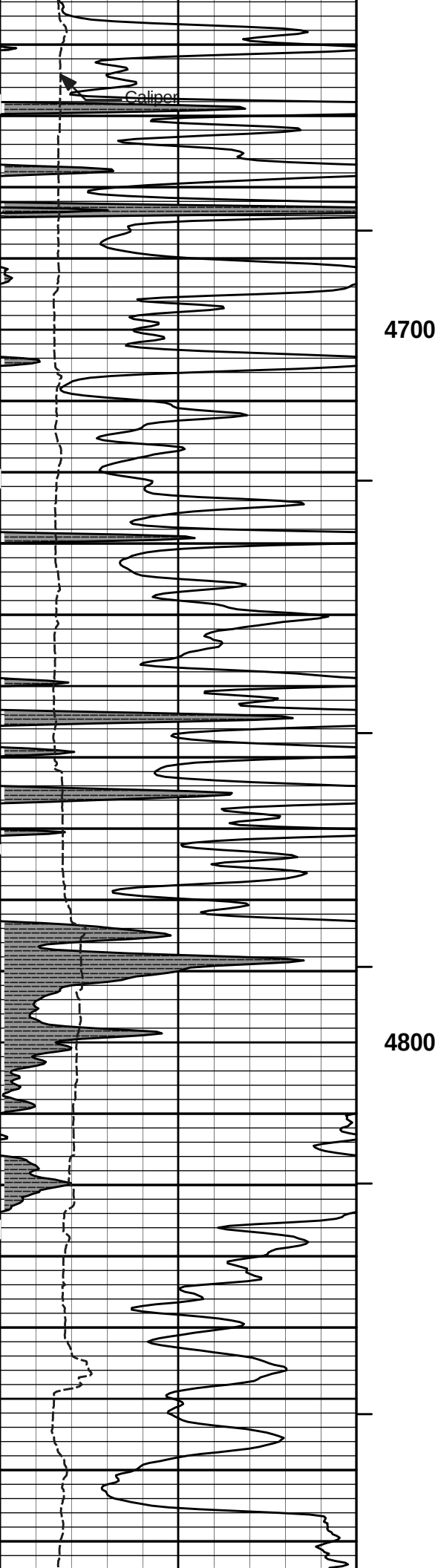
5 INCH MAIN LOG

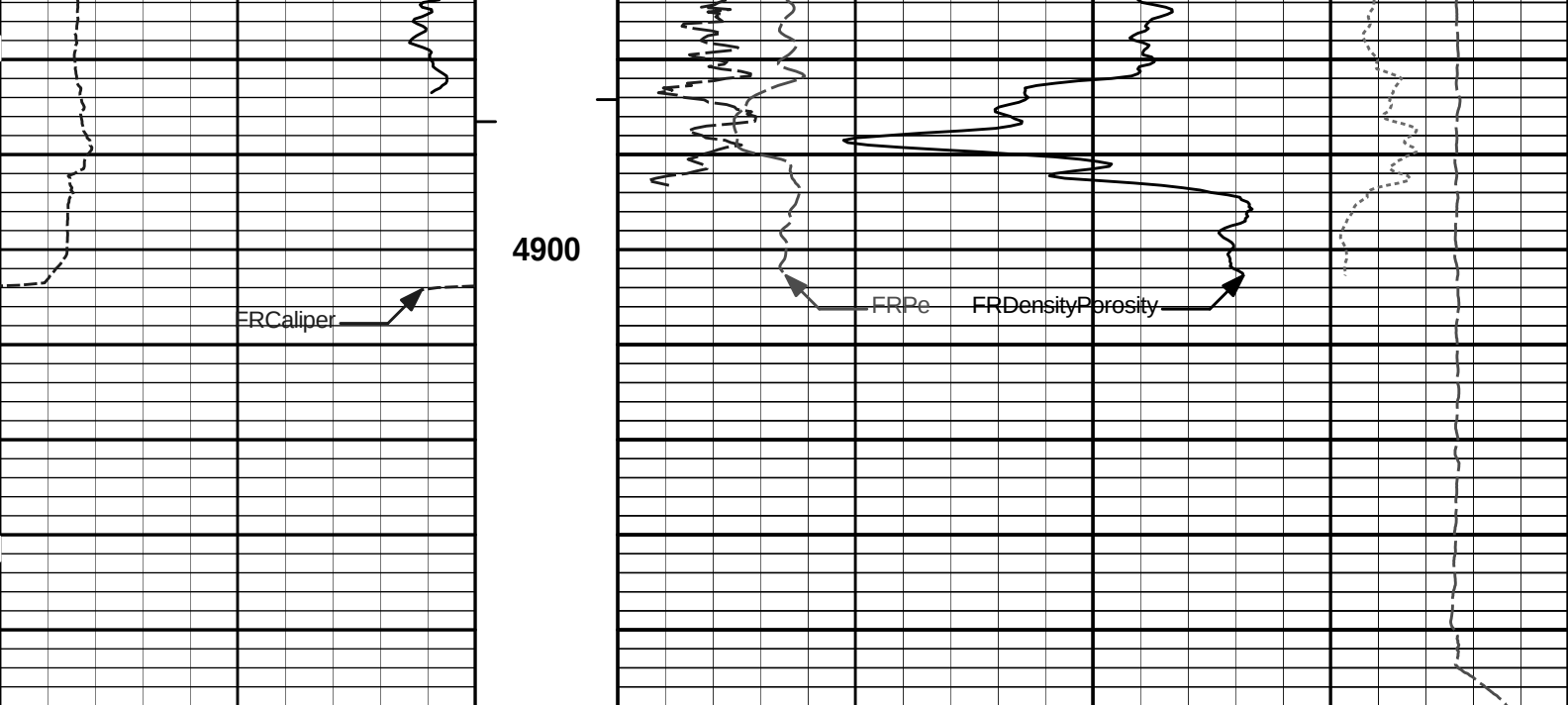
HALLIBURTON

Plot Time: 06-Nov-12 17:26:26
Plot Range: 4645 ft to 4948.25 ft
Data: WILKINSON_1_22\Well Based\DAQ-0001-007\
Plot File: \\PORO\Porosity_Q_5_REP_LIB

REPEAT SECTION







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

HALLIBURTON

Plot Time: 06-Nov-12 17:26:33
Plot Range: 4645 ft to 4948.25 ft
Data: WILKINSON_1_22\Well Based\DAQ-0001-007\
Plot File: \\POROI\Porosity_Q_5_REP_LIB

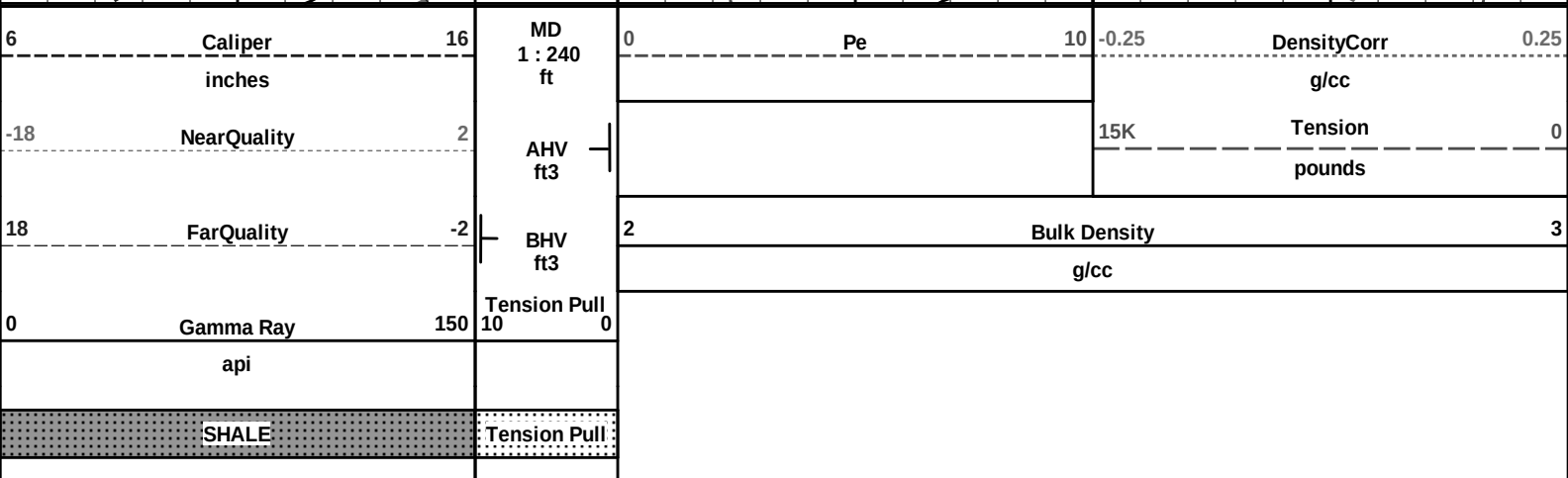
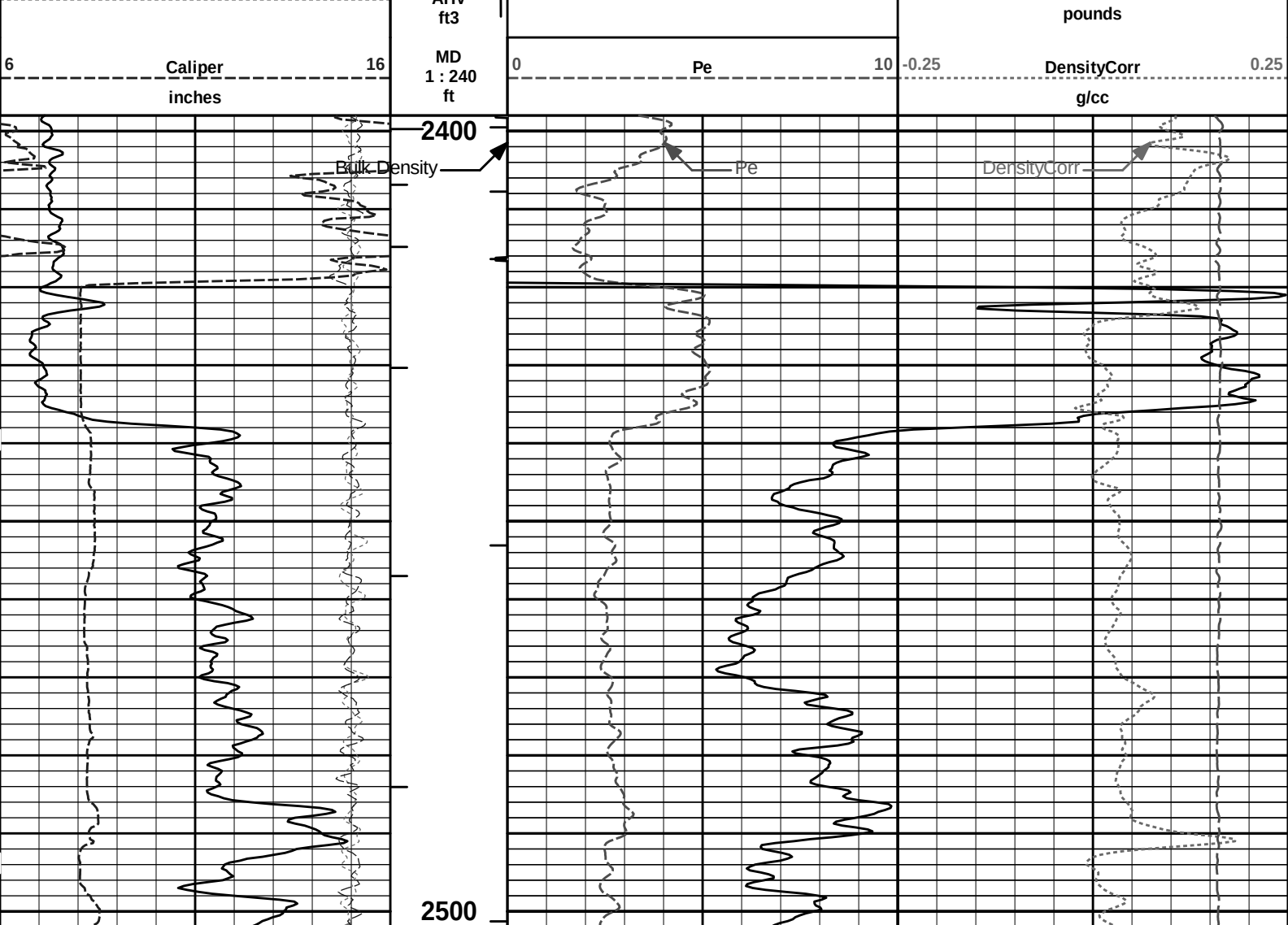
REPEAT SECTION

HALLIBURTON

Plot Time: 06-Nov-12 17:26:33
Plot Range: 2398 ft to 2502 ft
Data: WILKINSON_1_22\Well Based\DAQ-0001-008\
Plot File: \\LOCAL-WILKINSON_1_22\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CHIPOROIBULKD_5_MAIN_LIB

5 INCH MAIN LOG

	SHALE	Tension Pull	
0	Gamma Ray	150	Tension Pull
	api		10 0
18	FarQuality	-2	BHV
			ft3
-18	NearQuality	2	AHV
			2
			Bulk Density
			g/cc
			15K
			Tension
			0



HALLIBURTON

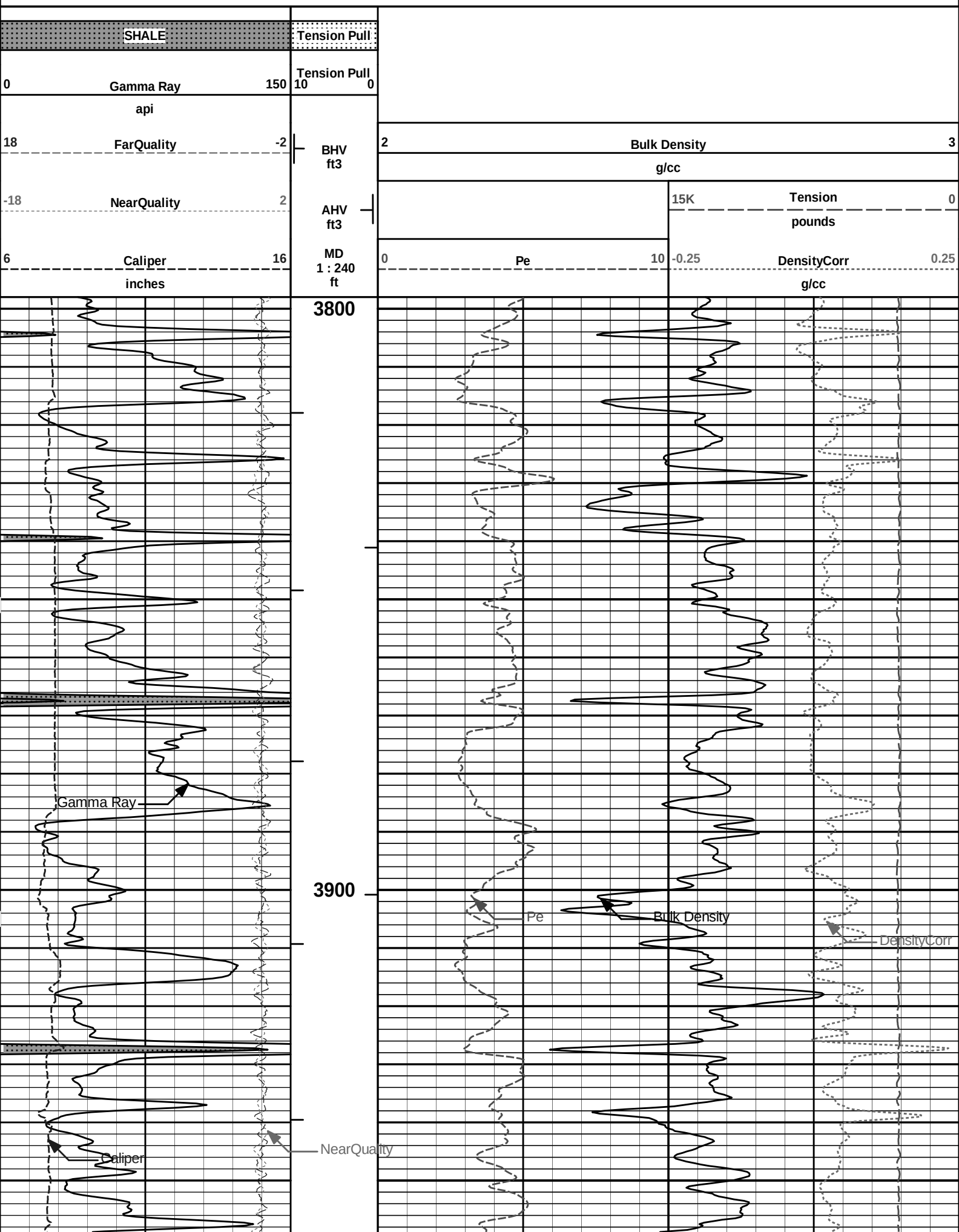
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Plot File: \\-LOCAL-WILKINSON_1_22\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CHIPORO\BULKD_5_MAIN_LIB

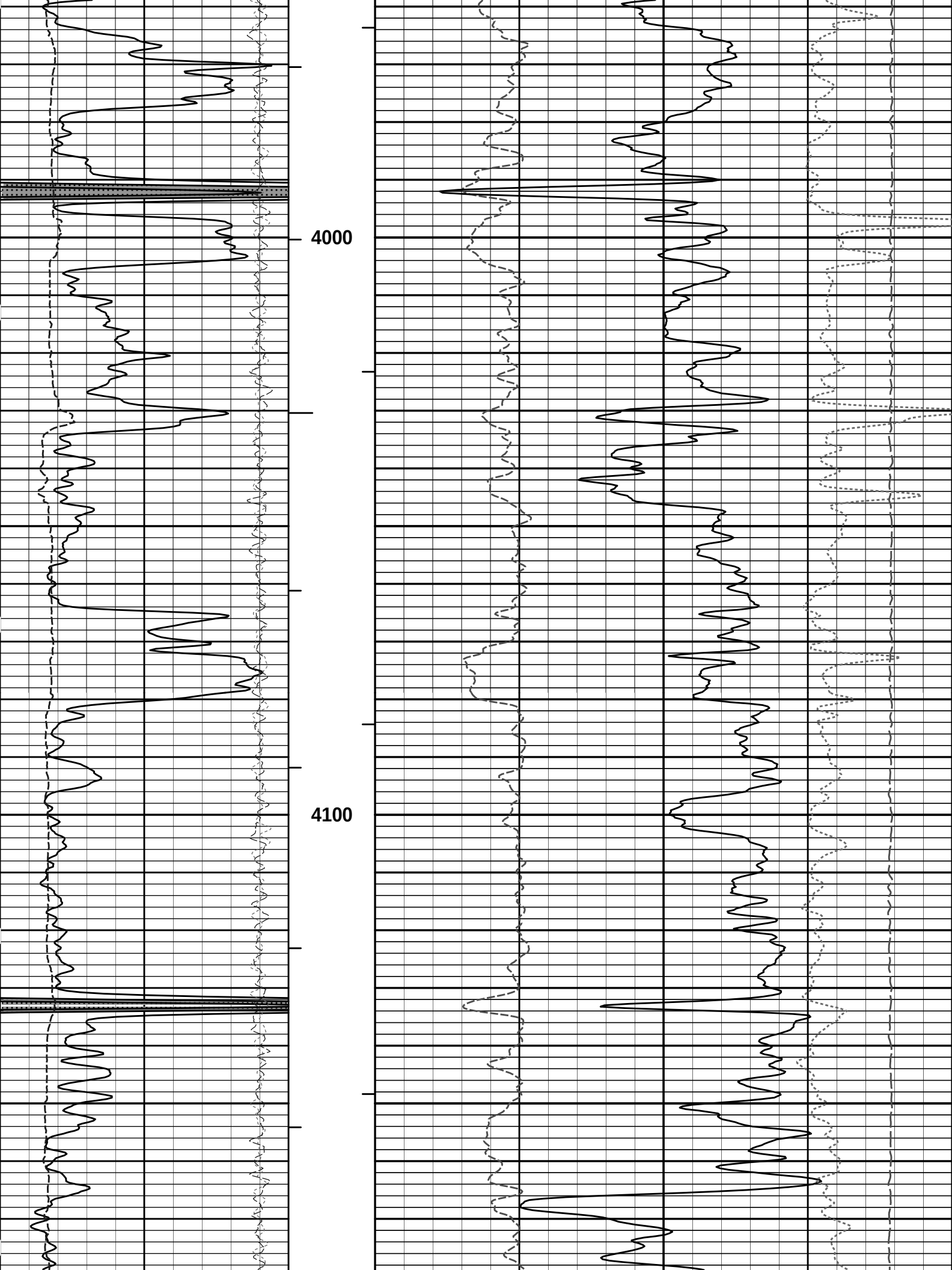
5 INCH MAIN LOG

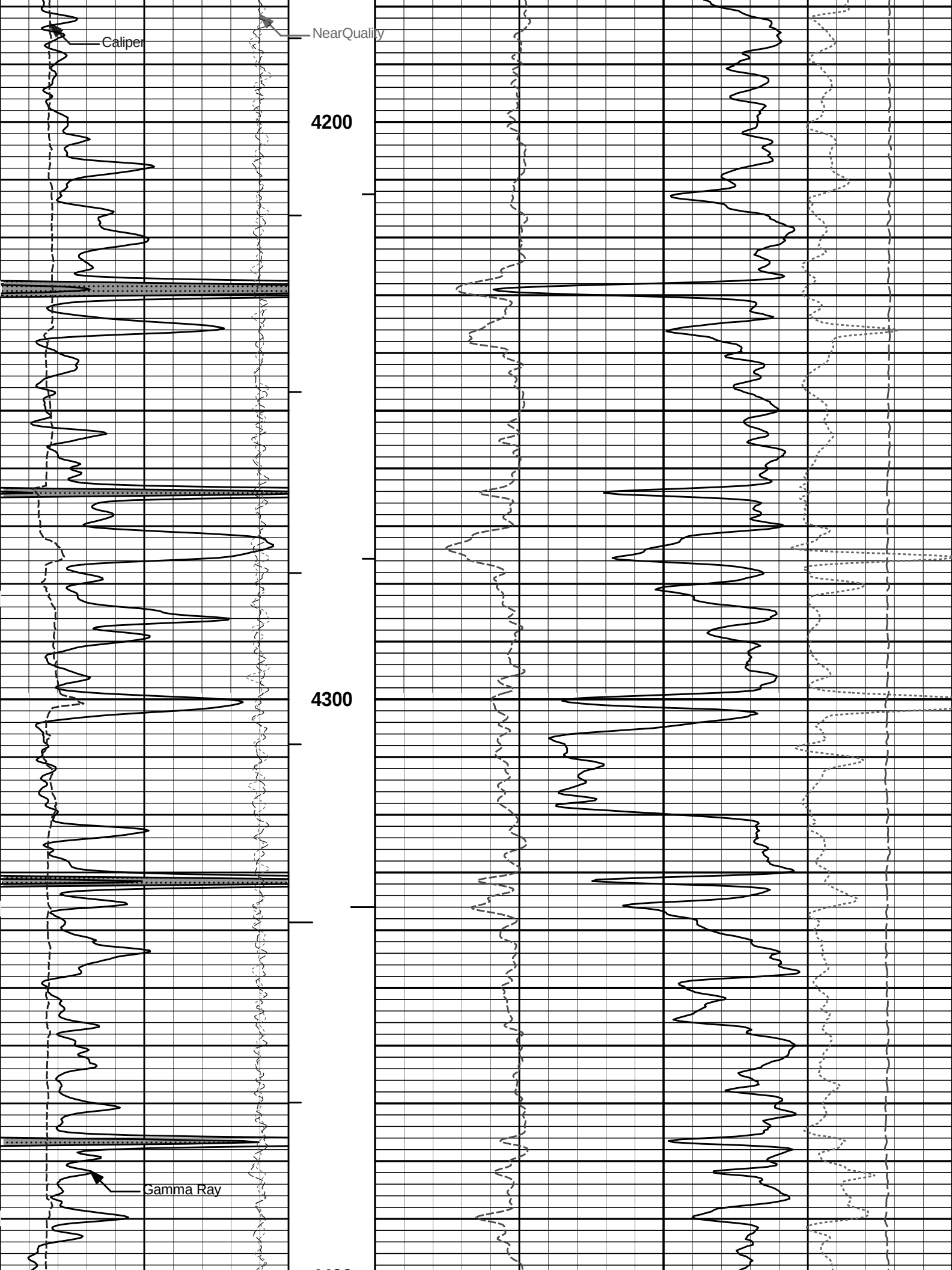
HALLIBURTON

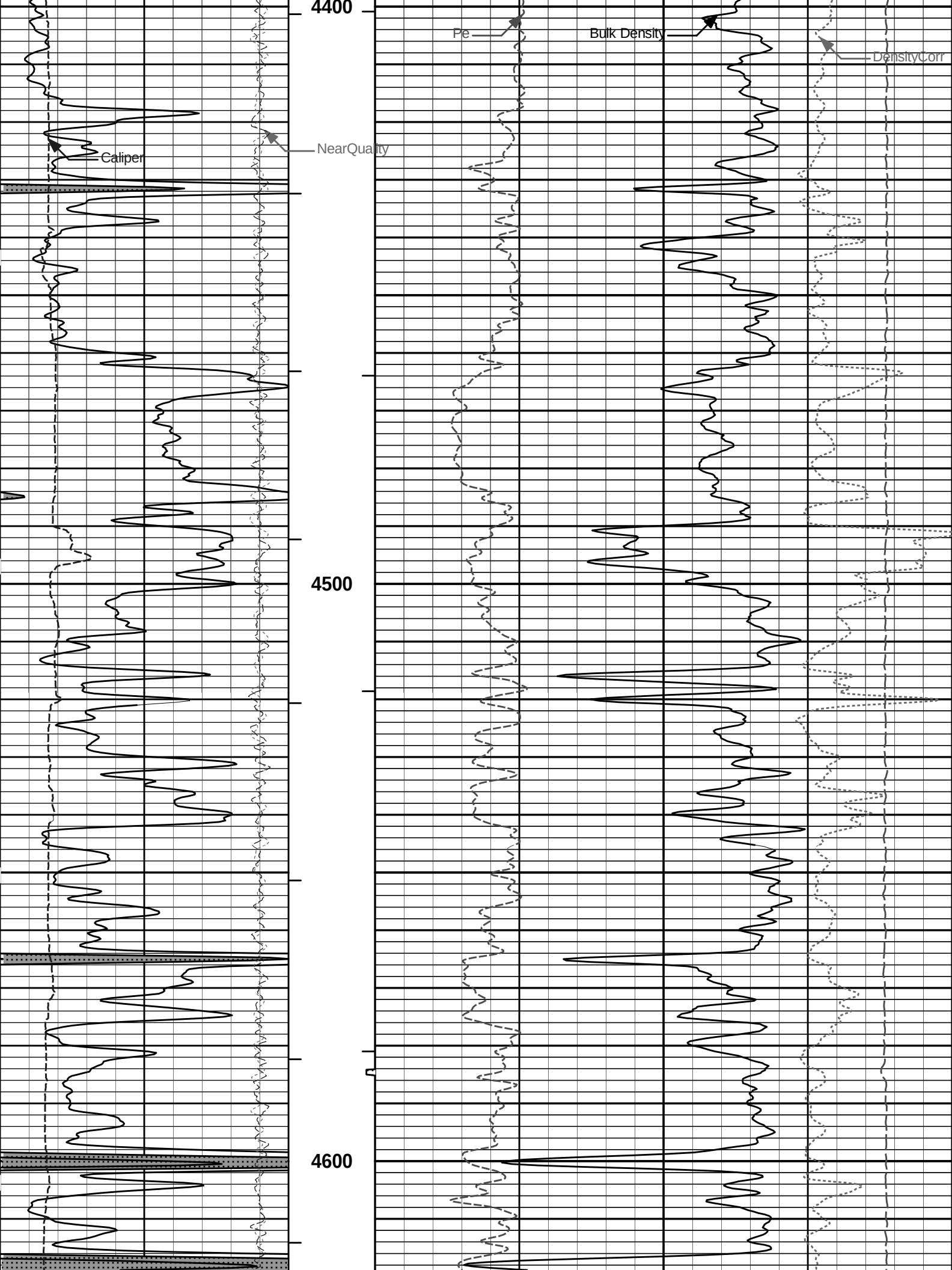
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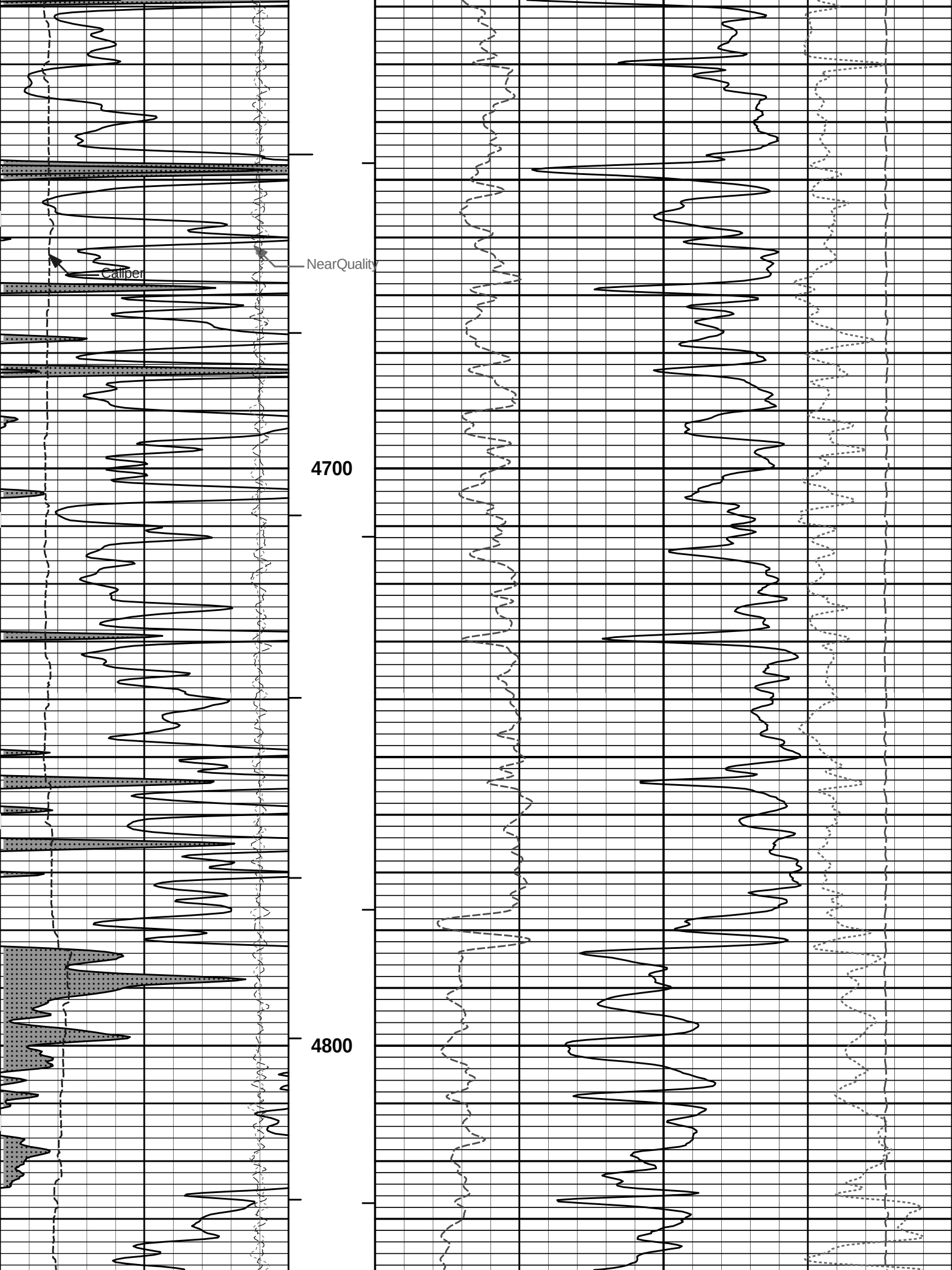
5 INCH MAIN LOG

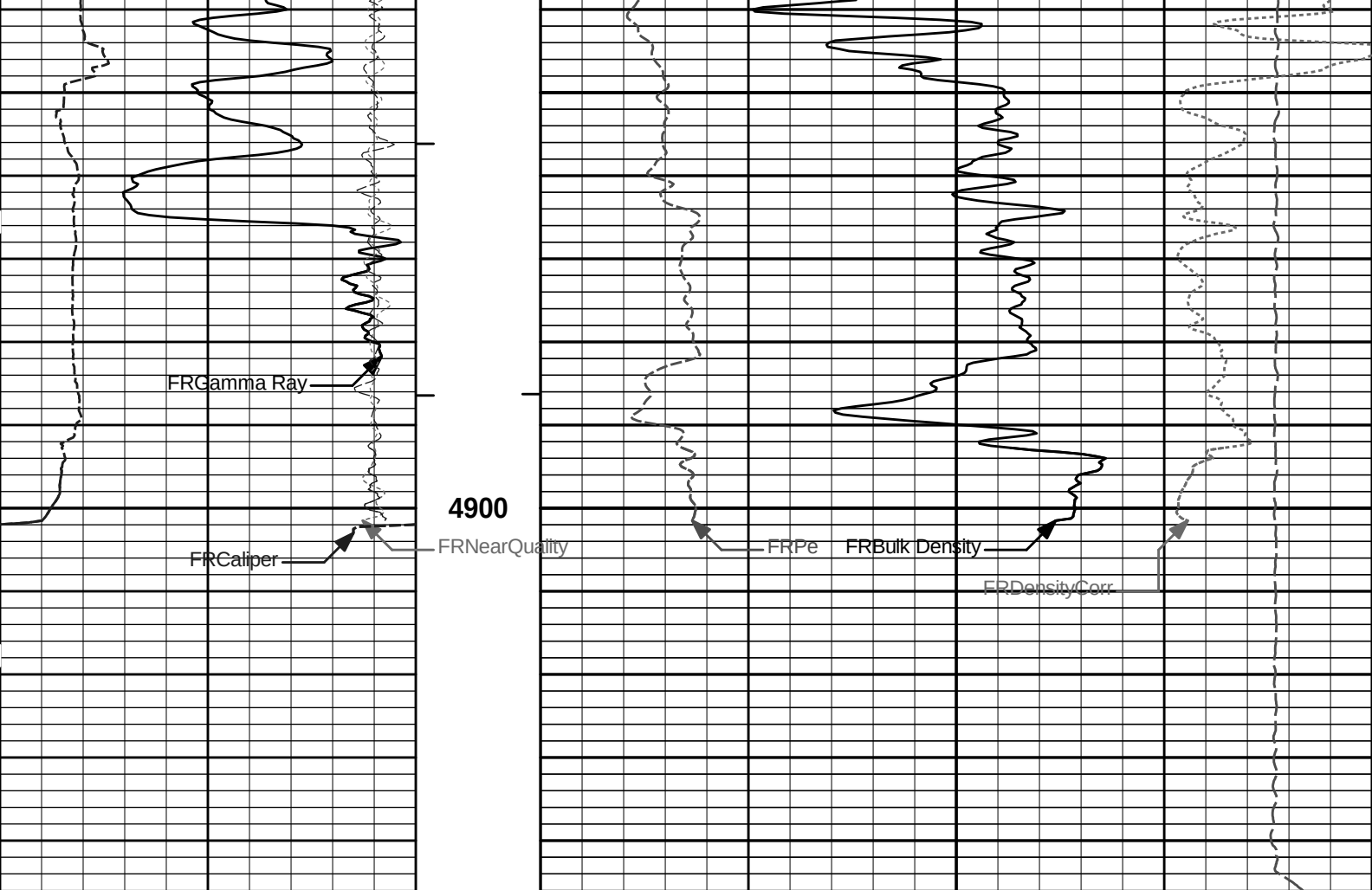












6	Caliper	16	MD	0	Pe	10	-0.25	DensityCorr	0.25
	inches		1 : 240					g/cc	
-18	NearQuality	2	AHV			15K		Tension	0
			ft3					pounds	
18	FarQuality	-2	BHV	2	Bulk Density				3
			ft3		g/cc				
0	Gamma Ray	150	Tension Pull						
	api		10	0					
	SHALE		Tension Pull						

HALLIBURTON

Plot Time: 06-Nov-12 17:26:51
Plot Range: 3798 ft to 4946.5 ft
Data: WILKINSON_1_22\Well Based\DAQ-0001-008\
Plot File: \\-LOCAL-WILKINSON_1_22\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CHIPORO\BULKD_5_MAIN_LIB

5 INCH MAIN LOG

HALLIBURTON

Plot Time: 06-Nov-12 17:26:51
Plot Range: 4645 ft to 4948.25 ft
Data: WILKINSON_1_22\Well Based\DAQ-0001-007\
Plot File: \\-LOCAL-WILKINSON_1_22\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CHIPORO\BULKD_5_REP_LIB

REPEAT SECTION

SHALE

api

_____ inches

MD
1 : 24
ft

2	Bulk Density	3
---	--------------	---

	g/cc
--	------

	15K	Tension	0
--	-----	---------	---

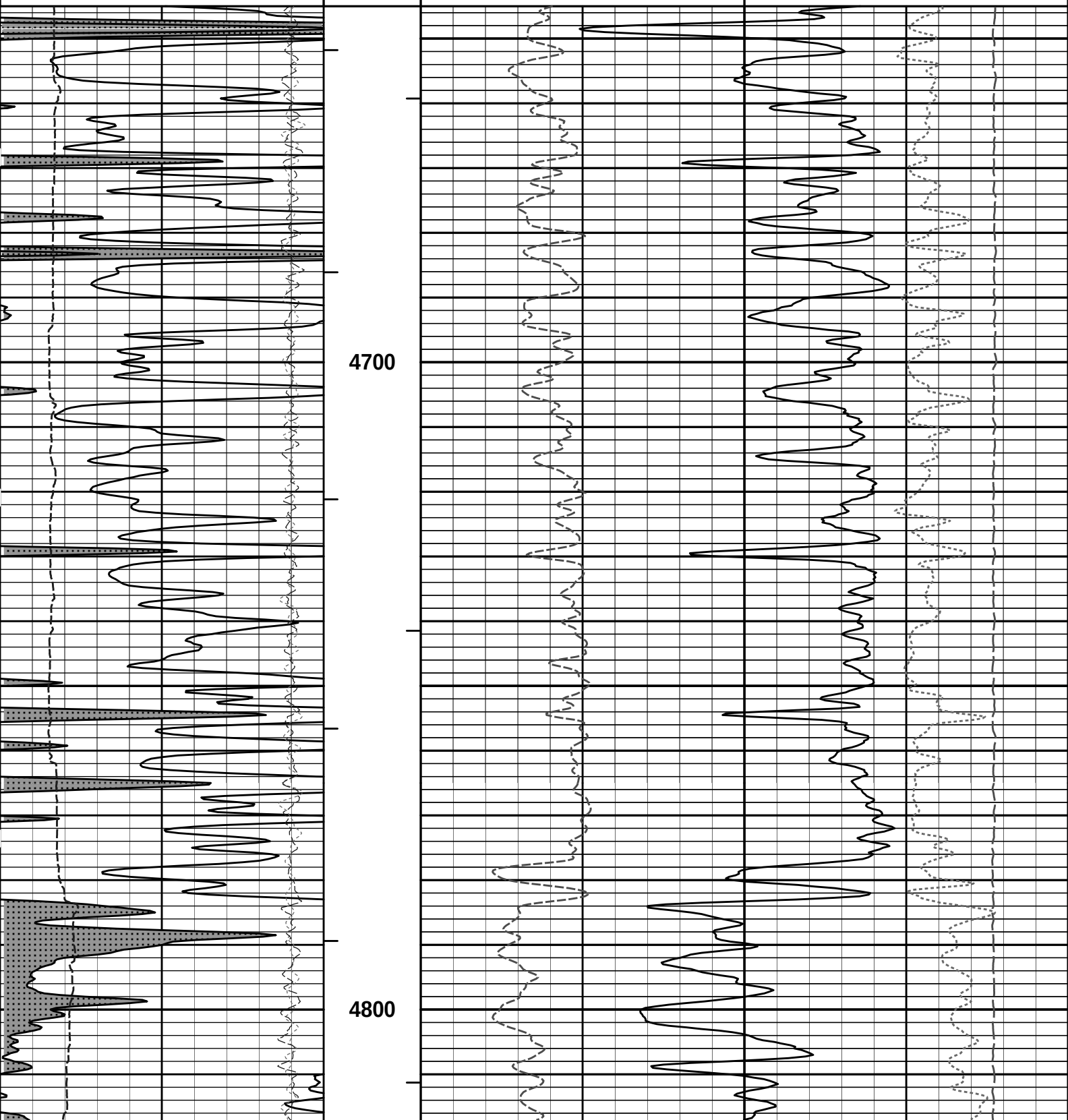
	pounds
--	--------

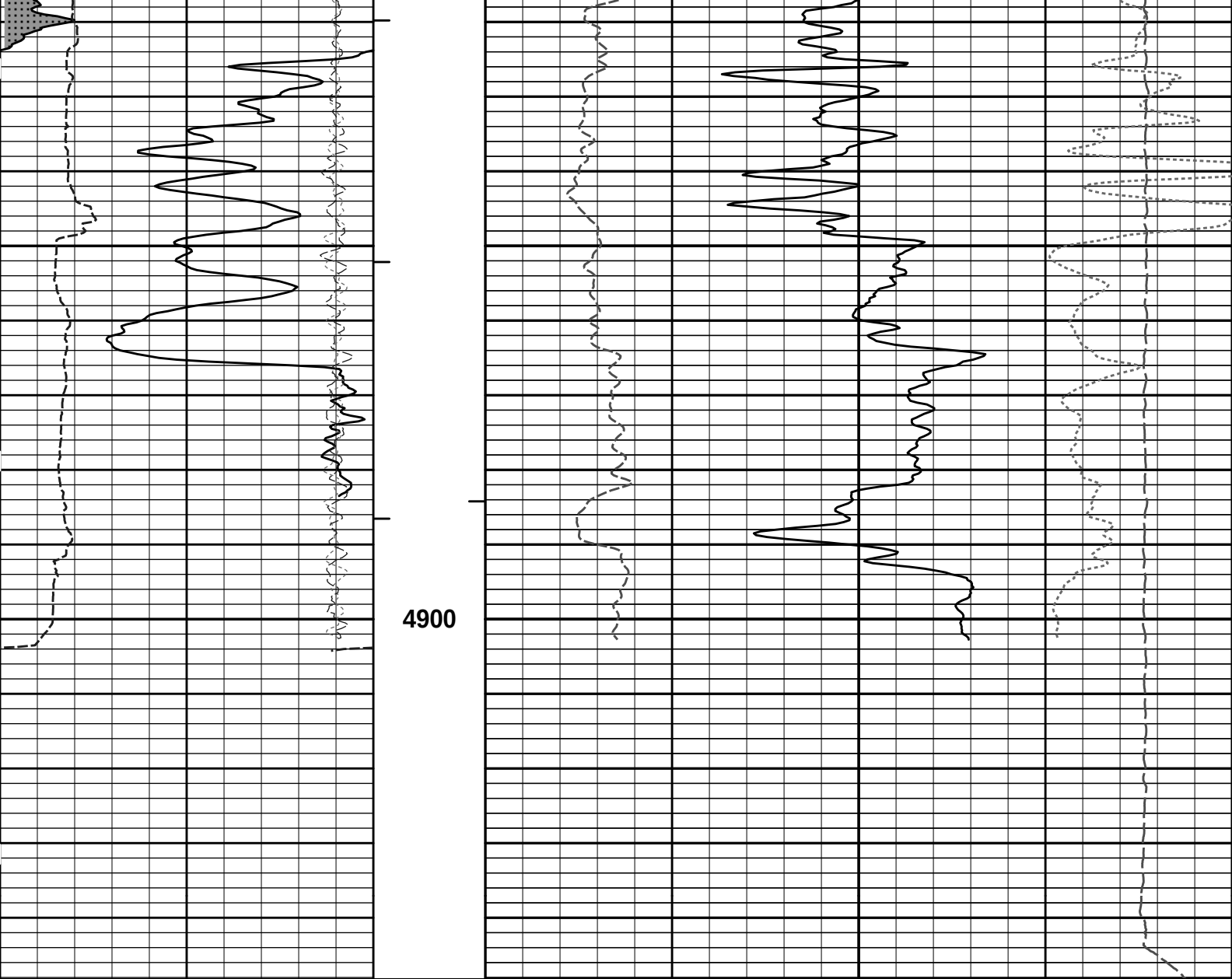
[illegible]

0	Pe	10	-0.25	DensityCorr	0.25
---	----	----	-------	-------------	------

Density	
g/cc	g/cc

4800





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

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Plot Time: 06-Nov-12 17:26:57

Plot Range: 4645 ft to 4948.25 ft

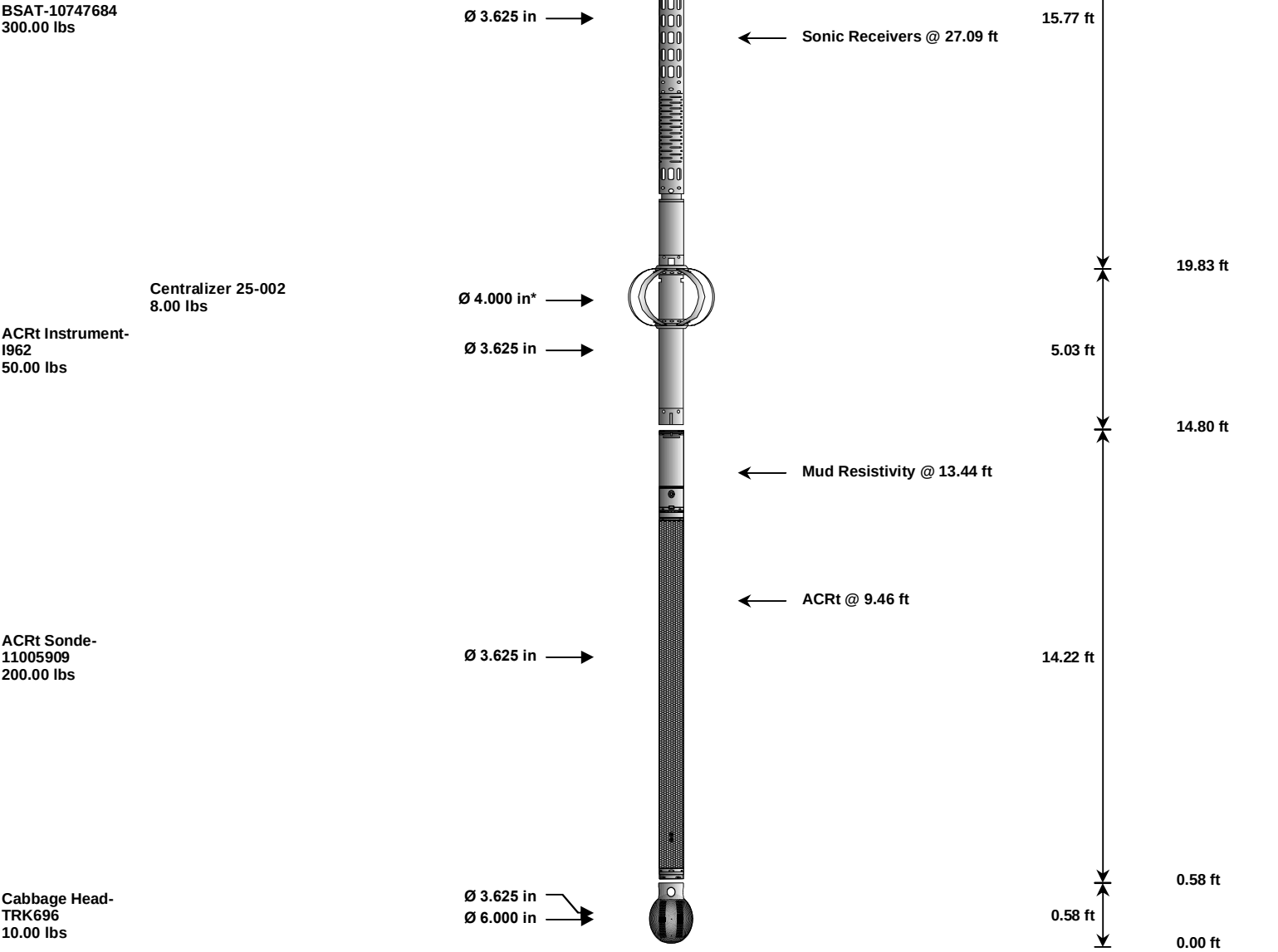
Data: WILKINSON_1_22\Well Based\DAQ-0001-007\

Plot File: \\-LOCAL-WILKINSON_1_22\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CHIPOROIBULKD_5_REP_LIB

REPEAT SECTION

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
CH_HOS-CH_696 37.50 lbs		Ø 2.750 in →		← Temperature @ 76.98 ft	3.03 ft	78.01 ft
XOHD-TRK696 20.00 lbs		Ø 2.750 in → Ø 3.625 in →			0.95 ft	74.98 ft
SP Sub-11441455 60.00 lbs		Ø 3.625 in →		← SP @ 72.26 ft	3.74 ft	74.03 ft
						70.30 ft
GTET-11039640 165.00 lbs		Ø 3.625 in →		← GammaRay @ 64.23 ft	8.52 ft	
						61.78 ft
DSNT-11055304 174.00 lbs	DSN Decentralizer-11005605 6.60 lbs	Ø 5.000 in* → Ø 3.625 in →		← DSN Far @ 54.84 ft ← DSN Near @ 54.09 ft	9.69 ft	
						52.09 ft
SDLT-11014296 360.00 lbs	SDLT Pad-10865884 65.00 lbs Microlog Pad-11014296 8.00 lbs	Ø 4.500 in → Ø 4.750 in* → Ø 4.750 in* →		Microlog @ 44.28 ft SDL Caliper @ 44.09 ft SDL @ 44.08 ft	10.81 ft	
						41.28 ft
Flex Joint-001 140.00 lbs		Ø 3.625 in →			5.67 ft	
	Centralizer 25-001 8.00 lbs	Ø 4.000 in* →				35.61 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		CH_696	37.50	3.03	74.98	300.00
XOHD	Hostile to Dits Cross Over		TRK696	20.00	0.95	74.03	300.00
SP	SP Sub		11441455	60.00	3.74	70.30	300.00
GTET	Gamma Telemetry Tool		11039640	165.00	8.52	61.78	60.00
DSNT	Dual Spaced Neutron		11055304	174.00	9.69	52.09	60.00
DCNT	DSN Decentralizer		11005605	6.60	5.13	* 55.42	300.00
SDLT	Spectral Density Tool		11014296	360.00	10.81	41.28	60.00
MICP	Microlog Pad		11014296	8.00	1.00	* 43.78	60.00
SDLP	Density Insite Pad		10865884	65.00	2.55	* 43.49	60.00
FLEX	Flex Joint		001	140.00	5.67	35.61	300.00
BSAT	Borehole Sonic Array Tool		10747684	300.00	15.77	19.83	60.00
OBCEN	Centralizer - 25 in. Overbody		001	8.00	2.08	* 33.53	300.00
ACRt	Array Compensated True Resistivity Instrument Section		I962	50.00	5.03	14.80	300.00
OBCEN	Centralizer - 25 in. Overbody		002	8.00	2.08	* 17.83	300.00
ACRt	Array Compensated True Resistivity Sonde Section		11005909	200.00	14.22	0.58	300.00
CBHD	Cabbage Head		TRK696	10.00	0.58	0.00	300.00
Total				1,612.10	78.01		
* Not included in Total Length and Length Accumulation.							
Data: WILKINSON_1_22\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CH\IDLE							Date: 06-Nov-12 14:30:13

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name:	GTET - 11039640	Reference Calibration Date:	25-Sep-12 15:48:12
Engineer:	T. HYDE	Calibration Date:	02-Nov-12 10:48:45
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Calibrator Source S/N: TB146 Calibrator API Reference:265.00 api Equivalent Calibrator API Reference:269.6 api			
Measurement	Measured	Calibrated	Units
Background	63.1	62.7	api
Background + Calibrator	334.4	332.3	api
Calibrator	271.3	269.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION			
Tool Name:	GTET - 11039640	Reference Calibration Date:	02-Nov-12 10:48:45
Engineer:	T. HYDE	Calibration Date:	06-Nov-12 14:49:34
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Calibrator Source S/N: TB146 Calibrator API Reference:265.00 api Equivalent Calibrator API Reference:269.6 api			
Field Verification	Shop	Field	Units
Background	62.7	36.2	api
Background + Calibrator	332.3	304.7	api
Calibrator	269.6	268.5	api
Shop	Field	Difference	Tolerance
269.6	268.5	1.1	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 11055304

Engineer: T. HYDE

Software Version: WL INSITE R3.6.0 (Build 3)

Reference Calibration Date: 03-Oct-12 09:49:05

Calibration Date: 02-Nov-12 10:41:48

Calibration Version: 1

Logging Source S/N: 696

Tank Serial Number: LIBERAL_NEUTRON

Reference value assigned to Tank: 51.680

Snow Block S/N: 696

Calibration Tank Water Temperature: 68 degF

Min. Tool Housing Outside Diameter: 3.620 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.992	0.989	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):	0.2116	0.2107	0.0009	+/- 0.0020
Calibrated Ratio:	9.75	9.72	0.032	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit

	Measurement	Value	Control Limit
	Snow-Block Porosity (decp):	0.0701	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:	02-Nov-12 10:41:48
Engineer:	T. HYDE	Calibration Date:	06-Nov-12 14:51:50
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Logging Source S/N: 696

Snow Block S/N: 696

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0701	0.0800	0.0099	+/- 0.0150

PASS/FAIL SUMMARY	
Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DENSITY CALIPER SHOP CALIBRATION			
Tool Name:	SDLT - 11014296	Reference Calibration Date:	03-Oct-12 13:32:52
Engineer:	T. HYDE	Calibration Date:	02-Nov-12 10:17:50
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Host Tool Name:	DSNT - 11055304		

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-4436.57	-3840.06	-7000.00 - -1000.00
Pad Gain	0.0004115	0.0003836	0.000200 - 0.000600
Arm Offset	-2657.94	-2907.65	-5000.00 - 3000.00
Arm Gain	0.0005195	0.0004674	0.000300 - 0.000700
Arm Power	-0.000004820	-0.000000836	-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)	1.90	2.00	0.10	+/- 0.20
Medium Ring (in)	3.78	3.75	-0.03	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.56	6.50	-0.06	+/- 0.20
Medium Ring (in)	8.41	8.25	-0.16	+/- 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

Calibration Version: 1

Pe: 2.598

75 - 145

+/- 0.150

Control Limits

QUALITY				
Background	-0.0004	+/- 0.0110	0.0007	+/- 0.0140
Magnesium Block	0.0009	+/- 0.0110	0.0007	+/- 0.0140
Aluminum Block	-0.0003	+/- 0.0110	-0.0009	+/- 0.0140
Resolution	9.17	6.00 - 11.50	8.94	6.00 - 11.50
Internal Verifier(B+D+P+L)	1387	1200 - 2700	884	800 - 1700

PASS/FAIL SUMMARY	
Background Quality Check:	Passed
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed
Aluminum Quality Check:	Passed
Gains Check:	Passed
Changes in Calibration Blocks:	Passed

SPECTRAL DENSITY FIELD CHECK

Tool Name: SDLT Pad - 10865884

Reference Calibration Date: 02-Nov-12 09:31:35

Engineer: T. HYDE

Calibration Date: 06-Nov-12 14:49:42

Software Version: WL INSITE R3.6.0 (Build 3)

Calibration Version: 1

Pad Temperature: 71.7 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1386.731	1387.429	0.698	15.044
Far (B+D+P+L) cps	883.870	886.636	2.766	16.212
Near Resolution	9.17	9.30	0.130	0.50
Far Resolution	8.94	9.57	0.630	1.00

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

SDLT CALIPER FIELD CALIBRATION

Tool Name: SDLT - 11014296

Reference Calibration Date: 02-Nov-12 10:17:50

Engineer: T. HYDE

Calibration Date: 06-Nov-12 14:54:48

Software Version: WL INSITE R3.6.0 (Build 3)

Calibration Version: 1

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.76	0.01	+/- 0.10
Ring Diameter	8.25	8.24	-0.01	+/- 0.15

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

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
--------	------	-------	------	------------	-----------	-------

GTET-11039640						
Gamma Ray Calibrator	269.6	268.5	-----	1.1	+/- 9.00	api
DSNT-11055304						
Snow-Block Porosity	0.0701	0.0800	-----	-0.0099	+/- 0.0150	decp
SDLT-11014296						
Pad Extension	3.75	3.76	-----	-0.01	+/-0.10	in
Ring Diameter	8.25	8.24	-----	0.01	+/-0.15	in
SDLT Pad-10865884						
Near(B+D+P+L)	1386.731	1387.429	-----	-0.698	+/-15.044	cps
Far(B+D+P+L)	883.870	886.636	-----	-2.766	+/-16.212	cps
Data: WILKINSON_1_22\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CH\IDLE						
Date: 06-Nov-12 15:26:18						

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	9.300	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	2.000	ohmm
	SHARED	TRM	Temperature of Mud	70.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	70.0	degF
	SHARED	TD	Total Well Depth	4950.00	ft
	SHARED	BHT	Bottom Hole Temperature	200.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size Master Tool	NONE	
	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	
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GRSO	Gamma Tool Standoff	0.000	in
	GTET	GEOK	Process Gamma Ray EVR?	No	
	GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
	DSNT	DNOK	Process DSN?	Yes	

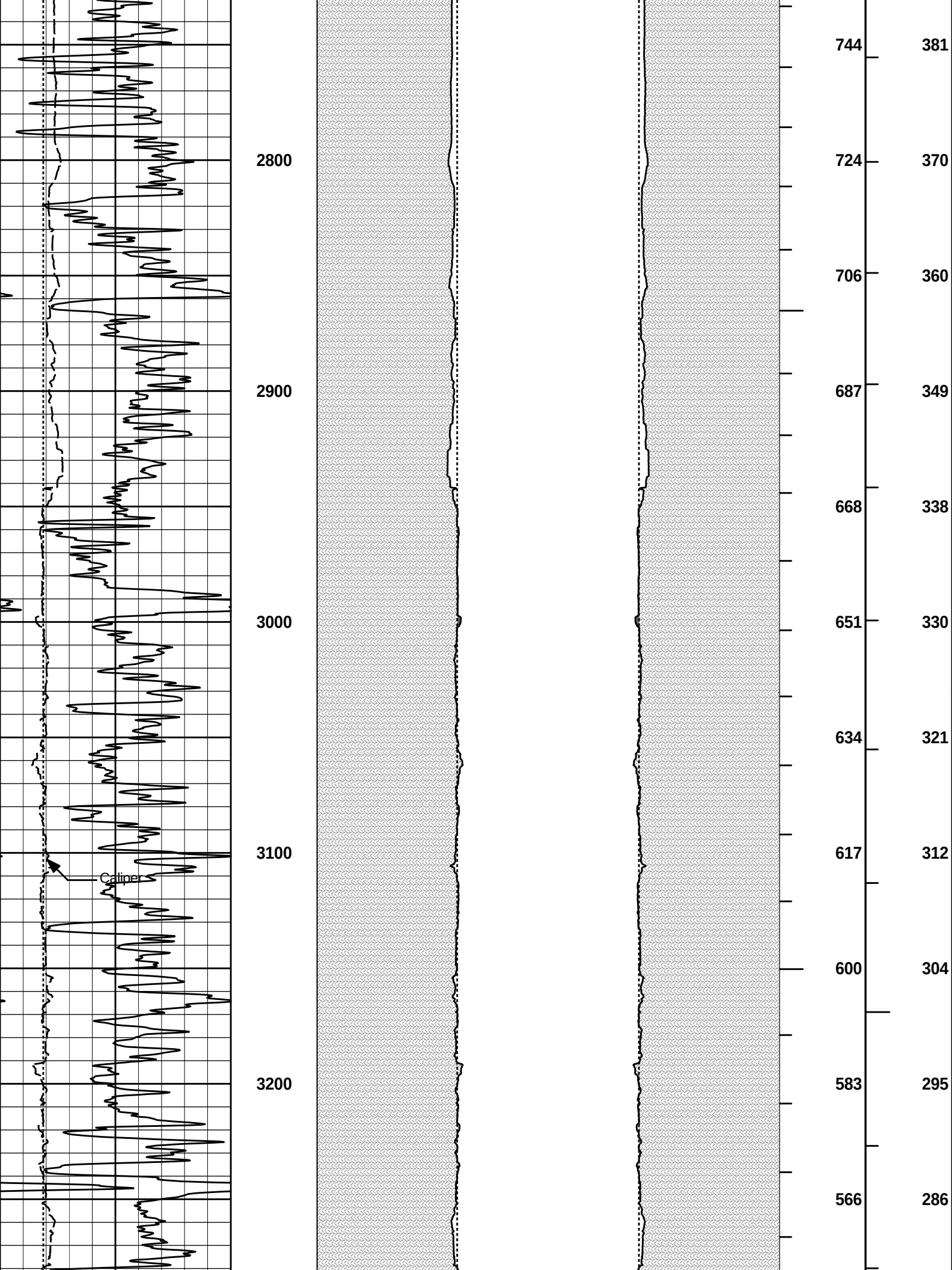
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DSNO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
DSNT	DNTP	Temperature Correction Type	None	
DSNT	DPRS	DSN Pressure Correction Type	None	
DSNT	SHCO	View More Correction Options	No	
DSNT	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT Pad	DNOK	Process Density?	Yes	
SDLT Pad	DNOK	Process Density EVR?	No	
SDLT Pad	CB	Logging Calibration Blocks?	No	
SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	DTWN	Disable temperature warning	No	
SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
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 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 Upr	
ACRt Sonde	TPOS	Tool Position	Free Hanging	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
BOTTOM				
Data: WILKINSON_1_2210001 SP-GTET-DSN-SDL-BSAT-ACRT-CHIDLE			Date: 06-Nov-12 15:26:32	

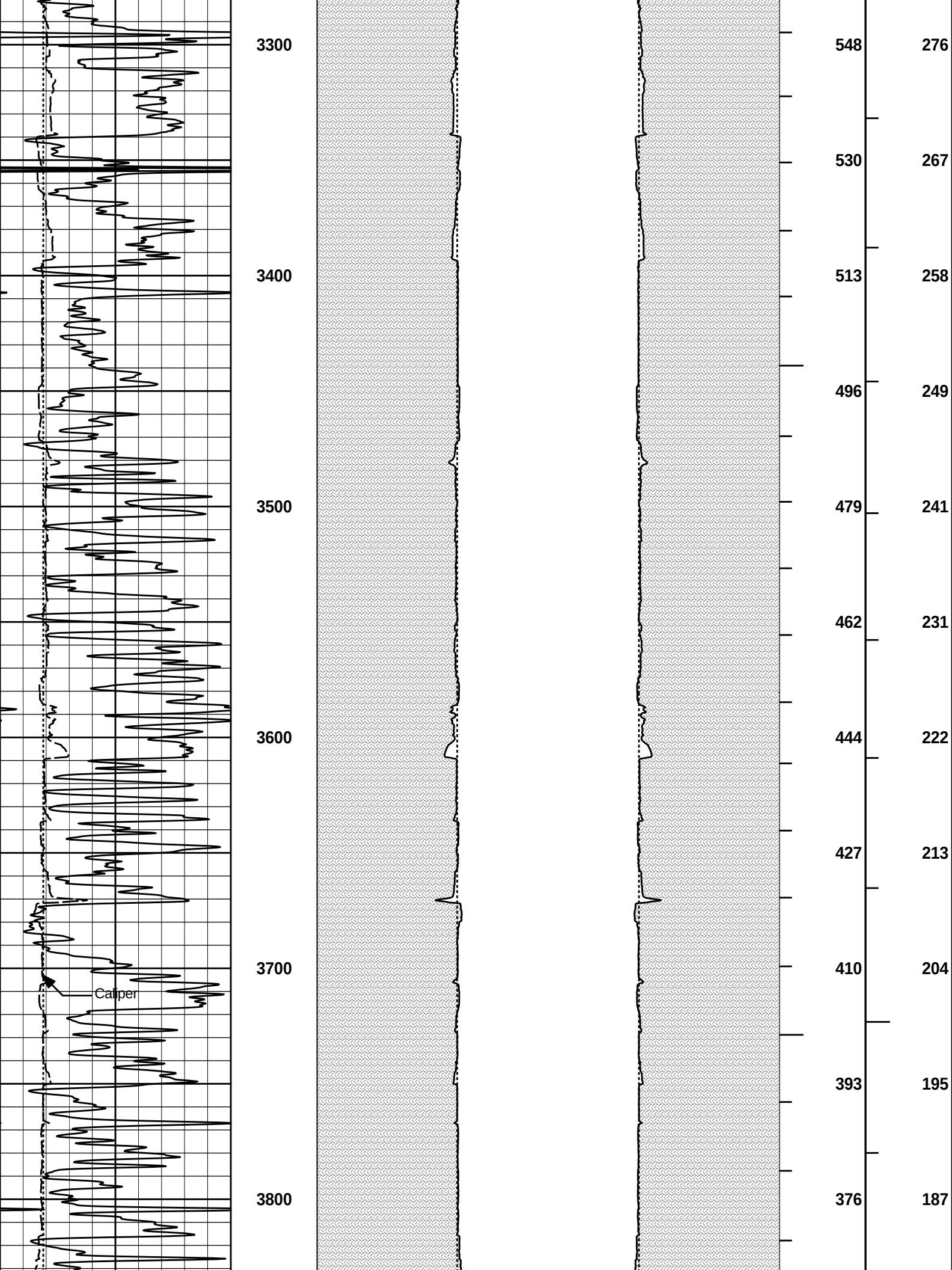
HALLIBURTON				
INPUTS, DELAYS AND FILTERS TABLE				
Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel				
TENS	Tension	0.00	NO	
CH_HOS				
DHTN	DownholeTension	0.00	BLK	0.000
SP Sub				
PLTC	Plot Control Mask	72.25	NO	
SP	Spontaneous Potential	72.25	BLK	1.250
SPR	Raw Spontaneous Potential	72.25	NO	
SPO	Spontaneous Potential Offset	72.25	NO	

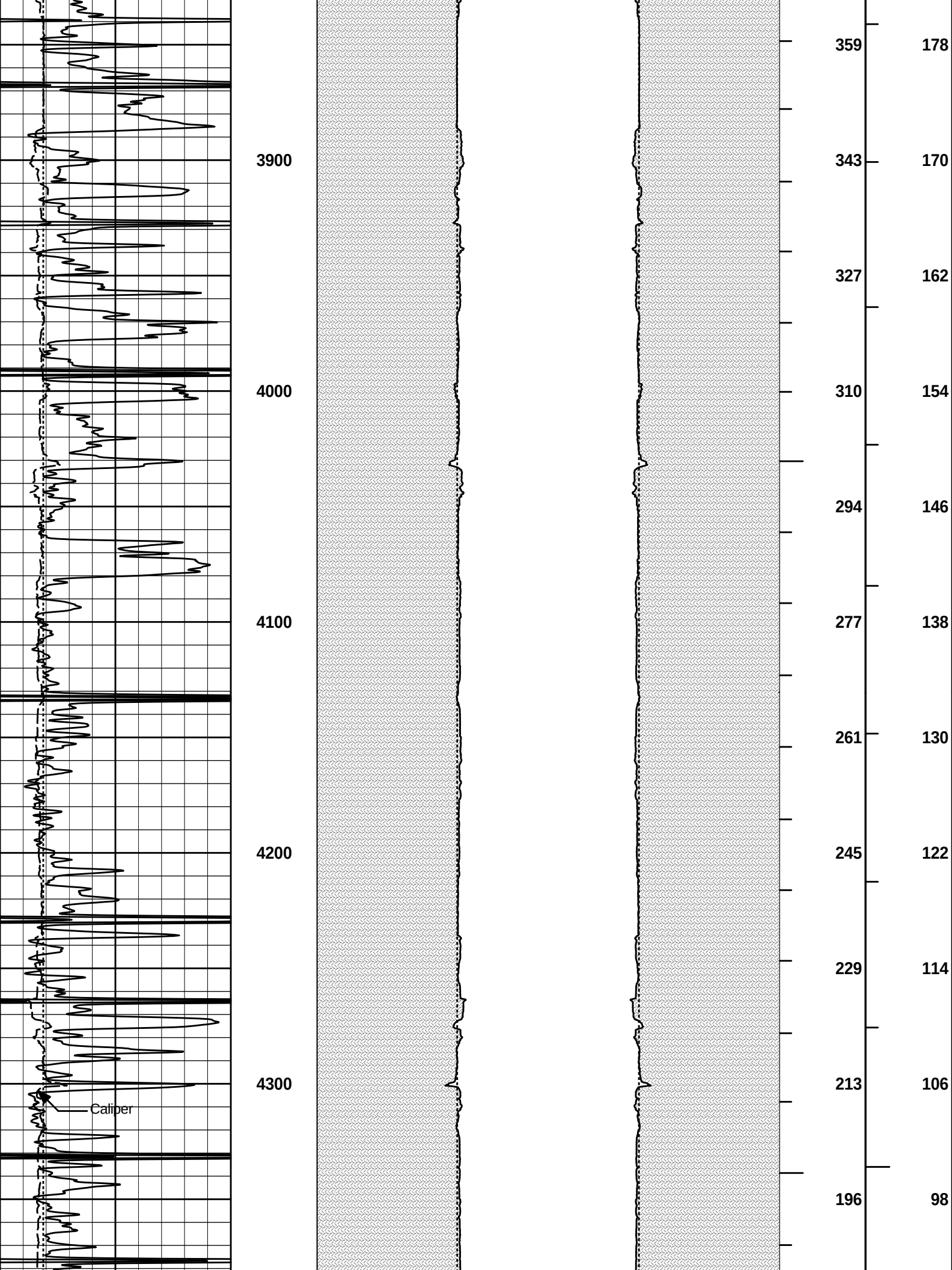
GTET				
TPUL	Tension Pull	64.23	NO	
GR	Natural Gamma Ray API	64.23	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	64.23	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	64.23	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	53.99	NO	
RNDS	Near Detector Telemetry Counts	54.09	BLK	1.417
RFDS	Far Detector Telemetry Counts	54.84	TRI	0.583
DNTT	DSN Tool Temperature	54.09	NO	
DSNS	DSN Tool Status	53.99	NO	
ERND	Near Detector Telemetry Counts EVR	54.09	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	54.84	BLK	0.000
ENTM	DSN Tool Temperature EVR	54.09	NO	
SDLT				
TPUL	Tension Pull	44.09	NO	
PCAL	Pad Caliper	44.09	TRI	0.250
ACAL	Arm Caliper	44.09	TRI	0.250
BSAT				
TPUL	Tension Pull	27.09	NO	
STAT	Status	27.09	NO	
DLYT	Delay Time	27.09	NO	
SI	Sample Interval	27.09	NO	
TXRX	Raw Telemetry 10 Receivers	27.09	NO	
FRMC	Tool Frame Count	27.09	NO	
GMOD	Gain processing mode	19.83	NO	
ACRt Sonde				
TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	4.22	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.72	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.72	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.47	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.47	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	9.22	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	9.22	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.72	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.72	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	5.22	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	5.22	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	4.22	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	4.22	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.72	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.72	BLK	0.000

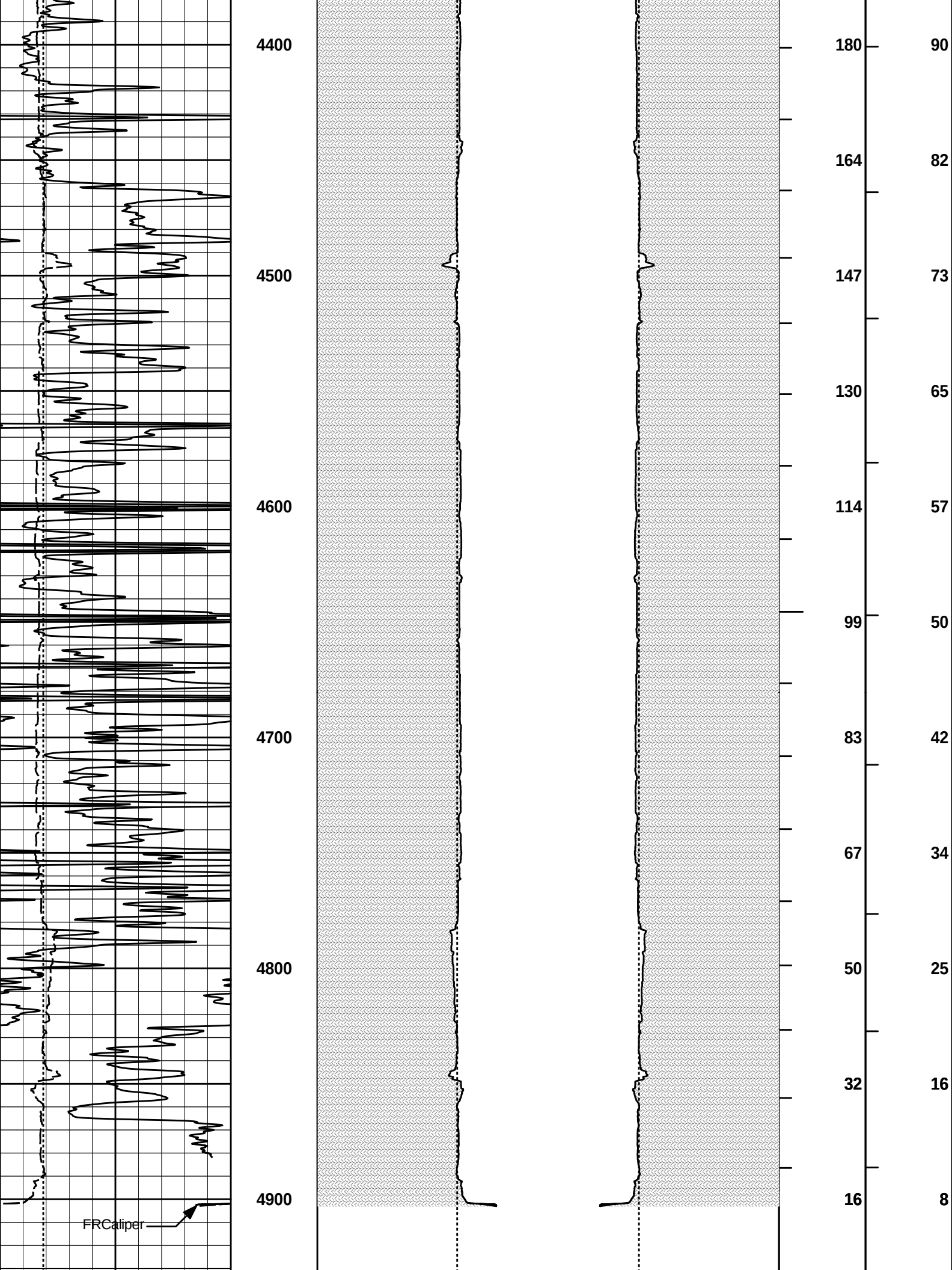
F2R6	ACRT 36KHz - 6in R value	3.47	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.47	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	9.22	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	9.22	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.72	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.72	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	5.22	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	5.22	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	4.22	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.72	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.72	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.47	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.47	BLK	0.000
RMUD	Mud Resistivity	12.76	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.97	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.97	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.97	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.97	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.97	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.97	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.97	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.97	BLK	0.000
ITMP	Instrument Temperature	2.97	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.97	NO	
TIDV	Instrument Temperature Derivative	2.97	NO	
TUDV	Upper Temperature Derivative	2.97	NO	
TLDV	Lower Temperature Derivative	2.97	NO	
TRBD	Receiver Board Temperature	2.97	NO	
SDLT Pad				
TPUL	Tension Pull	44.08	NO	
NAB	Near Above	43.90	BLK	0.920
NHI	Near Cesium High	43.90	BLK	0.920
NLO	Near Cesium Low	43.90	BLK	0.920
NVA	Near Valley	43.90	BLK	0.920
NBA	Near Barite	43.90	BLK	0.920
NDE	Near Density	43.90	BLK	0.920
NPK	Near Peak	43.90	BLK	0.920
NLI	Near Lithology	43.90	BLK	0.920
NBAU	Near Barite Unfiltered	43.90	BLK	0.250
NLIU	Near Lithology Unfiltered	43.90	BLK	0.250
FAB	Far Above	44.26	BLK	0.250
FHI	Far Cesium High	44.26	BLK	0.250
FLO	Far Cesium Low	44.26	BLK	0.250
FVA	Far Valley	44.26	BLK	0.250
FBA	Far Barite	44.26	BLK	0.250
FDE	Far Density	44.26	BLK	0.250
FPK	Far Peak	44.26	BLK	0.250
FLI	Far Lithology	44.26	BLK	0.250
PTMP	Pad Temperature	44.09	BLK	0.920
NHV	Near Detector High Voltage	43.49	NO	
FHV	Far Detector High Voltage	43.49	NO	
ITMP	Instrument Temperature	43.49	NO	
DDHV	Detector High Voltage	43.49	NO	

			MUDCAKE		MUDCAKE			
0	Gamma API	150						
api								
6	Bit Size	16	20	Bit Size	0 0	Bit Size	20	
inches								
6	Caliper	16	MD 1 : 600 ft	20	Caliper	0 0	Caliper	20
inches							BHVT	AHVT
			2400				900	475
							863	451
			2500				844	440
							823	428
			2600				803	416
							782	403
			2700				763	392









HALLIBURTON

Plot Time: 06-Nov-12 17:27:12
Plot Range: 2398 ft to 4946.5 ft
Data: WILKINSON_1_22\Well Based\DAQ-0001-008\
Plot File: \\-LOCAL-WILKINSON_1_22\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CHIPORO\AHV_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT

COMPANY	HARTMAN OIL CO., LLC		
WELL	WILKINSON 1-22		
FIELD	WILDCAT		
COUNTY	WICHITA	STATE	KANSAS
HALLIBURTON		DUAL SPACED NEUTRON SPECTRAL DENSITY LOG	