HALLIBURTON

SPECTRAL DENSITY DUAL SPACED NEUTRON LOG

COMPANY **BEREXCO INC.**

WELL **NEWBY 2-21**

FIELD **EVA SOUTH**

COUNTY **SCOTT** STATE **KANSAS**

COMPANY BEREXCO INC.
WELL NEWBY 2-21
FIELD EVA SOUTH
COUNTY SCOTT
STATE KANSAS

API No. 15-171-20866
Location 954' FSL & 2232' FEL

Sect. 21 Twp. 18S Rge. 31W

Other Services:
ACRT
MICROLOG

Permanent Datum	GL	Elev. 2943.0 ft	Elev.: K.B. 2955.0 ft
Log measured from	KB	, 12.0 ft above perm. Datum	D.F. 2954.0 ft
Drilling measured from	KB		G.L. 2943.0 ft

Date		14-Mar-12					
Run No.		ONE					
Depth - Driller		4770.00 ft					
Depth - Logger		4764.0 ft					
Bottom - Logged Interval		4741.0 ft					
Top - Logged Interval		2600.0 ft					
Casing - Driller		8.626 in @ 427.0 ft		@		@	
Casing - Logger		449.0 ft					
Bit Size		7.875 in		@		@	
Type Fluid in Hole		WATER BASED MUD					
Density	Viscosity	9.4 ppg	50.00 s/qt				
PH	Fluid Loss	10.00 pH	8.0 cptm				
Source of Sample		FLOWLINE					
Rm @ Meas. Temperature		0.660 ohmm @ 75.00 degF		@		@	
Rmf @ Meas. Temperature		0.89 ohmm @ 40.00 degF		@		@	
Rmc @ Meas. Temperature		1.450 ohmm @ 40.00 degF		@		@	
Source Rmf	Rmc	MEASURED	MEASURED				
Rm @ BHT		0.43 ohmm @ 118.0 degF		@		@	
Time Since Circulation		2.0 hr					
Time on Bottom		14-Mar-12 04:08					
Max. Rec. Temperature		118.0 degF @ 4764.0 ft		@		@	
Equipment	Location	10782954	LIBERAL				
Recorded By		J. BOLLOM		C. HAVERKAMP			
Witnessed By		P. WILSON					

Fold here

Service Ticket No.: 9338910 API Serial No.: 15-171-20866 PGM Version: WL INSITE R3.4.2 (Build 2)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

RESISTIVITY SCALE CHANGES

	Type Log	Depth	Scale Up Hole	Scale Down Hole
Date				
Sample No.				
Depth-Driller				
Type Fluid in Hole				
Density Viscosity				
Ph Fluid Loss				
Source of Sample				
Rm @ Meas. Temp	@	@		
Rmf @ Meas. Temp.	@	@		
Rmc @ Meas. Temp.	@	@		
Source Rmf Rmc				
Rm @ BHT	@	@		
Rmf @ BHT	@	@		
Rmc @ BHT	@	@		

RESISTIVITY EQUIPMENT DATA

	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
Run No.					
Serial No.					
Model No.					
Diameter					
Detector Model No.					
Type					
Length					
Distance to Source					

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.	ONE	Run No.	ONE
Serial No.	10811258	Serial No.		Serial No.	I145_M73803_P90	Serial No.	10735145
Model No.	GTET	Model No.		Model No.	SDLT-I	Model No.	DSNT-I
Diameter	3.625"	No. of Cent.		Diameter	4.5"	Diameter	3.625"
Detector Model No.	GTET	Spacing		Log Type	GAM-GAM	Log Type	NEU-NEU
Type	SCINT			Source Type	CS137	Source Type	AM241BE
Length	8'	LSA [Y/N]		Serial No.	5073GW	Serial No.	DSN-436
Distance to Source	N/A	FWDA [Y/N]		Strength	1.5 CI	Strength	

LOGGING DATA

GENERAL GAMMA ACOUSTIC DENSITY NEUTRON

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	4764	3750	REC	0	150				30	-10	2.71	30	-10	LIME
ONE	2950	2600	REC	0	150				30	-10	2.71	30	-10	LIME

DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

Remarks: TOOL SURVEYS NOT PERFORMED DUE TO TEMPERATURE

LCM REPORTED AT 4 LB/BBL

CHLORIDES REPORTED AT 1800 PPM

ANNULAR HOLE VOLUME CALCULATED FOR 5.5-INCH CASING

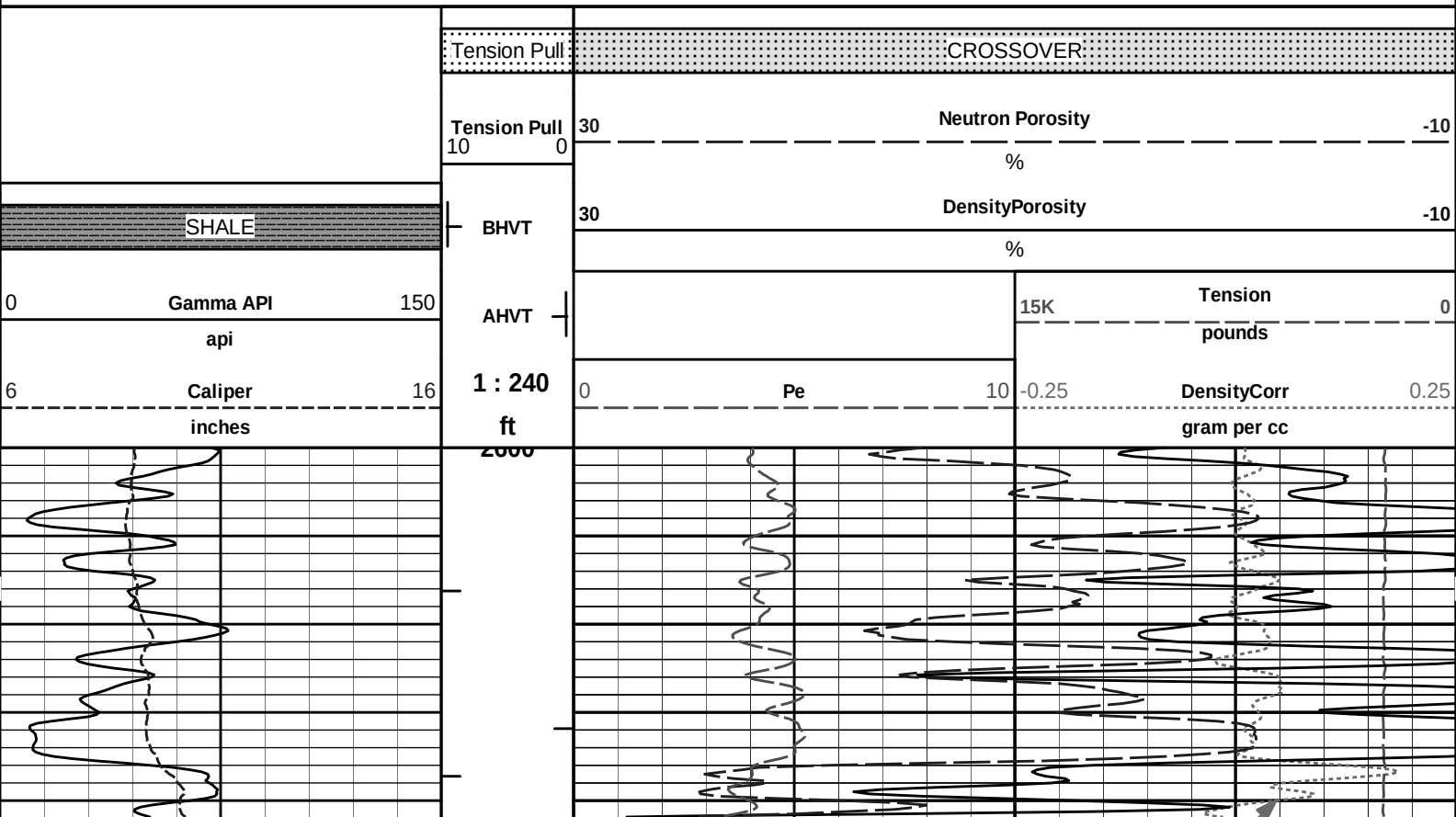
TODAY'S CREW: K. KING & B. TERREL

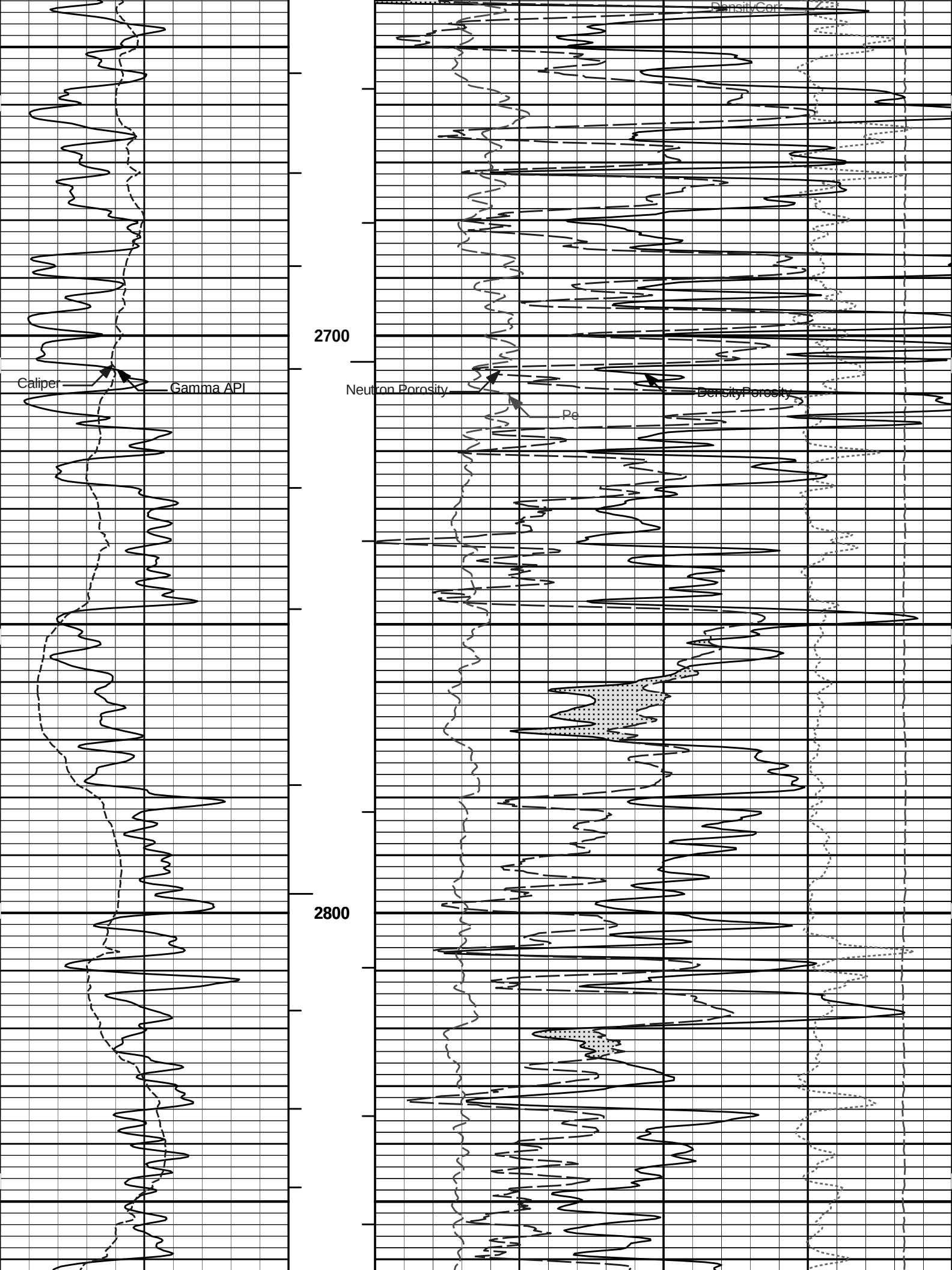
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KS. 620-624-8123

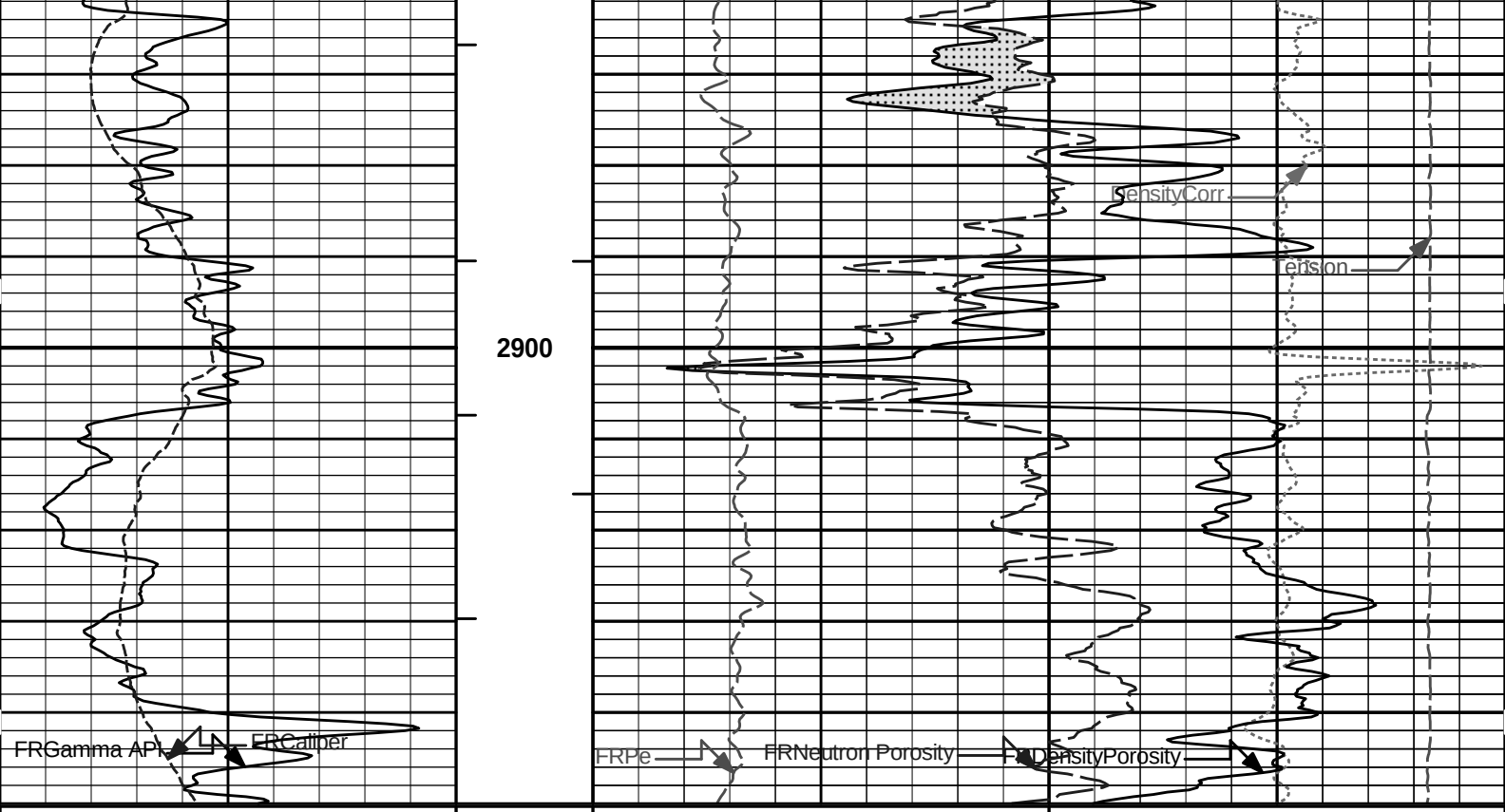
HALLIBURTON

Plot Time: 14-Mar-12 07:58:59
Plot Range: 2600 ft to 2950 ft
Data: NEWBY 2-21\Well Based\DETAIL_TOP
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

5 INCH MAIN LOG




DensityCorr
2700
Caliper
Gamma API
Neutron Porosity
Pe
DensityPorosity
2800



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

HALLIBURTON

Plot Time: 14-Mar-12 07:59:04
Plot Range: 2600 ft to 2950 ft
Data: NEWBY 2-21\Well Based\DETAIL_TOP
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

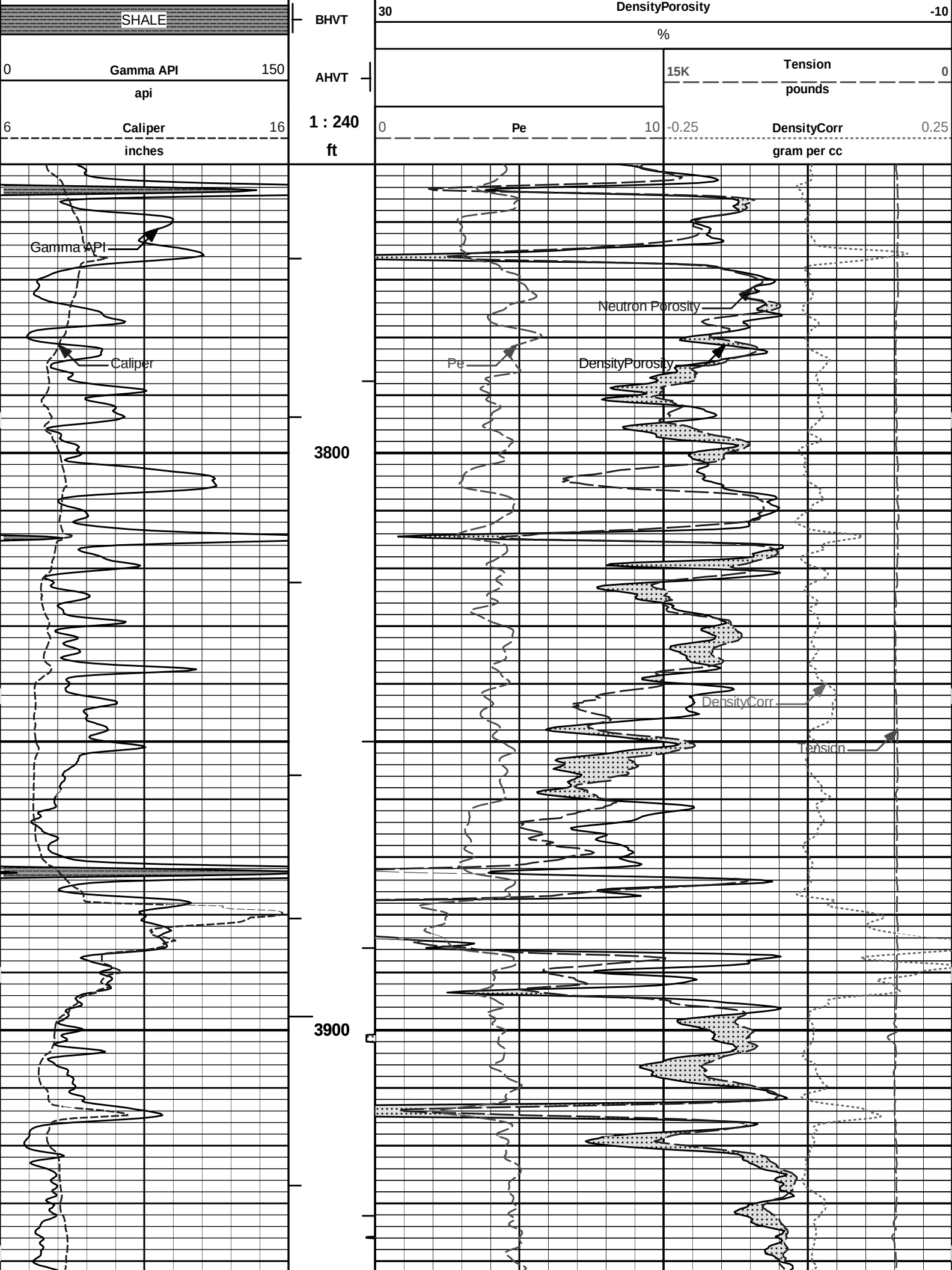
5 INCH MAIN LOG

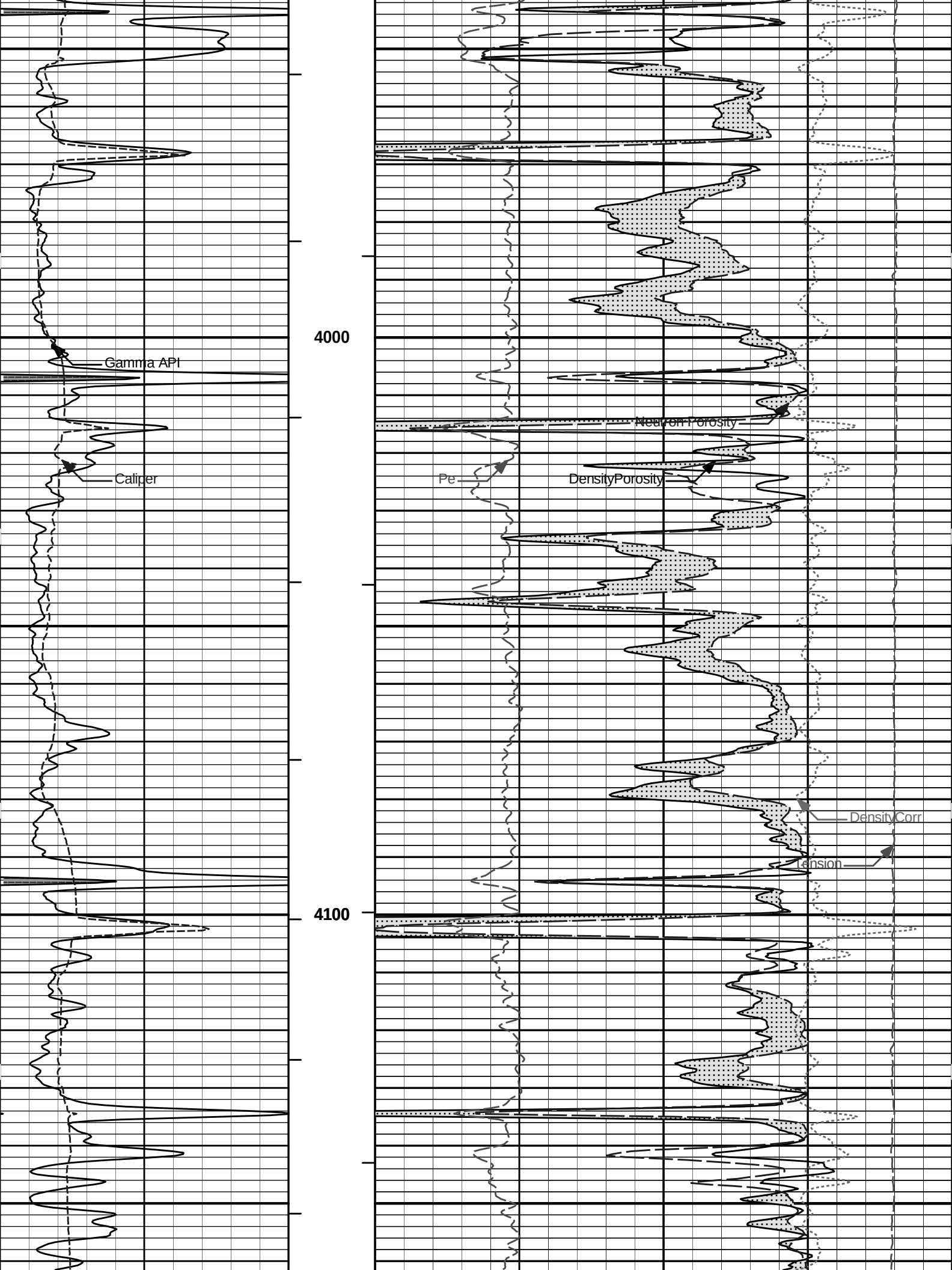
HALLIBURTON

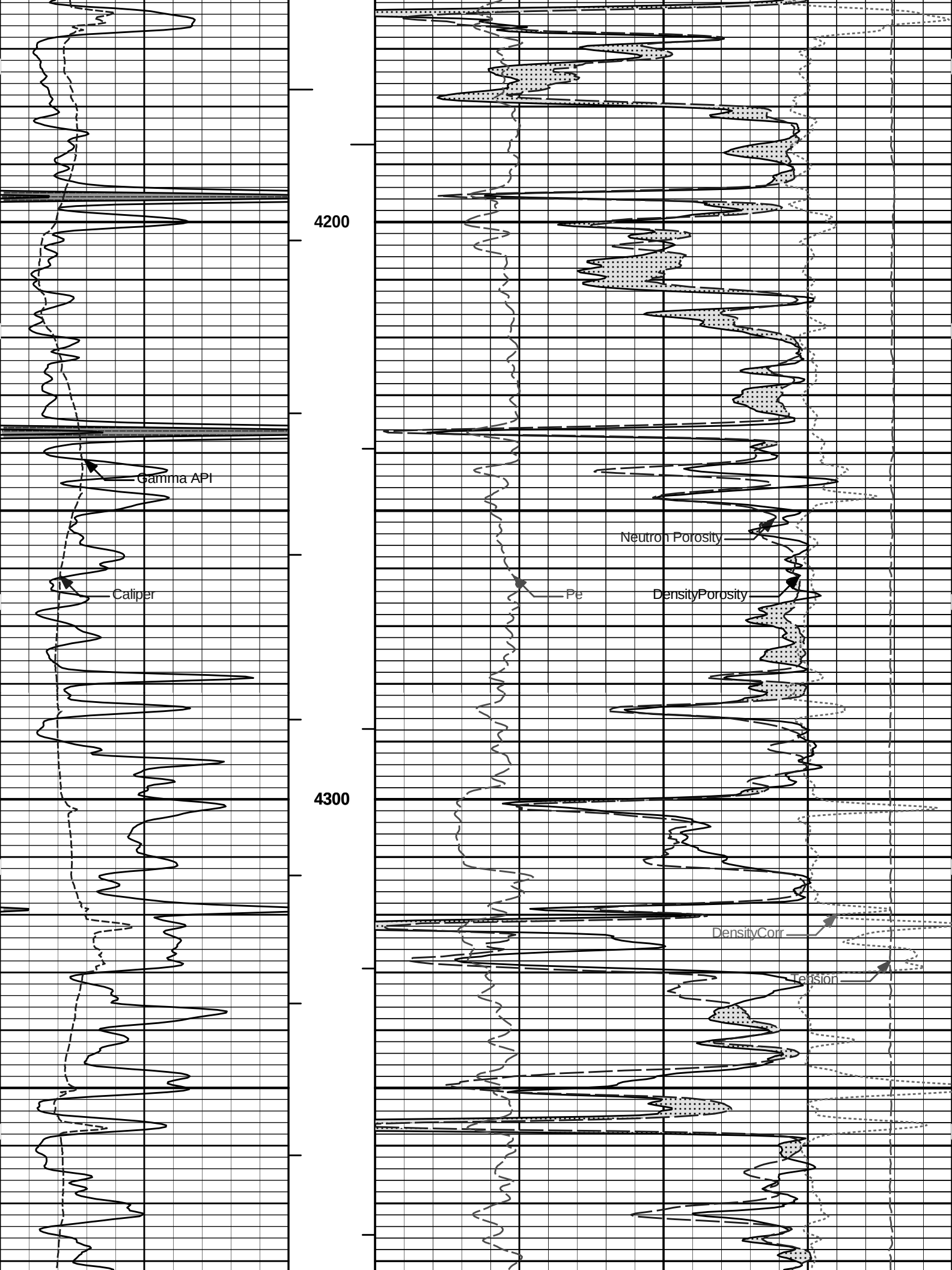
Plot Time: 14-Mar-12 07:59:04
Plot Range: 3750 ft to 4769 ft
Data: NEWBY 2-21\Well Based\DETAIL_BOTTOM
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

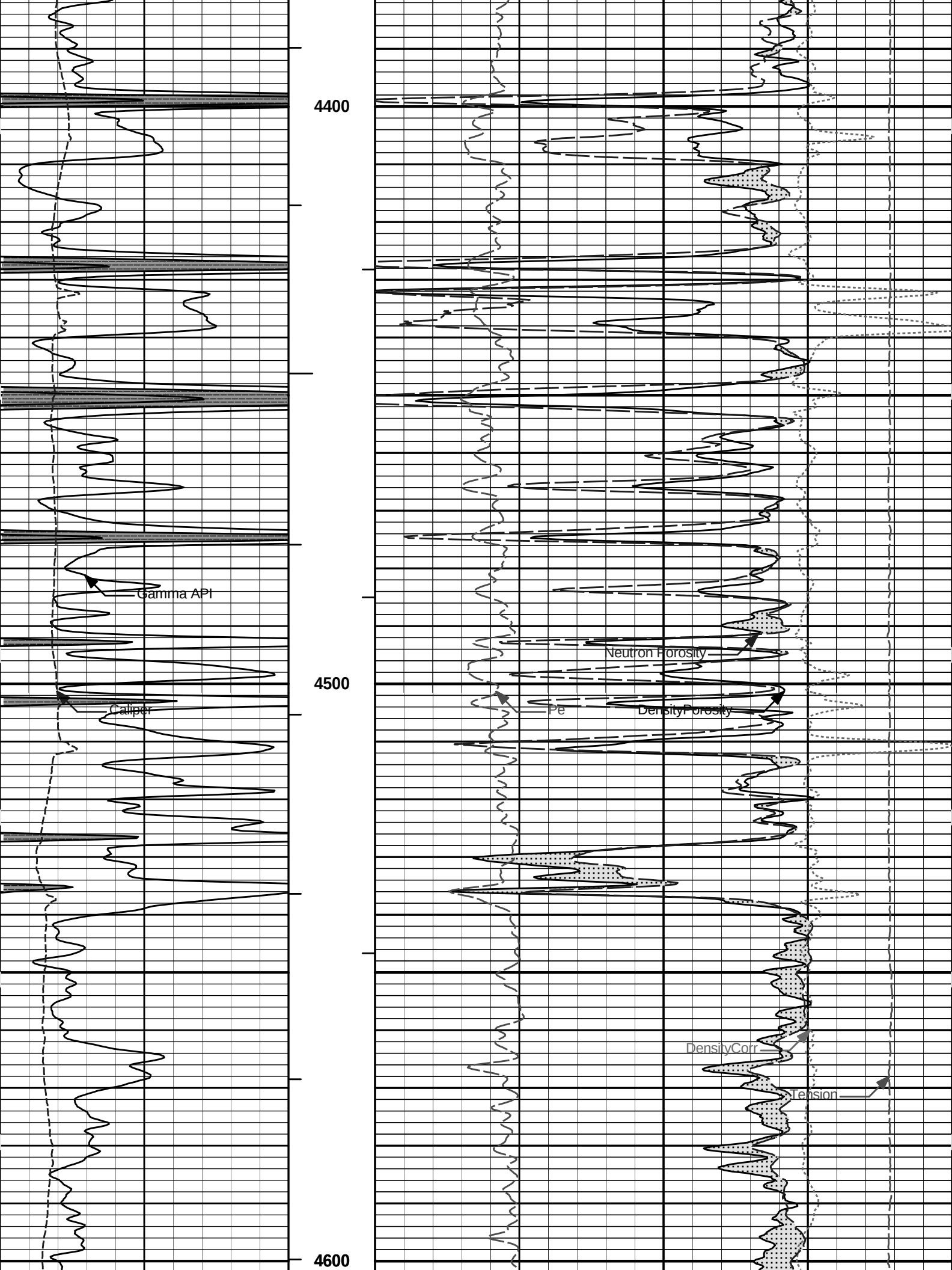
5 INCH MAIN LOG

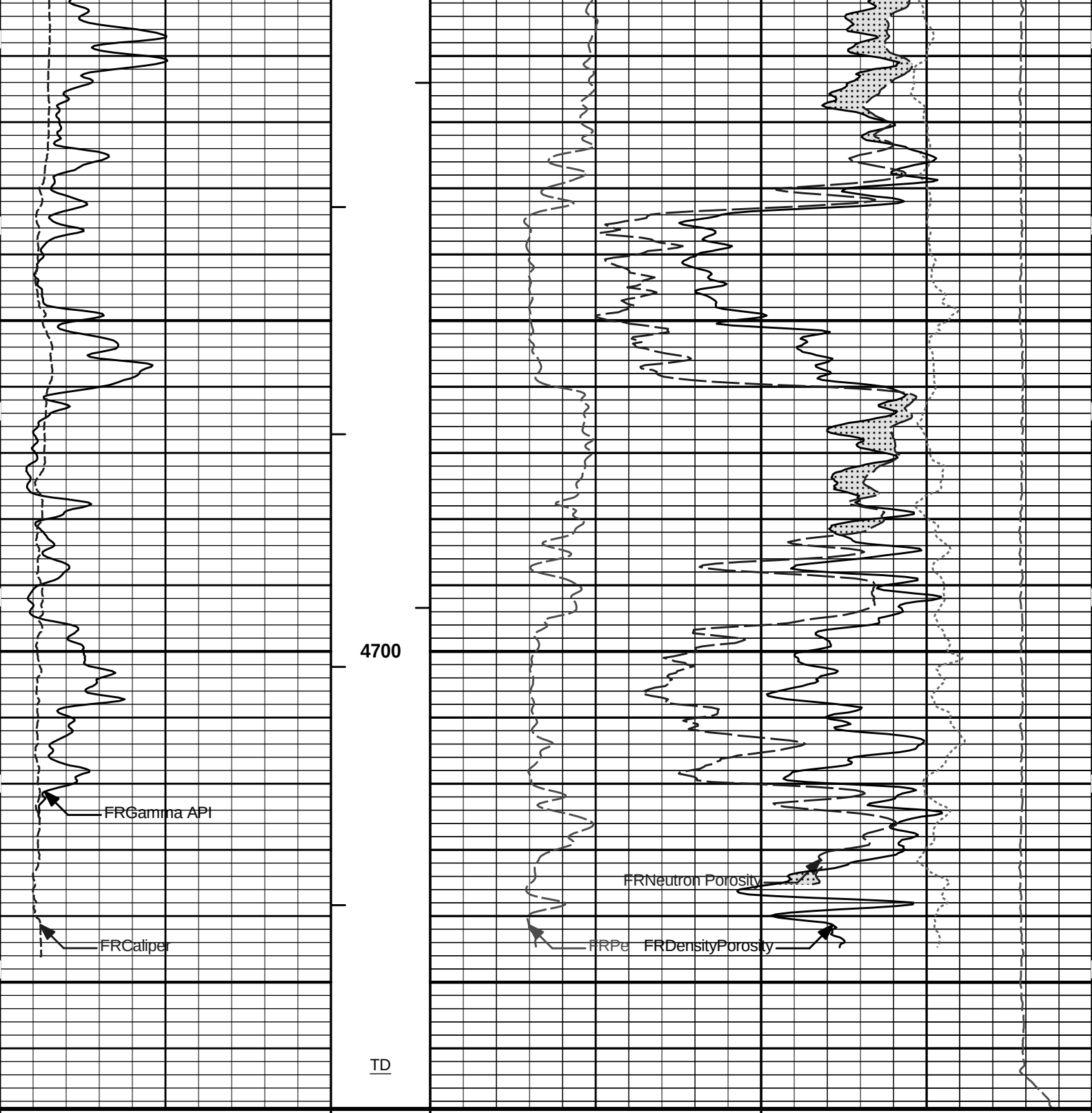
	Tension Pull	CROSSOVER
	Tension Pull 10 0	30 Neutron Porosity -10 %


SHALE
BHVT
AHVT
1 : 240
ft
0
Gamma API
150
api
6
Caliper
16
inches
30
DensityPorosity
-10
%
15K
Tension
0
pounds
0
Pe
10
-0.25
DensityCorr
0.25
gram per cc
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity
DensityCorr
Tension
3800
3900


4000
Gamma API
Caliper
Pe
DensityPorosity
DensityCorr
4100


4200
4300
Gamma API
Caliper
Pe
Neutron Porosity
DensityPorosity
DensityCorr
Tension


4400
4500
4600
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity
DensityCorr
Tension



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

HALLIBURTON

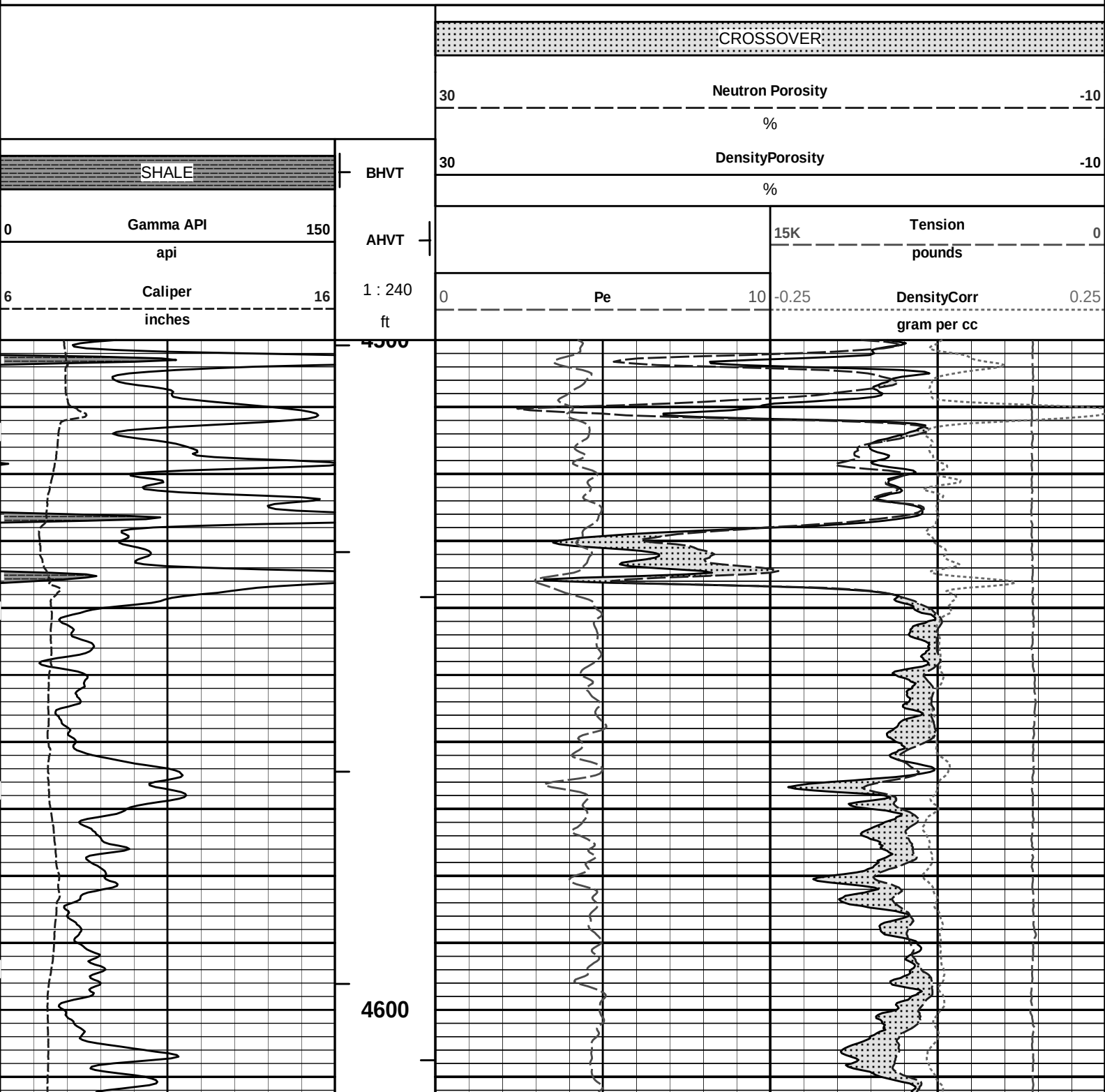
Plot Time: 14-Mar-12 07:59:10
Plot Range: 3750 ft to 4769 ft
Data: NEWBY 2-21\Well Based\DETAIL_BOTTOM\
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

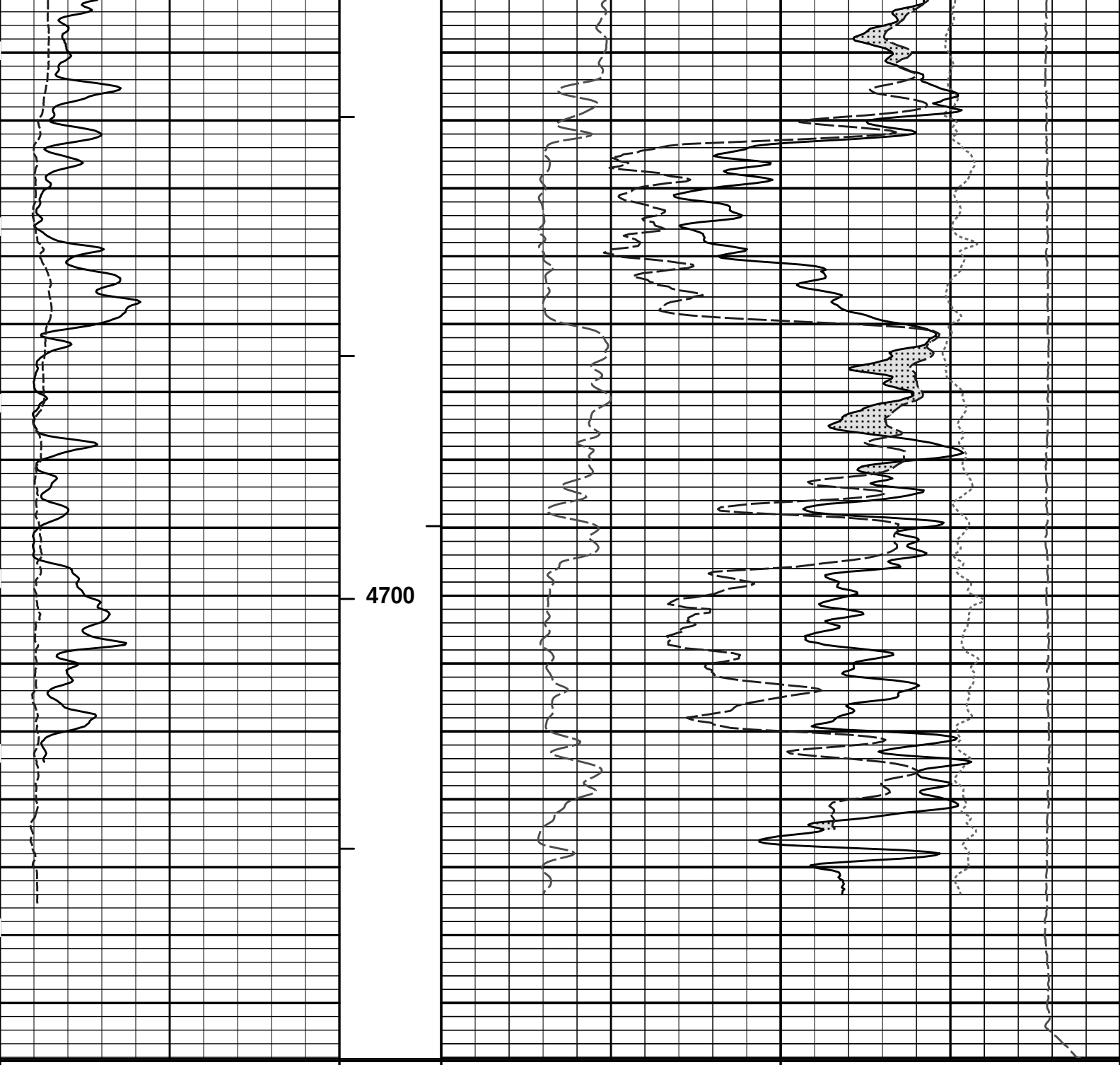
5 INCH MAIN LOG

HALLIBURTON

Plot Time: 14-Mar-12 07:59:10
Plot Range: 4500 ft to 4768.25 ft
Data: NEWBY 2-21\Well Based\REPEAT\
Plot File: \\PORO\Poro_IQ_5_REP_LIB

REPEAT SECTION





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

HALLIBURTON

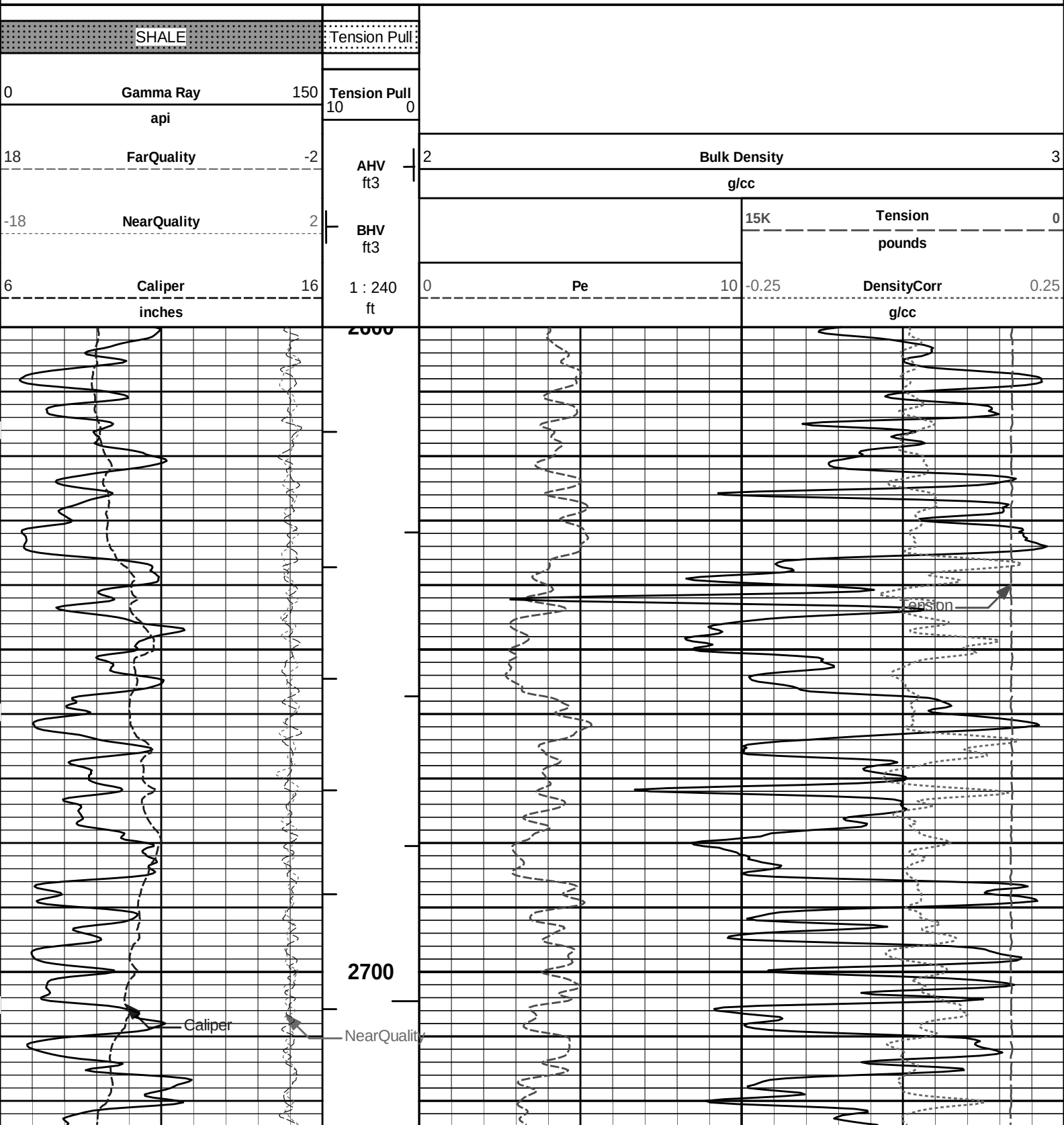
Plot Time: 14-Mar-12 07:59:13
Plot Range: 4500 ft to 4768.25 ft
Data: NEWBY 2-21\Well Based\REPEAT\
Plot File: \\PORO\Poro_IQ_5_REP_LIB

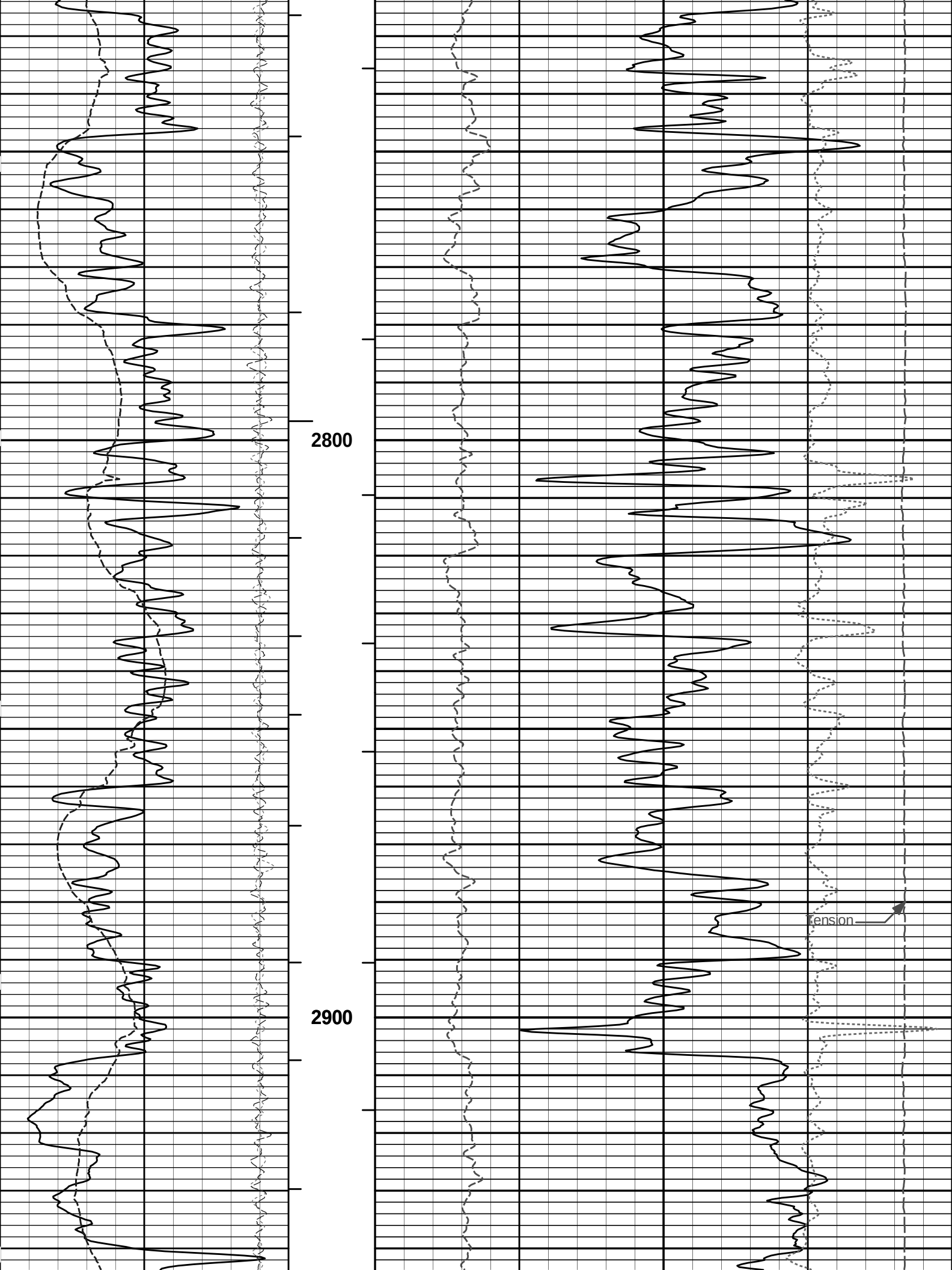
REPEAT SECTION

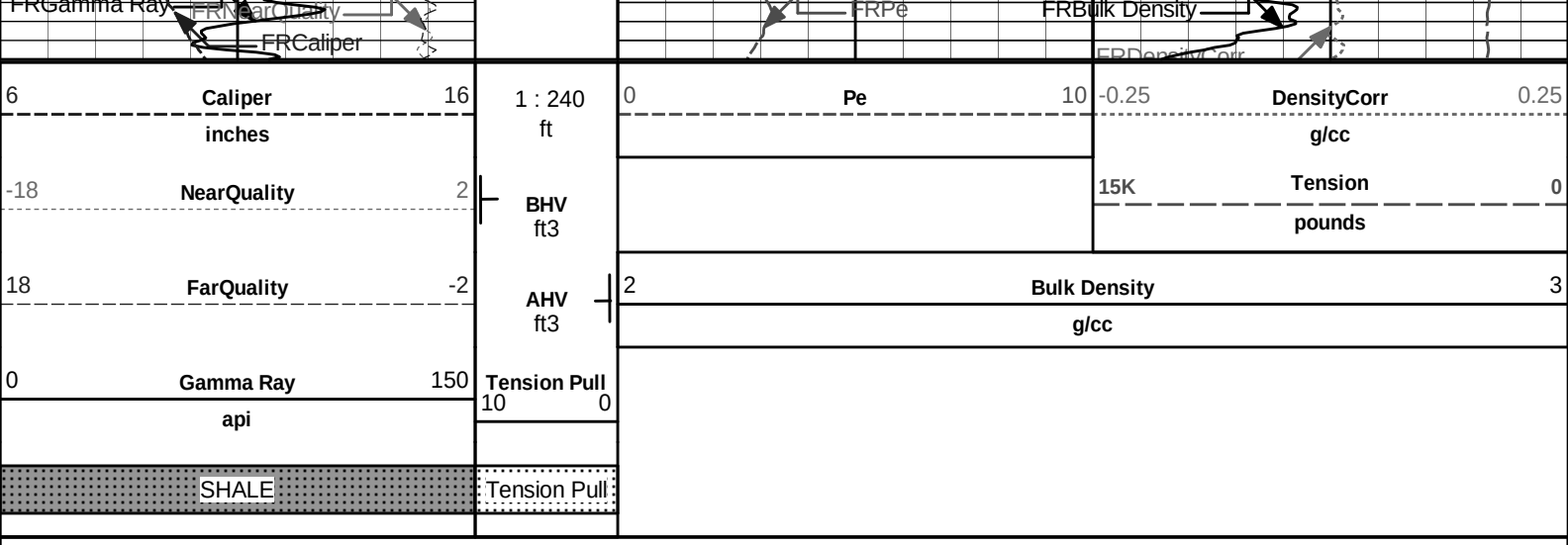
HALLIBURTON

Plot Time: 14-Mar-12 07:59:14
Plot Range: 2600 ft to 2950 ft
Data: NEWBY 2-21\Well Based\DETAIL_TOP\
Plot File: \\-LOCAL-\NEWBY 2-21\0001 SP-GTET-DSNT-SDLT-ACRT-CH\PORO\BULKD_5_MAIN_LIB

5 INCH MAIN LOG




2800
2900
Tension



HALLIBURTON

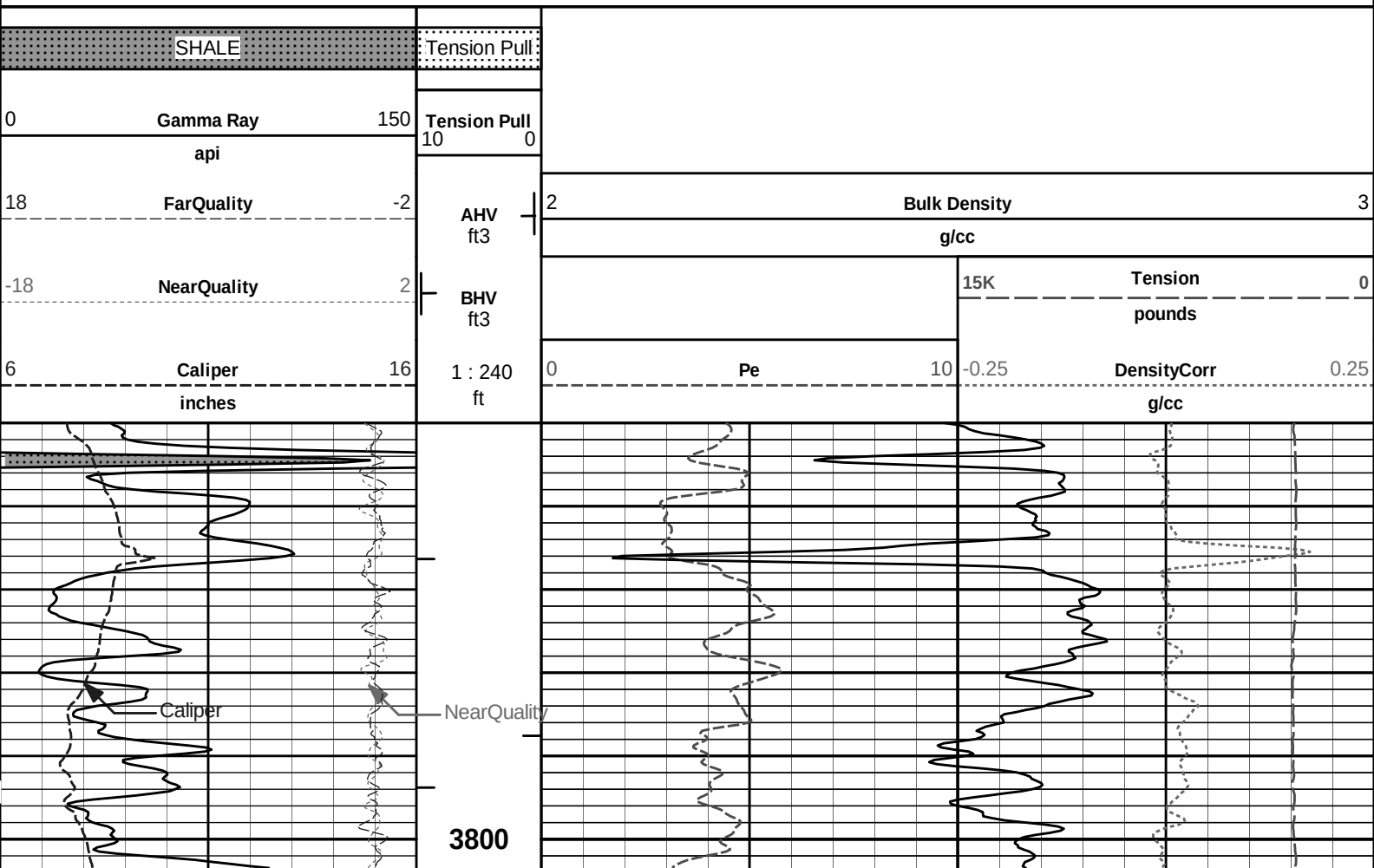
Plot Time: 14-Mar-12 07:59:16
Plot Range: 2600 ft to 2950 ft
Data: NEWBY 2-21\Well Based\DETAIL_TOP
Plot File: \\-LOCAL-\NEWBY 2-21\0001 SP-GTET-DSNT-SDLT-ACRT-CH\PORO\BULKD_5_MAIN_LIB

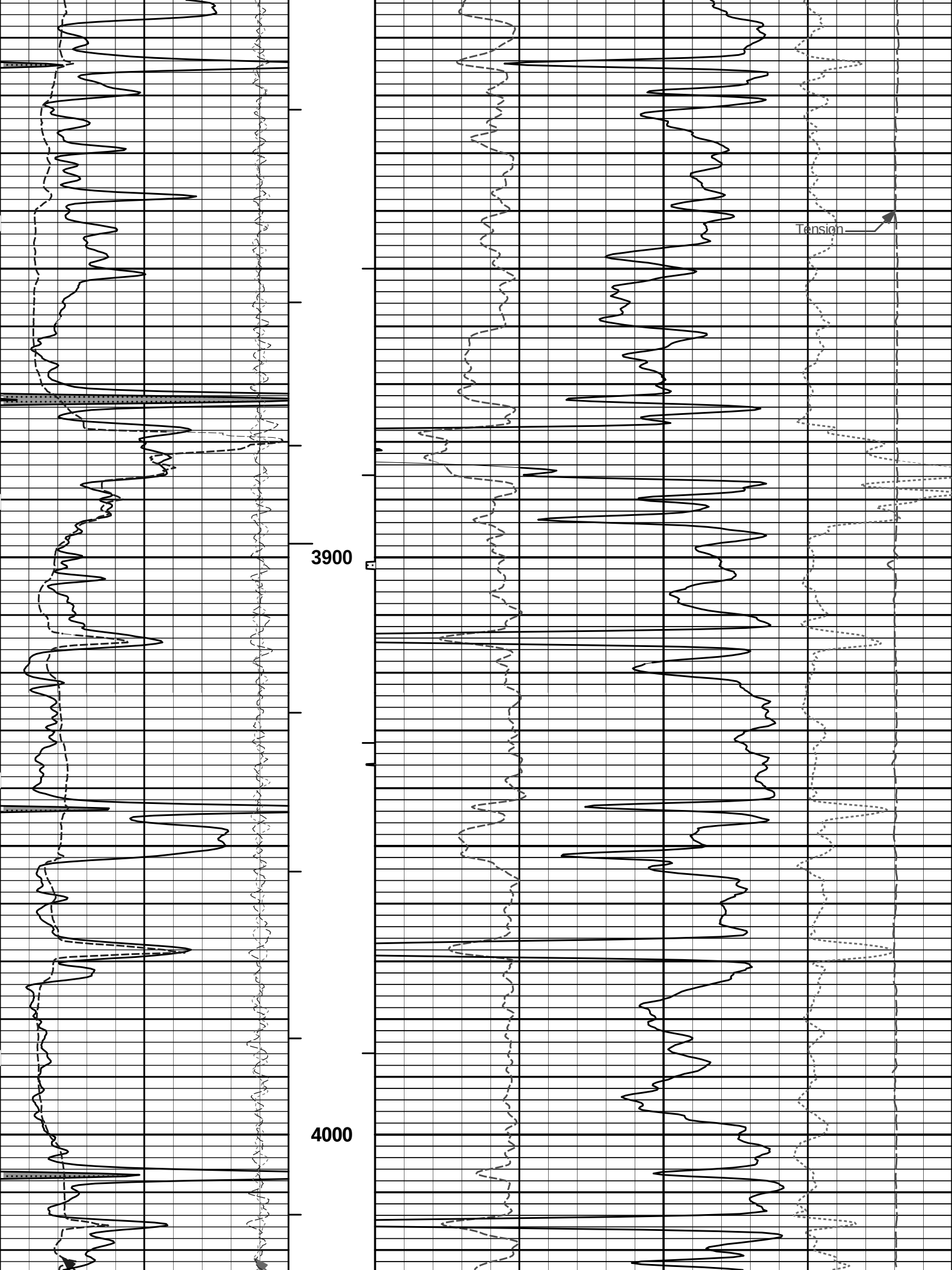
5 INCH MAIN LOG

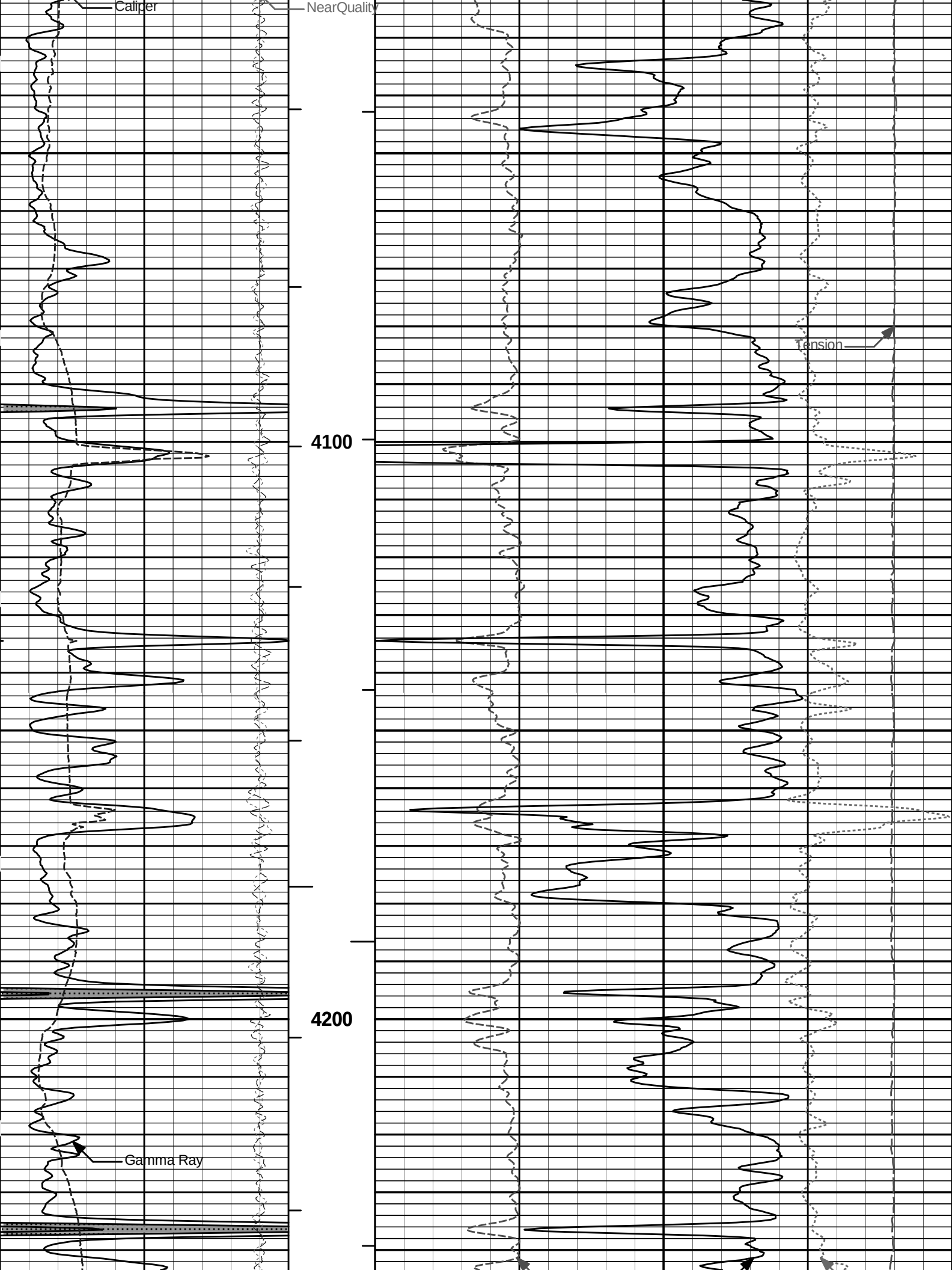
HALLIBURTON

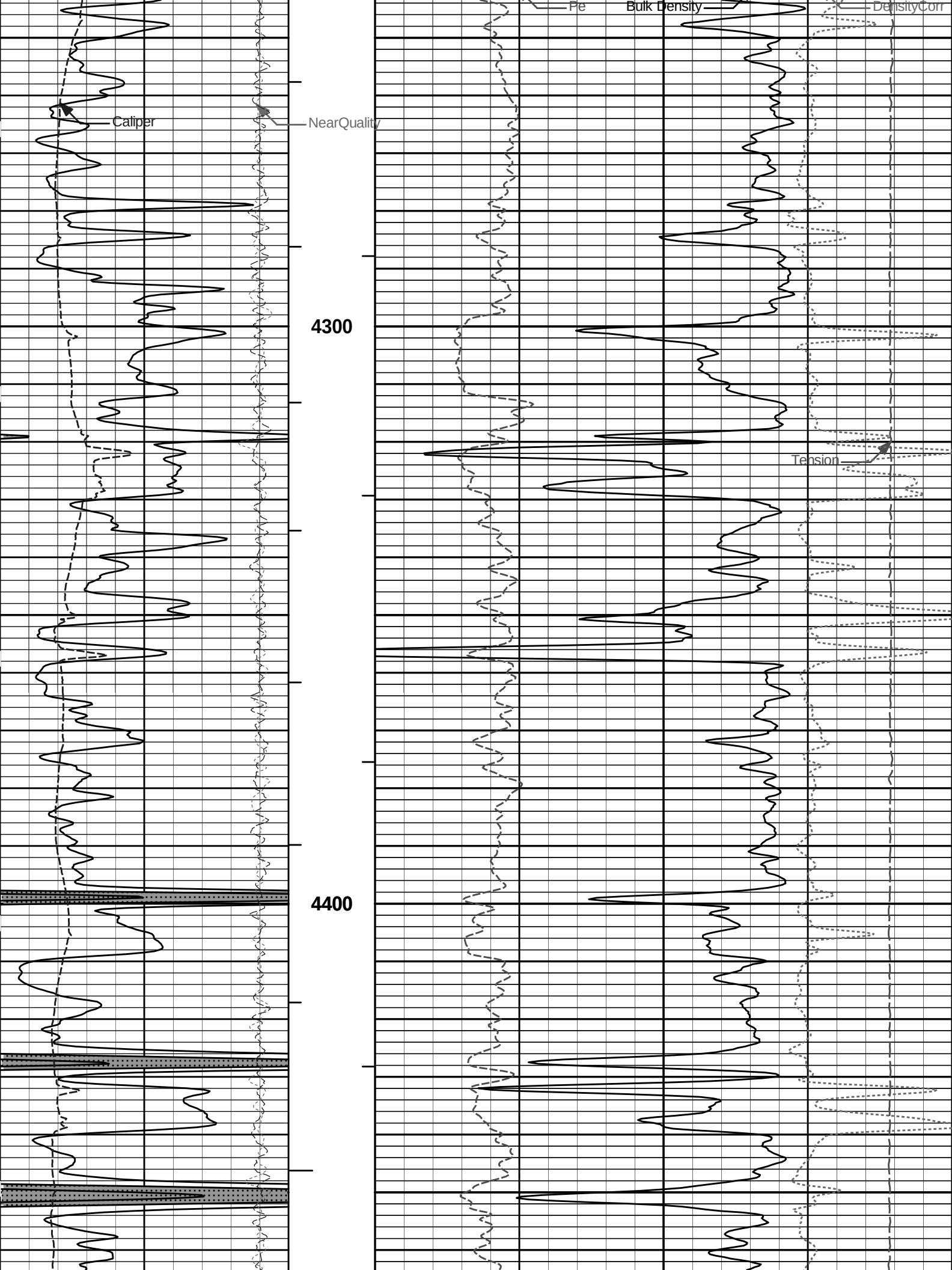
Plot Time: 14-Mar-12 07:59:16
Plot Range: 3750 ft to 4769 ft
Data: NEWBY 2-21\Well Based\DETAIL_BOTTOM
Plot File: \\-LOCAL-\NEWBY 2-21\0001 SP-GTET-DSNT-SDLT-ACRT-CH\PORO\BULKD_5_MAIN_LIB

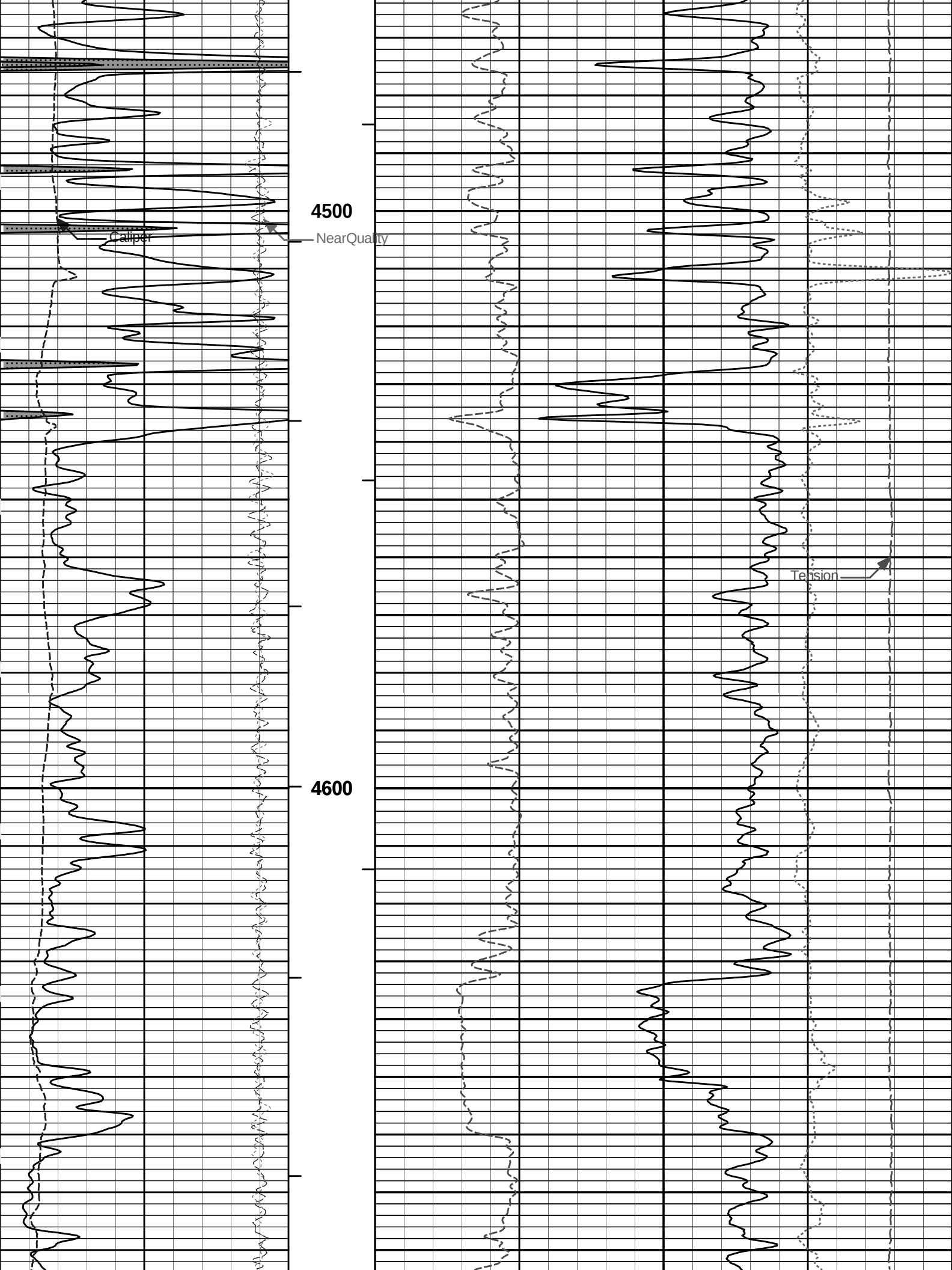
5 INCH MAIN LOG

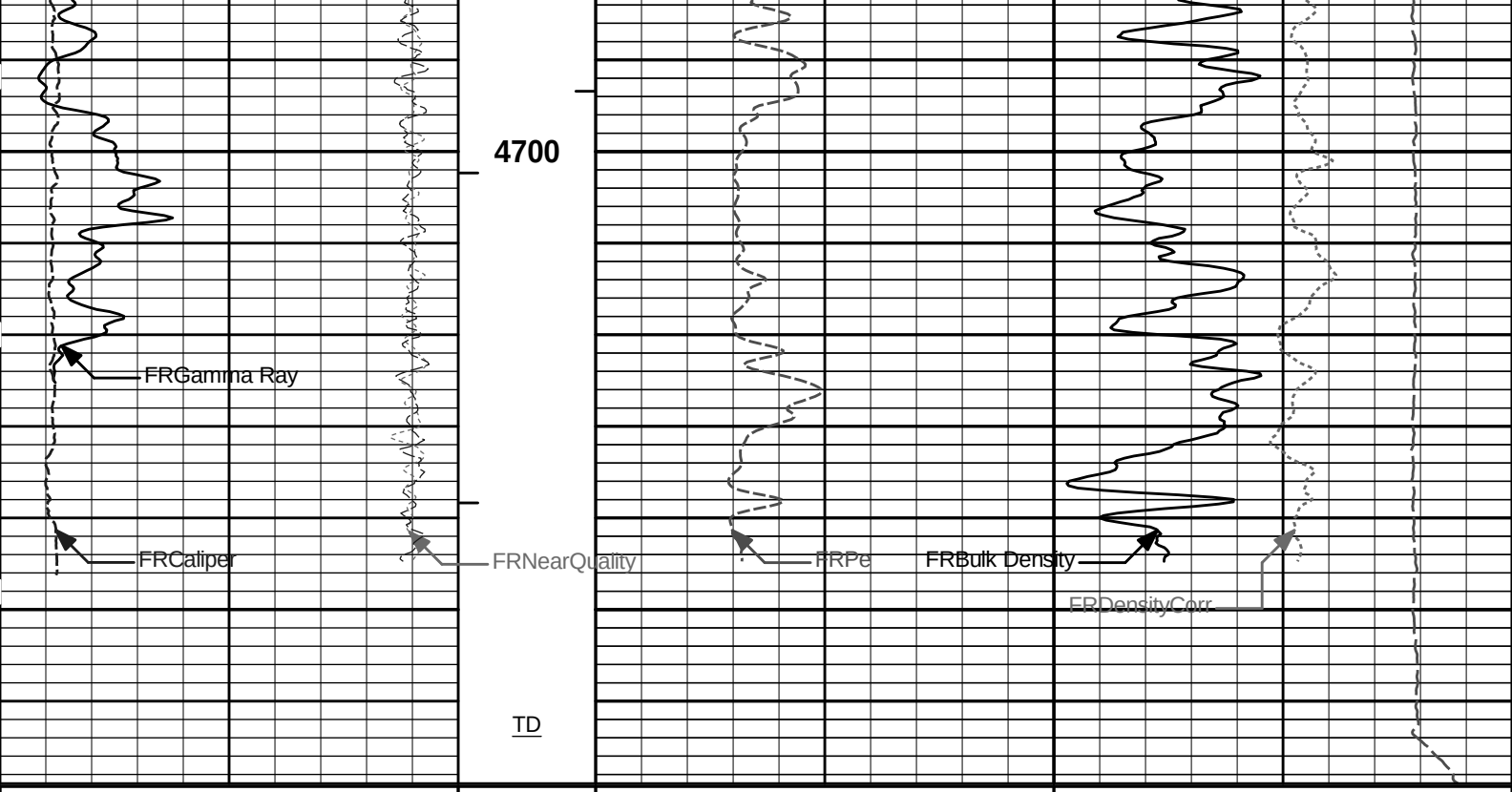



Tension
3900
4000


Caliper
NearQuality
Tension
4100
4200
Gamma Ray


Caliper
NearQuality
Pe
Bulk Density
DensityCorr
4300
Tension
4400


4500
4600
Caliper
NearQuality
Tension



6 Caliper 16 inches	1 : 240 ft	0 Pe 10	-0.25 DensityCorr 0.25 g/cc	
-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	Tension Pull 10 0			
SHALE	Tension Pull			

HALLIBURTON

Plot Time: 14-Mar-12 07:59:20
Plot Range: 3750 ft to 4769 ft
Data: NEWBY 2-21\Well Based\DETAIL_BOTTOM
Plot File: \\-LOCAL-\NEWBY 2-21\0001 SP-GTET-DSNT-SDLT-ACRT-CH\PORO\BULKD_5_MAIN_LIB

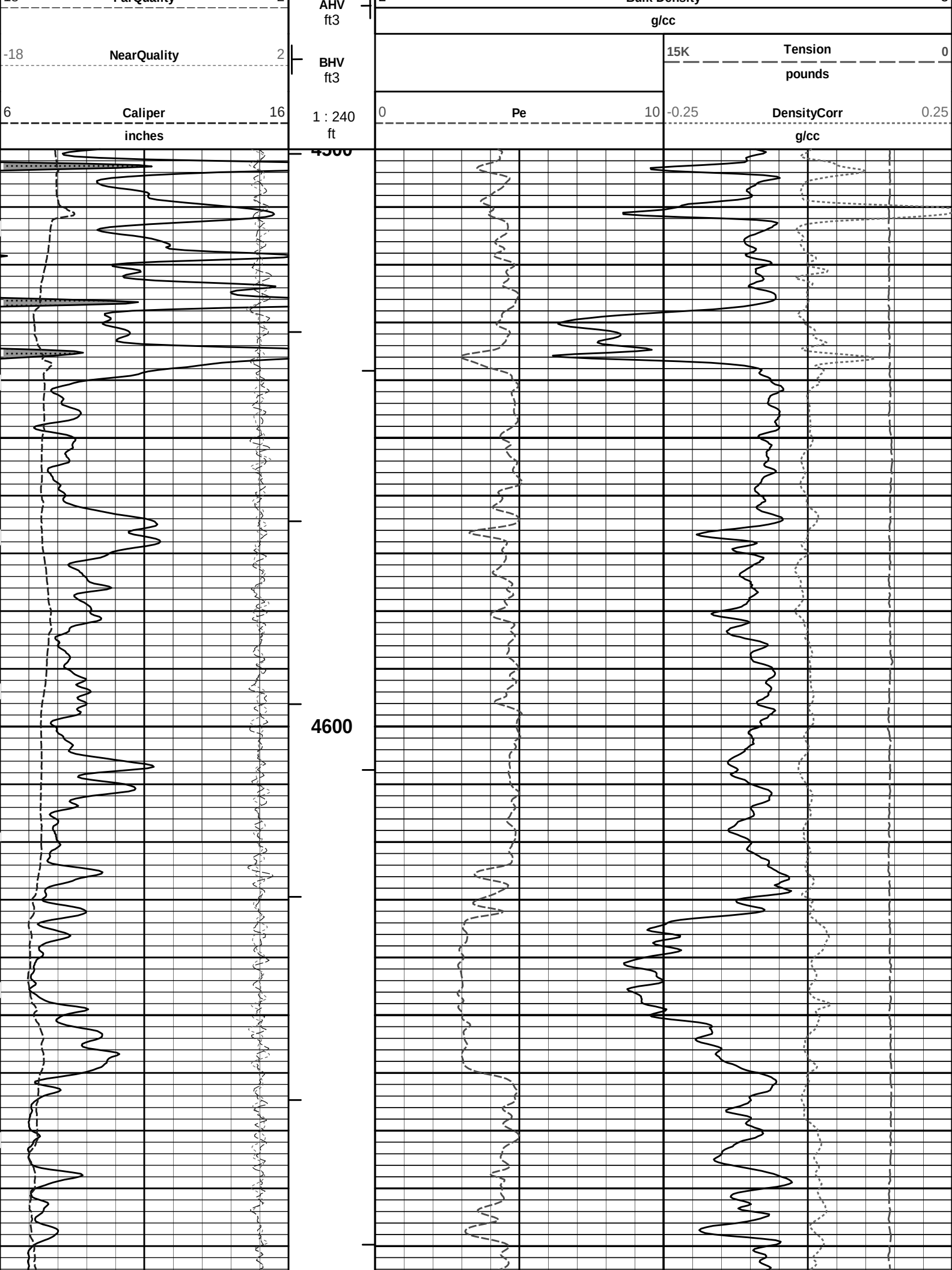
5 INCH MAIN LOG

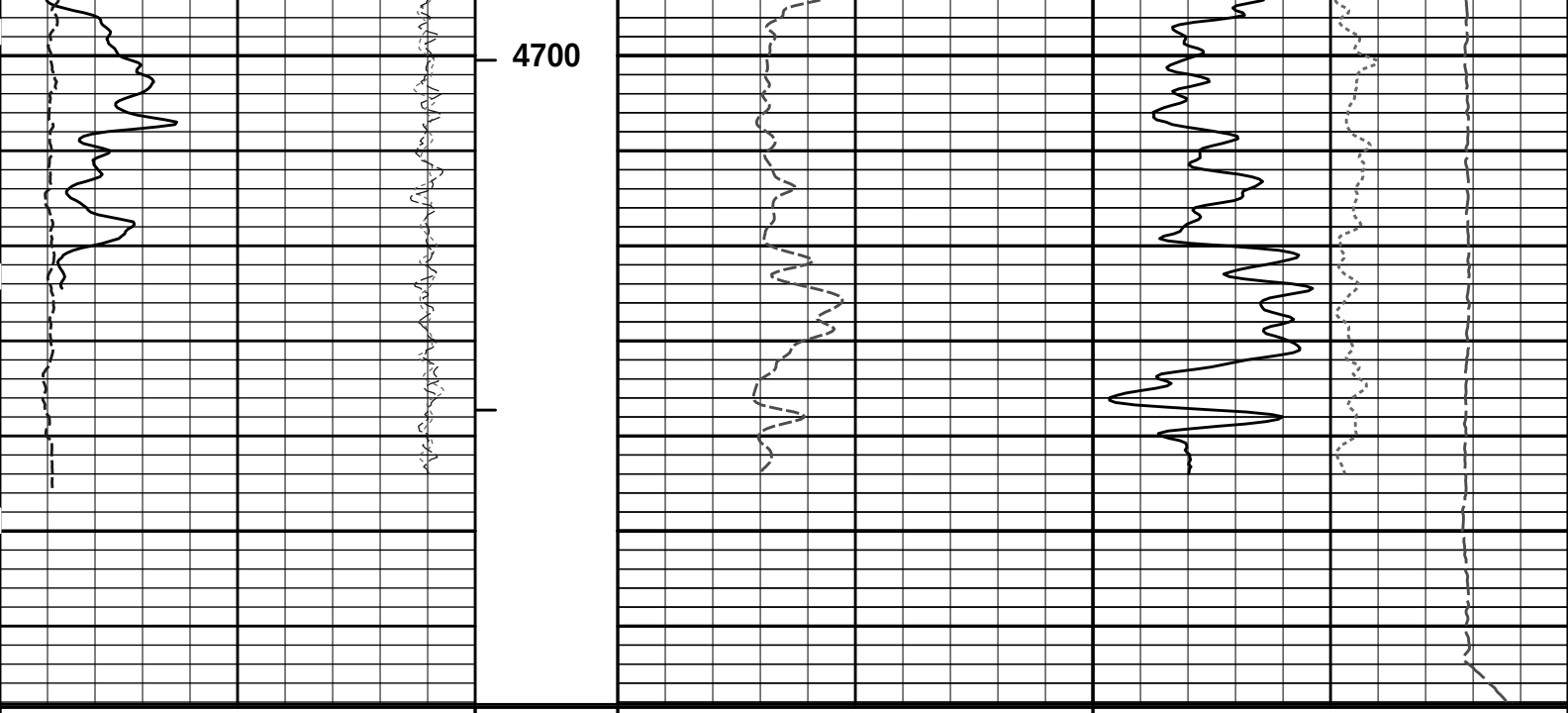
HALLIBURTON

Plot Time: 14-Mar-12 07:59:20
Plot Range: 4500 ft to 4768.25 ft
Data: NEWBY 2-21\Well Based\REPEAT
Plot File: \\-LOCAL-\NEWBY 2-21\0001 SP-GTET-DSNT-SDLT-ACRT-CH\PORO\BULKD_5_REP_LIB

REPEAT SECTION

SHALE		
0 Gamma Ray 150 api		
18 FarQuality -2		2 Bulk Density 3


FarQuality
-18
NearQuality
2
6
Caliper
16
inches
AHV
ft3
BHV
ft3
1 : 240
ft
4500
4600
Bulk Density
g/cc
15K
Tension
0
pounds
0
Pe
10
-0.25
DensityCorr
0.25
g/cc



6 Caliper 16	1 : 240 ft	0 Pe 10	-0.25 DensityCorr 0.25	
inches			g/cc	
-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				
SHALE				

HALLIBURTON

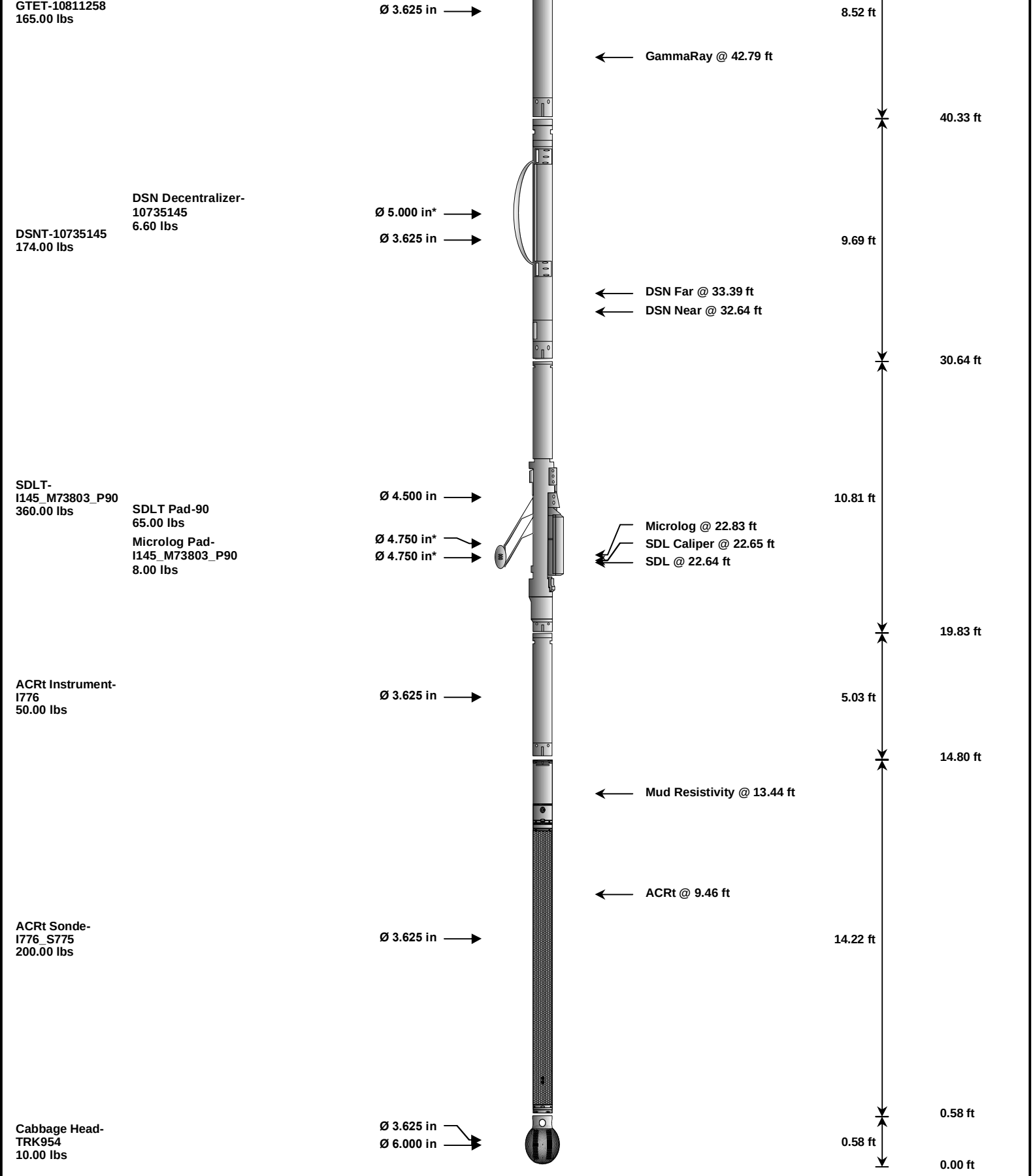
Plot Time: 14-Mar-12 07:59:22
Plot Range: 4500 ft to 4768.25 ft
Data: NEWBY 2-21\Well Based\REPEAT\
Plot File: \\-LOCAL-\NEWBY 2-21\0001 SP-GTET-DSNT-SDLT-ACRT-CH\PORO\BULKD_5_REP_LIB

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Cable Head-PROT01 30.00 lbs		Ø 3.625 in			1.92 ft	54.51 ft
SP Sub-PROT01 60.00 lbs		Ø 3.625 in		SP @ 50.81 ft	3.74 ft	52.59 ft
						48.85 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
CH	Standard OH Cable Head	PROT01	30.00	1.92		52.59	300.00
SP	SP Sub	PROT01	60.00	3.74		48.85	300.00
GTET	Gamma Telemetry Tool	10811258	165.00	8.52		40.33	60.00
DSNT	Dual Spaced Neutron	10735145	174.00	9.69		30.64	60.00
DCNT	DSN Decentralizer	10735145	6.60	5.13	*	33.97	300.00
SDLT	Spectral Density Tool	I145_M73803_P90	360.00	10.81		19.83	60.00
MICP	Microlog Pad	I145_M73803_P90	8.00	1.00	*	22.33	60.00

SDLP	Density Insite Pad	90	65.00	2.55	*	22.04	60.00
ACRt	Array Compensated True Resistivity Instrument Section	I776	50.00	5.03		14.80	300.00
ACRt	Array Compensated True Resistivity	I776_S775	200.00	14.22		0.58	300.00
CBHD	Cabbage Head	TRK954	10.00	0.58		0.00	300.00
Total			**1,128.60**	**54.51**			

* Not included in Total Length and Length Accumulation.

Data: NEWBY 2-21\0001 SP-GTET-DSNT-SDLT-ACRT-CH\IDLE **Date: 14-Mar-12 04:45:16**

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	**GTET - 10811258**	**Reference Calibration Date:**	**27-Feb-12 10:42:34**
Engineer:	**T. HYDE**	**Calibration Date:**	**27-Feb-12 10:45:14**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Measurement	Measured	Calibrated	Units
Background	43.9	44.1	api
Background + Calibrator	275.0	276.1	api
Calibrator	231.1	232.0	api

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	**DSNT - 10735145**	**Reference Calibration Date:**	**23-Jan-12 13:47:26**
Engineer:	**T. HYDE**	**Calibration Date:**	**27-Feb-12 13:38:46**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

Logging Source S/N: 954

Tank Serial Number: LIBERAL_NEUTRON

Reference value assigned to Tank: 51.680

Snow Block S/N: 954

Calibration Tank Water Temperature: 67 degF

Min. Tool Housing Outside Diameter: 3.600 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.933	0.931	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):	0.2094	0.2088	0.0006	+/- 0.0020
Calibrated Ratio:	9.67	9.65	0.020	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0624	0.02000 - 0.09000

PASS/FAIL SUMMARY

Background Check:	Passed
Gain-Range Check:	Passed
Snow-Block Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	**SDLT - I145_M73803_P90**	**Reference Calibration Date:**	**13-Mar-12 07:51:45**
Engineer:	**J. BOLLOM**	**Calibration Date:**	**13-Mar-12 07:57:35**
Software Version:	**WL INSITE R3.4.2 (Build 2)**	**Calibration Version:**	**1**

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-2639.33	-2523.52	-7000.00 - -1000.00
Pad Gain	0.0003736	0.0003667	0.000200 - 0.000600
Arm Offset	-2860.63	-3477.34	-5000.00 - 3000.00
Arm Gain	0.0005039	0.0005744	0.000300 - 0.000700
Arm Power	-0.000003830	-0.000008404	-0.000010 - 0.000010

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)	1.99	2.00	0.01	+/- 0.20
Medium Ring (in)	3.78	3.75	-0.03	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.58	6.50	-0.08	+/- 0.20
Medium Ring (in)	8.18	8.25	0.07	+/- 0.20
Large Ring (in)	15.05	15.00	-0.05	+/- 0.20

PASS/FAIL SUMMARY

Calibration-Coefficients Range Check:	Passed
Ring-Measurement Check:	Passed

PASS/FAIL SUMMARY

Calibration-Coefficients Range Check:	Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	**ACRt Sonde - I776_S775**	**Reference Calibration Date:**	**19-Jan-12 15:31:50**
Engineer:	**T. HYDE**	**Calibration Date:**	**13-Mar-12 13:01:10**
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	1.0182	1.05	0.95	1.0238	1.05	0.95	1.0250	1.05
A2 (50")	0.95	1.0191	1.05	0.95	1.0247	1.05	0.95	1.0239	1.05
A3 (29")	0.95	1.0020	1.05	0.95	1.0070	1.05	0.95	1.0057	1.05
A4 (17")	0.95	1.0042	1.05	0.95	1.0078	1.05	0.95	1.0098	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0196	1.05	0.95	1.0218	1.05
A6 (6")	N/A	N/A	N/A	0.95	1.0299	1.05	0.95	1.0326	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	-1.736	2	-6	-4.151	-2	-8	-4.087	-2
A2 (50")	-7	-3.028	-1	-6	-4.236	-2	-7	-4.272	-2
A3 (29")	-27	-14.459	-9	-9	-4.439	-3	-7	-2.628	-1
A4 (17")	-180	-101.693	-60	-45	-31.226	-15	-39	-24.236	-13
A5 (10")	N/A	N/A	N/A	-150	-119.327	-50	-80	-54.577	-10
A6 (6")	N/A	N/A	N/A	175	286.532	525	90	141.850	270

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.8630	1.3
36K	1.0	1.1828	2.0
72K	1.0	1.4604	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	0.991	1.05

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT Pad - 90
Engineer: T. HYDE
Software Version: WL INSITE R3.4.2 (Build 2)
Reference Calibration Date: 27-Feb-12 11:07:59
Calibration Date: 27-Feb-12 11:25:47
Calibration Version: 1

Logging Source S/N: 5073GW
Aluminum Block S/N: LIBERAL — Density: 2.598g/cc — Pe: 3.170
Magnesium Block S/N: LIBERAL — Density: 1.684g/cc — Pe: 2.598

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	0.9856	0.9682	0.90 - 1.10
Near Dens Gain	0.9885	0.9615	0.90 - 1.10
Near Peak Gain	0.9735	0.9585	0.90 - 1.10
Near Lith Gain	0.9731	0.9312	0.90 - 1.10
Far Bar Gain	1.0029	1.0019	0.90 - 1.10
Far Dens Gain	0.9915	0.9920	0.90 - 1.10
Far Peak Gain	0.9841	0.9845	0.90 - 1.10
Far Lith Gain	0.9542	0.9507	0.90 - 1.10
Near Bar Offset	0.3137	0.4689	NONE
Near Dens Offset	0.2724	0.5100	NONE
Near Peak Offset	0.3884	0.5102	NONE
Near Lith Offset	0.3734	0.7177	NONE
Far Bar Offset	0.0764	0.0851	NONE
Far Dens Offset	0.1574	0.1521	NONE
Far Peak Offset	0.1642	0.1606	NONE
Far Lith Offset	0.3045	0.3323	NONE
Near Bar Background	888.26	884.21	700 - 1450
Near Dens Background	294.87	292.50	230 - 480
Near Peak Background	128.25	129.52	100 - 210
Near Lith Background	157.60	157.77	125 - 260
Far Bar Background	596.35	593.58	450 - 900
Far Dens Background	234.07	233.79	175 - 345
Far Peak Background	92.13	93.24	70 - 140
Far Lith Background	97.19	97.98	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change

MAGNESIUM				
Density (g/cc)	1.688	1.684	-0.004	+/- 0.015
Pe	2.517	2.555	0.038	+/- 0.150
ALUMINUM				
Density (g/cc)	2.597	2.598	0.001	+/- 0.01500
Pe	3.140	3.124	-0.016	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0017	+/- 0.0110	0.0029	+/- 0.0140
Magnesium Block	-0.0007	+/- 0.0110	-0.0011	+/- 0.0140
Aluminum Block	0.0006	+/- 0.0110	0.0010	+/- 0.0140
Resolution	8.97	6.00 - 11.50	9.18	6.00 - 11.50
Internal Verifier(B+D+P+L)	1464	1200 - 2700	1019	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

MICRO LOG SHOP CALIBRATION

Tool Name: Microlog Pad - I145_M73803_P90
Reference Calibration Date: 13-Jan-12 12:43:35
Engineer: J. BOLLOM
Calibration Date: 12-Mar-12 08:17:08
Software Version: WL INSITE R3.4.2 (Build 2)
Calibration Version: 1

CALIBRATION COEFFICIENT SUMMARY

Measurement	Micro Log Normal		Micro Log Lateral		
	Measured	Calibrated	Measured	Calibrated	Units
Tool Zero	-0.08	-0.07	-0.00	-0.01	ohmm
Calibration Point #1	-0.02	0.00	0.00	0.00	ohmm
Calibration Point #2	19.92	20.00	19.94	20.00	ohmm
Internal Reference	19.85	19.93	19.94	19.99	ohmm

Measurement	Micro Log Normal Tool Value	Micro Log Lateral Tool Value	Units
Tool Zero	-0.32	-0.77	V
Calibration Point #1	17.42	1.71	V
Calibration Point #2	5373.42	6988.77	V
Internal Reference	5354.44	6985.83	V

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10811258						
Gamma Ray Calibrator	232.0	----------	----------	0.0	+/- 9.00	api
DSNT-10735145						

Snow-Block Porosity	0.0624	----------	----------	0.0000	+/- -.--	decp
SDLT-I145_M73803_P90						
Pad Extension	3.75	----------	----------	0.00	+/-0.20	in
Ring Diameter	8.25	----------	----------	0.00	+/-0.20	in
ACRt Sonde-I776_S775						
Mud Cell	0.991	----------	----------	0.000	----------	ohm-m
SDLT Pad-90						
Near(B+D+P+L)	1464.003	----------	----------	0.000	+/-13.496	cps
Far(B+D+P+L)	1018.591	----------	----------	0.000	+/-15.424	cps
Microlog Pad-I145_M73803_P90						
MicroLog Normal	19.93	----------	----------	0.00	----------	ohmm
MicroLog Lateral	19.99	----------	----------	0.00	----------	ohmm

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PARAMETERS REPORT

Depth ((ft))	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.300	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	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	4770.00	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	DNSO	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	
	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	

BOTTOM

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INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
	Depth Panel			
TENS	Tension	0.00	NO	
	SP Sub			
PLTC	Plot Control Mask	50.81	NO	
SP	Spontaneous Potential	50.81	BLK	1.250
SPR	Raw Spontaneous Potential	50.81	NO	
SPO	Spontaneous Potential Offset	50.81	NO	
	GTET			
TPUL	Tension Pull	42.79	NO	
GR	Natural Gamma Ray API	42.79	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	42.79	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	42.79	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
	DSNT			

TPUL	Tension Pull	32.54	NO	
RNDS	Near Detector Telemetry Counts	32.64	BLK	1.417
RFDS	Far Detector Telemetry Counts	33.39	TRI	0.583
DNTT	DSN Tool Temperature	32.64	NO	
DSNS	DSN Tool Status	32.54	NO	
ERND	Near Detector Telemetry Counts EVR	32.64	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	33.39	BLK	0.000
ENTM	DSN Tool Temperature EVR	32.64	NO	

SDLT				
TPUL	Tension Pull	22.65	NO	
PCAL	Pad Caliper	22.65	TRI	0.250
ACAL	Arm Caliper	22.65	TRI	0.250

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	22.64	NO	
NAB	Near Above	22.46	BLK	0.920
NHI	Near Cesium High	22.46	BLK	0.920
NLO	Near Cesium Low	22.46	BLK	0.920
NVA	Near Valley	22.46	BLK	0.920
NBA	Near Barite	22.46	BLK	0.920
NDE	Near Density	22.46	BLK	0.920
NPK	Near Peak	22.46	BLK	0.920
NLI	Near Lithology	22.46	BLK	0.920
NBAU	Near Barite Unfiltered	22.46	BLK	0.250
NLIU	Near Lithology Unfiltered	22.46	BLK	0.250
FAB	Far Above	22.81	BLK	0.250
FHI	Far Cesium High	22.81	BLK	0.250
FLO	Far Cesium Low	22.81	BLK	0.250
FVA	Far Valley	22.81	BLK	0.250
FBA	Far Barite	22.81	BLK	0.250
FDE	Far Density	22.81	BLK	0.250
FPK	Far Peak	22.81	BLK	0.250
FLI	Far Lithology	22.81	BLK	0.250
PTMP	Pad Temperature	22.65	BLK	0.920
NHV	Near Detector High Voltage	22.04	NO	
FHV	Far Detector High Voltage	22.04	NO	
ITMP	Instrument Temperature	22.04	NO	
DDHV	Detector High Voltage	22.04	NO	

Microlog Pad

TPUL	Tension Pull	22.83	NO	
MINV	Microlog Lateral	22.83	BLK	0.750
MNOR	Microlog Normal	22.83	BLK	0.750

Data: NEWBY 2-21\0001 SP-GTET-DSNT-SDLT-ACRT-CH\IDLE **Date: 14-Mar-12 04:47:00**

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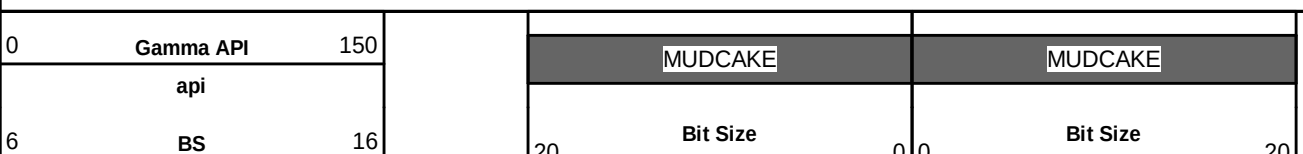
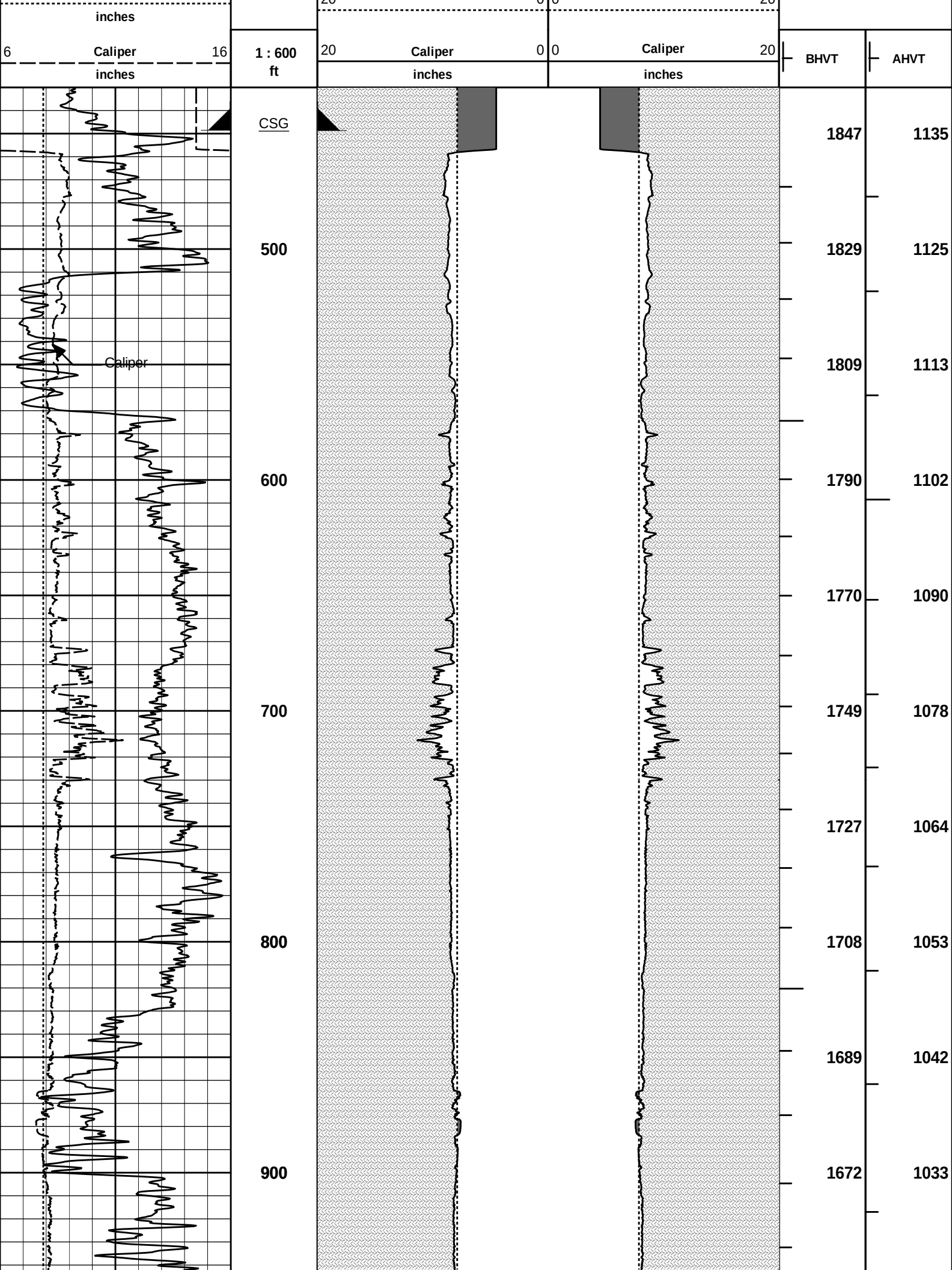
Plot Time: 14-Mar-12 07:59:22
Plot Range: 430 ft to 4769 ft
Data: NEWBY 2-21\Well Based\CASING
Plot File: \\-LOCAL-\NEWBY 2-21\0001 SP-GTET-DSNT-SDLT-ACRT-CH\PORO\AHV_5_5_INCH_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT (5.5 INCH)

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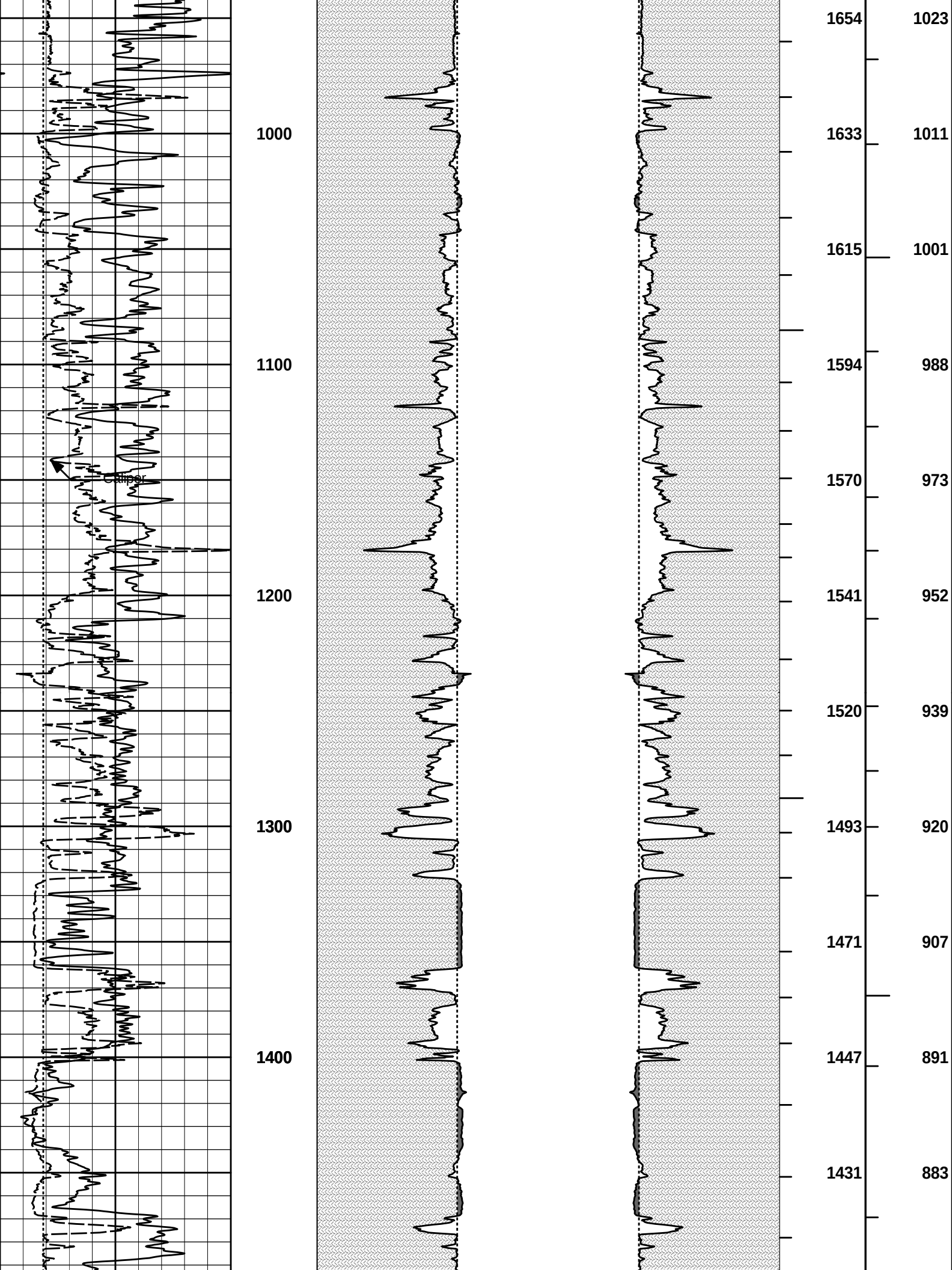
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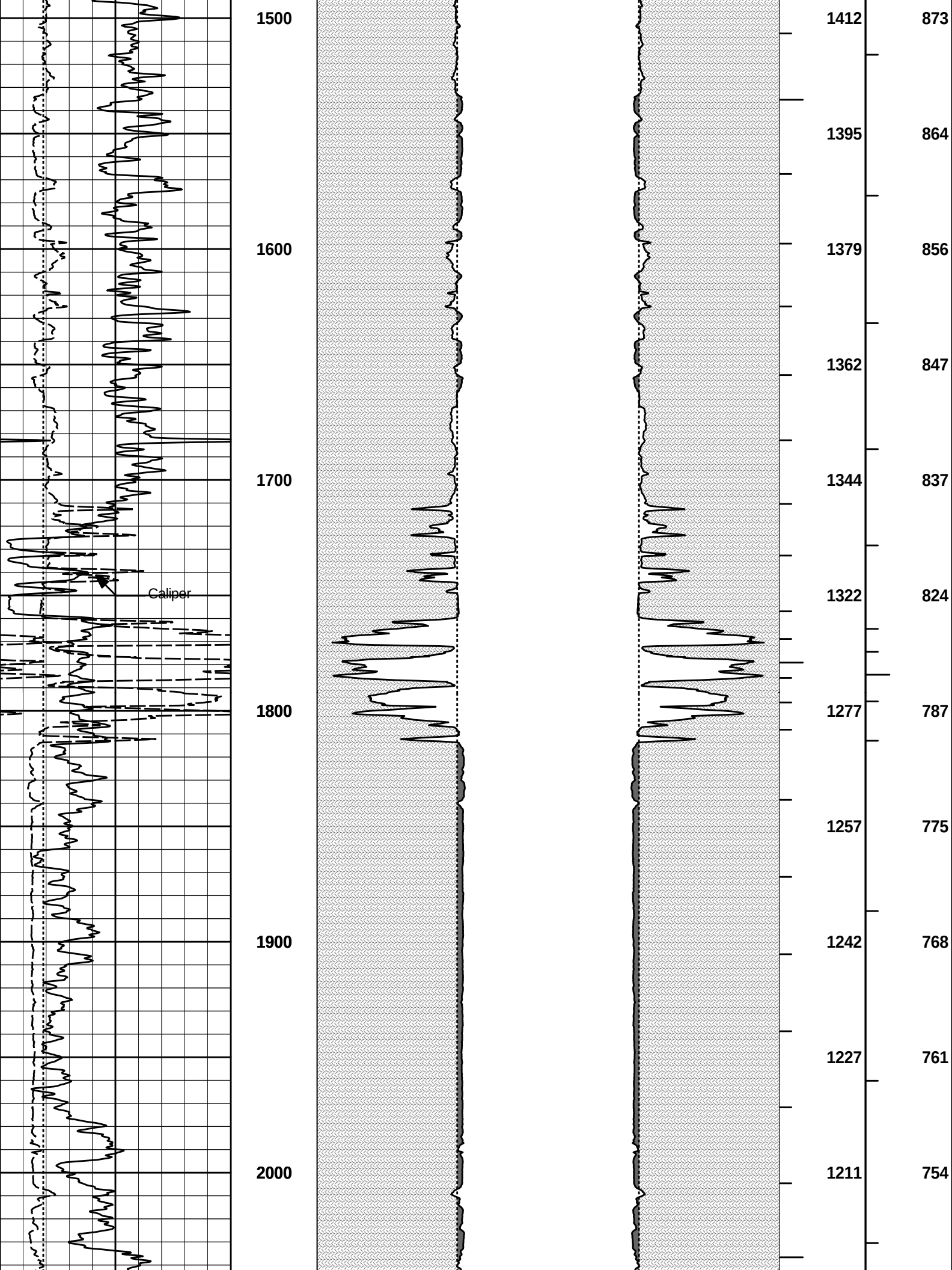
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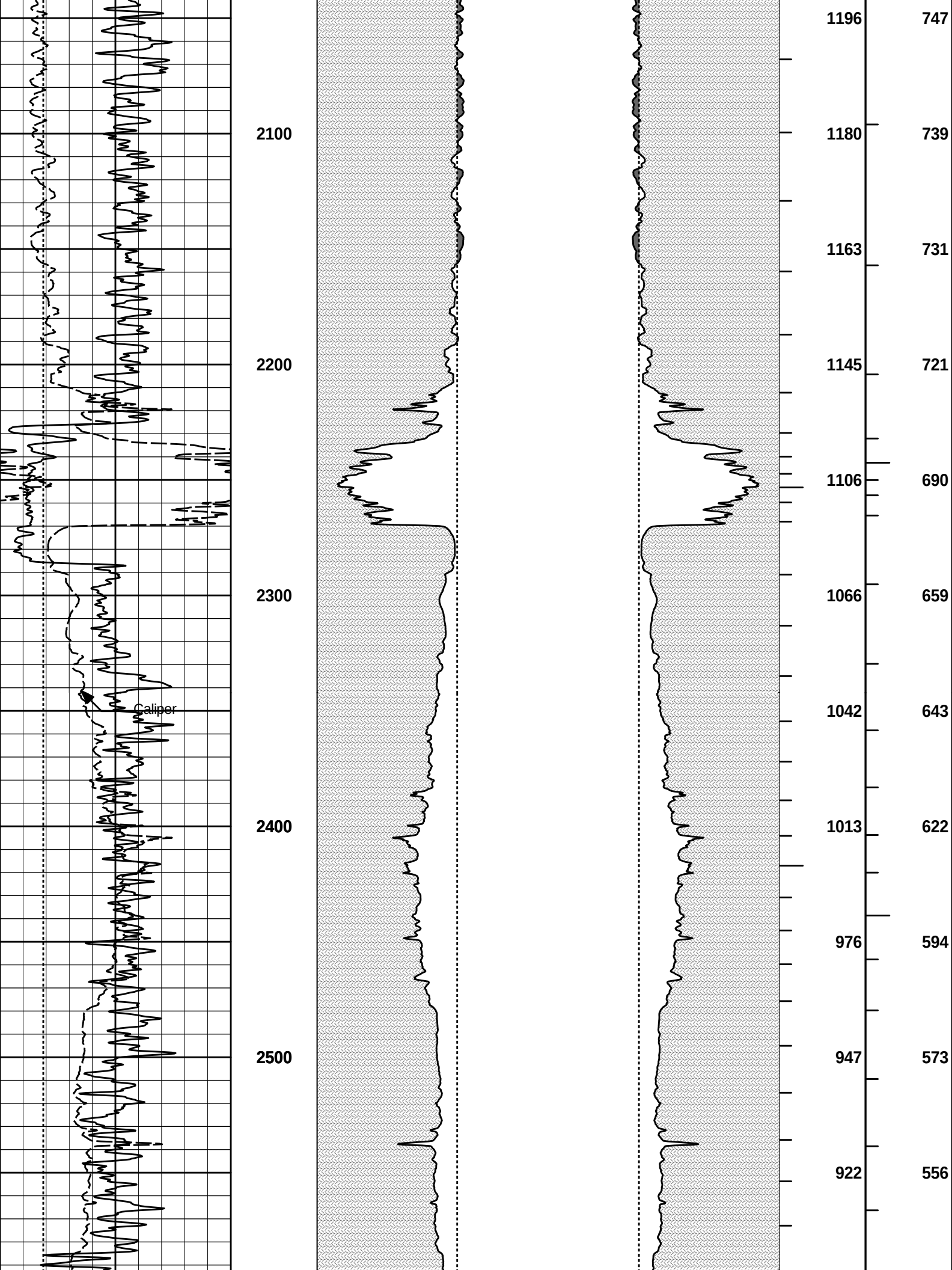
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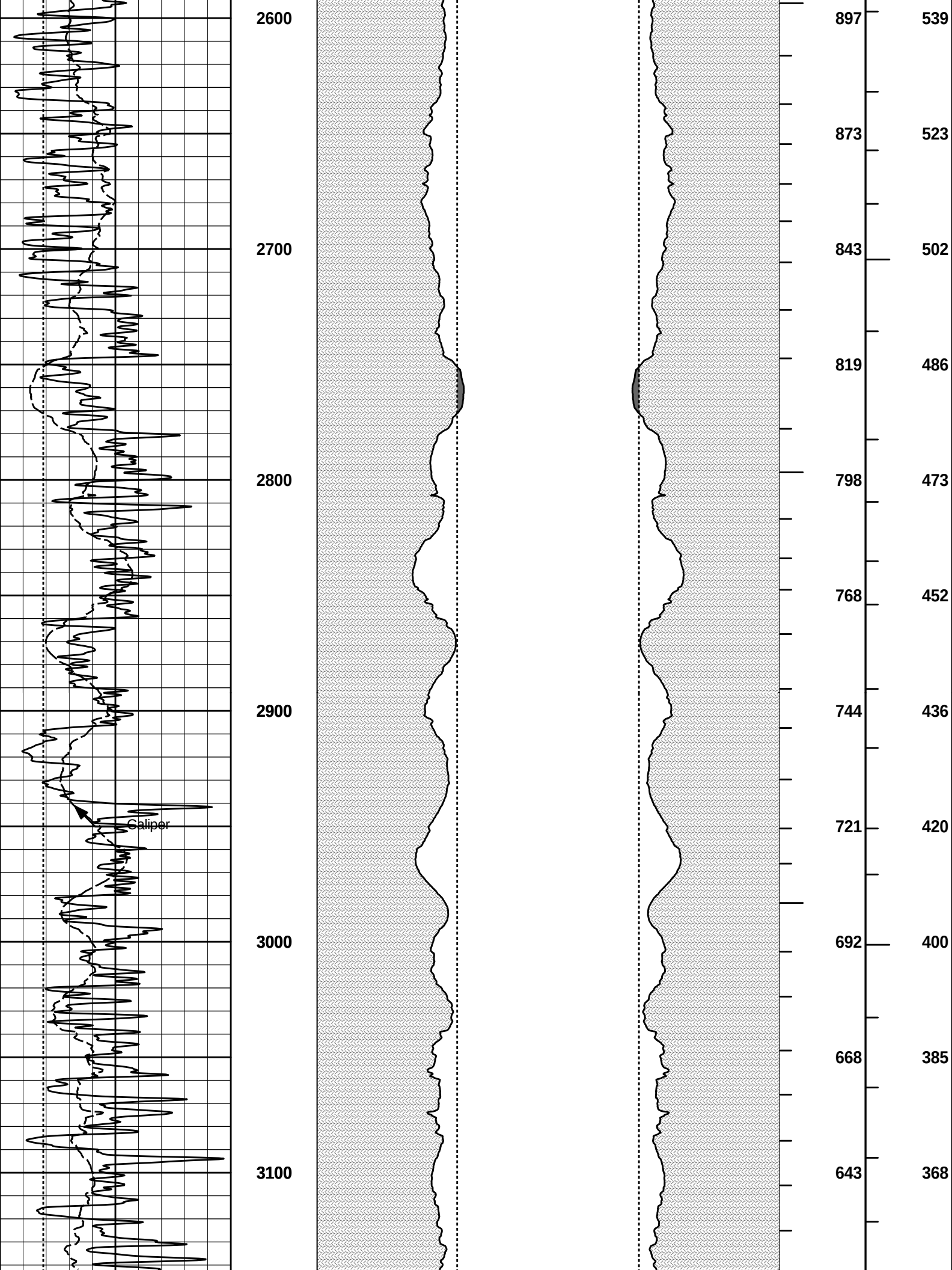
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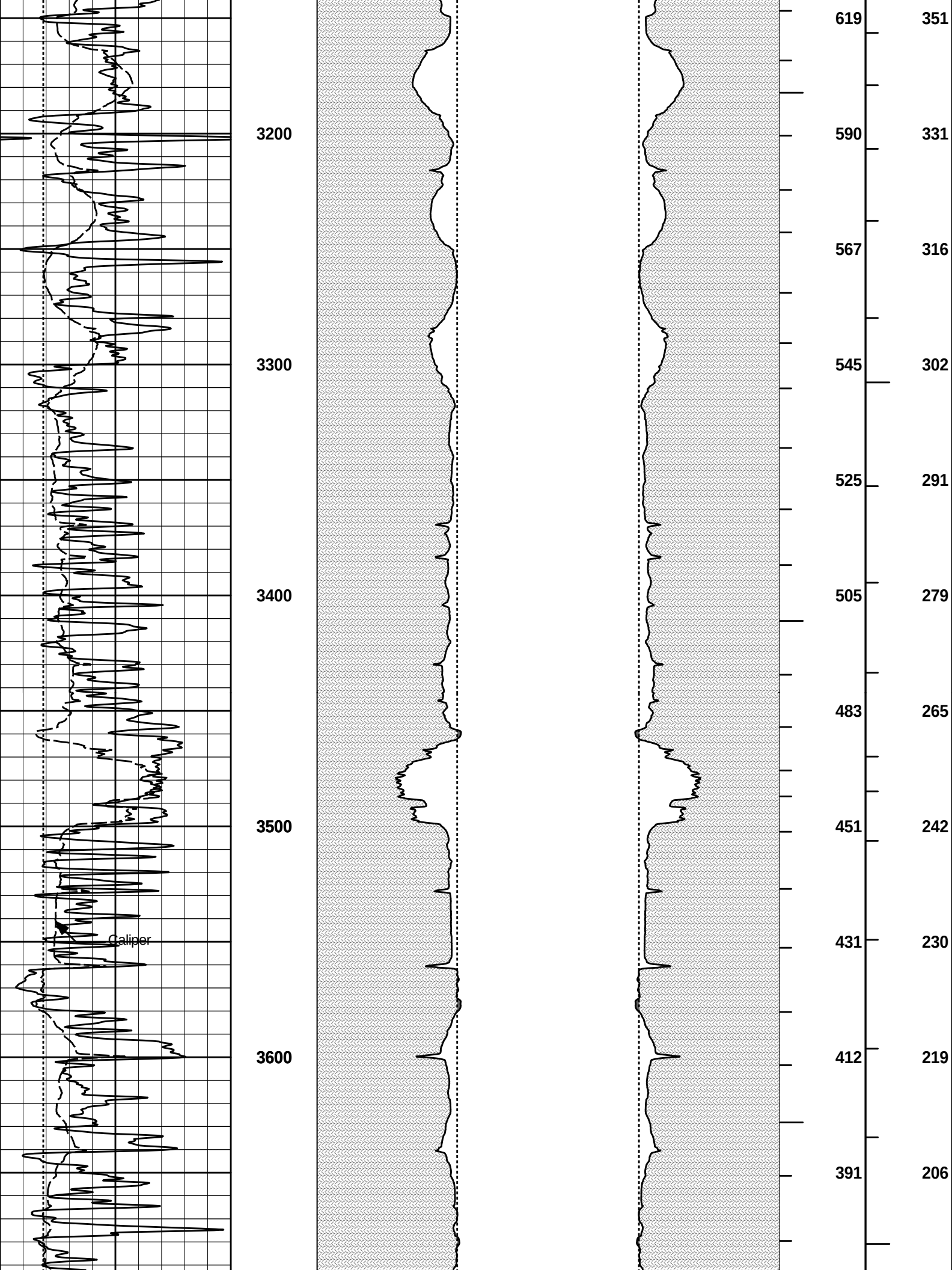
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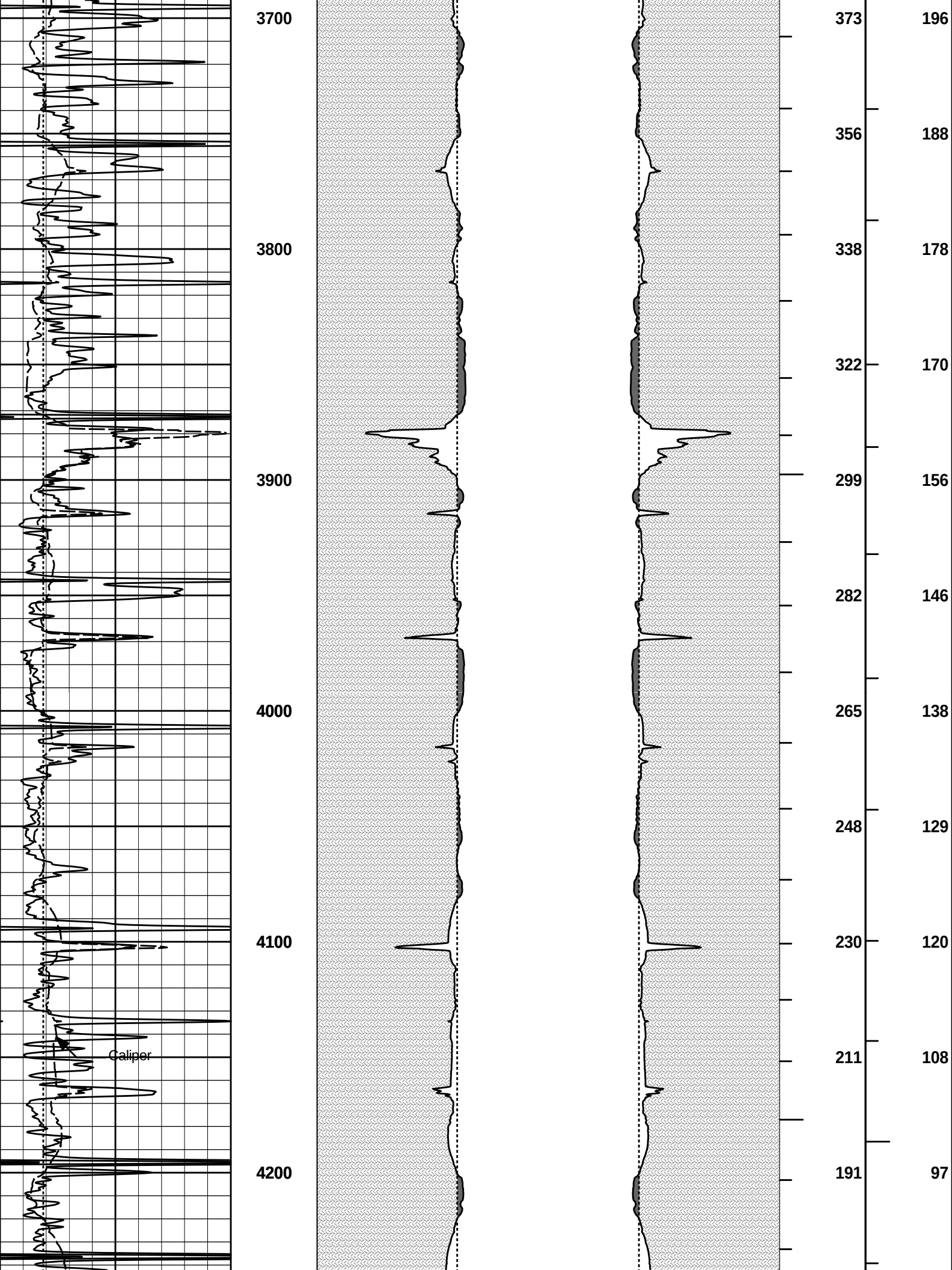
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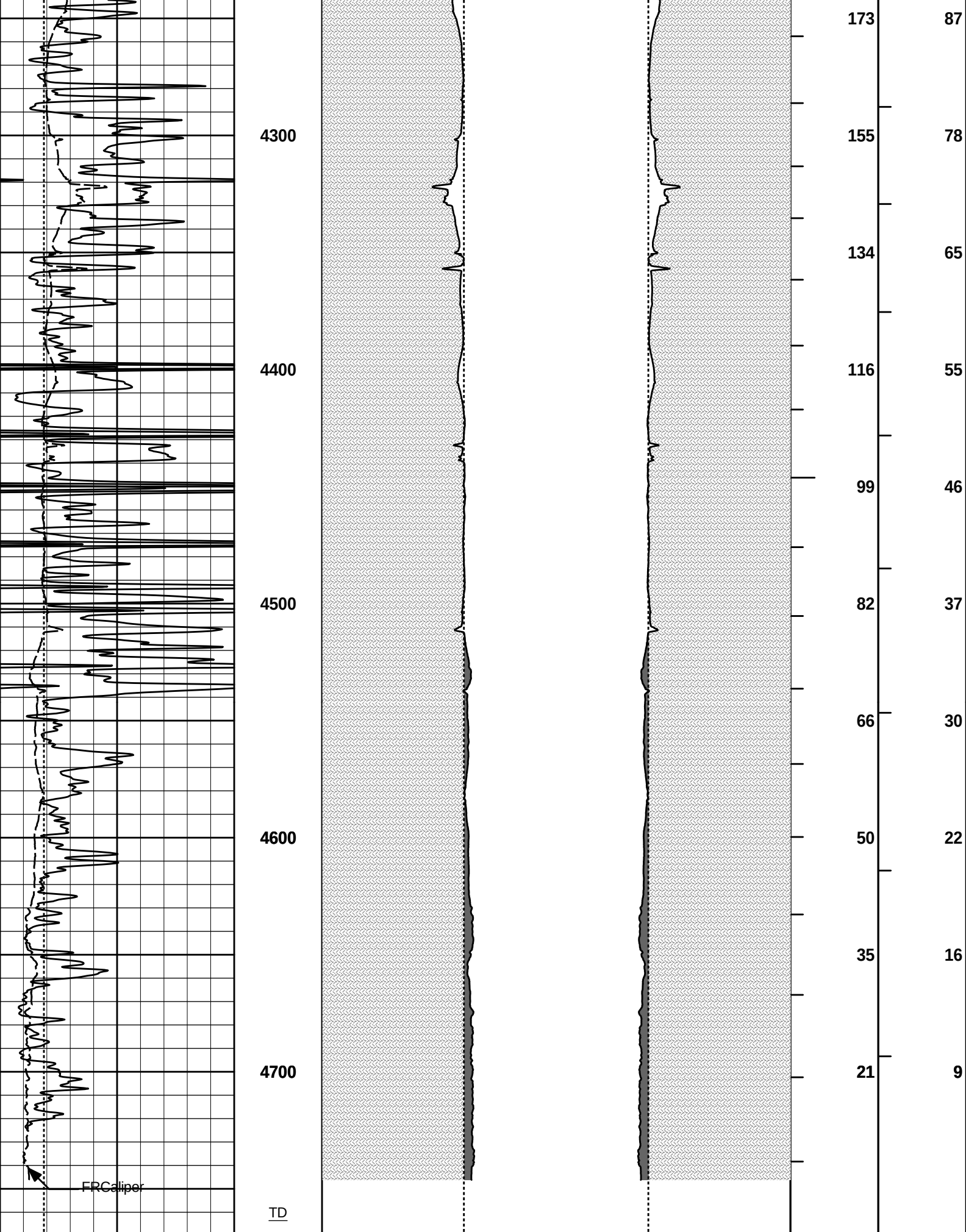
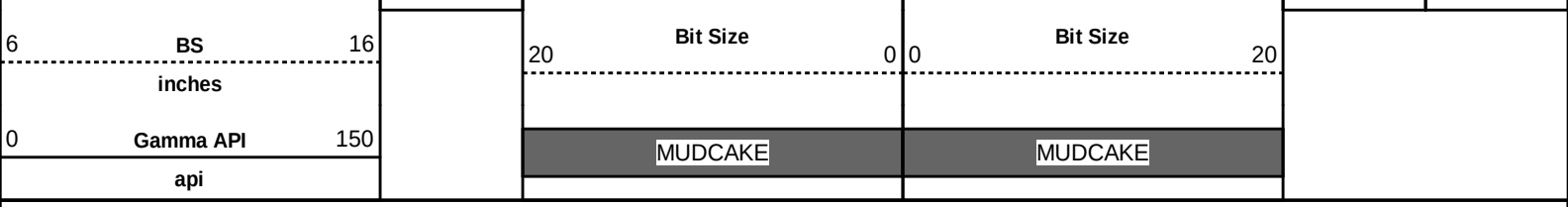
3800
3900
4000
4100
4200
Caliper
373
356
338
322
299
282
265
248
230
211
191
196
188
178
170
156
146
138
129
120
108
97



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



HALLIBURTON

Plot Time: 14-Mar-12 07:59:33
Plot Range: 430 ft to 4769 ft
Data: NEWBY 2-21\Well Based\CASING
Plot File: \\-LOCAL-\NEWBY 2-21\0001 SP-GTET-DSNT-SDLT-ACRT-CH\PORO\AHV_5_5_INCH_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT (5.5 INCH)

COMPANY	**BEREXCO INC.**		
WELL	**NEWBY 2-21**		
FIELD	**EVA SOUTH**		
COUNTY	**SCOTT**	STATE	**KANSAS**

HALLIBURTON

SPECTRAL DENSITY
DUAL SPACED NEUTRON
LOG