

HALLIBURTON

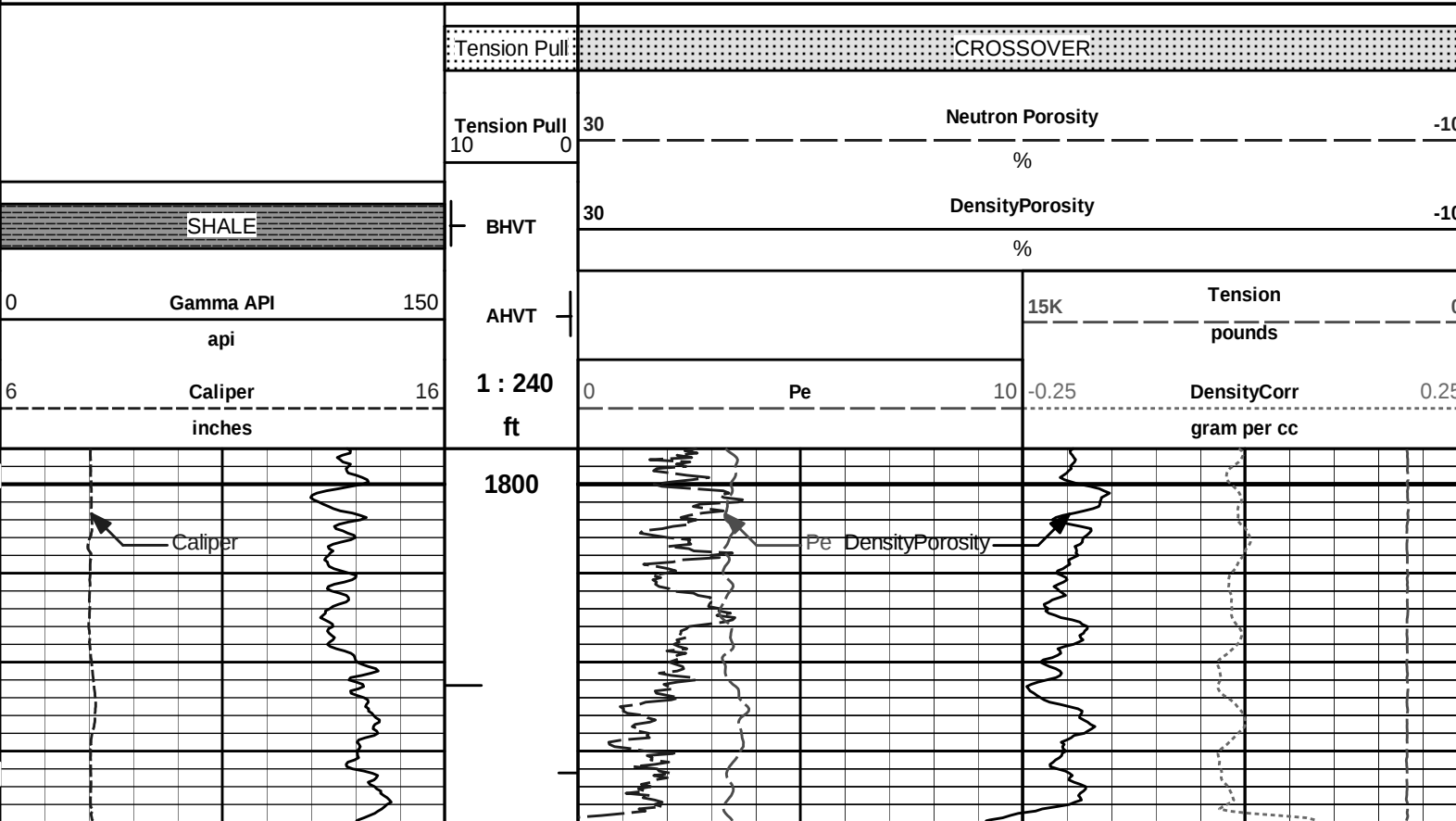
SPECTRAL DENSITY DUAL SPACED NEUTRON LOG

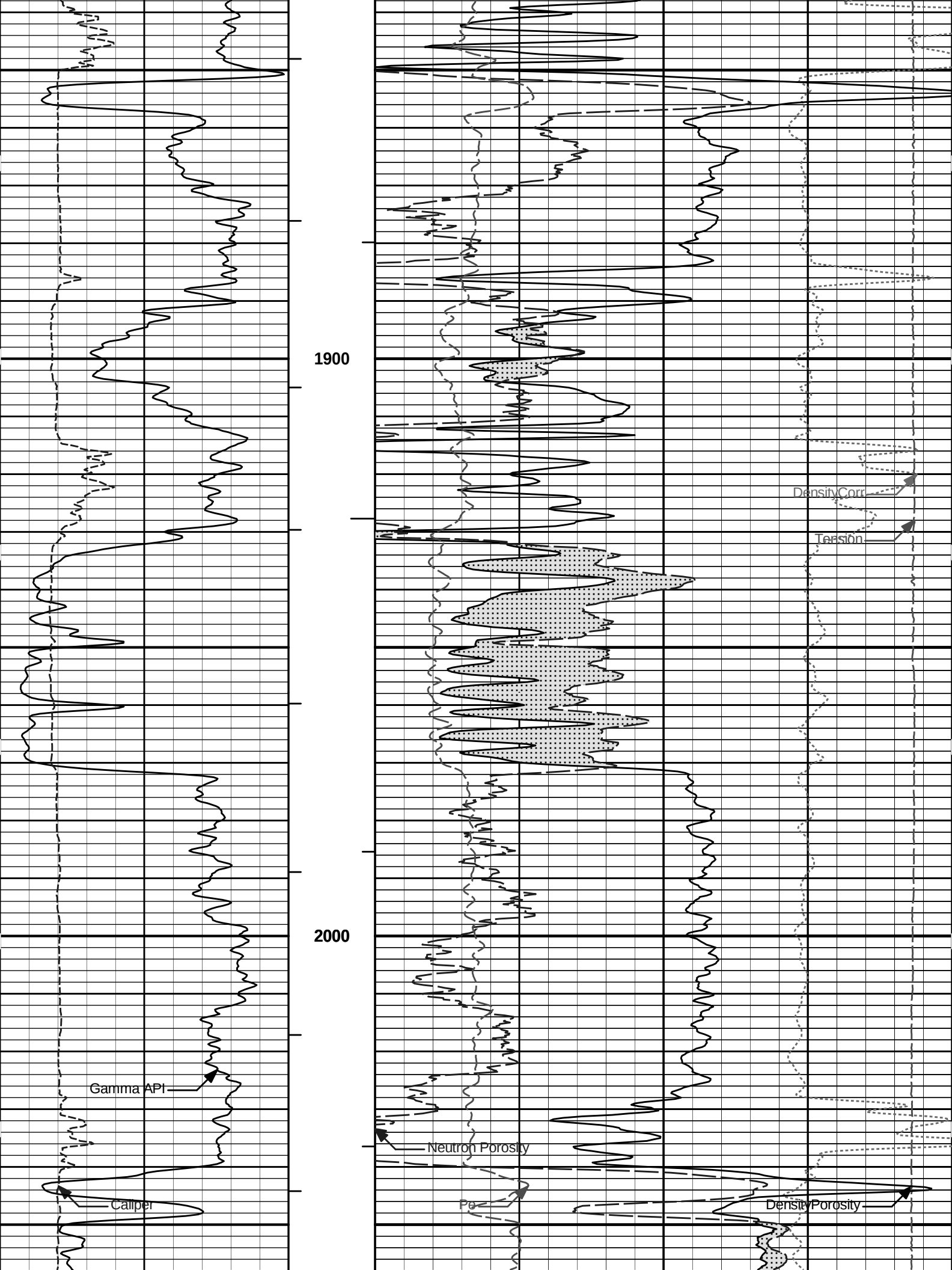
HALLBURTON										SPECTRAL DENSITY DUAL SPACED NEUTRON LOG														
VAL ENERGY INC.					COMPANY VAL ENERGY INC.					Other Services: MICRO ACRT MRIL														
BOLACK V 1-21					WELL BOLACK V 1-21																			
BOLACK					FIELD BOLACK																			
COWLEY					COUNTY COWLEY																			
KANSAS					STATE KANSAS																			
COMPANY					WELL					Sect. 21					Twp. 32S					Rge. 6E				
WELL					FIELD					COUNTY					STATE					KANSAS				
COUNTY					KANSAS					Location 2405' FNL & 3380' FEL					API No. 15-035-24461									
Permanent Datum					GROUND LEVEL					Elev. 1331.0 ft					Elev.: K.B. 1341.0 ft									
Log measured from					KELLY BUSHING					10.0 ft above perm. Datum					D.F. 1340.0 ft									
Drilling measured from					KELLY BUSHING										G.L. 1331.0 ft									
Date					08-Apr-12																			
Run No.					ONE																			
Depth - Driller					3500.00 ft																			
Depth - Logger					3506.0 ft																			
Bottom - Logged Interval					3484.0 ft																			
Top - Logged Interval					1800.0 ft																			
Casing - Driller					8.625 in @ 308.0 ft					@					@									
Casing - Logger					309.0 ft																			
Bit Size					7.875 in					@					@									
Type Fluid in Hole					WATER BASED MUD																			
Density					9.0 ppq					50.00 sg/qt														
PH					9.50 pH					9.6 cp/m														
Source of Sample					FLOWLINE																			
Rm @ Meas. Temperature					1.630 ohmm @ 71.00 degF					@					@									
Rmf @ Meas. Temperature					1.89 ohmm @ 52.00 degF					@					@									
Rmc @ Meas. Temperature					2.360 ohmm @ 52.00 degF					@					@									
Source Rmf					MEASURED					MEASURED														
Rm @ BHT					1.15 ohmm @ 116.0 degF					@					@									
Time Since Circulation					5.3 hr																			
Time on Bottom					08-Apr-12 02:18																			
Max. Rec. Temperature					116.0 degF @ 3506.0 ft					@					@									
Equipment					10782954					LIBERAL														
Recorded By					C. HAVERKAMP																			
Witnessed By					S. VANBUSKIRK																			

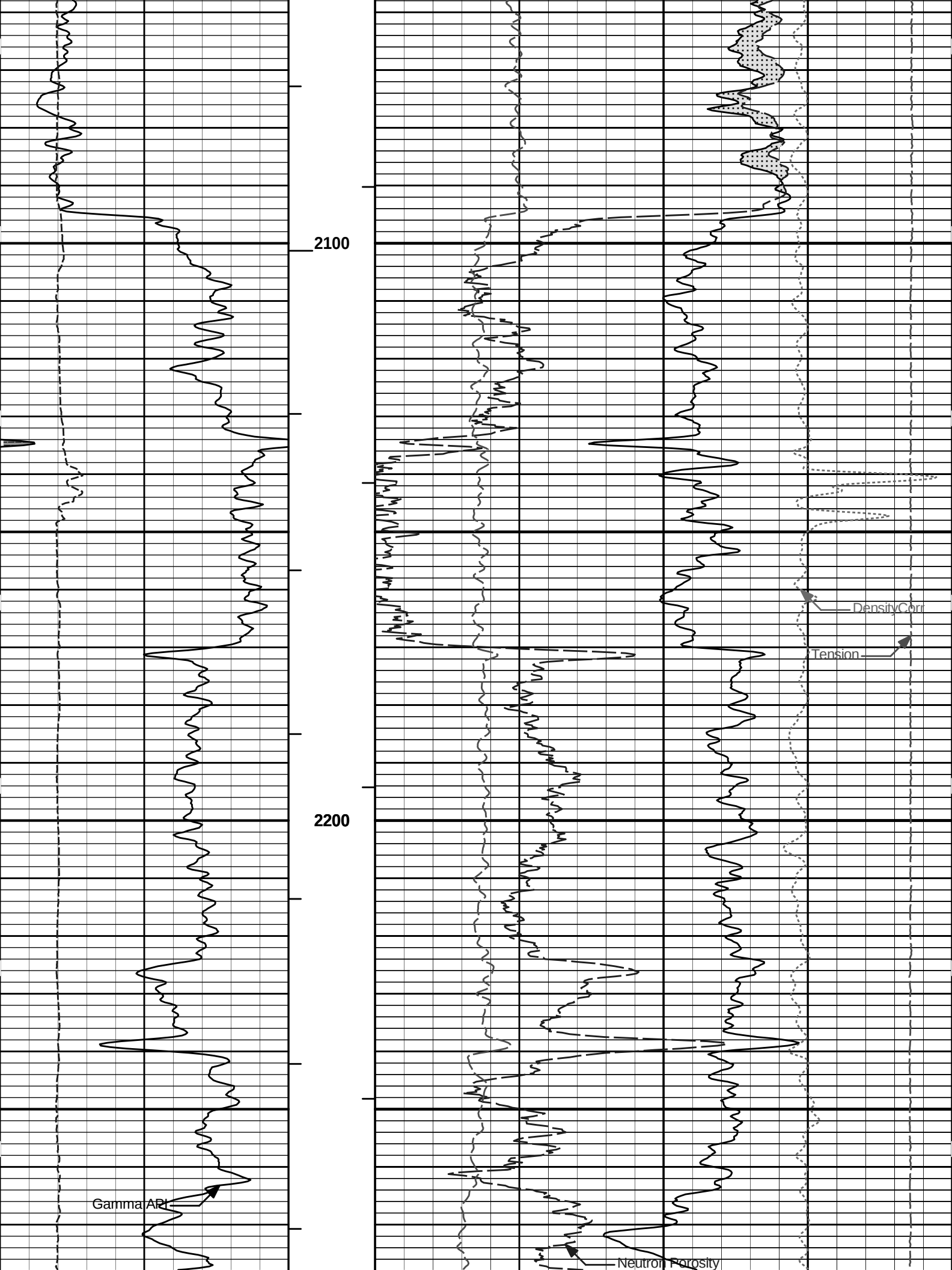
Fold here

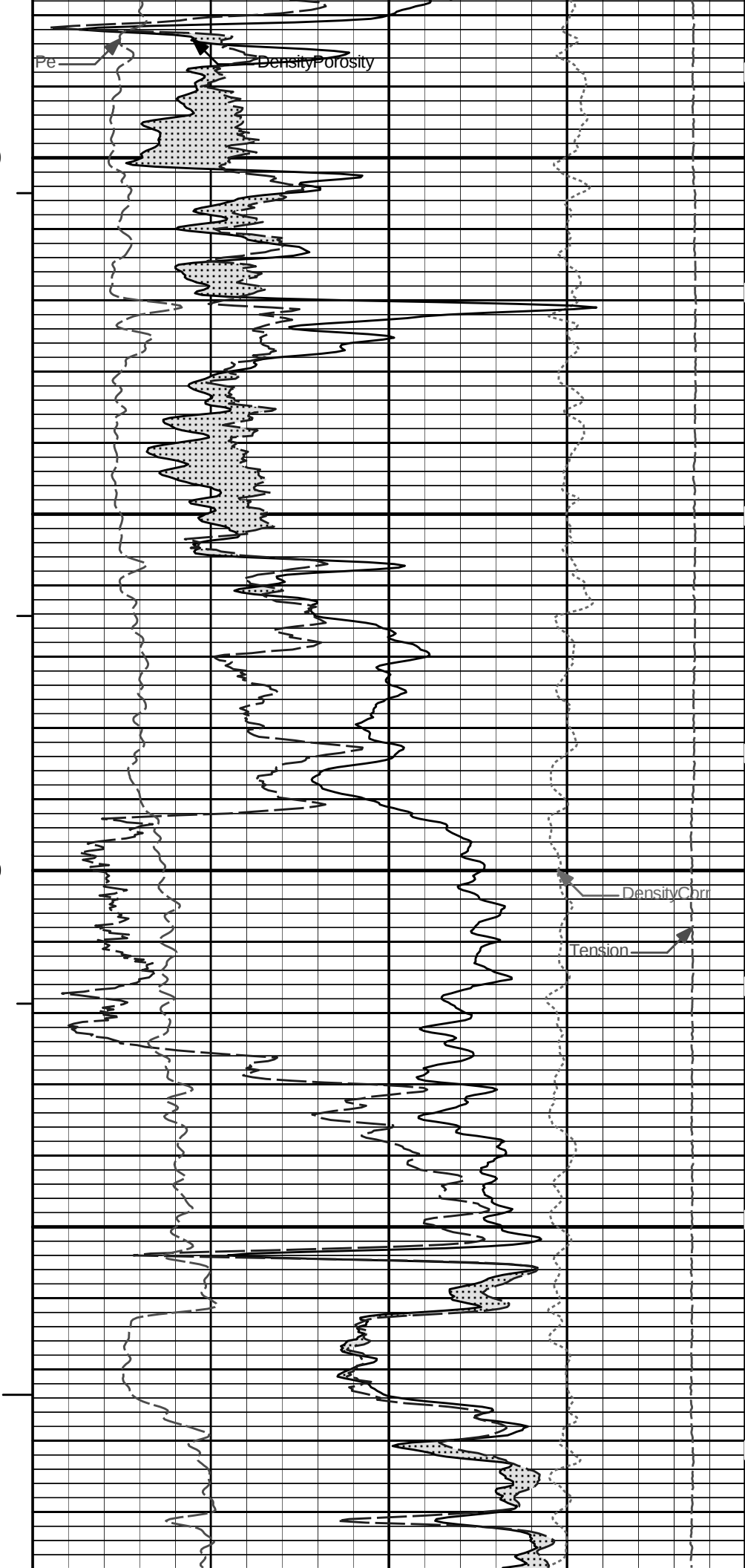
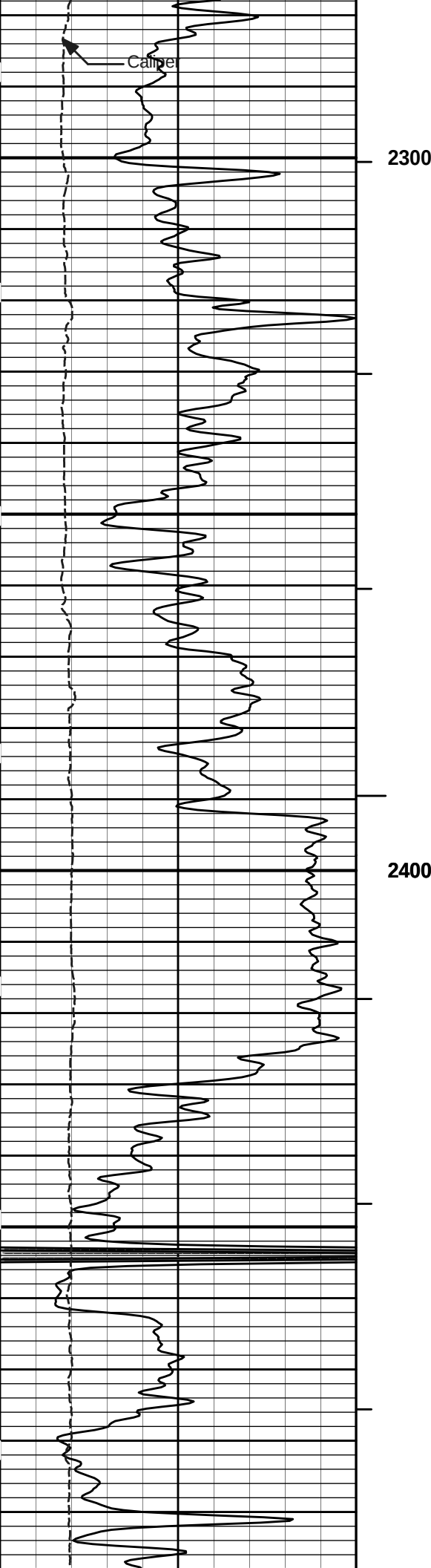
Service Ticket No.: 9415301						API Serial No.: 15-035-24461						PGM Version: WL INSITE R3.4.2 (Build 2)											
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE												RESISTIVITY SCALE CHANGES											
Date		Sample No.										Type Log		Depth		Scale Up Hole		Scale Down Hole					
Depth-Driller																							
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.				@				@															
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.		10811258		Serial No.								Serial No.		90		Serial No.		10735145					
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.		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.		5073 GW		Serial No.		DSN-436					
Distance to Source		10'		FWDA [Y/N]								Strength		1.5 CI		Strength		15 CI					

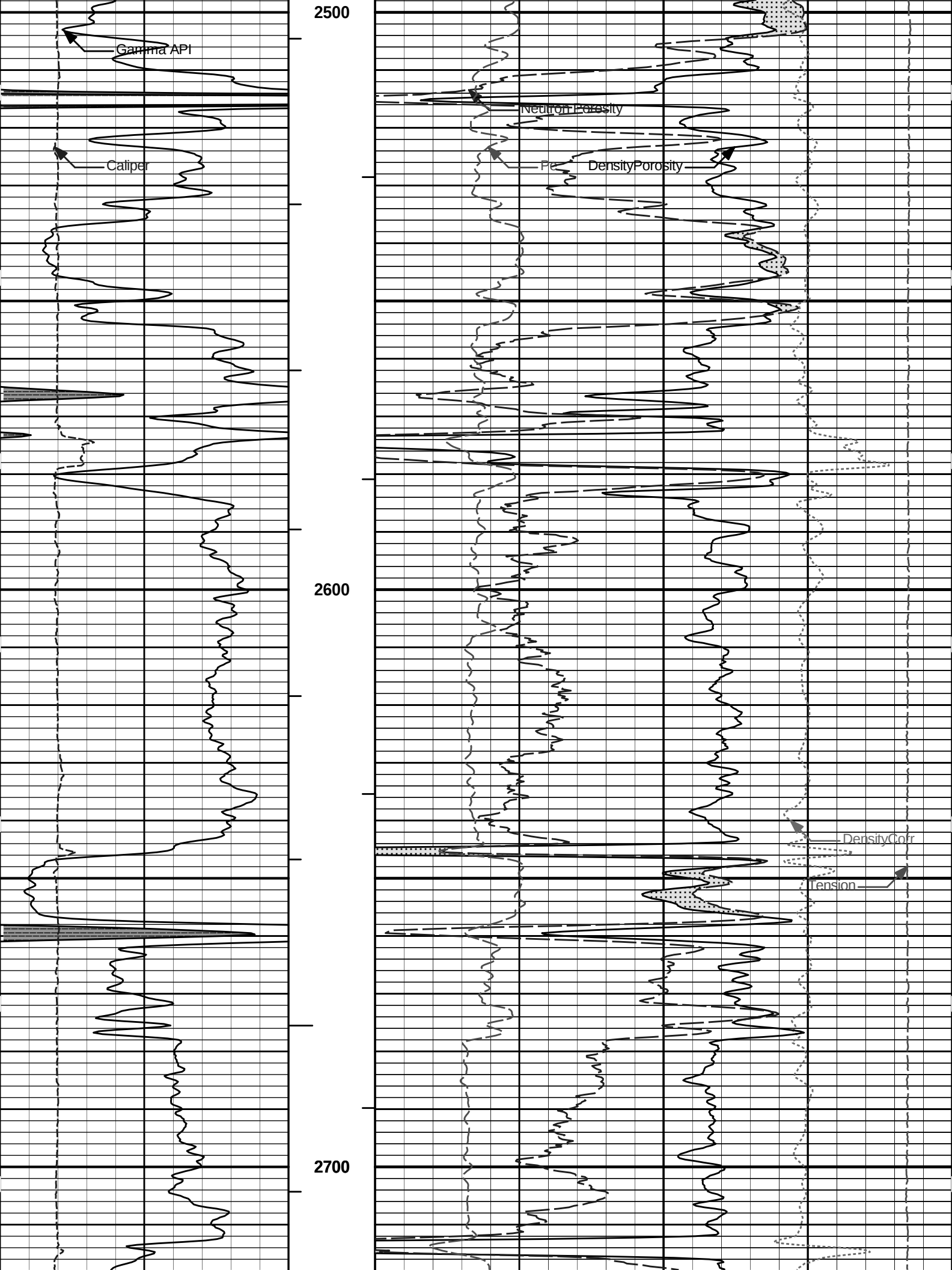
GENERAL			GAMMA		ACOUSTIC		DENSITY		NEUTRON					
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	3506'	1800'	REC	0	150									
DIRECTIONAL INFORMATION														
Maximum Deviation @								KOP @						
Remarks: SP-GTET-DSNT-SDLT-ACRT RAN IN COMBINATION.														
ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING.														
CHLORIDES REPORTED AT 1900 MG/L.														
LCM REPORTED AT 6 LB/BBL.														
TOOL SURVEYS NOT PERFORMED PER CUSTOMER REQUEST.														
YOUR CREW: F. VILLA, B. TERRELL														
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES. LIBERAL, KS 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														

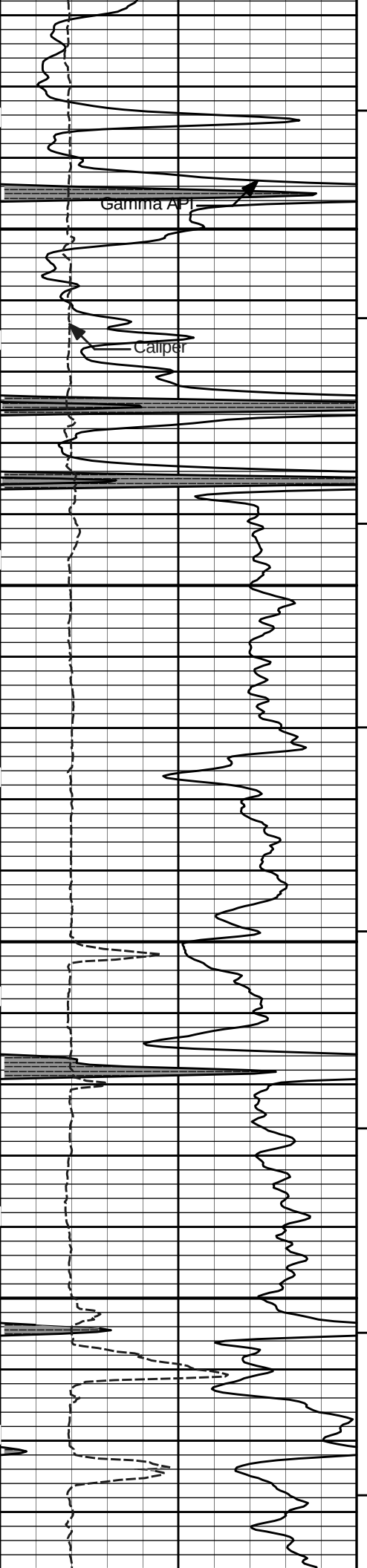






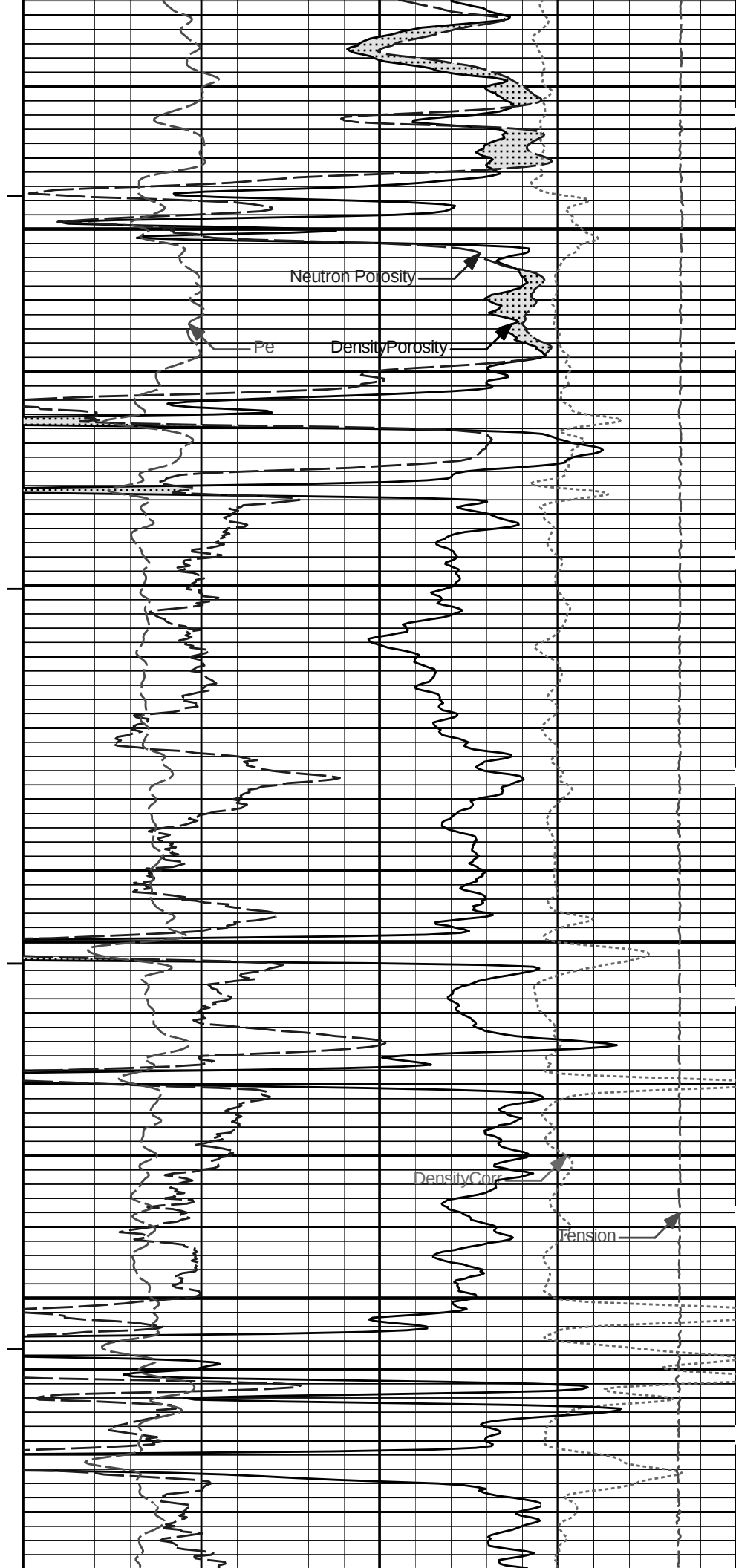






2800

2900



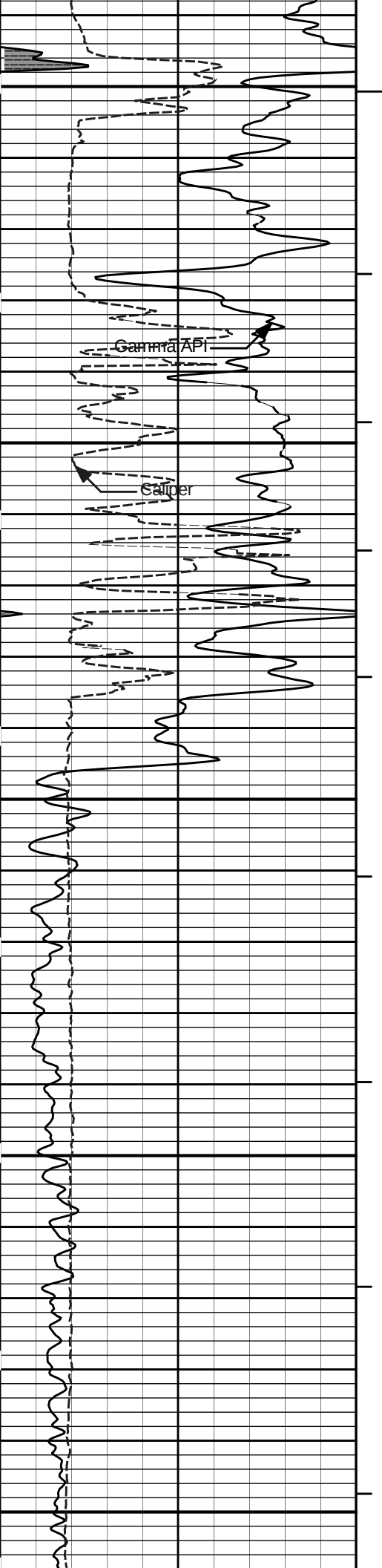
Neutron Porosity

Pe

Density Porosity

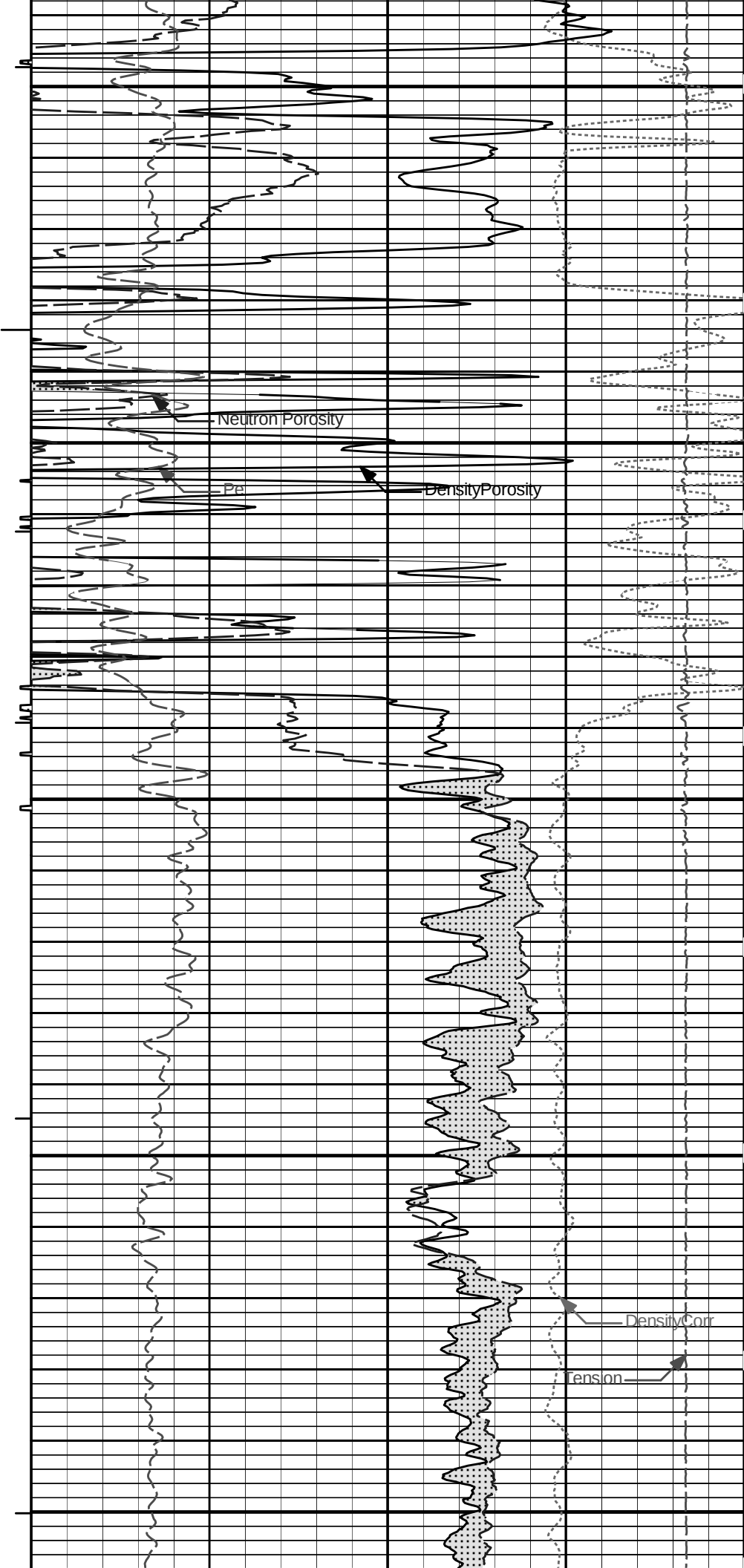
Density Cor

Pressure



3000

3100



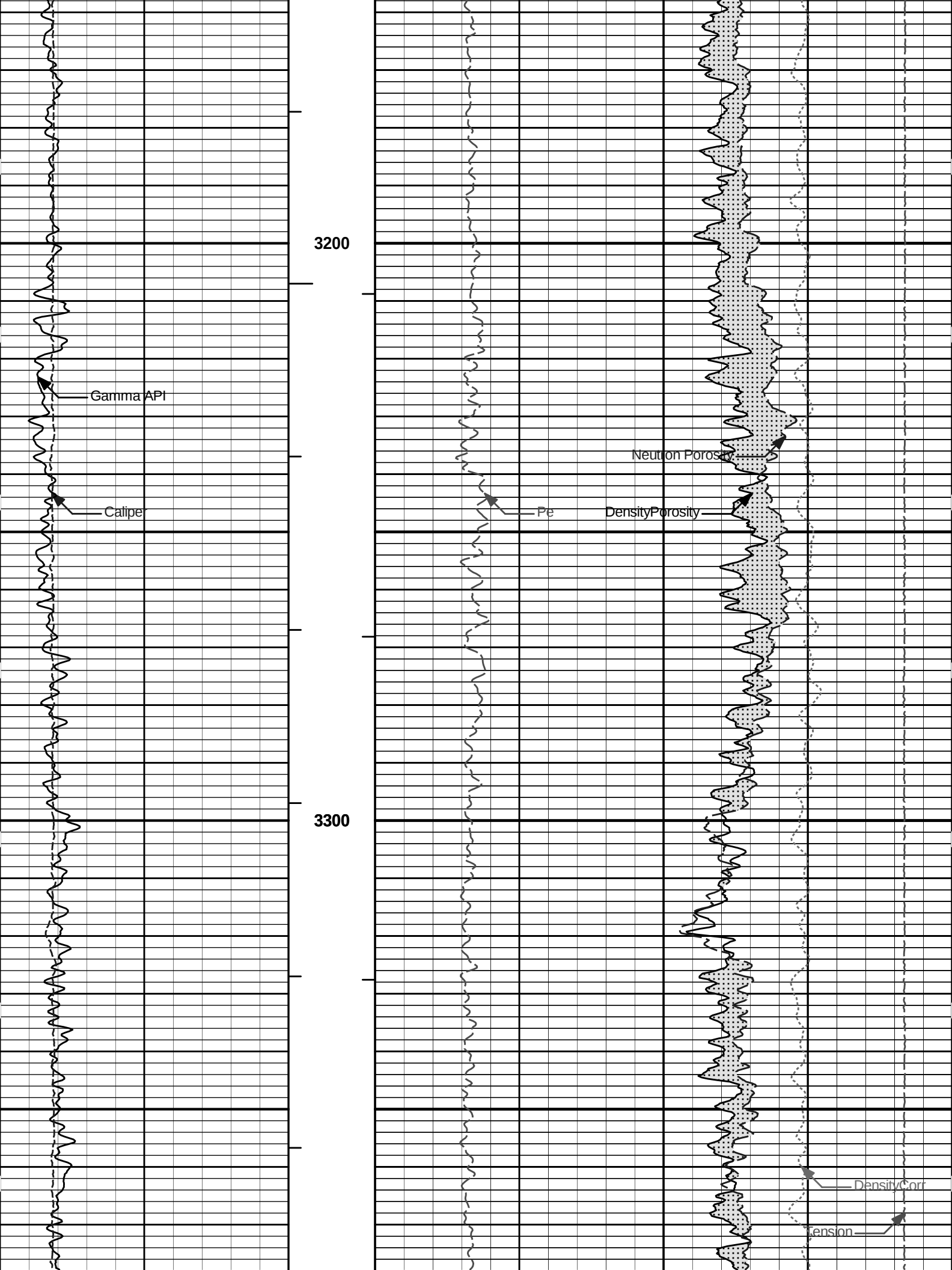
Neutron Porosity

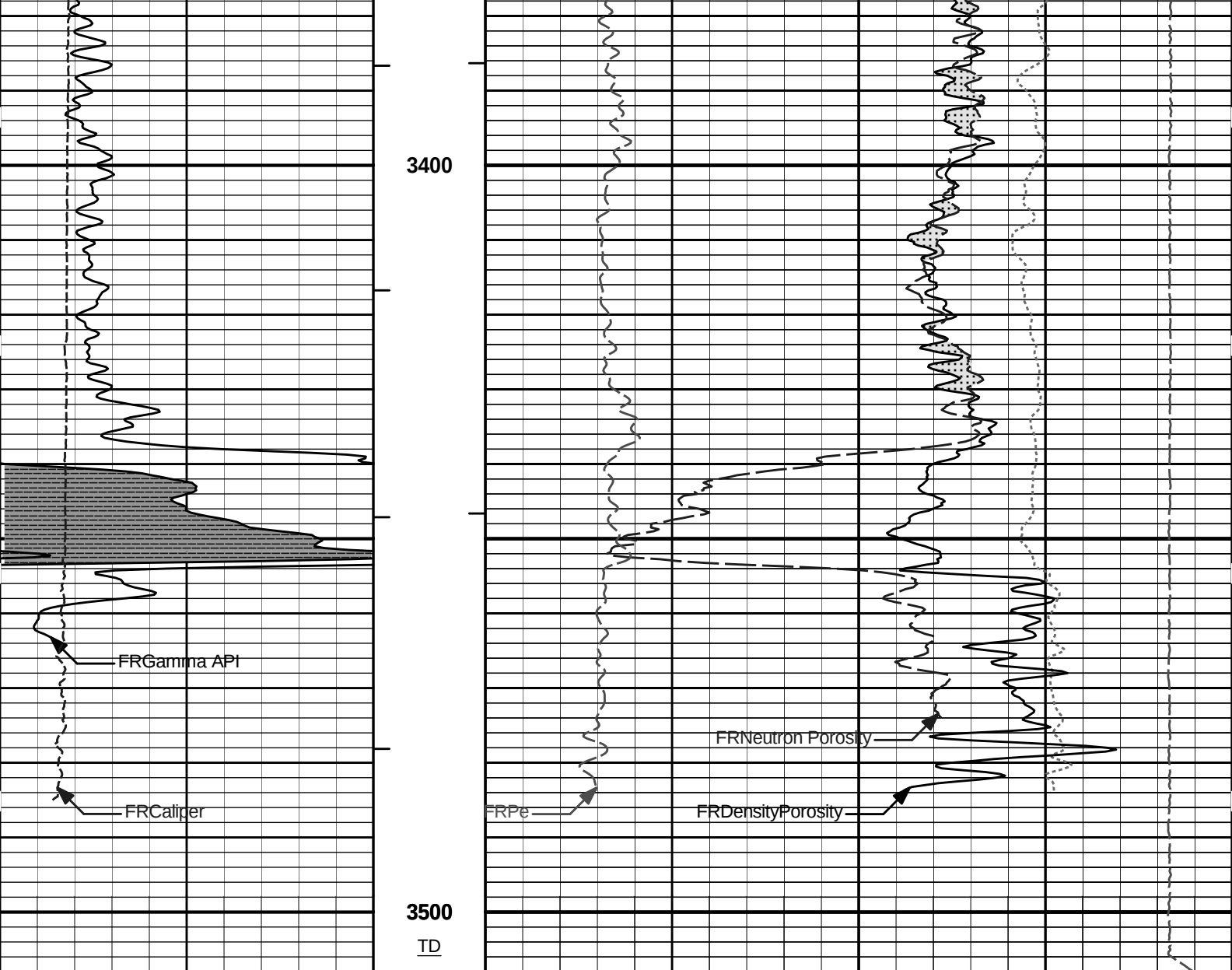
Pe

Density Porosity

Density Corr

Tension





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	
	SHALE		BHVT	30	DensityPorosity				-10
					%				
			Tension Pull	30	Neutron Porosity				-10
			10		%				
			Tension Pull		CROSSOVER				

HALLIBURTON

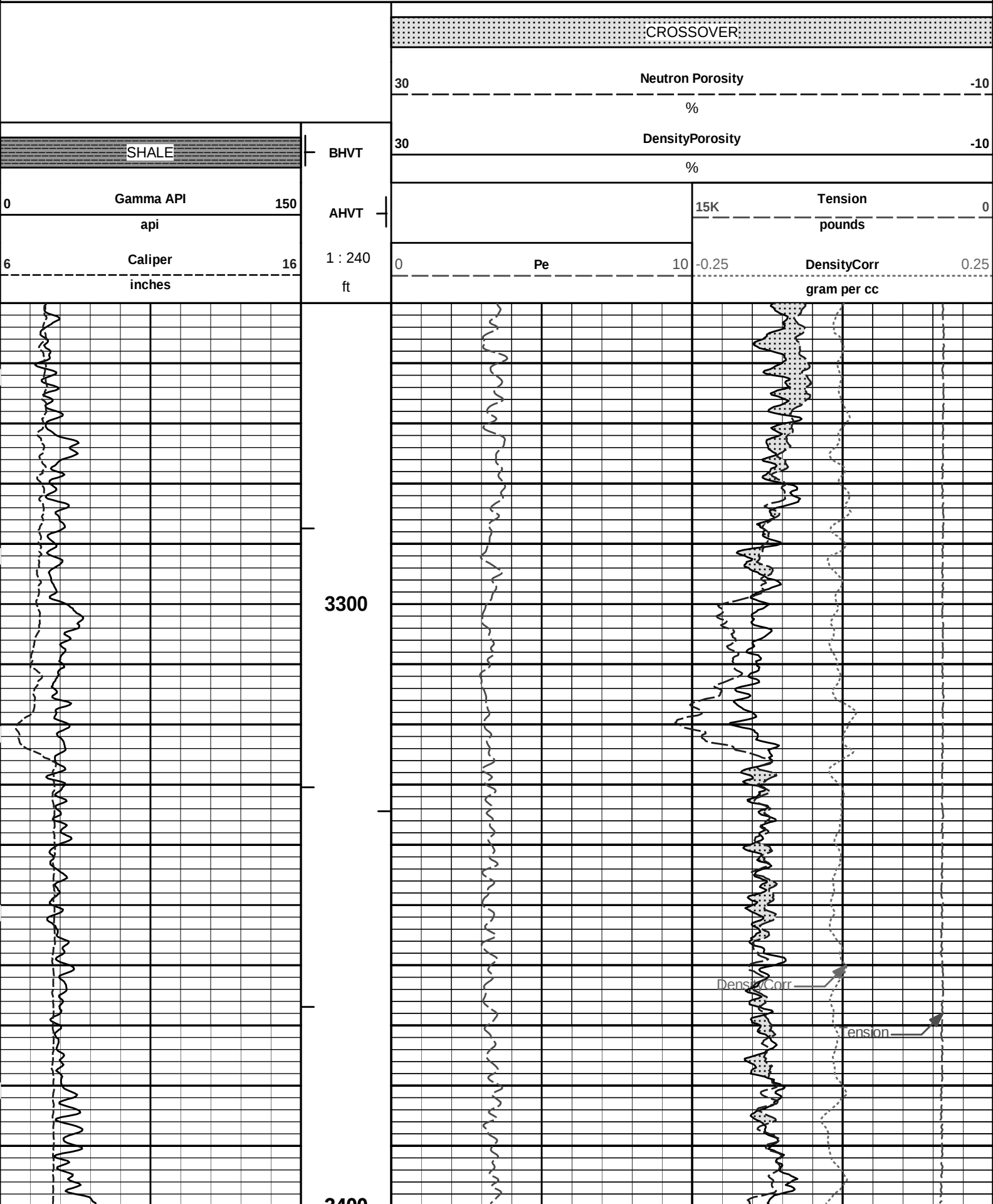
Plot Time: 08-Apr-12 04:53:12
Plot Range: 1796 ft to 3507.92 ft
Data: BOLACK_V_1_21\Well Based\IR1_DETAIL\
Plot File: \\PORO\Poros_IQ_5_MAIN_LIB

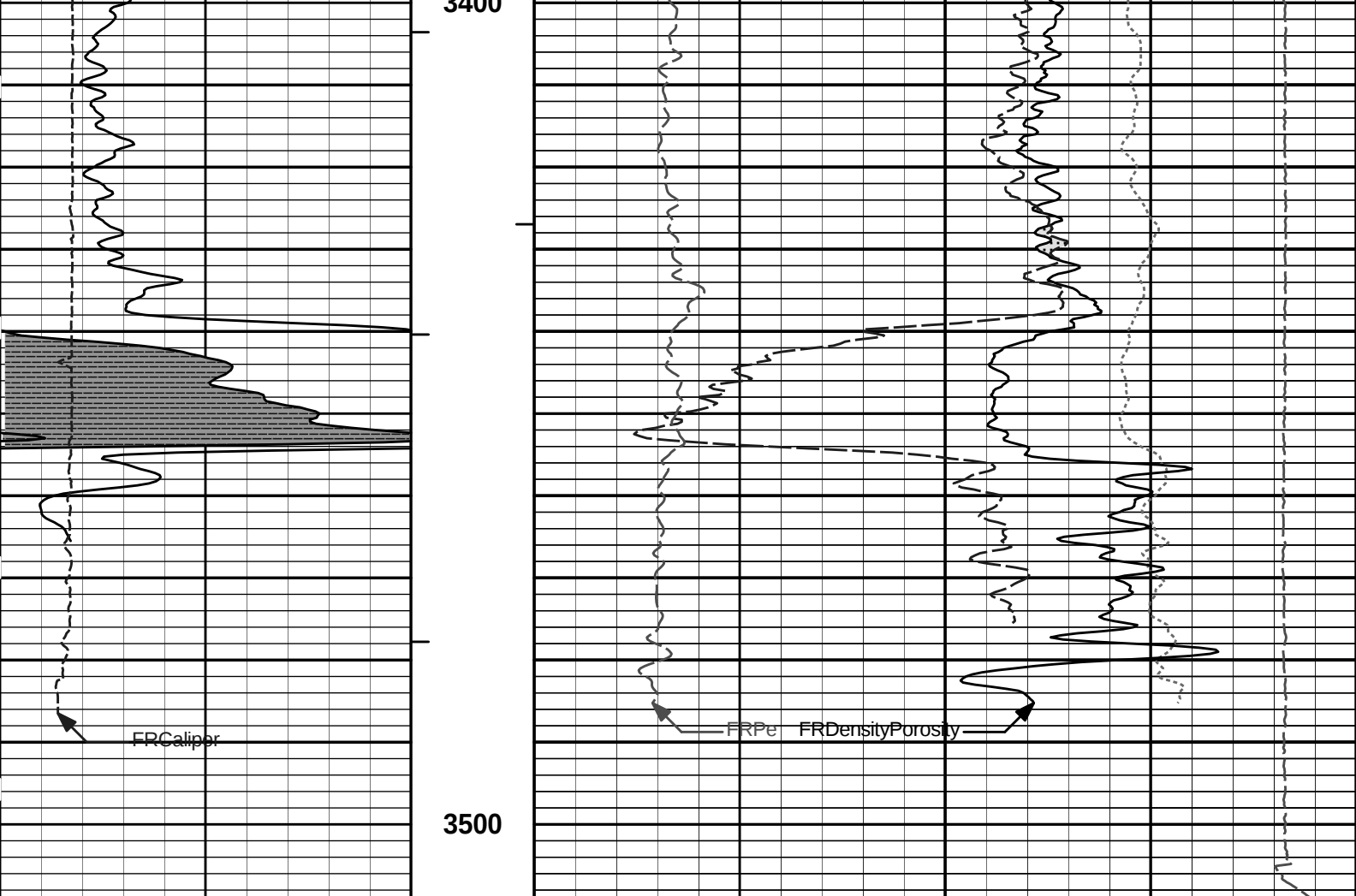
5 INCH MAIN LOG

HALLIBURTON

Plot Time: 08-Apr-12 04:53:12
Plot Range: 3250 ft to 3509.42 ft
Data: BOLACK_V_1_21\Well Based\IR1_REPEAT\

REPEAT SECTION





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	
	SHALE		BHVT	30	DensityPorosity				-10
					%				
				30	Neutron Porosity				-10
					%				
					CROSSOVER				

HALLIBURTON

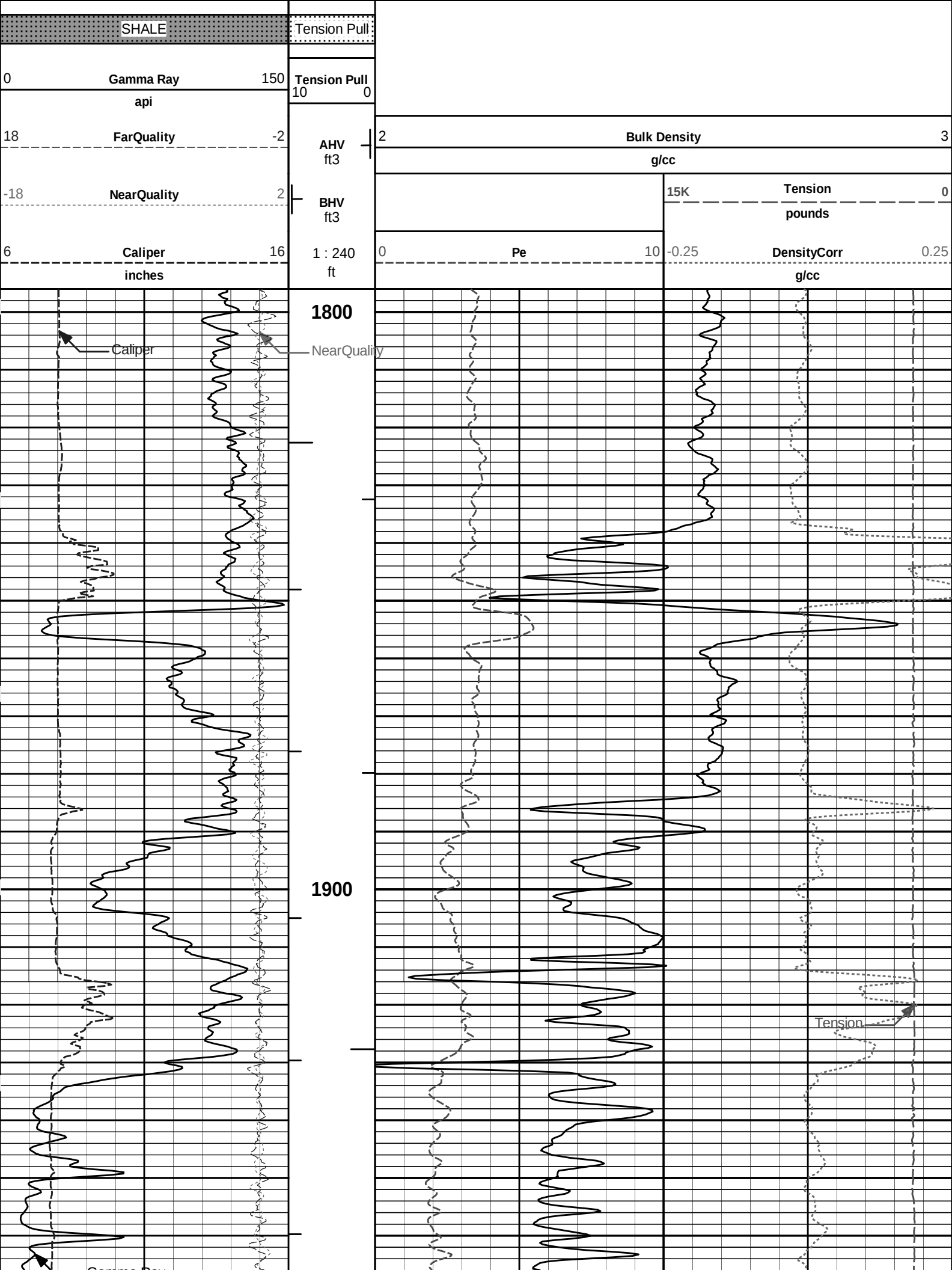
Plot Time: 08-Apr-12 04:53:15
 Plot Range: 3250 ft to 3509.42 ft
 Data: BOLACK_V_1_21\Well Based\IR1_REPEAT\
 Plot File: \\PORO\Porosity_Q_5_REP_LIB

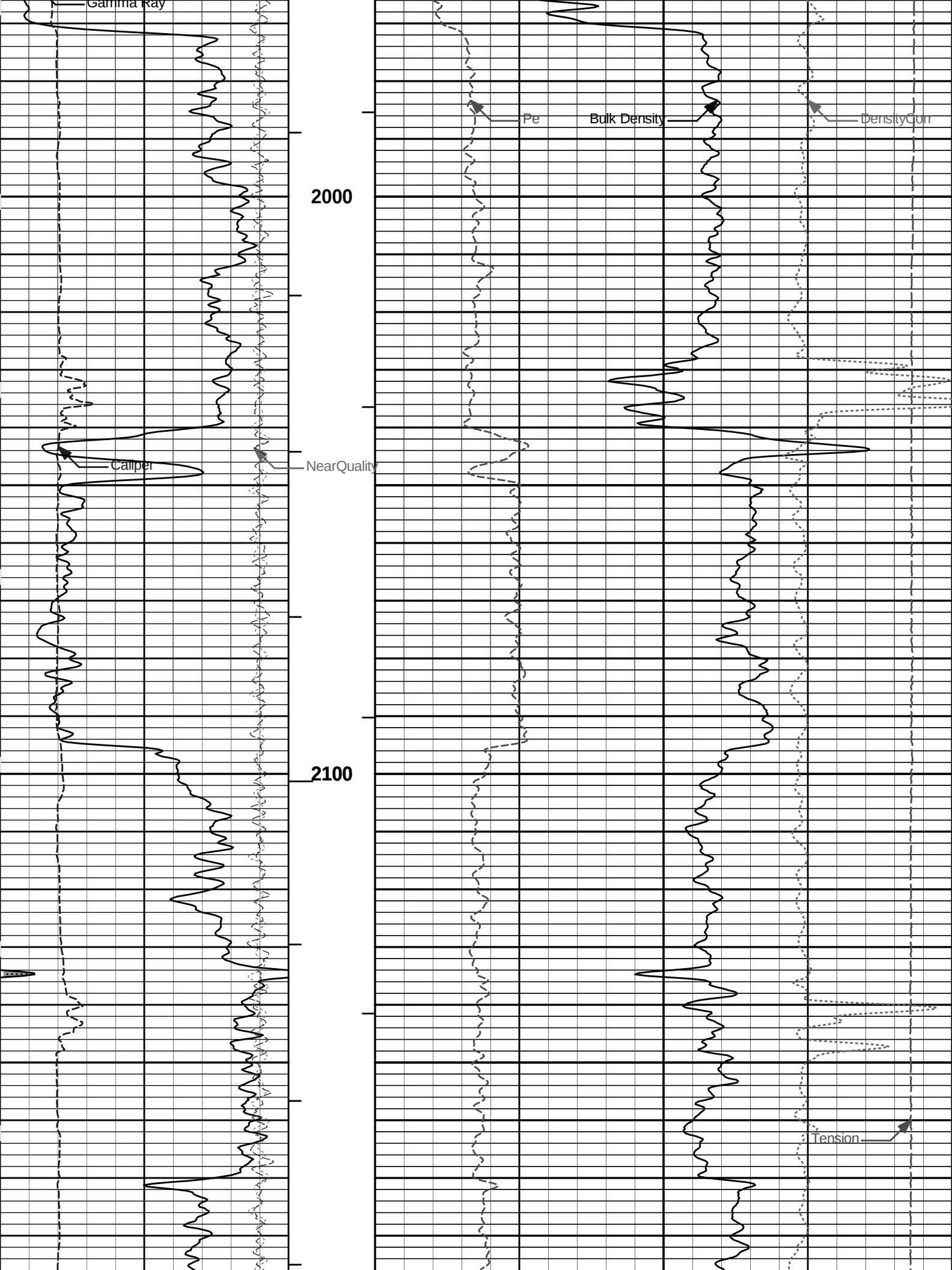
REPEAT SECTION

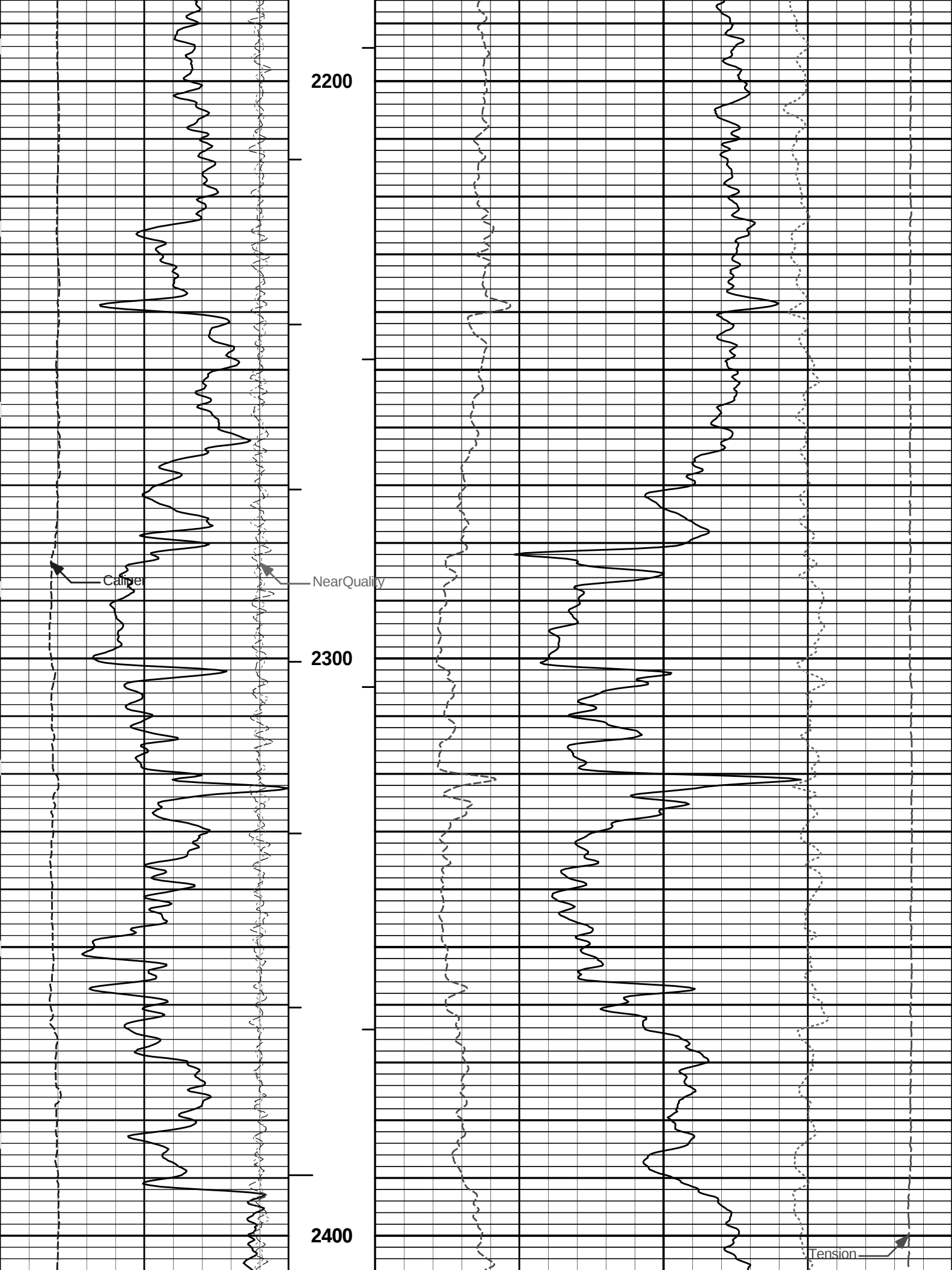
HALLIBURTON

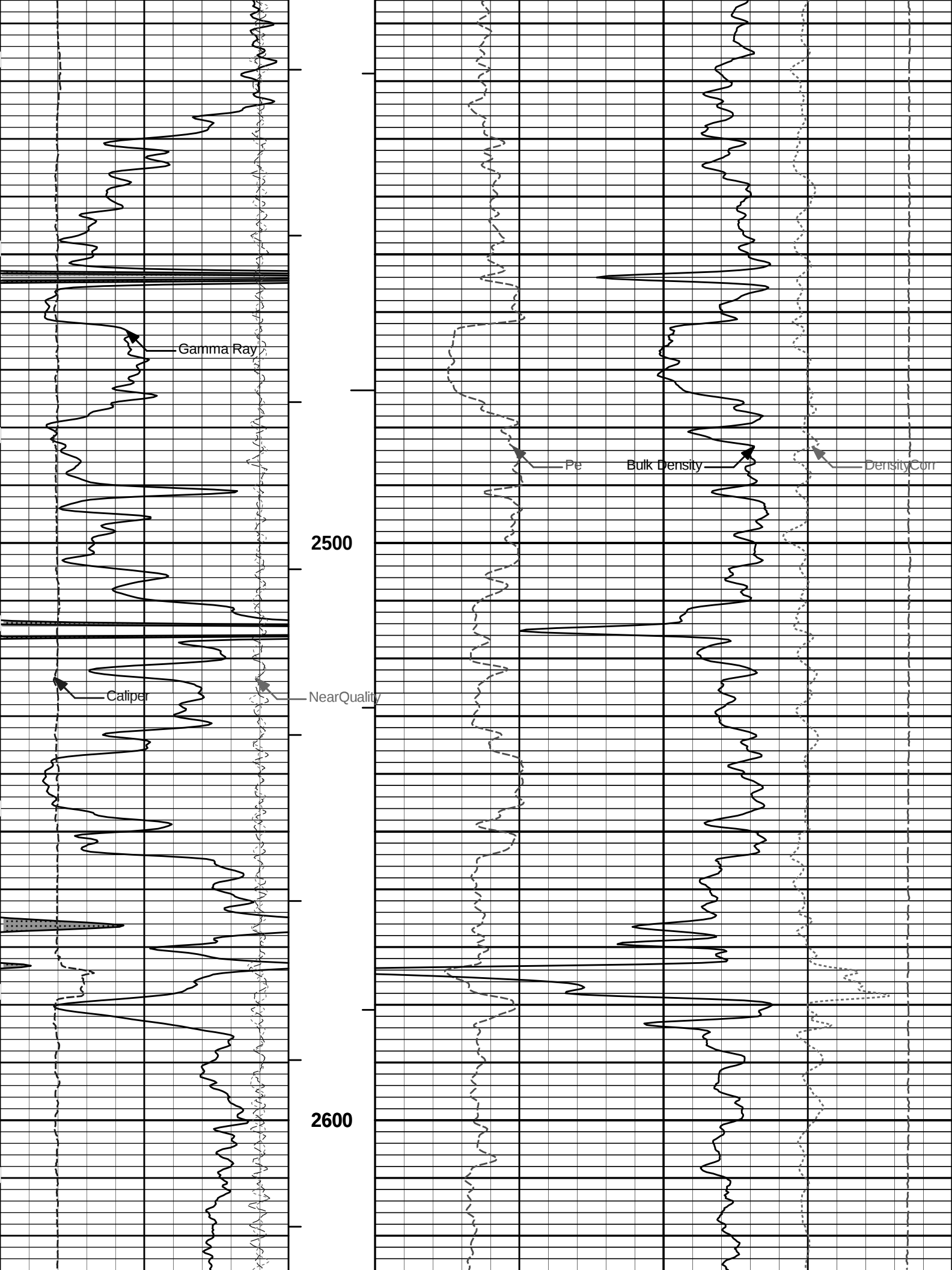
Plot Time: 08-Apr-12 04:53:15
 Plot Range: 1796 ft to 3507.92 ft
 Data: BOLACK_V_1_21\Well Based\IR1_DETAIL\
 Plot File: \\LOCAL-BOLACK_V_1_21\0001 SP-GTET-DSNT-SDLT-ACRT-CH\PORO\BULKD_5_MAIN_LIB

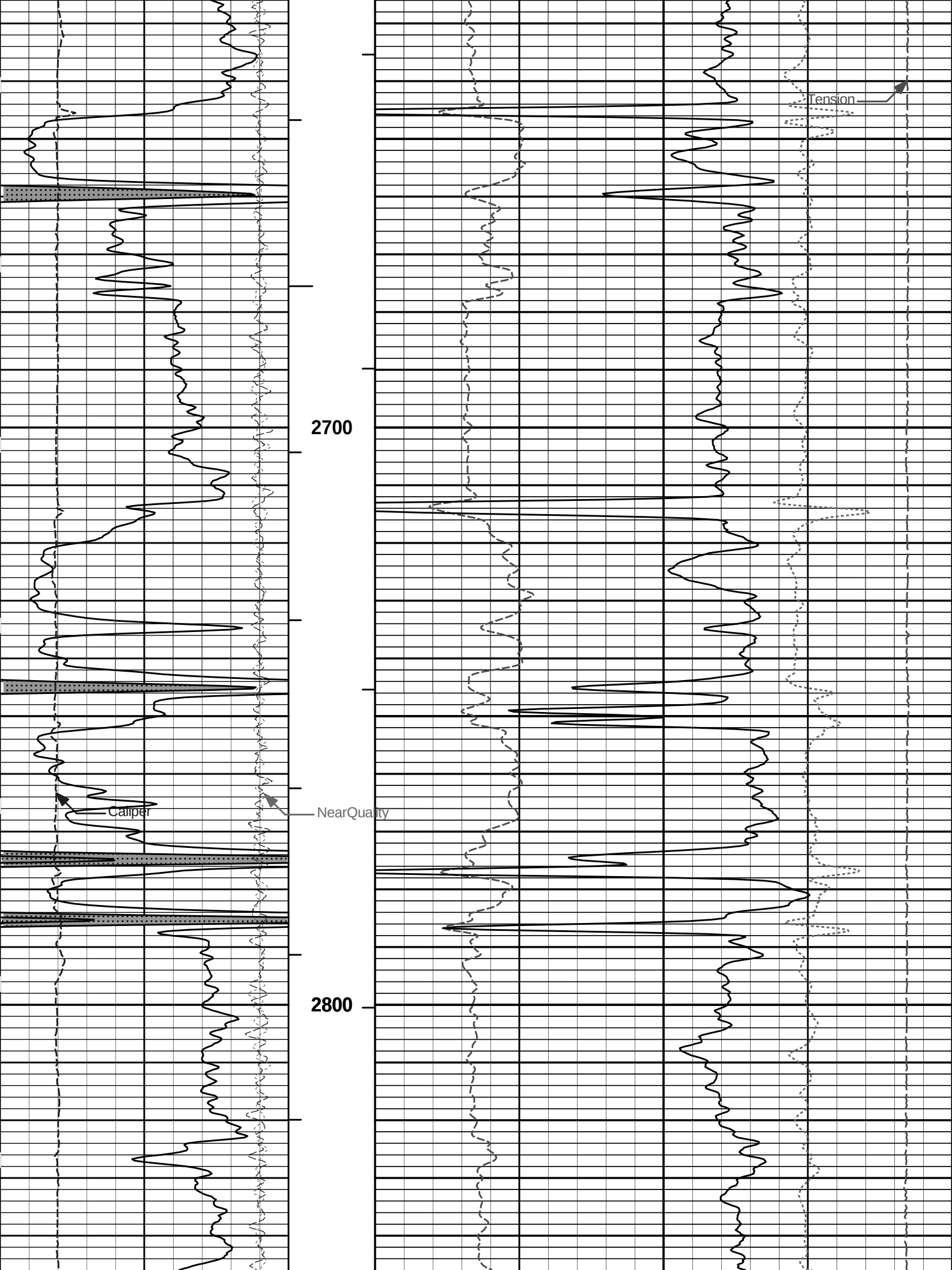
5 INCH MAIN LOG

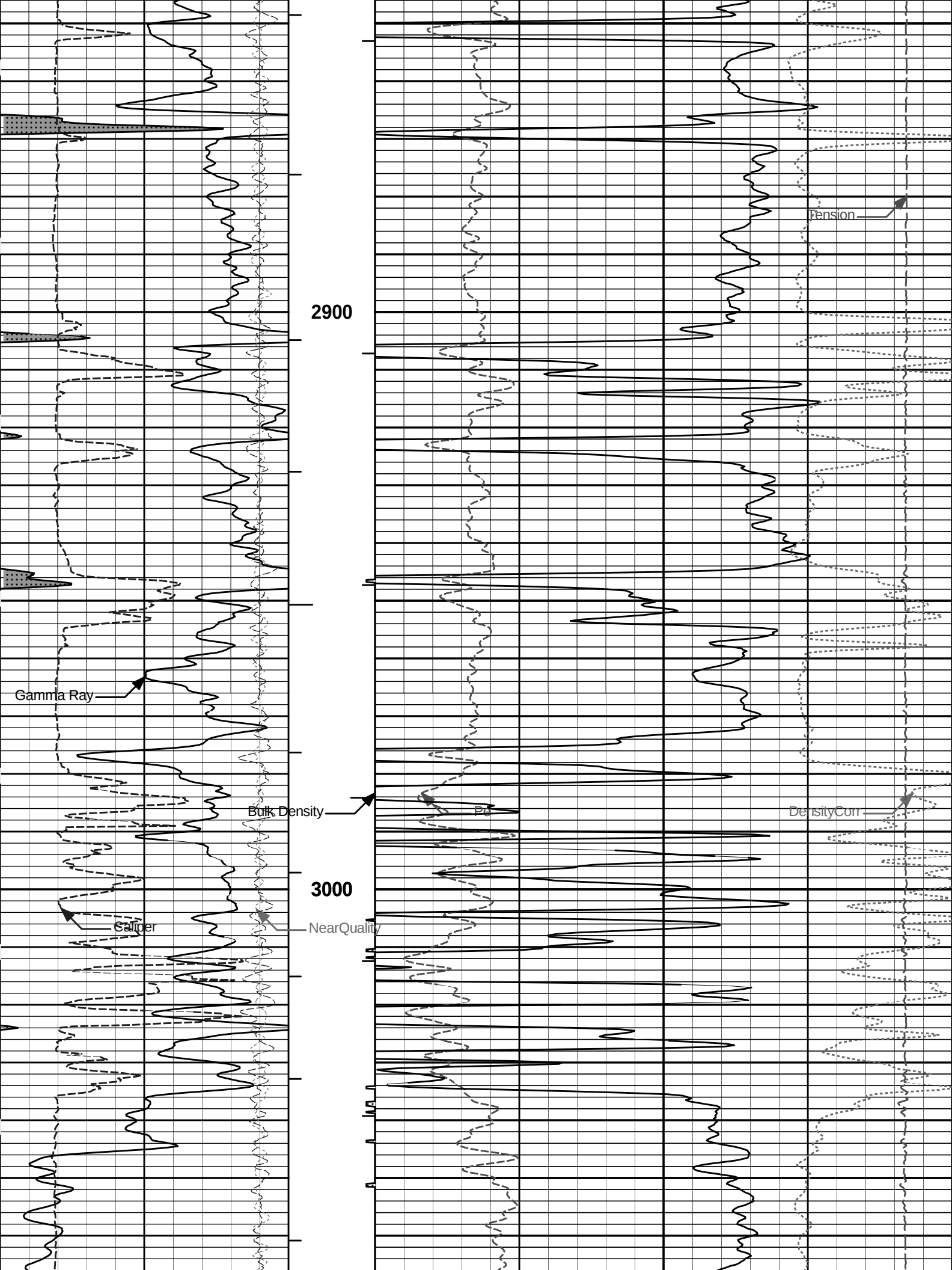


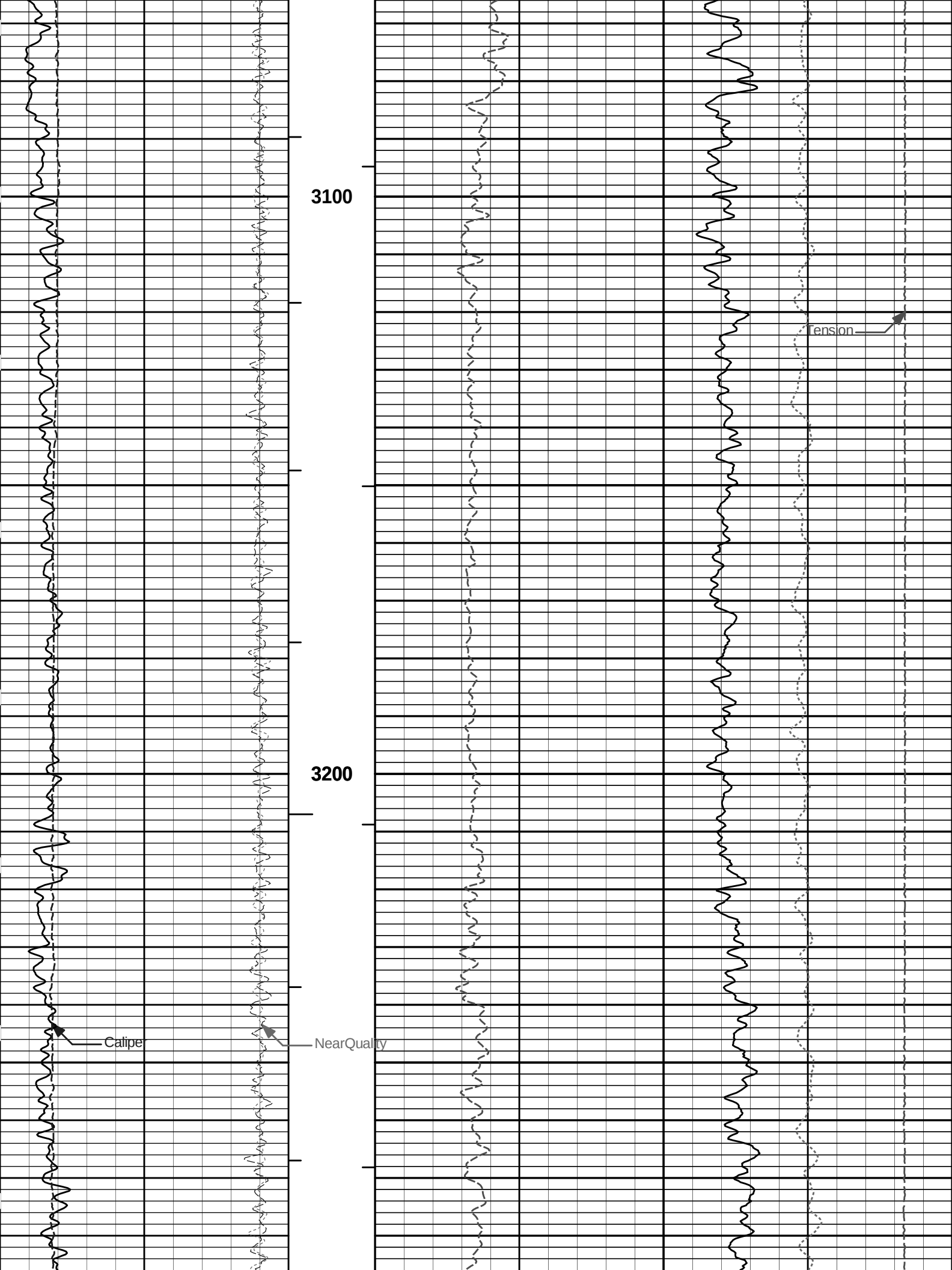


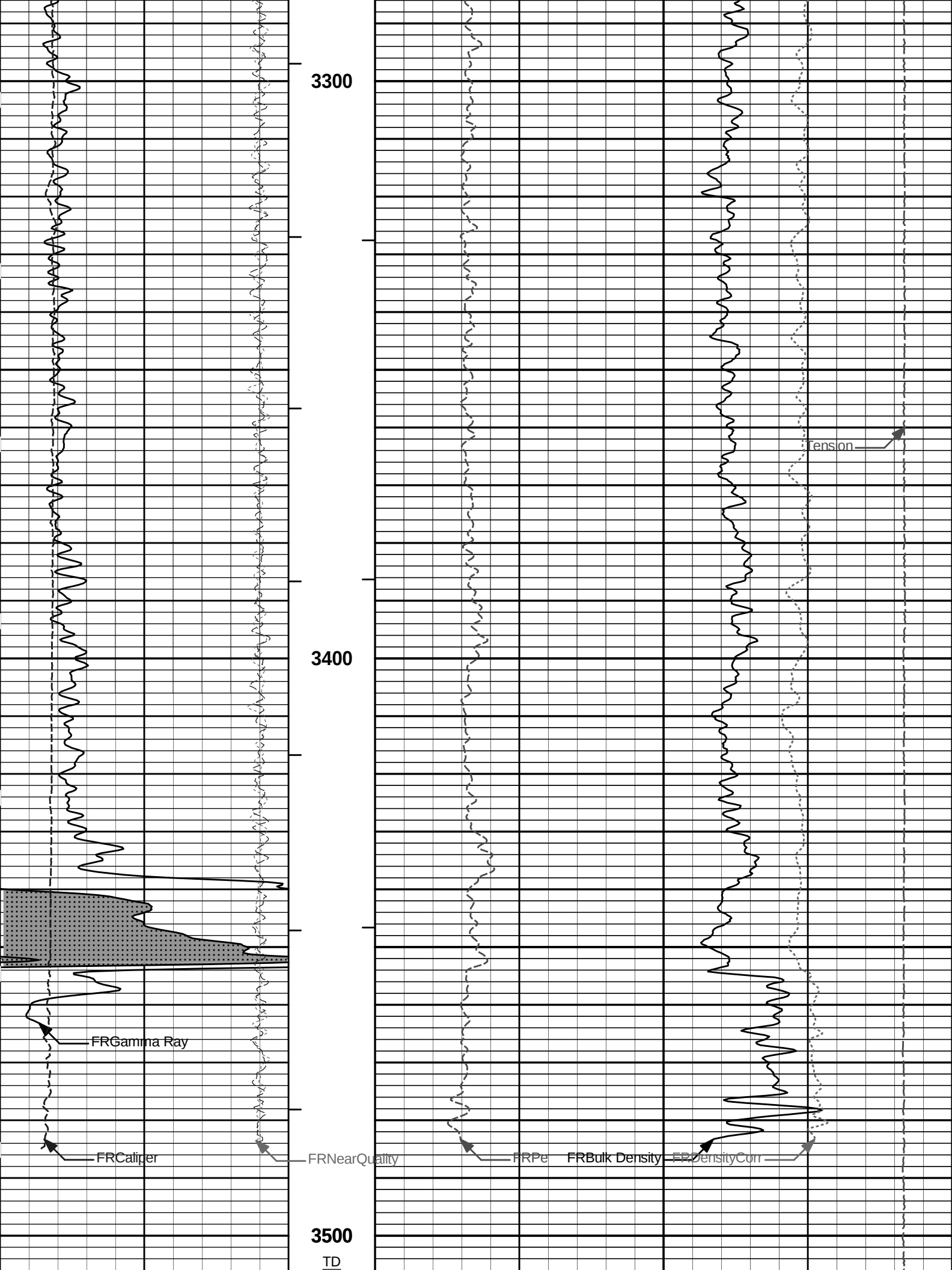












6	Caliper	16	1 : 240	0	Pe	10	-0.25	DensityCorr	0.25	
	inches		ft					g/cc		
-18	NearQuality	2	BHV				15K	Tension	0	
			ft3					pounds		
18	FarQuality	-2	AHV	2	Bulk Density					3
			ft3		g/cc					
0	Gamma Ray	150	Tension Pull							
	api		10	0						
	SHALE		Tension Pull							

HALLIBURTON

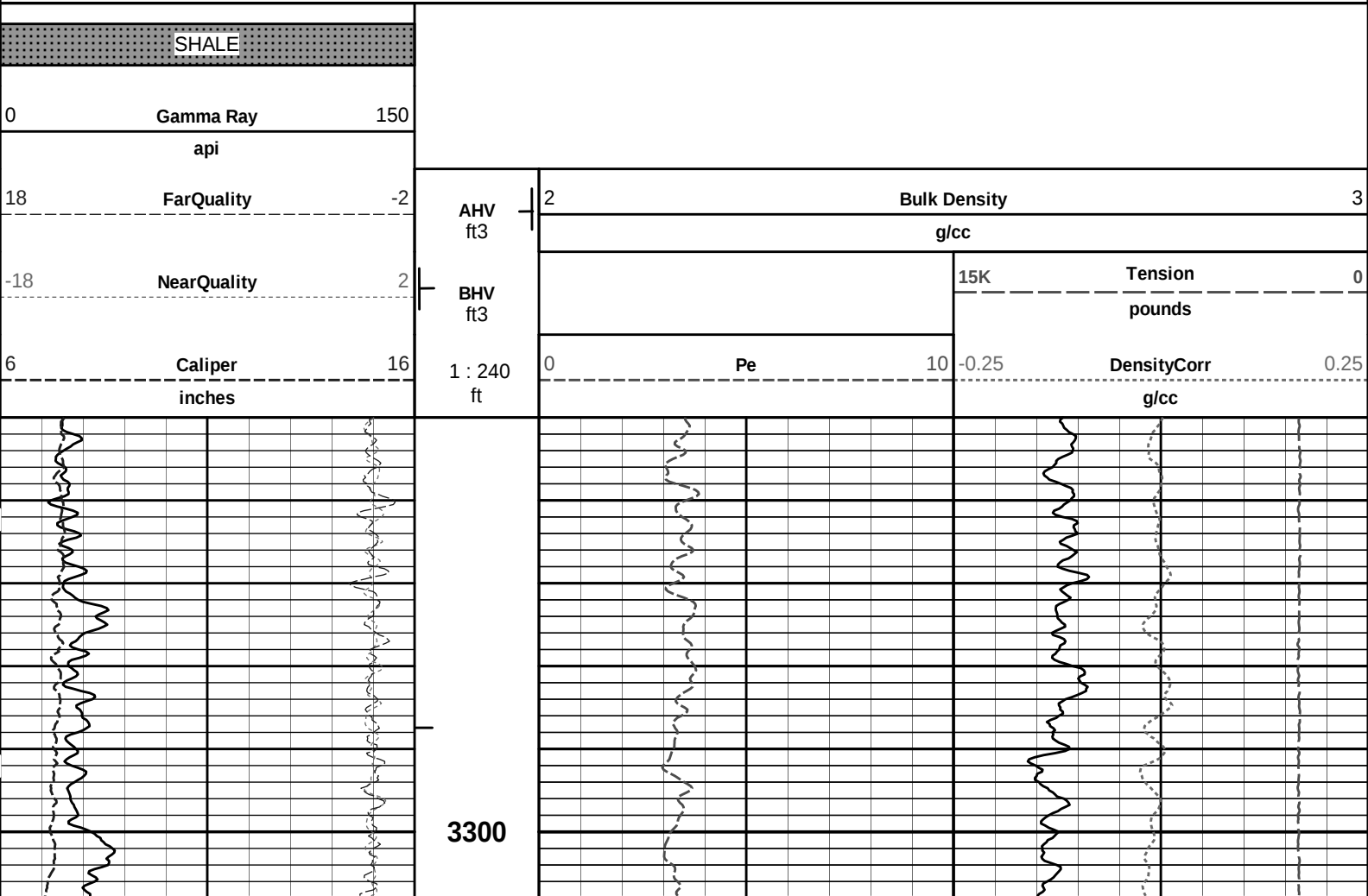
Plot Time: 08-Apr-12 04:53:18
Plot Range: 1796 ft to 3507.92 ft
Data: BOLACK_V_1_21\Well Based\R1_DETAIL\
Plot File: \\-LOCAL-BOLACK_V_1_21\0001 SP-GTET-DSNT-SDLT-ACRT-CHIPORO\BULKD_5_MAIN_LIB

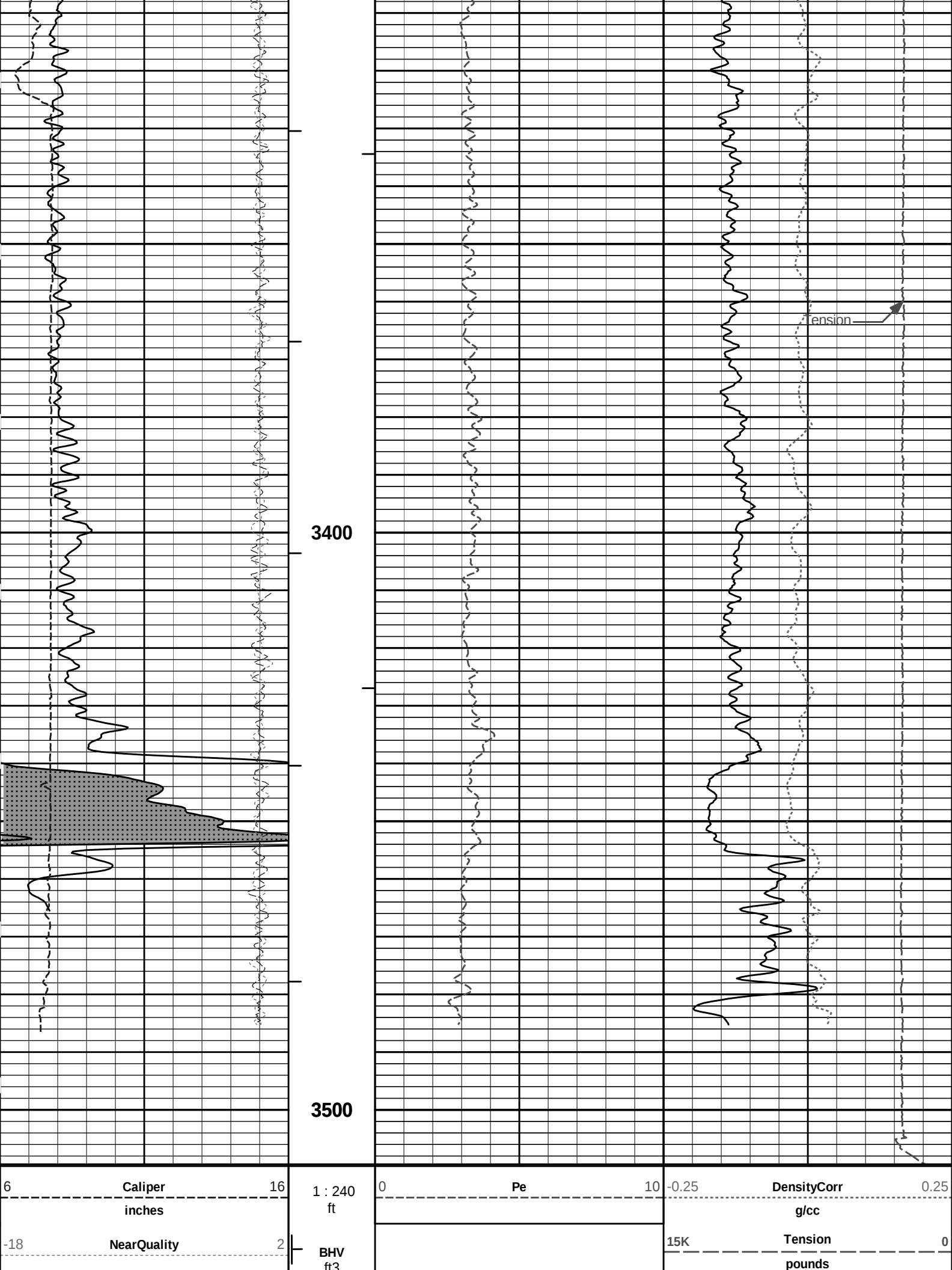
5 INCH MAIN LOG

HALLIBURTON

Plot Time: 08-Apr-12 04:53:18
Plot Range: 3250 ft to 3509.42 ft
Data: BOLACK_V_1_21\Well Based\R1_REPEAT\
Plot File: \\-LOCAL-BOLACK_V_1_21\0001 SP-GTET-DSNT-SDLT-ACRT-CHIPORO\BULKD_5_REP_LIB

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 ft3	2	Bulk Density	3
0	Gamma Ray	150			g/cc	
	api					
	SHALE					

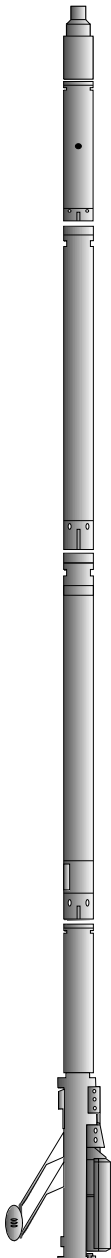
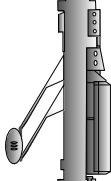
HALLIBURTON

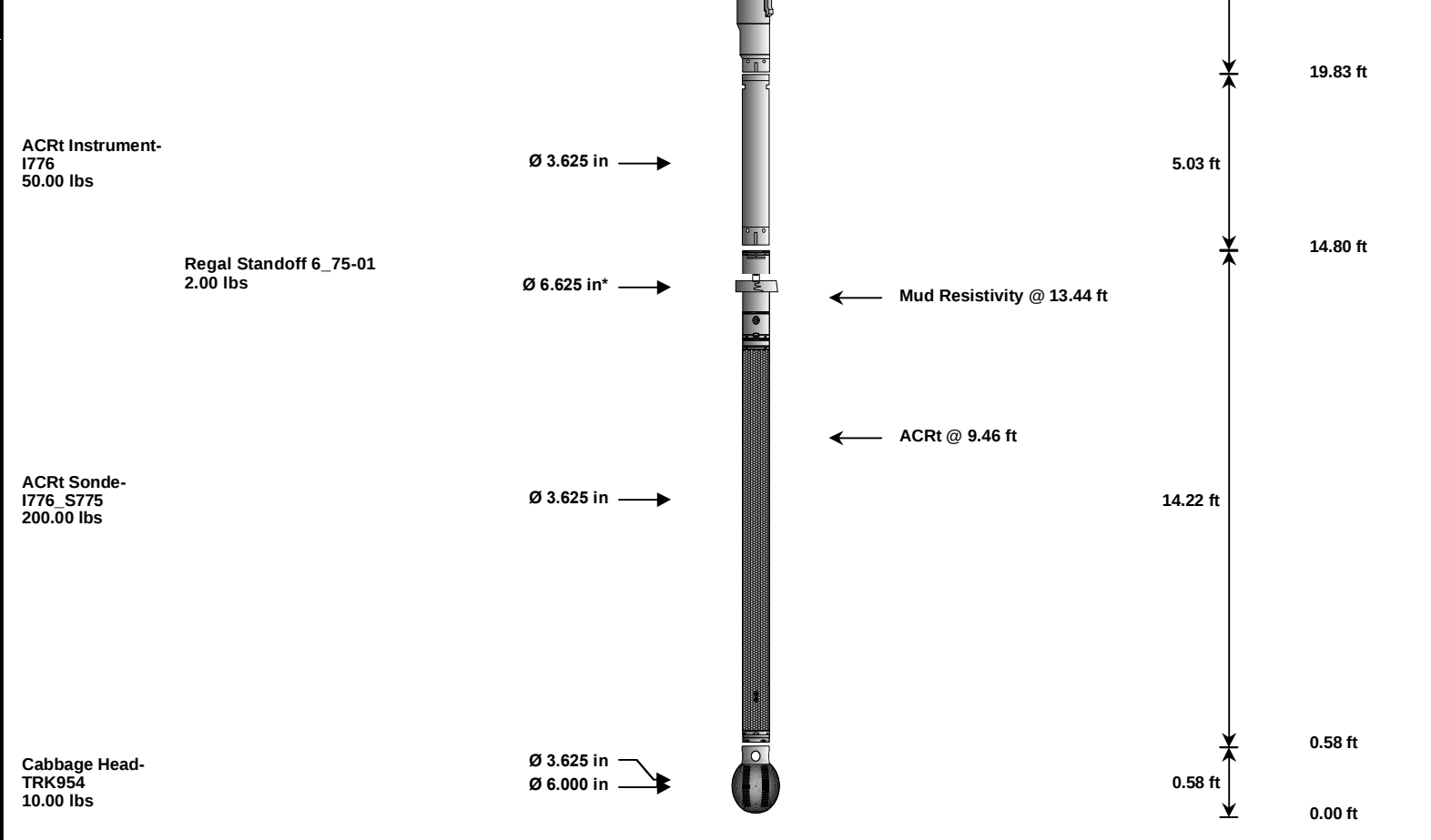
Plot Time: 08-Apr-12 04:53:19
Plot Range: 3250 ft to 3509.42 ft
Data: BOLACK_V_1_21\Well Based\IR1_REPEAT\
Plot File: \\-LOCAL-BOLACK_V_1_21\0001 SP-GTET-SDLT-ACRT-CHIPORO\BULKD_5_REP_LIB

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-11441709 60.00 lbs		Ø 3.625 in →		← SP @ 50.81 ft	3.74 ft	52.59 ft
						48.85 ft
GTET-10811258 165.00 lbs		Ø 3.625 in →		← GammaRay @ 42.79 ft	8.52 ft	
						40.33 ft
DSNT-10735145 174.00 lbs		Ø 3.625 in →		← DSN Far @ 33.39 ft ← DSN Near @ 32.64 ft	9.69 ft	
						30.64 ft
SDLT- I145_M73803_P90 360.00 lbs	SDLT Pad-90 65.00 lbs Microlog Pad- I145_M73803_P90 8.00 lbs	Ø 4.500 in → Ø 4.750 in* → Ø 4.750 in* →		Microlog @ 22.83 ft SDL Caliper @ 22.65 ft SDL @ 22.64 ft	10.81 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		11441709	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
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
SDLP	Density Insite Pad		90	65.00	2.55	*	22.04
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
RSOF	Regal Standoff 6.75in		01	2.00	0.52	*	13.53
CBHD	Cabbage Head		TRK954	10.00	0.58	0.00	300.00
Total				1,124.00	54.51		
* Not included in Total Length and Length Accumulation.							
Data: BOLACK_V_1_21\0001 SP-GTET-DSNT-SDLT-ACRT-CH\IDLE						Date: 08-Apr-12 01:32:17	

HALLIBURTON			
CALIBRATION REPORT			
DUAL SPACED NEUTRON SHOP CALIBRATION			
Tool Name:	DSNT - 10735145	Reference Calibration Date:	27-Feb-12 13:38:46
Engineer:	C. HAVERKAMP	Calibration Date:	07-Apr-12 14:03:46
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1
Logging Source S/N: DSN-436			
Tank Serial Number: 105060			
Reference value assigned to Tank: 51.680			
Snow Block S/N: TRK_954			
Calibration Tank Water Temperature: 65 degF			

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.931	0.935	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):	0.2076	0.2088	0.0012	+/- 0.0020
Calibrated Ratio:	9.61	9.65	0.041	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0625	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. BOLLUM	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: $\text{DIAMETER} = \text{PAD EXTENSION} + \text{ARM EXTENSION} + \text{TOOL DIAMETER}$

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

SPECTRAL DENSITY SHOP CALIBRATION			
-----------------------------------	--	--	--

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT Pad - 90

Reference Calibration Date: 07-Apr-12 11:36:19

Engineer: C. HAVERKAMP

Calibration Date: 07-Apr-12 11:56:59

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

Calibration Version: 1

Logging Source S/N: 5073GW

Aluminum Block S/N: 63061

Density: 2.591g/cc

Pe: 3.170

Magnesium Block S/N: 63393

Density: 1.690g/cc

Pe: 2.594

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0488	1.0430	0.90 - 1.10
Near Dens Gain	1.0152	1.0101	0.90 - 1.10
Near Peak Gain	1.0169	1.0182	0.90 - 1.10
Near Lith Gain	0.9915	0.9890	0.90 - 1.10
Far Bar Gain	0.9989	0.9974	0.90 - 1.10
Far Dens Gain	0.9879	0.9867	0.90 - 1.10
Far Peak Gain	0.9824	0.9813	0.90 - 1.10
Far Lith Gain	0.9594	0.9591	0.90 - 1.10
Near Bar Offset	-0.2250	-0.1713	NONE
Near Dens Offset	0.0748	0.1210	NONE
Near Peak Offset	0.0695	0.0576	NONE
Near Lith Offset	0.2620	0.2824	NONE
Far Bar Offset	0.1553	0.1682	NONE
Far Dens Offset	0.2355	0.2452	NONE
Far Peak Offset	0.2526	0.2634	NONE
Far Lith Offset	0.3787	0.3829	NONE
Near Bar Background	880.26	881.31	700 - 1450
Near Dens Background	291.30	294.81	230 - 480
Near Peak Background	129.08	127.76	100 - 210
Near Lith Background	157.53	158.16	125 - 260
Far Bar Background	591.45	592.33	450 - 900
Far Dens Background	232.56	232.07	175 - 345
Far Peak Background	91.93	92.39	70 - 140
Far Lith Background	97.63	95.98	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.690	1.690	0.000	+/- 0.015
Pe	2.549	2.551	0.002	+/- 0.150
ALUMINUM				
Density (g/cc)	2.591	2.591	0.000	+/- 0.01500
Pe	3.119	3.125	0.006	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0011	+/- 0.0110	0.0006	+/- 0.0140
Magnesium Block	0.0000	+/- 0.0110	-0.0008	+/- 0.0140

Magnesium Block	0.0000	+/- 0.0120	0.0000	+/- 0.0140
Aluminum Block	-0.0013	+/- 0.0110	-0.0005	+/- 0.0140
Resolution	8.95	6.00 - 11.50	8.94	6.00 - 11.50
Internal Verifier(B+D+P+L)	1462	1200 - 2700	1013	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				

CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
DSNT-10735145						
Snow-Block Porosity	0.0625	-----	-----	0.0000	+/- -.--	decg
SDLT-I145_M73803_P90						
Pad Extension	3.75	-----	-----	0.00	+/-0.20	in
Ring Diameter	8.25	-----	-----	0.00	+/-0.20	in
SDLT Pad-90						
Near(B+D+P+L)	1462.042	-----	-----	0.000	+/-13.488	cps
Far(B+D+P+L)	1012.779	-----	-----	0.000	+/-15.394	cps
Data: BOLACK_V_1_21\0001 SP-GTET-DSNT-SDLT-ACRT-CHIIDLE					Date: 08-Apr-12 01:59:20	

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	1900.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	1.630	ohmm
	SHARED	TRM	Temperature of Mud	71.0	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	3500.00	ft
	SHARED	BHT	Bottom Hole Temperature	110.0	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?	No	
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				
Data: BOLACK_V_1_21\0001 SP-GTET-DSNT-SDLT-ACRT-CHIDLE			Date: 08-Apr-12 01:57:28	

HALLIBURTON				
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	

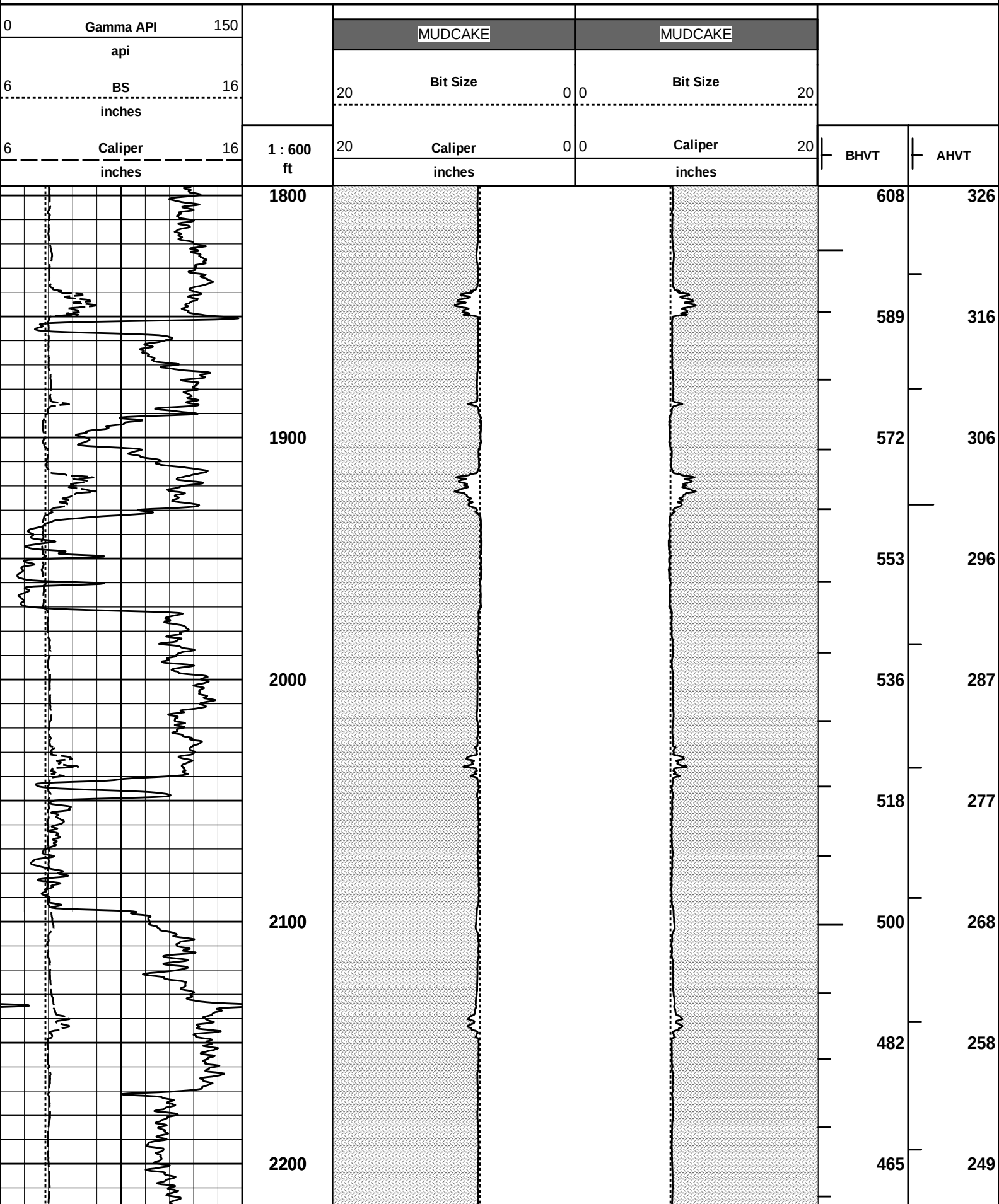
Microlog Pad

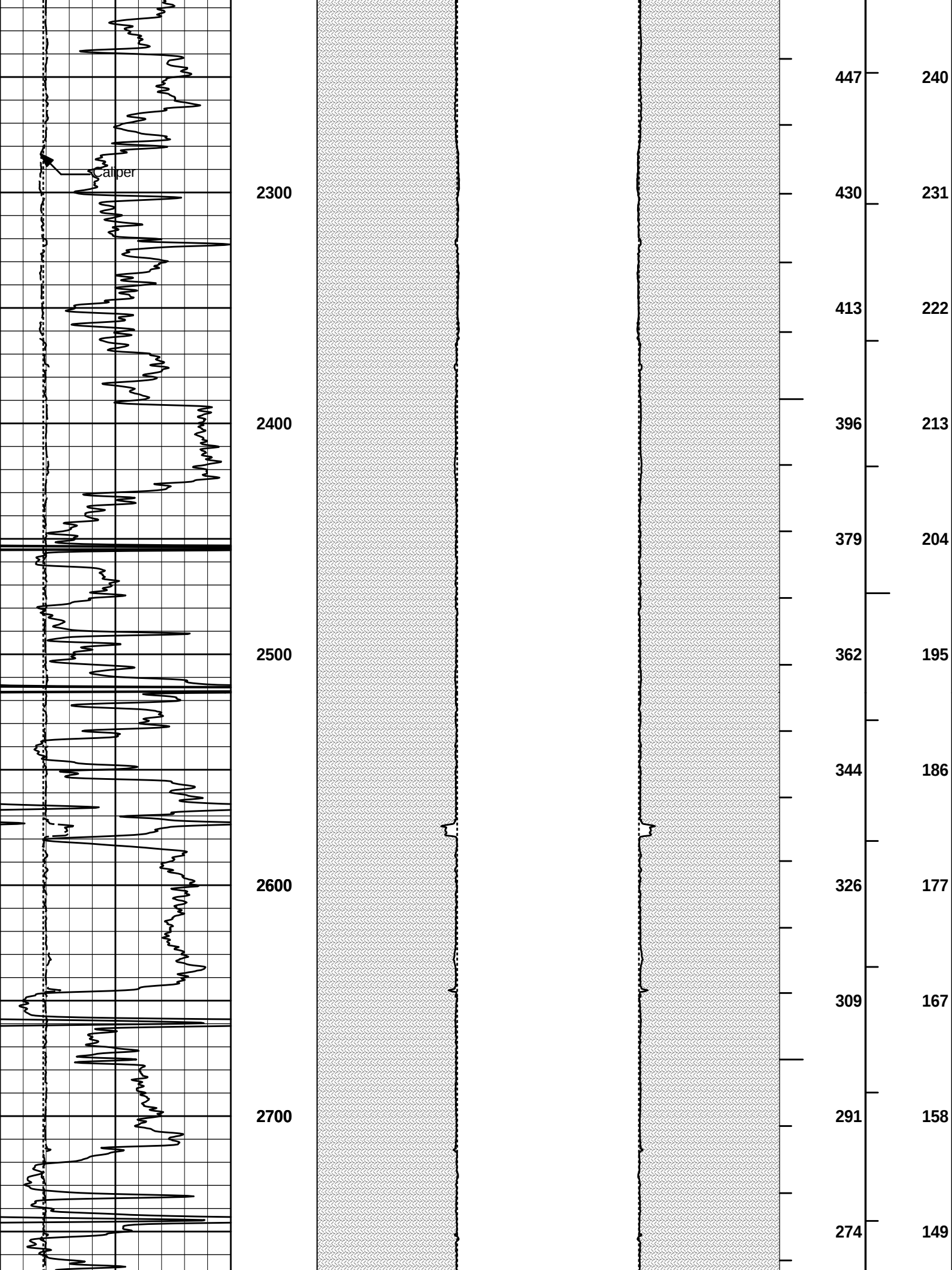
TPUL	Tension Pull	22.83	NO	
MINV	Microlog Lateral	22.83	BLK	0.750
MNOR	Microlog Normal	22.83	BLK	0.750

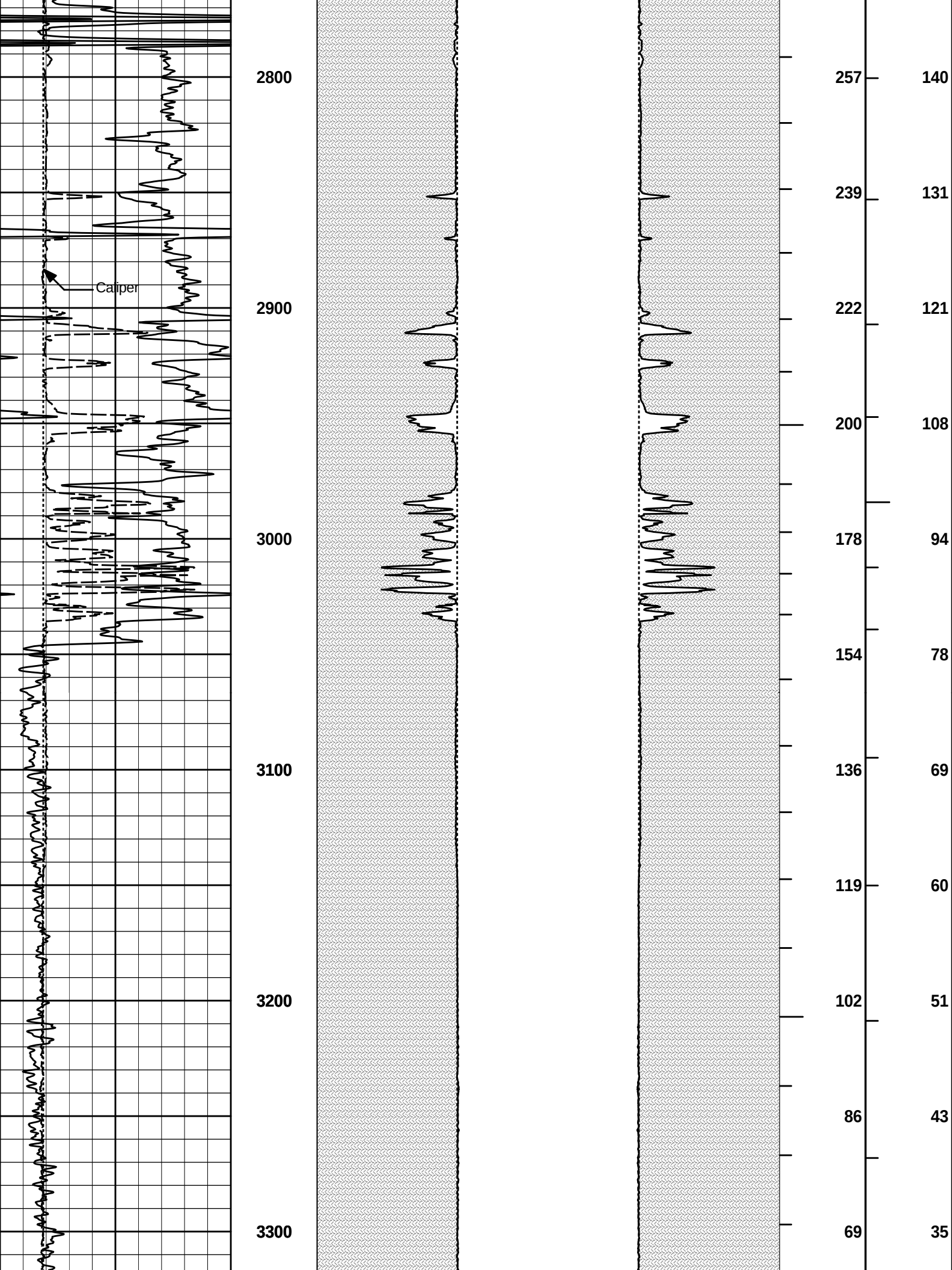
Data: BOLACK_V_1_21\0001 SP-GTET-DSNT-SDLT-ACRT-CHIDLE

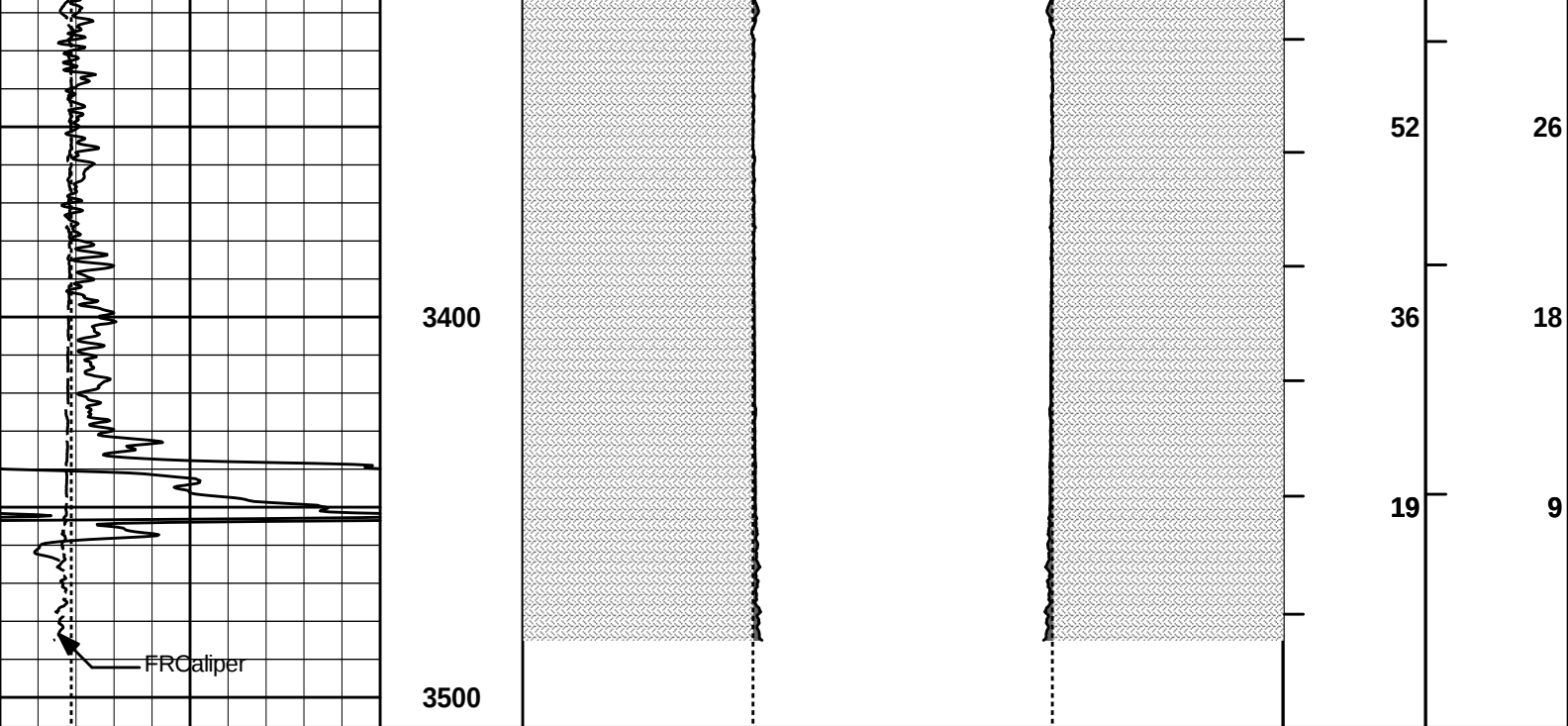
Date: 08-Apr-12 01:57:39

ANNULAR HOLE VOLUME PLOT (5.5 INCH)









6	Caliper	16	1 : 600	20	Caliper	0 0	20	BHVT	AHVT
	inches		ft		inches				
6	BS	16		20	Bit Size	0 0	20		
	inches								
0	Gamma API	150			MUDCAKE		MUDCAKE		
	api								

HALLIBURTON

Plot Time: 08-Apr-12 04:53:22
Plot Range: 1796 ft to 3507.92 ft
Data: BOLACK_V_1_21\Well Based\IR1_DETAIL\
Plot File: \\LOCAL\BOLACK_V_1_21\0001 SP-GTET-DSNT-SDLT-ACRT-CH\PORO\AHV_5_5_INCH_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT (5.5 INCH)

COMPANY	VAL ENERGY INC.		
WELL	BOLACK V 1-21		
FIELD	BOLACK		
COUNTY	COWLEY	STATE	KANSAS
HALLIBURTON		SPECTRAL DENSITY DUAL SPACED NEUTRON LOG	