

HALLIBURTON

SPECTRAL DENSITY DUAL SPACED NEUTRON LOG

COMPANY	OXY USA, INC.		
WELL	SNIDER C-2		
FIELD	PLEASANT PRAIRIE		
COUNTY	HASKELL		
STATE	KANSAS		
COMPANY	OXY USA, INC.	WELL	SNIDER C-2
FIELD	PLEASANT PRAIRIE	COUNTY	HASKELL
STATE	KANSAS	API No.	15-081-21929
Location	1460' FSL & 1660' FWL	Other Services:	MICRO ACRT BSAT
Sec. 22	Twp. 27S	Rge. 34W	
GROUND LEVEL		Elev. 3010.0 ft	Elev.: K.B. 3021.0 ft
Log measured from	KELLY BUSHING	11.0 ft above perm. Datum	D.F. 3020.0 ft
Drilling measured from	KELLY BUSHING		G.L. 3010.0 ft

Date	17-Mar-11	Run No.	ONE
Depth - Driller	5430.00 ft	Depth - Logger	5425.0 ft
Bottom - Logged Interval	5387.0 ft	Top - Logged Interval	3900.0 ft
Casing - Driller	8.625 in	Casing - Logger	1928.0 ft
Bit Size	7.875 in	Type Fluid in Hole	WATER BASED MUD
Viscosity	9.1 ppg	Density	46.00 s/qt
PH	10.80 pH	Fluid Loss	6.4 cpm
Source of Sample	FLOW LINE	Rm @ Meas. Temperature	1.300 ohmm @ 72.00 degF
Rmf @ Meas. Temperature	1.20 ohmm @ 74.00 degF	Rmc @ Meas. Temperature	1.700 ohmm @ 74.00 degF
Source Rmf	MEASURED	Rmc	MEASURED
Rm @ BHT	1.03 ohmm @ 125.0 degF	Time Since Circulation	4.2 hr
Time on Bottom	17-Mar-11 18:03	Max. Rec. Temperature	125.0 degF @ 5425.0 ft
Equipment	10782954	Location	LIBERAL
Recorded By	S. JUNG		
Witnessed By	A. GARNER		

Fold here

Service Ticket No.: 8017367		API Serial No.: 15-081-21929		PGM Version: WL INSITE R3.2.0 (Build 7)	
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	
Run No.	ONE	Run No.		Run No.	ONE
Serial No.	10748374	Serial No.		Serial No.	I066_M85803_P45
Model No.	GTET	Model No.		Model No.	SDLT
Diameter	3.625"	No. of Cent.		Diameter	4.75"
Detector Model No.	T-102	Spacing		Log Type	GAM-GAM
Type	SCINT			Source Type	CS137
Length	8"	LSA [Y/N]		Serial No.	5073GW
Distance to Source	10'	FWDA [Y/N]		Strength	1.5 Ci
LOGGING DATA					
GENERAL		GAMMA		DENSITY	
ACOUSTIC		NEUTRON			

Run No.	GENERAL		Speed ft/min	GAMMA		ACOUSTIC		Matrix	DENSITY		NEUTRON			
	Depth			Scale		Scale			Matrix	Scale		Matrix		
	From	To		L	R	L	R			L	R			
ONE	TD	3900'	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

GPS COORDINATES: LAT: 37.66 N & LONG: 101.01 W

CHLORIDES REPORTED AT 900 MG/L

TODAY'S CREW: F. VILLA, D. FULLERTON

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

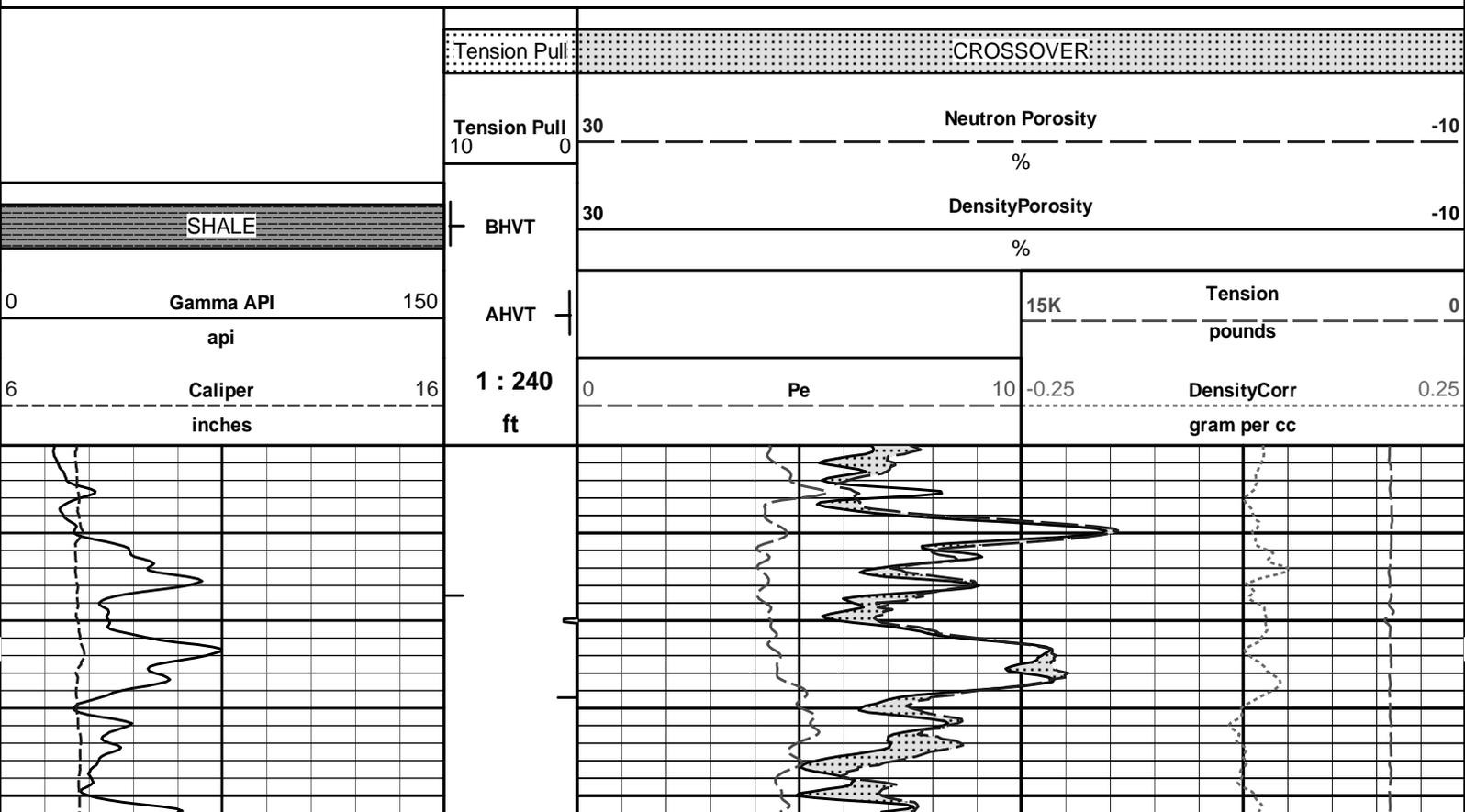
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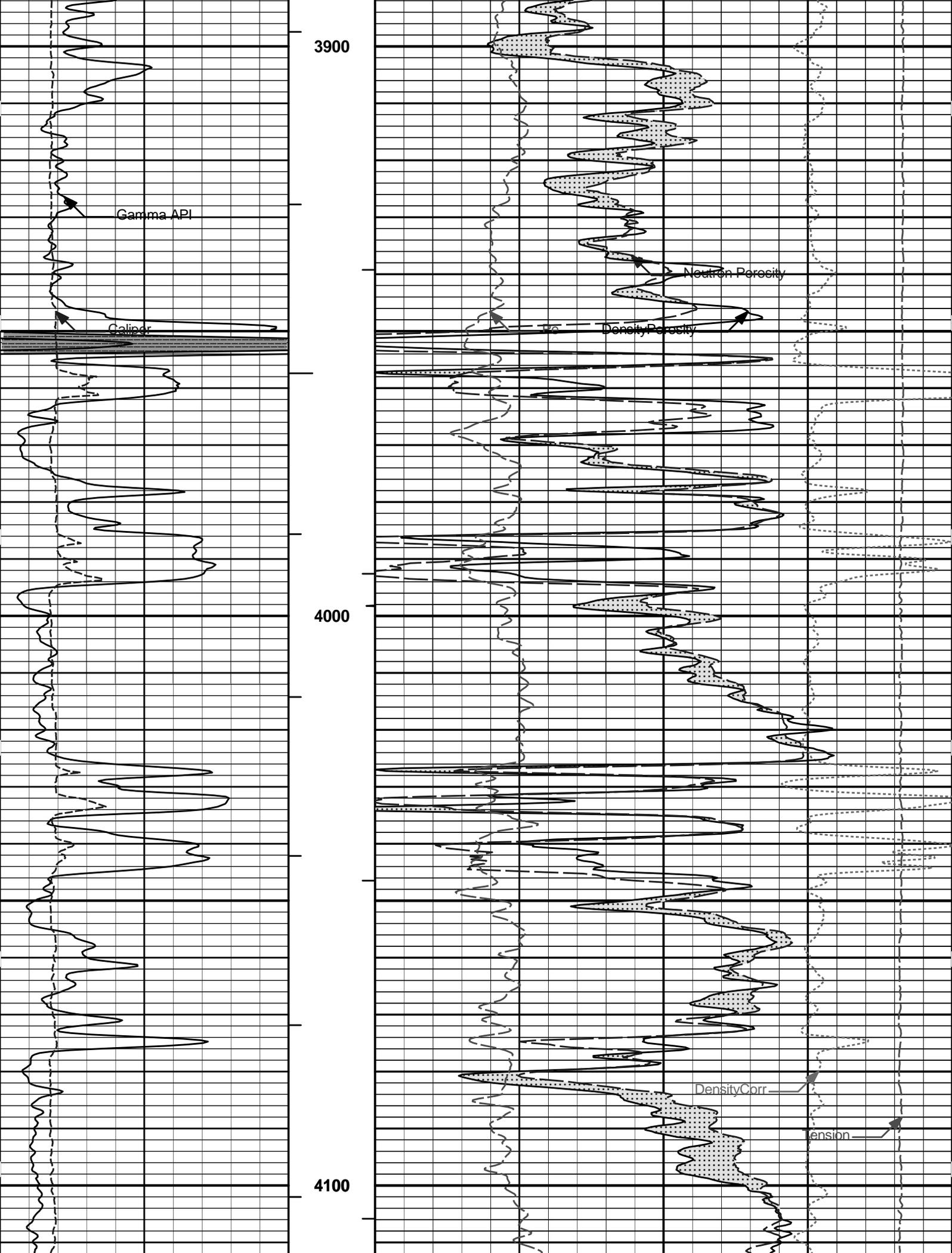
HALLIBURTON

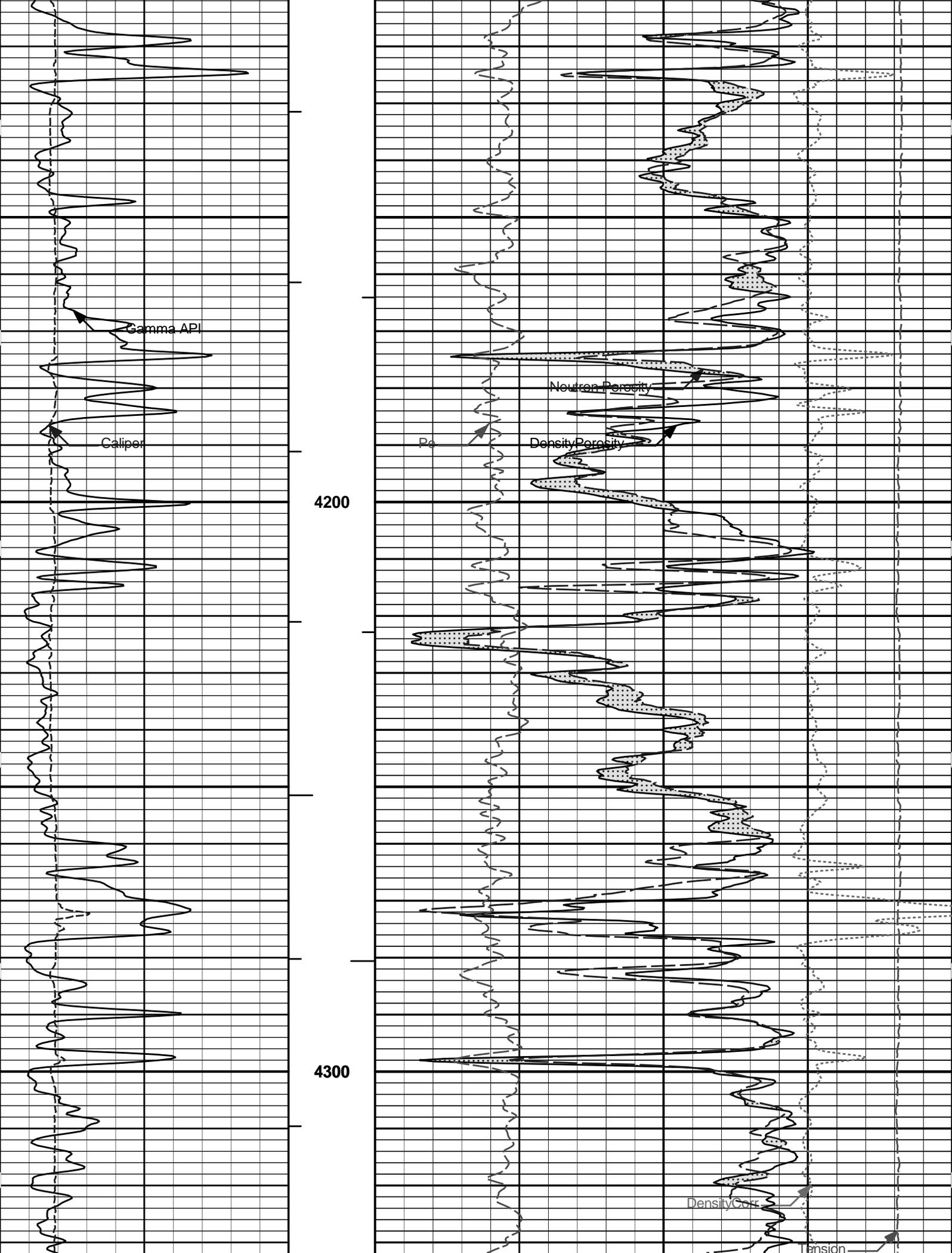
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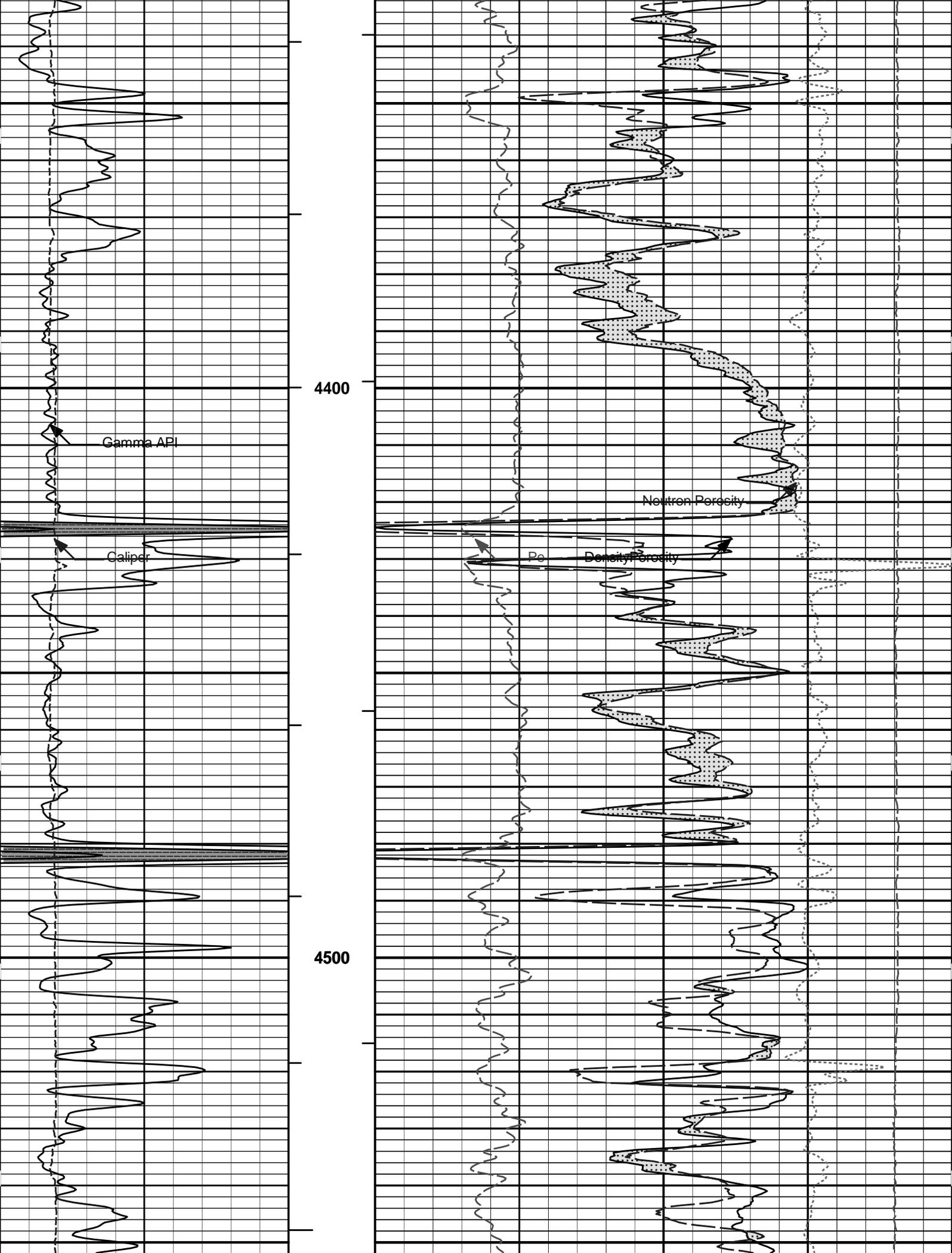
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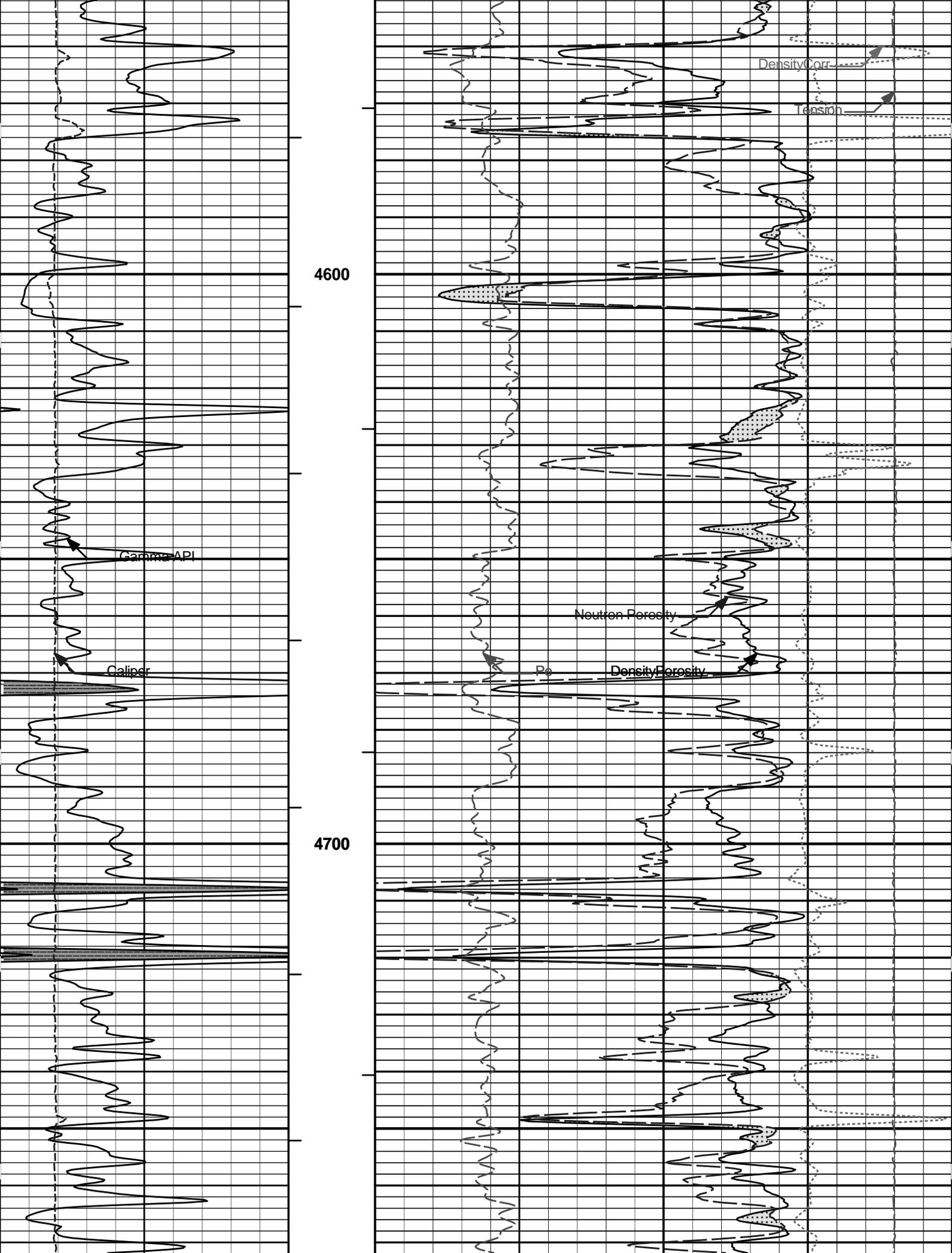
5 INCH MAIN LOG

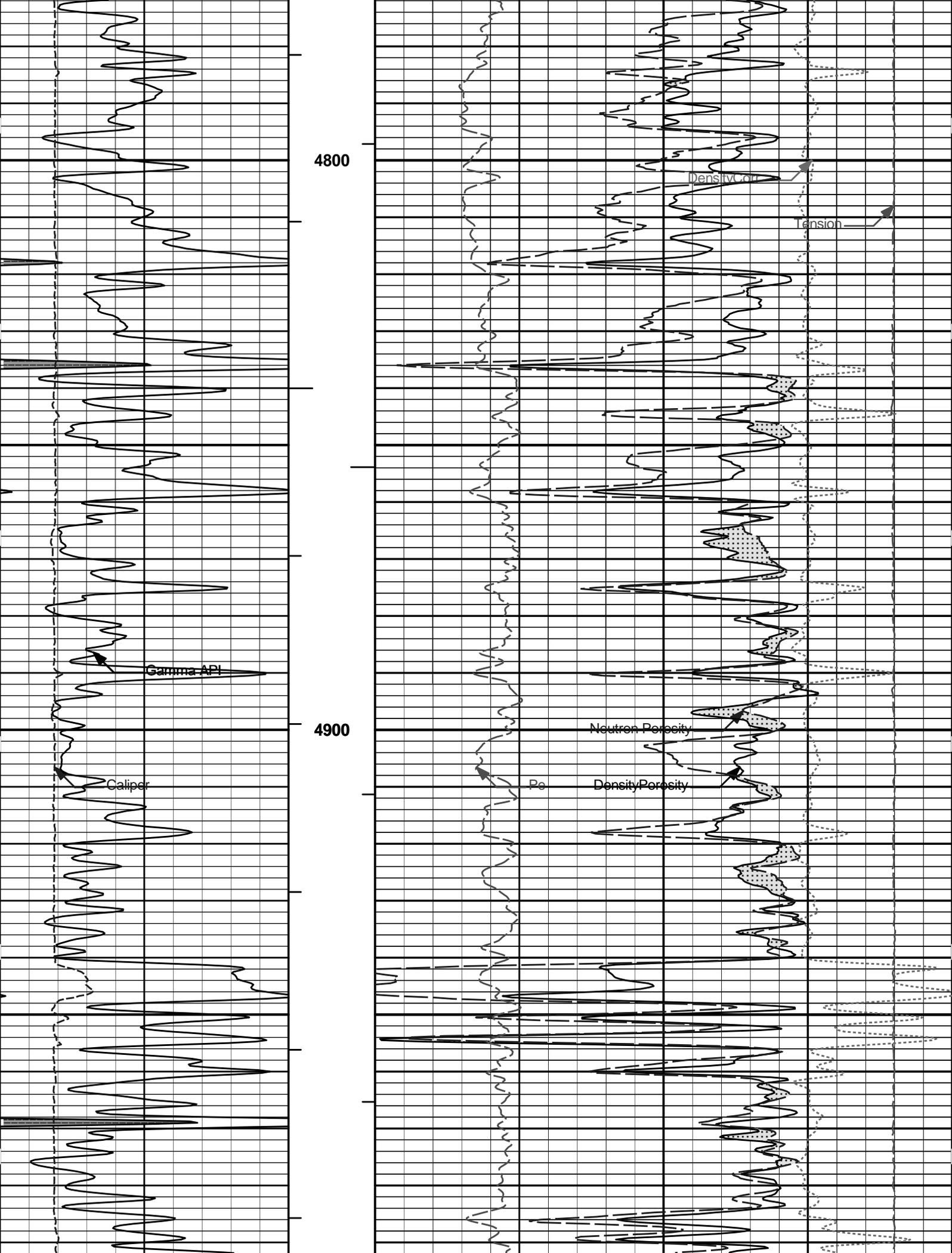


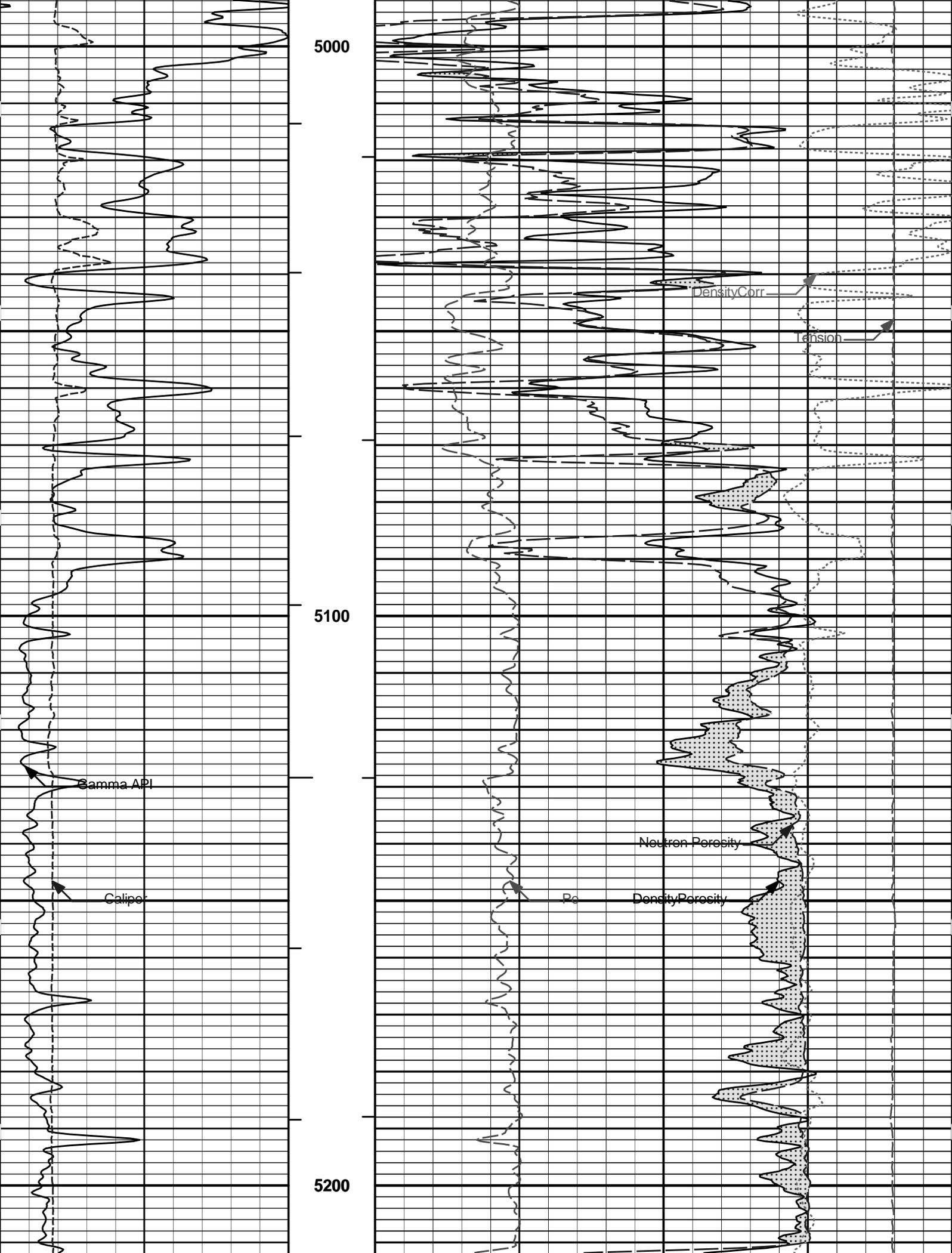


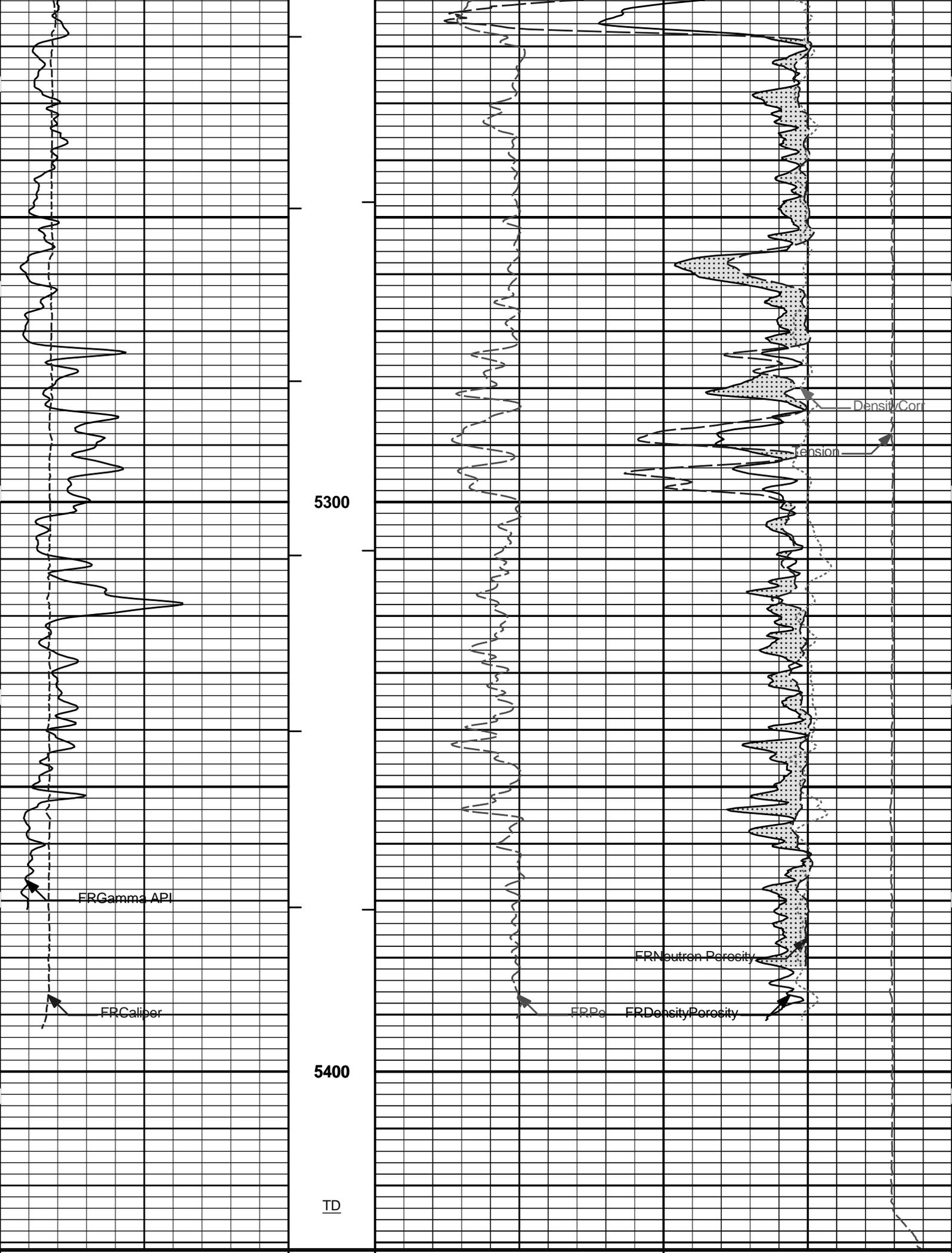












5300

5400

TD

ERGamma API

ERCaliper

FRNeutron Porosity

ERPe ERDensityPorosity

Density/Correction

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

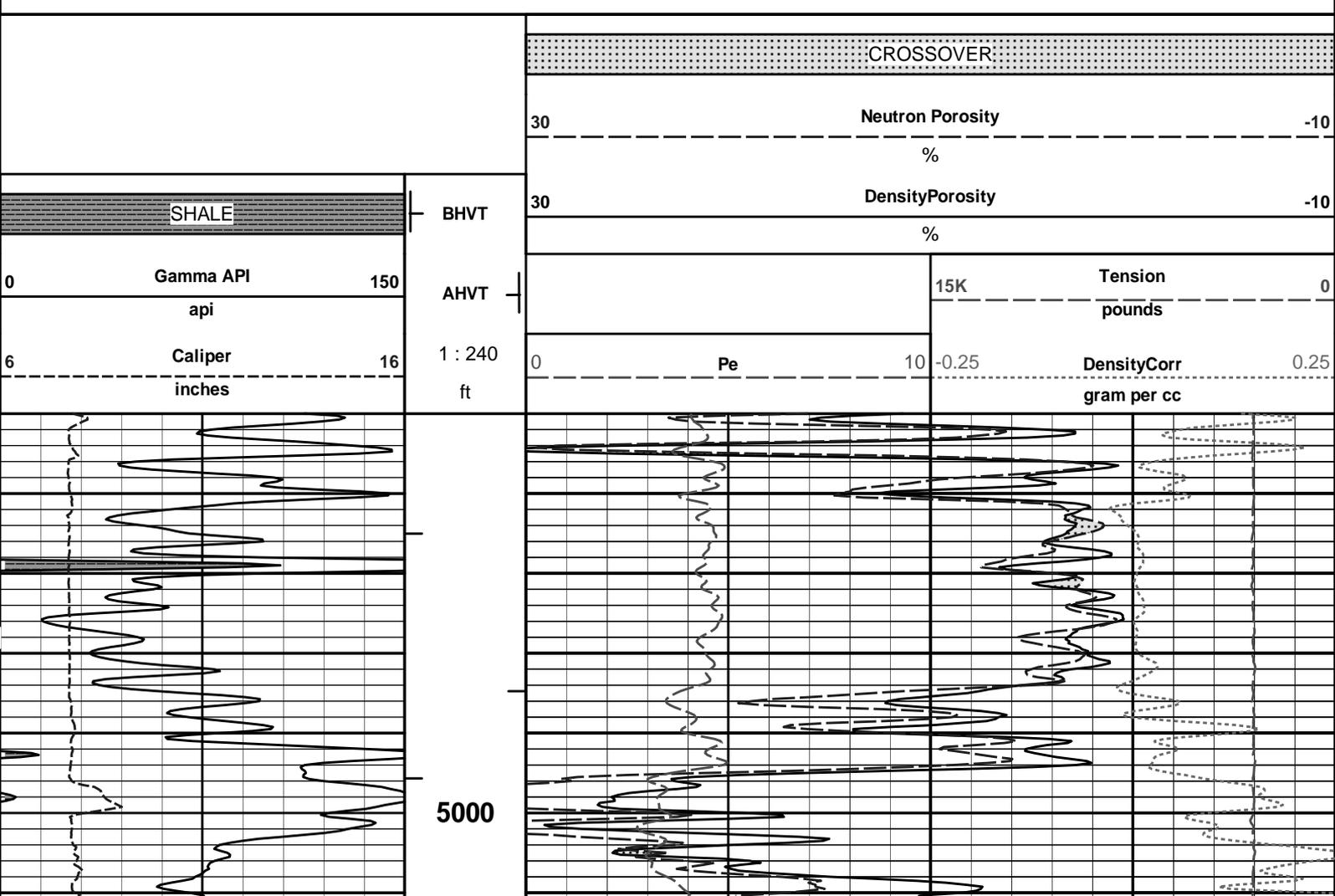
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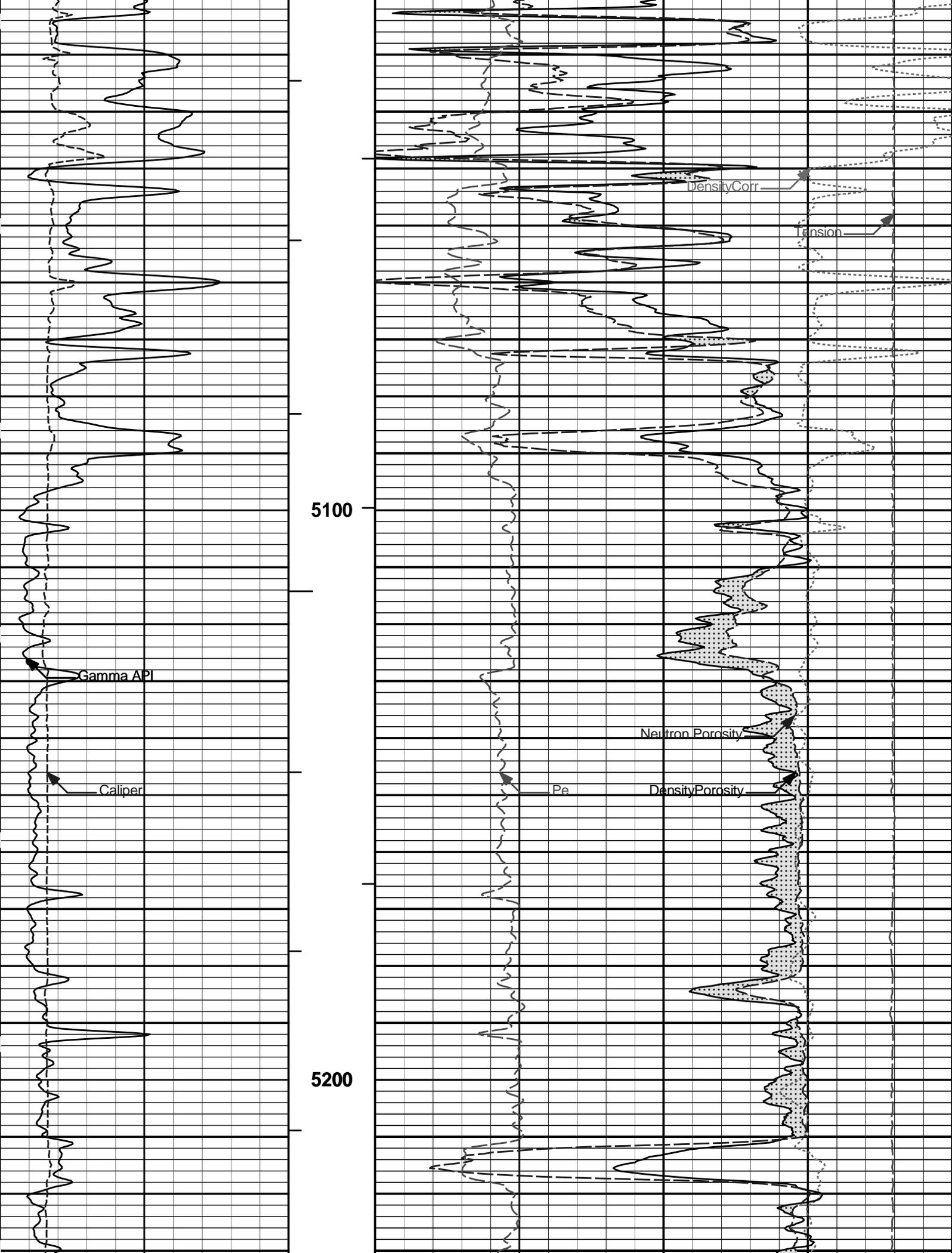
5 INCH MAIN LOG

HALLIBURTON

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 Plot Range: 4950 ft to 5430.58 ft
 Data: SNIDER_C_2\Well Based\DAQ-0001-REPEAT\
 Plot File: \PORO\Poro_IQ_5_REP_LIB

REPEAT SECTION





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

HALLIBURTON

Plot Time: 17-Mar-11 20:56:22
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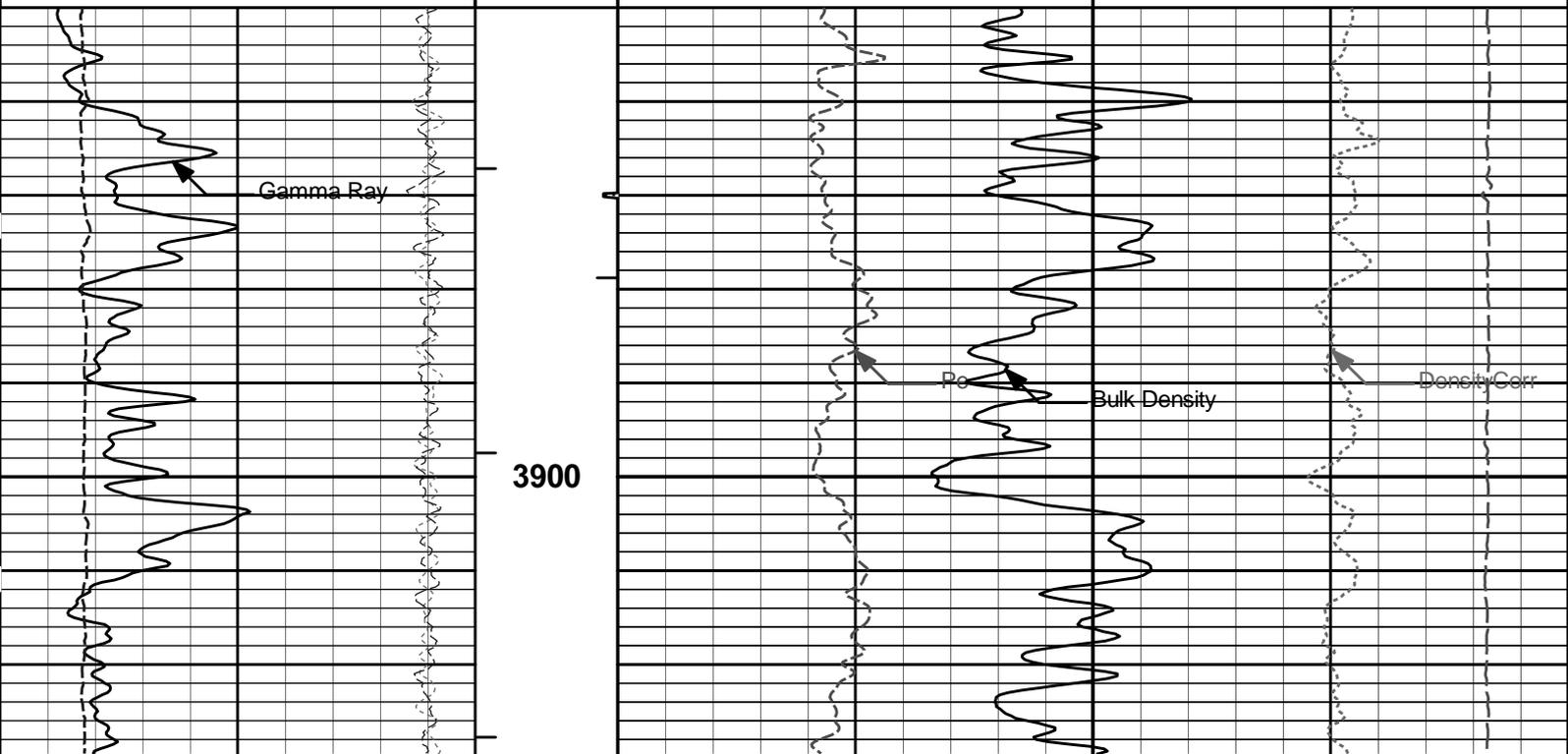
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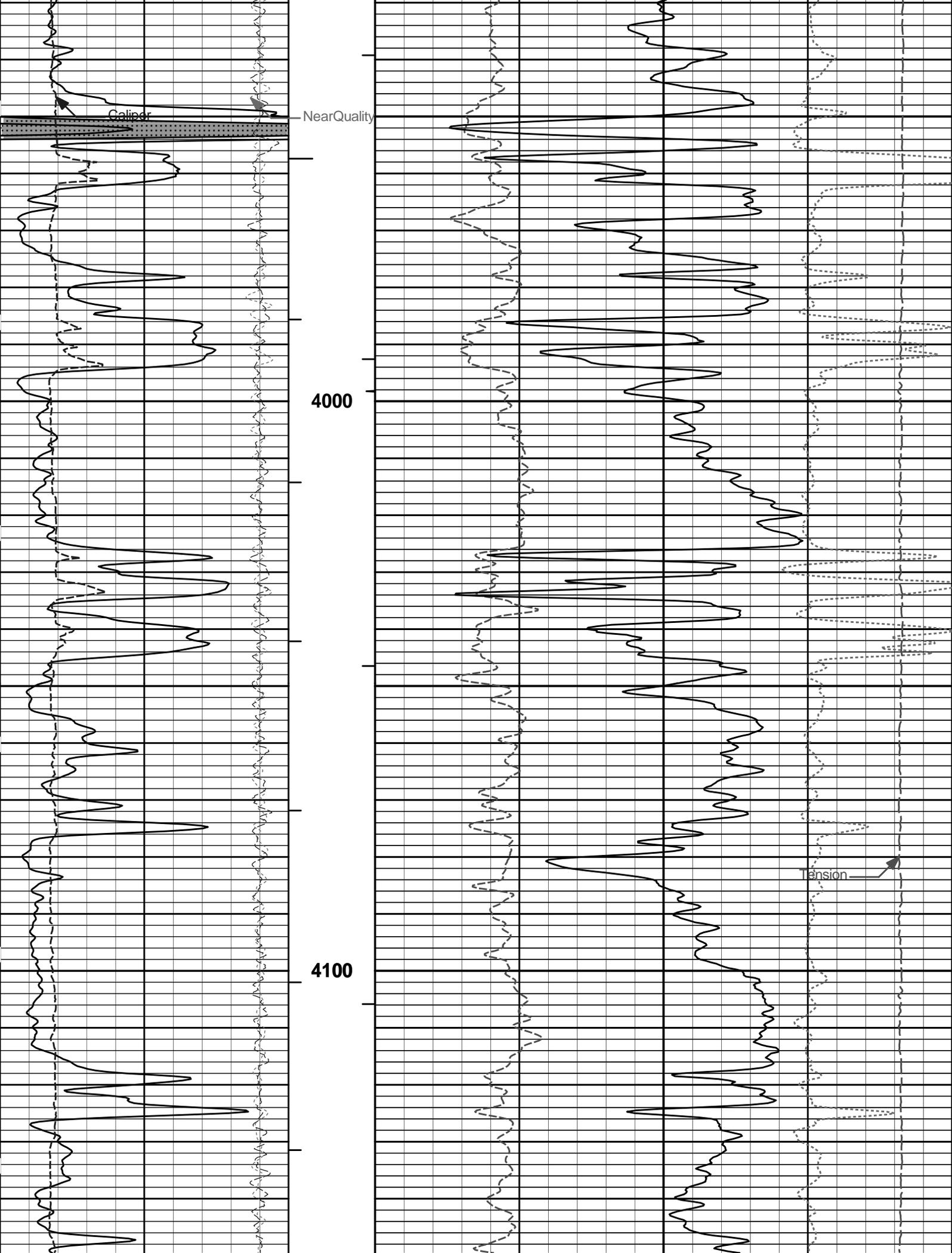
HALLIBURTON

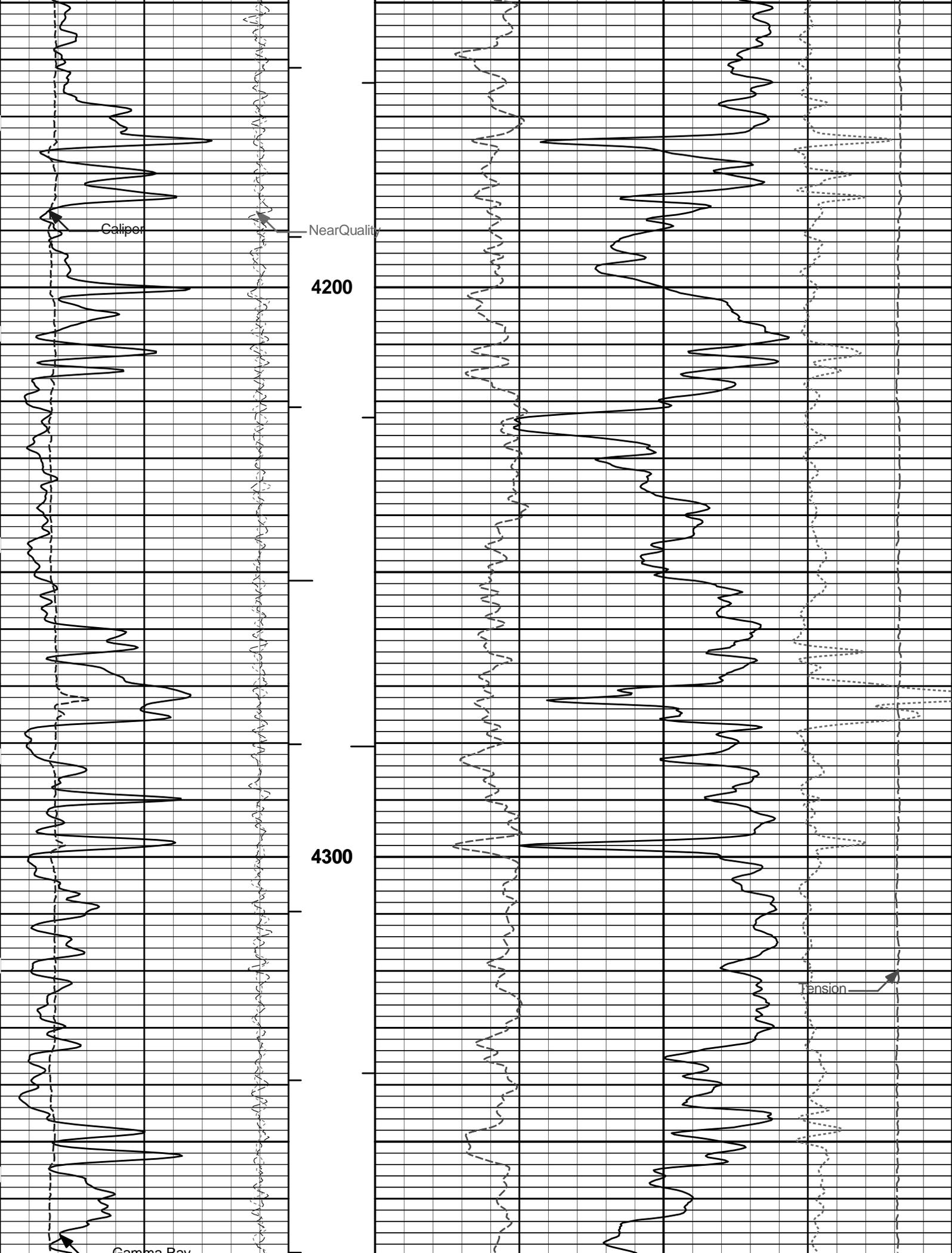
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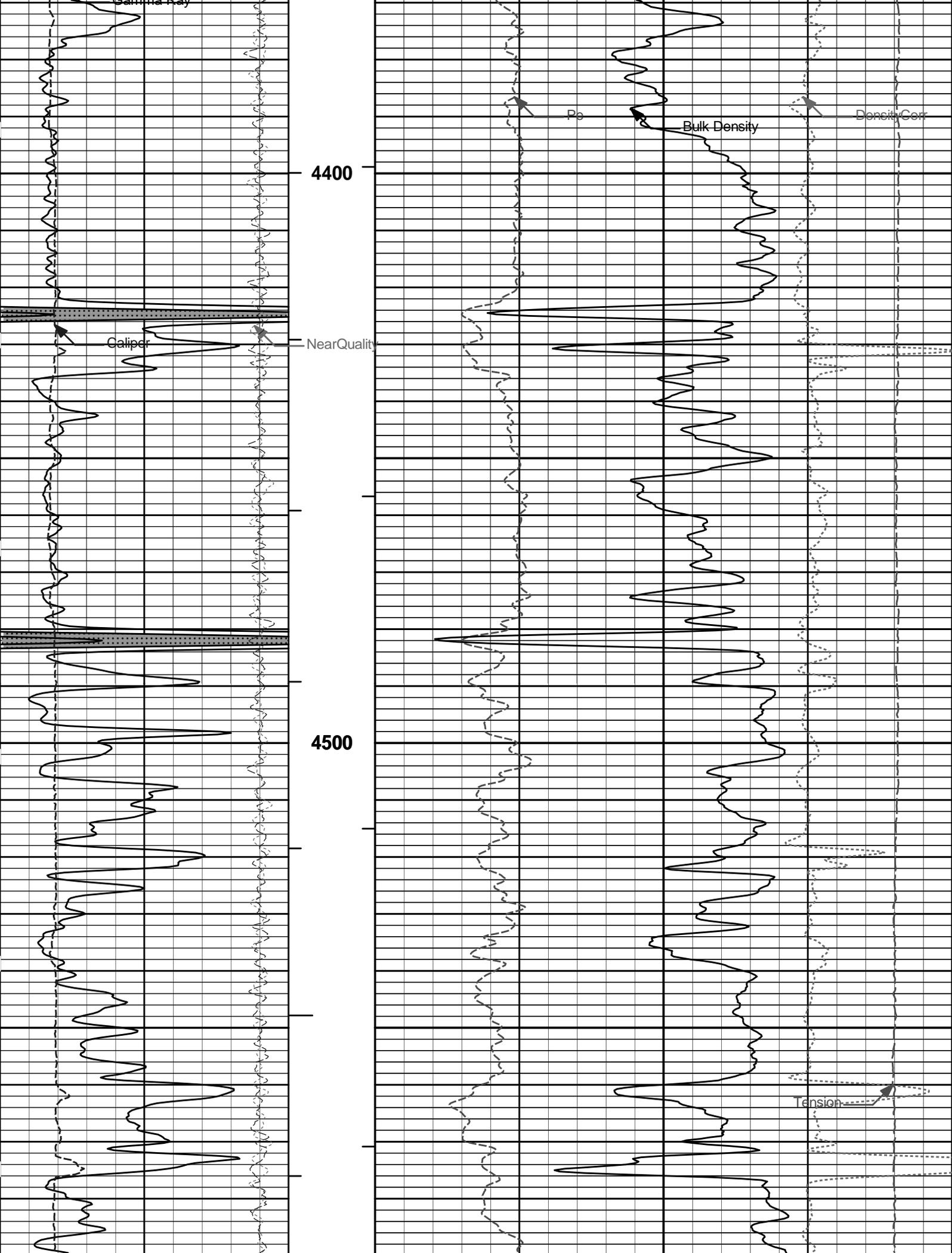
5 INCH MAIN LOG

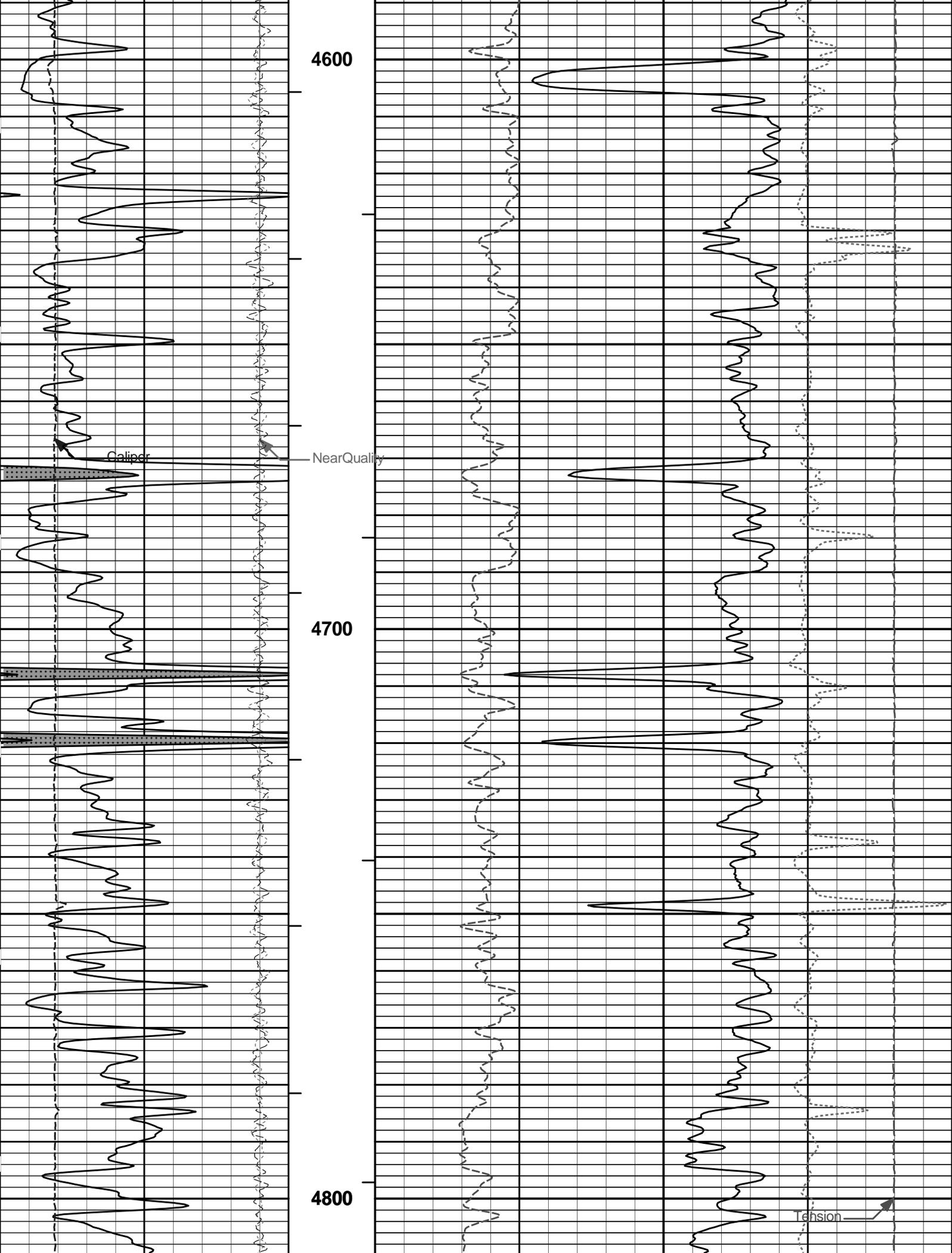
SHALE		Tension Pull			
0	Gamma Ray	150	Tension Pull		
	api		10		
18	FarQuality	-2	AHV	2	Bulk Density
			ft3		g/cc
-18	NearQuality	2	BHV	15K	Tension
			ft3		pounds
6	Caliper	16	1 : 240	0	Pe
	inches		ft	10	DensityCorr
				-0.25	g/cc

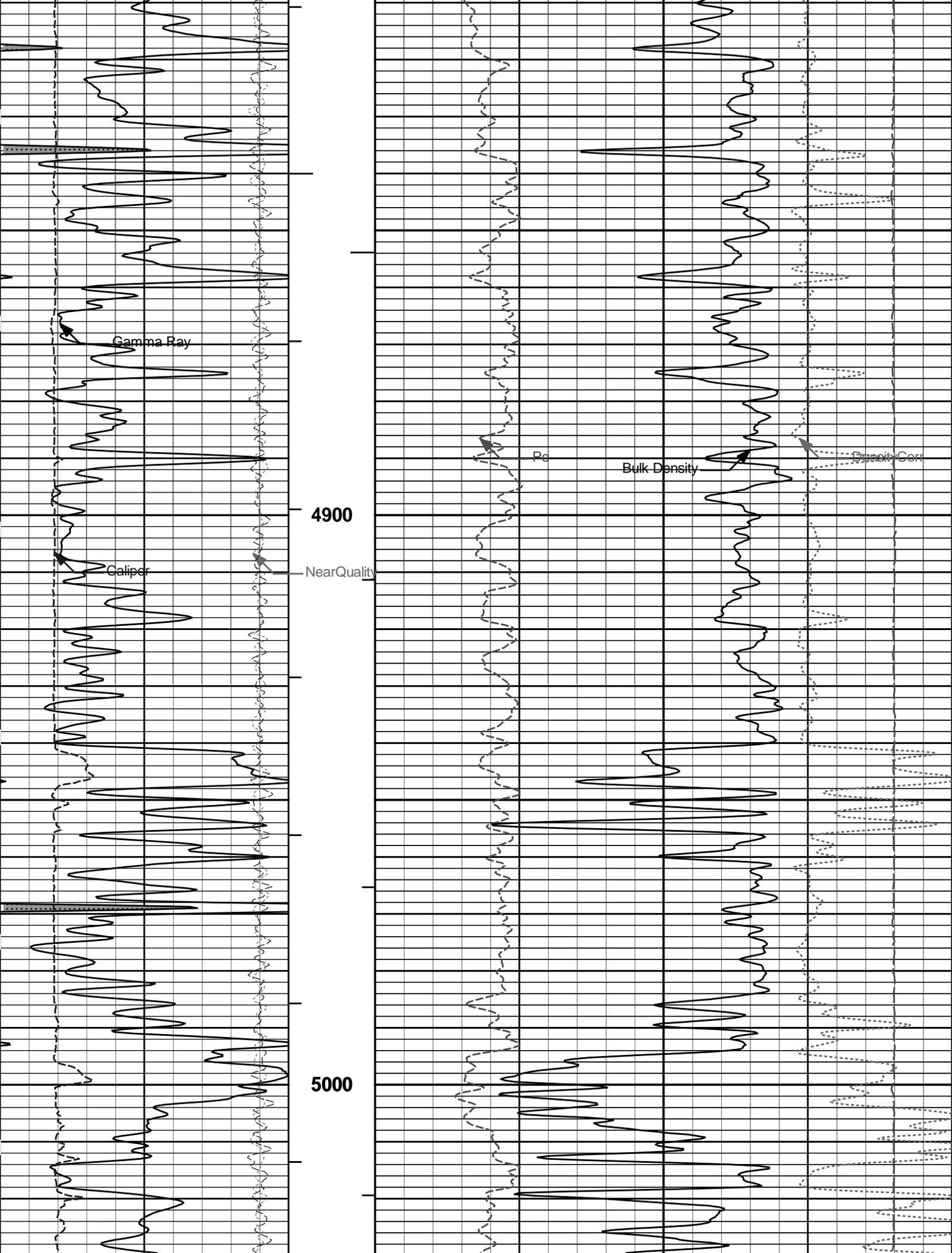


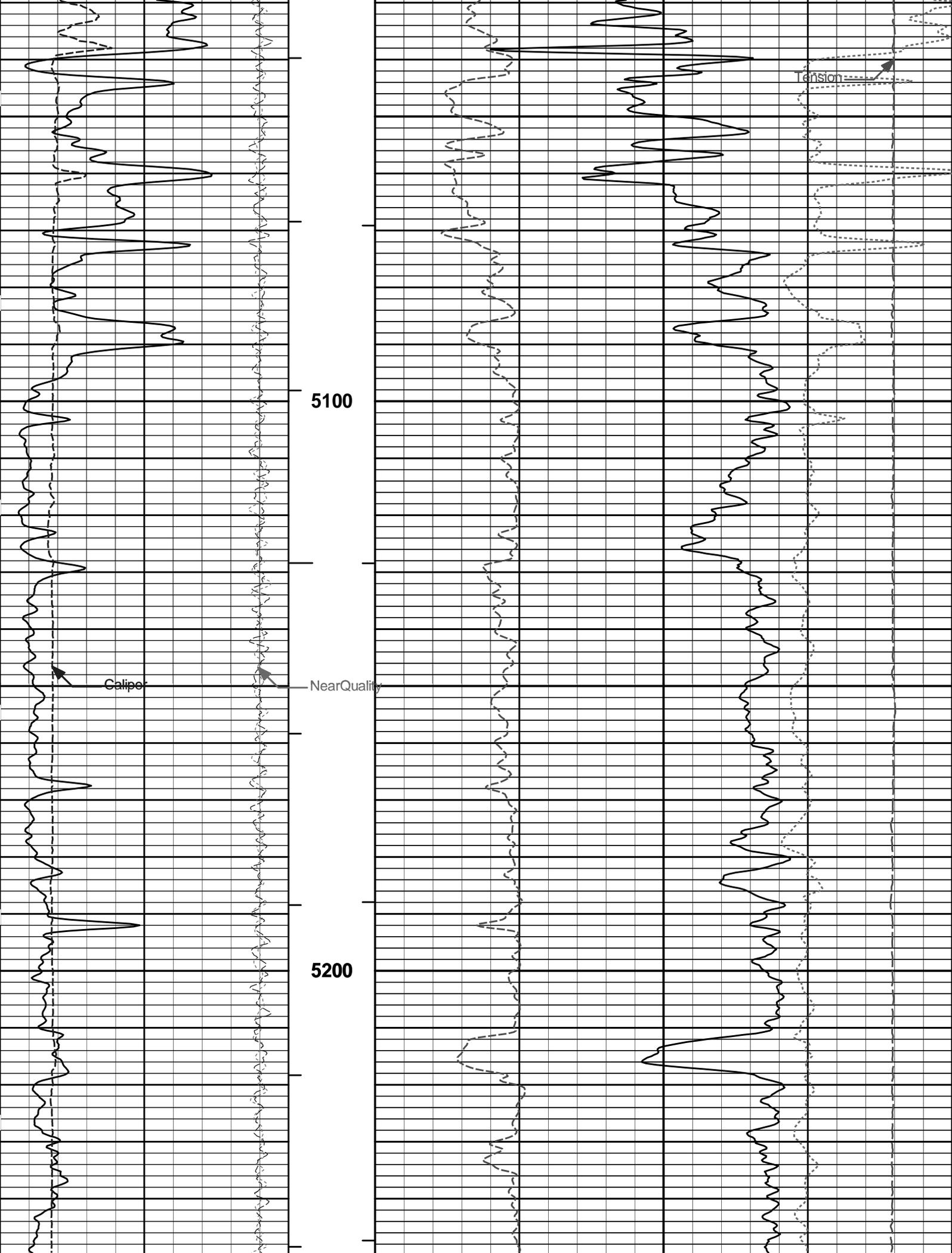












SHALE

Tension Pull

HALLIBURTON

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Plot File: \\-LOCAL-\\SNIDER_C_2\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CH\PORO\BULKD_5_MAIN_LIB

5 INCH MAIN LOG

HALLIBURTON

Plot Time: 17-Mar-11 20:56:47
Plot Range: 4950 ft to 5430.58 ft
Data: SNIDER_C_2\Well Based\DAQ-0001-REPEAT\
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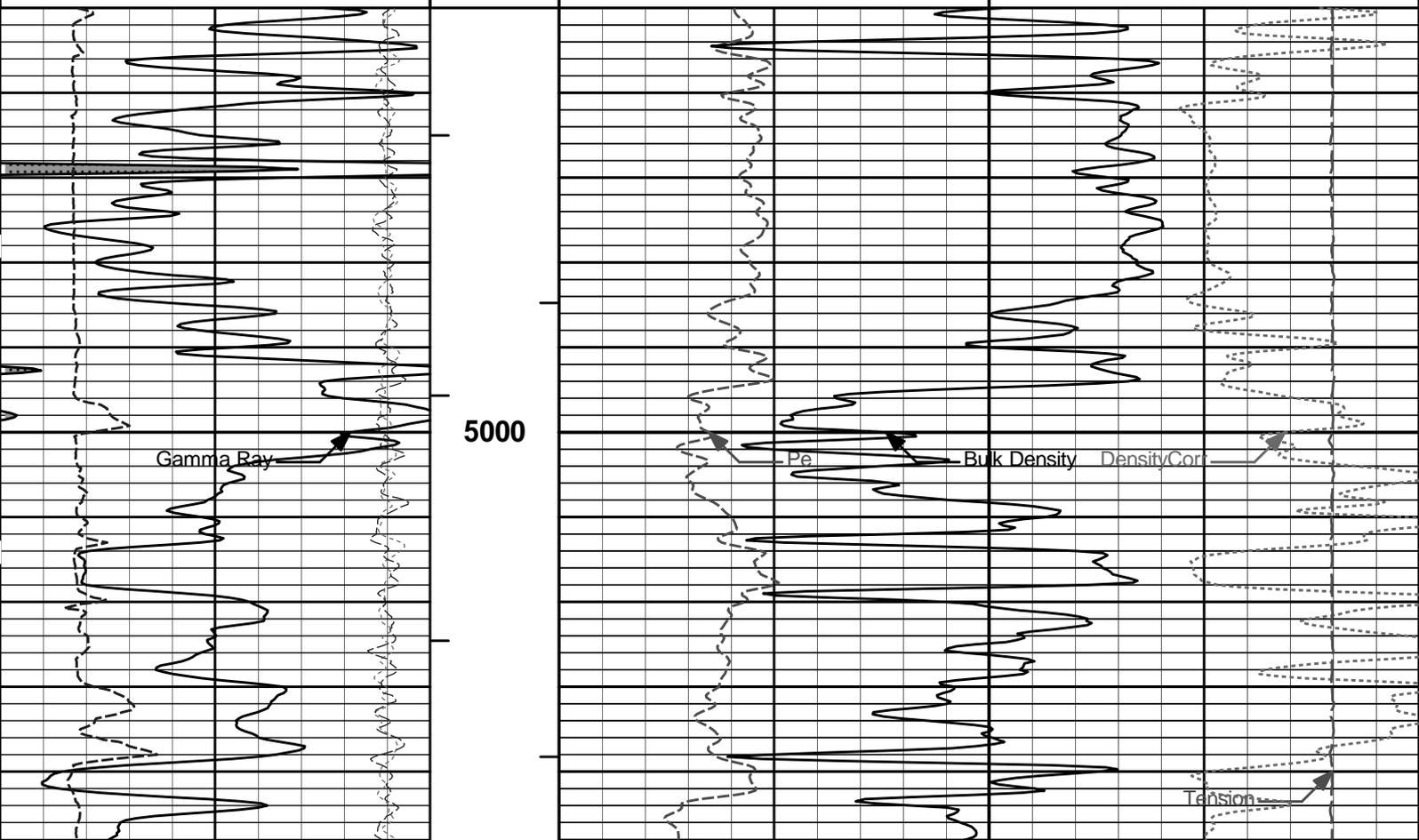
REPEAT SECTION

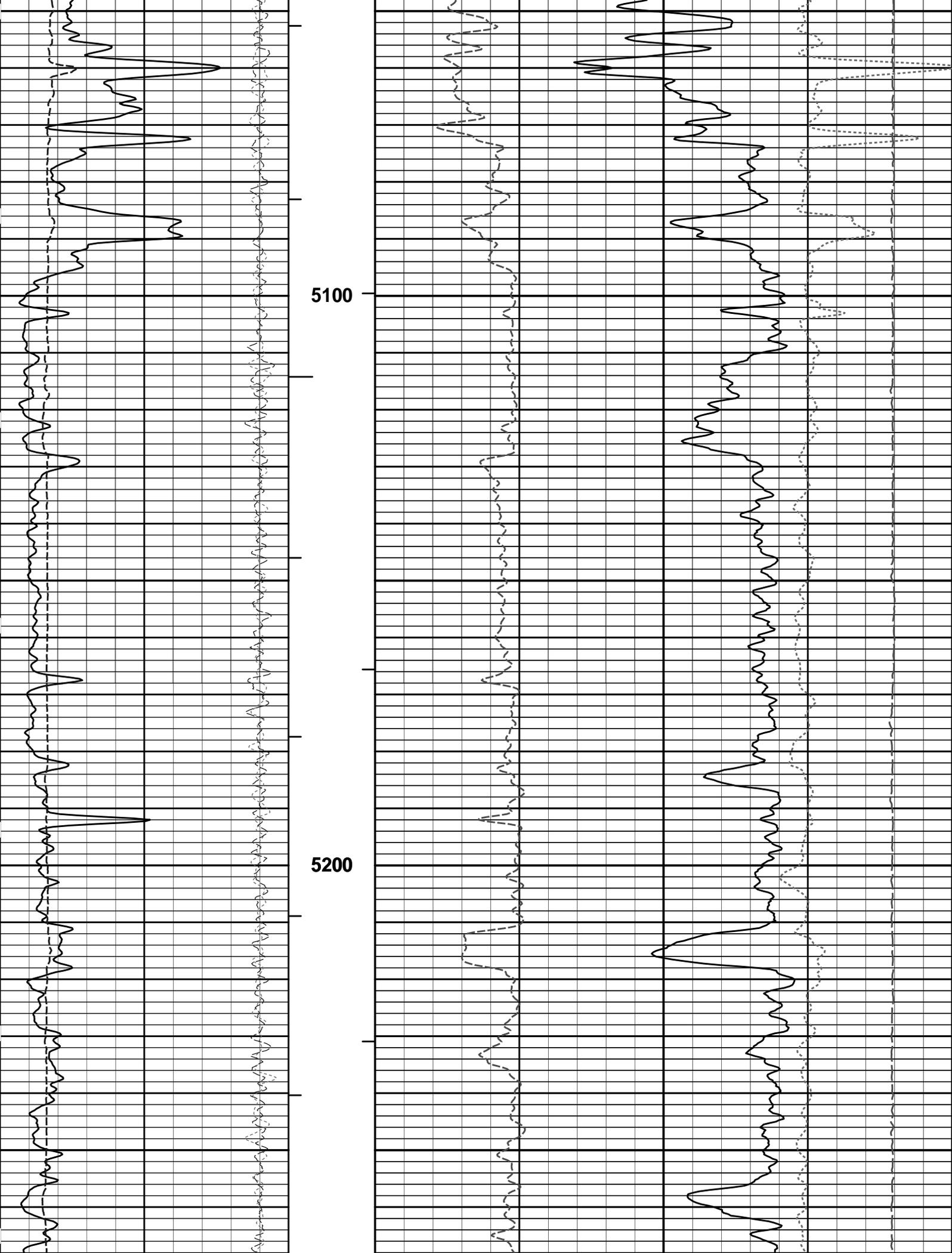
SHALE

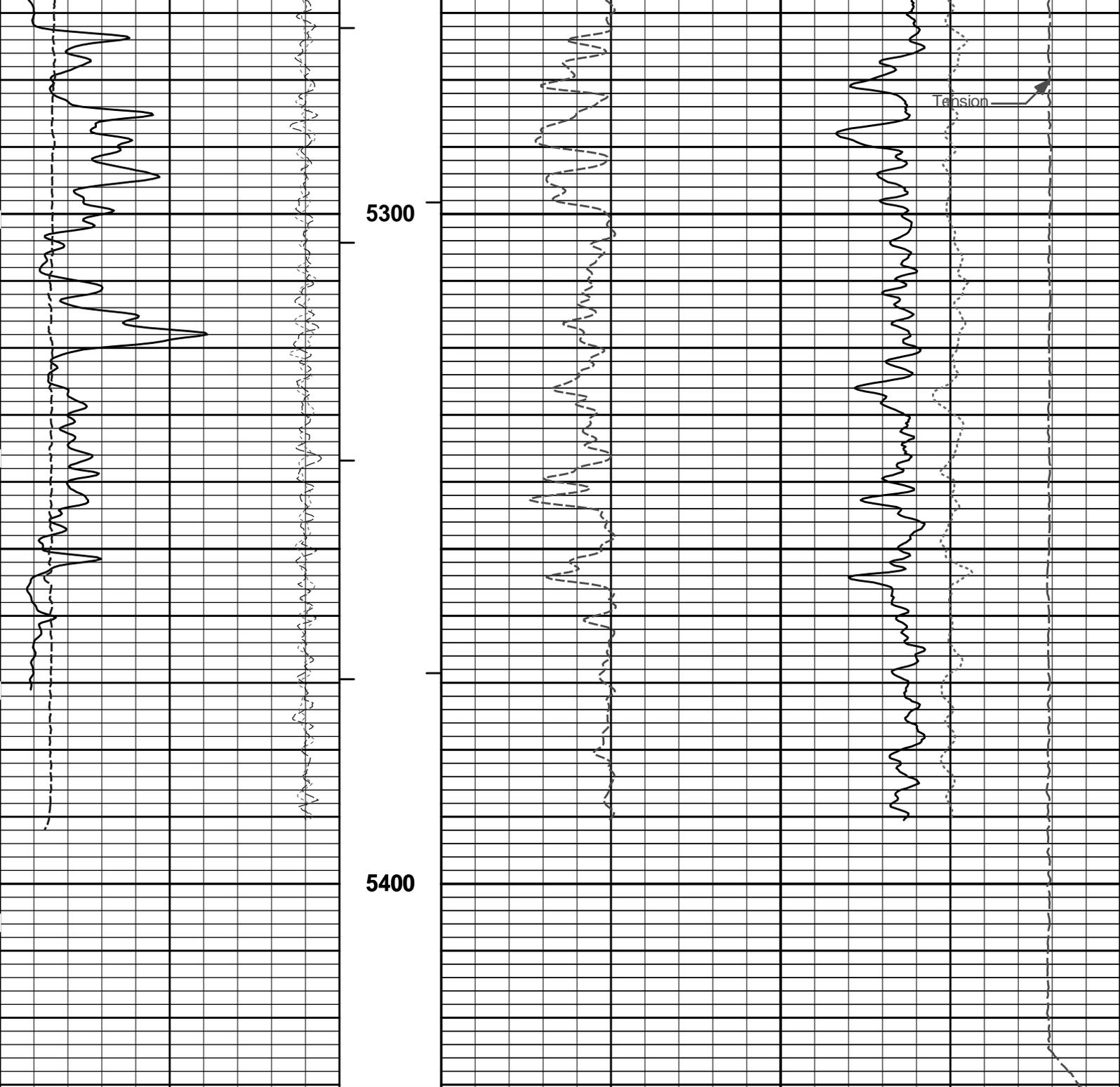
0	Gamma Ray	150
	api	
18	FarQuality	-2
-18	NearQuality	2
6	Caliper	16
	inches	

AHV	ft3	2
BHV	ft3	2
1 : 240	ft	

Bulk Density		3
g/cc		
15K	Tension	0
	pounds	
0	Pe	10
-0.25	DensityCorr	0.25
	g/cc	







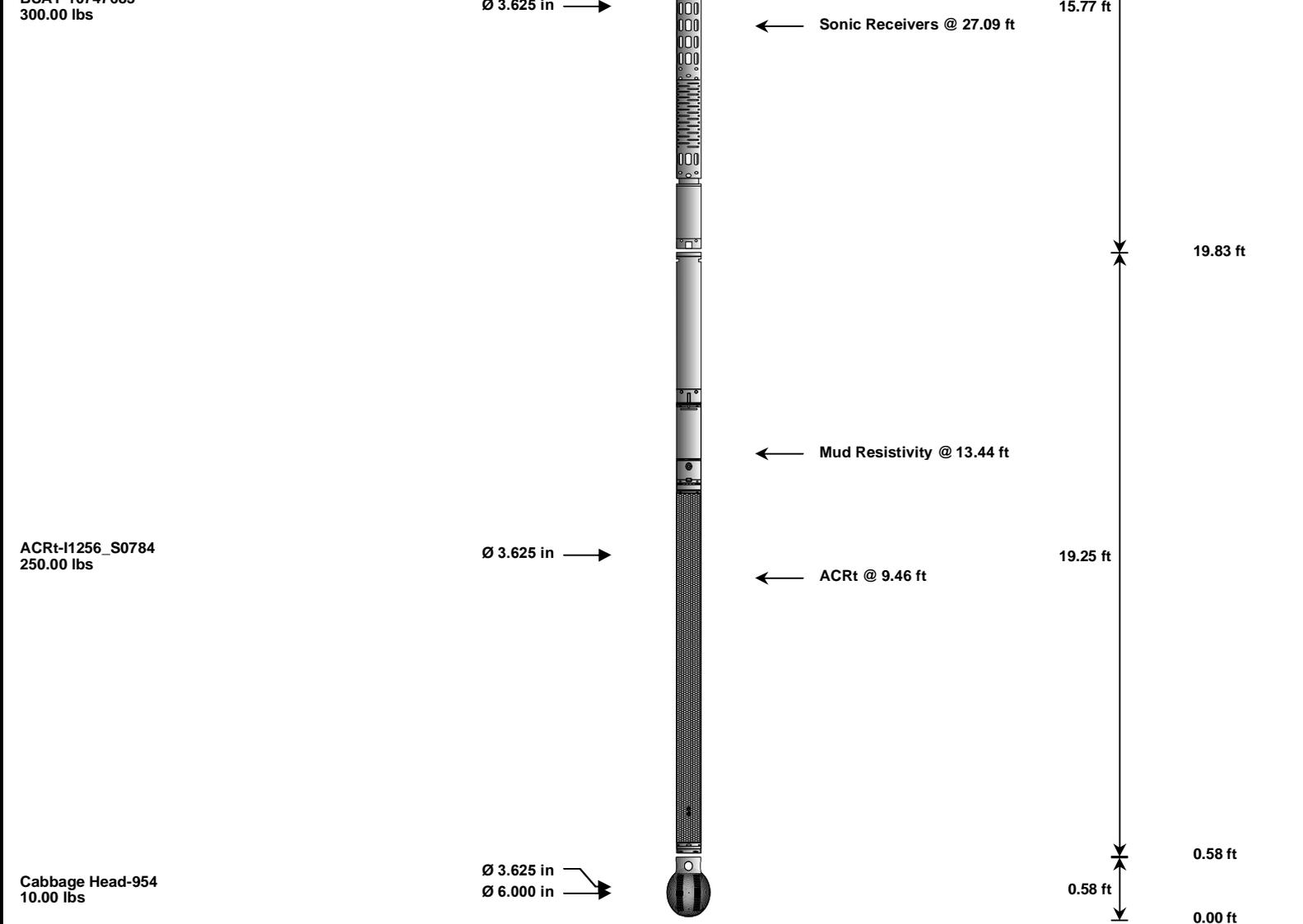
6	Caliper	16	1 : 240	0	Pe	10	-0.25	DensityCorr	0.25
	inches		ft					g/cc	
-18	NearQuality	2	BHV			15K		Tension	0
			ft3					pounds	
18	FarQuality	-2	AHV	2	Bulk Density				3
			ft3		g/cc				
0	Gamma Ray	150							
	api								
	SHALE								

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	70.28 ft
SP Sub-PROT01 60.00 lbs		Ø 3.625 in →		← SP @ 66.59 ft	3.74 ft	68.36 ft
GTET-10748374 165.00 lbs		Ø 3.625 in →		← GammaRay @ 58.56 ft	8.52 ft	64.63 ft
DSNT-10755066 174.00 lbs	DSN Decentralizer- 10755066 6.60 lbs	Ø 3.625 in* → Ø 3.625 in →		← DSN Far @ 49.17 ft ← DSN Near @ 48.42 ft	9.69 ft	56.10 ft
SDLT- 1066_M85803_P45 360.00 lbs		Ø 4.500 in → Ø 4.750 in →		SDL Microlog @ 38.60 ft SDL Caliper @ 38.42 ft SDL @ 38.41 ft	10.81 ft	46.42 ft
BSAT-10747683						35.60 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	68.36	300.00
SP	SP Sub	PROT01	60.00	3.74	64.63	300.00
GTET	Gamma Telemetry Tool	10748374	165.00	8.52	56.10	60.00
DSNT	Dual Spaced Neutron	10755066	174.00	9.69	46.42	60.00
DCNT	DSN Decentralizer	10755066	6.60	5.13 *	49.75	300.00
SDLT	Spectral Density Tool	I066_M85803_P45	360.00	10.81	35.60	60.00
BSAT	Borehole Sonic Array Tool	10747683	300.00	15.77	19.83	60.00
ACRt	Array Compensated True Resistivity	I1256_S0784	250.00	19.25	0.58	300.00
CBHD	Cabbage Head	954	10.00	0.58	0.00	300.00

Total **1,355.60** **70.28**

* Not included in Total Length and Length Accumulation.

Data: SNIDER_C_2I0001 SP-GTET-DSN-SDL-BSAT-ACRT-CHNDLE Date: 17-Mar-11 18:44:54

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name:	GTET - 10748374	Reference Calibration Date:	21-Jan-11 12:21:50
Engineer:	S. JUNG	Calibration Date:	24-Feb-11 21:56:53
Software Version:	WL INSITE R3.2.0 (Build 7)	Calibration Version:	1

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Measurement	Measured	Calibrated	Units
Background	38.4	37.8	api
Background + Calibrator	273.6	269.8	api
Calibrator	231.5	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 10748374

Reference Calibration Date: 24-Feb-11 21:56:53

Engineer: S. JUNG

Calibration Date: 17-Mar-11 14:37:31

Software Version: WL INSITE R3.2.0 (Build 7)

Calibration Version: 1

Calibrator Source S/N: 185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Field Verification	Shop	Field	Units
Background	37.8	38.8	api
Background + Calibrator	269.8	272.2	api
Calibrator	232.0	233.3	api

Shop	Field	Difference	Tolerance
232.0	233.3	-1.3	+/- 9.00

NATURAL GAMMA RAY TOOL POST CALIBRATION

Tool Name: GTET - 10748374

Reference Calibration Date: 17-Mar-11 14:37:31

Engineer: S. JUNG

Calibration Date: 17-Mar-11 20:44:53

Software Version: WL INSITE R3.2.0 (Build 7)

Calibration Version: 1

Calibrator Source S/N: 185

Calibrator API Reference:228.00 api

Calibrator API Reference:232.0 api

Post Verification	Field	Post	Units
Background	38.8	35.2	api
Background + Calibrator	272.2	268.6	api
Calibrator	233.3	233.4	api

Shop	Field	Post	Difference	Tolerance
232.0	233.3	233.4	-0.1	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 10755066

Reference Calibration Date: 13-Mar-11 12:18:45

Engineer: S. JUNG

Calibration Date: 13-Mar-11 12:33:12

Software Version: WL INSITE R3.2.0 (Build 7)

Calibration Version: 1

Logging Source S/N: DSN 436

Tank Serial Number: LIB-105060

Reference value assigned to Tank: 51.680

Snow Block S/N: LIBERAL

Calibration Tank Water Temperature: 64 degF

Min. Tool Housing Outside Diameter: 3.615 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.951	0.954	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):	0.2093	0.2103	0.0010	+/- 0.0020
Calibrated Ratio:	9.67	9.70	0.033	+/- 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

DUAL SPACED NEUTRON FIELD CALIBRATION

Tool Name: DSNT - 10755066	Reference Calibration Date: 13-Mar-11 12:33:12
Engineer: S. JUNG	Calibration Date: 17-Mar-11 14:40:08
Software Version: WL INSITE R3.2.0 (Build 7)	Calibration Version: 1

Logging Source S/N: DSN 436

Snow Block S/N: LIBERAL

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0625	0.0617	-0.0008	+/- 0.0150

PASS/FAIL SUMMARY

Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DUAL SPACED NEUTRON POST CALIBRATION

Tool Name: DSNT - 10755066	Reference Calibration Date: 17-Mar-11 14:40:08
Engineer: S. JUNG	Calibration Date: 17-Mar-11 20:47:42
Software Version: WL INSITE R3.2.0 (Build 7)	Calibration Version: 1

Logging Source S/N: DSN 436

Snow Block S/N: LIBERAL

NEUTRON POST-CHECK SUMMARY

	Field Value	Post Value	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0617	0.0629	0.0012	+/- 0.0150

PASS/FAIL SUMMARY

Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT - I066_M85803_P45	Reference Calibration Date: 13-Mar-11 13:40:57
Engineer: S. JUNG	Calibration Date: 13-Mar-11 13:59:47
Software Version: WL INSITE R3.2.0 (Build 7)	Calibration Version: 1

Logging Source S/N: 5073CW

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	0.9821	1.0003	0.90 - 1.10
Near Dens Gain	0.9763	0.9887	0.90 - 1.10
Near Peak Gain	0.9818	0.9982	0.90 - 1.10
Near Lith Gain	0.9630	0.9703	0.90 - 1.10
Far Bar Gain	1.0011	1.0025	0.90 - 1.10
Far Dens Gain	0.9938	0.9940	0.90 - 1.10
Far Peak Gain	0.9870	0.9898	0.90 - 1.10
Far Lith Gain	0.9631	0.9701	0.90 - 1.10
<hr/>			
Near Bar Offset	0.3722	0.2076	NONE
Near Dens Offset	0.3947	0.2852	NONE
Near Peak Offset	0.3177	0.1799	NONE
Near Lith Offset	0.4445	0.3807	NONE
Far Bar Offset	0.1055	0.0925	NONE
Far Dens Offset	0.1519	0.1505	NONE
Far Peak Offset	0.1865	0.1625	NONE
Far Lith Offset	0.3242	0.2682	NONE
<hr/>			
Near Bar Background	1024.43	1022.20	700 - 1450
Near Dens Background	338.50	340.18	230 - 480
Near Peak Background	147.30	148.65	100 - 210
Near Lith Background	182.02	181.67	125 - 260
Far Bar Background	516.57	519.24	450 - 900
Far Dens Background	201.91	200.03	175 - 345
Far Peak Background	78.41	77.70	70 - 140
Far Lith Background	83.39	83.28	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.683	1.684	0.001	+/- 0.015
Pe	2.524	2.552	0.028	+/- 0.150
ALUMINUM				
Density (g/cc)	2.598	2.598	0.000	+/- 0.01500
Pe	3.105	3.124	0.019	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0012	+/- 0.0110	0.0007	+/- 0.0140
Magnesium Block	-0.0000	+/- 0.0110	-0.0009	+/- 0.0140
Aluminum Block	0.0001	+/- 0.0110	0.0024	+/- 0.0140
Resolution	9.89	6.00 - 11.50	9.21	6.00 - 11.50
Internal Verifier(B+D+P+L)	1693	1200 - 2700	880	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 - I066_M85803_P45	Reference Calibration Date: 13-Mar-11 13:59:47
Engineer: S. JUNG	Calibration Date: 17-Mar-11 14:38:09
Software Version: WL INSITE R3.2.0 (Build 7)	Calibration Version: 1

Pad Temperature: 72.7 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1692.698	1699.130	6.432	16.516
Far (B+D+P+L) cps	880.256	895.901	15.645	16.189
Near Resolution	9.89	10.09	0.200	0.50
Far Resolution	9.21	10.16	0.950	1.00

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

SPECTRAL DENSITY POST CHECK

Tool Name: SDLT - I066_M85803_P45	Reference Calibration Date: 17-Mar-11 14:38:09
Engineer: S. JUNG	Calibration Date: 17-Mar-11 20:45:19
Software Version: WL INSITE R3.2.0 (Build 7)	Calibration Version: 1

Pad Temperature: 67.6 degF

DENSITY POST CALIBRATION SUMMARY				
Measurement	Field	Post	Change	Control Limit +/-
Near (B+D+P+L) cps	1699.130	1697.932	-1.198	16.516
Far (B+D+P+L) cps	895.901	900.469	4.568	16.189
Near Resolution	10.09	10.19	0.100	0.50
Far Resolution	10.16	10.01	-0.150	1.00

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

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - I066_M85803_P45	Reference Calibration Date: 13-Mar-11 14:16:31
Engineer: S. JUNG	Calibration Date: 13-Mar-11 14:21:12
Software Version: WL INSITE R3.2.0 (Build 7)	Calibration Version: 1

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value

Pad Offset	-5497.74	-5483.48	-7000.00 - -1000.00
Pad Gain	0.0003825	0.0003797	0.000200 - 0.000600
Arm Offset	-1341.33	-1131.25	-5000.00 - 3000.00
Arm Gain	0.0005338	0.0004882	0.000300 - 0.000700
Arm Power	-0.000006242	-0.000003134	-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)	2.01	2.00	-0.01	+/- 0.20
Medium Ring (in)	3.77	3.75	-0.02	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.55	6.50	-0.05	+/- 0.20
Medium Ring (in)	8.39	8.25	-0.14	+/- 0.20
Large Ring (in)	15.00	15.00	0.00	+/- 0.20

PASS/FAIL SUMMARY

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

PASS/FAIL SUMMARY

Calibration-Coefficients Range Check: Passed

SDLT CALIPER FIELD CALIBRATION			
Tool Name:	SDLT - I066_M85803_P45	Reference Calibration Date:	13-Mar-11 14:21:12
Engineer:	S. JUNG	Calibration Date:	17-Mar-11 14:48:02
Software Version:	WL INSITE R3.2.0 (Build 7)	Calibration Version:	1

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.75	0.00	+/- 0.10
Ring Diameter	8.25	8.22	-0.03	+/- 0.15

PASS/FAIL SUMMARY

Pad Extension Check: Passed
 Diameter Check: Passed

SDLT CALIPER POST CALIBRATION			
Tool Name:	SDLT - I066_M85803_P45	Reference Calibration Date:	17-Mar-11 14:48:02
Engineer:	S. JUNG	Calibration Date:	17-Mar-11 20:50:26
Software Version:	WL INSITE R3.2.0 (Build 7)	Calibration Version:	1

MEASURED CALIPER VALUES				
Measurement	Field	Post	Change	Control Limit On New Value
Pad Extension	3.75	3.78	0.03	+/- 0.10
Ring Diameter	8.22	8.13	-0.09	+/- 0.15

PASS/FAIL SUMMARY

Pad Extension Check: Passed
 Diameter Check: Passed

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10748374						
Gamma Ray Calibrator	232.0	233.3	233.4	-0.1	+/- 9.00	api
DSNT-10755066						
Snow-Block Porosity	0.0625	0.0617	0.0629	-0.0012	+/- 0.0150	decg
SDLT-I066_M85803_P45						
Near(B+D+P+L)	1692.698	1699.130	1697.932	1.198	+/-16.516	cps
Far(B+D+P+L)	880.256	895.901	900.469	-4.568	+/-16.189	cps
Pad Extension	3.75	3.75	3.78	-0.03	+/-0.10	in
Ring Diameter	8.25	8.22	8.13	0.090	+/-0.15	in

Data: SNIDER_C_20001 SP-GTET-DSN-SDL-BSAT-ACRT-CHMDLE Date: 17-Mar-11 20:51:04

HALLIBURTON

PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.100	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	1.300	ohmm
	SHARED	TRM	Temperature of Mud	72.0	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	5430.00	ft
	SHARED	BHT	Bottom Hole Temperature	125.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	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	1.20	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	74.00	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	Centered	

GTET	TPCS	Tool Position	Centered	
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	DNOK	Process Density?	Yes	
SDLT	DNOK	Process Density EVR?	No	
SDLT	CB	Logging Calibration Blocks?	No	
SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT	DTWN	Disable temperature warning	No	
SDLT	DMA	Formation Density Matrix	2.710	g/cc
SDLT	DFL	Formation Density Fluid	1.000	g/cc
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT	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	RTOK	Process ACRt?	Yes	
ACRt	MNSO	Minimum Tool Standoff	1.50	in
ACRt	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt	TPOS	Tool Position	Free Hanging	
ACRt	RMOP	Rmud Source	Mud Cell	
ACRt	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt	THQY	Threshold Quality	0.50	

BOTTOM

Data: SNIDER_C_20001 SP-GTET-DSN-SDL-BSAT-ACRT-CHNDLE

Date: 17-Mar-11 18:45:22

HALLIBURTON

INPUTS, DELAYS AND FILTERS TABLE

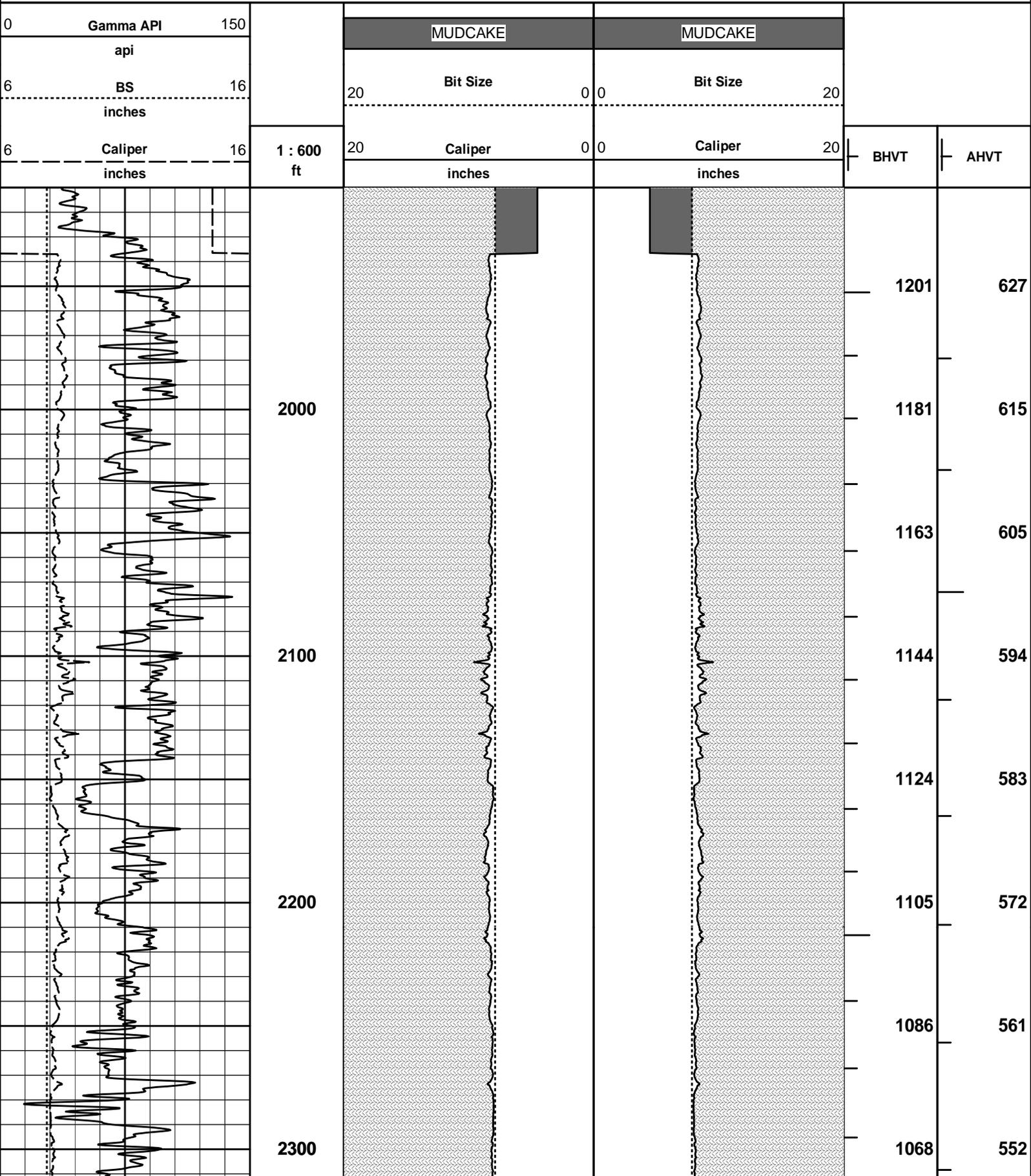
Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
Depth Panel				
TENS	Tension	0.00	NO	
SP Sub				
PLTC	Plot Control Mask	66.58	NO	
SP	Spontaneous Potential	66.58	BLK	1.250
SPR	Raw Spontaneous Potential	66.58	NO	
SPO	Spontaneous Potential Offset	66.58	NO	
GTET				
TPUL	Tension Pull	58.56	NO	

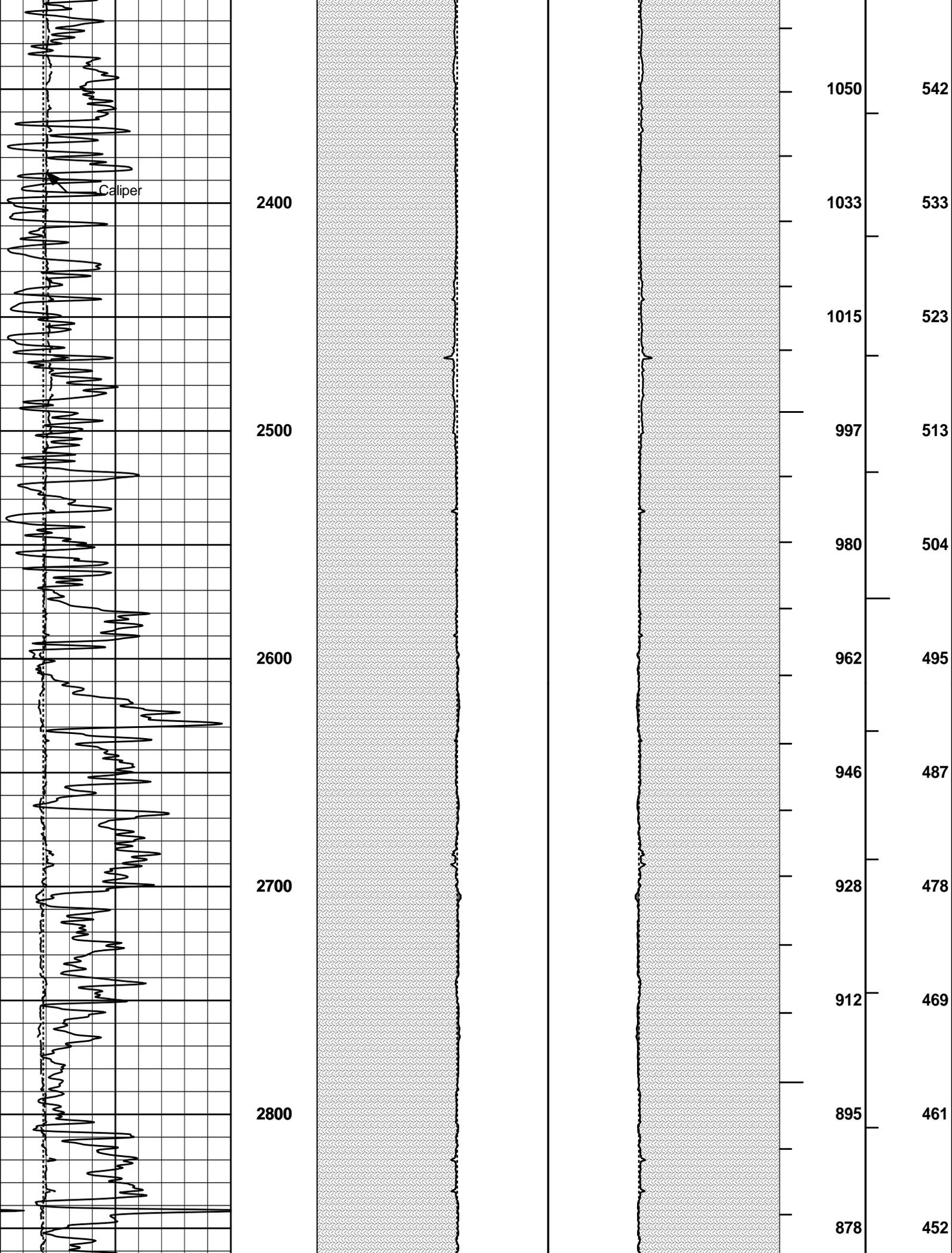
GR	Natural Gamma Ray API	58.56	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	58.56	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	58.56	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	48.32	NO	
RNDS	Near Detector Telemetry Counts	48.42	BLK	1.417
RFDS	Far Detector Telemetry Counts	49.17	TRI	0.583
DNTT	DSN Tool Temperature	48.42	NO	
DSNS	DSN Tool Status	48.32	NO	
ERND	Near Detector Telemetry Counts EVR	48.42	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	49.17	BLK	0.000
ENTM	DSN Tool Temperature EVR	48.42	NO	
SDLT				
TPUL	Tension Pull	38.41	NO	
NAB	Near Above	38.24	BLK	0.920
NHI	Near Cesium High	38.24	BLK	0.920
NLO	Near Cesium Low	38.24	BLK	0.920
NVA	Near Valley	38.24	BLK	0.920
NBA	Near Barite	38.24	BLK	0.920
NDE	Near Density	38.24	BLK	0.920
NPK	Near Peak	38.24	BLK	0.920
NLI	Near Lithology	38.24	BLK	0.920
NBAU	Near Barite Unfiltered	38.24	BLK	0.250
NLIU	Near Lithology Unfiltered	38.24	BLK	0.250
FAB	Far Above	38.58	BLK	0.250
FHI	Far Cesium High	38.58	BLK	0.250
FLO	Far Cesium Low	38.58	BLK	0.250
FVA	Far Valley	38.58	BLK	0.250
FBA	Far Barite	38.58	BLK	0.250
FDE	Far Density	38.58	BLK	0.250
FPK	Far Peak	38.58	BLK	0.250
FLI	Far Lithology	38.58	BLK	0.250
PTMP	Pad Temperature	38.42	BLK	0.920
NHV	Near Detector High Voltage	35.60	NO	
FHV	Far Detector High Voltage	35.60	NO	
ITMP	Instrument Temperature	35.60	NO	
DDHV	Detector High Voltage	35.60	NO	
TPUL	Tension Pull	38.42	NO	
PCAL	Pad Caliper	38.42	TRI	0.250
ACAL	Arm Caliper	38.42	TRI	0.250
TPUL	Tension Pull	38.60	NO	
MINV	Microlog Lateral	38.60	BLK	0.750
MNOR	Microlog Normal	38.60	BLK	0.750
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	

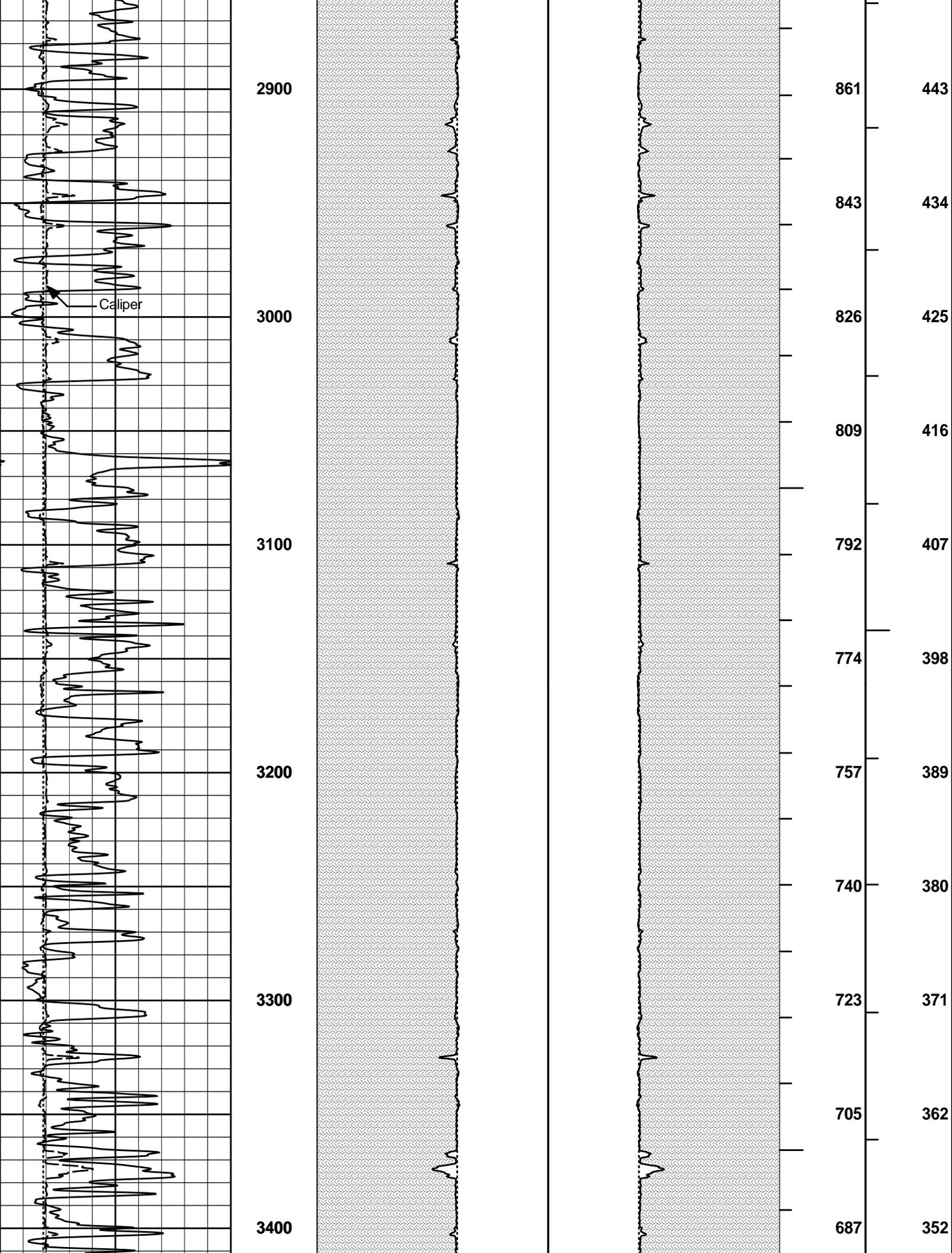
ACRt

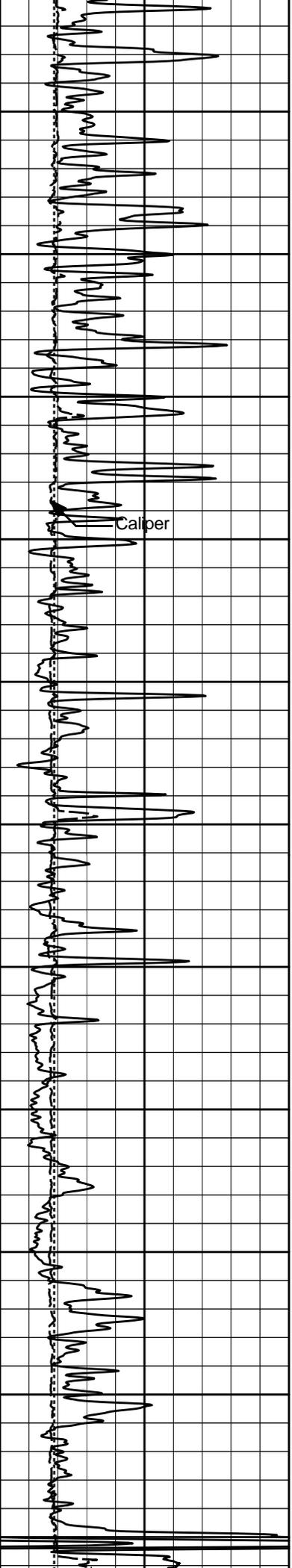
TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
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	

ANNULAR HOLE VOLUME PLOT (5.5 INCH)









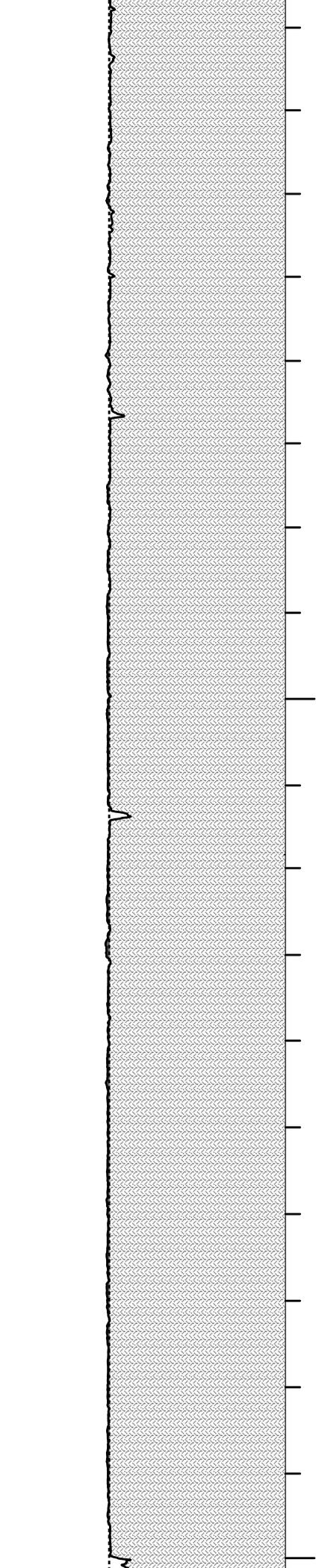
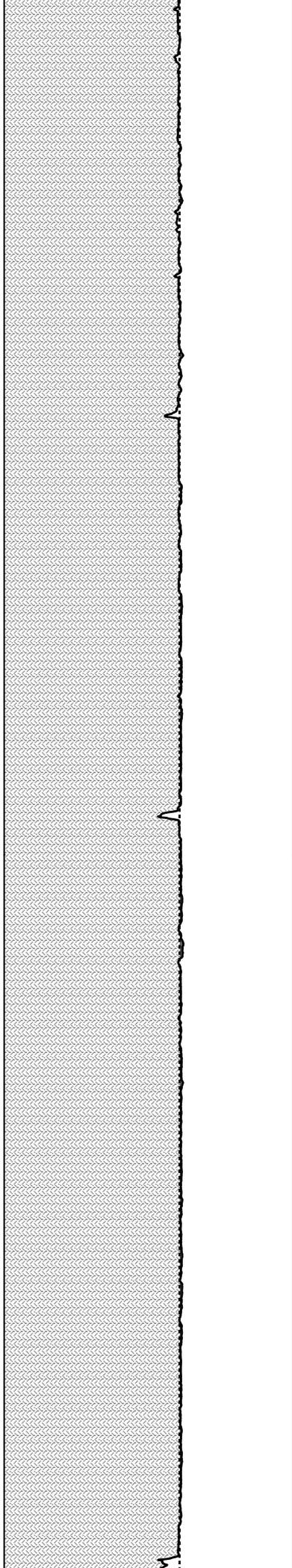
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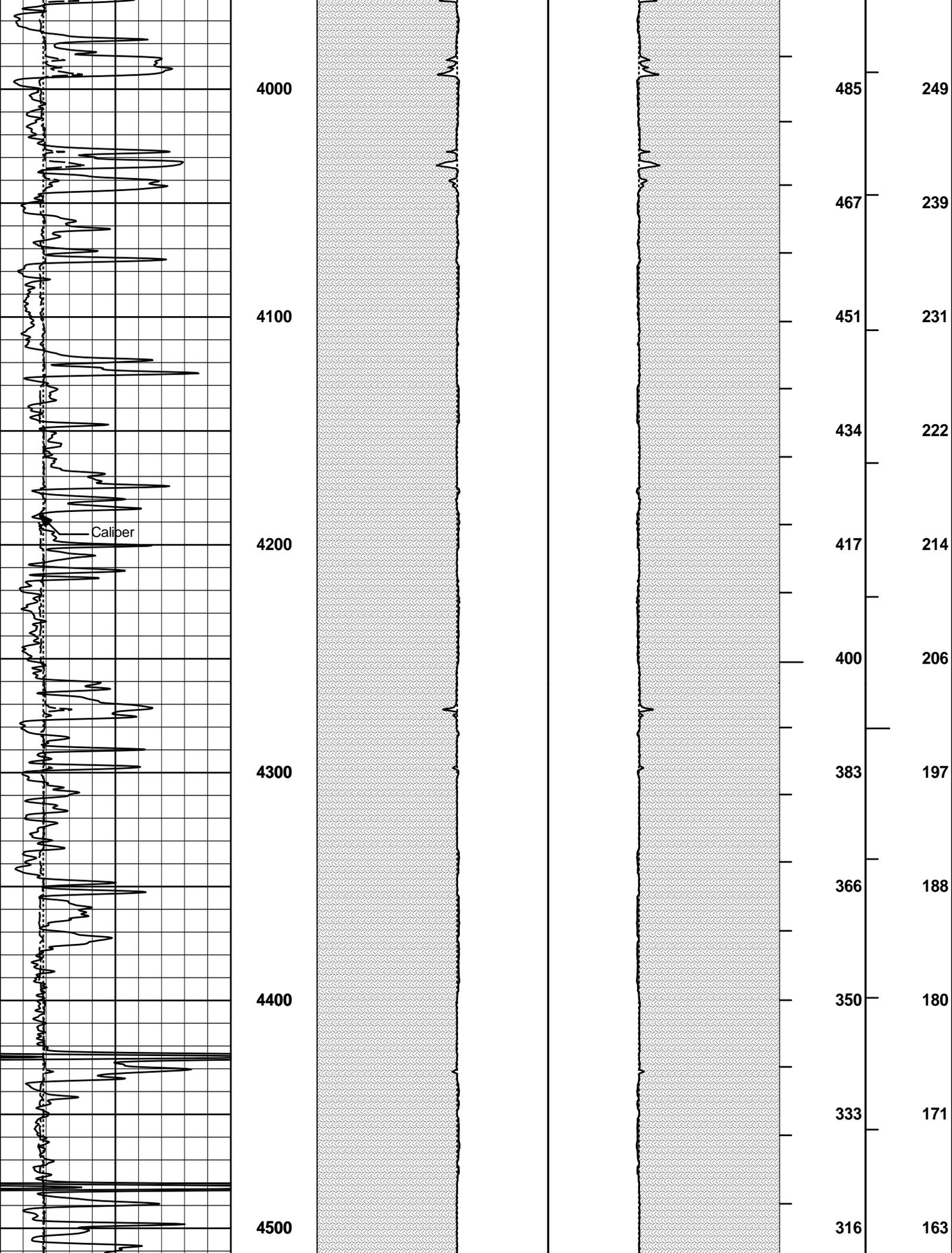
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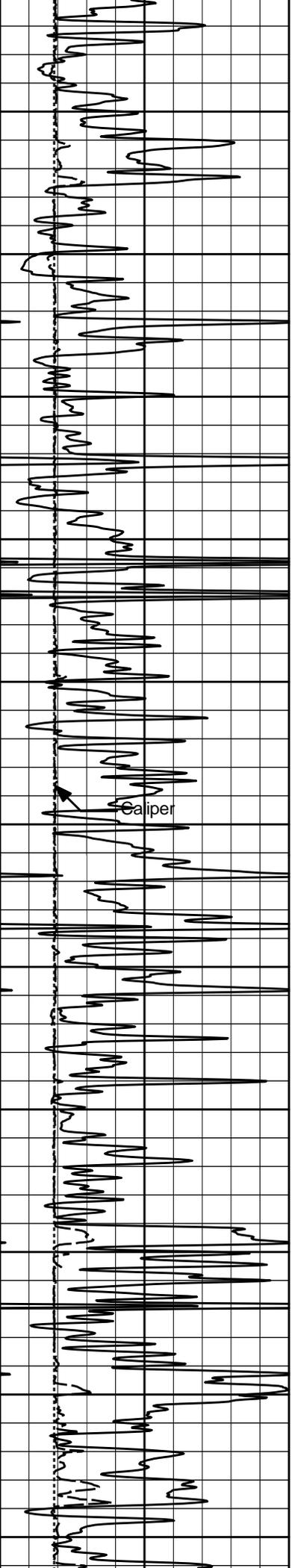
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Caliber

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4200
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4400
4500

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467 239
451 231
434 222
417 214
400 206
383 197
366 188
350 180
333 171
316 163



4600

4700

4800

4900

5000

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197

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145

126

154

145

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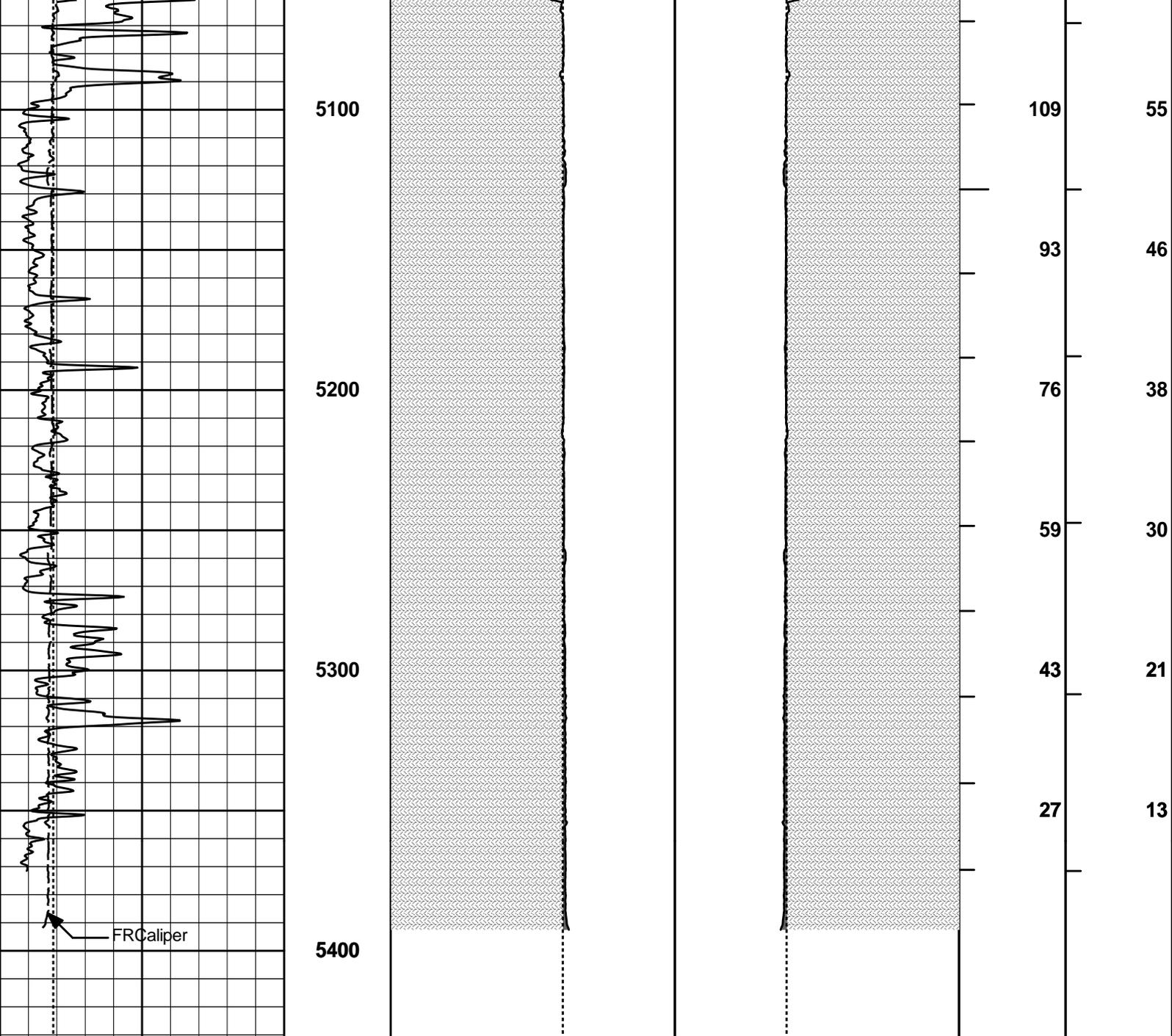
92

83

74

64

Caliper



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

HALLIBURTON

Plot Time: 17-Mar-11 20:57:26
 Plot Range: 1910 ft to 5431.17 ft
 Data: SNIDER_C_2\Well Based\DAQ-0001-CSG\
 Plot File: \\-LOCAL-SNIDER_C_2\0001 SP-GTET-DSN-SDL-BSAT-ACRT-CHIPORO\AHV_5_5_INCH_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT (5.5 INCH)

WELL	SNIDER C-2		
FIELD	PLEASANT PRAIRIE		
COUNTY	HASKELL	STATE	KANSAS
HALLIBURTON		SPECTRAL DENSITY DUAL SPACED NEUTRON LOG	