HALLIBURTON

DUAL SPACED NEUTRON SPECTRAL DENSITY LOG

COMPANY CMX, INC.
WELL FOGHORN #1-27
FIELD/BLOCK CHASE-SILICA
COUNTY RICE
STATE KANSAS

COMPANY **CMX, INC.**

WELL **FOGHORN #1-27**

FIELD/BLOCK **CHASE-SILICA**

COUNTY **RICE** STATE **KANSAS**

API No. 15-159-22839-00-00

Location 2310' FNL & 1110' FEL

Sect. 27 Twp. 19S Rge. 10W

Other Services:
ACRT
BSAT
DSNT/SDLT
MICRO

Permanent Datum	GL	Elev. 1753.0 ft	Elev.: K.B. 1761.0 ft
Log measured from	KB	, 8.0 ft above perm. Datum	D.F. 1761.0 ft
Drilling measured from	KB		G.L. 1753.0 ft

Date		17-Mar-17					
Run No.		ONE					
Depth - Driller		3320.0 ft					
Depth - Logger		3315.0 ft					
Bottom - Logged Interval		3311.0 ft					
Top - Logged Interval		1250.0 ft					
Casing - Driller		8.625 in	@ 256.0 ft	@		@	
Casing - Logger		258.0 ft					
Bit Size		7.875 in		@		@	
Type Fluid in Hole		Water Based Mud					
Density	Viscosity	9.1 ppg	57.00 s/qt				
PH	Fluid Loss	2.60 pH	10.0 cptm				
Source of Sample		FLOWLINE					
Rm @ Meas. Temperature		0.49 ohmm	@ 75.00 degF	@		@	
Rmf @ Meas. Temperature		0.42 ohmm	@ 75.00 degF	@		@	
Rmc @ Meas. Temperature		0.57 ohmm	@ 75.00 degF	@		@	
Source Rmf	Rmc	CALC	CALC				
Rm @ BHT		0.38 ohmm	@ 98.0 degF	@		@	
Time Since Circulation		08:00 hr					
Time on Bottom		17-Mar-17 18:41					
Max. Rec. Temperature		98.00 degF	@ 3315.0 ft	@		@	
Equipment	Location	11072142	EL RENO, OK				
Recorded By		THOMAS HYDE					
Witnessed By		K. LEBLANC					

Fold here

Service Ticket No.: 903904174

API No.: 15-159-22839-00-00

PGM Version: WL INSITE R5.0.5 (Build 8)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

RESISTIVITY SCALE CHANGES

	Sample No.	Type Log	Depth	Scale Up Hole	Scale Down Hole
Date					
Depth-Driller					
Type Fluid in Hole					
Density	Viscosity				
Ph	Fluid Loss				

RESISTIVITY EQUIPMENT DATA

	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
Source of Sample					
Rm @ Meas. Temp	@	ONE	ACRT	N/A	CENT.	N/A
Rmf @ Meas. Temp.	@		I-11026095			
Rmc @ Meas. Temp.	@		S-11005908			
Source Rmf	Rmc					
Rm @ BHT	@					
Rmf @ BHT	@					
Rmc @ BHT	@					

EQUIPMENT DATA

GAMMA		ACOUSTIC				DENSITY				NEUTRON			
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	11013114	Serial No.	10747683	Serial No.	10960494	Serial No.	10993115
Model No.	GTET	Model No.	BSAT	Model No.	SDLT	Model No.	DSNT
Diameter	3.625"	No. of Cent.	3.625"	Diameter	5.5"	Diameter	3.625"
Detector Model No.	T-102	Spacing	EVEN	Log Type	GAM-GAM	Log Type	NEU-NEU
Type	SCINT			Source Type	Cs137	Source Type	Am241Be
Length	8"	LSA [Y/N]		Serial No.	5168GW	Serial No.	DSN-424
Distance to Source	10'	FWDA [Y/N]		Strength	1.5 Ci	Strength	15 Ci

LOGGING DATA

GENERAL				GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	Depth From	Depth To	Speed ft/min	Scale L	Scale R	Scale L	Scale R	Matrix	Scale L	Scale R	Matrix
ONE	3315	258	REC	0	150	30	130	147.6	30	130	2.71	30	130	LIME

ONE	3315	258	REC	0	150	30	-10	47.6	30	-10	2.71	30	-10	LIME

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@

Remarks: RUN 1: GTET-DSNT-SDLT

RUN 2: GTET-BSAT-ACRT

TOOLS RUN PER CUSTOMER REQUEST

ANNULAR HOLE VOLUME RAN FOR 5.5 INCH CASING

CHLORIDES REPORTED AT 12,200 mg/l

TODAY'S CREW: J. WOOD J. ROBERSON

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES EL RENO, OK 405-278-9685

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

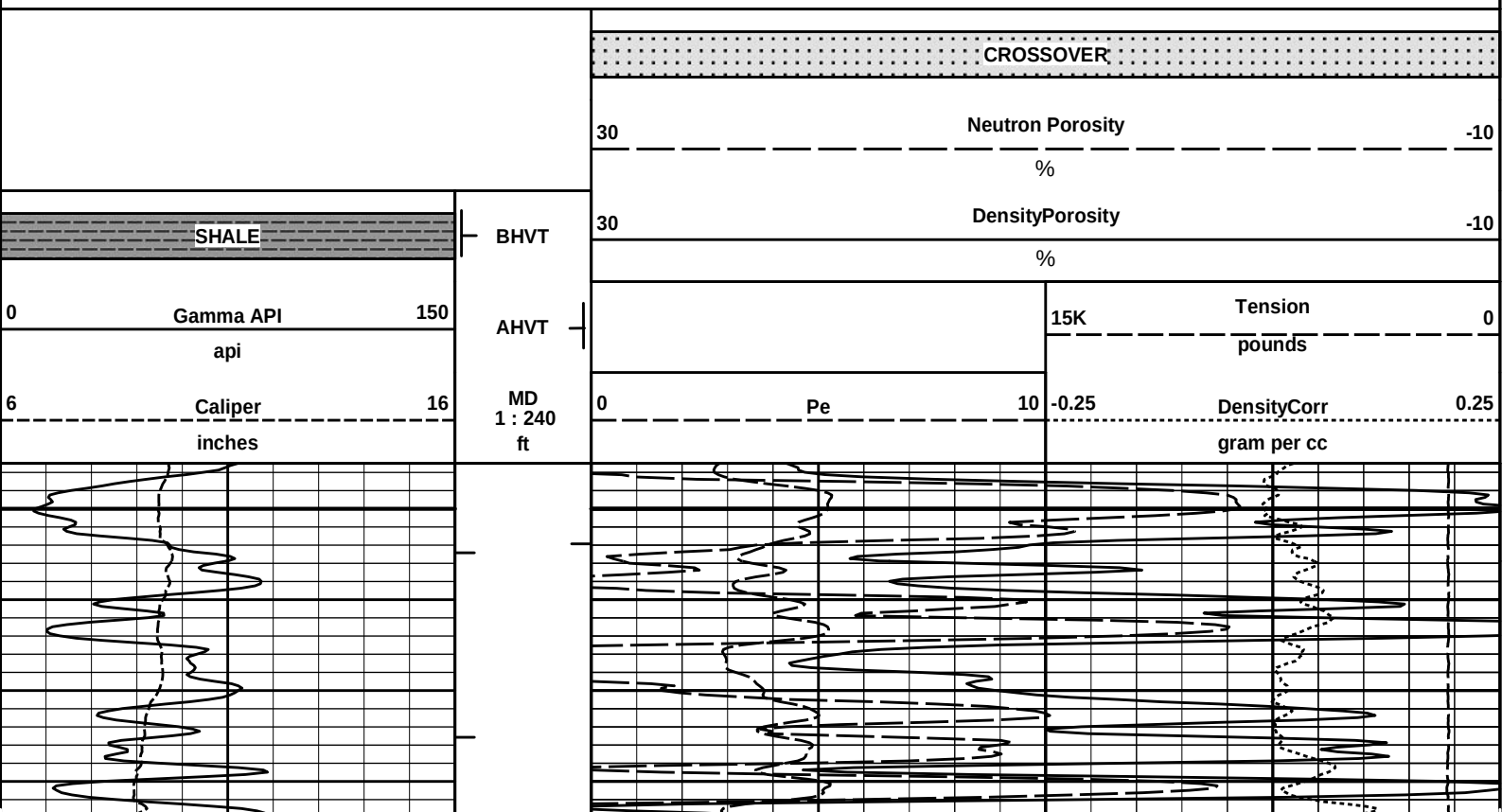
HALLIBURTON

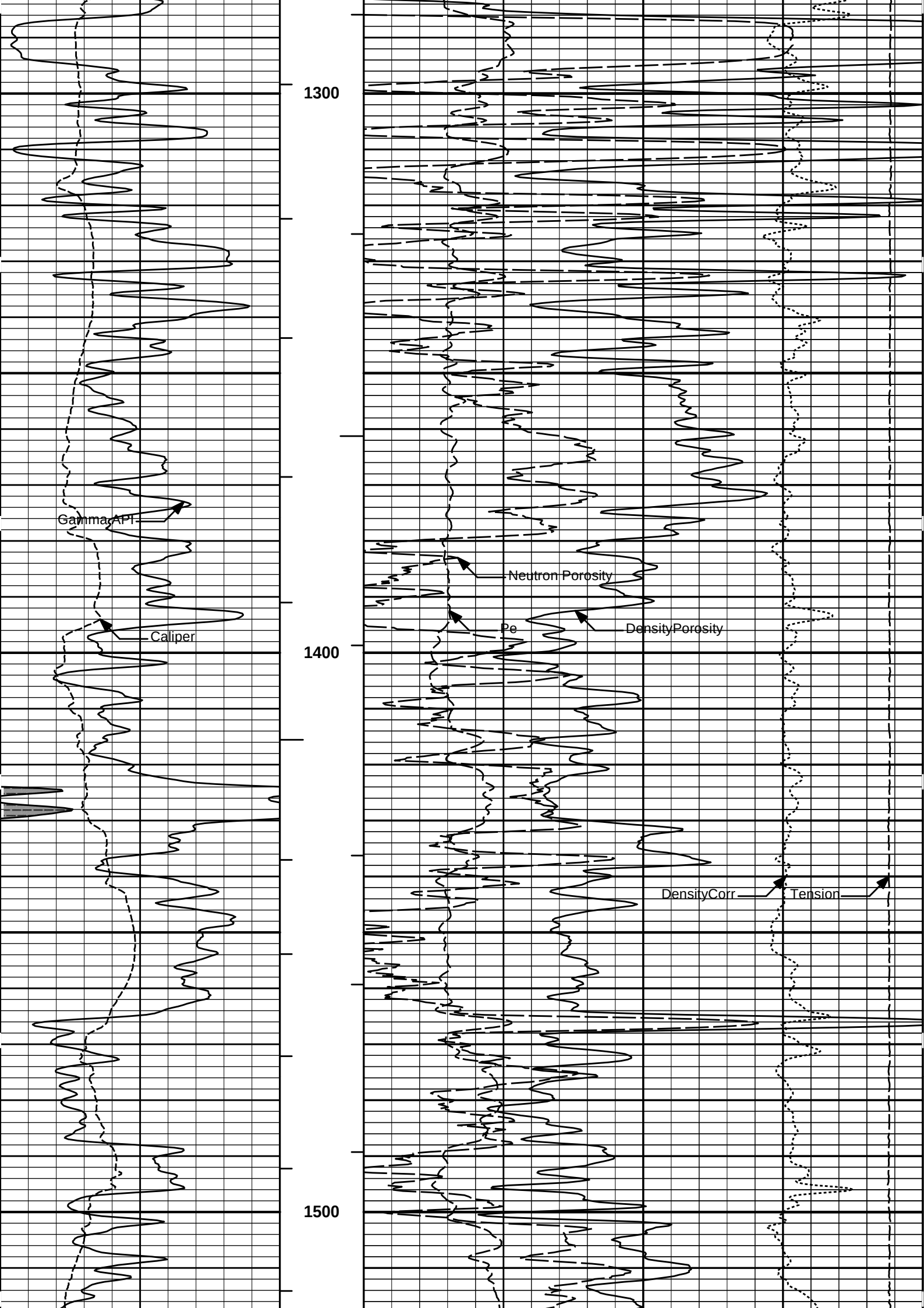
HALLIBURTON

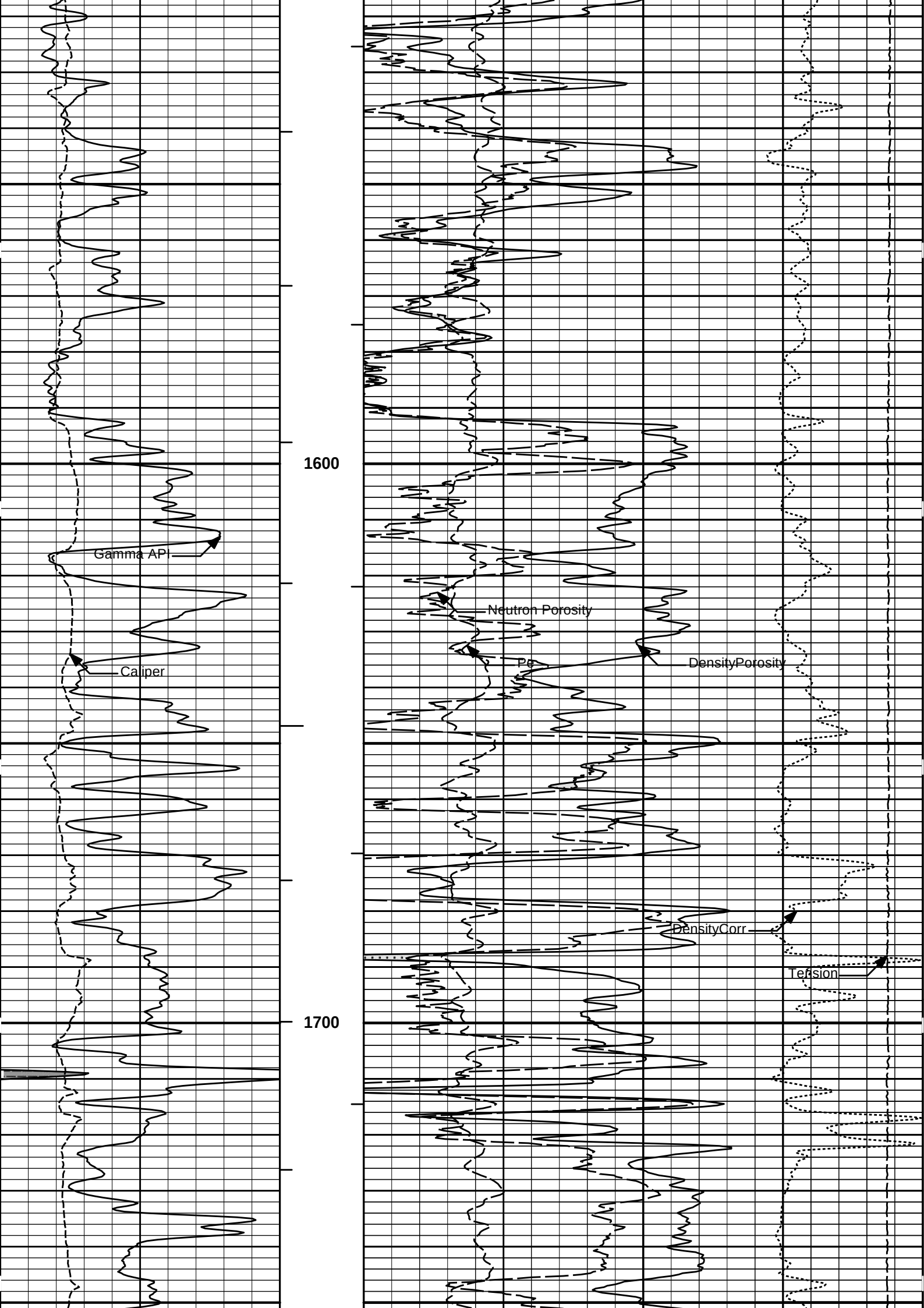
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Data: FOG_1-27\Well Based\PORO_ML_DETAIL
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

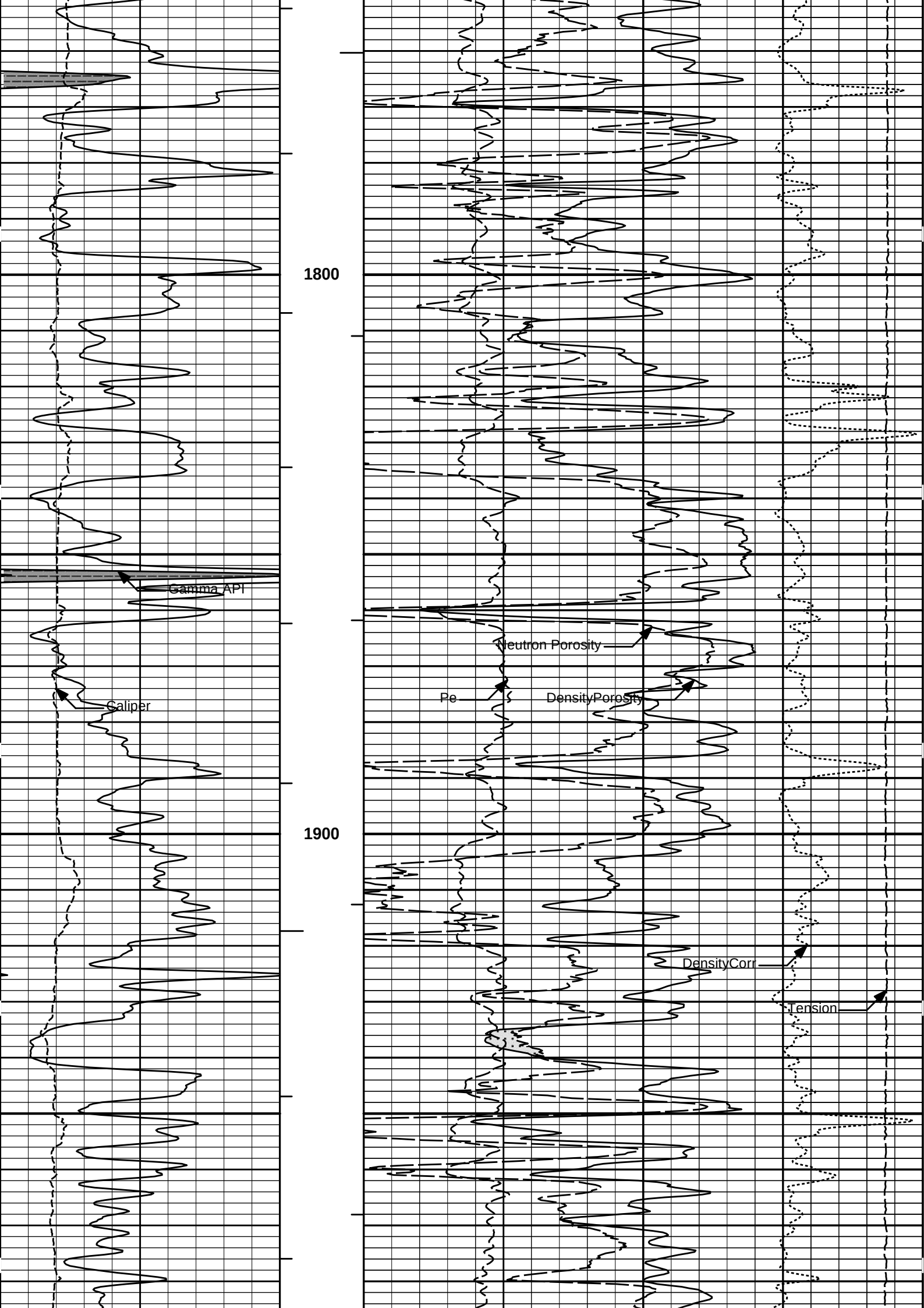
5 INCH MAIN LOG

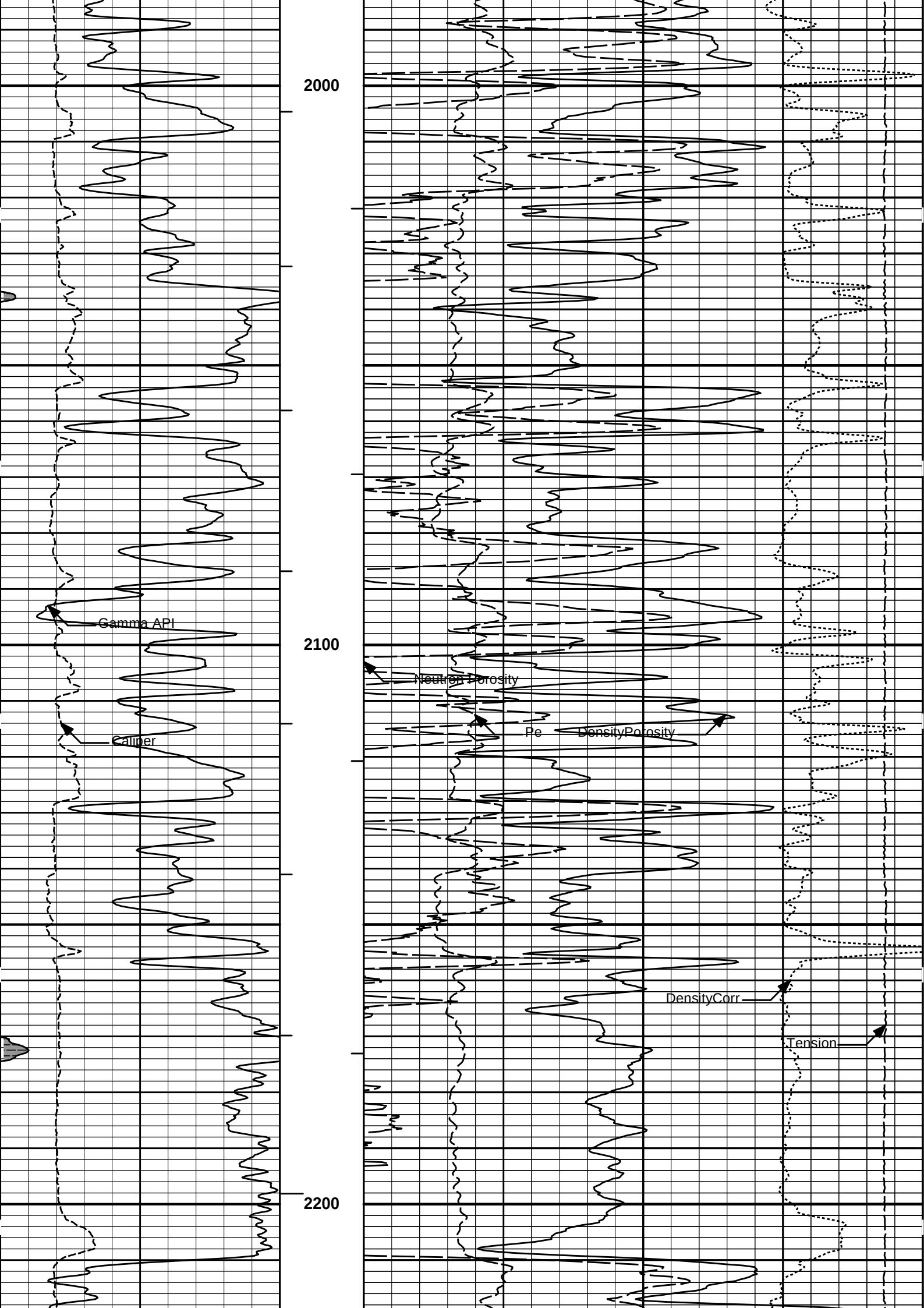
MEASURED DEPTH
MAIN SECTION 5" PER 100'

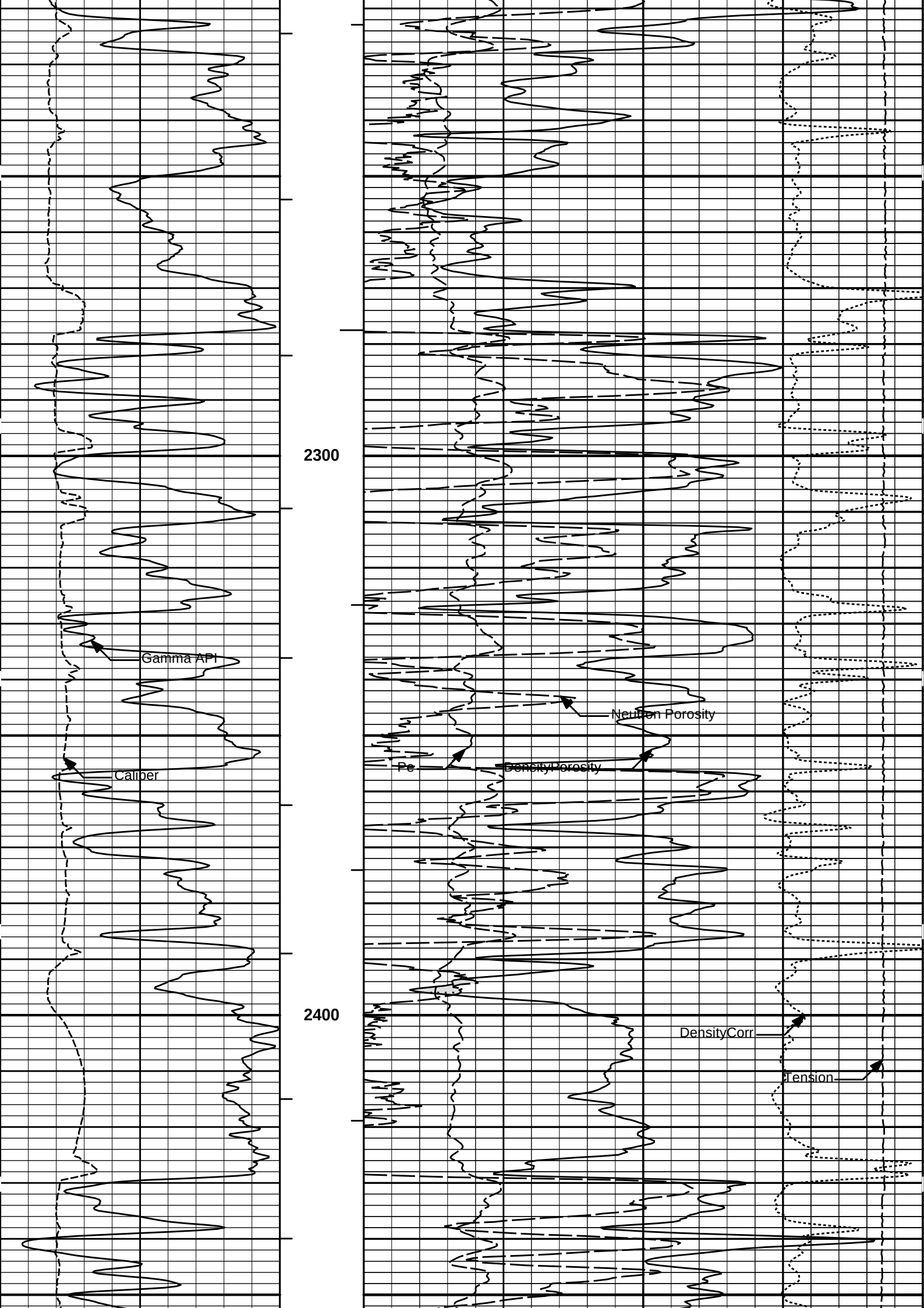


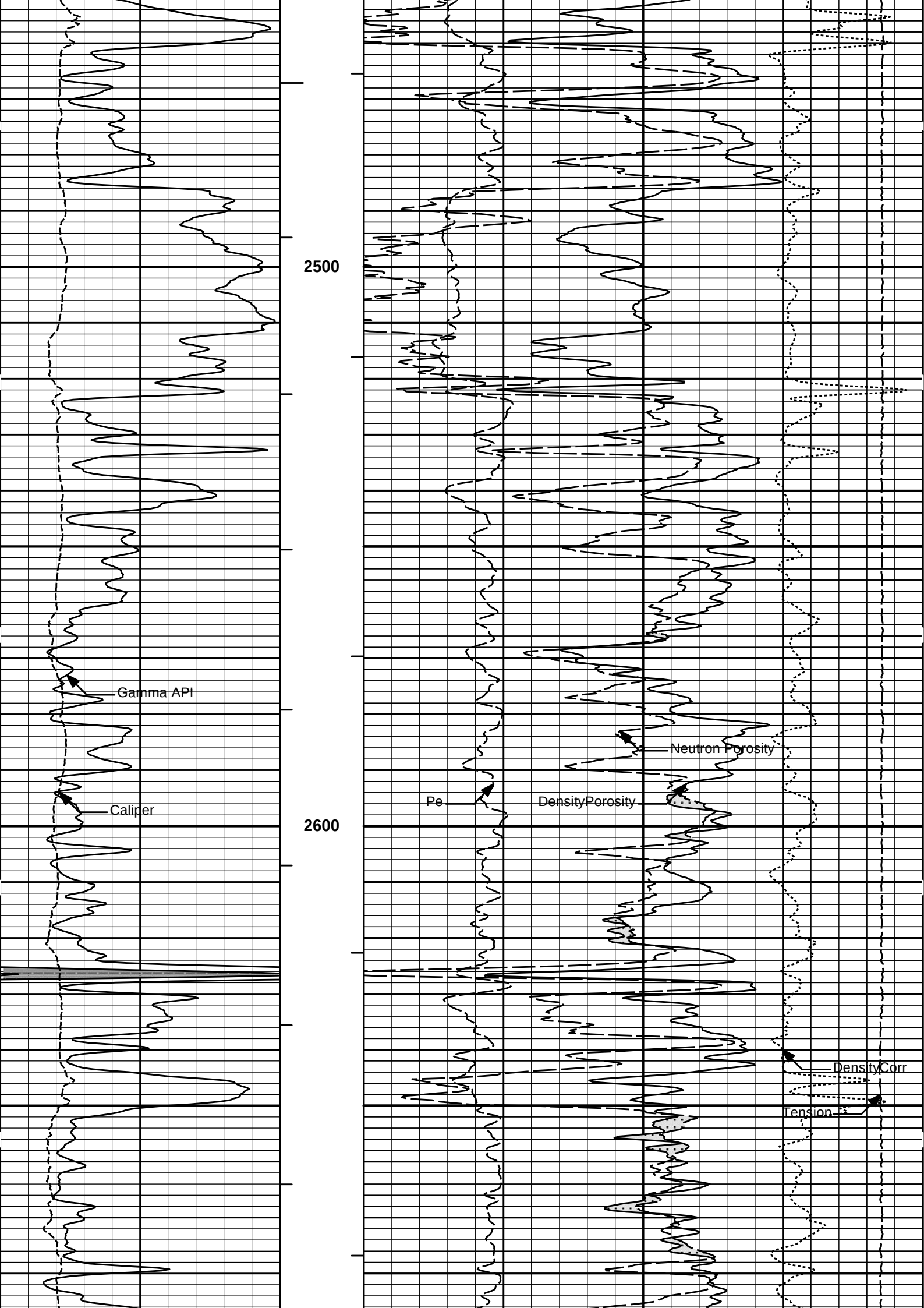

1300
1400
1500
GammaAPI
Caliper
Neutron Porosity
Pe
DensityPorosity
DensityCorr
Tension

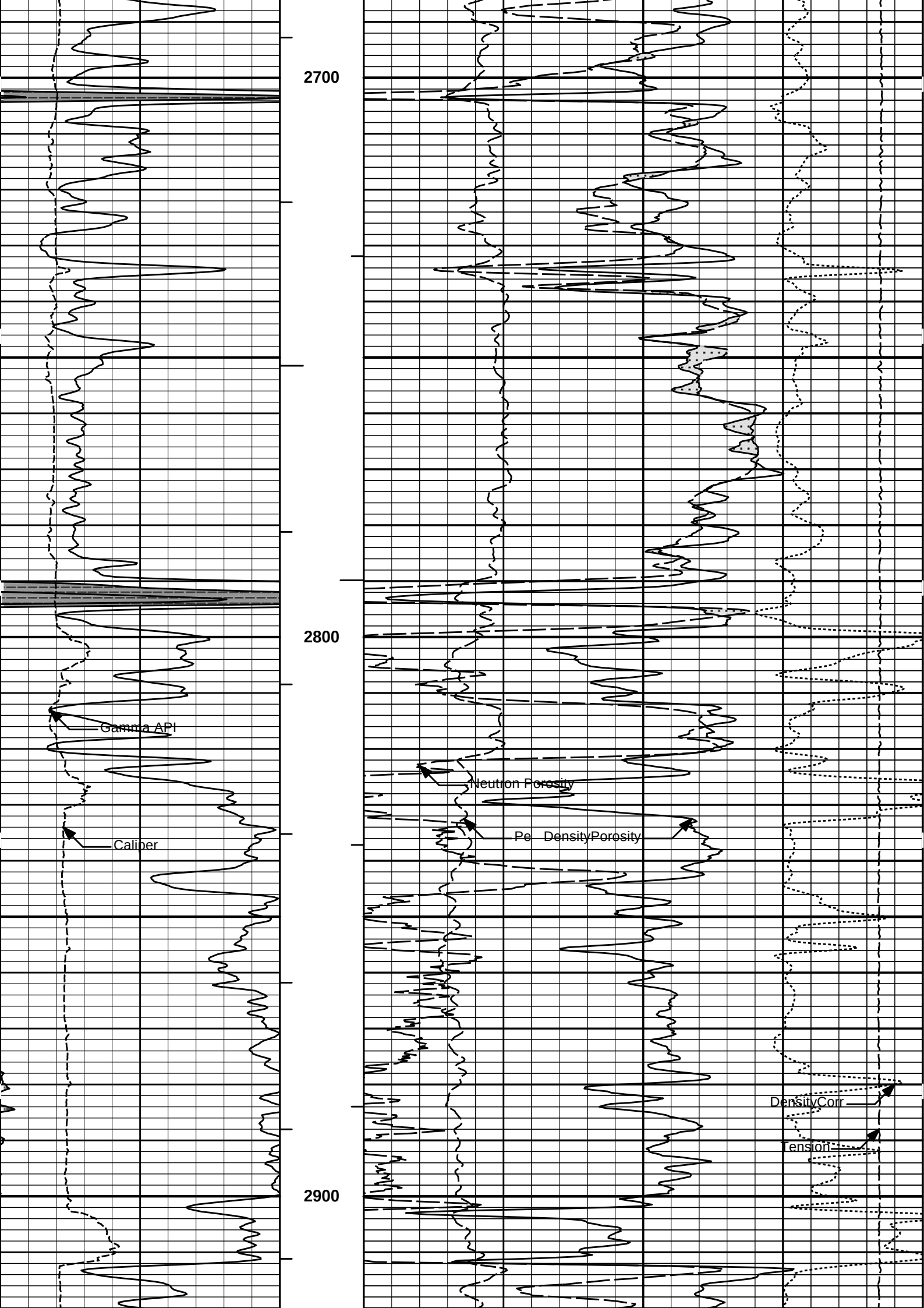

1600
1700
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity
DensityCorr
Tension

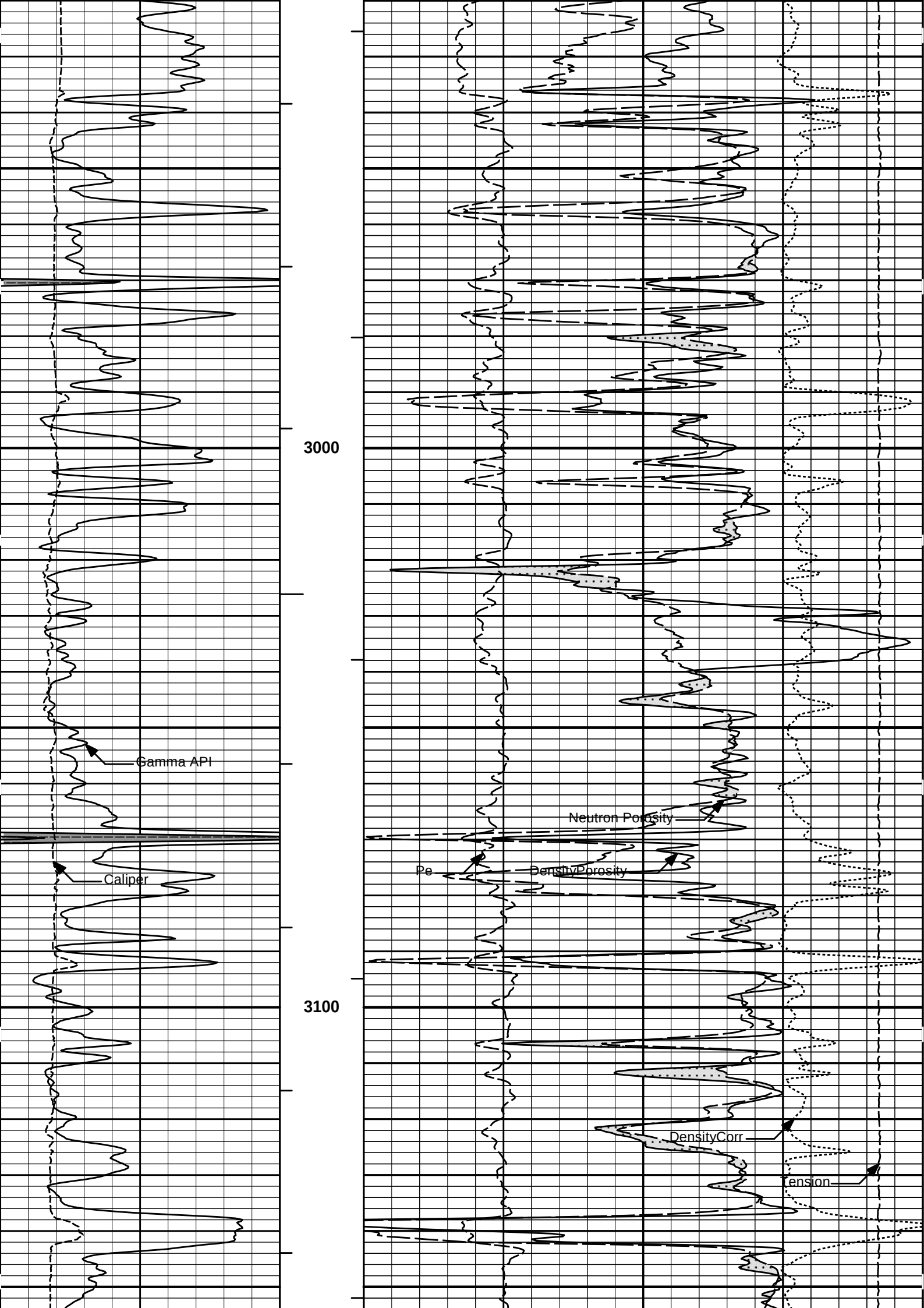

1800
1900
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity
DensityCorr
Tension

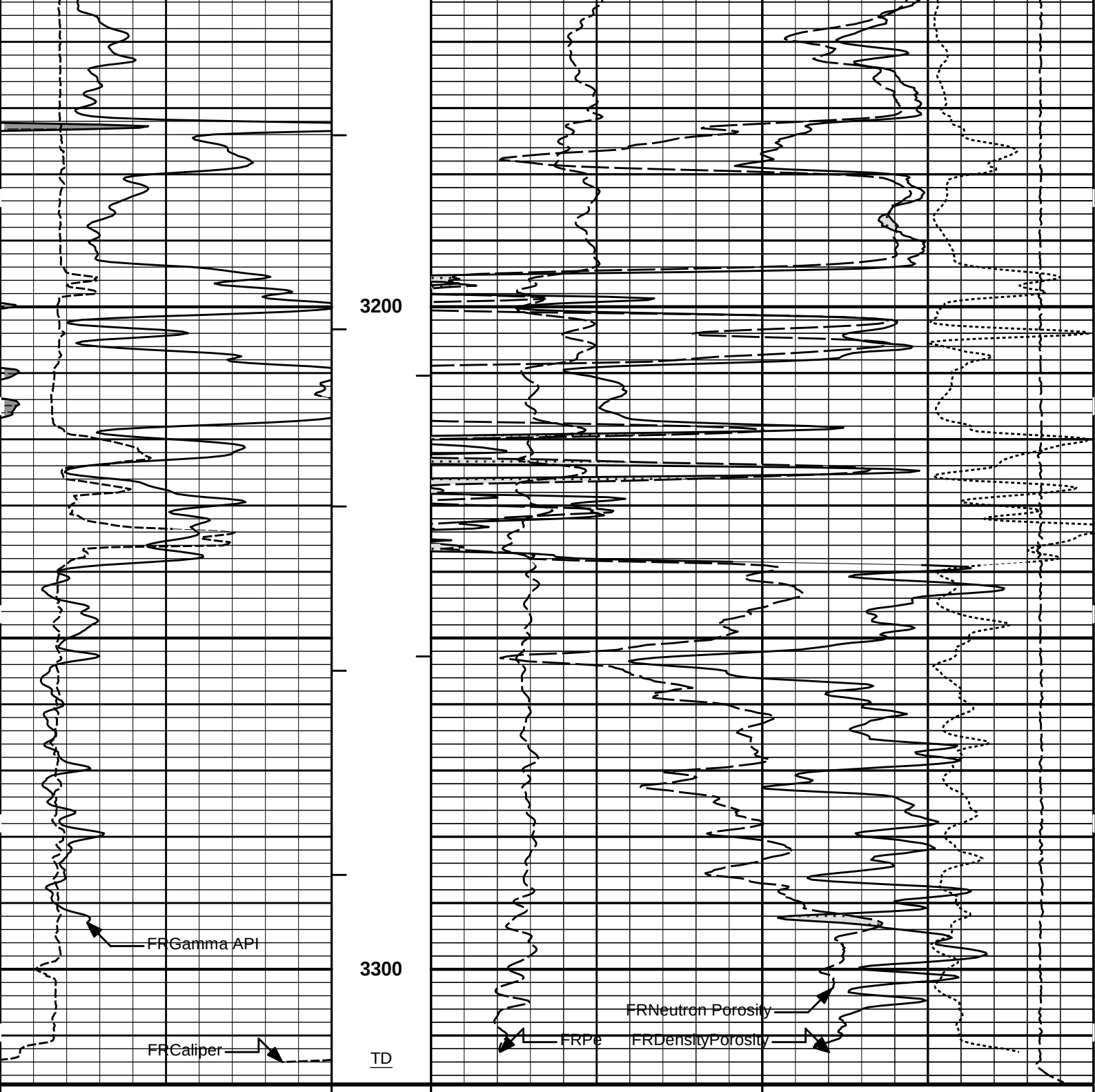

2000
2100
2200
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity
DensityCorr
Tension


2300
2400
Gamma API
Caliber
Neutron Porosity
Pe
DensityPorosity
DensityCorr
Tension


2500
2600
Gamma API
Caliper
Pe
DensityPorosity
Neutron Porosity
DensityCorr
Tension


2700
2800
2900
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity
DensityCorr
Tension


3000
3100
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity
DensityCorr
Tension



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

HALLIBURTON

Plot Time: 17-Mar-17 19:16:57
Plot Range: 1245 ft to 3317.25 ft
Data: FOG_1-27\Well Based\PORO_ML_DETAIL\
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

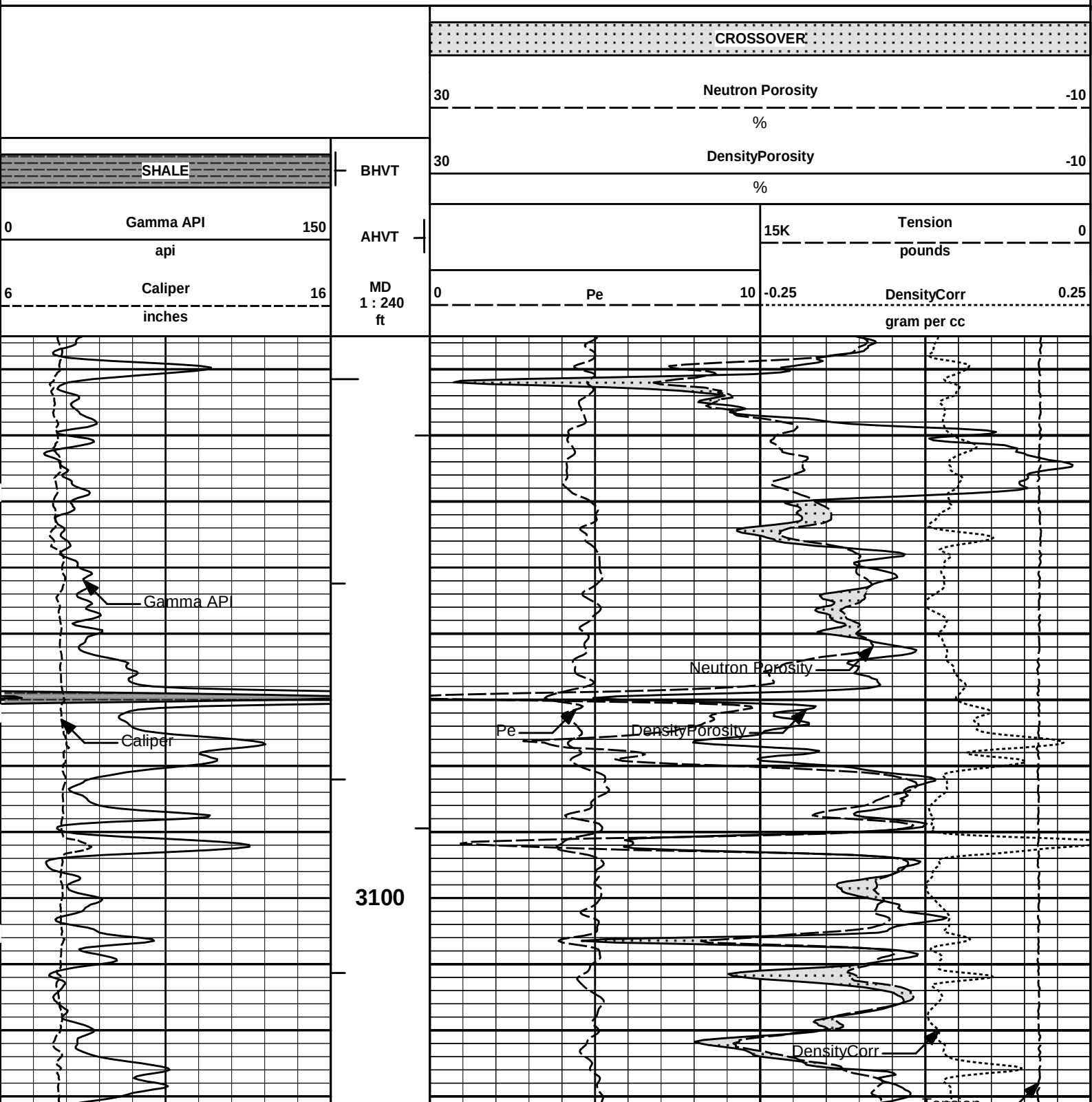
5 INCH MAIN LOG

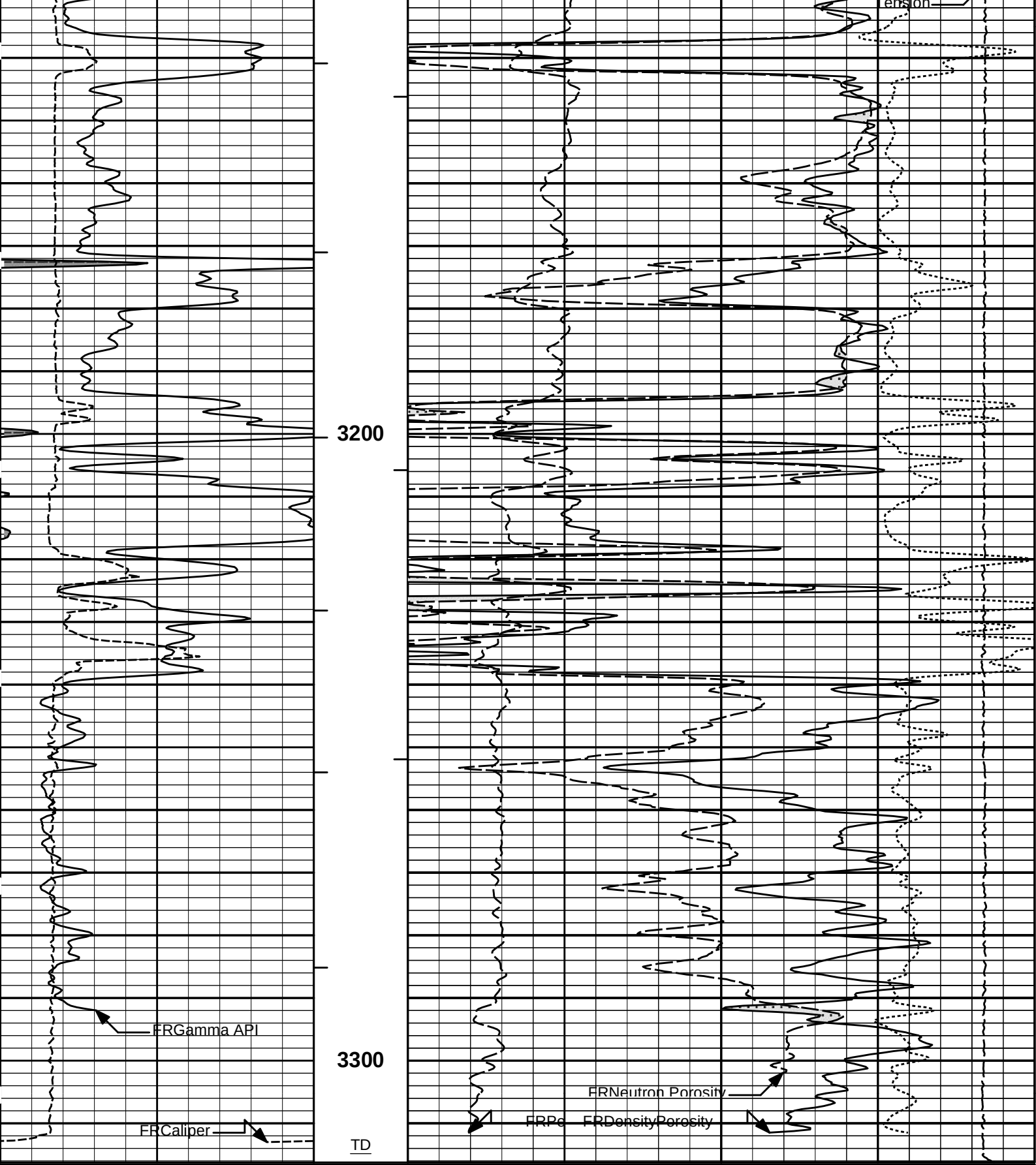
MEASURED DEPTH
MAIN SECTION 5" PER 100'

HALLIBURTON

Plot Time: 17-Mar-17 19:16:57
Plot Range: 3015 ft to 3316.25 ft
Data: FOG_1-27\Well Based\PORO_ML_RPT\
Plot File: \\PORO\Poro_IQ_5_REP_LIB

REPEAT SECTION





6 Caliper 16	MD 1 : 240 ft	0 Pe 10 / -0.25 DensityCorr 0.25
inches		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: 17-Mar-17 19:16:59
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Data: FOG_1-27\Well Based\PORO_ML_RPT\
Plot File: \\PORO\Poro_IQ_5_REP_LIB

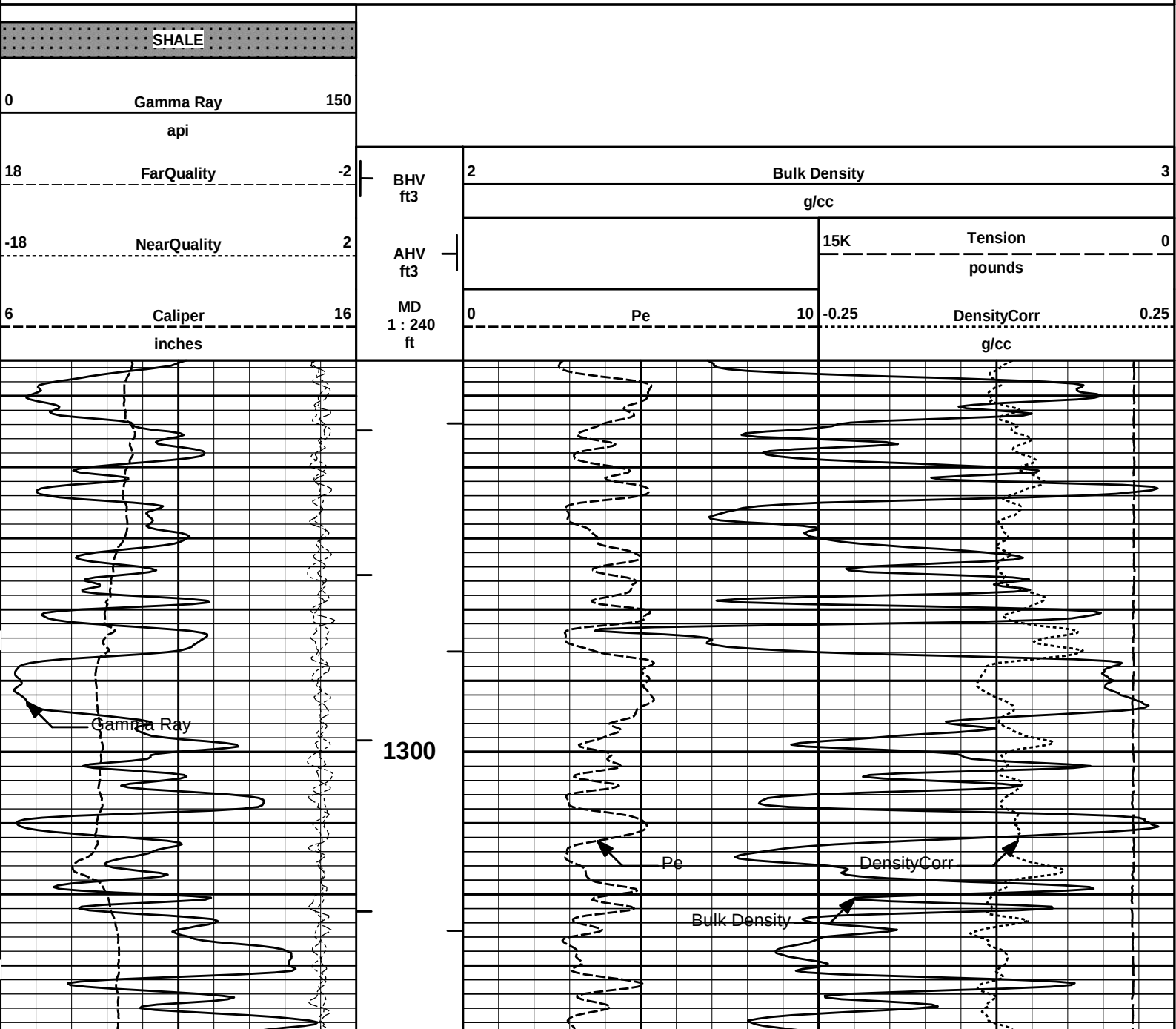
REPEAT SECTION

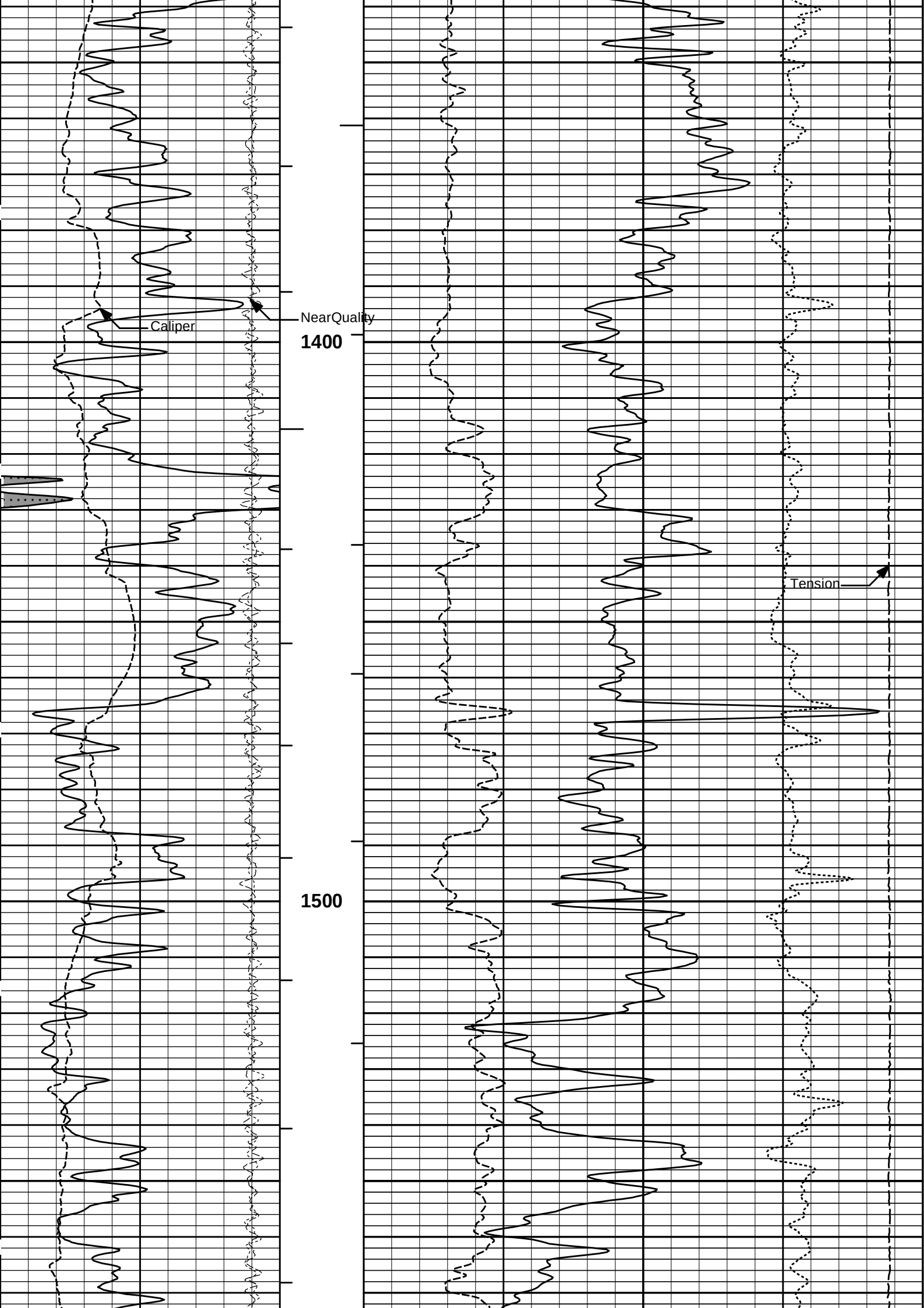
HALLIBURTON

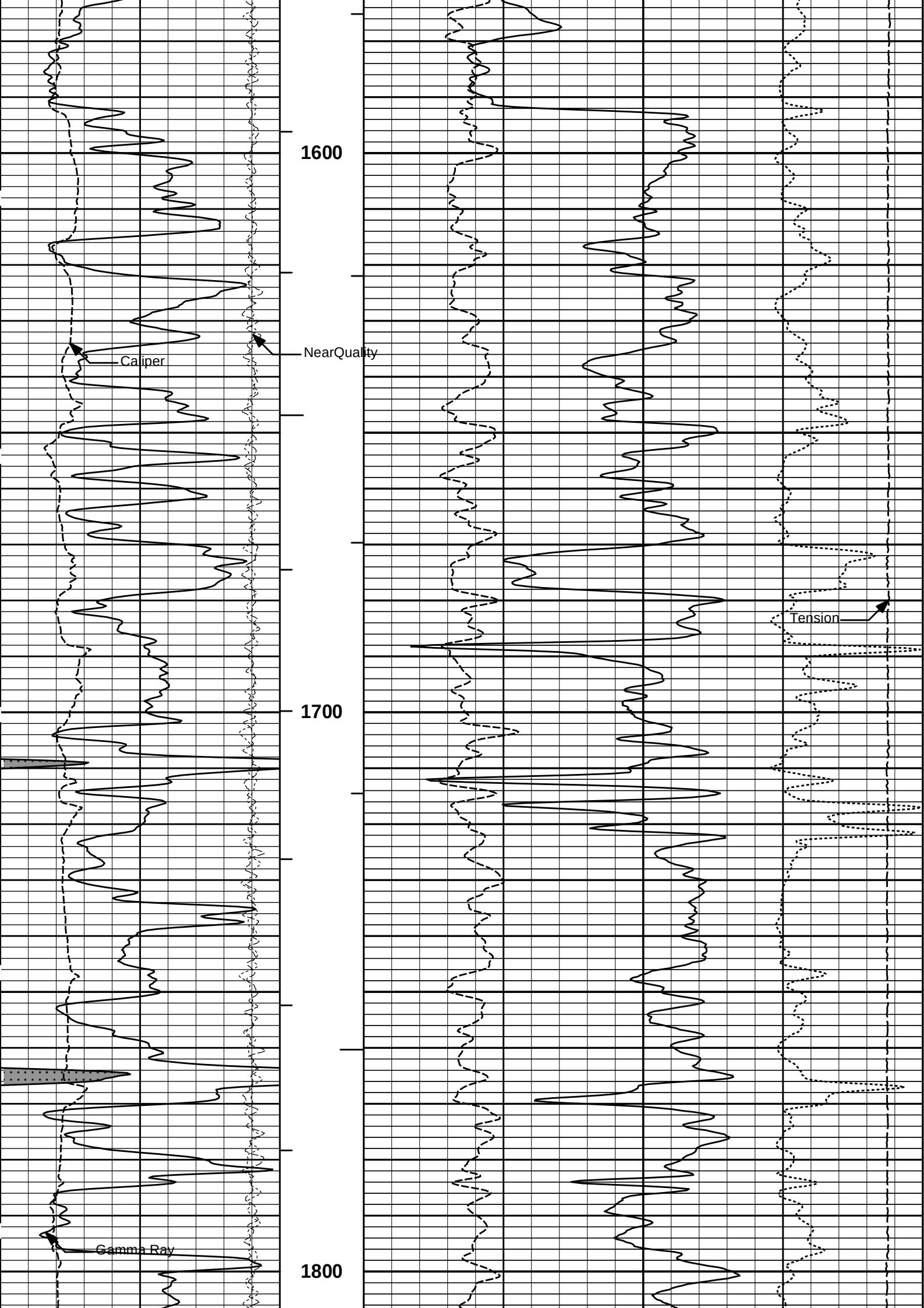
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Plot Range: 1245 ft to 3317.25 ft
Data: FOG_1-27\Well Based\PORO_ML_DETAIL\
Plot File: \\-LOCAL-\FOG_1-27\0004 GTET-BSAT-ACRT\PORO\BULKD_5_MAIN_LIB

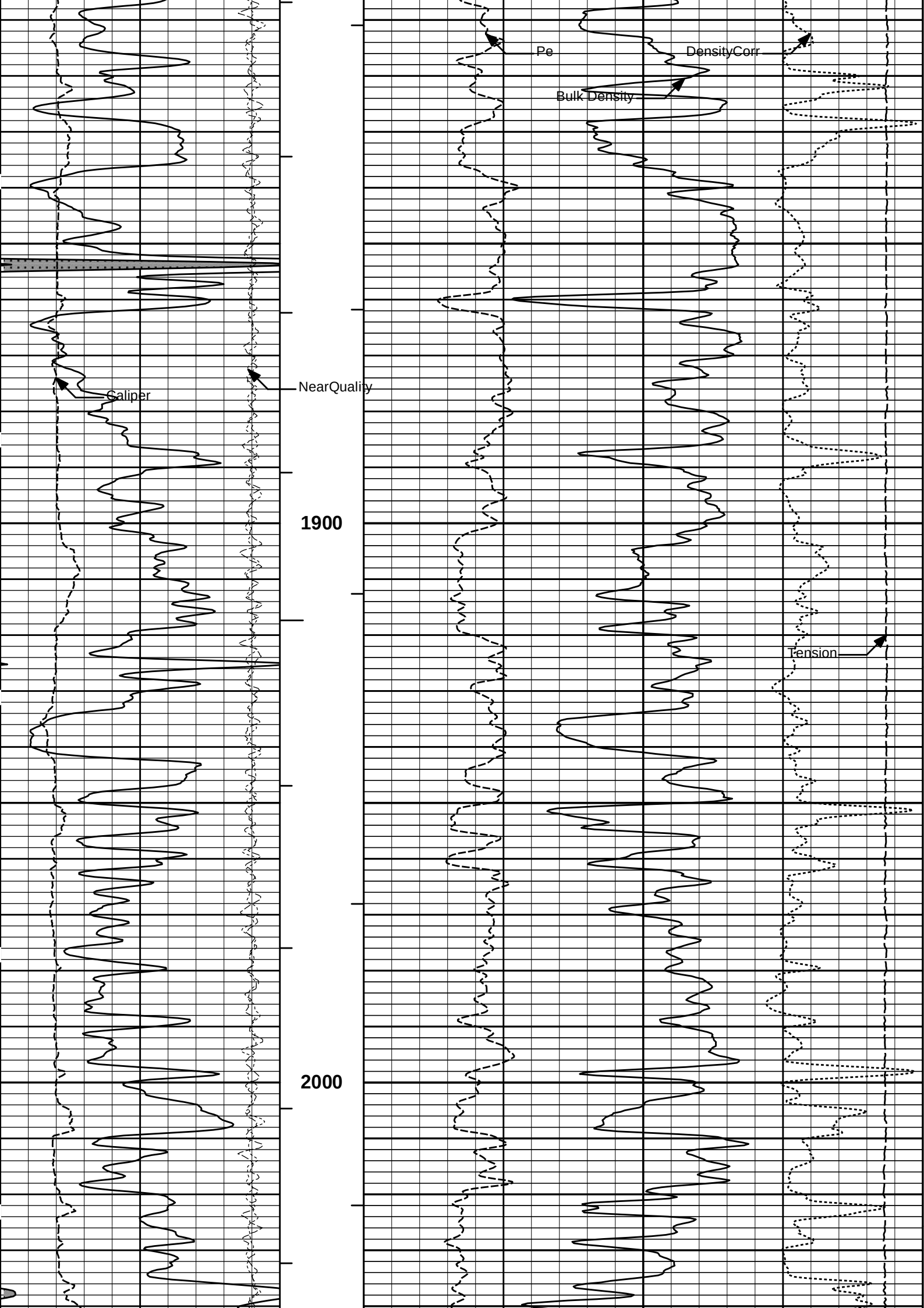
5 INCH MAIN LOG

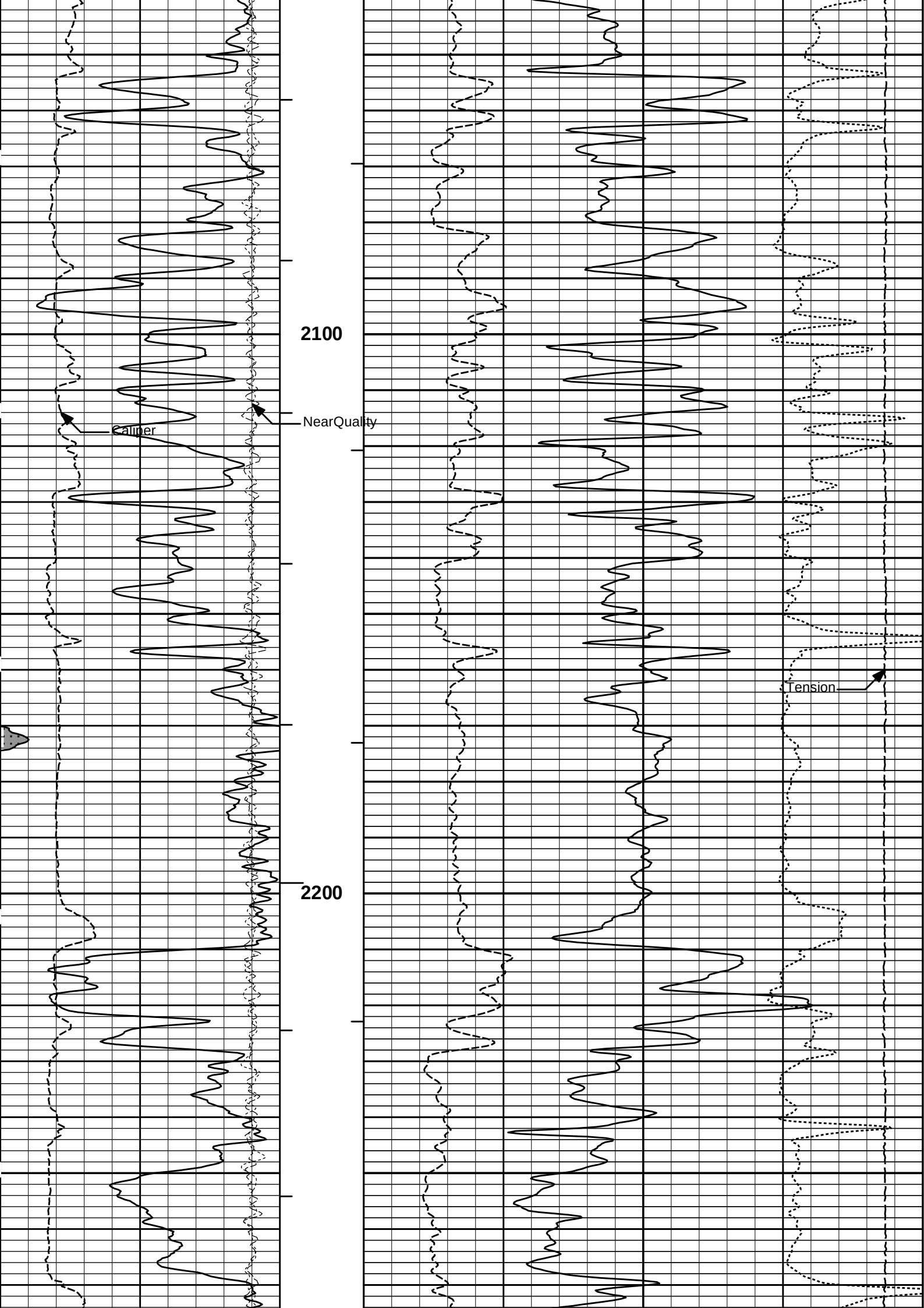
MEASURED DEPTH
MAIN SECTION 5" PER 100'

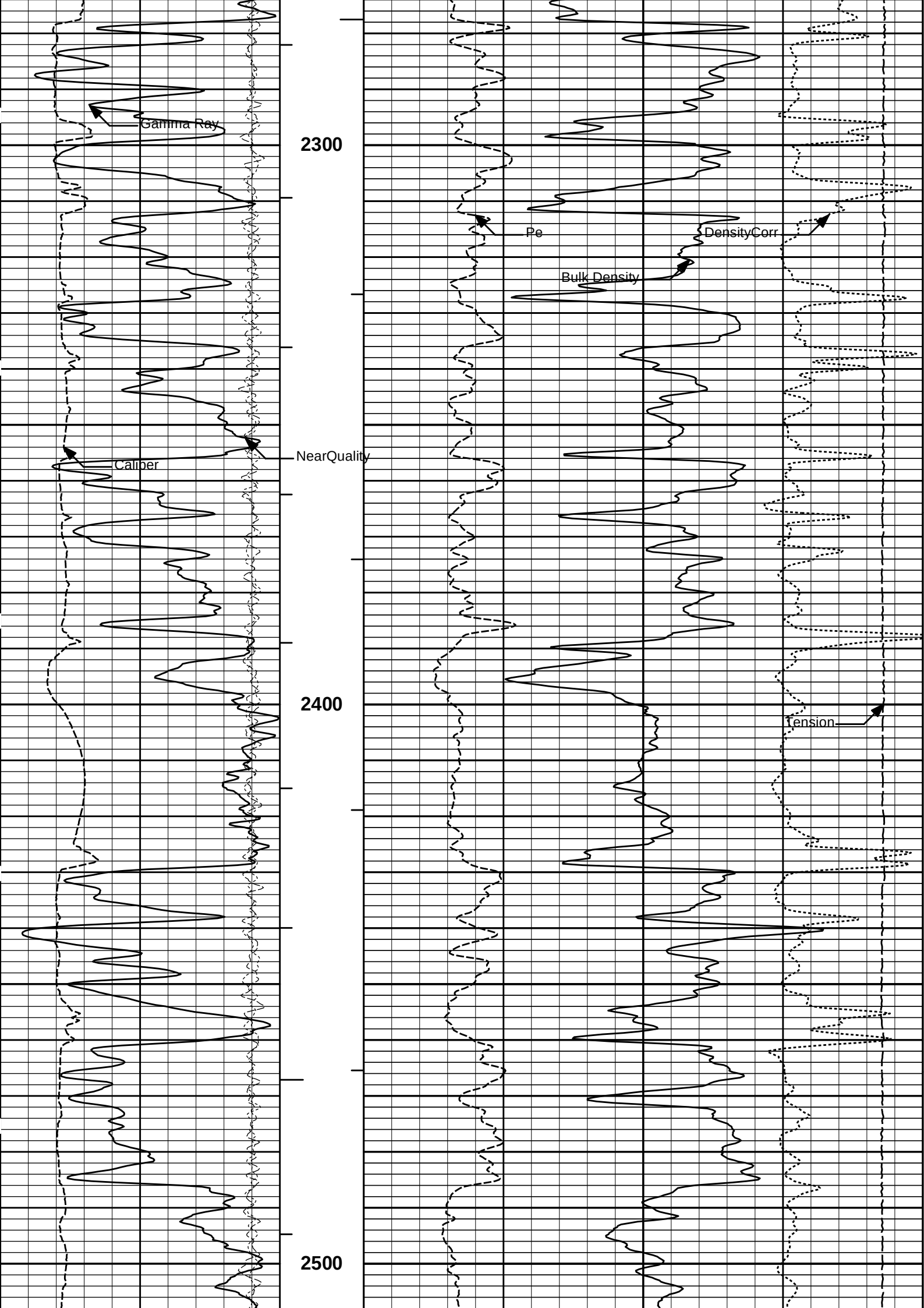


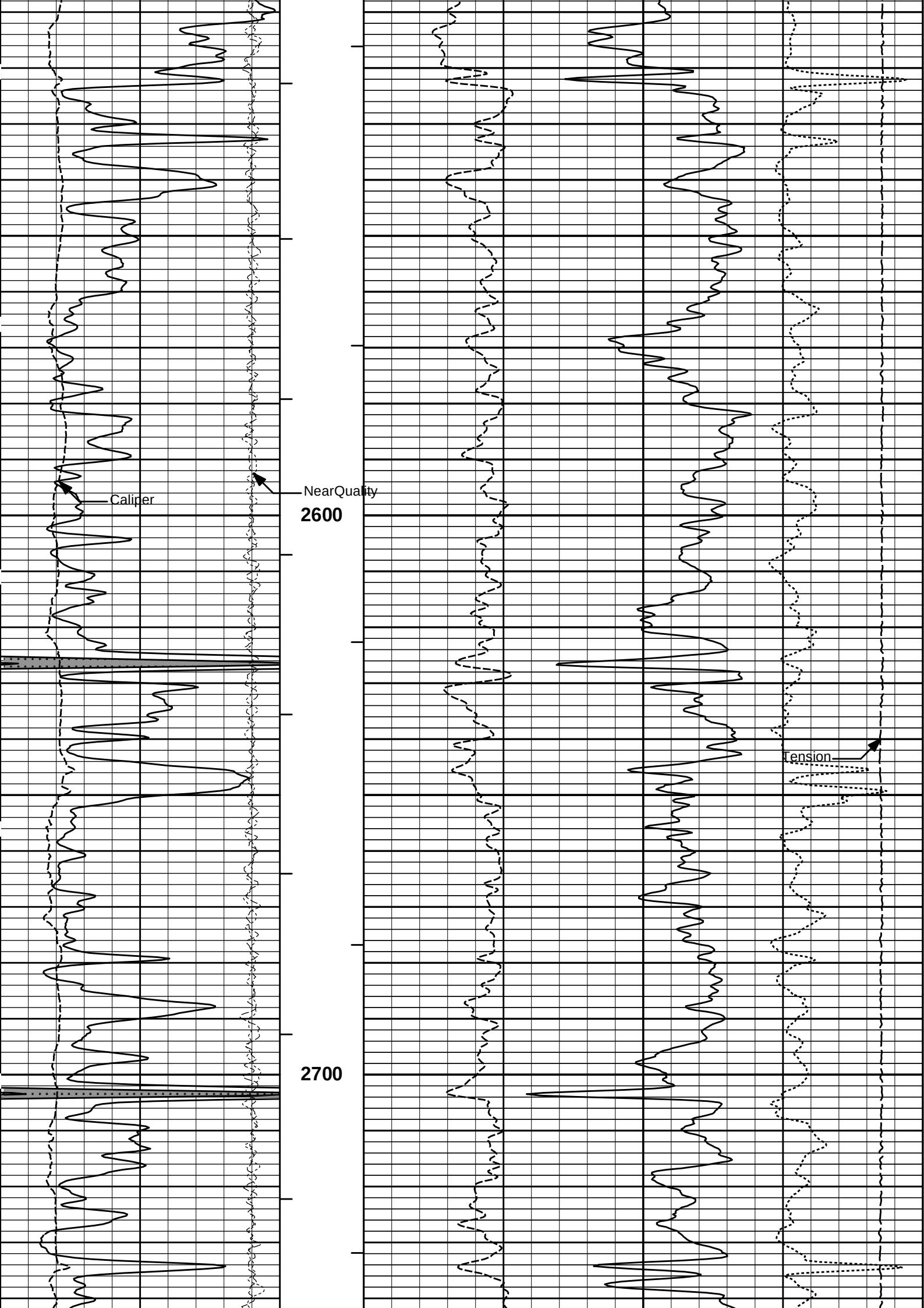

Caliper
NearQuality
1400
Tension
1500

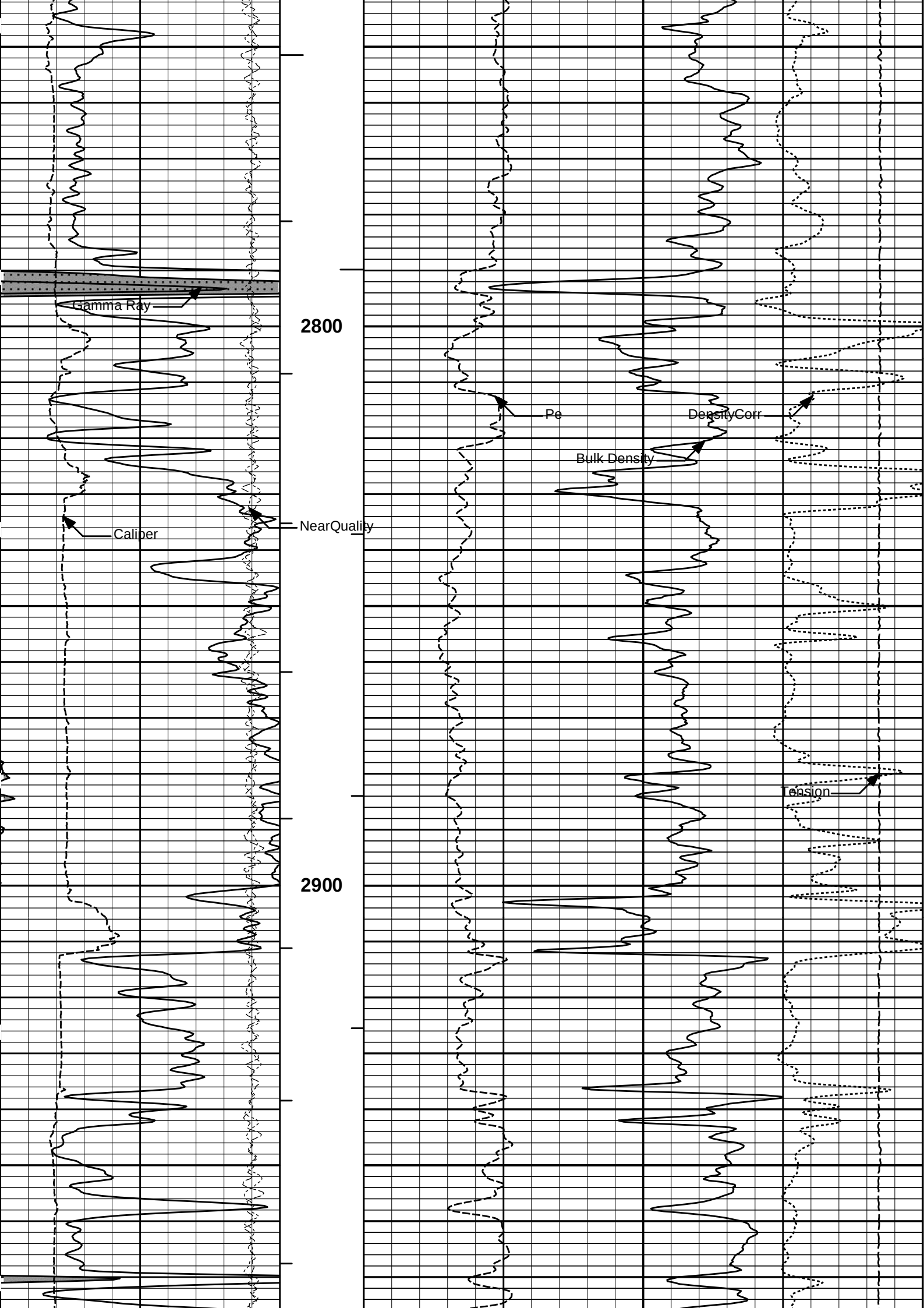

1600
1700
1800
Caliper
NearQuality
Tension
Gamma Ray

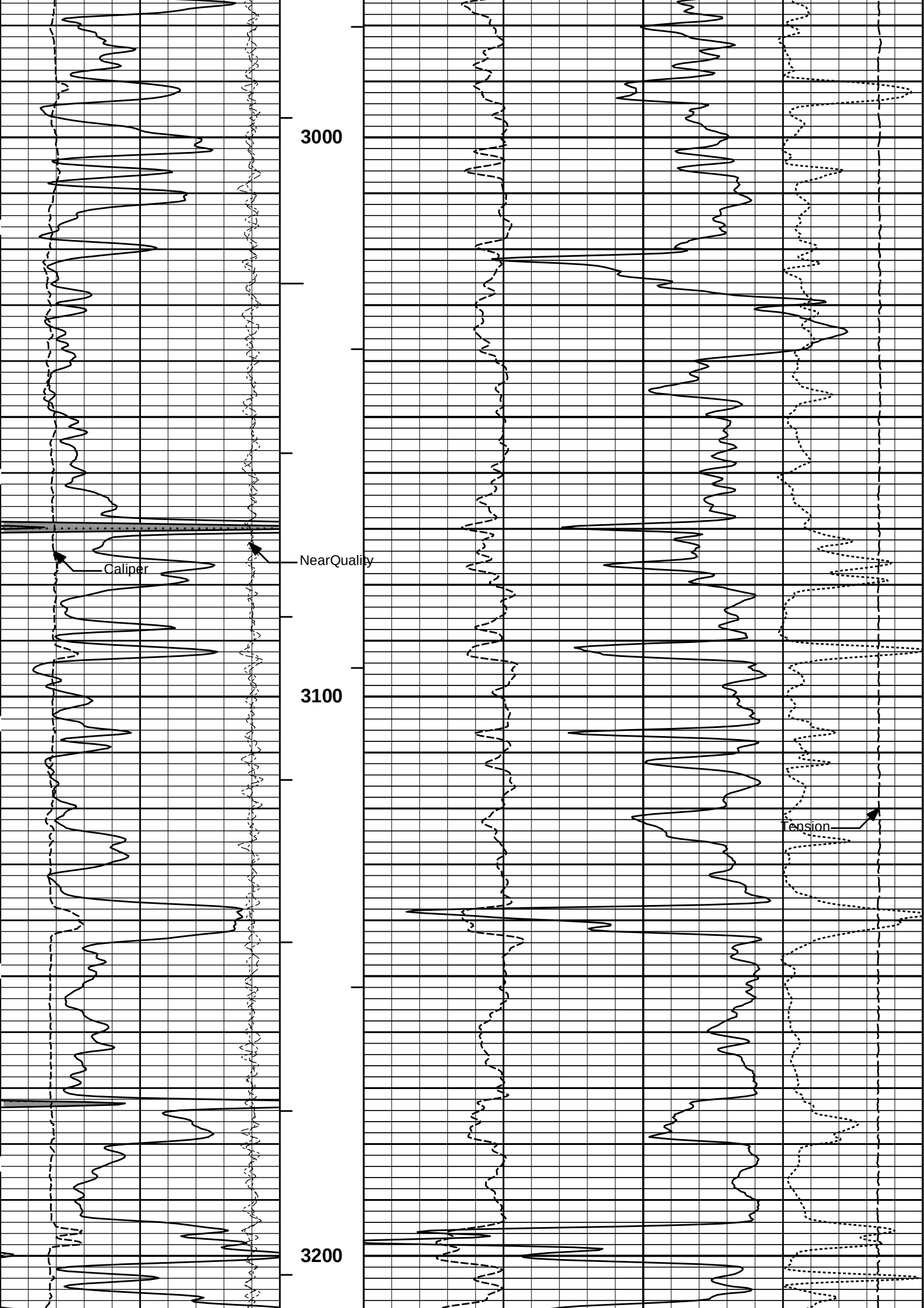

Pe
DensityCorr
Bulk Density
Caliper
NearQuality
1900
Tension
2000

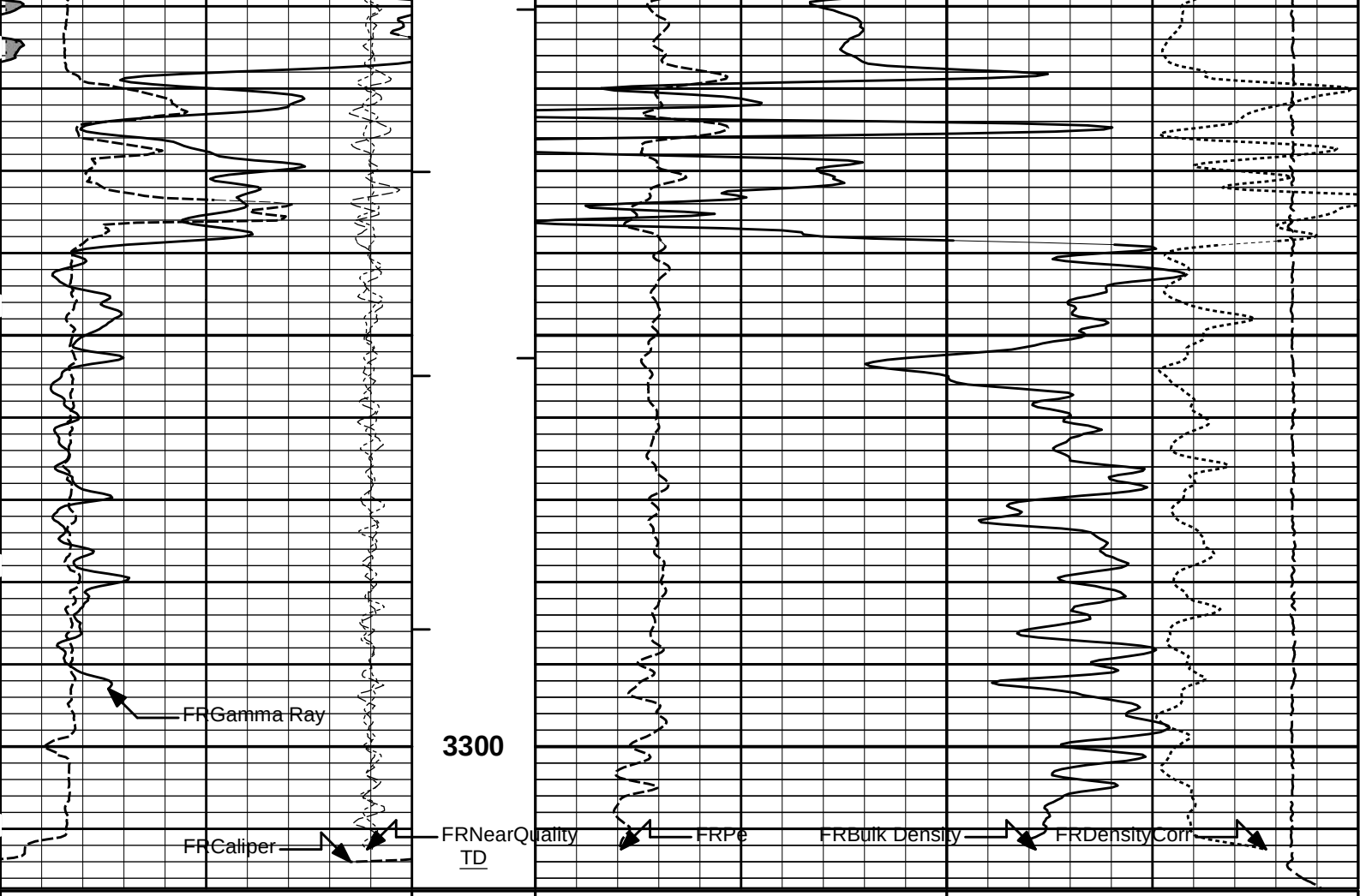

2100
NearQuality
Caliper
Tension
2200


Gamma Ray
2300
Pe
DensityCorr
Bulk Density
Caliber
NearQuality
2400
Tension
2500


Caliper
NearQuality
2600
Tension
2700


Gamma Ray
2800
Pe
DensityCorr
Bulk Density
Caliber
NearQuality
Tension
2900


3000
3100
3200
Caliper
NearQuality
Tension



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

-0.25 DensityCorr 0.25 g/cc	
15K Tension 0 pounds	

HALLIBURTON

Plot Time: 17-Mar-17 19:17:01
Plot Range: 1245 ft to 3317.25 ft
Data: FOG_1-27\Well Based\PORO_ML_DETAIL
Plot File: \\-LOCAL-\FOG_1-27\0004 GTET-BSAT-ACRT\PORO\BULKD_5_MAIN_LIB

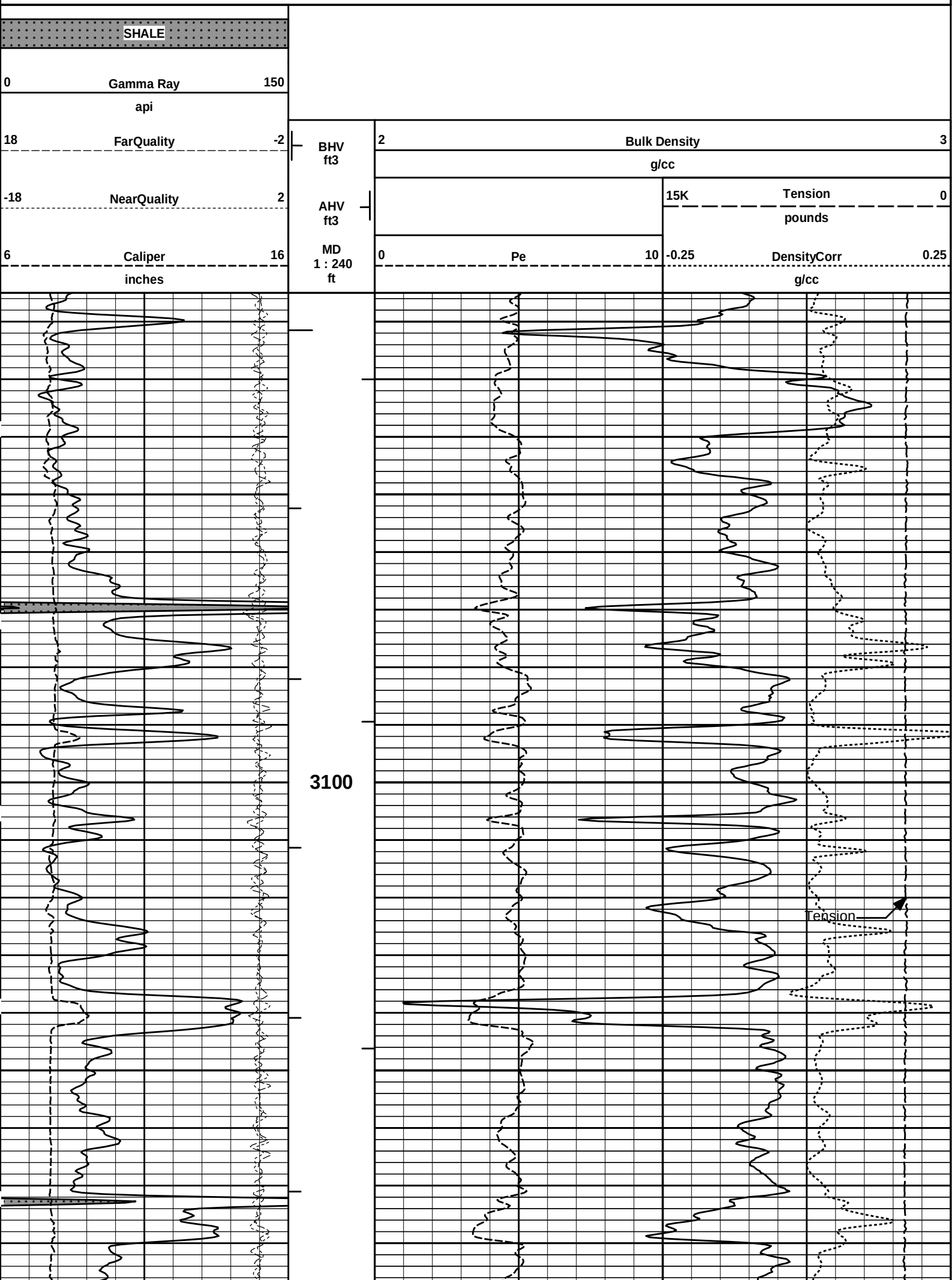
5 INCH MAIN LOG

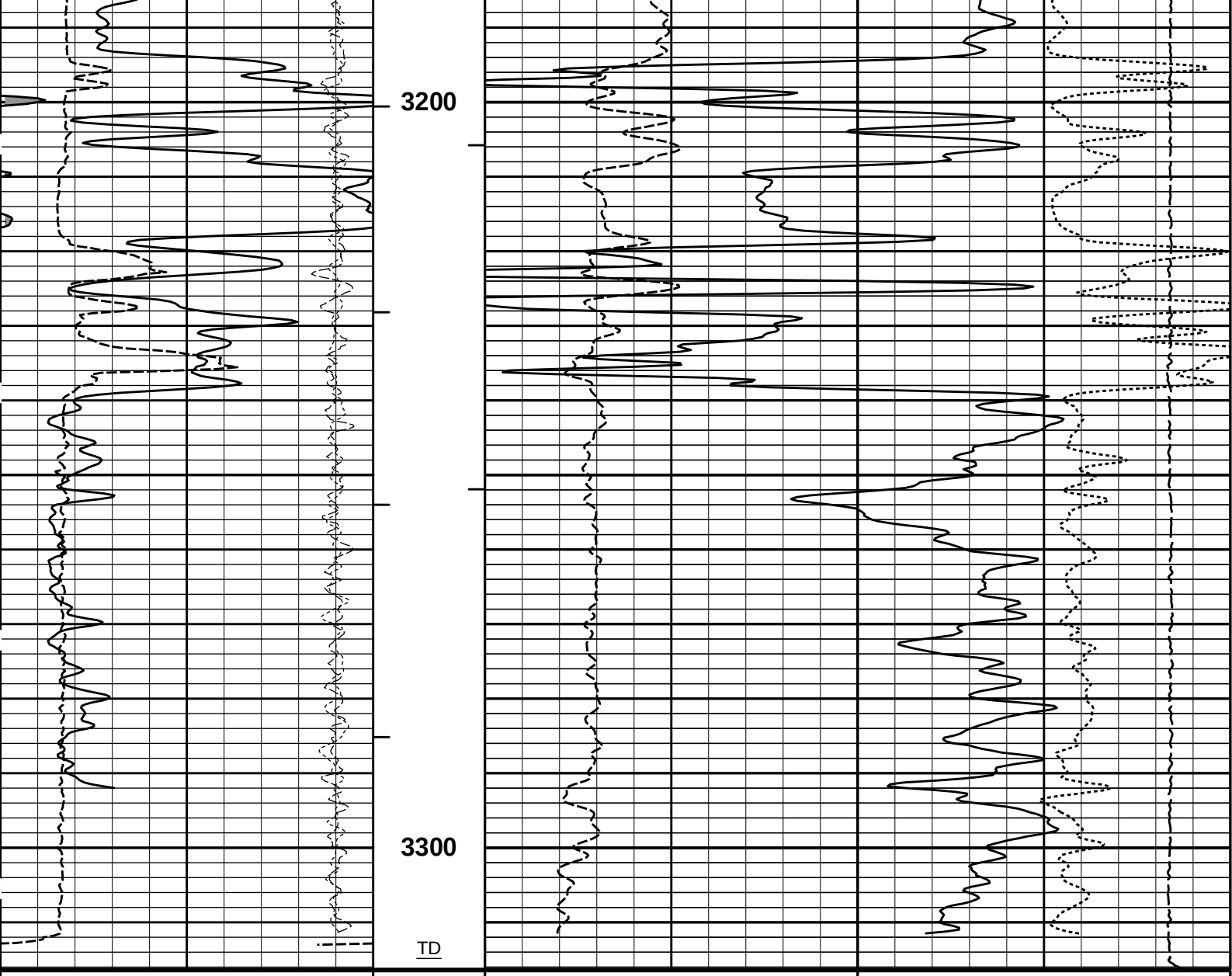
MEASURED DEPTH
MAIN SECTION 5" PER 100'

HALLIBURTON

Plot Time: 17-Mar-17 19:17:01
Plot Range: 3015 ft to 3316.25 ft
Data: FOG_1-27\Well Based\PORO_ML_RPT
Plot File: \\-LOCAL-\FOG_1-27\0004 GTET-BSAT-ACRT\PORO\BULKD_5_REP_LIB

REPEAT SECTION





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

HALLIBURTON

Plot Time: 17-Mar-17 19:17:03
Plot Range: 3015 ft to 3316.25 ft
Data: FOG_1-27\Well Based\PORO_ML_RPT\
Plot File: \\-LOCAL-\FOG_1-27\0004 GTET-BSAT-ACRT\PORO\BULKD_5_REP_LIB

REPEAT SECTION

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	**GTET - 11013114**	**Reference Calibration Date:**	**03-Jan-17 10:45:31**
Engineer:	**THOMAS HYDE**	**Calibration Date:**	**15-Feb-17 11:45:58**
Software Version:	**WL INSITE R5.0.5 (Build 8)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB-146
Calibrator API Reference:265.00 api
Equivalent Calibrator API Reference:269.6 api

Measurement	Measured	Calibrated	Units
Background	34.7	35.1	api
Background + Calibrator	301.7	304.7	api
Calibrator	266.9	269.6	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	**GTET - 11013114**	**Reference Calibration Date:**	**15-Feb-17 11:45:58**
Engineer:	**THOMAS HYDE**	**Calibration Date:**	**06-Mar-17 09:20:23**
Software Version:	**WL INSITE R5.0.5 (Build 8)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB-146
Calibrator API Reference:265.00 api
Equivalent Calibrator API Reference:269.6 api

Field Verification	Shop	Field	Units
Background	35.1	42.9	api
Background + Calibrator	304.7	314.5	api
Calibrator	269.6	271.6	api

Shop	Field	Difference	Tolerance
269.6	271.6	-2.0	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	**DSNT2 - 10993115**	**Reference Calibration Date:**	**15-Feb-17 10:08:17**
Engineer:	**JORGE ORLANDO PEREZ**	**Calibration Date:**	**13-Mar-17 11:43:34**
Software Version:	**WL INSITE R5.0.5 (Build 8)**	**Calibration Version:**	**1**

Logging Source S/N: DSN-424
Tank Serial Number: 12345678
Reference value assigned to Tank: 56.100
Snow Block S/N: 12345678
Calibration Tank Water Temperature: 65 degF
Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.99927	0.99592	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):	0.2368	0.2358	0.0011	+/- 0.0020
Calibrated Ratio:	10.5950	10.5595	0.035	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0809	0.02000 - 0.09000

PASS/FAIL SUMMARY

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

Snow Block Check: Passed

DUAL SPACED NEUTRON FIELD CALIBRATION

Tool Name:	**DSNT2 - 10993115**	**Reference Calibration Date:**	**13-Mar-17 11:43:34**
Engineer:	**JORGE ORLANDO PEREZ**	**Calibration Date:**	**13-Mar-17 11:44:50**
Software Version:	**WL INSITE R5.0.5 (Build 8)**	**Calibration Version:**	**1**

Logging Source S/N: DSN-424

Snow Block S/N: 12345678

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0809	0.0812	0.0002	+/- 0.0150

PASS/FAIL SUMMARY

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

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	**SDLT2 - 10960494**	**Reference Calibration Date:**	**13-Mar-17 10:54:03**
Engineer:	**JORGE ORLANDO PEREZ**	**Calibration Date:**	**13-Mar-17 10:59:42**
Software Version:	**WL INSITE R5.0.5 (Build 8)**	**Calibration Version:**	**1**
Host Tool Name:	**DSNT - 10993115**		

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-2911.10	-2900.89	-7000.00 - -1000.00
Pad Gain	0.0003786	0.0003767	0.0002000 - 0.0006000
Arm Offset	-1777.50	-2019.68	-5000.00 - 3000.00
Arm Gain	0.0005156	0.0005359	0.000300 - 0.000700
Arm Power	-0.000004876	-0.000006036	-0.000010000 - 0.000010000

The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER

Tool Diameter: 4.50 in

CALIBRATION RINGS

Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	2.01	2.00	-0.01	+/- 0.20
Medium Ring (in)	3.76	3.75	-0.01	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.55	6.50	-0.05	+/- 0.20
Medium Ring (in)	8.26	8.25	-0.01	+/- 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:	**SDLT2 - 10960494**	**Reference Calibration Date:**	**13-Mar-17 10:59:42**
Engineer:	**JORGE ORLANDO PEREZ**	**Calibration Date:**	**13-Mar-17 11:03:49**
Software Version:	**WL INSITE R5.0.5 (Build 8)**	**Calibration Version:**	**1**

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value

				New Value
Pad Extension	3.76	3.75	-0.02	+/- 0.10
Ring Diameter	8.25	8.26	0.01	+/- 0.15

PASS/FAIL SUMMARY

Pad Extension Check:	Passed
Diameter Check:	Passed

MICRO LOG SHOP CALIBRATION

Tool Name: Microlog Pad2 - 10960494
Reference Calibration Date: 13-Mar-17 11:10:33
Engineer: JORGE ORLANDO PEREZ
Calibration Date: 13-Mar-17 11:12:02
Software Version: WL INSITE R5.0.5 (Build 8)
Calibration Version: 1
Host Tool Name: DSNT - 10993115

CALIBRATION COEFFICIENT SUMMARY

Measurement	Micro Log Normal		Micro Log Lateral		
	Measured	Calibrated	Measured	Calibrated	Units
Tool Zero	-0.00	-0.01	-0.23	-0.21	ohmm
Calibration Point #1	0.01	0.00	-0.02	0.00	ohmm
Calibration Point #2	20.02	20.00	20.00	20.00	ohmm
Internal Reference	19.78	19.76	20.00	20.00	ohmm

Measurement	Micro Log Normal Tool Value	Micro Log Lateral Tool Value	Units
Tool Zero	0.75	0.57	V
Calibration Point #1	3.73	71.97	V
Calibration Point #2	5368.44	6939.49	V
Internal Reference	5304.54	6938.98	V

MICRO LOG FIELD CHECK

Tool Name: Microlog Pad2 - 10960494
Reference Calibration Date: 13-Mar-17 11:12:02
Engineer: JORGE ORLANDO PEREZ
Calibration Date: 13-Mar-17 11:12:45
Software Version: WL INSITE R5.0.5 (Build 8)
Calibration Version: 1

Measurement	Micro Log Normal		Micro Log Lateral		
	Shop	Field	Shop	Field	Units
Tool Zero	-0.01	-0.01	-0.21	-0.21	ohmm
Internal Reference	19.76	19.77	20.00	20.00	ohmm

Summary

Signal	Shop	Field	Difference	Tolerence
Microlog Normal	19.76	19.77	-0.01	+/- 0.80
Microlog Lateral	20.00	20.00	0.00	+/- 0.80

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT Pad2 - 10844781
Reference Calibration Date: 13-Mar-17 10:05:39
Engineer: JORGE ORLANDO PEREZ
Calibration Date: 13-Mar-17 10:24:03
Software Version: WL INSITE R5.0.5 (Build 8)
Calibration Version: 1

Logging Source S/N: 5168GW

Aluminum Block S/N: EL RENO STD ALUMINUM	Density: 2.581g/cc	Pe: 3.170
Magnesium Block S/N: EL RENO	Density: 1.687g/cc	Pe: 2.594

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0457	1.0364	0.90 - 1.10
Near Dens Gain	1.0261	1.0238	0.90 - 1.10
Near Peak Gain	1.0335	1.0221	0.90 - 1.10
Near Lith Gain	1.0253	1.0552	0.90 - 1.10

Near Lith Gain	1.0253	1.0352	0.90 - 1.10
Far Bar Gain	1.0152	1.0145	0.90 - 1.10
Far Dens Gain	1.0028	1.0038	0.90 - 1.10
Far Peak Gain	0.9992	1.0000	0.90 - 1.10
Far Lith Gain	0.9785	0.9816	0.90 - 1.10
Near Bar Offset	-0.1210	-0.0376	NONE
Near Dens Offset	0.0288	0.0482	NONE
Near Peak Offset	-0.0463	0.0495	NONE
Near Lith Offset	0.0233	-0.2247	NONE
Far Bar Offset	0.1023	0.1095	NONE
Far Dens Offset	0.2000	0.1904	NONE
Far Peak Offset	0.2240	0.2182	NONE
Far Lith Offset	0.3690	0.3442	NONE
Near Bar Background	735.26	733.33	700 - 1450
Near Dens Background	243.40	239.77	230 - 480
Near Peak Background	104.80	105.24	100 - 210
Near Lith Background	129.73	129.58	125 - 260
Far Bar Background	478.61	478.31	450 - 900
Far Dens Background	188.66	188.83	175 - 345
Far Peak Background	73.88	74.80	70 - 140
Far Lith Background	76.35	77.92	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.688	1.687	-0.001	+/- 0.015
Pe	2.572	2.551	-0.021	+/- 0.150
ALUMINUM				
Density (g/cc)	2.579	2.581	0.002	+/- 0.01500
Pe	3.090	3.123	0.033	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0007	+/- 0.0110	0.0005	+/- 0.0140
Magnesium Block	-0.0004	+/- 0.0110	-0.0016	+/- 0.0140
Aluminum Block	-0.0000	+/- 0.0110	-0.0006	+/- 0.0140
Resolution	9.75	6.00 - 11.50	8.79	6.00 - 11.50
Internal Verifier(B+D+P+L)	1208	1200 - 2700	820	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 Pad2 - 10844781 **Reference Calibration Date:** 13-Mar-17 10:24:03

Engineer: JORGE ORLANDO PEREZ **Calibration Date:** 13-Mar-17 10:27:23

Software Version: WL INSITE R5.0.5 (Build 8) **Calibration Version:** 1

Pad Temperature: 68.2 degF

DENSITY FIELD CALIBRATION SUMMARY

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1207.924	1206.470	-1.454	14.107
Far (B+D+P+L) cps	819.864	819.729	-0.135	15.798
Near Resolution	9.75	9.68	-0.070	0.50
Far Resolution	8.79	8.82	0.030	1.00

PASS/FAIL SUMMARY

Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11013114						
Gamma Ray Calibrator	269.6	271.6	----------	-2.0	+/- 9.00	api
DSNT2-10993115						
Snow-Block Porosity	0.0809	0.0812	----------	-0.0003	+/- 0.0150	decp
SDLT2-10960494						
Pad Extension	3.75	3.75	----------	0.00	+/-0.10	in
Ring Diameter	8.25	8.26	----------	-0.01	+/-0.15	in
Microlog Pad2-10960494						
MicroLog Normal	19.76	19.77	----------	-0.01	+/-0.80	ohmm
MicroLog Lateral	20.00	20.00	----------	0.00	+/-0.80	ohmm
SDLT Pad2-10844781						
Near(B+D+P+L)	1207.924	1206.470	----------	1.454	+/-14.107	cps
Far(B+D+P+L)	819.864	819.729	----------	0.135	+/-15.798	cps

Data: FOG_1-27\0003 GTET-DSN2-SDL2-ACRT\IDLE **Date: 17-Mar-17 17:23:53**

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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	9.100	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	0.490	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	CSTR	Compressive Strength	1000.00	psia
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	3315.00	ft
	SHARED	BHT	Bottom Hole Temperature	98.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	

SHARED	AZTM	High Res 2 Accelerometer Master Tool	GTET	
SHARED	TEMM	CBM Temperature Master Tool	GTET	
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	
Rwa / CrossPlot	BHSM	Borehole Size Source Tool	Bit Size	
Rwa / CrossPlot	ROIN	Input for RO Calculation	Rwa	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
GTET	BHSM	Borehole Size Source Tool	Bit Size	
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 Pore Fluid	189.00	uspf
BSAT	DTMT	Delta -T Matrix Type	User define	
BSAT	DTMA	Delta -T Matrix	47.60	uspf
BSAT	DTSH	Delta -T Shale	100.00	uspf
BSAT	SPEQ	Acoustic Porosity Equation	Wylie	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.19	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt Sonde	TPOS	Tool Position	Centered	
ACRt Sonde	RMOP	Rmud Source	Mud Cell	
ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt Sonde	RMAX	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
ACRt Sonde	BHSM	Borehole Size Source Tool	Bit Size	
ACRt Sonde	MBFL	Apply Corkscrew Effect?	No	

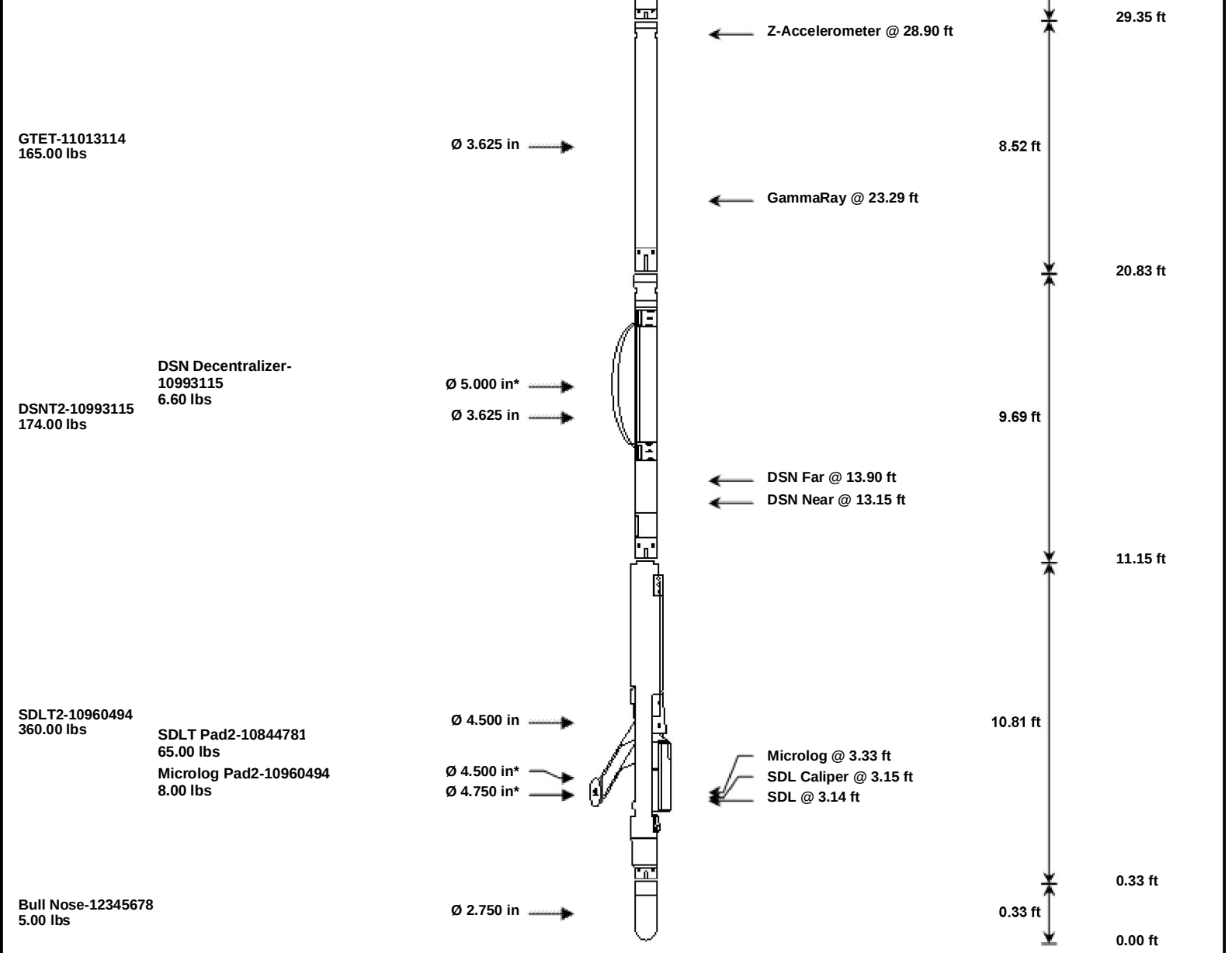
BOTTOM

Data: FOG_1-27\0004 GTET-BSAT-ACRT\IDLE **Date: 17-Mar-17 19:12:57**

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TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						36.54 ft
CH_HOS-11459024 37.50 lbs		Ø 2.750 in		Temperature @ 36.04 ft	2.50 ft	
						34.04 ft
XOHD-11572809 20.00 lbs		Ø 2.750 in Ø 3.625 in			0.95 ft	
						33.09 ft
SP Sub-11441455 60.00 lbs		Ø 3.625 in		SP @ 31.31 ft	3.74 ft	



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
CH_HOS	Hostile Cable Head with Load Cell	11459024	37.50	2.50		34.04	300.00
XOHD	Hostile to Dits Cross Over	11572809	20.00	0.95		33.09	300.00
SP	SP Sub	11441455	60.00	3.74		29.35	300.00
GTET	Gamma Telemetry Tool	11013114	165.00	8.52		20.83	60.00
DSNT	Dual Spaced Neutron	10993115	174.00	9.69		11.15	60.00
DCNT	DSN Decentralizer	10993115	6.60	5.13	*	14.48	300.00
SDLT	Spectral Density Tool	10960494	360.00	10.81		0.33	60.00
SDLP	Density Insite Pad	10844781	65.00	2.55	*	2.54	60.00
MICP	Microlog Pad	10960494	8.00	1.00	*	2.83	60.00
BLNS	Bull Nose	12345678	5.00	0.33		0.00	300.00
Total			**901.10**	**36.54**			

* Not included in Total Length and Length Accumulation.

Data: FOG_1-27\0003 GTET-DSN2-SDL2-ACRT\IDLE **Date: 17-Mar-17 16:05:02**

COMPANY	**CMX, INC.**		
WELL	**FOGHORN #1-27**		
FIELD	**CHASE-SILICA**		
COUNTY	**RICE**	STATE	**KANSAS**

HALLIBURTON

DUAL SPACED NEUTRON SPECTRAL DENSITY

	LOG