HALLIBURTON

DUAL SPACED NEUTRON SPECTRAL DENSITY LOG

COMPANY	VAL ENERGY
WELL	WERNER V1-31
FIELD/BLOCK	WILSON
COUNTY	COWLEY
STATE	KANSAS

API No. 15-035-24500-00-00

Location 535' FSL 535' FWL
LAT: 37°15' N LONG: 96°55' W

Sect. 31 Twp. 32S Rge. 6E

Other Services:
MICRO
ACRT
WSTT
XRMI

Permanent Datum	GL	Elev. 1291.0 ft	Elev.: K.B. 1301.0 ft
Log measured from	KB	10.0 ft above perm. Datum	D.F. 1299.0 ft
Drilling measured from	KB		G.L. 1291.0 ft

Date		03-Apr-13					
Run No.		ONE					
Depth - Driller		3580.00 ft					
Depth - Logger		3580.0 ft					
Bottom - Logged Interval		3557.0 ft					
Top - Logged Interval		500.0 ft					
Casing - Driller		8.625 in	@ 307.0 ft	@		@	
Casing - Logger		305.0 ft					
Bit Size		7.875 in		@		@	
Type Fluid in Hole		WATER BASED					
Density	Viscosity	9.5 ppg	49.00 s/qt				
PH	Fluid Loss	10.00 pH	8.0 cptm				
Source of Sample		FLOWLINE					
Rm @ Meas. Temperature		1.800 ohmm	@ 70.00 degF	@		@	
Rmf @ Meas. Temperature		1.50 ohmm	@ 70.00 degF	@		@	
Rmc @ Meas. Temperature		2.100 ohmm	@ 70.00 degF	@		@	
Source Rmf	Rmc	MEASURED	MEASURED				
Rm @ BHT		1.27 ohmm	@ 102.0 degF	@		@	
Time Since Circulation		4.0 hr					
Time on Bottom		03-Apr-13 21:53					
Max. Rec. Temperature		102.0 degF	@ 3580.0 ft	@		@	
Equipment	Location	10782954	LIBERAL				
Recorded By		THOMAS HYDE					
Witnessed By		J. BAKER					

Fold here

Service Ticket No.: 900337201 API Serial No.: 15-035-24500-00-00 PGM Version: WL INSITE R3.8.4 (Build 5)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

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 SCALE CHANGES

	Type Log	Depth	Scale Up Hole	Scale Down Hole

RESISTIVITY EQUIPMENT DATA

	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
	@				
	@				
	@				
	@				
	@				
	@				

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.	ONE	Run No.	ONE
Serial No.	10748374	Serial No.		Serial No.	10685803	Serial No.	10755066
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.	5073GW	Serial No.	DSN436
Distance to Source	10'	FWDA [Y/N]		Strength	1.5 Ci	Strength	15 Ci

LOGGING DATA

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	3580	1800	REC	0	150				30	-10	2.71	30	-10	LIME
	800	500												

DIRECTIONAL INFORMATION

Maximum Deviation @	KOP @

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING

CHLORIDES REPORTED AT 1000 MG/L

LCM REPORTED AT 3 PPB

HOLE WAS TIGHT

CALIPER WAS CLOSED FROM 1892-1844 DUE TO TIGHT HOLE

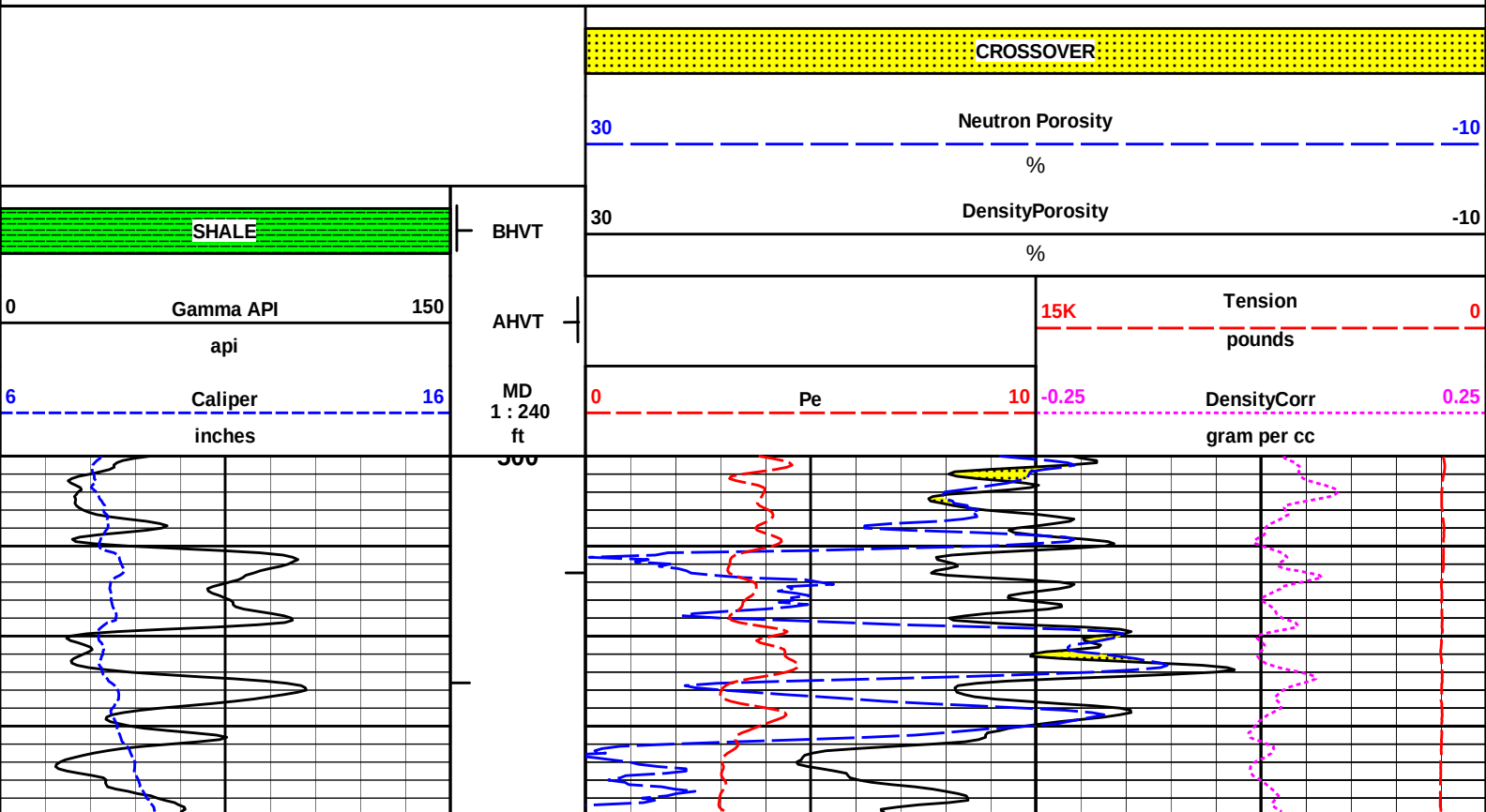
TODAY'S CREW F. VILLA J. ALBRIGHT

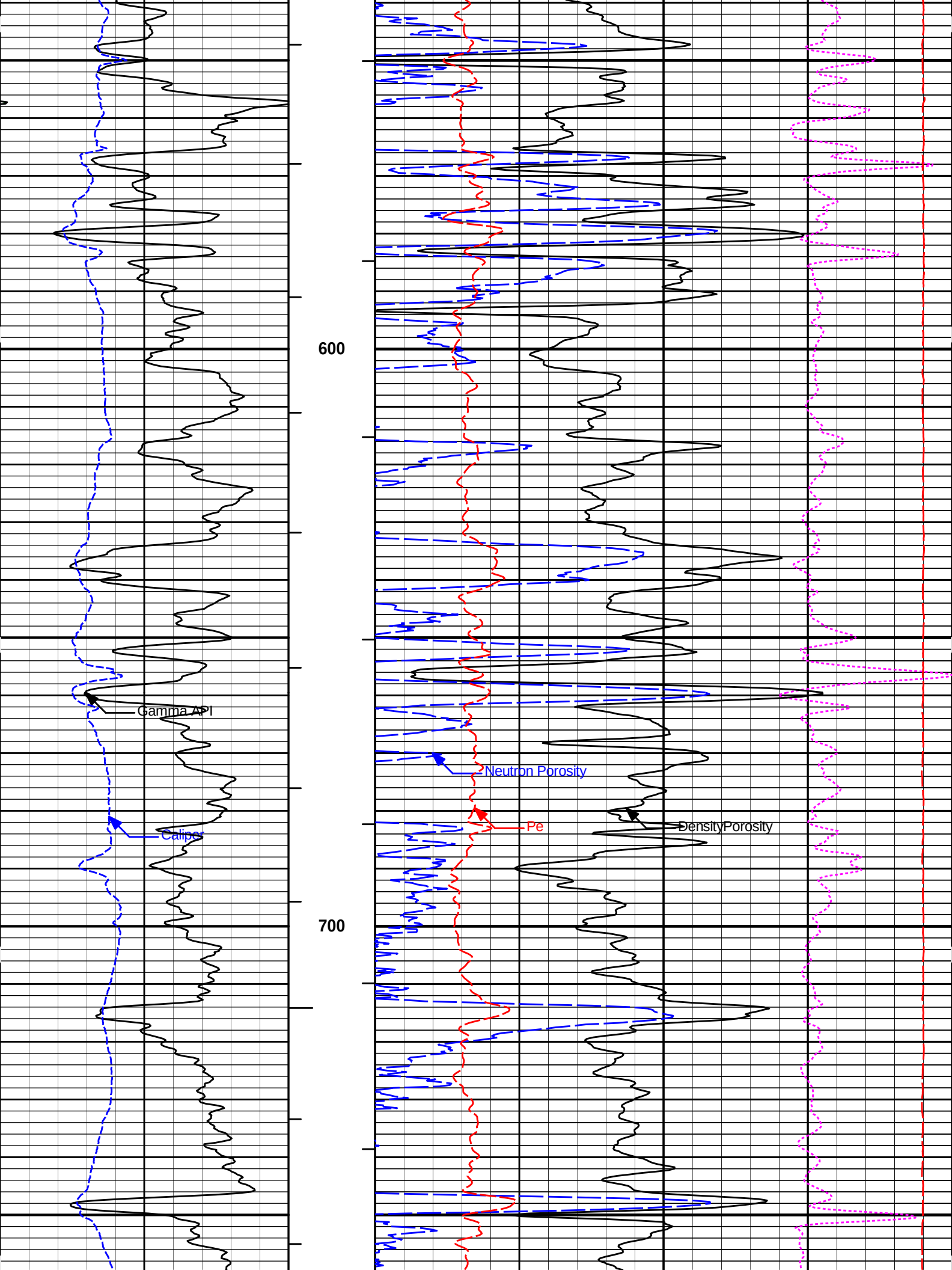
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERICES LIBERAL, KANSAS 620-624-8123

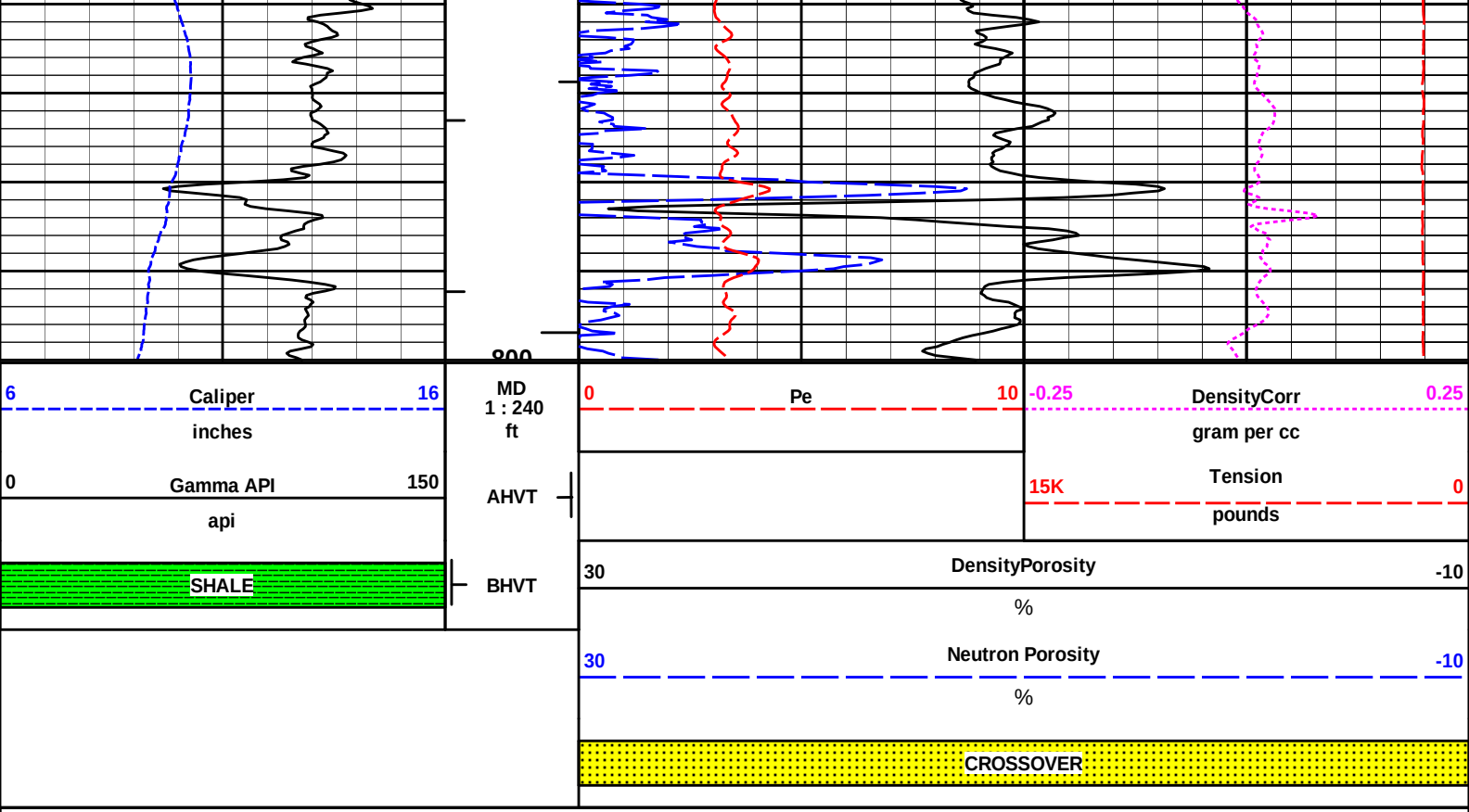
HALLIBURTON

Plot Time: 04-Apr-13 00:24:34
Plot Range: 500 ft to 800 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-003
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

5 INCH MAIN LOG




600
700
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity



HALLIBURTON

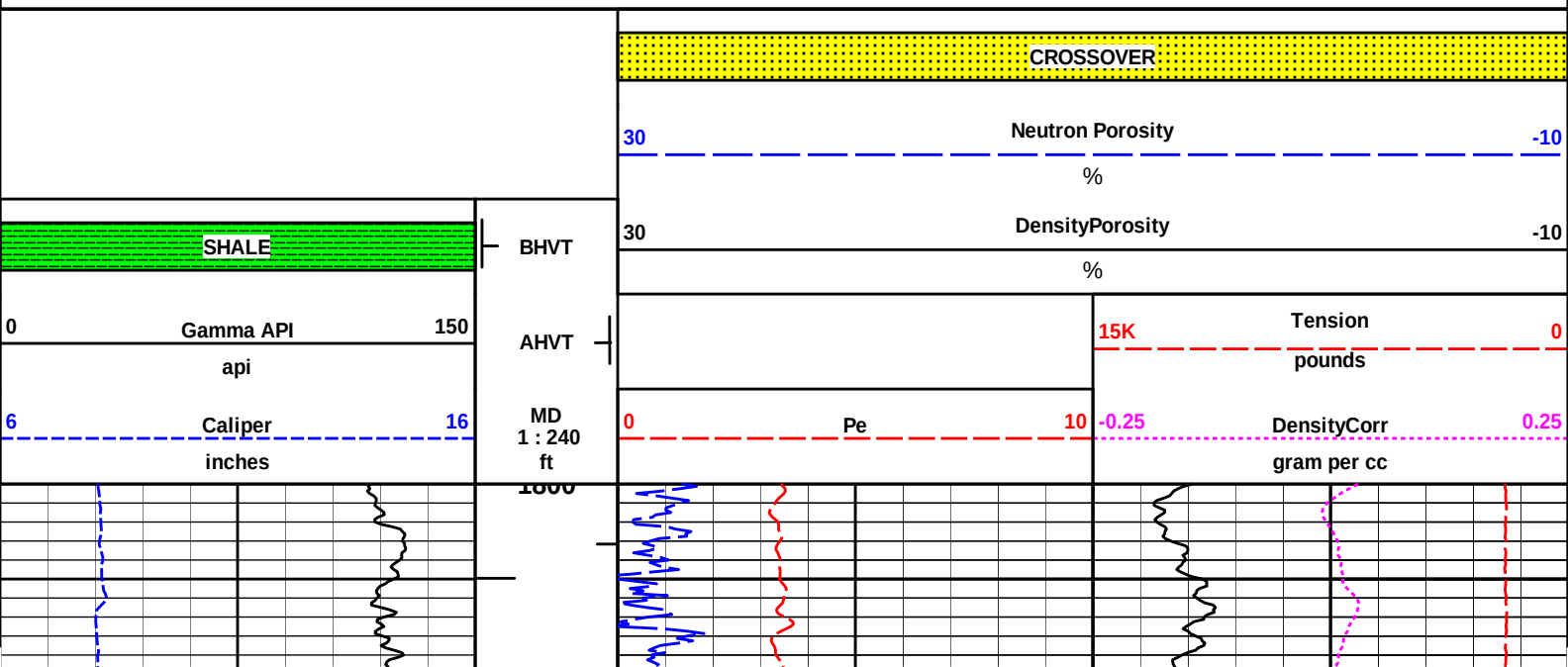
Plot Time: 04-Apr-13 00:24:38
Plot Range: 500 ft to 800 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-003\
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

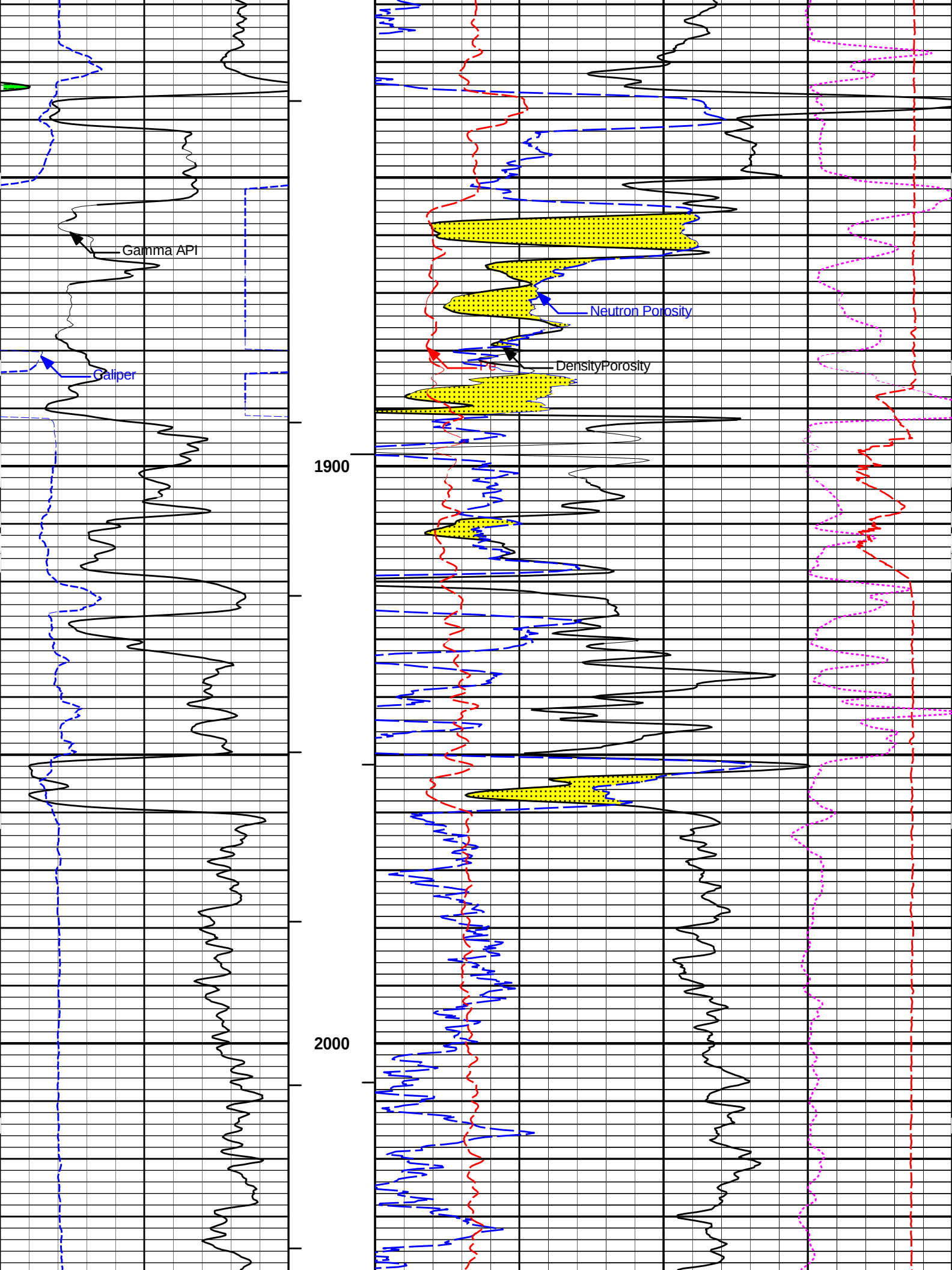
5 INCH MAIN LOG

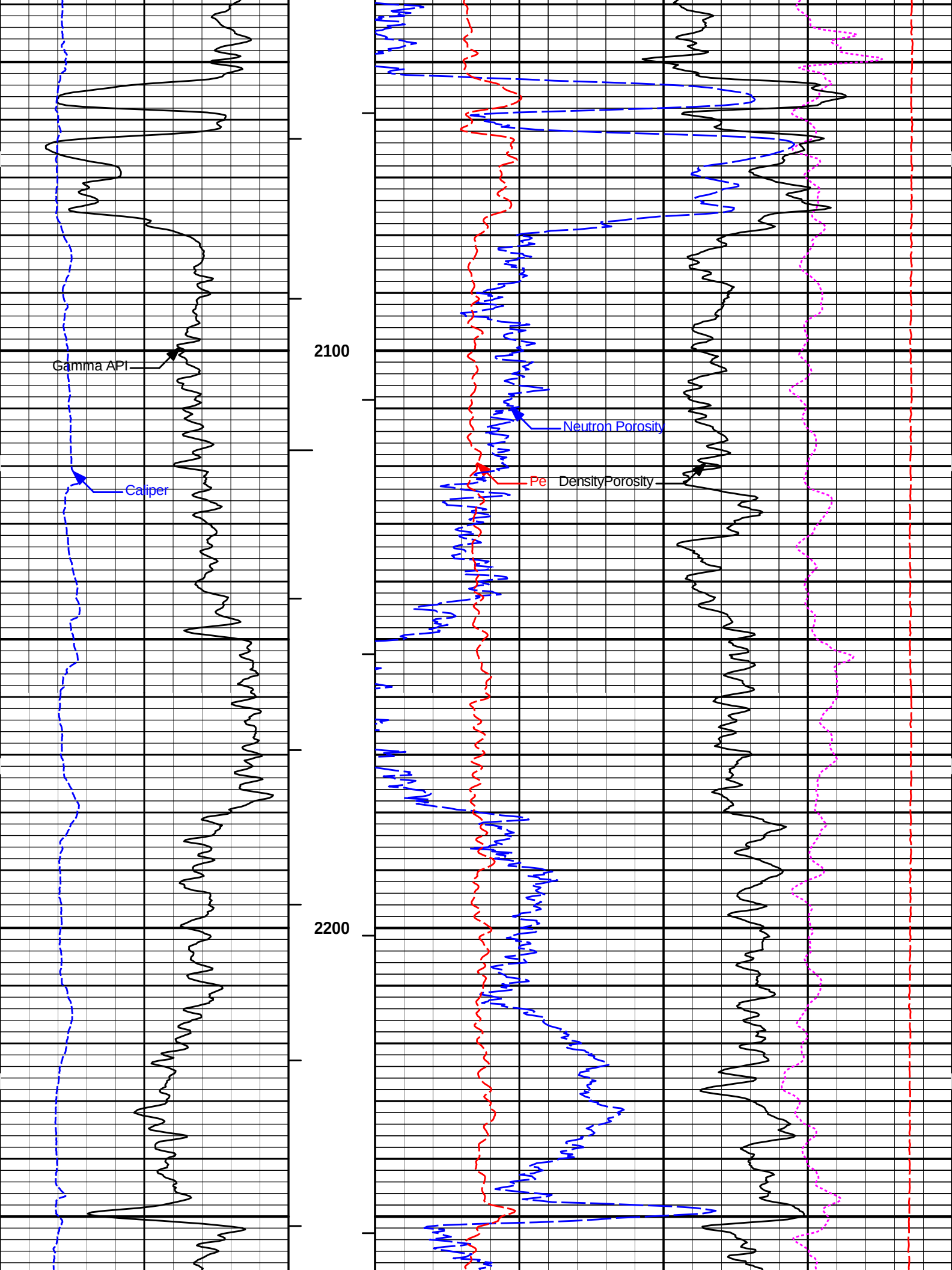
HALLIBURTON

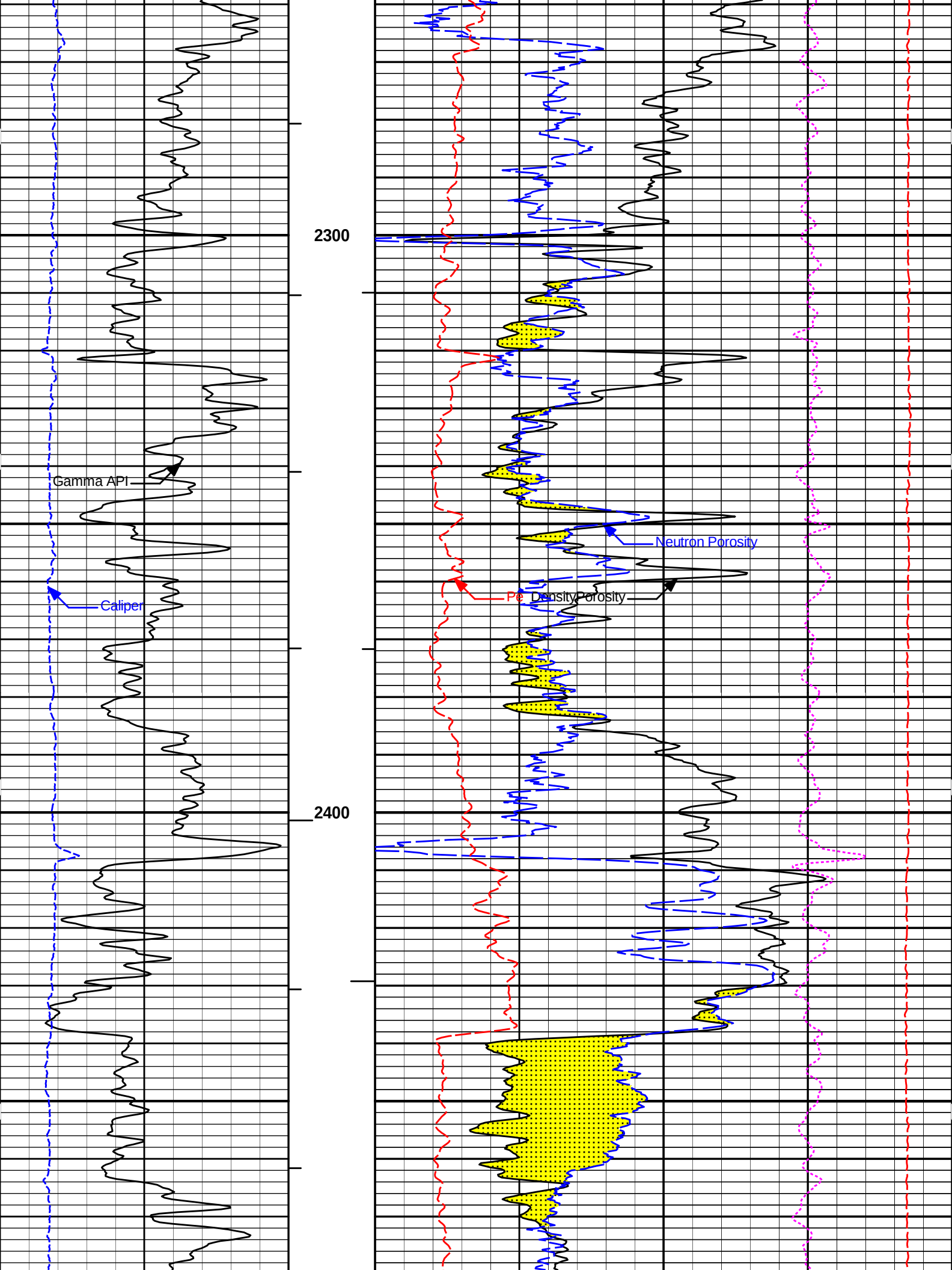
Plot Time: 04-Apr-13 00:24:39
Plot Range: 1800 ft to 3582.75 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-003\
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

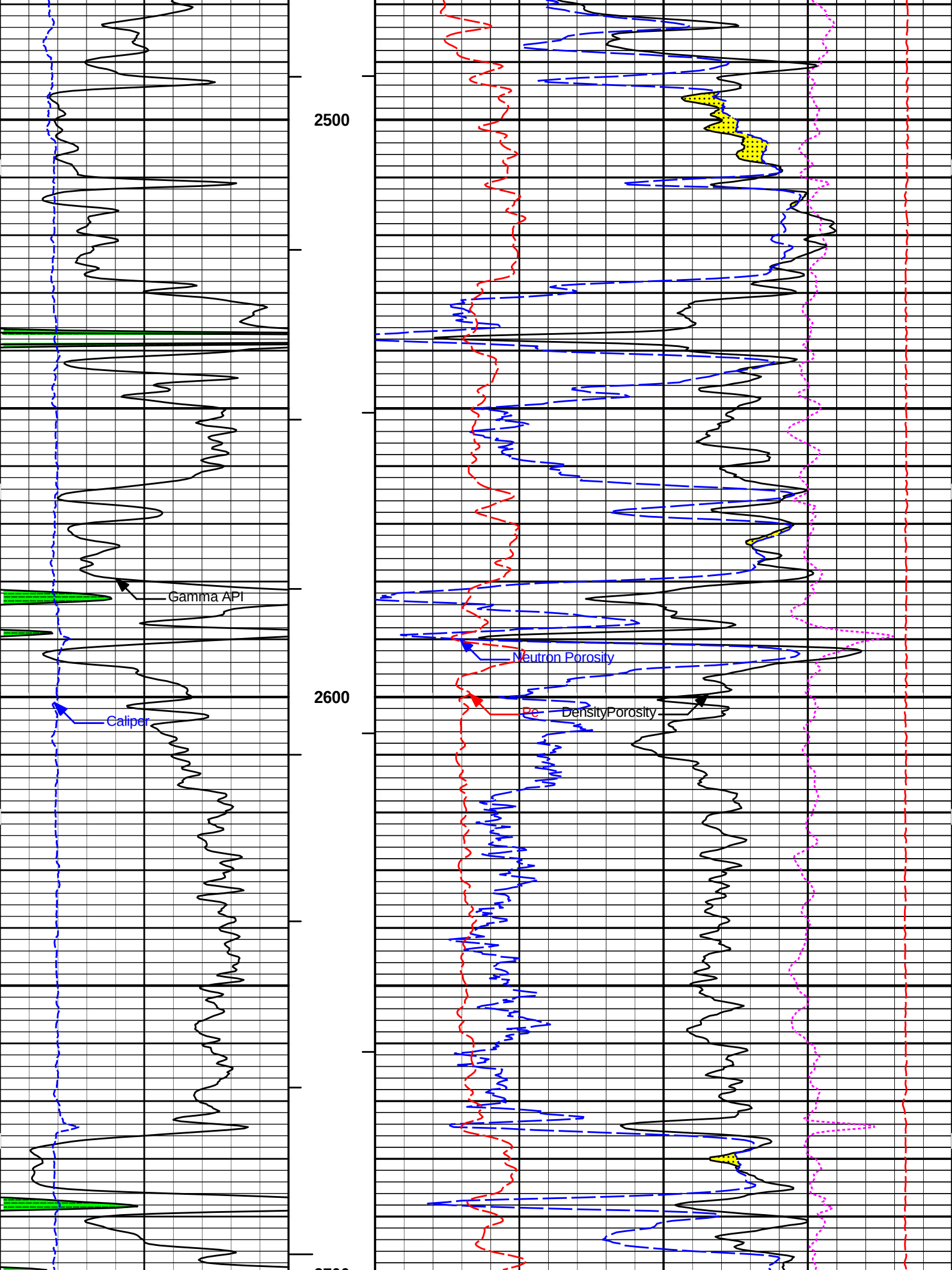
5 INCH MAIN LOG

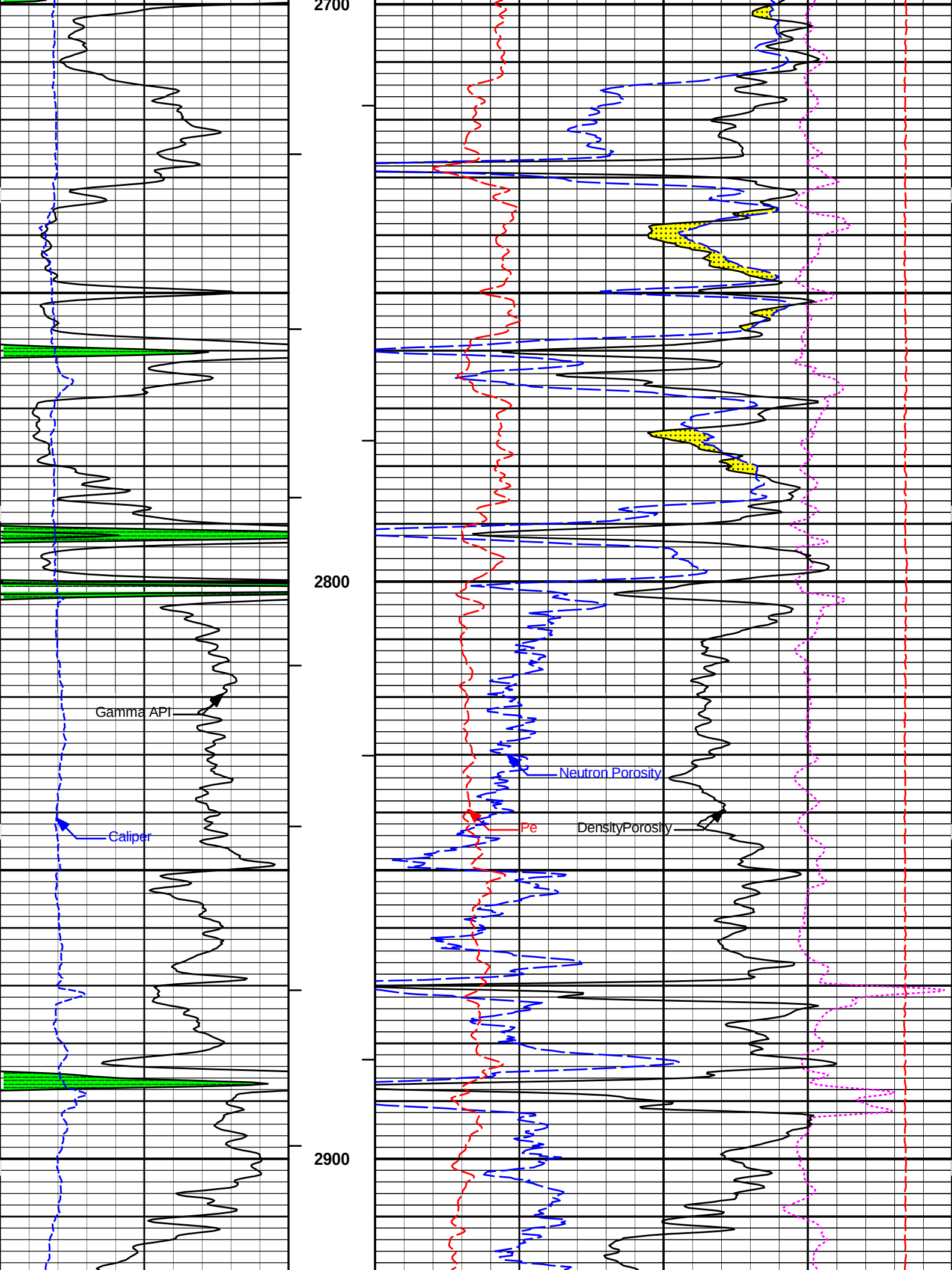


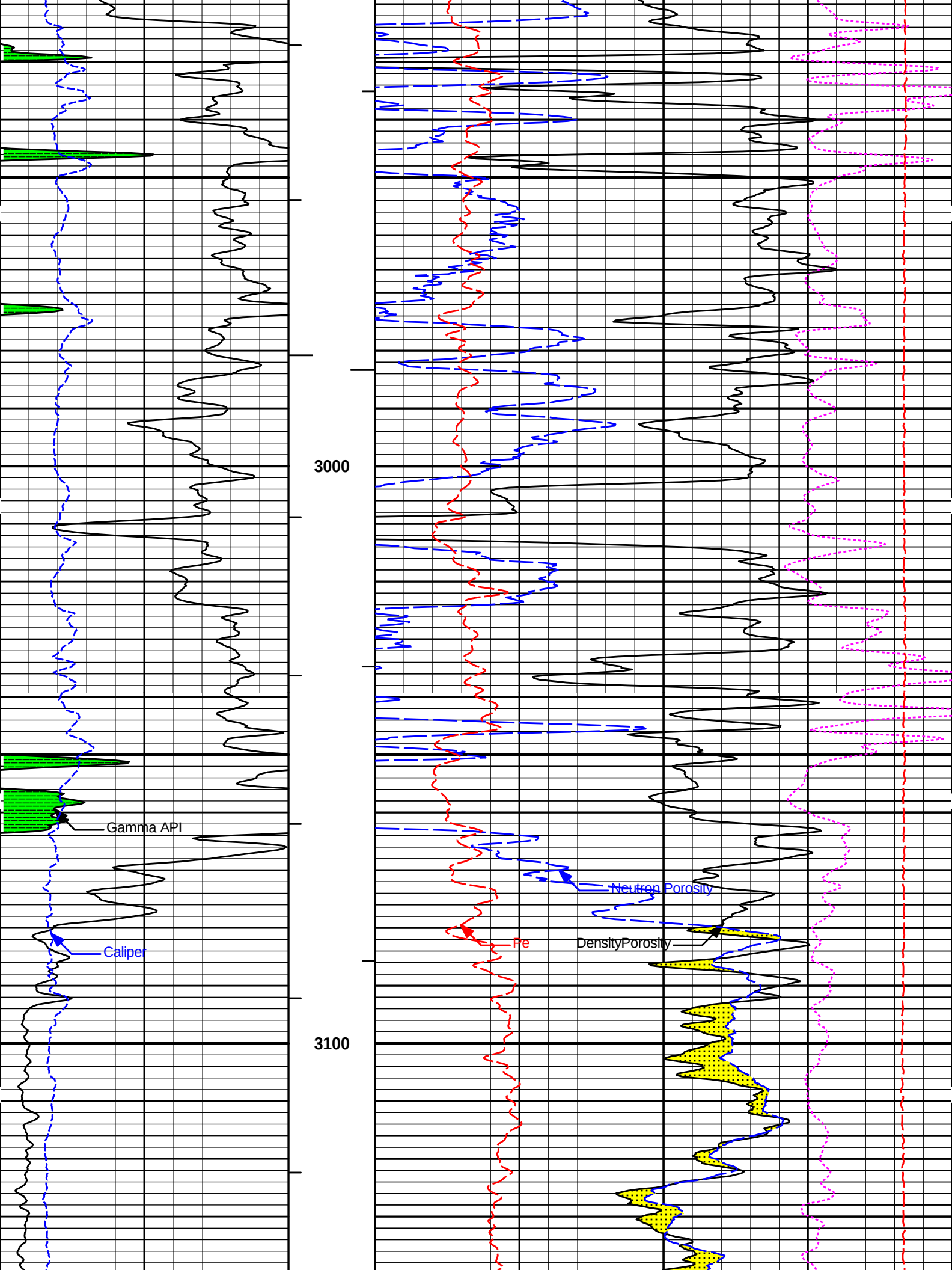

Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity
1900
2000

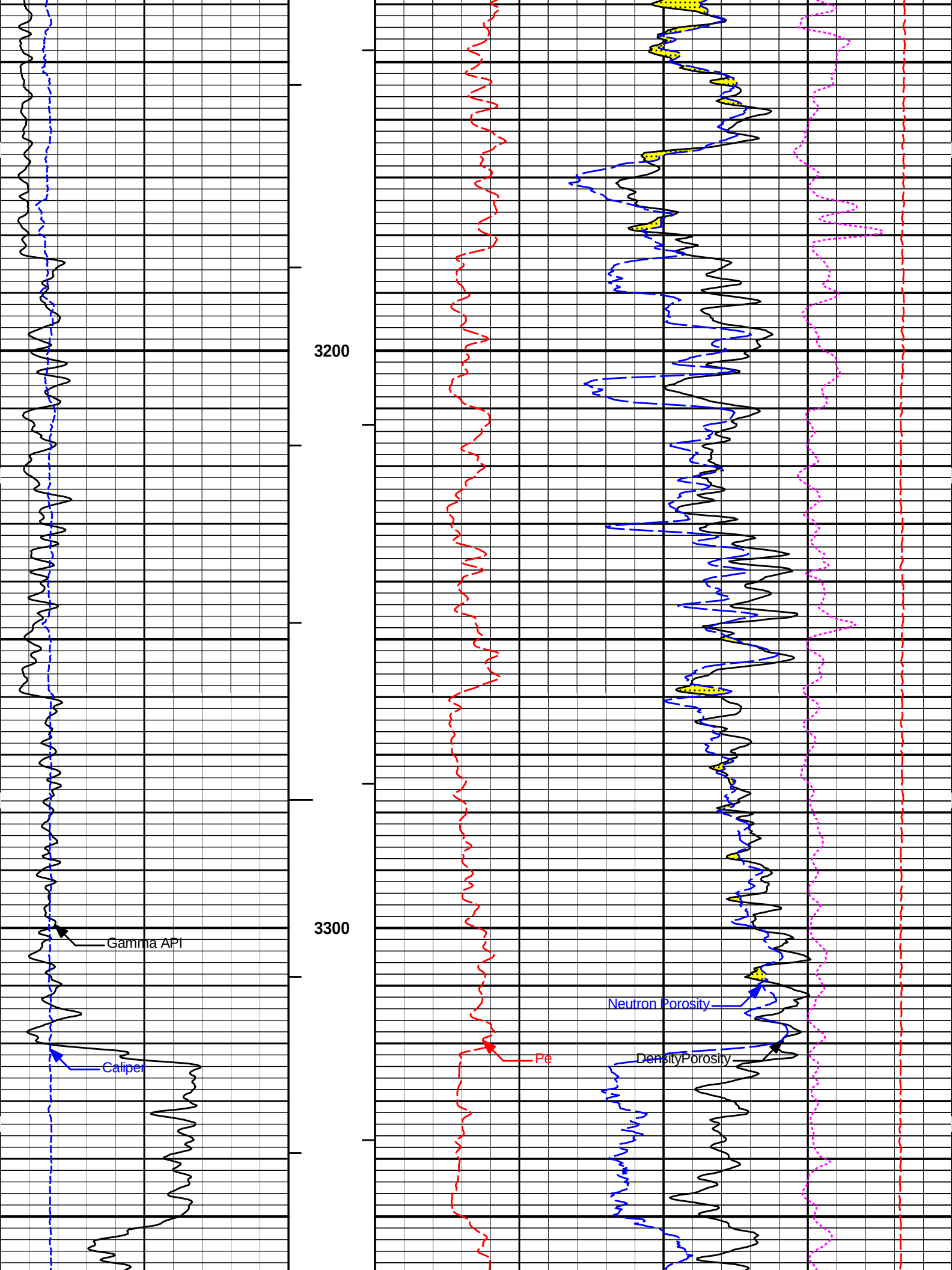

Gamma API
Caliper
2100
Neutron Porosity
Pe
DensityPorosity
2200

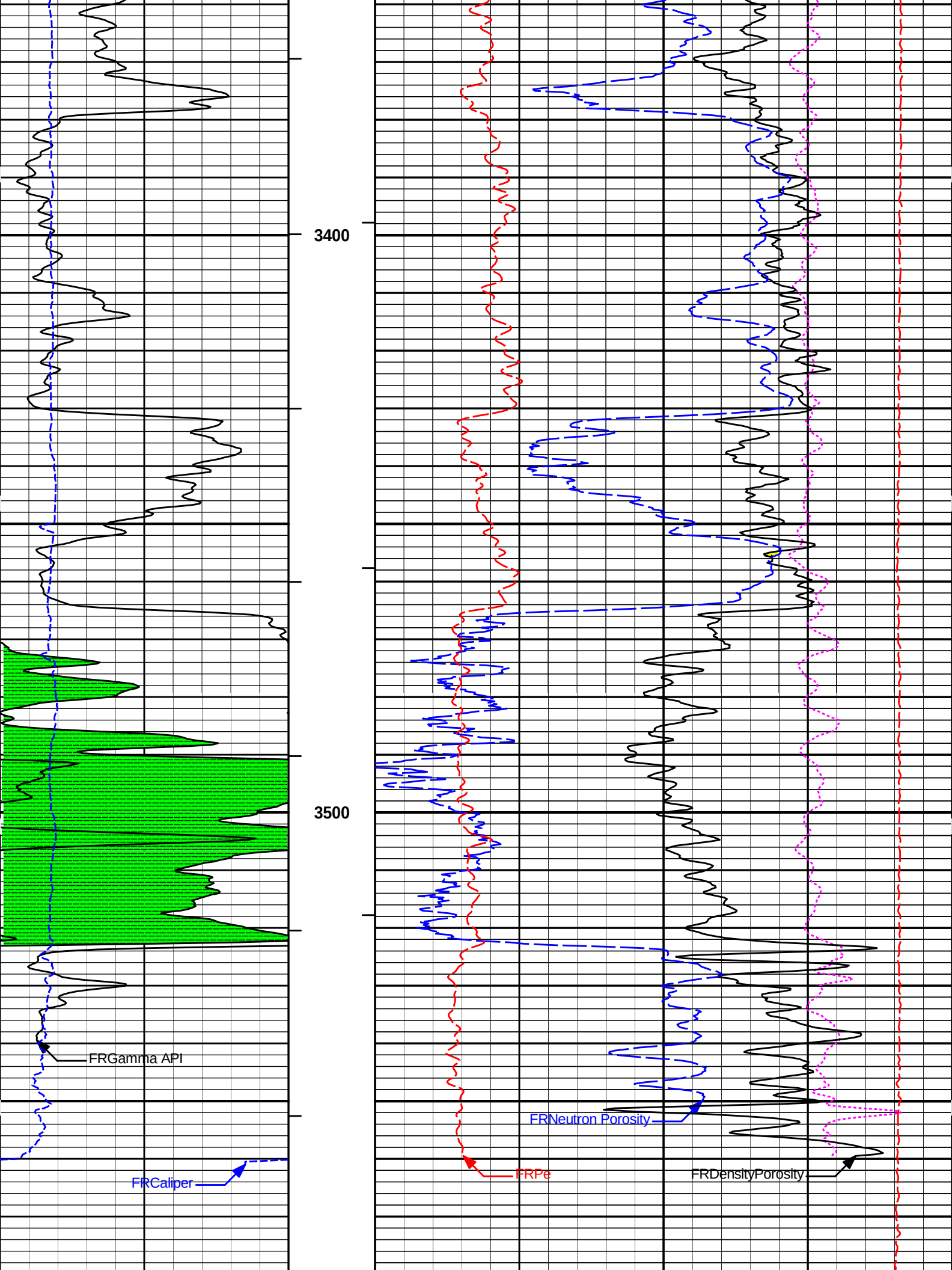

2300
2400
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity

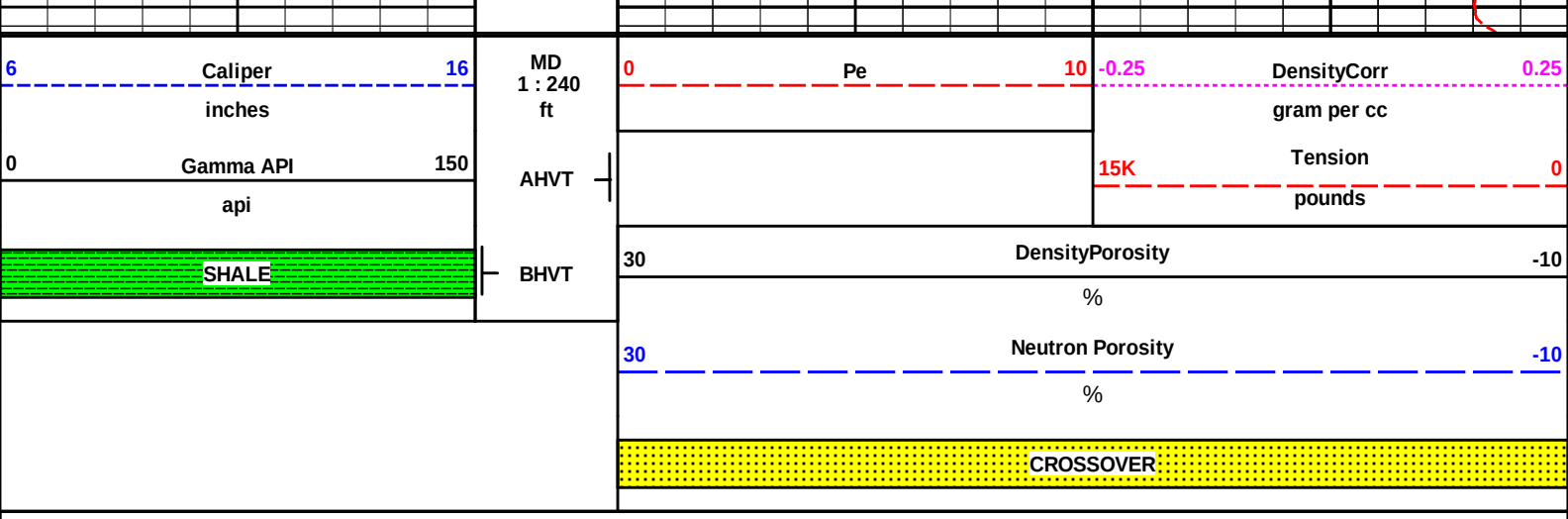

2500
2600
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity


2700
2800
2900
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity


3000
3100
Gamma API
Caliper
Neutron Porosity
Pe
DensityPorosity


3200
3300
Gamma API
Caliper
Pe
Neutron Porosity
DensityPorosity


3400
3500
FRGamma API
FRCaliper
FRPe
FRNeutron Porosity
FRDensityPorosity



HALLIBURTON

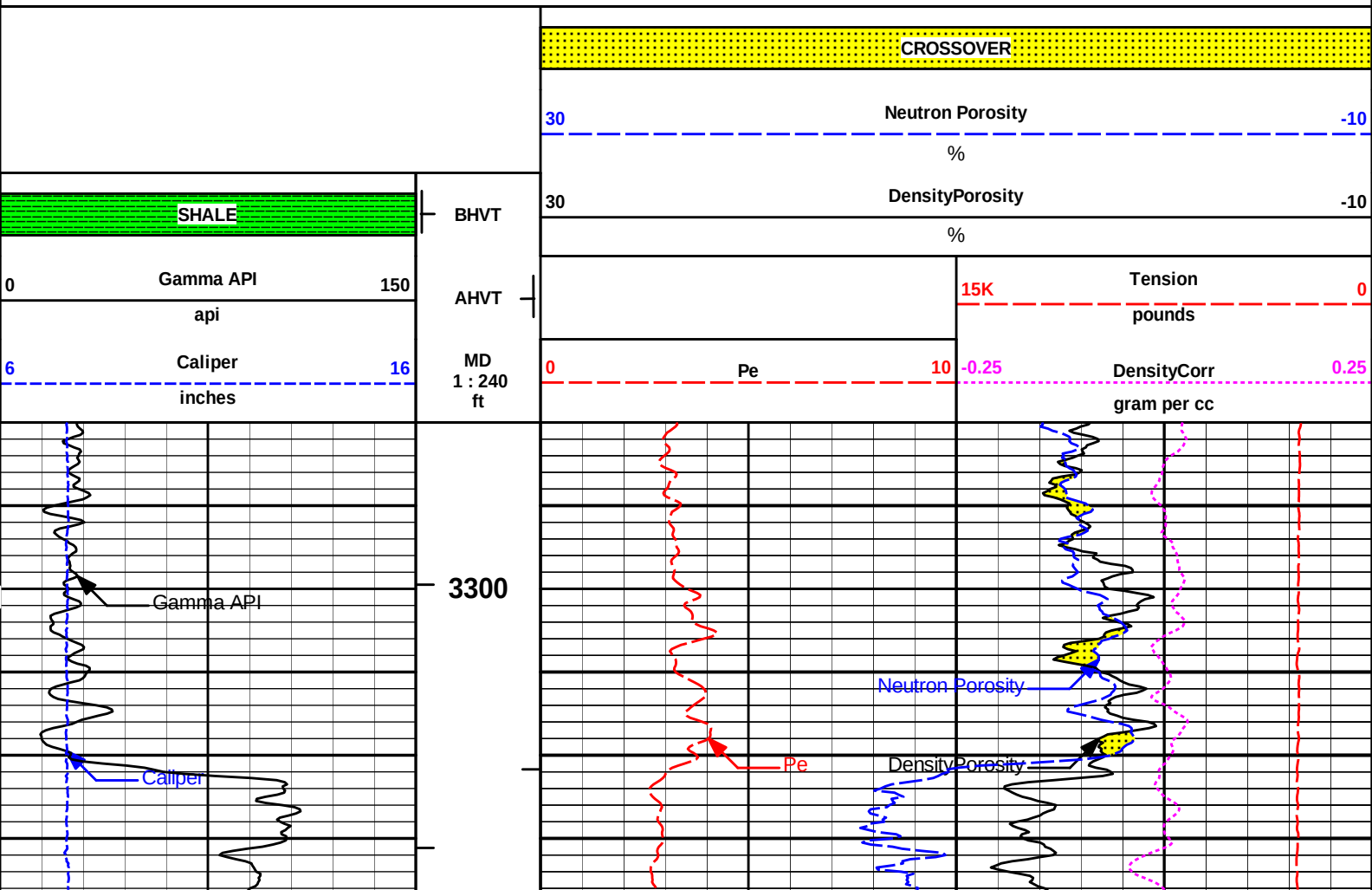
Plot Time: 04-Apr-13 00:24:47
Plot Range: 1800 ft to 3582.75 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-003\
Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

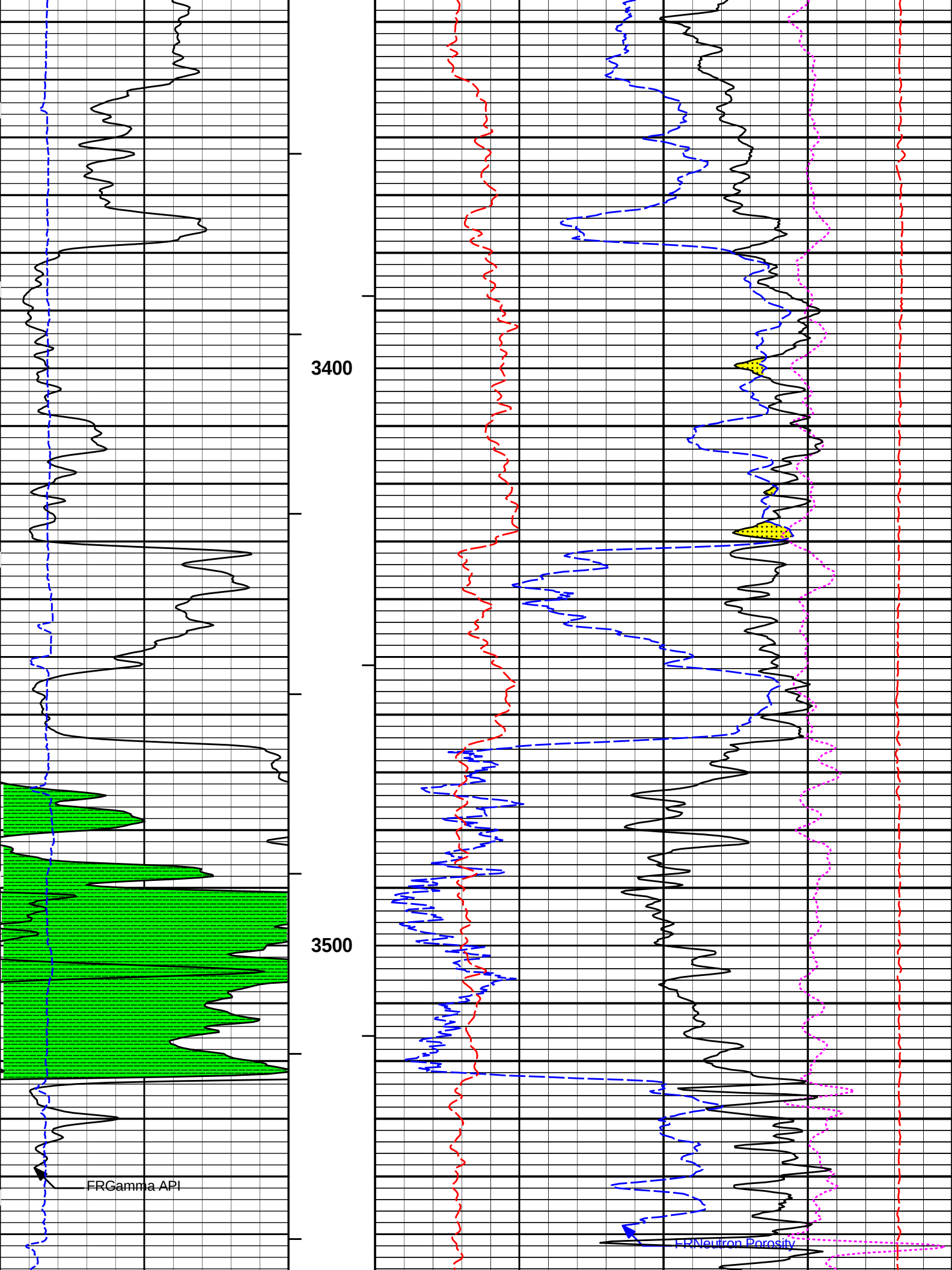
5 INCH MAIN LOG

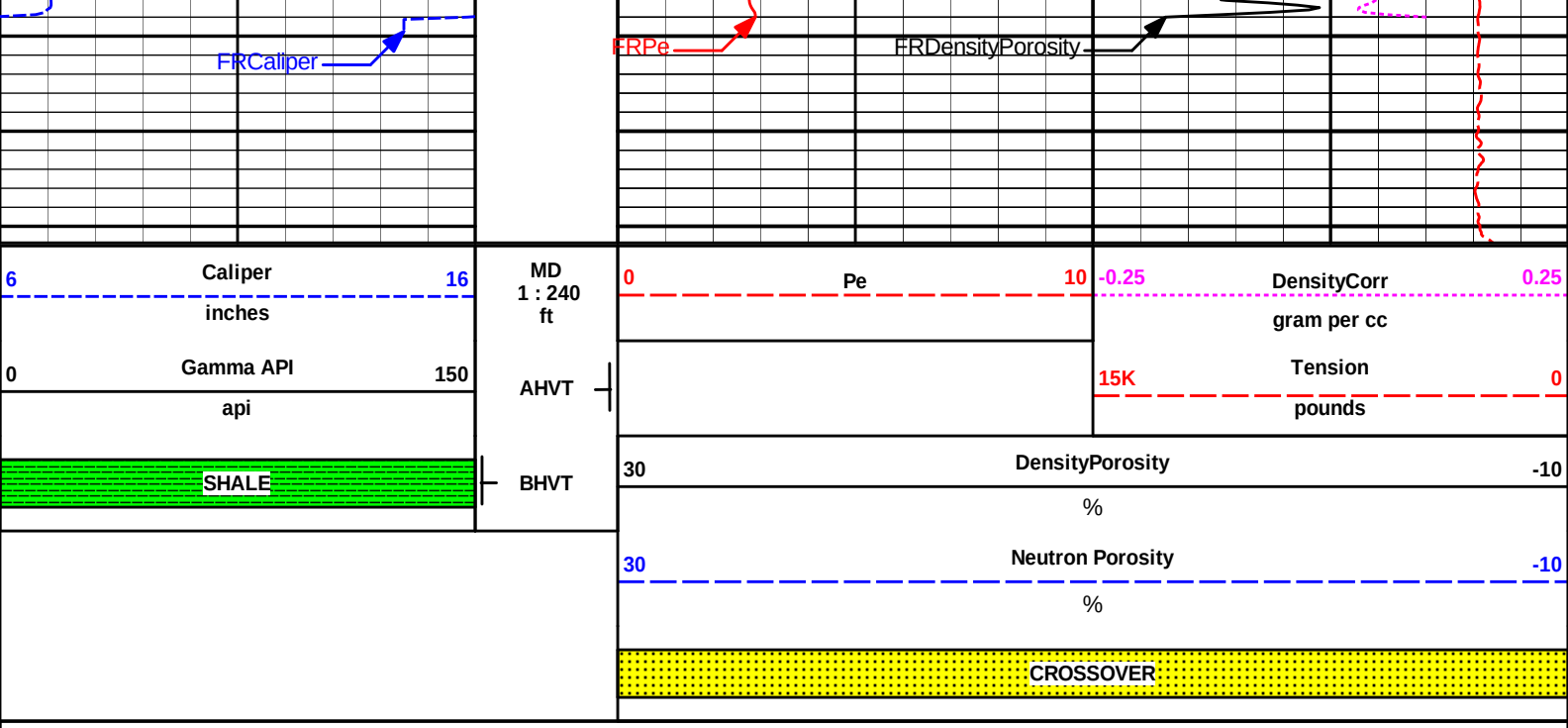
HALLIBURTON

Plot Time: 04-Apr-13 00:24:47
Plot Range: 3280 ft to 3581.75 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-002\
Plot File: \\PORO\Poro_IQ_5_REP_LIB

REPEAT SECTION




3400
3500
FRGamma API
FRNeutron Porosity



HALLIBURTON

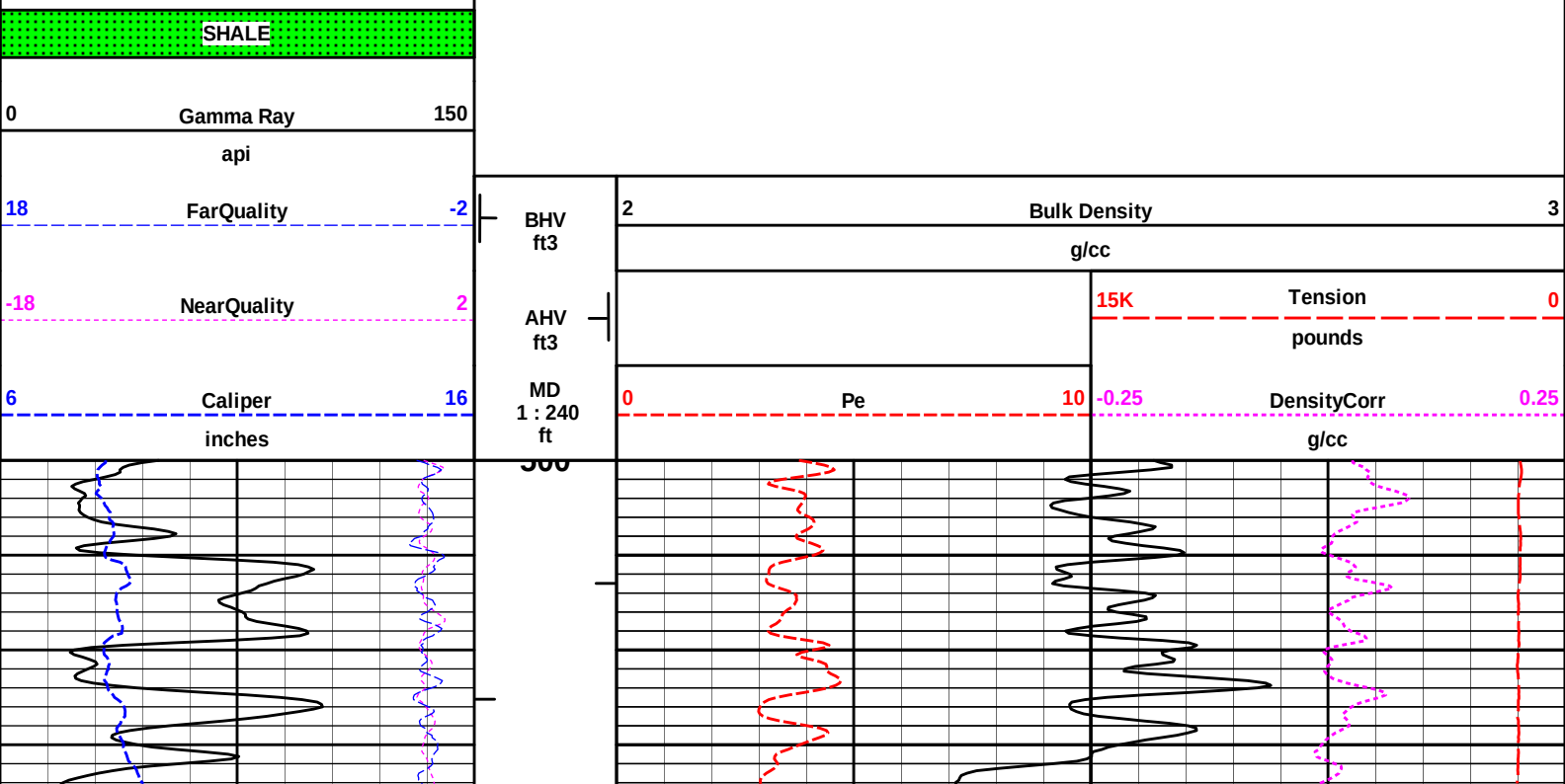
Plot Time: 04-Apr-13 00:24:50
Plot Range: 3280 ft to 3581.75 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-002\
Plot File: \\PORO\Poro_IQ_5_REP_LIB

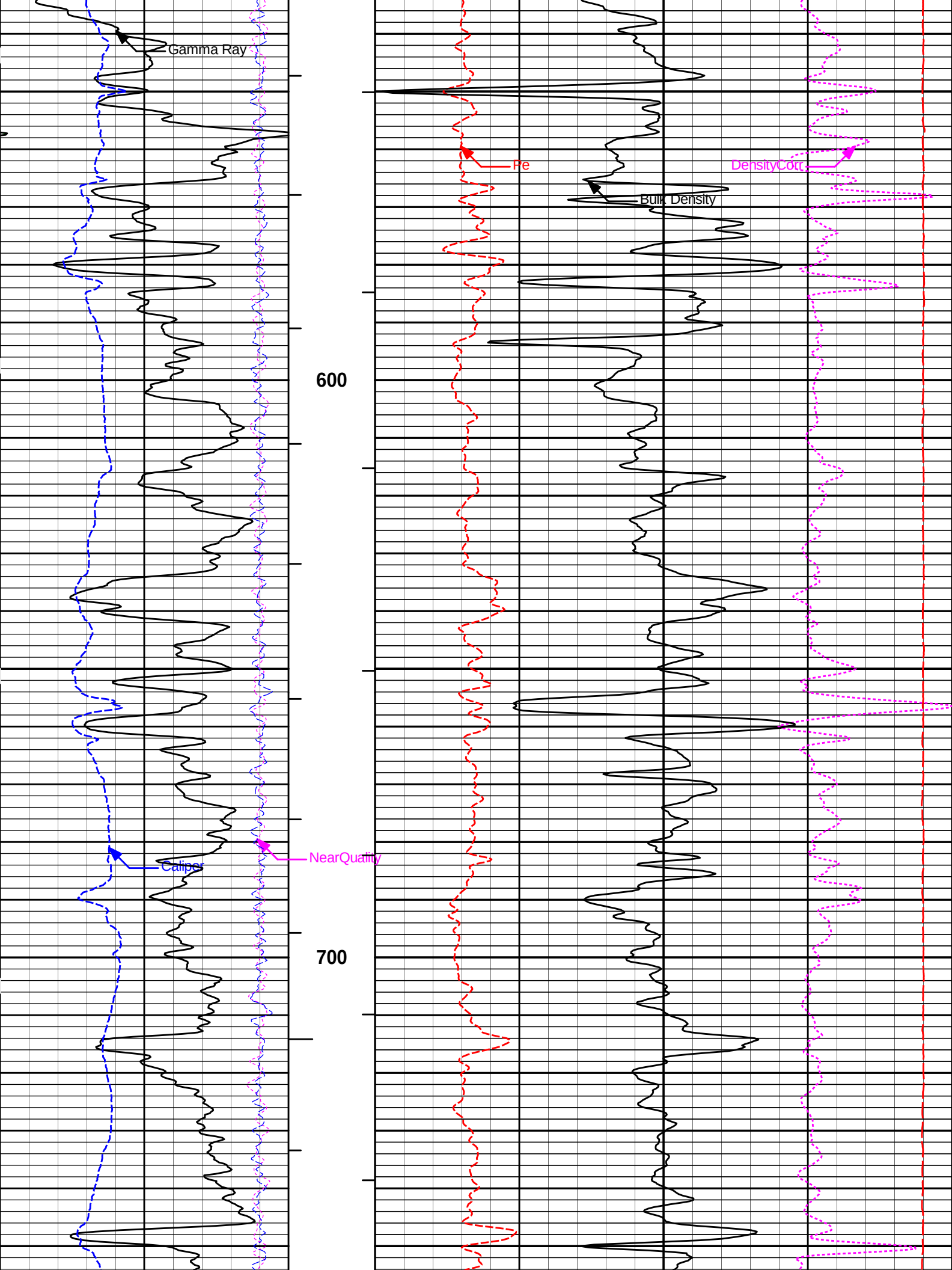
REPEAT SECTION

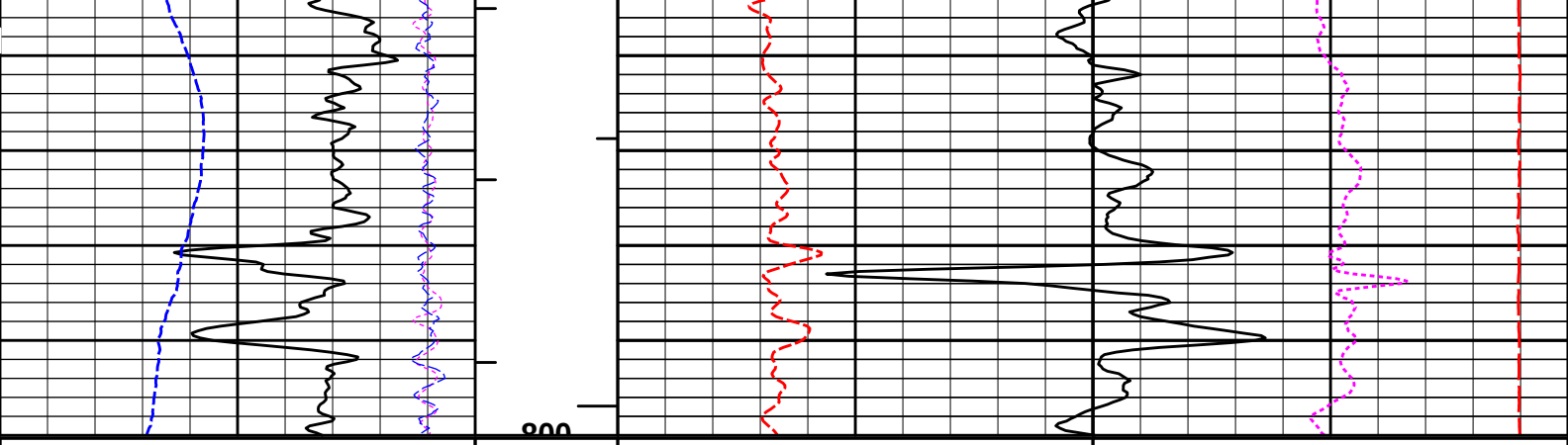
HALLIBURTON

Plot Time: 04-Apr-13 00:24:51
Plot Range: 500 ft to 800 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-003\
Plot File: \\-LOCAL-\WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\BULKD_5_MAIN_LIB

5 INCH MAIN LOG




Gamma Ray
Pe
DensityCorr
Bulk Density
600
Caliper
NearQuality
700



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

HALLIBURTON

Plot Time: 04-Apr-13 00:24:52
Plot Range: 500 ft to 800 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-003\
Plot File: \\-LOCAL-\WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\BULKD_5_MAIN_LIB

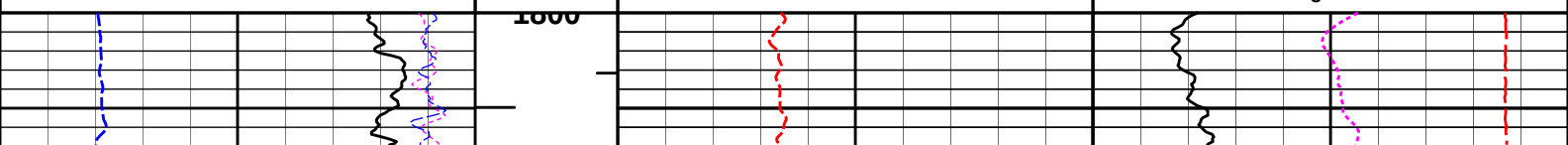
5 INCH MAIN LOG

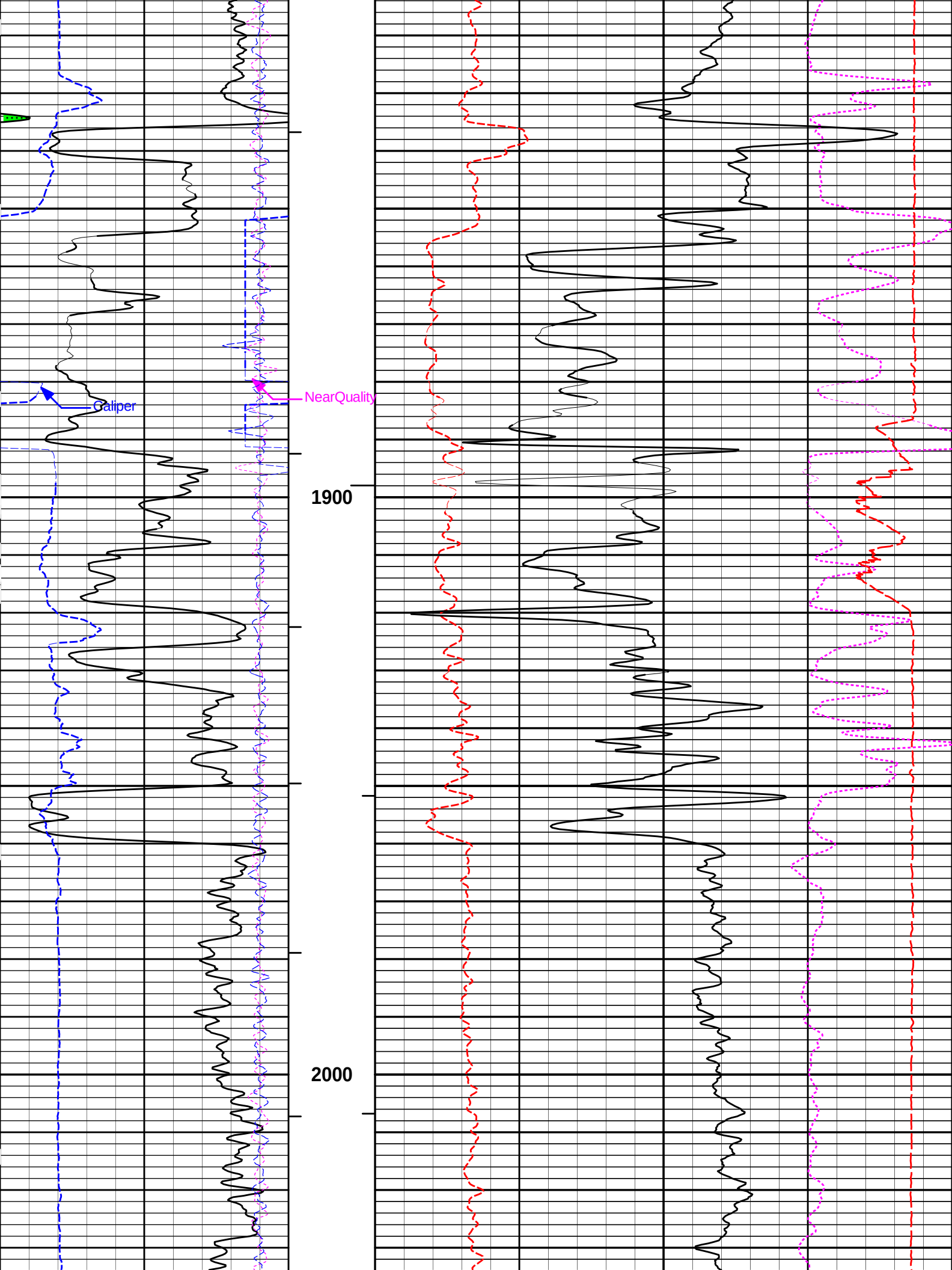
HALLIBURTON

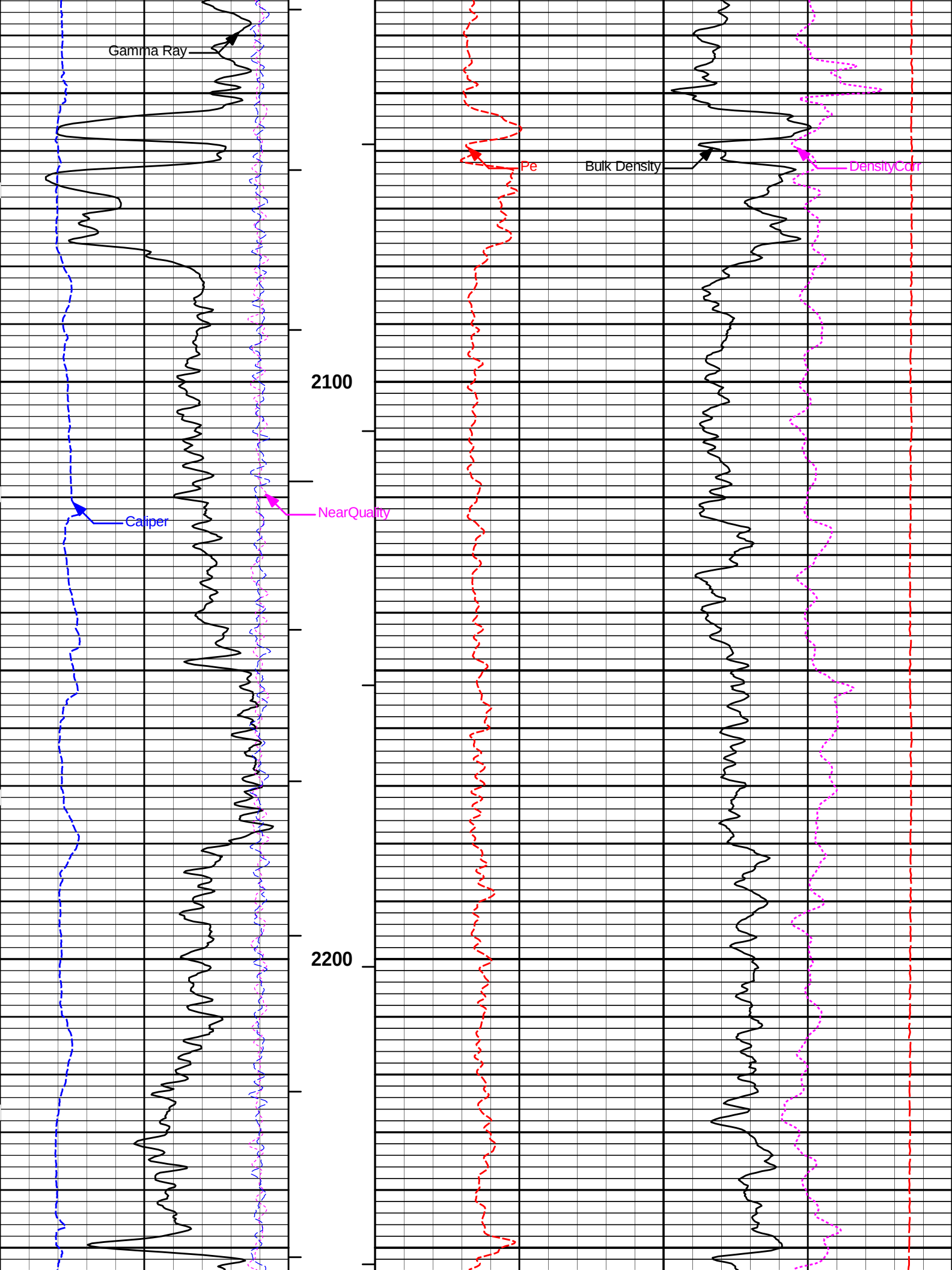
Plot Time: 04-Apr-13 00:24:52
Plot Range: 1800 ft to 3582.75 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-003\
Plot File: \\-LOCAL-\WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\BULKD_5_MAIN_LIB

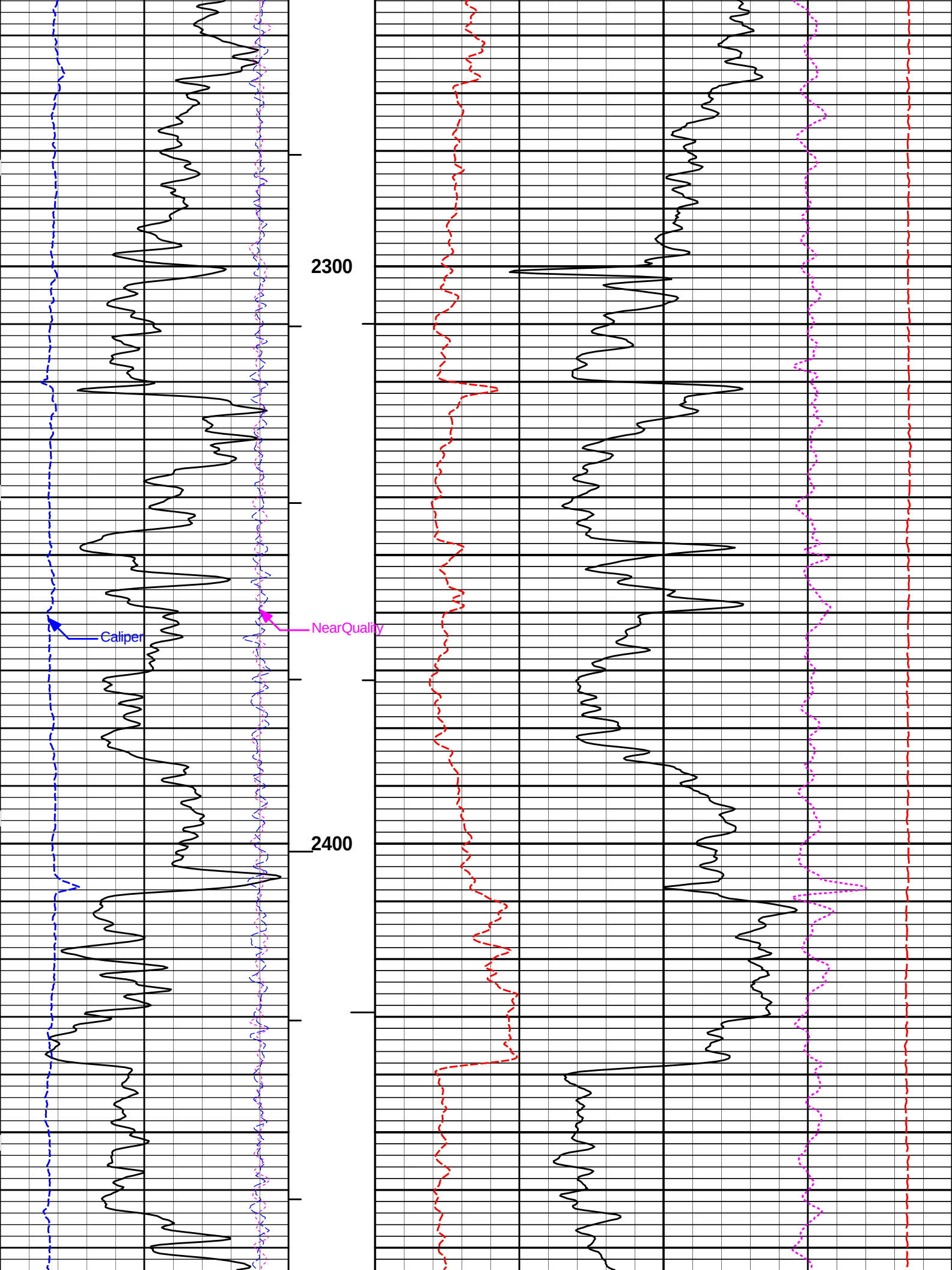
5 INCH MAIN LOG

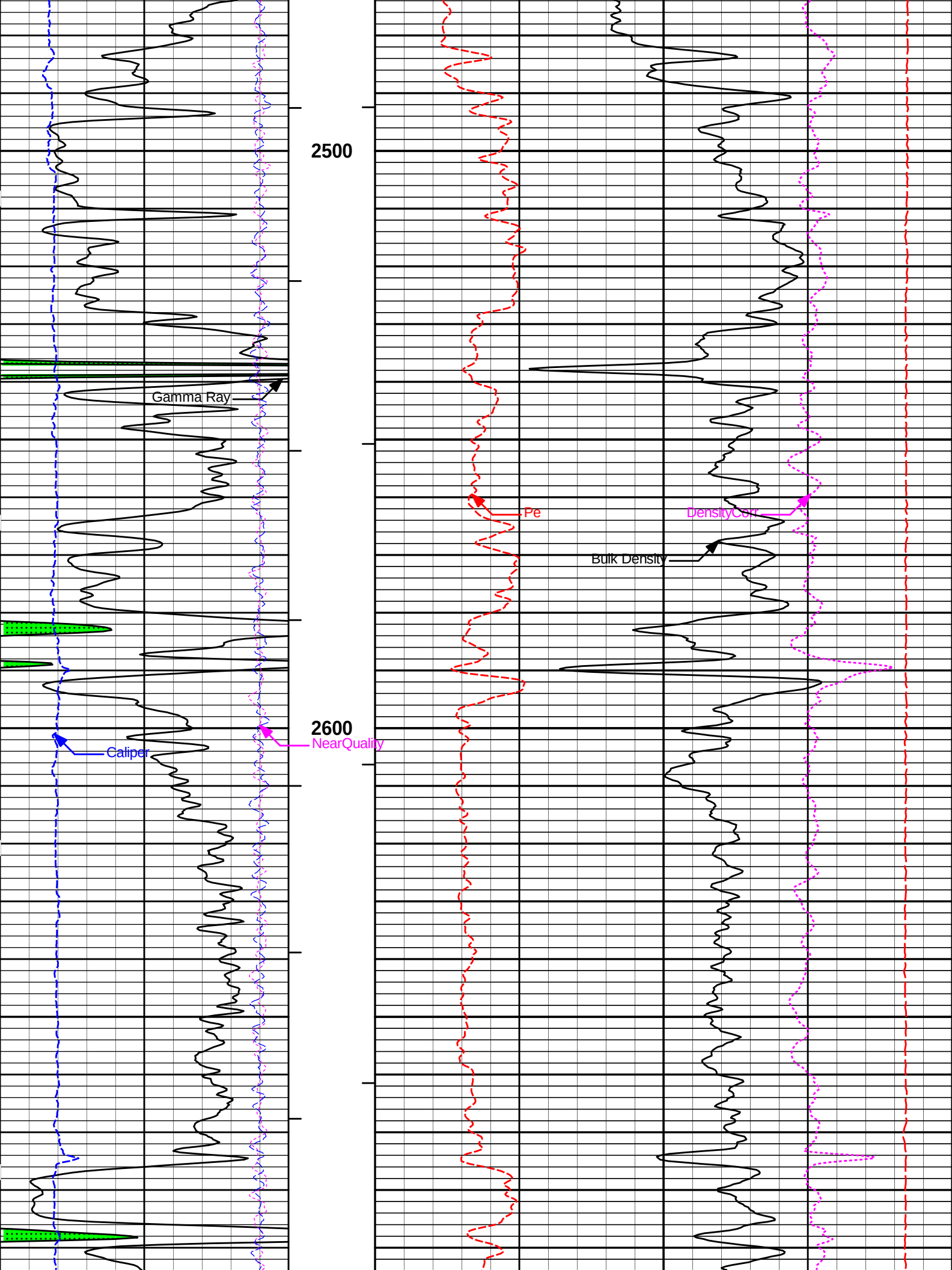
SHALE		
0 Gamma Ray 150		
api		
18 FarQuality -2	BHV ft3	2 Bulk Density 3
		g/cc
-18 NearQuality 2	AHV ft3	15K Tension 0
		pounds
6 Caliper 16	MD 1 : 240 ft	0 Pe 10 / -0.25 DensityCorr 0.25
inches		g/cc

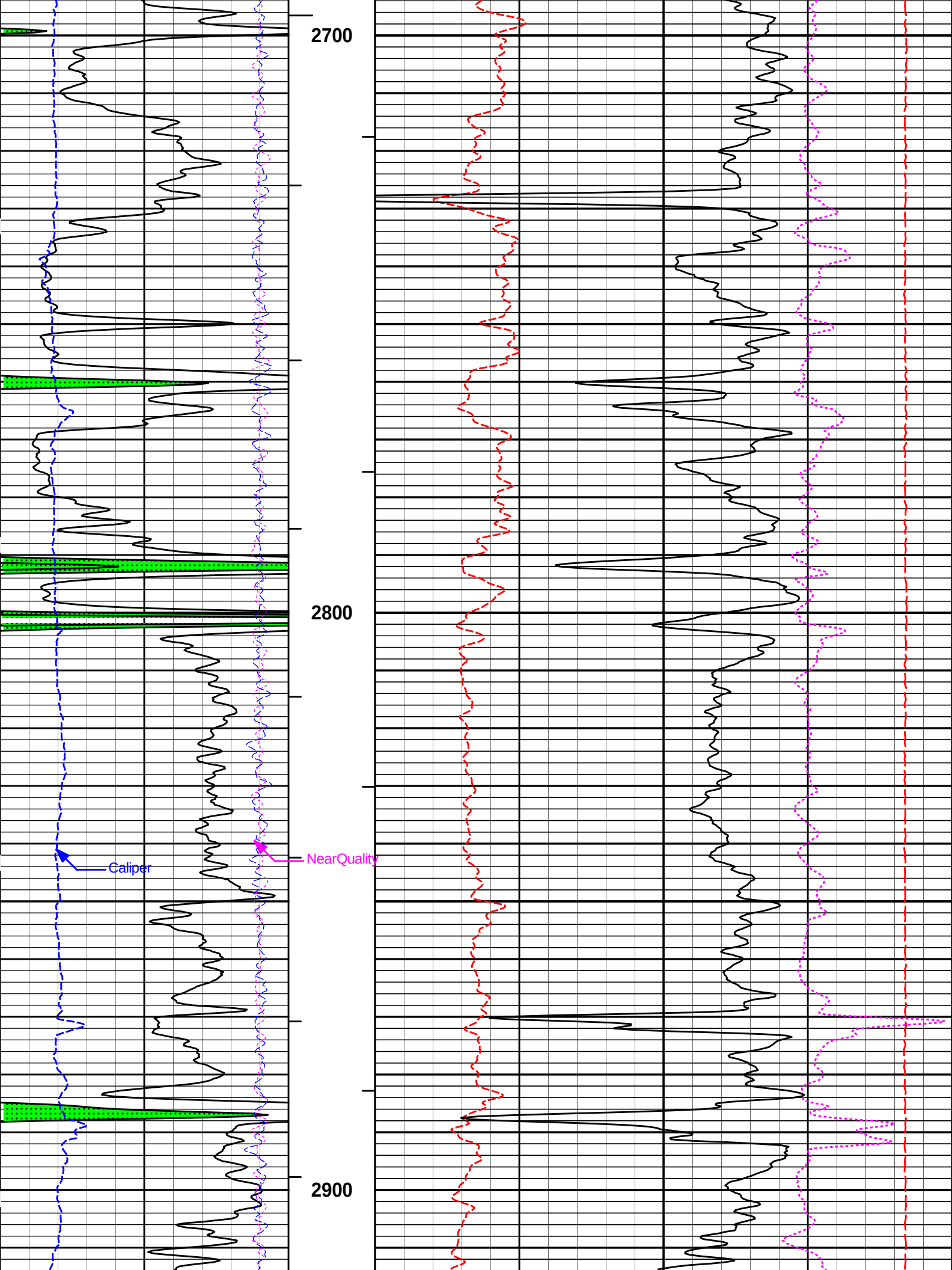


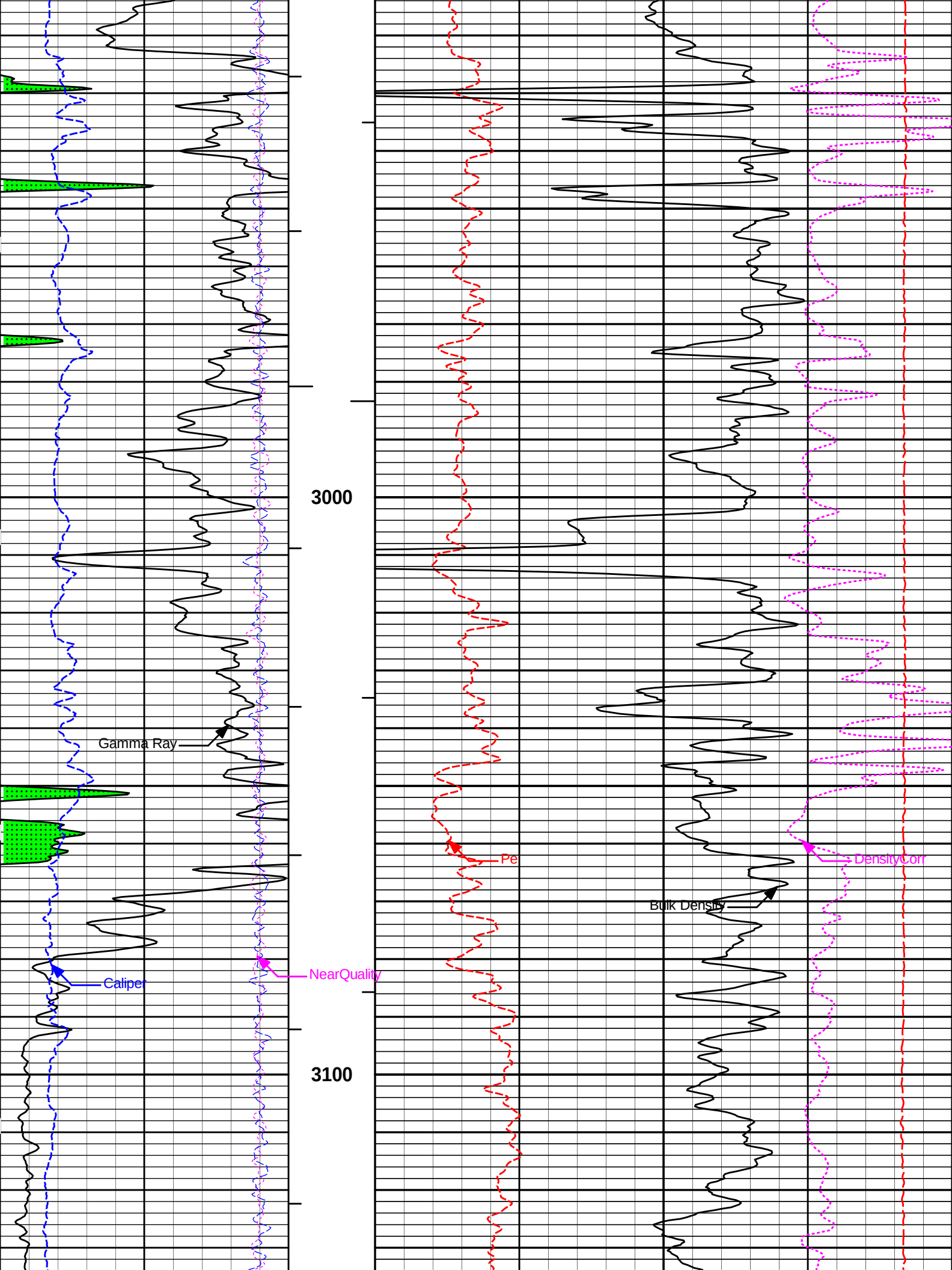

Caliper
NearQuality
1900
2000

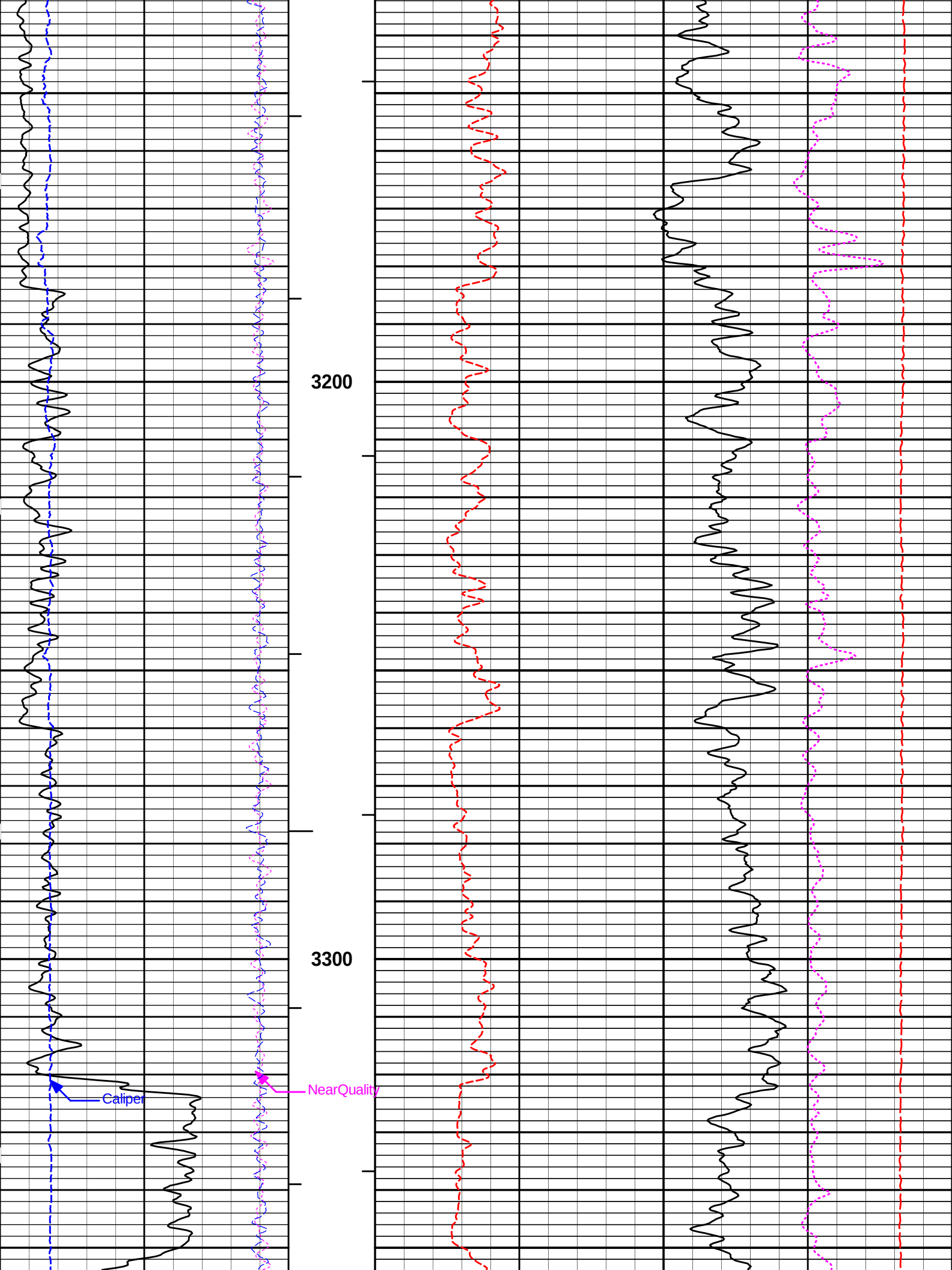

Gamma Ray
Caliper
NearQuality
Pe
Bulk Density
DensityCorr
2100
2200

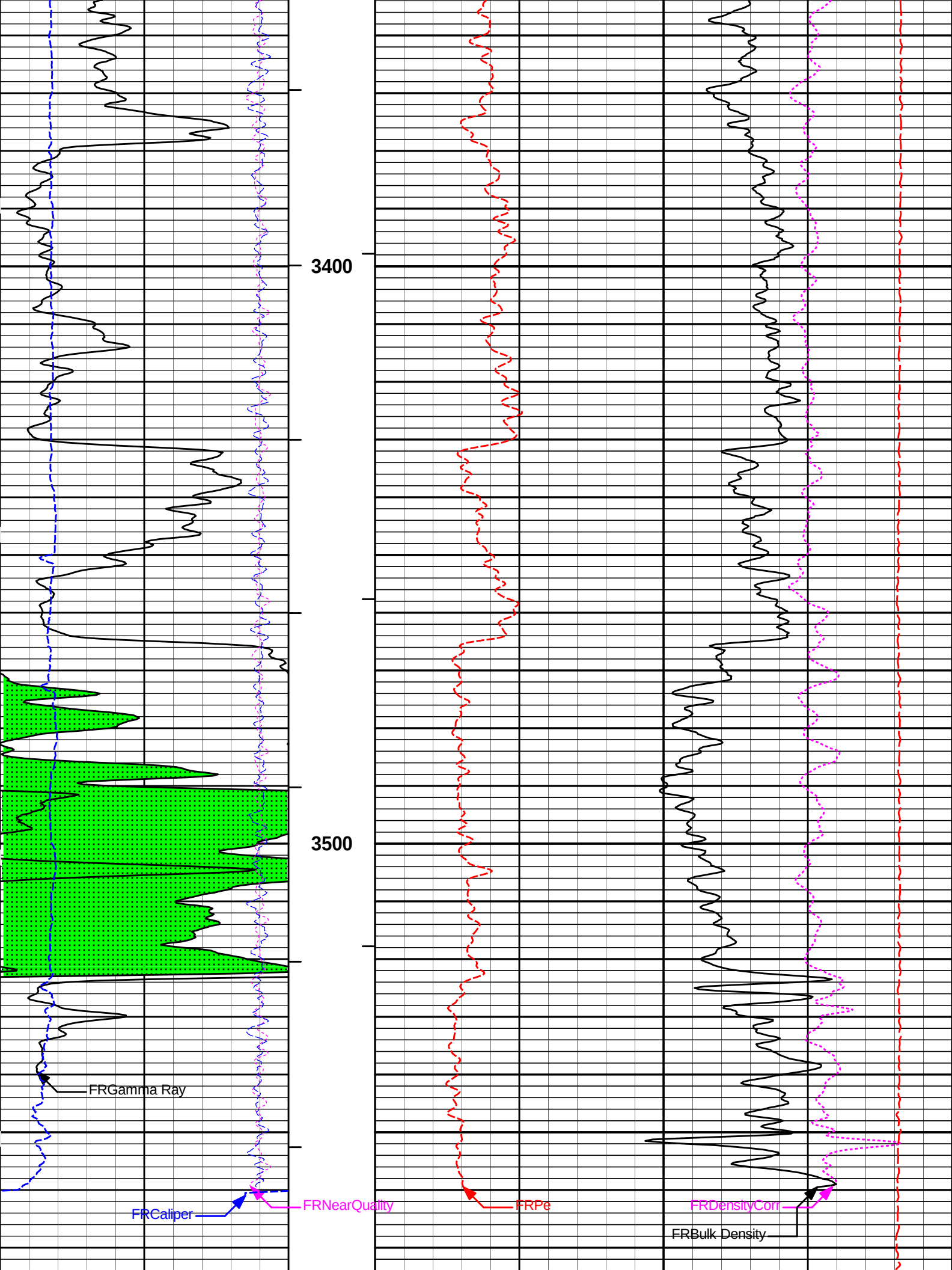

2300
2400
Caliper
NearQuality

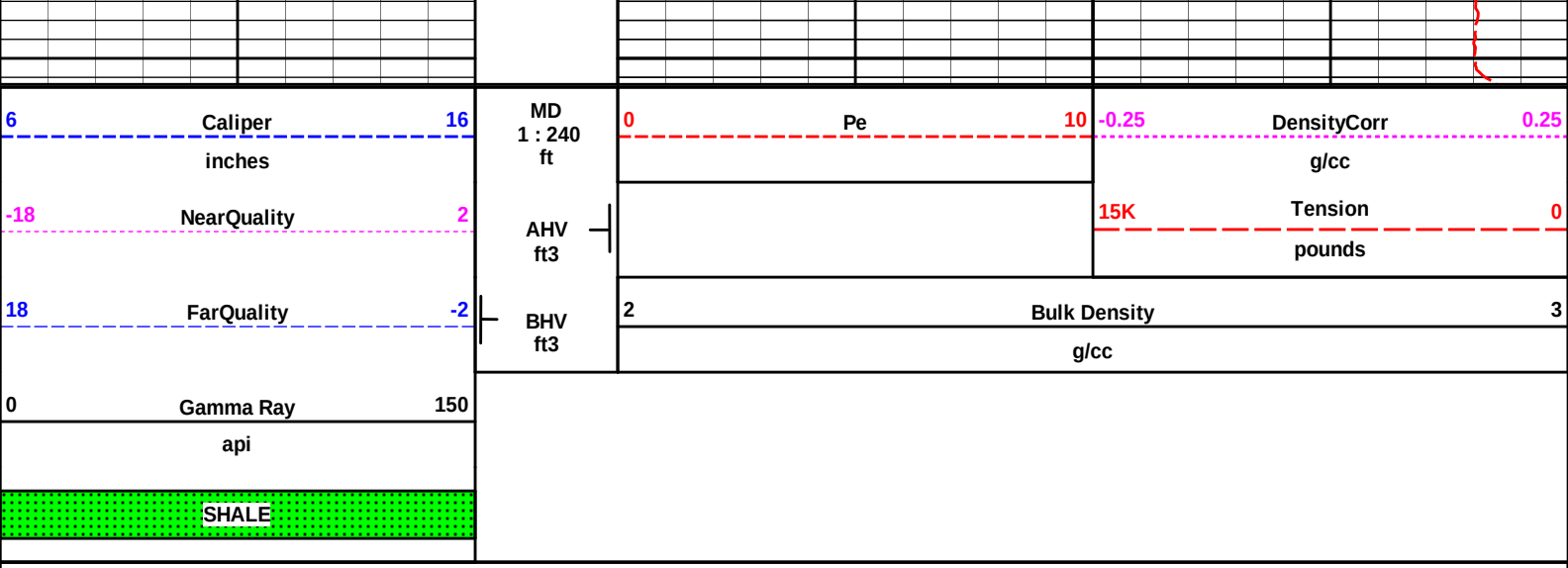

2500
2600
Gamma Ray
Caliper
NearQuality
Pe
DensityCorr
Bulk Density


2700
2800
2900
Caliper
NearQuality


3000
3100
Gamma Ray
Caliper
NearQuality
Pe
Bulk Density
DensityCorr


3200
3300
Caliper
NearQuality


3400
3500
FRGamma Ray
FRCaliper
FRNearQuality
FRPe
FRDensityCorr
FRBulk Density



HALLIBURTON

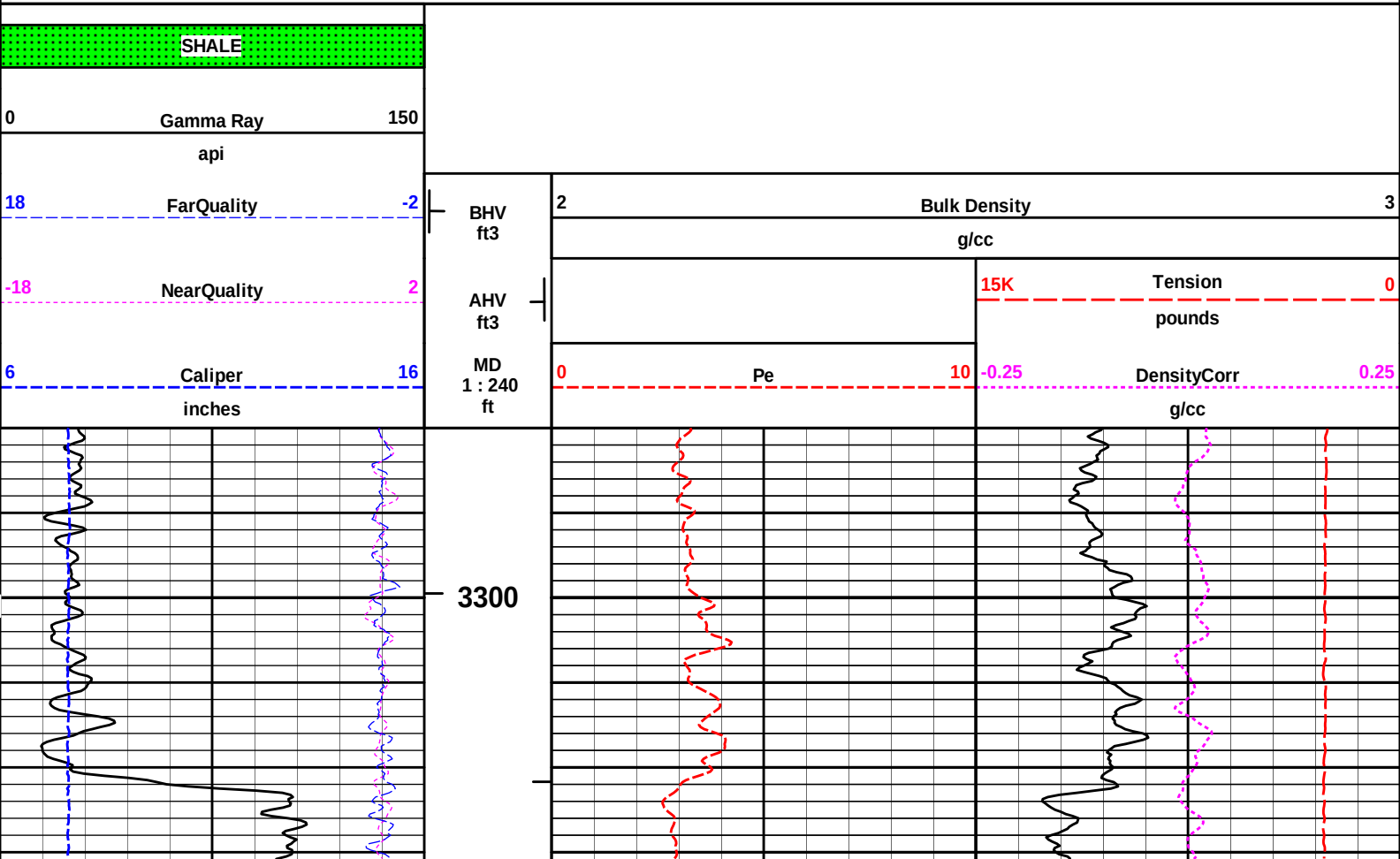
Plot Time: 04-Apr-13 00:24:55
Plot Range: 1800 ft to 3582.75 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-003\
Plot File: \\-LOCAL-\WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\BULKD_5_MAIN_LIB

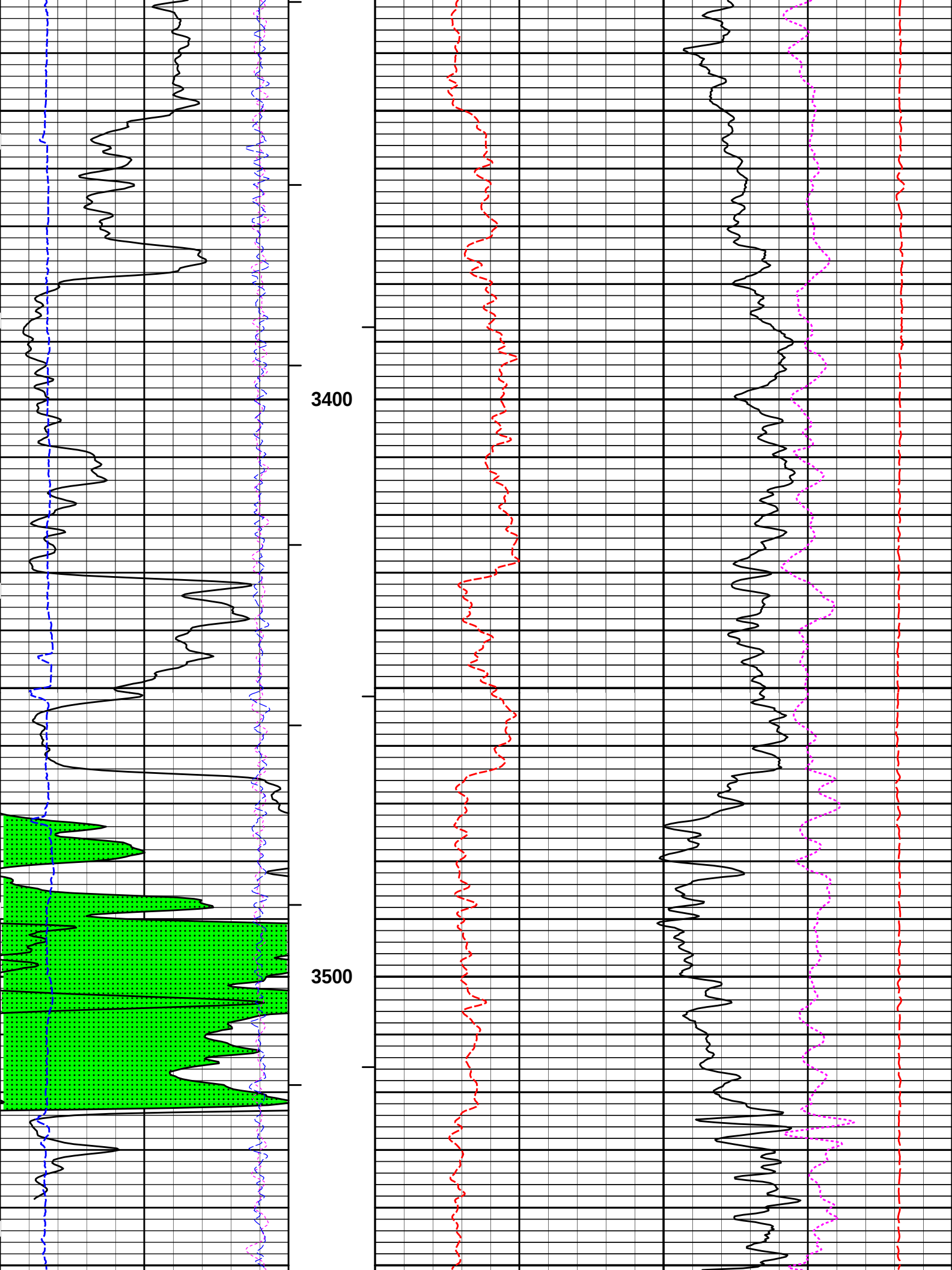
5 INCH MAIN LOG

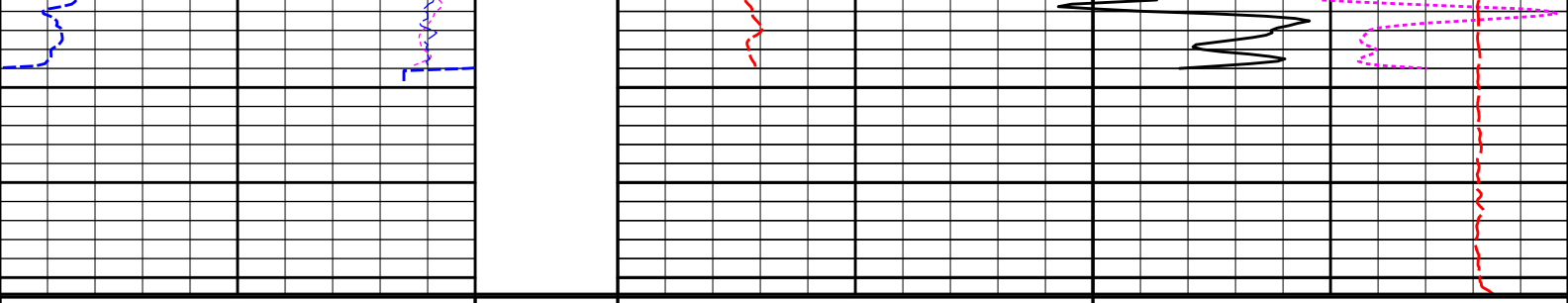
HALLIBURTON

Plot Time: 04-Apr-13 00:24:56
Plot Range: 3280 ft to 3581.75 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-002\
Plot File: \\-LOCAL-\WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\BULKD_5_REP_LIB

REPEAT SECTION




3400
3500



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

HALLIBURTON

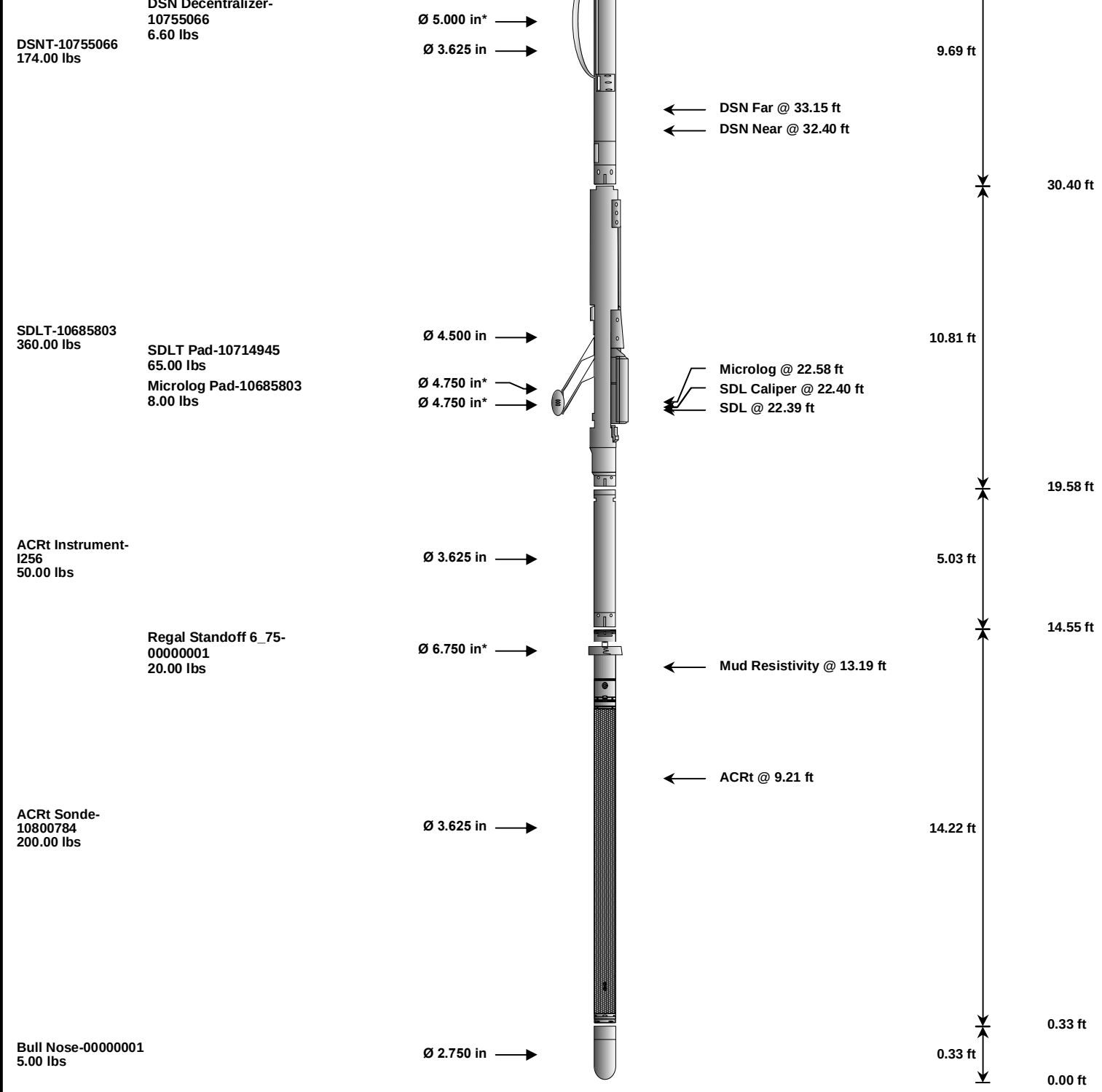
Plot Time: 04-Apr-13 00:24:57
Plot Range: 3280 ft to 3581.75 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-002\
Plot File: \\-LOCAL-\WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\BULKD_5_REP_LIB

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						56.32 ft
CH_HOS-954 37.50 lbs		Ø 2.750 in		Temperature @ 55.29 ft	3.03 ft	
						53.29 ft
XOHD-00000001 20.00 lbs		Ø 2.750 in Ø 3.625 in			0.95 ft	
						52.34 ft
SP Sub-12345678 60.00 lbs		Ø 3.625 in		SP @ 50.56 ft	3.74 ft	
						48.60 ft
GTET-10748374 165.00 lbs		Ø 3.625 in			8.52 ft	
				GammaRay @ 42.54 ft		
						40.08 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	954	37.50	3.03		53.29	300.00
XOHD	Hostile to Dits Cross Over	00000001	20.00	0.95		52.34	300.00
SP	SP Sub	12345678	60.00	3.74		48.60	300.00
GTET	Gamma Telemetry Tool	10748374	165.00	8.52		40.08	60.00
DSNT	Dual Spaced Neutron	10755066	174.00	9.69		30.40	60.00
DCNT	DSN Decentralizer	10755066	6.60	5.13	*	33.73	300.00
SDLT	Spectral Density Tool	10685803	360.00	10.81		19.58	60.00
SDLP	Density Insite Pad	10714945	65.00	2.55	*	21.79	60.00
MICP	Microlog Pad	10685803	8.00	1.00	*	22.08	60.00
ACRt	Array Compensated True Resistivity Instrument Section	I256	50.00	5.03		14.55	300.00
ACRt	Array Compensated True Resistivity Sonde Section	10800784	200.00	14.22		0.33	300.00
RSOF	Regal Standoff 6.75in	00000001	20.00	0.52	*	13.52	300.00
BLNS	Bull Nose	00000001	5.00	0.33		0.00	300.00
Total			**1,171.10**	**56.32**			

* Not included in Total Length and Length Accumulation.

Data: WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\IDLE **Date: 03-Apr-13 19:23:43**

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	**GTET - 10748374**	**Reference Calibration Date:**	**17-Jan-13 13:03:23**
Engineer:	**THOMAS HYDE**	**Calibration Date:**	**12-Mar-13 13:11:16**
Software Version:	**WL INSITE R3.8.4 (Build 5)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Measurement	Measured	Calibrated	Units
Background	43.5	43.2	api
Background + Calibrator	277.4	275.2	api
Calibrator	233.9	232.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	**GTET - 10748374**	**Reference Calibration Date:**	**12-Mar-13 13:11:16**
Engineer:	**THOMAS HYDE**	**Calibration Date:**	**03-Apr-13 11:09:25**
Software Version:	**WL INSITE R3.8.4 (Build 5)**	**Calibration Version:**	**1**

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

Field Verification	Shop	Field	Units
Background	43.2	45.0	api
Background + Calibrator	275.2	275.2	api
Calibrator	232.0	230.3	api

Shop	Field	Difference	Tolerance
232.0	230.3	1.7	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	**DSNT - 10755066**	**Reference Calibration Date:**	**18-Jan-13 10:41:33**
Engineer:	**S. INGERSOLL**	**Calibration Date:**	**05-Mar-13 18:15:26**
Software Version:	**WL INSITE R3.8.4 (Build 5)**	**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: 62 degF

Min. Tool Housing Outside Diameter: 3.620 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.946	0.950	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)

Measurement	Current Reading	Calibrated	Change	Control Limit

Measurement	(Previous Coef.)	(New Coef.)	Change	On Change
Porosity (decp):	0.2093	0.2106	0.0014	+/- 0.0020
Calibrated Ratio:	9.67	9.72	0.047	+/- 0.050

VERIFIER		
Measurement	**Value**	**Control Limit**
Snow-Block Porosity (decp):	0.0660	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:** 05-Mar-13 18:15:26

Engineer: THOMAS HYDE **Calibration Date:** 03-Apr-13 11:05:35

Software Version: WL INSITE R3.8.4 (Build 5) **Calibration Version:** 1

Logging Source S/N: DSN-436

Snow Block S/N: TRK_954

NEUTRON FIELD-CHECK SUMMARY				
	Shop	**Field**	**Difference**	**Control Limit On Change**
Snow-Block Porosity (decp):	0.0660	0.0725	0.0065	+/- 0.0150

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

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - 10685803 **Reference Calibration Date:** 18-Jan-13 10:03:41

Engineer: S. INGERSOLL **Calibration Date:** 05-Mar-13 17:17:34

Software Version: WL INSITE R3.8.4 (Build 5) **Calibration Version:** 1

Host Tool Name: DSNT - 10755066

CALIBRATION COEFFICIENTS			
Measurement	**Previous Value**	**New Value**	**Control Limit On New Value**
Pad Offset	-4634.87	-4558.14	-7000.00 - -1000.00
Pad Gain	0.0003949	0.0003966	0.000200 - 0.000600
Arm Offset	-2519.31	-2964.89	-5000.00 - 3000.00
Arm Gain	0.0005659	0.0005807	0.000300 - 0.000700
Arm Power	-0.000008059	-0.000008381	-0.000010000 - 0.000010000

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

Tool Diameter: 4.50 in

CALIBRATION RINGS				
Measurement	**Current Reading (Previous Coeff.)**	**Calibrated (New Coeff.)**	**Change**	**Control Limit On New Value**
PAD EXTENSION:				
Small Ring (in)	1.96	2.00	0.04	+/- 0.20
Medium Ring (in)	3.70	3.75	0.05	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.66	6.50	-0.16	+/- 0.20

Medium Ring (in)	8.35	8.25	-0.10	+/- 0.20
Large Ring (in)	14.95	15.00	0.05	+/- 0.20

PASS/FAIL SUMMARY	
Calibration-Coefficients Range Check:	Passed
Ring-Measurement Check:	Passed

PASS/FAIL SUMMARY	
Calibration-Coefficients Range Check:	Passed

SDLT CALIPER FIELD CALIBRATION

Tool Name: SDLT - 10685803 **Reference Calibration Date:** 05-Mar-13 17:17:34

Engineer: THOMAS HYDE **Calibration Date:** 03-Apr-13 11:10:11

Software Version: WL INSITE R3.8.4 (Build 5) **Calibration Version:** 1

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.67	-0.08	+/- 0.10
Ring Diameter	8.25	8.18	-0.07	+/- 0.15

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

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name: SDLT Pad - 10714945 **Reference Calibration Date:** 05-Mar-13 15:52:04

Engineer: S. INGERSOLL **Calibration Date:** 05-Mar-13 16:11:51

Software Version: WL INSITE R3.8.4 (Build 5) **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	1.0319	1.0312	0.90 - 1.10
Near Dens Gain	1.0031	1.0128	0.90 - 1.10
Near Peak Gain	0.9986	1.0111	0.90 - 1.10
Near Lith Gain	0.9882	0.9834	0.90 - 1.10
Far Bar Gain	1.0074	1.0091	0.90 - 1.10
Far Dens Gain	0.9990	1.0003	0.90 - 1.10
Far Peak Gain	0.9931	0.9930	0.90 - 1.10
Far Lith Gain	0.9788	0.9739	0.90 - 1.10
Near Bar Offset	0.0243	0.0304	NONE
Near Dens Offset	0.2636	0.1791	NONE
Near Peak Offset	0.2962	0.1905	NONE
Near Lith Offset	0.3574	0.3935	NONE
Far Bar Offset	0.1349	0.1195	NONE
Far Dens Offset	0.1915	0.1780	NONE
Far Peak Offset	0.2394	0.2405	NONE
Far Lith Offset	0.3213	0.3587	NONE
Near Bar Background	977.27	974.88	700 - 1450
Near Dens Background	324.79	324.11	230 - 480

Near Peak Background	141.16	141.44	100 - 210
Near Lith Background	172.61	172.47	125 - 260
Far Bar Background	500.46	499.16	450 - 900
Far Dens Background	193.68	194.82	175 - 345
Far Peak Background	76.43	76.18	70 - 140
Far Lith Background	80.49	79.54	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.684	1.684	0.000	+/- 0.015
Pe	2.527	2.554	0.027	+/- 0.150
ALUMINUM				
Density (g/cc)	2.598	2.598	0.000	+/- 0.01500
Pe	3.099	3.122	0.023	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0002	+/- 0.0110	0.0007	+/- 0.0140
Magnesium Block	0.0009	+/- 0.0110	0.0007	+/- 0.0140
Aluminum Block	-0.0009	+/- 0.0110	0.0022	+/- 0.0140
Resolution	9.89	6.00 - 11.50	9.27	6.00 - 11.50
Internal Verifier(B+D+P+L)	1613	1200 - 2700	850	800 - 1700

PASS/FAIL SUMMARY

Background Quality Check:	Passed
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed
Aluminum Quality Check:	Passed
Gains Check:	Passed
Changes in Calibration Blocks:	Passed

SPECTRAL DENSITY FIELD CHECK

Tool Name: SDLT Pad - 10714945 **Reference Calibration Date:** 05-Mar-13 16:11:51

Engineer: S. INGERSOLL **Calibration Date:** 03-Apr-13 11:03:49

Software Version: WL INSITE R3.8.4 (Build 5) **Calibration Version:** 1

Pad Temperature: 64.7 degF

DENSITY FIELD CALIBRATION SUMMARY

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1612.894	1608.858	-4.036	16.146
Far (B+D+P+L) cps	849.708	851.666	1.958	15.993
Near Resolution	9.89	9.87	-0.020	0.50
Far Resolution	9.27	9.32	0.050	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-10748374						
Gamma Ray Calibrator	232.0	230.3	----------	1.7	+/- 9.00	api
DSNT-10755066						
Snow-Block Porosity	0.0660	0.0725	----------	-0.0065	+/- 0.0150	decp
SDLT-10685803						
Pad Extension	3.75	3.67	----------	0.08	+/-0.10	in
Ring Diameter	8.25	8.18	----------	0.07	+/-0.15	in
SDLT Pad-10714945						
Near(B+D+P+L)	1612.894	1608.858	----------	4.036	+/-16.146	cps
Far(B+D+P+L)	849.708	851.666	----------	-1.958	+/-15.993	cps

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	9.500	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	2.000	ohmm
	SHARED	TRM	Temperature of Mud	70.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	70.0	degF
	SHARED	TD	Total Well Depth	3580.00	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	

	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	
	ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
BOTTOM					

HALLIBURTON

INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
	Depth Panel			
TENS	Tension	0.00	NO	
	CH_HOS			
DHTN	DownholeTension	0.00	BLK	0.000
	SP Sub			
PLTC	Plot Control Mask	50.56	NO	
SP	Spontaneous Potential	50.56	BLK	1.250
SPR	Raw Spontaneous Potential	50.56	NO	
SPO	Spontaneous Potential Offset	50.56	NO	
	GTET			
TPUL	Tension Pull	42.54	NO	

GR	Natural Gamma Ray API	42.54	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	42.54	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	42.54	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	

	DSNT			
TPUL	Tension Pull	32.30	NO	
RNDS	Near Detector Telemetry Counts	32.40	BLK	1.417
RFDS	Far Detector Telemetry Counts	33.15	TRI	0.583
DNTT	DSN Tool Temperature	32.40	NO	
DSNS	DSN Tool Status	32.30	NO	
ERND	Near Detector Telemetry Counts EVR	32.40	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	33.15	BLK	0.000
ENTM	DSN Tool Temperature EVR	32.40	NO	

	SDLT			
TPUL	Tension Pull	22.40	NO	
PCAL	Pad Caliper	22.40	TRI	0.250
ACAL	Arm Caliper	22.40	TRI	0.250

	ACRt Sonde			
TPUL	Tension Pull	2.73	NO	
F1R1	ACRT 12KHz - 80in R value	8.98	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	8.98	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.48	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.48	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	4.98	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	4.98	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	3.98	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	3.98	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.48	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.48	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.23	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.23	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	8.98	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	8.98	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.48	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.48	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	4.98	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	4.98	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	3.98	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	3.98	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.48	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.48	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.23	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.23	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	8.98	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	8.98	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.48	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.48	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	4.98	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	4.98	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	3.98	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	3.98	BLK	0.000

F3R5	ACRT 72KHz - 10in R value	3.48	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.48	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.23	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.23	BLK	0.000
RMUD	Mud Resistivity	12.52	BLK	0.000
F1RT	Transmitter Current Raw 12K X Receiver	2.73	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.73	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.73	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.73	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.73	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.73	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.73	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.73	BLK	0.000
ITMP	Instrument Temperature	2.73	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.73	NO	
TIDV	Instrument Temperature Derivative	2.73	NO	
TUDV	Upper Temperature Derivative	2.73	NO	
TLDV	Lower Temperature Derivative	2.73	NO	
TRBD	Receiver Board Temperature	2.73	NO	

SDLT Pad

TPUL	Tension Pull	22.39	NO	
NAB	Near Above	22.21	BLK	0.920
NHI	Near Cesium High	22.21	BLK	0.920
NLO	Near Cesium Low	22.21	BLK	0.920
NVA	Near Valley	22.21	BLK	0.920
NBA	Near Barite	22.21	BLK	0.920
NDE	Near Density	22.21	BLK	0.920
NPK	Near Peak	22.21	BLK	0.920
NLI	Near Lithology	22.21	BLK	0.920
NBAU	Near Barite Unfiltered	22.21	BLK	0.250
NLIU	Near Lithology Unfiltered	22.21	BLK	0.250
FAB	Far Above	22.56	BLK	0.250
FHI	Far Cesium High	22.56	BLK	0.250
FLO	Far Cesium Low	22.56	BLK	0.250
FVA	Far Valley	22.56	BLK	0.250
FBA	Far Barite	22.56	BLK	0.250
FDE	Far Density	22.56	BLK	0.250
FPK	Far Peak	22.56	BLK	0.250
FLI	Far Lithology	22.56	BLK	0.250
PTMP	Pad Temperature	22.40	BLK	0.920
NHV	Near Detector High Voltage	21.79	NO	
FHV	Far Detector High Voltage	21.79	NO	
ITMP	Instrument Temperature	21.79	NO	
DDHV	Detector High Voltage	21.79	NO	

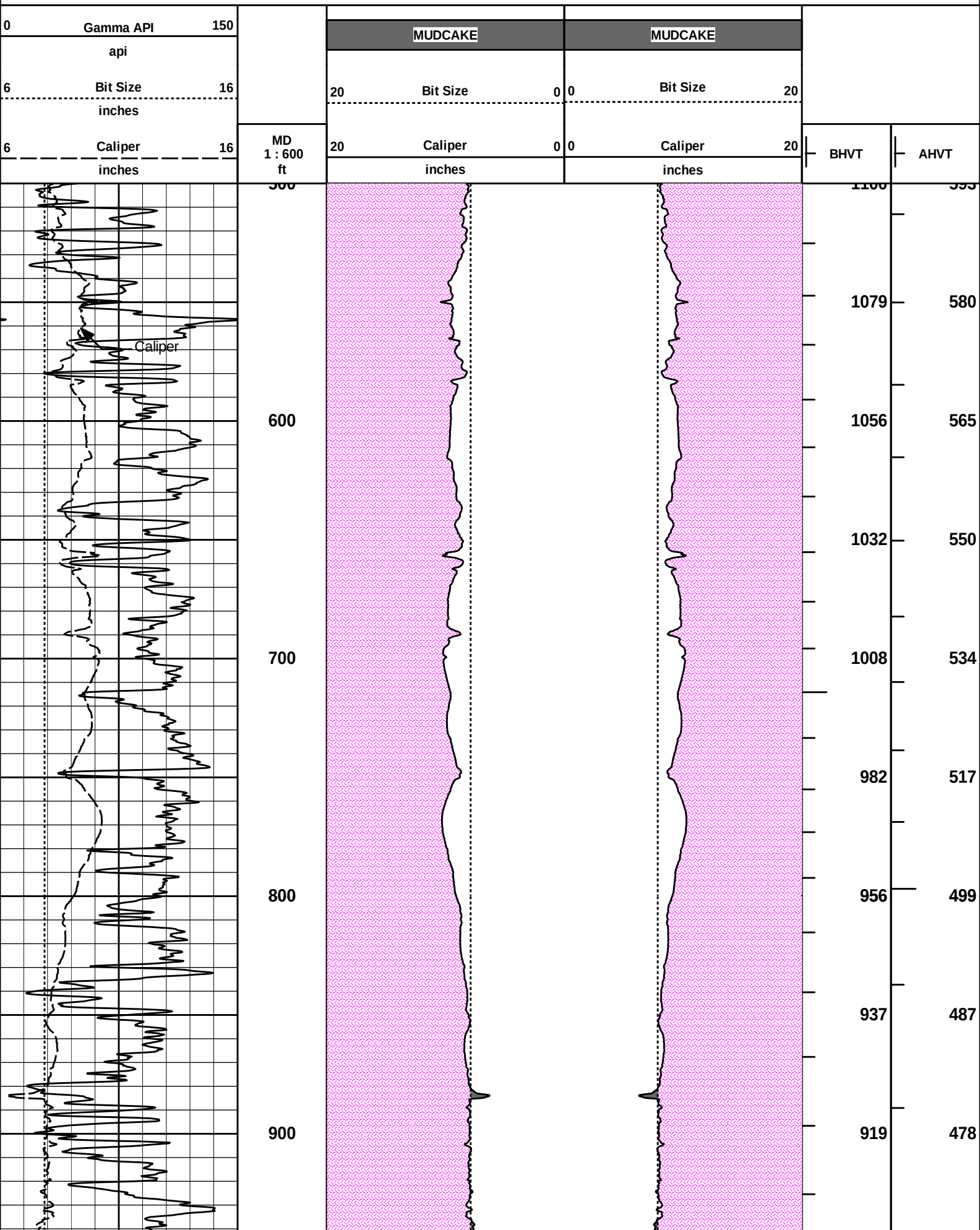
Microlog Pad

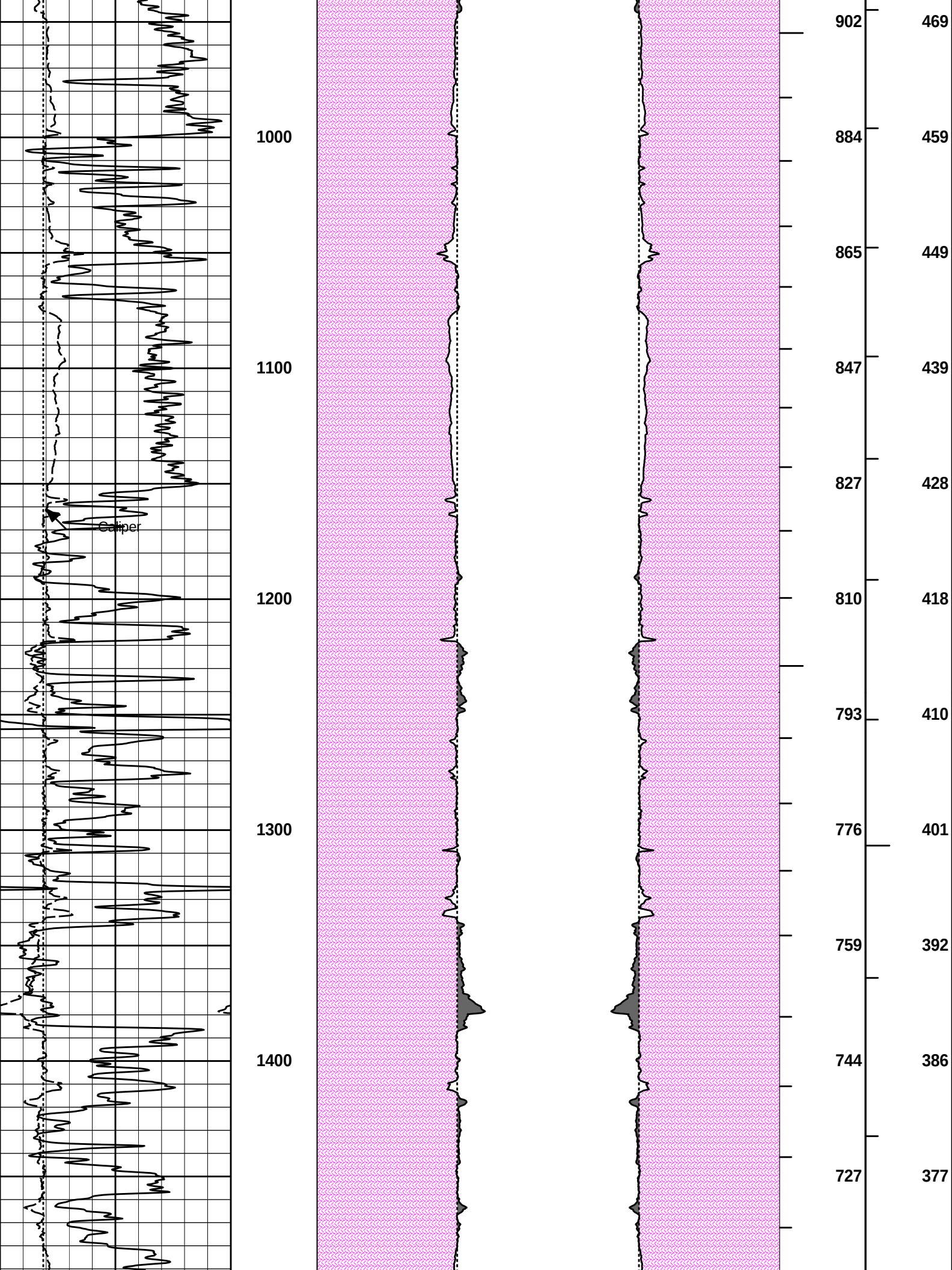
TPUL	Tension Pull	22.58	NO	
MINV	Microlog Lateral	22.58	BLK	0.750
MNOR	Microlog Normal	22.58	BLK	0.750

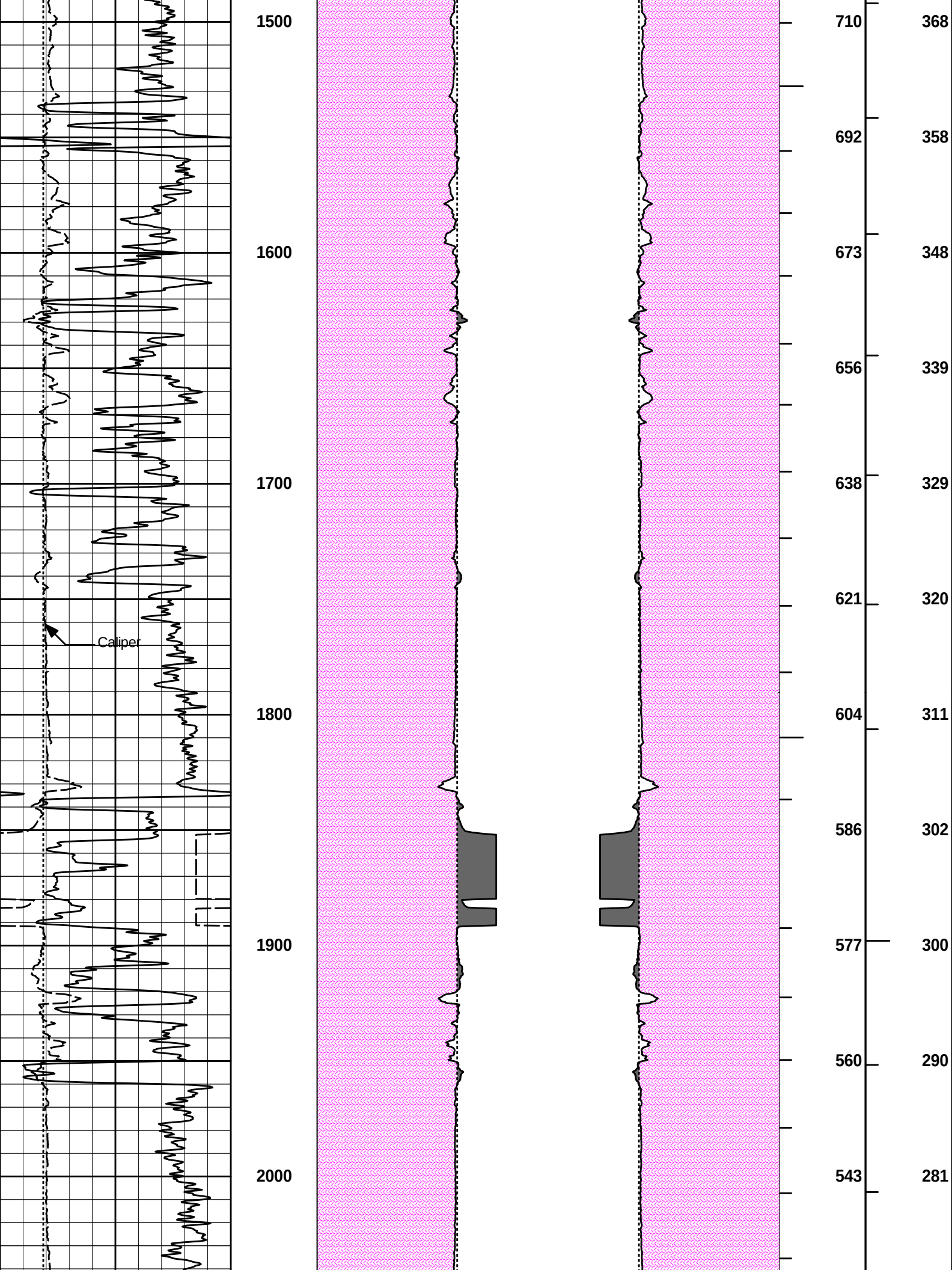
HALLIBURTON

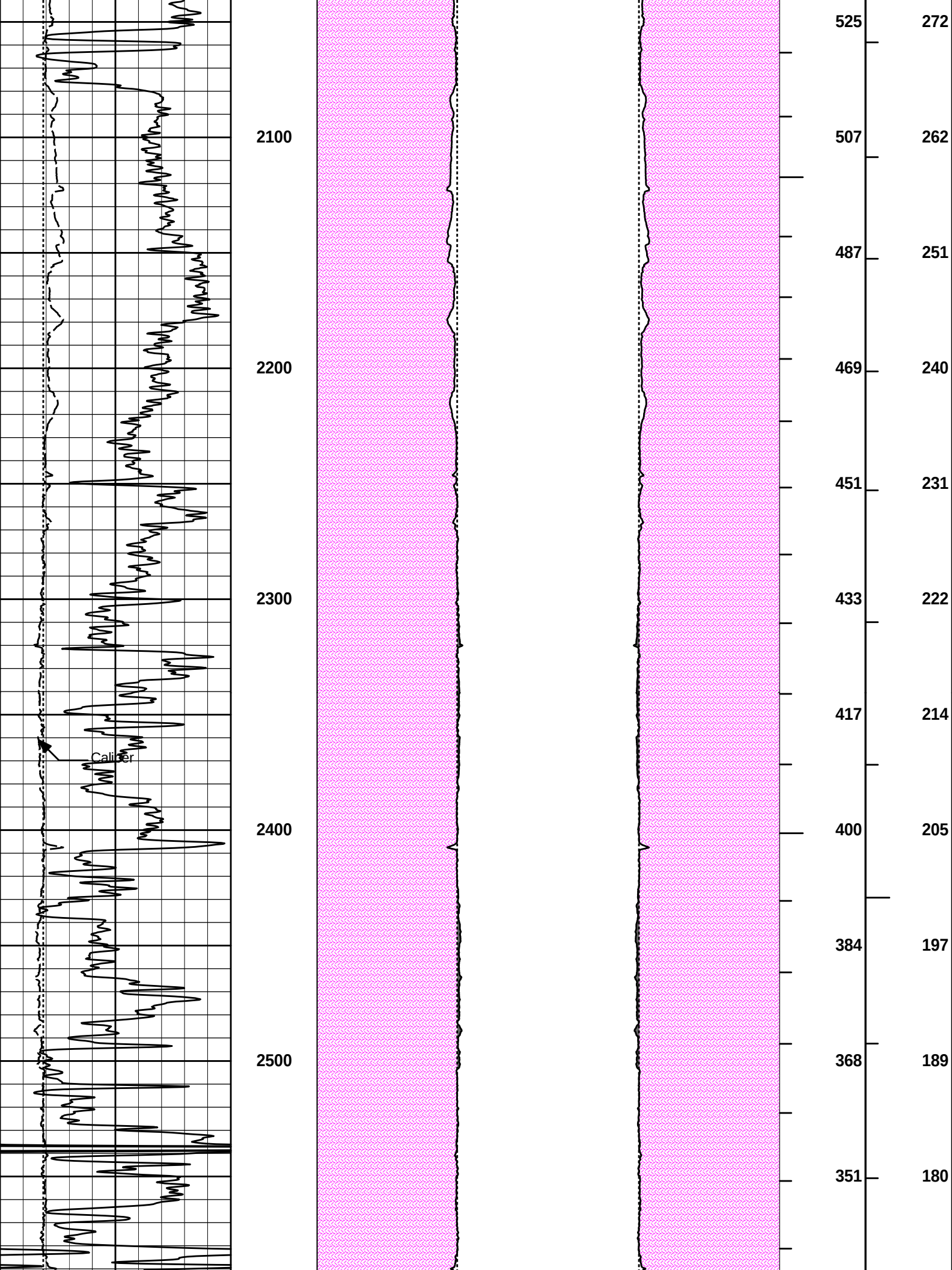
Plot Time: 04-Apr-13 00:24:58
Plot Range: 500 ft to 3582.75 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-003
Plot File: \\-LOCAL-\WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\AHV_2_IQ_LIB

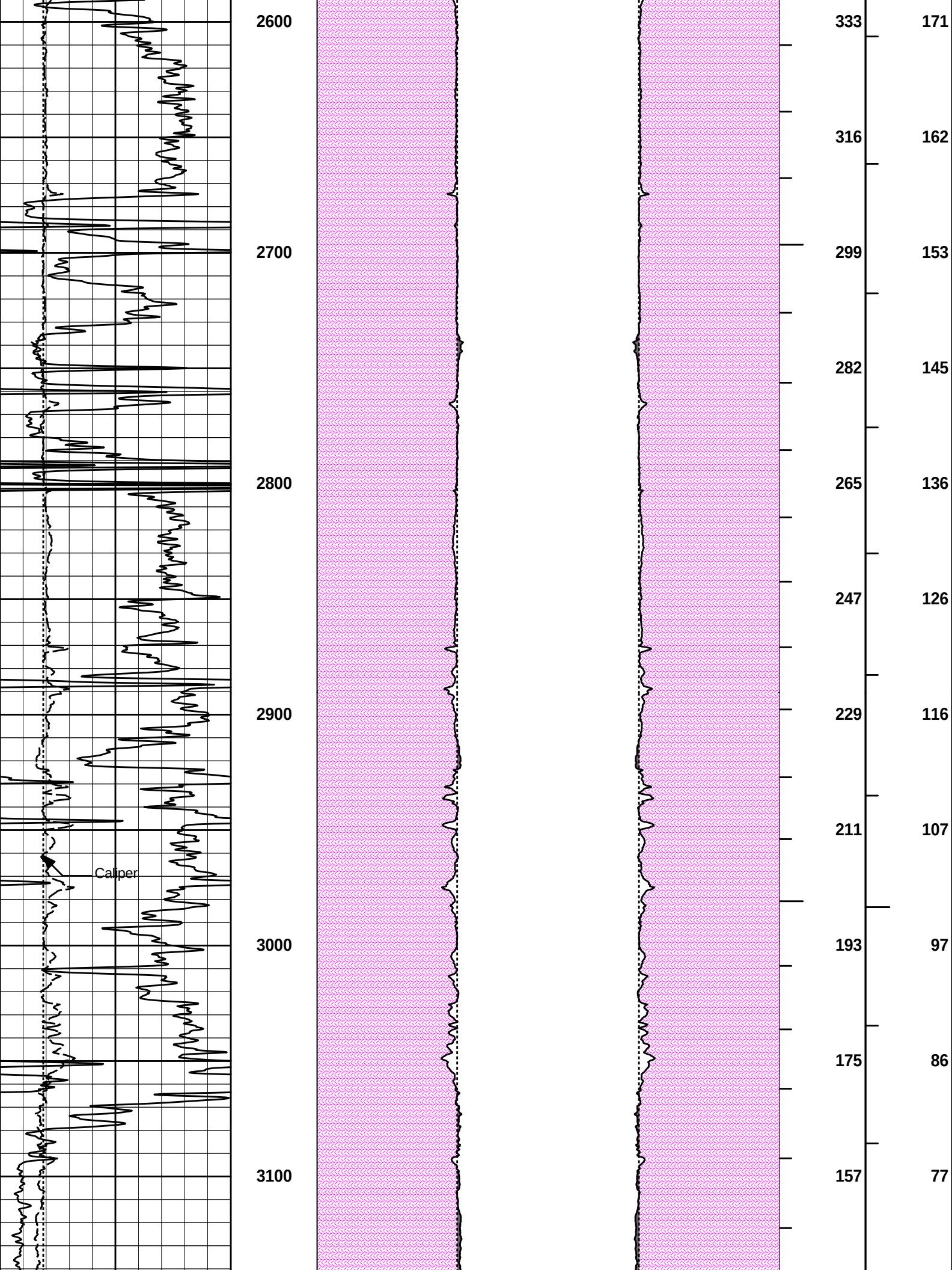
ANNULAR HOLE VOLUME PLOT

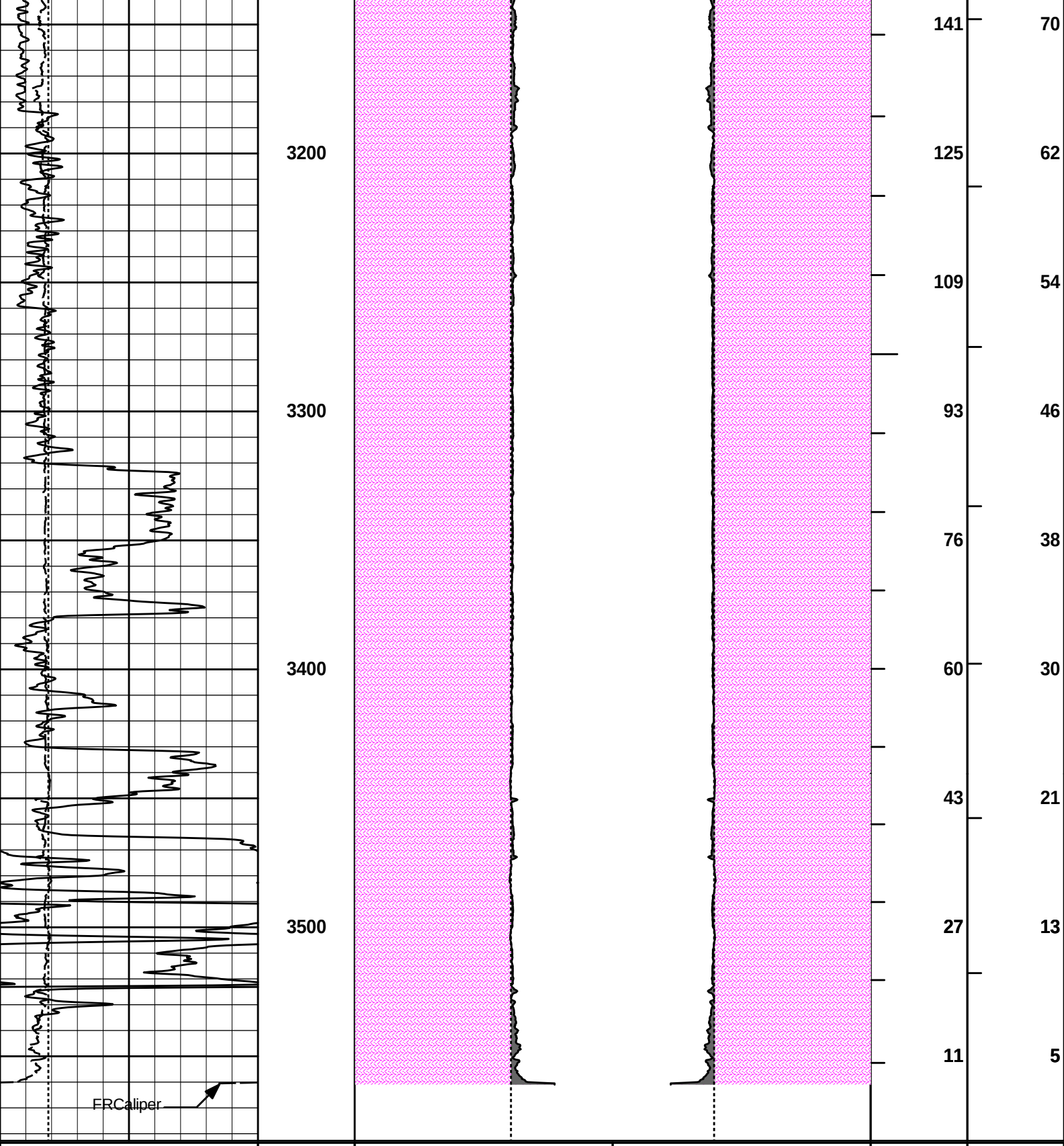



Caliper
1000
1100
1200
1300
1400
902
884
865
847
827
810
793
776
759
744
727
469
459
449
439
428
418
410
401
392
386
377


1500
1600
1700
1800
1900
2000
Caliper
710
692
673
656
638
621
604
586
577
560
543
368
358
348
339
329
320
311
302
300
290
281


Caliper
2100
2200
2300
2400
2500
525
507
487
469
451
433
417
400
384
368
351
272
262
251
240
231
222
214
205
197
189
180


Caliper
2600
2700
2800
2900
3000
3100
333
316
299
282
265
247
229
211
193
175
157
171
162
153
145
136
126
116
107
97
86
77



6 Caliper 16	MD 1 : 600 ft	20 Caliper 0 / 0 Caliper 20
inches		inches
6 Bit Size 16		20 Bit Size 0 / 0 Bit Size 20
inches		
0 Gamma API 150		MUDCAKE / MUDCAKE
api		

BHVT AHVT

HALLIBURTON

Plot Time: 04-Apr-13 00:25:03
Plot Range: 500 ft to 3582.75 ft
Data: WERNER_V1_31\Well Based\DAQ-0001-003\
Plot File: \\-LOCAL-\WERNER_V1_31\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\AHV_2_IO_LIB

ANNULAR HOLE VOLUME PLOT

COMPANY	**VAL ENERGY**		
WELL	**WERNER V1-31**		
FIELD	**WILSON**		
COUNTY	**COWLEY**	STATE	**KANSAS**

HALLIBURTON

DUAL SPACED NEUTRON
SPECTRAL DENSITY
LOG