

HALLIBURTON

SPECTRAL DENSITY DUAL SPACED NEUTRON LOG

COMPANY WELL FIELD/BLOCK COUNTY STATE	BEREXCO LLC CRAIG 1-35 MANNING NW SCOTT KANSAS
Permanent Datum Log measured from Drilling measured from	GL KB KB KB
Sect. 35 Twp. 17S Rge. 31W	Elev. 2917.0 ft 12.0 ft above perm. Datum Elev.: K.B. 2929.0 ft D.F. 2928.0 ft G.L. 2917.0 ft
Other Services: MICROLOG ACRT BSAT	

Date Run No. Depth - Driller Depth - Logger Bottom - Logged Interval Top - Logged Interval Casing - Driller Casing - Logger Bit Size Type Fluid in Hole Density PH Source of Sample Rm @ Meas. Temperature Rmf @ Meas. Temperature Source Rmf Rm @ BHT Time Since Circulation Max. Rec. Temperature Equipment Recorded By Witnessed By	11-Feb-14 ONE 4695.00 ft 4695.0 ft 4651.0 ft 3690.0 ft 8.625 in @ 420.0 ft 418.0 ft 7.875 in @ WATER BASED 9.7 ppg @ 52.00 s/qt 9.00 pH @ 7.0 cpH MUD PIT 0.900 ohmm @ 75.00 degF 0.73 ohmm @ 75.00 degF 1.210 ohmm @ 75.00 degF MEASURED 0.59 ohmm @ 119.0 degF 5.0 hr 11-Feb-14 19:28 119.0 degF @ 4695.0 ft 11230668 LIBERAL J. BOLLUM I. BOSMEIJER
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Fold here

Service Ticket No.: 901111896 API Serial No.: 15-171-21024-00-00 PGM Version: WL INSITE R3.8.4 (Build 5)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE					RESISTIVITY SCALE CHANGES				
Date	Sample No.				Type Log	Depth	Scale Up Hole	Scale Down Hole	
Depth-Driller									
Type Fluid in Hole									
Density	Viscosity								
Ph	Fluid Loss								
Source of Sample					RESISTIVITY EQUIPMENT DATA				
Rm @ Meas. Temp		@		@	Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
Rmf @ Meas. Temp.		@		@					
Rmc @ Meas. Temp.		@		@					
Source Rmf	Rmc								
Rm @ BHT		@		@					
Rmf @ BHT		@		@					
Rmc @ BHT		@		@					

EQUIPMENT DATA							
GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.	ONE	Run No.	ONE
Serial No.	10748374	Serial No.		Serial No.	10673790	Serial No.	10735145
Model No.	GTET	Model No.		Model No.	SDLT-I	Model No.	DSNT-I
Diameter	3.625"	No. of Cent.		Diameter	4.5"	Diameter	3.625"
Detector Model No.	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.	DSN-436
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	4695	3690	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

CHLORIDES REPORTED AT 4,000 PPM

LCM REPORTED AT 1.5 LB/BBL

GTET-DSNT-SDLT-BSAT-ACRT RUN IN COMBINATION

PRE-CALS NOT PERFORMED, DST EQUIPMENT LEFT ON CATWALK

TODAY'S CREW: D. MILLER & E. ZAPIEN

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

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

HALLIBURTON



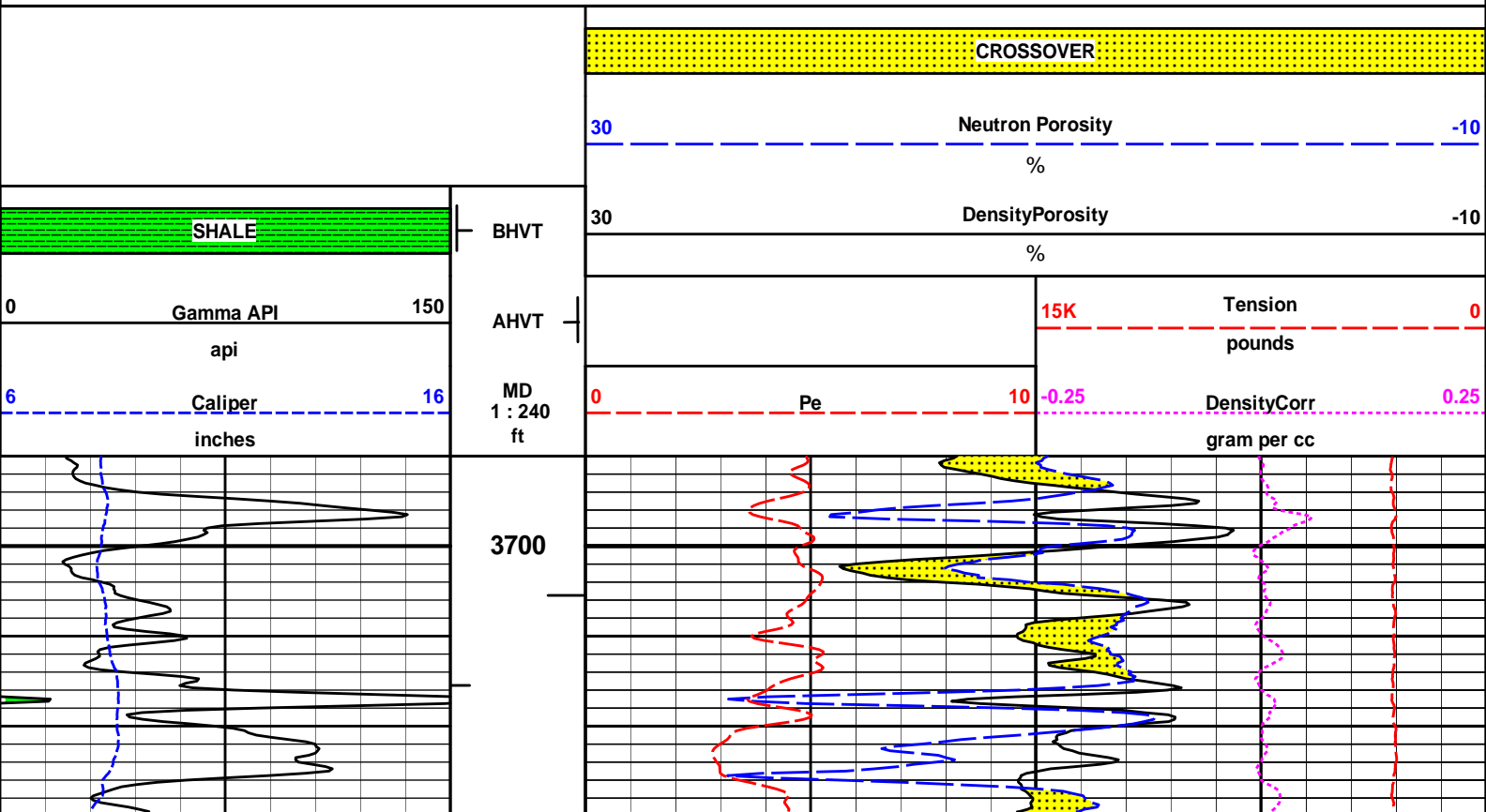
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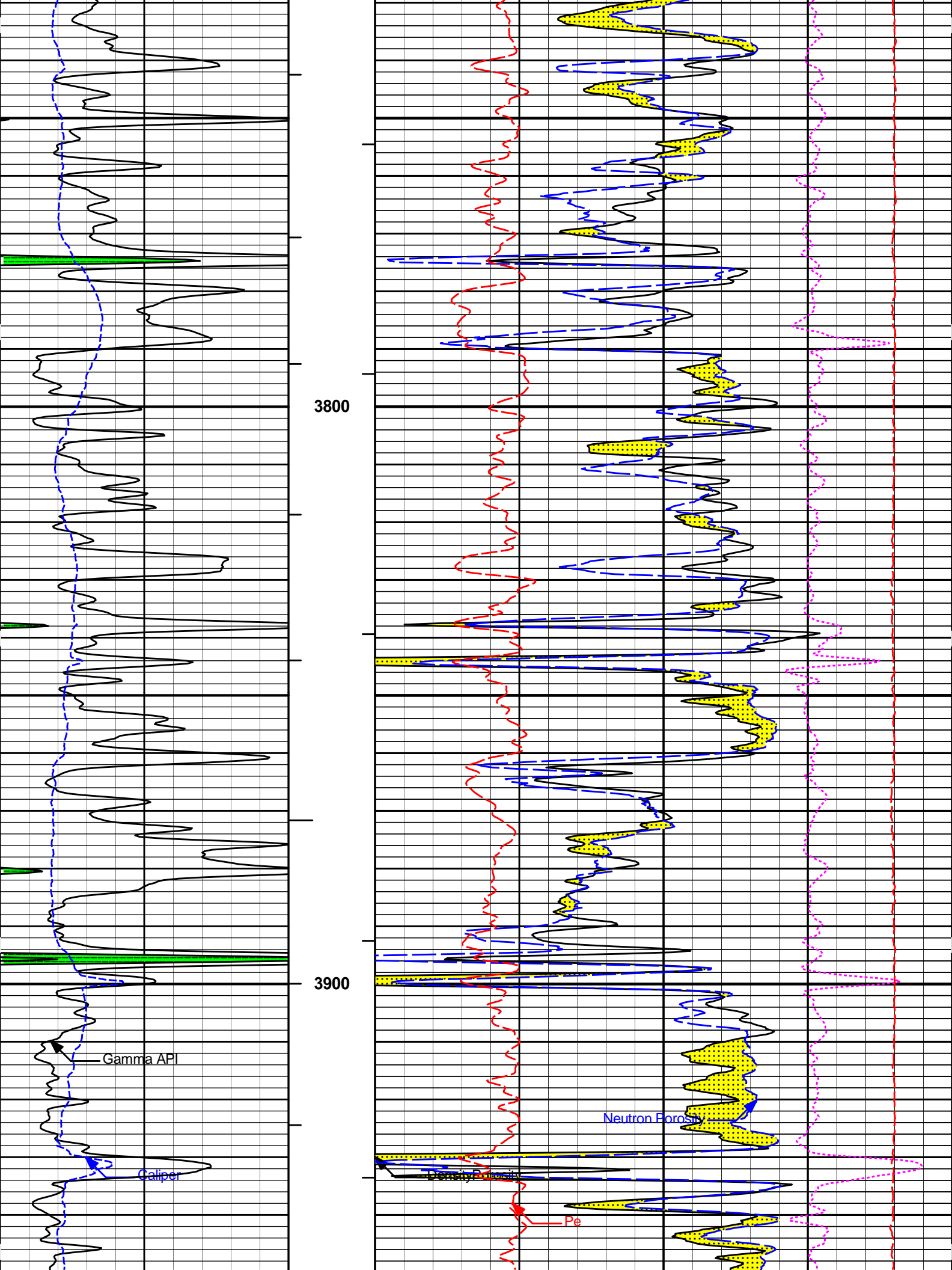
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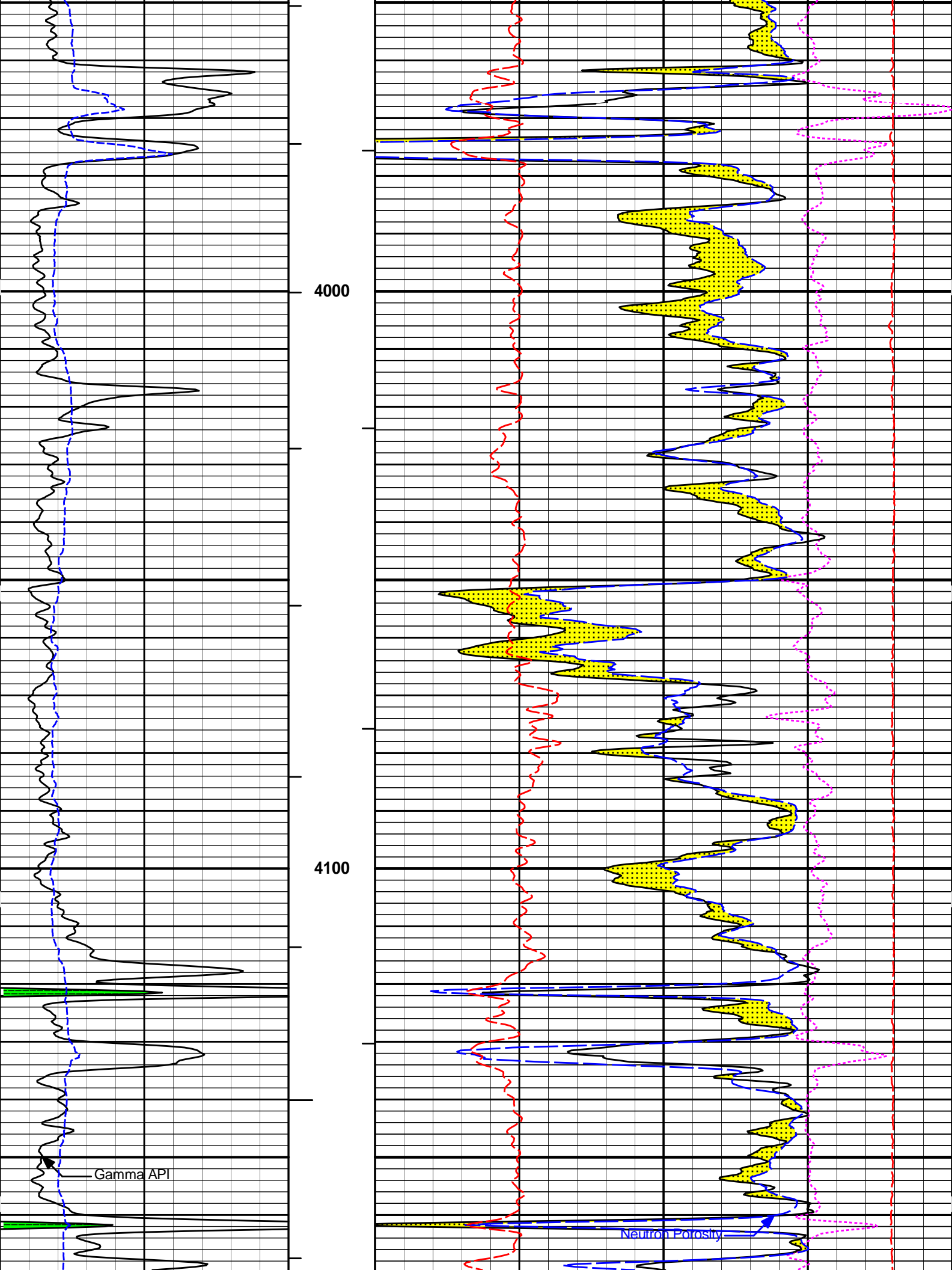
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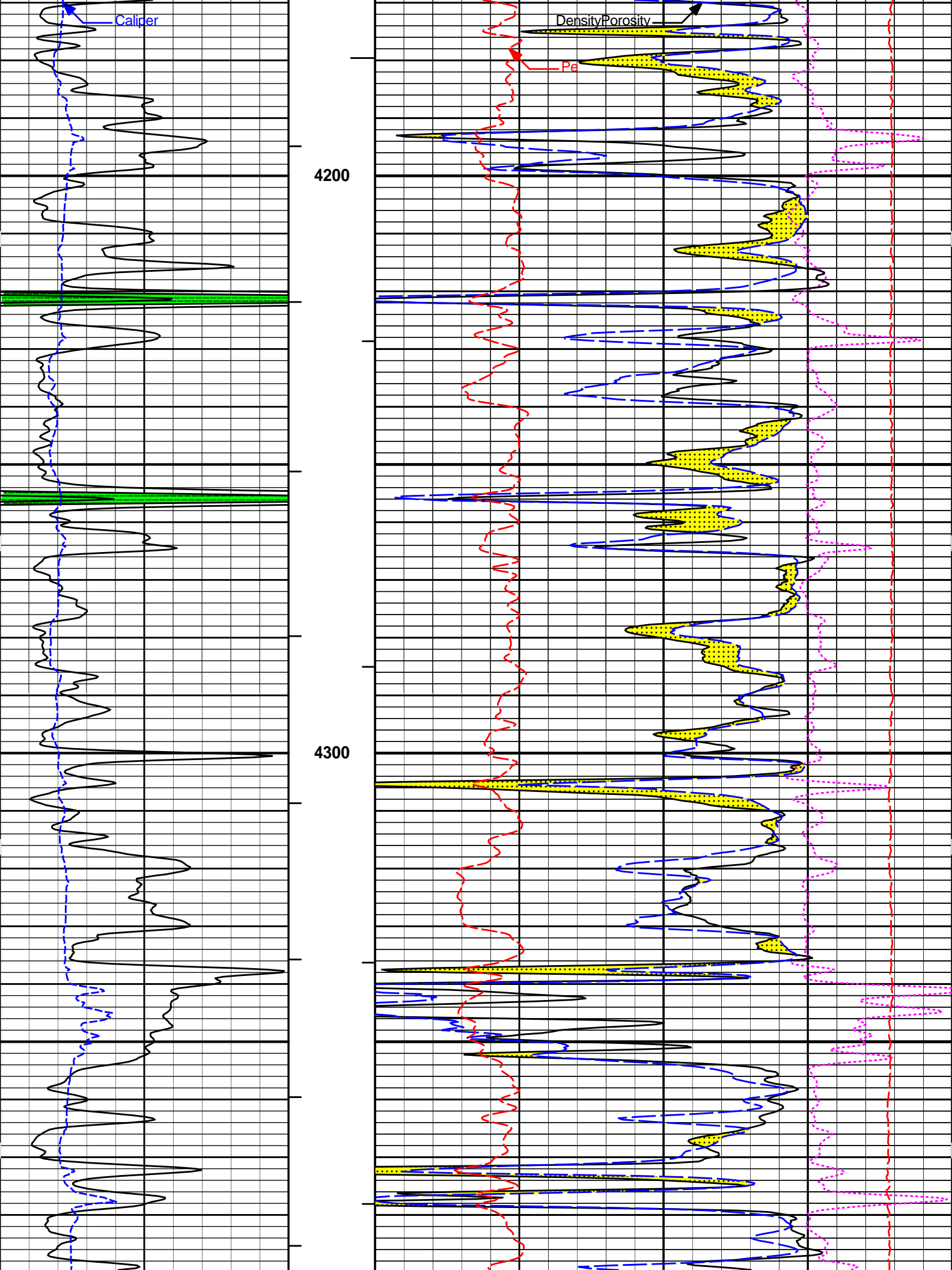
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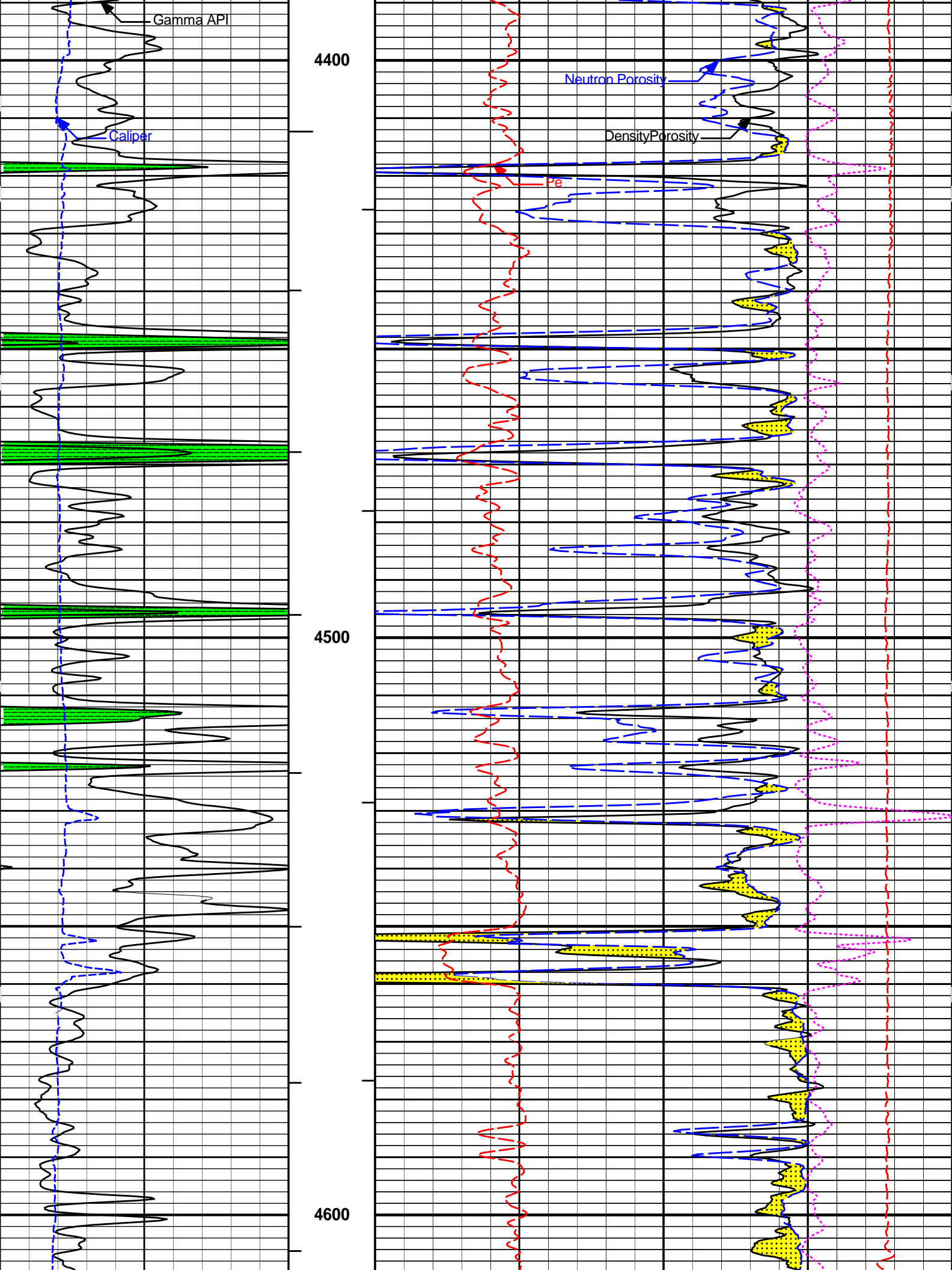
5 INCH MAIN LOG

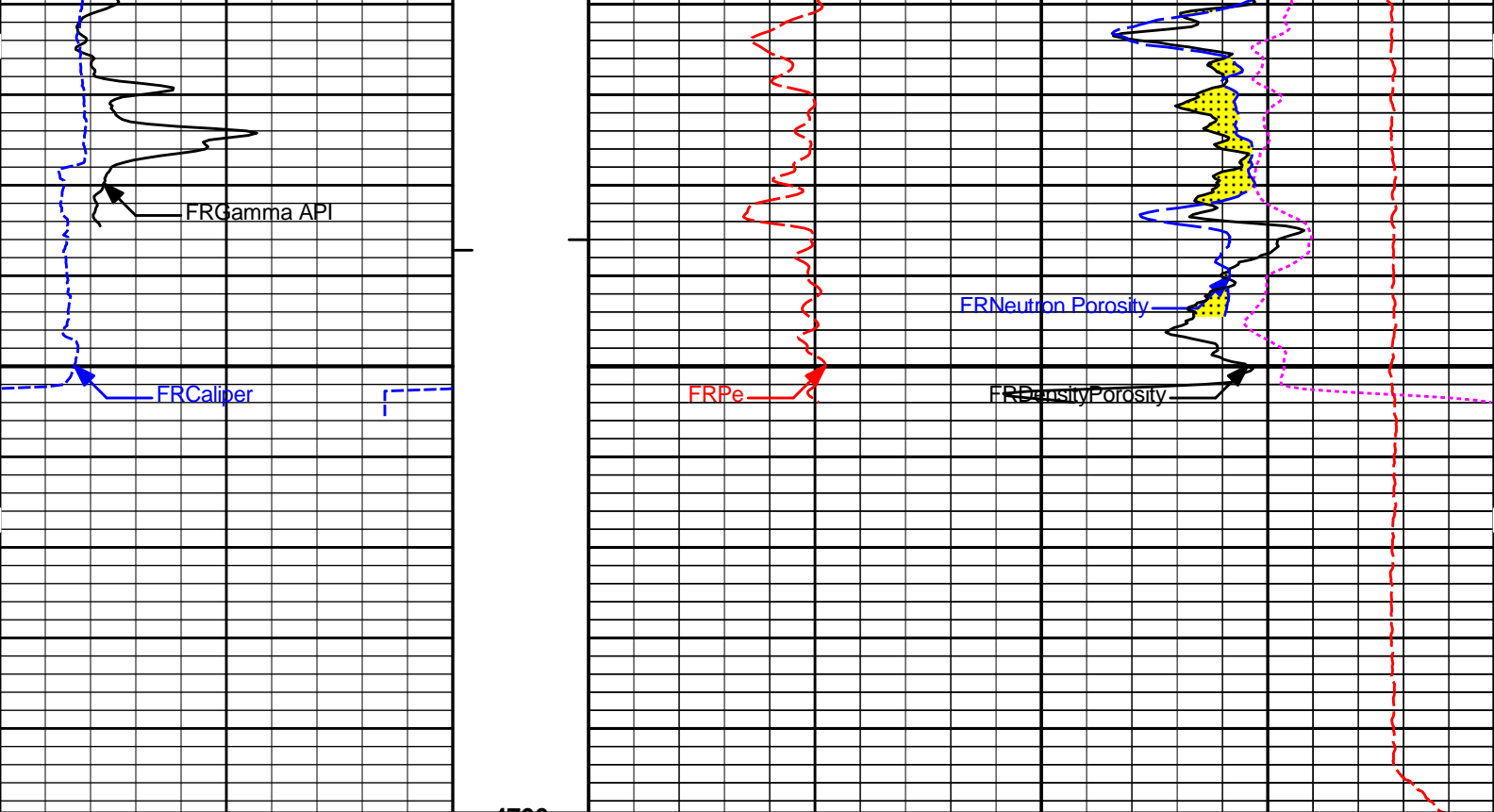












6	Caliper	16	MD	0	Pe	10	-0.25	DensityCorr	0.25
	inches		1 : 240					gram per cc	
0	Gamma API	150	AHVT				15K	Tension	0
	api		BHVT					pounds	
	SHALE			30	DensityPorosity				-10
					%				
				30	Neutron Porosity				-10
					%				
					CROSSOVER				

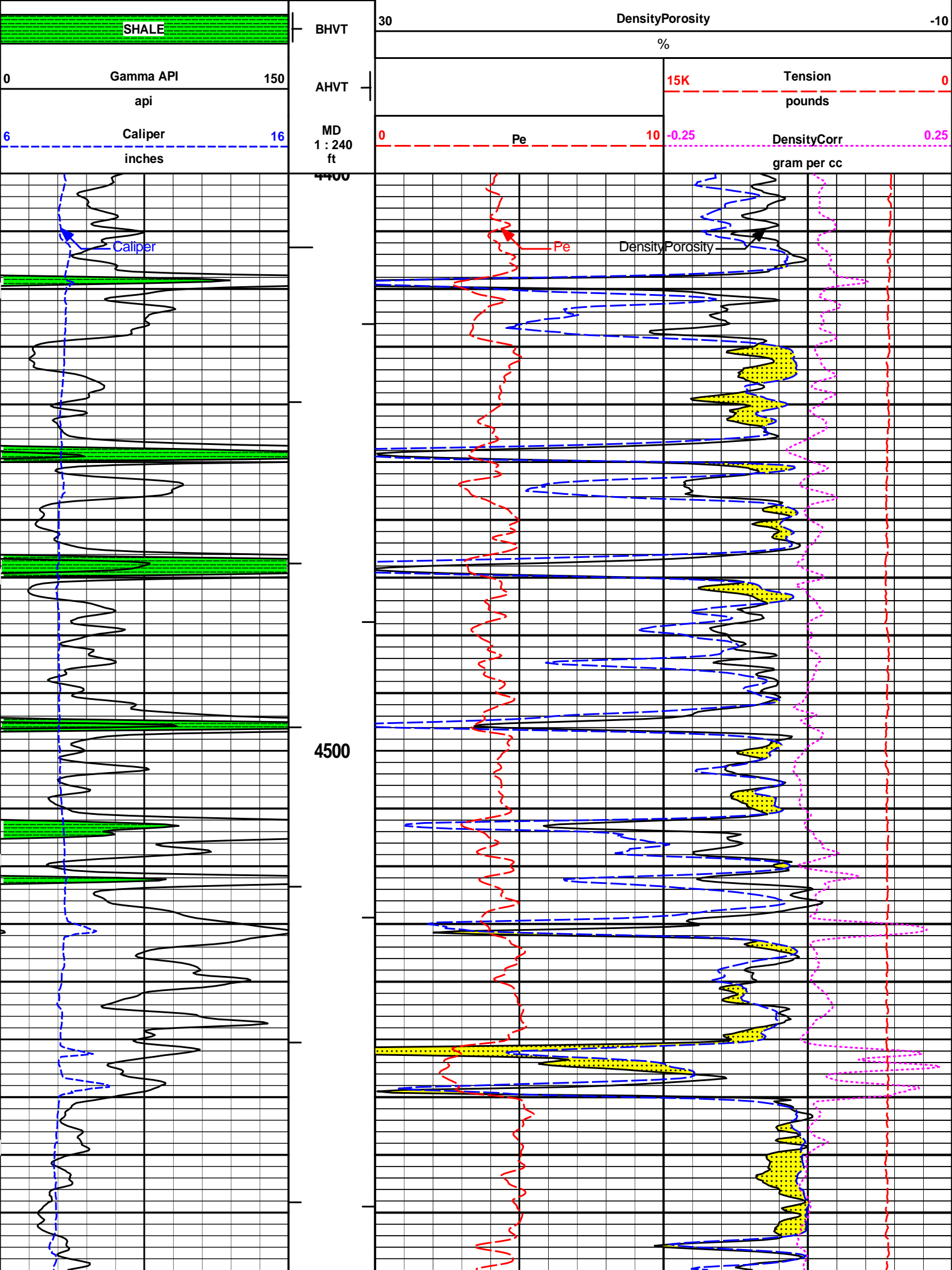
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 Plot File: \\PORO\Poro_IQ_5_MAIN_LIB

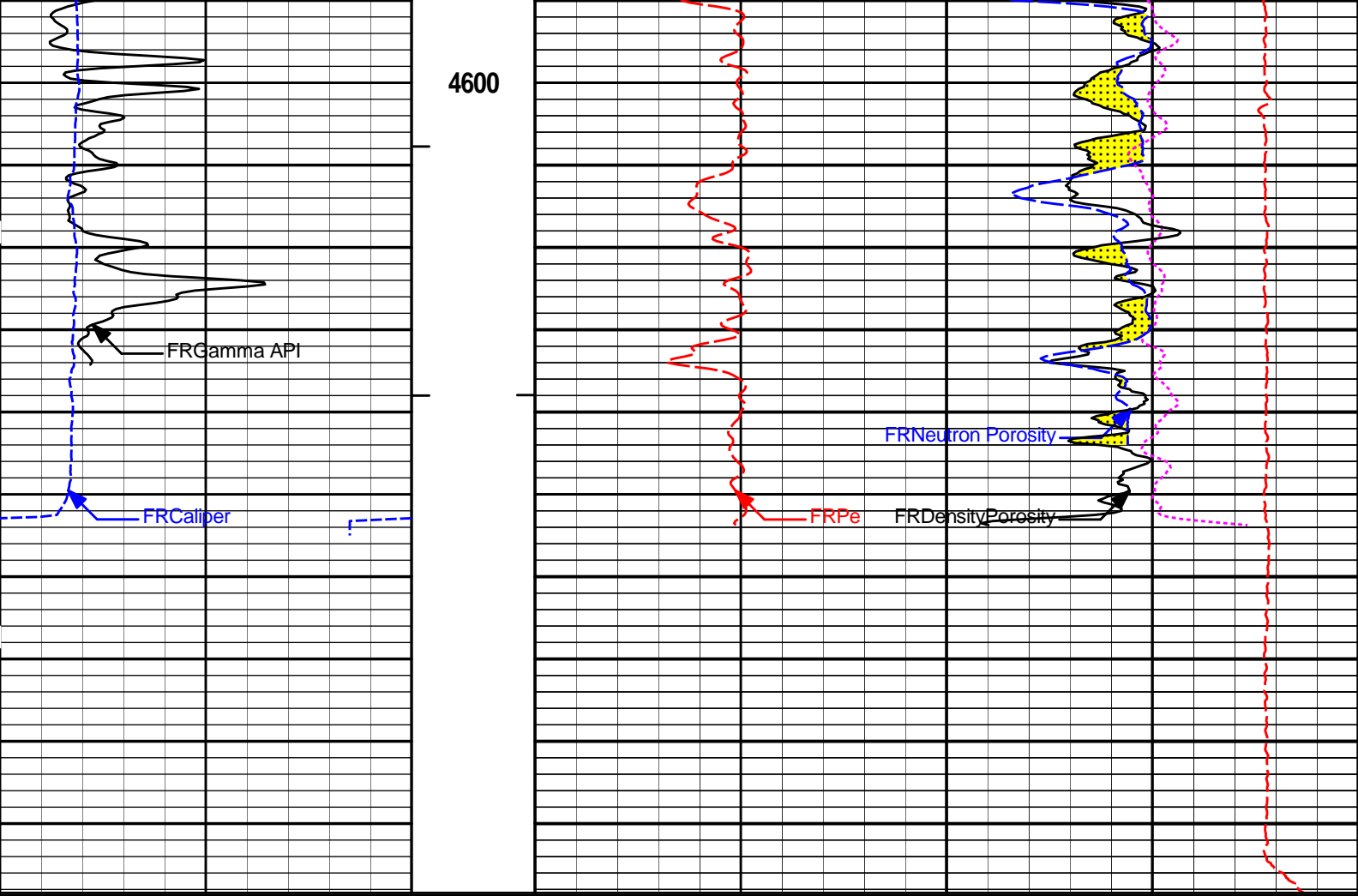
5 INCH MAIN LOG

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 Plot Range: 4400 ft to 4698.42 ft
 Data: CRAIG_1-35\Well Based\REPEAT\
 Plot File: \\PORO\Poro_IQ_5_REP_LIB

REPEAT SECTION

					CROSSOVER				
				30	Neutron Porosity				-10
					%				





6	Caliper	16	MD	0	Pe	10	-0.25	DensityCorr	0.25
	inches		1 : 240					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: 11-Feb-14 20:53:32
 Plot Range: 4400 ft to 4698.42 ft
 Data: CRAIG_1-35\Well Based\REPEAT\
 Plot File: \\PORO\Poro_IQ_5_REP_LIB

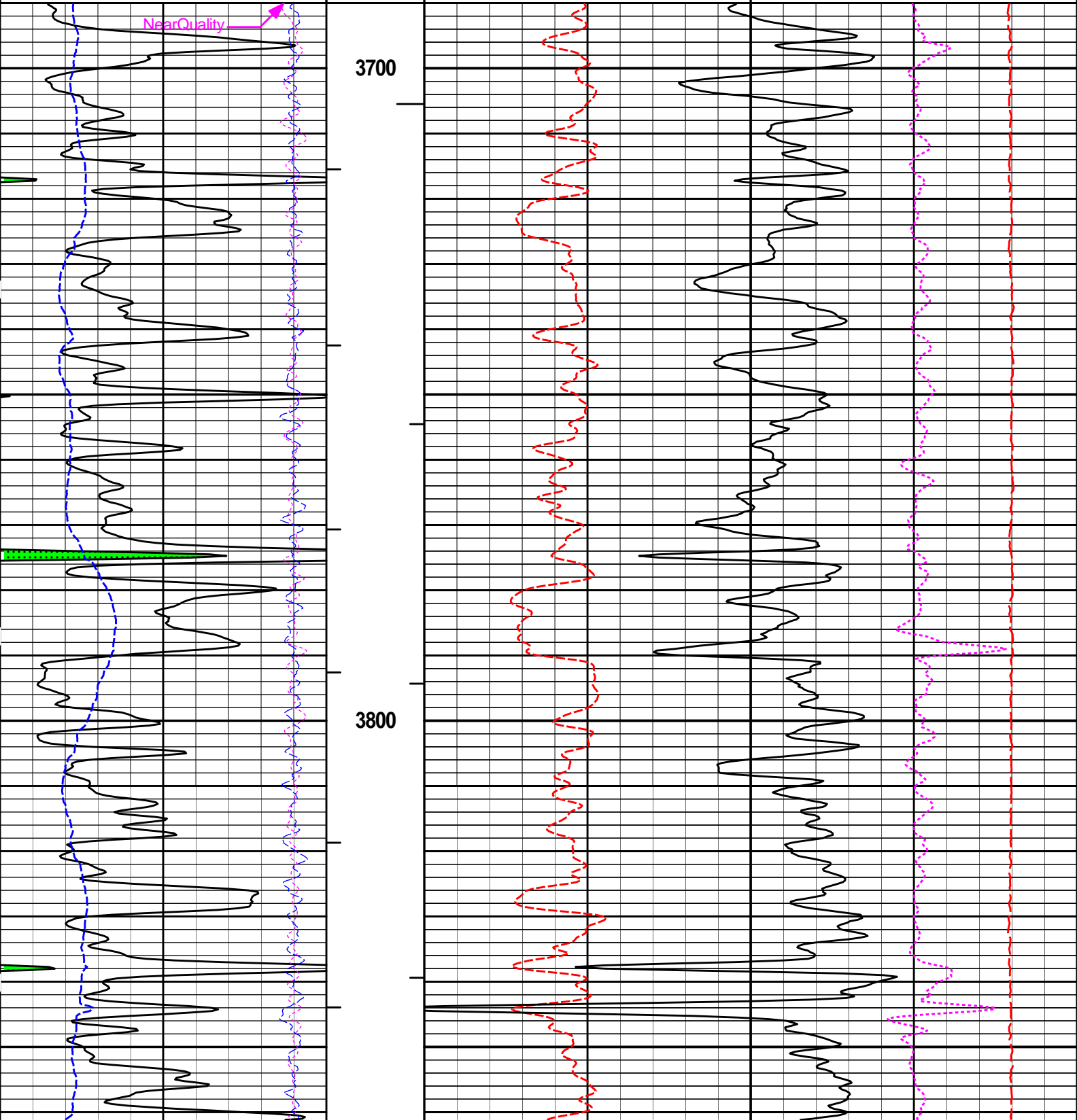
REPEAT SECTION

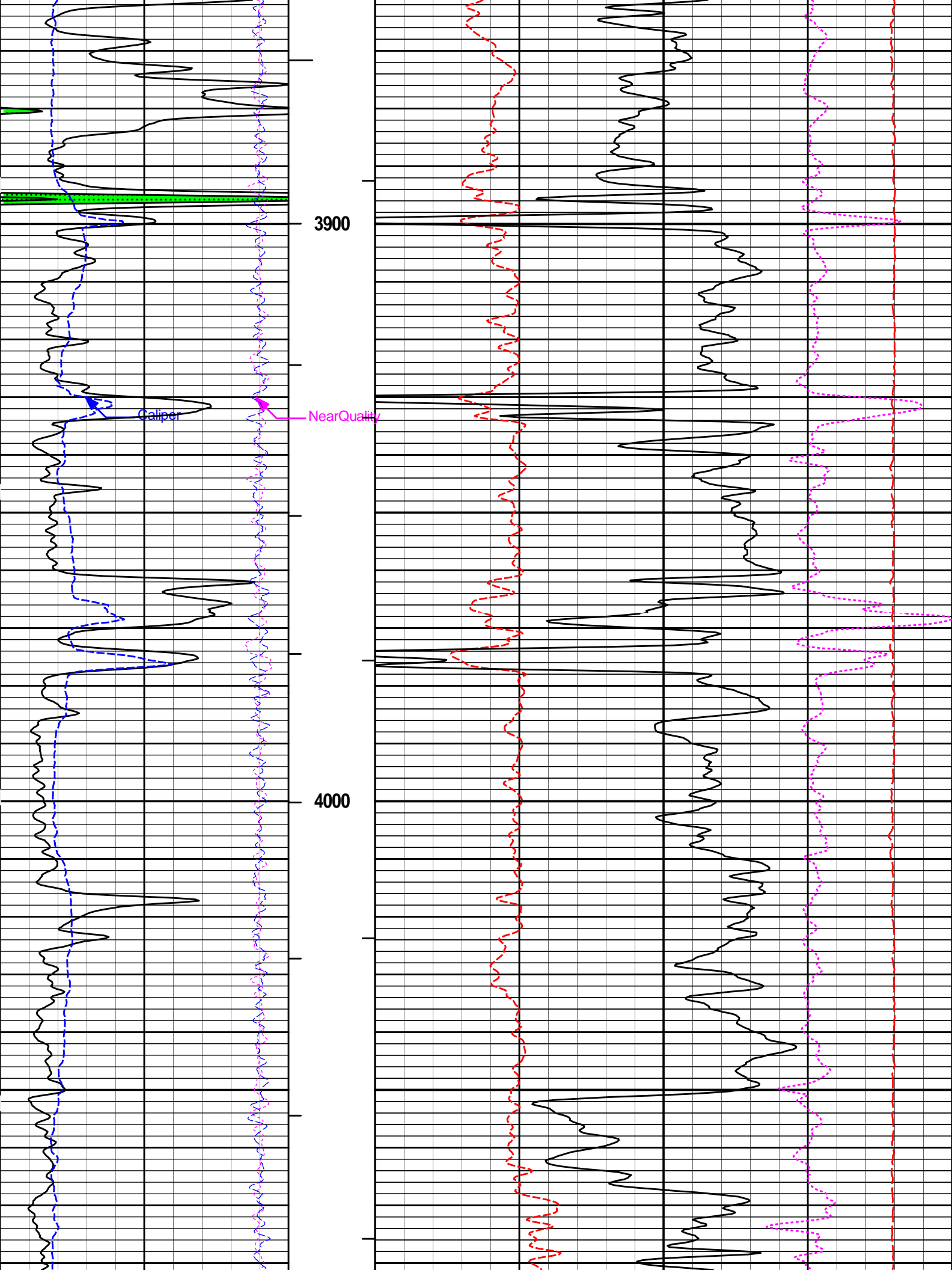
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 Plot Range: 3690 ft to 4699.33 ft
 Data: CRAIG_1-35\Well Based\DETAIL\
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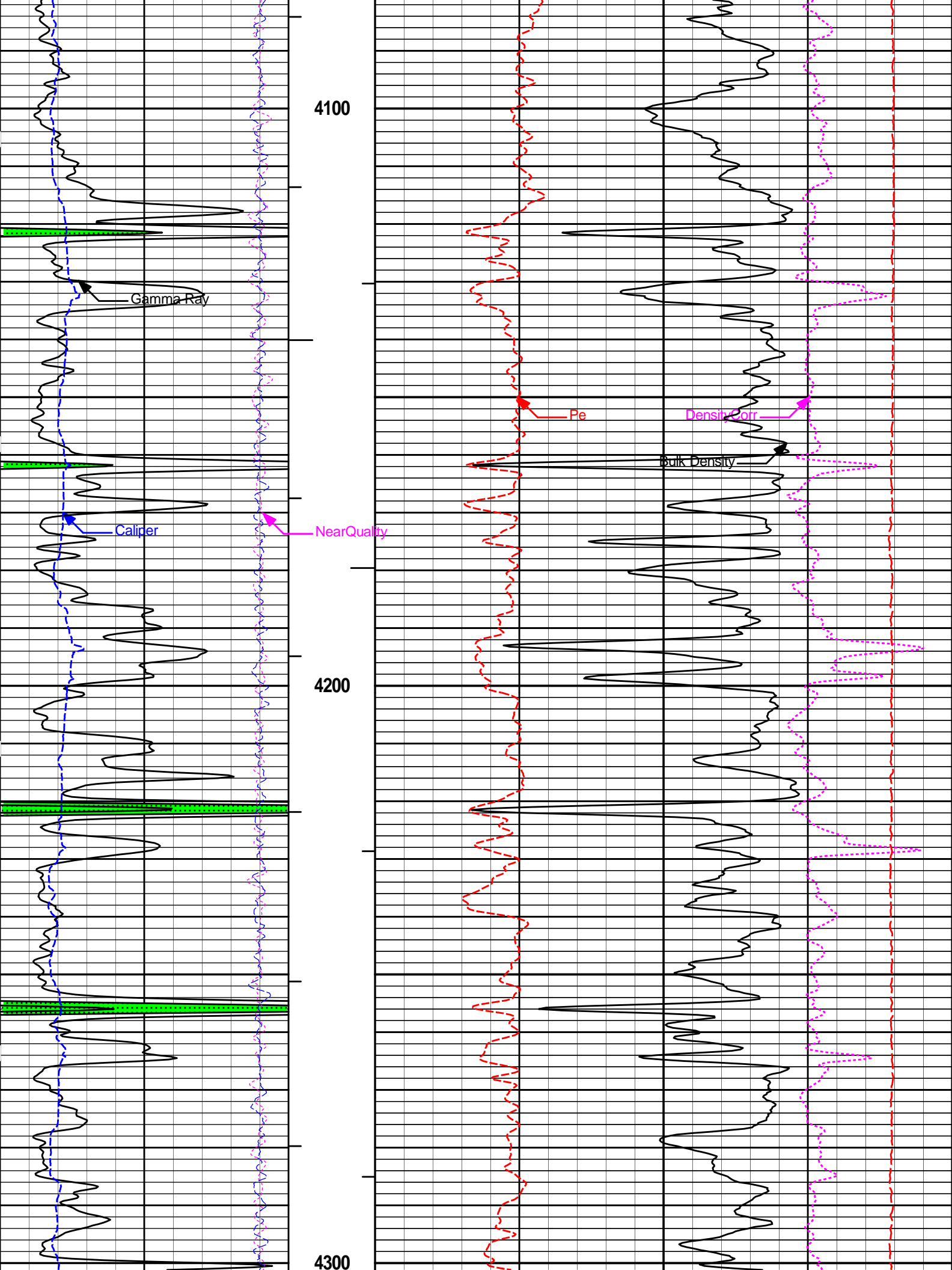
5 INCH MAIN LOG

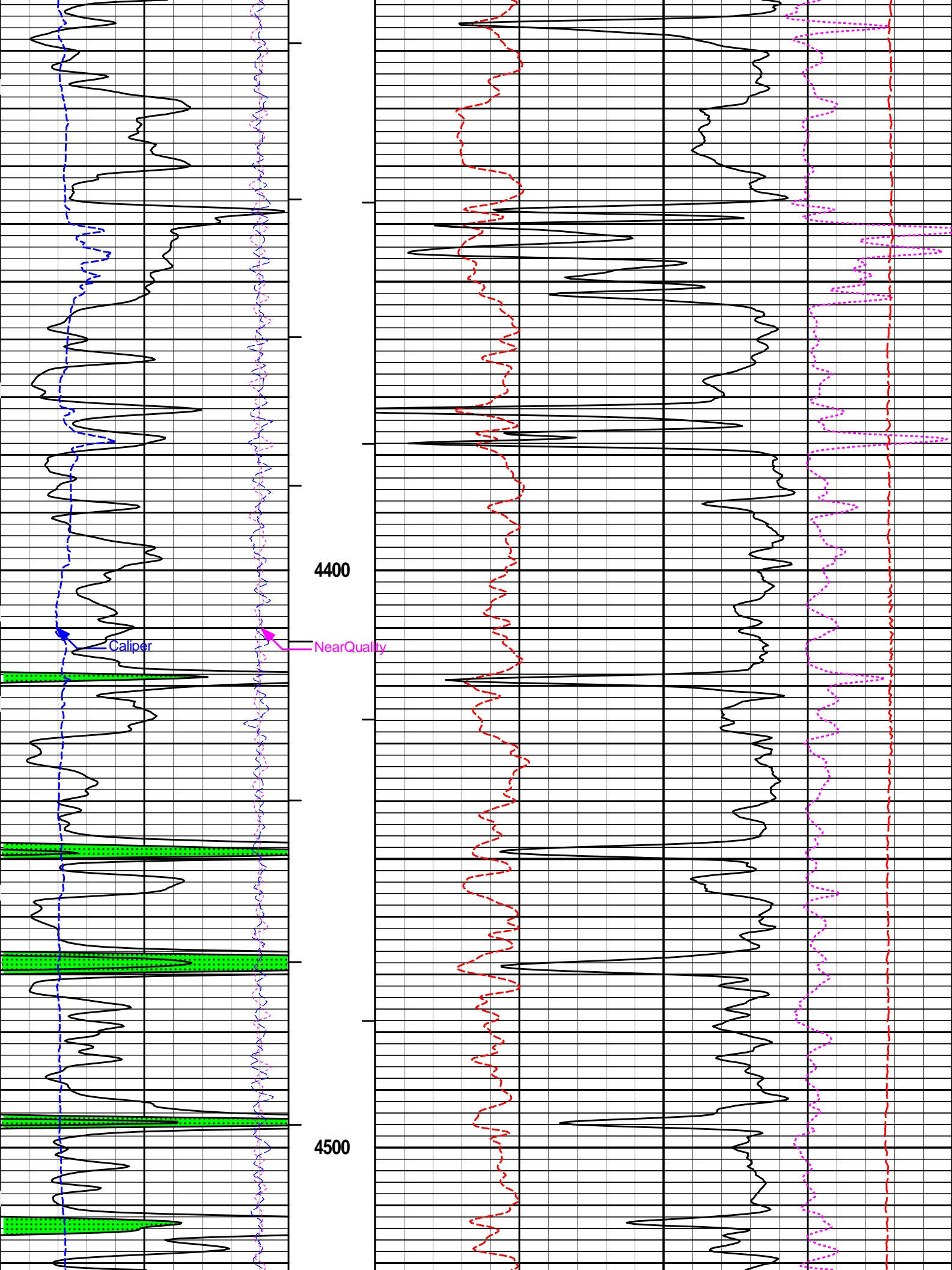
SHALE		
0	Gamma Ray api	150
18	FarQuality	-2
-18	NearQuality	2
6	Caliper inches	16

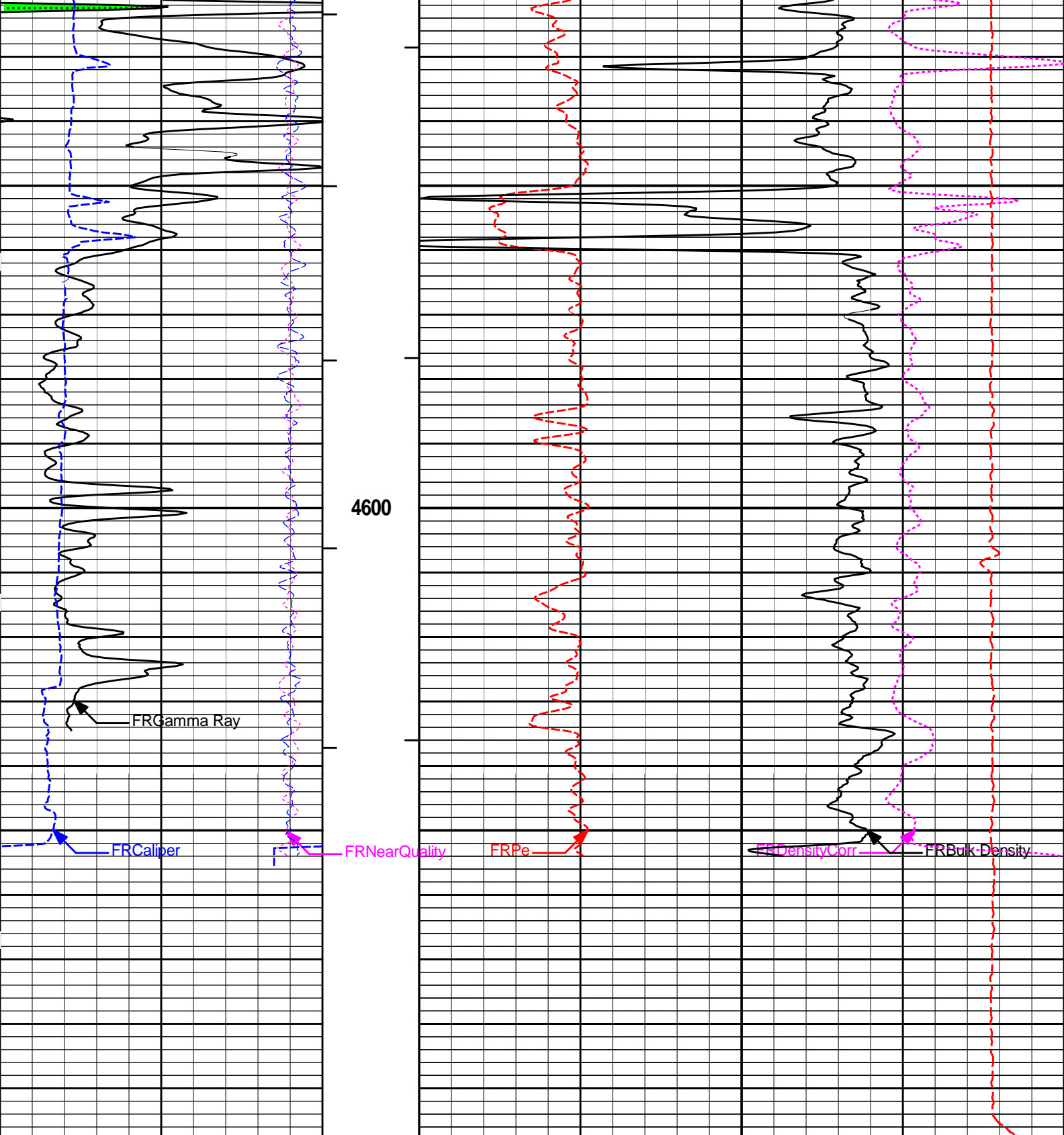
BH ft3	Bulk Density		3
	g/cc		
AHV ft3	15K	Tension	0
		pounds	
MD 1 : 240 ft	0	Pe	10
	-0.25	DensityCorr	0.25
		g/cc	











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

SHALE

HALLIBURTON

Plot Time: 11-Feb-14 20:53:35
Plot Range: 3690 ft to 4699.33 ft
Data: CRAIG_1-35\Well Based\DETAIL\
Plot File: \\-LOCAL-\CRAIG_1-35\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BMPORO\BULKD_5_MAIN_LIB

5 INCH MAIN LOG

HALLIBURTON

Plot Time: 11-Feb-14 20:53:35
Plot Range: 4400 ft to 4698.42 ft
Data: CRAIG_1-35\Well Based\REPEAT\
Plot File: \\-LOCAL-\CRAIG_1-35\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BMPORO\BULKD_5_REP_LIB

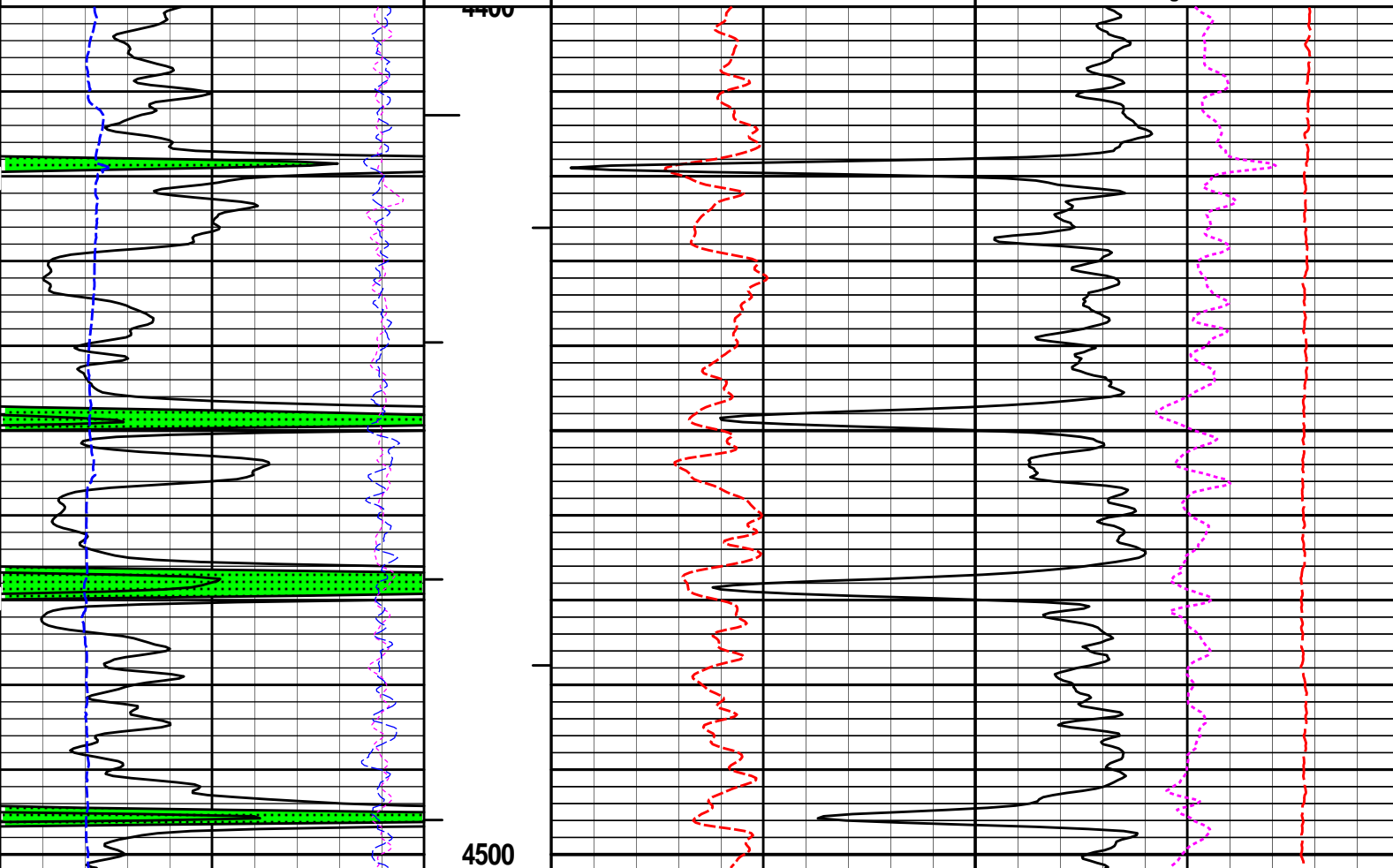
REPEAT SECTION

SHALE

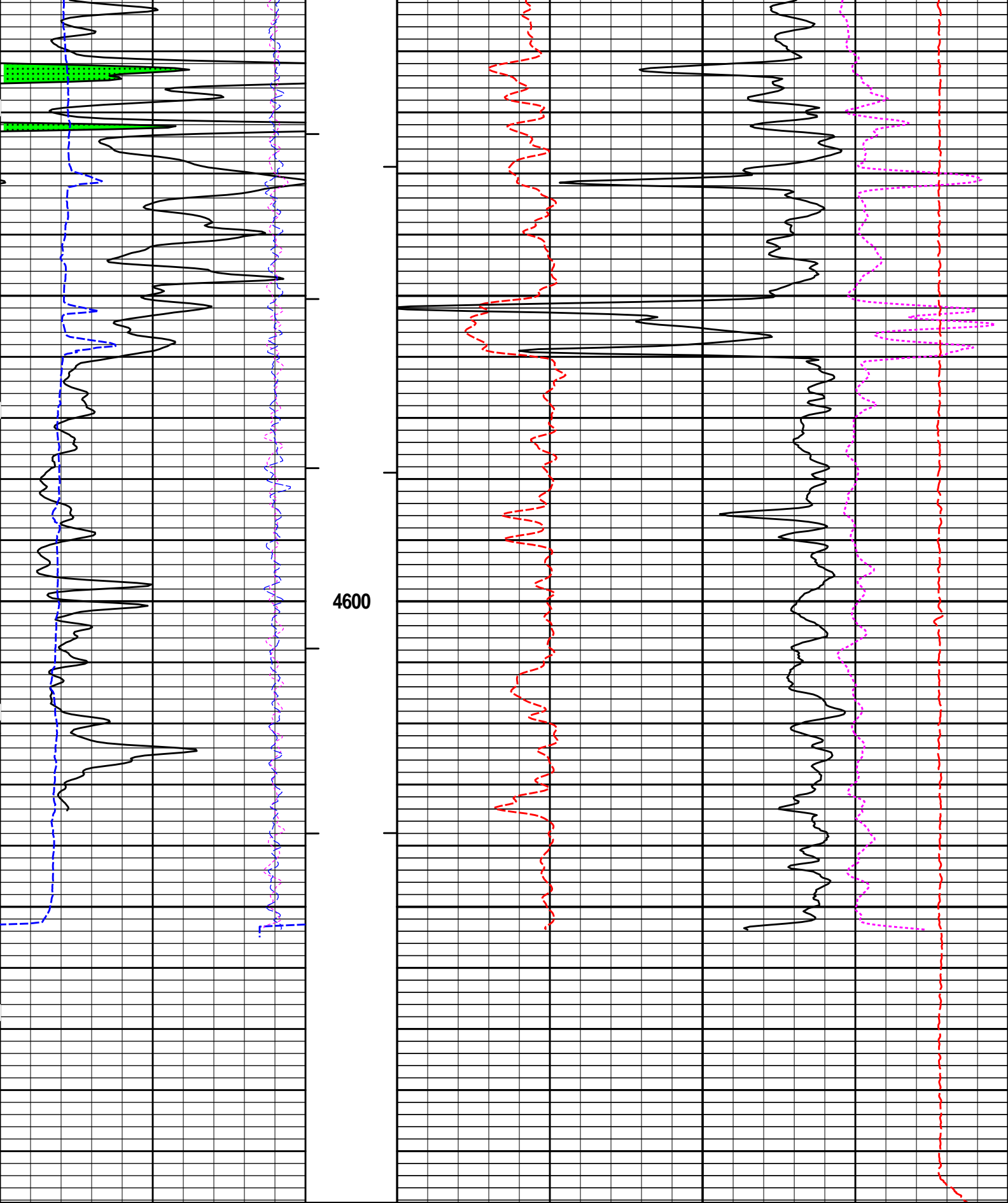
0 Gamma Ray 150
api
18 FarQuality -2
NearQuality 2
Caliper 16
inches

BHV
ft3
AHV
ft3
MD
1 : 240
ft

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



4500



4600

<p>6</p> <p>Caliper</p> <p>inches</p> <p>16</p>	<p>MD</p> <p>1 : 240</p> <p>ft</p>	<p>0</p> <p>Pe</p> <p>10</p>	<p>-0.25</p> <p>DensityCorr</p> <p>g/cc</p> <p>0.25</p>
<p>-18</p> <p>NearQuality</p> <p>2</p>	<p>AHV</p> <p>ft3</p>	<p>15K</p>	<p>Tension</p> <p>pounds</p> <p>0</p>

FarQuality	-2	BHV ft3	Bulk Density g/cc
0	Gamma Ray	150	
	api		
	SHALE		

HALLIBURTON

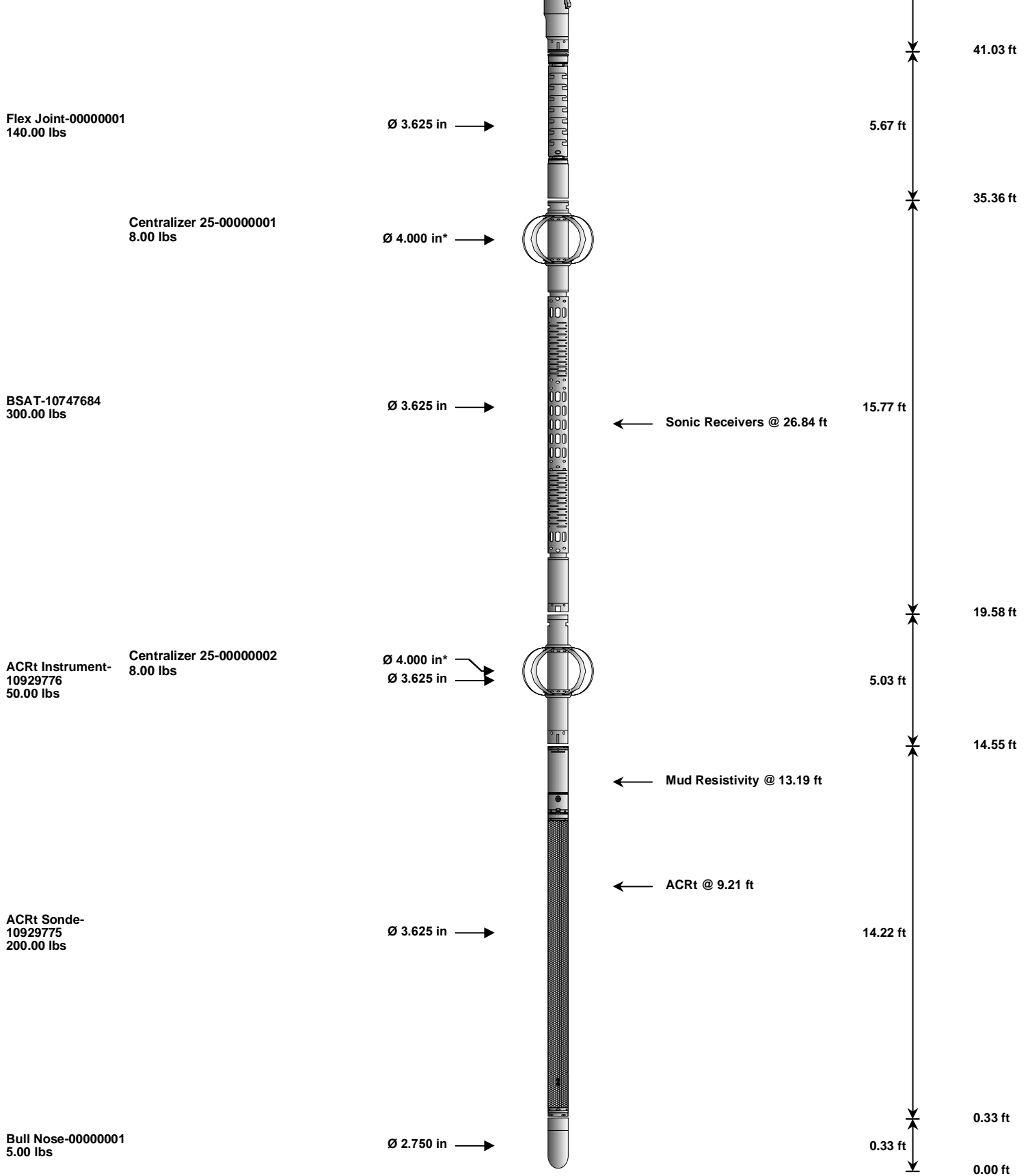
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 Plot File: \\-LOCAL-\CRAIG_1-35\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BMPORO\BULKD_5_REP_LIB

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
CH_HOS-HOSTILE 37.50 lbs		Ø 2.750 in →		← Temperature @ 75.79 ft	3.03 ft	76.82 ft
SP Sub-12345678 60.00 lbs		Ø 3.625 in →		← SP @ 72.01 ft	3.74 ft	73.79 ft
GTET-10748374 165.00 lbs		Ø 3.625 in →		← GammaRay @ 63.99 ft	8.52 ft	70.05 ft
DSNT-10735145 174.00 lbs	DSN Decentralizer- 10755066 6.60 lbs	Ø 5.000 in* → Ø 3.625 in →		← DSN Far @ 54.59 ft ← DSN Near @ 53.84 ft	9.69 ft	61.53 ft
SDLT-10673803 360.00 lbs	SDLT Pad-10673790 65.00 lbs Microlog Pad-10673803 8.00 lbs	Ø 4.500 in → Ø 4.750 in* → Ø 4.750 in* →		← Microlog @ 44.03 ft ← SDL Caliper @ 43.84 ft ← SDL @ 43.83 ft	10.81 ft	51.84 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	HOSTILE	37.50	3.03	73.79	300.00
SP	SP Sub	12345678	60.00	3.74	70.05	300.00
GTET	Gamma Telemetry Tool	10748374	165.00	8.52	61.53	60.00
DSNT	Dual Spaced Neutron	10735145	174.00	9.69	51.84	60.00
DCNT	DSN Decentralizer	10755066	6.60	5.13	55.17	300.00
SDLT	Spectral Density Tool	10673803	360.00	10.81	41.03	60.00
MICP	Microlog Pad	10673803	8.00	1.00	43.53	60.00
SDLP	Density Insite Pad	10673790	65.00	2.55	43.24	60.00
FLEX	Flex Joint	00000001	140.00	5.67	35.36	300.00
BSAT	Borehole Sonic Array Tool	10747684	300.00	15.77	19.58	60.00
ACRT	ACRT Instrument	10929776	50.00	5.03	14.55	60.00
ACRT	ACRT Sonde	10929775	200.00	14.22	0.33	60.00
BULL	Bull Nose	00000001	5.00	0.33	0.00	60.00

BSA1	Borehole Sonic Array Tool	10747684	300.00	15.77	19.58	60.00
OBCEN	Centralizer - 25 in. Overbody	00000001	8.00	2.08 *	32.82	300.00
ACRt	Array Compensated True Resistivity Instrument Section	10929776	50.00	5.03	14.55	300.00
OBCEN	Centralizer - 25 in. Overbody	00000002	8.00	2.08 *	16.30	300.00
ACRt	Array Compensated True Resistivity Sonde Section	10929775	200.00	14.22	0.33	300.00
BLNS	Bull Nose	00000001	5.00	0.33	0.00	300.00
Total			1,587.10	76.82		

* Not included in Total Length and Length Accumulation.

Data: CRAIG_1-35\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BN\IDLE Date: 11-Feb-14 18:15:21

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 10748374 **Reference Calibration Date:** 25-Nov-13 16:08:30
Engineer: SHELDON INGERSOLL **Calibration Date:** 03-Feb-14 18:18:39
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	44.9	44.5	api
Background + Calibrator	279.2	276.5	api
Calibrator	234.3	232.0	api

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 10735145 **Reference Calibration Date:** 09-Jan-14 12:49:09
Engineer: THOMAS HYDE **Calibration Date:** 09-Jan-14 13:02:38
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: 08910
 Calibration Tank Water Temperature: 60 degF
 Min. Tool Housing Outside Diameter: 3.620 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.959	0.959	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)				
Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change	Control Limit On Change
Porosity (dec):	0.2106	0.2106	0.0000	+/- 0.0020
Calibrated Ratio:	9.72	9.72	0.001	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (dec):	0.0658	0.02000 - 0.09000

PASS/FAIL SUMMARY

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

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	SDLT - 10673803	Reference Calibration Date:	01-Jan-70 00:00:00
Engineer:	THOMAS HYDE	Calibration Date:	09-Jan-14 09:05:08
Software Version:	WL INSITE R3.8.4 (Build 5)	Calibration Version:	1
Host Tool Name:	DSNT - 10735145		

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-4027.93	-4027.93	-7000.00 - -1000.00
Pad Gain	0.0003815	0.0003815	0.000200 - 0.000600
Arm Offset	-4150.02	-4150.02	-5000.00 - 3000.00
Arm Gain	0.0004265	0.0004265	0.000300 - 0.000700
Arm Power	0.000000860	0.000000860	-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)	2.00	2.00	0.00	+/- 0.20
Medium Ring (in)	3.75	3.75	0.00	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.50	6.50	0.00	+/- 0.20
Medium Ring (in)	8.25	8.25	0.00	+/- 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
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SPECTRAL DENSITY SHOP CALIBRATION

Tool Name:	SDLT Pad - 10673790	Reference Calibration Date:	09-Jan-14 11:16:09
Engineer:	THOMAS HYDE	Calibration Date:	09-Jan-14 11:34:29
Software Version:	WL INSITE R3.8.4 (Build 5)	Calibration Version:	1

Logging Source S/N: 5073GW

Aluminum Block S/N: LIBERAL ALUMINUM

Density: 2.598g/cc

Pe: 3.170

Magnesium Block S/N: LIBERAL MAG BLOCK

Density: 1.684g/cc

Pe: 2.598

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0151	1.0127	0.90 - 1.10
Near Dens Gain	1.0082	1.0048	0.90 - 1.10
Near Peak Gain	1.0023	1.0081	0.90 - 1.10
Near Lith Gain	0.9707	0.9824	0.90 - 1.10
Far Bar Gain	1.0100	1.0088	0.90 - 1.10

Far Dens Gain	0.9959	0.9953	0.90 - 1.10
Far Peak Gain	0.9883	0.9855	0.90 - 1.10
Far Lith Gain	0.9575	0.9565	0.90 - 1.10
Near Bar Offset	0.1129	0.1333	NONE
Near Dens Offset	0.1711	0.2001	NONE
Near Peak Offset	0.2234	0.1746	NONE
Near Lith Offset	0.4658	0.3697	NONE
Far Bar Offset	0.0878	0.0985	NONE
Far Dens Offset	0.1788	0.1844	NONE
Far Peak Offset	0.1930	0.2172	NONE
Far Lith Offset	0.3456	0.3534	NONE
Near Bar Background	852.85	852.08	700 - 1450
Near Dens Background	277.69	278.65	230 - 480
Near Peak Background	121.60	123.11	100 - 210
Near Lith Background	151.48	150.74	125 - 260
Far Bar Background	573.91	571.65	450 - 900
Far Dens Background	225.08	225.65	175 - 345
Far Peak Background	88.87	89.49	70 - 140
Far Lith Background	92.72	93.78	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	2.583	2.561	-0.022	+/- 0.150
ALUMINUM				
Density (g/cc)	2.600	2.598	-0.002	+/- 0.01500
Pe	3.132	3.130	-0.002	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0002	+/- 0.0110	-0.0021	+/- 0.0140
Magnesium Block	0.0015	+/- 0.0110	-0.0005	+/- 0.0140
Aluminum Block	-0.0010	+/- 0.0110	0.0004	+/- 0.0140
Resolution	8.57	6.00 - 11.50	8.94	6.00 - 11.50
Internal Verifier(B+D+P+L)	1405	1200 - 2700	981	800 - 1700

PASS/FAIL SUMMARY

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

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-10748374						
Gamma Ray Calibrator	232.0	-----	-----	0.0	+/- 9.00	api
DSNT-10735145						
Snow-Block Porosity	0.0658	-----	-----	0.0000	+/- .-.-	decp
SDLT-10673803						
Pad Extension	3.75	-----	-----	0.00	+/-0.20	in
Ring Diameter	8.25	-----	-----	0.00	+/-0.20	in
SDLT Pad-10673790						
Near(B+D+P+L)	1404.575	-----	-----	0.000	+/-13.240	cps
Far(B+D+P+L)	980.571	-----	-----	0.000	+/-15.227	cps

Data: CRAIG_1-350001_SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BNIDLE Date: 11-Feb-14 18:19:17

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	9.700	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	2.000	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	4695.00	ft
	SHARED	BHT	Bottom Hole Temperature	200.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size Master Tool	NONE	
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
	Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GRSO	Gamma Tool Standoff	0.000	in
	GTET	GEOK	Process Gamma Ray EVR?	No	

GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
DSNT	DNTP	Temperature Correction Type	None	
DSNT	DPRS	DSN Pressure Correction Type	None	
DSNT	SHCO	View More Correction Options	No	
DSNT	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT Pad	DNOK	Process Density?	Yes	
SDLT Pad	DNOK	Process Density EVR?	No	
SDLT Pad	CB	Logging Calibration Blocks?	No	
SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	DTWN	Disable temperature warning	No	
SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
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	Wyllie	
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

Data: CRAIG_1-35\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BNIDLE

Date: 11-Feb-14 18:18:30

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	Downhole Tension	0.00	BLK	0.000
SP Sub				
PLTC	Plot Control Mask	72.01	NO	
SP	Spontaneous Potential	72.01	BLK	1.250

SPR	Raw Spontaneous Potential	72.01	NO	
SPO	Spontaneous Potential Offset	72.01	NO	
GTET				
TPUL	Tension Pull	63.99	NO	
GR	Natural Gamma Ray API	63.99	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	63.99	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	63.99	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	53.74	NO	
RNDS	Near Detector Telemetry Counts	53.84	BLK	1.417
RFDS	Far Detector Telemetry Counts	54.59	TRI	0.583
DNTT	DSN Tool Temperature	53.84	NO	
DSNS	DSN Tool Status	53.74	NO	
ERND	Near Detector Telemetry Counts EVR	53.84	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	54.59	BLK	0.000
ENTM	DSN Tool Temperature EVR	53.84	NO	
SDLT				
TPUL	Tension Pull	43.84	NO	
PCAL	Pad Caliper	43.84	TRI	0.250
ACAL	Arm Caliper	43.84	TRI	0.250
BSAT				
TPUL	Tension Pull	26.84	NO	
STAT	Status	26.84	NO	
DLYT	Delay Time	26.84	NO	
SI	Sample Interval	26.84	NO	
TXRX	Raw Telemetry 10 Receivers	26.84	NO	
FRMC	Tool Frame Count	26.84	NO	
GMOD	Gain processing mode	19.58	NO	
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	43.83	NO	
NAB	Near Above	43.66	BLK	0.920
NHI	Near Cesium High	43.66	BLK	0.920
NLO	Near Cesium Low	43.66	BLK	0.920
NVA	Near Valley	43.66	BLK	0.920
NBA	Near Barite	43.66	BLK	0.920
NDE	Near Density	43.66	BLK	0.920
NPK	Near Peak	43.66	BLK	0.920
NLI	Near Lithology	43.66	BLK	0.920
NBAU	Near Barite Unfiltered	43.66	BLK	0.250
NLIU	Near Lithology Unfiltered	43.66	BLK	0.250
FAB	Far Above	44.01	BLK	0.250
FHI	Far Cesium High	44.01	BLK	0.250
FLO	Far Cesium Low	44.01	BLK	0.250
FVA	Far Valley	44.01	BLK	0.250
FBA	Far Barite	44.01	BLK	0.250
FDE	Far Density	44.01	BLK	0.250
FPK	Far Peak	44.01	BLK	0.250
FLI	Far Lithology	44.01	BLK	0.250
PTMP	Pad Temperature	43.84	BLK	0.920
NHV	Near Detector High Voltage	43.24	NO	

AHV	Far Detector High Voltage	43.24	NO
ITMP	Instrument Temperature	43.24	NO
DDHV	Detector High Voltage	43.24	NO

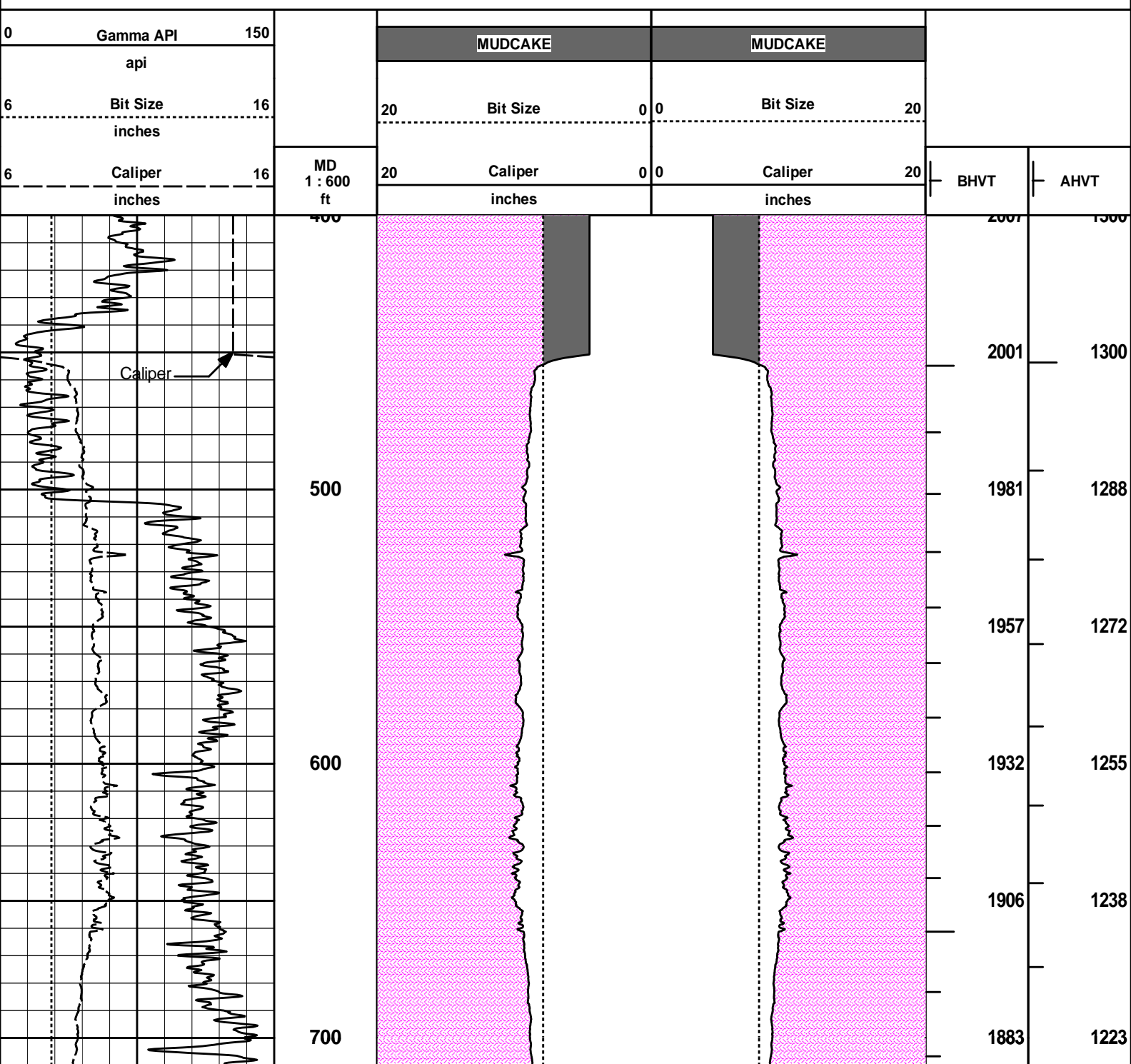
Microlog Pad

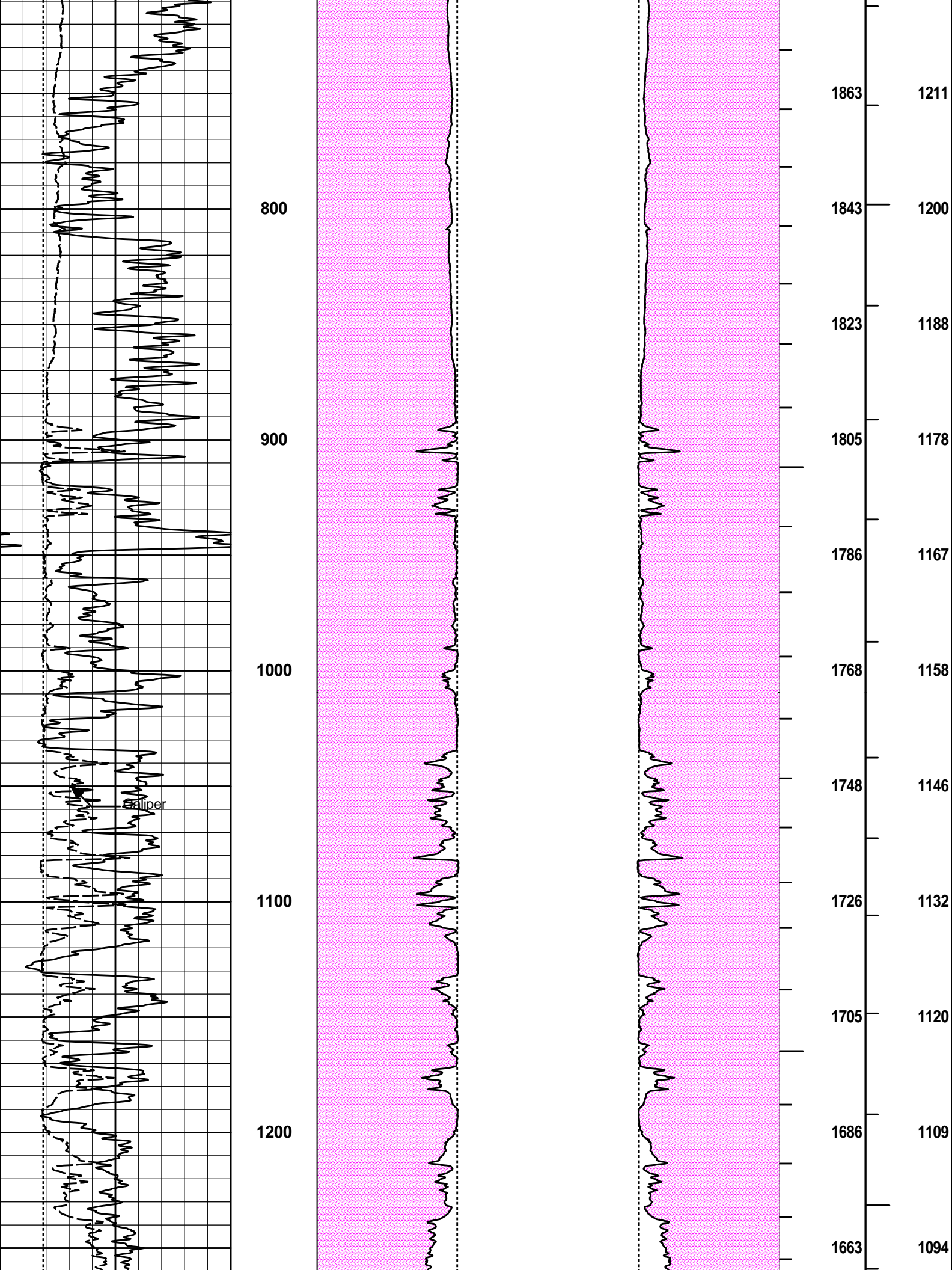
TPUL	Tension Pull	44.03	NO	
MINV	Microlog Lateral	44.03	BLK	0.750
MNOR	Microlog Normal	44.03	BLK	0.750

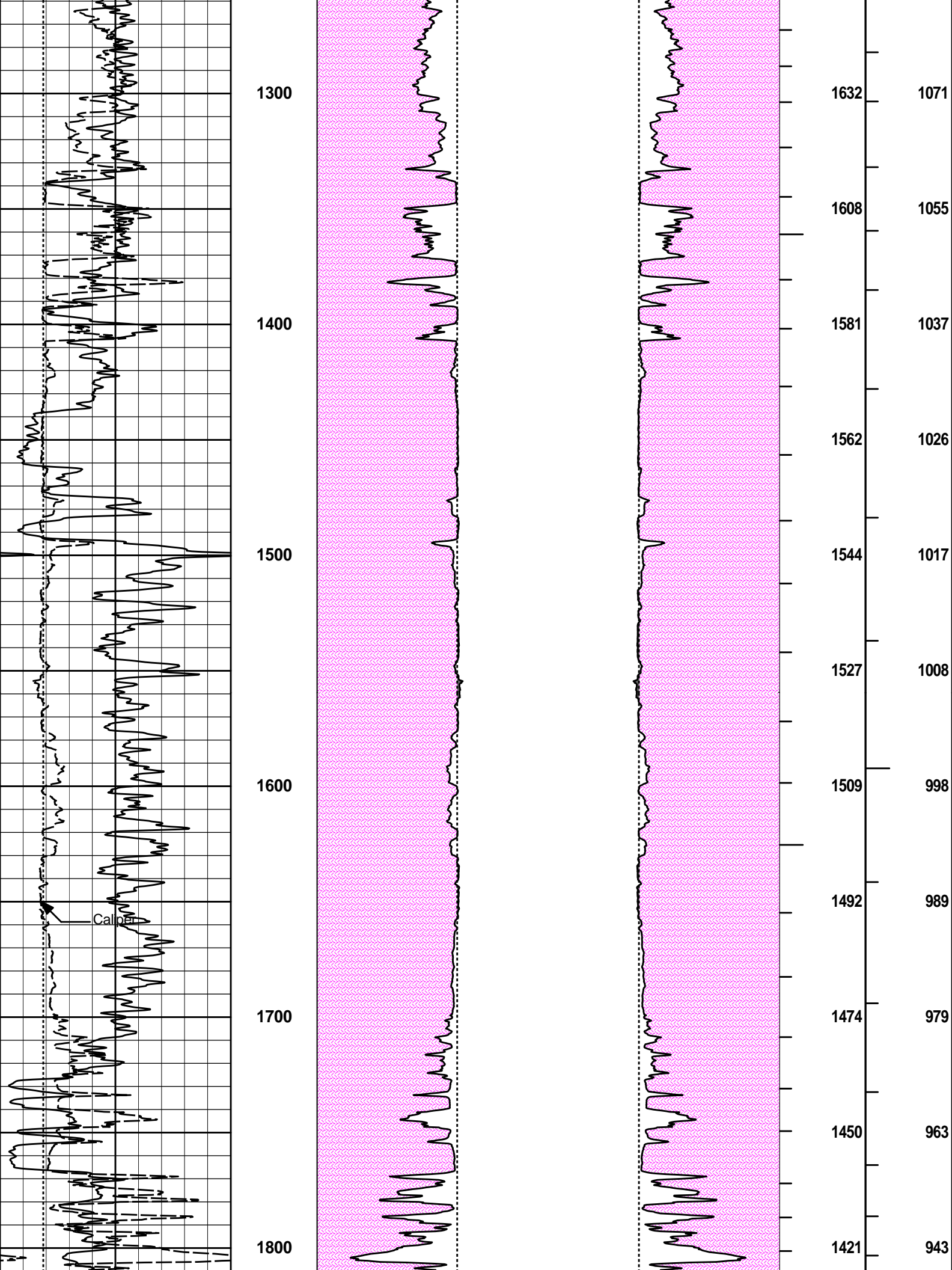
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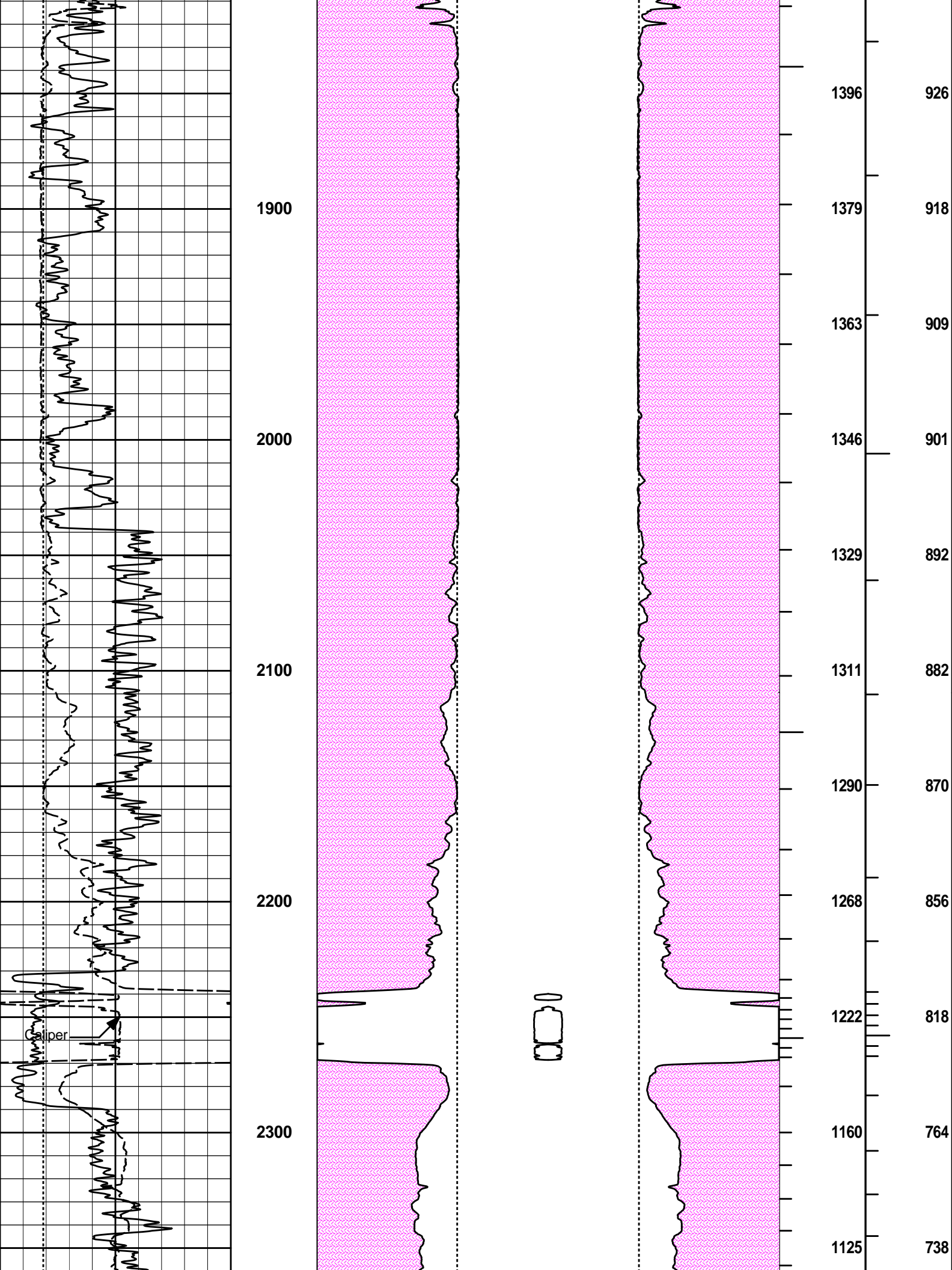
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Plot Range: 400 ft to 4699.33 ft
Data: CRAIG_1-35\Well Based\CASING\
Plot File: \\-LOCAL-\CRAIG_1-35\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BMPORO\AHV_2_IQ_LIB

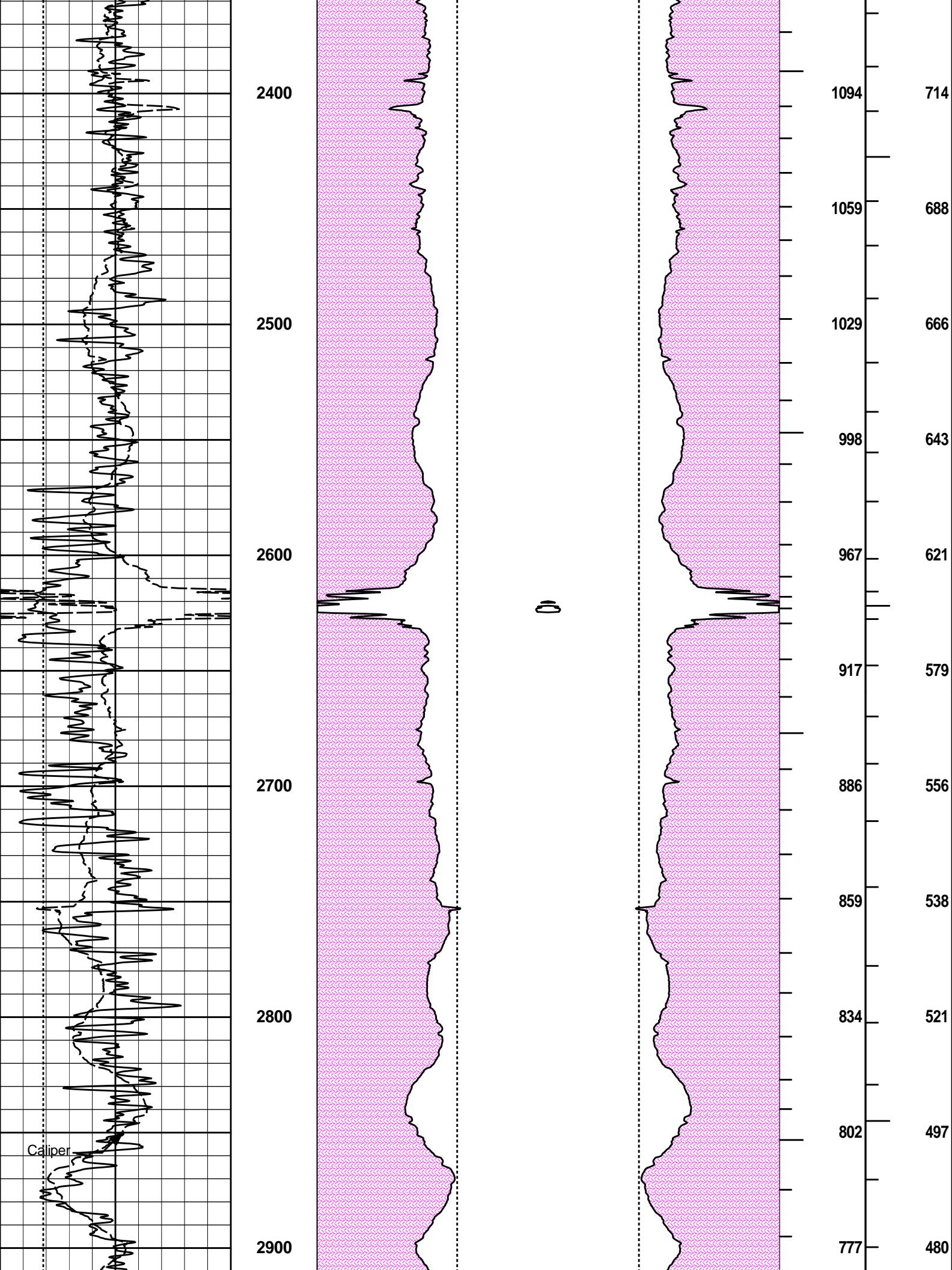
ANNULAR HOLE VOLUME PLOT

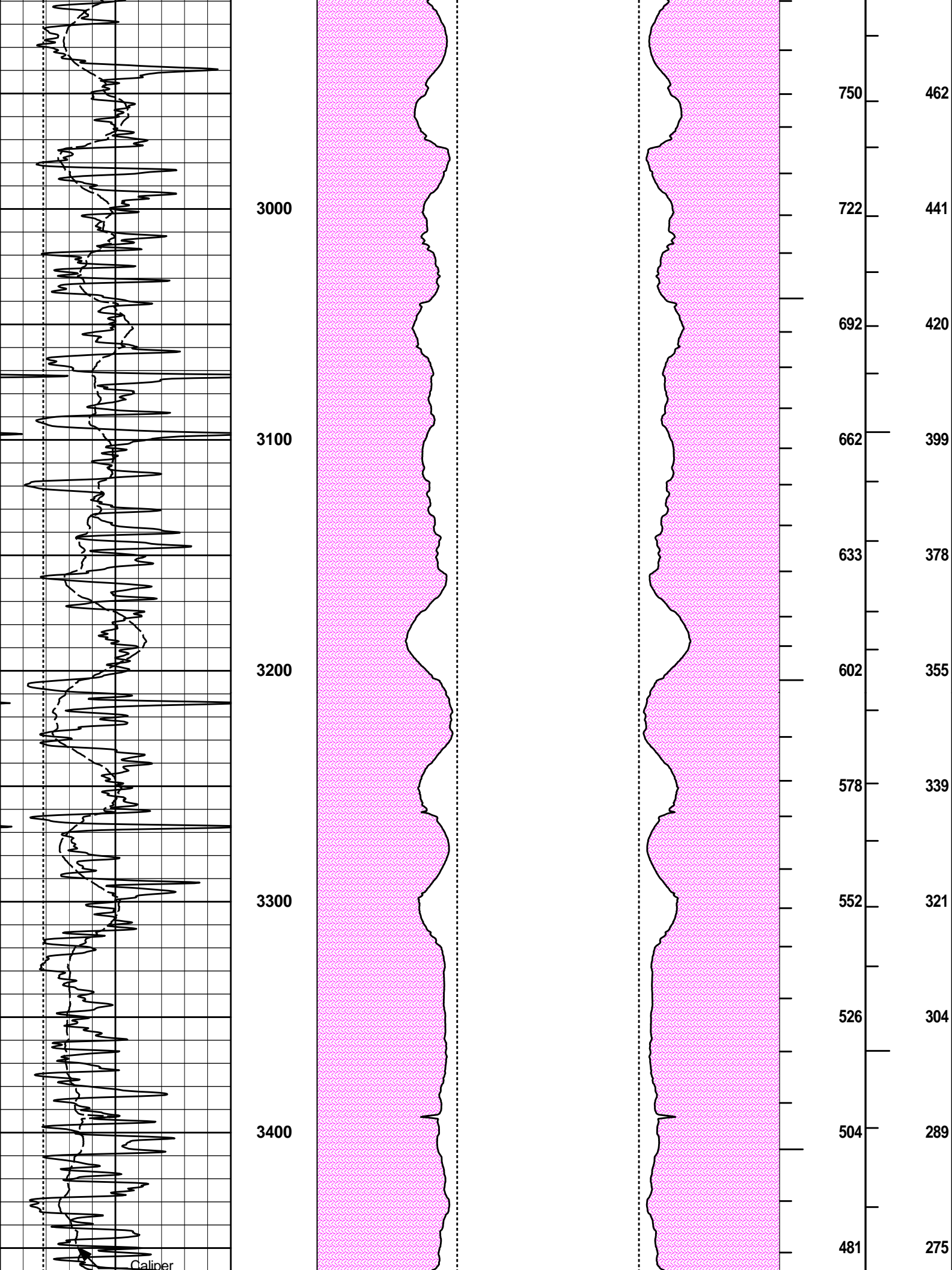


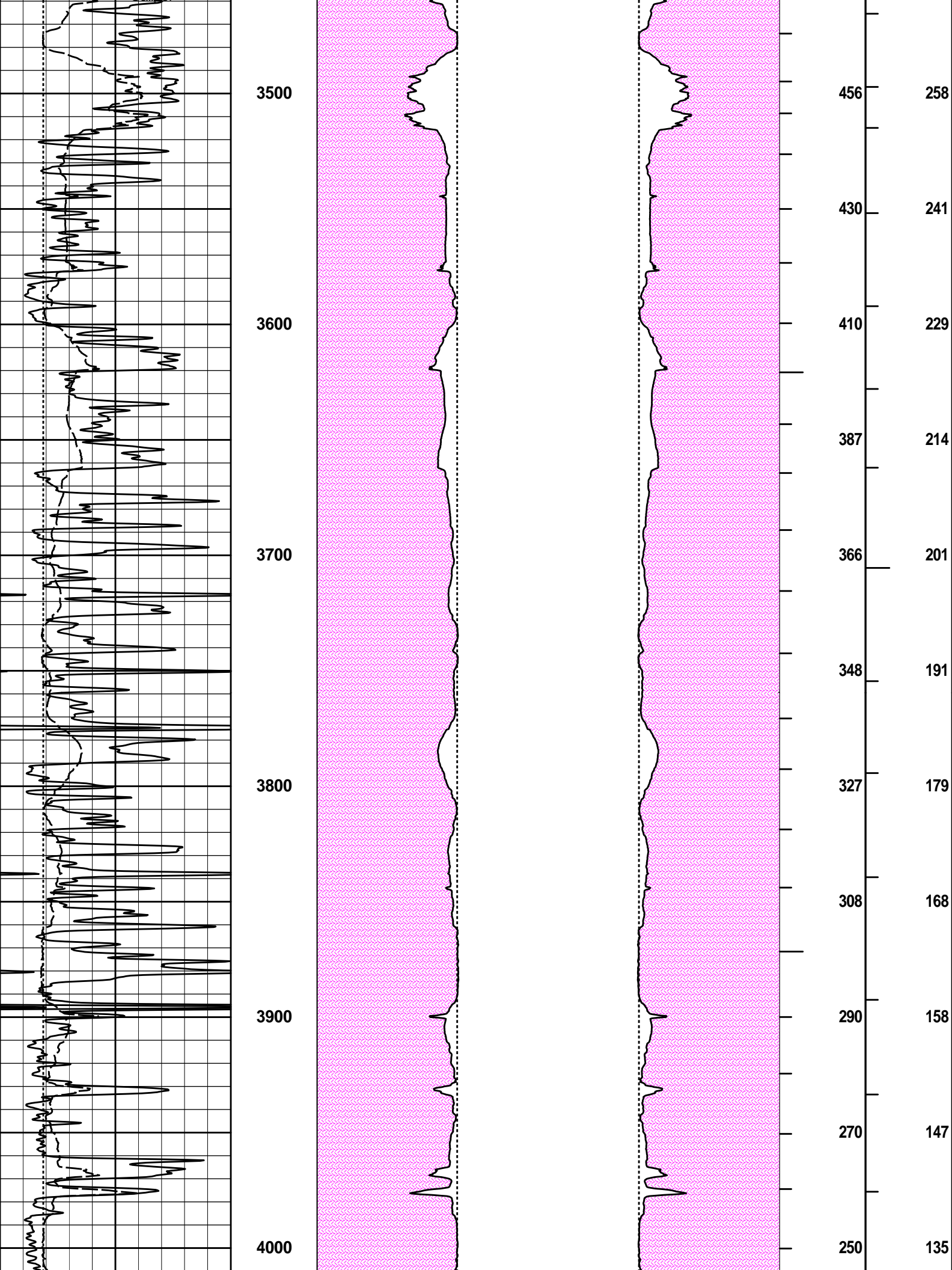


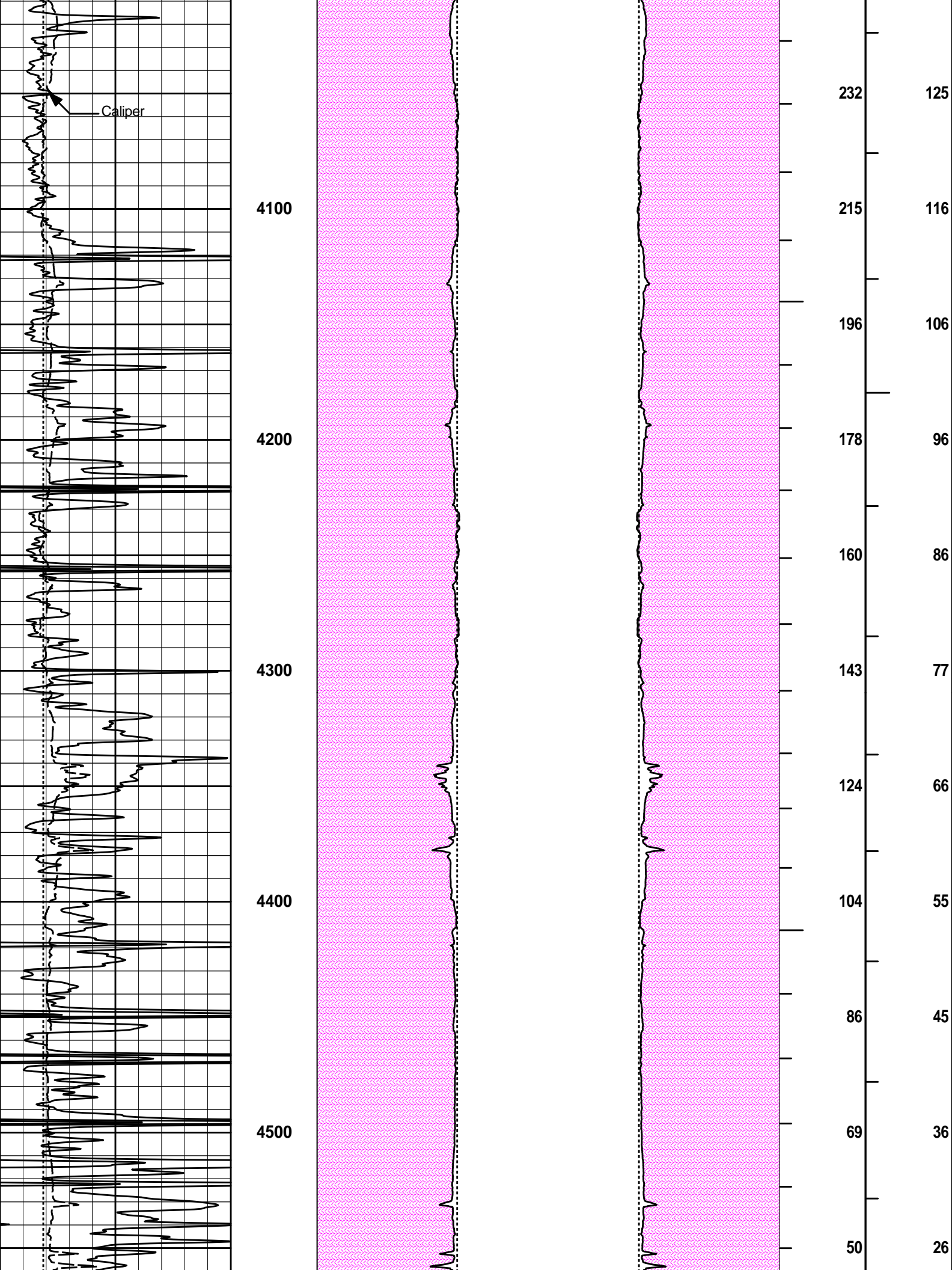












Caliper

4100

4200

4300

4400

4500

232

215

196

178

160

143

124

104

86

69

50

125

116

106

96

86

77

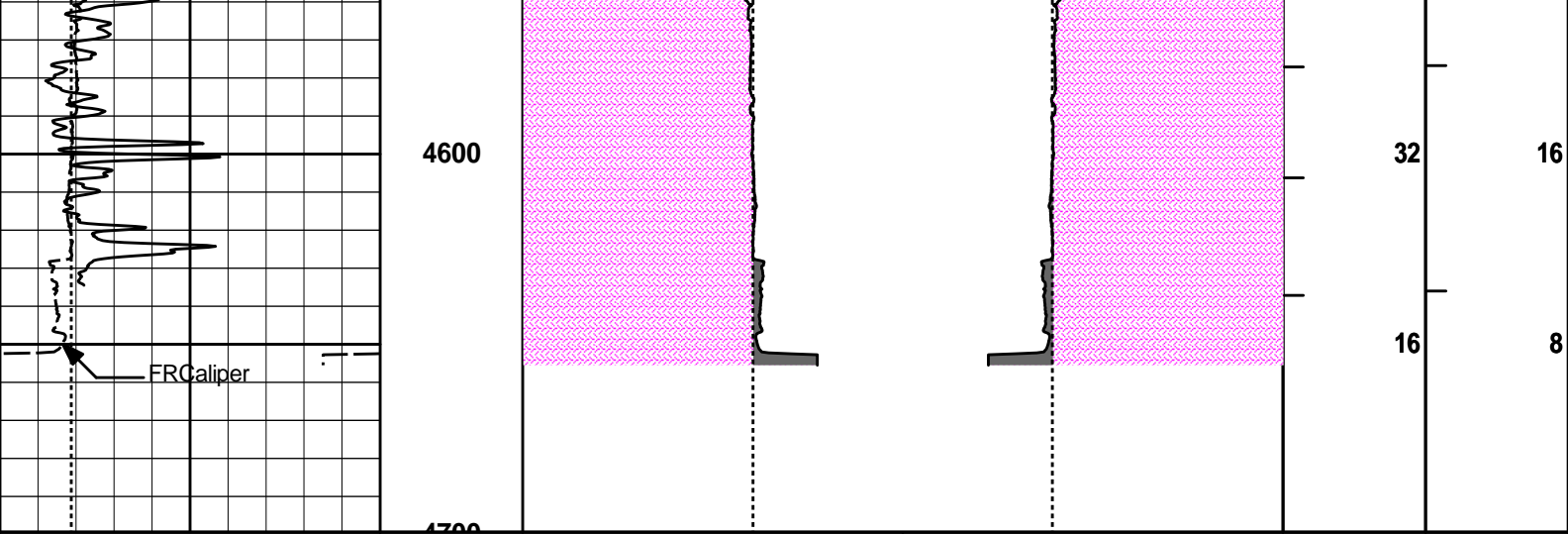
66

55

45

36

26



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

HALLIBURTON

Plot Time: 11-Feb-14 20:53:50
 Plot Range: 400 ft to 4699.33 ft
 Data: CRAIG_1-35\Well Based\CASING\
 Plot File: \\-LOCAL-\CRAIG_1-35\0001 SP-GTET-DSN-SDL-FLEX-BSAT-ACRT-BMPORO\AHV_2_IQ_LIB

ANNULAR HOLE VOLUME PLOT

COMPANY	BEREXCO LLC		
WELL	CRAIG 1-35		
FIELD	MANNING NW		
COUNTY	SCOTT	STATE	KANSAS

HALLIBURTON

SPECTRAL DENSITY
 DUAL SPACED NEUTRON
 LOG