

HALLIBURTON

DUAL SPACED NEUTRON
SPECTRAL DENSITY

COMPANY				BAYHORSE PETROLEUM, LLC			
WELL				TRADE WINDS 5-21			
FIELD/BLOCK				LEFT HAND			
COUNTY				KIOWA			
STATE				CO			
Permanent Datum				GL			
Log measured from				KB			
Drilling measured from				KB			
Date				12-Mar-15			
Run No.				ONE			
Depth - Driller				5210.00 ft			
Depth - Logger				5209.0 ft			
Bottom - Logged Interval				5207.0 ft			
Top - Logged Interval				50.0 ft			
Casing - Driller				8.625 in @ 422.0 ft			
Casing - Logger				420.0 ft			
Bit Size				7.875 in			
Type Fluid in Hole				Water Based Mud			
Density				9.2 ppg			
PH				10.00 pH			
Source of Sample				MUD TANK			
Rm @ Meas. Temperature				1.300 ohmm @ 69.70 degF			
Rmf @ Meas. Temperature				0.80 ohmm @ 66.80 degF			
Rmc @ Meas. Temperature				1.780 ohmm @ 65.20 degF			
Source Rmf				MEASURED			
Rm @ BHT				0.63 ohmm @ 151.0 degF			
Time Since Circulation				5.0 hr			
Time on Bottom				12-Mar-15 14:58:09.000			
Max. Rec. Temperature				151.0 degF @ 5209.0 ft			
Equipment				11871076			
Recorded By				B. RIDDEL			
Witnessed By				J. KLIJSEN			

COMPANY				BAYHORSE PETROLEUM, LLC			
WELL				TRADE WINDS 5-21			
FIELD/BLOCK				LEFT HAND			
COUNTY				KIOWA			
STATE				CO			
API No.				05061068950000			
Location				SURFACE HOLE LOCATION: 2276 FNL & 1293 FEL			
Sect.				21			
Twp.				18S			
Rge.				47W			
Elev.				4148.0 ft			
Other Services:				RWCH BSAT ACRT			
Elev. K.B.				4159.0 ft			
D.F.				4159.0 ft			
G.L.				4148.0 ft			

Latitude: 38.477655			
Longitude: 102.67990			

Elev. 4148.0 ft			
11.0 ft above perm. Datum			

G.L.			
4148.0 ft			

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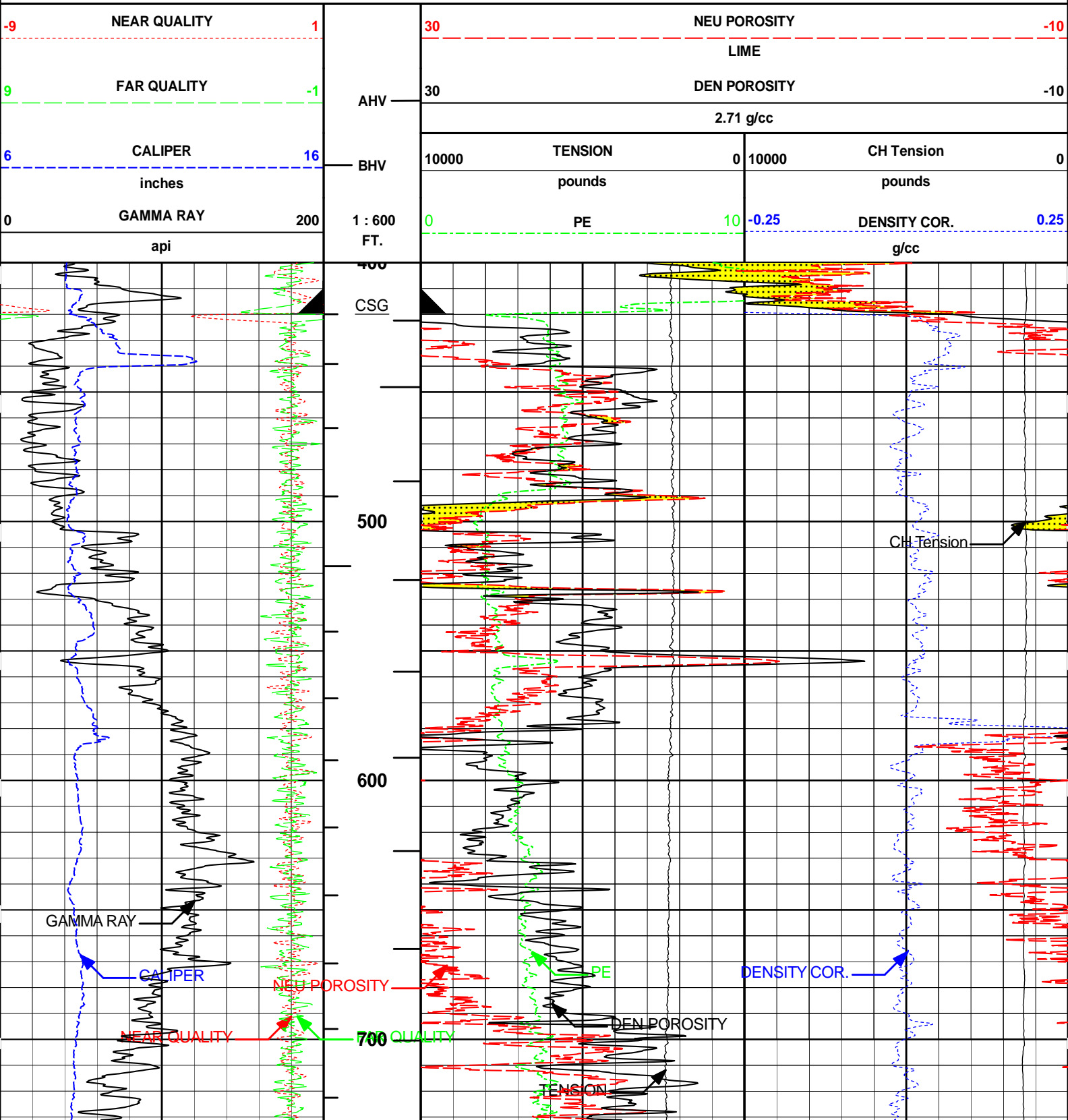
Service Ticket No.: 902218154				API Serial No.: 05061068950000				PGM Version: WL INSITE R4.6.0 (Build 4)							
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE						RESISTIVITY SCALE CHANGES									
Date		Sample No.				Type Log		Depth		Scale Up Hole		Scale Down Hole			
Depth-Driller															
Type Fluid 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.		@		@		ONE		ACRt		N/A		ECCENTERED		N/A	
Rmc @ Meas. Temp.		@		@				I-11585787							
Source Rmf		Rmc						S-11585797							
Rm @ BHT		@		@											
Rmf @ BHT		@		@											
Rmc @ BHT		@		@											
EQUIPMENT DATA															
GAMMA				ACOUSTIC				DENSITY				NEUTRON			
Run No.		ONE		Run No.		ONE		Run No.		ONE		Run No.		ONE	
Serial No.		11005602		Serial No.		10939054		Serial No.		10951300		Serial No.		10993888	
Model No.		GTET		Model No.		BSAT		Model No.		SDLT		Model No.		DSNT	
Diameter		3.625"		No. of Cent.		2		Diameter		4.5"		Diameter		3.625"	
Detector Model No.		GTET		Spacing		0.5'		Log Type		GAMMA-GAMMA		Log Type		NEU-THERM	
Type		SCINT						Source Type		Cs137		Source Type		Am241Be	
Length		8"		LSA [Y/N]		N		Serial No.		5153GW		Serial No.		DSN-388	
Distance to Source		9'		FWDA [Y/N]		N		Strength		1.5Ci		Strength		15Ci	
LOGGING DATA															

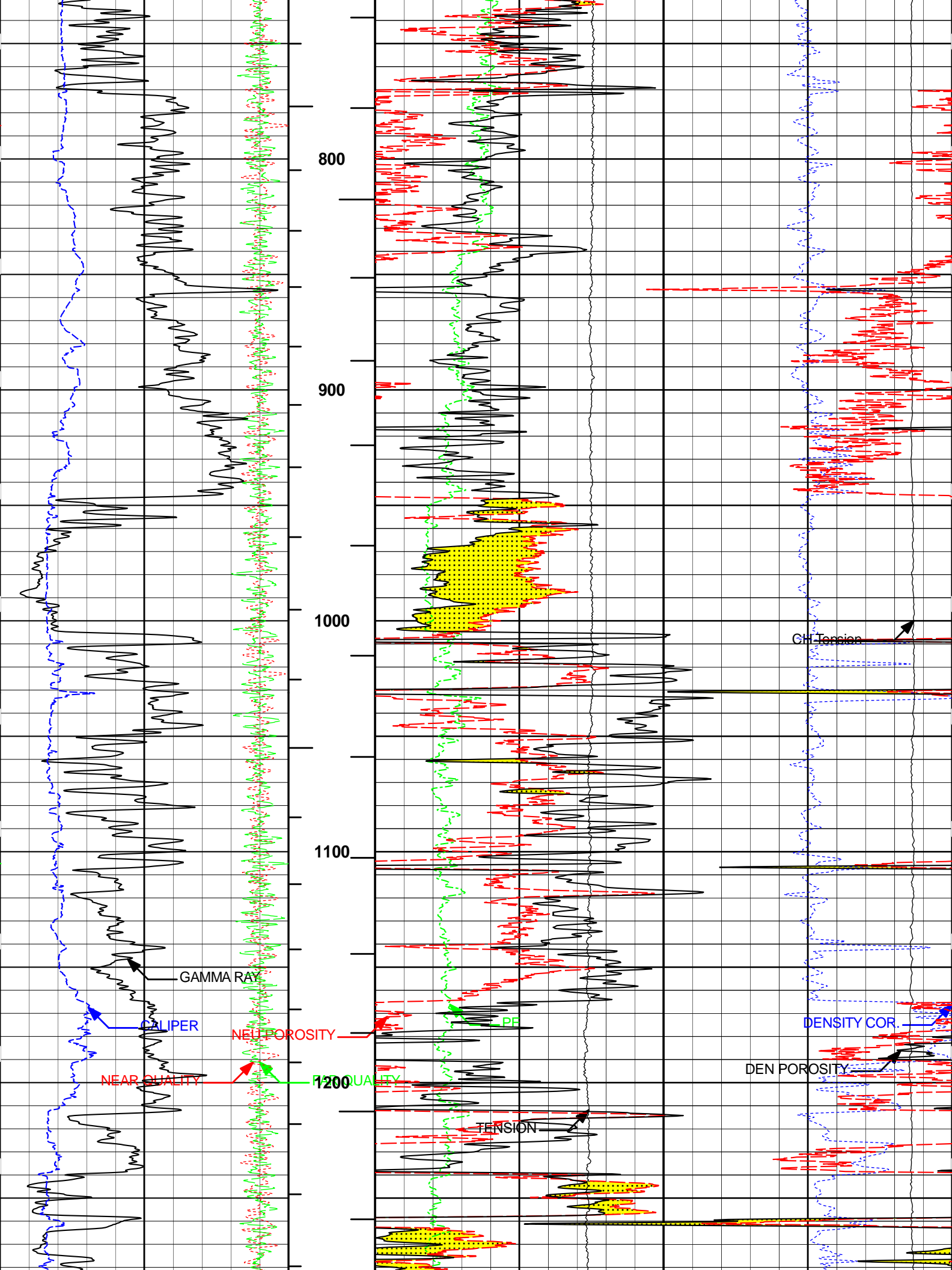
Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.200	ppg
	SHARED	WAGT	Weighting Agent	Barite	
	SHARED	BSAL	Borehole salinity	3000.00	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	69.7	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	4.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	5209.00	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	
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	
	Rwa / CrossPlot	AFAC	Archie A factor	0.6200	

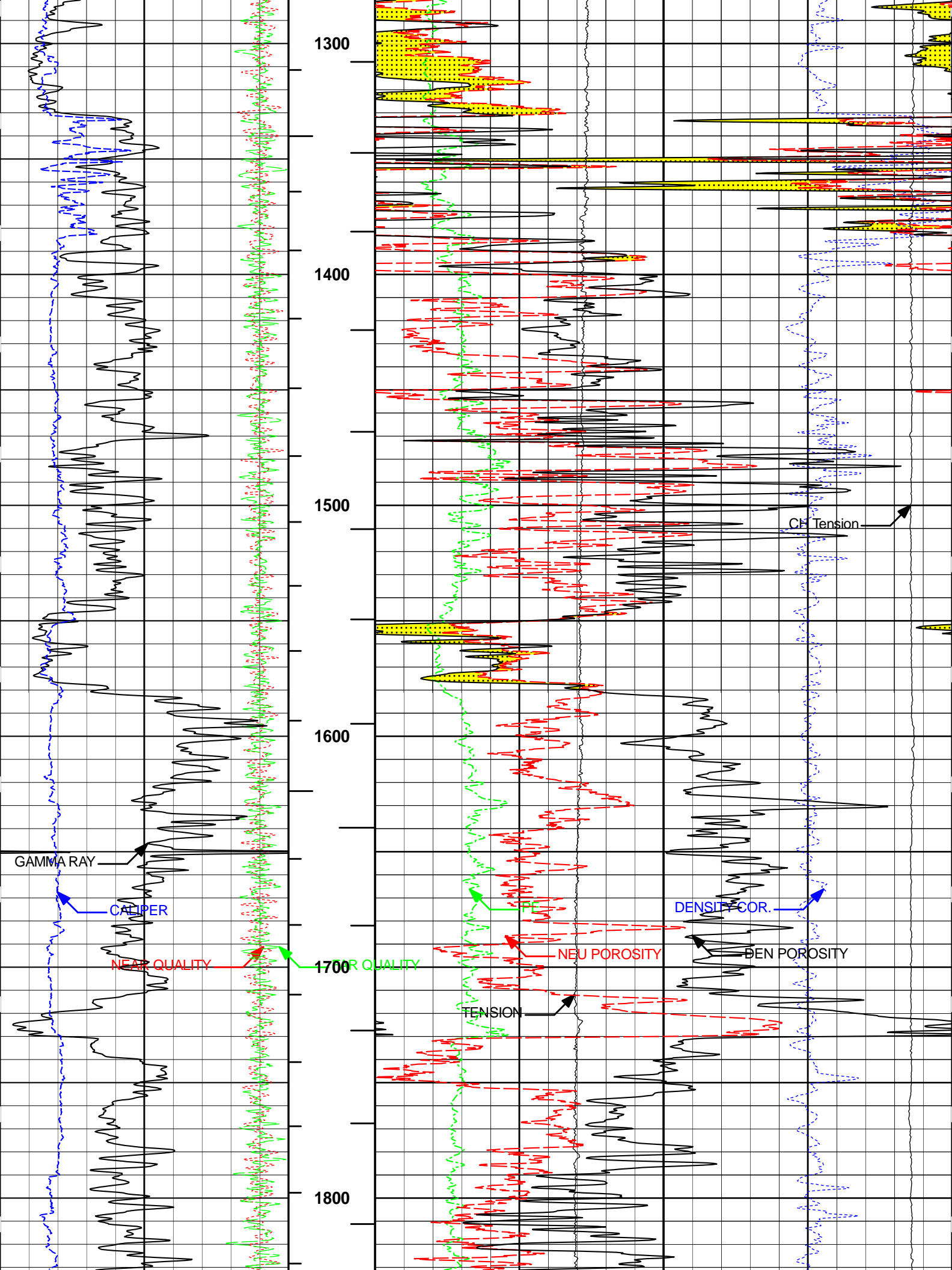
Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
Rwa / CrossPlot	BHSM	Borehole Size Source Tool	SDLT	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GRSO	Gamma Tool Standoff	0.250	in
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
GTET	BHSM	Borehole Size Source Tool	SDLT	
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	
DSNT	BHSM	Borehole Size Source Tool	SDLT	
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
SDLT Pad	BHSM	Borehole Size Source Tool	SDLT	
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	Limestone 47.5	
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	Centered	
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
ACRt Sonde	BHSM	Borehole Size Source Tool	SDLT	
ACRt Sonde	MBFL	Apply Corkscrew Effect?	No	

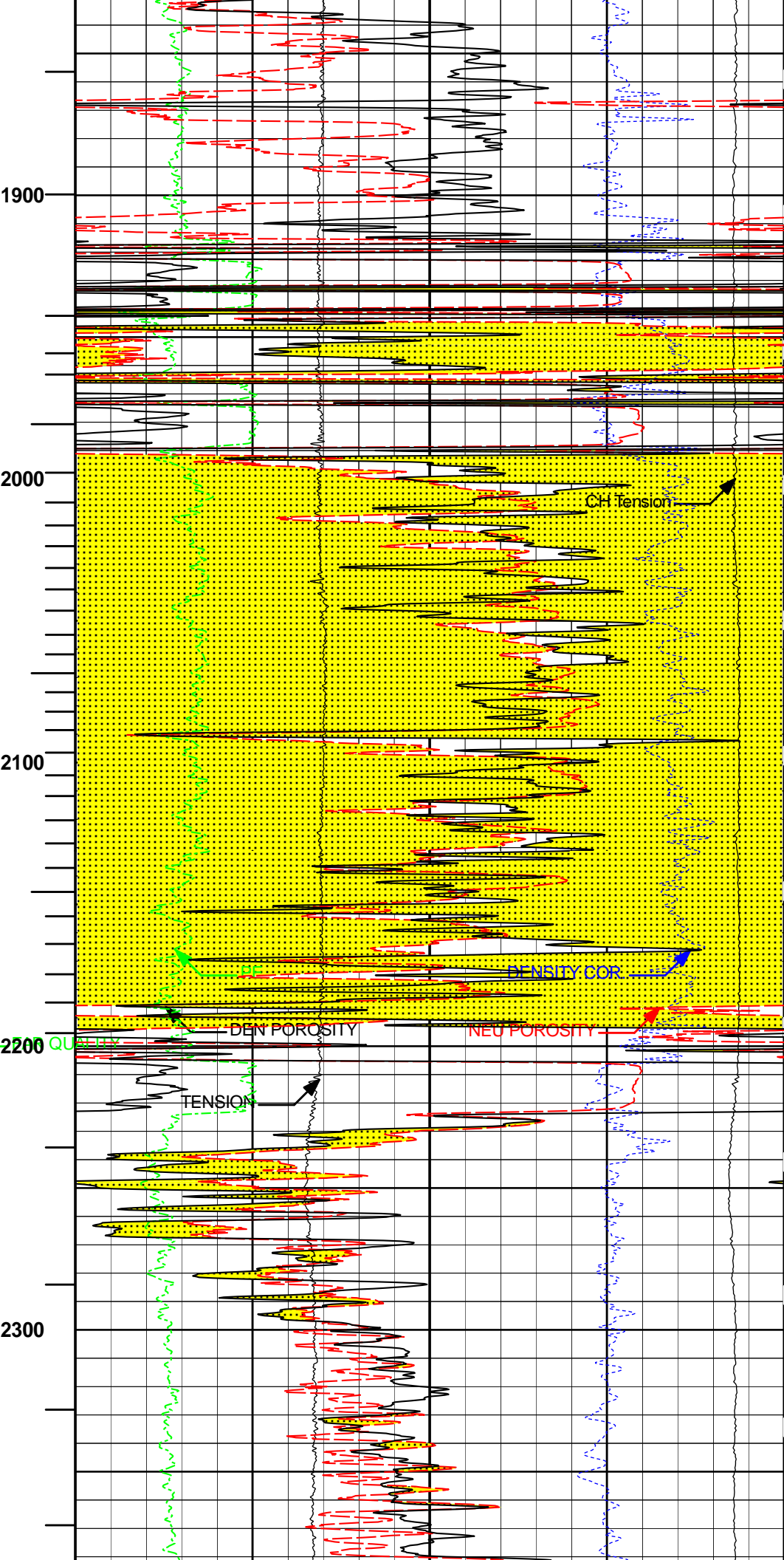
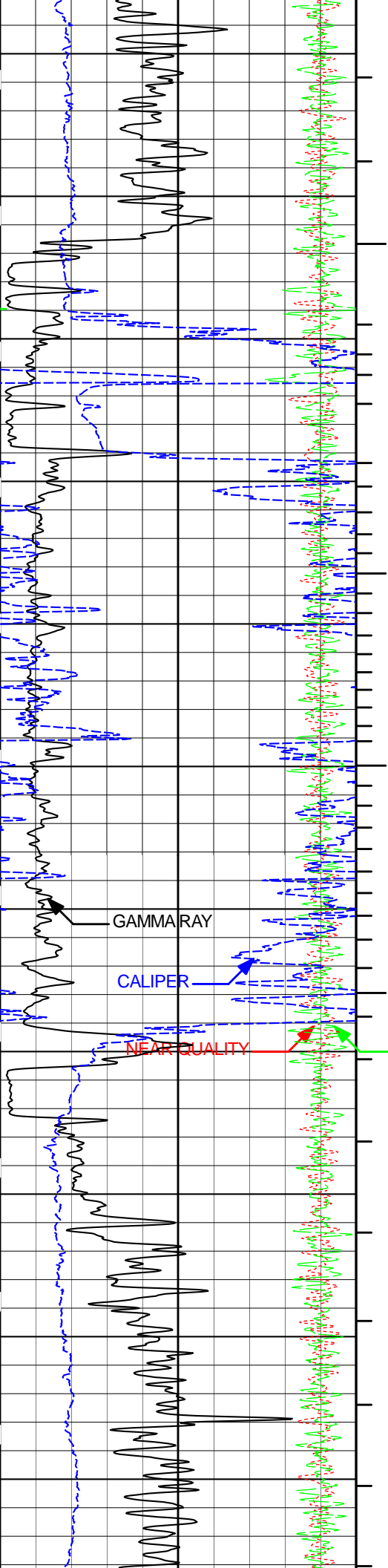
BOTTOM

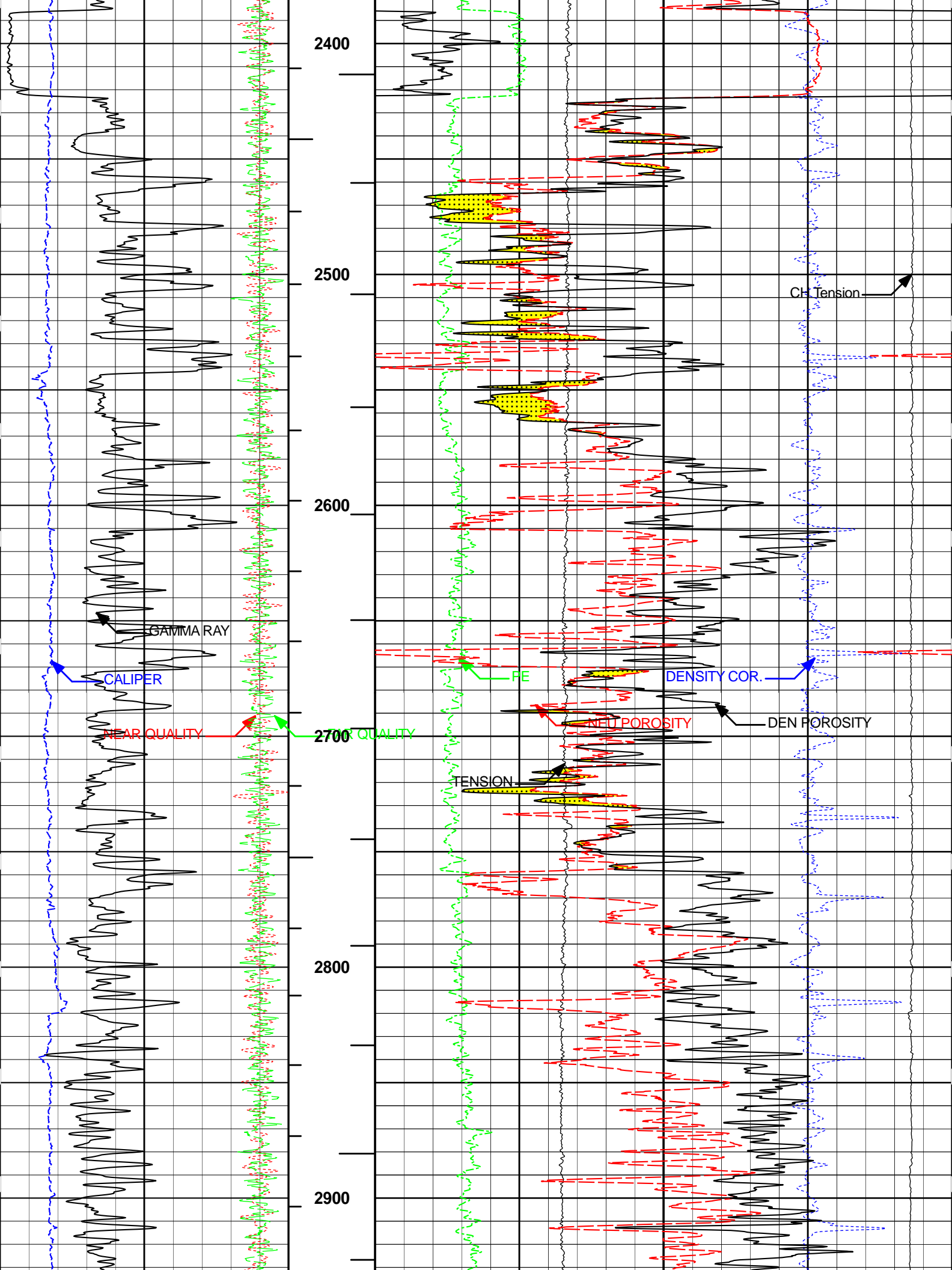
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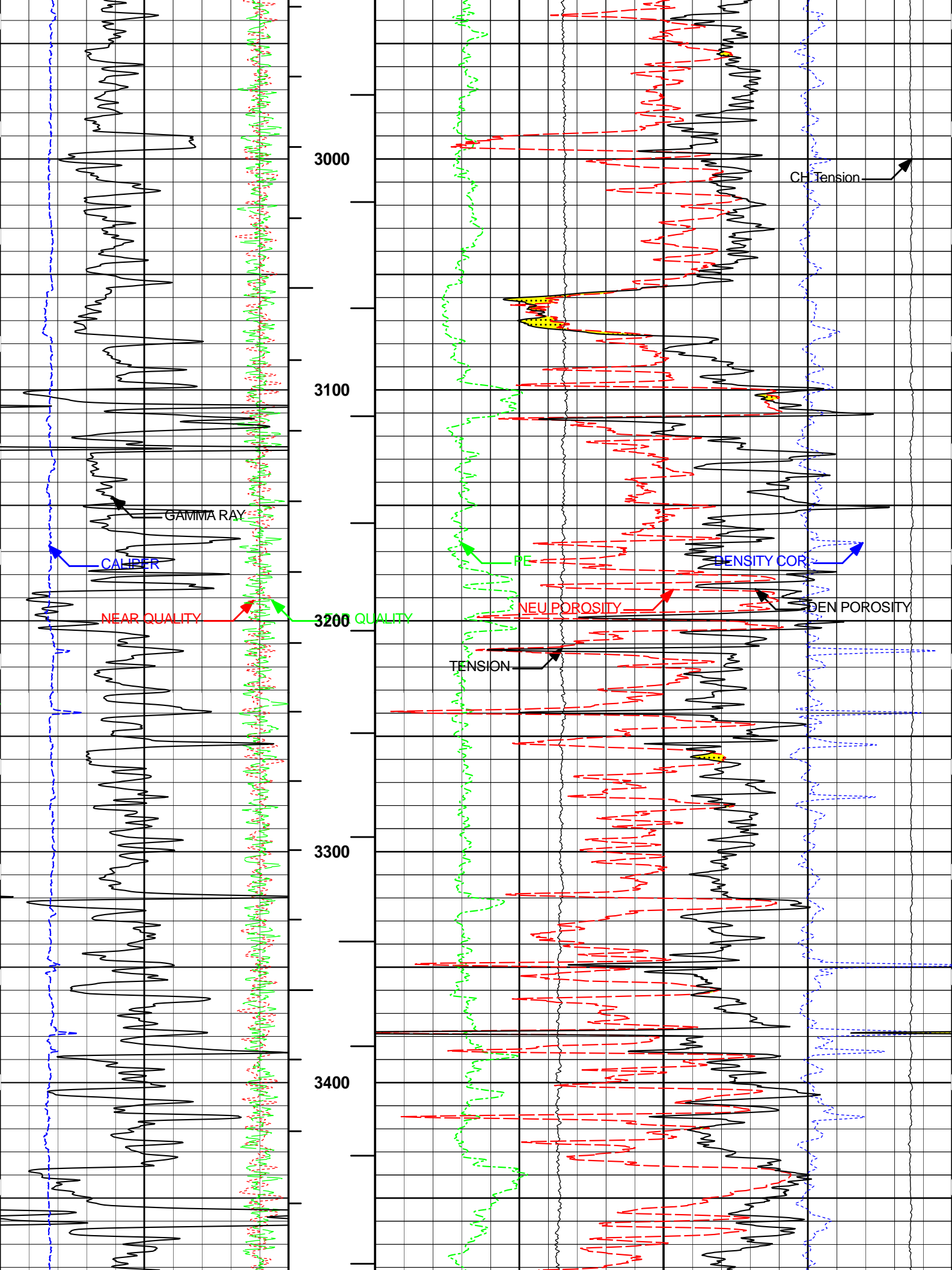


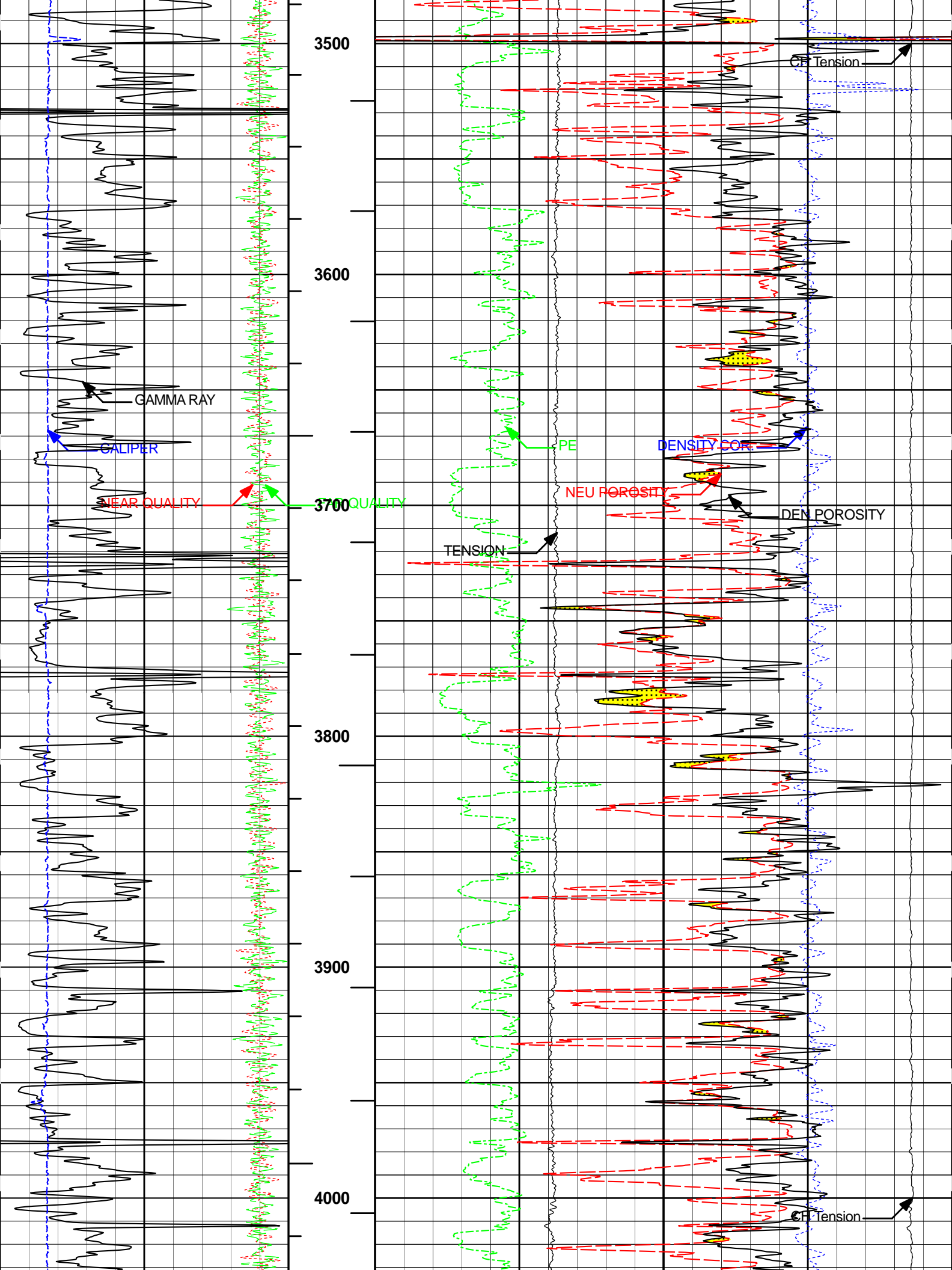


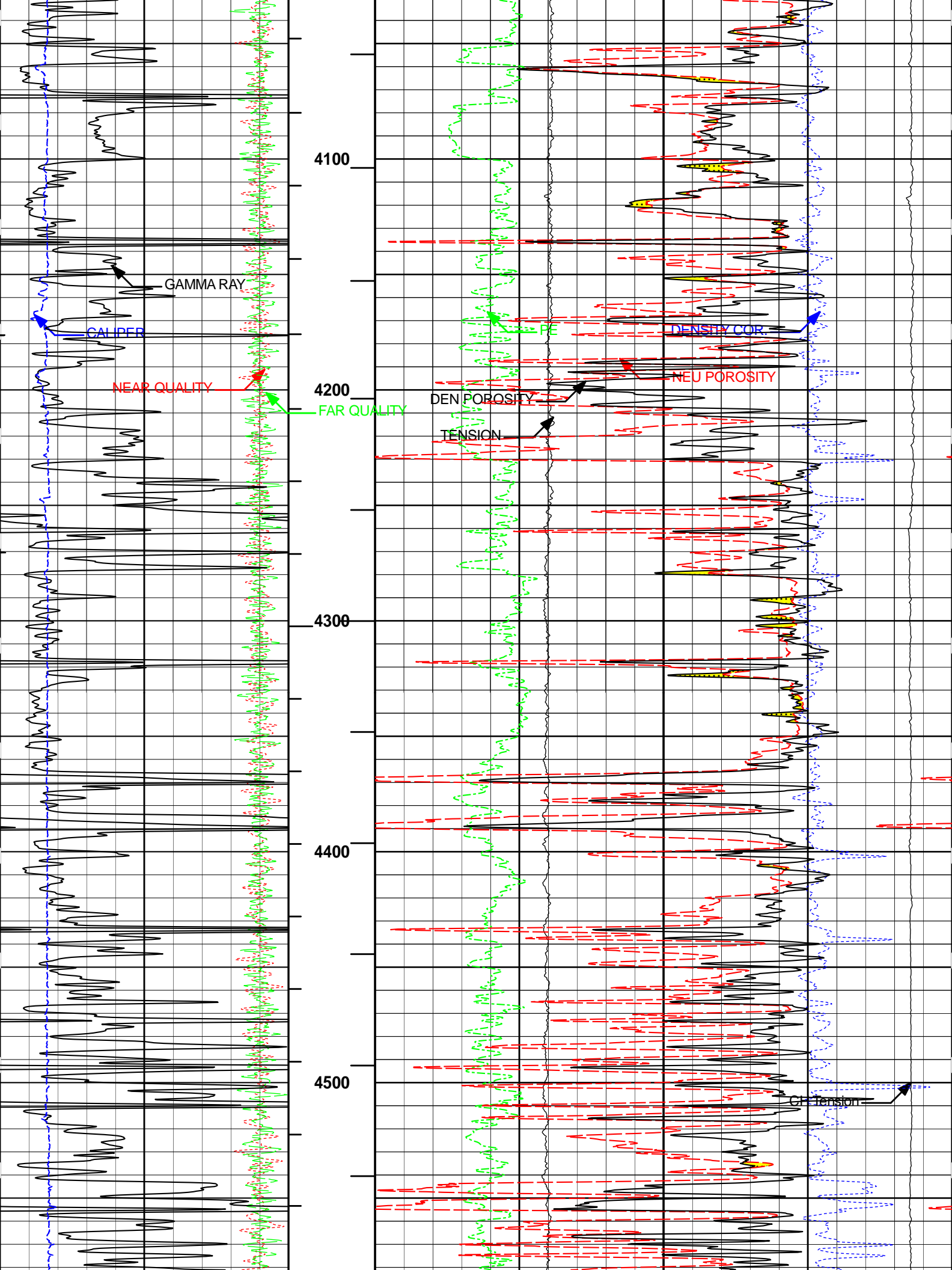


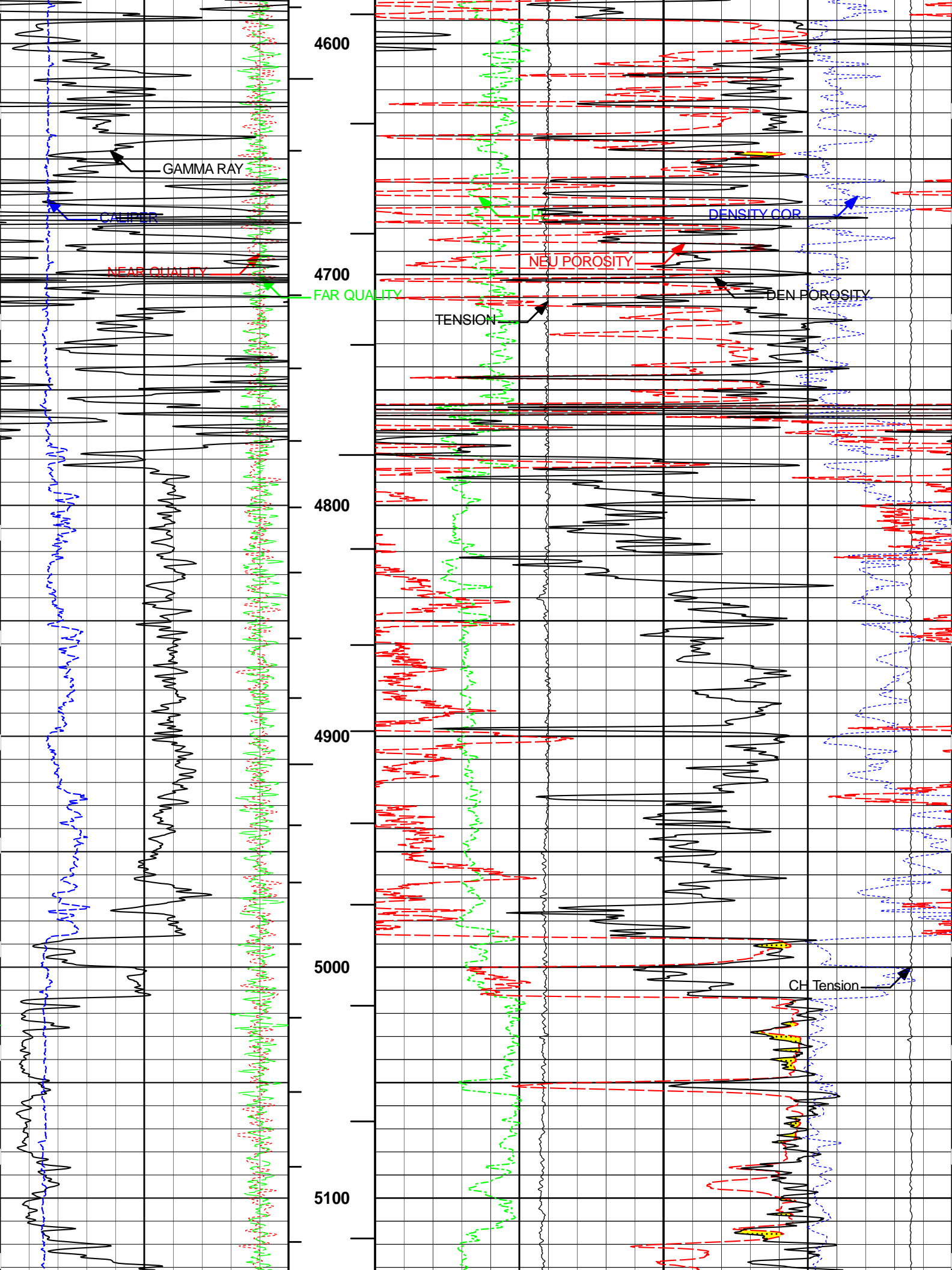


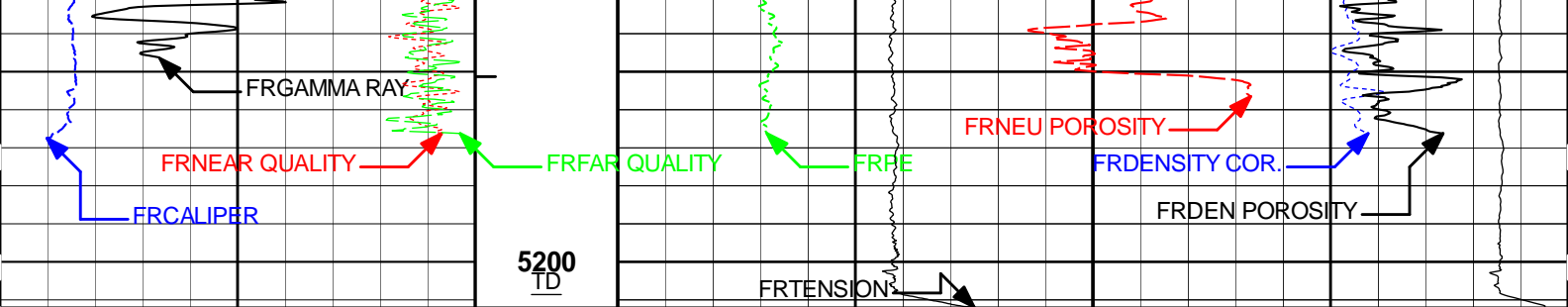












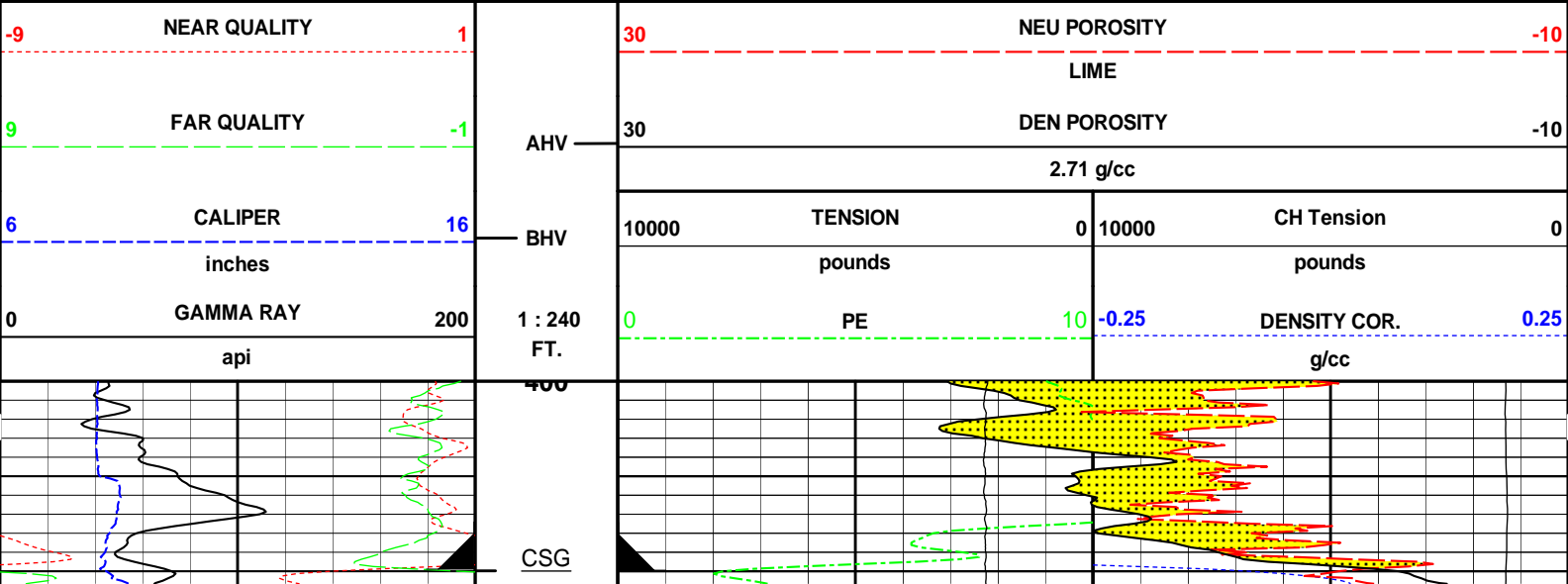
0 GAMMA RAY 200		1 : 600 FT.	0 PE 10		-0.25 DENSITY COR. 0.25	
api					g/cc	
6	CALIPER 16	— BHV	10000 TENSION 0		10000 CH Tension 0	
inches			pounds		pounds	
9	FAR QUALITY -1	— AHV	30 DEN POROSITY -10			
			2.71 g/cc			
-9	NEAR QUALITY 1		30 NEU POROSITY -10			
			LIME			

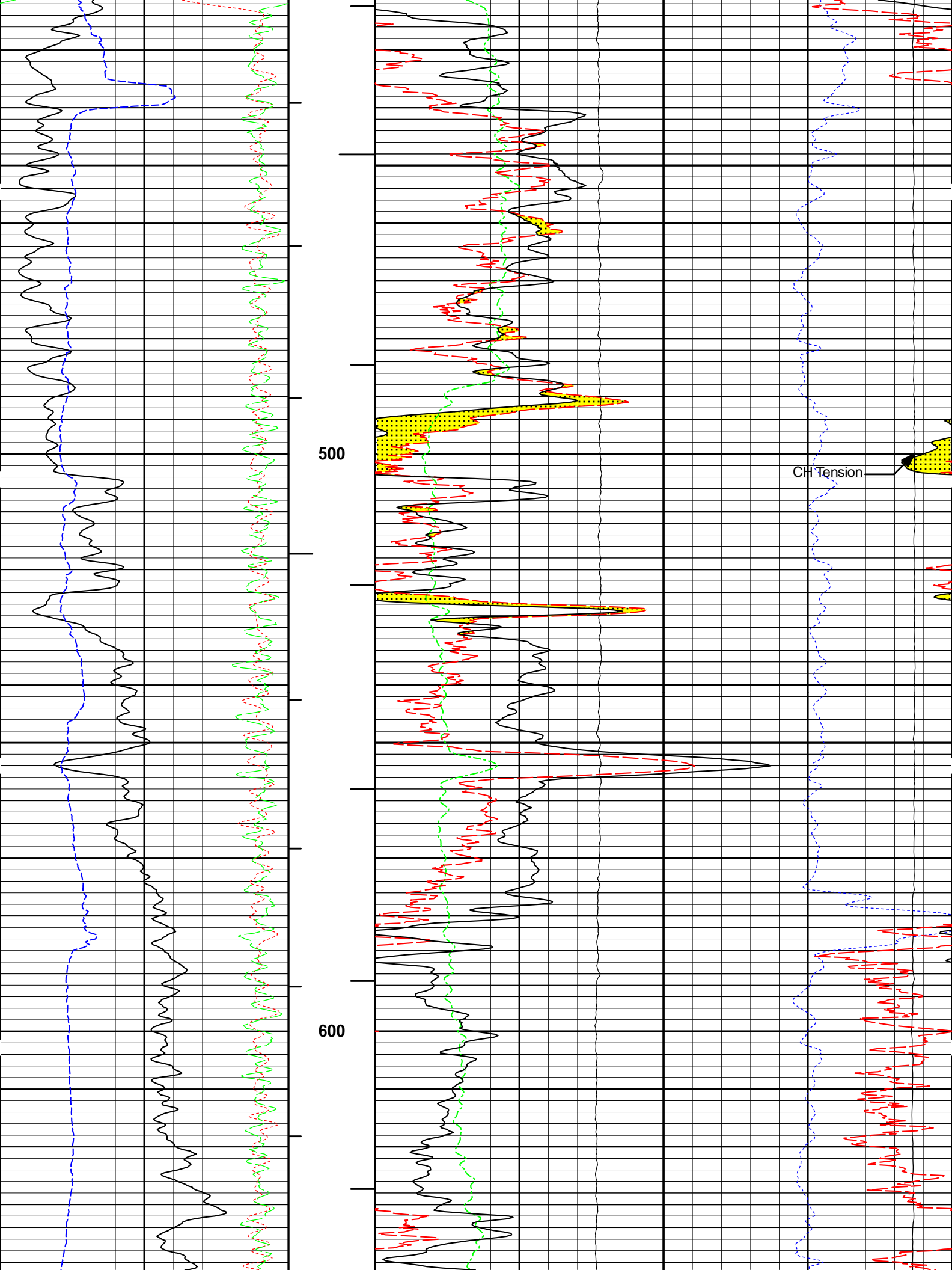
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Plot Range: 400 ft to 5212.11 ft
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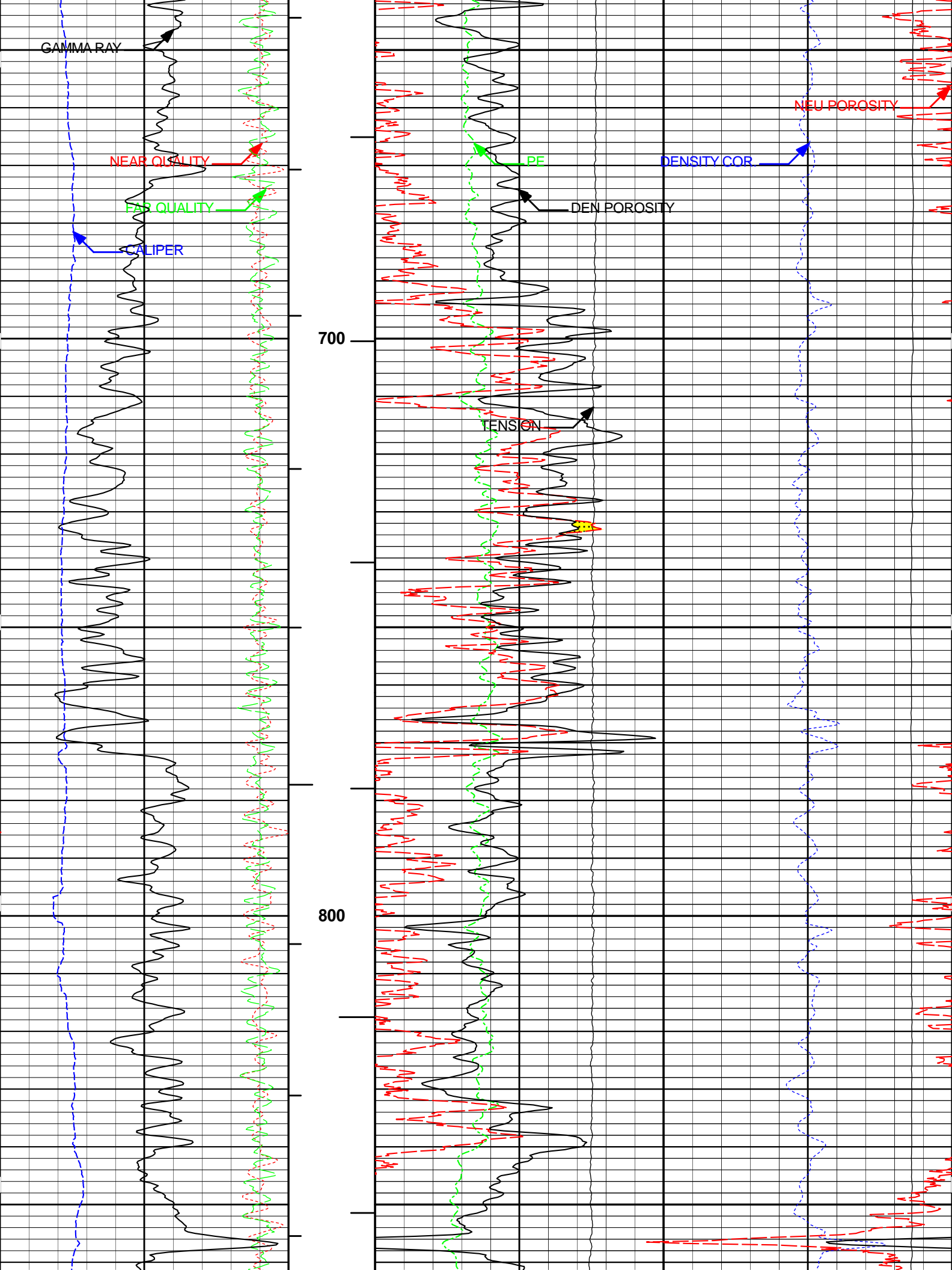
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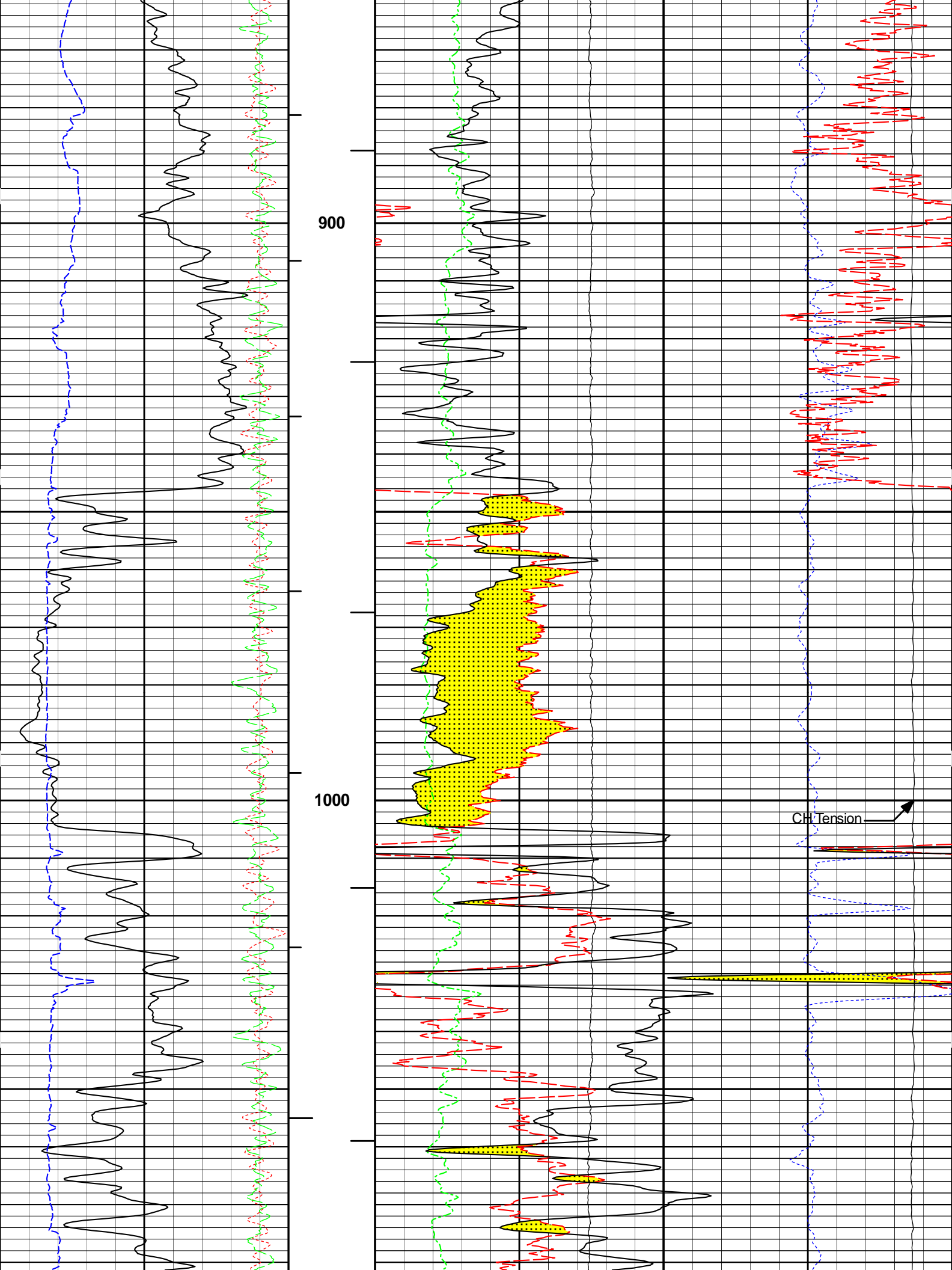
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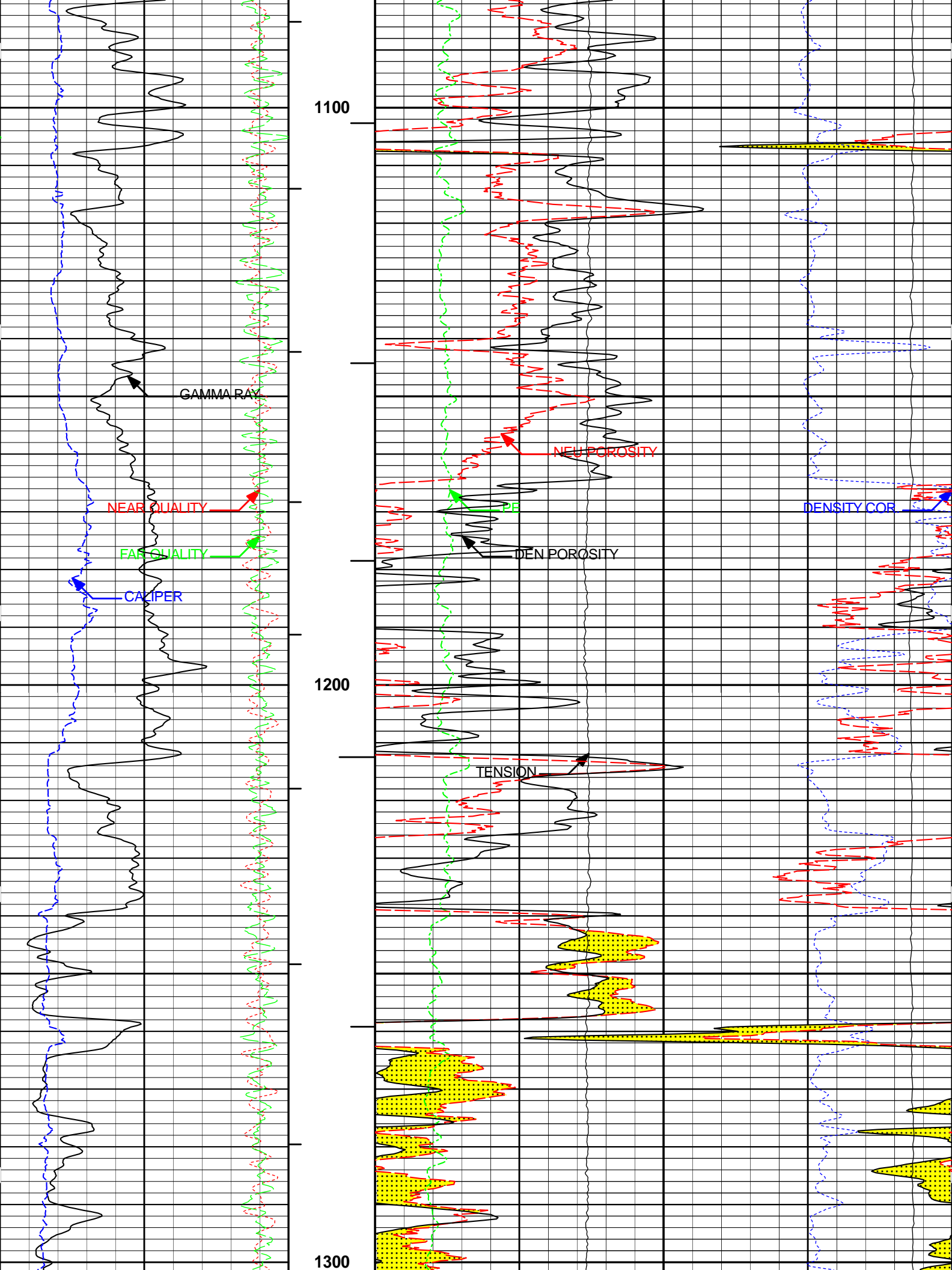
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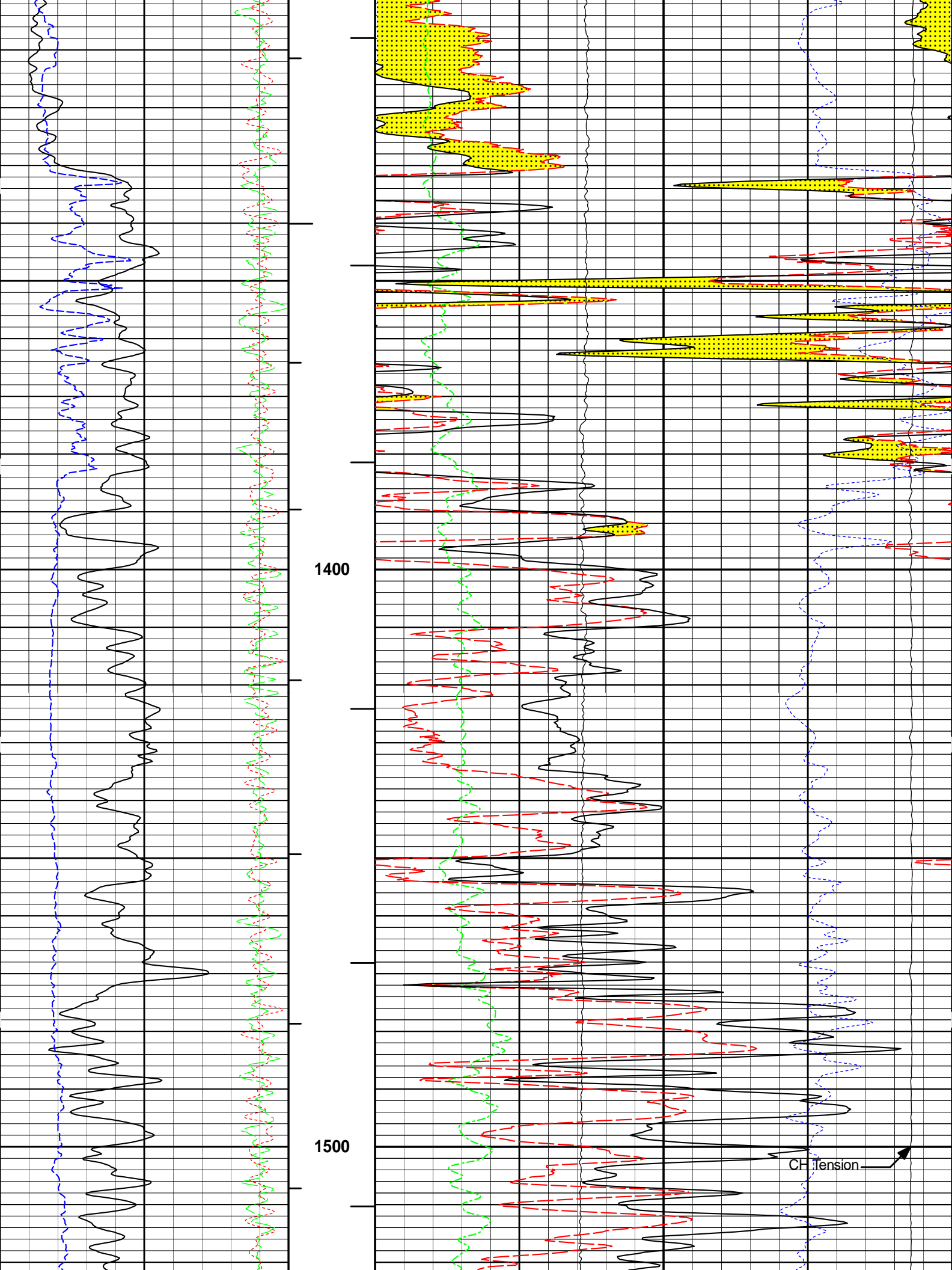


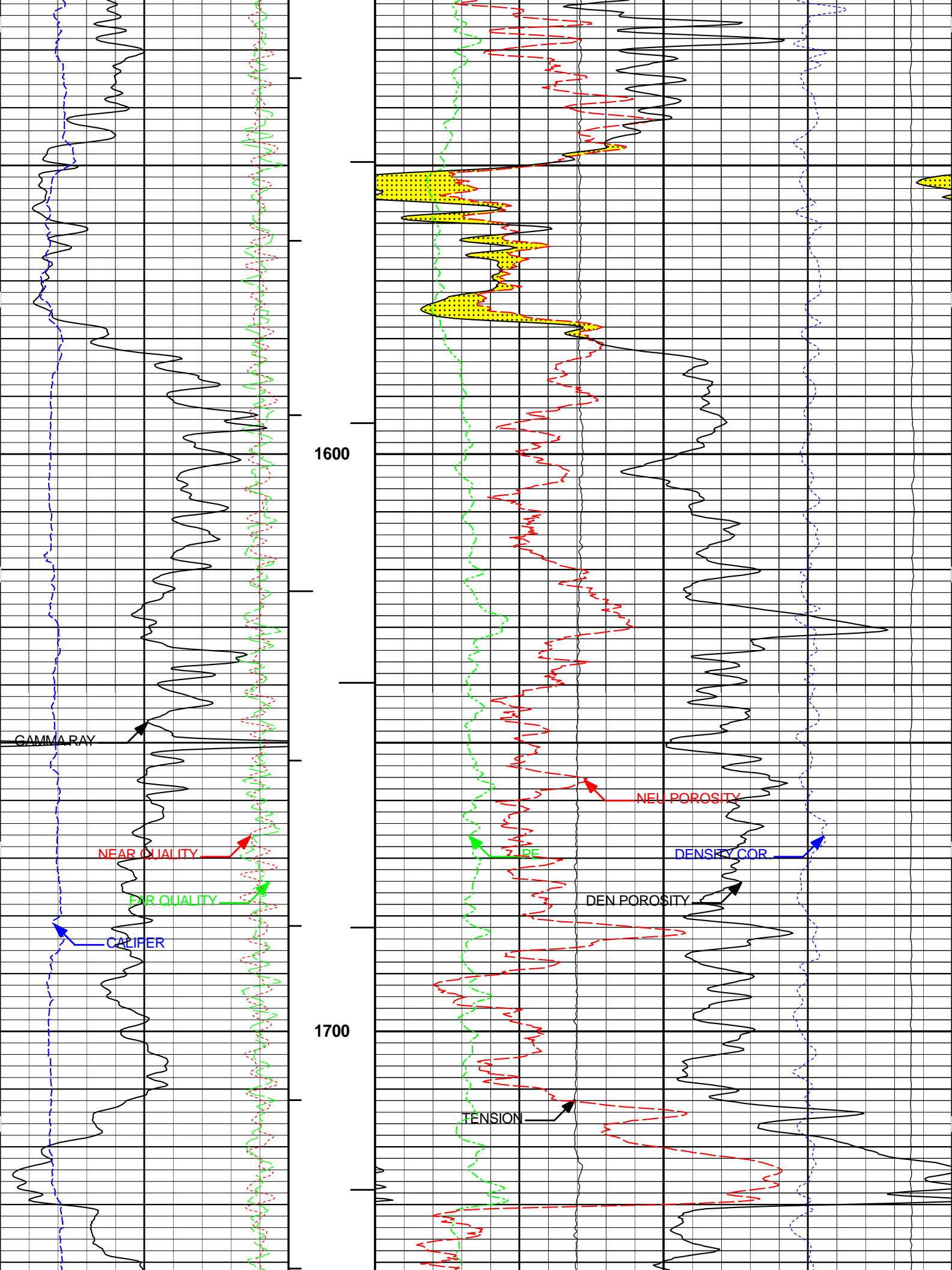


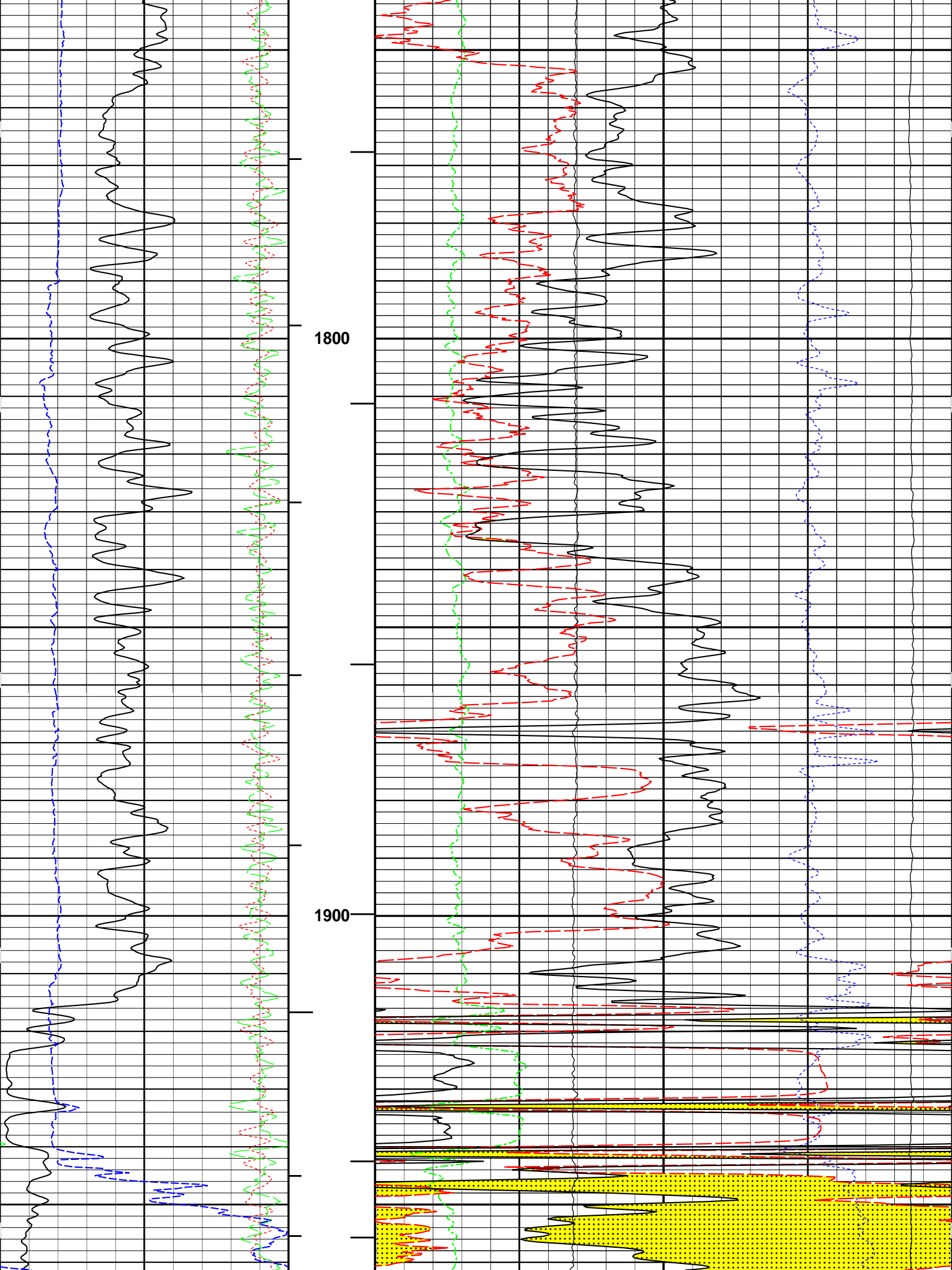


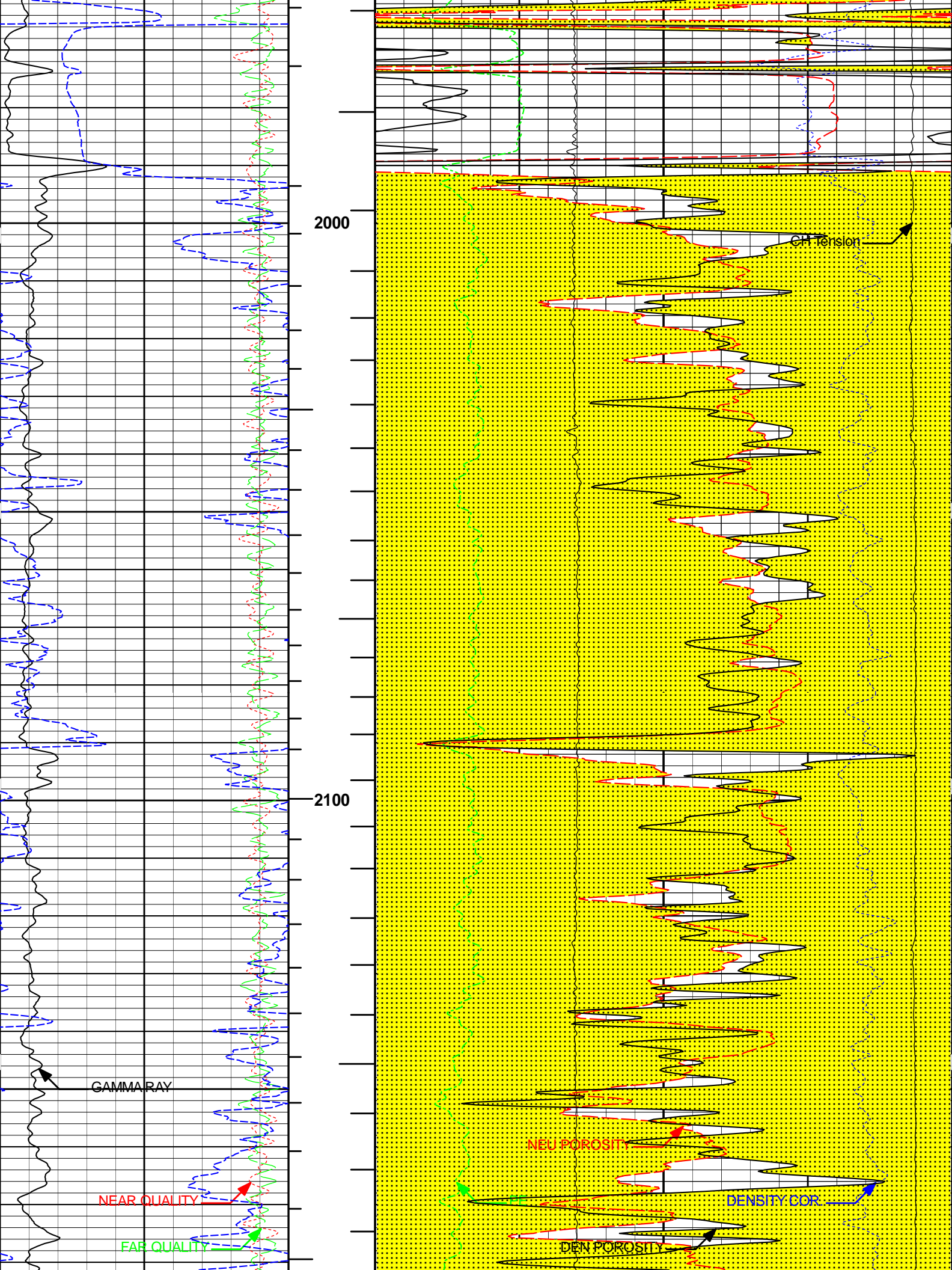


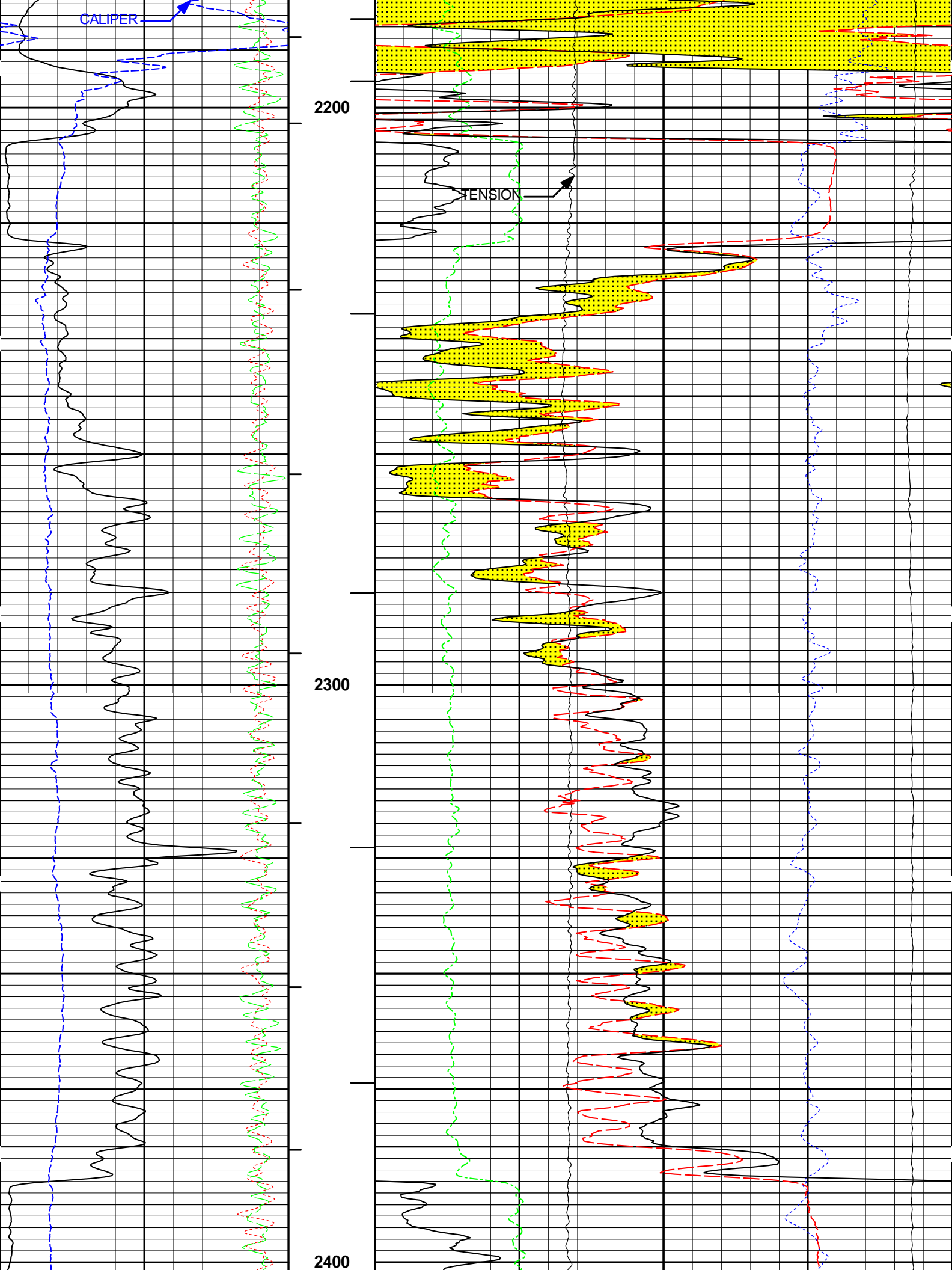


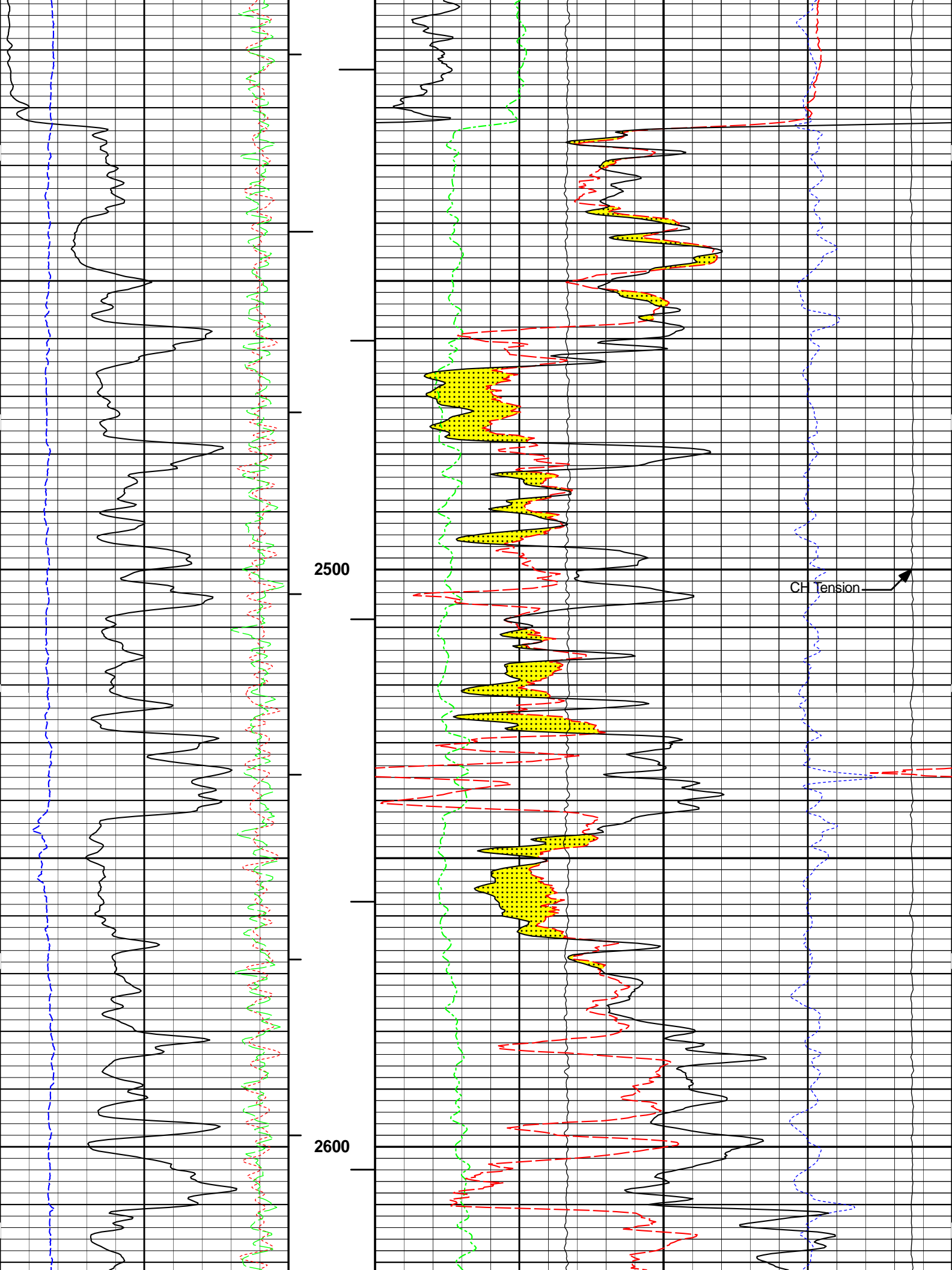


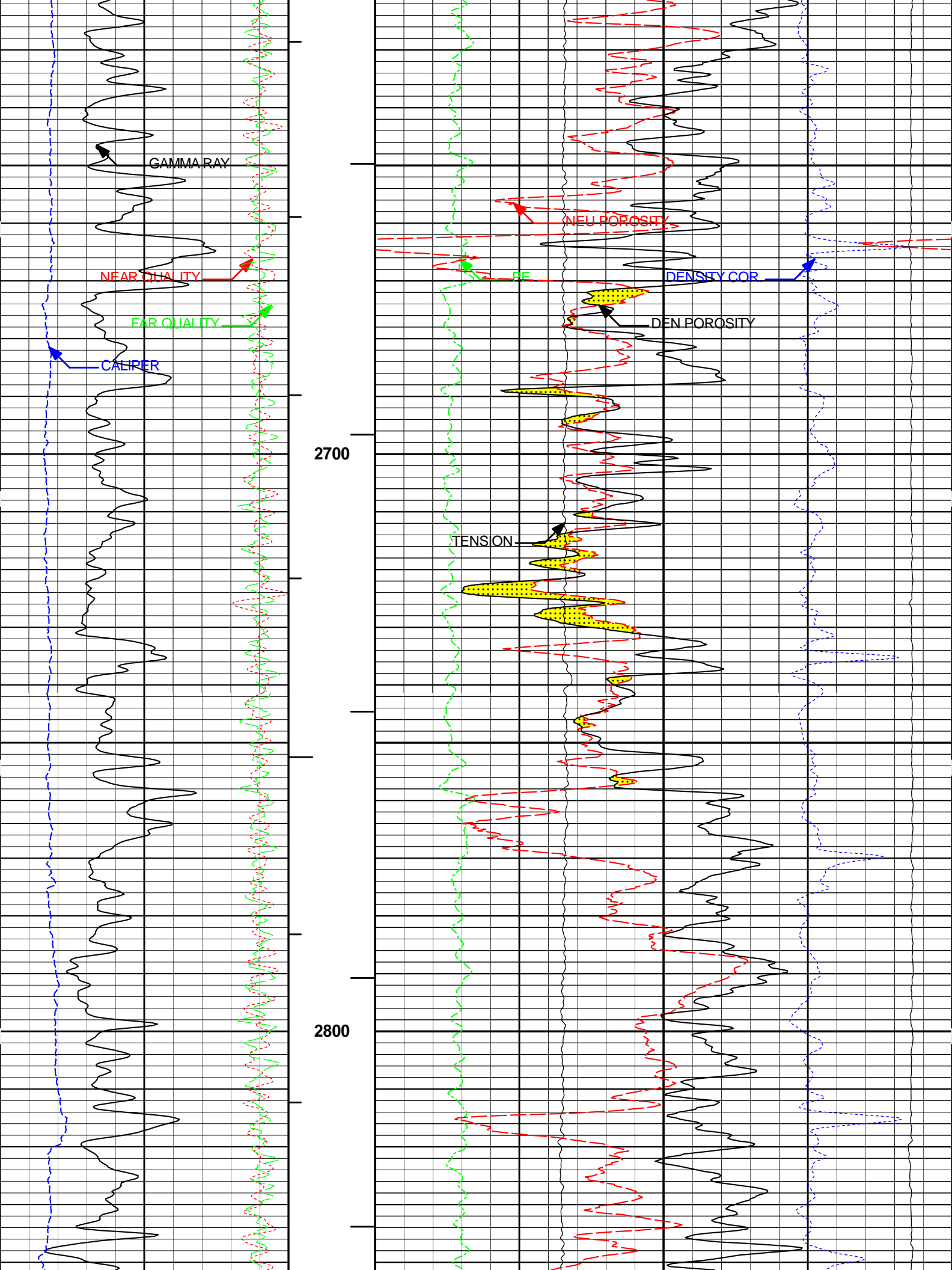


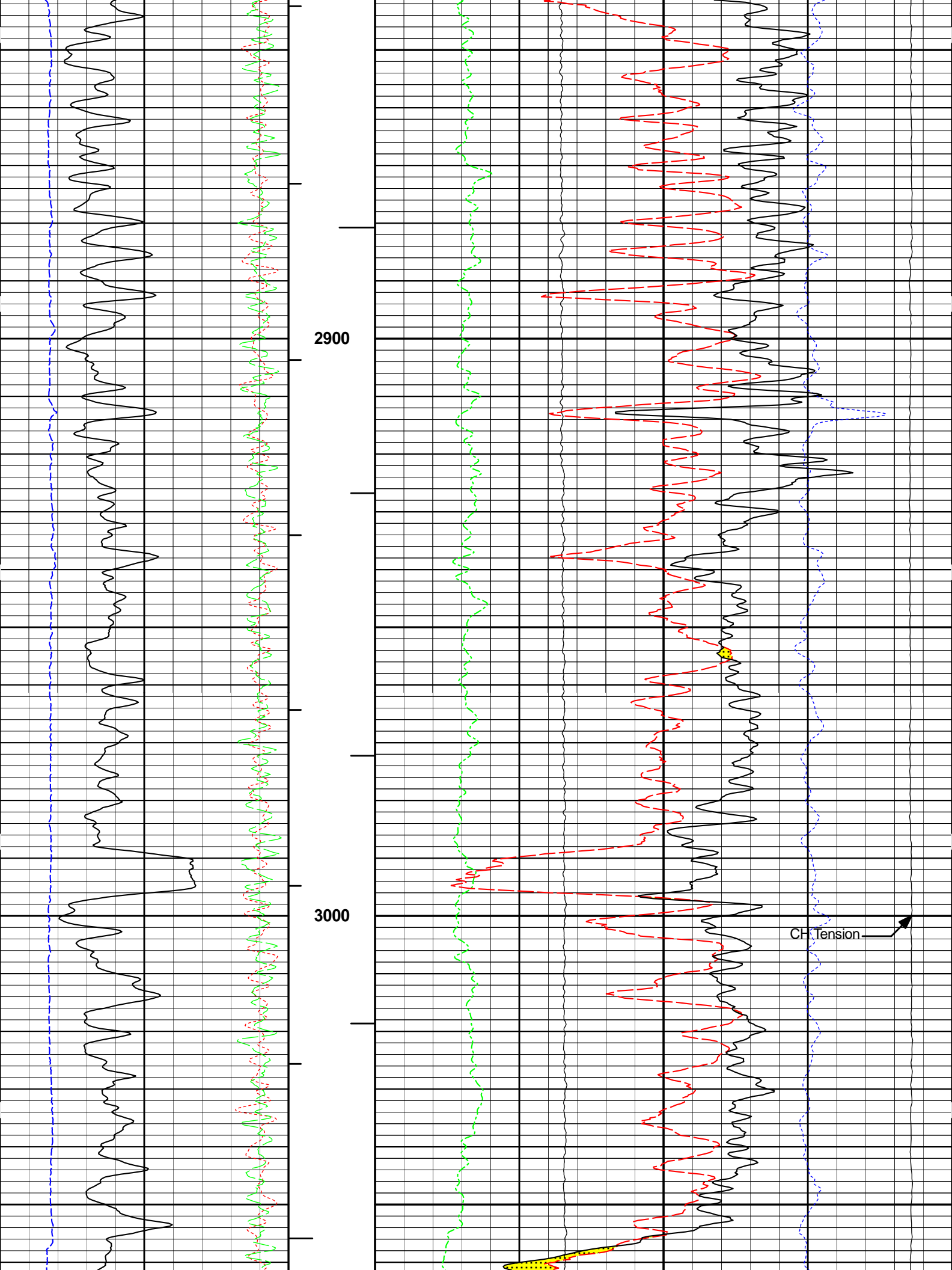


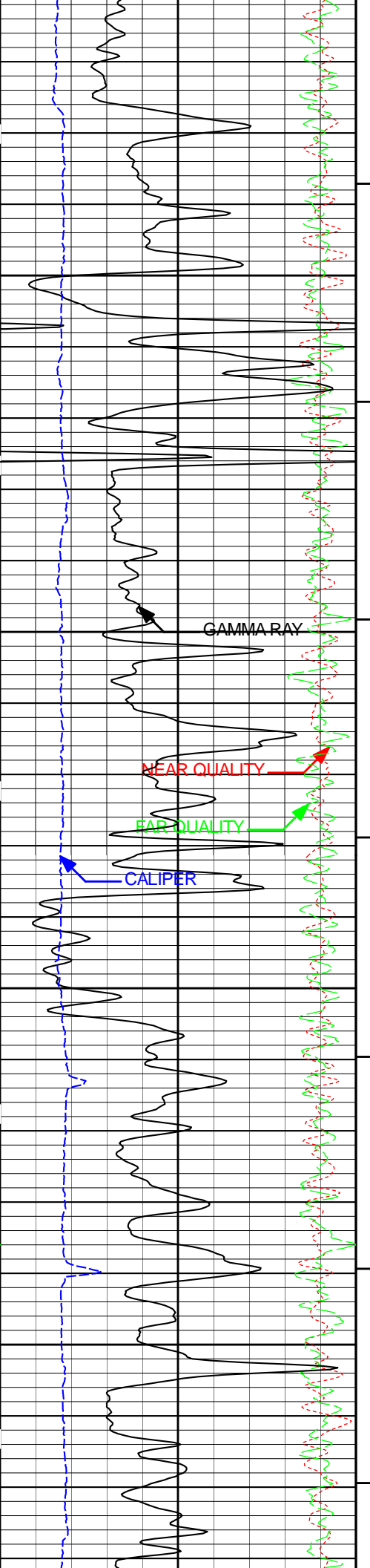






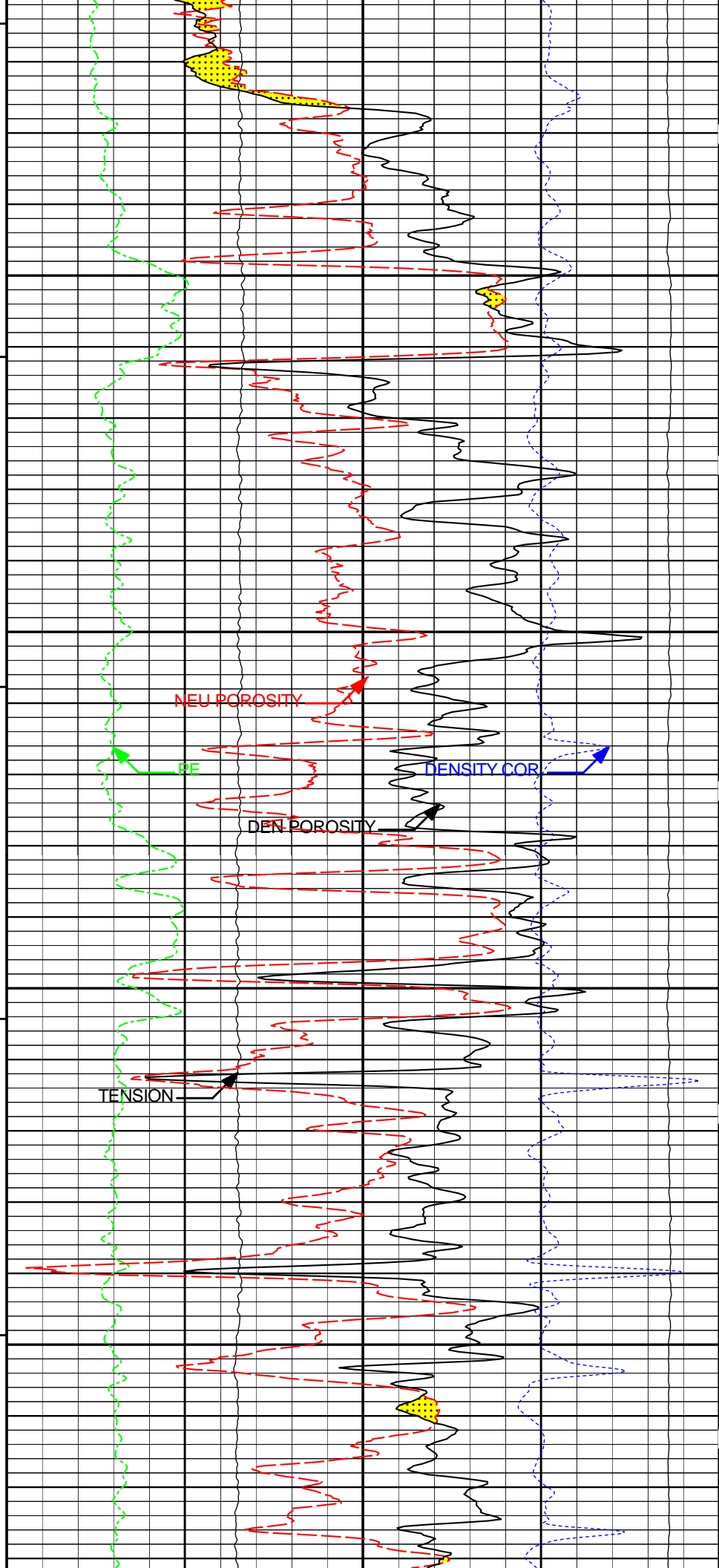


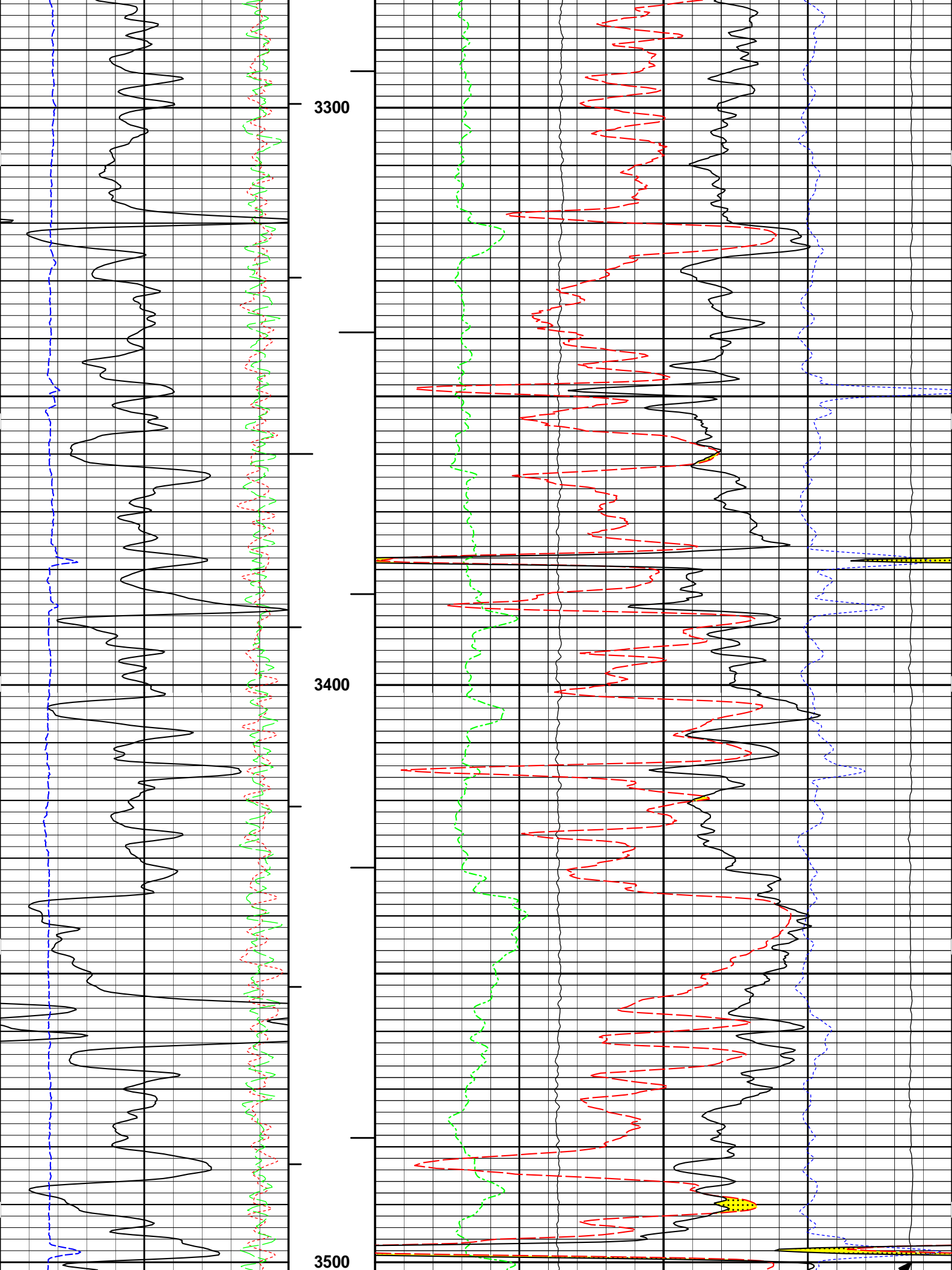


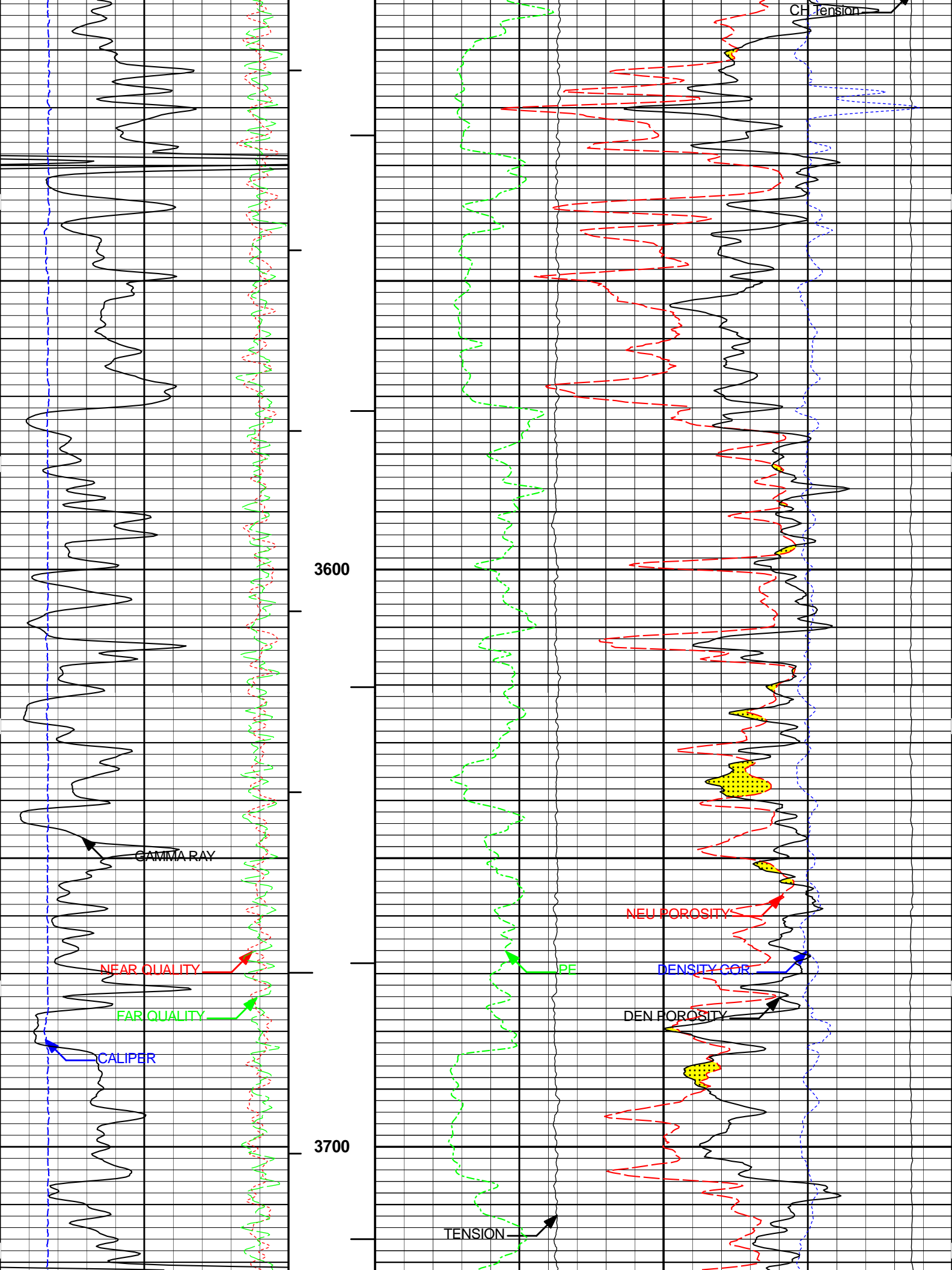


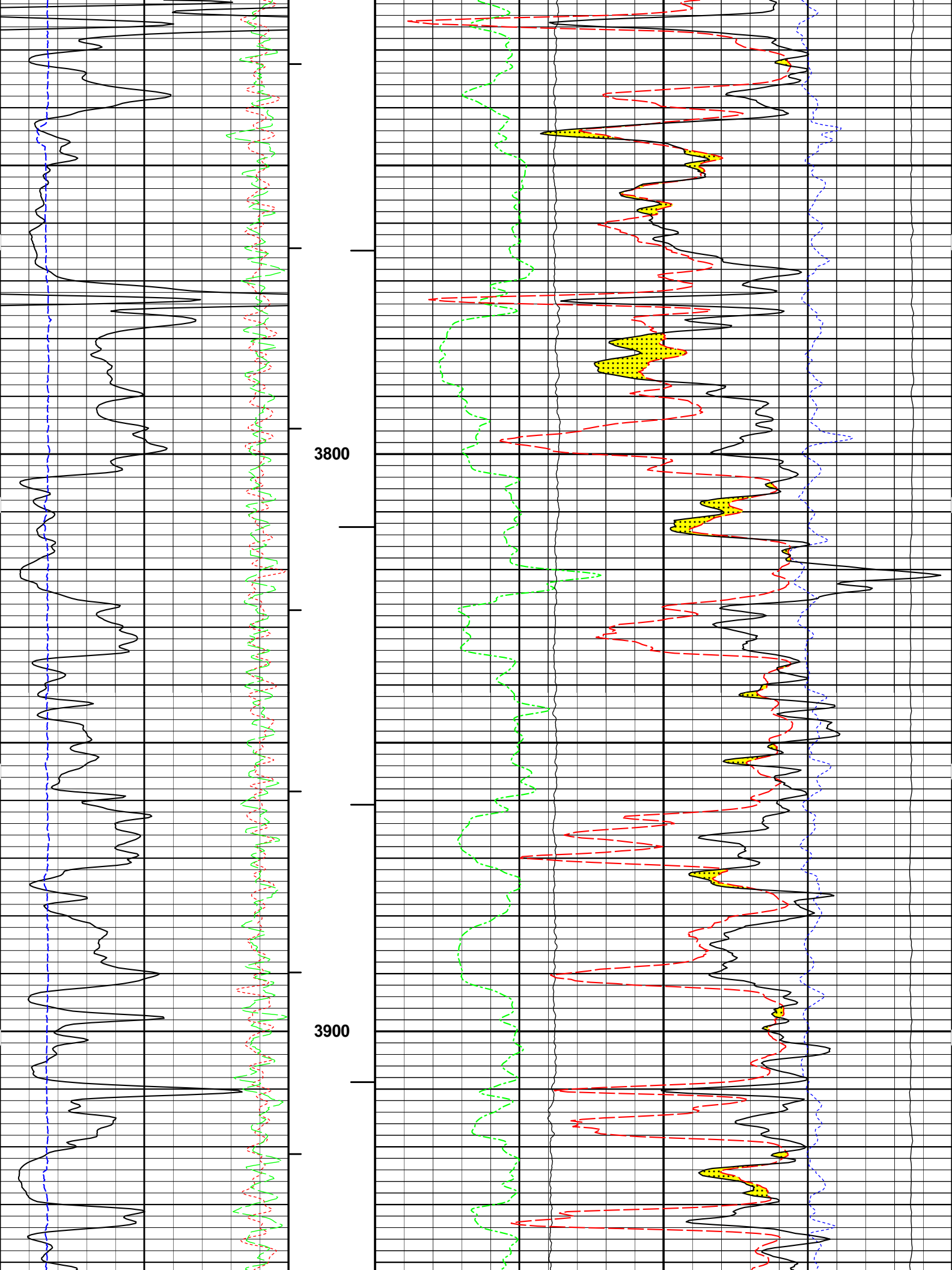
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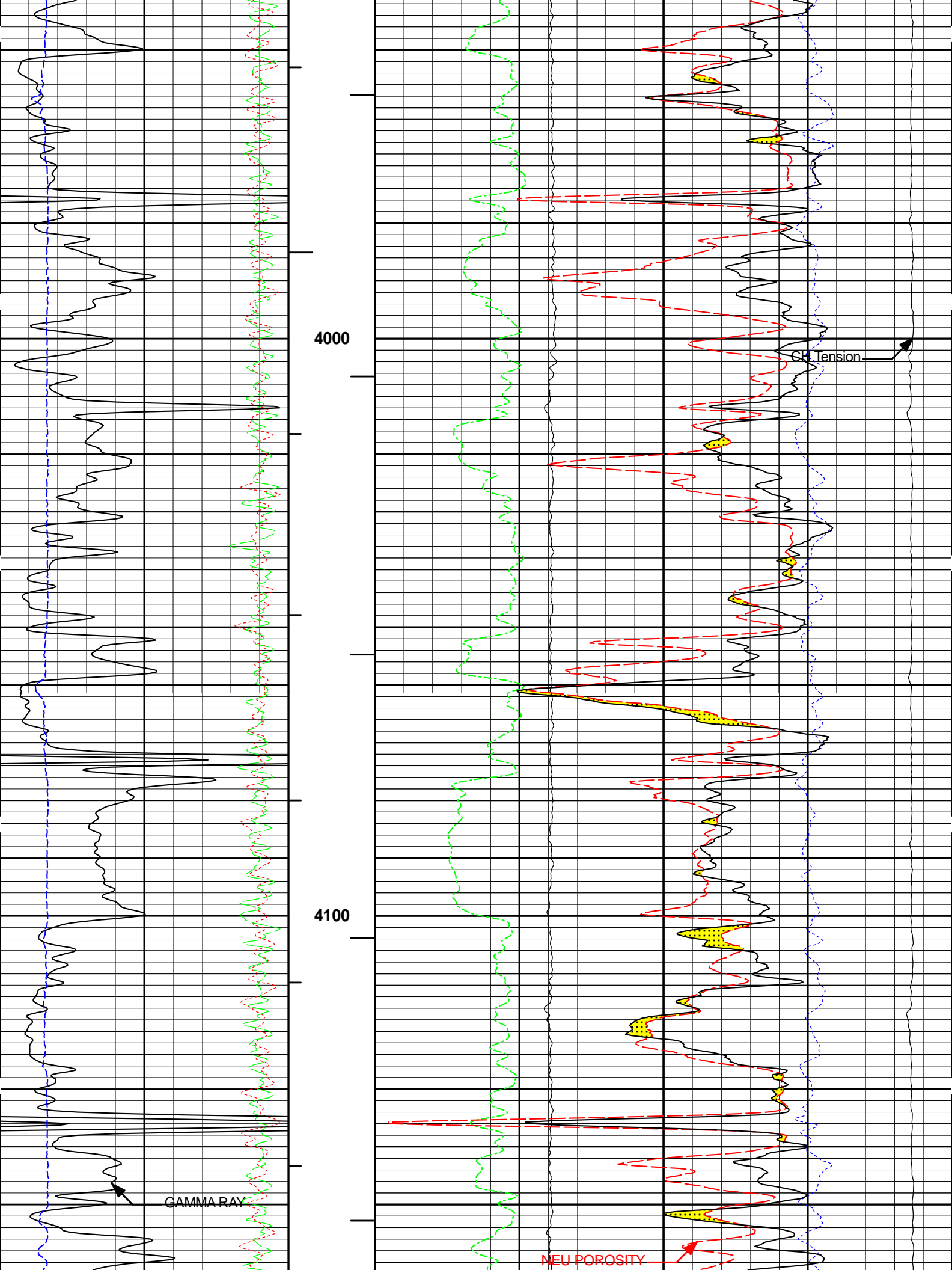
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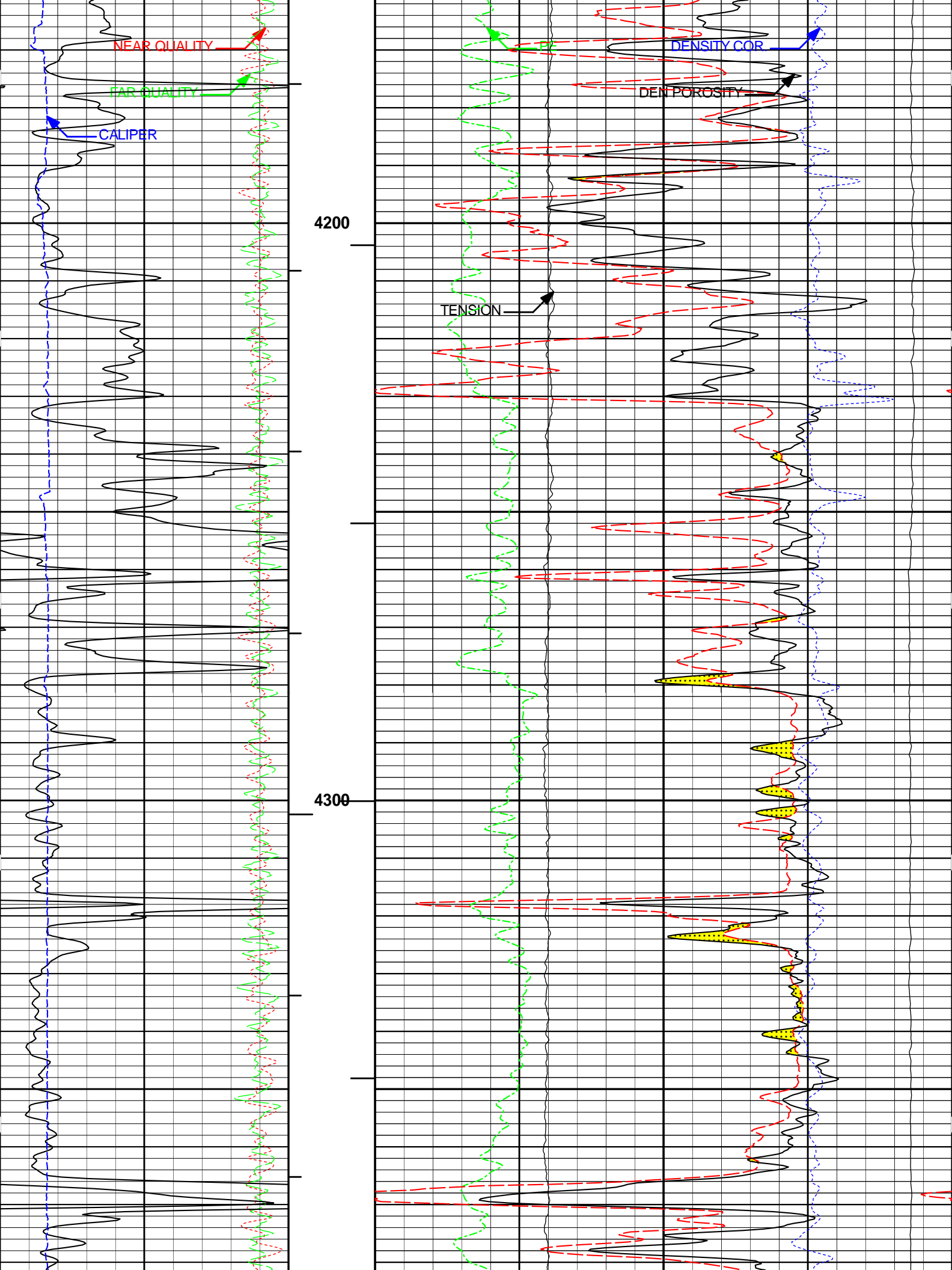


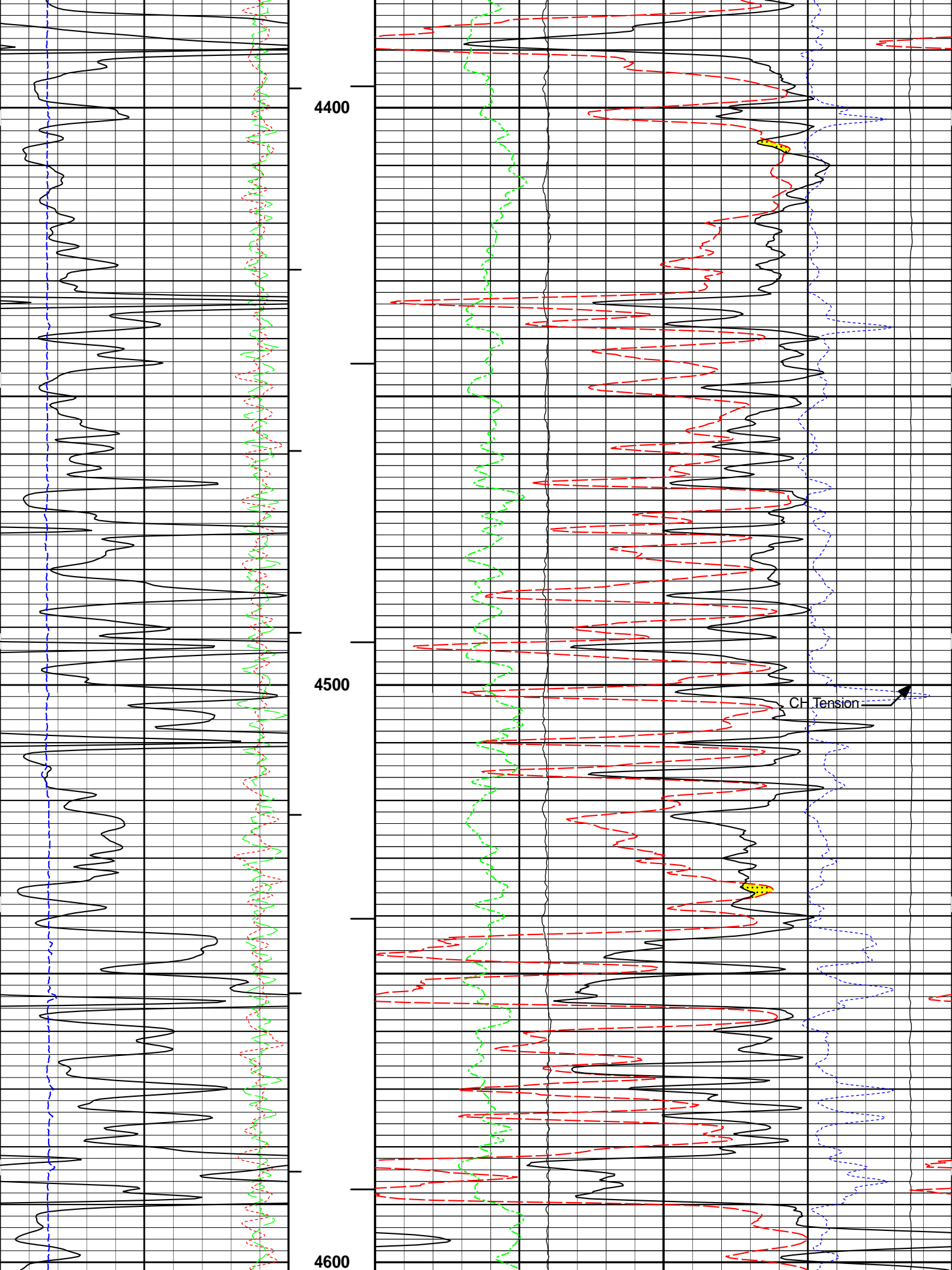


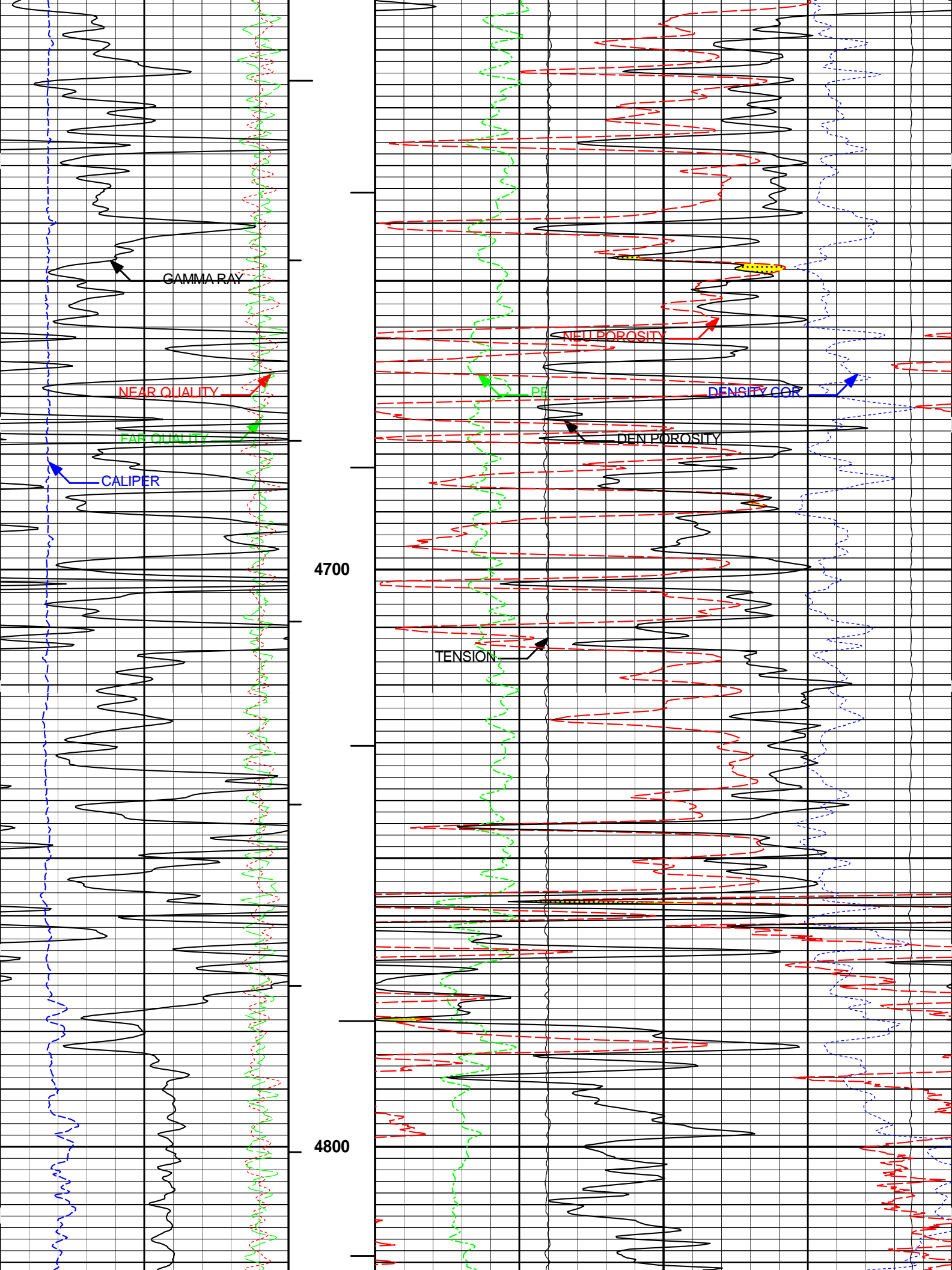


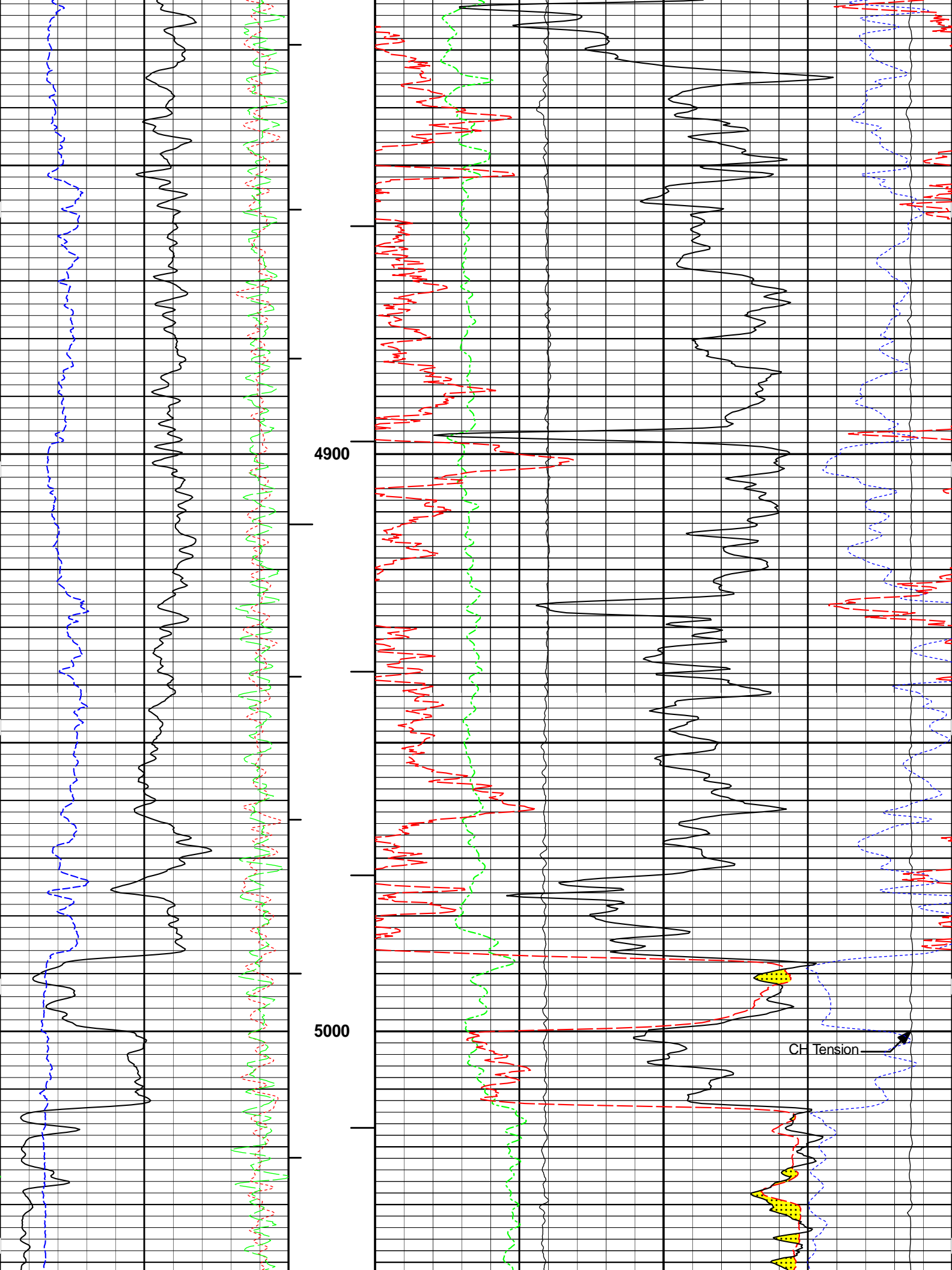


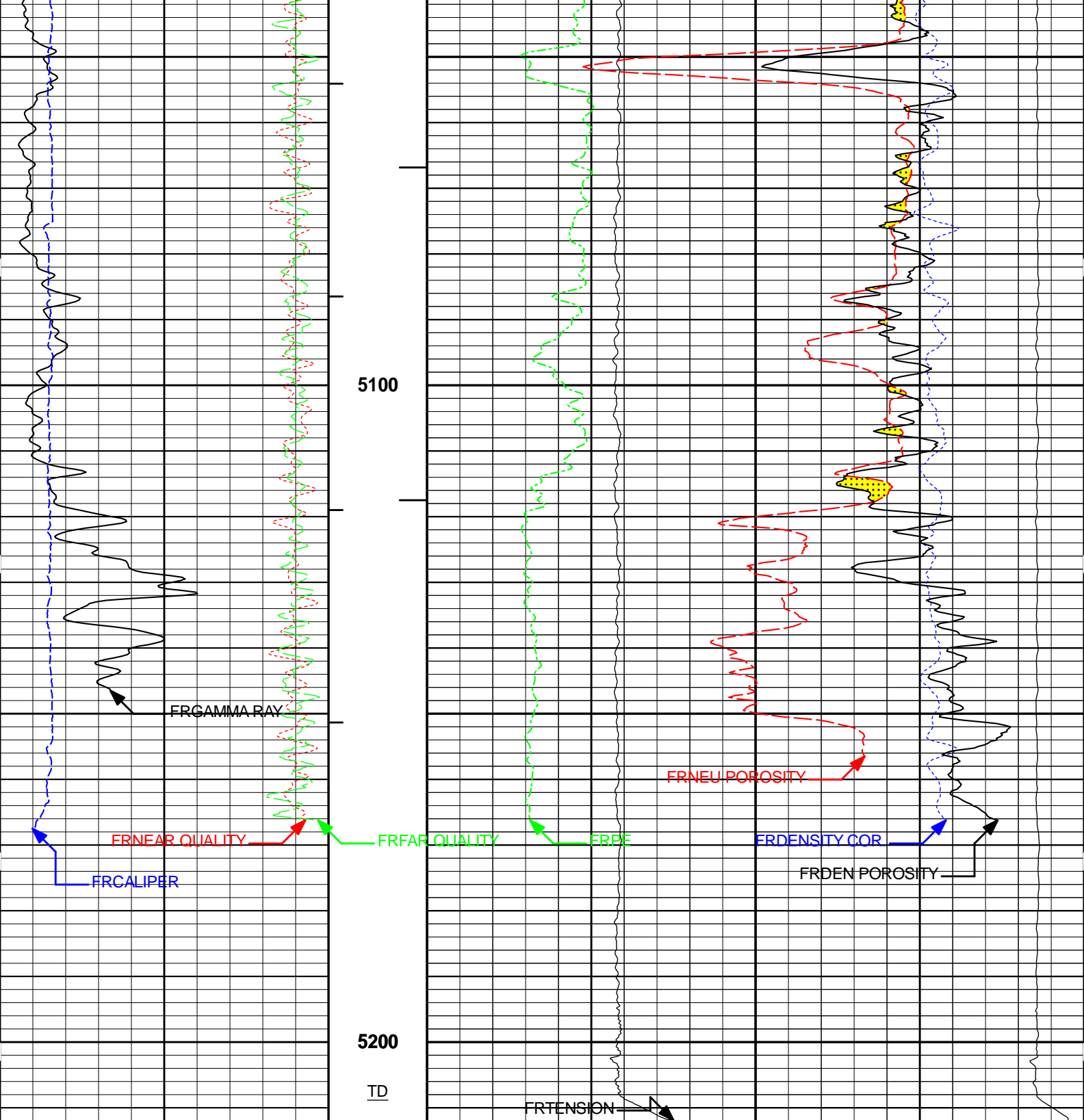












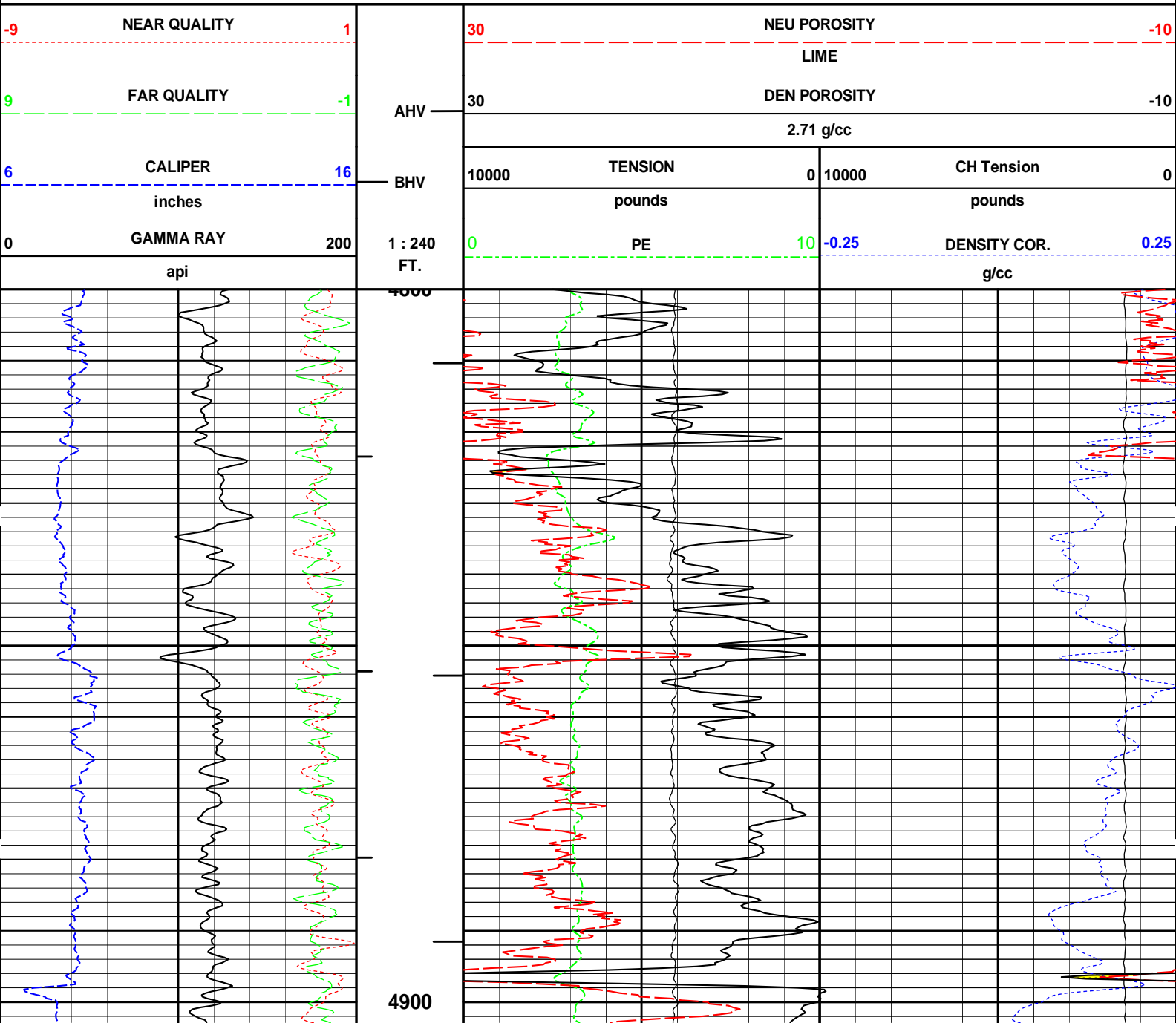
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	api		FT.					g/cc	
6	CALIPER	16	BHV	10000	TENSION	0	10000	CH Tension	0
	inches				pounds			pounds	
9	FAR QUALITY	-1	AHV	30	DEN POROSITY			-10	
					2.71 g/cc				
-9	NEAR QUALITY	1		30	NEU POROSITY			-10	
					LIME				

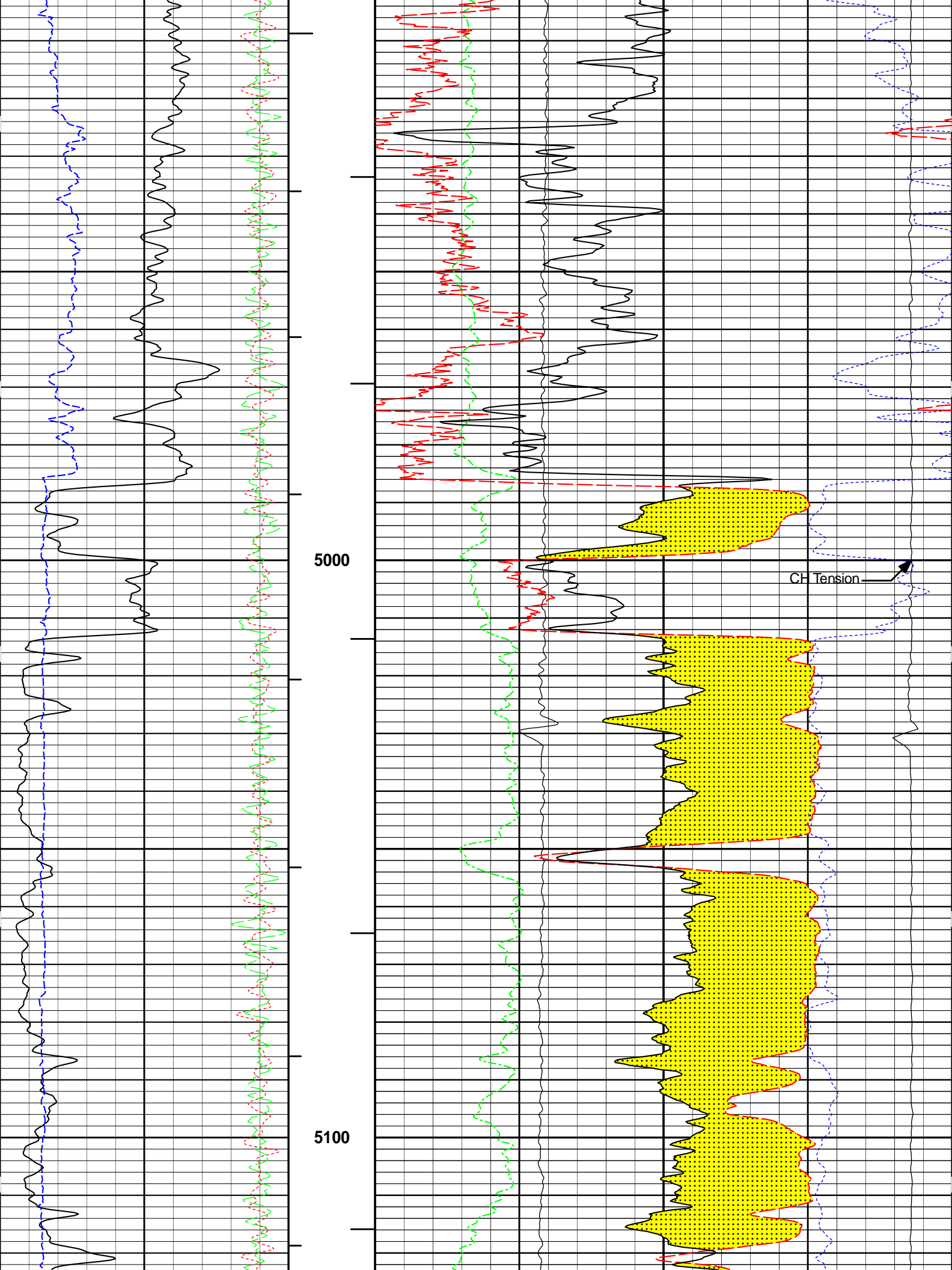
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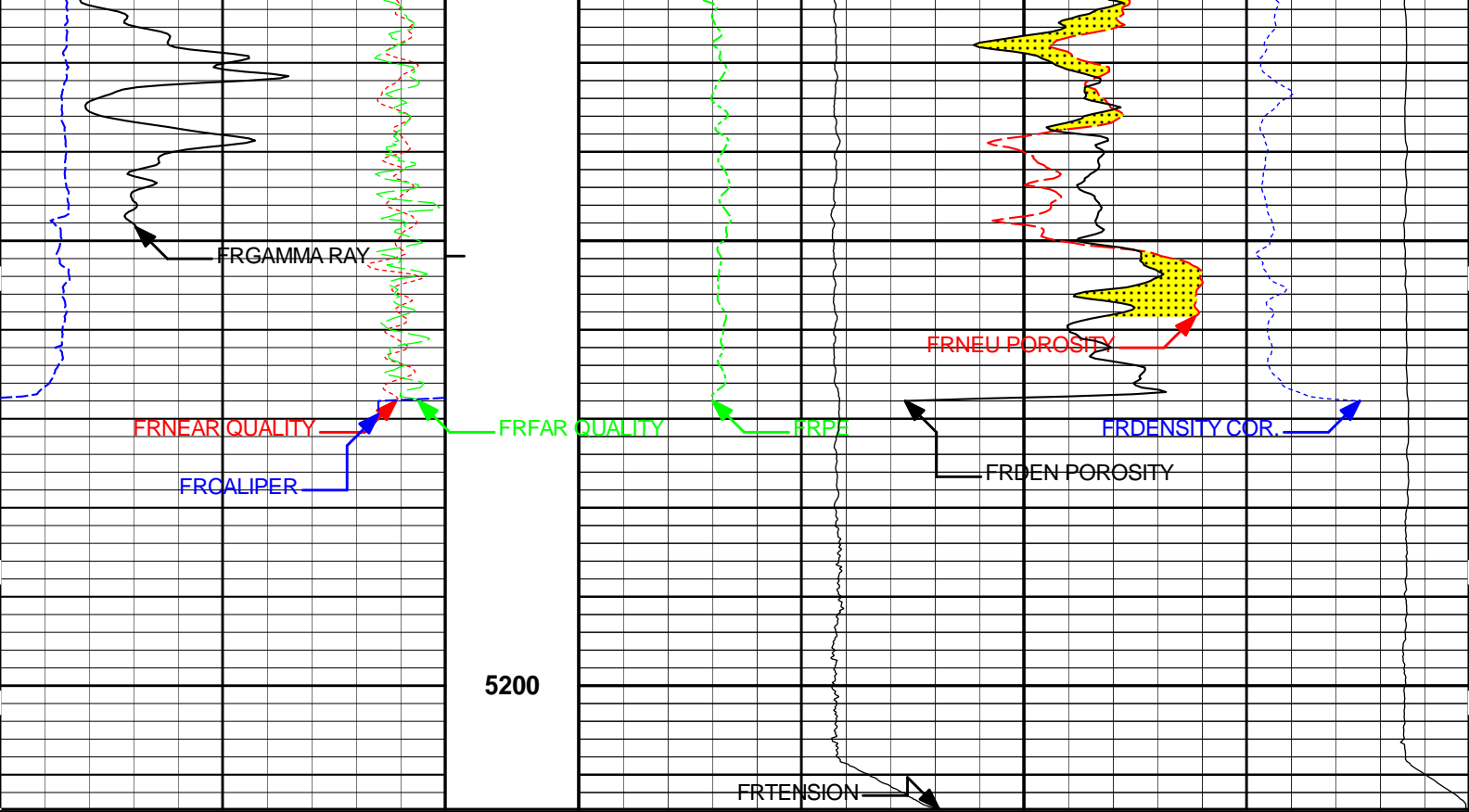
HALLIBURTON

Plot Time: 16-Mar-15 09:54:44
Plot Range: 4800 ft to 5213.9 ft
Data: BHORSE_T_W_5_21\Well Based\REPEAT\
Plot File: \\PORO\POR5IN_R

REPEAT PASS 5" = 100'







0	GAMMA RAY	200	1 : 240 FT.	0	PE	10	-0.25	DENSITY COR.	0.25
	api							g/cc	
6	CALIPER	16	BHV	10000	TENSION	0	10000	CH Tension	0
	inches				pounds			pounds	
9	FAR QUALITY	-1	AHV	30	DEN POROSITY				
					2.71 g/cc				
-9	NEAR QUALITY	1		30	NEU POROSITY				
					LIME				

HALLIBURTON

Plot Time: 16-Mar-15 09:54:46
Plot Range: 4800 ft to 5213.9 ft
Data: BHORSE_T_W_5_21Well Based\REPEAT\
Plot File: \\PORO\POR5IN_R

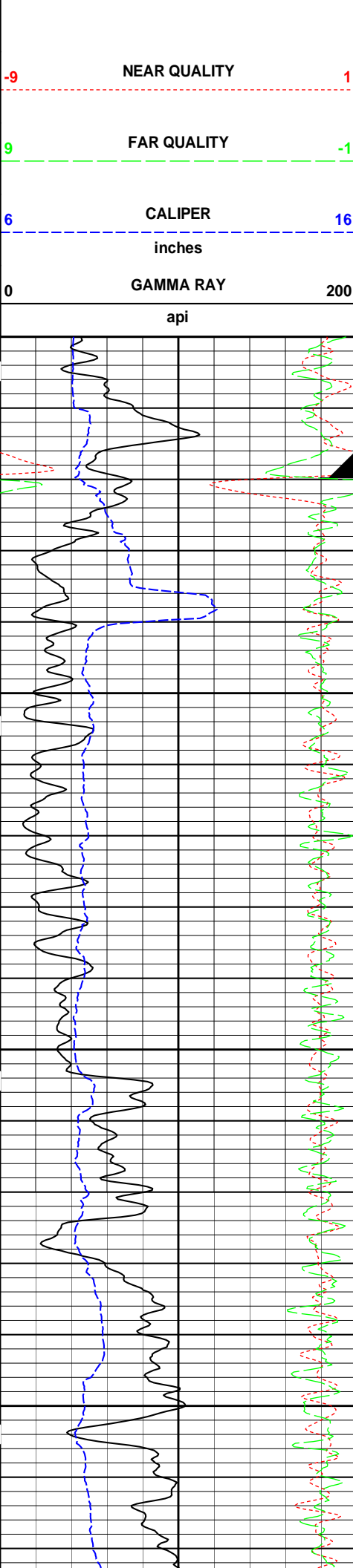
REPEAT PASS 5" = 100'

HALLIBURTON

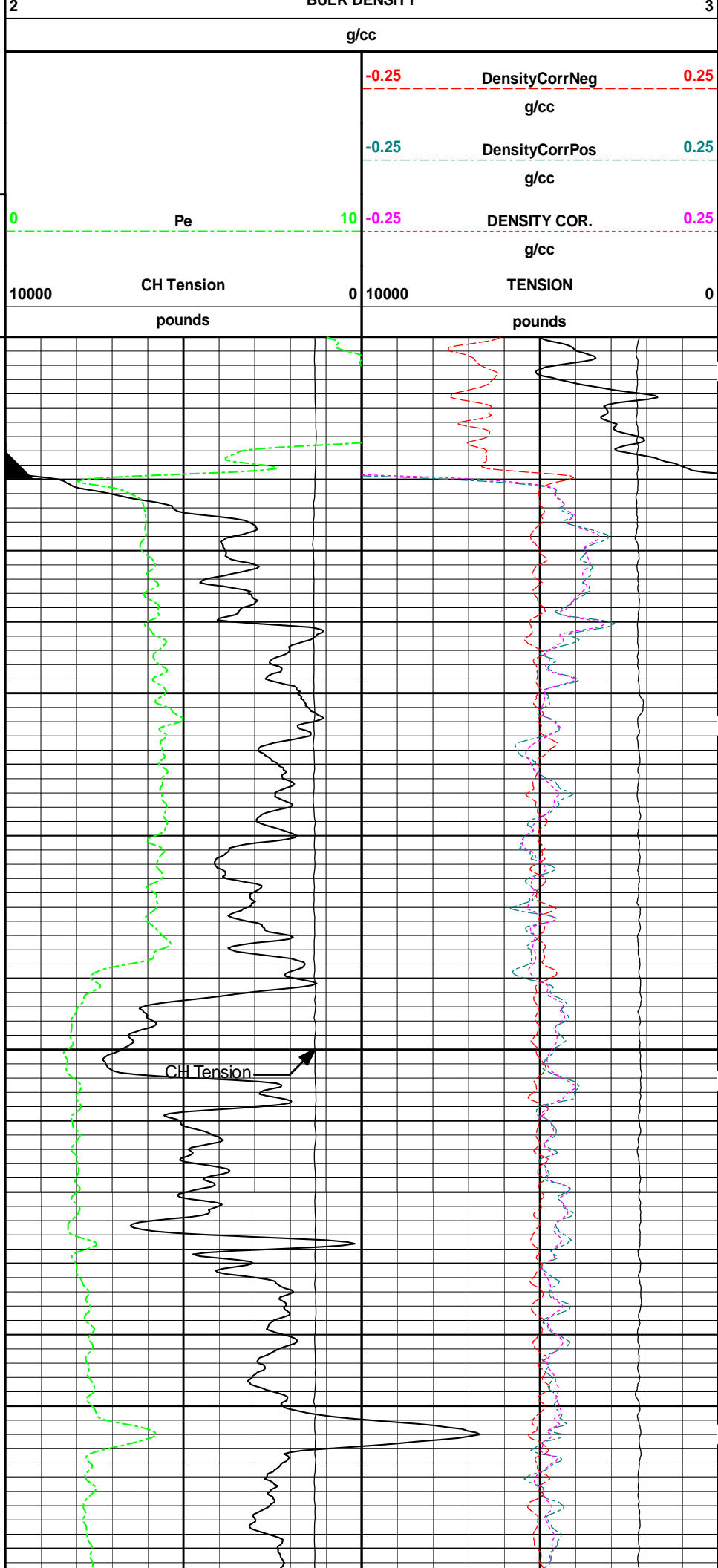
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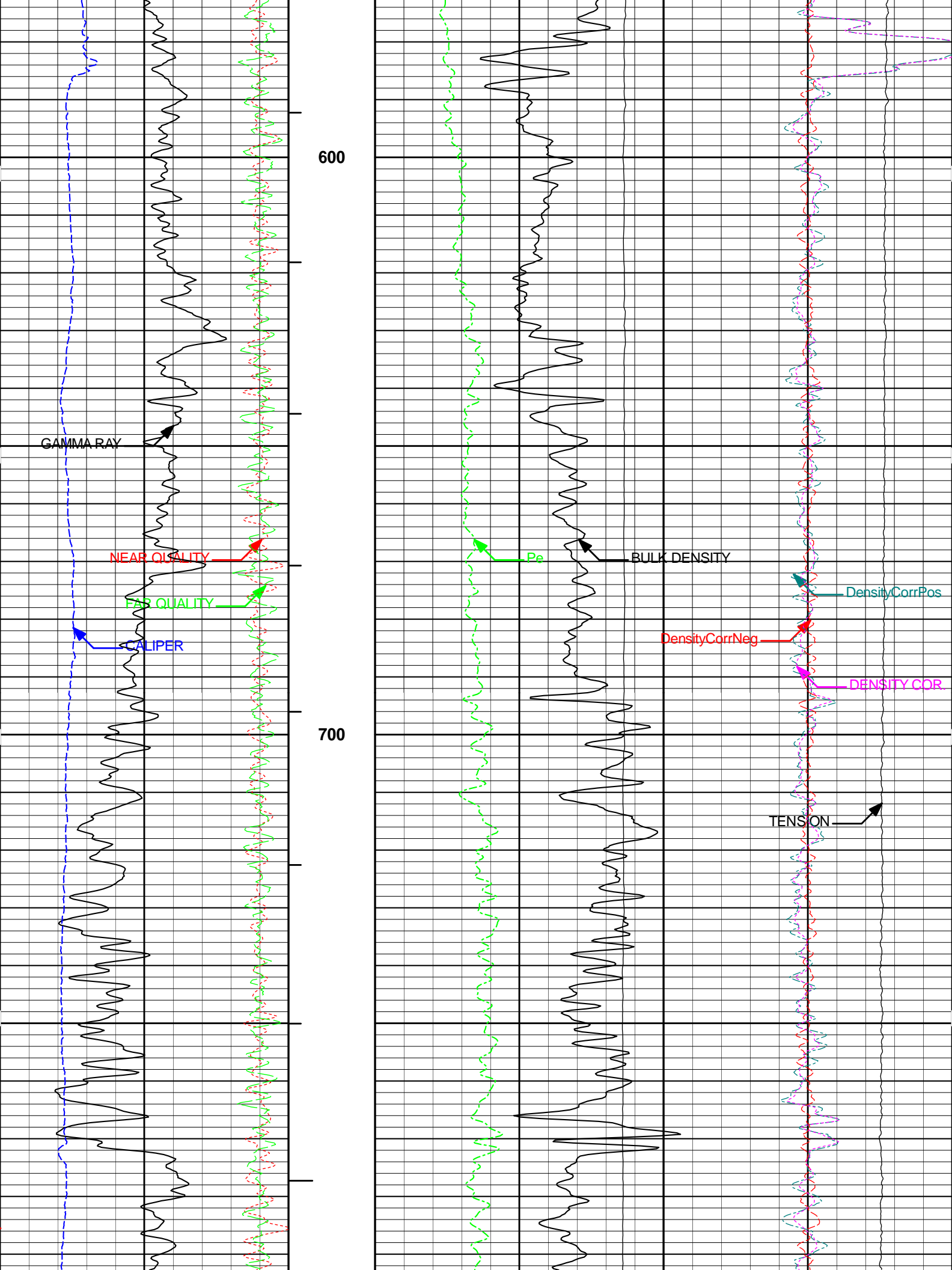
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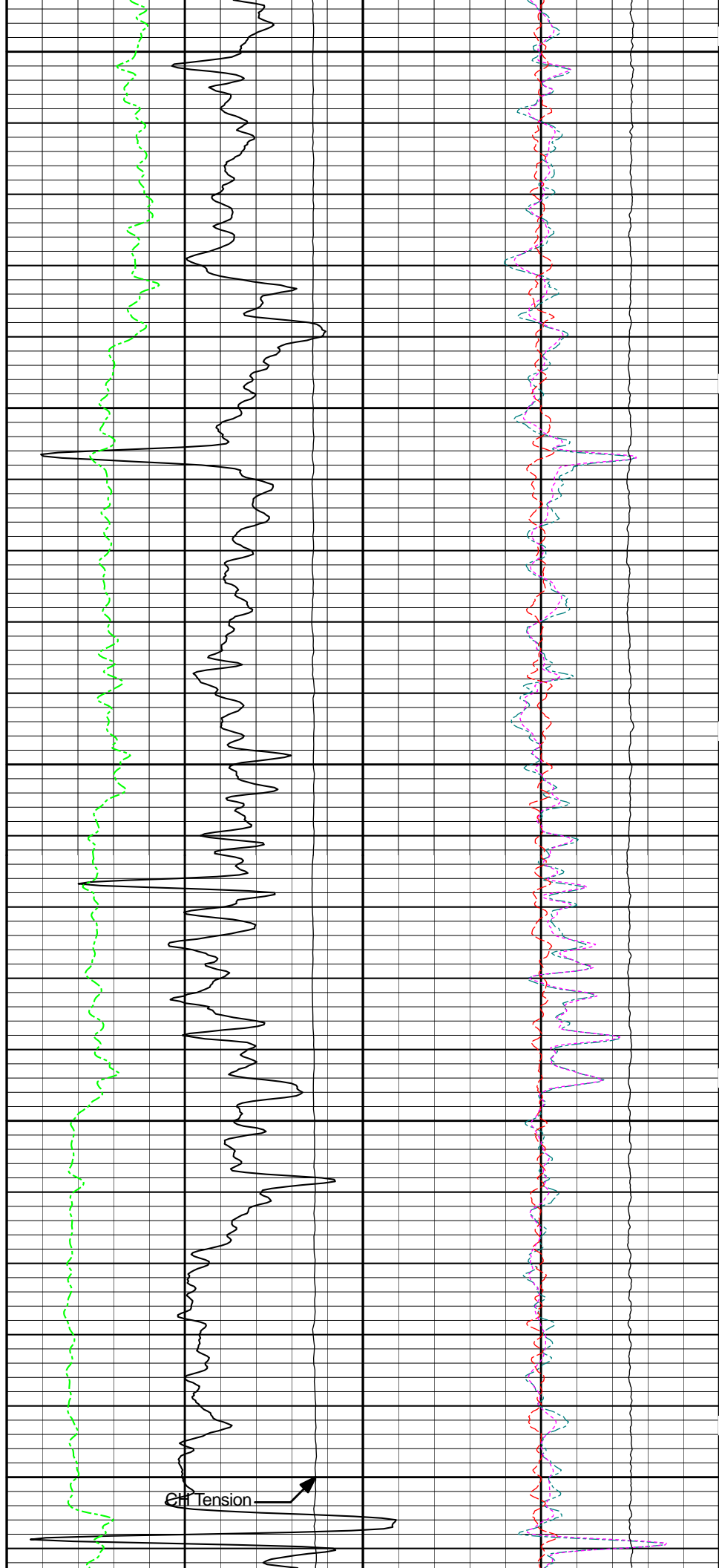
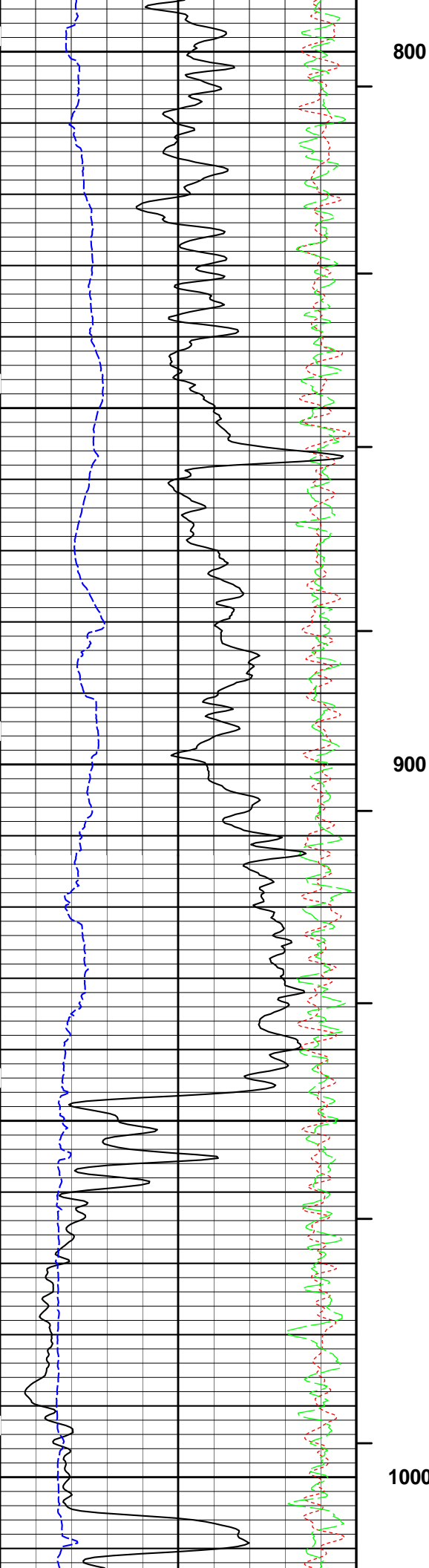
BULK DENSITY

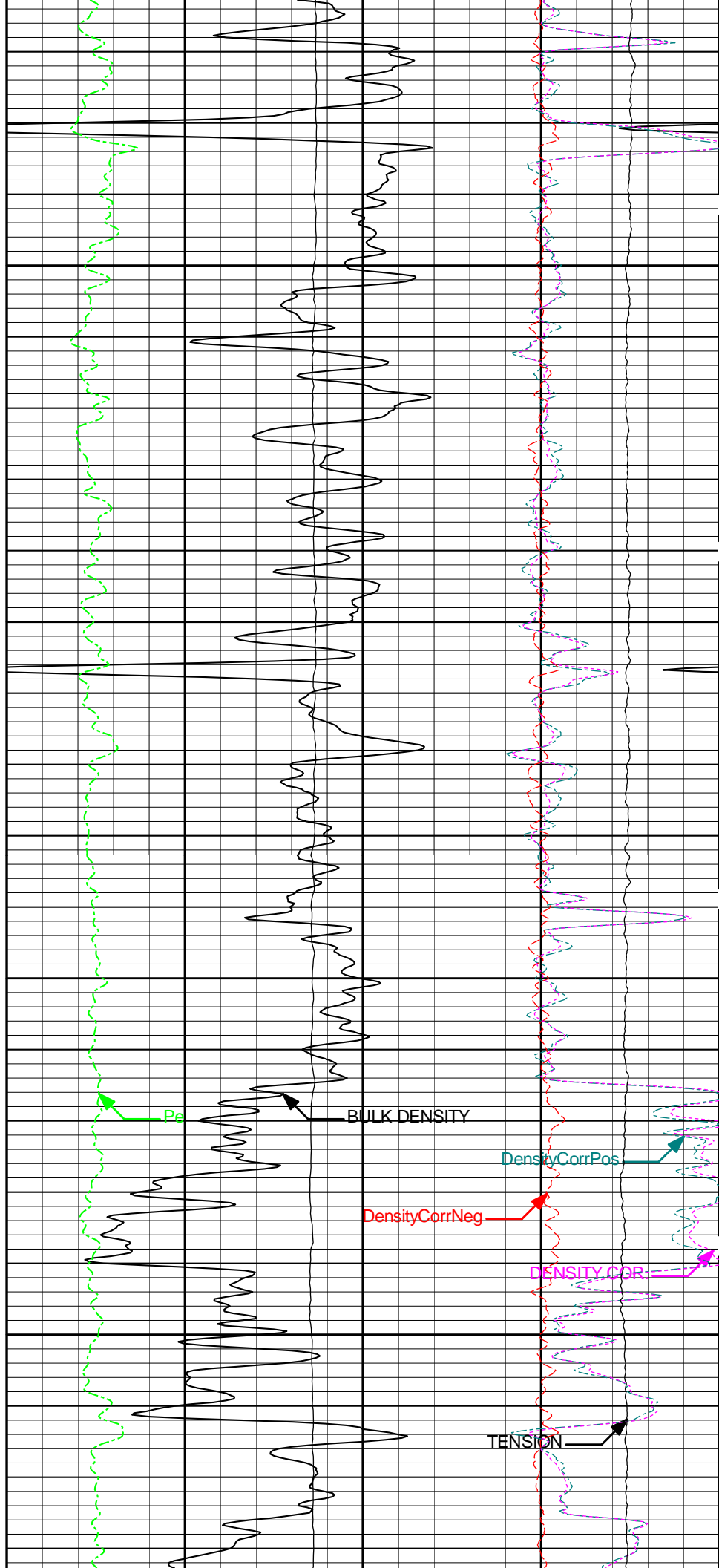
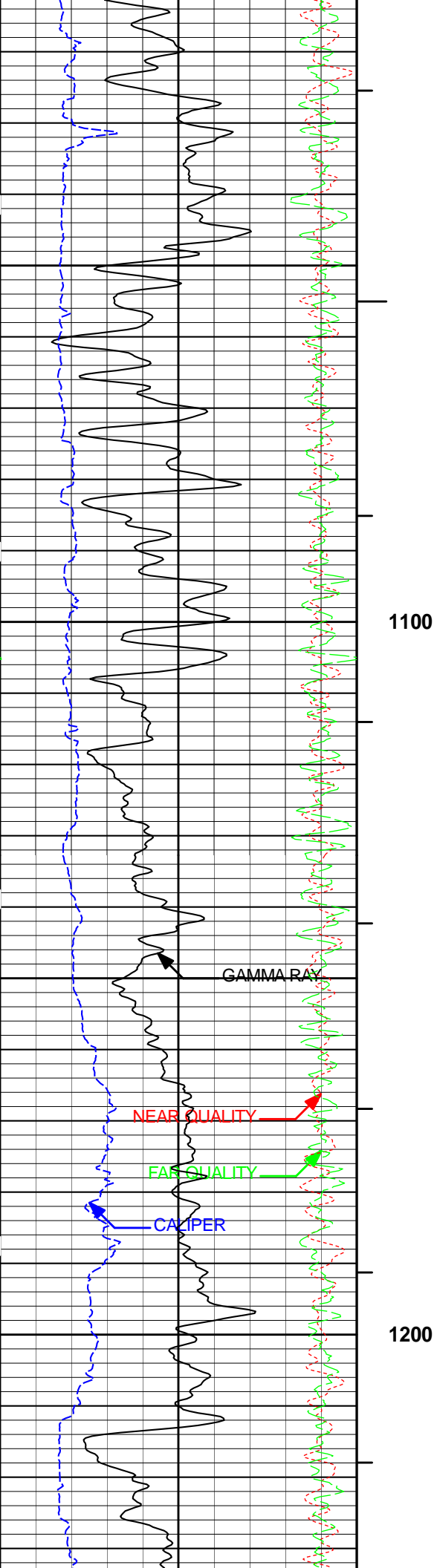


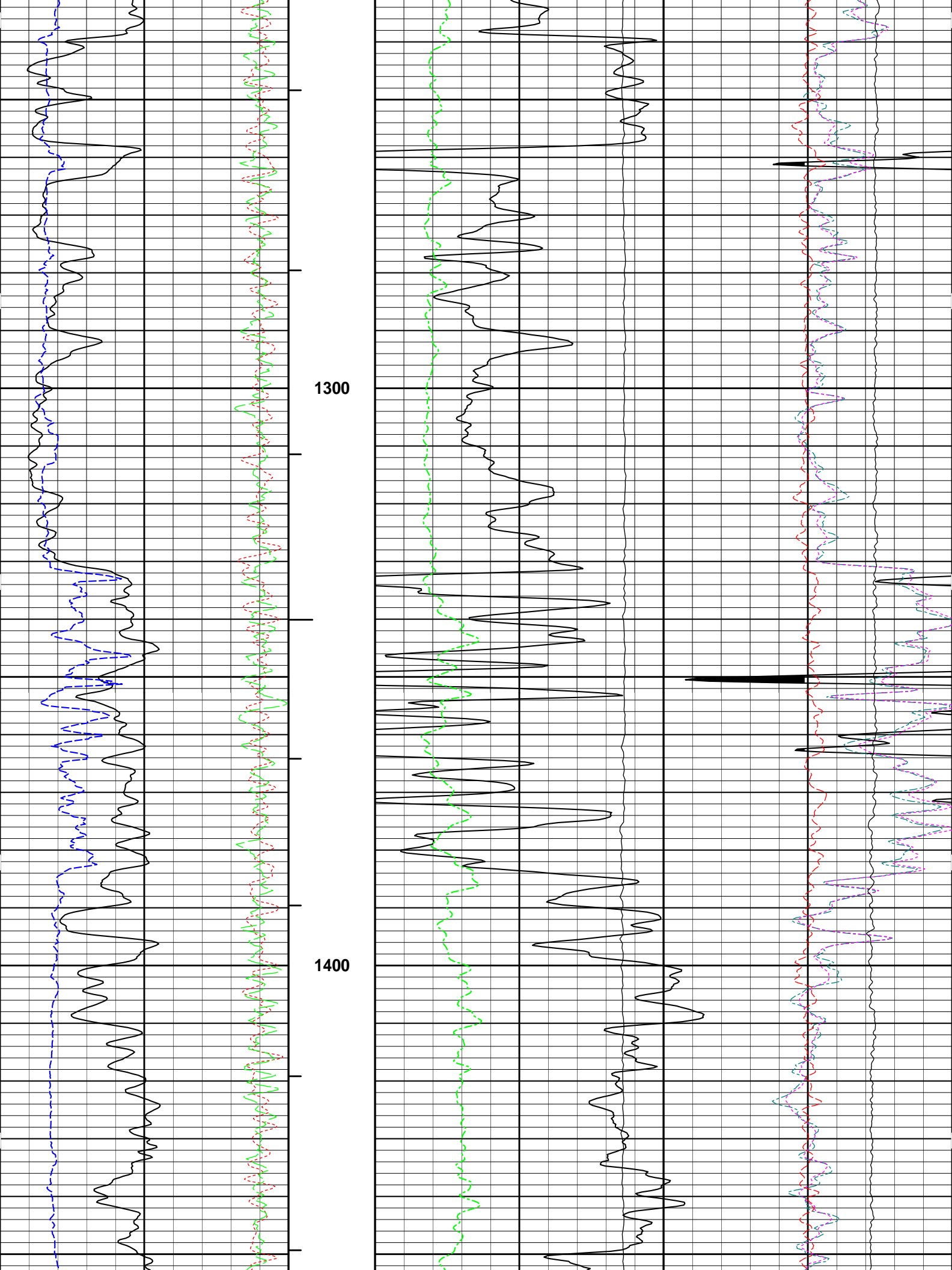
BHV
1 : 240
FT.

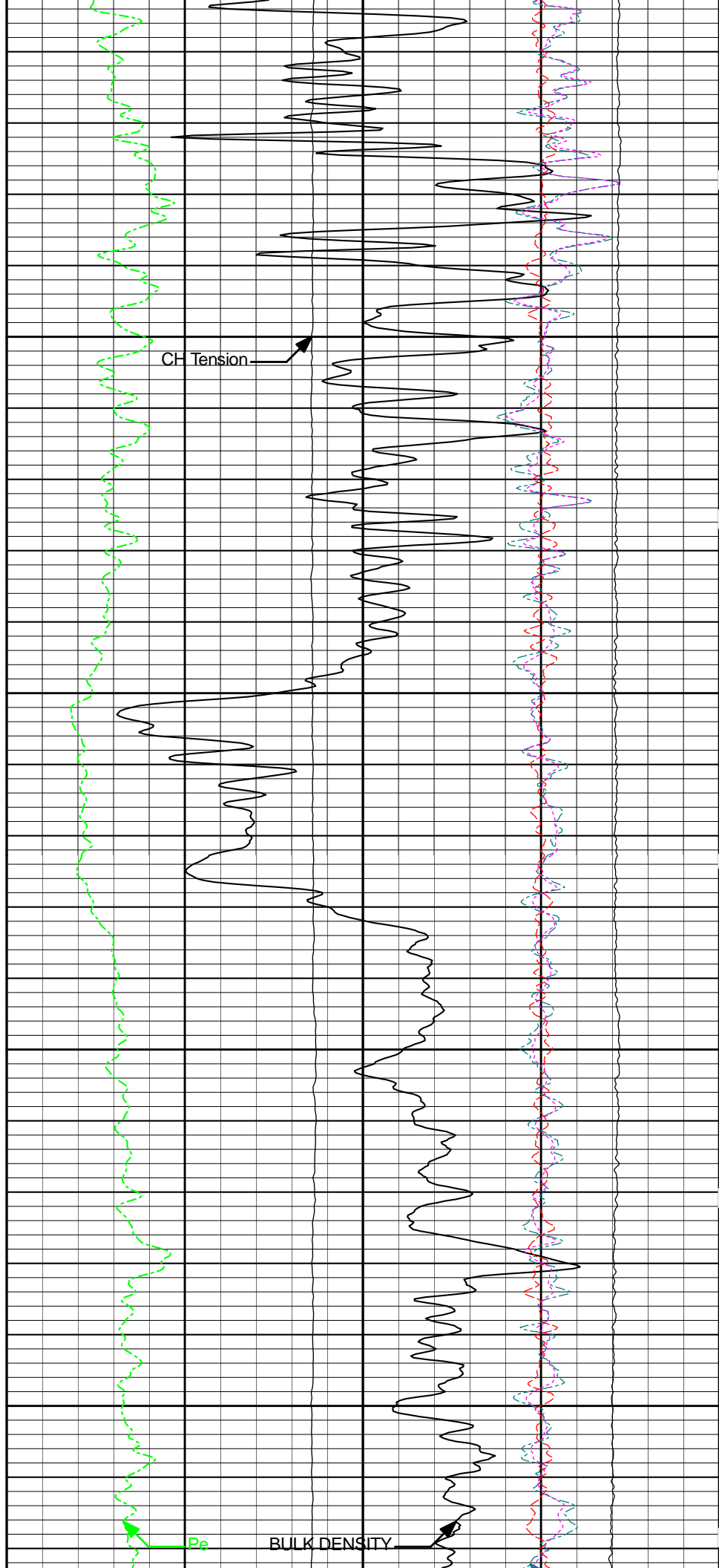
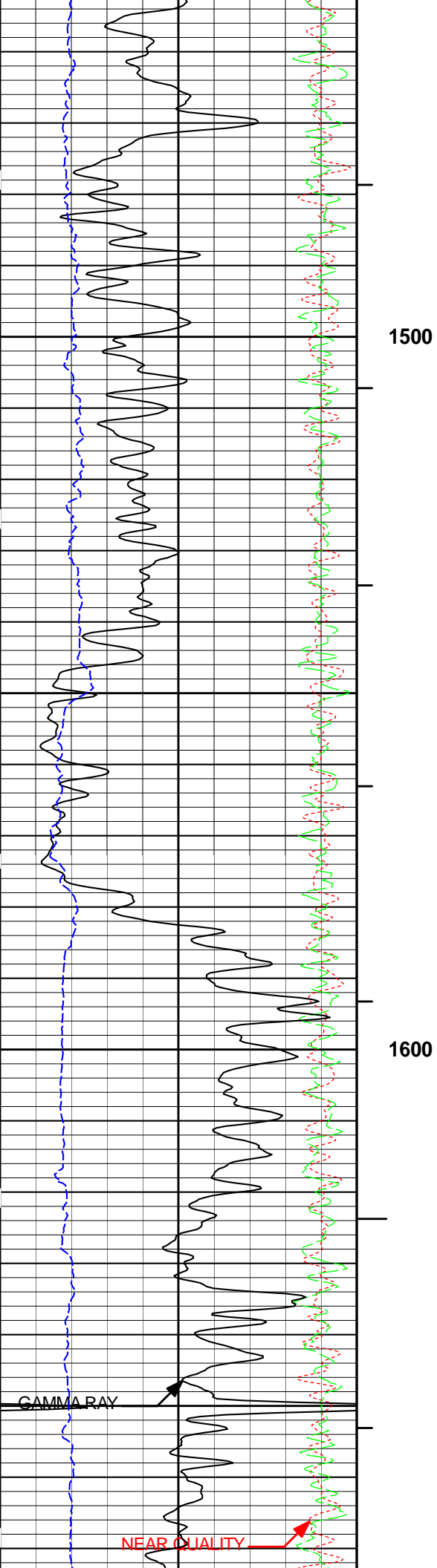


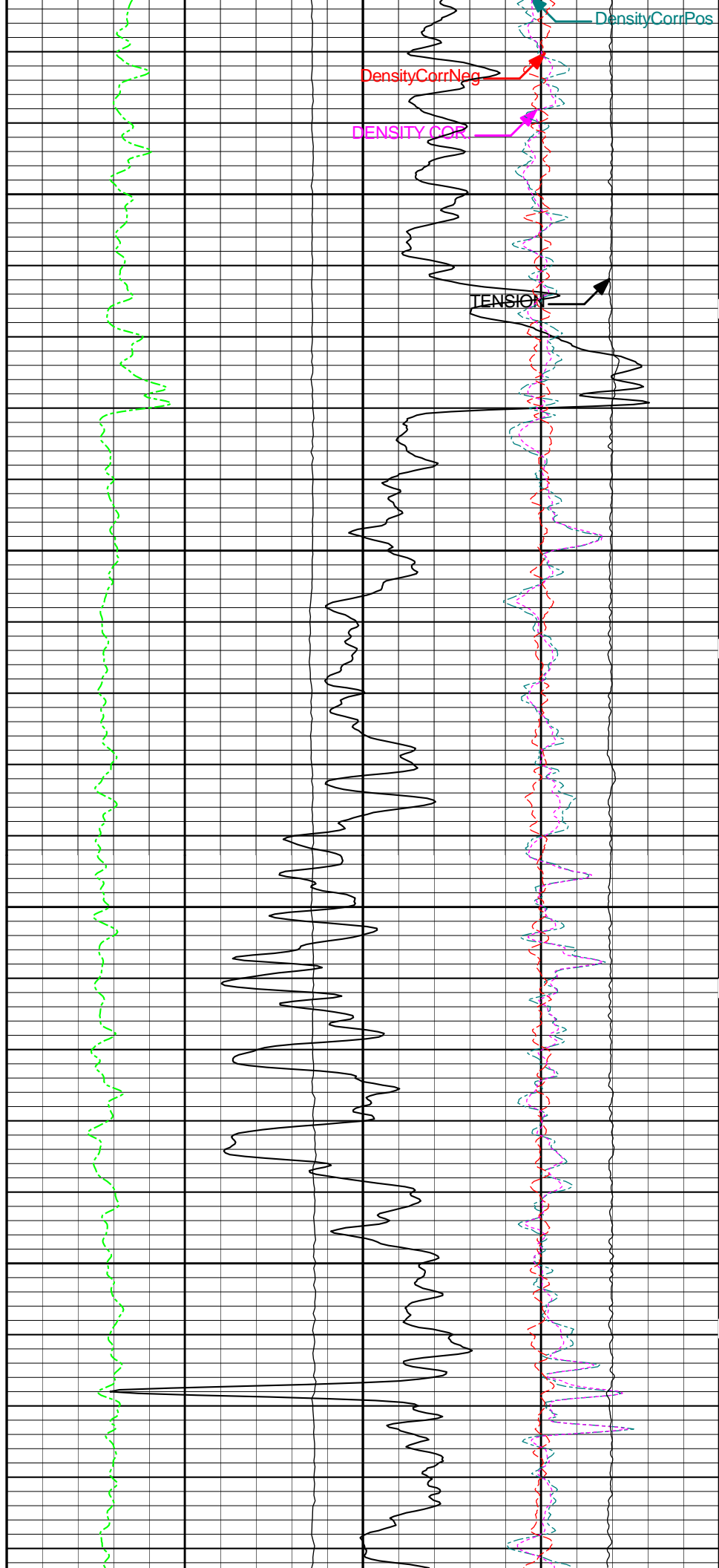
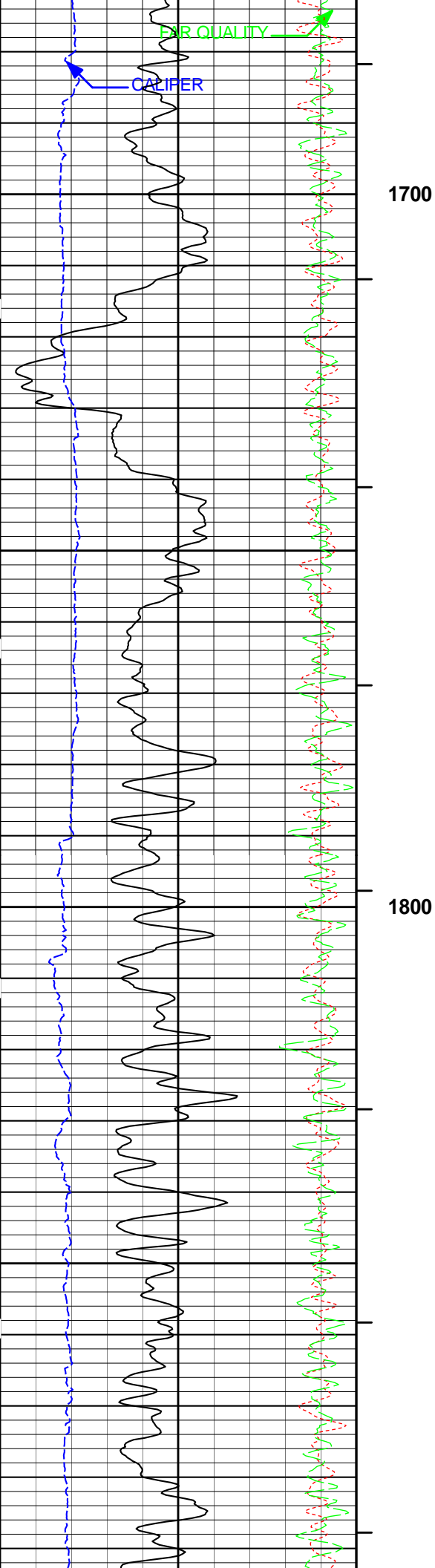


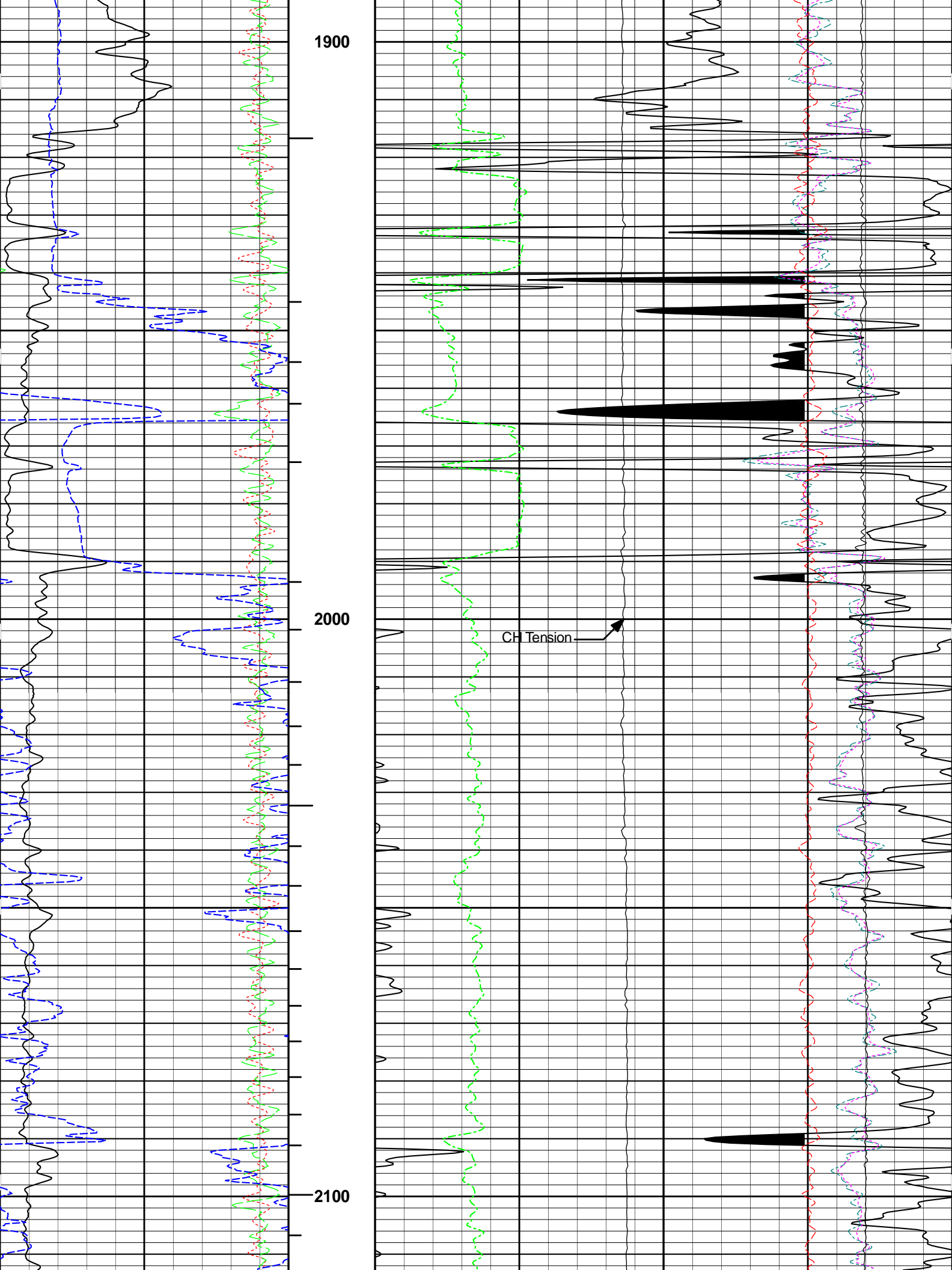


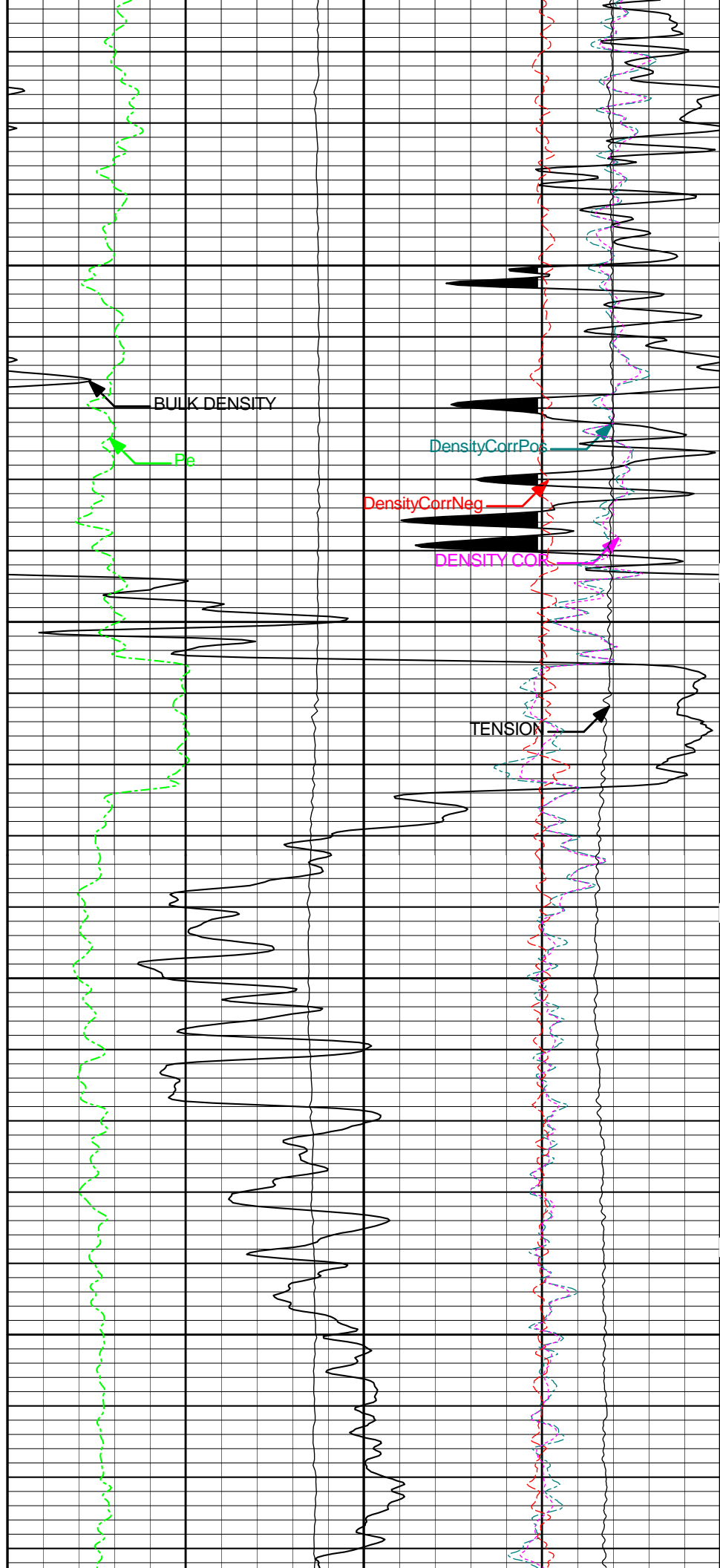
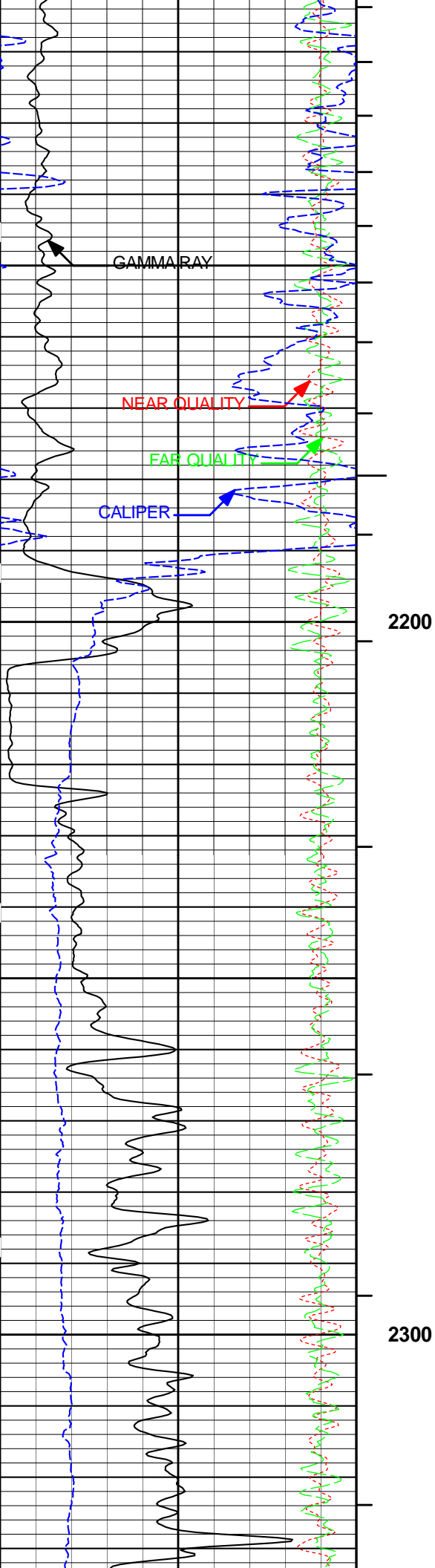


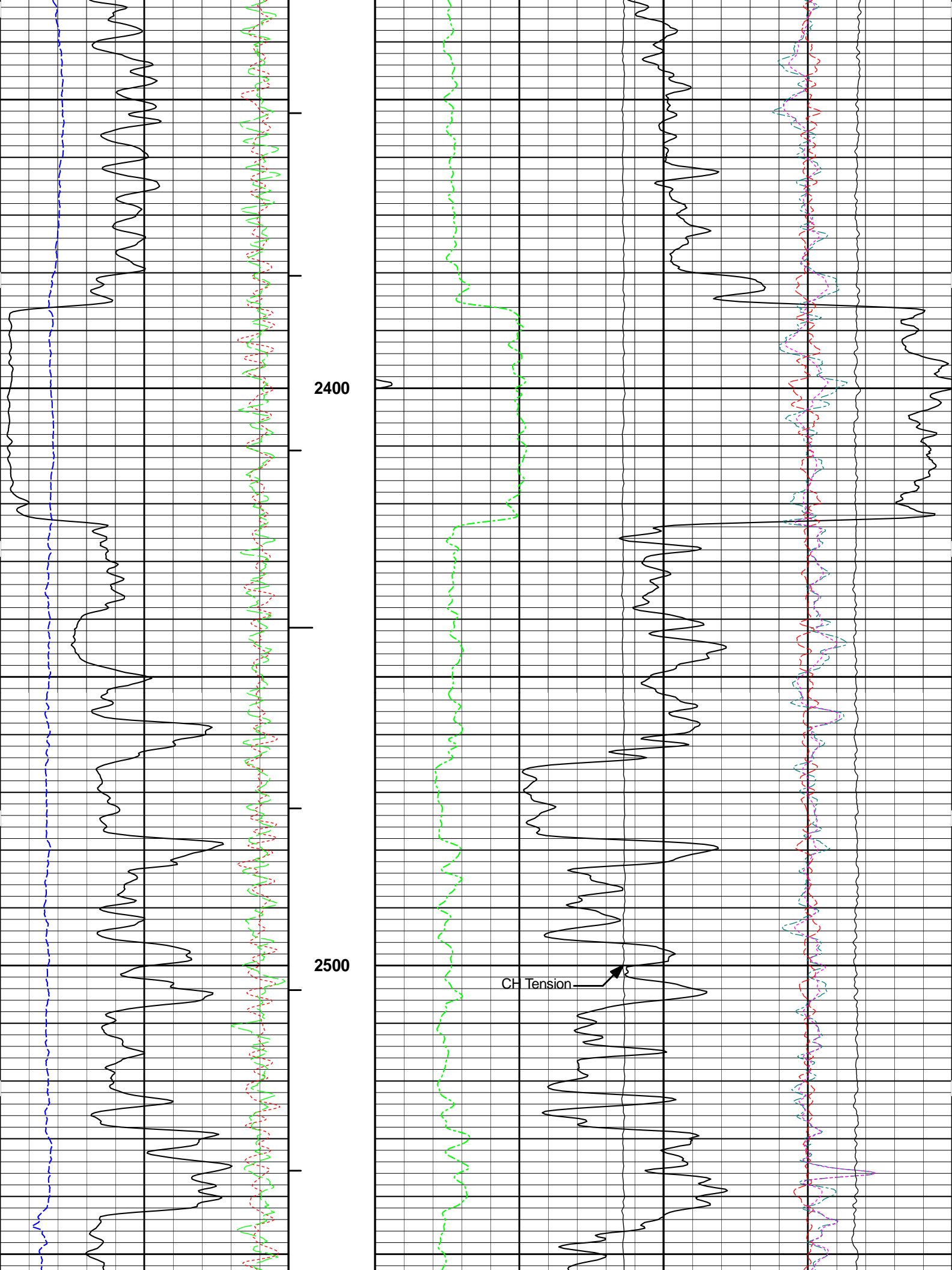


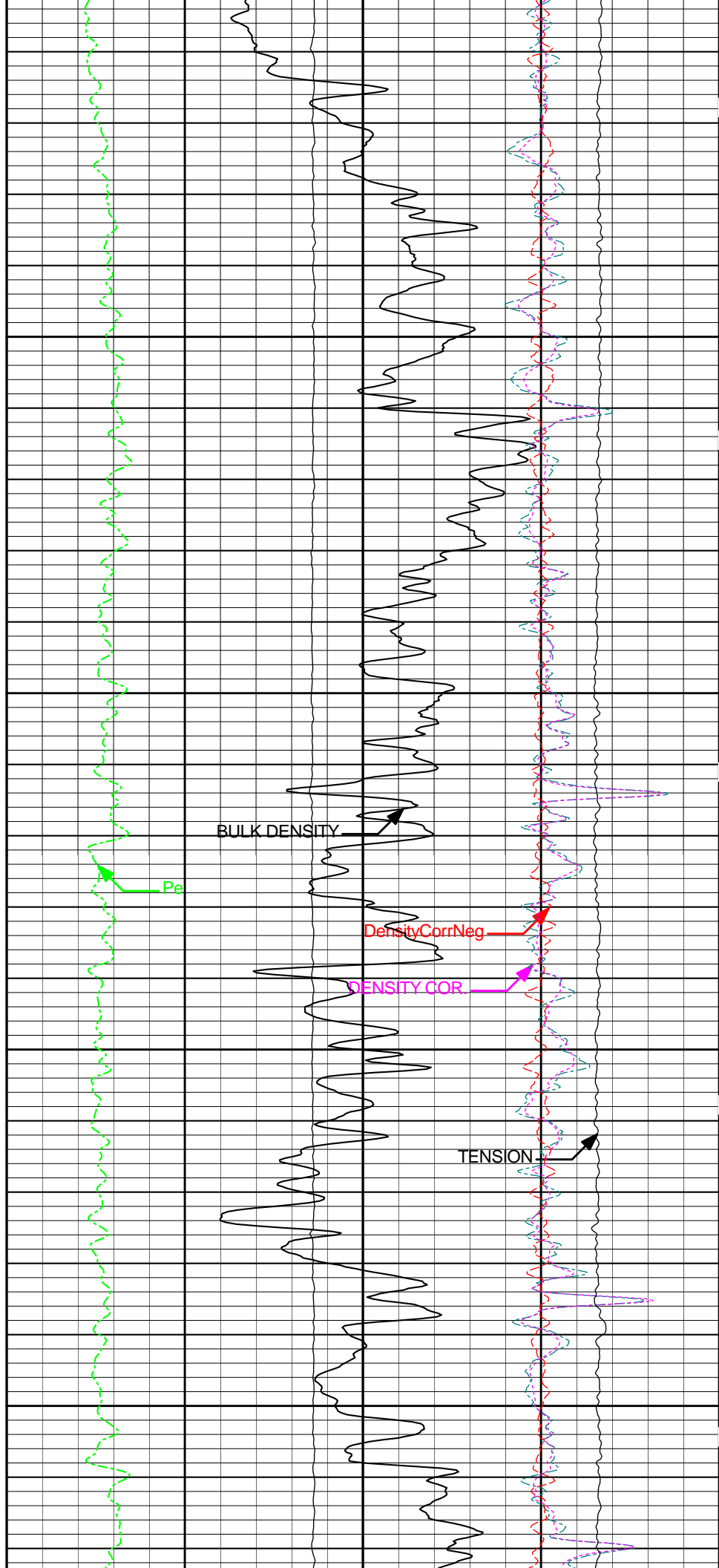
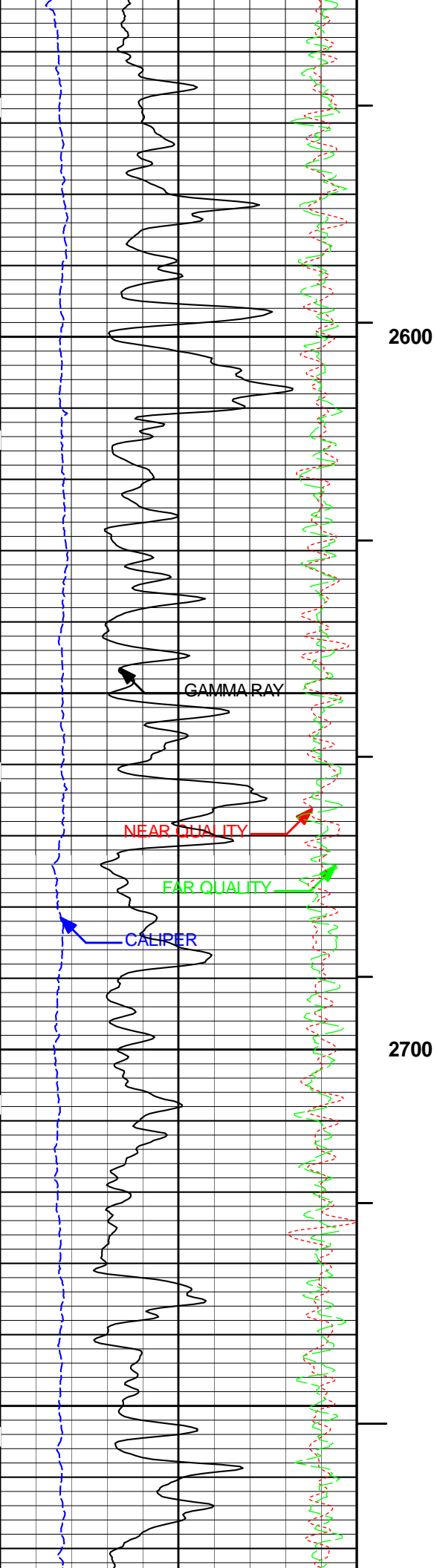


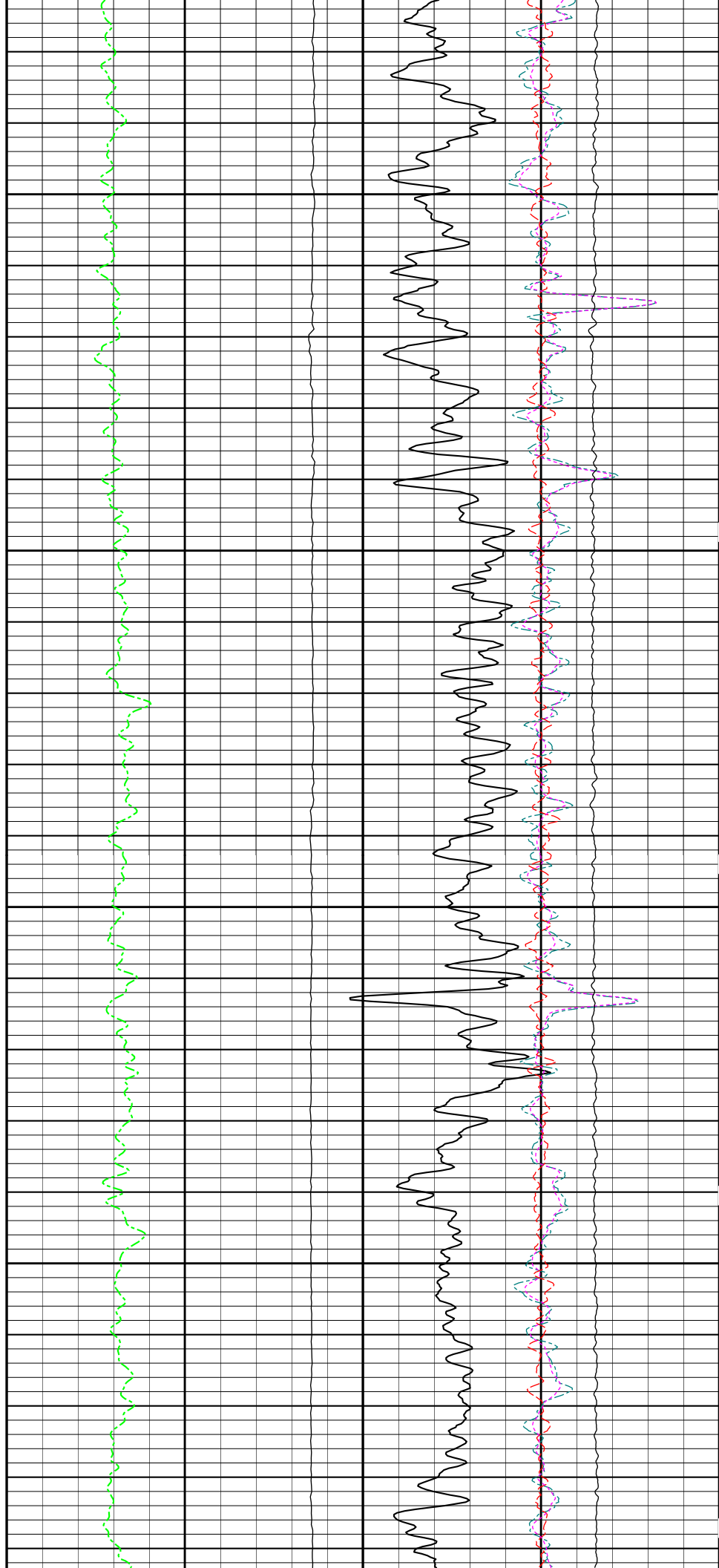
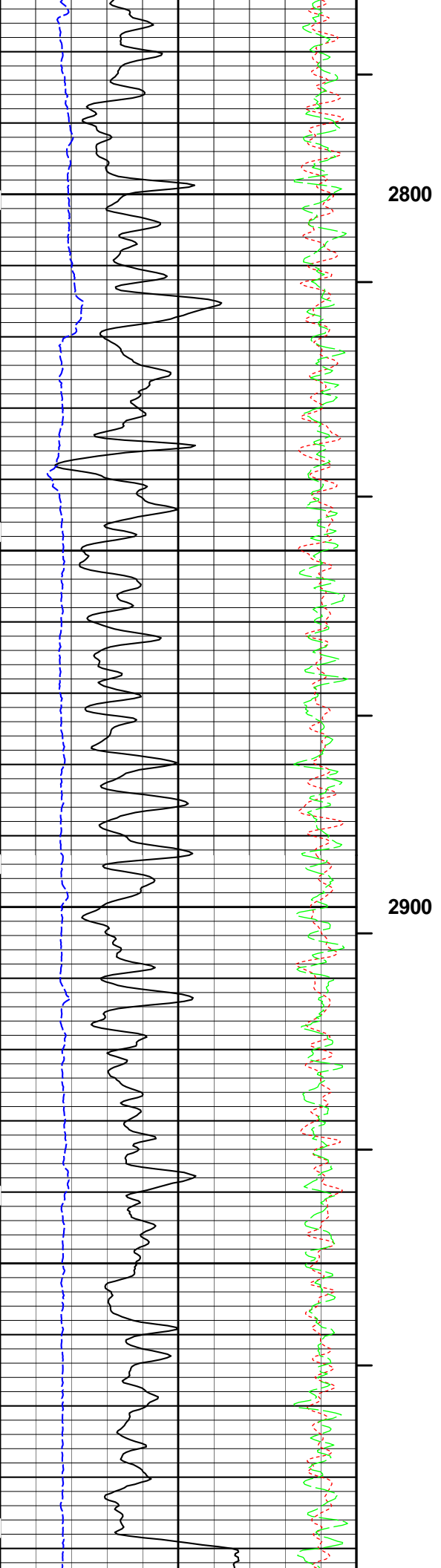


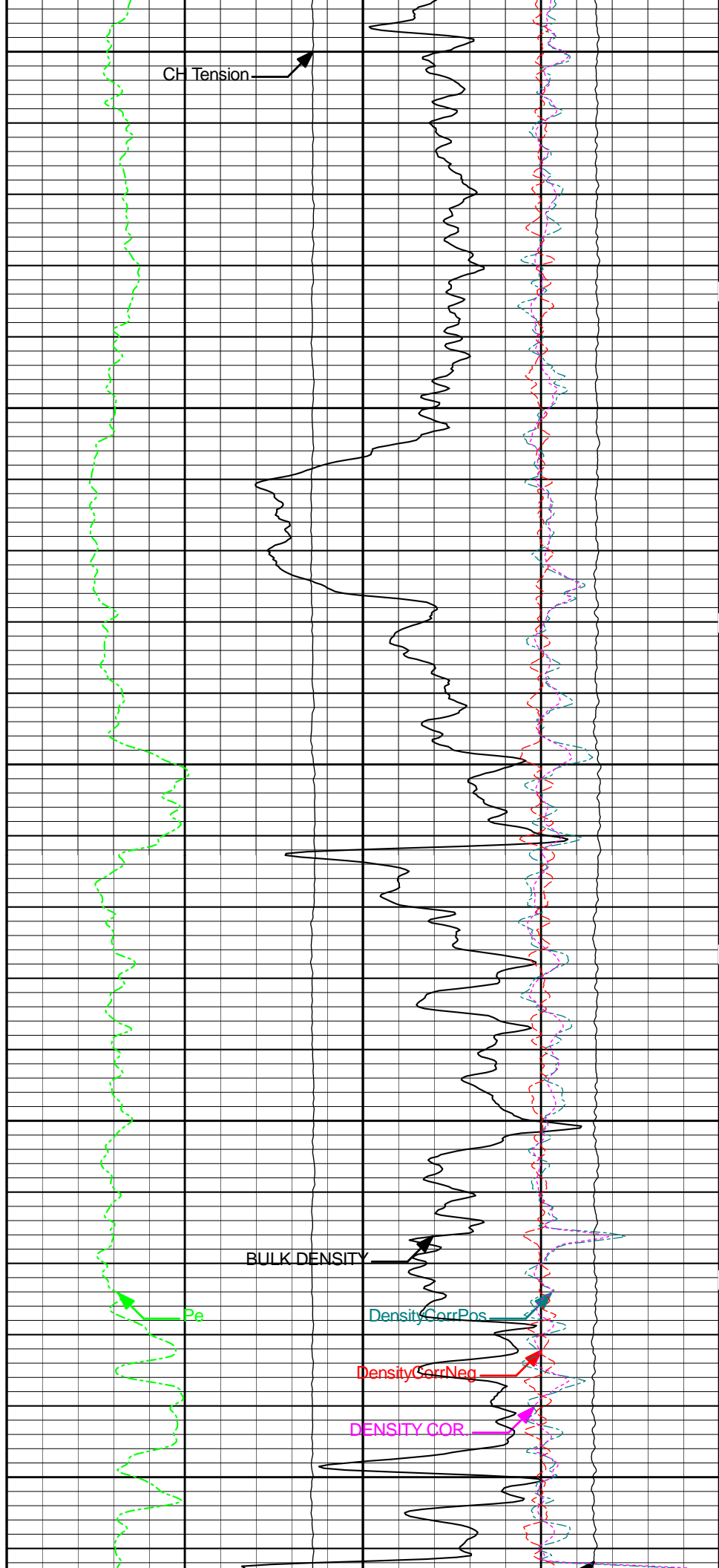
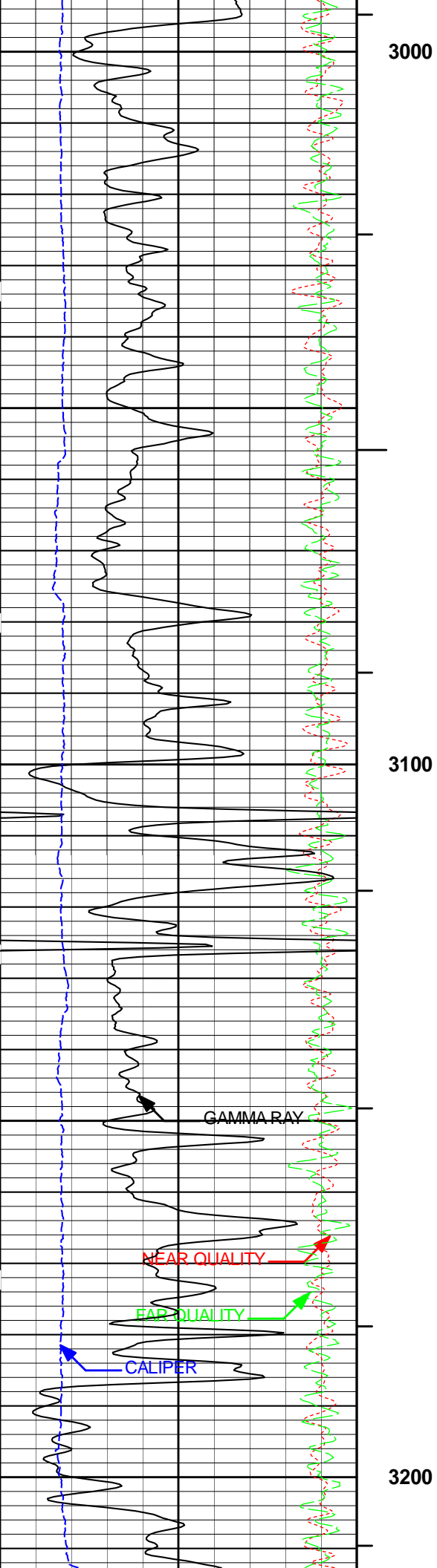


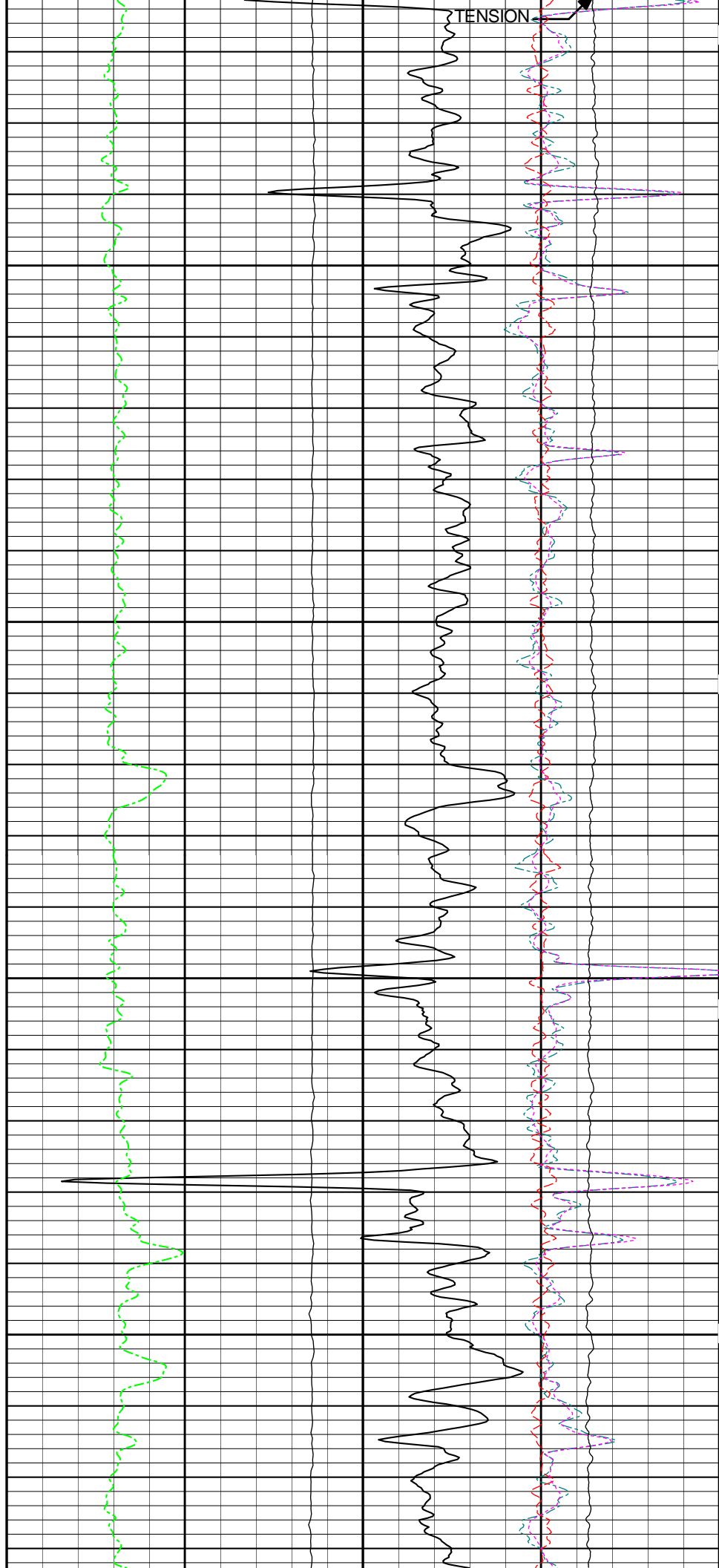
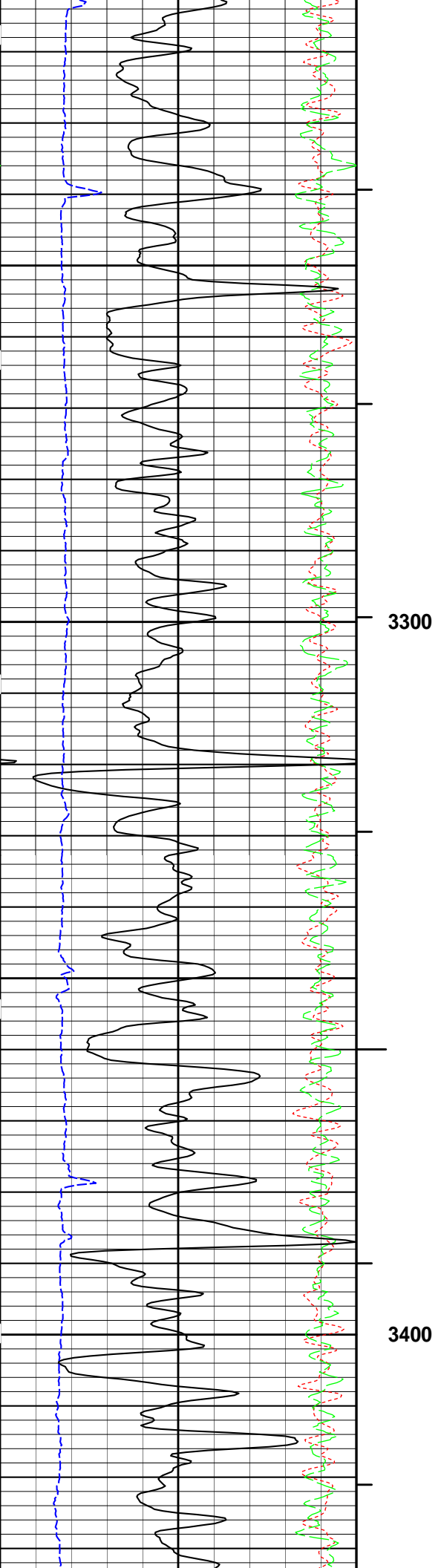
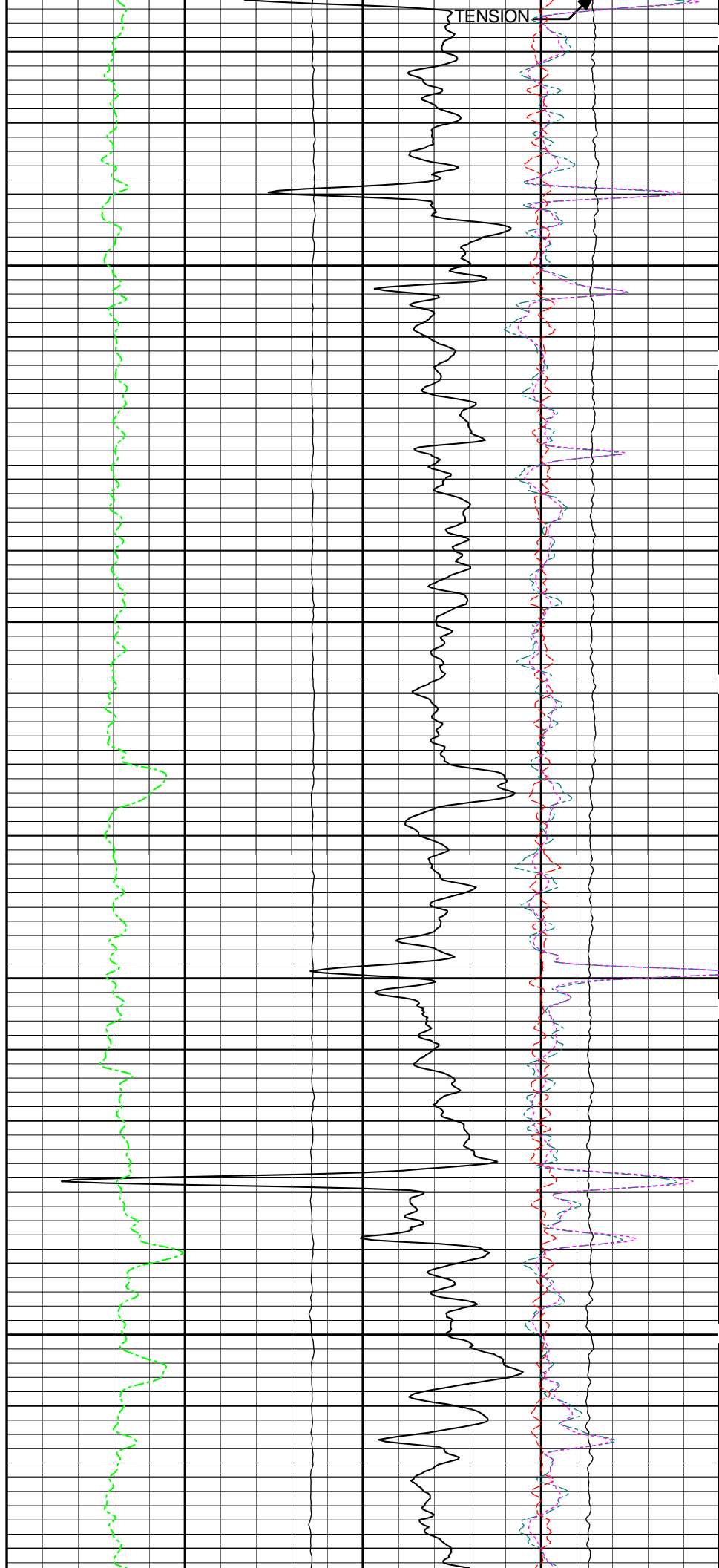
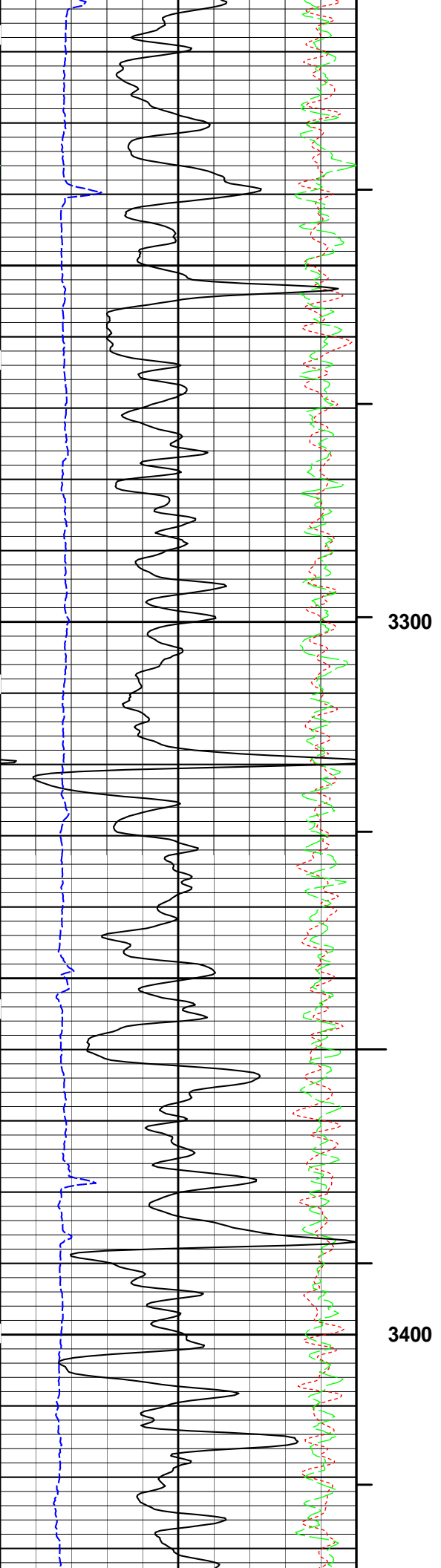


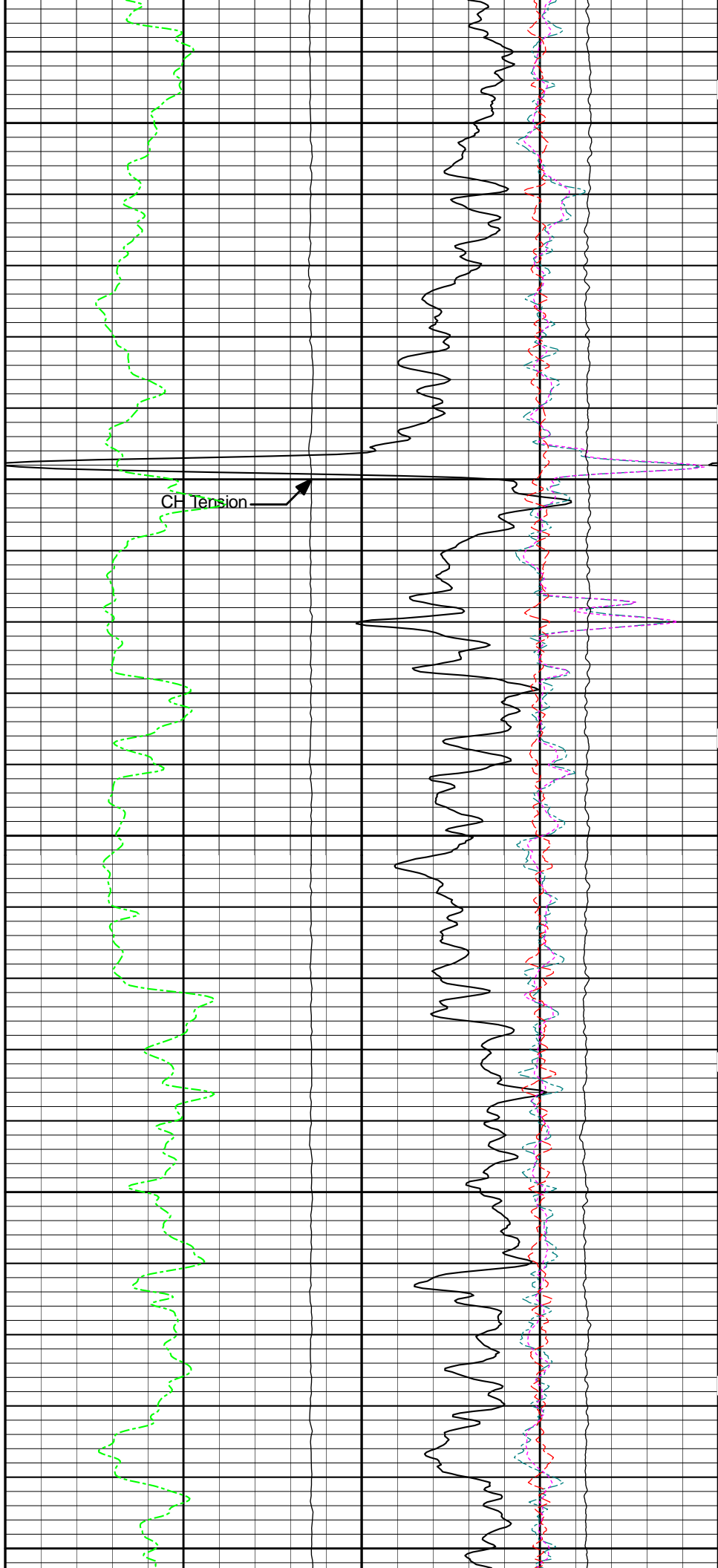
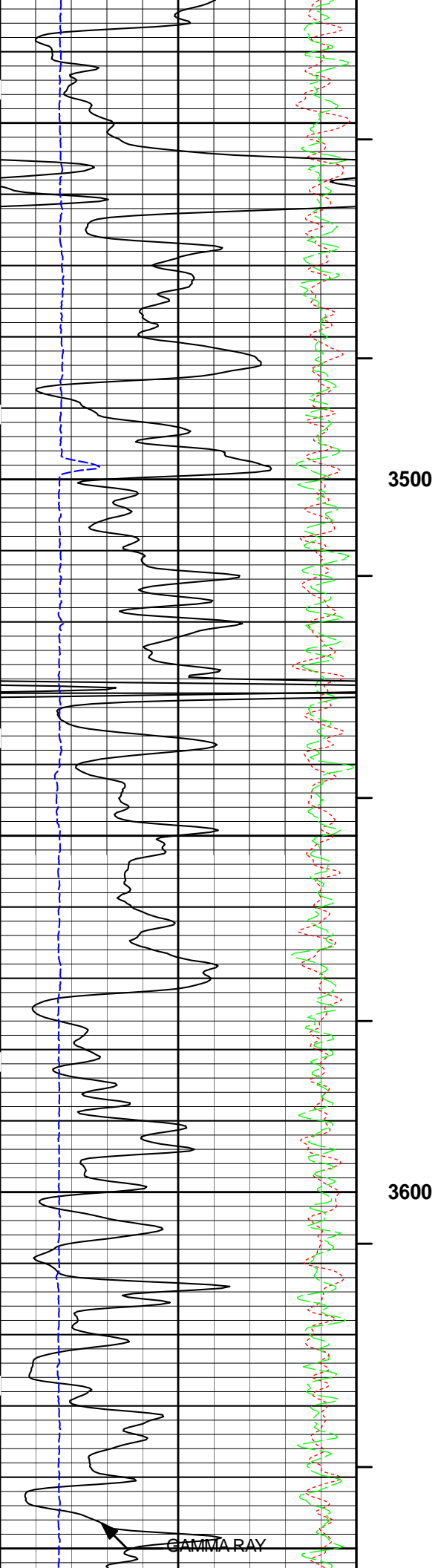


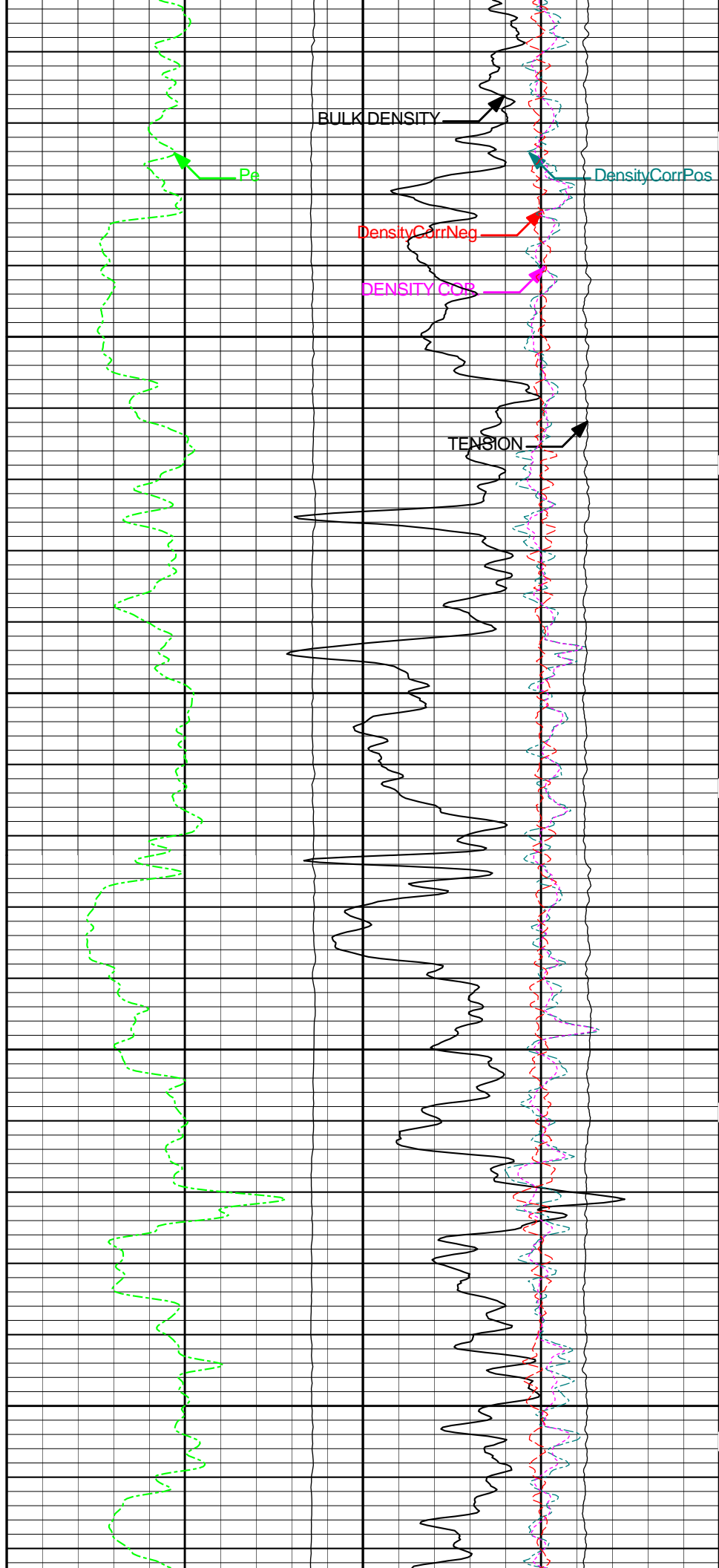
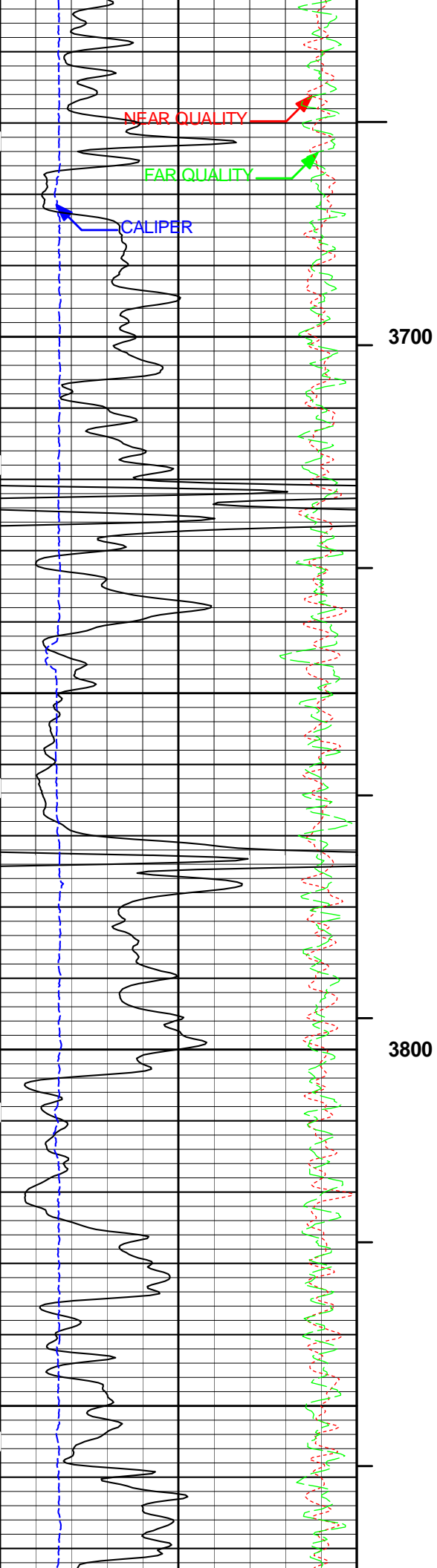


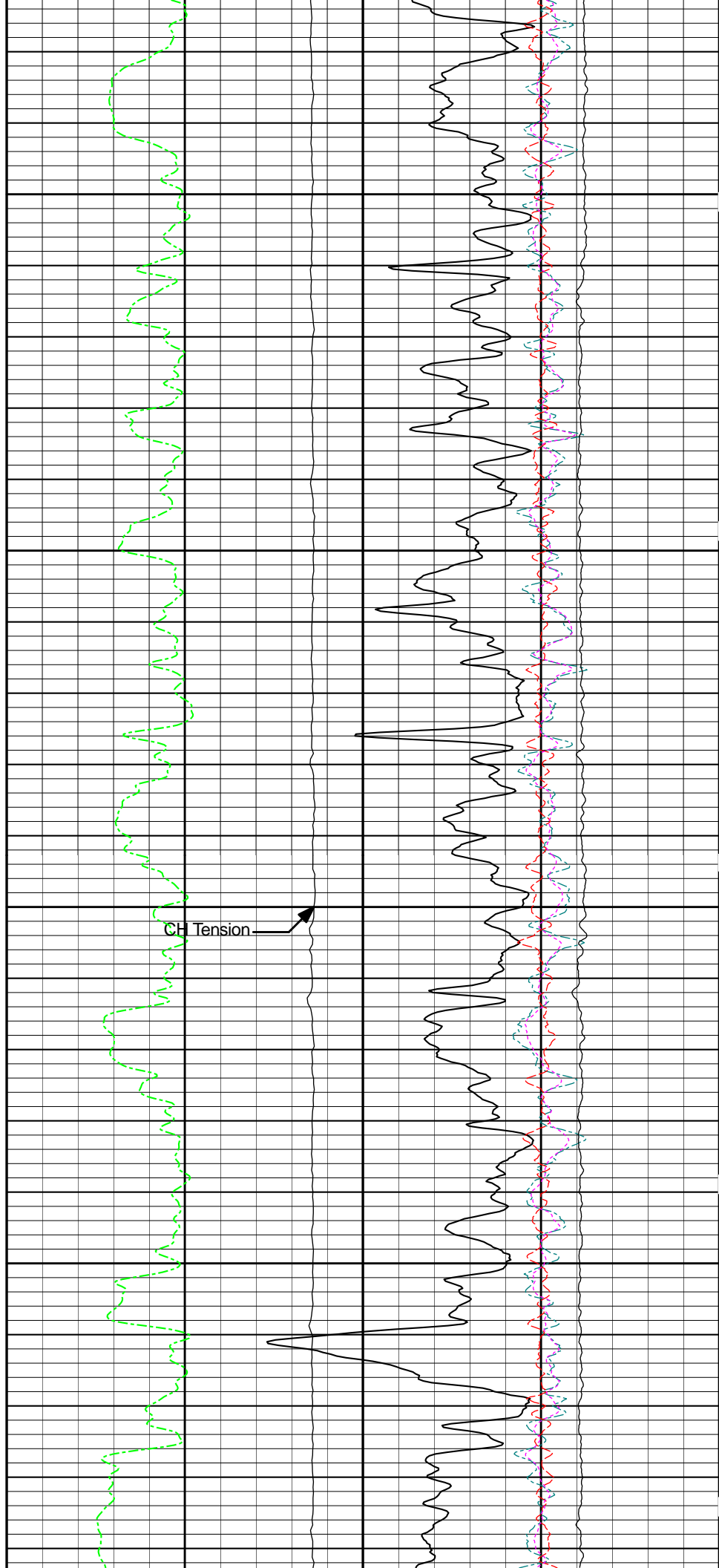
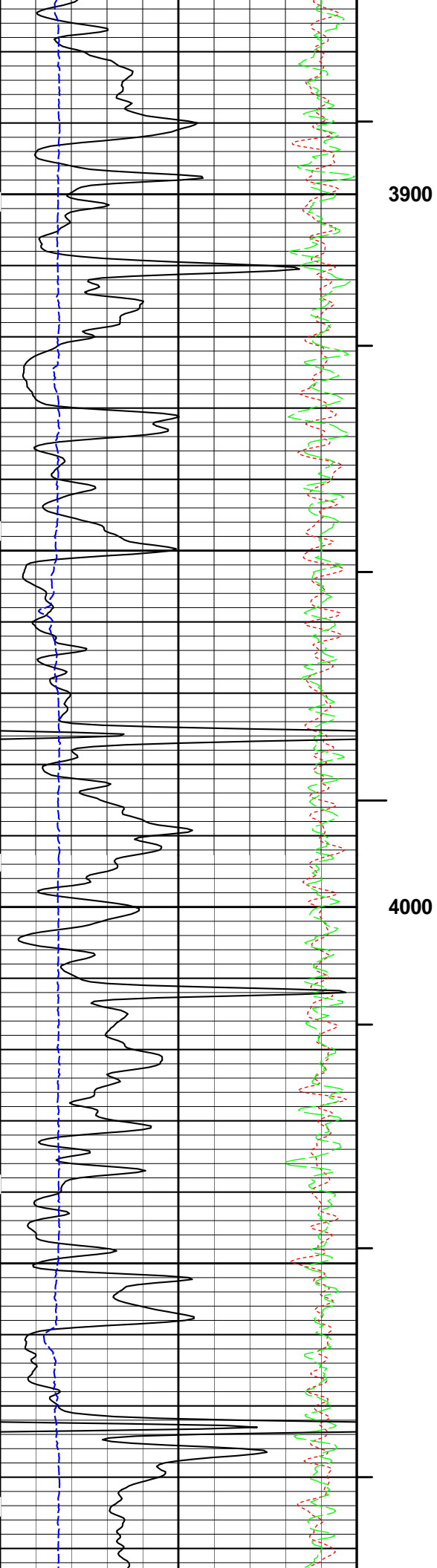


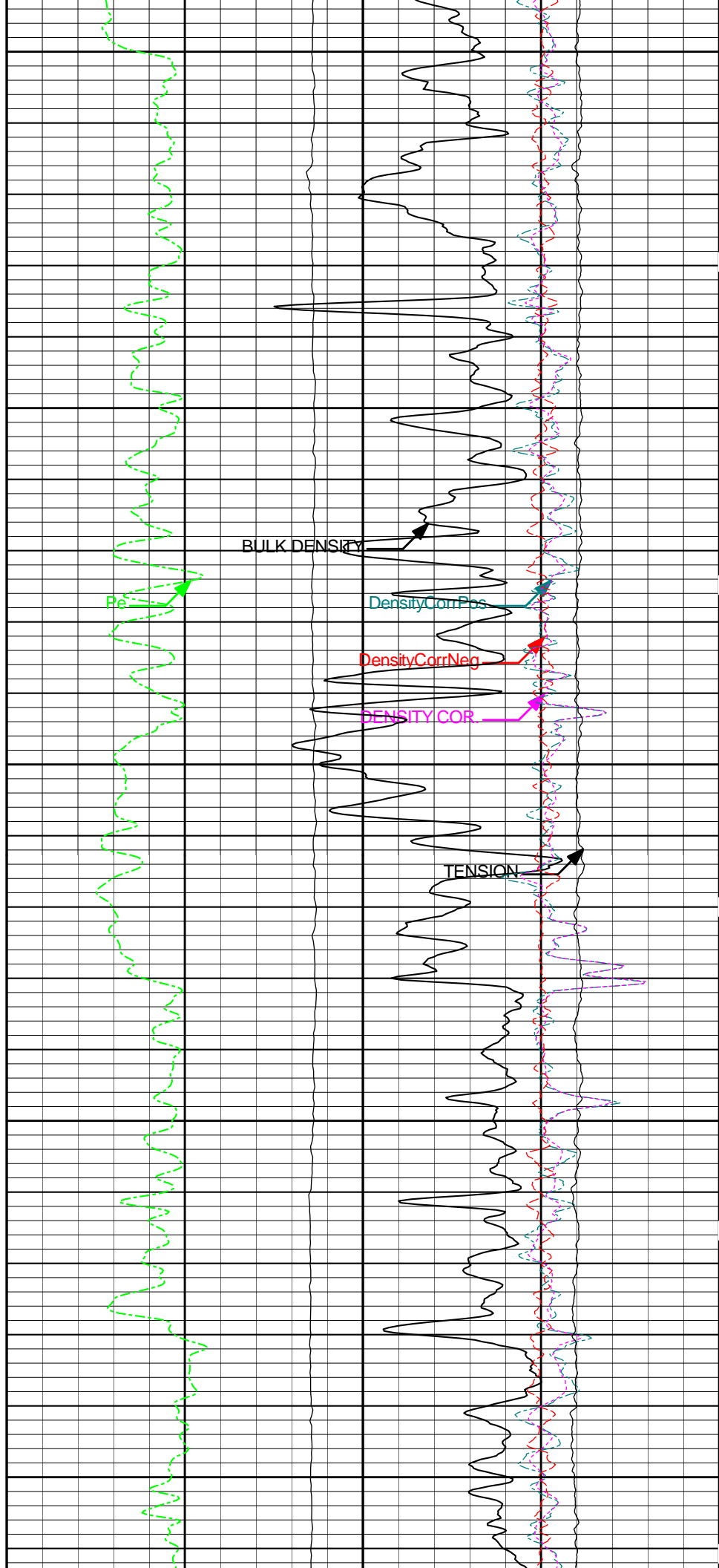
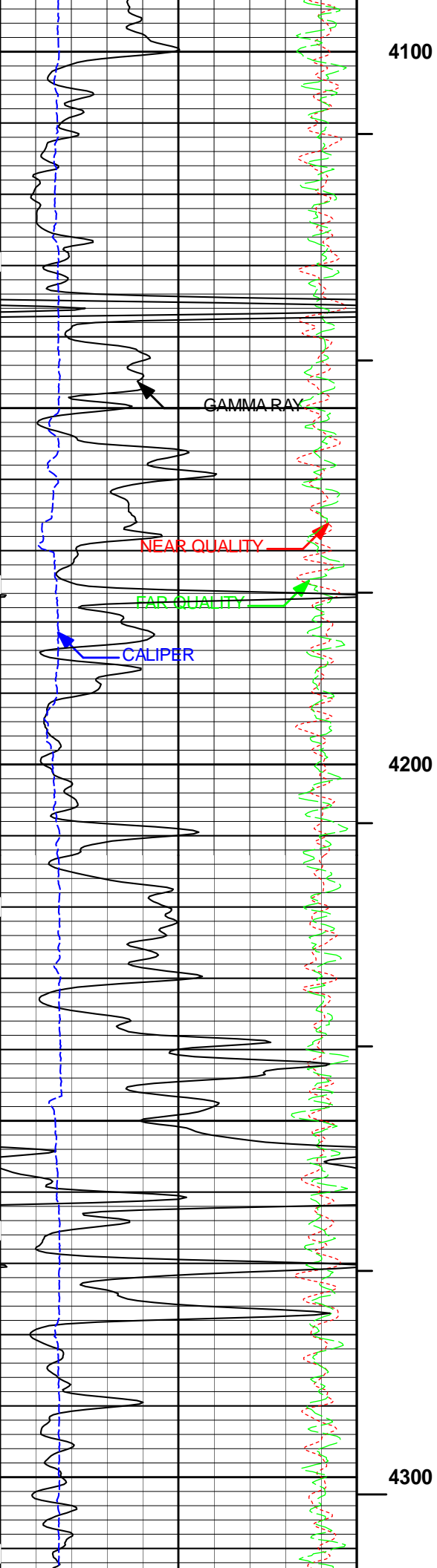


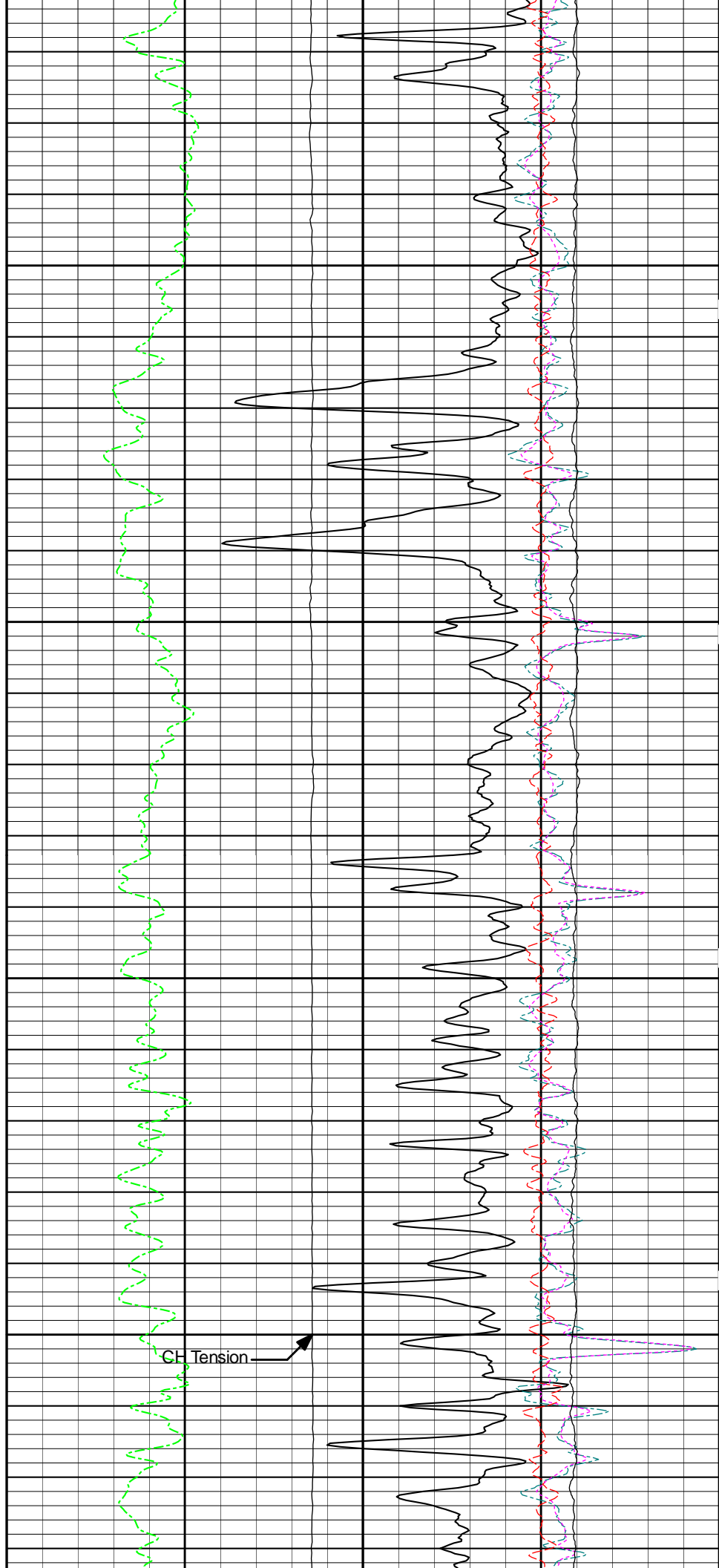
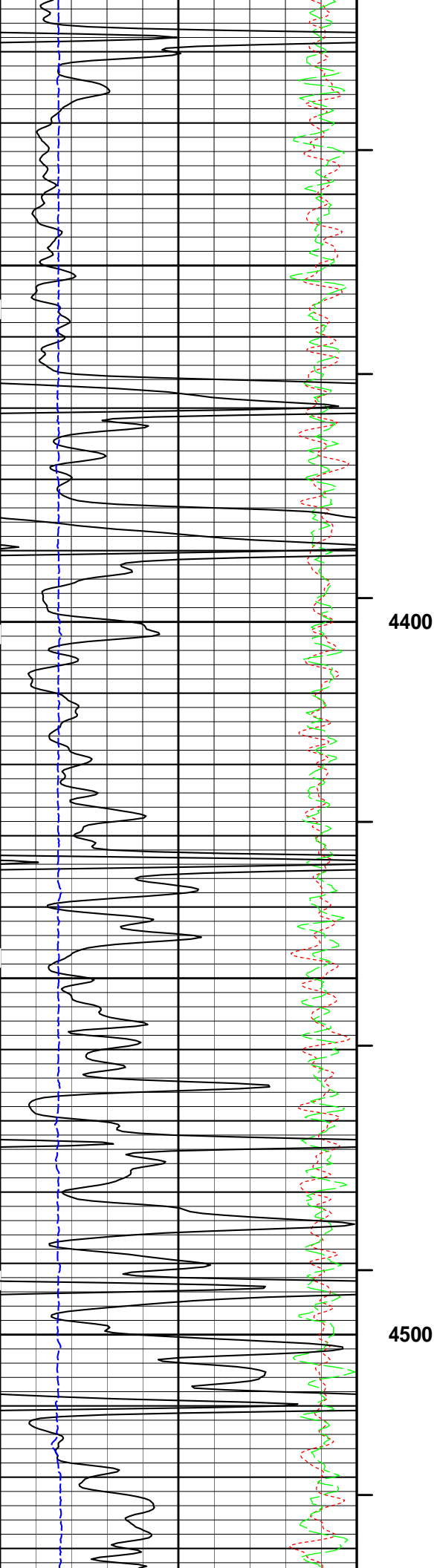


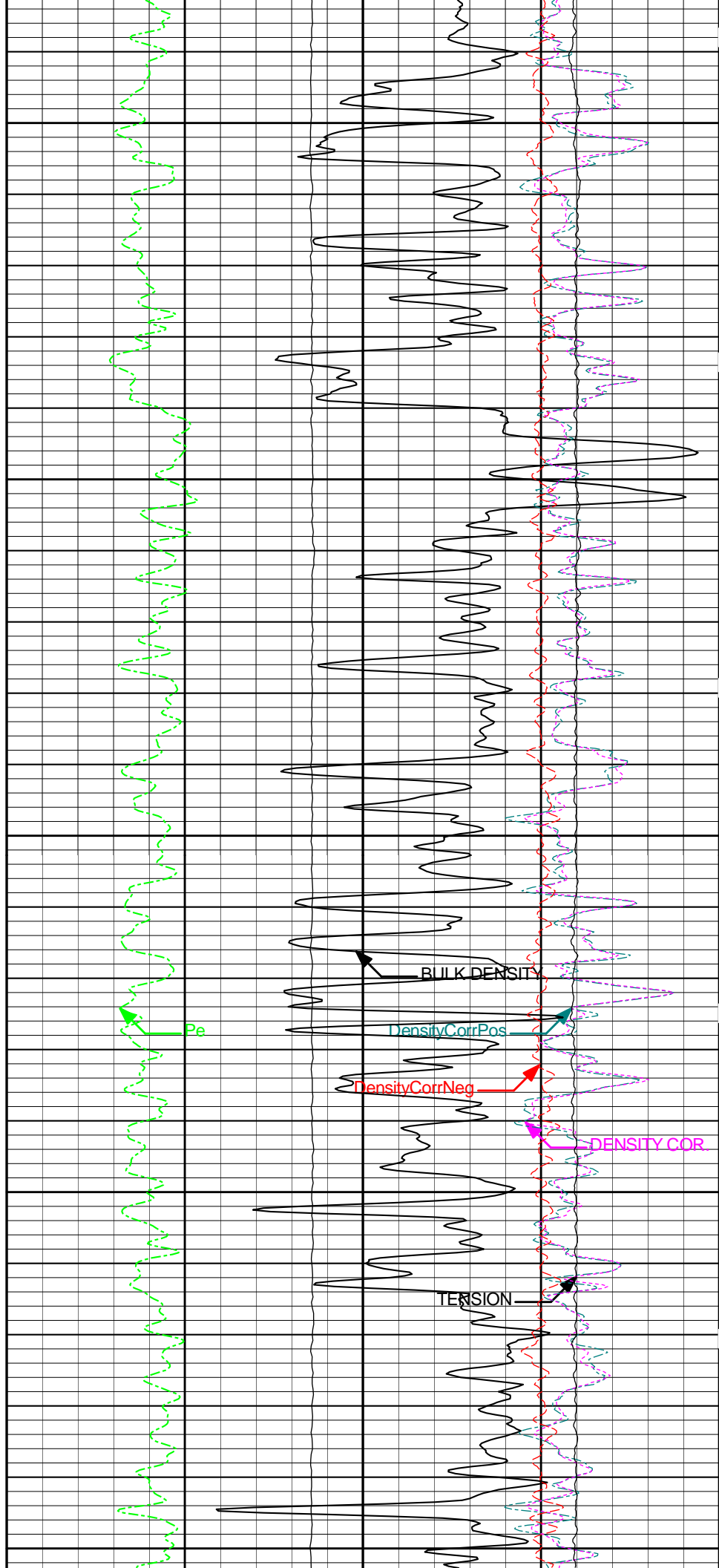
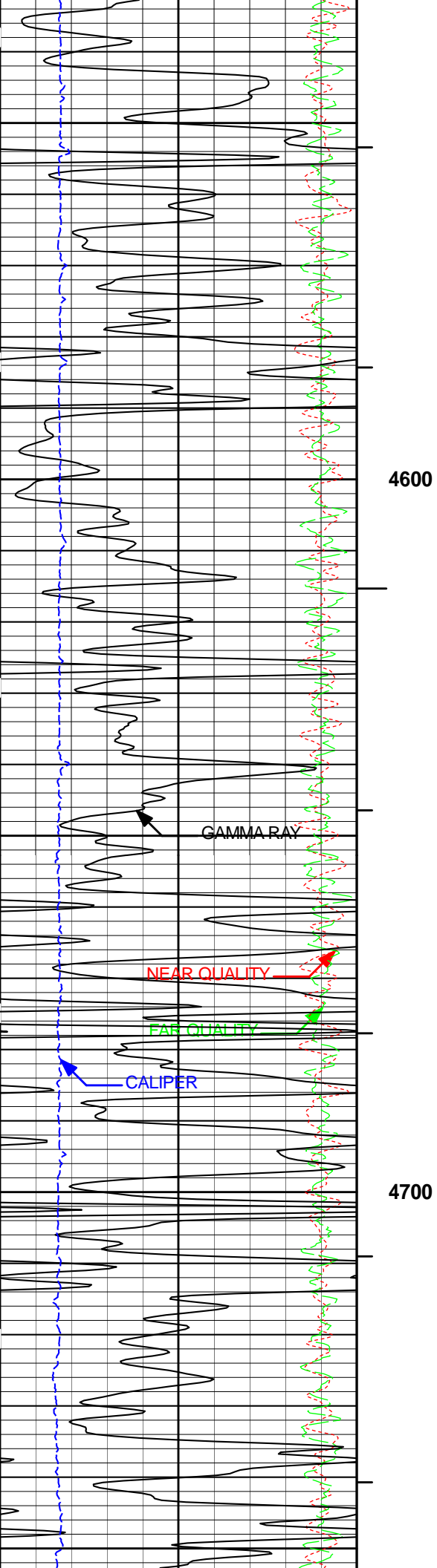


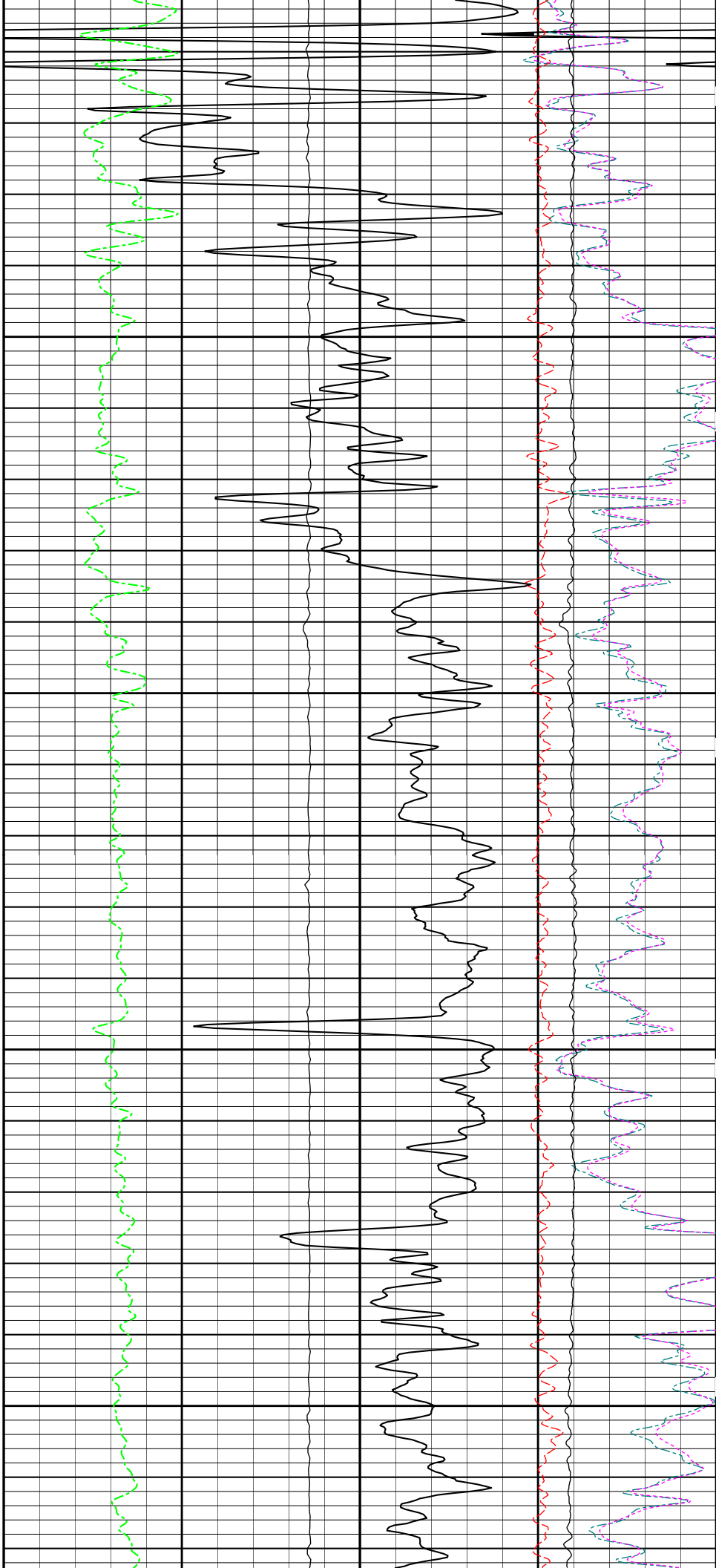
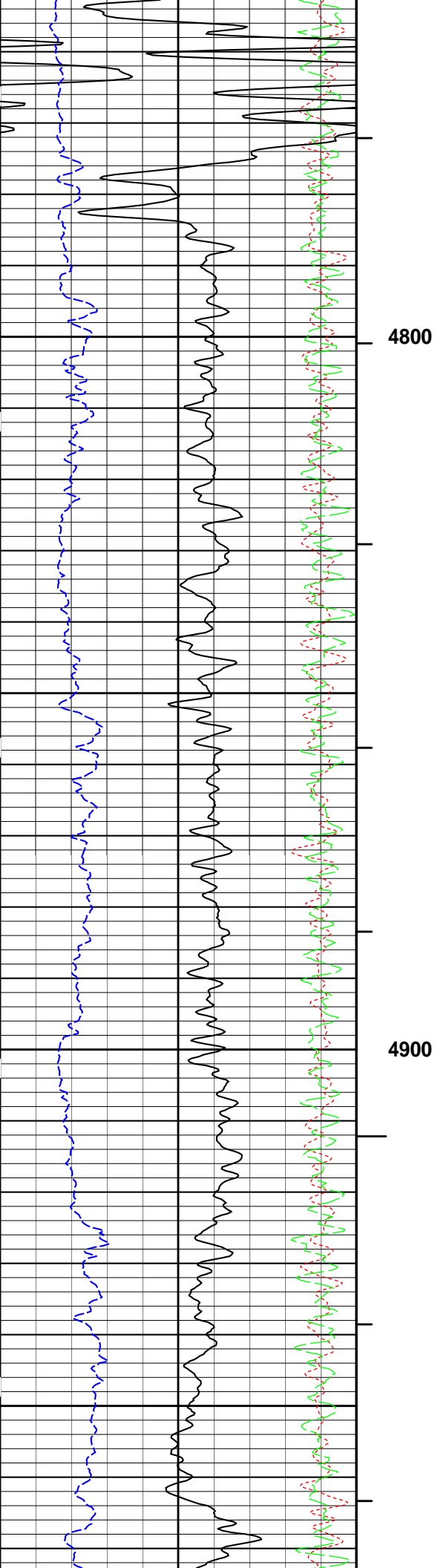


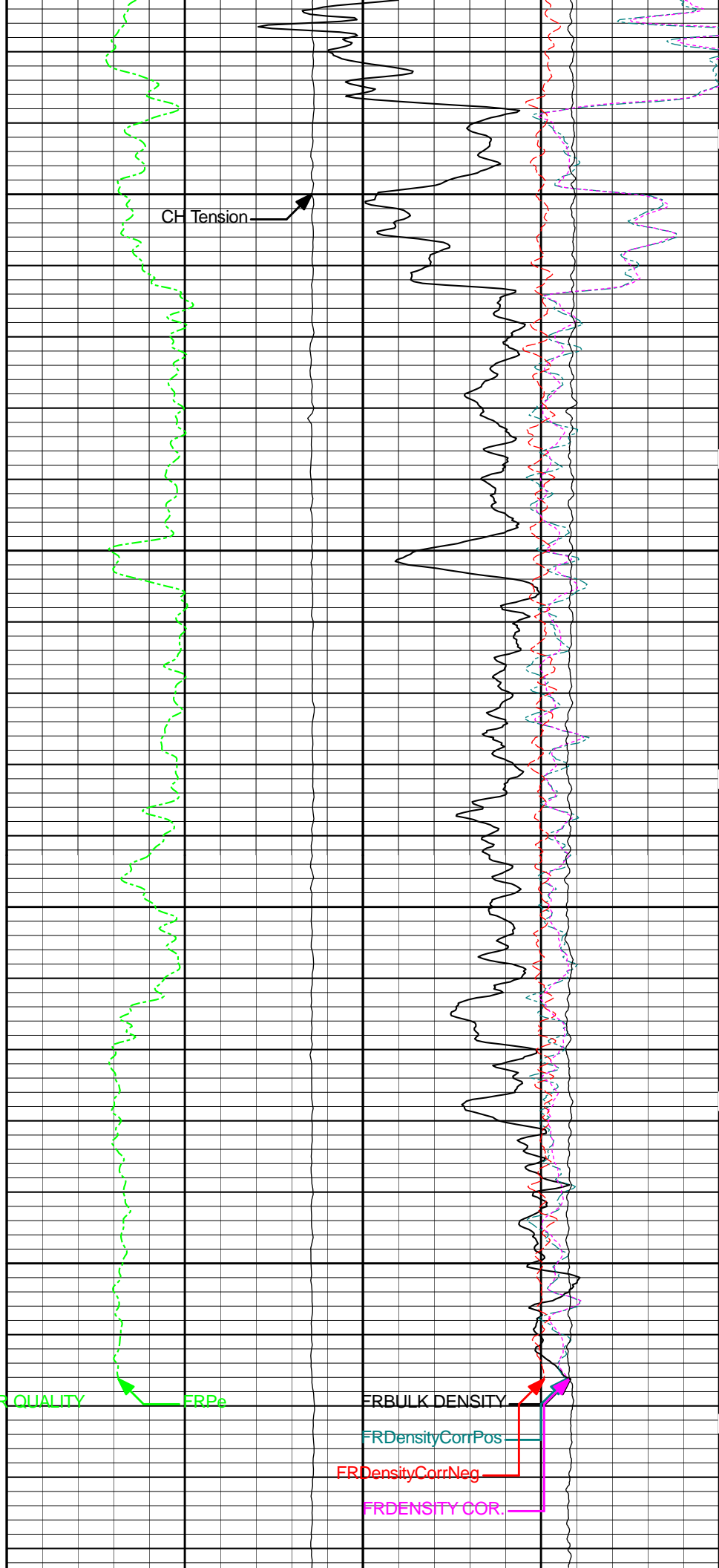
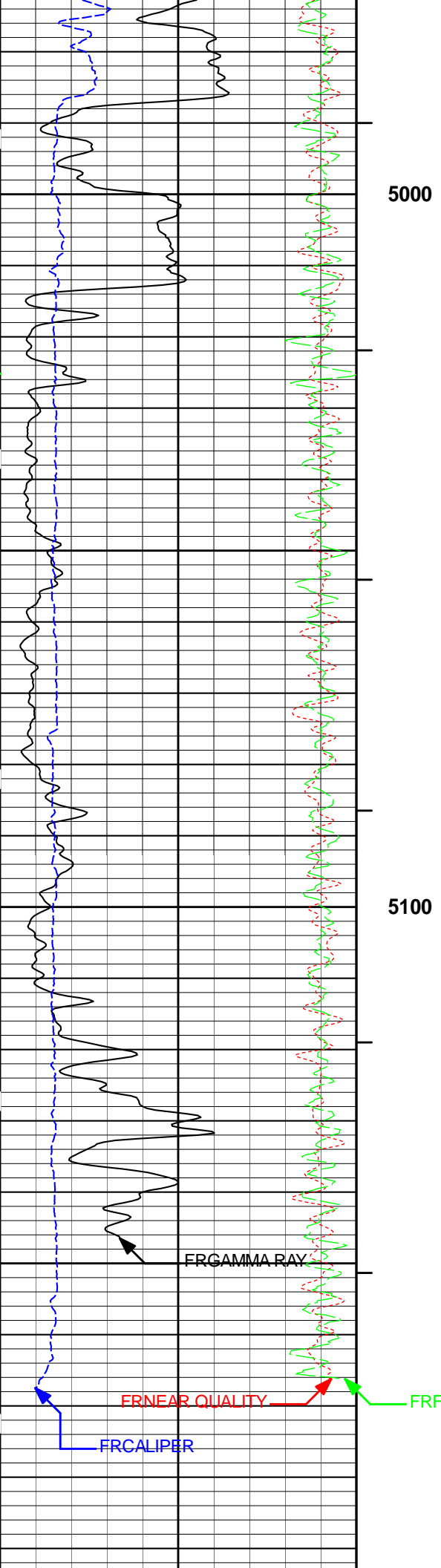


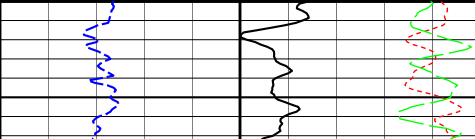
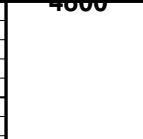
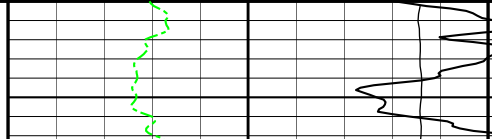
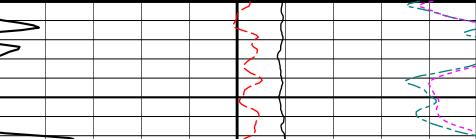


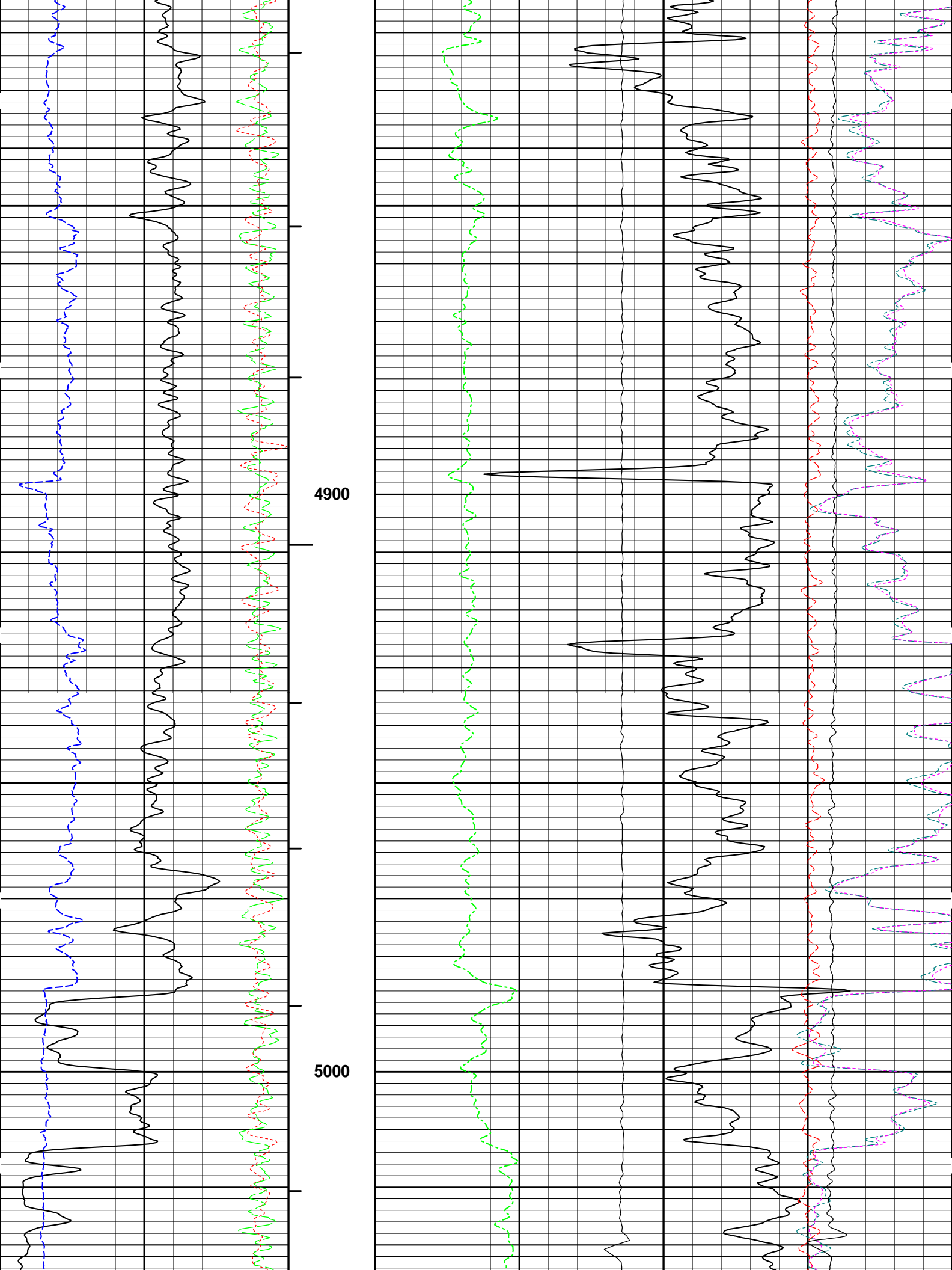


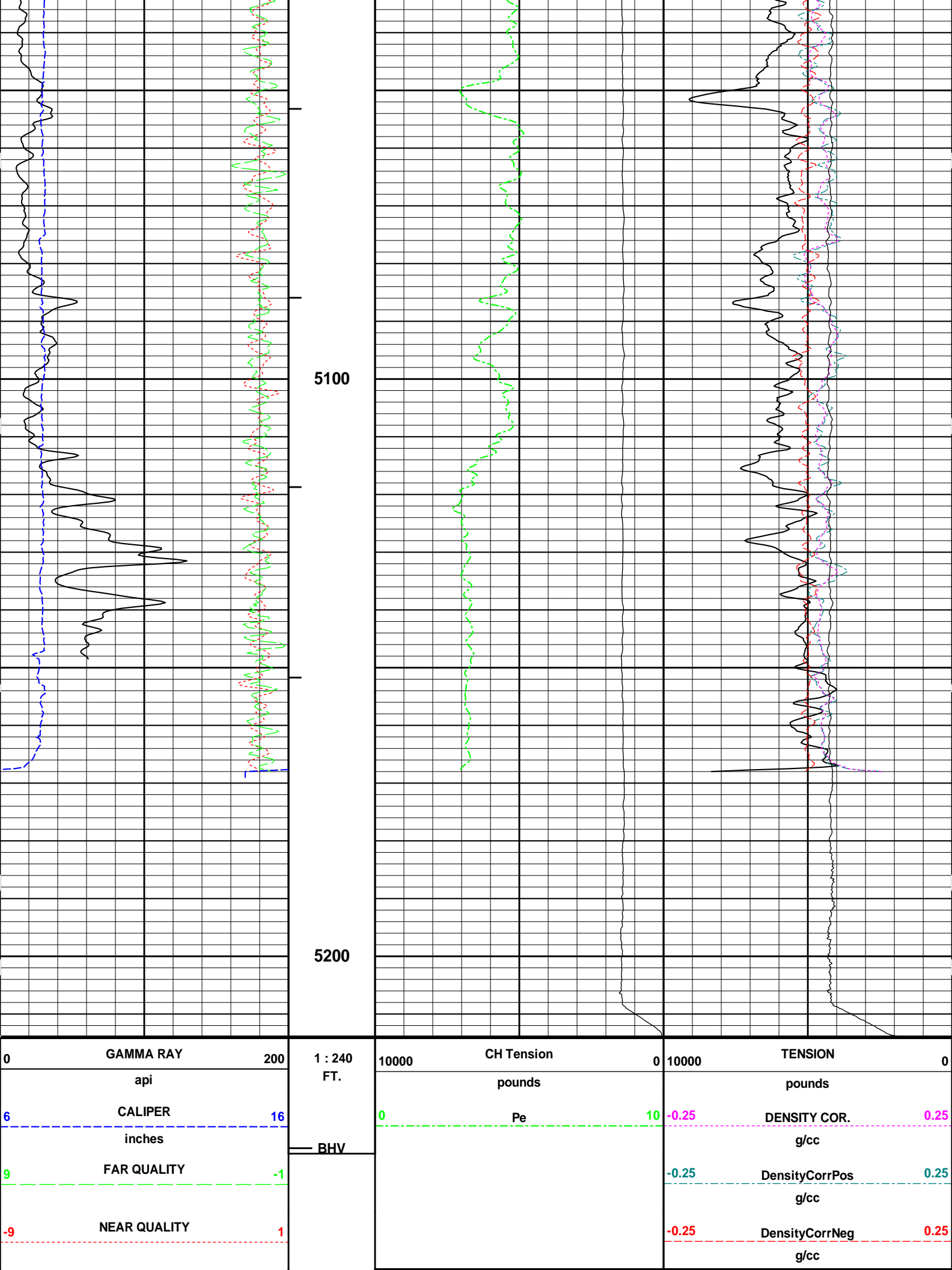






		2	BULK DENSITY	3
			g/cc	
-9 NEAR QUALITY 1			-0.25 DensityCorrNeg 0.25 g/cc	
9 FAR QUALITY -1			-0.25 DensityCorrPos 0.25 g/cc	
6 CALIPER 16		0 Pe 10	-0.25 DENSITY COR. 0.25 g/cc	
inches	BHV			
0 GAMMA RAY 200	1 : 240 FT.	10000 CH Tension 0	10000 TENSION 0	
api		pounds	pounds	
				





		2	BULK DENSITY	3
			g/cc	
<div><div>HALLIBURTON</div><div>Plot Time: 16-Mar-15 09:54:59 Plot Range: 4800 ft to 5213.9 ft Data: BHORSE_T_W_5_21\Well Based\REPEAT\ Plot File: \\PORO\RHOB_R</div></div>				
REPEAT PASS 5" = 100'				
<div><div>HALLIBURTON</div><div>CALIBRATION REPORT</div></div>				
NATURAL GAMMA RAY TOOL SHOP CALIBRATION				
Tool Name: GTET - 11005602		Reference Calibration Date: 09-Mar-15 02:01:28		
Engineer: B. RIDDEL		Calibration Date: 12-Mar-15 12:19:27		
Software Version: WL INSITE R4.6.0 (Build 4)		Calibration Version: 1		
Calibrator Source S/N: MP051807-04 Calibrator API Reference:239.00 api Equivalent Calibrator API Reference:243.2 api				
Measurement		Measured	Calibrated	Units
Background		39.5	37.1	api
Background + Calibrator		293.7	276.1	api
Calibrator		236.6	239.0	api
NATURAL GAMMA RAY TOOL FIELD CALIBRATION				
Tool Name: GTET - 11005602		Reference Calibration Date: 12-Mar-15 12:19:27		
Engineer: B. RIDDEL		Calibration Date: 12-Mar-15 12:24:05		
Software Version: WL INSITE R4.6.0 (Build 4)		Calibration Version: 1		
Calibrator Source S/N: MP051807-04 Calibrator API Reference:239.00 api Equivalent Calibrator API Reference:243.2 api				
Field Verification		Shop	Field	Units
Background		37.1	37.1	api
Background + Calibrator		276.1	272.0	api
Calibrator		239.0	234.9	api
Shop		Field	Difference	Tolerance
239.0		234.9	4.1	+/- 9.00
DUAL SPACED NEUTRON SHOP CALIBRATION				
Tool Name: DSNT - 10993888		Reference Calibration Date: 29-Jan-15 10:21:15		
Engineer: B. RIDDEL		Calibration Date: 05-Mar-15 14:06:08		
Software Version: WL INSITE R4.6.0 (Build 4)		Calibration Version: 1		
Logging Source S/N: DSN-388 Tank Serial Number: GJ WATER TANK Reference value assigned to Tank: 52.750 Snow Block S/N: GJ SNOW BLOCK				

Calibration Tank Water Temperature: 66 degF
Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.993	0.998	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):	0.2157	0.2169	0.0013	+/- 0.0020
Calibrated Ratio:	9.89	9.93	0.043	+/- 0.050

VERIFIER

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0691	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 - 10993888	Reference Calibration Date:	05-Mar-15 14:06:08
Engineer:	B. RIDDEL	Calibration Date:	12-Mar-15 12:26:13
Software Version:	WL INSITE R4.6.0 (Build 4)	Calibration Version:	1

Logging Source S/N: DSN-388
Snow Block S/N: GJ SNOW BLOCK

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0691	0.0738	0.0047	+/- 0.0150

PASS/FAIL SUMMARY

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

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	SDLT - 10951300	Reference Calibration Date:	19-Feb-15 10:11:47
Engineer:	B. RIDDEL	Calibration Date:	19-Feb-15 10:15:26
Software Version:	WL INSITE R4.2.0 (Build 2)	Calibration Version:	1
Host Tool Name:	DSNT - 10993888		

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-3445.21	-3550.63	-7000.00 - -1000.00
Pad Gain	0.0003644	0.0003685	0.000200 - 0.000600
Arm Offset	-1416.13	-1695.85	-5000.00 - 3000.00
Arm Gain	0.0004667	0.0005038	0.000300 - 0.000700
Arm Power	-0.000001974	-0.000004478	-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)	2.02	2.00	-0.02	+/- 0.20	
Medium Ring (in)	3.75	3.75	0.00	+/- 0.20	
RING DIAMETER:					
Small Ring (in)	6.55	6.50	-0.05	+/- 0.20	
Medium Ring (in)	8.21	8.25	0.04	+/- 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 - 10951300	Reference Calibration Date:	19-Feb-15 10:15:26
Engineer:	B. RIDDEL	Calibration Date:	12-Mar-15 12:22:32
Software Version:	WL INSITE R4.6.0 (Build 4)	Calibration Version:	1

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.69	-0.06	+/- 0.10
Ring Diameter	8.25	8.11	-0.14	+/- 0.15
PASS/FAIL SUMMARY				
Pad Extension Check:			Passed	
Diameter Check:			Passed	

SPECTRAL DENSITY SHOP CALIBRATION			
Tool Name:	SDLT Pad - 10865876	Reference Calibration Date:	16-Feb-15 12:04:38
Engineer:	B. RIDDEL	Calibration Date:	05-Mar-15 09:54:34
Software Version:	WL INSITE R4.6.0 (Build 4)	Calibration Version:	1

Logging Source S/N: 5153 GW			
Aluminum Block S/N: GJ ALUMINUM BLOCK		Density: 2.608g/cc	Pe: 3.230
Magnesium Block S/N: GJ MAG BLOCK		Density: 1.681g/cc	Pe: 2.600

DENSITY CALIBRATION SUMMARY				
Measurement	Previous Value	New Value	Control Limit	
Near Bar Gain	1.0255	1.0249	0.90 - 1.10	
Near Dens Gain	1.0142	1.0101	0.90 - 1.10	
Near Peak Gain	1.0006	1.0022	0.90 - 1.10	
Near Lith Gain	0.9771	0.9813	0.90 - 1.10	
Far Bar Gain	1.0131	1.0118	0.90 - 1.10	
Far Dens Gain	1.0010	1.0016	0.90 - 1.10	
Far Peak Gain	0.9950	0.9932	0.90 - 1.10	
Far Lith Gain	0.9729	0.9727	0.90 - 1.10	
Near Bar Offset	-0.0252	-0.0232	NONE	

Near Bar Offset	0.0817	0.1143	NONE
Near Peak Offset	0.1903	0.1710	NONE
Near Lith Offset	0.3704	0.3293	NONE
Far Bar Offset	0.0212	0.0272	NONE
Far Dens Offset	0.1081	0.0978	NONE
Far Peak Offset	0.1359	0.1479	NONE
Far Lith Offset	0.2750	0.2725	NONE

Near Bar Background	857.39	857.08	700 - 1450
Near Dens Background	285.49	286.70	230 - 480
Near Peak Background	128.01	127.29	100 - 210
Near Lith Background	155.13	154.92	125 - 260
Far Bar Background	529.31	526.12	450 - 900
Far Dens Background	206.13	204.04	175 - 345
Far Peak Background	80.69	80.77	70 - 140
Far Lith Background	86.11	85.27	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.681	1.681	-0.000	+/- 0.015
Pe	2.536	2.558	0.022	+/- 0.150
ALUMINUM				
Density (g/cc)	2.609	2.608	-0.001	+/- 0.01500
Pe	3.157	3.179	0.022	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0018	+/- 0.0110	0.0000	+/- 0.0140
Magnesium Block	-0.0005	+/- 0.0110	-0.0021	+/- 0.0140
Aluminum Block	-0.0011	+/- 0.0110	0.0013	+/- 0.0140
Resolution	8.96	6.00 - 11.50	9.64	6.00 - 11.50
Internal Verifier(B+D+P+L)	1426	1200 - 2700	896	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 - 10865876	Reference Calibration Date:	05-Mar-15 09:54:34
Engineer:	B. RIDDEL	Calibration Date:	12-Mar-15 12:19:42
Software Version:	WL INSITE R4.6.0 (Build 4)	Calibration Version:	1

DENSITY FIELD CALIBRATION SUMMARY

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1425.983	1422.641	-3.342	15.241
Far (B+D+P+L) cps	896.206	895.431	-0.775	16.290
Near Resolution	8.96	9.03	0.070	0.50
Far Resolution	9.64	9.64	0.000	1.00

PASS/FAIL SUMMARY

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

MICRO LOG SHOP CALIBRATION

Tool Name:	Microlog Pad - 10951300	Reference Calibration Date:	17-Jan-15 11:47:55
Engineer:	B. RIDDEL	Calibration Date:	05-Mar-15 11:19:23
Software Version:	WL INSITE R4.6.0 (Build 4)	Calibration Version:	1
Host Tool Name:	DSNT - 10993888		

CALIBRATION COEFFICIENT SUMMARY

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.04	-0.04	0.01	0.01	ohmm
Calibration Point #1	0.00	0.00	-0.00	0.00	ohmm
Calibration Point #2	19.70	20.00	19.72	20.00	ohmm
Internal Reference	19.91	20.21	19.97	20.25	ohmm

Measurement	Micro Log Normal Tool Value	Micro Log Lateral Tool Value	Units
Tool Zero	6.11	6.17	V
Calibration Point #1	17.37	2.30	V
Calibration Point #2	5224.88	6862.02	V
Internal Reference	5280.52	6946.90	V

MICRO LOG FIELD CHECK

Tool Name:	Microlog Pad - 10951300	Reference Calibration Date:	05-Mar-15 11:19:23
Engineer:	B. RIDDEL	Calibration Date:	12-Mar-15 12:23:47
Software Version:	WL INSITE R4.6.0 (Build 4)	Calibration Version:	1

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.04	-0.07	0.01	-0.01	ohmm
Internal Reference	20.21	20.28	20.25	20.31	ohmm

Summary

Signal	Shop	Field	Difference	Tolerance
Microlog Normal	20.21	20.28	-0.07	+/- 0.80
Microlog Lateral	20.25	20.31	-0.06	+/- 0.80

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	ACRt Sonde - 11585797	Reference Calibration Date:	27-Jan-15 15:50:02
Engineer:	P. DIMPFL	Calibration Date:	27-Jan-15 16:03:38
Software Version:	WL INSITE R4.2.0 (Build 2)	Calibration Version:	1

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.0234	1.05	0.95	1.0213	1.05	0.95	1.0201	1.05
A2 (50")	0.95	1.0120	1.05	0.95	1.0125	1.05	0.95	1.0133	1.05
A3 (29")	0.95	1.0058	1.05	0.95	1.0054	1.05	0.95	1.0047	1.05
A4 (17")	0.95	1.0036	1.05	0.95	1.0005	1.05	0.95	1.0023	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.0075	1.05	0.95	1.0083	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9861	1.05	0.95	0.9861	1.05

SONDE OFFSET

Subarray	R12KHz	R36KHz	R72KHz
	(mmho/m)	(mmho/m)	(mmho/m)
A1 (80")	-1.400	-4.436	-5.489
A2 (50")	-1.992	-3.255	-4.694
A3 (29")	-15.645	-4.528	-3.257
A4 (17")	-119.763	-35.638	-27.444
A5 (10")	N/A	-97.013	-50.120
A6 (6")	N/A	312.823	158.068

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.85	1.3
36K	1.0	1.83	2.0
72K	1.0	1.10	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	1.00	1.05

PASS/FAIL SUMMARY

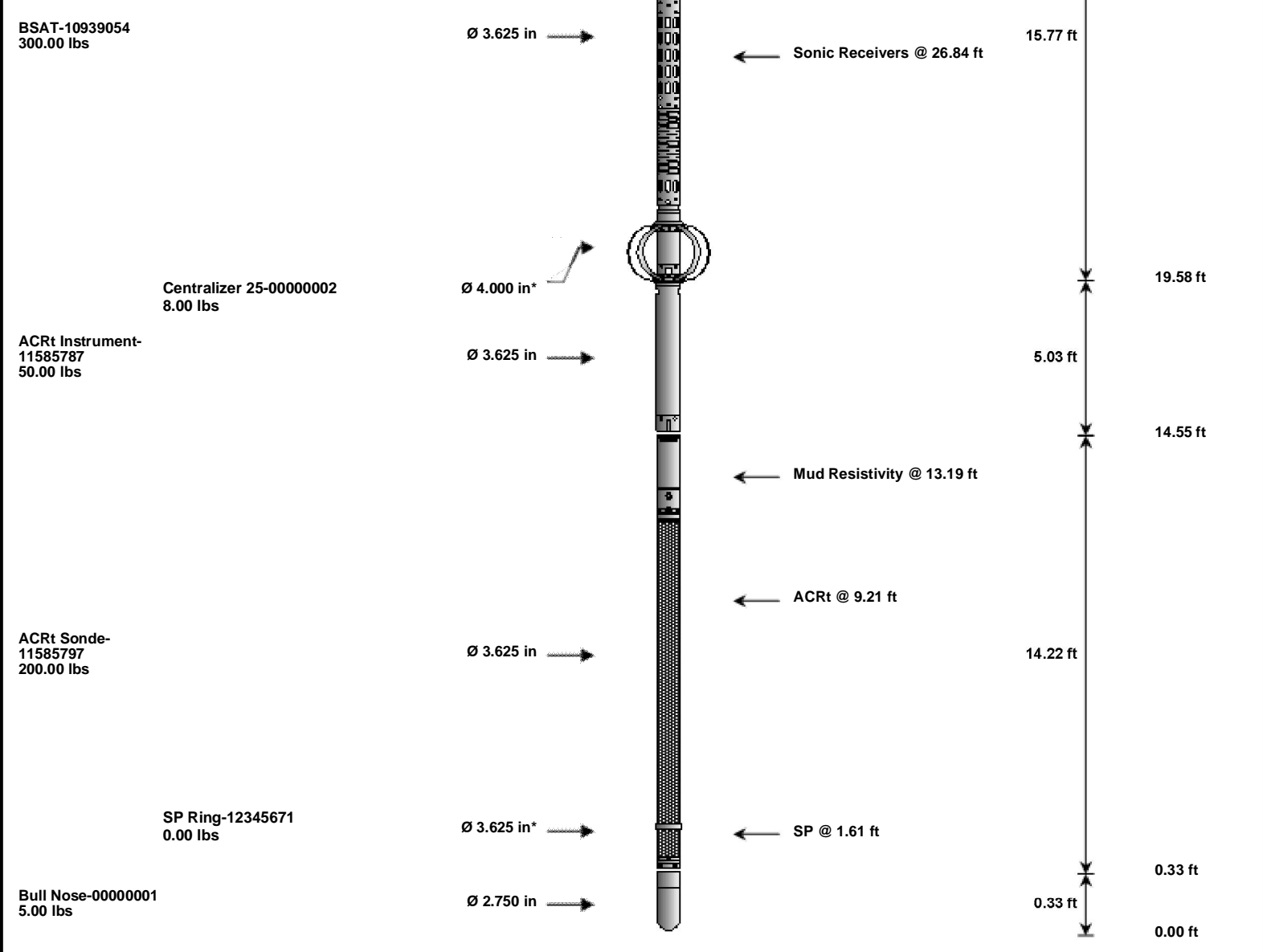
GAIN RANGE CHK	PASS
SONDE OFFSET CHK	PASS
TOOL OK TO LOG	

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11005602						
Gamma Ray Calibrator	239.0	234.9	-----	4.1	+/- 9.00	api
DSNT-10993888						
Snow-Block Porosity	0.0691	0.0738	-----	-0.0047	+/- 0.0150	decp
SDLT-10951300						
Pad Extension	3.75	3.69	-----	0.06	+/-0.10	in
Ring Diameter	8.25	8.11	-----	0.14	+/-0.15	in
SDLT Pad-10865876						
Near(B+D+P+L)	1425.983	1422.641	-----	3.342	+/-15.241	cps
Far(B+D+P+L)	896.206	895.431	-----	0.775	+/-16.290	cps
Microlog Pad-10951300						
MicroLog Normal	20.21	20.28	-----	-0.07	+/-0.80	ohmm
MicroLog Lateral	20.25	20.31	-----	-0.06	+/-0.80	ohmm
ACRt Sonde-11585797						
Mud Cell	1.00	-----	-----	0.00	-----	ohm-m

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
RWCH-A032 135.00 lbs		Ø 3.625 in		Load Cell @ 72.91 ft BH Temperature @ 72.35 ft	6.25 ft	76.60 ft
GTET-11005602 165.00 lbs		Ø 3.625 in		GammaRay @ 64.29 ft	8.52 ft	70.35 ft
DSNT-10993888 174.00 lbs	DSN Decentralizer-12026050 6.60 lbs	Ø 5.000 in* Ø 3.625 in		DSN Far @ 54.89 ft DSN Near @ 54.14 ft	9.69 ft	61.83 ft
SDLT-10951300 360.00 lbs	SDLT Pad-10865876 65.00 lbs Microlog Pad-10951300 8.00 lbs	Ø 4.500 in Ø 4.750 in* Ø 4.750 in*		Microlog @ 44.33 ft SDL Caliper @ 44.14 ft SDL @ 44.13 ft	10.81 ft	52.14 ft
Flex Joint - Pressure Comp-11208102 140.00 lbs		Ø 3.625 in			5.97 ft	41.33 ft
Centralizer 25-00000001 8.00 lbs		Ø 4.000 in*				35.36 ft



Mnemonic		Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head		A032	135.00	6.25	70.35	300.00
GTET	Gamma Telemetry Tool		11005602	165.00	8.52	61.83	60.00
DSNT	Dual Spaced Neutron		10993888	174.00	9.69	52.14	60.00
DCNT	DSN Decentralizer		12026050	6.60	5.13	55.47	300.00
SDLT	Spectral Density Tool		10951300	360.00	10.81	41.33	60.00
SDLP	Density Insite Pad		10865876	65.00	2.55	43.54	60.00
MICP	Microlog Pad		10951300	8.00	1.00	43.83	60.00
FLEX	Flex Joint - Pressure Compensated		11208102	140.00	5.97	35.36	300.00
BSAT	Borehole Sonic Array Tool		10939054	300.00	15.77	19.58	60.00
OBCEN	Centralizer - 25 in. Overbody		00000001	8.00	2.08	32.62	300.00
ACRt	Array Compensated True Resistivity Instrument Section		11585787	50.00	5.03	14.55	120.00
OBCEN	Centralizer - 25 in. Overbody		00000002	8.00	2.08	19.36	300.00
ACRt	Array Compensated True Resistivity Sonde Section		11585797	200.00	14.22	0.33	120.00
SP	SP Ring		12345671	0.00	0.25	1.61	300.00
BLNS	Bull Nose		00000001	5.00	0.33	0.00	300.00
Total				1,624.60	76.60		
				* Not included in Total Length and Length Accumulation.			
Data: BHORSE_T_W_5_21\0001 QUAD\IDLE				Date: 12-Mar-15 16:12:35			

COMPANY	BAYHORSE PETROLEUM, LLC
WELL	TRADE WINDS 5-21

FIELD	LEFT HAND		
COUNTY	KIOWA	STATE	CO
HALLIBURTON		DUAL SPACED NEUTRON SPECTRAL DENSITY	