

HALLIBURTON

DUAL SAGED NEURTON
SPECTRAL DENSITY
ARRAY COMPENSATED
TRUE RESISTIVITY
LOG

COMPANY										LARAMIE ENERGY									
WELL										HAWXHURST 19-13A									
FIELD										BRUSH CREEK									
COUNTY										MESA									
STATE										CO									
Permanent Datum										GL									
Log measured from										KB									
Drilling measured from										KB									
Date										05-Oct-11									
Run No.										ONE									
Depth - Driller										6636.00 ft									
Depth - Logger										6633.0 ft									
Bottom - Logged Interval										6513.0 ft									
Top - Logged Interval										1542.0 ft									
Casing - Driller										9.625 in @ 1547.0 ft									
Casing - Logger										1542.0 ft									
Bit Size										8.750 in									
Type Fluid in Hole										WBM									
Density										9.6 ppg									
Viscosity										60.00 s/qt									
Fluid Loss										9.50 pH									
Source of Sample										MUD TANK									
Rm @ Meas. Temperature										1.480 ohmm @ 72.00 degF									
Rmf @ Meas. Temperature										1.24 ohmm @ 75.00 degF									
Rmc @ Meas. Temperature										1.242 ohmm @ 75.00 degF									
Source Rmf										CHART									
Rm @ BHT										0.61 ohmm @ 185.0 degF									
Time Since Circulation										10.0 hr									
Time on Bottom										05-Oct-11 12:04									
Max Rec. Temperature										185.0 degF @ 6633.0 ft									
Equipment										11014853									
Location										GU, CO									
Recorded By										J. KRONABLE									
Witnessed By										KELLY CLAUSSSEN									

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Service Ticket No.: 8512723						API Serial No.: 05077101660000						PGM Version: WL INSITE R3.4.2 (Build 2)											
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		ACRT90194258		N/A		1.5"S.0		N/A					
Rmc @ Meas. Temp.				@		@						E-7486											
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.		11005602		Serial No.				Serial No.		10951300		Serial No.		10993887									
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.		102 A		Spacing				Log Type		GAM - GAM		Log Type		NEU - NEU									
Type		SCINT						Source Type		Cs 137		Source Type		Am241Be									
Length		8"		LSA [Y/N]				Serial No.		5153 GW		Serial No.		DSN-388									
Distance to Source		18'		FWDA [Y/N]				Strength		1.5 Ci		Strength		15 Ci									
LOGGING DATA																							

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	8.750	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.800	ppg
	SHARED	WAGT	Weighting Agent	Barite	
	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	7.000	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	6535.00	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	0.250	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	Sandstone	
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	2.680	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Up	
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	

BOTTOM

Data: LARA_HAWX19_13A\0001 TRIPLEIDLE

Date: 05-Oct-11 13:07:24

HALLIBURTON

Plot Time: 05-Oct-11 14:19:11
Plot Range: 1521 ft to 6546.92 ft
Data: LARA_HAWX19_13A\Well Based\MAIN"
Plot File: \\COMP\IQ_COMPOSITE_5IN_RM_NOBLE

2150 TO 2500 5" = 100'

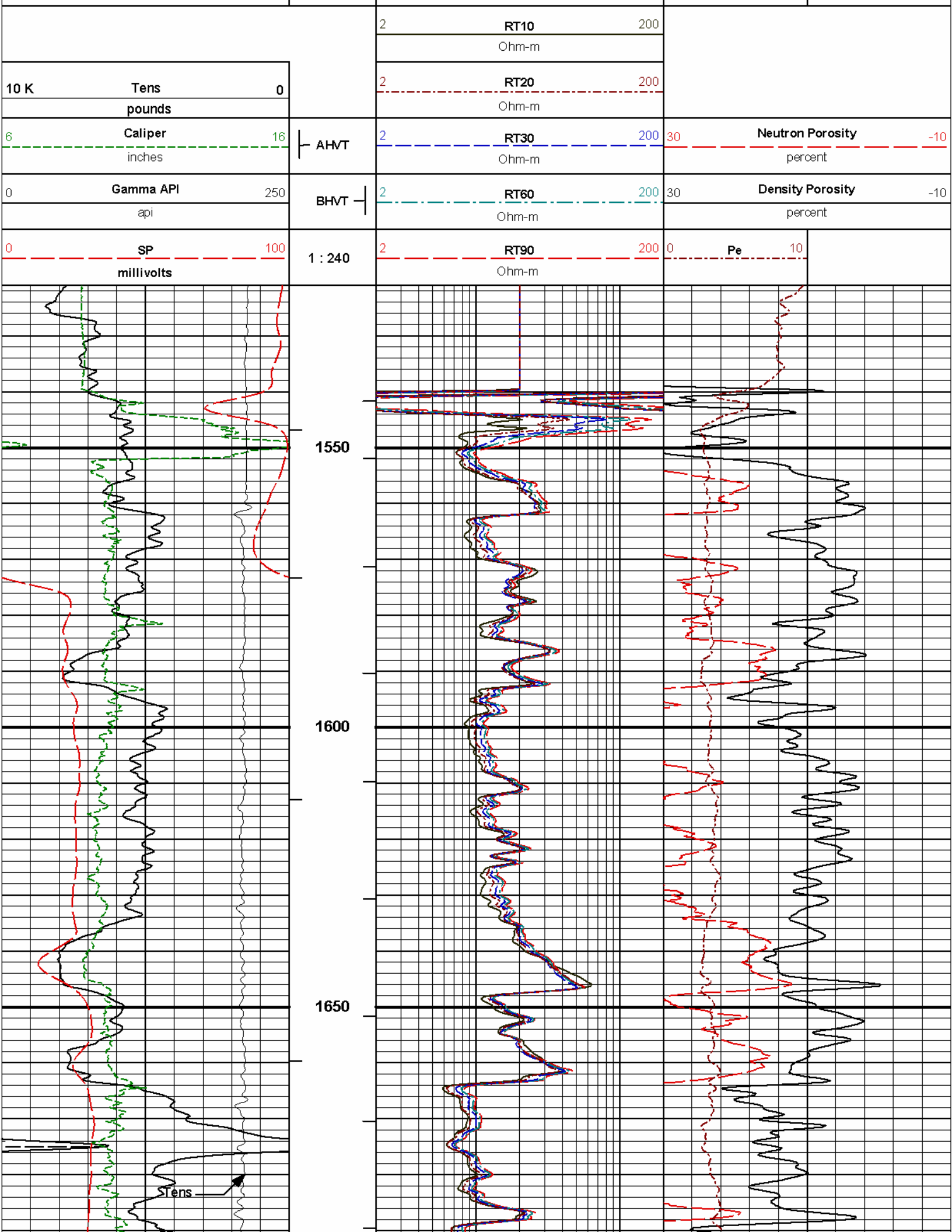
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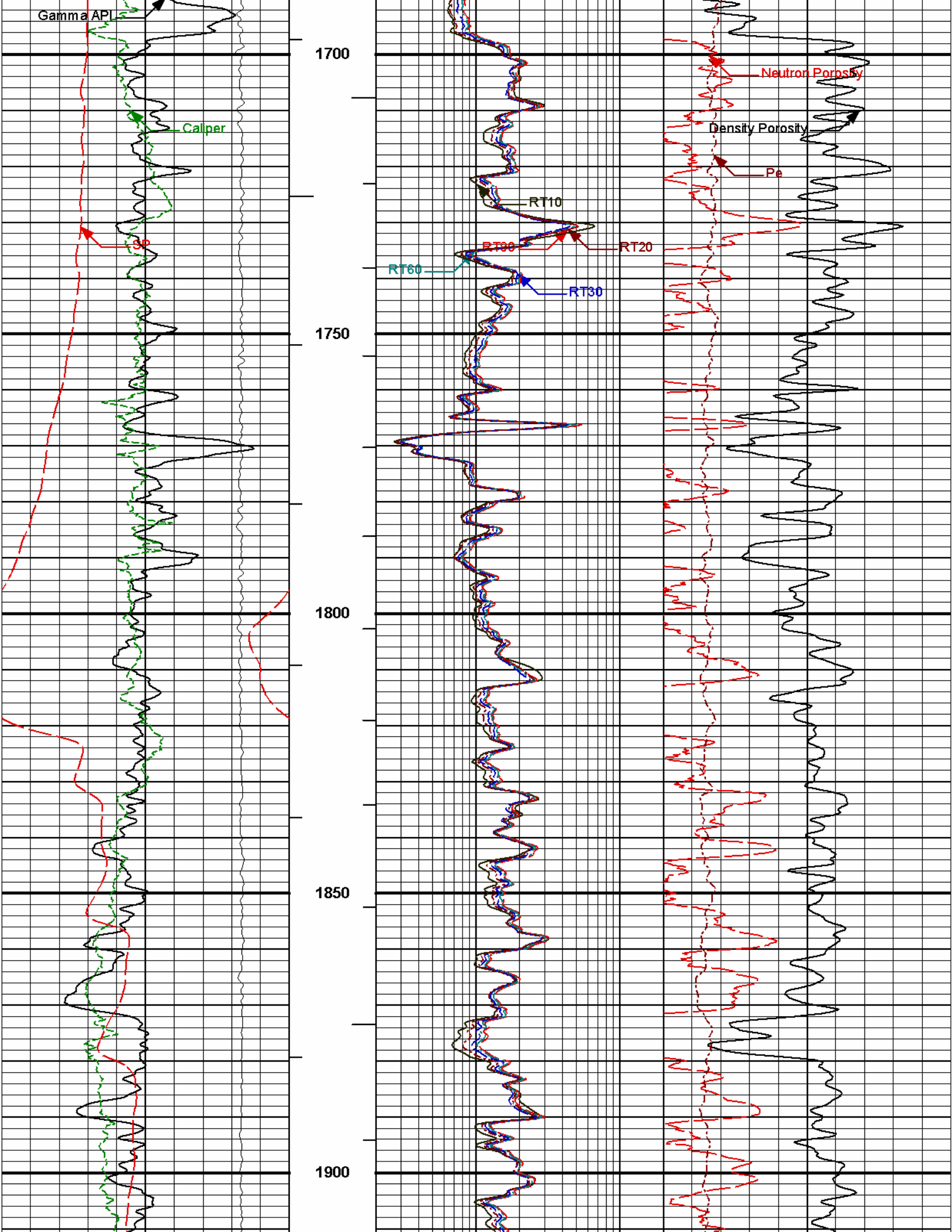
Depth Track

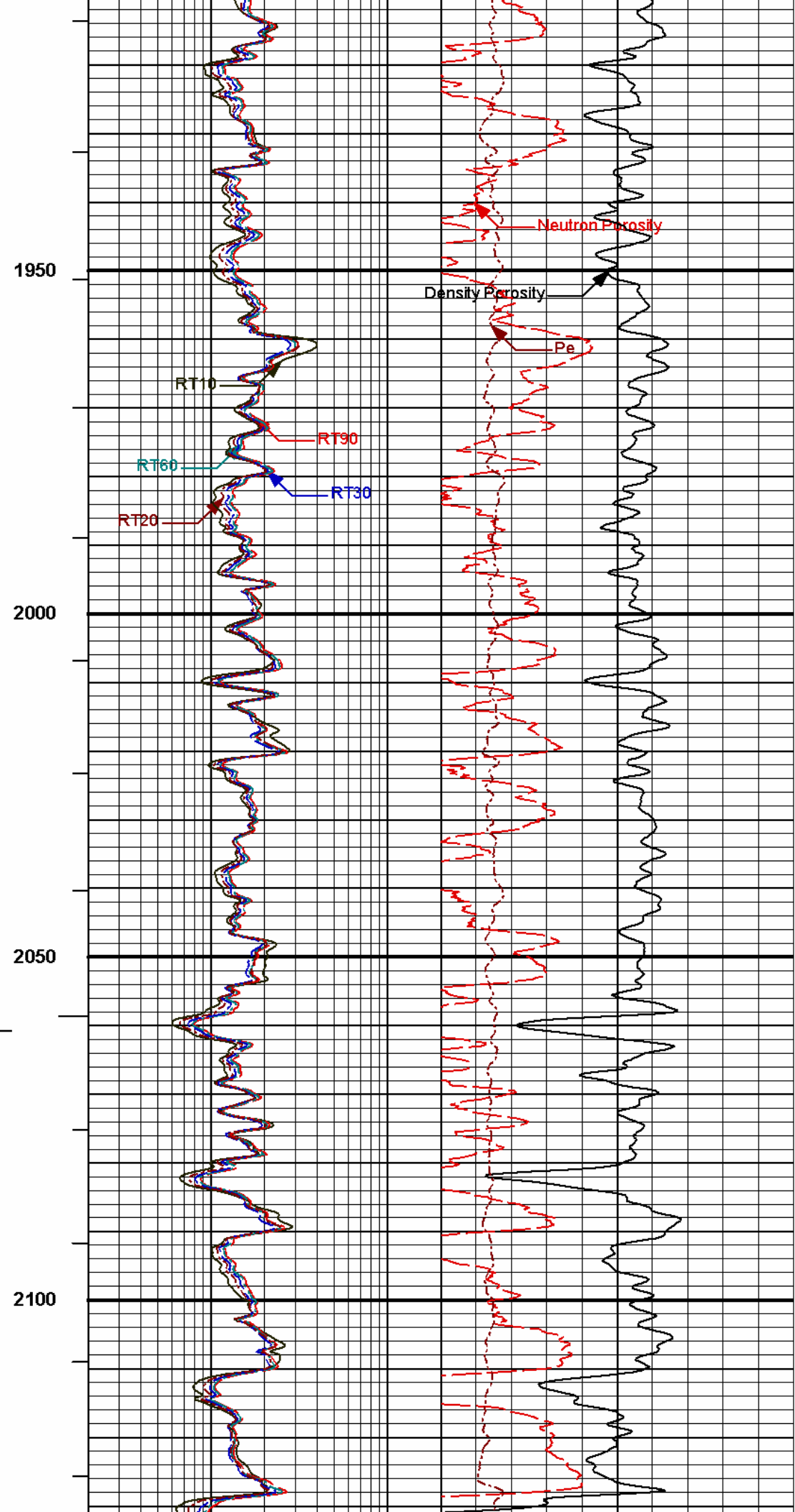
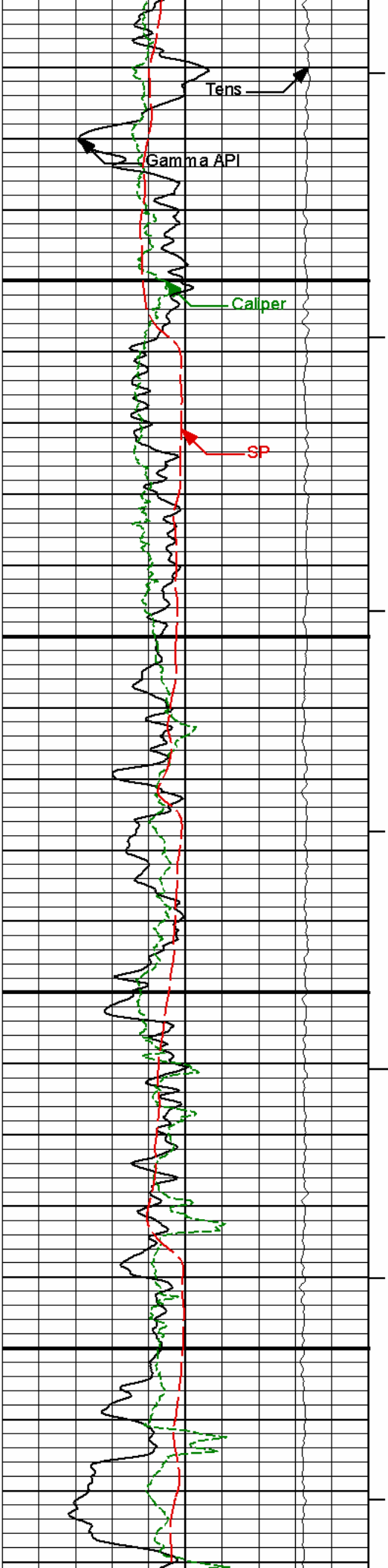
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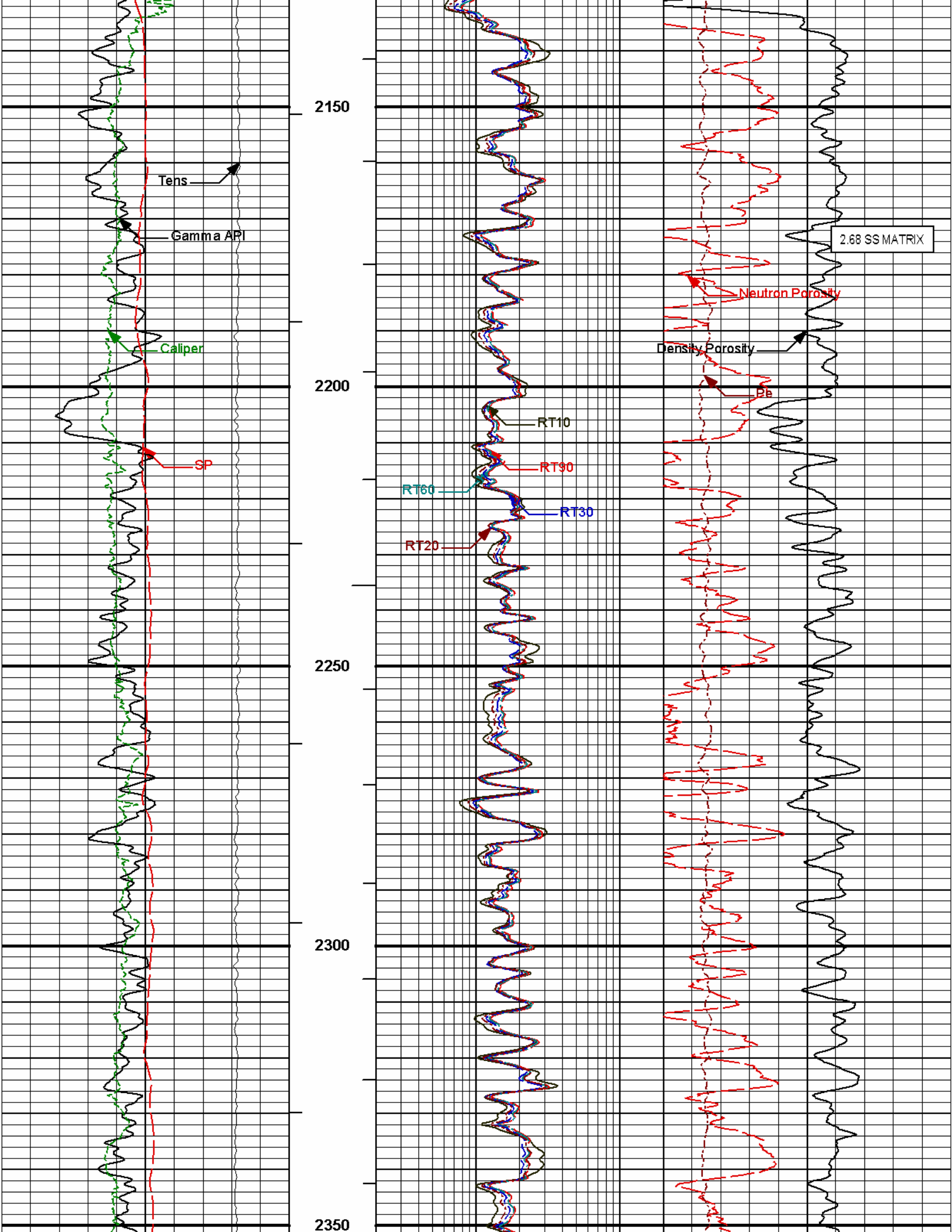
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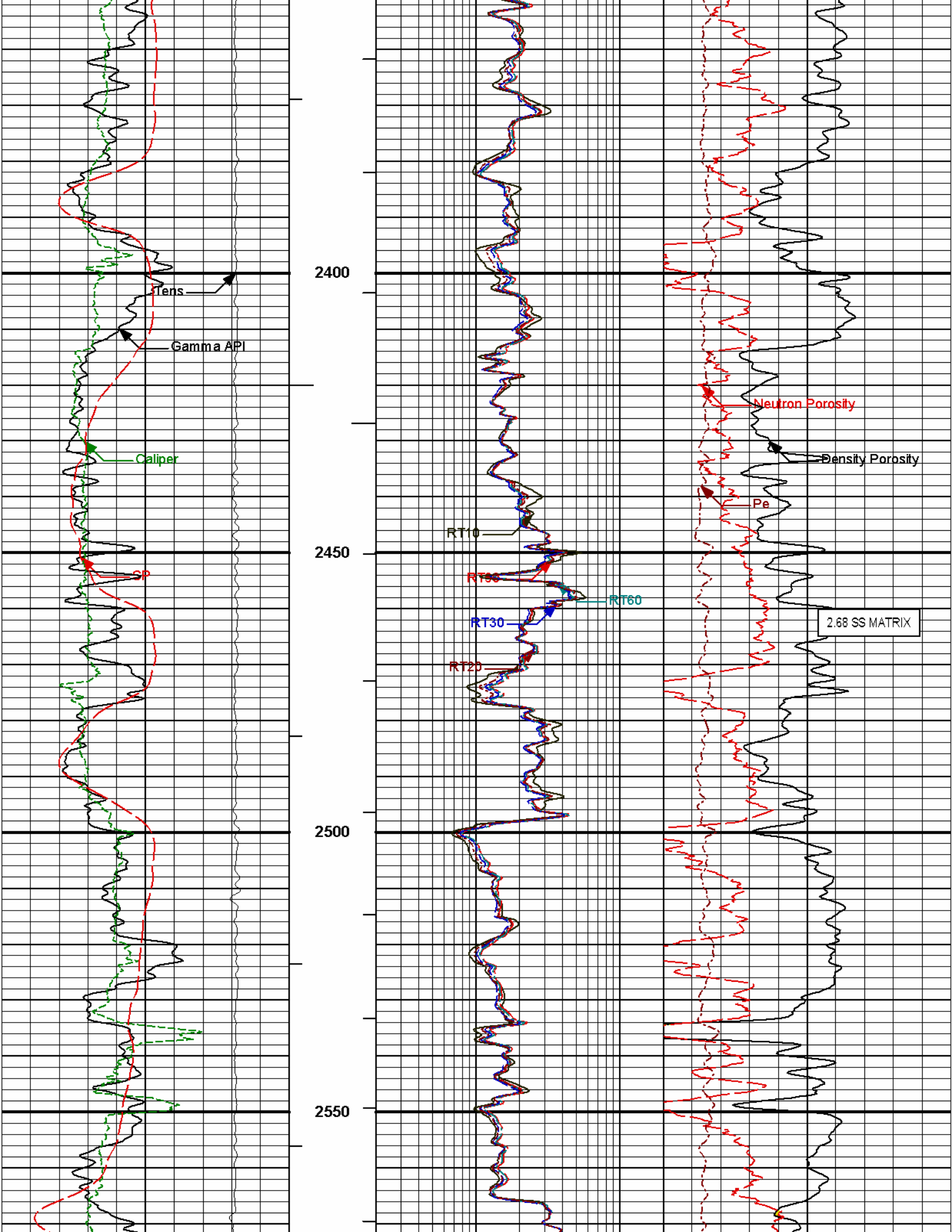
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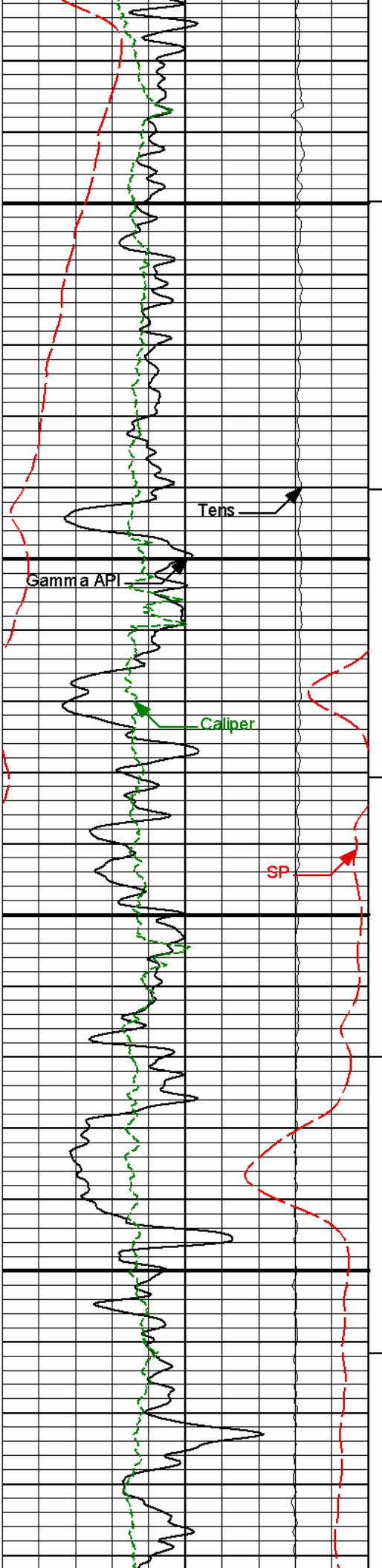










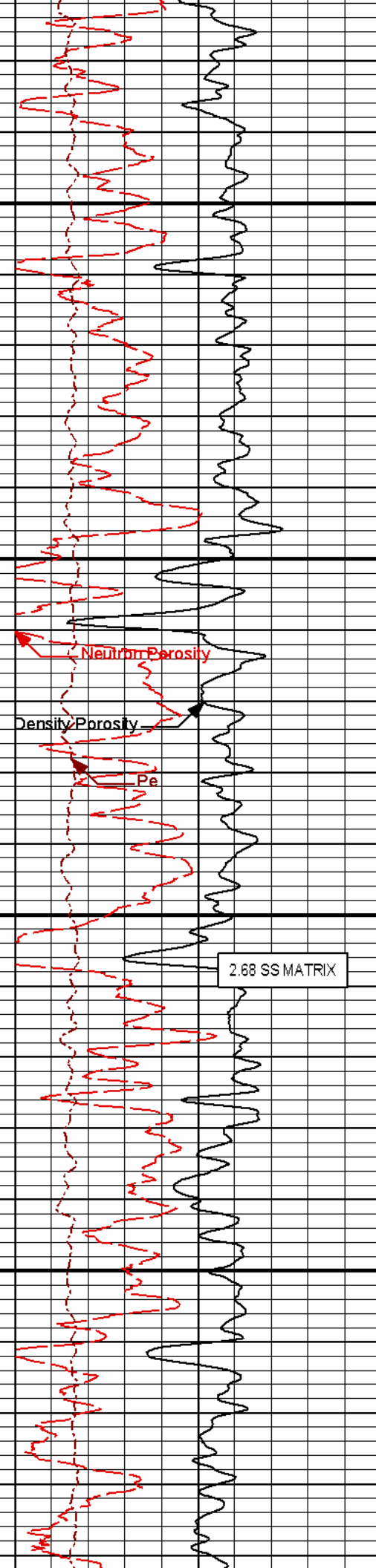
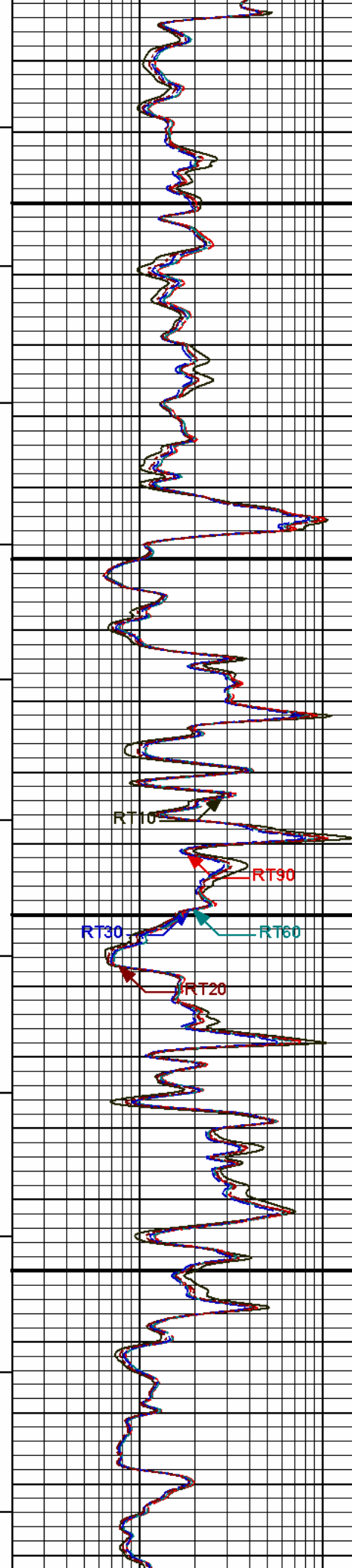


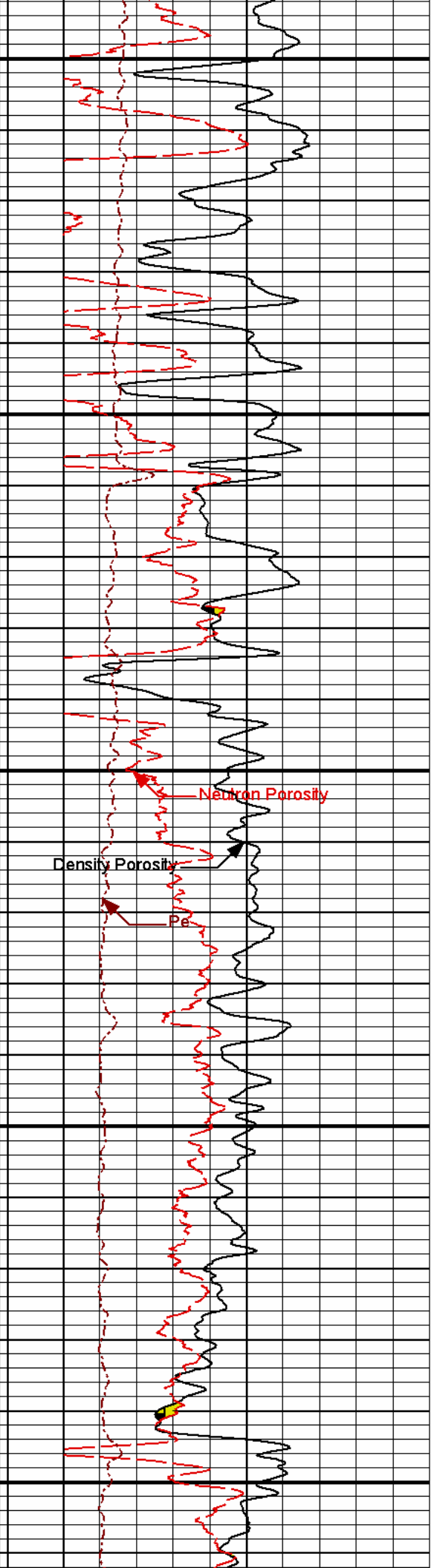
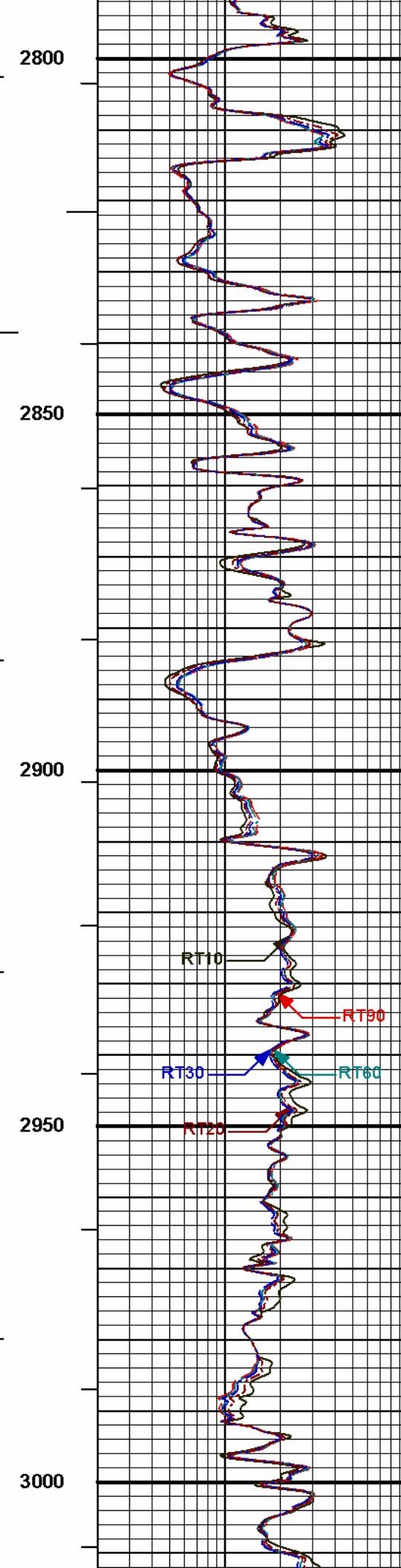
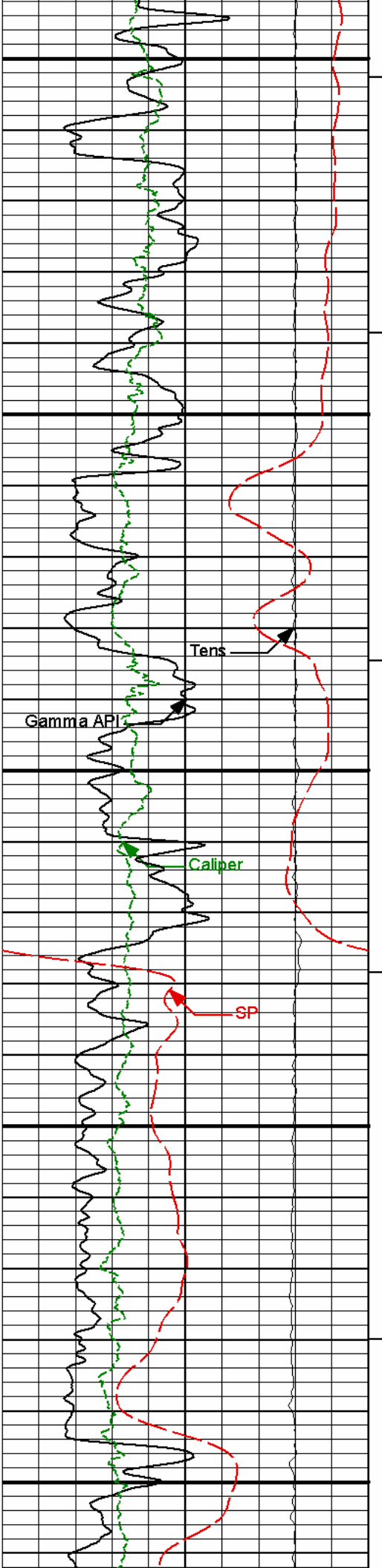
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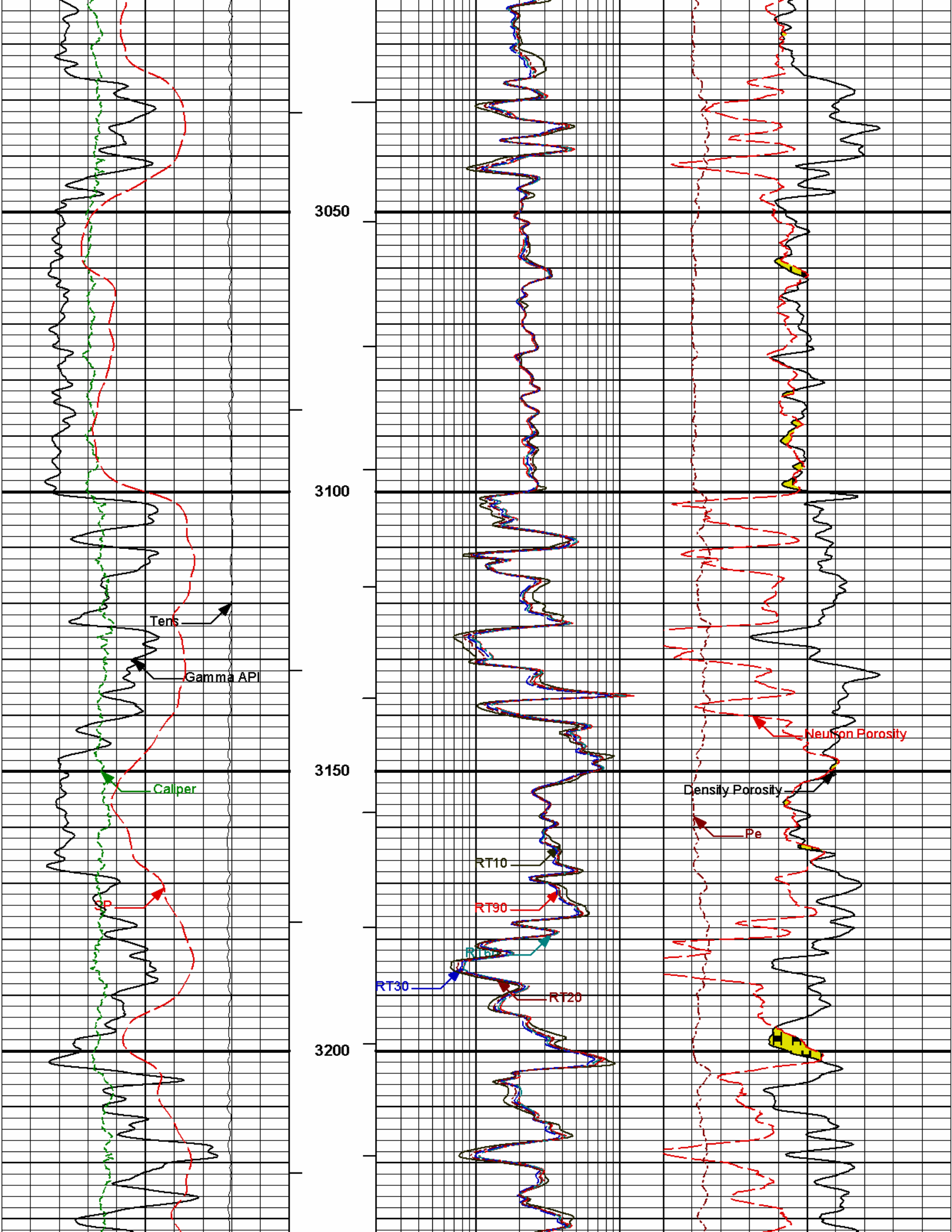
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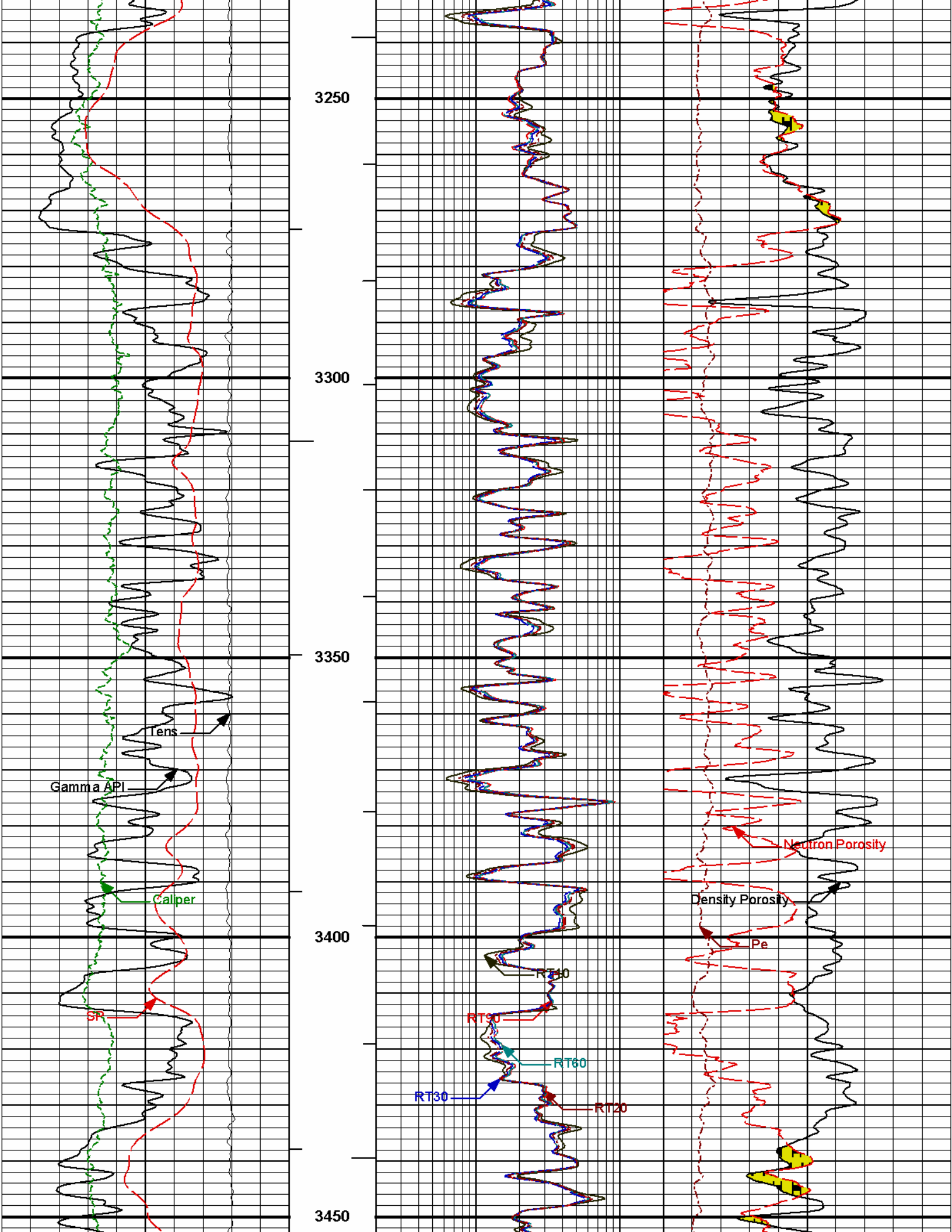
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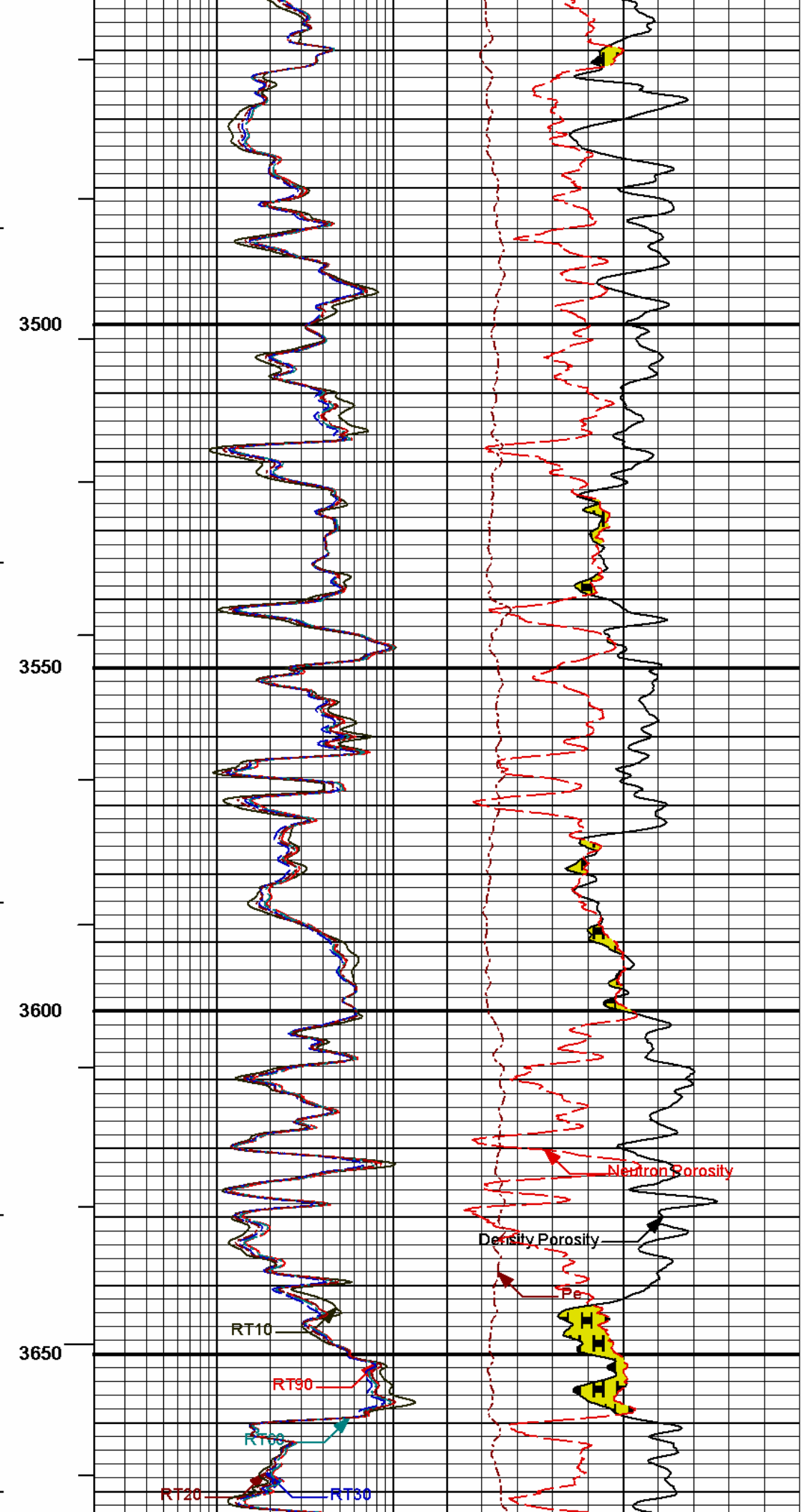
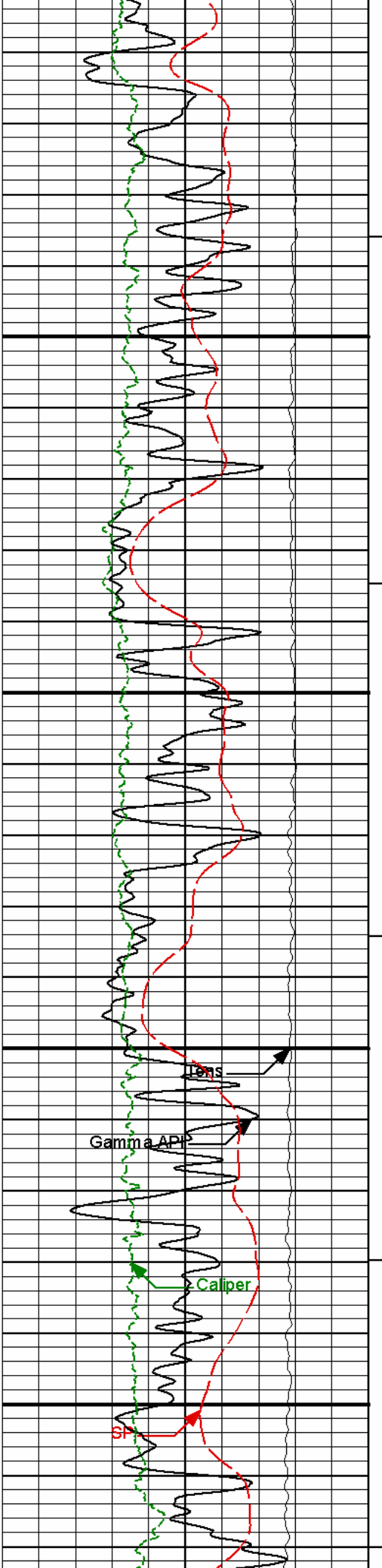
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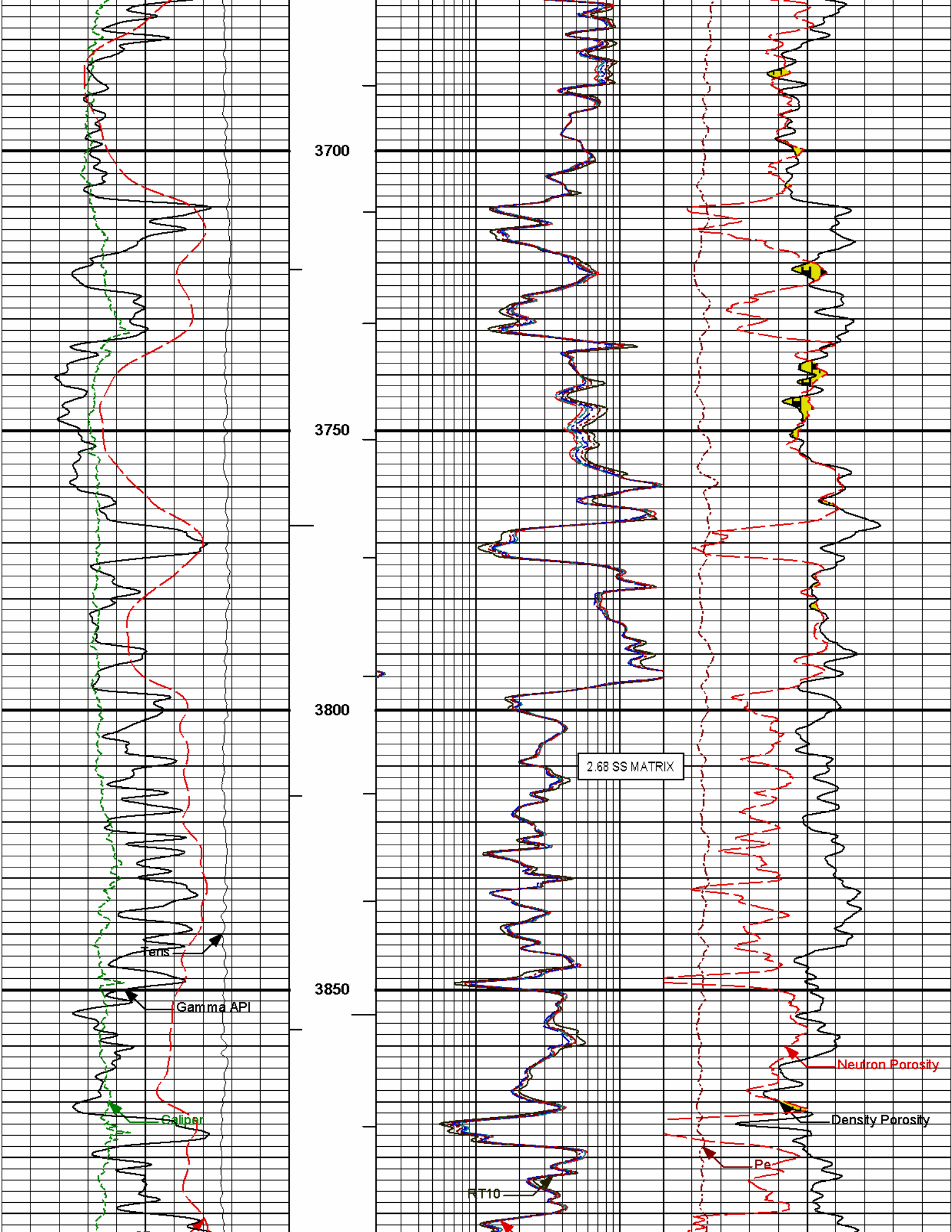


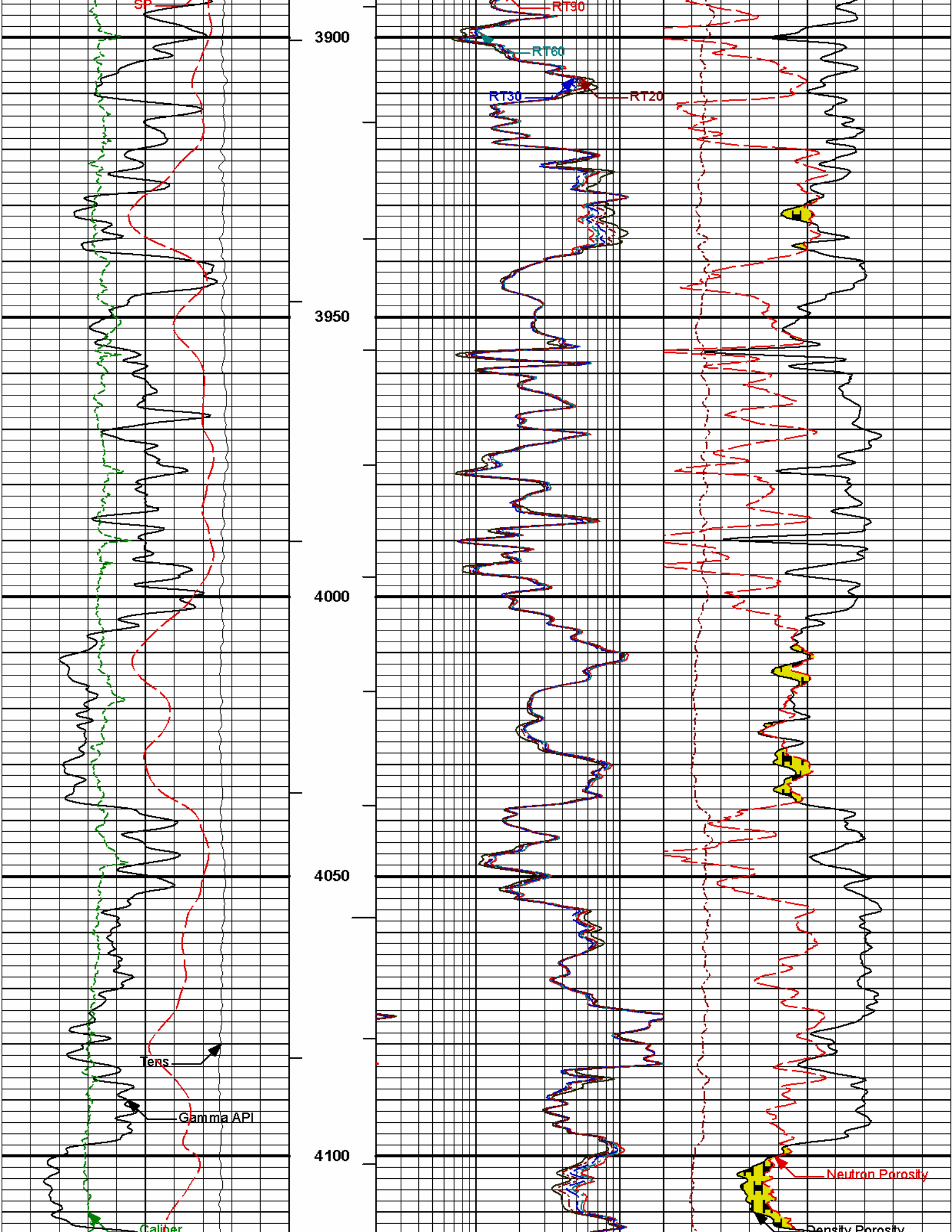


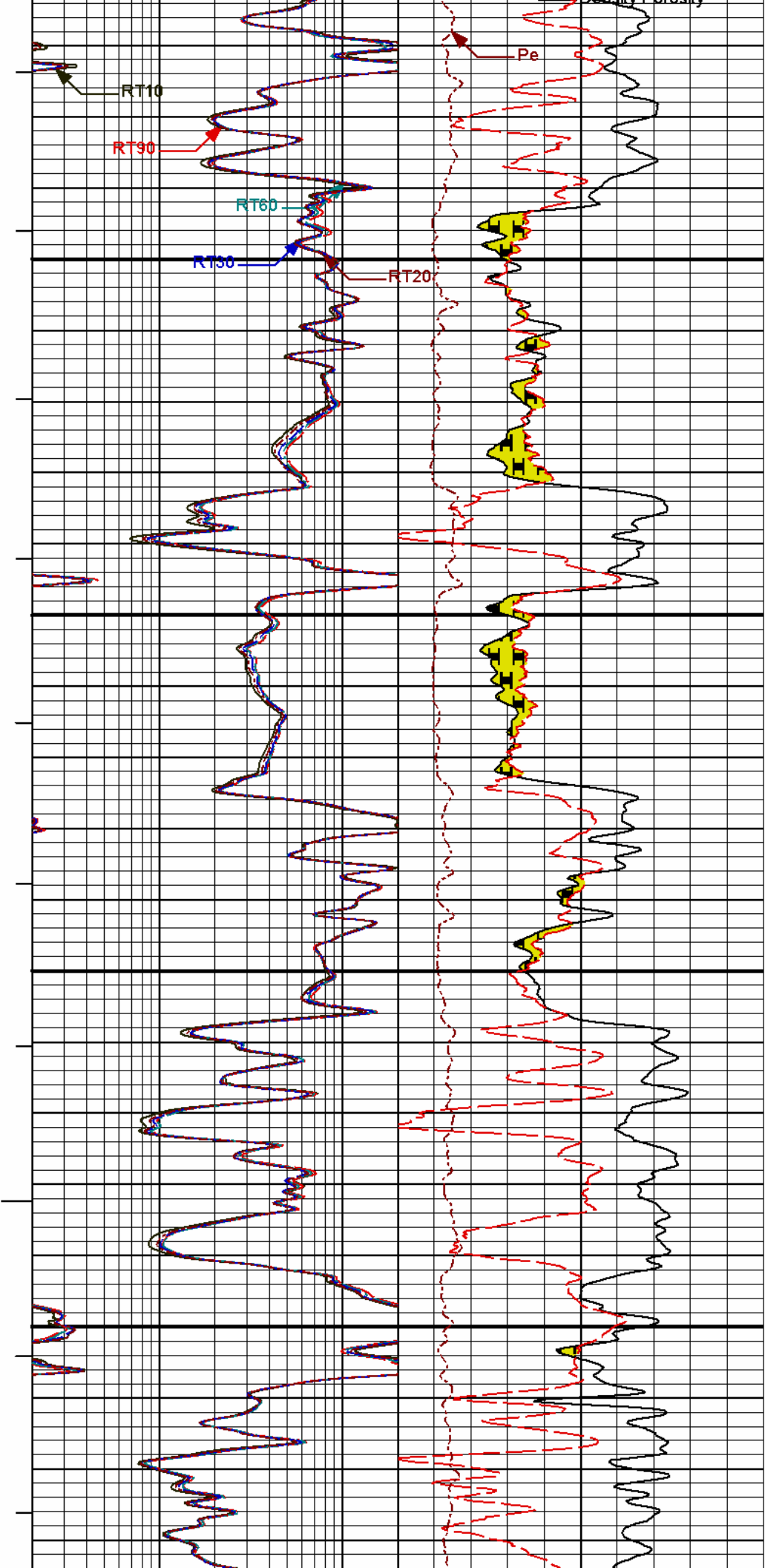
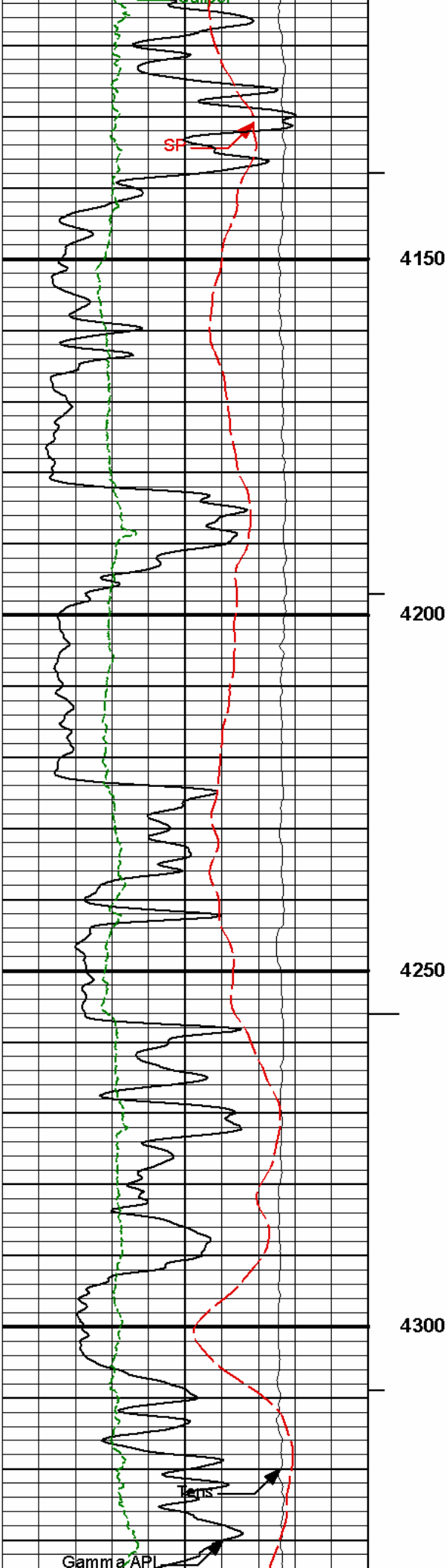


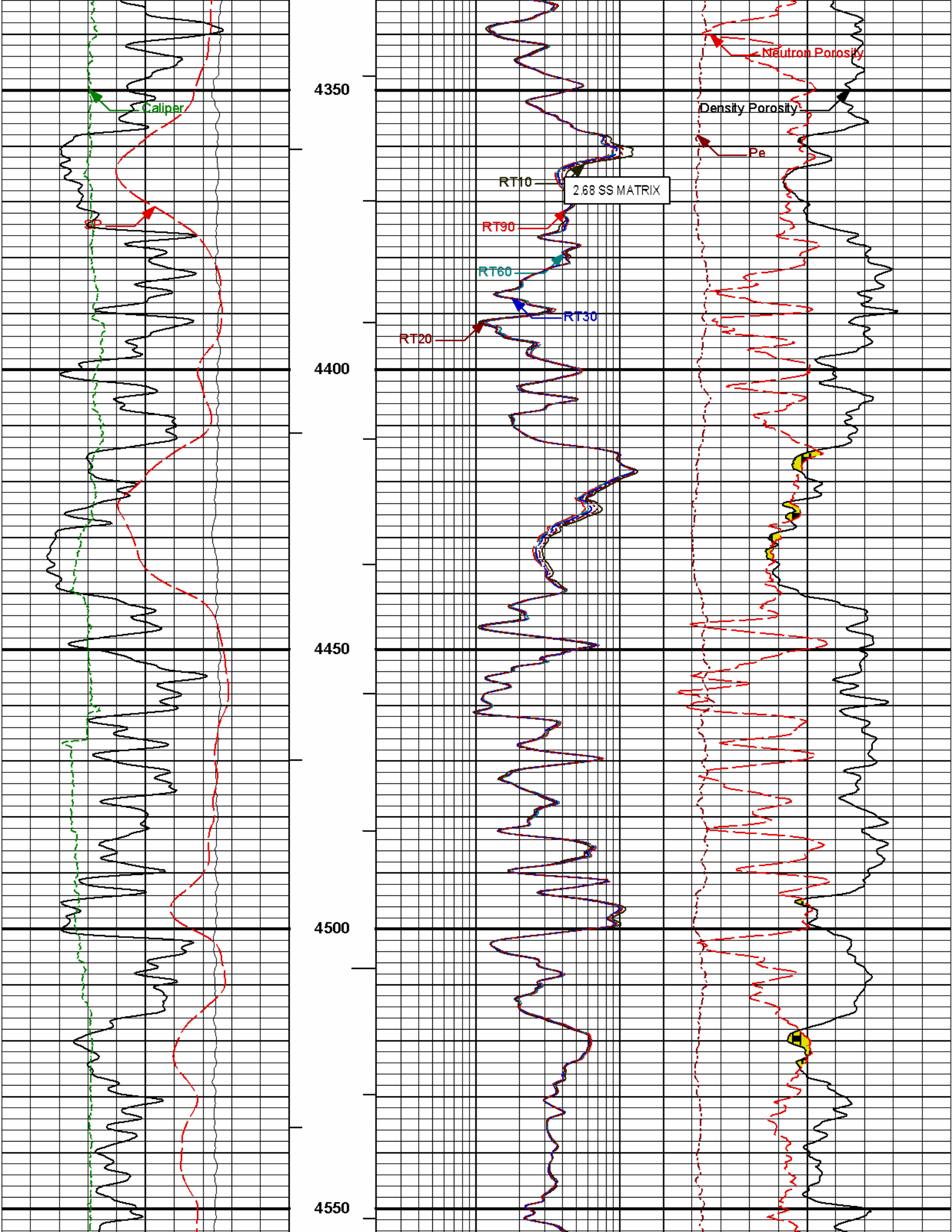


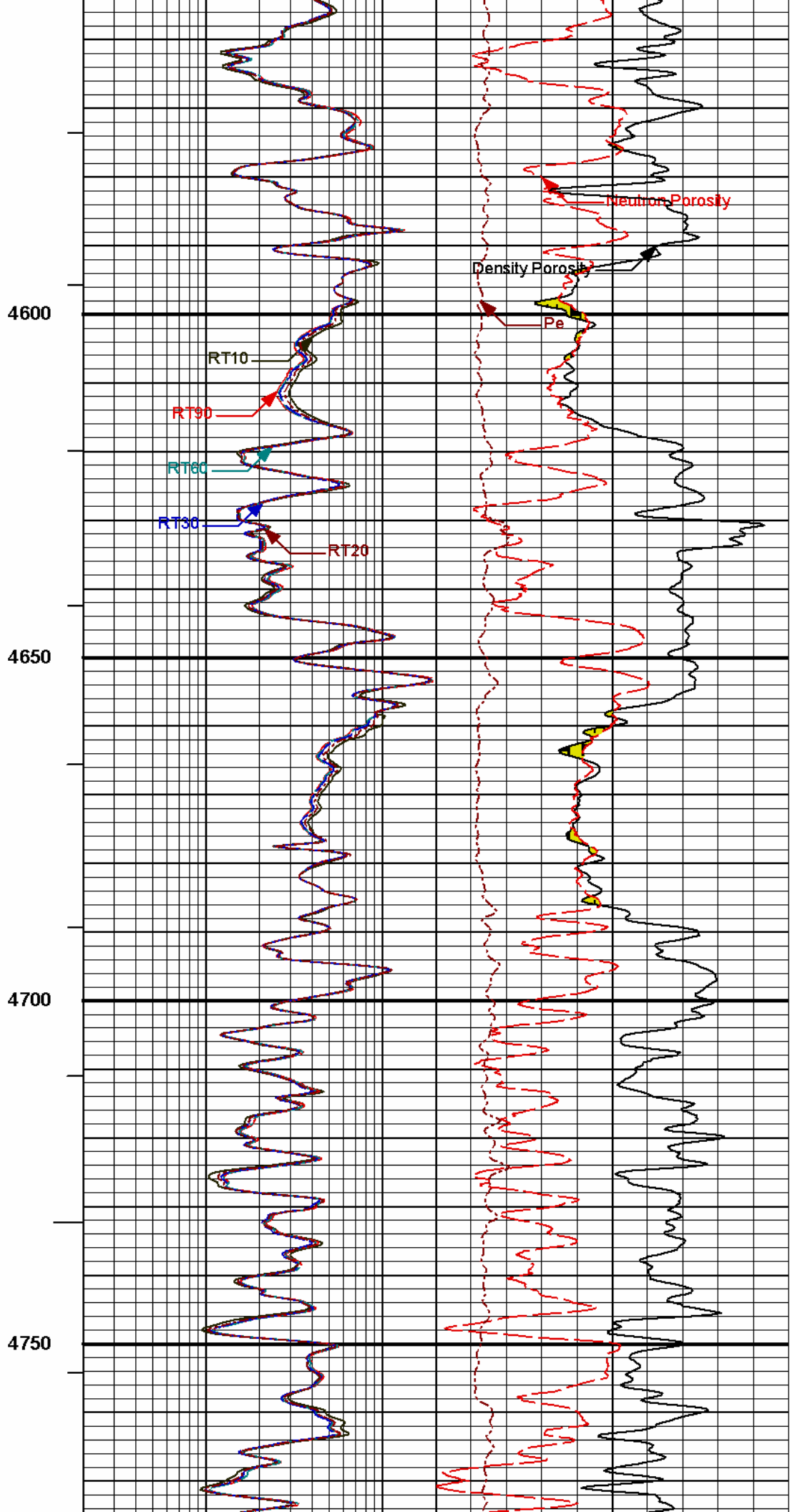
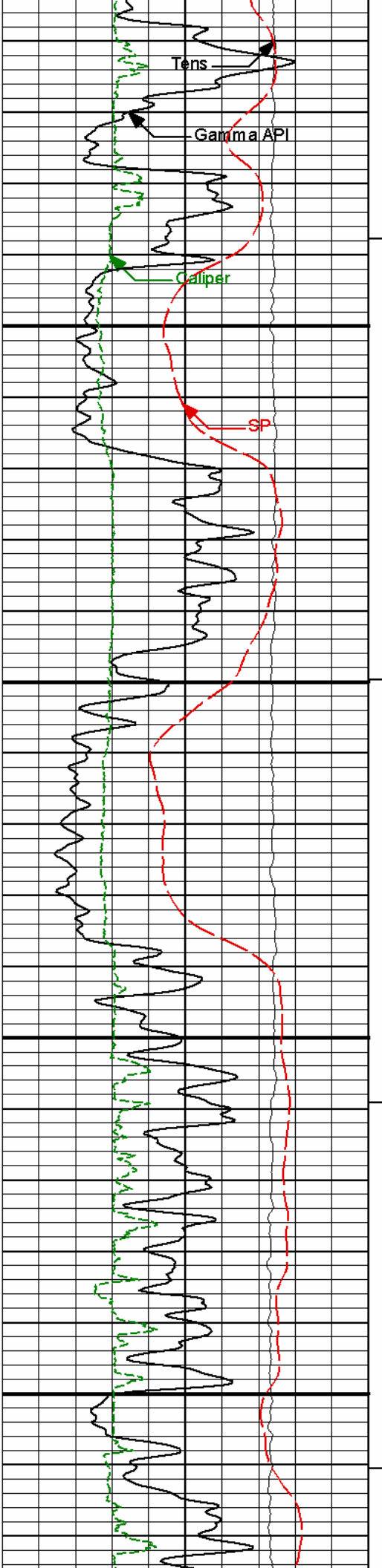


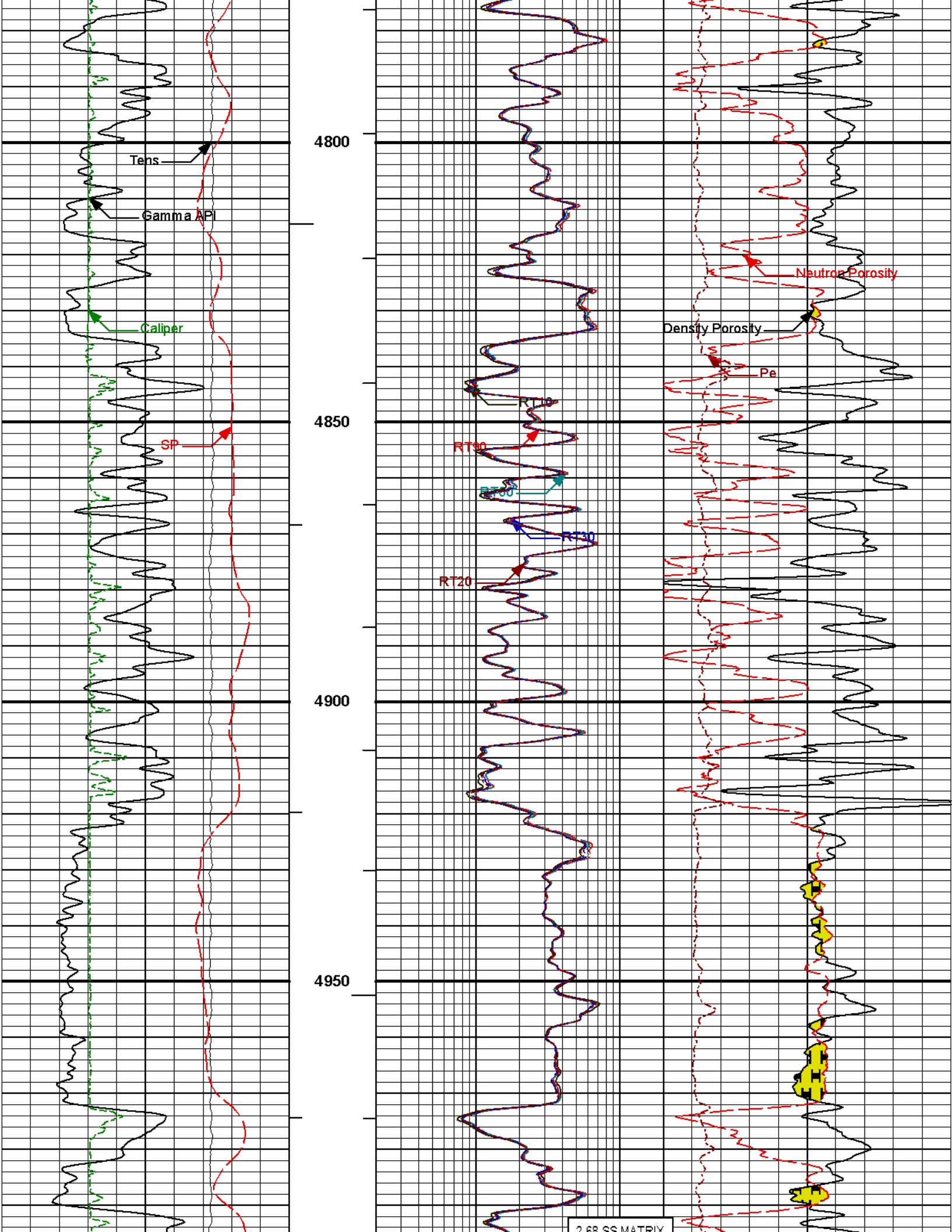


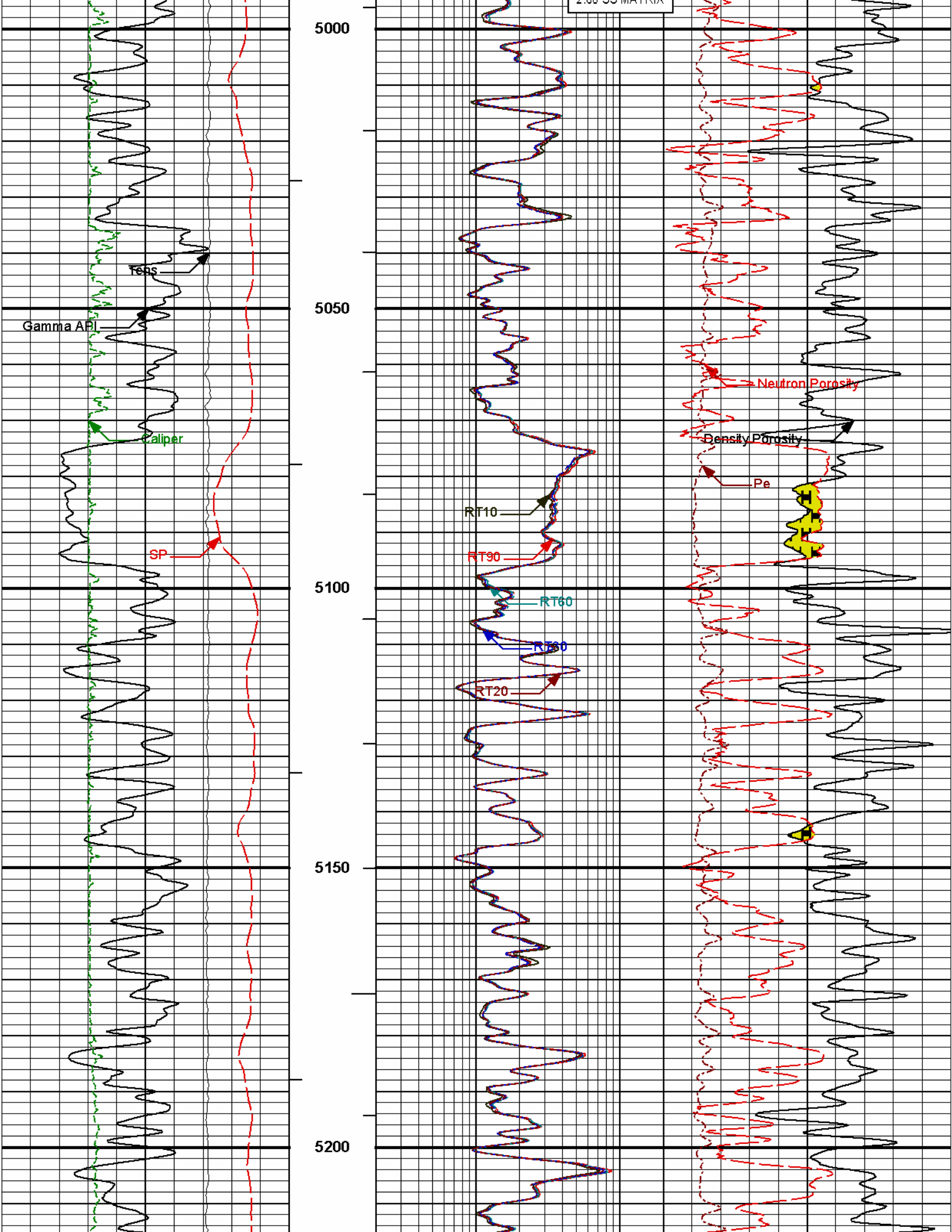


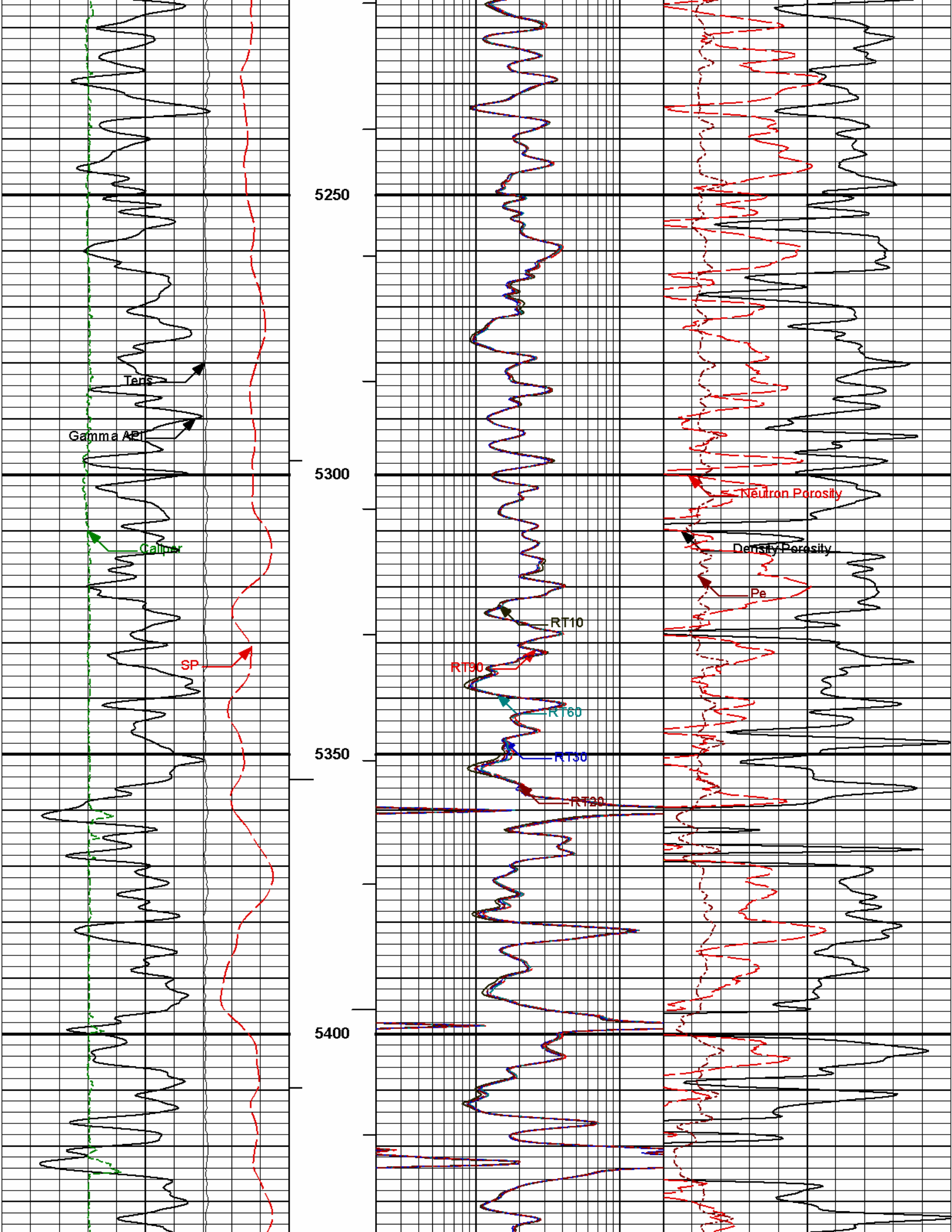


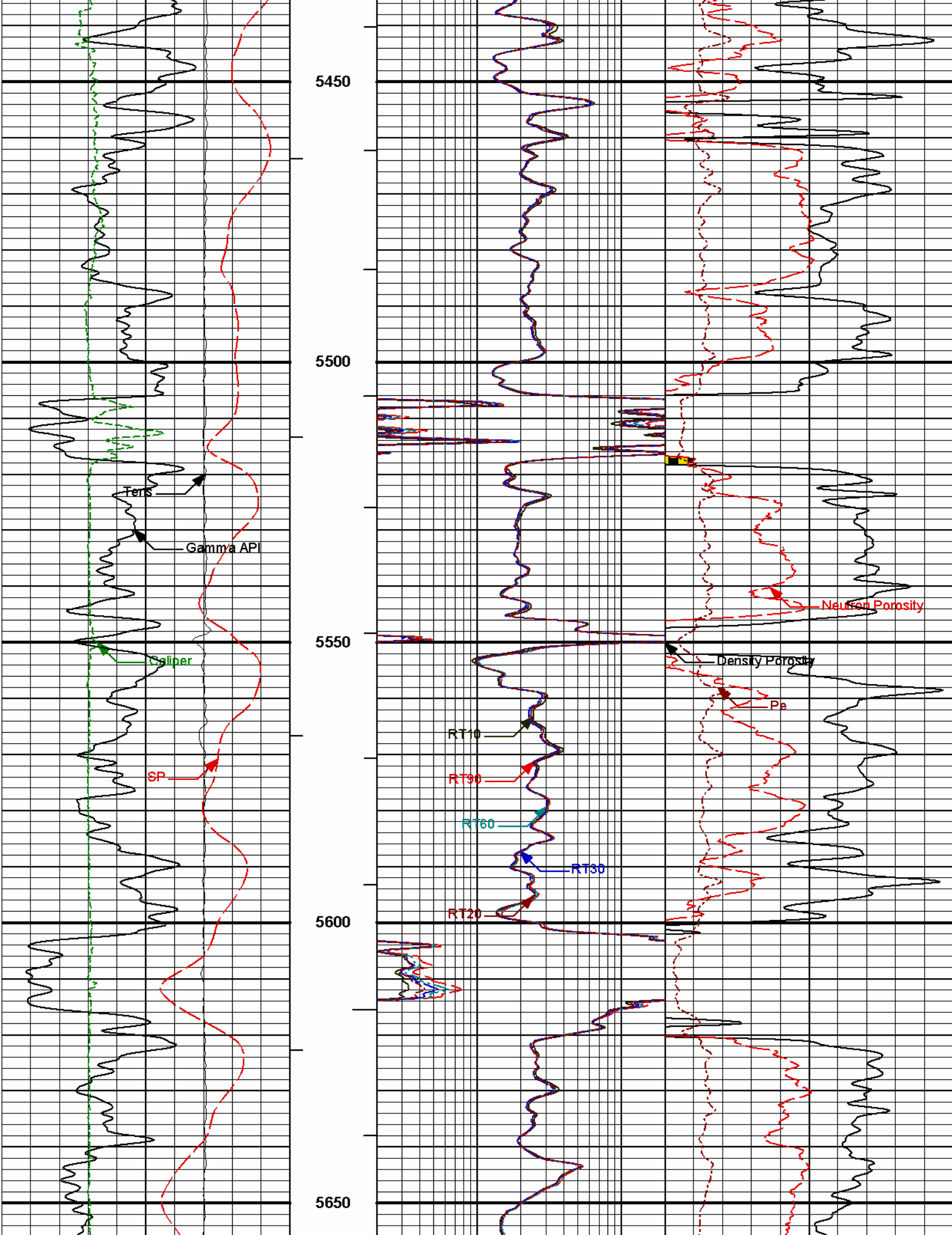


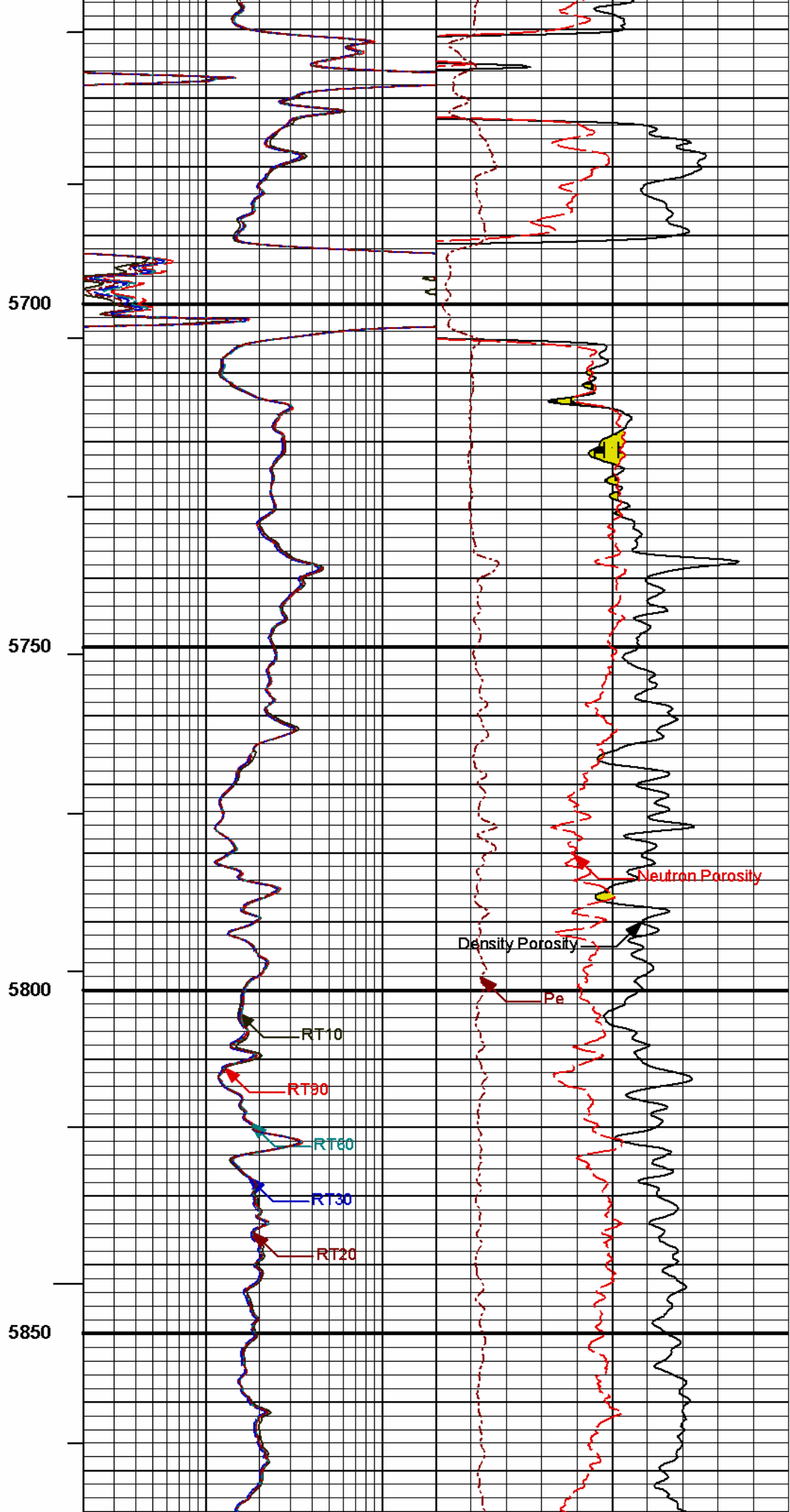
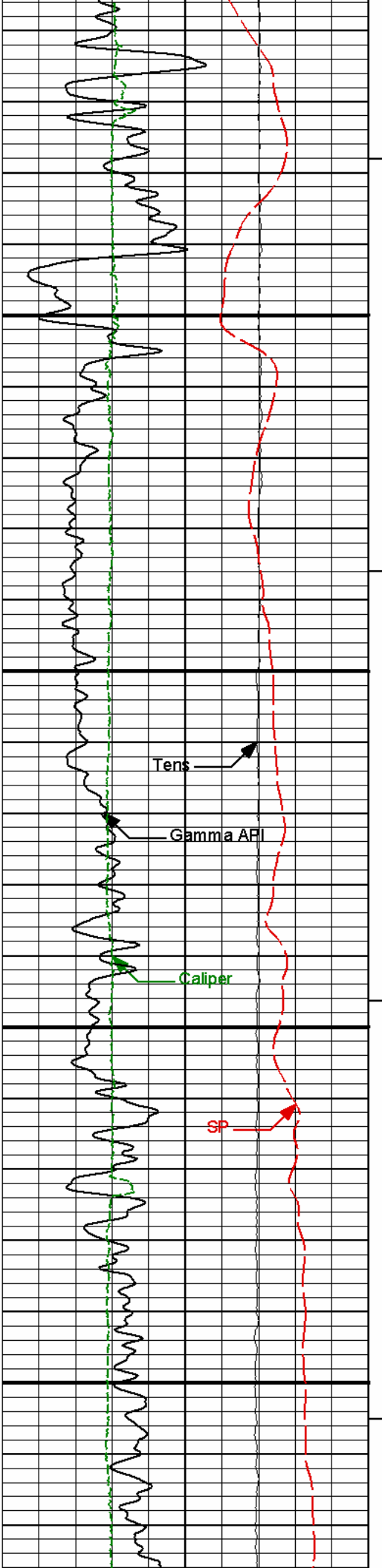


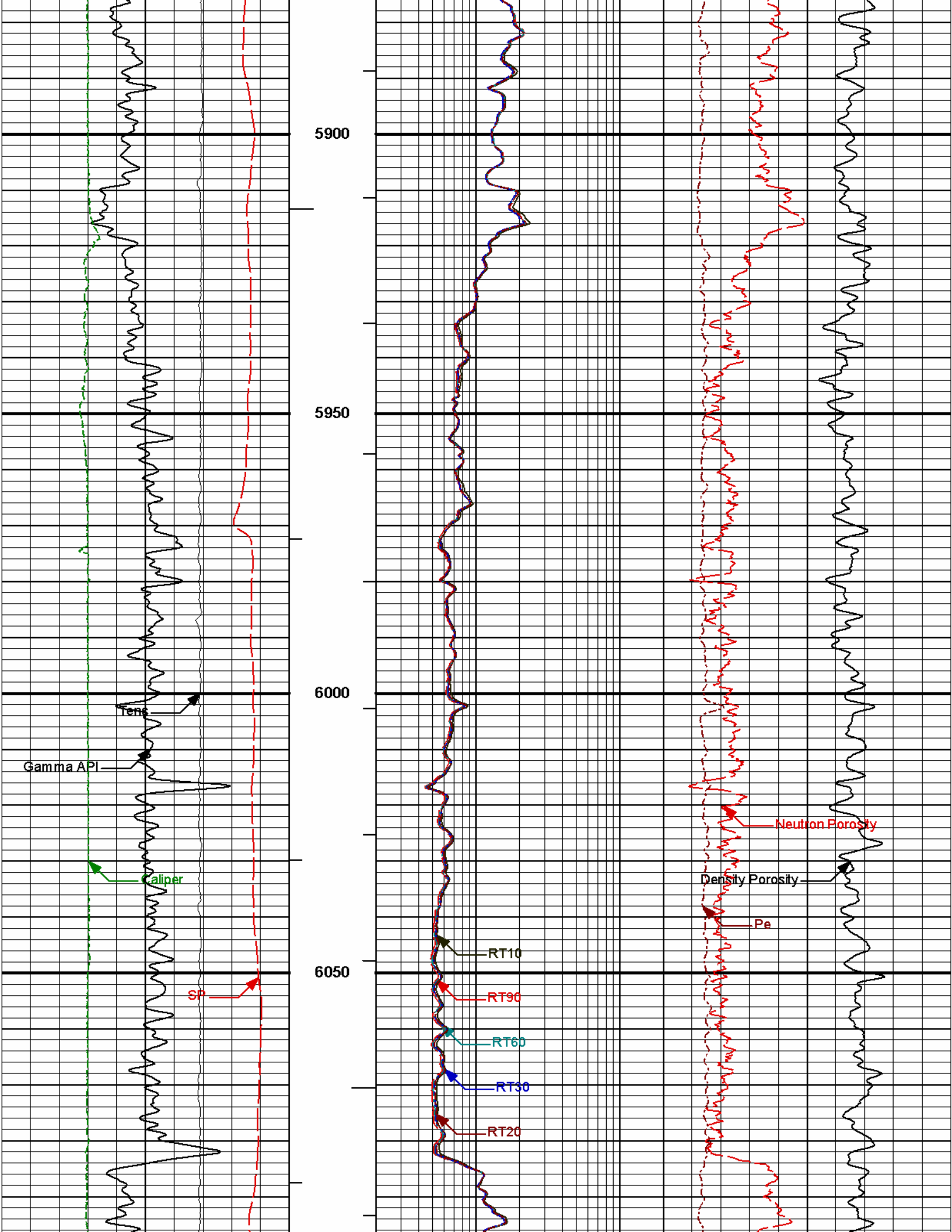


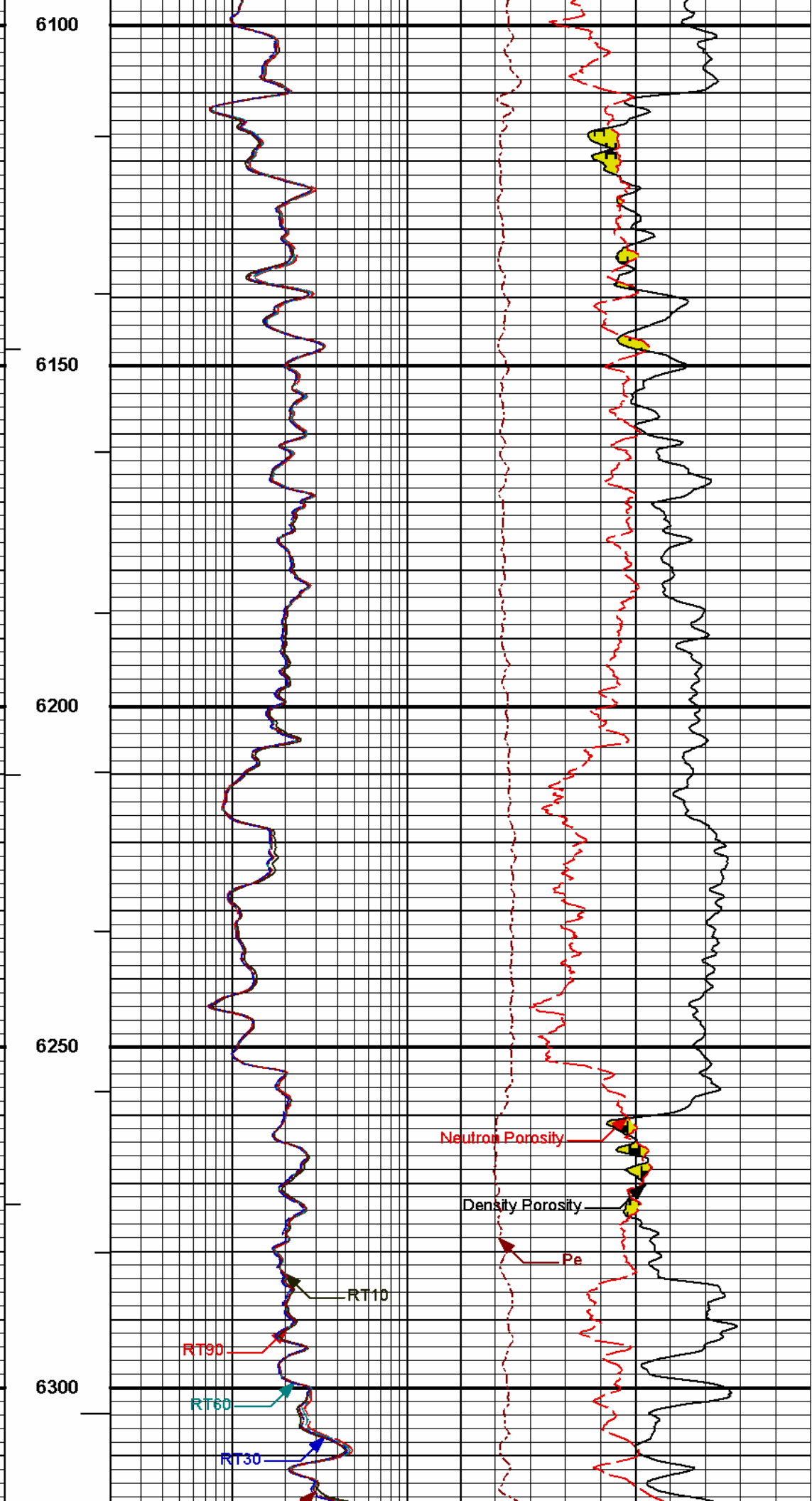
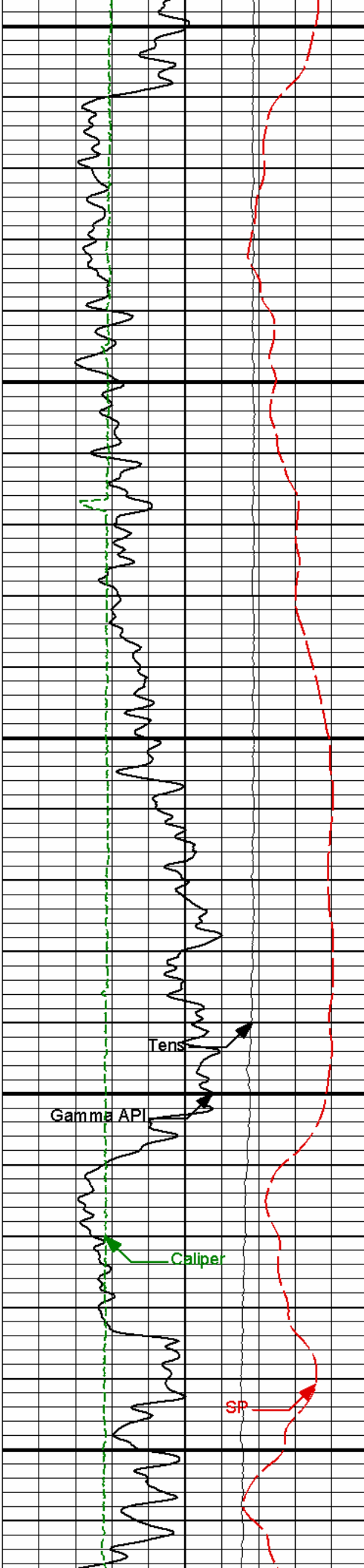


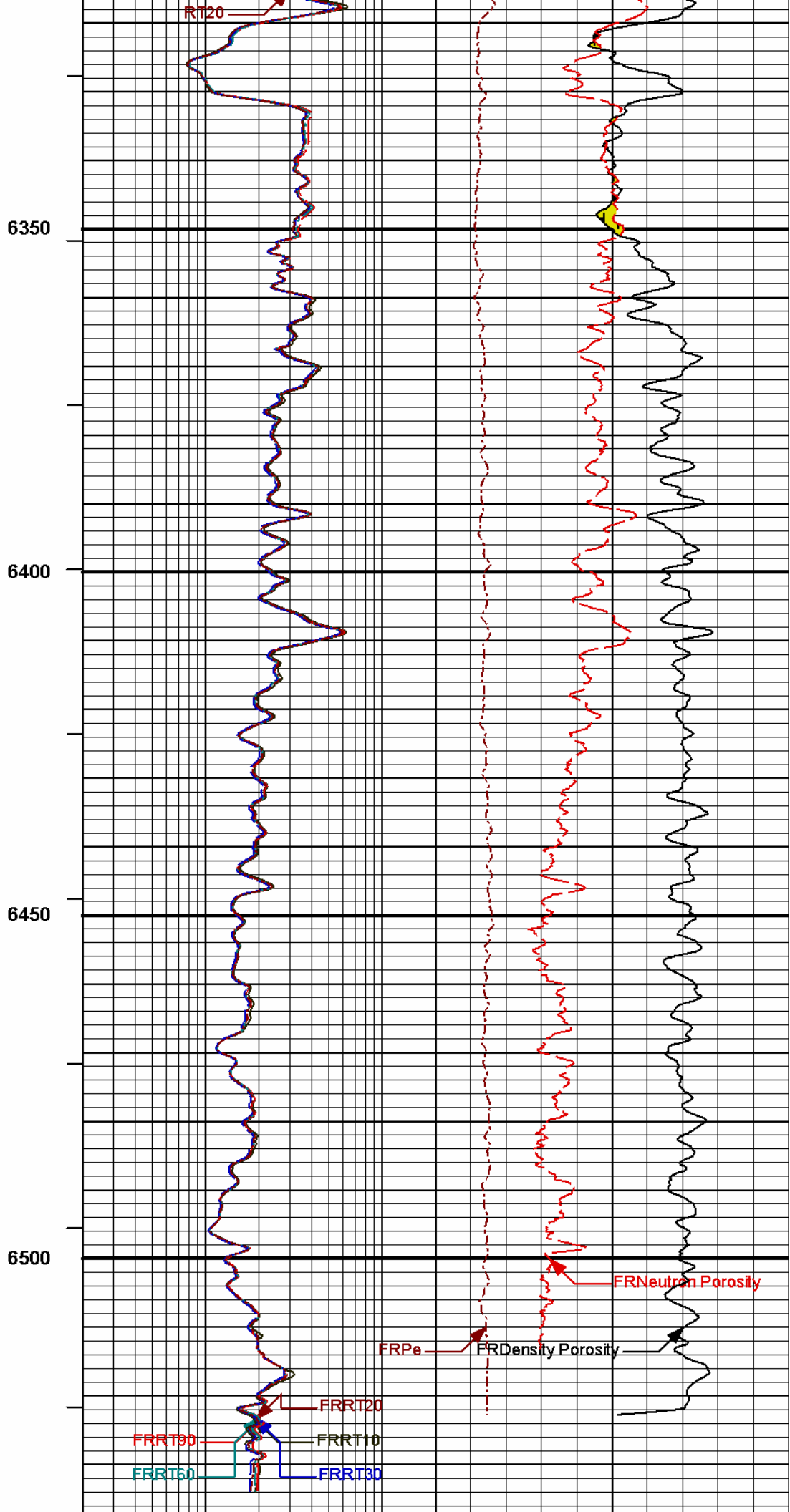
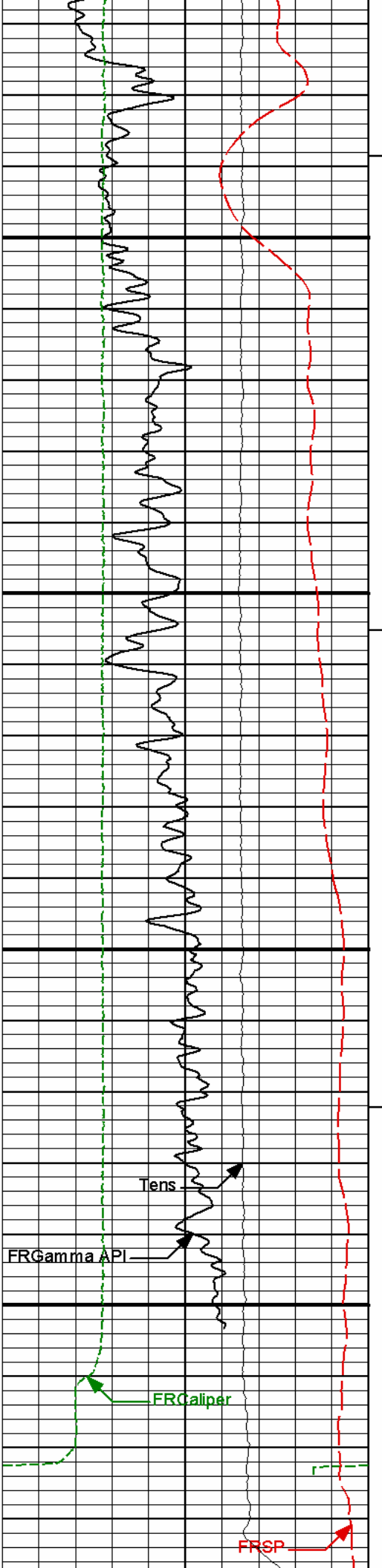












0	SP	100	1 : 240	2	RT90	200	0	Pe	10	
	millivolts				Ohm-m					
0	Gamma API	250	BHVT	2	RT60	200	30	Density Porosity		-10
	api				Ohm-m			percent		
6	Caliper	16	AHVT	2	RT30	200	30	Neutron Porosity		-10
	inches				Ohm-m			percent		
10 K	Tens	0		2	RT20	200				
	pounds				Ohm-m					
				2	RT10	200				
					Ohm-m					

HALLIBURTON

Plot Time: 05-Oct-11 14:19:16
Plot Range: 1521 ft to 6546.92 ft
Data: LARA_HAWX19_13A\Well Based\MAIN*
Plot File: \\COMP\IQ_COMPOSITE_5IN_RM_NOBLE

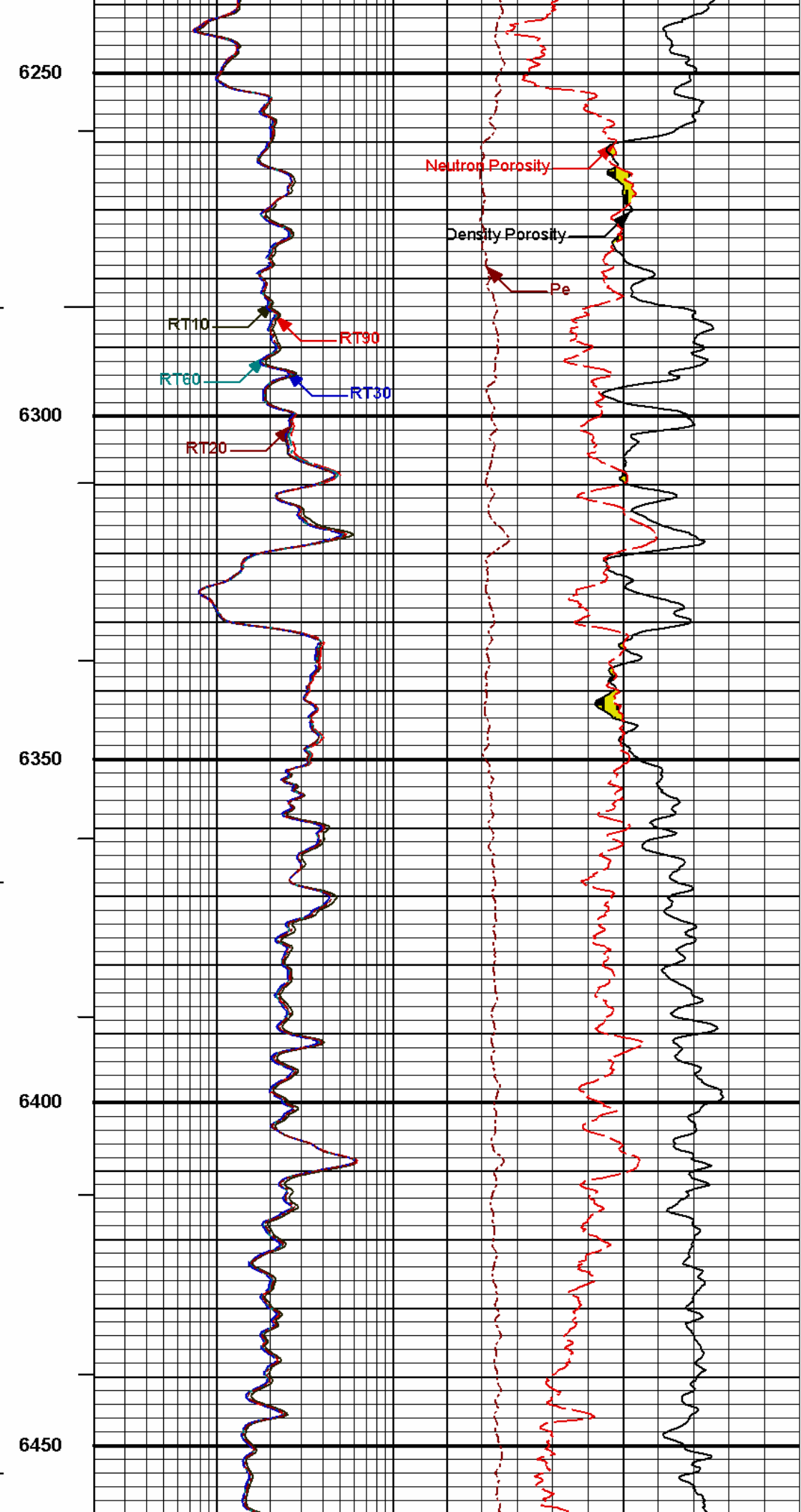
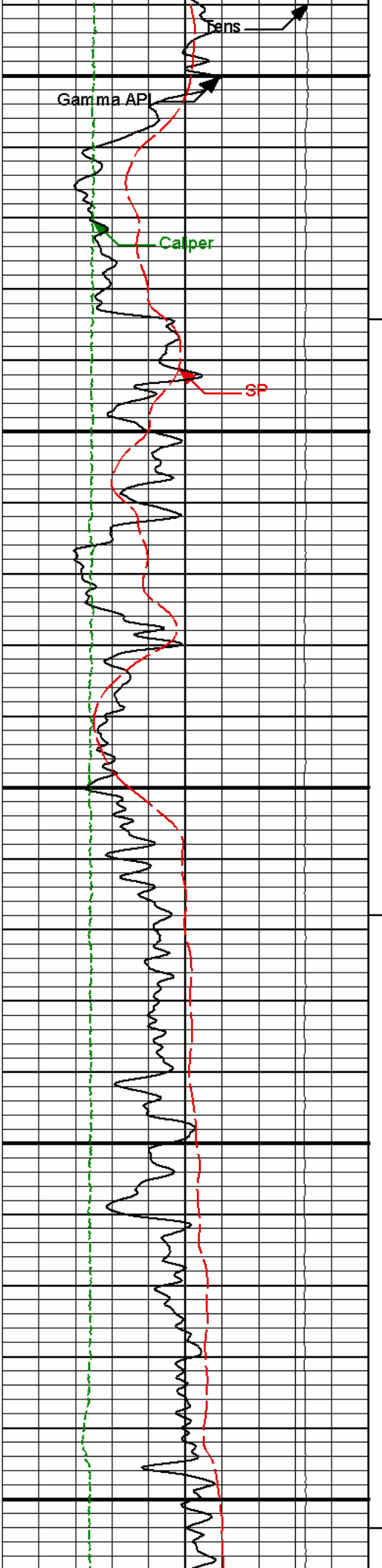
2150 TO 2500 5" = 100'

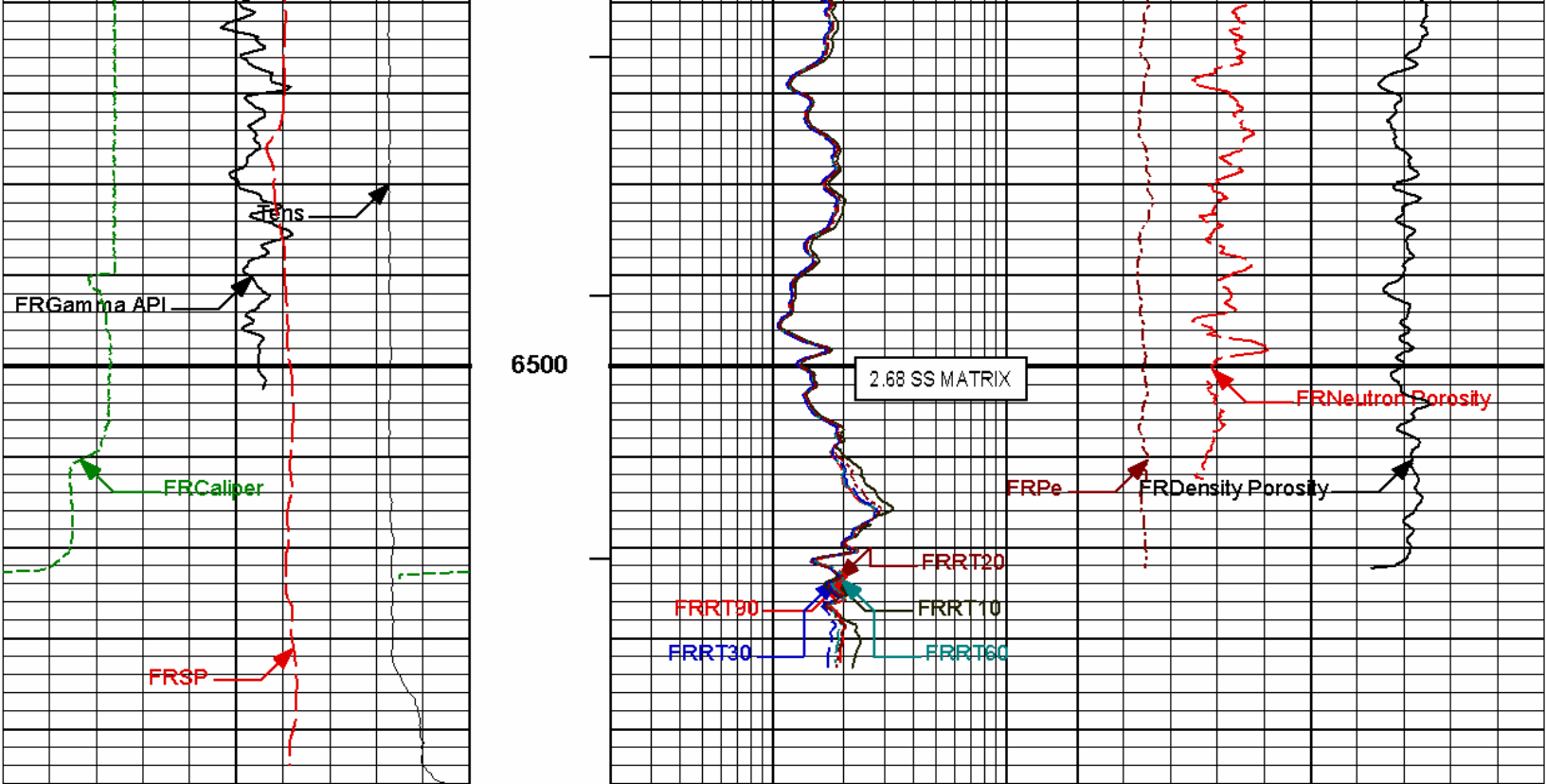
HALLIBURTON

Plot Time: 05-Oct-11 14:19:16
Plot Range: 6230 ft to 6546.17 ft
Data: LARA_HAWX19_13A\Well Based\REPEAT*
Plot File: \\COMP\IQ_COMPOSITE_5IN_RM_NOBLE

3500 TO 4480 5" = 100'

Track 1	Depth Track	Track 2	Track 5	Track 3
		2		
		RT10		
		Ohm-m		
10K		2		
Tens		RT20		
pounds		Ohm-m		
6		2		
Caliper	AHVT	RT30	30	Neutron Porosity
inches		Ohm-m		percent
0		2		
Gamma API	BHVT	RT60	30	Density Porosity
api		Ohm-m		percent
50	1 : 240	2	0	Pe
SP		RT90		10
millivolts		Ohm-m		





50	SP	150	1 : 240	2	RT90	200	0	Pe	10
	millivolts				Ohm-m				
0	Gamma API	250	BHVT	2	RT60	200	30	Density Porosity	-10
	api				Ohm-m			percent	
6	Caliper	16	AHVT	2	RT30	200	30	Neutron Porosity	-10
	inches				Ohm-m			percent	
10K	Tens	0		2	RT20	200			
	pounds				Ohm-m				
				2	RT10	200			
					Ohm-m				

HALLIBURTON

Plot Time: 05-Oct-11 14:19:18
 Plot Range: 6230 ft to 6546.17 ft
 Data: LARA_HAWX19_13A Well Based REPEAT[®]
 Plot File: \\COMPIQ_COMPOSITE_5IN_RM_NOBLE

3500 TO 4480 5" = 100'

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	GTET - 11005602	Reference Calibration Date:	20-Aug-11 04:20:38
Engineer:	W. MATSON	Calibration Date:	17-Sep-11 05:47:29
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

Calibrator Source S/N: MPO51807-04

Calibrator API Reference:239.00 api
Equivalent Calibrator API Reference:243.2 api

Measurement	Measured	Calibrated	Units
Background	51.9	54.0	api
Background + Calibrator	281.7	293.0	api
Calibrator	241.1	239.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	GTET - 11005602	Reference Calibration Date:	17-Sep-11 05:47:29
Engineer:	J. KRONABLE	Calibration Date:	05-Oct-11 10:55:15
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

Calibrator Source S/N: MPO51807-04
Calibrator API Reference:239.00 api
Equivalent Calibrator API Reference:243.2 api

Field Verification	Shop	Field	Units
Background	54.0	29.6	api
Background + Calibrator	293.0	273.6	api
Calibrator	239.0	244.0	api

Shop	Field	Difference	Tolerance
239.0	244.0	-5.0	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	DSNT - 10993887	Reference Calibration Date:	16-Jul-11 15:54:24
Engineer:	W. MATSON	Calibration Date:	03-Aug-11 10:37:48
Software Version:	WL INSITE R3.2.1 (Build 7)	Calibration Version:	1

Logging Source S/N: DSN-388
Tank Serial Number: GJWATERTANK
Reference value assigned to Tank: 52.750
Snow Block S/N: GJ
Calibration Tank Water Temperature: 74 degF
Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.954	0.953	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):	0.2170	0.2169	0.0001	+/- 0.0020
Calibrated Ratio:	9.93	9.93	0.002	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0792	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 - 10993887**Reference Calibration Date:** 03-Aug-11 10:37:48**Engineer:** J. KRONABLE**Calibration Date:** 05-Oct-11 11:01:06**Software Version:** WL INSITE R3.4.2 (Build 2)**Calibration Version:** 1

Logging Source S/N: DSN-388

Snow Block S/N: GJ

NEUTRON FIELD-CHECK SUMMARY

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decg):	0.0792	0.0645	-0.0147	+/- 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:** 16-Jul-11 10:10:43**Engineer:** J. KRONABLE**Calibration Date:** 16-Jul-11 10:46:46**Software Version:** WL INSITE R3.2.1 (Build 7)**Calibration Version:** 1**CALIBRATION COEFFICIENTS**

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-1198.71	-1385.68	-7000.00 - -1000.00
Pad Gain	0.0003733	0.0003722	0.000200 - 0.000600
Arm Offset	-3619.14	-3788.88	-5000.00 - 3000.00
Arm Gain	0.0005455	0.0005802	0.000300 - 0.000700
Arm Power	-0.000004507	-0.000006601	-0.000010 - 0.000010

The ring diameter is computed from: $\text{DIAMETER} = \text{PAD EXTENSION} + \text{ARM EXTENSION} + \text{TOOL DIAMETER}$

Tool Diameter: 4.50 in

CALIBRATION RINGS

Measurement	Current Reading (Previous Coeff.)	Calibrated (New Coeff.)	Change	Control Limit On New Value
PAD EXTENSION:				
Small Ring (in)	2.08	2.00	-0.08	+/- 0.20
Medium Ring (in)	3.83	3.75	-0.08	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.56	6.50	-0.06	+/- 0.20
Medium Ring (in)	8.24	8.25	0.01	+/- 0.20
Large Ring (in)	15.02	15.00	-0.02	+/- 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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ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION**Tool Name:** ACRT Sonde - 90194258-E7486-**Reference Calibration Date:** 16-Sep-11 09:56:06**Engineer:** W. MATSON**Calibration Date:** 16-Sep-11 10:05:53**Software Version:** WL INSITE R3.4.2 (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	0.9990	1.05	0.95	1.0010	1.05	0.95	0.9984	1.05
A2 (50")	0.95	1.0079	1.05	0.95	1.0098	1.05	0.95	1.0084	1.05
A3 (29")	0.95	1.0070	1.05	0.95	1.0079	1.05	0.95	1.0046	1.05
A4 (17")	0.95	1.0002	1.05	0.95	1.0003	1.05	0.95	0.9980	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.9960	1.05	0.95	0.9921	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9864	1.05	0.95	0.9822	1.05

TYPICAL SONDE OFFSET RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	-5	-0.227	2	-6	-3.962	-2	-8	-5.147	-2
A2 (50")	-7	-1.967	-1	-6	-3.725	-2	-7	-4.690	-2
A3 (29")	-27	-11.435	-9	-9	-3.493	-3	-7	-2.946	-1
A4 (17")	-180	-102.277	-60	-45	-32.251	-15	-39	-25.909	-13
A5 (10")	N/A	N/A	N/A	-150	-68.582	-50	-80	-35.110	-10
A6 (6")	N/A	N/A	N/A	175	273.528	525	90	141.684	270

TRANSMITTER CURRENT GAIN					R-MUD VERIFICATION			
Signal	Lower	R	Upper		Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
12K	0.6	0.8631	1.3		Mud Cell	0.95	1.004	1.05
36K	1.0	1.7921	2.0					
72K	1.0	1.1061	2.0					

SPECTRAL DENSITY SHOP CALIBRATION									
Tool Name:	SDLT Pad - 10951300					Reference Calibration Date:	23-Sep-11 13:48:20		
Engineer:	J. KRONABLE					Calibration Date:	23-Sep-11 14:20:31		
Software Version:	WL INSITE R3.4.2 (Build 2)					Calibration Version:	1		

Logging Source S/N: 5153GW									
Aluminum Block S/N: 63094					Density: 2.610g/cc			Pe: 3.100	
Magnesium Block S/N: 63387					Density: 1.685g/cc			Pe: 2.594	

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0315	1.0655	0.90 - 1.10
Near Dens Gain	1.0025	1.0265	0.90 - 1.10
Near Peak Gain	0.9637	0.9930	0.90 - 1.10
Near Lith Gain	0.9057	0.9359	0.90 - 1.10
Far Bar Gain	1.0122	1.0175	0.90 - 1.10
Far Dens Gain	0.9990	1.0011	0.90 - 1.10
Far Peak Gain	0.9900	0.9906	0.90 - 1.10
Far Lith Gain	0.9629	0.9663	0.90 - 1.10
Near Bar Offset	-0.1414	-0.4574	NONE
Near Dens Offset	0.0838	-0.1319	NONE
Near Peak Offset	0.3968	0.1468	NONE
Near Lith Offset	0.8551	0.5995	NONE
Far Bar Offset	-0.0171	-0.0655	NONE
Far Dens Offset	0.0800	0.0611	NONE
Far Peak Offset	0.1503	0.1420	NONE
Far Lith Offset	0.3472	0.3151	NONE

Near Bar Background	949.09	948.87	700 - 1450
Near Dens Background	310.00	311.22	230 - 480
Near Peak Background	136.92	135.95	100 - 210
Near Lith Background	167.96	168.26	125 - 260
Far Bar Background	558.69	560.42	450 - 900
Far Dens Background	221.28	220.73	175 - 345
Far Peak Background	88.46	87.33	70 - 140
Far Lith Background	90.90	89.84	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.684	1.685	0.001	+/- 0.015
Pe	2.573	2.557	-0.016	+/- 0.150
ALUMINUM				
Density (g/cc)	2.609	2.610	0.001	+/- 0.01500
Pe	3.071	3.066	-0.005	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0010	+/- 0.0110	-0.0009	+/- 0.0140
Magnesium Block	-0.0002	+/- 0.0110	-0.0004	+/- 0.0140
Aluminum Block	-0.0000	+/- 0.0110	0.0001	+/- 0.0140
Resolution	8.59	6.00 - 11.50	8.84	6.00 - 11.50
Internal Verifier(B+D+P+L)	1564	1200 - 2700	958	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 - 10951300	Reference Calibration Date:	23-Sep-11 14:20:31
Engineer:	J. KRONABLE	Calibration Date:	05-Oct-11 10:55:32
Software Version:	WL INSITE R3.4.2 (Build 2)	Calibration Version:	1

Pad Temperature: 73.4 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1564.292	1559.292	-5.000	15.916
Far (B+D+P+L) cps	958.312	952.647	-5.665	16.674
Near Resolution	8.59	8.62	0.030	0.50
Far Resolution	8.84	8.90	0.060	1.00

PASS/FAIL SUMMARY

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

CALIBRATION SUMMARY

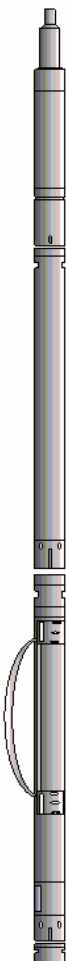
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11005602						
Gamma Ray Calibrator	239.0	244.0	-----	-5.0	+/- 9.00	api
DSNT-10993887						
Snow-Block Porosity	0.0792	0.0645	-----	0.0147	+/- 0.0150	decg
SDLT-10951300						
Pad Extension	3.75	-----	-----	0.00	+/-0.20	in
Ring Diameter	8.25	-----	-----	0.00	+/-0.20	in
ACRt Sonde-90194258-E7486-						
Mud Cell	1.004	-----	-----	0.000	-----	ohm-m
SDLT Pad-10951300						
Near(B+D+P+L)	1564.292	1559.292	-----	5.000	+/-15.916	cps
Far(B+D+P+L)	958.312	952.647	-----	5.665	+/-16.674	cps

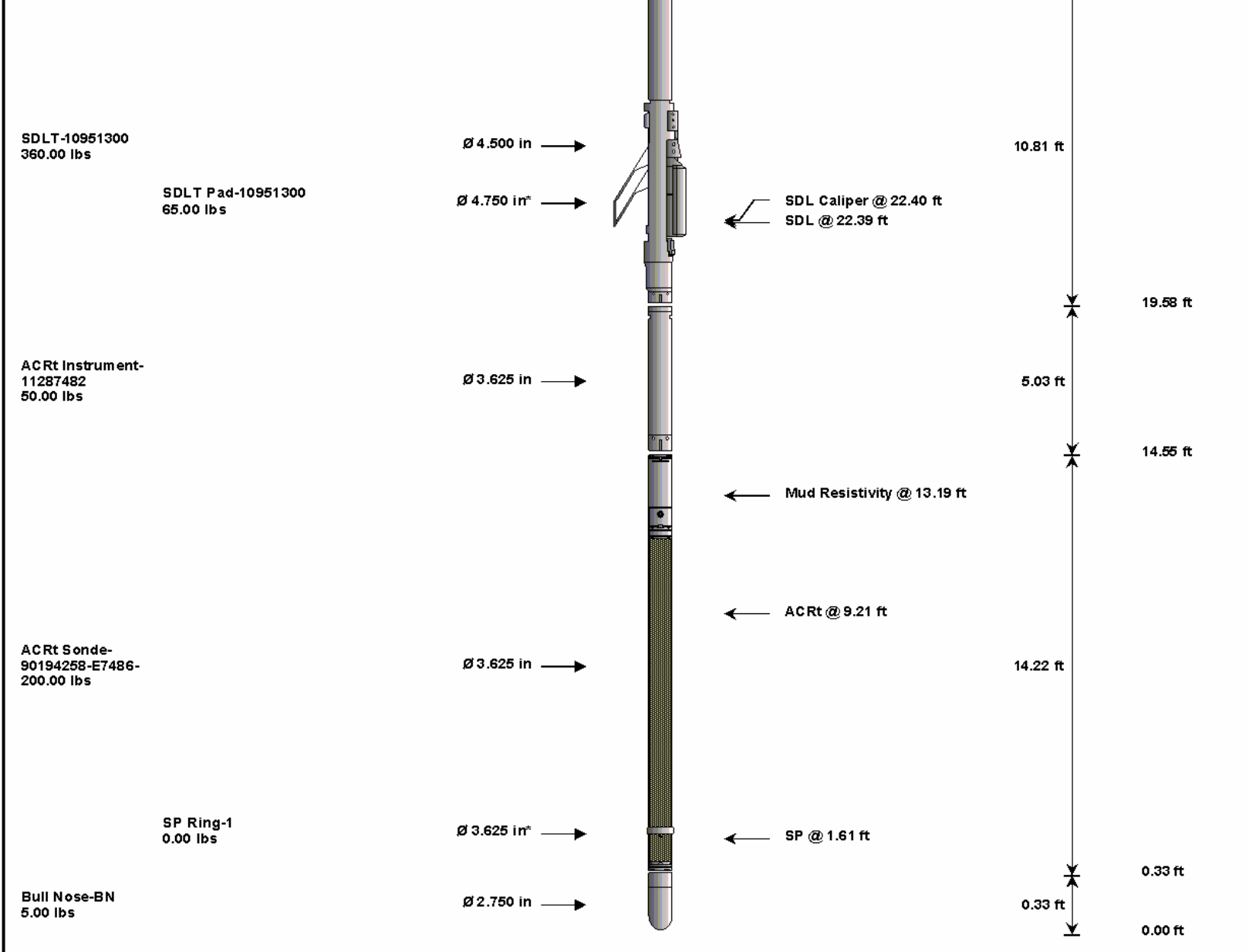
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Date: 05-Oct-11 13:07:51

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TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
RWCH-10763226 135.00 lbs		Ø 3.625 in →		Load Cell @ 51.17 ft BH Temperature @ 50.60 ft	6.25 ft	54.85 ft
GTET-11005602 165.00 lbs		Ø 3.625 in →		GammaRay @ 42.54 ft	8.52 ft	48.60 ft
DSN Decentralizer- 10839203 6.60 lbs		Ø 5.000 in" →				40.08 ft
DSNT-10993887 174.00 lbs		Ø 3.625 in →		DSN Far @ 33.15 ft DSN Near @ 32.40 ft	9.69 ft	30.40 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)	
RWCH	Releasable Wireline Cable Head	10763226	135.00	6.25	48.60	300.00	
GTET	Gamma Telemetry Tool	11005602	165.00	8.52	40.08	60.00	
DSNT	Dual Spaced Neutron	10993887	174.00	9.69	30.40	60.00	
DCNT	DSN Decentralizer	10839203	6.60	5.13	*	33.73	300.00
SDLT	Spectral Density Tool	10951300	360.00	10.81	19.58	60.00	
SDLP	Density Insite Pad	10951300	65.00	2.55	*	21.79	60.00
ACRt	Array Compensated True Resistivity Instrument Section	11287482	50.00	5.03	14.55	300.00	
ACRt	Array Compensated True Resistivity	90194258-E7486-	200.00	14.22	0.33	300.00	
SP	SP Ring	1	0.00	0.25	*	1.61	300.00
BLNS	Bull Nose	BN	5.00	0.33	0.00	300.00	
Total			1,160.60	54.85			
* Not included in Total Length and Length Accumulation.							
Data: LARA_HAWX19_13A\0001 TRIPLEIDLE							
Date: 05-Oct-11 13:09:41							

COMPANY	LARAMIE ENERGY					
WELL	HAWXHURST 19-13A					
FIELD	BRUSH CREEK					
COUNTY	MESA	STATE	CO			

HALLIBURTON

DUAL SPACED NEUTRON
SPECTRAL DENSITY
ARRAY COMPENSATED
TRUE RESISTIVITY
LOG