

COMPANY										KERR-MCGEE OIL & GAS ONSHORE LP									
WELL										HEIN 1-1									
FIELD										WATTENBERG									
COUNTY										WELD									
STATE										CO									
COMPANY										KERR-MCGEE OIL & GAS ONSHORE LP									
WELL										HEIN 1-1									
FIELD										WATTENBERG									
COUNTY										WELD									
STATE										CO									
Permanent Datum										GL									
Log measured from										KB									
Drilling measured from										KB									
Date										23-Apr-12									
Run No.										ONE									
Depth - Driller										8028.00 ft									
Depth - Logger										8006.0 ft									
Bottom - Logged Interval										8004 ft									
Top - Logged Interval										CASING									
Casing - Driller										8.625 in @ 924.0 ft									
Casing - Logger										924.0 ft									
Bit Size										7.875 in									
Type Fluid in Hole										WATER BASED MUD									
Density										8.8 ppq									
Viscosity										26.00 s/qt									
Fluid Loss										8.00 pH									
Source of Sample										MUD CELL									
Rm @ Meas. Temperature										0.560 ohmm @ 105.16 degF									
Rmf @ Meas. Temperature										0.53 ohmm @ 75.00 degF									
Rmc @ Meas. Temperature										0.964 ohmm @ 75.00 degF									
Source Rmf										CHART									
Rm @ BHT										0.26 ohmm @ 232.0 degF									
Time Since Circulation										4.0 hr									
Time on Bottom										23-Apr-12 16:03									
Max. Rec. Temperature										232.0 degF @ 8006.0 ft									
Equipment										11454566									
Location										BRIGHTON									
Recorded By										J. PINKETT									
Witnessed By										B. BENJAMIN									
Other Services:										RWCH									
Elev. K.B.										4911.0 ft									
D.F.										4911.0 ft									
G.L.										4896.0 ft									

API No. 05123350680000
Location SHL 1956' FNL & 1857' FEL SWNE
BHL 526' FNL & 531' FEL NENE ESTIMATED
LAT: 40.082061°
LONG: -104.836625°

Fold here

Service Ticket No.: N/A						API Serial No.: 05123350680000						PGM Version: WL INSITE R3.4.4 (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		ACRT		N/A		1.25" S.O.		N/A					
Rmc @ Meas. Temp.				@		@						E2584-S2585											
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.		11215095		Serial No.				Serial No.		M319_P123_BLUE		Serial No.		11277440									
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.		GTET		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.		5256GW		Serial No.		DSN-430									
Distance to Source		10'		FWDA [Y/N]				Strength		1.5 Ci		Strength		15 Ci									
LOGGING DATA																							

DSNT	DNOK	Process DSN?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DNOS	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
DSNT	DNTP	Temperature Correction Type	None	
DSNT	DPRS	DSN Pressure Correction Type	None	
DSNT	SHCO	View More Correction Options	No	
DSNT	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT Pad	DNOK	Process Density?	Yes	
SDLT Pad	DNOK	Process Density EVR?	No	
SDLT Pad	CB	Logging Calibration Blocks?	No	
SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	DTWN	Disable temperature warning	No	
SDLT Pad	DMA	Formation Density Matrix	2.710	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.25	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

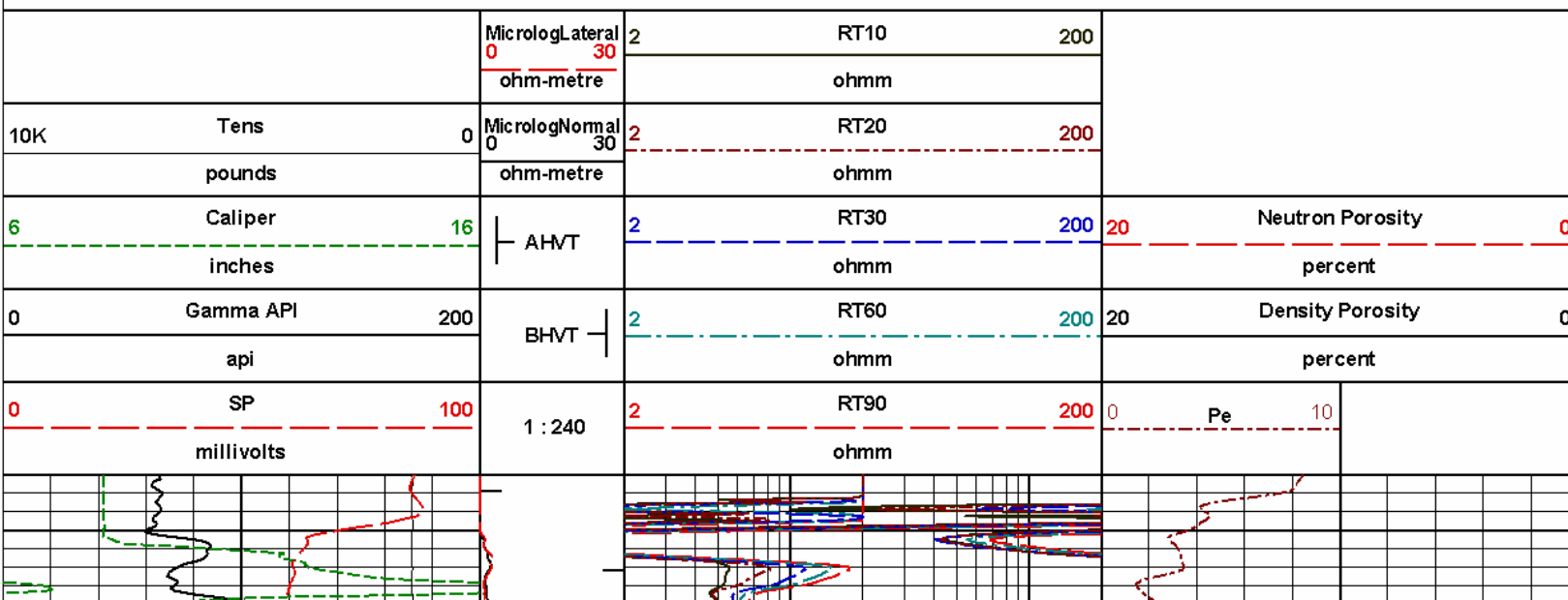
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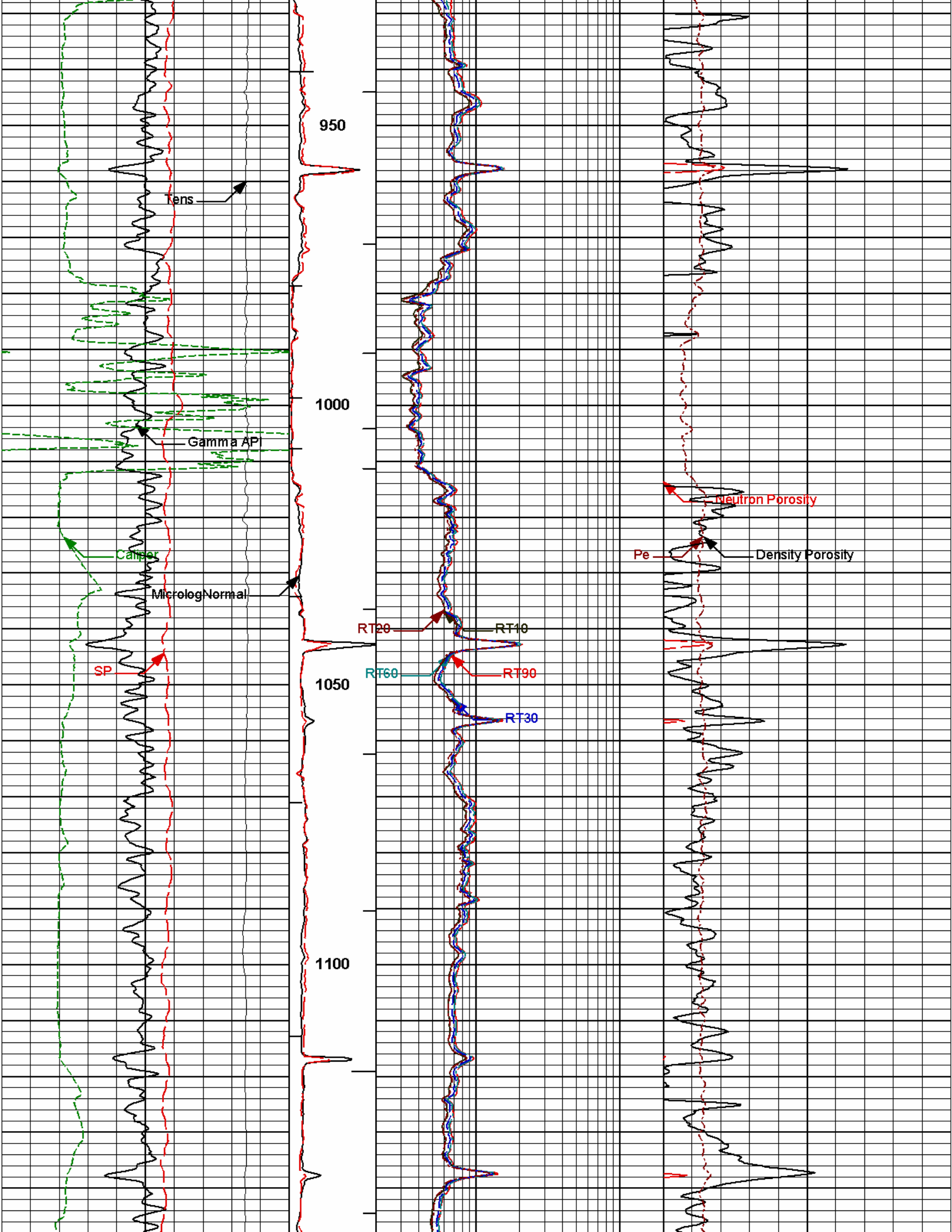
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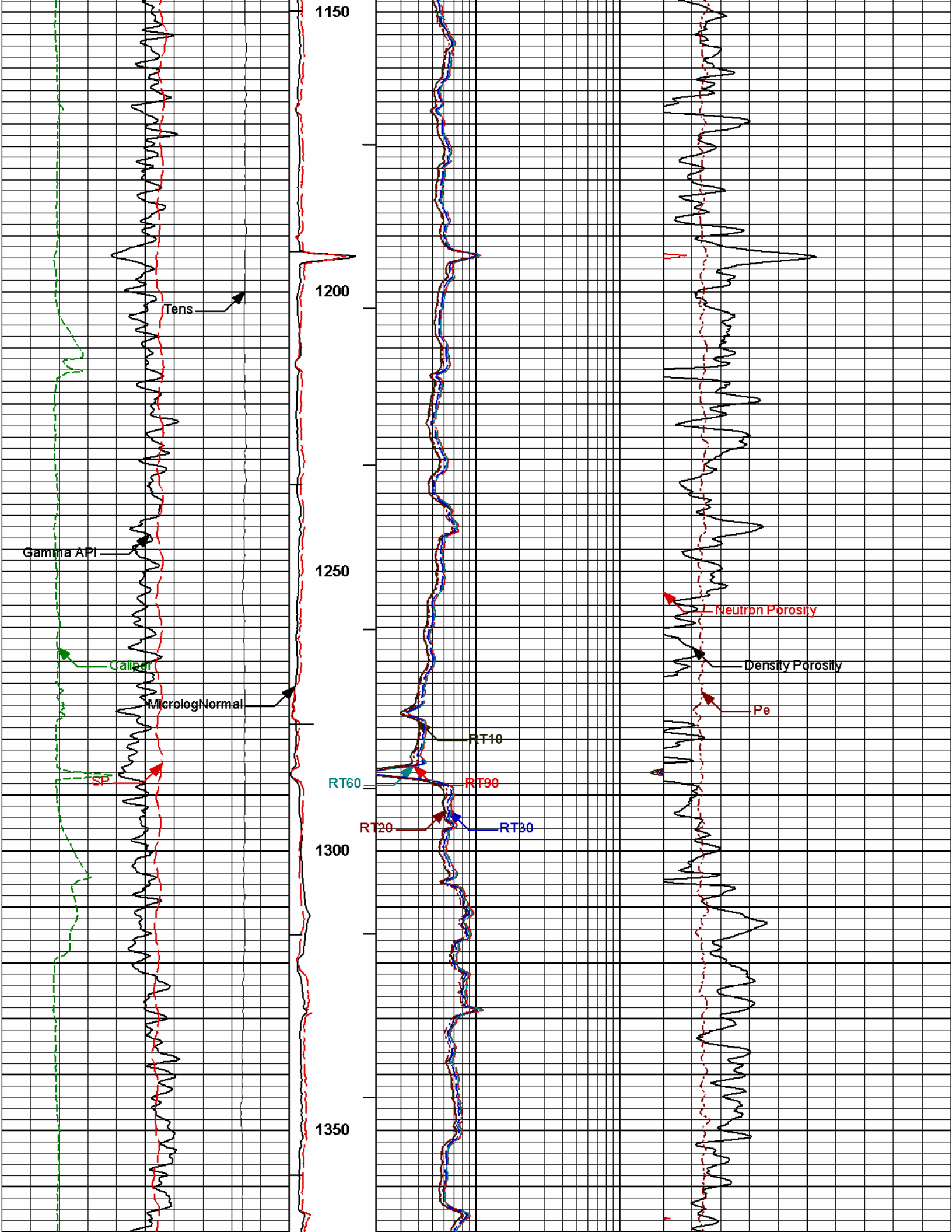
HALLIBURTON

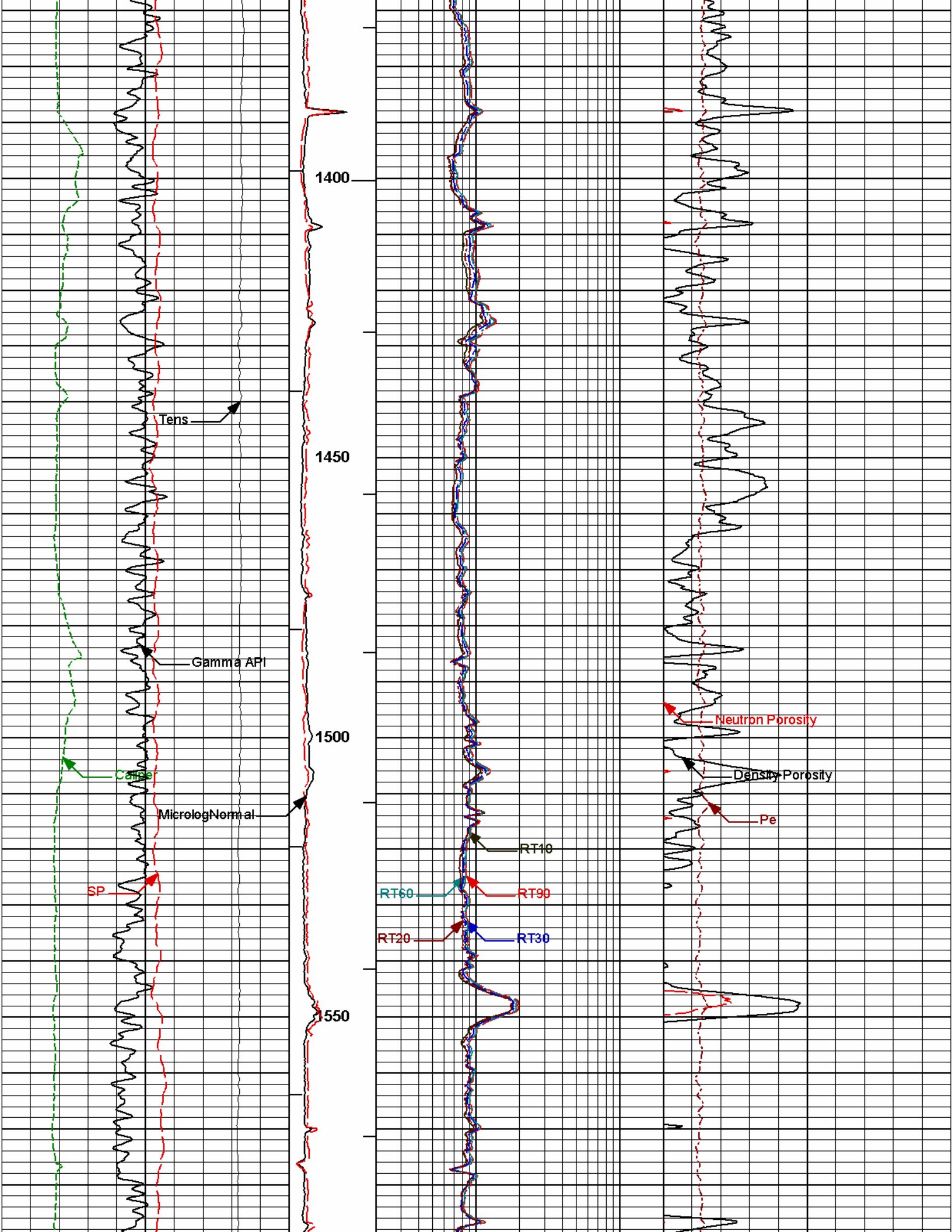
Plot Time: 23-Apr-12 18:27:37
Plot Range: 914 ft to 8014.25 ft
Data: HEIN 1-1\Well Based\MAIN
Plot File: \COMP\MAIN

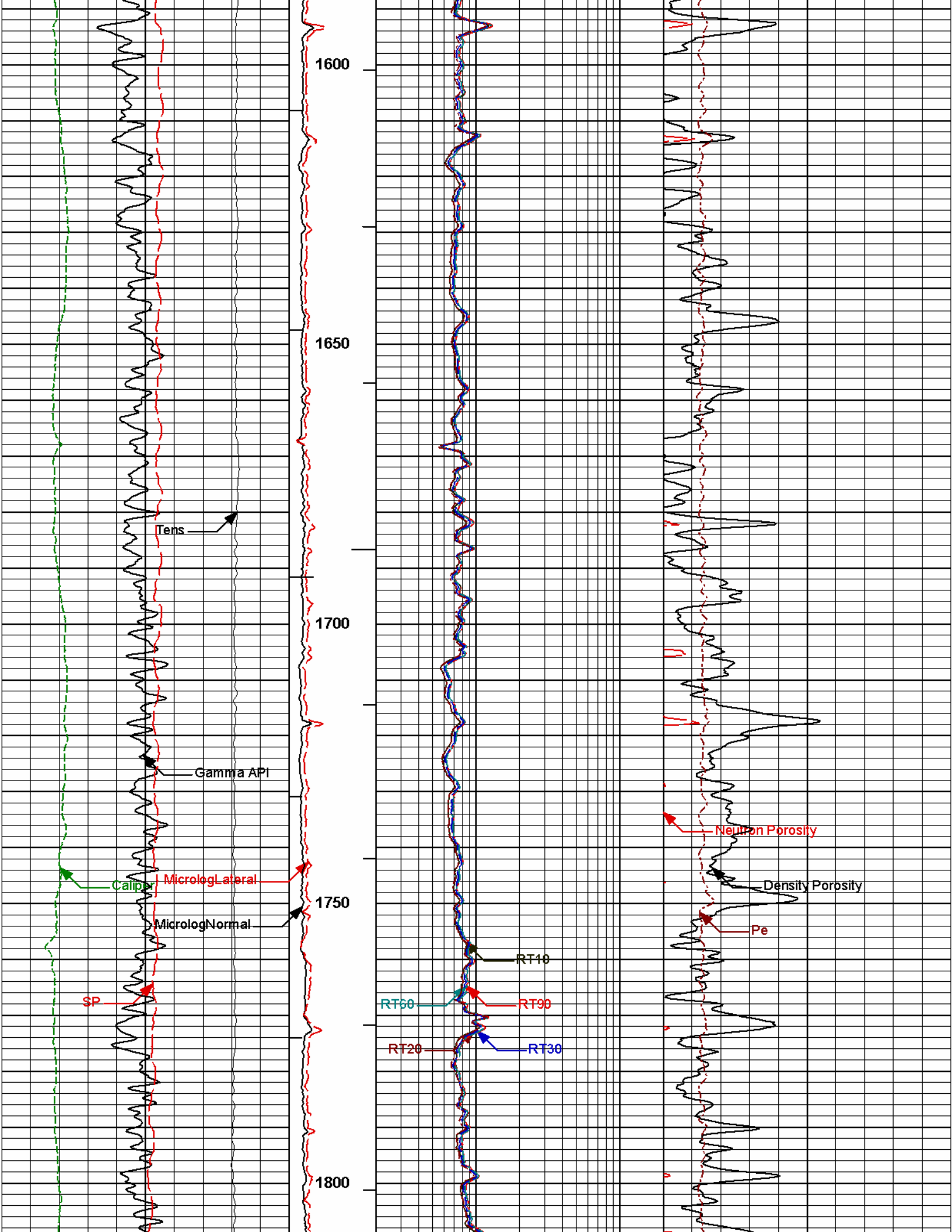
MAIN PASS 5" = 100'

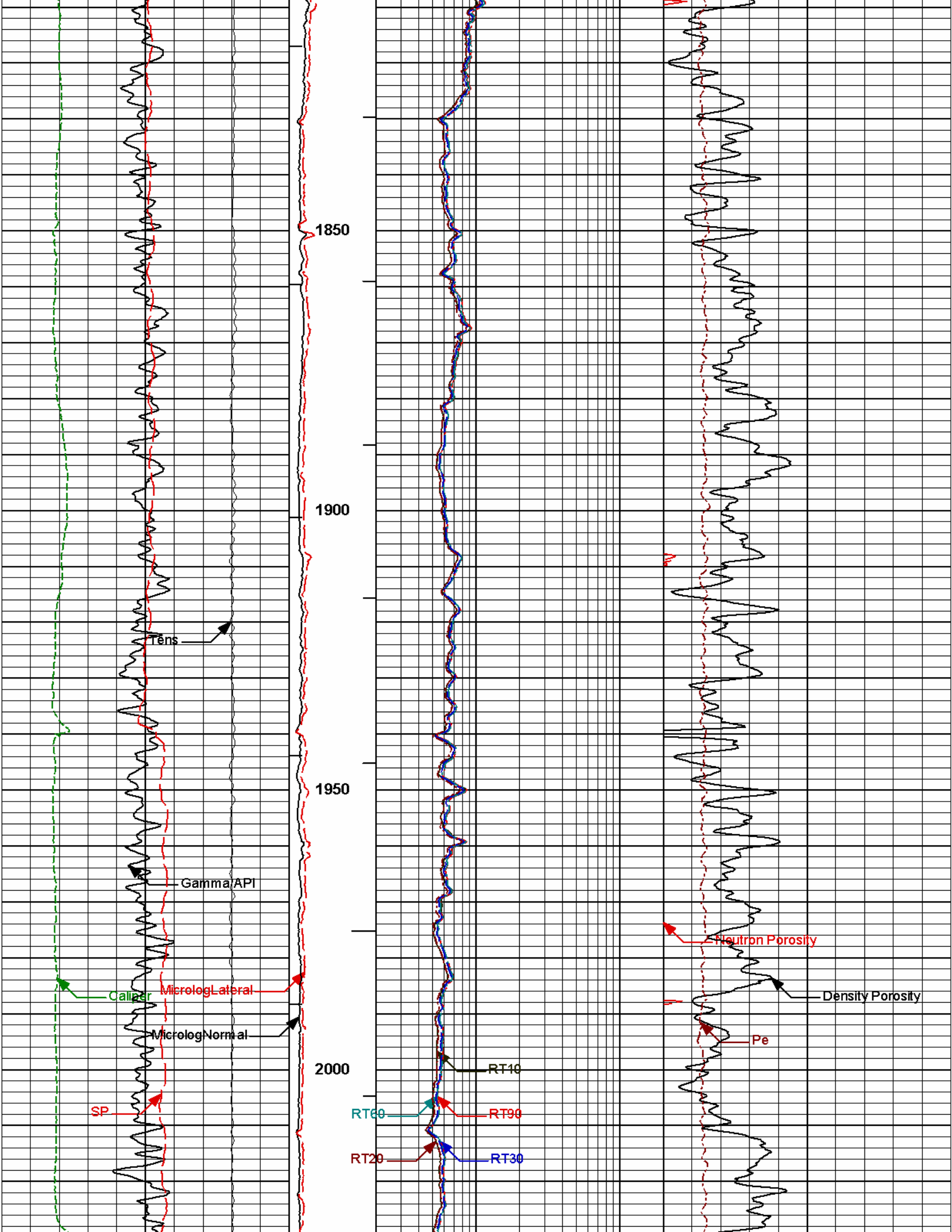


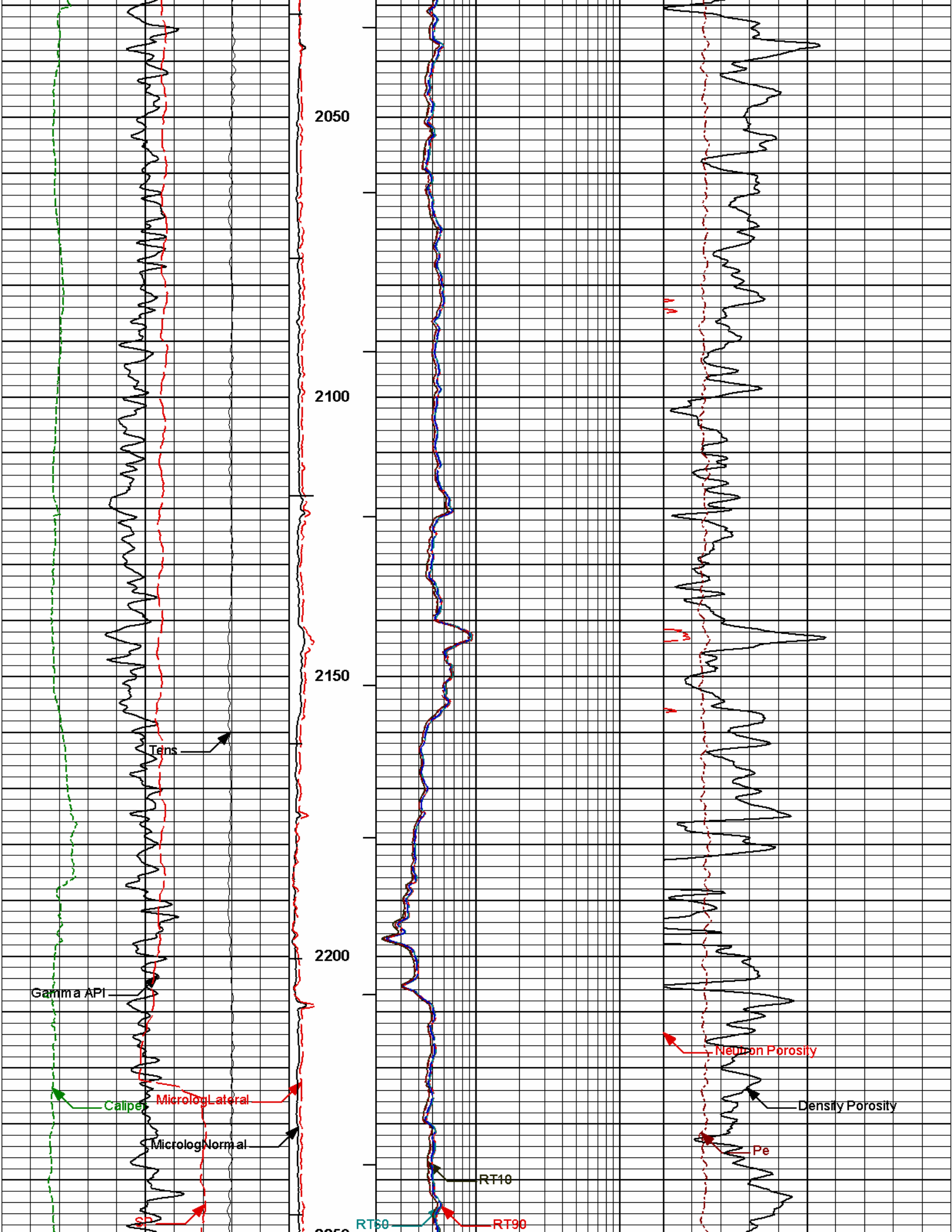


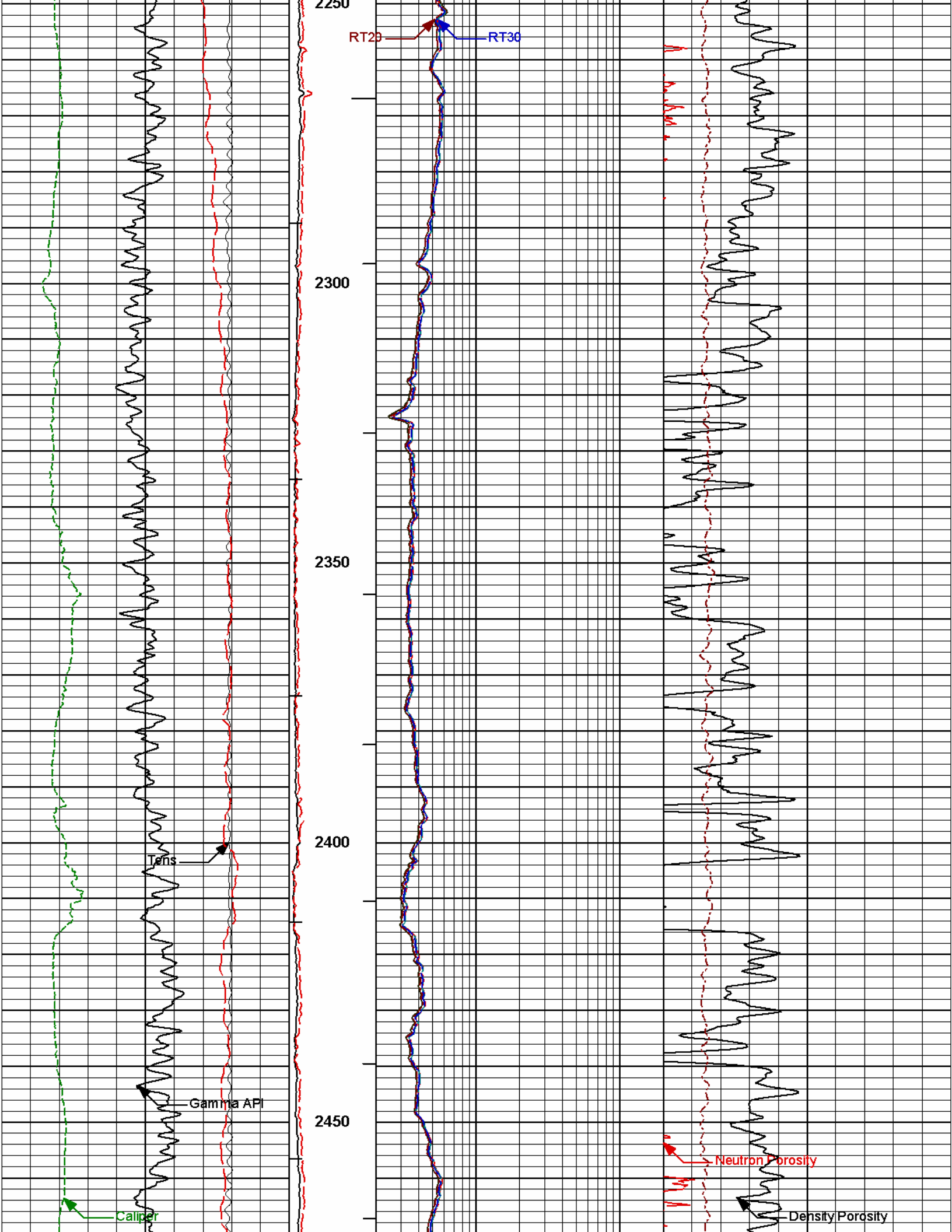


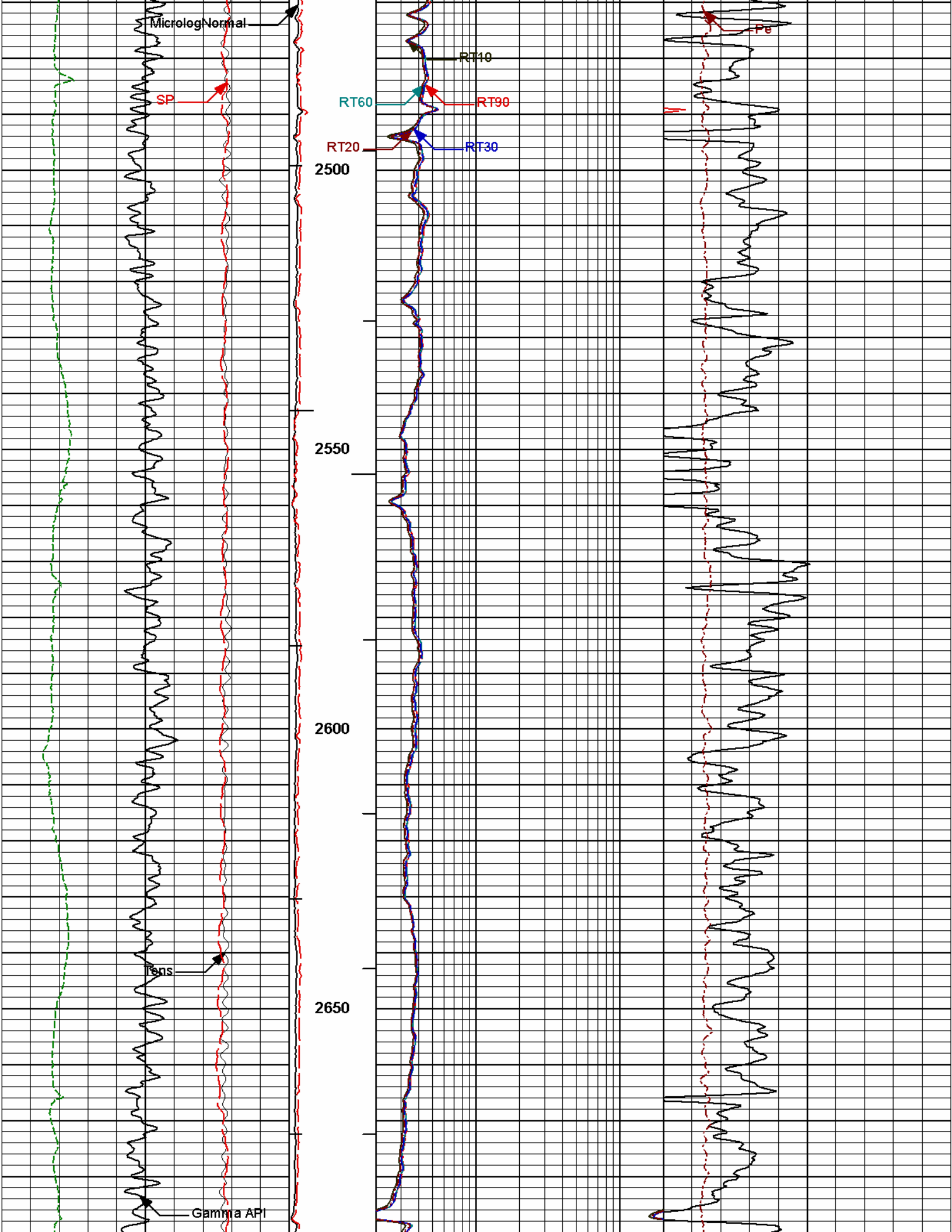


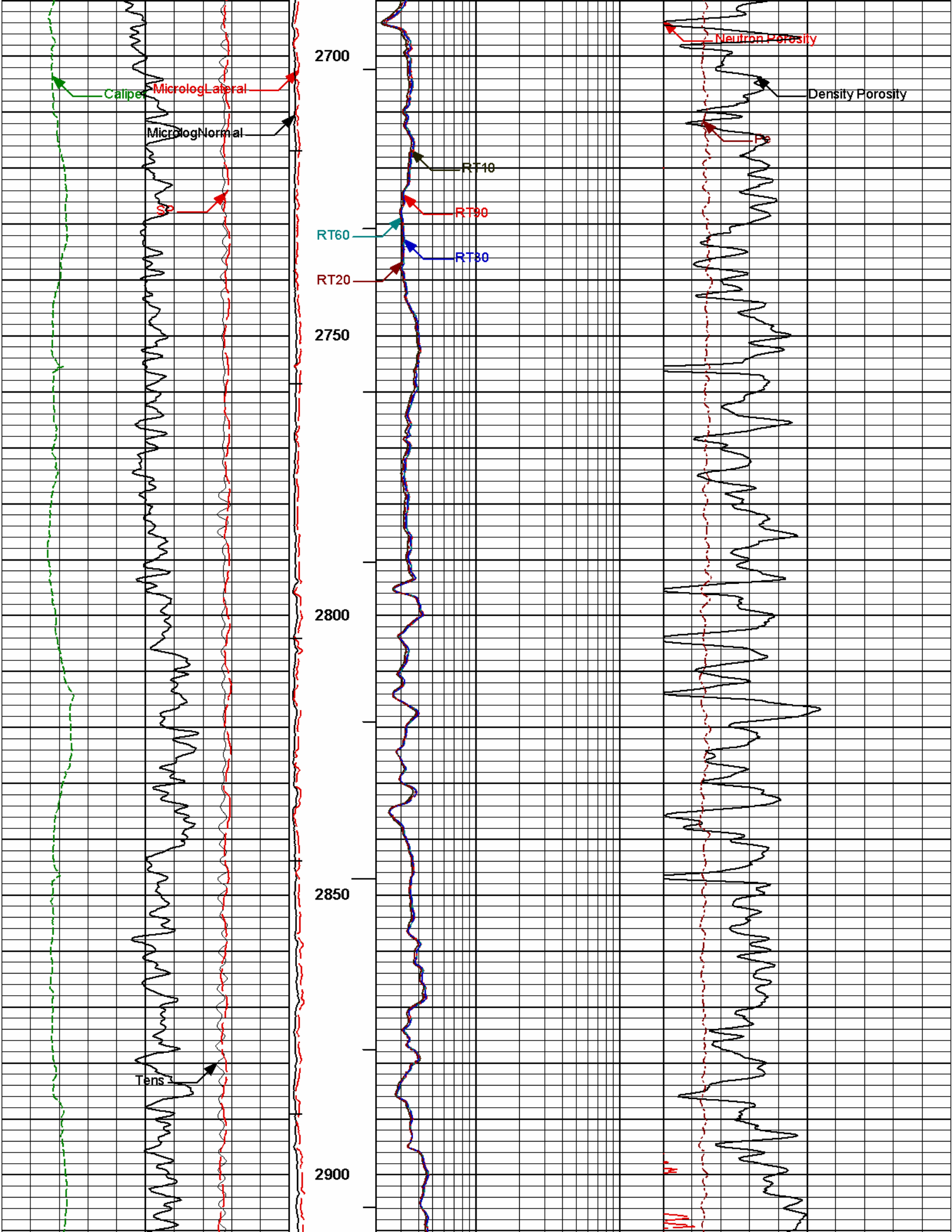


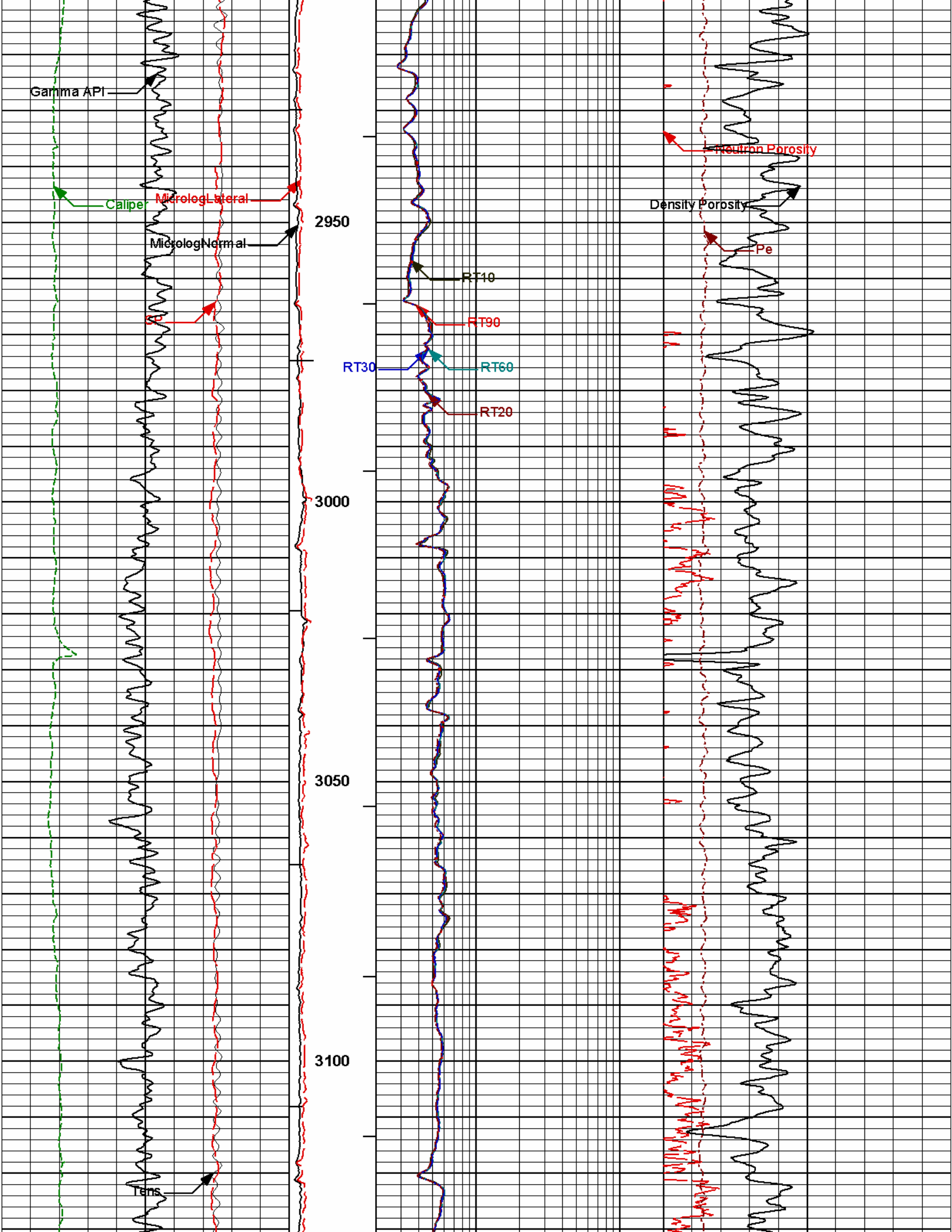


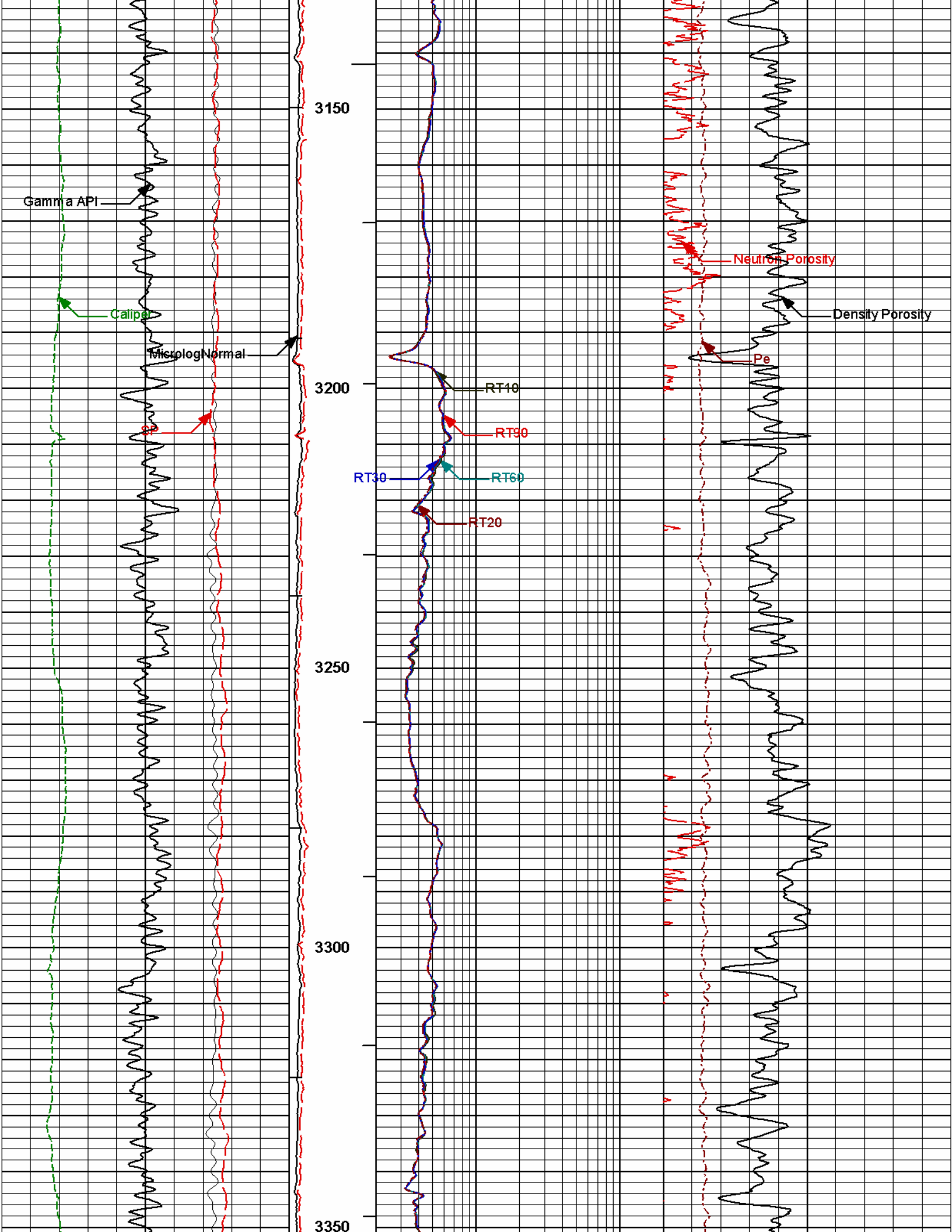


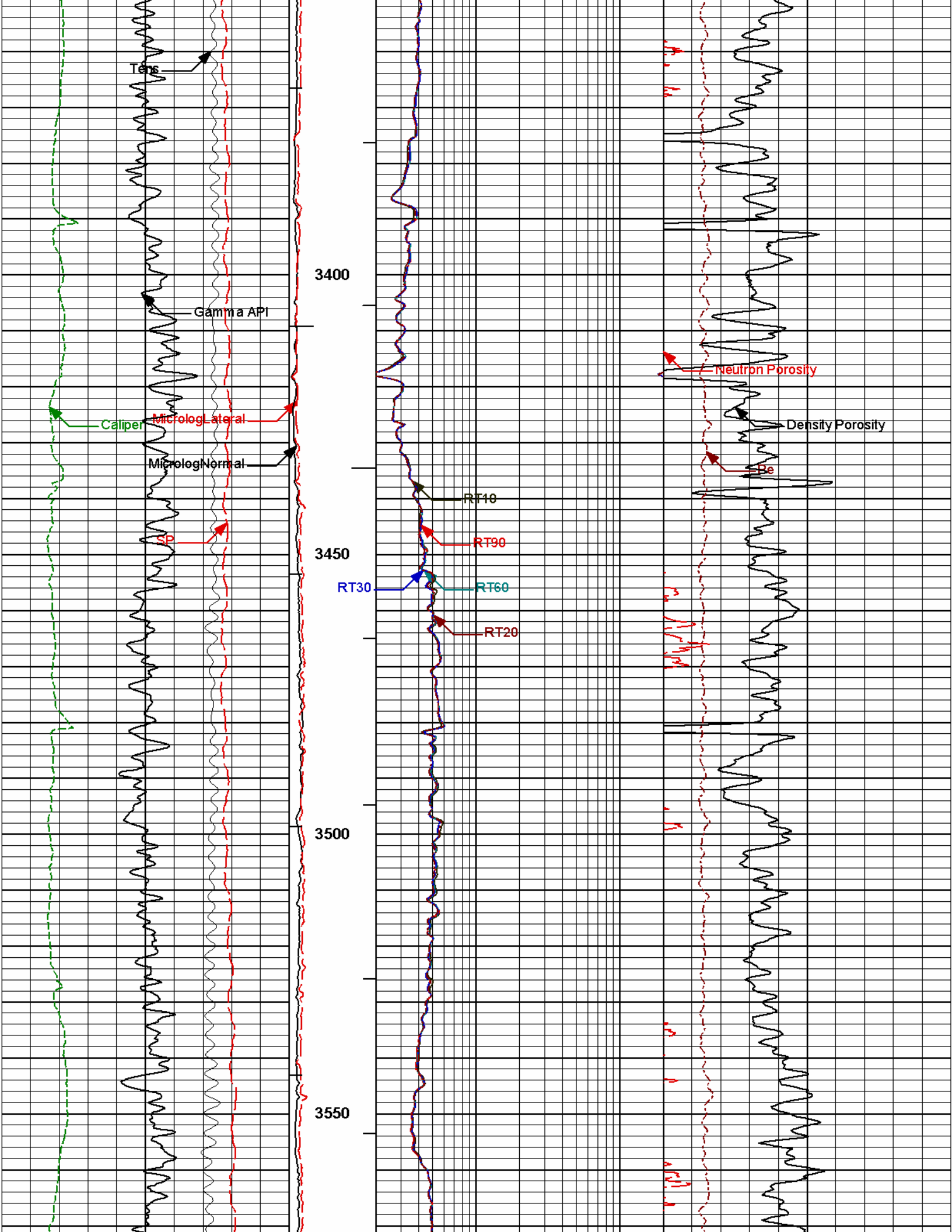


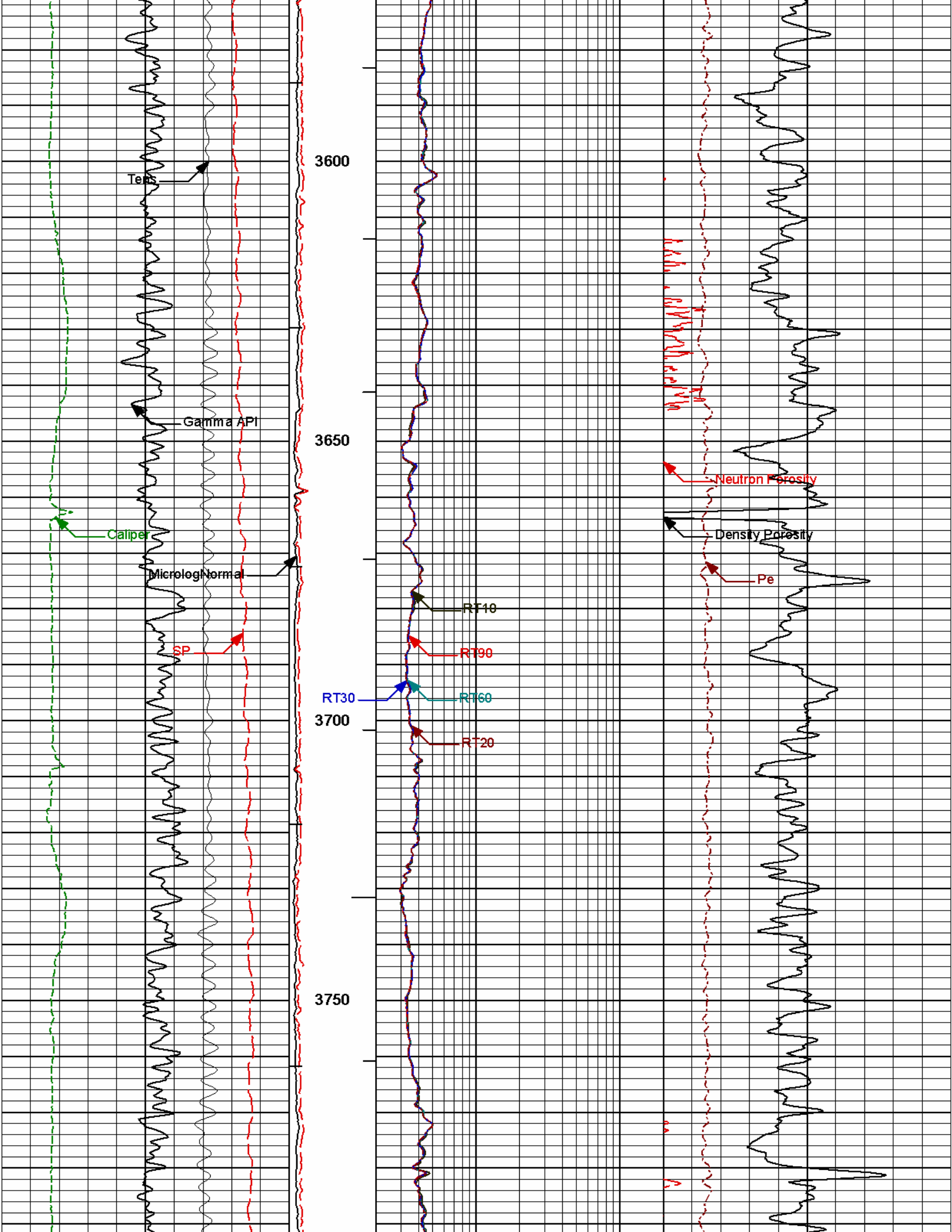


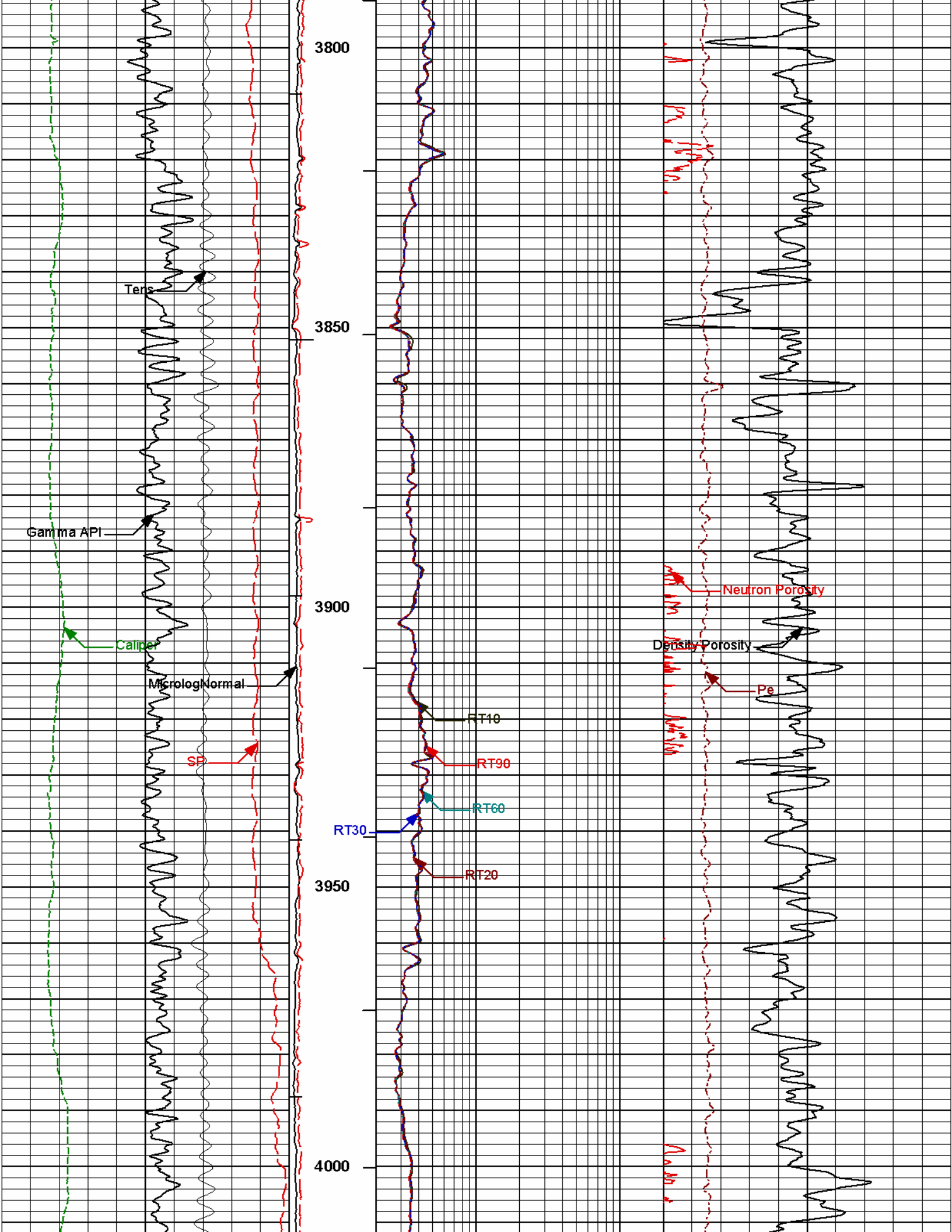


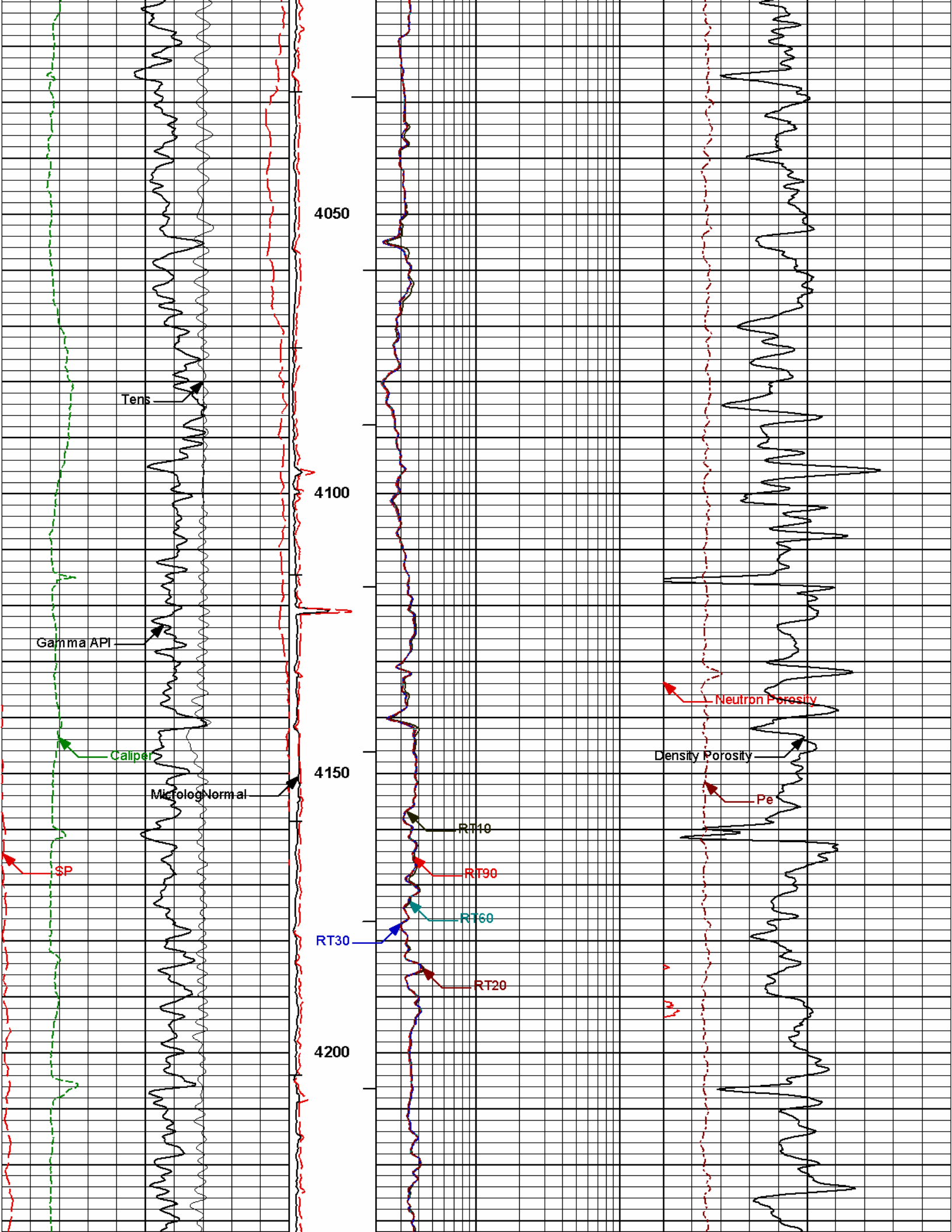


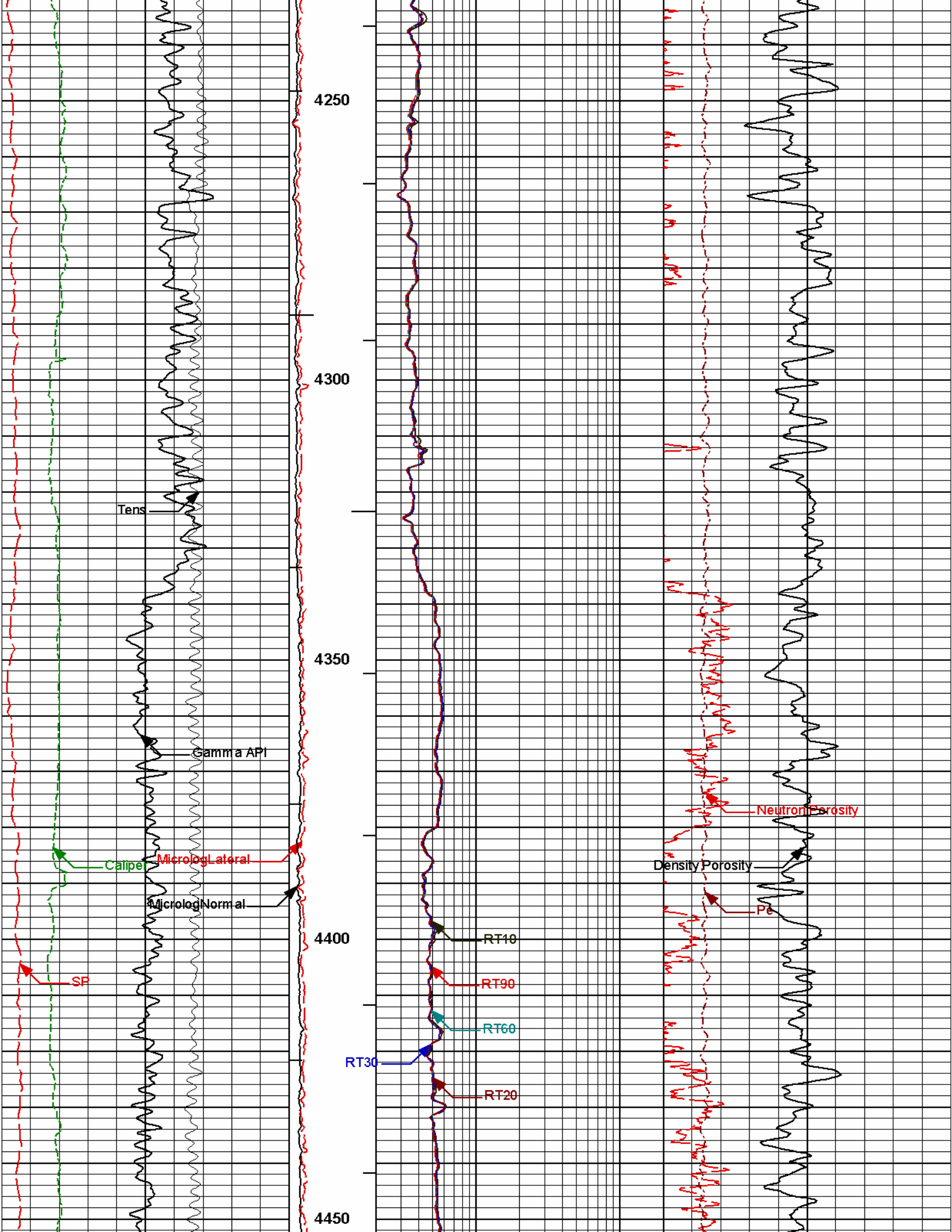


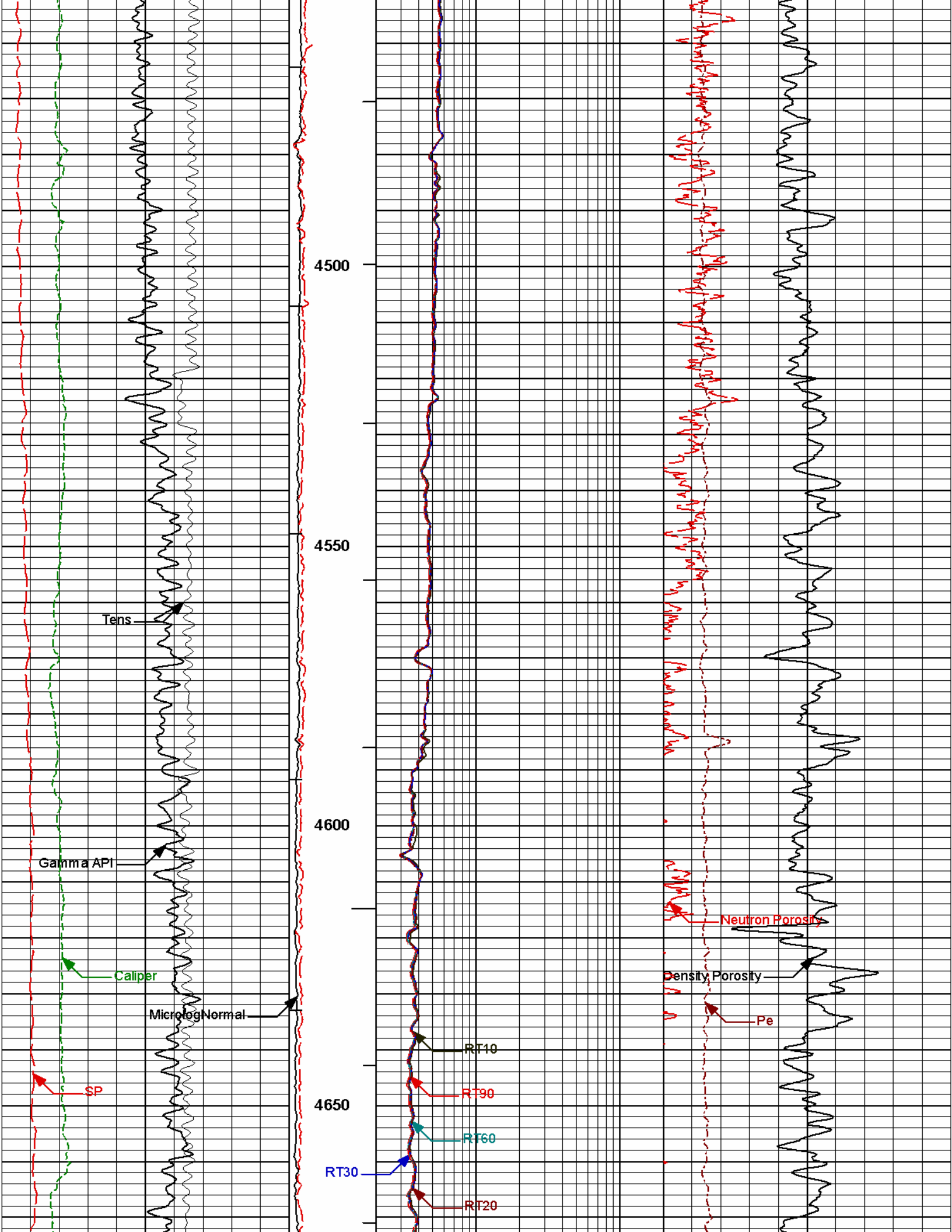


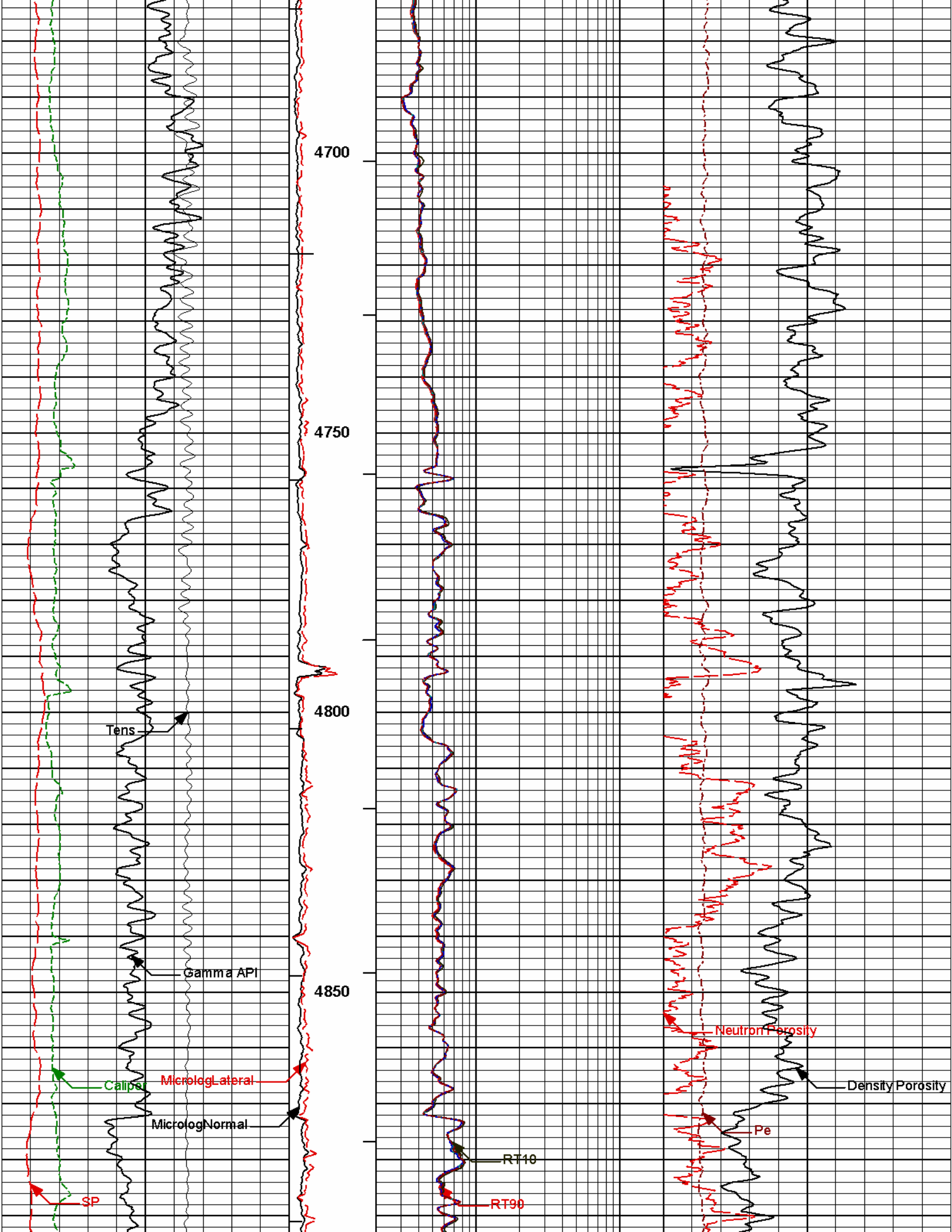


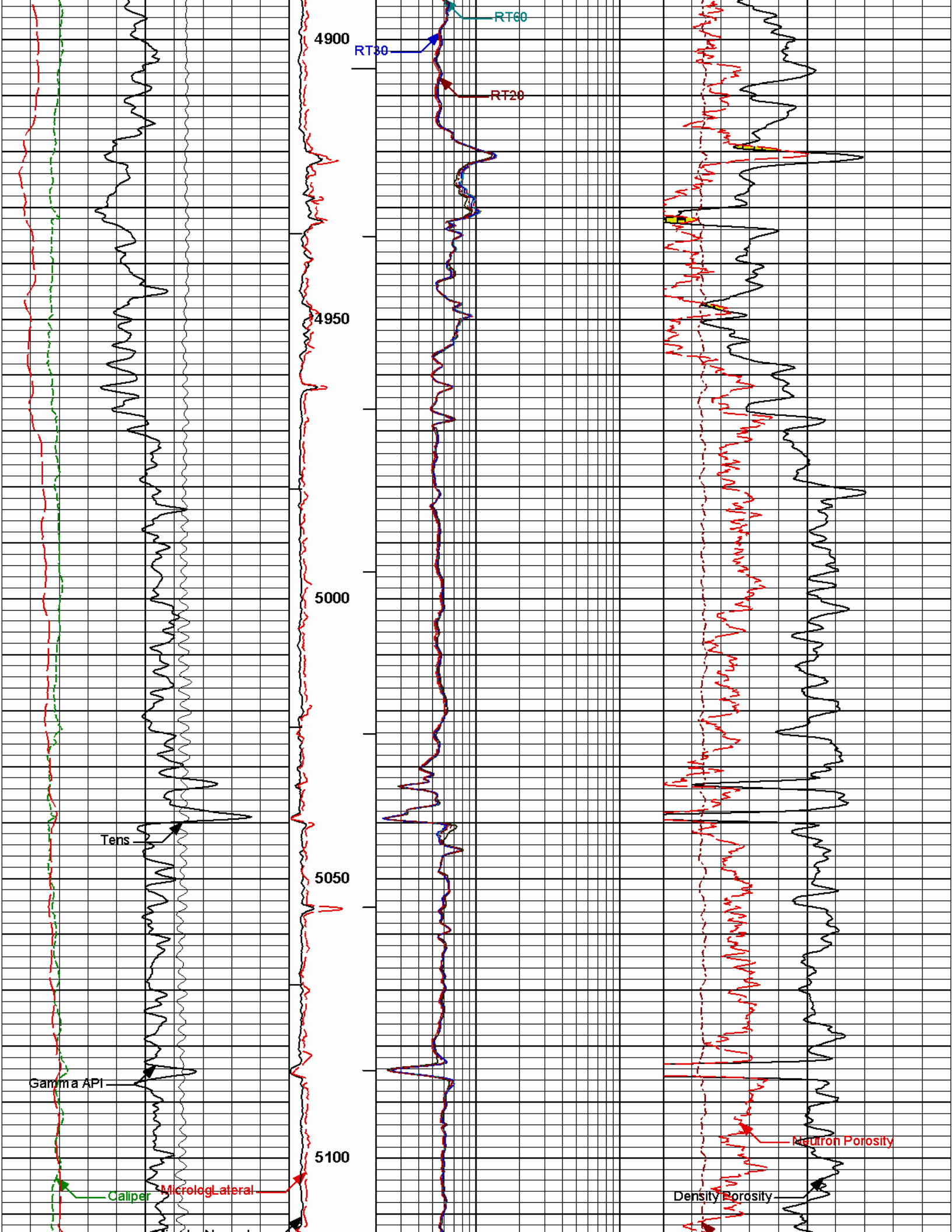


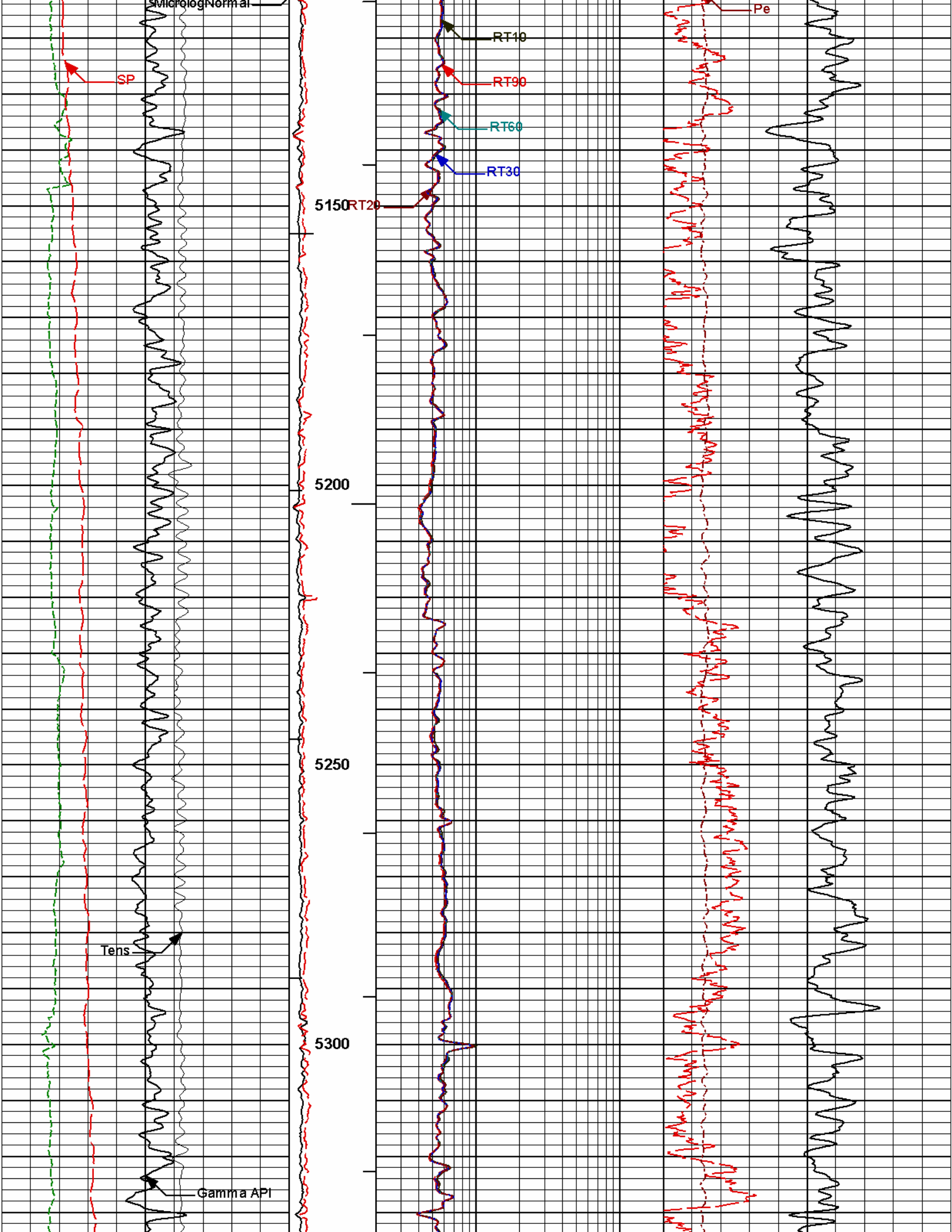


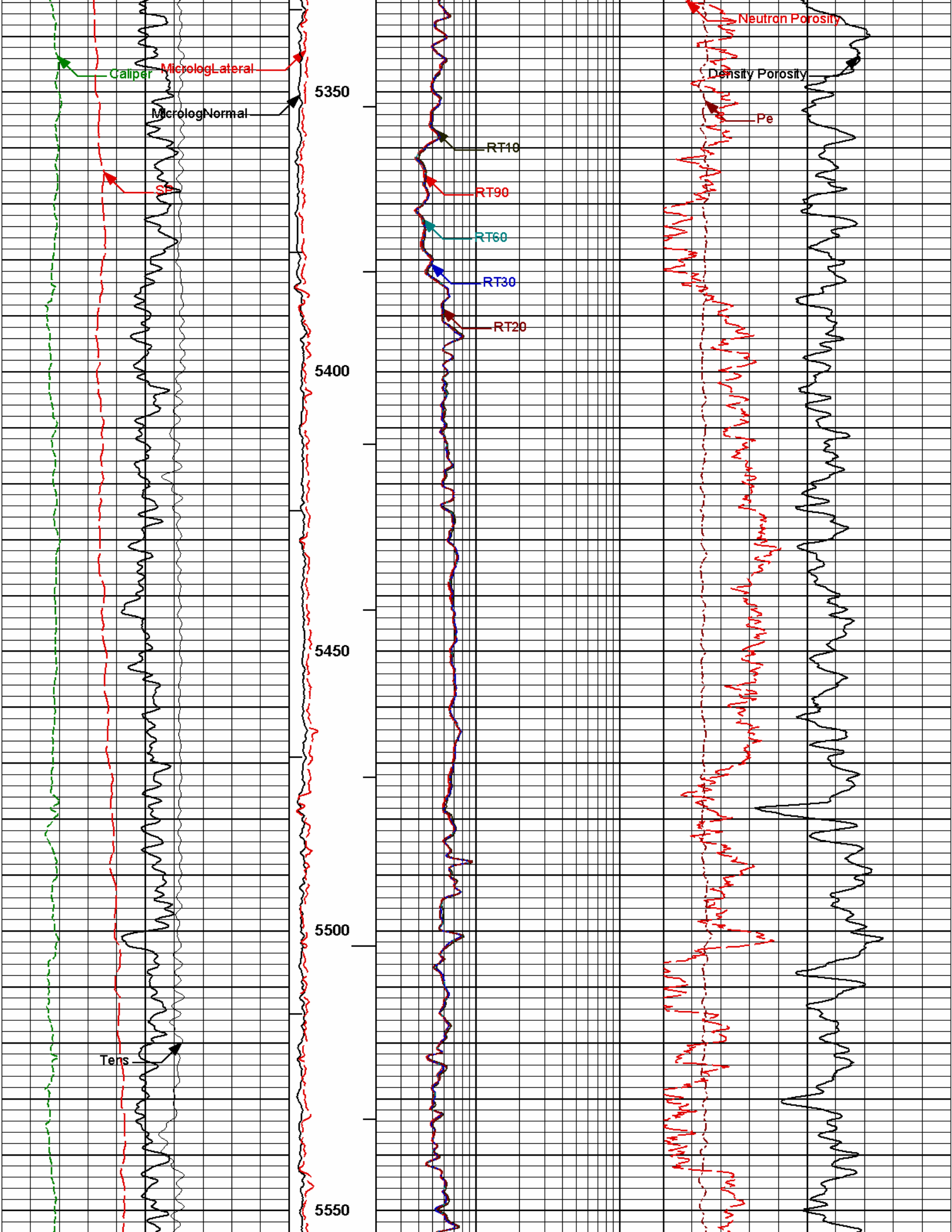


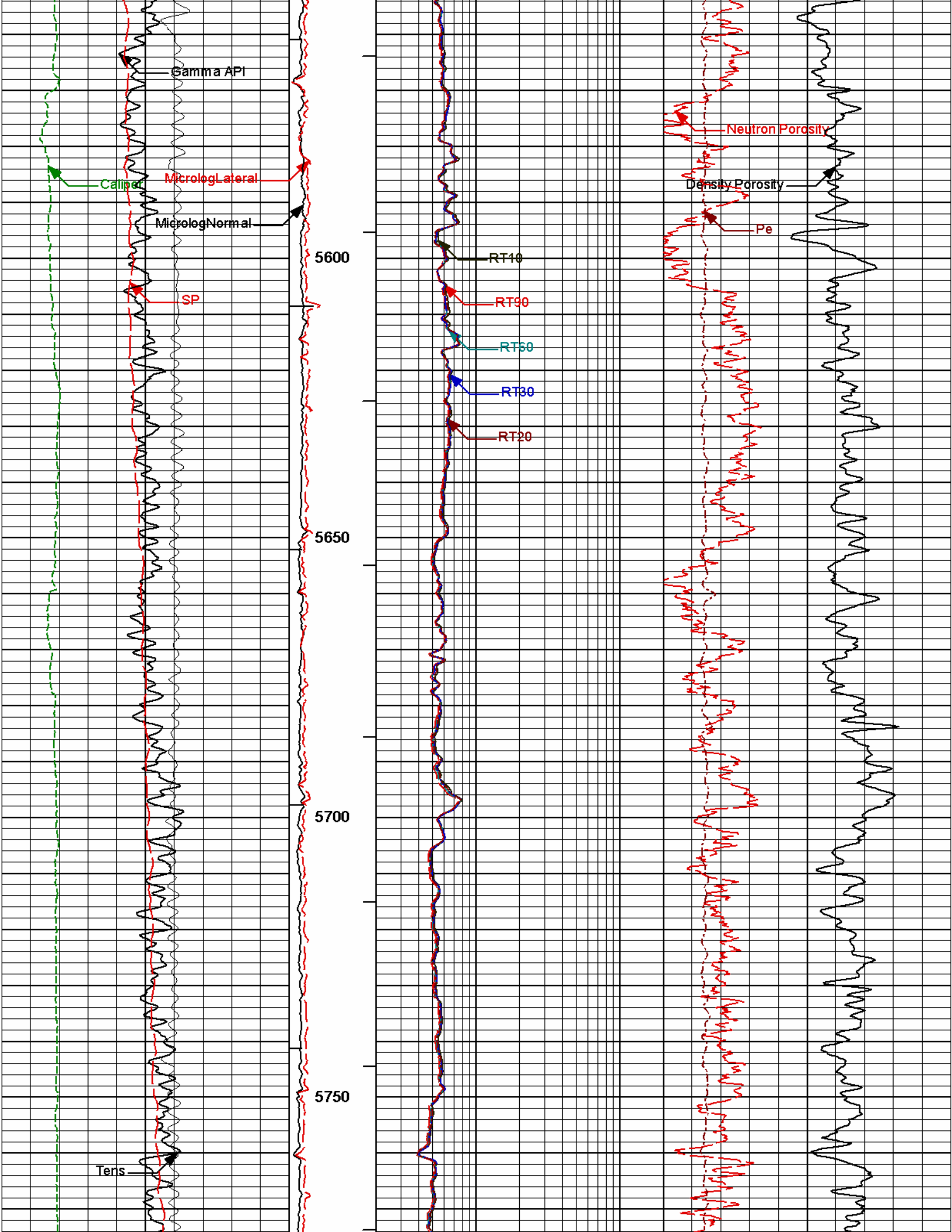


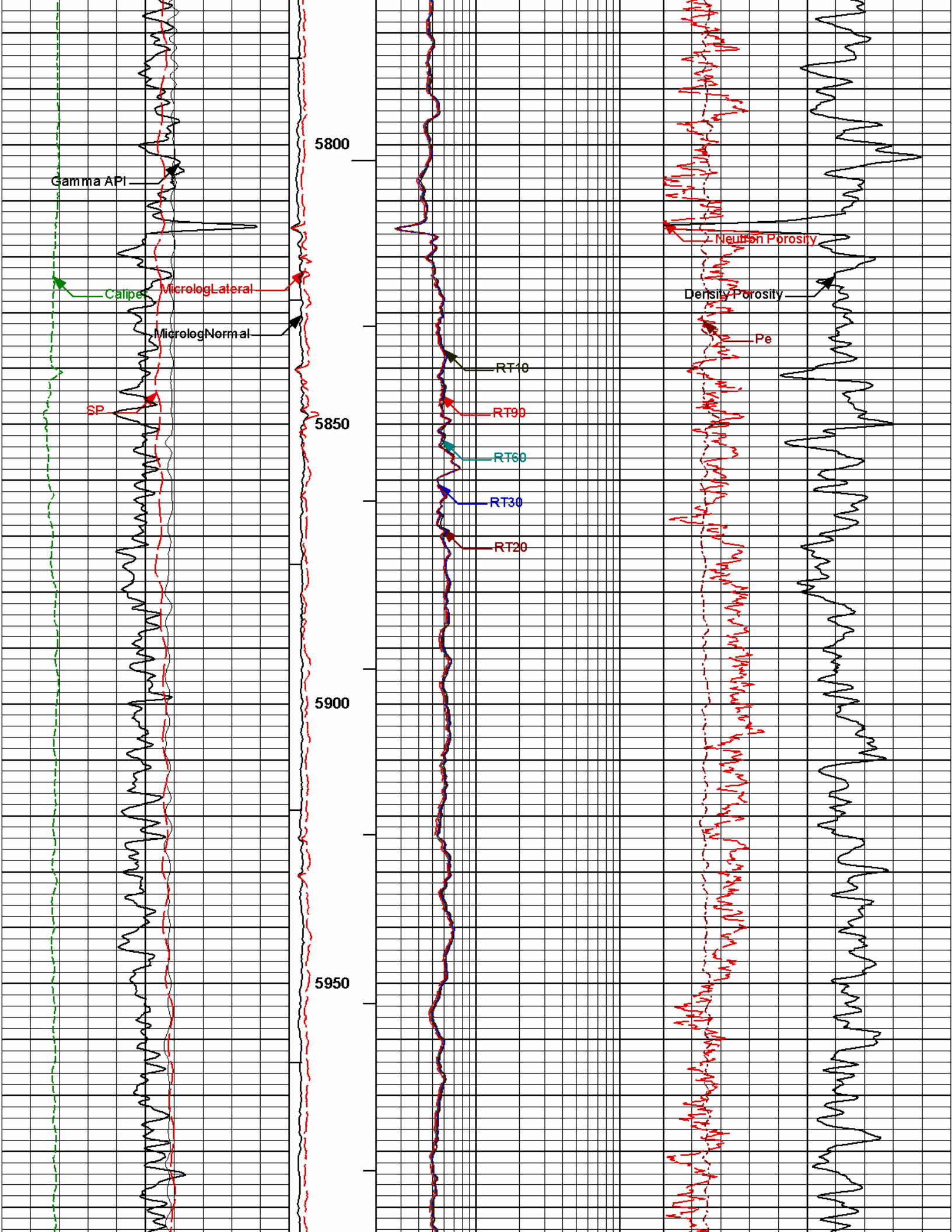


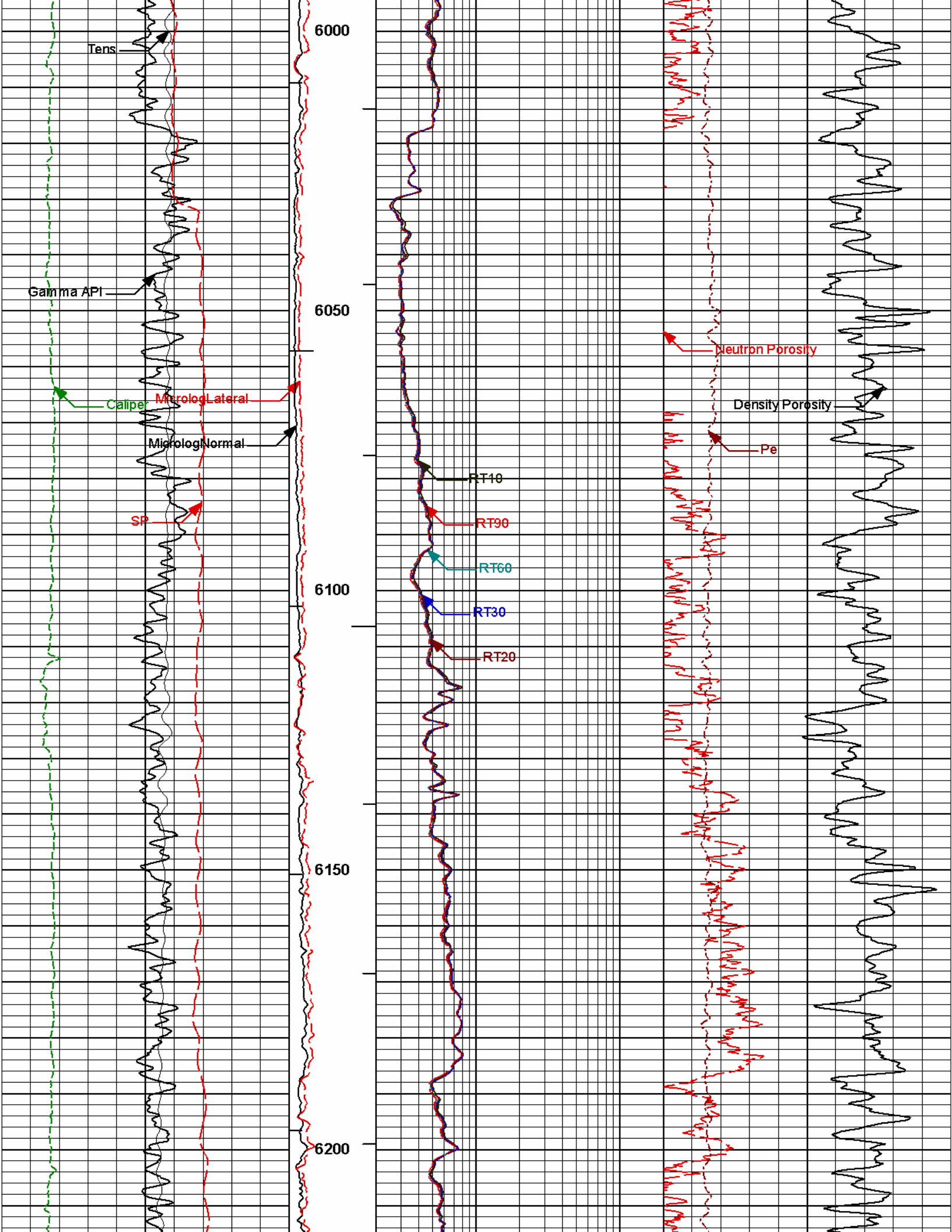


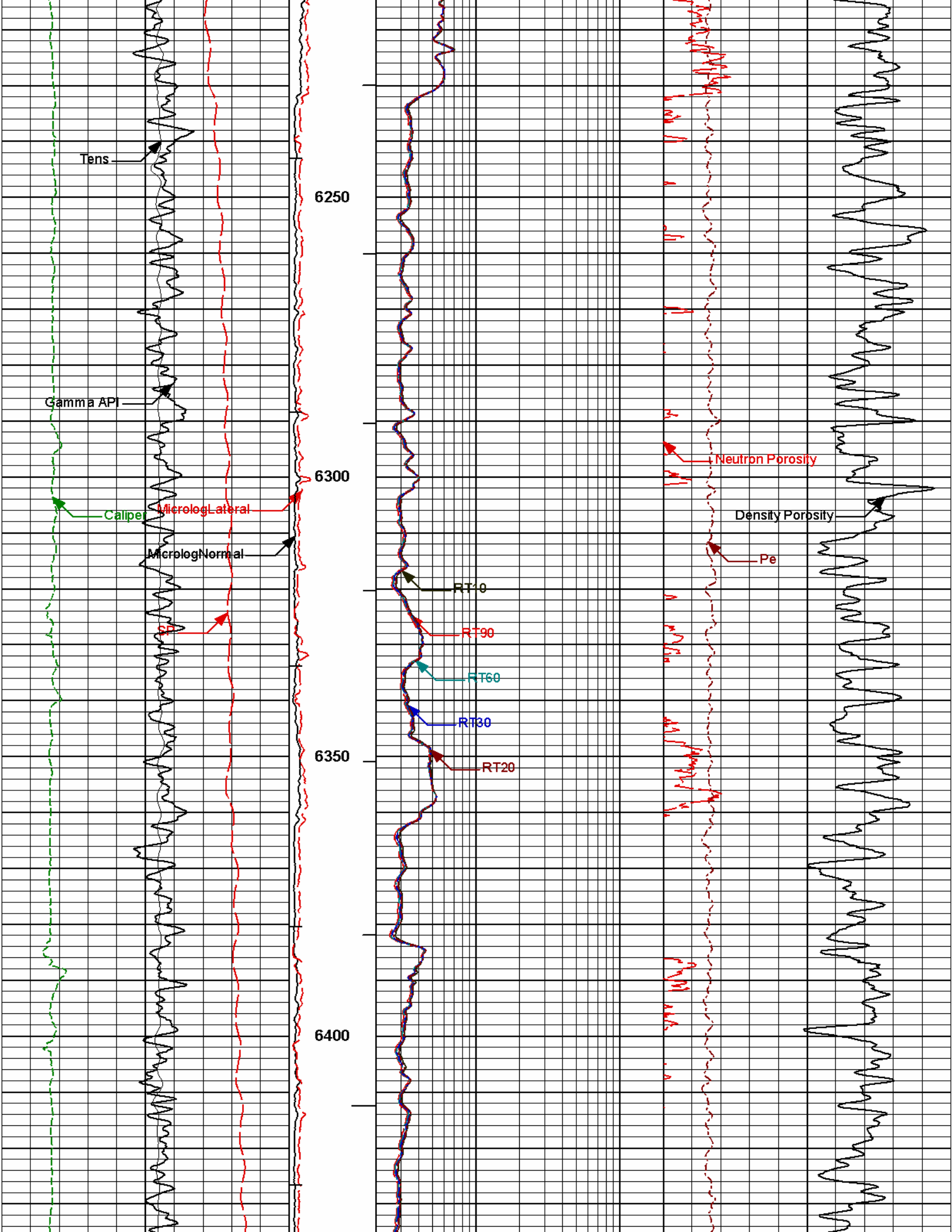


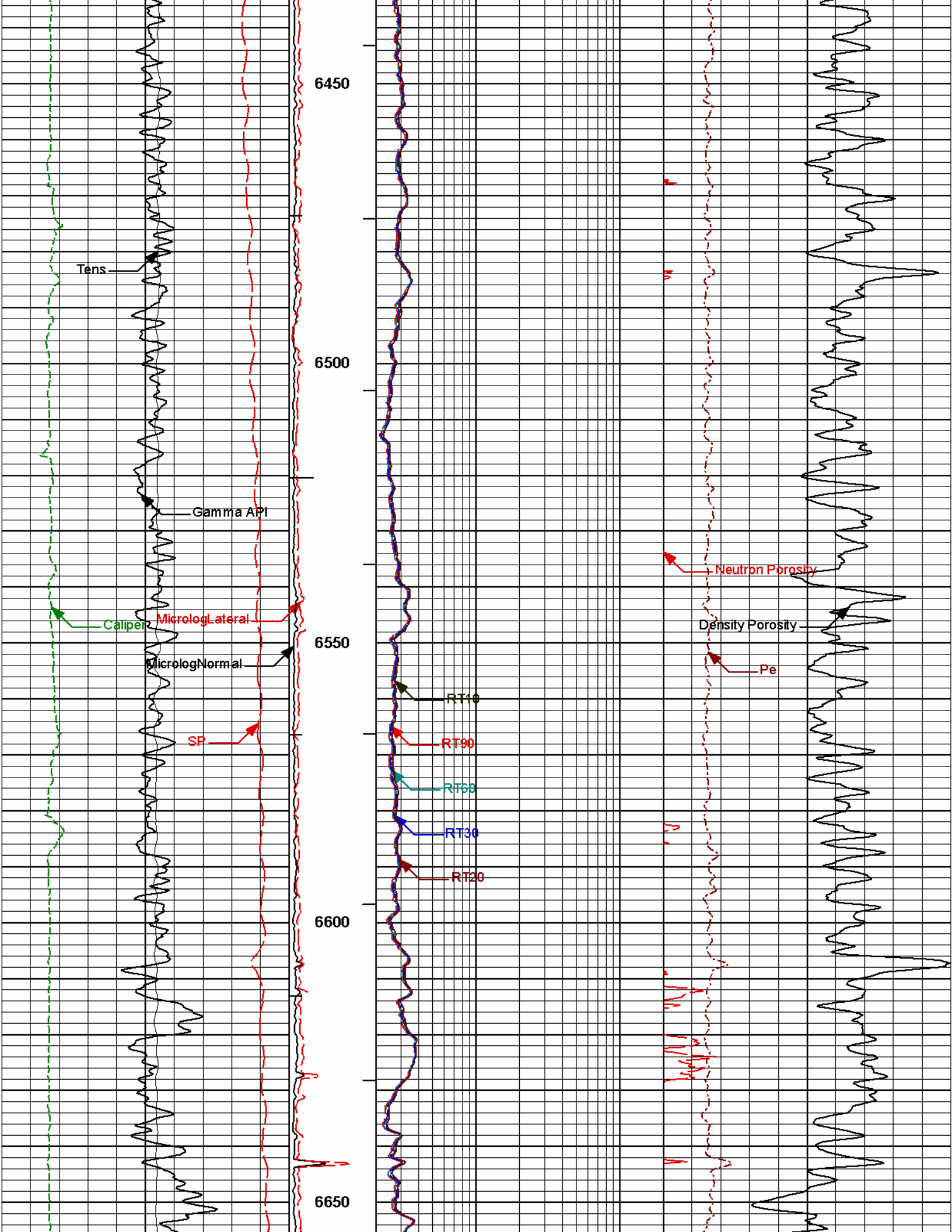


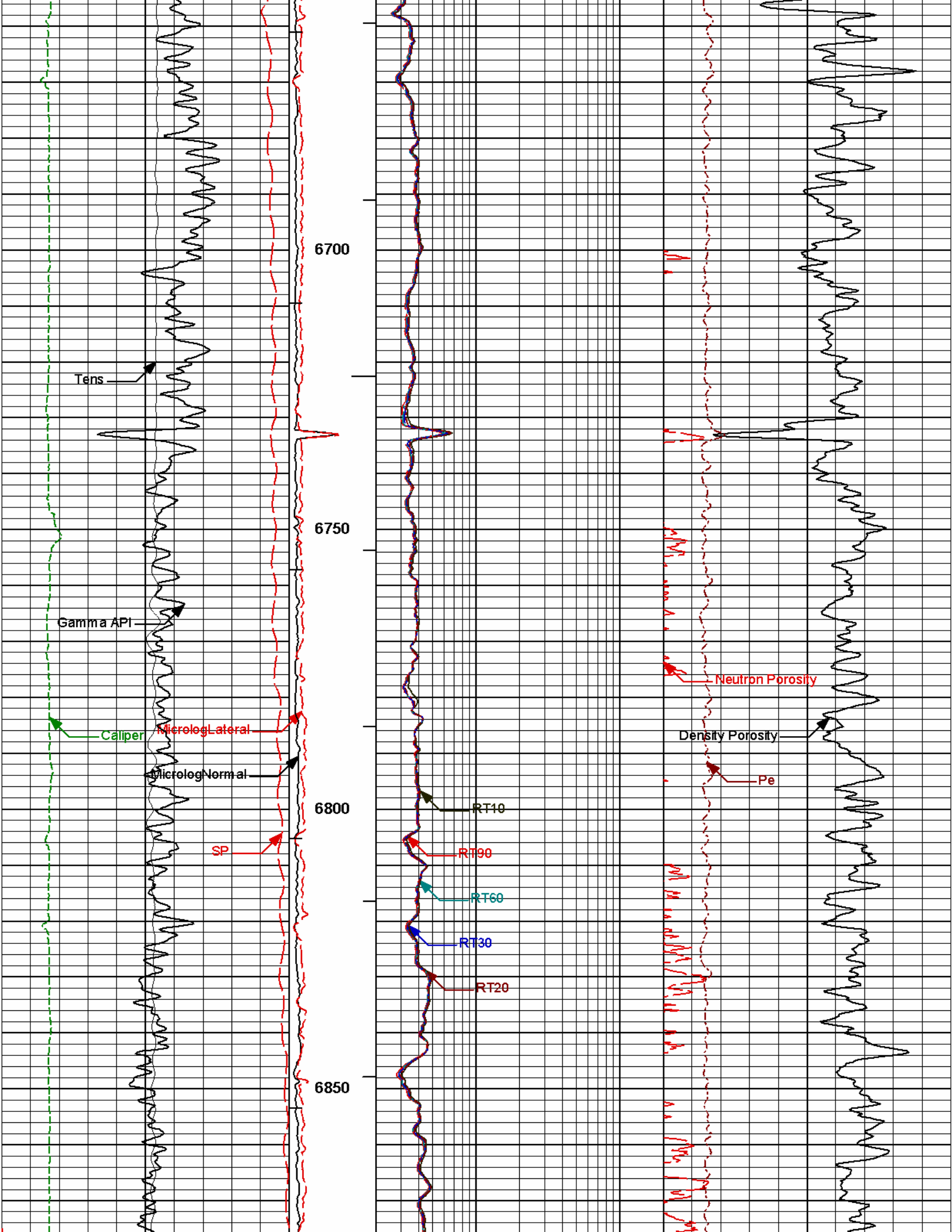


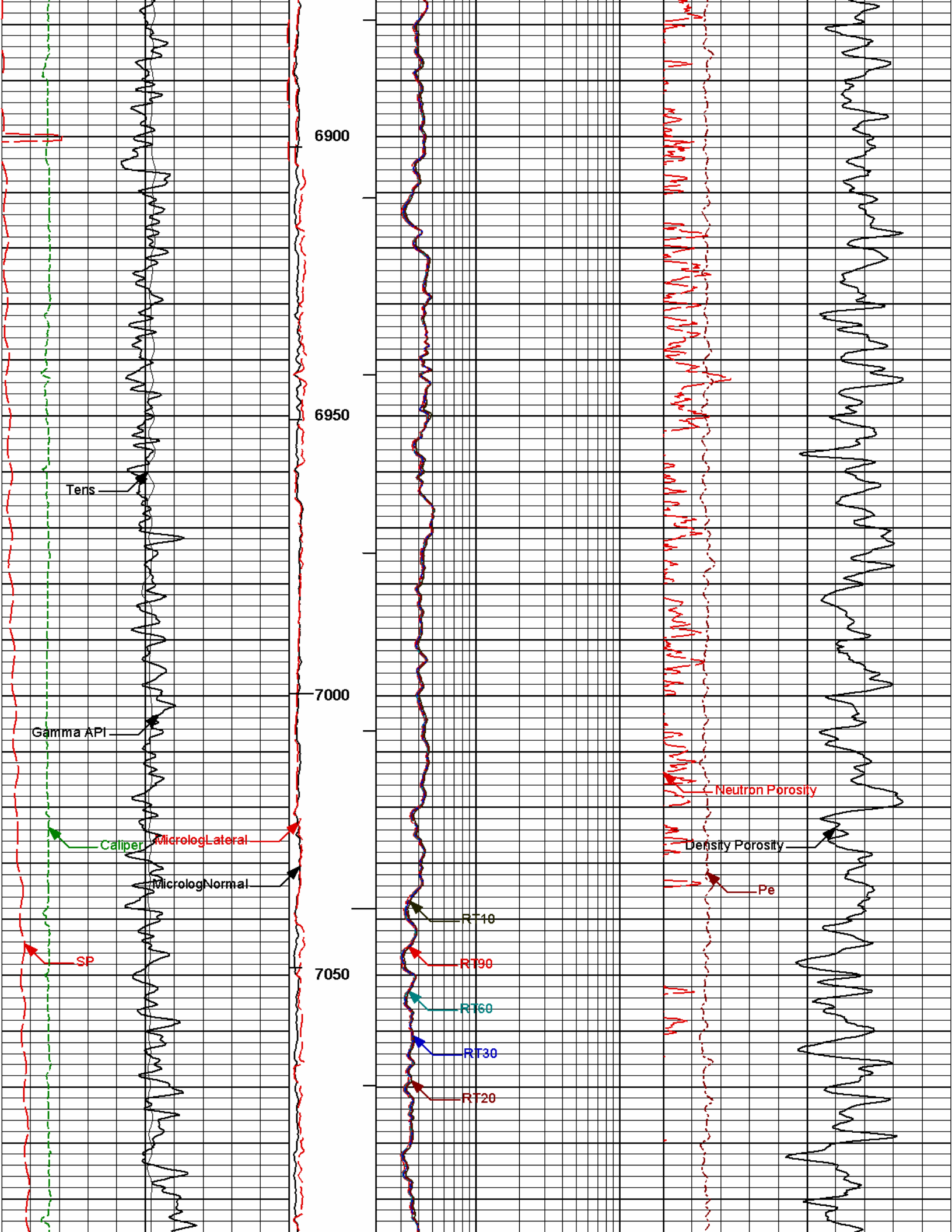


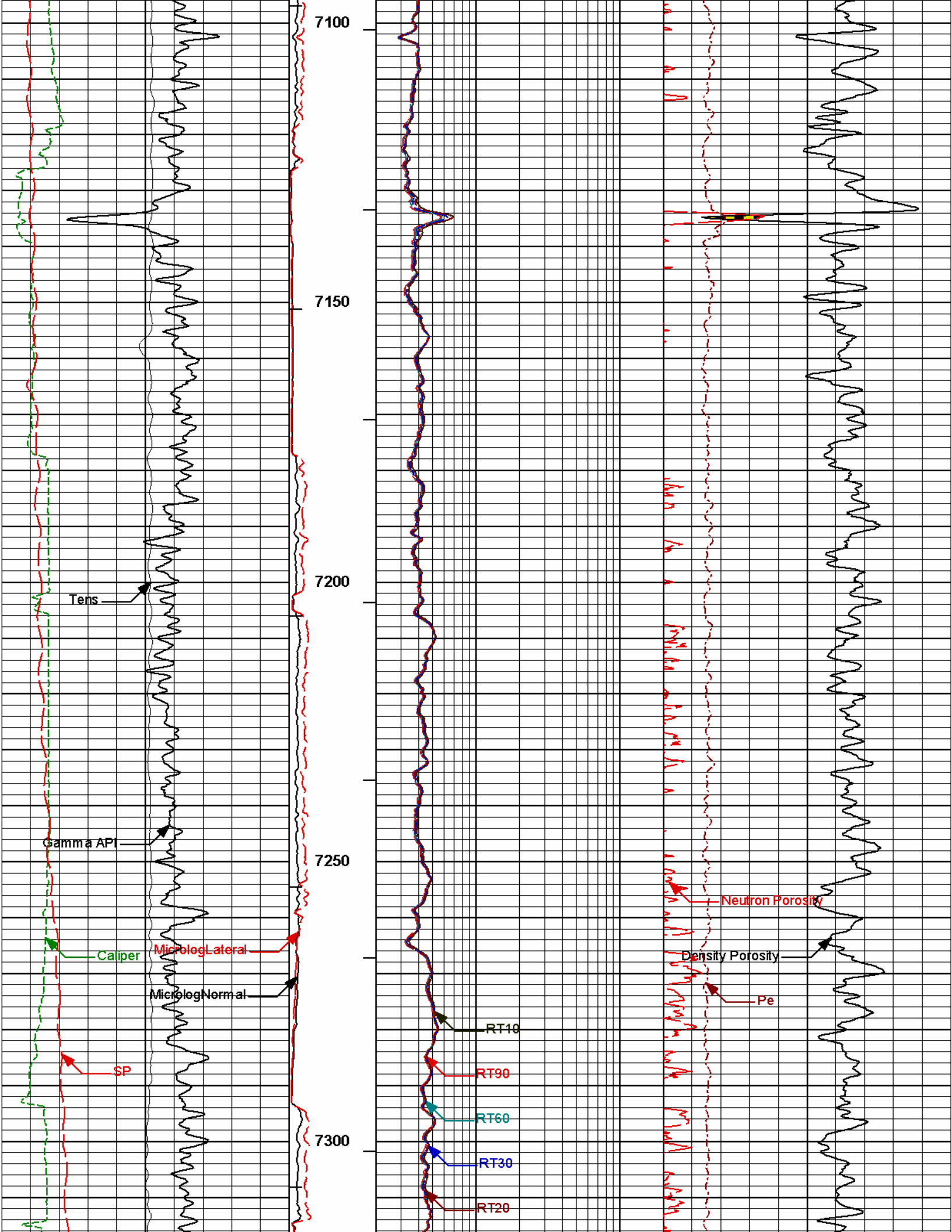


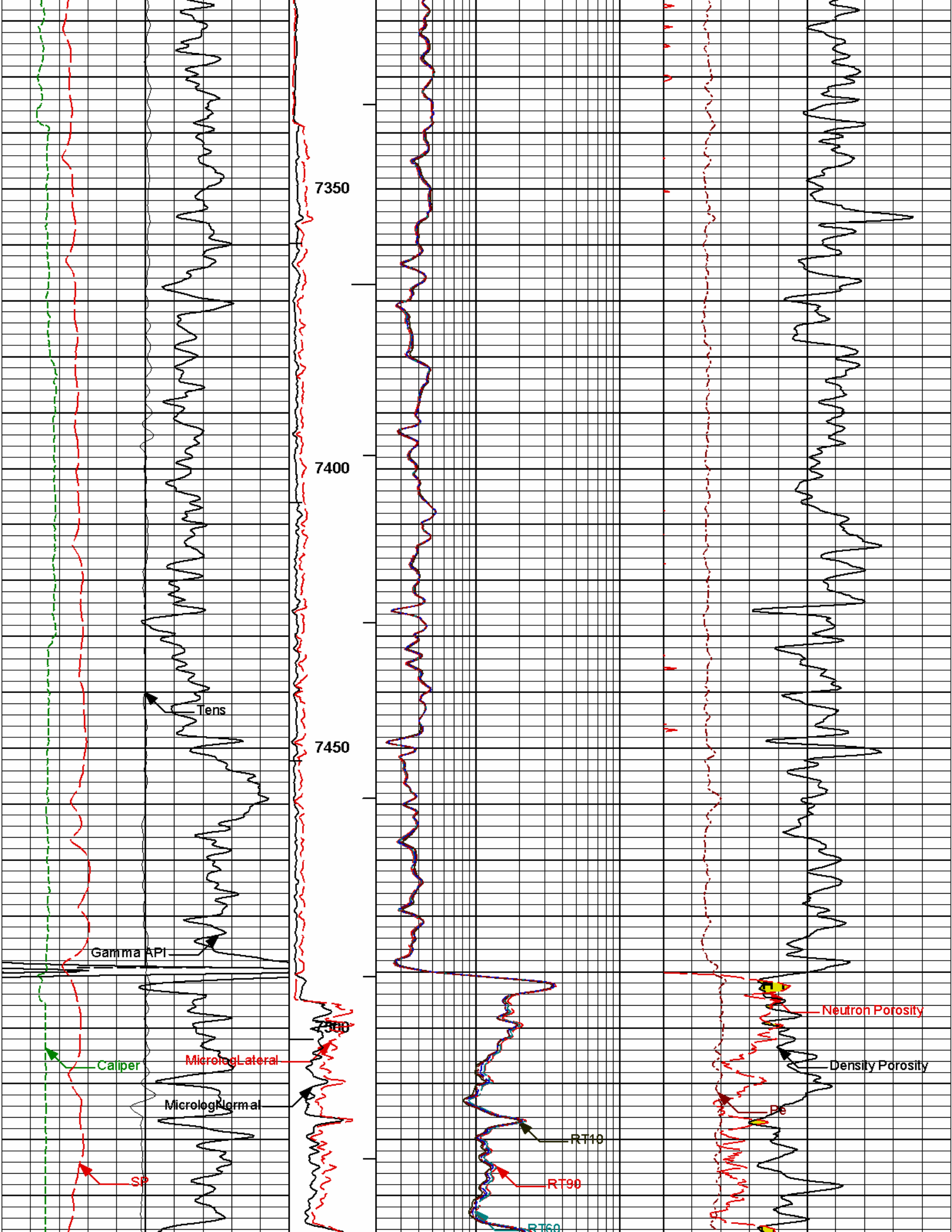


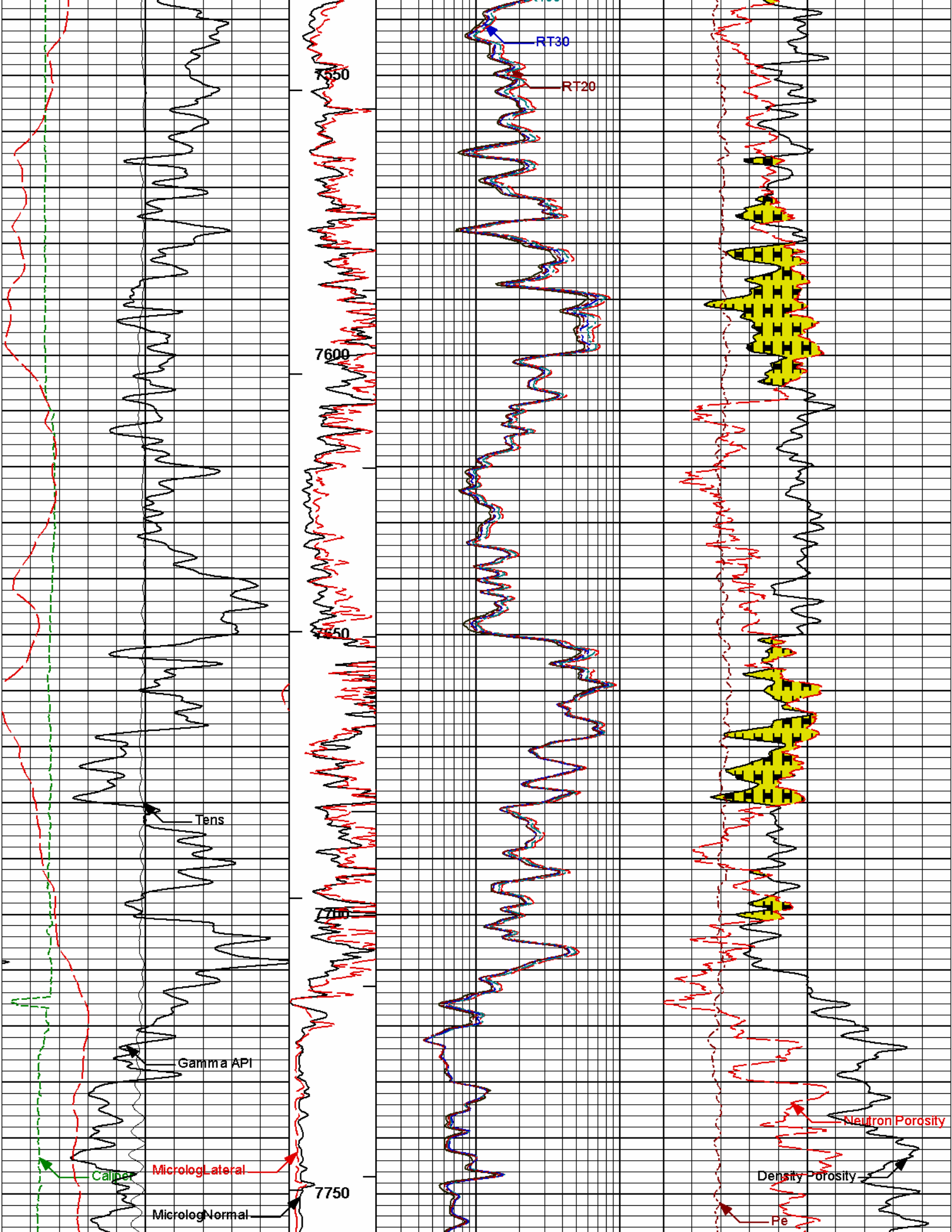


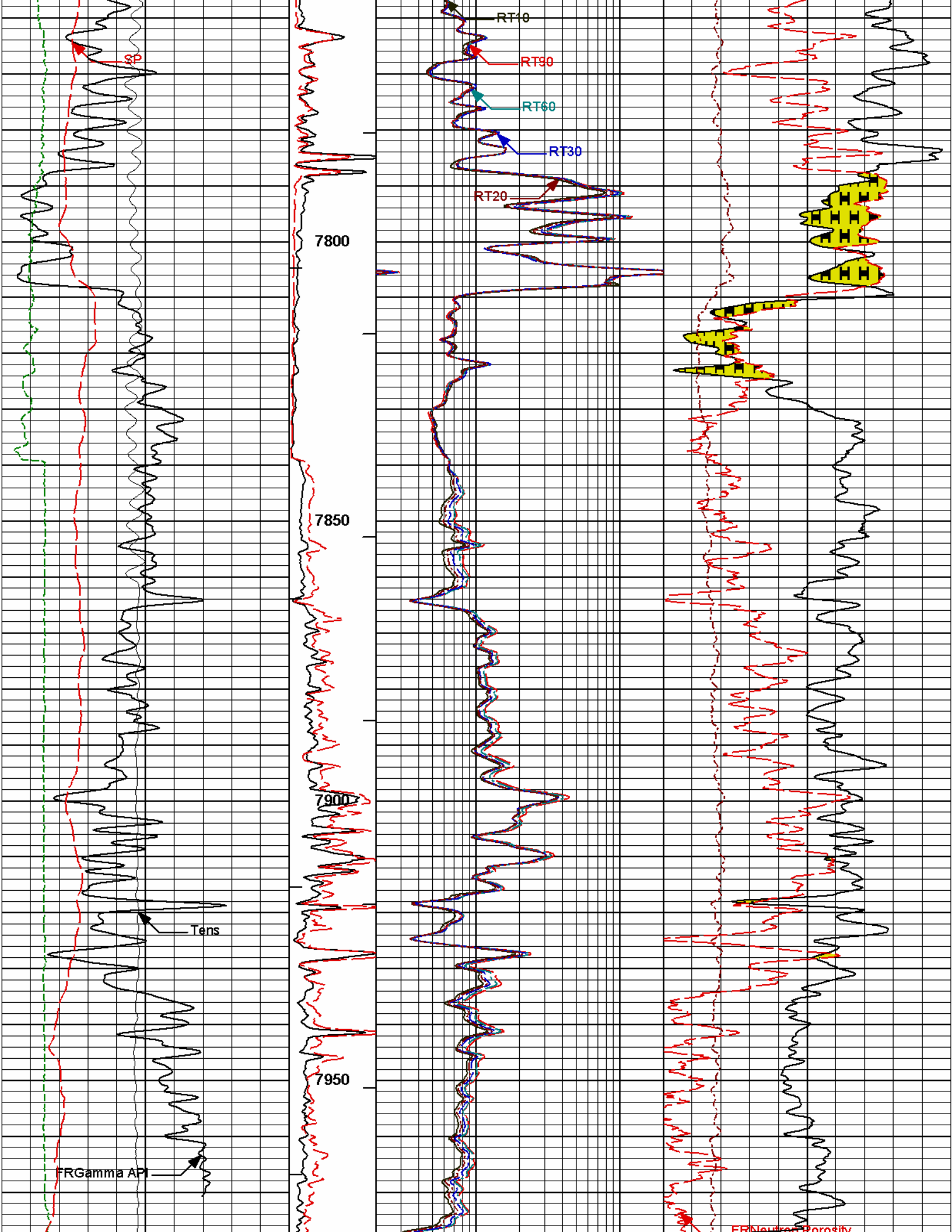


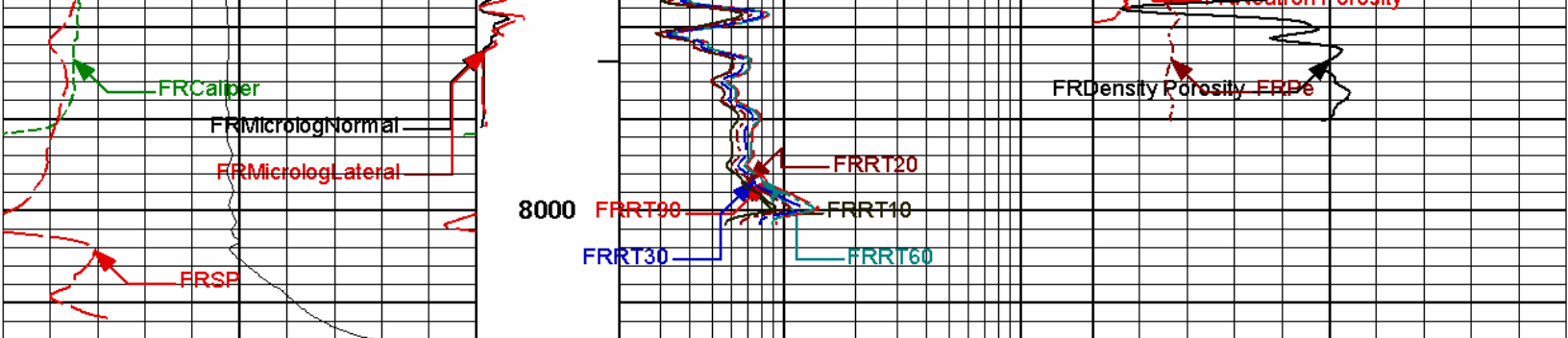












0	SP	100	1 : 240	2	RT90	200	0	Pe	10
	millivolts				ohmm				
0	Gamma API	200	BHVT	2	RT60	200	20	Density Porosity	0
	api				ohmm			percent	
6	Caliper	16	AHVT	2	RT30	200	20	Neutron Porosity	0
	inches				ohmm			percent	
10K	Tens	0	MicrologNormal	2	RT20	200			
	pounds		ohm-metre		ohmm				
			MicrologLateral	2	RT10	200			
			ohm-metre		ohmm				

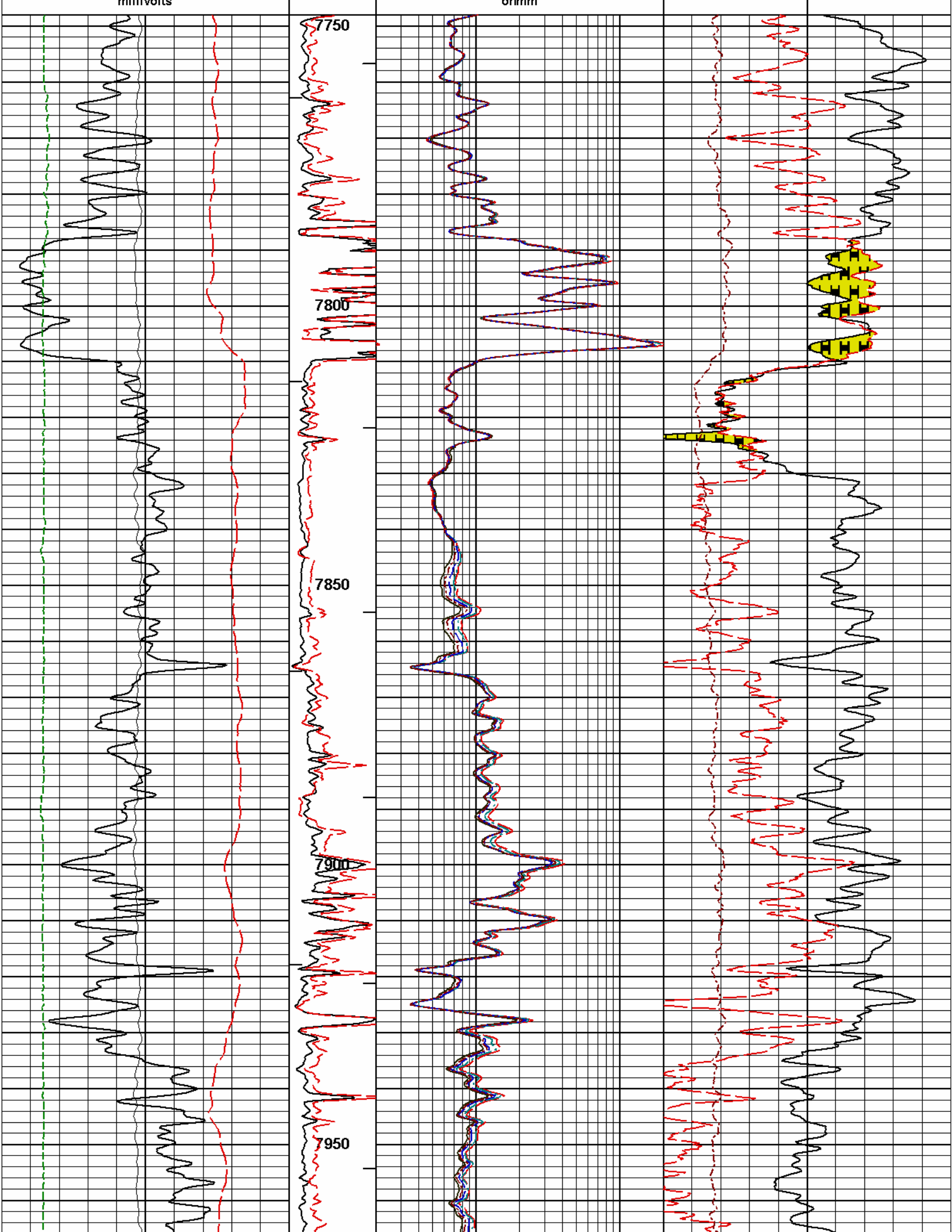
HALLIBURTON Plot Time: 23-Apr-12 18:27:45
 Plot Range: 914 ft to 8014.25 ft
 Data: HEIN 1-1\Well Based\MAIN*
 Plot File: \COMP\MAIN

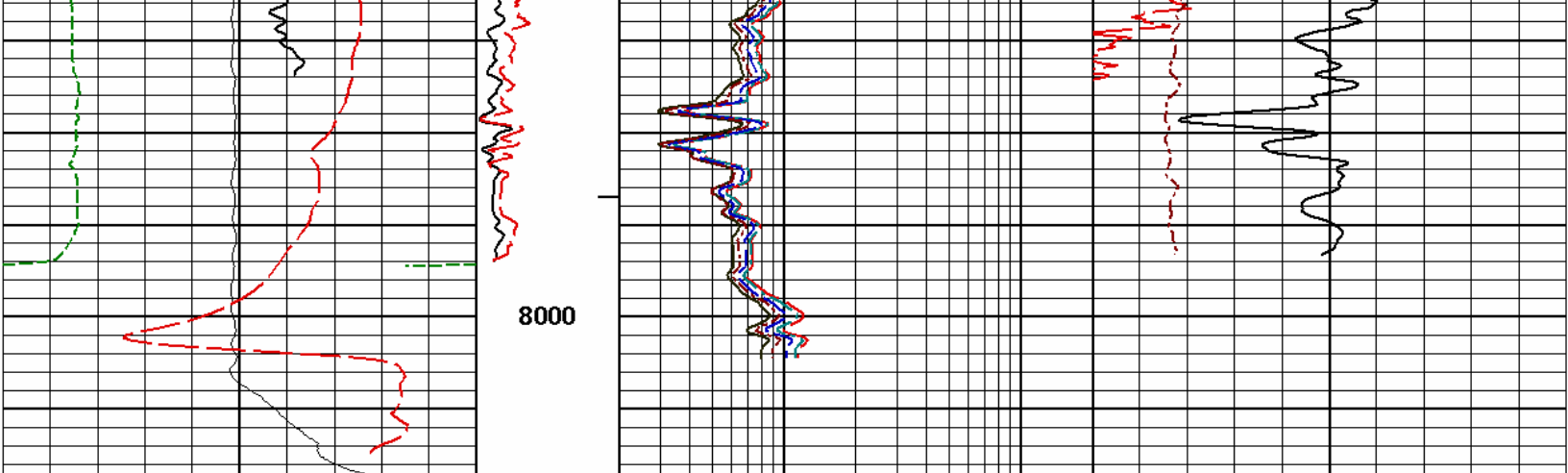
MAIN PASS 5" = 100'

HALLIBURTON Plot Time: 23-Apr-12 18:27:45
 Plot Range: 7748 ft to 8017.25 ft
 Data: HEIN 1-1\Well Based\REPEAT*
 Plot File: \COMP\REPEAT

REPEAT SECTION 5" = 100'

			MicrologLateral	2	RT10	200			
			ohm-metre		ohmm				
10K	Tens	0	MicrologNormal	2	RT20	200			
	pounds		ohm-metre		ohmm				
6	Caliper	16	AHVT	2	RT30	200	20	Neutron Porosity	0
	inches				ohmm			percent	
0	Gamma API	200	BHVT	2	RT60	200	20	Density Porosity	0
	api				ohmm			percent	
0	SP	100	1 : 240	2	RT90	200	0	Pe	10
	millivolts				ohmm				





0	SP	100	1 : 240	2	RT90	200	0	Pe	10
	millivolts				ohmm				
0	Gamma API	200	BHVT	2	RT60	200	20	Density Porosity	0
	api				ohmm			percent	
6	Caliper	16	AHVT	2	RT30	200	20	Neutron Porosity	0
	inches				ohmm			percent	
10K	Tens	0	MicrologNormal	2	RT20	200			
	pounds		0		ohmm				
			MicrologLateral	2	RT10	200			
			0		ohmm				

HALLIBURTON

Plot Time: 23-Apr-12 18:27:49
 Plot Range: 7748 ft to 8017.25 ft
 Data: HEIN 1-1 Well Based REPEAT
 Plot File: \\COMPIREPEAT

REPEAT SECTION 5" = 100'

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11215095

Reference Calibration Date: 13-Apr-12 10:08:49

Engineer: J. PINKETT

Calibration Date: 13-Apr-12 10:21:55

Software Version: WL INSITE R3.4.4 (Build 2)

Calibration Version: 1

Calibrator Source S/N: TB 290

Calibrator API Reference: 230.00 api

Equivalent Calibrator API Reference: 234.0 api

Measurement	Measured	Calibrated	Units
Background	68.6	70.8	api
Background + Calibrator	291.6	300.8	api
Calibrator	232.2	230.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11215095

Reference Calibration Date: 13-Apr-12 10:21:55

Engineer:	J. PINKETT	Calibration Date:	23-Apr-12 08:40:00
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

Calibrator Source S/N: TB 290
 Calibrator API Reference:230.00 api
 Equivalent Calibrator API Reference:234.0 api

Field Verification	Shop	Field	Units
Background	70.8	72.7	api
Background + Calibrator	300.8	299.3	api
Calibrator	230.0	226.6	api
Shop	Field	Difference	Tolerance
230.0	226.6	3.4	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	DSNT - 11277440	Reference Calibration Date:	13-Apr-12 12:27:11
Engineer:	J. PINKETT	Calibration Date:	13-Apr-12 12:42:50
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

Logging Source S/N: DSN-430
 Tank Serial Number: 11068236
 Reference value assigned to Tank: 53.720
 Snow Block S/N: 37526
 Calibration Tank Water Temperature: 68 degF
 Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value

Gain:	1.004	1.002	0.900 - 1.100
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WATER TANK SUMMARY (Horizontal Water Tank)				
Measurement	Current Reading (Previous Coef.)	Calibrated (New Coef.)	Change	Control Limit On Change
Porosity (decp):	0.2229	0.2224	0.0006	+/- 0.0020
Calibrated Ratio:	10.13	10.11	0.020	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0671	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 - 11277440	Reference Calibration Date:	13-Apr-12 12:42:50
Engineer:	J. PINKETT	Calibration Date:	23-Apr-12 09:55:22
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

Logging Source S/N: DSN-430
 Snow Block S/N: 37526

NEUTRON FIELD-CHECK SUMMARY			
Measurement	Value	Control Limit	

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0671	0.0650	-0.0021	+/- 0.0150

PASS/FAIL SUMMARY

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

DENSITY CALIPER SHOP CALIBRATION

Tool Name:	SDLT - M319_P123_BLUE	Reference Calibration Date:	13-Apr-12 10:06:31
Engineer:	J. PINKETT	Calibration Date:	13-Apr-12 10:12:25
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-2747.71	-2760.54	-7000.00 - -1000.00
Pad Gain	0.0003864	0.0003890	0.000200 - 0.000600
Arm Offset	-1879.95	-1286.22	-5000.00 - 3000.00
Arm Gain	0.0005413	0.0004847	0.000300 - 0.000700
Arm Power	-0.000006916	-0.000003541	-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)	1.99	2.00	0.01	+/- 0.20
Medium Ring (in)	3.73	3.75	0.02	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.42	6.50	0.08	+/- 0.20
Medium Ring (in)	8.30	8.25	-0.05	+/- 0.20
Large Ring (in)	14.99	15.00	0.01	+/- 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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SDLT CALIPER FIELD CALIBRATION

Tool Name:	SDLT - M319_P123_BLUE	Reference Calibration Date:	13-Apr-12 10:12:25
Engineer:	J. PINKETT	Calibration Date:	23-Apr-12 10:01:55
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

MEASURED CALIPER VALUES

Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.65	-0.10	+/- 0.10
Ring Diameter	8.25	8.15	-0.10	+/- 0.15

PASS/FAIL SUMMARY

Pad Extension Check:	Passed
Diameter Check:	Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	ACRt Sonde - E2584-S2585	Reference Calibration Date:	28-Jul-11 16:05:50
Engineer:	C. BLUE	Calibration Date:	17-Feb-12 02:58:12
Software Version:	WL INSITE R3.4.4 (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	1.0033	1.05	0.95	1.0042	1.05	0.95	1.0033	1.05
A2 (50")	0.95	1.0018	1.05	0.95	1.0042	1.05	0.95	1.0063	1.05
A3 (29")	0.95	0.9952	1.05	0.95	0.9961	1.05	0.95	0.9967	1.05
A4 (17")	0.95	0.9953	1.05	0.95	0.9938	1.05	0.95	0.9965	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.9840	1.05	0.95	0.9856	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9693	1.05	0.95	0.9711	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	-0.916	2	-6	-4.084	-2	-8	-5.369	-2
A2 (50")	-7	-1.297	-1	-6	-3.575	-2	-7	-4.655	-2
A3 (29")	-27	-12.240	-9	-9	-3.457	-3	-7	-3.376	-1
A4 (17")	-180	-92.899	-60	-45	-29.938	-15	-39	-24.840	-13
A5 (10")	N/A	N/A	N/A	-150	-83.643	-50	-80	-42.487	-10
A6 (6")	N/A	N/A	N/A	175	304.068	525	90	152.524	270

TRANSMITTER CURRENT GAIN					R-MUD VERIFICATION			
Signal	Lower	R	Upper		Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
12K	0.6	0.8674	1.3		Mud Cell	0.95	0.997	1.05
36K	1.0	1.9281	2.0					
72K	1.0	1.1211	2.0					

SPECTRAL DENSITY SHOP CALIBRATION			
Tool Name:	SDLT Pad - M319_P123_BLUE	Reference Calibration Date:	13-Apr-12 11:11:41
Engineer:	J. PINKETT	Calibration Date:	13-Apr-12 11:31:11
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

Logging Source S/N: 5256GW		
Aluminum Block S/N: 63066 (BRIGHTON AL BLOCK)	Density: 2.602g/cc	Pe: 3.100
Magnesium Block S/N: 12345	Density: 1.691g/cc	Pe: 2.650

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0228	1.0144	0.90 - 1.10
Near Dens Gain	0.9790	0.9748	0.90 - 1.10
Near Peak Gain	0.9776	0.9545	0.90 - 1.10
Near Lith Gain	0.9946	0.9786	0.90 - 1.10
Far Bar Gain	0.9987	0.9960	0.90 - 1.10
Far Dens Gain	0.9894	0.9876	0.90 - 1.10
Far Peak Gain	0.9841	0.9840	0.90 - 1.10
Far Lith Gain	0.9632	0.9625	0.90 - 1.10
Near Bar Offset	-0.0287	0.0480	NONE
Near Dens Offset	0.3841	0.4196	NONE

Near Peak Offset	0.4723	0.6614	NONE
Near Lith Offset	0.3896	0.5175	NONE
Far Bar Offset	0.0215	0.0450	NONE
Far Dens Offset	0.0839	0.0987	NONE
Far Peak Offset	0.1117	0.1089	NONE
Far Lith Offset	0.2668	0.2698	NONE

Near Bar Background	824.04	829.45	700 - 1450
Near Dens Background	272.42	272.67	230 - 480
Near Peak Background	118.21	117.61	100 - 210
Near Lith Background	145.49	146.89	125 - 260
Far Bar Background	526.67	528.67	450 - 900
Far Dens Background	201.85	205.02	175 - 345
Far Peak Background	79.25	78.80	70 - 140
Far Lith Background	83.56	83.59	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.691	1.691	-0.000	+/- 0.015
Pe	2.575	2.601	0.026	+/- 0.150
ALUMINUM				
Density (g/cc)	2.601	2.602	0.002	+/- 0.01500
Pe	3.050	3.061	0.011	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	0.0009	+/- 0.0110	0.0004	+/- 0.0140
Magnesium Block	-0.0009	+/- 0.0110	-0.0007	+/- 0.0140
Aluminum Block	0.0001	+/- 0.0110	-0.0011	+/- 0.0140
Resolution	9.48	6.00 - 11.50	9.69	6.00 - 11.50
Internal Verifier(B+D+P+L)	1367	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 - M319_P123_BLUE	Reference Calibration Date:	13-Apr-12 11:31:11
Engineer:	J. PINKETT	Calibration Date:	23-Apr-12 08:39:09
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

Pad Temperature: 67.1 degF

DENSITY FIELD CALIBRATION SUMMARY

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1366.622	1364.029	-2.593	14.941
Far (B+D+P+L) cps	896.085	895.927	-0.158	16.289
Near Resolution	9.48	9.62	0.140	0.50
Far Resolution	9.69	9.87	0.180	1.00

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

Tool Name:	Microlog Pad - M319_P123_BLUE	Reference Calibration Date:	13-Apr-12 11:46:20
Engineer:	J. PINKETT	Calibration Date:	13-Apr-12 11:48:38
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.41	-0.42	-0.00	-0.00	ohm m
Calibration Point #1	0.00	0.00	-0.00	0.00	ohm m
Calibration Point #2	20.01	20.00	20.02	20.00	ohm m
Internal Reference	19.60	19.60	20.01	19.99	ohm m

Measurement	Micro Log Normal Tool Value	Micro Log Lateral Tool Value	Units
Tool Zero	-0.89	0.13	V
Calibration Point #1	110.27	1.15	V
Calibration Point #2	5444.82	6890.93	V
Internal Reference	5337.47	6888.76	V

Tool Name:	Microlog Pad - M319_P123_BLUE	Reference Calibration Date:	13-Apr-12 11:48:38
Engineer:	J. PINKETT	Calibration Date:	23-Apr-12 16:01:59
Software Version:	WL INSITE R3.4.4 (Build 2)	Calibration Version:	1

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.42	-0.41	-0.00	-0.00	ohm m
Internal Reference	19.60	19.68	19.99	20.06	ohm m

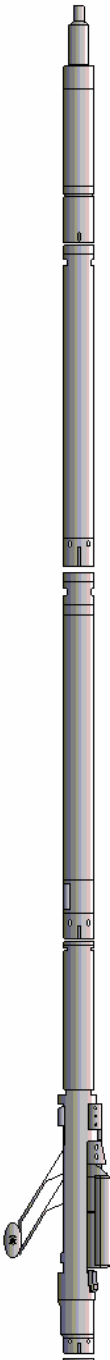
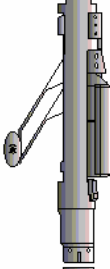
Signal	Shop	Field	Difference	Tolerance
Microlog Normal	19.60	19.68	-0.08	+/- 0.80
Microlog Lateral	19.99	20.06	-0.07	+/- 0.80

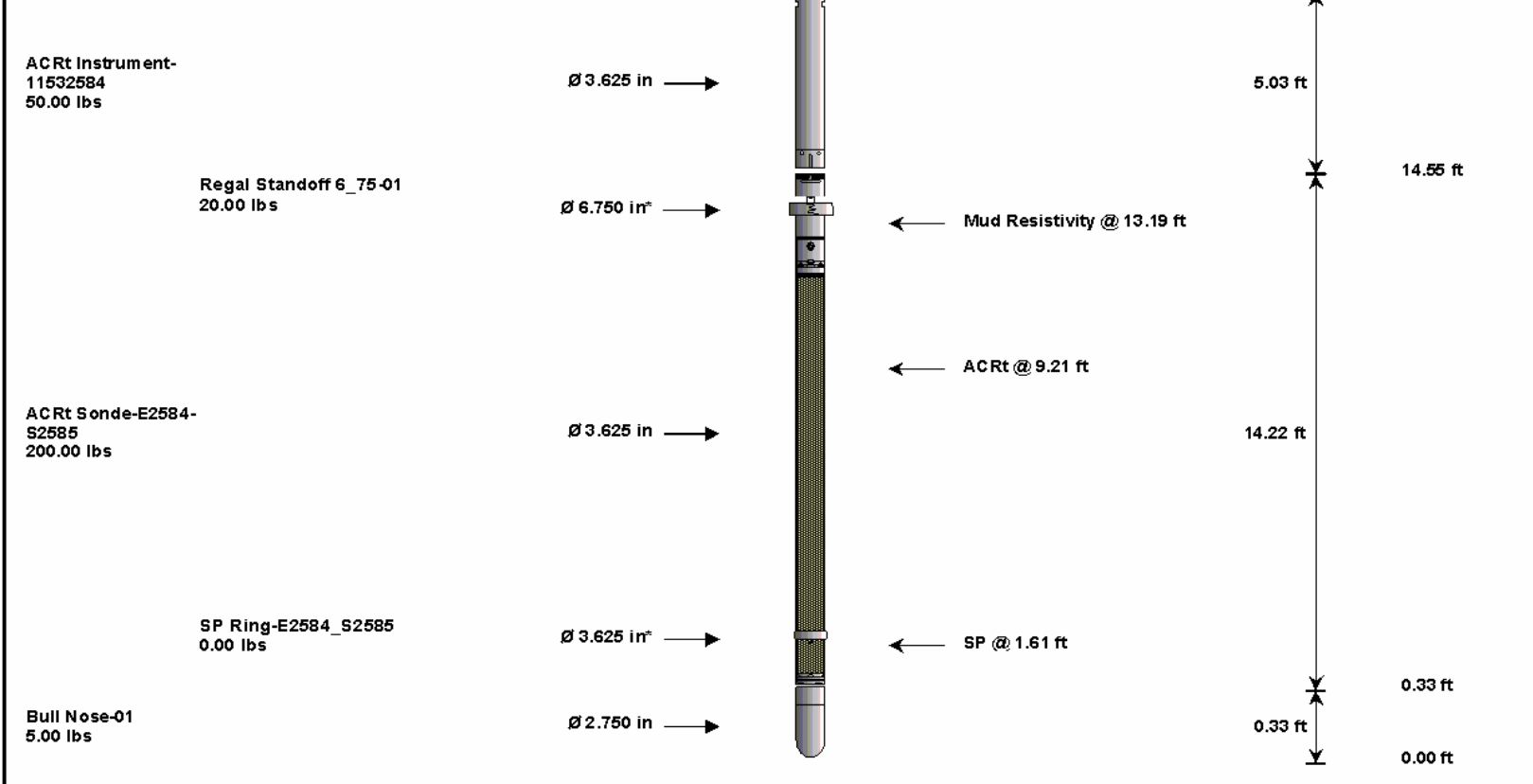
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Pad Extension	3.75	3.65	-----	0.10	+/-0.10	in
Ring Diameter	8.25	8.15	-----	0.100	+/-0.15	in
ACRt Sonde-E2584-S2585						
Mud Cell	0.997	-----	-----	0.000	-----	ohm-m
SDLT Pad-M319_P123_BLUE						
Near(B+D+P+L)	1366.622	1364.029	-----	2.593	+/-14.941	cps
Far(B+D+P+L)	896.085	895.927	-----	0.158	+/-16.289	cps
Microlog Pad-M319_P123_BLUE						
MicroLog Normal	19.60	19.68	-----	-0.08	+/-0.80	ohmm
MicroLog Lateral	19.99	20.06	-----	-0.07	+/-0.80	ohmm
Data: HEIN 1-110001 ANADARKO_21001 23-Apr-12 16:02 Dn @499.3f						
Date: 23-Apr-12 16:17:44						

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length	
						54.85 ft	
RWCH-11830866 135.00 lbs		Ø 3.625 in →		← Load Cell @ 51.17 ft	6.25 ft		
				← BH Temperature @ 50.60 ft			
							48.60 ft
GTET-11215095 165.00 lbs		Ø 3.625 in →			← GammaRay @ 42.54 ft	8.52 ft	
							40.08 ft
DSNT-11277440 174.00 lbs		Ø 3.625 in →			← DSN Far @ 33.15 ft	9.69 ft	
					← DSN Near @ 32.40 ft		
							30.40 ft
SDLT-M319_P123_BLUE 360.00 lbs	SDLT Pad-M319_P123_BLUE 65.00 lbs	Ø 4.500 in →			10.81 ft		
	Microlog Pad-M319_P123_BLUE 8.00 lbs	Ø 4.750 in →			Microlog @ 22.58 ft		
		Ø 4.750 in →			SDL Caliper @ 22.40 ft		
					SDL @ 22.39 ft		19.58 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	11830866	135.00	6.25	48.60	300.00
GTET	Gamma Telemetry Tool	11215095	165.00	8.52	40.08	60.00
DSNT	Dual Spaced Neutron	11277440	174.00	9.69	30.40	60.00
SDLT	Spectral Density Tool	M319_P123_BLUE	360.00	10.81	19.58	60.00
MICP	Microlog Pad	M319_P123_BLUE	8.00	1.00	* 22.08	60.00
SDLP	Density Insite Pad	M319_P123_BLUE	65.00	2.55	* 21.79	60.00
ACRt	Array Compensated True Resistivity Instrument Section	11532584	50.00	5.03	14.55	300.00
ACRt	Array Compensated True Resistivity	E2584-S2585	200.00	14.22	0.33	300.00
SP	SP Ring	E2584_S2585	0.00	0.25	* 1.61	300.00
RSOF	Regal Standoff 6.75in	01	20.00	0.52	* 13.33	300.00
BLNS	Bull Nose	01	5.00	0.33	0.00	300.00
Total			1,182.00	54.85		
* Not included in Total Length and Length Accumulation.						
Data: HEIN 1-10001 ANADARKO_2002 23-Apr-12 16:05 Dn @ 692.3f						Date: 23-Apr-12 16:16:55

COMPANY	KERR-MCGEE OIL & GAS ONSHORE LP		
WELL	HEIN 1-1		
FIELD	WATTENBERG		
COUNTY	WELD	STATE	CO
HALLIBURTON		SPECTRAL DENSITY DUAL SPACED NEUTRON ARRAY COMPENSATED TRUE RESISTIVITY	