

HALLIBURTON

ARRAY COMPENSATED
TRUE RESISTIVITY
SPECTRAL DENSITY
DUAL SPACED NEUTRON

COMPANY		LARAMIE ENERGY	
WELL		LARAMIE 20-06D	
FIELD		RULISON	
COUNTY		GARFIELD	
STATE		CO	
Permanent Datum		GL	
Log measured from		KB	
Drilling measured from		KB	
Date	15-Jan-10	Elev. 5655.0 ft	
Run No.	ONE	Elev.: K.B. 5676.0 ft	
Depth - Driller	9080.00 ft	D.F. 5675.0 ft	
Depth - Logger	9078.0 ft	G.L. 5655.0 ft	
Bottom - Logged Interval	9073.0 ft		
Top - Logged Interval	1059.0 ft		
Casing - Driller	8.625 in @ 1022.0 ft		
Casing - Logger	1059.0 ft		
Bit Size	7.875 in		
Type Fluid in Hole	GEL/CHEM		
Density	10.7 ppq		
Viscosity	60.00 s/qt		
PH	9.80 pH		
Fluid Loss	5.6 cpm		
Source of Sample	MUD TANK		
Rm @ Meas. Temperature	2.42 ohmm @ 59.30 degF		
Rmf @ Meas. Temperature	2.07 ohmm @ 60.50 degF		
Rmc @ Meas. Temperature	2.64 ohmm @ 62.60 degF		
Source Rmf	MEAS. Rmc		
Rm @ BHT	0.73 ohmm @ 212.0 degF		
Time Since Circulation	13.0 hr		
Time on Bottom	15-Jan-10 09:35		
Max. Rec. Temperature	212.0 degF @ 9078.0 ft		
Equipment	11014853 G.J., CO		
Recorded By	K. WOOD		
Witnessed By	C. CLAUSEN		

COMPANY	LARAMIE ENERGY
WELL	LARAMIE 20-06D
FIELD	RULISON
COUNTY	GARFIELD
STATE	CO
API No.	05045155610000
Location	SURFACE HOLE: 2307' FSL & 157' FWL BOTTOM HOLE: 2476' FNL & 1968' FWL
Other Services:	NONE

Fold here

Service Ticket No.: 7104697				API Serial No.: 05045155610000				PGM Version: WL INSITE R2.4 (Build 20)											
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-90190515		N/A		1.5" S.O.		N/A					
Rmc @ Meas. Temp.		@		@				-E9775											
Source Rmf		Rmc		CALC.		CALC.													
Rm @ BHT		0.73 ohmm @ 212.0 degF		@															
Rmf @ BHT		0.64 ohmm @ 212.0 degF		@															
Rmc @ BHT		0.84 ohmm @ 212.0 degF		@															
EQUIPMENT DATA																			
GAMMA				ACOUSTIC				DENSITY				NEUTRON							
Run No.		ONE		Run No.				Run No.		ONE		Run No.		ONE					
Serial No.		11005602		Serial No.				Serial No.		10951314		Serial No.		10993888					
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		GAMMA-GAMMA		Log Type		THERMAL					
Type		SCINT.						Source Type		Cs137		Source Type		Am241Be					
Length		8"		LSA [Y/N]				Serial No.		20785B		Serial No.		DSN-388					
Distance to Source		10'		FWDA [Y/N]				Strength		1.5 Ci		Strength		15.0 Ci					
LOGGING DATA																			
GENERAL				GAMMA				ACOUSTIC				DENSITY				NEUTRON			

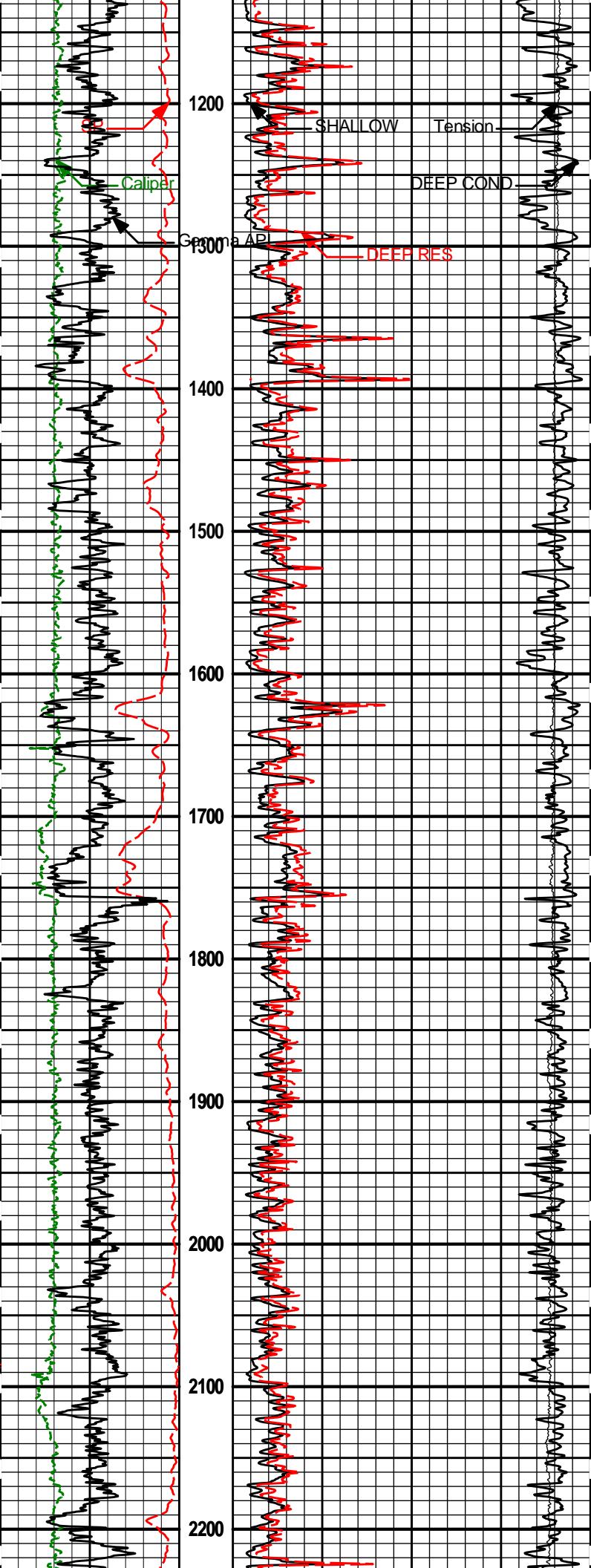
Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDWT	Borehole Fluid Weight	10.700	ppg
	SHARED	RMUD	Mud Resistivity	2.420	ohmm
	SHARED	TRM	Temperature of Mud	59.3	degF
	SHARED	OBM	Oil Based Mud System?	No	
	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	9078.00	ft
	SHARED	BHT	Bottom Hole Temperature	212.0	degF
	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
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GRSO	Gamma Tool Standoff	0.000	in

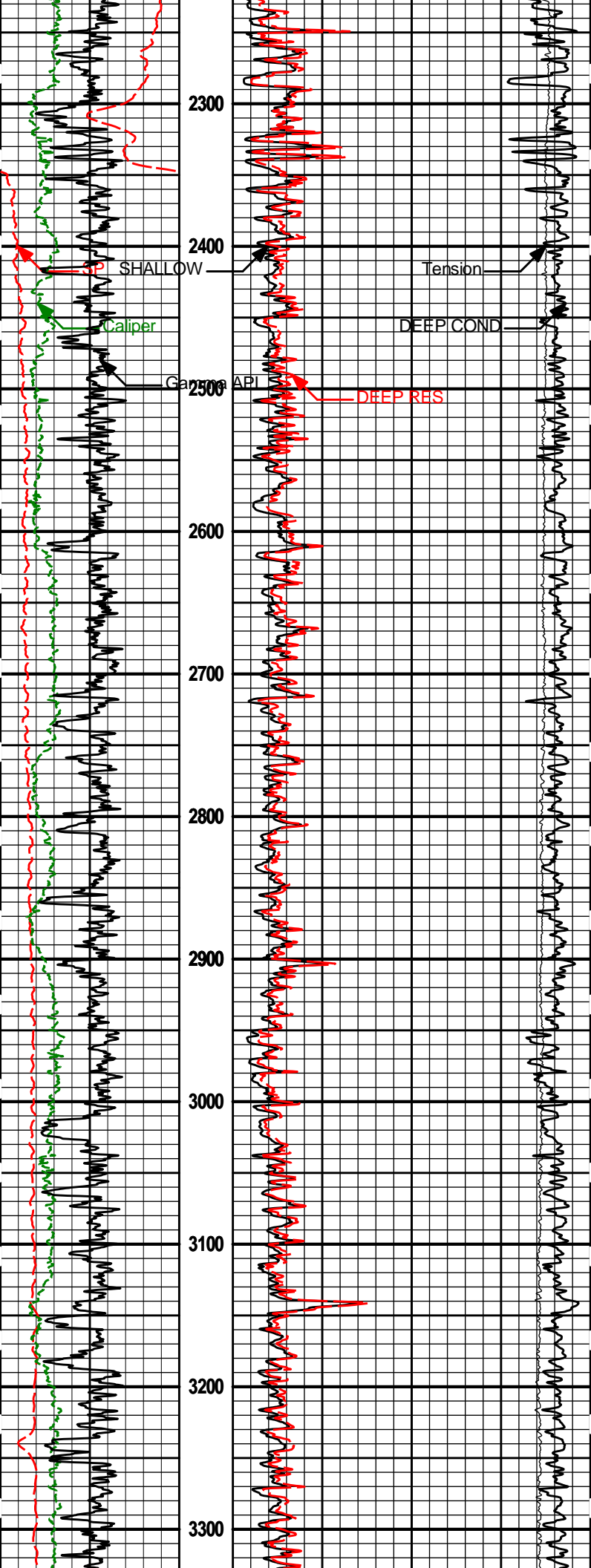
HALLIBURTON

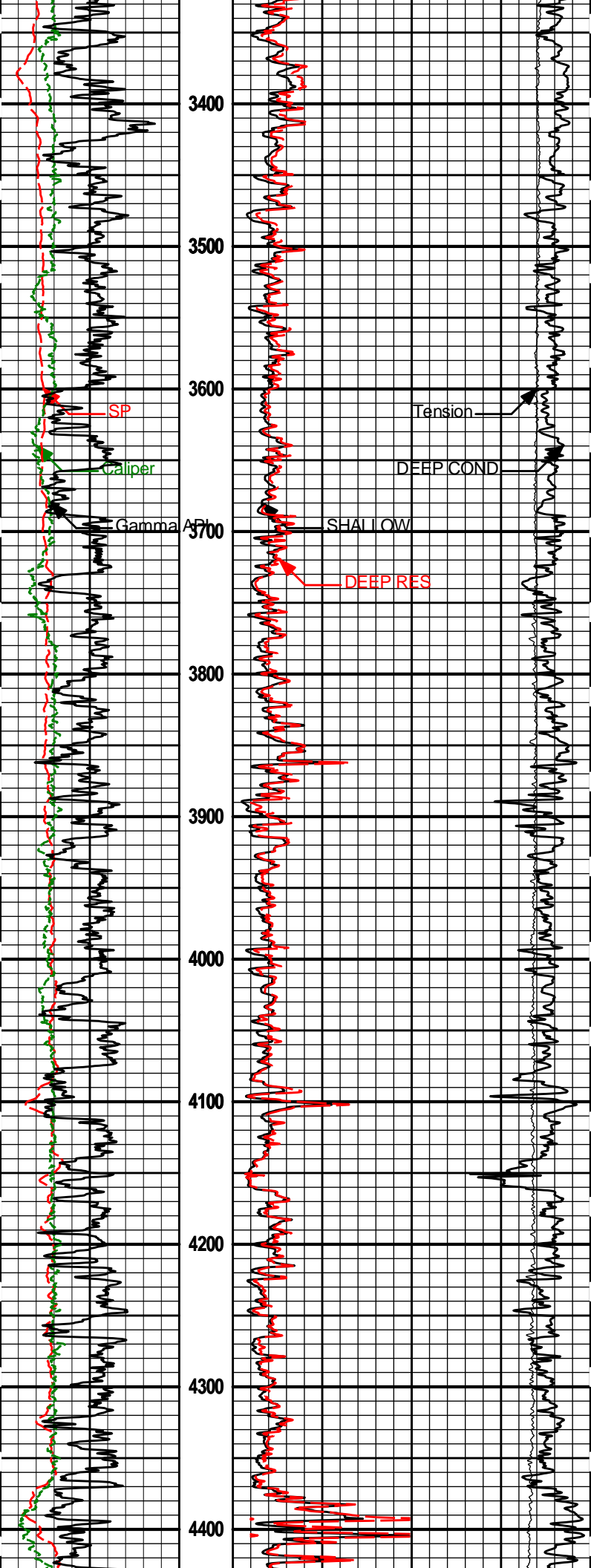
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 Plot Range: 1039 ft to 9105.92 ft
 Data: LARAMIE_20_06DWell Based\4
 Plot File: \\TRIPLE\IQ_ACRt_1IN_WILLIAMS

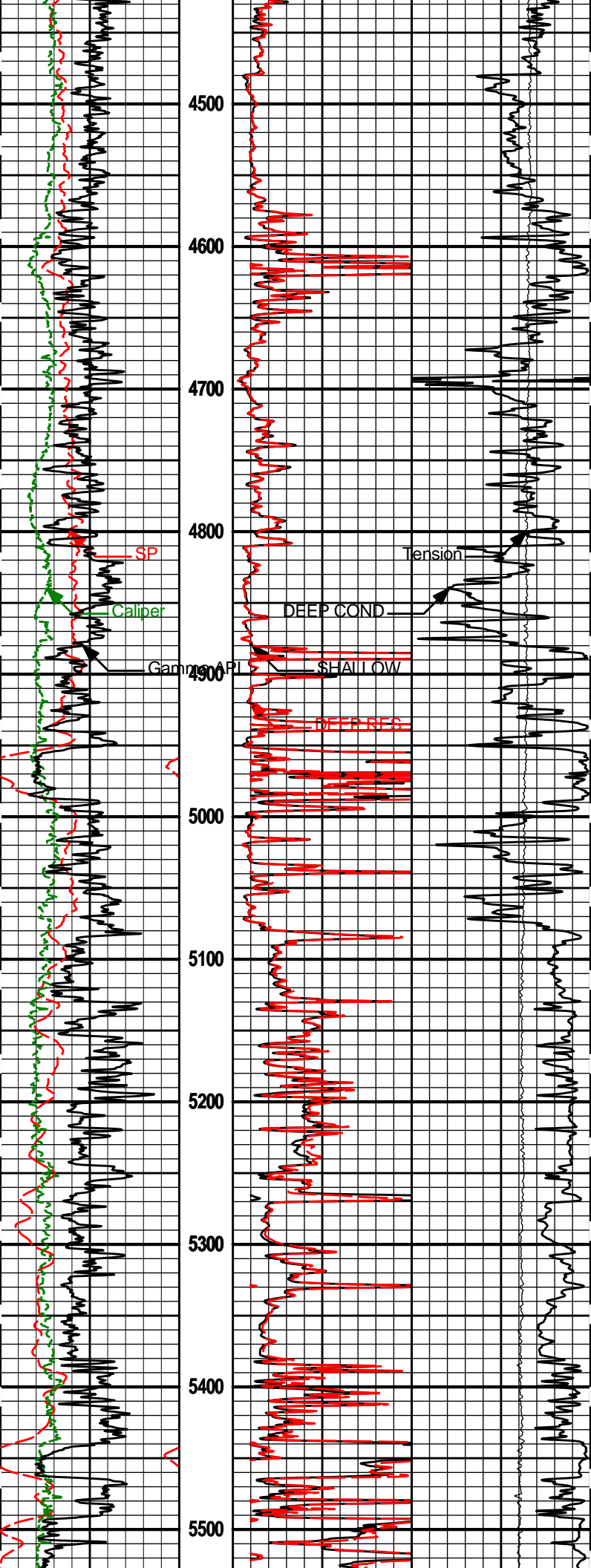
MAIN PASS 1" = 100' (HALF SCALE)

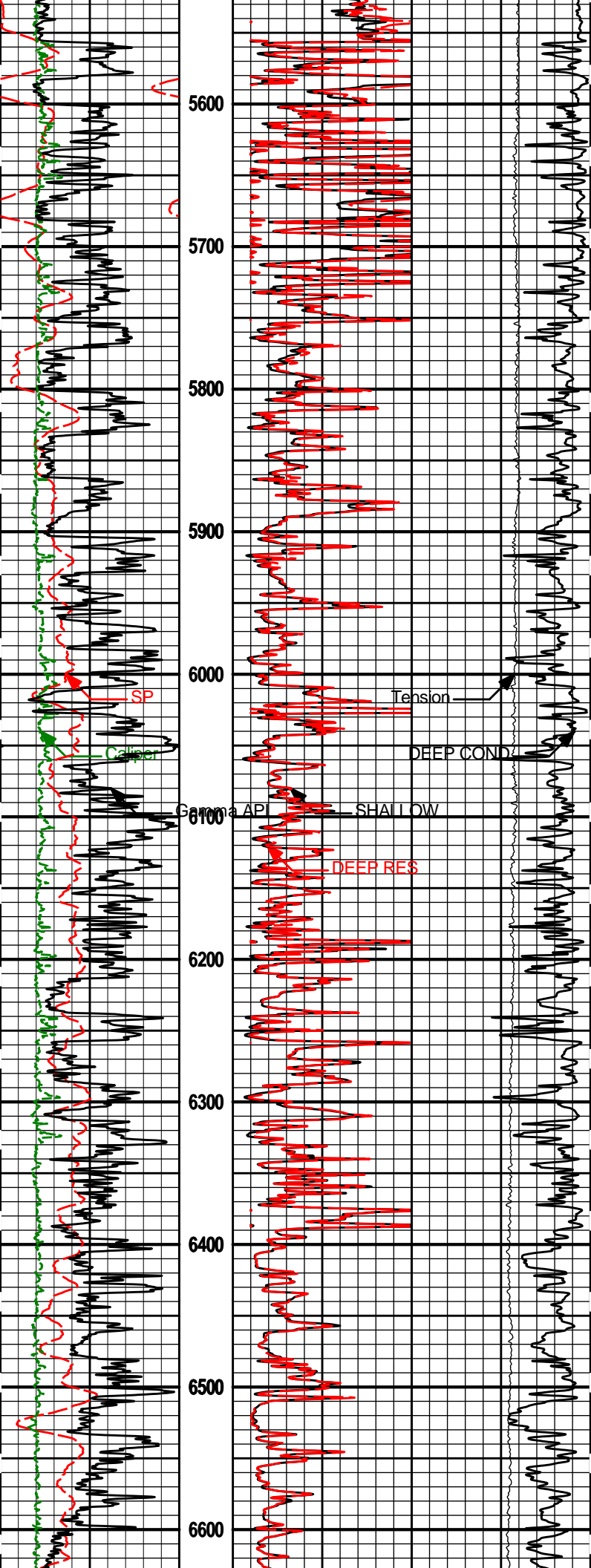
6	Caliper	16			
	inches				
0	Gamma API	200	0	DEEP RES	100
				ohm-metre	
	api		200	DEEP COND	0
				mmho per metre	
	SP		0	SHALLOW	100
	-]10[+			ohm-metre	
		1 : 1200 ft MD	10K	Tension	0
				pounds	
		CSG			
		1100			

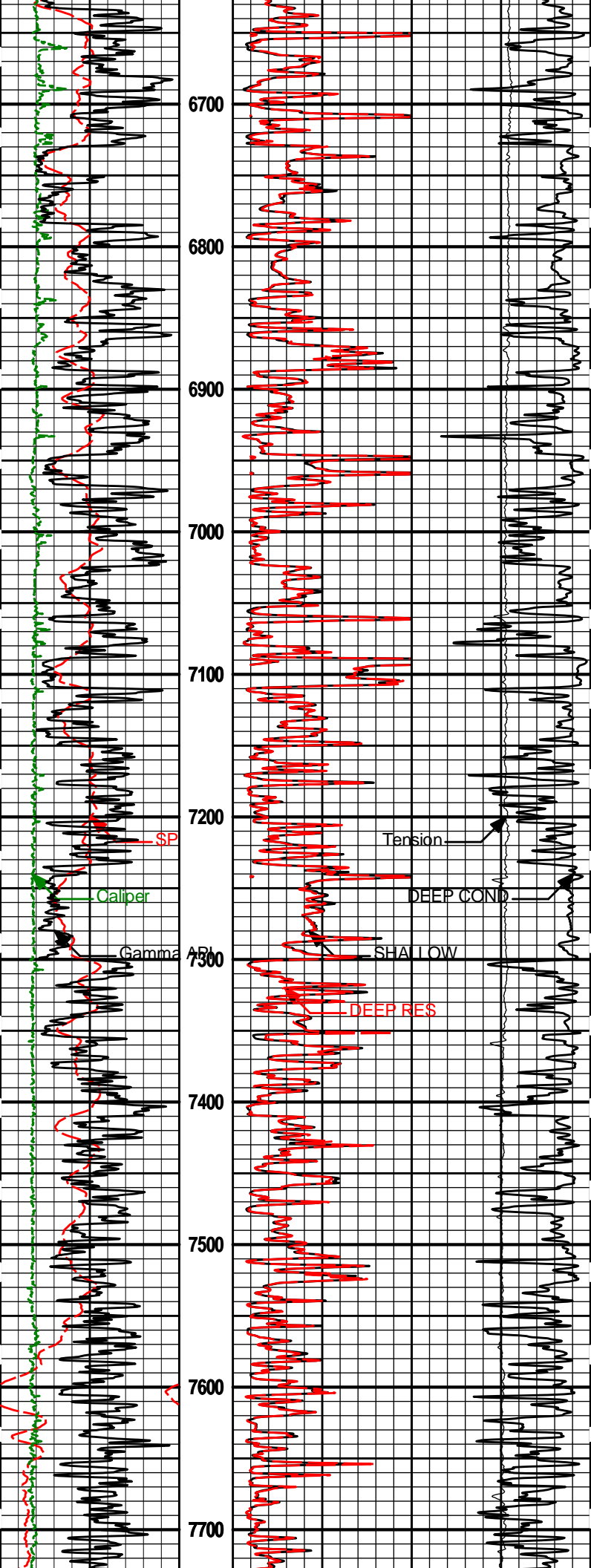


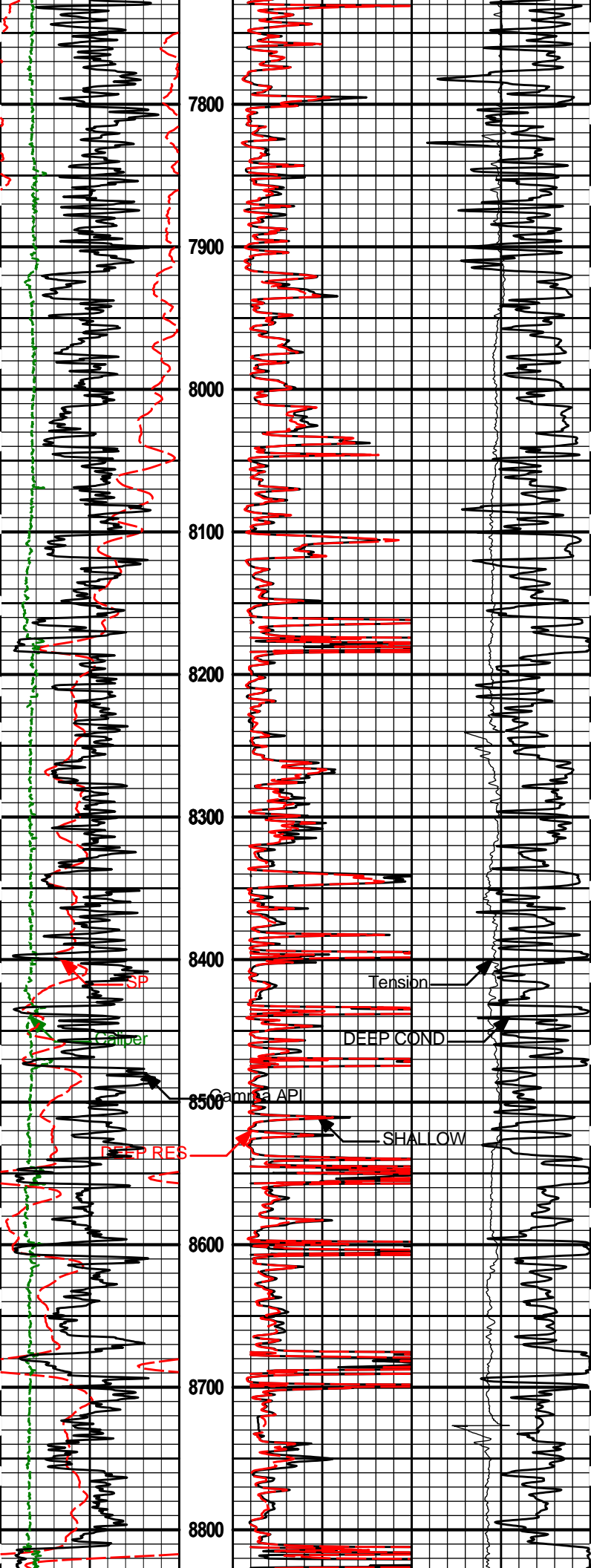


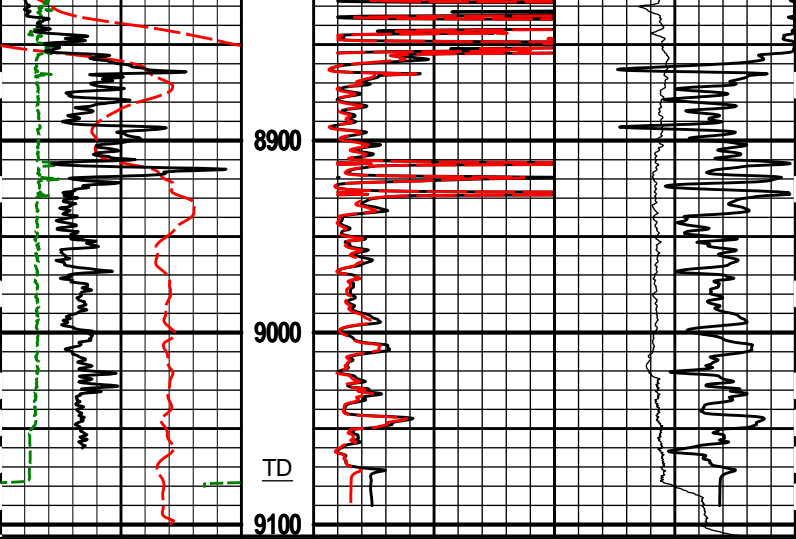












SP	1 : 1200 ft MD	0	SHALLOW	100	10K	Tension	0
-]10[+			ohm-metre			pounds	
0	Gamma API	200	0	DEEP RES	100	DEEP COND	0
api			ohm-metre		200	mmho per metre	
6	Caliper	16					
inches							

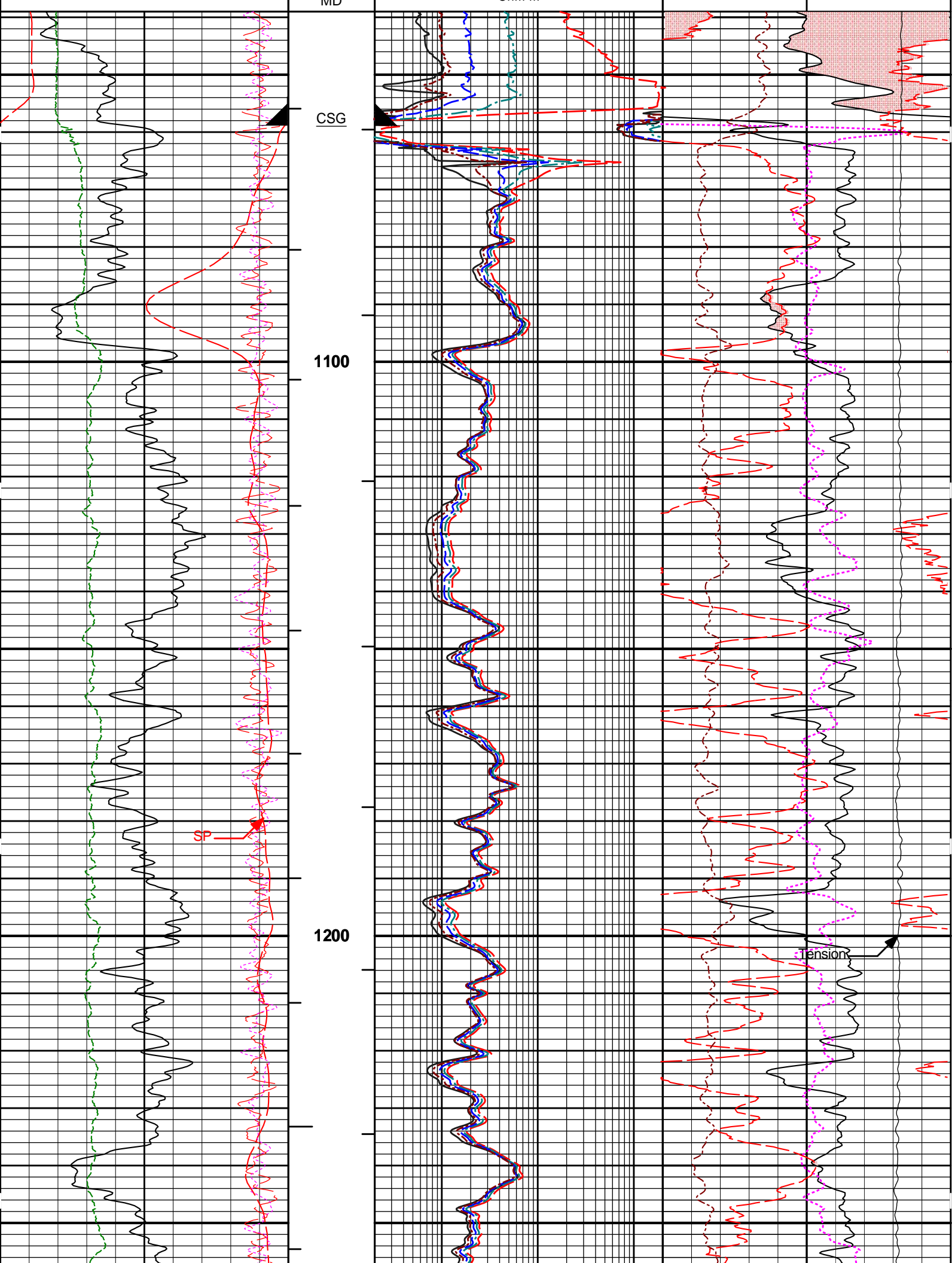
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Plot Range: 1039 ft to 9105.92 ft
Data: LARAMIE_20_06D\Well Based*\n
Plot File: \\TRIPLE\\IQ_ACRt_1IN_WILLIAMS

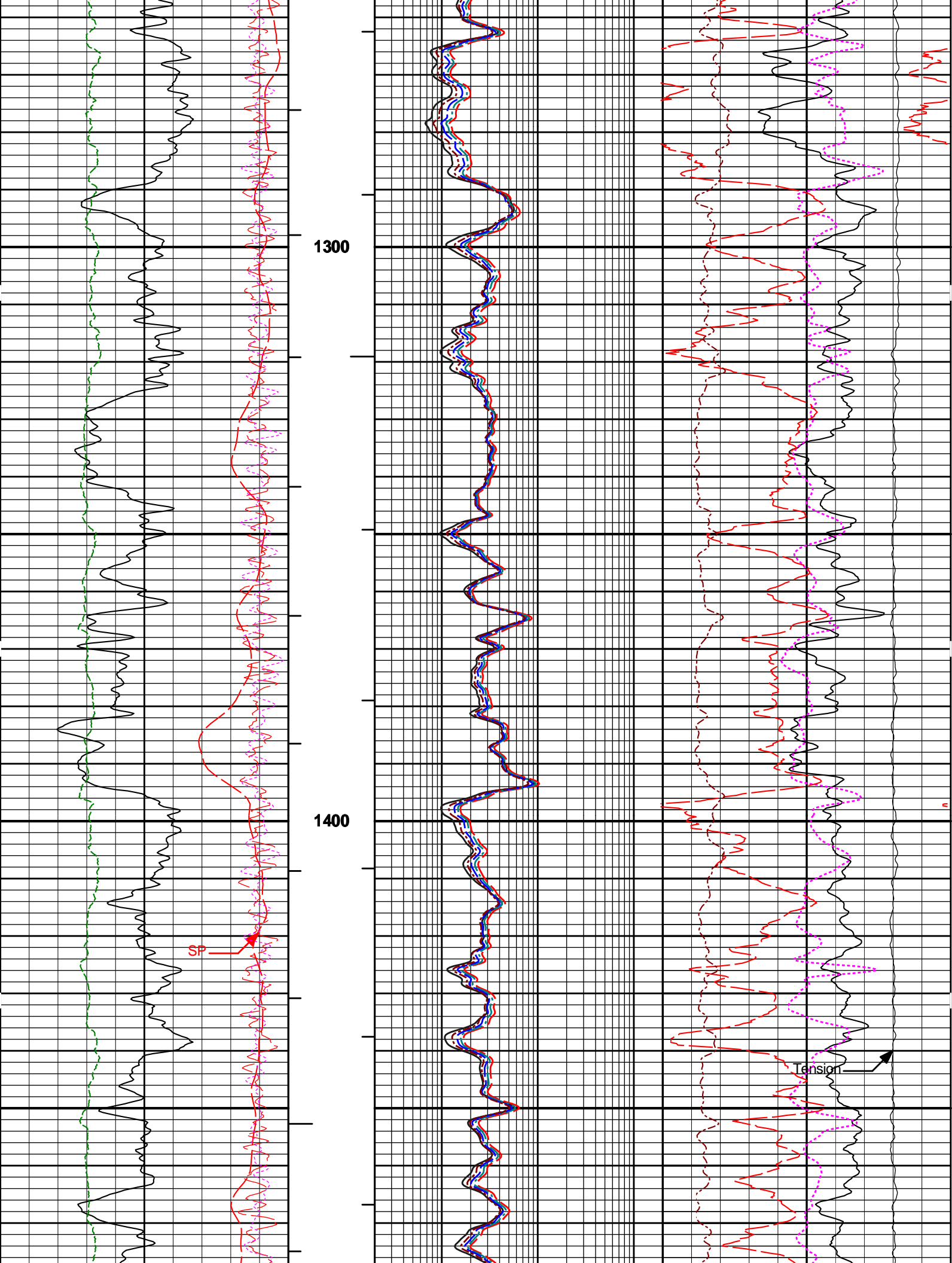
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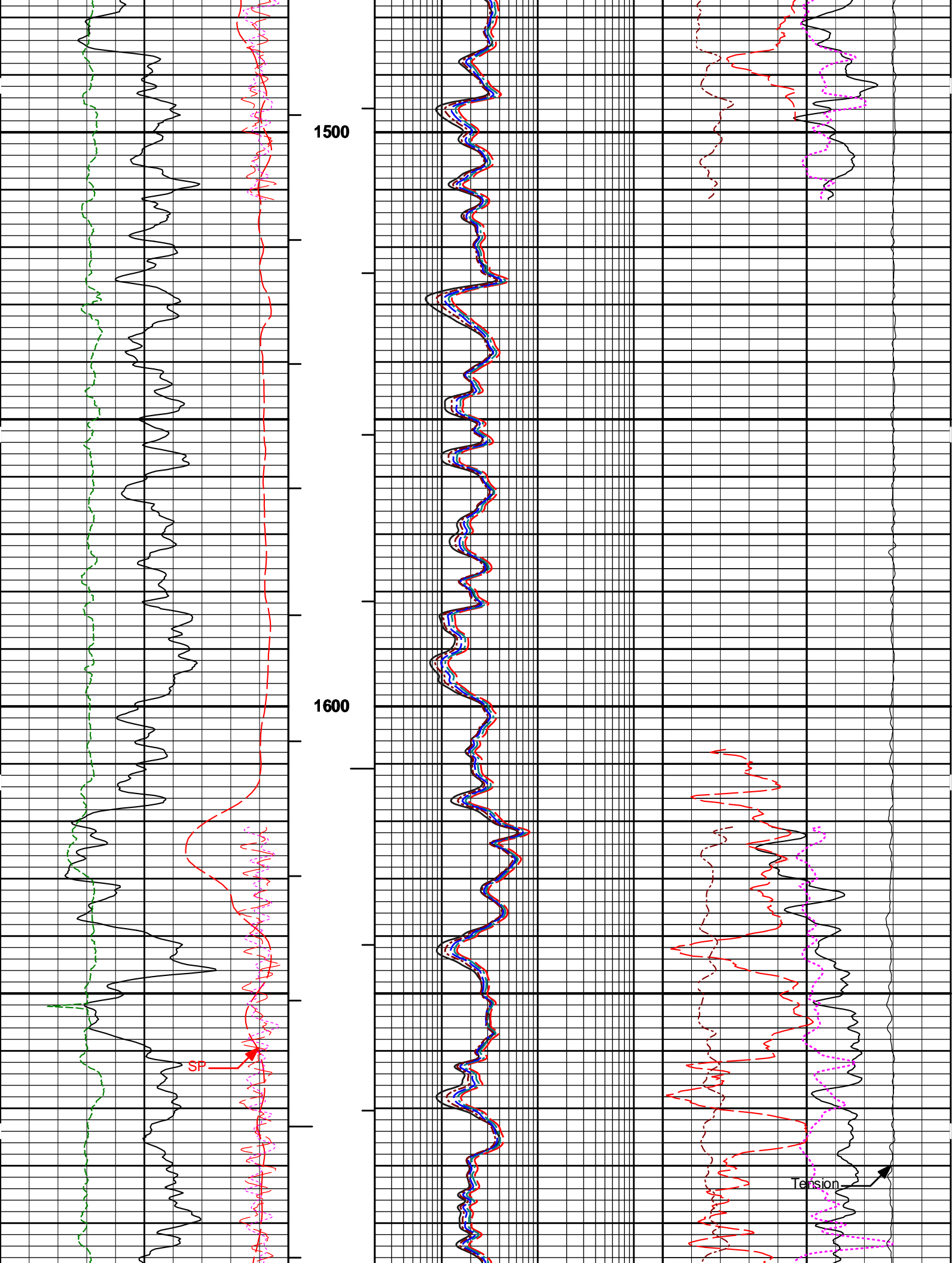
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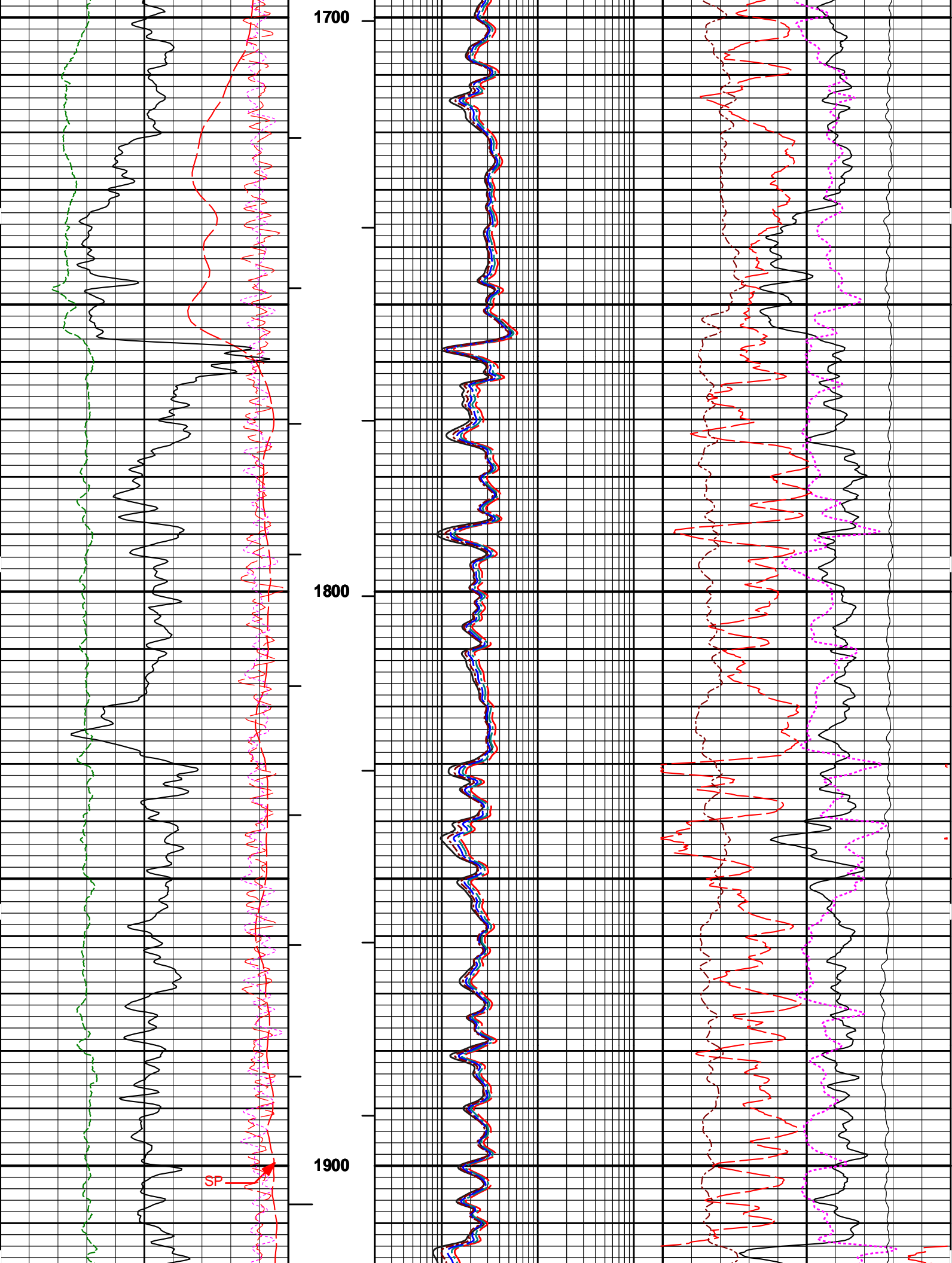
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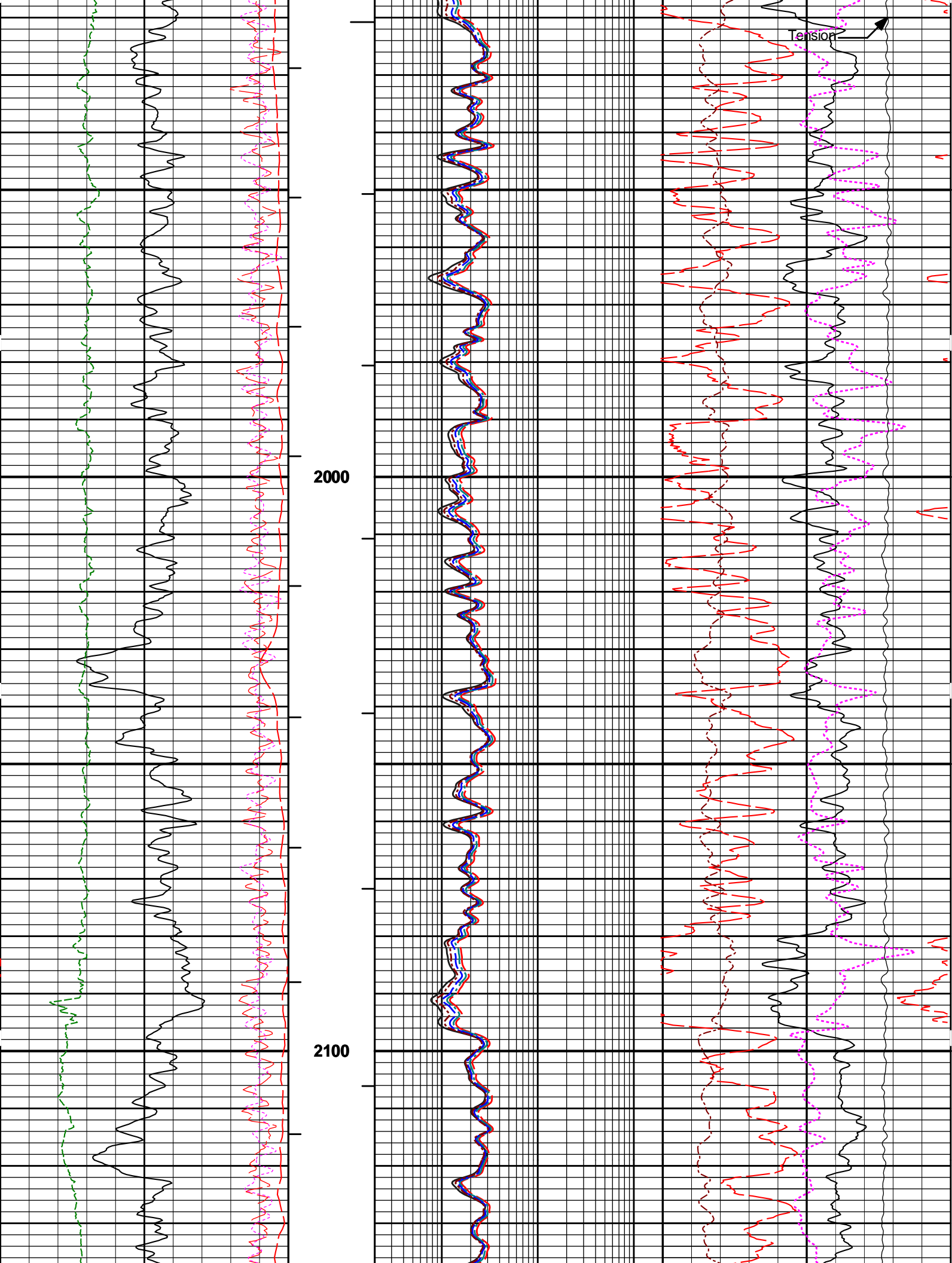
SP		2	RT90	2K	10000	Tension	0
-]10[+			Ohm-m			pounds	
6	Caliper	2	RT60	2K	-0.25	DensityCorr	0.25
inches			Ohm-m			gram per cc	
0	Gamma API	200	2	RT30	2K	30	Neutron Porosity
api	BHV	ft3		Ohm-m			percent
9	FarQuality	-1	2	RT20	2K	30	DensityPorosity
				Ohm-m			percent
9	NearQuality	-1	2	RT10	2K	0	Pe
				Ohm-m			10

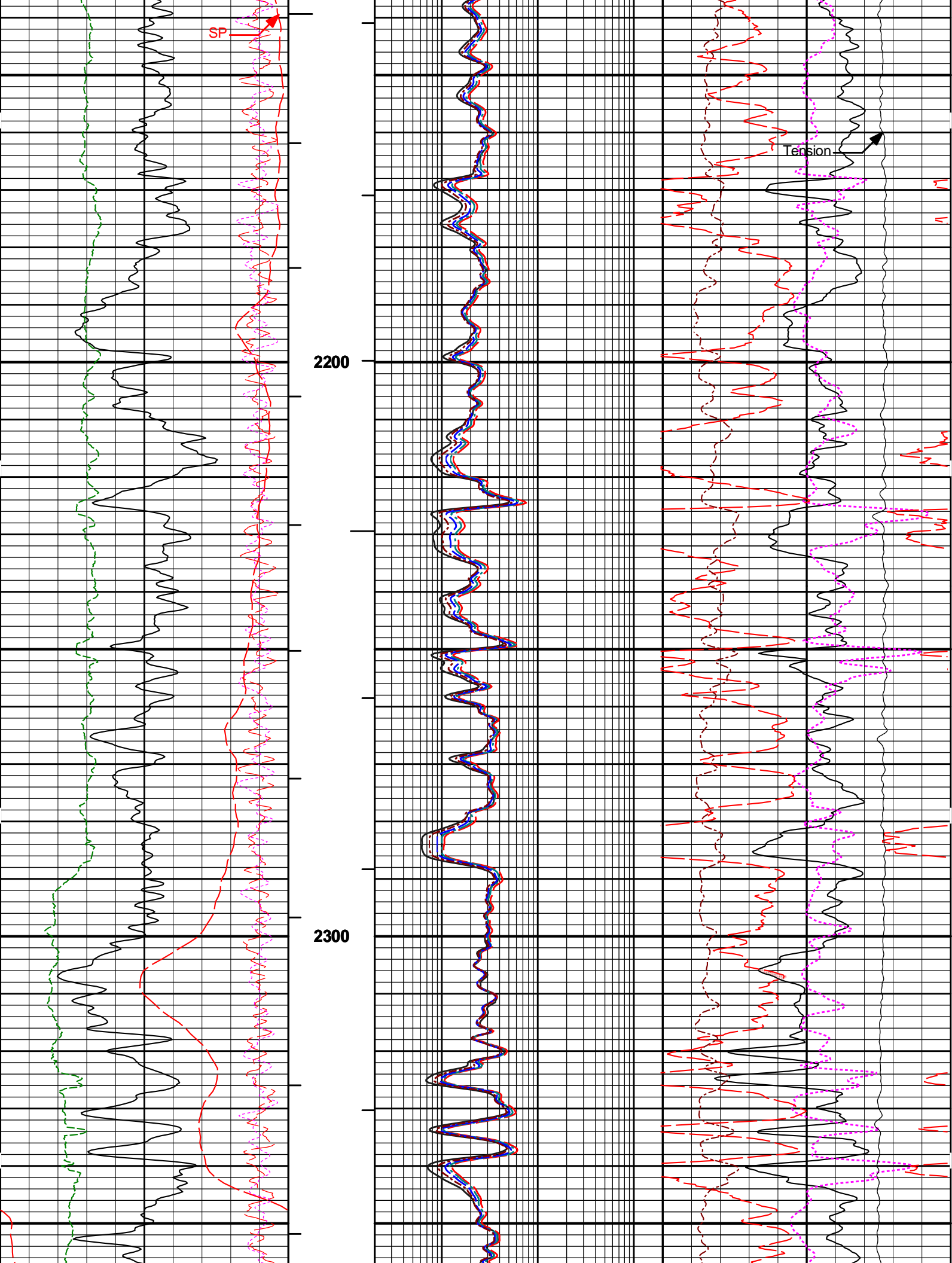


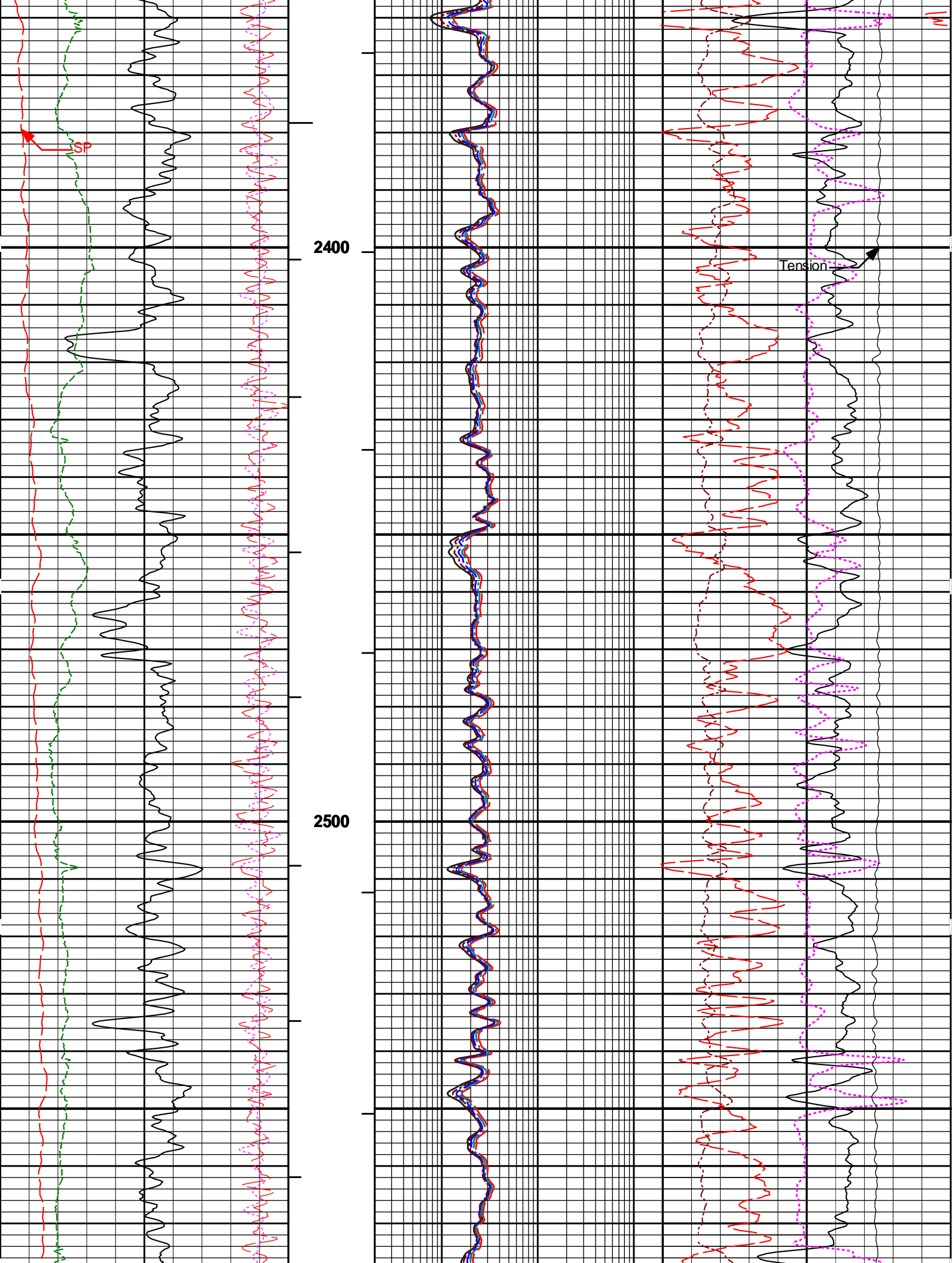


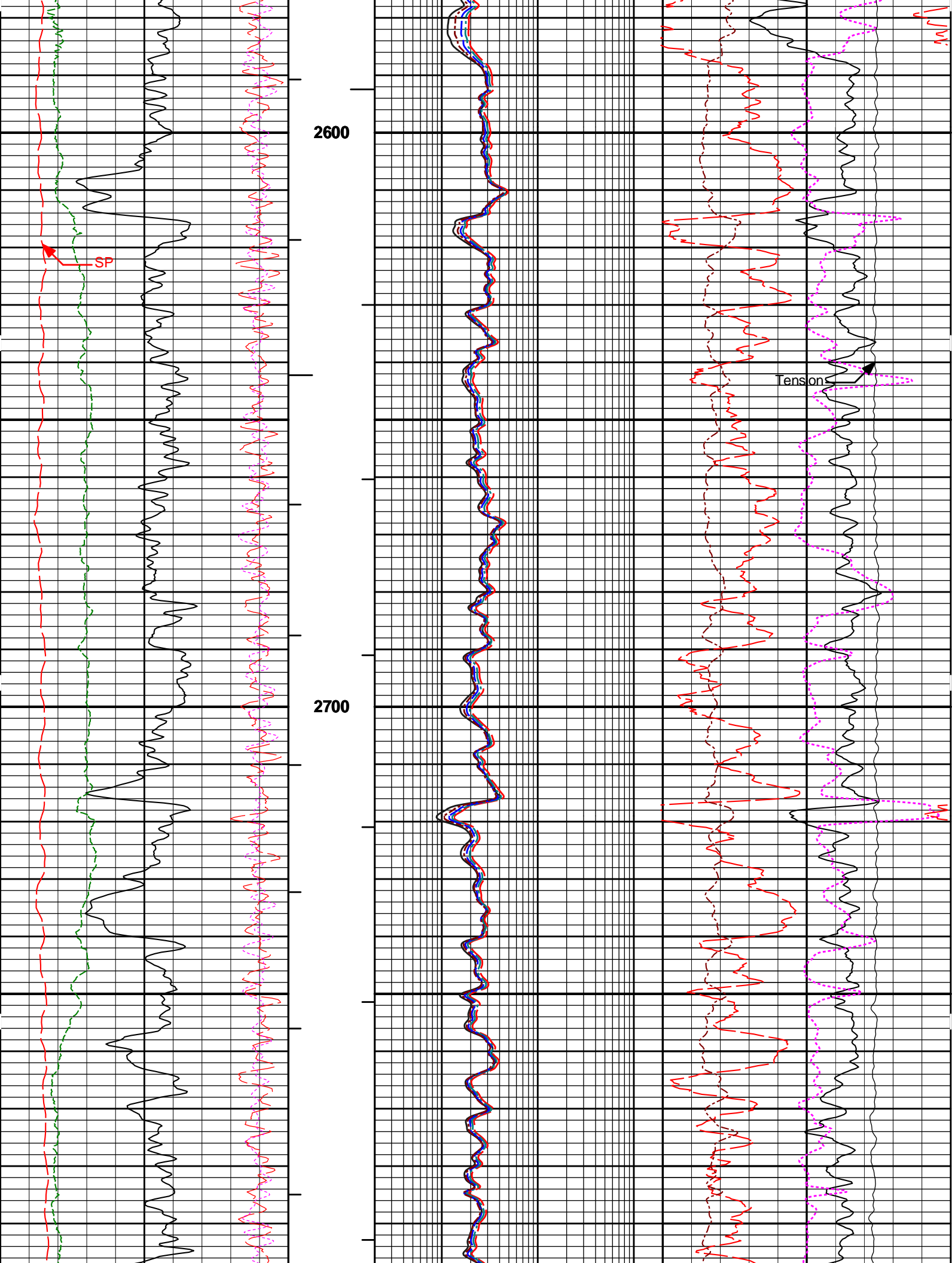


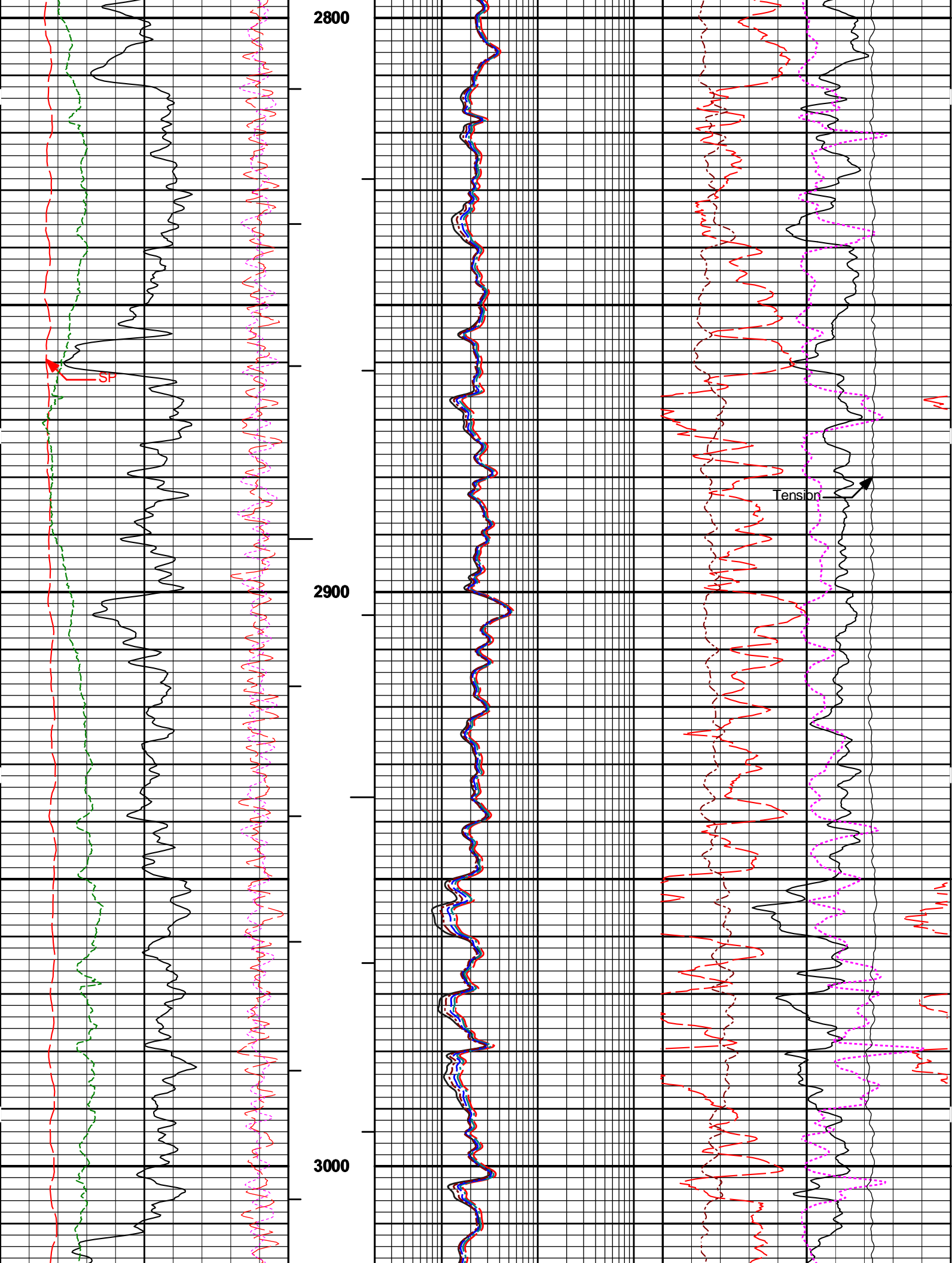


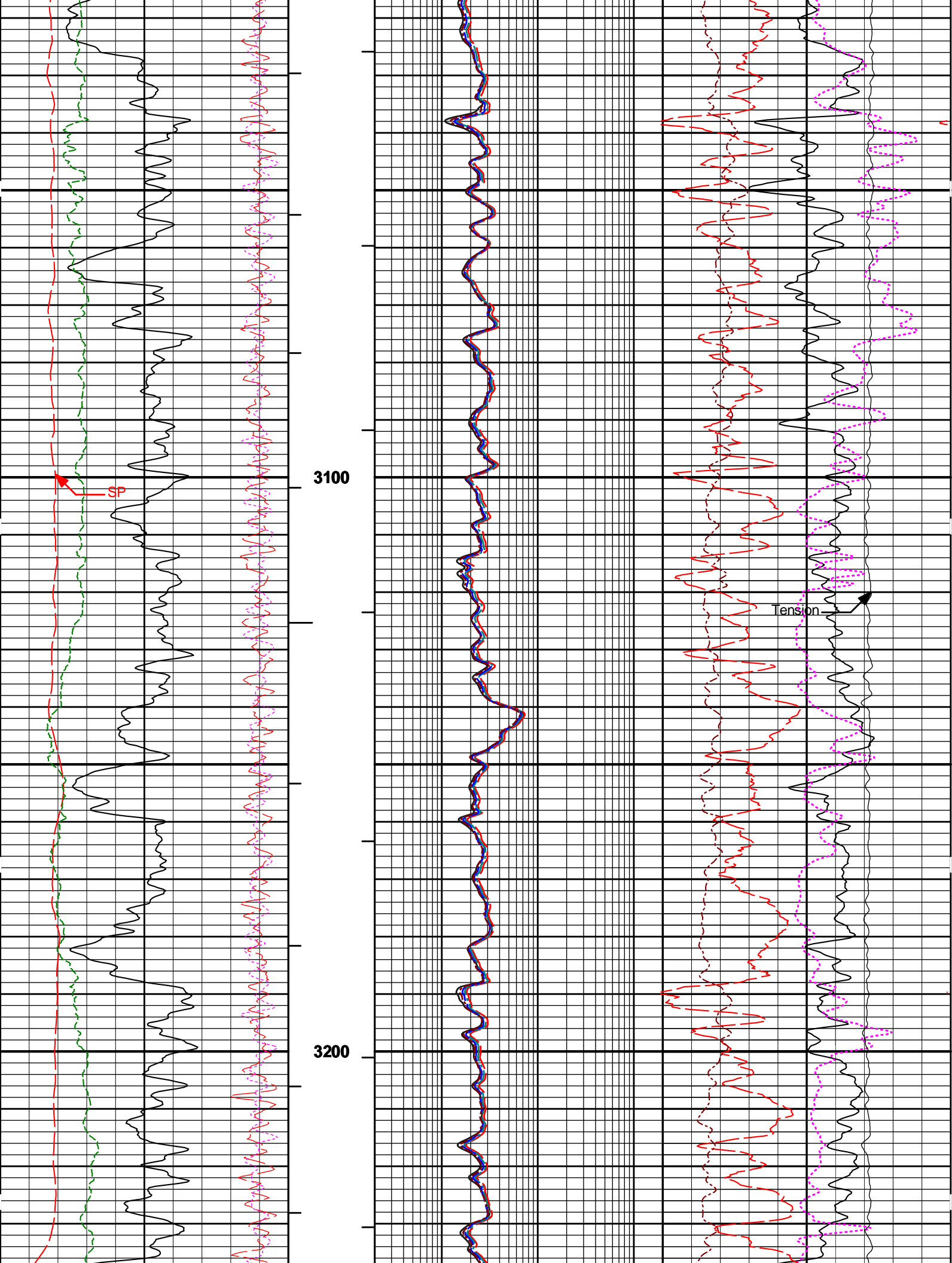


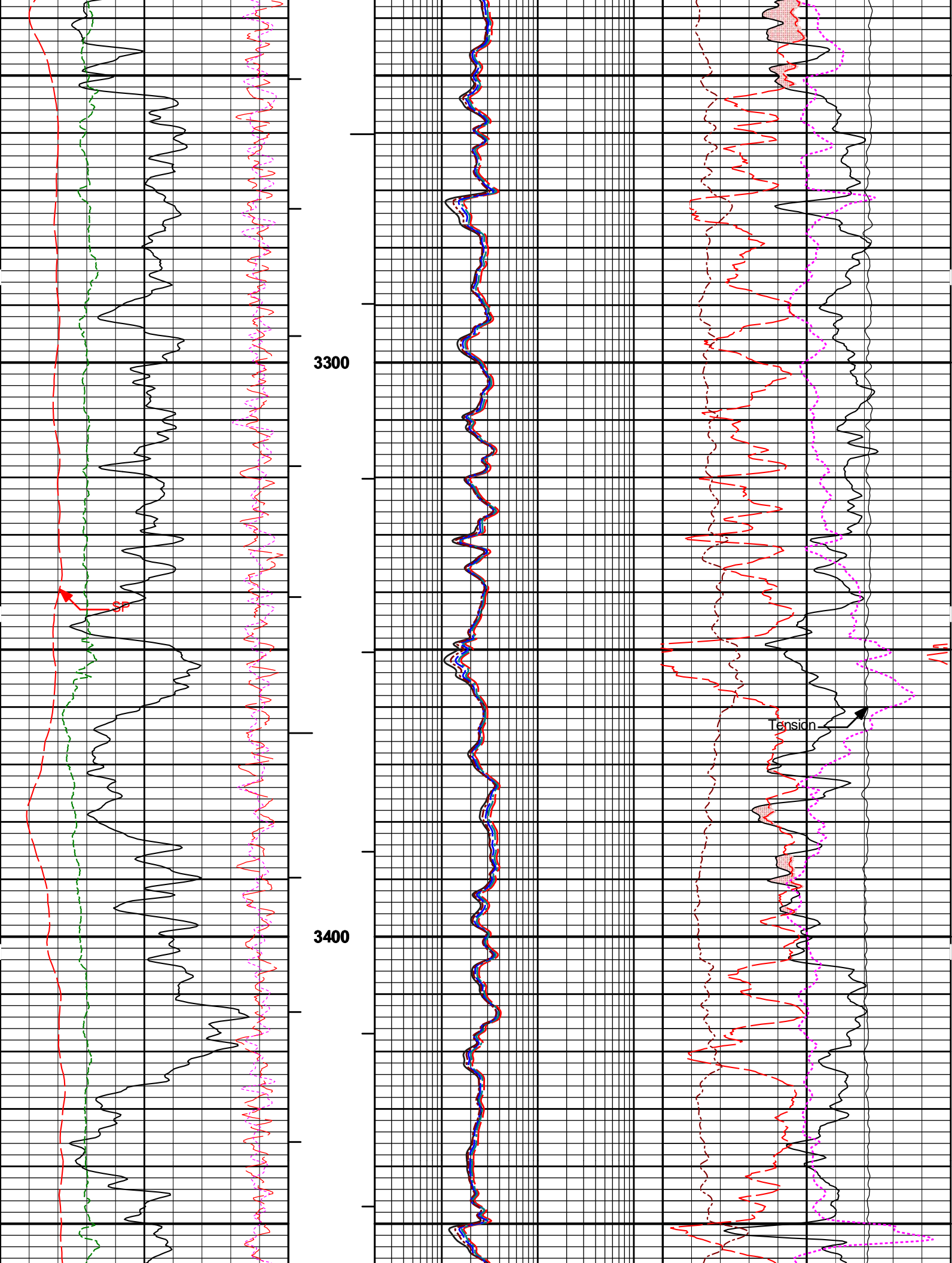


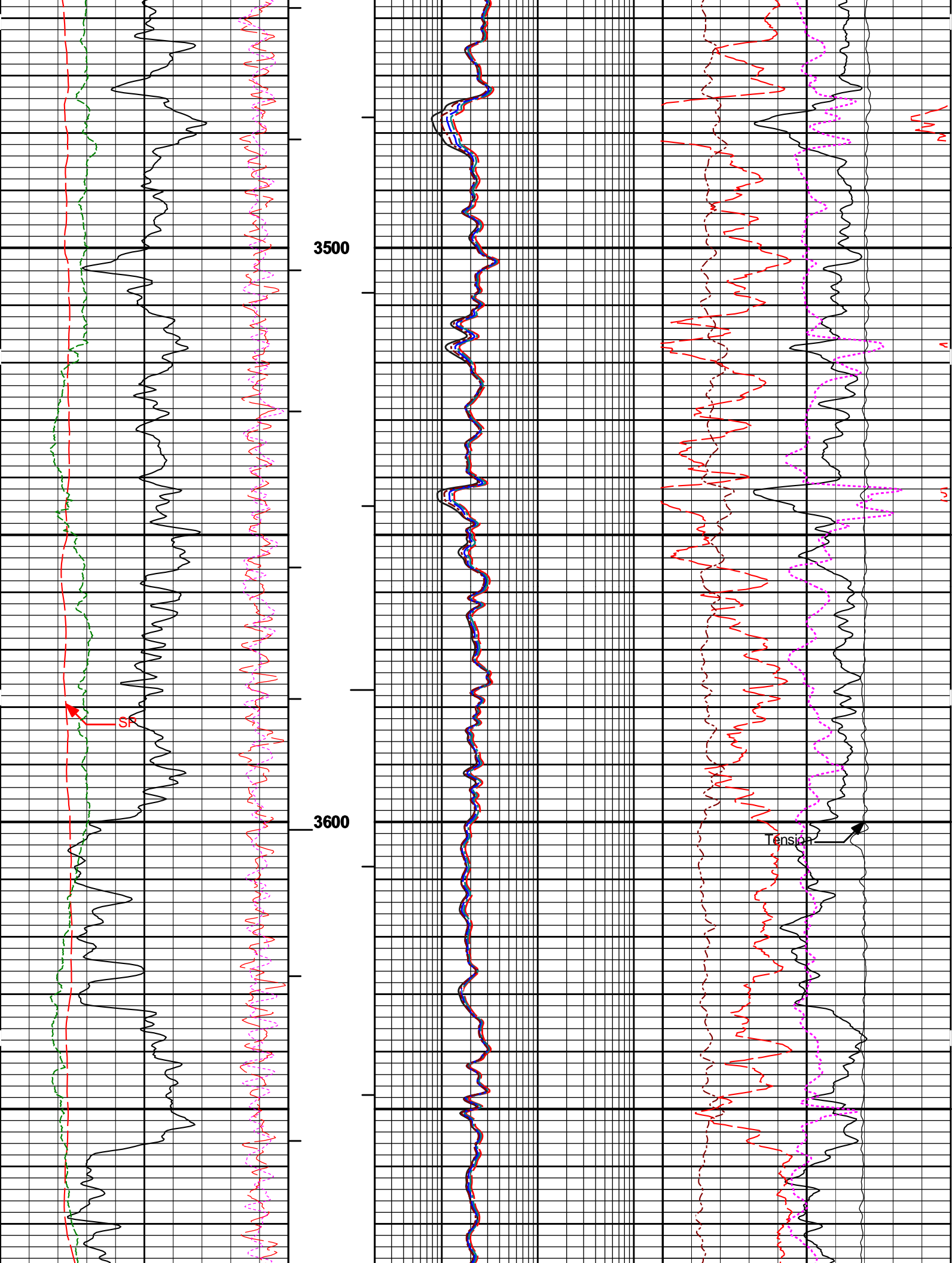


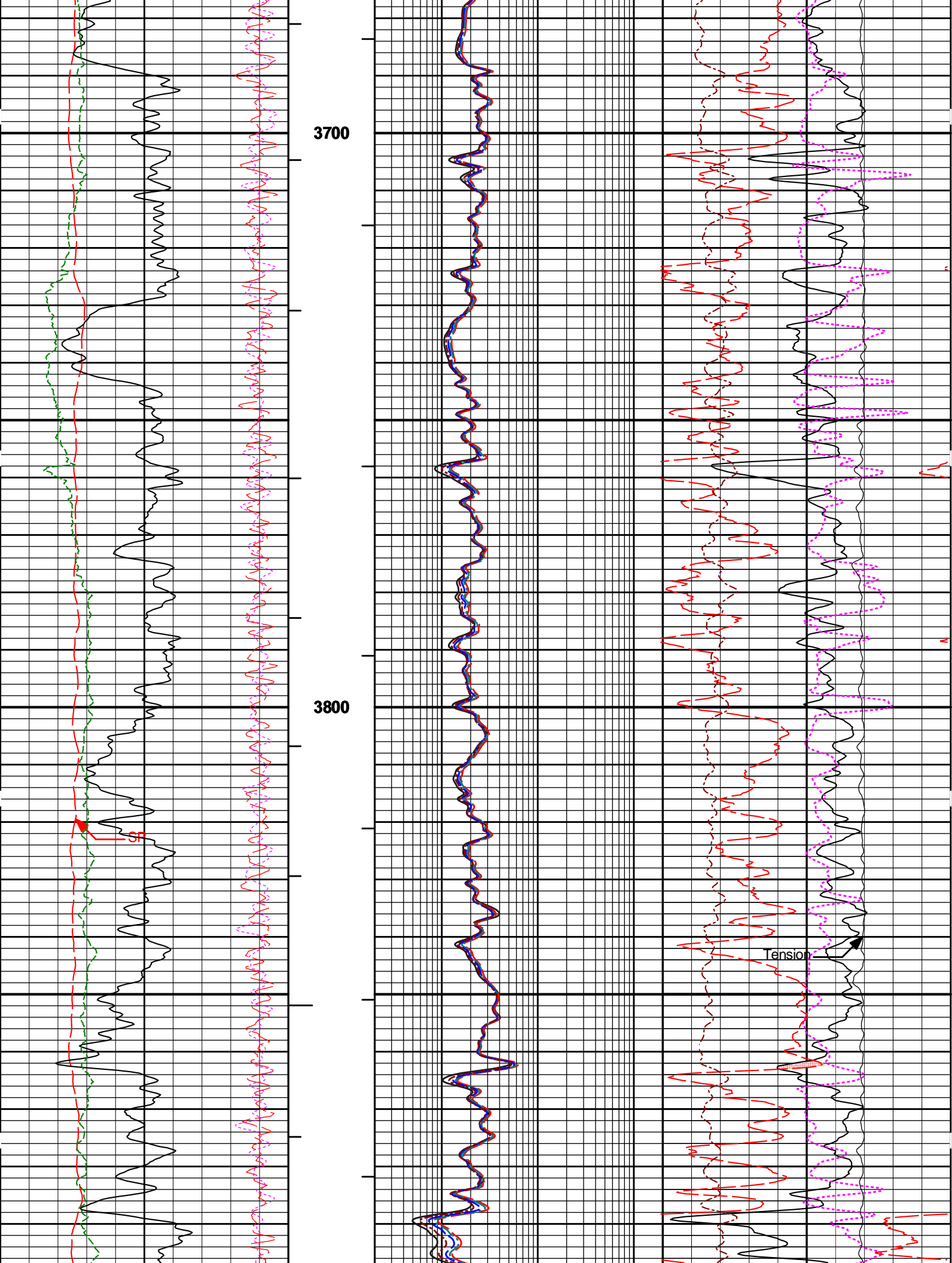


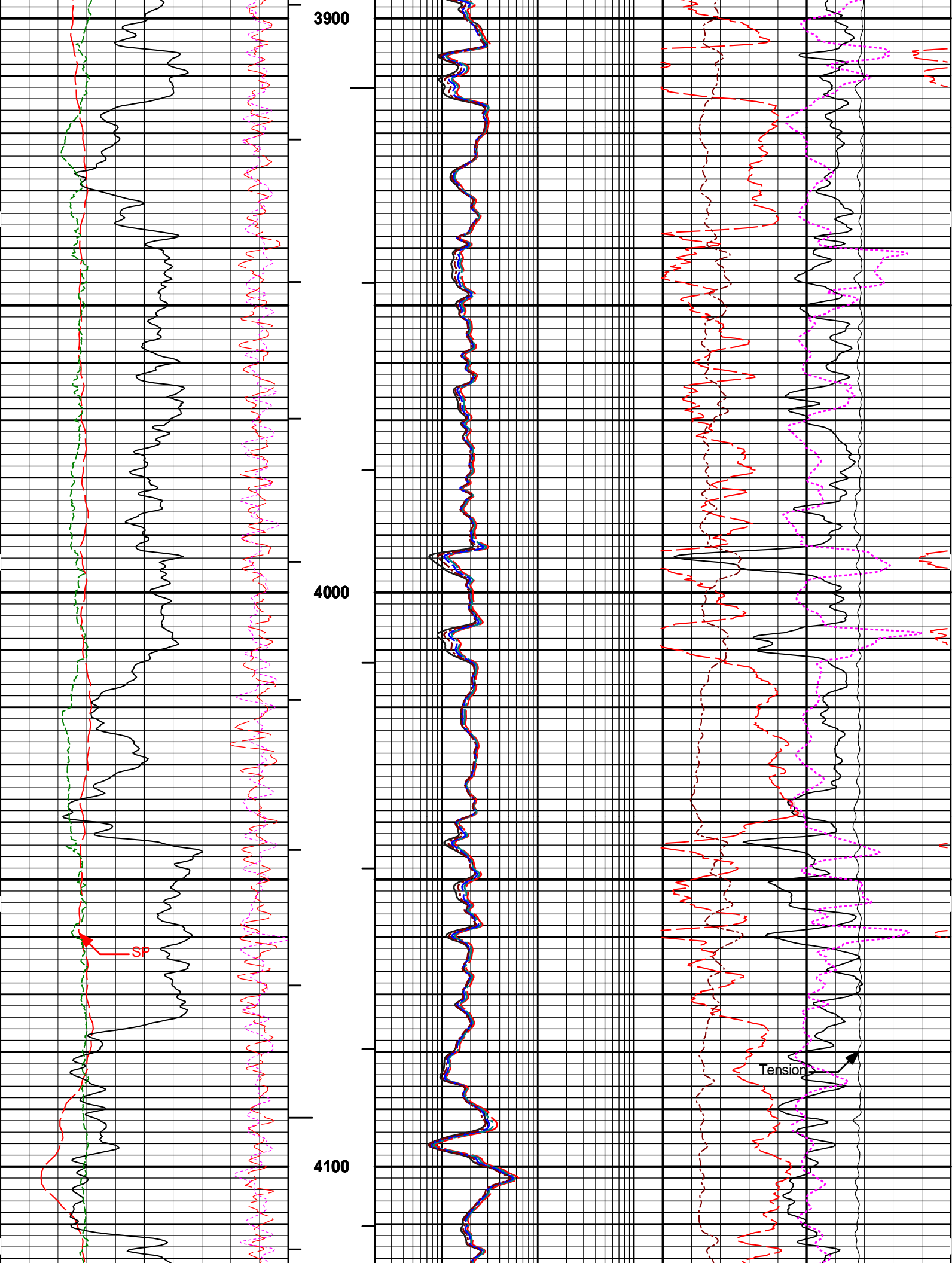


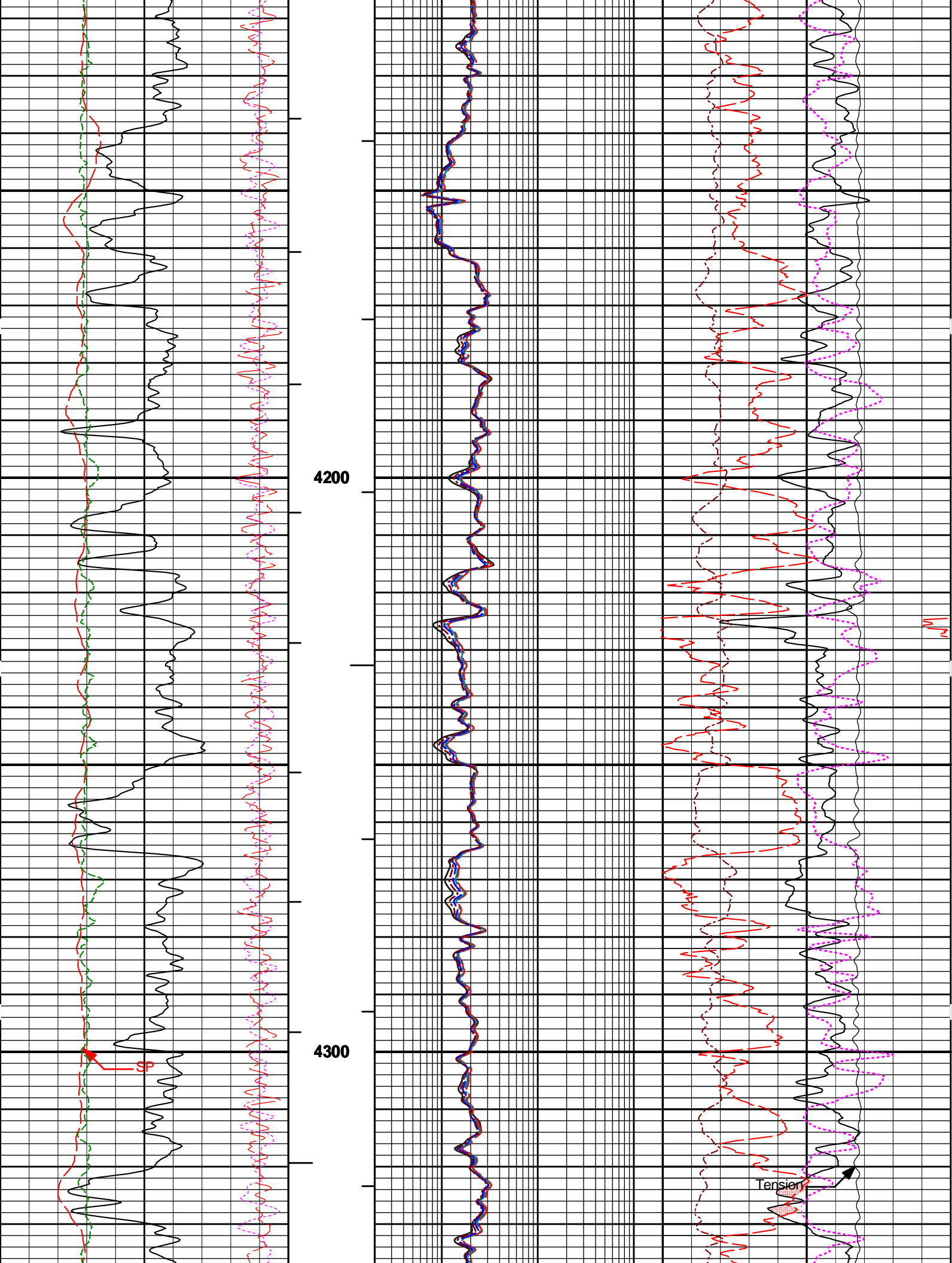


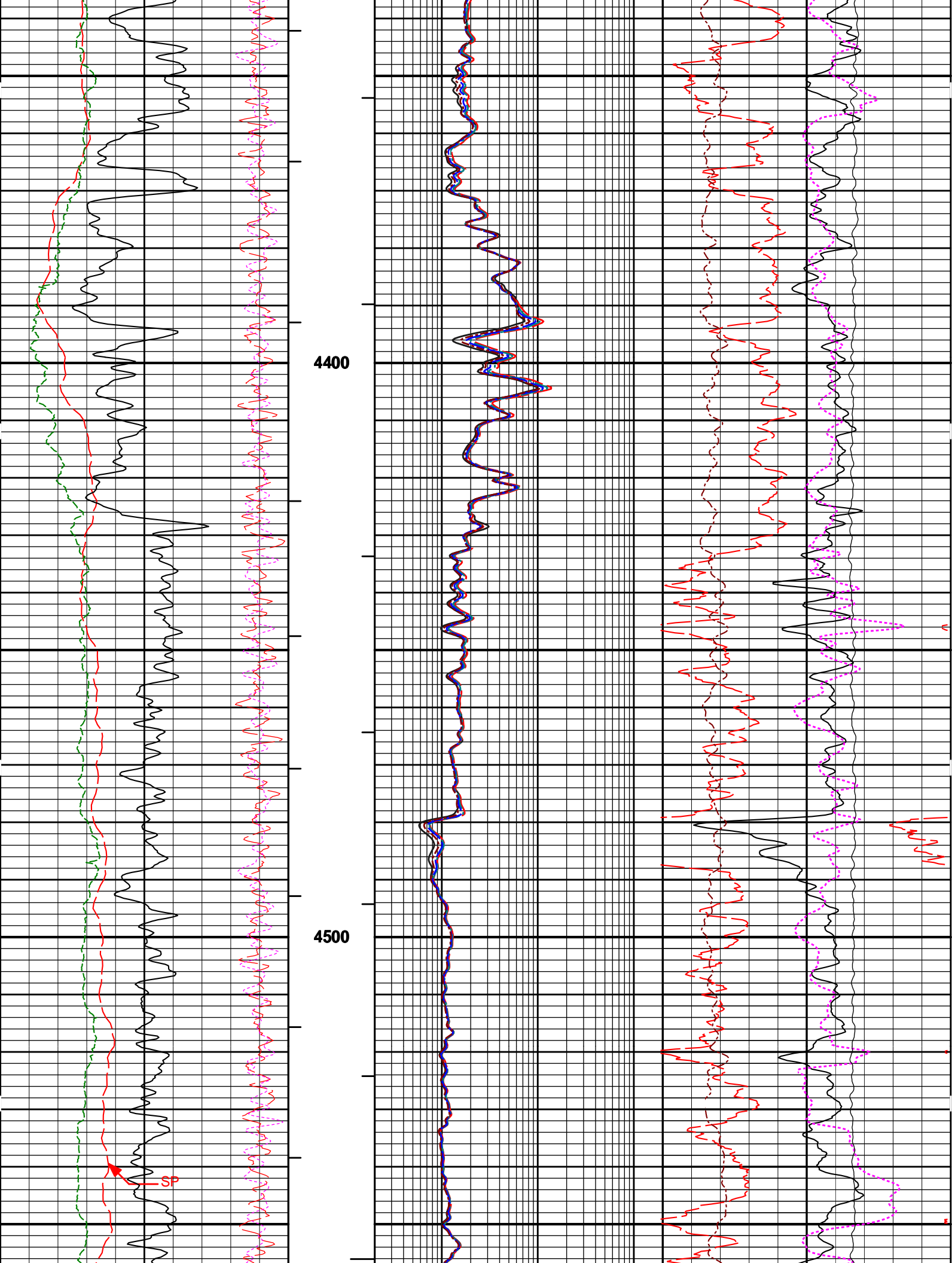


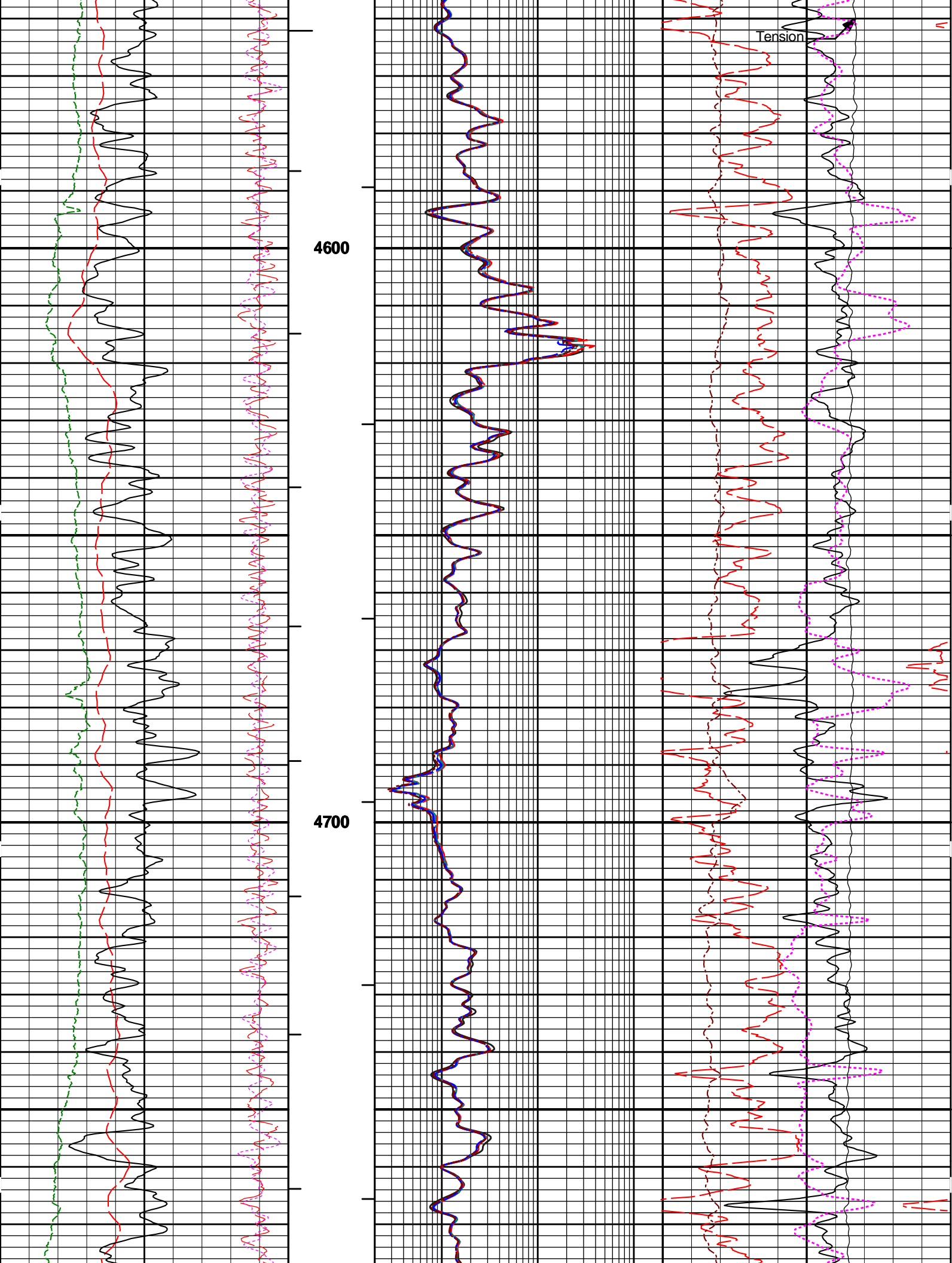


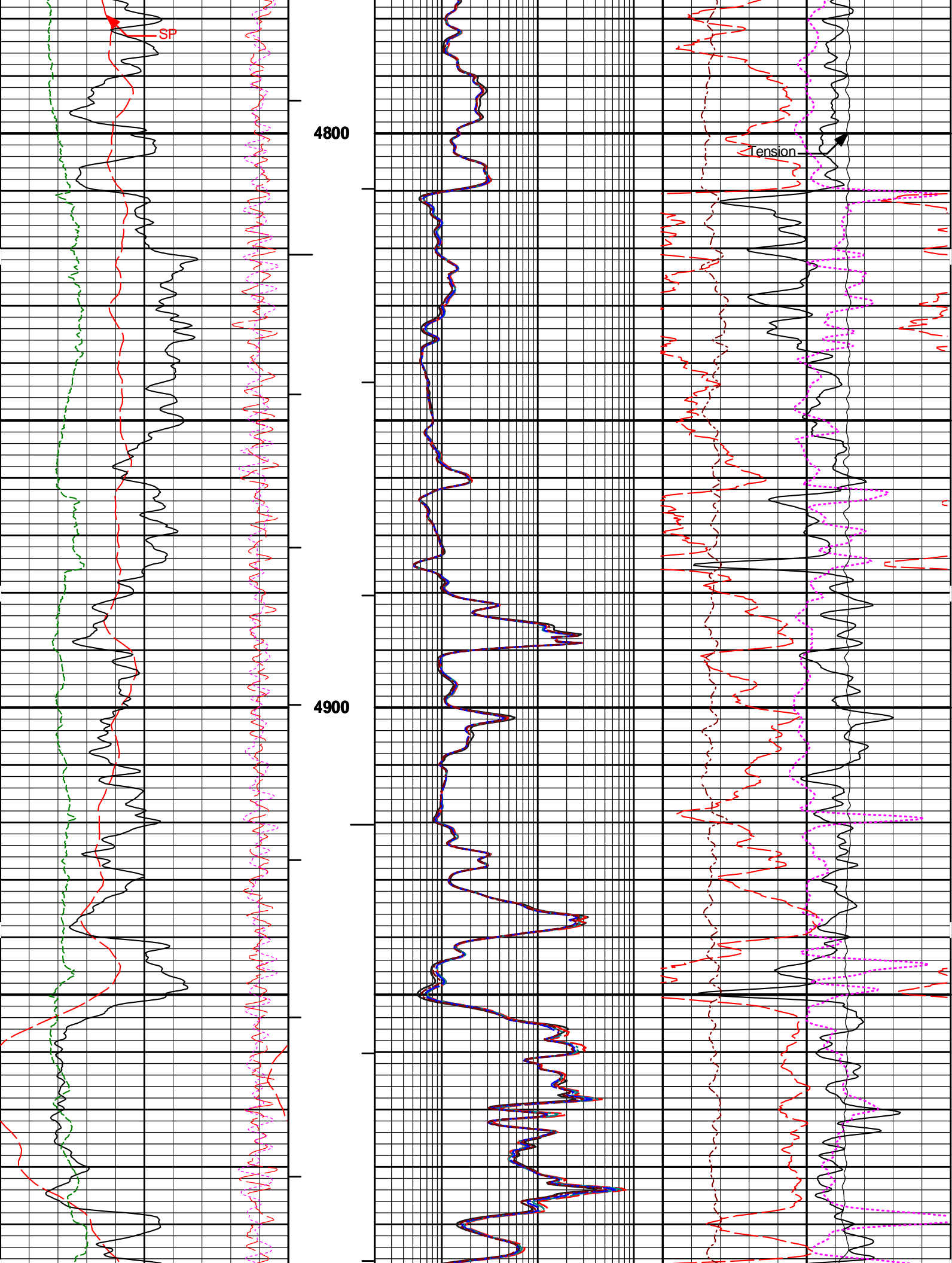


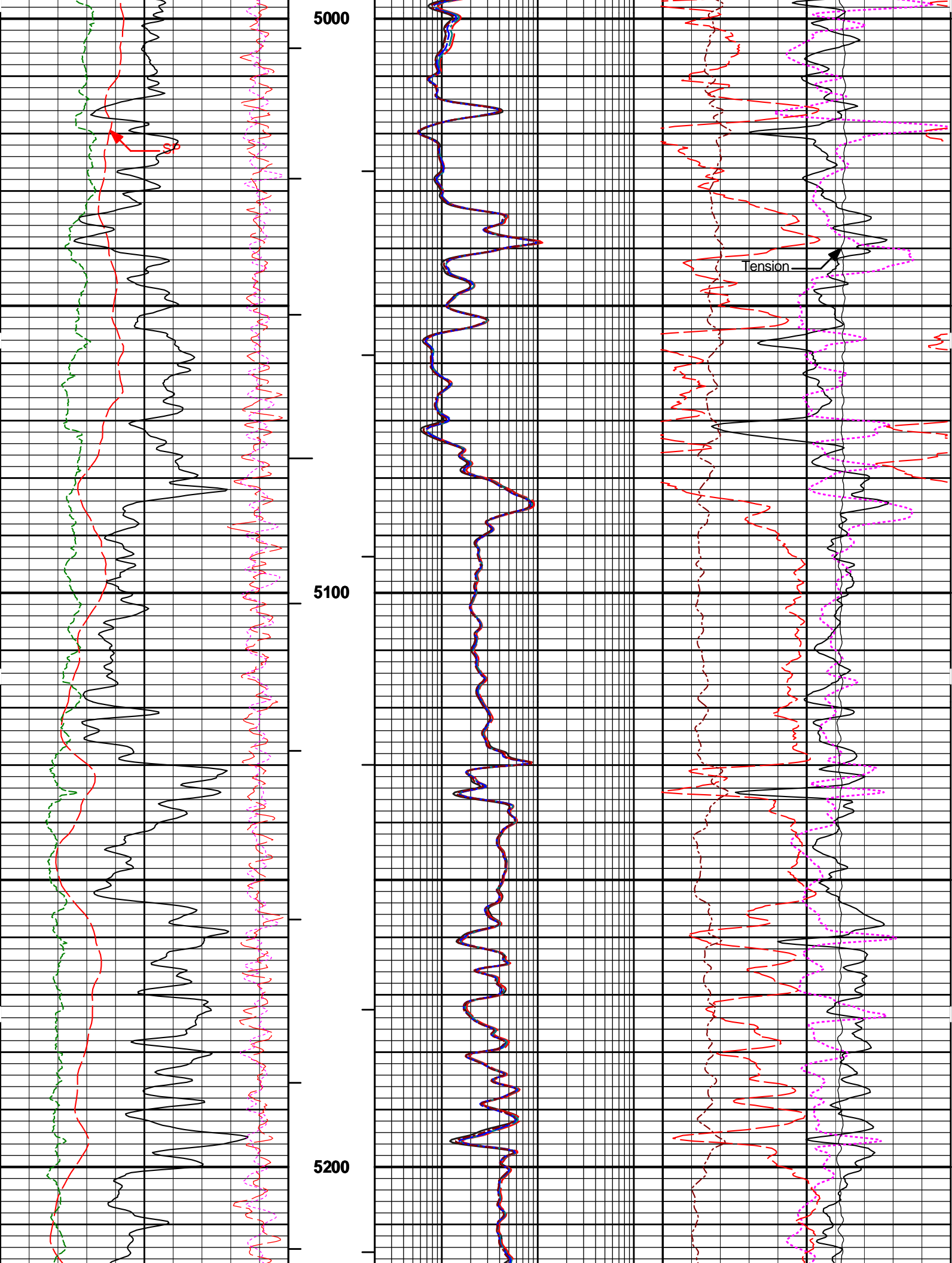


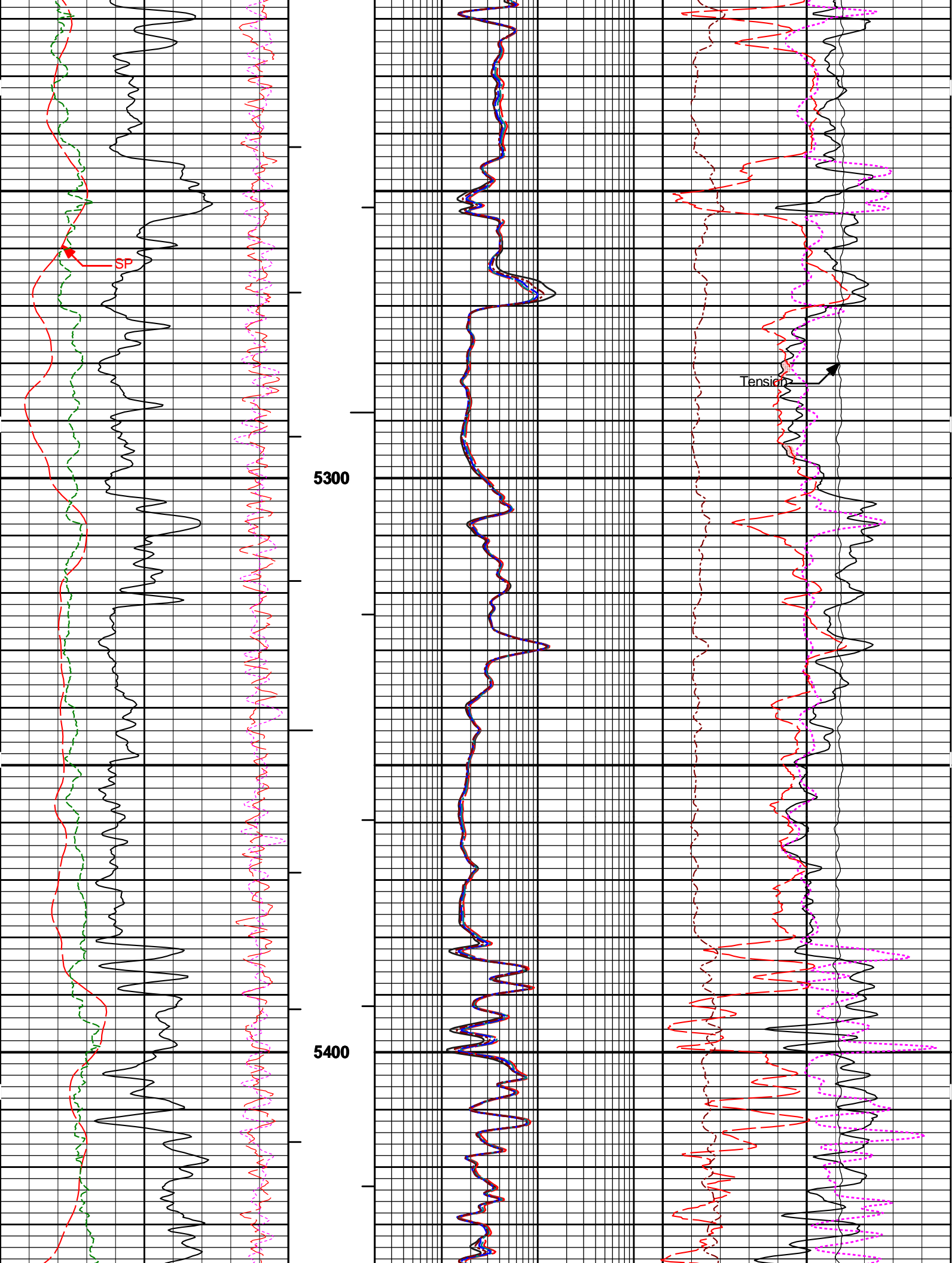


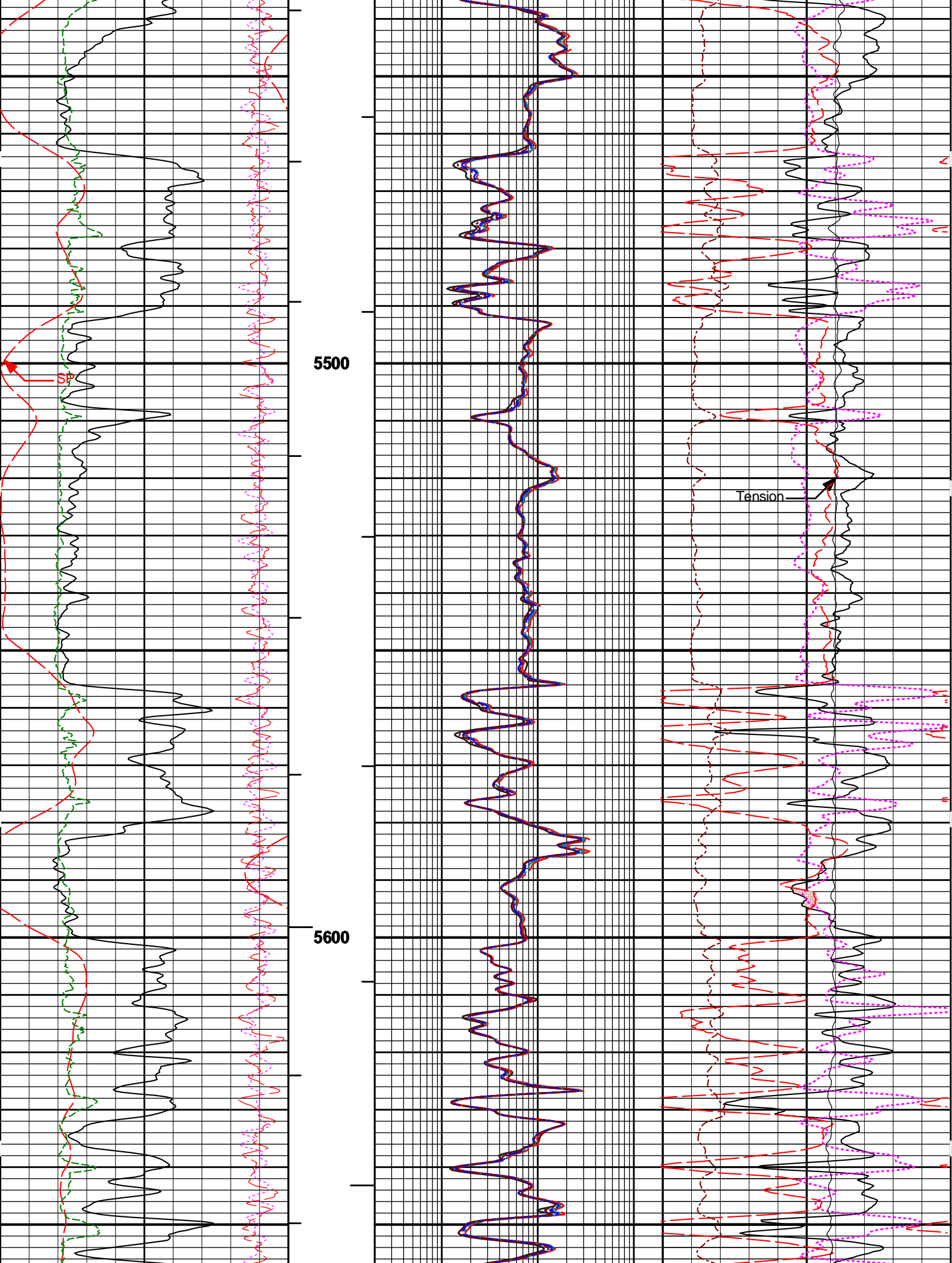


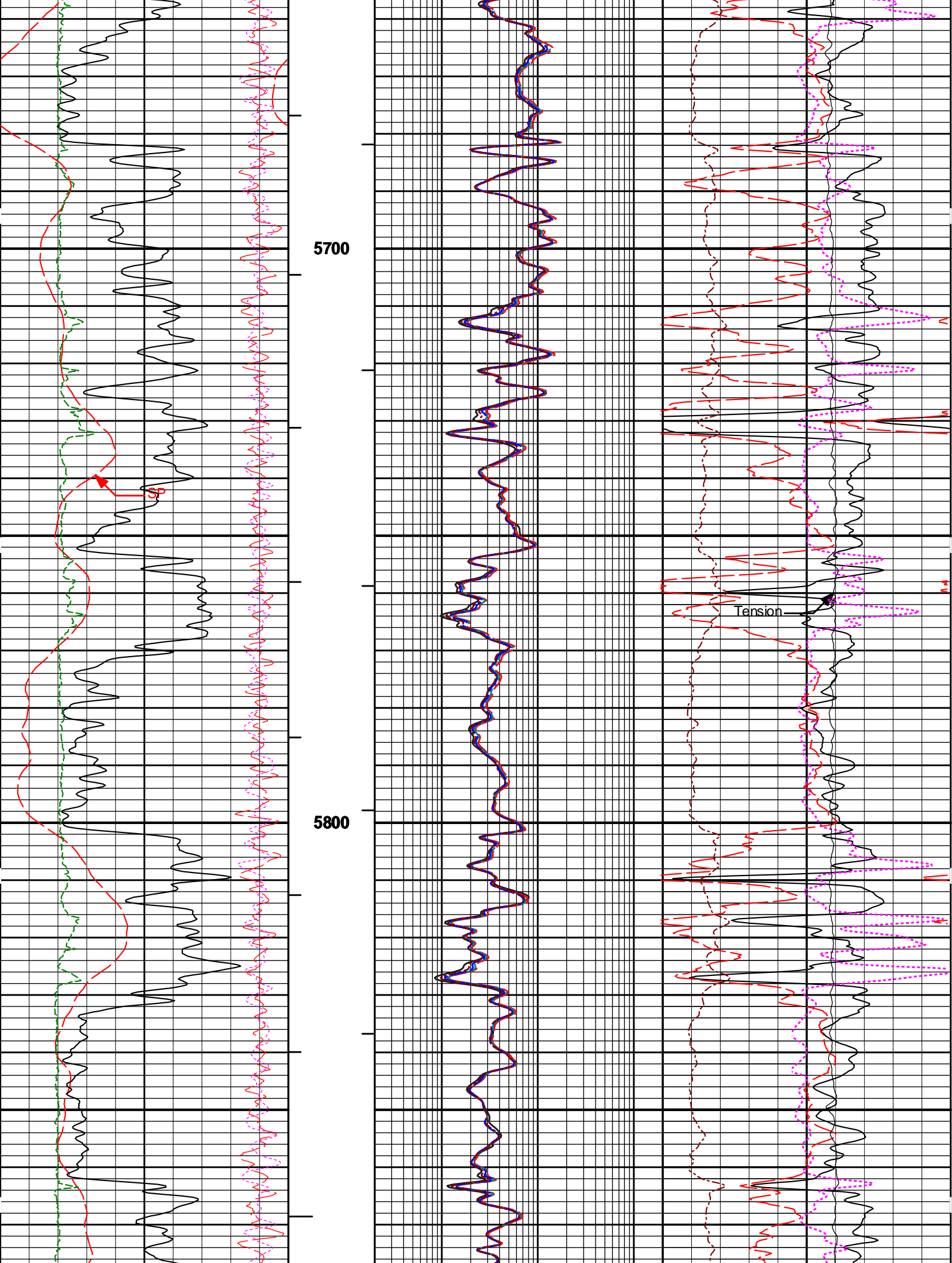


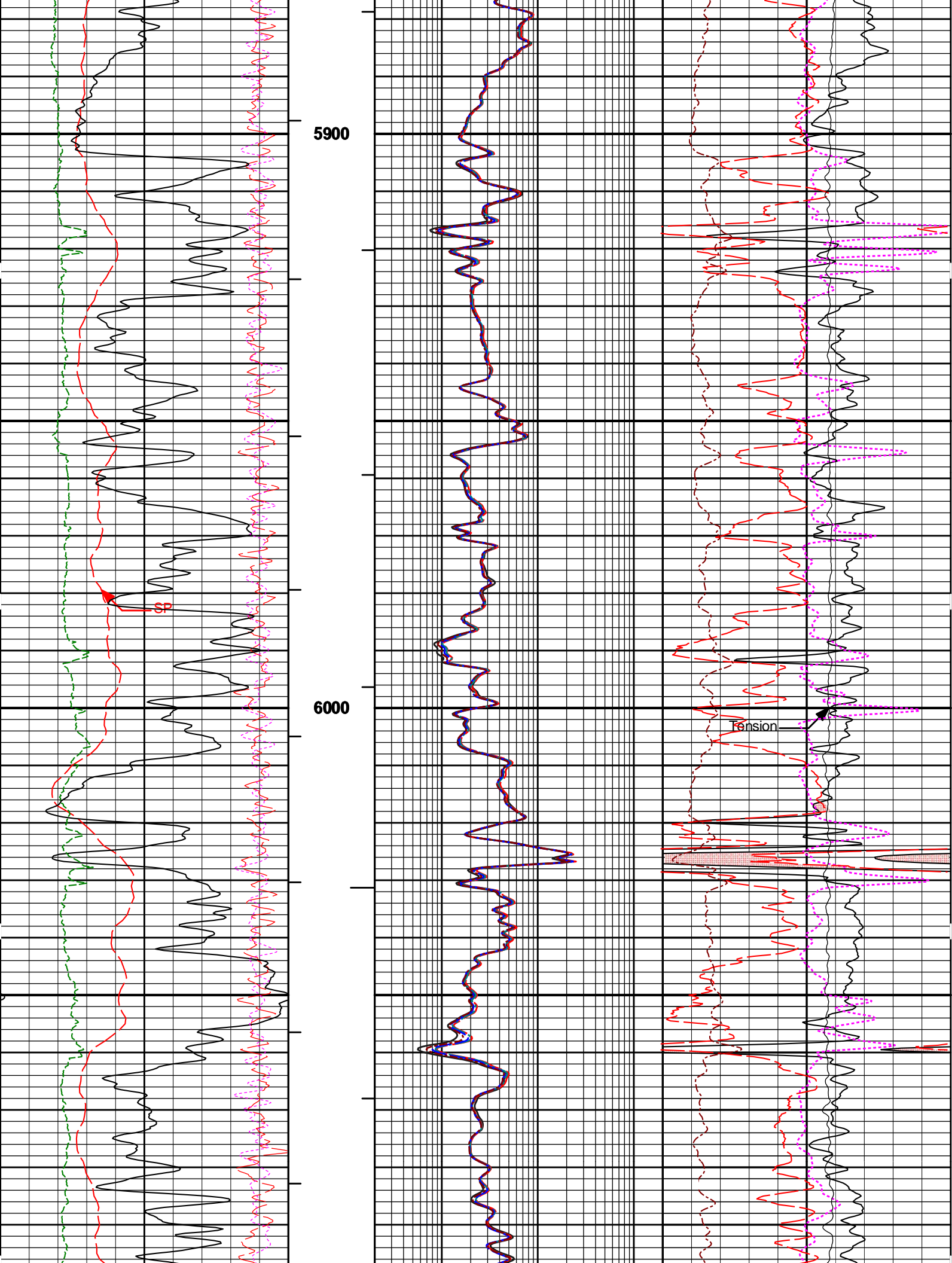


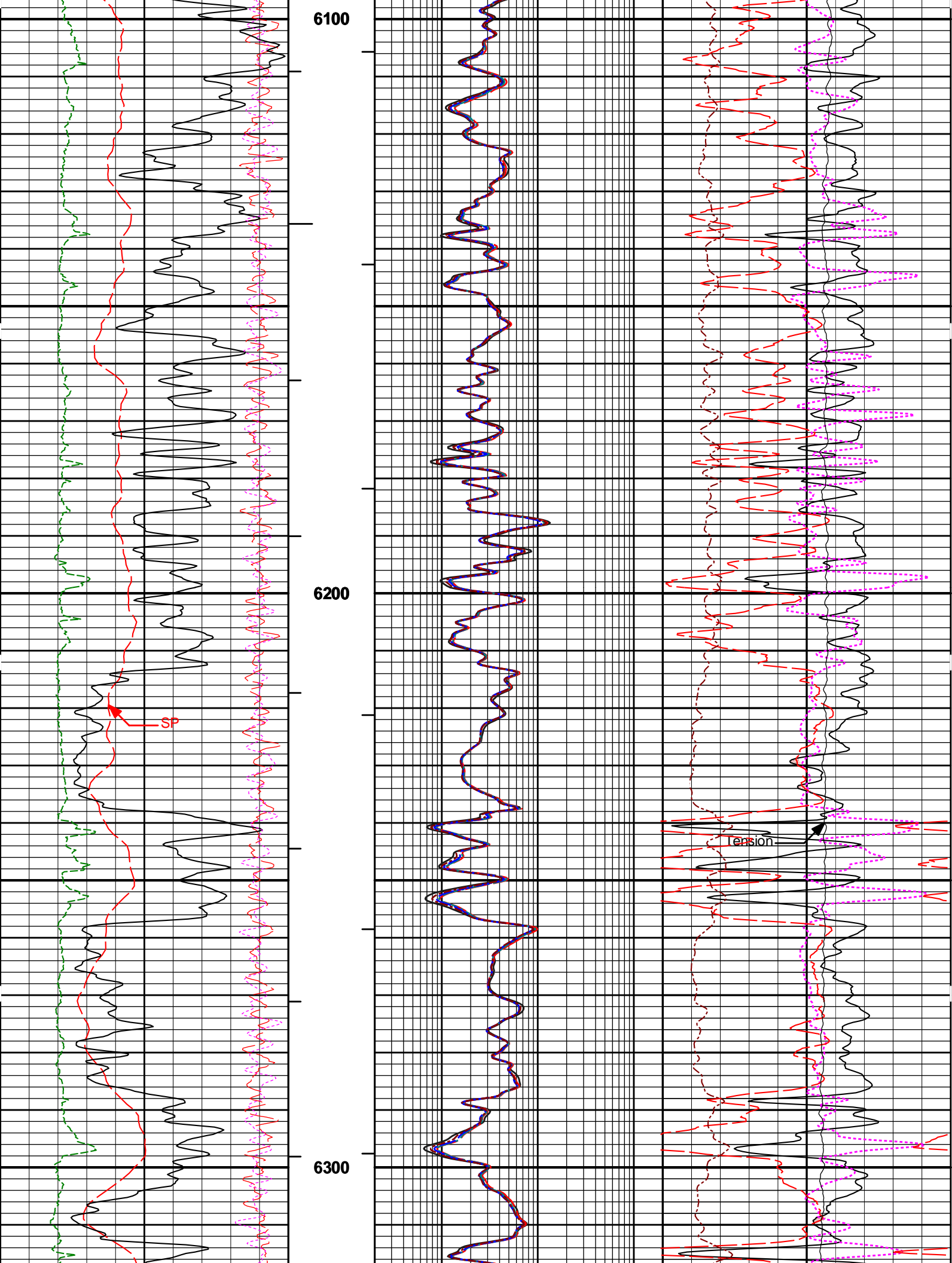


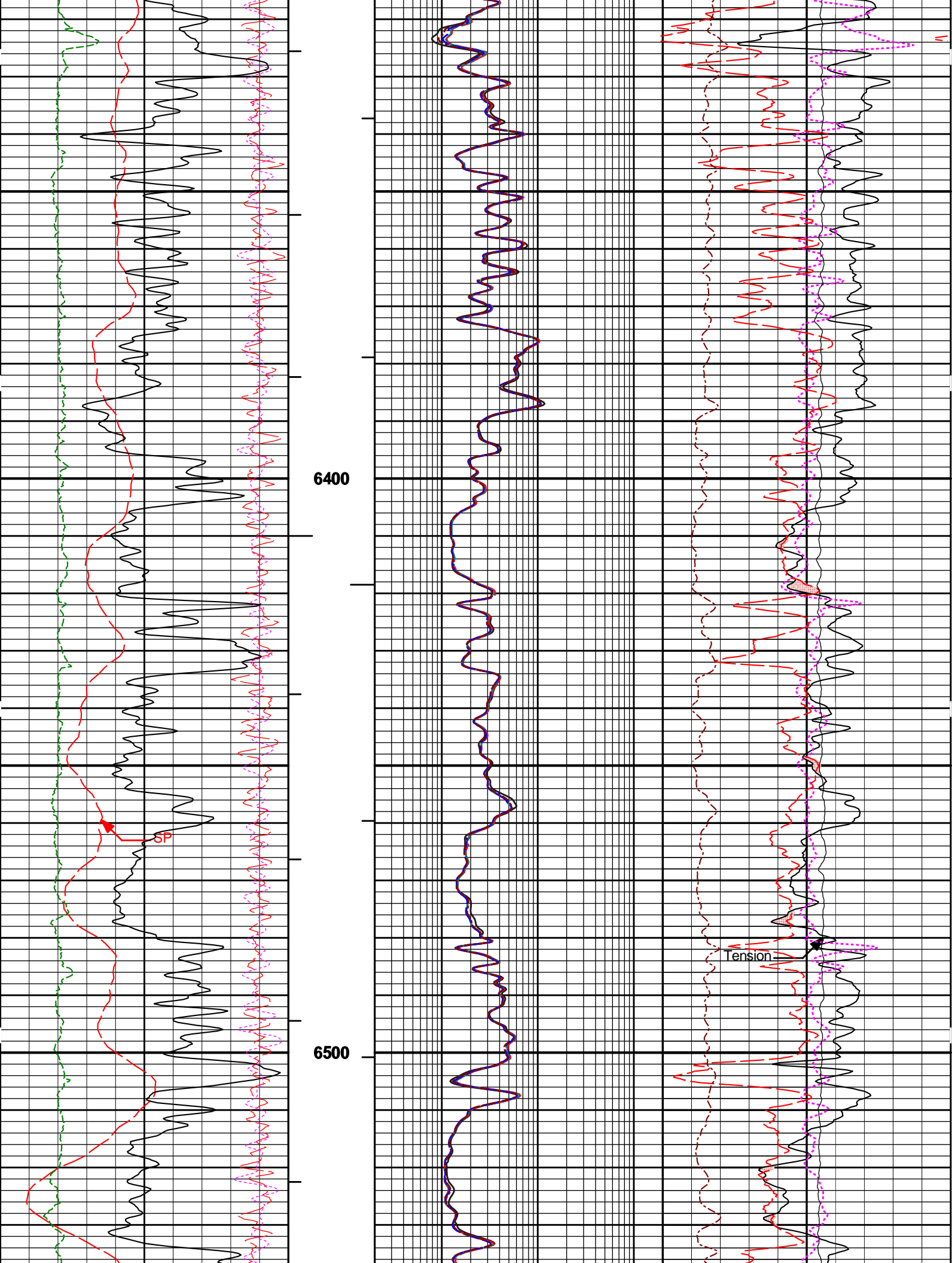


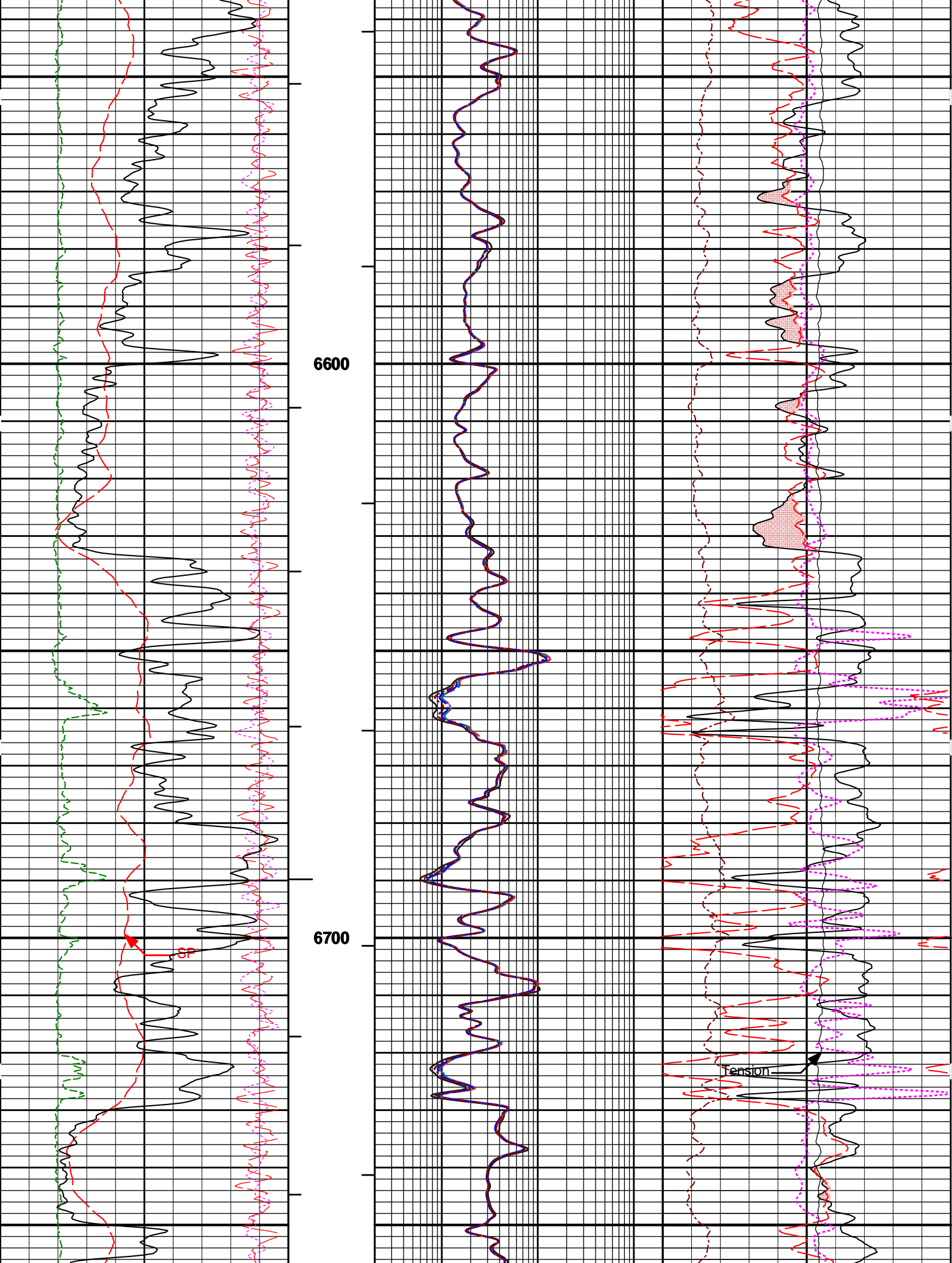


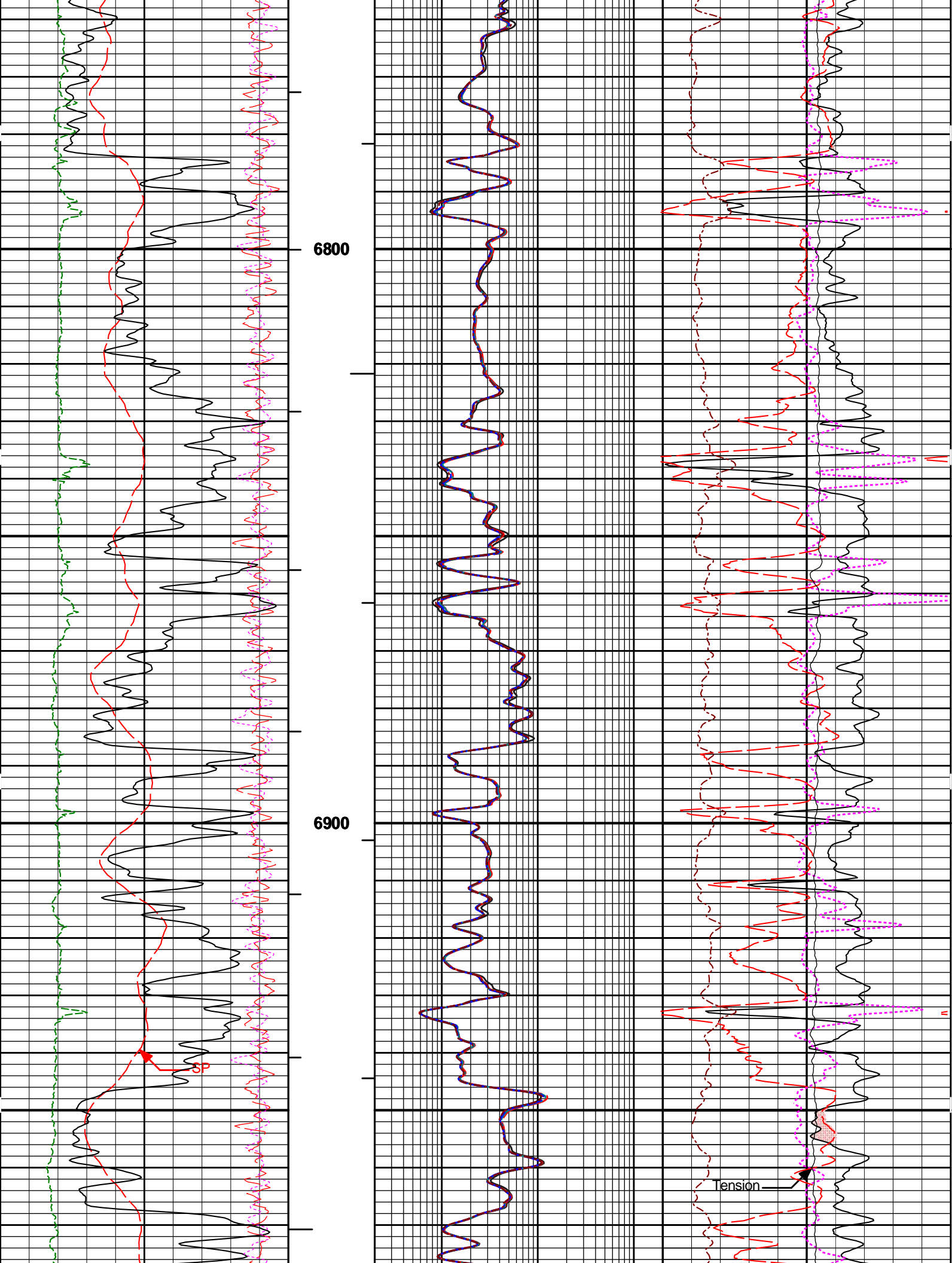


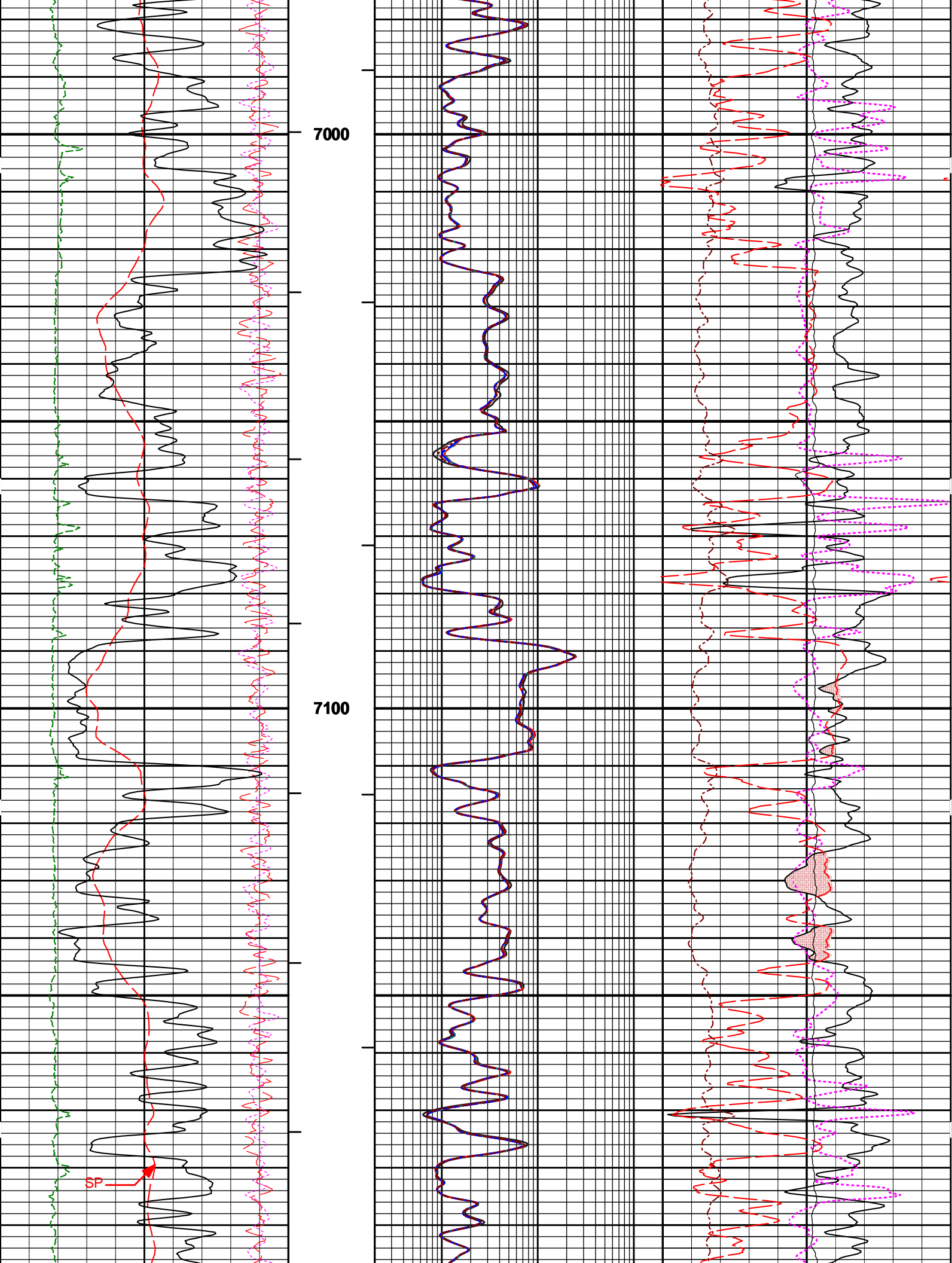


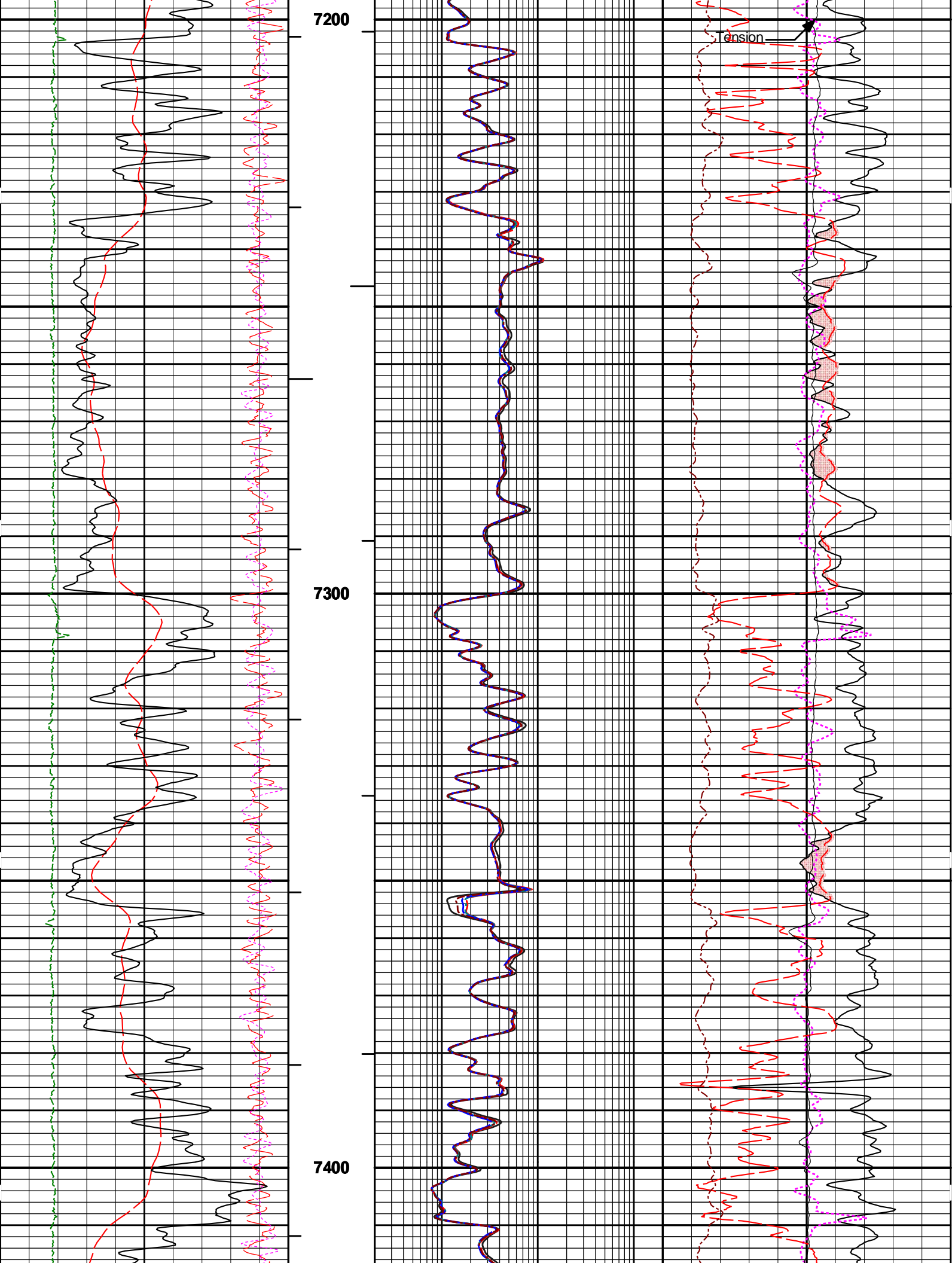


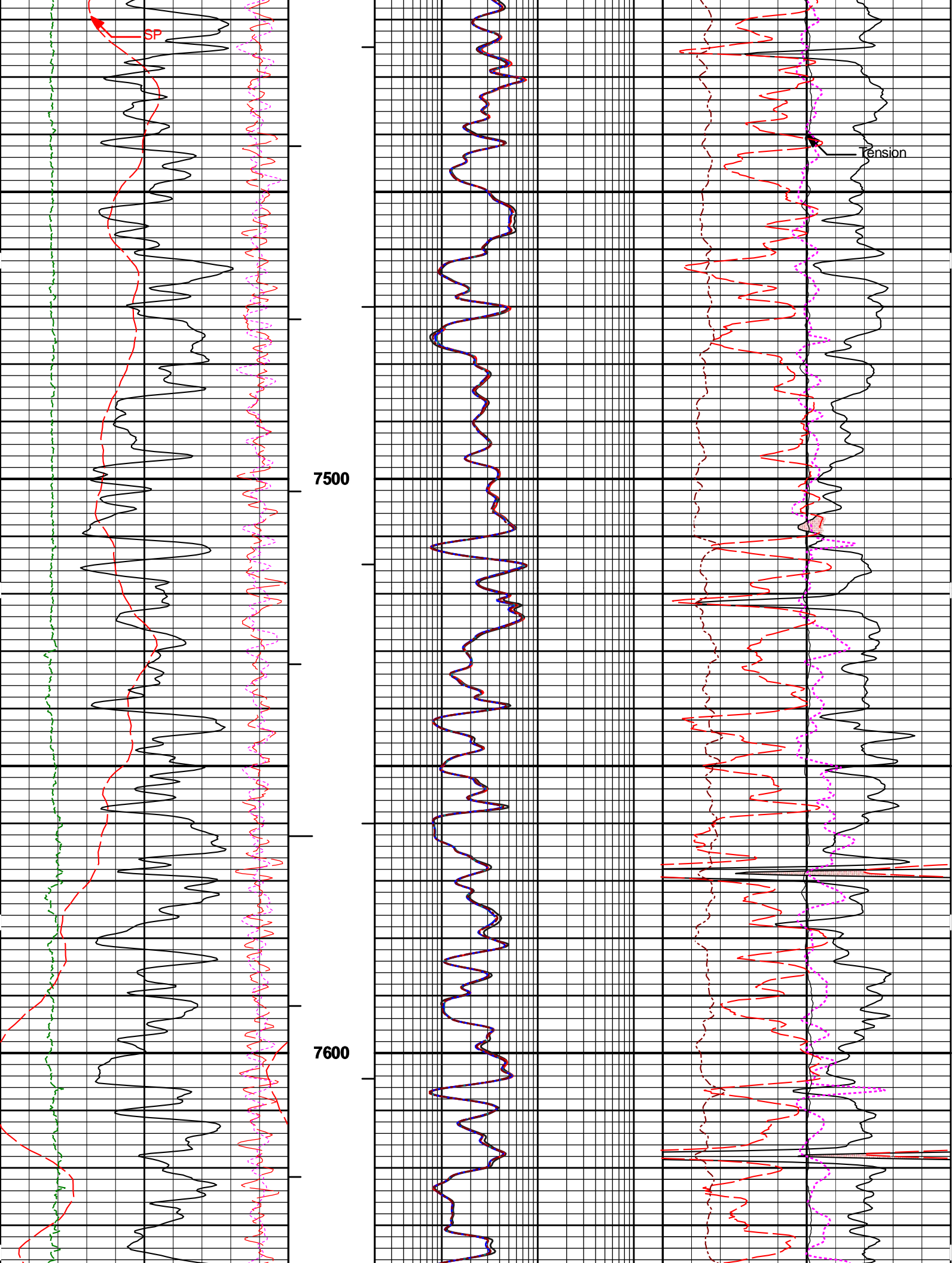


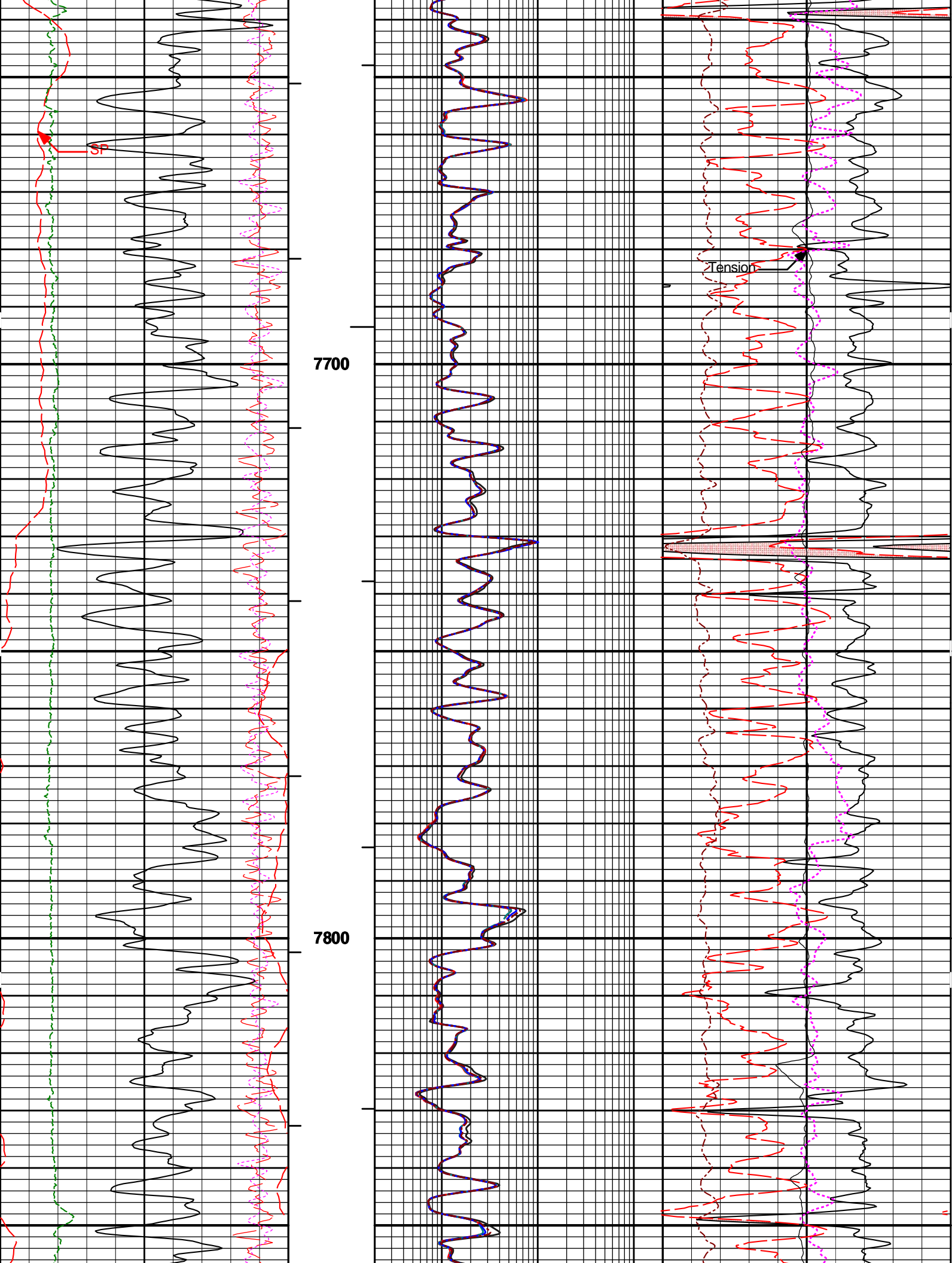


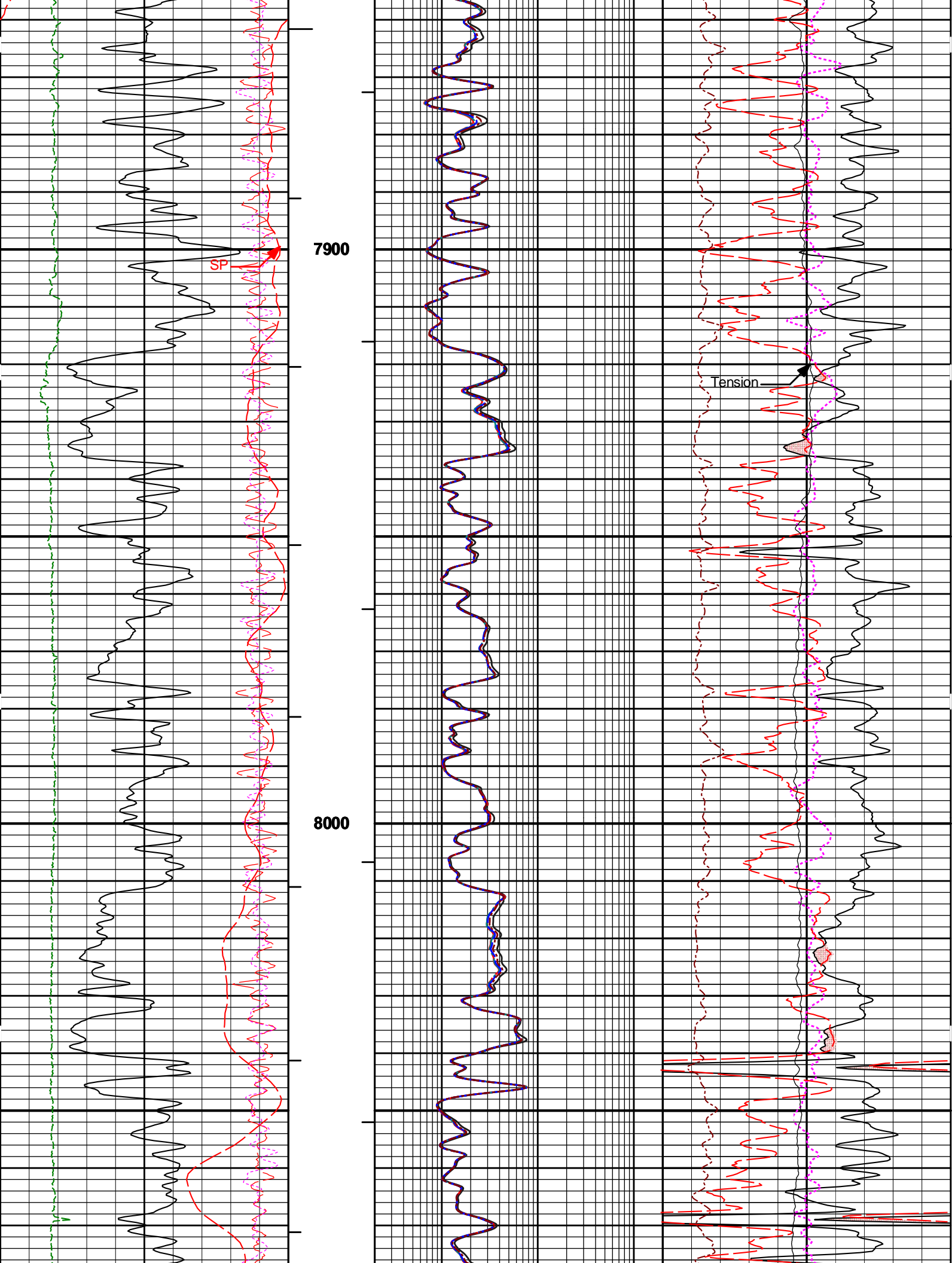


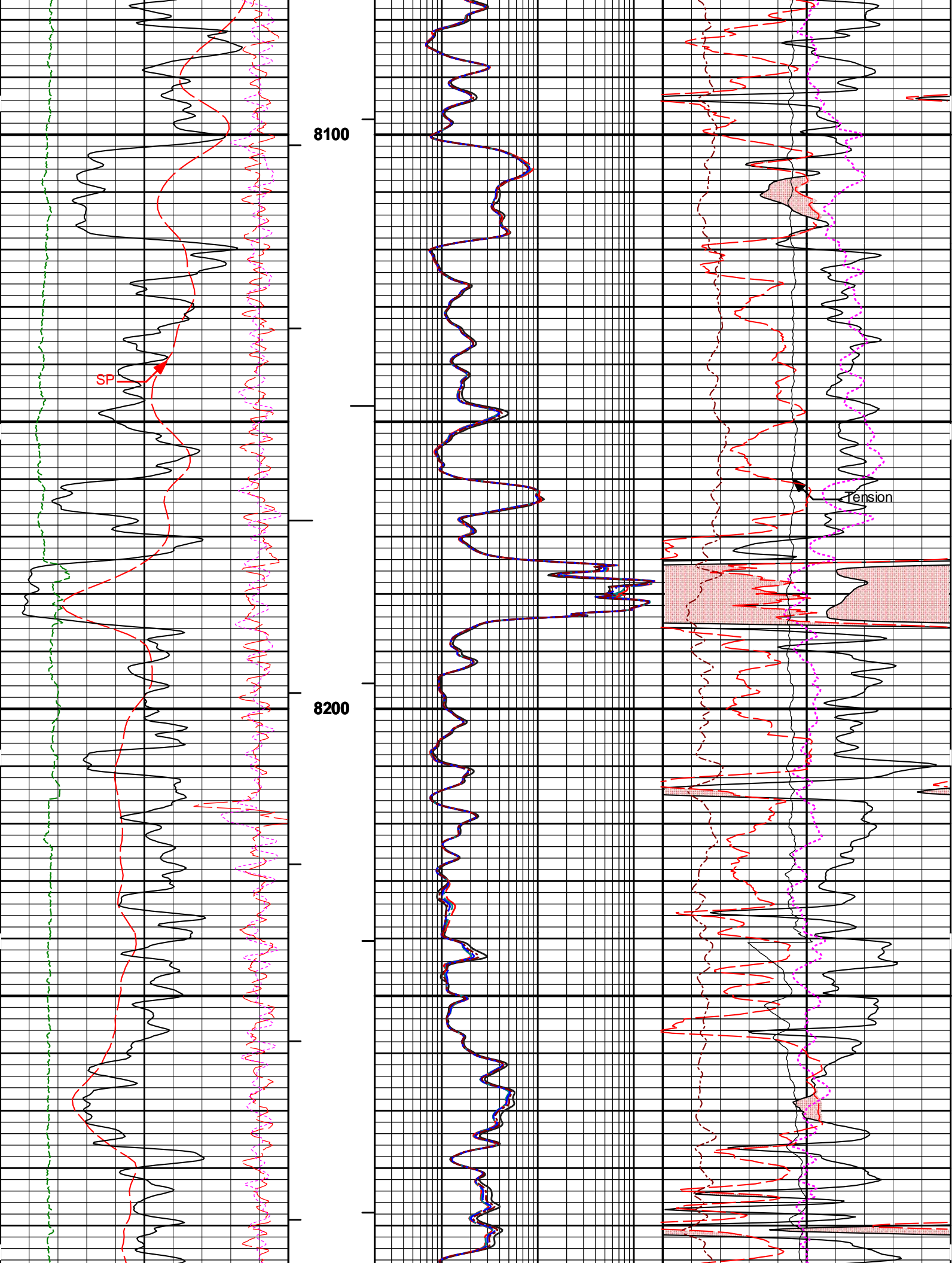


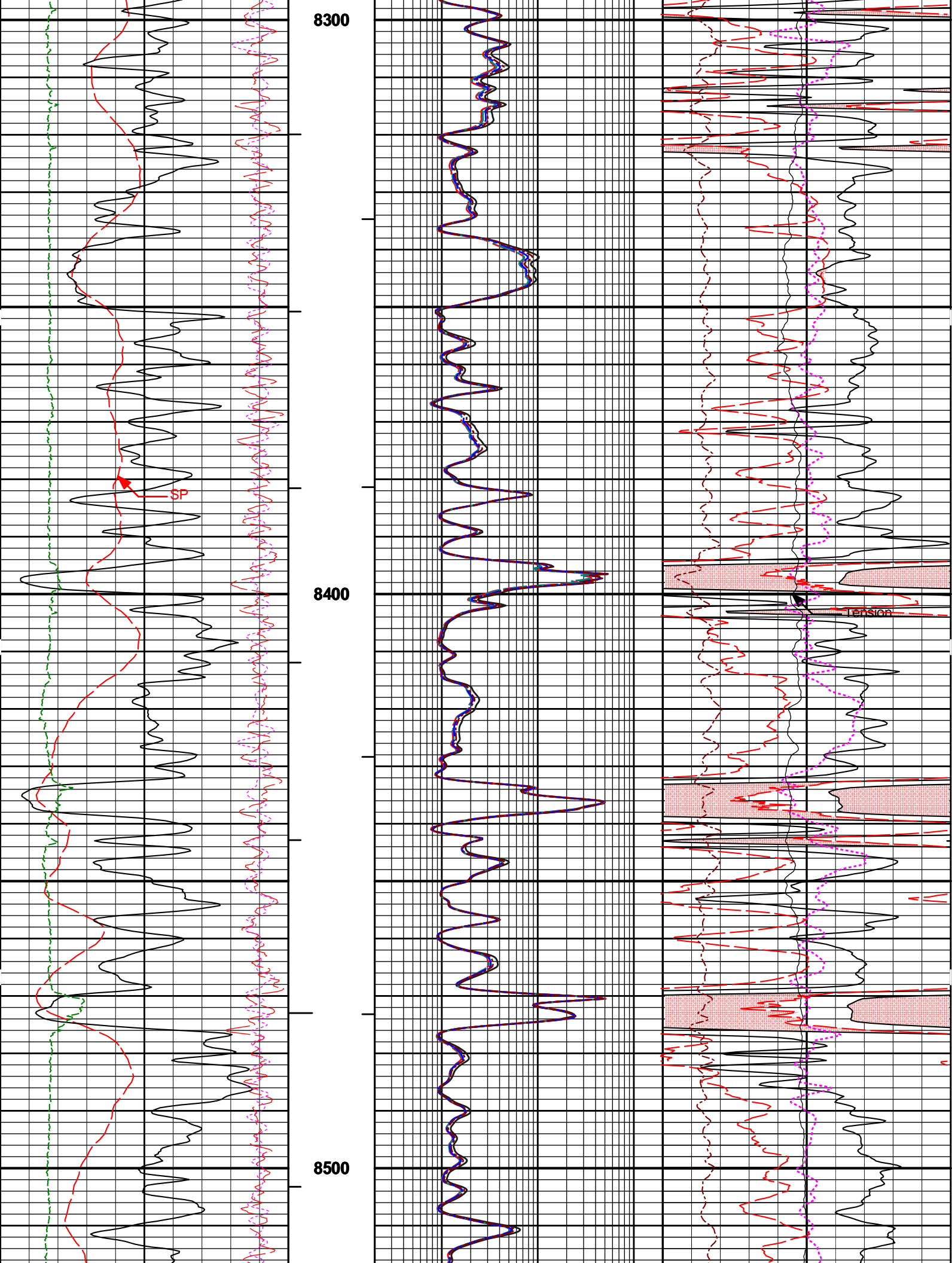


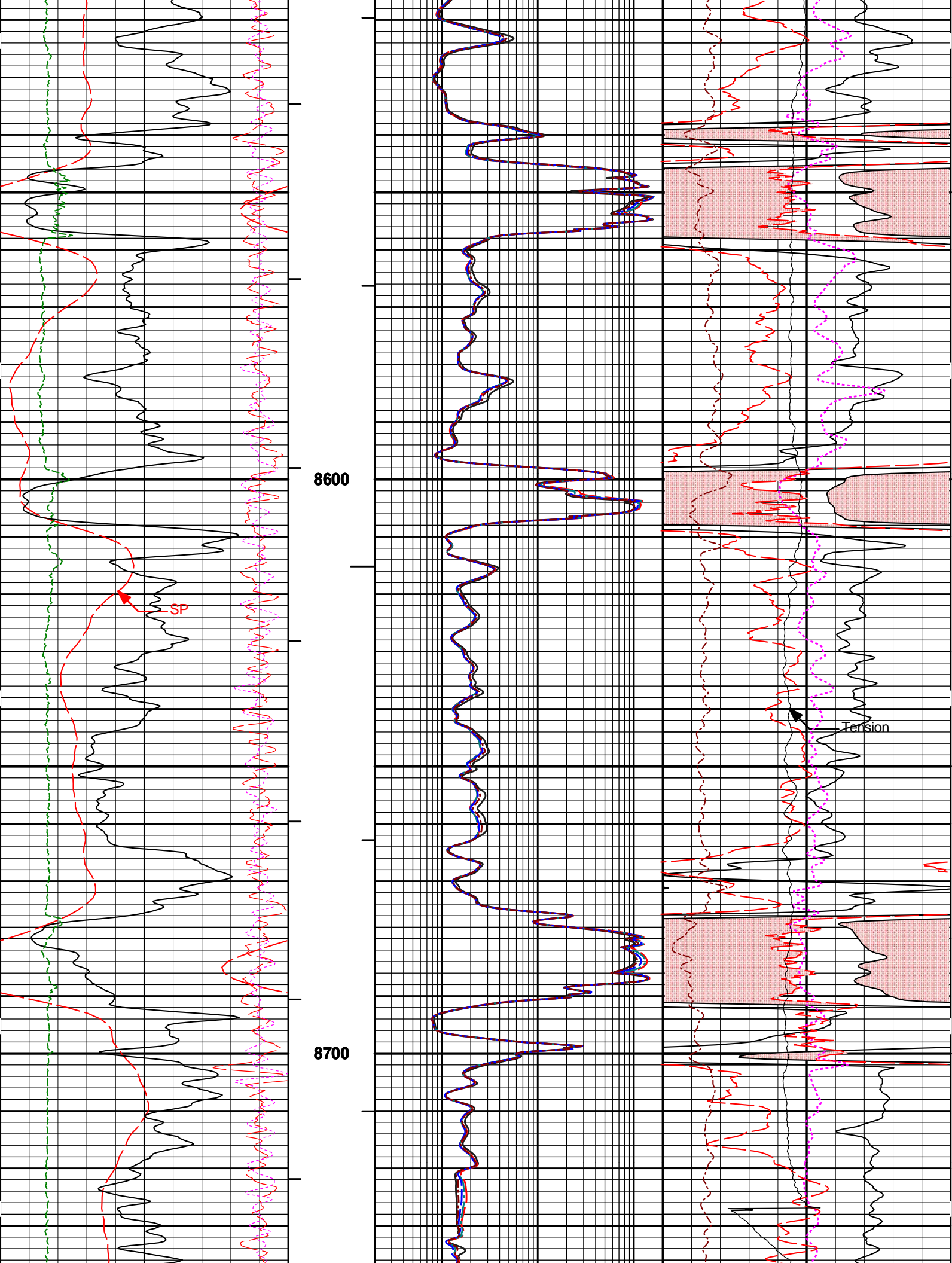


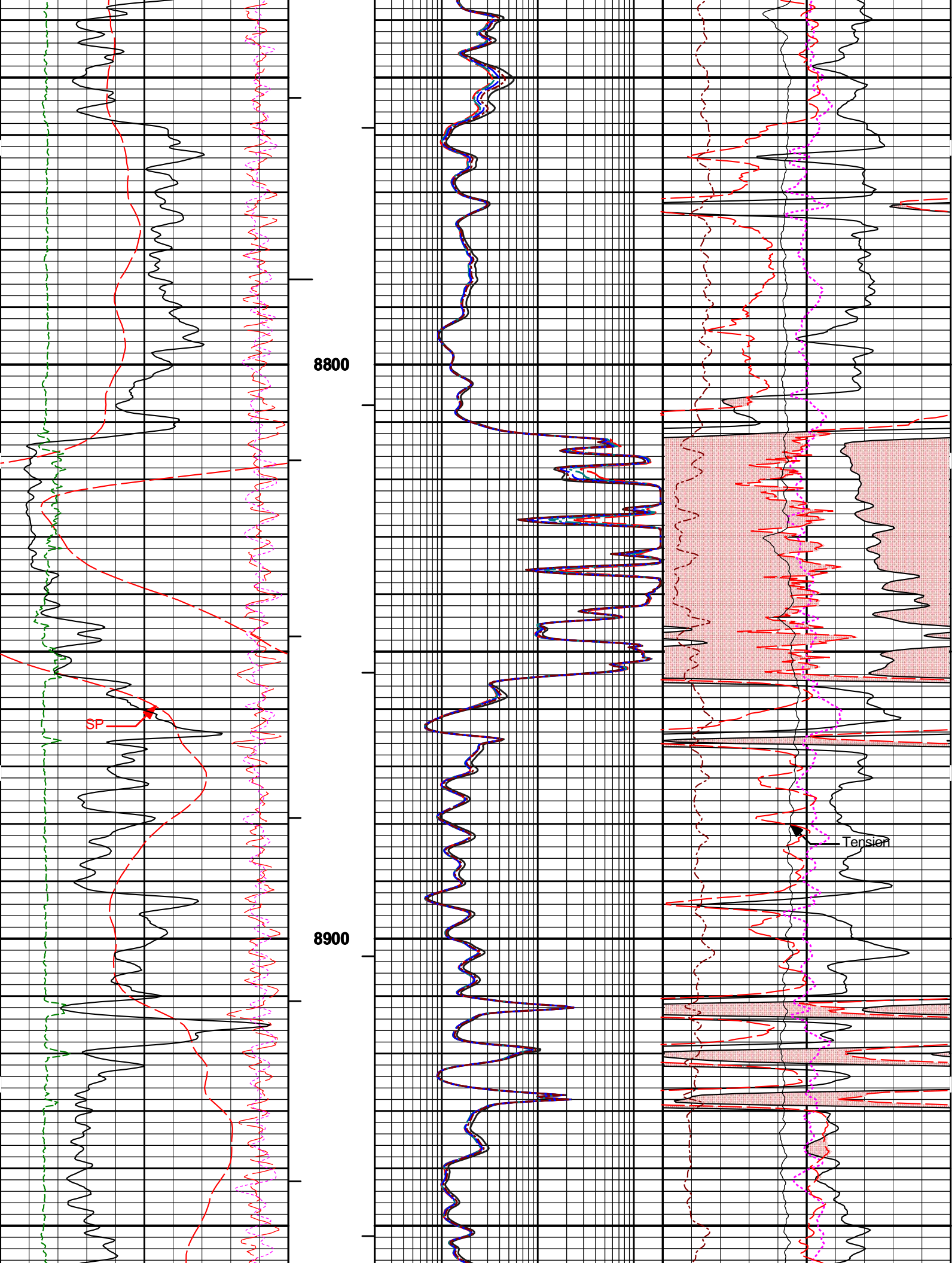


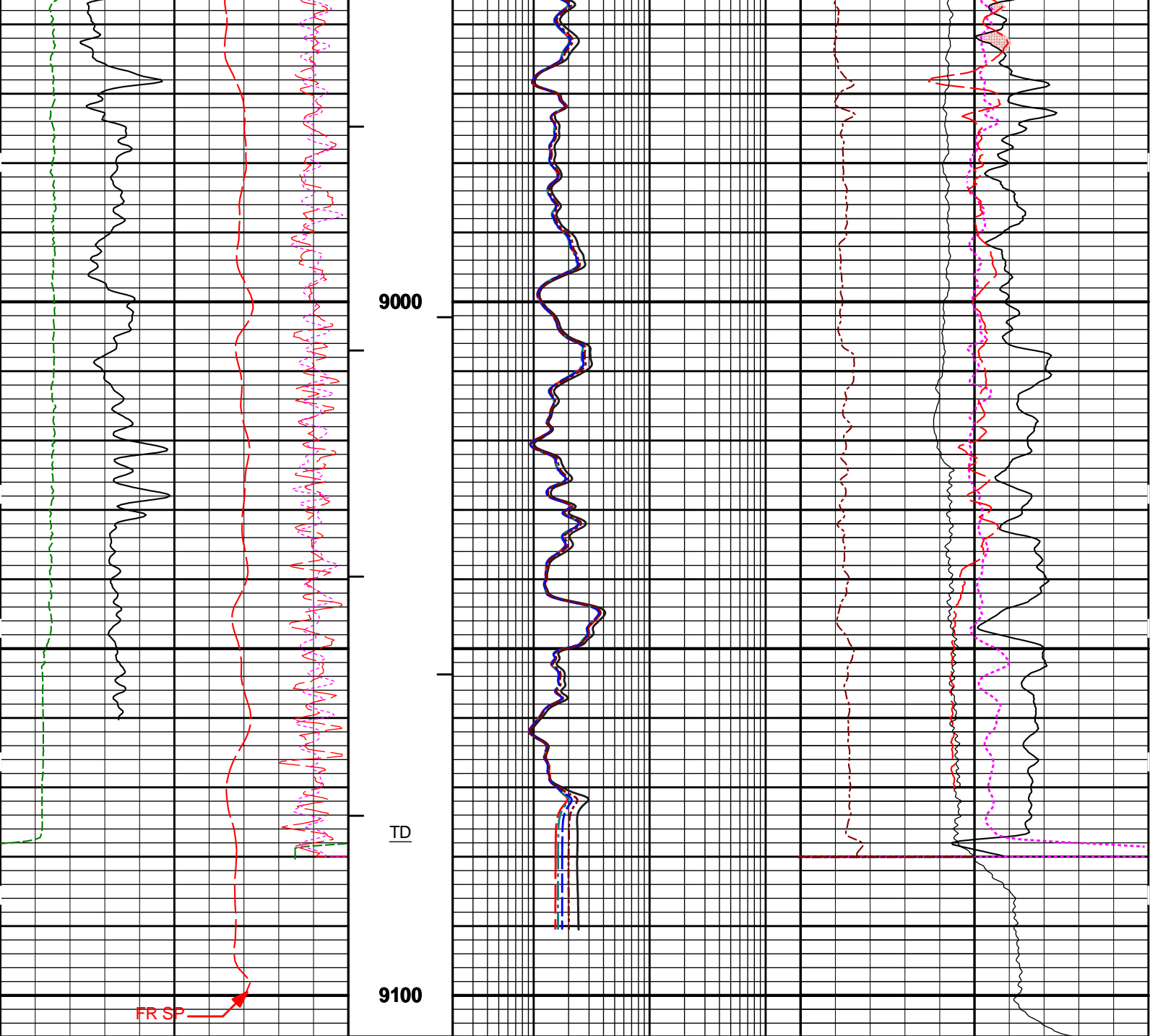












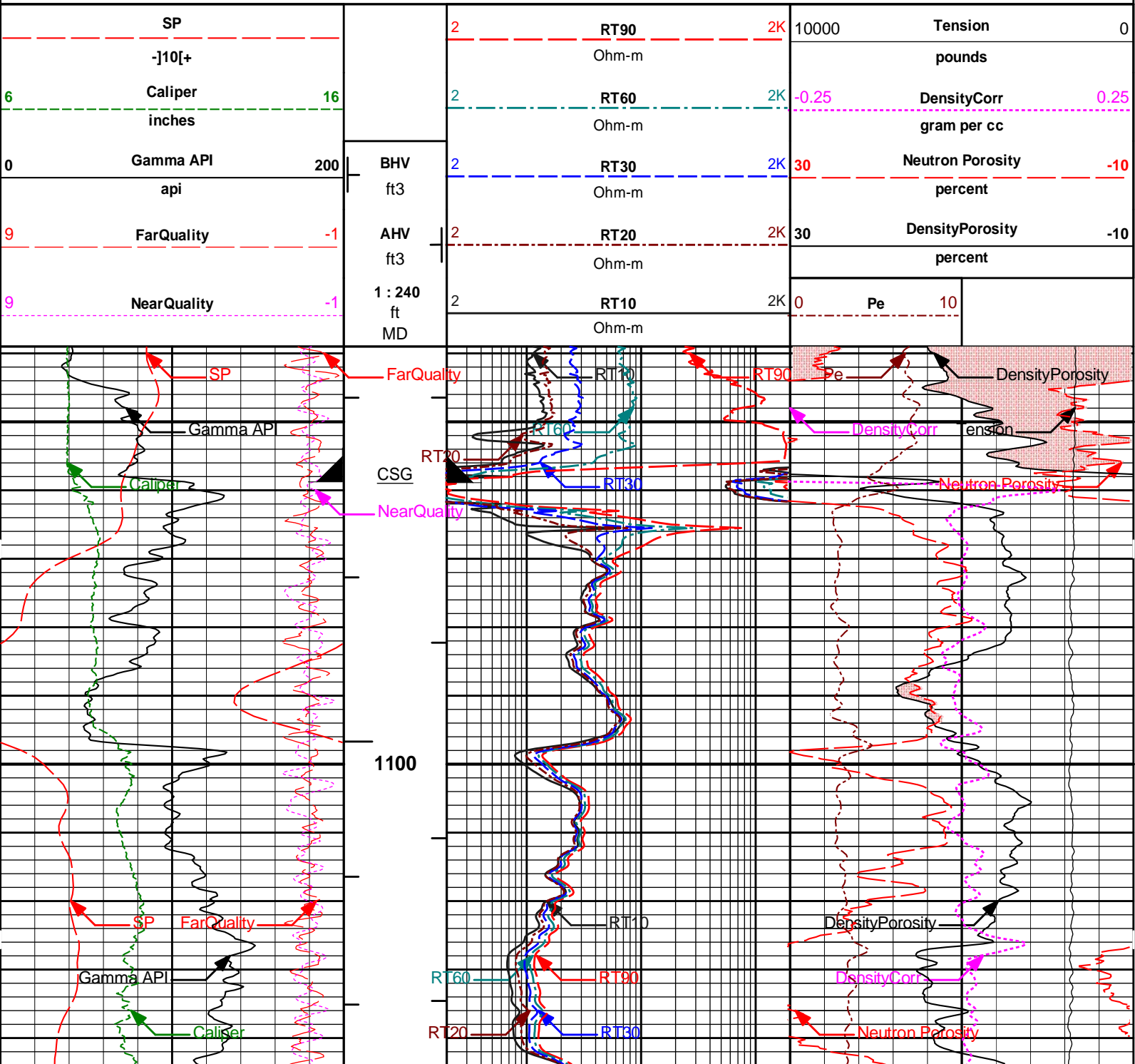
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					Ohm-m				
9	FarQuality	-1	AHV ft3	2	RT20	2K	30	DensityPorosity	-10
					Ohm-m			percent	
0	Gamma API	200	BHV ft3	2	RT30	2K	30	Neutron Porosity	-10
	api				Ohm-m			percent	
6	Caliper	16		2	RT60	2K	-0.25	DensityCorr	0.25
	inches				Ohm-m			gram per cc	
	SP			2	RT90	2K	10000	Tension	0
	-]10[+				Ohm-m			pounds	

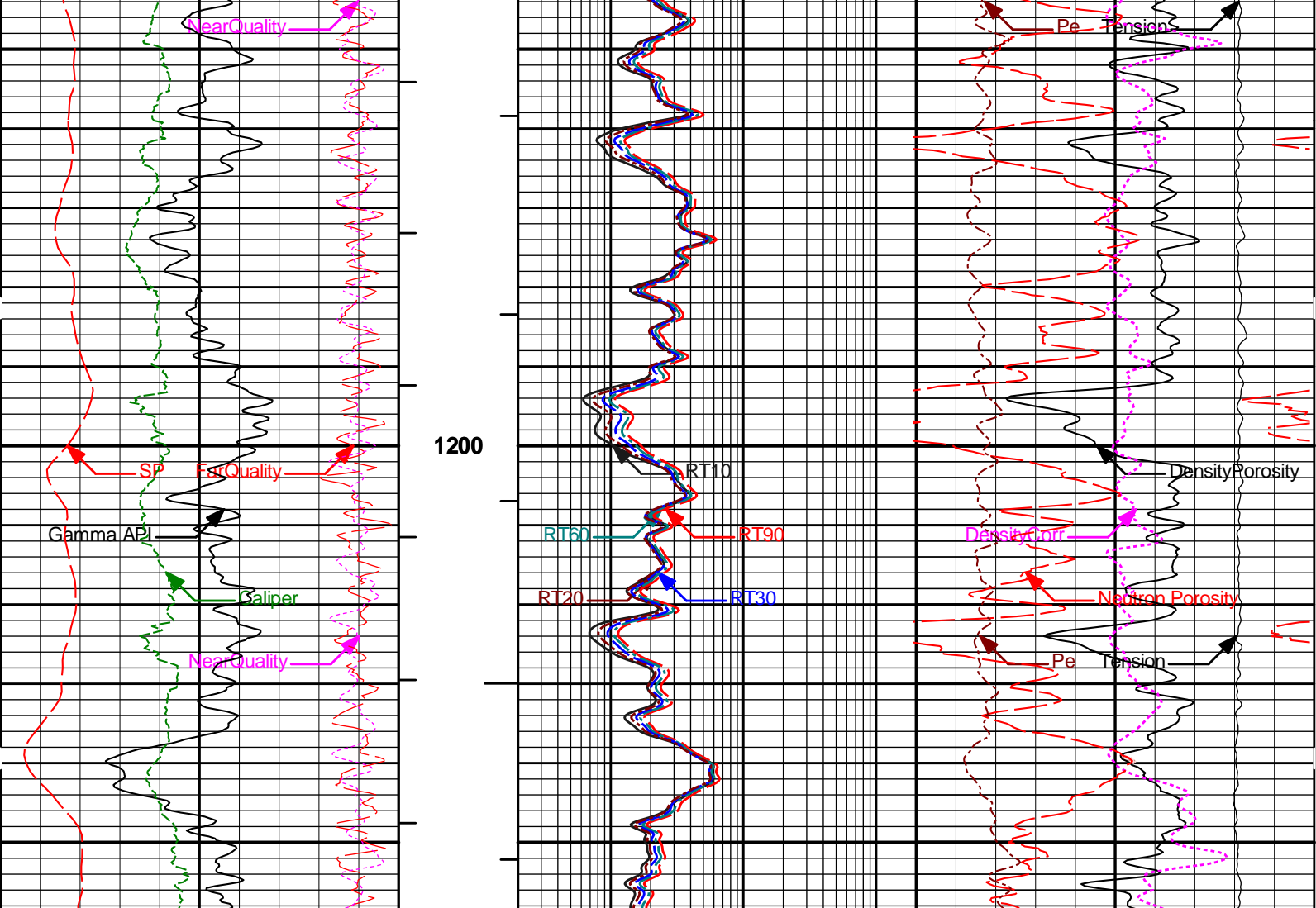
MAIN PASS 5" = 100'

HALLIBURTON

Plot Time: 15-Jan-10 13:03:47
Plot Range: 1039 ft to 1259 ft
Data: LARAMIE_20_06D\Well Based\REPEAT\
Plot File: \\TRIPLE\REPEAT

REPEAT PASS 5" = 100'





9	NearQuality	-1	1 : 240 ft MD	2	RT10	2K	0	Pe	10
9	FarQuality	-1	AHV ft3	2	RT20	2K	30	DensityPorosity	-10
0	Gamma API	200	BHV ft3	2	RT30	2K	30	Neutron Porosity	-10
	api				Ohm-m			percent	
6	Caliper	16		2	RT60	2K	-0.25	DensityCorr	0.25
	inches				Ohm-m			gram per cc	
	SP			2	RT90	2K	10000	Tension	0
	-]10[+				Ohm-m			pounds	

HALLIBURTON

Plot Time: 15-Jan-10 13:03:48
 Plot Range: 1039 ft to 1259 ft
 Data: LARAMIE_20_06D\Well Based\REPEAT\
 Plot File: \\TRIPLE\REPEAT

REPEAT PASS 5" = 100'

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11005602

Reference Calibration Date: 03-Dec-09 08:35:05

Engineer: J. GILBERT

Calibration Date: 30-Dec-09 12:59:04

Software Version: WL INSITE R2.4 (Build 20)

Calibration Version: 1

Calibrator Source S/N: 110

Calibrator API Reference:239.00 api

Measurement	Measured	Calibrated	Units
Background	54.1	56.7	api
Background + Calibrator	282.3	295.7	api
Calibrator	241.6	239.0	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11005602

Reference Calibration Date: 30-Dec-09 12:59:04

Engineer: K. WOOD

Calibration Date: 15-Jan-10 04:29:25

Software Version: WL INSITE R2.4 (Build 20)

Calibration Version: 1

Calibrator Source S/N: 110

Calibrator API Reference:239.00 api

Field Verification	Shop	Field	Units
Background	56.7	66.7	api
Background + Calibrator	295.7	303.9	api
Calibrator	239.0	237.2	api

Shop	Field	Difference	Tolerance
239.0	237.2	1.8	+/- 9.00

NATURAL GAMMA RAY TOOL POST CALIBRATION

Tool Name: GTET - 11005602

Reference Calibration Date: 15-Jan-10 04:29:25

Engineer: K. WOOD

Calibration Date: 15-Jan-10 12:55:41

Software Version: WL INSITE R2.4 (Build 20)

Calibration Version: 1

Calibrator Source S/N: 110

Calibrator API Reference:239.00 api

Post Verification	Field	Post	Units
Background	66.7	44.6	api
Background + Calibrator	303.9	285.4	api
Calibrator	237.2	240.8	api

Shop	Field	Post	Difference	Tolerance
239.0	237.2	240.8	-3.6	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 10993888

Reference Calibration Date: 03-Dec-09 14:27:25

Engineer: J. GILBERT

Calibration Date: 30-Dec-09 12:53:11

Software Version: WL INSITE R2.4 (Build 20)

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-110

Calibration Tank Water Temperature: 70 degF

Min. Tool Housing Outside Diameter: 3.590 in

CALIBRATION CONSTANTS			
Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.964	0.966	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):	0.2162	0.2169	0.0008	+/- 0.0020
Calibrated Ratio:	9.90	9.93	0.026	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0758	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:	30-Dec-09 12:53:11
Engineer:	K. WOOD	Calibration Date:	15-Jan-10 04:39:54
Software Version:	WL INSITE R2.4 (Build 20)	Calibration Version:	1

Logging Source S/N: DSN-388
Snow Block S/N: GJ-110

NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0758	0.0693	-0.0065	+/- 0.0150

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

DUAL SPACED NEUTRON POST CALIBRATION			
Tool Name:	DSNT - 10993888	Reference Calibration Date:	15-Jan-10 04:39:54
Engineer:	K. WOOD	Calibration Date:	15-Jan-10 13:01:06
Software Version:	WL INSITE R2.4 (Build 20)	Calibration Version:	1

Logging Source S/N: DSN-388
Snow Block S/N: GJ-110

NEUTRON POST-CHECK SUMMARY				
	Field Value	Post Value	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0693	0.0664	-0.0029	+/- 0.0150

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

SPECTRAL DENSITY SHOP CALIBRATION			
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Logging Source S/N: 20785B

Aluminum Block S/N: 63094

Magnesium Block S/N: 63387

Density: 2.610g/cc

Density: 1.685g/cc

Density Calibration Summary			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0852	1.0853	0.90 - 1.10
Near Dens Gain	1.0349	1.0265	0.90 - 1.10
Near Peak Gain	1.0034	0.9947	0.90 - 1.10
Near Lith Gain	0.9329	0.9392	0.90 - 1.10
Far Bar Gain	1.0176	1.0184	0.90 - 1.10
Far Dens Gain	1.0050	1.0048	0.90 - 1.10
Far Peak Gain	0.9949	0.9937	0.90 - 1.10
Far Lith Gain	0.9672	0.9653	0.90 - 1.10
Near Bar Offset	-0.6738	-0.6681	NONE
Near Dens Offset	-0.1900	-0.1081	NONE
Near Peak Offset	0.1101	0.1889	NONE
Near Lith Offset	0.6798	0.6301	NONE
Far Bar Offset	-0.1631	-0.1657	NONE
Far Dens Offset	-0.0474	-0.0410	NONE
Far Peak Offset	0.0114	0.0217	NONE
Far Lith Offset	0.1884	0.2028	NONE
Near Bar Background	972.15	969.88	700 - 1450
Near Dens Background	318.28	318.49	230 - 480
Near Peak Background	138.48	137.21	100 - 210
Near Lith Background	169.94	168.93	125 - 260
Far Bar Background	589.91	587.39	450 - 900
Far Dens Background	226.69	225.01	175 - 345
Far Peak Background	90.07	88.65	70 - 140
Far Lith Background	94.07	93.40	75 - 145

Calibration Block Summary				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.682	1.685	0.003	+/- 0.015
Pe	2.589	2.594	0.005	+/- 0.150
ALUMINUM				
Density (g/cc)	2.604	2.610	0.006	+/- 0.01500
Pe	3.078	3.100	0.022	+/- 0.150

Tool Summary				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0027	+/- 0.0110	-0.0009	+/- 0.0140
Magnesium Block	-0.0007	+/- 0.0110	-0.0030	+/- 0.0140
Aluminum Block	0.0007	+/- 0.0110	0.0004	+/- 0.0140

Aluminum Block	-0.0007	+/- 0.0110	0.0004	+/- 0.0140
Resolution	9.41	6.00 - 11.50	9.50	6.00 - 11.50
Internal Verifier(B+D+P+L)	1595	1200 - 2700	994	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 - 10951314

Reference Calibration Date: 31-Dec-09 11:39:44

Engineer: K. WOOD

Calibration Date: 15-Jan-10 04:28:50

Software Version: WL INSITE R2.4 (Build 20)

Calibration Version: 1

Aluminum Block S/N: 63094

Density: 2.610g/cc

Magnesium Block S/N: 63387

Density: 1.685g/cc

Pad Temperature: 61.1 degF

DENSITY FIELD CALIBRATION SUMMARY

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1594.506	1592.762	-1.744	16.059
Far (B+D+P+L) cps	994.437	998.287	3.850	16.892
Near Resolution	9.41	9.48	0.070	0.50
Far Resolution	9.50	9.62	0.120	1.00

PASS/FAIL SUMMARY

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

SPECTRAL DENSITY POST CHECK

Tool Name: SDLT - 10951314

Reference Calibration Date: 15-Jan-10 04:28:50

Engineer: K. WOOD

Calibration Date: 15-Jan-10 12:52:57

Software Version: WL INSITE R2.4 (Build 20)

Calibration Version: 1

Aluminum Block S/N: 63094

Density: 2.610g/cc

Magnesium Block S/N: 63387

Density: 1.685g/cc

Pad Temperature: 70.1 degF

DENSITY POST CALIBRATION SUMMARY

Measurement	Field	Post	Change	Control Limit +/-
Near (B+D+P+L) cps	1592.762	1592.763	0.001	16.059
Far (B+D+P+L) cps	998.287	994.900	-3.387	16.892
Near Resolution	9.48	9.61	0.130	0.50
Far Resolution	9.62	9.66	0.040	1.00

PASS/FAIL SUMMARY

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

DENSITY CALIPER SHOP CALIBRATION

Tool Name:

SDLT - 10951314

Reference Calibration Date:

31-Dec-09 13:04:53

Engineer:

K. WOOD

Calibration Date:

14-Jan-10 15:26:33

Software Version:

WL INSITE R2.4 (Build 20)

Calibration Version:

1

CALIBRATION COEFFICIENTS			
Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-1056.51	-1879.37	-7000.00 - -1000.00
Pad Gain	0.0003738	0.0003982	0.000200 - 0.000600
Arm Offset	-1738.79	-1168.62	-5000.00 - 3000.00
Arm Gain	0.0005364	0.0005434	0.000300 - 0.000700
Arm Power	-0.000004404	-0.000004529	-0.000010 - 0.000010

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)	2.18	2.00	-0.18	+/- 0.20
Medium Ring (in)	3.83	3.75	-0.08	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.51	6.50	-0.01	+/- 0.20
Medium Ring (in)	8.25	8.25	0.00	+/- 0.20
Large Ring (in)	14.97	15.00	0.03	+/- 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 - 10951314

Reference Calibration Date:

14-Jan-10 15:26:33

Engineer:

K. WOOD

Calibration Date:

15-Jan-10 04:32:33

Software Version:

WL INSITE R2.4 (Build 20)

Calibration Version:

1

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.73	-0.02	+/- 0.10
Ring Diameter	8.25	8.25	0.00	+/- 0.15

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

SDLT CALIPER POST CALIBRATION

Tool Name:

SDLT - 10951314

Reference Calibration Date:

15-Jan-10 04:32:33

Engineer:

K. WOOD

Calibration Date:

15-Jan-10 12:57:29

Software Version:

WL INSITE R2.4 (Build 20)

Calibration Version:

1

MEASURED CALIPER VALUES				
Measurement	Field	Post	Change	Control Limit On New Value

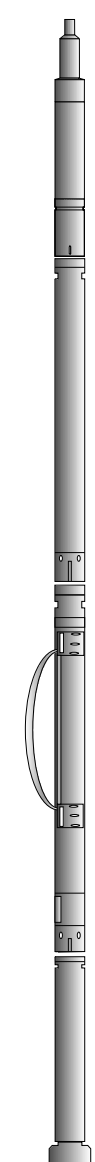
Pad Extension		3.73	3.83	0.10	+/- 0.10				
Ring Diameter		8.25	8.20	-0.05	+/- 0.15				
PASS/FAIL SUMMARY									
Pad Extension Check:			Passed						
Diameter Check:			Passed						
ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION									
Tool Name:		ACRt - 90190515-E9775-		Reference Calibration Date: 22-Dec-09 17:07:17					
Engineer:		K. WOOD		Calibration Date: 22-Dec-09 17:41:43					
Software Version:		WL INSITE R2.4 (Build 20)		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	0.9989	1.05	0.95	1.0018	1.05	0.95	1.0018	1.05
A2 (50")	0.95	1.0020	1.05	0.95	1.0056	1.05	0.95	1.0062	1.05
A3 (29")	0.95	0.9927	1.05	0.95	0.9964	1.05	0.95	0.9937	1.05
A4 (17")	0.95	0.9929	1.05	0.95	0.9940	1.05	0.95	0.9941	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.9870	1.05	0.95	0.9862	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.9747	1.05	0.95	0.9727	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	-0.650	2	-6	-4.123	-2	-8	-4.475	-2
A2 (50")	-7	-1.922	-2	-6	-3.005	-2	-7	-4.496	-2
A3 (29")	-27	-12.802	-9	-9	-3.327	-3	-7	-3.146	-1
A4 (17")	-180	-106.043	-60	-45	-33.103	-15	-39	-25.846	-13
A5 (10")	N/A	N/A	N/A	-150	-80.980	-50	-80	-41.945	-10
A6 (6")	N/A	N/A	N/A	175	309.309	525	90	155.987	270
TRANSMITTER CURRENT GAIN				R-MUD VERIFICATION					
Signal	Lower	R	Upper	Signal	Lower (ohm-m)	Measured (ohmm)	Upper (ohm-m)		
12K	0.6	0.8482	1.3	Mud Cell	0.95	1.005	1.05		
36K	1.0	1.8893	2.0						
72K	1.0	1.1009	2.0						
CALIBRATION SUMMARY									
Sensor	Shop	Field	Post	Difference	Tolerance	Units			
GTET-11005602									
Gamma Ray Calibrator	239.0	237.2	240.8	-3.6	+/- 9.00	api			
DSNT-10993888									
Snow-Block Porosity	0.0758	0.0693	0.0664	0.0029	+/- 0.0150	decp			
SDLT-10951314									
Near(B+D+P+L)	1594.506	1592.762	1592.763	-0.001	+/-16.059	cps			
Far(B+D+P+L)	994.437	998.287	994.900	3.387	+/-16.892	cps			
Pad Extension	3.75	3.73	3.83	-0.10	+/-0.10	in			
Ring Diameter	8.25	8.25	8.20	0.050	+/-0.15	in			
ACRt-90190515-E9775-									
Mud Cell	1.005	-----	-----	0.000	-----	ohmm			
D-1 LABVIEW 90-00210001-10 TRIPLE 5 STRING WIRE									
D-1 15 in 10-10-01-01									

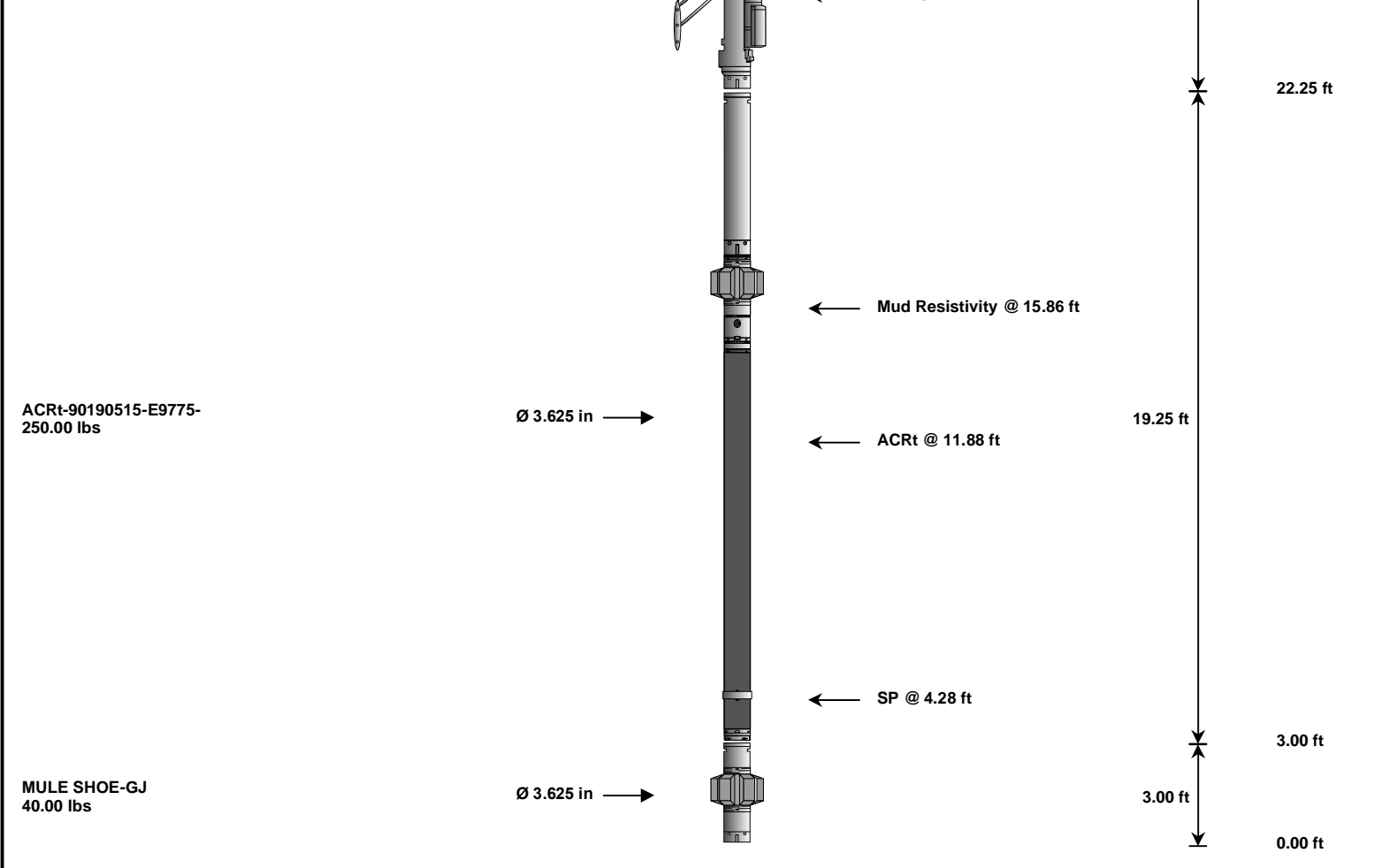
HALLIBURTON**CUSTOMER EVENT LOG**

Event Type	Time & Date	Depth (ft)	Event Description
	15-Jan-10 08:42:39	1499.50	Logging 001 15-Jan-10 08:42 Up @1499.5f
	15-Jan-10 08:53:29	906.12	Halting 001 15-Jan-10 08:42 Up @1499.5f
	15-Jan-10 08:53:40	843.75	Logging 002 15-Jan-10 08:53 Dn @843.8f
	15-Jan-10 09:35:39	9103.11	Halting 002 15-Jan-10 08:53 Dn @843.8f
	15-Jan-10 09:35:53	9106.75	Logging 003 15-Jan-10 09:35 Up @9106.8f
	15-Jan-10 11:59:28	963.75	Halting 003 15-Jan-10 09:35 Up @9106.8f

Data: LARAMIE_20_06D\0001 IQ-TRIPLE-STRING\HW11256 Date: 15-Jan-10 12:46:41

HALLIBURTON**TOOL STRING DIAGRAM REPORT**

Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
RWCH-C11013846 135.00 lbs	Ø 3.625 in →		← Load Cell @ 53.84 ft ← BH Temperature @ 53.27 ft	6.25 ft	57.52 ft
GTET-11005602 165.00 lbs	Ø 3.625 in →		← GammaRay @ 45.21 ft	8.52 ft	51.27 ft
DSNT-10993888 174.00 lbs	Ø 3.625 in →		← DSN Far @ 35.81 ft ← DSN Near @ 35.06 ft	9.69 ft	42.75 ft
SDLT-10951314 360.00 lbs	Ø 4.500 in → Ø 4.750 in →		SDL Microlog @ 25.25 ft SDL Caliper @ 25.07 ft SDL @ 25.06 ft	10.81 ft	33.06 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	C11013846	135.00	6.25	51.27	300.00
GTET	Natural Gamma Ray Tool	11005602	165.00	8.52	42.75	60.00
DSNT	Dual Spaced Neutron	10993888	174.00	9.69	33.06	60.00
DCNT	DSN Decentralizer	10917119	50.00	5.13	* 36.39	300.00
SDLT	Spectral Density Tool	10951314	360.00	10.81	22.25	60.00
ACRt	Array Compensated True Resistivity	90190515-E9775-	250.00	19.25	3.00	300.00
SP	SP Ring	PROTO1	0.00	0.25	* 4.28	300.00
HFCS	Hostile Full Wave Sonic Caged Metal and Rubber Standoff	01	7.94	1.33	* 15.92	300.00
MUSH	MULE SHOE	GJ	40.00	3.00	0.00	100.00
HFCS	Hostile Full Wave Sonic Caged Metal and Rubber Standoff	02	7.94	1.33	* 0.95	300.00

Total	1,189.88	57.52
* Not included in Total Length and Length Accumulation.		
Data: LARAMIE_20_06D\0001 IQ-TRIPLE-STRING1\003 15-Jan-10 09:35 Up @9106.8f	Date: 15-Jan-10 11:15:55	

COMPANY	LARAMIE ENERGY		
WELL	LARAMIE 20-06D		
FIELD	RULISON		
COUNTY	GARFIELD	STATE	CO
HALLIBURTON		ARRAY COMPENSATED TRUE RESISTIVITY SPECTRAL DENSITY DUAL SPACED NEUTRON	