

Company: Nighthawk Production LLC

Well: Big Sky 4-11

Field: Wildcat

County: Lincoln Country: USA

Platform Express

Array Induction

with Linear Correlation

County:	Lincoln				
Field:	Wildcat				
Location:	NWNW				
Well:	Big Sky 4-11				
Company:	Nighthawk Production LLC				
		Location:			
		NWNW	Elev.:		K.B. 5208.00 ft
		SHL: 615' FNL X 622' FWL	G.L. 5193.00 ft		D.F. 5207.00 ft
		Permanent Datum:	Ground Level	Elev.:	5193.00 f
		Log Measured From:	Kelly Bushing	15.00 ft	above Perm.Datum
		Drilling Measured From:	Kelly Bushing		
		API Serial No.	Max.Hole Deviation	Longitude:	Latitude:
		05-073-06523-0000		-103.41460 degrees	39.548770 degrees

Logging Date	12-May-2013			
Run Number	1			
Depth Driller	8350.00 ft			
Schlumberger Depth	8342.00 ft			
Bottom Log Interval	8334.00 ft			
Top Log Interval	308.00 ft			
Casing Driller Size @ Depth	8.625 in @ 300.00 ft			
Casing Schlumberger	309 ft			
Bit Size	7.875 in			
Type Fluid In Hole	Fresh Water			
MUD	Density	Viscosity	90 s	
	Fluid Loss	PH	8 cm3	7.3
	Source of Sample			
RM @ Meas Temp	0.53 ohm.m @ 60 degF			
RMF @ Meas Temp	0.4 ohm.m @ 60 degF			
RMC @ Meas Temp	0.81 ohm.m @ 60 degF			
Source RMF	RMC	Calculated	Calculated	
RM @ BHT	RMF @ BHT	0.18 @ 190	0.14 @ 190	
Max Recorded Temperatures				
Circulation Stopped	Time	21:00:00		
Logger on Bottom	Time	15:00:00		
Unit Number	Location:	2223	Fort Morgan	
Recorded By	Danil Kholin			
Witnessed By	Anders Elgerd			

Disclaimer

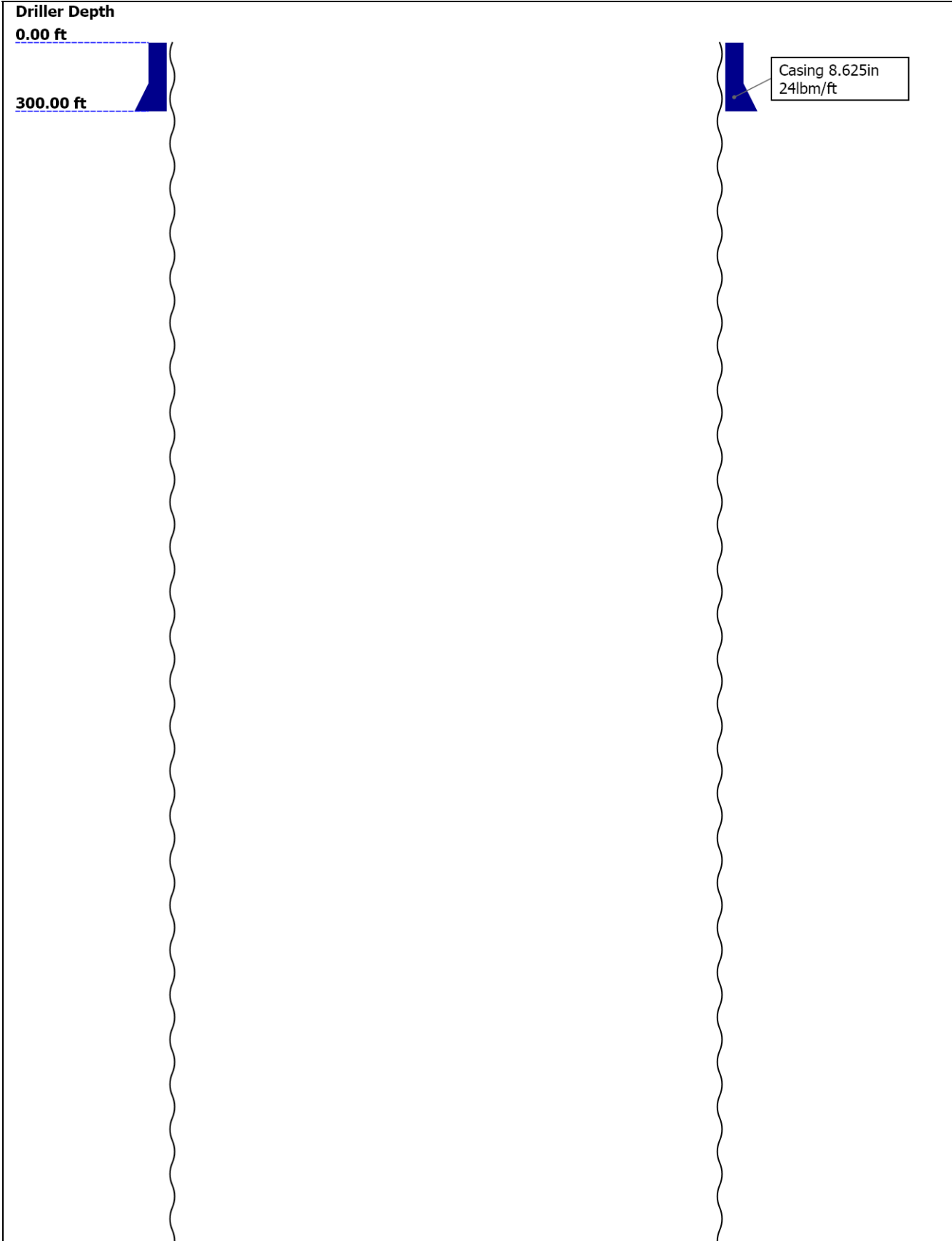
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Well Sketch



8350.00 ft

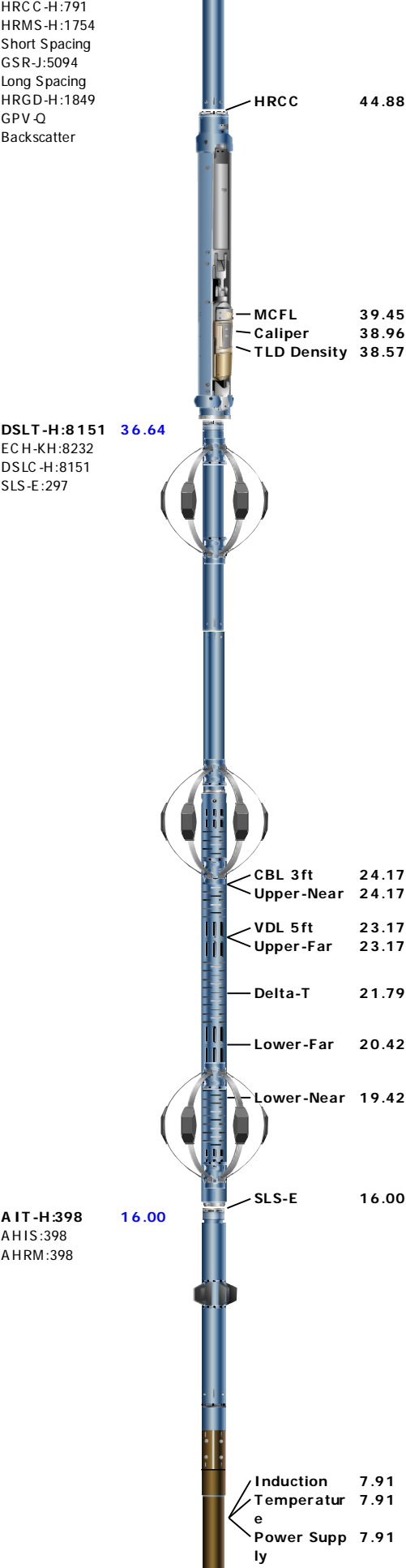
Open Hole 7.875in

Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	7.875					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	8350					
Bottom Logger (ft)	8342					
Casing						
Size (in)	8.625					
Weight (lbm/ft)	24					
Inner Diameter (in)	8.099					
Grade	N80					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	300					
Bottom Logger (ft)	309					

Remarks and Equipment Summary

1: Toolstring	1: Remarks
<div><div><div>Equip nameLengthMP nameOffset</div><div>LEH-QT:249364.21</div><div>LEH-QT:2493</div><div>DTC-H:1053061.29</div><div>ECH-KC</div><div>DTC-H:10530</div><div>HGNS-H:86358.29</div><div>HGNH:2883</div><div>NSR-F:5069</div><div>NPV-IN</div><div>HGNS-H:863</div><div>HMCA-H</div><div>HACCZ-H:452</div><div>HDRS-H:175448.88</div><div>ECH-MEB:1922</div></div><div><div>CTEM60.39</div><div>HV0.00</div><div>TelStatus58.29</div><div>ToolStatus58.29</div><div>Temperatur58.26</div><div>GR57.55</div><div>CNL Porosit y51.21</div><div>HMCA48.88</div><div>HGNS48.88</div><div>Accelerometer0.00</div></div></div>	Toolstring run as per toolsketch.
	HGNS run without bowspring as per client request due to hole conditions
	Matrix: Limestone, 2.71 g/cc
	Crew: Troy Ocanas, Jay Musgrave





SP 0.08
Mud Resistivity 0.00
Head Tension
TOOL_ZERO

Lengths are in ft

Maximum Outer Diameter = 5.000 in

Line: Sensor Location, Value: Gating Offset

All measurements are relative to TOOL_ZERO

Depth Summary

Depth Control Parameters	1		
Conveyance Type	Wireline		
Log Sequence	This is first run in the hole.		
Stretch Correction (ft)	6.12		
Rig Type	Land		
Depth Remark Parameters	1		
Depth Remark 1	All Schlumberger Depth Control		
Depth Remark 2	IDW used as primary depth control.		
Depth Remark 3	Z-chart used as secondary depth		
Depth Measuring Device	1		
Type	IDW-B		
Serial Number	1918		
Calibration Date	22-Apr-2013		
Calibration Cable Type	7-46 AXS		
Wheel Correction 1	-8		
Wheel Correction 2	-9		
Tension Device	1		
Type	CMTD-B/A		
Serial Number	1274		
Calibration Date	30-apr-2013		
Calibrator Serial Number	78135A		
Calibration Points	10		
Calibration RMS	36		
Calibration Peak Error	77		
Logging Cable	1		
Type	7-46A-XS		
Serial Number	U711126		
Logging Cable Length (ft)	24000.00		

1

2" Induction

Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
ICV	Integrated Cement Volume	GCSE_UP_PASS, FCD	1943.21	ft3

Software Version

Acquisition System	Version
MaxWell	3.1.9755.0
Application Patch	SP-20121102-3.1.9755.1422

Computation	Description	Version	
Borehole	Borehole Ensemble provides common Borehole Parameters and Channels		3.1.9755.0
Tool Elements	Description	Software Version	Firmware Version
HRCC-H	HILT High-Resolution Control Cartridge, 150 degC	3.1.9755.0	2.0
AHIS	Array Induction Sonde - H	3.1.9755.1422	
HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC	3.1.9755.0	2.0

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
1	Main[3]:Up	Up	208.80 ft	8359.06 ft	12-May-2013 3:21:28 PM	12-May-2013 5:46:55 PM	0.00 ft	
All depths are referenced to toolstring zero								

Log

1: Main[3]:Up

Description: AIT Basic Log Two Format: Log (Import of Kerr McGee 2in Induction) Index Scale: 2 in per 100 ft Index Unit: ft Index Type: Measured

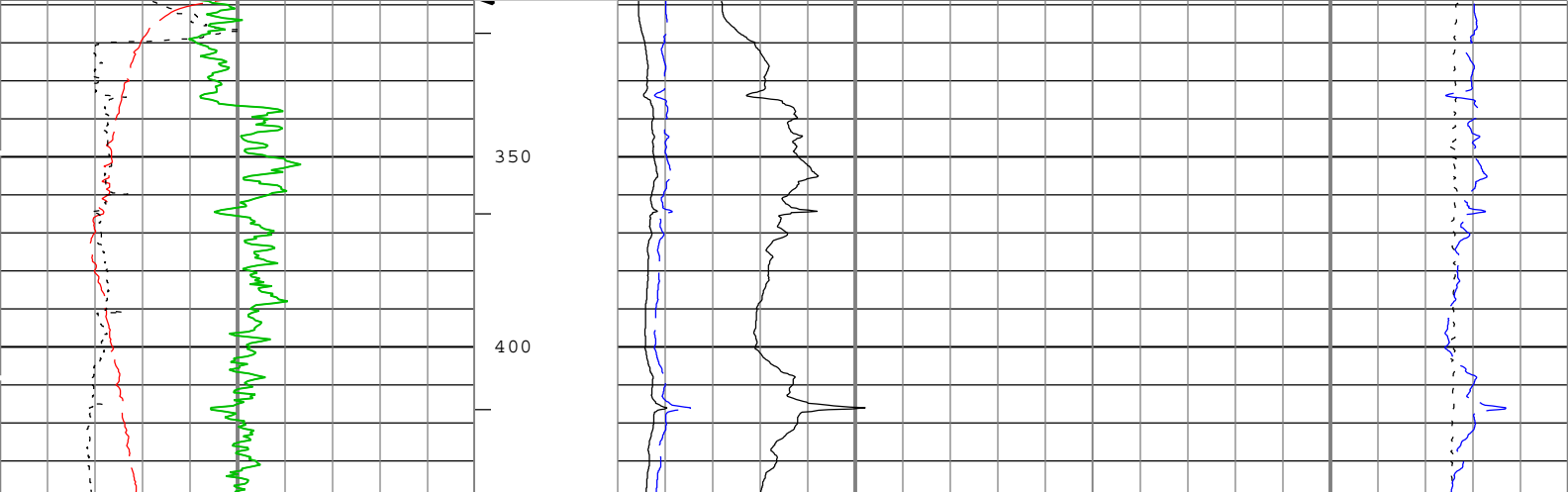
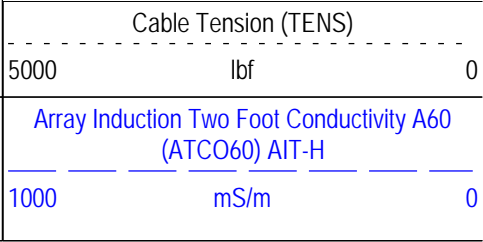
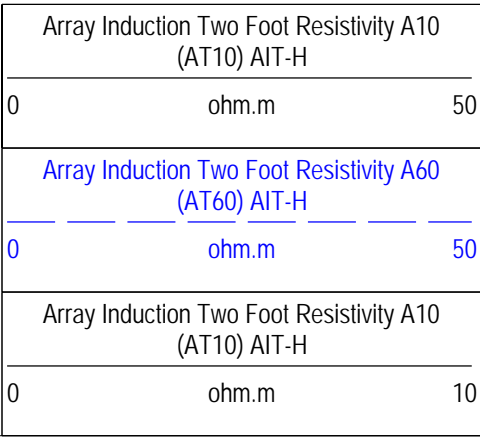
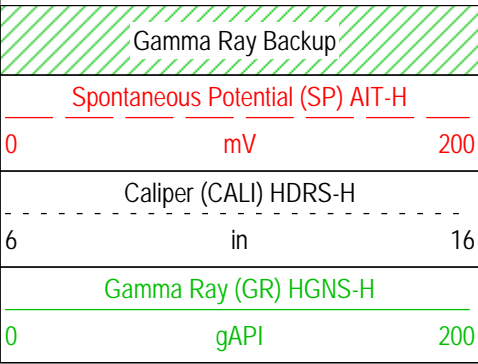
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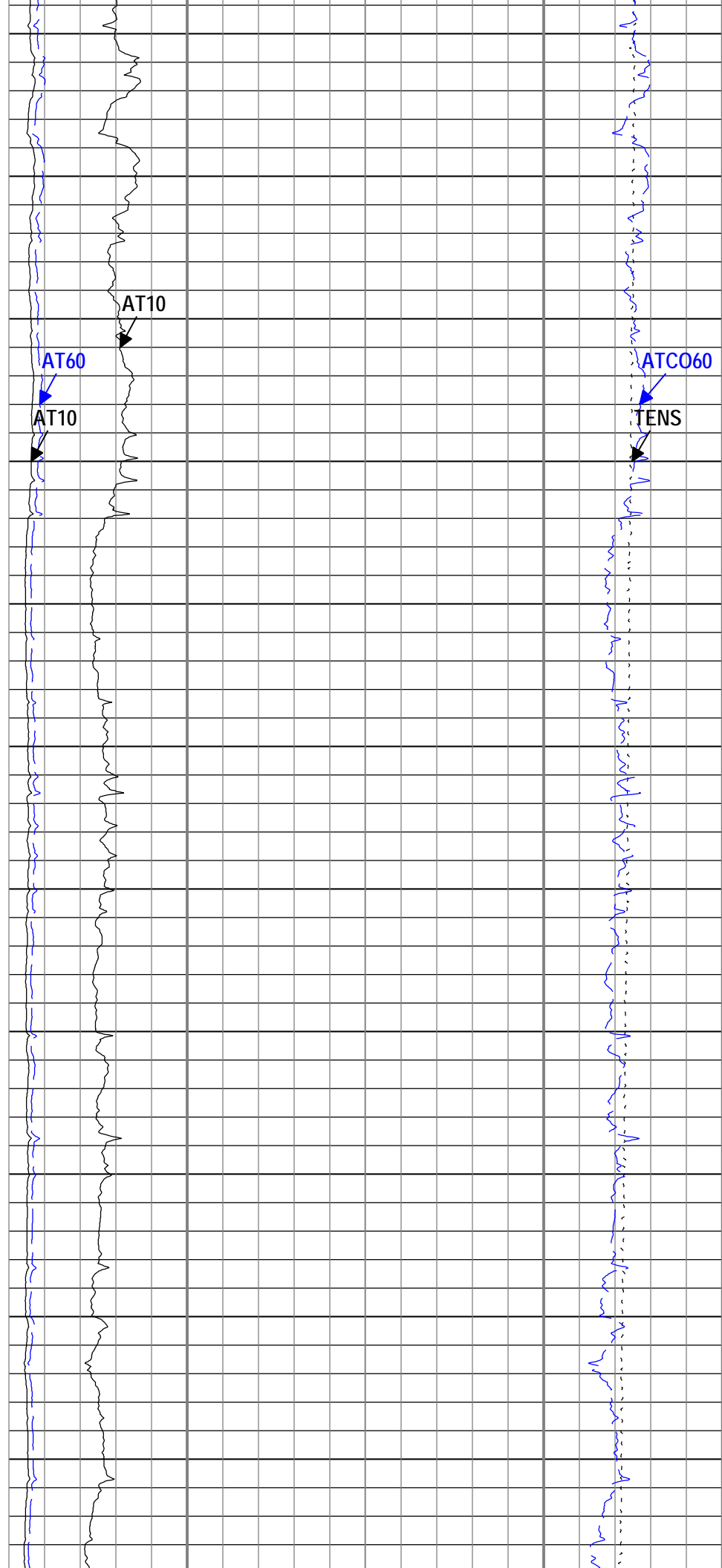
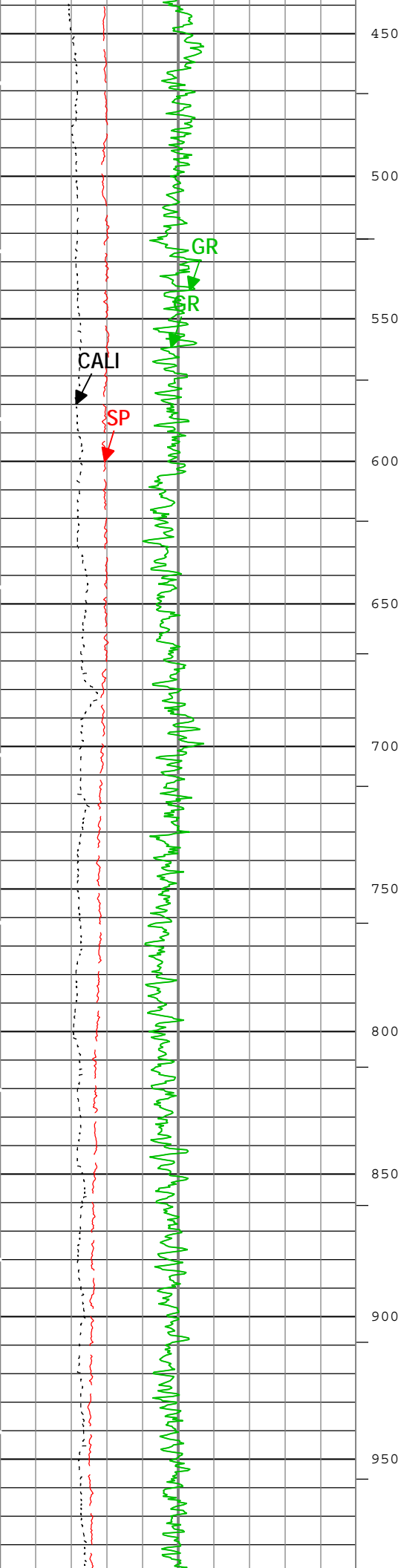
Channel	Source	Sampling
AT10	AIT-H:AHIS:AHIS	3in
AT60	AIT-H:AHIS:AHIS	3in
ATCO60	AIT-H:AHIS:AHIS	3in
CALI	HDRS-H:HRCC-H:HRCC-H	1in
GR	HGNS-H:HGNS-H:HGNS-H	6in
ICV	Borehole	6in
SP	AIT-H:AHIS:AHIS	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in

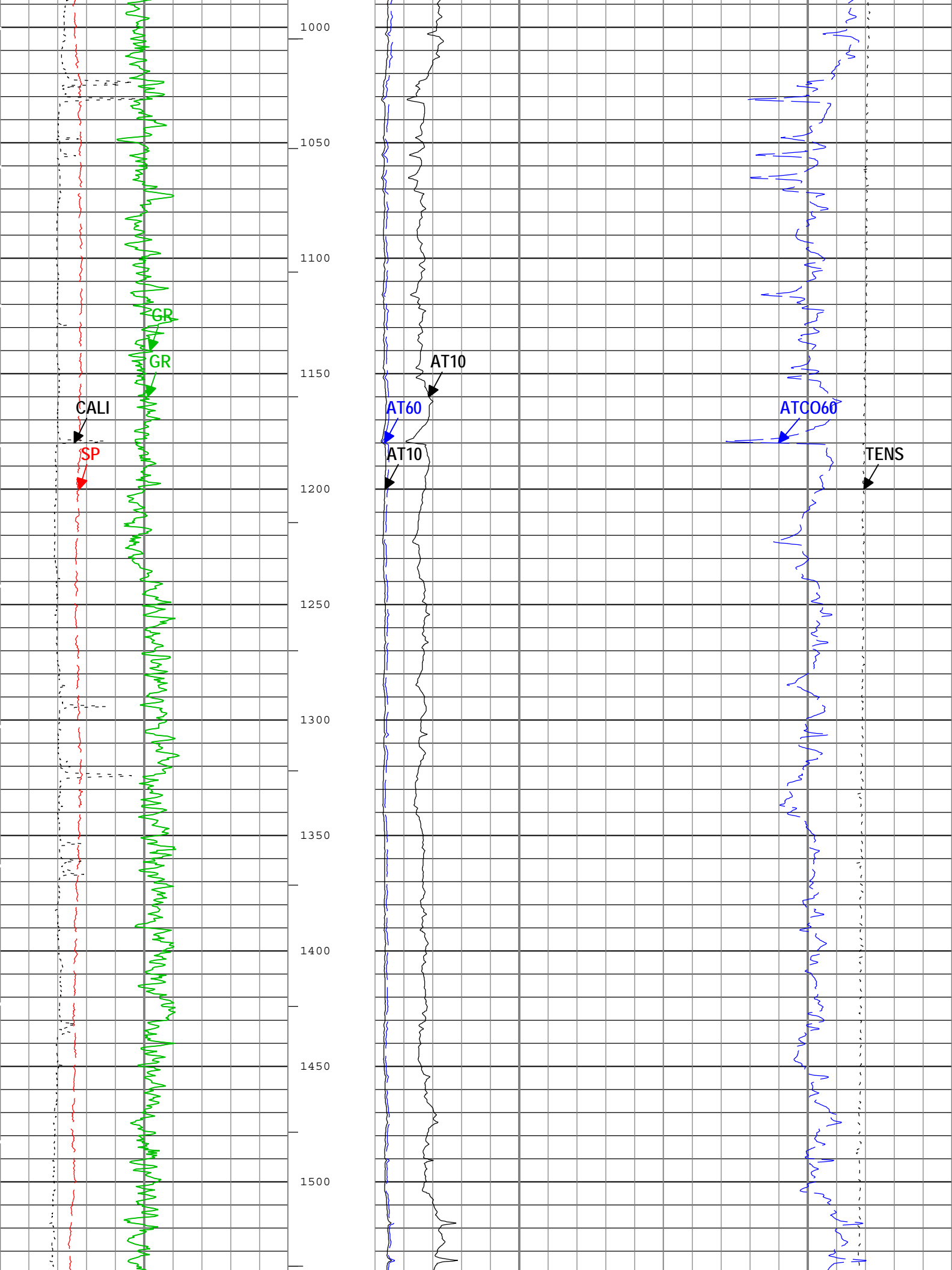
└─ ICV - Integrated Cement Volume every 10.00 (ft3)

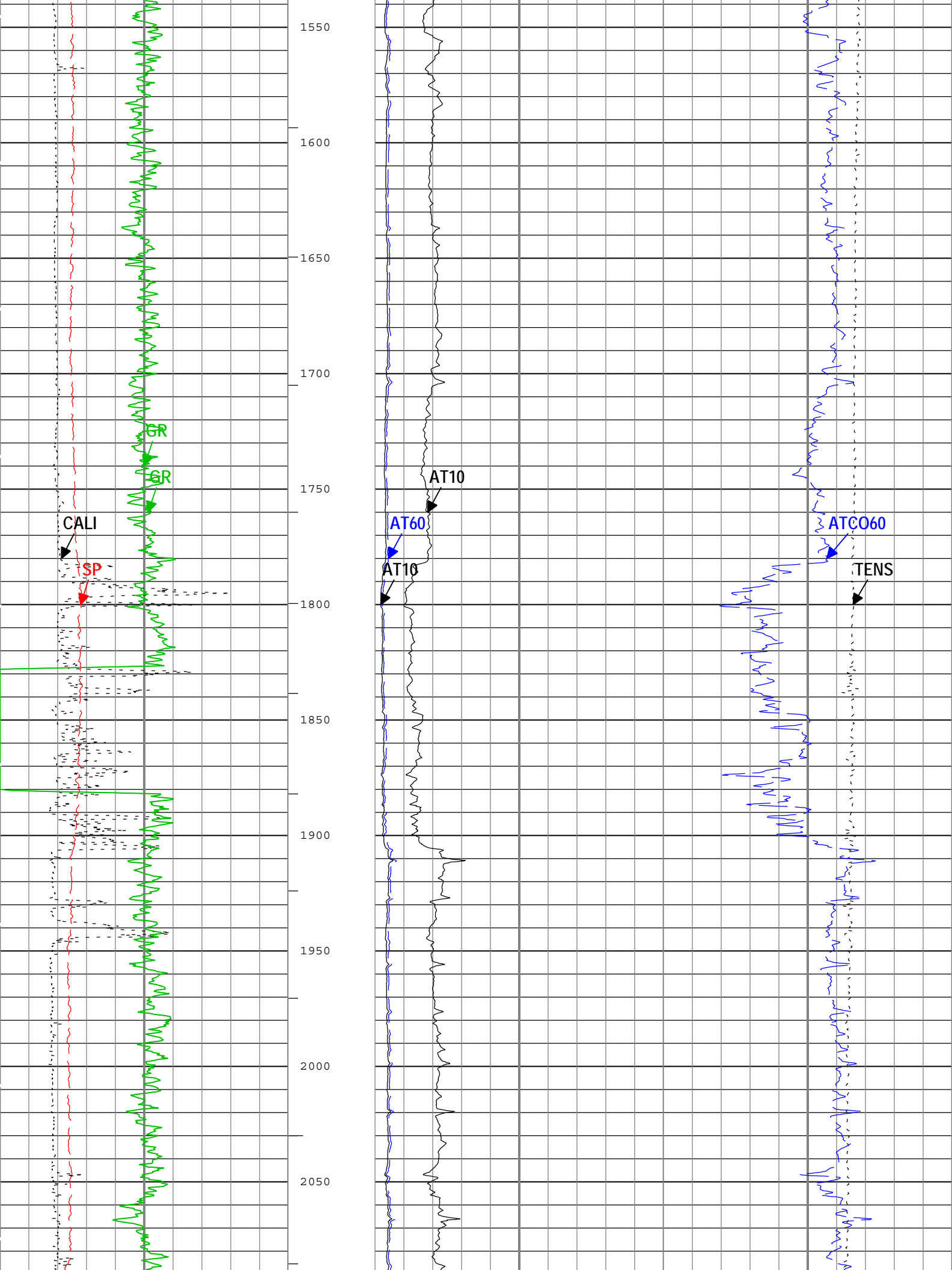
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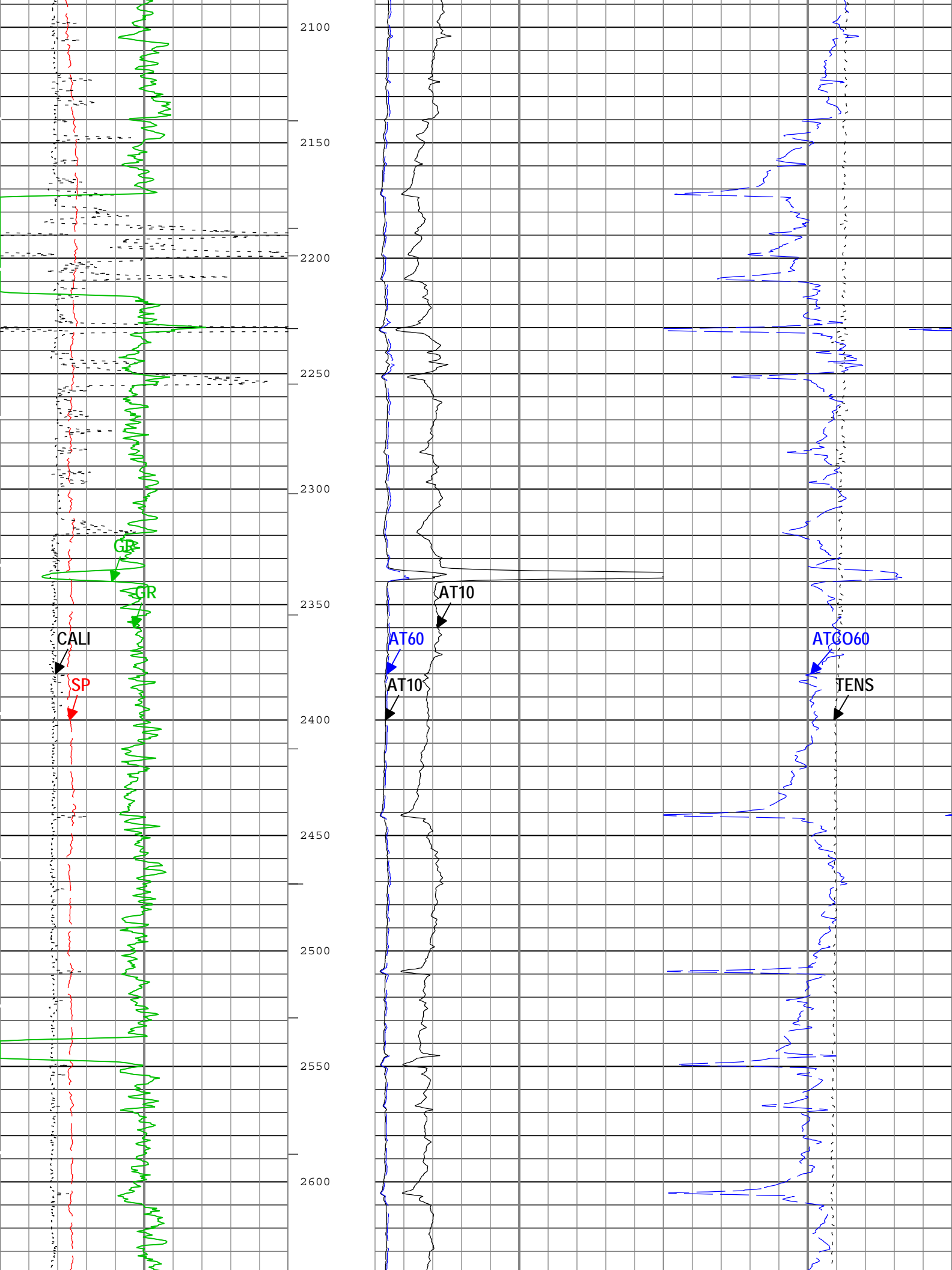
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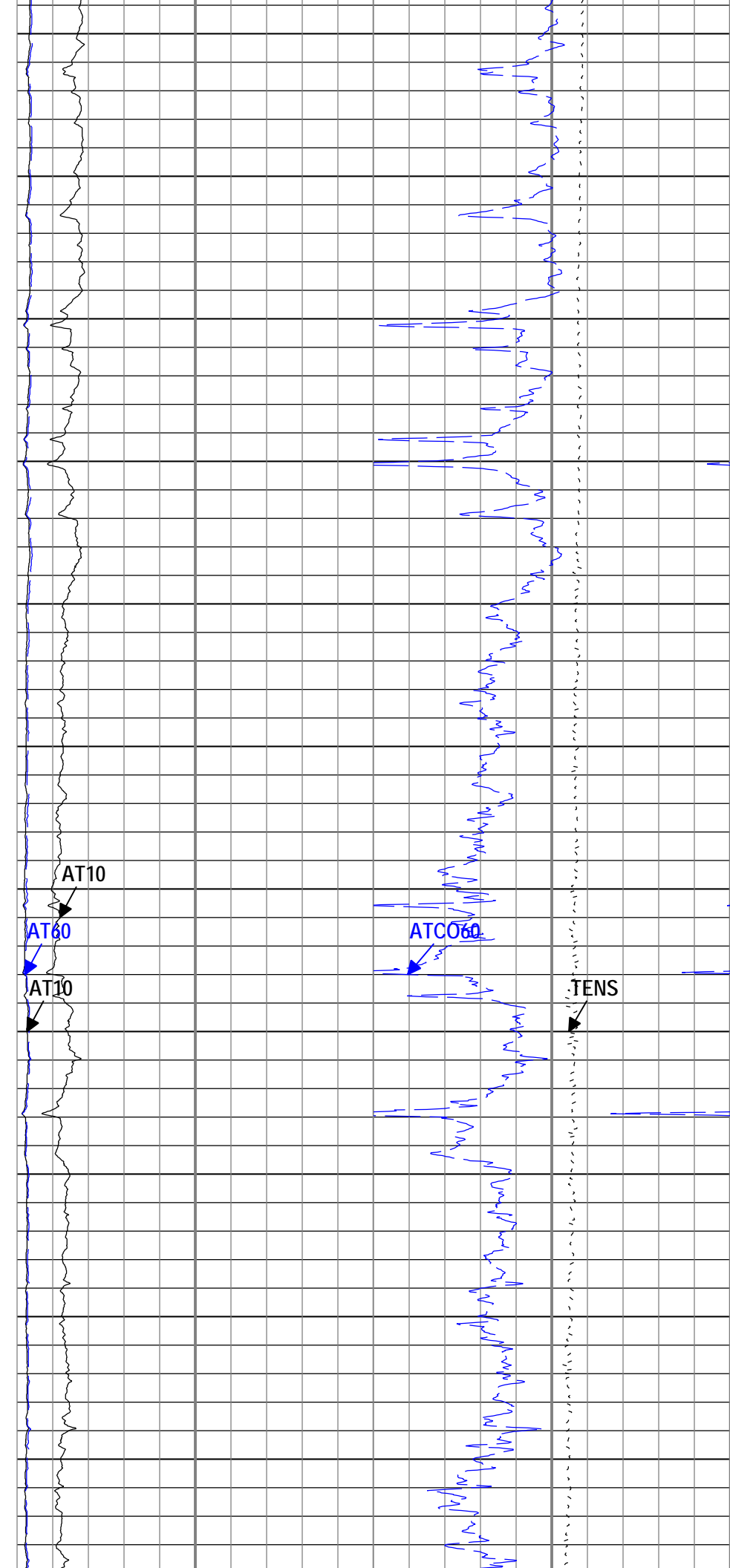
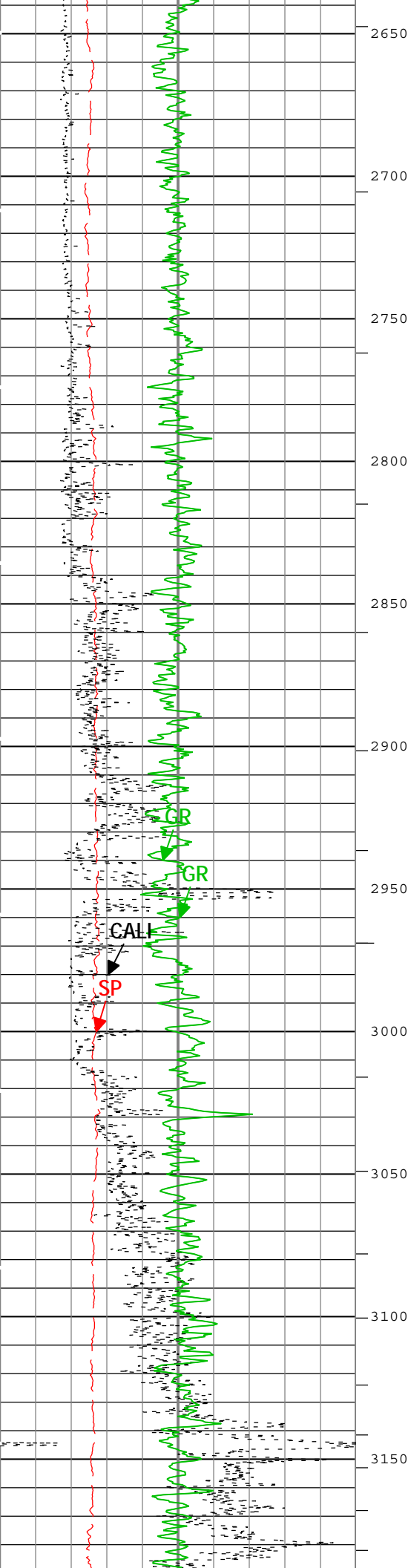


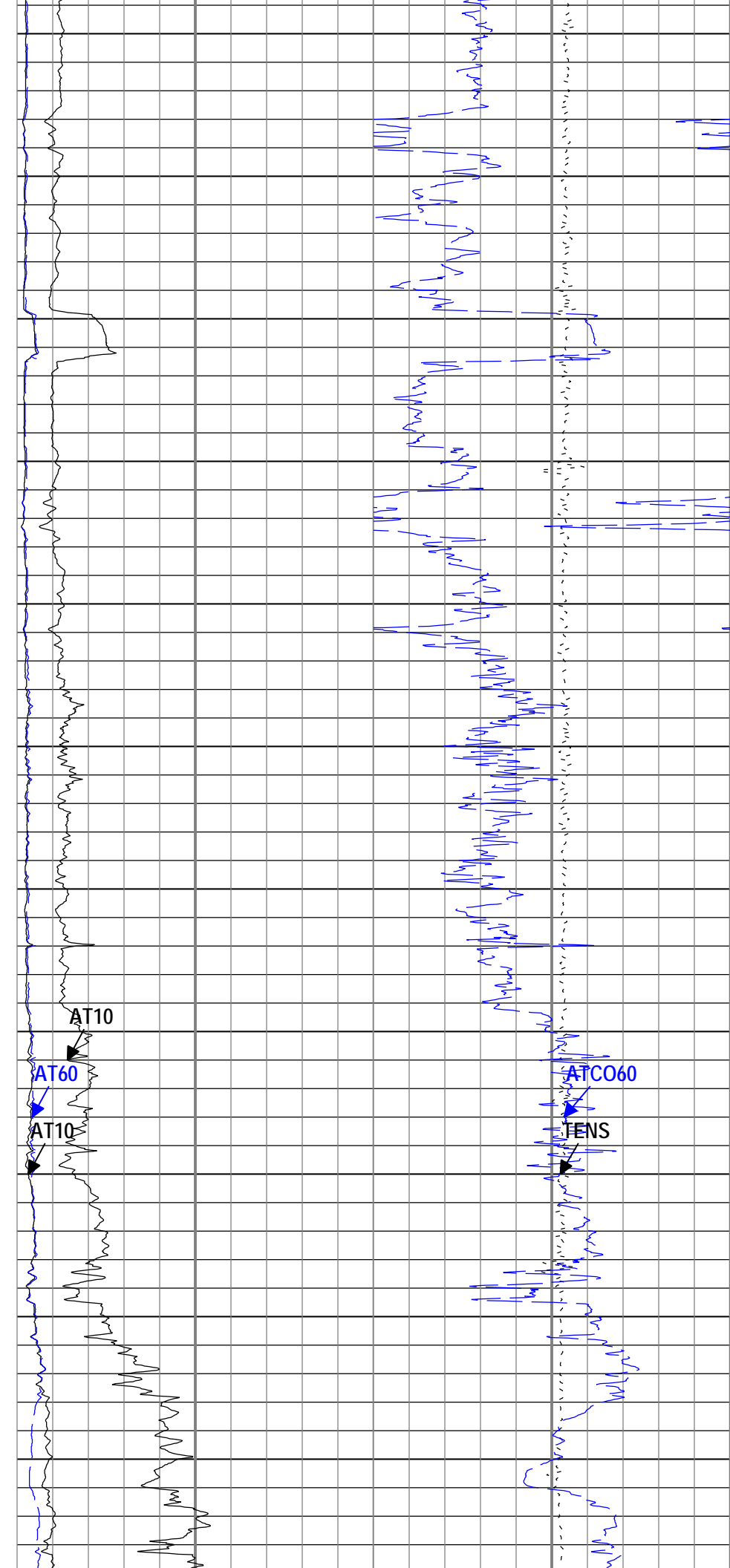
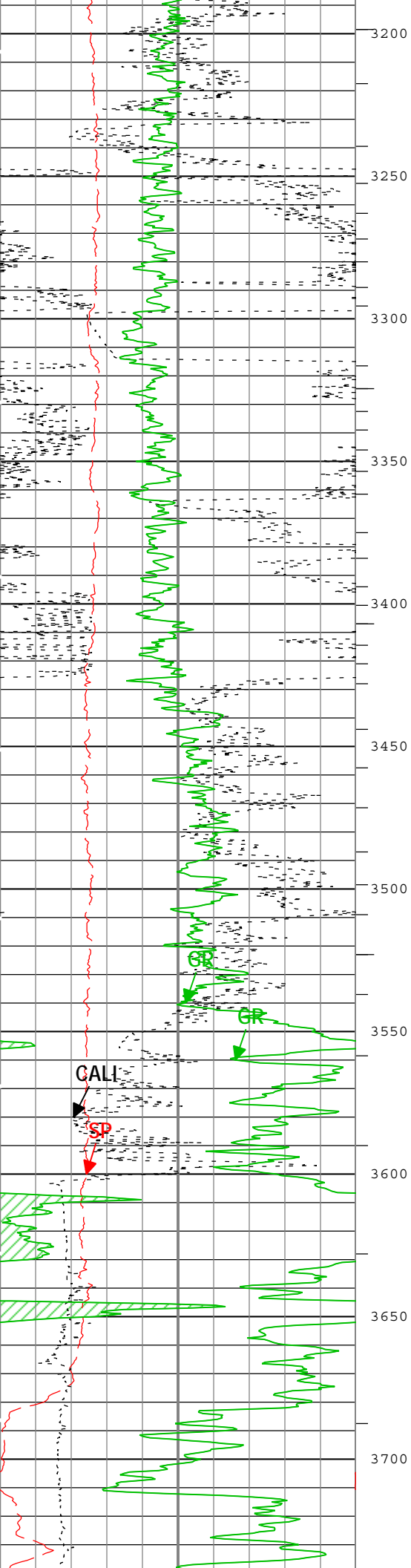


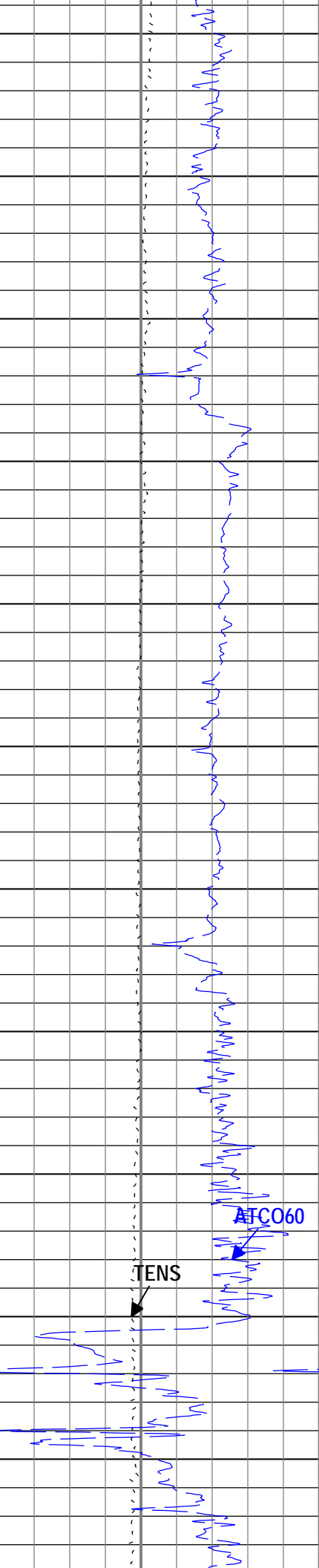
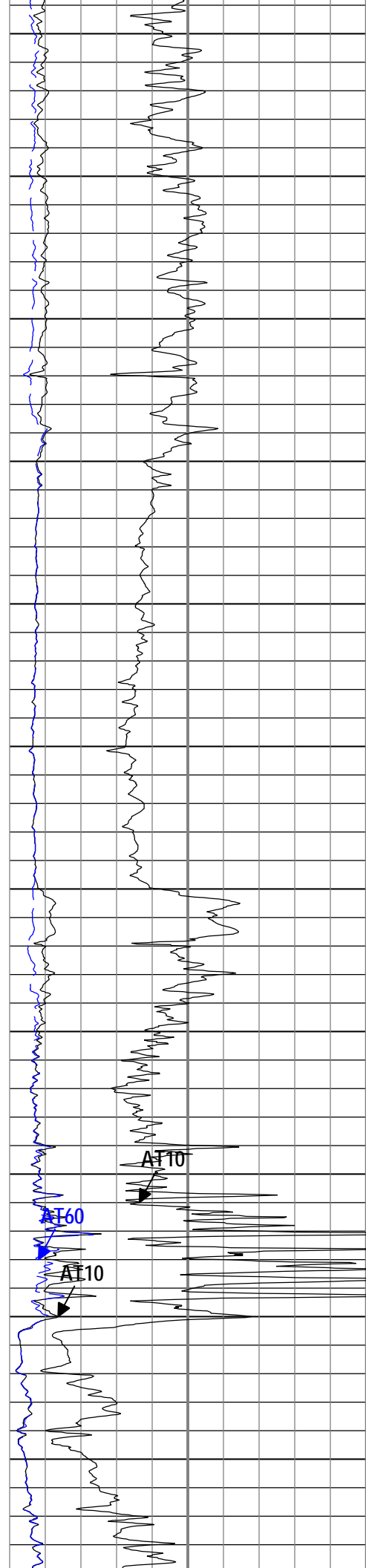
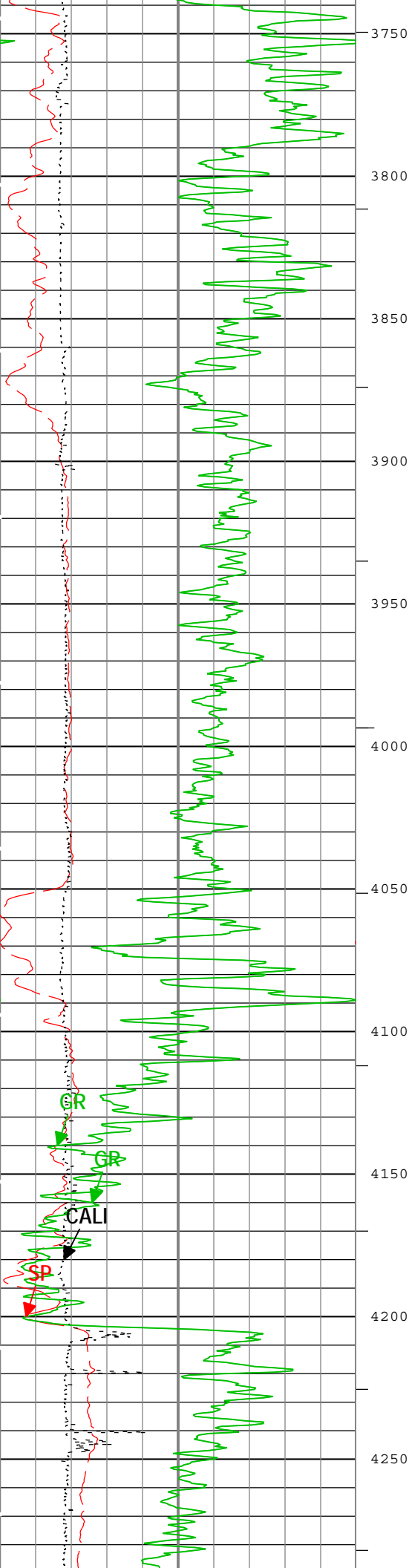


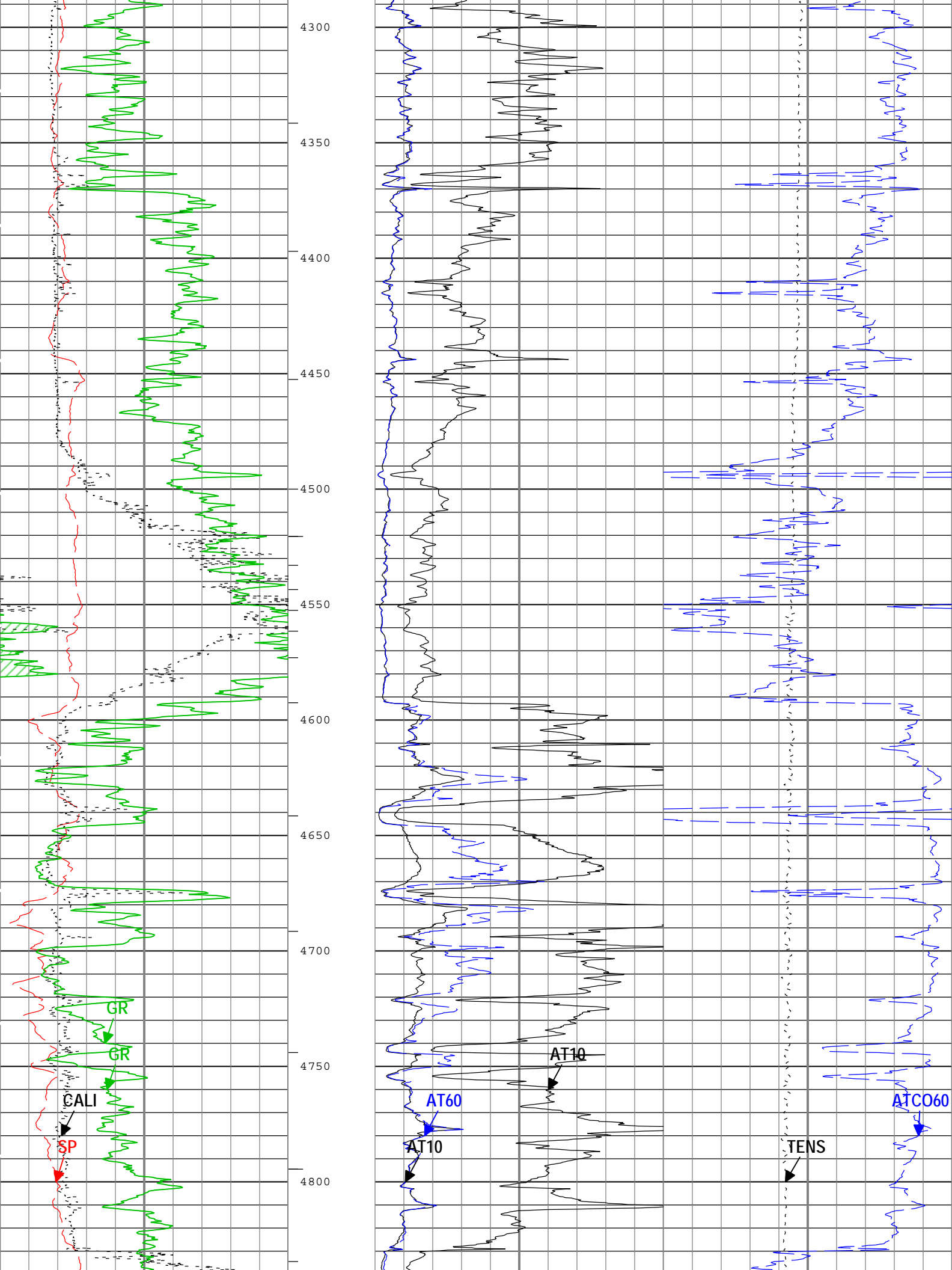


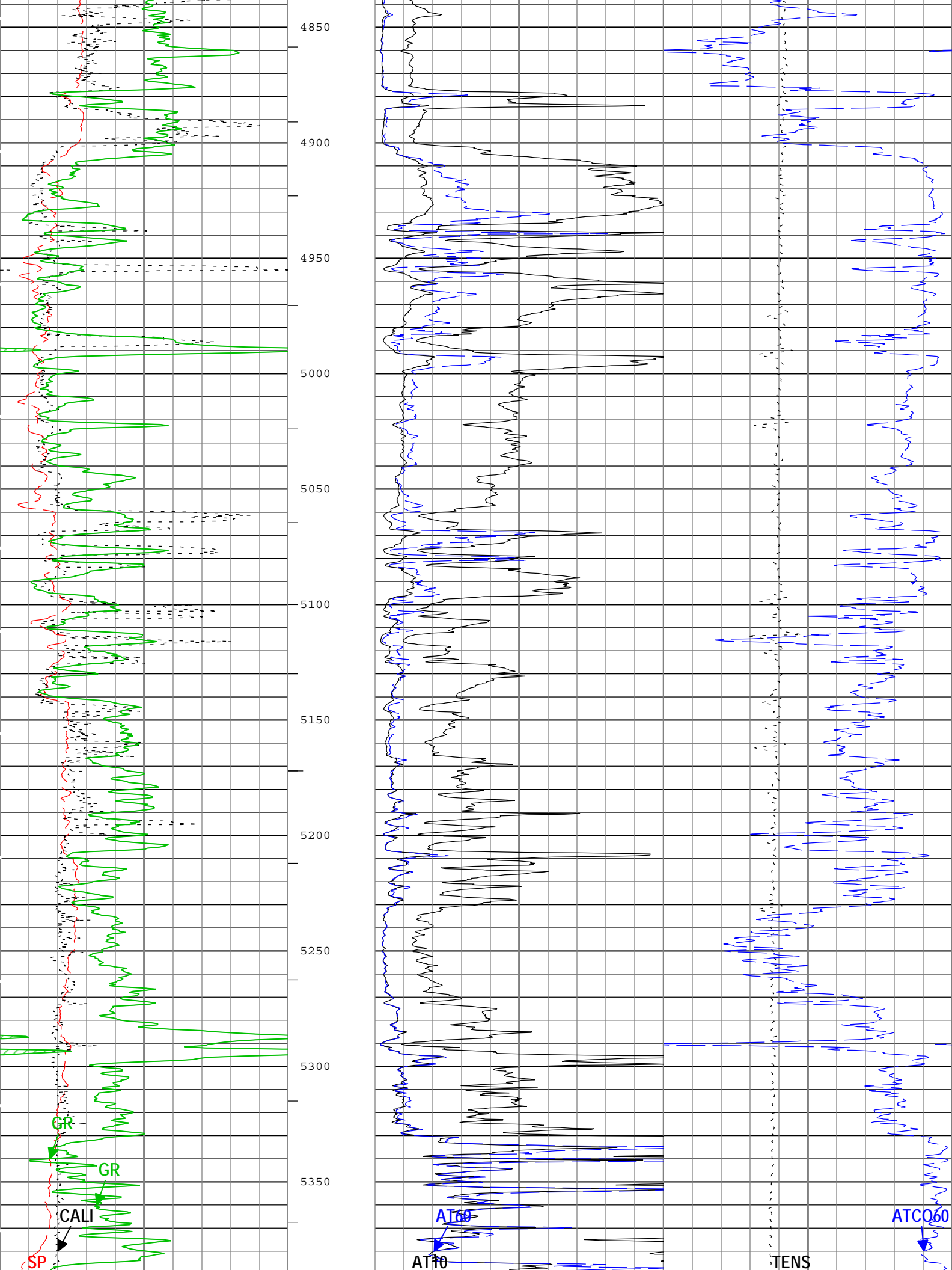


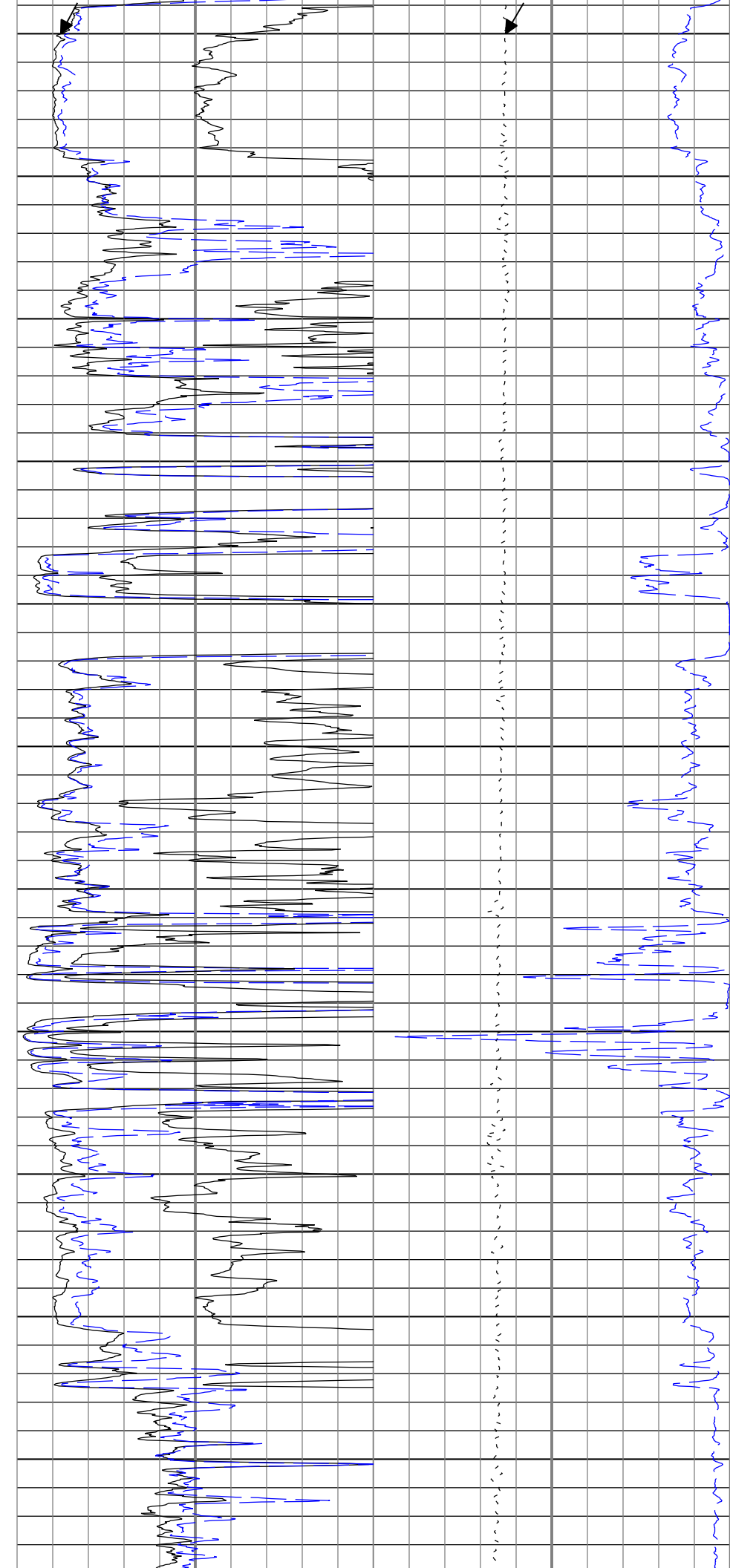
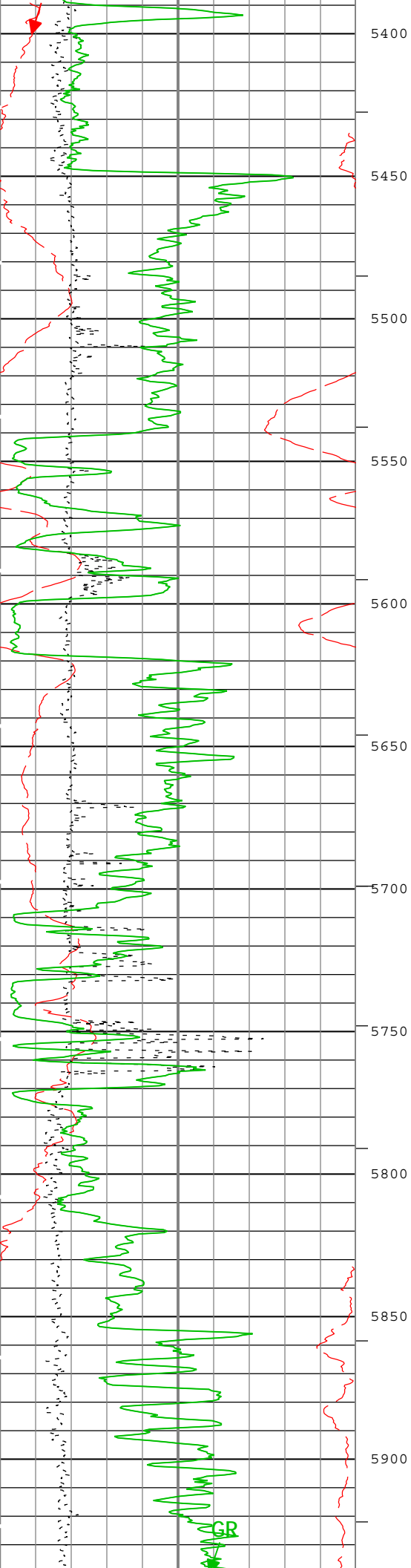


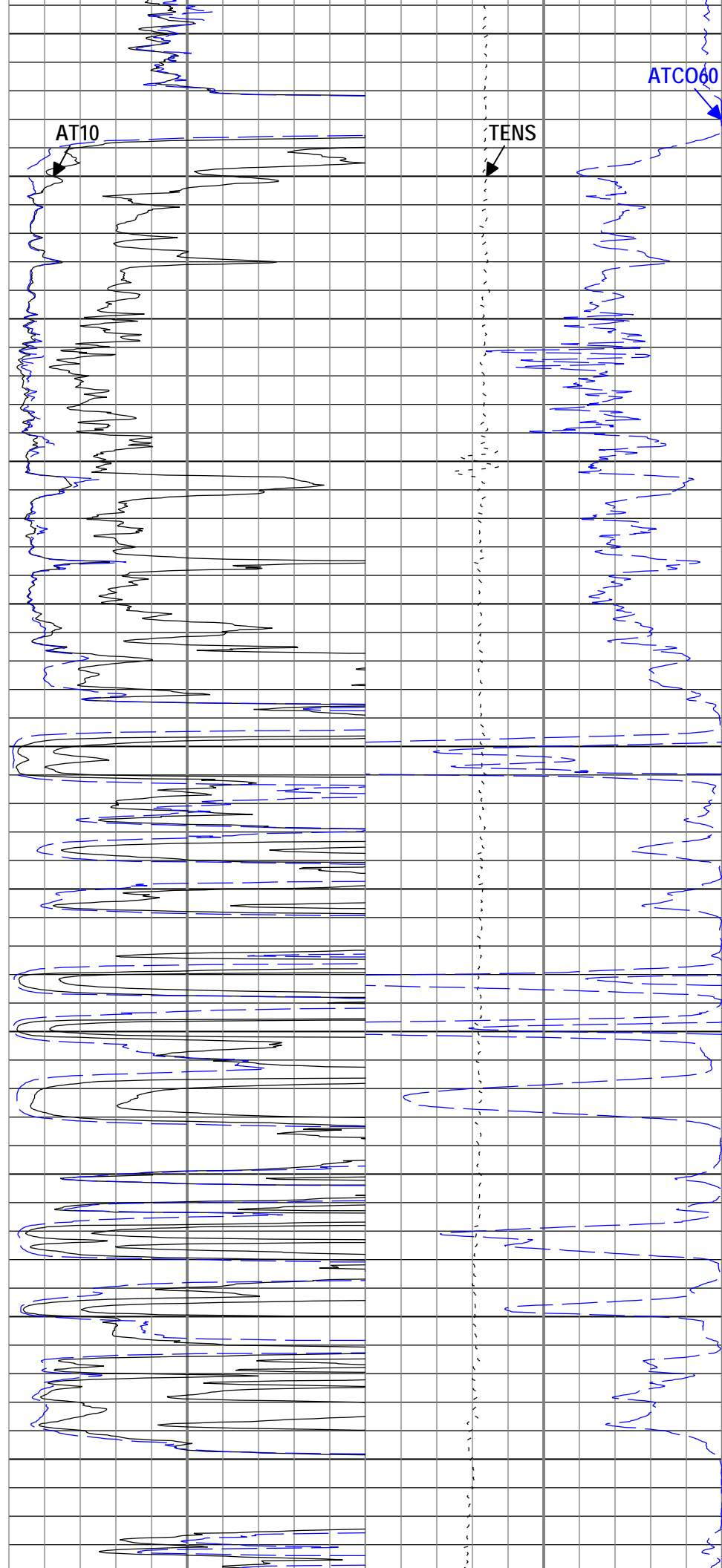
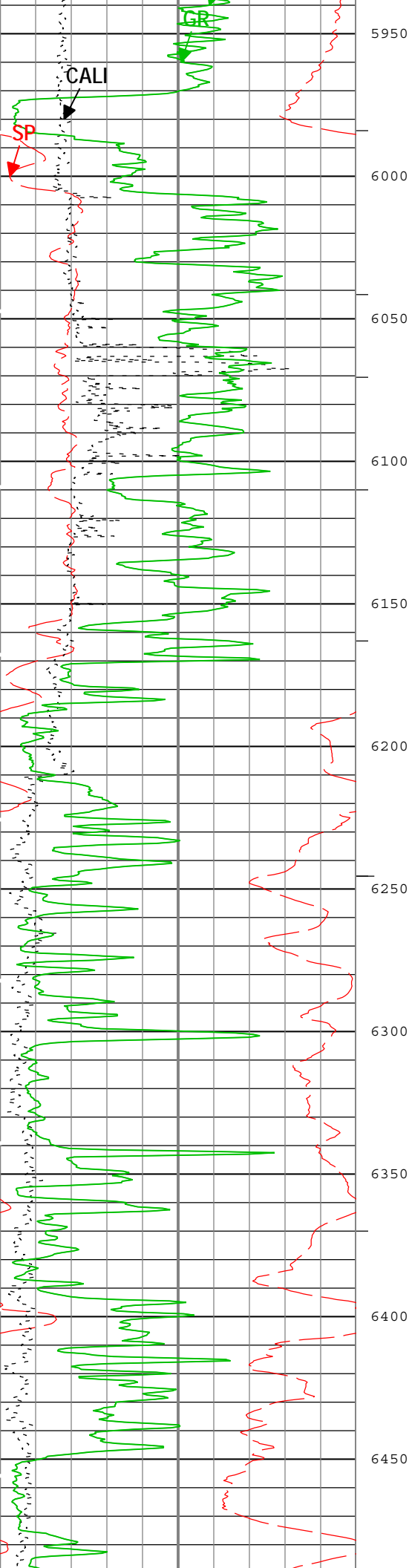


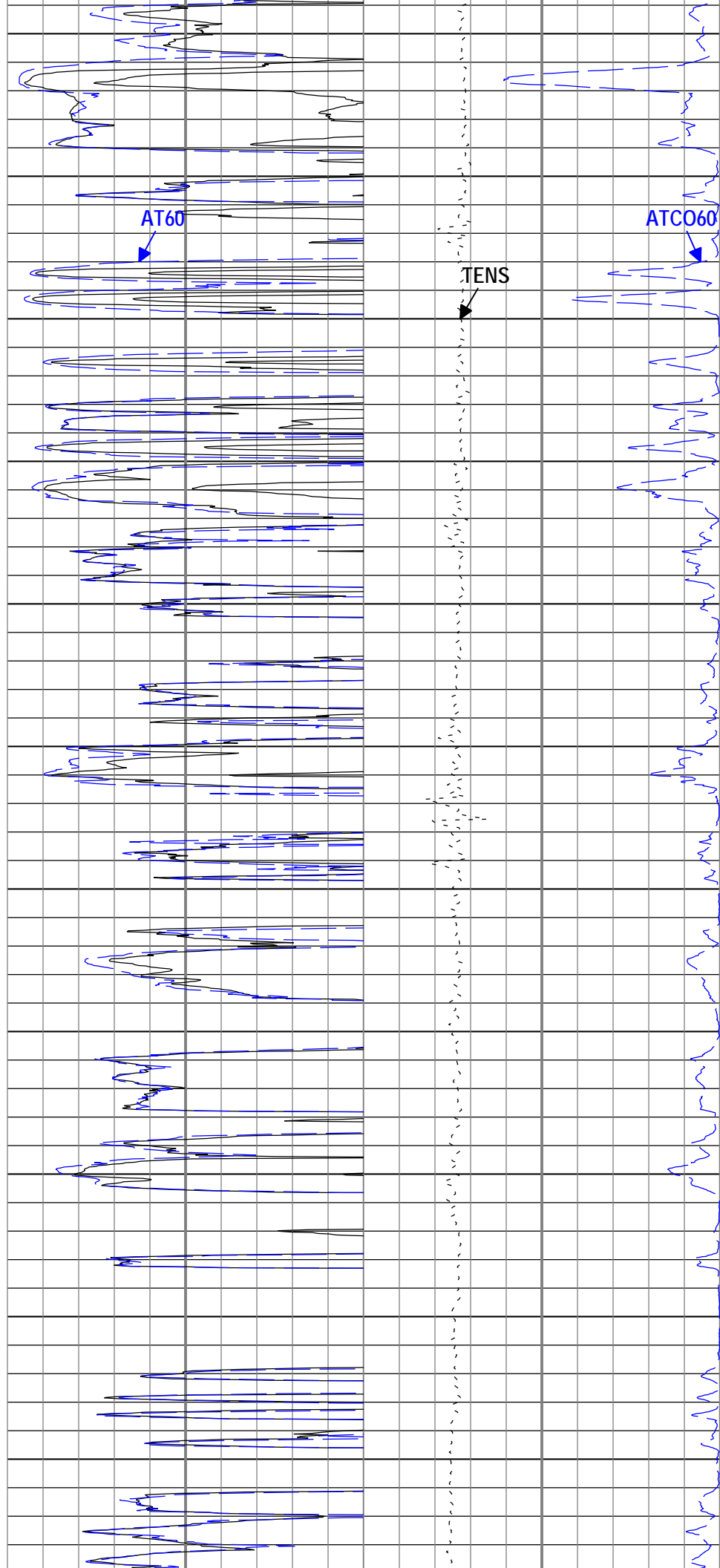
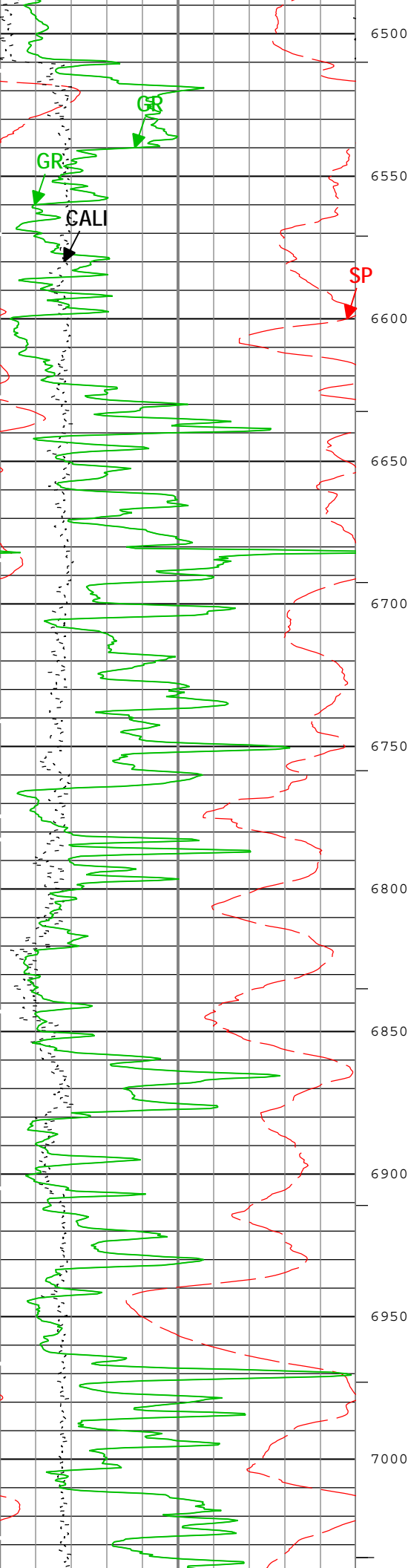


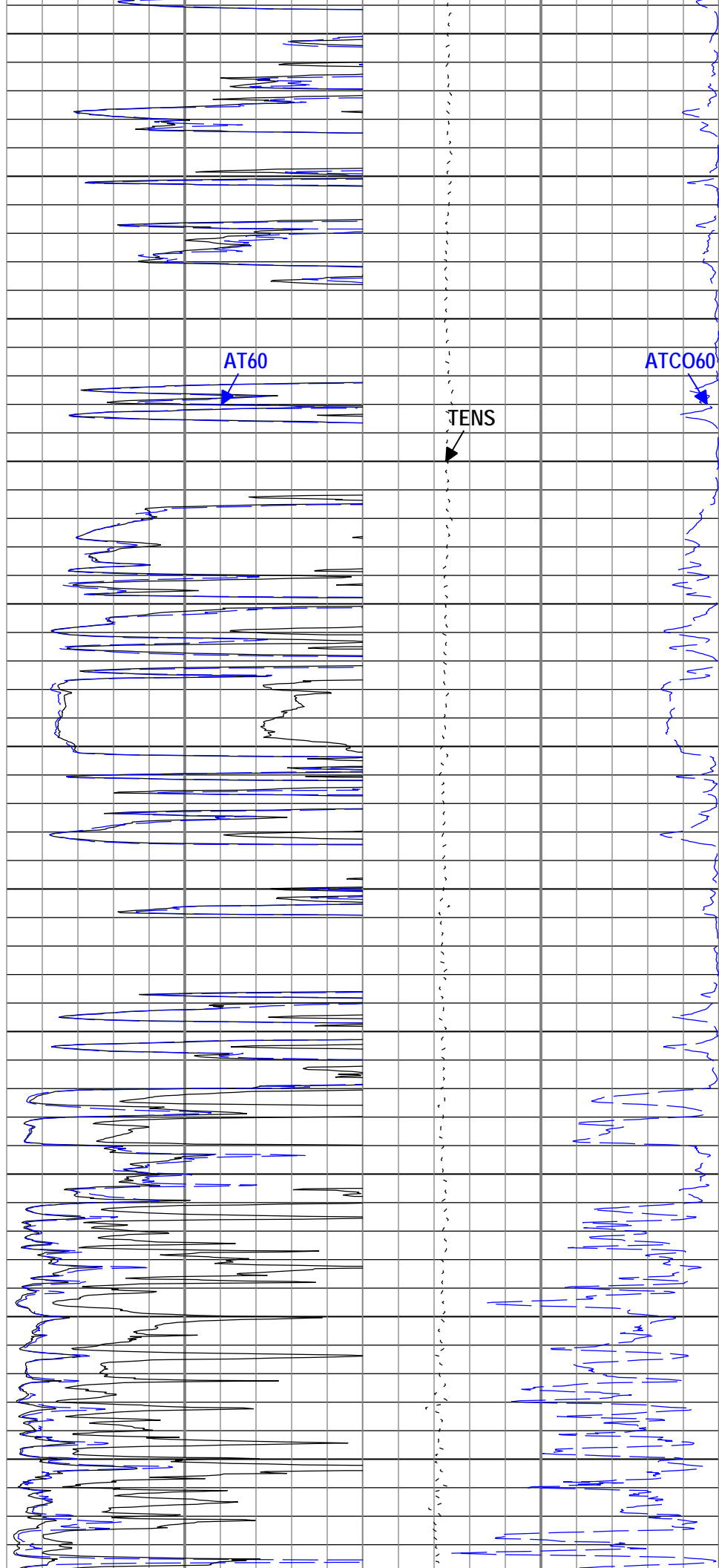
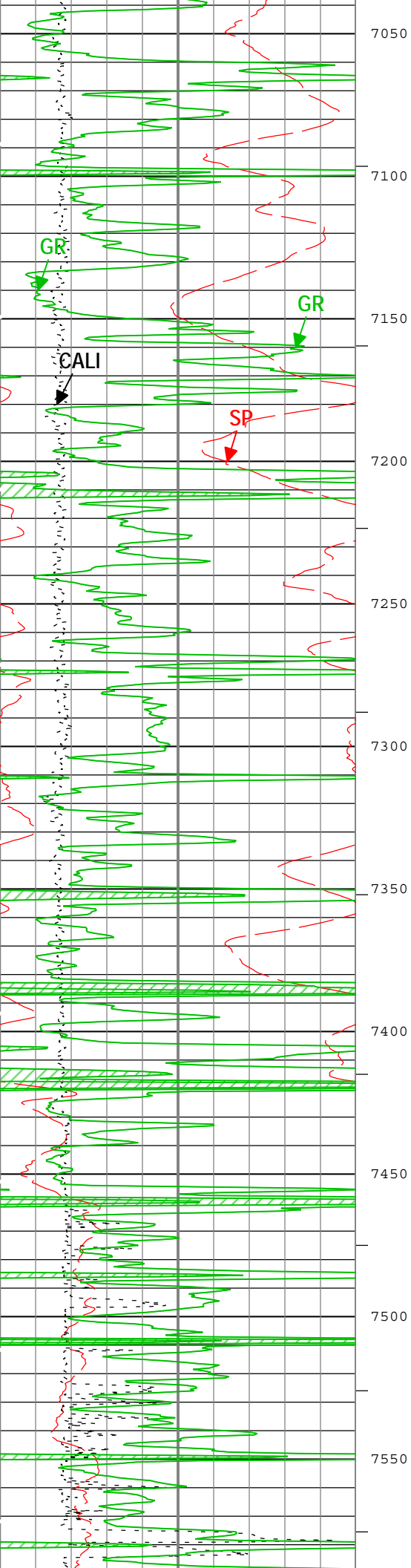


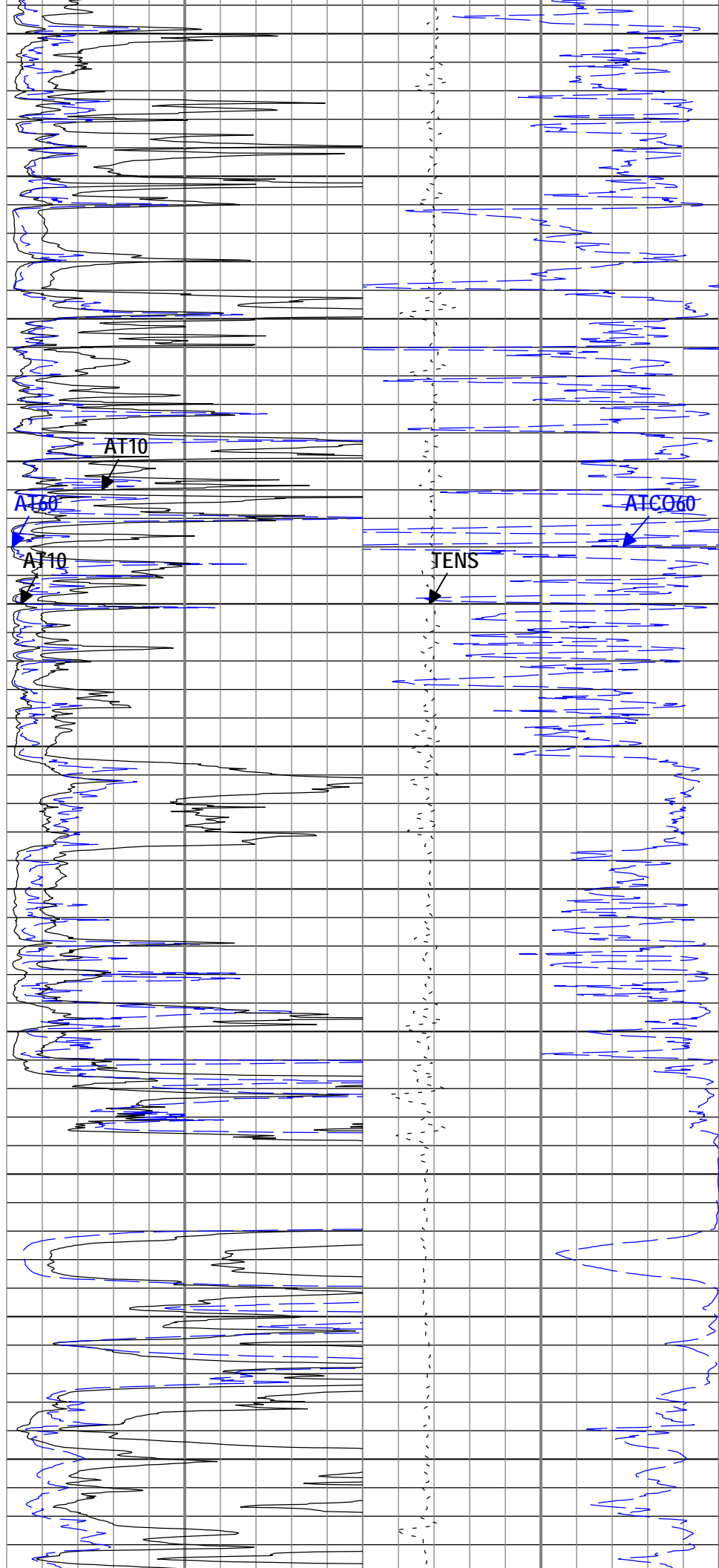
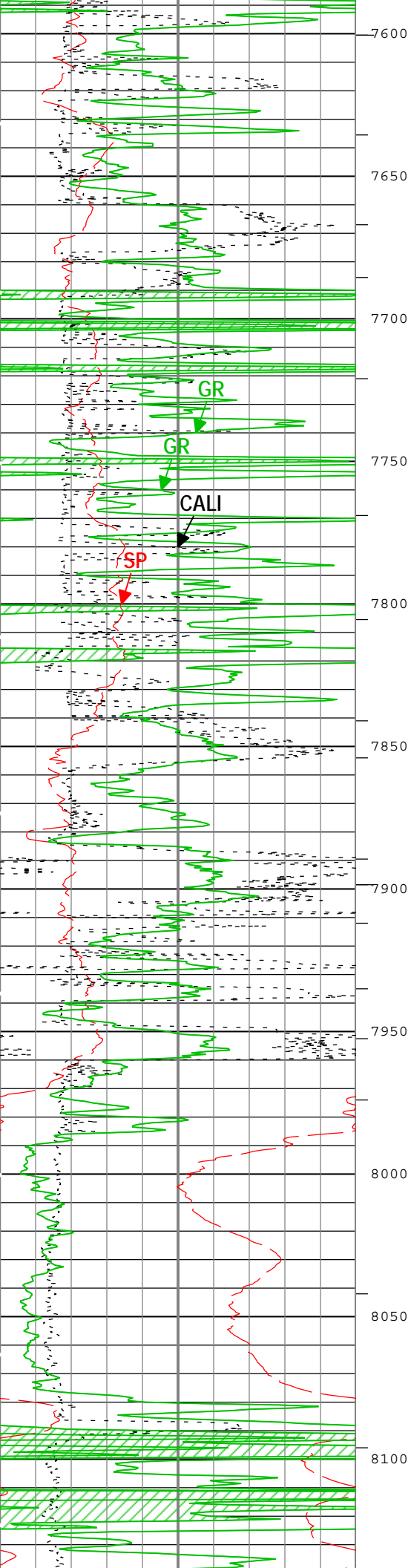


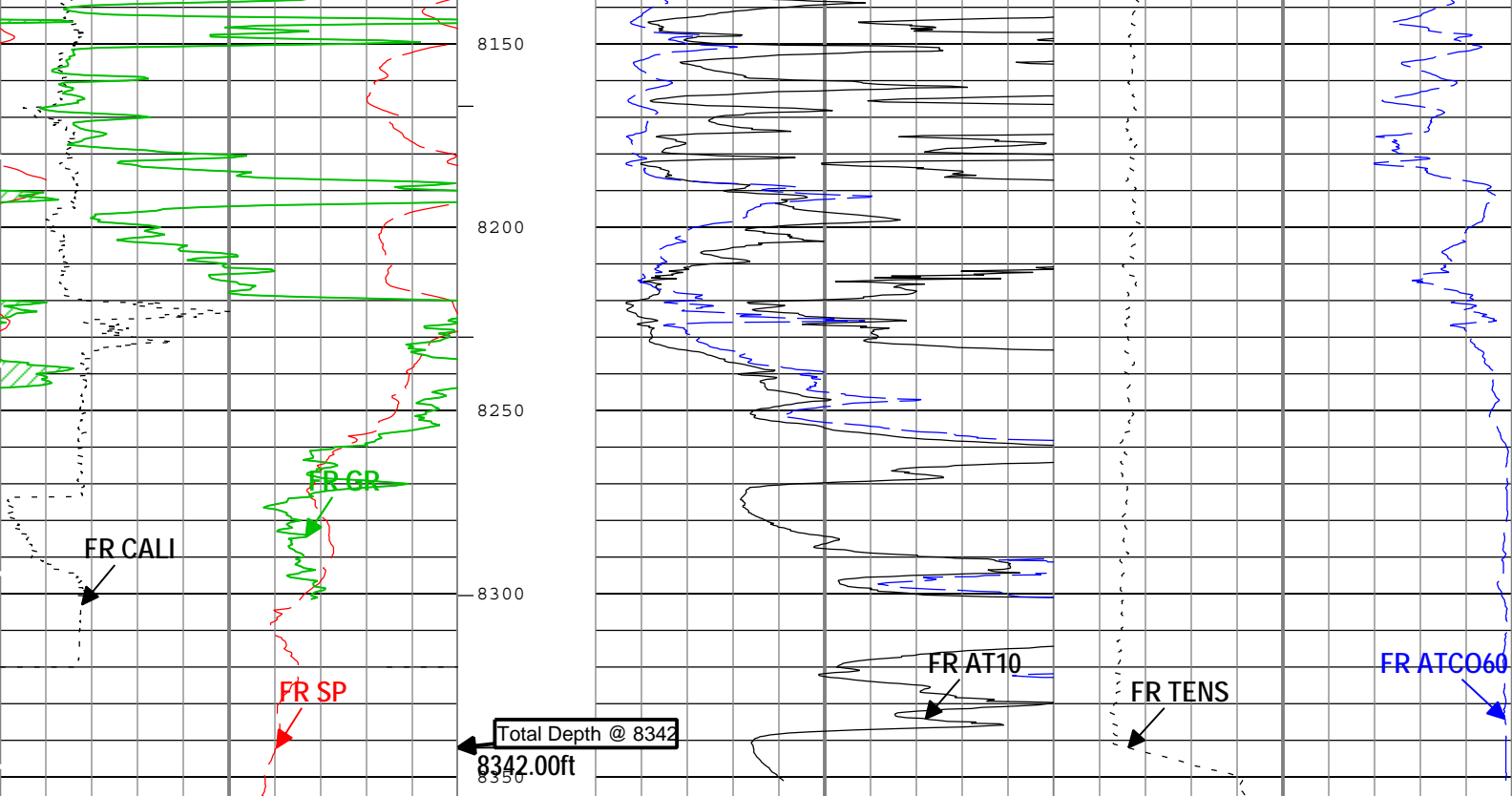












Gamma Ray Backup		
Spontaneous Potential (SP) AIT-H		
0	mV	200
Caliper (CALI) HDRS-H		
6	in	16
Gamma Ray (GR) HGNS-H		
0	gAPI	200

Array Induction Two Foot Resistivity A10 (AT10) AIT-H		
0	ohm.m	50
Array Induction Two Foot Resistivity A60 (AT60) AIT-H		
0	ohm.m	50
Array Induction Two Foot Resistivity A10 (AT10) AIT-H		
0	ohm.m	10

Cable Tension (TENS)		
5000	lbf	0
Array Induction Two Foot Conductivity A60 (ATCO60) AIT-H		
1000	mS/m	0

TIME_1900 - Time Marked every 60.00 (s)

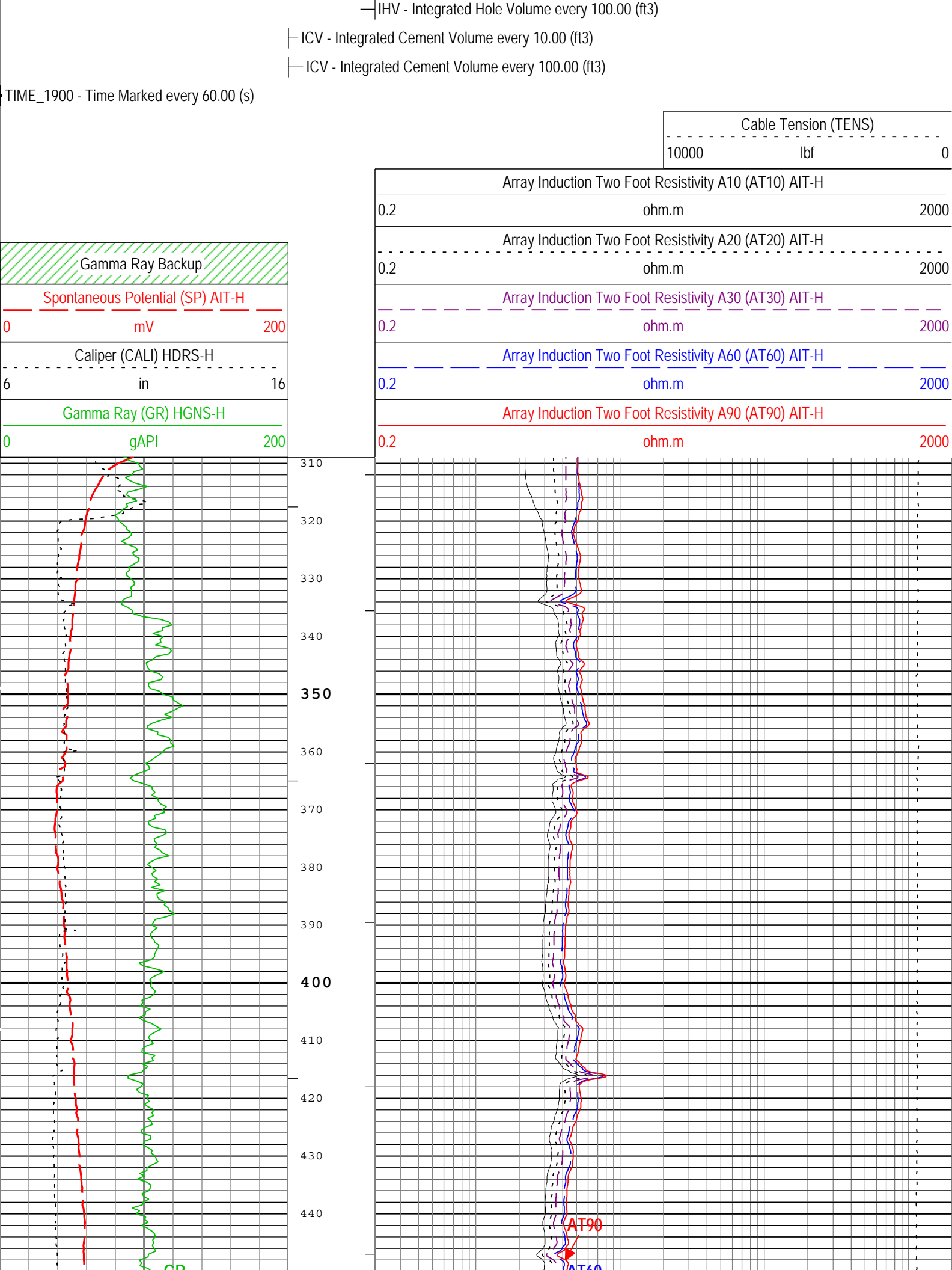
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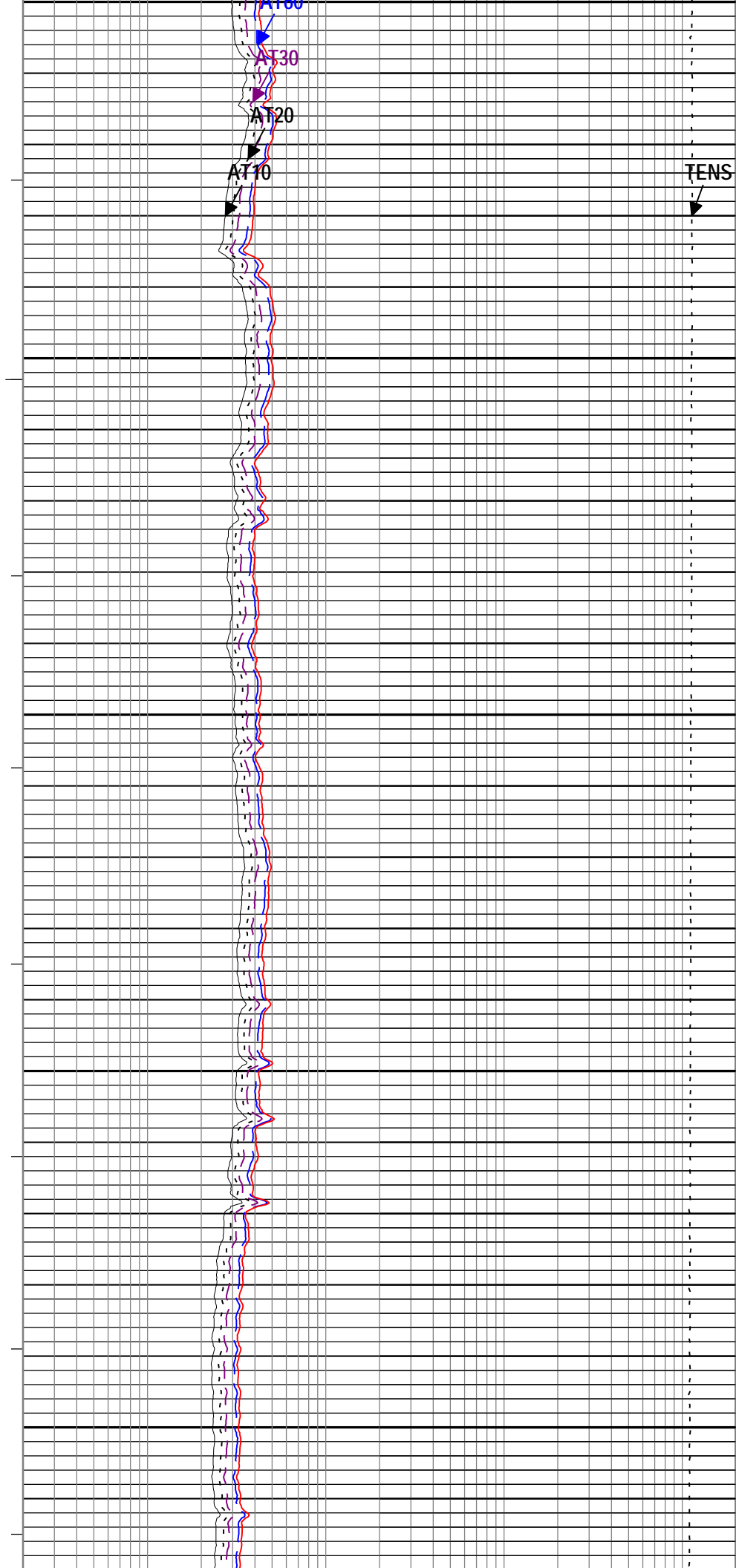
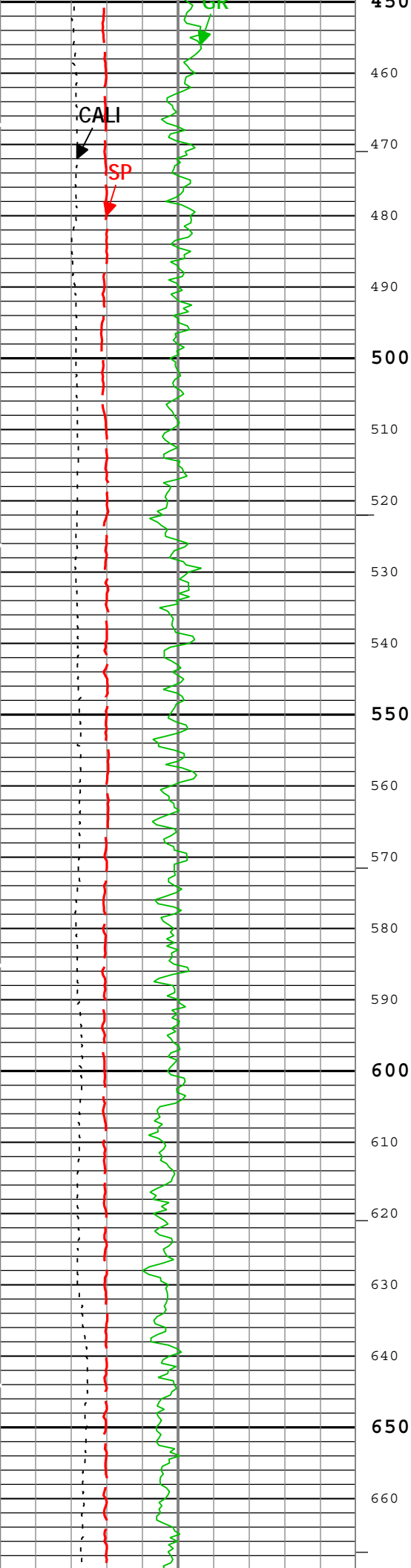
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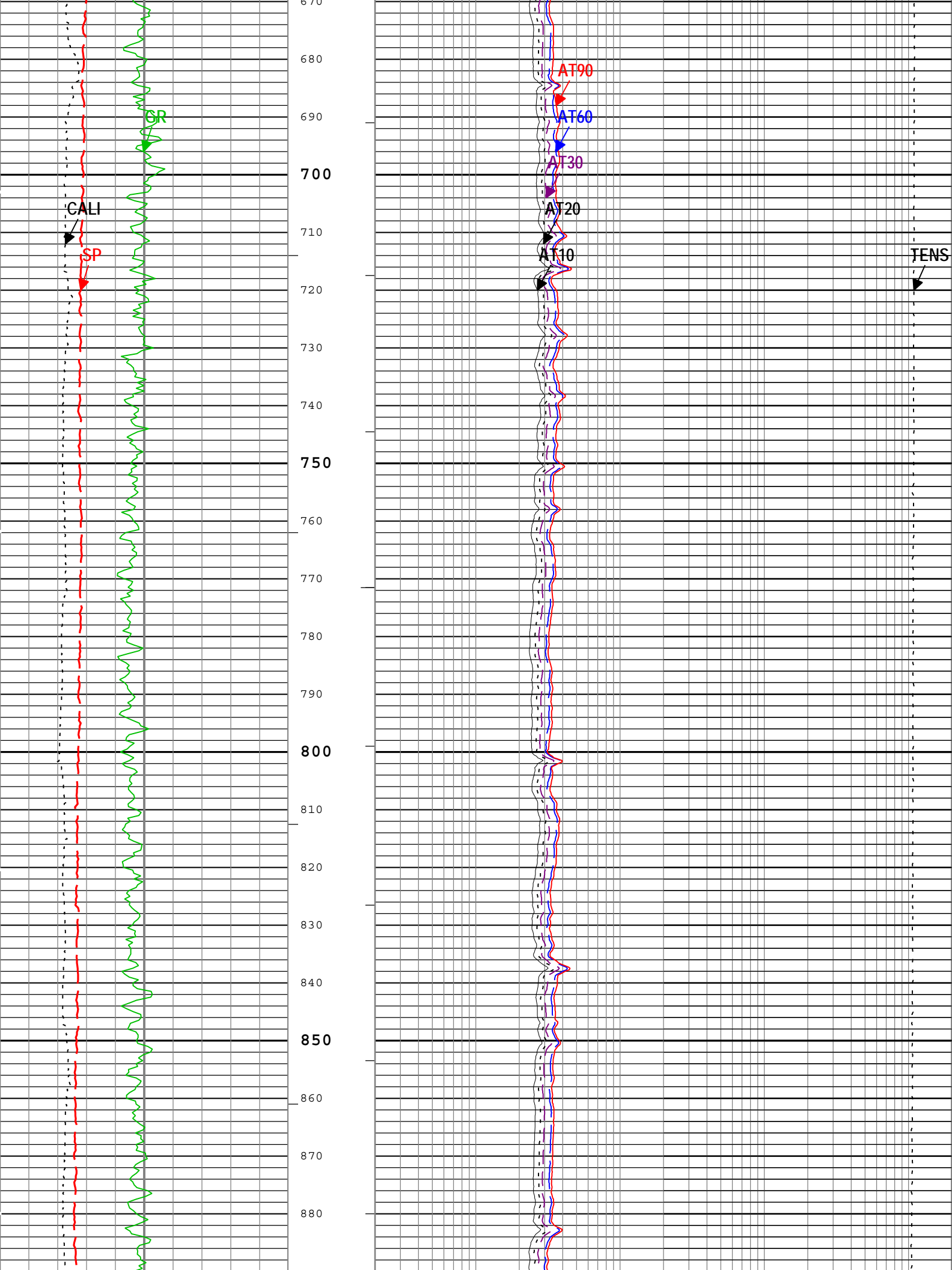
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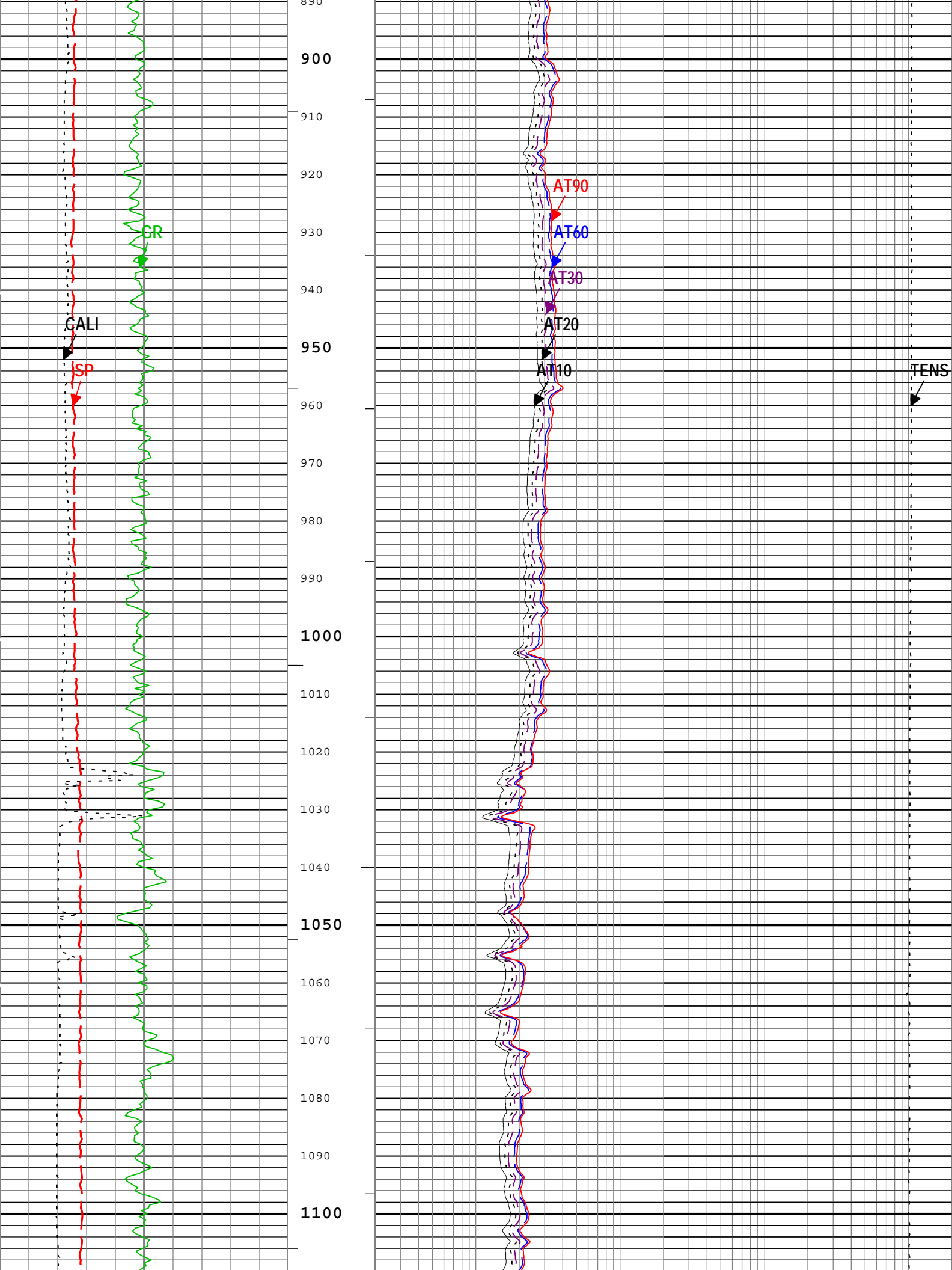
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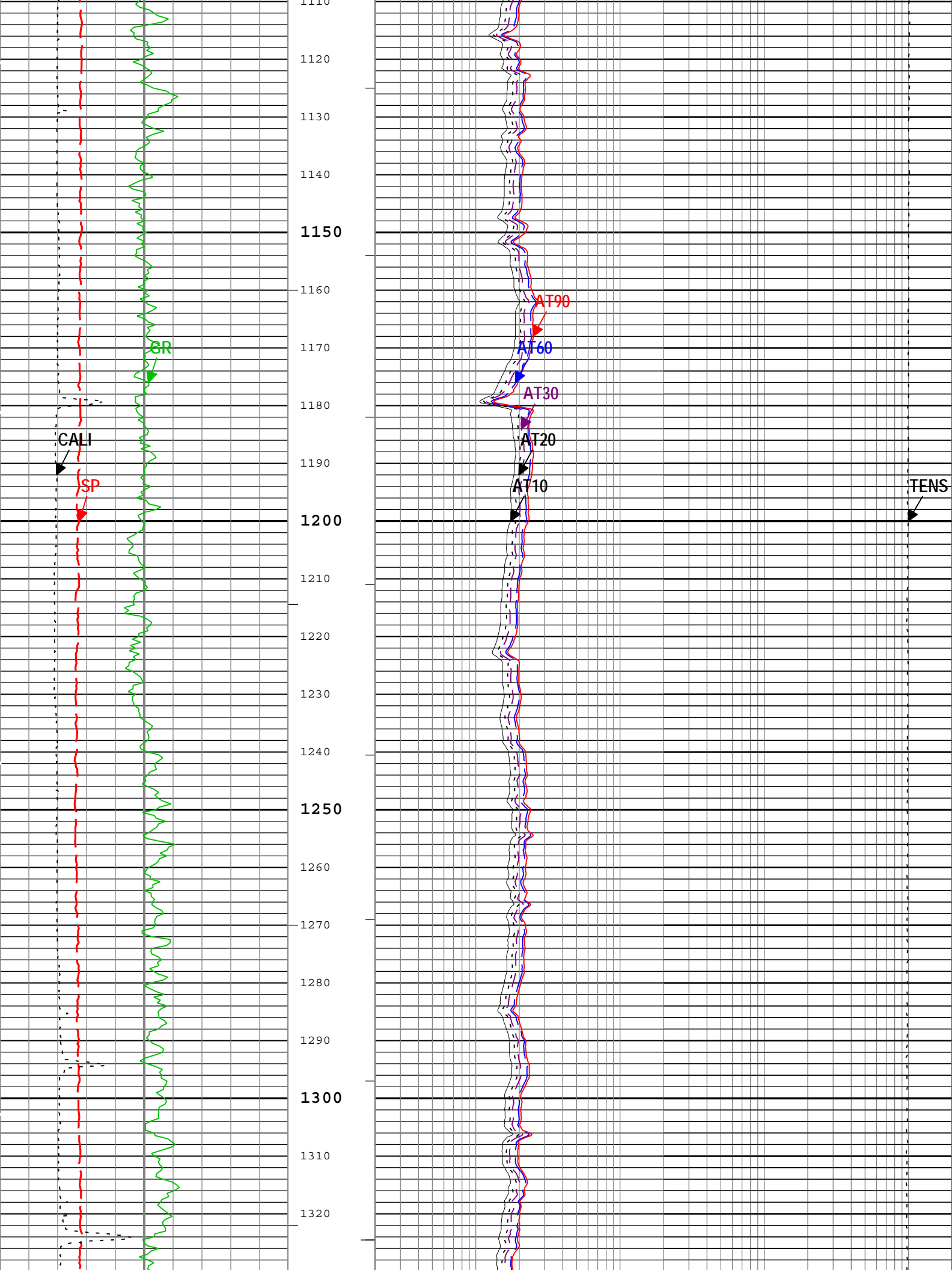
Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-H	Compute Standoff	
ABLM	Array Induction Basic Logs Mode	AIT-H	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-H	Yes	
ASTA	Array Induction Tool Standoff	AIT-H	1.125	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	7.875	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0	in
CBLO	Casing Bottom (Logger)	WLSESSION	309	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DFD	Drilling Fluid Density	Borehole	9.2	lbm/gal
FCD	Future Casing (Outer) Diameter	WLSESSION	5.5	in

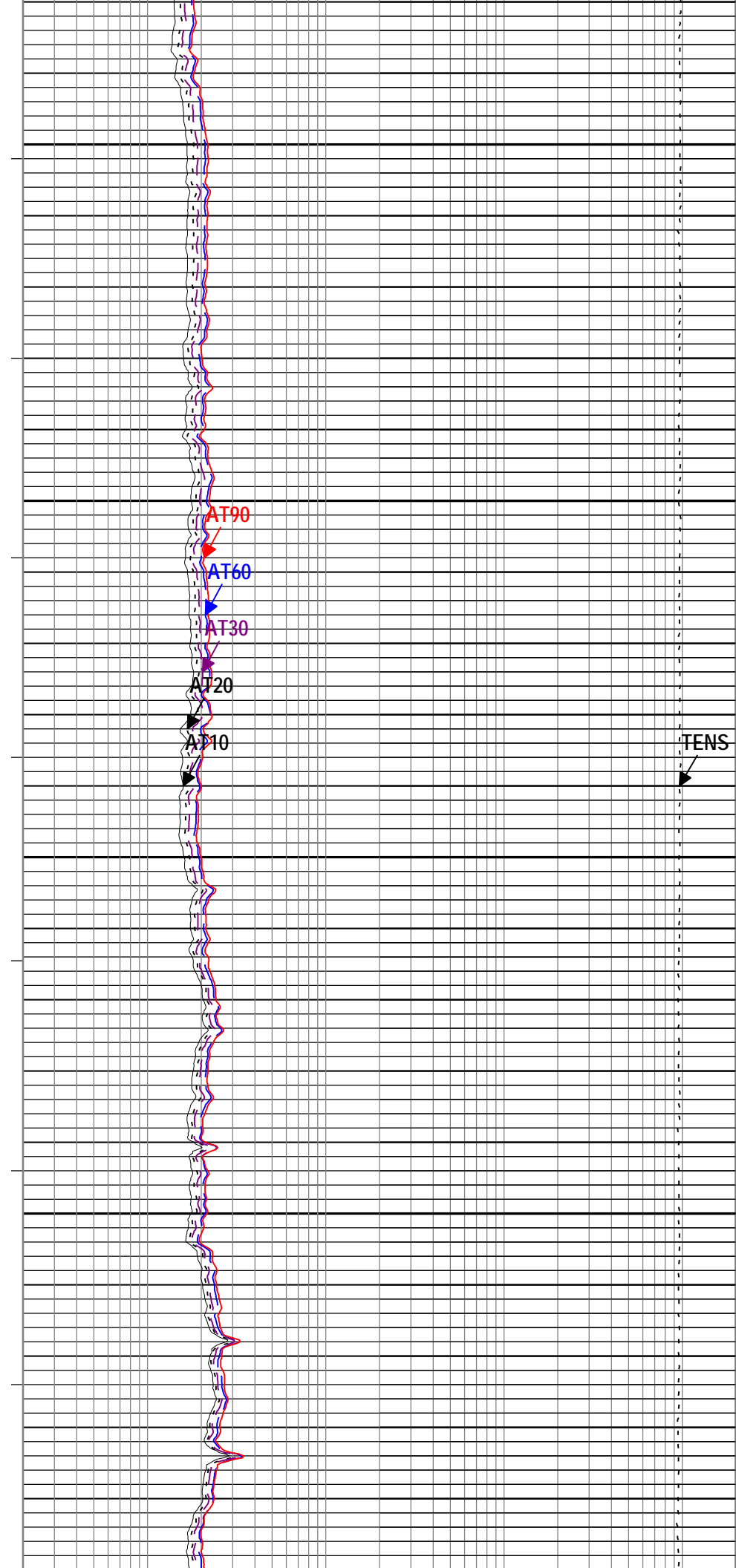
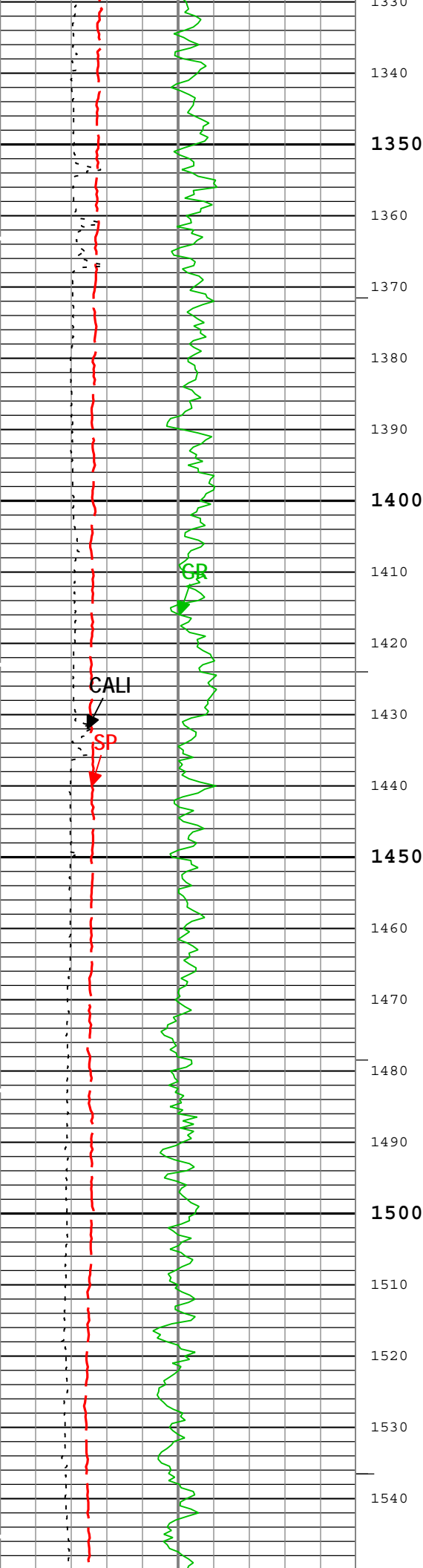


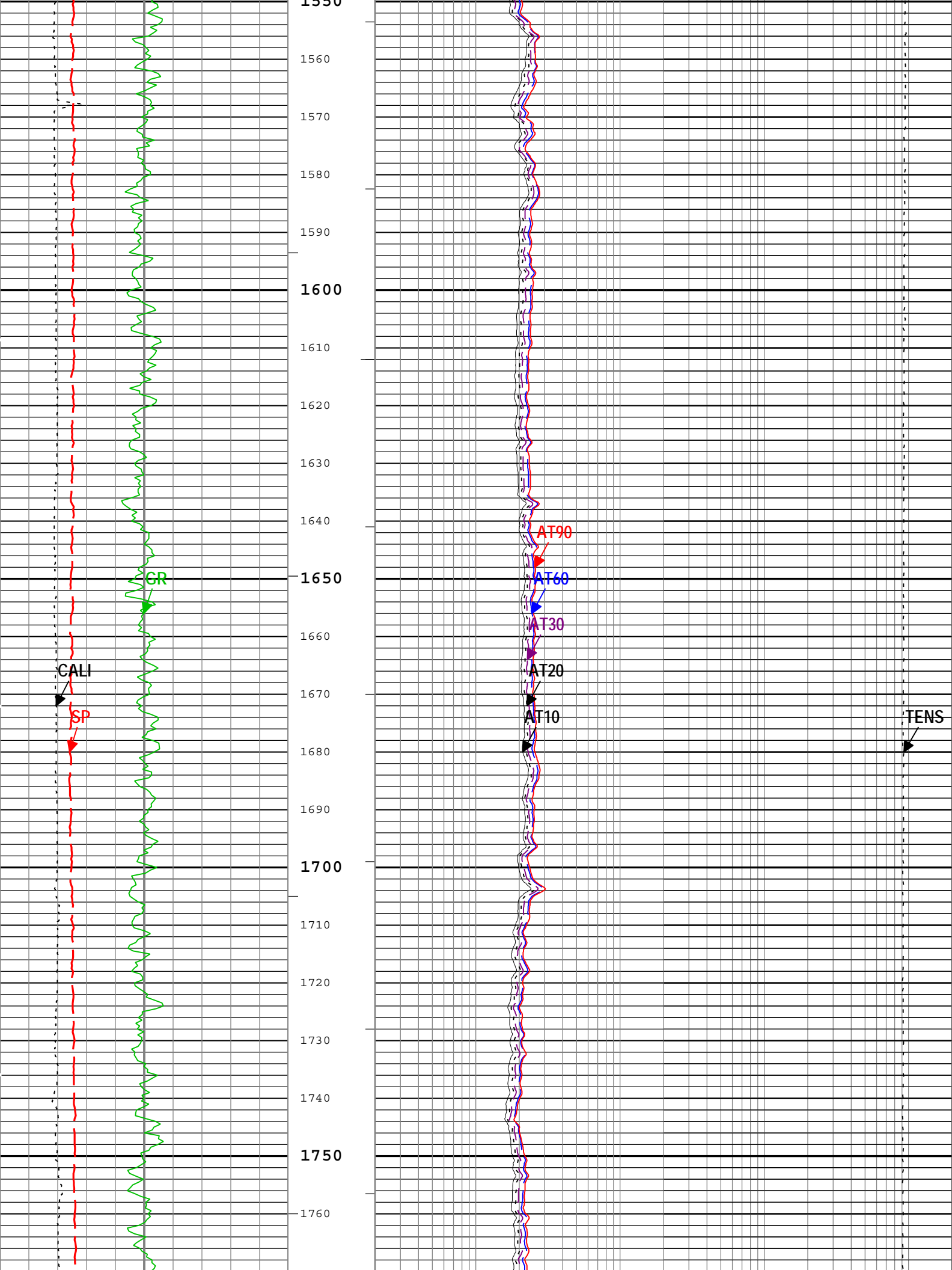


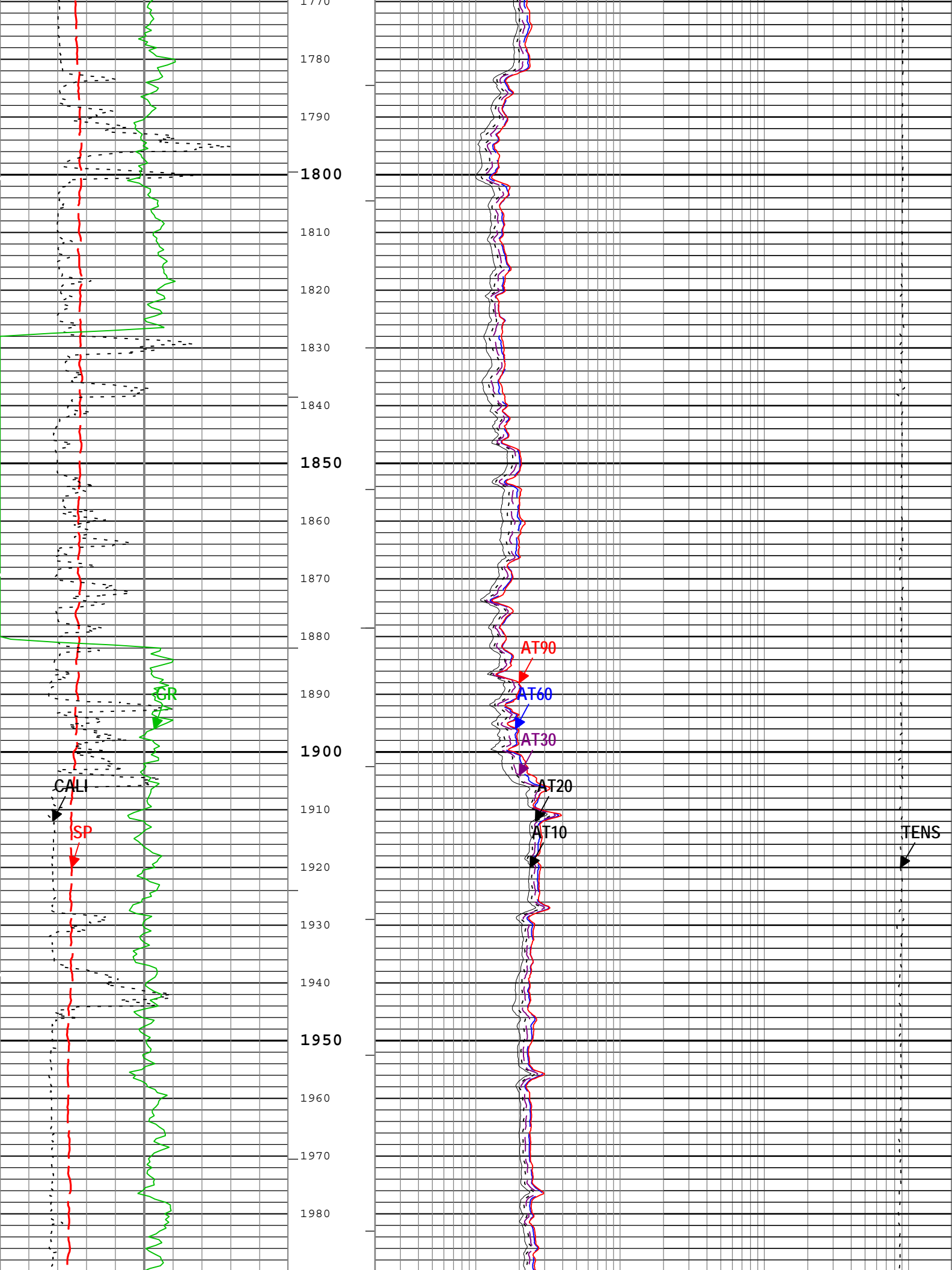


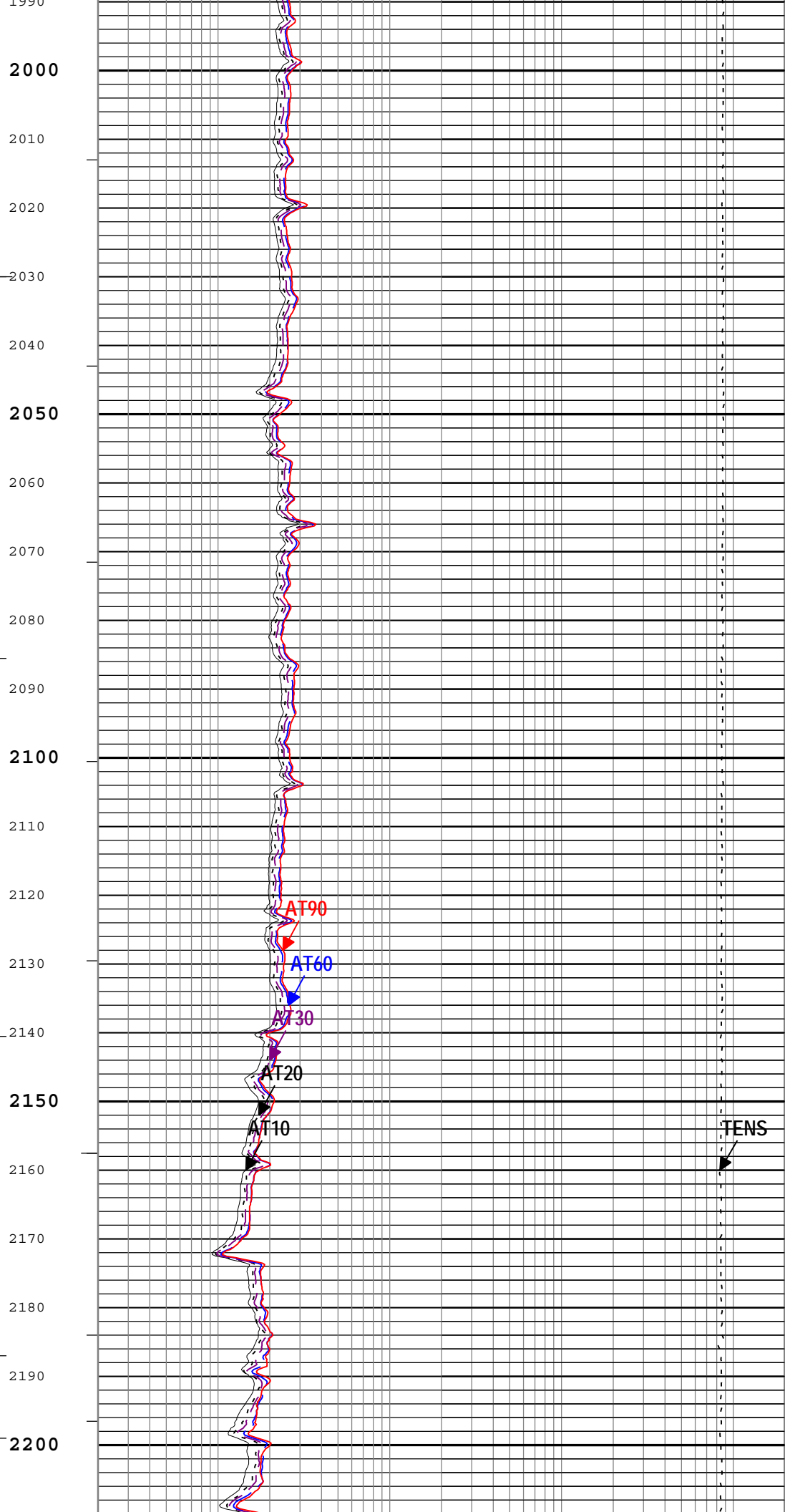
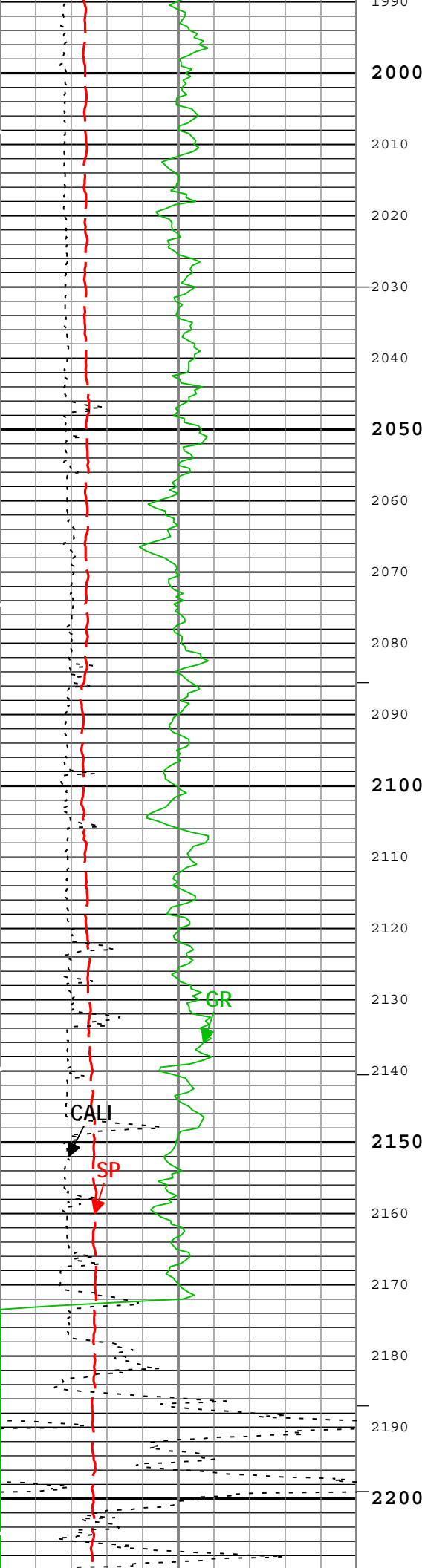


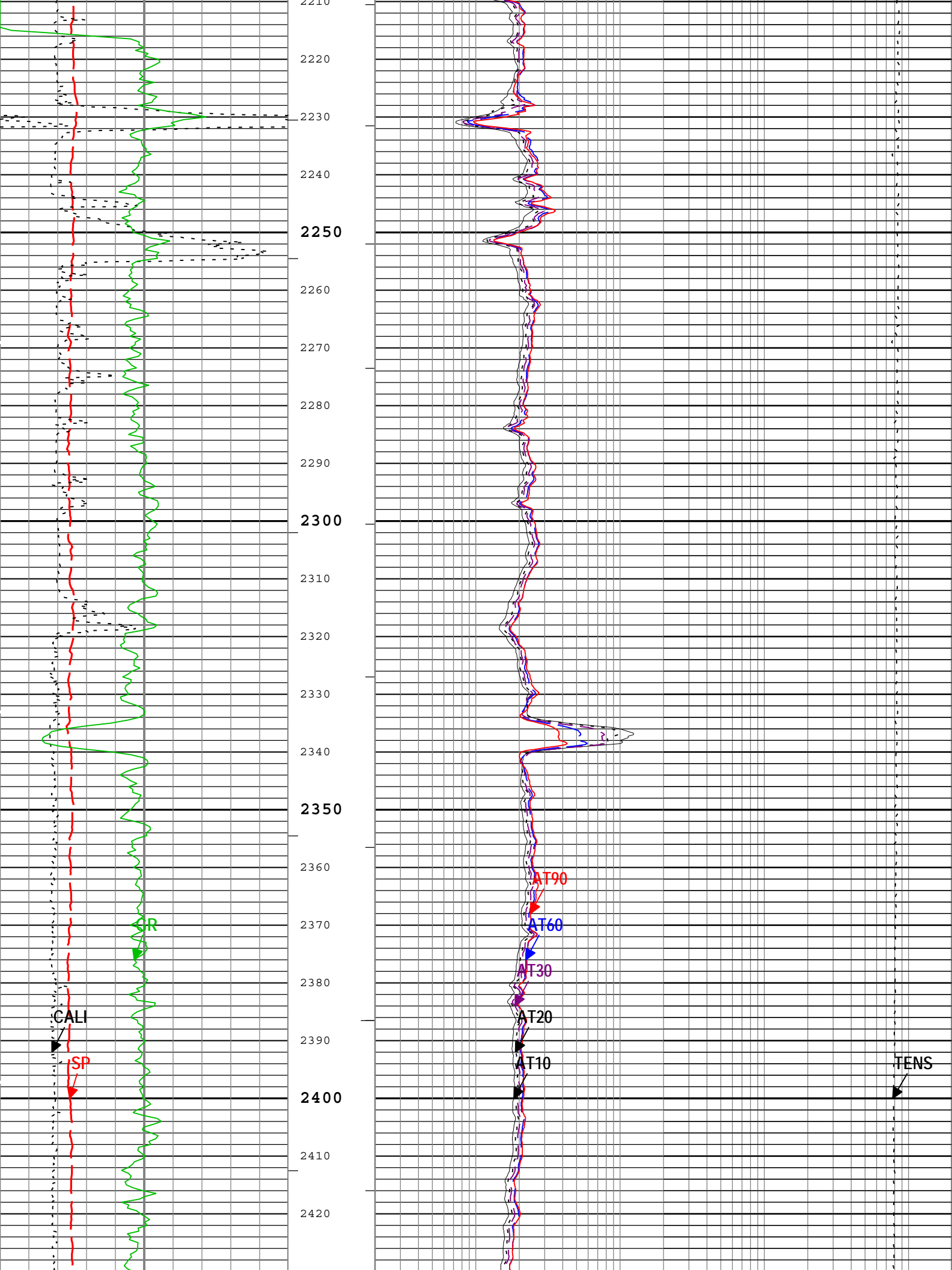


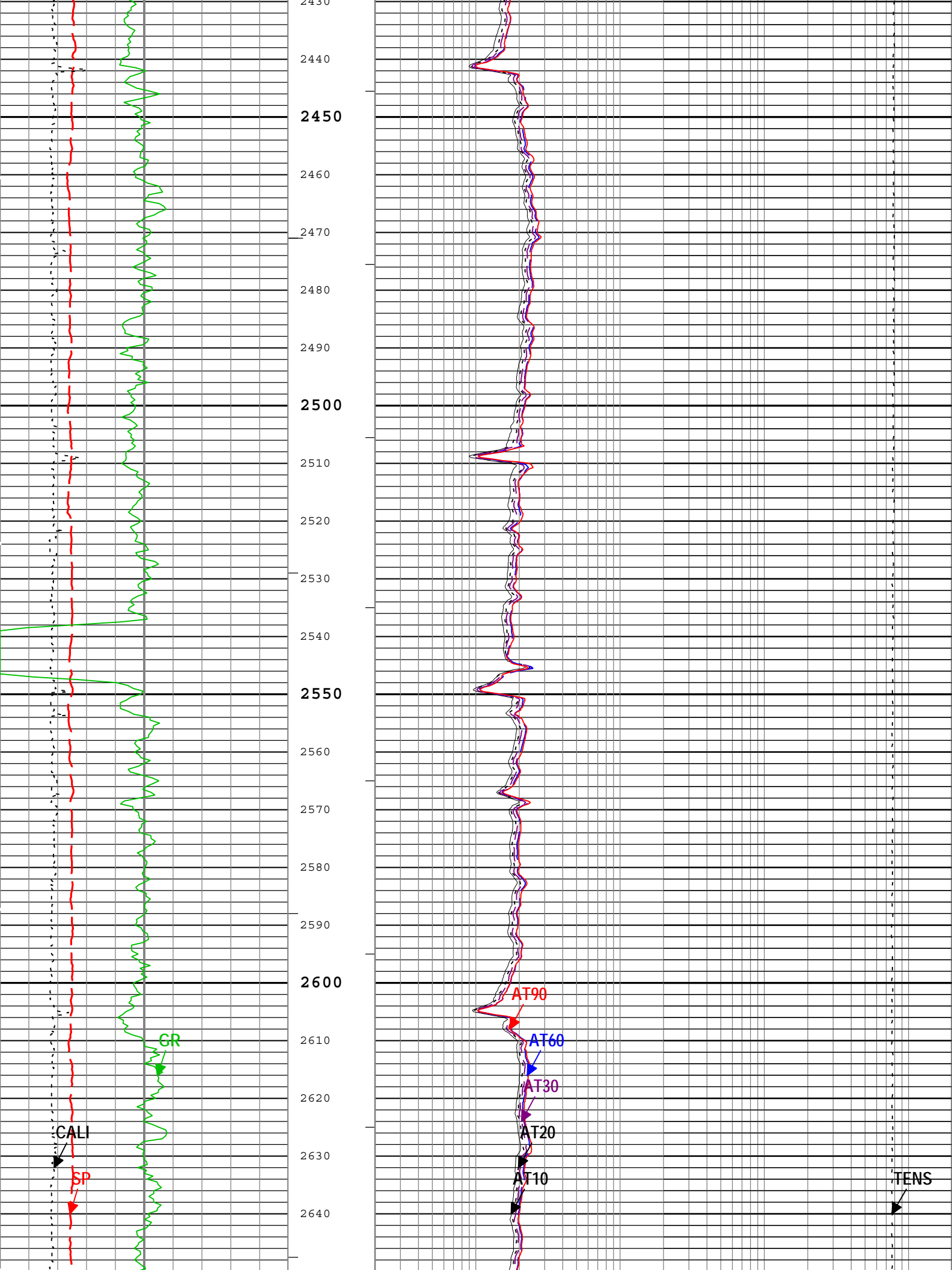


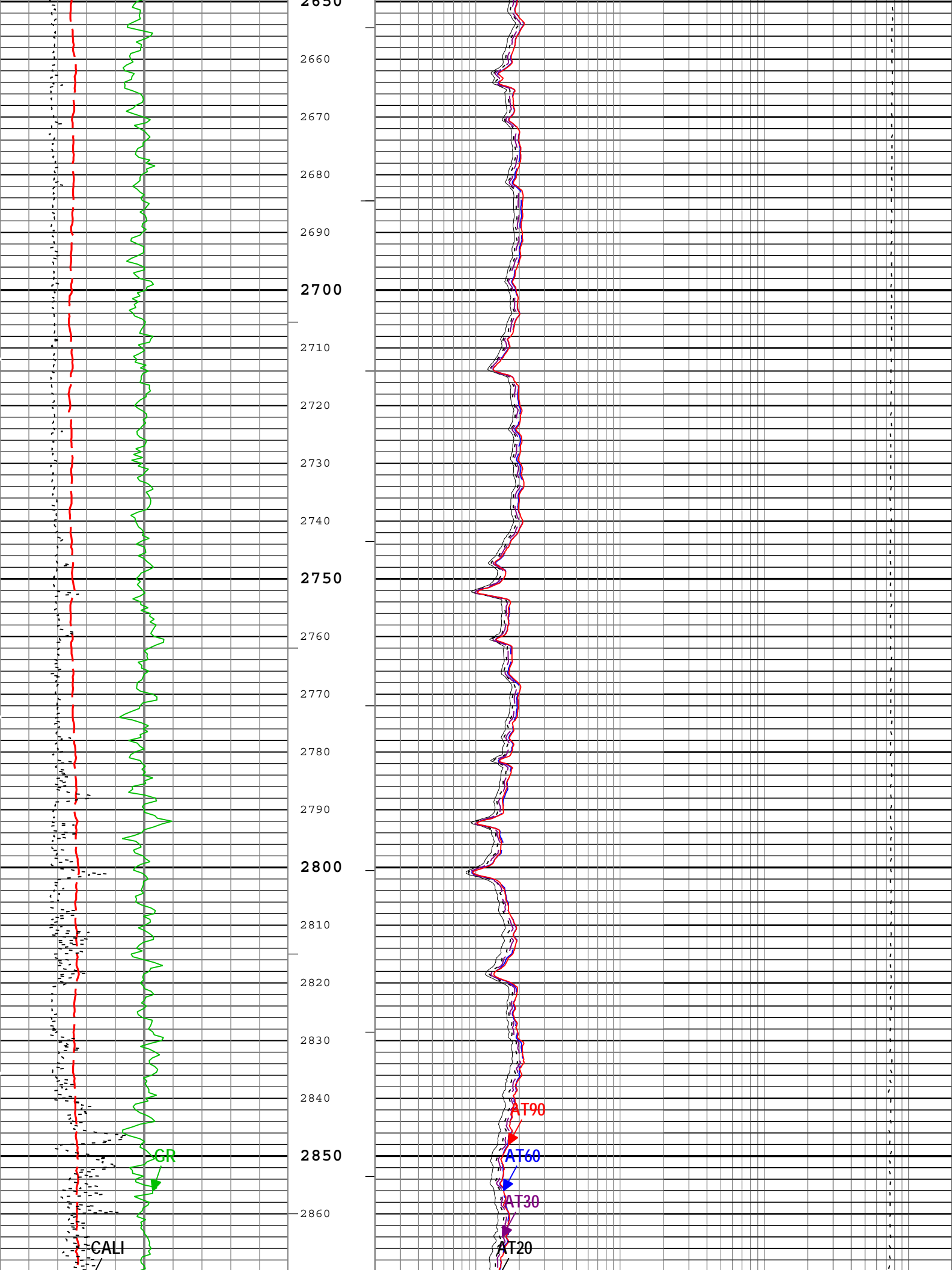


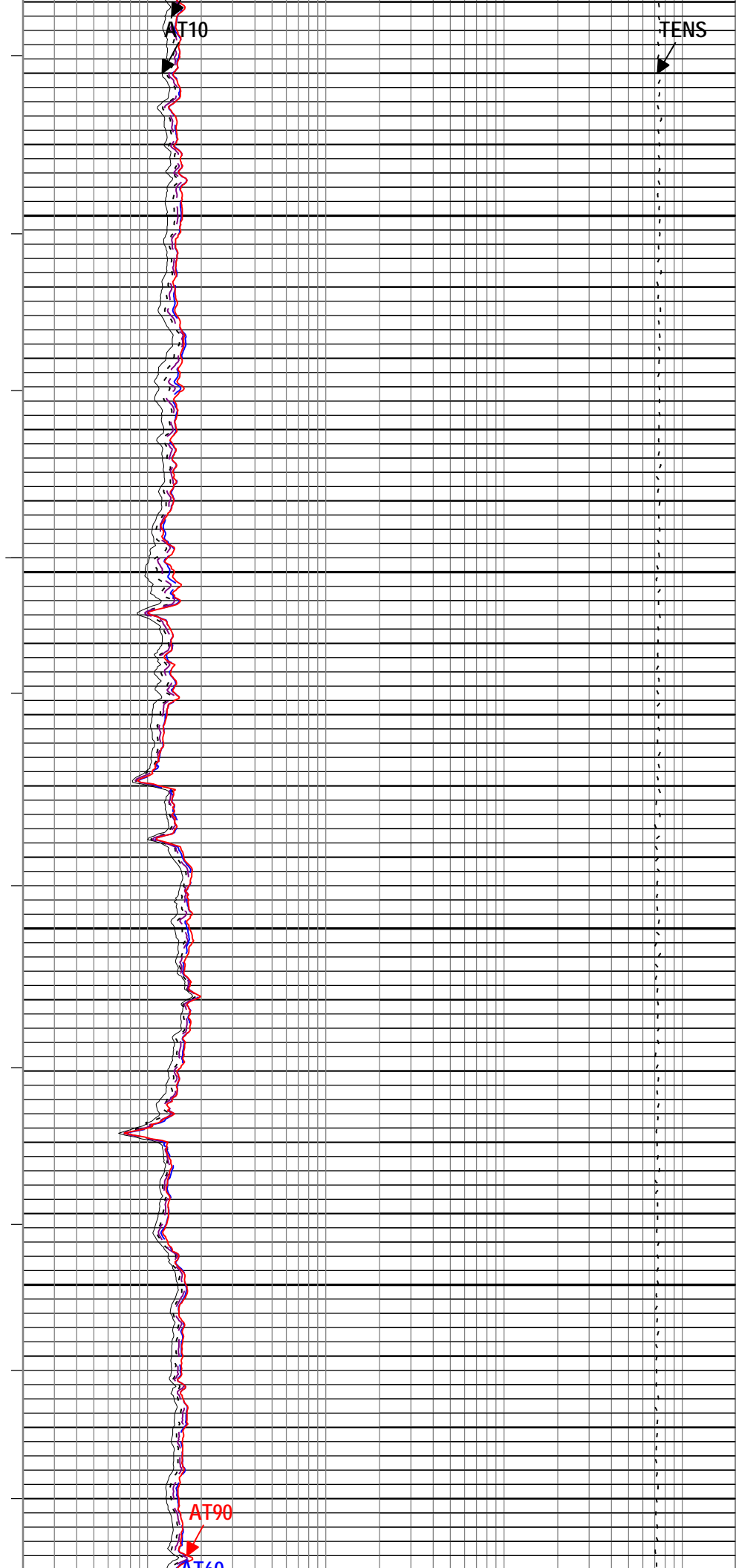
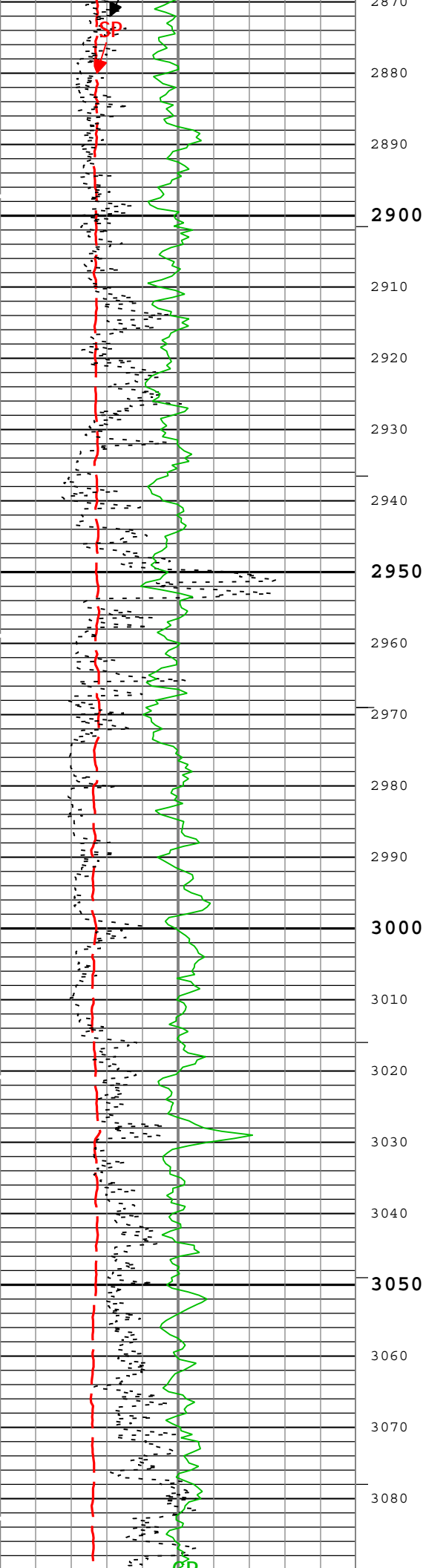


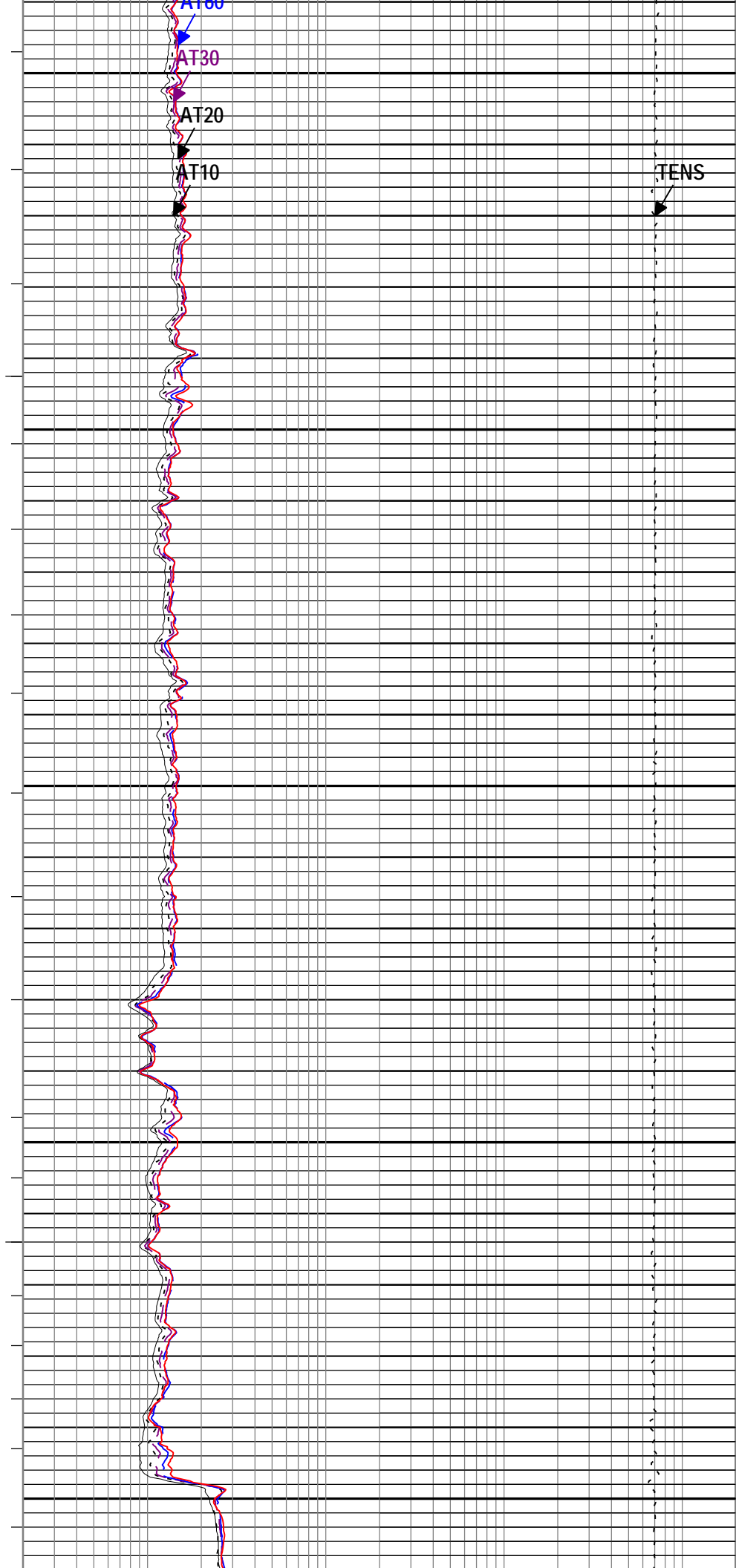
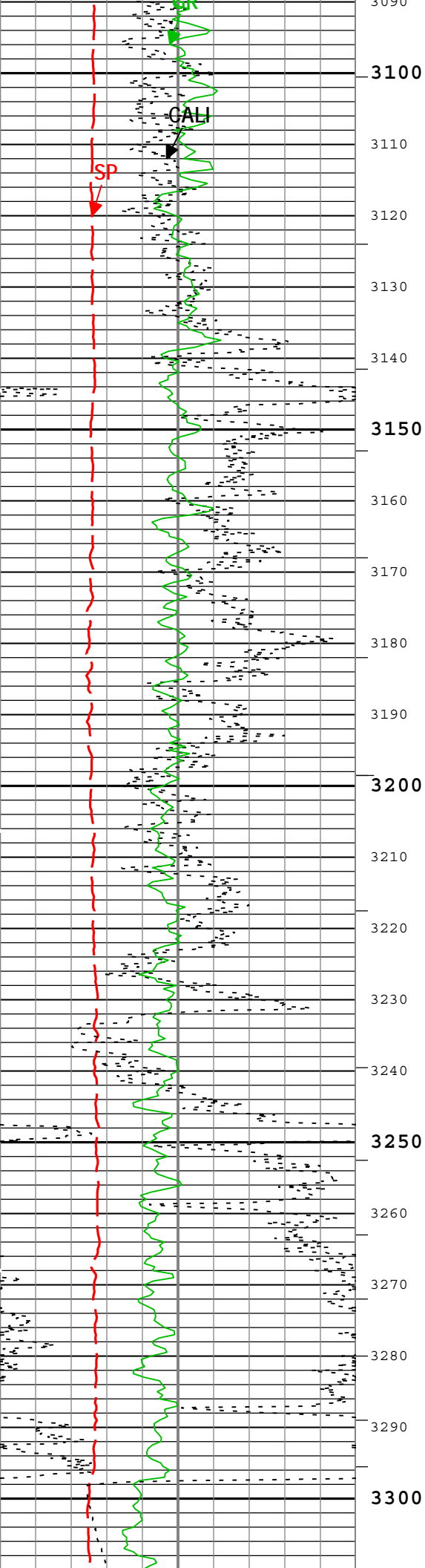


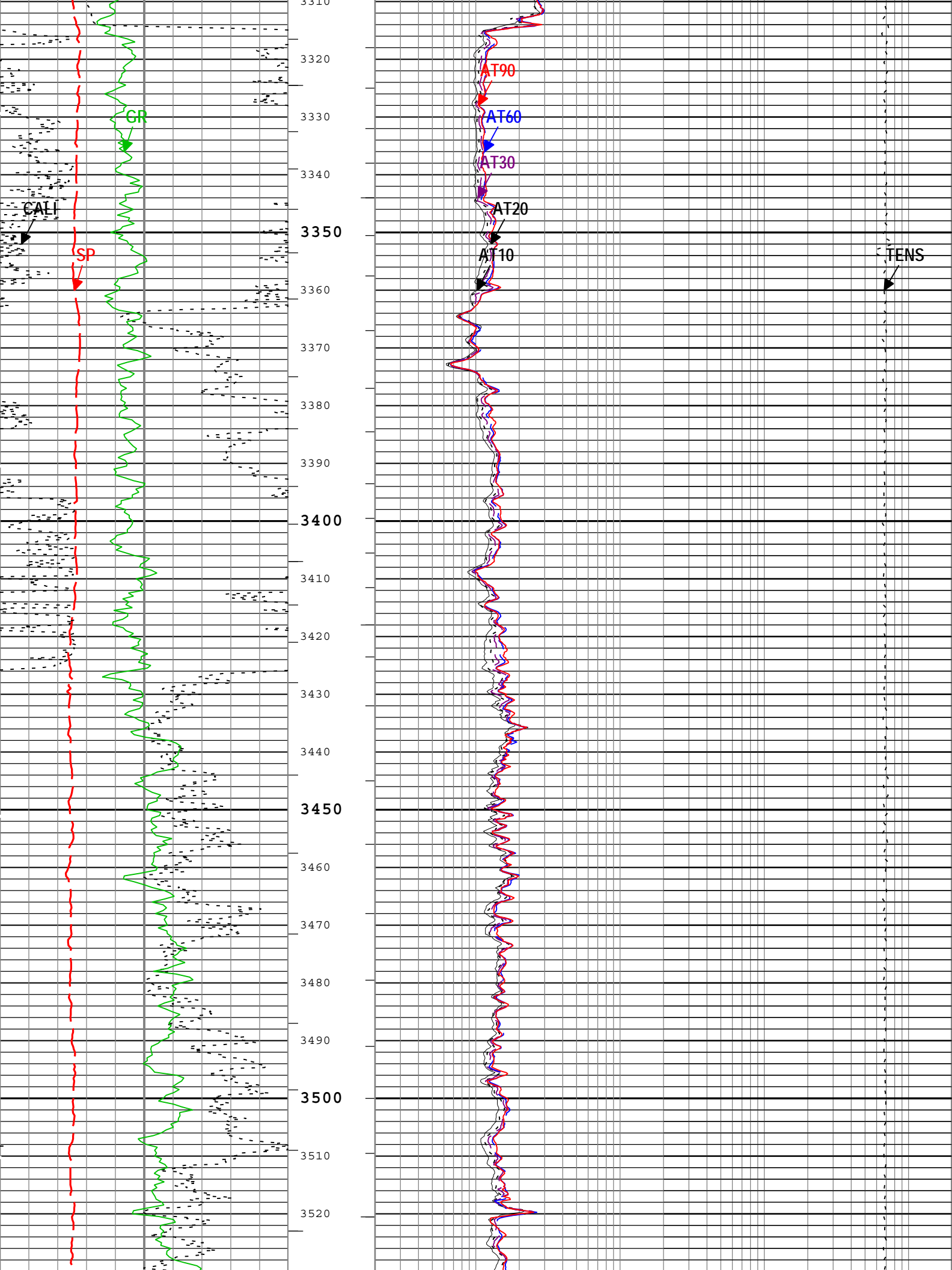


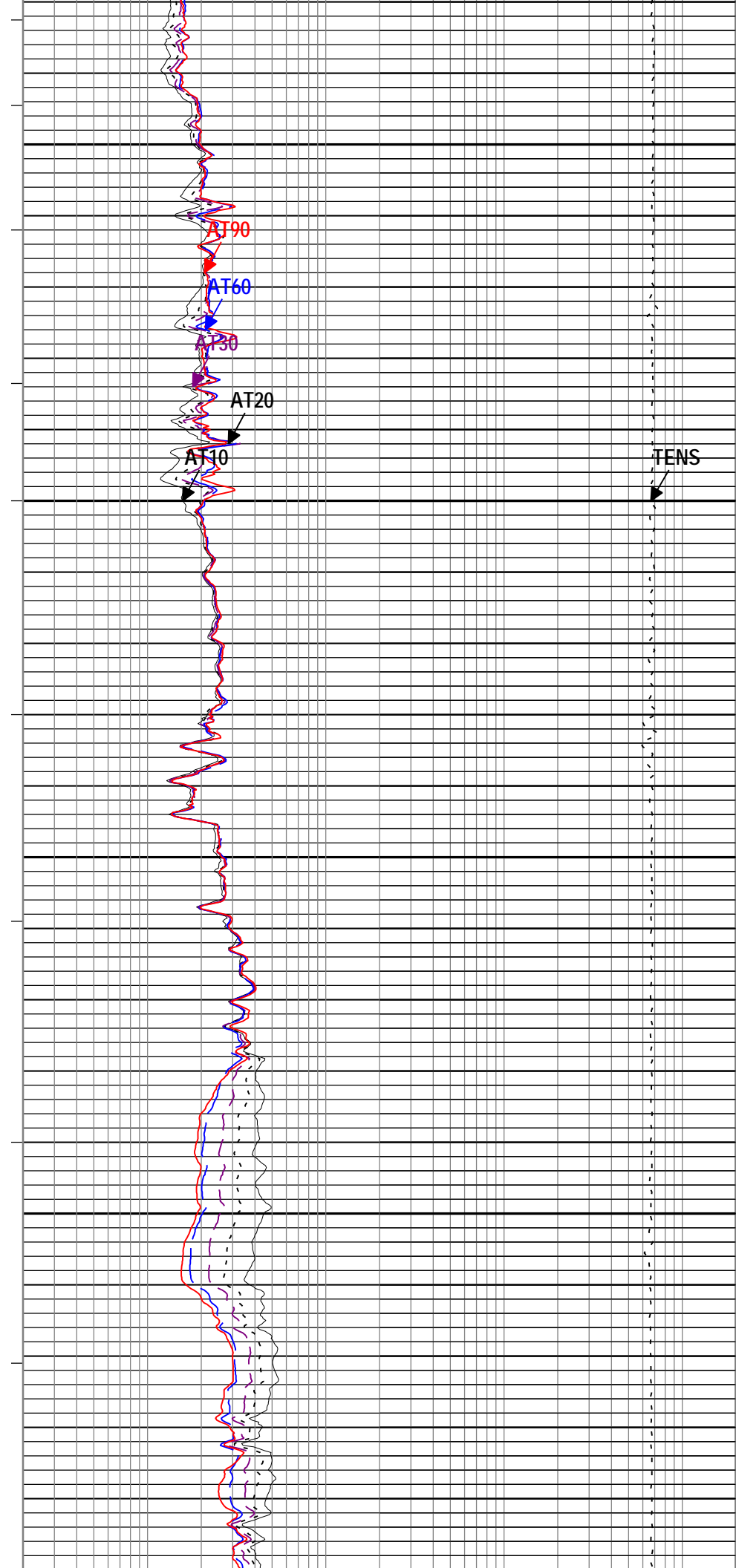
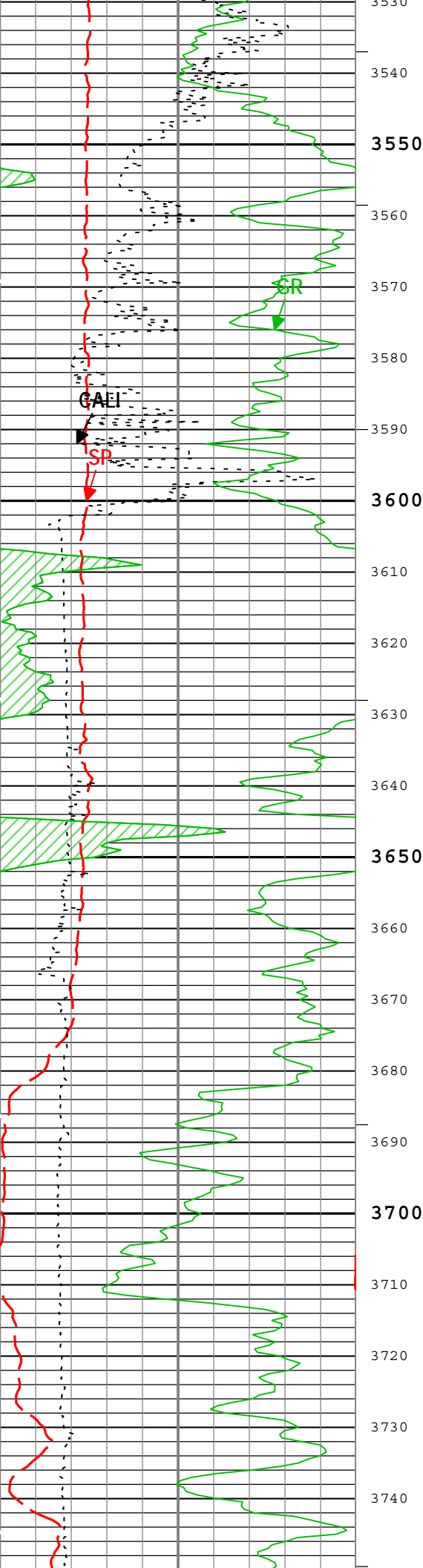


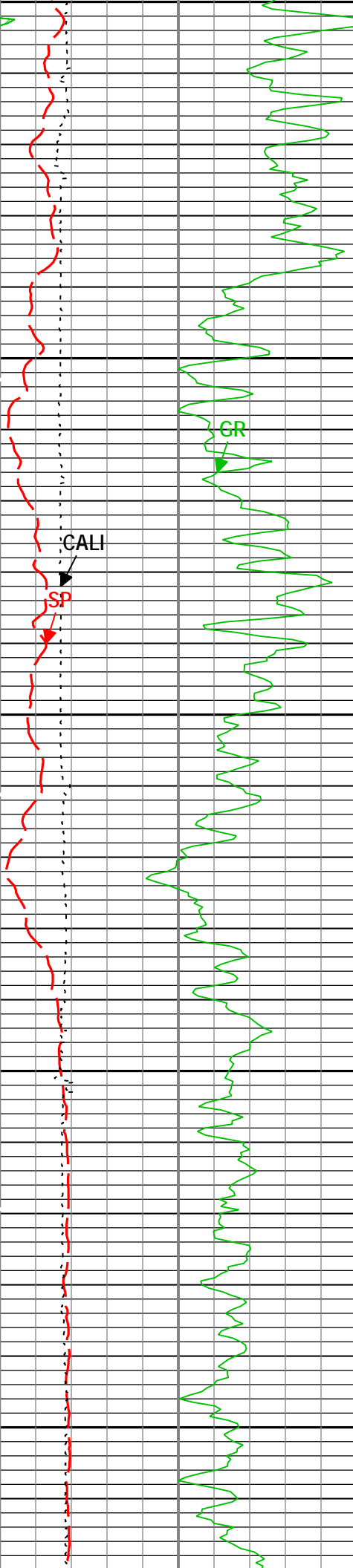




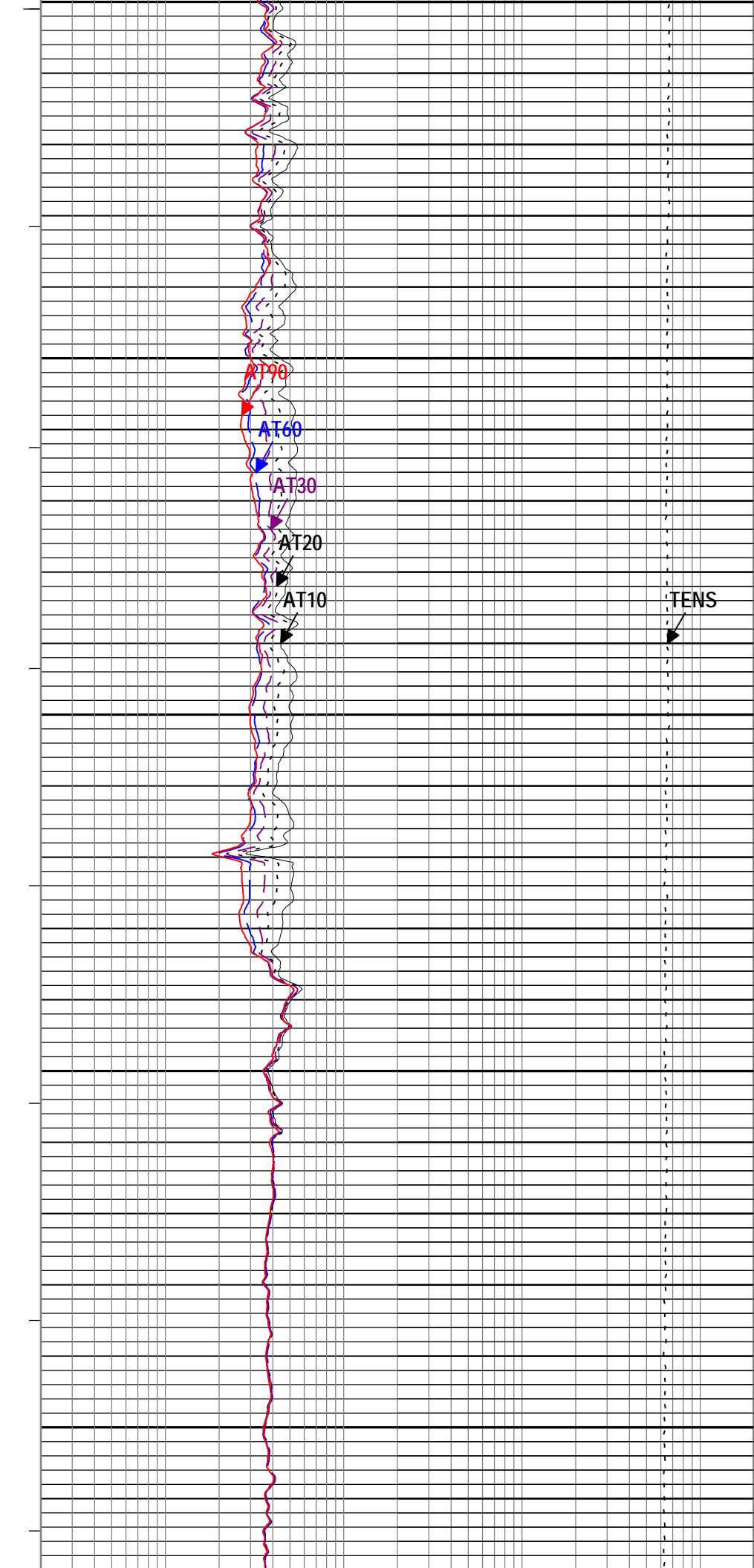


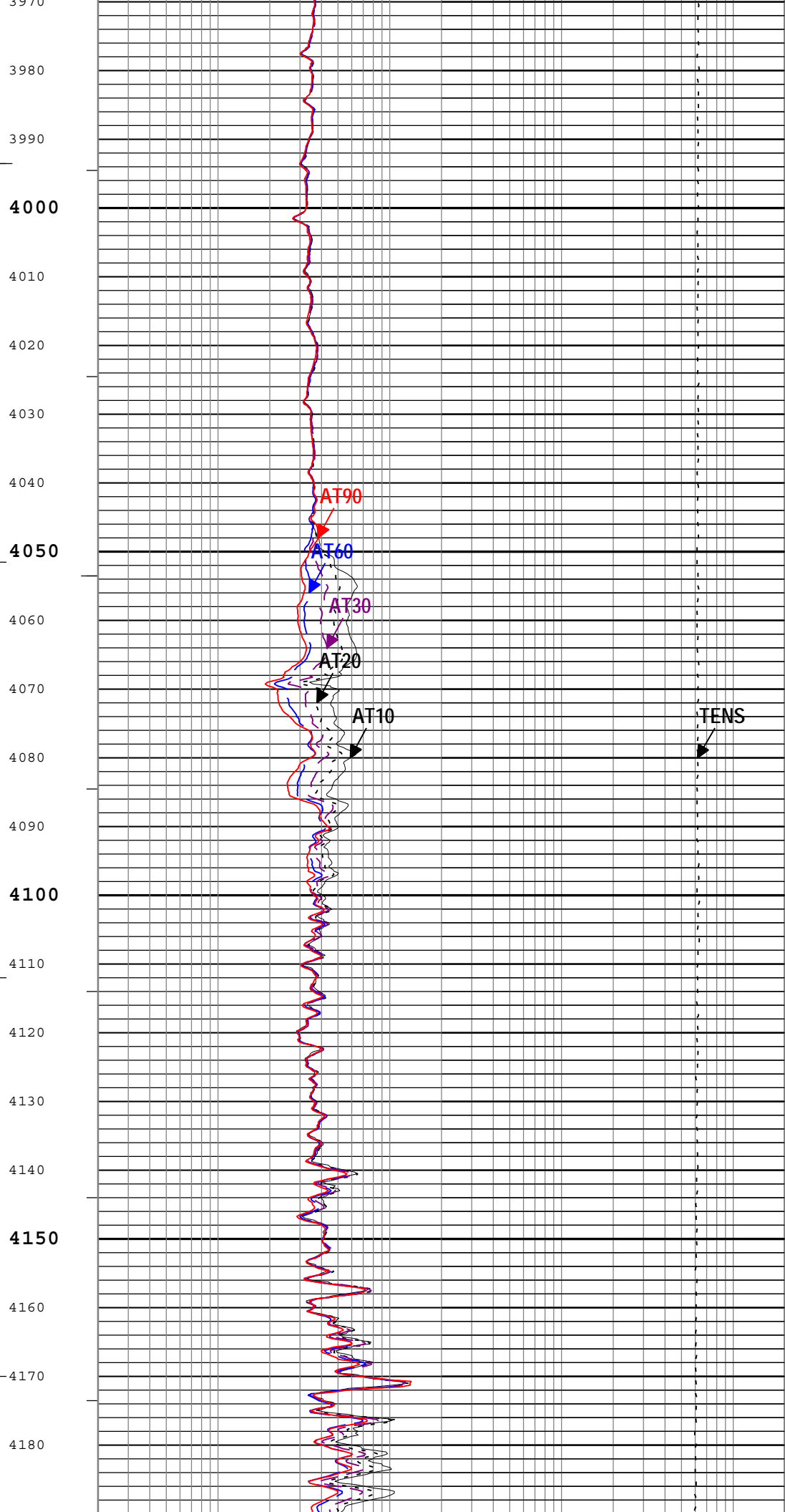
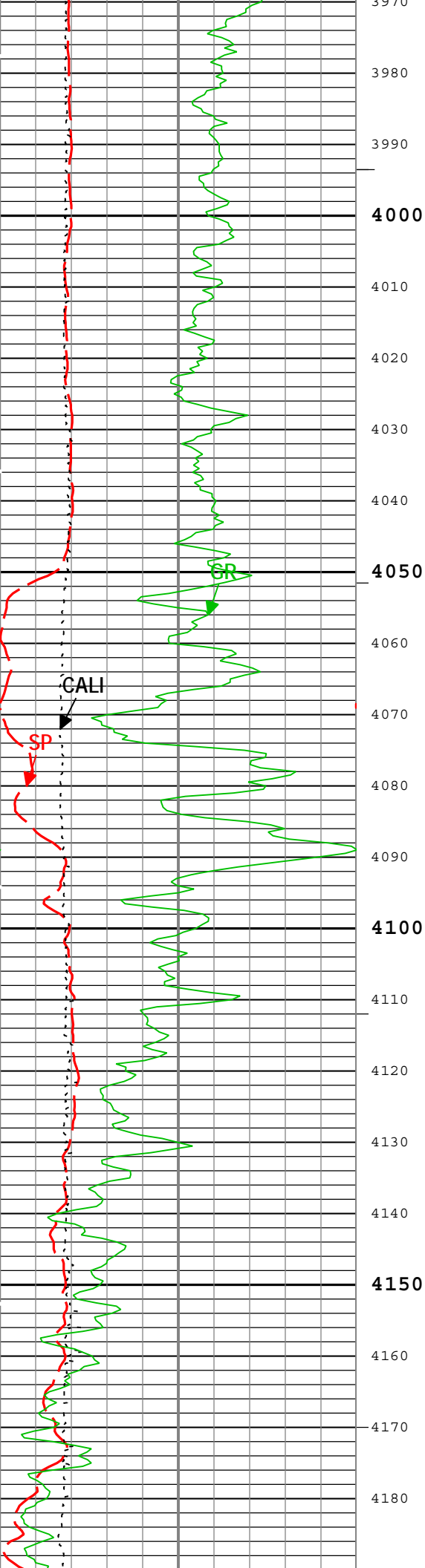


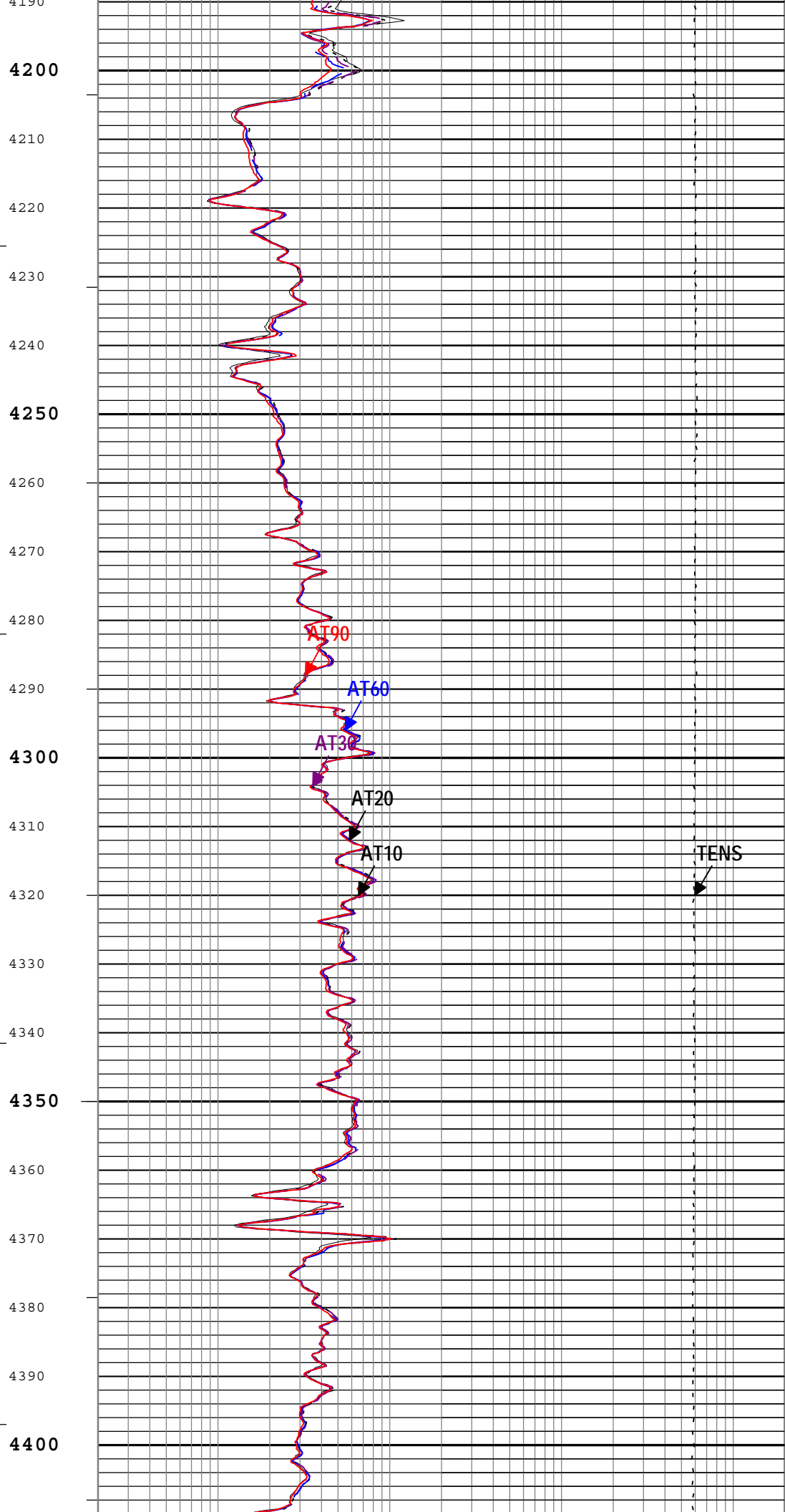
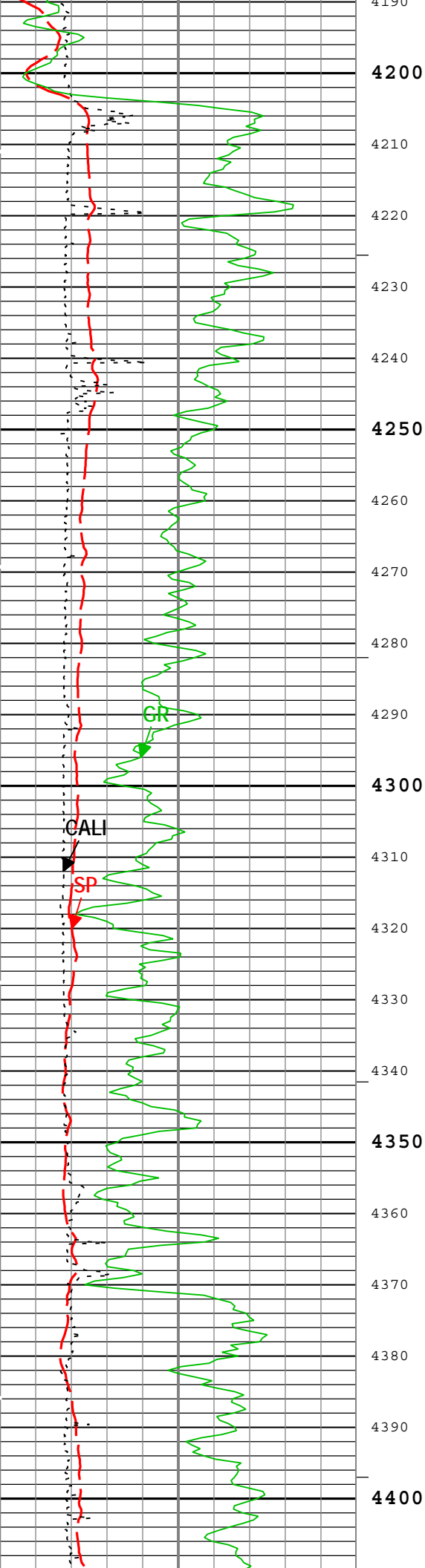


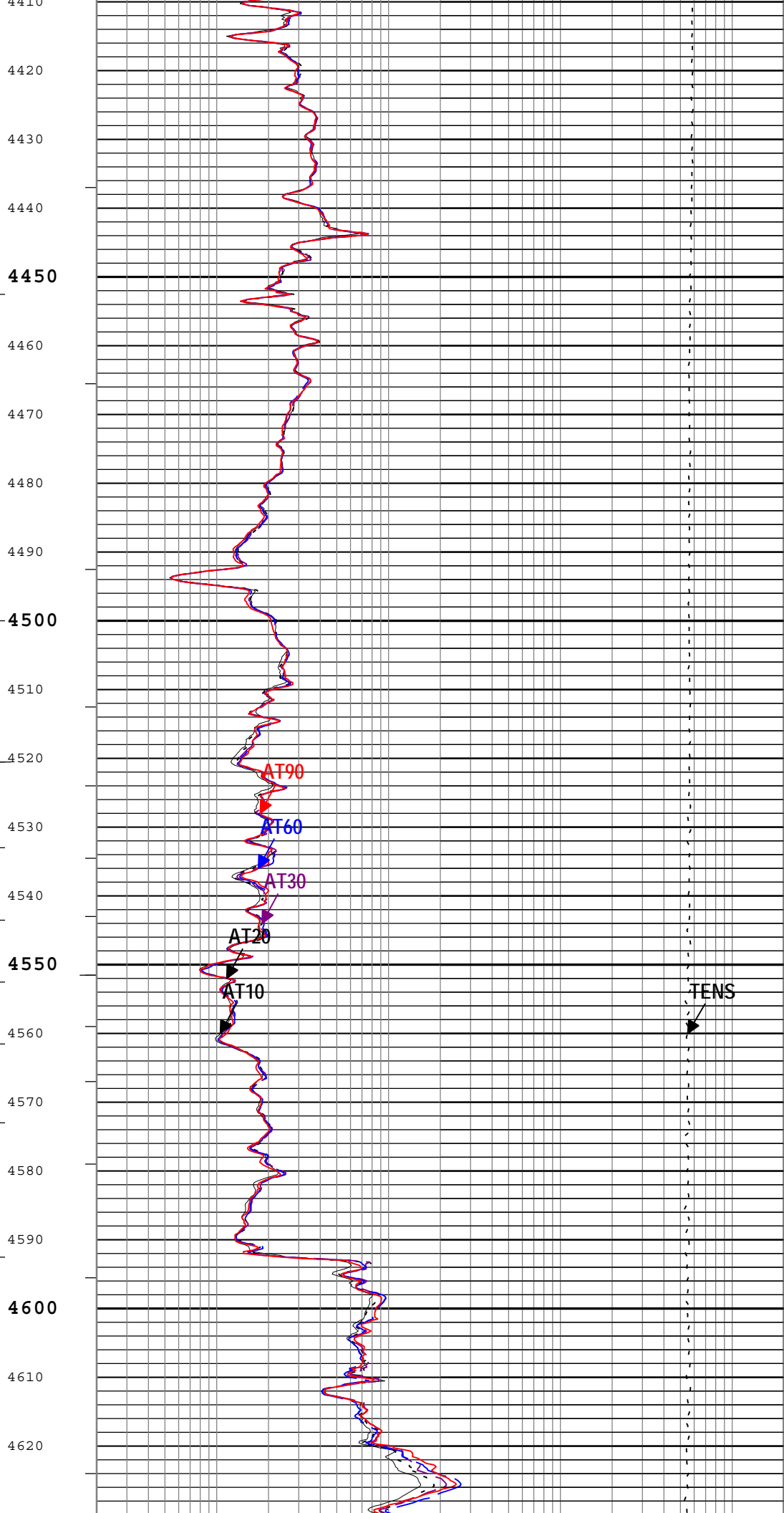
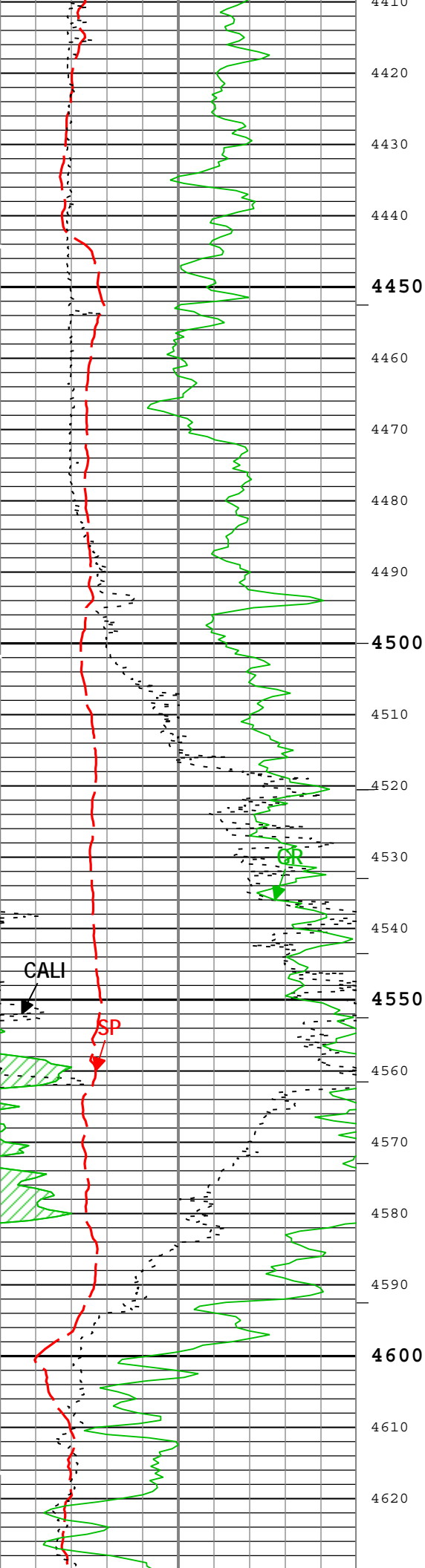


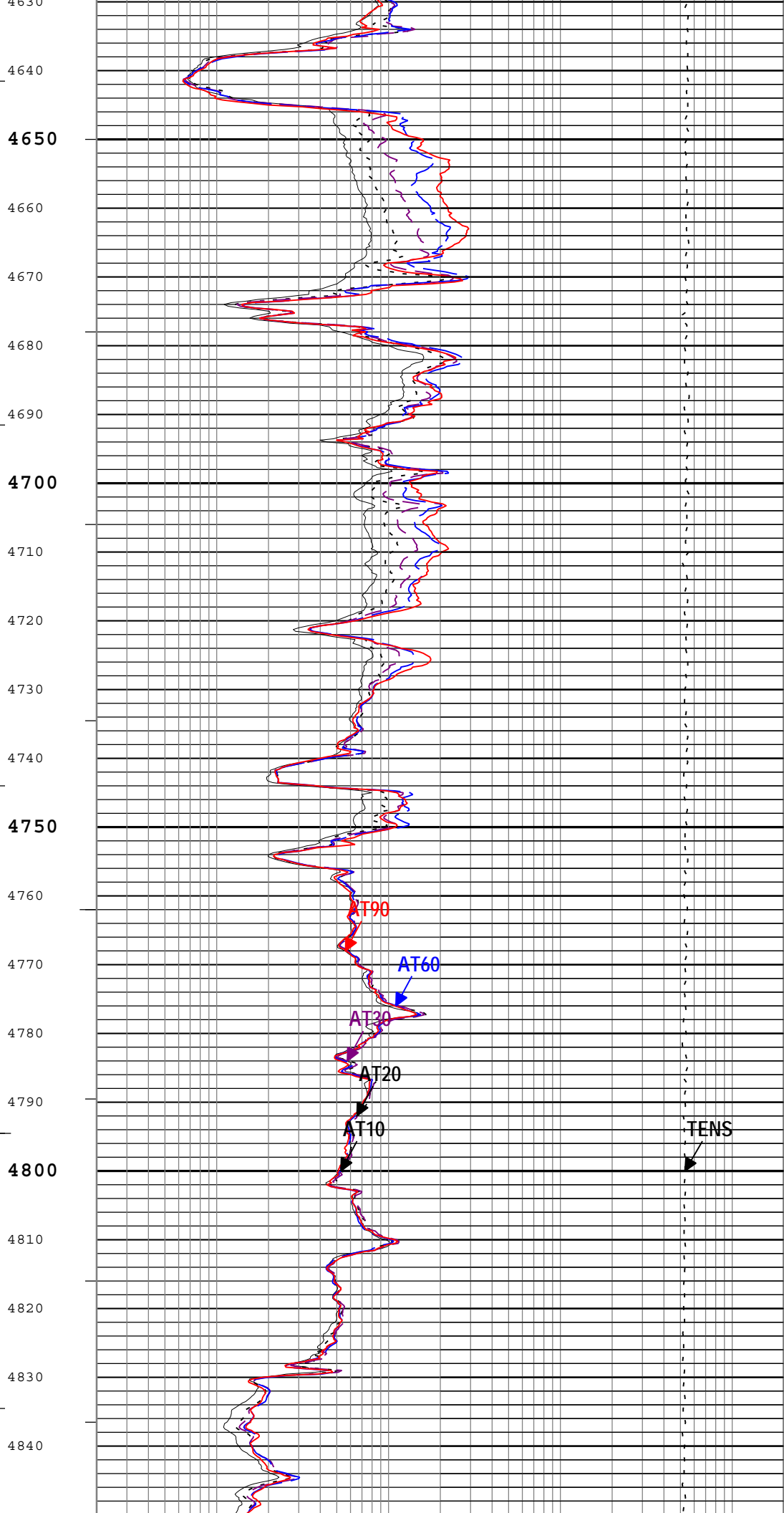
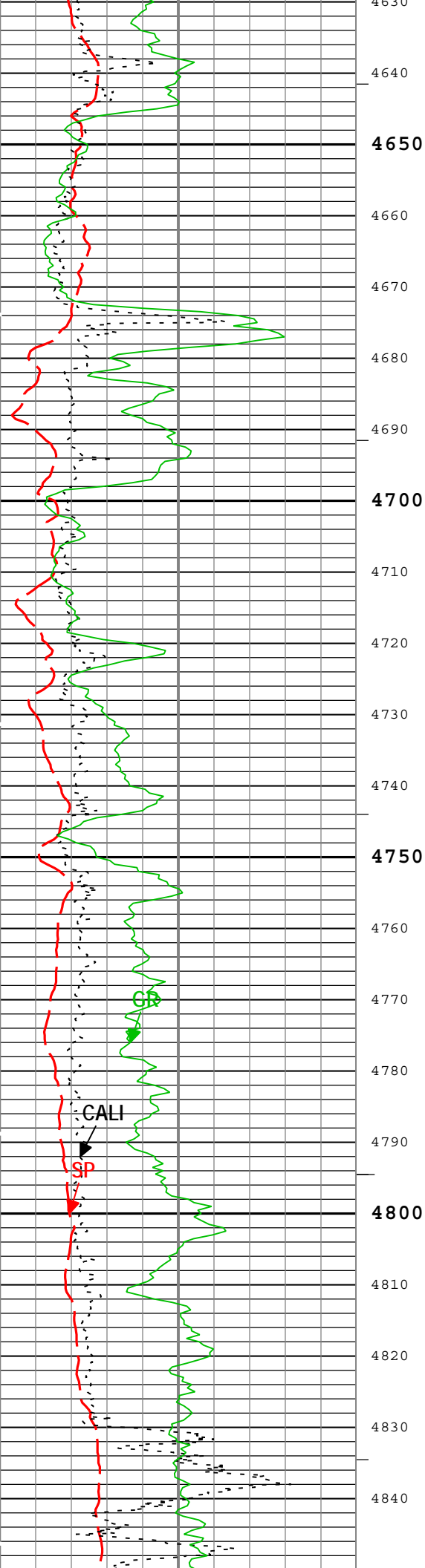
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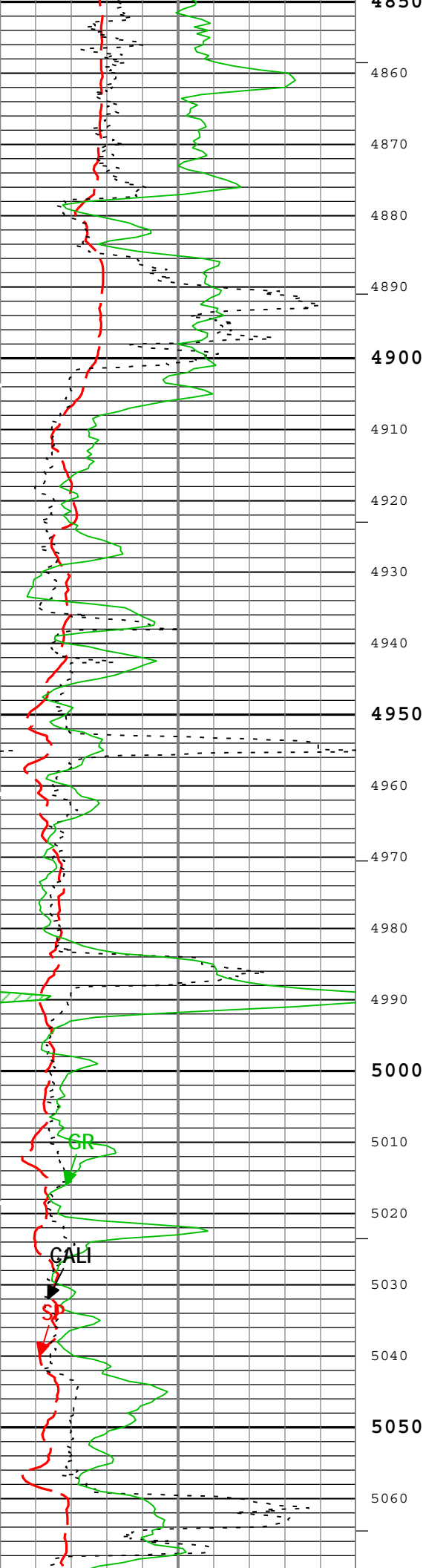












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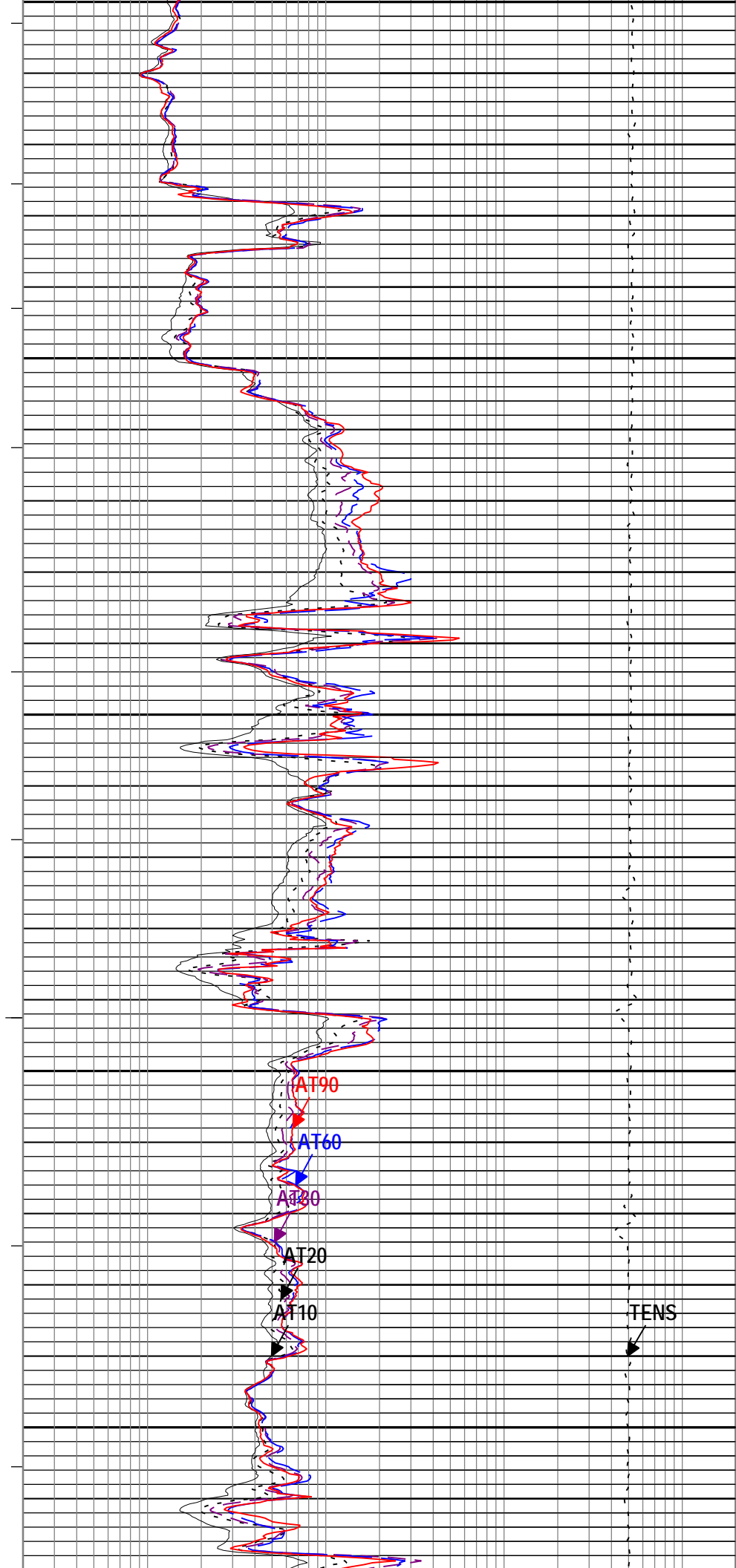
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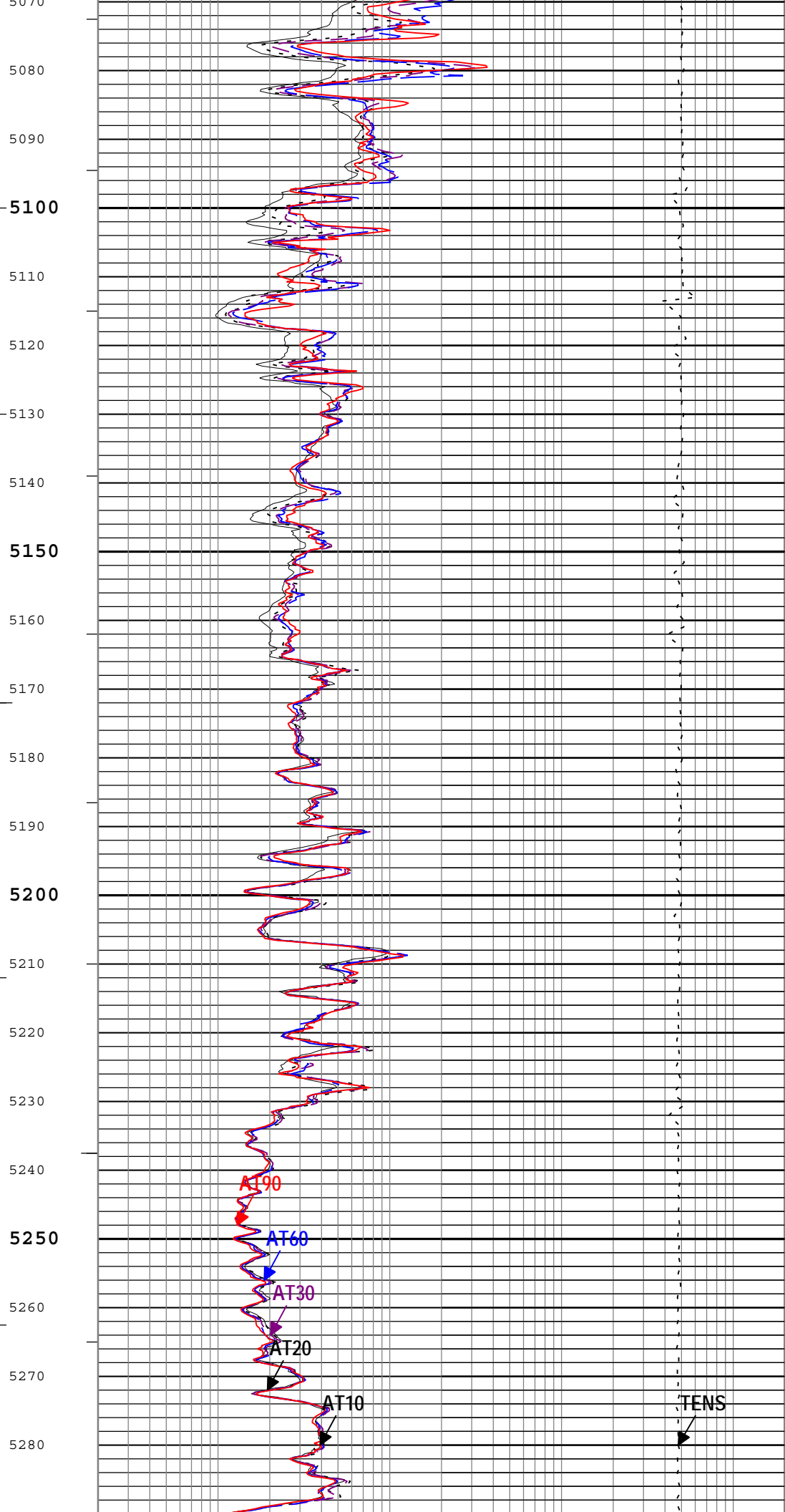
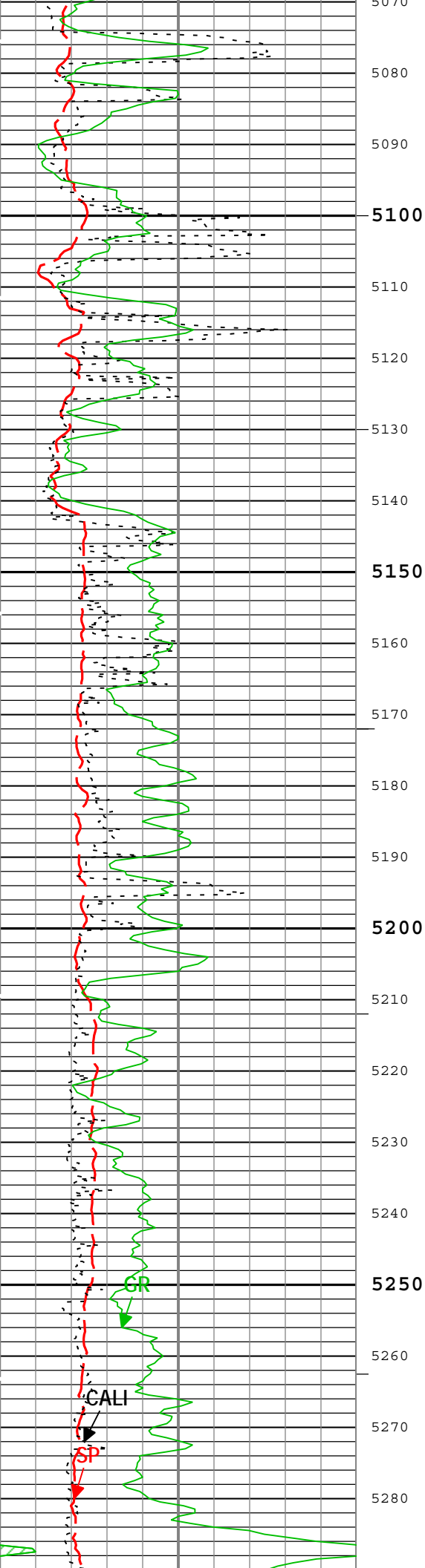
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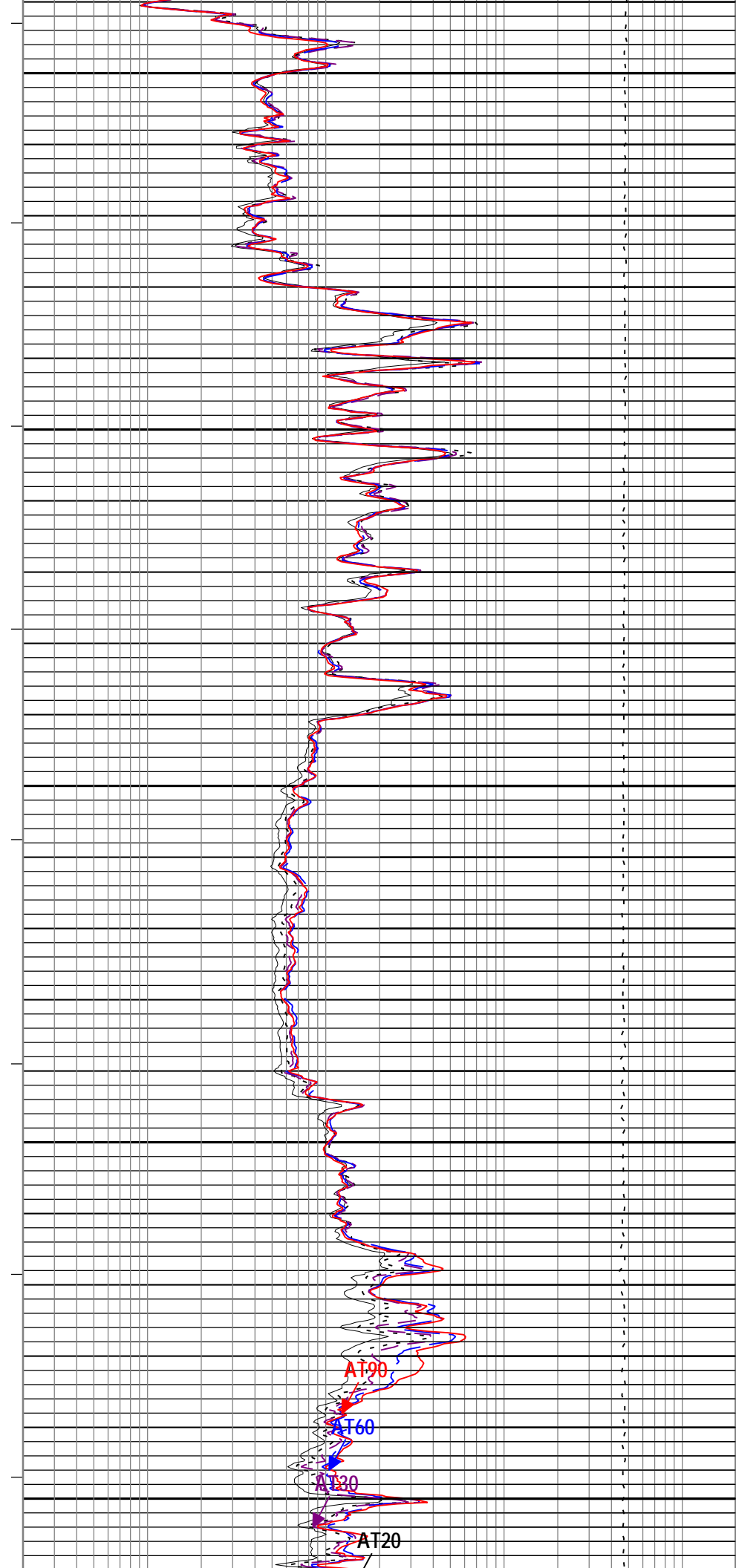
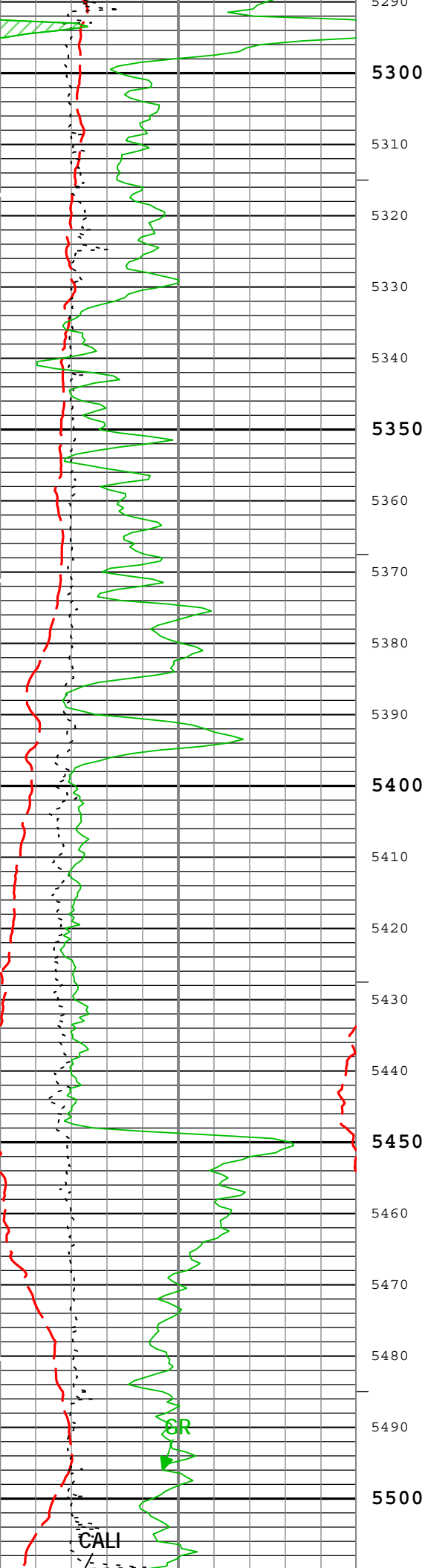
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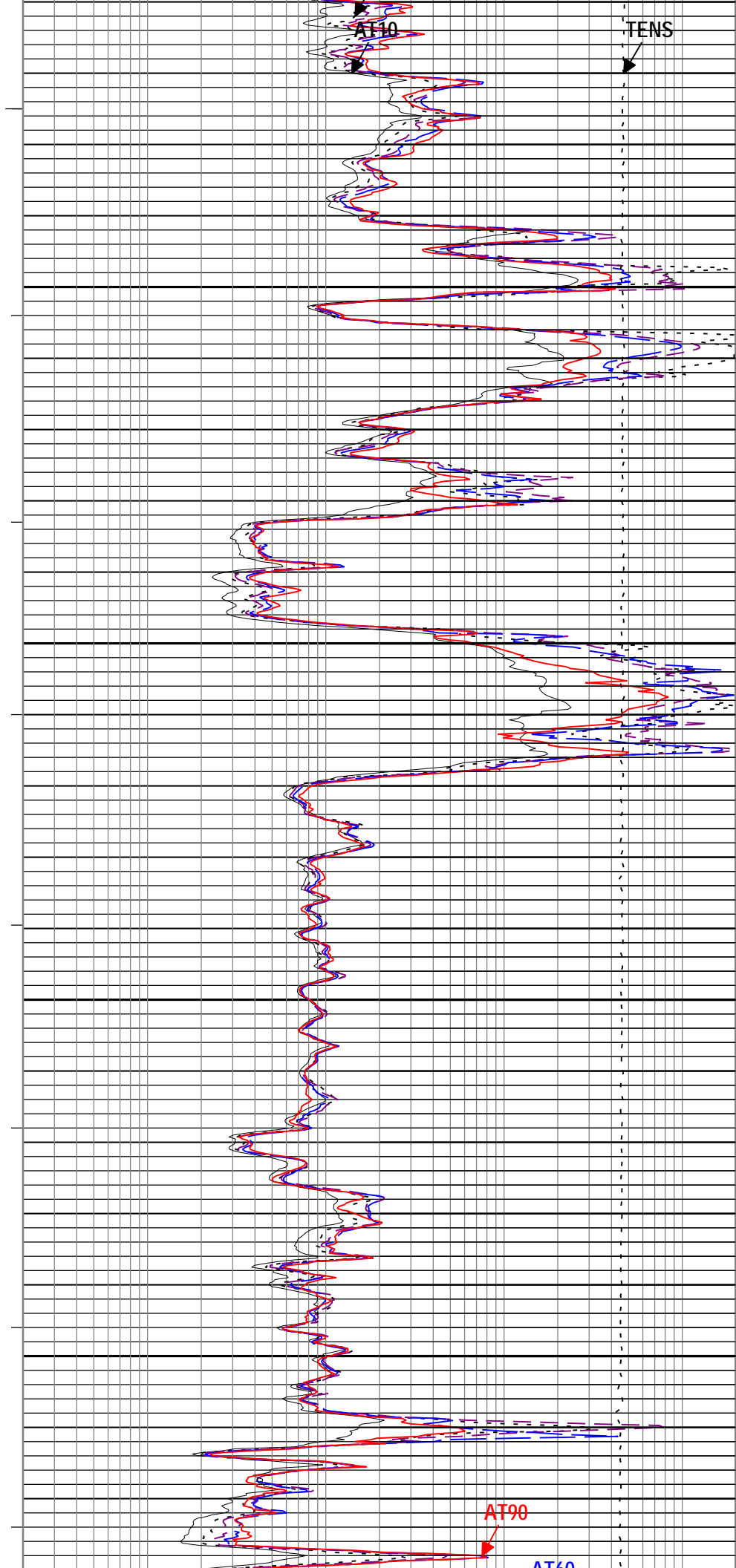
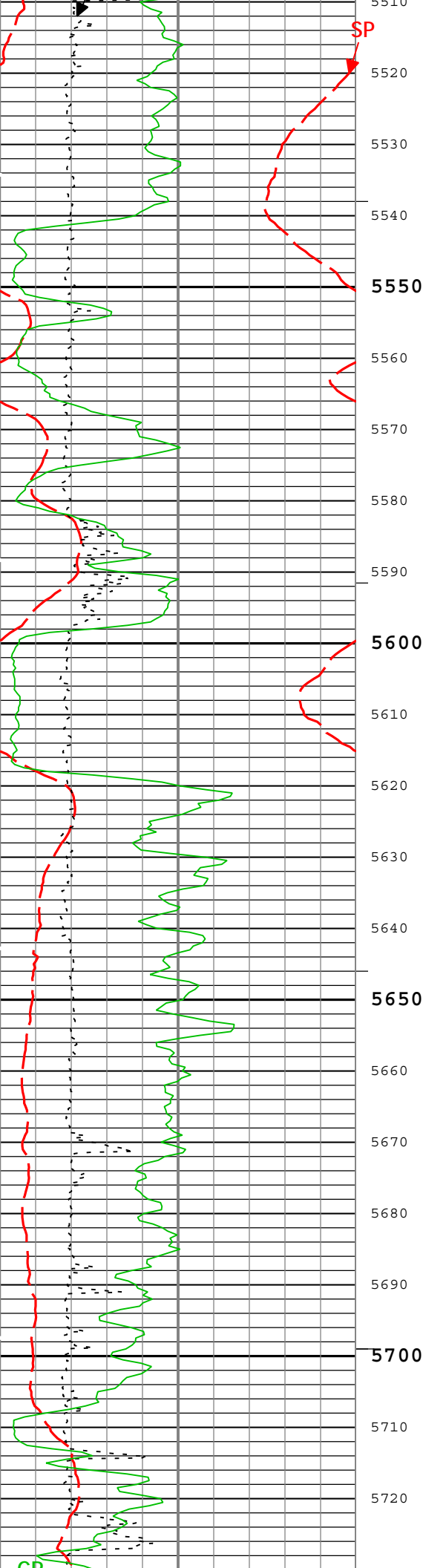
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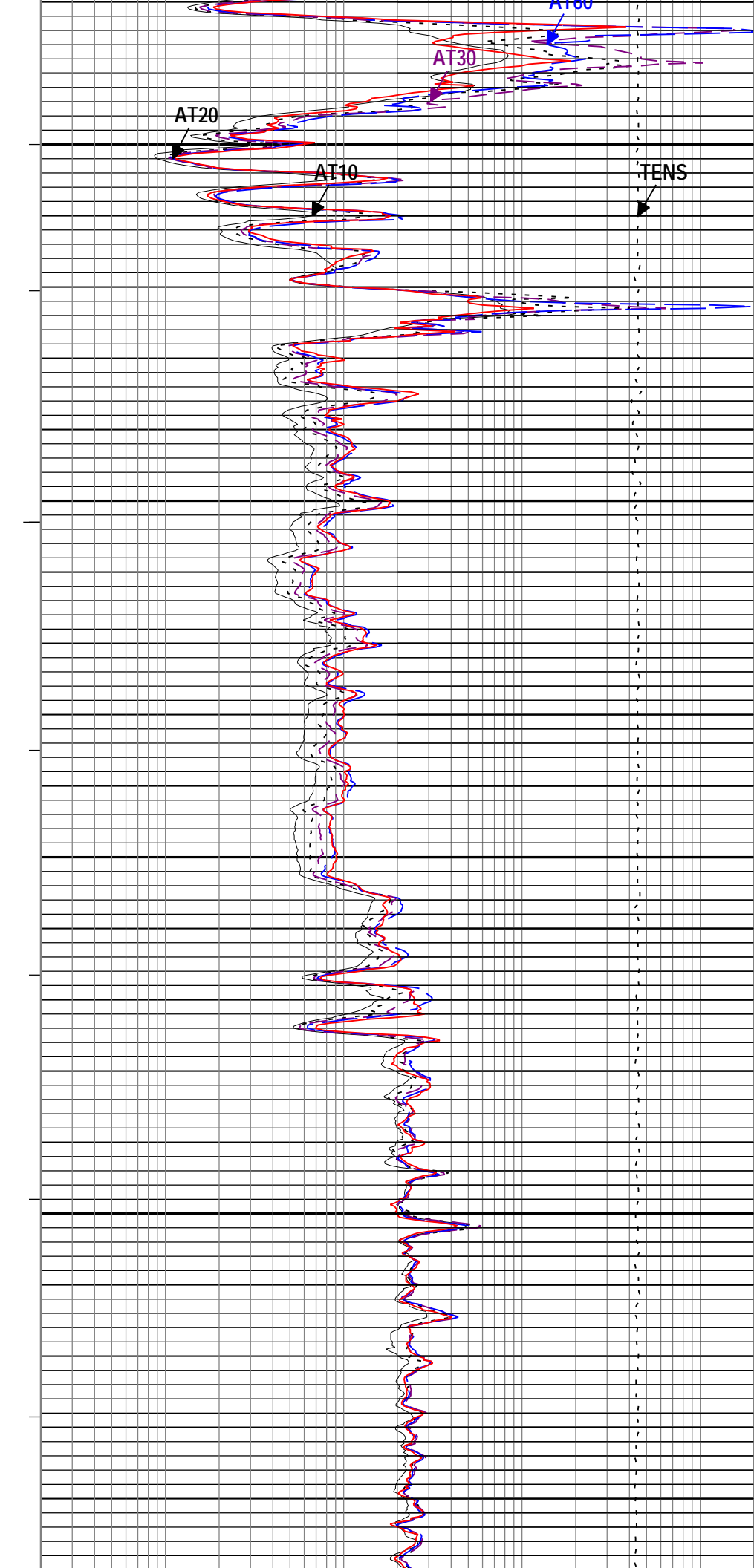
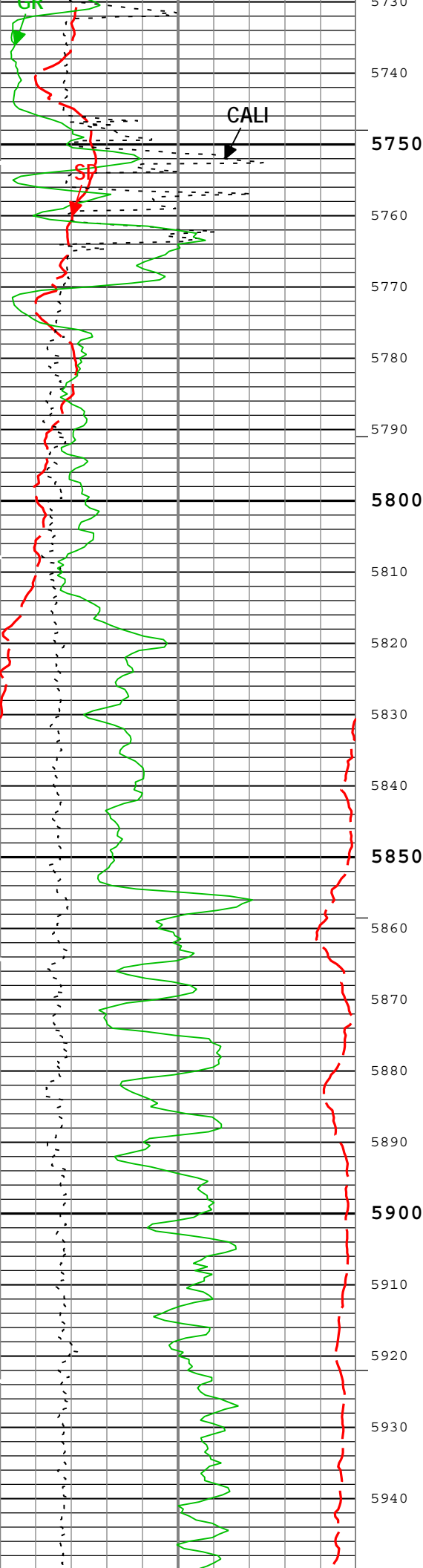
AT10

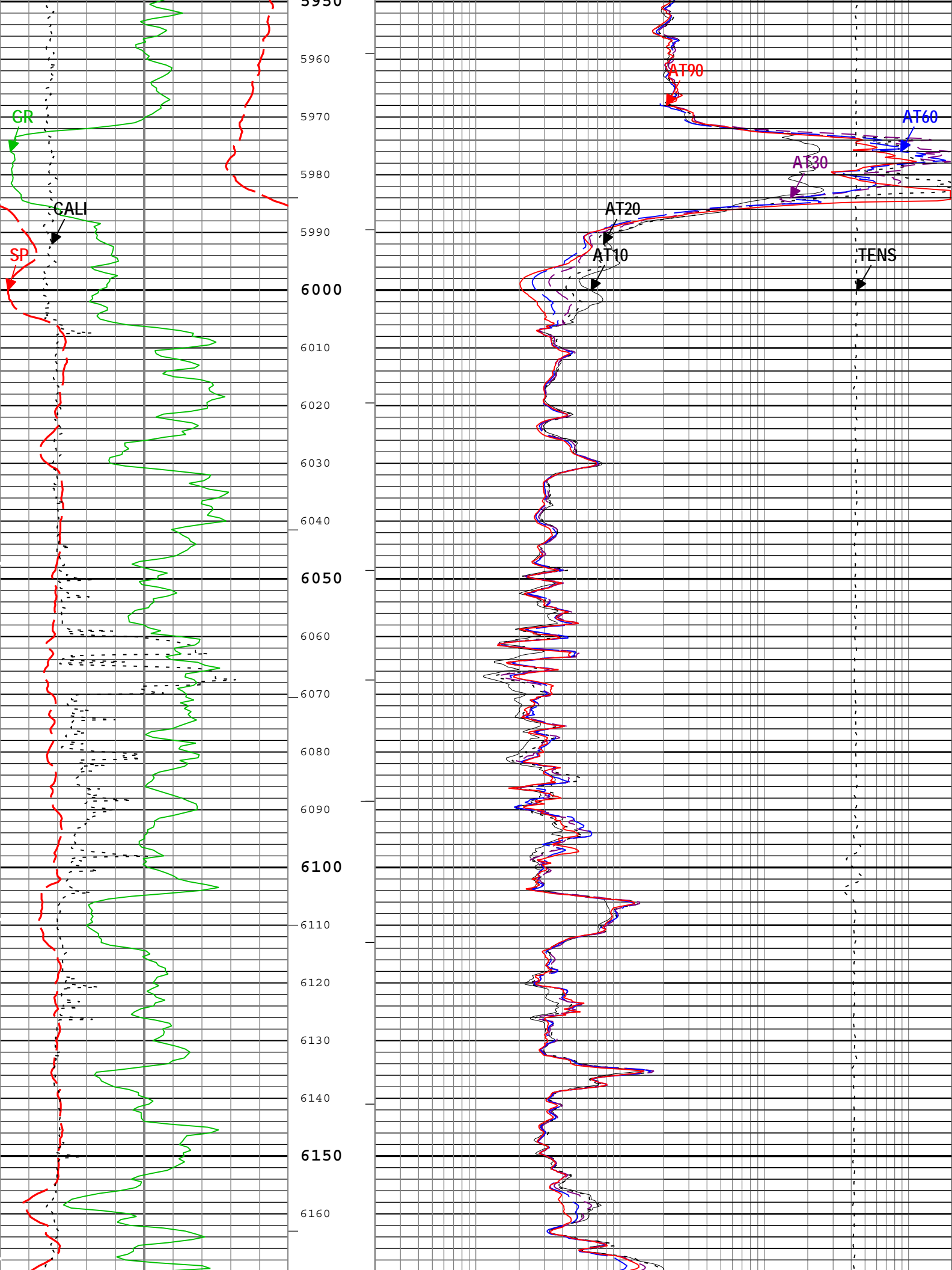
TENS

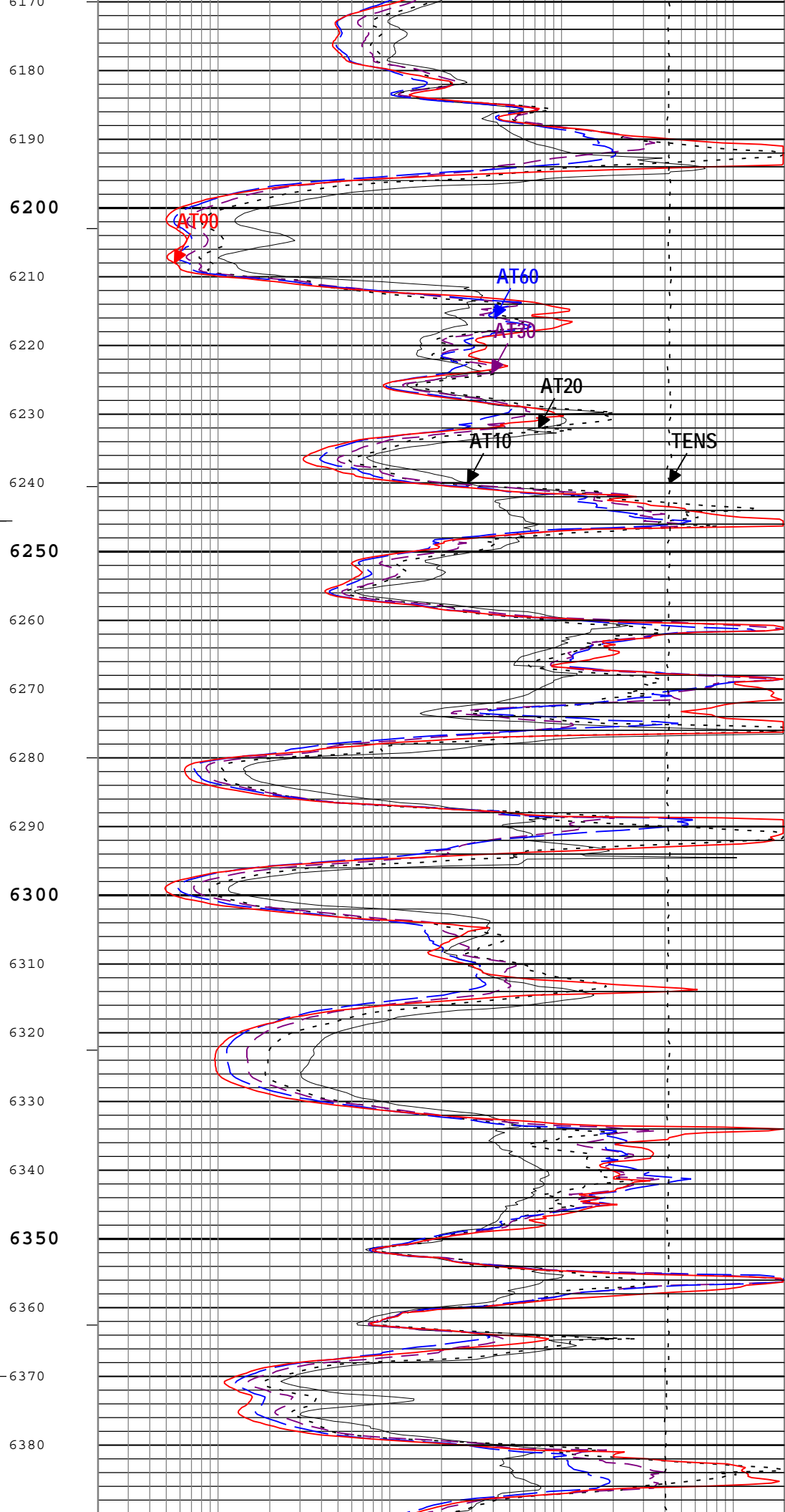
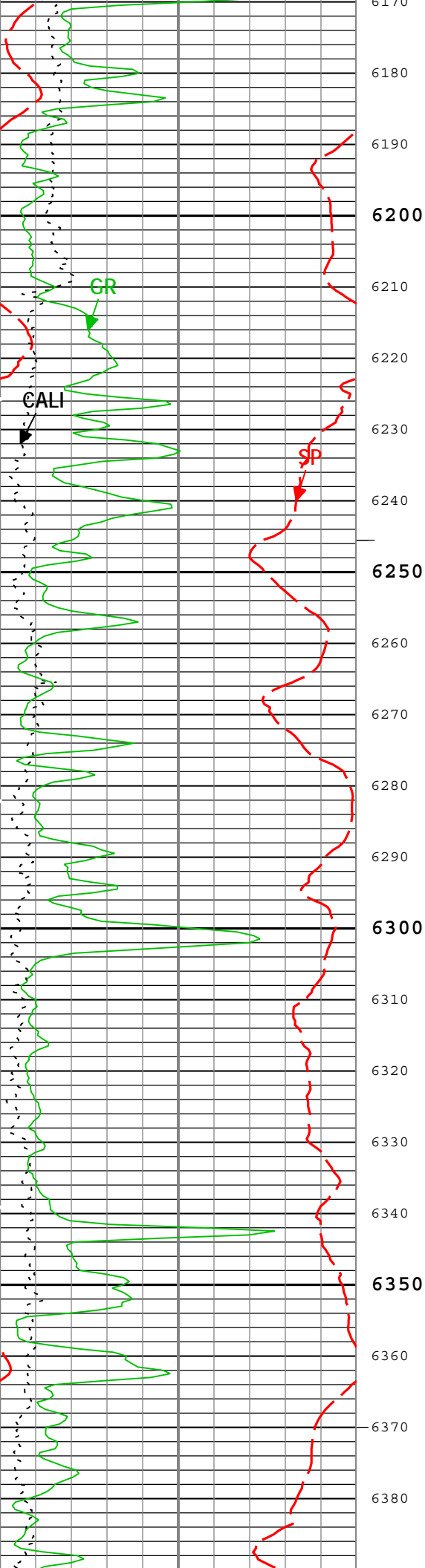


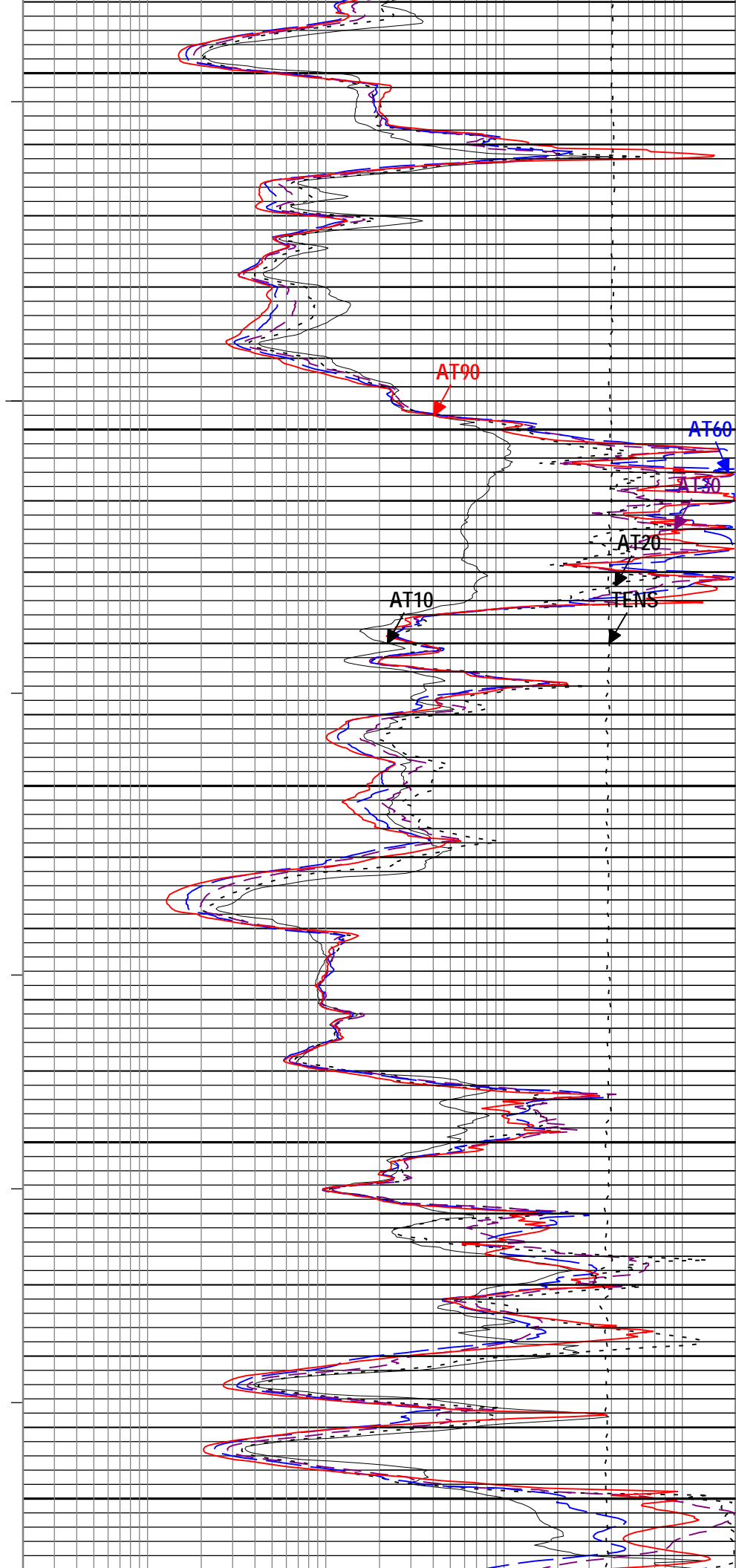
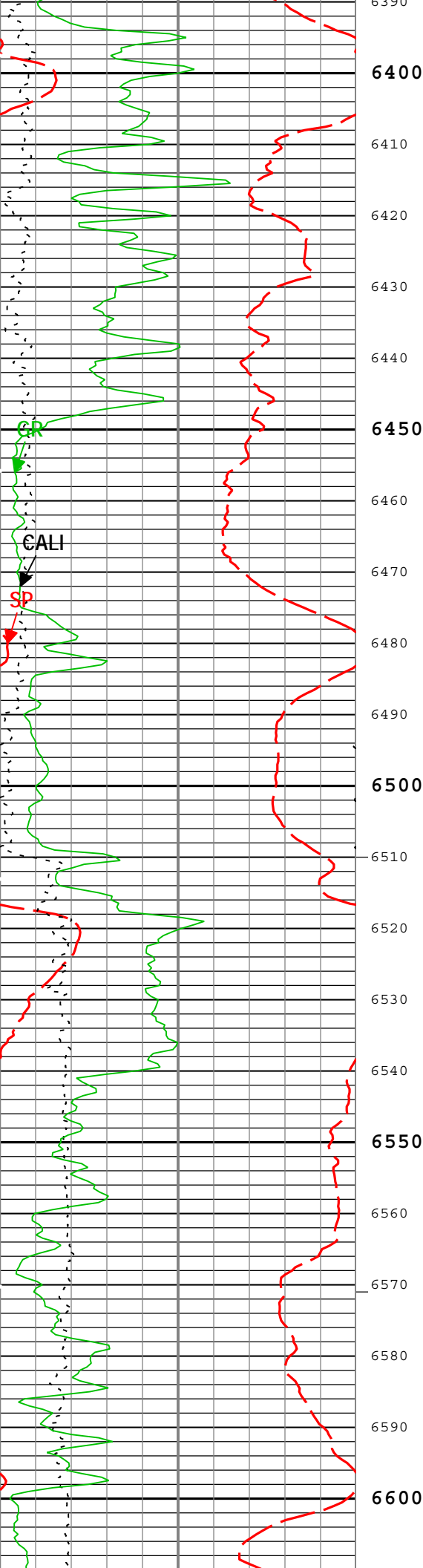


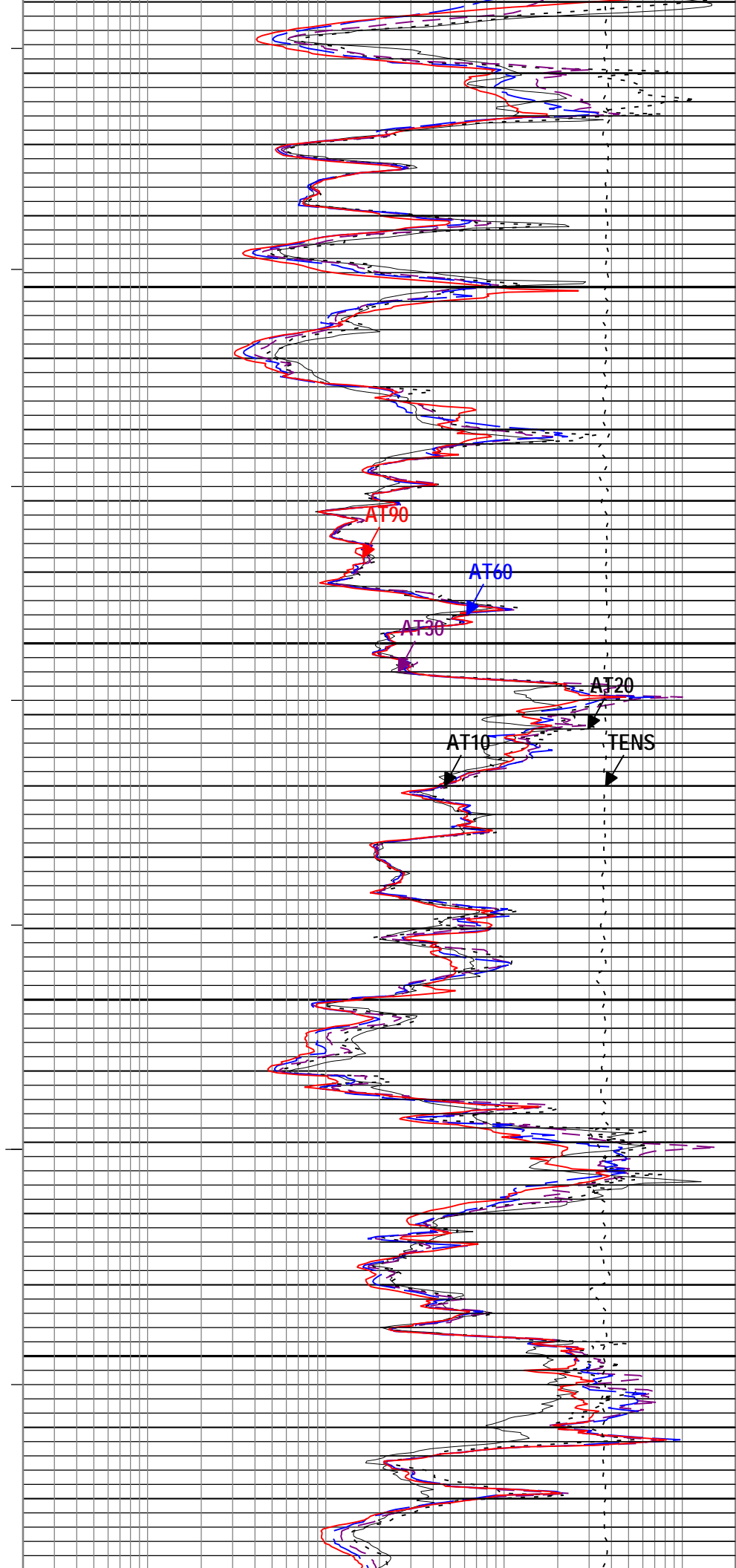
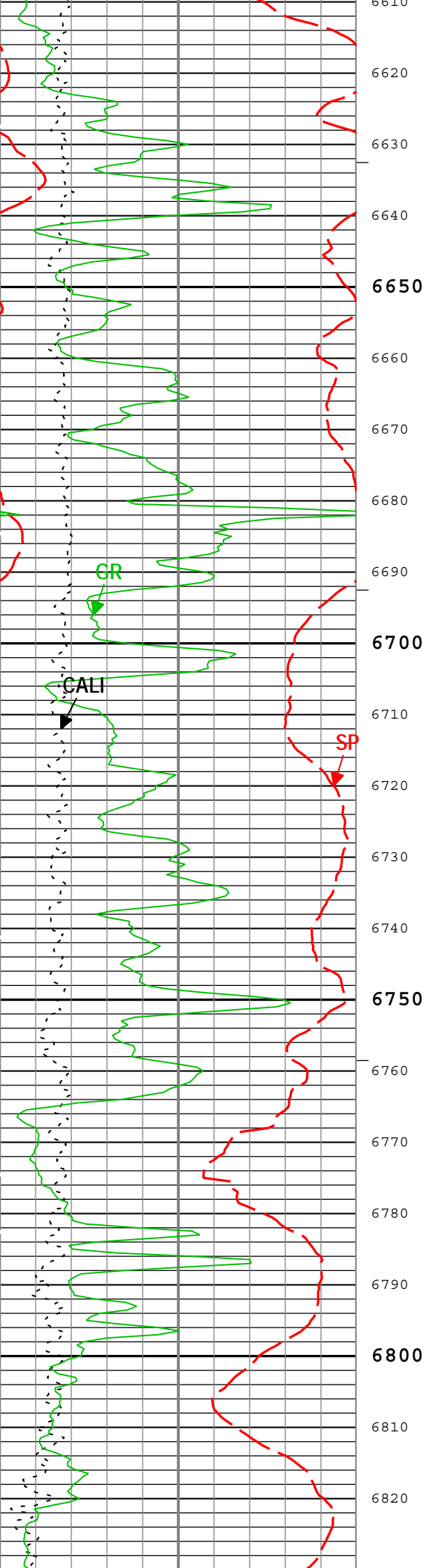


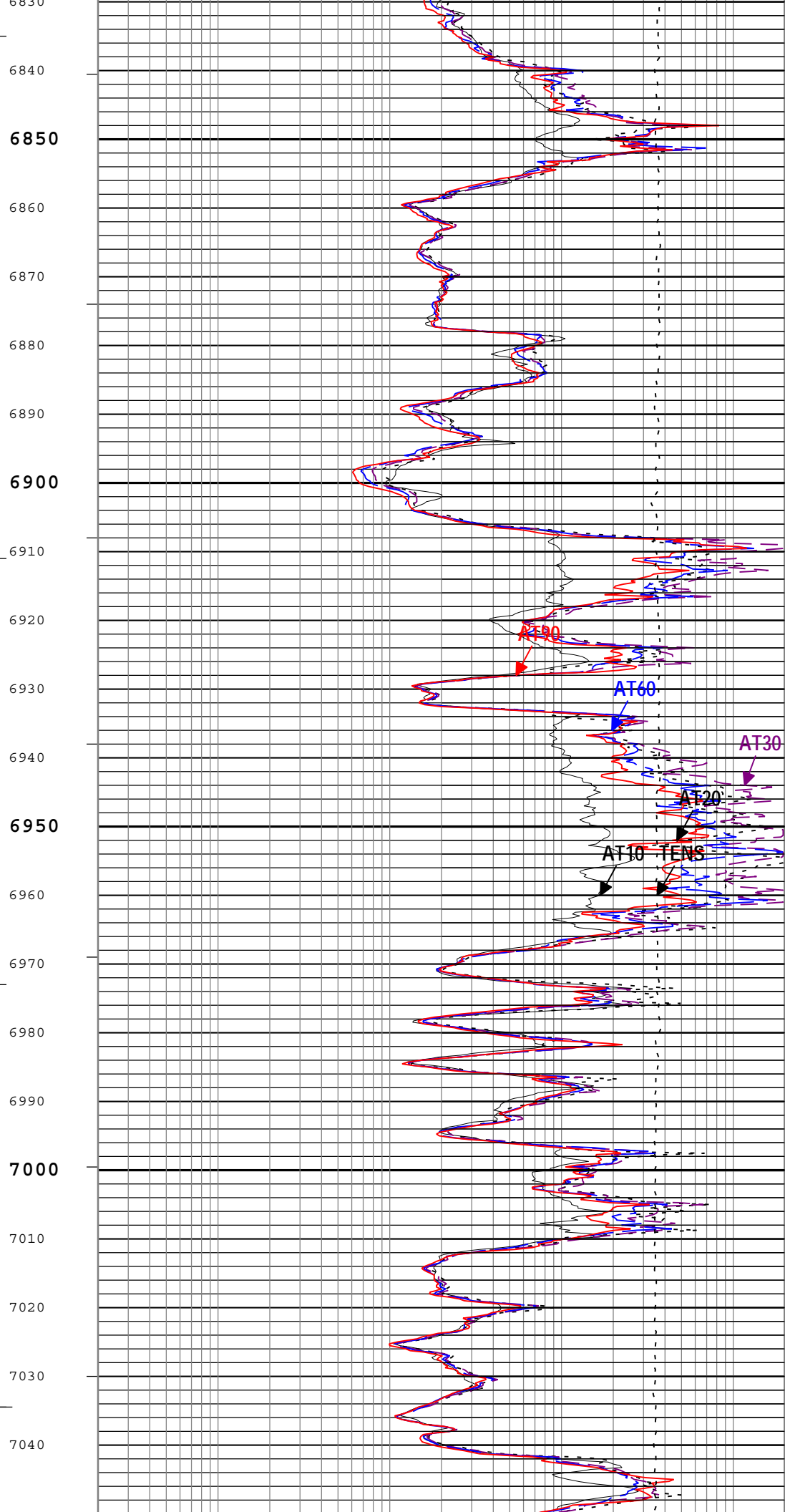
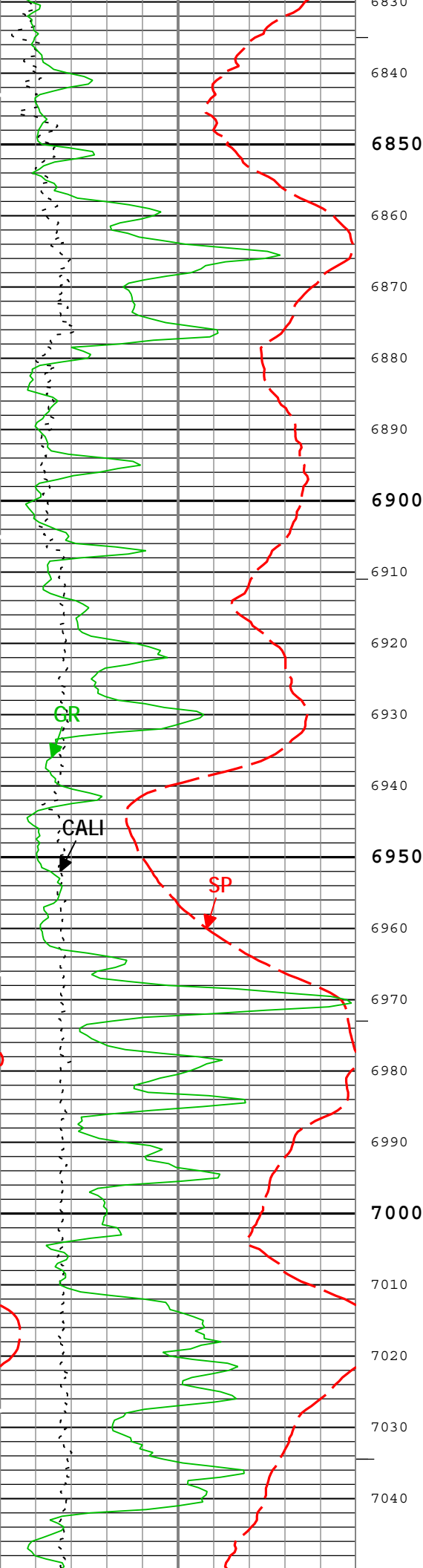


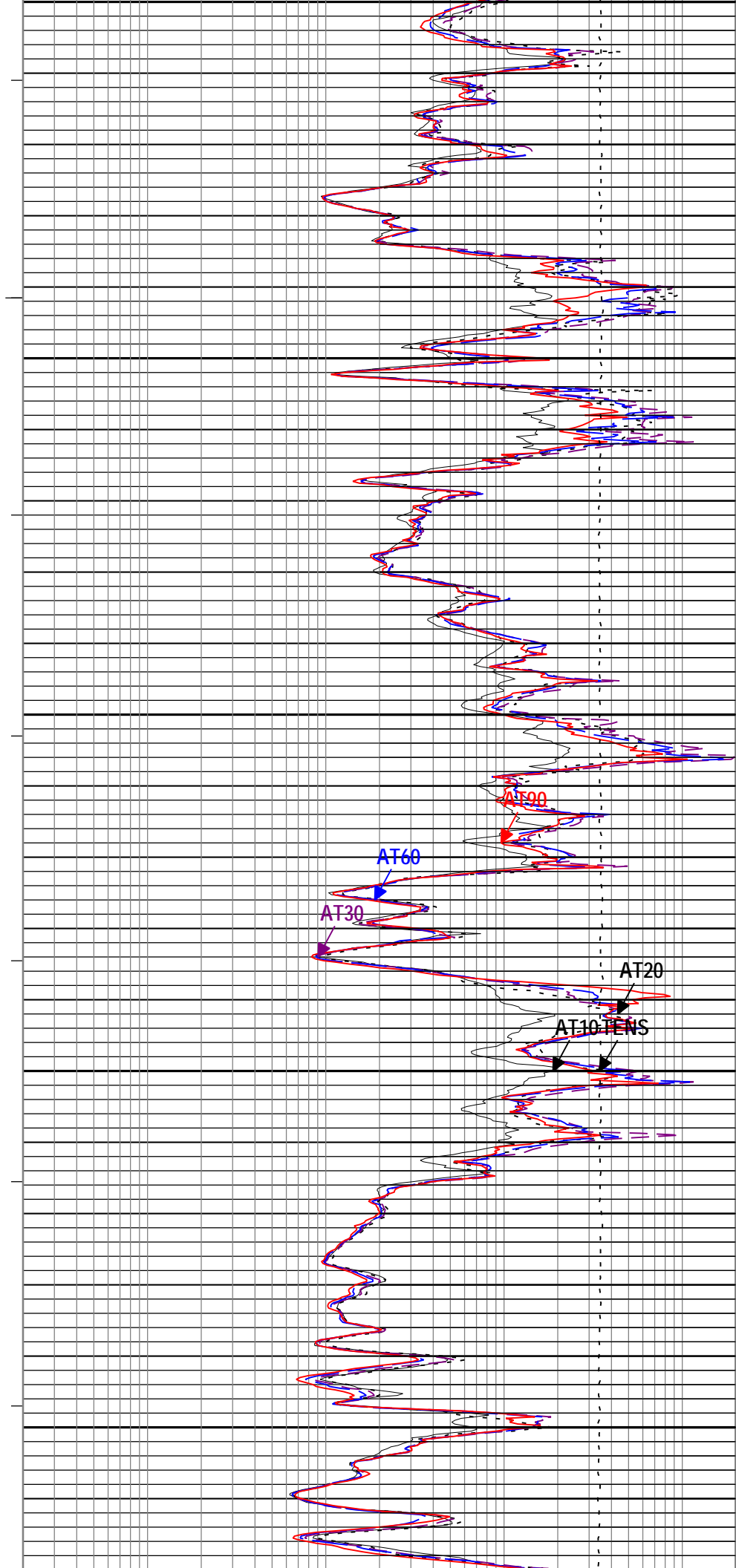
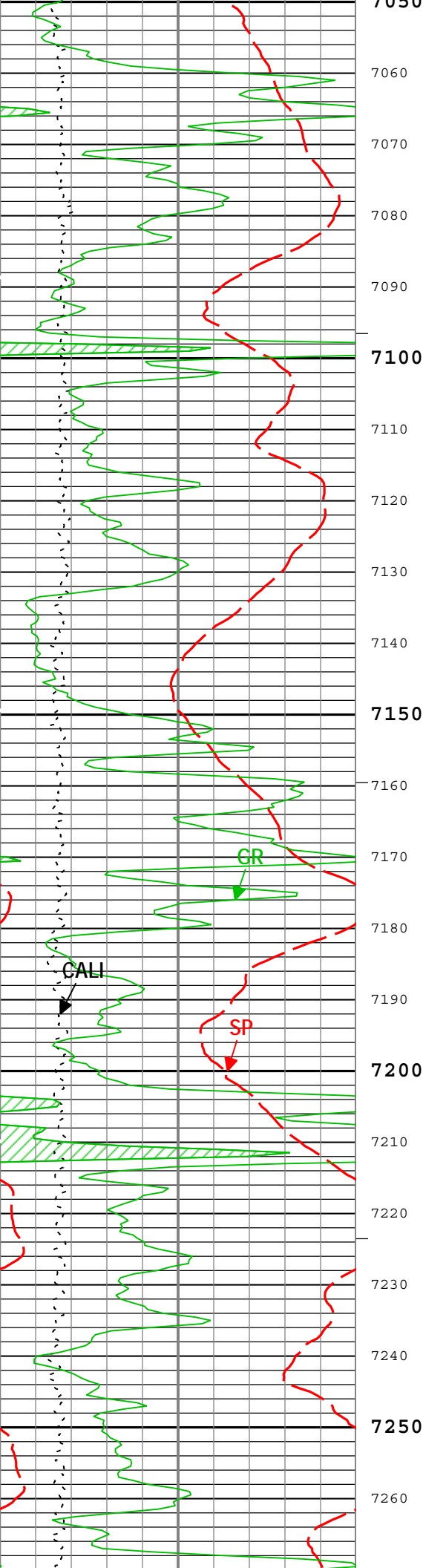


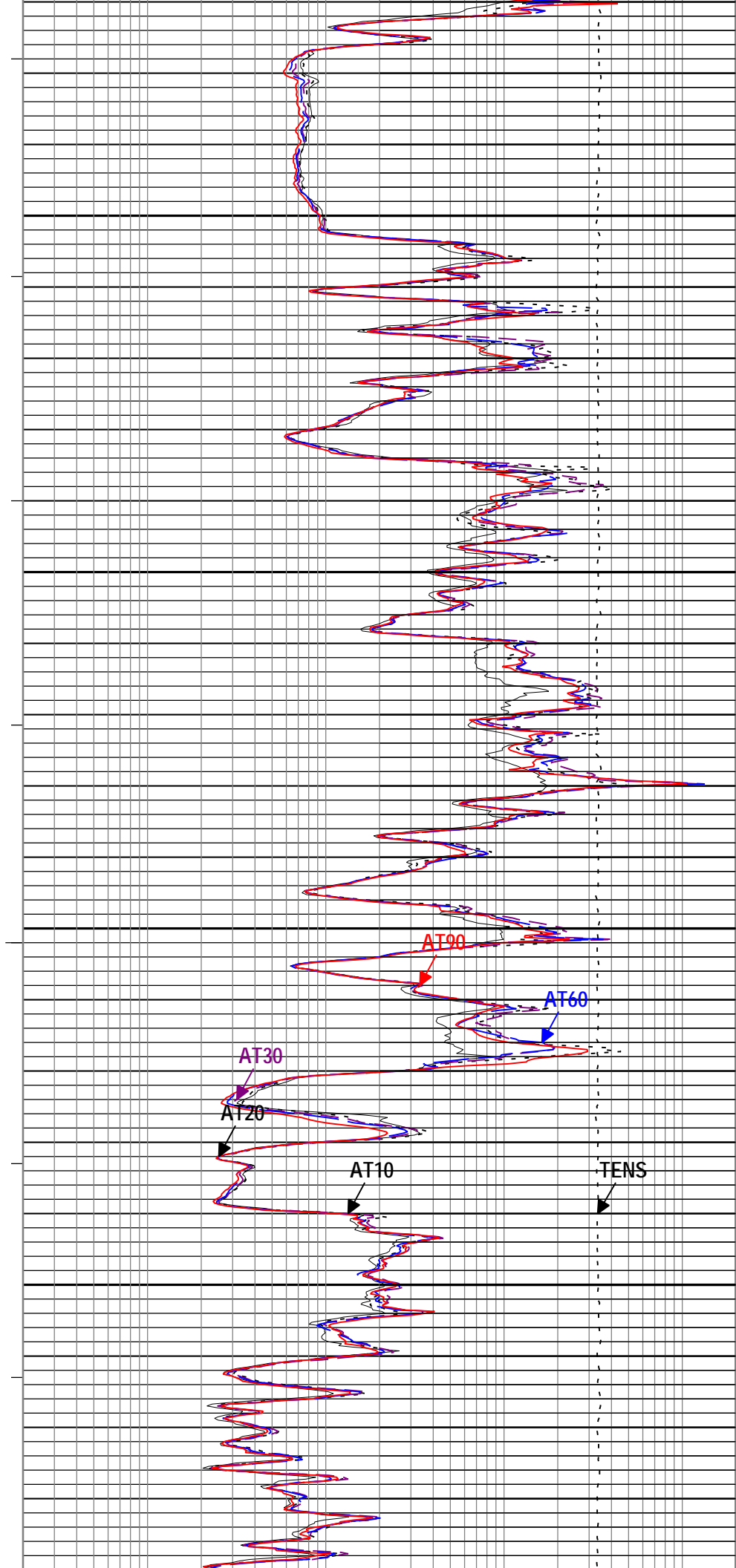
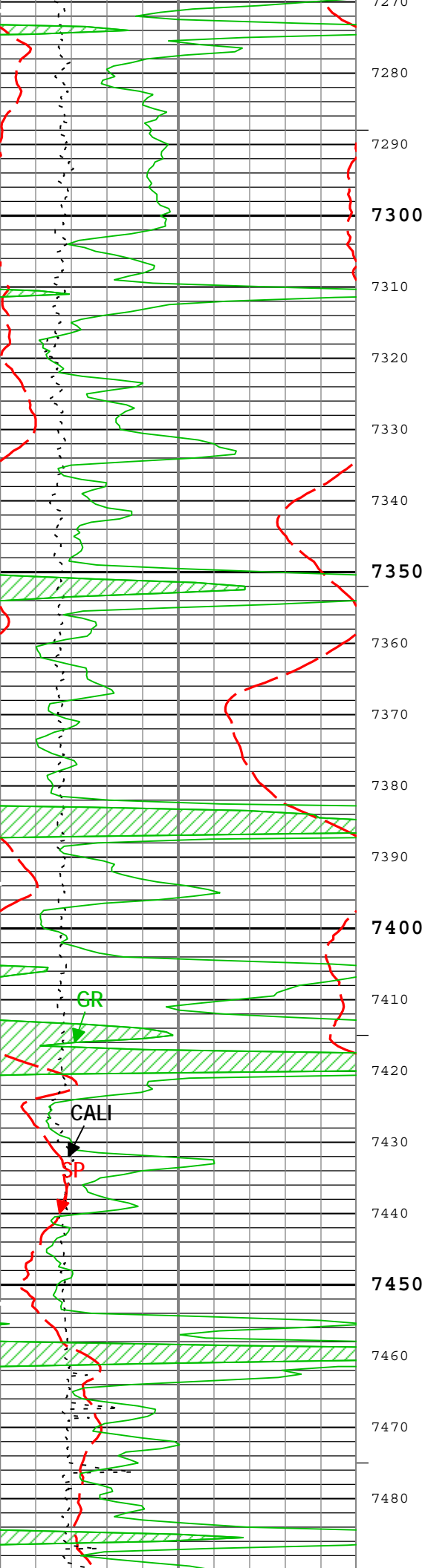


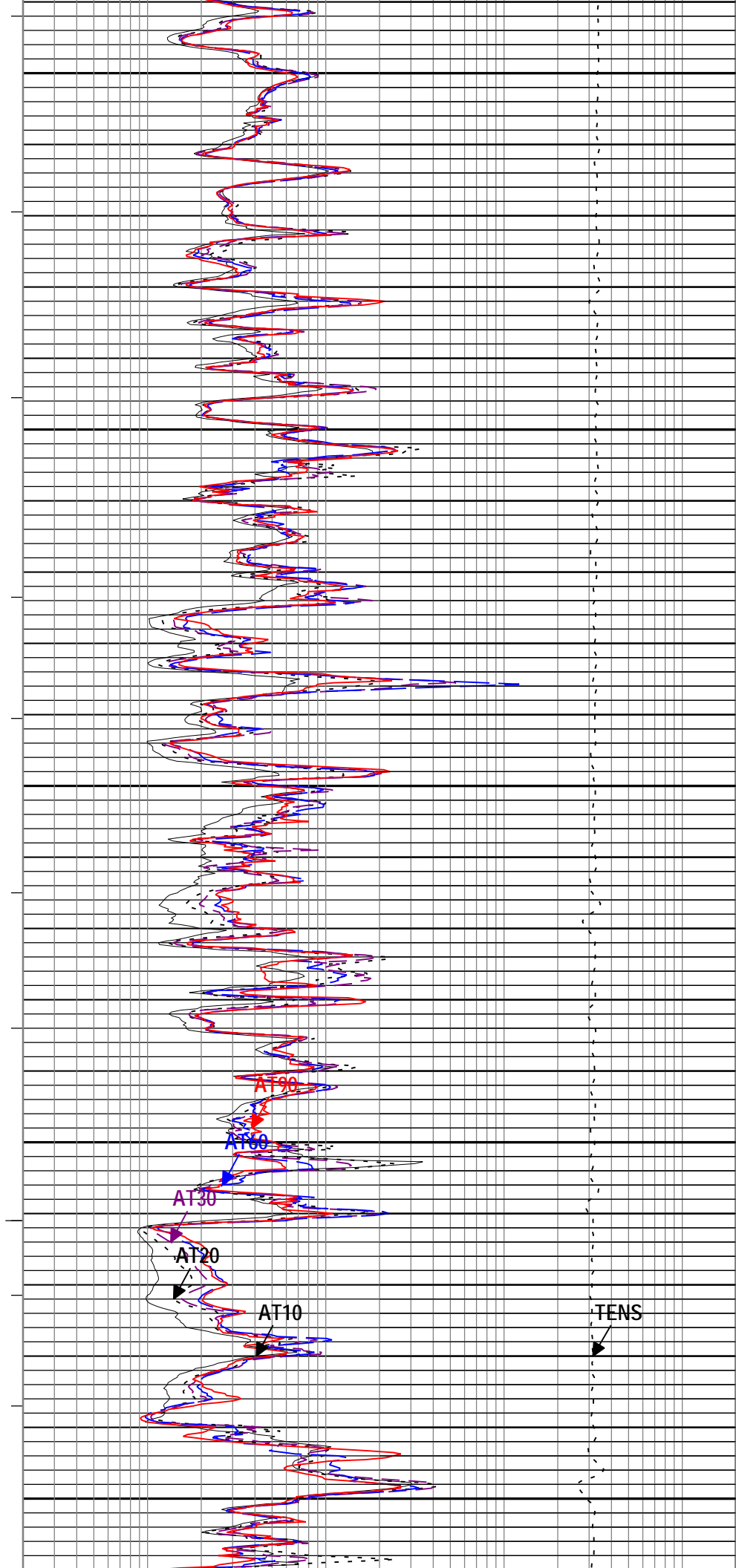
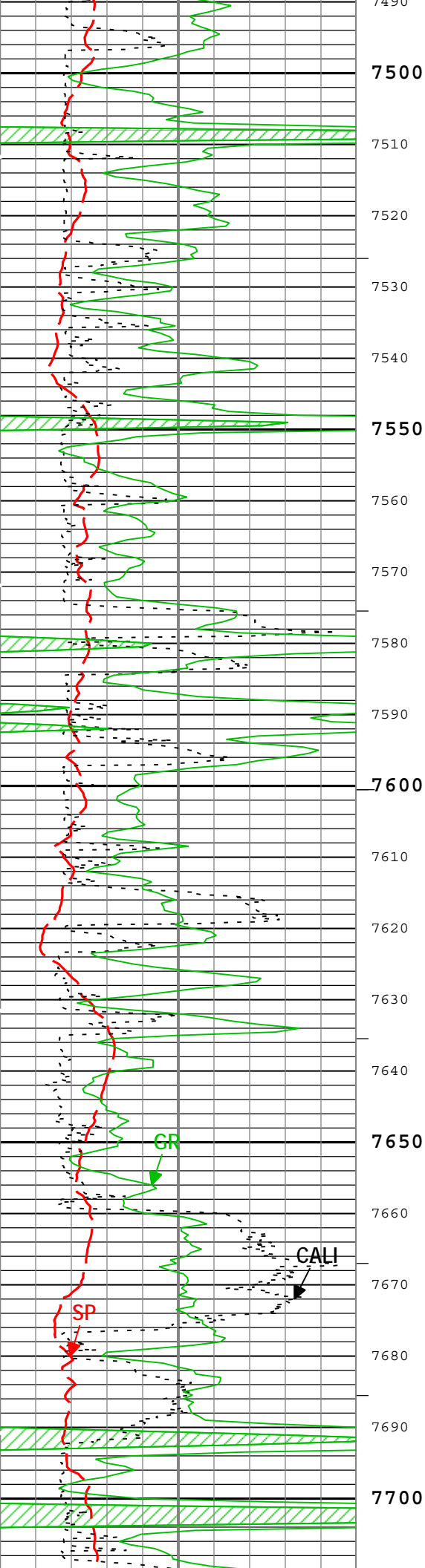


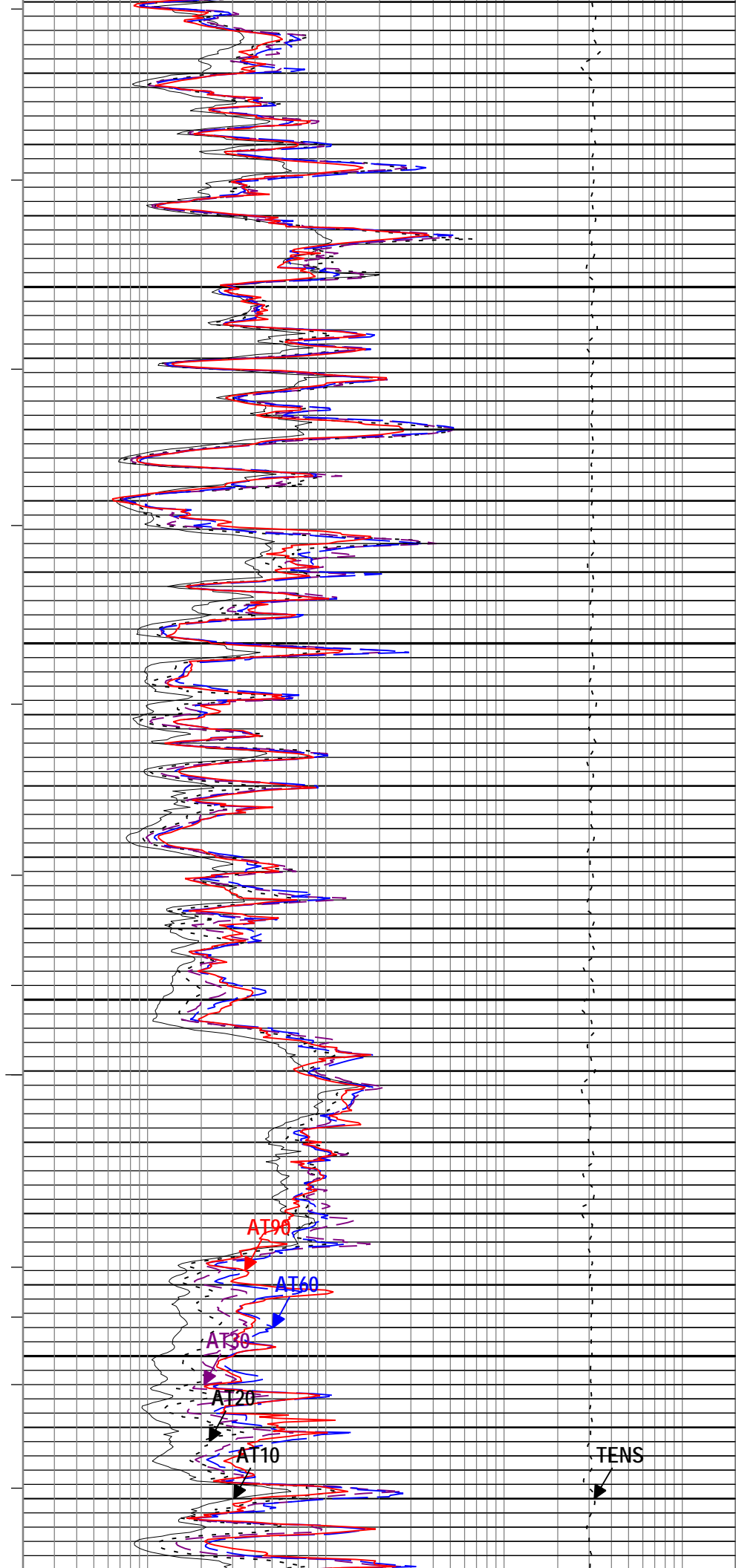
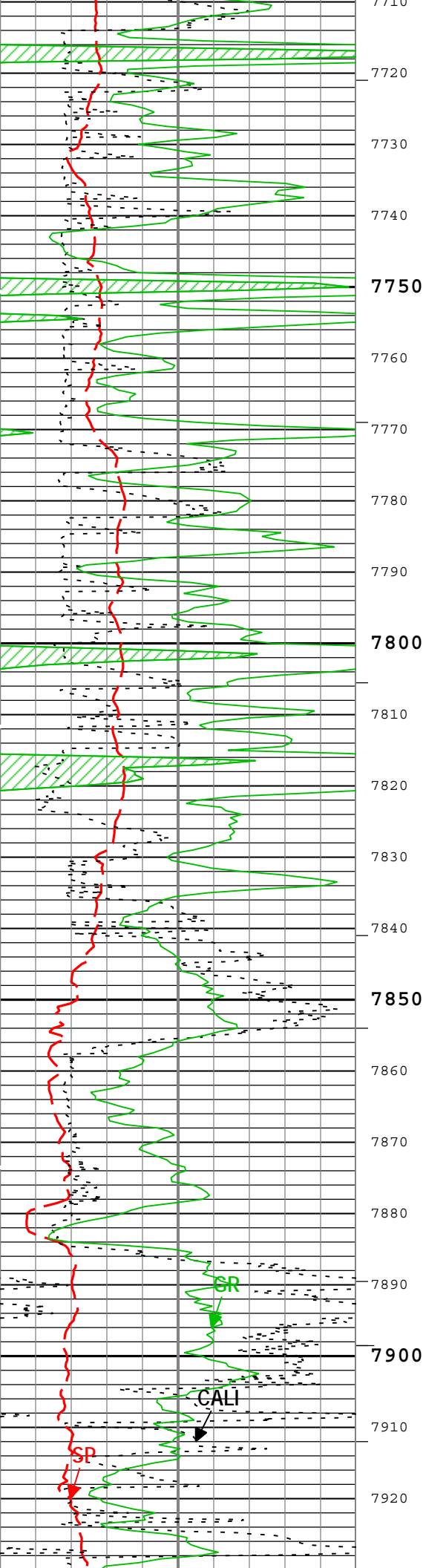


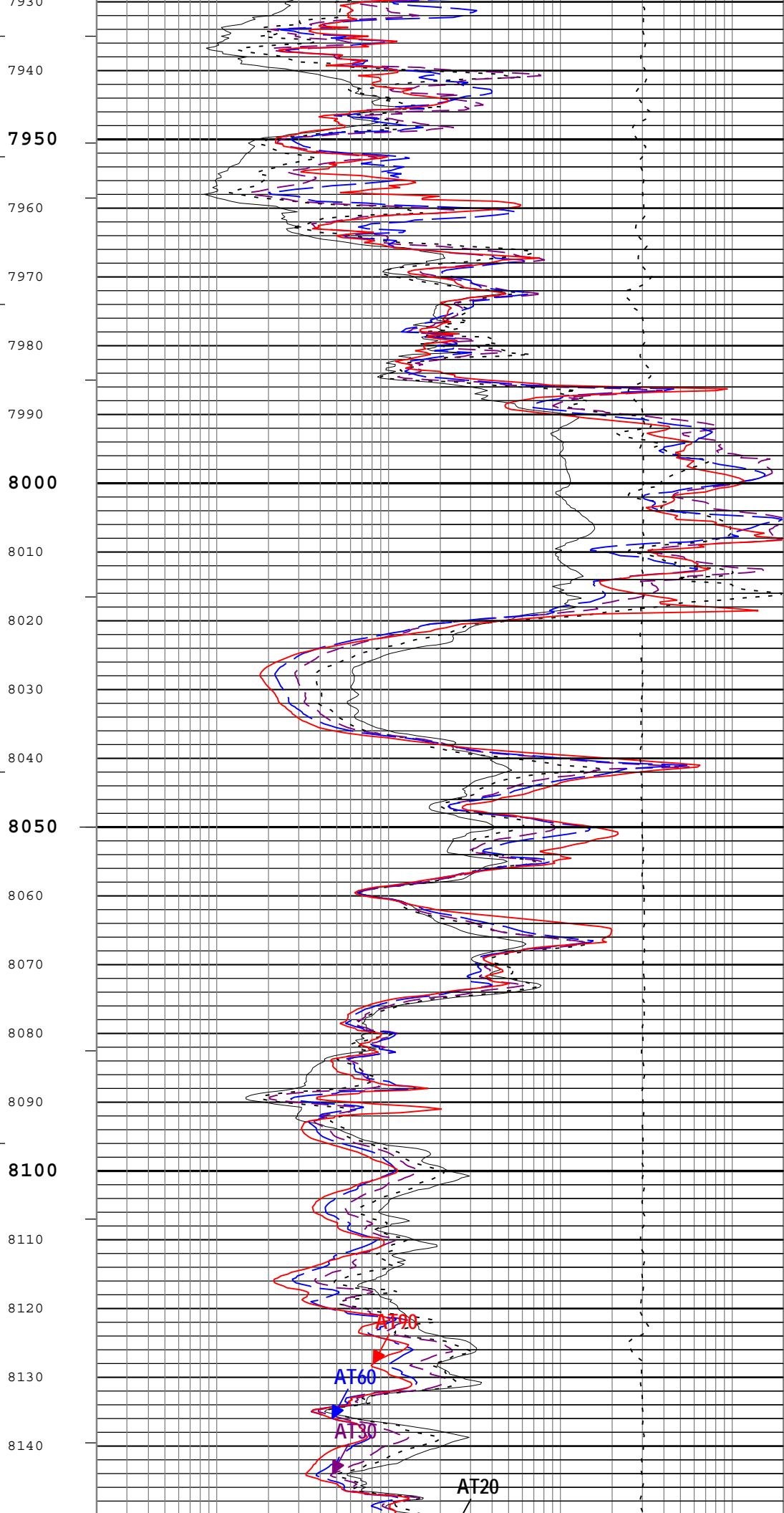
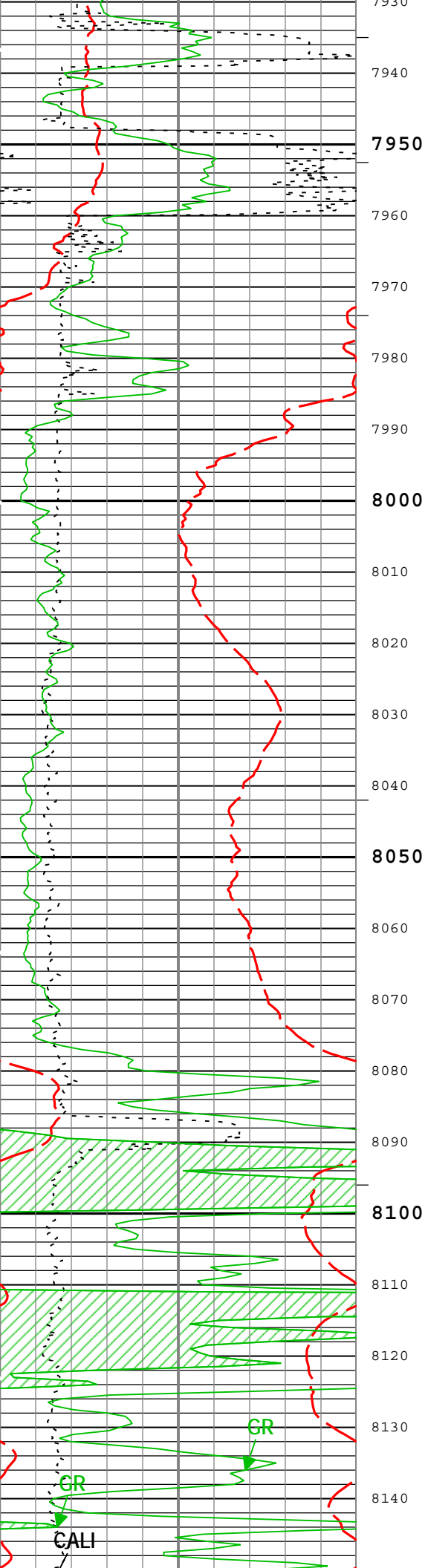


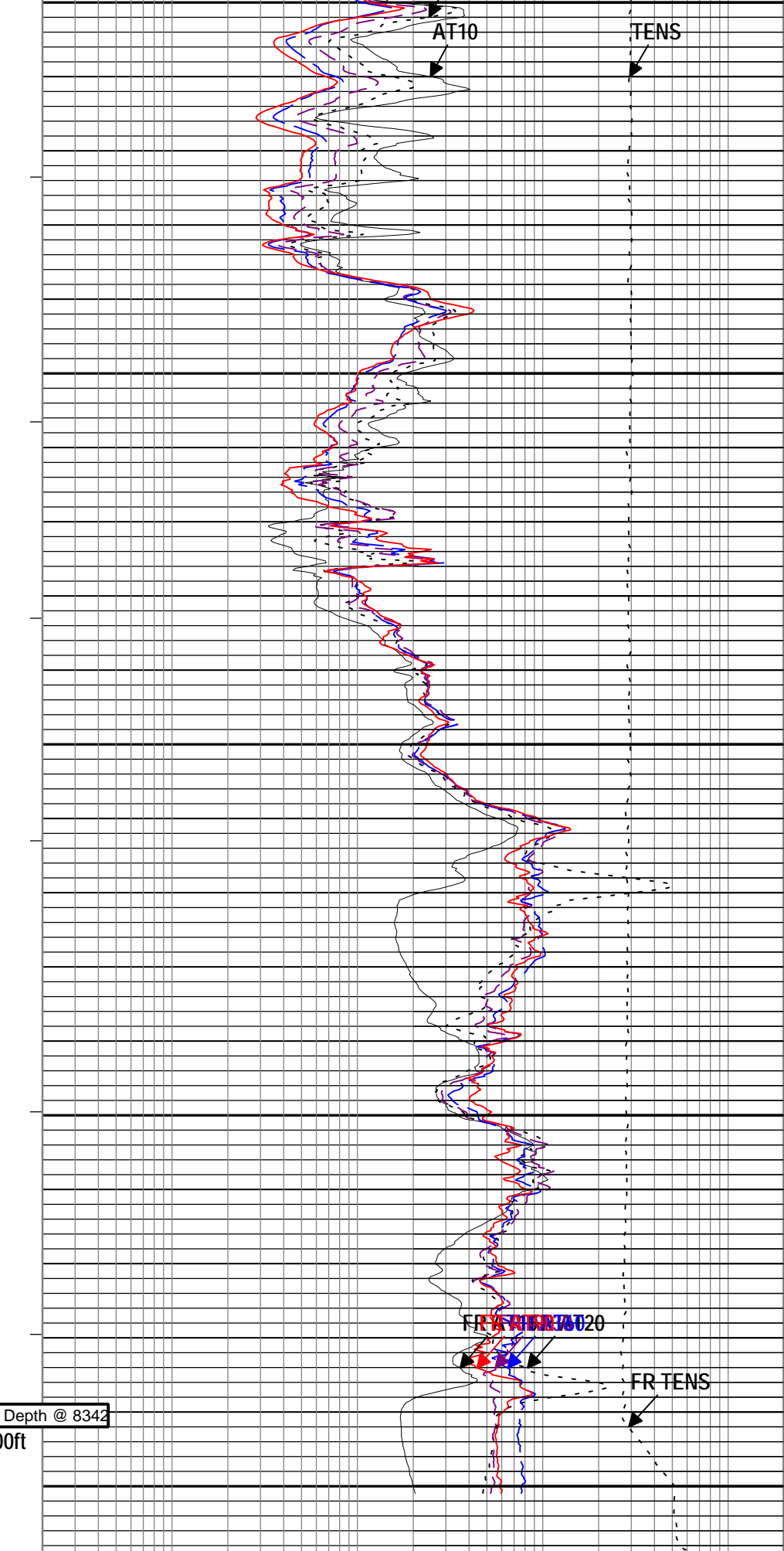
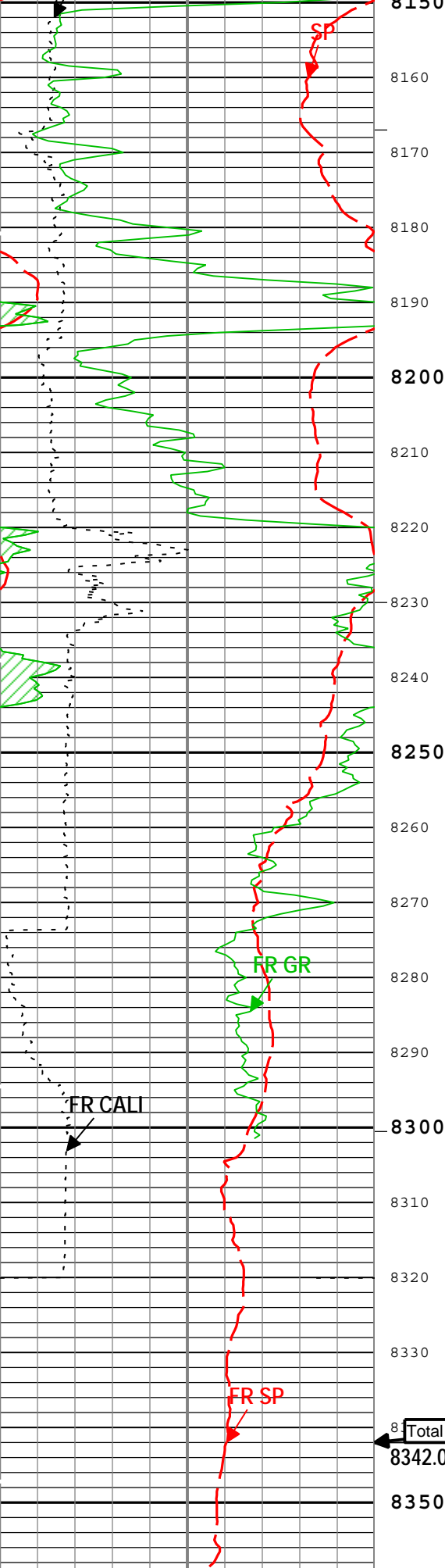












Gamma Ray Backup

Spontaneous Potential (SP) AIT-H

Array Induction Two Foot Resistivity A10 (AT10) AIT-H

0.2 ohm.m 2000

0	mV	200
Caliper (CALI) HDRS-H		
6	in	16
Gamma Ray (GR) HGNS-H		
0	gAPI	200

Array Induction Two Foot Resistivity A20 (AT20) AIT-H		
0.2	ohm.m	2000
Array Induction Two Foot Resistivity A30 (AT30) AIT-H		
0.2	ohm.m	2000
Array Induction Two Foot Resistivity A60 (AT60) AIT-H		
0.2	ohm.m	2000
Array Induction Two Foot Resistivity A90 (AT90) AIT-H		
0.2	ohm.m	2000
Cable Tension (TENS)		
10000	lbf	0

TIME_1900 - Time Marked every 60.00 (s)

└─ICV - Integrated Cement Volume every 100.00 (ft3)

└─ICV - Integrated Cement Volume every 10.00 (ft3)

└─IHV - Integrated Hole Volume every 100.00 (ft3)

└─IHV - Integrated Hole Volume every 10.00 (ft3)

Description: AIT Basic Log Two Format: Log (Import of KM 5in Induction) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth
Creation Date: 12-May-2013 18:04:15

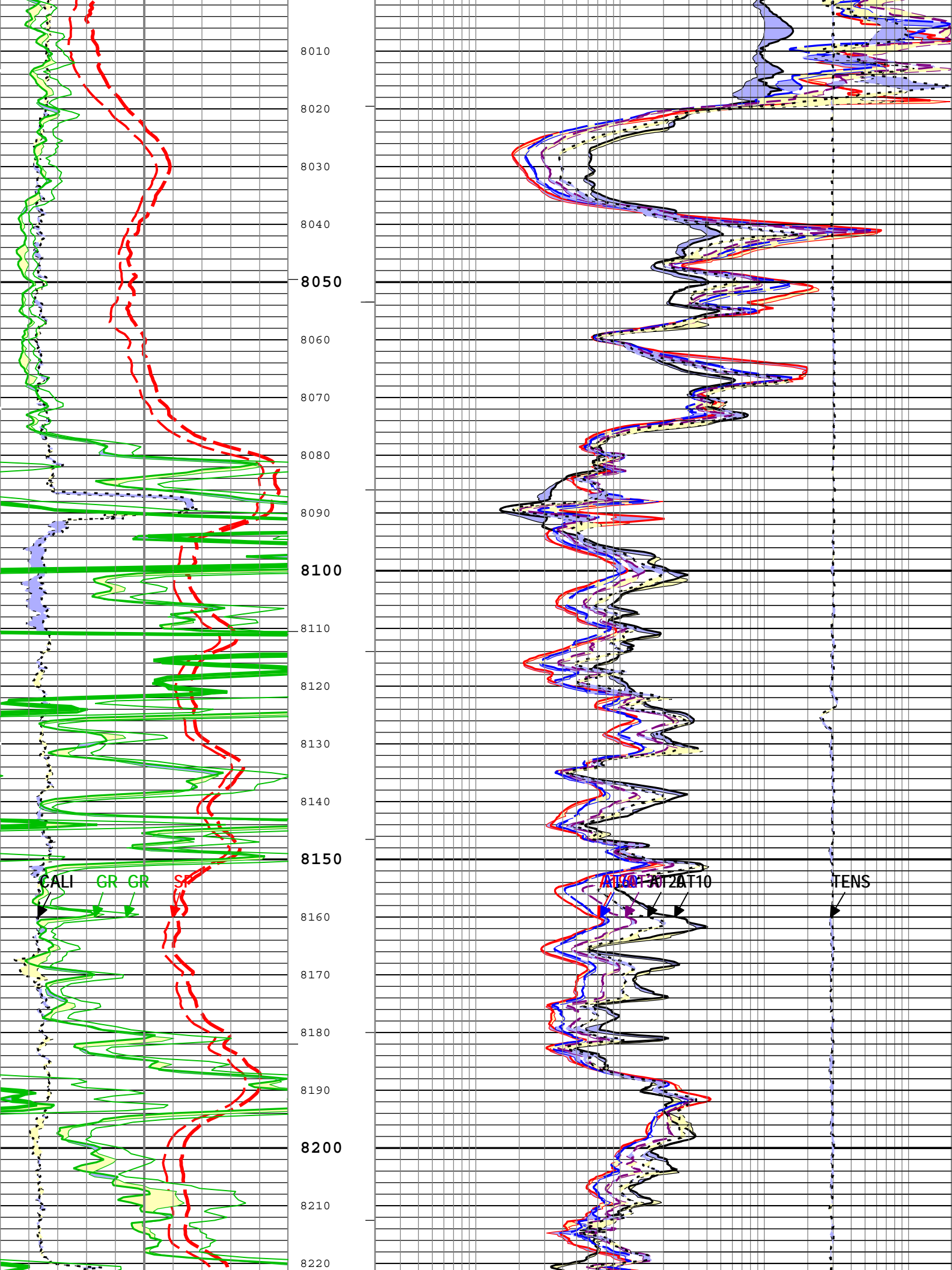
Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-H	Compute Standoff	
ABLM	Array Induction Basic Logs Mode	AIT-H	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-H	Yes	
ASTA	Array Induction Tool Standoff	AIT-H	1.125	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	7.875	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0	in
CBLO	Casing Bottom (Logger)	WLSESSION	309	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DFD	Drilling Fluid Density	Borehole	9.2	lbm/gal
FCD	Future Casing (Outer) Diameter	WLSESSION	5.5	in
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	CALI	
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	AMF	
SOCO	Standoff Correction Option	HGNS-H	Yes	
SPDR	SP Drift Per Foot	AIT-H	0	mV/ft

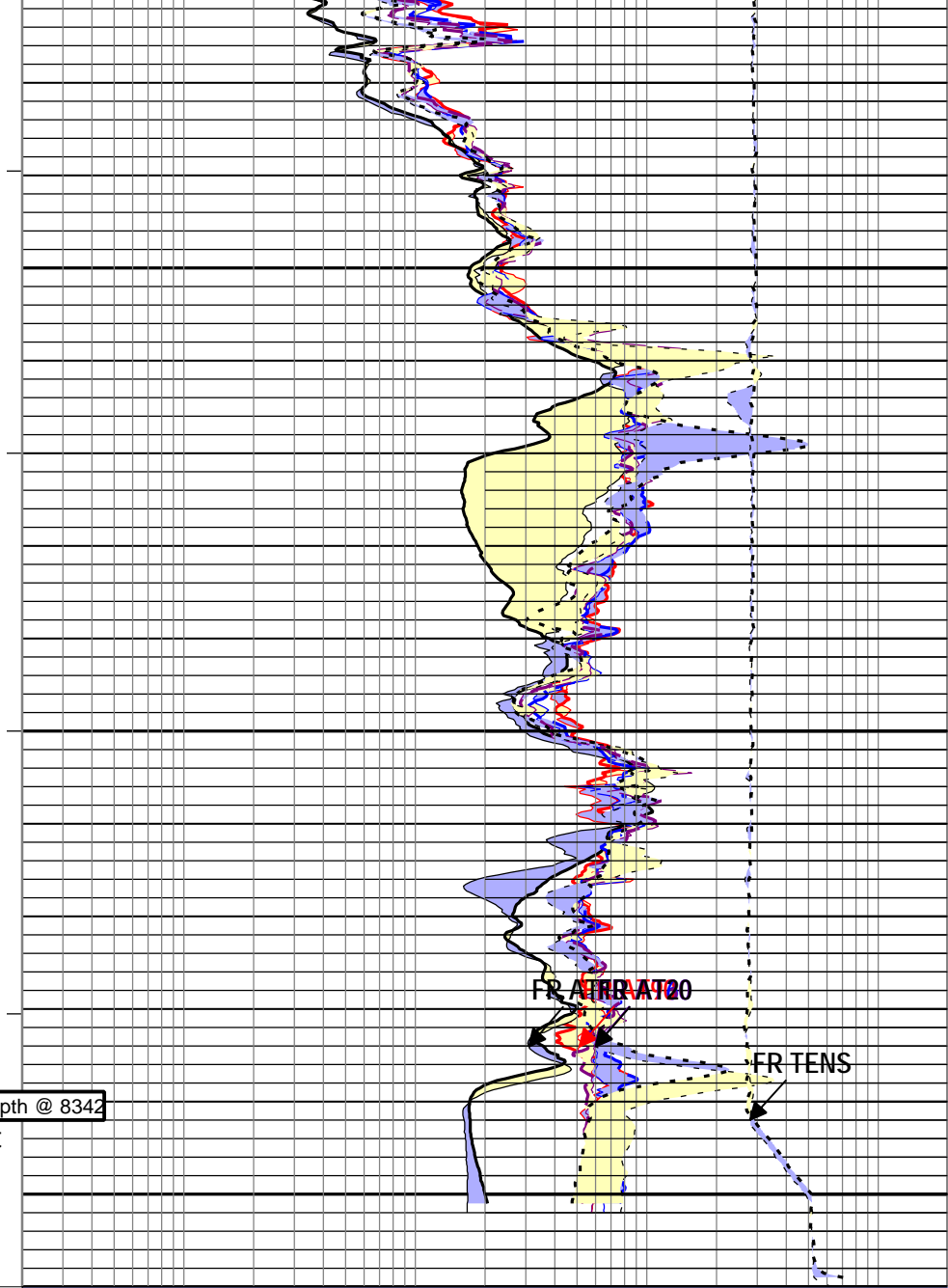
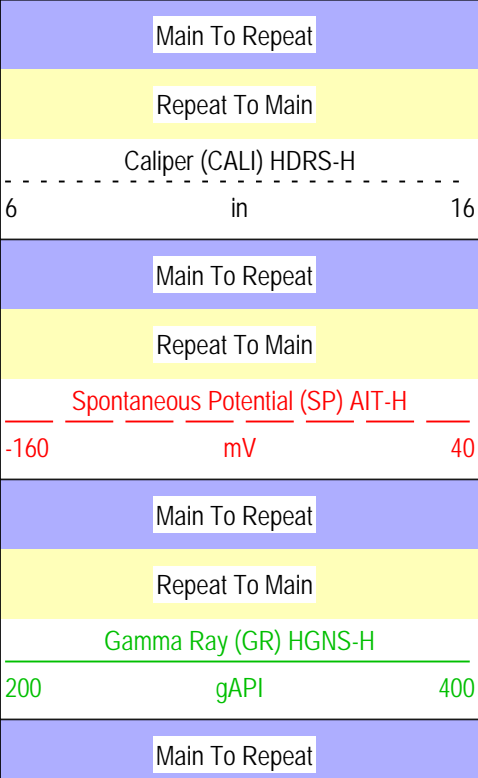
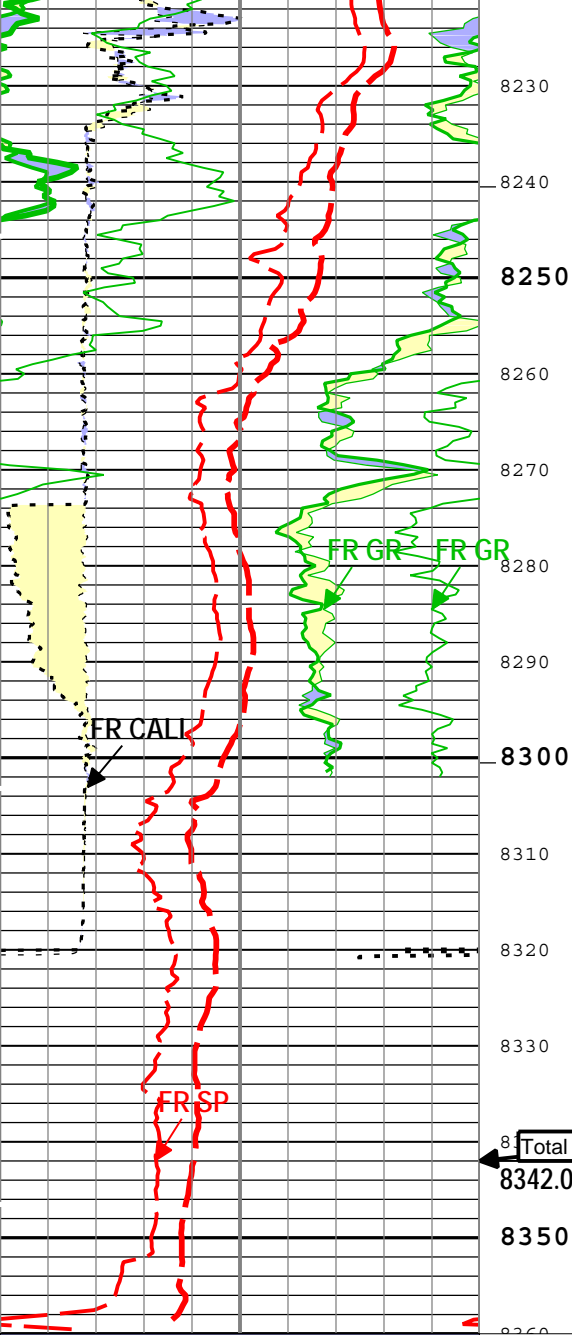
Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h

1								
5" Induction								

Pass Summary								
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
1	Repeat[2]:Up	Up	7571.19 ft	8360.03 ft	12-May-2013 3:00:14 PM	12-May-2013 3:14:09 PM	6.12 ft	

	Main[3]:Up	Up	208.80 ft	8359.06 ft	12-May-2013 3:21:28 PM	12-May-2013 5:46:55 PM	0.00 ft	
All depths are referenced to toolstring zero								
Log	1: Repeat[2]:Up							
Description: AIT Basic Log Two Format: Import of KM 5in Induction RA Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 12-May-2013 18:04:26								
Channel	Source	Sampling						
GR	HGNS-H:HGNS-H:HGNS-H	6in						
ICV	Borehole	6in						
IHV	Borehole	6in						
TIME_1900	WLWorkflow	0.1in						
			<div><div><div></div>IHV - Integrated Hole Volume every 10.00 (ft3)</div><div><div></div>IHV - Integrated Hole Volume every 100.00 (ft3)</div><div><div></div>ICV - Integrated Cement Volume every 10.00 (ft3)</div><div><div></div>ICV - Integrated Cement Volume every 100.00 (ft3)</div></div>					
TIME_1900 - Time Marked every 60.00 (s)			<div><div><div></div>Main To Repeat</div><div><div></div>Repeat To Main</div><div><div></div>Cable Tension (TENS)</div><div><div>10000</div><div>lbf</div><div>0</div></div></div>					
			<div><div><div></div>Main To Repeat</div><div><div></div>Repeat To Main</div><div><div></div>Array Induction Two Foot Resistivity A90 (AT90) AIT-H</div><div><div>0.2</div><div>ohm.m</div><div>2000</div></div></div>					
<div><div><div></div>Main To Repeat</div><div><div></div>Repeat To Main</div><div><div></div>Caliper (CALI) HDRS-H</div><div><div>6</div><div>in</div><div>16</div></div></div>			<div><div><div></div>Main To Repeat</div><div><div></div>Repeat To Main</div><div><div></div>Array Induction Two Foot Resistivity A10 (AT10) AIT-H</div><div><div>0.2</div><div>ohm.m</div><div>2000</div></div></div>					
<div><div><div></div>Main To Repeat</div><div><div></div>Repeat To Main</div><div><div></div>Spontaneous Potential (SP) AIT-H</div><div><div>-160</div><div>mV</div><div>40</div></div></div>			<div><div><div></div>Main To Repeat</div><div><div></div>Repeat To Main</div><div><div></div>Array Induction Two Foot Resistivity A60 (AT60) AIT-H</div><div><div>0.2</div><div>ohm.m</div><div>2000</div></div></div>					
<div><div><div></div>Main To Repeat</div><div><div></div>Repeat To Main</div><div><div></div>Gamma Ray (GR) HGNS-H</div><div><div>200</div><div>gAPI</div><div>400</div></div></div>			<div><div><div></div>Main To Repeat</div><div><div></div>Repeat To Main</div><div><div></div>Array Induction Two Foot Resistivity A30 (AT30) AIT-H</div><div><div>0.2</div><div>ohm.m</div><div>2000</div></div></div>					
<div><div><div></div>Main To Repeat</div><div><div></div>Repeat To Main</div><div><div></div>Gamma Ray (GR) HGNS-H</div><div><div>0</div><div>gAPI</div><div>200</div></div></div>			<div><div><div></div>Main To Repeat</div><div><div></div>Repeat To Main</div><div><div></div>Array Induction Two Foot Resistivity A20 (AT20) AIT-H</div><div><div>0.2</div><div>ohm.m</div><div>2000</div></div></div>					
<div><div><div></div>Main To Repeat</div><div><div></div>Repeat To Main</div><div><div></div>Gamma Ray (GR) HGNS-H</div><div><div>0</div><div>gAPI</div><div>150</div></div></div>								





The figure consists of two charts, one for A30 (AT30) AIT-H and one for A20 (AT20) AIT-H. Both charts show the relationship between Array Induction Two Foot Resistivity (ohm.m) and Main To Repeat/Repeat To Main. The x-axis for both charts ranges from 0.2 to 2000 ohm.m. The y-axis for both charts ranges from 0.2 to 2000 ohm.m. The charts are divided into four quadrants by a diagonal line representing the 1:1 relationship. The top-left quadrant is yellow and labeled 'Repeat To Main'. The top-right quadrant is white and labeled 'Array Induction Two Foot Resistivity A30 (AT30) AIT-H'. The bottom-left quadrant is blue and labeled 'Main To Repeat'. The bottom-right quadrant is yellow and labeled 'Repeat To Main'.

Description: AIT Basic Log Two	Format: Import of KM 5in Induction RA	Index Scale: 5 in per 100 ft	Index Unit: ft	Index Type: Measured Depth	Creation Date: 12-May-2013 18:04:26
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Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-84.646	119.000	
Sonde Error Correction Quad - 0		Master	-----	-2250.000	116.355	2250.000	
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	169.146	204.000	
Sonde Error Correction Quad - 1		Master	-----	-625.000	151.070	625.000	

AIT Mud Calibration - Mud Calibration Gain							
Master (EEPROM):		11:33:25 08-Mar-2013					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Coarse Gain		Master	1.000	0.800	0.826	1.200	
Fine Gain		Master	1.000	0.800	0.823	1.200	

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Thru Cal Mag - 0	V	Master	----	0.363	0.627	0.847	
		Before	----	0.363	0.626	0.847	
		After	----	----	----	----	
		Before-Master	----	----	-0.001	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 0	deg	Master	----	11.000	74.092	131.000	
		Before	----	11.000	74.816	131.000	
		After	----	----	----	----	
		Before-Master	----	----	0.724	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 1	V	Master	----	0.762	1.284	1.778	
		Before	----	0.762	1.283	1.778	
		After	----	----	----	----	
		Before-Master	----	----	-0.001	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 1	deg	Master	----	10.000	73.071	130.000	
		Before	----	10.000	73.799	130.000	
		After	----	----	----	----	
		Before-Master	----	----	0.728	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 2	V	Master	----	0.374	0.637	0.872	
		Before	----	0.374	0.636	0.872	
		After	----	----	----	----	
		Before-Master	----	----	-0.001	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 2	deg	Master	----	6.000	68.875	126.000	
		Before	----	6.000	69.617	126.000	
		After	----	----	----	----	
		Before-Master	----	----	0.742	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 3	V	Master	----	0.422	0.723	0.986	
		Before	----	0.422	0.722	0.986	
		After	----	----	----	----	
		Before-Master	----	----	-0.001	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 3	deg	Master	----	5.000	67.972	125.000	
		Before	----	5.000	68.716	125.000	
		After	----	----	----	----	
		Before-Master	----	----	0.744	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 4	V	Master	----	0.802	1.347	1.872	
		Before	----	0.802	1.345	1.872	
		After	----	----	----	----	
		Before-Master	----	----	-0.002	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 4	deg	Master	----	1.000	66.922	110.000	
		Before	----	1.000	67.666	110.000	
		After	----	----	----	----	
		Before-Master	----	----	0.744	----	
		After-Before	----	----	----	----	

Thru Cal Phase - 4	deg	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	-1.000 ----- ----- ----- -----	60.999 61.762 ----- 0.763 -----	119.000 ----- ----- ----- -----	
Thru Cal Mag - 5	V	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	1.173 1.173 ----- ----- -----	1.946 1.943 ----- -0.003 -----	2.737 2.737 ----- ----- -----	
Thru Cal Phase - 5	deg	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	-3.000 -3.000 ----- ----- -----	58.812 59.598 ----- 0.786 -----	117.000 117.000 ----- ----- -----	
Thru Cal Mag - 6	V	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	1.173 1.173 ----- ----- -----	1.941 1.939 ----- -0.002 -----	2.737 2.737 ----- ----- -----	
Thru Cal Phase - 6	deg	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	-3.000 -3.000 ----- ----- -----	58.874 59.661 ----- 0.787 -----	117.000 117.000 ----- ----- -----	
Thru Cal Mag - 7	V	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	0.849 0.849 ----- ----- -----	1.378 1.378 ----- 0.000 -----	1.981 1.981 ----- ----- -----	
Thru Cal Phase - 7	deg	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	-7.000 -7.000 ----- ----- -----	53.154 54.102 ----- 0.948 -----	113.000 113.000 ----- ----- -----	
SPA Zero	mV	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	-50.000 -50.000 ----- ----- -----	-0.032 -0.033 ----- -0.001 -----	50.000 50.000 ----- ----- -----	
SPA Plus	mV	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	941.000 941.000 ----- ----- -----	992.378 993.049 ----- 0.671 -----	1040.000 1040.000 ----- ----- -----	
Temperature Zero	V	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	-0.050 -0.050 ----- ----- -----	0.000 0.000 ----- 0.000 -----	0.050 0.050 ----- ----- -----	
Temperature Plus	V	Master Before After Before-Master After-Before	----- ----- ----- ----- -----	0.870 0.870 ----- ----- -----	0.919 0.920 ----- 0.001 -----	0.960 0.960 ----- ----- -----	

Company:	Nighthawk Production LLC	Schlumberger
Well:	Big Sky 4-11	
Field:	Wildcat	
County:	Lincoln	

Country:	USA
Platform Express	
Array Induction	
with Linear Correlation	