

Company: Aurora Power Resources Inc

Well: David Bender 1A

Field: Bijou West

County: Morgan State: Colorado

Platform Express

Array Induction

with Linear Correlation

County:	Morgan
Field:	Bijou West
Location:	SHL: NWSW 2441' FSL & 260' FWL
Well:	David Bender 1A
Company:	Aurora Power Resources Inc
Location:	
SHL: NWSW 2441' FSL & 260' FWL	Elev.: K.B. 4476.00 ft
Section 12, Township 4N, Range 60W	G.L. 4462.00 ft
Lat: 40.326670, Long: -104.054240	D.F. 4475.00 ft
Permanent Datum:	Ground Level Elev.: 4462.00 f
Log Measured From:	Kelly Bushing 14.00 ft above Perm.Datum
Drilling Measured From:	Kelly Bushing
API Serial No.	Section: 12 Township: 4N Range: 60W
05-087-08178-00	

Logging Date	16-Feb-2014		
Run Number	Run 1: PEX-AIT		
Depth Driller	6585.00 ft		
Schlumberger Depth	6585.00 ft		
Bottom Log Interval	6590.00 ft		
Top Log Interval	536.00 ft		
Casing Driller Size @ Depth	8.625 in @ 500.00 ft		
Casing Schlumberger	500 ft		
Bit Size	7.875 in		
Type Fluid In Hole	Chemical Gel		
Density	9.1 lbm/gal	34 s	
Fluid Loss	PH 10 cm3	8.5	
Source of Sample	Flowline		
RM @ Meas Temp	1.2 ohm.m @ 70 degF		
RMF @ Meas Temp	0.9 ohm.m @ 70 degF		
RMC @ Meas Temp	1.5 ohm.m @ 70 degF		
Source RMF	RMC Calculated	Calculated	
RM @ BHT	0.51 @ 175	0.38 @ 175	
Max Recorded Temperatures	175 degF		
Circulation Stopped	15-Feb-2014	15:00:00	
Logger on Bottom	16-Feb-2014	01:30:34	
Unit Number	Location: 2135	Fort Morgan, CO	
Recorded By	Max Pace		
Witnessed By	Ed Jones		

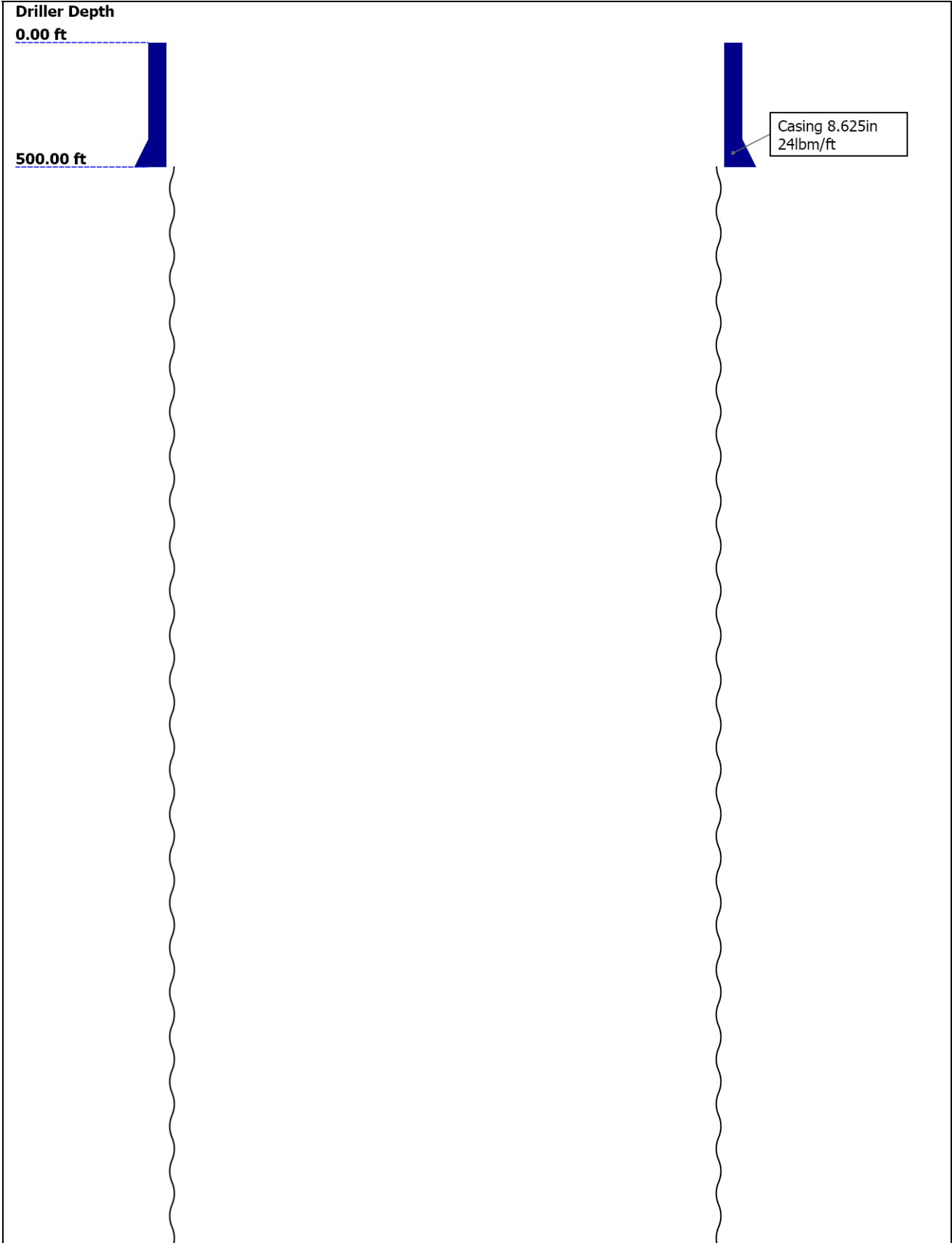
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Contents

- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Borehole Fluids
- 7. Remarks and Equipment Summary
- 8. Depth Summary
- 9. Run 1: PEX-AIT 5" Induction
 - 9.1 Integration Summary
 - 9.2 Software Version
 - 9.3 Composite Summary
 - 9.4 Log (KM 5in Induction)
 - 9.5 Parameter Listing
- 10. Run 1: PEX-AIT 5" Induction Repeat
 - 10.1 Composite Summary
 - 10.2 Log (KM 5in Induction RA)

Well Sketch





Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	7.875					
Top Driller (ft)	500					
Top Logger (ft)	500					
Bottom Driller (ft)	6585					
Bottom Logger (ft)	6585					
Casing						
Size (in)	8.625					
Weight (lbm/ft)	24					
Inner Diameter (in)	8.097					
Grade	N80					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	500					
Bottom Logger (ft)	500					

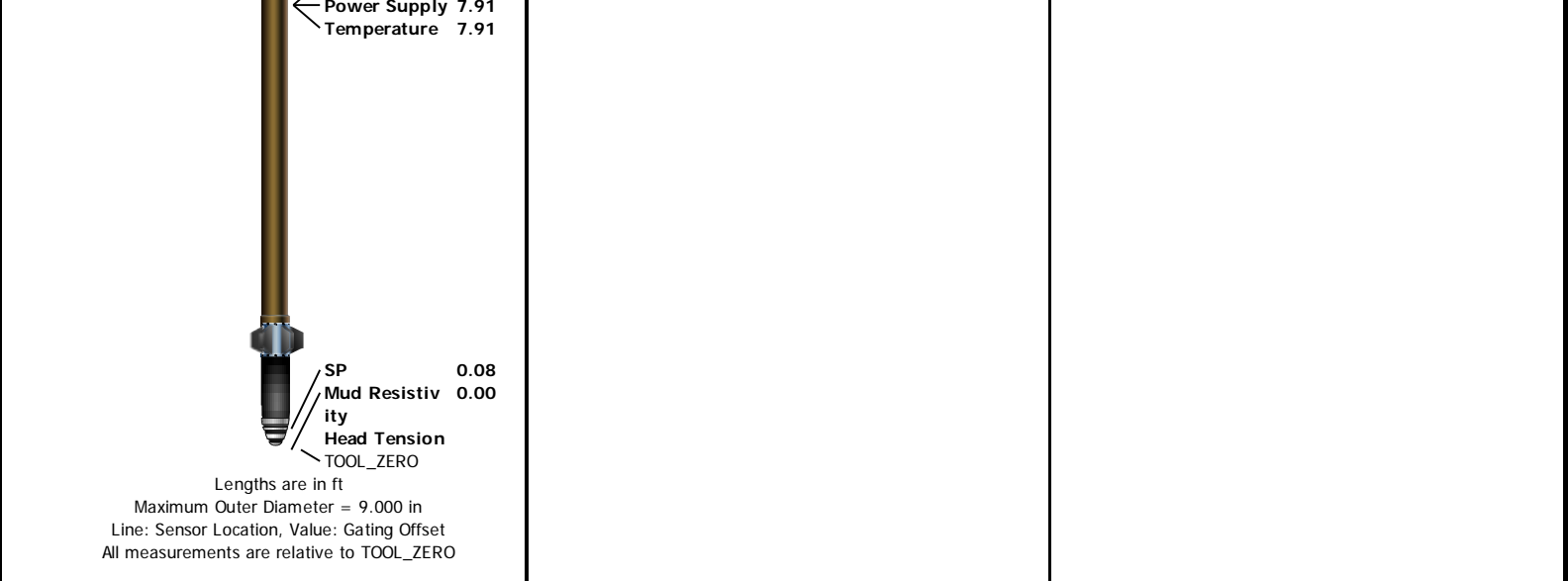
Borehole Fluids

Parameter(unit)	Run 1: PEX-AIT					
Fluid Type	Water					
Fluid Name	Chemical Gel					
Max Recorded Temperatures (degF)	175					
Source of Sample	Flowline					
Salinity (ppm)	0					
Density (lbm/gal)	9.1					
Funnel Viscosity (s)	34					
Fluid Loss (cm3)	10					
PH	8.5					
Date/Time Circulation Stopped	15-Feb-2014 15:00:00					
Date Logger on Bottom	16-Feb-2014					
Time Logger on Bottom	01:30:34					
Source RMF	Calculated					
RMC	Calculated					
RM @ Meas Temp (ohm.m@degF)	1.2 @ 70					
RMF @ Meas Temp (ohm.m@degF)	0.9 @ 70					

ohm.m@degF)						
RMC @ Meas Temp (ohm.m@degF)	1.5 @ 70					
RM @ BHT (ohm.m@degF)	0.51 @ 175					
RMF @ BHT (ohm.m@degF)	0.38 @ 175					
RMC @ BHT (ohm.m@degF)	0.63 @ 175					
Total Solid (%)						
High Gravity Solids (%)						

Remarks and Equipment Summary

Run 1: PEX-AIT: Toolstring				Run 1: PEX-AIT: Remarks	
Equip name LEH-QT LEH-QT	Length 43.57	MP name	Offset	All Schlumberger depth control procedures followed	
				IDW used as primary depth reference	
				Z chart used as secondary depth reference	
				Matrix type and density zoned as per client request	
				Tool string run as per tool sketch	
DTC-H ECH-KC DTC-H	40.65	CTEM HV	39.75 0.00	Crew: Max Pace, Ian Derry, Jake Jump	
HGNS-H HGNH NPV-N NSR-F:5215 HACCZ-H:5955 HGNS-H HMCA-H	37.65	ToolStatus TelStatus Temperature	37.65 37.65 37.62	This is the first run in hole	
HDRS-H ECH-MEB HRCC-H HRMS-H HRGD-H:4791 GSR-J:5240 Backscatter GPV-Q Short Spacing Long Spacing:289 10	28.24	GR CNL Porosity HGNS HMCA Acceleromete r	36.91 30.57 28.24 28.24 0.00		
AIT-M:208 AMIS:208 AMRM:208	16.00	HRCC MCFL Caliper TLD Density	24.24 18.81 18.33 17.94		
		Induction	7.91		



Depth Summary			
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	Run 1: PEX-AIT		
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Depth Measuring Device			
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Type	IDW-B		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Calibration Cable Type			
Wheel Correction 1	0		
Wheel Correction 2	0		

Tension Device			
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Type	CMTD-B/A		
Serial Number			
Calibration Date			
Calibrator Serial Number			
Number of Calibration Points	0		

Logging Cable			
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Type	7-46NT-XS		
Serial Number			
Length	24000.00 ft		
Conveyance Type	Wireline		
Rig Type	Land		

Run 1: PEX-AIT:Depth Control Parameters		Depth Control Remarks	
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Log Sequence	First Log In the Well		
Rig Up Length At Surface			
Rig Up Length At Bottom			
Rig Up Length Correction			
Stretch Correction			
Tool Zero Check At Surface			

Run 1: PEX-AIT			
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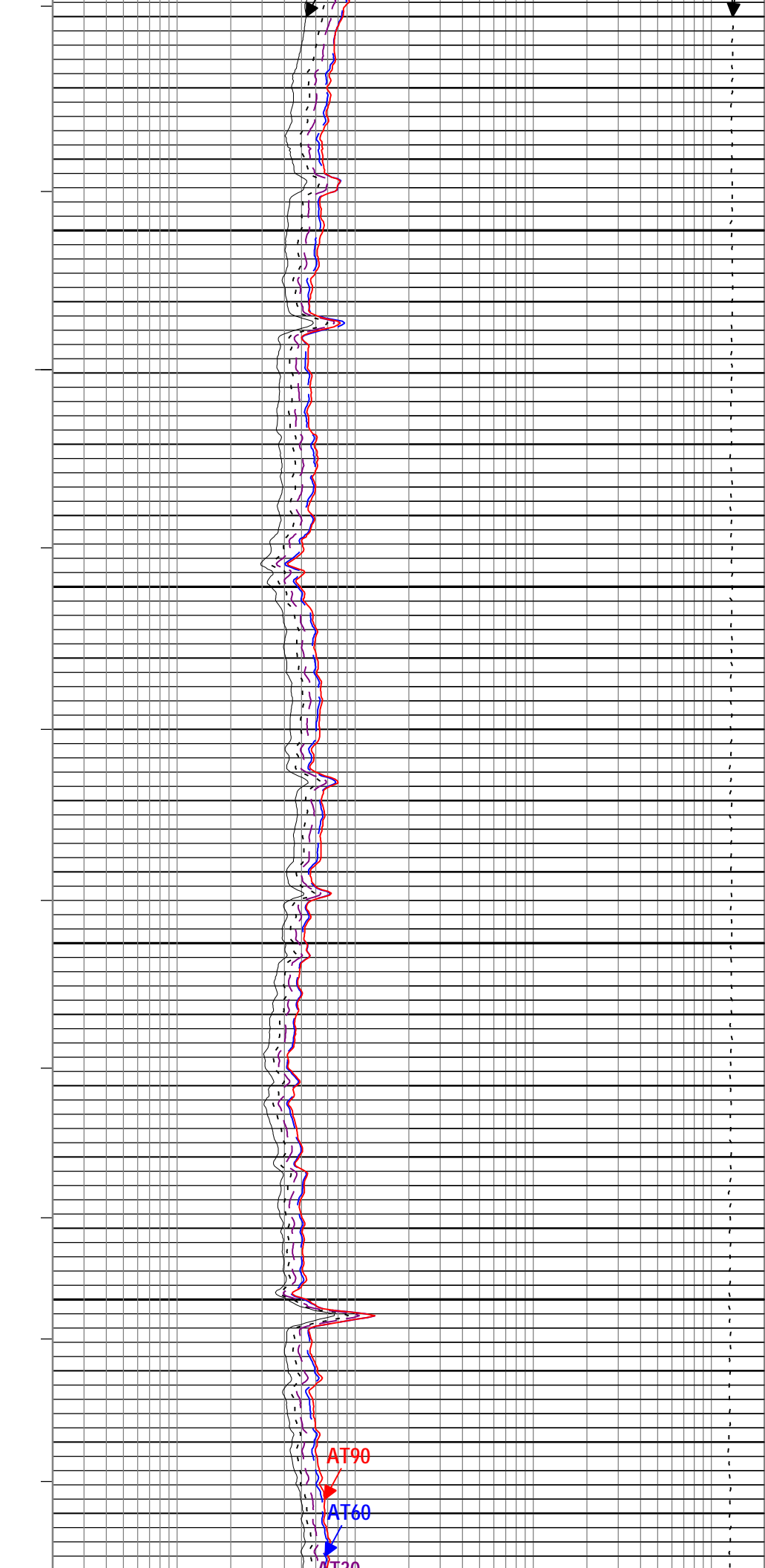
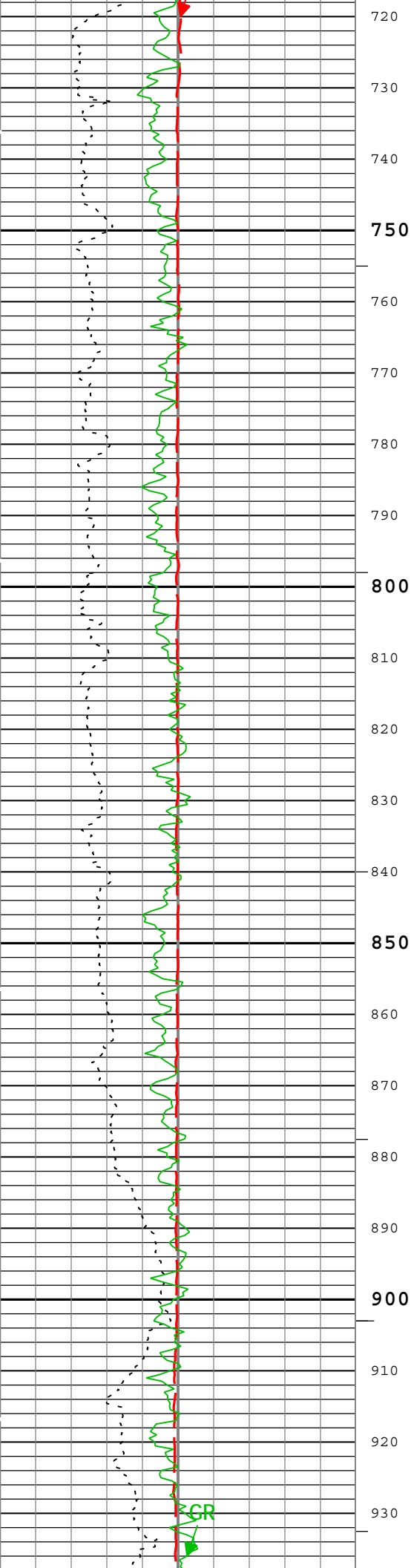
5" Induction			
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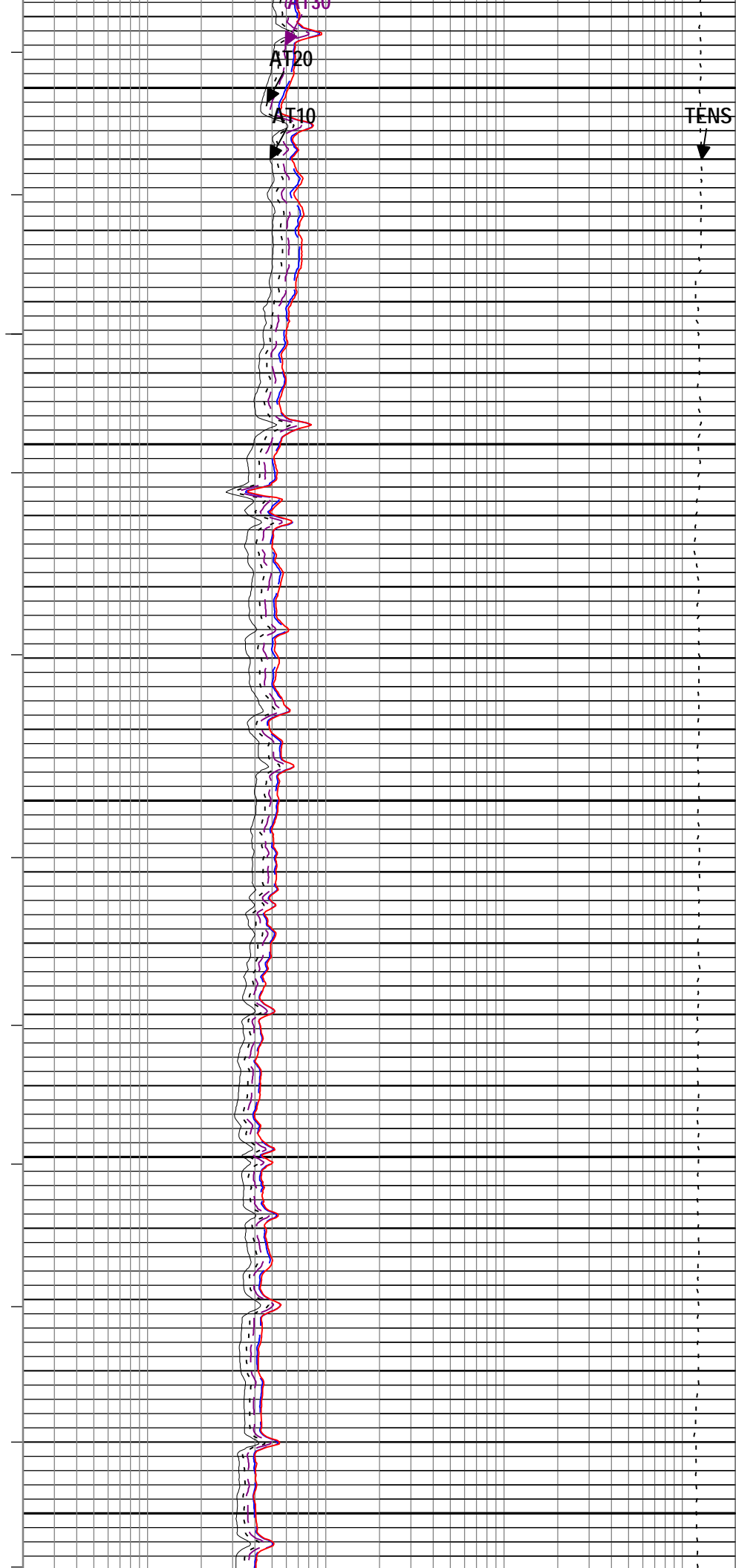
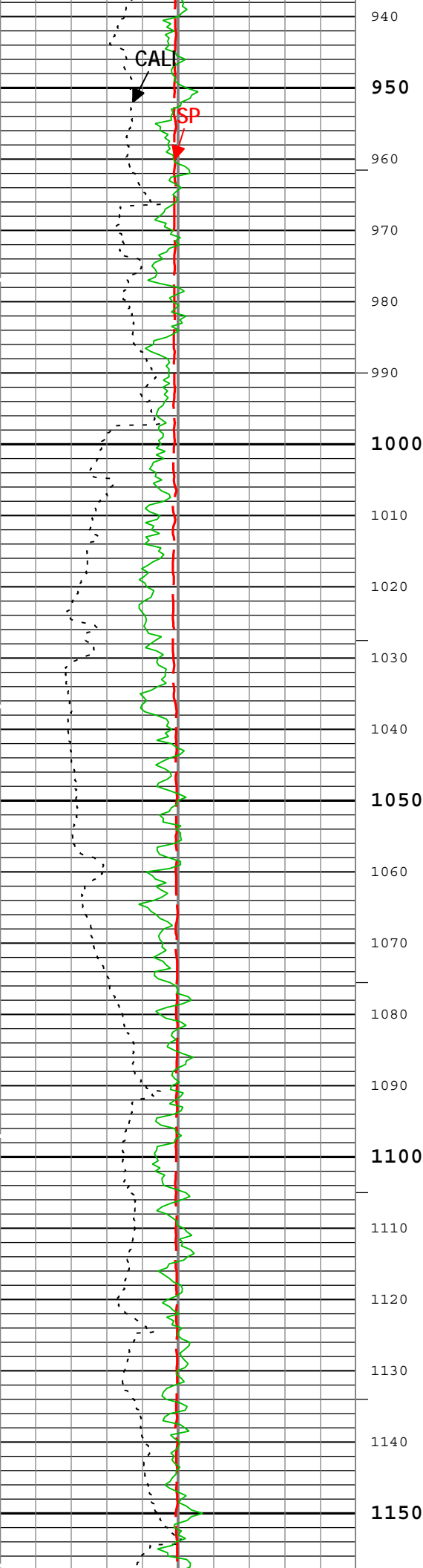
Integration Summary				
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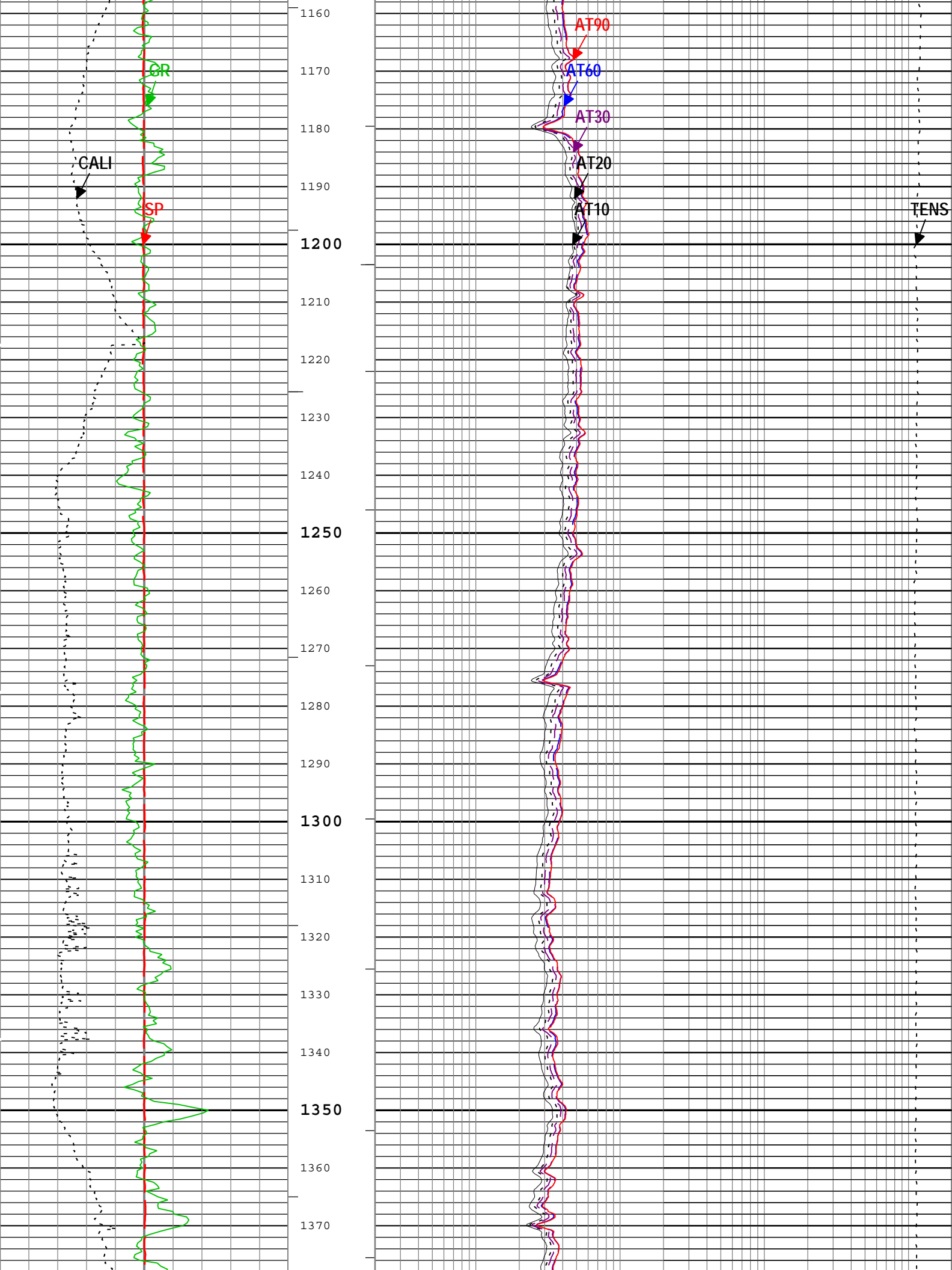
Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
ICV	Integrated Cement Volume	GCSE_UP_PASS, FCD	1403.85	ft3
IHV	Integrated Hole Volume	GCSE_UP_PASS	2411.63	ft3

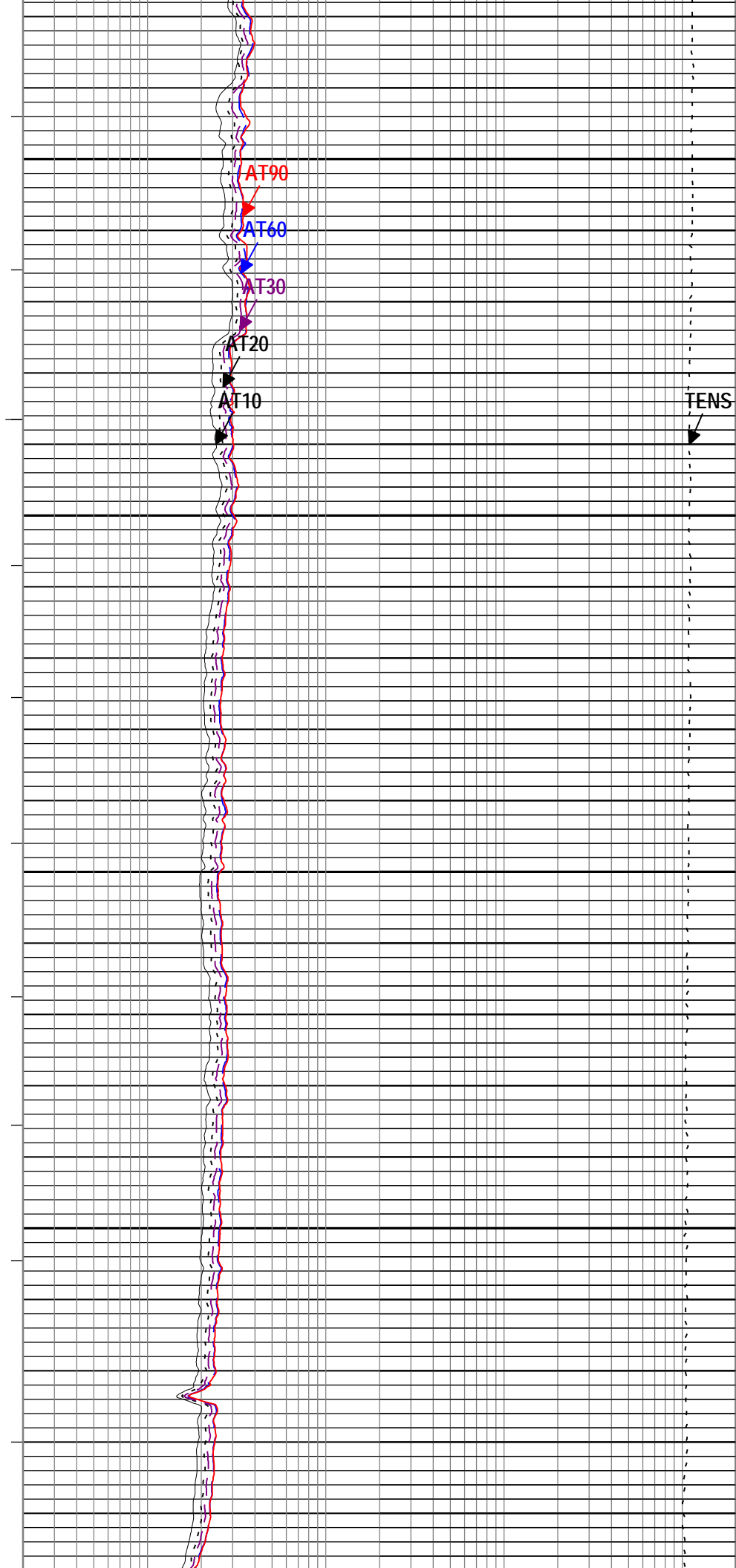
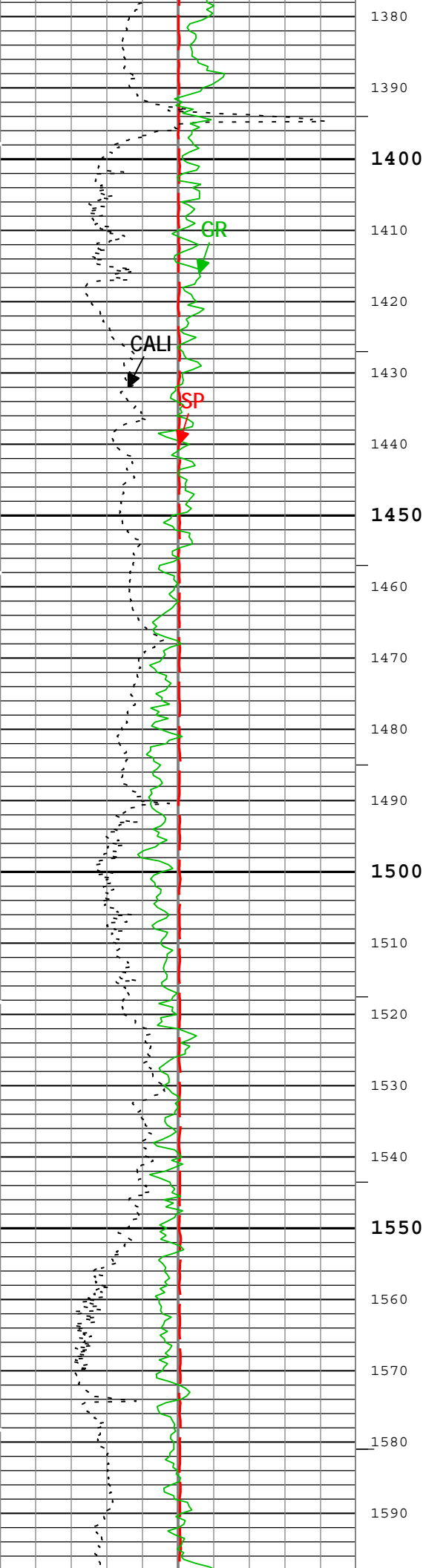
Software Version				
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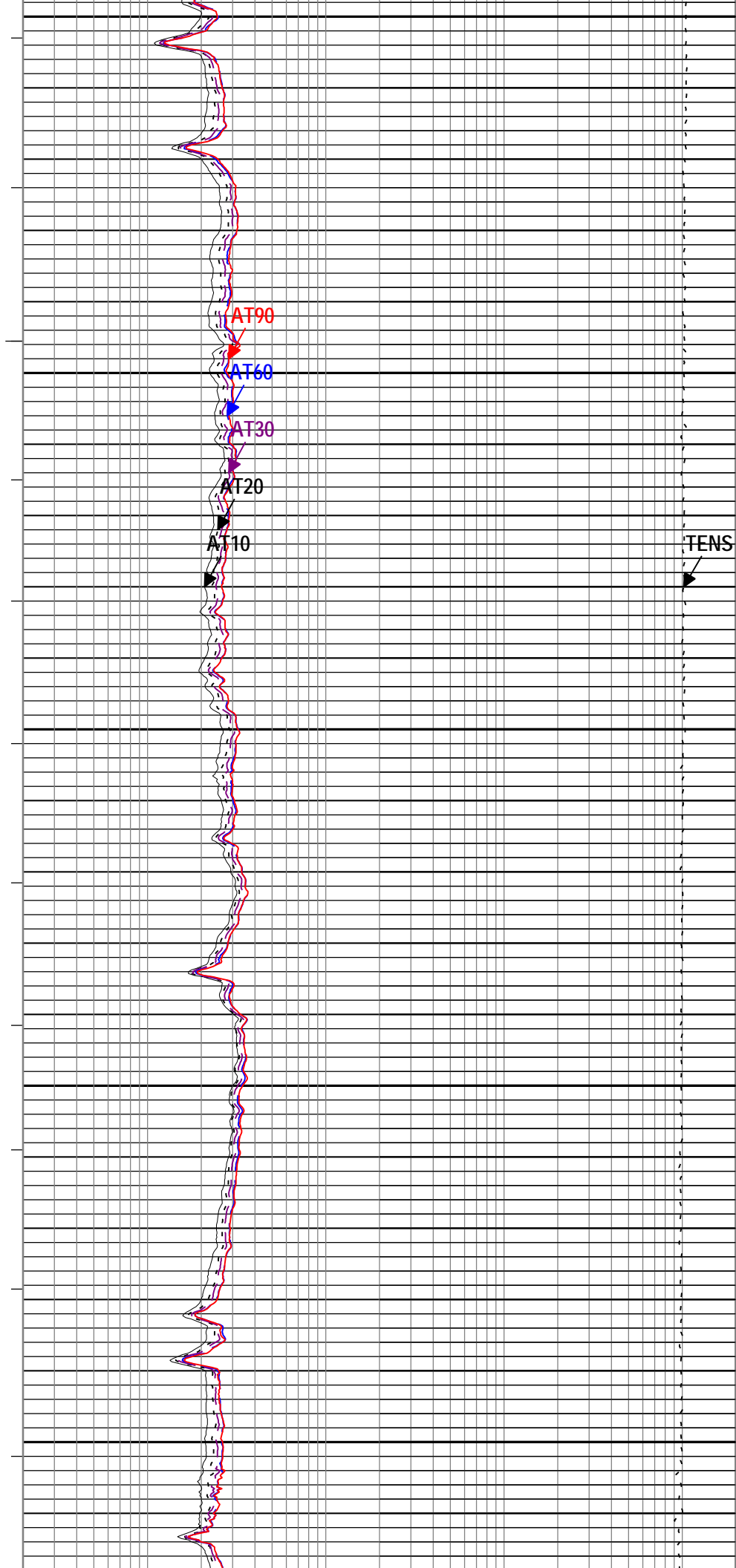
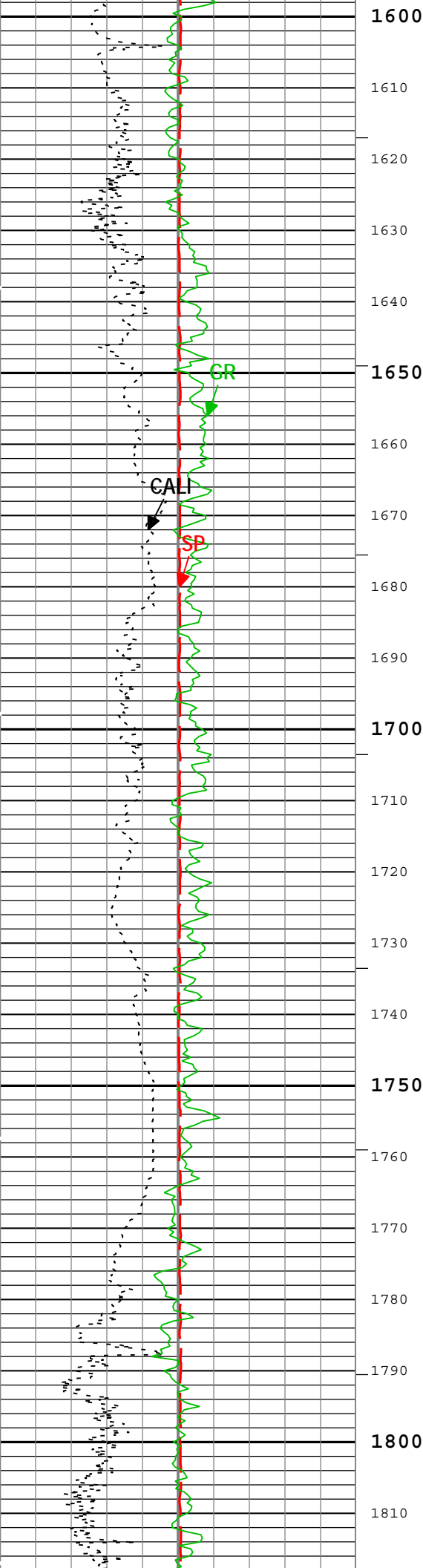
Acquisition System							Version		
MaxWell							4.0.9163.3000		
Application Patch							Patch-SP-10767_13393-4.0.9163.3001		
Computation		Description						Version	
Borehole		Borehole Ensemble provides common Borehole Parameters and Channels						4.0.9213.3000	
Tool Elements		Description				Software Version		Firmware Version	
HRCC-H		HILT High-Resolution Control Cartridge, 150 degC				4.0.9231.3000		2.0	
HGNS-H		HILT Gamma-Ray and Neutron Sonde, 150 degC				4.0.9231.3000		2.0	
AMIS		Array Induction Sonde - M				4.0.9247.3000		1	
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
Run 1: PEX-AIT	Main[6]:Up	Up	412.38 ft	6608.73 ft	16-Feb-2014 1:44:28 AM	16-Feb-2014 3:30:23 AM	ON	0.00 ft	No
All depths are referenced to toolstring zero									
Log	Company:Aurora Power Resources Inc Well:David Bender 1A Run 1: PEX-AIT: Main[6]:Up:S003								
Description: AIT Basic Log Two Format: Log (KM 5in Induction) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 16-Feb-2014 04:43:49									
Channel	Source		Sampling						
AT10	AIT-M:AMIS:AMIS		3in						
AT20	AIT-M:AMIS:AMIS		3in						
AT30	AIT-M:AMIS:AMIS		3in						
AT60	AIT-M:AMIS:AMIS		3in						
AT90	AIT-M:AMIS:AMIS		3in						
CALI	HDRS-H:HRCC-H:HRCC-H		1in						
GR	HGNS-H:HGNS-H:HGNS-H		6in						
ICV	Borehole		6in						
IHV	Borehole		6in						
SP	AIT-M:AMIS:AMIS		6in						
TENS	WLWorkflow		6in						
TIME_1900	WLWorkflow		0.1in						
— IHV - Integrated Hole Volume every 10.00 (ft3) — IHV - Integrated Hole Volume every 100.00 (ft3) — ICV - Integrated Cement Volume every 10.00 (ft3) — ICV - Integrated Cement Volume every 100.00 (ft3) TIME_1900 - Time Marked every 60.00 (s)									
							Cable Tension (TENS)		
							10000	lbf	0
Array Induction Two Foot Resistivity A10 (AT10) AIT-M									
0.2		ohm.m						2000	
Array Induction Two Foot Resistivity A20 (AT20) AIT-M									
0.2		ohm.m						2000	
Array Induction Two Foot Resistivity A30 (AT30) AIT-M									
0.2		ohm.m						2000	
Array Induction Two Foot Resistivity A60 (AT60) AIT-M									
0.2		ohm.m						2000	
Array Induction Two Foot Resistivity A90 (AT90) AIT-M									
0.2		ohm.m						2000	
Gamma Ray Backup									
Spontaneous Potential (SP) AIT-M									
-160		mV						40	
Caliper (CALI) HDRS-H									
6		in						16	
Gamma Ray (GR) HGNS-H									
0		nAPI						200	

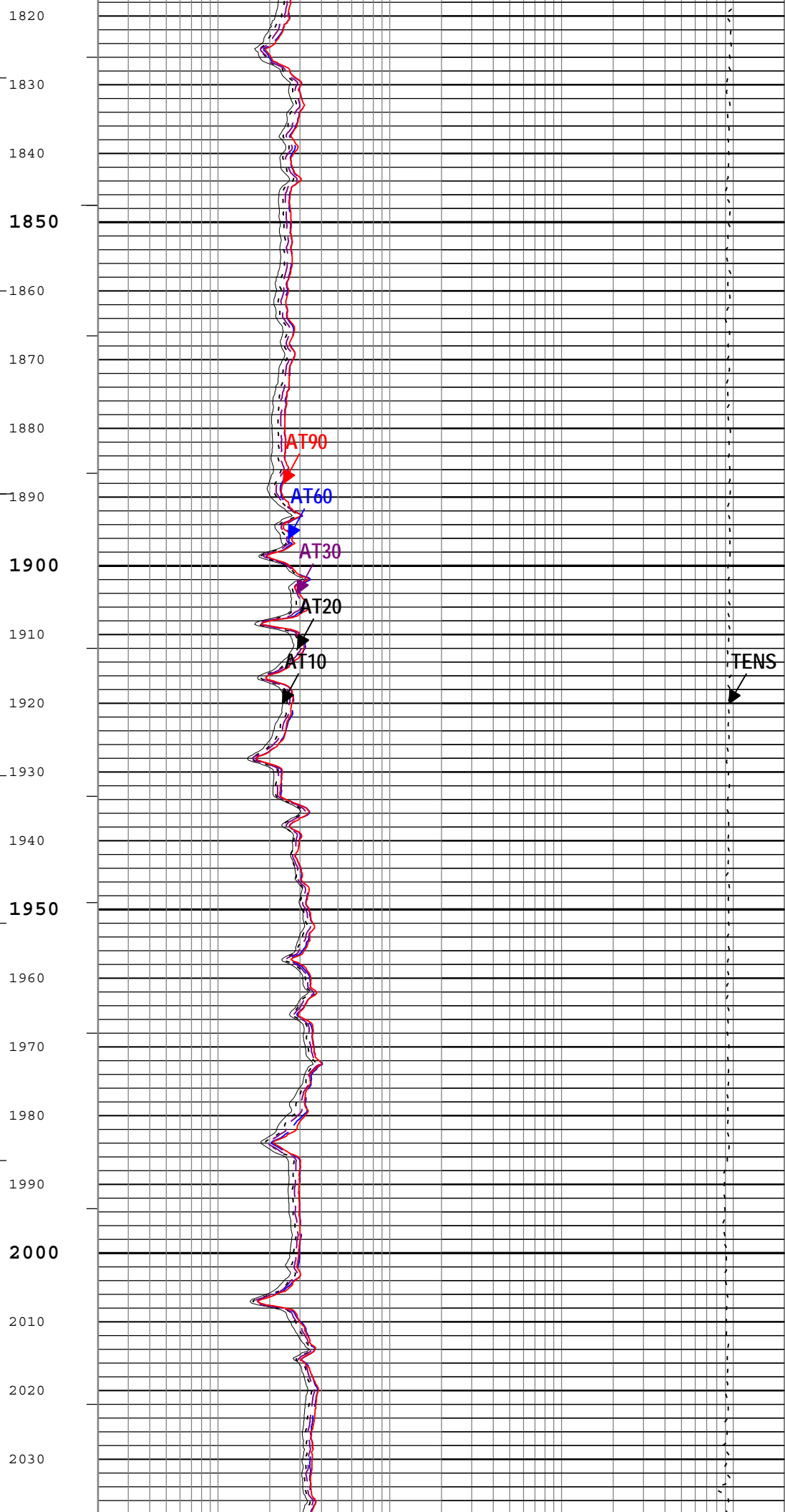
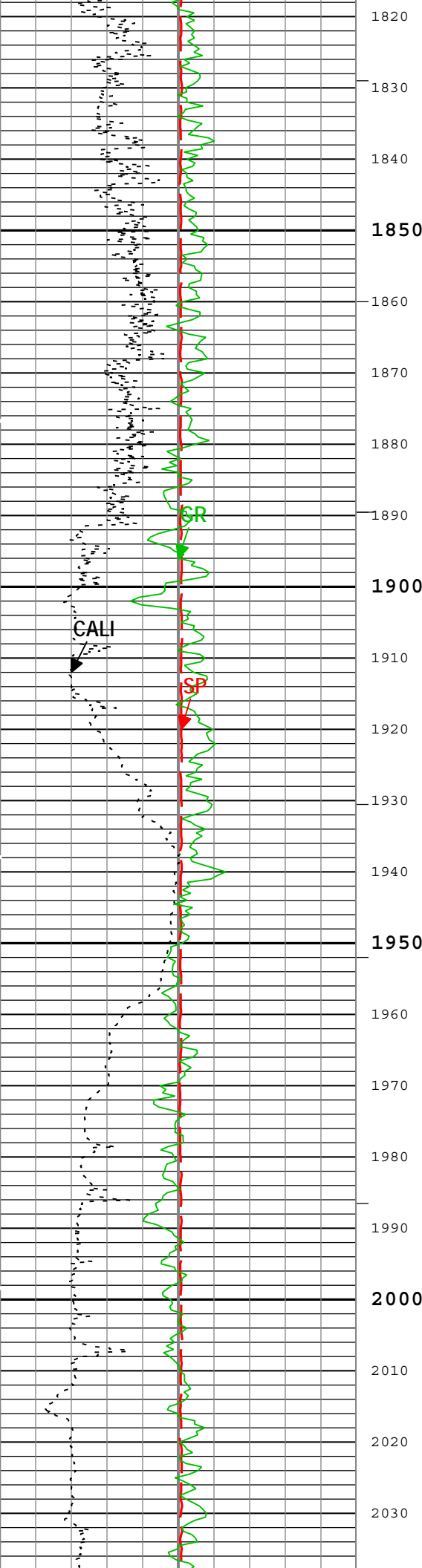


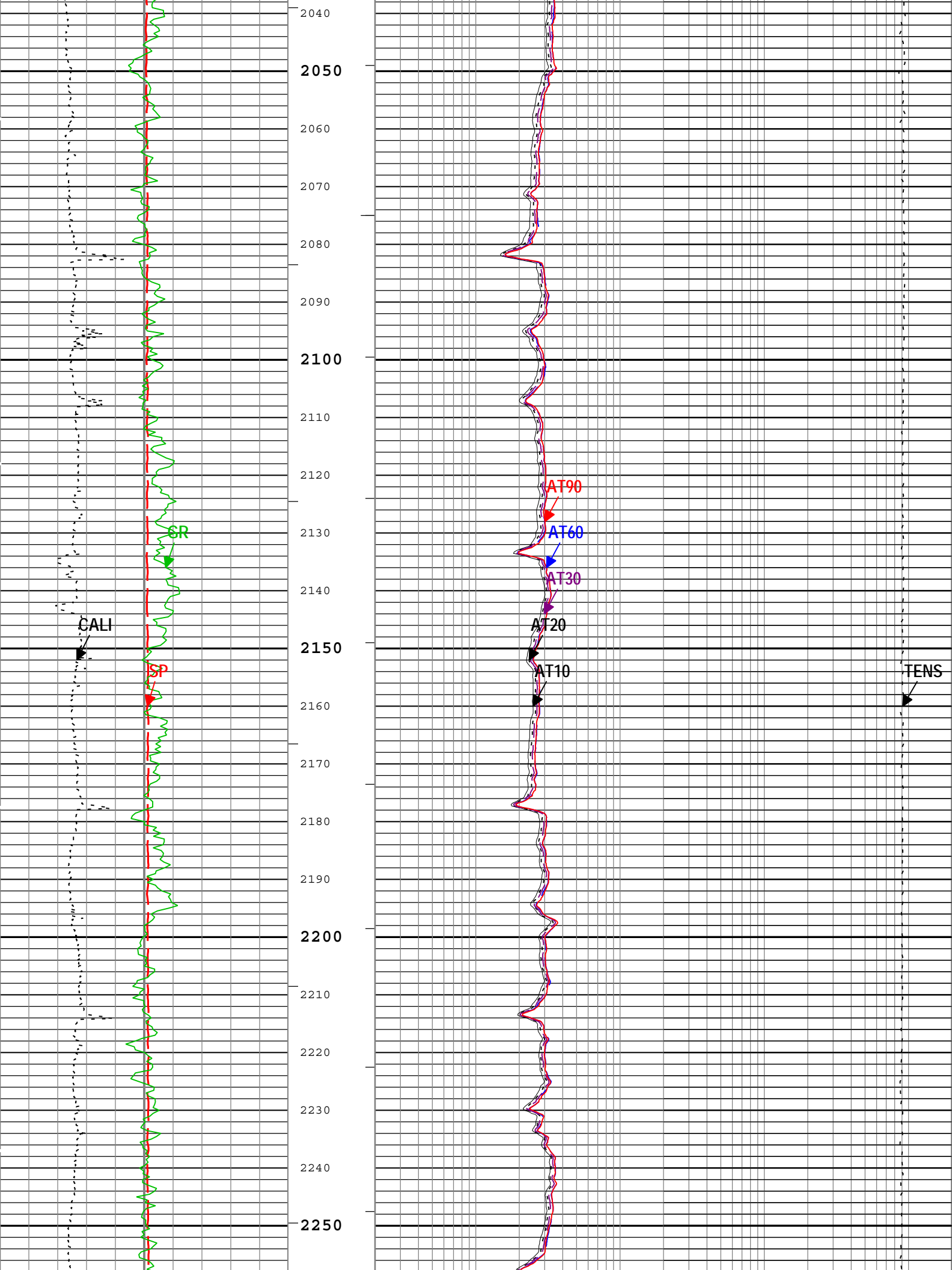


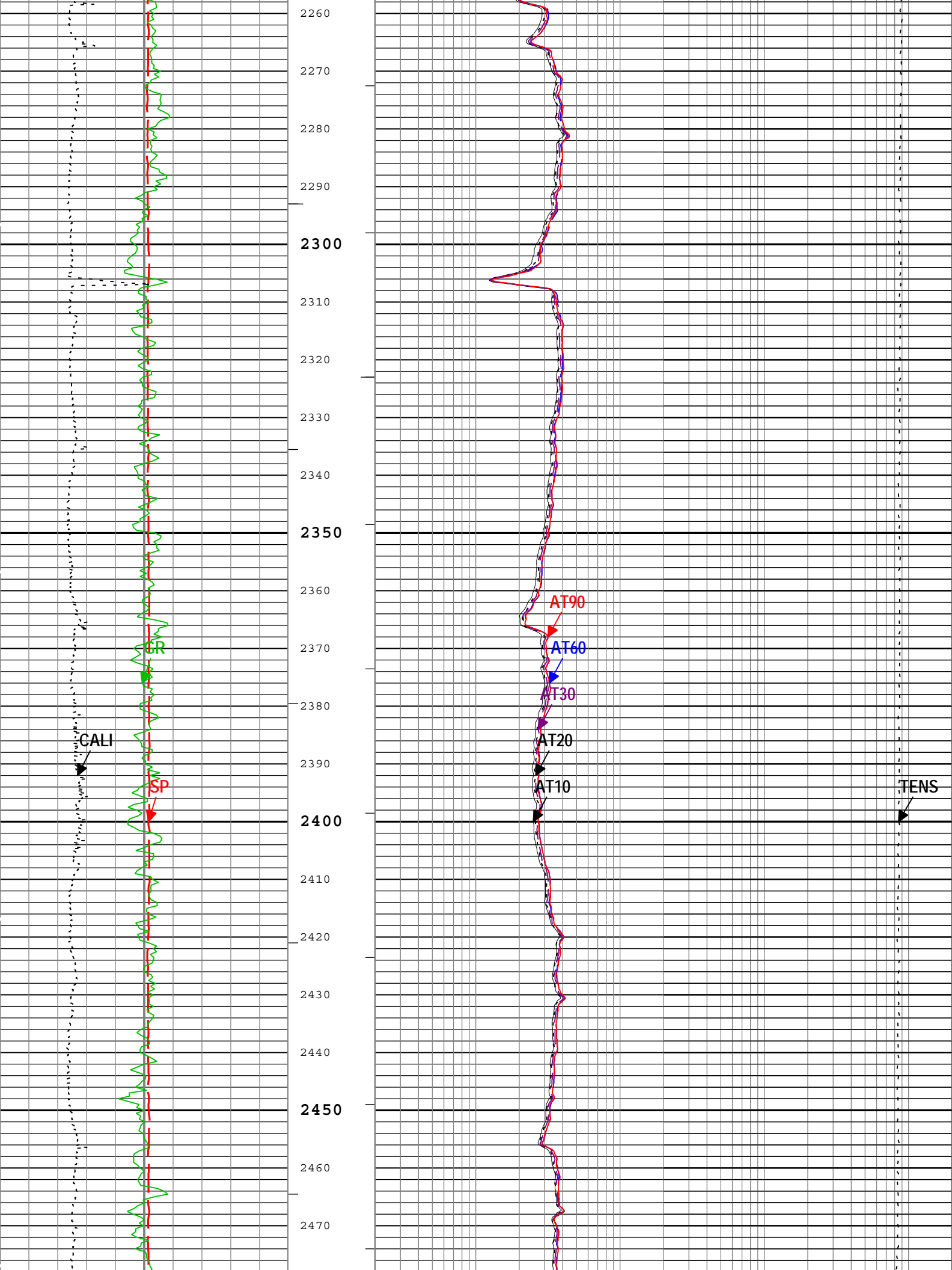


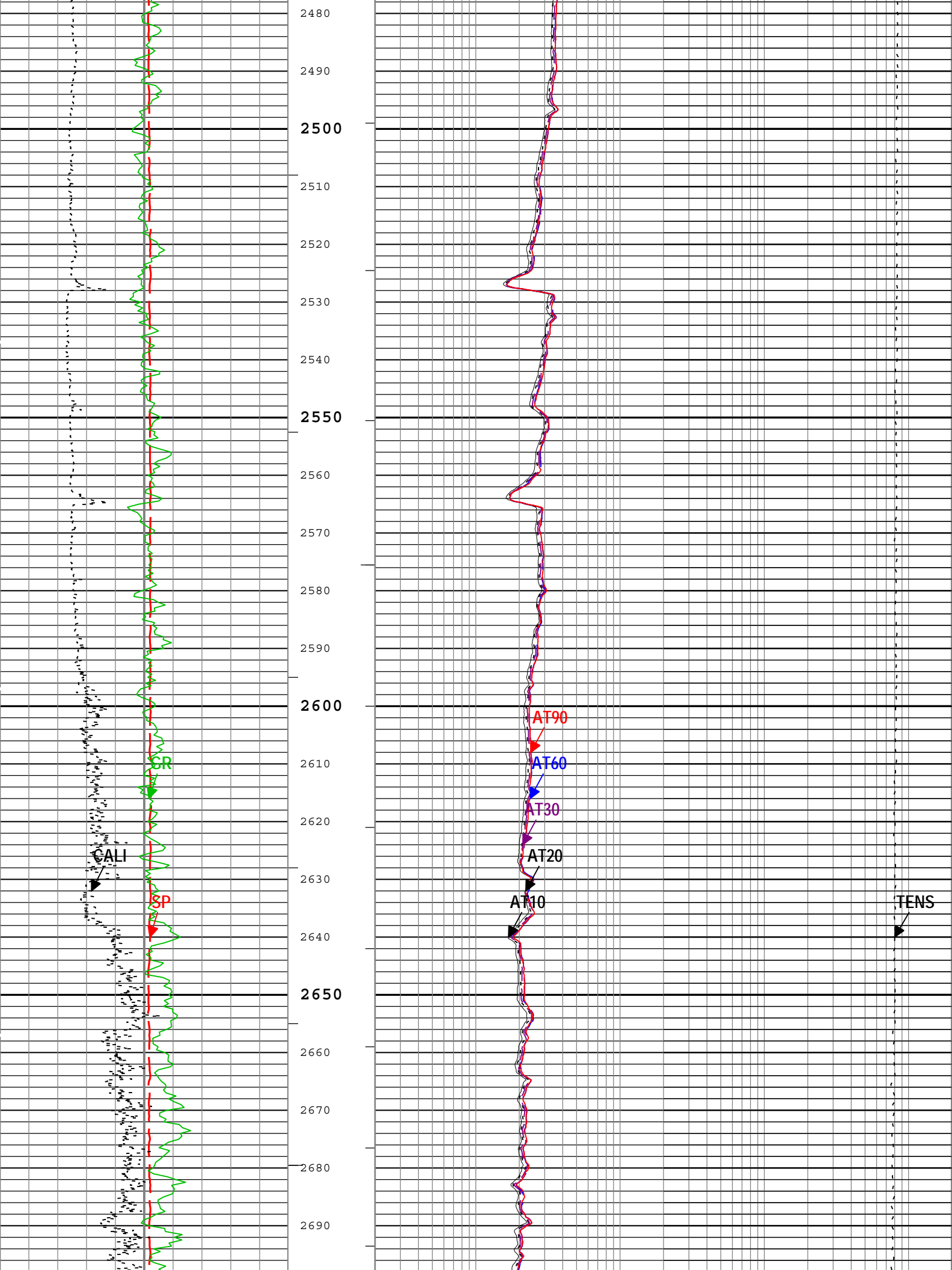


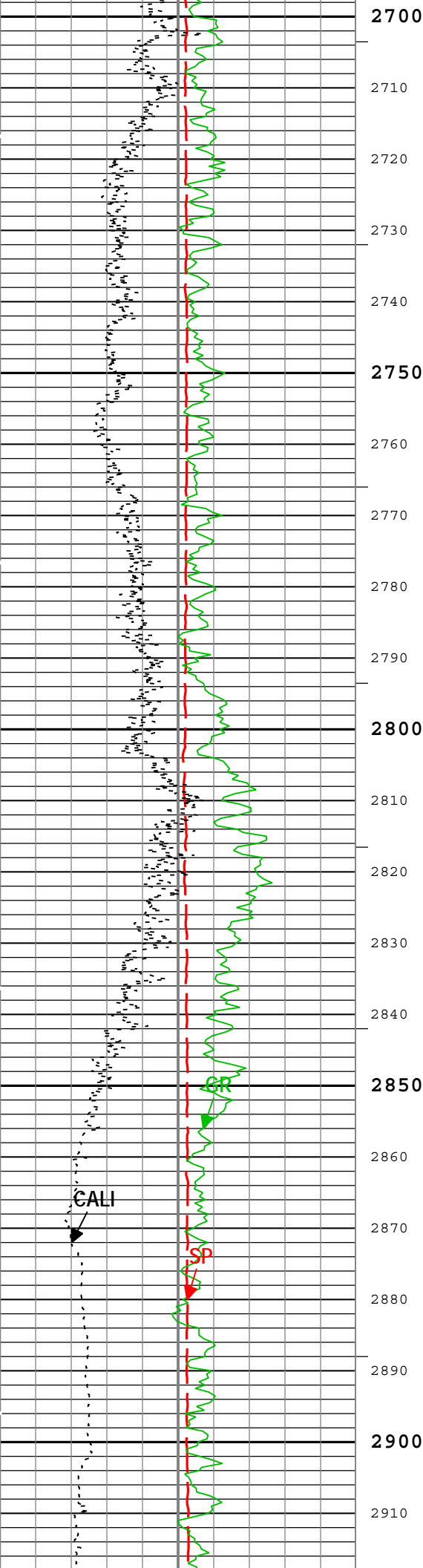




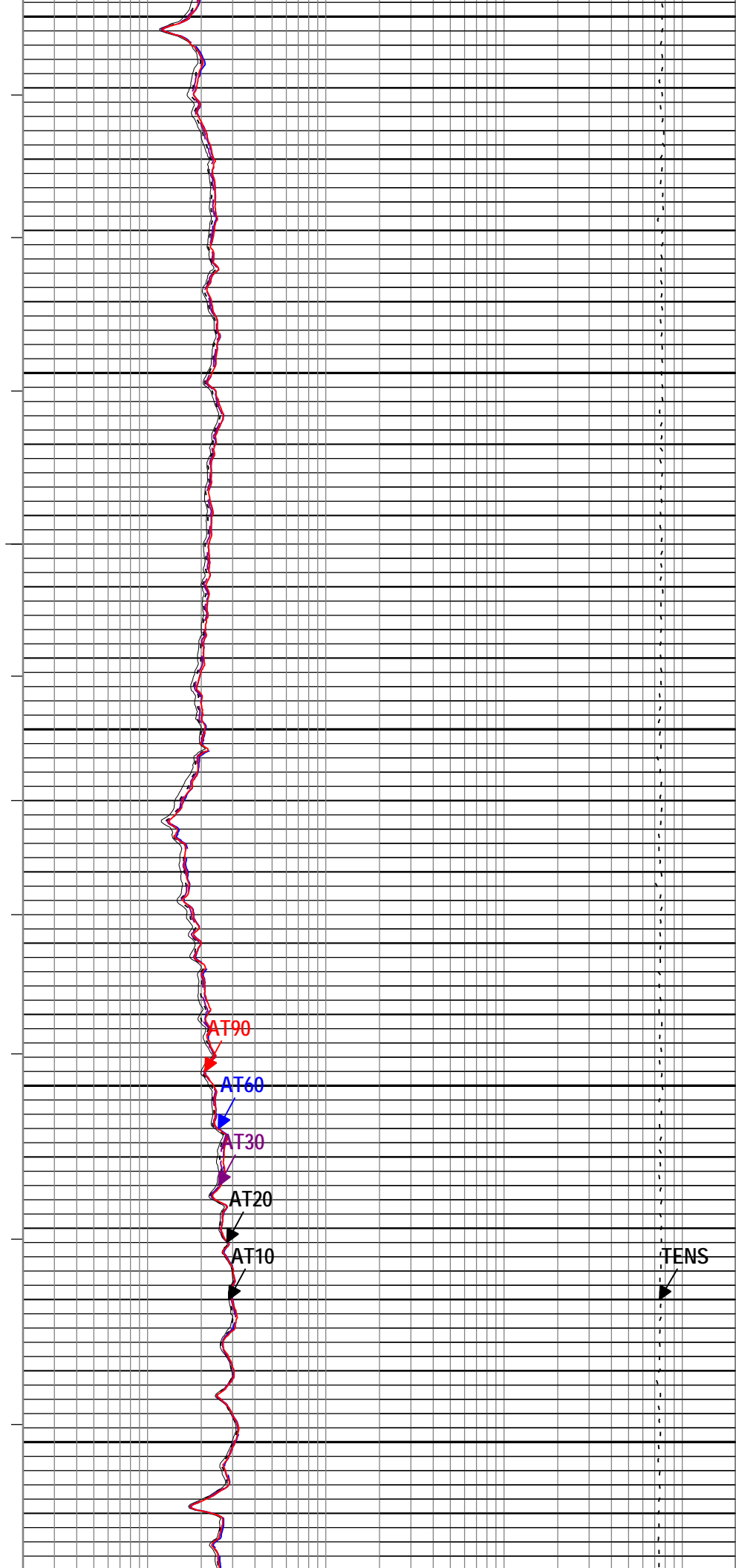


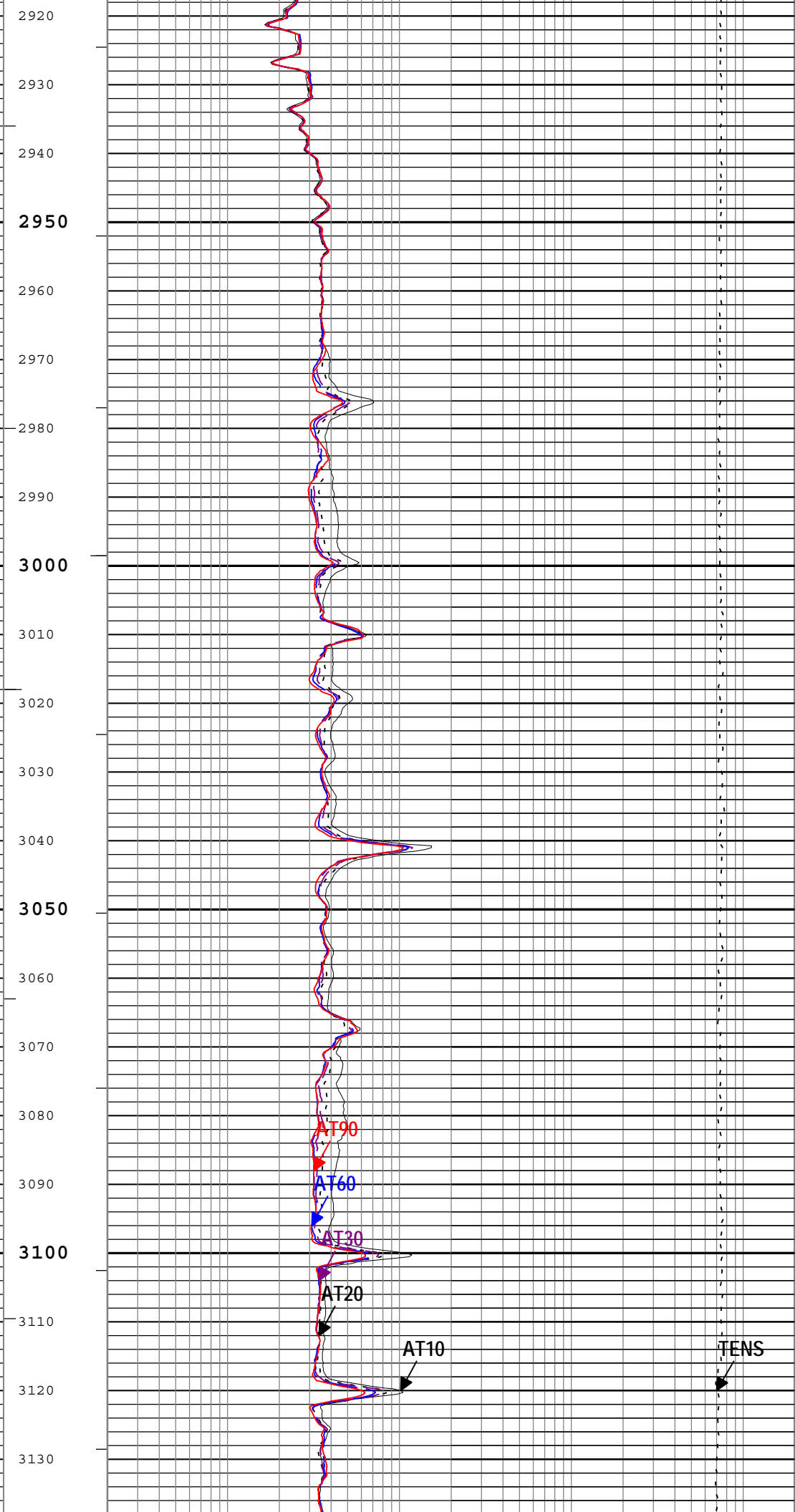
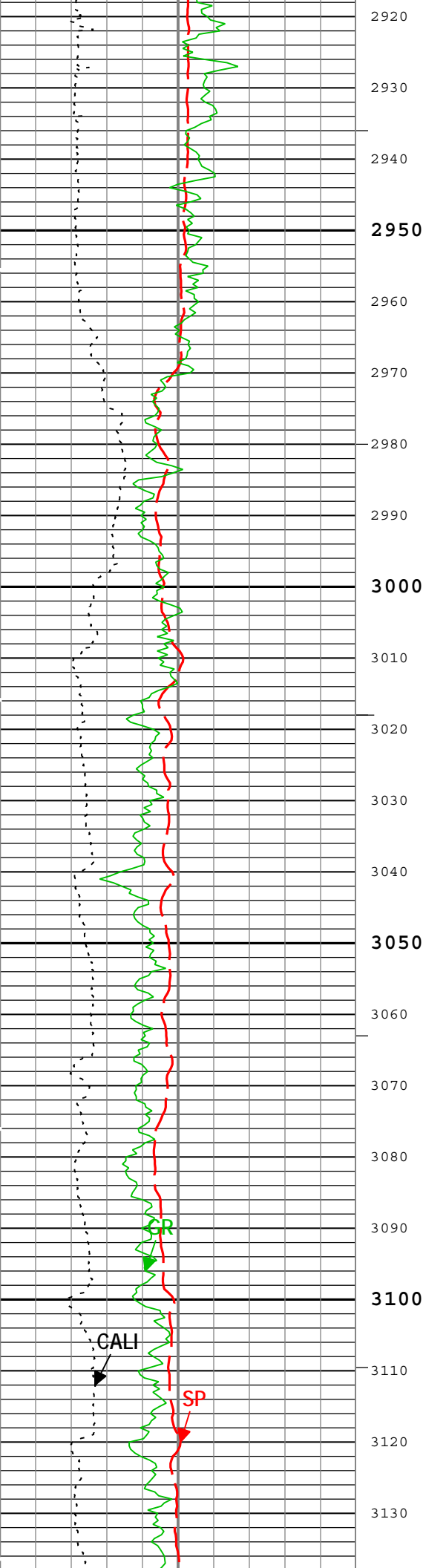


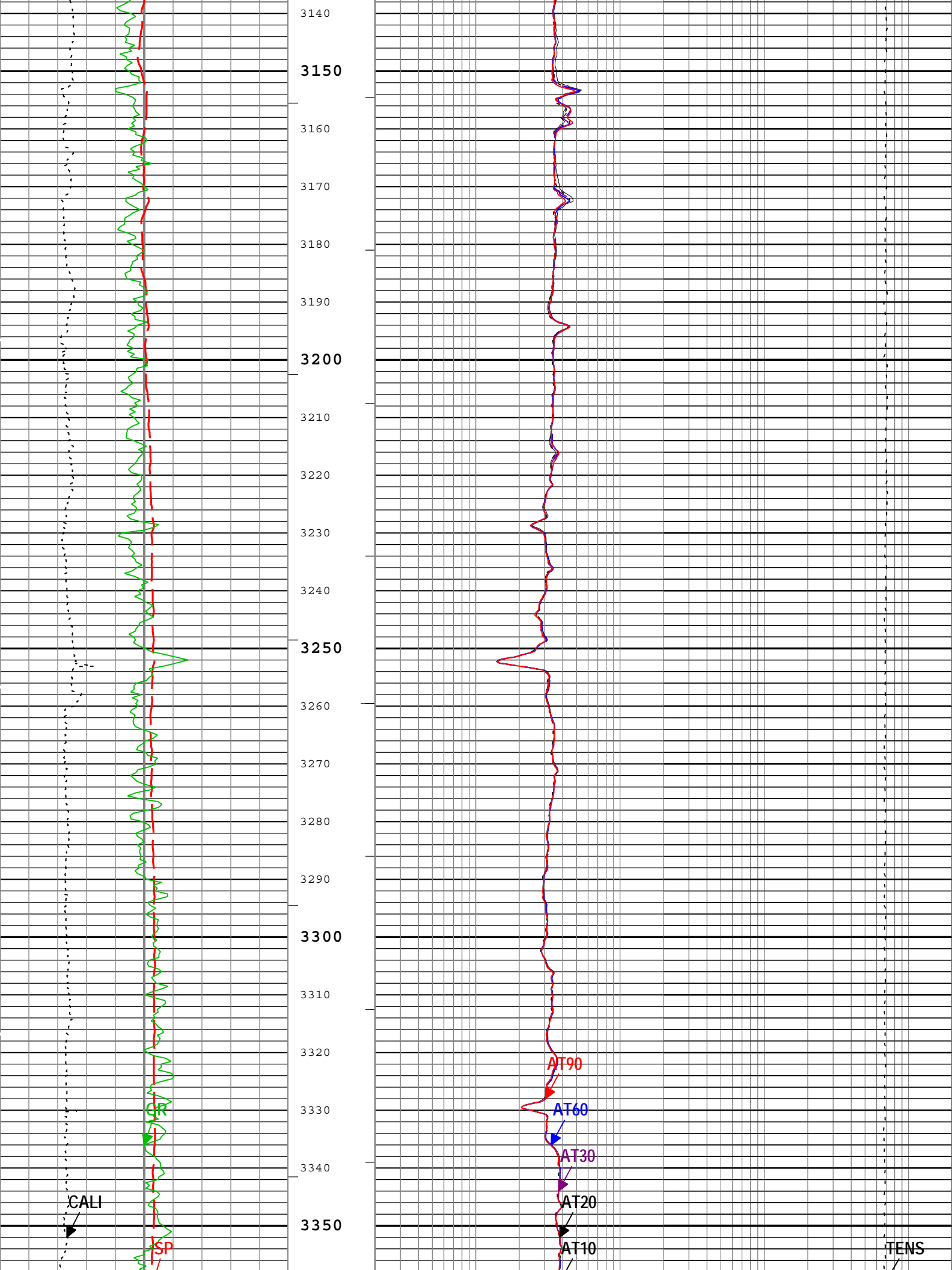


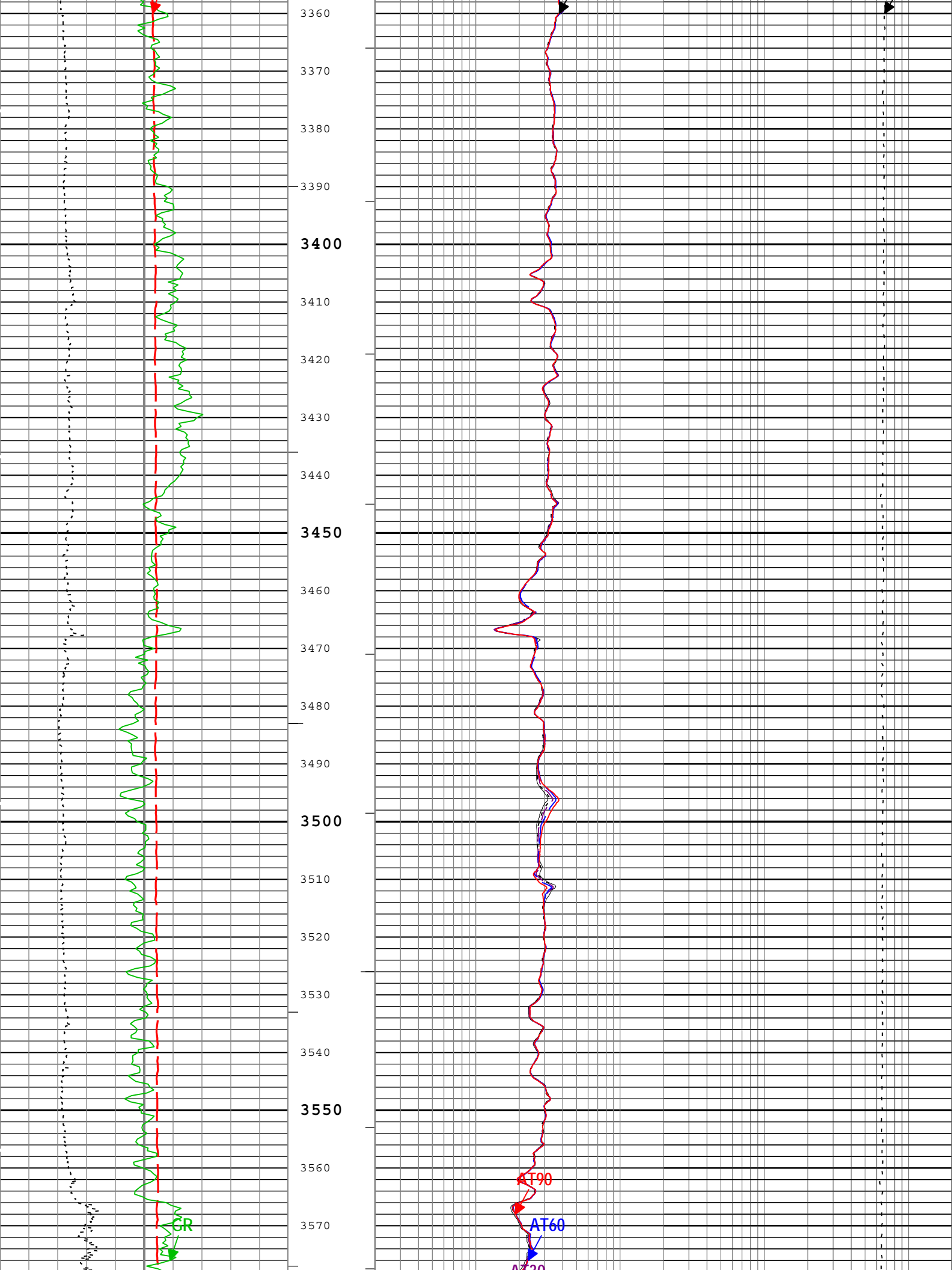


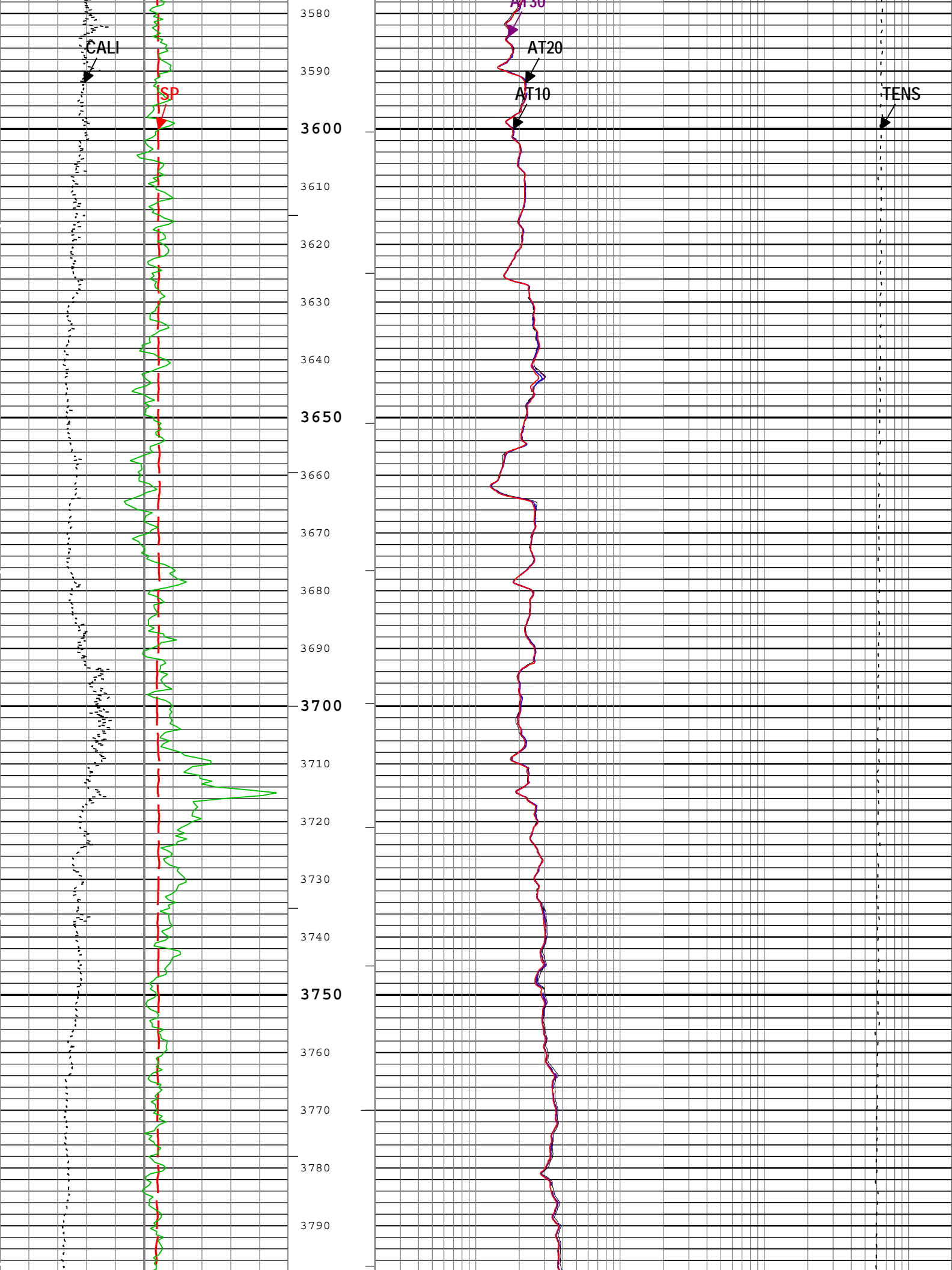
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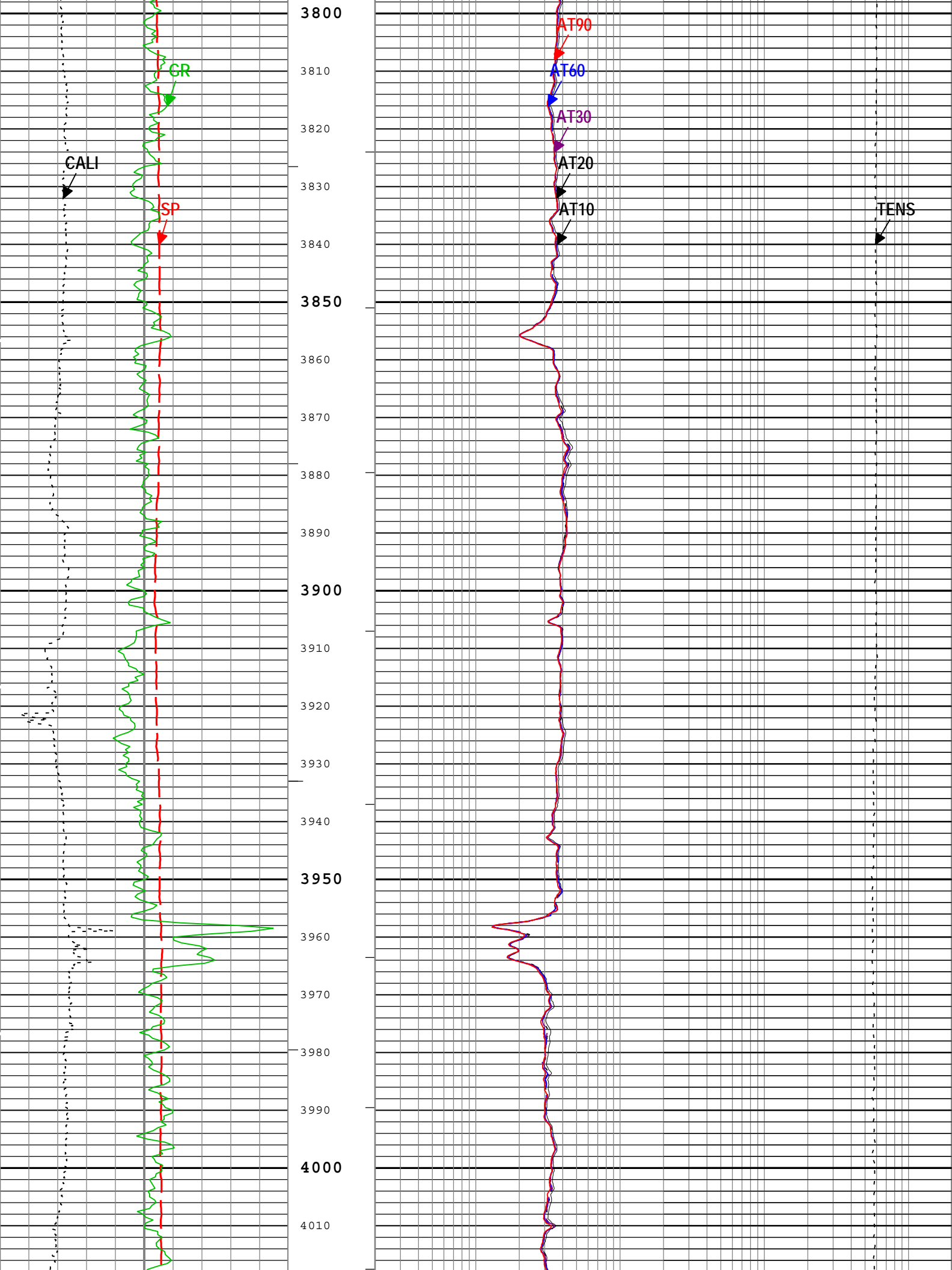


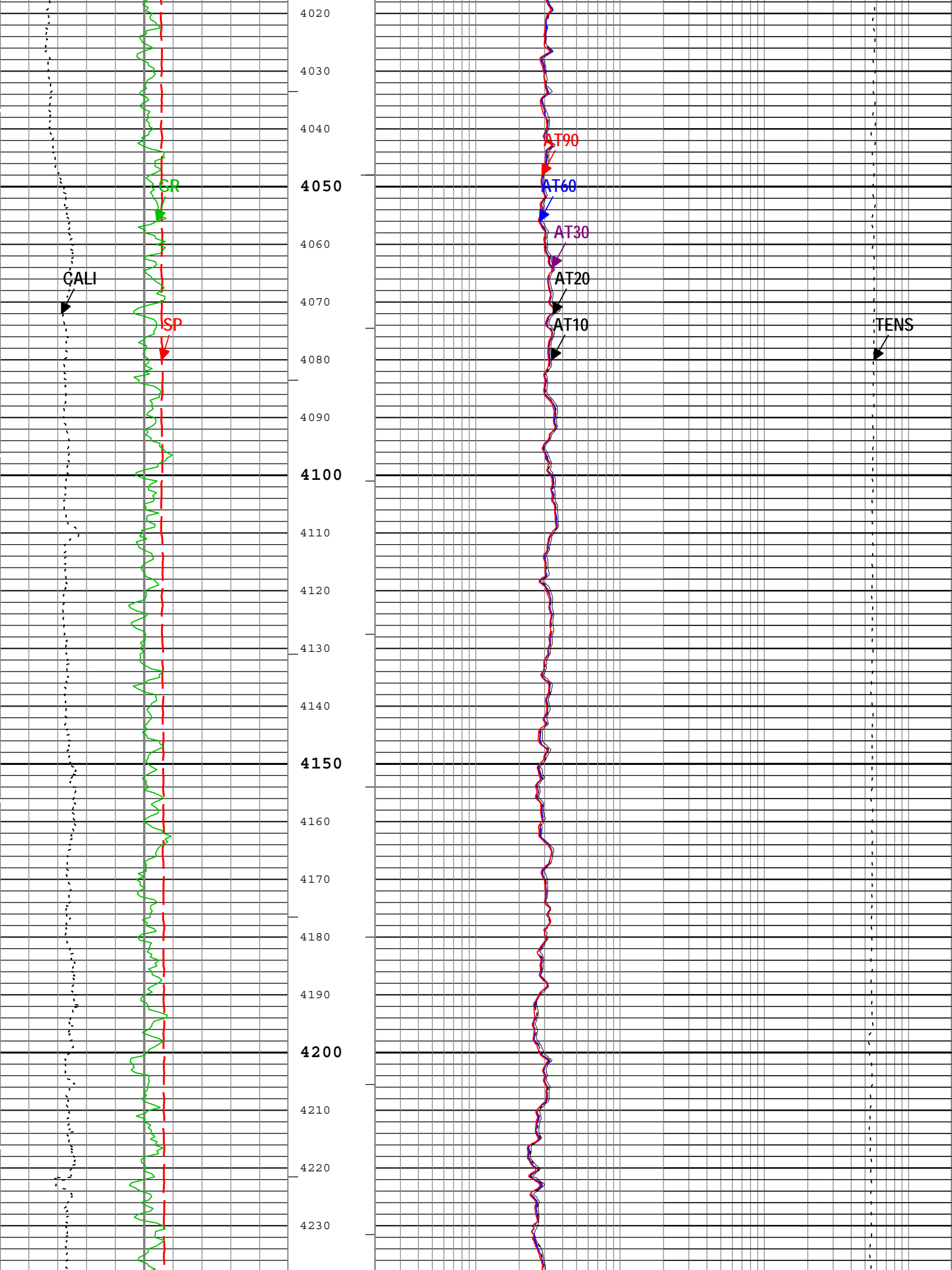


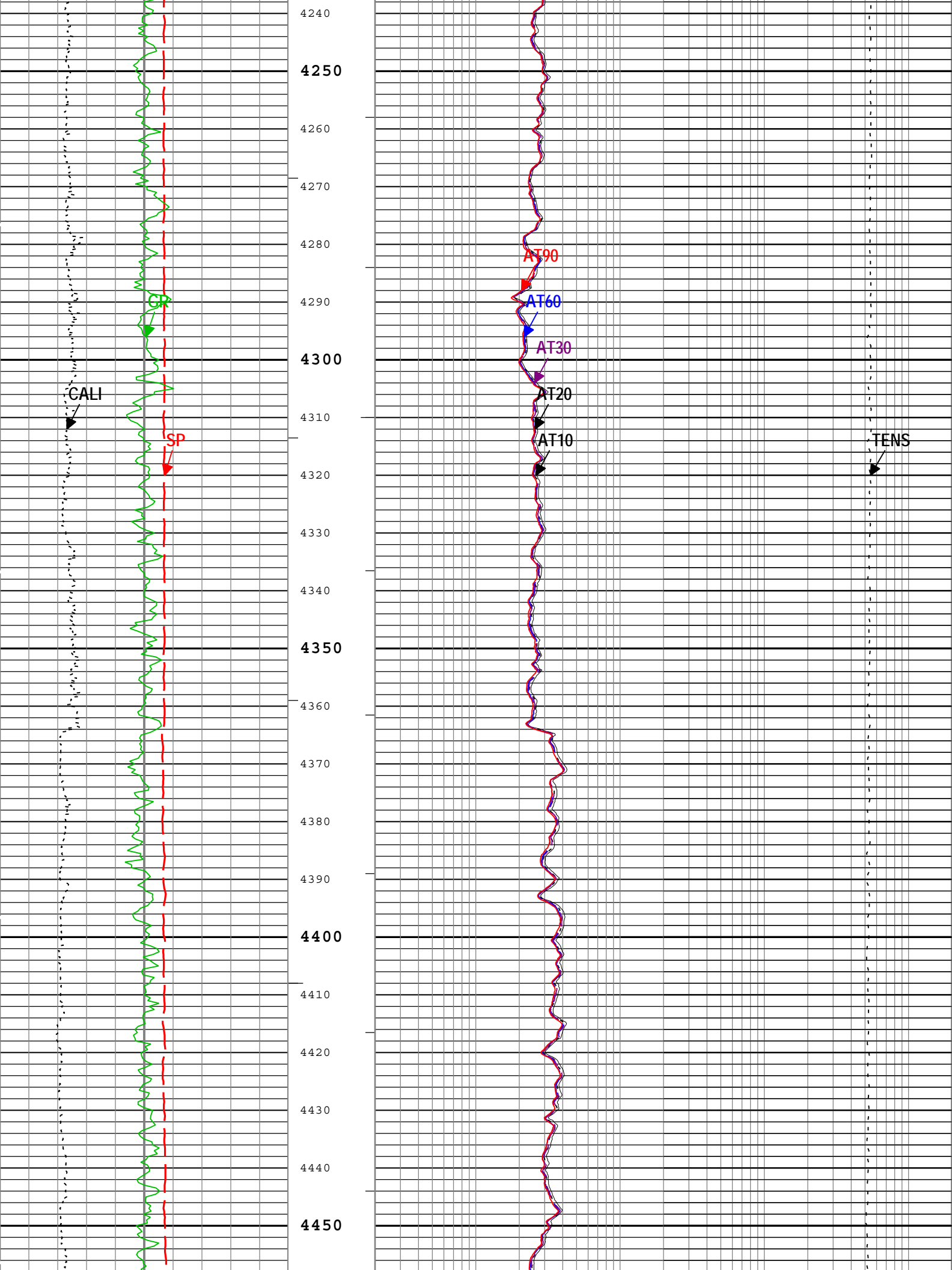


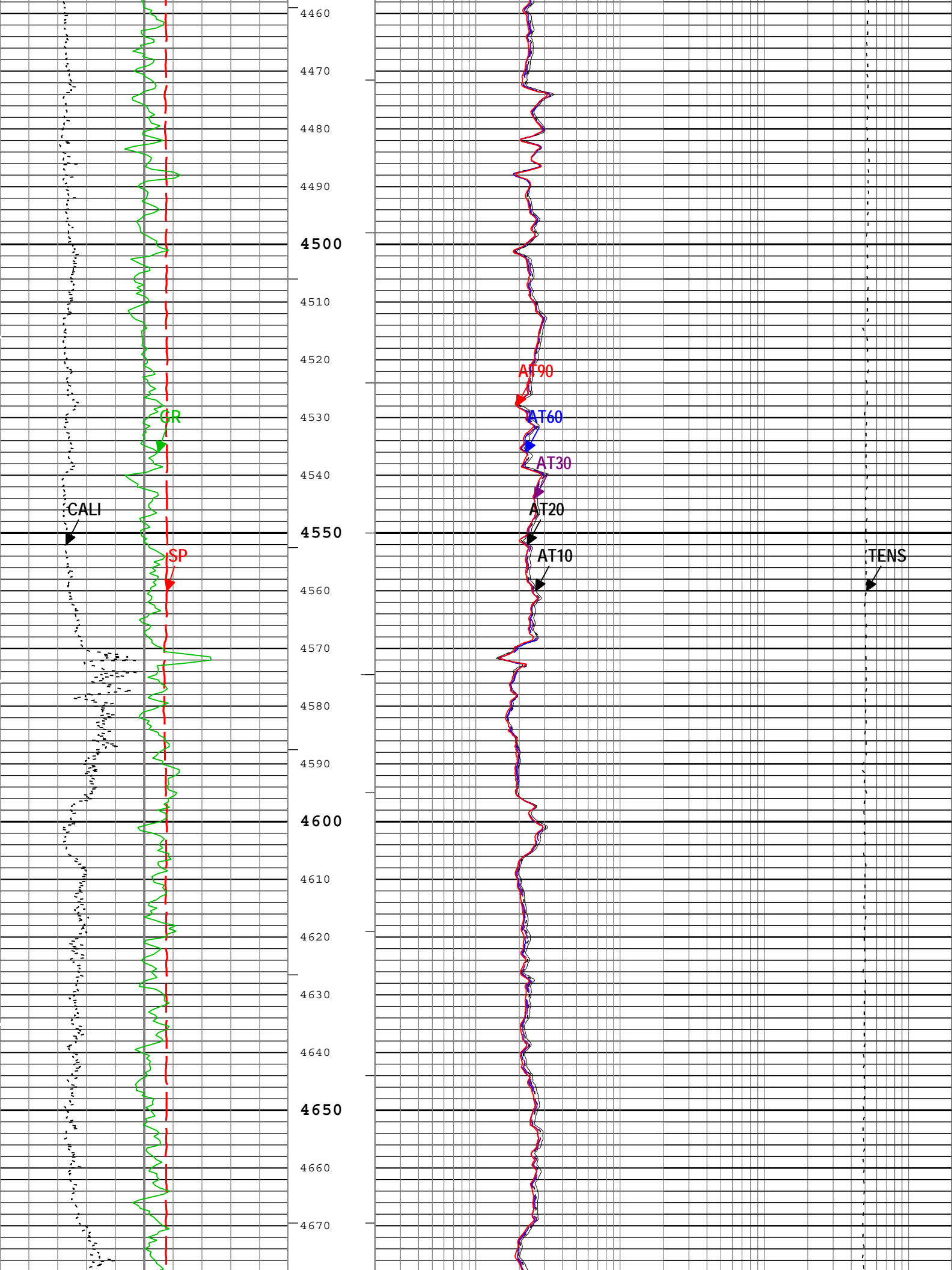


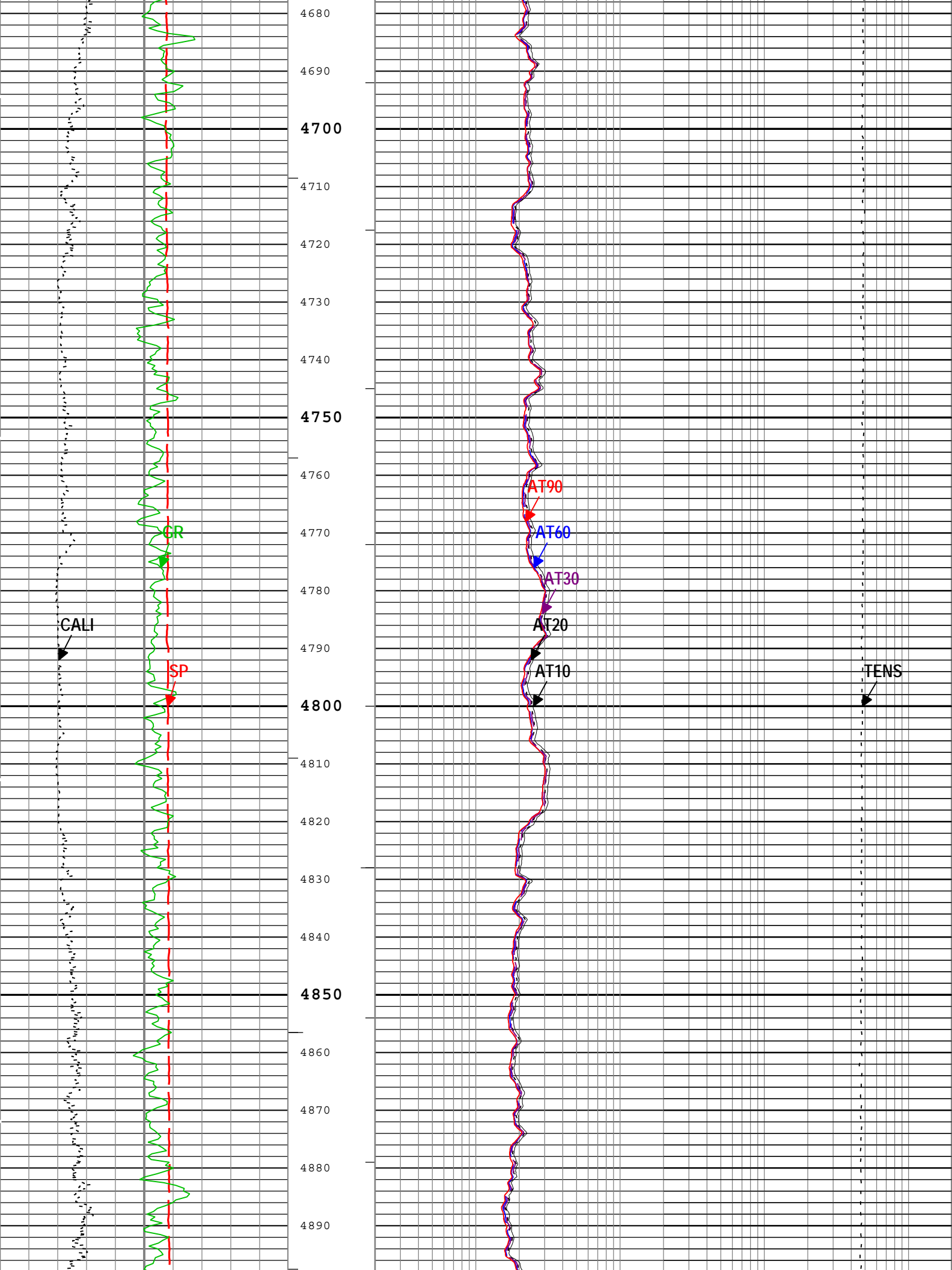


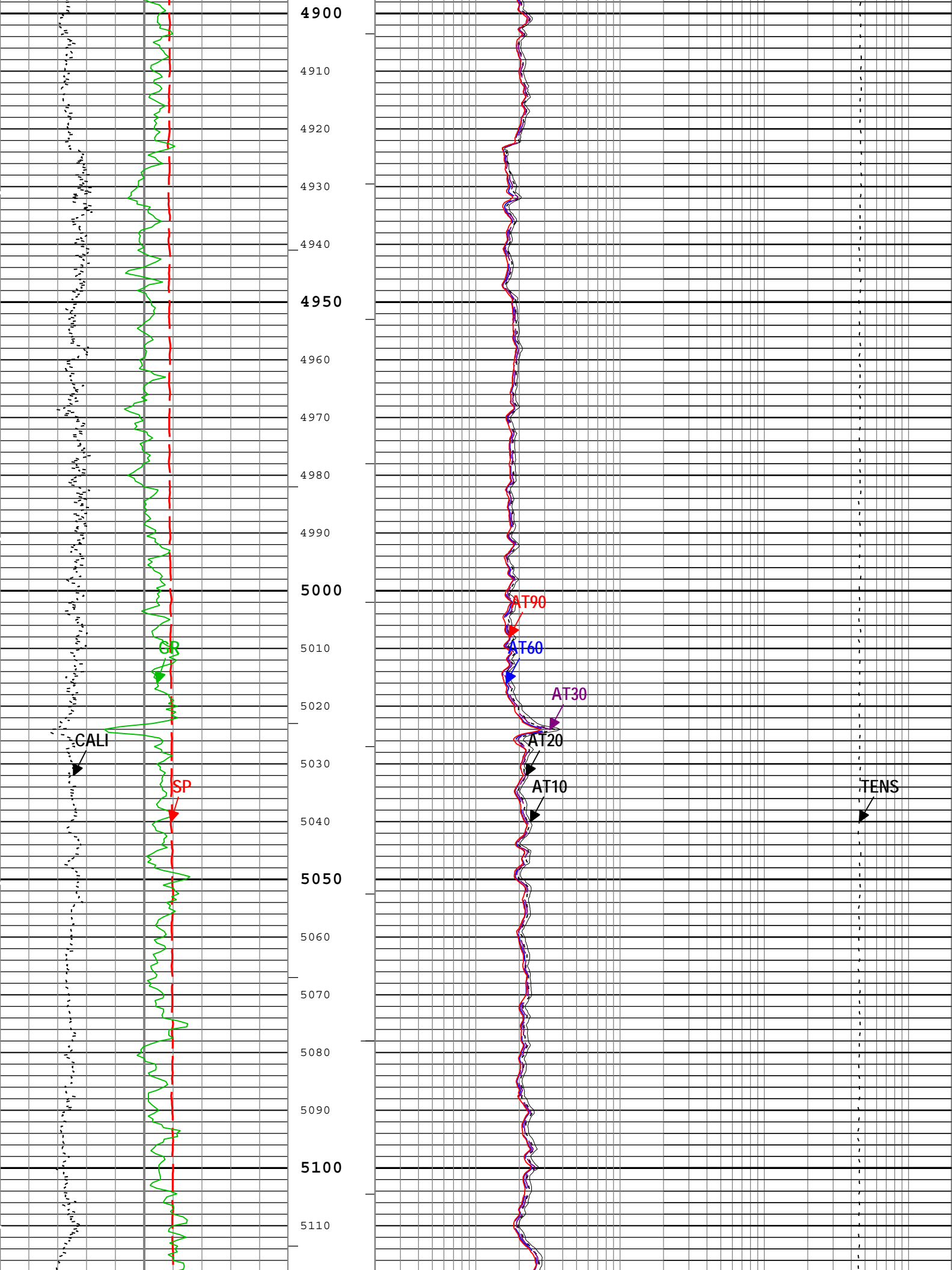


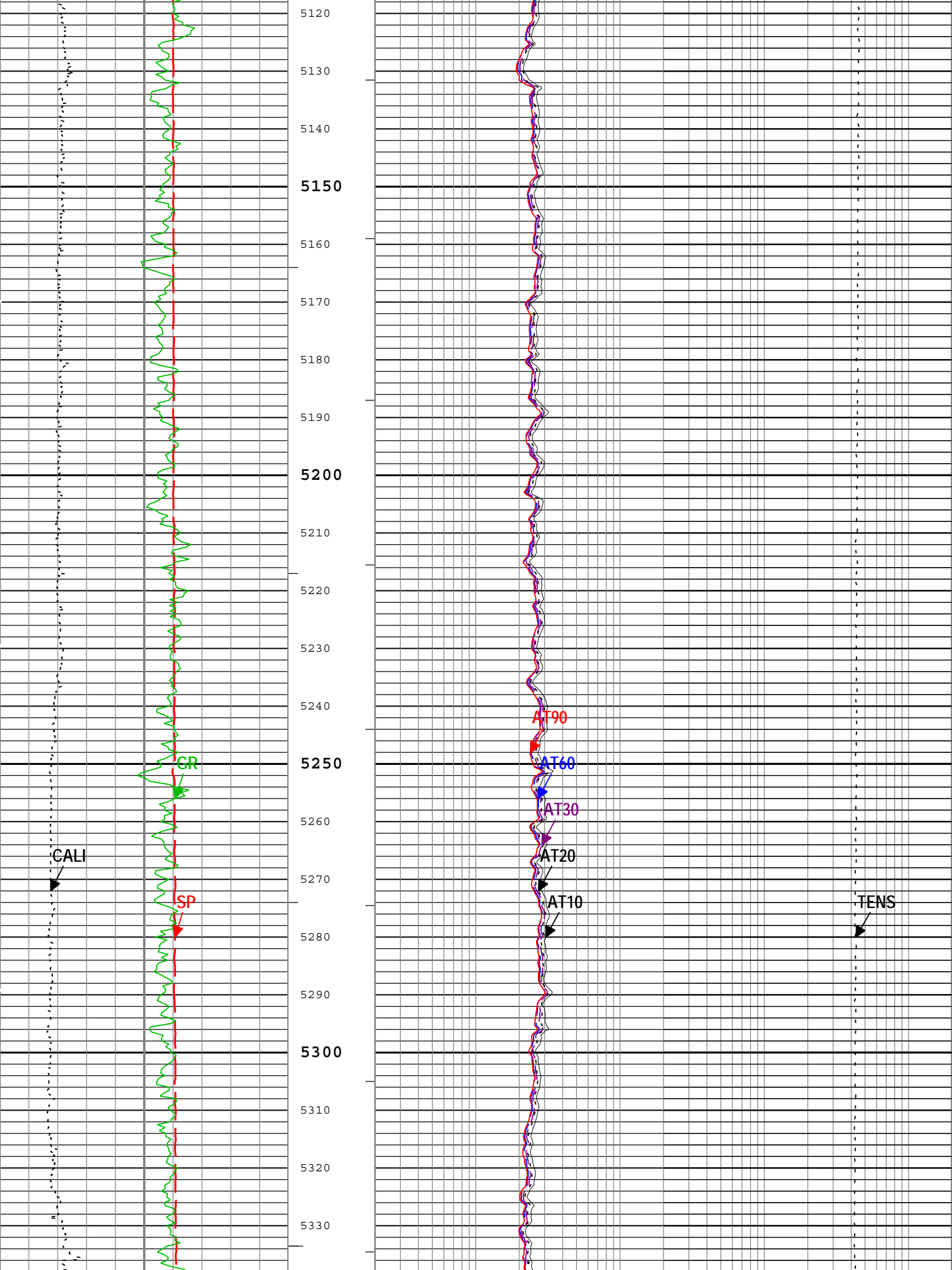


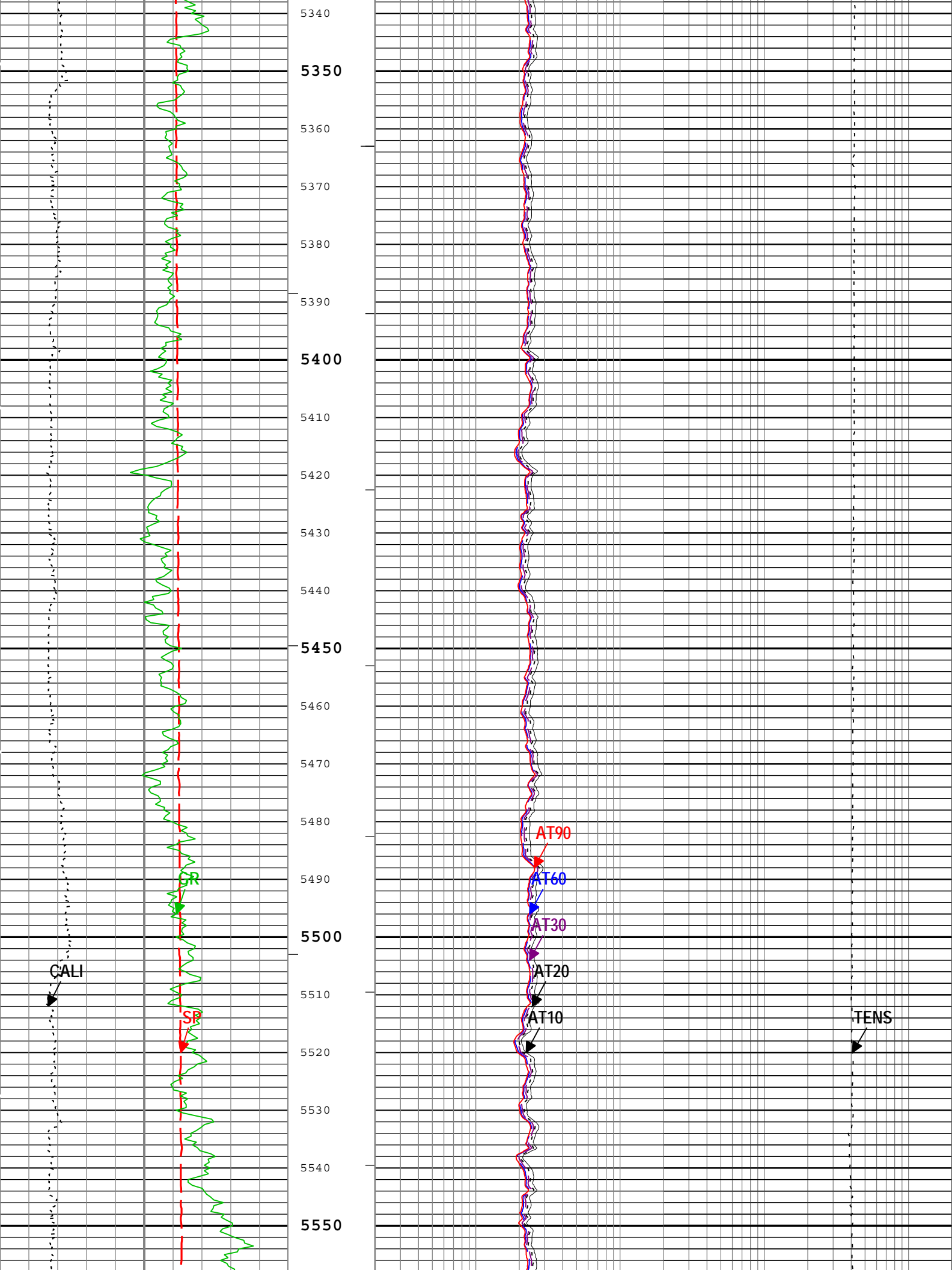


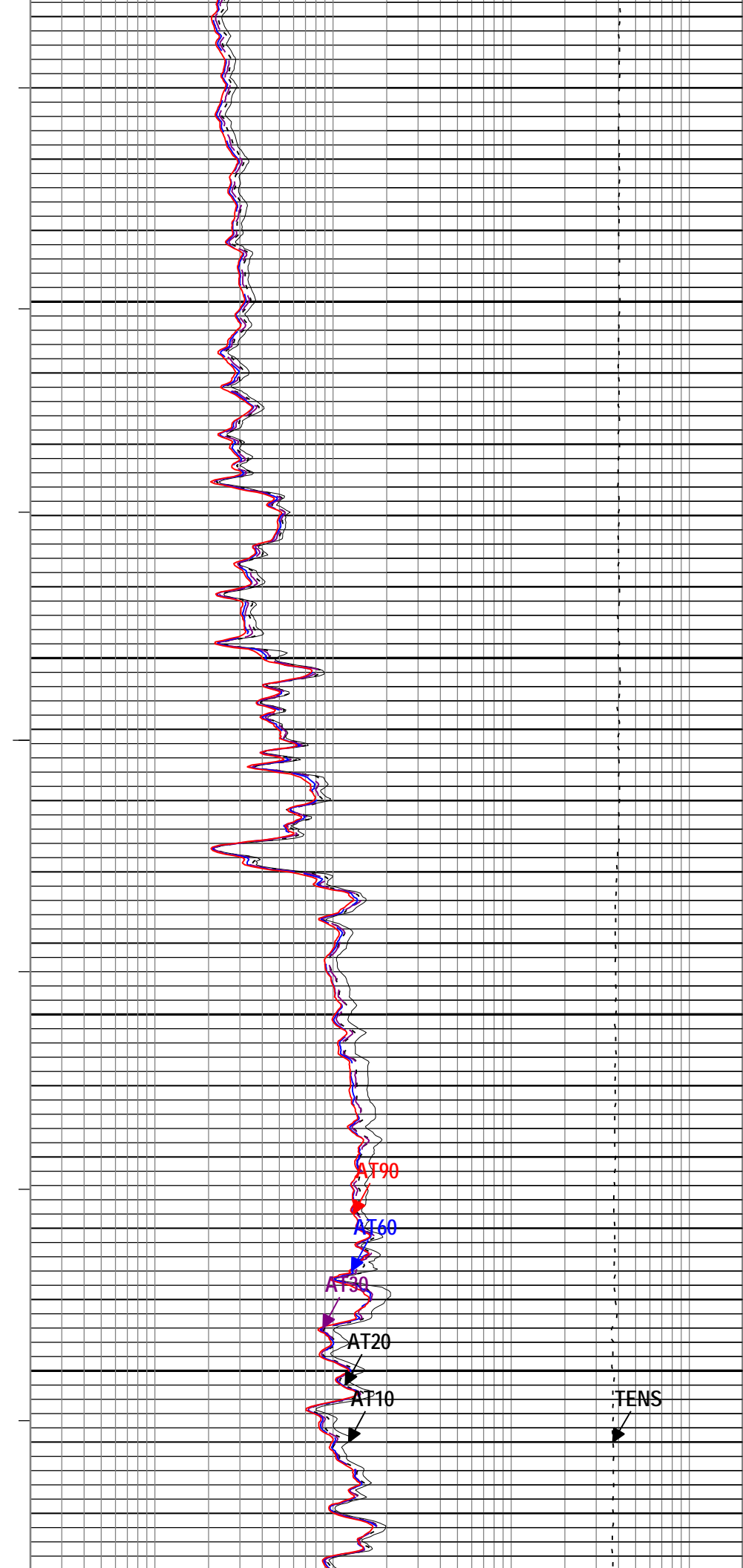
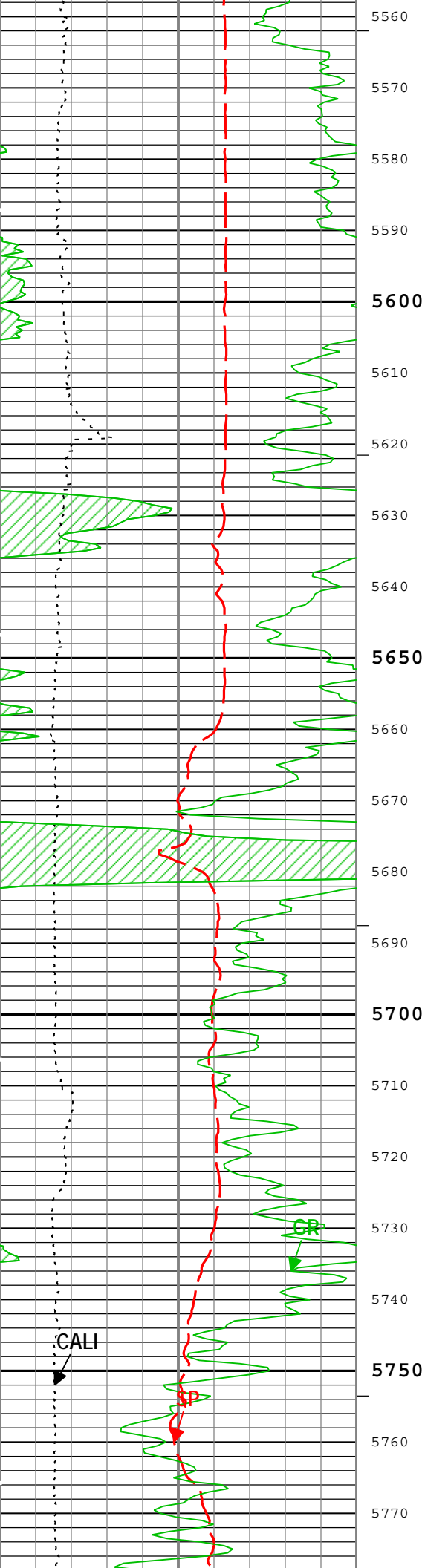


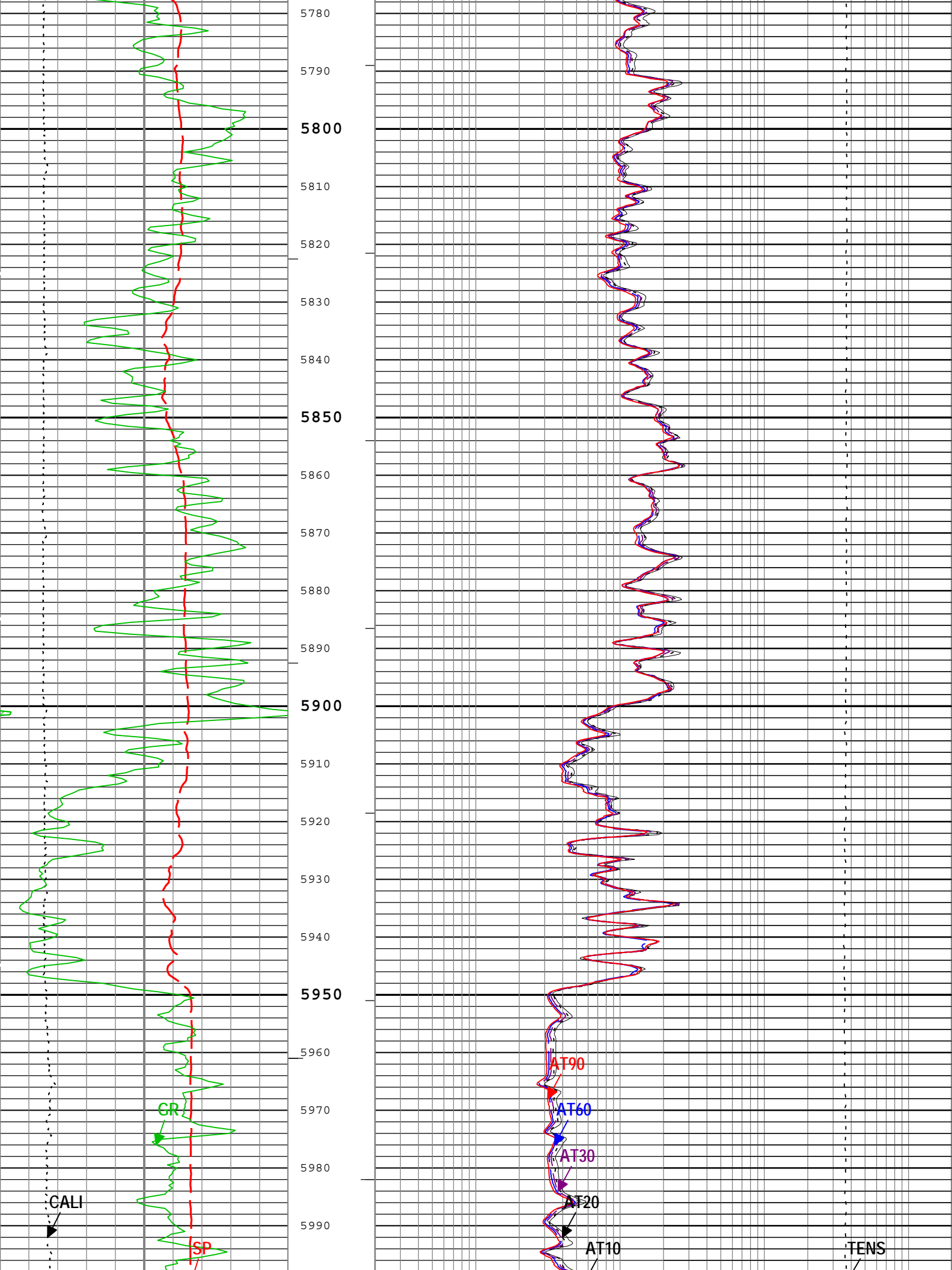


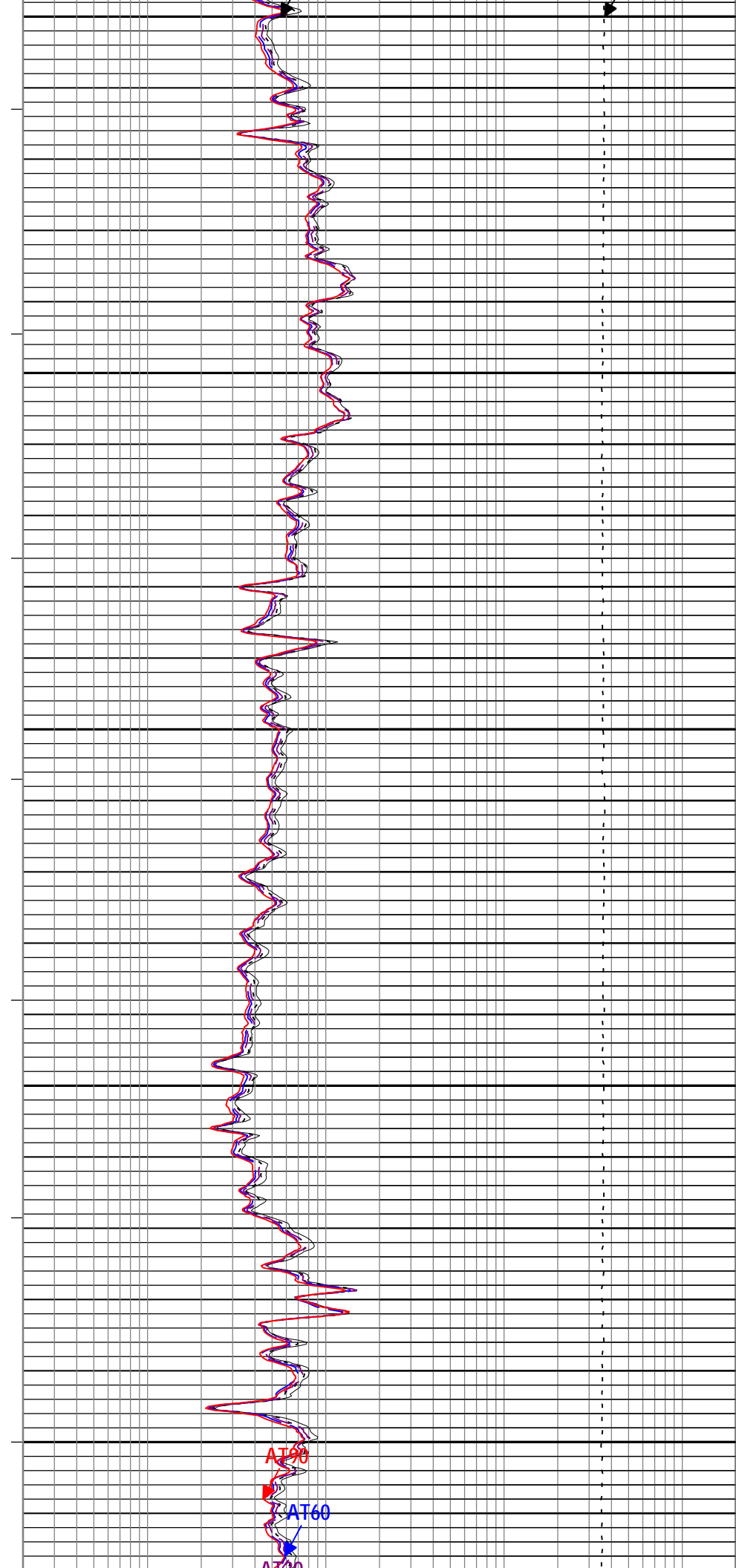
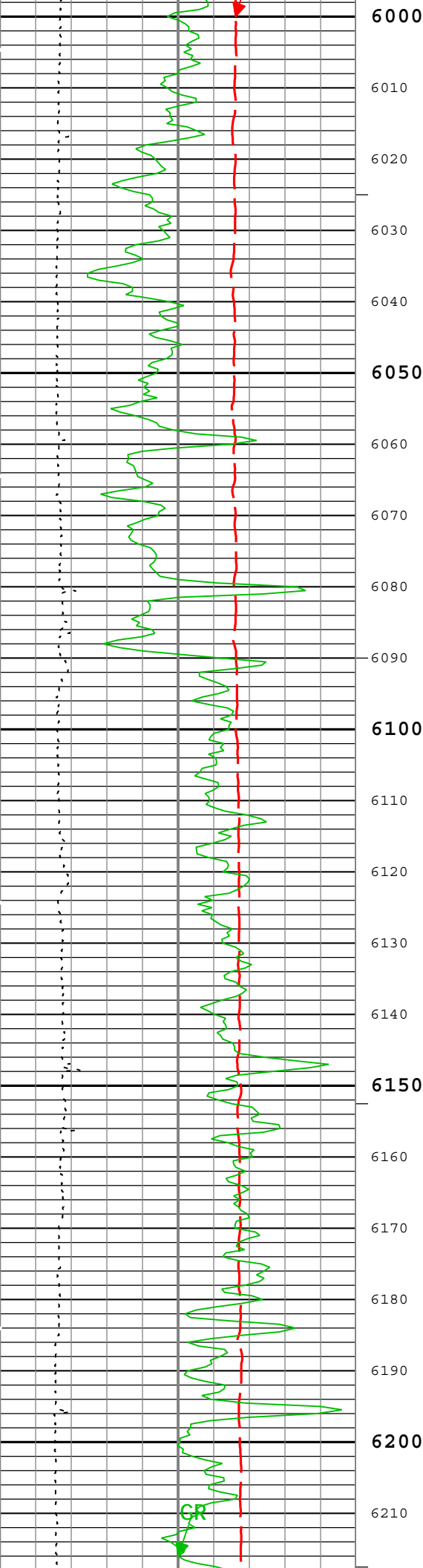


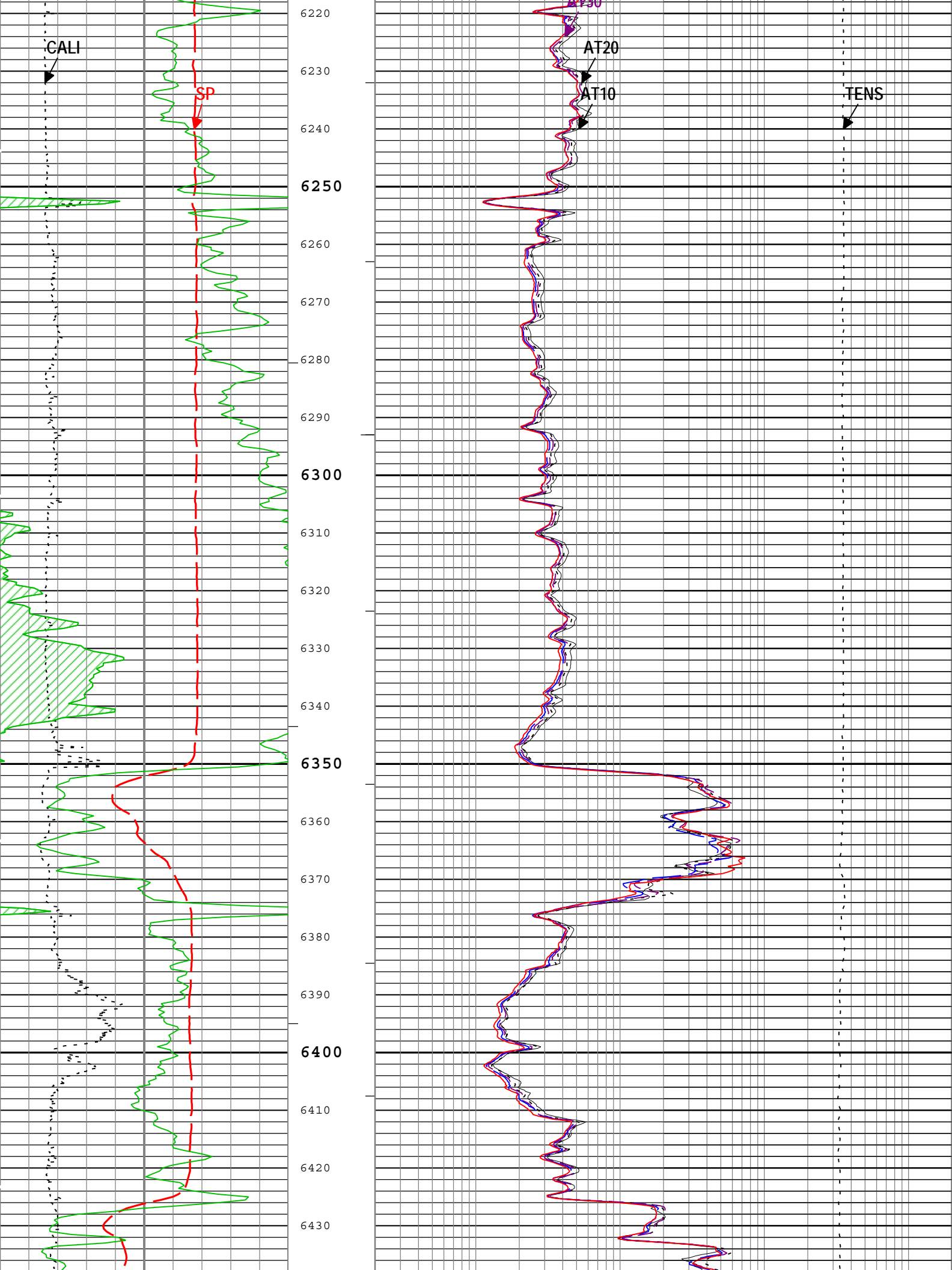


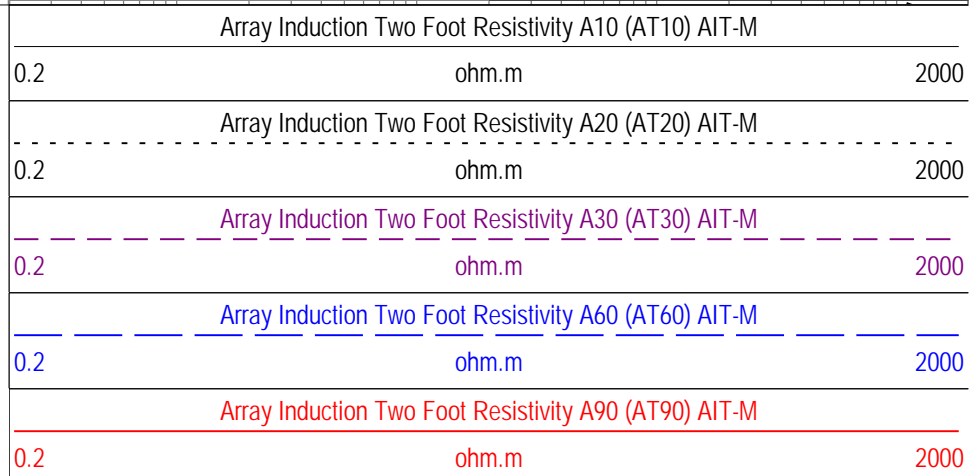
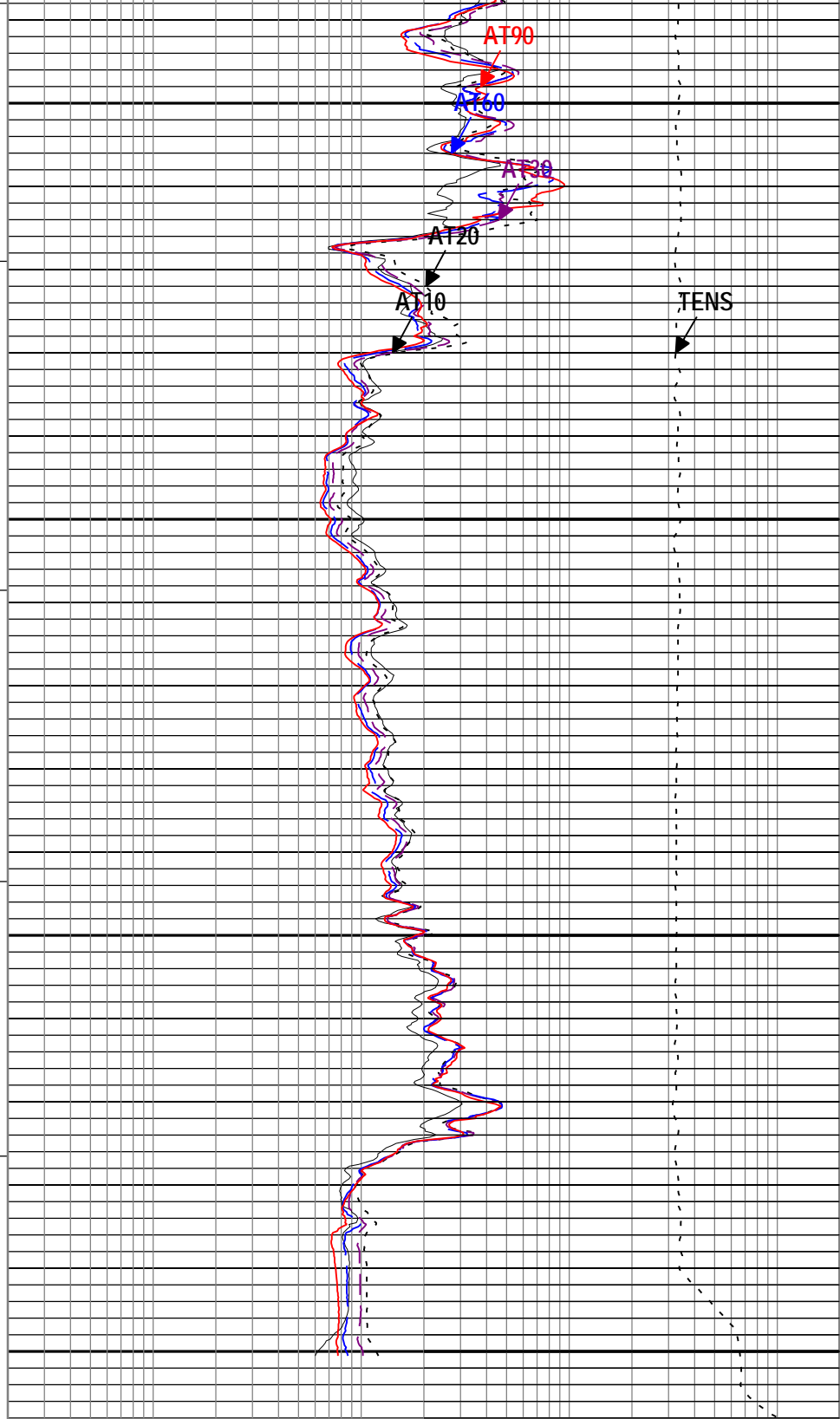
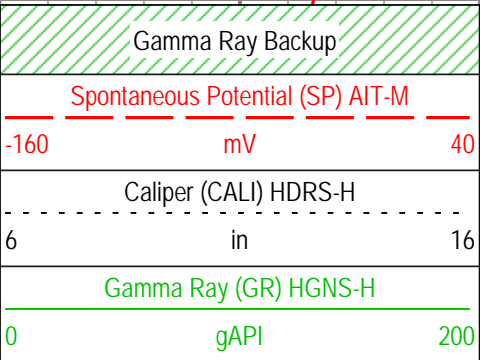
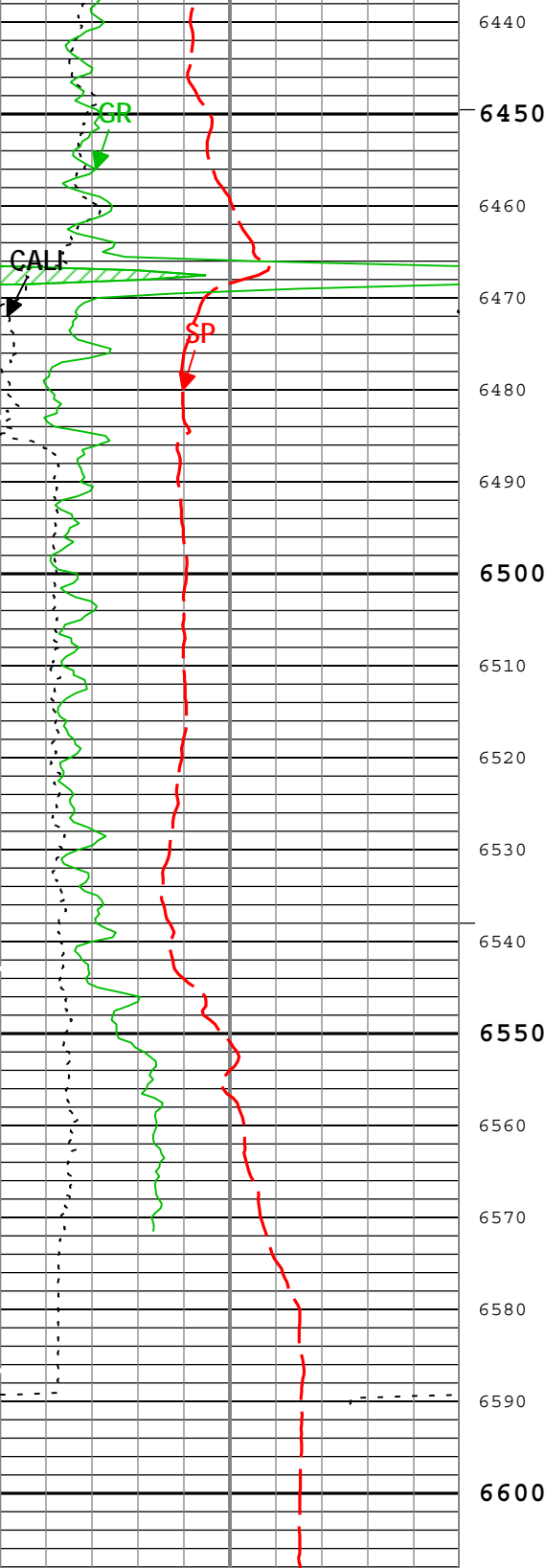




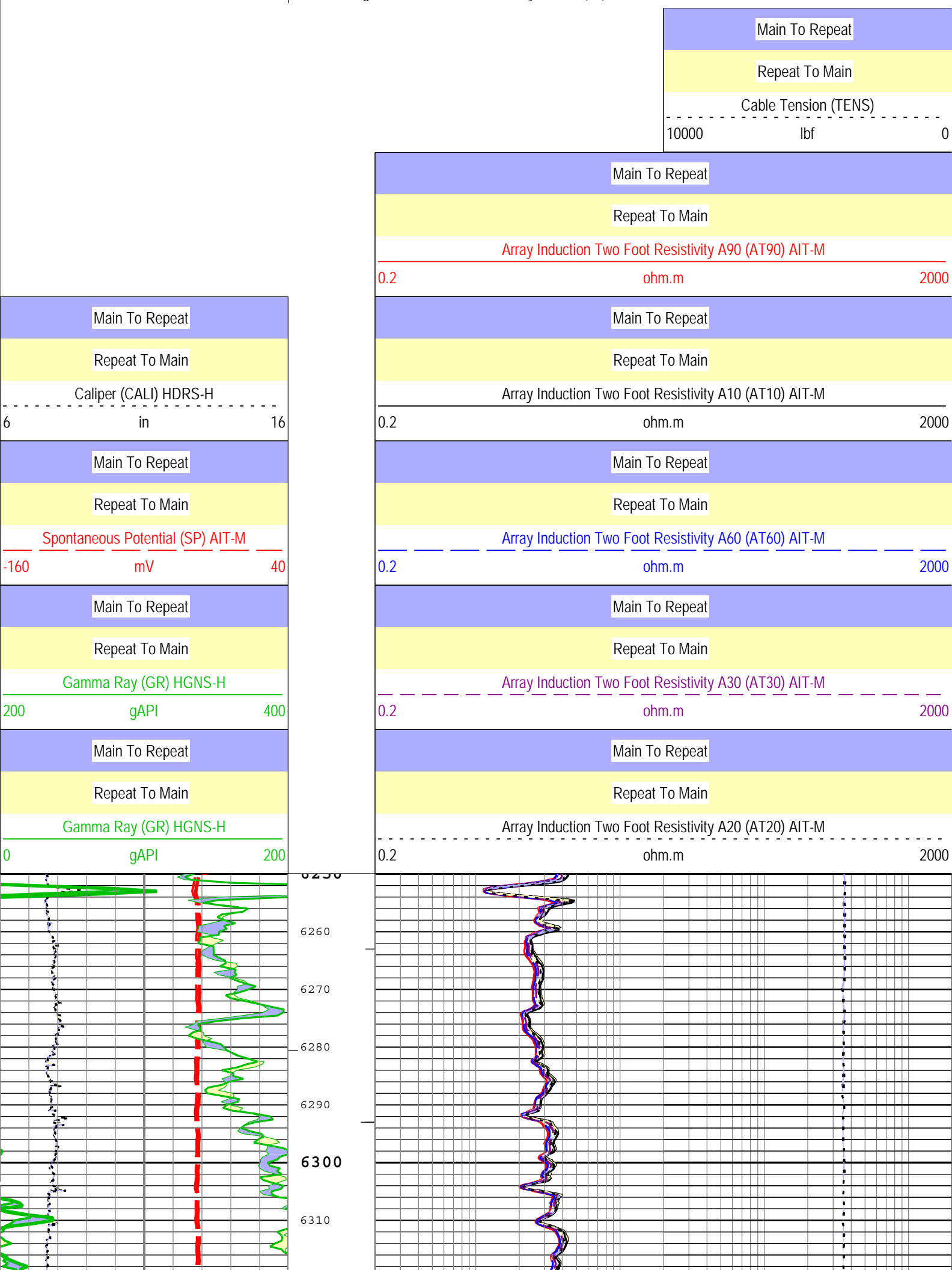


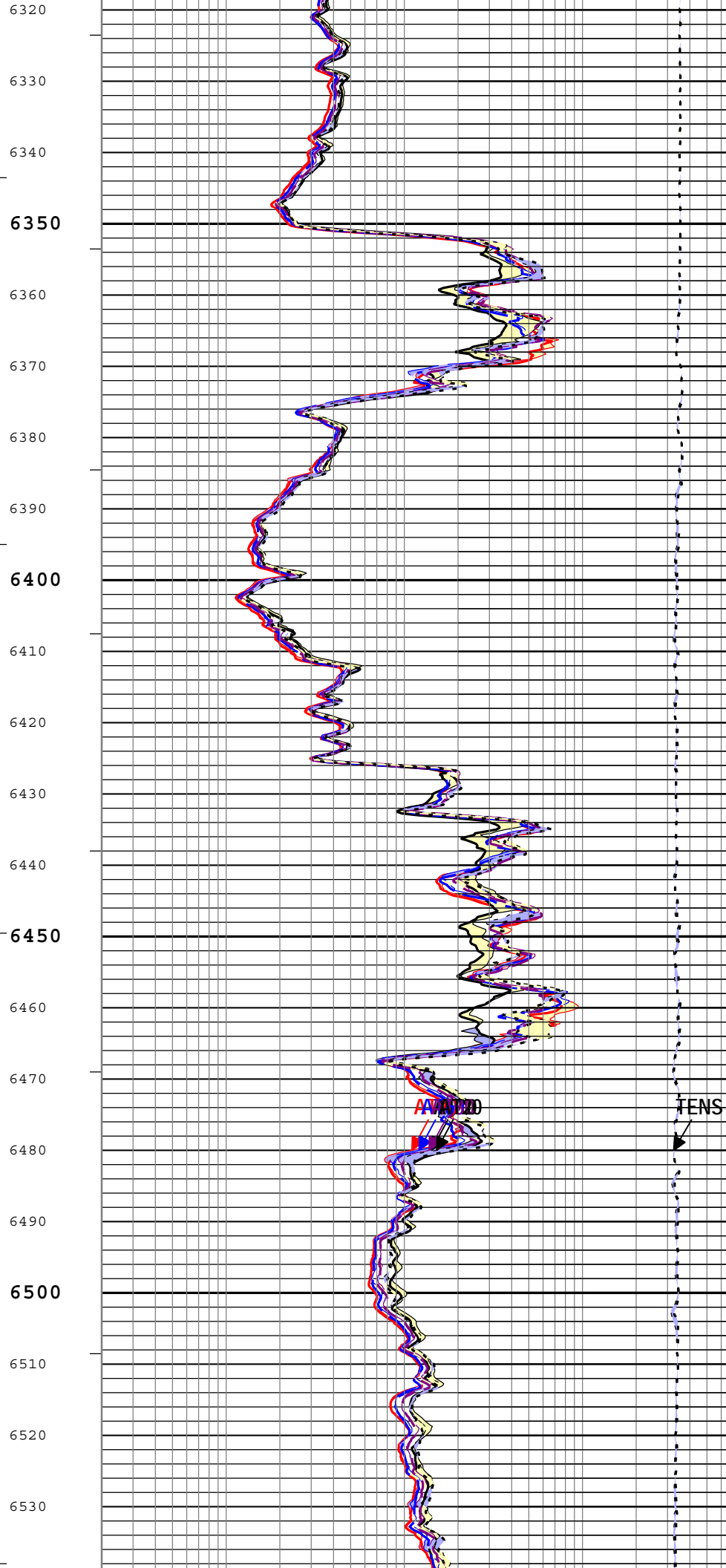
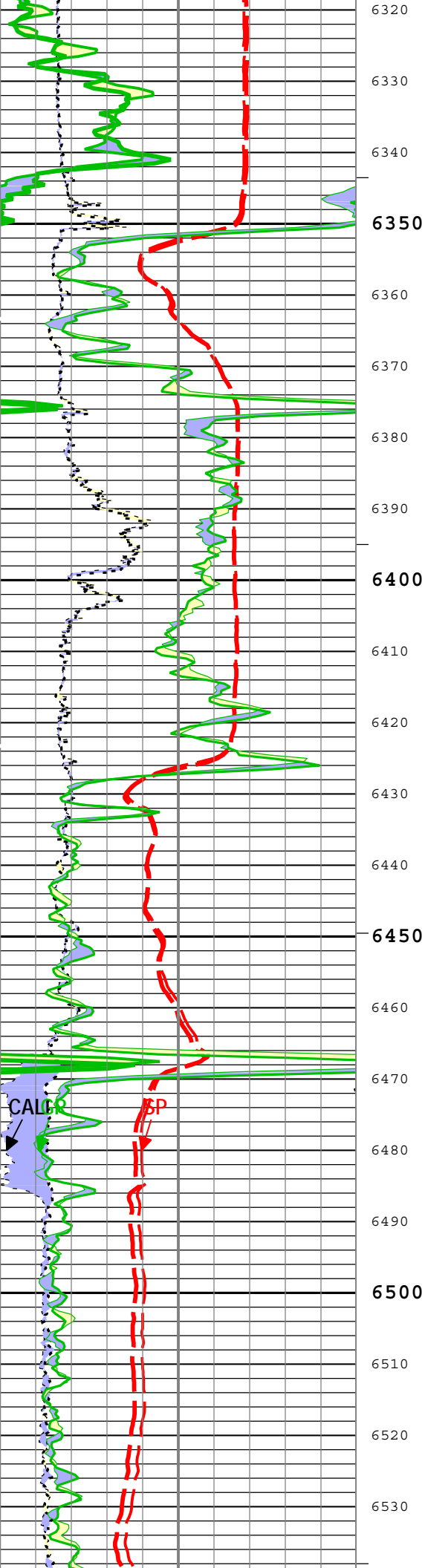


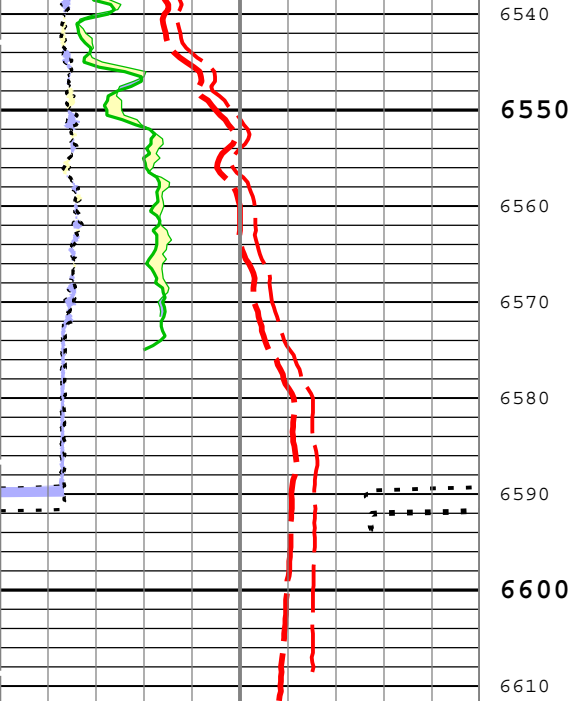




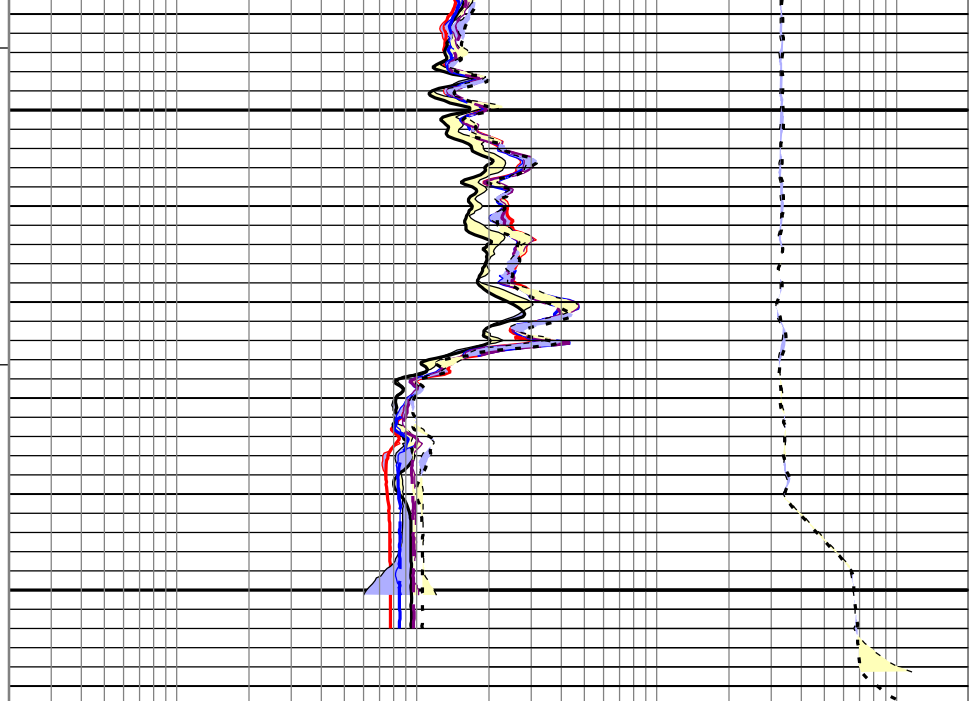
— ICV - Integrated Cement Volume every 100.00 (ft3)







Main To Repeat		
Repeat To Main		
Caliper (CALI) HDRS-H		
6	in	16
Main To Repeat		
Repeat To Main		
Spontaneous Potential (SP) AIT-M		
-160	mV	40
Main To Repeat		
Repeat To Main		
Gamma Ray (GR) HGNS-H		
200	gAPI	400
Main To Repeat		
Repeat To Main		
Gamma Ray (GR) HGNS-H		
0	gAPI	200



Main To Repeat		
Repeat To Main		
Array Induction Two Foot Resistivity A90 (AT90) AIT-M		
0.2	ohm.m	2000
Main To Repeat		
Repeat To Main		
Array Induction Two Foot Resistivity A10 (AT10) AIT-M		
0.2	ohm.m	2000
Main To Repeat		
Repeat To Main		
Array Induction Two Foot Resistivity A60 (AT60) AIT-M		
0.2	ohm.m	2000
Main To Repeat		
Repeat To Main		
Array Induction Two Foot Resistivity A30 (AT30) AIT-M		
0.2	ohm.m	2000
Main To Repeat		
Repeat To Main		
Array Induction Two Foot Resistivity A20 (AT20) AIT-M		
0.2	ohm.m	2000

Main To Repeat		
Repeat To Main		
Cable Tension (TENS)		
10000	lbf	

0

—IHV - Integrated Hole Volume every 10.00 (ft3)

TIME_1900 - Time Marked every 60.00 (s)

Description: AIT Basic Log Two Date: 16-Feb-2014 04:43:52	Format: Log (KM 5in Induction RA)	Index Scale: 5 in per 100 ft	Index Unit: ft	Index Type: Measured Depth	Creation
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Company: Aurora Power Resources Inc

Schlumberger

Well: David Bender 1A

Field: Bijou West

County: Morgan

State: Colorado

Platform Express

Array Induction

with Linear Correlation