

Company: Vecta Oil & Gas LTD

Well: Maroon 24-20

Field: Wildcat

County: Cheyenne State: Colorado

Platform Express			
Array Induction			
with Linear Correlation			
Location:			
SE/SW Sec. 20, Twn 14 S, Rng 47 W		Elev. K.B. 4253.00 ft	
SHL: 888' FSL & 1,499' FWL		G.L. 4242.00 ft	
D.F. 4252.00 ft			
Permanent Datum:		Ground Level	
Log Measured From:		Kelly Bushing	
Drilling Measured From:		Kelly Bushing	
API Serial No.		Section: 20	
05-017-07718-0000		Township: 47 W	
		Range: 47 W	

Logging Date	19-Nov-2012				
Run Number	Run-1				
Depth Driller	5445.00 ft				
Schlumberger Depth	5442.00 ft				
Bottom Log Interval	5442.00 ft				
Top Log Interval	431.00 ft				
Casing Driller Size @ Depth	8.625 in @ 434.00 ft				
Casing Schlumberger	431 ft				
Bit Size	7.875 in				
Type Fluid In Hole	Gel Chemical				
MUD	Density	Viscosity	58 s		
	Fluid Loss	PH	9		
	Source of Sample				
RM @ Meas Temp	2.59 ohm.m @ 51.6 degF				
RMF @ Meas Temp	1.94 ohm.m @ 51.6 degF				
RMC @ Meas Temp	3.24 ohm.m @ 51.6 degF				
Source RMF	RMC	Calculated			
RM @ BHT	RMF @ BHT	0.81 @ 180	0.61 @ 180		
Max Recorded Temperatures					
Circulation Stopped	Time	14:00:00			
Logger on Bottom	Time				
Unit Number	Location:	2135	Fort Morgan, CO		
Recorded By	Stan Thompson				
Witnessed By	Larry Schneider & Ryan				

Disclaimer

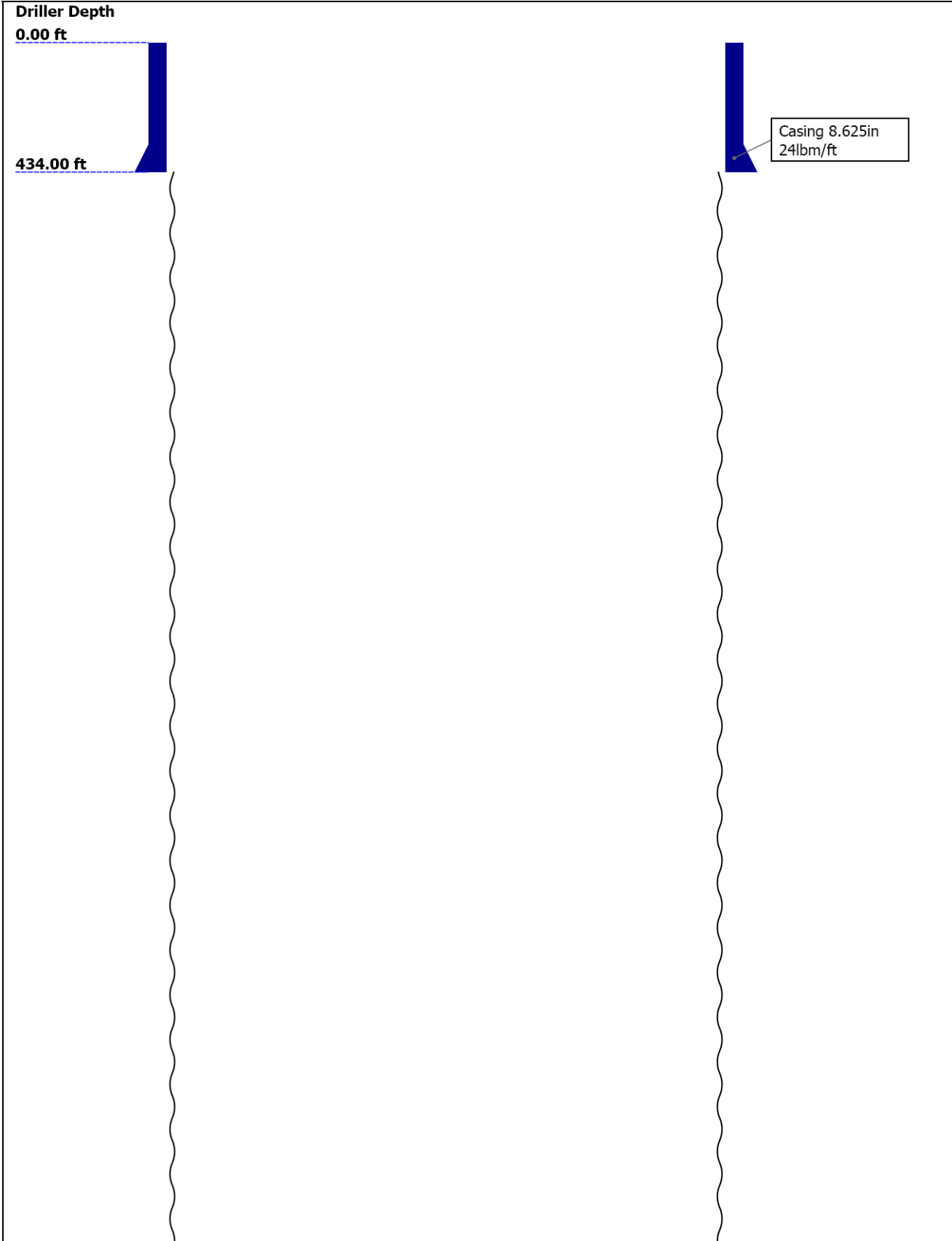
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

Contents

- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Remarks and Equipment Summary
- 7. Depth Summary
- 8. Composite 1 2" Induction
  - 8.1 Integration Summary
  - 8.2 Software Version
  - 8.3 Composite Summary
  - 8.4 Log ( Import of Kerr McGee 2in Induction )
  - 8.5 Parameter Listing
- 9. Composite 1 5" Induction
  - 9.1 Integration Summary
  - 9.2 Software Version
  - 9.3 Composite Summary

9.4 Log ( EMD 5in Induction )  
9.5 Parameter Listing  
10. Calibration Report  
11. Tail

Well Sketch



5445.00 ft

Open Hole 7.875in

Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	7.875					
Top Driller ( ft )	434					
Top Logger ( ft )	434					
Bottom Driller ( ft )	5445					
Bottom Logger ( ft )	5442					
Casing						
Size ( in )	8.625					
Weight ( lbm/ft )	24					
Inner Diameter ( in )	8.099					
Top Driller ( ft )	0					
Top Logger ( ft )	0					
Bottom Driller ( ft )	434					
Bottom Logger ( ft )	431					

Remarks and Equipment Summary

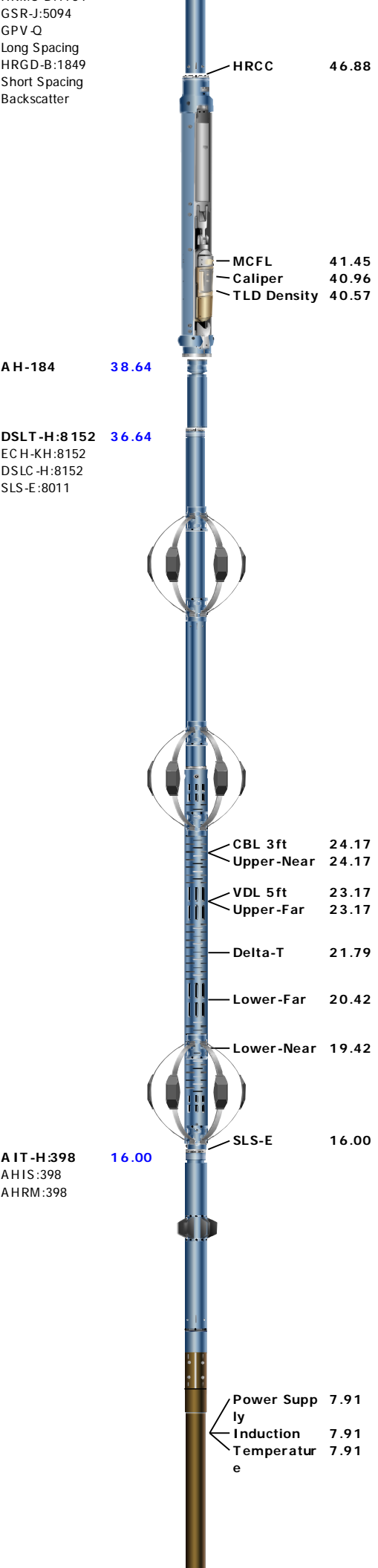
Run-1: Toolstring				Run-1: Remarks	
<div><div><div>Equip name</div><div>Length</div><div>MP name</div><div>Offset</div></div><div><div>LEH-QT</div><div>66.21</div><div></div><div></div></div><div><div>DTC-H:9236</div><div>63.29</div><div></div><div></div></div><div><div>ECH-KC:10316</div><div></div><div></div><div></div></div><div><div>DTC-H:9236</div><div></div><div></div><div></div></div><div><div>HGNS-B:1927</div><div>60.29</div><div></div><div></div></div><div><div>HGNH:3878</div><div></div><div></div><div></div></div><div><div>NPV-N</div><div></div><div></div><div></div></div><div><div>NSR-F:5069</div><div></div><div></div><div></div></div><div><div>HACCZ-B:749</div><div></div><div></div><div></div></div><div><div>HMCA-B</div><div></div><div></div><div></div></div><div><div>HGNS-B:1927</div><div></div><div></div><div></div></div><div><div>HDRS-B:1754</div><div>50.88</div><div></div><div></div></div><div><div>ECH-MEB:1922</div><div></div><div></div><div></div></div><div><div>HRCC-B:791</div><div></div><div></div><div></div></div><div><div>HRMS-B:1754</div><div></div><div></div><div></div></div></div> <div><div><div>CTEM</div><div>62.39</div></div><div><div>HV</div><div>0.00</div></div><div><div>TelStatus</div><div>60.29</div></div><div><div>ToolStatus</div><div>60.29</div></div><div><div>Temperature</div><div>60.26</div></div><div><div>GR</div><div>59.55</div></div><div><div>CNL Porosity</div><div>53.21</div></div><div><div>HMCA</div><div>50.88</div></div><div><div>HGNS</div><div>50.88</div></div><div><div>Accelerometer</div><div>0.00</div></div></div>	Toolstring run as per tool sketch.				
	High-res data acquisition from TD-3,900'				
	Matrix was set to Limestone: 2.71 g/cc				
	Crew: Ed Ponce & Matt Rocha				

Toolstring run as per tool sketch.

High-res data acquisition from TD-3,900'

Matrix was set to Limestone: 2.71 g/cc

Crew: Ed Ponce & Matt Rocha





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		Run-1		
Conveyance Type		Wireline		
Log Sequence		1		
Depth Remark Parameters		Run-1		
Depth Remark 1		All Schlumberger depth procedures followed.		
Depth Remark 2		IDW used as primary depth device, Z-chart used as secondary depth reference.		
Depth Measuring Device		Run-1		
Type		IDW-JA		
Serial Number		6515A		
Calibration Date		23-Oct-2012		
Calibrator Serial Number		1324		
Calibration Cable Type		7-46P LXS		
Wheel Correction 1		-7		
Wheel Correction 2		-5		
Tension Device		Run-1		
Type		CMTD-B/A		
Serial Number		1919		
Calibration Date		10-Nov-2012		
Calibrator Serial Number		78135		
Calibration Points		10		
Calibration RMS		6		
Calibration Peak Error		11		
Logging Cable		Run-1		
Type		7-46P-XS		
Serial Number		U7110		
Logging Cable Length ( ft )		23450.00		

## Composite 1

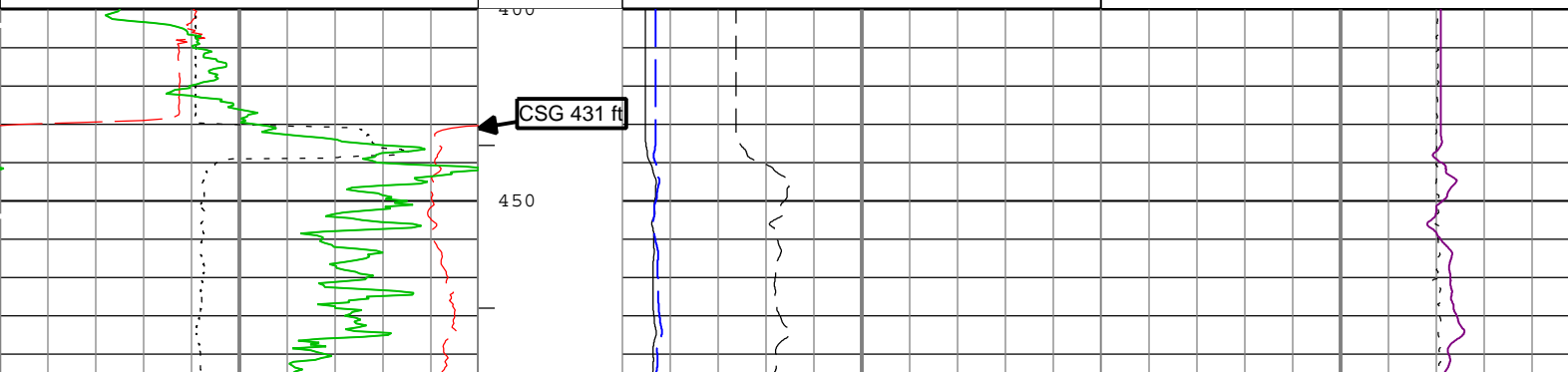
## 2" Induction

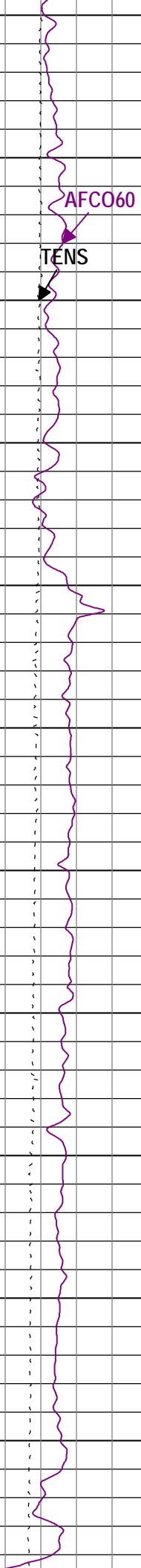
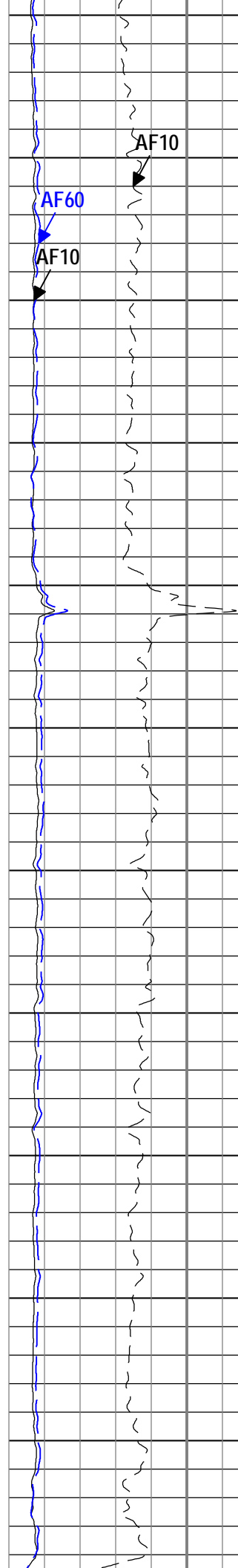
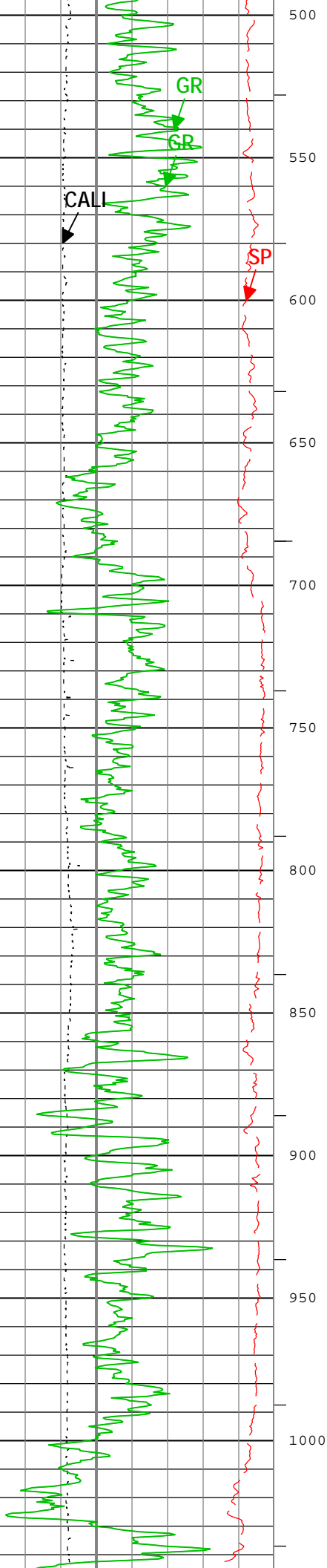
## Integration Summary

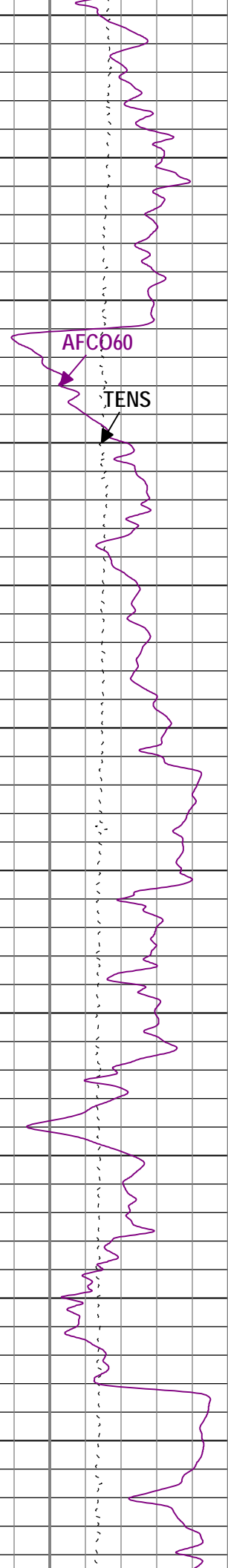
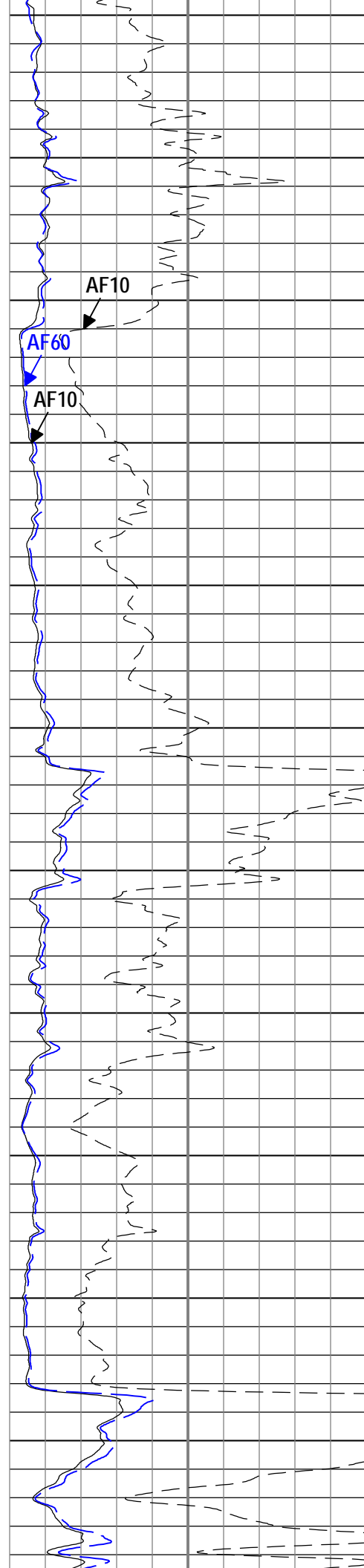
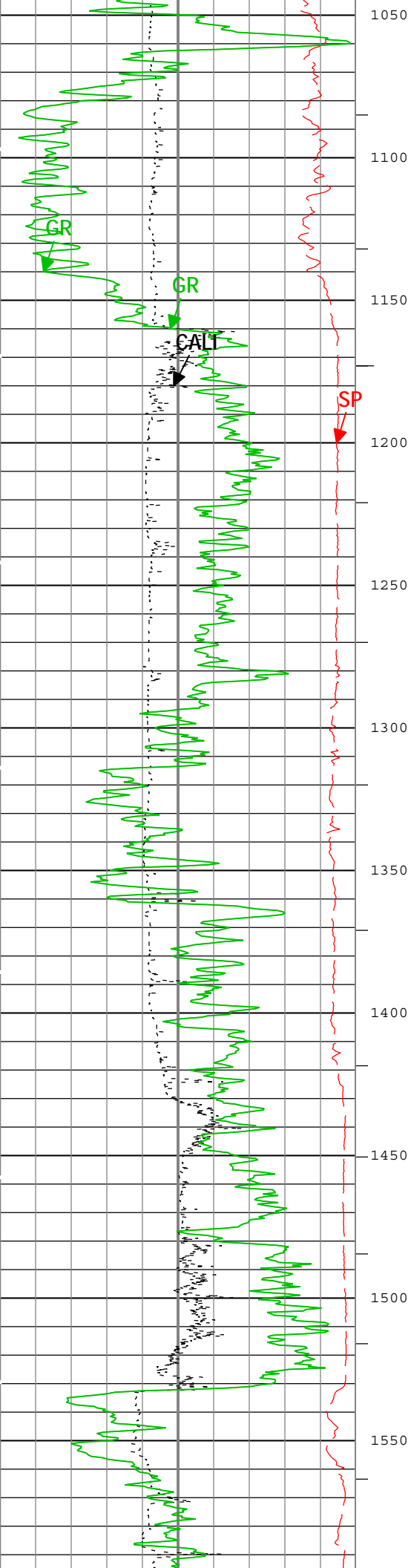
Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
ICV	Integrated Cement Volume	GCSE_UP_PASS, GCSE_DOWN_PASS:Run-1, FCD	1252.54	ft3

## Software Version

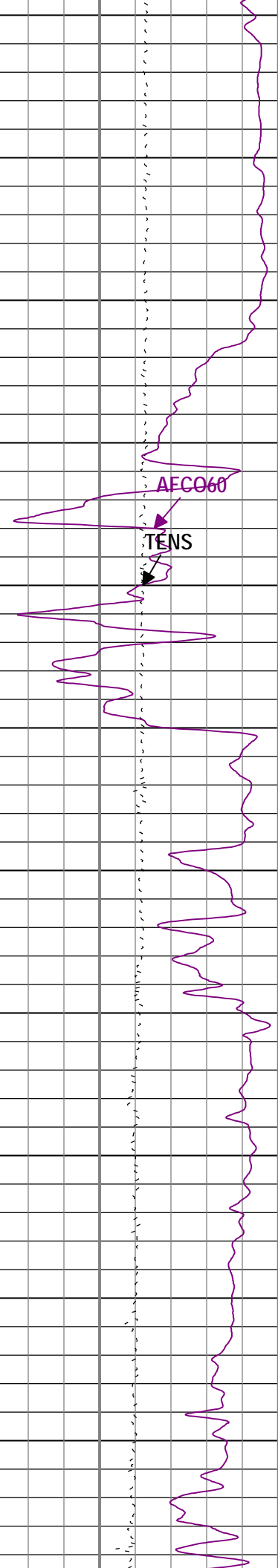
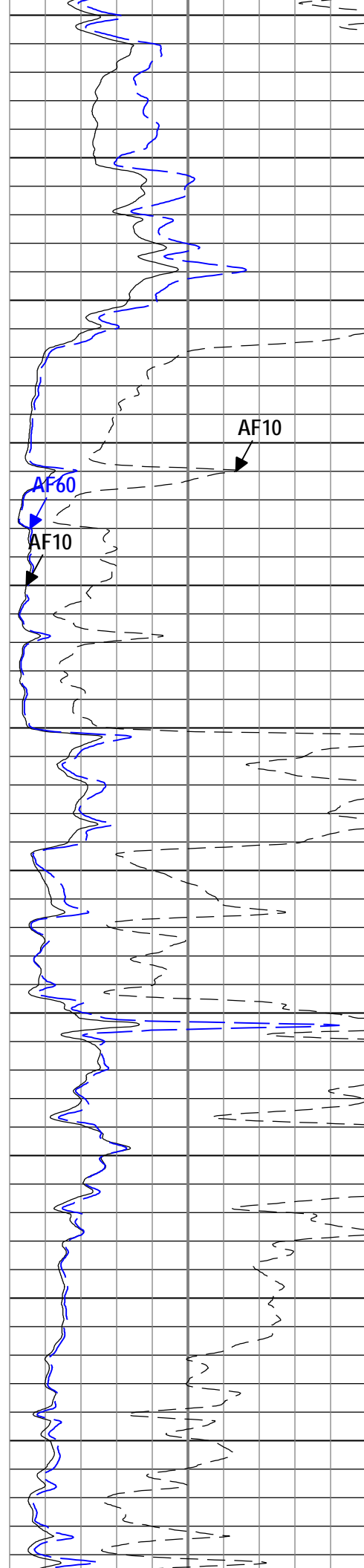
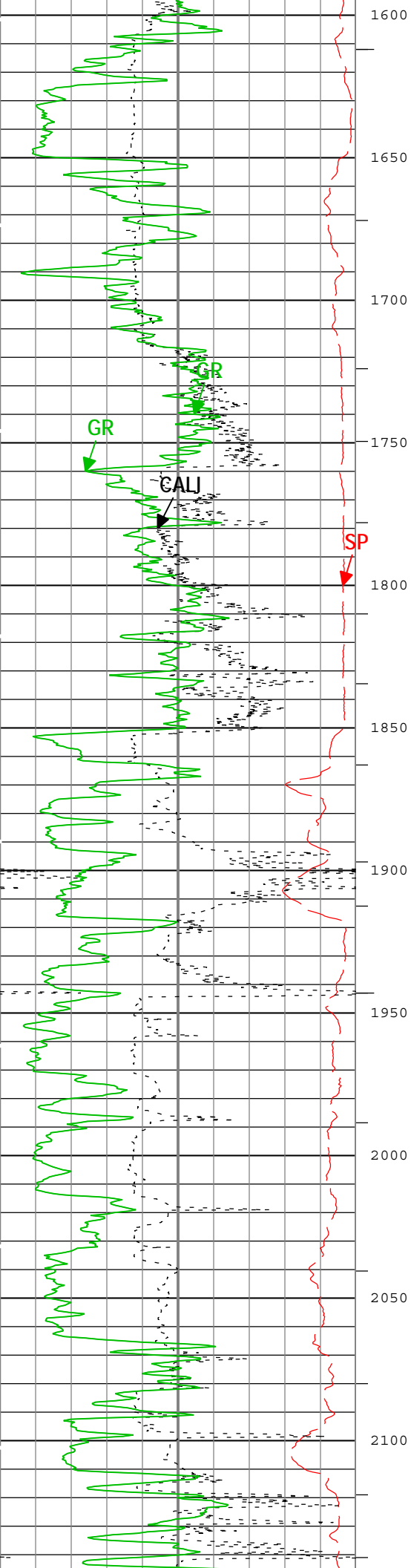
Acquisition System	Version
MaxWell	3.1.9755.0

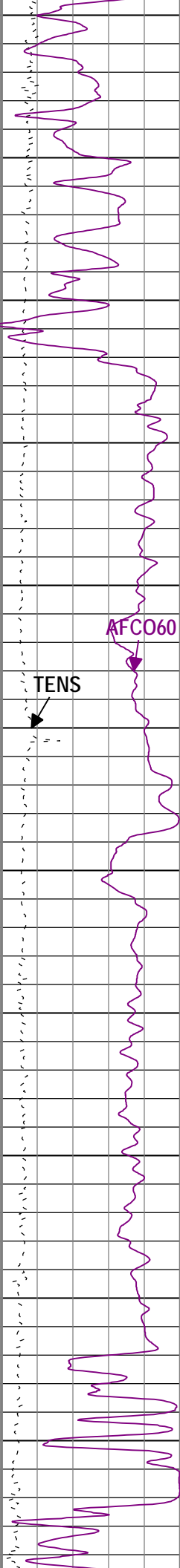
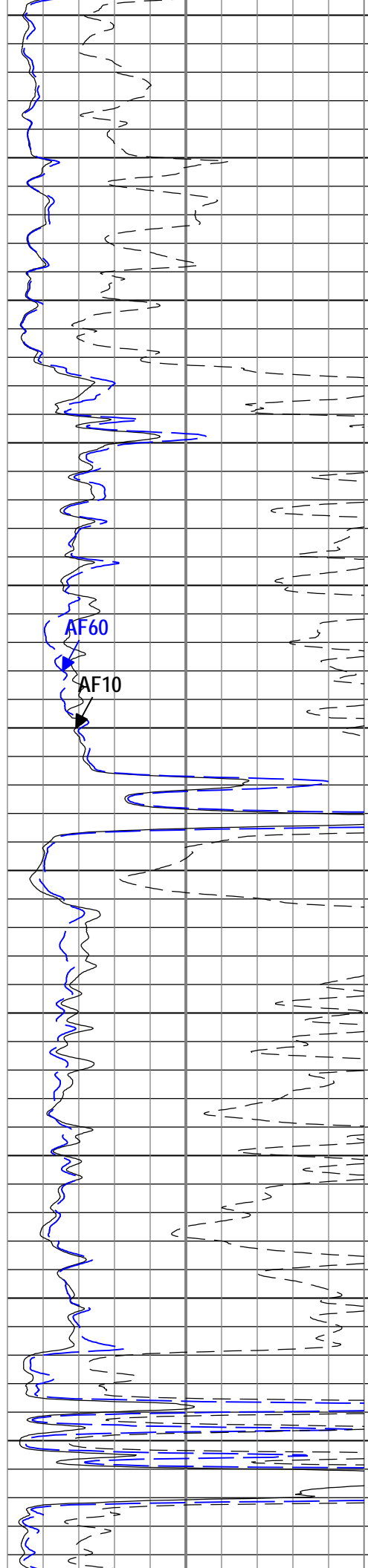
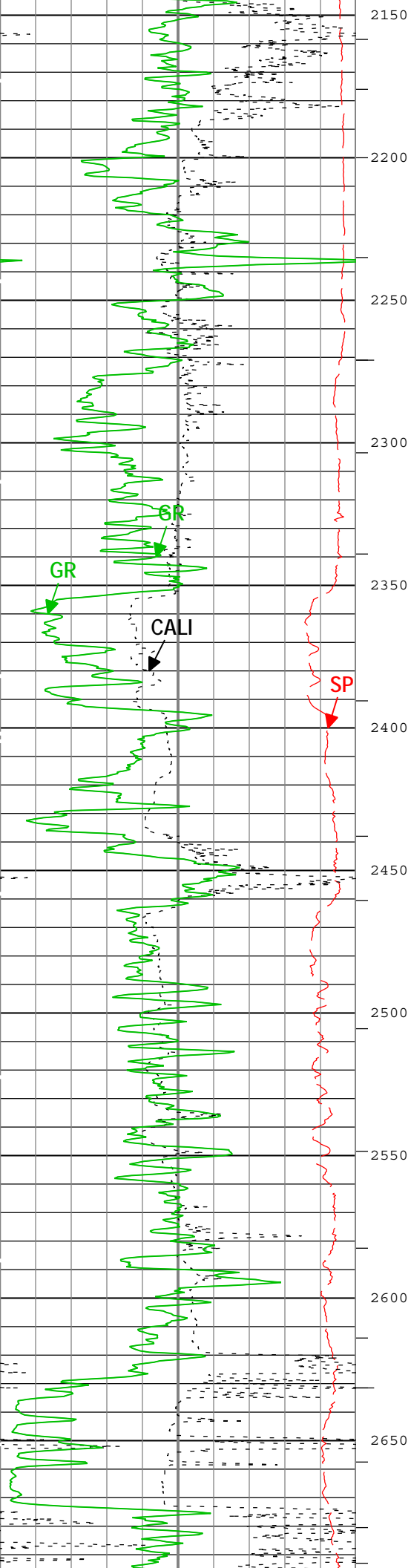


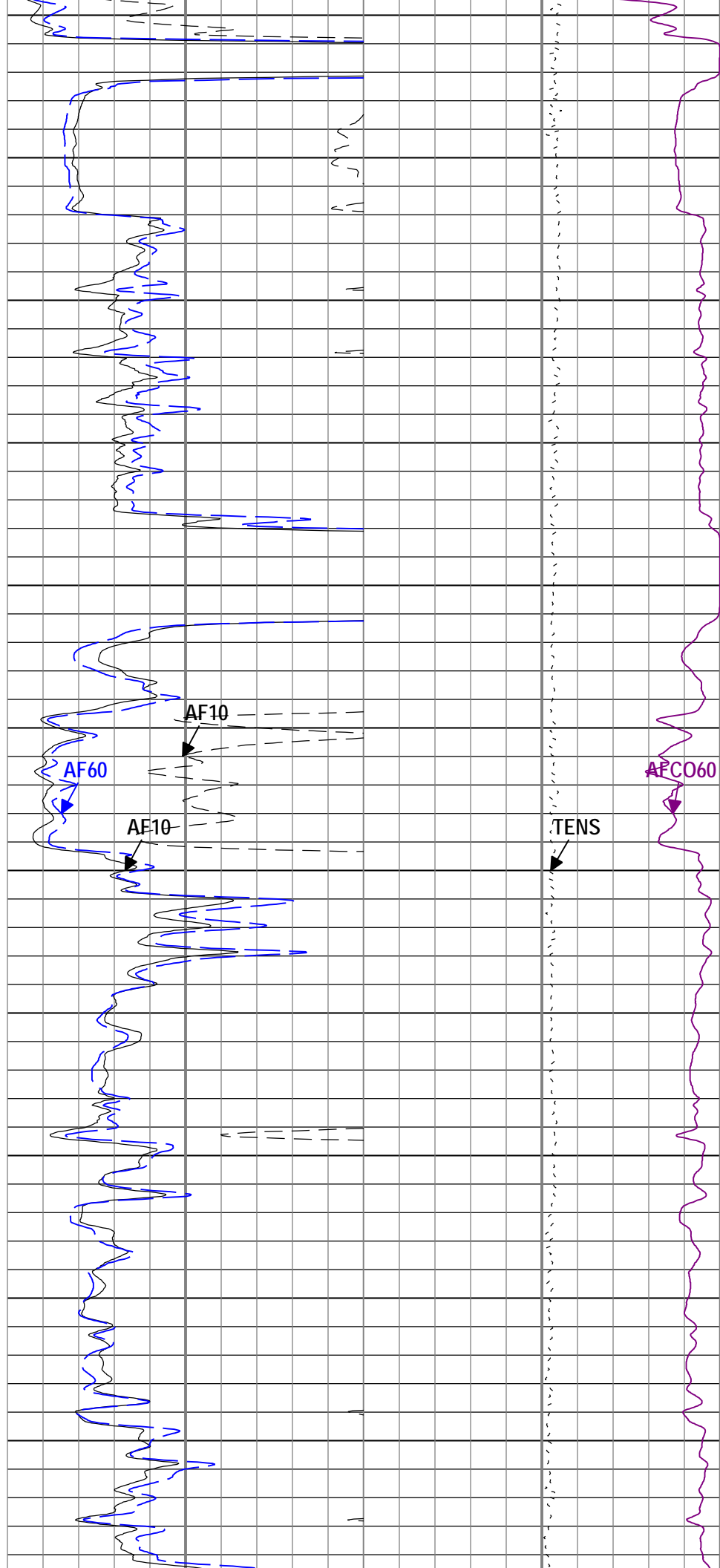
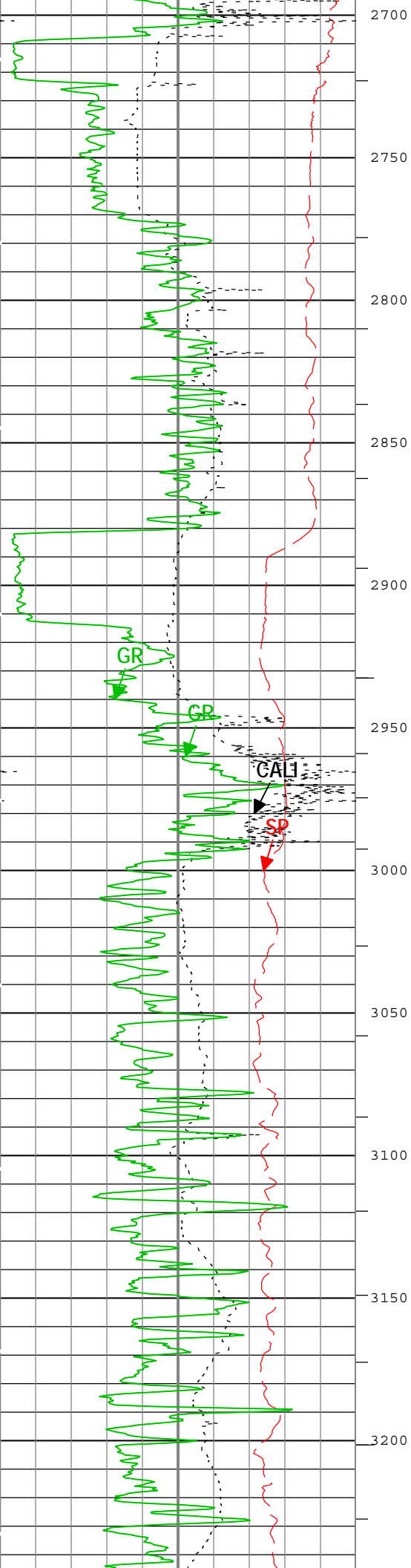


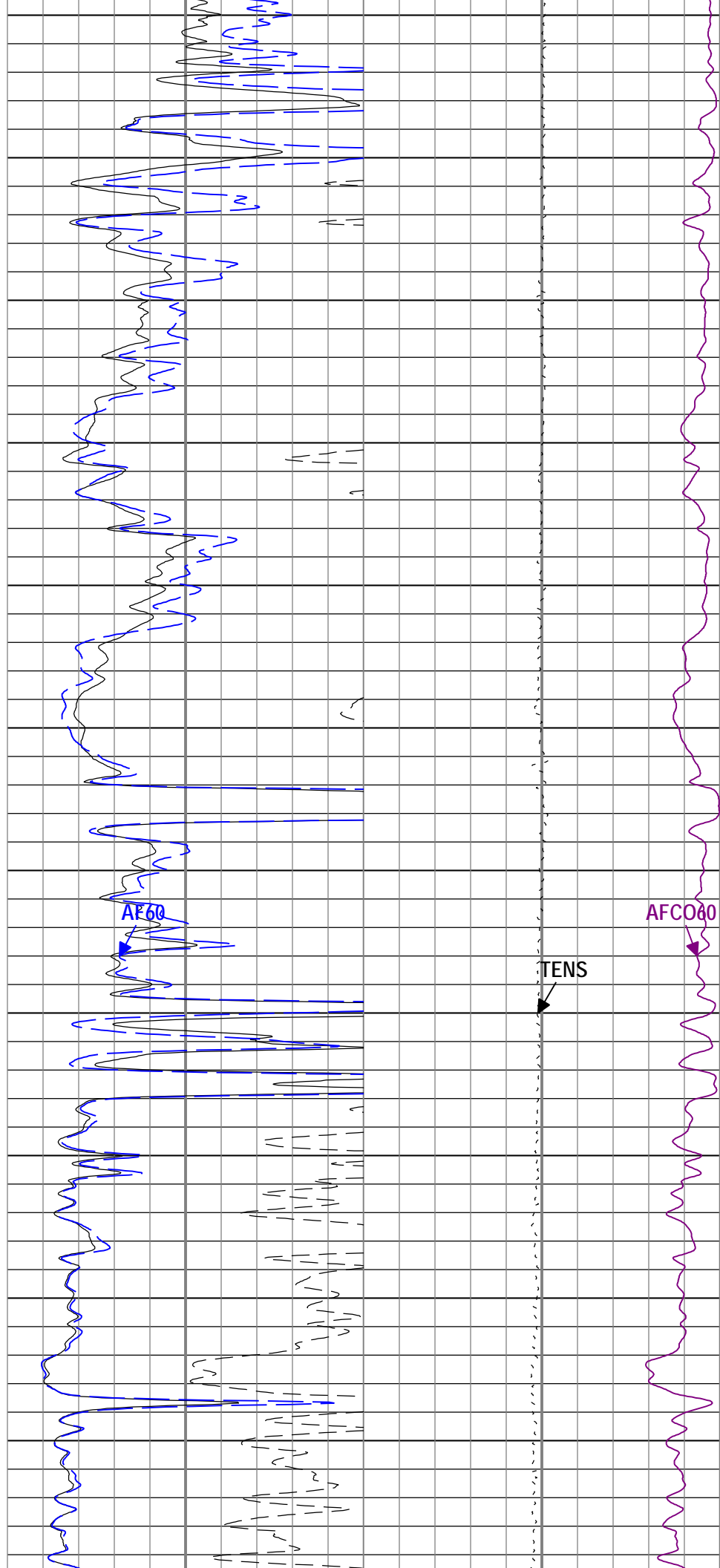
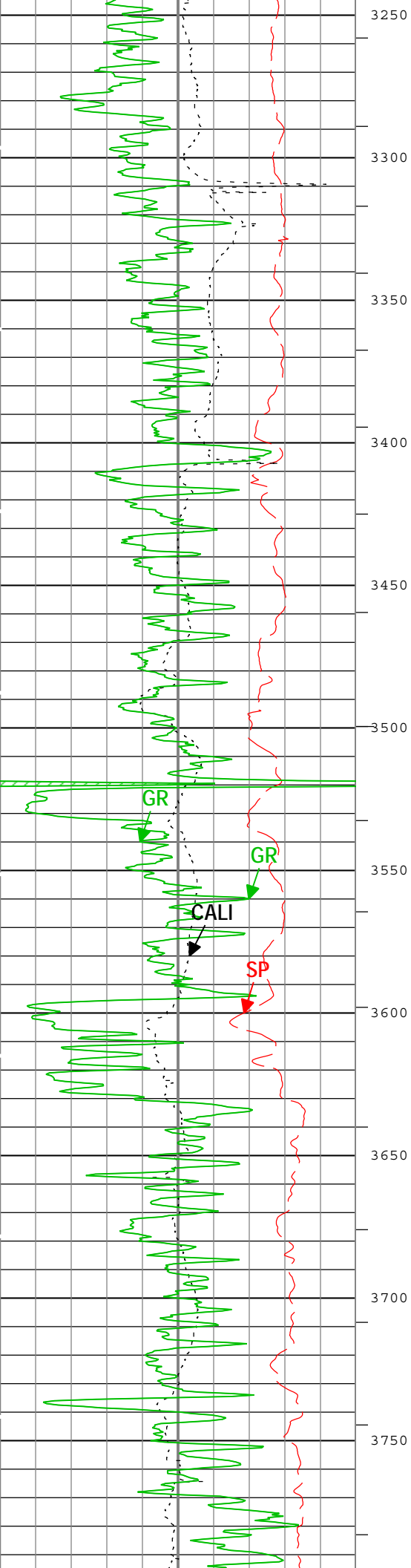


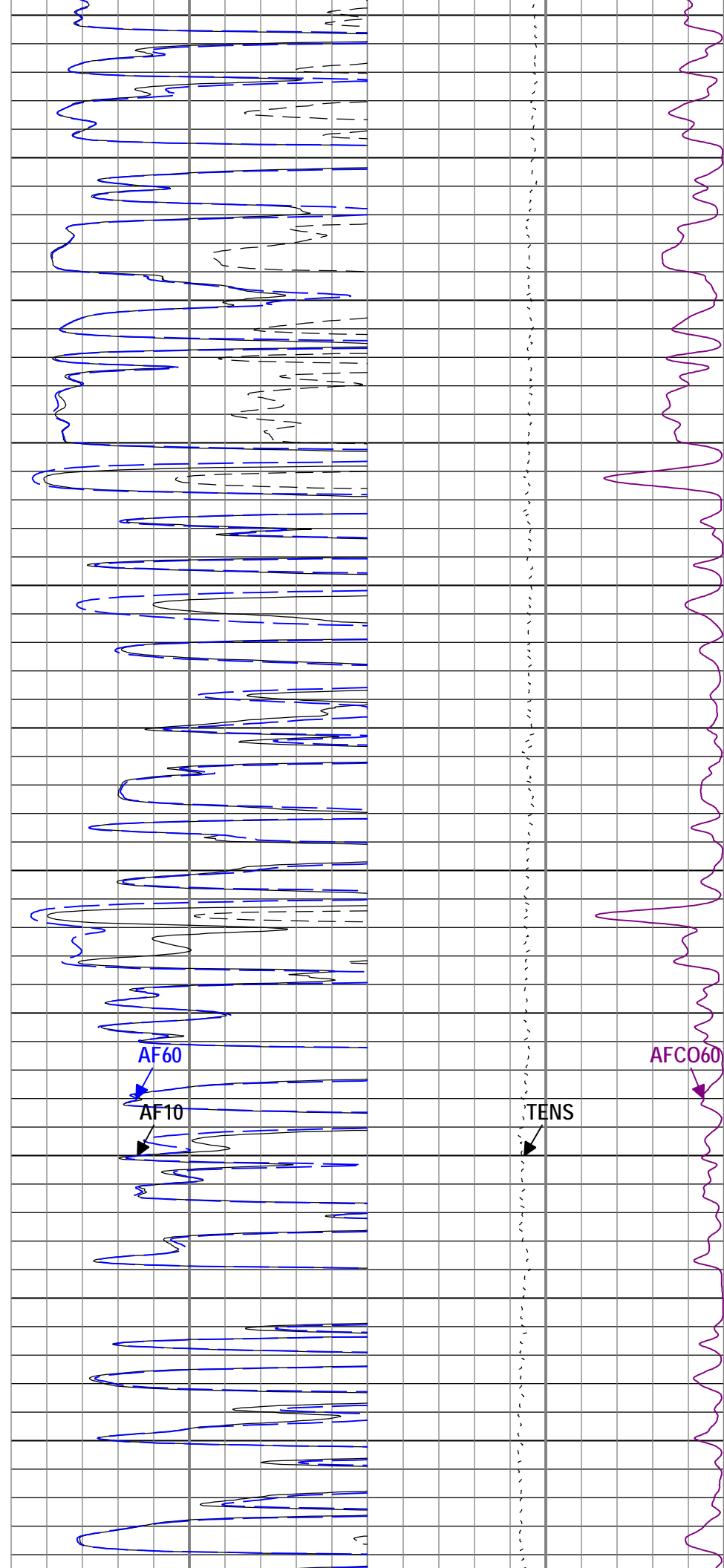
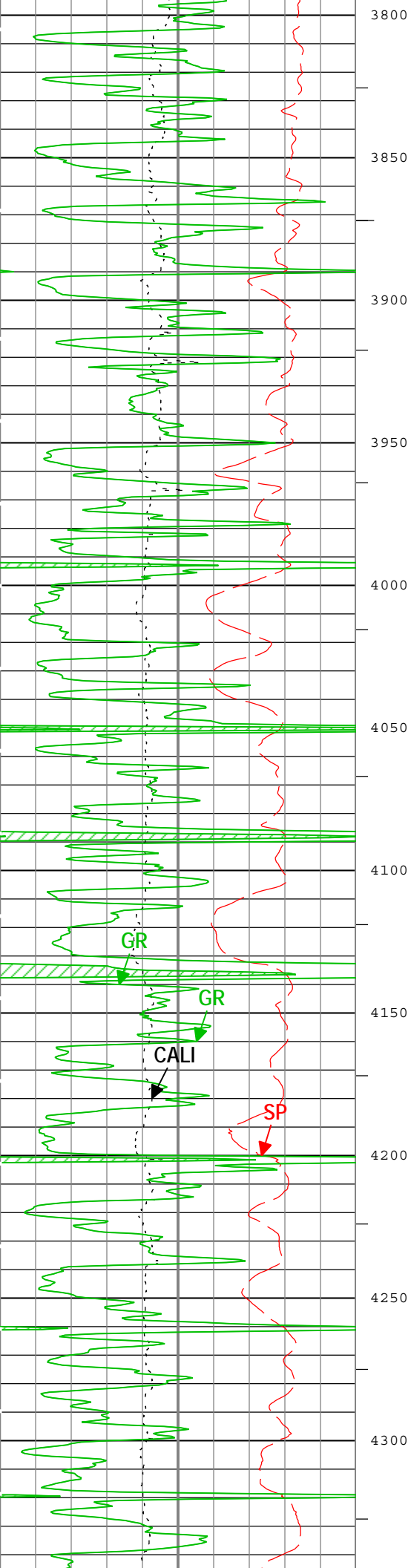


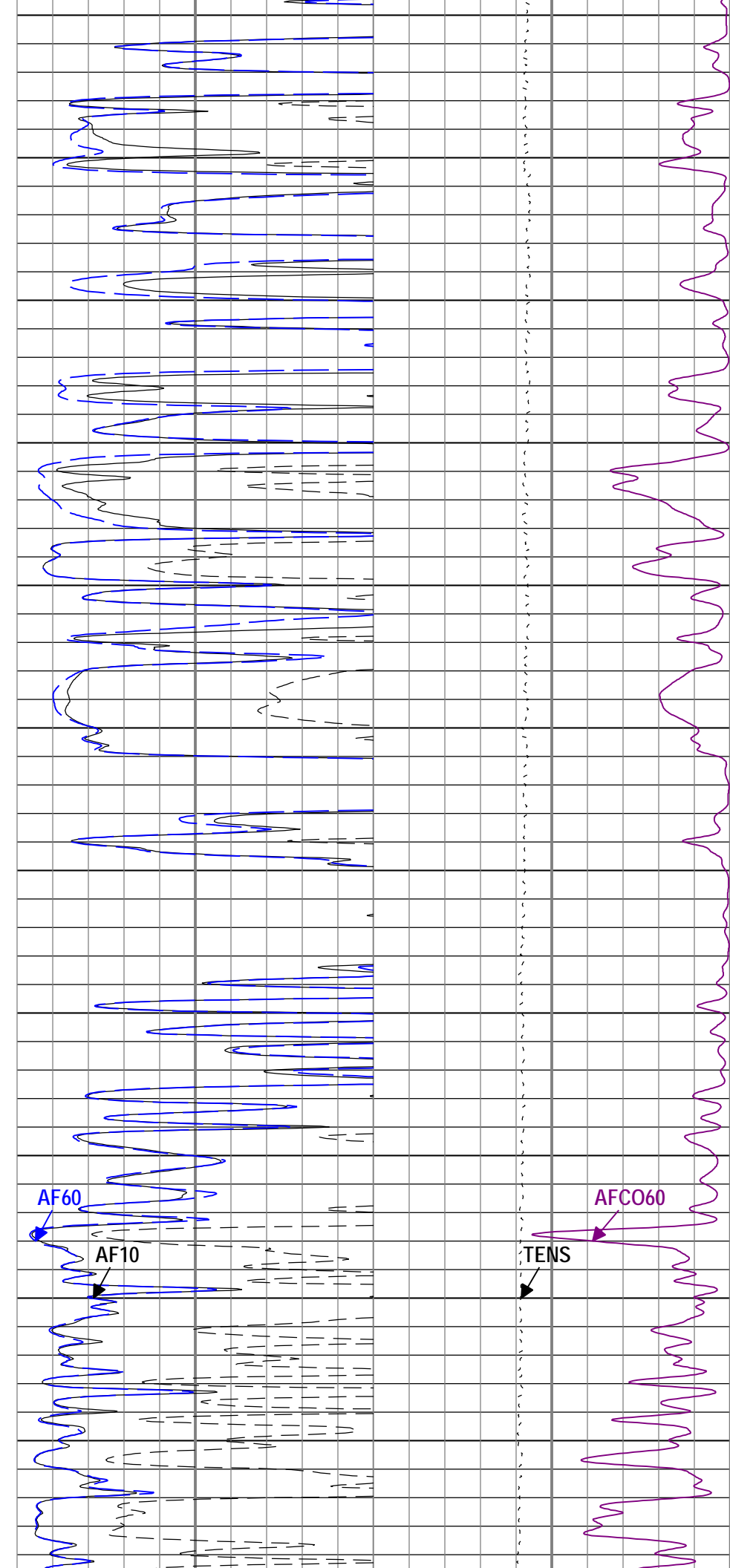
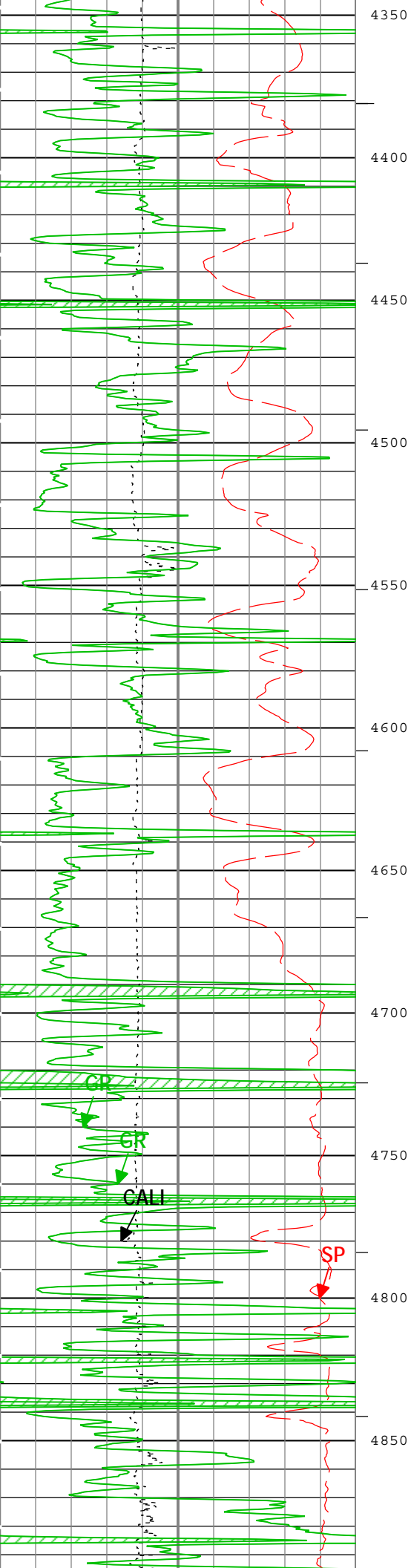


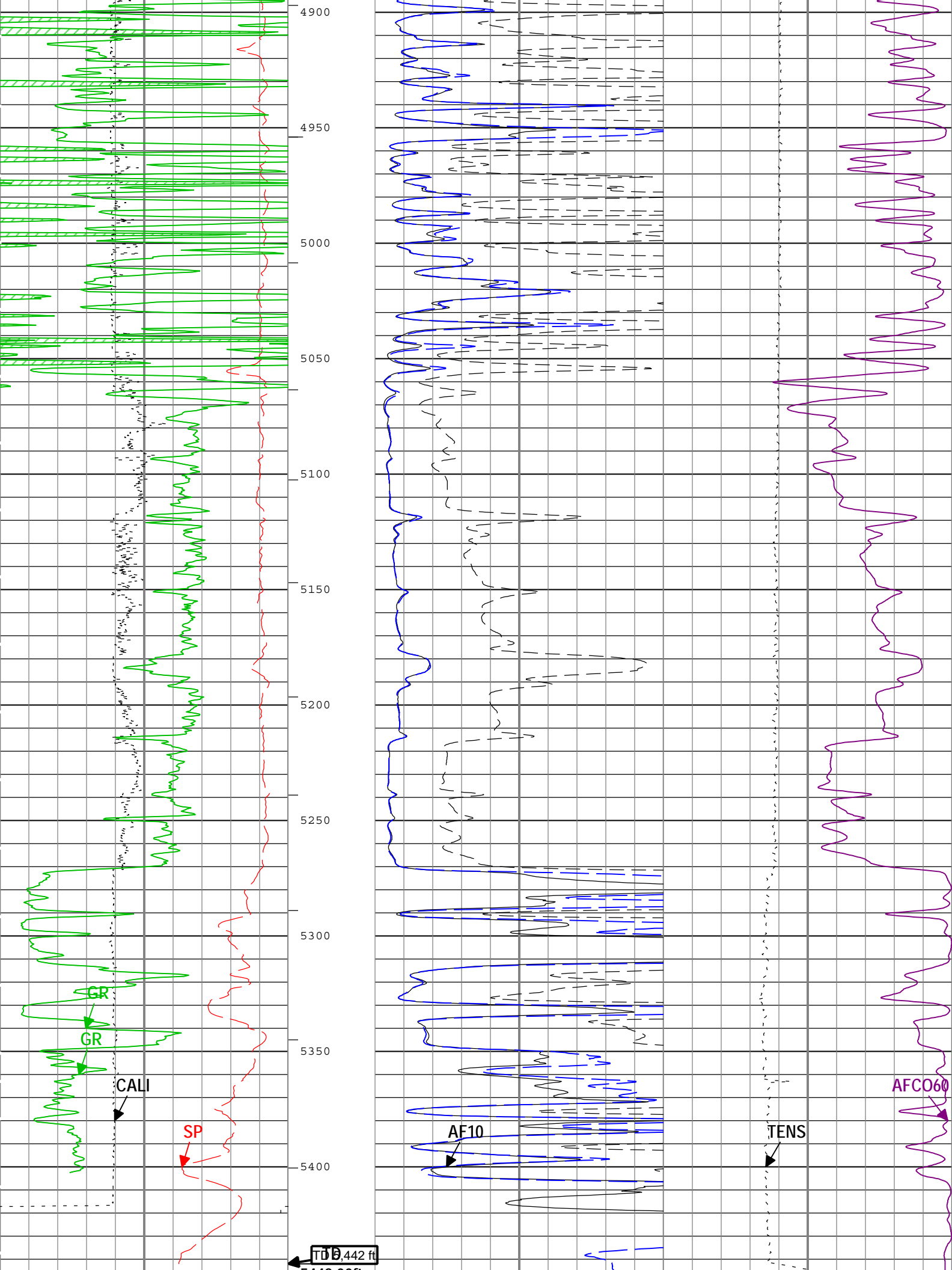












Channel Processing Parameters				
Run-1: Parameters				
Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-H	Compute Standoff	
ABLM	Array Induction Basic Logs Mode	AIT-H	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-H	Yes	
ASTA	Array Induction Tool Standoff	AIT-H	0.625	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	Depth Zoned	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-B	0.109	in
CBLO	Casing Bottom (Logger)	WLSESSION	431	ft
CDEN	Cement Density	HGNS-B	2	g/cm3
CSODDRL	Casing Outer Diameter - Zoned along driller depths	WLSESSION	8.625	in
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-B	Yes	
SPDR	SP Drift Per Foot	AIT-H	0	mV/ft
Run-1Depth Zoned Parameters				
Parameter	Value	Start ( ft )	Stop ( ft )	
BS	0	400	434	
BS	7.875	434	5462	
All depth are actual.				
Tool Control Parameters				
Run-1: Parameters				
Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h



Composite 1
5" Induction

Integration Summary	
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Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
ICV	Integrated Cement Volume	GCSE_UP_PASS, GCSE_DOWN_PASS:Run-1, FCD	1252.54	ft3
IHV	Integrated Hole Volume	GCSE_UP_PASS, GCSE_DOWN_PASS:Run-1	2082.15	ft3

Software Version	
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Acquisition System	Version
MaxWell	3.1.9755.0
Application Patch	SP-20120723-3.1.9755.1112
	EXP_APL-MASTAXIS-3.1.9755.1221

Computation	Description	Version
Borehole	Borehole Ensemble provides common Borehole Parameters and Channels	3.1.9755.0

Tool Elements	Description	Software Version	Firmware Version
AHIS	Array Induction Sonde - H	3.1.9755.1112	
HGNS-B	HILT Gamma-Ray and Neutron Sonde, 125 degC	3.1.9755.0	2.0
HRCC-B	HILT High-Resolution Control Cartridge, 125 degC	3.1.9755.0	2.0

Composite Summary	
Overall Score	85.5
Mathematics	88.0
Science	82.0
History	87.0
Language Arts	89.0
Physical Education	86.0
Art	84.0
Music	83.0
Health	85.0
Social Studies	86.0
Foreign Languages	87.0
Electives	88.0
Attendance	92.0
Behavior	90.0
Progress	89.0
Feedback	88.0
Recommendations	87.0
Notes	86.0
Comments	85.0
Summary	84.0
Conclusion	83.0
Final Remarks	82.0
Overall Assessment	81.0
Final Score	80.0

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
Run-1	Log[3]:Up	Up	2330.23 ft	5462.23 ft	19-Nov-2012 9:11:52 PM	19-Nov-2012 10:30:49 PM	0.00 ft	
Run-1	Log[4]:Up	Up	323.00 ft	2404.61 ft	19-Nov-2012 11:00:30 PM	19-Nov-2012 11:31:37 PM	0.00 ft	

All depths are referenced to toolstring zero

Log

Composite 1

Description: AIT Basic Log Two    Format: Log ( EMD 5in Induction )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 19-Nov-2012 23:42:35

Channel	Source	Sampling
AT10	AIT_SpliceGroup[1]:AHIS[1]:AHIS[1]	3in
AT20	AIT_SpliceGroup[1]:AHIS[1]:AHIS[1]	3in
AT30	AIT_SpliceGroup[1]:AHIS[1]:AHIS[1]	3in
AT60	AIT_SpliceGroup[1]:AHIS[1]:AHIS[1]	3in
AT90	AIT_SpliceGroup[1]:AHIS[1]:AHIS[1]	3in
CALI	HDRS[1]:HRCC-B[1]:HRCC-B[1]	1in
GR	HGNS[1]:HGNS-B[1]:HGNS-B[1]	6in
ICV	Borehole	6in
IHV	Borehole	6in
SP	AIT_SpliceGroup[1]:AHIS[1]:AHIS[1]	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in

—IHV - Integrated Hole Volume every 10.00 (ft3)

TIME\_1900 - Time Marked every 60.00 (s)

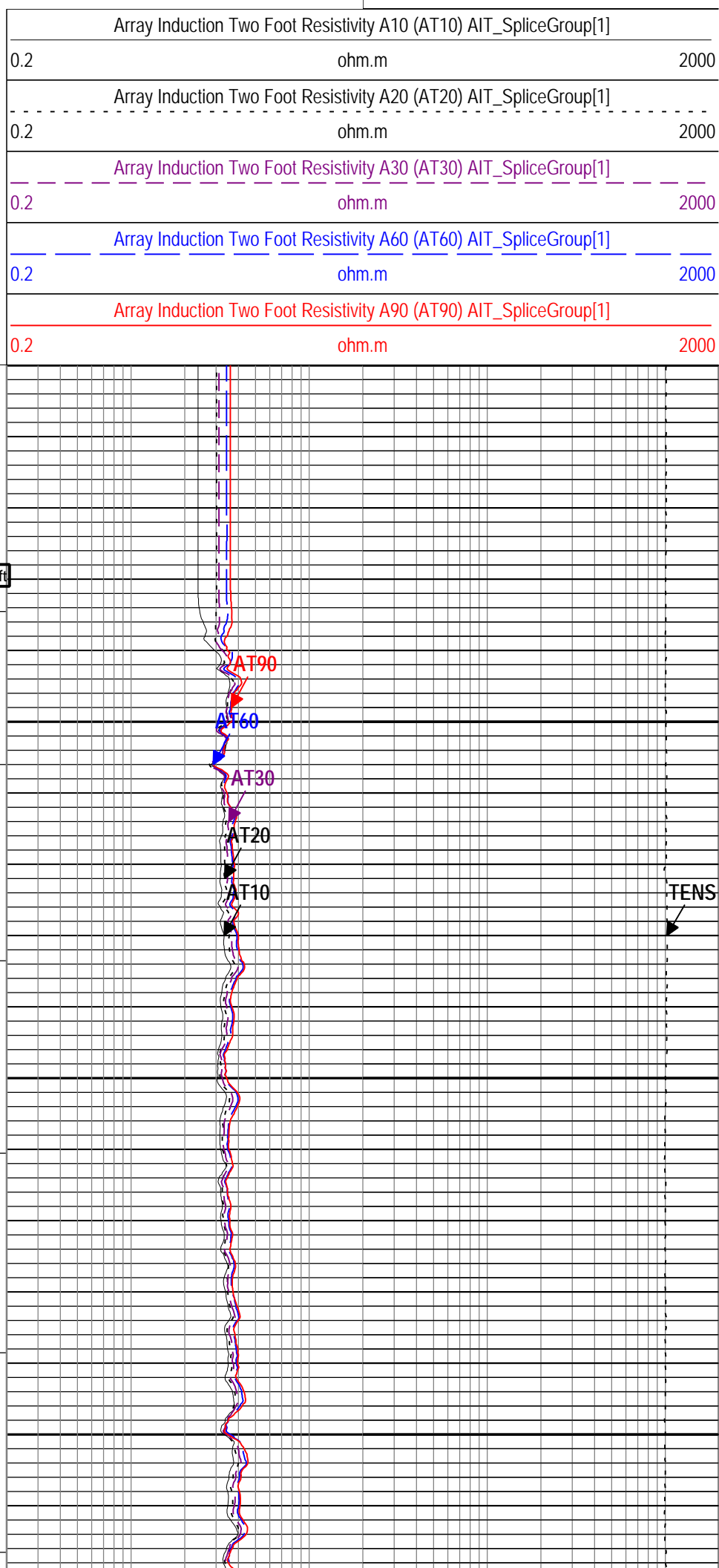
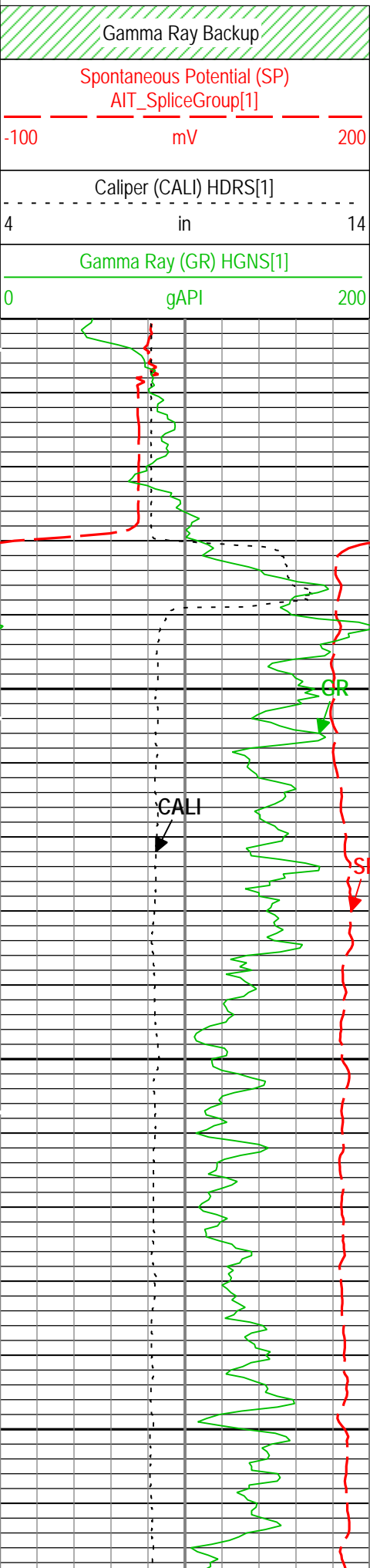
—IHV - Integrated Hole Volume every 100.00 (ft3)

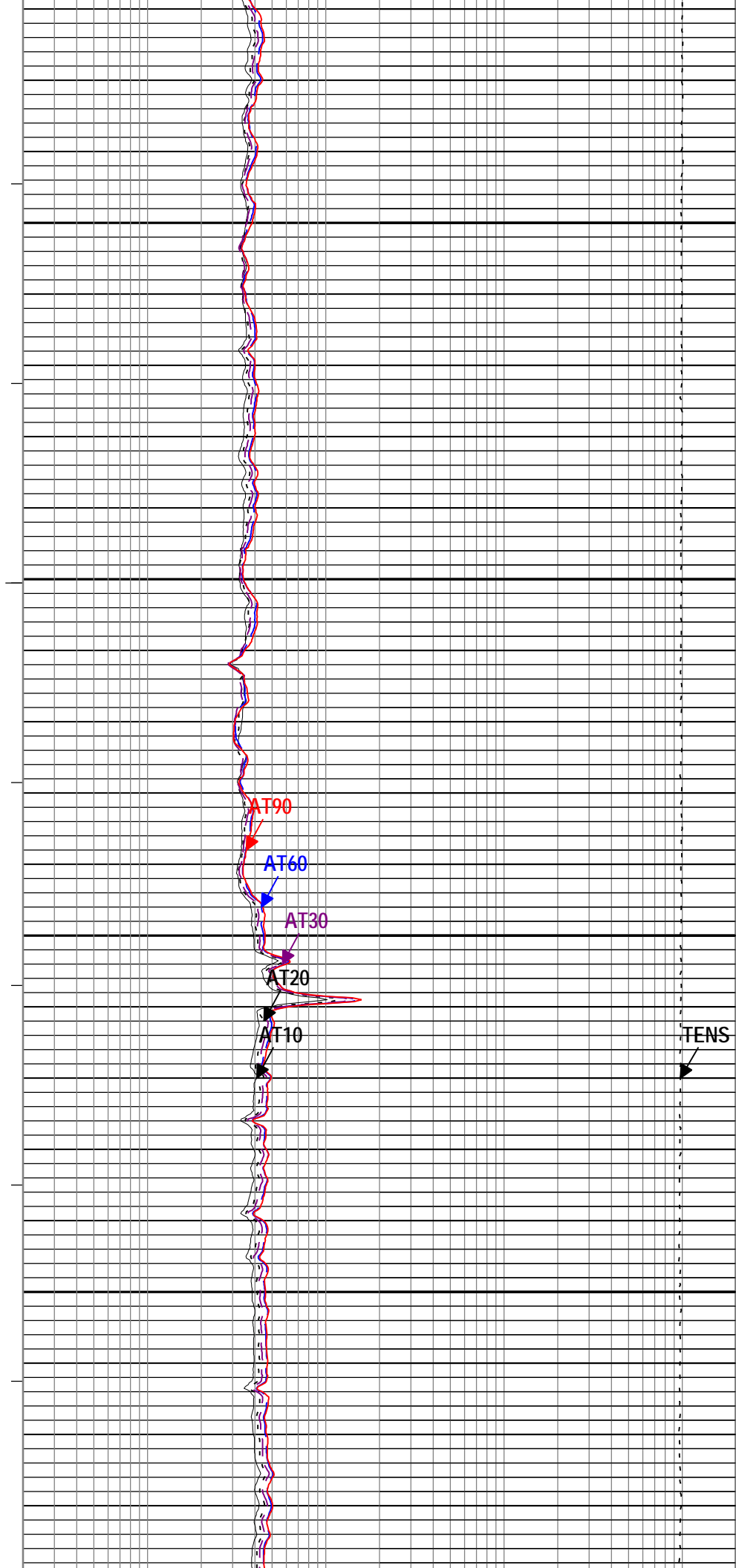
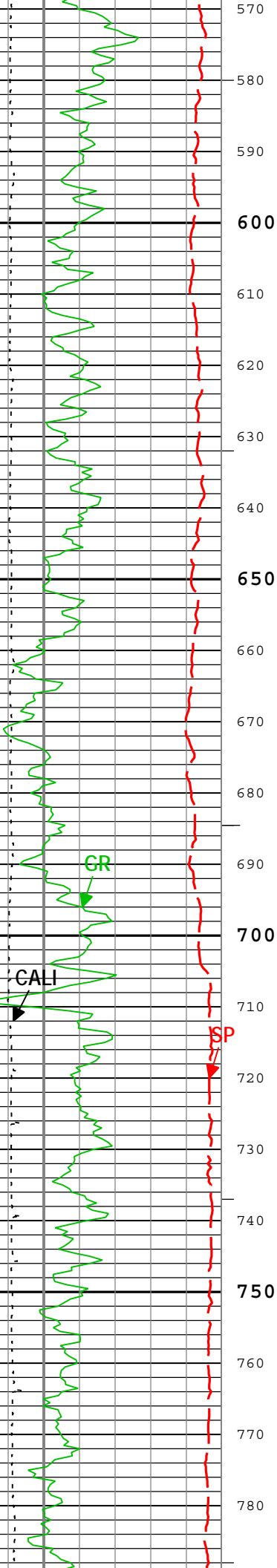
—ICV - Integrated Cement Volume every 10.00 (ft3)

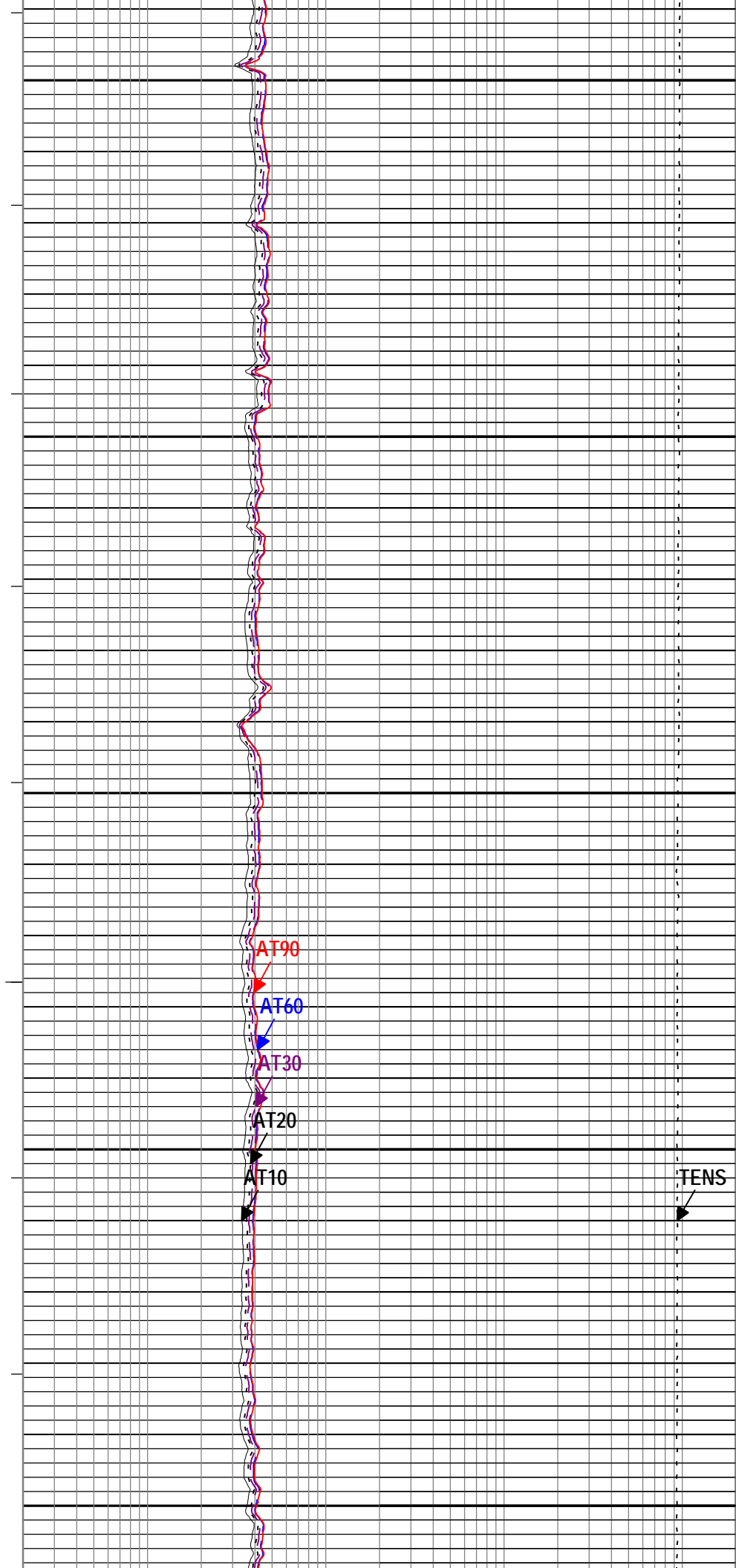
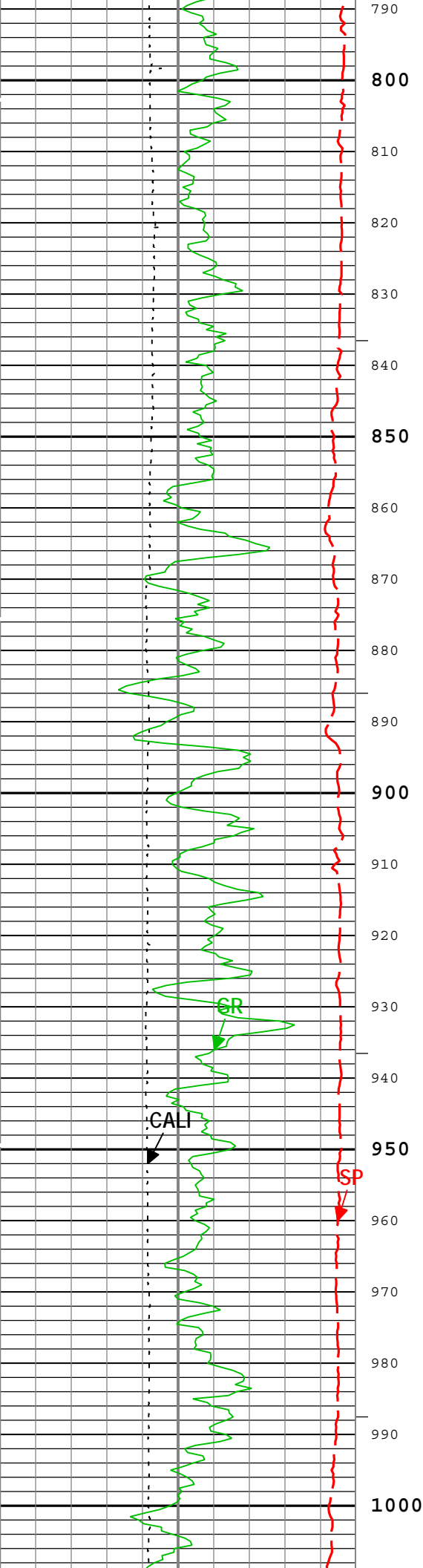
—ICV - Integrated Cement Volume every 100.00 (ft3)

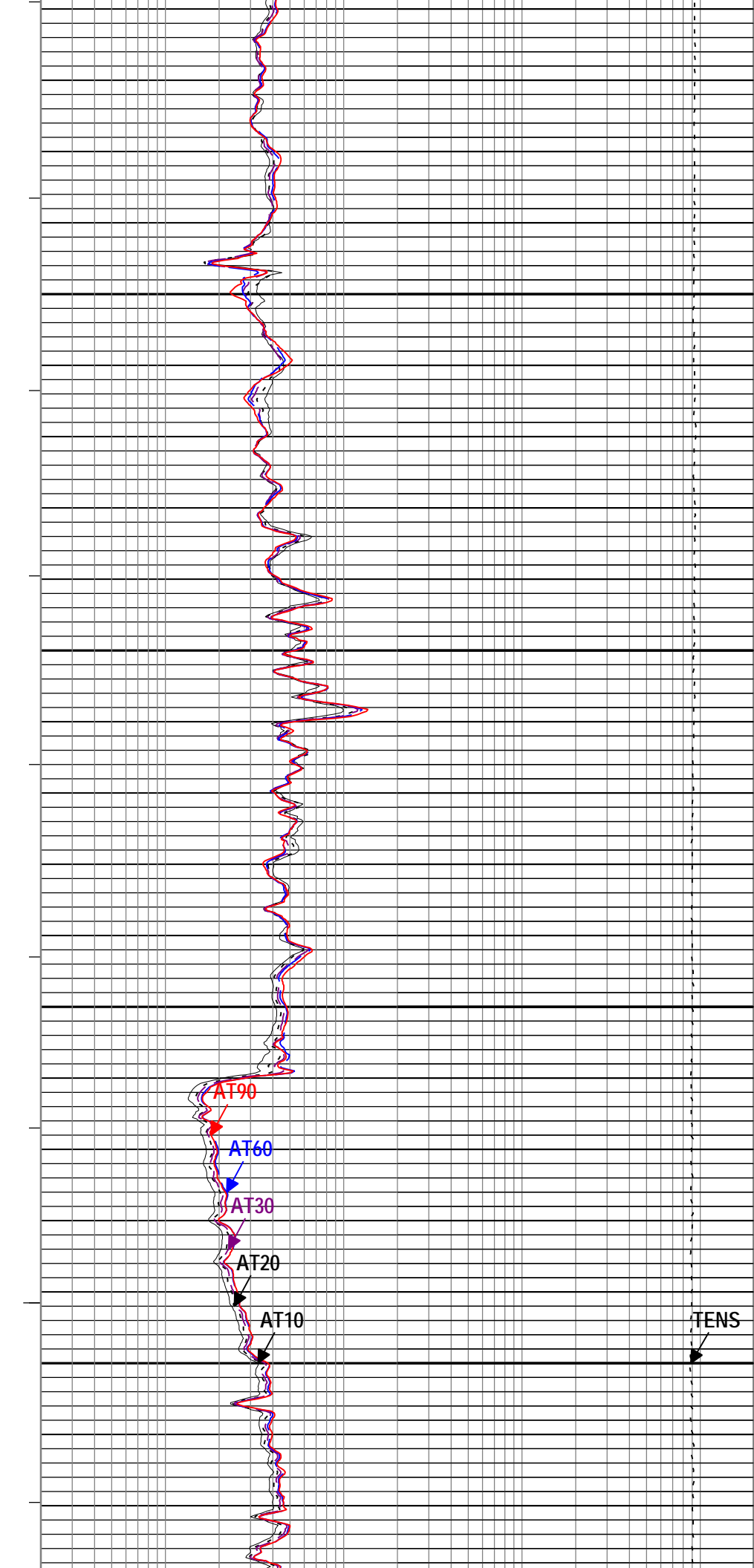
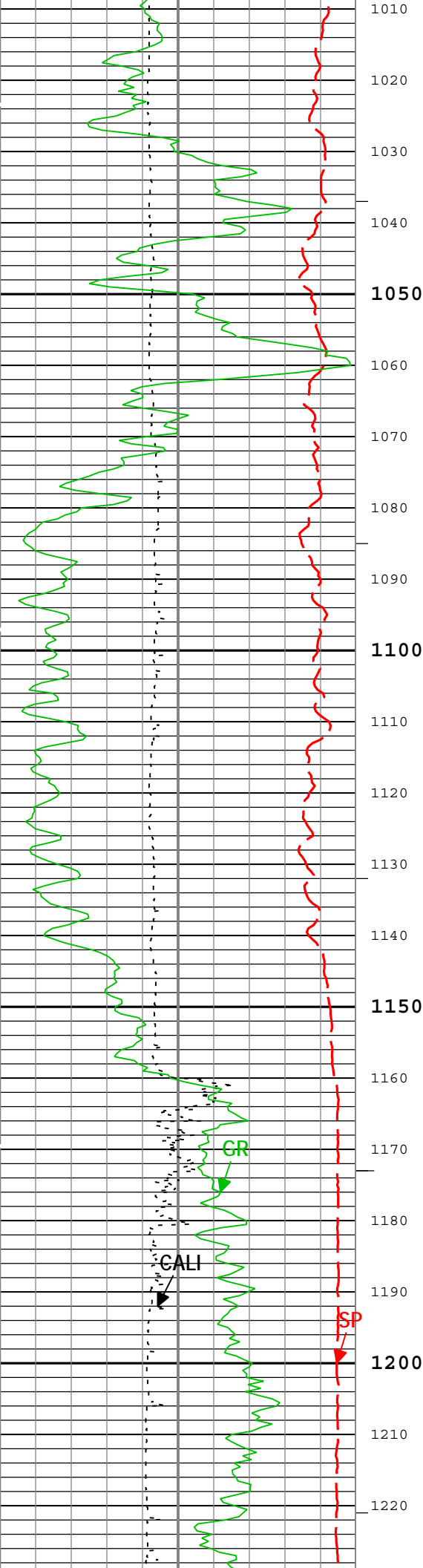
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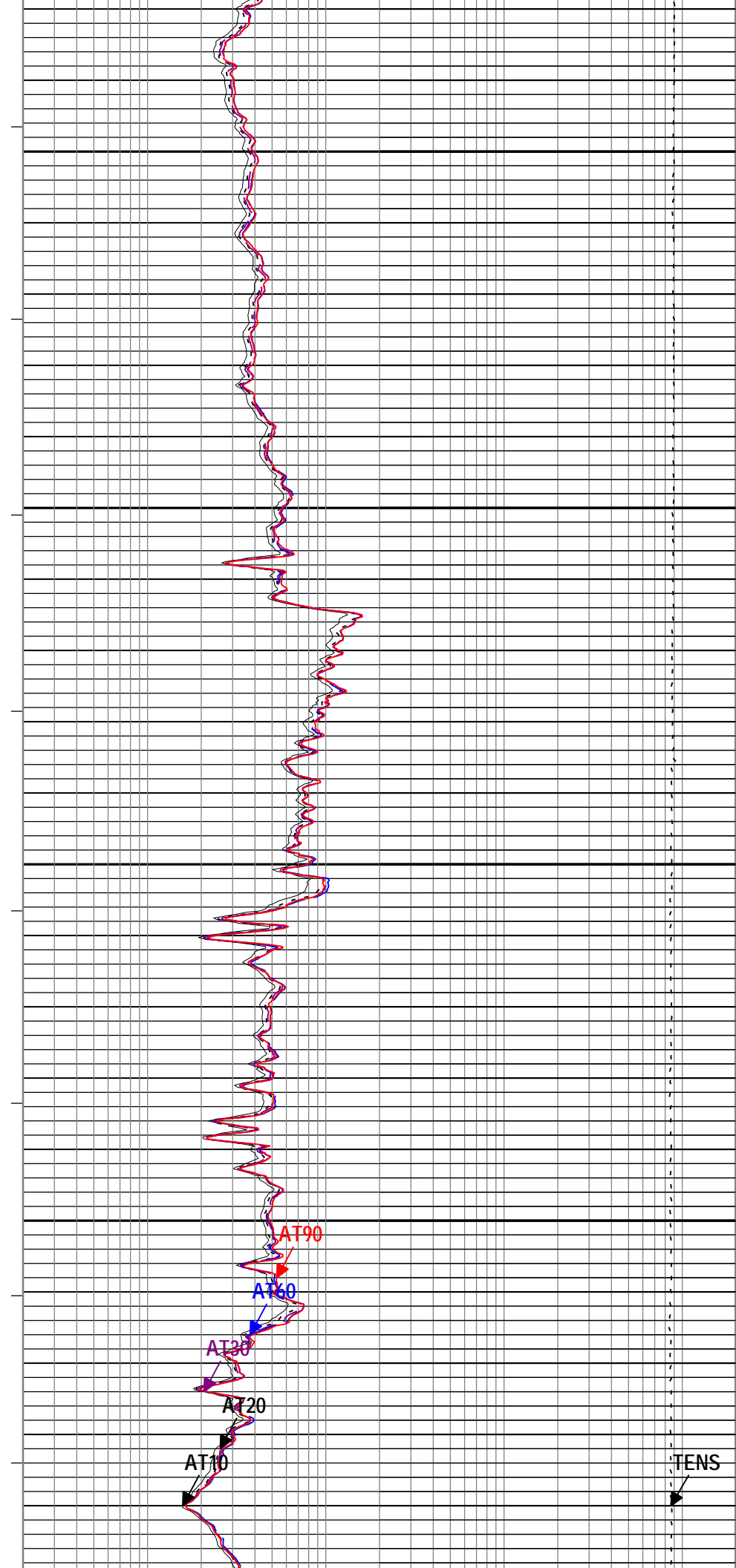
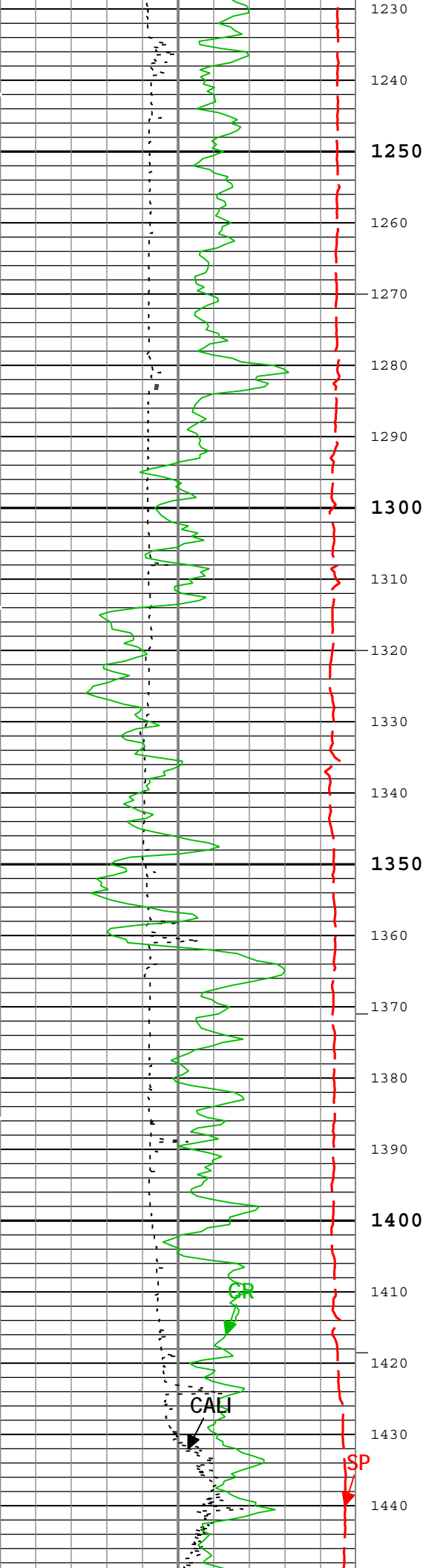
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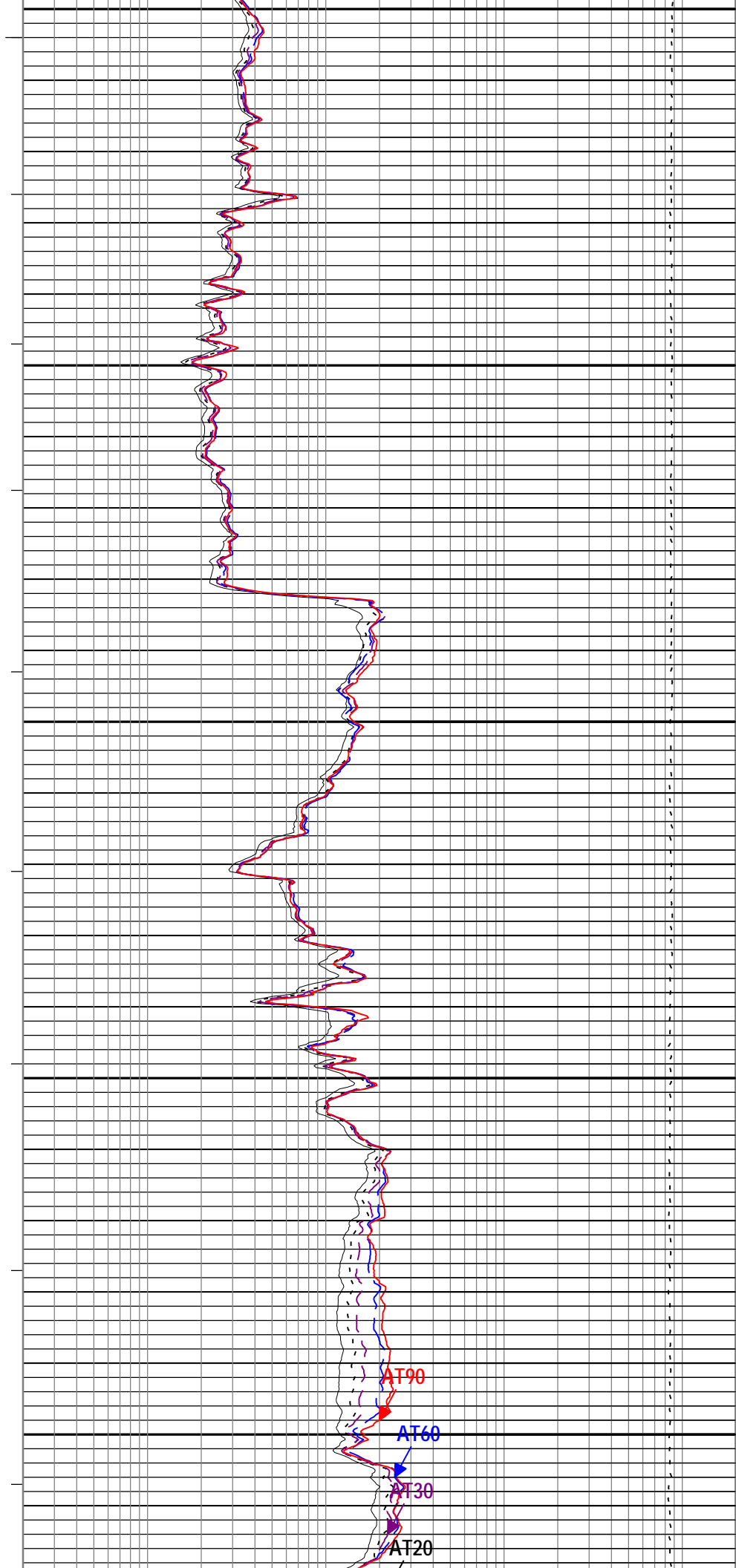
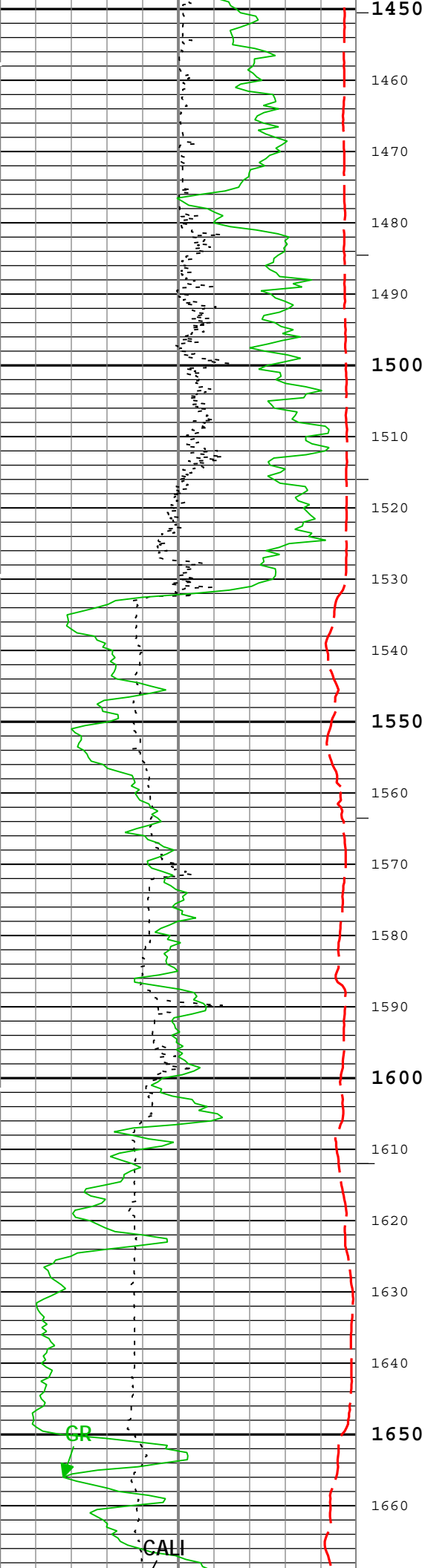


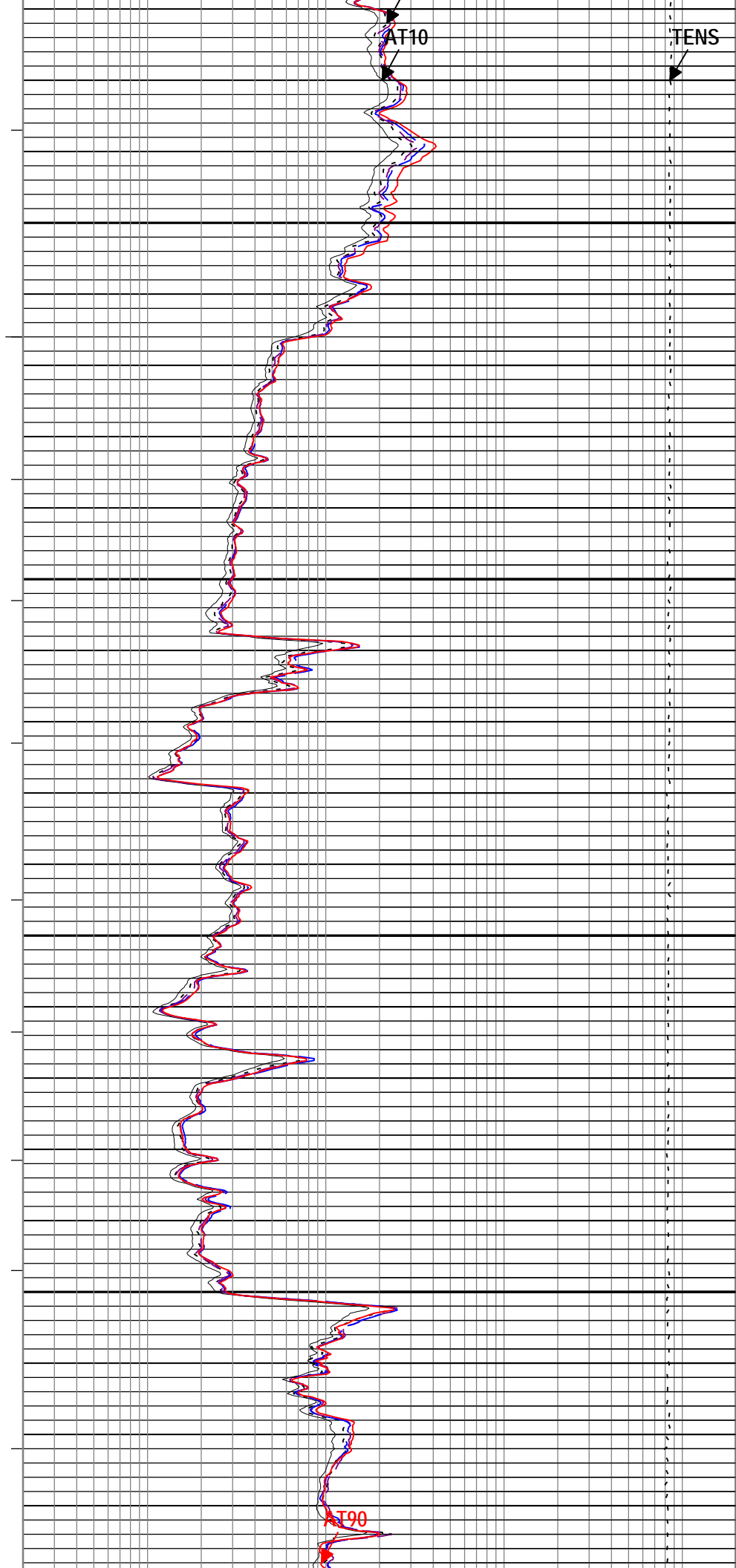
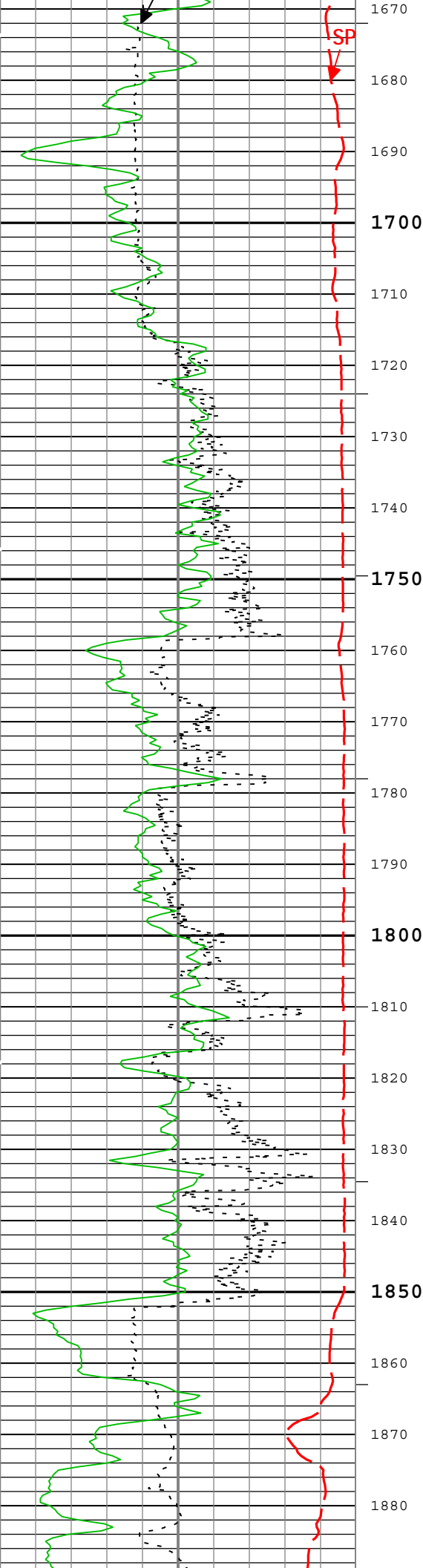




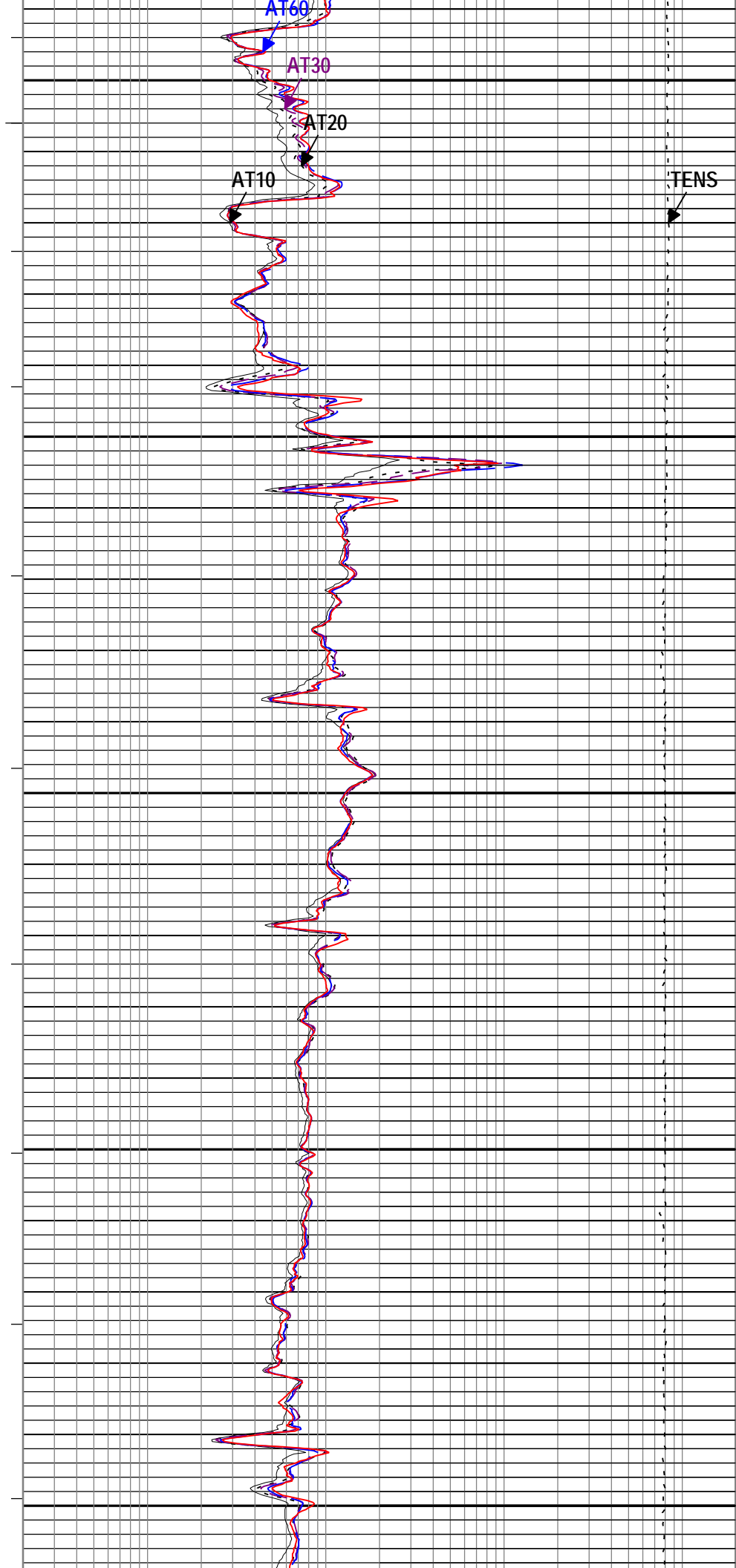
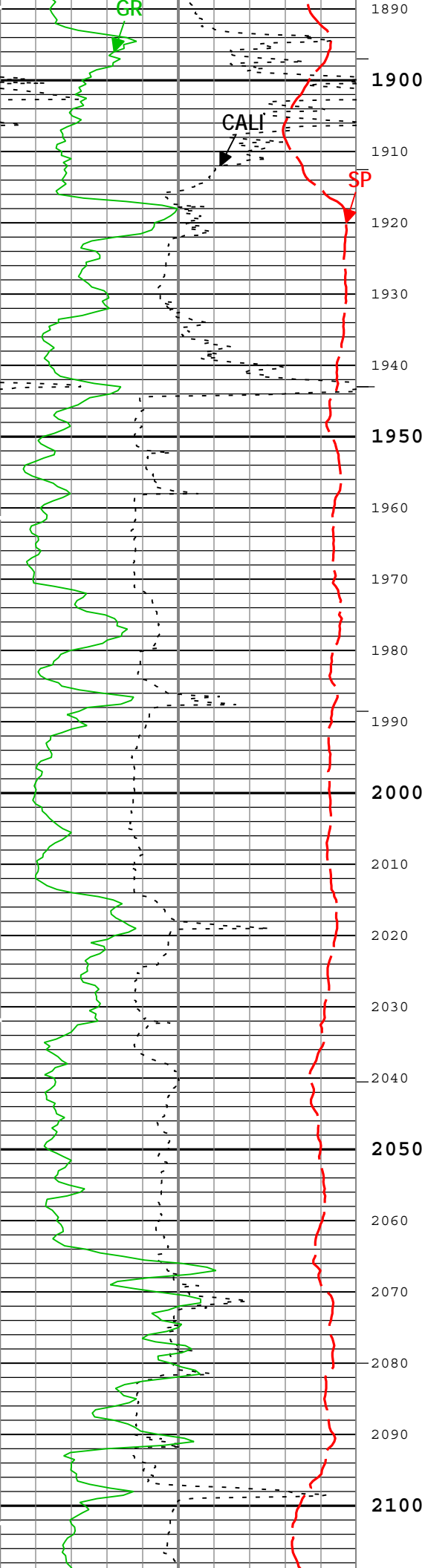


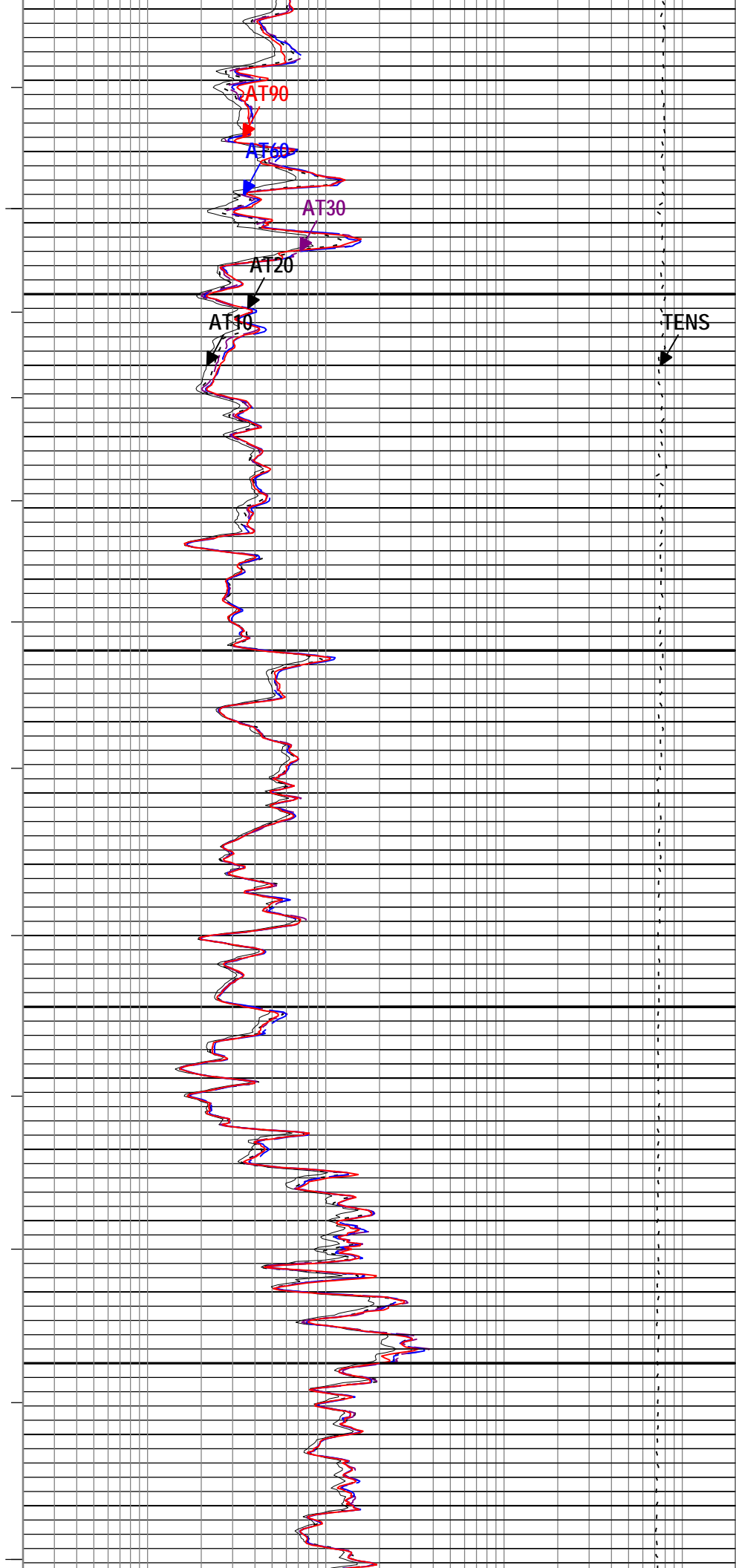
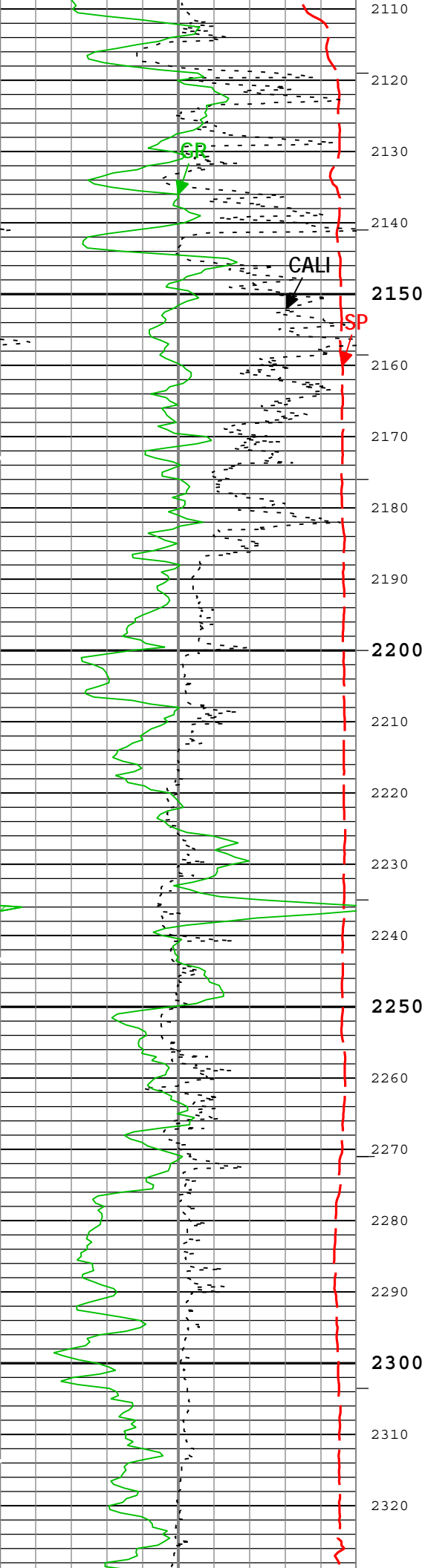


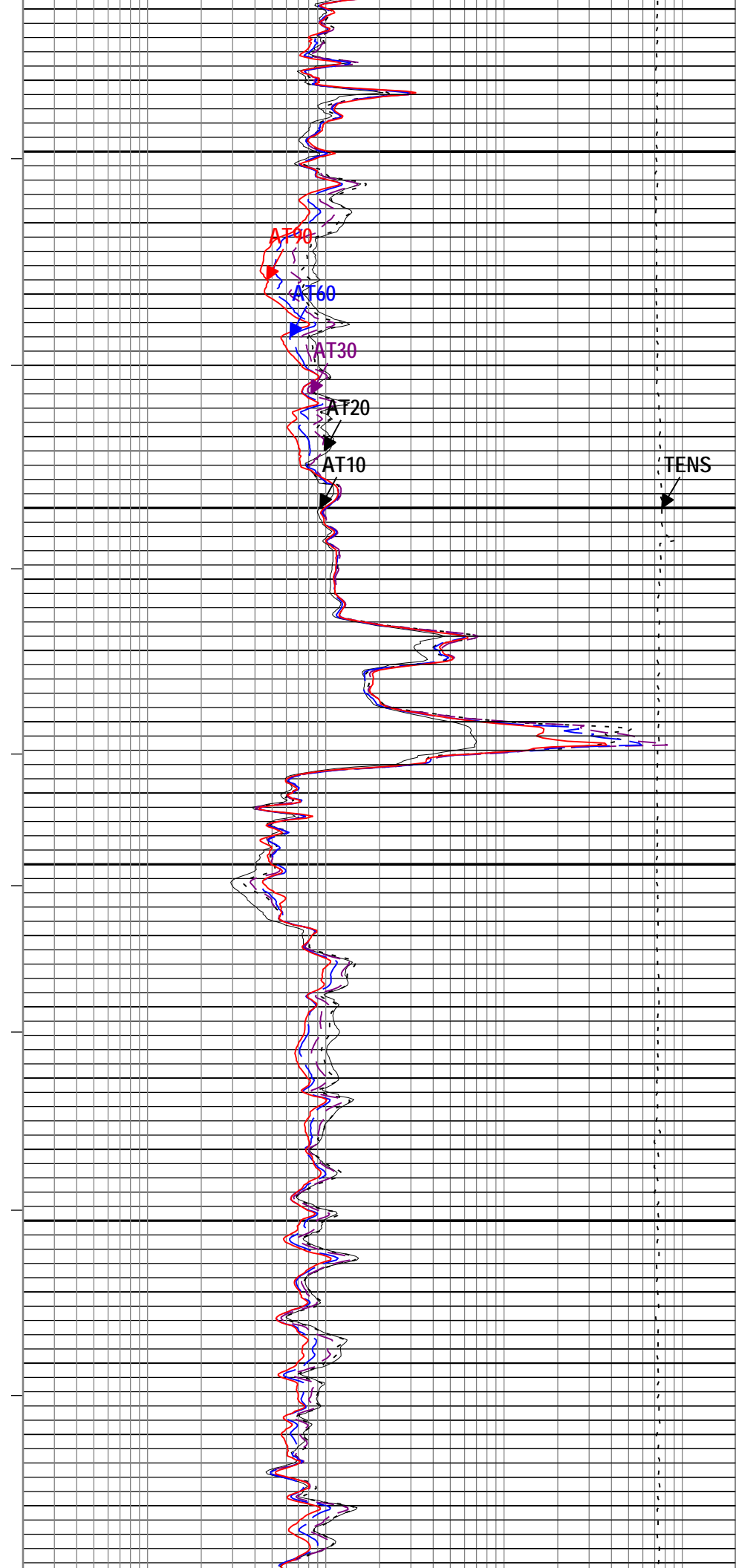
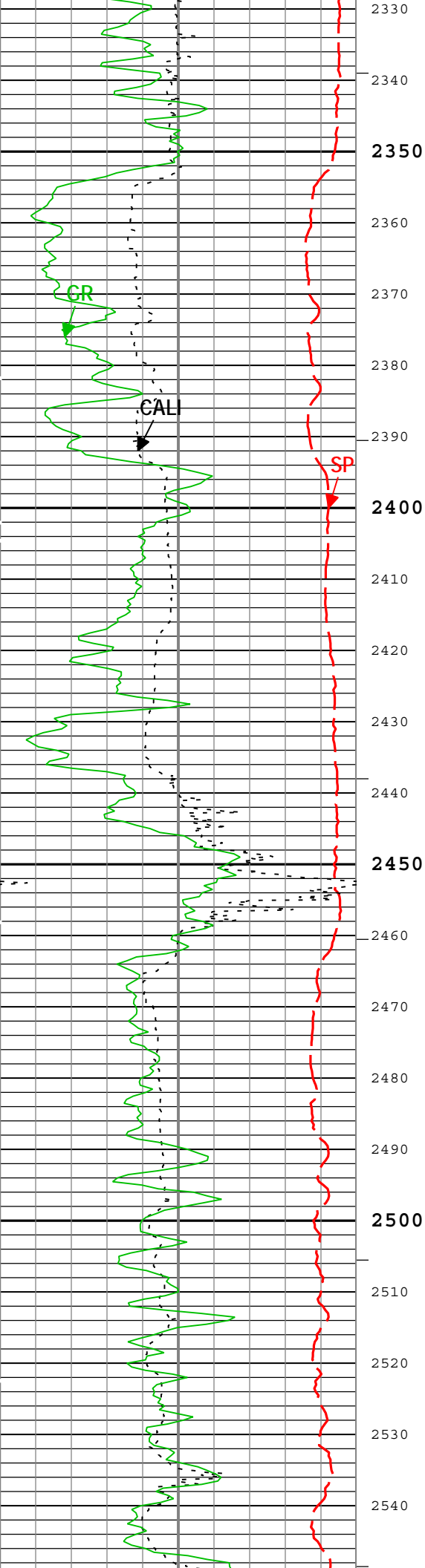


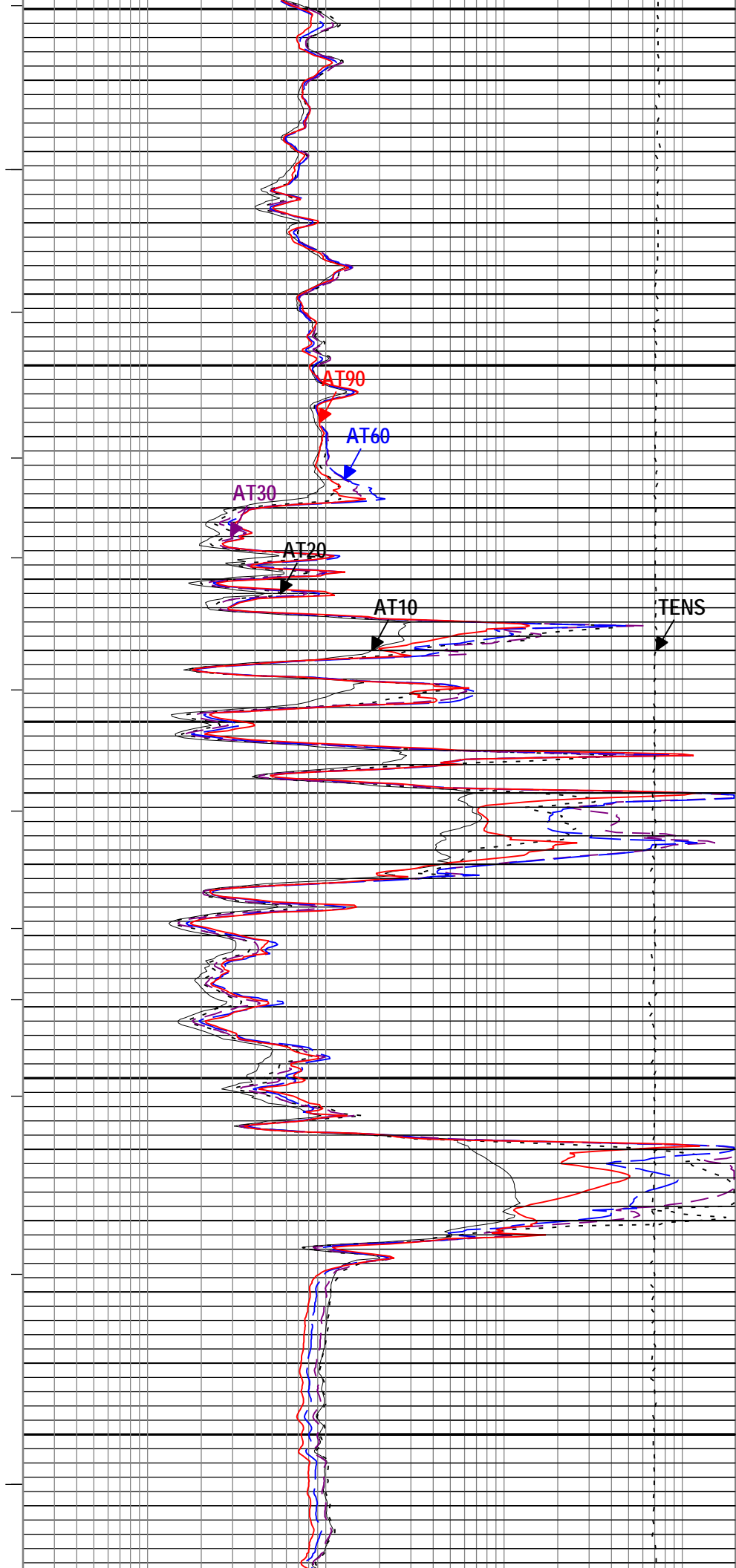
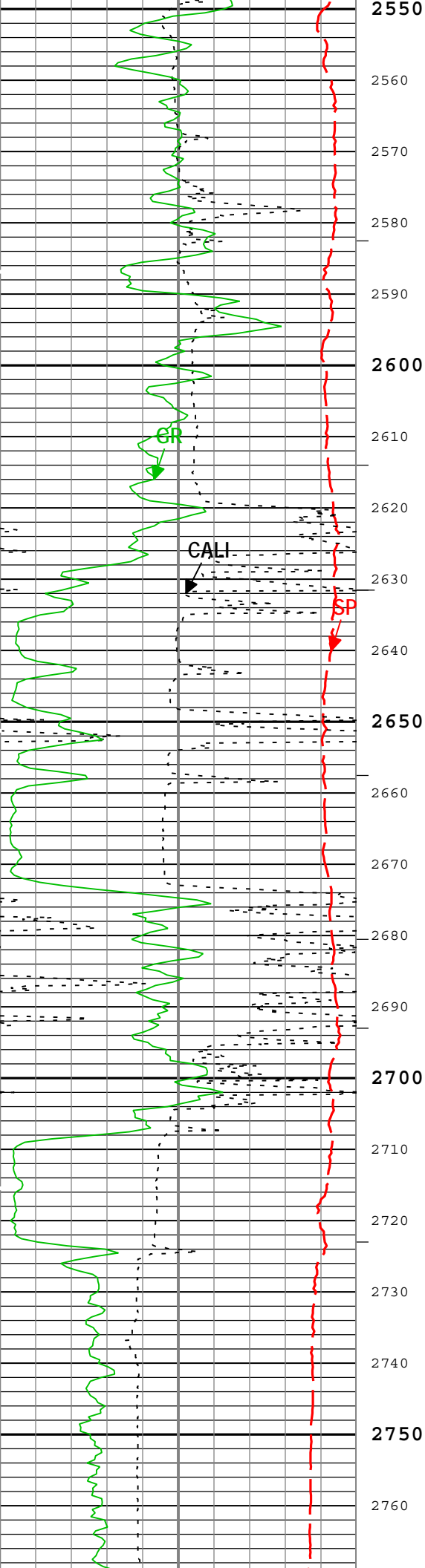


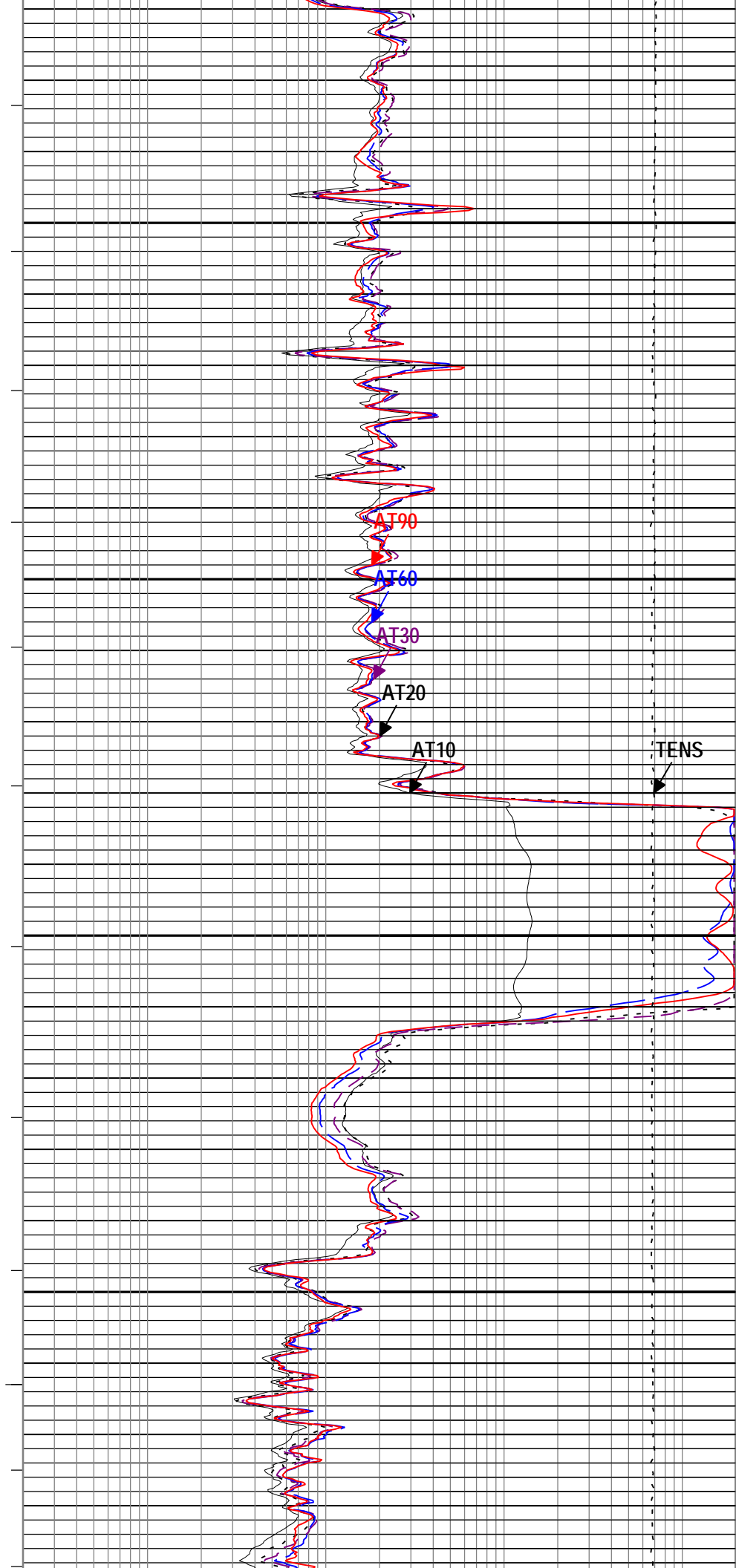
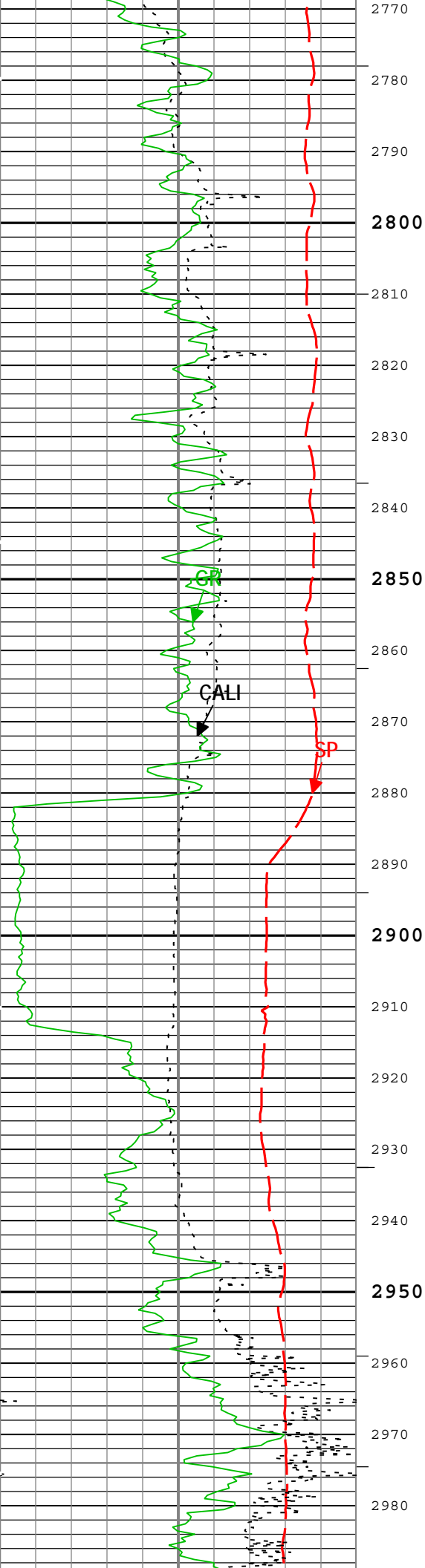


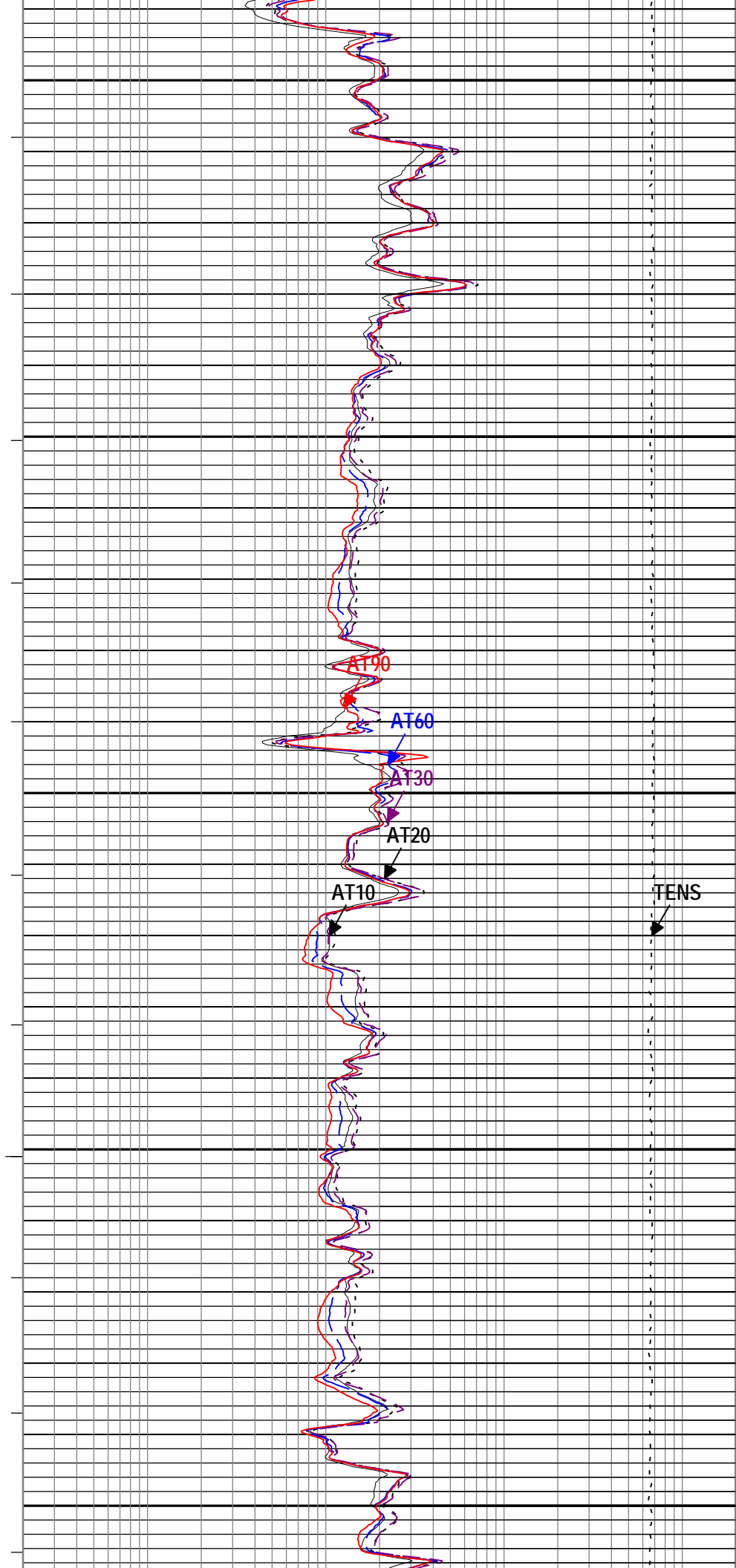
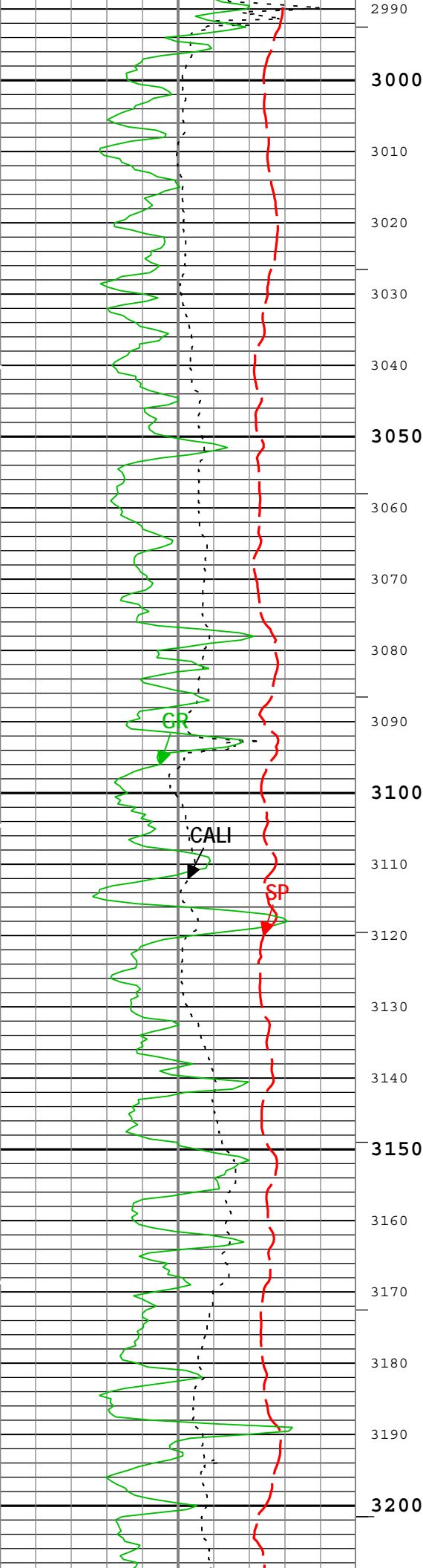


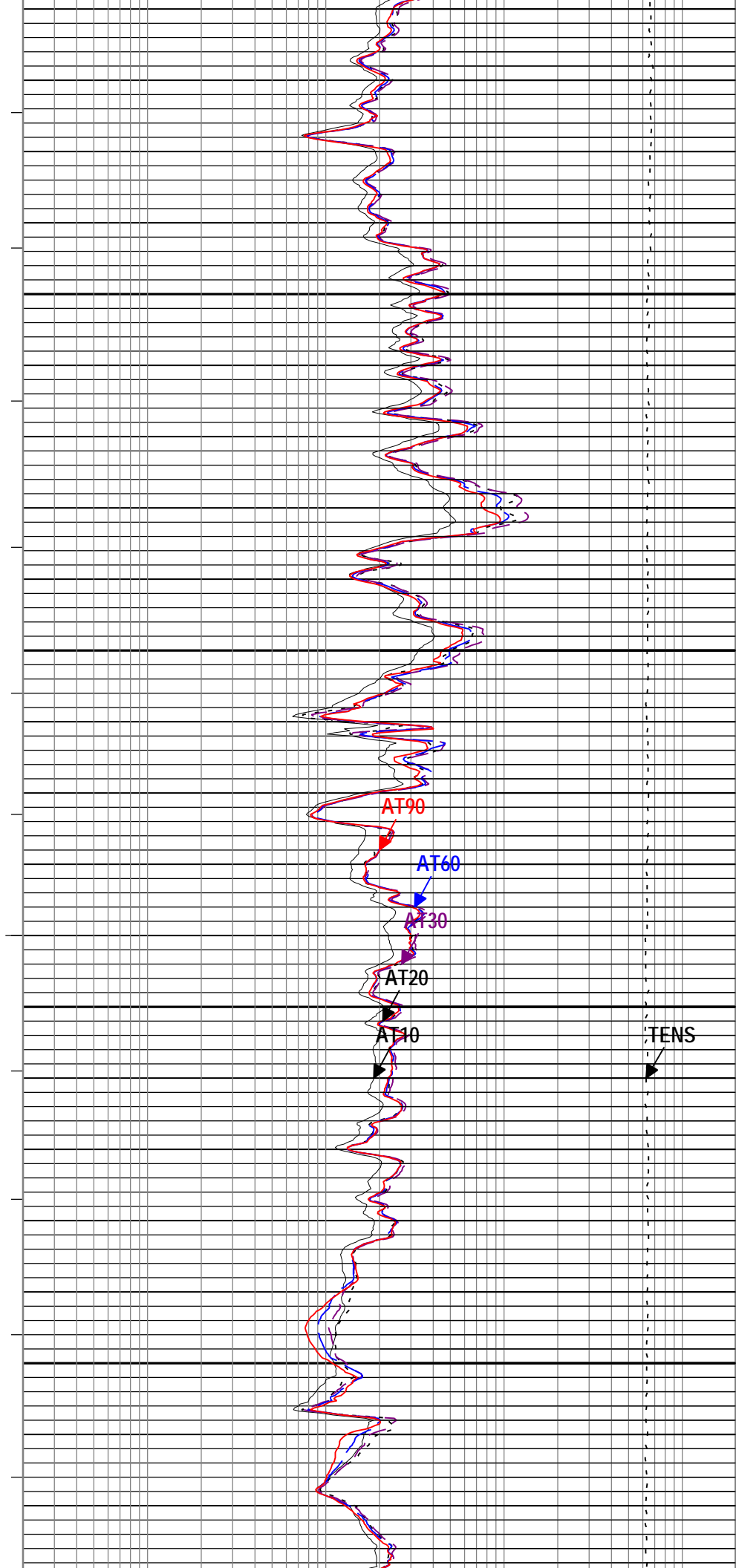
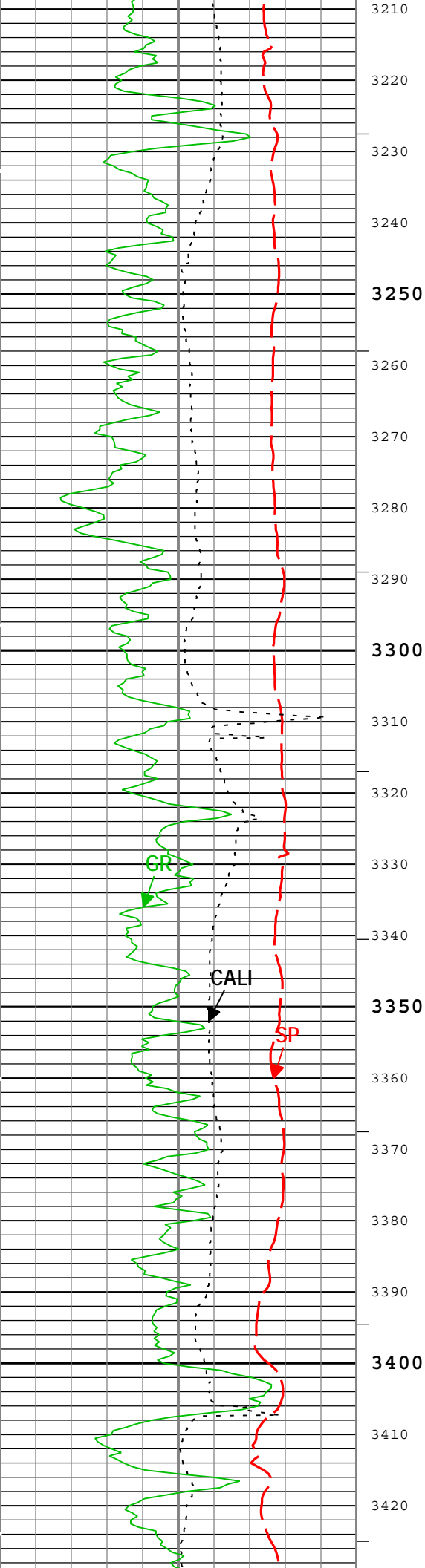


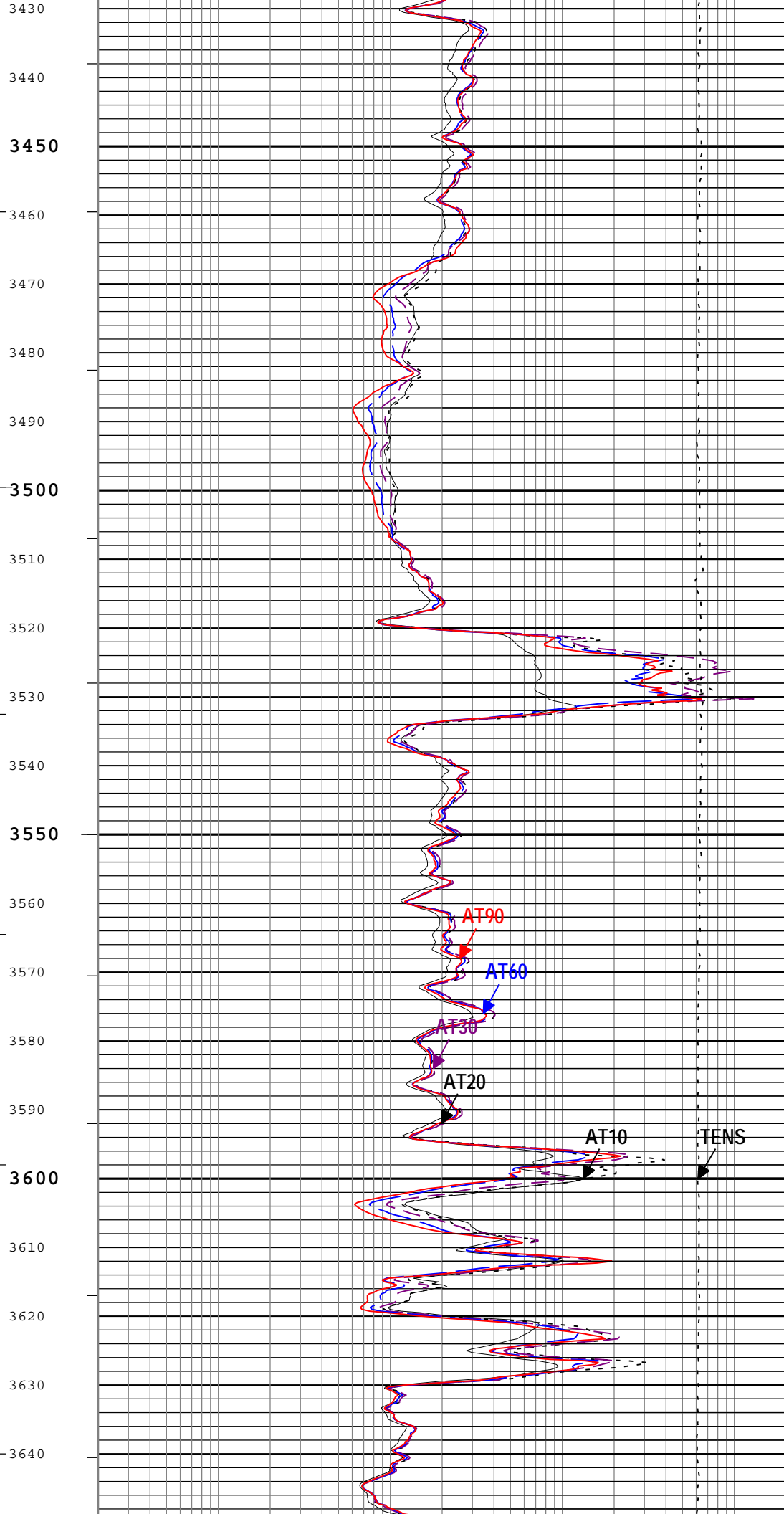
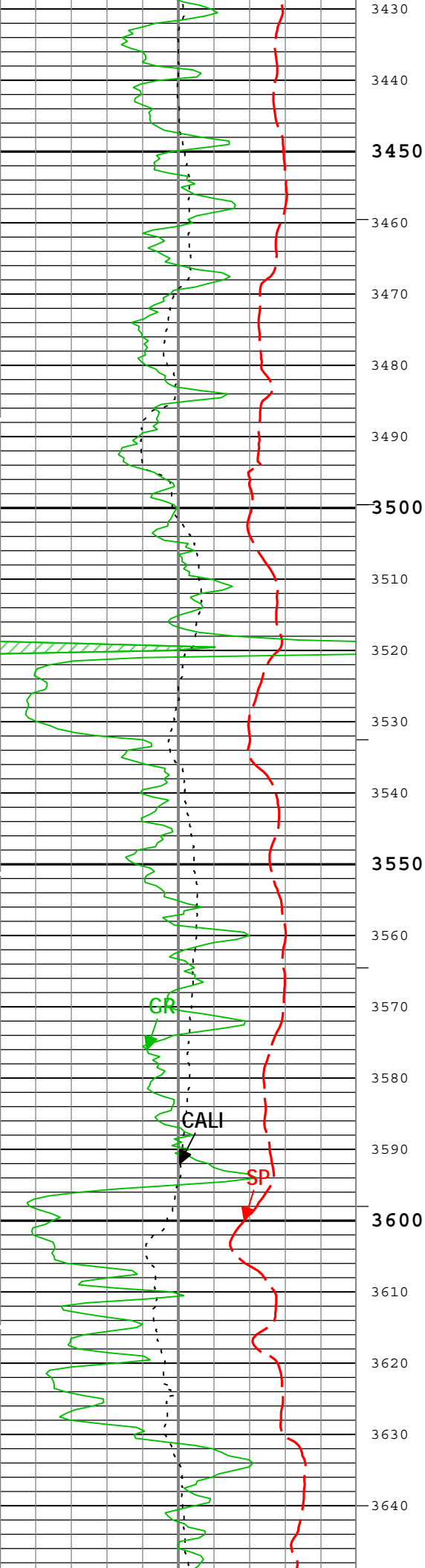




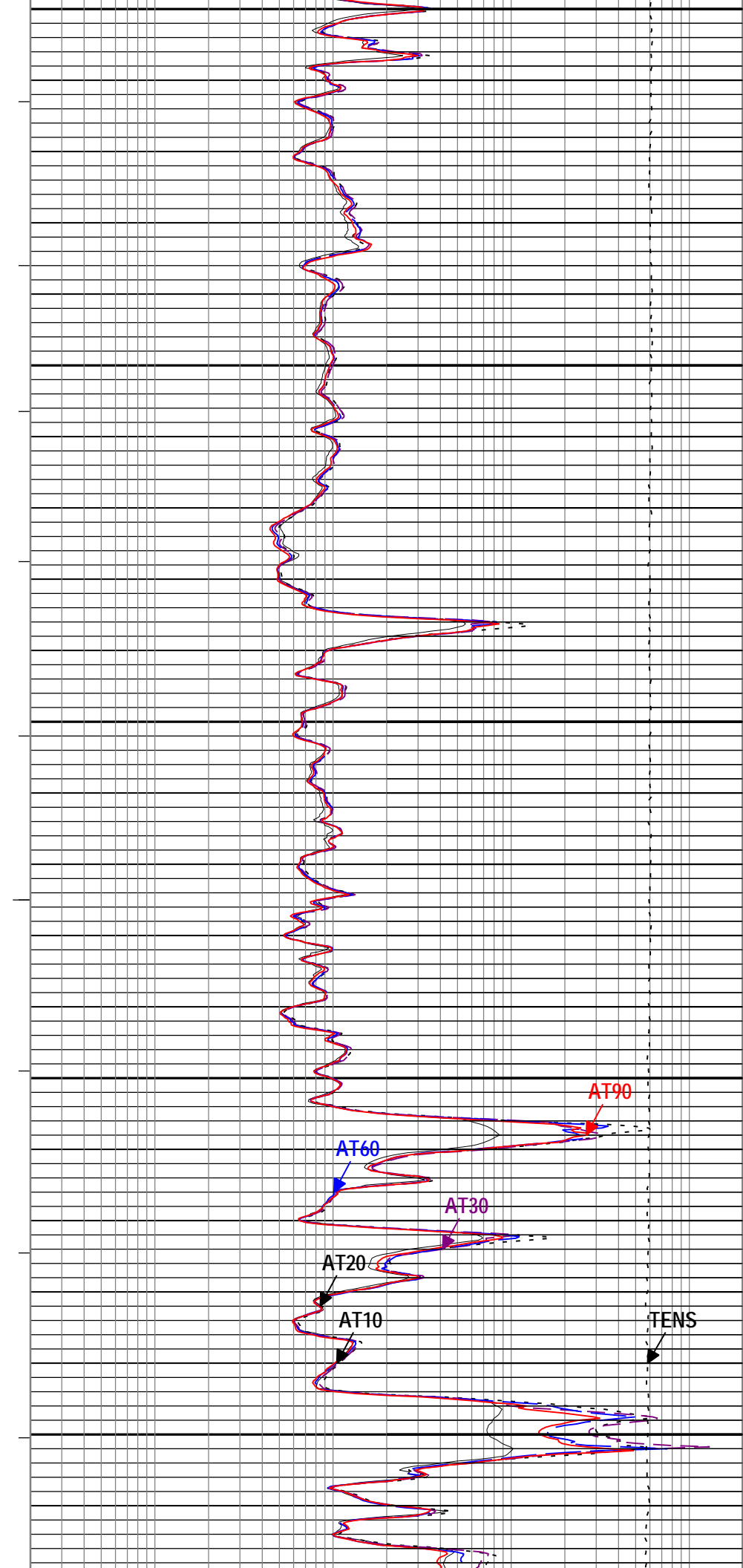
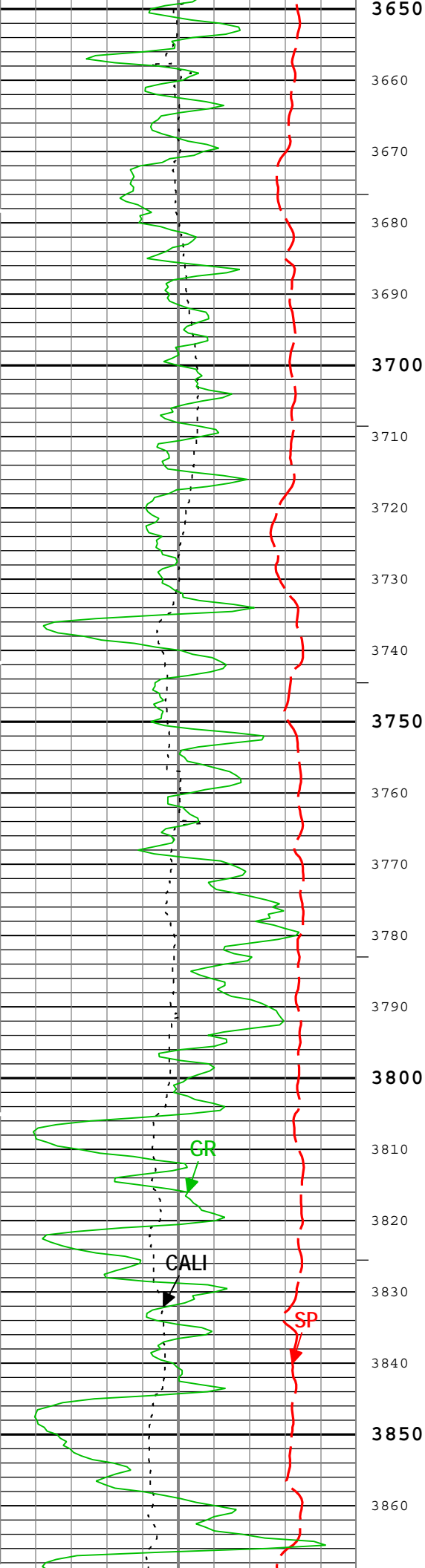


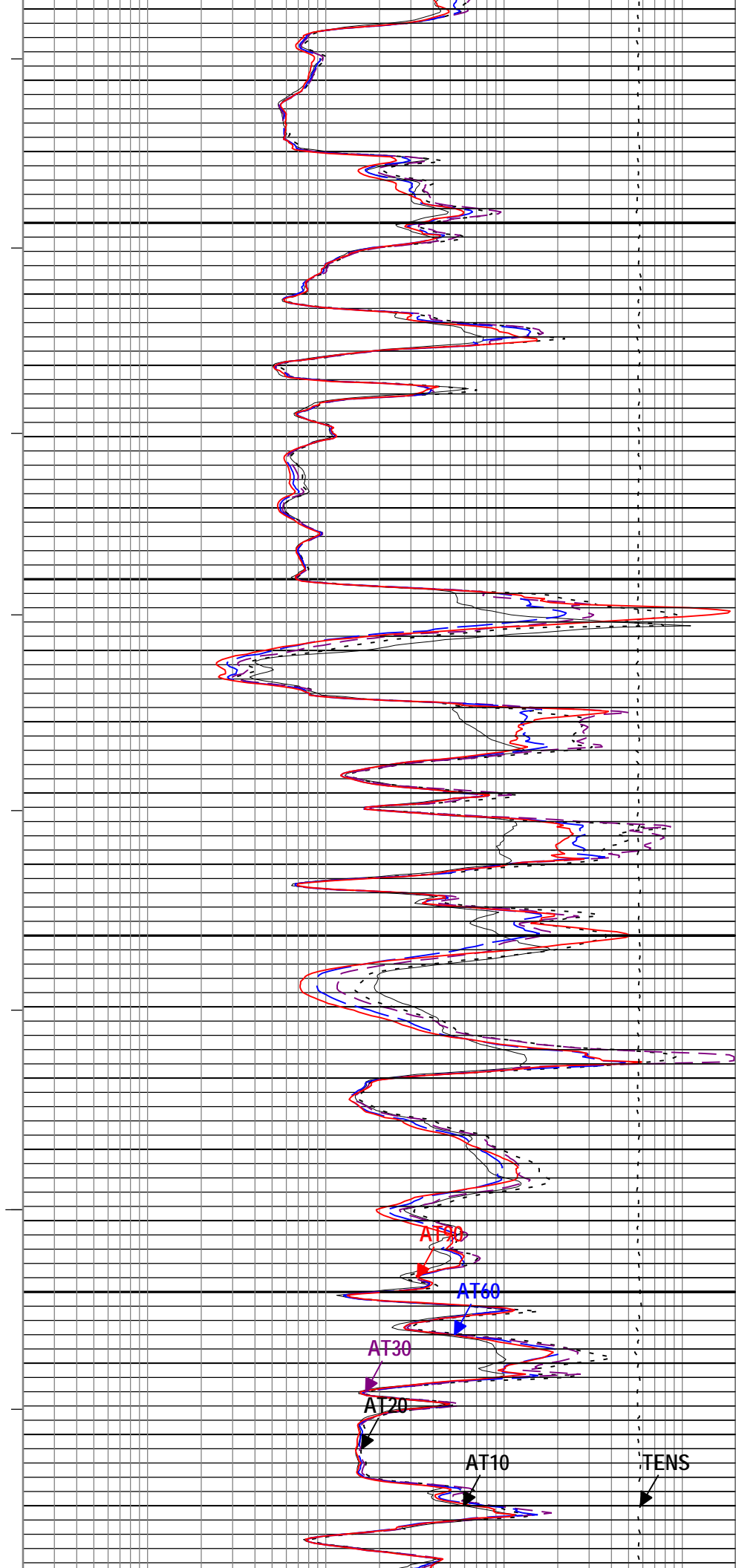
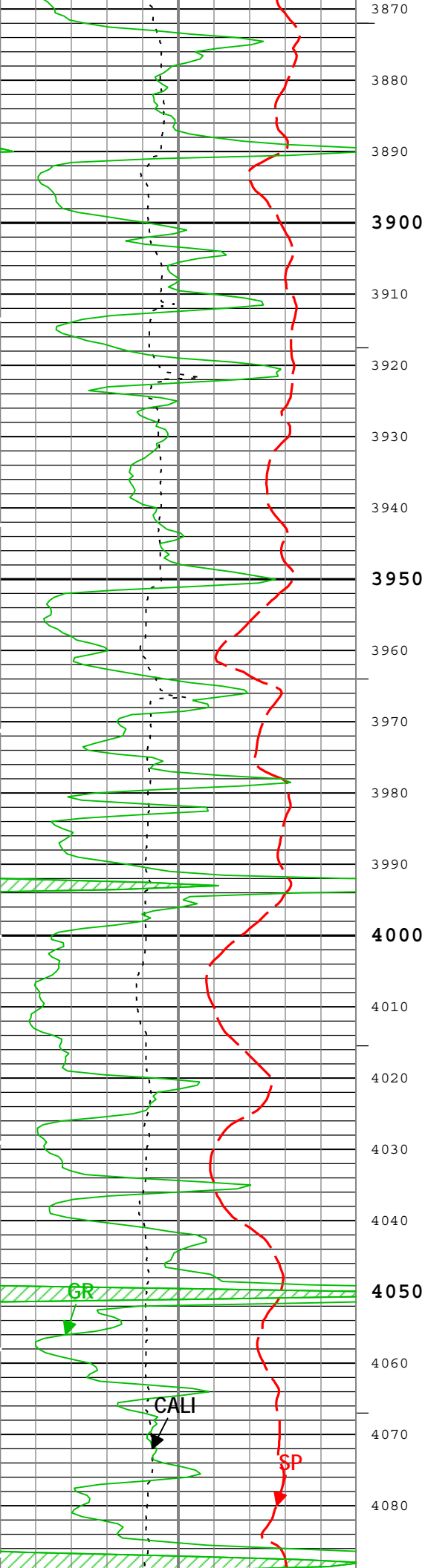


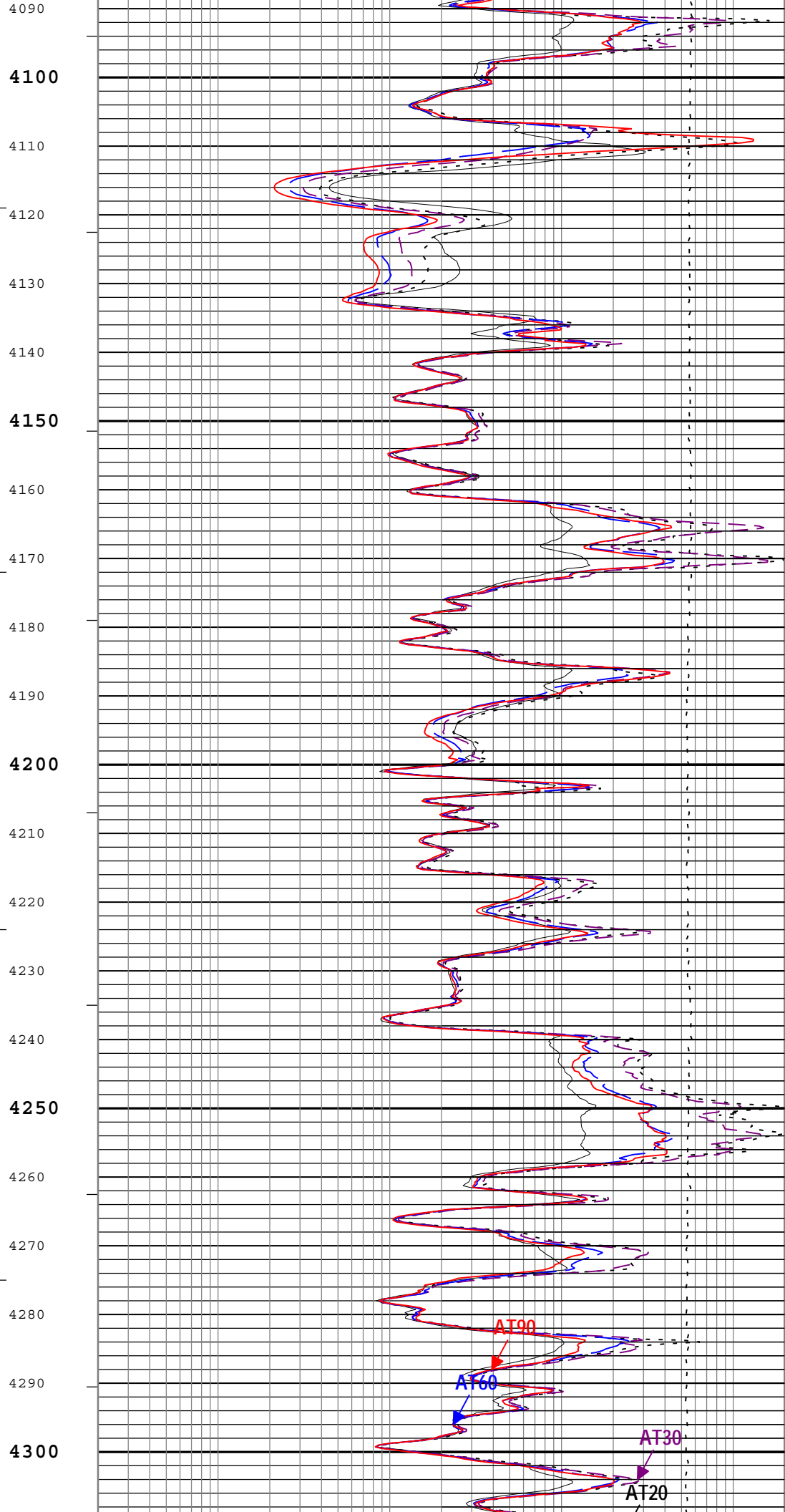
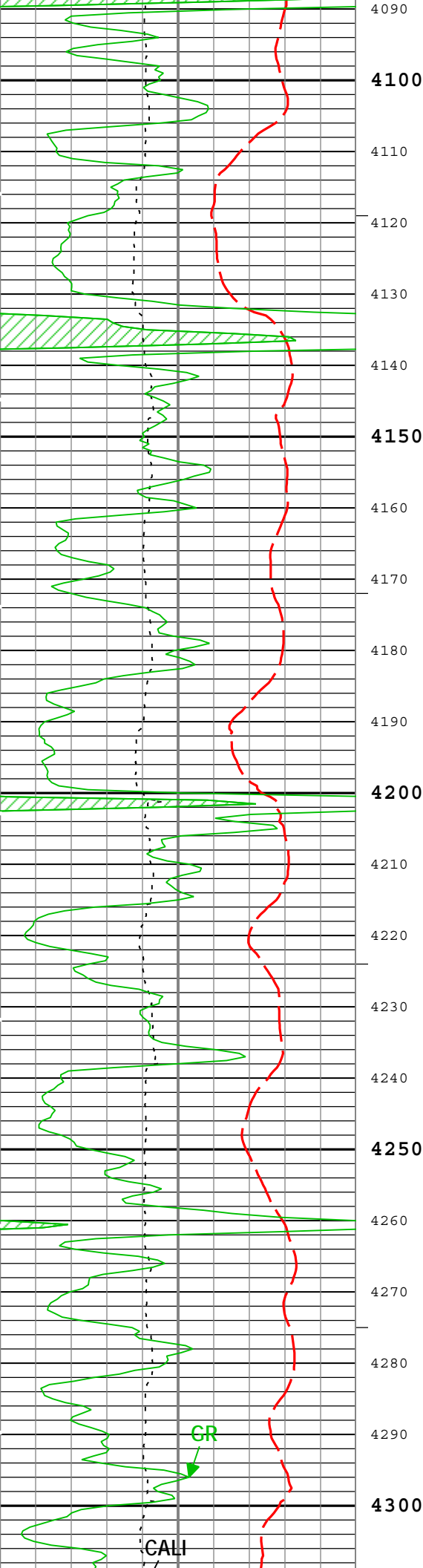


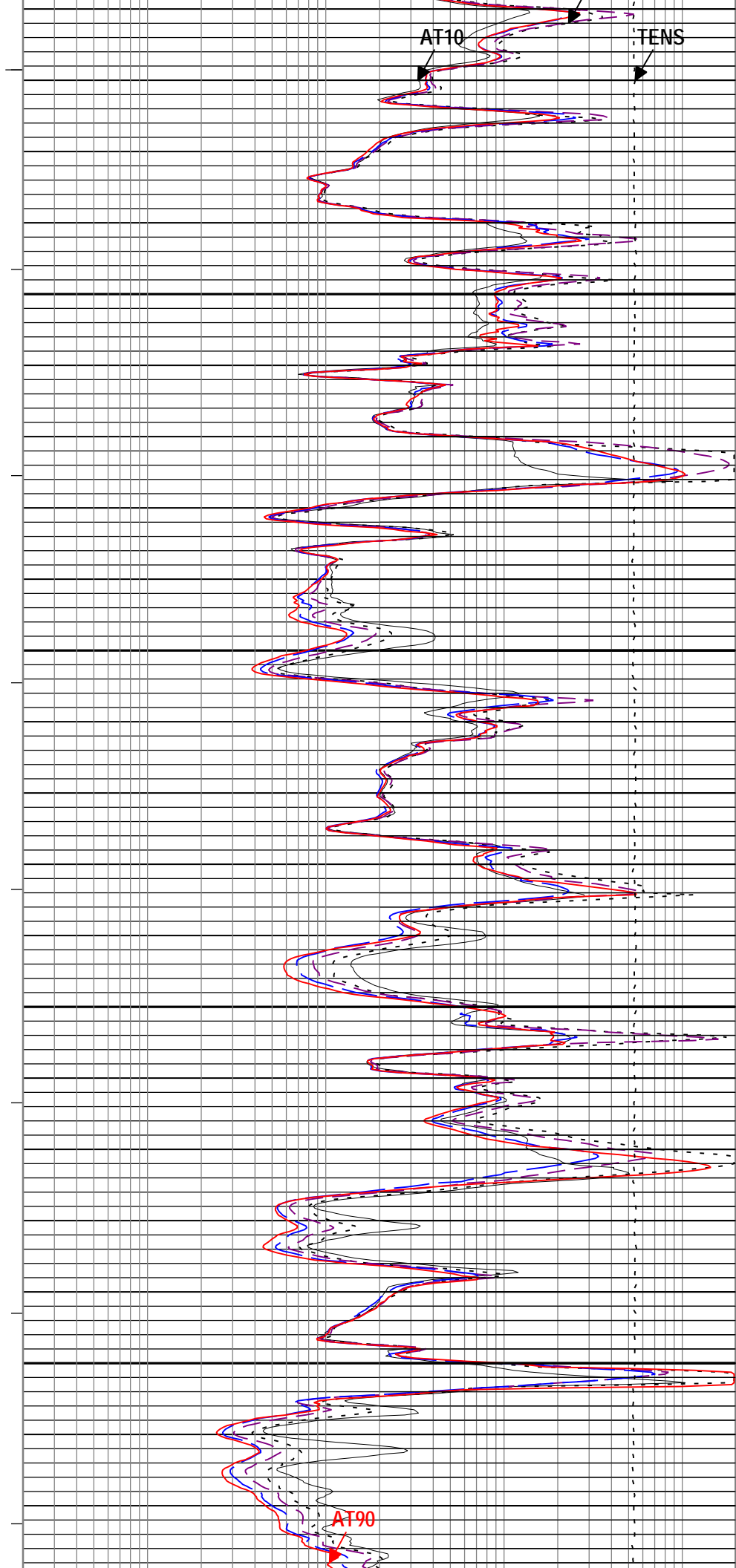
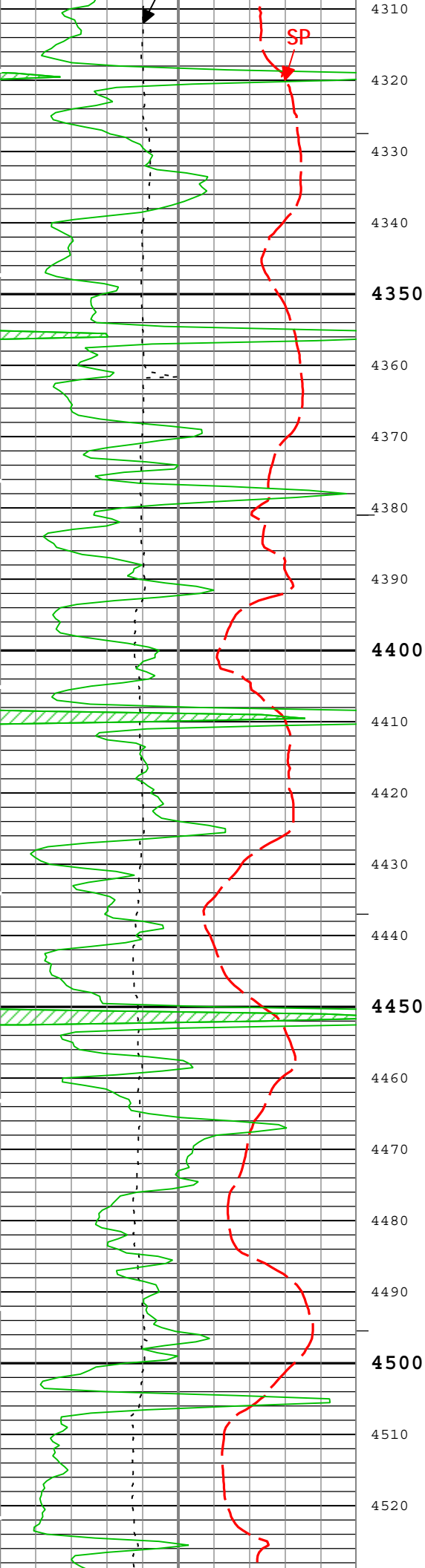


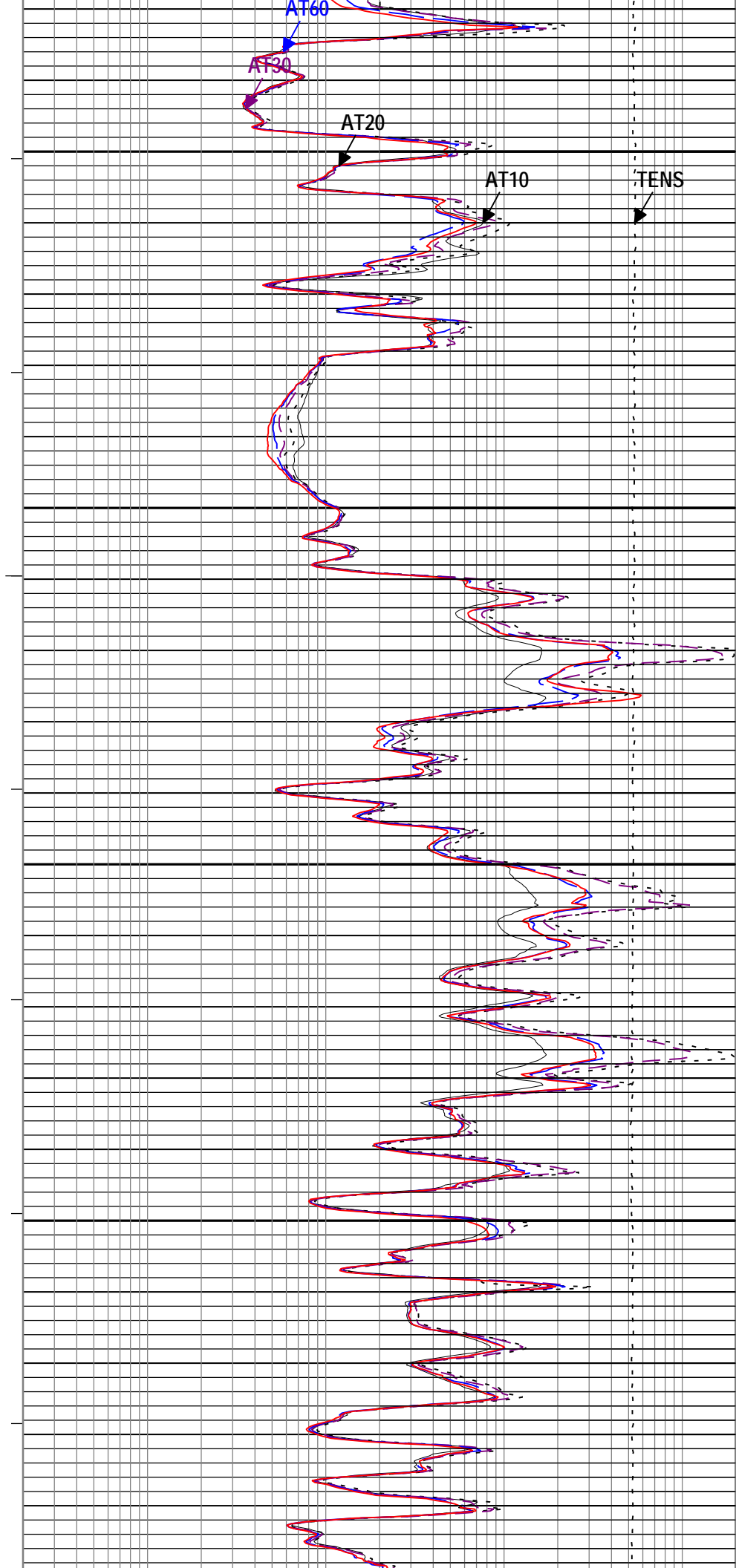
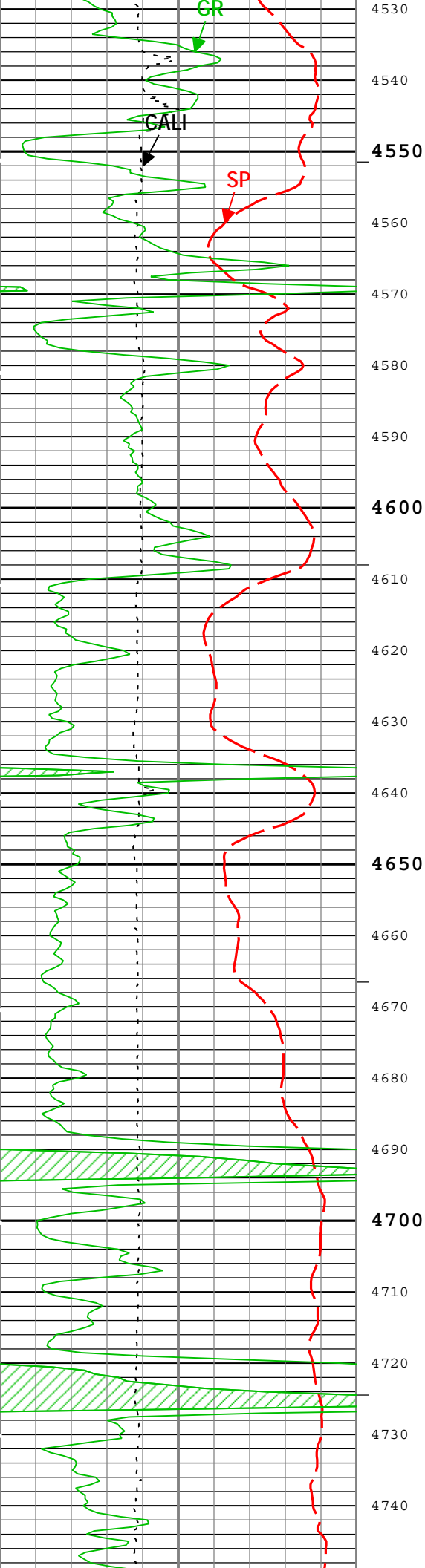


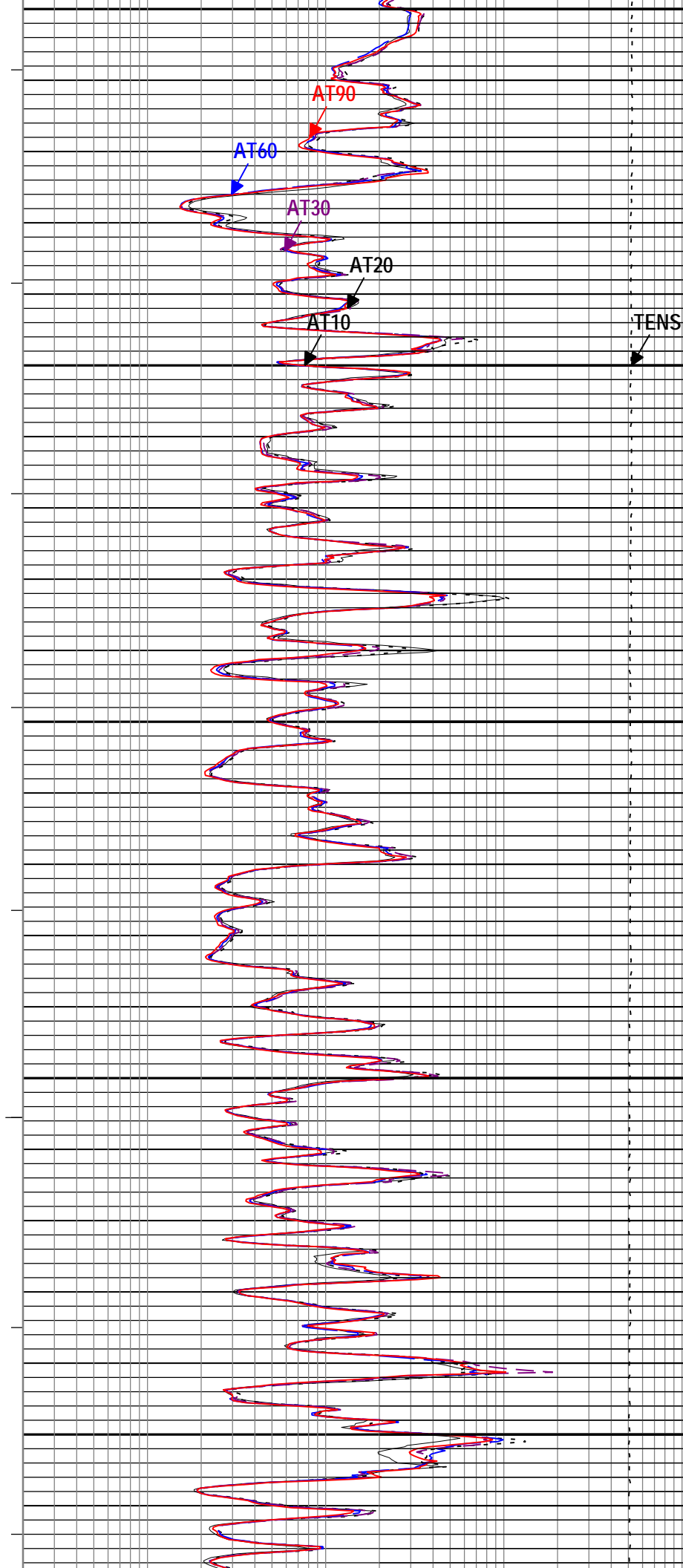
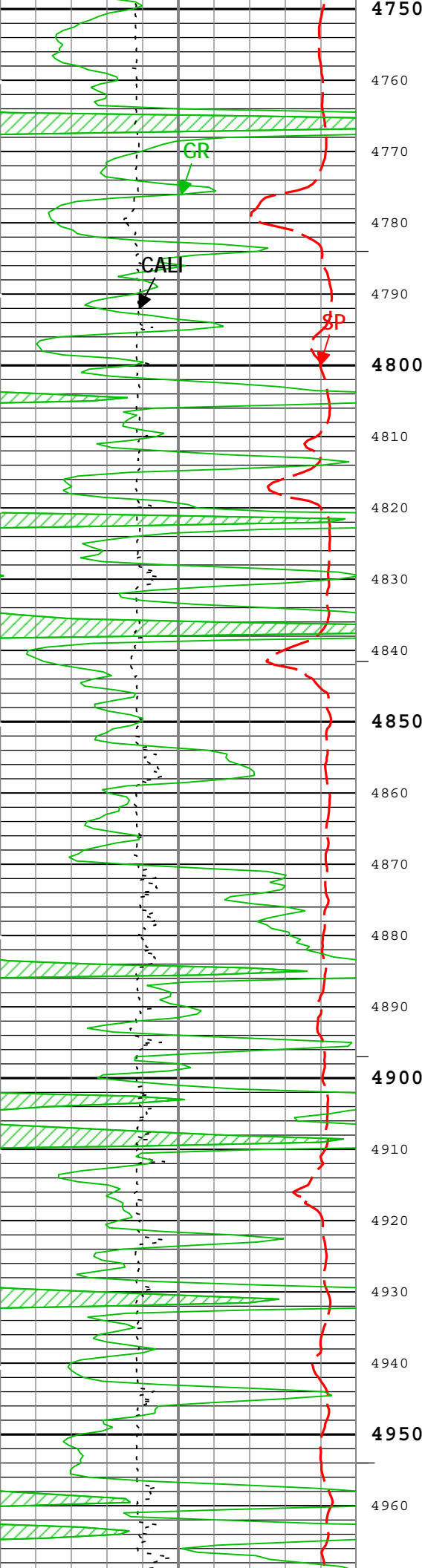


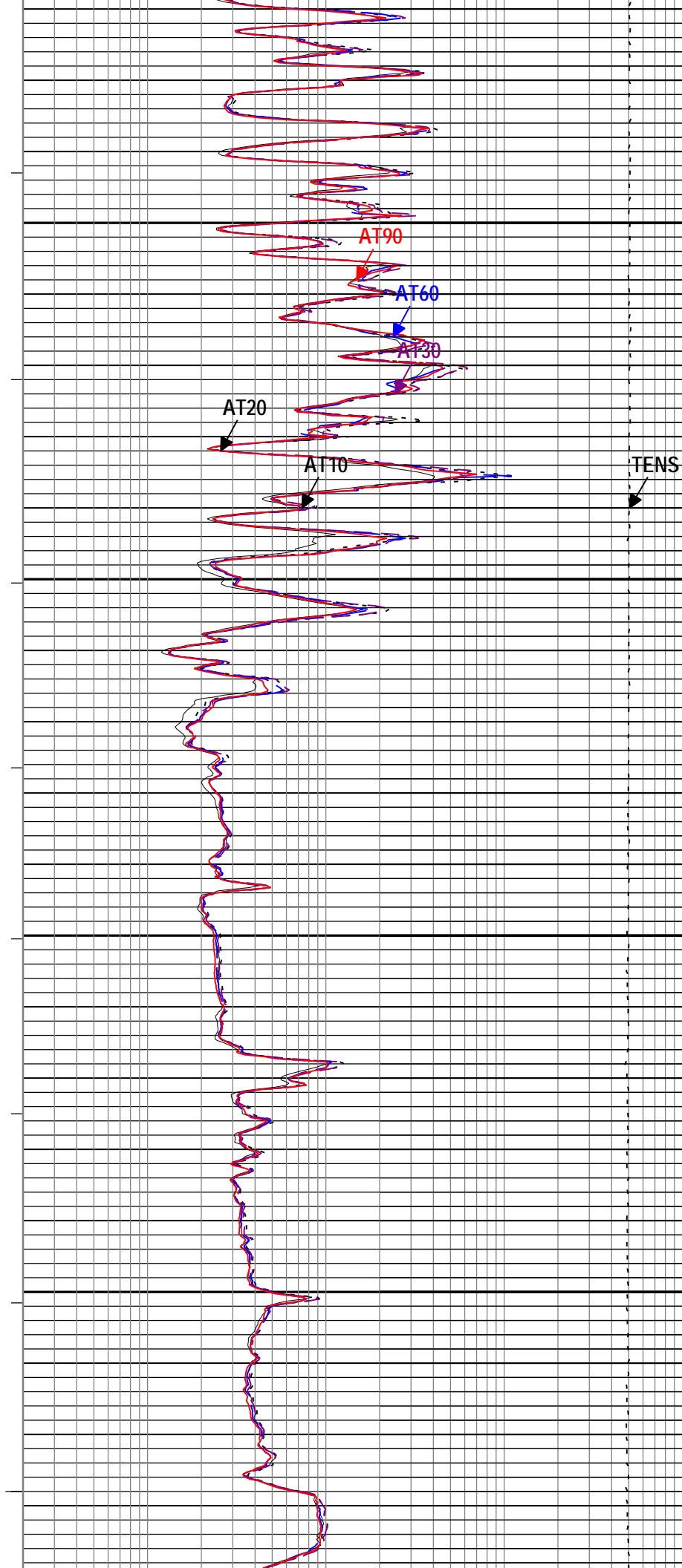
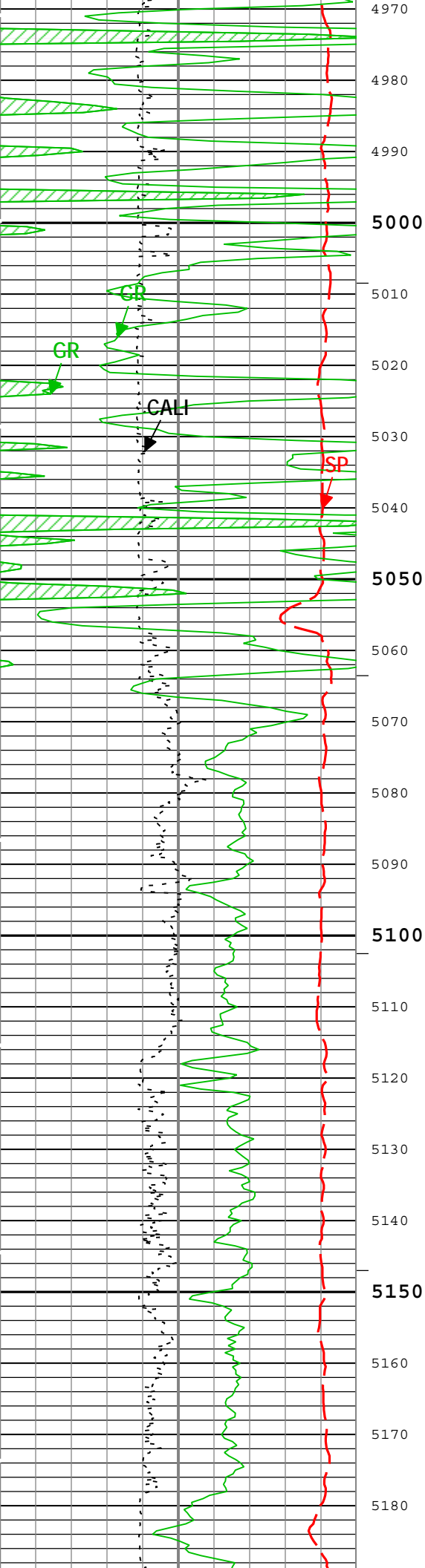


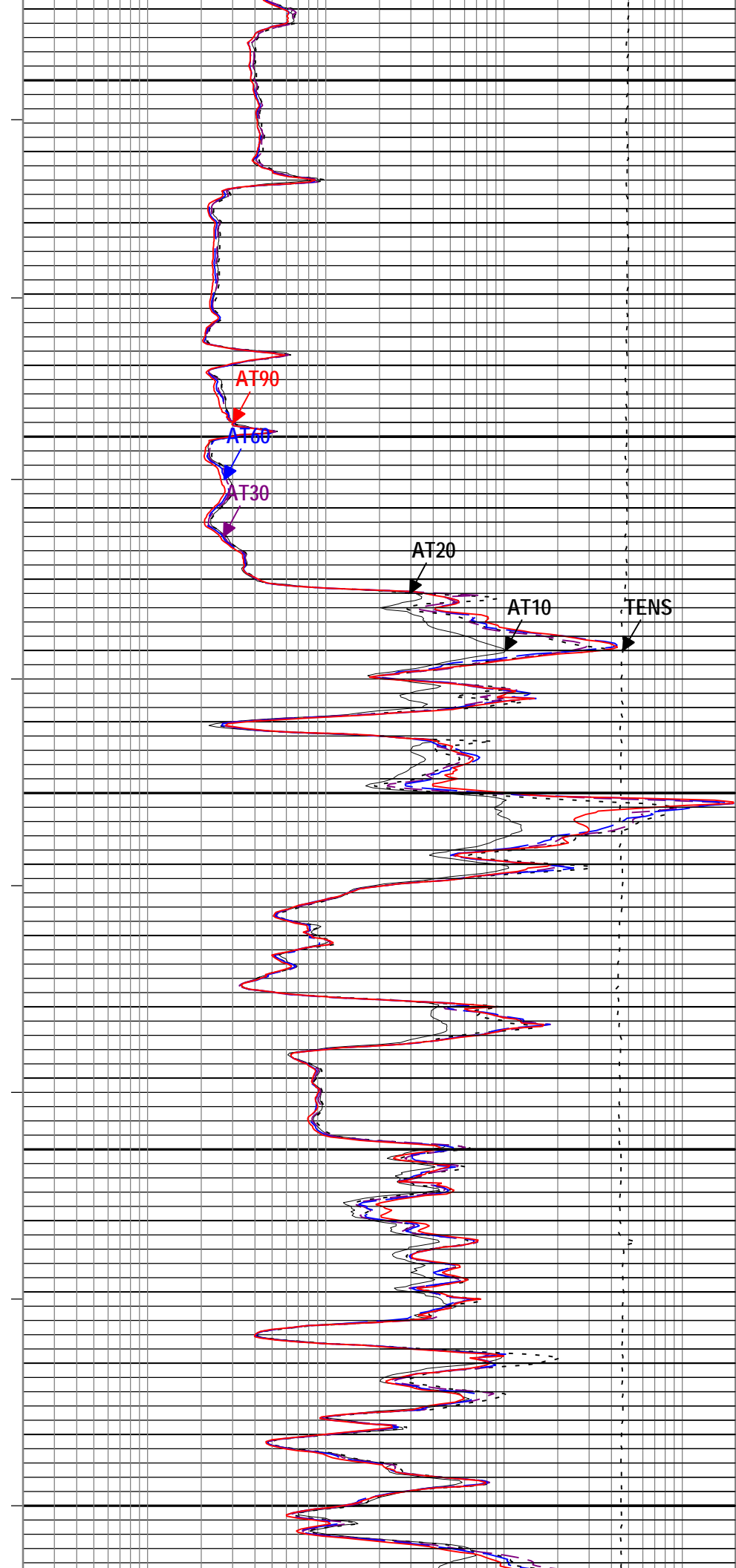
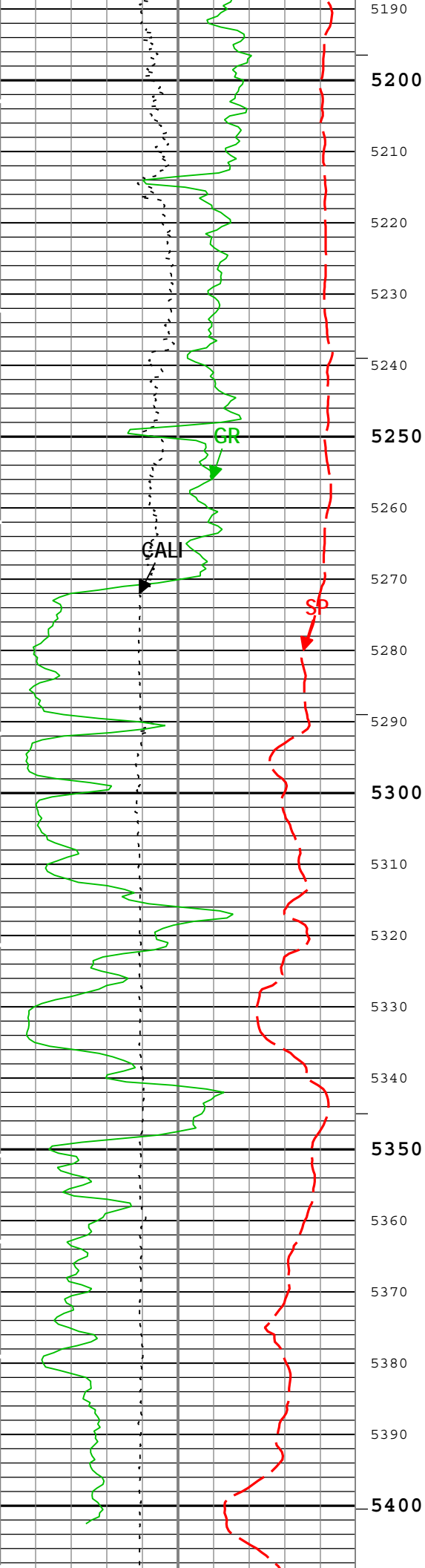




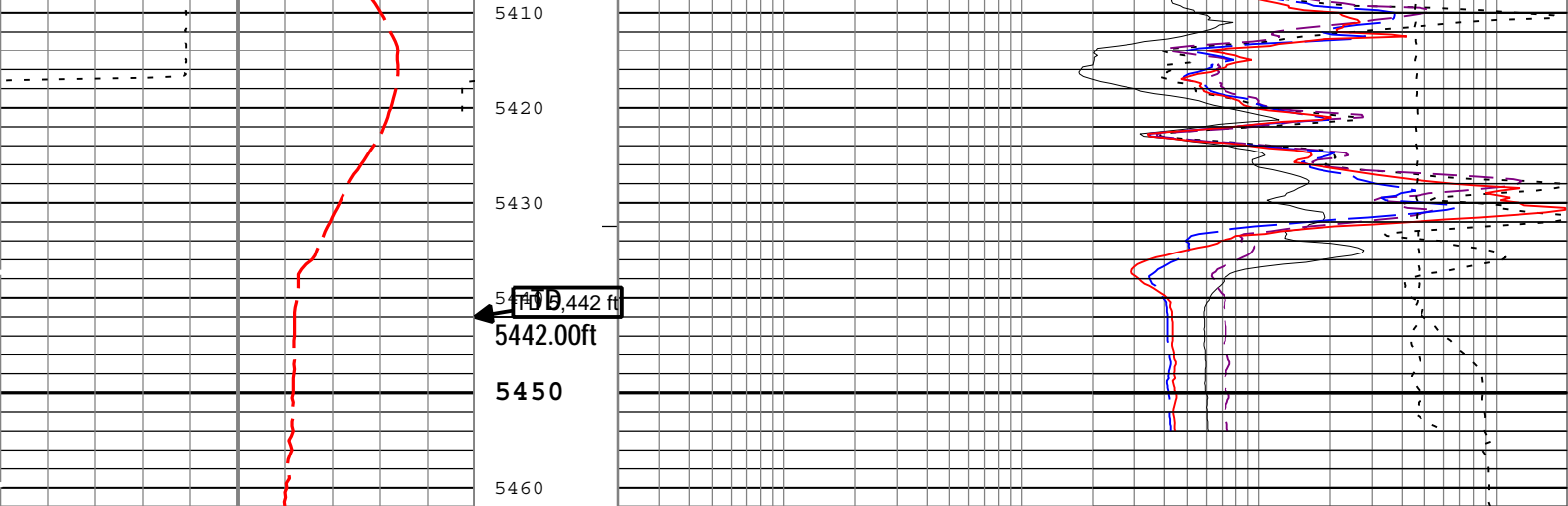












Gamma Ray Backup		
Spontaneous Potential (SP) AIT_SpliceGroup[1]		
-100	mV	200
Caliper (CALI) HDRS[1]		
4	in	14
Gamma Ray (GR) HGNS[1]		
0	gAPI	200

Array Induction Two Foot Resistivity A10 (AT10) AIT_SpliceGroup[1]		
0.2	ohm.m	2000
Array Induction Two Foot Resistivity A20 (AT20) AIT_SpliceGroup[1]		
0.2	ohm.m	2000
Array Induction Two Foot Resistivity A30 (AT30) AIT_SpliceGroup[1]		
0.2	ohm.m	2000
Array Induction Two Foot Resistivity A60 (AT60) AIT_SpliceGroup[1]		
0.2	ohm.m	2000
Array Induction Two Foot Resistivity A90 (AT90) AIT_SpliceGroup[1]		
0.2	ohm.m	2000
Cable Tension (TENS)		
10000	lbf	0

- ICV - Integrated Cement Volume every 100.00 (ft3)
- ICV - Integrated Cement Volume every 10.00 (ft3)
- IHV - Integrated Hole Volume every 100.00 (ft3)
- TIME\_1900 - Time Marked every 60.00 (s)
- IHV - Integrated Hole Volume every 10.00 (ft3)

Description: AIT Basic Log Two Format: Log ( EMD 5in Induction ) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 19-Nov-2012 23:42:35

Channel Processing Parameters				
Run-1: 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	0.625	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	Depth Zoned	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-B	0.109	in
CBLO	Casing Bottom (Logger)	WLSESSION	431	ft
CDEN	Cement Density	HGNS-B	2	g/cm3
CSODDRL	Casing Outer Diameter - Zoned along driller depths	WLSESSION	8.625	in
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-B	Yes	
SPDR	SP Drift Per Foot	AIT-H	0	mV/ft

Run-1Depth Zoned Parameters				
Parameter	Value	Start ( ft )	Stop ( ft )	
BS	0	400	434	
BS	7.875	434	5462	
All depth are actual.				

Tool Control Parameters				
Run-1: Parameters				
Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h

Calibration Report				
AIT-H (Array Induction Tool - H) Calibration - Run Run-1				
Primary Equipment :				
Array Induction Sonde - H	AHIS	398		
Auxiliary Equipment :				
AITH Rm/SP Bottom Nose	AHRM	398		

AIT Sonde Calibration - Test Loop Gain							
Master (EEPROM): 10:54:27 13-Sep-2012							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Test Loop Gain - 0		Master	1.000	0.950	1.018	1.050	
Test Loop Phase - 0	deg	Master	0	-3.000	0.588	3.000	
Test Loop Gain - 1		Master	1.000	0.950	1.019	1.050	
Test Loop Phase - 1	deg	Master	0	-3.000	0.646	3.000	
Test Loop Gain - 2		Master	1.000	0.950	1.020	1.050	
Test Loop Phase - 2	deg	Master	0	-3.000	-0.013	3.000	
Test Loop Gain - 3		Master	1.000	0.950	1.018	1.050	
Test Loop Phase - 3	deg	Master	0	-3.000	0.040	3.000	
Test Loop Gain - 4		Master	1.000	0.950	0.999	1.050	
Test Loop Phase - 4	deg	Master	0	-3.000	-0.034	3.000	
Test Loop Gain - 5		Master	1.000	0.950	0.992	1.050	
Test Loop Phase - 5	deg	Master	0	-3.000	-0.222	3.000	
Test Loop Gain - 6		Master	1.000	0.950	1.000	1.050	
Test Loop Phase - 6	deg	Master	0	-3.000	0.151	3.000	
Test Loop Gain - 7		Master	1.000	0.950	1.015	1.050	
Test Loop Phase - 7	deg	Master	0	-3.000	-0.171	3.000	

AIT Sonde Calibration - Sonde Error Correction							
Master (EEPROM): 10:54:27 13-Sep-2012							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-83.485	119.000	
Sonde Error Correction Quad - 0		Master	-----	-2250.000	113.456	2250.000	
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	170.122	204.000	
Sonde Error Correction Quad - 1		Master	-----	-625.000	141.828	625.000	
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	113.188	156.000	
Sonde Error Correction Quad - 2		Master	-----	-350.000	31.028	350.000	
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	59.559	89.000	
Sonde Error Correction Quad - 3		Master	-----	-250.000	44.859	250.000	
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	23.005	35.000	
Sonde Error Correction Quad - 4		Master	-----	-63.000	-11.754	63.000	
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	14.030	24.000	
Sonde Error Correction Quad - 5		Master	-----	-50.000	2.131	50.000	
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	9.683	15.000	
Sonde Error Correction Quad - 6		Master	-----	-30.000	4.940	30.000	

Sonde Error Correction Quad - 6		Master	-----	-30.000	4.946	30.000	
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-1.093	5.000	
Sonde Error Correction Quad - 7		Master	-----	-30.000	3.075	30.000	

## AIT Mud Calibration - Mud Calibration Gain

Master (EEPROM): 10:54:27 13-Sep-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Coarse Gain		Master	1.000	0.800	0.821	1.200	
Fine Gain		Master	1.000	0.800	0.823	1.200	

## AIT Electronics Check - Thru Calibration Check

Master (EEPROM): 10:54:27 13-Sep-2012 Before (Measured): 10:57:04 19-Nov-2012 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Thru Cal Mag - 0	V	Master	-----	0.363	0.627	0.847	
		Before	-----	0.363	0.627	0.847	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	0.000	-----	
		After-Before	-----	-----	-----	-----	
Thru Cal Phase - 0	deg	Master	-----	11.000	74.608	131.000	
		Before	-----	11.000	74.841	131.000	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	0.233	-----	
		After-Before	-----	-----	-----	-----	
Thru Cal Mag - 1	V	Master	-----	0.762	1.285	1.778	
		Before	-----	0.762	1.285	1.778	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	0.000	-----	
		After-Before	-----	-----	-----	-----	
Thru Cal Phase - 1	deg	Master	-----	10.000	73.598	130.000	
		Before	-----	10.000	73.830	130.000	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	0.232	-----	
		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	69.416	126.000	
		Before	-----	6.000	69.655	126.000	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	0.239	-----	
		After-Before	-----	-----	-----	-----	
Thru Cal Mag - 3	V	Master	-----	0.422	0.723	0.986	
		Before	-----	0.422	0.723	0.986	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	0.000	-----	
		After-Before	-----	-----	-----	-----	
Thru Cal Phase - 3	deg	Master	-----	5.000	68.514	125.000	
		Before	-----	5.000	68.754	125.000	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	0.240	-----	
		After-Before	-----	-----	-----	-----	
Thru Cal Mag - 4	V	Master	-----	0.802	1.349	1.872	
		Before	-----	0.802	1.348	1.872	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-0.001	-----	
		After-Before	-----	-----	-----	-----	
Thru Cal Phase - 4	deg	Master	-----	-1.000	61.558	119.000	
		Before	-----	-1.000	61.810	119.000	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	0.252	-----	
		After-Before	-----	-----	-----	-----	
Thru Cal Mag - 5	V	Master	-----	1.173	1.947	2.737	
		Before	-----	1.173	1.946	2.737	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-0.001	-----	
		After-Before	-----	-----	-----	-----	
Thru Cal Phase - 5	deg	Master	-----	-3.000	59.409	117.000	

		Before	----	-3.000	59.659	117.000	
		After	----	----	----	----	
		Before-Master	----	----	0.250	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 6	V	Master	----	1.173	1.943	2.737	
		Before	----	1.173	1.942	2.737	
		After	----	----	----	----	
		Before-Master	----	----	-0.001	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 6	deg	Master	----	-3.000	59.473	117.000	
		Before	----	-3.000	59.723	117.000	
		After	----	----	----	----	
		Before-Master	----	----	0.250	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 7	V	Master	----	0.849	1.382	1.981	
		Before	----	0.849	1.381	1.981	
		After	----	----	----	----	
		Before-Master	----	----	-0.001	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 7	deg	Master	----	-7.000	53.953	113.000	
		Before	----	-7.000	54.249	113.000	
		After	----	----	----	----	
		Before-Master	----	----	0.296	----	
		After-Before	----	----	----	----	
SPA Zero	mV	Master		-50.000	-0.053	50.000	
		Before		-50.000	-0.061	50.000	
		After	----	----	----	----	
		Before-Master	----	----	-0.008	----	
		After-Before	----	----	----	----	
SPA Plus	mV	Master		941.000	993.658	1040.000	
		Before		941.000	993.363	1040.000	
		After	----	----	----	----	
		Before-Master	----	----	-0.295	----	
		After-Before	----	----	----	----	
Temperature Zero	V	Master		-0.050	0.000	0.050	
		Before		-0.050	0.000	0.050	
		After	----	----	----	----	
		Before-Master	----	----	0.000	----	
		After-Before	----	----	----	----	
Temperature Plus	V	Master		0.870	0.920	0.960	
		Before		0.870	0.920	0.960	
		After	----	----	----	----	
		Before-Master	----	----	0.000	----	
		After-Before	----	----	----	----	

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
CBL Amplitude - 0	mV	Before	----	----	----	----		
CBL Reference Amplitude (CBRA) - 0	mV	Before	----	----	----	----		
Measurement Depth - 0	ft	Before	----	----	----	----		

## CBL Free Pipe Adjustment - CBL Amplitude Coefficient

Before:								
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
CBL Adjustment Factor		Before	1.000	0.200	NOT DONE	5.000		
Depth of Before Calibration	ft	Before			NOT DONE			

## HDRS-B (HILT Density and Rxo Sonde, 125 degC) Calibration - Run Run-1

Primary Equipment :			
	HILT High-Resolution Control Cartridge, 125 degC	HRCC-B	791
	HILT Resistivity Gamma-Ray Density Device, 125 degC	HRGD-B	1849
Auxiliary Equipment :			
	HRDD Backscatter Detector	Backscatter	
	HRDD Long Spacing Detector	Long Spacing	
	HRDD Short Spacing Detector	Short Spacing	
	Cesium 137 Gamma-Ray Logging Source	GSR-J	5094
	HILT High-Resolution Control Cartridge, 125 degC	HRCC-B	791
	HILT High-Resolution Mechanical Sonde, 125 degC	HRMS-B	1754
Calibration Parameter :			
	Small Ring Size (Caliper Calibration Small Ring)	8.00	
	Large Ring Size (Caliper Calibration Large Ring)	12.00	

## HDRS Caliper Calibration - Caliper Accumulations

Before (Measured): 11:01:07 19-Nov-2012								
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
Small Ring	in	Before	8.00	6.00	8.02	10.00		
Large Ring	in	Before	12.00	9.00	12.20	15.00		

## HDRS Density Calibration - Inversion Results

Master (EEPROM): 15:32:56 16-Nov-2012								
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
Rho Aluminum	g/cm3	Master	2.596	2.586	2.600	2.606		
Rho Magnesium	g/cm3	Master	1.686	1.676	1.686	1.696		
Pe Aluminum		Master	2.570	2.470	2.563	2.670		
Pe Magnesium		Master	2.650	2.550	2.632	2.750		

## HDRS Density Calibration - Deviation Summary

Master (EEPROM): 15:32:56 16-Nov-2012								
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
BS Average Deviation	%	Master	0	-0.6000	0.4813	0.6000		
BS Max Deviation	%	Master	0	-1.6000	1.0620	1.6000		
SS Average Deviation	%	Master	0	-1.0000	0.3288	1.0000		
SS Max Deviation	%	Master	0	-2.5000	1.5436	2.5000		
LS Average Deviation	%	Master	0	-1.5000	0.5170	1.5000		
LS Max Deviation	%	Master	0	-3.5000	1.2479	3.5000		

## HDRS Density Calibration - Background Summary

Master (EEPROM): 15:32:56 16-Nov-2012			Before (Measured): 11:04:03 19-Nov-2012					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
BS Window Ratio		Master	1.0000		0.7367			
		Before	0.7367	0.6998	0.7377	0.7735		
		Before-Master	----	----	0.0010	----		
BS Window Sum	1/s	Master	1		9557			
		Before	9557	9080	9556	10035		
		Before-Master	----	----	-1	----		
SS Window Ratio		Master	1.0000		0.4943			
		Before	0.4943	0.4696	0.4948	0.5190		
		Before-Master	----	----	0.0005	----		
SS Window Sum	1/s	Master	1		9176			

		Before	9176	8717	9196	9635	
		Before-Master	-----	-----	20	-----	
LS Window Ratio		Master	1.0000		0.2976		
		Before	0.2976	0.2828	0.2997	0.3125	
		Before-Master	-----	-----	0.0021	-----	
LS Window Sum	1/s	Master	1		1073		
		Before	1073	1020	1072	1127	
		Before-Master	-----	-----	-1	-----	

## HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM):		15:32:56 16-Nov-2012		Before (Measured):		11:04:03 19-Nov-2012	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS PM High Voltage	V	Master		1000	1627	2400	
		Before		1000	1622	2400	
		Before-Master	-----	-100	-5	100	
SS PM High Voltage	V	Master		1000	1690	2400	
		Before		1000	1695	2400	
		Before-Master	-----	-100	5	100	
LS PM High Voltage	V	Master		1000	1588	2400	
		Before		1000	1579	2400	
		Before-Master	-----	-100	-9	100	

## HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM):		15:32:56 16-Nov-2012		Before (Measured):		11:04:03 19-Nov-2012	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Crystal Resolution	%	Master		5.00	11.80	25.00	
		Before		5.00	11.79	25.00	
		Before-Master	-----	-1.00	-0.01	1.00	
SS Crystal Resolution	%	Master		5.00	10.12	20.00	
		Before		5.00	10.21	20.00	
		Before-Master	-----	-1.00	0.09	1.00	
LS Crystal Resolution	%	Master		5.00	9.55	20.00	
		Before		5.00	9.64	20.00	
		Before-Master	-----	-1.00	0.09	1.00	

## HDRS MCFL Calibration - MCFL Accumulations

Before (Measured):		11:04:17 19-Nov-2012					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Main Resistivity	ohm.m	Before	3875	3565	3831	4185	
Deep Resistivity	ohm.m	Before	3830	3524	3794	4136	
Shallow Resistivity	ohm.m	Before	3830	3524	3822	4136	

## HGNS-B (HILT Gamma-Ray and Neutron Sonde, 125 degC) Calibration - Run Run-1

Primary Equipment :			
HILT Gamma-Ray and Neutron Sonde, 125 degC		HGNS-B	1927
Auxiliary Equipment :			
HGNS Accelerometer, 125 degC		HACCZ-B	749
AmBe Neutron Logging Source		NSR-F	5069
Calibration Parameter :			
Water Temperature			
Housing Size			
JIG-BKG (Jig minus background reference)		165	

## HGNS Accelerometer Calibration - Accelerometer Accumulations

Before (Measured):		20:12:05 19-Nov-2012					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
AZ Vertical Measurement	ft/s2	Before	32.2	31.5	32.2	32.8	

## HGNS Accelerometer EEPROM - Accelerometer EEPROM Read

Master (EEPROM):		00:00:00 15-Mar-2001					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Accelerometer Manufacturer		Master			Sunstrand		
Accelerometer Reference Temperature	degF	Master		30.2	68.0	122.0	
Accelerometer Coefficients		Master			5602.000		

Accelerometer Coefficients - 0		Master	-----	-----	-3693.000	-----	
Accelerometer Coefficients - 1		Master	-----	-----	20.390	-----	
Accelerometer Coefficients - 2		Master	-----	-----	-0.031	-----	
Accelerometer Coefficients - 3		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 4		Master	-----	-----	2.141	-----	
Accelerometer Coefficients - 5		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 7		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 8		Master	-----	-----	295.800	-----	
Accelerometer Coefficients - 9		Master	-----	-----	1.031	-----	

## HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM): 12:04:40 16-Nov-2012		Before (Measured): 10:57:38 19-Nov-2012		After:			
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Near Zero Measurement	1/s	Master	0	5.0	27.1	40.0	
		Before	0	5.0	26.6	40.0	
		After	-----	-----	-----	-----	
		Before-Master	-----	-4.1	-0.5	4.1	
		After-Before	-----	-----	-----	-----	
Far Zero Measurement	1/s	Master	0	5.0	26.8	40.0	
		Before	0	5.0	27.4	40.0	
		After	-----	-----	-----	-----	
		Before-Master	-----	-4.0	0.6	4.0	
		After-Before	-----	-----	-----	-----	
Near Plus Measurement - 0	1/s	Master	6031.0	4700.0	4898.0	6900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Far Plus Measurement - 0	1/s	Master	2793.0	1900.0	2070.0	2900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Near Corrected Plus Measurement - 0	1/s	Master		4700.0	4970.0	6900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Far Corrected Plus Measurement - 0	1/s	Master		1900.0	2107.0	2900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

## HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured): 11:02:29 19-Nov-2012		After:					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement	gAPI	Before	30.0	0	73.3	120.0	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
RGR Plus Measurement	gAPI	Before	185.4	157.1	170.6	206.3	
		After	-----	-----	NOT DONE	-----	
		After-Before	-----	-----	-----	-----	
GR Calibration Gain		Before	0.89	0.80	0.97	1.05	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

## LEH-QT (Logging Equipment Head - QT, 3-3/8 inch 31 pin HPHT with Tension Sensor) Calibration - Run Run-1

Primary Equipment :		Logging Equipment Head - QT, 3-3/8 inch 31 pin HPHT with Tension Sensor	LEH-QT
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## HTEN Master Calibration - HTEN Master Calibration

Master:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HTEN Shear Gain		Master	1.000	0.800	NOT DONE	1.500	

HTEN Shop Gain								
HTEN Shop Offset	lbf	Master	0	-1000.000	NOT DONE	1000.000		
HTEN Before Calibration - HTEN Before Calibration								
Before:								
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit		
RHTE Zero Measurement - 0	lbf	Before	----	----	----	----		
RHTE Plus Measurement - 0	lbf	Before	----	----	----	----		
HTEN Gain - 0		Before	----	----	----	----		
HTEN Offset - 0	lbf	Before	----	----	----	----		

Company:

Vecta Oil & Gas LTD

Well:

Maroon 24-20

Field:

Wildcat

County:

Cheyenne

State:

Colorado

Platform Express

Array Induction

with Linear Correlation

Schlumberger