

Company: Kerr McGee Oil & Gas Onshore LP

Well: Banded 37C-27HZ

Field: Wattenberg

County: Weld State: Colorado

Platform Express

Triple Combo

County:	Weld
Field:	Wattenberg
Location:	SHL: 300' FSL & 916' FEL
Well:	Banded 37C-27HZ
Company:	Kerr McGee Oil & Gas Onshore LP
Location:	
SHL: 300' FSL & 916' FEL	Elev.: K.B. 5002.00 ft G.L. 4977.00 ft D.F. 5001.00 ft
Permanent Datum:	Ground Level
Log Measured From:	Kelly Bushing
Drilling Measured From:	Kelly Bushing
API Serial No. 05-123-39303-00	Section: 27
	Township: 2N
	Range: 67W

Logging Date	08-Aug-2014
Run Number	Two
Depth Driller	7045.00 ft
Schlumberger Depth	7042.00 ft
Bottom Log Interval	7055.00 ft
Top Log Interval	1762.00 ft
Casing Driller Size @ Depth	9.625 in @ 1771.00 ft
Casing Schlumberger	1762 ft
Bit Size	8.75 in
Type Fluid In Hole	WBM
Density	10.2 lbm/gal
Fluid Loss	PH
Source of Sample	Active Tank
RM @ Meas Temp	1.13 ohm.m @ 75 degF
RMF @ Meas Temp	1.15 ohm.m @ 75 degF
RMC @ Meas Temp	1.37 ohm.m @ 75 degF
Source RMF	Calculated
RM @ BHT	0.55 @ 160
RMF @ BHT	0.56 @ 160
Max Recorded Temperatures	160 degF
Circulation Stopped	07-Aug-2014 23:00:00
Logger on Bottom	08-Aug-2014 04:00:00
Unit Number	2135
Recorded By	Nolan Welsh
Witnessed By	Steve Wilson

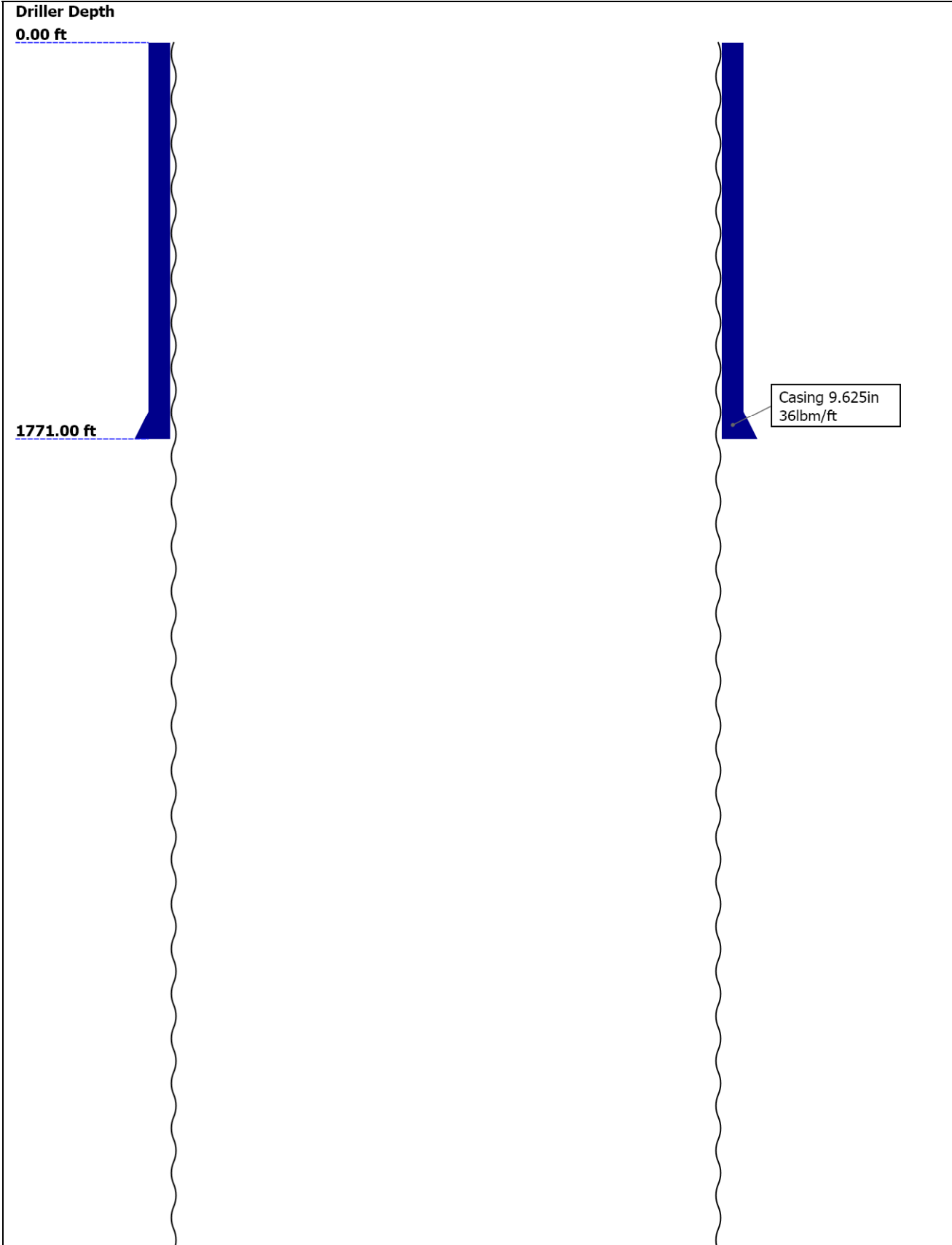
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Well Sketch





Borehole Size/Casing/Tubing Record						
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Bit						
Bit Size (in)	8.75					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	7045					
Bottom Logger (ft)	7042					
Casing						
Size (in)	9.625					
Weight (lbm/ft)	36					
Inner Diameter (in)	8.921					
Grade	N/A					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	1771					
Bottom Logger (ft)	1762					

Operational Run Summary						
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Parameter (unit)	Two					
Date Log Started	08-Aug-2014					
Time Log Started	03:12:32					
Date Log Finished	08-Aug-2014					
Time Log Finished	06:14:00					
Top Log Interval (ft)	1762.00					
Bottom Log Interval (ft)	7055.00					
Total Depth (ft)	7055.00					
Max Hole Deviation (deg)	19.00					
Azimuth of Max Deviation (deg)	0.00					
Bit Size (in)	8.750					
Logging Unit Number	2135					
Logging Unit Location	Fort Morgan					
Recorded By	Nolan Welsh					
Witnessed By	Steve Wilson					
Service Order Number	CXPX-00021					

Service Order Number		CATX-00021					
Borehole Fluids							
Parameter(unit)	Two						
Fluid Type	Water						
Fluid Name	WBM						
Max Recorded Temperatures (degF)	160						
Source of Sample	Active Tank						
Salinity (ppm)	0						
Density (lbm/gal)	10.2						
Funnel Viscosity (s)	41						
Fluid Loss (cm3)							
PH	9.5						
Date/Time Circulation Stopped	07-Aug-2014 23:00:00						
Date Logger on Bottom	08-Aug-2014						
Time Logger on Bottom	04:00:00						
Source RMF	Calculated						
RMC	Calculated						
RM @ Meas Temp (ohm.m@degF)	1.13 @ 75						
RMF @ Meas Temp (ohm.m@degF)	1.15 @ 75						
RMC @ Meas Temp (ohm.m@degF)	1.37 @ 75						
RM @ BHT (ohm.m@degF)	0.55 @ 160						
RMF @ BHT (ohm.m@degF)	0.56 @ 160						
RMC @ BHT (ohm.m@degF)	0.67 @ 160						
Total Solid (%)							
High Gravity Solids (%)							
Remarks and Equipment Summary							
Two: Toolstring				Two: Remarks			
Equip name	Length	MP name	Offset	Thank you for choosing schlumberger			
LEH-QT	53.58			Rig: H&P 311			
LEH-QT				AIT ran in compute standoff mode`			
EDTC-B:8315	50.67			HGNS ran without bowspring			
EDTH-B:8336				HGNS eccentered using PPC caliper with one arm powered.			
EDTG-B:77213				Logging interval from TD to Casing Shoe.			
EDTC-B:8315				Repeat analysis done 200 ft. below casing shoe due to bottom hole conditions.			
		CTEM	47.17	Crew: Kevin Crow, Troy Ocanas, Alonzo Carrera			
		ACCZ	0.00				
		HV	0.00				
		Gamma Ray	45.3				
		TelStatus	44.17				
PPC-B:8193	44.17						
PPC-B:8193		PPC-B Caliper	43.02				
		s					

HGNS-H:4865 37.65
HGNH:4817
NSR-F:2554
NPV-N
HMCA-H
HGNS-H:4865
HACCZ-H:6991

Temperature 37.62
GR 36.91

CNL Porosity 30.57
HGNS 28.24
HMCA 28.24
Acceleromete 0.00
r

HDRS-H:3863 28.24
ECH-MEB:2898
HRCC-H:3828
HRMS-H:3863
GPV-Q
Short Spacing
Long Spacing
GSR-J:5471
Backscatter
HRGD-H:3760

HRCC 24.24

MCFL 18.81
Caliper 18.33
TLD Density 17.94

AIT-M:181 16.00
AMIS:181
AMRM:181

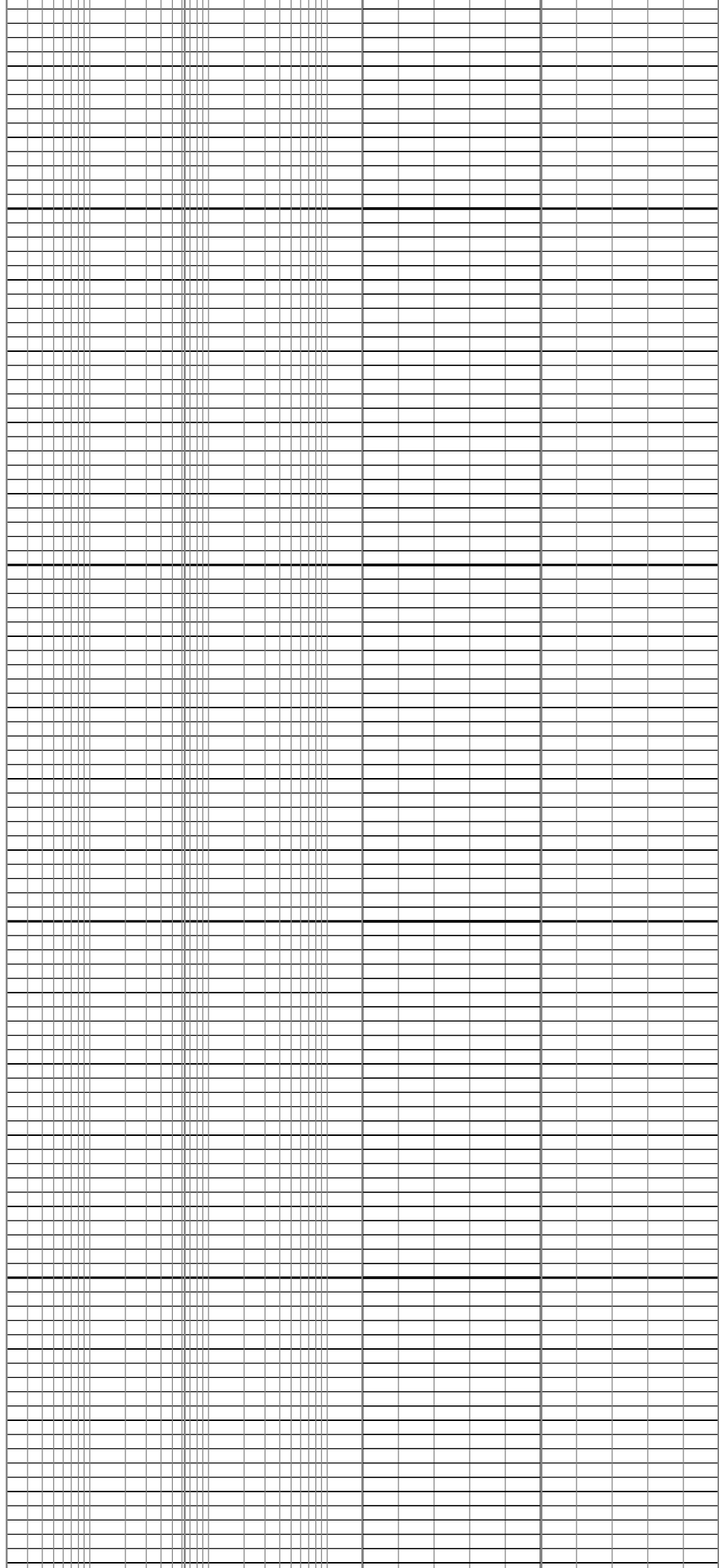
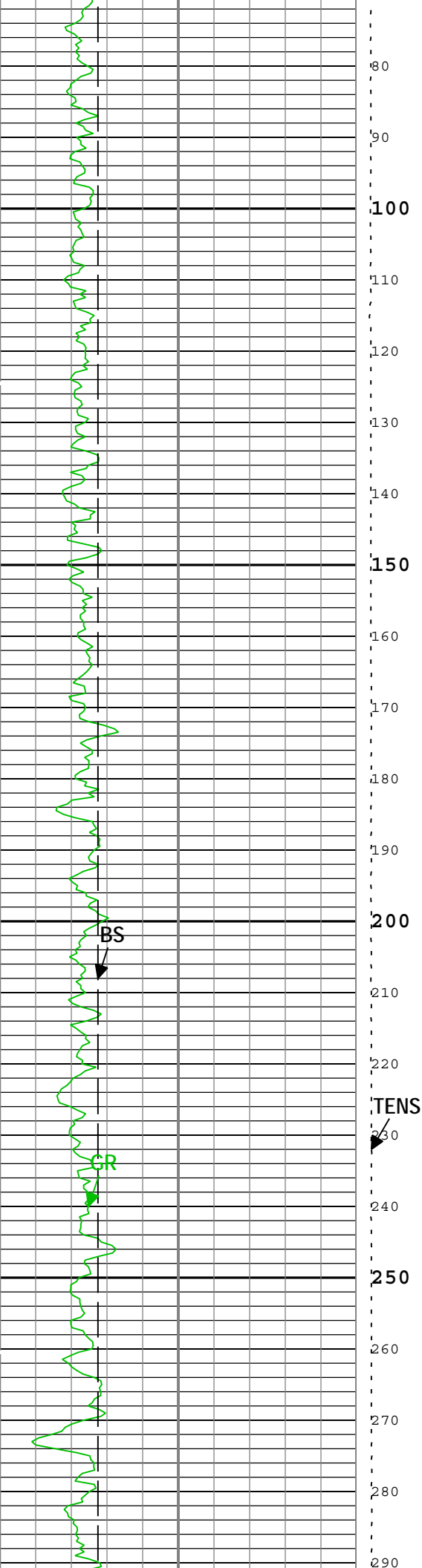
Power Supply 7.91
Temperature 7.91
Induction 7.91

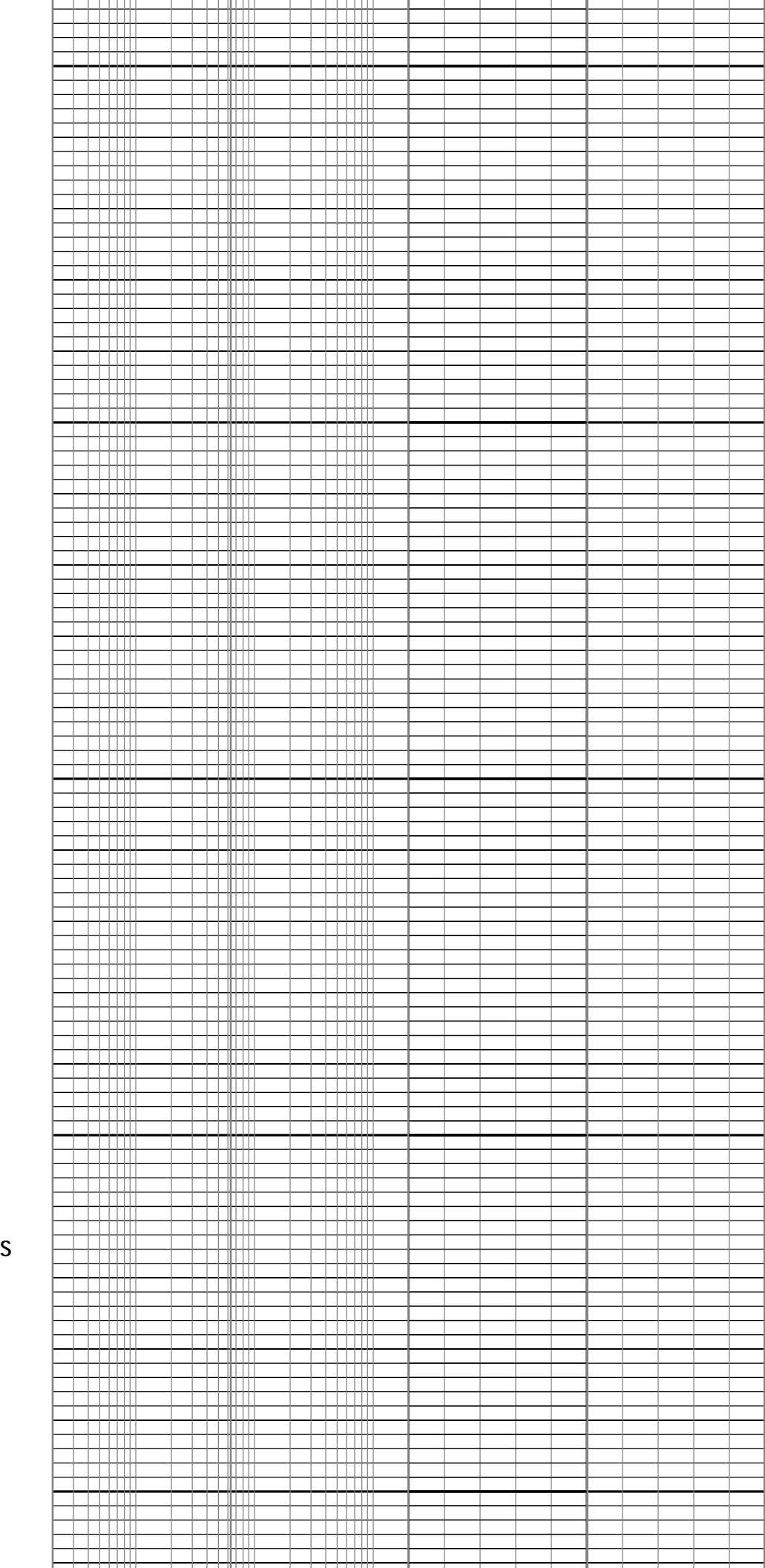
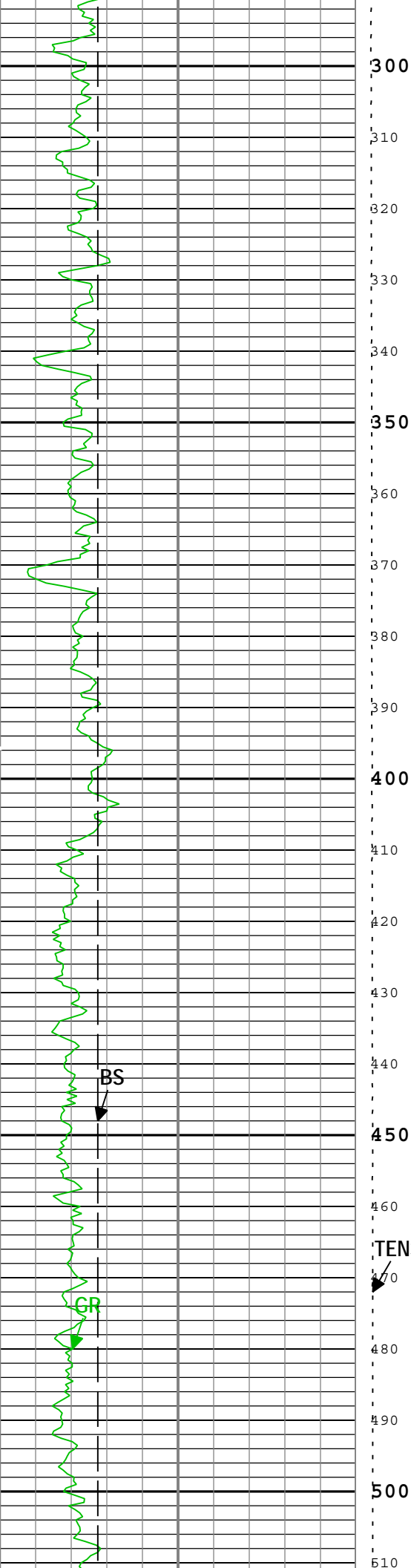
SP 0.08
Mud Resistivity 0.00
Head Tension
TOOL_ZERO

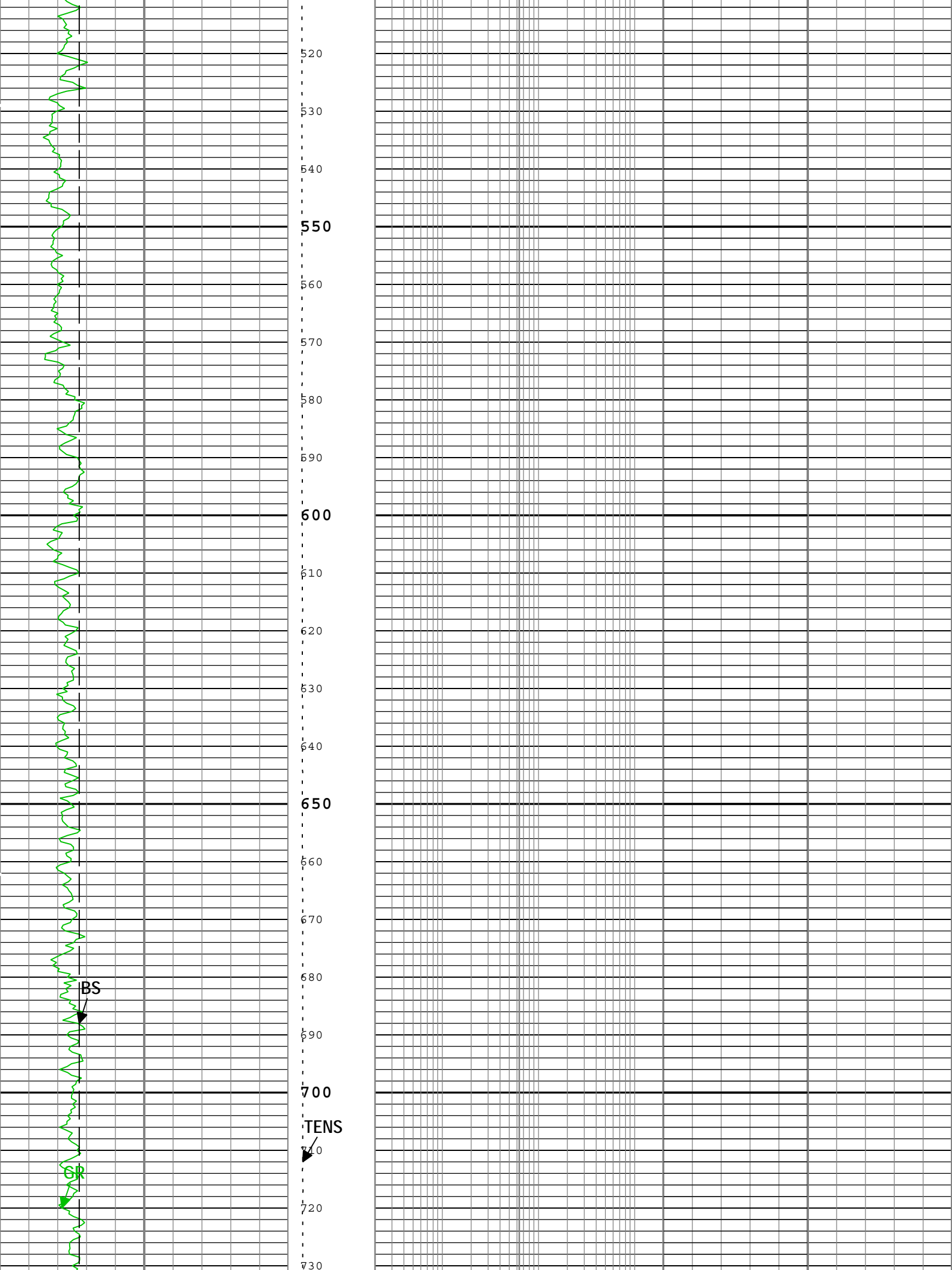
Lengths are in ft
Maximum Outer Diameter = 9.000 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

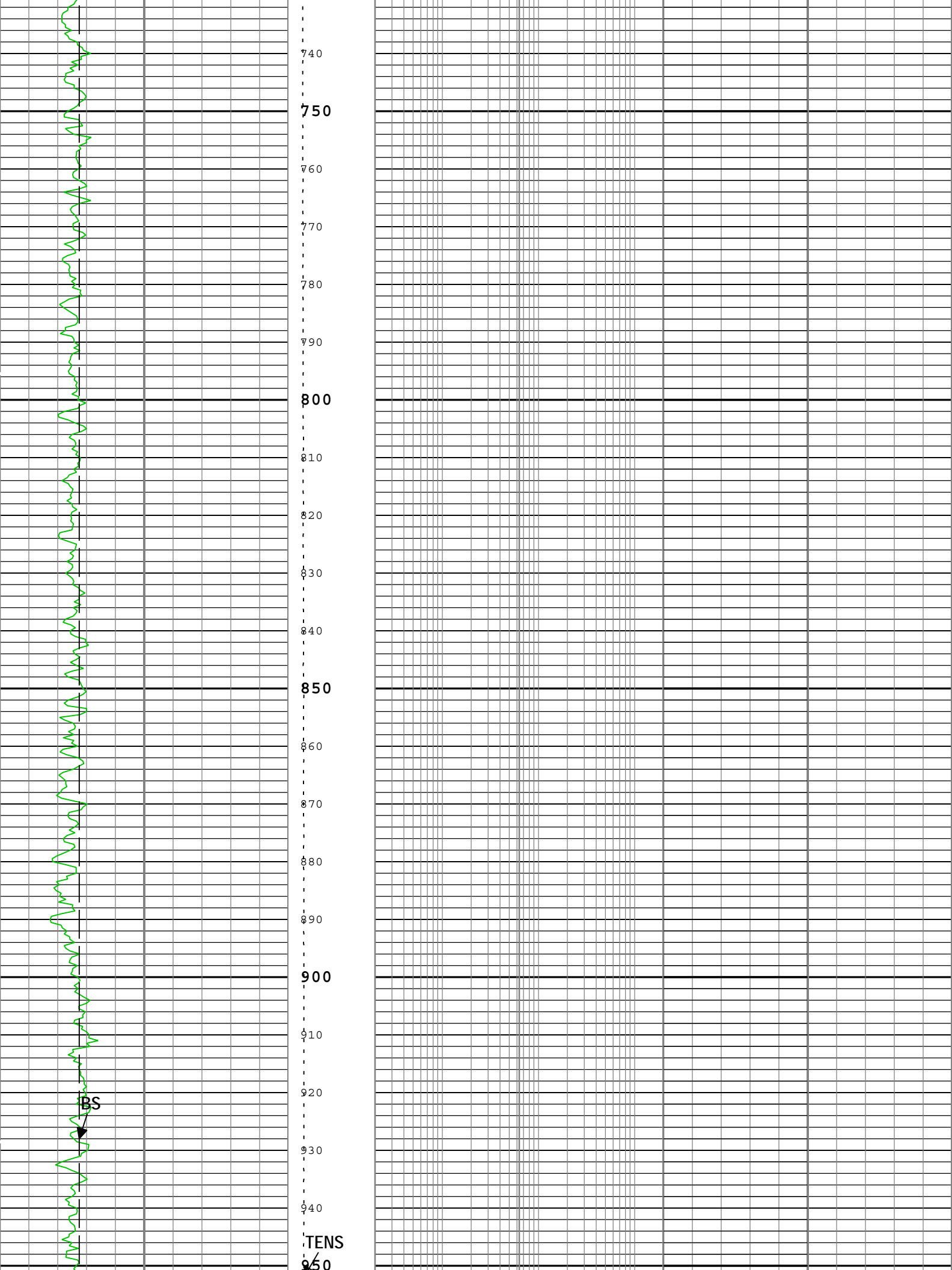
Depth Summary									
		Two							
Depth Measuring Device									
Type	IDW-JA								
Serial Number	5916								
Calibration Date	24-Mar-2014								
Calibrator Serial Number									
Calibration Cable Type	7-46 PXS								
Wheel Correction 1	-6								
Wheel Correction 2	-3								
Tension Device									
Type	CMTD-B/A								
Serial Number	1919								
Calibration Date	28-Jul-2014								
Calibrator Serial Number	78135A								
Number of Calibration Points	10								
Calibration Root Mean Square Error	17								
Calibration Peak Error	26								
Logging Cable									
Type	7-46P-XS								
Serial Number	U711136								
Length	18500.00 ft								
Conveyance Type	Wireline								
Rig Type	Land								
Two:Depth Control Parameters				Depth Control Remarks					
Log Sequence	First Log In the Well			All Schlumberger depth procedures followed.					
Rig Up Length At Surface				IDW used as primary depth control.					
Rig Up Length At Bottom				Z-Chart used as secondary depth control.					
Rig Up Length Correction									
Stretch Correction	11.35 ft								
Tool Zero Check At Surface									
Two									
5" Triple Combo									
Software Version									
Acquisition System						Version			
MaxWell						4.0.9163.3000			
Application Patch						Patch-SP-10767_18214-4.0.9163.3001			
						Patch-Hotfix_Task_Tree_GDI_SP2-20806-4.0.9434.3002			
Computation	Description						Version		
Borehole	Borehole Ensemble provides common Borehole Parameters and Channels						4.0.9433.3000		
HENVIR	Computation Ensemble for the HGNS Neutron environmental corrections						4.0.9360.3000		
DepthCorrection	DepthCorrection						4.0.9433.3000		
Tool Elements	Description				Software Version		Firmware Version		
HRCC-H	HILT High-Resolution Control Cartridge, 150 degC				4.0.9385.3000		2.0		
HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC				4.0.9385.3000		2.0		
HRGD-H	HILT Resistivity Gamma-Ray Density Device, 150 degC				4.0.9385.3000		3.0		
AMIS	Array Induction Sonde - M				4.0.9427.3000		1		
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data

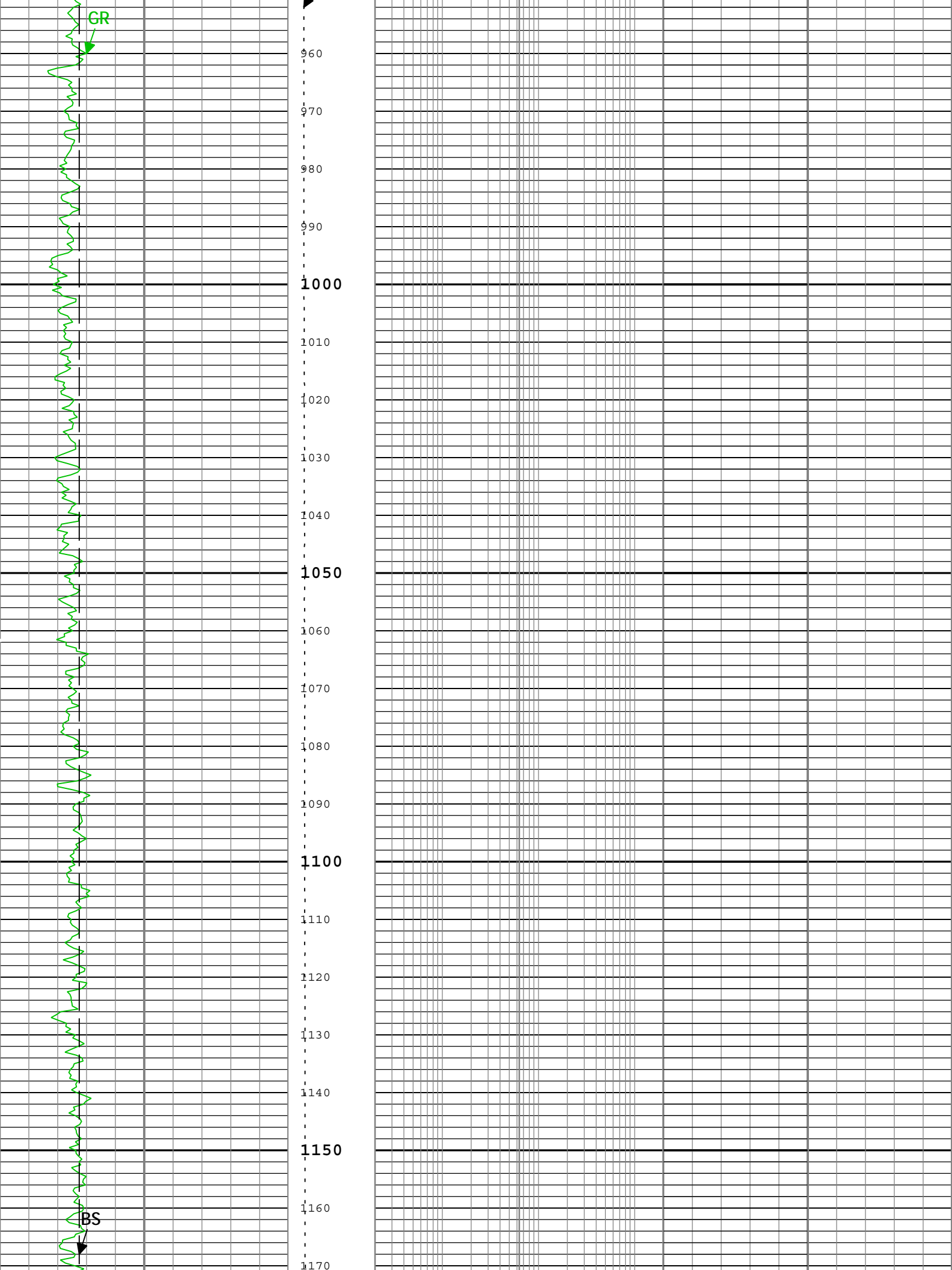
Two	Log[2]:Up	Up	71.32 ft	7075.21 ft	08-Aug-2014 4:00:16 AM	08-Aug-2014 5:44:41 AM	ON	13.25 ft	Yes		
All depths are referenced to toolstring zero											
Log	Company:Kerr McGee Oil & Gas Onshore LP							Well:Banded 37C-27HZ			
	Two: Log[2]:Up:S010										
Description: HGNS standard resolution porosities for Platform Express Format: Log (KM 5in Triple Combo) Index Scale: 5 in per 100 ft Index Unit: ft											
Index Type: Measured Depth Creation Date: 08-Aug-2014 06:52:09											
Channel	Source	Sampling									
AT10	AIT-M:AMIS:AMIS	3in									
AT30	AIT-M:AMIS:AMIS	3in									
AT90	AIT-M:AMIS:AMIS	3in									
BS	Borehole	6in									
CALI	HDRS-H:HRCC-H:HRCC-H	1in									
DPHZ	HDRS-H:HRMS-H:HRGD-H	2in									
GR	HGNS-H:HGNS-H:HGNS-H	6in									
NPOR	HGNS-H:HGNS-H:HGNS-H	6in									
PEFZ	HDRS-H:HRMS-H:HRGD-H	2in									
SP	AIT-M:AMIS:AMIS	6in									
STIT	DepthCorrection	6in									
TENS	WLWorkflow	6in									
TIME_1900	WLWorkflow	0.1in									
TIME_1900 - Time Marked every 60.00 (s)											
							Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H				
							010				
							Gas Effect				
Gamma Ray Back up							NPOR Backup				
Gamma Ray (GR) HGNS-H							Cable Tension (TENS)				
0	gAPI	200	Stuck Tool Indicator, Total (STIT)			0.2	ohm.m	200	5000	lbf	0
Caliper (CALI) HDRS-H											
6	in	16									
Spontaneous Potential (SP) AIT-M			Cable Tension (TENS)								
-160	mV	40									
Bit Size (BS)											
6	in	16	0	lbf	6000	0.2	ohm.m	200	0.3	m3/m3	-0.1
			20								
			30								
			40								
			50								
			60								
			70								

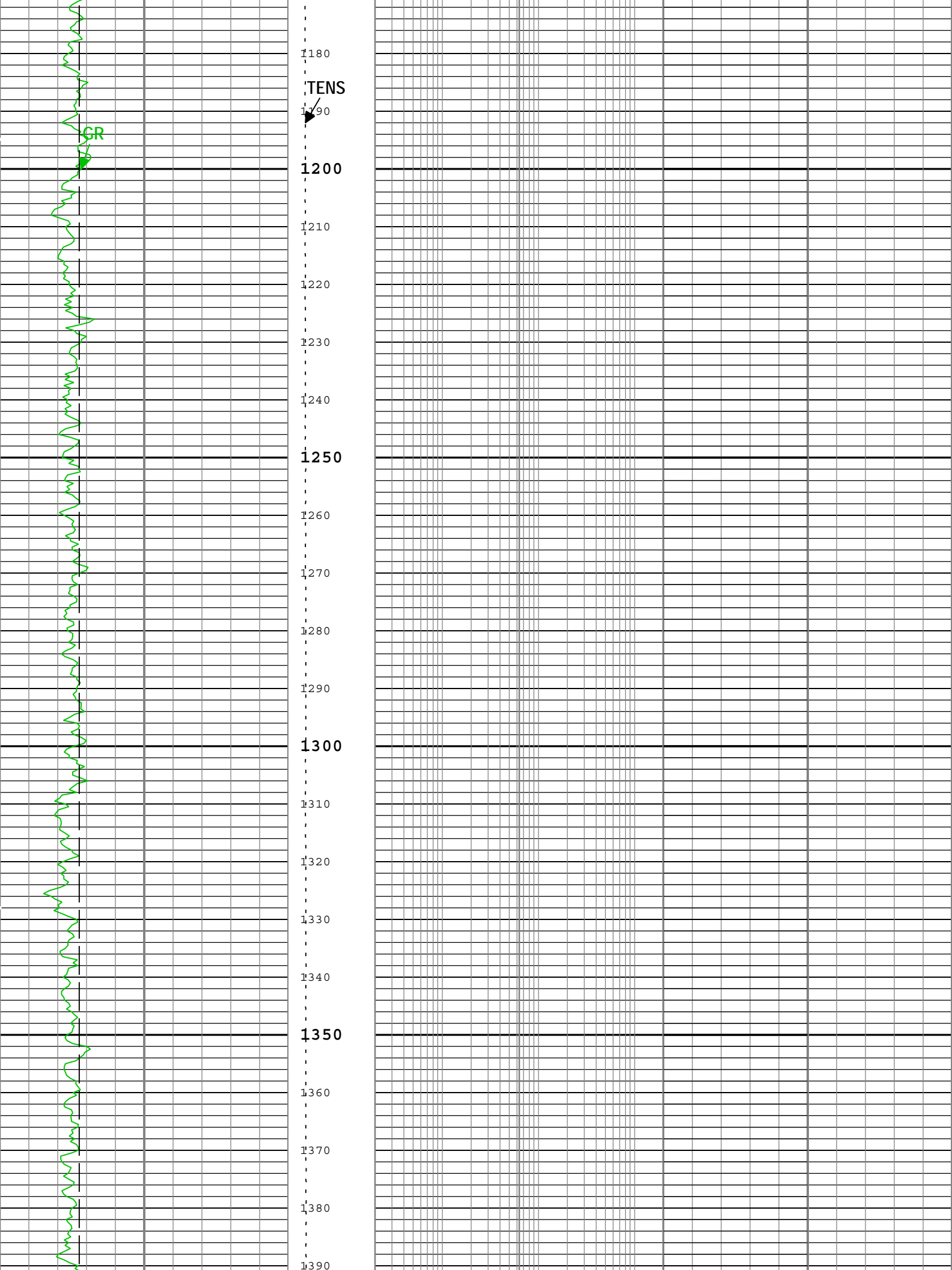


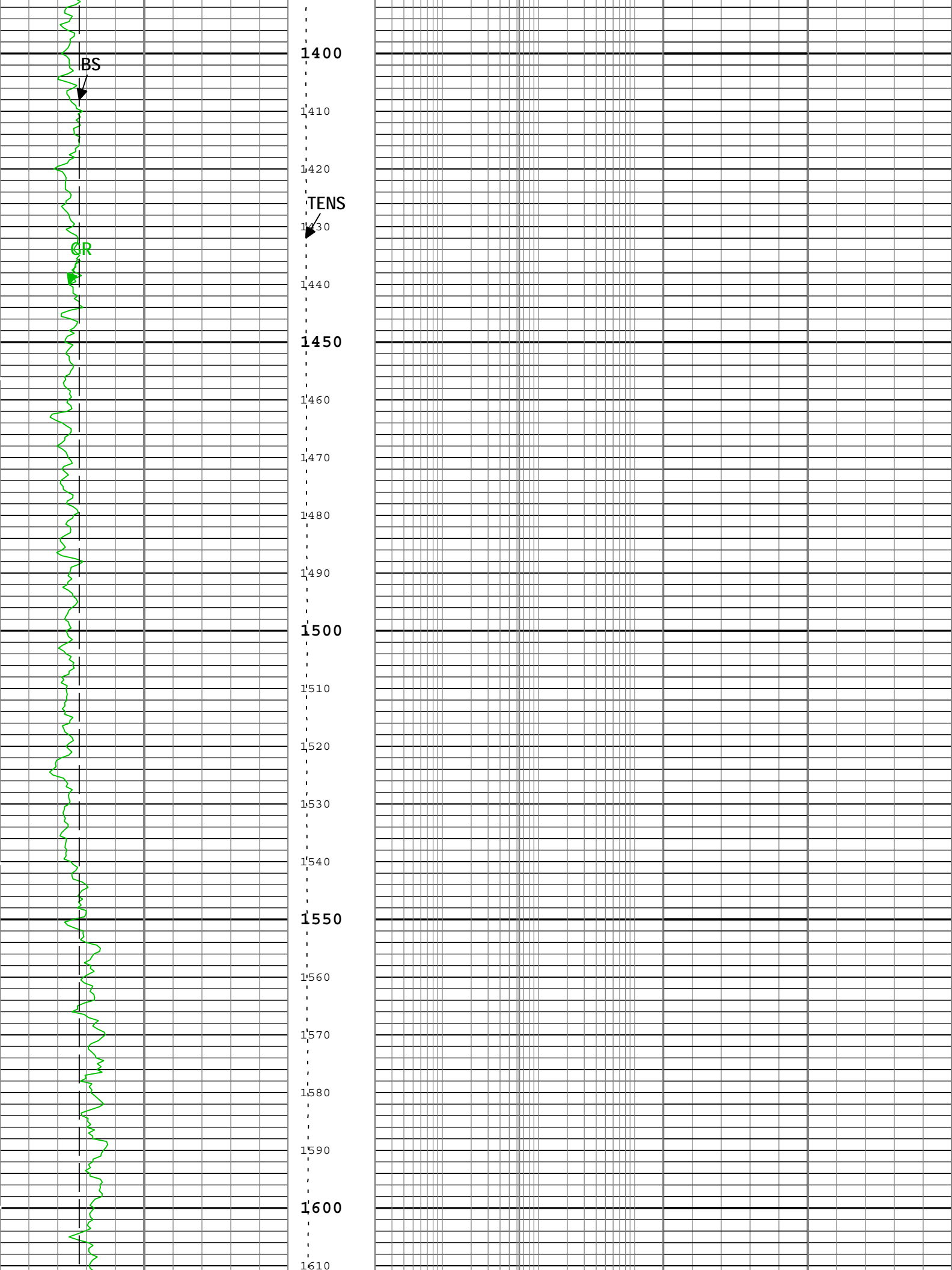


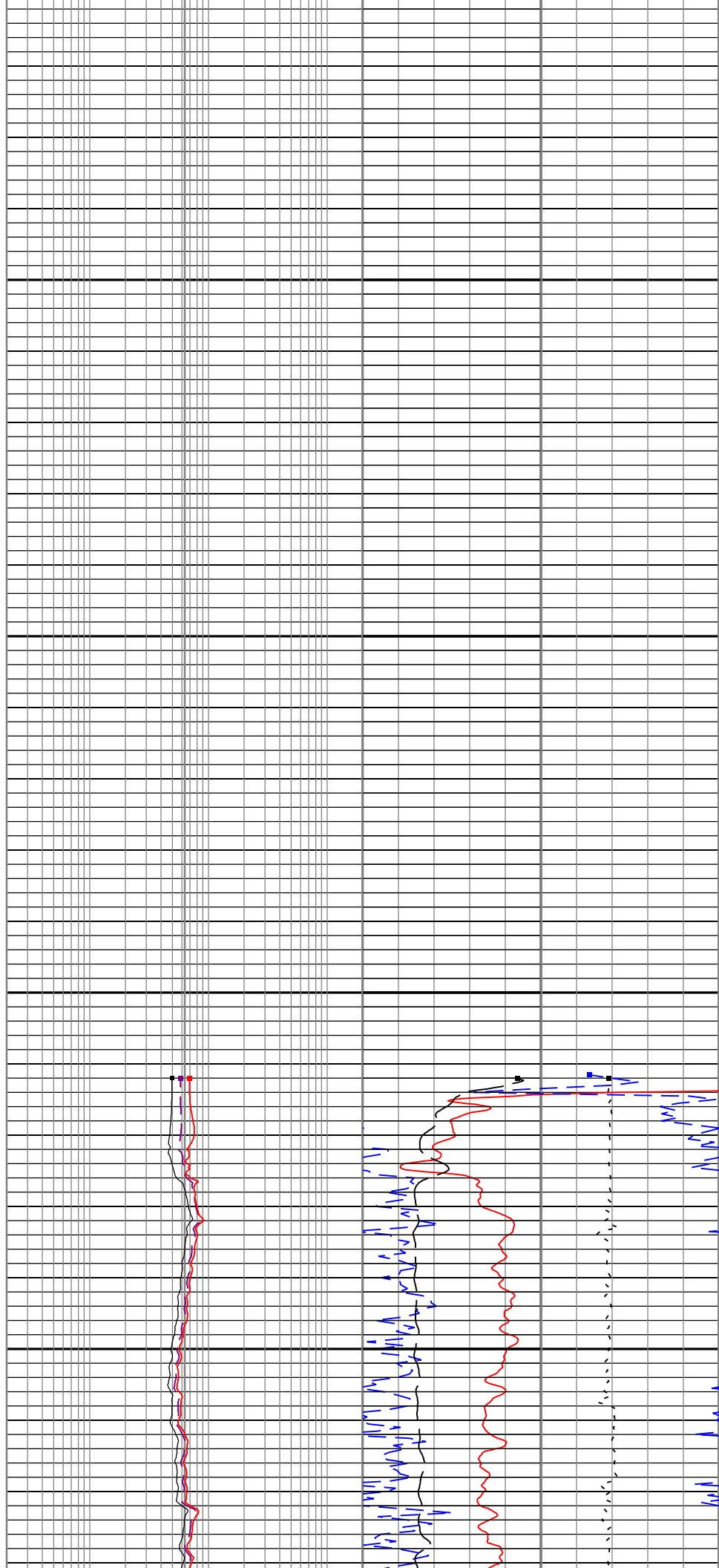
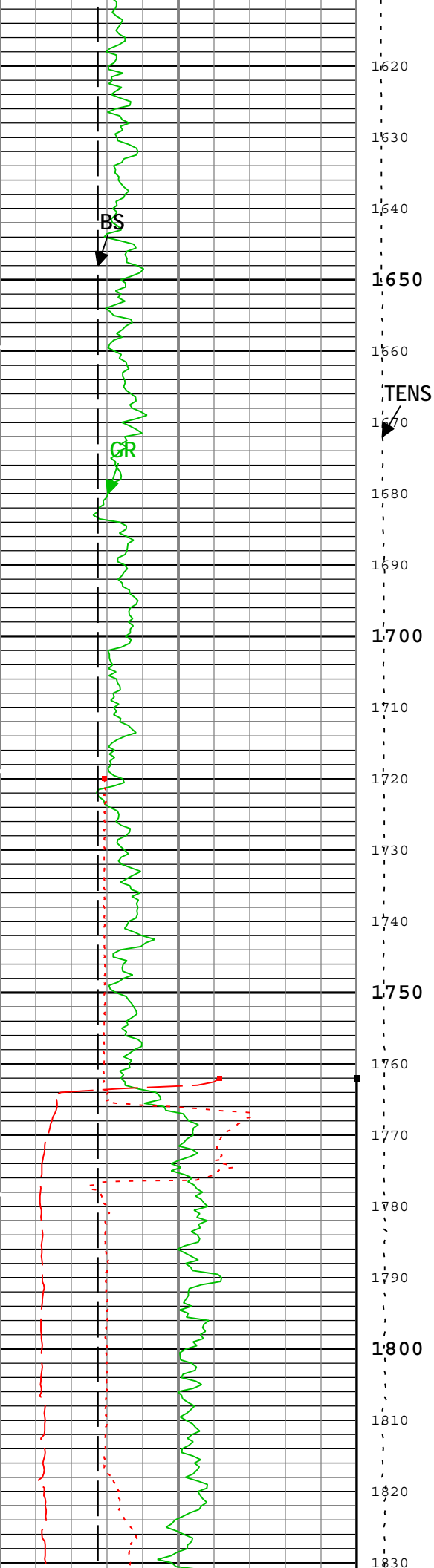


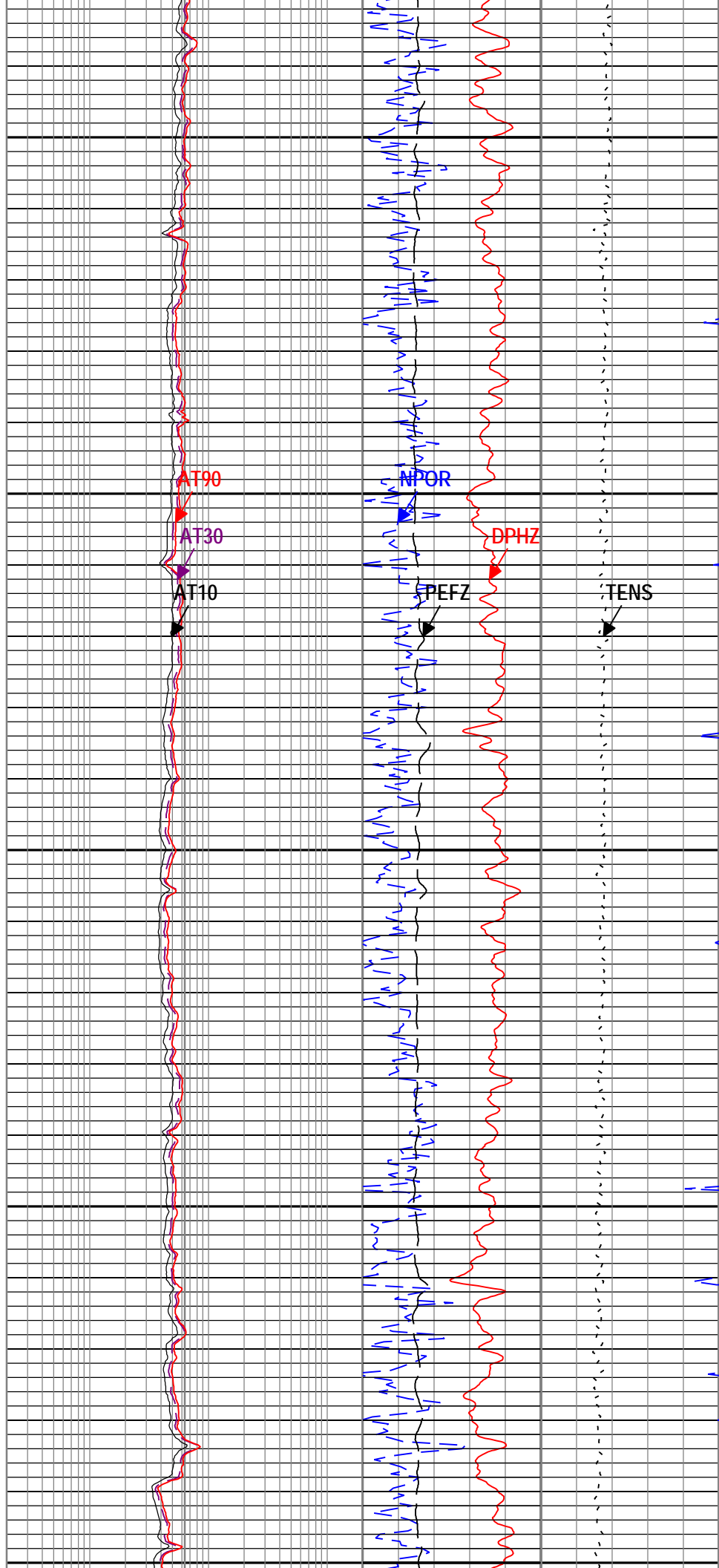
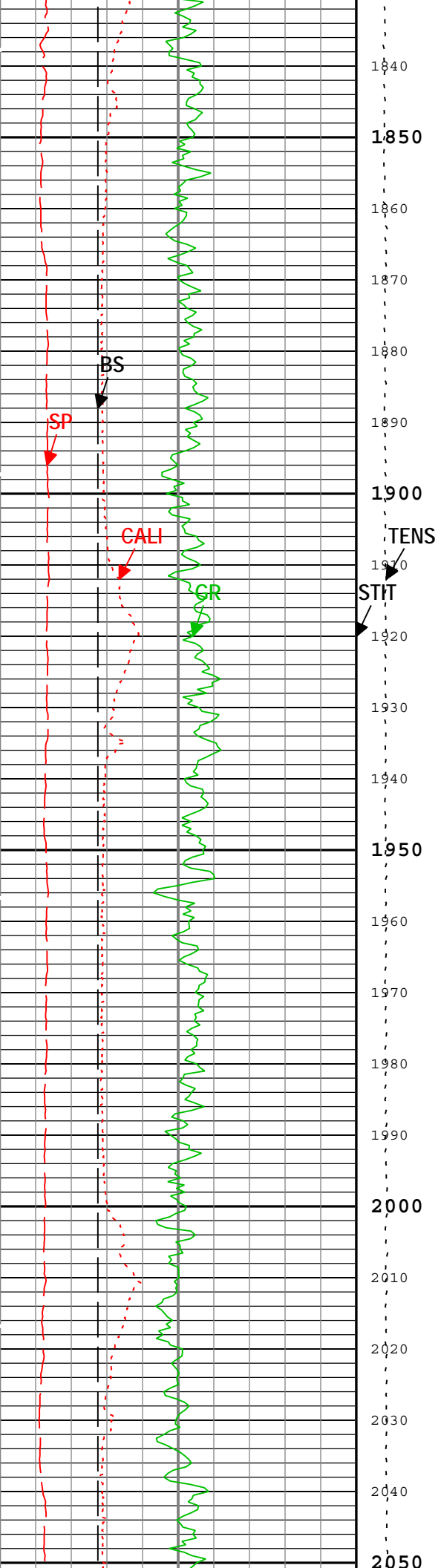


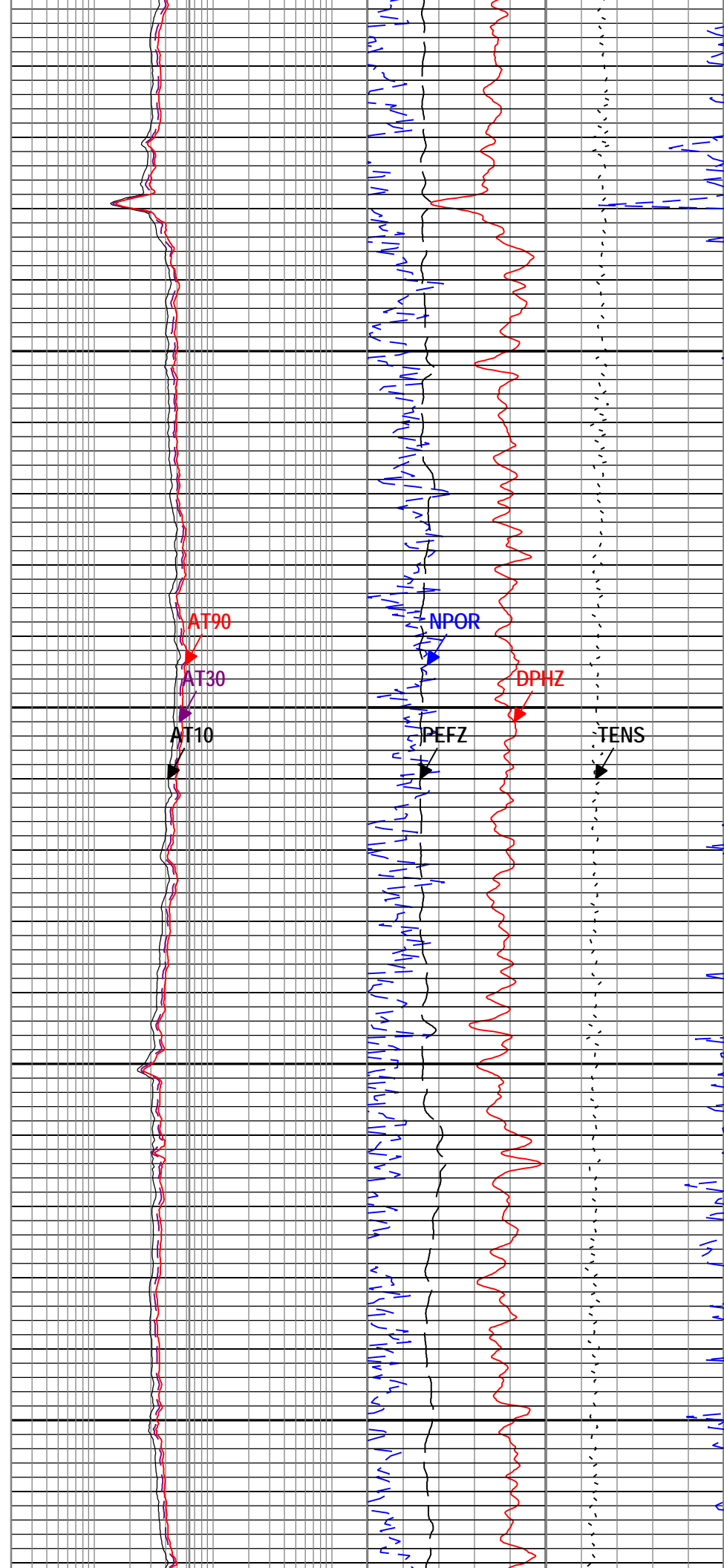
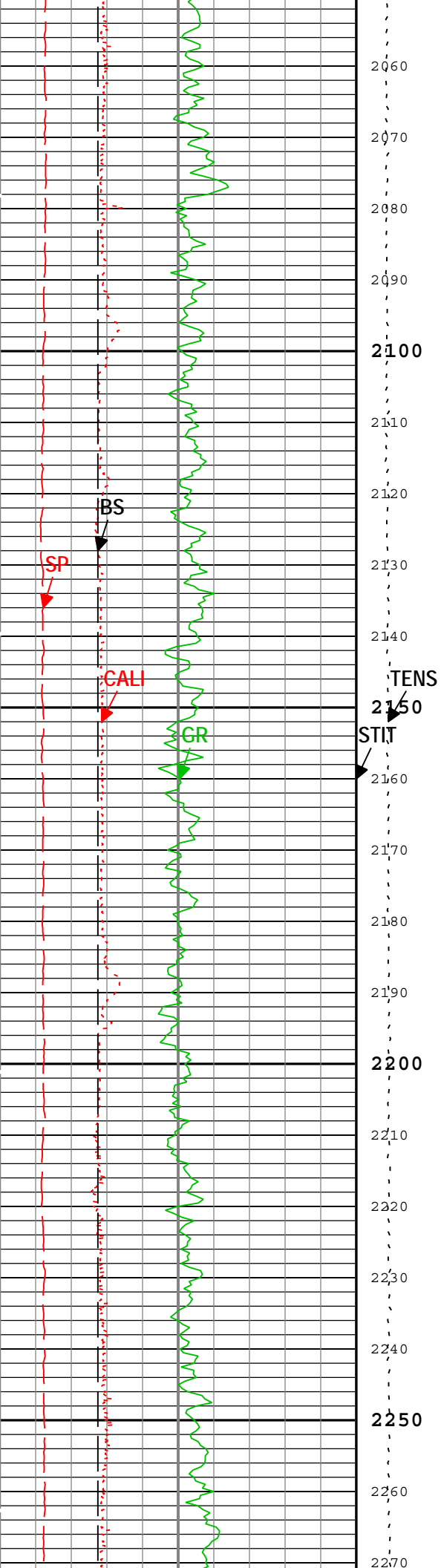


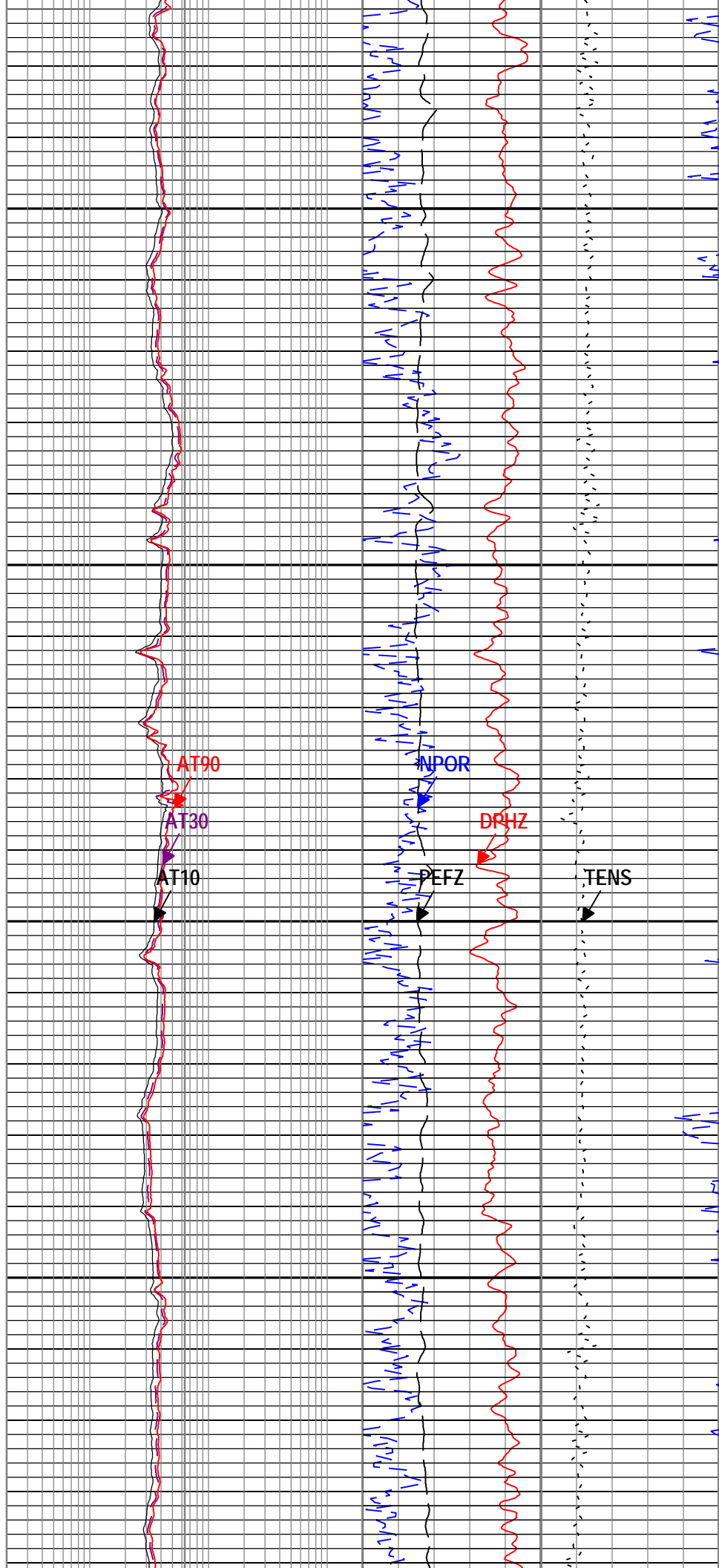
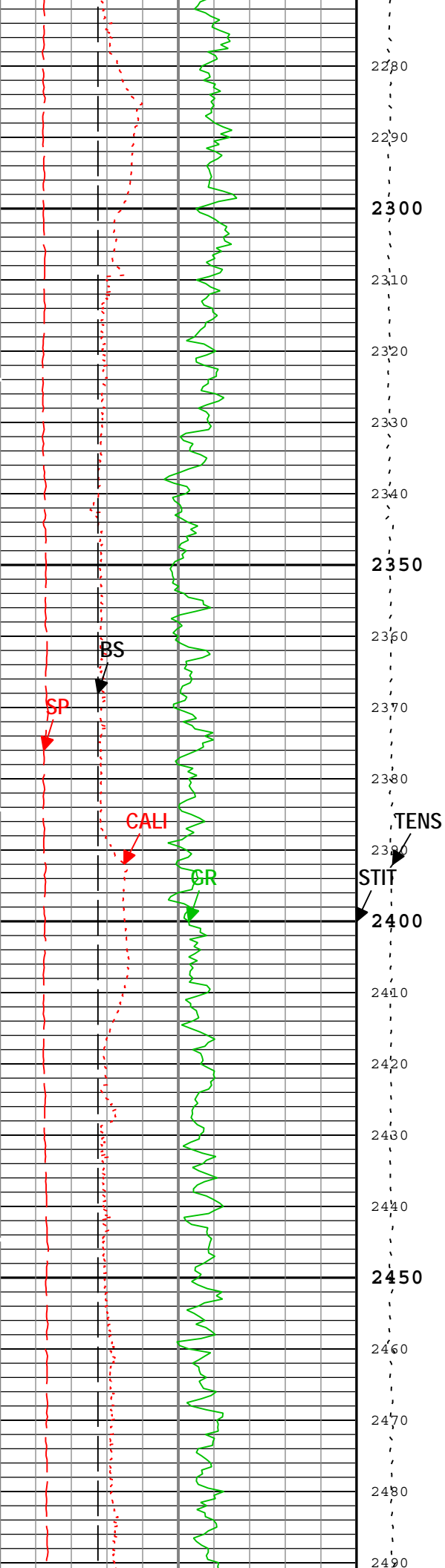


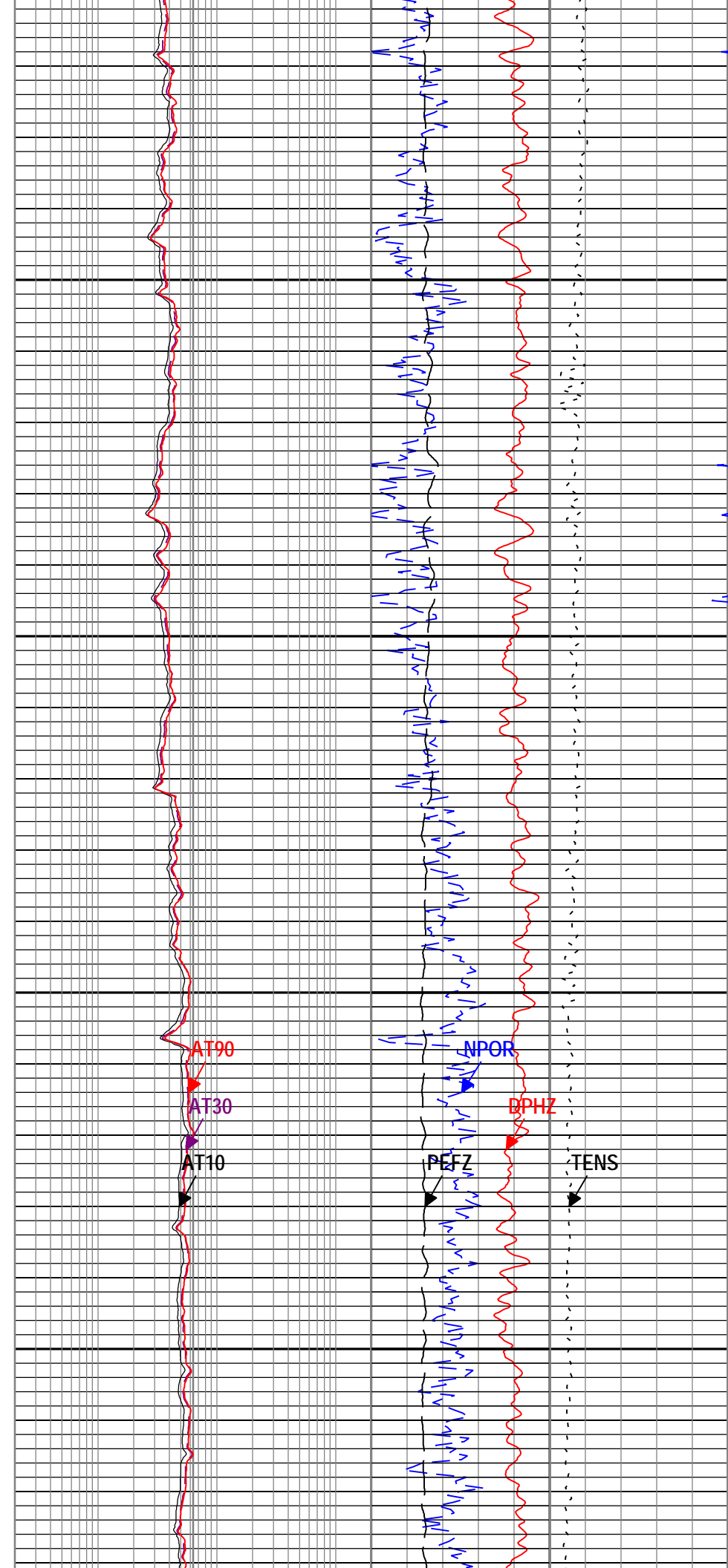
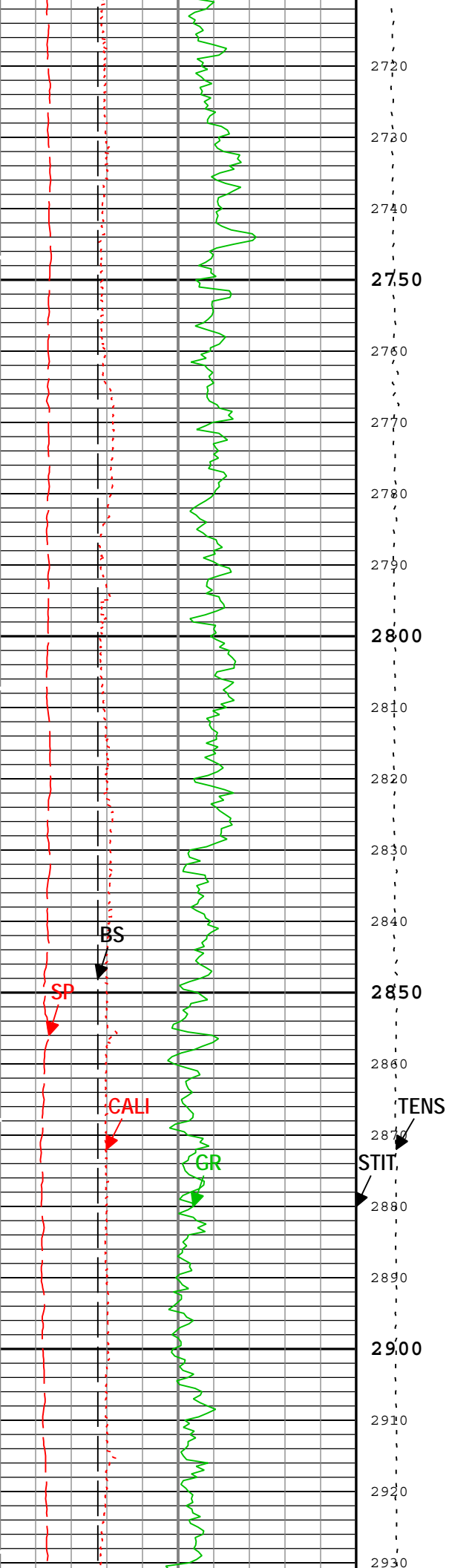


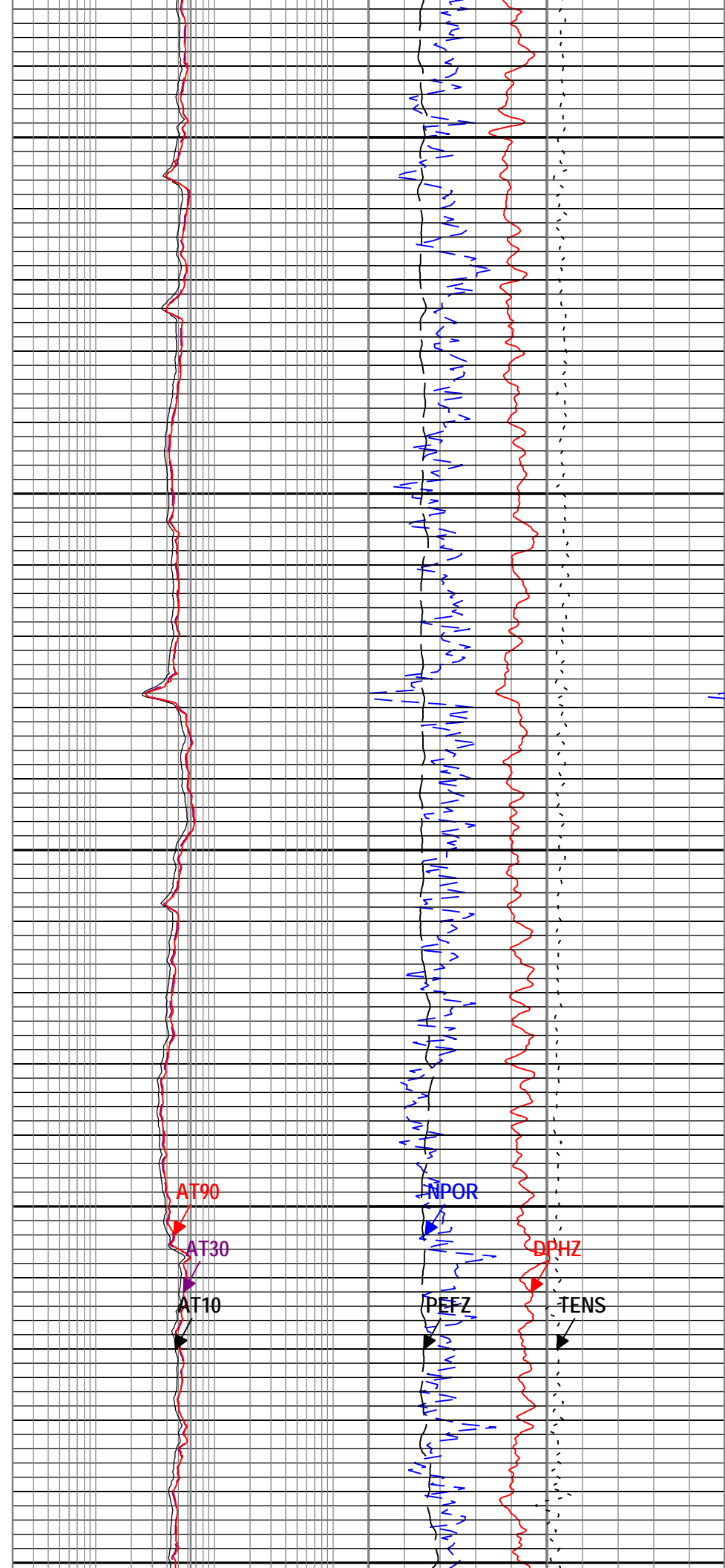
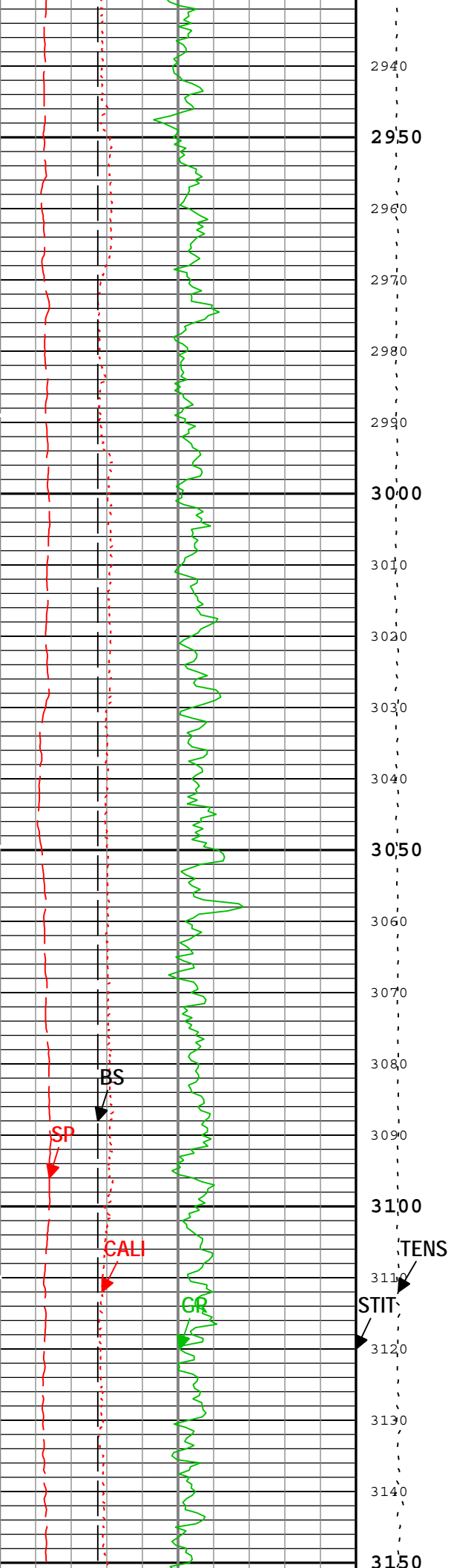


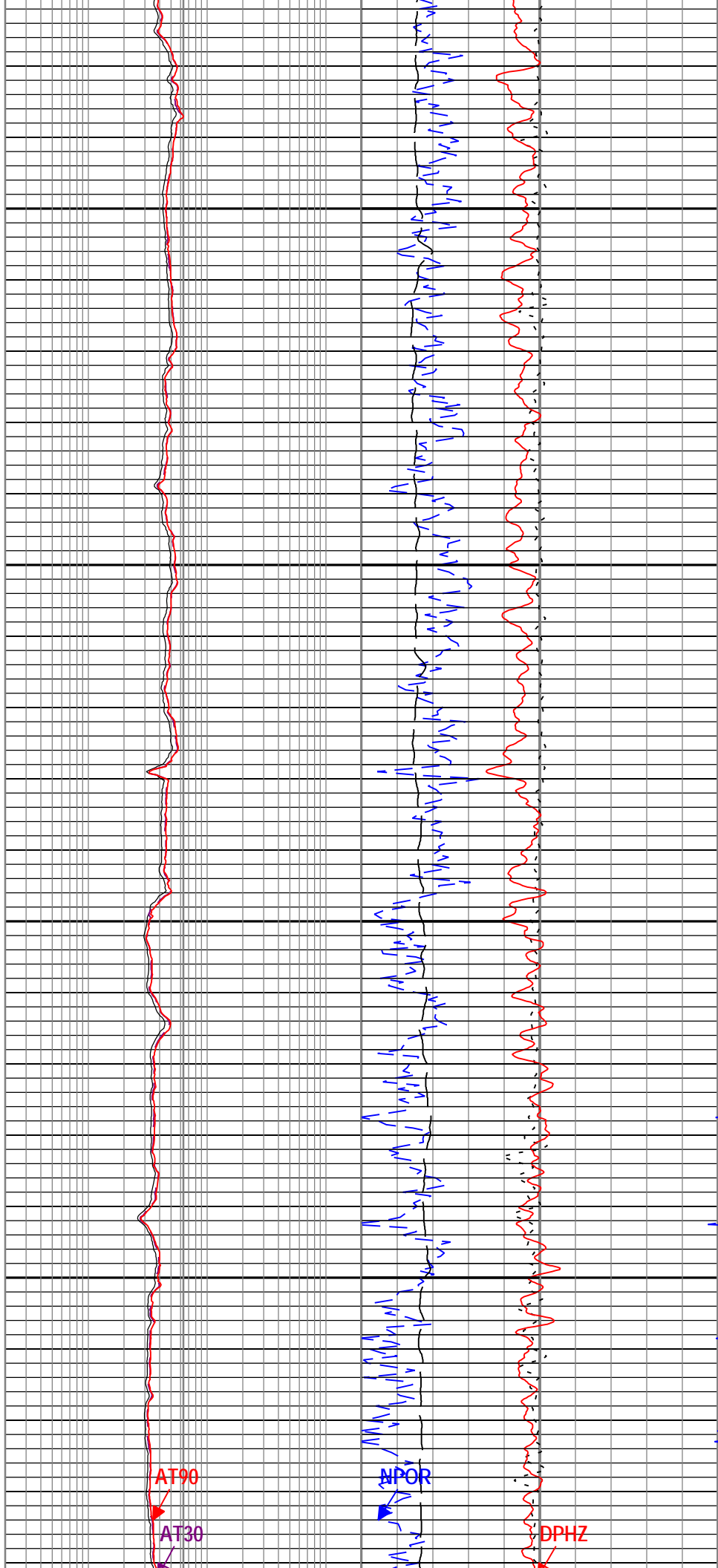
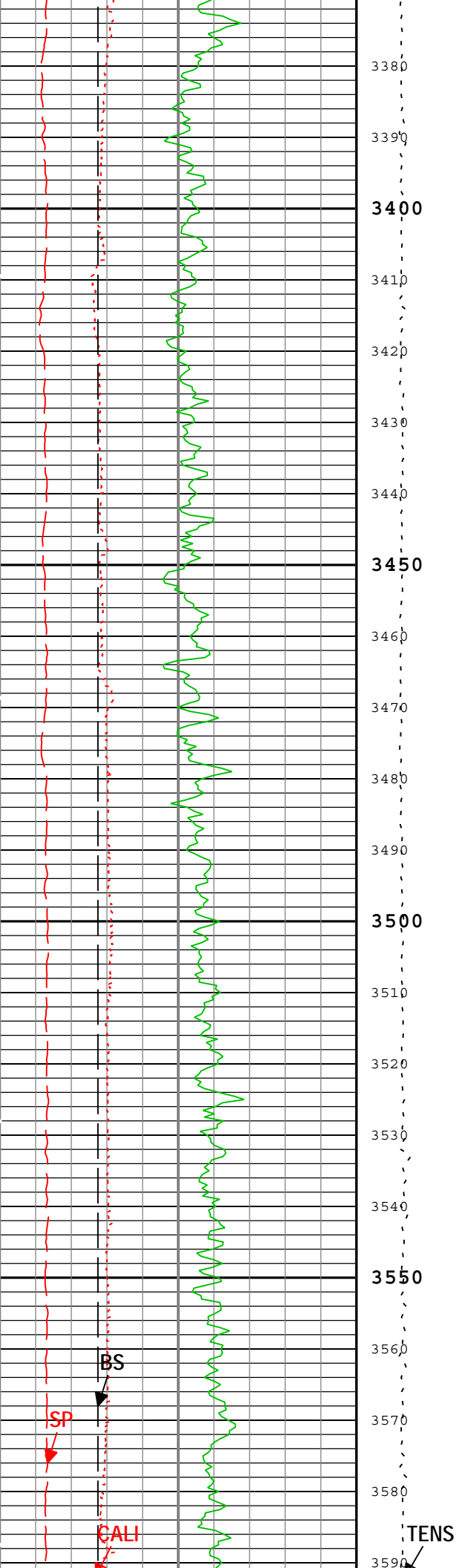


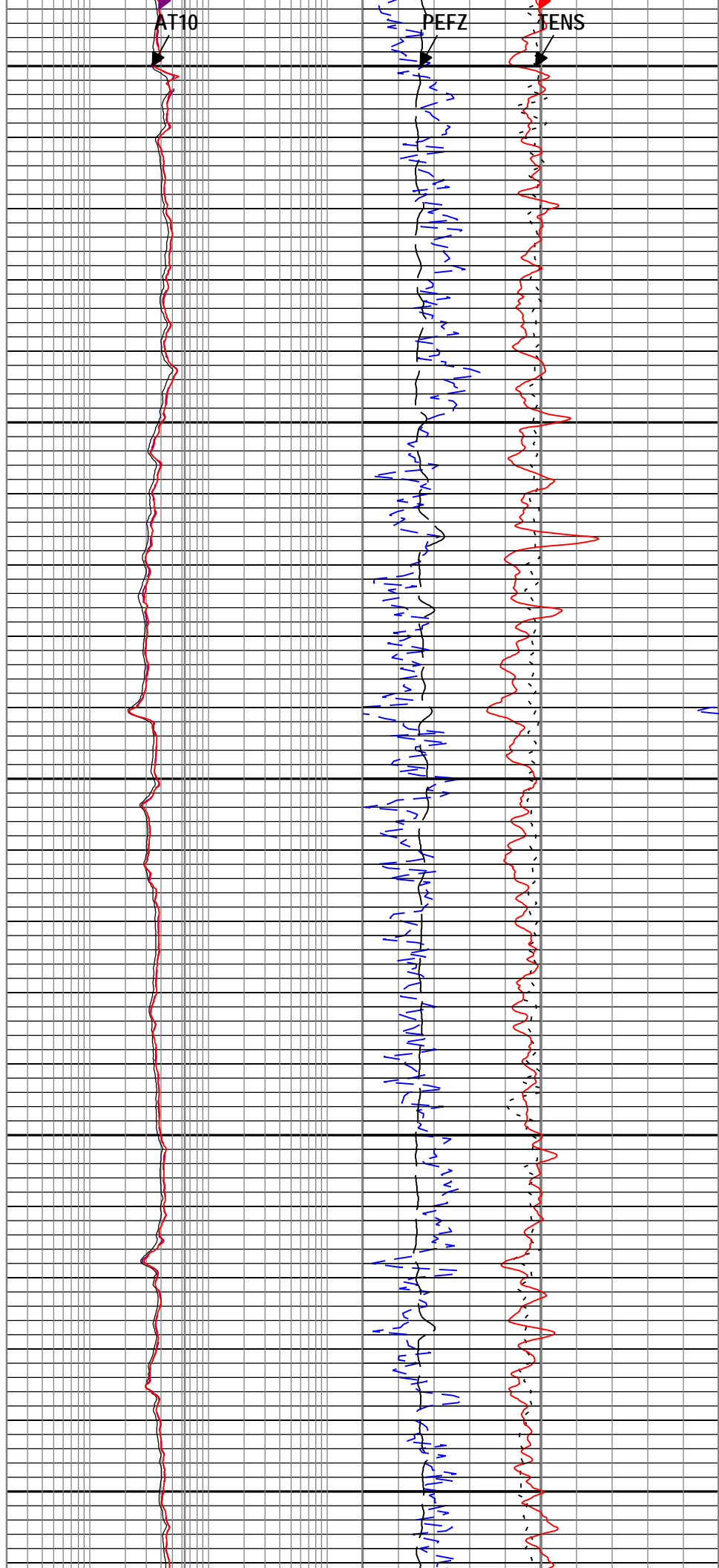
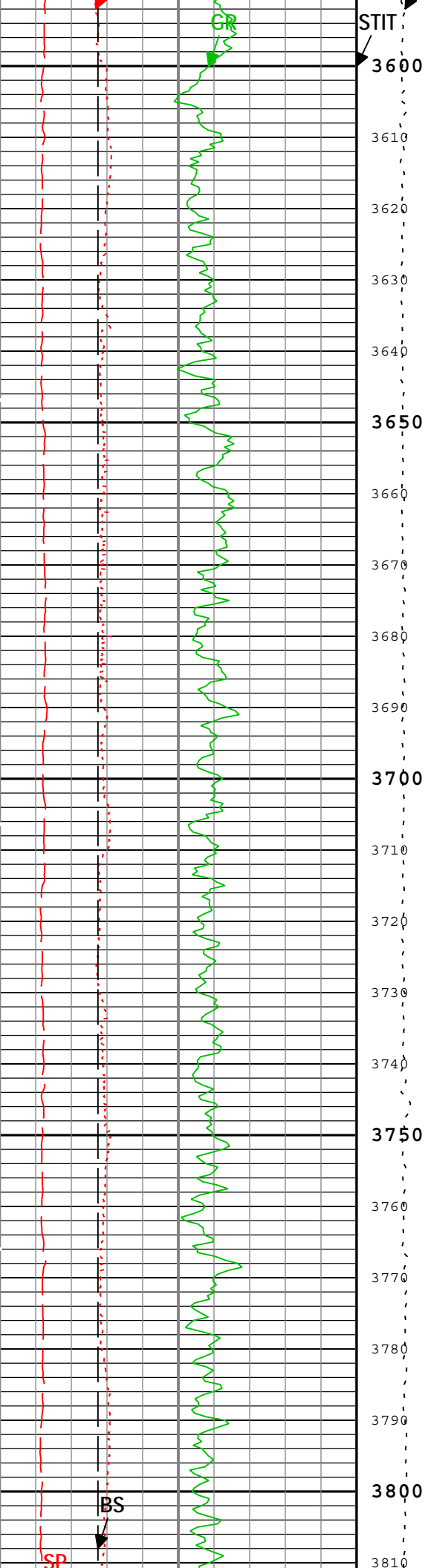


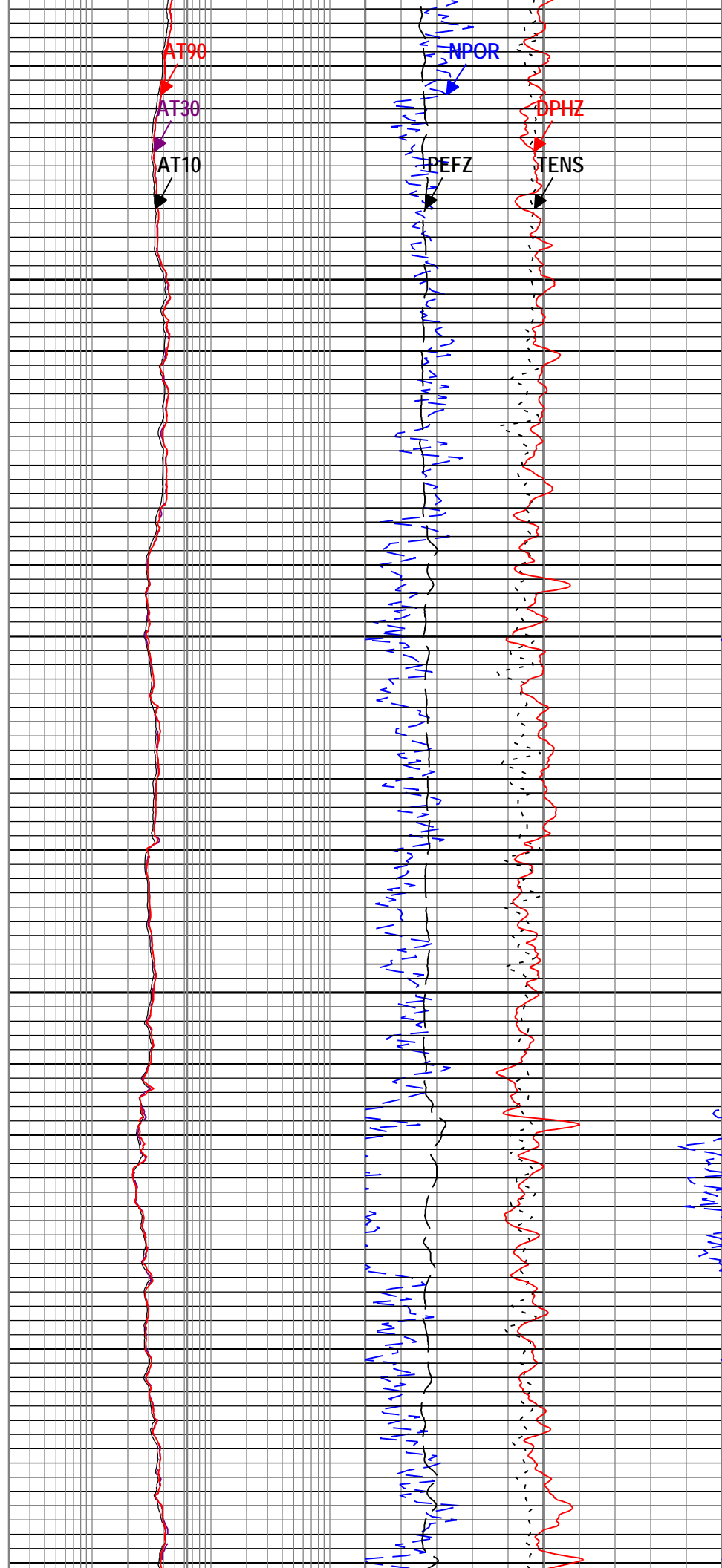
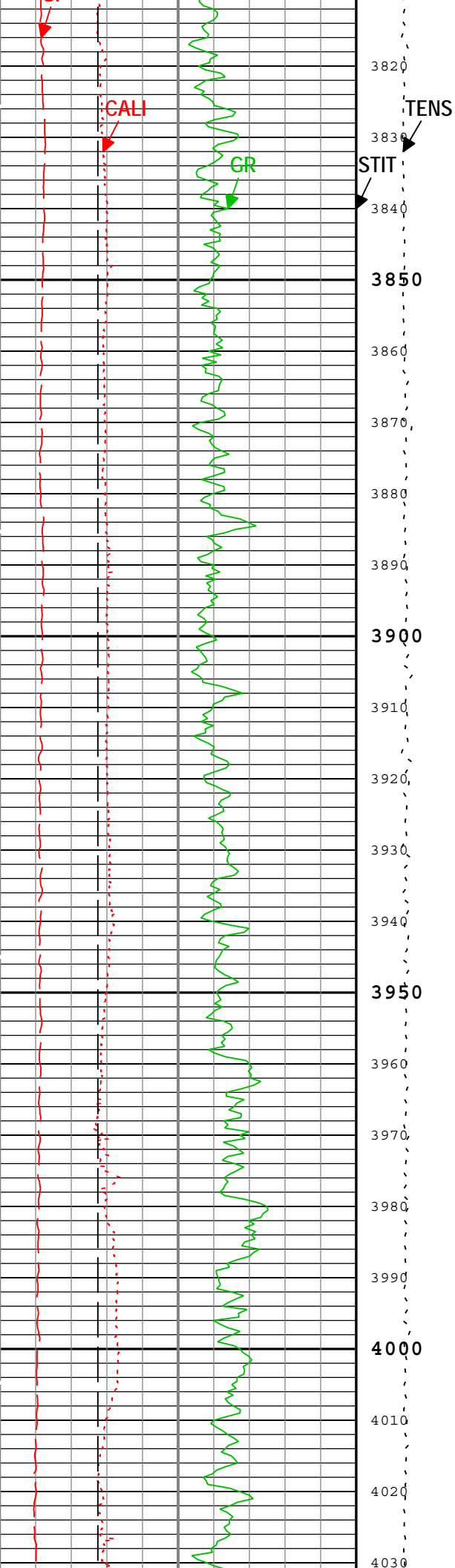


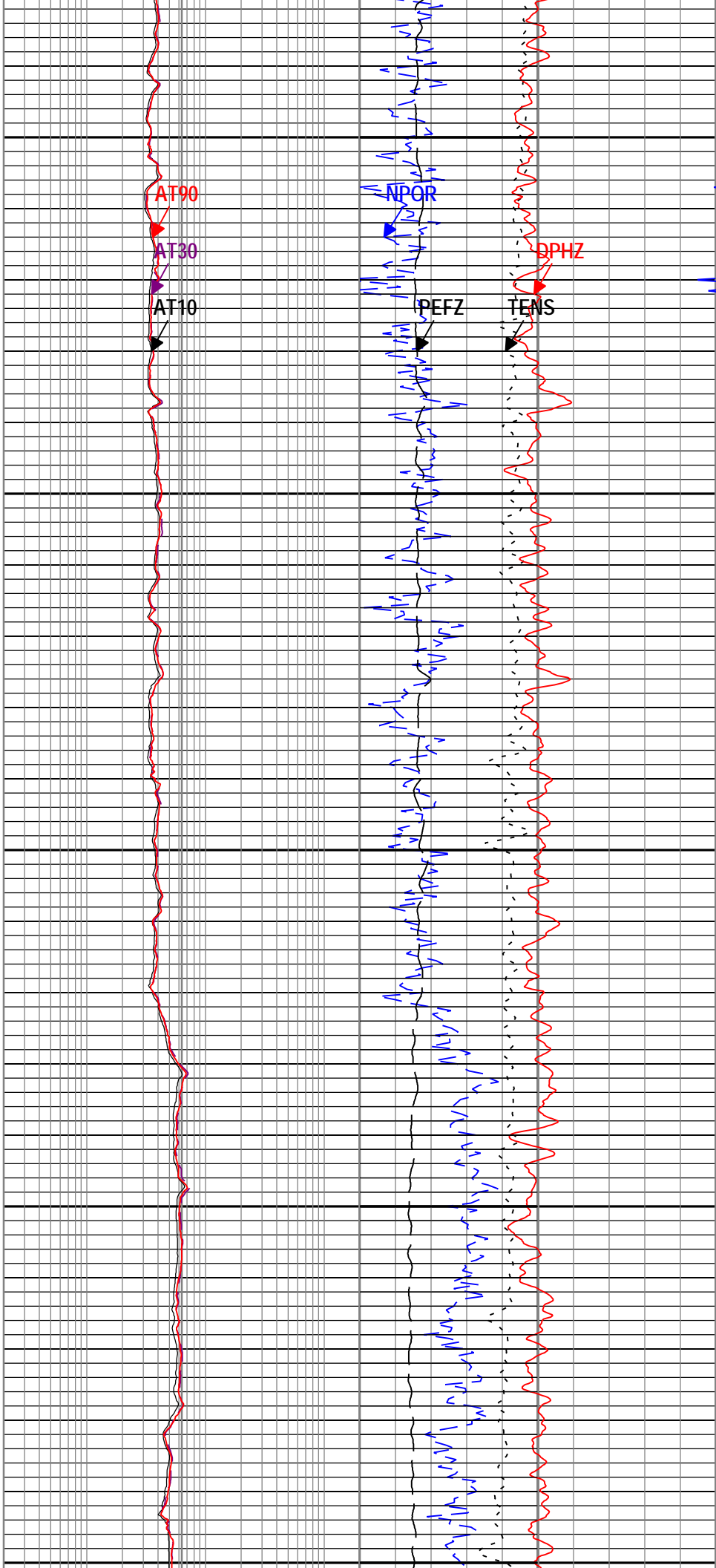
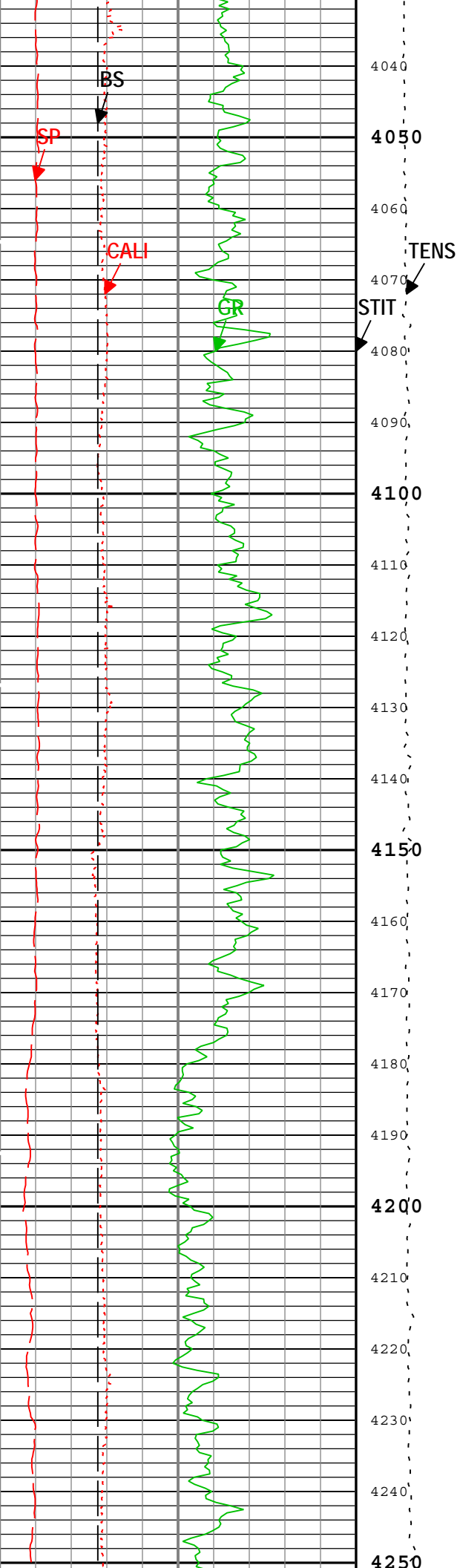


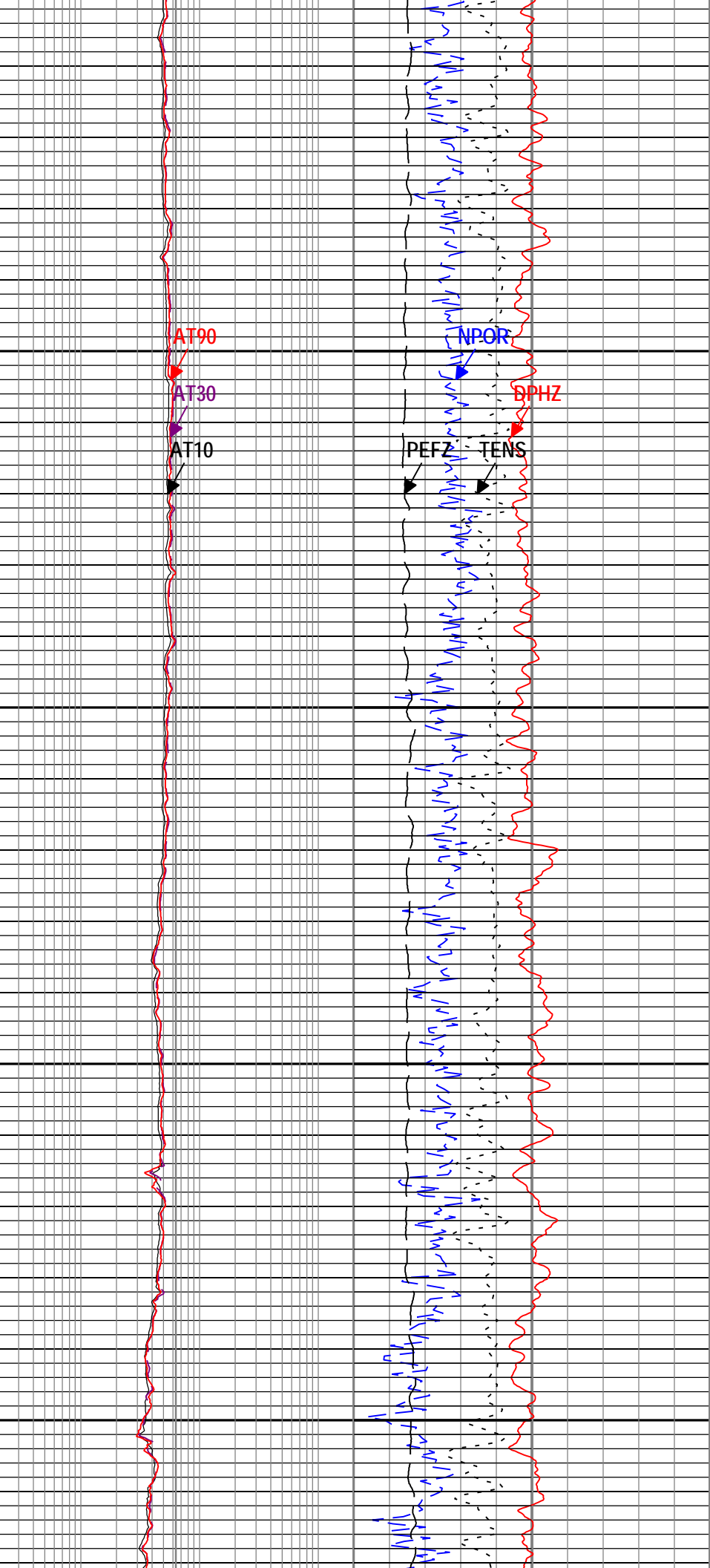
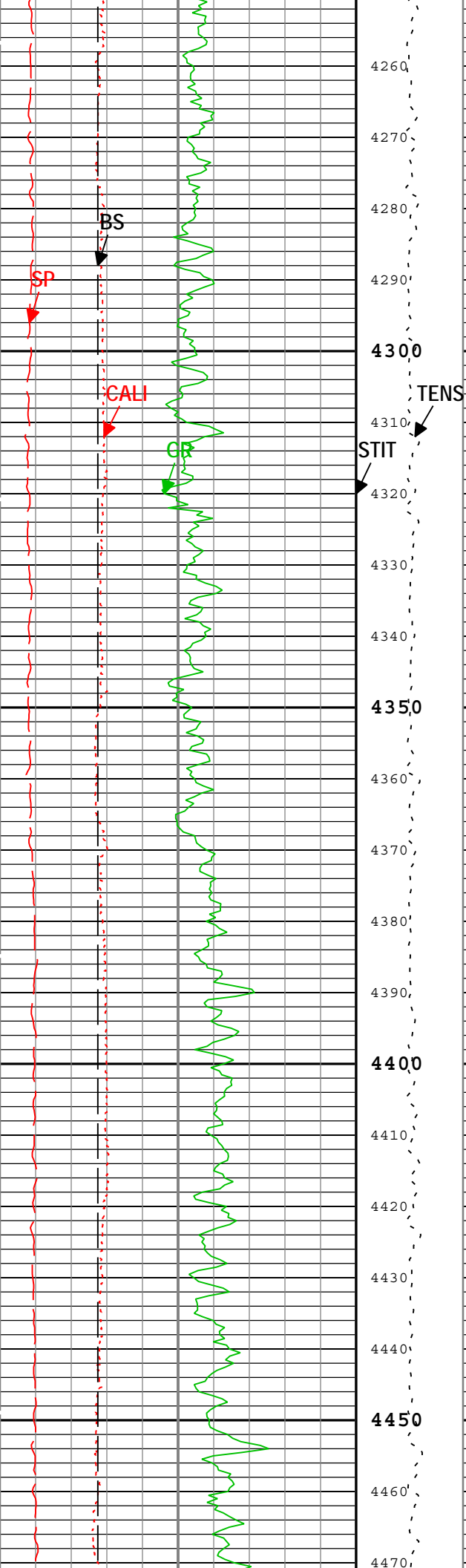


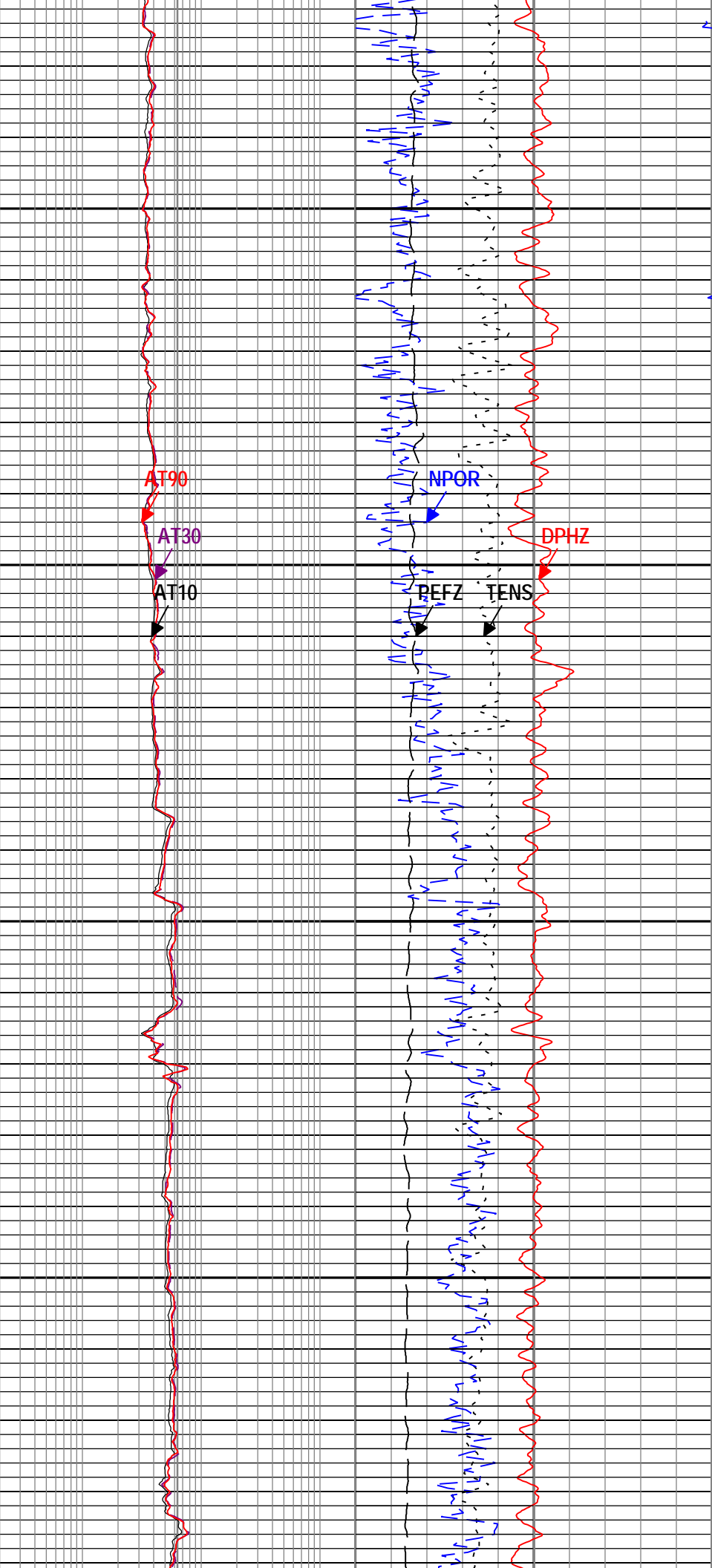
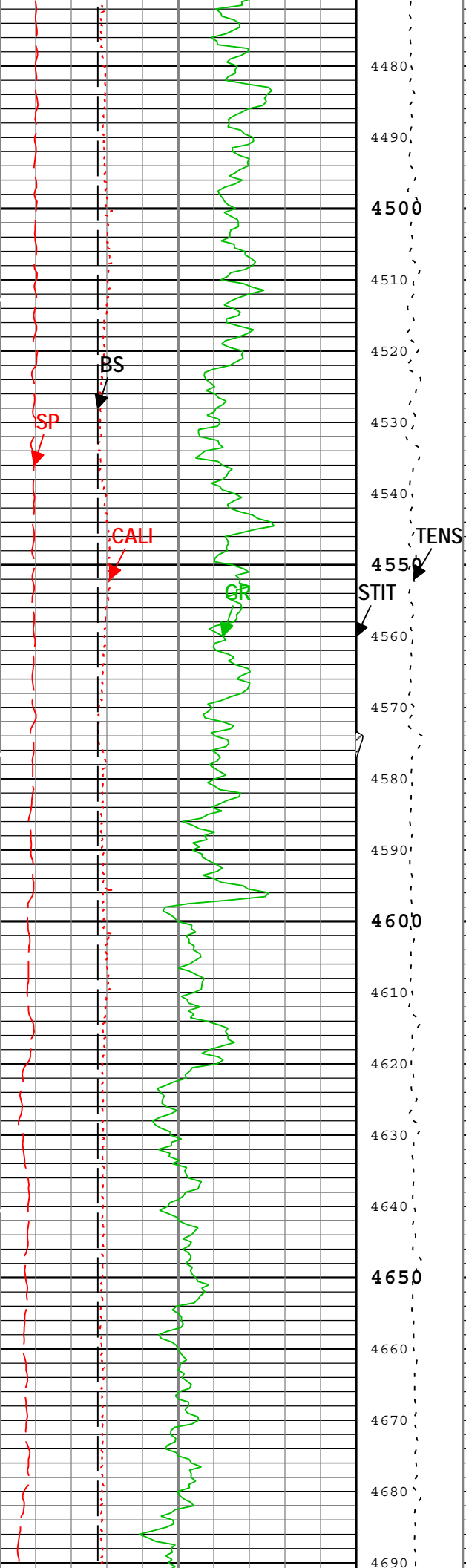


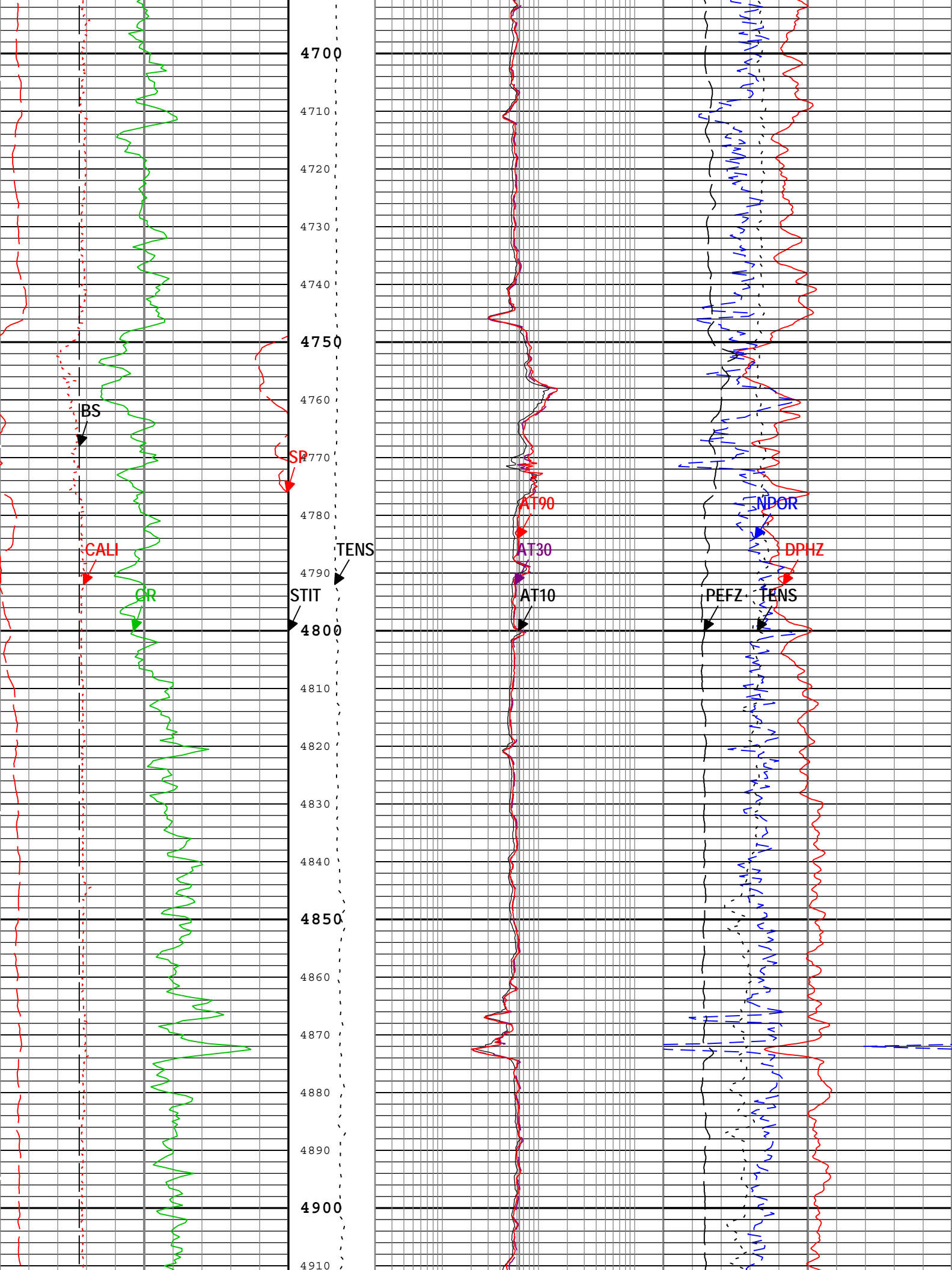


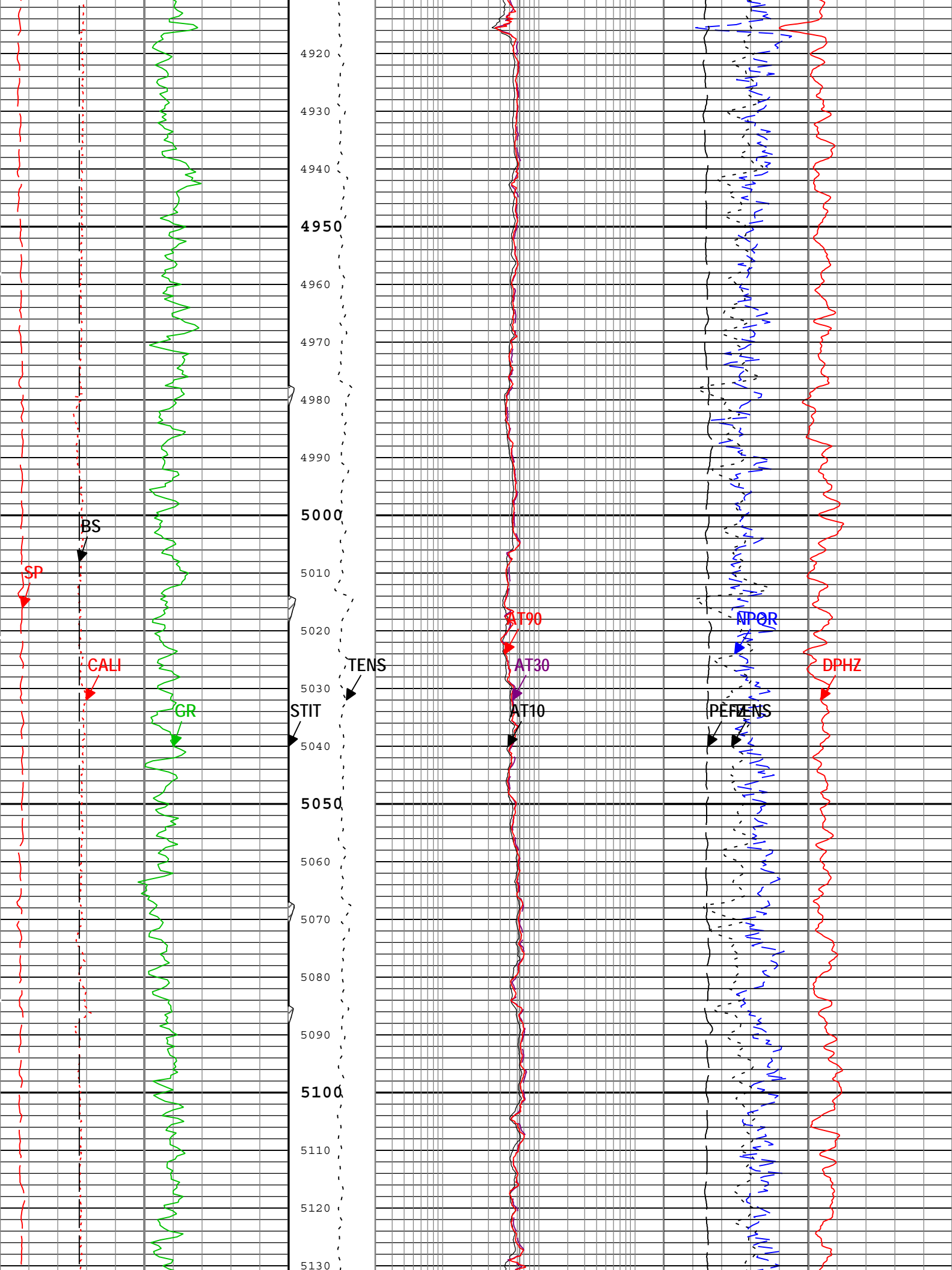


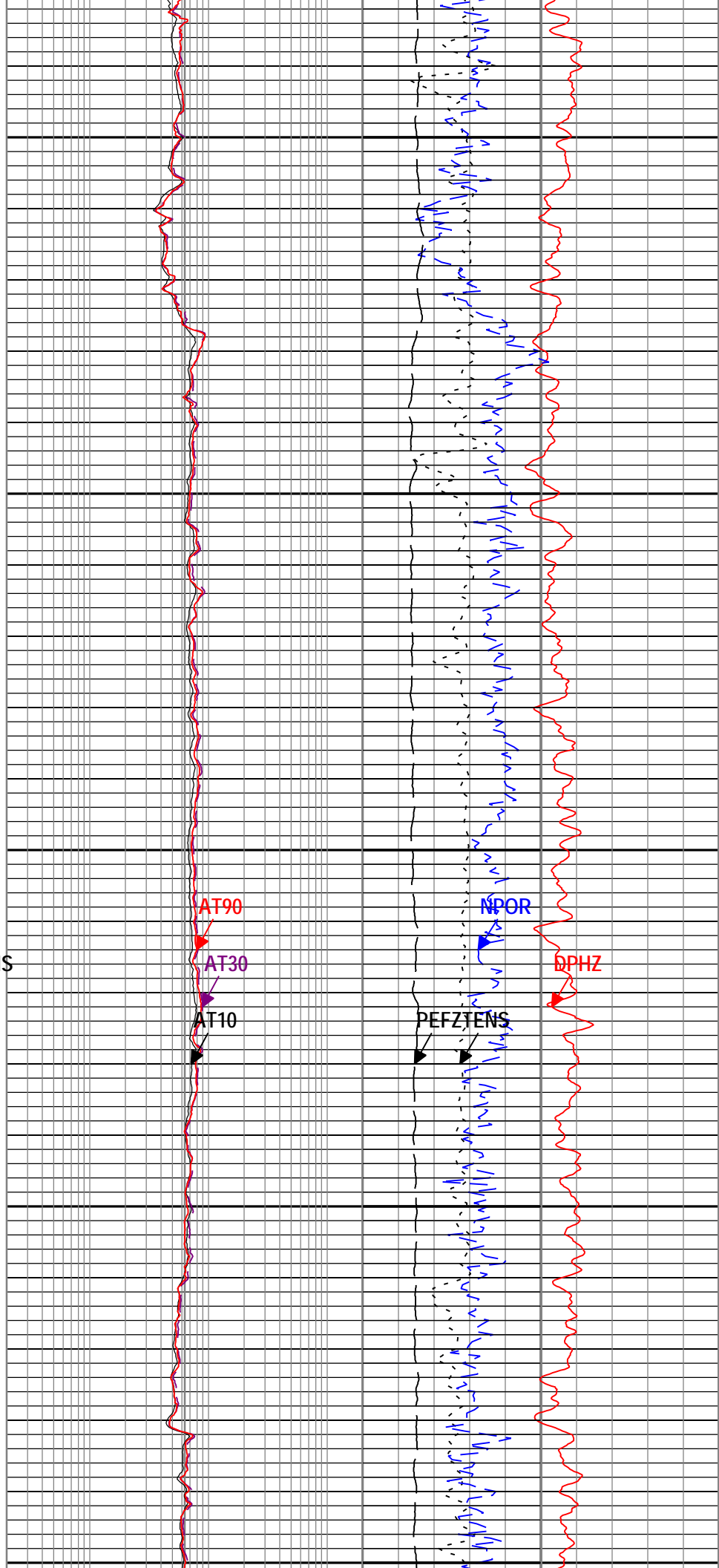
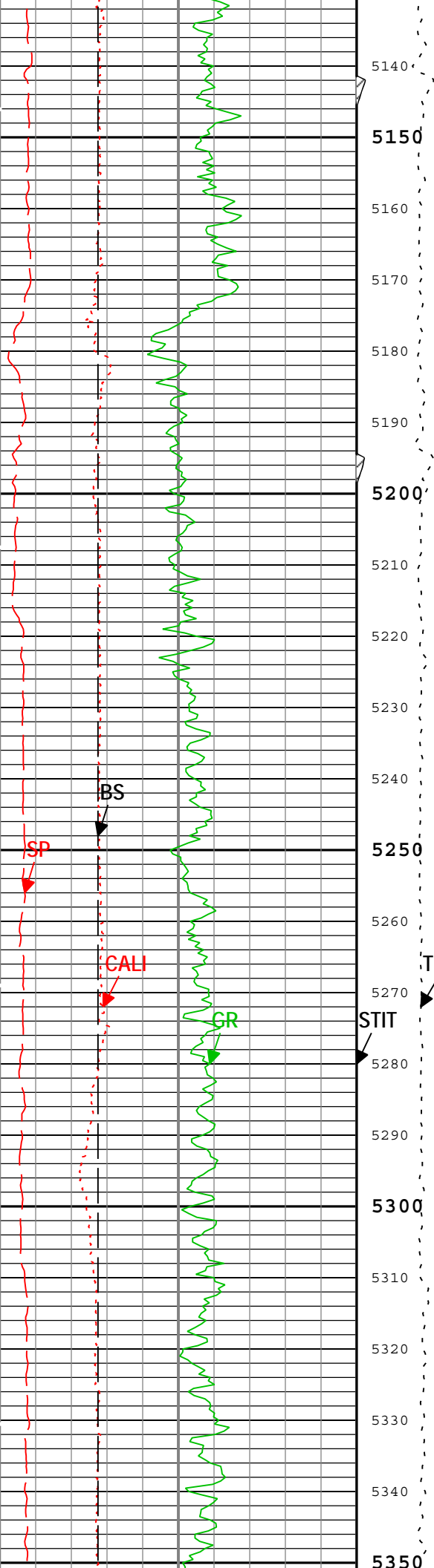


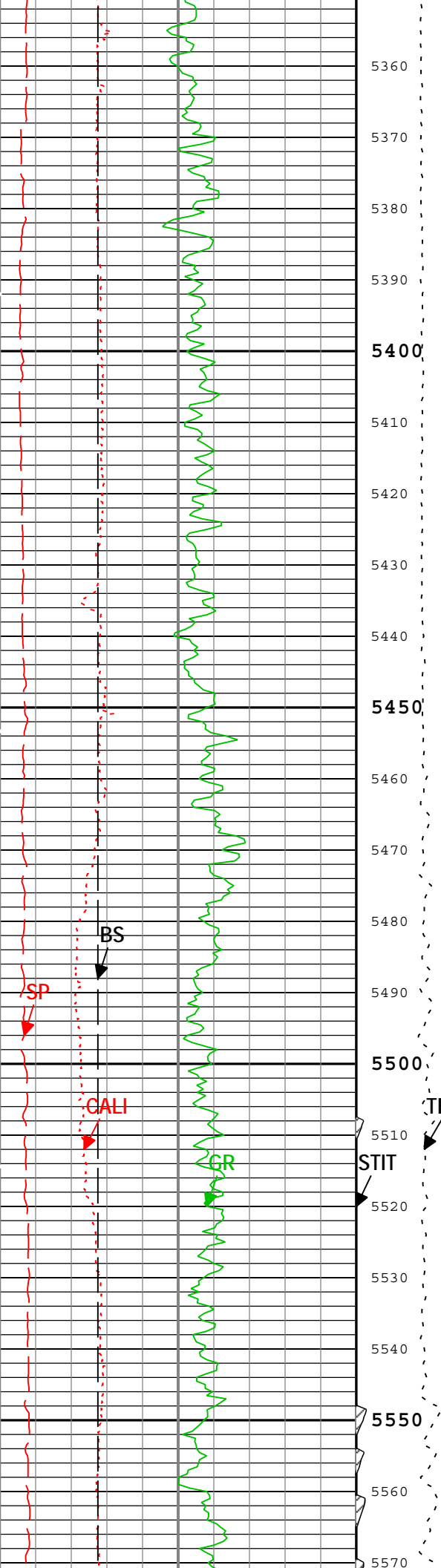




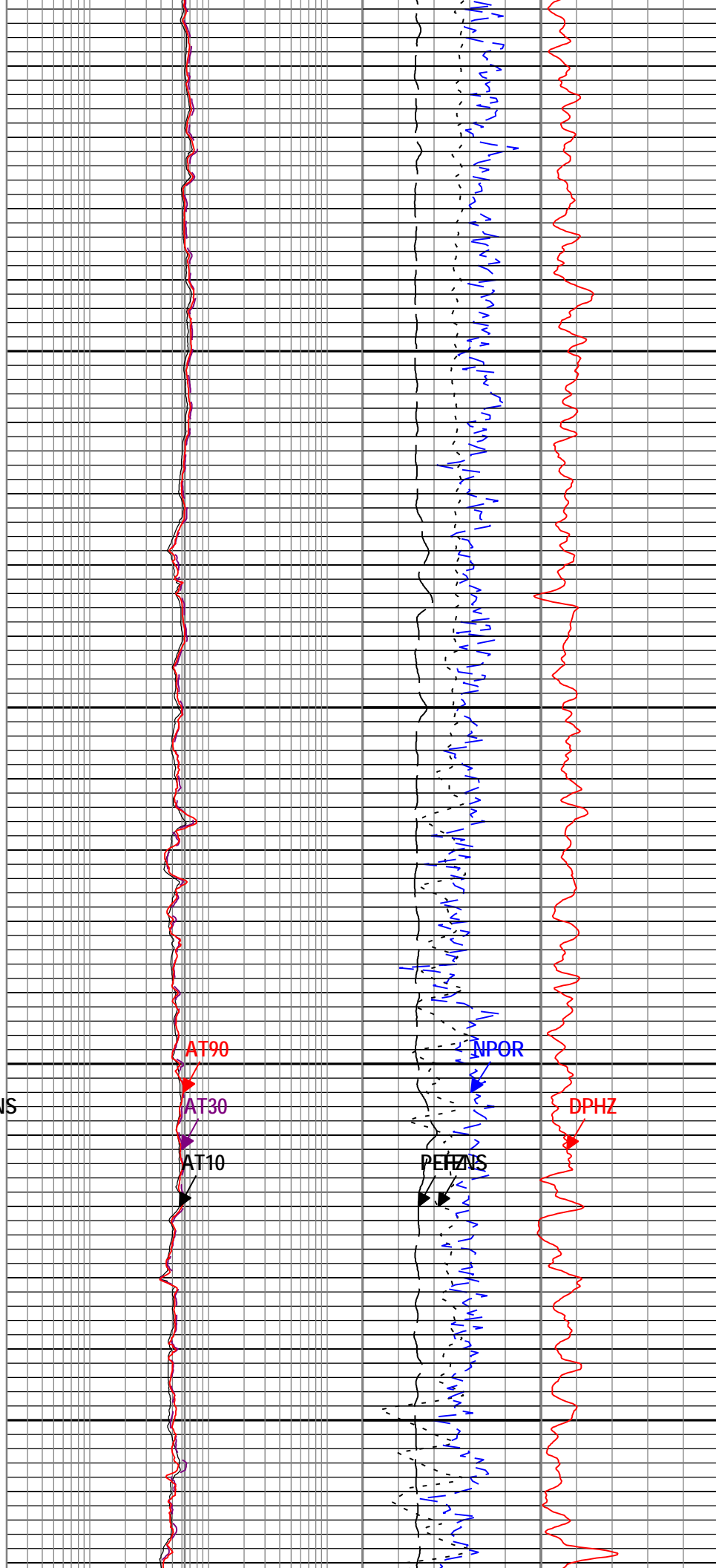


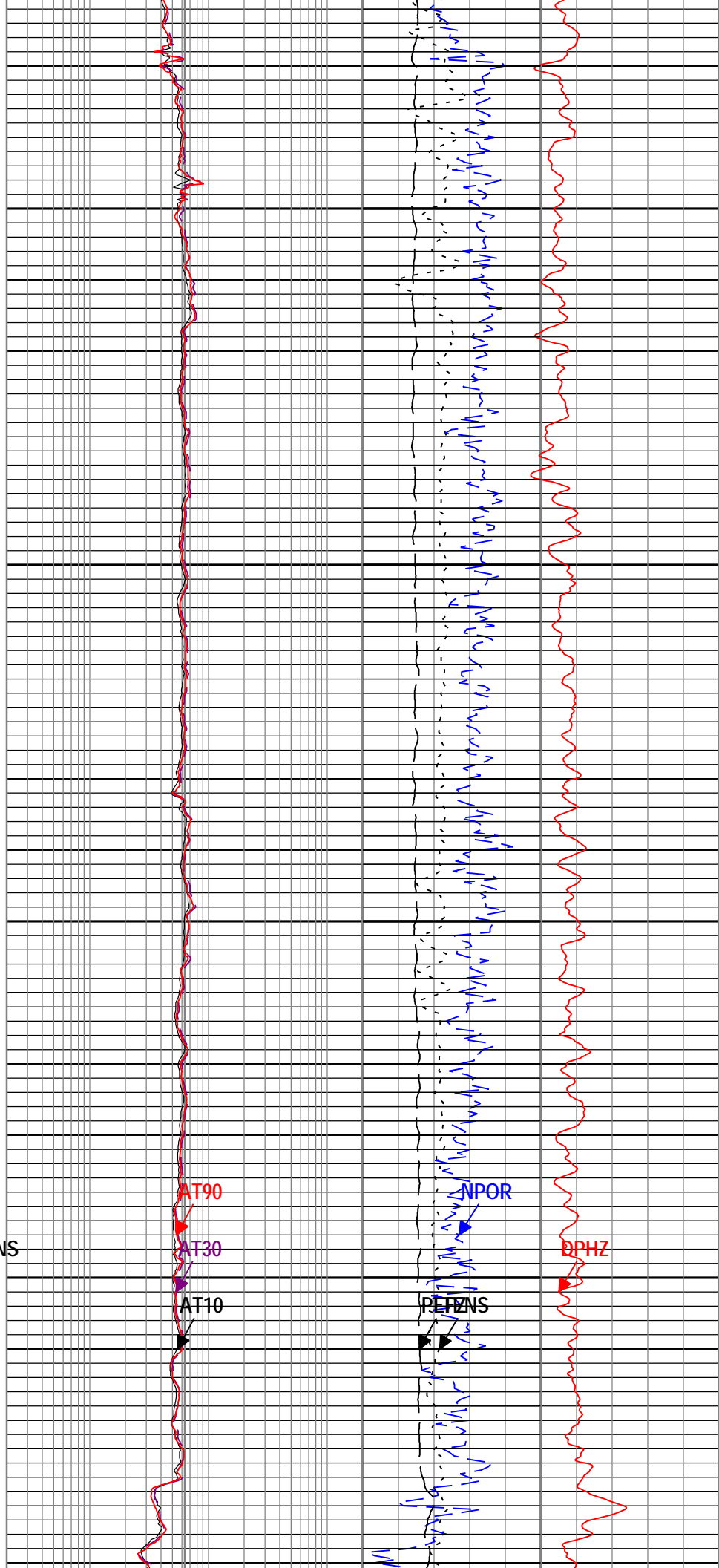
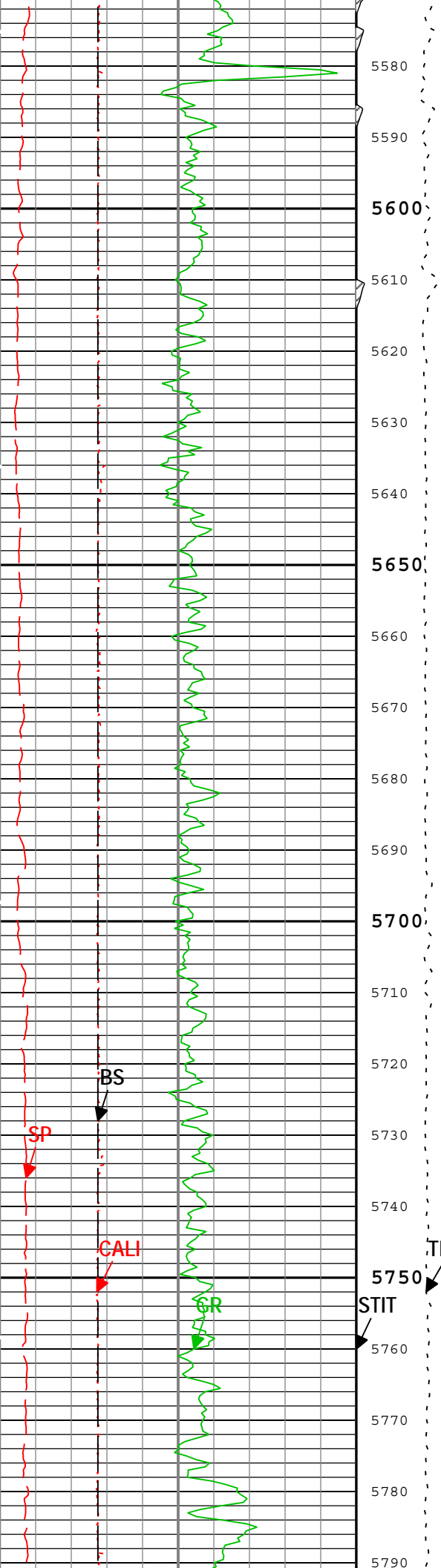


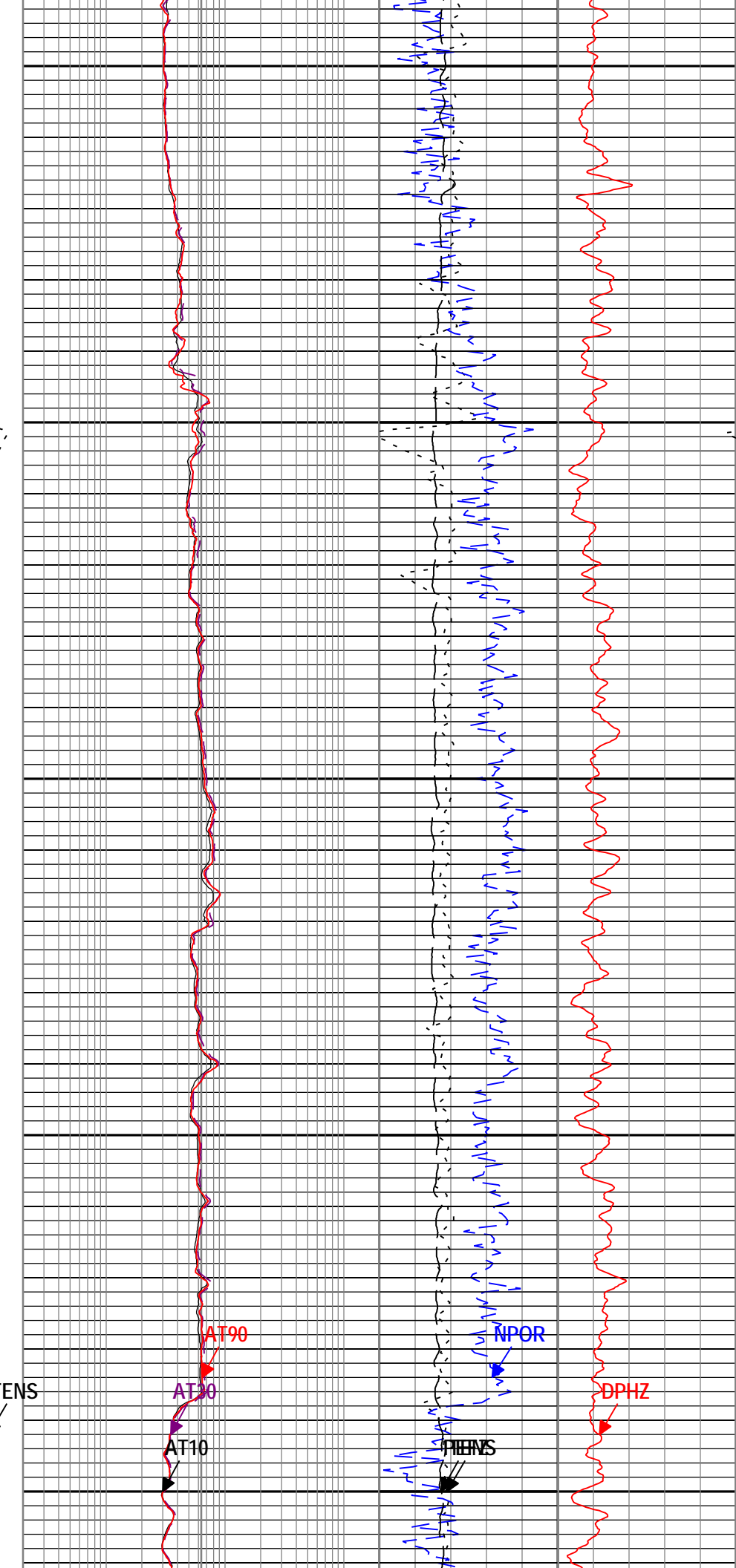
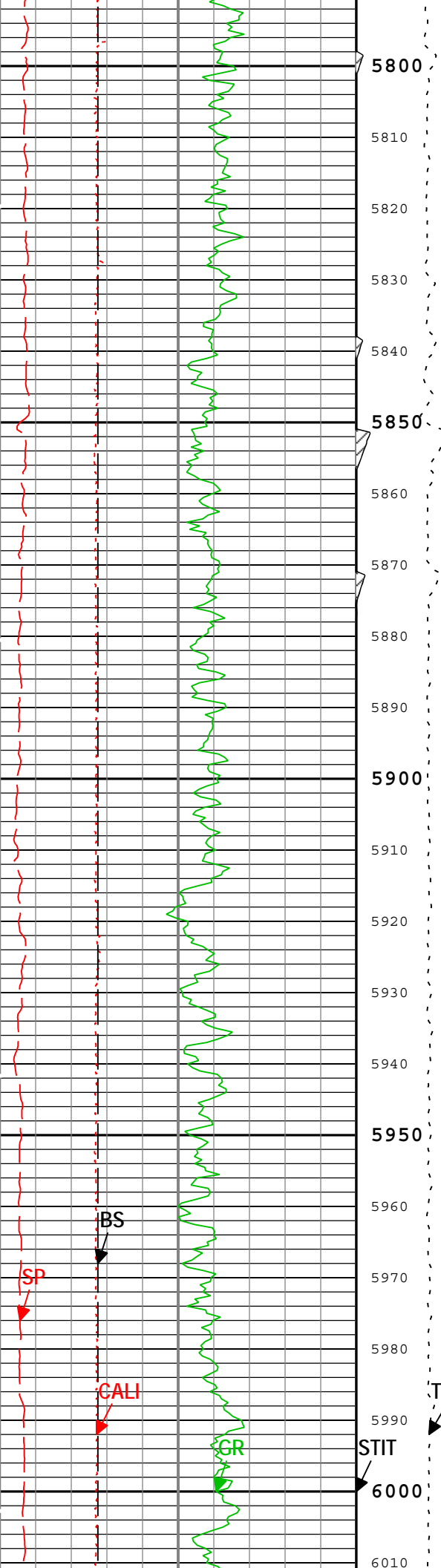


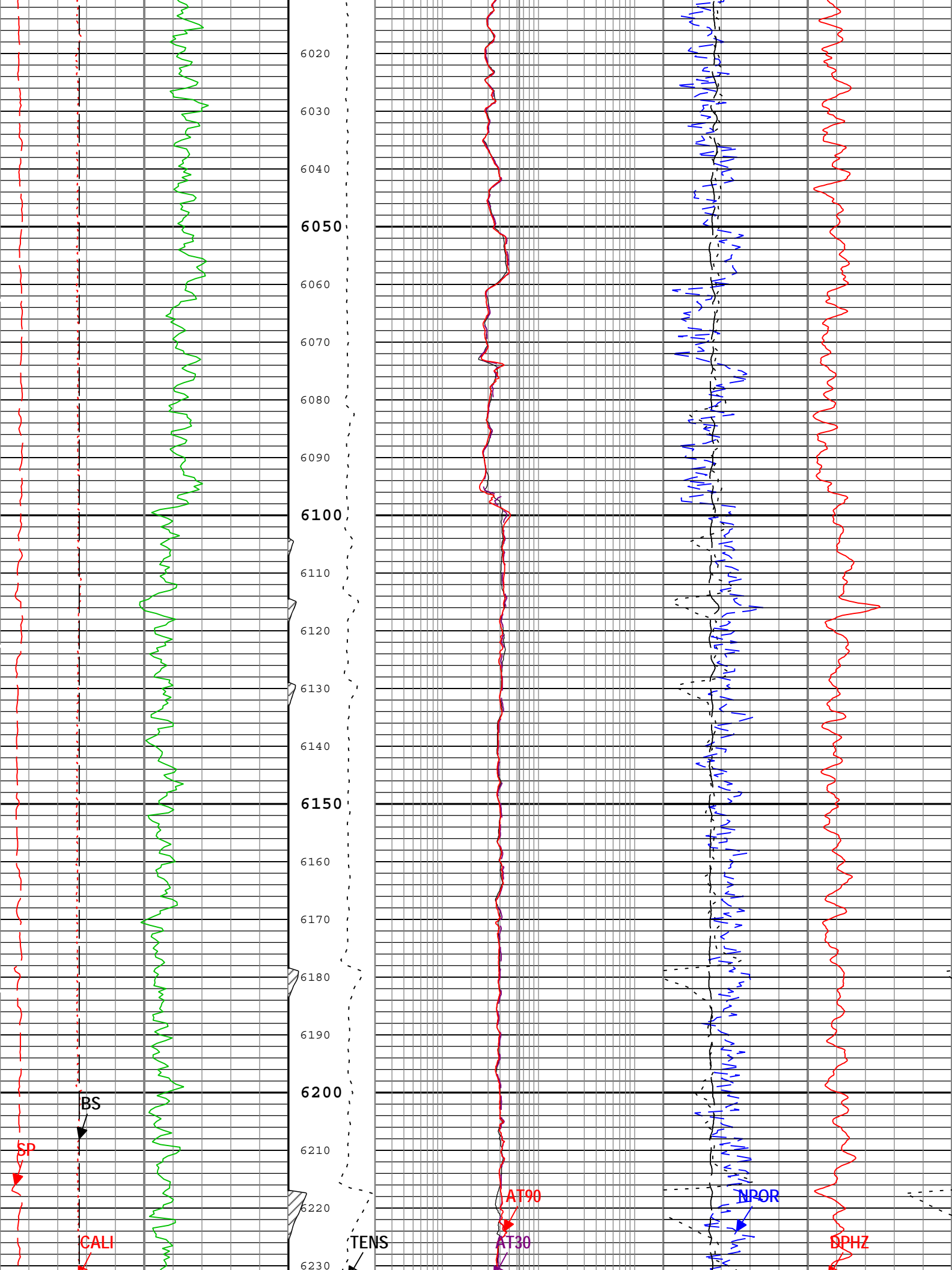


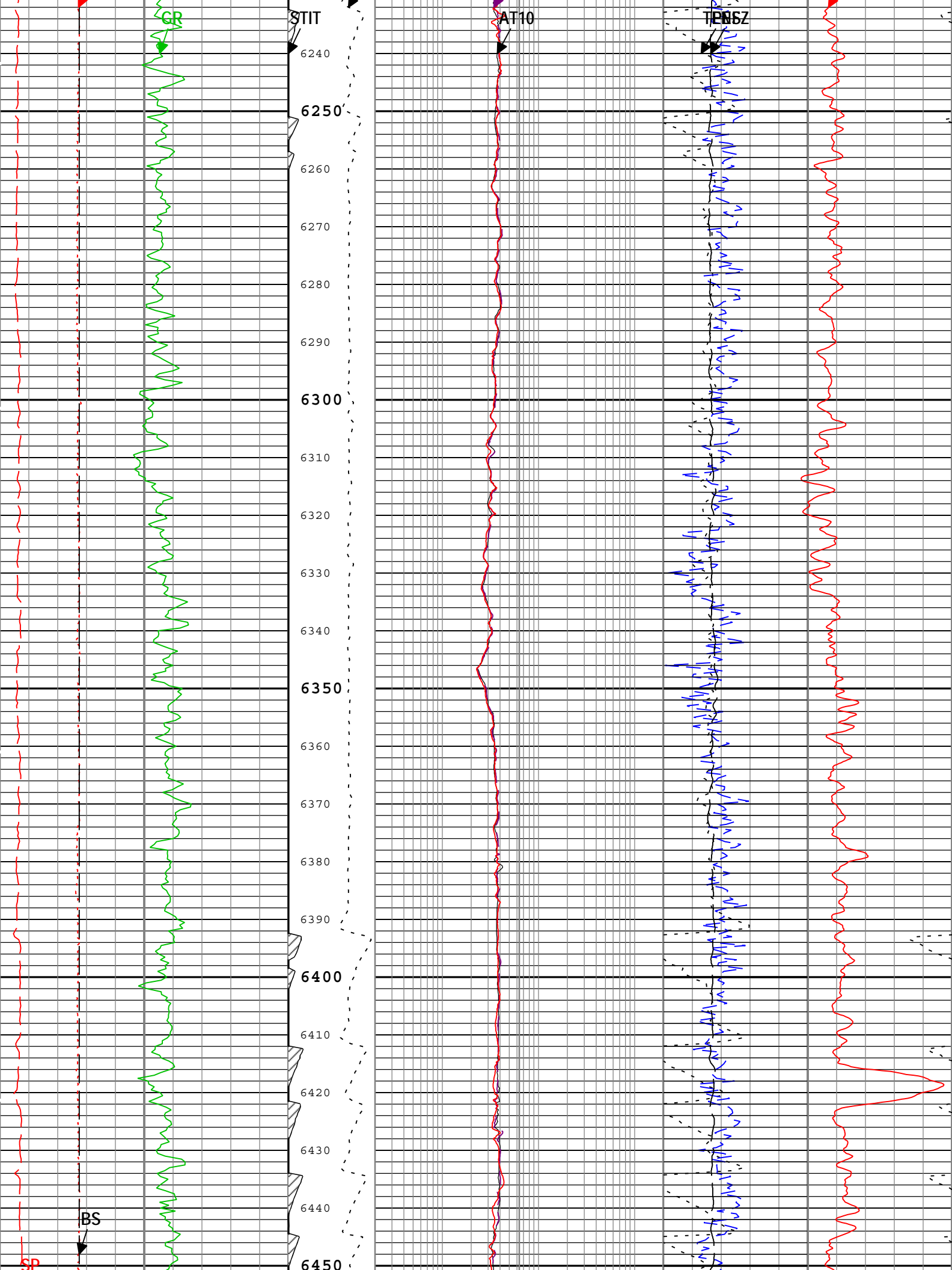
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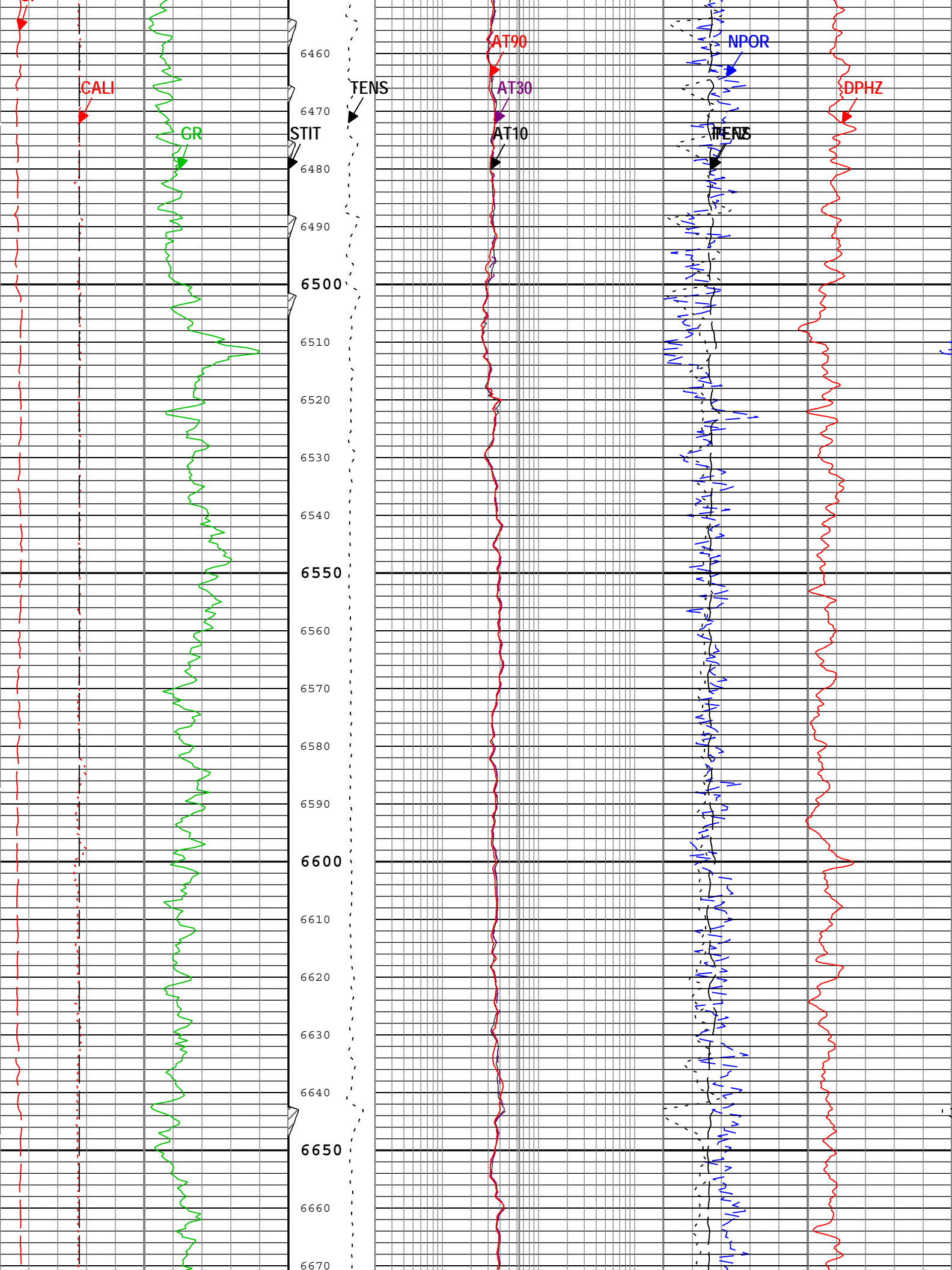


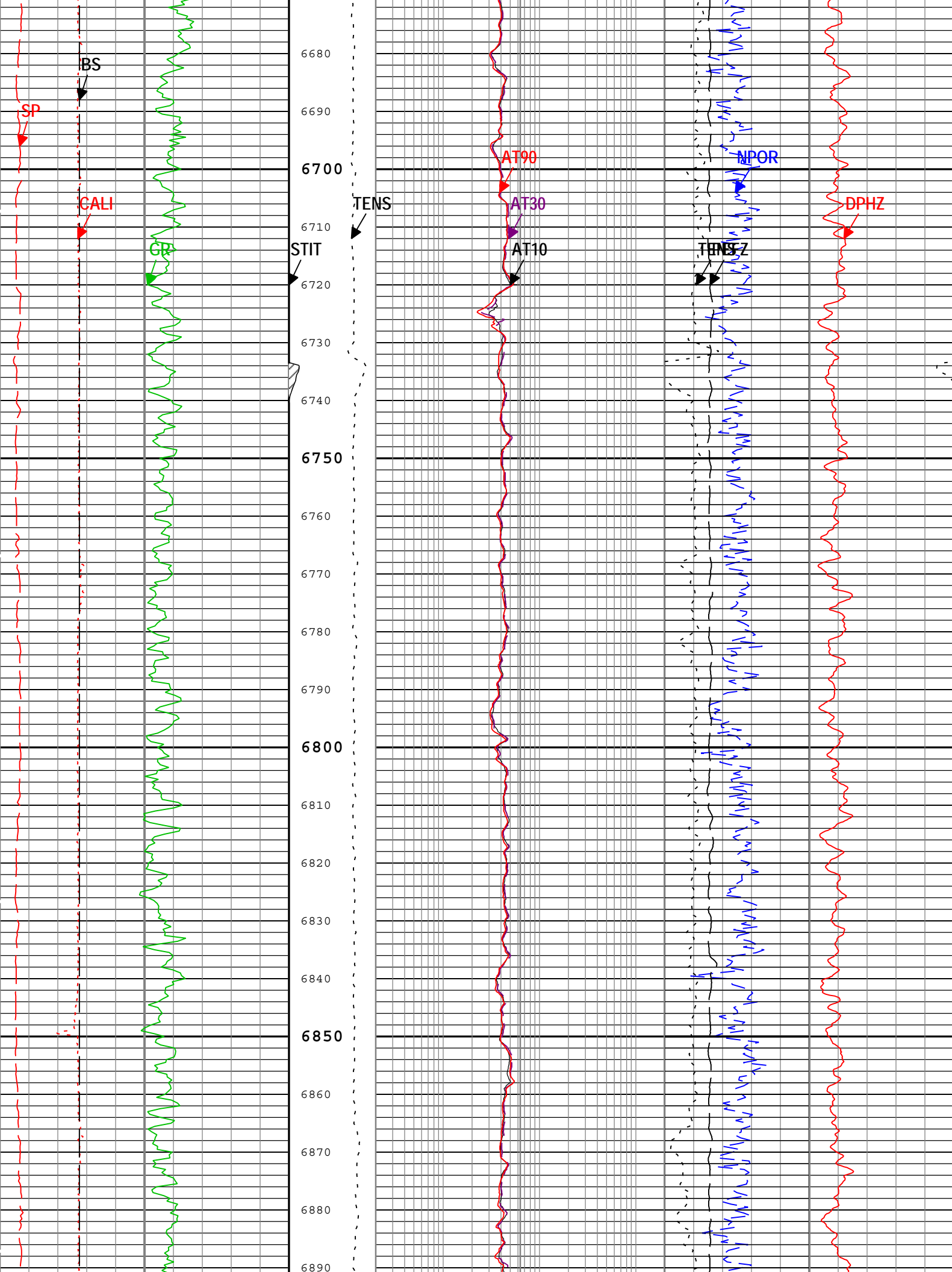


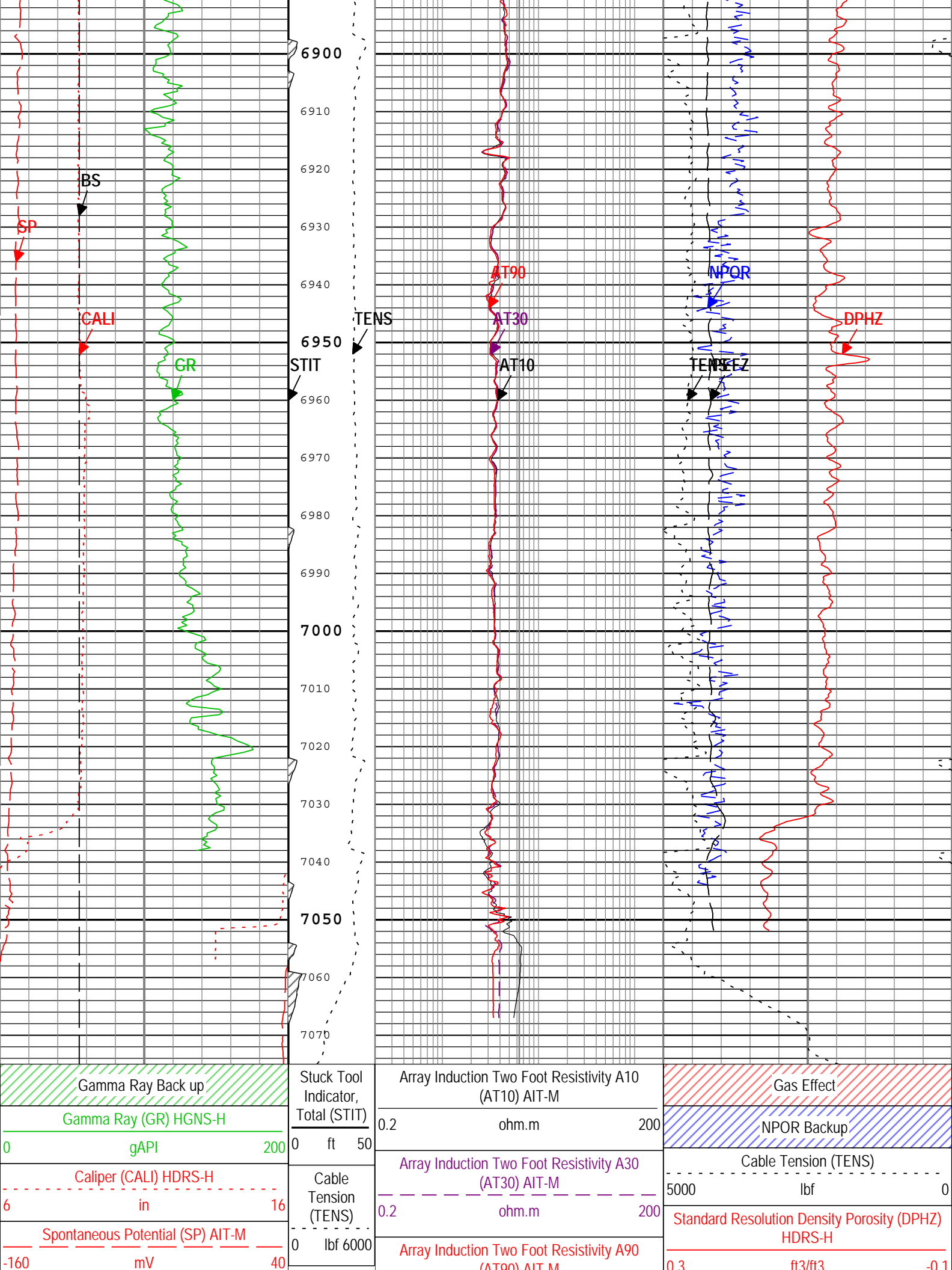












6900
6910
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6930
6940
6950
6960
6970
6980
6990
7000
7010
7020
7030
7040
7050
7060
7070

BS

SP

CALI

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TENS

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AT90

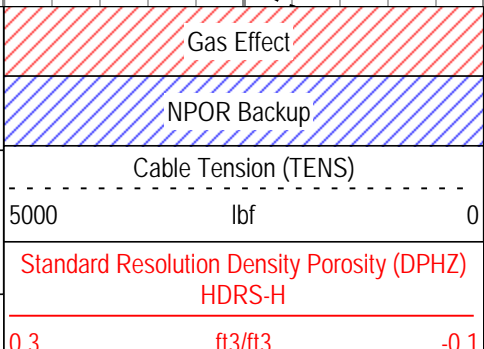
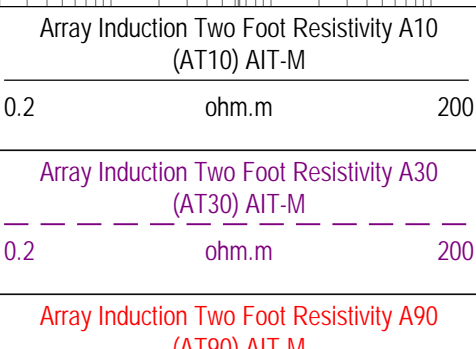
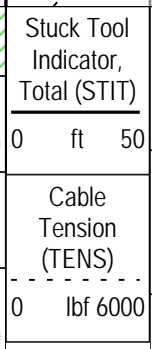
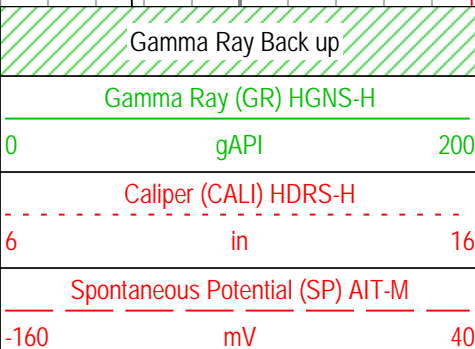
AT30

AT10

NPOR

TENSEZ

DPHZ



<div> <div>Bit Size (BS)</div> <div>6in16</div> </div>		<div> <div>0.2ohm.m200</div> </div>	<div> <div>Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H</div> <div>0.3m3/m3-0.1</div> </div>
			<div> <div>Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H</div> <div>010</div> </div>

TIME_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log (KM 5in Triple Combo) Index Scale: 5 in per 100 ft Index Unit: ft

Index Type: Measured Depth Creation Date: 08-Aug-2014 06:52:09

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Standoff	
ACDE	Array Induction Casing Detection Enable	AIT-M	Yes	
ASTA	Array Induction Tool Standoff	AIT-M	1.125	in
BARI	Barite Mud Presence Flag	Borehole	Yes	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BHT	Bottom Hole Temperature	Borehole	160	degF
BS	Bit Size	WLSESSION	8.75	in
BSAL	Borehole Salinity	Borehole	0	ppm
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0.068	in
CBLO	Casing Bottom (Logger)	WLSESSION	1762	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	10.2	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DFT_WATER	Drilling Fluid Water Type	Borehole	WBM	
DHC	Density Hole Correction	HDRS-H	Bit Size	
FD	Fluid Density	Borehole	1	g/cm3
FSAL	Formation Salinity	Borehole	0	ppm
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	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	CTEM	
HSCO	Hole Size Correction Option	HGNS-H	Yes	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MDEN	Matrix Density for Density Porosity	Borehole	2.71	g/cm3
MFST	Mud Filtrate Sample Temperature	Borehole	75	degF
RMFS	Resistivity of Mud Filtrate Sample	Borehole	1.15	ohm.m
SOCO	Standoff Correction Option	HGNS-H	Yes	
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft
TD	Total Measured Depth	Borehole	7055	ft

Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
HMCA_BRD_TYPE	HMCA Board Type	HGNS-H	1	
HRGD_BRD_TYPE	HRGD Board Type	HDRS-H	WITH_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h

Calibration Report

AIT-M (Array Induction Tool - M) Calibration - Run Two

Primary Equipment :			File code for AIT-MA Sonde Tool Element			AMIS	181
Auxiliary Equipment :			File code for AIT Bottom Nose Tool Element			AMRM	181

AIT Sonde Calibration - Test Loop Gain

Master (EEPROM):		15:52:07 18-Jun-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Test Loop Gain - 0		Master	1.000	0.950	1.016	1.050	
Test Loop Phase - 0	deg	Master	0	-3.000	-0.873	3.000	
Test Loop Gain - 1		Master	1.000	0.950	1.016	1.050	
Test Loop Phase - 1	deg	Master	0	-3.000	-0.523	3.000	
Test Loop Gain - 2		Master	1.000	0.950	1.020	1.050	
Test Loop Phase - 2	deg	Master	0	-3.000	-0.285	3.000	
Test Loop Gain - 3		Master	1.000	0.950	1.017	1.050	
Test Loop Phase - 3	deg	Master	0	-3.000	-0.364	3.000	
Test Loop Gain - 4		Master	1.000	0.950	0.996	1.050	
Test Loop Phase - 4	deg	Master	0	-3.000	0.047	3.000	
Test Loop Gain - 5		Master	1.000	0.950	0.992	1.050	
Test Loop Phase - 5	deg	Master	0	-3.000	-0.306	3.000	
Test Loop Gain - 6		Master	1.000	0.950	0.998	1.050	
Test Loop Phase - 6	deg	Master	0	-3.000	-0.014	3.000	
Test Loop Gain - 7		Master	1.000	0.950	1.012	1.050	
Test Loop Phase - 7	deg	Master	0	-3.000	-0.171	3.000	

AIT Sonde Calibration - Sonde Error Correction


















Master (EEPROM):		15:52:07 18-Jun-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-105.375	119.000	
Sonde Error Correction Quad - 0		Master	-----	-2250.000	128.249	2250.000	
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	154.526	204.000	
Sonde Error Correction Quad - 1		Master	-----	-625.000	-120.438	625.000	
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	113.010	156.000	
Sonde Error Correction Quad - 2		Master	-----	-350.000	-106.668	350.000	
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	49.722	89.000	
Sonde Error Correction Quad - 3		Master	-----	-250.000	-9.512	250.000	
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	25.368	35.000	
Sonde Error Correction Quad - 4		Master	-----	-63.000	-11.301	63.000	
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	10.767	24.000	
Sonde Error Correction Quad - 5		Master	-----	-50.000	19.041	50.000	
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	9.775	15.000	
Sonde Error Correction Quad - 6		Master	-----	-30.000	0.982	30.000	
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-1.211	5.000	
Sonde Error Correction Quad - 7		Master	-----	-30.000	1.407	30.000	

AIT Mud Calibration - Mud Calibration Gain

Master (EEPROM):		15:52:07 18-Jun-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Coarse Gain		Master	1.000	0.800	0.903	1.200	
Fine Gain		Master	1.000	0.800	0.900	1.200	

AIT Electronics Check - Thru Calibration Check

Master (EEPROM):		15:52:07 18-Jun-2014		Before (Measured):		20:28:46 07-Aug-2014	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Thru Cal Mag - 0	V	Master	-----	0.366	0.576	0.854	
		Before	-----	0.366	0.575	0.854	
		Before-Master	-----	-----	-0.001	-----	
Thru Cal Phase - 0	deg	Master	-----	137.000	-169.574	-103.000	
		Before	-----	137.000	-169.066	-103.000	
		Before-Master	-----	-----	0.508	-----	
Thru Cal Mag - 1	V	Master	-----	0.762	1.179	1.778	
		Before	-----	0.762	1.178	1.778	
		Before-Master	-----	-----	-0.001	-----	

Thru Cal Phase - 1	deg	Master Before Before-Master	----- ----- -----	136.000 136.000 -----	-170.676 -170.166 0.510	-104.000 -104.000 -----	
Thru Cal Mag - 2	V	Master Before Before-Master	----- ----- -----	0.372 0.372 -----	0.585 0.585 0.000	0.868 0.868 -----	
Thru Cal Phase - 2	deg	Master Before Before-Master	----- ----- -----	132.000 132.000 -----	-174.320 -173.810 0.510	-108.000 -108.000 -----	
Thru Cal Mag - 3	V	Master Before Before-Master	----- ----- -----	0.420 0.420 -----	0.661 0.660 -0.001	0.980 0.980 -----	
Thru Cal Phase - 3	deg	Master Before Before-Master	----- ----- -----	131.000 131.000 -----	-175.098 -174.588 0.510	-109.000 -109.000 -----	
Thru Cal Mag - 4	V	Master Before Before-Master	----- ----- -----	0.804 0.804 -----	1.234 1.233 -0.001	1.876 1.876 -----	
Thru Cal Phase - 4	deg	Master Before Before-Master	----- ----- -----	125.000 125.000 -----	178.625 179.142 0.517	-115.000 -115.000 -----	
Thru Cal Mag - 5	V	Master Before Before-Master	----- ----- -----	1.176 1.176 -----	1.797 1.795 -0.002	2.744 2.744 -----	
Thru Cal Phase - 5	deg	Master Before Before-Master	----- ----- -----	122.000 122.000 -----	176.963 177.486 0.523	-118.000 -118.000 -----	
Thru Cal Mag - 6	V	Master Before Before-Master	----- ----- -----	1.176 1.176 -----	1.796 1.795 -0.001	2.744 2.744 -----	
Thru Cal Phase - 6	deg	Master Before Before-Master	----- ----- -----	121.000 121.000 -----	176.970 177.492 0.522	-119.000 -119.000 -----	
Thru Cal Mag - 7	V	Master Before Before-Master	----- ----- -----	0.846 0.846 -----	1.295 1.295 0.000	1.974 1.974 -----	
Thru Cal Phase - 7	deg	Master Before Before-Master	----- ----- -----	115.000 115.000 -----	176.186 176.764 0.578	-125.000 -125.000 -----	
SPA Zero	mV	Master Before Before-Master	----- ----- -----	-50.000 -50.000 -----	0.159 0.143 -0.016	50.000 50.000 -----	
SPA Plus	mV	Master Before Before-Master	----- ----- -----	941.000 941.000 -----	992.540 992.398 -0.142	1040.000 1040.000 -----	
Temperature Zero	V	Master Before Before-Master	----- ----- -----	-0.050 -0.050 -----	0.000 0.000 0.000	0.050 0.050 -----	
Temperature Plus	V	Master Before Before-Master	----- ----- -----	0.870 0.870 -----	0.919 0.919 0.000	0.960 0.960 -----	

HDRS-H (HILT Density and Rxo Sonde, 150 degC) Calibration - Run Two

Primary Equipment :

HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	3828
HILT Resistivity Gamma-Ray Density Device, 150 degC	HRGD-H	3760

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	5471
HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	3828
HILT High-Resolution Mechanical Sonde, 150 degC	HRMS-H	3863

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):		20:30:24 07-Aug-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Small Ring	in	Before	8.00	6.00	7.93	10.00	
Large Ring	in	Before	12.00	9.00	12.27	15.00	

HDRS Density Calibration - Inversion Results

Master (EEPROM):		19:57:24 07-Aug-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Rho Aluminum	g/cm3	Master	2.596	2.586	2.597	2.606	
Rho Magnesium	g/cm3	Master	1.686	1.676	1.686	1.696	
Pe Aluminum		Master	2.570	2.470	2.573	2.670	
Pe Magnesium		Master	2.650	2.550	2.612	2.750	

HDRS Density Calibration - Deviation Summary

Master (EEPROM):		19:57:24 07-Aug-2014					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Average Deviation	%	Master	0	-0.6000	0.3581	0.6000	
BS Max Deviation	%	Master	0	-1.6000	0.7597	1.6000	
SS Average Deviation	%	Master	0	-1.0000	0.2058	1.0000	
SS Max Deviation	%	Master	0	-2.5000	0.5896	2.5000	
LS Average Deviation	%	Master	0	-1.5000	0.8070	1.5000	
LS Max Deviation	%	Master	0	-3.5000	1.9199	3.5000	

HDRS Density Calibration - Background Summary

Master (EEPROM):		19:57:24 07-Aug-2014		Before (Measured):		20:43:07 07-Aug-2014	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Window Ratio		Master	1.0000		0.7352		
		Before	0.7352	0.6985	0.7345	0.7720	
		Before-Master	-----	-----	-0.0007	-----	
BS Window Sum	1/s	Master	1		23918		
		Before	23918	22723	23916	25114	
		Before-Master	-----	-----	-2	-----	
SS Window Ratio		Master	1.0000		0.4821		
		Before	0.4821	0.4580	0.4863	0.5062	
		Before-Master	-----	-----	0.0042	-----	
SS Window Sum	1/s	Master	1		9772		
		Before	9772	9284	9770	10261	
		Before-Master	-----	-----	-2	-----	
LS Window Ratio		Master	1.0000		0.2994		
		Before	0.2994	0.2845	0.3012	0.3144	
		Before-Master	-----	-----	0.0018	-----	
LS Window Sum	1/s	Master	1		1176		
		Before	1176	1117	1178	1235	
		Before-Master	-----	-----	2	-----	

HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM):		19:57:24 07-Aug-2014		Before (Measured):		20:43:07 07-Aug-2014	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS PM High Voltage	V	Master		1000	1375	2400	
		Before		1000	1379	2400	
		Before-Master	-----	-100	4	100	
SS PM High Voltage	V	Master		1000	1632	2400	
		Before		1000	1647	2400	
		Before-Master	-----	-100	15	100	
LS PM High Voltage	V	Master		1000	1188	2400	
		Before		1000	1194	2400	
		Before-Master	-----	-100	6	100	

HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM):		19:57:24 07-Aug-2014		Before (Measured):		20:43:07 07-Aug-2014	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Crystal Resolution	%	Master		5.00	10.72	25.00	
		Before		5.00	10.64	25.00	

		Before	-----	3.00	10.04	23.00	
SS Crystal Resolution	%	Master		5.00	9.28	20.00	
		Before		5.00	9.43	20.00	
		Before-Master	-----	-1.00	0.15	1.00	
LS Crystal Resolution	%	Master		5.00	8.42	20.00	
		Before		5.00	8.45	20.00	
		Before-Master	-----	-1.00	0.03	1.00	

HDRS MCFL Calibration - MCFL Accumulations

Before (Measured): 20:39:36 07-Aug-2014							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Main Resistivity	ohm.m	Before	3875	3565	3860	4185	
Deep Resistivity	ohm.m	Before	3830	3524	3800	4136	
Shallow Resistivity	ohm.m	Before	3830	3524	3815	4136	

HGNS-H (HILT Gamma-Ray and Neutron Sonde, 150 degC) Calibration - Run Two

Primary Equipment :							
	HILT Gamma-Ray and Neutron Sonde, 150 degC		HGNS-H		4865		
Auxiliary Equipment :							
	HGNS Accelerometer, 150 degC		HACCZ-H		6991		
	AmBe Neutron Logging Source		NSR-F		2554		
Calibration Parameter :							
	Water Temperature						
	Housing Size						
	JIG-BKG (Jig minus background reference)		165				

HGNS Accelerometer Calibration - Accelerometer Accumulations

Before (Measured): 03:13:55 08-Aug-2014							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
AZ Vertical Measurement	ft/s2	Before	32.2	31.5	32.1	32.8	

HGNS Accelerometer EEPROM - Accelerometer EEPROM Read

Master (EEPROM): 00:00:00 15-May-2007							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Accelerometer Manufacturer		Master			QAT_160		
Accelerometer Reference Temperature	degF	Master		30.2	77.0	122.0	
Accelerometer Coefficients - 0		Master	-----	-----	-4298.000	-----	
Accelerometer Coefficients - 1		Master	-----	-----	50.180	-----	
Accelerometer Coefficients - 2		Master	-----	-----	-0.002	-----	
Accelerometer Coefficients - 3		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 4		Master	-----	-----	2.754	-----	
Accelerometer Coefficients - 5		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 7		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 8		Master	-----	-----	300.500	-----	
Accelerometer Coefficients - 9		Master	-----	-----	0.994	-----	

HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM): 14:29:32 23-Jul-2014				Before (Measured): 20:28:17 07-Aug-2014			
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Near Zero Measurement	1/s	Master	0	5.0	27.5	40.0	
		Before	0	5.0	26.6	40.0	
		Before-Master	-----	-4.1	-0.9	4.1	
Far Zero Measurement	1/s	Master	0	5.0	28.9	40.0	
		Before	0	5.0	27.6	40.0	
		Before-Master	-----	-4.3	-1.3	4.3	
Near Plus Measurement	1/s	Master	6031.0	4700.0	5764.0	6900.0	
		Before	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
Far Plus Measurement	1/s	Master	2793.0	1900.0	2396.0	2900.0	
		Before	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured): 20:30:52 07-Aug-2014

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement	gAPI	Before	30.0	0	73.3	120.0	
RGR Plus Measurement	gAPI	Before	185.4	157.1	174.9	206.3	
GR Calibration Gain		Before	0.89	0.80	0.94	1.05	

Company:	Kerr McGee Oil & Gas Onshore LP	Schlumberger
Well:	Banded 37C-27HZ	
Field:	Wattenberg	
County:	Weld	
State:	Colorado	
Platform Express		
Triple Combo		