

Company: Nighthawk Production LLC

Well: Whistler 6-22

Field: Wildcat

County: Lincoln State: Colorado

Platform Express
Triple Combo

County: Lincoln		Field: Wildcat		Location: SENW Sec 22, Twp 6S, Rng 54		Well: Whistler 6-22		Company: Nighthawk Production LLC			
Location:				SENNW Sec 22, Twp 6S, Rng 54	Elev.	K.B.	5264.00 ft				
				SHL: 1668' FNL, 1951' FWL		G.L.	5252.00 ft				
				Lat 39.516583, Long -103.42763		D.F.	5263.00 ft				
Permanent Datum:		Ground Level		Elev.:		5252.00 f					
Log Measured From:		Kelly Bushing		12.00 ft		above Perm.Datum					
Drilling Measured From:		Kelly Bushing									
API Serial No.		Section:		Township:		Range:					
05-073-06481-0000		22		6S		54W					
Logging Date				06-Nov-2012							

Run Number		Run1			
Depth Driller		8500.00 ft			
Schlumberger Depth		8507.00 ft			
Bottom Log Interval		8499.00 ft			
Top Log Interval		410.00 ft			
Casing Driller Size @ Depth		8.625 in @ 401.00 ft			
Casing Schlumberger		410 ft			
Bit Size		7.875 in			
Type Fluid In Hole		Chemical Gel			
MUD	Density	Viscosity	75 s		
	Fluid Loss	PH	7.4		
Source of Sample		Active Tank			
RM @ Meas Temp		0.2 ohm.m @ 85.66 degF			
RMF @ Meas Temp		0.15 ohm.m @ 85.66 degF			
RMC @ Meas Temp		0.52 ohm.m @ 85.66 degF			
Source RMF		Calculated			
RM @ BHT		0.09 @ 210.25 0.06 @ 210.25			
Max Recorded Temperatures		210.25 degF			
Circulation Stopped		06-Nov-2012 16:30:00			
Logger on Bottom		06-Nov-2012 03:15:26			
Unit Number		2135			
Recorded By		Megan Leone			
Witnessed By		Jerry Hedrick			

Disclaimer

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Well Sketch

Driller Depth

0.00 ft

401.00 ft

Casing 8.625in
24lbm/ft

8500.00 ft

Open Hole 7.875in

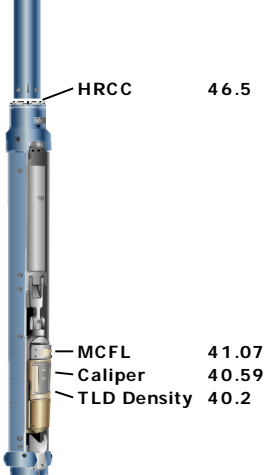
Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	7.875					
Top Driller (ft)	401					
Top Logger (ft)	410					
Bottom Driller (ft)	8500					
Bottom Logger (ft)	8507					
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)	401					
Bottom Logger (ft)	410					

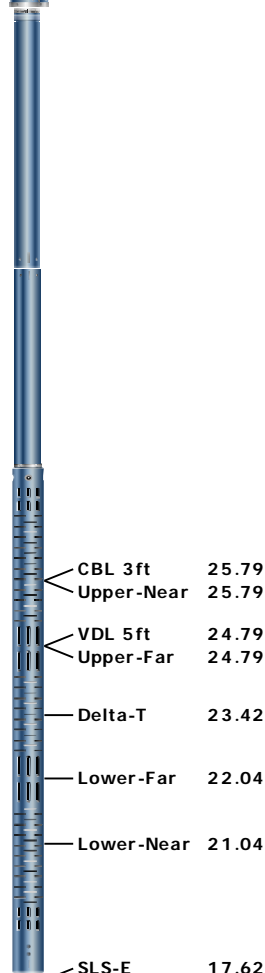
Remarks and Equipment Summary

Run1: Toolstring				Run1: Remarks	
Equip name	Length	MP name	Offset	This is the first run in hole	
LEH-QT	65.83			Toolstring run as per toolsketch	
LEH-QT				Limestone Matrix 2.71	
DTC-H	62.91			Replaced AIT bottom nose with hole finder	
ECH-KC		CTEM	62.01		
DTC-H		HV	0.00		
		TelStatus	59.91		
		ToolStatus	59.91		
		Temperature	59.89		
HGNS-H	59.91				
HGNH:3823					
NSR-F:5215		GR	59.17		
NPV-N					
HMCA-H					
HACCZ-H:5736					
HGNS-H					
		CNL Porosity	52.84		
		HGNS	50.51		
		HMCA	50.51		
		Accelerometer	0.00		
HDRS-H	50.51				
ECH-MEB					
HRCC-H					
HRMS-H					

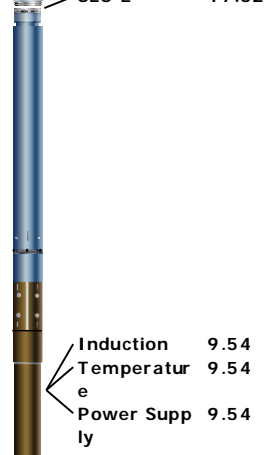
GSR-J:5240
Long Spacing:28
732
HRGD-H:3816
GPV-Q
Backscatter
Short Spacing:27
634



DSLT-H:3823 38.26
ECH-KH
DSLCH-H:3823
SLS-E



AIT-H:392 17.62
AHIS:392
AHHF



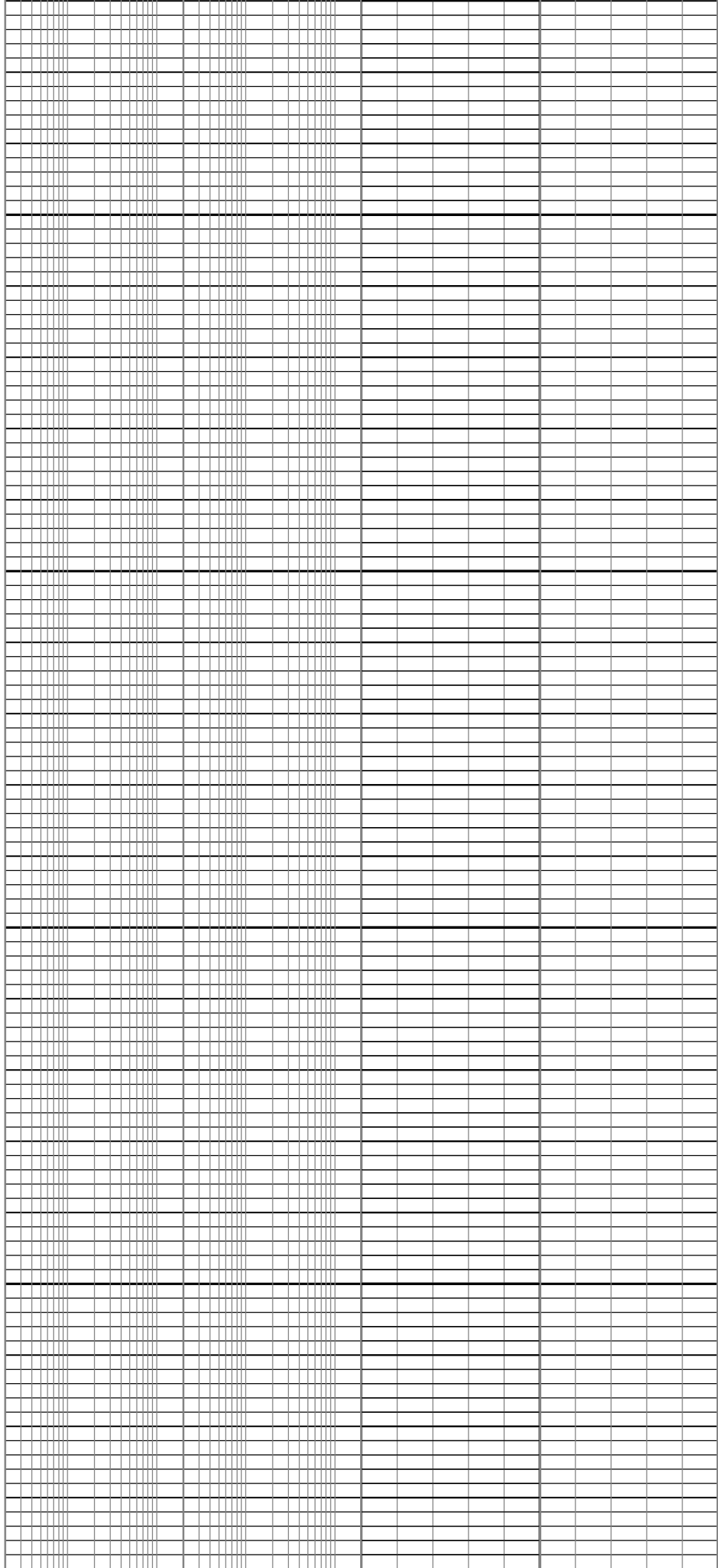
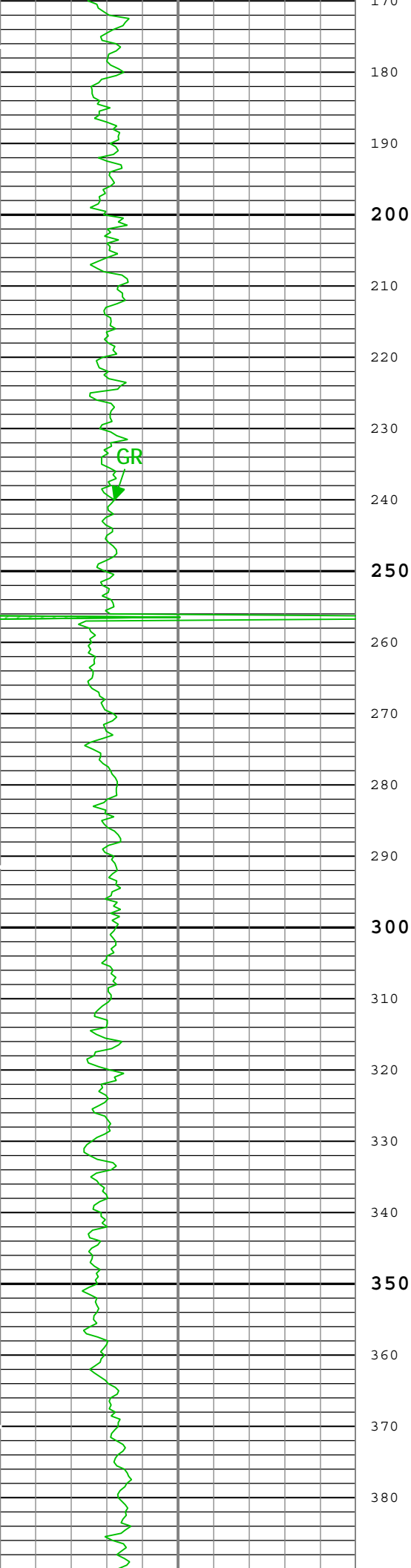
		
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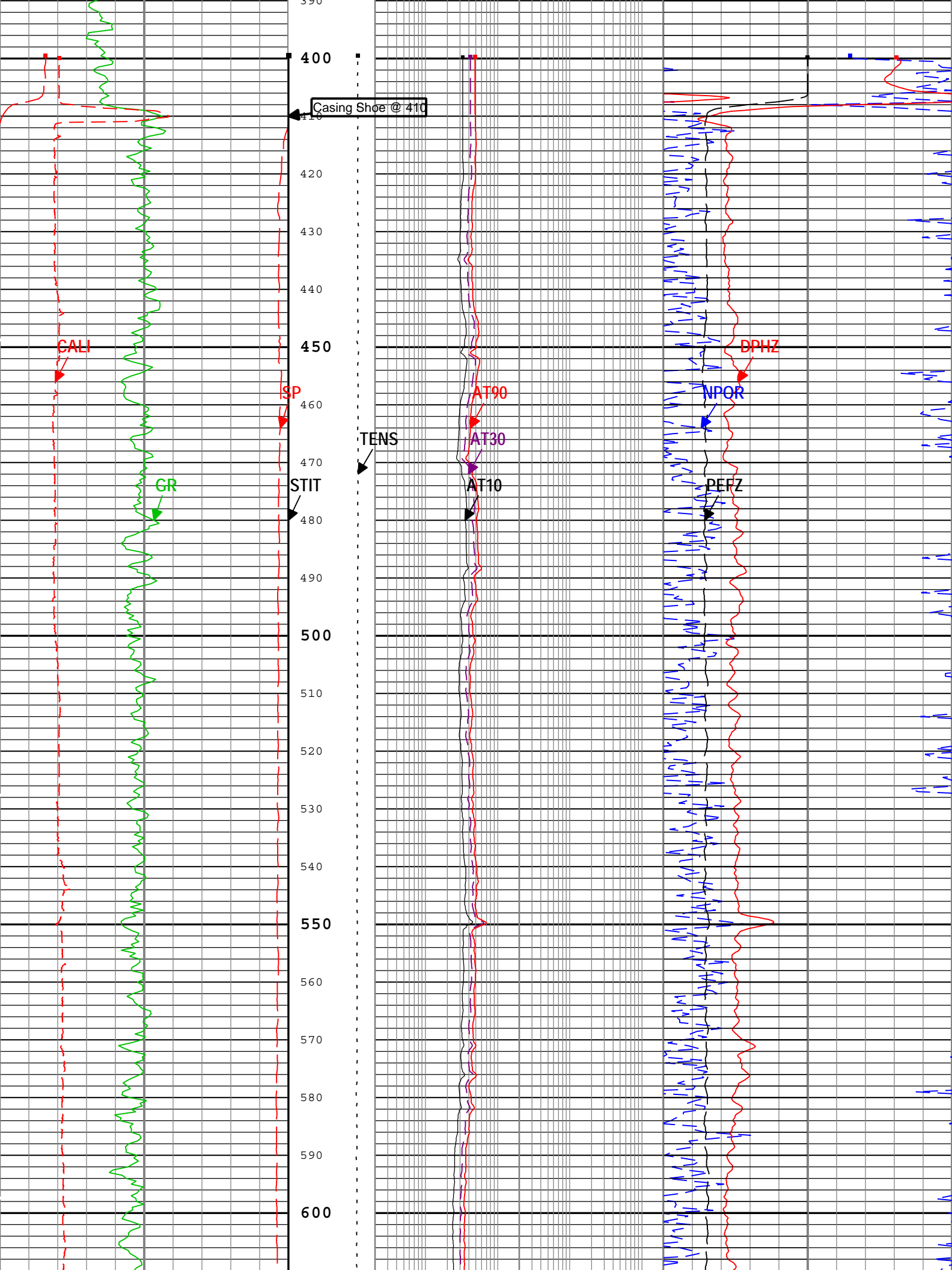
Depth Summary			
Depth Control Parameters		Run1	
Conveyance Type		Wireline	
Log Sequence		This is the first run in hole	
Stretch Correction (ft)		8.00	
Rig Type		Land	
Depth Remark Parameters		Run1	
Depth Remark 1		All Schlumberger depth procedures followed	
Depth Remark 2		IDW used as primary depth device. Z-chart used as secondary depth device.	
Depth Measuring Device		Run1	
Type		IDW-B	
Wheel Correction 1		1	
Wheel Correction 2		0	
Tension Device		Run1	
Type		CMTD-B/A	
Calibration Points		0	
Logging Cable		Run1	
Type		7-46NT-XS	
Logging Cable Length (ft)		24000.00	

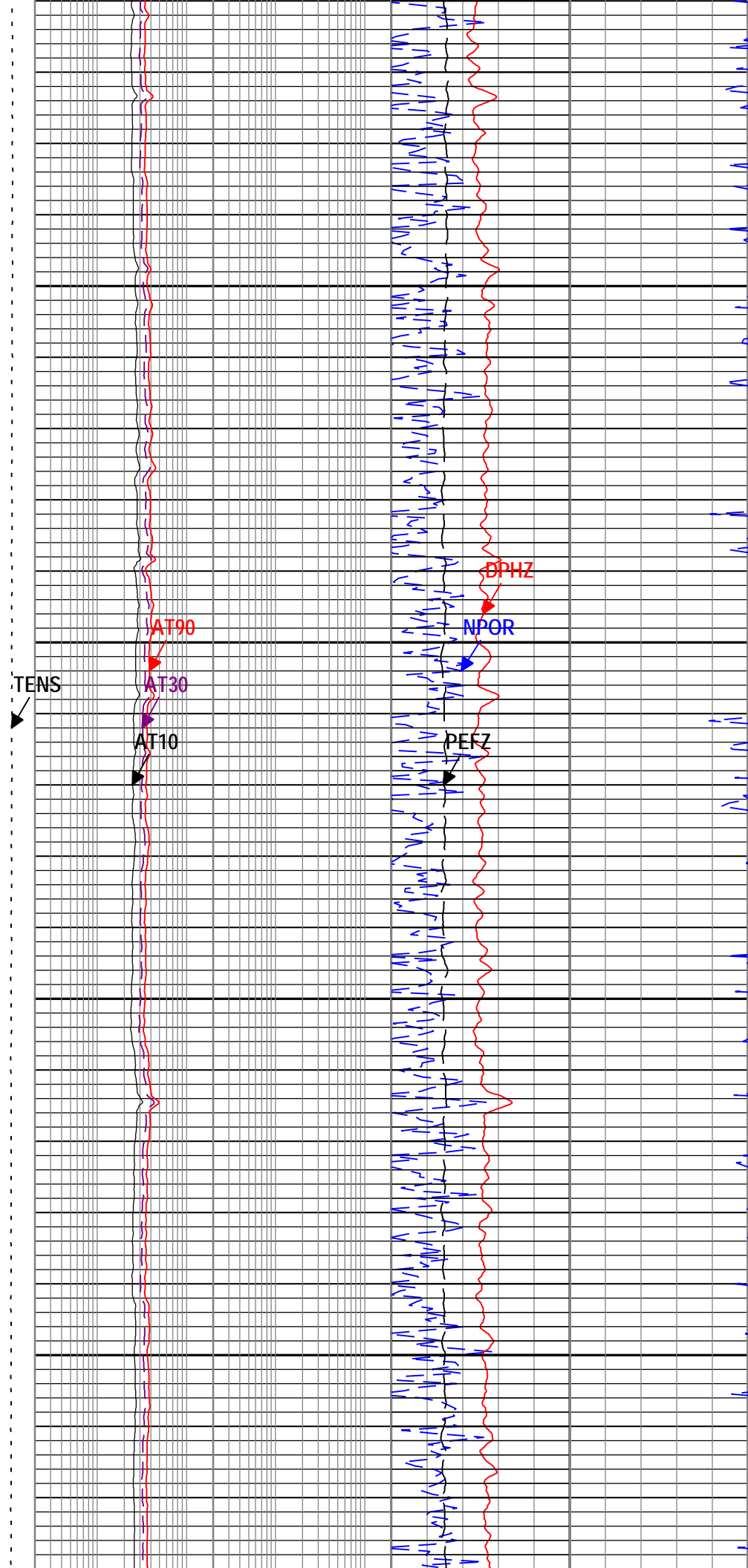
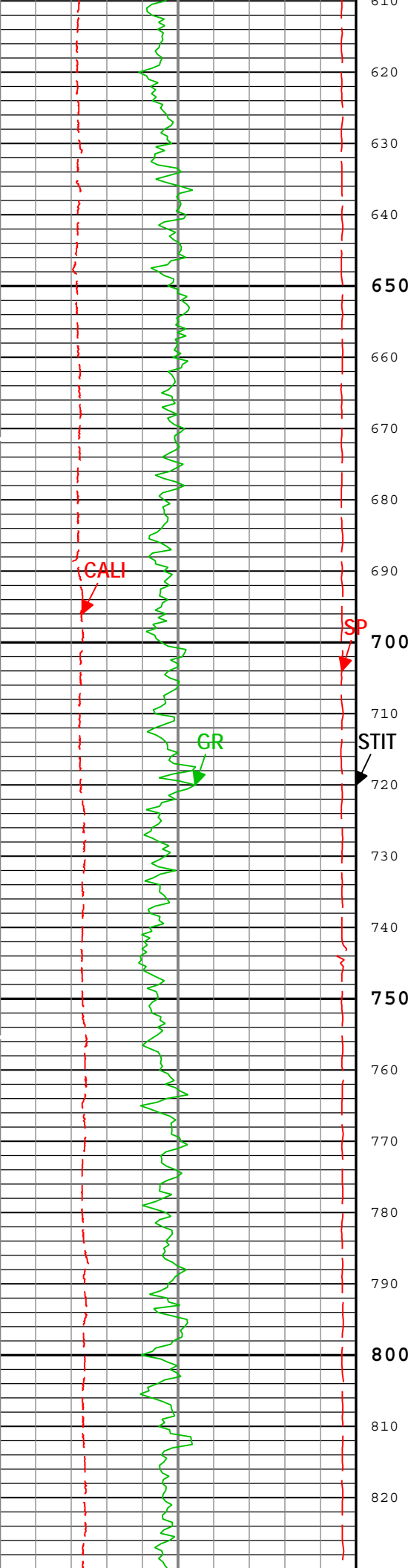
Run1			
5" Triple Combo			

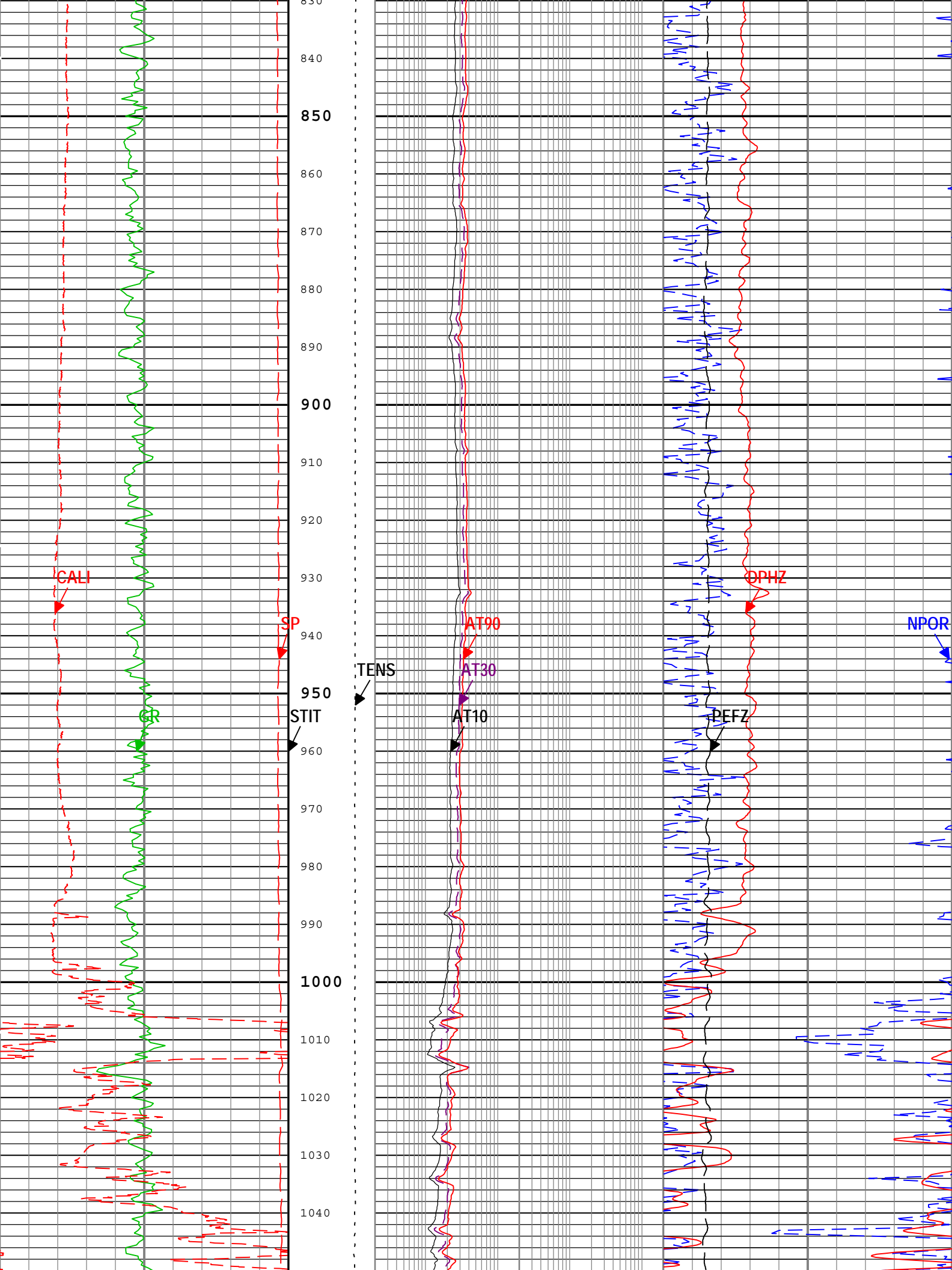
Integration Summary				
Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
Software Version				
Acquisition System		Version		
MaxWell		3.1.9755.0		
Application Patch		SP-20120723-3.1.9755.1112		
		EXP_APL-MASTAXIS-3.1.9755.1221		
Computation	Description		Version	
HENVIR	Computation Ensemble for the HGNS Neutron environmental corrections		3.1.9755.0	
DepthCorrection	DepthCorrection		3.1.9755.0	
Tool Elements	Description	Software Version	Firmware Version	
HRCC-H	HILT High-Resolution Control Cartridge, 150 degC	3.1.9755.0	2.0	
HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC	3.1.9755.0	2.0	
AHIS	Array Induction Sonde - H	3.1.9755.1112		
HRGD-H	HILT Resistivity Gamma-Ray Density Device, 150 degC	3.1.9755.0	3.0	

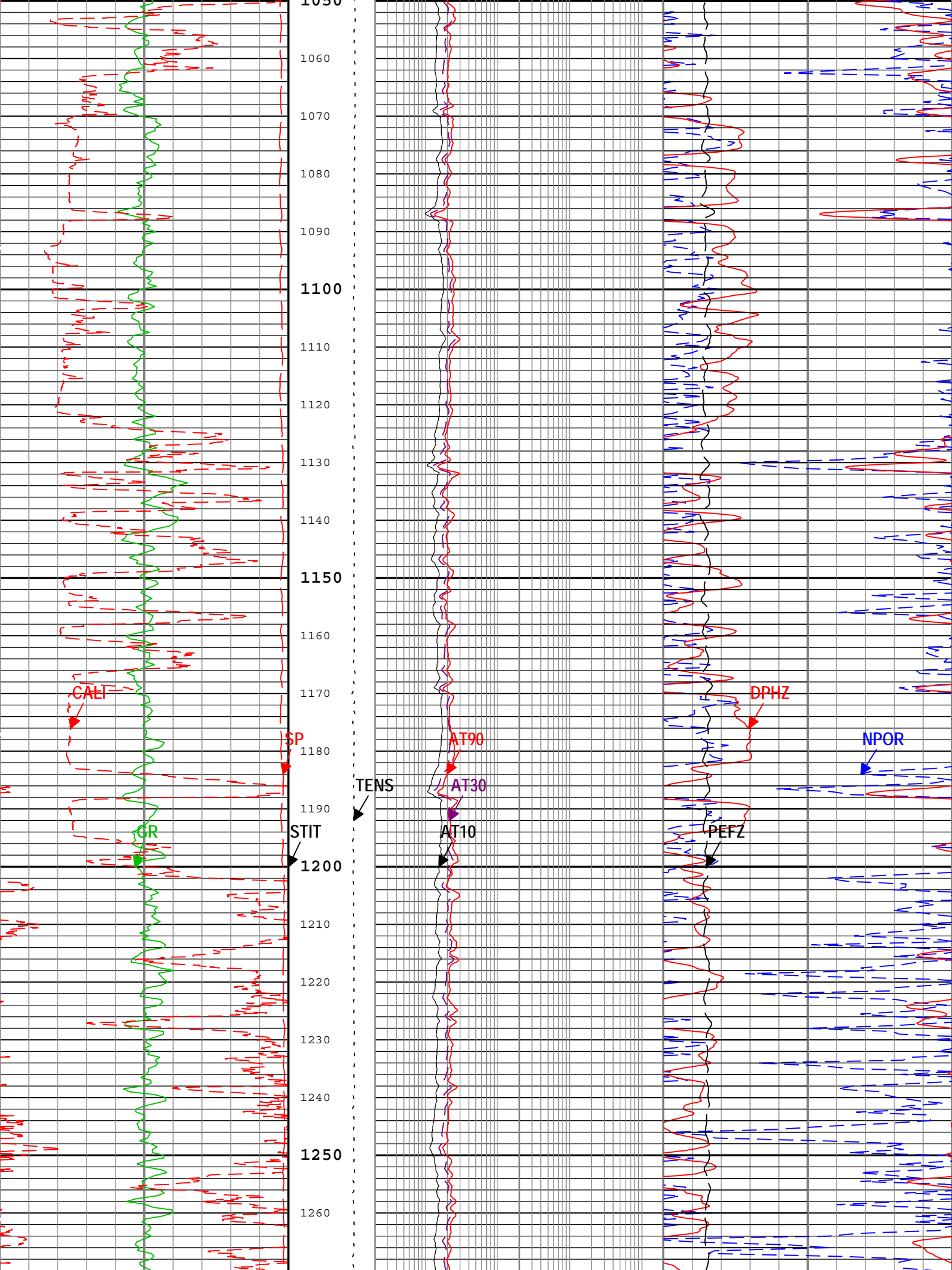
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data				
Run1	Log[4]:Up	Up	166.47 ft	8504.24 ft	06-Nov-2012 3:30:47 AM	06-Nov-2012 5:24:04 AM	0.00 ft					
All depths are referenced to toolstring zero												
Log	Run1: Log[4]:Up											
Description: HGNS standard resolution porosities for Platform Express Format: Log (EMD 5in Triple Combo) Index Scale: 5 in per 100 ft Index Unit: ft												
Index Type: Measured Depth Creation Date: 06-Nov-2012 05:33:03												
Channel	Source	Sampling										
AT10	AIT-H:AHIS:AHIS	3in										
AT30	AIT-H:AHIS:AHIS	3in										
AT90	AIT-H:AHIS:AHIS	3in										
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-H:AHIS:AHIS	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						
						0	10					
			Array Induction Two Foot Resistivity A10 (AT10) AIT-H			Gas Effect						
Gamma Ray Back up			0.2	ohm.m	2000	NPOR Backup						
Gamma Ray (GR) HGNS-H			Array Induction Two Foot Resistivity A30 (AT30) AIT-H			Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H						
0	gAPI	200	0	ft	50	0.2	ohm.m	2000	0.45	ft3/ft3	-0.15	
Spontaneous Potential (SP) AIT-H			Cable Tension (TENS)			Array Induction Two Foot Resistivity A90 (AT90) AIT-H			Standard Resolution Density Porosity (DPHZ) HDRS-H			
0	mV	200	6000 lbf			0	0.2	ohm.m	2000	0.45	ft3/ft3	-0.15
Caliper (CALI) HDRS-H			6			in	16					
			110									
			120									
			130									
			140									
			150									
			160									

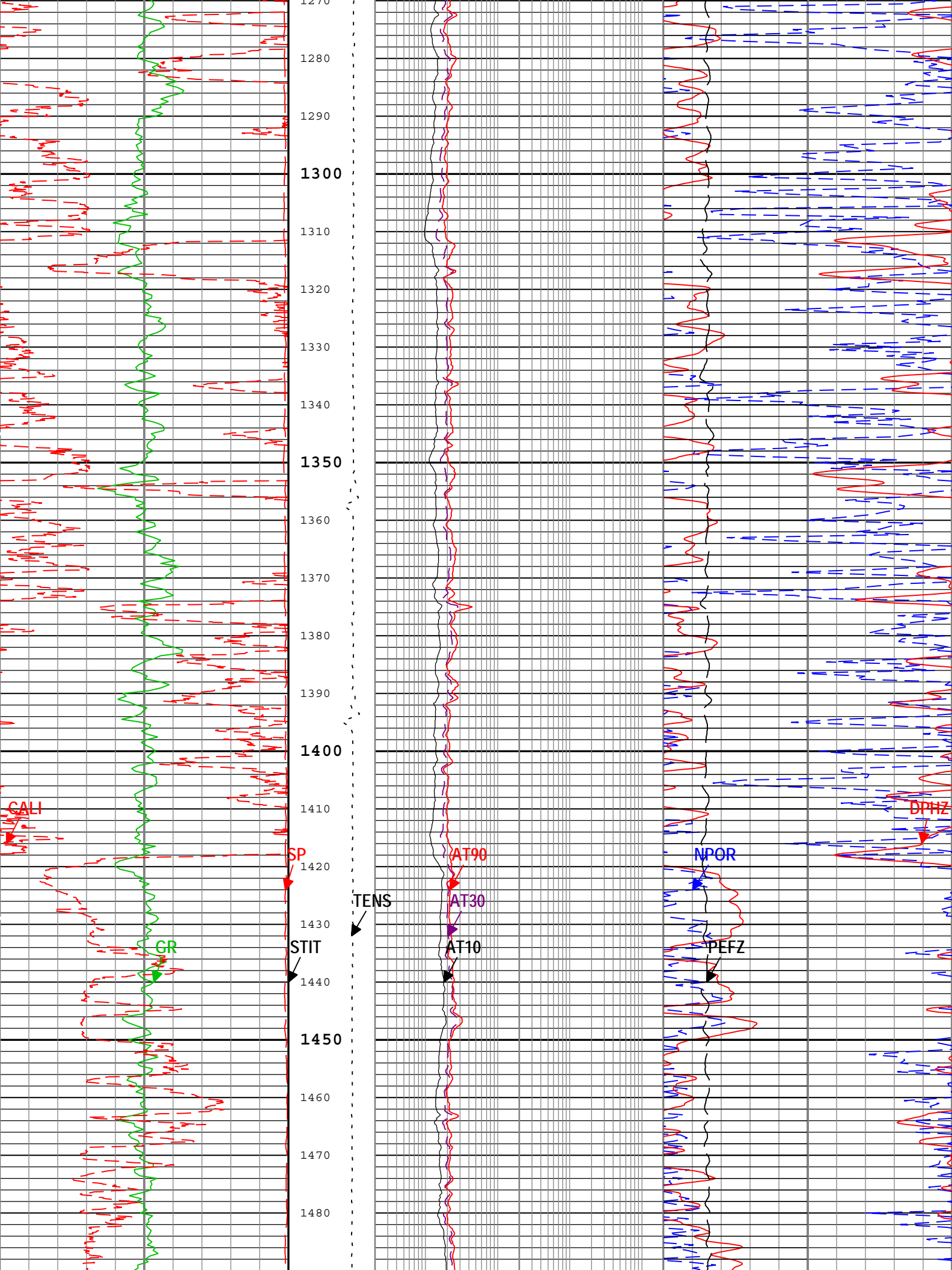


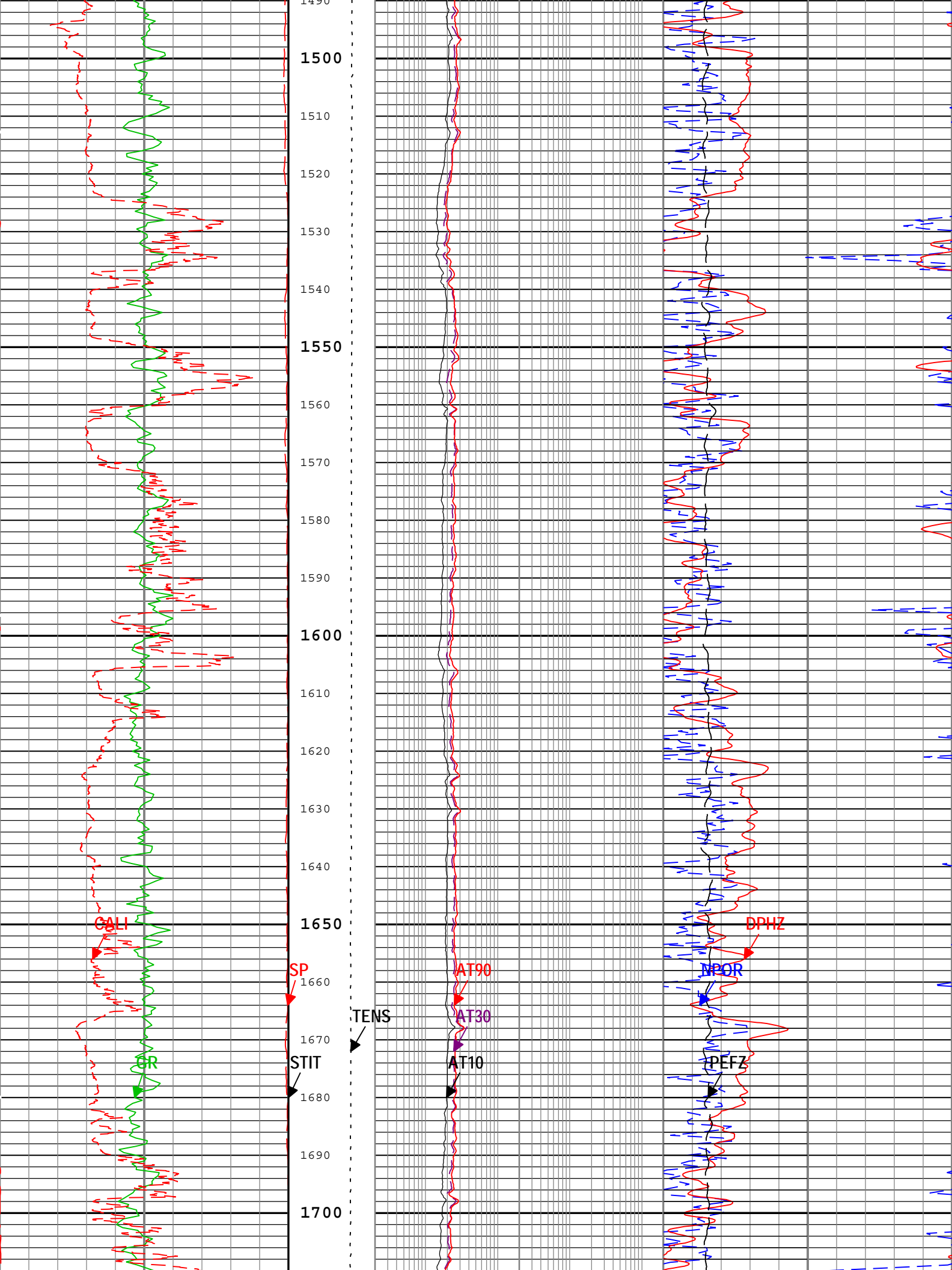


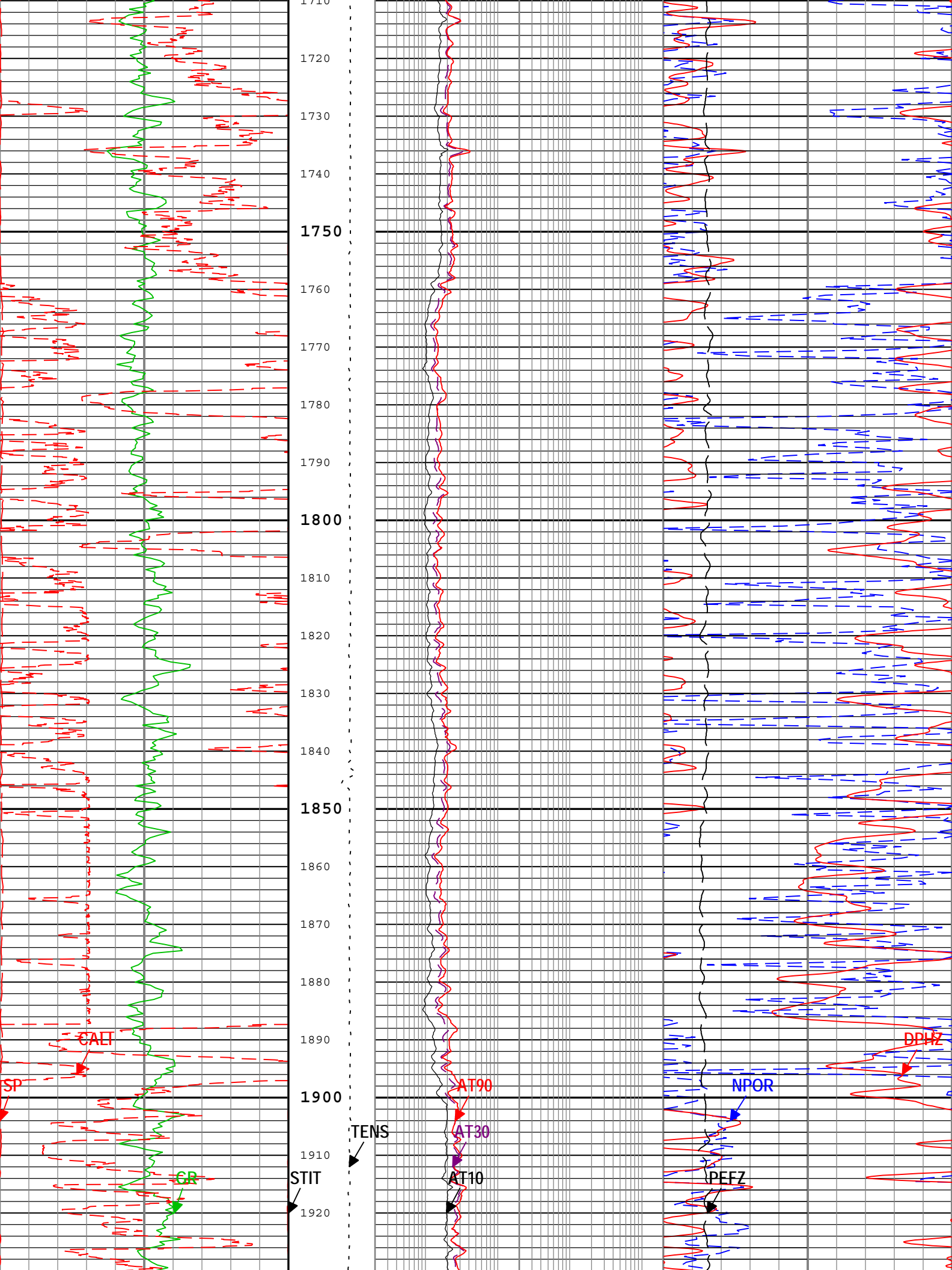


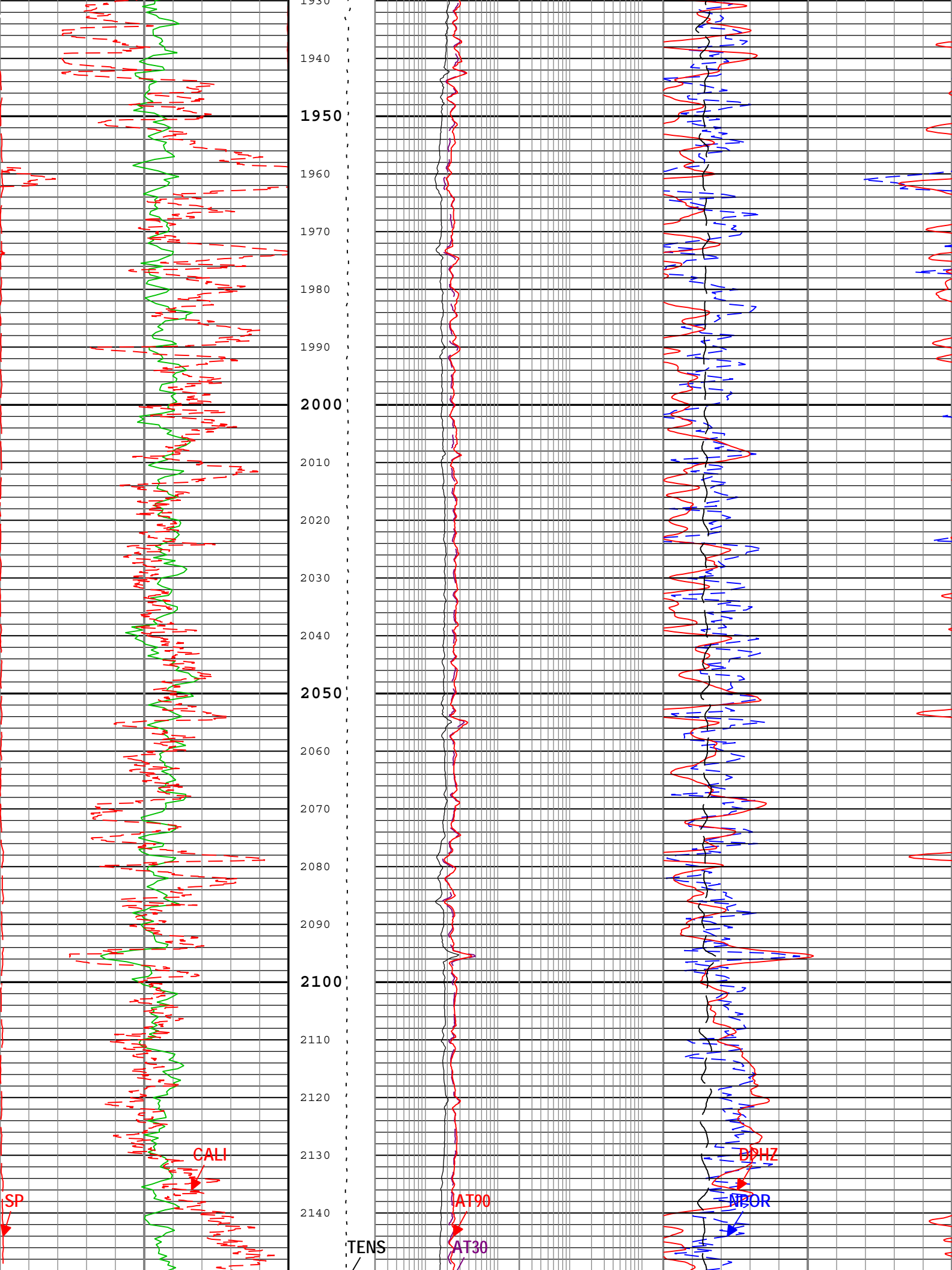


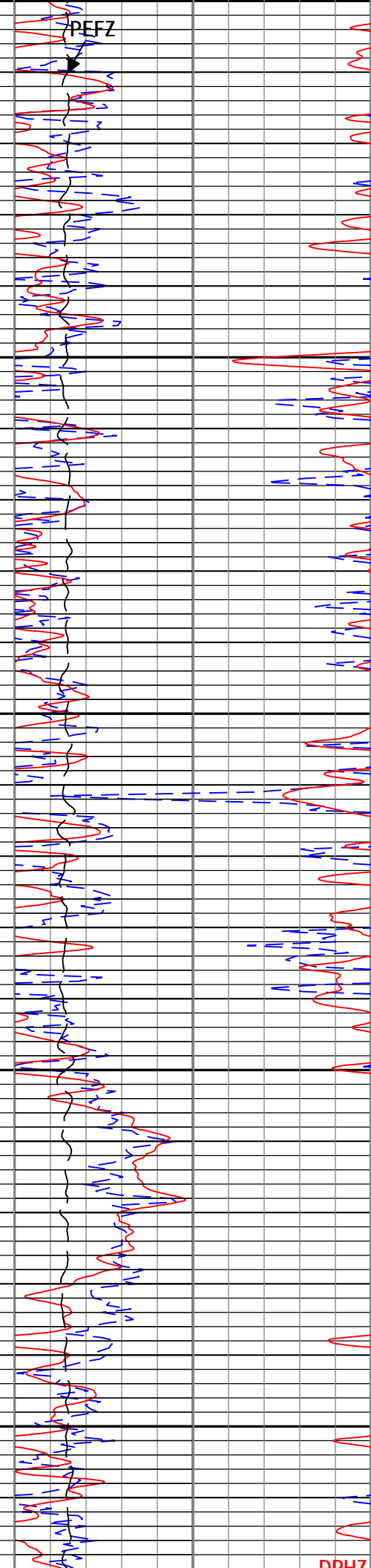
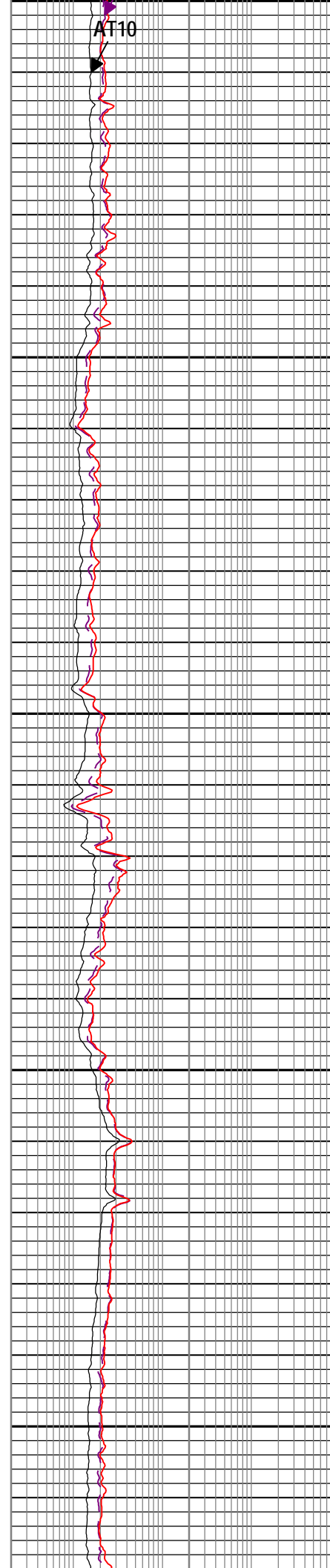
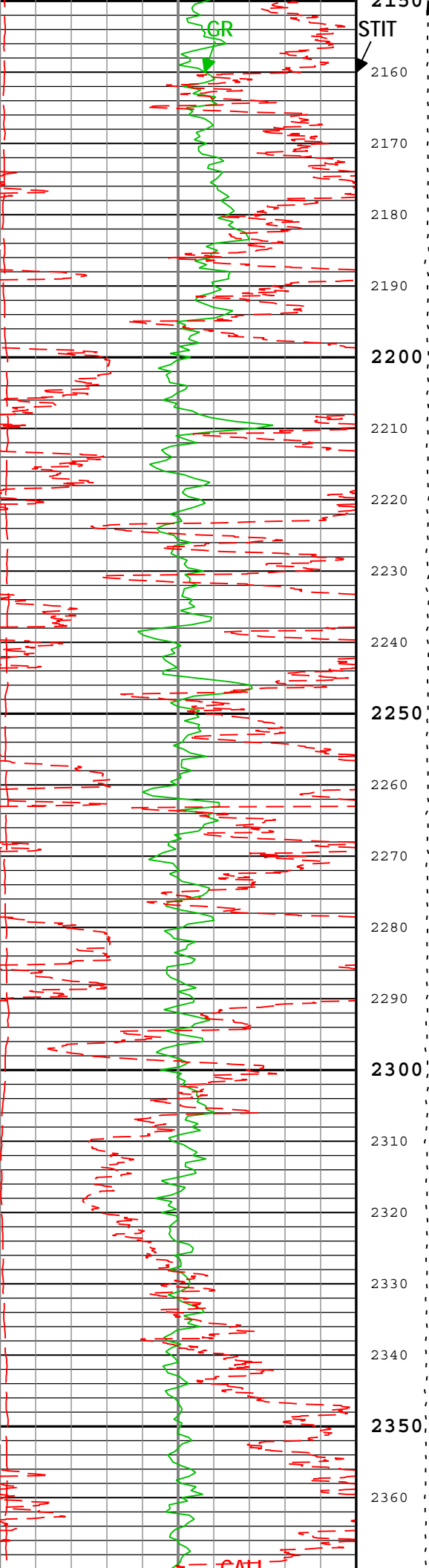


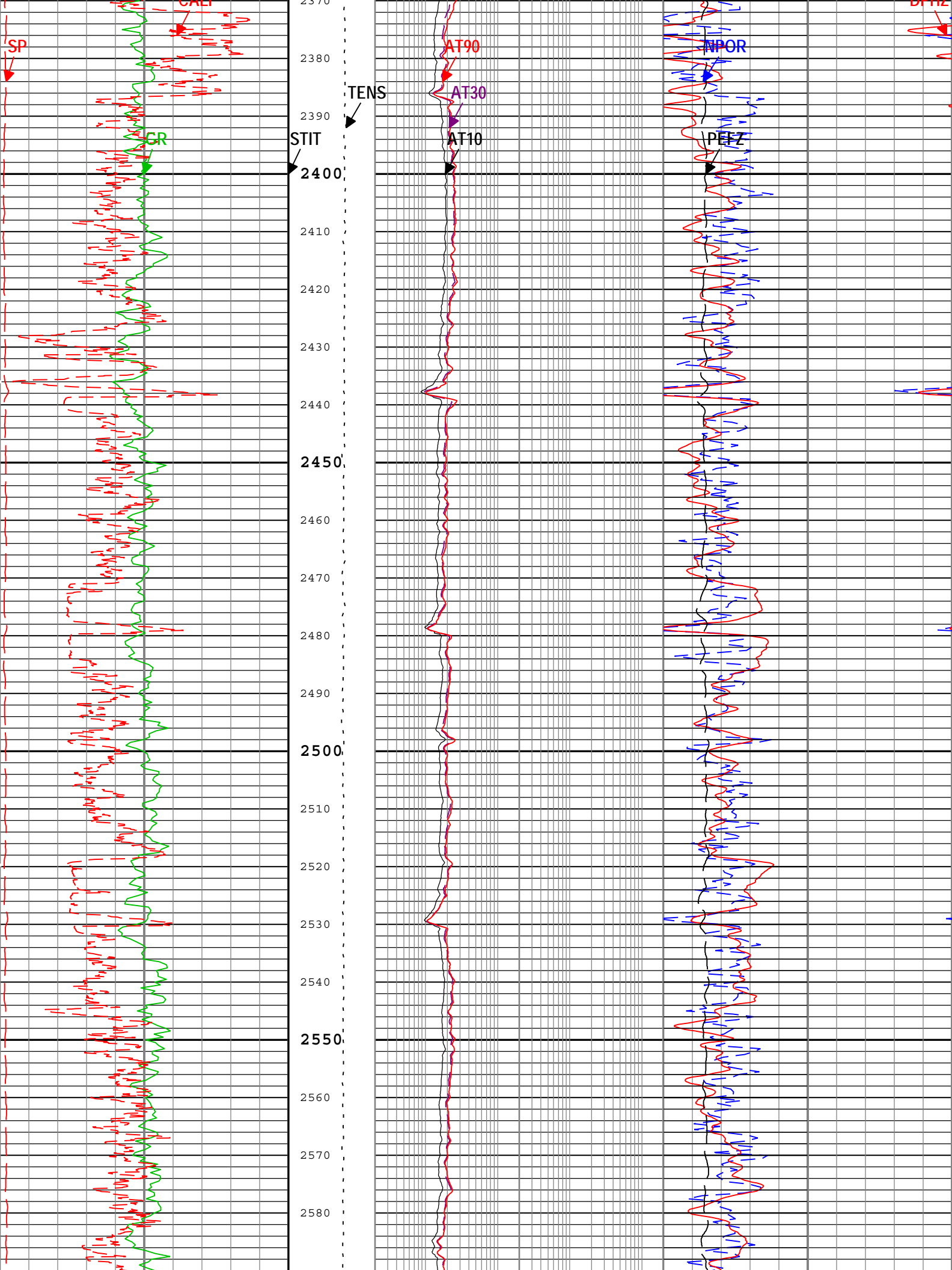


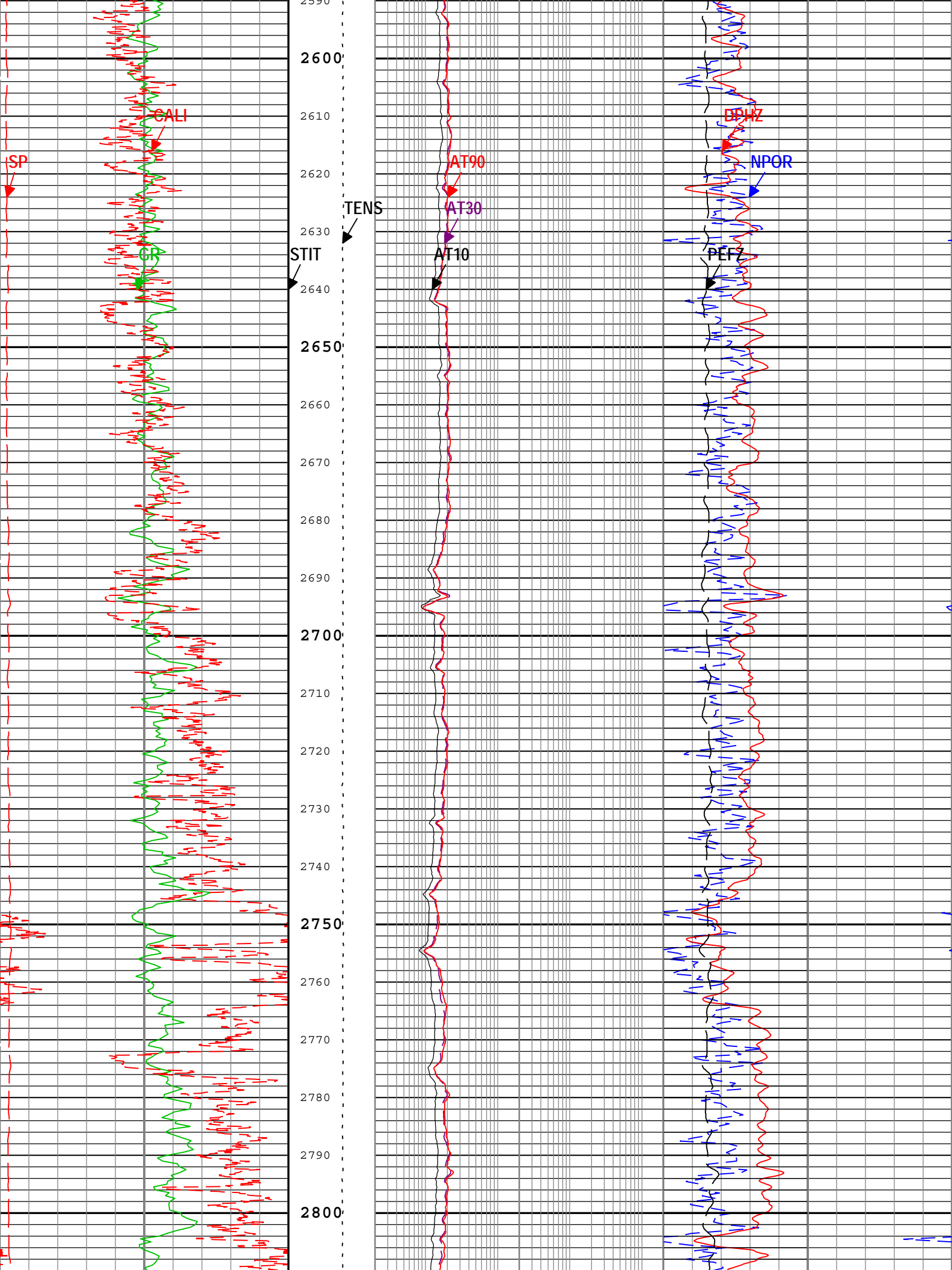


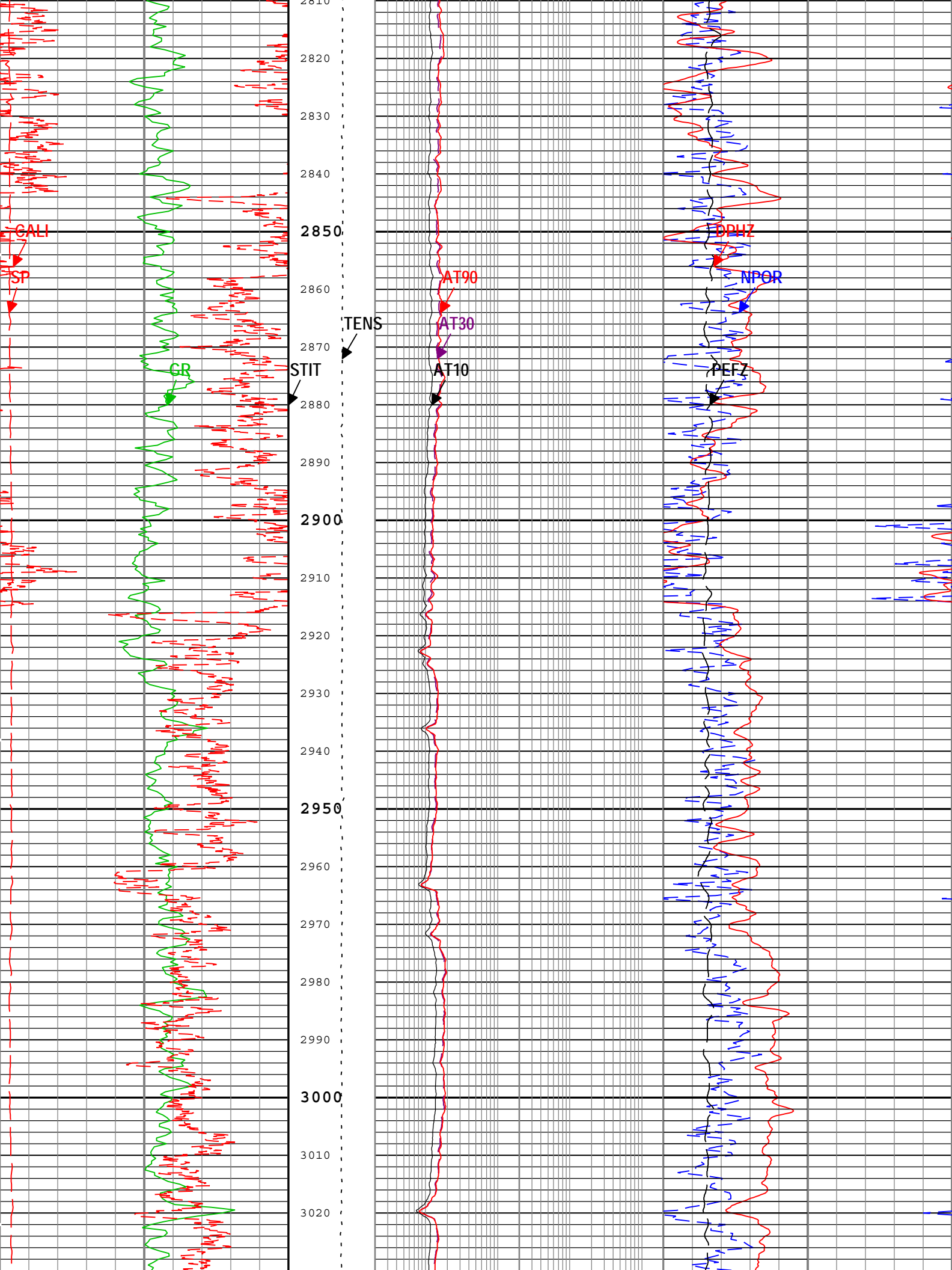


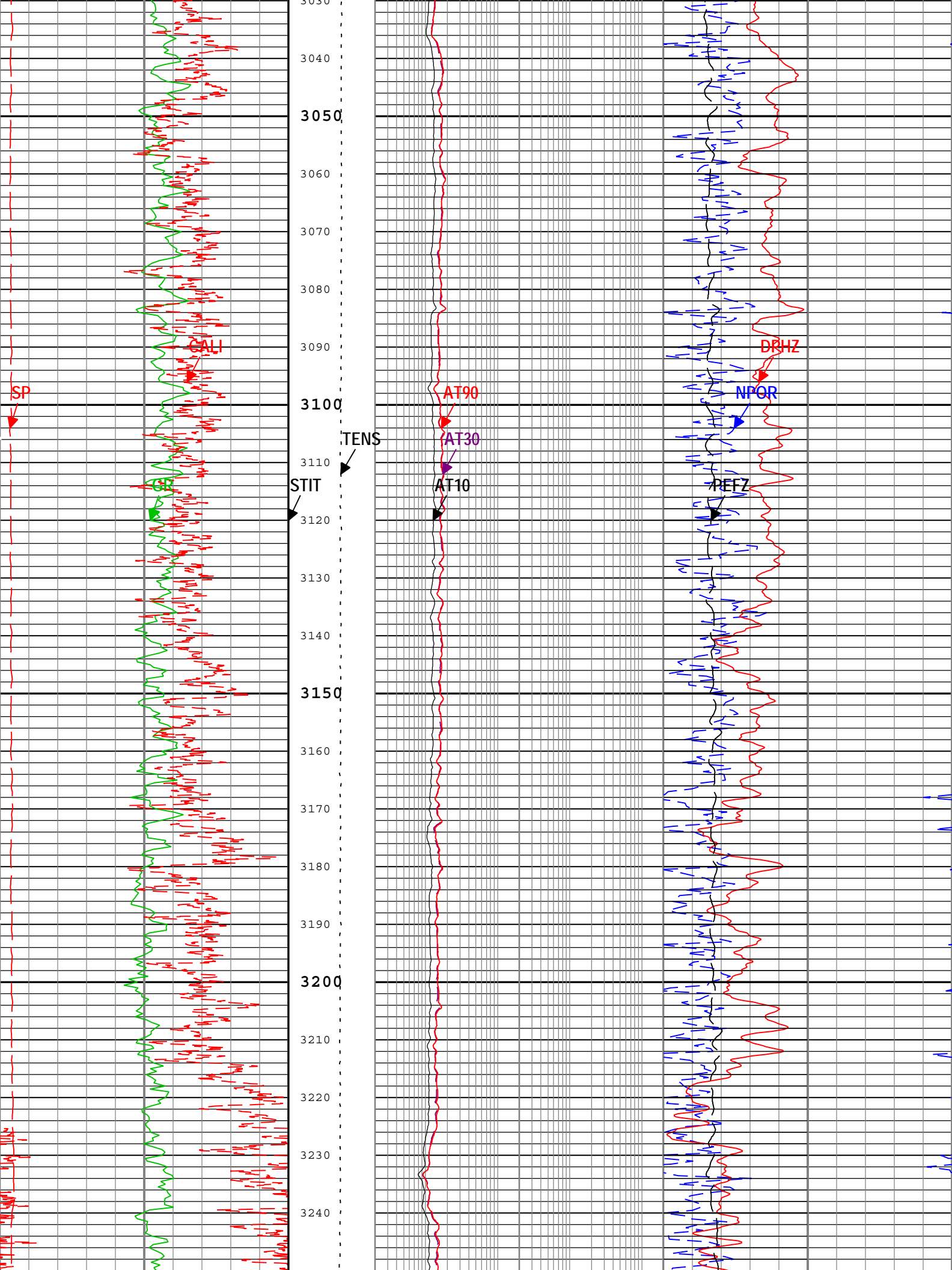


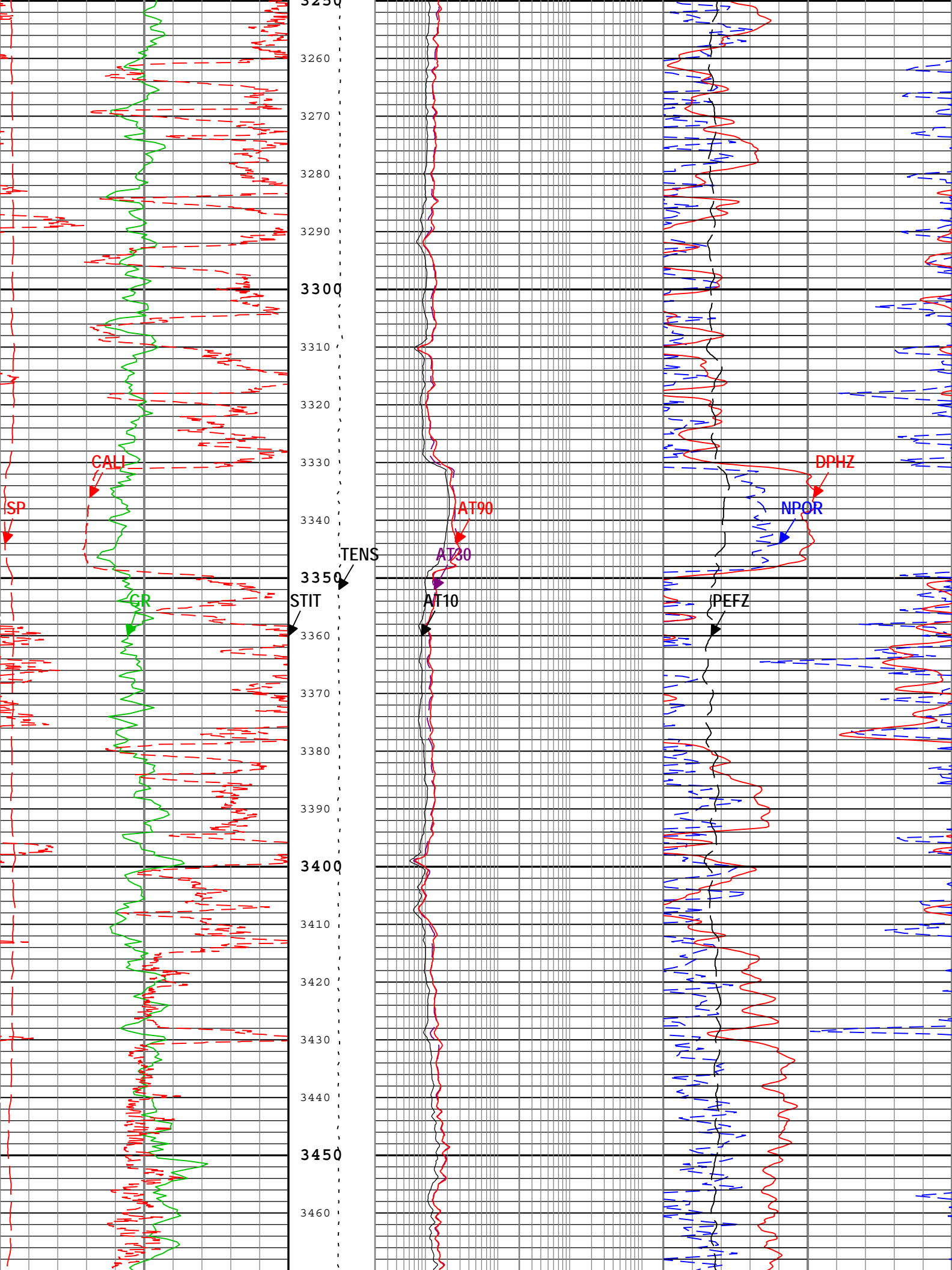


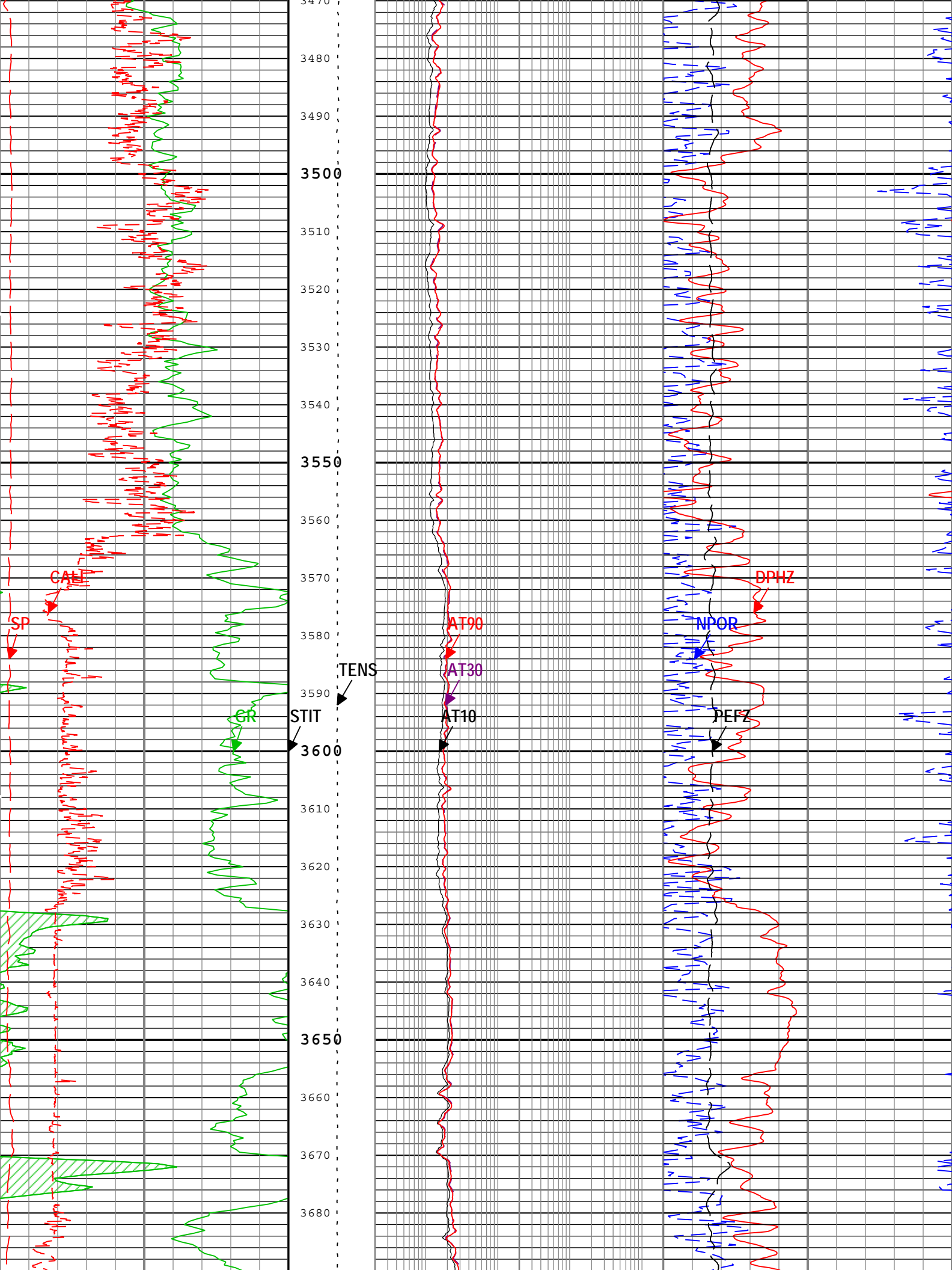


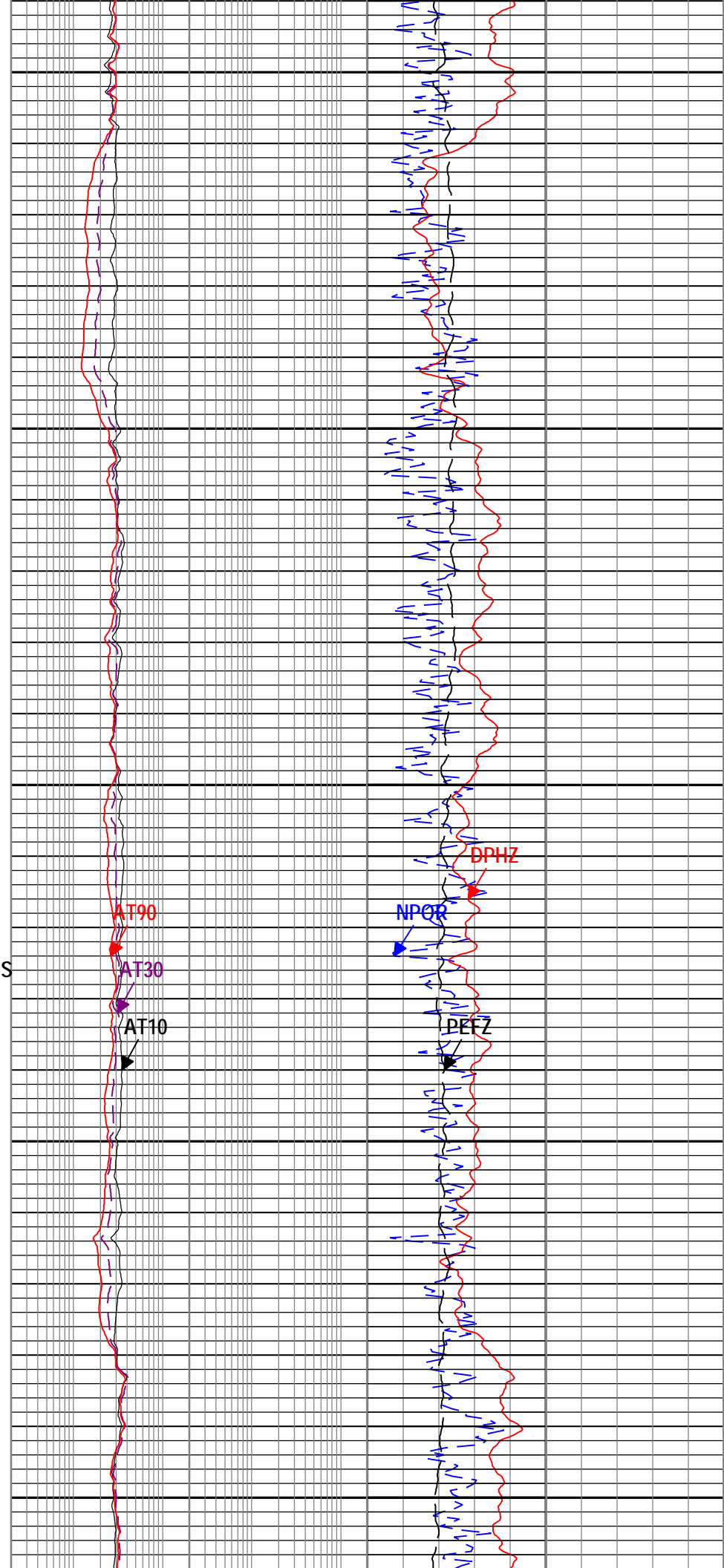
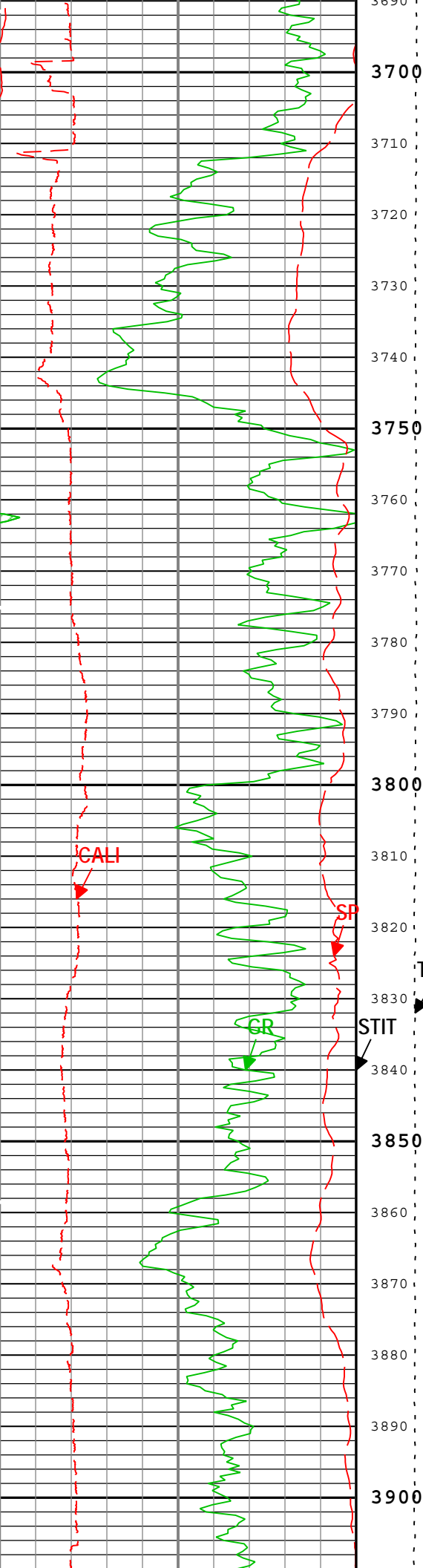


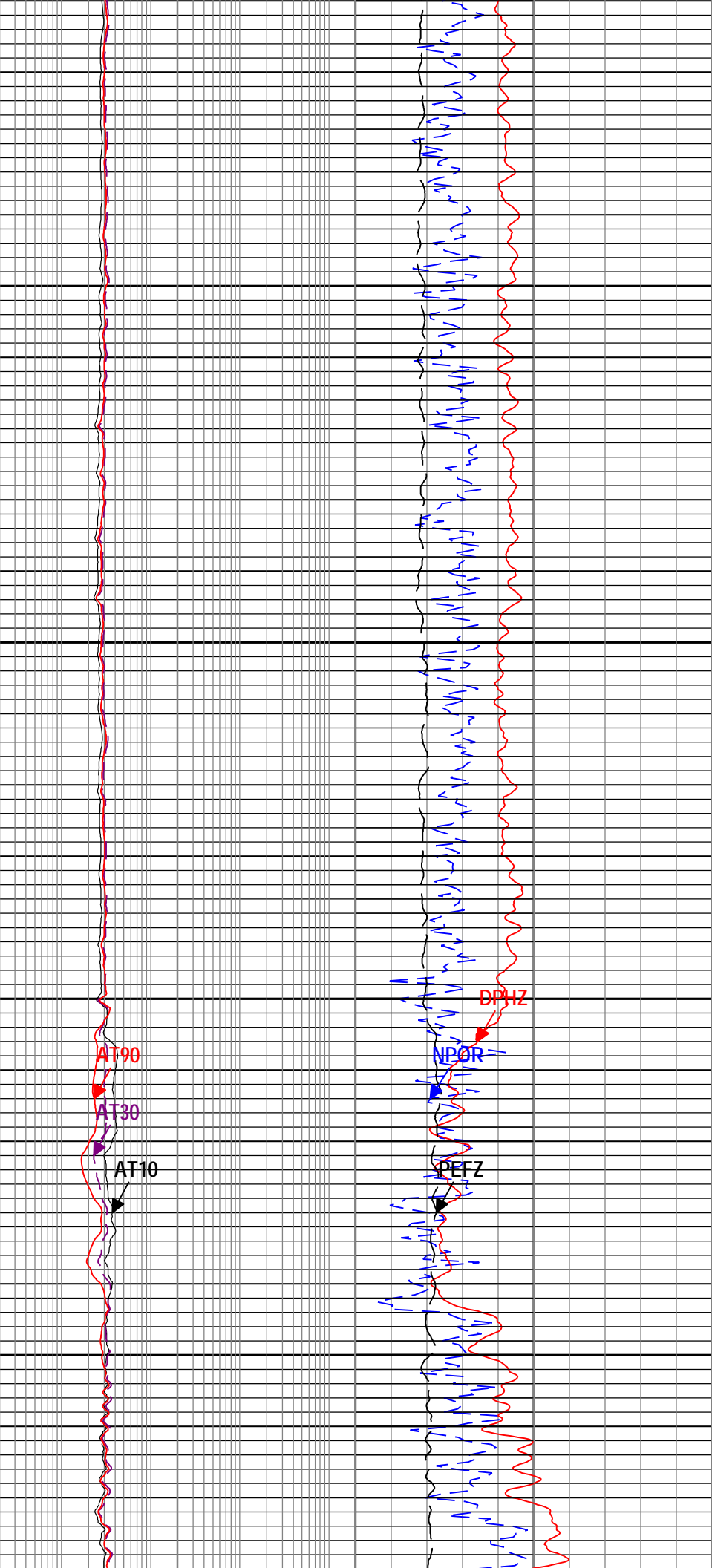
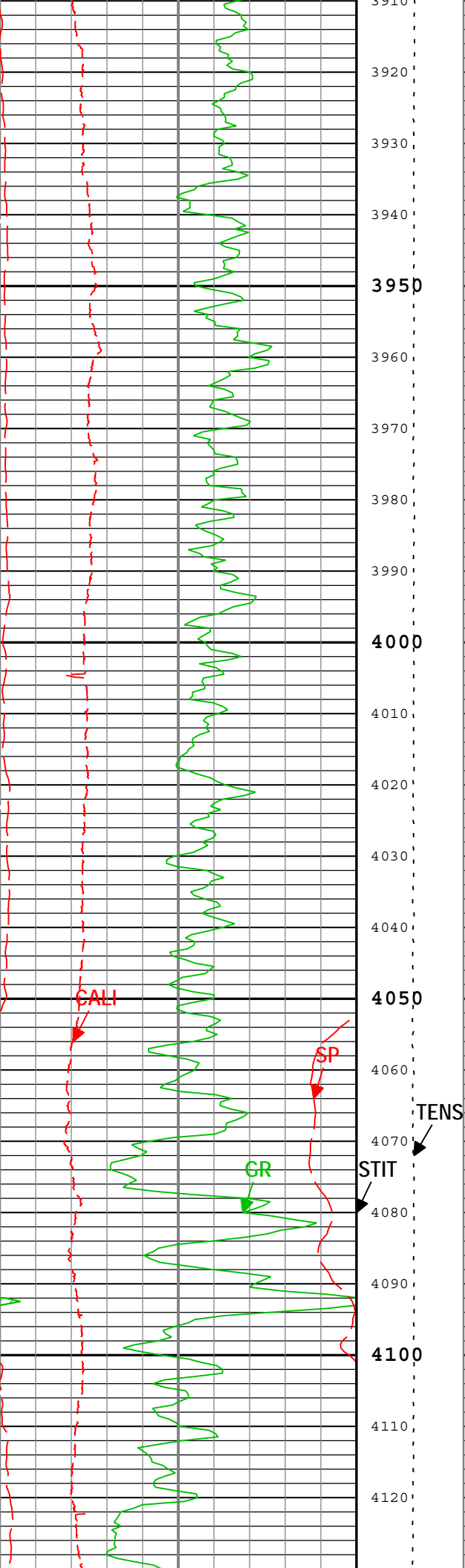


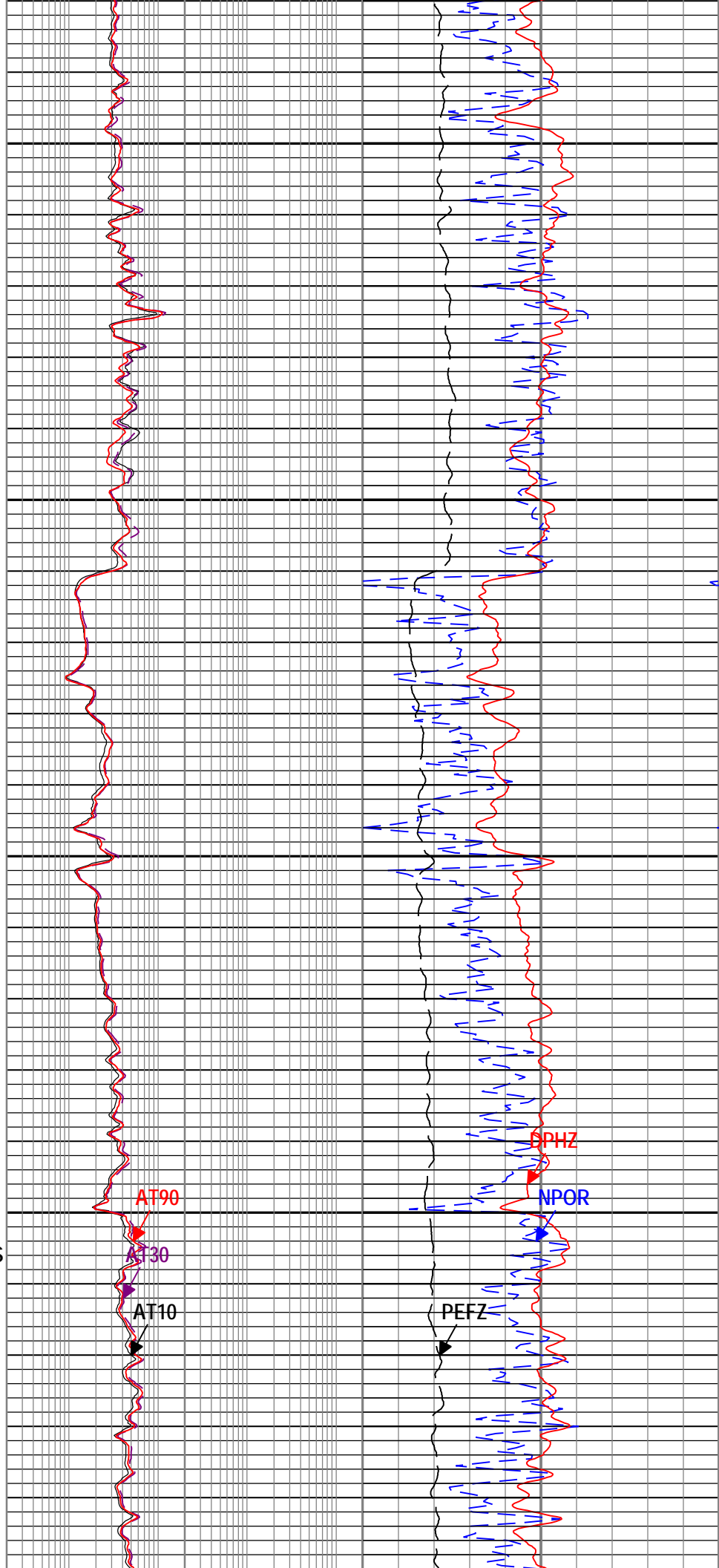
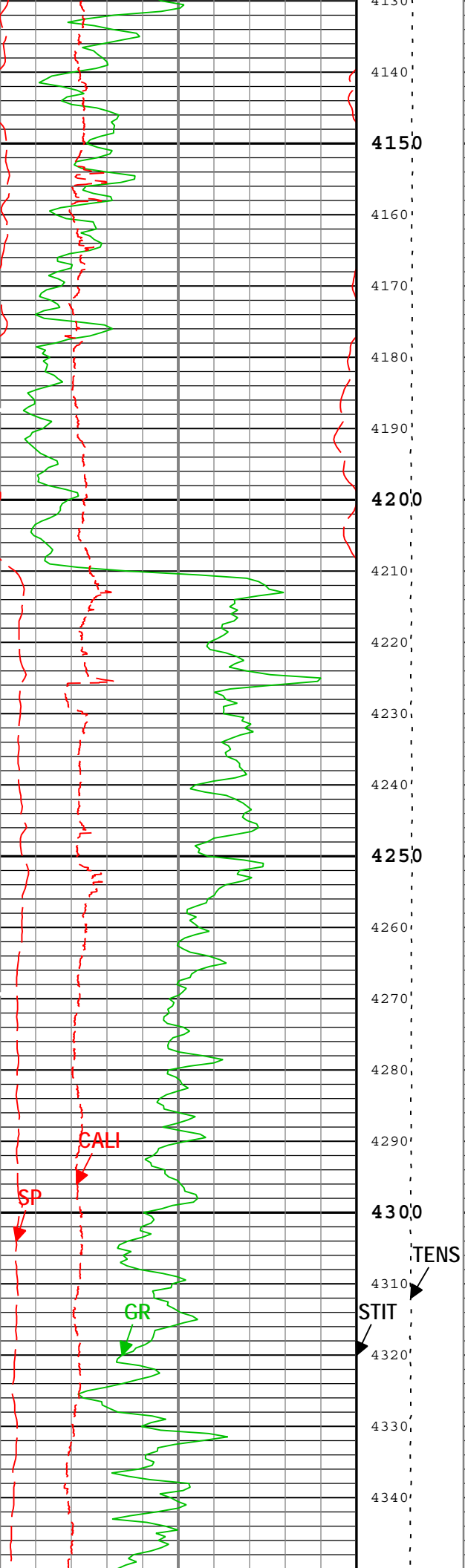


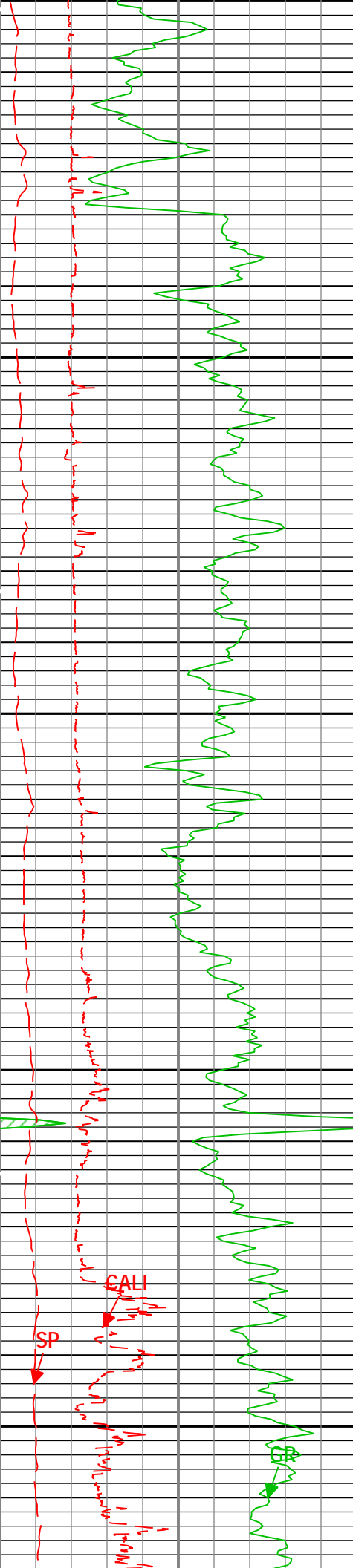






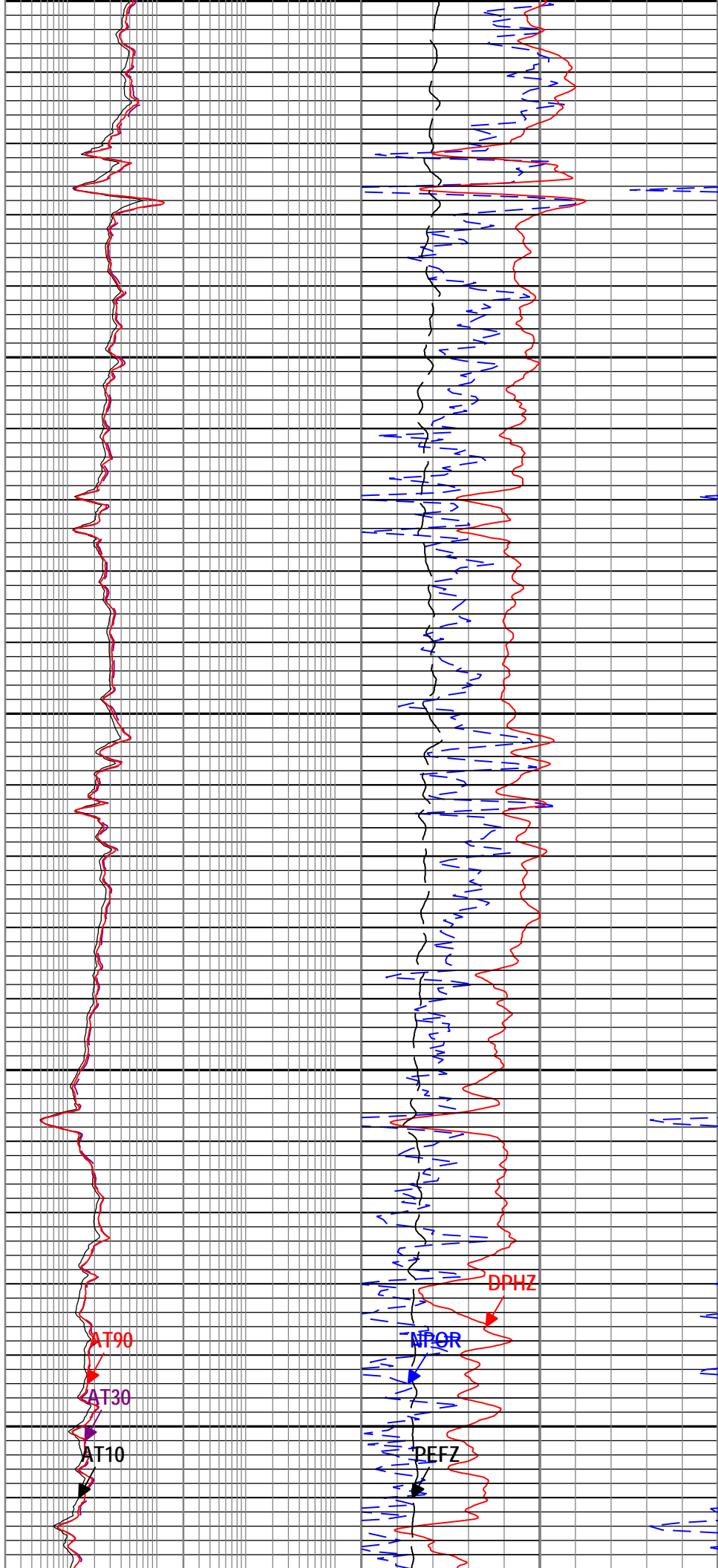


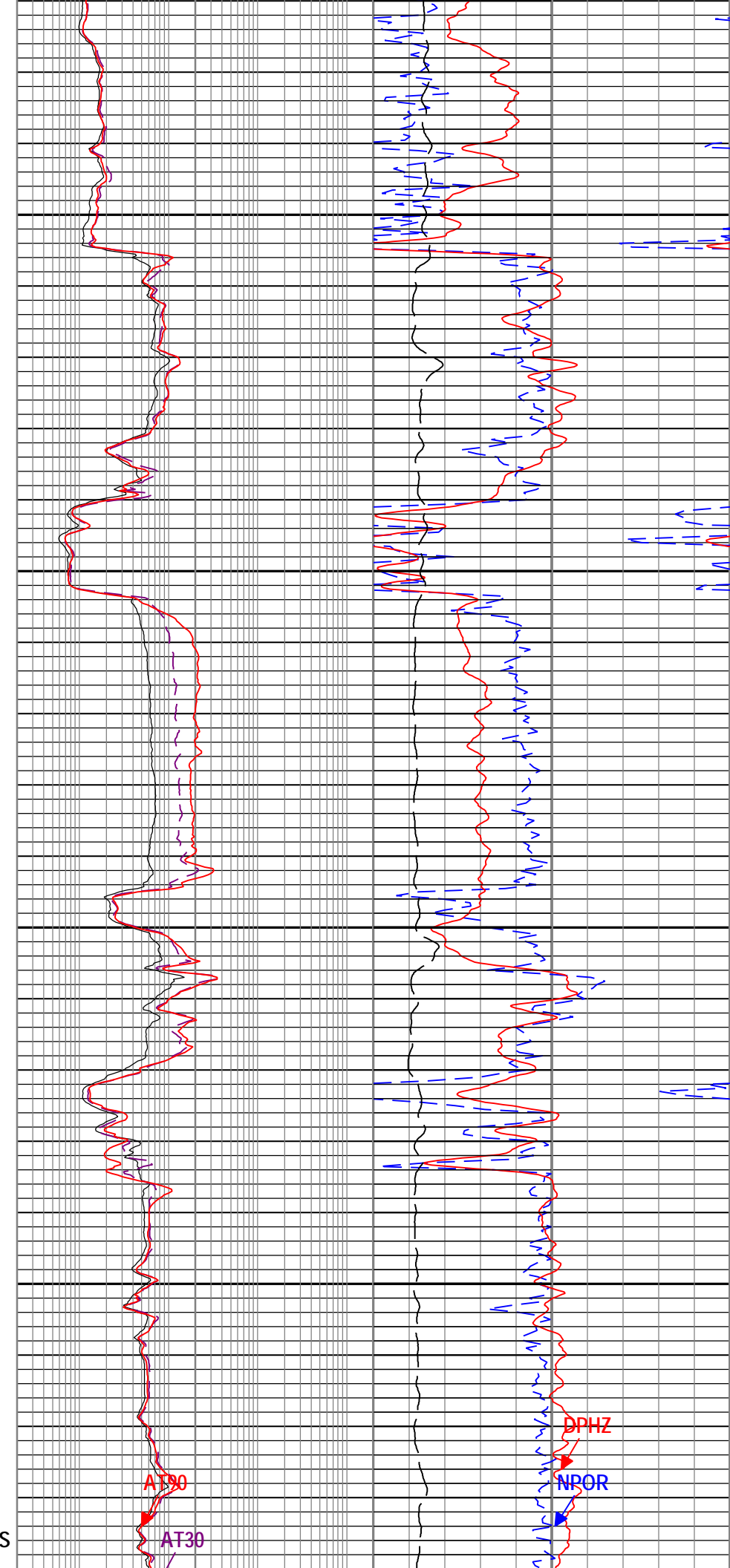
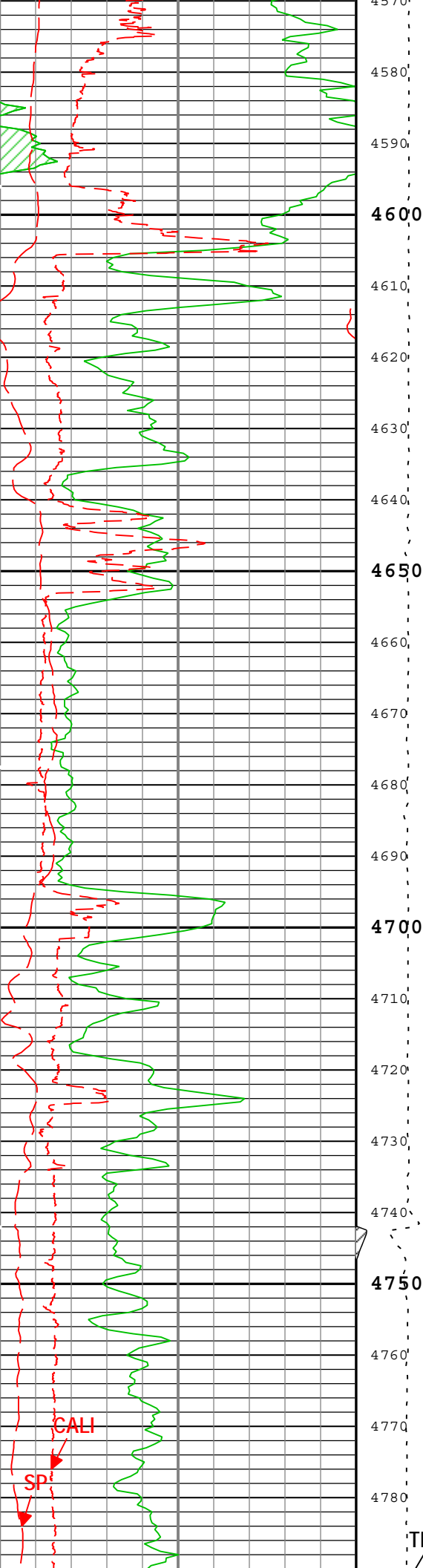


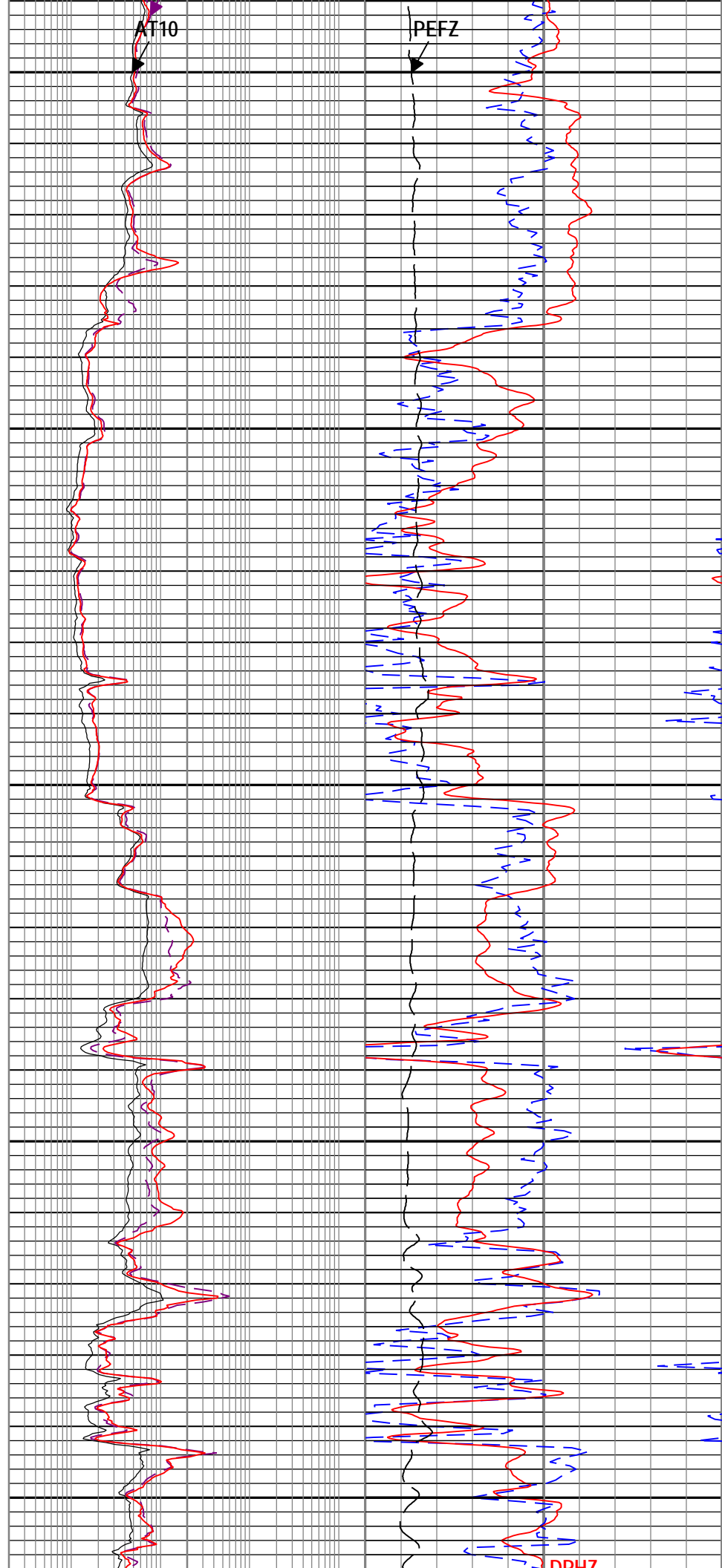
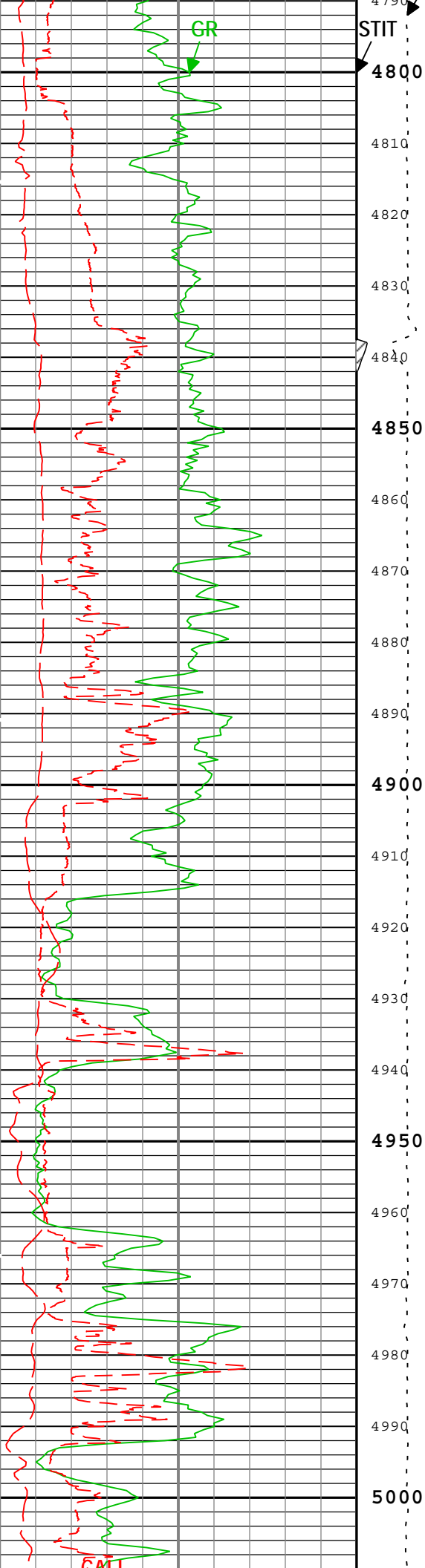


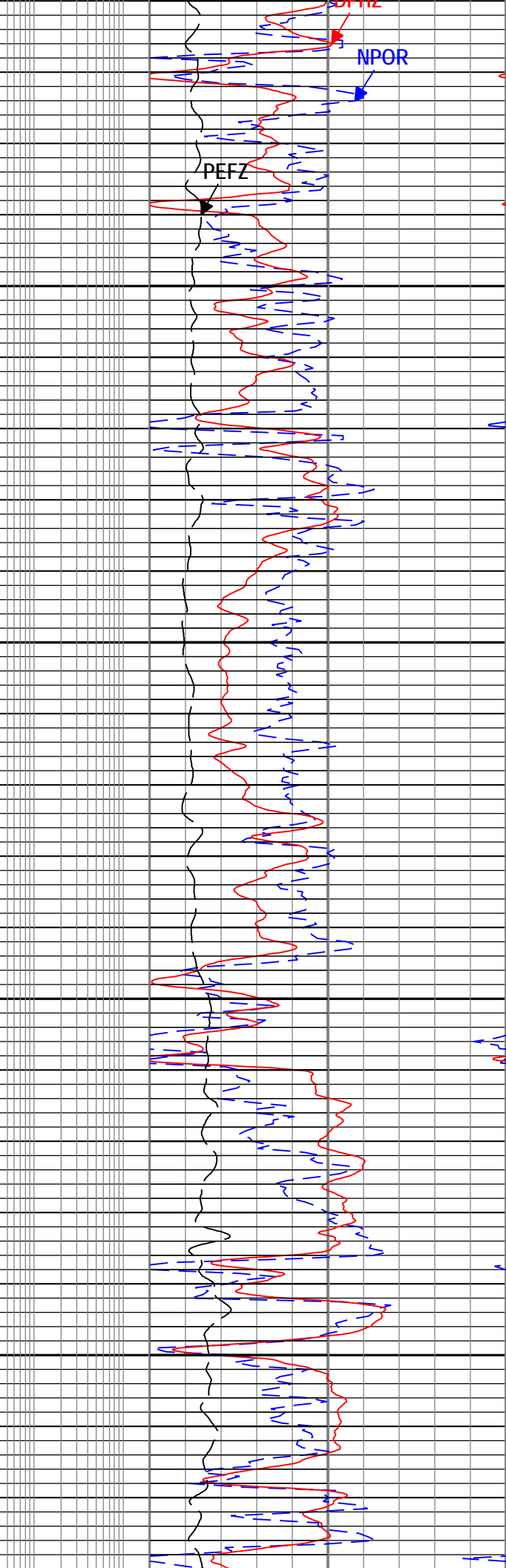
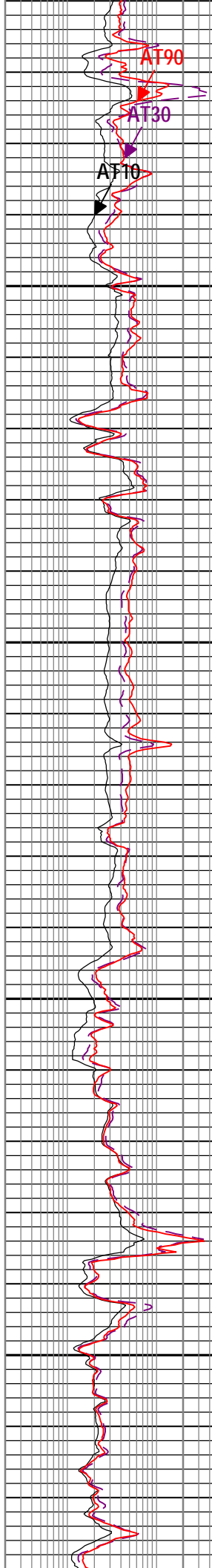
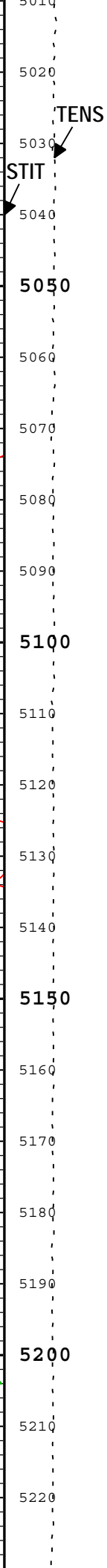
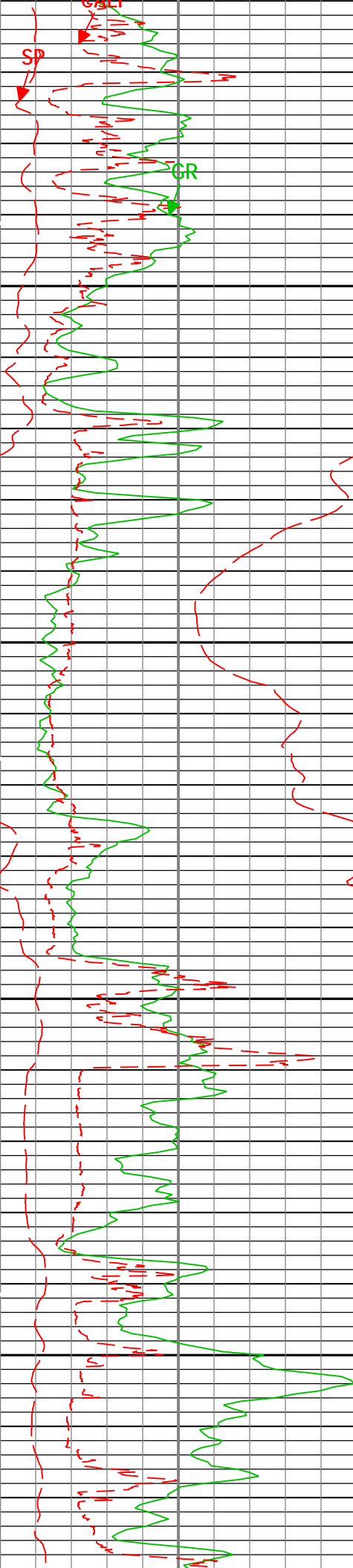
4350'
4360'
4370'
4380'
4390'
4400
4410'
4420'
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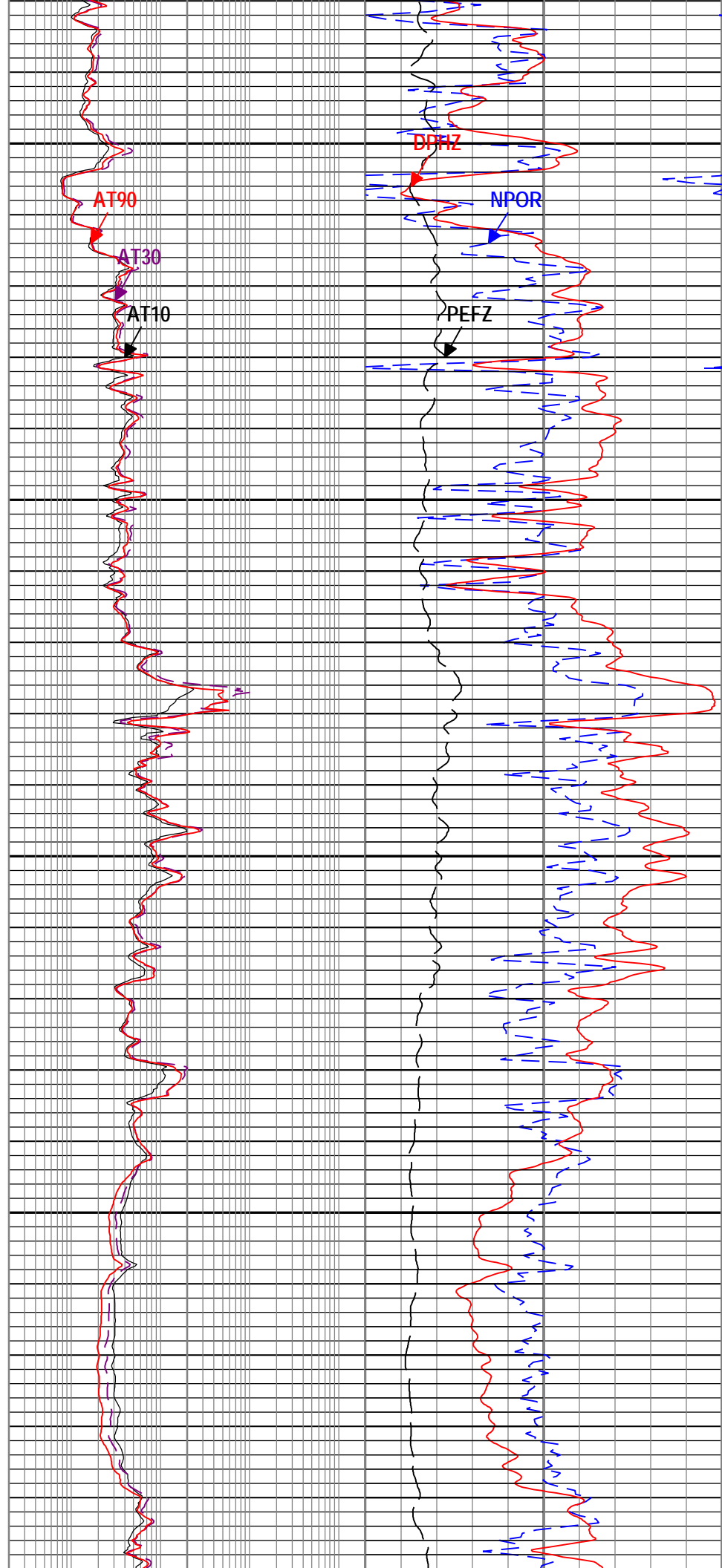
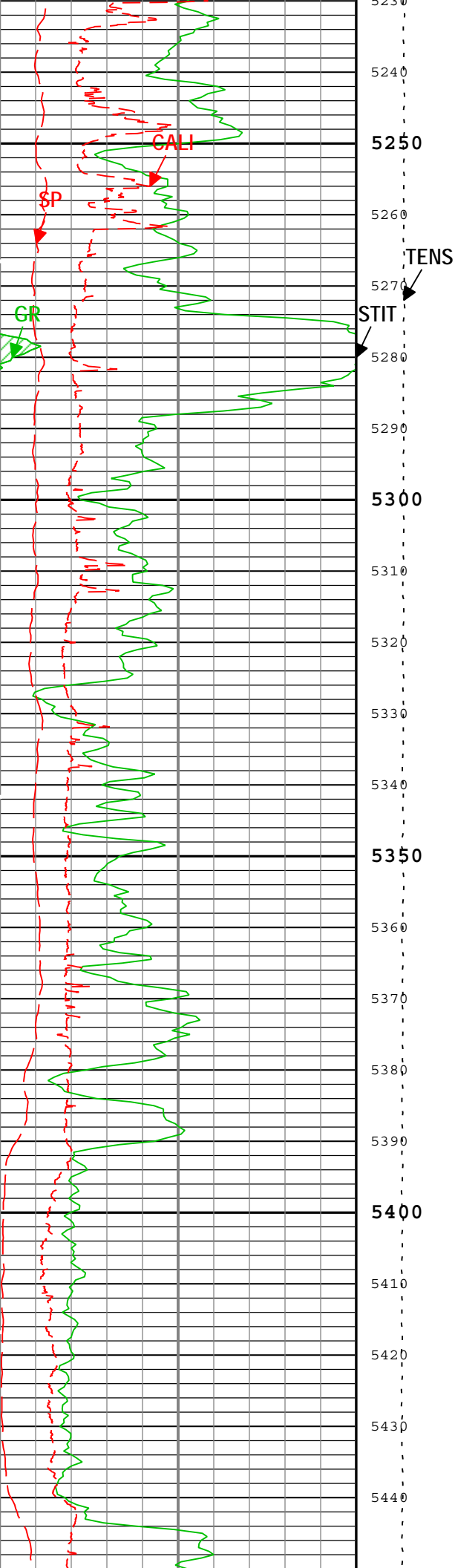
TENS
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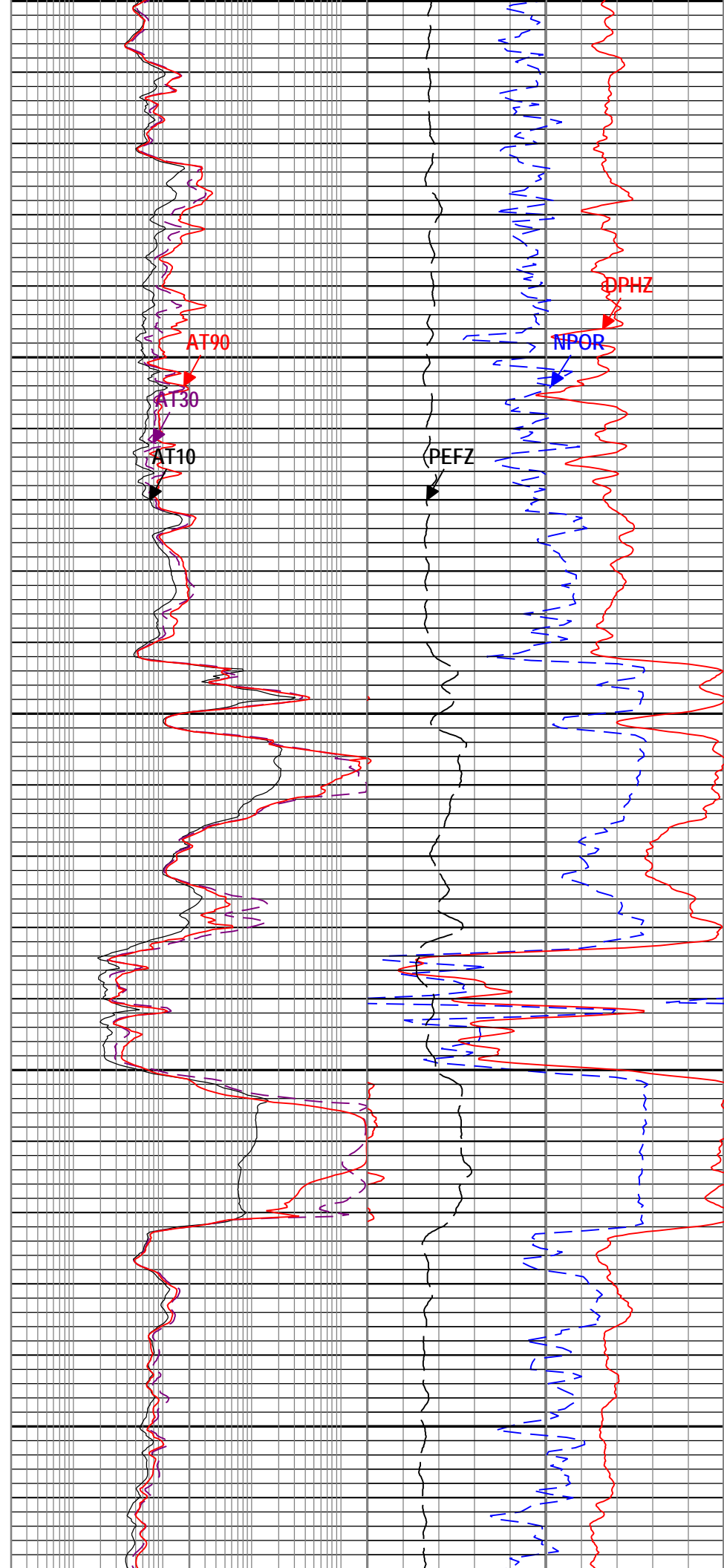
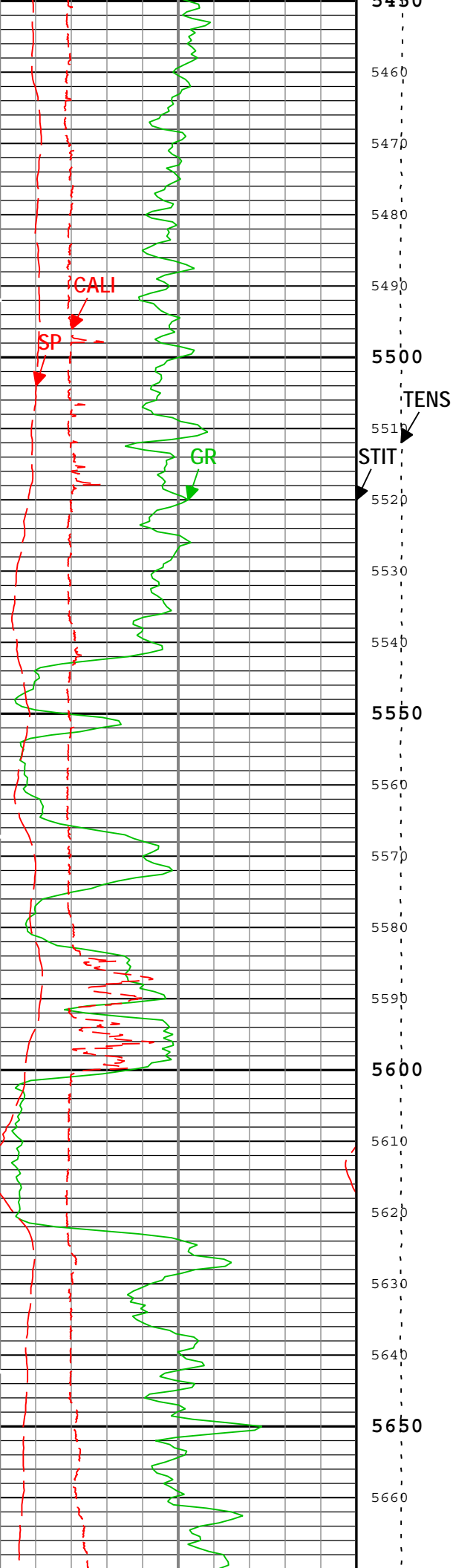


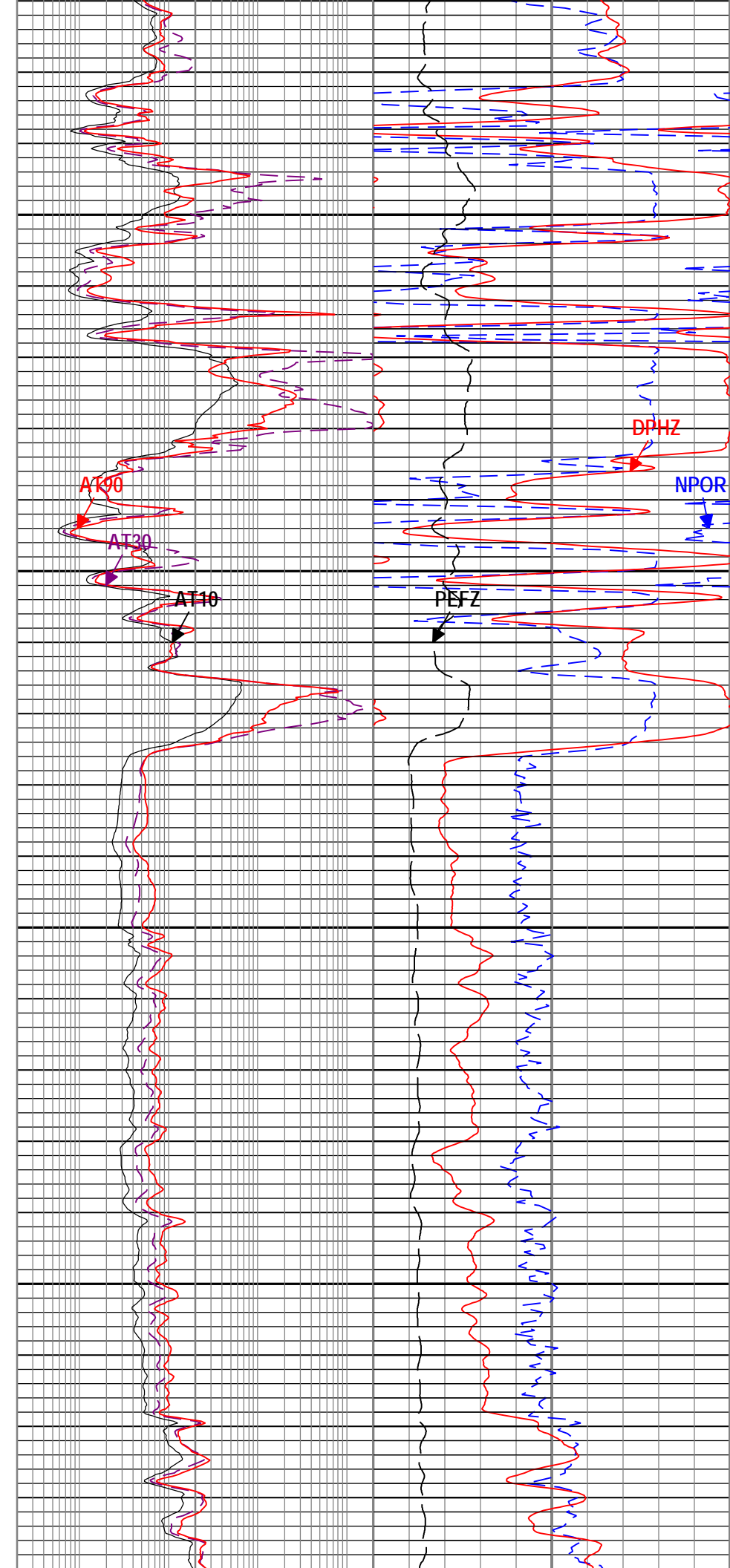
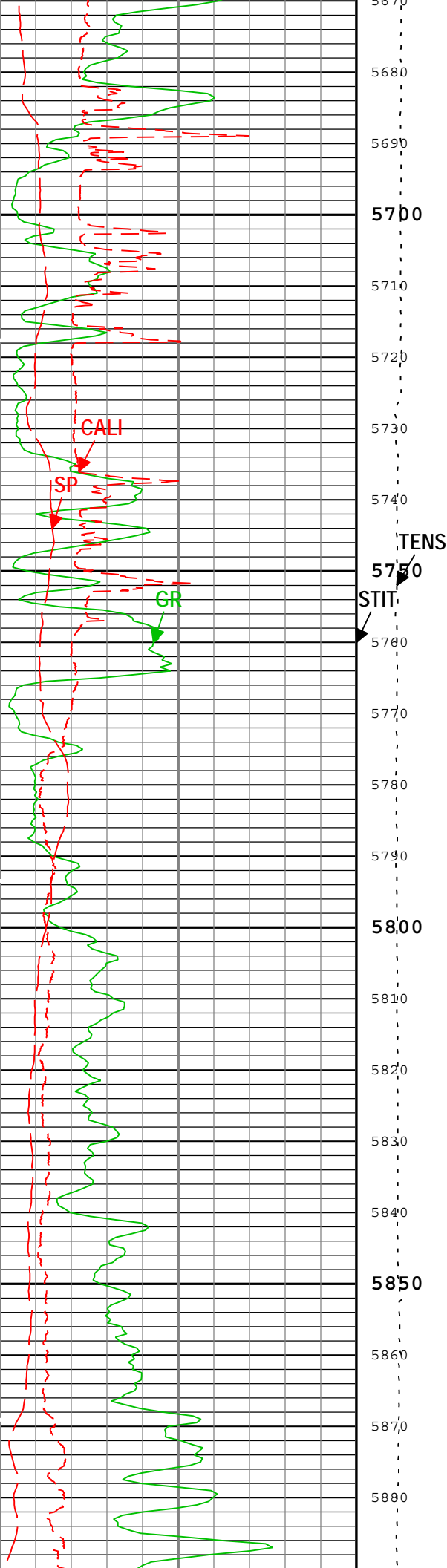


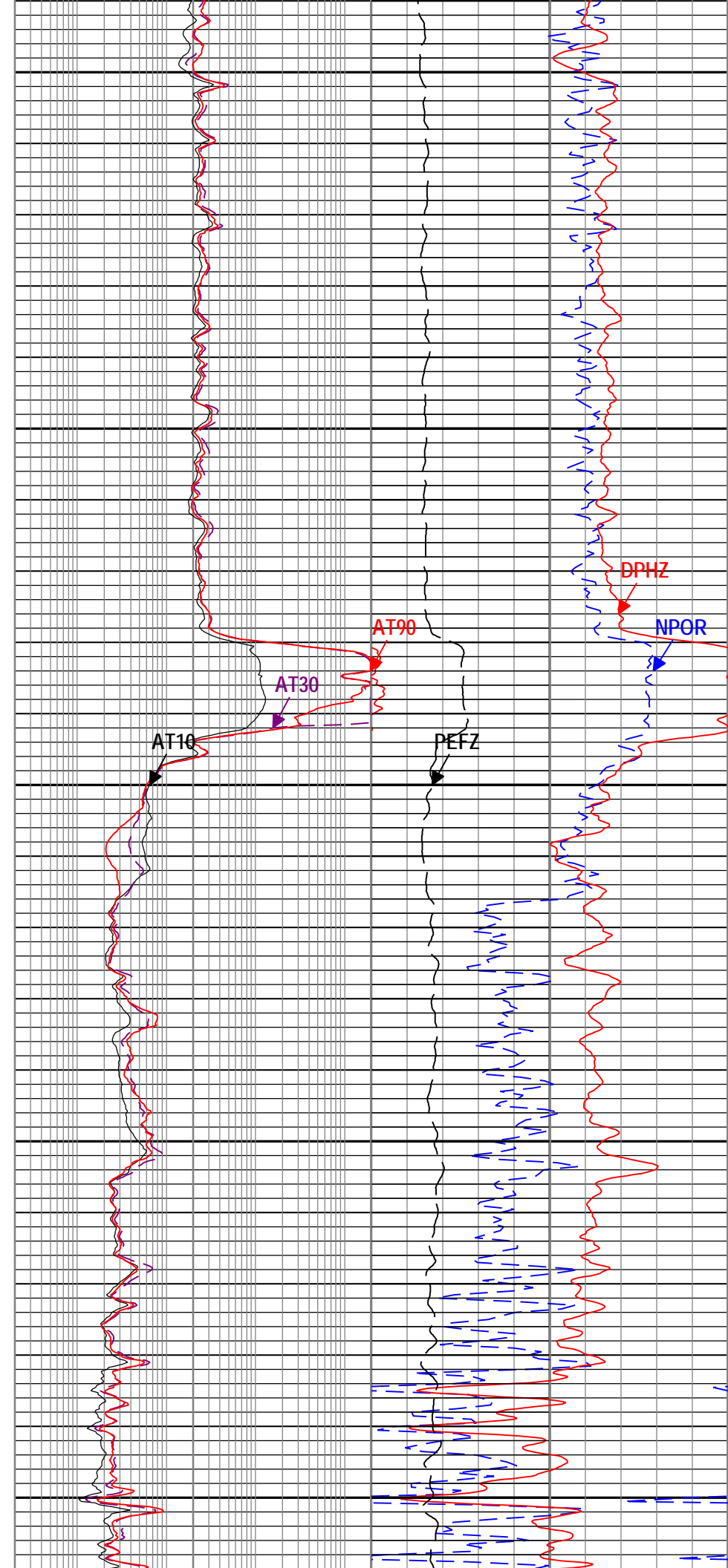
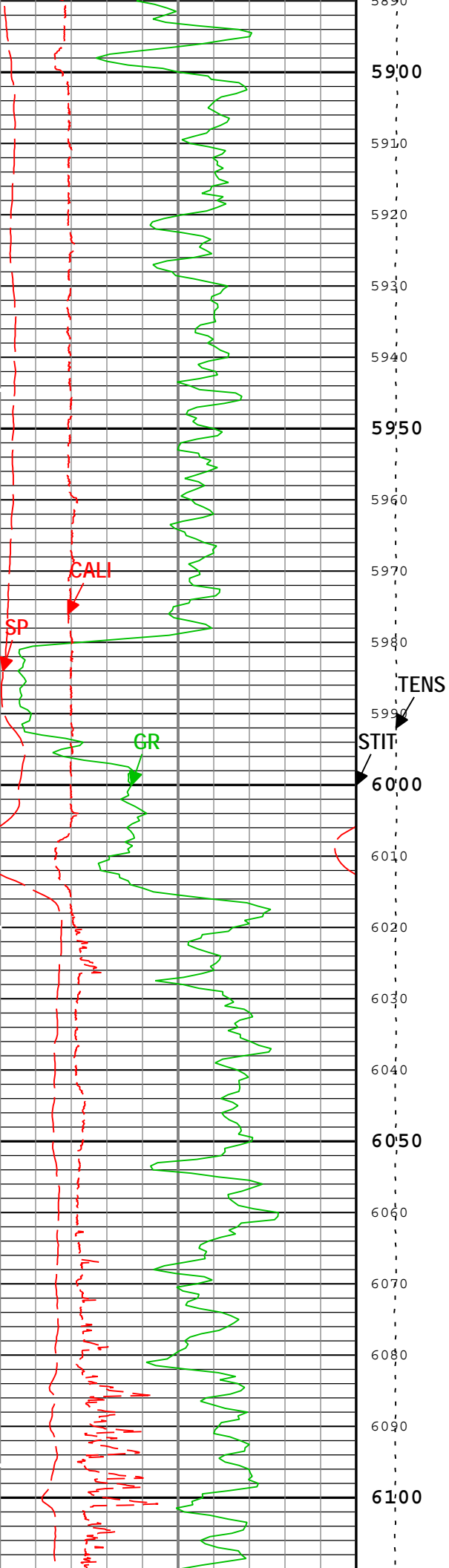


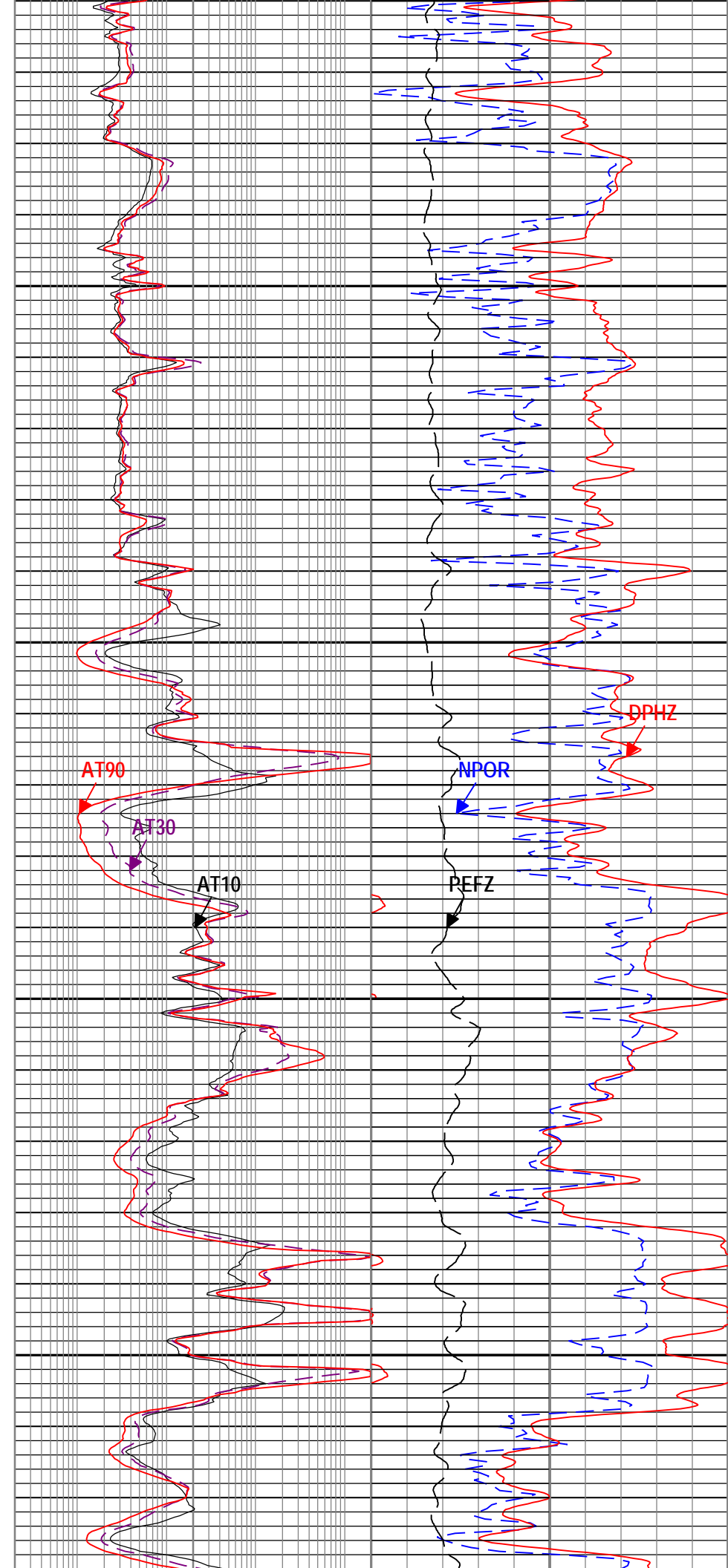
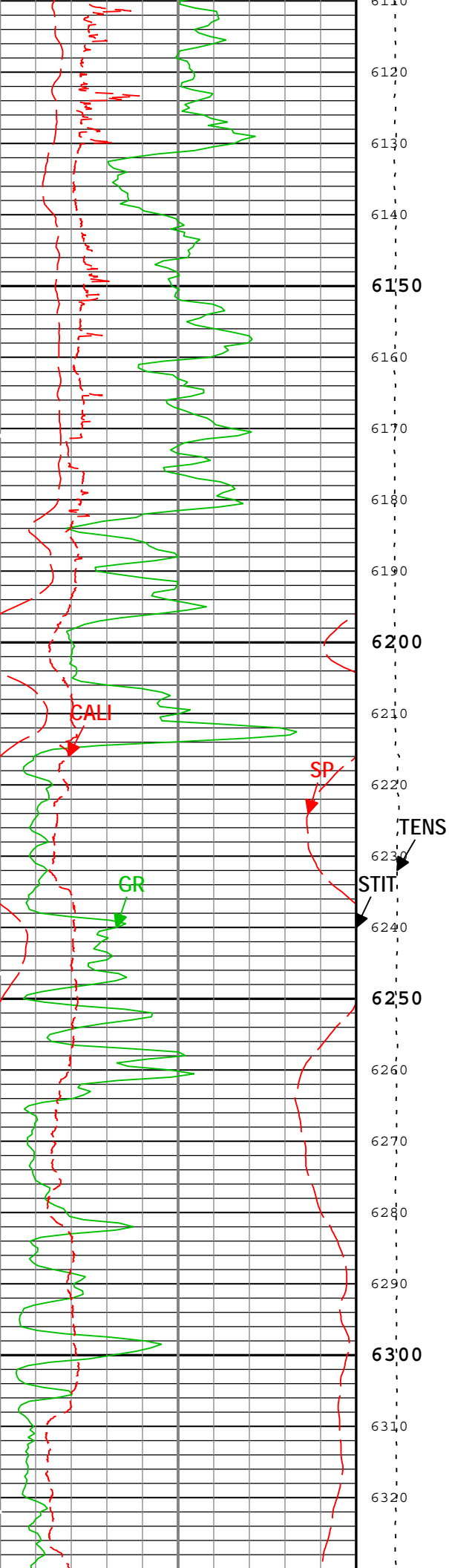


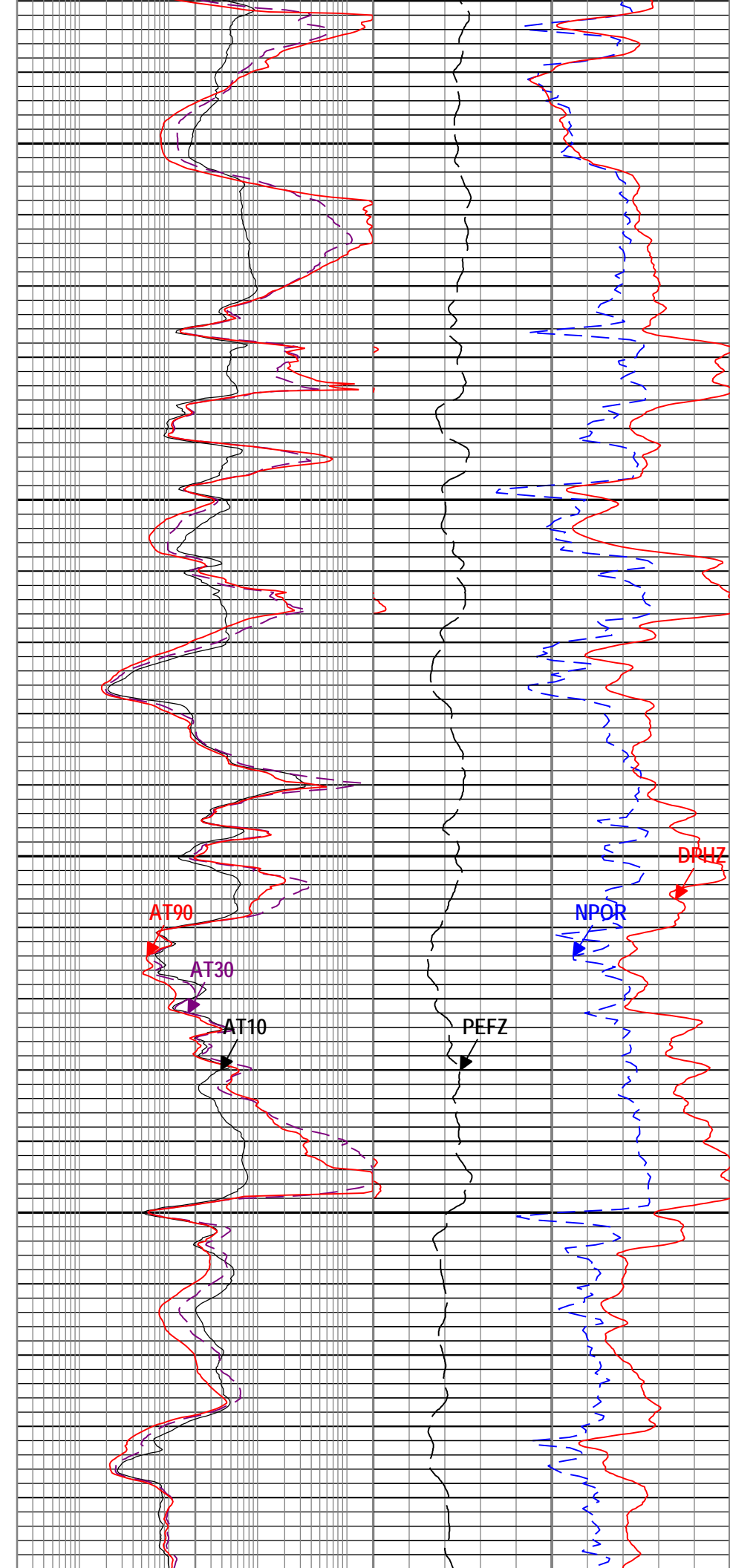
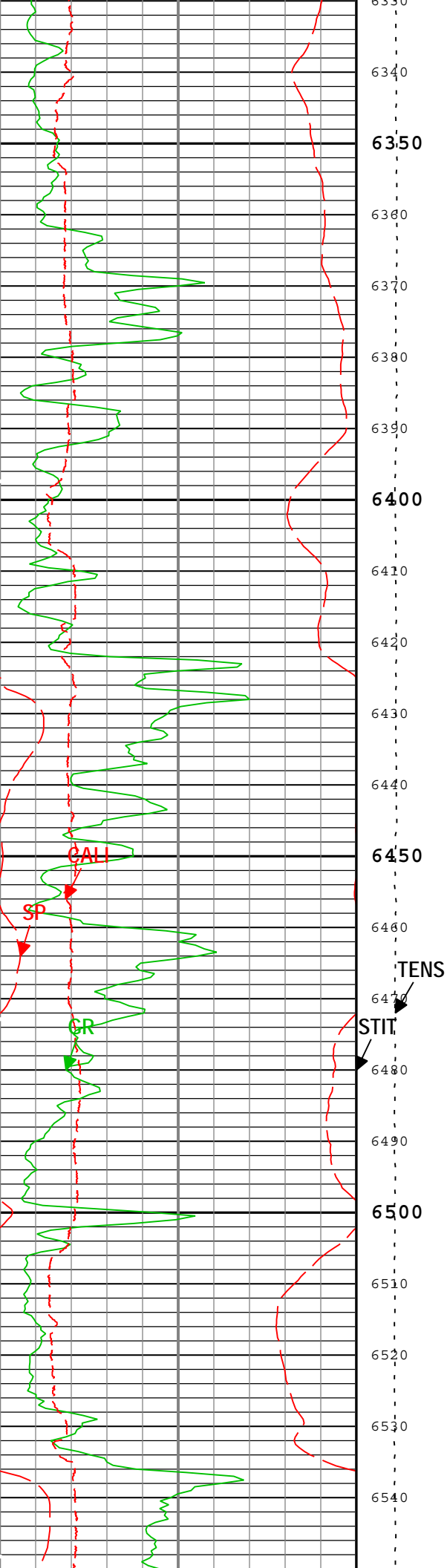


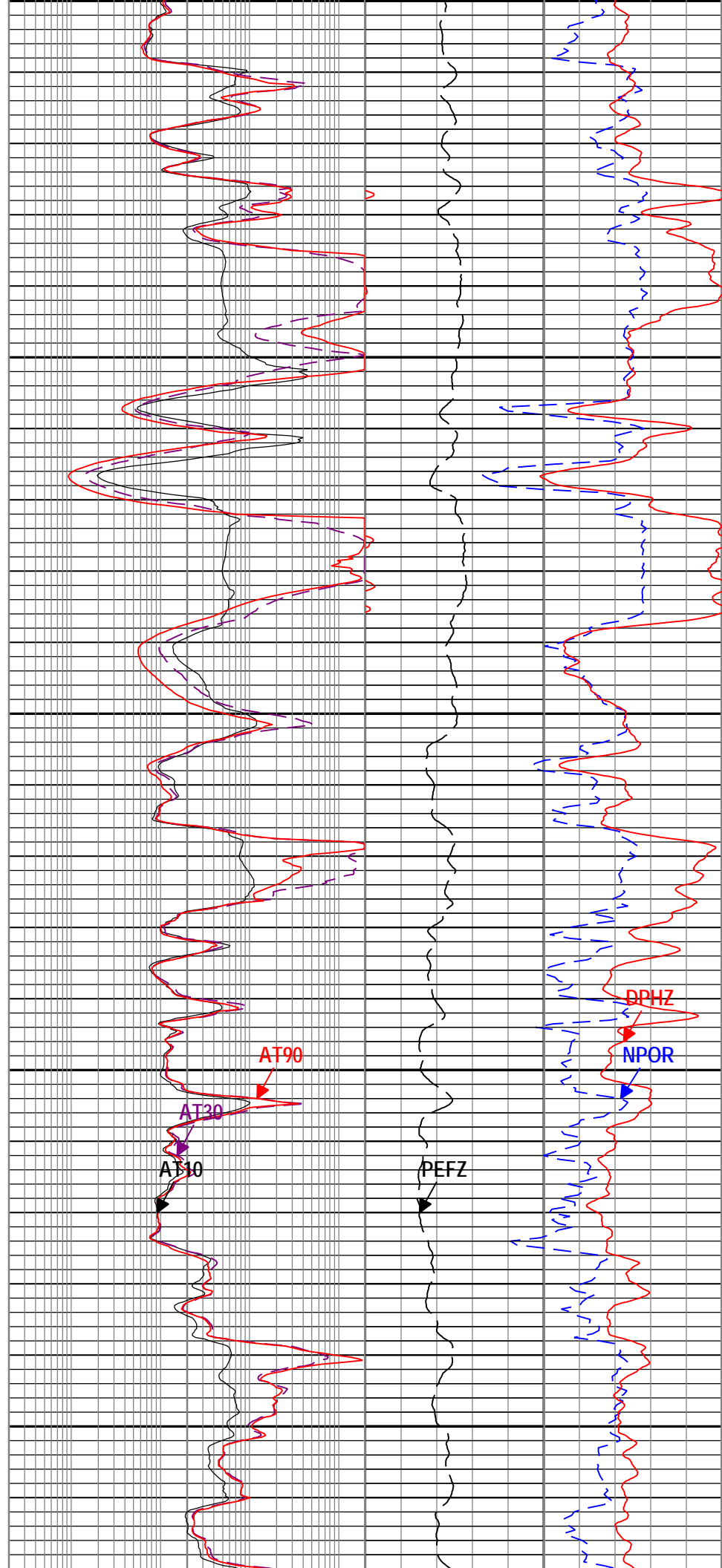
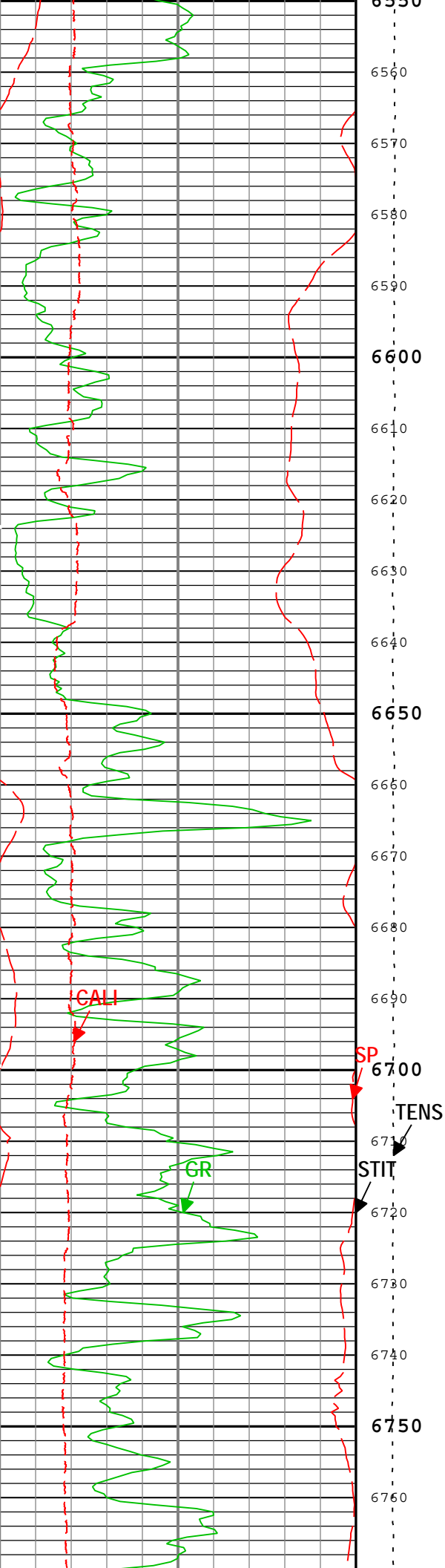


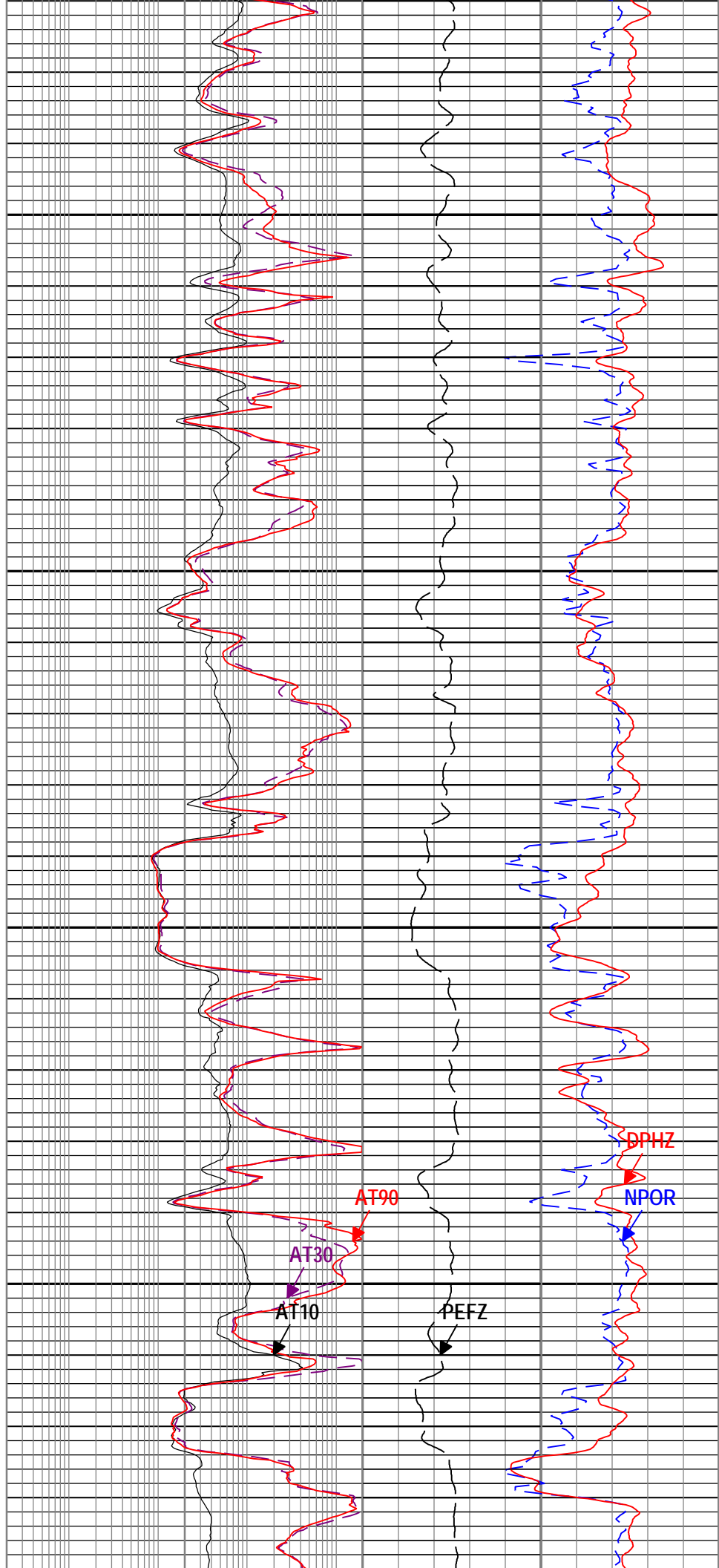
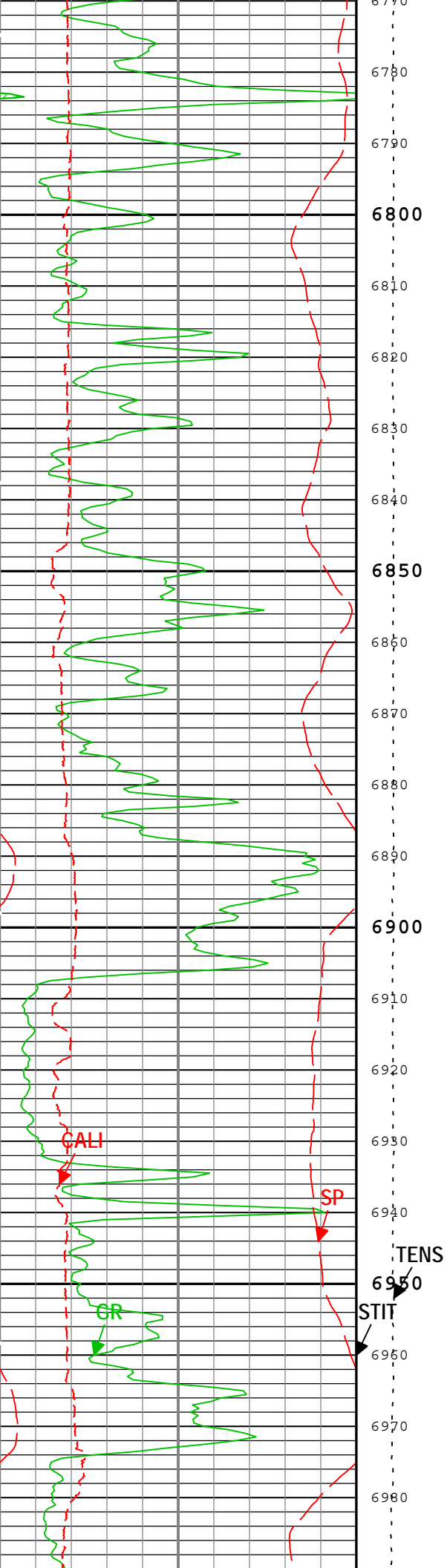


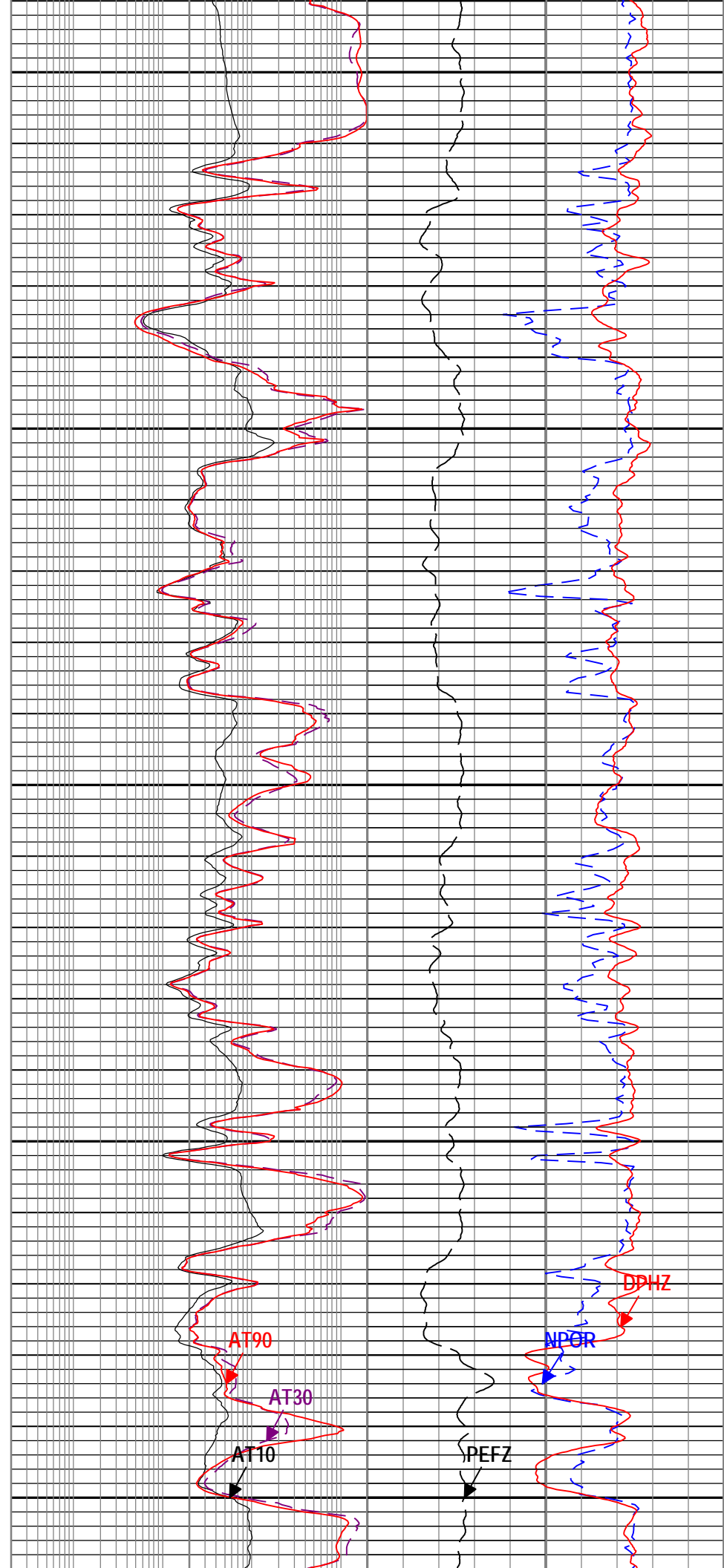
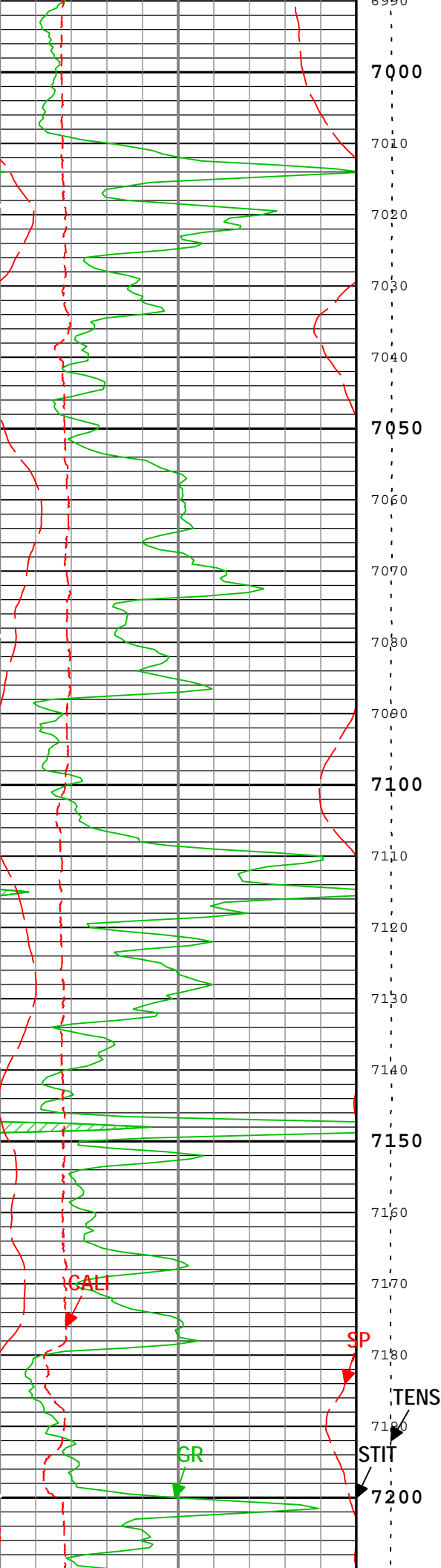


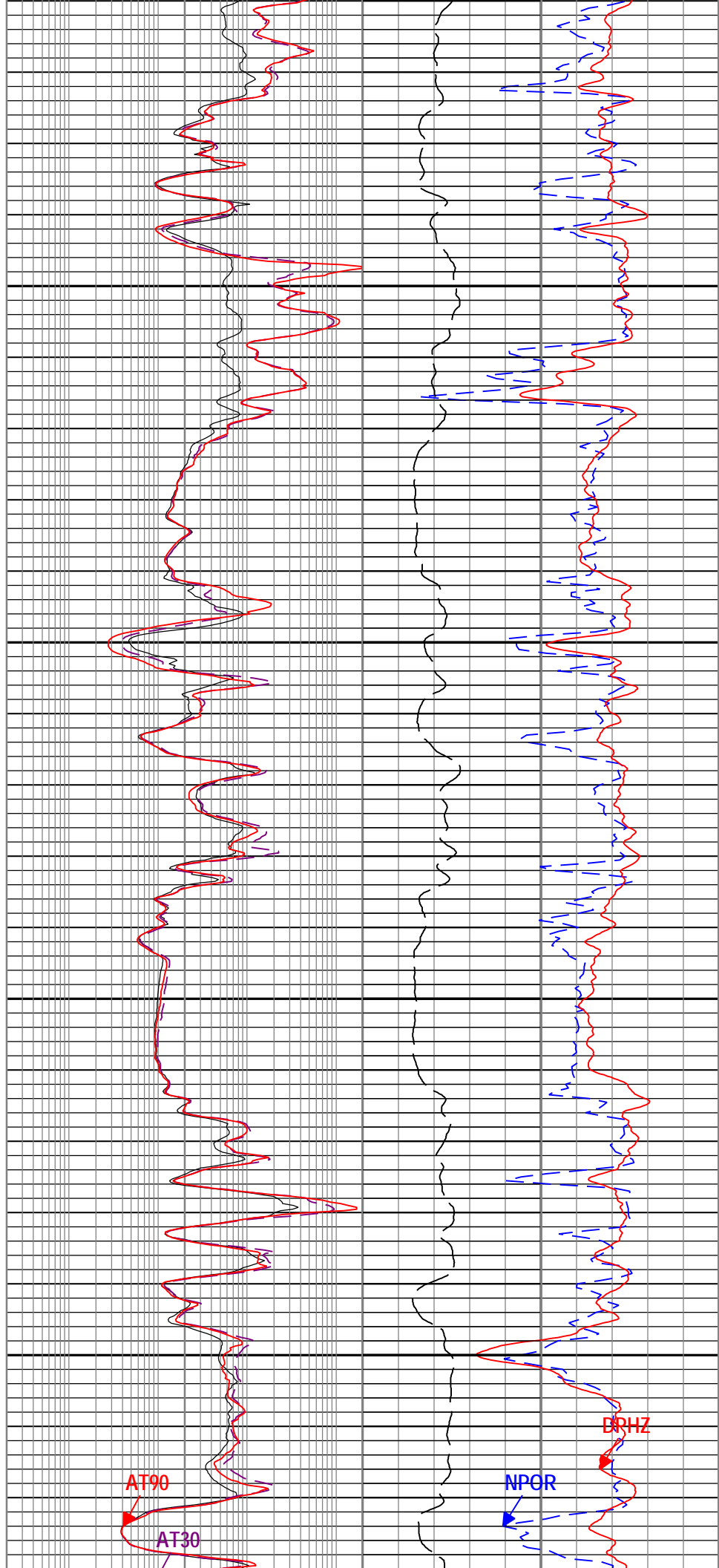
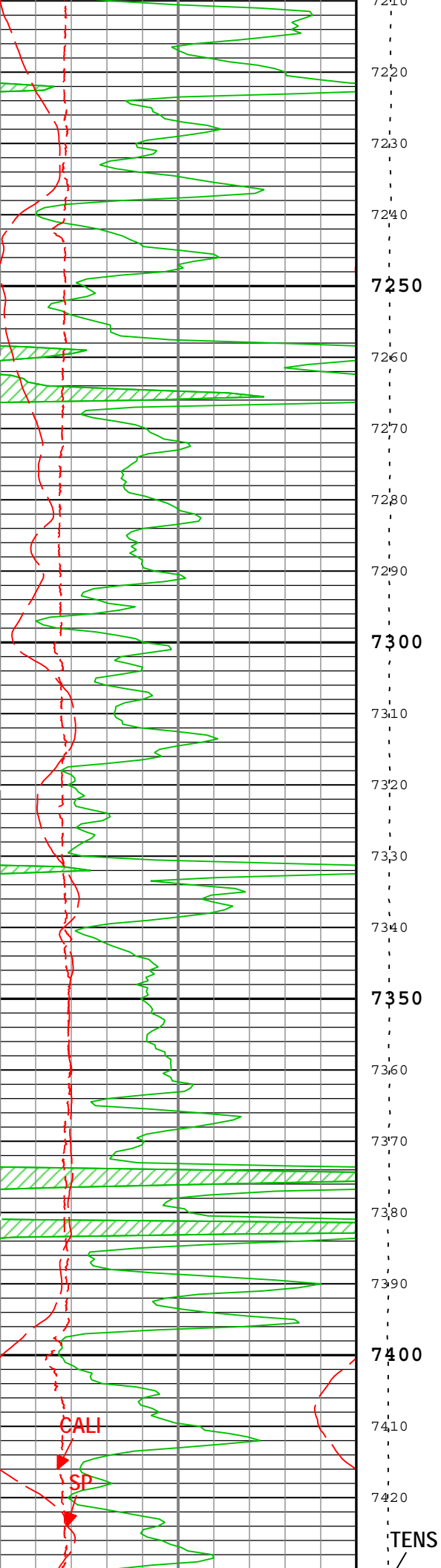


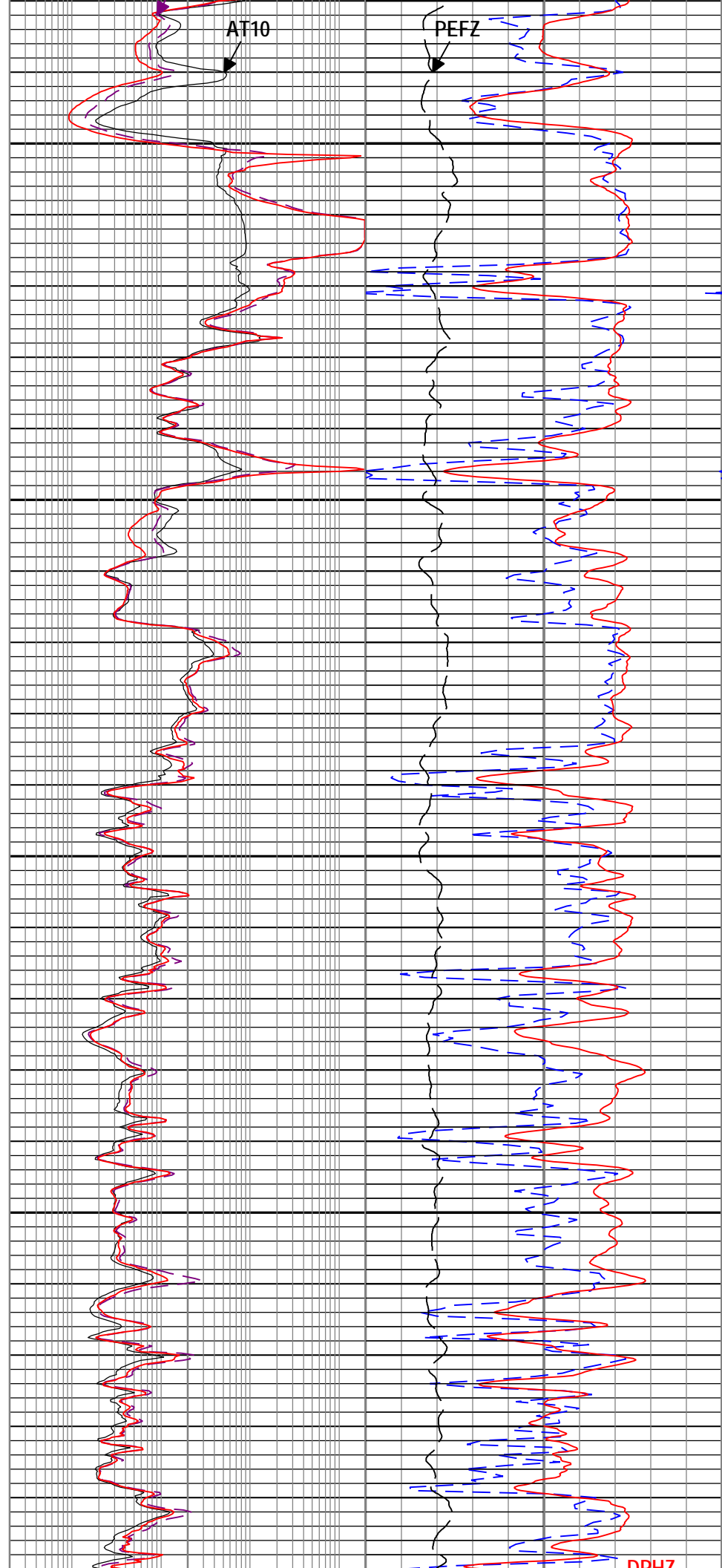
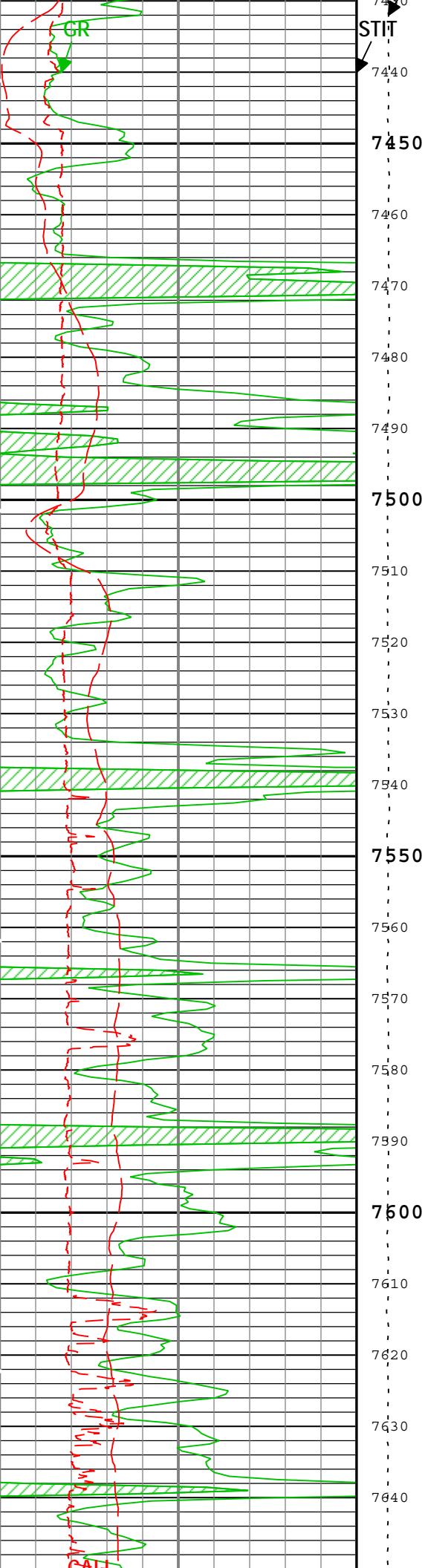


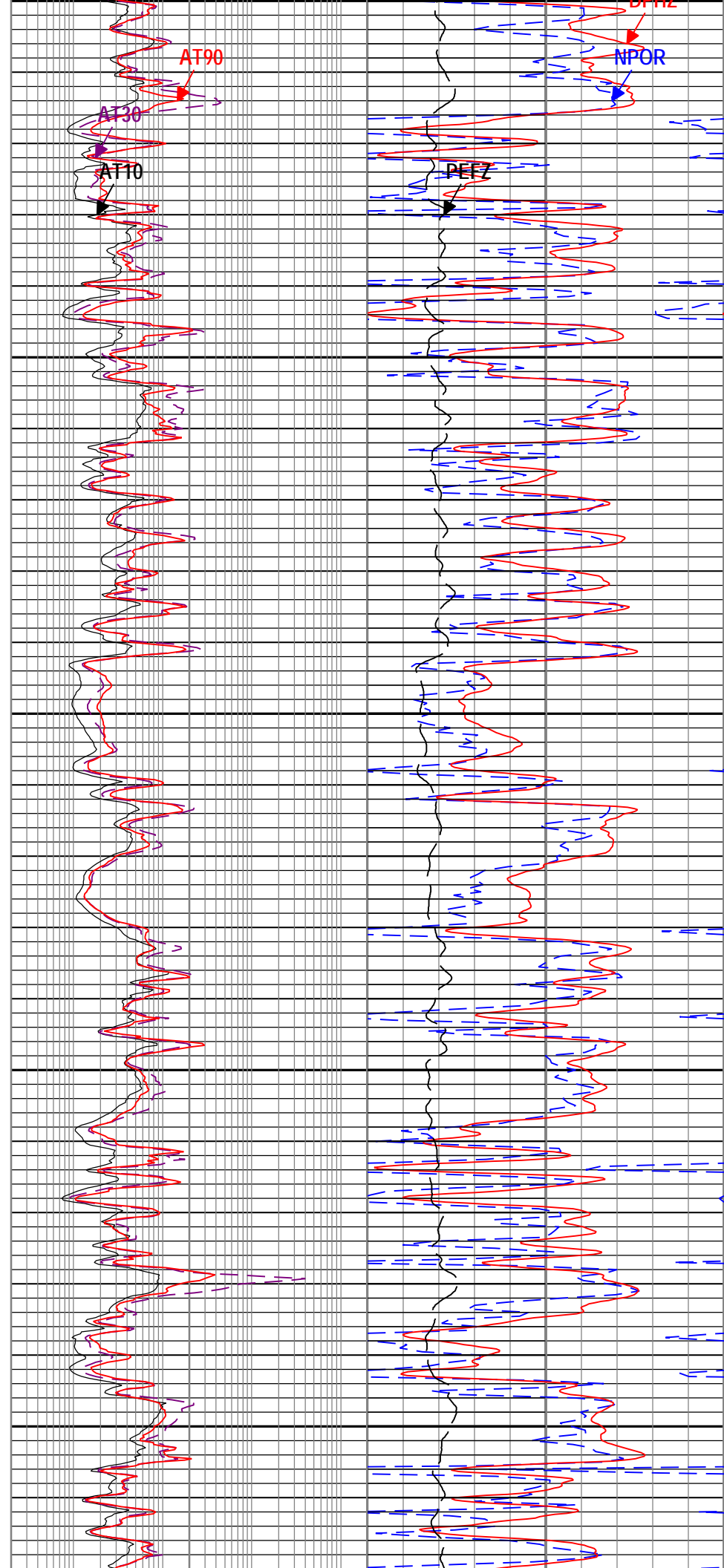
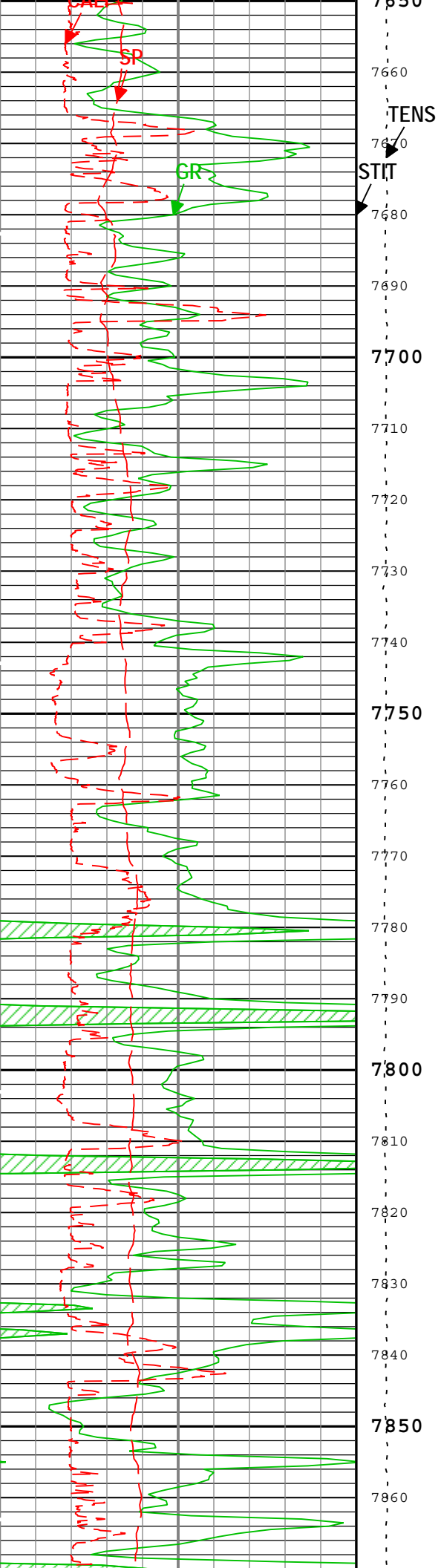


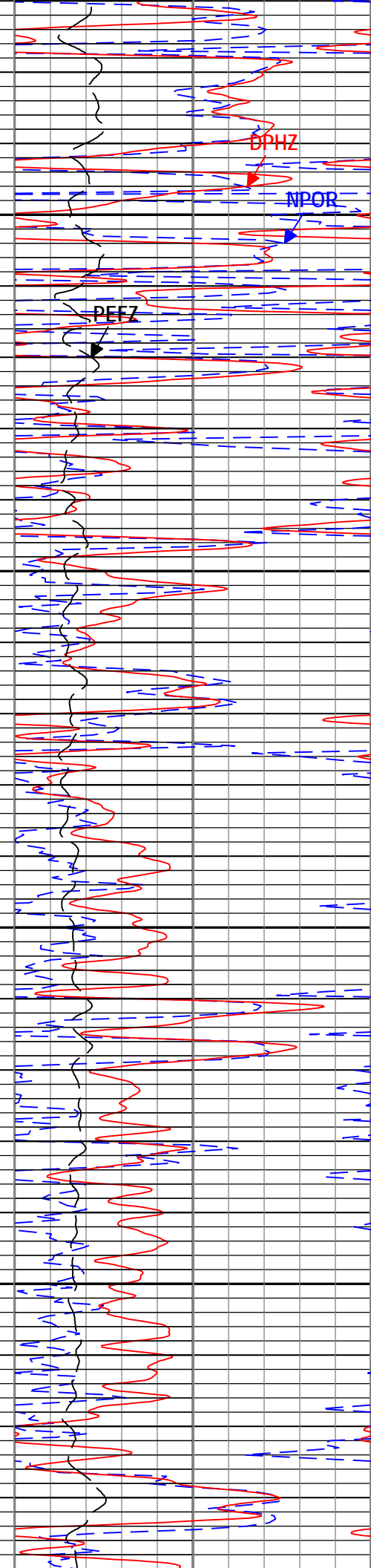
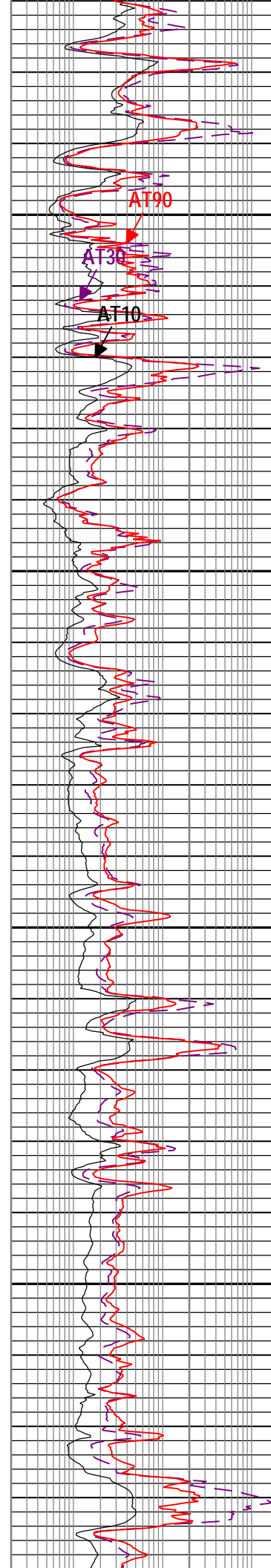
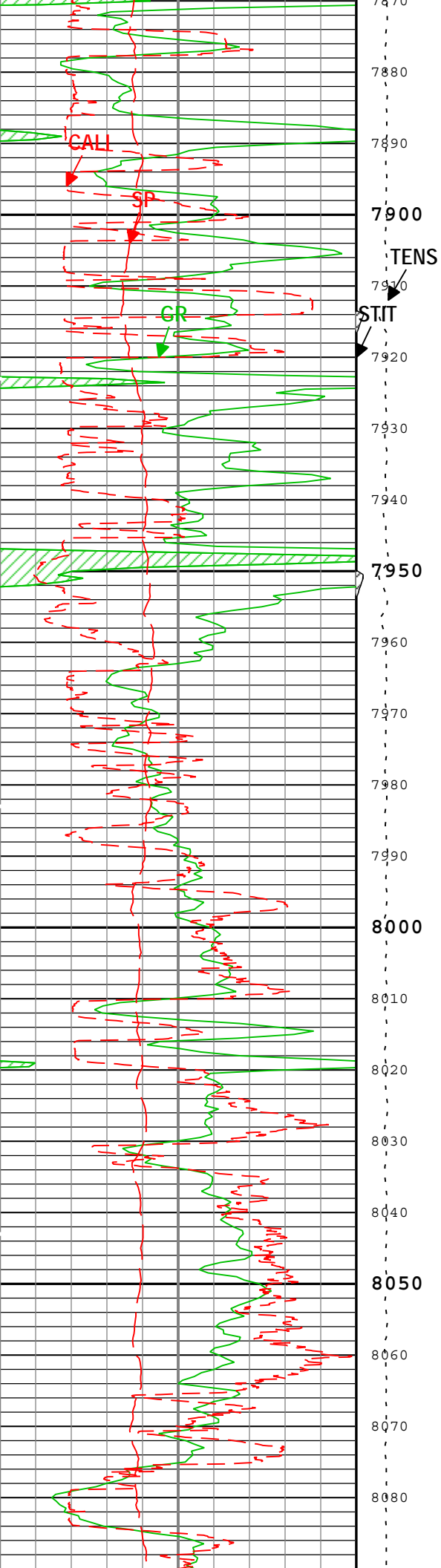


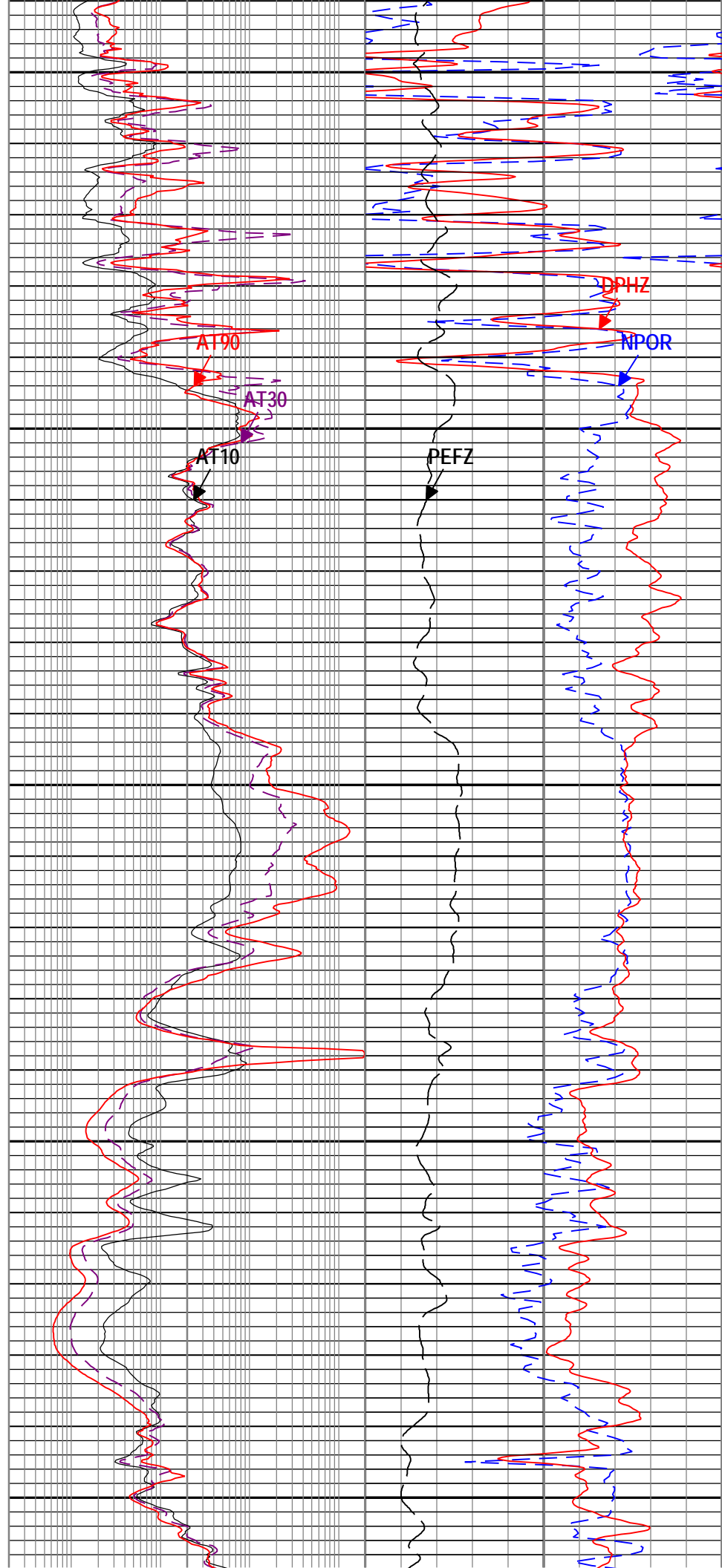
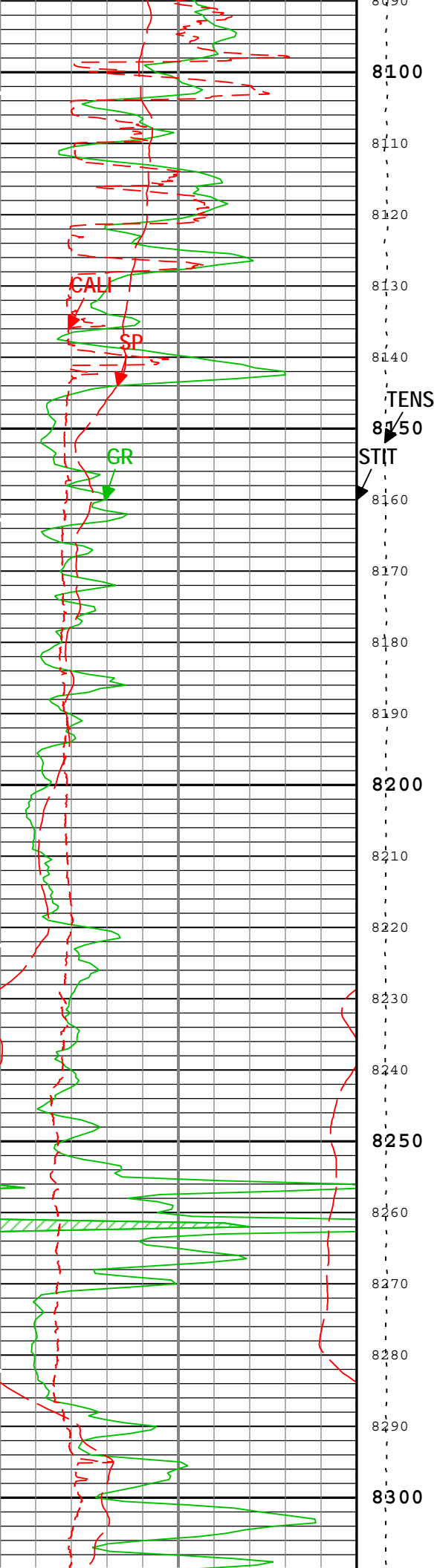


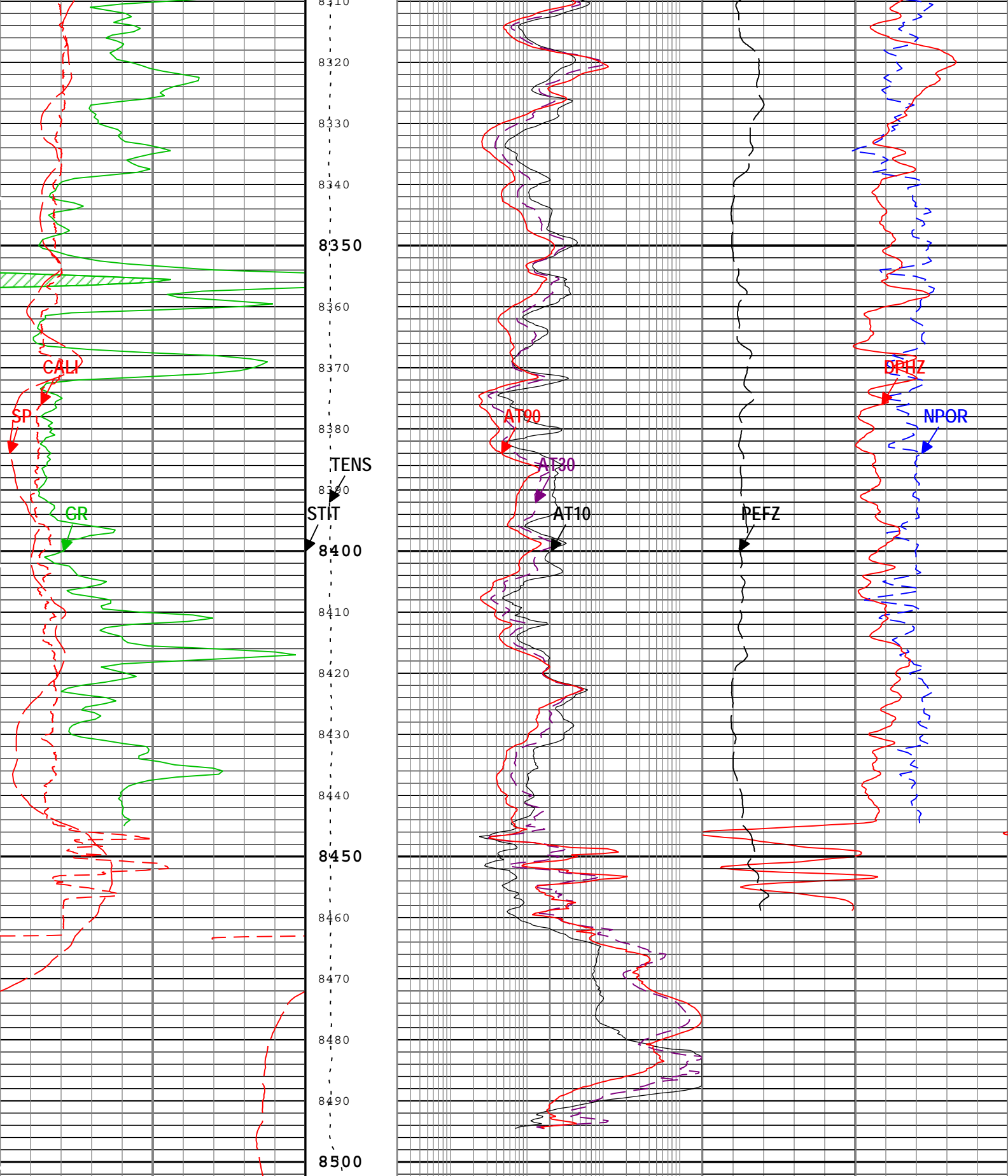












Gamma Ray Back up			Stuck Tool Indicator, Total (STIT)	Array Induction Two Foot Resistivity A10 (AT10) AIT-H			Gas Effect			
Gamma Ray (GR) HGNS-H				0.2 ohm.m 2000			NPOR Backup			
0	gAPI		200	0	ft	50				
Spontaneous Potential (SP) AIT-H				Cable Tension (TENS)	Array Induction Two Foot Resistivity A30 (AT30) AIT-H			Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H		
0	mV		200		0.2 ohm.m 2000			0.45 ft3/ft3 -0.15		

Caliper (CALI) HDRS-H			(TENS)	0.2	ohm.m	2000	0.15	Standard Resolution Density Porosity (DPHZ)	
6	in		6000 lbf	0	Array Induction Two Foot Resistivity A90 (AT90) AIT-H		HDRS-H		
				0.2	ohm.m	2000	0.45	ft3/ft3	-0.15
							Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H		
							0		10

TIME_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log (EMD 5in Triple Combo) Index Scale: 5 in per 100 ft Index Unit: ft
Index Type: Measured Depth Creation Date: 06-Nov-2012 05:33:03

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-H	Compute Standoff	
ABLM	Array Induction Basic Logs Mode	AIT-H	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-H	Yes	
ASTA	Array Induction Tool Standoff	AIT-H	0.125	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	Depth Zoned	in
BSAL	Borehole Salinity	Borehole	27672.44	ppm
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0	in
CBLO	Casing Bottom (Logger)	WLSESSION	410	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	9.2	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DFT_WATER	Drilling Fluid Water Type	Borehole	Chemical Gel	
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	85.66	degF
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.15	ohm.m
SOCO	Standoff Correction Option	HGNS-H	Yes	
SP_SHIFT	SP Shift	AIT-H	0	mV
SPDR	SP Drift Per Foot	AIT-H	0	mV/ft
TD	Total Measured Depth	Borehole	8507	ft

Depth Zone Parameters			
Parameter	Value	Start (ft)	Stop (ft)
BS	0	107.5	410
BS	7.875	410	8504

All depth are actual.

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

Run1

5" Triple Combo

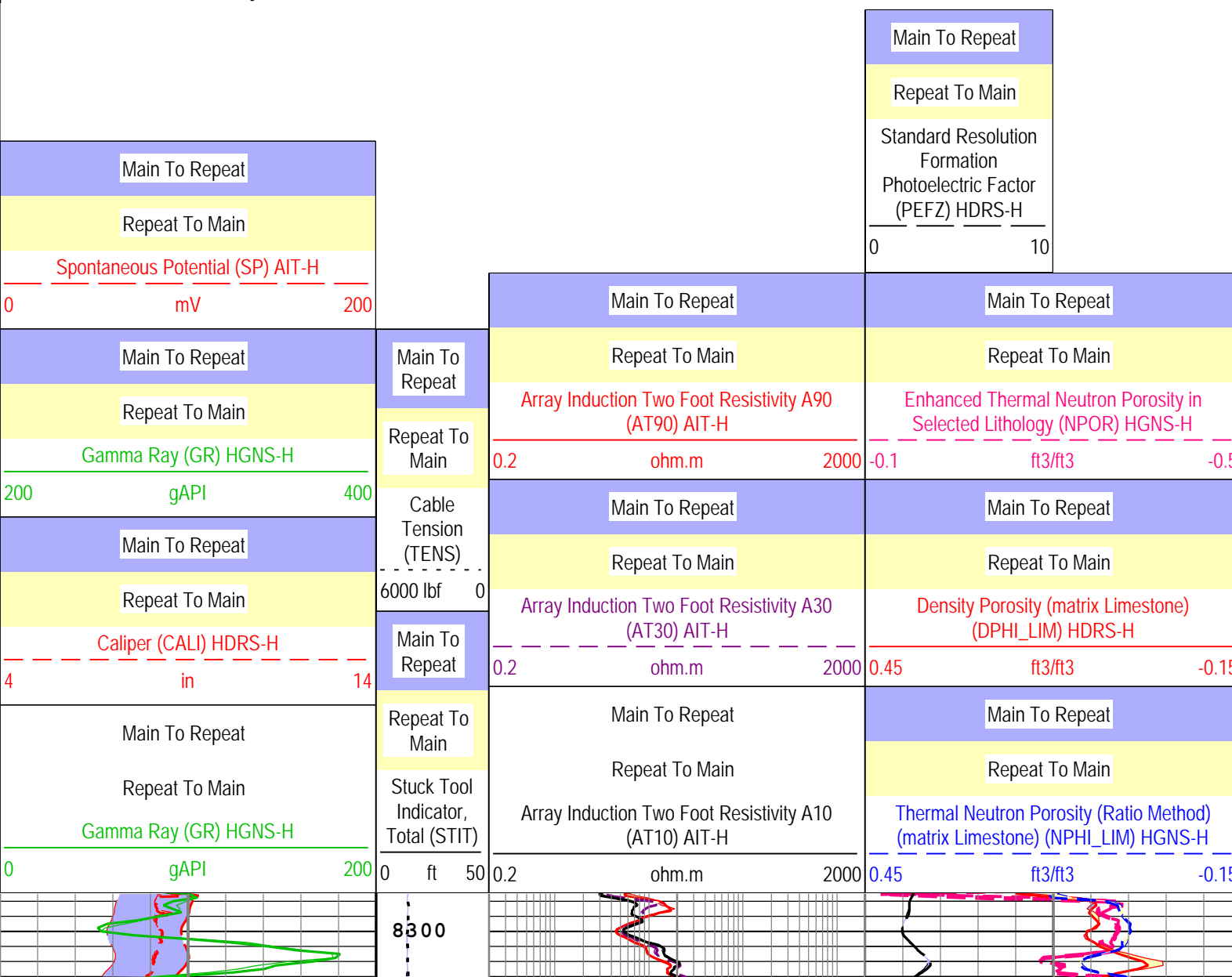
Pass Summary								
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
Run1	Log[3]:Up	Up	8067.37 ft	8515.82 ft	06-Nov-2012 3:18:09 AM	06-Nov-2012 3:27:19 AM	8.07 ft	
Run1	Log[4]:Up	Up	166.47 ft	8504.24 ft	06-Nov-2012 3:30:47 AM	06-Nov-2012 5:24:04 AM	0.00 ft	

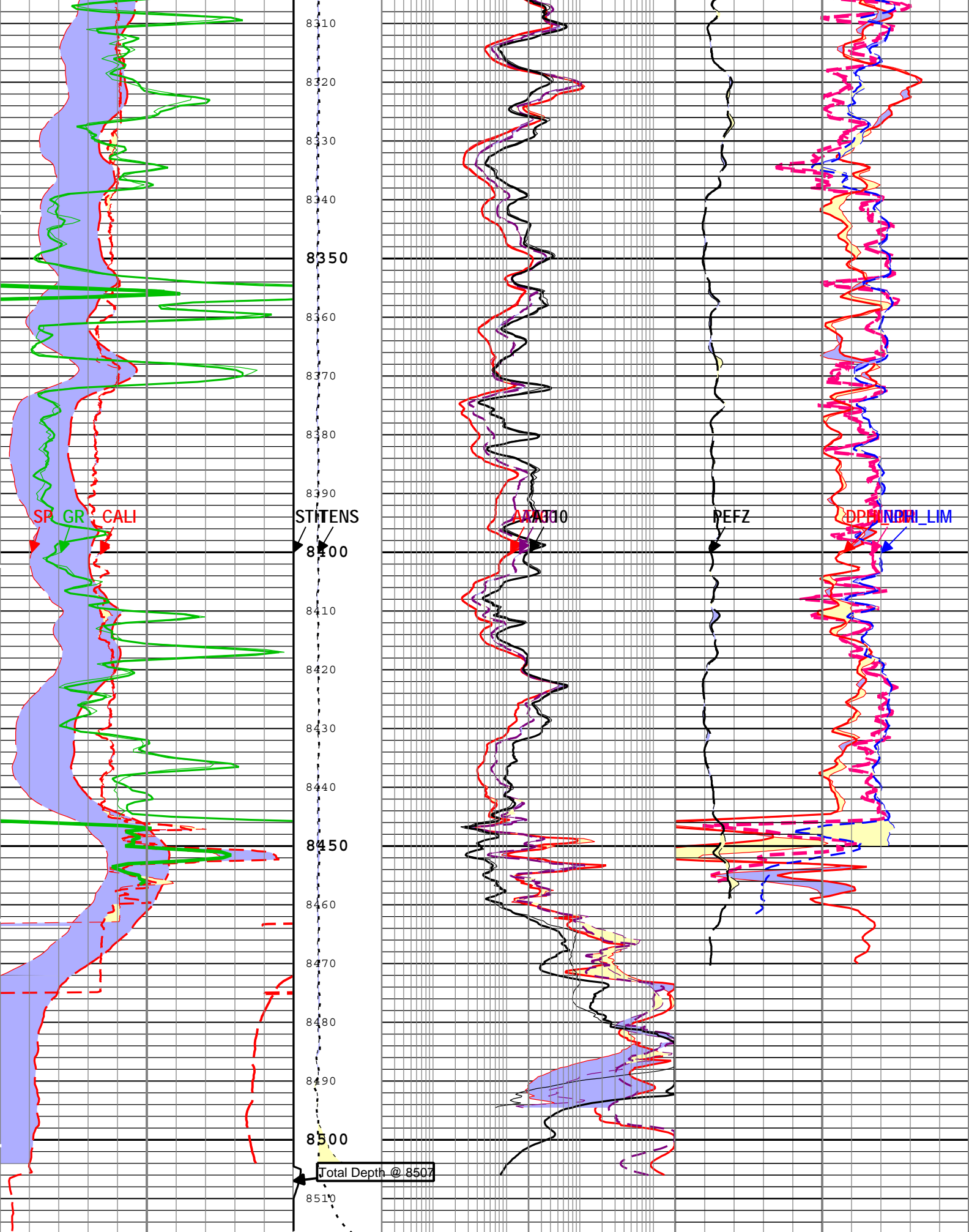
All depths are referenced to toolstring zero

Log	Run1: Log[4]:Up
-----	-----------------

Description: HGNS standard resolution porosities for Platform Express Format: Log (EMD 5in Triple Combo RA) Index Scale: 5 in per 100 ft Index Unit: ft
Index Type: Measured Depth Creation Date: 06-Nov-2012 05:33:07

TIME_1900 - Time Marked every 60.00 (s)





Main To Repeat

Main To Repeat

Main To Repeat

Main To Repeat

Repeat To Main	Repeat To Main	Repeat To Main	Repeat To Main
Spontaneous Potential (SP) AIT-H	Repeat To Main	Array Induction Two Foot Resistivity A90 (AT90) AIT-H	Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H
0 mV 200	Cable Tension (TENS)	0.2 ohm.m 2000	-0.1 ft3/ft3 -0.5
Main To Repeat	6000 lbf 0	Main To Repeat	Main To Repeat
Repeat To Main	Main To Repeat	Repeat To Main	Repeat To Main
Gamma Ray (GR) HGNS-H	Repeat To Main	Array Induction Two Foot Resistivity A30 (AT30) AIT-H	Density Porosity (matrix Limestone) (DPHI_LIM) HDRS-H
200 gAPI 400	Repeat To Main	0.2 ohm.m 2000	0.45 ft3/ft3 -0.15
Main To Repeat	Stuck Tool Indicator, Total (STIT)	Main To Repeat	Main To Repeat
Repeat To Main	0 ft 50	Repeat To Main	Repeat To Main
Caliper (CALI) HDRS-H		Array Induction Two Foot Resistivity A10 (AT10) AIT-H	Thermal Neutron Porosity (Ratio Method) (matrix Limestone) (NPHI_LIM) HGNS-H
4 in 14		0.2 ohm.m 2000	0.45 ft3/ft3 -0.15
Main To Repeat			Main To Repeat
Repeat To Main			Repeat To Main
Gamma Ray (GR) HGNS-H			Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H
0 gAPI 200			0 10

TIME_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log (EMD 5in Triple Combo RA) Index Scale: 5 in per 100 ft Index Unit: ft
Index Type: Measured Depth Creation Date: 06-Nov-2012 05:33:07

Calibration Report							
AIT-H (Array Induction Tool - H) Calibration - Run Run1							
Primary Equipment :							
Array Induction Sonde - H			AHIS		392		
AIT Sonde Calibration - Test Loop Gain							
Master (EEPROM):		16:00:26 25-Oct-2012					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Test Loop Gain - 0		Master	1.000	0.950	1.011	1.050	
Test Loop Phase - 0	deg	Master	0	-3.000	0.278	3.000	
Test Loop Gain - 1		Master	1.000	0.950	1.011	1.050	
Test Loop Phase - 1	deg	Master	0	-3.000	0.501	3.000	
Test Loop Gain - 2		Master	1.000	0.950	1.020	1.050	
Test Loop Phase - 2	deg	Master	0	-3.000	0.020	3.000	
Test Loop Gain - 3		Master	1.000	0.950	1.010	1.050	
Test Loop Phase - 3	deg	Master	0	-3.000	0.015	3.000	
Test Loop Gain - 4		Master	1.000	0.950	0.997	1.050	
Test Loop Phase - 4	deg	Master	0	-3.000	-0.018	3.000	
Test Loop Gain - 5		Master	1.000	0.950	0.990	1.050	
Test Loop Phase - 5	deg	Master	0	-3.000	-0.170	3.000	
Test Loop Gain - 6		Master	1.000	0.950	1.000	1.050	
Test Loop Phase - 6	deg	Master	0	-3.000	0.148	3.000	
Test Loop Gain - 7		Master	1.000	0.950	0.995	1.050	
Test Loop Phase - 7	deg	Master	0	-3.000	-0.296	3.000	
AIT Sonde Calibration - Sonde Error Correction							
Master (EEPROM):		16:00:26 25-Oct-2012					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	

		Before	----	0.002	1.927	1.972	
		After	----	----	----	----	
		Before-Master	----	----	0.000	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 4	deg	Master	----	-1.000	61.213	119.000	
		Before	----	-1.000	61.154	119.000	
		After	----	----	----	----	
		Before-Master	----	----	-0.059	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 5	V	Master	----	1.173	1.933	2.737	
		Before	----	1.173	1.933	2.737	
		After	----	----	----	----	
		Before-Master	----	----	0.000	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 5	deg	Master	----	-3.000	59.316	117.000	
		Before	----	-3.000	59.251	117.000	
		After	----	----	----	----	
		Before-Master	----	----	-0.065	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 6	V	Master	----	1.173	1.932	2.737	
		Before	----	1.173	1.932	2.737	
		After	----	----	----	----	
		Before-Master	----	----	0.000	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 6	deg	Master	----	-3.000	59.327	117.000	
		Before	----	-3.000	59.264	117.000	
		After	----	----	----	----	
		Before-Master	----	----	-0.063	----	
		After-Before	----	----	----	----	
Thru Cal Mag - 7	V	Master	----	0.849	1.381	1.981	
		Before	----	0.849	1.380	1.981	
		After	----	----	----	----	
		Before-Master	----	----	-0.001	----	
		After-Before	----	----	----	----	
Thru Cal Phase - 7	deg	Master	----	-7.000	55.850	113.000	
		Before	----	-7.000	55.732	113.000	
		After	----	----	----	----	
		Before-Master	----	----	-0.118	----	
		After-Before	----	----	----	----	
SPA Zero	mV	Master		-50.000	-0.201	50.000	
		Before		-50.000	-0.217	50.000	
		After	----	----	----	----	
		Before-Master	----	----	-0.016	----	
		After-Before	----	----	----	----	
SPA Plus	mV	Master		941.000	991.790	1040.000	
		Before		941.000	992.062	1040.000	
		After	----	----	----	----	
		Before-Master	----	----	0.272	----	
		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	0.919	0.960	
		Before		0.870	0.919	0.960	
		After	----	----	----	----	
		Before-Master	----	----	0.000	----	
		After-Before	----	----	----	----	

HDRS-H (HILT Density and Rxo Sonde, 150 degC) Calibration - Run Run1			
Primary Equipment :			
HILT High-Resolution Control Cartridge, 150 degC		HRCC-H	
HILT Resistivity Gamma-Ray Density Device, 150 degC		HRGD-H	3816
Auxiliary Equipment :			
HRDD Backscatter Detector		Backscatter	

HRDD Long Spacing Detector	Long Spacing	28732
HRDD Short Spacing Detector	Short Spacing	27634
Cesium 137 Gamma-Ray Logging Source	GSR-J	5240
HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	
HILT High-Resolution Mechanical Sonde, 150 degC	HRMS-H	

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): 16:23:18 01-Nov-2012 Expired by 3 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Small Ring	in	Before	8.00	6.00	8.74	10.00	
Large Ring	in	Before	12.00	9.00	13.10	15.00	

HDRS Density Calibration - Inversion Results

Master (EEPROM): 12:02:16 27-Oct-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Rho Aluminum	g/cm3	Master	2.596	2.586	2.599	2.606	
Rho Magnesium	g/cm3	Master	1.686	1.676	1.685	1.696	
Pe Aluminum		Master	2.570	2.470	2.534	2.670	
Pe Magnesium		Master	2.650	2.550	2.642	2.750	

HDRS Density Calibration - Deviation Summary

Master (EEPROM): 12:02:16 27-Oct-2012

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Average Deviation	%	Master	0	-0.6000	0.5313	0.6000	
BS Max Deviation	%	Master	0	-1.6000	1.0019	1.6000	
SS Average Deviation	%	Master	0	-1.0000	0.3341	1.0000	
SS Max Deviation	%	Master	0	-2.5000	1.1387	2.5000	
LS Average Deviation	%	Master	0	-1.5000	0.7415	1.5000	
LS Max Deviation	%	Master	0	-3.5000	2.3181	3.5000	

HDRS Density Calibration - Background Summary

Master (EEPROM): 12:02:16 27-Oct-2012 Before (Measured): 16:24:27 01-Nov-2012 Expired by 3 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Window Ratio		Master	1.0000		0.7507	0.7882	
		Before	0.7507	0.7131	0.7495		
		Before-Master	-----	-----	-0.0012		
BS Window Sum	1/s	Master	1		26052	27355	
		Before	26052	24749	26225		
		Before-Master	-----	-----	173		
SS Window Ratio		Master	1.0000		0.4792	0.5031	
		Before	0.4792	0.4552	0.4825		
		Before-Master	-----	-----	0.0033		
SS Window Sum	1/s	Master	1		10312	10828	
		Before	10312	9797	10298		
		Before-Master	-----	-----	-14		
LS Window Ratio		Master	1.0000		0.3034	0.3186	
		Before	0.3034	0.2882	0.3033		
		Before-Master	-----	-----	-0.0001		
LS Window Sum	1/s	Master	1		1214	1275	
		Before	1214	1153	1201		
		Before-Master	-----	-----	-13		

HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM): 12:02:16 27-Oct-2012 Before (Measured): 16:24:27 01-Nov-2012 Expired by 3 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS PM High Voltage	V	Master		1000	1580	2400	
		Before		1000	1584	2400	
		Before-Master	-----	-100	4	100	
SS PM High Voltage	V	Master		1000	1401	2400	
		Before		1000	1407	2400	
		Before-Master	-----	-100	6	100	
LS PM High Voltage	V	Master		1000	1216	2400	

		Before		1000	1225	2400	
		Before-Master	-----	-100	9	100	

HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM):		12:02:16 27-Oct-2012		Before (Measured):		16:24:27 01-Nov-2012 Expired by 3 days	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Crystal Resolution	%	Master		5.00	11.79	25.00	
		Before		5.00	11.88	25.00	
		Before-Master	-----	-1.00	0.09	1.00	
SS Crystal Resolution	%	Master		5.00	9.89	20.00	
		Before		5.00	10.02	20.00	
		Before-Master	-----	-1.00	0.13	1.00	
LS Crystal Resolution	%	Master		5.00	8.16	20.00	
		Before		5.00	8.23	20.00	
		Before-Master	-----	-1.00	0.07	1.00	

HDRS MCFL Calibration - MCFL Accumulations

Before (Measured):		16:25:07 01-Nov-2012 Expired by 3 days					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Main Resistivity	ohm.m	Before	3875	3565	3877	4185	
Deep Resistivity	ohm.m	Before	3830	3524	3826	4136	
Shallow Resistivity	ohm.m	Before	3830	3524	3829	4136	

HGNS-H (HILT Gamma-Ray and Neutron Sonde, 150 degC) Calibration - Run Run1

Primary Equipment :			
HILT Gamma-Ray and Neutron Sonde, 150 degC		HGNS-H	
Auxiliary Equipment :			
HGNS Accelerometer, 150 degC		HACCZ-H	5736
AmBe Neutron Logging Source		NSR-F	5215
Calibration Parameter :			
Water Temperature			
Housing Size			
JIG-BKG (Jig minus background reference)		165	

HGNS Accelerometer Calibration - Accelerometer Accumulations

Before (Measured):		19:09:51 04-Nov-2012 Expired by 1 days					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
AZ Vertical Measurement	ft/s2	Before	32.2	31.5	32.0	32.8	

HGNS Accelerometer EEPROM - Accelerometer EEPROM Read

Master (EEPROM):		00:00:00 15-Mar-2006					
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	-----	-----	8084.000	-----	
Accelerometer Coefficients - 1		Master	-----	-----	-8.467	-----	
Accelerometer Coefficients - 2		Master	-----	-----	0.009	-----	
Accelerometer Coefficients - 3		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 4		Master	-----	-----	2.722	-----	
Accelerometer Coefficients - 5		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 7		Master	-----	-----	0.000	-----	
Accelerometer Coefficients - 8		Master	-----	-----	298.700	-----	
Accelerometer Coefficients - 9		Master	-----	-----	0.995	-----	

HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM):		10:52:24 11-Oct-2012		Before (Measured):		16:23:03 01-Nov-2012 Expired by 3 days		After:	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit			
Near Zero Measurement	1/s	Master	0	5.0	25.2	40.0			
		Before	0	5.0	25.2	40.0			
		After	-----	-----	-----	-----			
		Before-Master	-----	-3.8	0.0	3.8			

Far Zero Measurement	1/s	After-Before	----	----	----	----	
		Master	0	5.0	28.4	40.0	
		Before	0	5.0	27.8	40.0	
		After	----	----	----	----	
		Before-Master	----	-4.3	-0.6	4.3	
Near Plus Measurement - 0	1/s	After-Before	----	----	----	----	
		Master	6031.0	4700.0	5278.0	6900.0	
		Before	----	----	----	----	
		After	----	----	----	----	
		Before-Master	----	----	----	----	
Far Plus Measurement - 0	1/s	After-Before	----	----	----	----	
		Master	2793.0	1900.0	2189.0	2900.0	
		Before	----	----	----	----	
		After	----	----	----	----	
		Before-Master	----	----	----	----	
Near Corrected Plus Measurement - 0	1/s	After-Before	----	----	----	----	
		Master		4700.0	5228.0	6900.0	
		Before	----	----	----	----	
		After	----	----	----	----	
		Before-Master	----	----	----	----	
Far Corrected Plus Measurement - 0	1/s	After-Before	----	----	----	----	
		Master		1900.0	2143.0	2900.0	
		Before	----	----	----	----	
		After	----	----	----	----	
		Before-Master	----	----	----	----	

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations							
Before (Measured): 16:23:53 01-Nov-2012 Expired by 3 days After:							
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement	gAPI	Before	30.0	0	76.9	120.0	
		After	----	----	----	----	
		After-Before	----	----	----	----	
RGR Plus Measurement	gAPI	Before	185.4	157.1	177.6	206.3	
		After	----	----	NOT DONE	----	
		After-Before	----	----	----	----	
GR Calibration Gain		Before	0.89	0.80	0.93	1.05	
		After	----	----	----	----	
		After-Before	----	----	----	----	

Company:	Nighthawk Production LLC	Schlumberger
Well:	Whistler 6-22	
Field:	Wildcat	
County:	Lincoln	
State:	Colorado	
Platform Express		
Triple Combo		