

Company: Noble Energy Inc

Well: Oscar Y10-74-1HC

Field: Wattenberg

County: Weld State: Colorado

Platform Express									
Triple Combo									
NWSE Sec10 T2N R64W									
Elev.: K.B. 4946.00 ft									
G.L. 4922.00 ft									
D.F. 4945.00 ft									
Location:									
Permanent Datum: Ground Level Elev.: 4922.00 f									
Log Measured From: Kelly Bushing 24.00 ft									
Drilling Measured From: Kelly Bushing									
API Serial No. Section: Township: Range:									
05-123-38204 10 2N 64W									
Logging Date 19-Nov-2014									
Run Number ONE									
Depth Driller 6433.00 ft									
Schlumberger Depth 6441.00 ft									
Bottom Log Interval 6441.00 ft									
Top Log Interval 1175.00 ft									
Casing Driller Size @ Depth 9.625 in @ 1176.00 ft									
Casing Schlumberger 1175 ft									
Bit Size 8.75 in									
Type Fluid In Hole Water									
Density 9.65 lbm/gal 40 s									
Fluid Loss PH 5.6 cm3 9.1									
MUD									
Source of Sample AIT Measured									
RM @ Meas Temp 1.18 ohm.m @ 92 degF									
RMF @ Meas Temp 0.94 ohm.m @ 92 degF									
RMC @ Meas Temp 1.66 ohm.m @ 92 degF									
Source RMF RMC Calculated									
RM @ BHT RMF @ BHT 0.61 @ 184 0.49 @ 184									
Max Recorded Temperatures									
Circulation Stopped Time 19-Nov-2014 06:00:00									
Logger on Bottom Time 19-Nov-2014 15:37:16									
Unit Number Location: 9108 Fort Morgan									
Recorded By B Makinson									
Witnessed By Martin Suarez									

Disclaimer

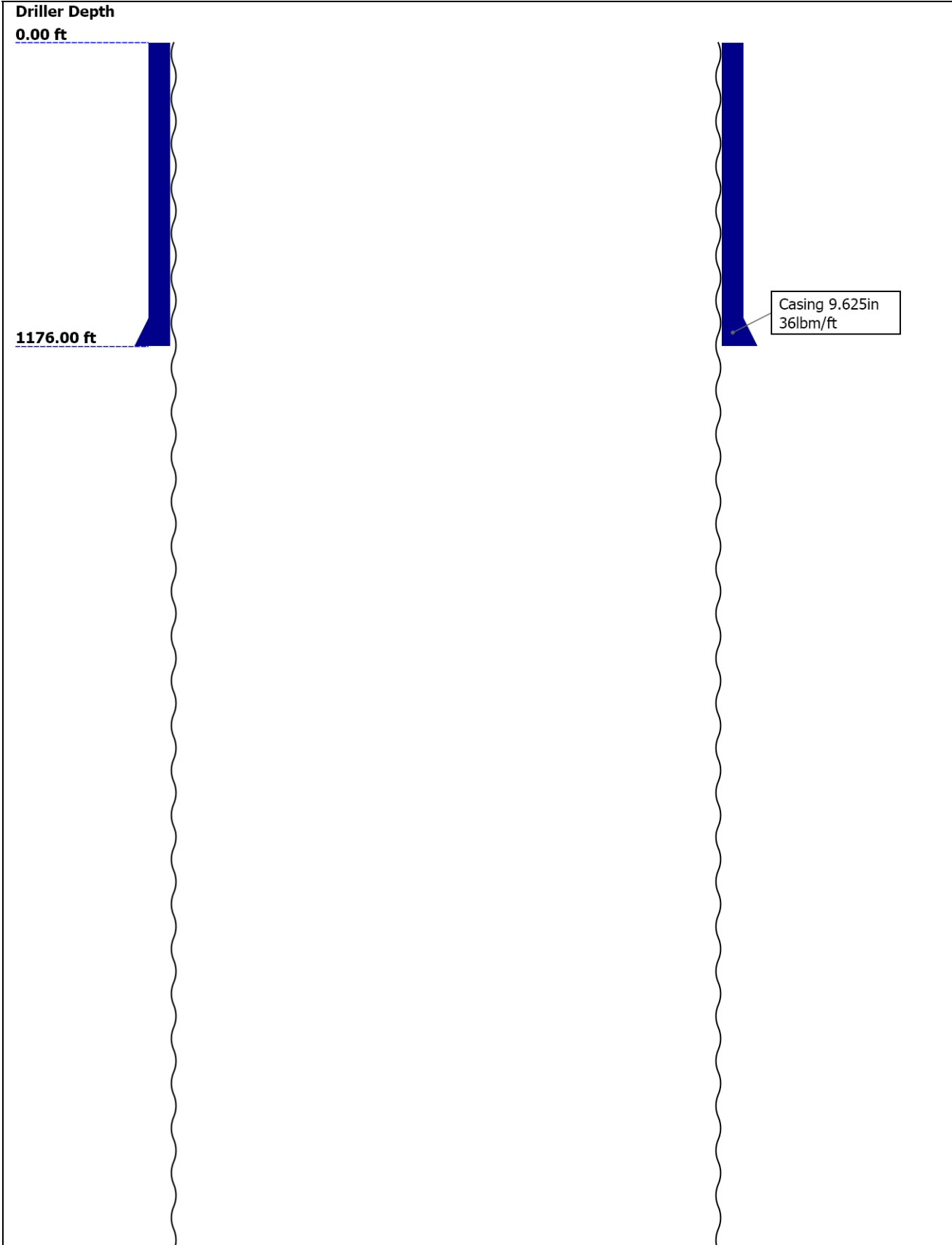
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Well Sketch



6433.00 ft

Open Hole 8.75in

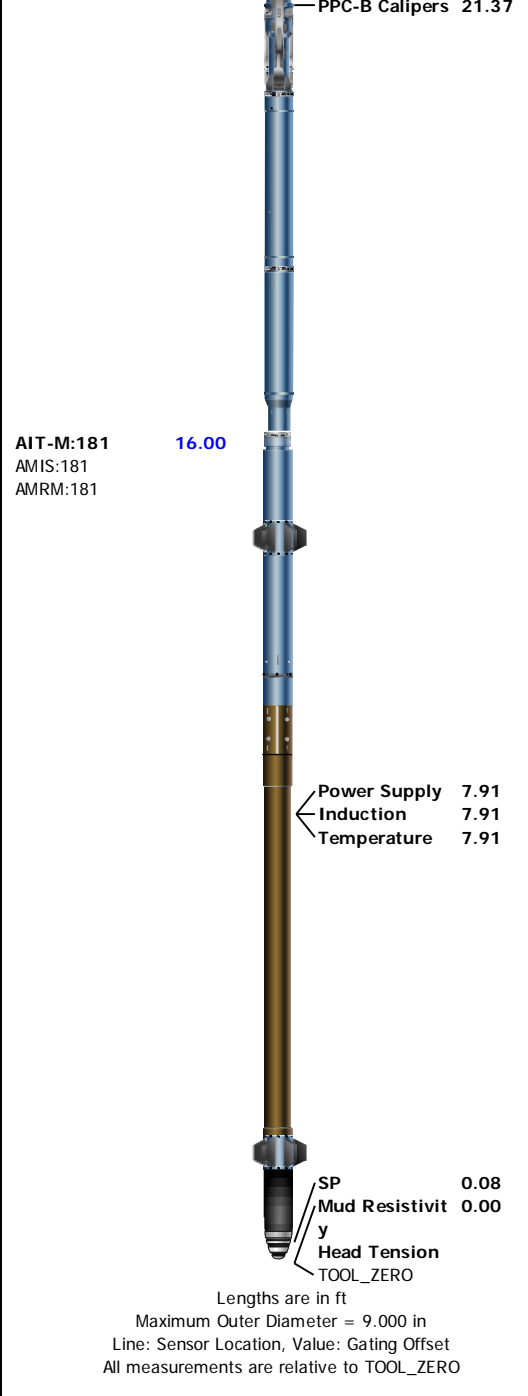
Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	8.75					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	6433					
Bottom Logger (ft)	6441					
Casing						
Size (in)	9.625					
Weight (lbm/ft)	36					
Inner Diameter (in)	8.921					
Grade	J55					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	1176					
Bottom Logger (ft)	1175					

Operational Run Summary

Parameter (unit)	ONE					
Date Log Started	19-Nov-2014					
Time Log Started	14:11:18					
Date Log Finished	19-Nov-2014					
Time Log Finished	17:22:19					
Top Log Interval (ft)						
Bottom Log Interval (ft)						
Total Depth (ft)	6441.00					
Max Hole Deviation (deg)						
Azimuth of Max Deviation (deg)						
Bit Size (in)	8.750					
Logging Unit Number	9108					
Logging Unit Location	Fort Morgan					
Recorded By	B Makinson					
Witnessed By	Martin Suarez					
Service Order Number	CZOH-00040					

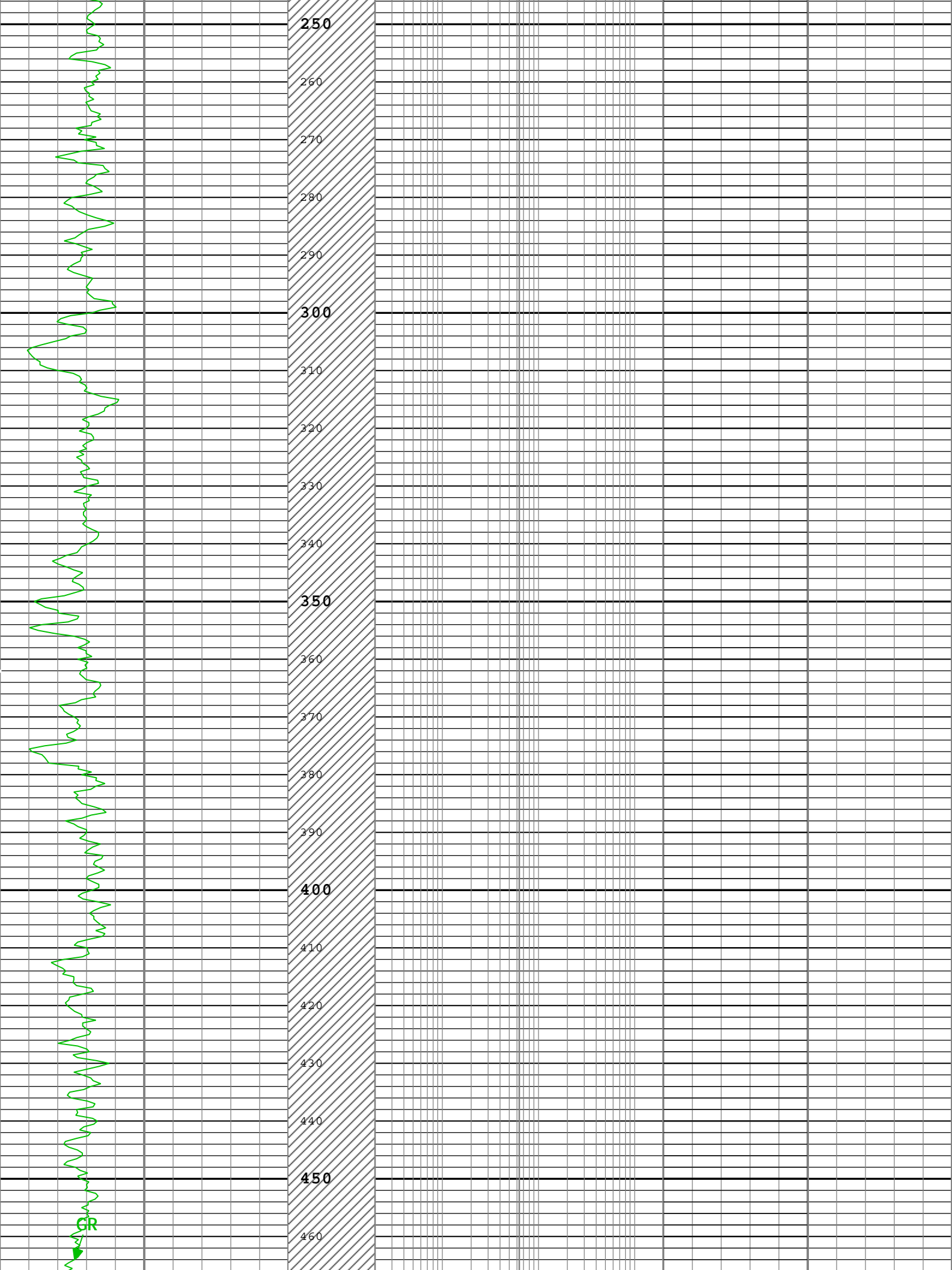
Service Order Number		CZCH-00040					
Borehole Fluids							
Parameter(unit)	ONE						
Fluid Type	Water						
Max Recorded Temperatures (degF)	184						
Source of Sample	AIT Measured						
Salinity (ppm)	1300						
Density (lbm/gal)	9.65						
Funnel Viscosity (s)	40						
Fluid Loss (cm3)	5.6						
PH	9.1						
Date/Time Circulation Stopped	19-Nov-2014 06:00:00						
Date Logger on Bottom	19-Nov-2014						
Time Logger on Bottom	15:37:16						
Source RMF	Calculated						
RMC	Calculated						
RM @ Meas Temp (ohm.m@degF)	1.18 @ 92						
RMF @ Meas Temp (ohm.m@degF)	0.94 @ 92						
RMC @ Meas Temp (ohm.m@degF)	1.66 @ 92						
RM @ BHT (ohm.m@degF)	0.61 @ 184						
RMF @ BHT (ohm.m@degF)	0.49 @ 184						
RMC @ BHT (ohm.m@degF)	0.86 @ 184						
Total Solid (%)							
High Gravity Solids (%)							
Remarks and Equipment Summary							
ONE: Toolstring				ONE: Remarks			
Equip name	Length	MP name	Offset	First run in the well.			
LEH-QT	37.84			Toolstring run as per tool sketch.			
LEH-QT				Mud resistivity measured from AIT AMF.			
DTC-H	34.92			Down log stretch correction 4.43 ft.			
ECH-KC		CTEM	34.03	TD: CSG:			
DTC-H		HV	0.00				
HGNS-H:4810	31.92	TelStatus	31.92				
HGNH:3921		ToolStatus	31.92				
NPV-N		Temperature	31.9				
NSR-F:5215							
HACCZ-H:5955		GR	31.18				
HMCA-H							
HGNS-H:4810							
		CNL Porosity	24.85				
		HMCA	22.52				
		HGNS	22.52				
PPC-B:8352	22.52	Accelerometer	0.00				
PPC-B:8352							

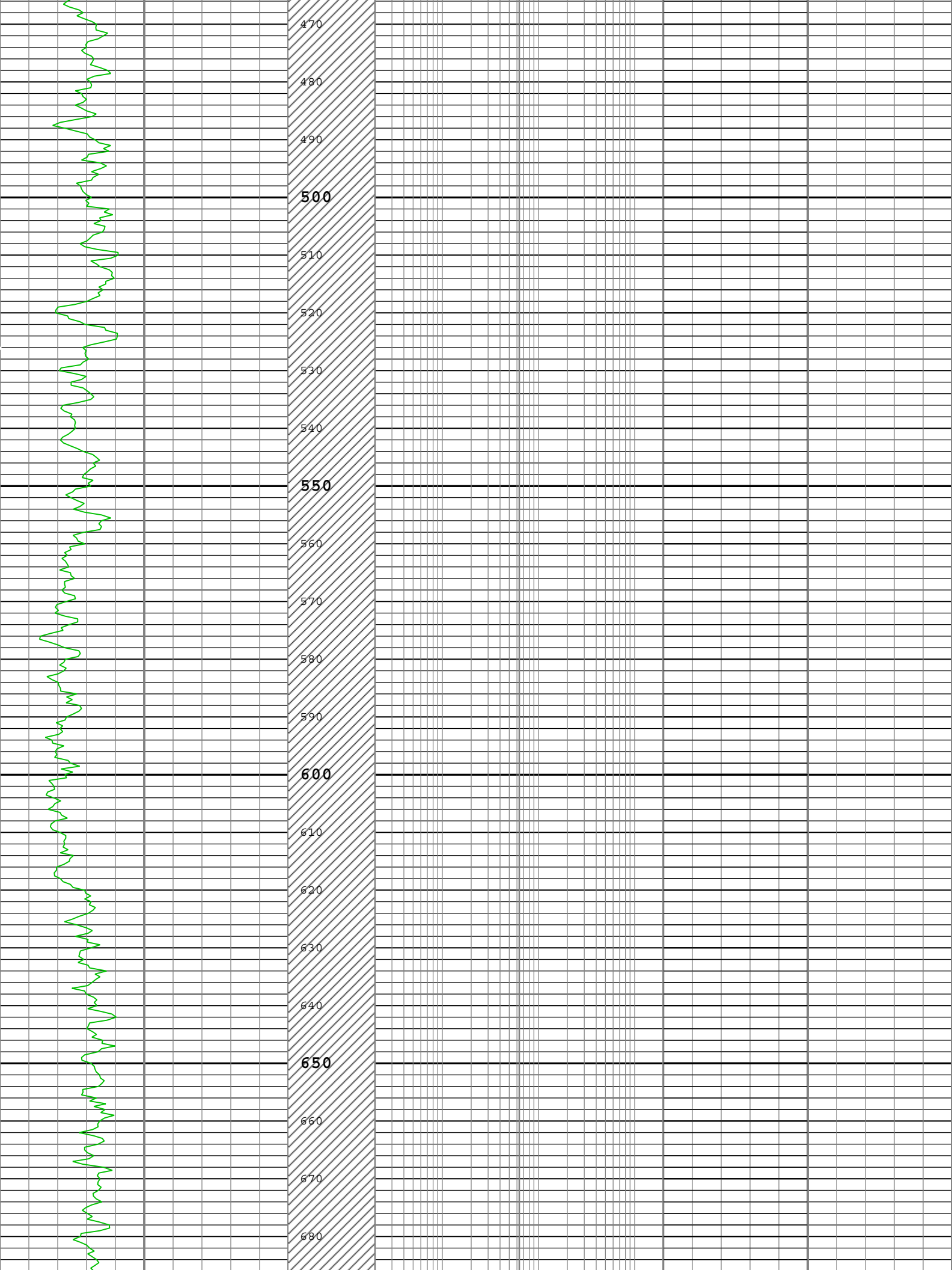


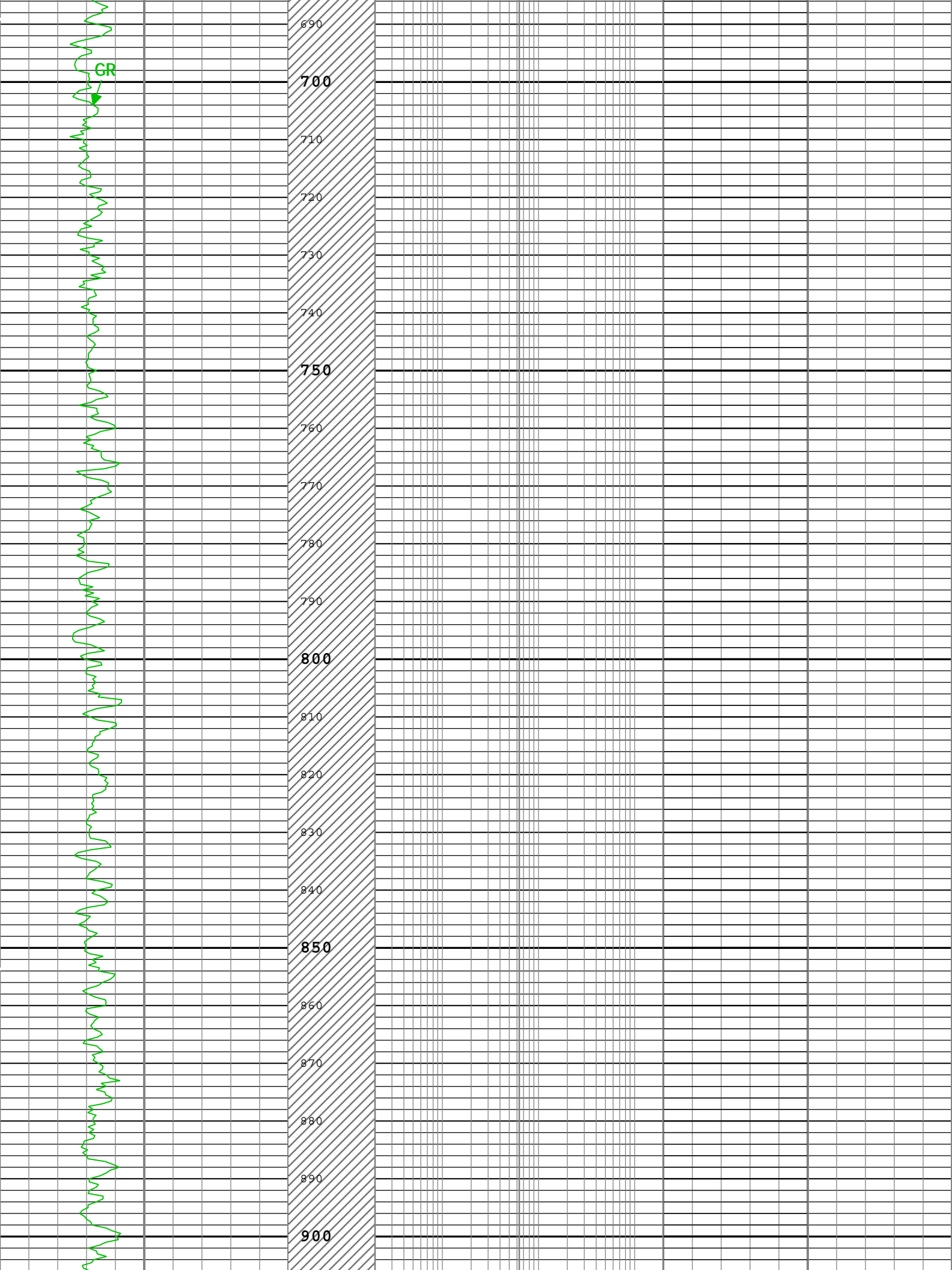
Depth Summary			
		ONE	
Depth Measuring Device			
Type	IDW-JA		
Serial Number	6780		
Calibration Date	12-Nov-2014		
Calibrator Serial Number			
Calibration Cable Type	7-46 AXS		
Wheel Correction 1	-2		
Wheel Correction 2	-2		
Tension Device			
Type	CMTD-B/A		
Serial Number	147		
Calibration Date	19-Oct-2014		
Calibrator Serial Number	78135A		
Number of Calibration Points	10		
Calibration Root Mean Square Error	78		
Calibration Peak Error	130		

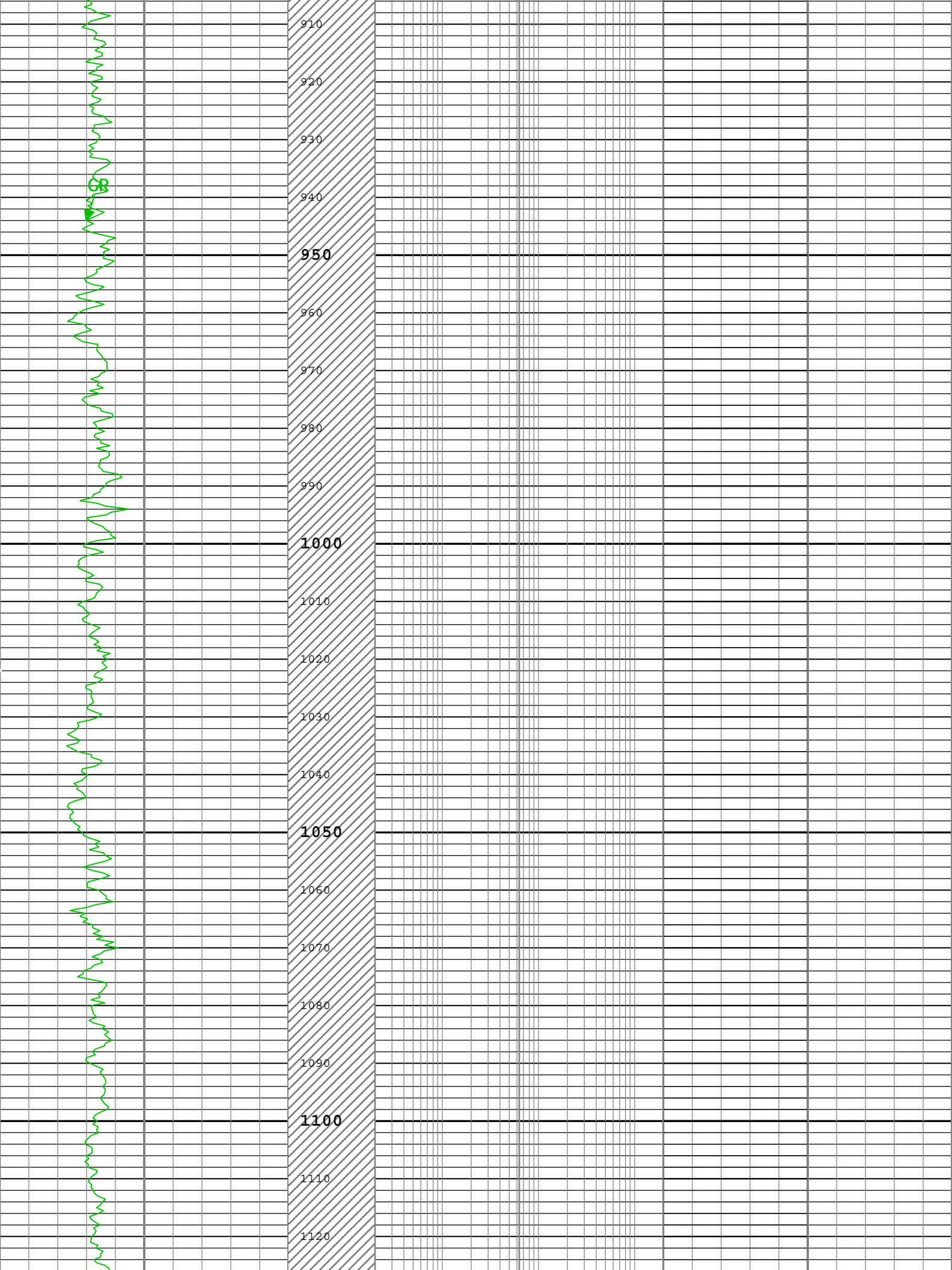
Logging Cable									
Type	7-46A-XS								
Serial Number	U714022								
Length	18500.00 ft								
Conveyance Type	Wireline								
Rig Type	Triple								
ONE:Depth Control Parameters					Depth Control Remarks				
Log Sequence	First Log In the Well				All Schlumberger depth control procedures followed.				
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	4.43 ft								
Tool Zero Check At Surface	4.00 ft								
ONE									
5" Triple Combo									
Software Version									
Acquisition System						Version			
MaxWell						4.0.9163.3000			
Application Patch						Patch-SP-10767_26570-4.0.9163.3001			
Tool Elements		Description				Software Version		Firmware Version	
HGNS-H		HILT Gamma-Ray and Neutron Sonde, 150 degC				4.0.9575.3000		2.0	
PPC-B		PPC-B Element is used for usual logging at wellsite and check/diagnostics.				4.0.9570.3000		1.0	
AMIS		Array Induction Sonde - M				4.0.9535.3000		1	
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[4]:Up	Up	80.18 ft	6456.18 ft	19-Nov-2014 3:37:59 PM	19-Nov-2014 5:22:04 PM	ON	5.47 ft	No
All depths are referenced to toolstring zero									
Log					Company:Noble Energy Inc			Well:Oscar Y10-74-1HC	
ONE: Log[4]:Up:S002									
Description: HGNS standard resolution porosities for Platform Express Format: Log (Import of KM 5in Triple Combo) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 19-Nov-2014 17:39:31									
Channel	Source			Sampling					
AT10	AIT-M:AMIS:AMIS			3in					
AT30	AIT-M:AMIS:AMIS			3in					
AT90	AIT-M:AMIS:AMIS			3in					
EHD1	PPC-B:PPC-B:PPC-B			6in					
EHD2	PPC-B:PPC-B:PPC-B			6in					
GR	HGNS-H:HGNS-H:HGNS-H			6in					
SDEV	HGNS-H:HGNS-H:HGNS-H			6in					
SP	AIT-M:AMIS:AMIS			6in					
TENS	WLWorkflow			6in					
TIME_1900	WLWorkflow			0.1in					
TIME_1900 - Time Marked every 60.00 (s)									
				Array Induction Two Foot Resistivity A10 (AT10) AIT-M					
Gamma Ray Back up				0.2	ohm.m		200		
Sonde Deviation (SDEV) HGNS-H				Array Induction Two Foot Resistivity A30 (AT30) AIT-M			Enhanced Hole Diameter 1 (ellipse-based algorithm) (EHD1) PPC-B		

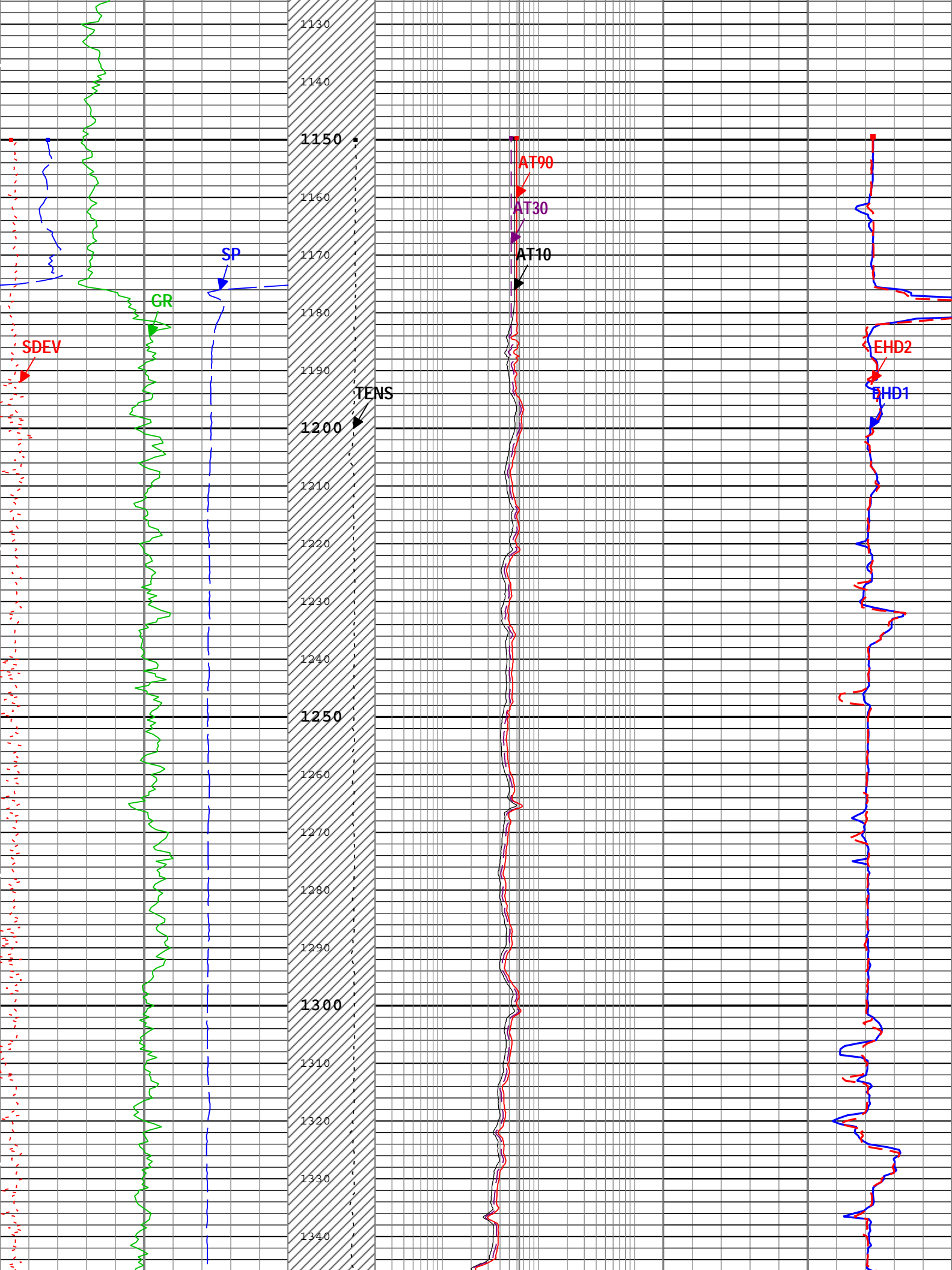
				deg		50	ohm.m		200	2	in		12			
Gamma Ray (GR) HGNS-H						Cable Tension (TENS)	Array Induction Two Foot Resistivity A90 (AT90) AIT-M			Enhanced Hole Diameter 2 (ellipse-based algorithm) (EHD2) PPC-B						
gAPI							ohm.m			in						
Spontaneous Potential (SP) AIT-M							ohm.m			in						
-160 mV						5000 lbf	0	0.2 ohm.m			200	2	in		12	
							50									
							60									
							70									
							80									
							90									
							100									
							110									
							120									
							130									
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							150									
							160									
							170									
							180									
							190									
							200									
							210									
							220									
							230									
							240									

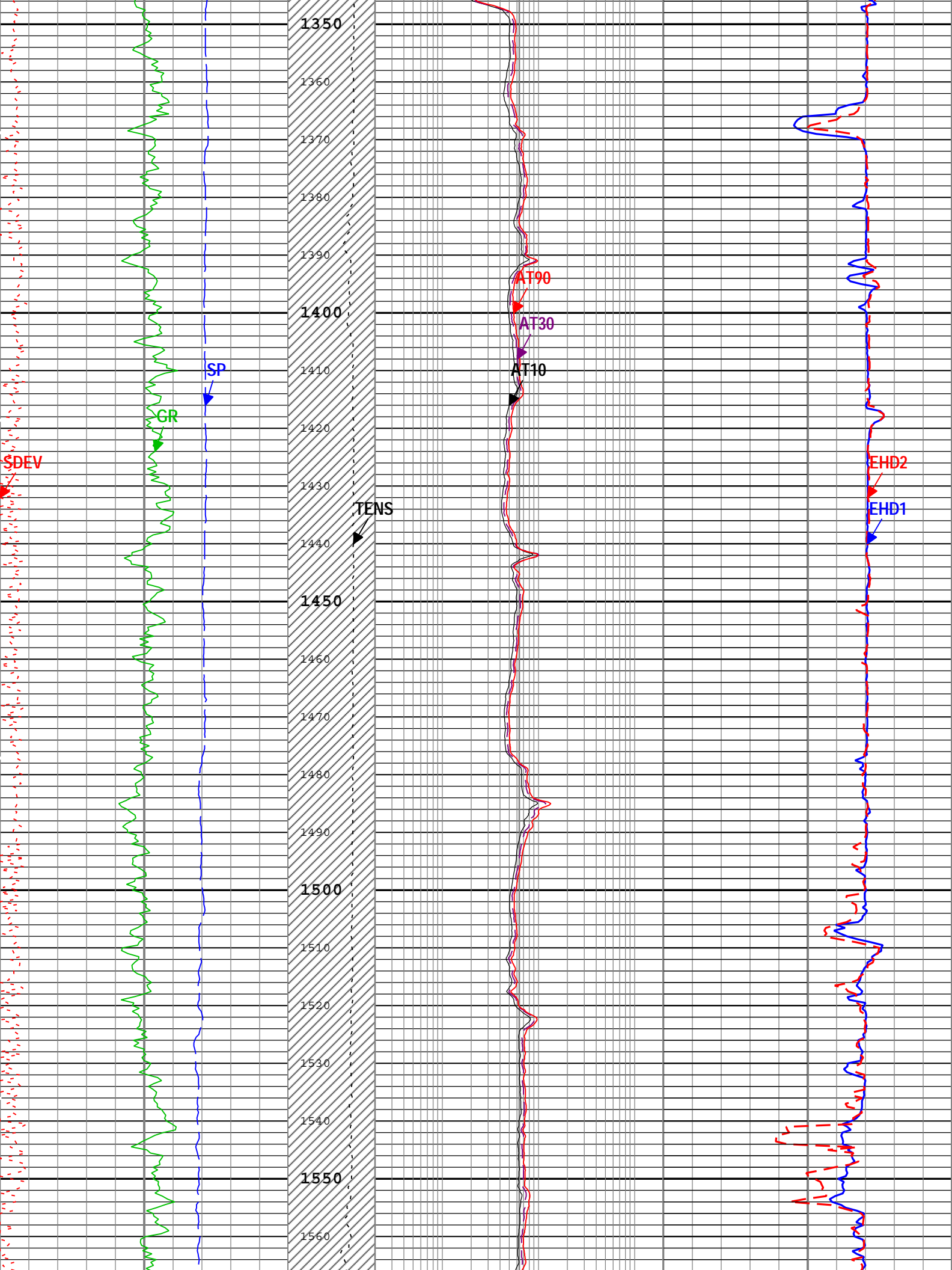


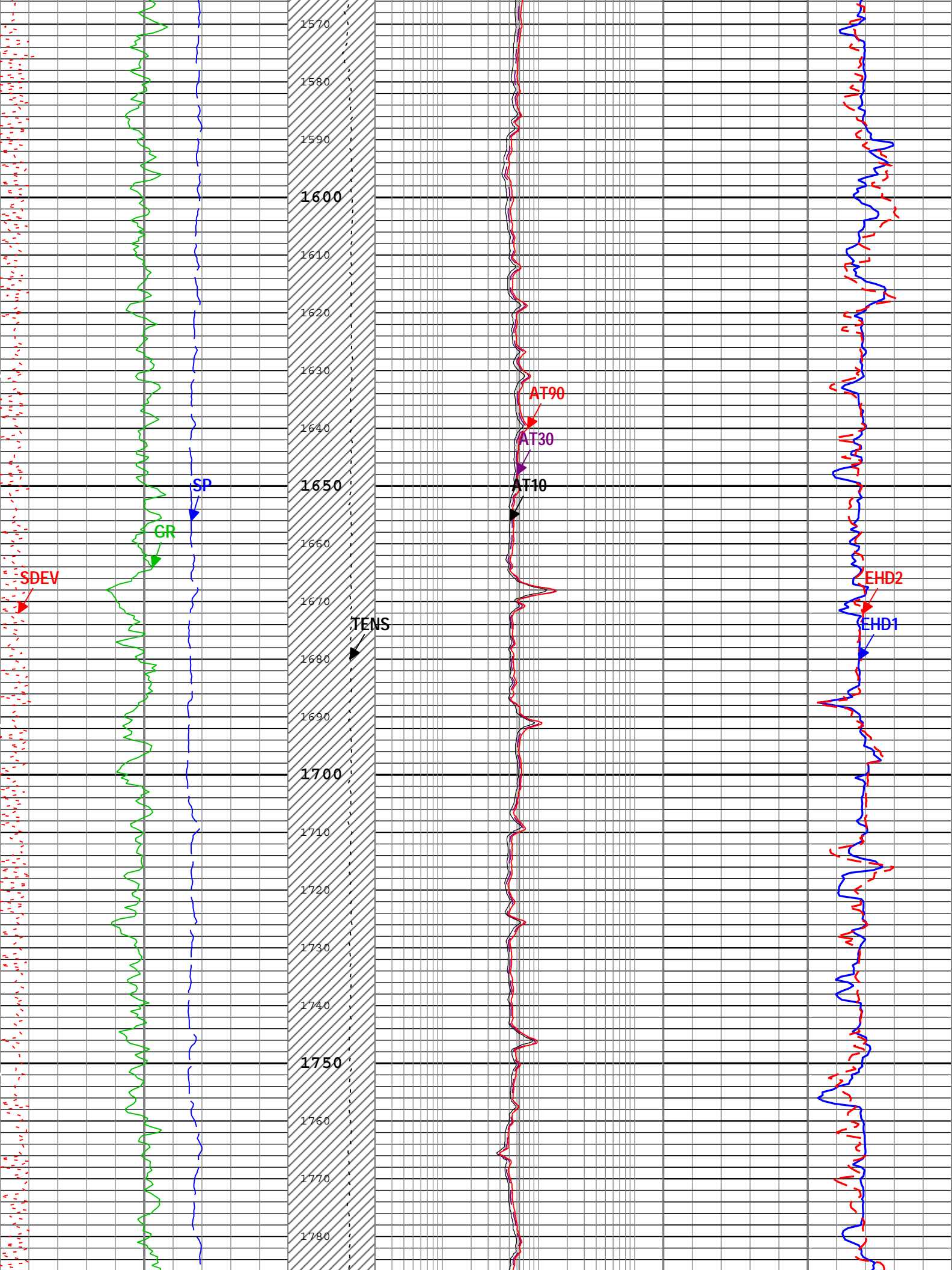


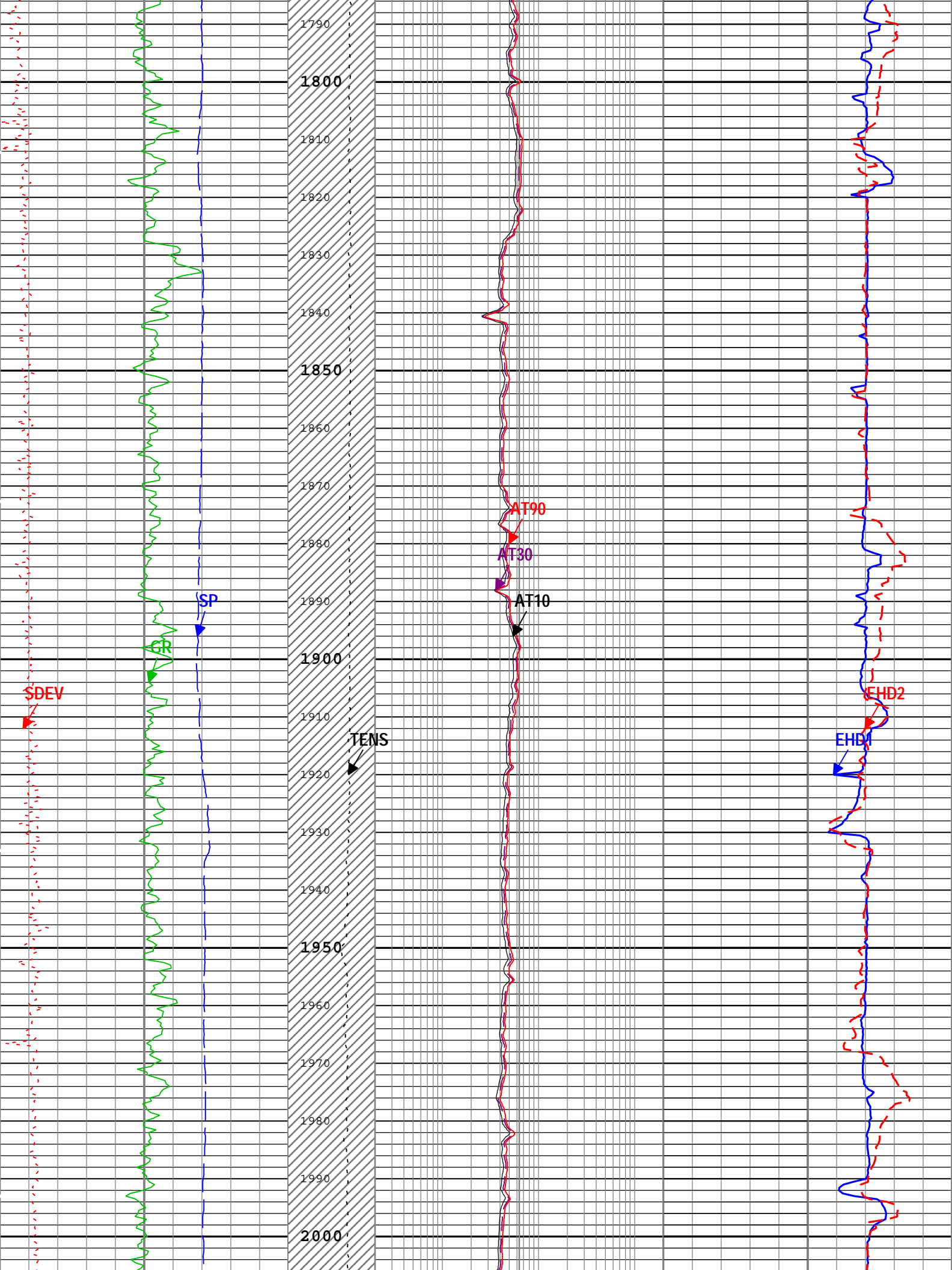


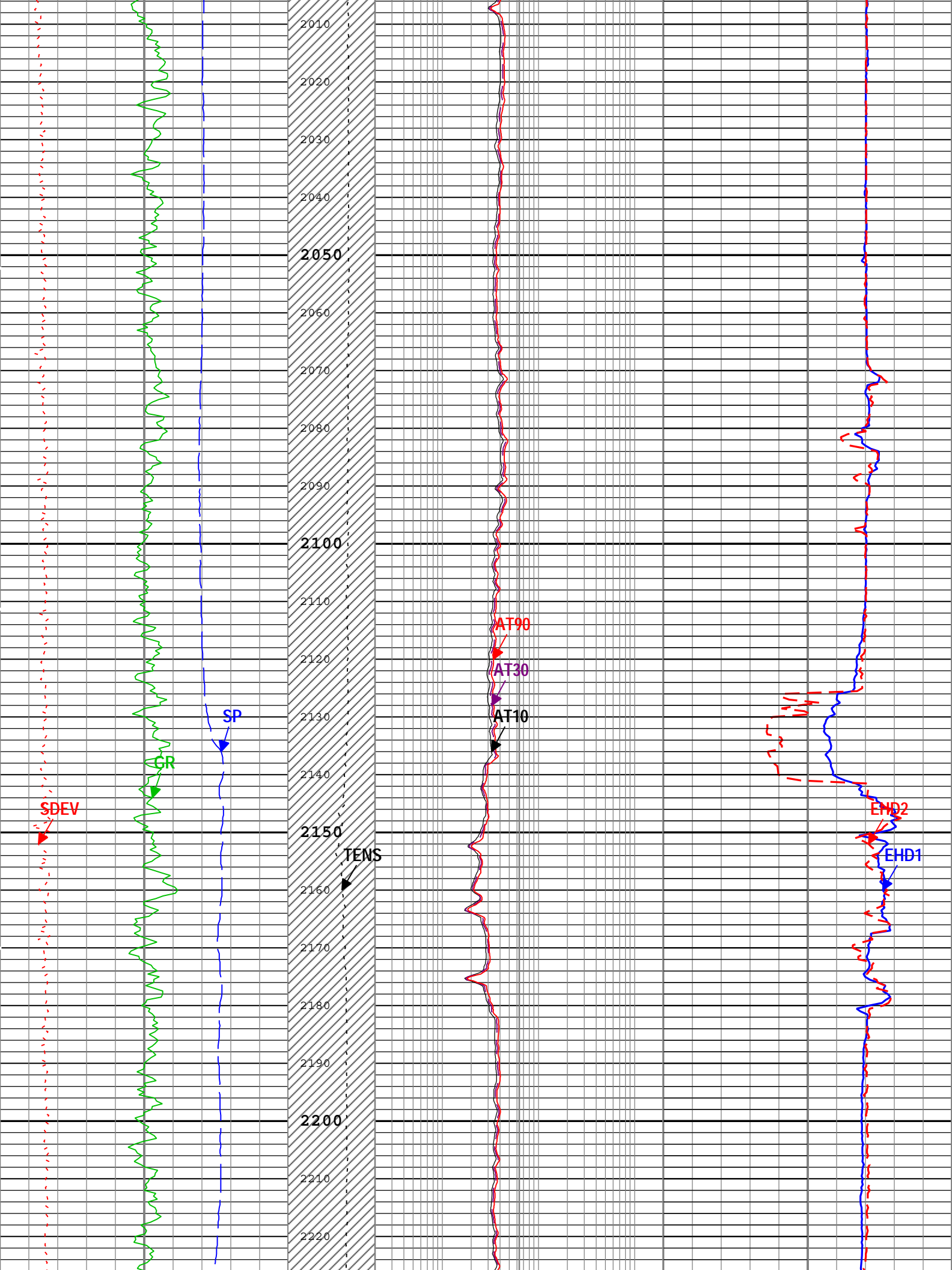


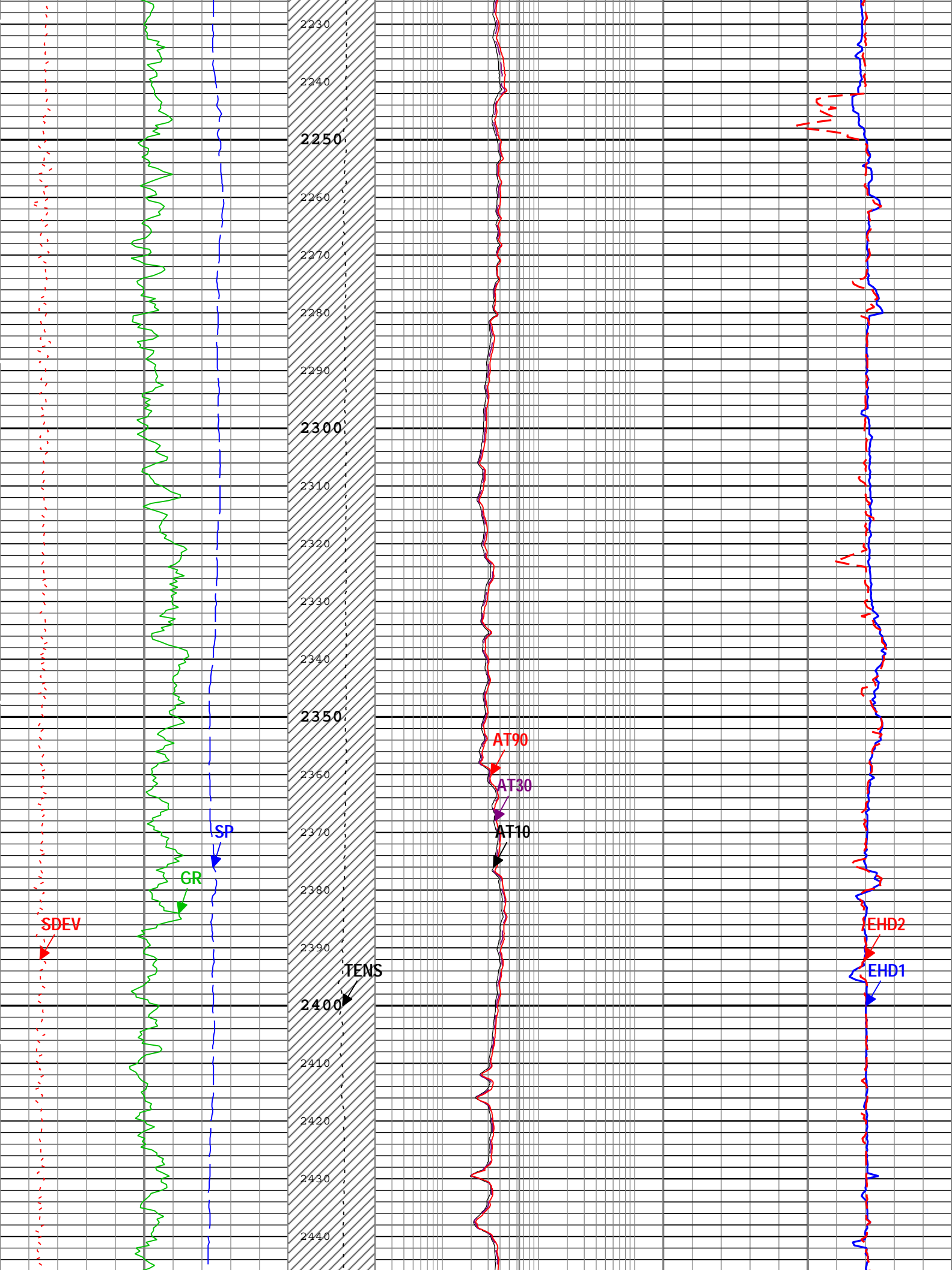


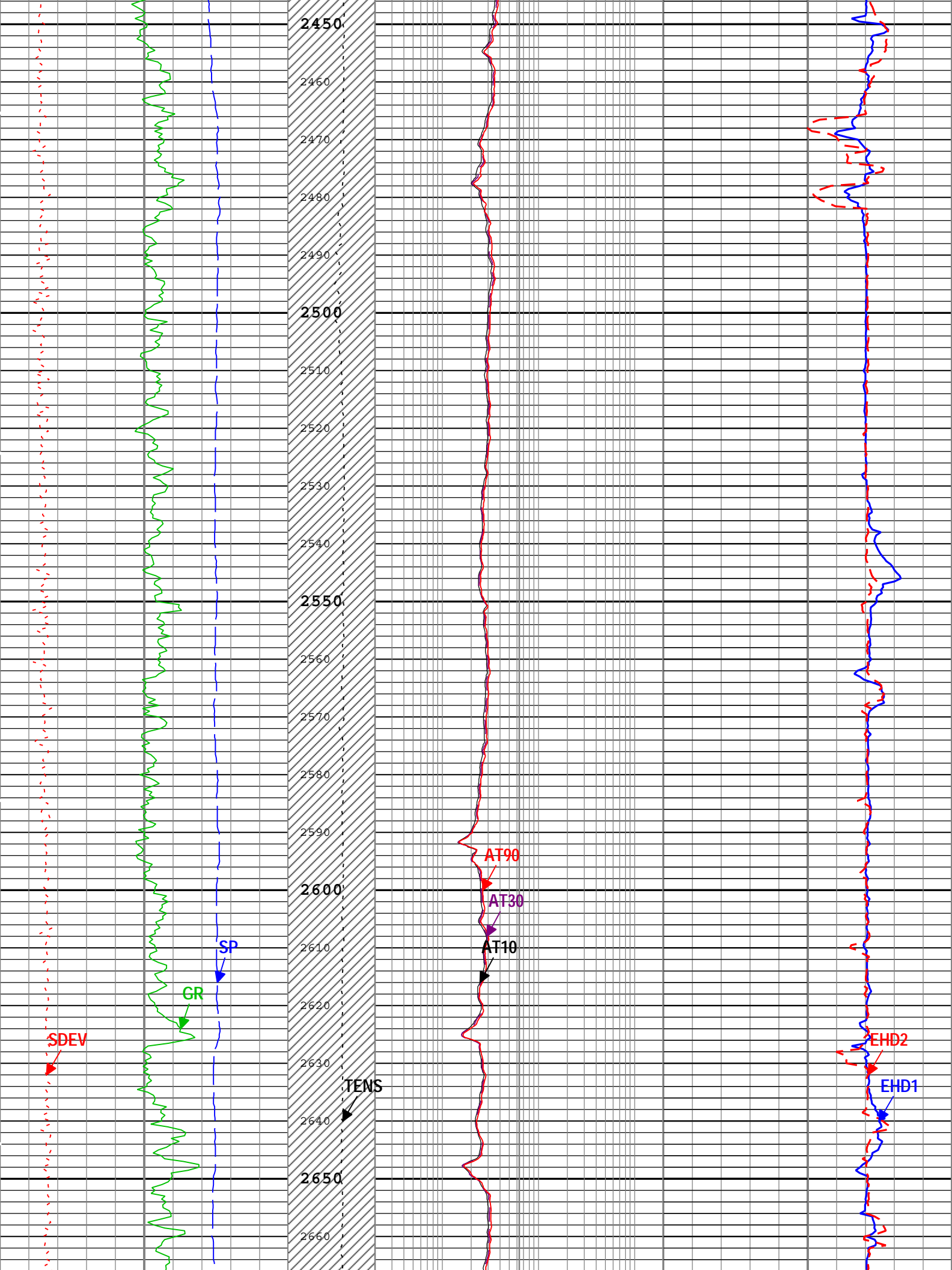


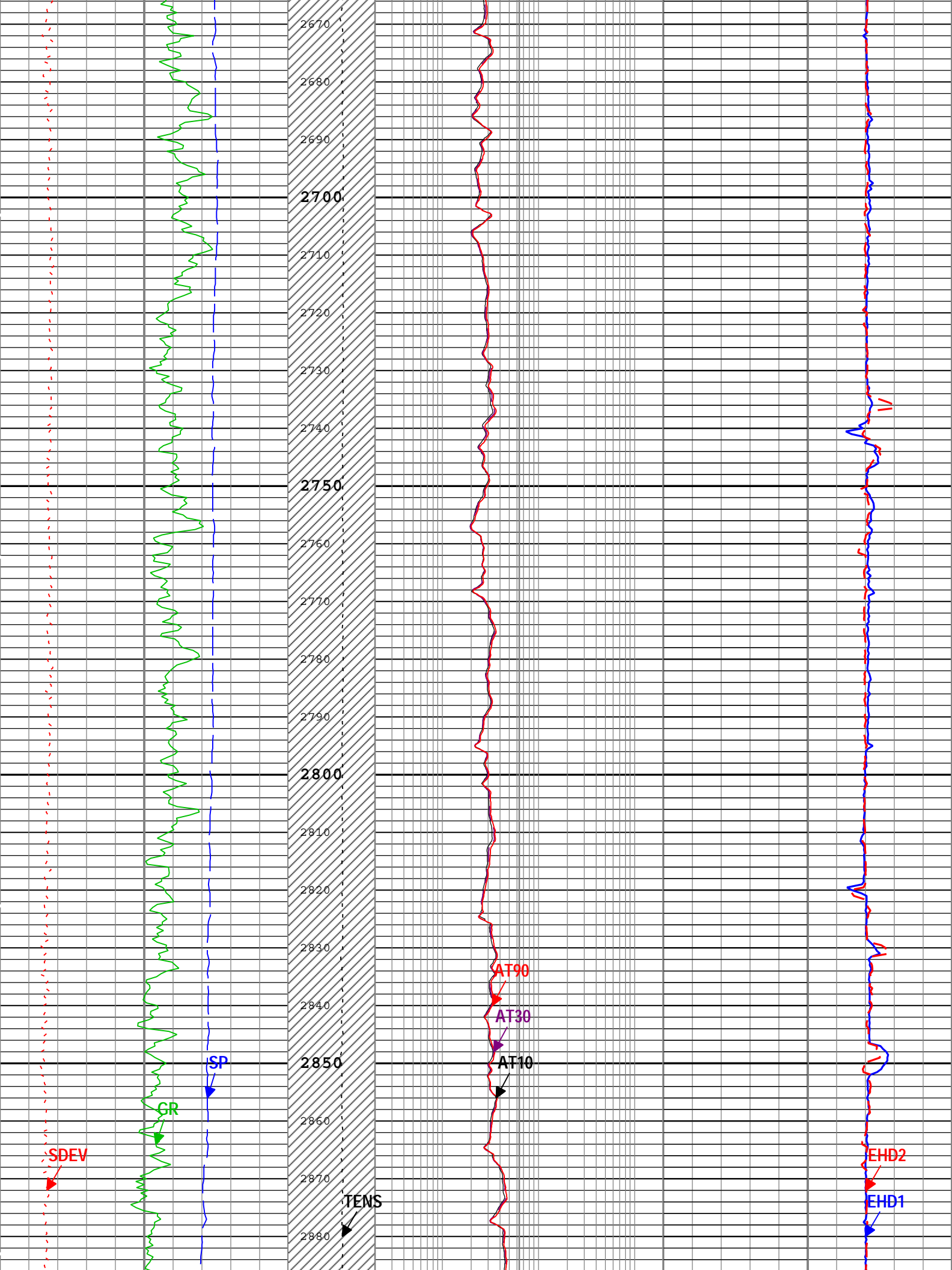


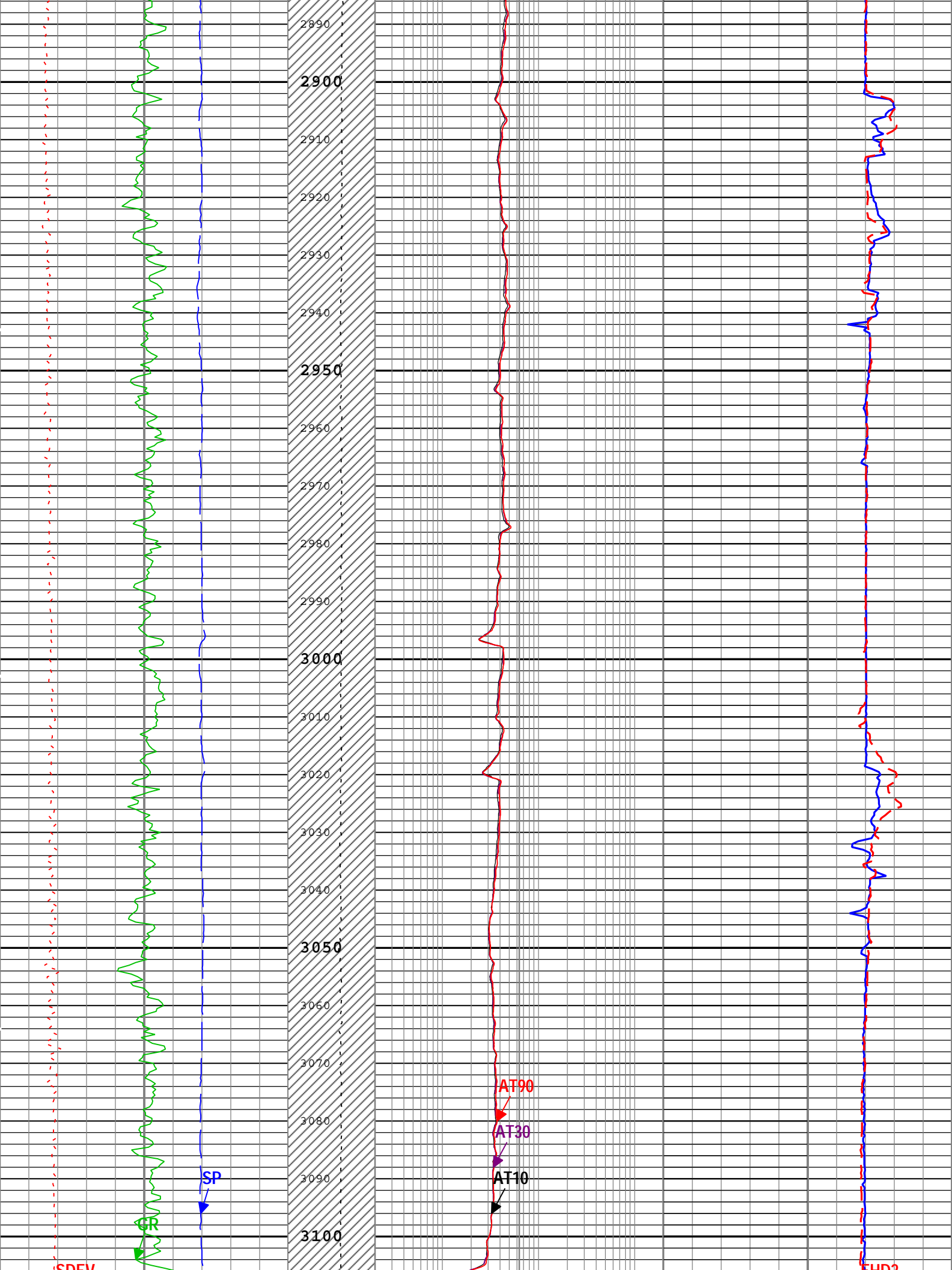


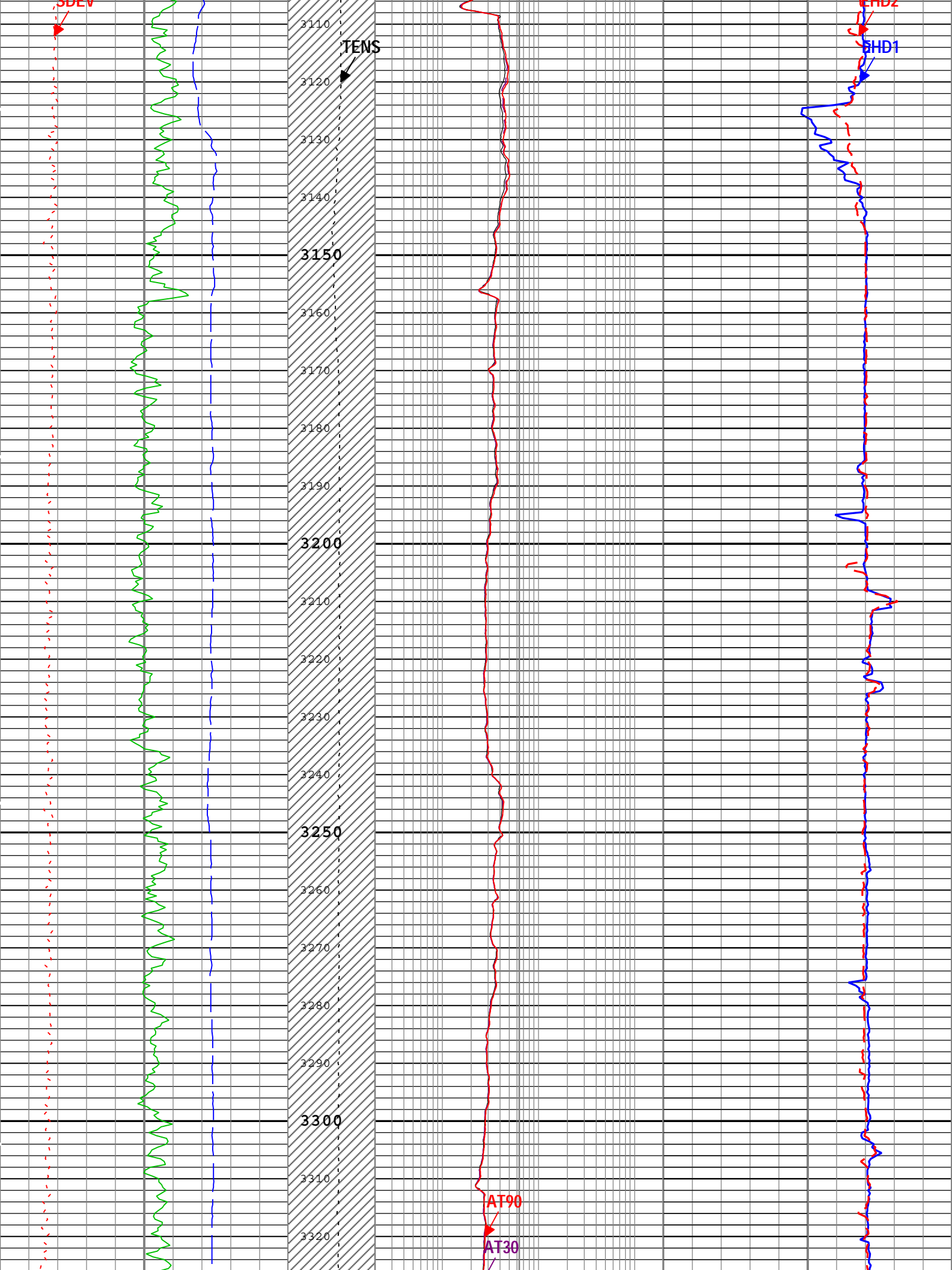


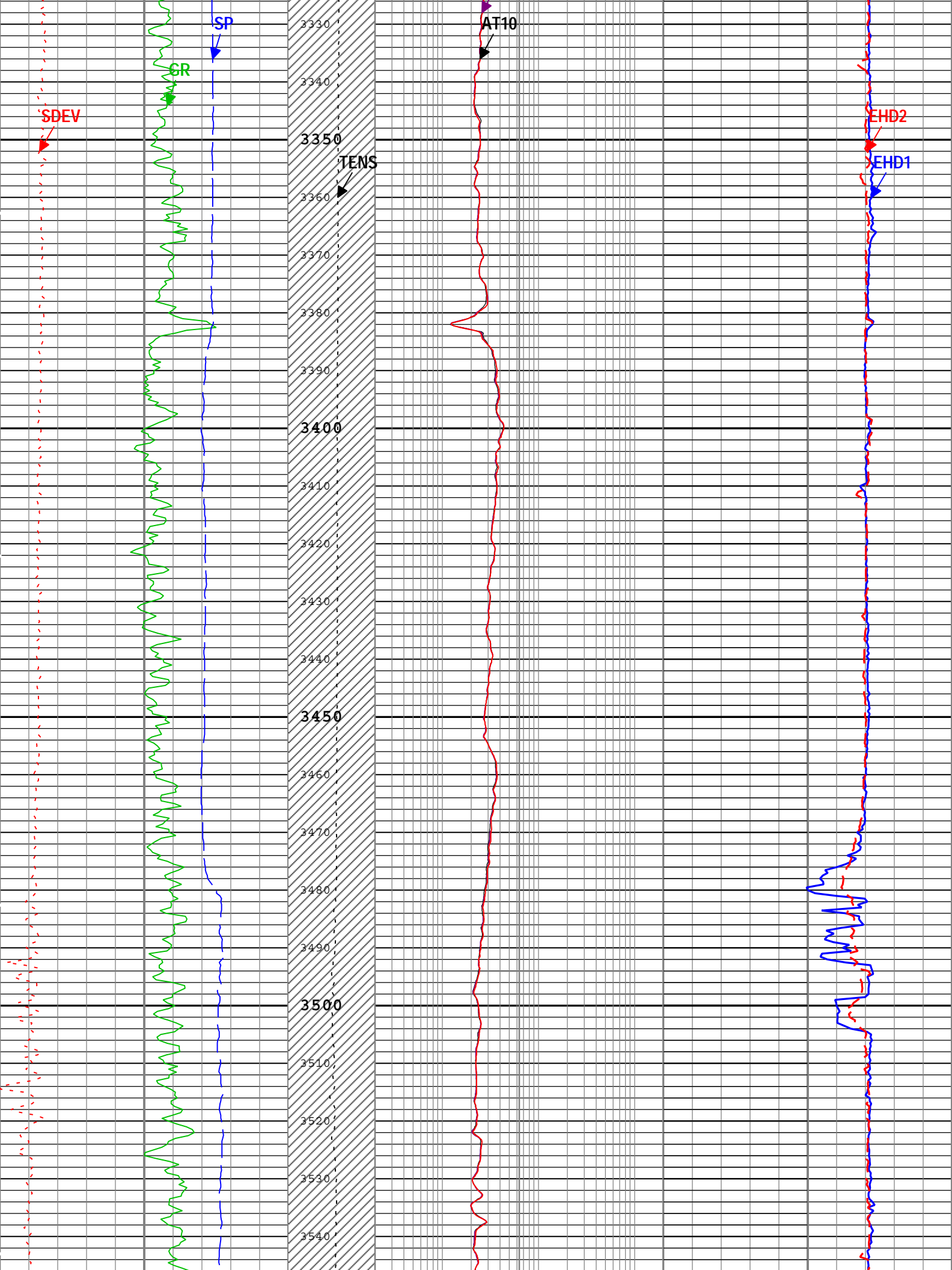


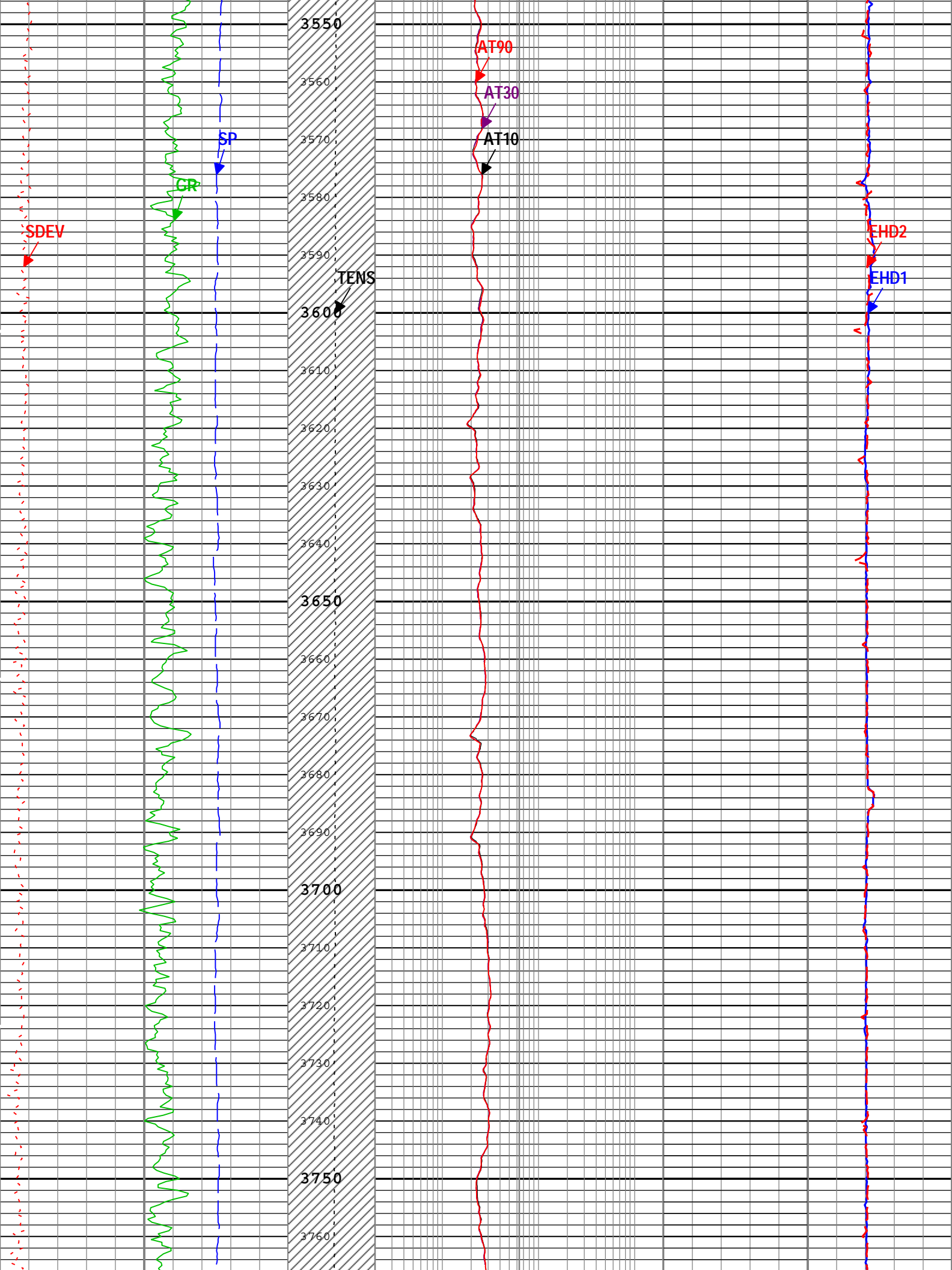


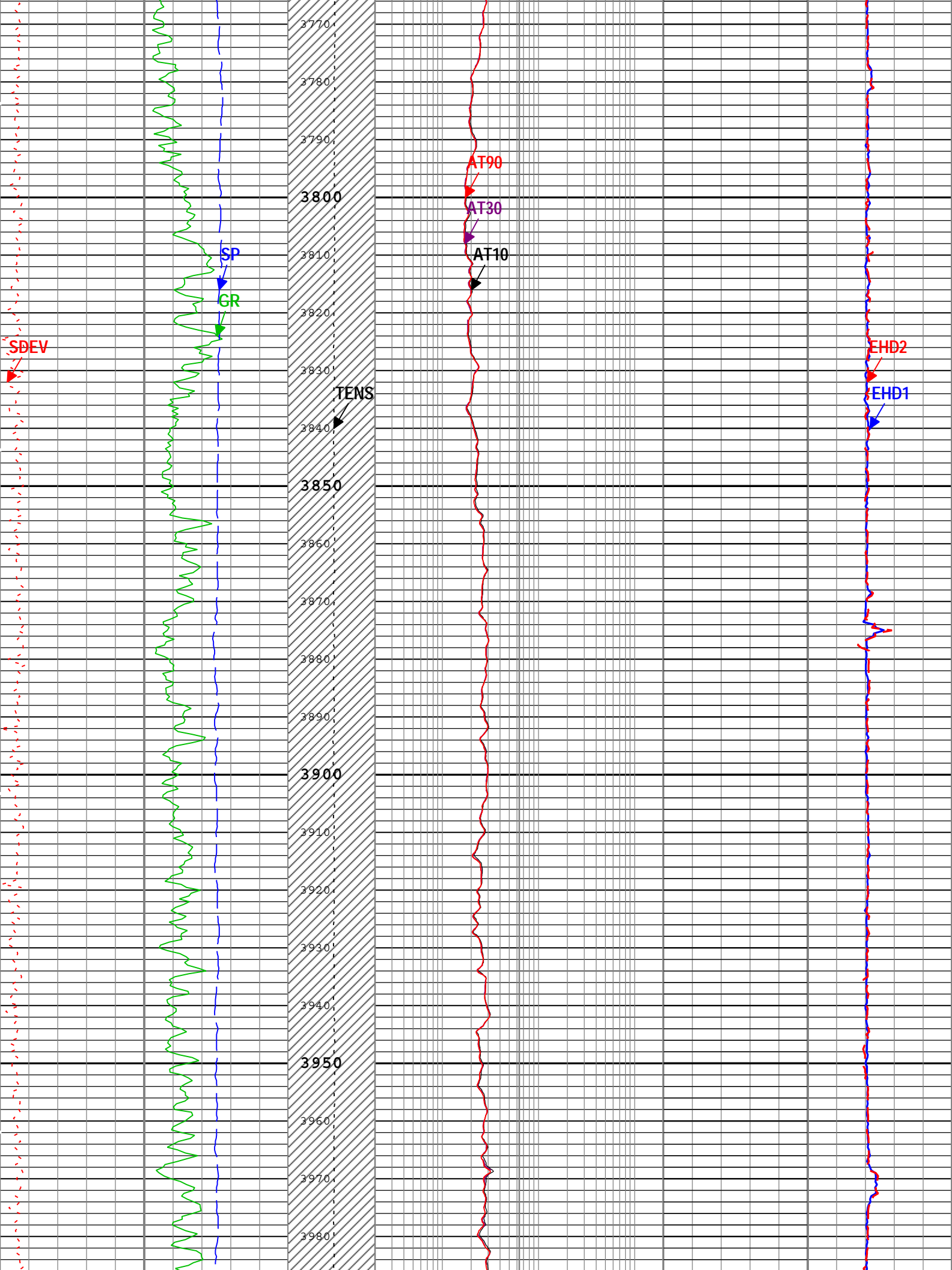


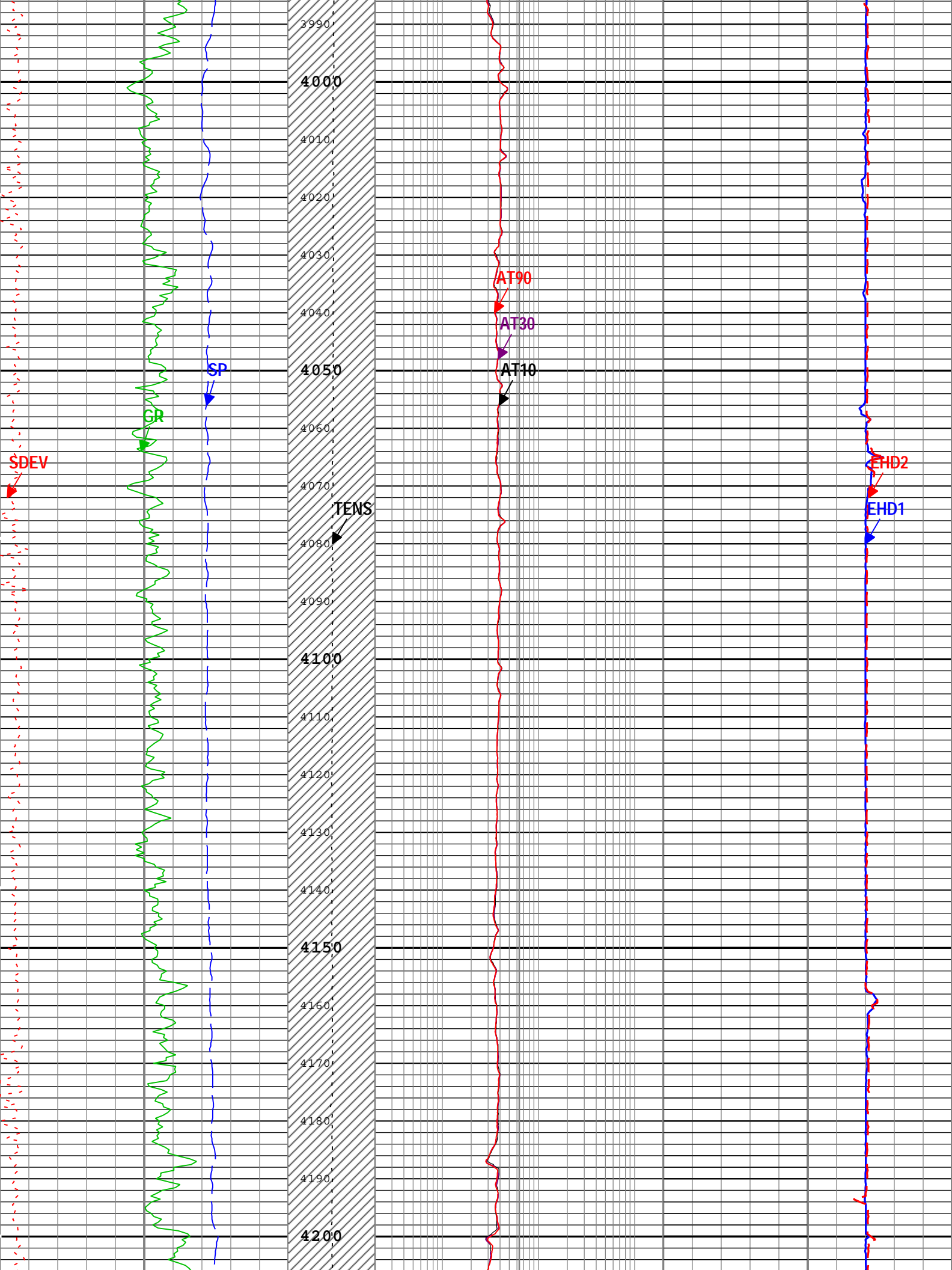


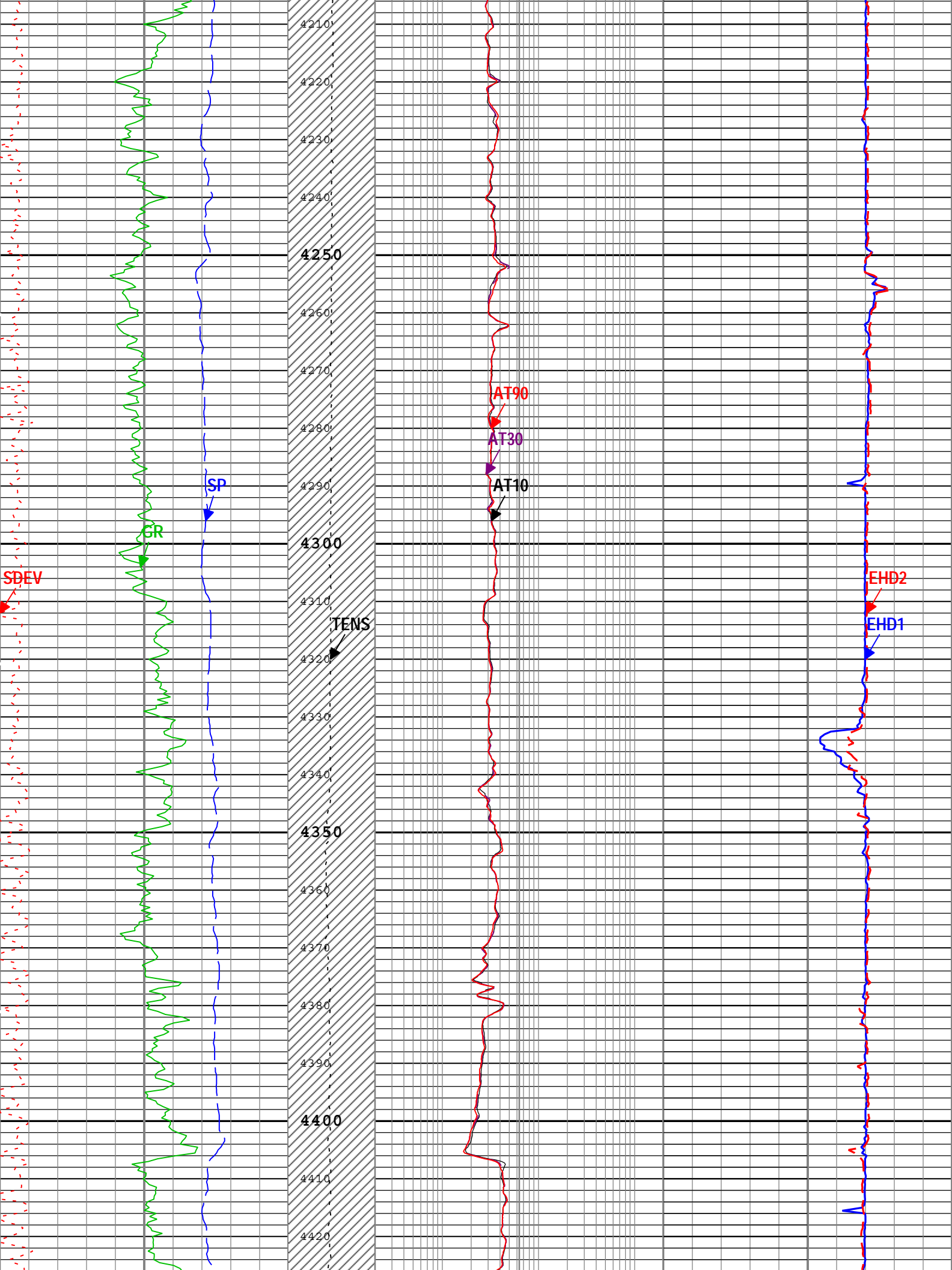


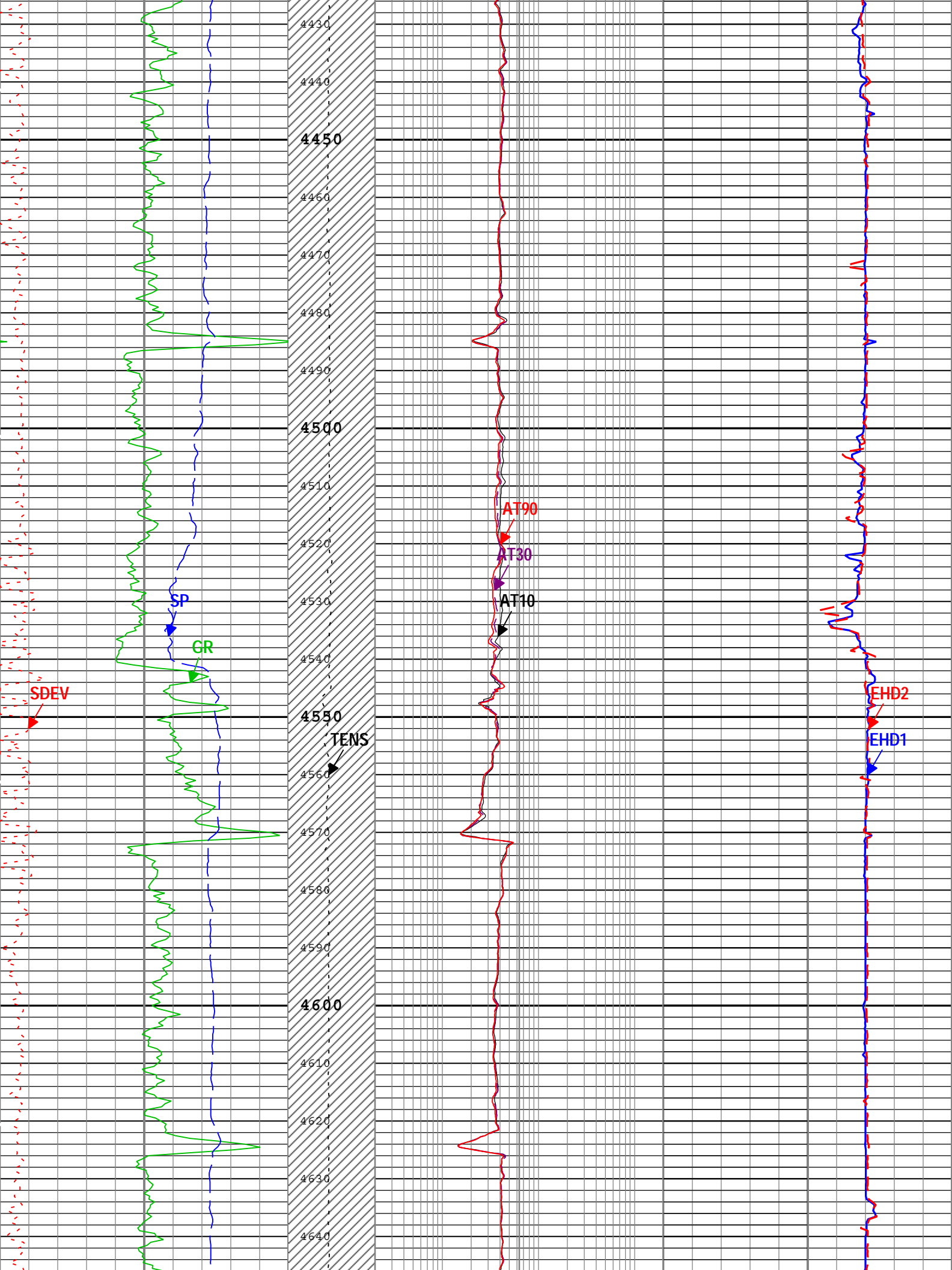


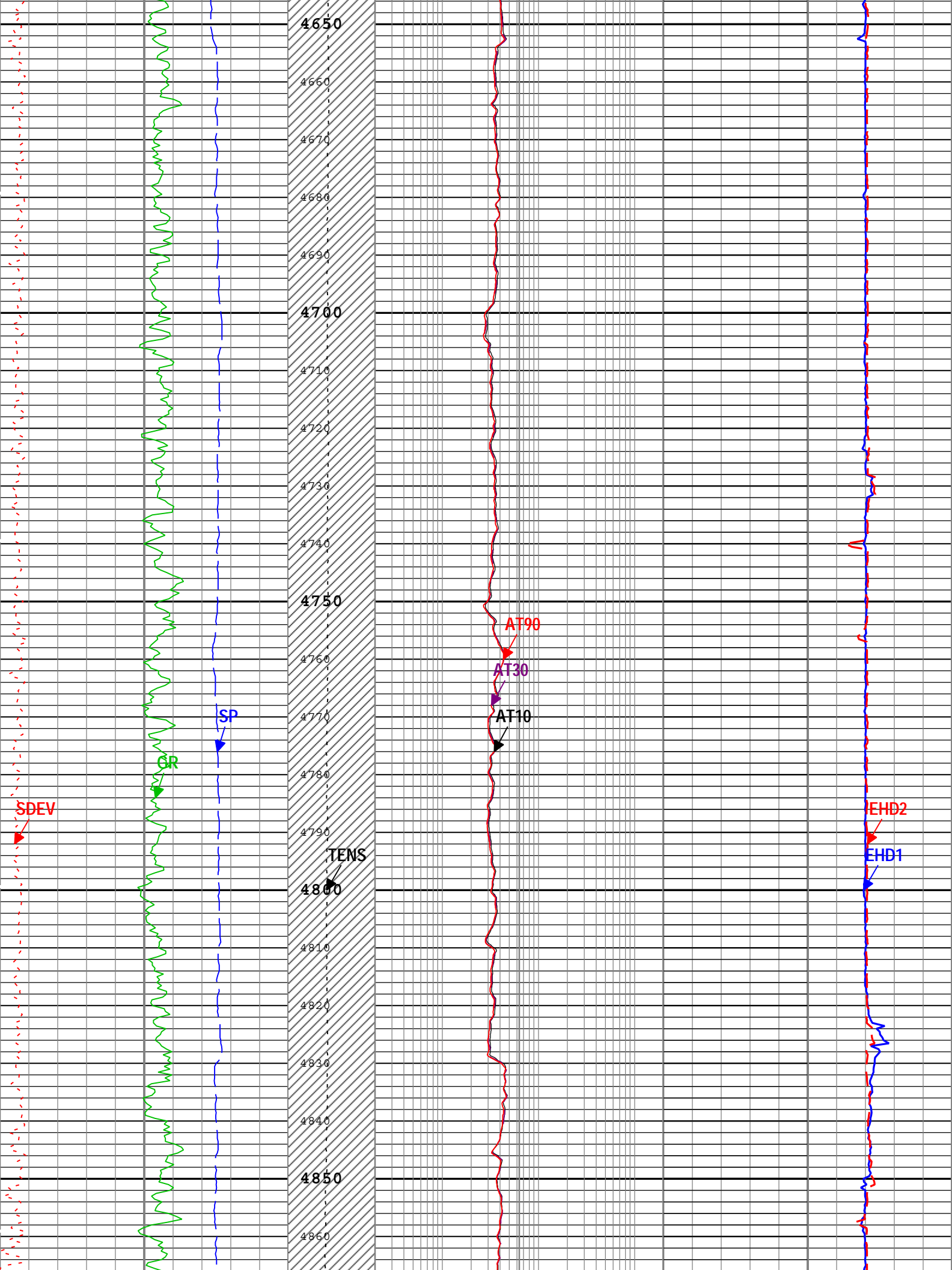


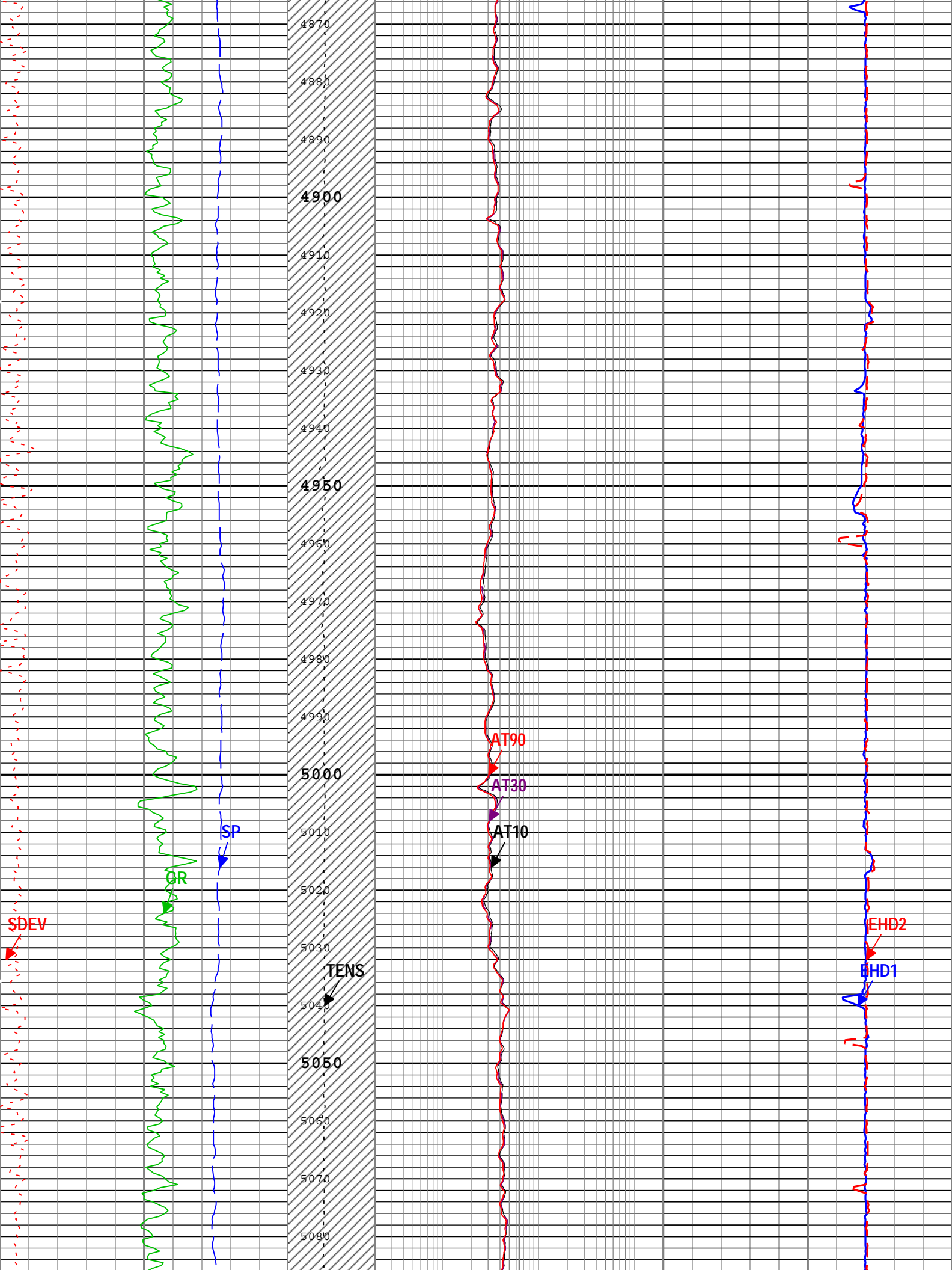


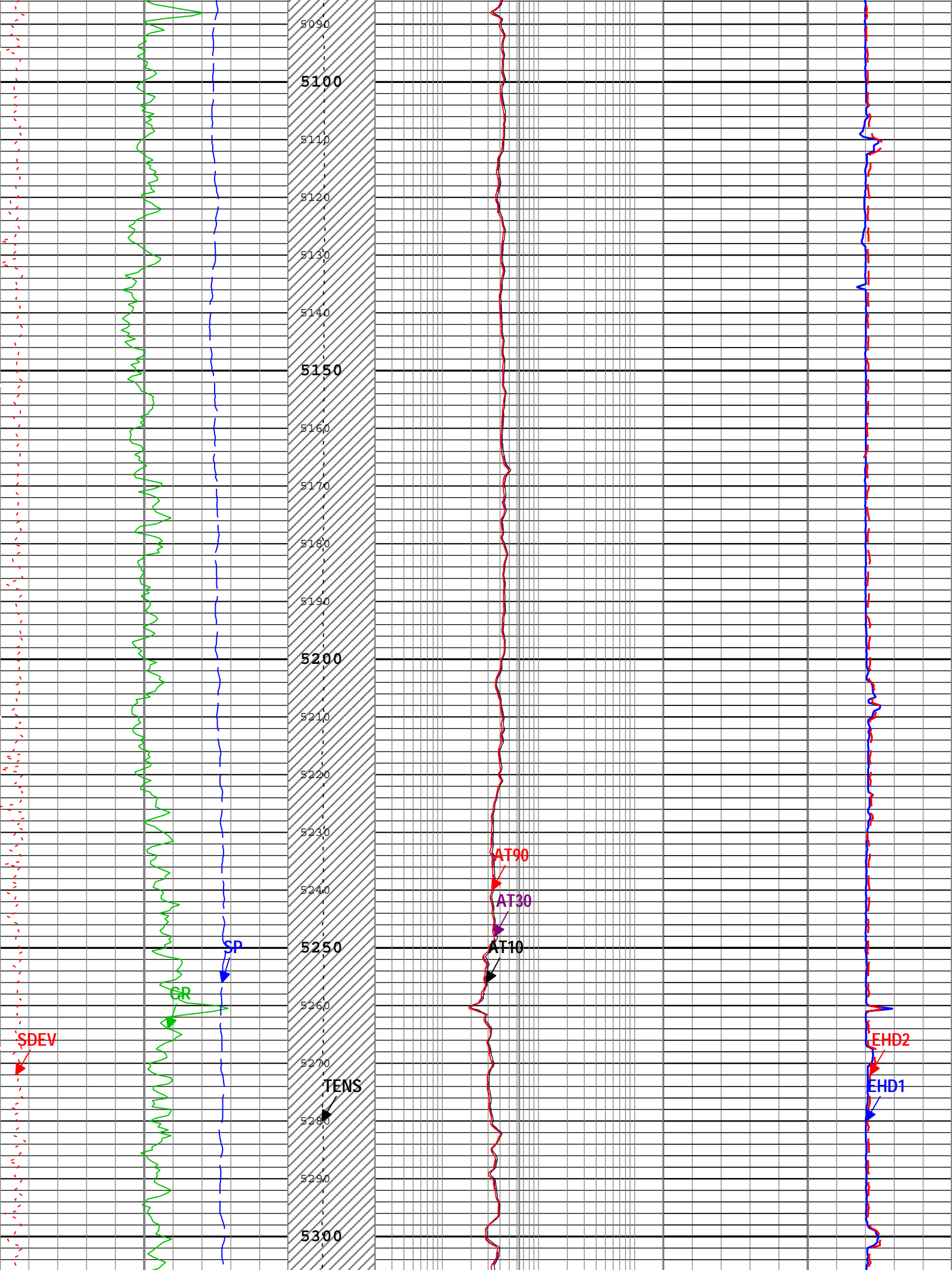


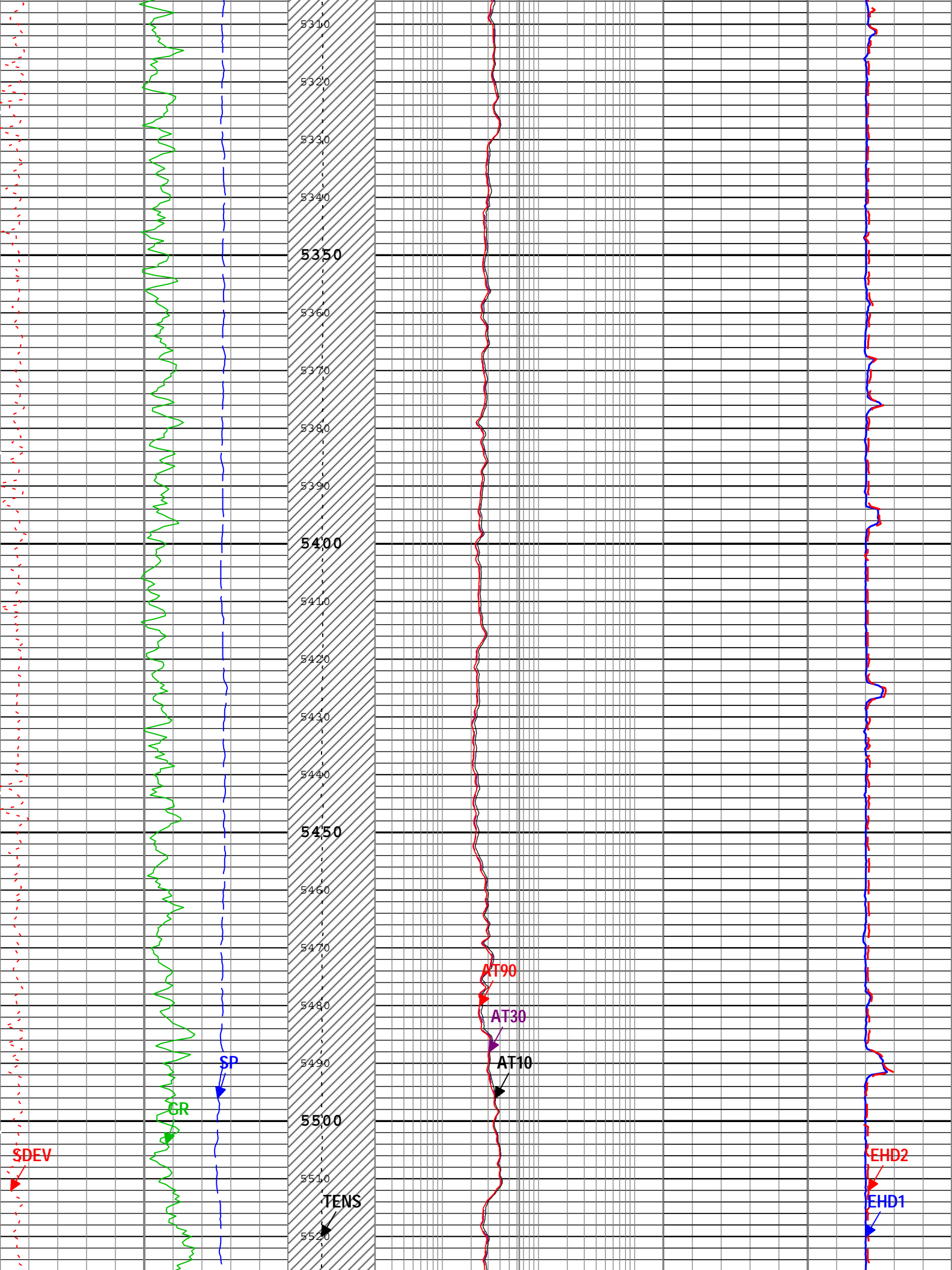


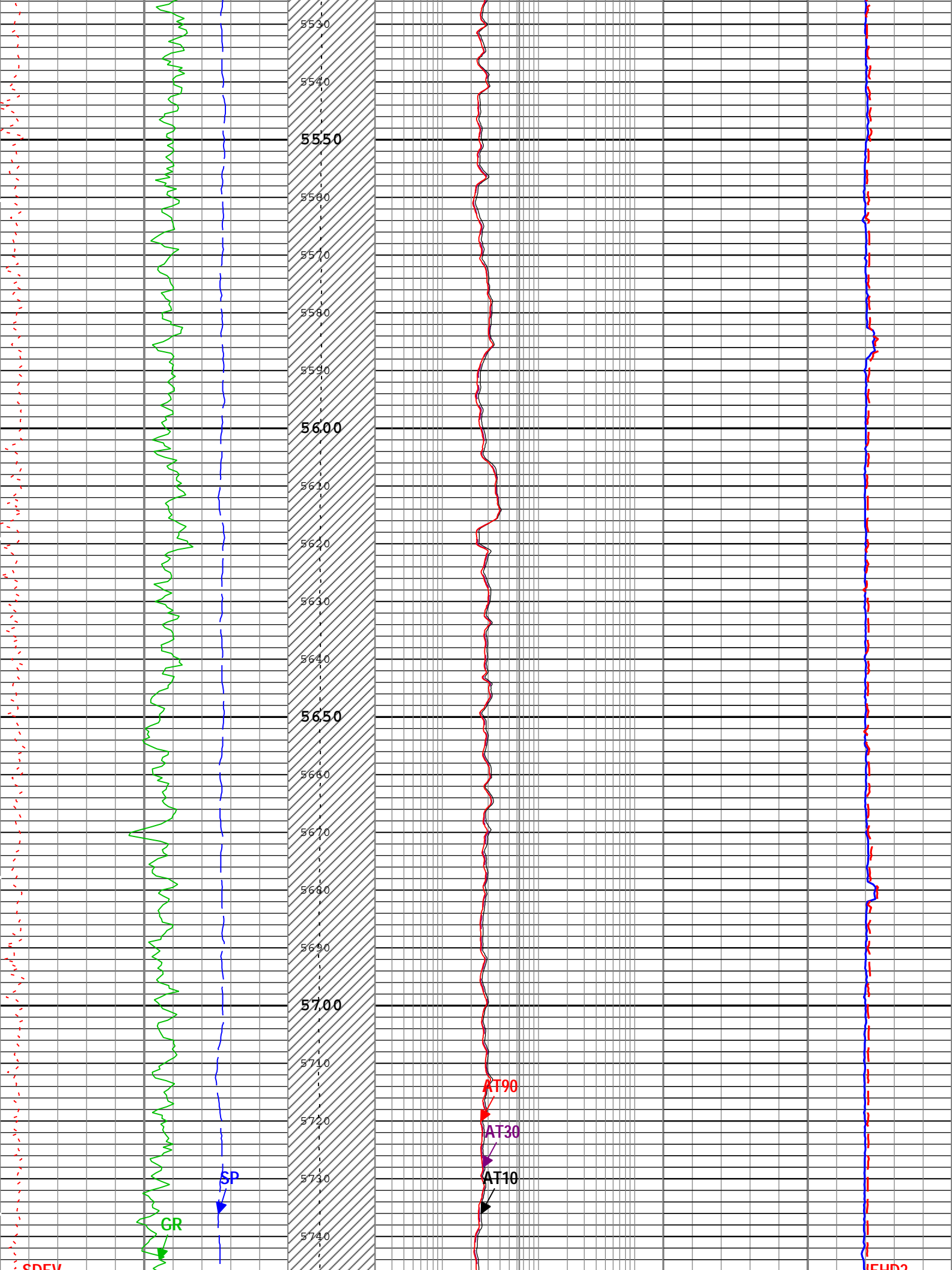


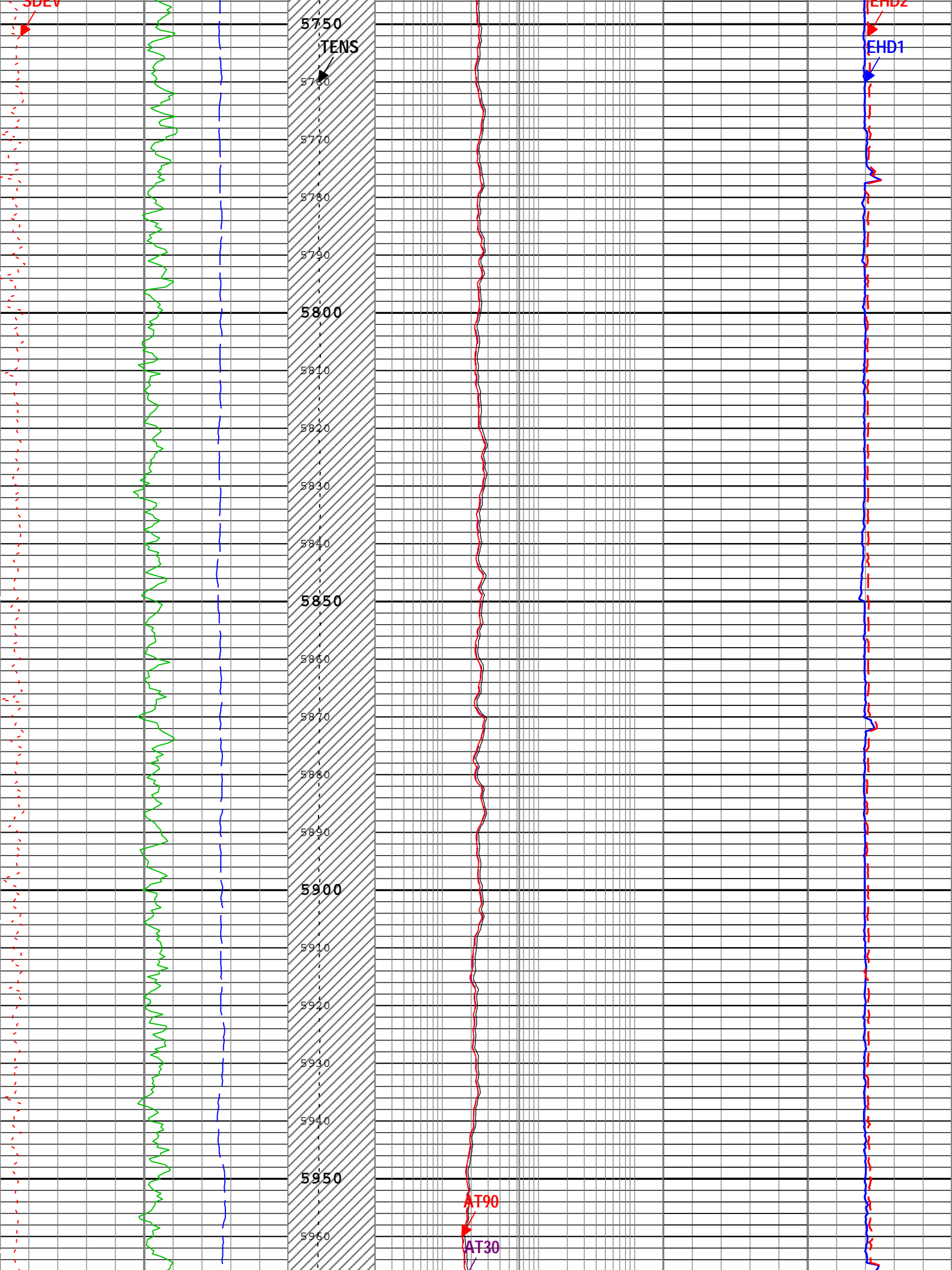


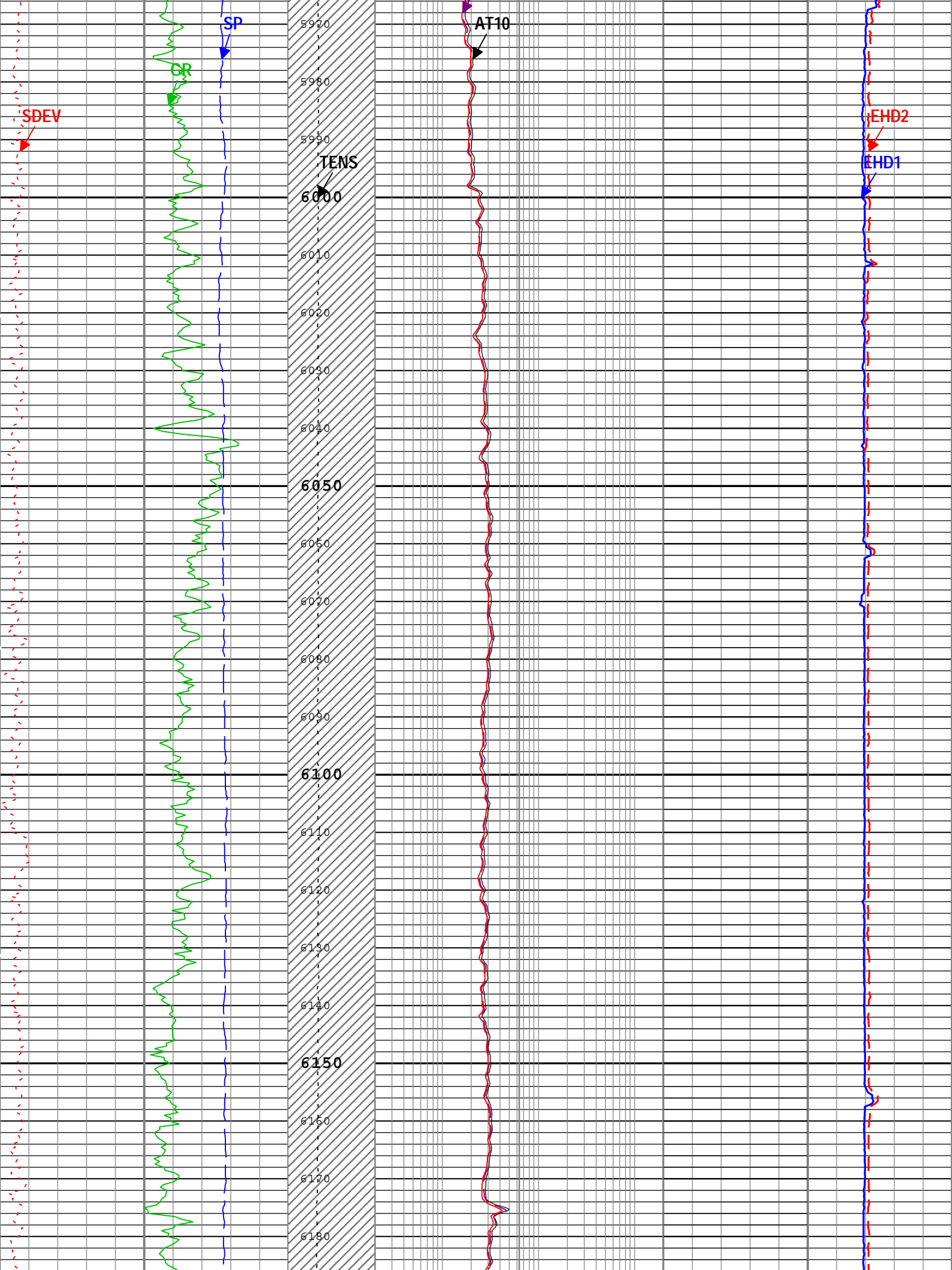


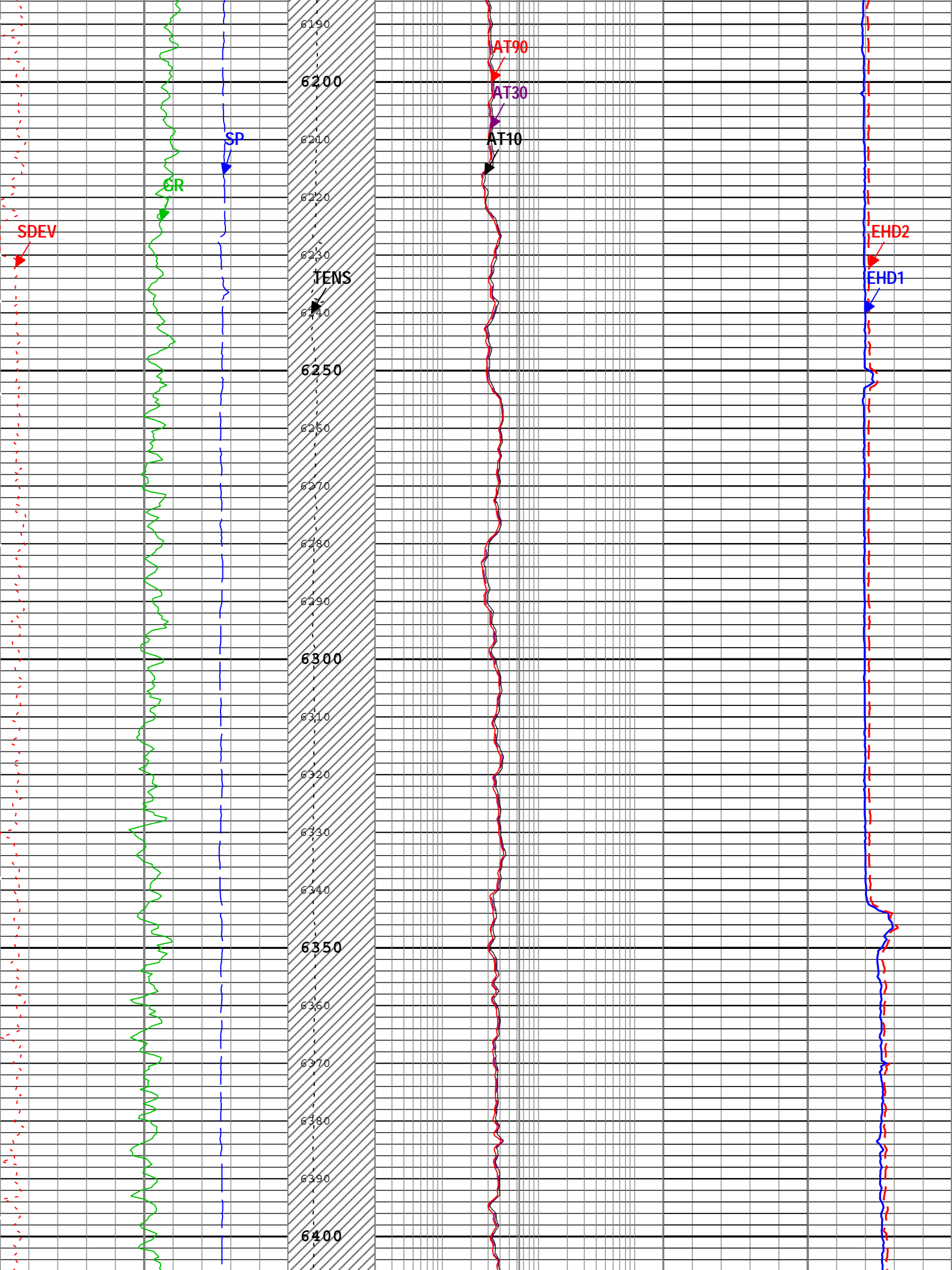


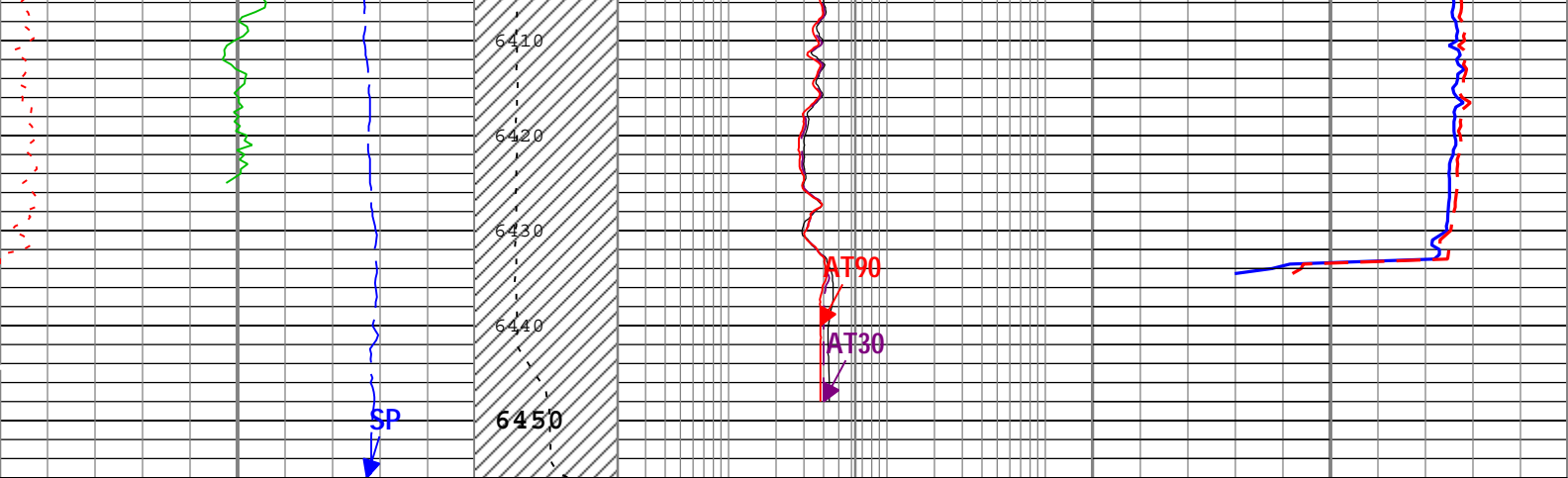












Gamma Ray Back up			Cable Tension (TENS) 5000 lbf 0	Array Induction Two Foot Resistivity A10 (AT10) AIT-M			Enhanced Hole Diameter 1 (ellipse-based algorithm) (EHD1) PPC-B		
Sonde Deviation (SDEV) HGNS-H				0.2 ohm.m 200			2 in 12		
0 deg 50									
Gamma Ray (GR) HGNS-H				Array Induction Two Foot Resistivity A30 (AT30) AIT-M			Enhanced Hole Diameter 2 (ellipse-based algorithm) (EHD2) PPC-B		
0 gAPI 200			0.2 ohm.m 200			2 in 12			
Spontaneous Potential (SP) AIT-M									
-160 mV 40									
			Array Induction Two Foot Resistivity A90 (AT90) AIT-M						
			0.2 ohm.m 200						

TIME_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log (Import of KM 5in Triple Combo) Index Scale: 5 in per 100 ft Index
Unit: ft Index Type: Measured Depth Creation Date: 19-Nov-2014 17:39:31

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
AAPL	Array Induction Answer Product Level(Depth Log/View only)	AIT-M	Radial	
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Standoff	
ACDE	Array Induction Casing Detection Enable	AIT-M	Yes	
ACEN	Array Induction Tool Centering Flag (in Borehole)	AIT-M	Eccentered	
AMRF	Array Induction Mud Resistivity Factor	AIT-M	1	
ASTA	Array Induction Tool Standoff	AIT-M	1	in
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	AIT-M	Internal	
BARI	Barite Mud Presence Flag	Borehole	Yes	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BHT	Bottom Hole Temperature	Borehole	184	degF
BS	Bit Size	WLSESSION	8.75	in
CBLO	Casing Bottom (Logger)	WLSESSION	1175	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	9.65	lbm/gal
EDF	Elevation of Derrick Floor Above Permanent Datum	WLSESSION	23	ft
EPD	Elevation of Permanent Datum (PDAT) above Mean Sea Level	WLSESSION	4922	ft
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	HD1	
GGRD	Geothermal Gradient	Borehole	1	0.01 degF/ft
GR_MULTIPLIER	Gamma Ray Multiplier	HGNS-H	1	
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	AMF	
GTSE	Generalized Temperature Selection, from Measured or	Borehole	CTEM	

MST	Computed Temperature	Borehole	92	degF
PDAT	Permanent Datum	WLSESSION	GL	
RMS	Resistivity of Mud Sample	Borehole	1.18	ohm.m
SHT	Surface Hole Temperature	Borehole	68	degF
SOCN	Standoff Distance	HGNS-H	0.125	in
SOCO	Standoff Correction Option	HGNS-H	No	
SPDR	SP Drift Per Foot	AIT-M	0	mV/ft
TD	Total Measured Depth	Borehole	6441	ft
TPOS	Tool Position: Centered or Eccentered	HGNS-H	Eccentered	

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
HMCA_BRD_TYPE	HMCA Board Type	HGNS-H	1	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h

ONE

Triple Combo Repeat Analysis

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE	Log[3]:Up	Up	6065.13 ft	6455.87 ft	19-Nov-2014 3:27:06 PM	19-Nov-2014 3:34:50 PM	ON	0.00 ft	No
ONE	Log[4]:Up	Up	80.18 ft	6456.18 ft	19-Nov-2014 3:37:59 PM	19-Nov-2014 5:22:04 PM	ON	5.47 ft	No

All depths are referenced to toolstring zero

Log

Company:Noble Energy Inc

Well:Oscar Y10-74-1HC

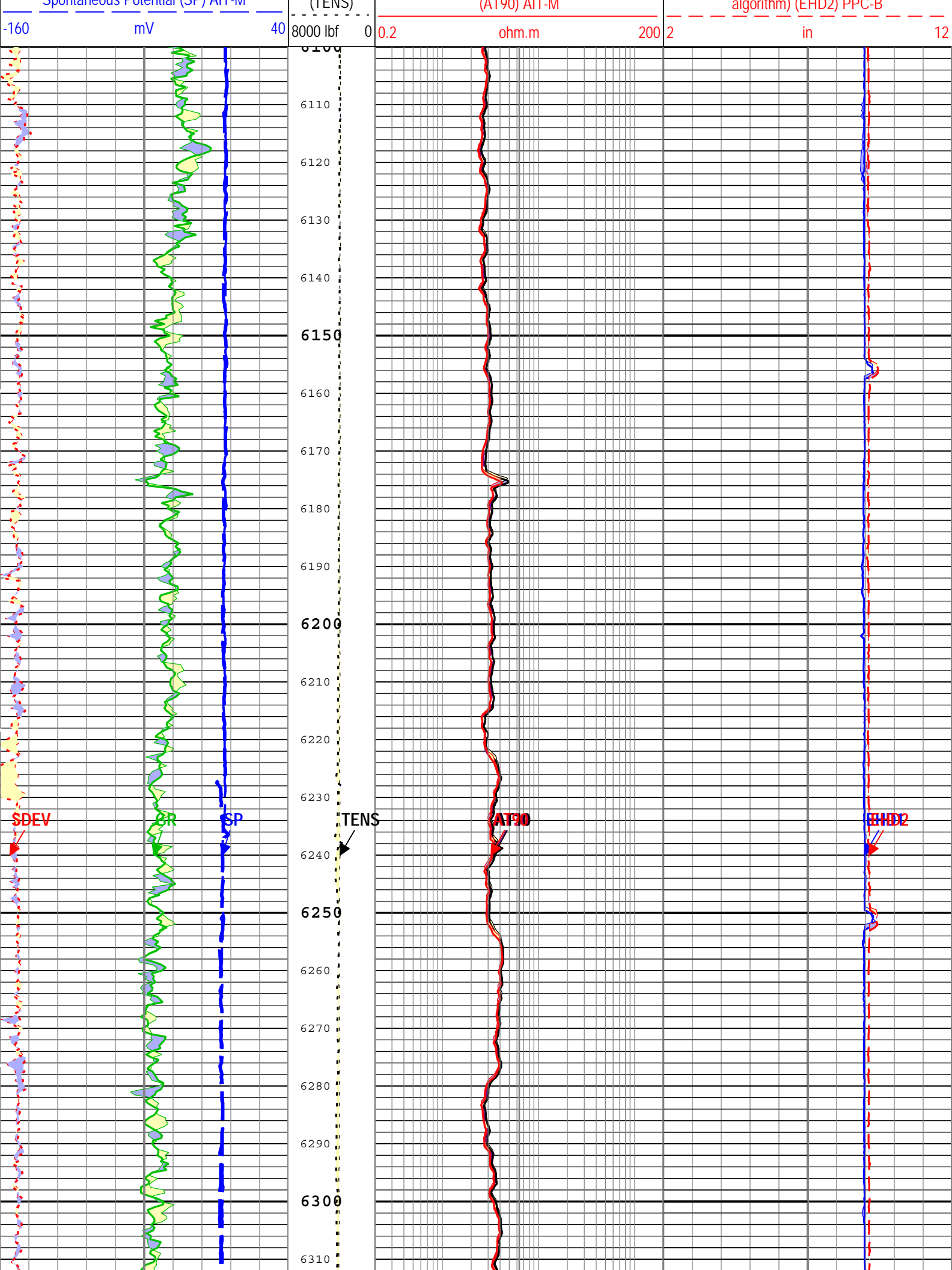
ONE: Log[3]:Up:S002

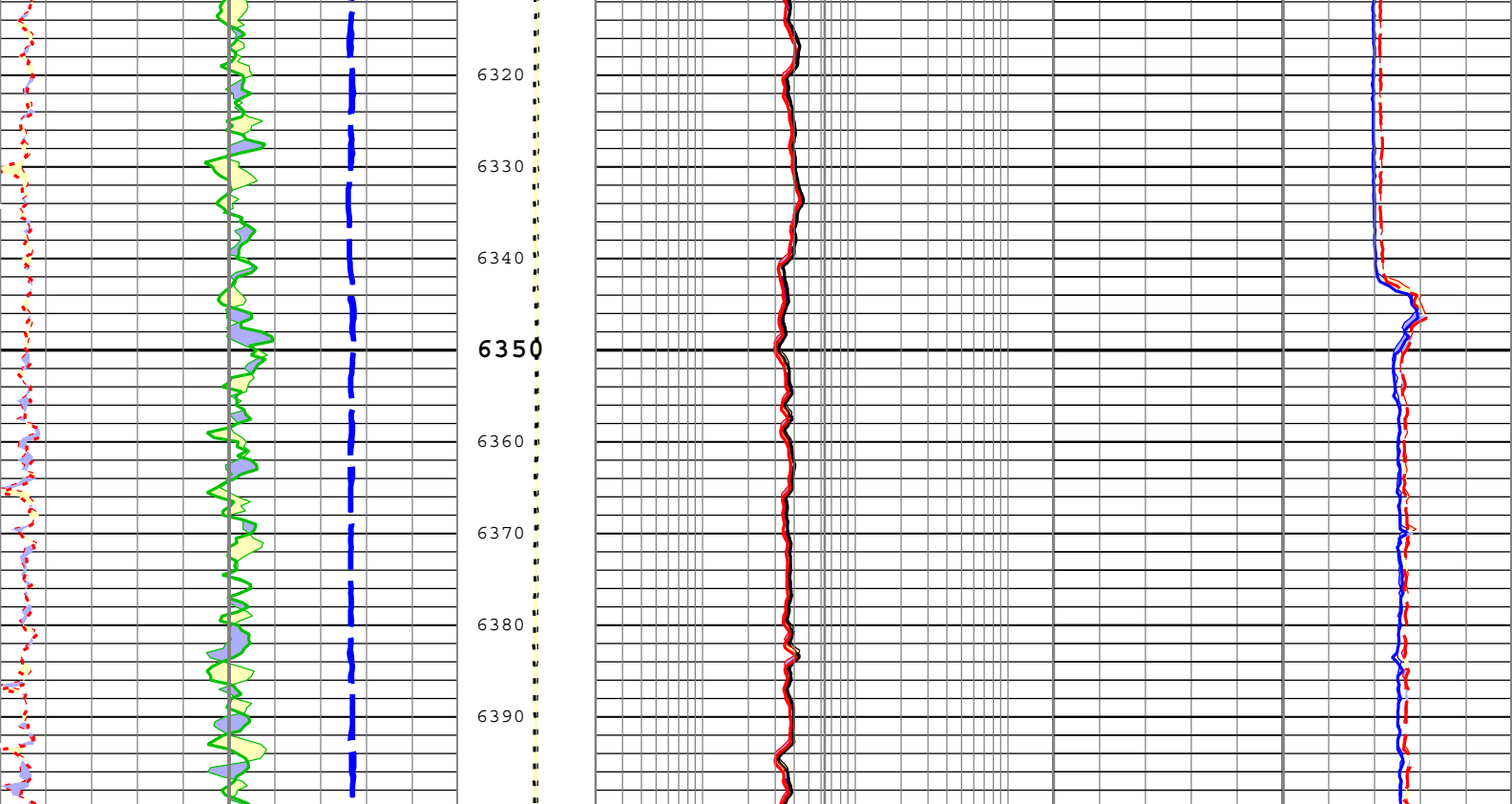
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Index Unit: ft Index Type: Measured Depth Creation Date: 19-Nov-2014 17:39:34

TIME_1900 - Time Marked every 60.00 (s)

Main To Repeat				Main To Repeat			
Repeat To Main				Repeat To Main			
Sonde Deviation (SDEV) HGNS-H				deg			
0		50					
Main To Repeat				Repeat To Main			
Repeat To Main				Array Induction Two Foot Resistivity A30 (AT30) AIT-M			
Gamma Ray (GR) HGNS-H				0.2	ohm.m	200	
200	gAPI	400					
Main To Repeat				Main To Repeat			
Repeat To Main				Repeat To Main			
Gamma Ray (GR) HGNS-H				Enhanced Hole Diameter 1 (ellipse-based algorithm) (EHD1) PPC-B			
0	gAPI	200		0.2	ohm.m	200	
Main To Repeat				2			
Repeat To Main				in			
Main To Repeat				12			
Repeat To Main				Main To Repeat			
Repeat To Main				Repeat To Main			
Spontaneous Potential (SP) AIT-M				Array Induction Two Foot Resistivity A90 (AT90) AIT-M			
Main To Repeat				Enhanced Hole Diameter 2 (ellipse-based algorithm) (EHD2) PPC-B			
Repeat To Main				Repeat To Main			
Main To Repeat				Main To Repeat			
Repeat To Main				Repeat To Main			
Main To Repeat				Main To Repeat			
Repeat To Main				Repeat To Main			
Main To Repeat				Main To Repeat			
Repeat To Main			Repeat To Main				
Main To Repeat			Main To Repeat				
Repeat To Main			Repeat To Main				
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Sonde Deviation (SDEV) HGNS-H	Cable Tension (TENS)	Array Induction Two Foot Resistivity A30 (AT30) AIT-M	Enhanced Hole Diameter 1 (ellipse-based algorithm) (EHD1) PPC-B
0 deg 50	8000 lbf 0	0.2 ohm.m 200	2 in 12
Main To Repeat		Main To Repeat	Main To Repeat
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Gamma Ray (GR) HGNS-H		Array Induction Two Foot Resistivity A10 (AT10) AIT-M	Enhanced Hole Diameter 2 (ellipse-based algorithm) (EHD2) PPC-B
200 gAPI 400		0.2 ohm.m 200	2 in 12
Main To Repeat		Main To Repeat	
Repeat To Main		Repeat To Main	
Gamma Ray (GR) HGNS-H		Array Induction Two Foot Resistivity A90 (AT90) AIT-M	
0 gAPI 200		0.2 ohm.m 200	
Main To Repeat			
Repeat To Main			
Spontaneous Potential (SP) AIT-M			
-160 mV 40			

TIME_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log (Import of KM 5in Triple Combo RA_1) Index Scale: 5 in per 100 ft
Index Unit: ft Index Type: Measured Depth Creation Date: 19-Nov-2014 17:39:34

Calibration Report

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

Primary Equipment :

File code for AIT-MA Sonde Tool Element

AMIS

181

Auxiliary Equipment :			AITM Rm/SP Bottom Nose			AMRM		181	
AIT Sonde Calibration - Test Loop Gain									
Master (EEPROM):			23:01:59 22-Sep-2014						
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div></div>		
Test Loop Gain - 0		Master	1.000	0.950	1.041	1.050	<div></div>		
Test Loop Phase - 0	deg	Master	0	-3.000	1.805	3.000	<div></div>		
Test Loop Gain - 1		Master	1.000	0.950	1.017	1.050	<div></div>		
Test Loop Phase - 1	deg	Master	0	-3.000	0.902	3.000	<div></div>		
Test Loop Gain - 2		Master	1.000	0.950	1.017	1.050	<div></div>		
Test Loop Phase - 2	deg	Master	0	-3.000	0.392	3.000	<div></div>		
Test Loop Gain - 3		Master	1.000	0.950	1.016	1.050	<div></div>		
Test Loop Phase - 3	deg	Master	0	-3.000	0.089	3.000	<div></div>		
Test Loop Gain - 4		Master	1.000	0.950	1.009	1.050	<div></div>		
Test Loop Phase - 4	deg	Master	0	-3.000	0.141	3.000	<div></div>		
Test Loop Gain - 5		Master	1.000	0.950	0.991	1.050	<div></div>		
Test Loop Phase - 5	deg	Master	0	-3.000	-0.110	3.000	<div></div>		
Test Loop Gain - 6		Master	1.000	0.950	0.998	1.050	<div></div>		
Test Loop Phase - 6	deg	Master	0	-3.000	0.235	3.000	<div></div>		
Test Loop Gain - 7		Master	1.000	0.950	1.010	1.050	<div></div>		
Test Loop Phase - 7	deg	Master	0	-3.000	-0.080	3.000	<div></div>		
AIT Sonde Calibration - Sonde Error Correction									
Master (EEPROM):			23:01:59 22-Sep-2014						
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div></div>		
Sonde Error Correction Real - 0	mS/m	Master	----	-231.000	-113.093	119.000	<div></div>		
Sonde Error Correction Quad - 0		Master	----	-2250.000	114.931	2250.000	<div></div>		
Sonde Error Correction Real - 1	mS/m	Master	----	114.000	157.599	204.000	<div></div>		
Sonde Error Correction Quad - 1		Master	----	-625.000	-170.942	625.000	<div></div>		
Sonde Error Correction Real - 2	mS/m	Master	----	66.000	115.105	156.000	<div></div>		
Sonde Error Correction Quad - 2		Master	----	-350.000	-99.364	350.000	<div></div>		
Sonde Error Correction Real - 3	mS/m	Master	----	39.000	49.447	89.000	<div></div>		
Sonde Error Correction Quad - 3		Master	----	-250.000	2.279	250.000	<div></div>		
Sonde Error Correction Real - 4	mS/m	Master	----	15.000	26.217	35.000	<div></div>		
Sonde Error Correction Quad - 4		Master	----	-63.000	-3.708	63.000	<div></div>		
Sonde Error Correction Real - 5	mS/m	Master	----	4.000	10.870	24.000	<div></div>		
Sonde Error Correction Quad - 5		Master	----	-50.000	21.802	50.000	<div></div>		
Sonde Error Correction Real - 6	mS/m	Master	----	5.000	9.914	15.000	<div></div>		
Sonde Error Correction Quad - 6		Master	----	-30.000	2.857	30.000	<div></div>		
Sonde Error Correction Real - 7	mS/m	Master	----	-5.000	-1.286	5.000	<div></div>		
Sonde Error Correction Quad - 7		Master	----	-30.000	1.530	30.000	<div></div>		
AIT Mud Calibration - Mud Calibration Gain									
Master (EEPROM):			23:01:59 22-Sep-2014						
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div></div>		
Coarse Gain		Master	1.000	0.800	0.847	1.200	<div></div>		
Fine Gain		Master	1.000	0.800	0.846	1.200	<div></div>		
AIT Electronics Check - Thru Calibration Check									
Master (EEPROM):			23:01:59 22-Sep-2014		Before (Measured): 18:05:53 17-Nov-2014 Expired by 1 days				
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	<div></div>		
Thru Cal Mag - 0	V	Master	----	0.366	0.575	0.854	<div></div>		
		Before	----	0.366	0.575	0.854	<div></div>		
		Before-Master	----	----	0.000	----	<div></div>		
Thru Cal Phase - 0	deg	Master	----	137.000	-169.442	-103.000	<div></div>		
		Before	----	137.000	-168.444	-103.000	<div></div>		
		Before-Master	----	----	0.998	----	<div></div>		
Thru Cal Mag - 1	V	Master	----	0.762	1.178	1.778	<div></div>		
		Before	----	0.762	1.178	1.778	<div></div>		
		Before-Master	----	----	0.000	----	<div></div>		
Thru Cal Phase - 1	deg	Master	----	136.000	-170.544	-104.000	<div></div>		
		Before	----	136.000	-169.542	-104.000	<div></div>		
		Before-Master	----	----	1.002	----	<div></div>		
Thru Cal Mag - 2	V	Master	----	0.372	0.584	0.868	<div></div>		
		Before	----	0.372	0.584	0.868	<div></div>		
		Before-Master	----	----	0.000	----	<div></div>		

PPC-B (Powered Positioning device and Caliper.) Calibration - Run ONE

Primary Equipment :

PPC-B Element is used for usual logging at wellsite and check/diagnostics

DDC B

9252

Auxiliary Equipment :

PPC-B Element is used for usual logging at wellsite and check/diagnostics

DRC B

9252

Calibration Parameter :

ZERO REF (Small Size Ring)

3 500

PLUS REF (Large Size Ring)

8 000



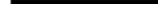
Equipment Properties :

Coliner Arm Equipment Type for DRC

DRC CAL STD

PPC Check - Downhole Electronics Test

Before (Measured): 14:12:57 10 Nov 2014

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Positive Analog Voltage	V	Before		7	8.64668	9	
Minus Analog Voltage	V	Before		-9	-8.70381	-7	
Digital Voltage	V	Before		3.15	3.37674	3.45	

Digital Voltage for Analog Digital Converter	V	Before		4.5	5.00449	5.5	
Status Word of Analog Digital Converter Offset		Before		-8	0.888889	8	

PPC Check - Cartridge Temperature Test

Before (Measured): 14:12:57 19-Nov-2014

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Cartridge Temperature	degF	Before		-58	55.662	482	

PPC Check - Power Control LVDT Test

Before (Measured): 14:12:57 19-Nov-2014

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
LVDT5 Caliper Open Position	in	Before			-1.27161		
LVDT5 Full Power Position	in	Before			1.4397		

PPC Diagnostics - Arm Close Position Test

Master:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Caliper-arm 1, radius raw - 0	in	Master	----	----	----	----	
Caliper-arm 2, radius raw - 0	in	Master	----	----	----	----	
Caliper-arm 3, radius raw - 0	in	Master	----	----	----	----	
Caliper-arm 4, radius raw - 0	in	Master	----	----	----	----	
Power Control LVDT - 0	in	Master	----	----	----	----	
LVDT excitation - 0	V	Master	----	----	----	----	

PPC Diagnostics - Downhole Electronics Test

Master:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Positive Analog Voltage - 0	V	Master	----	----	----	----	
Minus Analog Voltage - 0	V	Master	----	----	----	----	
Digital Voltage - 0	V	Master	----	----	----	----	
Digital Voltage for Analog Digital Converter - 0	V	Master	----	----	----	----	
Status Word of Analog Digital Converter Offset - 0		Master	----	----	----	----	

PPC Diagnostics - RBS Test

Master:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Relative Bearing - 0	deg	Master	----	----	----	----	
Potentiometer Excitation - 0	V	Master	----	----	----	----	

PPC Diagnostics - Cartridge Temperature Test

Master:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Cartridge Temperature - 0	degF	Master	----	----	----	----	

PPC Diagnostics - Power Control LVDT Test

Master:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
LVDT5 Caliper Open Position - 0	in	Master	----	----	----	----	
LVDT5 Full Power Position - 0	in	Master	----	----	----	----	

PPC LVDT5 Master Calibration - PPC CaliCoefficients

Master (EEPROM): 18:36:00 17-Nov-2014

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CCS	in	Master	-1.51		-1.48157		
COP	in	Master	-1.31		-1.27161		
CPW	in	Master	1.41		1.4397		

PPC Caliper Calibration - PPC CaliCoefficients

Before (EEPROM): 18:36:00 17-Nov-2014

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RD1_GAIN		Before	1	0.85	1.11718	1.15	
RD2_GAIN		Before	1	0.85	1.01784	1.15	
RD3_GAIN		Before	1	0.85	1.03886	1.15	
RD4_GAIN		Before	1	0.85	0.989157	1.15	
RD1_OFFSET	in	Before	0	-2.2	-2.23714	2.6	
RD2_OFFSET	in	Before	0	-2.2	-0.06201	2.6	
RD3_OFFSET	in	Before	0	-2.2	-1.712	2.6	
RD4_OFFSET	in	Before	0	-2.2	0.375937	2.6	

PPC Calibration - PPC Accumulations

Before (EEPROM): 18:36:00 17-Nov-2014

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Caliper 1 Zero Radius	in	Before	3.5	1.2	5.13536	5.6	
Caliper 2 Zero Radius	in	Before	3.5	1.2	3.49957	5.6	
Caliper 3 Zero Radius	in	Before	3.5	1.2	5.01706	5.6	
Caliper 4 Zero Radius	in	Before	3.5	1.2	3.15831	5.6	
Caliper 1 Plus Radius	in	Before	8	6.1	9.16335	9.7	
Caliper 2 Plus Radius	in	Before	8	6.1	7.92068	9.7	
Caliper 3 Plus Radius	in	Before	8	6.1	9.34875	9.7	
Caliper 4 Plus Radius	in	Before	8	6.1	7.70764	9.7	

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

Primary Equipment :

HILT Gamma-Ray and Neutron Sonde, 150 degC

HGNS-H

4810

Auxiliary Equipment :

Calibration Parameter :

Water Temperature

Housing Size

JIG-BKG (Jig minus background reference)

165

HGNS Accelerometer Calibration - Accelerometer Accumulations

Before (Measured): 14:13:15 19-Nov-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 Neutron Calibration - HGNS Neutron Accumulations

Before (Measured): 18:04:57 17-Nov-2014 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Near Zero Measurement	1/s	Before	0	5.0	25.5	40.0	
Far Zero Measurement	1/s	Before	0	5.0	28.5	40.0	
Near Plus Measurement - 0	1/s	Before	-----	-----	-----	-----	
Far Plus Measurement - 0	1/s	Before	-----	-----	-----	-----	
Near Corrected Plus Measurement - 0	1/s	Before	-----	-----	-----	-----	
Far Corrected Plus Measurement - 0	1/s	Before	-----	-----	-----	-----	

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured): 18:12:01 17-Nov-2014 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement	gAPI	Before	30.0	0	76.8	120.0	
RGR Plus Measurement	gAPI	Before	185.4	157.1	169.8	206.3	
GR Calibration Gain		Before	0.89	0.80	0.97	1.05	

Company: Noble Energy Inc

Schlumberger

Well: Oscar Y10-74-1HC

Field: Wattenberg

County:	Weld
State:	Colorado
Platform Express	
Triple Combo	