

Company: Vecta Oil & Gas Ltd

Well: Bierstadt 32-33

Field: Wildcat

County: Cheyenne Country:

Platform Express			
Compensated Neutron Log			
LithoDensity			
Location:		SWNE, Sec. 33, T.13S	
Permanent Datum:		Elev.: K.B. 4341.00 ft	
Log Measured From:		G.L. 4330.00 ft	
Drilling Measured From:		D.F. 4340.00 ft	
API Serial No.		Ground Level	Elev.: 4330.00 f
05-017-07733-0000		Kelly Bushing	11.00 ft
Max.Hole Deviation		Kelly Bushing	above Perm.Datum
0 deg		Longitude:	Latitude:
		-102.67432 degrees	38.876890 degrees

Logging Date	11-Dec-2012	
Run Number	PEX-AIT	
Depth Driller	5565.00 ft	
Schlumberger Depth	5565.00 ft	
Bottom Log Interval	5561.00 ft	
Top Log Interval	442.00 ft	
Casing Driller Size @ Depth	8.625 in @ 441.00 ft	
Casing Schlumberger	441 ft	
Bit Size	7.875 in	
Type Fluid In Hole	Water	
Density	9.3 lbm/gal	61 s
Fluid Loss	PH	
MUD		
Source of Sample	Active Tank	
RM @ Meas Temp	1.12 ohm.m @ 90.6 degF	
RMF @ Meas Temp	0.84 ohm.m @ 68 degF	
RMC @ Meas Temp	1.68 ohm.m @ 68 degF	
Source RMF	RMC	Calculated
RM @ BHT	0.74 @ 140 0.43 @ 140	
Max Recorded Temperatures	140 degF	
Circulation Stopped	11-Dec-2012 08:00:00	
Logger on Bottom	11-Dec-2012 17:00:00	
Unit Number	3022	Fort Morgan, CO
Recorded By	Heather Bennett	
Witnessed By	Ryan Scribner	

Disclaimer

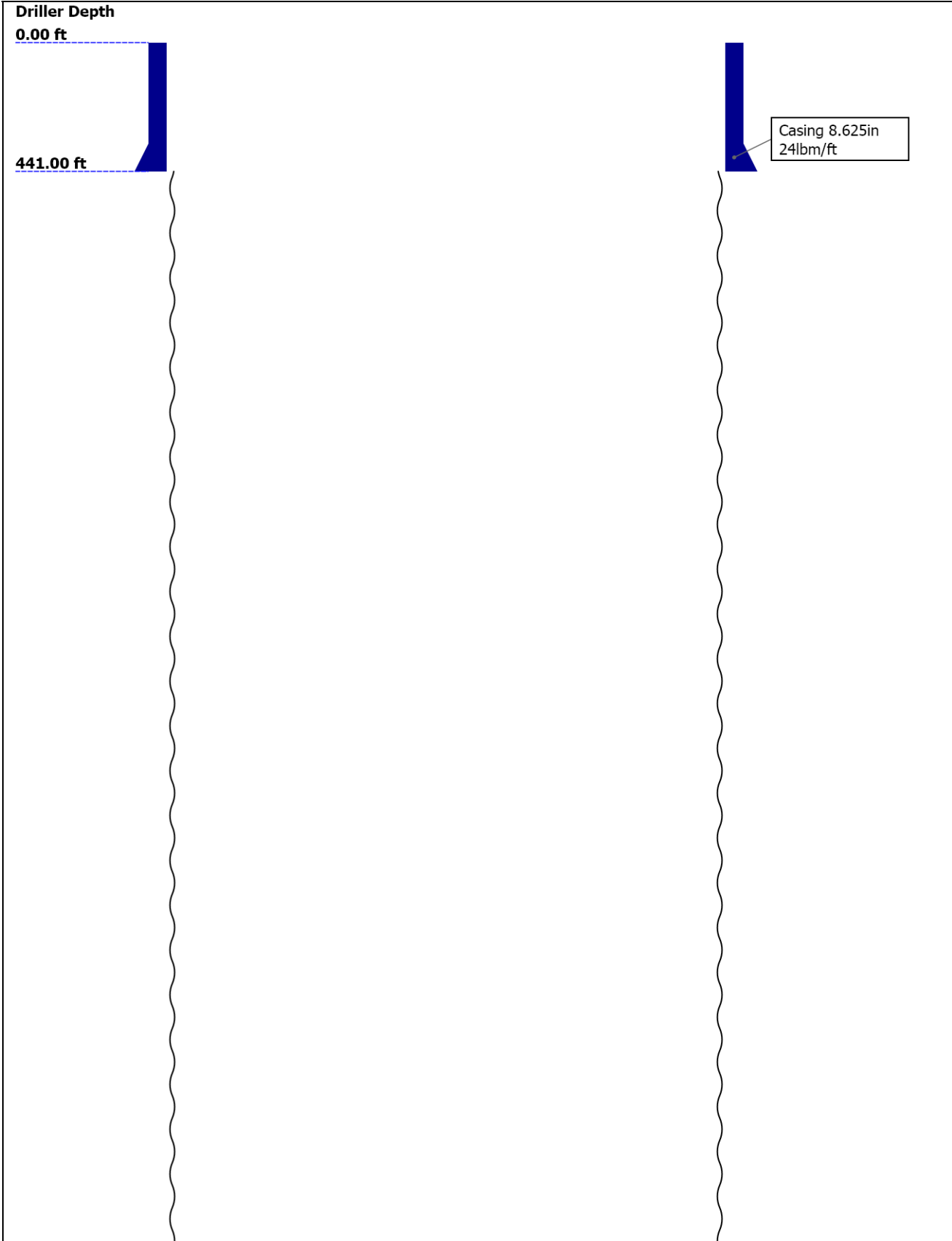
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA;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

Contents

- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Remarks and Equipment Summary
- 7. Depth Summary
- 8. PEX-AIT
  - 8.1 Integration Summary
  - 8.2 Software Version
  - 8.3 Composite Summary
  - 8.4 Log ( EMD 5in Porosity )
  - 8.5 Parameter Listing
- 9. PEX-AIT
  - 9.1 Composite Summary
  - 9.2 EMD 5in Porosity RA
- 10. PEX-AIT 5" Density

- 10.1 Integration Summary
- 10.2 Software Version
- 10.3 Composite Summary
- 10.4 Log ( EMD 5in Density )
- 10.5 Parameter Listing
- 11. Calibration Report
- 12. Tail

Well Sketch



Open Hole 7.875in

5565.00 ft

## Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( in )	7.875					
Top Driller ( ft )	441					
Top Logger ( ft )	441					
Bottom Driller ( ft )	5565					
Bottom Logger ( ft )	5565					
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 )	441					
Bottom Logger ( ft )	441					

## Remarks and Equipment Summary

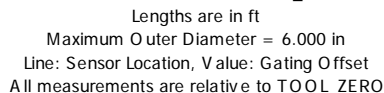
PEX-AIT: Toolstring				PEX-AIT: Remarks	
<b>Equip name</b>	<b>Length</b>	<b>MP name</b>	<b>Offset</b>	This is the first run in hole Toolstring run as per tool sketch Matrix: Limestone 2.71 (g/cc) Crew:Ian Derry, Jake Jump	
LEH-QT	64.21				
LEH-QT					
<b>DTC-H:9236</b>	<b>61.29</b>				
ECH-KC:10316		CTEM	60.39		
DTC-H:9236		HV	0.00		
		TelStatus	58.29		
		ToolStatus	58.29		
		Temperatur	58.26		
		e			
<b>HGNS-H:4779</b>	<b>58.29</b>				
HGNH:3826					
NPV-N		GR	57.55		
NSR-F:5215					
HMCA-H					
HGNS-H:4779					
HACCZ-H:5736					
		CNL Porosit	51.21		
		y			
		HGNS	48.88		
		HMCA	48.88		
		Accelerome	0.00		
		ter			
<b>HDRS-H:4826</b>	<b>48.88</b>				
ECH-MEB					
HRCC-H:3712					
HRMS-H:4826					

Long Spacing:28  
926  
HRGD-H:3775  
GPV-Q  
Backscatter:2640  
4  
Short Spacing  
GSR-J:5240

HRCC 44.88  
  
MCFL 39.45  
Caliper 38.96  
TLD Density 38.57  
  
DSLT-H:8318 36.64  
ECH-KH  
DSLH-H:8318  
SLS-E:165

CBL 3ft 24.17  
Upper-Near 24.17  
  
VDL 5ft 23.17  
Upper-Far 23.17  
  
Delta-T 21.79  
  
Lower-Far 20.42  
  
Lower-Near 19.42  
  
SLS-E 16.00  
  
AIT-M:1372 16.00  
AMIS:1372  
AMRM:1372

Temperatur 7.91  
e  
Induction 7.91  
Power Supply 7.91



Depth Control Parameters	PEX-AIT		
Conveyance Type	Wireline		
Depth Measuring Device	PEX-AIT		
Type	IDW-B		
Wheel Correction 1	1		
Wheel Correction 2	0		
Tension Device	PEX-AIT		
Type	CMTD-B/A		
Calibration Points	0		
Logging Cable	PEX-AIT		
Type	7-46NT-XS		
Logging Cable Length ( ft )	24000.00		

## Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
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Acquisition System		Version	
MaxWell		3.1.9755.0	
Application Patch		SP-20120723-3.1.9755.1112	
		EXP_APL-MASTAXIS-3.1.9755.1221	
Computation	Description	Version	
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
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
PEX-AIT	Log[3]:Up	Up	365.61 ft	5571.09 ft	11-Dec-2012 4:54:22 PM	11-Dec-2012 6:41:38 PM	5.00 ft	

All depths are referenced to toolstring zero

## PEX-AIT: Log[3]:Up

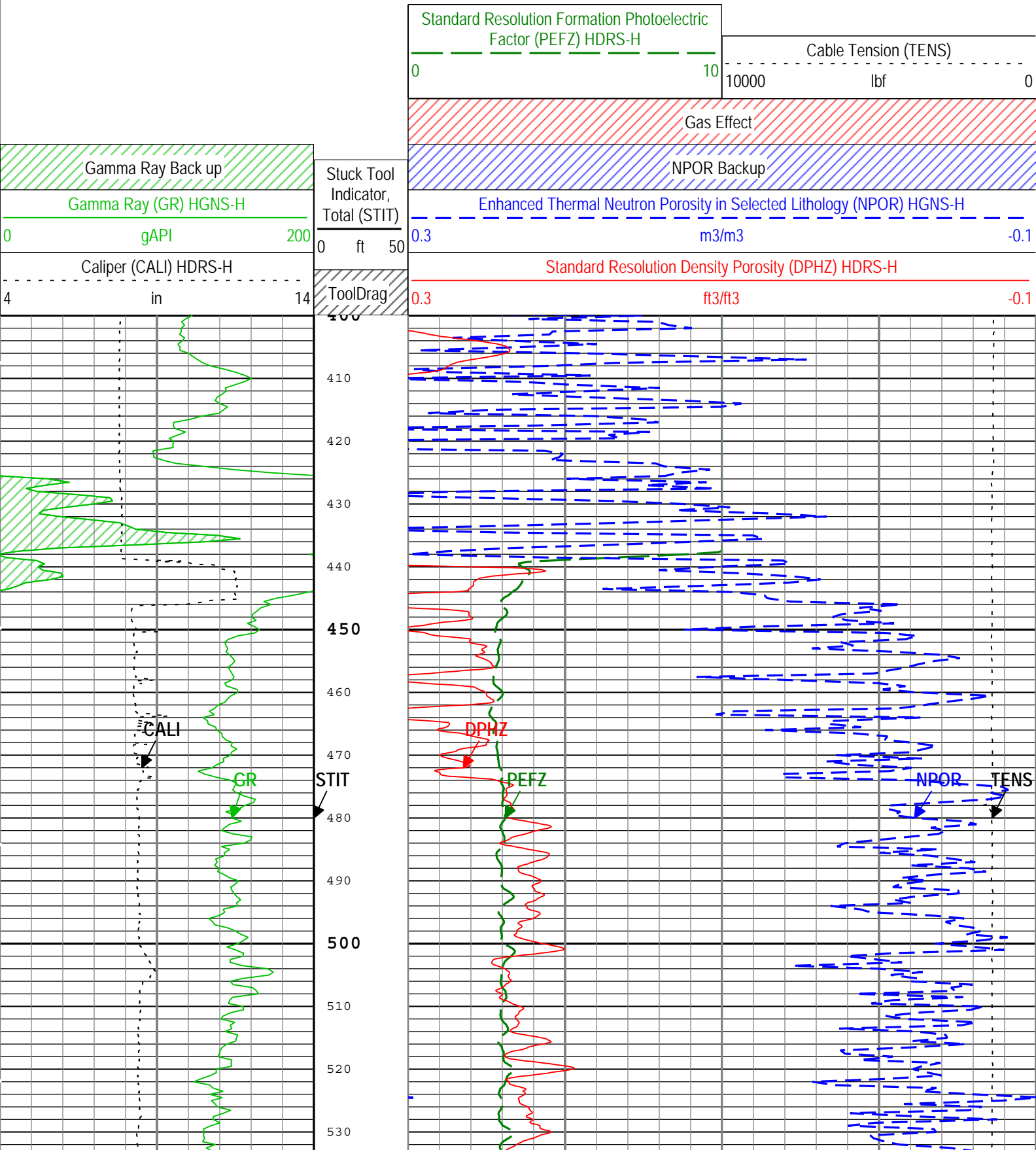
Description: HGNS standard resolution porosities for Platform Express					Format: Log ( EMD 5in Porosity )	Index Scale: 5 in per 100 ft	Index Unit: ft	Index
Type: Measured Depth	Creation Date: 11-Dec-2012 18:56:38							

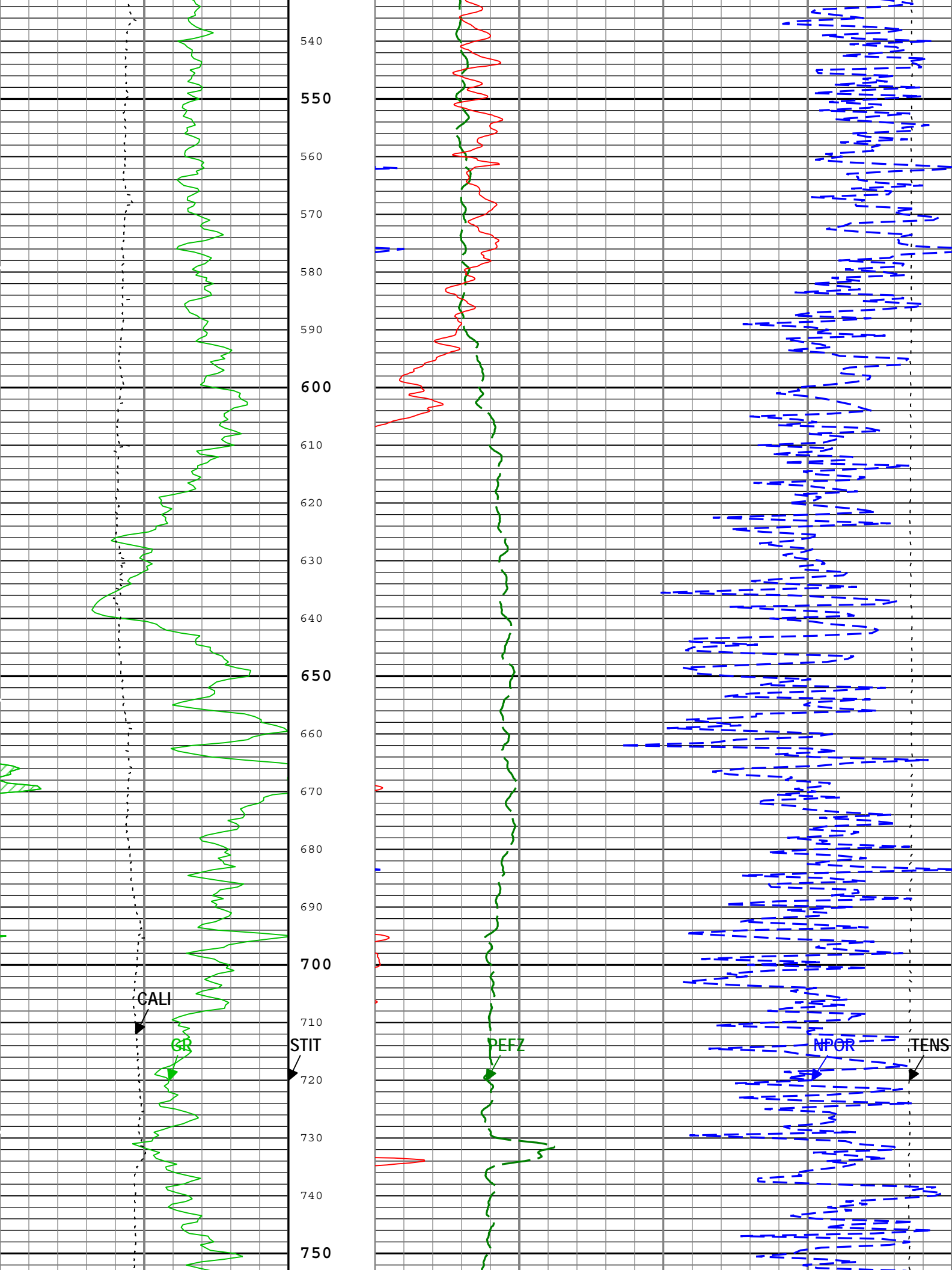
Channel	Source	Sampling
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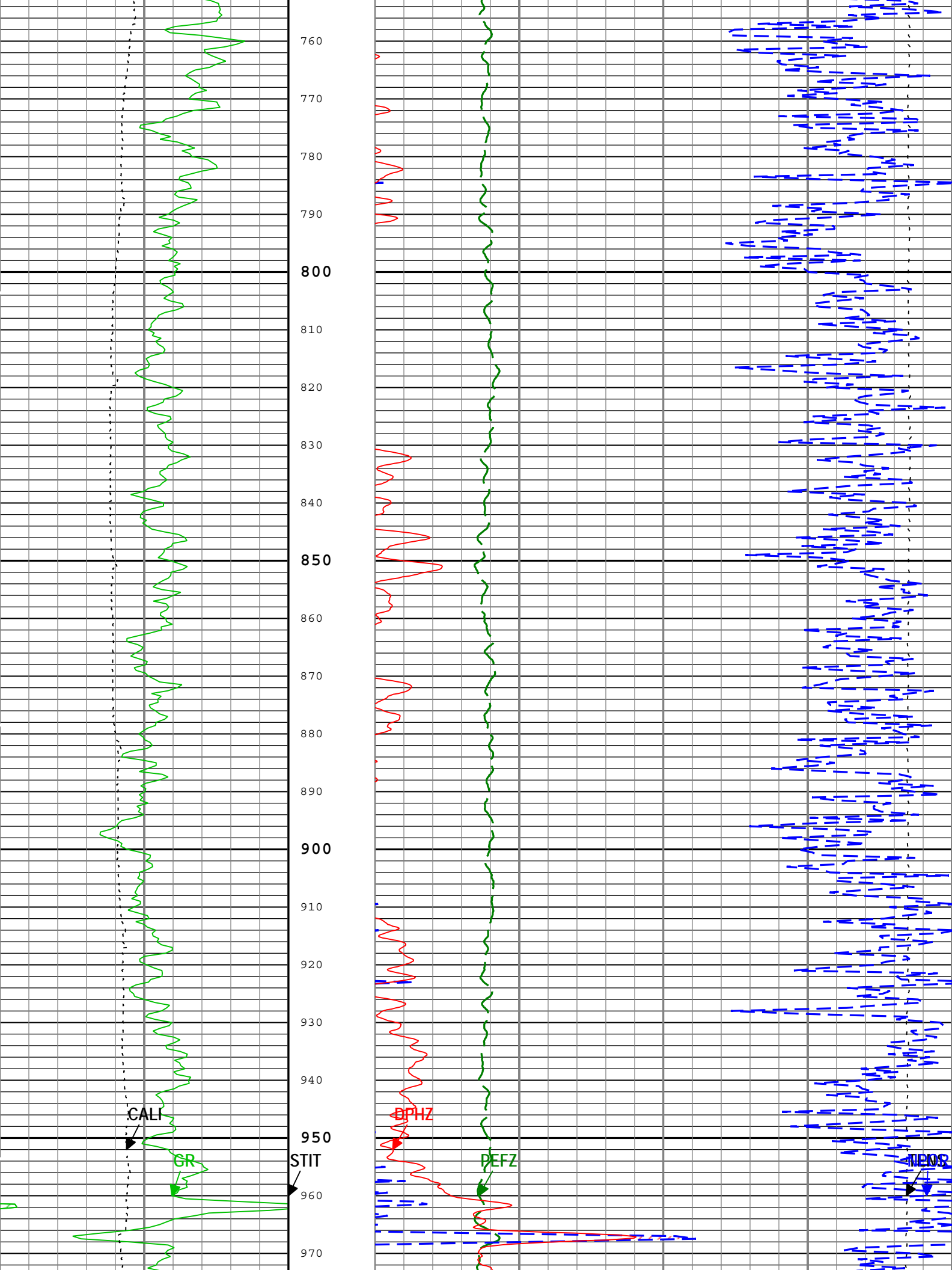
CALL HDRS-H·HRCC-H·HRCC-H 1in

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
STIT	DepthCorrection	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in

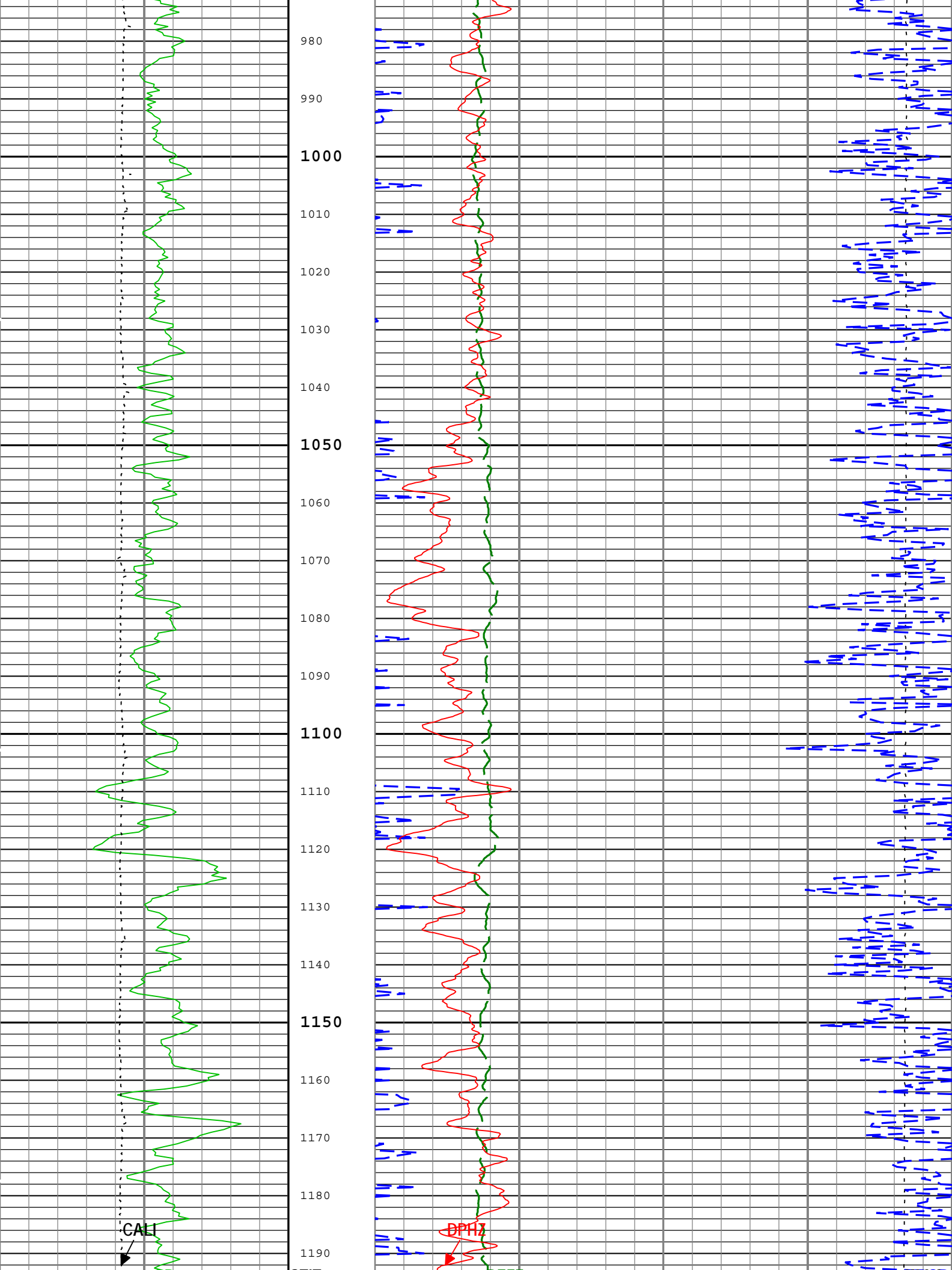
TIME\_1900 - Time Marked every 60.00 (s)

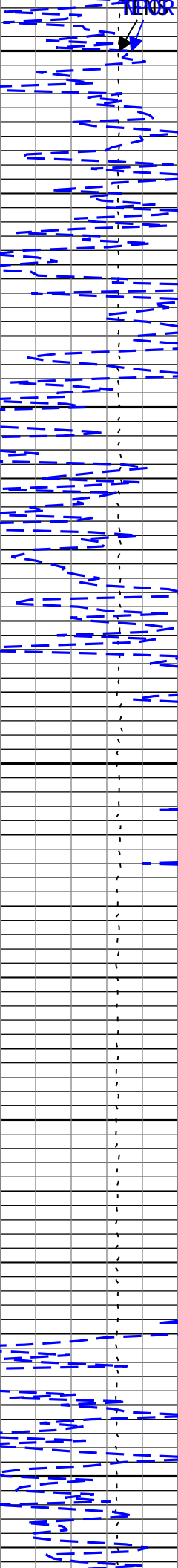
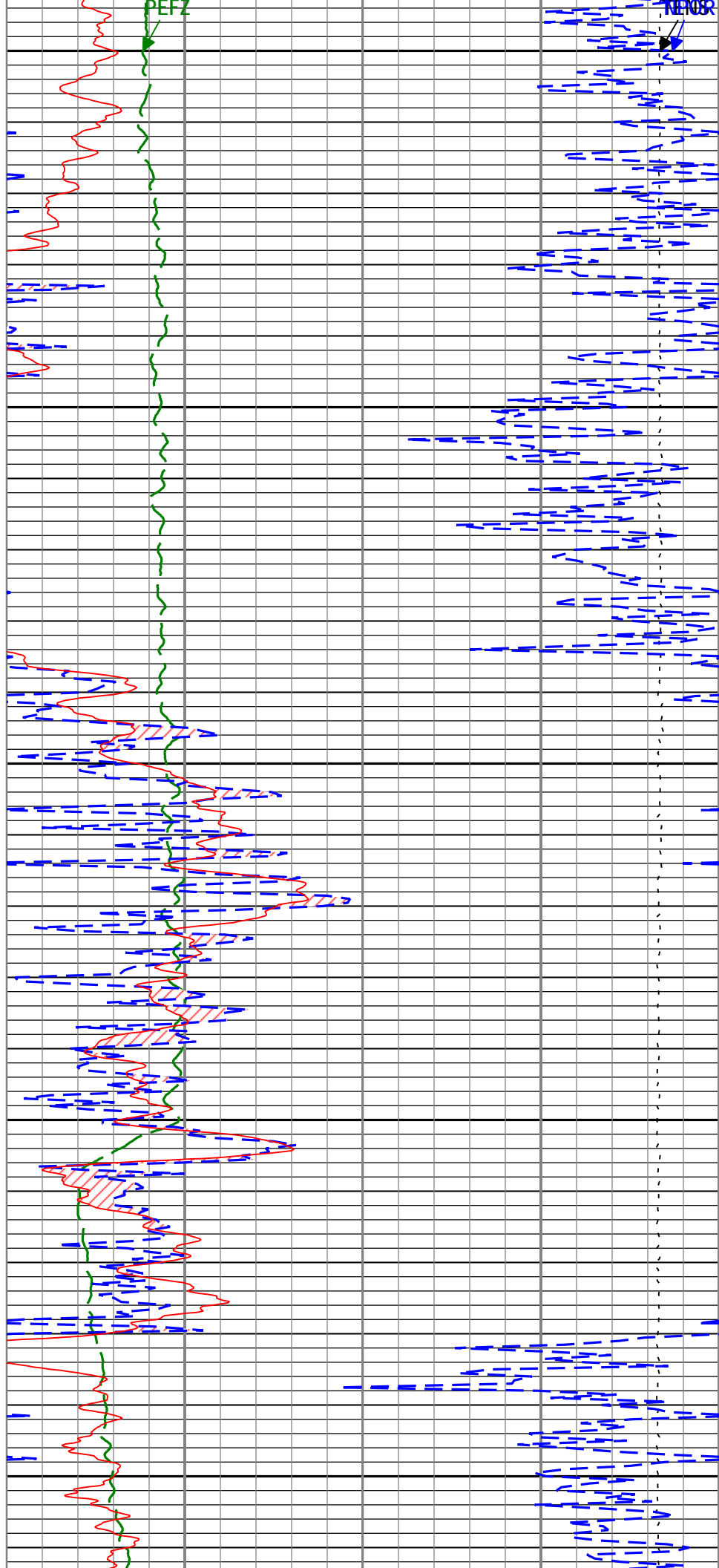
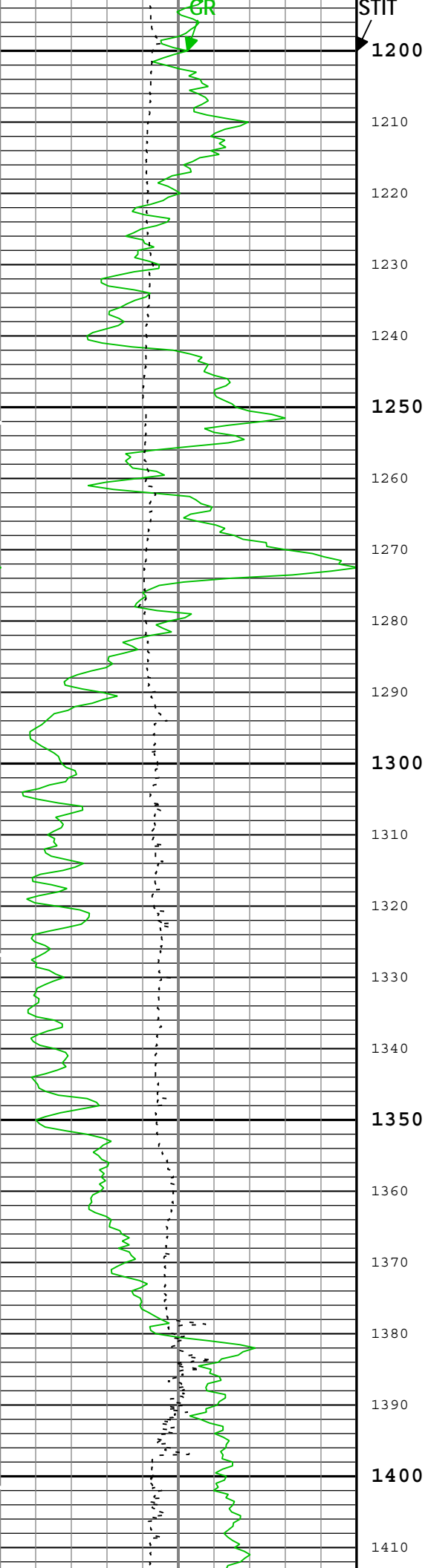


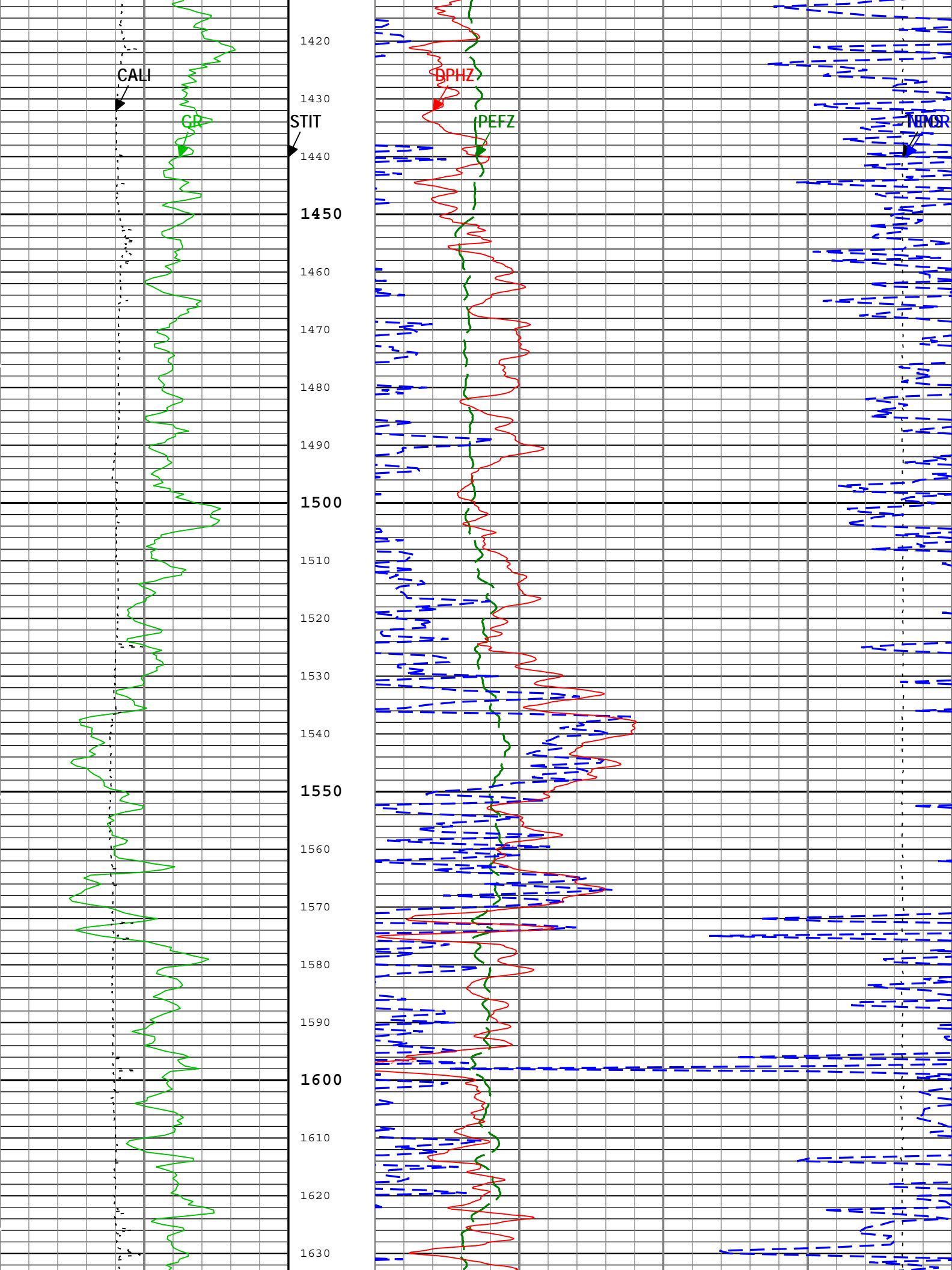


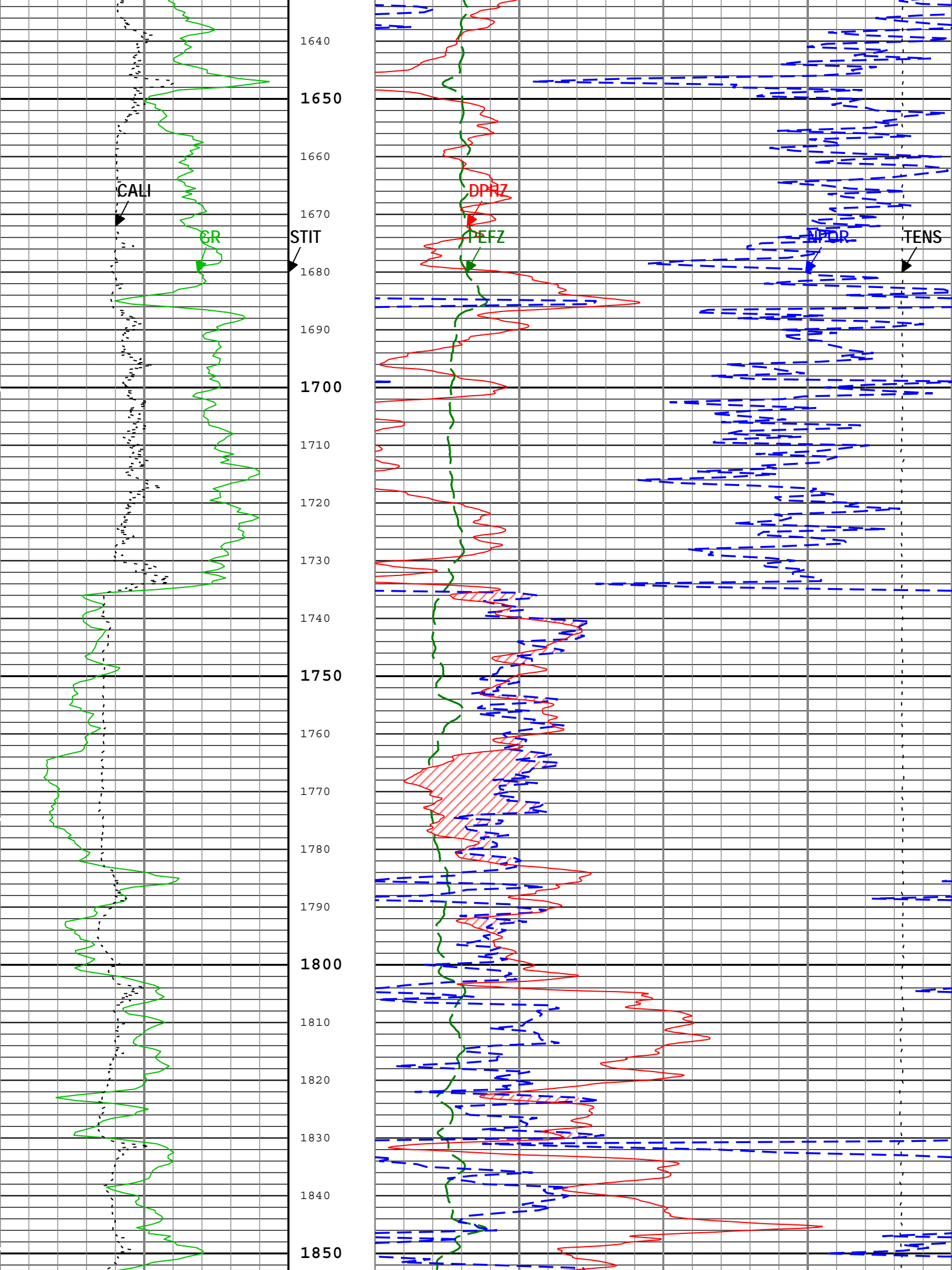


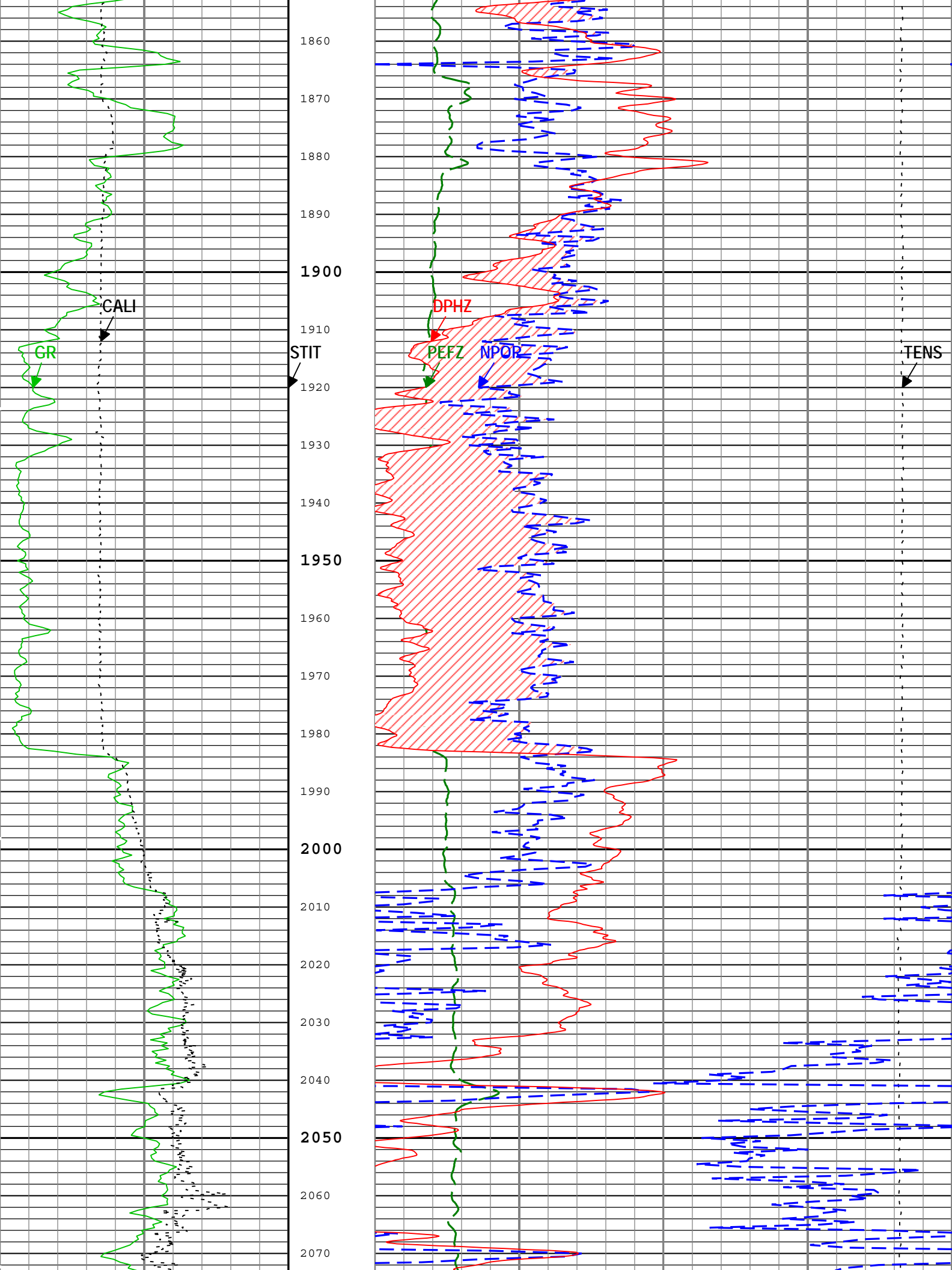


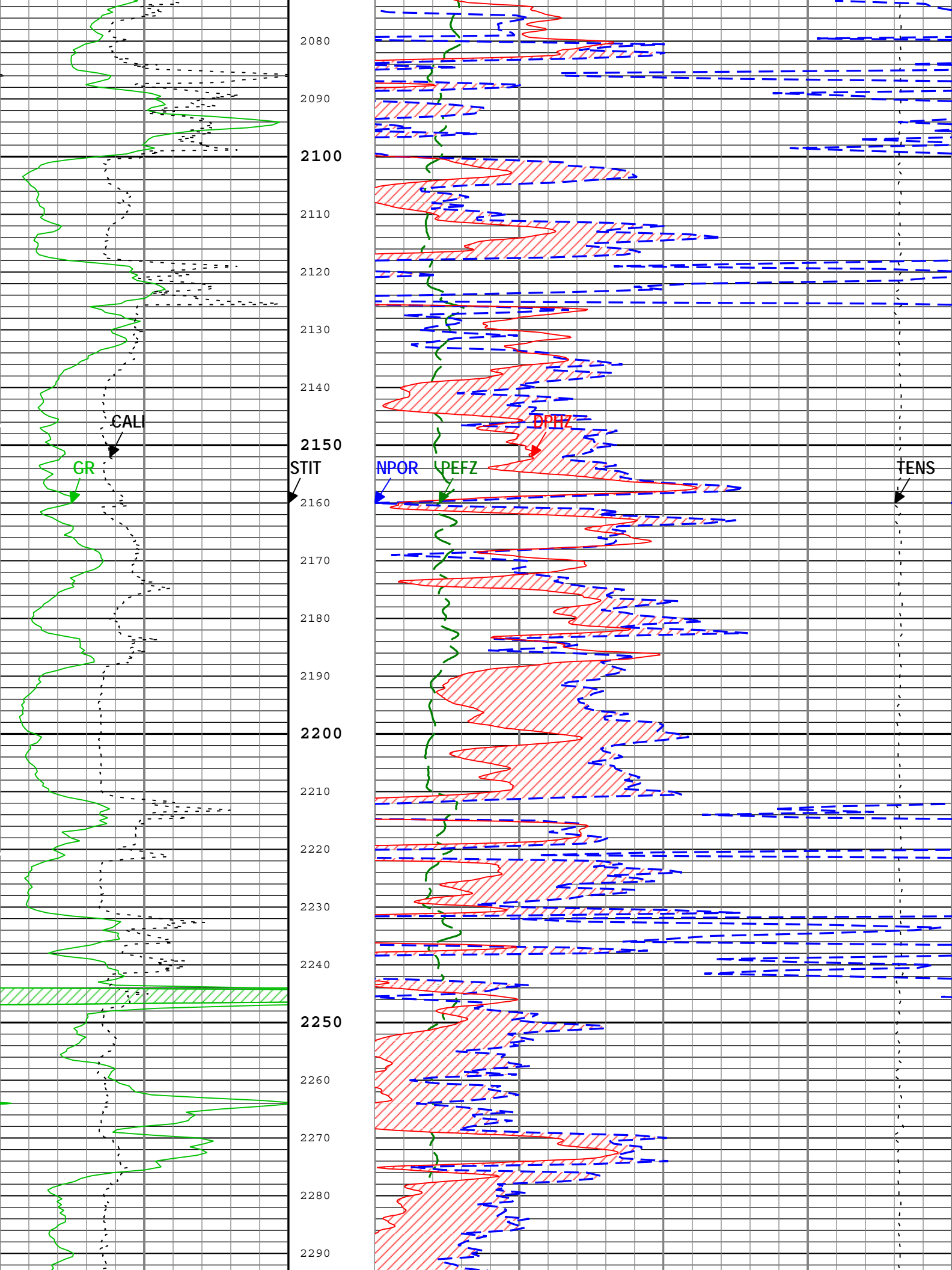


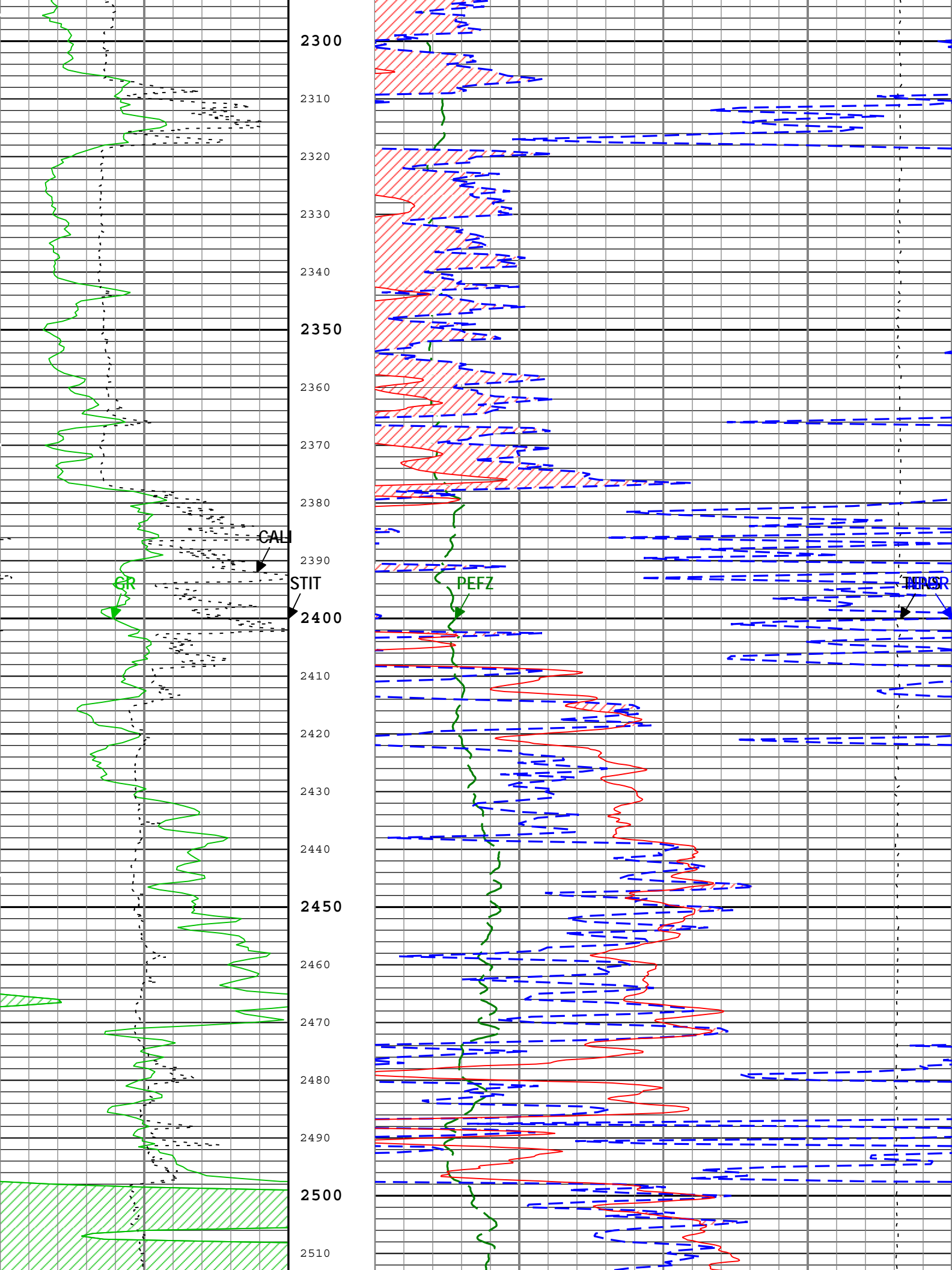


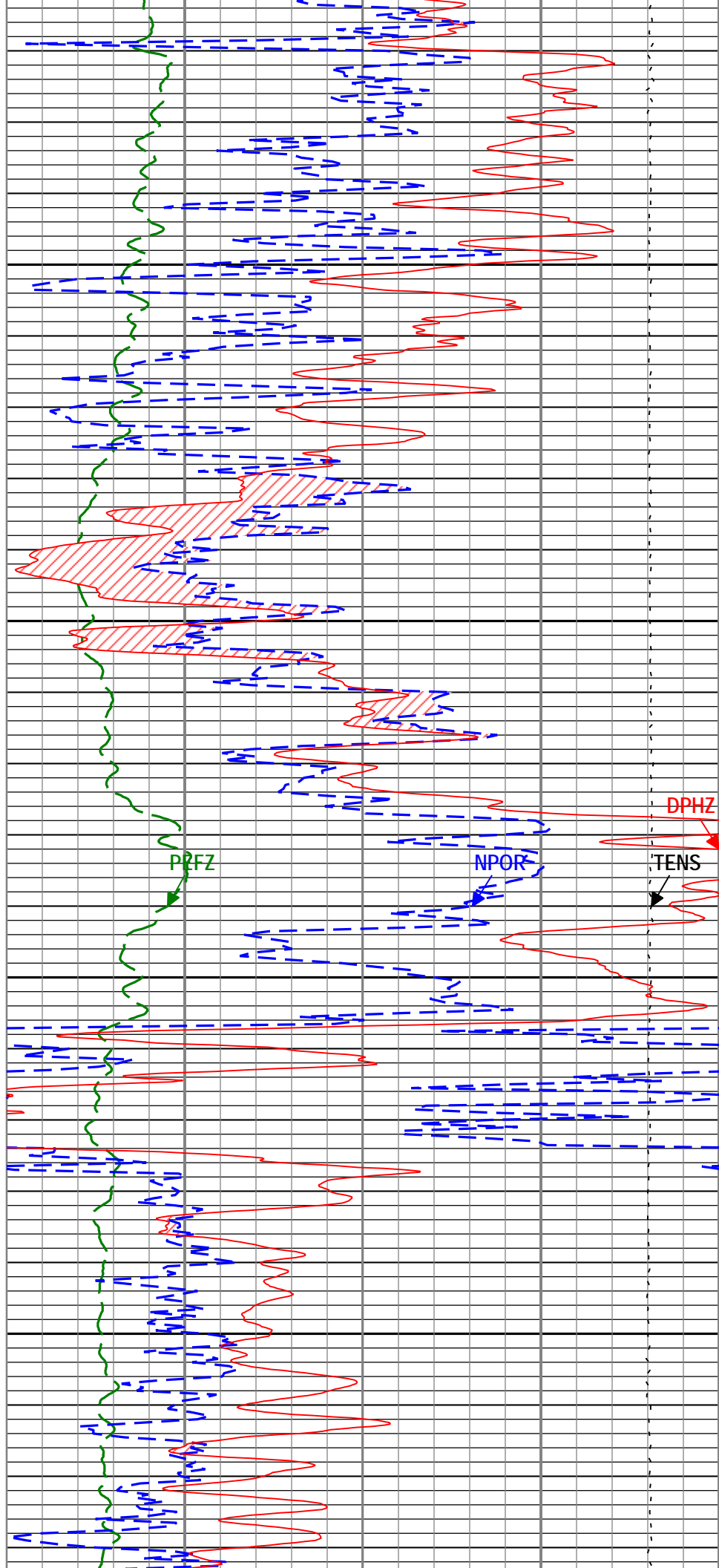
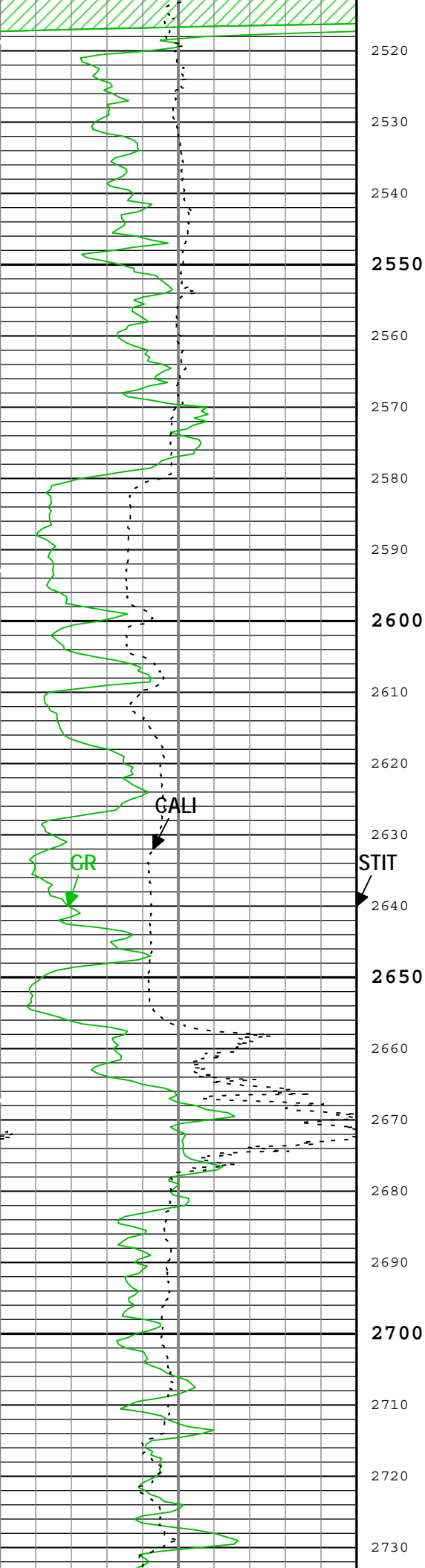




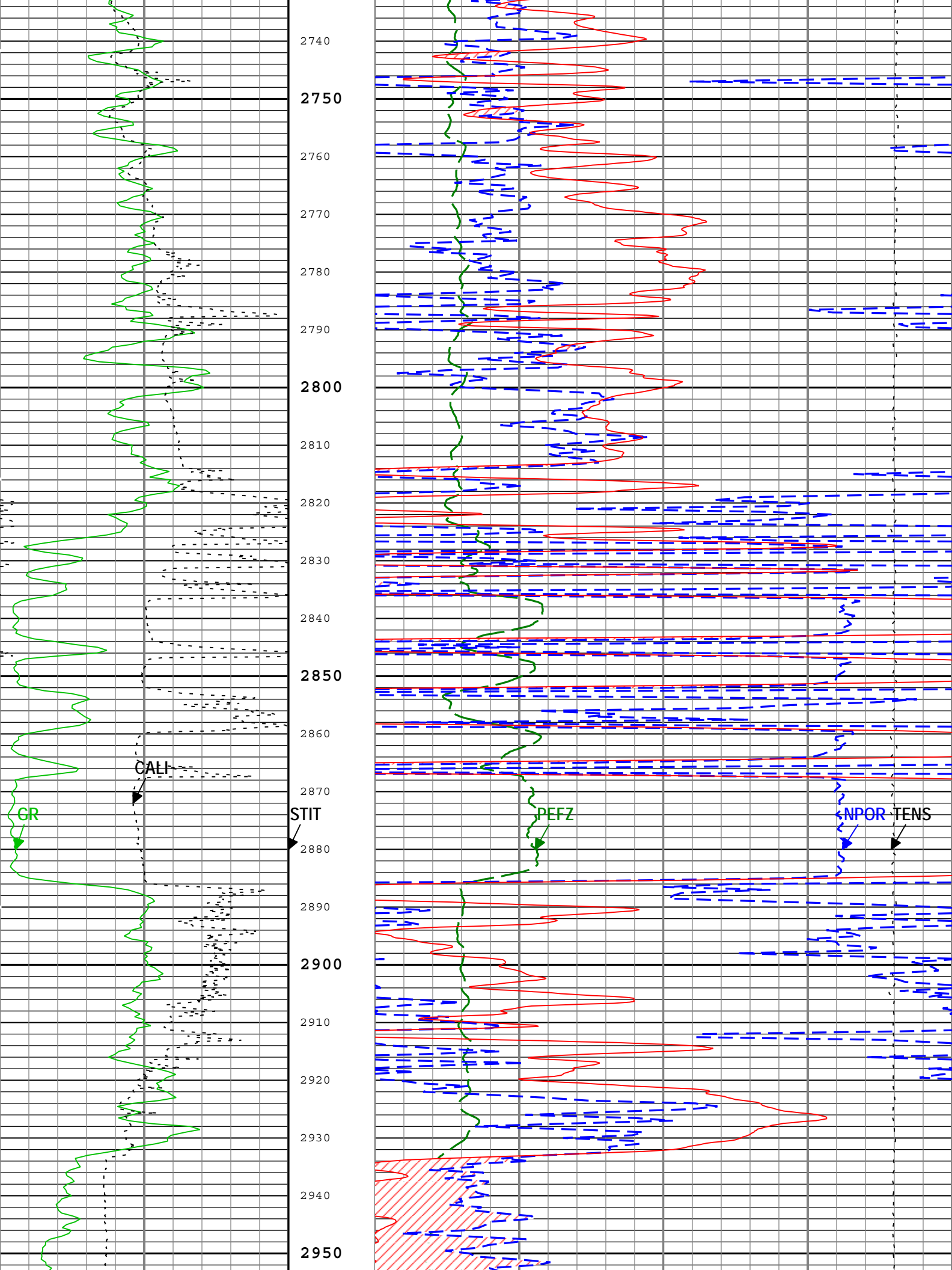


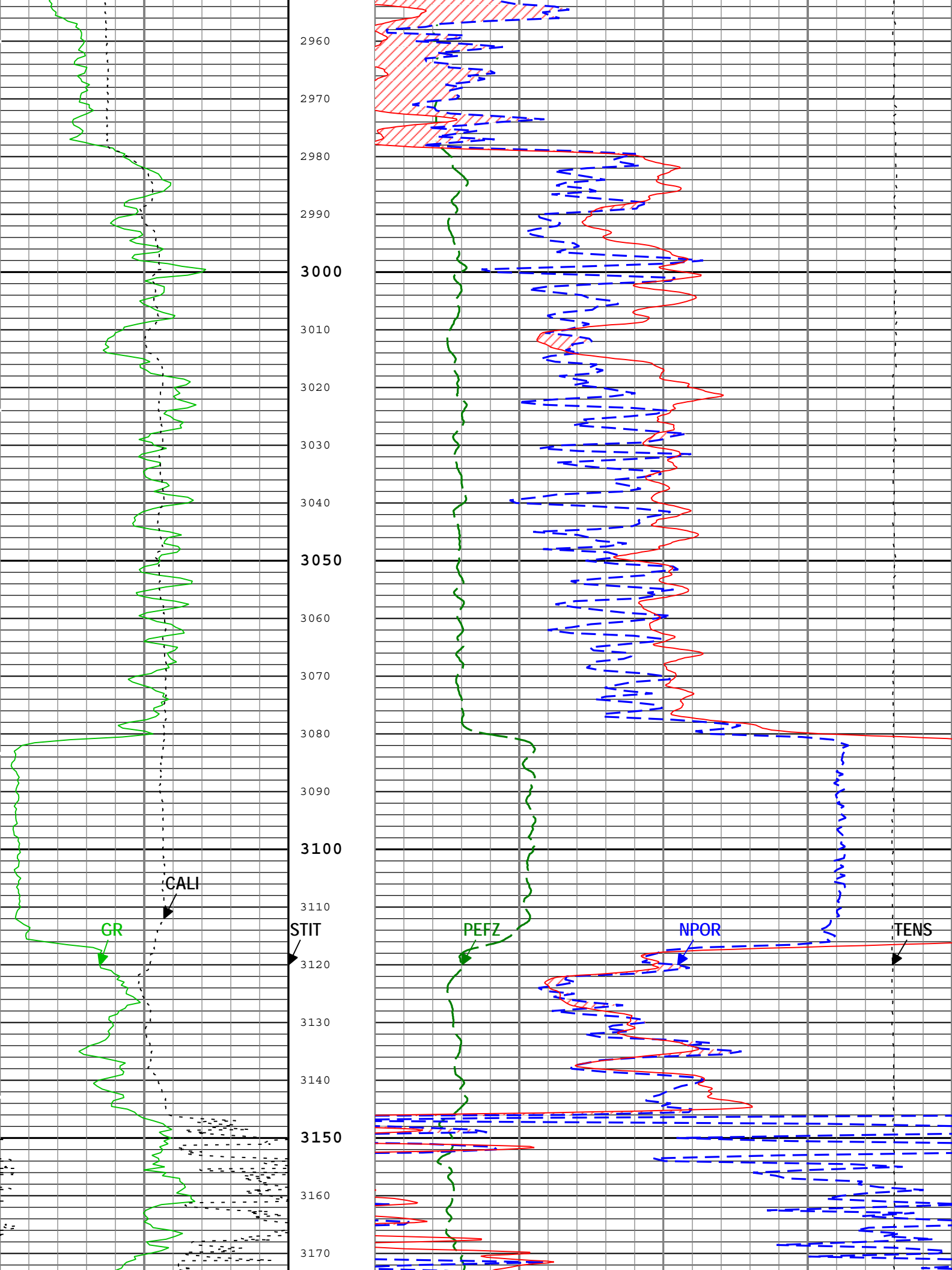


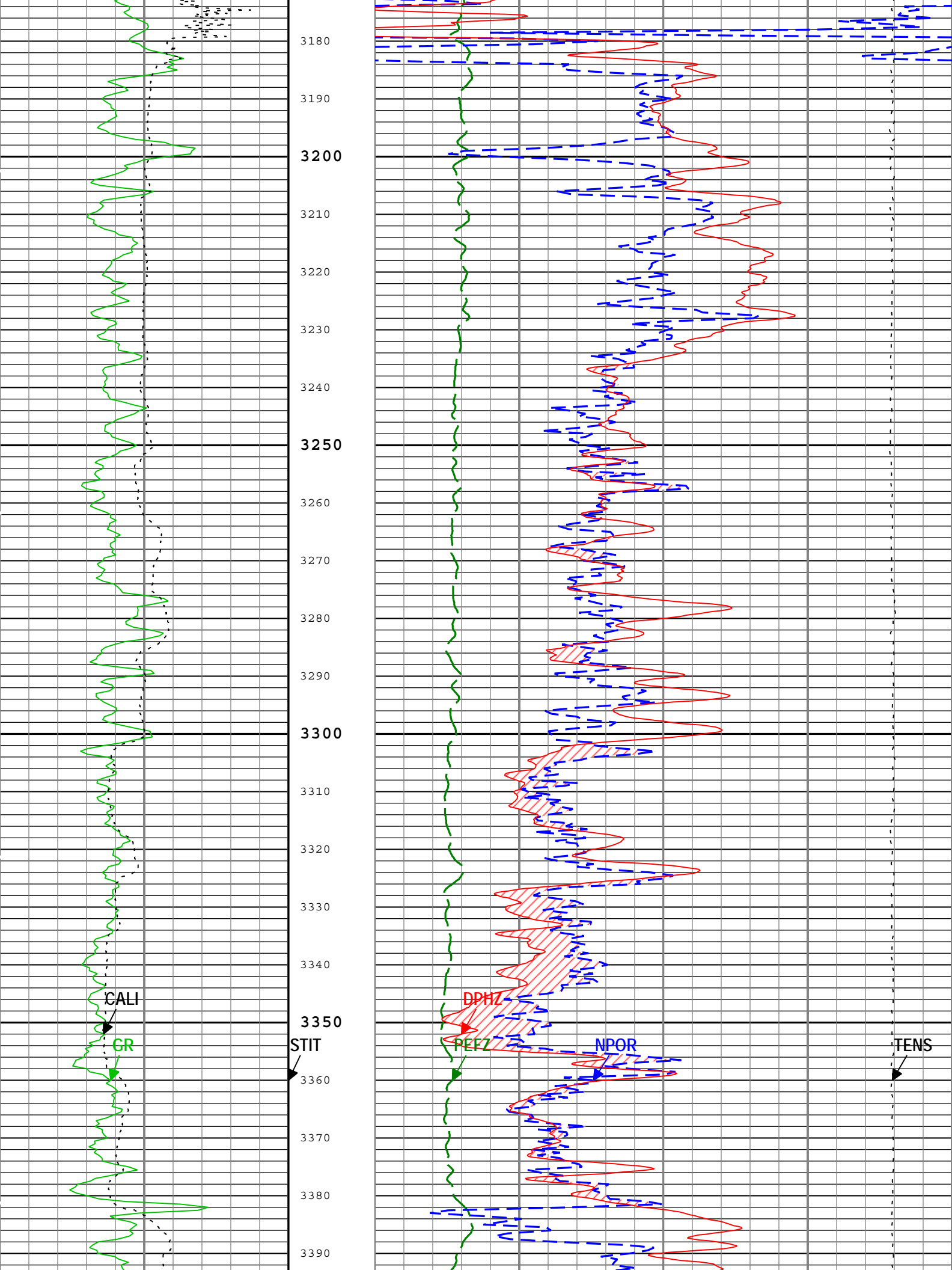


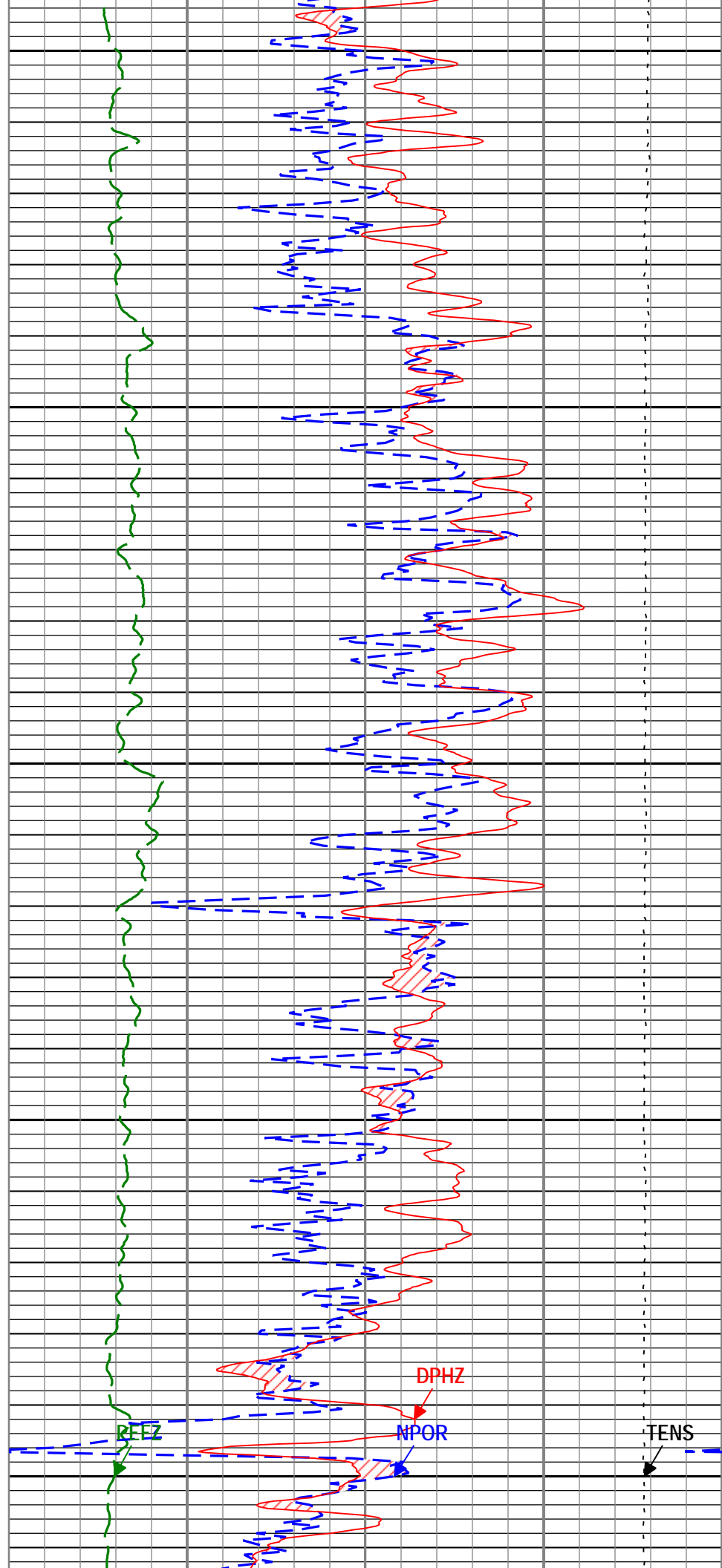
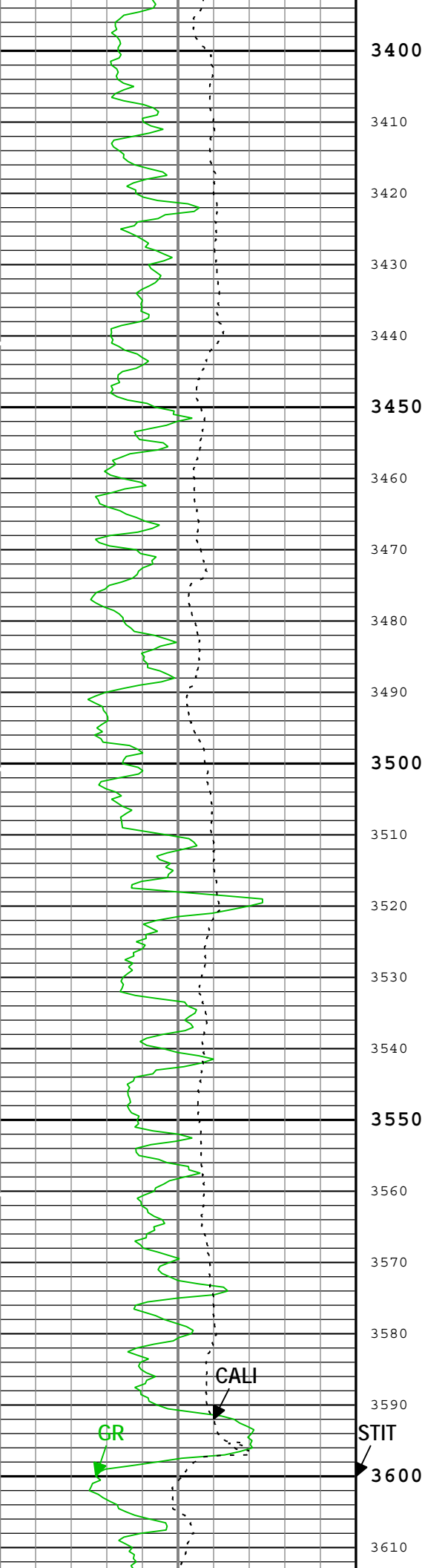


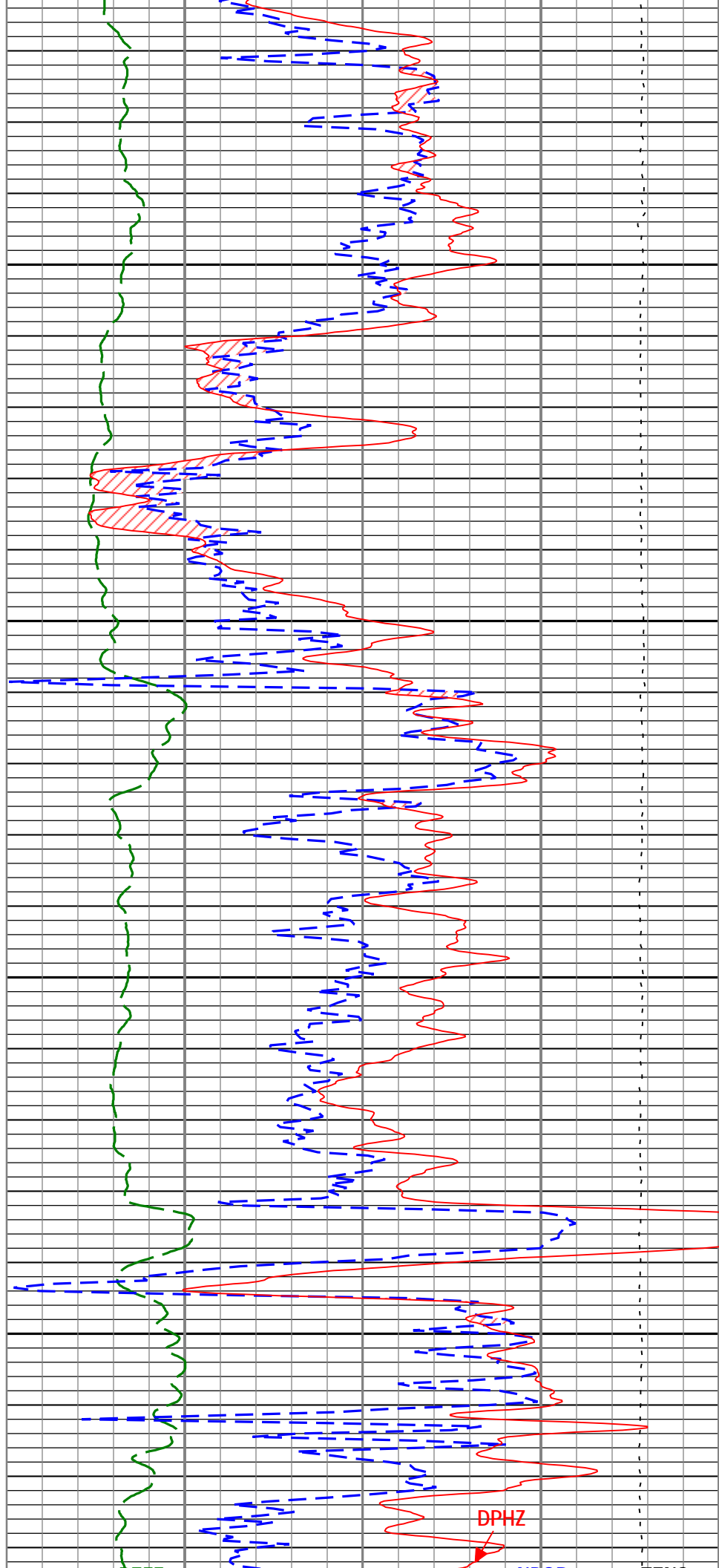
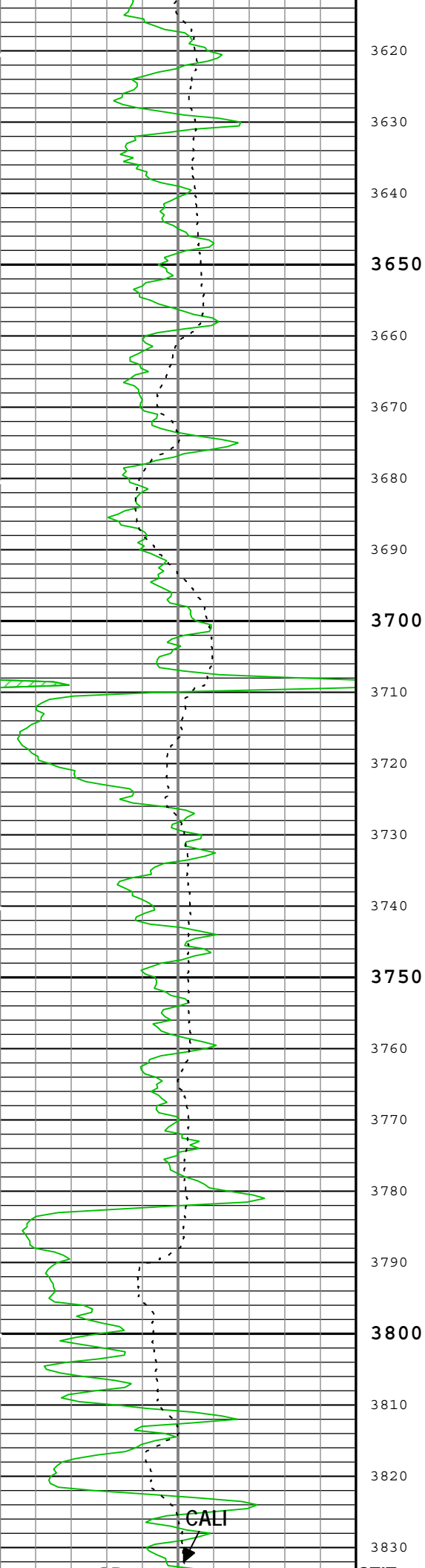


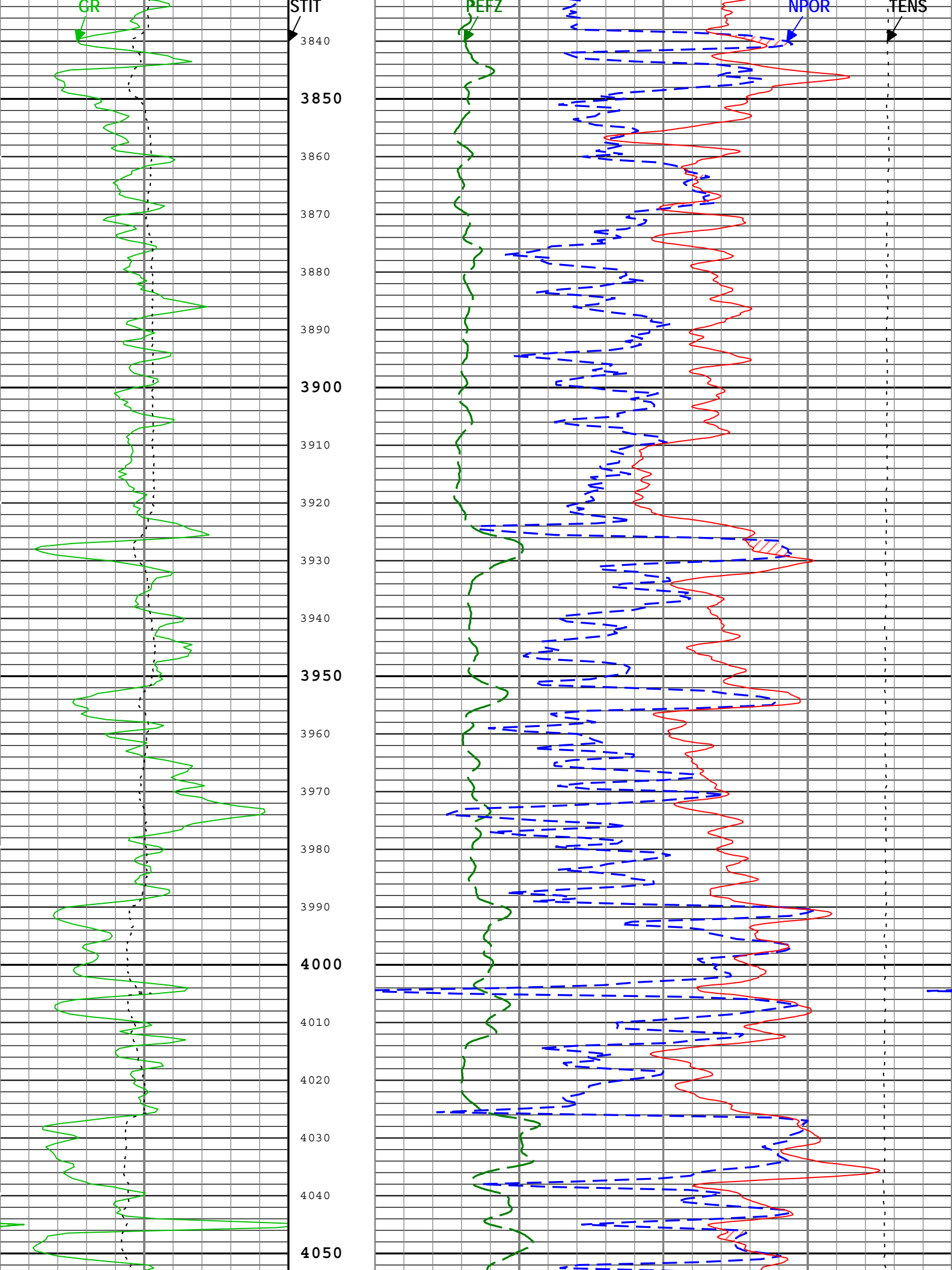


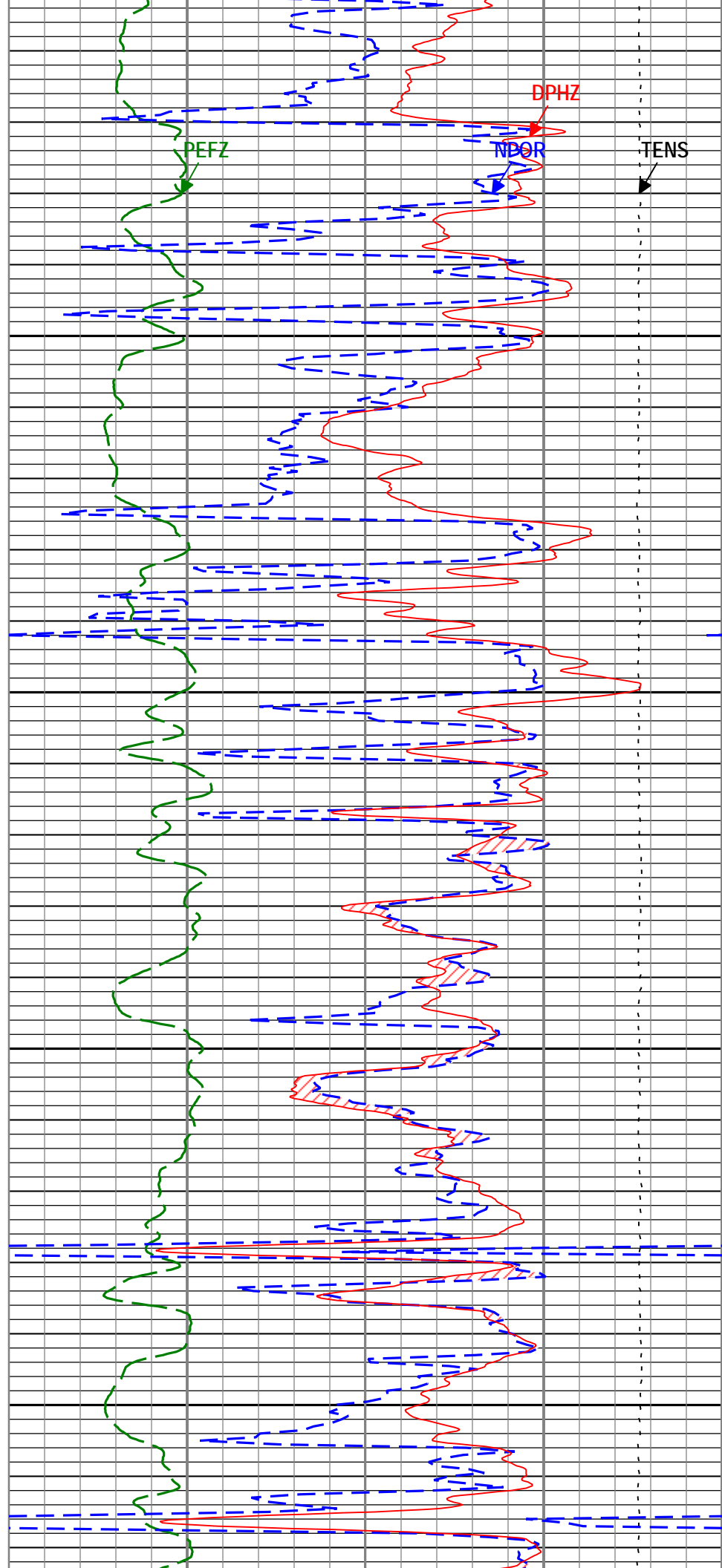
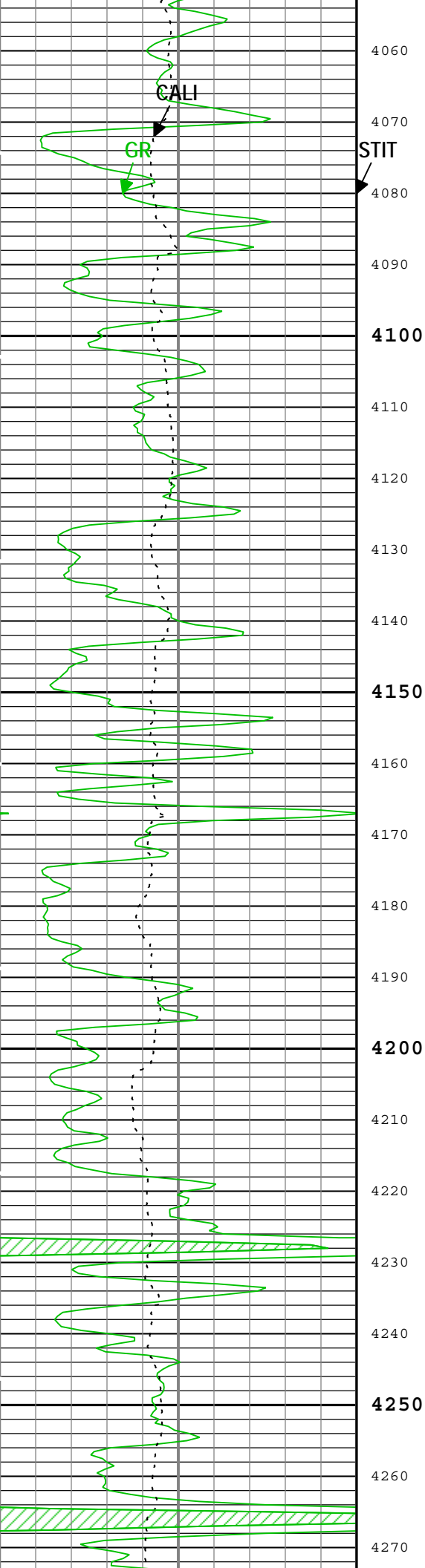


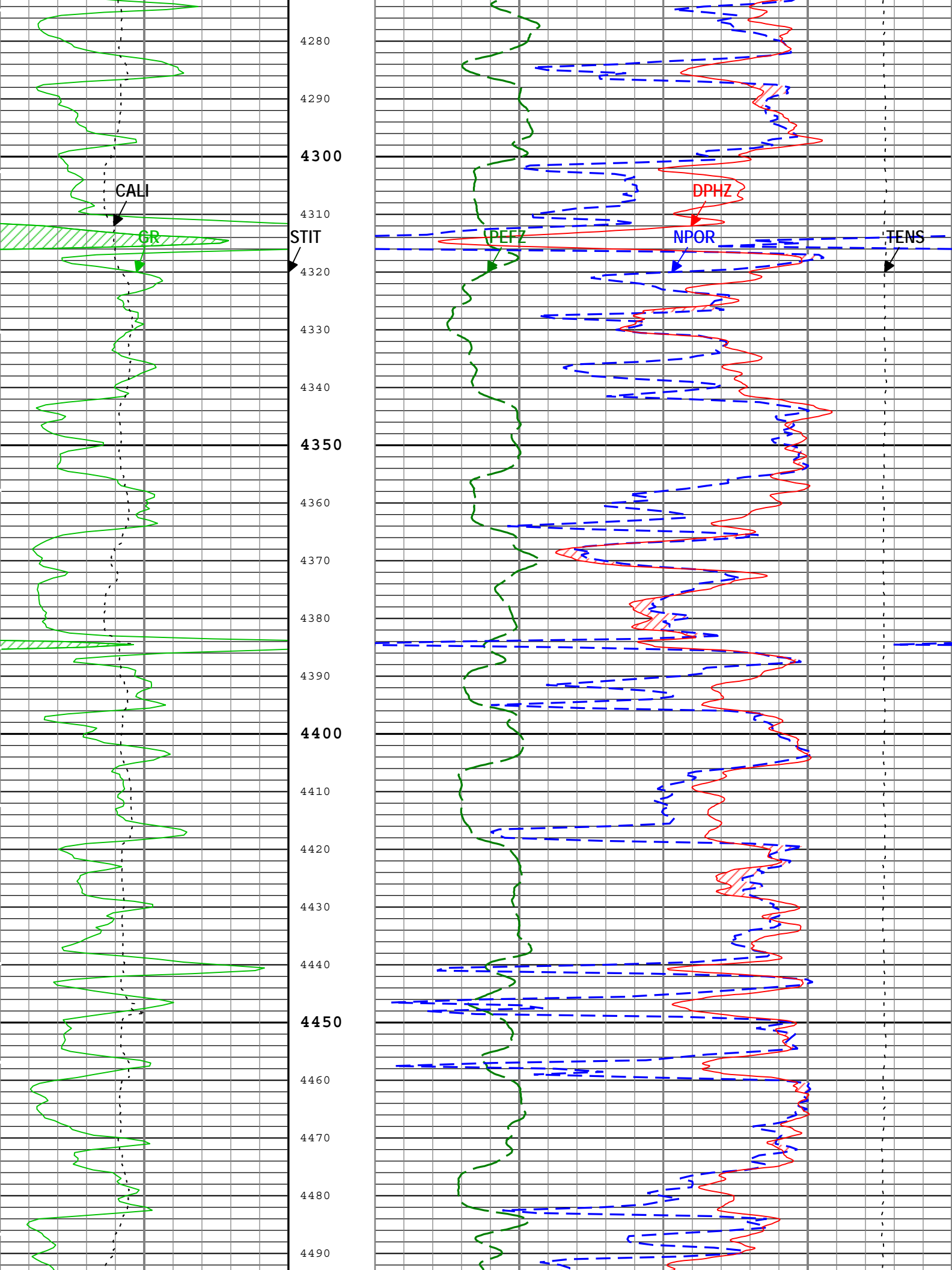




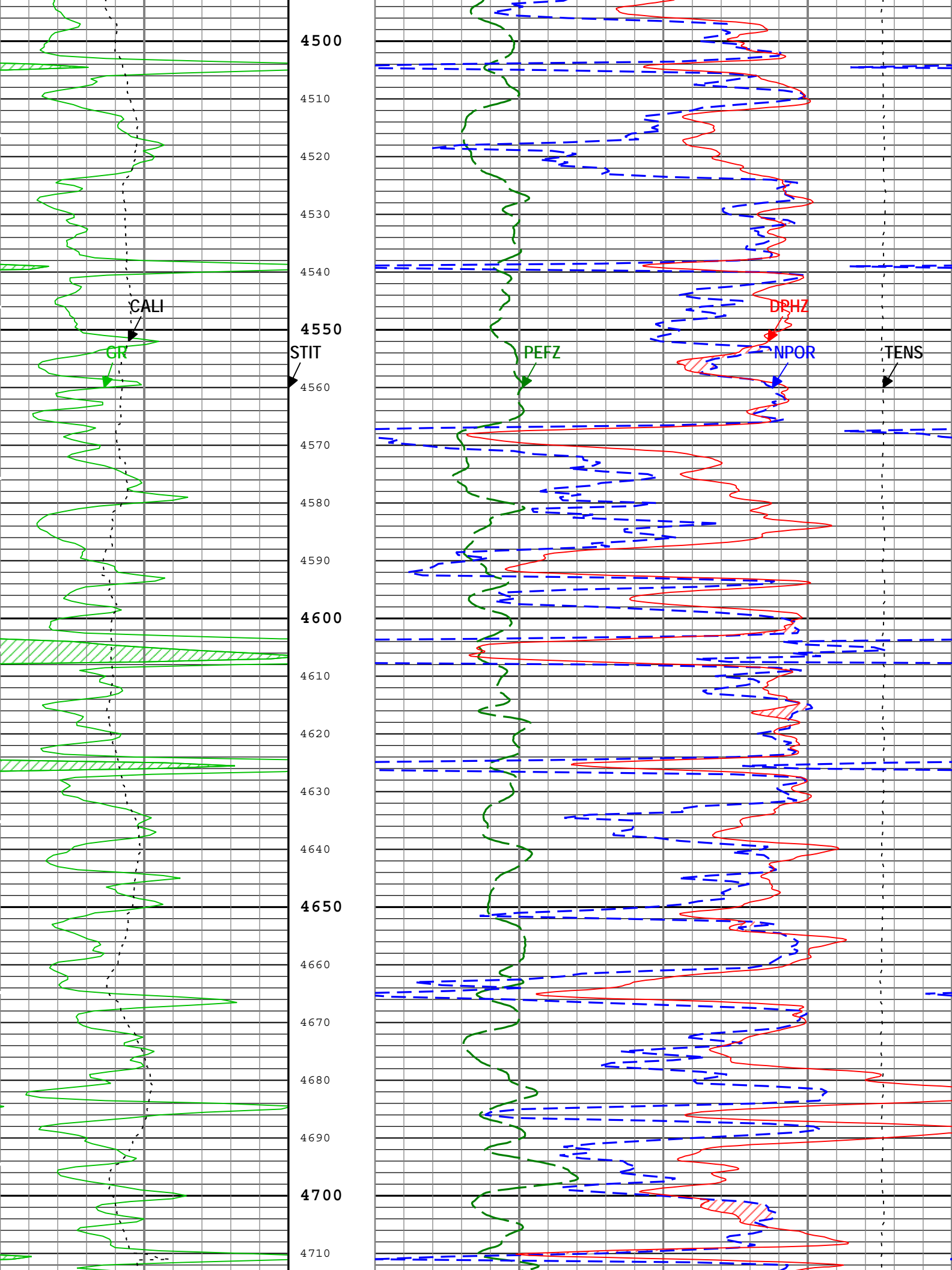


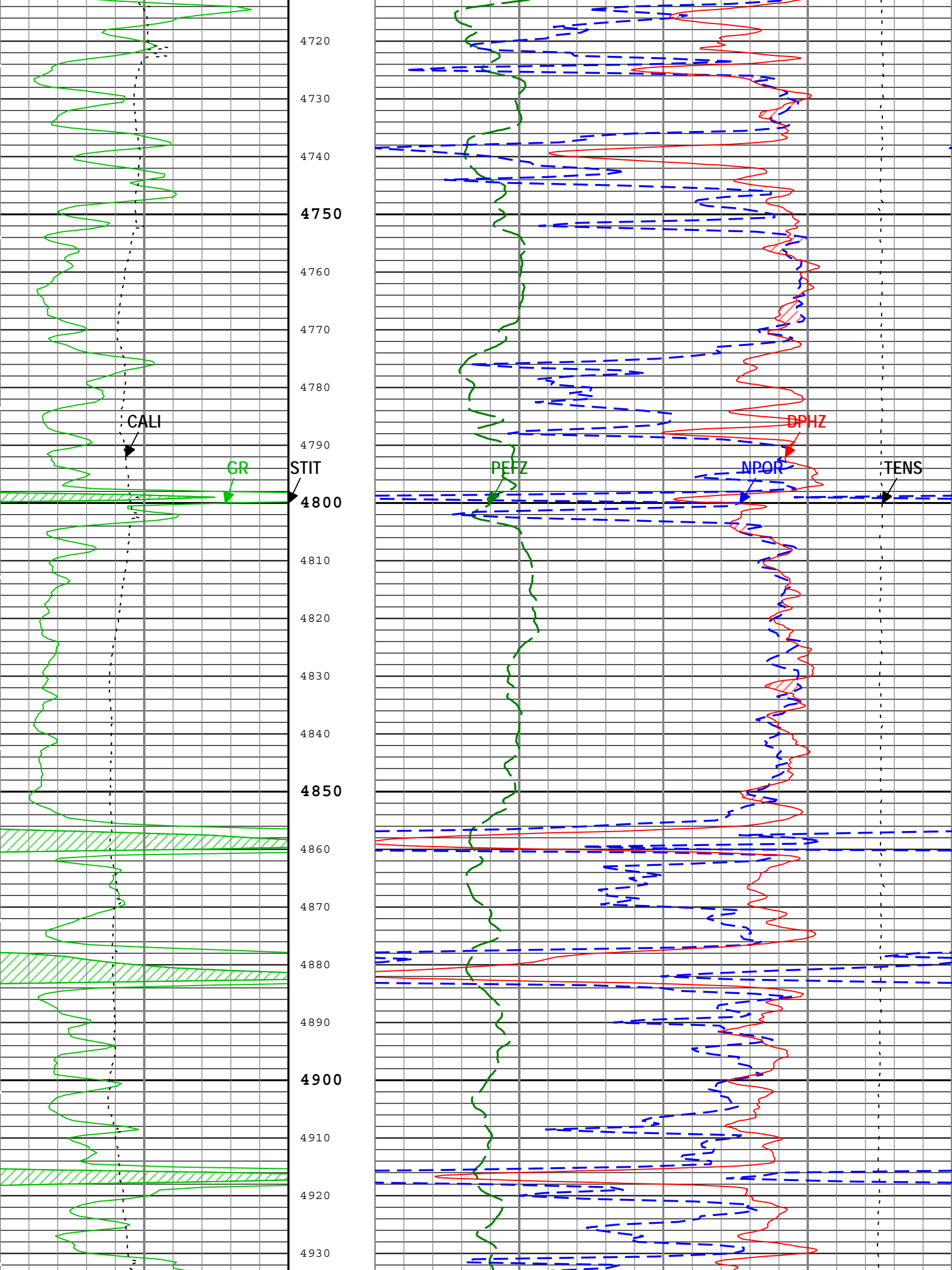


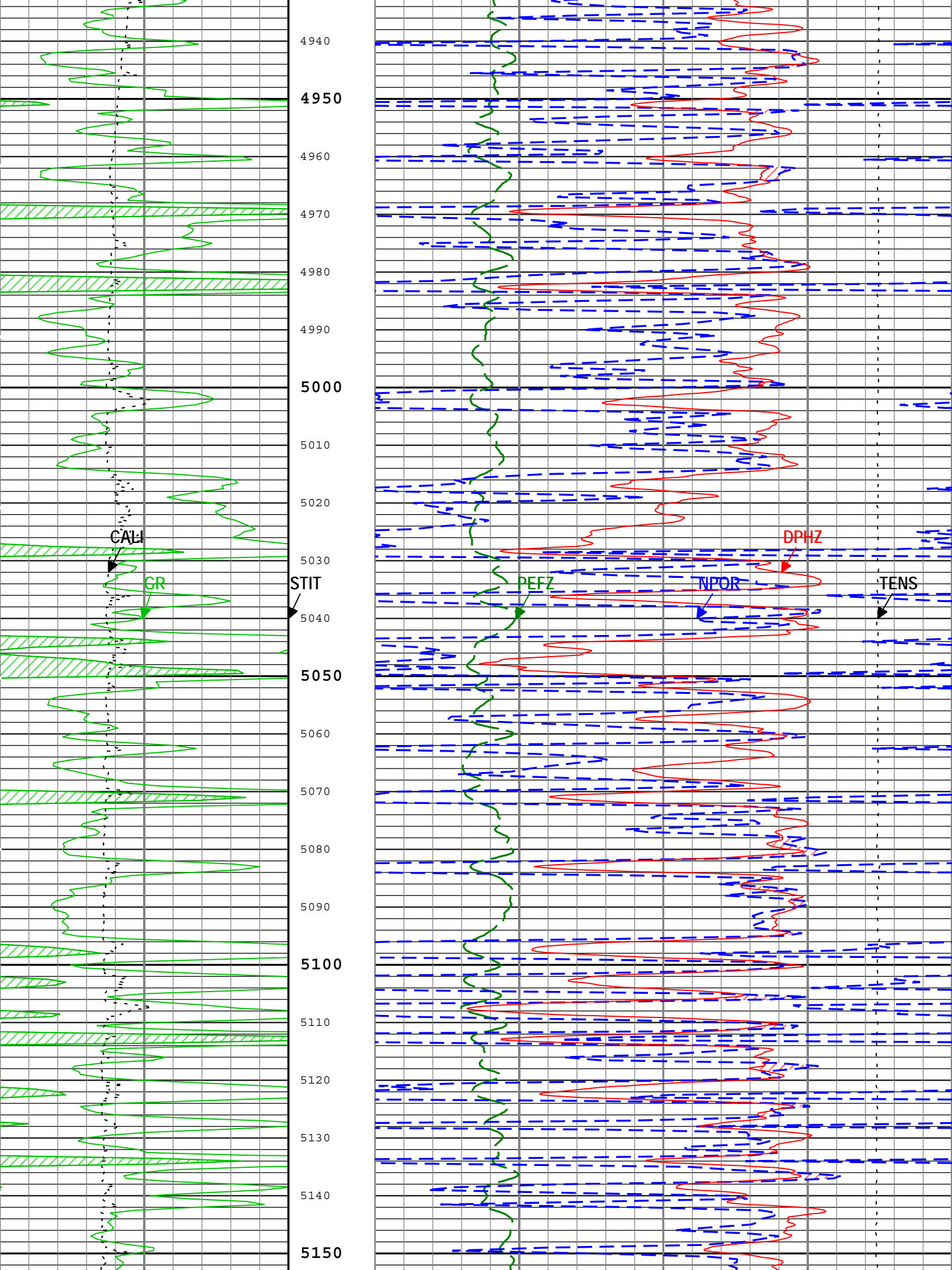


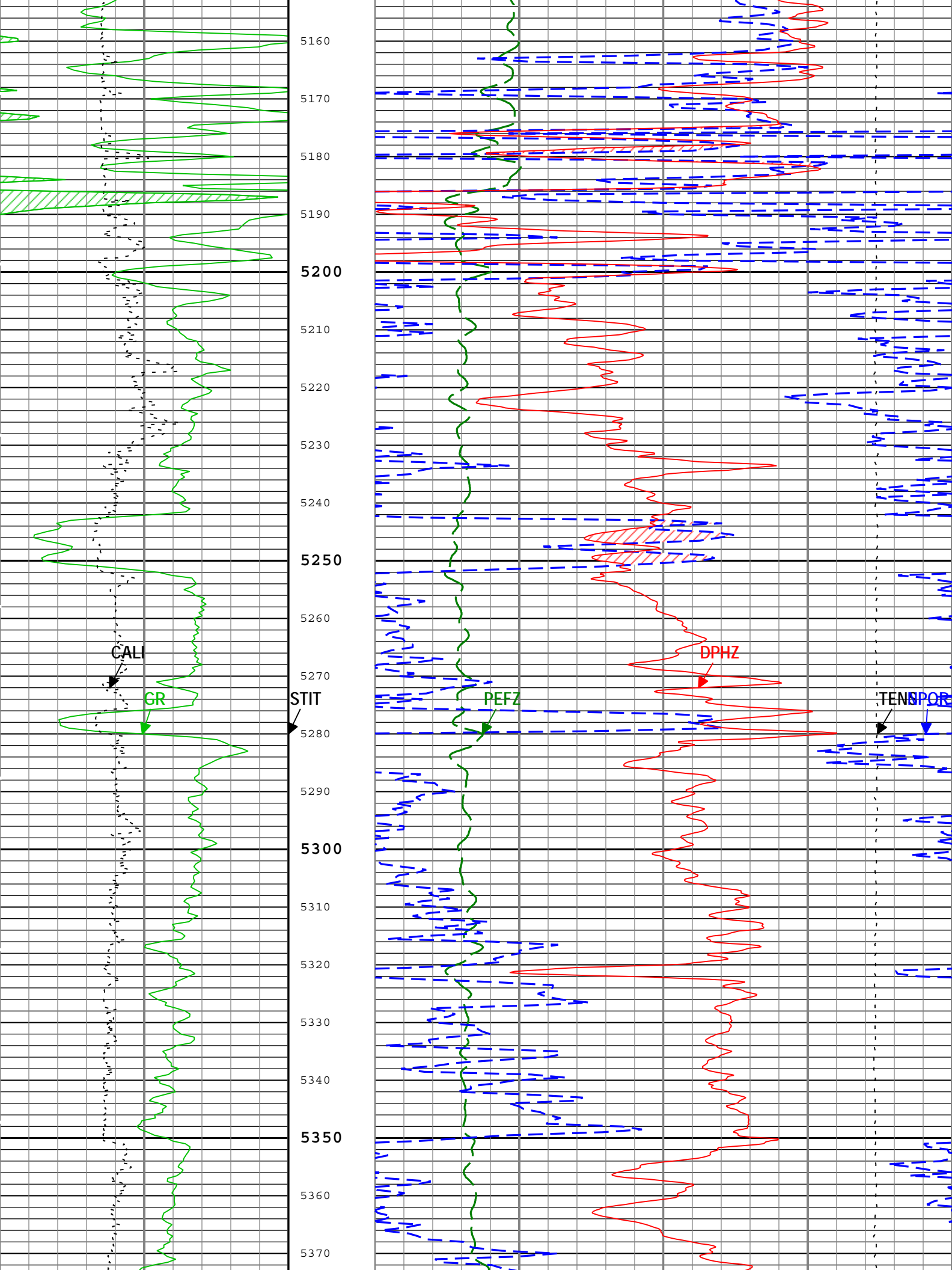


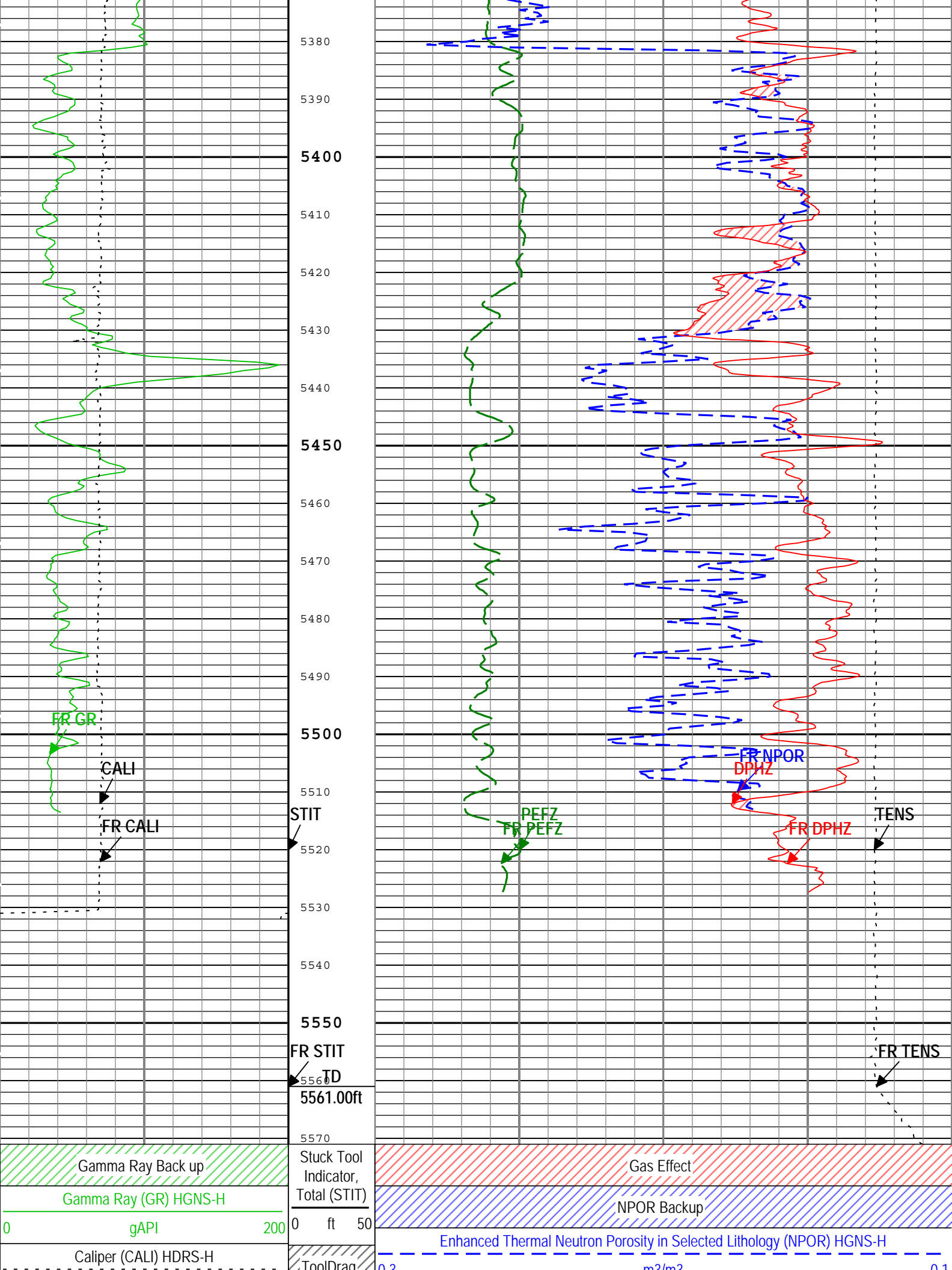












4	in	14	0.3	ft3/ft3	-0.1
Standard Resolution Density Porosity (DPHZ) HDRS-H					
0.3			ft3/ft3		-0.1
Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H			Cable Tension (TENS)		
0			10000	lbf	0
TIME_1900 - Time Marked every 60.00 (s)					
Description: HGNS standard resolution porosities for Platform Express    Format: Log ( EMD 5in Porosity )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 11-Dec-2012 18:56:38					
Channel Processing Parameters					
Parameter	Description	Tool	Value	Unit	
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	4092.61	ppm	
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	-0.005	in	
CBLO	Casing Bottom (Logger)	WLSESSION	441	ft	
CDEN	Cement Density	HGNS-H	2	g/cm3	
DFD	Drilling Fluid Density	Borehole	9.3	lbm/gal	
DFT	Drilling Fluid Type	Borehole	Water		
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	REMS		
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	68	degF	
MST	Mud Sample Temperature	Borehole	90.6	degF	
NPRM	HRDD Nuclear Processing Mode	HDRS-H	High Resolution		
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.84	ohm.m	
RMS	Resistivity of Mud Sample	Borehole	1.12	ohm.m	
SOCO	Standoff Correction Option	HGNS-H	Yes		
TD	Total Measured Depth	Borehole	5561	ft	
Depth Zone Parameters					
Parameter	Value	Start ( ft )	Stop ( ft )		
BS	0	400	441		
BS	7.875	441	5571		
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	1800	ft/h	
PEX-AIT					

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
PEX-AIT	Log[2]:Up	Up	5215.32 ft	5572.13 ft	11-Dec-2012 4:35:33 PM	11-Dec-2012 4:47:42 PM	5.00 ft	
PEX-AIT	Log[3]:Up	Up	365.61 ft	5571.09 ft	11-Dec-2012 4:54:22 PM	11-Dec-2012 6:41:38 PM	5.00 ft	

All depths are referenced to toolstring zero

Log

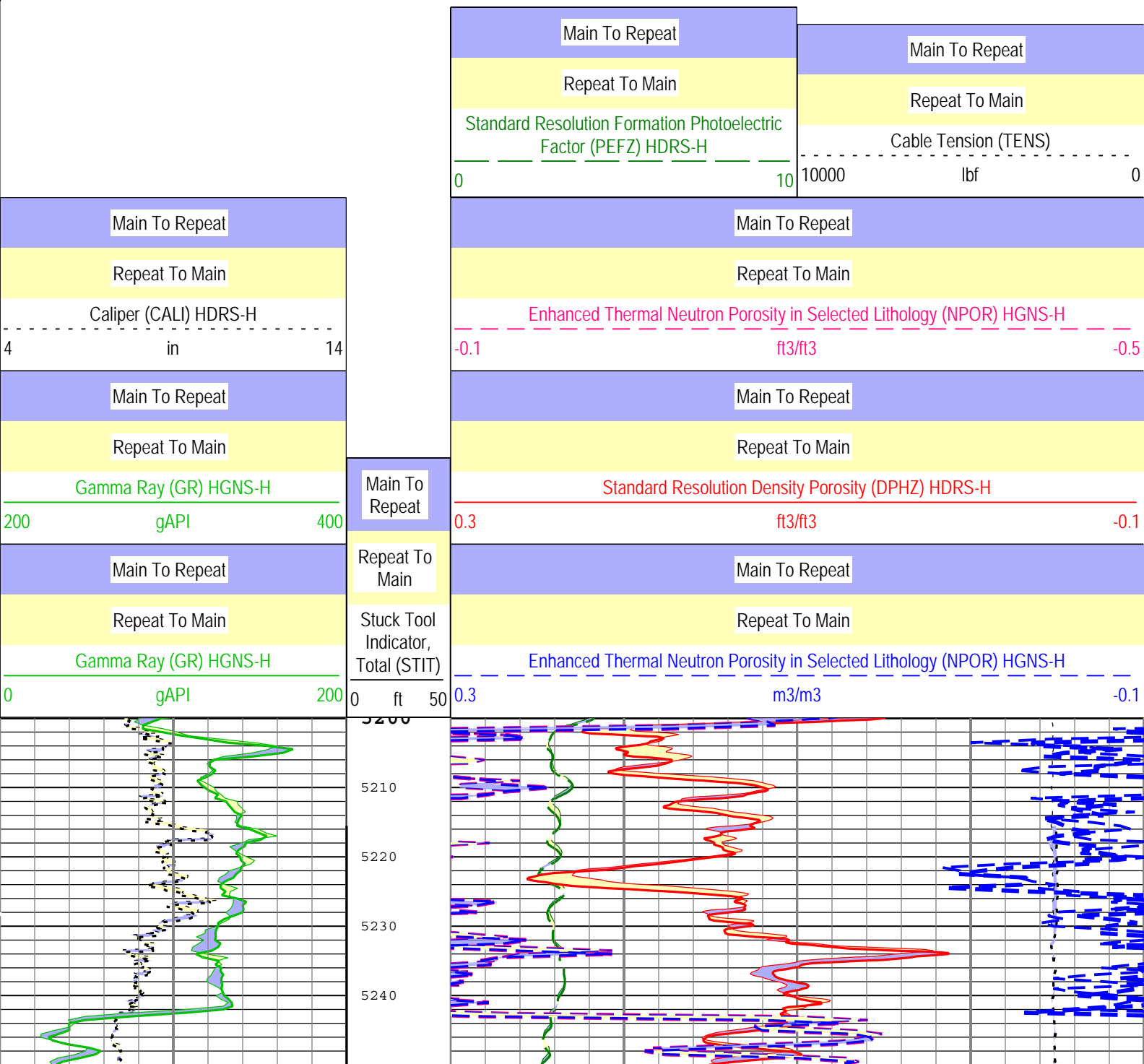
PEX-AIT: Log[3]:Up

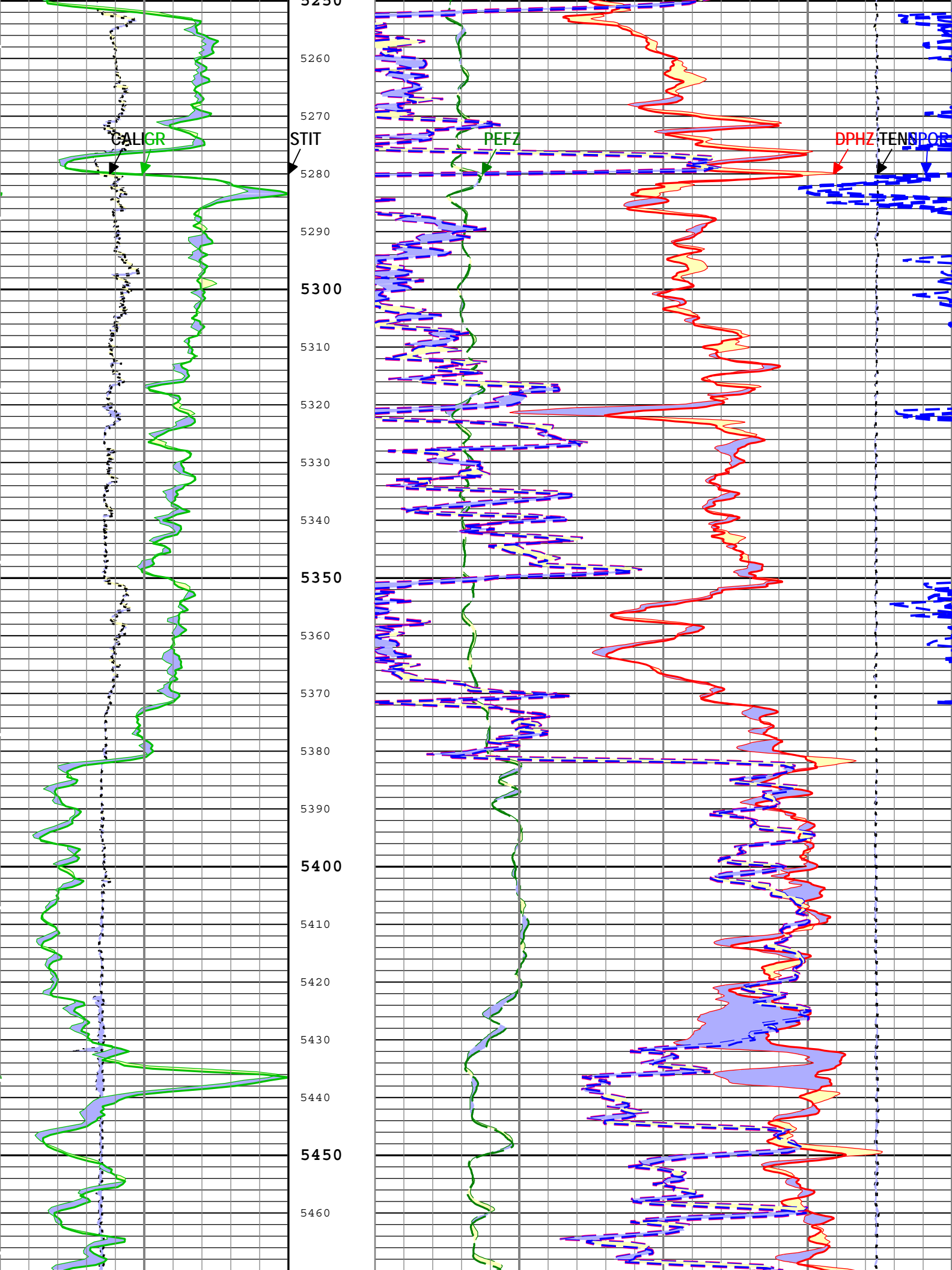
Description: HGNS standard resolution porosities for Platform Express    Format: EMD 5in Porosity RA    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 11-Dec-2012 18:56:41

Channel      Source      Sampling

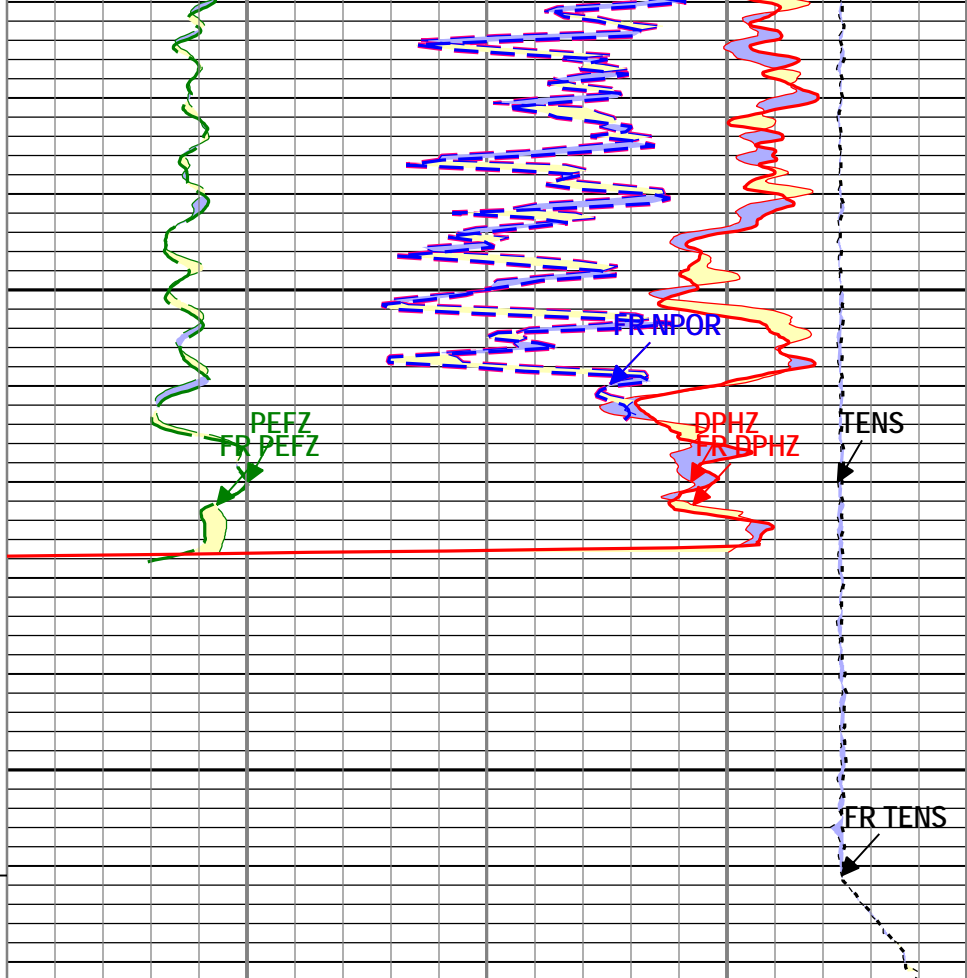
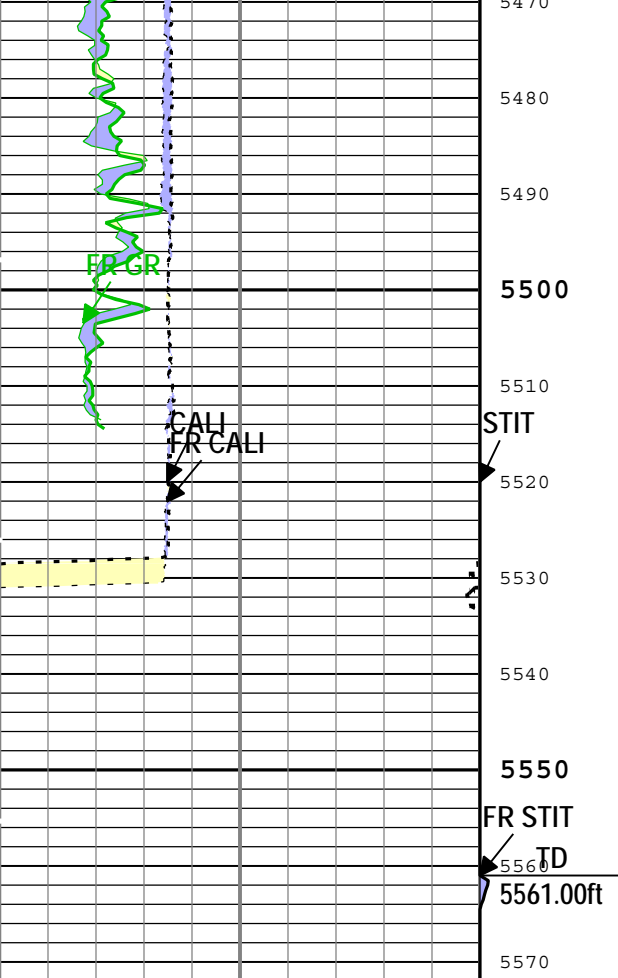
TIME\_1900    WLWorkflow    0.1in

TIME\_1900 - Time Marked every 60.00 (s)









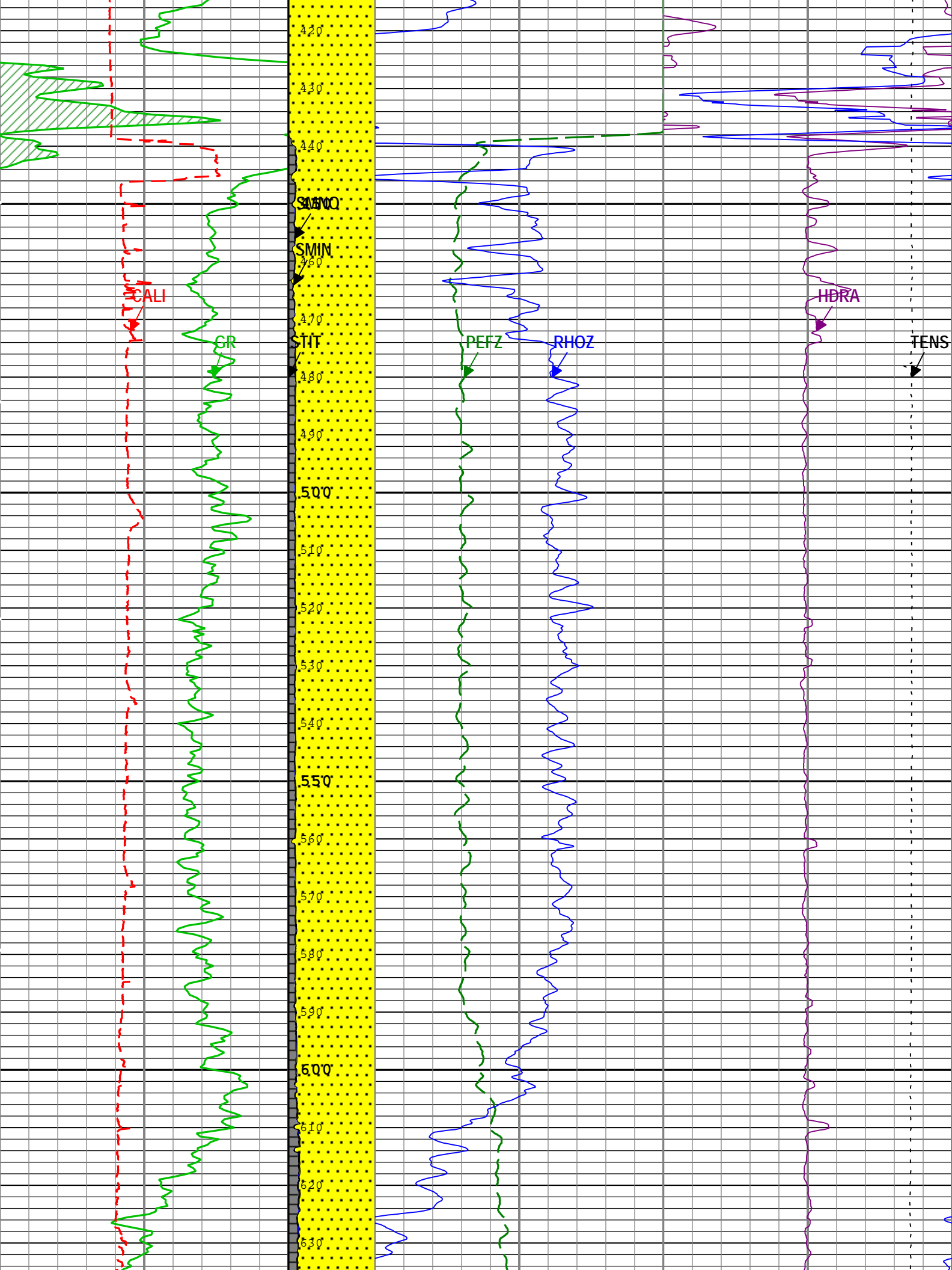
Main To Repeat	Main To Repeat
Repeat To Main	Repeat To Main
Caliper (CALI) HDRS-H	Stuck Tool Indicator, Total (STIT)
4 in 14	0 ft 50
Main To Repeat	
Repeat To Main	
Gamma Ray (GR) HGNS-H	
200 gAPI 400	
Main To Repeat	
Repeat To Main	
Gamma Ray (GR) HGNS-H	
0 gAPI 200	

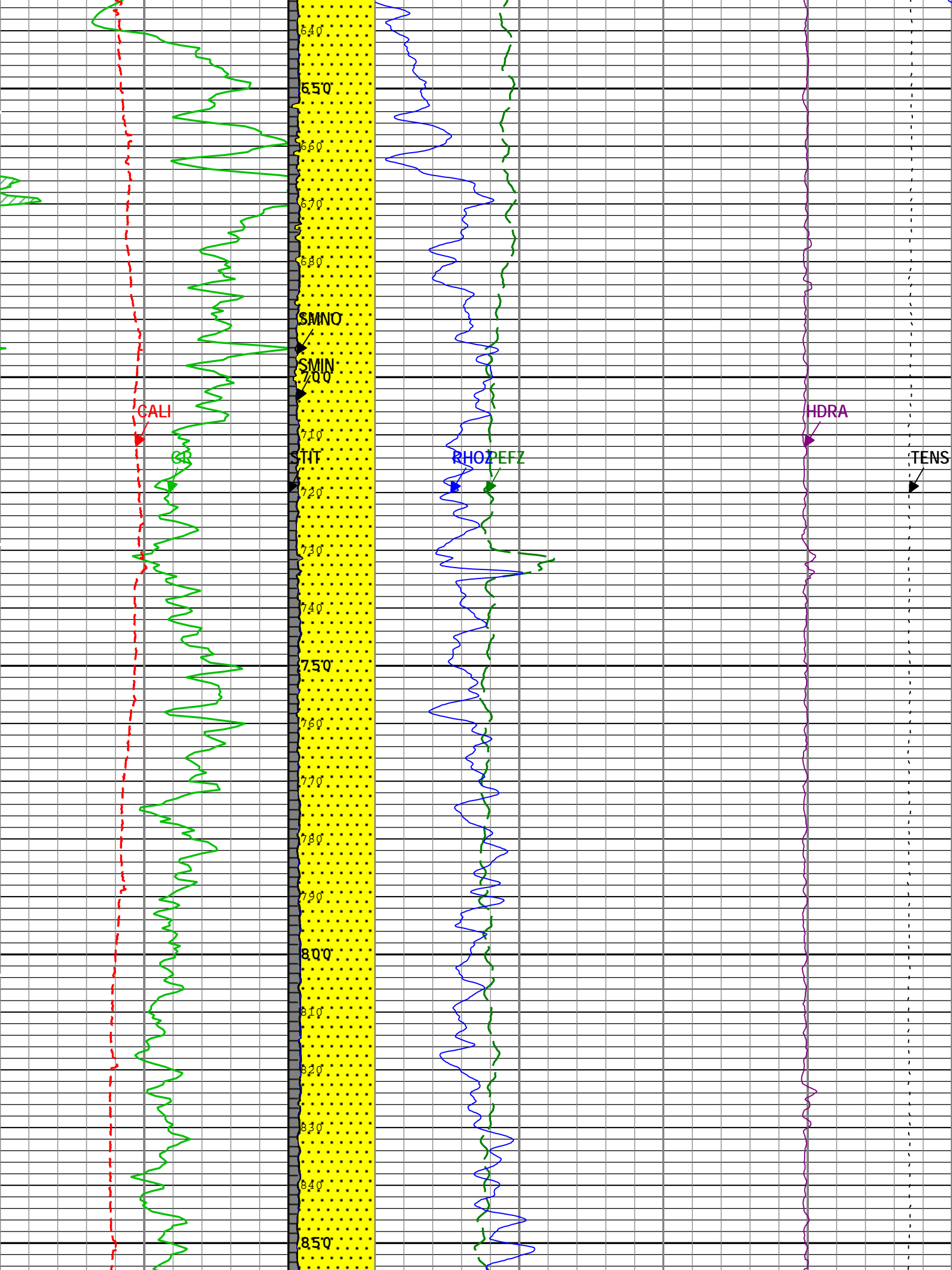
Main To Repeat	Main To Repeat
Repeat To Main	Repeat To Main
Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H	
-0.1 ft3/ft3 -0.5	
Main To Repeat	Main To Repeat
Repeat To Main	Repeat To Main
Standard Resolution Density Porosity (DPHZ) HDRS-H	
0.3 ft3/ft3 -0.1	
Main To Repeat	Main To Repeat
Repeat To Main	Repeat To Main
Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H	
0.3 m3/m3 -0.1	
Main To Repeat	Main To Repeat
Repeat To Main	Repeat To Main
Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H	Cable Tension (TENS)
0 10	10000 lbf 0

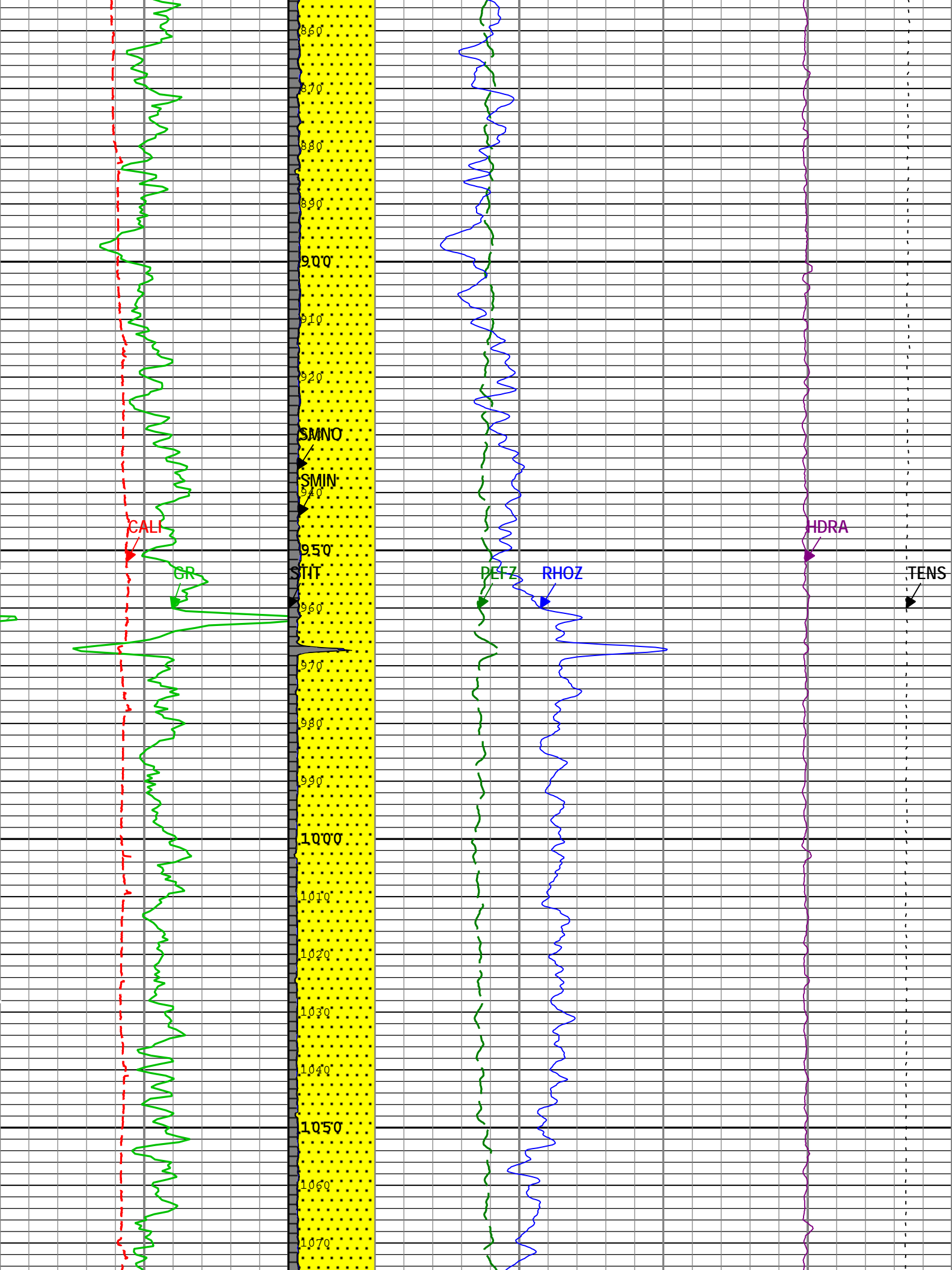
TIME\_1900 - Time Marked every 60.00 (s)

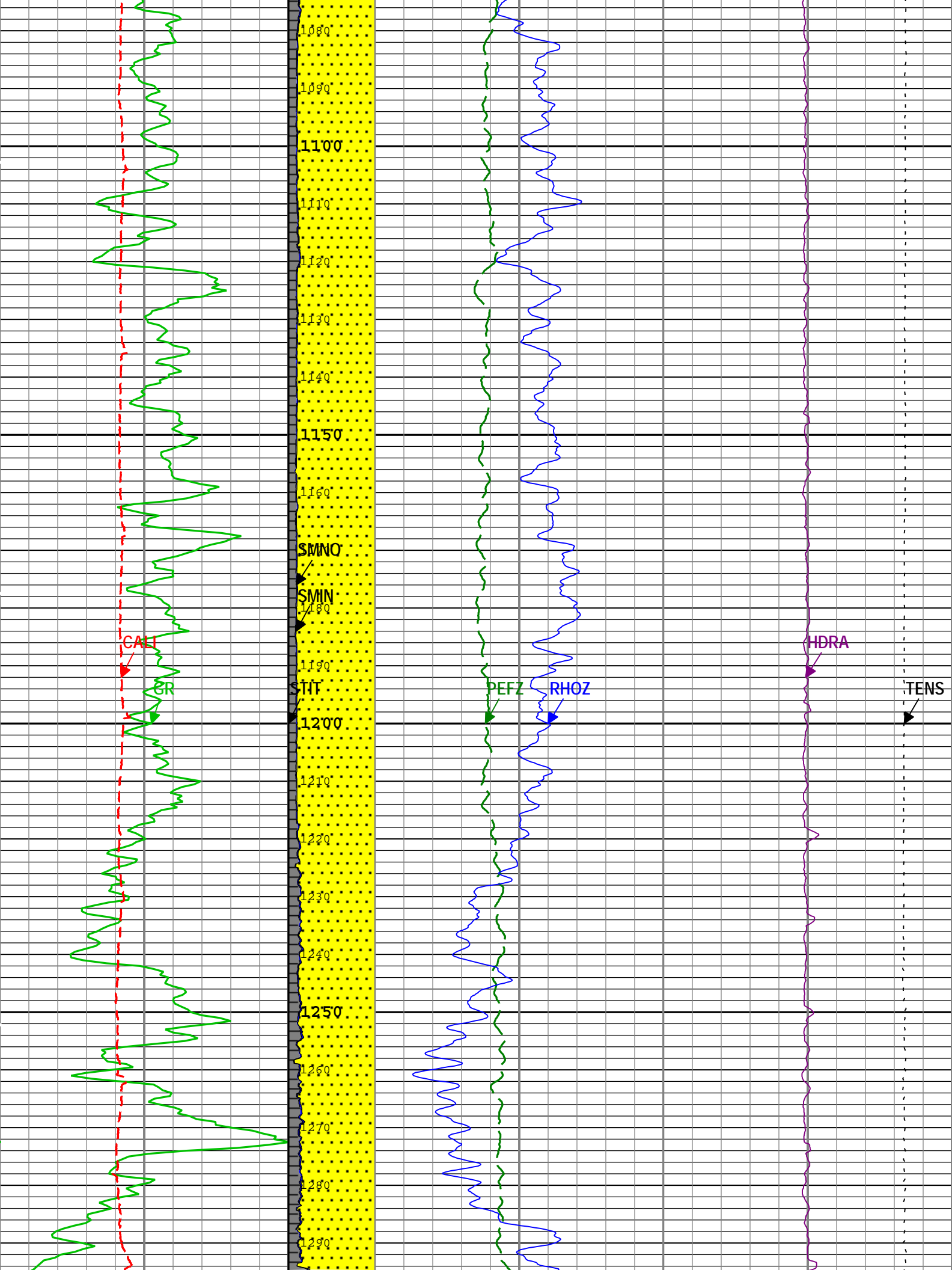
Description: HGNS standard resolution porosities for Platform Express Format: EMD 5in Porosity RA Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 11-Dec-2012 18:56:41

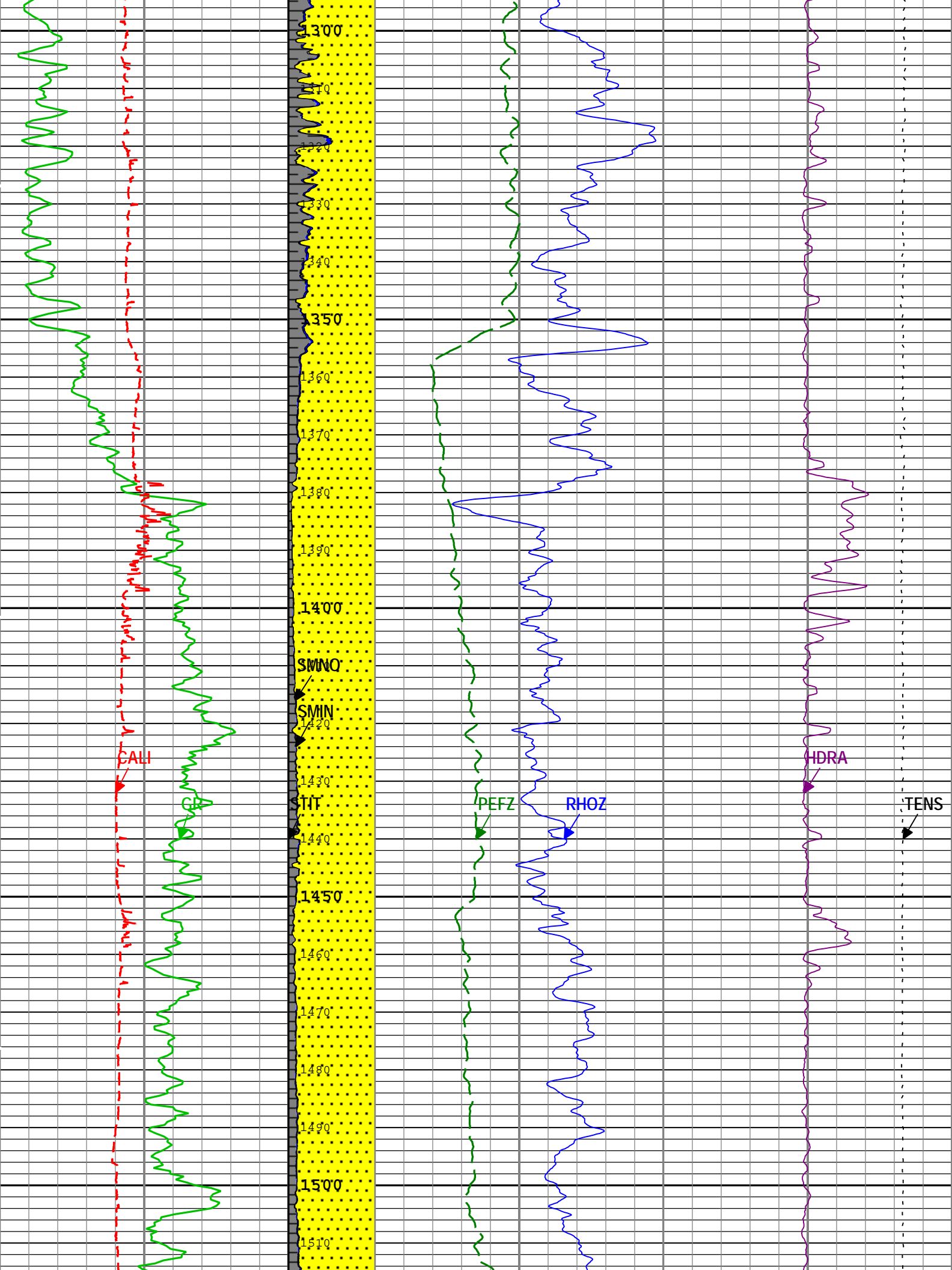
PEX-AIT									
5" Density									
Integration Summary									
Output Channel(s)		Output Description		Input Parameter		Output Value		Unit	
Software Version									
Acquisition System						Version			
MaxWell						3.1.9755.0			
Application Patch						SP-20120723-3.1.9755.1112			
						EXP_APL-MASTAXIS-3.1.9755.1221			
Computation		Description					Version		
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		
HRGD-H		HILT Resistivity Gamma-Ray Density Device, 150 degC			3.1.9755.0		3.0		
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data	
PEX-AIT	Log[3]:Up	Up	365.61 ft	5571.09 ft	11-Dec-2012 4:54:22 PM	11-Dec-2012 6:41:38 PM	5.00 ft		
All depths are referenced to toolstring zero									
Log									
PEX-AIT: Log[3]:Up									
Description: HGNS standard resolution porosities for Platform Express    Format: Log ( EMD 5in Density )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 11-Dec-2012 18:56:42									
Channel	Source		Sampling						
CALI	HDRS-H:HRCC-H:HRCC-H		1in						
GR	HGNS-H:HGNS-H:HGNS-H		6in						
HDRA	HDRS-H:HRMS-H:HRGD-H		2in						
PEFZ	HDRS-H:HRMS-H:HRGD-H		2in						
RHOZ	HDRS-H:HRMS-H:HRGD-H		2in						
SMIN	HDRS-H:HRMS-H:HRGD-H		2in						
SMNO	HDRS-H:HRMS-H:HRGD-H		2in						
STIT	DepthCorrection		6in						
TENS	WLWorkflow		6in						
TIME_1900	WLWorkflow		0.1in						
TIME_1900 - Time Marked every 60.00 (s)									
			LIME						
			SAND						
Gamma Ray Backup			SHALE			Cable Tension (TENS)			
Gamma Ray (GR) HGNS-H			Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H			10000                      lbf                      0			
0                      gAPI                      200			Stuck Tool Indicator, Total (STIT)			Density Standoff Correction (HDRA) HDRS-H			
4                      in                      14			0                      ft                      50			-0.25                      g/cm3                      0.25			
						Standard Resolution Formation Density (RHOZ) HDRS-H			
						2                      g/cm3                      3			

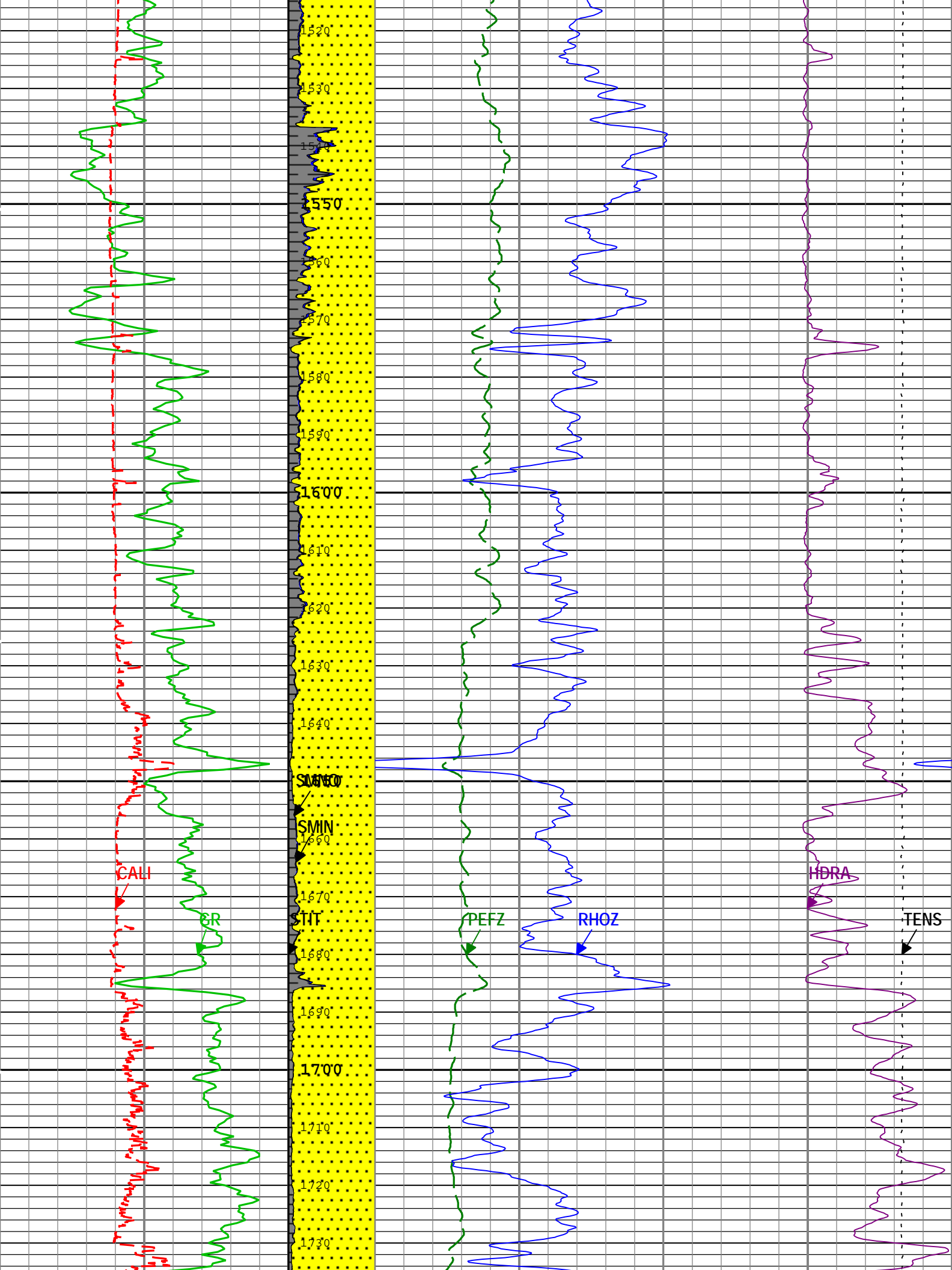




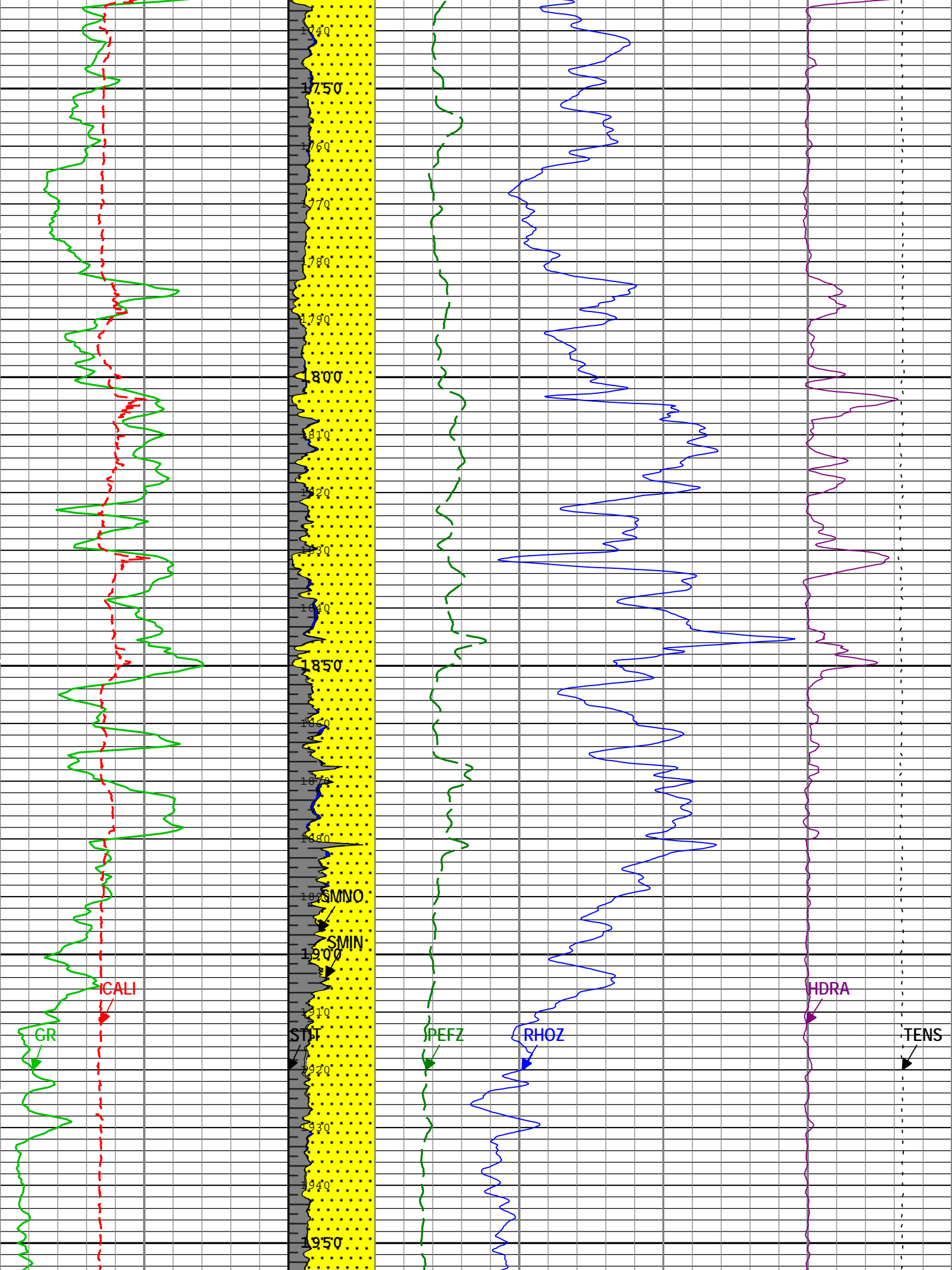


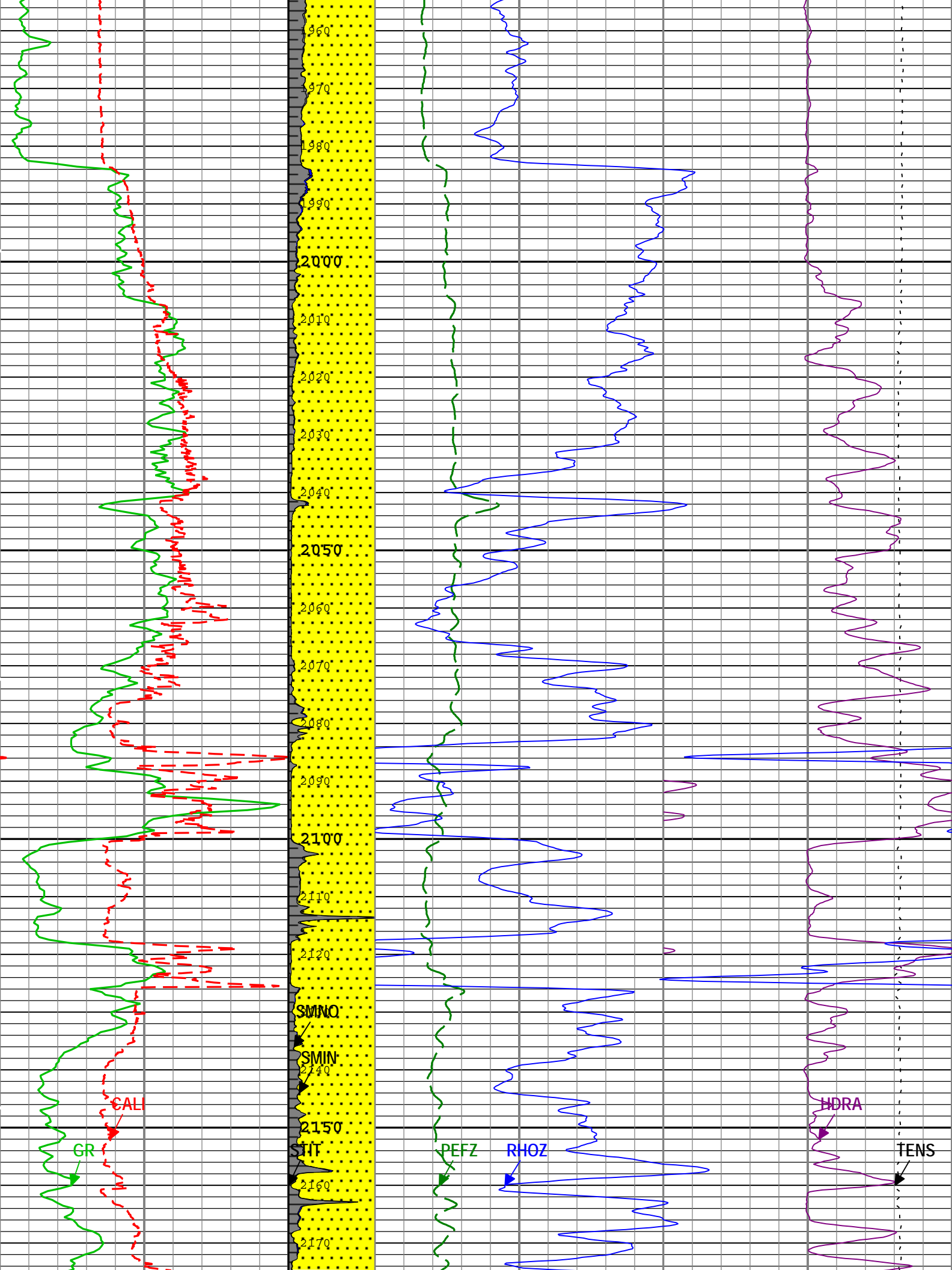


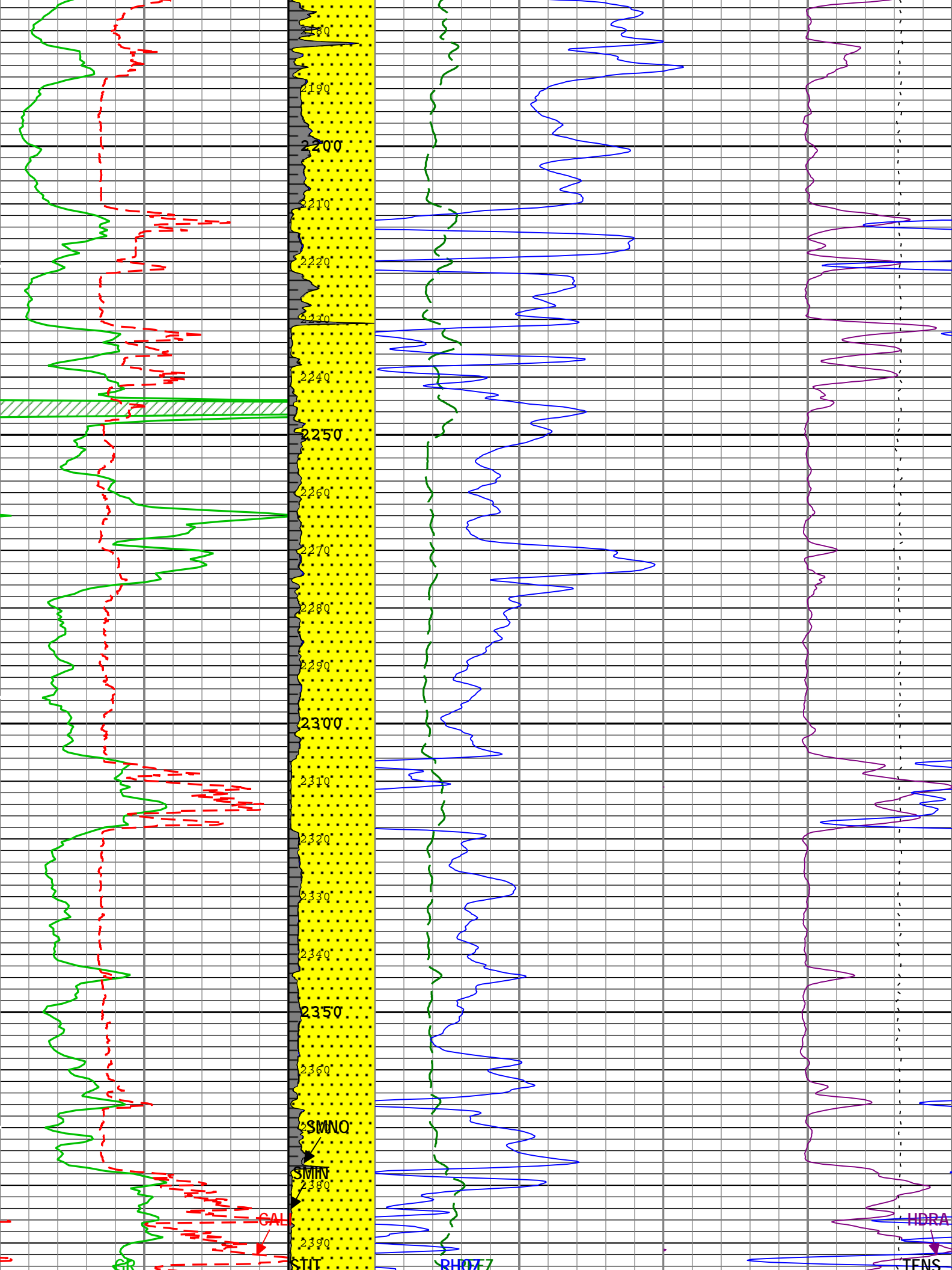


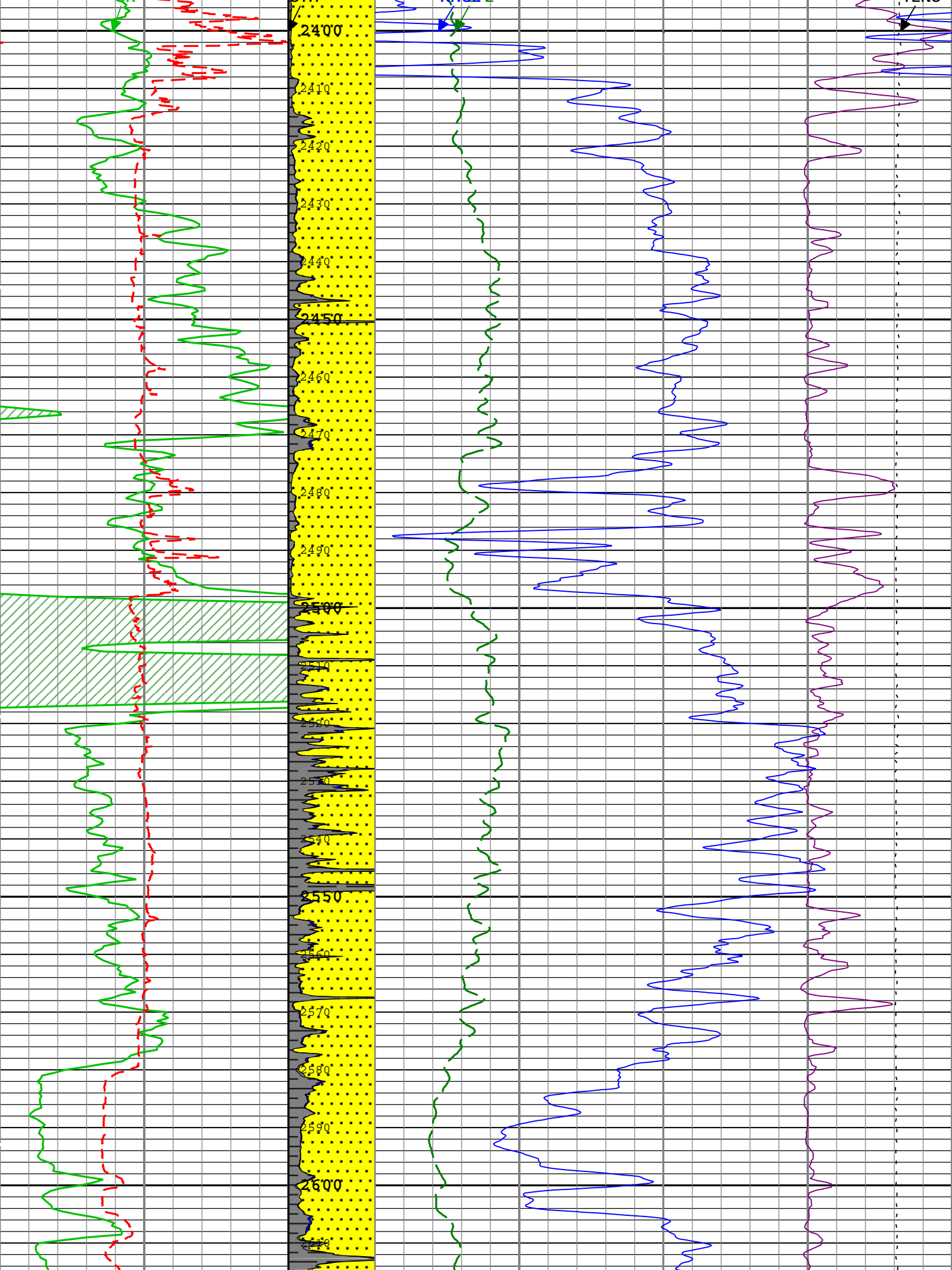


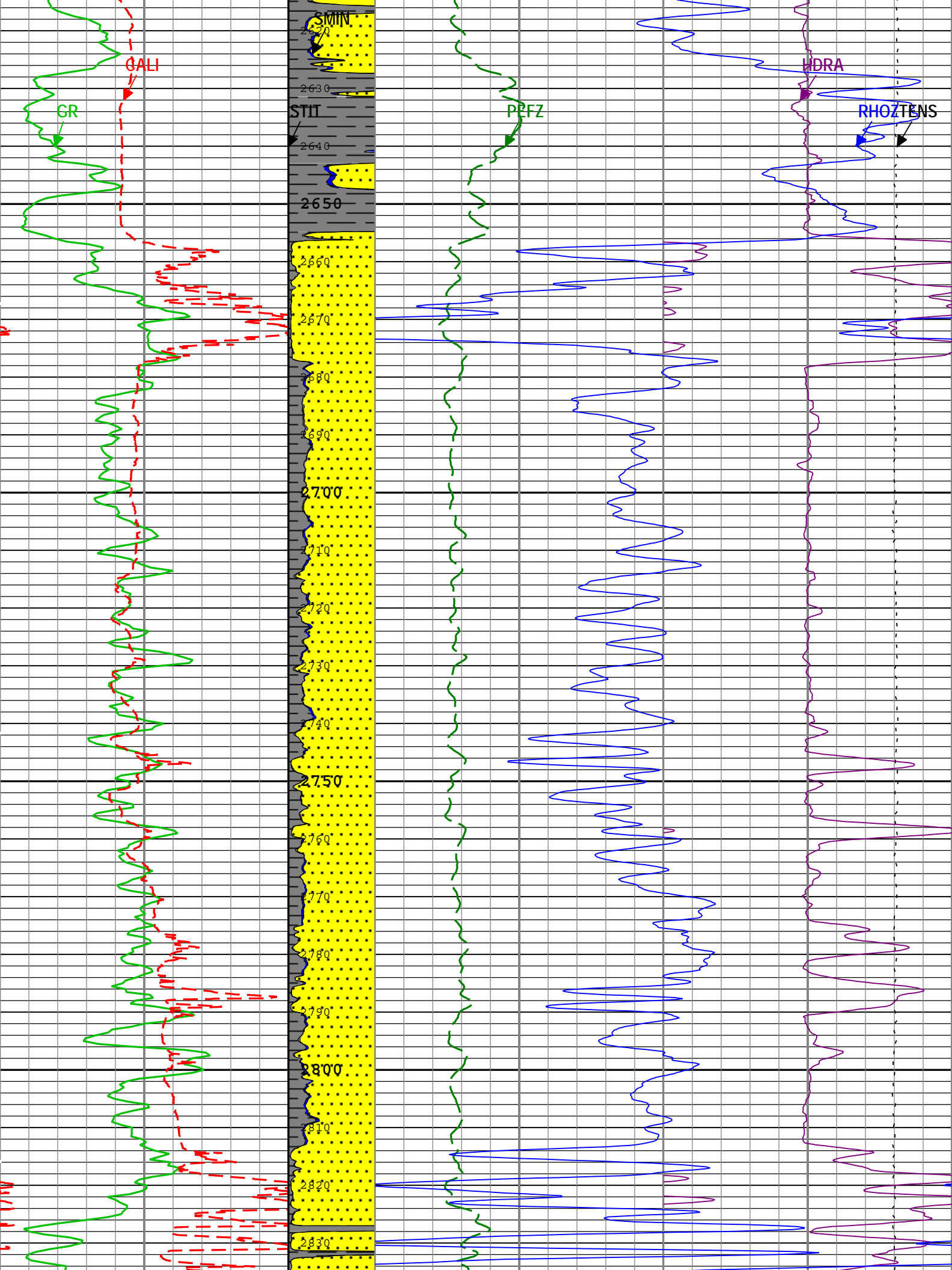


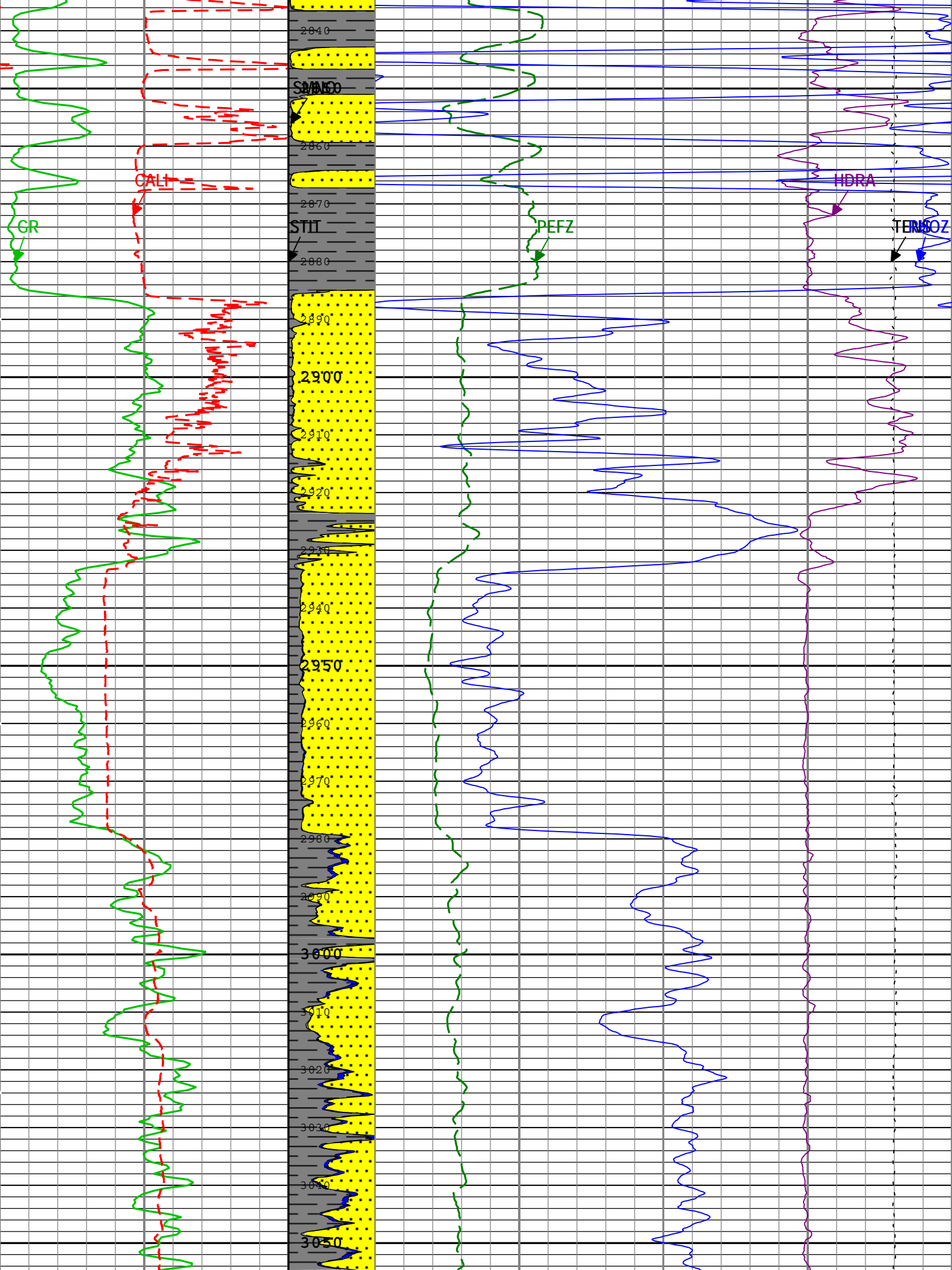


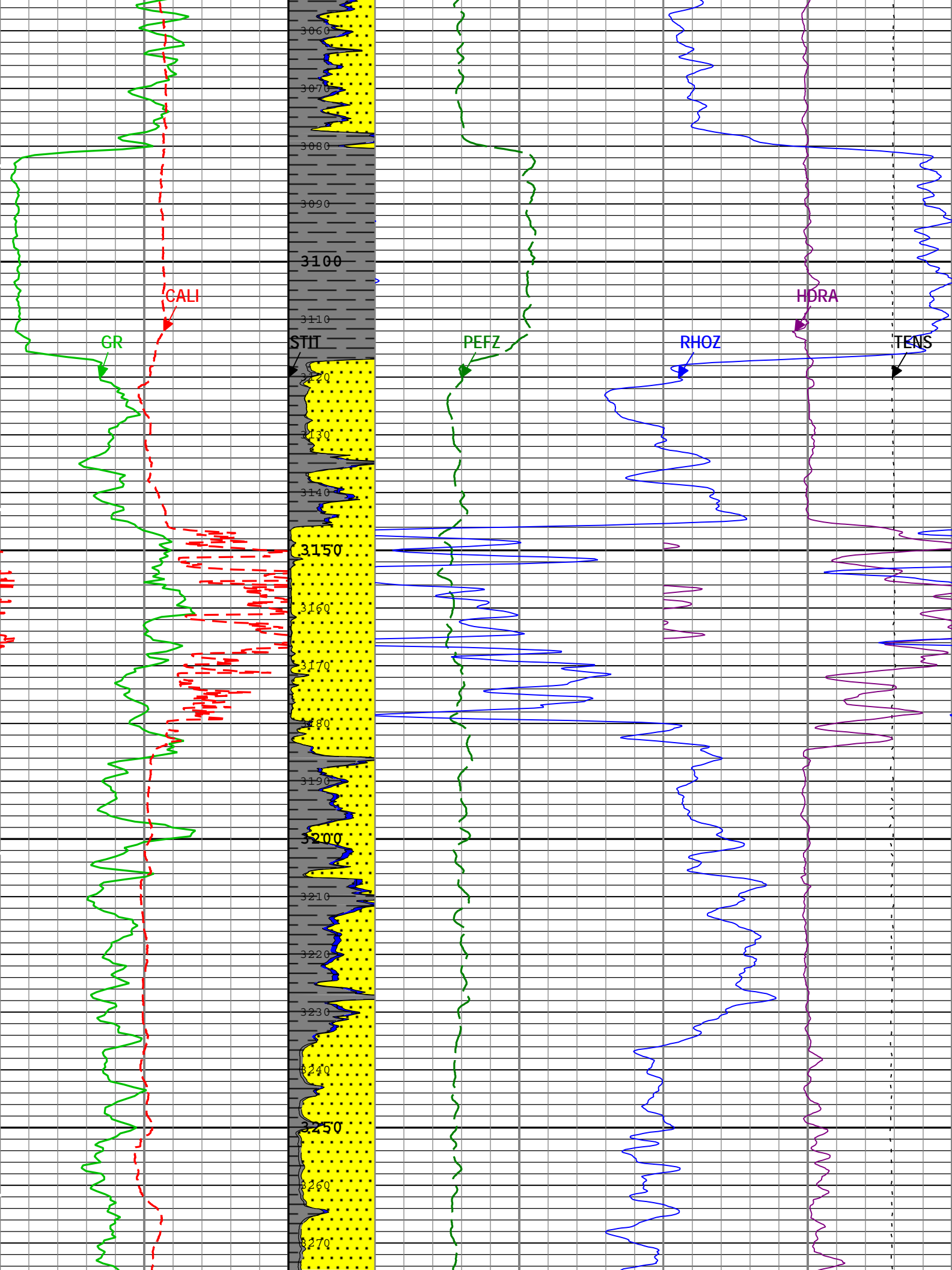


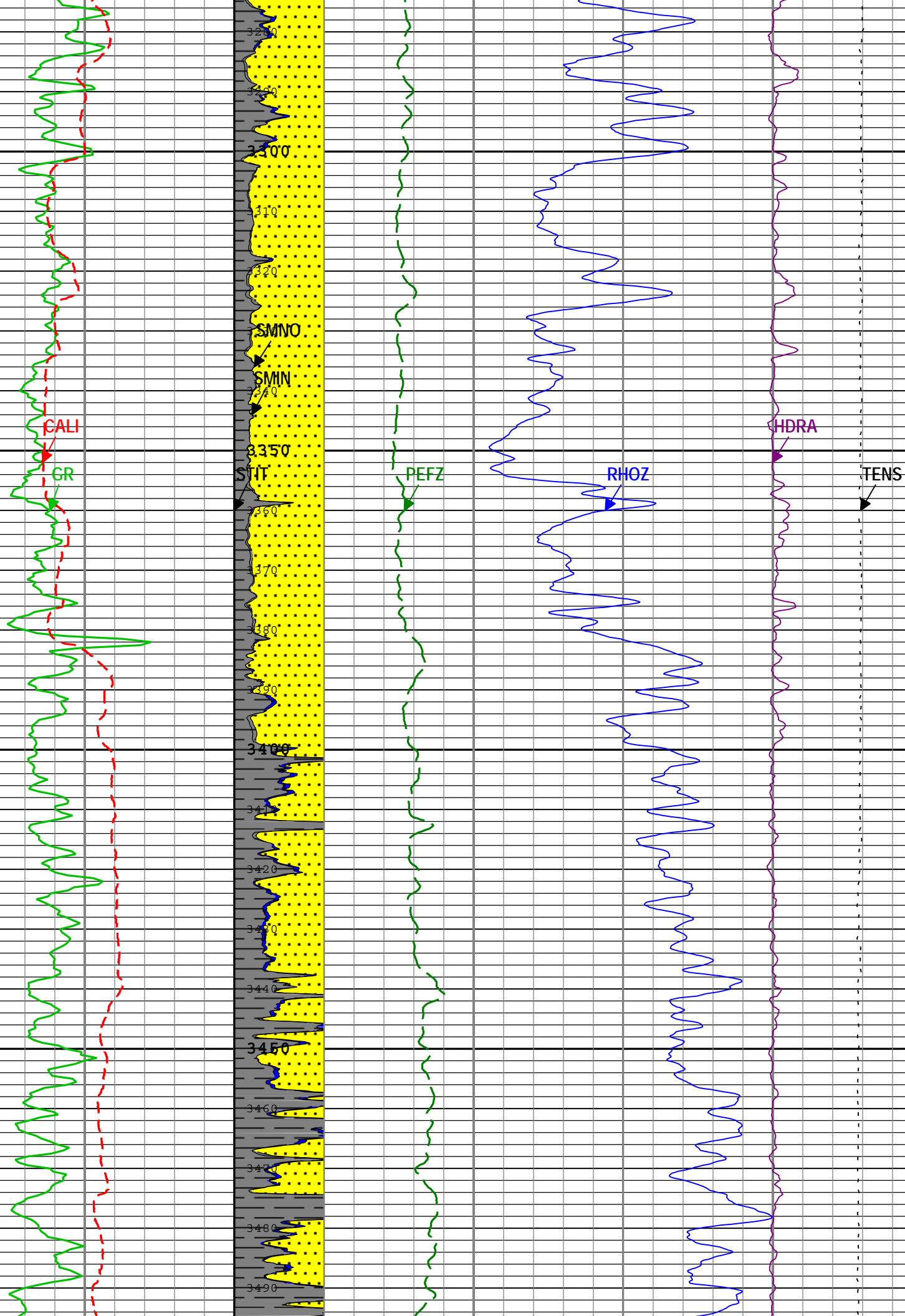




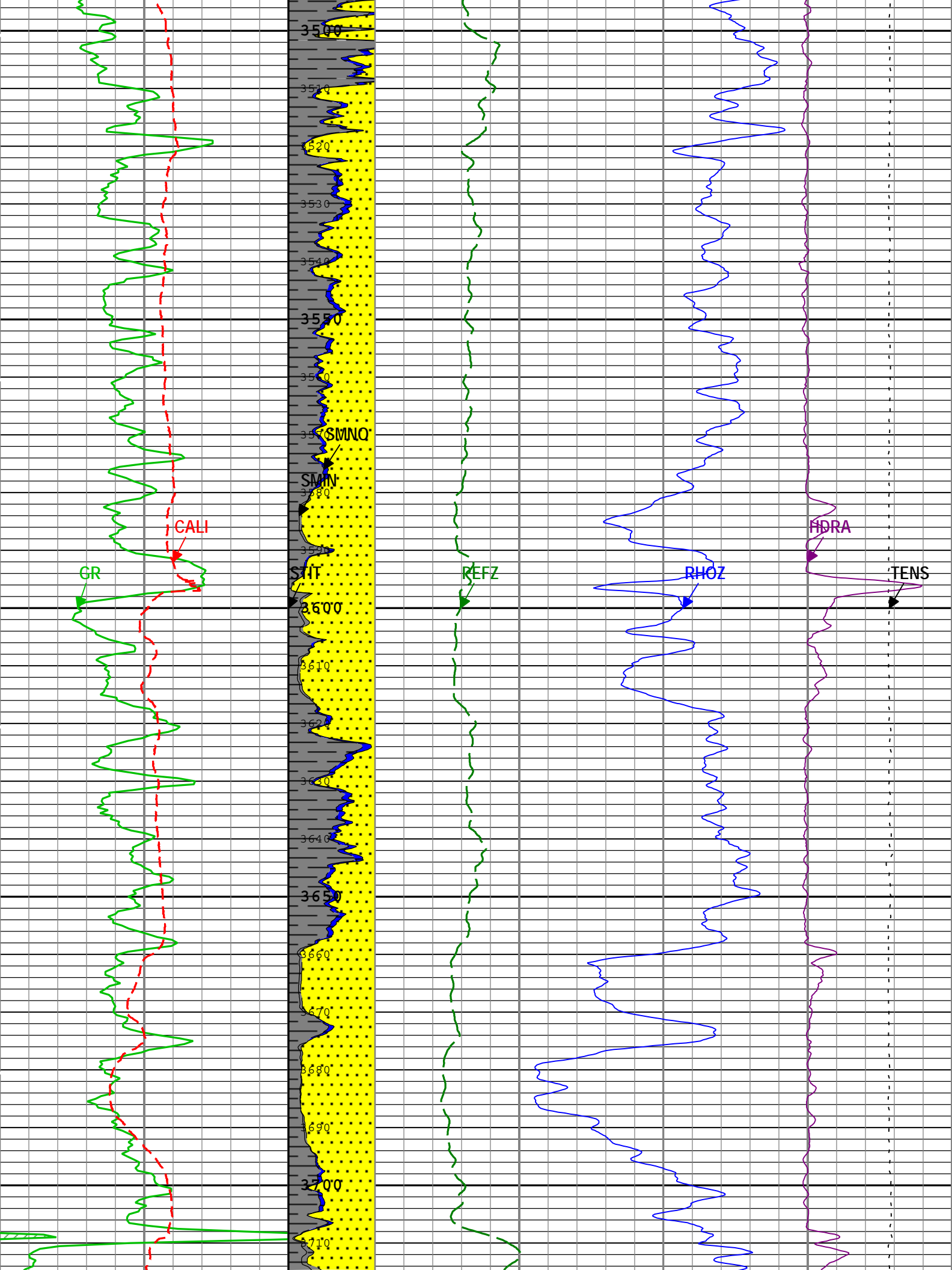


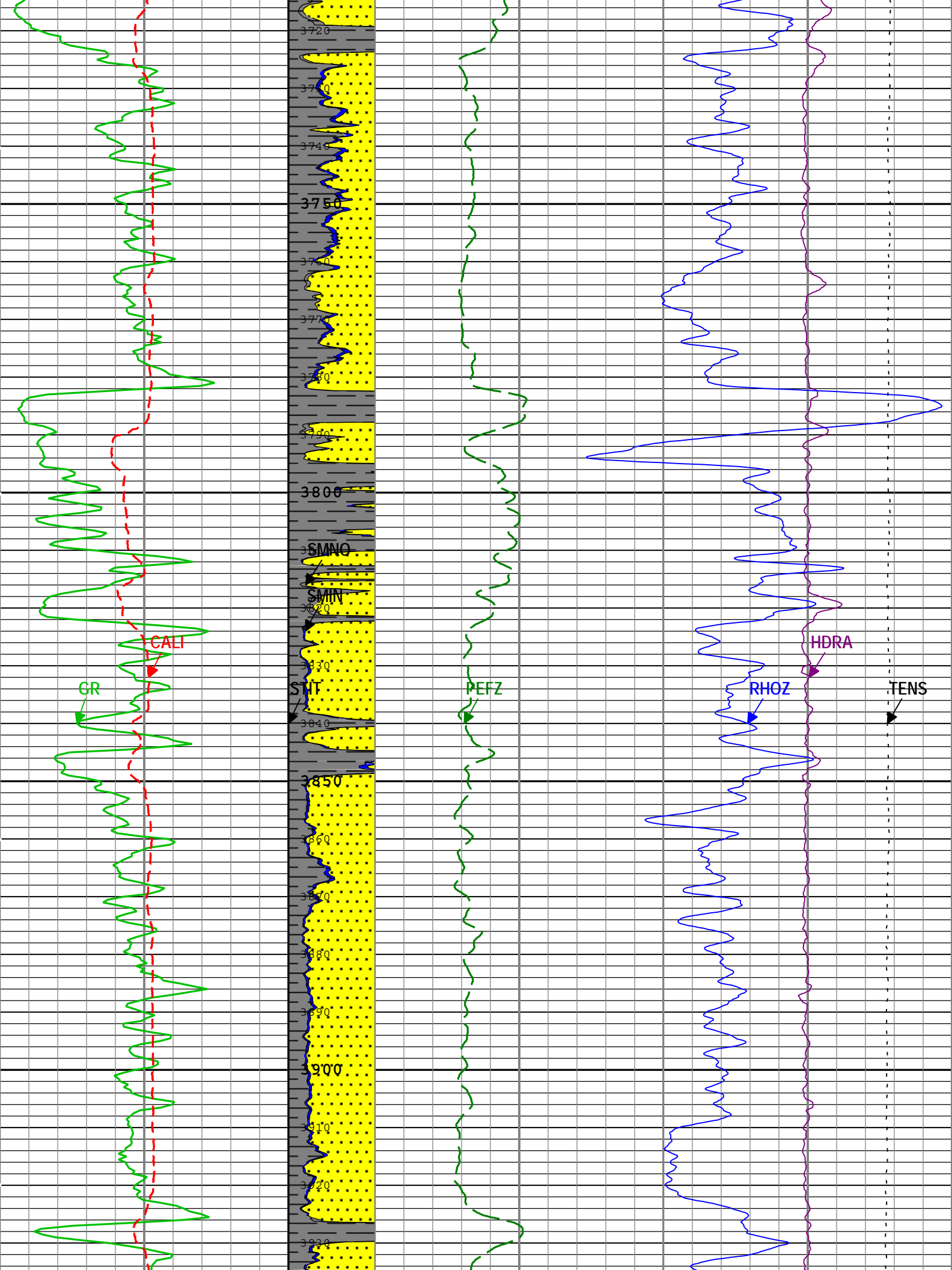


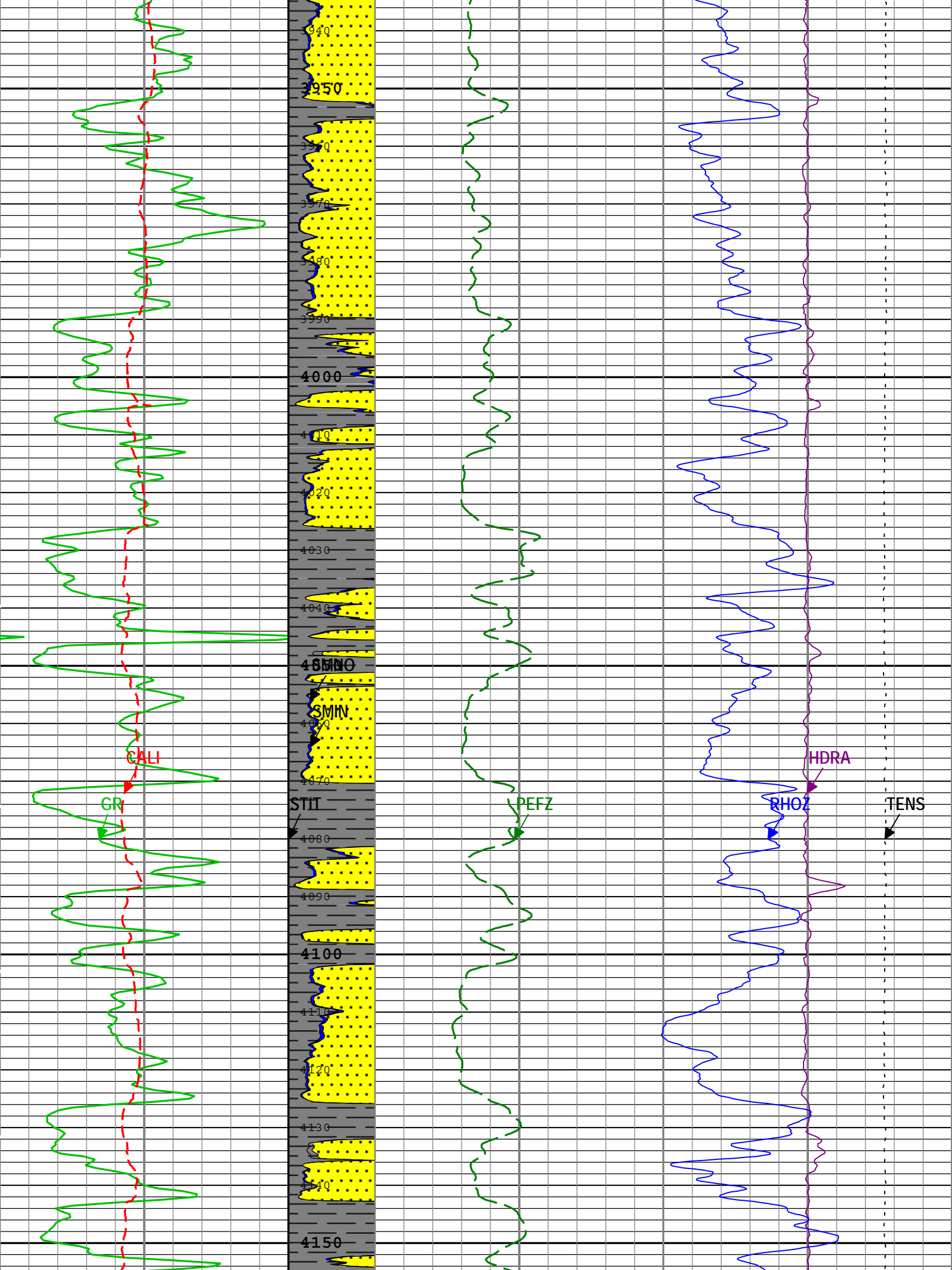


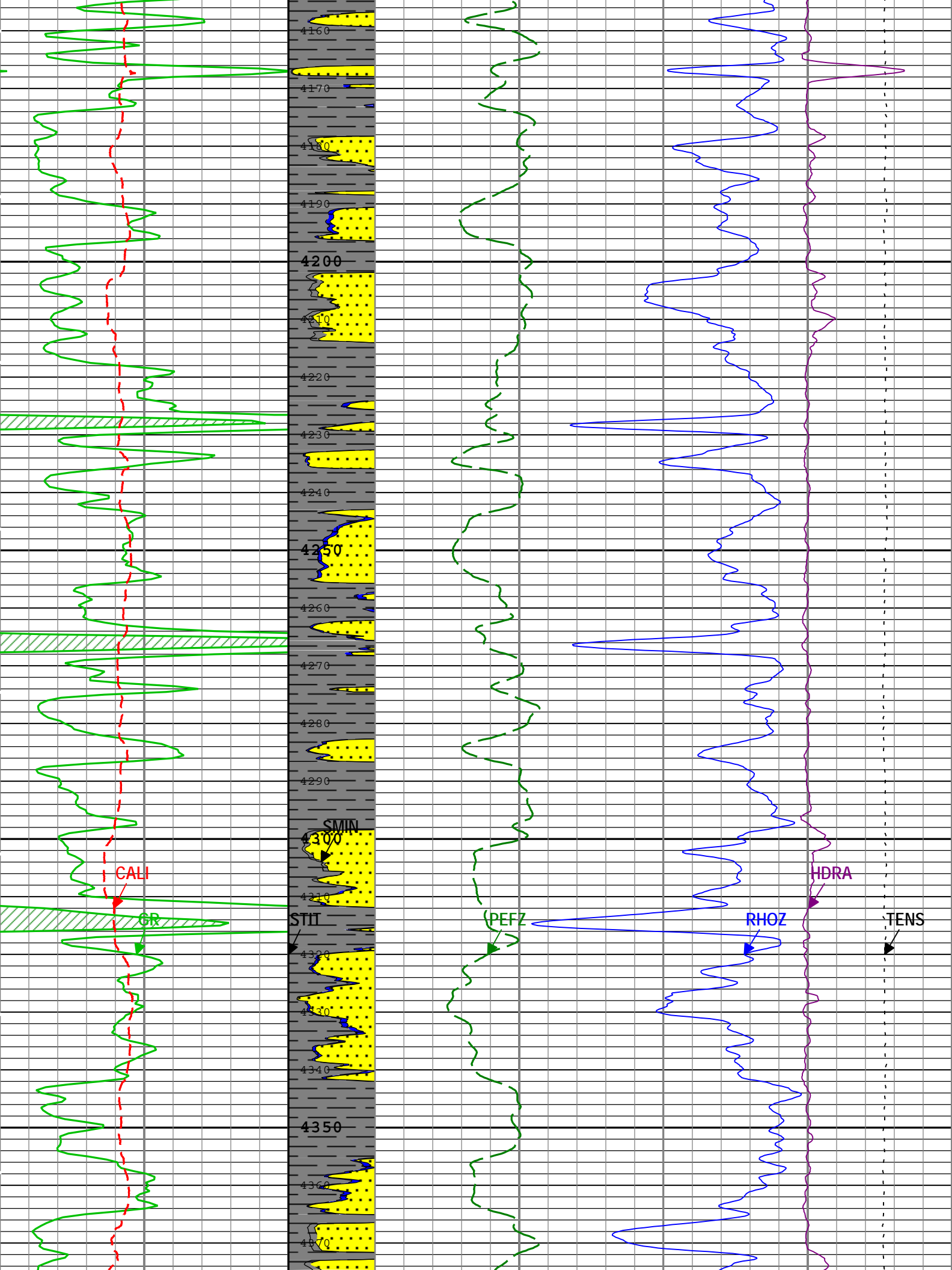


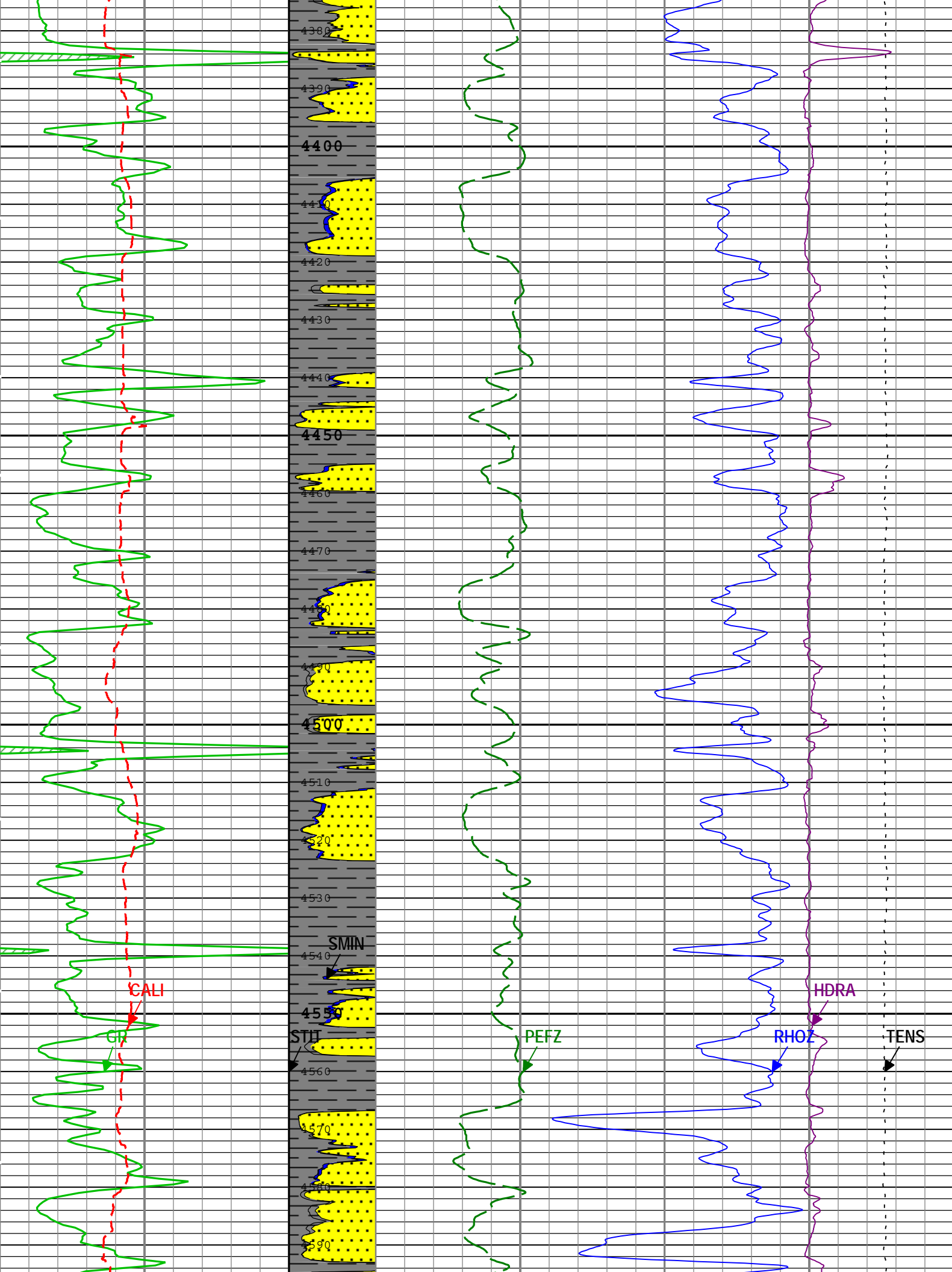


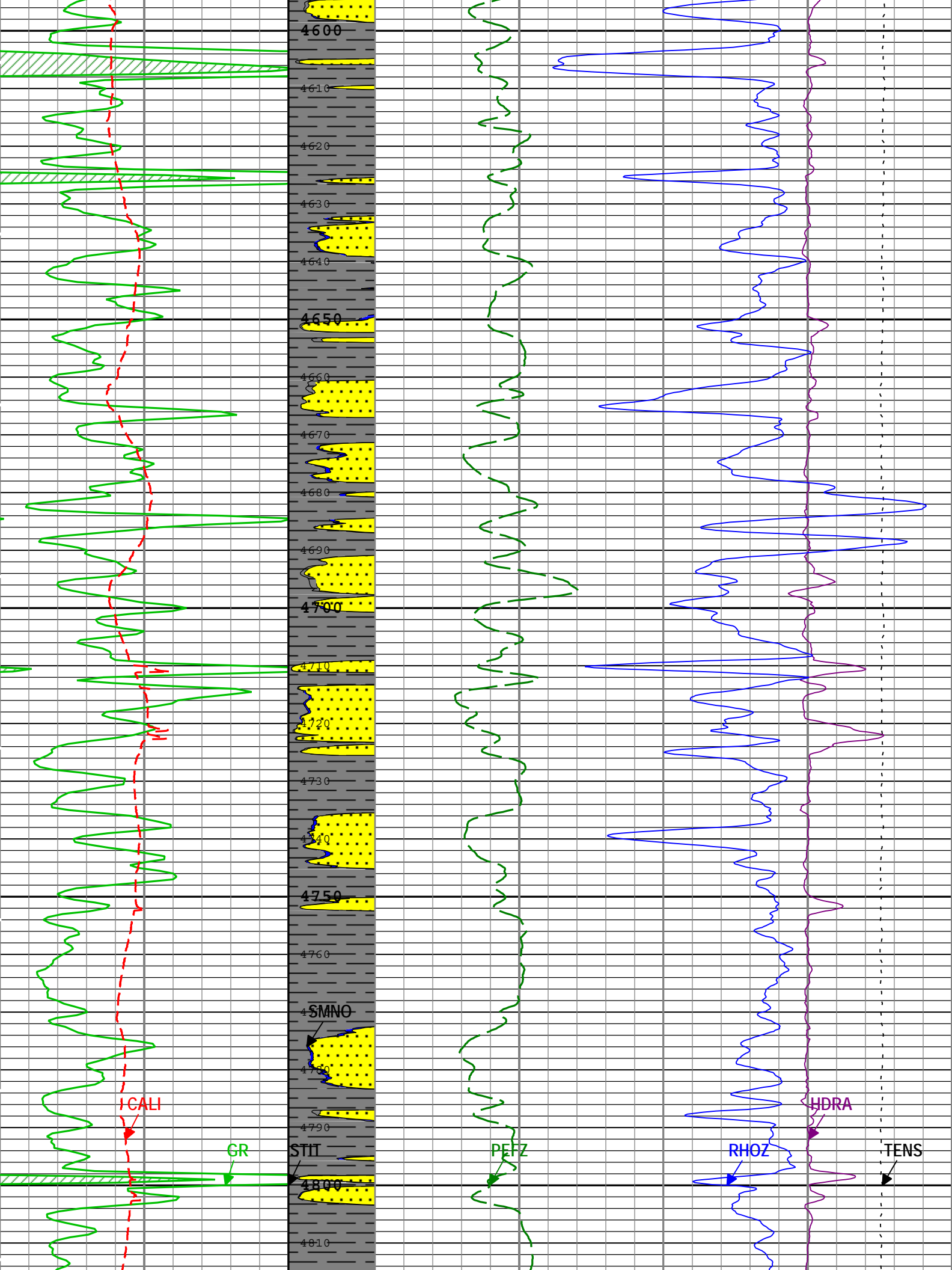


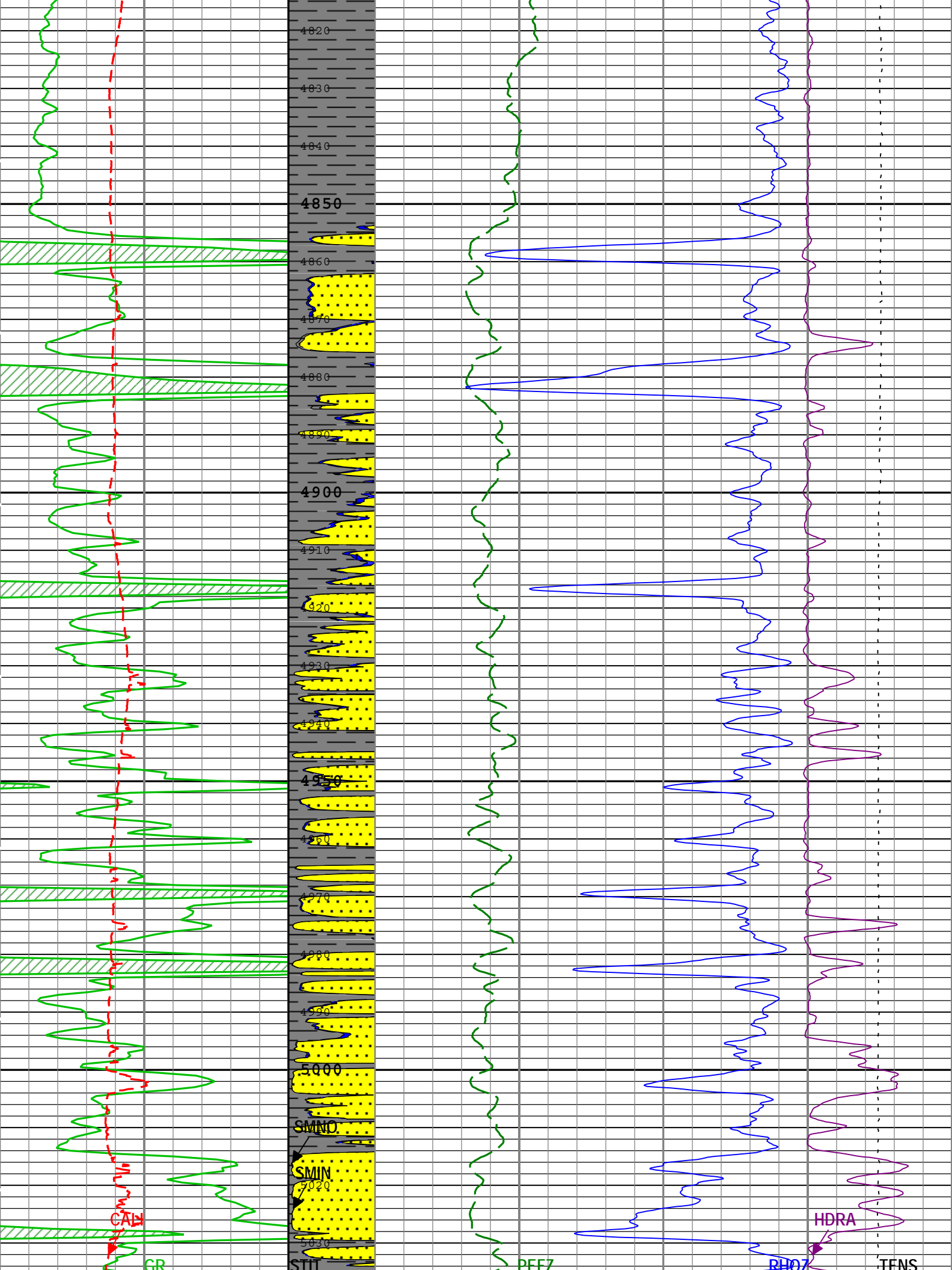


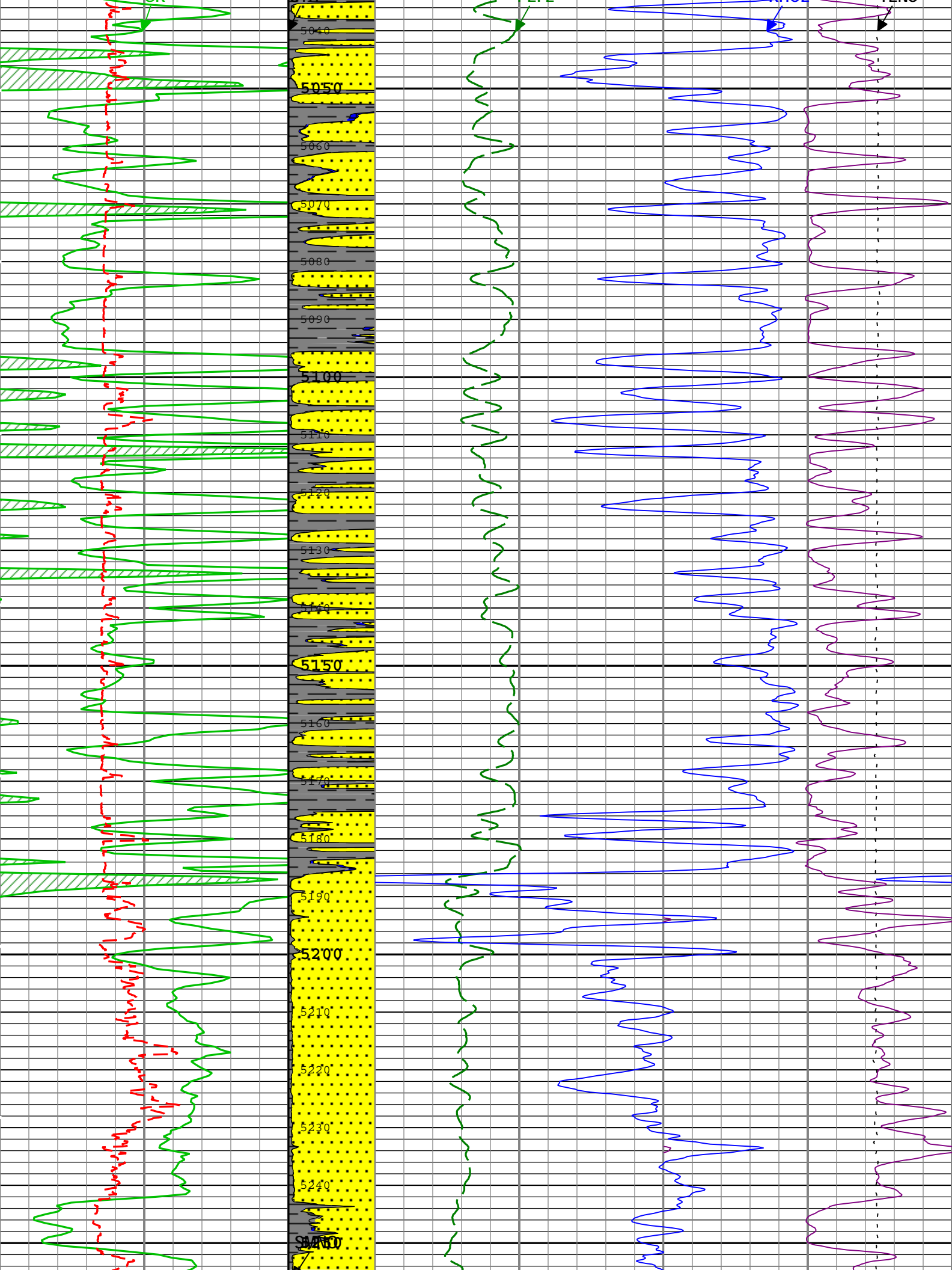




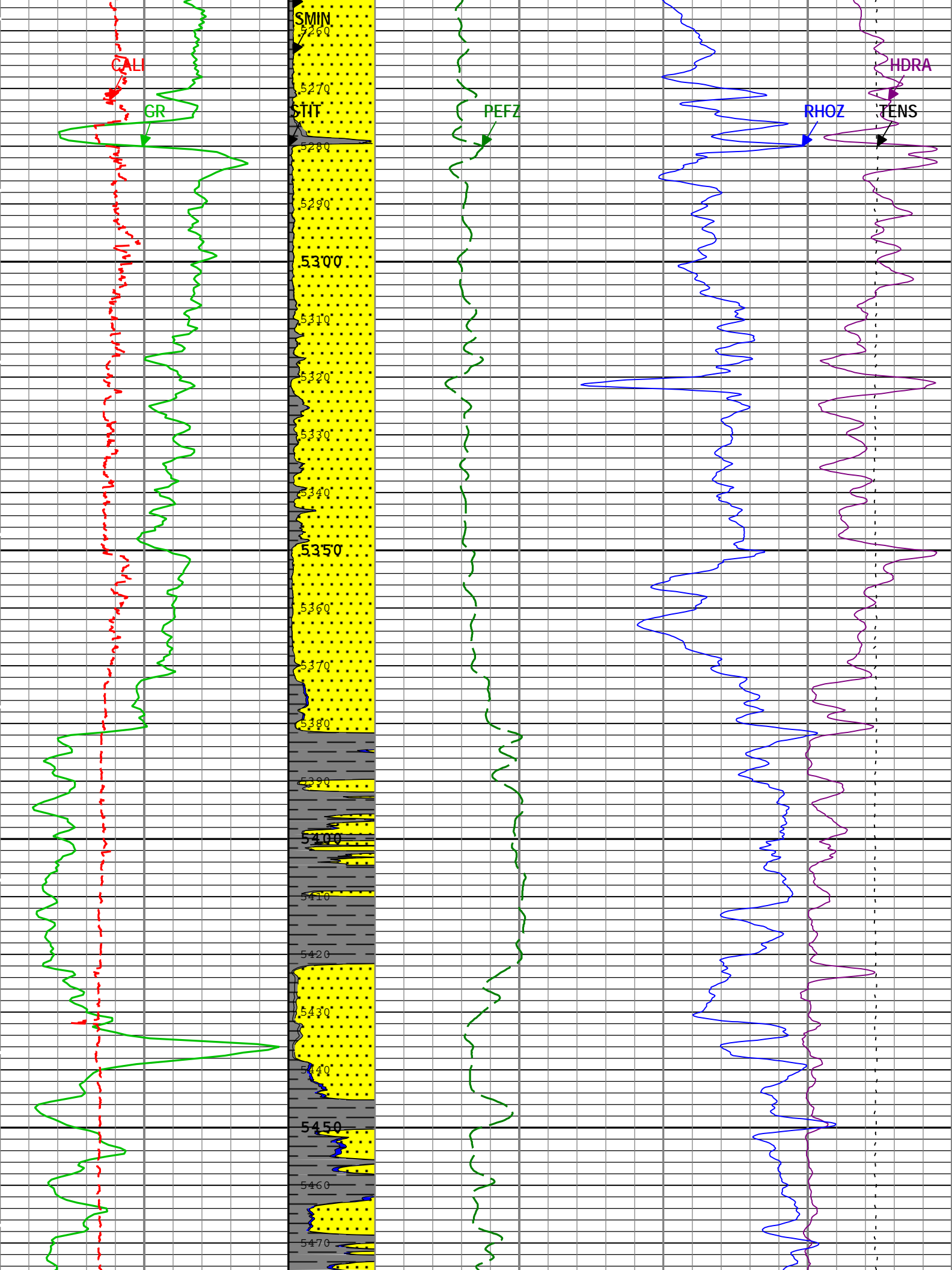


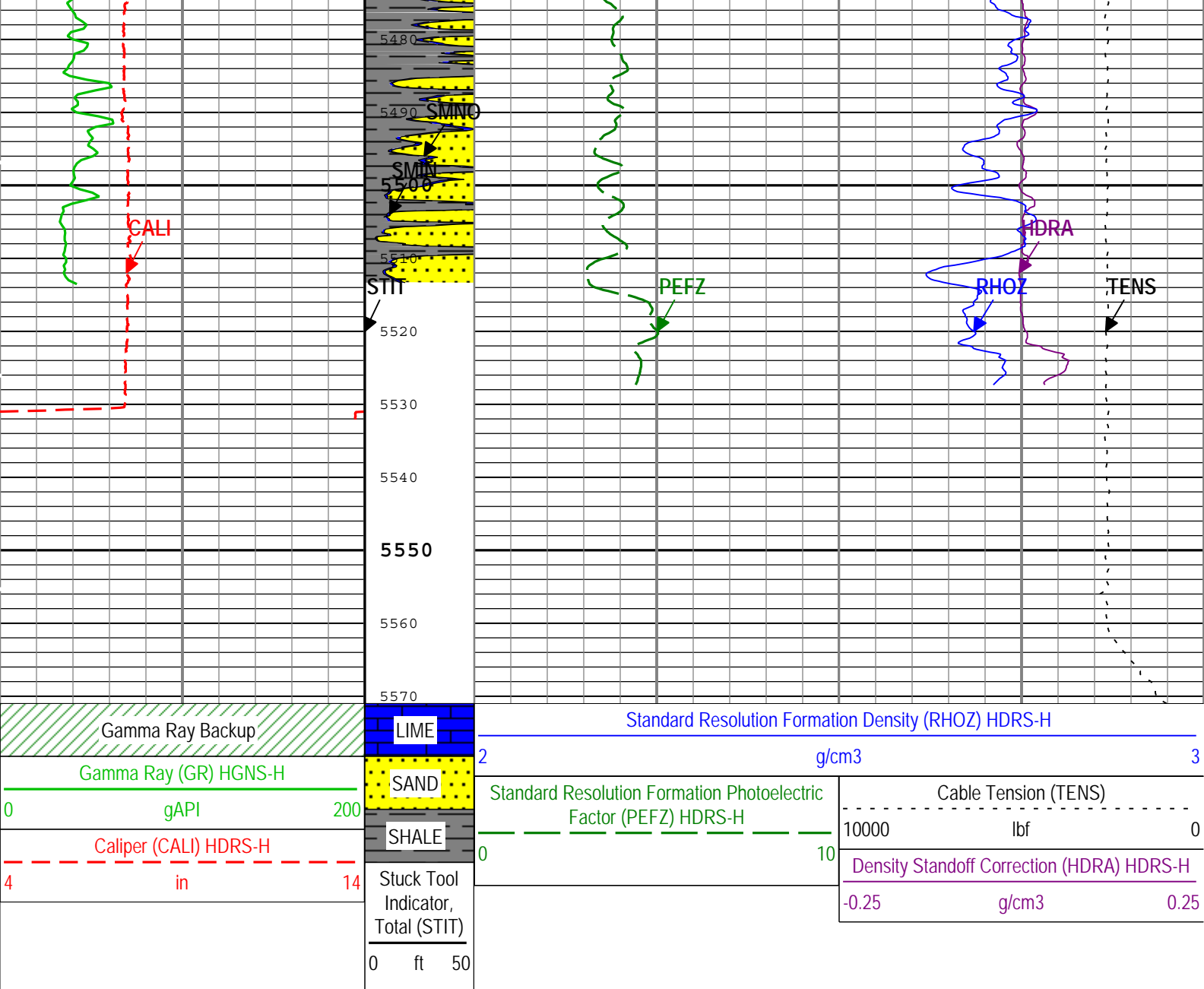












TIME\_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express    Format: Log ( EMD 5in Density )    Index Scale: 5 in per 100 ft    Index Unit: ft    Index Type: Measured Depth    Creation Date: 11-Dec-2012 18:56:42

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	Depth Zoned	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	-0.005	in
CBLO	Casing Bottom (Logger)	WLSESSION	441	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DFD	Drilling Fluid Density	Borehole	9.3	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DHC	Density Hole Correction	HDRS-H	Bit Size	
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	REMS	
GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	CTEM	
MST	Mud Sample Temperature	Borehole	90.6	degF

NPRM	HRDD Nuclear Processing Mode	HDRS-H	High Resolution	
RMS	Resistivity of Mud Sample	Borehole	1.12	ohm.m
SOCO	Standoff Correction Option	HGNS-H	Yes	
TD	Total Measured Depth	Borehole	5561	ft

## Depth Zone Parameters

Parameter	Value	Start ( ft )	Stop ( ft )
BS	0	400	441
BS	7.875	441	5571

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	1800	ft/h

## Calibration Report

### HDRS-H (HILT Density and Rxo Sonde, 150 degC) Calibration - Run PEX-AIT

Primary Equipment :				
	HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	3712	
	HILT Resistivity Gamma-Ray Density Device, 150 degC	HRGD-H	3775	
Auxiliary Equipment :				
	HRDD Backscatter Detector	Backscatter	26404	
	HRDD Long Spacing Detector	Long Spacing	28926	
	HRDD Short Spacing Detector	Short Spacing		
	Cesium 137 Gamma-Ray Logging Source	GSR-J	5240	
	HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	3712	
	HILT High-Resolution Mechanical Sonde, 150 degC	HRMS-H	4826	
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):		09:38:28 11-Dec-2012					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Small Ring	in	Before	8.00	6.00	8.32	10.00	
Large Ring	in	Before	12.00	9.00	12.50	15.00	

### HDRS Density Calibration - Inversion Results

Master (EEPROM):		20:14:00 09-Dec-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	1.686	1.696	
Pe Aluminum		Master	2.570	2.470	2.547	2.670	
Pe Magnesium		Master	2.650	2.550	2.632	2.750	

### HDRS Density Calibration - Deviation Summary

Master (EEPROM):		20:14:00 09-Dec-2012					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Average Deviation	%	Master	0	-0.6000	0.2389	0.6000	
BS Max Deviation	%	Master	0	-1.6000	0.8046	1.6000	
SS Average Deviation	%	Master	0	-1.0000	0.2825	1.0000	
SS Max Deviation	%	Master	0	-2.5000	0.6831	2.5000	
LS Average Deviation	%	Master	0	-1.5000	0.5659	1.5000	
LS Max Deviation	%	Master	0	-3.5000	1.1242	3.5000	

### HDRS Density Calibration - Background Summary

Master (EEPROM):	20:14:00 09-Dec-2012	Before (Measured):	09:40:39 11-Dec-2012
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Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Window Ratio		Master	1.0000		0.7540		
		Before	0.7540	0.7163	0.7552	0.7917	
		Before-Master	-----	-----	0.0012	-----	
BS Window Sum	1/s	Master	1		25277		
		Before	25277	24013	25272	26541	
		Before-Master	-----	-----	-5	-----	
SS Window Ratio		Master	1.0000		0.4895		
		Before	0.4895	0.4650	0.4900	0.5140	
		Before-Master	-----	-----	0.0005	-----	
SS Window Sum	1/s	Master	1		11345		
		Before	11345	10778	11314	11913	
		Before-Master	-----	-----	-31	-----	
LS Window Ratio		Master	1.0000		0.3047		
		Before	0.3047	0.2894	0.3056	0.3199	
		Before-Master	-----	-----	0.0009	-----	
LS Window Sum	1/s	Master	1		1153		
		Before	1153	1096	1152	1211	
		Before-Master	-----	-----	-1	-----	

### HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM):		20:14:00 09-Dec-2012		Before (Measured):		09:40:39 11-Dec-2012	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS PM High Voltage	V	Master		1000	1477	2400	
		Before		1000	1476	2400	
		Before-Master	-----	-100	-1	100	
SS PM High Voltage	V	Master		1000	1426	2400	
		Before		1000	1412	2400	
		Before-Master	-----	-100	-14	100	
LS PM High Voltage	V	Master		1000	1440	2400	
		Before		1000	1440	2400	
		Before-Master	-----	-100	0	100	

### HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM):		20:14:00 09-Dec-2012		Before (Measured):		09:40:39 11-Dec-2012	
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
BS Crystal Resolution	%	Master		5.00	10.55	25.00	
		Before		5.00	10.62	25.00	
		Before-Master	-----	-1.00	0.07	1.00	
SS Crystal Resolution	%	Master		5.00	9.74	20.00	
		Before		5.00	9.86	20.00	
		Before-Master	-----	-1.00	0.12	1.00	
LS Crystal Resolution	%	Master		5.00	8.61	20.00	
		Before		5.00	8.64	20.00	
		Before-Master	-----	-1.00	0.03	1.00	

### HDRS MCFL Calibration - MCFL Accumulations

Before (Measured):		09:40:55 11-Dec-2012					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Main Resistivity	ohm.m	Before	3875	3565	3879	4185	
Deep Resistivity	ohm.m	Before	3830	3524	3833	4136	
Shallow Resistivity	ohm.m	Before	3830	3524	3841	4136	

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

Primary Equipment :			
HILT Gamma-Ray and Neutron Sonde, 150 degC		HGNS-H	4779
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):		15:55:58 11-Dec-2012					
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-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):		09:37:02 11-Dec-2012	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	24.8	40.0	
		After	----	----	----	----	
		Before-Master	----	-3.8	-0.4	3.8	
		After-Before	----	----	----	----	
Far Zero Measurement	1/s	Master	0	5.0	28.4	40.0	
		Before	0	5.0	27.4	40.0	
		After	----	----	----	----	
		Before-Master	----	-4.3	-1.0	4.3	
		After-Before	----	----	----	----	
Near Plus Measurement - 0	1/s	Master	6031.0	4700.0	5278.0	6900.0	
		Before	----	----	----	----	
		After	----	----	----	----	
		Before-Master	----	----	----	----	
		After-Before	----	----	----	----	
Far Plus Measurement - 0	1/s	Master	2793.0	1900.0	2189.0	2900.0	
		Before	----	----	----	----	
		After	----	----	----	----	
		Before-Master	----	----	----	----	
		After-Before	----	----	----	----	
Near Corrected Plus Measurement - 0	1/s	Master		4700.0	5228.0	6900.0	
		Before	----	----	----	----	
		After	----	----	----	----	
		Before-Master	----	----	----	----	
		After-Before	----	----	----	----	
Far Corrected Plus Measurement - 0	1/s	Master		1900.0	2143.0	2900.0	
		Before	----	----	----	----	
		After	----	----	----	----	
		Before-Master	----	----	----	----	
		After-Before	----	----	----	----	

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured):		09:42:32 11-Dec-2012		After:			
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement	gAPI	Before	30.0	0	83.1	120.0	
		After	----	----	----	----	
		After-Before	----	----	----	----	
RGR Plus Measurement	gAPI	Before	185.4	157.1	174.5	206.3	
		After	----	----	NOT DONE	----	
		After-Before	----	----	----	----	
GR Calibration Gain		Before	0.89	0.80	0.95	1.05	
		After	----	----	----	----	
		After-Before	----	----	----	----	

Company: Vecta Oil & Gas Ltd

**Schlumberger**

Well: Bierstadt 32-33

Field: Wildcat

County: Cheyenne

Country:

Platform Express

Compensated Neutron Log

LithoDensity