

Company: North East Natural Energy LLC

Well: Boguess 17H

Field: Wildcat

County: Monongalia

State:

West Virginia

PLATFORM EXPRESS

HIRES LITHO-DENSITY / HIRES COMPENSATED NEUTRON

HIRES GAMMA RAY / CALIPER

County: Monongalia
Field: Wildcat
Location: Lat and Long:
Well: Boguess 17H
Company: North East Natural Energy LLC

Lat and Long:	Elev.:	K.B.	1296.00 ft
39:40:12.6 N		G.L.	1268.00 ft
80:5:35.8 W		D.F.	1296.00 ft

Permanent Datum:	Ground Level	Elev.:	1268.00 f
Log Measured From:	Kelly Bushing	28.00 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		

API Serial No.	District	Township:	Quad
47-061-01812-00-00	Clay	Core	Blacksville

Logging Date 15-Apr-2019

Run Number 1A

Depth Driller 8400.00 ft

Schlumberger Depth 8400.00 ft

Bottom Log Interval 8400.00 ft

Top Log Interval 2543.00 ft

Casing Driller Size @ Depth 9.625 in @ 2538.00 ft

Casing Schlumberger 2543 ft

Bit Size 8.5 in

Type Fluid In Hole Water

Density Viscosity

Fluid Loss PH

MUD Source of Sample

RM @ Meas Temp Active Tank

RMF @ Meas Temp 0.04 ohm.m @ 103 degF

RMC @ Meas Temp 0.03 ohm.m @ 103 degF

Source RMF 0.04 ohm.m @ 102 degF

RM @ BHT RMC

RMF @ BHT

Max Recorded Temperatures 0.04 @ 158 0.02 @ 158

Circulation Stopped 158 degF

Logger on Bottom Time 14-Apr-2019 23:00:00

Unit Number Time 15-Apr-2019 09:04:00

Recorded By Location: 3703 Elizabeth Morrone

Witnessed By BJ Varney

Disclaimer

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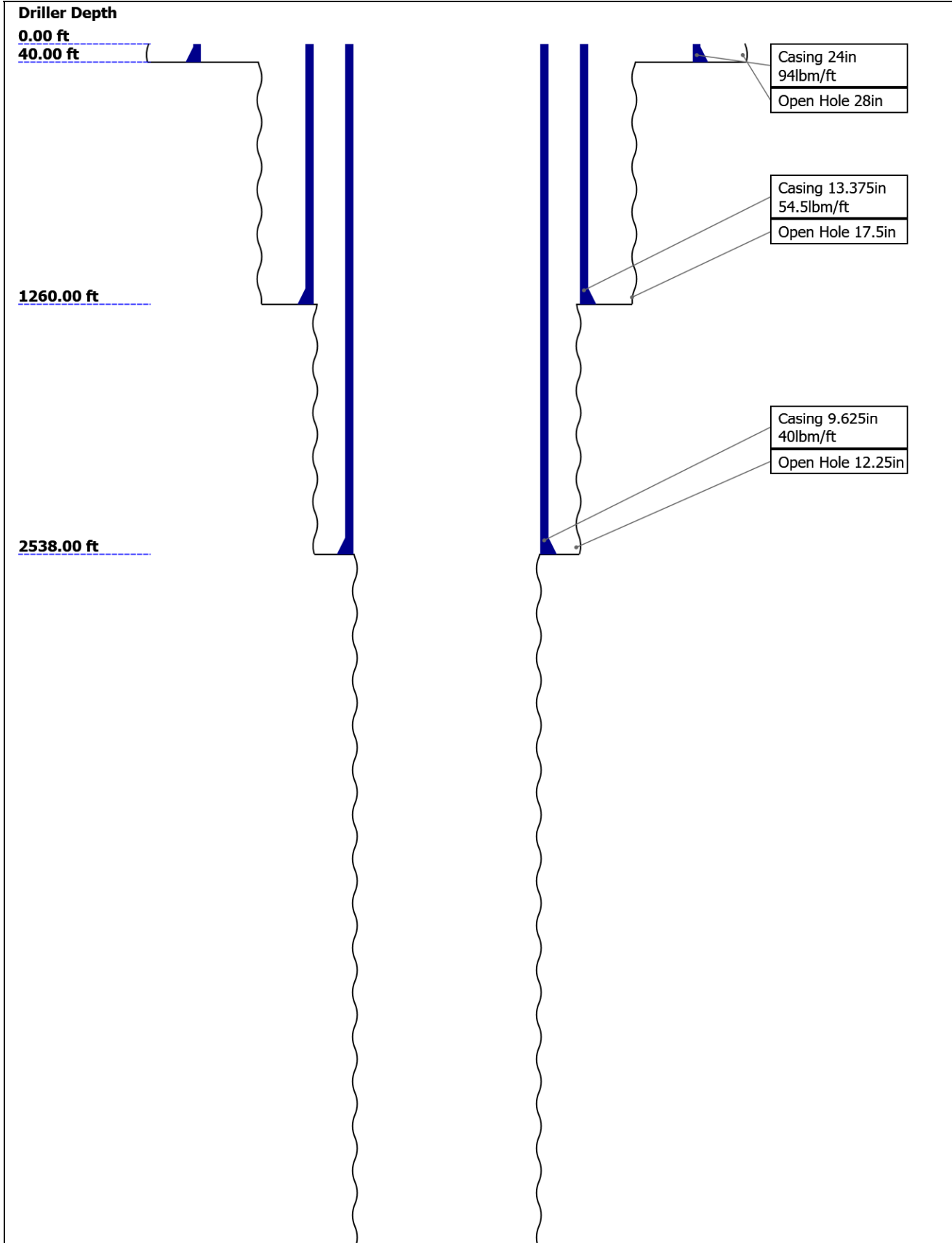
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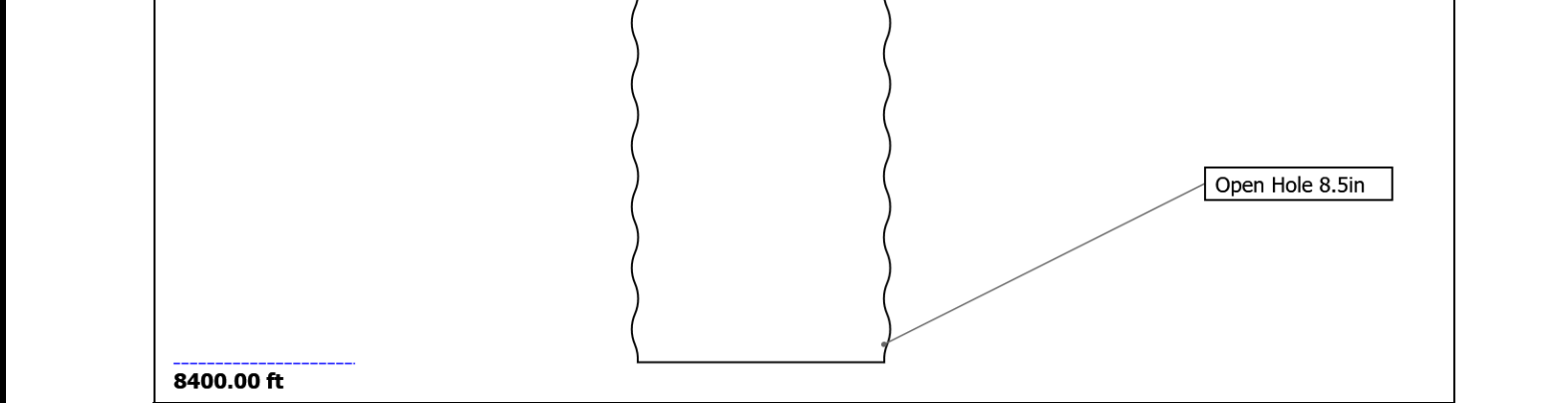
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Well Sketch





Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	28	17.5	12.25	8.5		
Top Driller (ft)	0	40	1260	2538		
Top Logger (ft)	0	40	1260	2543		
Bottom Driller (ft)	40	1260	2538	8400		
Bottom Logger (ft)	40	1260	2543	8400		
Casing						
Size (in)	24	13.375	9.625			
Weight (lbm/ft)	94	54.5	40			
Inner Diameter (in)	23.272	12.615	8.835			
Grade	N/A	N/A	N/A			
Top Driller (ft)	0	0	0			
Top Logger (ft)	0	0	0			
Bottom Driller (ft)	40	1260	2538			
Bottom Logger (ft)	40	1260	2543			

Remarks and Equipment Summary

1A: Toolstring				1A: Remarks
Equip name	Length	MP name	Offset	Thank you for choosing Schlumberger! Crew: Morrone, Kornacki, Shirley Tool ran per tool sketch; 6" standoffs placed on HRUC and HRLC Main pass recorded from TD to casing shoe for triple combo; repeat pass performed in HiRes from TD to 7700 ft
LEH-MT	99.63			
LEH-MT				
		Mud Temperature	97.69	
SAH-F	96.48			
AH-369	91.63			
EDTC-B:9231	90.2			
EDTH-B:9291				
EDTG-B:79427		CTEM	86.7	
EDTC-B:9231		ACCZ	0.00	
		HV	0.00	
		Gamma Ray	84.83	
		TelStatu	83.7	
		s		
HNGS-BA:425	83.7			

HEH-K:1070
HNGS-BA:4
25

GR	80.71
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HNGC-B:10 **75.51**
8

HNGH-A:46
HNGC-B:10
8

Tel Statu 73.76
s

HGNS-H:49 72.01
51

HGNH:4803	GR	71.27
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NPV-N
HMCA-H
HACCZ-H:7
648
HGNS-H:49
51

CNL Porosity	64.93
HGNS	62.6
HMCA	62.6
Accelerometer	0.00

AH-184[2	62.6
]	

HRLT-B:95 **60.6**
3

HRUH-B:18
92
HRUC-B:18
89
HRLS-B:953
HRLH-B:188
4
HRLC-B:900
AH-270

	Resistivity	48.83
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AH-184[1 36.4]

HDRS-H:3 34.4

791
ECH-MEB:3
963
HRCC-H:49
45
HRMS-H:37
91
Long Spacing
9
HRGD-H:39
21
GSR-J:5542
Short Spacing
Backscatter
GPV-Q

HRCC 30.4

MCFL 24.97
Caliper 24.48
TLD Density 24.09

NEXT-A:4 22.16

NEXH-A:4
PNG-G
NEXS-A:4

Spect 16.28

Status 14.87

ILE-F 8.46

BNS-STD 0.46

Head Tension
TOOL_ZERO

Lengths are in ft
Maximum Outer Diameter = 6.370 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Depth Summary

1A

Depth Measuring Device

Type	IDW-JA								
Serial Number	7173								
Calibration Date	20-Mar-2018								
Calibrator Serial Number	IDWC-C-57								
Calibration Cable Type	7-46 AXS								
Wheel Correction 1	-5								
Wheel Correction 2	-3								
Tension Device									
Type	CMTD-B/A								
Serial Number	5054								
Calibration Date	08-Jan-2019								
Calibrator Serial Number	232970A								
Number of Calibration Points	10								
Calibration Root Mean Square Error	13								
Calibration Peak Error	22								
Logging Cable									
Type	7-46A-XS								
Serial Number	U715008								
Length	11750.00 ft								
Conveyance Type	Wireline								
Rig Type	Land								
1A: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									
Tool Zero Check At Surface									
Main Pass									
MAIN PASS 2"=100'									
Integration Summary									
Output Channel(s)	Output Description	Input Parameter	Output Value	Unit					
IHV	Integrated Hole Volume	GCSE_UP_PASS, GCSE_DOWN_PASS:1A	2499.44	ft3					
ICV	Integrated Cement Volume	GCSE_UP_PASS, GCSE_DOWN_PASS:1A, FCD	1533.73	ft3					
Software Version									
Acquisition System			Version						
Maxwell 2019			9.0.106845.3100						
Composite Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Log[2]:Up	Up	8266.17 ft	8396.38 ft	15-Apr-2019 7:56:45 AM	15-Apr-2019 8:17:05 AM	ON	2.60 ft	Yes
1A	Log[8]:Up	Up	8021.42 ft	8407.18 ft	15-Apr-2019 9:44:04 AM	15-Apr-2019 10:51:09 AM	ON	3.12 ft	Yes

All depths are referenced to toolstring zero

Log

Company:North East Natural Energy LLC

Well:Boggess 17H

Main Pass:S012

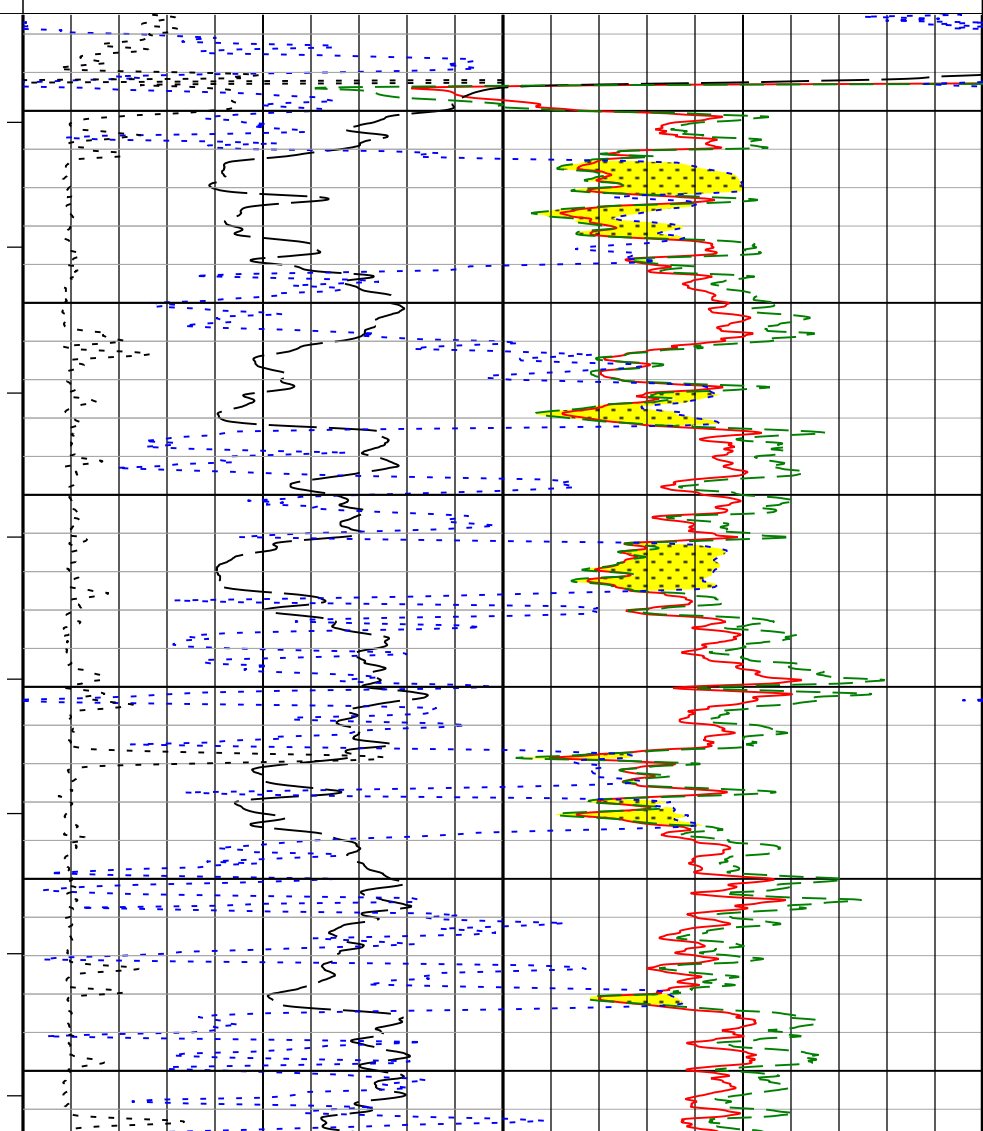
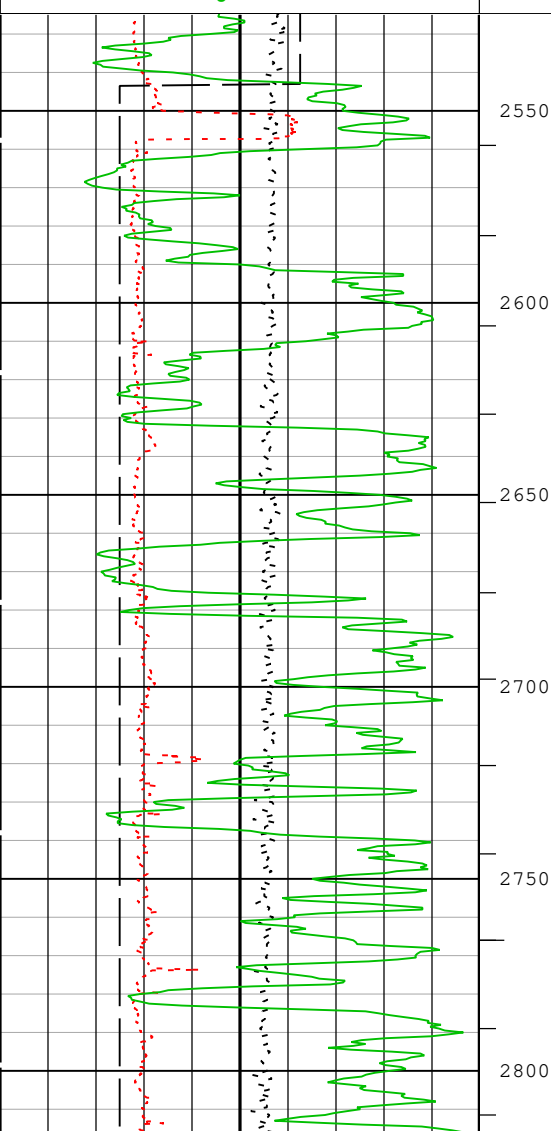
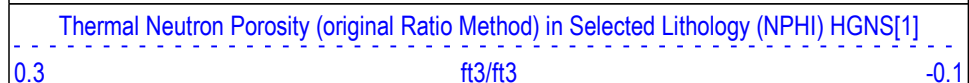
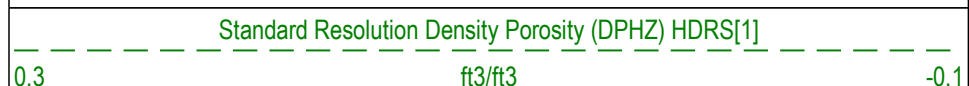
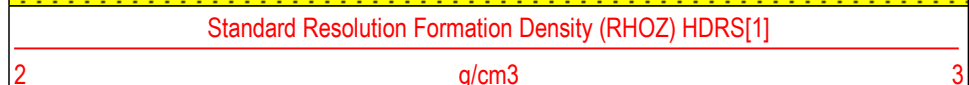
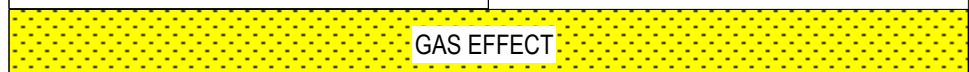
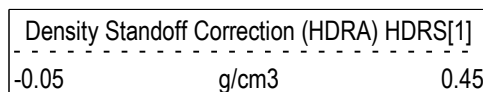
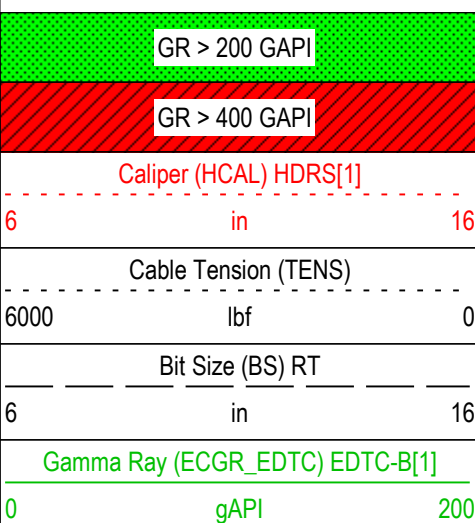
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Index Type: Measured Depth Creation Date: 15-Apr-2019 17:59:16

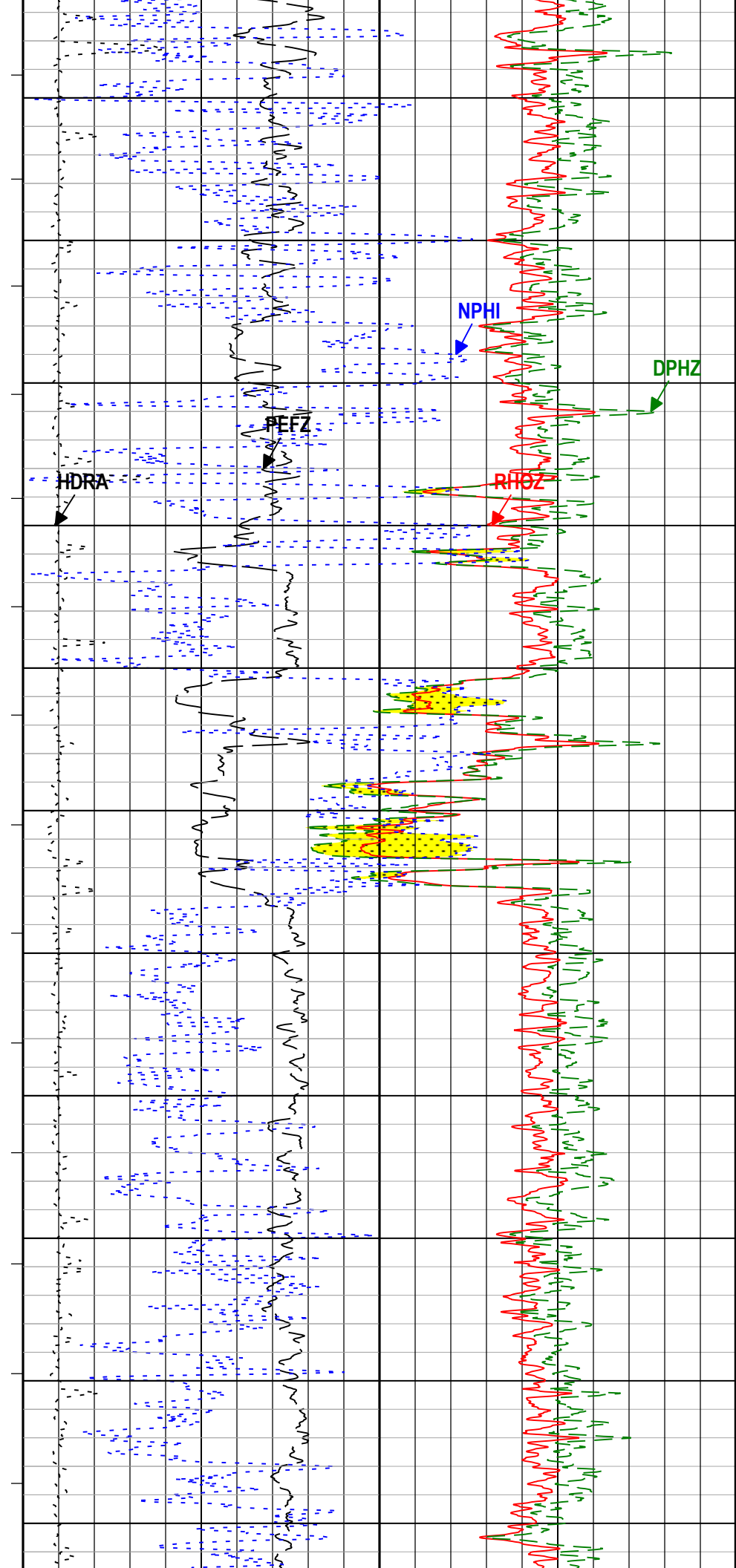
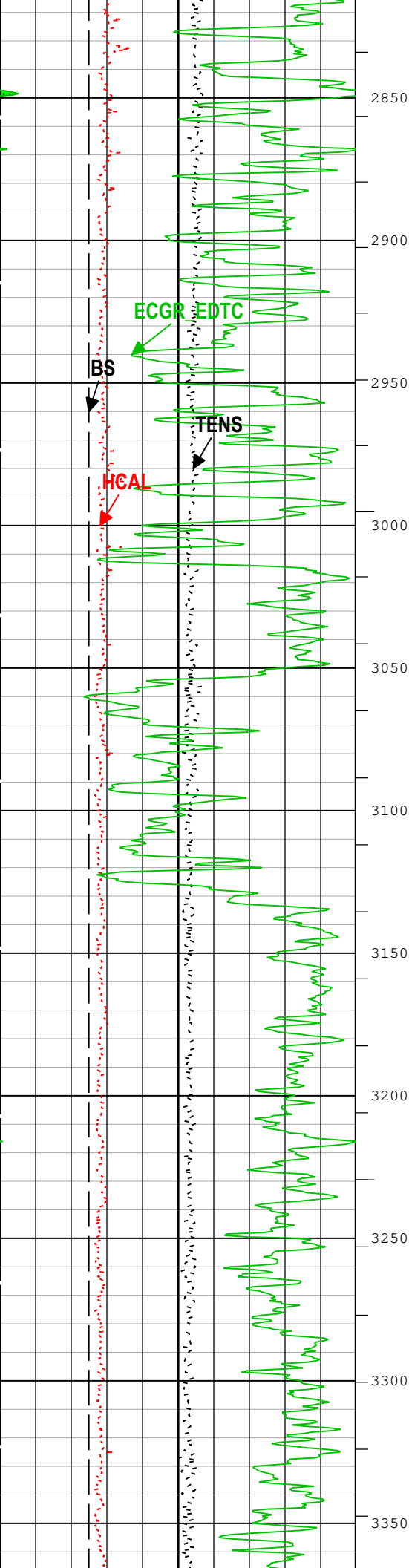
—ICV - Integrated Cement Volume every 10.00 (ft3)

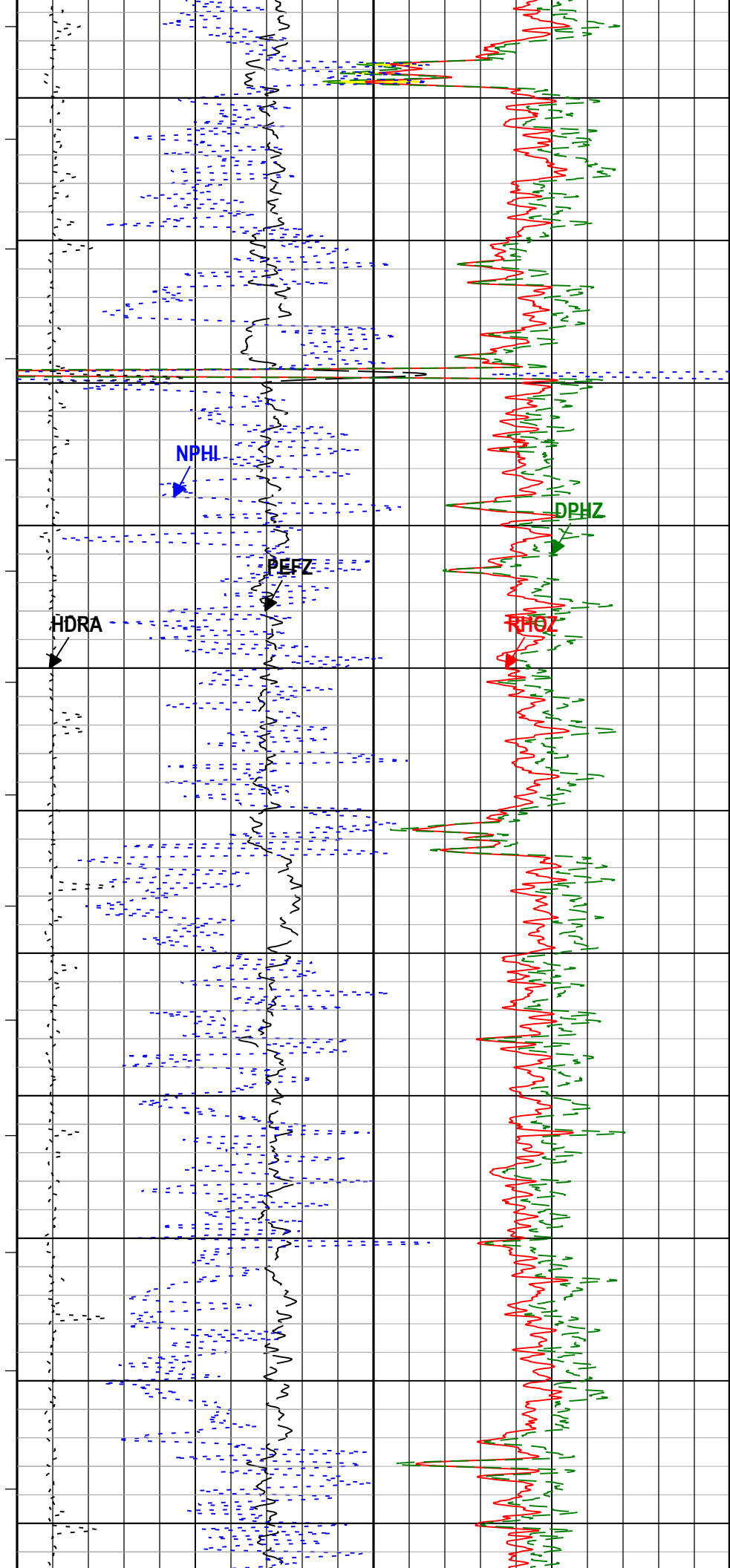
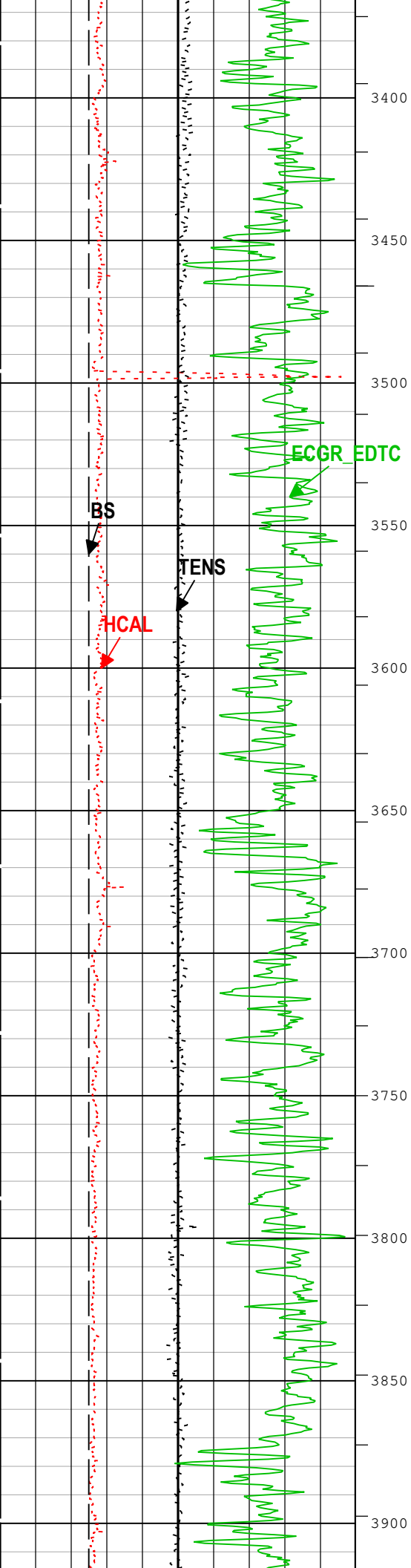
— IHV - Integrated Hole Volume every 10.00 (ft3)

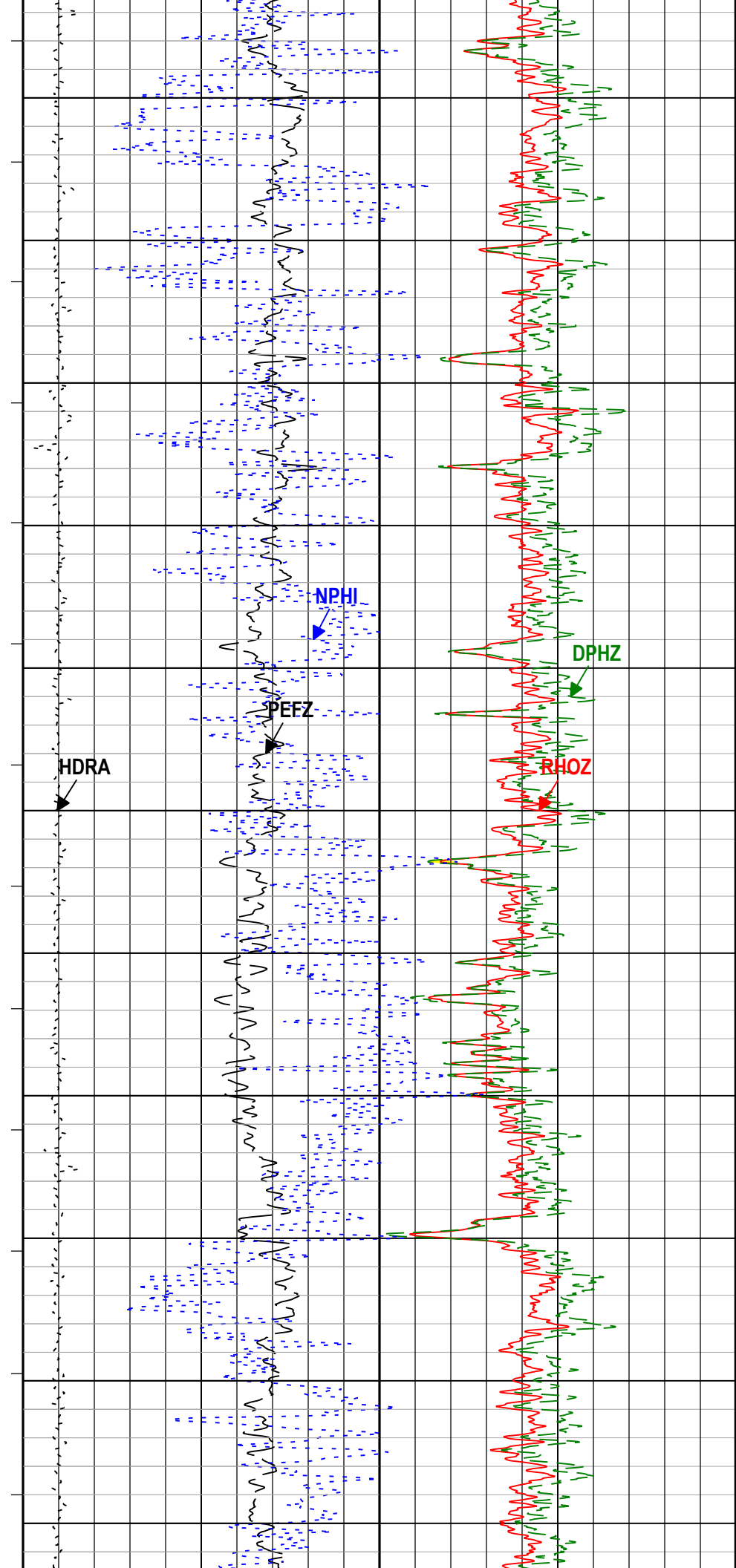
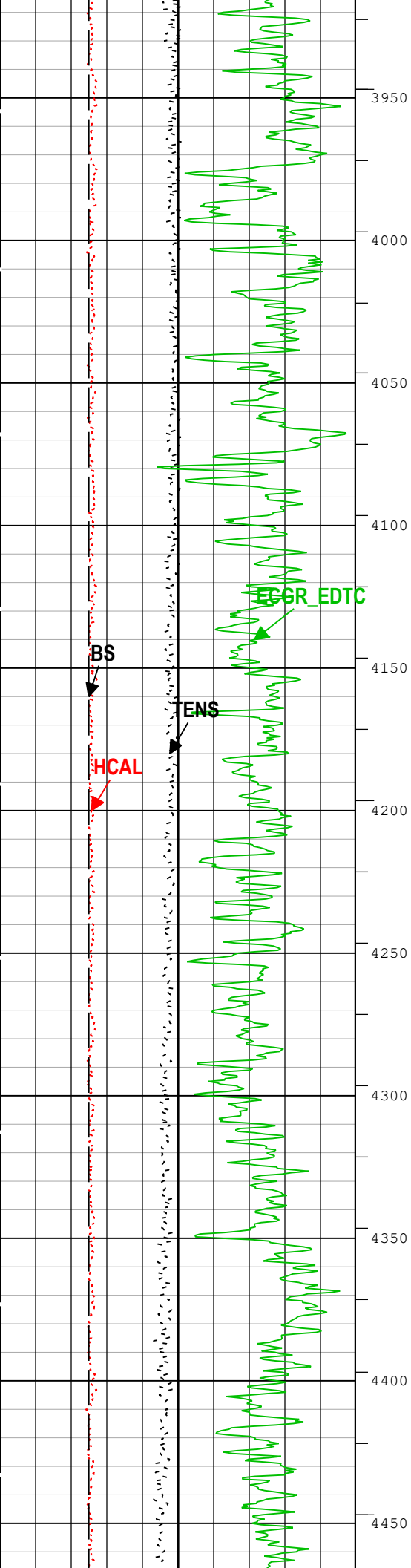
— IHV - Integrated Hole Volume every 100.00 (ft3)

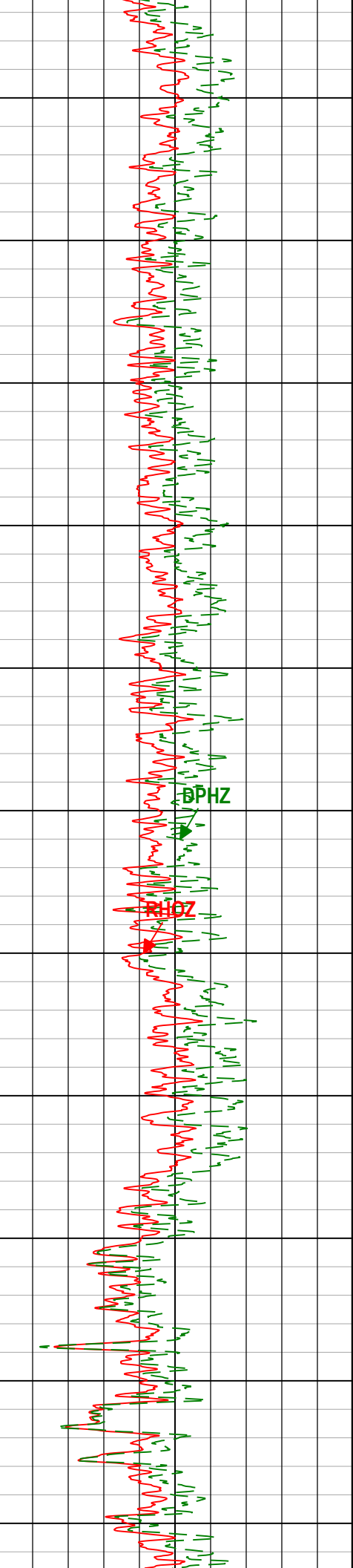
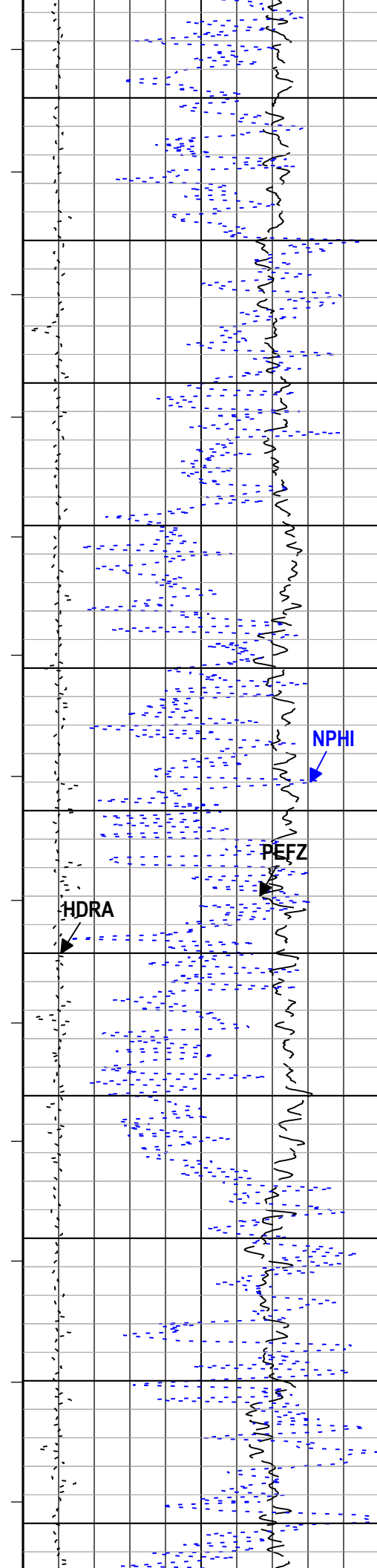
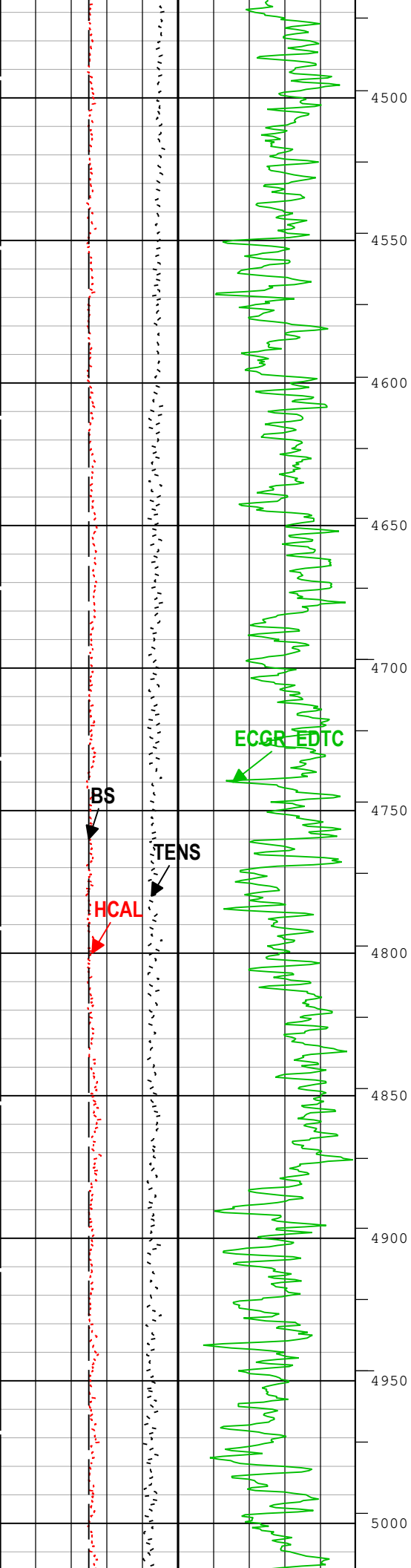
TIME_1900 - Time Marked every 60.00 (s)

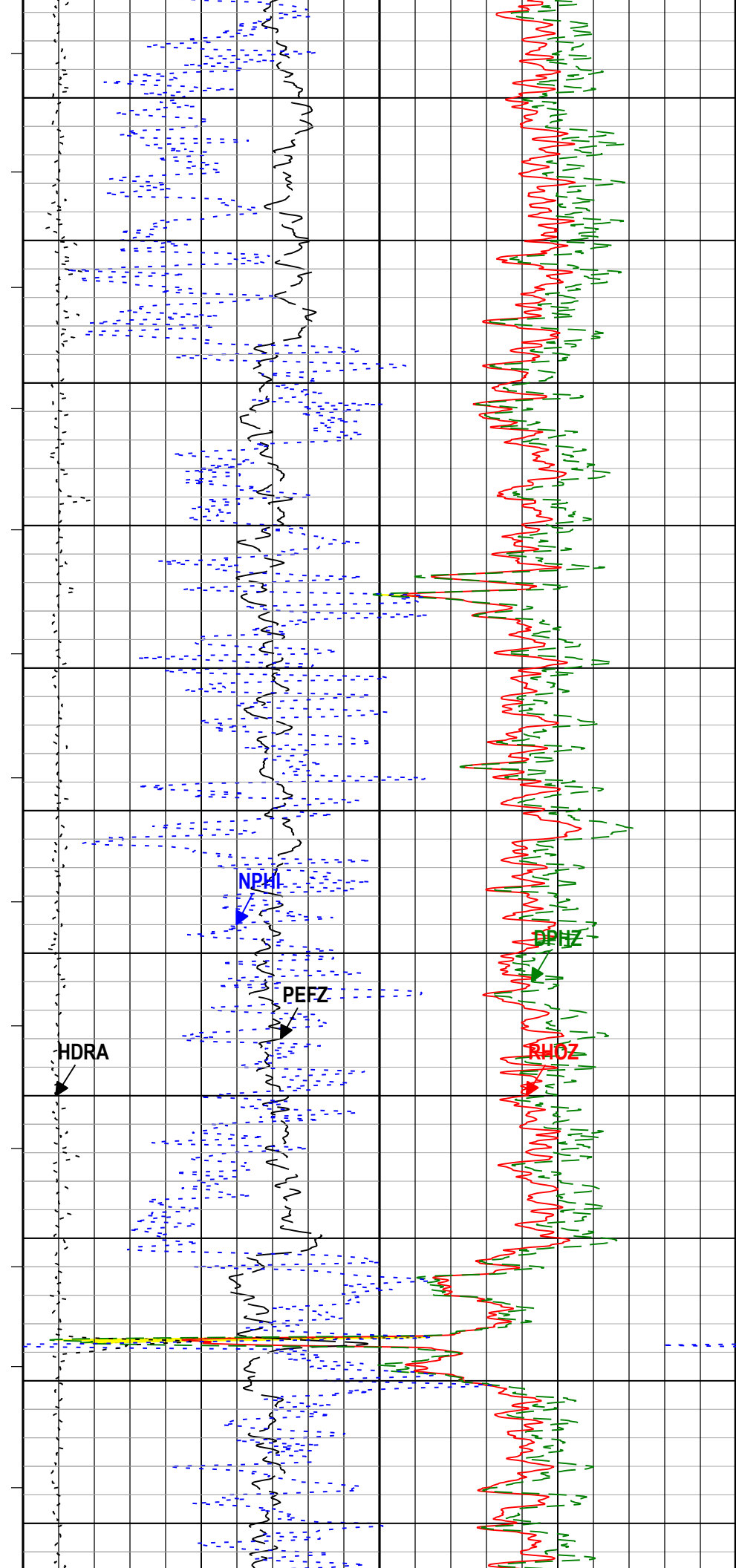
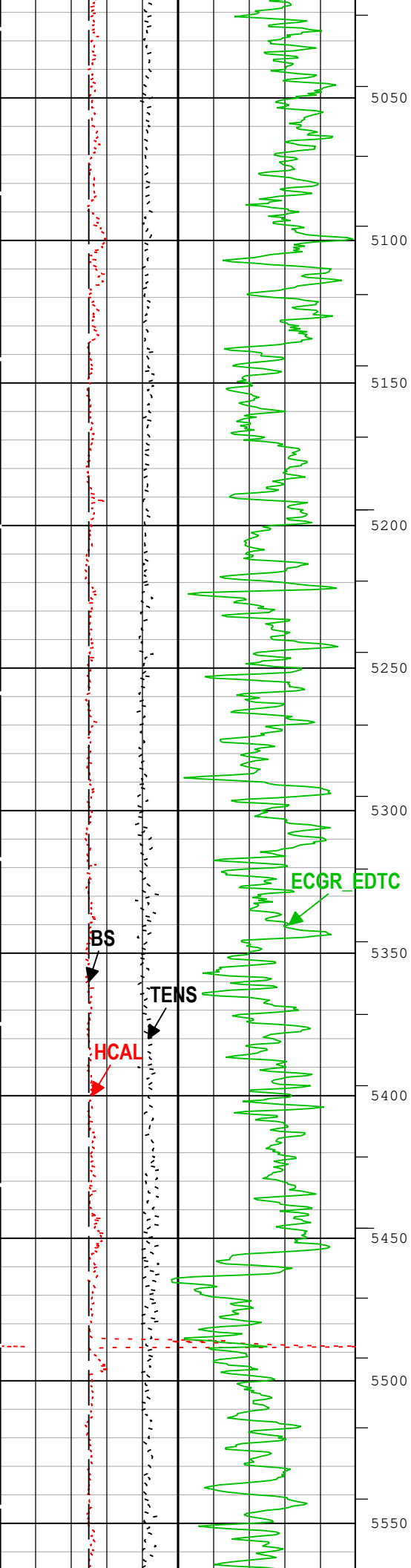


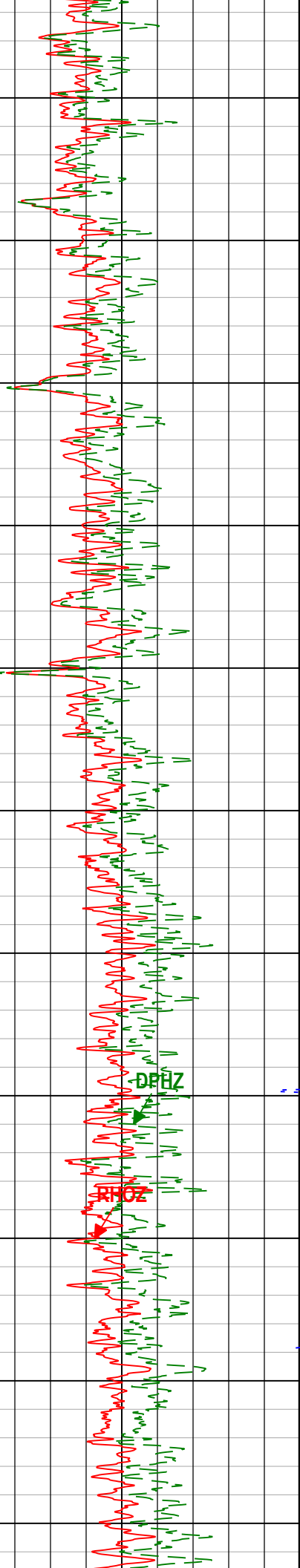
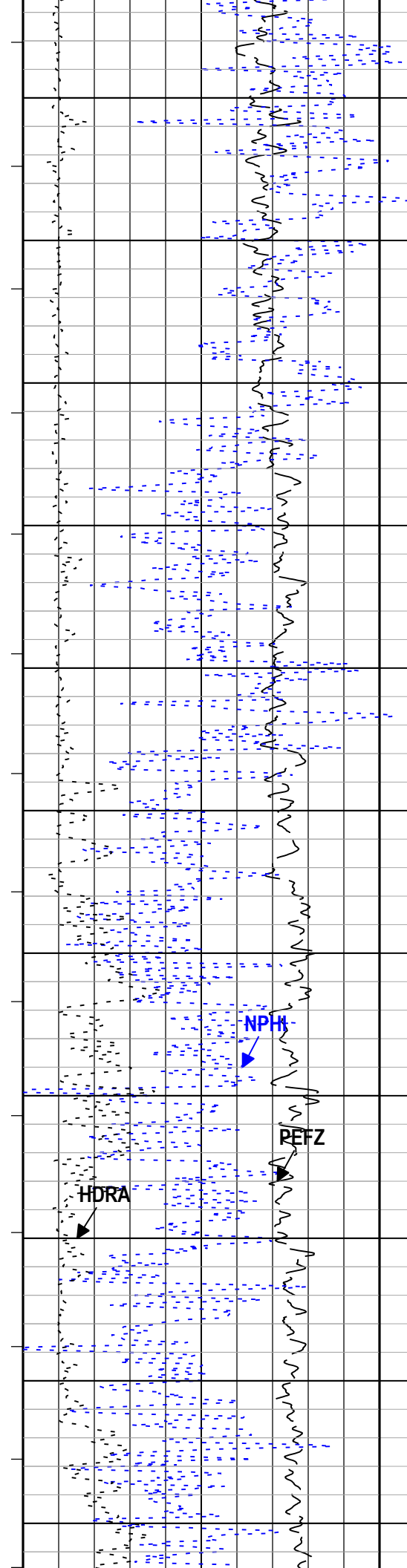
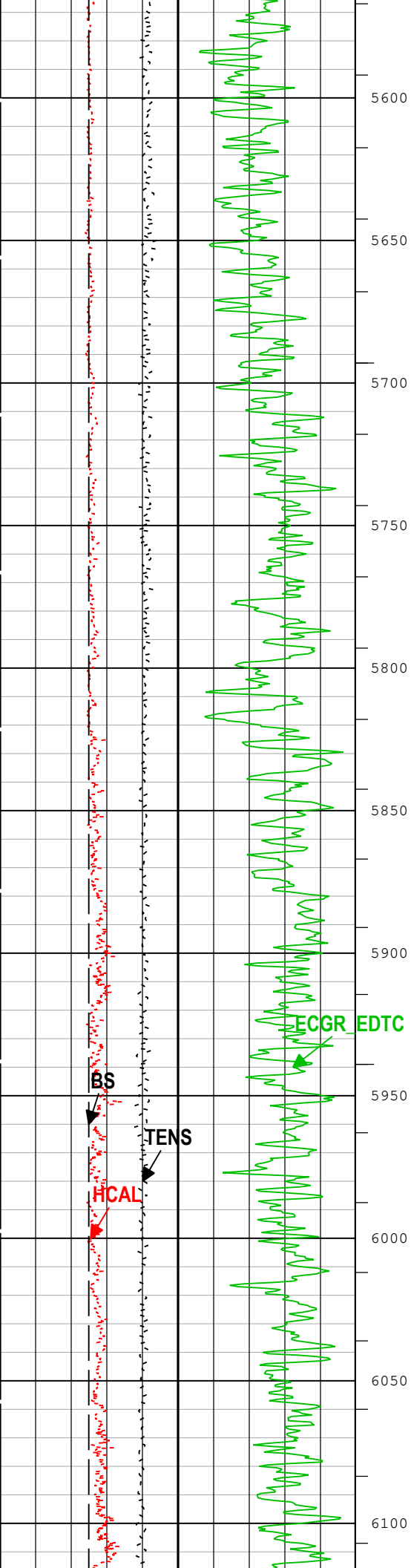


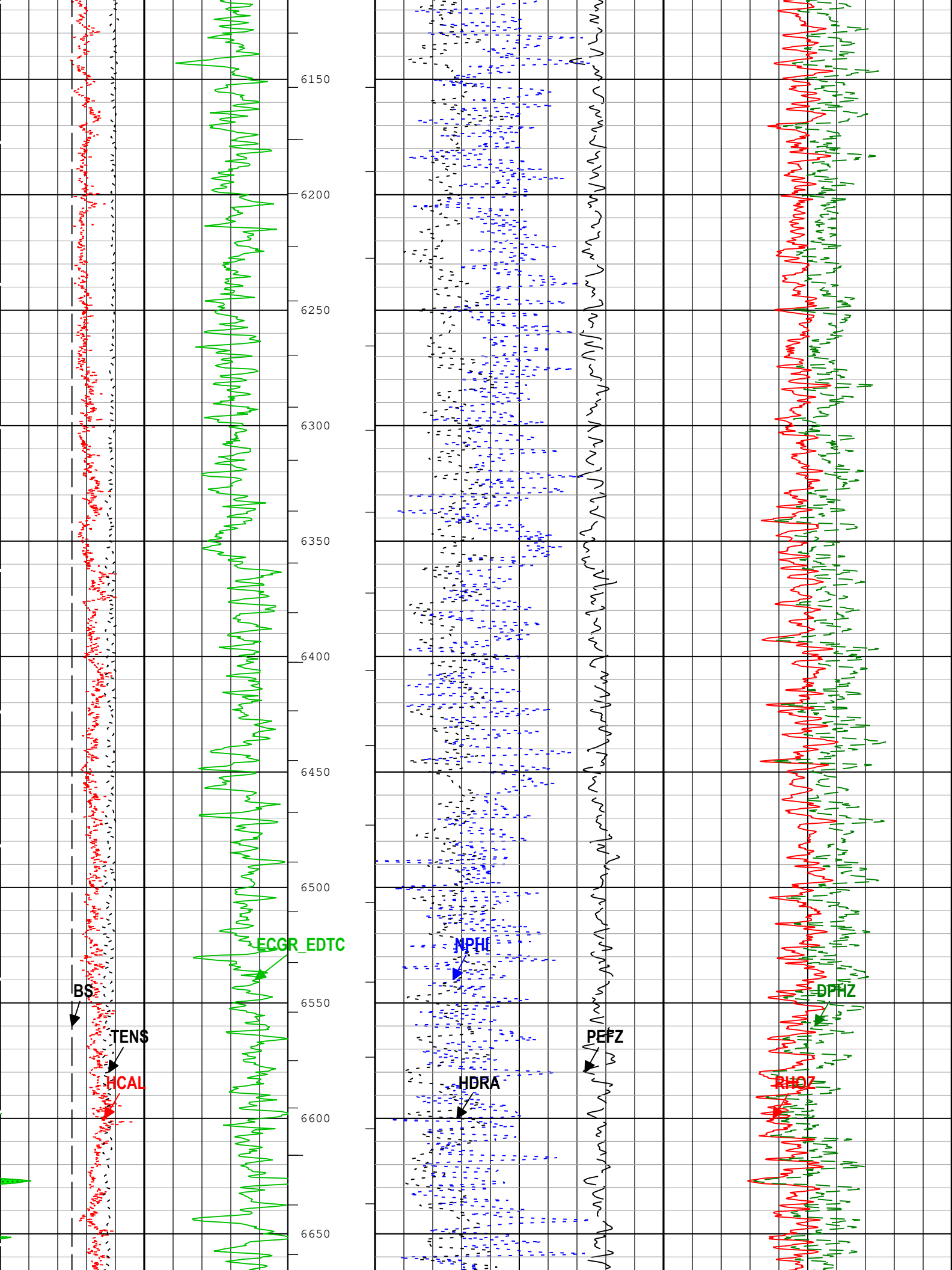


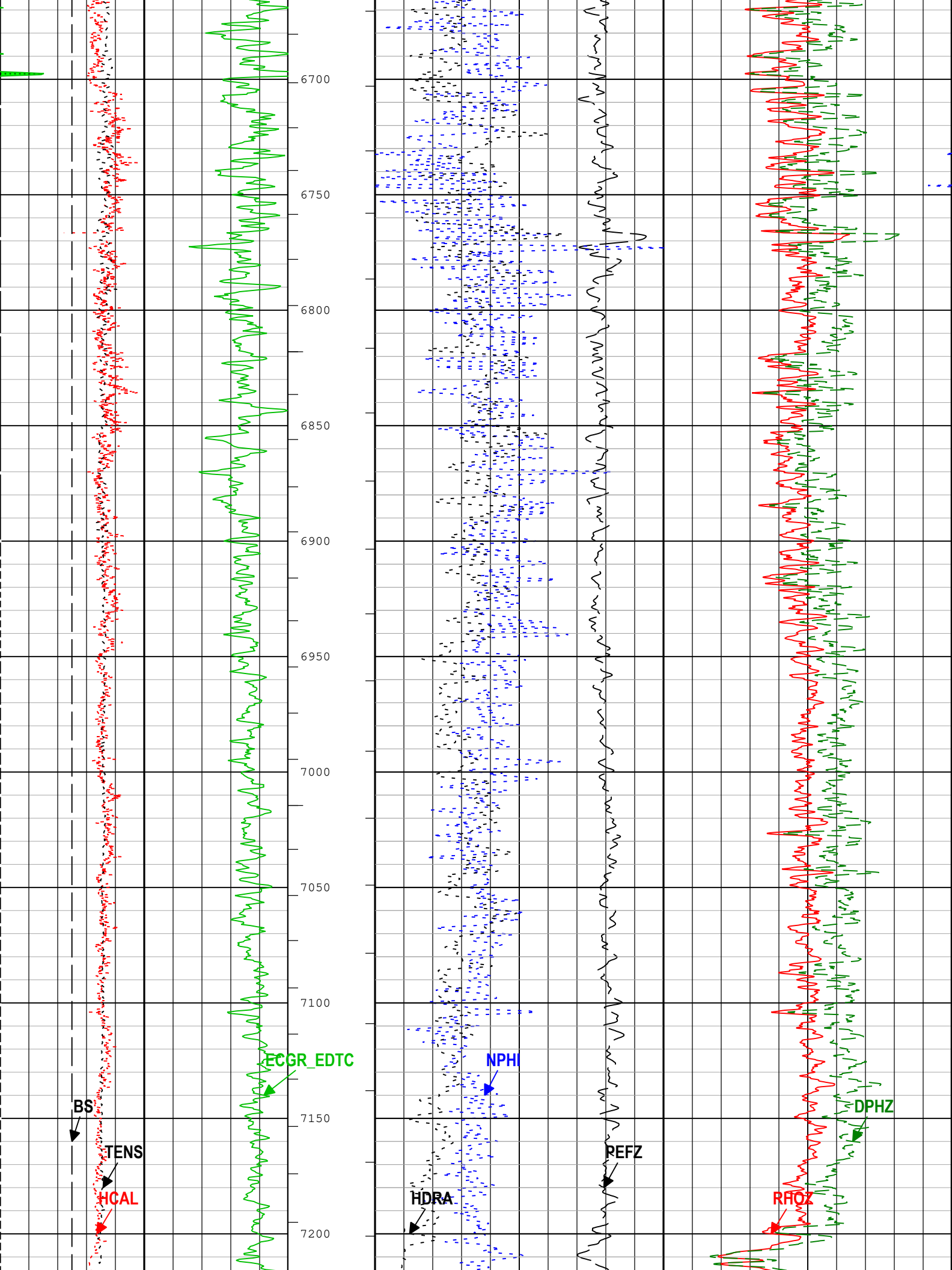


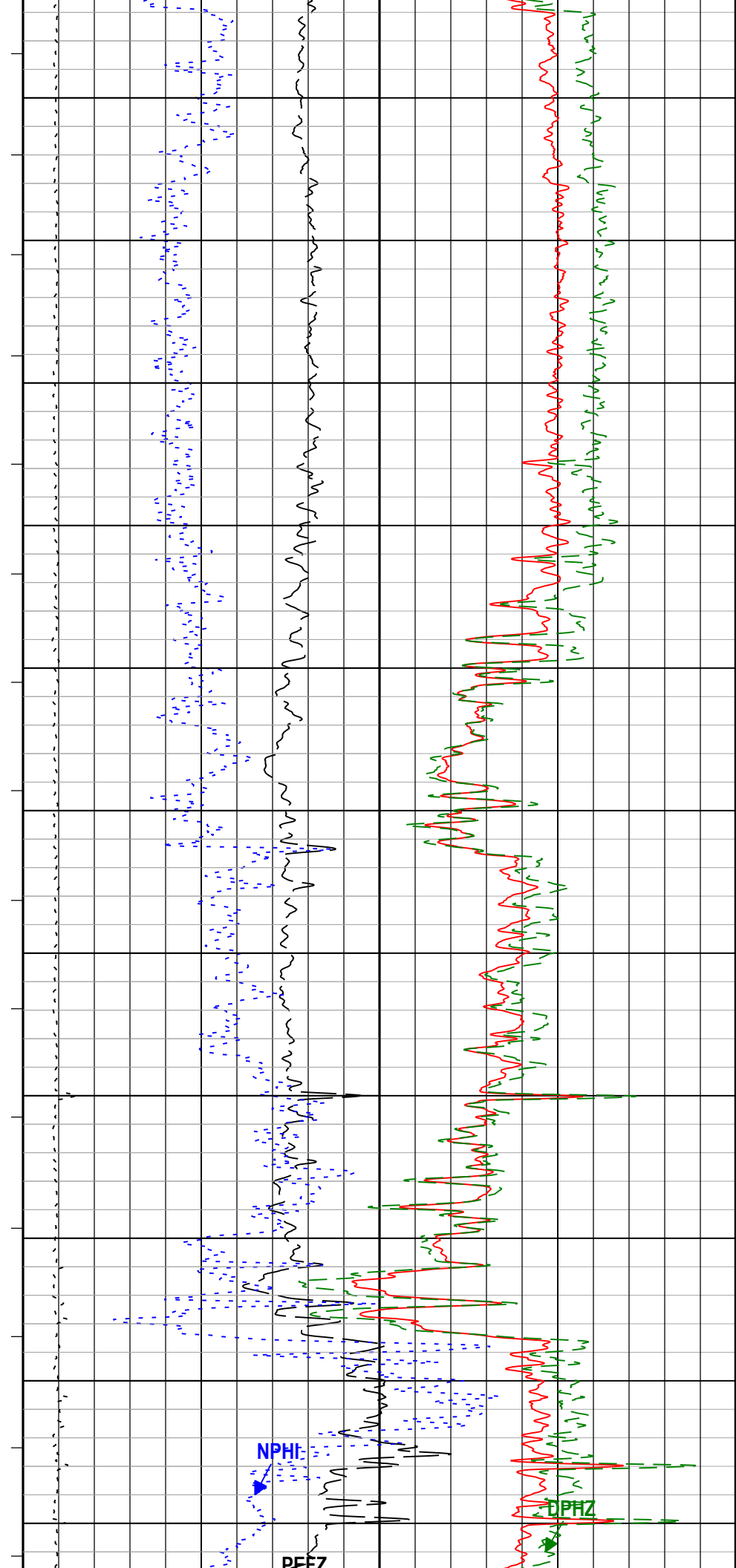
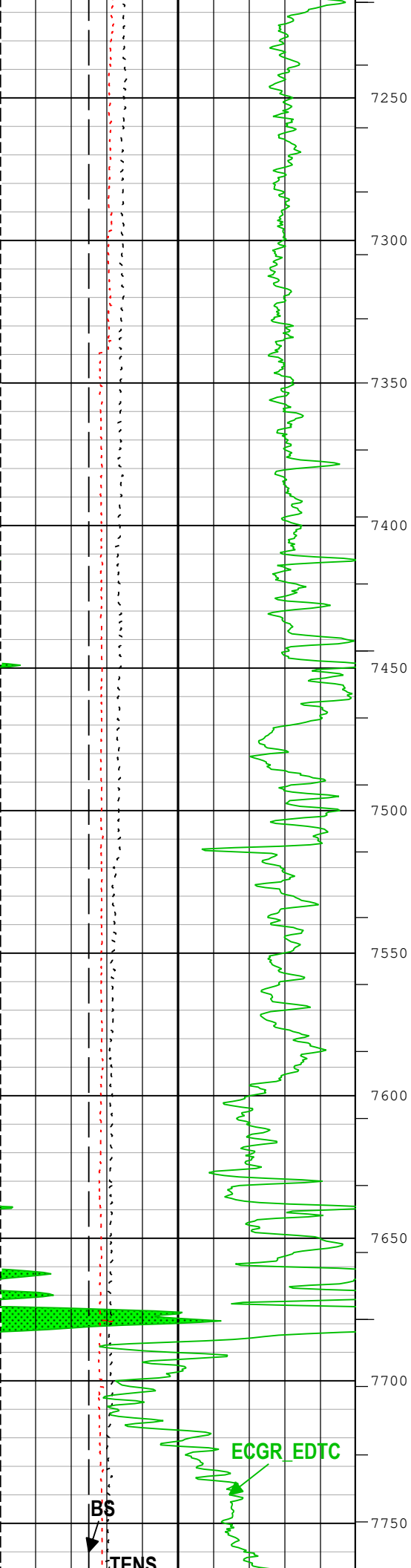


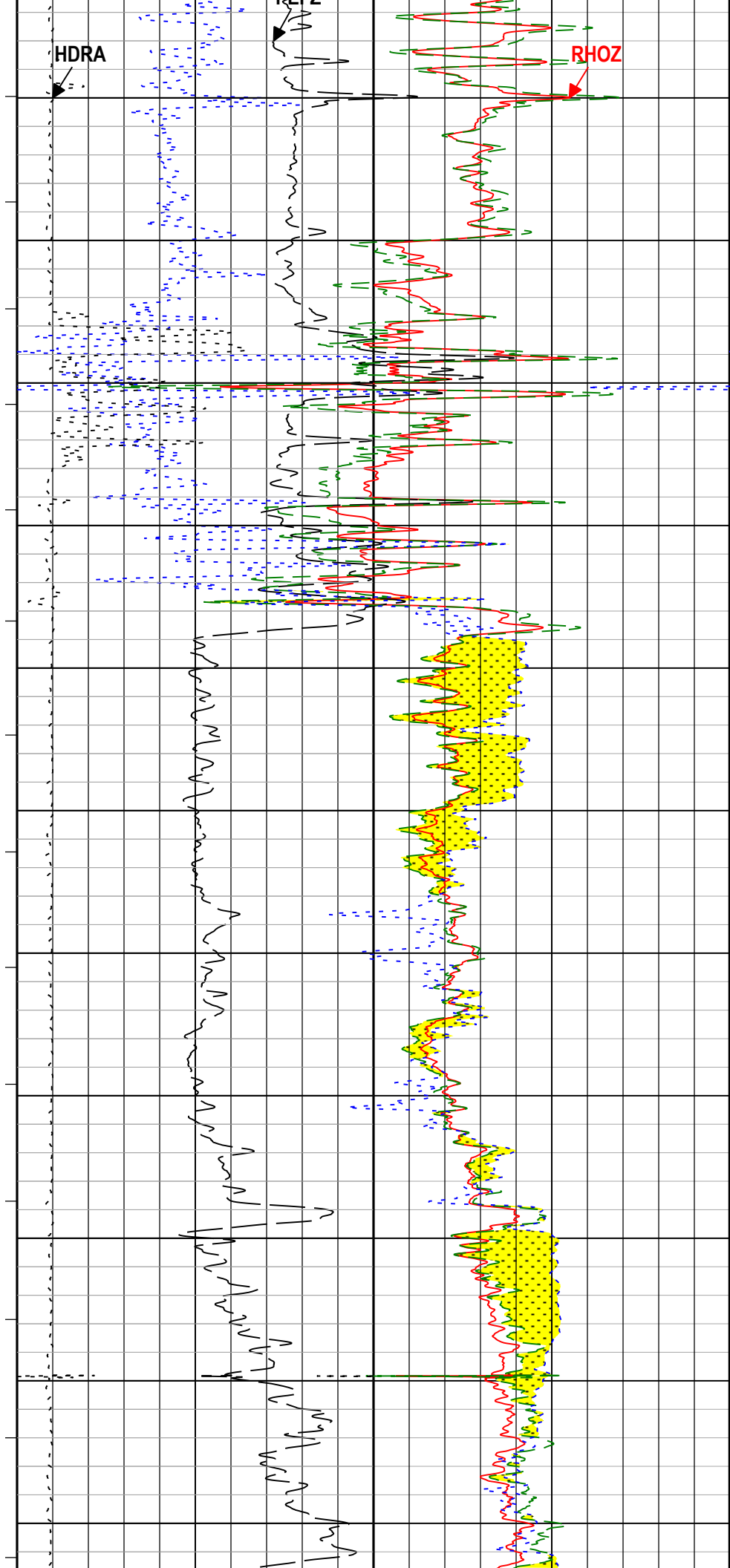
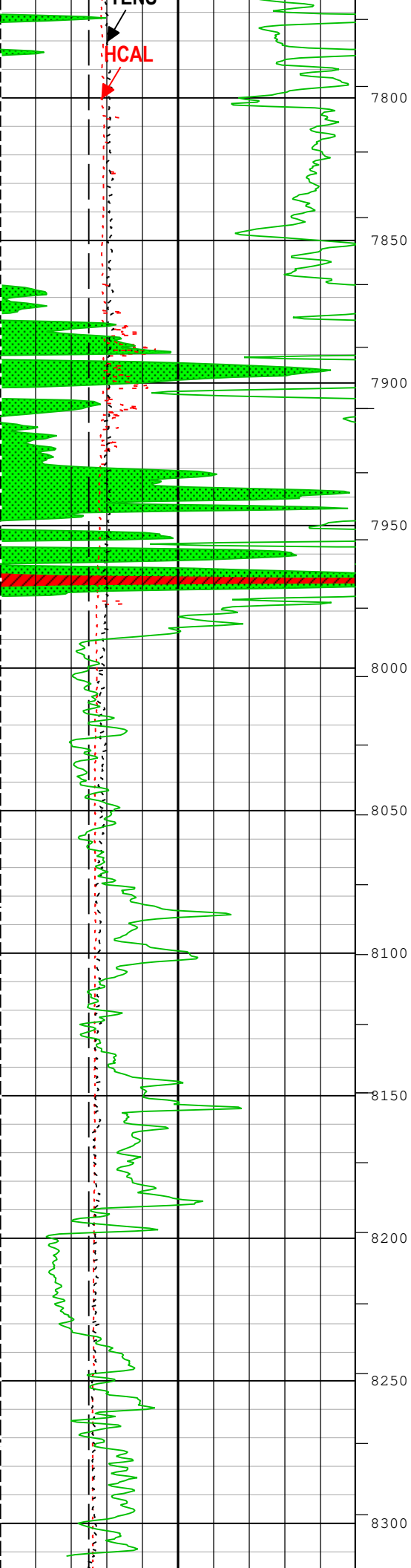


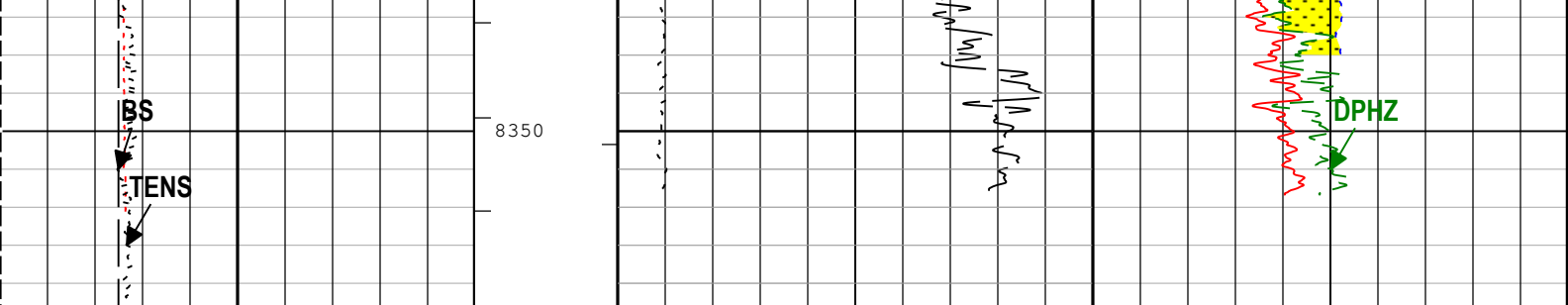












GR > 200 GAPI		
GR > 400 GAPI		
Caliper (HCAL) HDRS[1]		
6	in	16
Cable Tension (TENS)		
6000	lbf	0
Bit Size (BS) RT		
6	in	16
Gamma Ray (ECGR_EDTC) EDTC-B[1]		
0	gAPI	200

GAS EFFECT		
Standard Resolution Formation Density (RHOZ) HDRS[1]		
2	g/cm3	3
Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS[1]		
0		10
Standard Resolution Density Porosity (DPHZ) HDRS[1]		
0.3	ft3/ft3	-0.1
Thermal Neutron Porosity (original Ratio Method) in Selected Lithology (NPHI) HGNS[1]		
0.3	ft3/ft3	-0.1
Density Standoff Correction (HDRA) HDRS[1]		
-0.05	g/cm3	0.45

TIME_1900 - Time Marked every 60.00 (s)

— IHV - Integrated Hole Volume every 100.00 (ft3)

— IHV - Integrated Hole Volume every 10.00 (ft3)

— ICV - Integrated Cement Volume every 10.00 (ft3)

Description: Triple Combo standard resolution template for Platform Express Format: Log (BRADFORD NUC) Index Scale: 2 in per 100 ft Index Unit: ft
Index Type: Measured Depth Creation Date: 15-Apr-2019 17:59:16

Channel Processing Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	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	0.446	in
CBLO	Casing Bottom (Logger)	WLSESSION	2543	ft
CDEN	Cement Density	EDTC-B	2	g/cm3
CSODDRL	Casing Outer Diameter - Zoned along driller depths	WLSESSION	9.625	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DHC	Density Hole Correction	HDRS-H	Bit Size	
FCD	Future Casing (Outer) Diameter	WLSESSION	5.5	in
FD	Fluid Density	Borehole	1	g/cm3
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	CALI	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MDEN	Matrix Density for Density Porosity	Borehole	2.71	g/cm3
NPRM	HRDD Nuclear Processing Mode	HDRS-H	Time Zoned	

1ADepth Zoned Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	12.25	2525	2543
BS	8.5	2543	8396.5

All depth are actual.

1A Time Zoned Parameters

Pass Log[2]:Up

Parameter	Value	Start Time	Stop Time	Start Depth (ft)	Stop Depth (ft)
NPRM	High Resolution	15-Apr-2019 07:56:46	15-Apr-2019 08:17:05	8396.33	8272.33

Pass Log[8]:Up

NPRM	Standard Resolution	15-Apr-2019 10:06:38	15-Apr-2019 10:51:09	8272.33	8084.83
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Pass Log[9]:Up

NPRM	Standard Resolution	15-Apr-2019 11:04:41	15-Apr-2019 16:11:56	8084.83	2500.83
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All depth are at tool zero.

Tool Control Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
HRGD_BOARD_TYPE	HRGD Board Type	HDRS-H	WITH_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h

Main Pass

MAIN PASS 5"=100'

Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
IHV	Integrated Hole Volume	GCSE_UP_PASS, GCSE_DOWN_PASS:1A	2499.44	ft3
ICV	Integrated Cement Volume	GCSE_UP_PASS, GCSE_DOWN_PASS:1A, FCD	1533.73	ft3

Software Version

Acquisition System	Version
Maxwell 2019	9.0.106845.3100

Composite Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Log[2]:Up	Up	8266.17 ft	8396.38 ft	15-Apr-2019 7:56:45 AM	15-Apr-2019 8:17:05 AM	ON	2.60 ft	Yes
1A	Log[8]:Up	Up	8021.42 ft	8407.18 ft	15-Apr-2019 9:44:04 AM	15-Apr-2019 10:51:09 AM	ON	3.12 ft	Yes
1A	Log[9]:Up	Up	2500.63 ft	8126.68 ft	15-Apr-2019 10:57:49 AM	15-Apr-2019 4:11:56 PM	ON	4.17 ft	Yes

All depths are referenced to toolstring zero

Log	Company:North East Natural Energy LLC Well:Boggess 17H Main Pass:S012
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Description: Triple Combo standard resolution template for Platform Express Format: Log (BRADFORD NUC) Index Scale: 5 in per 100 ft Index Unit: ft
Index Type: Measured Depth Creation Date: 15-Apr-2019 17:59:20

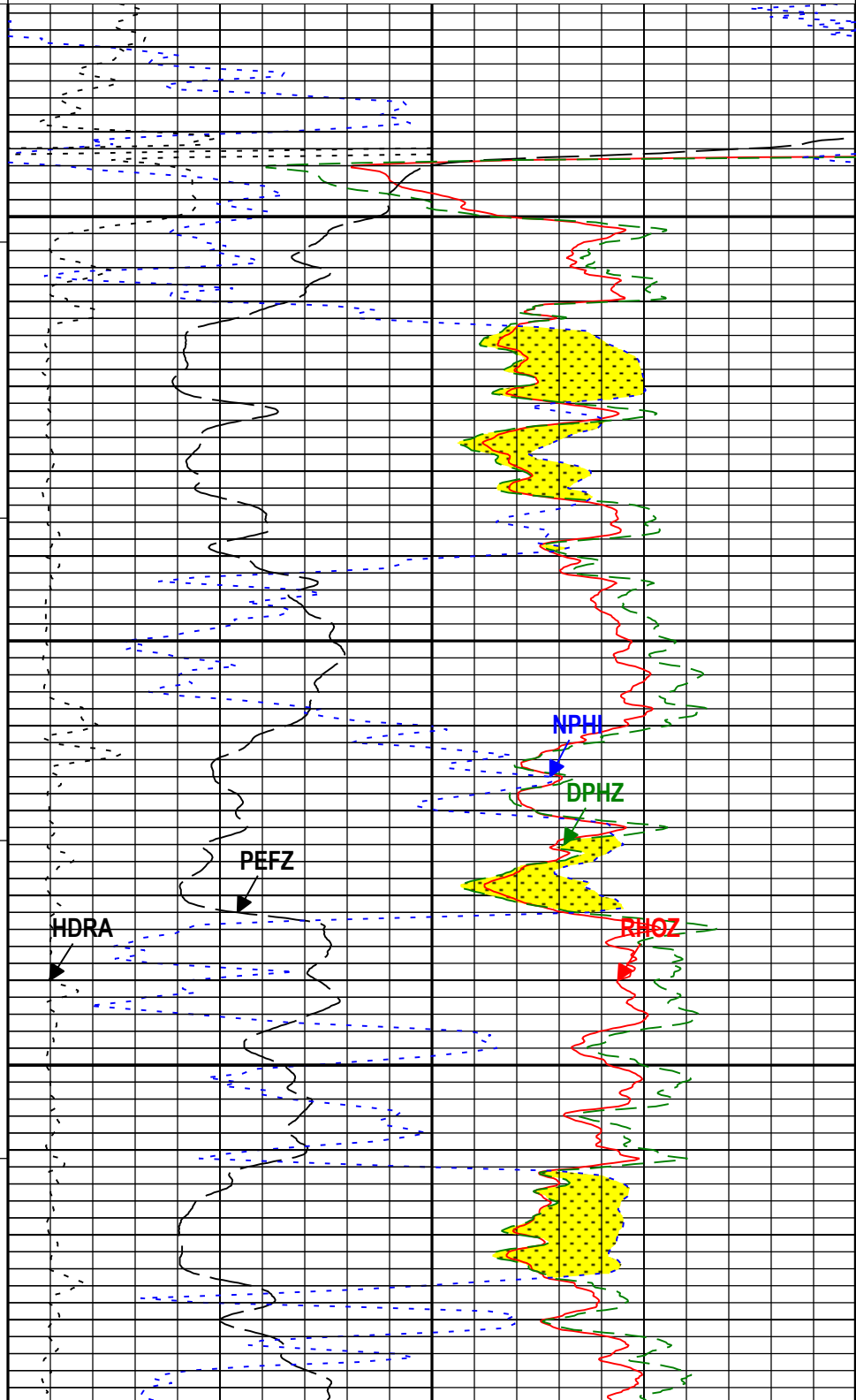
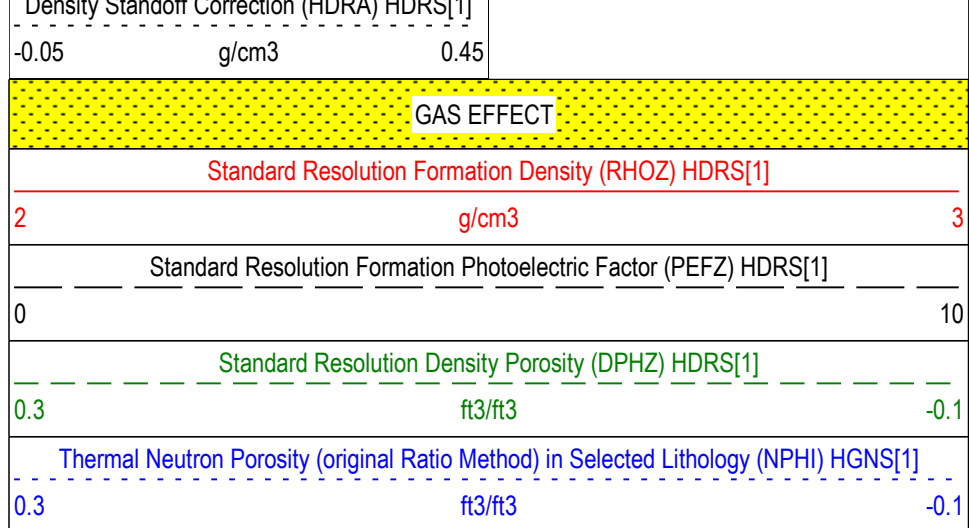
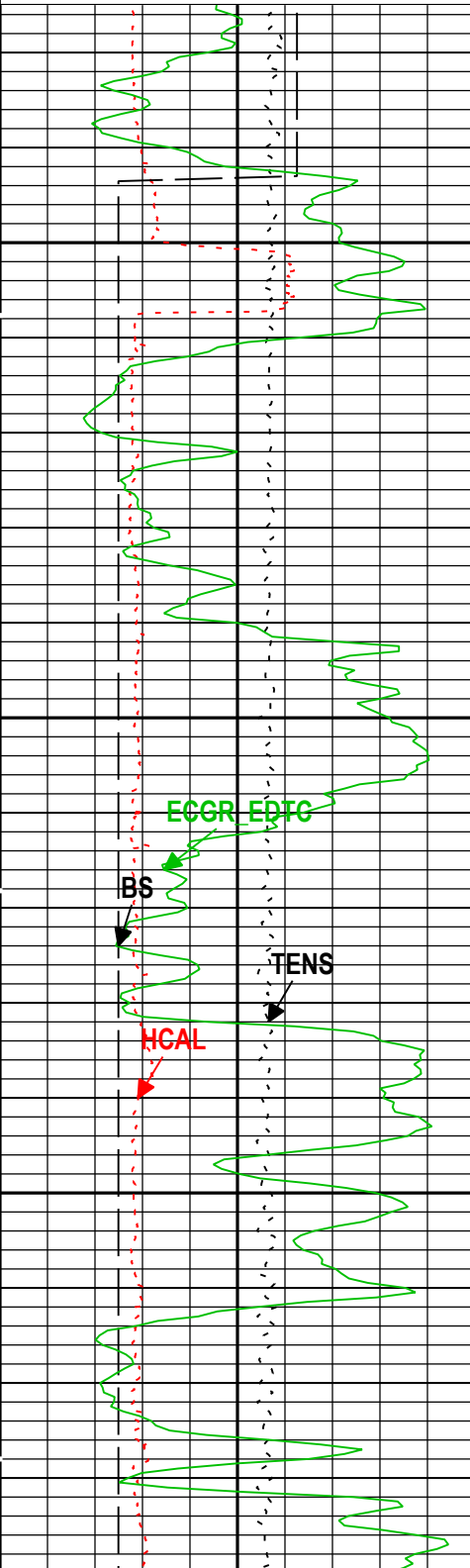
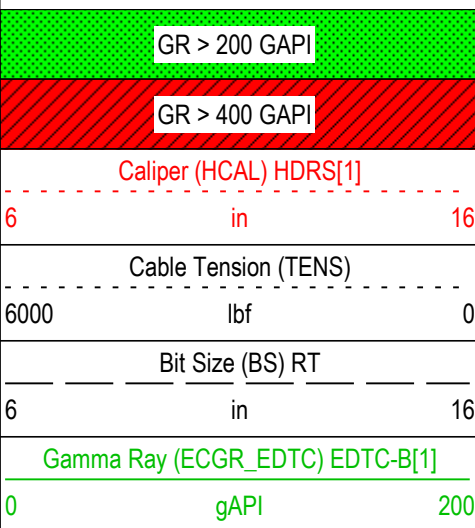
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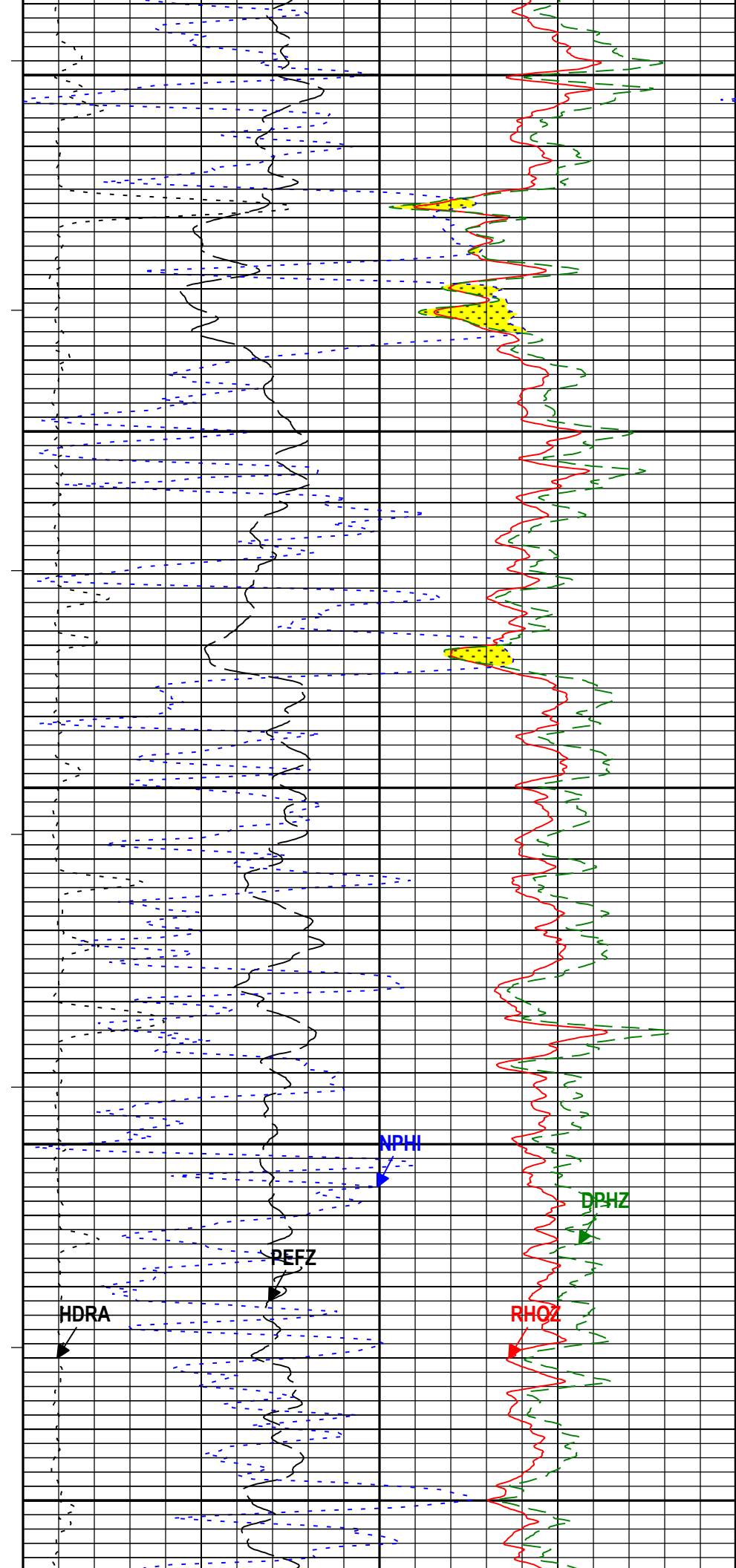
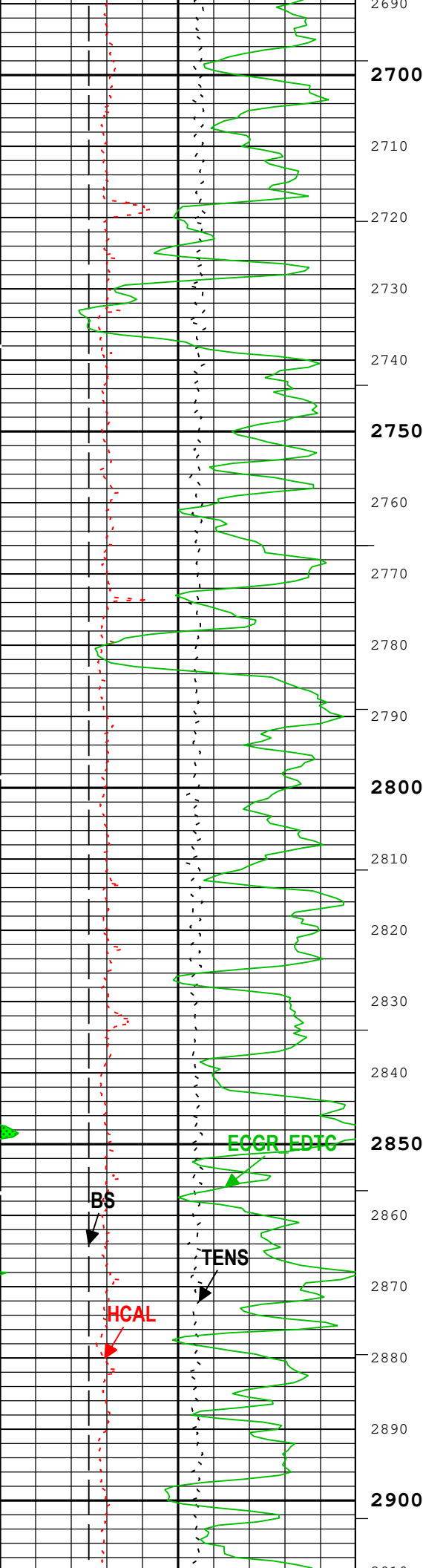
—ICV - Integrated Cement Volume every 10.00 (ft3)

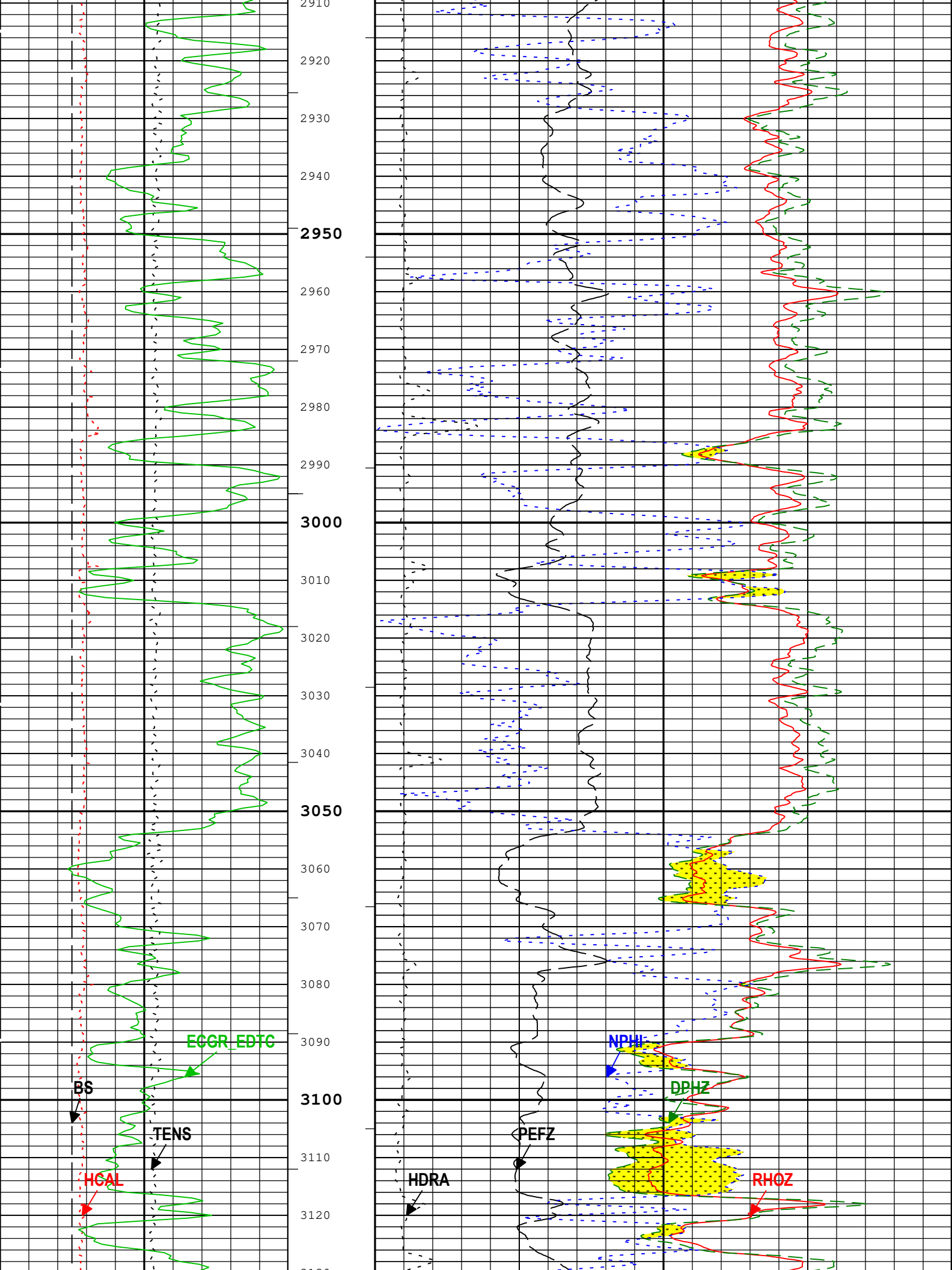
—IHV - Integrated Hole Volume every 10.00 (ft3)

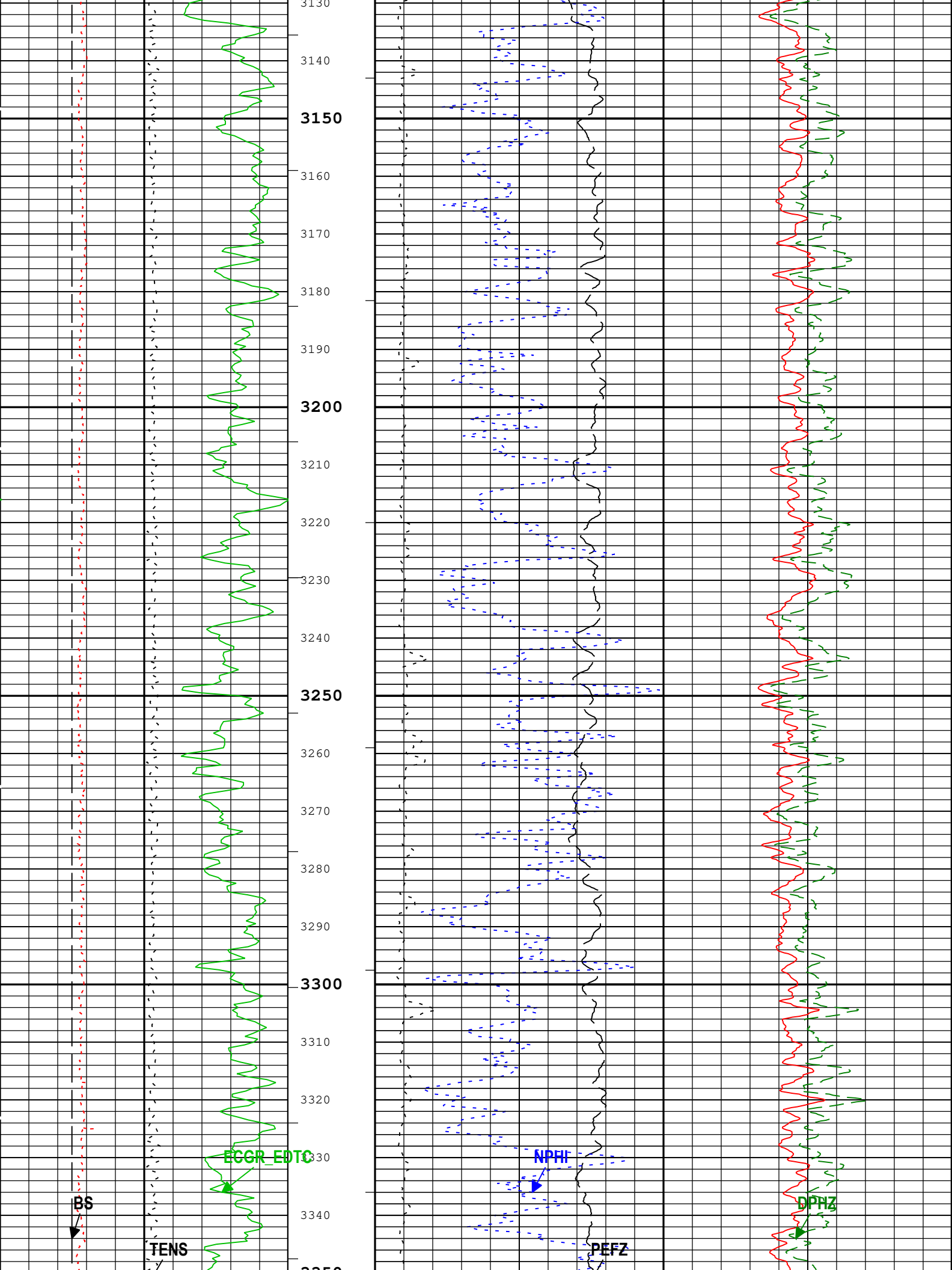
—IHV - Integrated Hole Volume every 100.00 (ft3)

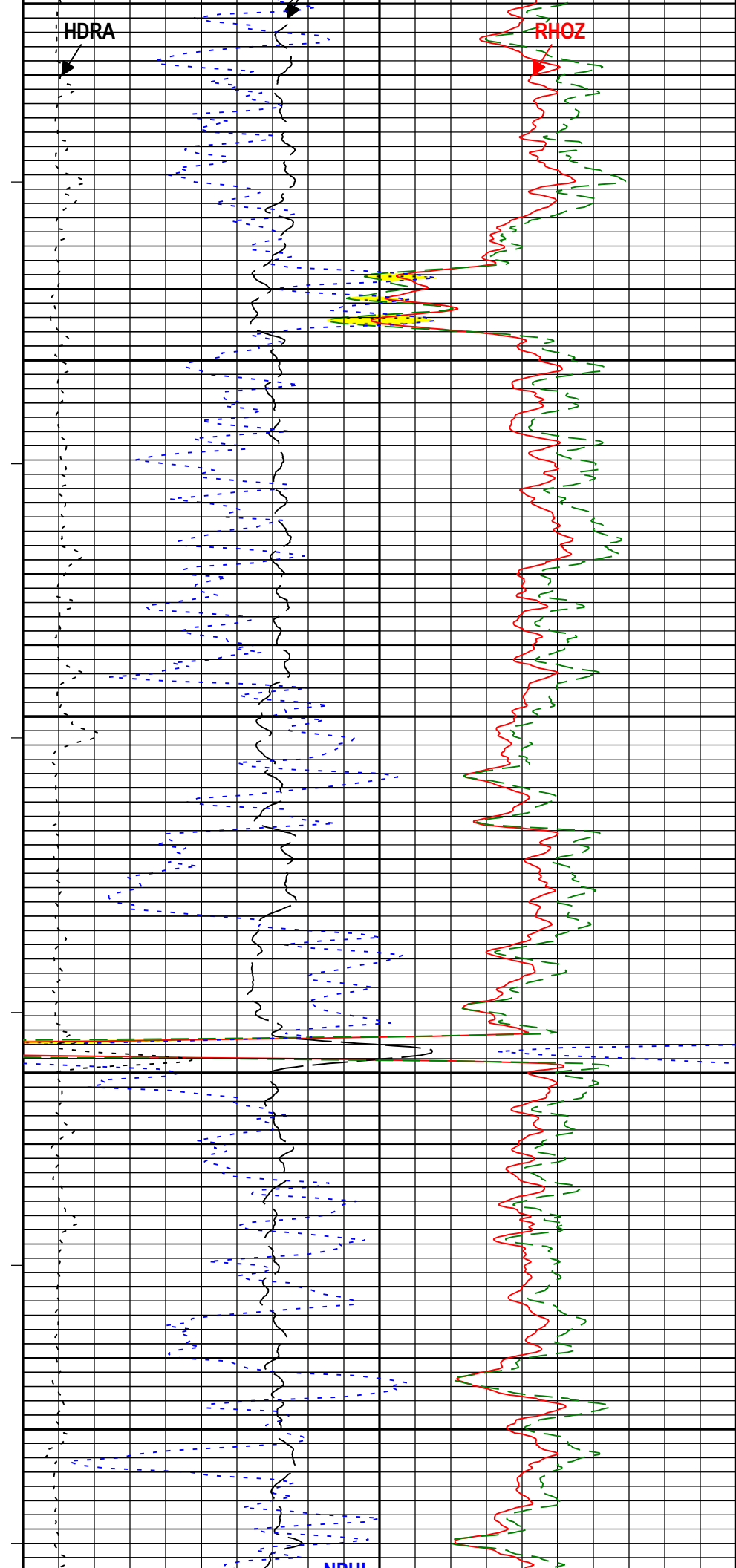
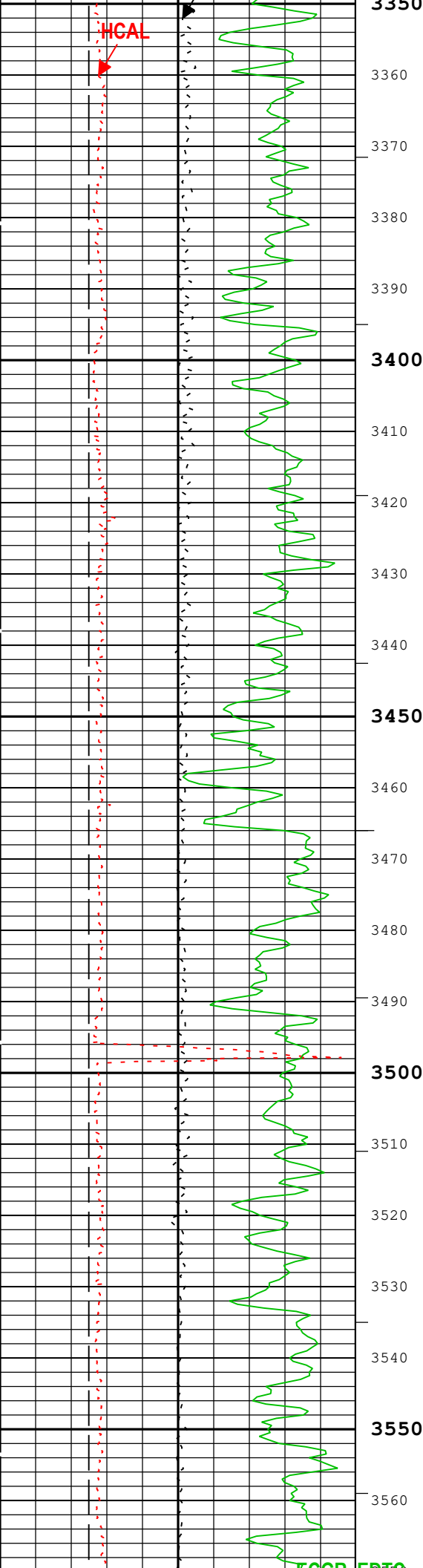
Density: Standoff Correction (UDPA) UDPCF11

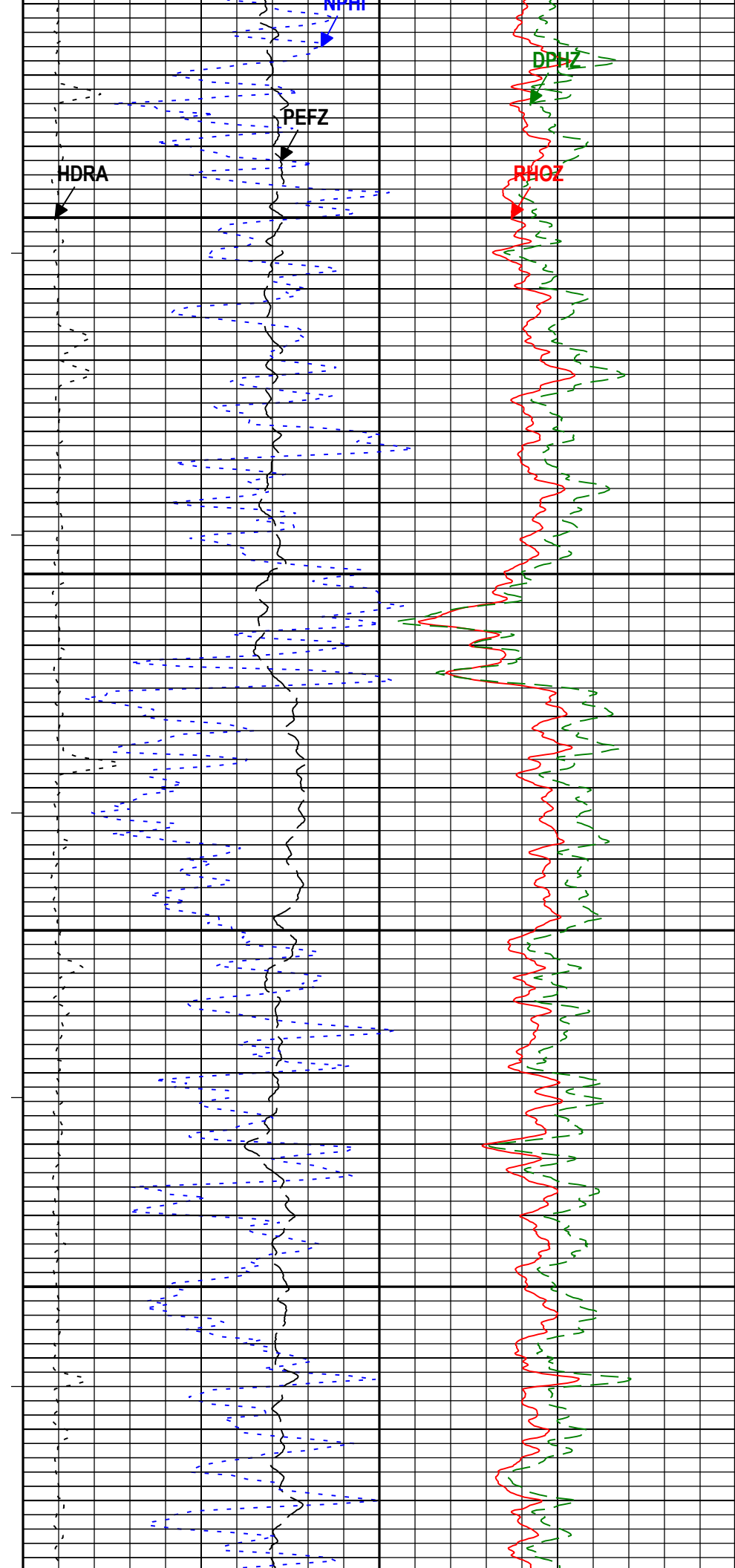
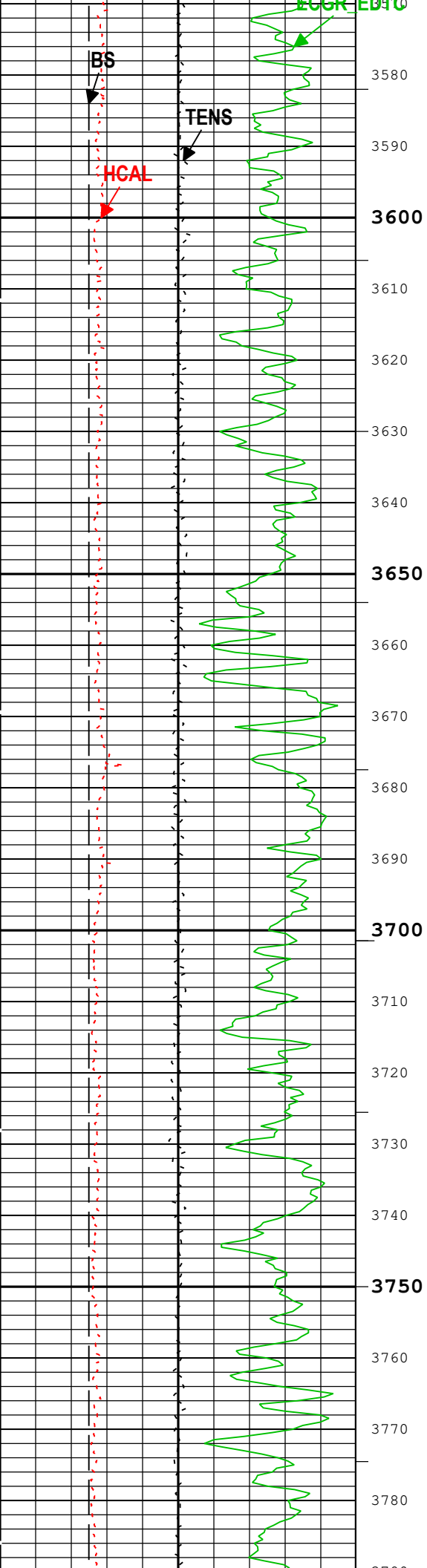


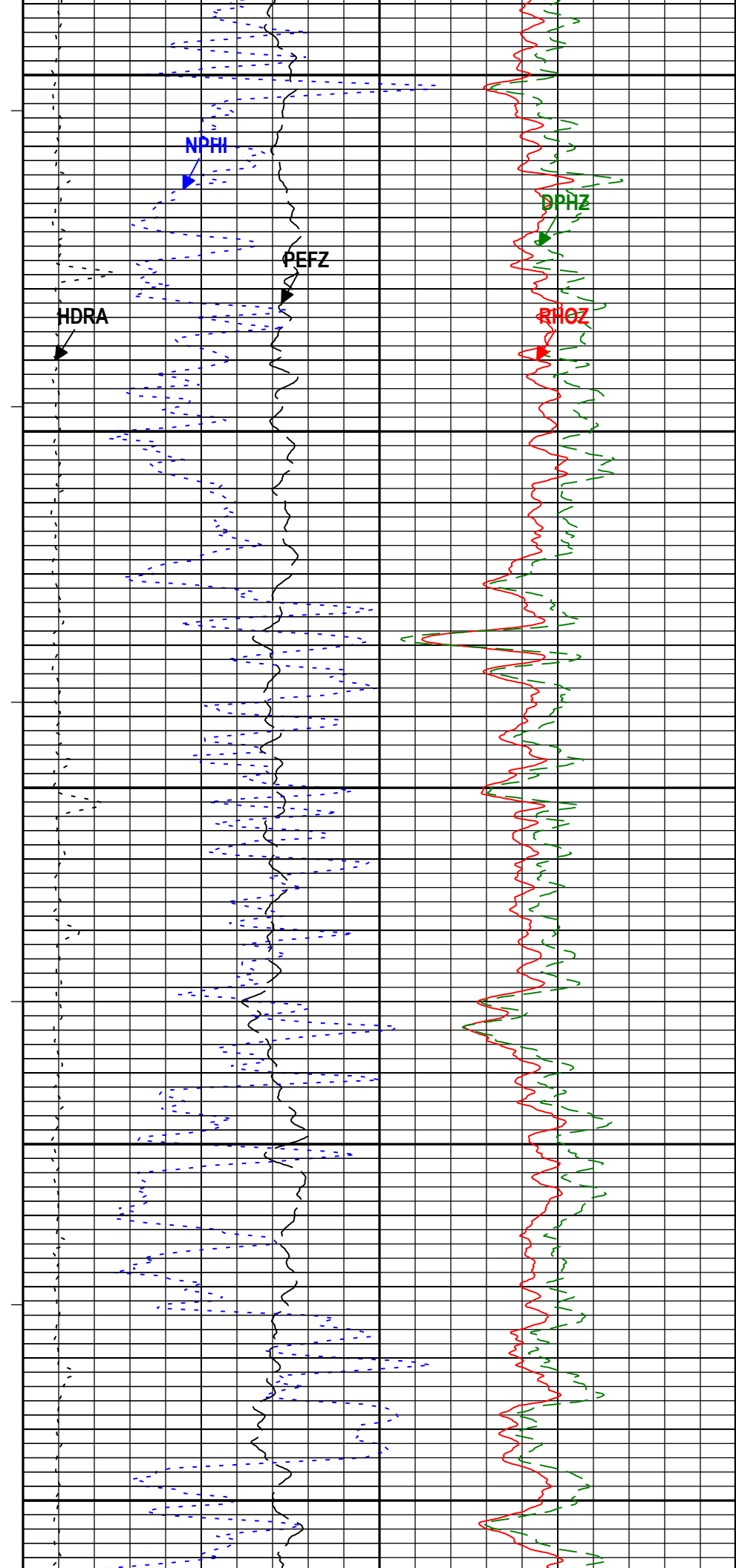
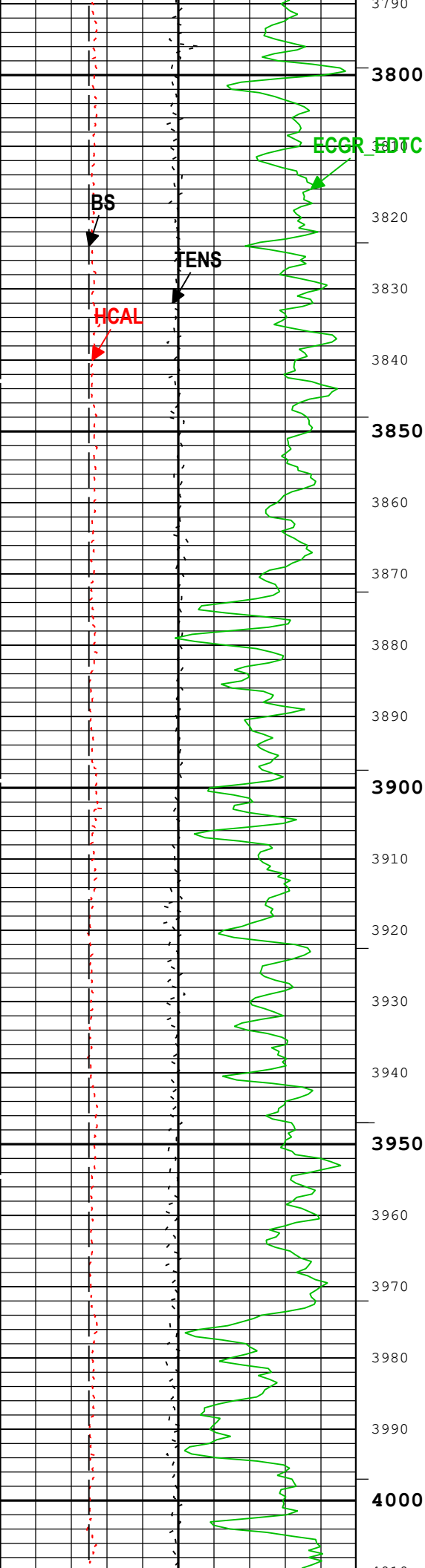


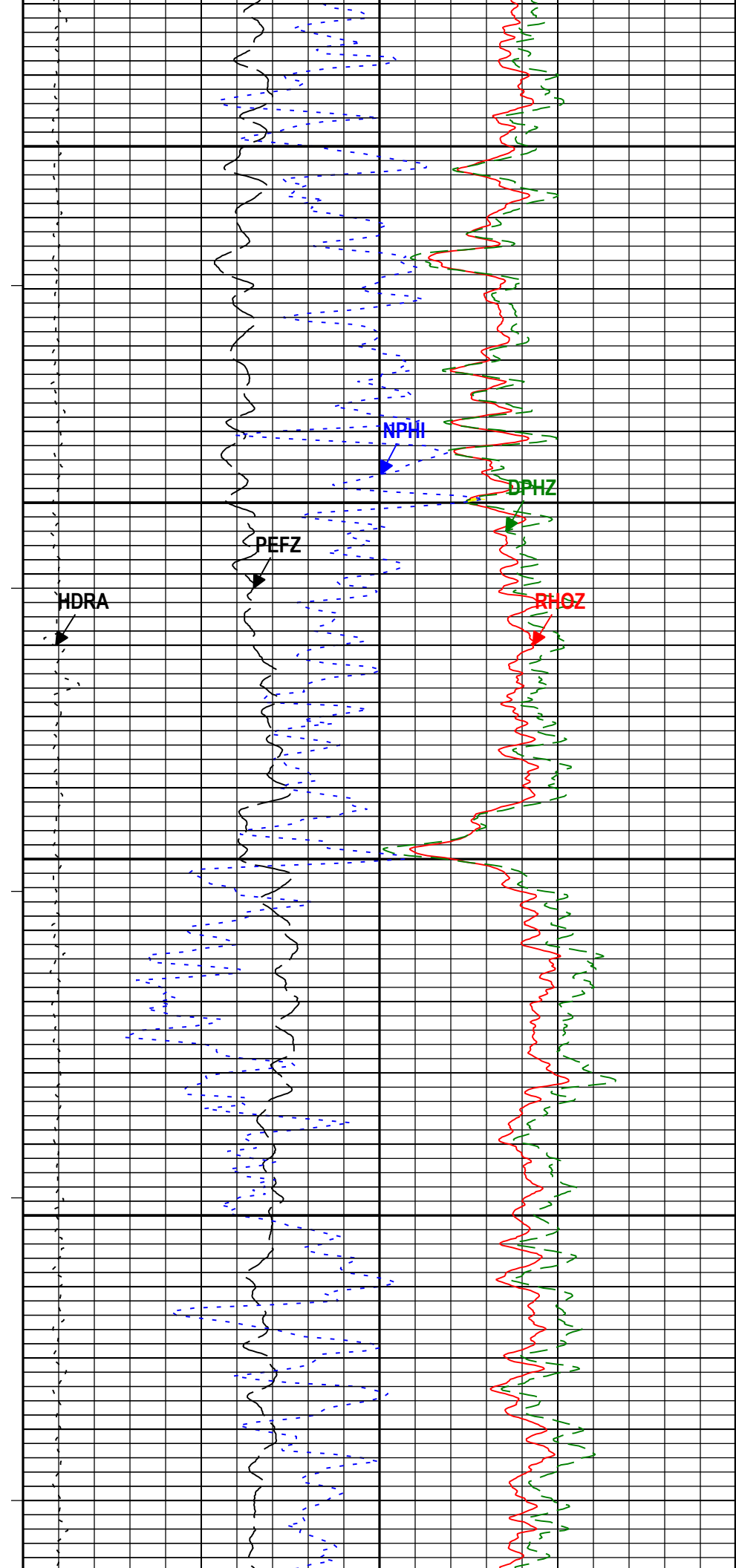
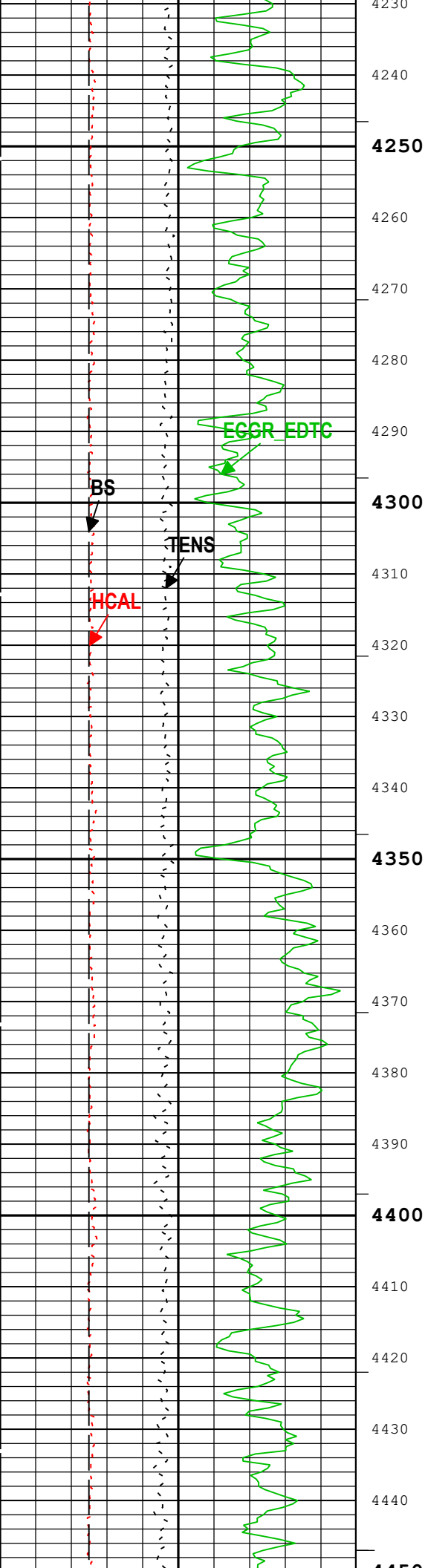


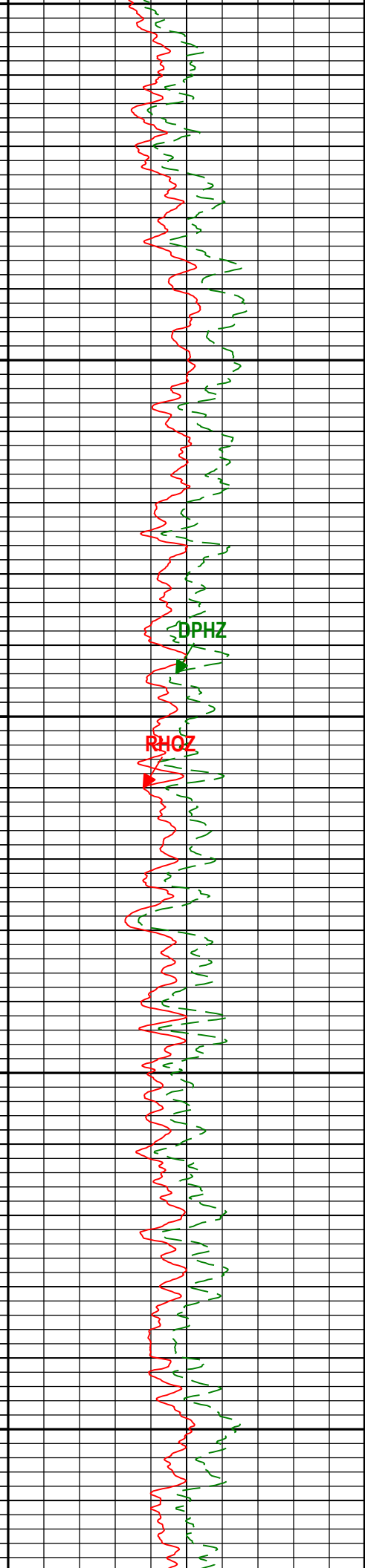
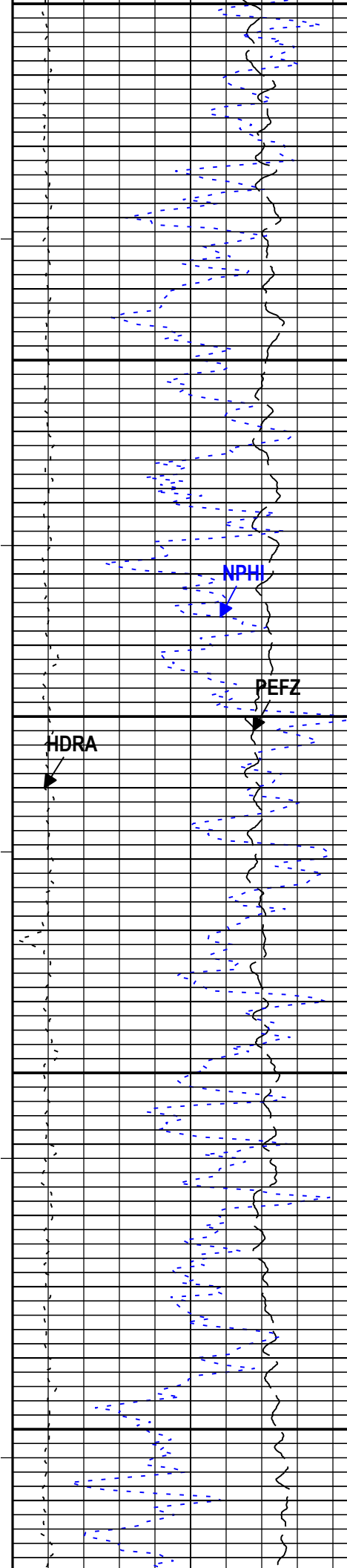
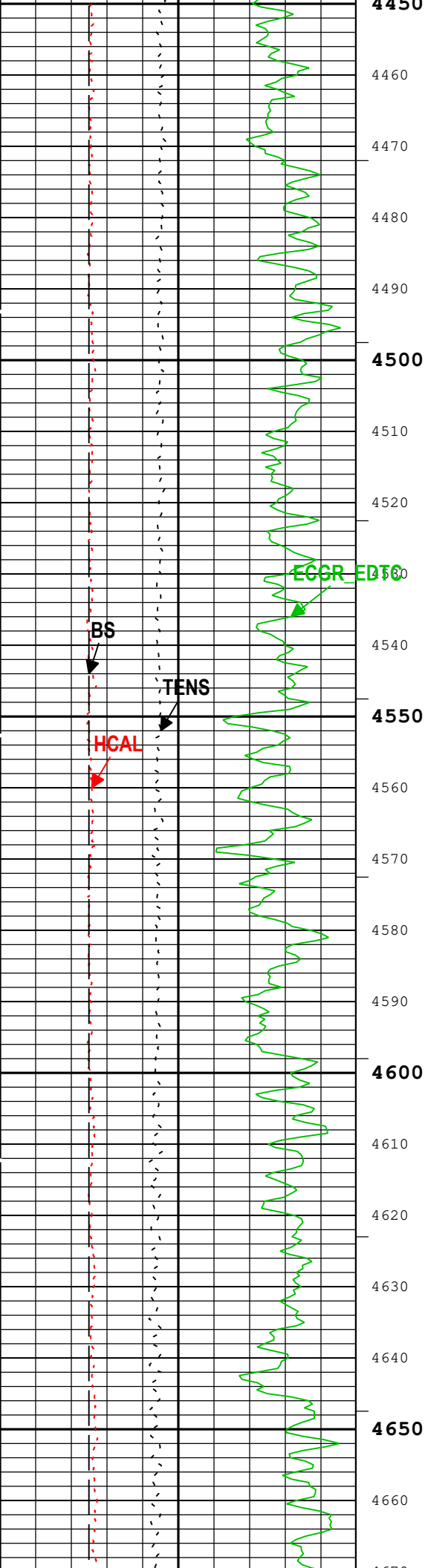


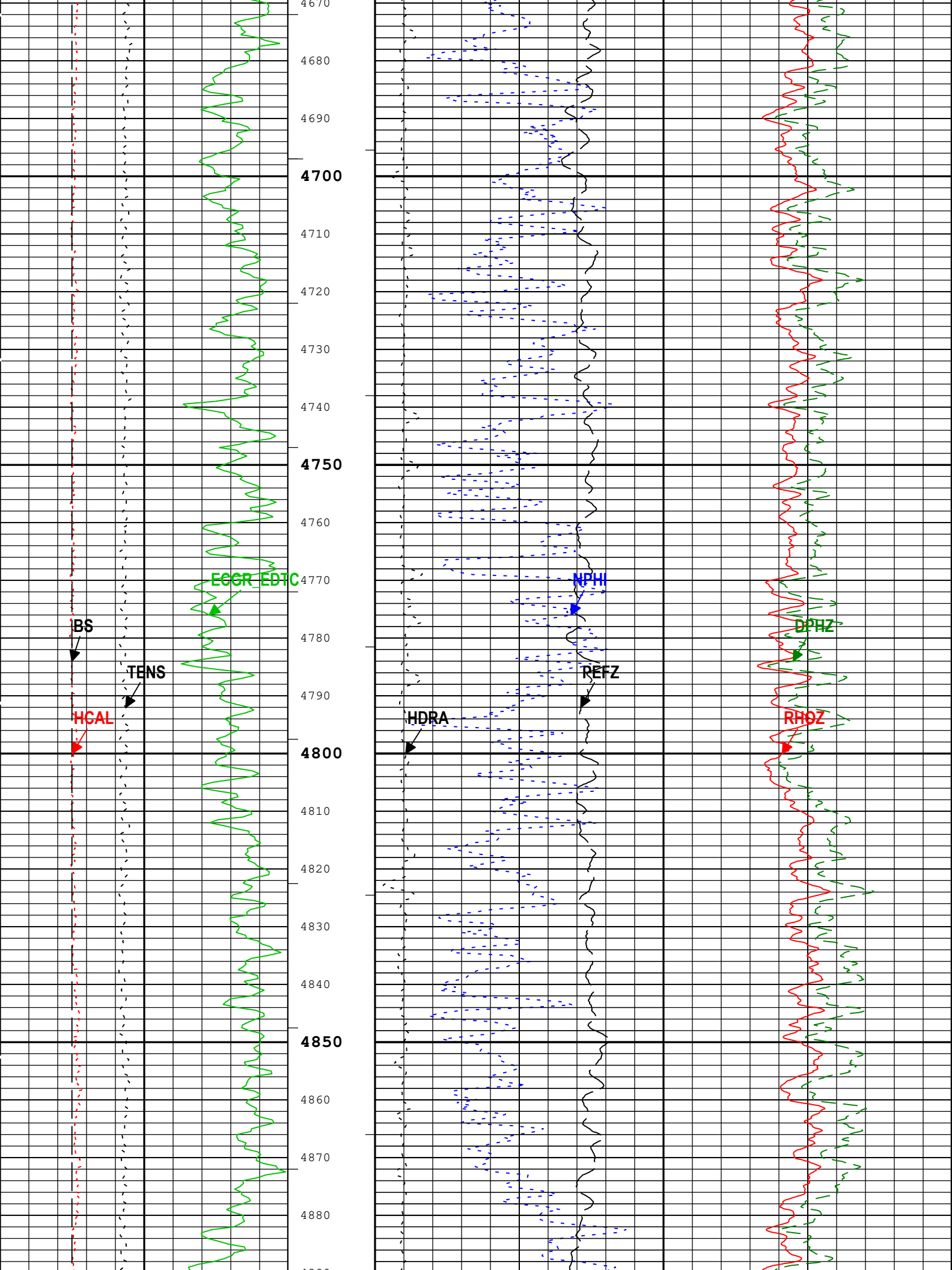


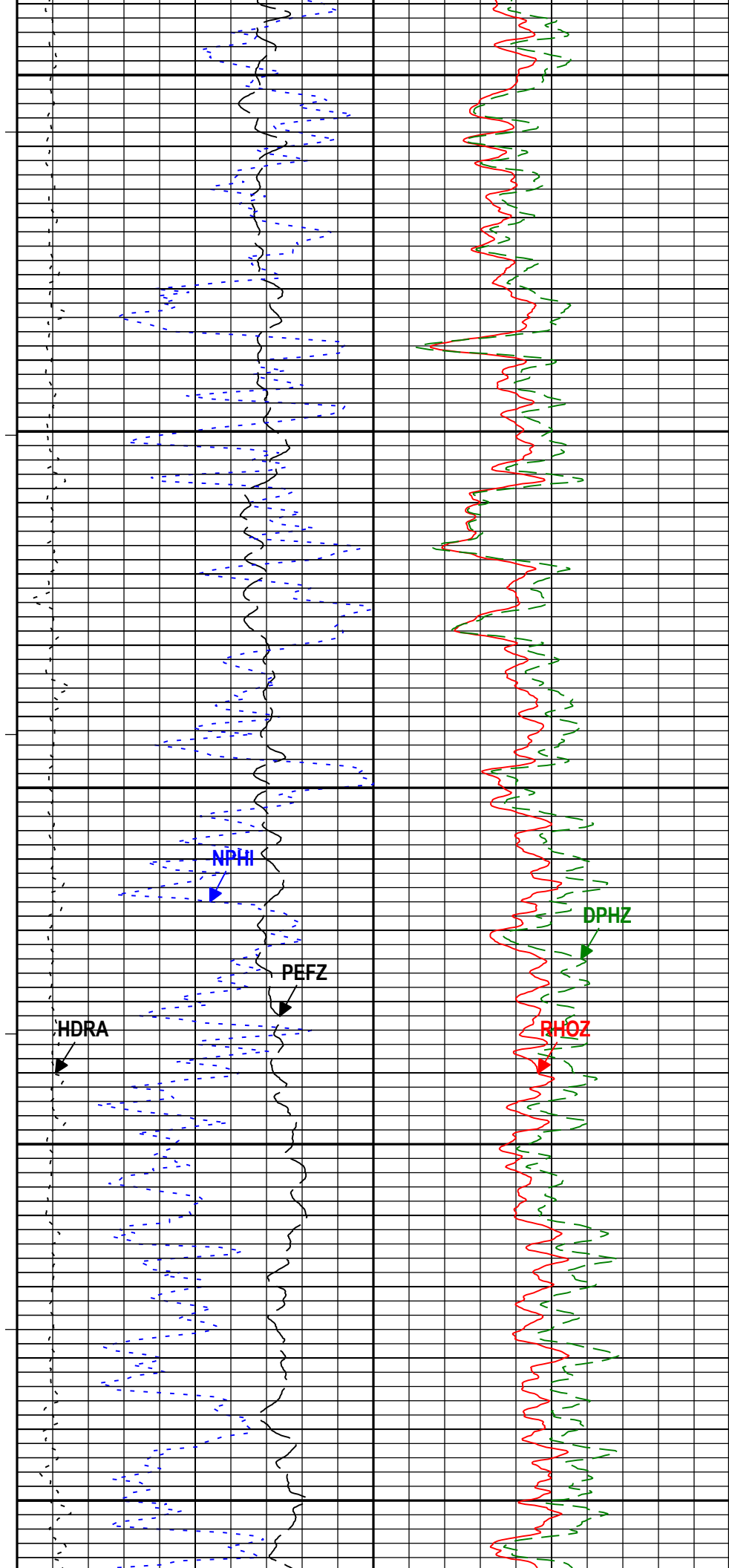
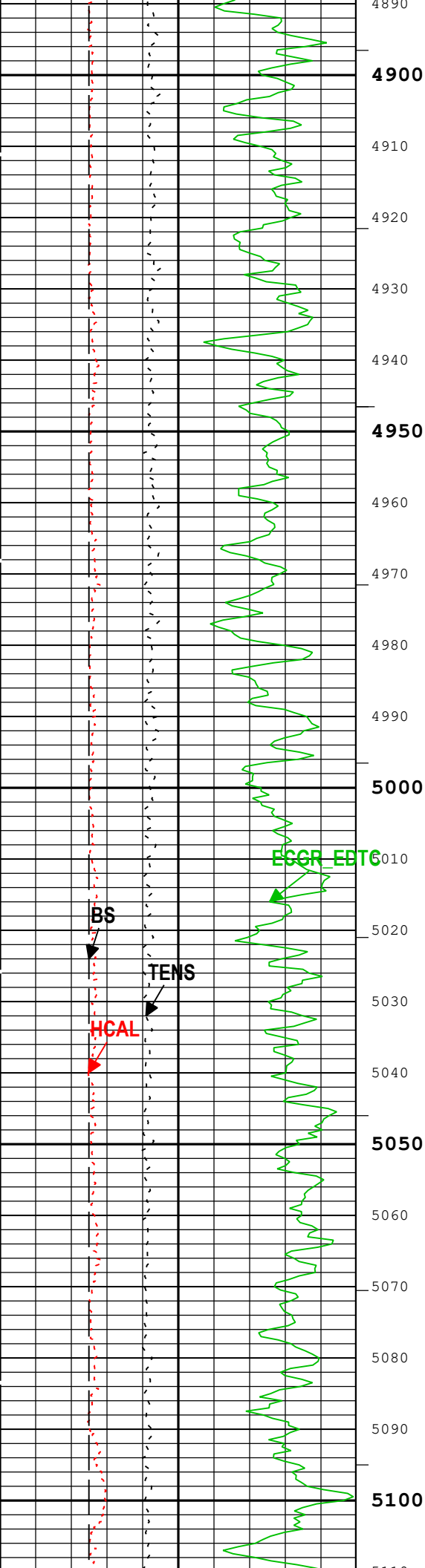


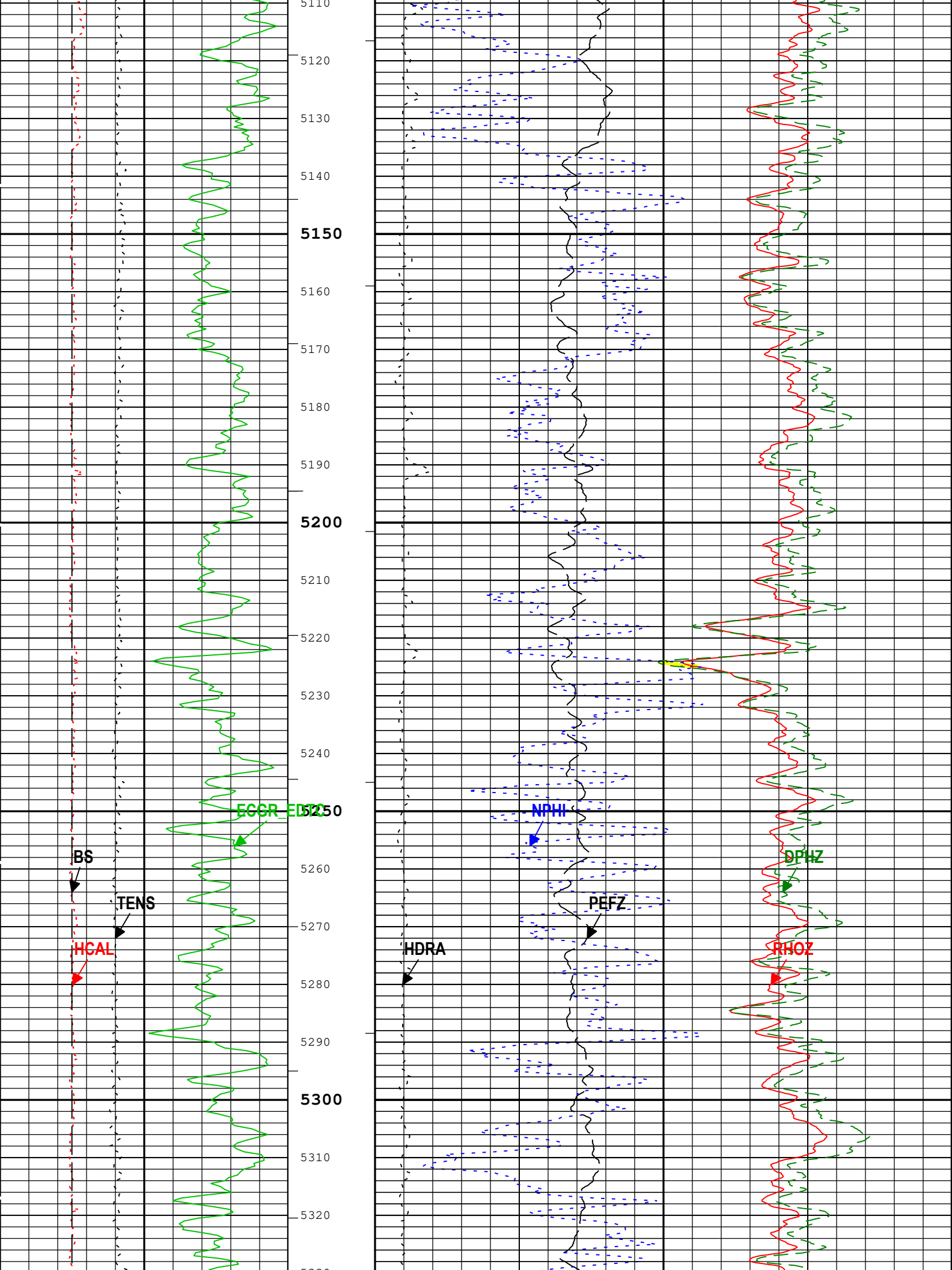


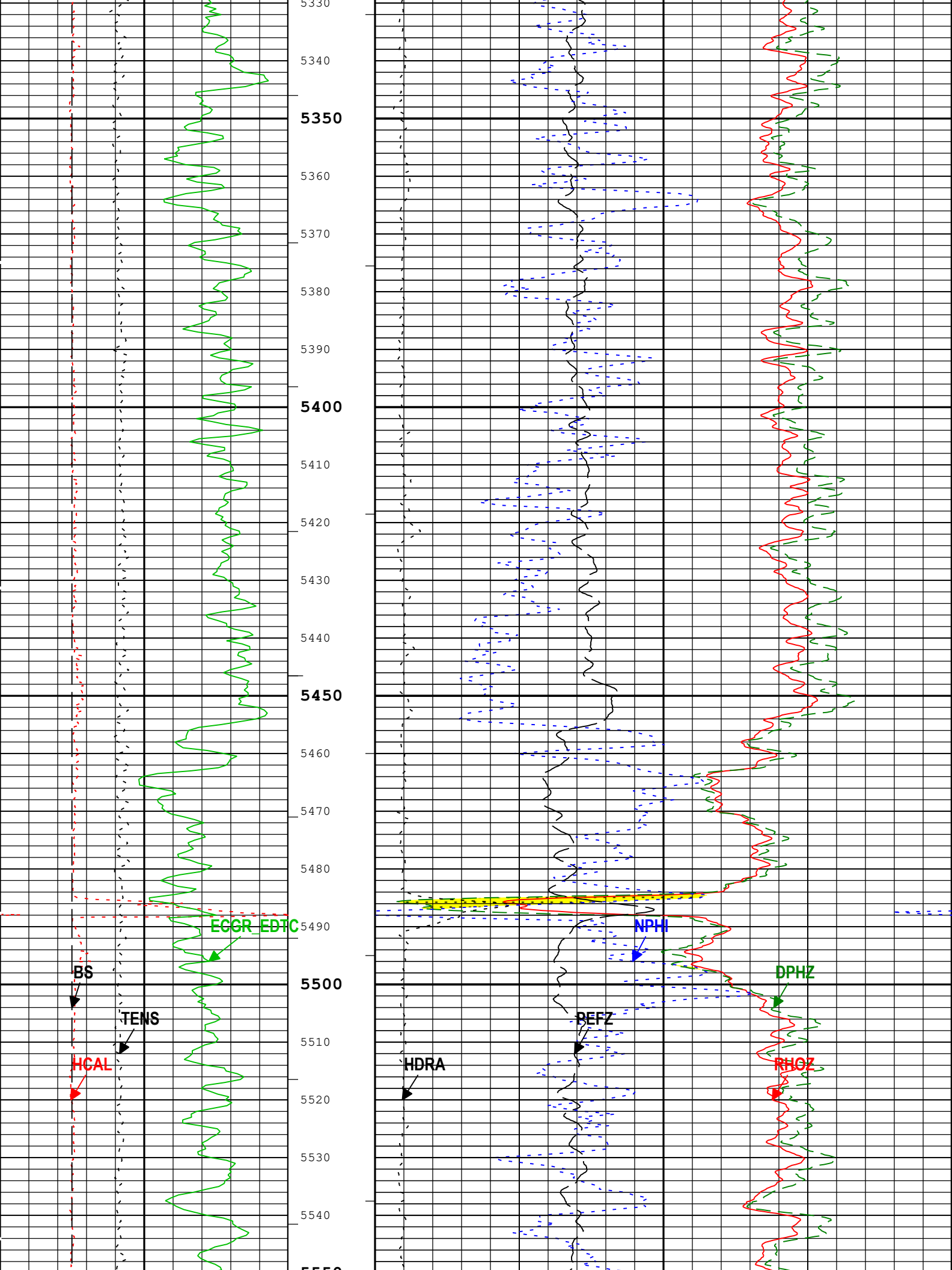


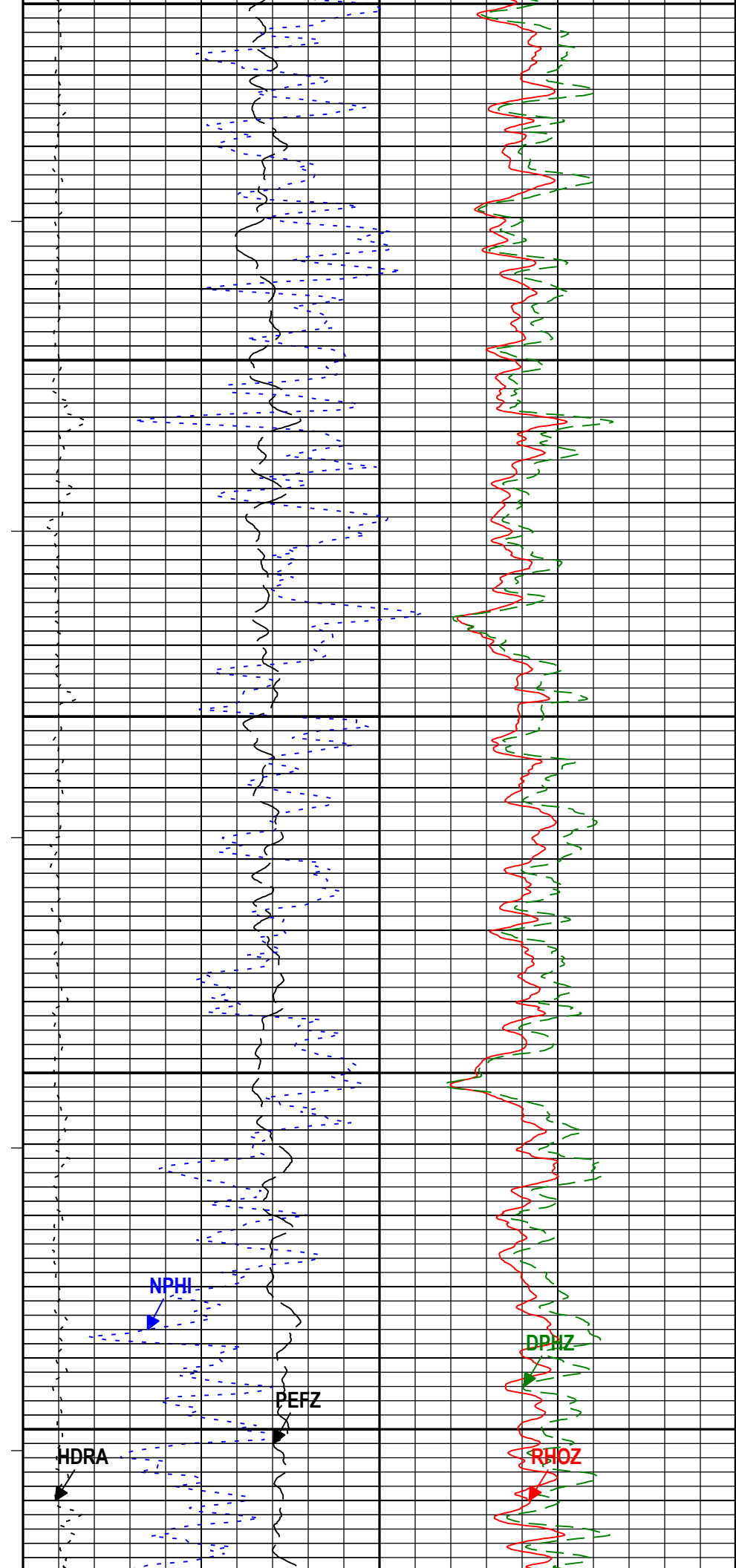
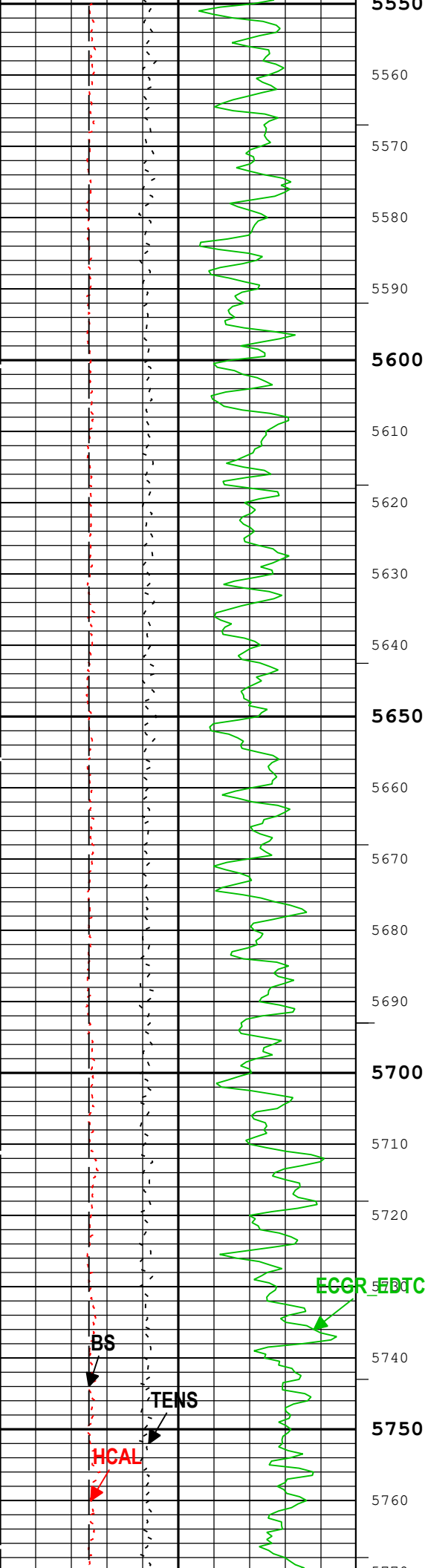


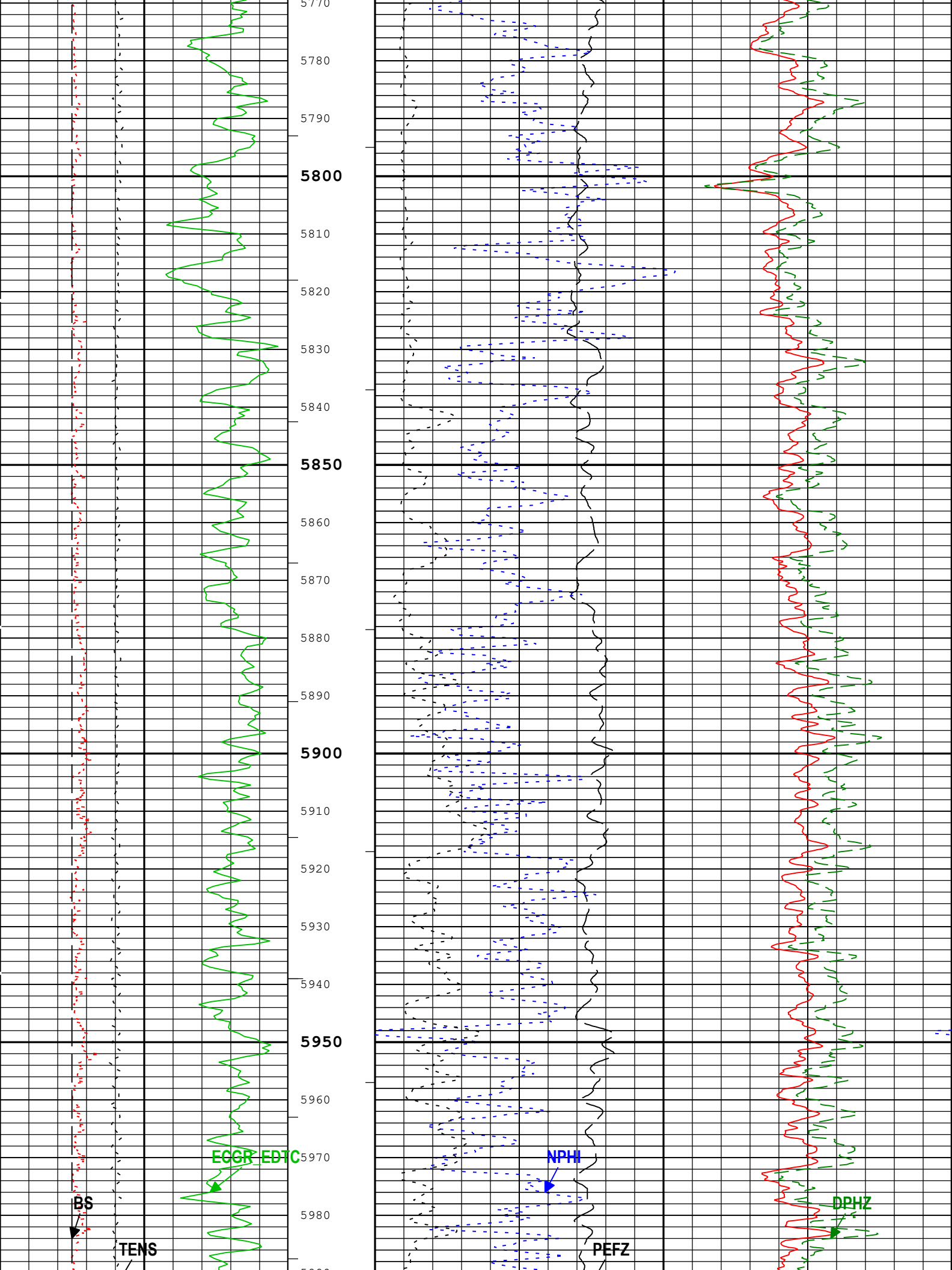


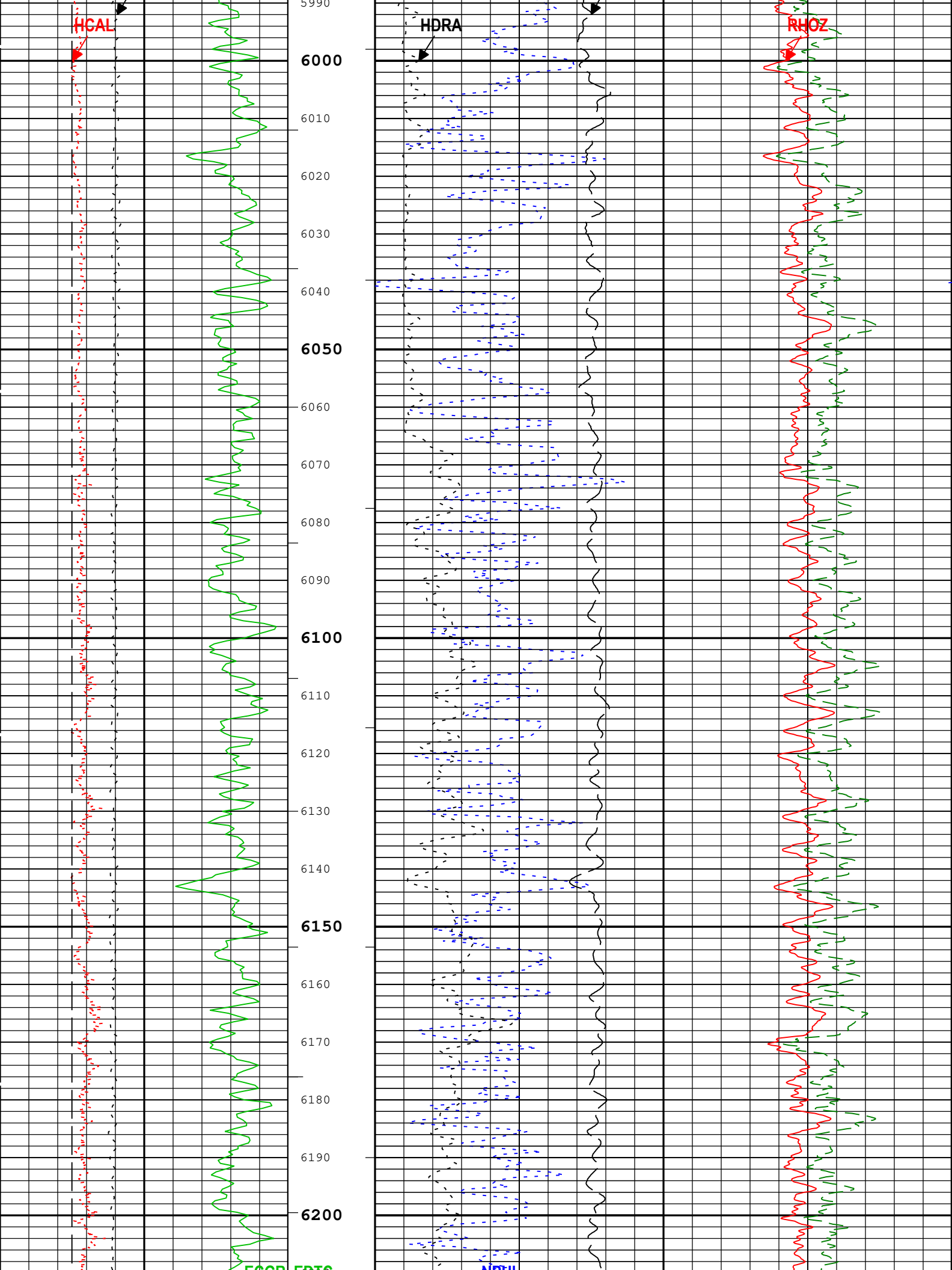


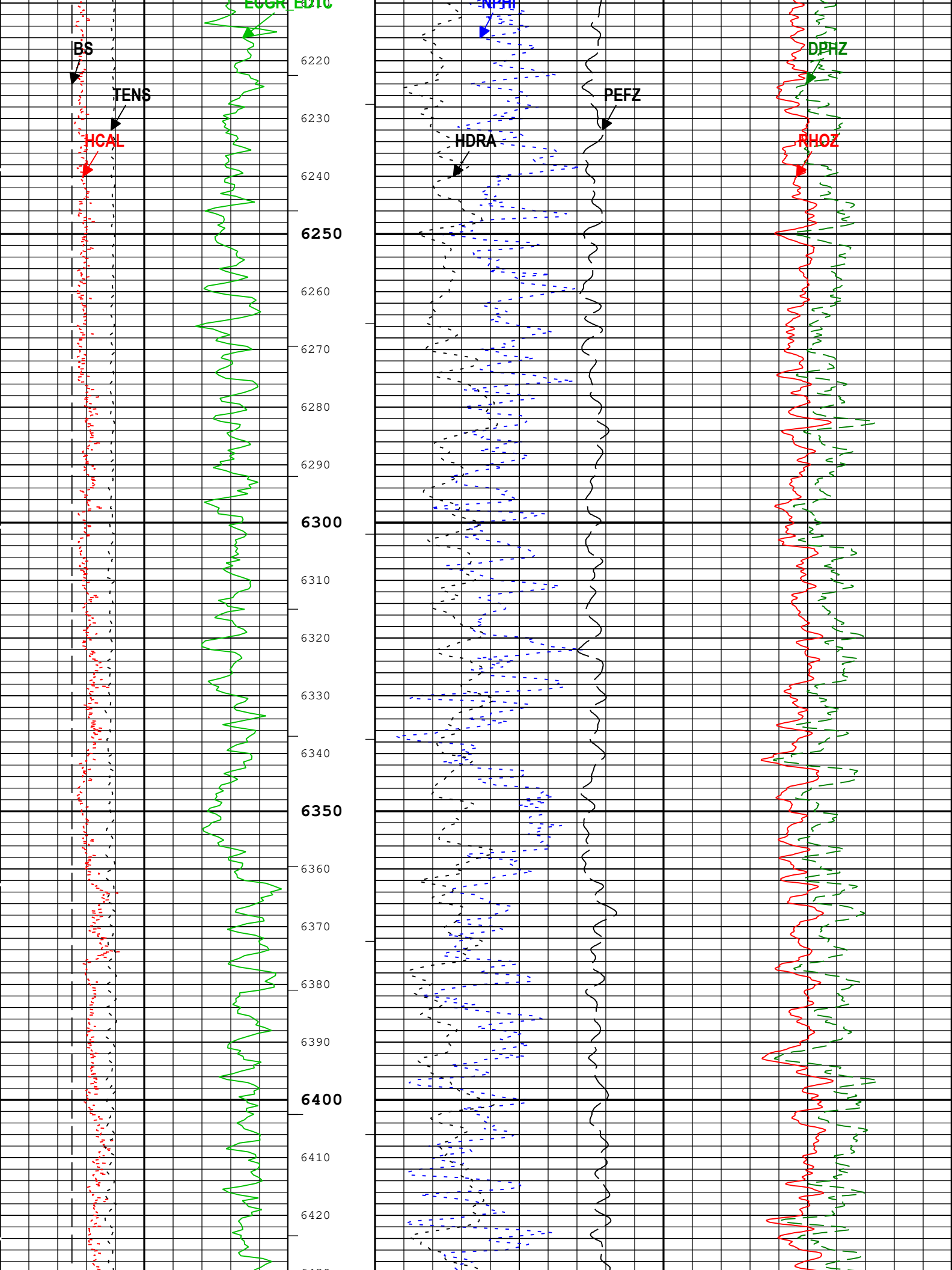


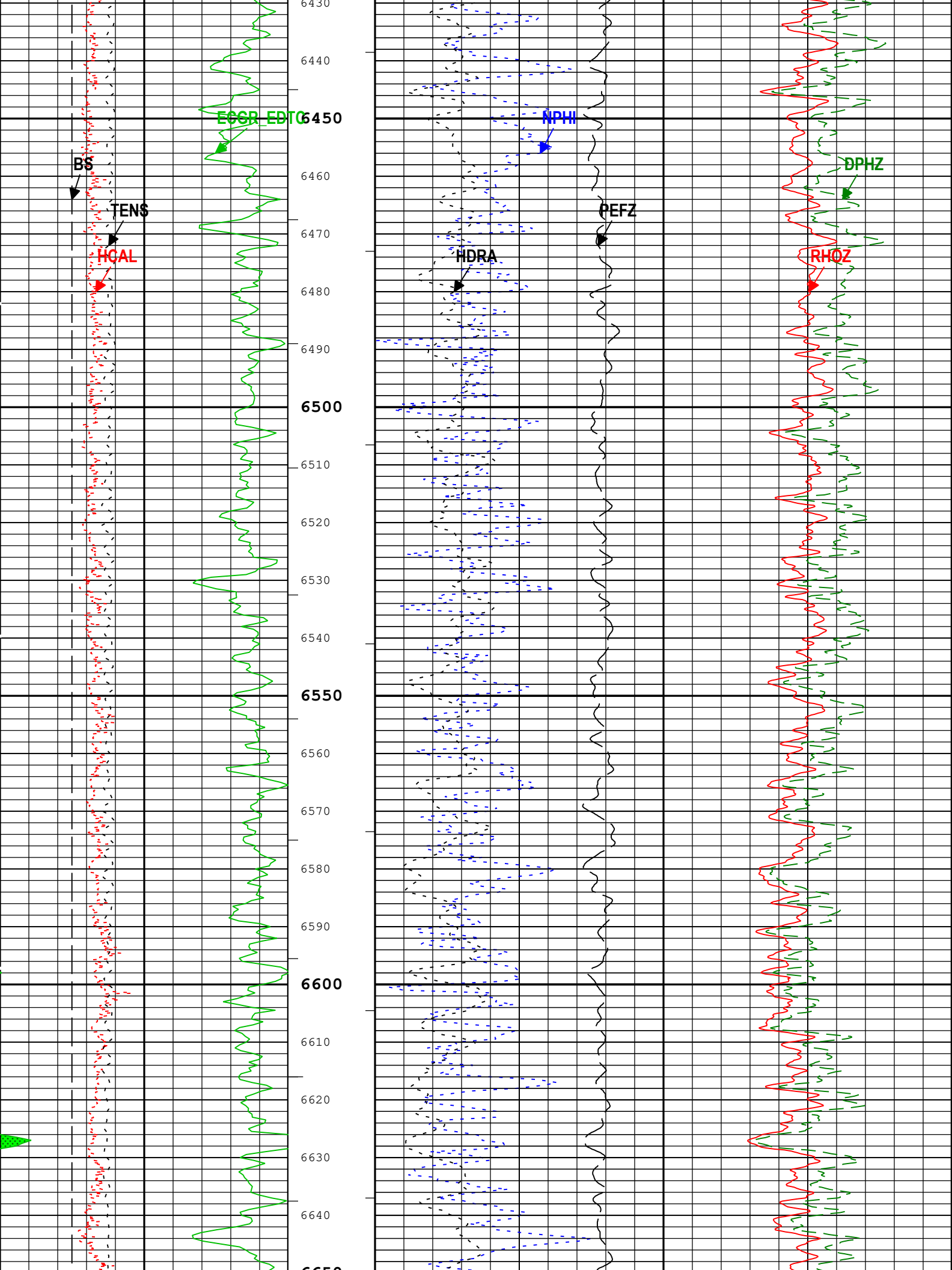


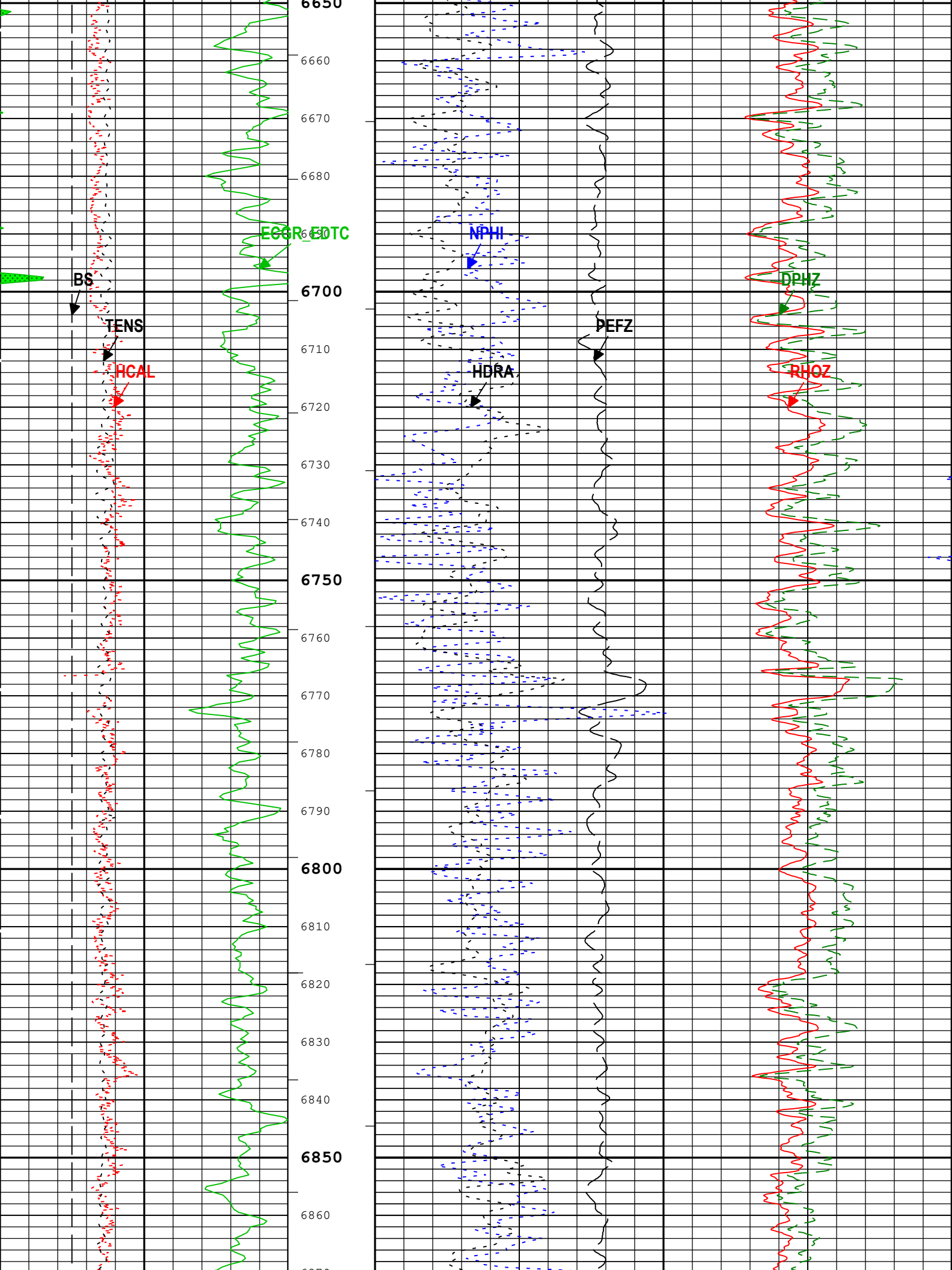


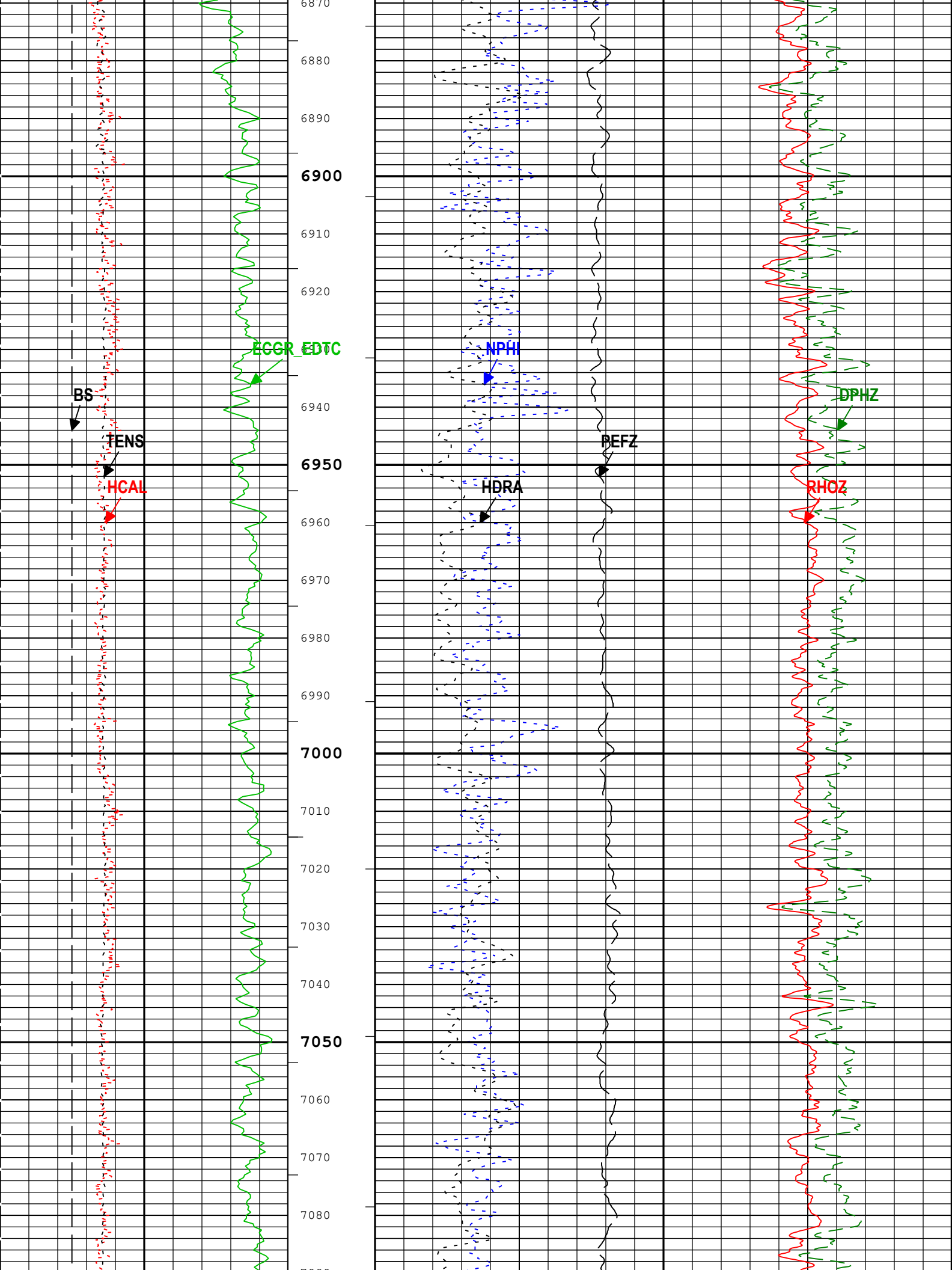


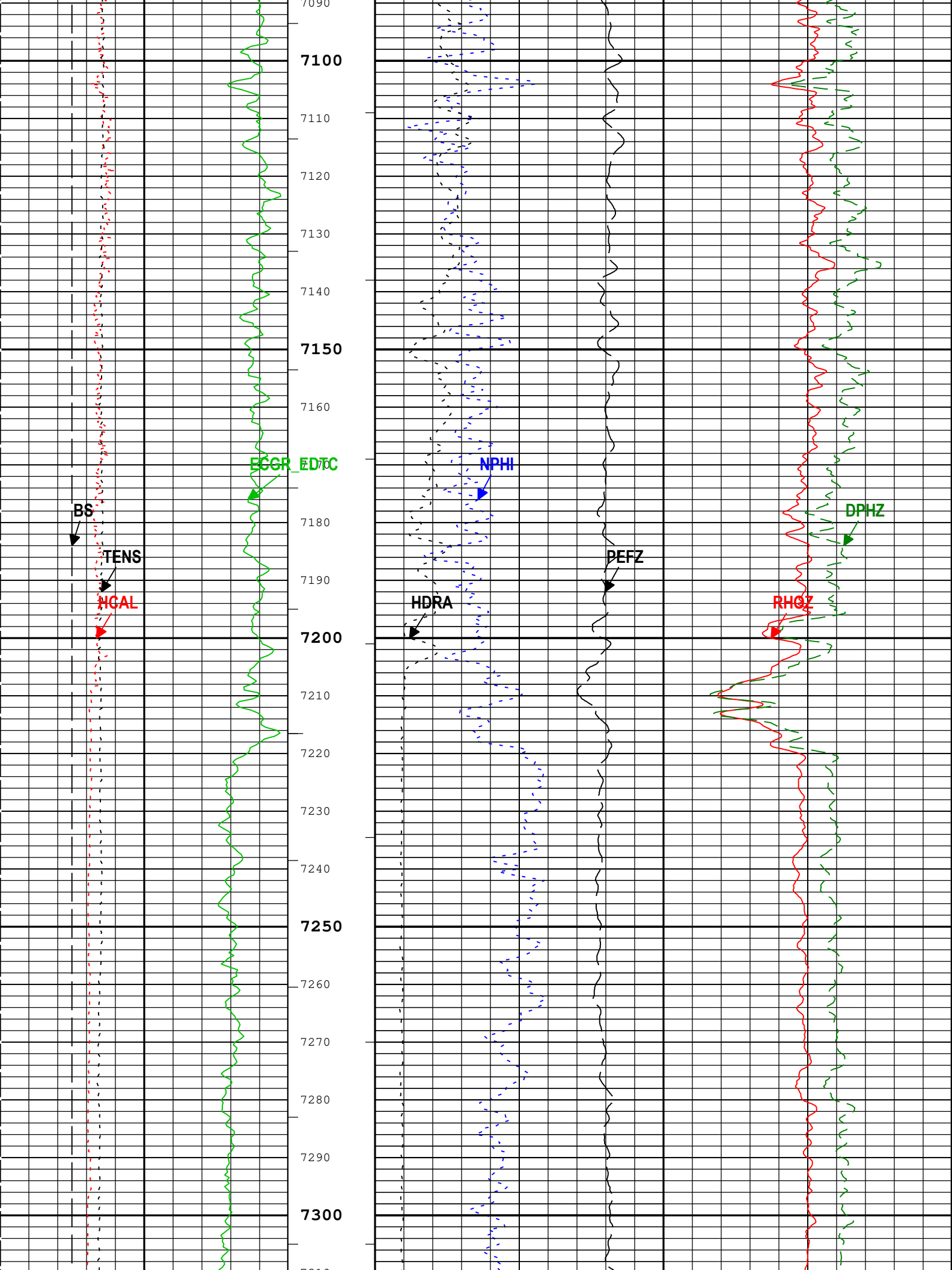


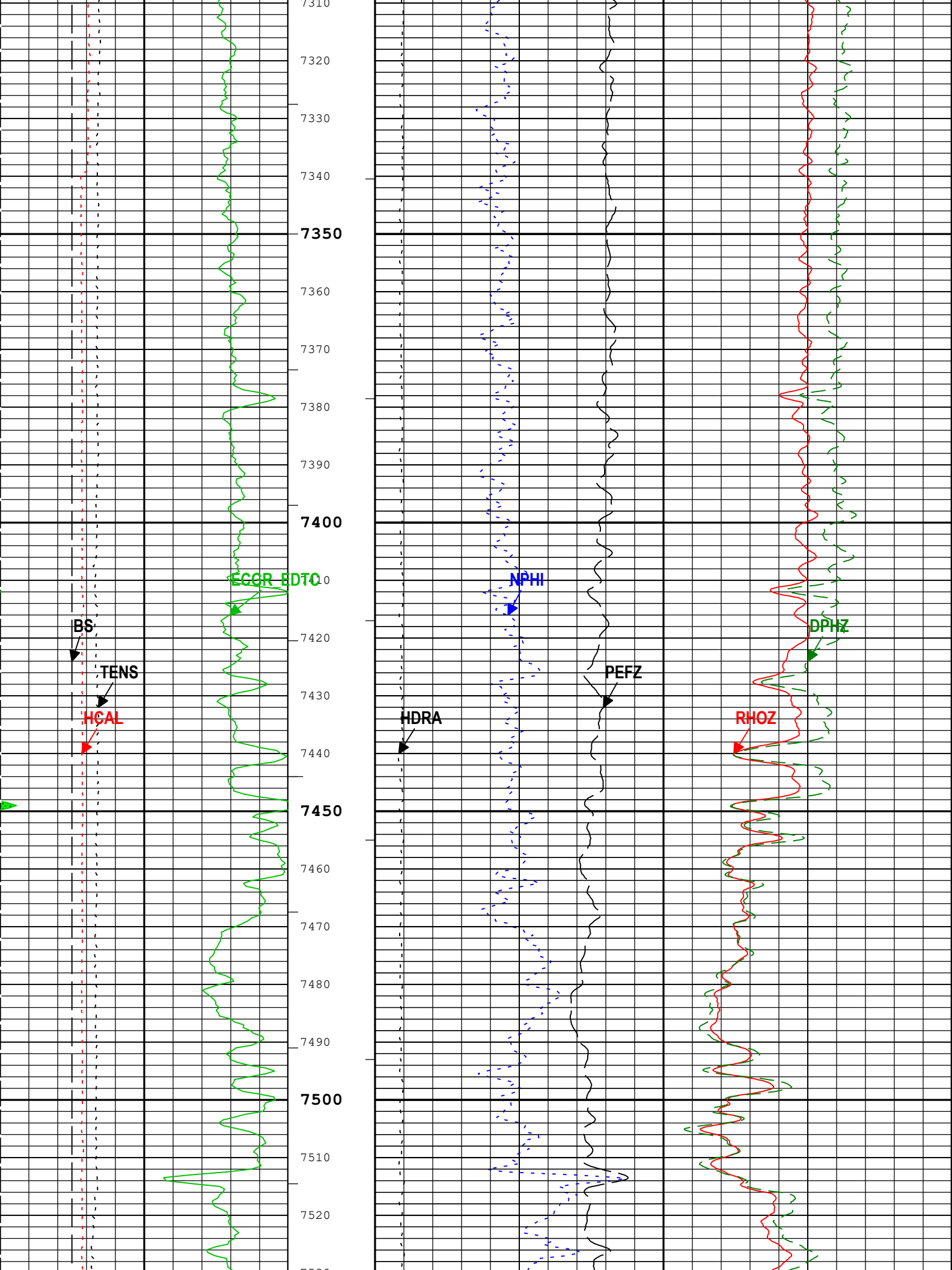


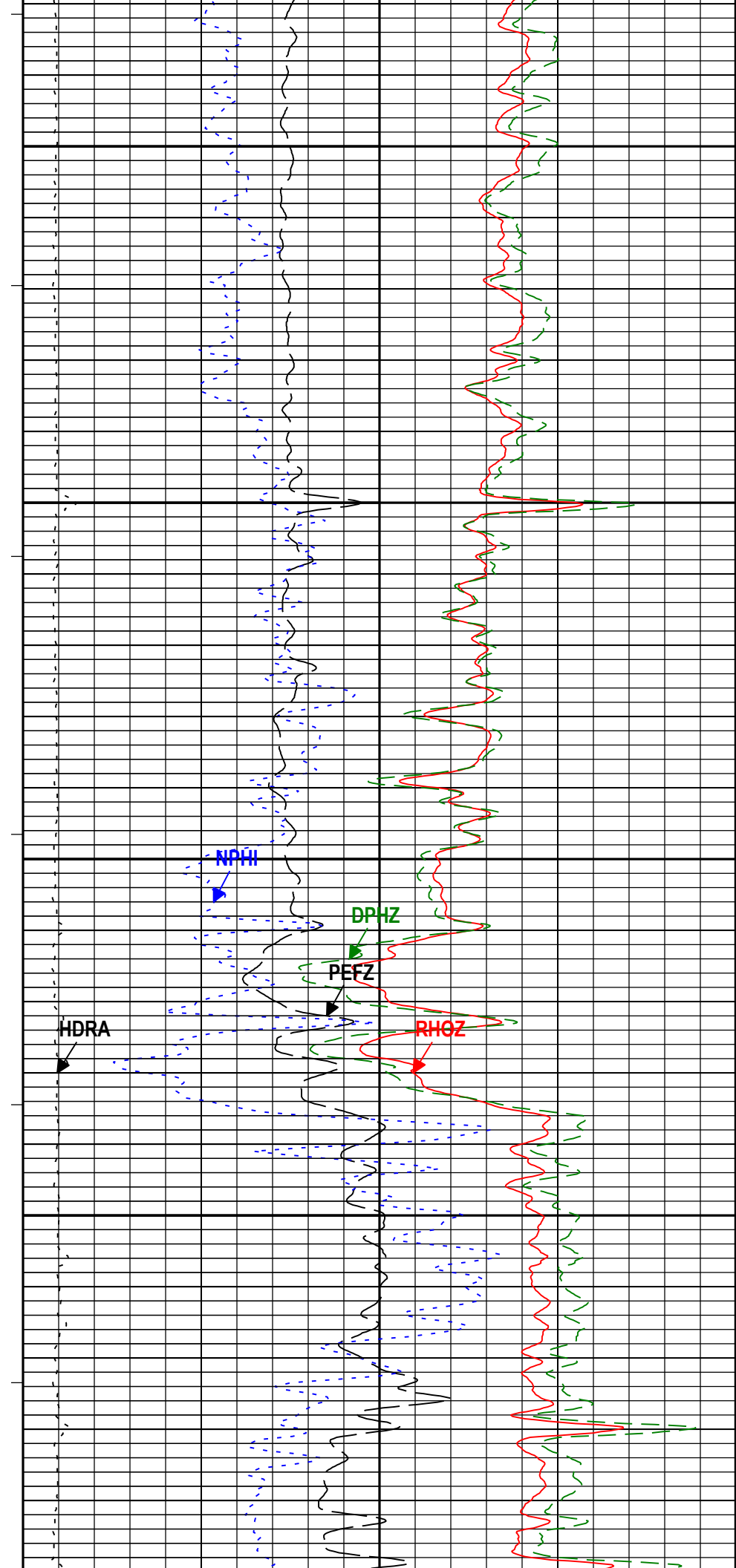
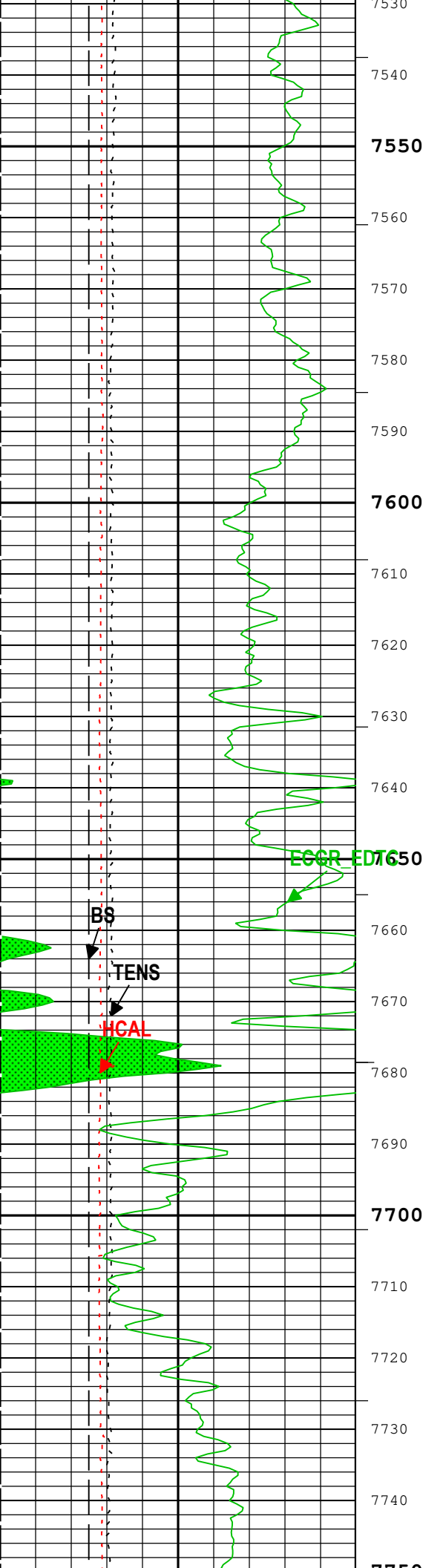


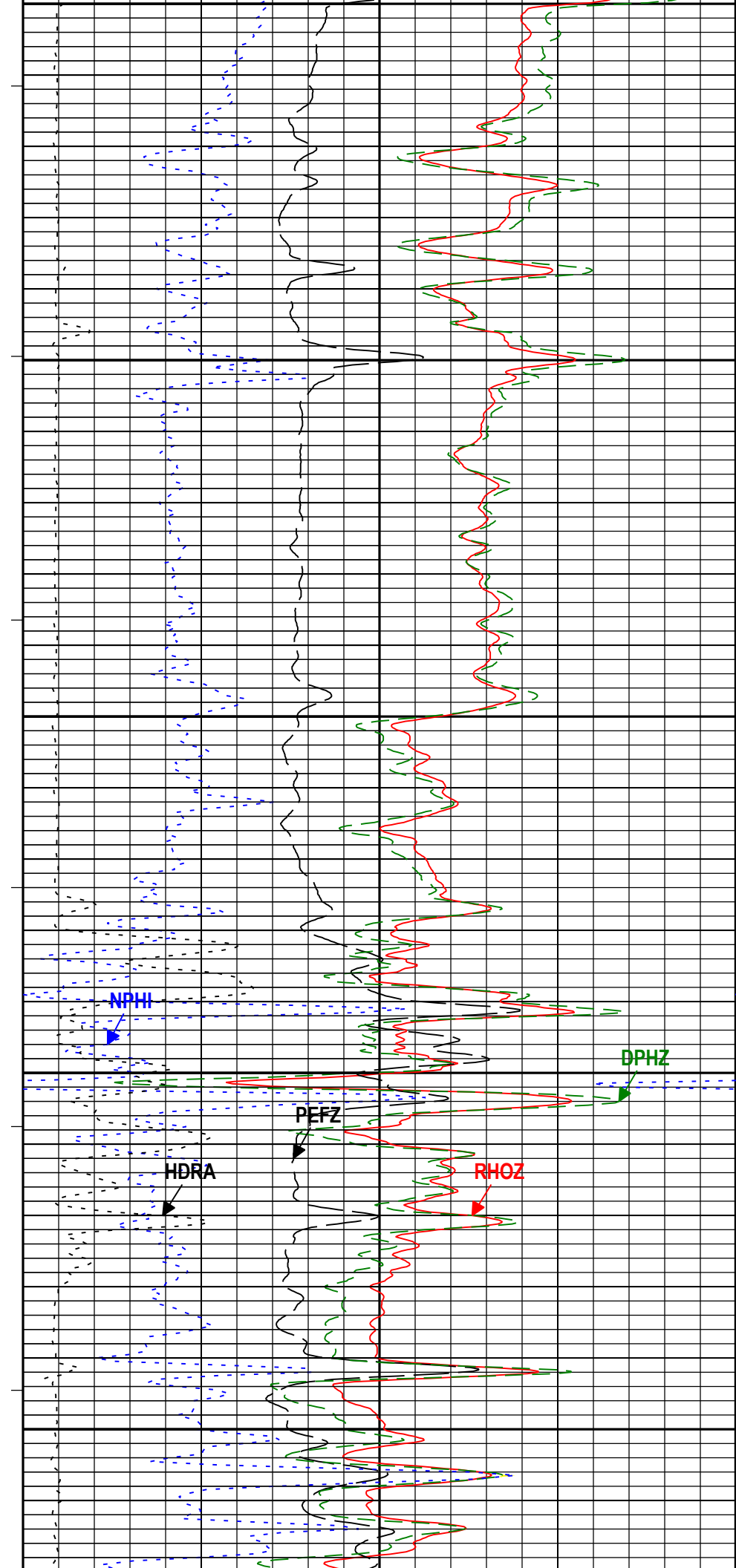
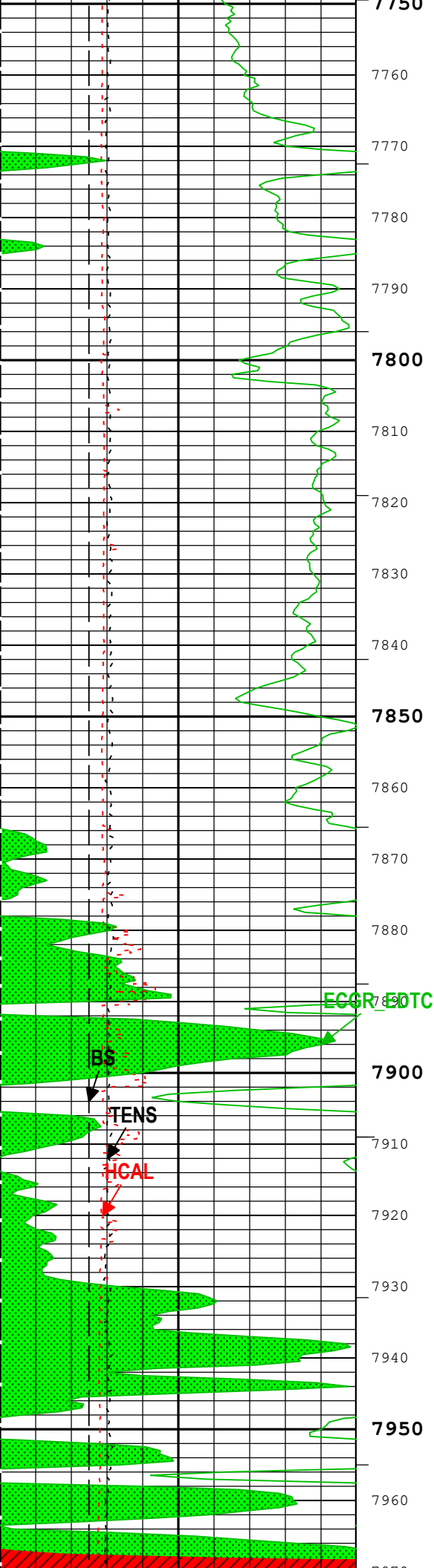


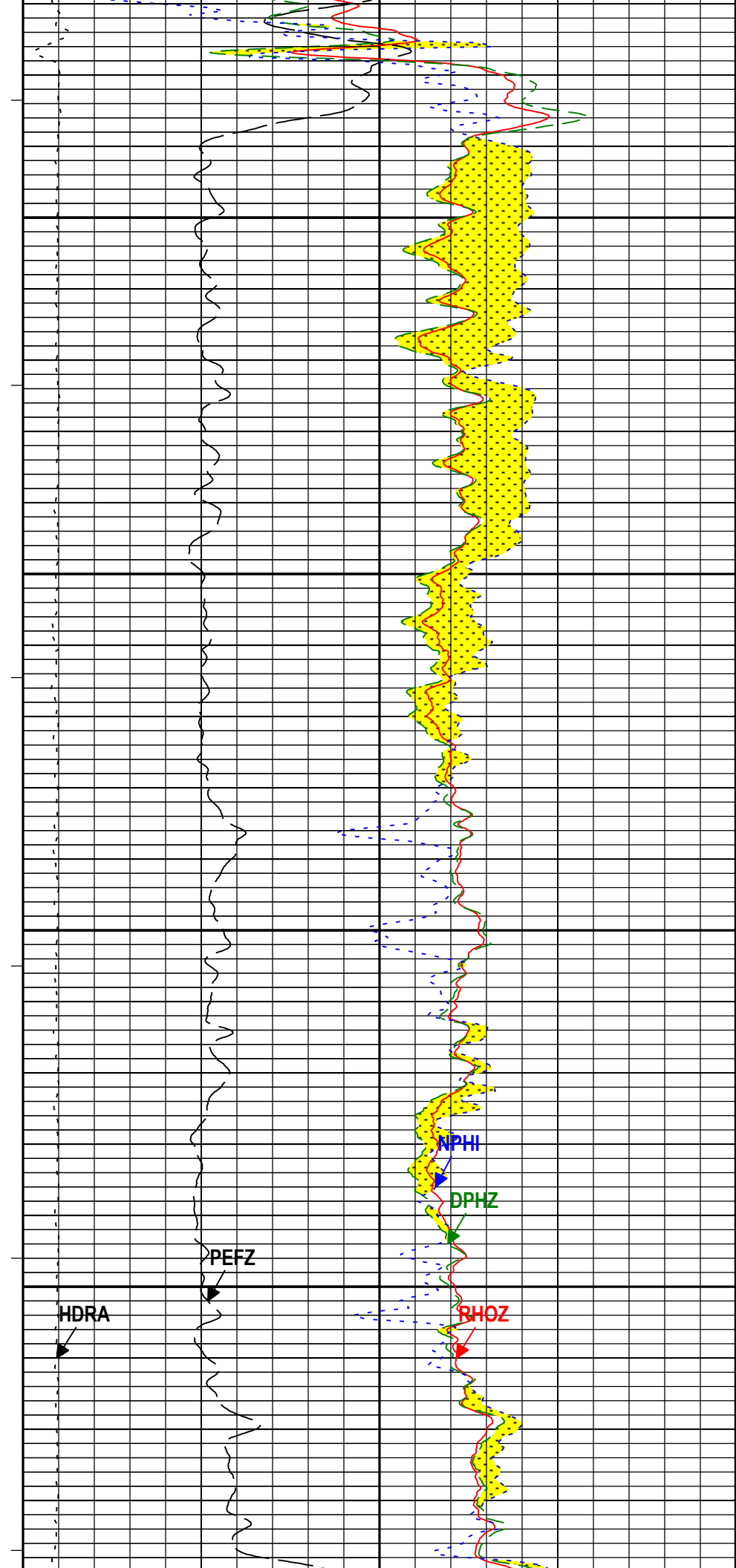
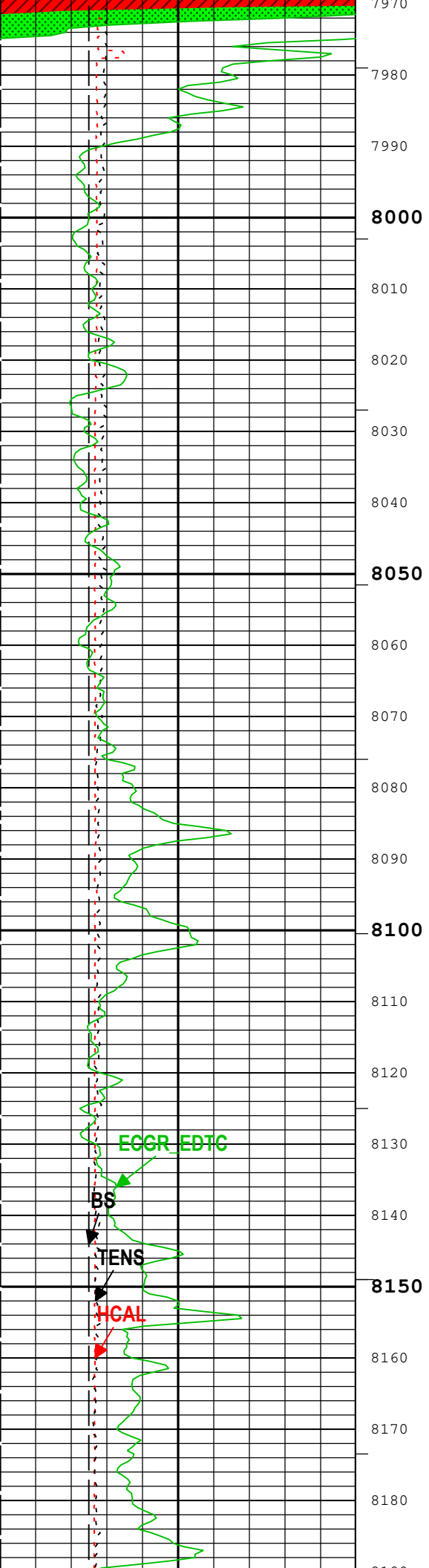


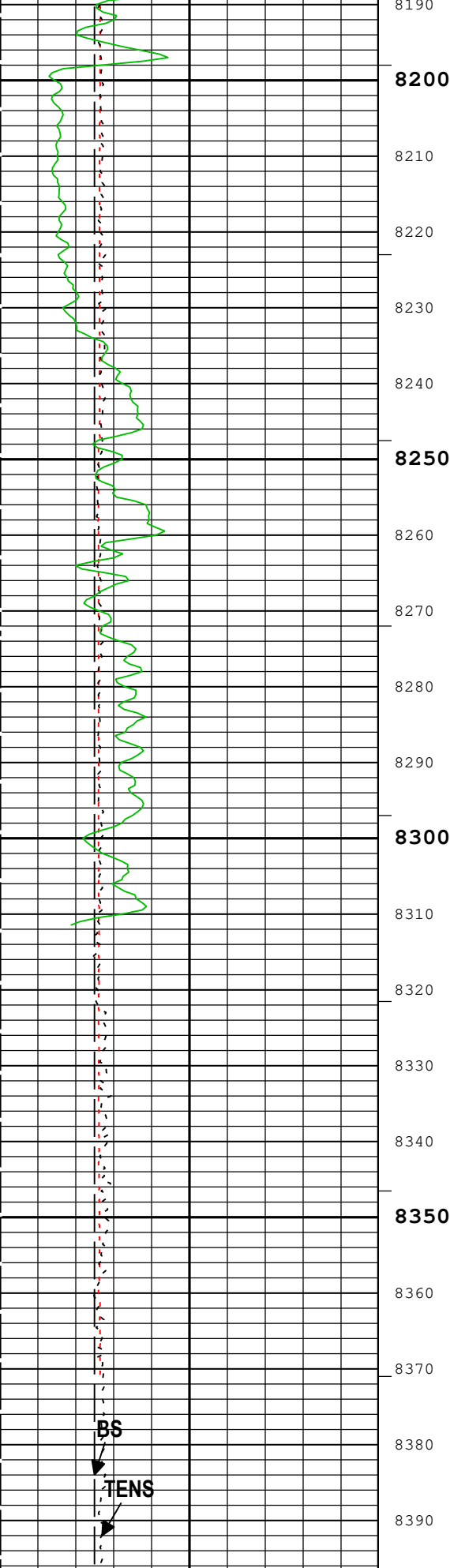






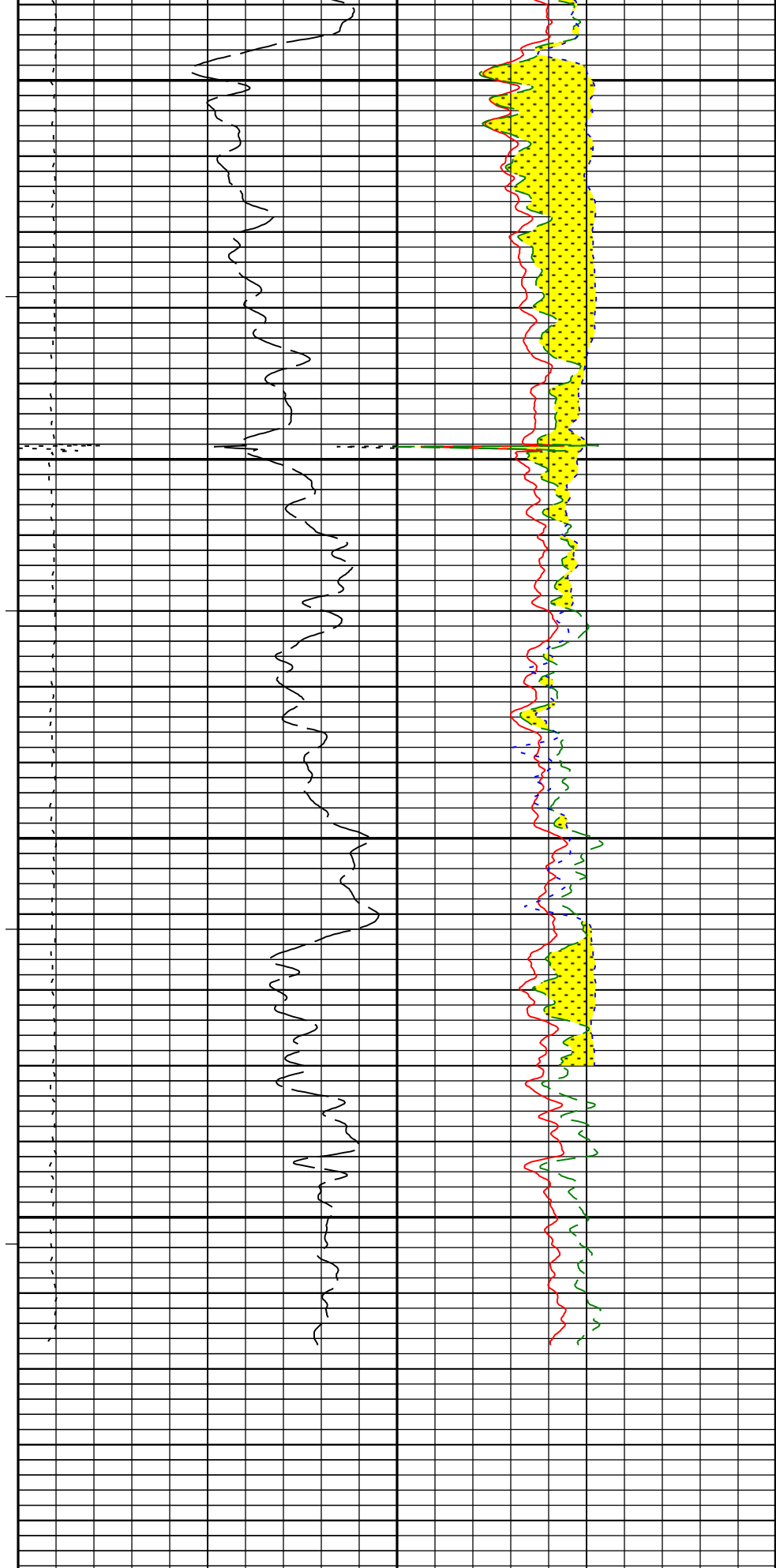






GR > 200 GAPI

GR > 400 GAPI



GAS EFFECT

Standard Resolution Formation Density (RHOZ) HDRS[1]

Caliper (HCAL) HDRS[1]		
6	in	16
Cable Tension (TENS)		
6000	lbf	0
Bit Size (BS) RT		
6	in	16
Gamma Ray (ECGR_EDTC) EDTC-B[1]		
0	gAPI	200

2	g/cm3		3
Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS[1]			
0			10
Standard Resolution Density Porosity (DPHZ) HDRS[1]			
0.3	ft3/ft3		-0.1
Thermal Neutron Porosity (original Ratio Method) in Selected Lithology (NPHI) HGNS[1]			
0.3	ft3/ft3		-0.1
Density Standoff Correction (HDRA) HDRS[1]			
-0.05	g/cm3	0.45	

— IHV - Integrated Hole Volume every 100.00 (ft3)

— IHV - Integrated Hole Volume every 10.00 (ft3)

— ICV - Integrated Cement Volume every 10.00 (ft3)

TIME_1900 - Time Marked every 60.00 (s)

Description: Triple Combo standard resolution template for Platform Express Format: Log (BRADFORD NUC) Index Scale: 5 in per 100 ft Index Unit: ft
Index Type: Measured Depth Creation Date: 15-Apr-2019 17:59:20

Channel Processing Parameters				
1A: Parameters				
Parameter	Description	Tool	Value	Unit
BAR(ISSBAR)	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	0.446	in
CBLO	Casing Bottom (Logger)	WLSESSION	2543	ft
CDEN	Cement Density	EDTC-B	2	g/cm3
CSODDRL	Casing Outer Diameter - Zoned along driller depths	WLSESSION	9.625	in
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DHC	Density Hole Correction	HDRS-H	Bit Size	
FCD	Future Casing (Outer) Diameter	WLSESSION	5.5	in
FD	Fluid Density	Borehole	1	g/cm3
GCLF	Coal-Like Formation	HDRS-H	No	
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	CALI	
GR_MULTIPLIER	Gamma Ray Multiplier	EDTC-B	1	
HVCS	Integrated Hole Volume Caliper Selection	Borehole	Compute Area from GHD	
IHVC	Integrated Hole Volume Control	Borehole	Start	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MDEN	Matrix Density for Density Porosity	Borehole	2.71	g/cm3
NACO	Neutron Activation Correction	HDRS-H	Off	
NPRM	HRDD Nuclear Processing Mode	HDRS-H	Time Zoned	
NTCO	HRDD Nuclear Temperature Correction Option	HDRS-H	On	
SOCN	Standoff Distance	EDTC-B	0.125	in
SOCO	Standoff Correction Option	EDTC-B	No	
TPOS_EDTC	Tool Position: Centered or Eccentered	EDTC-B	Eccentered	

1ADepth Zoned Parameters

Parameter	Value	Start (ft)	Stop (ft)
BS	12.25	2525	2543

All depth are actual.

All depth are at tool zero.

All depths are referenced to toolstring zero

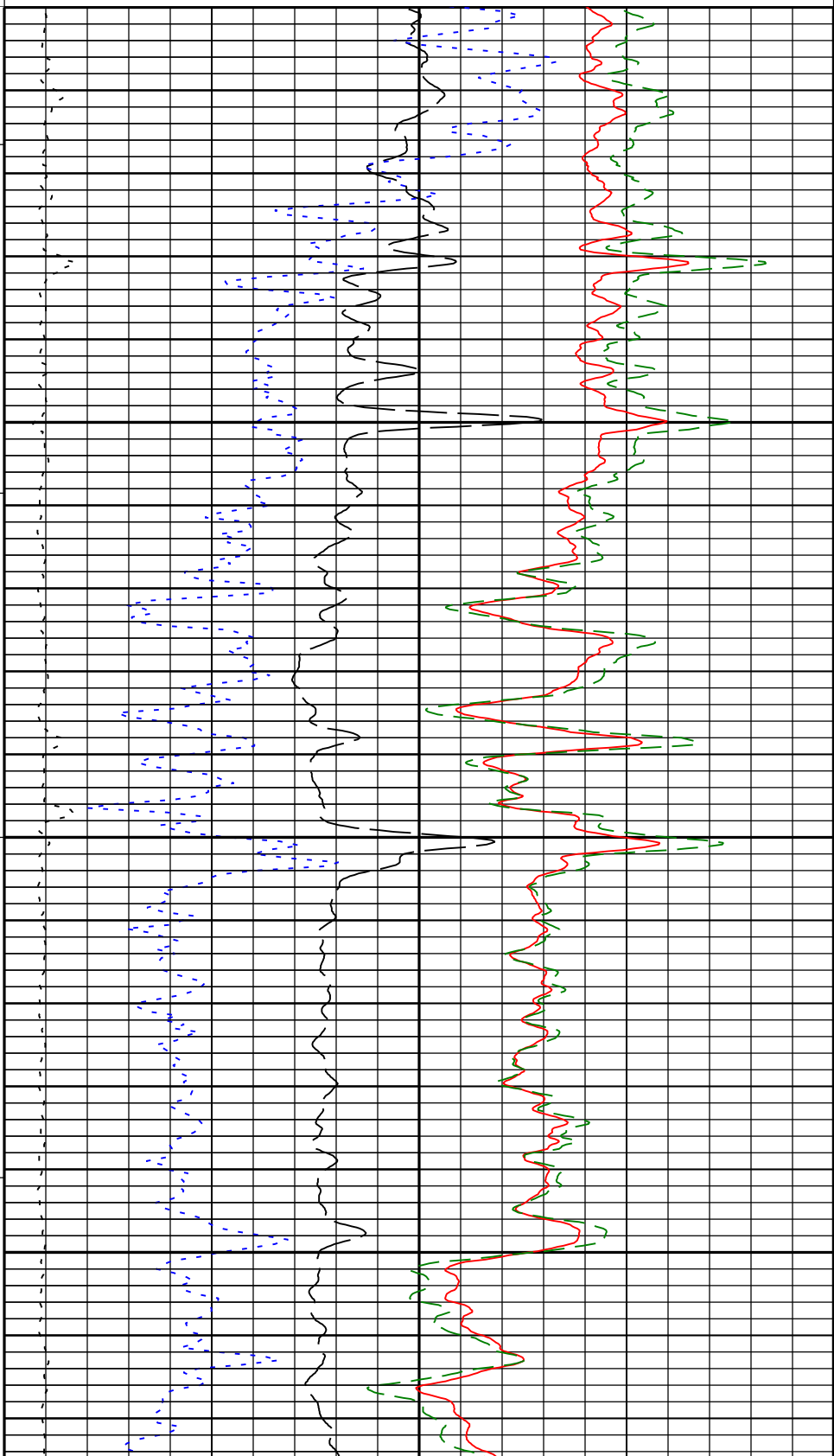
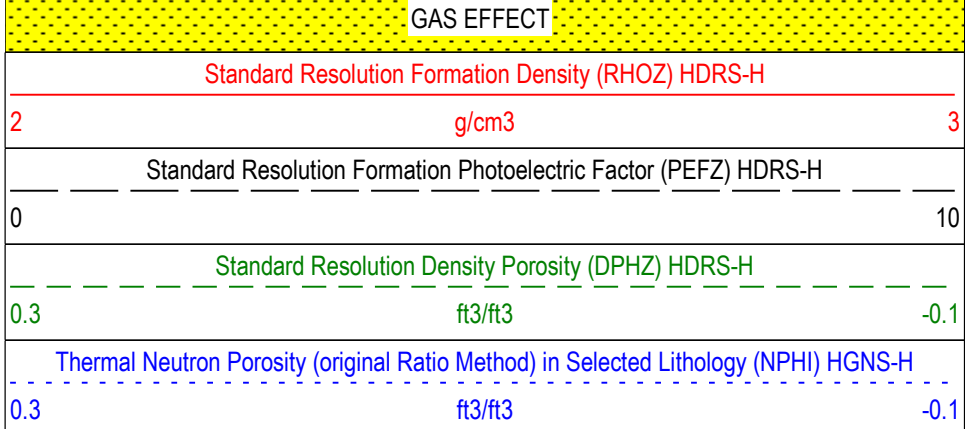
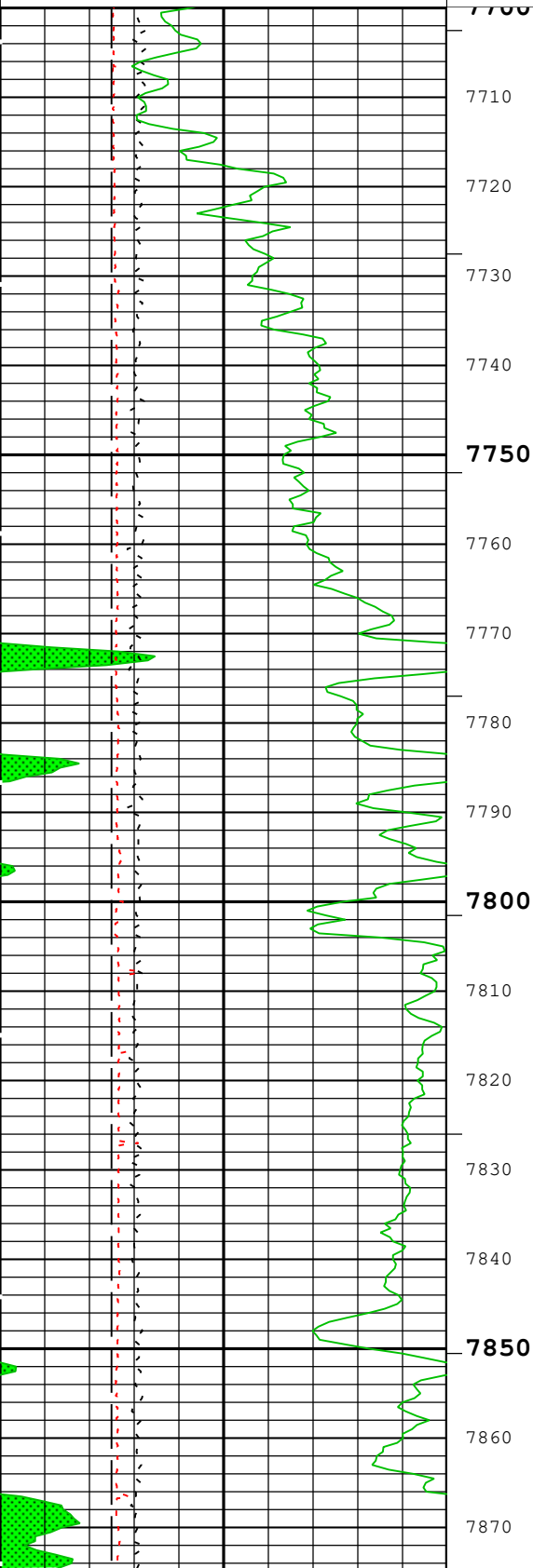
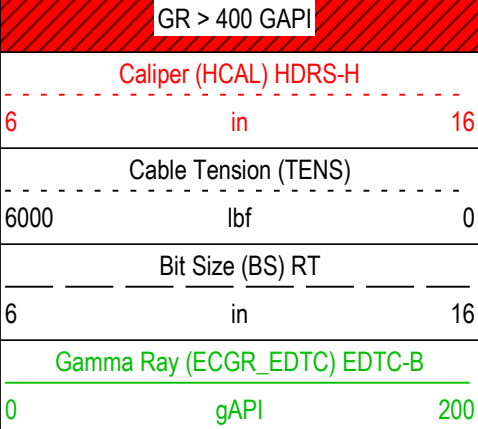
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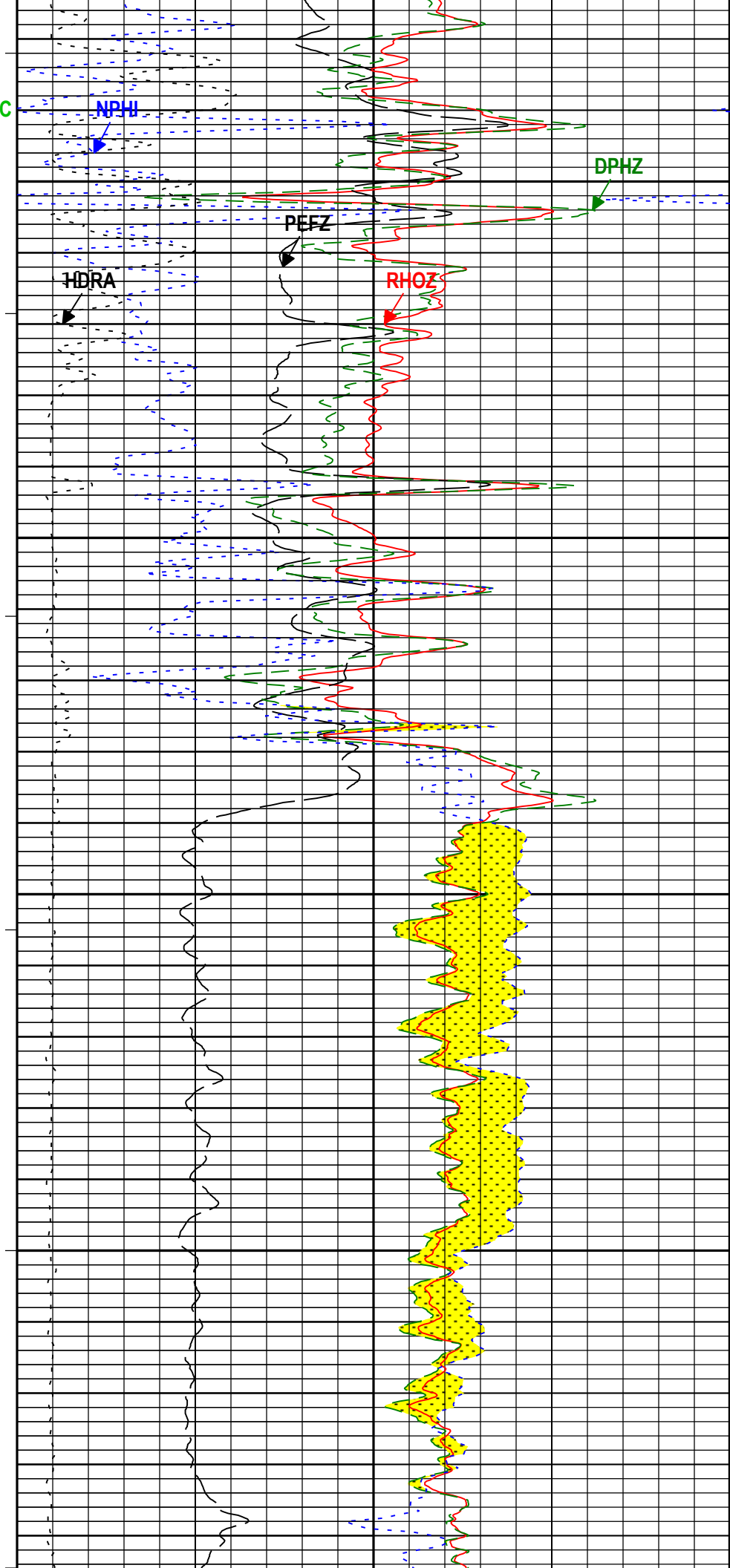
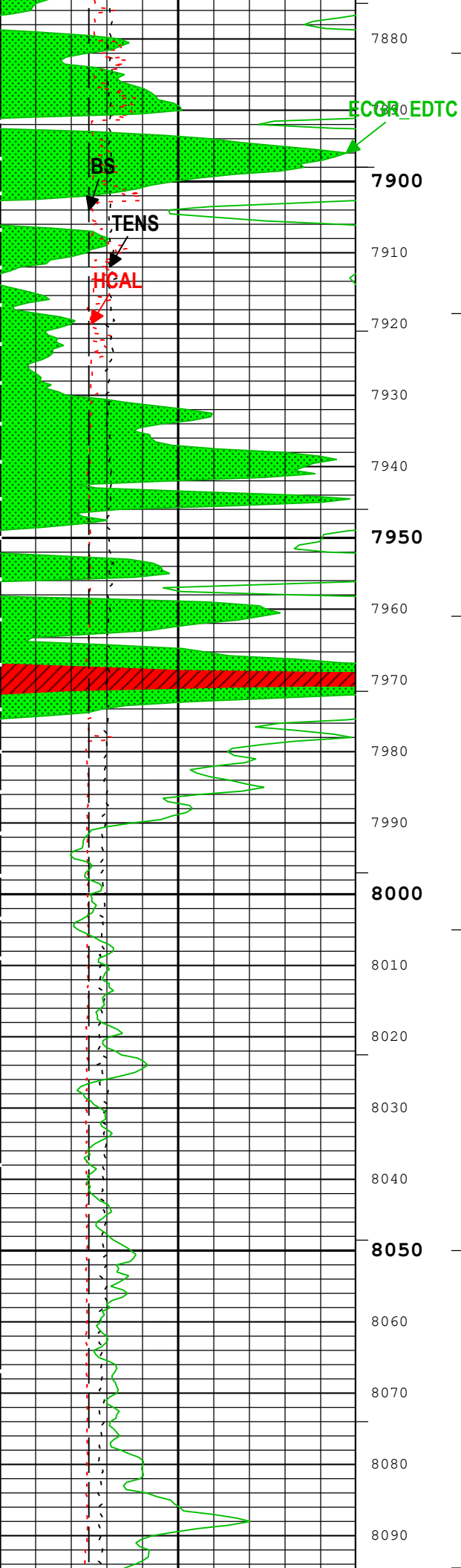
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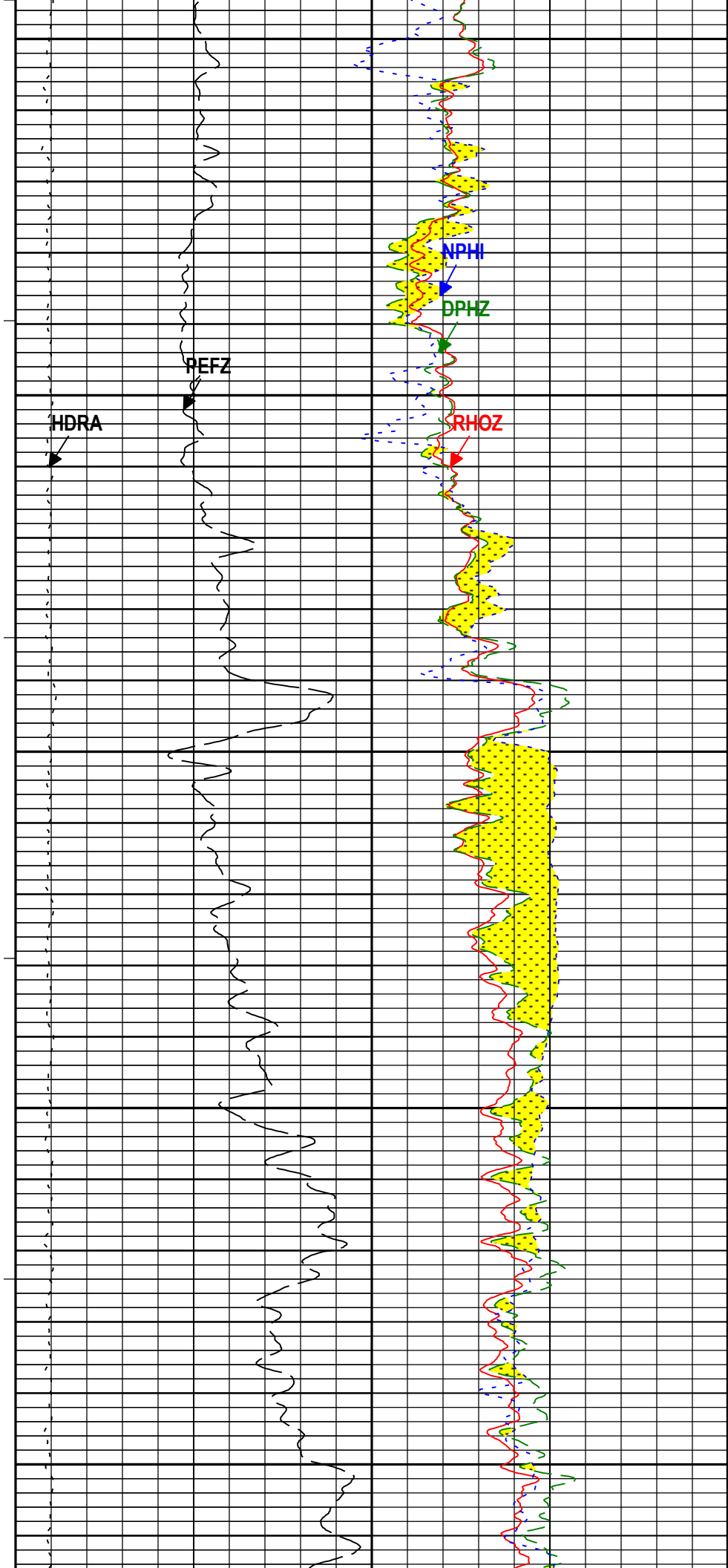
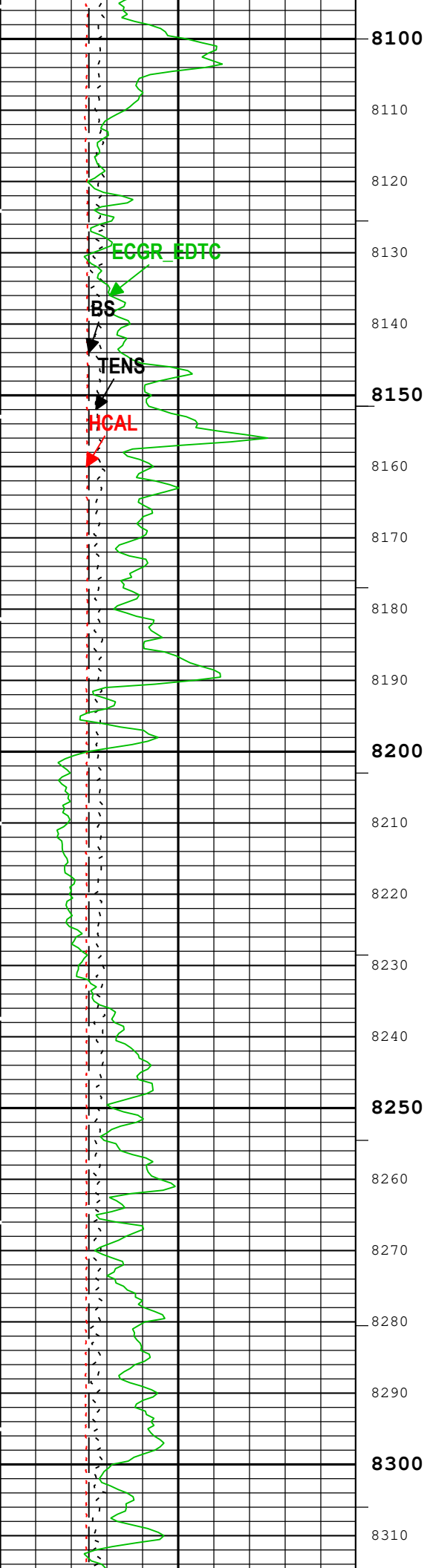
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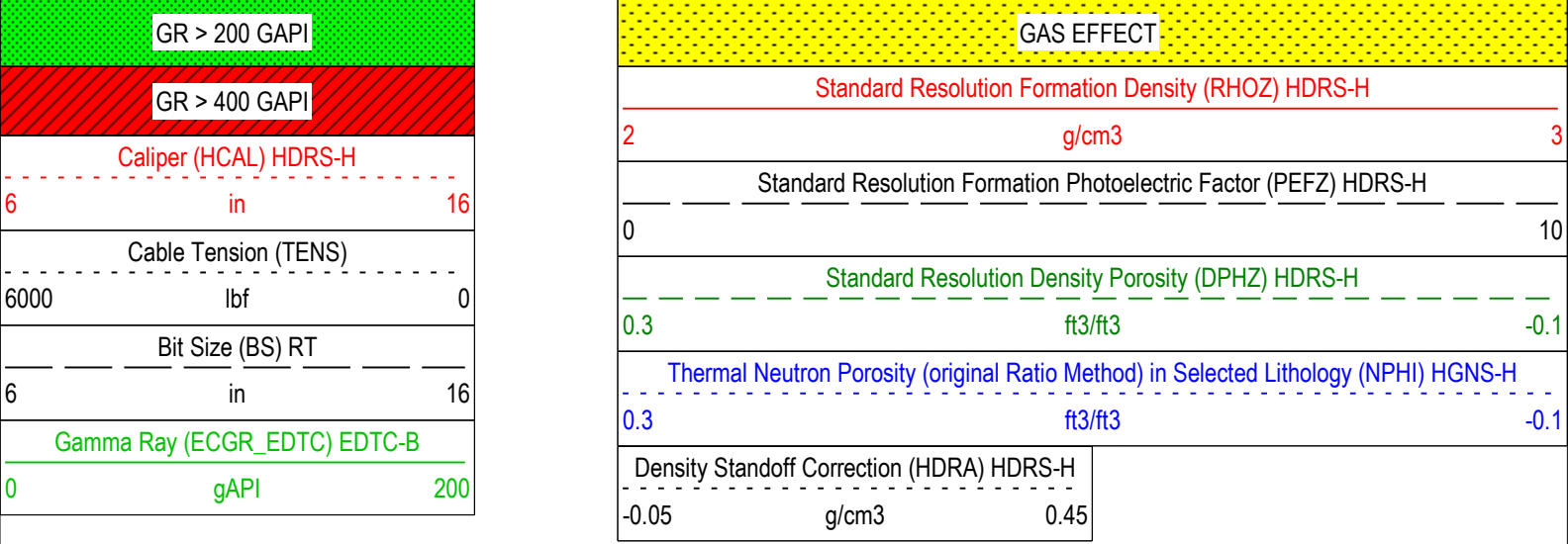
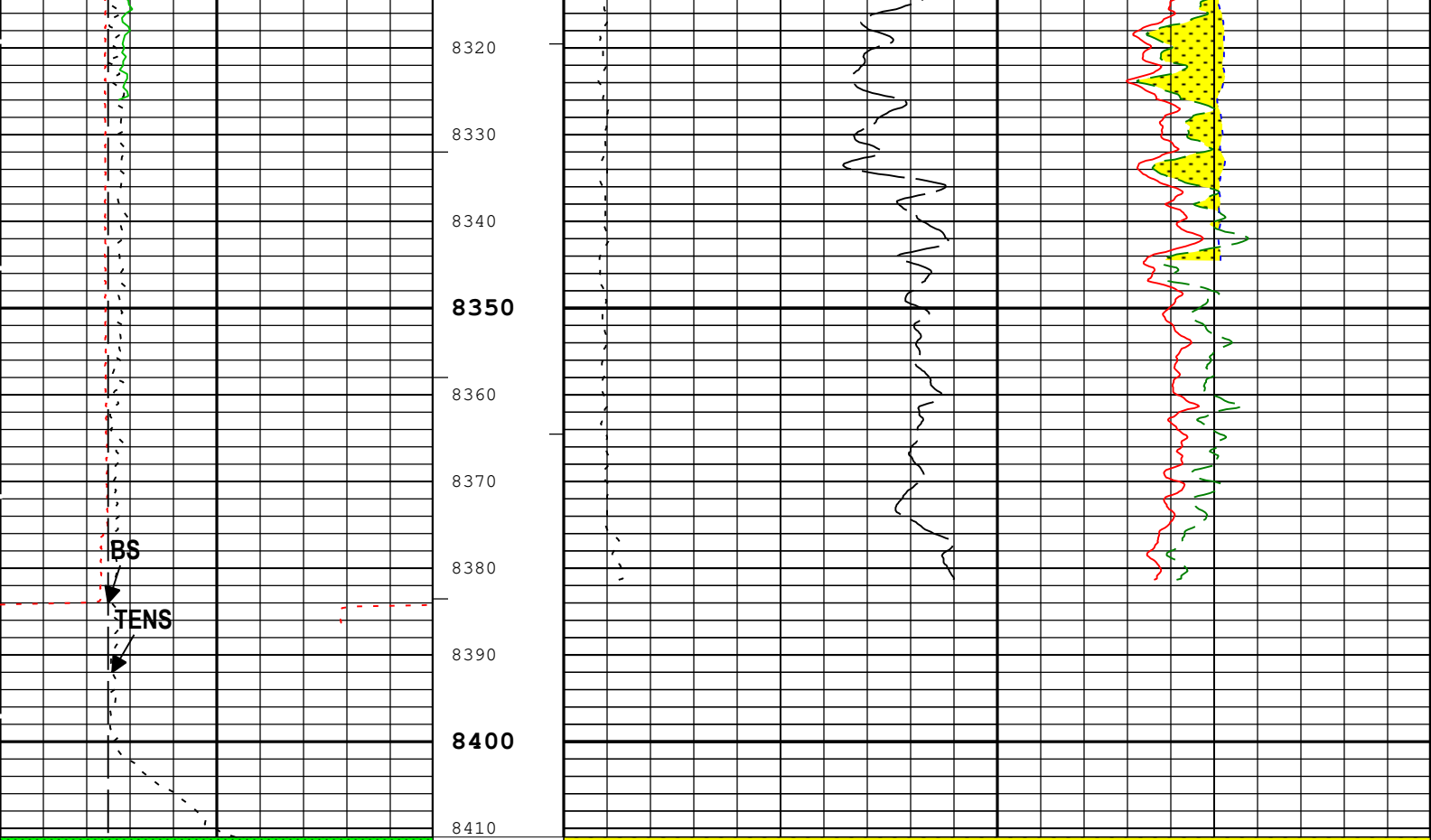
GR > 200 GAPI

Density Standoff Correction (HDRA) HDRS-H	
-0.05	0.45
g/cm3	









TIME_1900 - Time Marked every 60.00 (s)

— IHV - Integrated Hole Volume every 100.00 (ft3)

— IHV - Integrated Hole Volume every 10.00 (ft3)

— ICV - Integrated Cement Volume every 10.00 (ft3)

Description: Triple Combo standard resolution template for Platform Express Format: Log (BRADFORD NUC) Index Scale: 5 in per 100 ft Index Unit: ft

Index Type: Measured Depth Creation Date: 15-Apr-2019 17:59:26

Channel Processing Parameters				
1A: Parameters				
Parameter	Description	Tool	Value	Unit
BARI(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	8.5	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0.446	in
CBLO	Casing Bottom (Logger)	WLSESSION	2543	ft

C DEN	Cement Density	EDTC-B	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DHC	Density Hole Correction	HDRS-H	Bit Size	
FCD	Future Casing (Outer) Diameter	WLSESSION	5.5	in
FD	Fluid Density	Borehole	1	g/cm3
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	CALI	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MDEN	Matrix Density for Density Porosity	Borehole	2.71	g/cm3
NPRM	HRDD Nuclear Processing Mode	HDRS-H	High Resolution	

Tool Control Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
HRGD_BOARD_TYPE	HRGD Board Type	HDRS-H	WITH_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h

1A

MAIN PASS 20"=100'

Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
IHV	Integrated Hole Volume	GCSE_UP_PASS	280.81	ft3
ICV	Integrated Cement Volume	GCSE_UP_PASS, FCD	163.75	ft3

Software Version

Acquisition System	Version
Maxwell 2019	9.0.106845.3100

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
1A	Log[10]:Up	Up	7693.14 ft	8410.89 ft	15-Apr-2019 4:41:25 PM	15-Apr-2019 5:26:23 PM	ON	10.94 ft	Yes

All depths are referenced to toolstring zero

Log

Company:North East Natural Energy LLC Well:Boggess 17H
1A: Log[10]:Up:S012

Description: Triple Combo standard resolution template for Platform Express Format: Log (BRADFORD NUC HIRES) Index Scale: 20 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 15-Apr-2019 17:59:28

└─ICV - Integrated Cement Volume every 10.00 (ft3)

TIME_1900 - Time Marked every 60.00 (s)

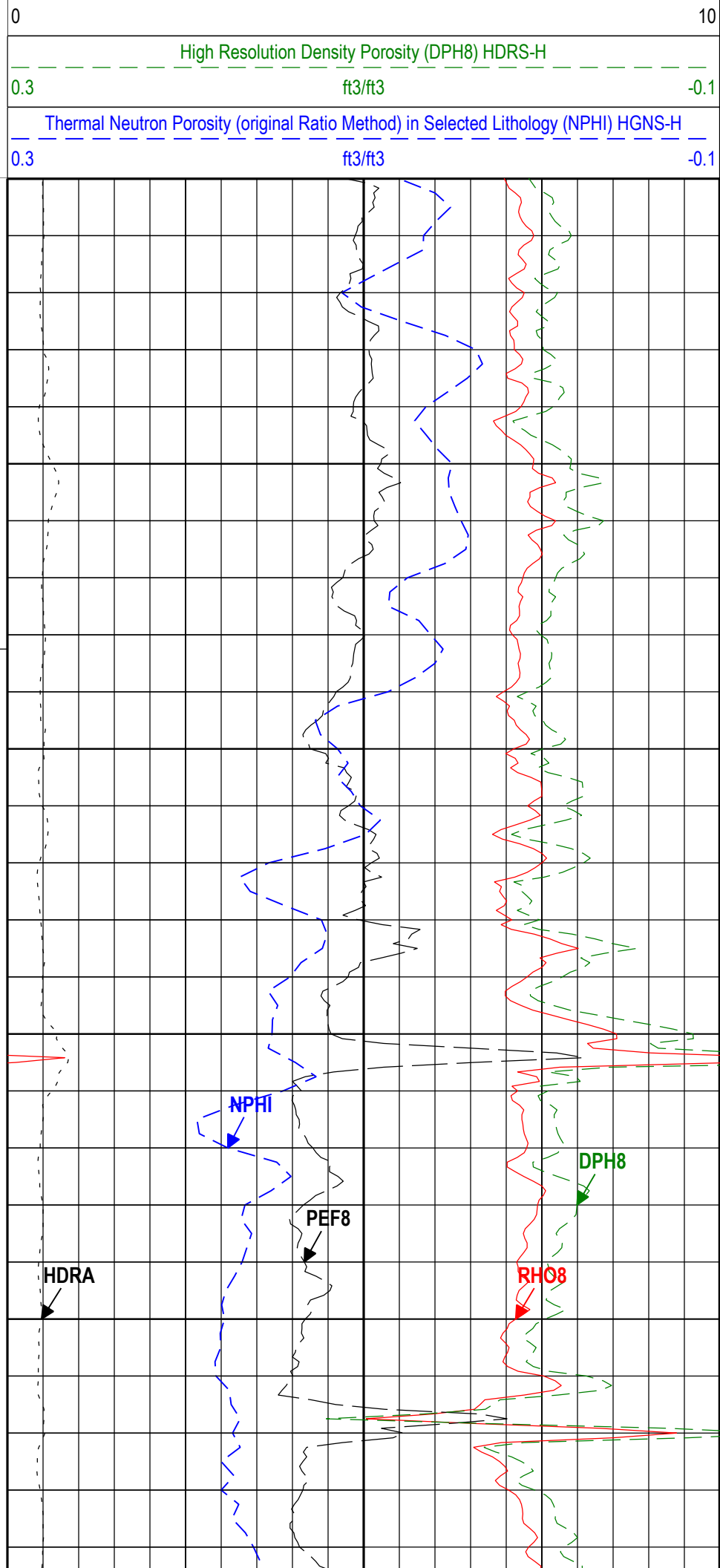
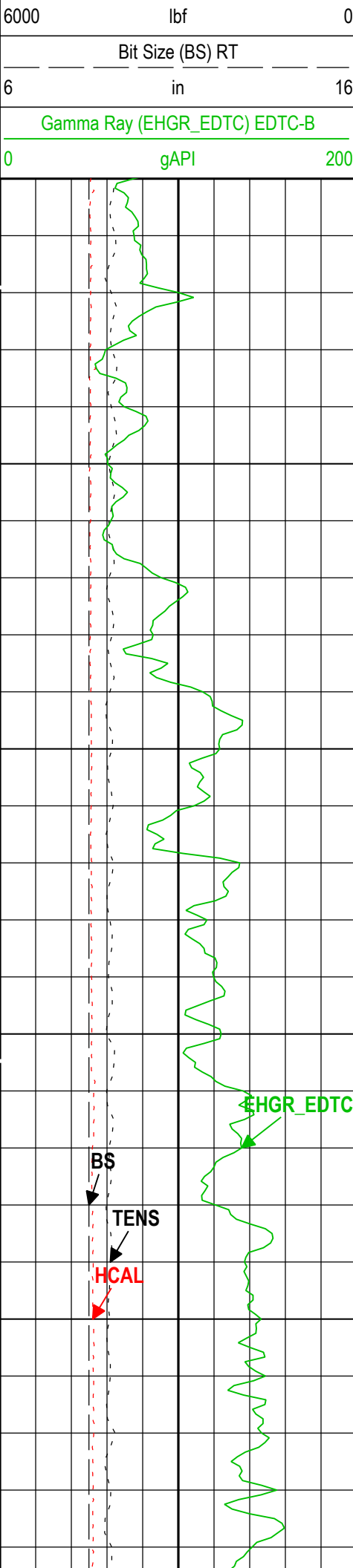
└─ IHV - Integrated Hole Volume every 10.00 (ft3)

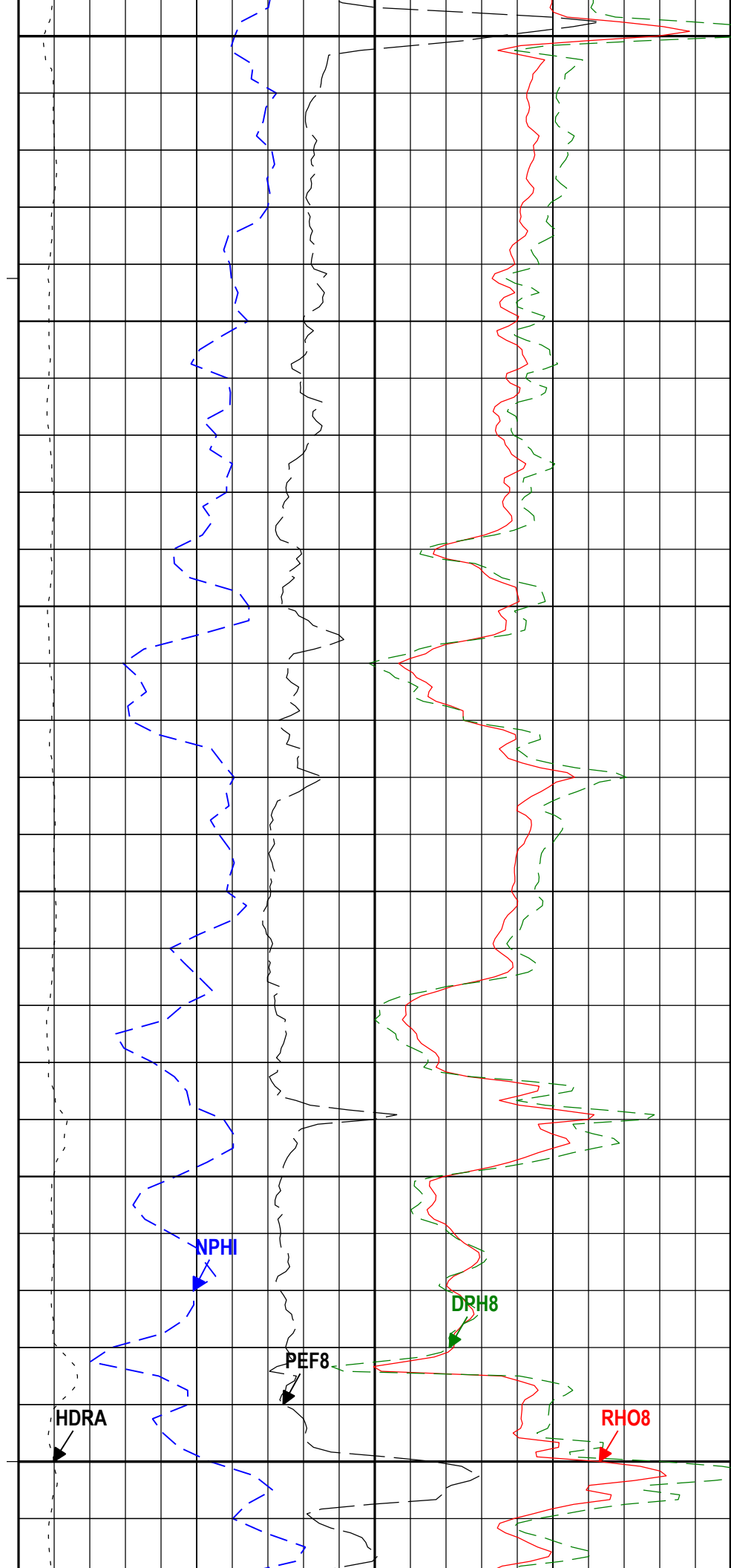
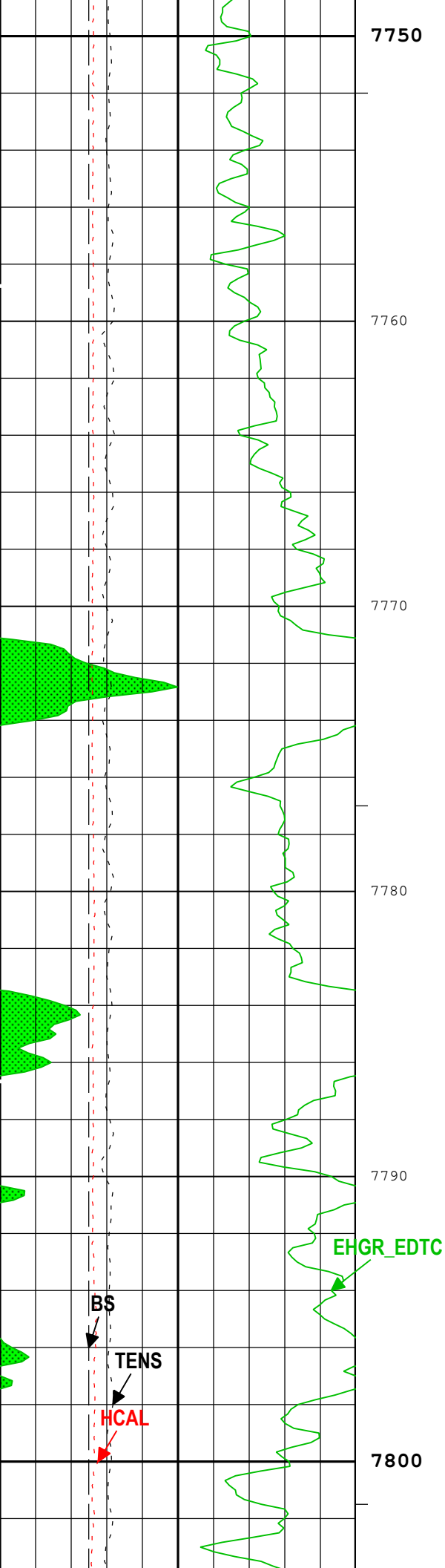
└─ IHV - Integrated Hole Volume every 100.00 (ft3)

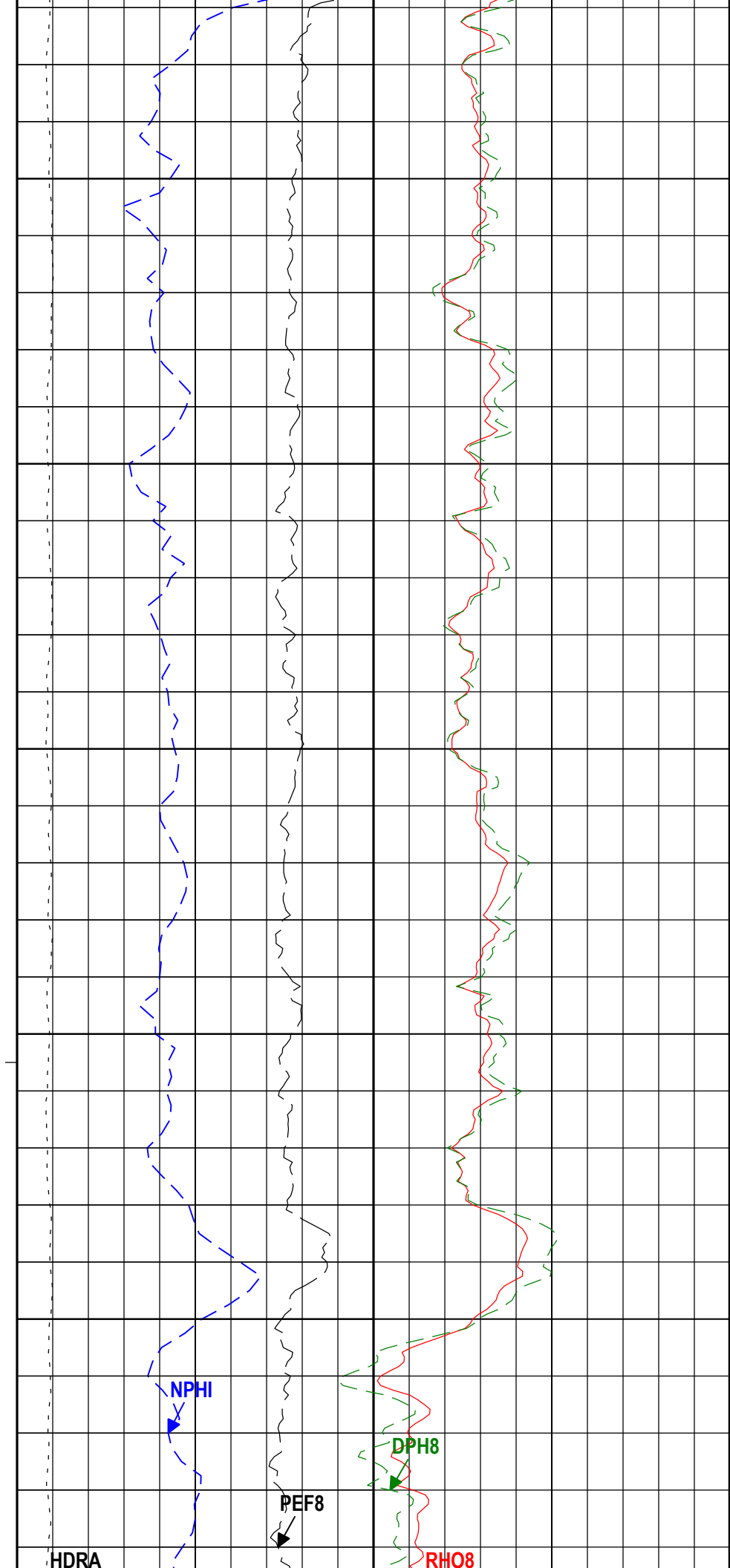
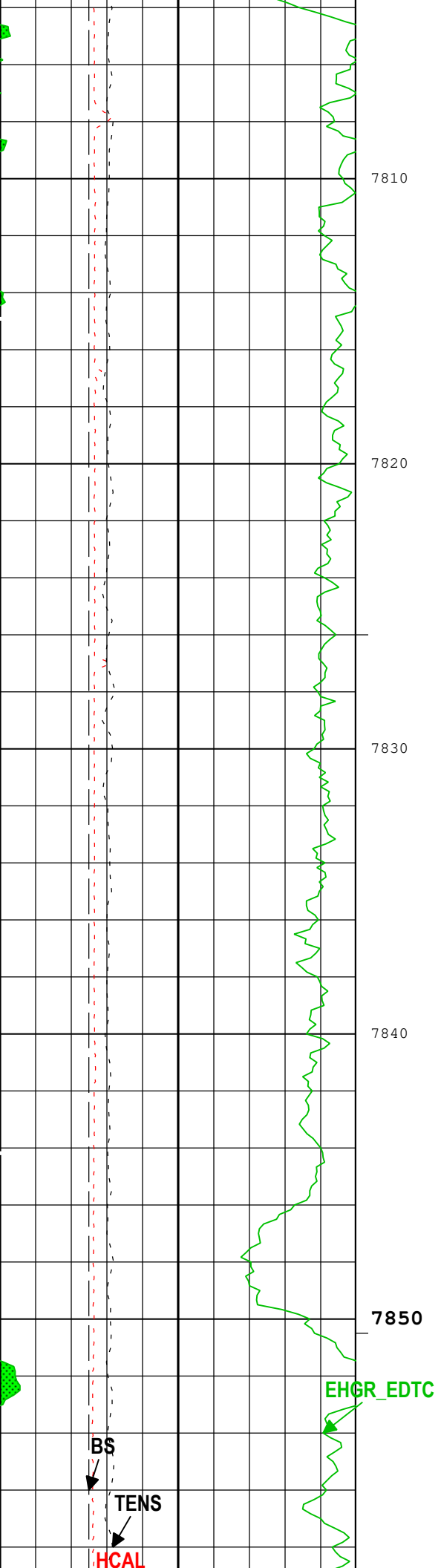
GR > 200 GAPI		
GR > 400 GAPI		
Caliper (HCAL) HDRS-H		
6	in	16
Cable Tension (TENS)		

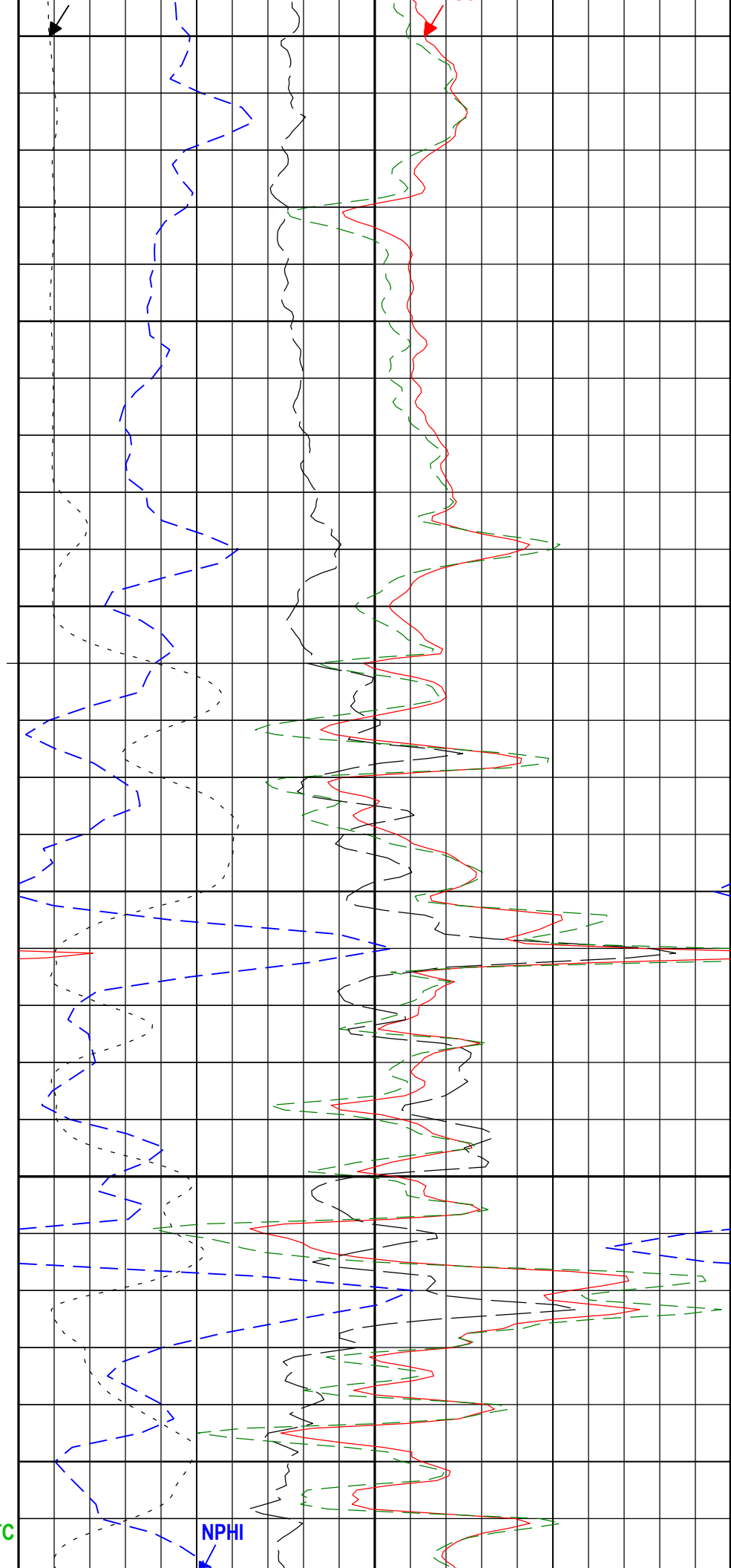
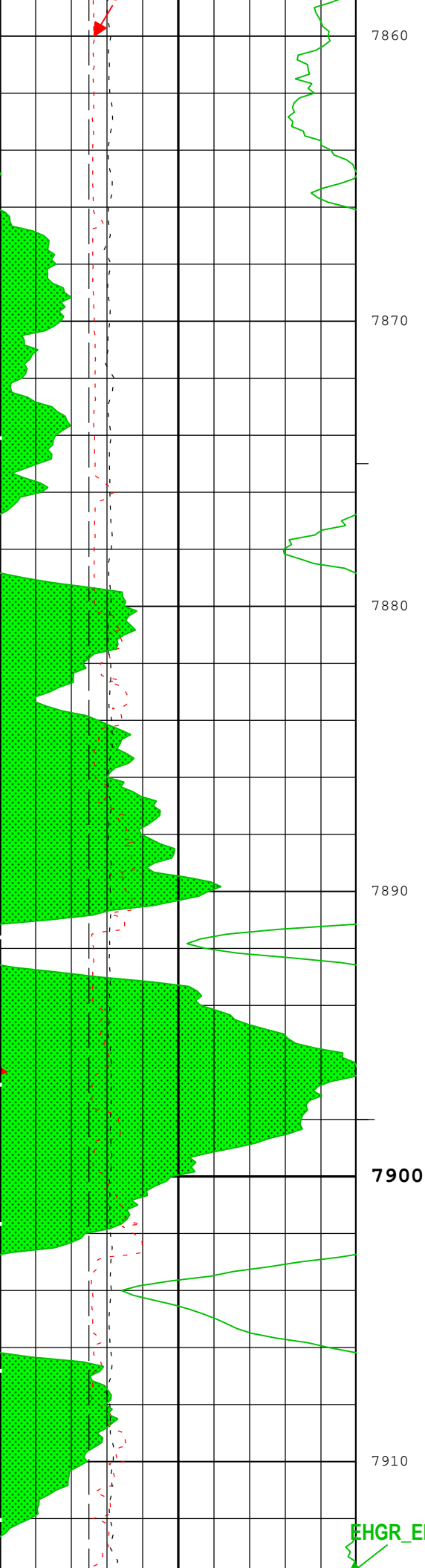
Density Standoff Correction (HDRA) HDRS-H		
-0.05	g/cm3	0.45

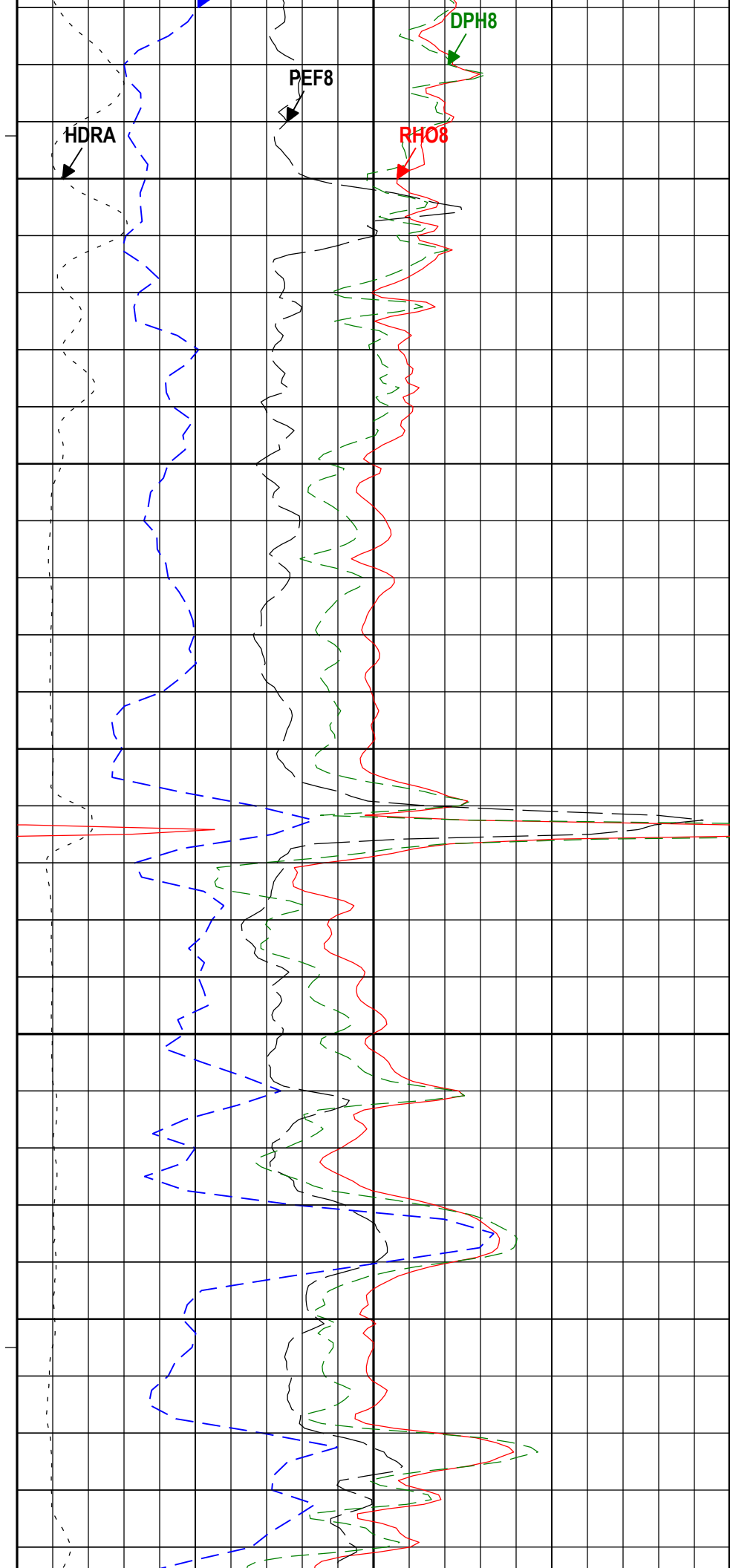
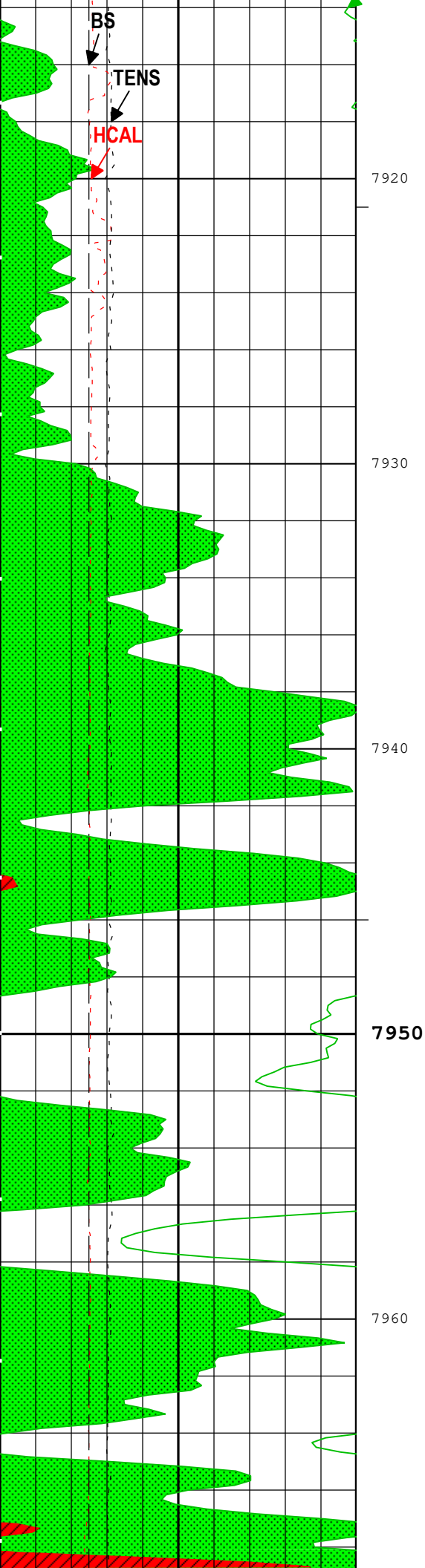
GAS EFFECT		
High Resolution Formation Density (RHO8) HDRS-H		
2	g/cm3	3
High Resolution Formation Photoelectric Factor (PEF8) HDRS-H		

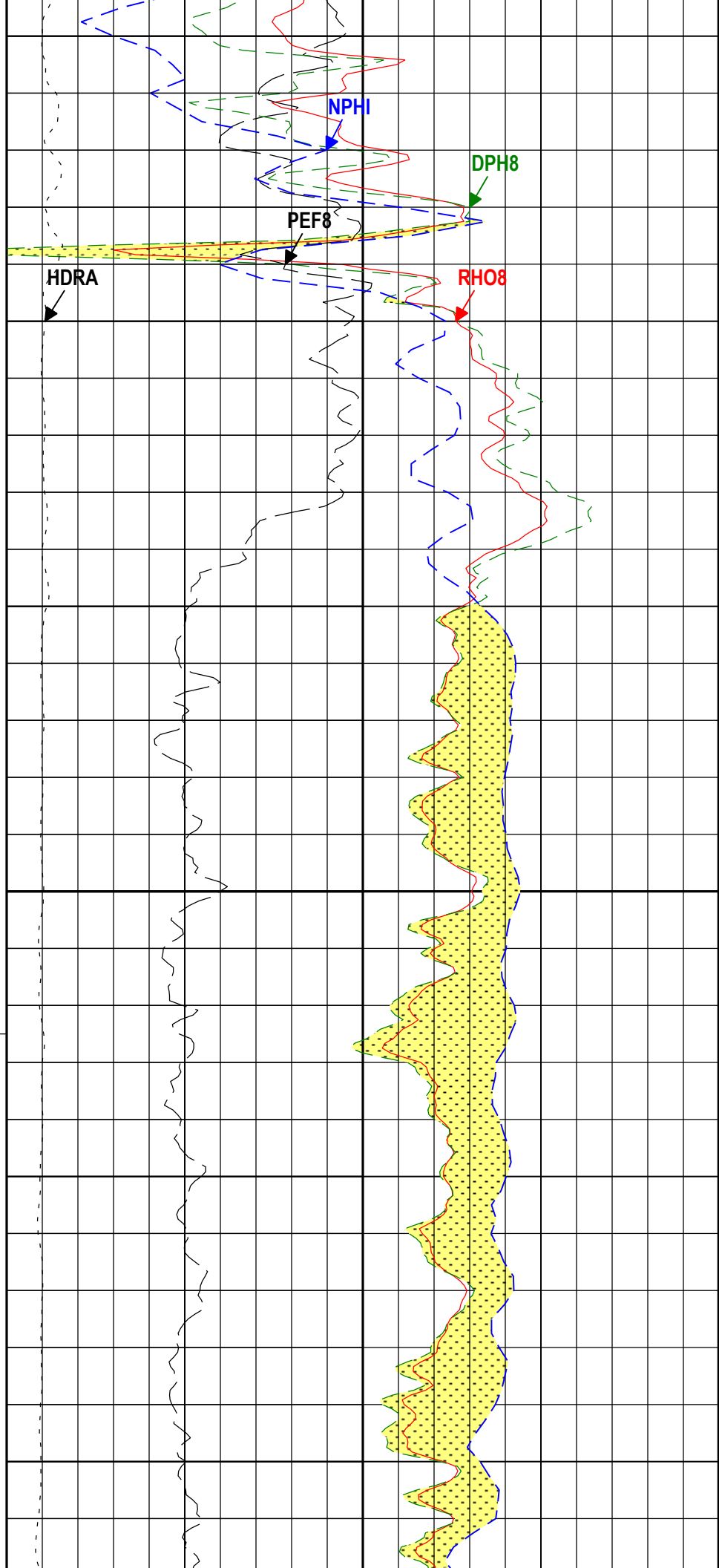
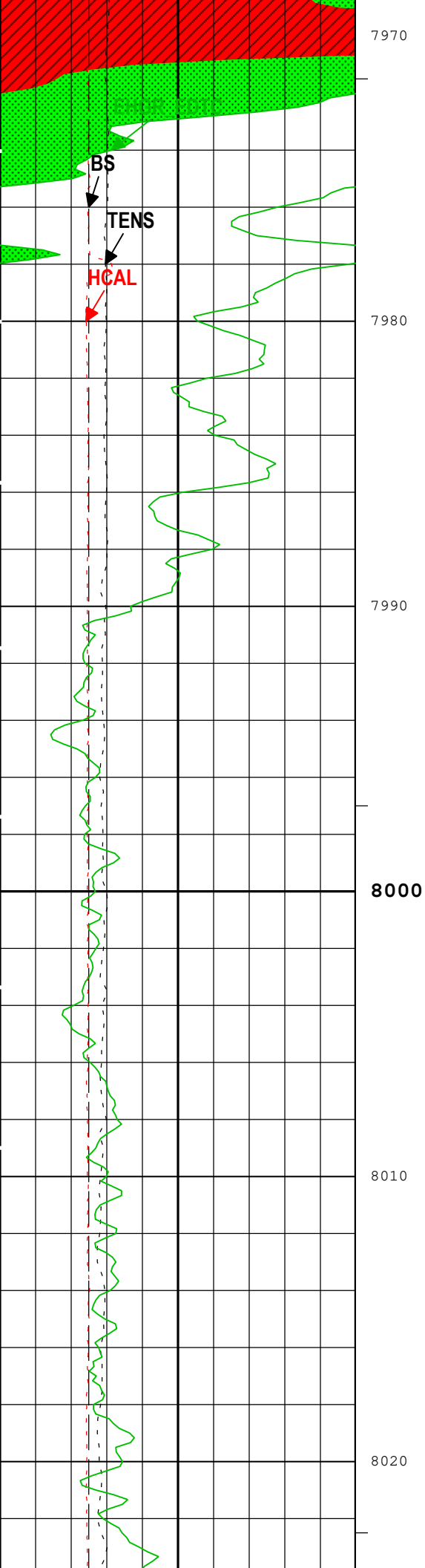


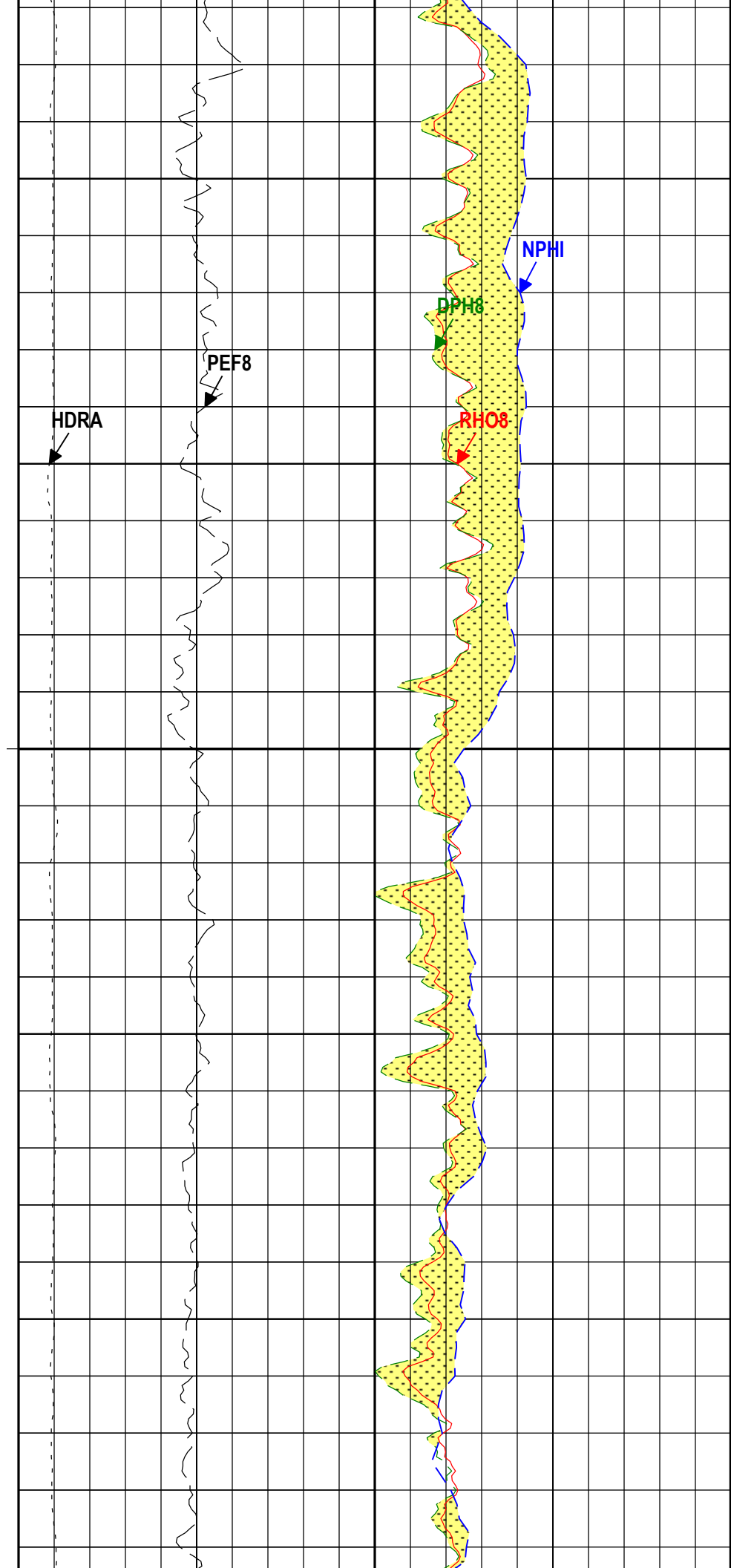
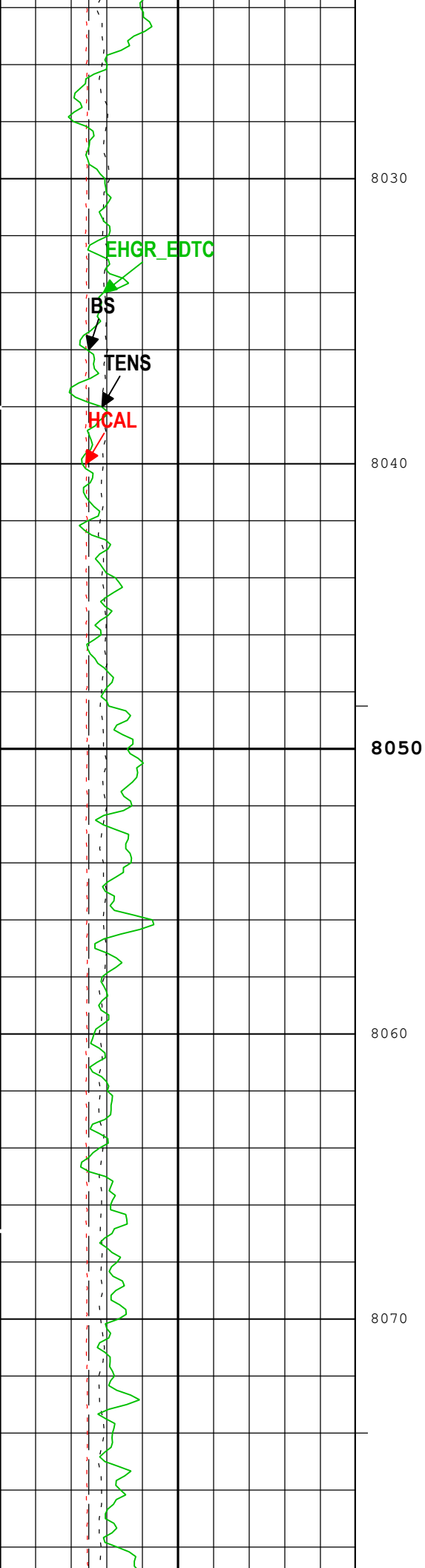


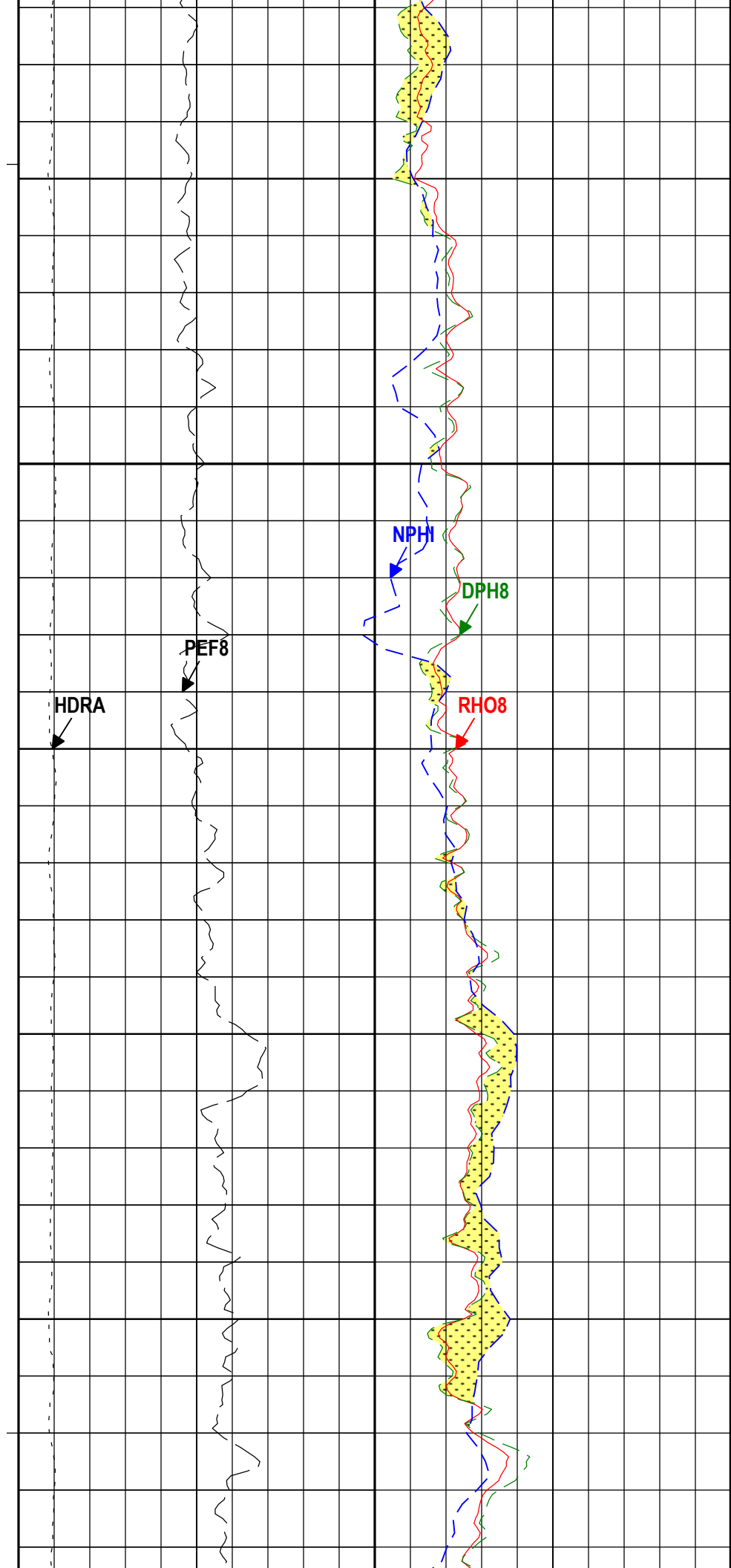
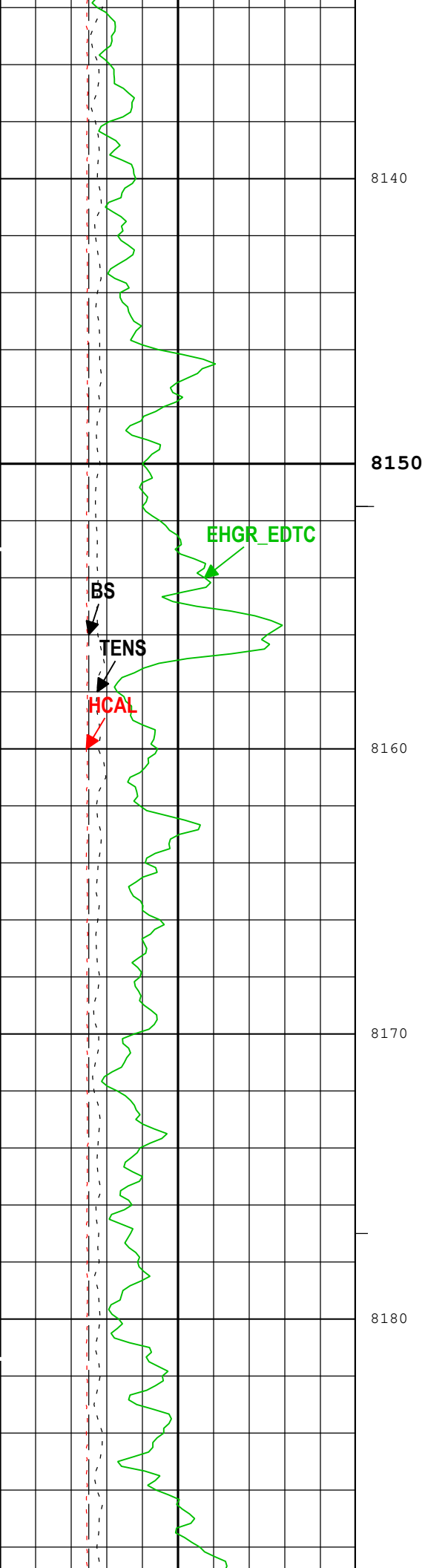


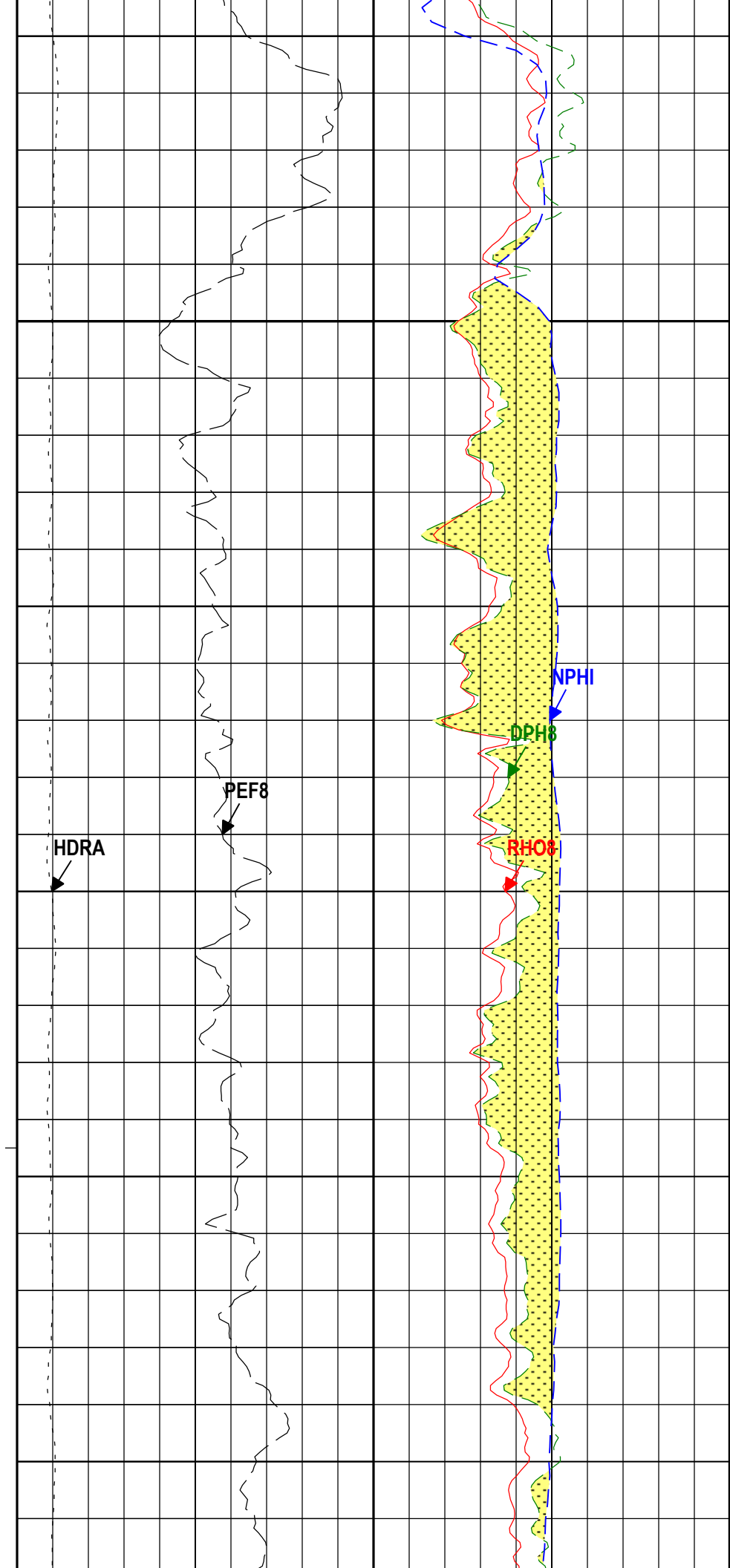
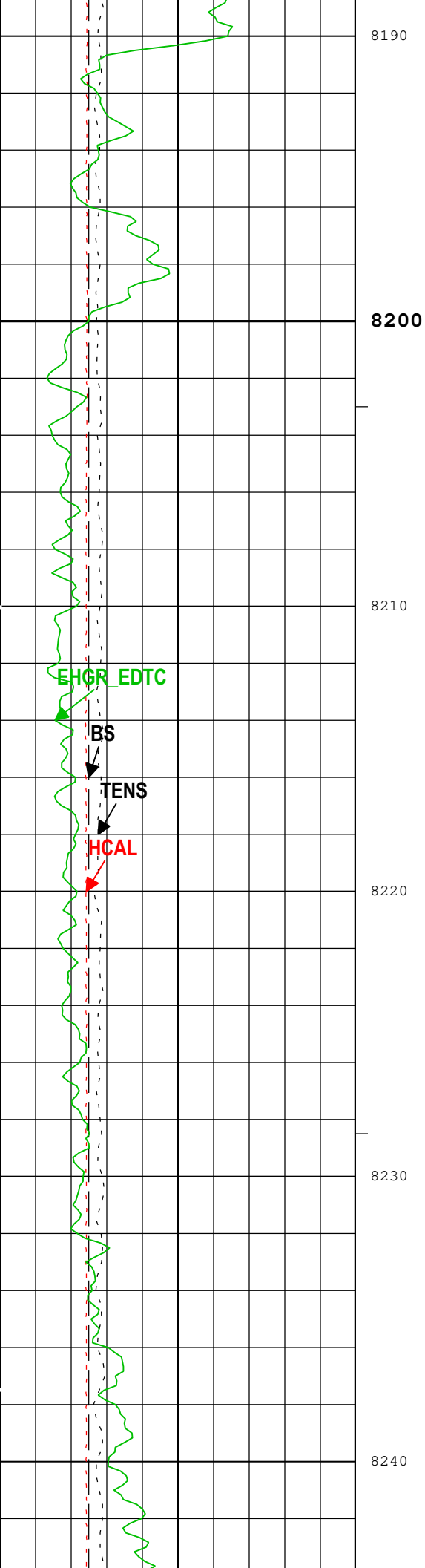


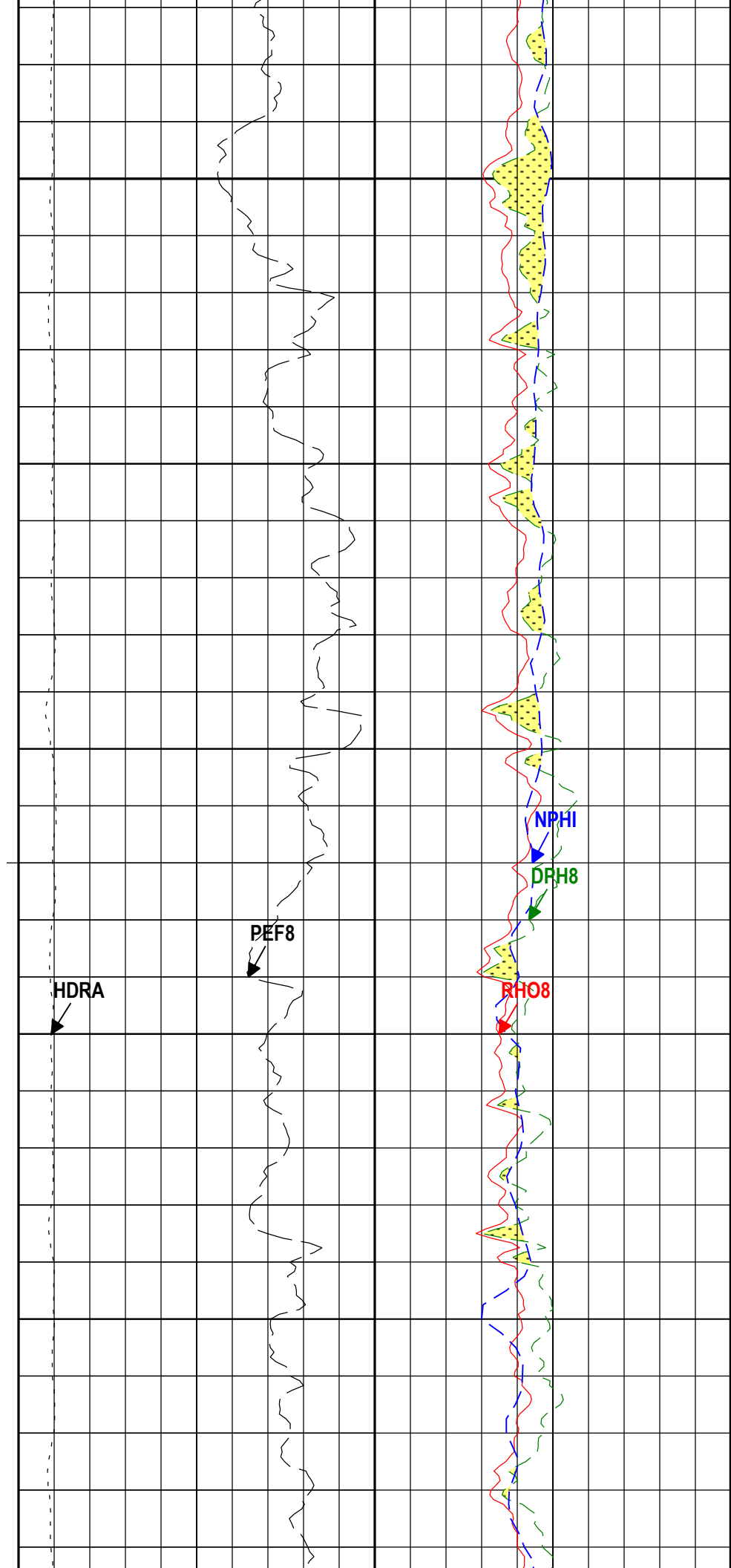
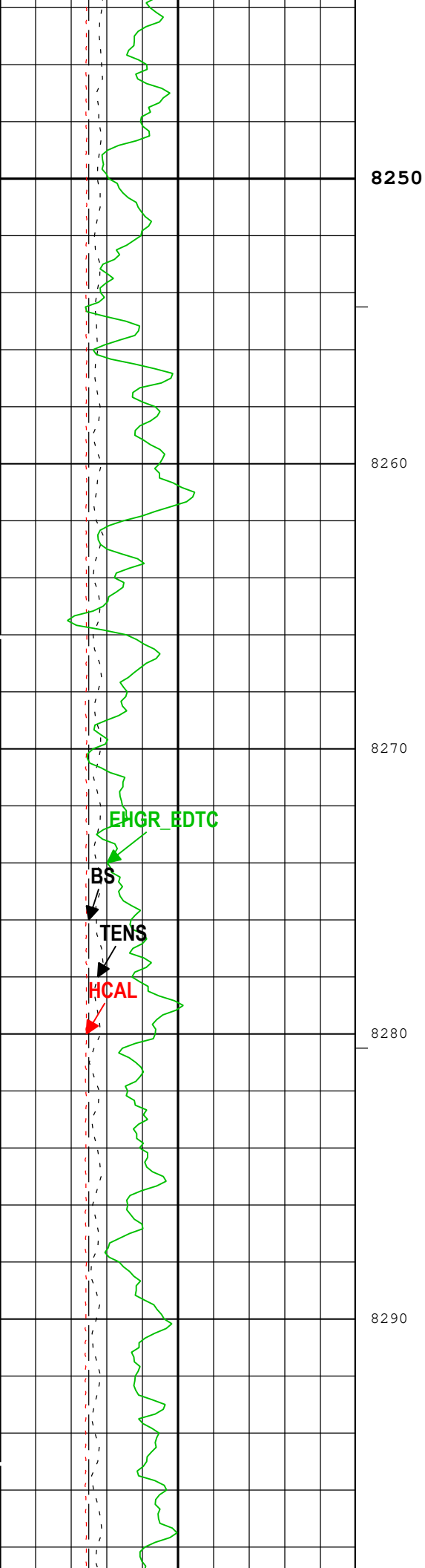


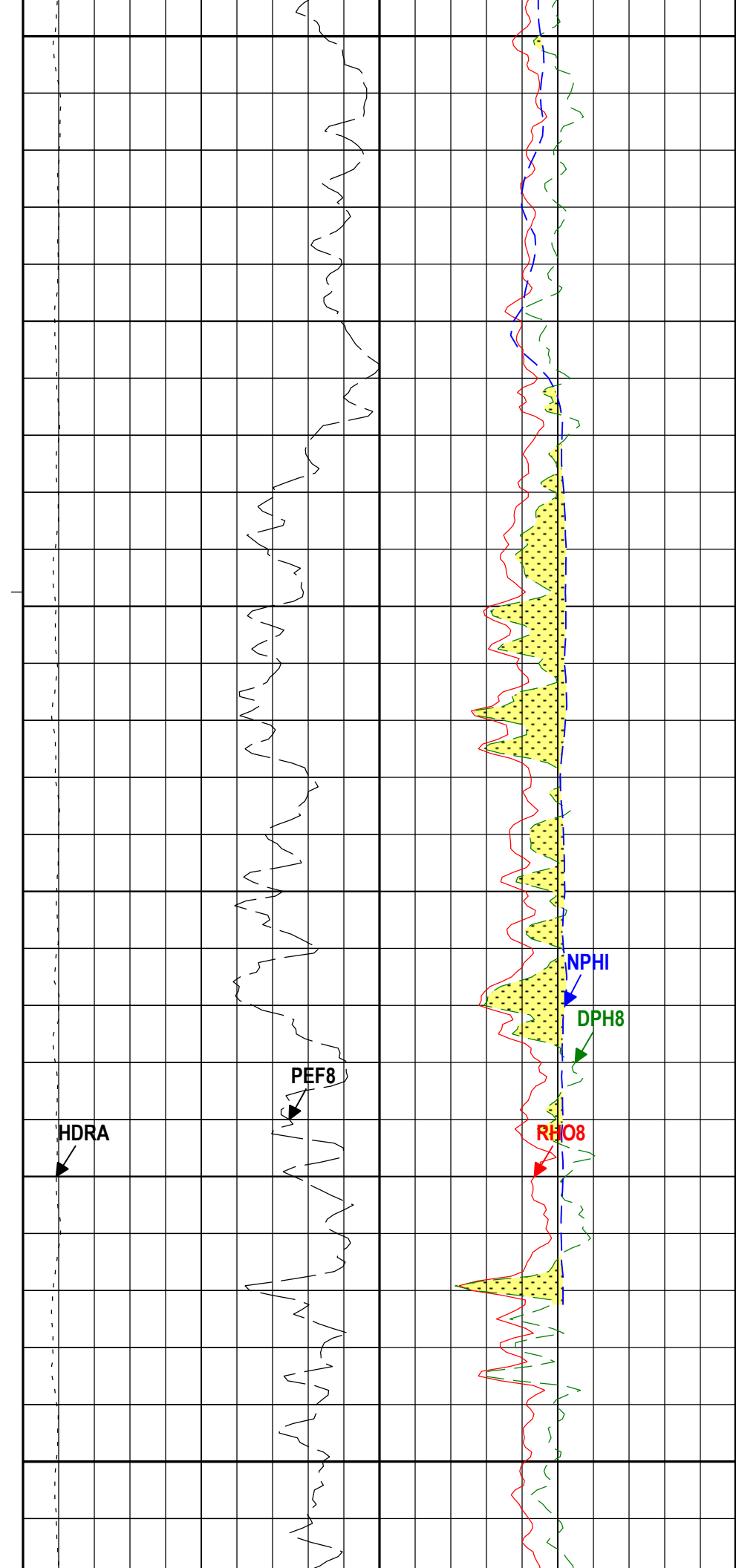
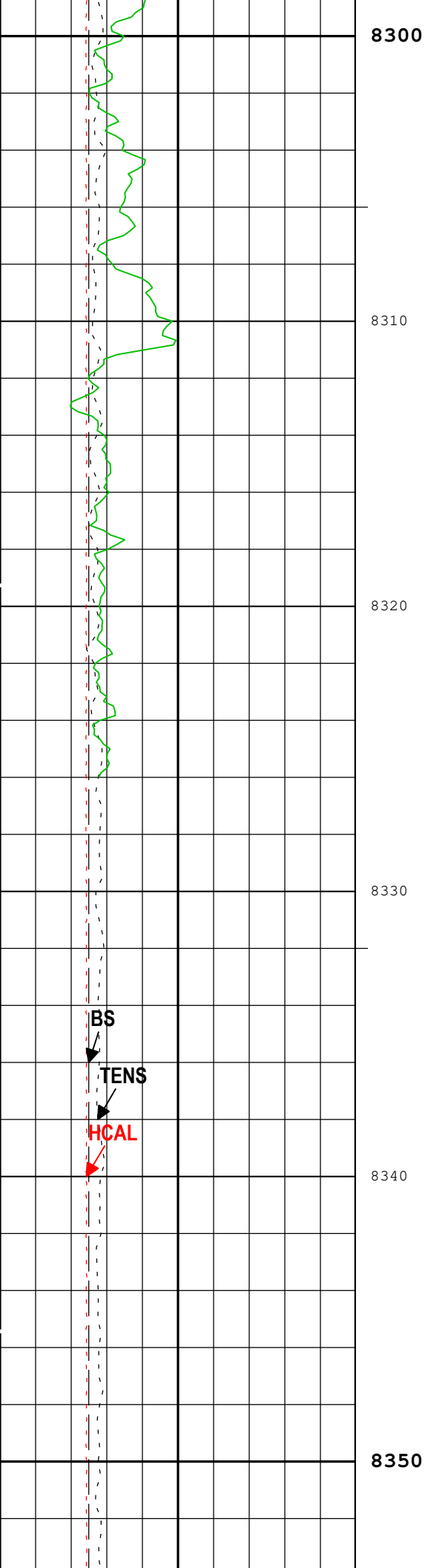


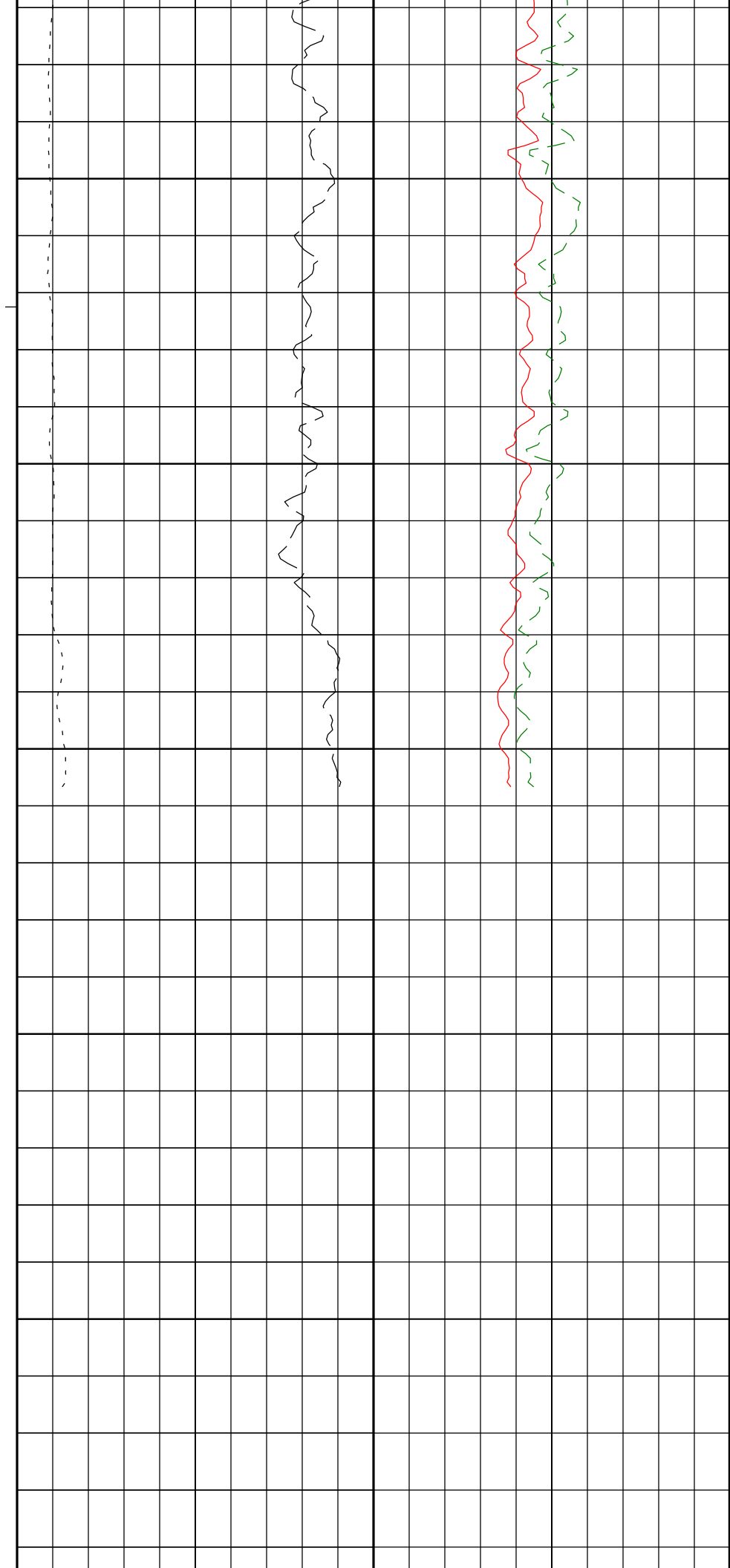
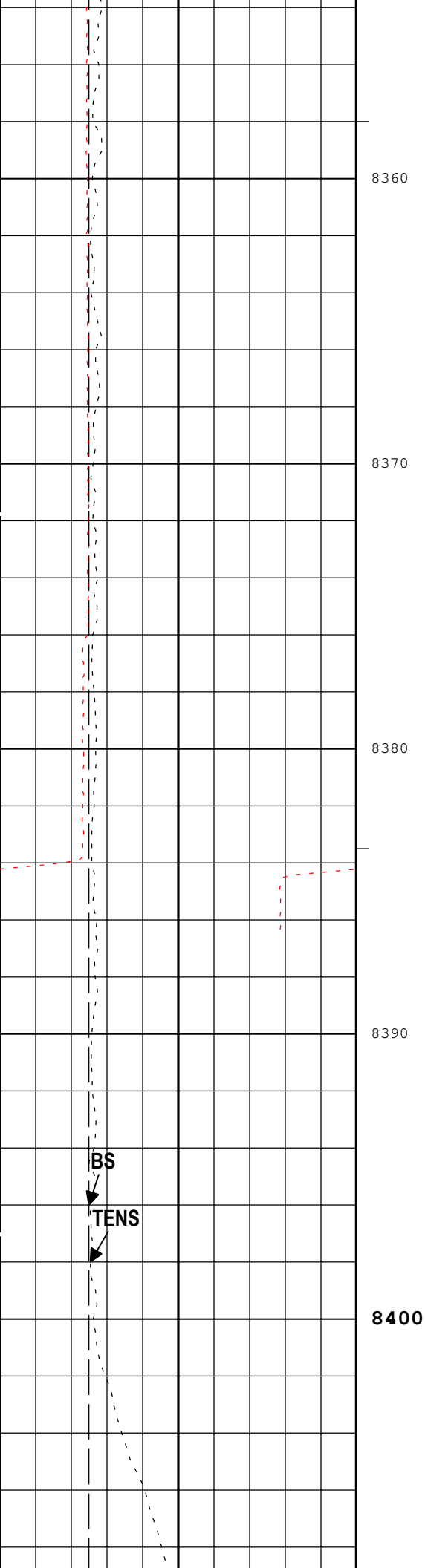












Description: Triple Combo standard resolution template for Platform Express				Format: Log (BRADFORD NUC HIRES)				Index Scale: 20 in per 100 ft				Index Unit: ft				Index Type: Measured Depth				Creation Date: 15-Apr-2019 17:59:28			
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1A: Parameters

Parameter	Description	Tool	Value	Unit
BAR(ISSBAR)	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	8.5	in
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0.446	in
CBLO	Casing Bottom (Logger)	WLSESSION	2543	ft
CDEN	Cement Density	EDTC-B	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	9.5	lbm/gal
DFT_CATEGORY	Drilling Fluid Type	Borehole	Water	
DHC	Density Hole Correction	HDRS-H	Bit Size	
FCD	Future Casing (Outer) Diameter	WLSESSION	5.5	in
FD	Fluid Density	Borehole	1	g/cm3
GCLF	Coal-Like Formation	HDRS-H	No	
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS(RT)	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	CALI	
GR_MULTIPLIER	Gamma Ray Multiplier	EDTC-B	1	
HVCS	Integrated Hole Volume Caliper Selection	Borehole	Compute Area from GHD	
IHVC	Integrated Hole Volume Control	Borehole	Start	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MDEN	Matrix Density for Density Porosity	Borehole	2.71	g/cm3
NACO	Neutron Activation Correction	HDRS-H	Off	
NPRM	HRDD Nuclear Processing Mode	HDRS-H	High Resolution	
NTCO	HRDD Nuclear Temperature Correction Option	HDRS-H	On	
SOCN	Standoff Distance	EDTC-B	0.125	in
SOCO	Standoff Correction Option	EDTC-B	No	

TPOS_EDTC	Tool Position: Centered or Eccentered	EDTC-B	Eccentered	
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Tool Control Parameters

1A: Parameters

Parameter	Description	Tool	Value	Unit
HRGD_BOARD_TYPE	HRGD Board Type	HDRS-H	WITH_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	1800	ft/h
NDTC	Nuclear Dead Time Correction	HDRS-H	On	
NPUC	Nuclear Pile-Up Correction	HDRS-H	Off	
STSO_HRDD	Temperature Source for the Density Algorithm	HDRS-H	HET data channel	

Calibration Report

HRLT-B (High Resolution Laterolog Array) Calibration - Run 1A

Primary Equipment :

HRLT-B Sonde

HRLS-B

953

HRLT-B Calibration - HRLT M0-M1 Voltage Plus

Before (Measured): 10:59:26 10-Apr-2019

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HRLT M01 - 0	uV	Before	-322.7	-379.6	-318.8	-280.6	
HRLT M01 - 1	uV	Before	-322.7	-379.6	-374.0	-280.6	
HRLT M01 - 2	uV	Before	-322.7	-379.6	-357.8	-280.6	
HRLT M01 - 3	uV	Before	-322.7	-379.6	-322.0	-280.6	
HRLT M01 - 4	uV	Before	-322.7	-379.6	-316.7	-280.6	
HRLT M01 - 5	uV	Before	-322.7	-379.6	-327.0	-280.6	
HRLT M01 - 6	uV	Before	322.7	280.6	337.1	379.6	

HRLT-B Calibration - HRLT M1-M2 Voltage Plus

Before (Measured): 10:59:26 10-Apr-2019

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HRLT M12 - 0	uV	Before	1781.0	1548.7	1748.4	2095.3	
HRLT M12 - 1	uV	Before	1781.0	1548.7	2054.1	2095.3	
HRLT M12 - 2	uV	Before	1781.0	1548.7	1959.1	2095.3	
HRLT M12 - 3	uV	Before	1781.0	1548.7	1763.3	2095.3	
HRLT M12 - 4	uV	Before	1781.0	1548.7	1734.5	2095.3	
HRLT M12 - 5	uV	Before	1781.0	1548.7	1792.1	2095.3	
HRLT M12 - 6	uV	Before	-1781.0	-2095.3	-1859.5	-1548.7	

HRLT-B Calibration - HRLT M2-M3 Voltage Plus

Before (Measured): 10:59:26 10-Apr-2019

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HRLT M23 - 0	uV	Before	1781.0	1548.7	1732.1	2095.3	
HRLT M23 - 1	uV	Before	1781.0	1548.7	2048.6	2095.3	
HRLT M23 - 2	uV	Before	1781.0	1548.7	1955.1	2095.3	
HRLT M23 - 3	uV	Before	1781.0	1548.7	1762.7	2095.3	
HRLT M23 - 4	uV	Before	1781.0	1548.7	1728.0	2095.3	
HRLT M23 - 5	uV	Before	1781.0	1548.7	1786.4	2095.3	
HRLT M23 - 6	uV	Before	-1781.0	-2095.3	-1842.4	-1548.7	

HRLT-B Calibration - HRLT A3-A4 Voltage Plus

Before (Measured): 10:59:26 10-Apr-2019

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HRLT V34 - 0	uV	Before	70000.0	60869.6	68873.9	82352.9	
HRLT V34 - 1	uV	Before	70000.0	60869.6	81622.0	82352.9	
HRLT V34 - 2	uV	Before	70000.0	60869.6	78130.2	82352.9	
HRLT V34 - 3	uV	Before	70000.0	60869.6	70598.3	82352.9	
HRLT V34 - 4	uV	Before	70000.0	60869.6	69081.6	82352.9	
HRLT V34 - 5	uV	Before	70000.0	60869.6	71368.4	82352.9	
HRLT V34 - 6	uV	Before	-70000.0	-82352.9	-72369.0	-60869.6	

HRLT-B Calibration - HRLT A4-A5 Voltage Plus

Before (Measured):		10:59:26 10-Apr-2019					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HRLT V45 - 0	uV	Before	70000.0	60869.6	68726.6	82352.9	
HRLT V45 - 1	uV	Before	70000.0	60869.6	81383.8	82352.9	
HRLT V45 - 2	uV	Before	70000.0	60869.6	77904.8	82352.9	
HRLT V45 - 3	uV	Before	70000.0	60869.6	70423.0	82352.9	
HRLT V45 - 4	uV	Before	70000.0	60869.6	68925.2	82352.9	
HRLT V45 - 5	uV	Before	70000.0	60869.6	71216.4	82352.9	
HRLT V45 - 6	uV	Before	-70000.0	-82352.9	-72138.0	-60869.6	
HRLT-B Calibration - HRLT A5-A6 Voltage Plus							
Before (Measured):		10:59:26 10-Apr-2019					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HRLT V56 - 0	uV	Before	70000.0	60869.6	68875.1	82352.9	
HRLT V56 - 1	uV	Before	70000.0	60869.6	81863.8	82352.9	
HRLT V56 - 2	uV	Before	70000.0	60869.6	78315.0	82352.9	
HRLT V56 - 3	uV	Before	70000.0	60869.6	70712.1	82352.9	
HRLT V56 - 4	uV	Before	70000.0	60869.6	69124.4	82352.9	
HRLT V56 - 5	uV	Before	70000.0	60869.6	71393.3	82352.9	
HRLT V56 - 6	uV	Before	-70000.0	-82352.9	-72588.8	-60869.6	
HRLT-B Calibration - HRLT Torpedo-M0 Voltage							
Before (Measured):		10:59:26 10-Apr-2019					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HRLT VTP - 0	uV	Before	-70000.0	-82352.9	-68225.6	-60869.6	
HRLT VTP - 1	uV	Before	-70000.0	-82352.9	-81150.6	-60869.6	
HRLT VTP - 2	uV	Before	-70000.0	-82352.9	-77724.9	-60869.6	
HRLT VTP - 3	uV	Before	-70000.0	-82352.9	-70310.4	-60869.6	
HRLT VTP - 4	uV	Before	-70000.0	-82352.9	-68869.0	-60869.6	
HRLT VTP - 5	uV	Before	-70000.0	-82352.9	-71153.2	-60869.6	
HRLT VTP - 6	uV	Before	70000.0	60869.6	71885.7	82352.9	
HRLT-B Calibration - HRLT Bridle#9-M0 Voltage							
Before (Measured):		10:59:26 10-Apr-2019					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HRLT VBD - 0	uV	Before	-70000.0	-82352.9	-68239.8	-60869.6	
HRLT VBD - 1	uV	Before	-70000.0	-82352.9	-81160.0	-60869.6	
HRLT VBD - 2	uV	Before	-70000.0	-82352.9	-77729.5	-60869.6	
HRLT VBD - 3	uV	Before	-70000.0	-82352.9	-70321.1	-60869.6	
HRLT VBD - 4	uV	Before	-70000.0	-82352.9	-68877.8	-60869.6	
HRLT VBD - 5	uV	Before	-70000.0	-82352.9	-71163.6	-60869.6	
HRLT VBD - 6	uV	Before	70000.0	60869.6	71897.9	82352.9	
HRLT-B Calibration - HRLT Source Current Plus							
Before (Measured):		10:59:26 10-Apr-2019					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HRLT ISO - 0	uA	Before	284.0	247.0	285.1	334.1	
HRLT ISO - 1	uA	Before	281.1	244.4	281.1	330.7	
HRLT ISO - 2	uA	Before	281.1	244.4	281.1	330.7	
HRLT ISO - 3	uA	Before	281.1	244.4	281.1	330.7	
HRLT ISO - 4	uA	Before	281.1	244.4	281.1	330.7	
HRLT ISO - 5	uA	Before	281.1	244.4	281.1	330.7	
HRLT ISO - 6	uA	Before	281.1	244.4	281.1	330.7	
HRLT-B Calibration - HRLT Vertical Voltage PI							
Before (Measured):		10:59:26 10-Apr-2019					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
HRLT MV - 0	uV	Before	-322.7	-379.6	-321.2	-280.6	
HRLT MV - 1	uV	Before	-322.7	-379.6	-369.9	-280.6	
HRLT MV - 2	uV	Before	-322.7	-379.6	-352.4	-280.6	
HRLT MV - 3	uV	Before	-322.7	-379.6	-315.3	-280.6	
HRLT MV - 4	uV	Before	-322.7	-379.6	-306.7	-280.6	
HRLT MV - 5	uV	Before	-322.7	-379.6	-331.8	-280.6	
HRLT MV - 6	uV	Before	322.7	379.6	347.3	379.6	

HRLT HV +0	uv	Before	322.7	200.0	347.3	379.0	
HRLT-B Calibration - HRLT Calibration Temperature							
Before (Measured):		10:59:26 10-Apr-2019					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
CTEM_HRLT	degF	Before			63.7		

HGNS-H (HILT Gamma-Ray and Neutron Sonde, 150 degC) Calibration - Run 1A			
Primary Equipment :			
HILT Gamma-Ray and Neutron Sonde, 150 degC	HGNS-H	4951	
Auxiliary Equipment :			
HGNS Accelerometer, 150 degC	HACCZ-H	7648	
AmBe Neutron Logging Source	NSR-F	5242	
Calibration Parameter :			
Water Temperature (Calibration Tank Water Temperature)	76.0		
Housing Size (Thermal Housing Size)	3.38		
JIG-BKG (Jig minus background reference)	165		

HGNS Accelerometer EEPROM - Accelerometer EEPROM Read							
Master (EEPROM):		19:00:00 14-Jan-2008					
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	----	----	-1672.000	----	
Accelerometer Coefficients - 1		Master	----	----	16.298	----	
Accelerometer Coefficients - 2		Master	----	----	-0.016	----	
Accelerometer Coefficients - 3		Master	----	----	0.000	----	
Accelerometer Coefficients - 4		Master	----	----	2.745	----	
Accelerometer Coefficients - 5		Master	----	----	0.000	----	
Accelerometer Coefficients - 6		Master	----	----	0.000	----	
Accelerometer Coefficients - 7		Master	----	----	0.000	----	
Accelerometer Coefficients - 8		Master	----	----	298.600	----	
Accelerometer Coefficients - 9		Master	----	----	1.005	----	

HGNS Neutron Calibration - HGNS Neutron Accumulations							
Master (EEPROM):		13:14:24 17-Feb-2019					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Near Zero Measurement	1/s	Master	0	5.0	28.7	40.0	
Far Zero Measurement	1/s	Master	0	5.0	28.6	40.0	
Near Plus Measurement	1/s	Master	6031.0	4700.0	4861.0	6900.0	
Far Plus Measurement	1/s	Master	2793.0	1900.0	2083.0	2900.0	
Near Corrected Plus Measurement	1/s	Master		4700.0	4828.0	6900.0	
Far Corrected Plus Measurement	1/s	Master		1900.0	2051.0	2900.0	

EDTC-B (Enhanced Digital Telemetry Cartridge - Version B) Calibration - Run 1A			
Primary Equipment :			
EDTC-B		EDTC-B	9231
Calibration Parameter :			
Plus Reference (Jig minus background reference)		165	

EDTC-B Memory Data - EDTC-B Memory Data							
Master (EEPROM):		09:57:01 15-Apr-2019					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
Initial PMT HV	V	Master			1395.000		
Accelerometer Serial Number		Master			144		
Accelerometer Coefficients - 0		Master	----	----	2.938E+000	----	
Accelerometer Coefficients - 1		Master	----	----	2.077E-004	----	
Accelerometer Coefficients - 2		Master	----	----	7.563E-007	----	
Accelerometer Coefficients - 3		Master	----	----	-2.103E-008	----	

Accelerometer Coefficients - 3		Master			2.100E-000		
Accelerometer Coefficients - 4		Master	-----	-----	5.623E-010	-----	
Accelerometer Coefficients - 5		Master	-----	-----	-4.367E-012	-----	
Accelerometer Coefficients - 6		Master	-----	-----	1.152E-014	-----	
Accelerometer Coefficients - 7		Master	-----	-----	-1.113E-003	-----	
Accelerometer Coefficients - 8		Master	-----	-----	2.612E-005	-----	
Accelerometer Coefficients - 9		Master	-----	-----	1.450E-007	-----	
Accelerometer Coefficients - 10		Master	-----	-----	-1.743E-009	-----	
Accelerometer Coefficients - 11		Master	-----	-----	3.857E-012	-----	
Gamma-Ray Detector Serial Number		Master			79427		

Company:	North East Natural Energy LLC	Schlumberger
Well:	Boggess 17H	
Field:	Wildcat	
County:	Monongalia	
State:	West Virginia	
PLATFORM EXPRESS		
HIRES LITHO-DENSITY / HIRES COMPENSATED NEUTRON		
HIRES GAMMA RAY / CALIPER		