

Schlumberger

Company: **Encana Oil & Gas (USA) Inc.**

Well: **Puritan 4-6-34**

Field: **Spindle**

County: **Weld**

State: **Colorado**

Schlumberger

Company: **Encana Oil & Gas (USA) Inc.**

Well: **Puritan 4-6-34**

Field: **Spindle**

County: **Weld**

State: **Colorado**

Schlumberger

Company: **Encana Oil & Gas (USA) Inc.**

Well: **Puritan 4-6-34**

Field: **Spindle**

County: **Weld**

State: **Colorado**

Schlumberger

Company: **Encana Oil & Gas (USA) Inc.**

Well: **Puritan 4-6-34**

Field: **Spindle**

County: **Weld**

State: **Colorado**

Schlumberger

Company: **Encana Oil & Gas (USA) Inc.**

Well: **Puritan 4-6-34**

Field: **Spindle**

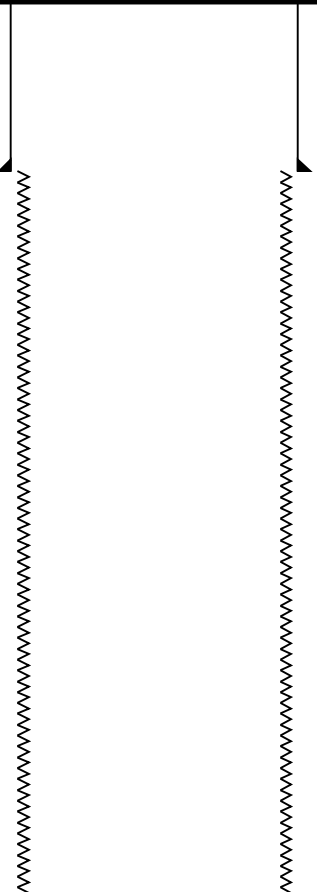
County: **Weld**

State: **Colorado**

[illegible]

Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth		@		
Casing Schlumberger				
Bit Size				
Type Fluid In Hole				
Density	Viscosity			
Fluid Loss	PH			
Source Of Sample				
RM @ Measured Temperature		@		
RMF @ Measured Temperature		@		
RMC @ Measured Temperature		@		
Source RMF	RMC			
RM @ MRT	RMF @ MRT	@		@
Maximum Recorded Temperatures				
Circulation Stopped	Time			
Logger On Bottom	Time			
Unit Number	Location			
Recorded By				
Witnessed By				

OTHER SERVICES1	OTHER SERVICES2
OS1: MSIP	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
This is the first run in hole	
Toolstring run as per tool sketch	
Matrix changes are as noted on the Triple Combo print	
Matrix: Sandstone (2.65 g/cc) 8069' to TD	

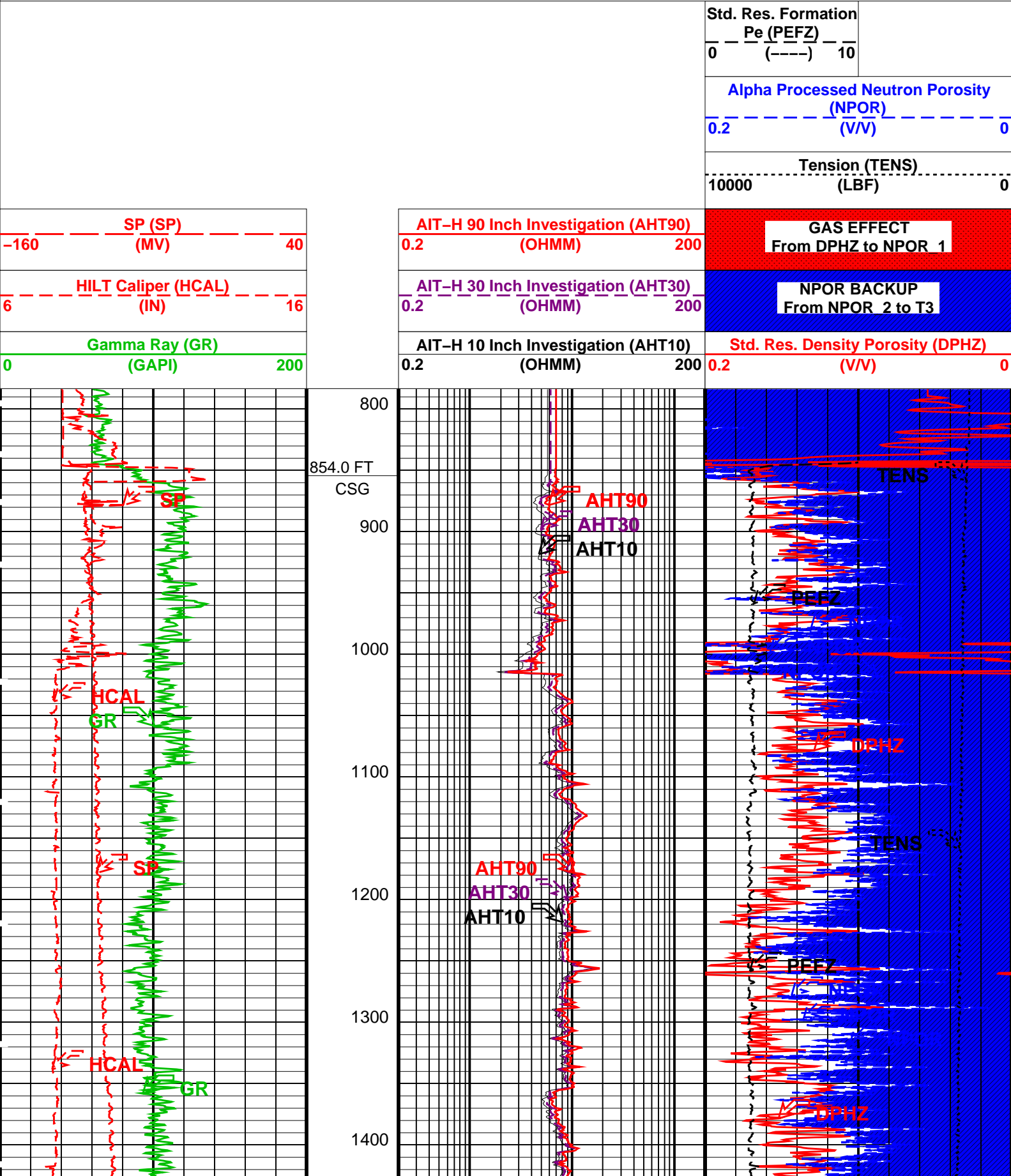
Production String	(in)		(ft)	Well Schematic	(ft)	(in)		Casing String
	OD	ID	MD		MD	OD	ID	
					0.0	8.625		Casing String
					853.0 853.0	8.625 7.875		Casing Shoe Borehole Segment

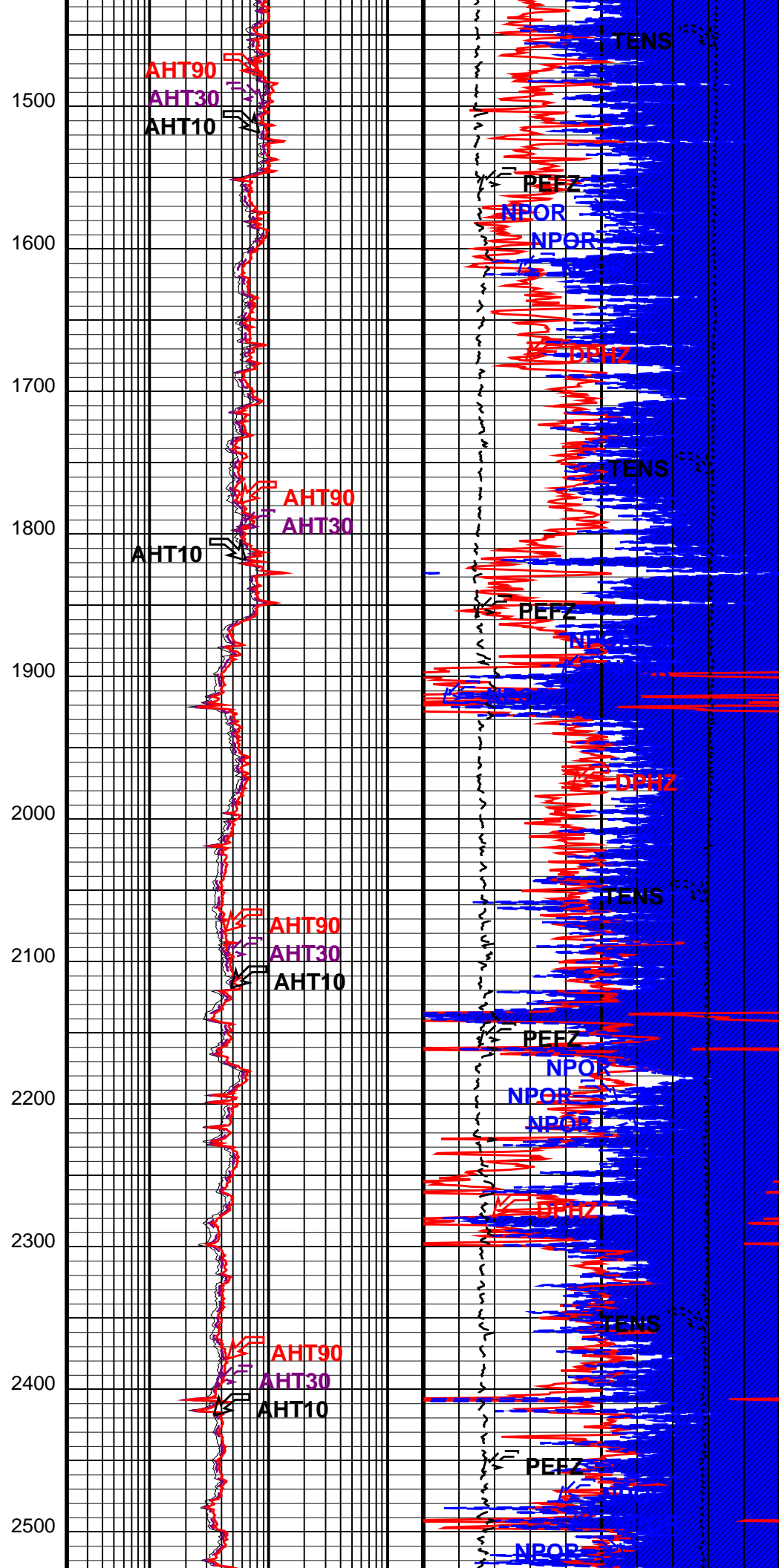
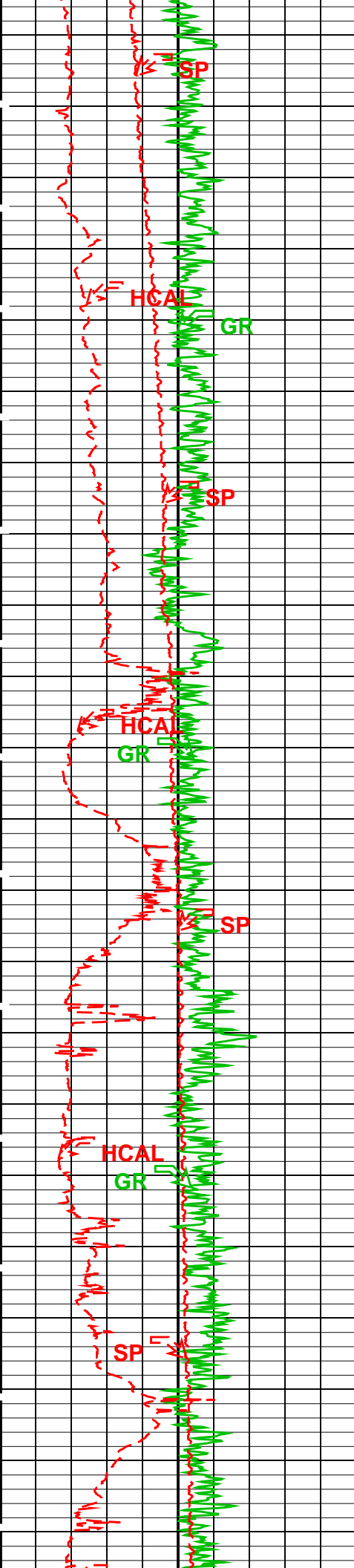
Changed Parameter Summary

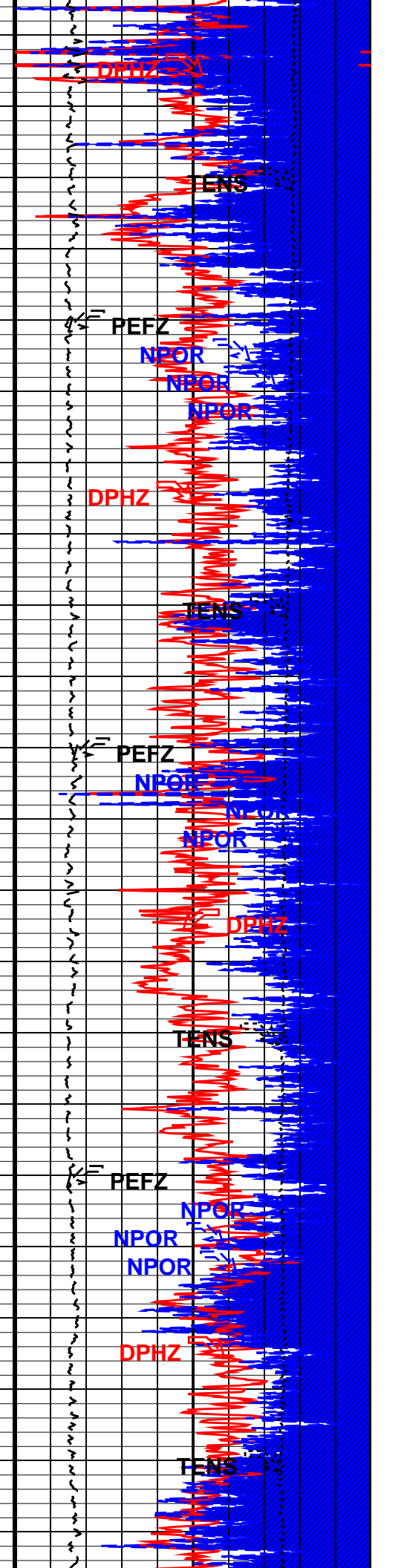
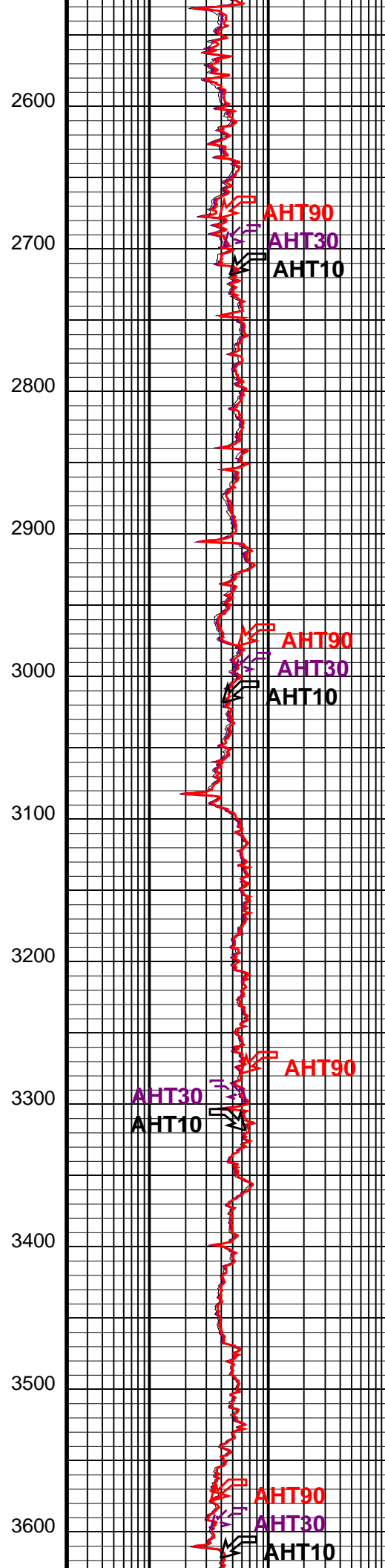
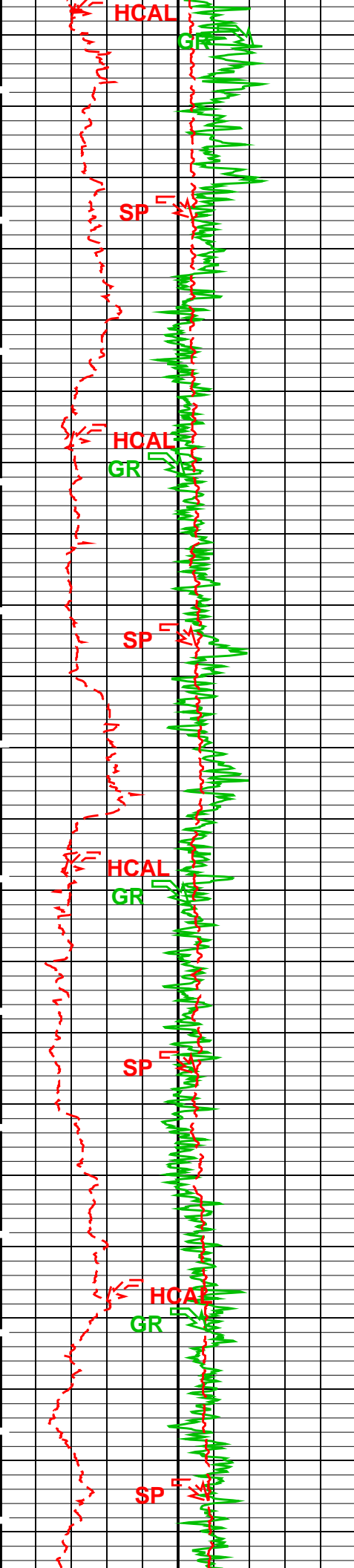
DLIS Name	New Value		Previous Value	Depth & Time
MATR	SANDSTONE		SANDSTONE	8425.5 15:58:23
MDEN	SANDSTONE		SANDSTONE	8069.0 15:58:34
	2.65	G/C3	2.68	8425.5 15:58:23
	2.68	G/C3	2.65	8069.0 15:58:34

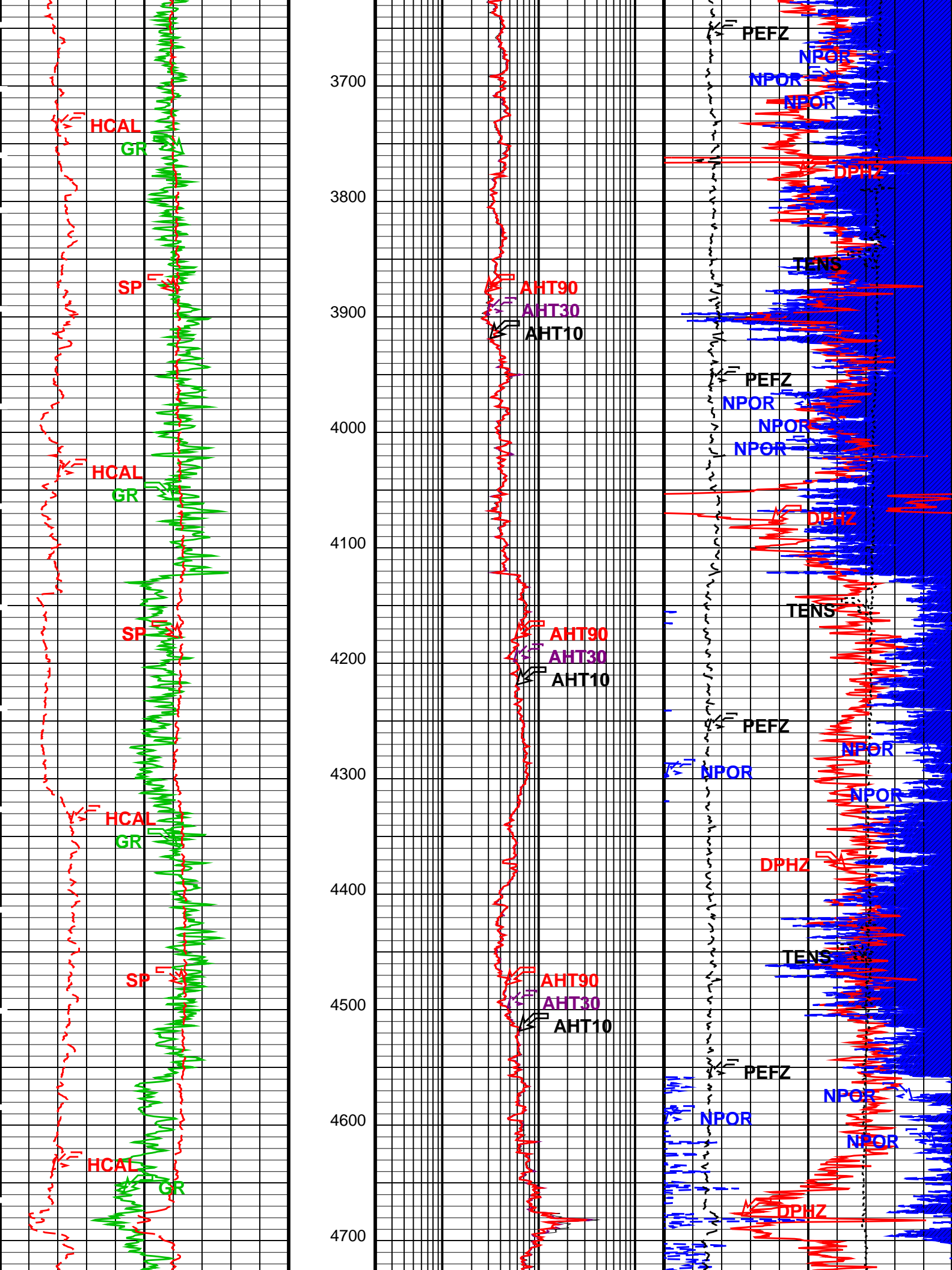
PIP SUMMARY

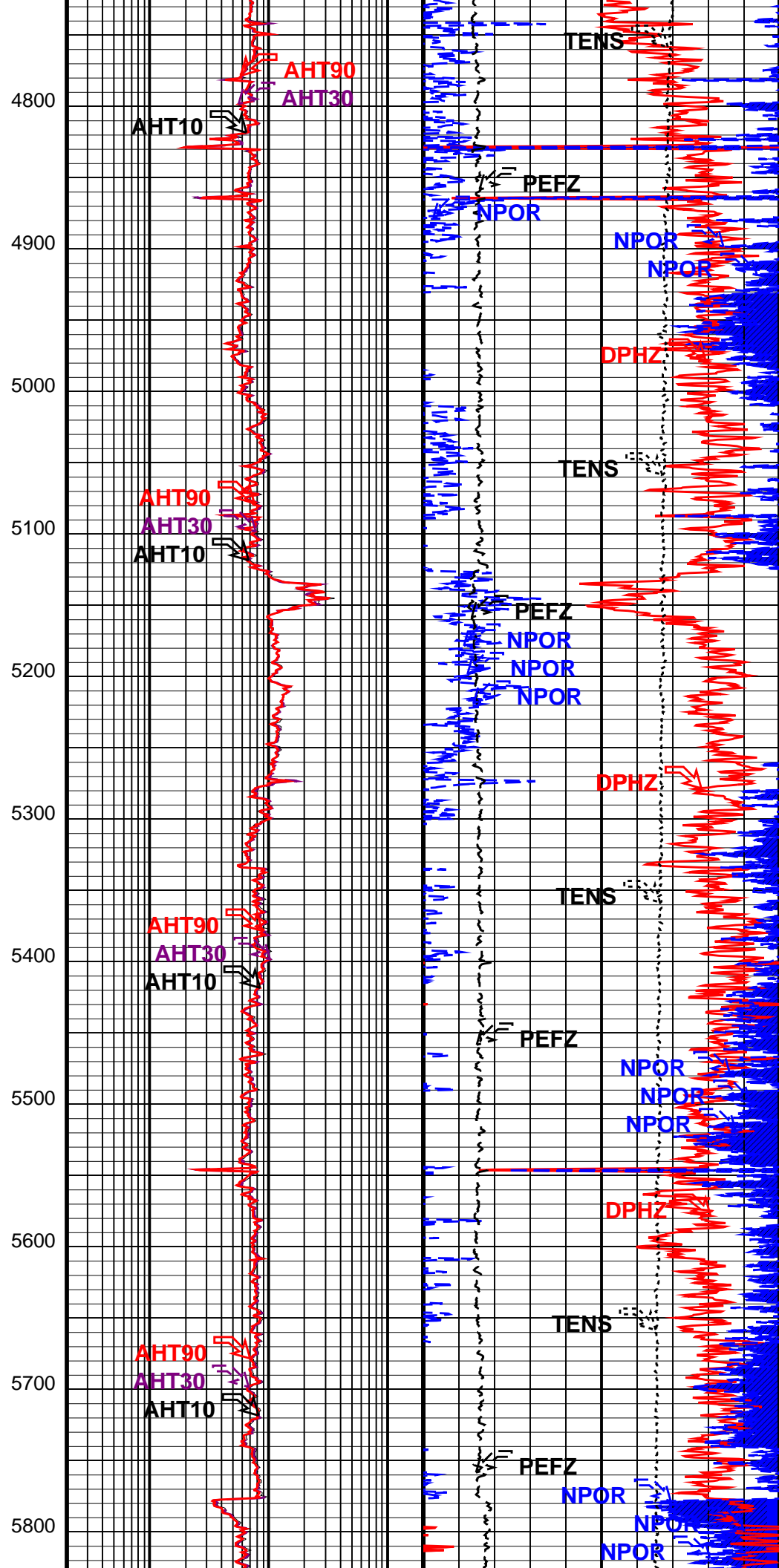
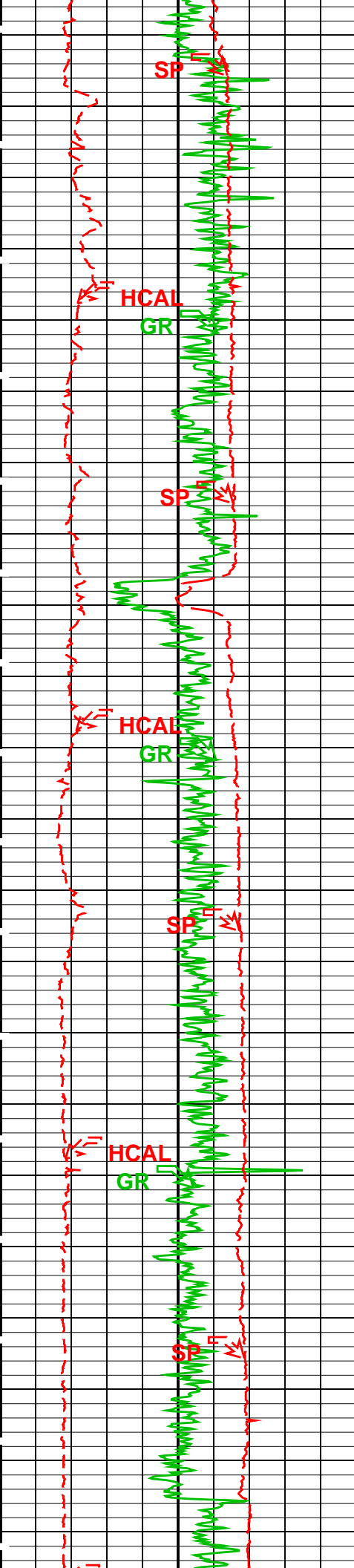
Time Mark Every 60 S

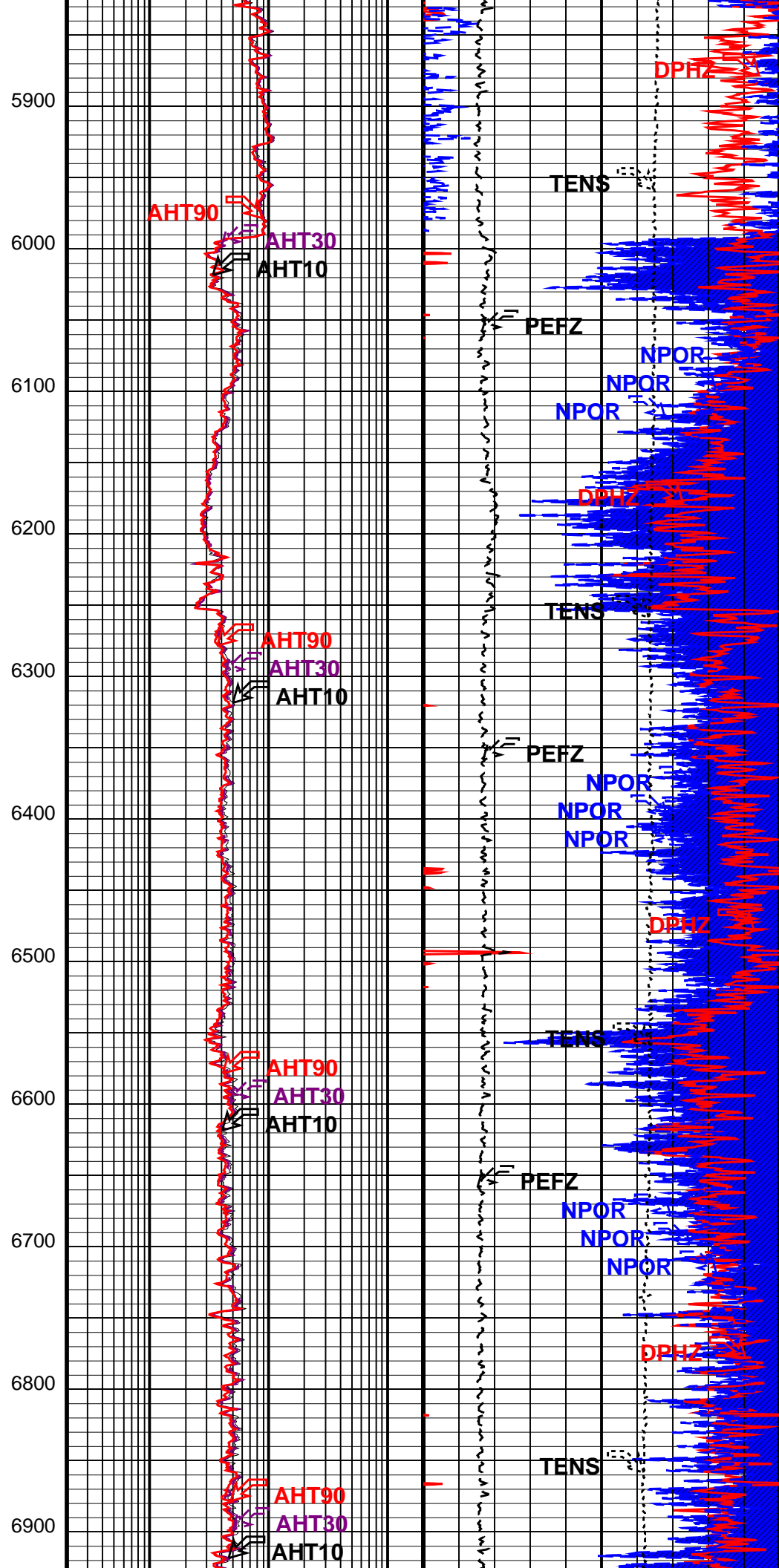
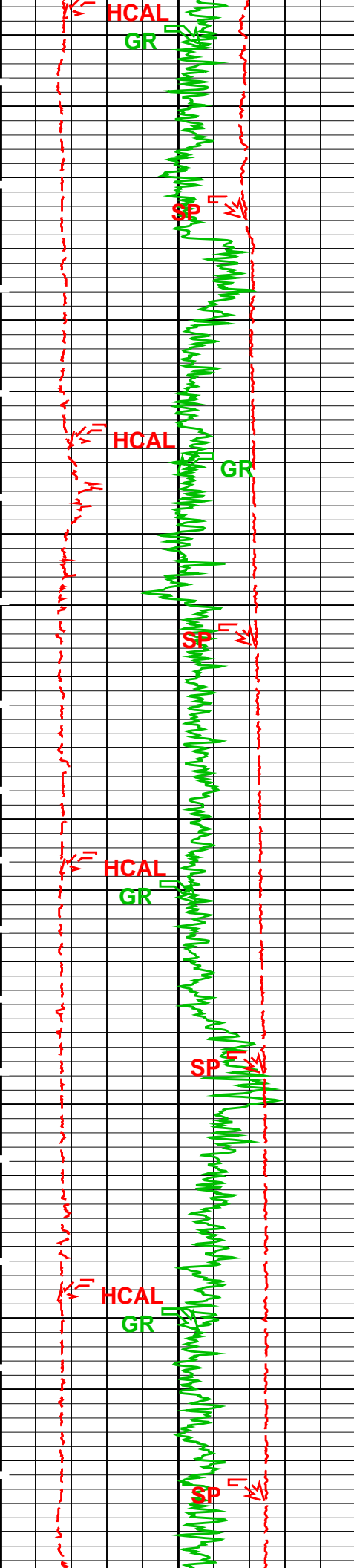


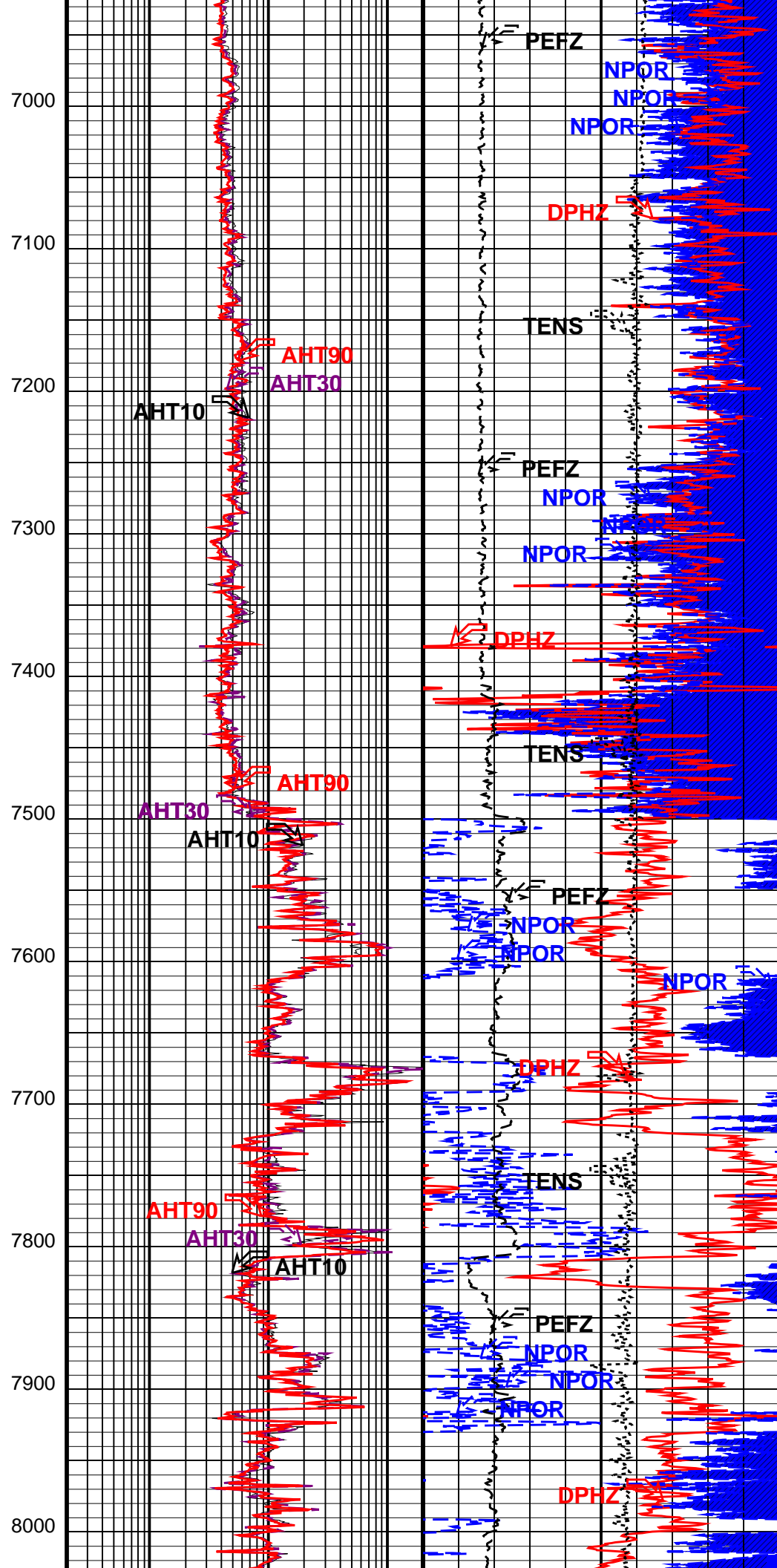
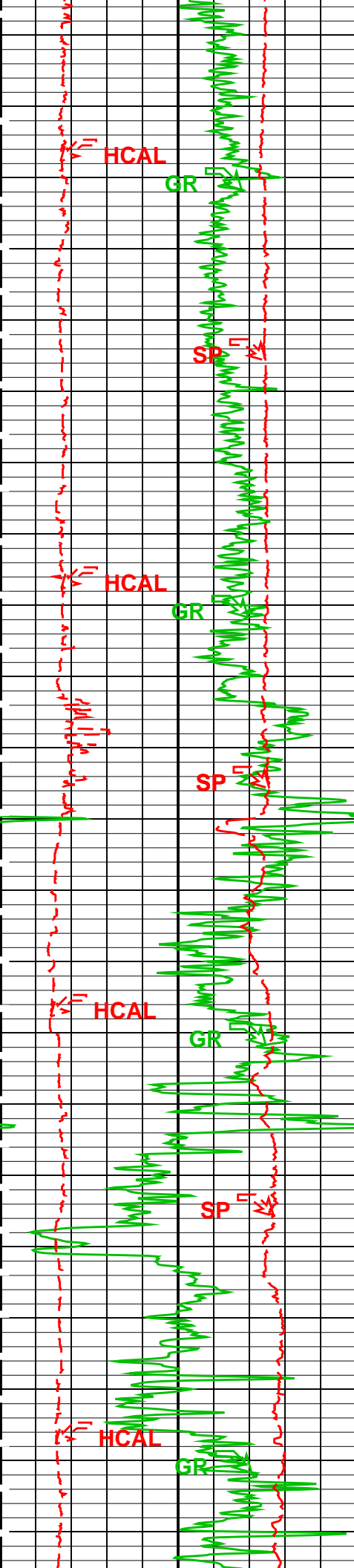


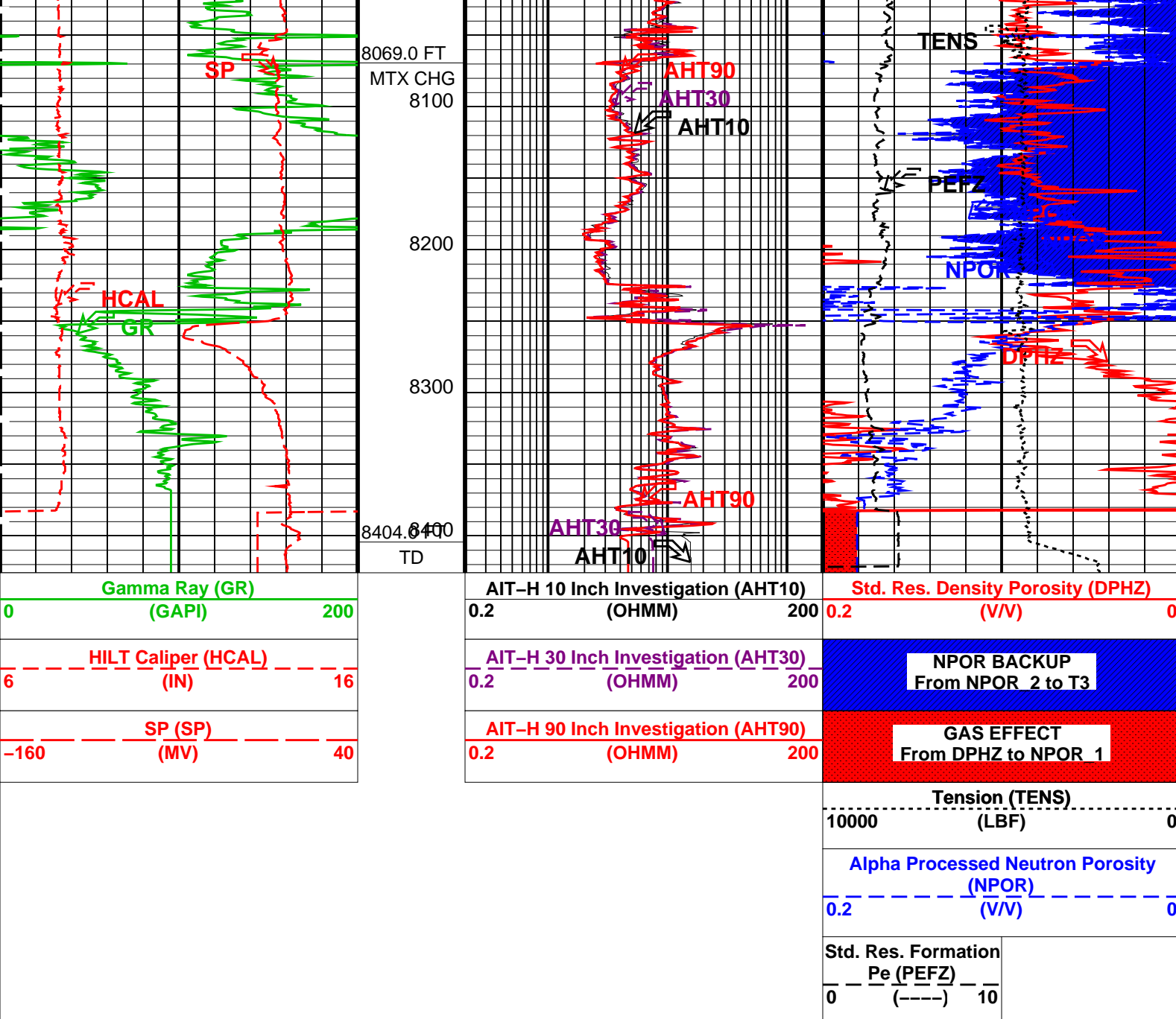












PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HAIT-H: Array Induction Tool - H		
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff
AHBHV	Array Induction Borehole Correction Code Version Number	900
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four
AHBLV	Array Induction Basic Logs Code Version Number	223
AHCDE	Array Induction Casing Detection Enable	Yes
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered
AHFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20
AHMRF	Array Induction Mud Resistivity Factor	1
AHORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20
AHRFV	Array Induction Radial Profiling Code Version Number	701
AHRPV	Array Induction Radial Parametrization Code Version Number	232
AHSTA	Array Induction Tool Standoff	0.625 IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	215 DEGF
FEXP	Form Factor Exponent	2
FNUM	Form Factor Numerator	1
GCSE	Generalized Caliper Selection	HCAL
GDEV	Average Angular Deviation of Borehole from Normal	0 DEG
GGRD	Geothermal Gradient	0.01 DE/F

GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	DF/F
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
SPNV	SP Next Value	0	MV
MAPC-B: Multimode Array Sonic Power Cartridge			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	215	DEGF
BS	Bit Size	7.875	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
HILTB-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	215	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal-like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.68	G/C3
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
RWA: Apparent Water Resistivity			
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	215	DEGF
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
STI: Stuck Tool Indicator			
TDL	Total Depth - Logger	8404.00	FT
FEQL: Formation Evaluation Quick Look			
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
PERT: Preliminary Evaluation - Real Time			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	215	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
System and Miscellaneous			
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	8.625	IN
CWEI	Casing Weight	24.00	LB/F
DFD	Drilling Fluid Density	2.38	LB/G

DFD	Drilling Fluid Density	9.70	LB/G
DO	Depth Offset for Playback	0.0	FT
FLEV	Fluid Level	300.00	FT
MST	Mud Sample Temperature	115.00	DEGF
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	0.9457	OHMM
TD	Total Depth	8404	FT

Format: COMBO_S1

Vertical Scale: 1" per 100'

Graphics File Created: 18-Aug-2011 15:58

OP System Version: 18C0-147			
HAIT-H	18C0-147	PPC1-B	18C0-147
MAPC-B	SKK-4027-MAST	HILTB-FTB	18C0-147
DTC-H	18C0-147		

Input DLIS Files						
DEFAULT	Splice_AIT_CAL_MAPC_022CUP	FN:1	PRODUCER	18-Aug-2011 15:56	8425.5 FT	783.0 FT
Output DLIS Files						
DEFAULT	AIT_CAL_MAPC_TLD_023PUP	FN:21	PRODUCER	18-Aug-2011 15:58		



COMBO LOG 5" = 100'

MAXIS Field Log

Company: Encana Oil & Gas (USA) Inc.

Well: Puritan 4-6-34

Input DLIS Files						
DEFAULT	Splice_AIT_CAL_MAPC_022CUP	FN:1	PRODUCER	18-Aug-2011 15:56	8425.5 FT	783.0 FT
Output DLIS Files						
DEFAULT	AIT_CAL_MAPC_TLD_023PUP	FN:21	PRODUCER	18-Aug-2011 15:58	8425.5 FT	783.0 FT

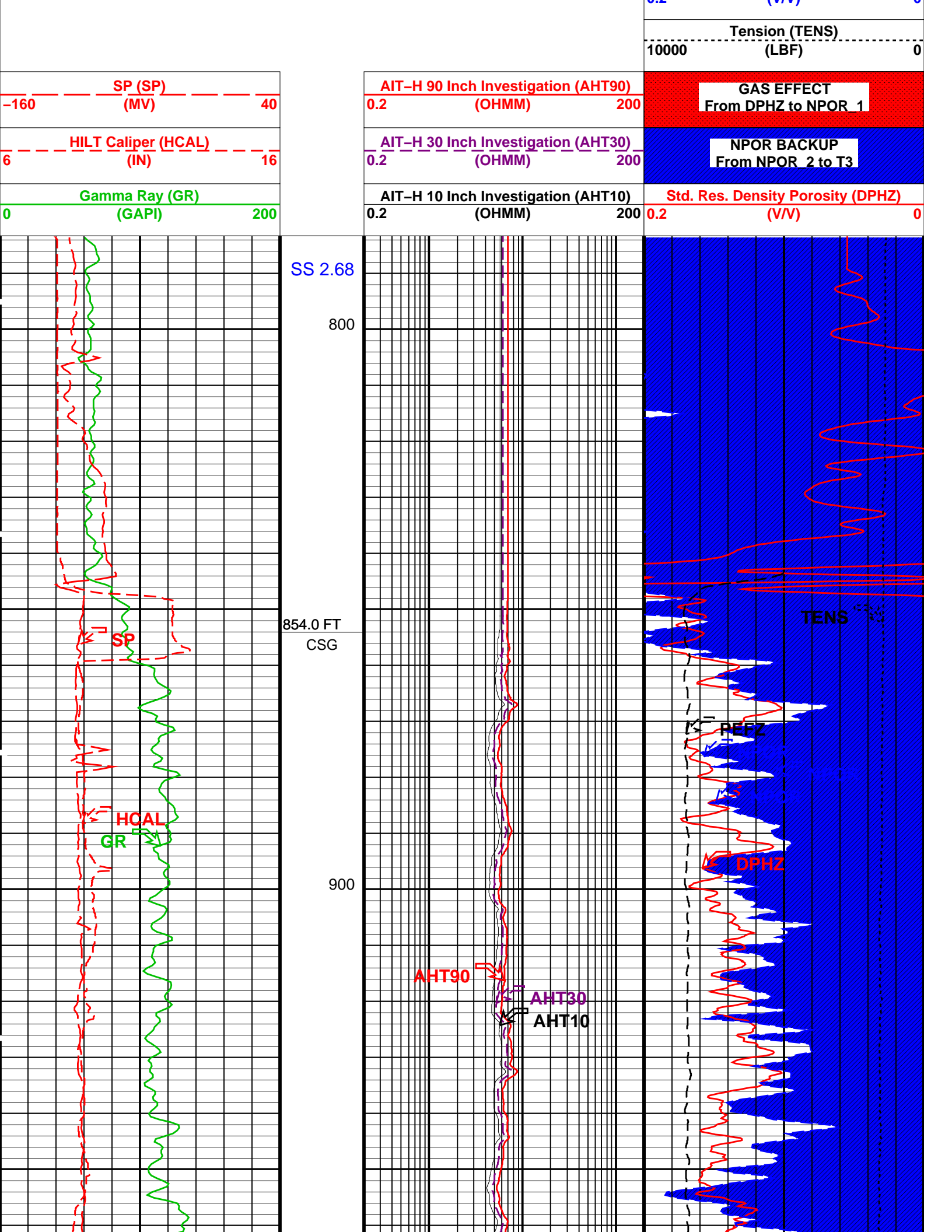
OP System Version: 18C0-147			
HAIT-H	18C0-147	PPC1-B	18C0-147
MAPC-B	SKK-4027-MAST	HILTB-FTB	18C0-147
DTC-H	18C0-147		

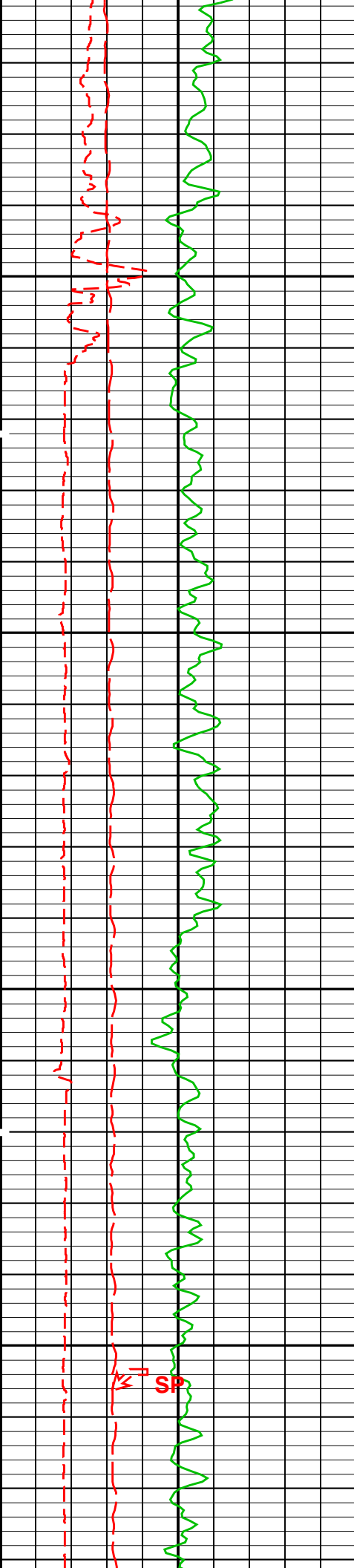
Changed Parameter Summary			
DLIS Name	New Value	Previous Value	Depth & Time
MATR	SANDSTONE	SANDSTONE	8425.5 15:58:23
MDEN	SANDSTONE	SANDSTONE	8069.0 15:58:34
	2.65 G/C3	2.68 G/C3	8425.5 15:58:23
	2.68 G/C3	2.65 G/C3	8069.0 15:58:34

PIP SUMMARY

Time Mark Every 60 S

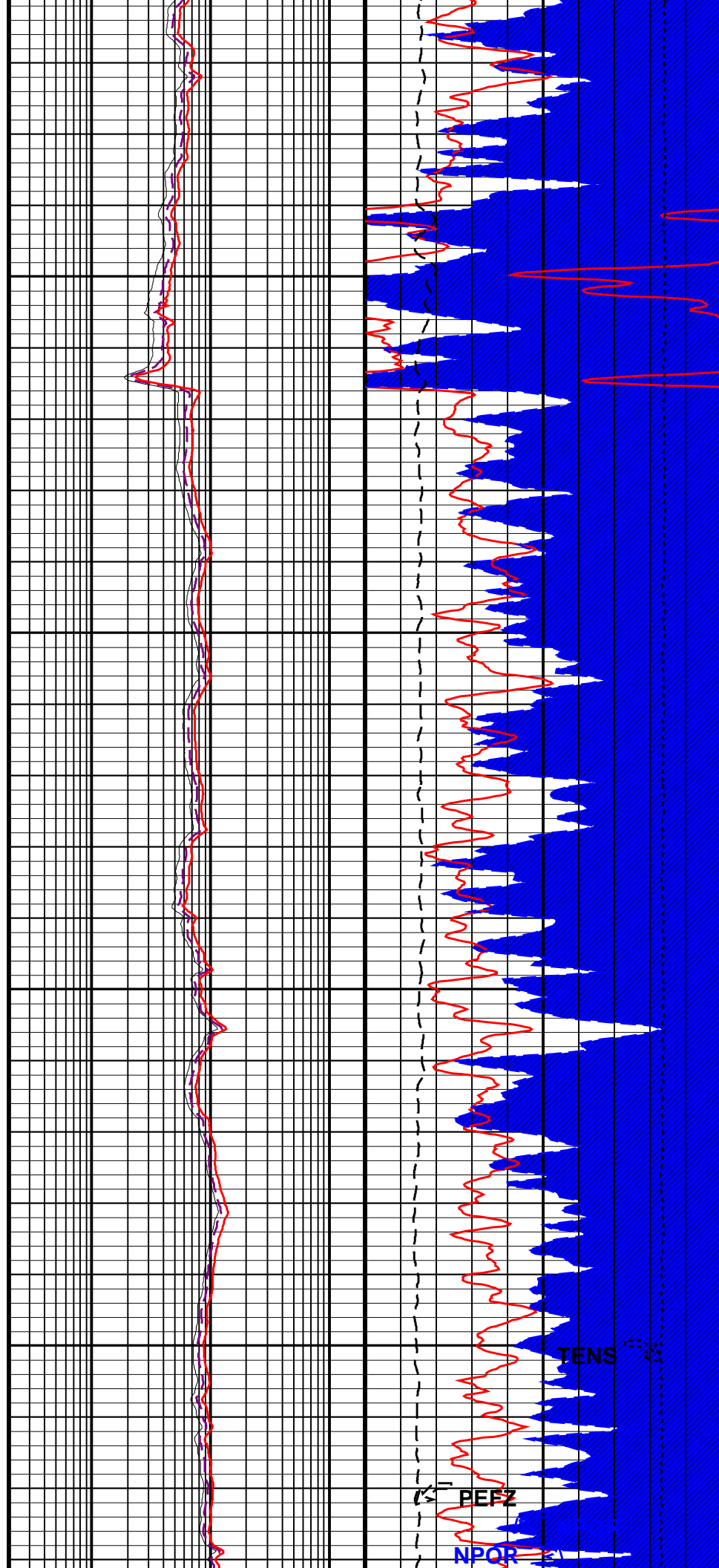
Std. Res. Formation			
Pe (PEFZ)			
0	(----	10	
Alpha Processed Neutron Porosity			
(NPOR)			
0.2	-----	(V/V)	0

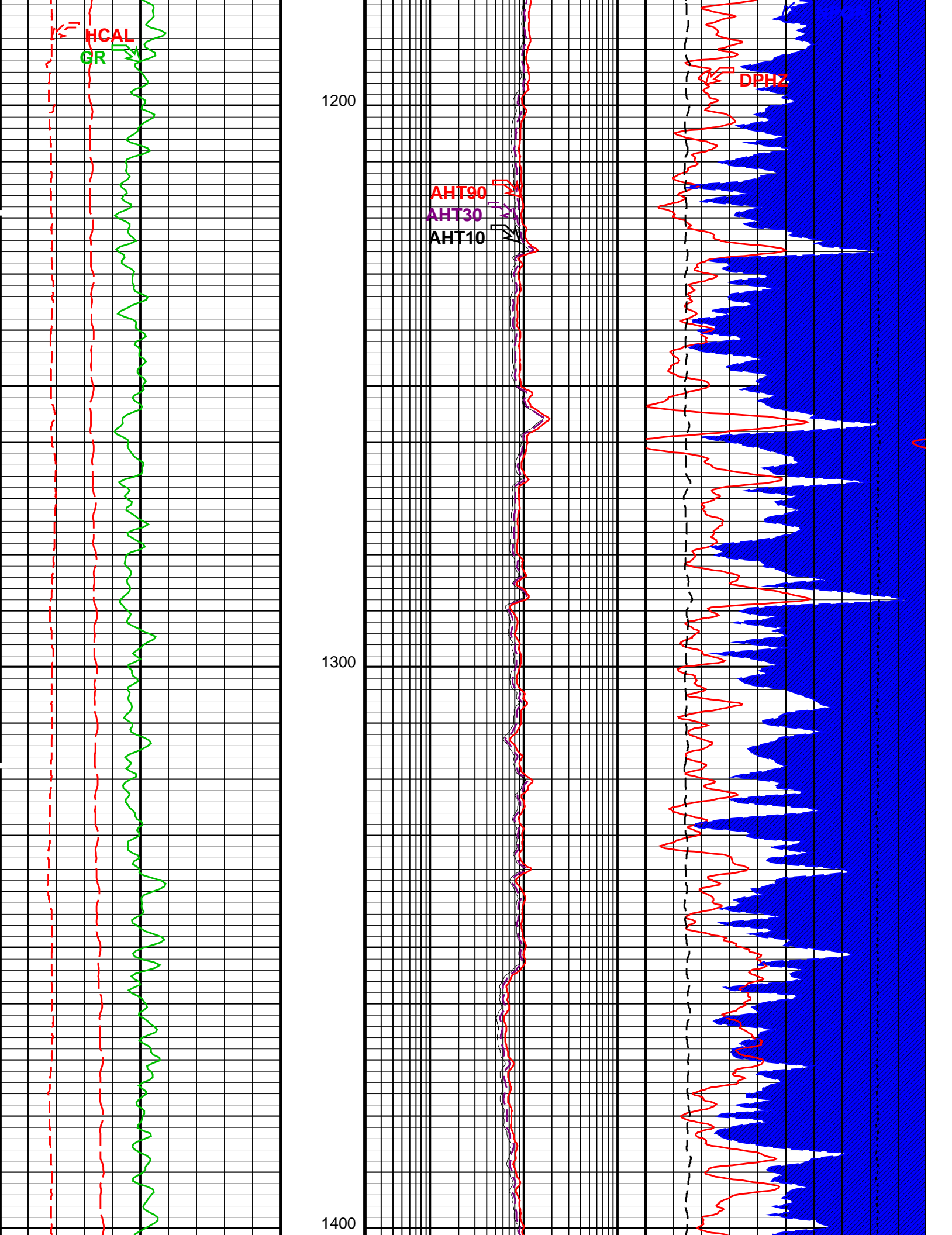


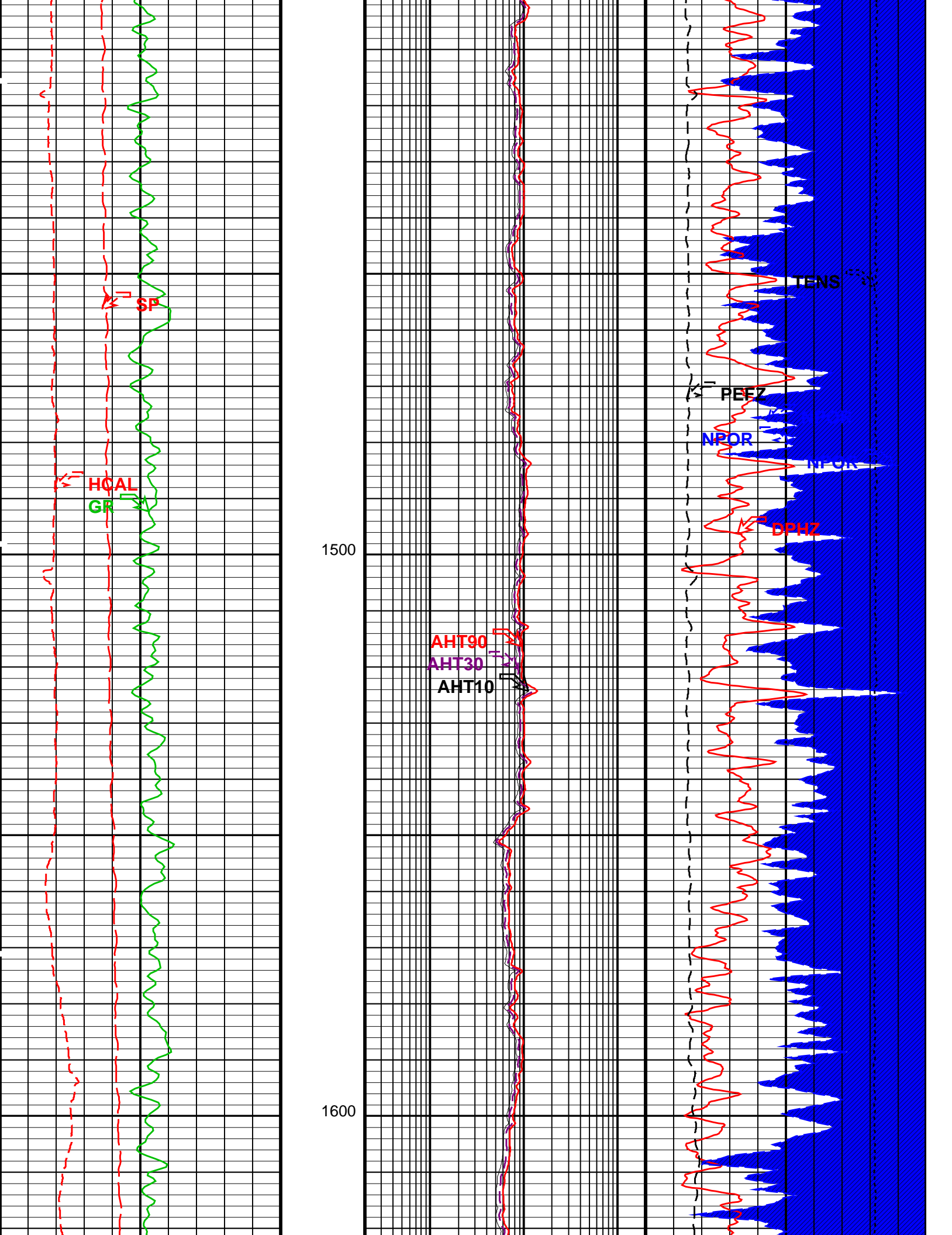


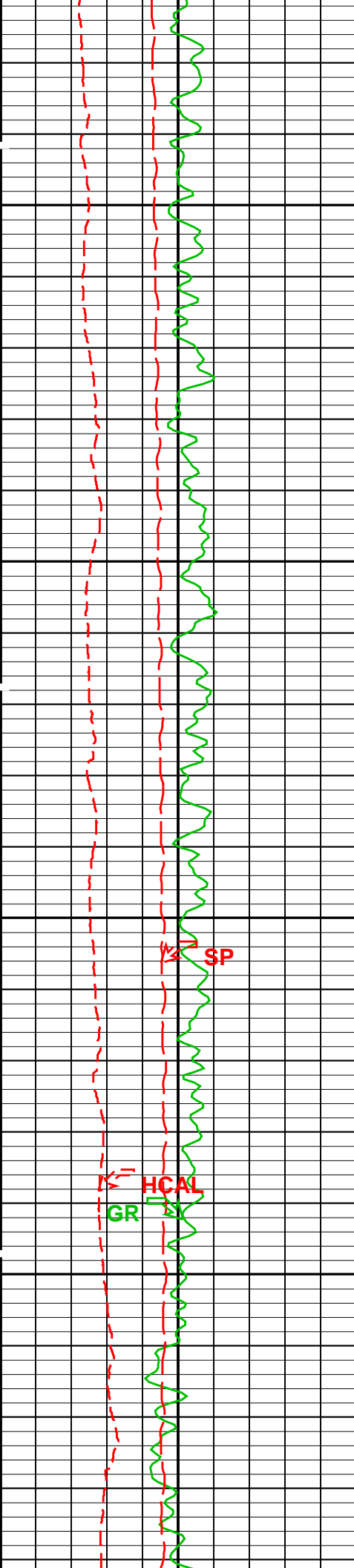
1000

1100



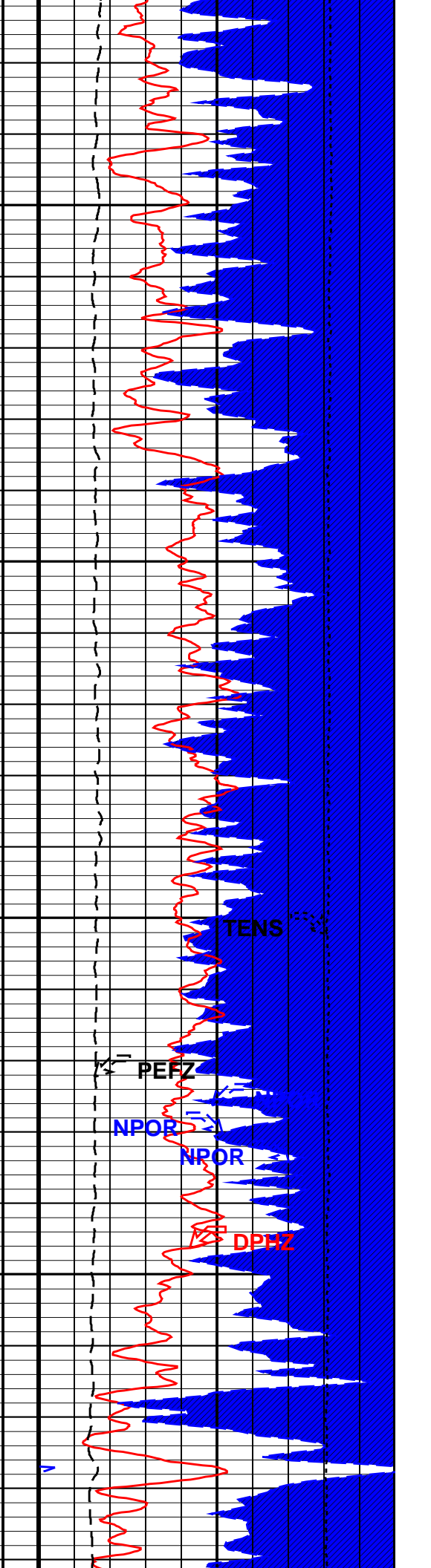
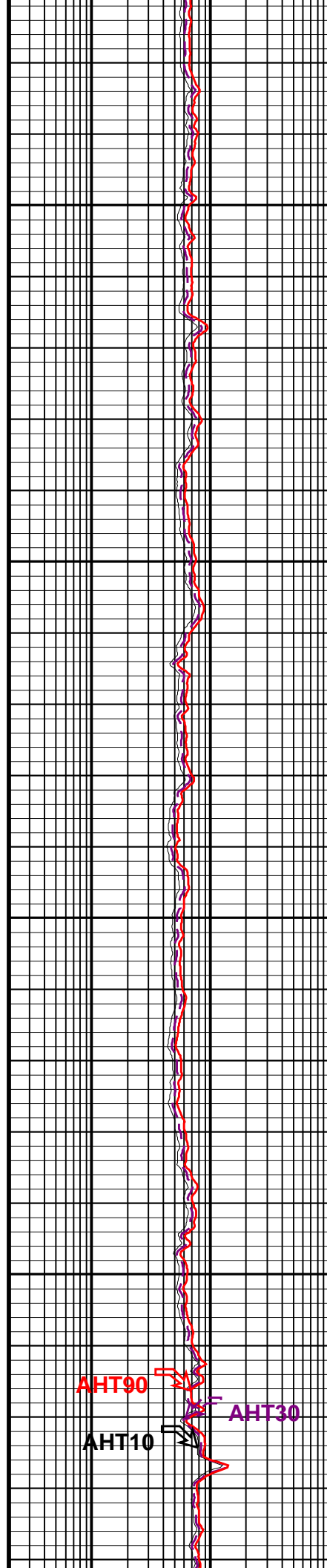


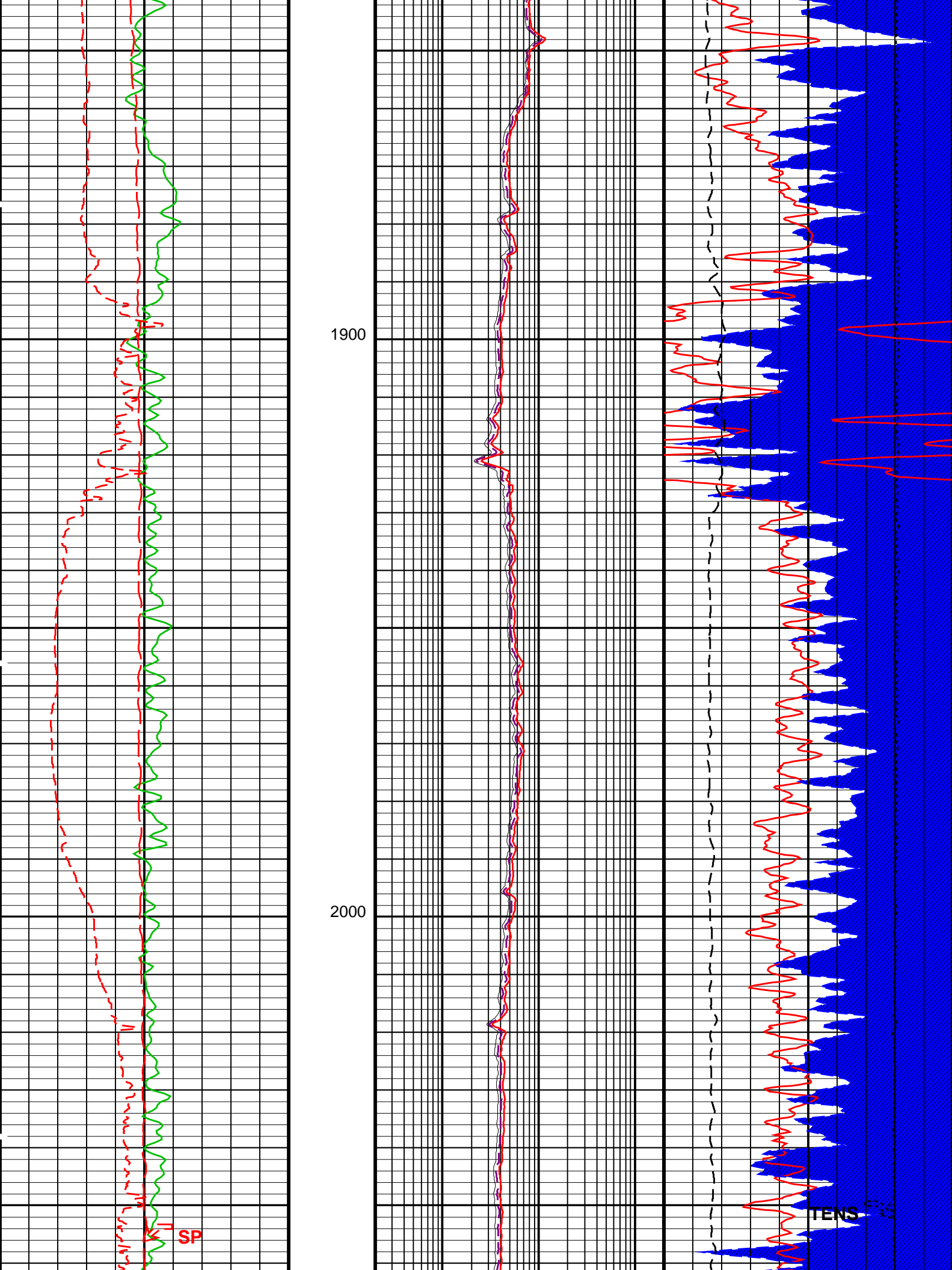


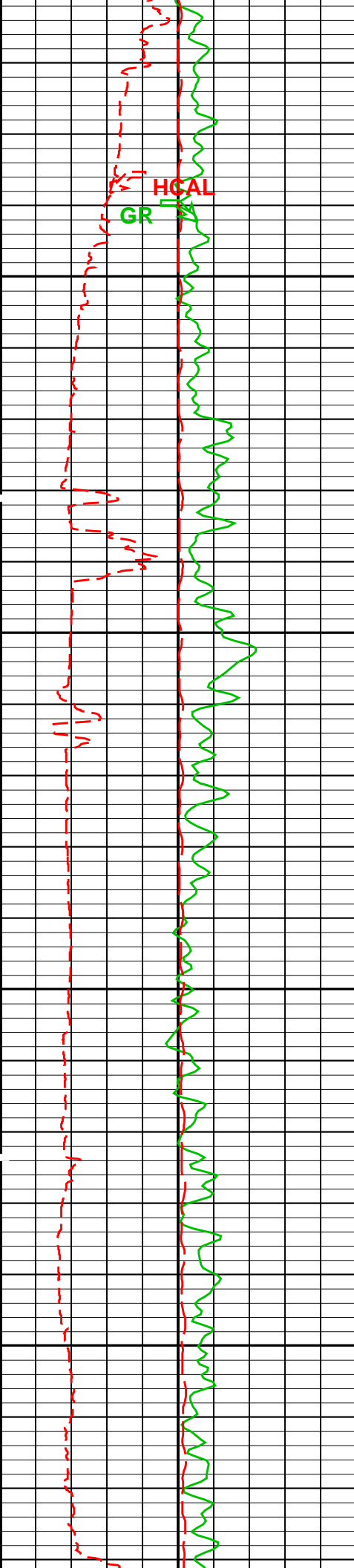


1700

1800

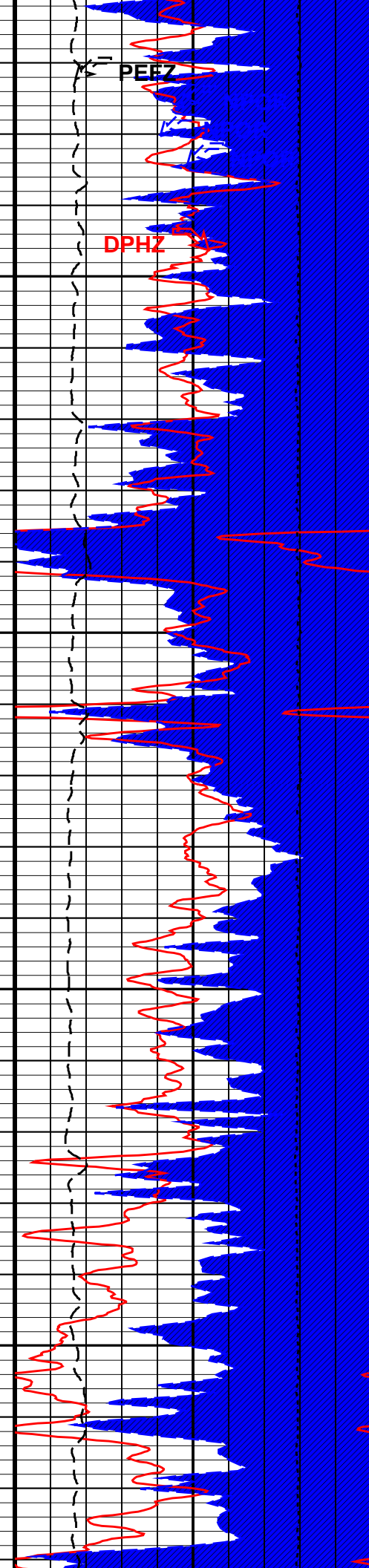
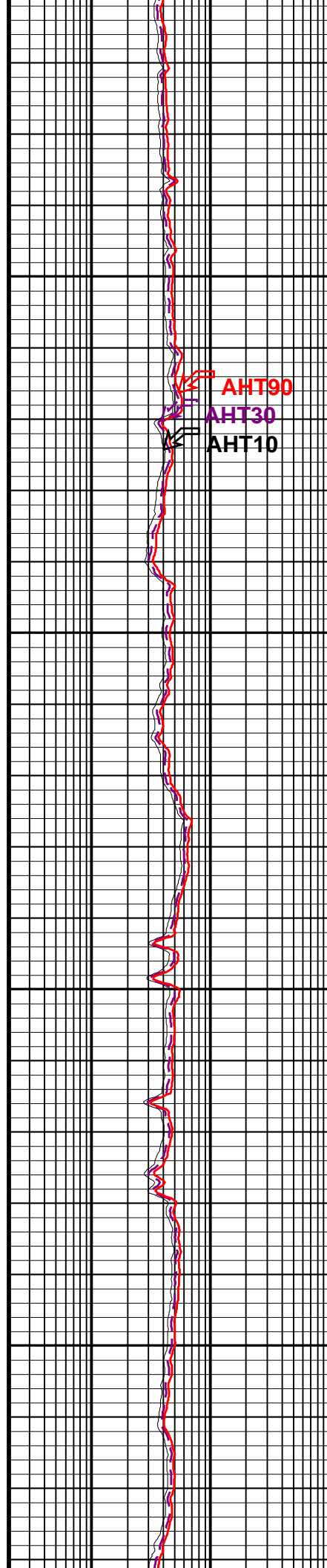


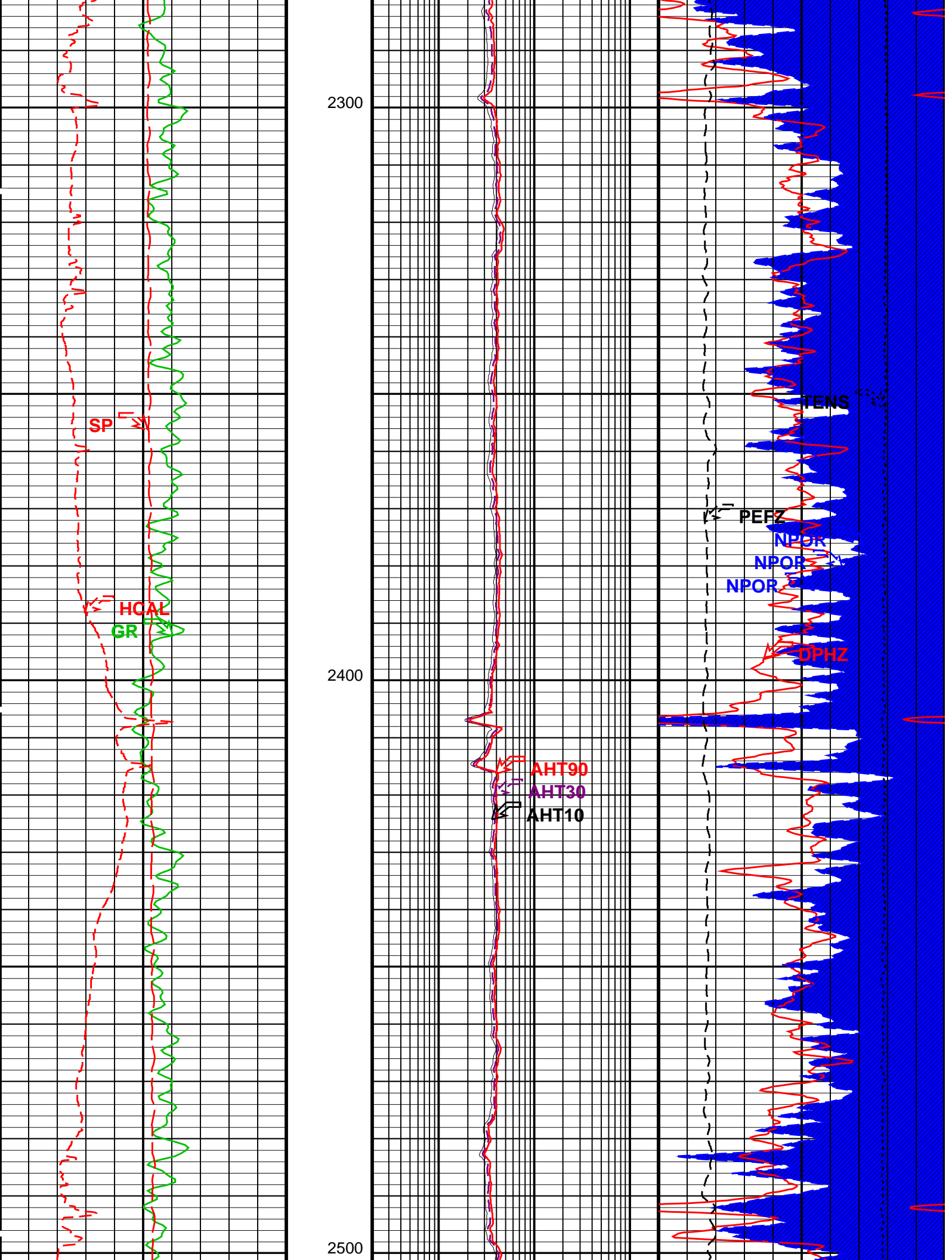


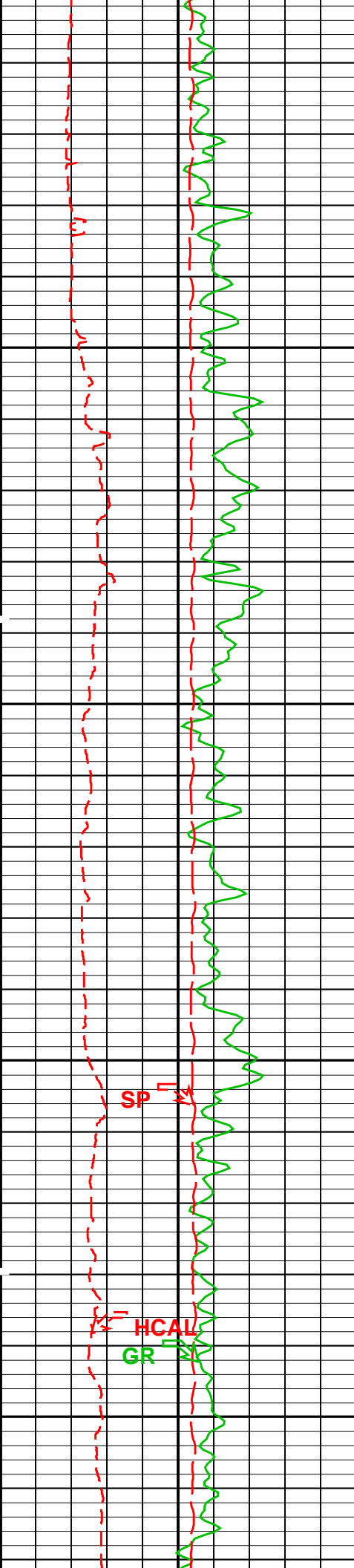


2100

2200

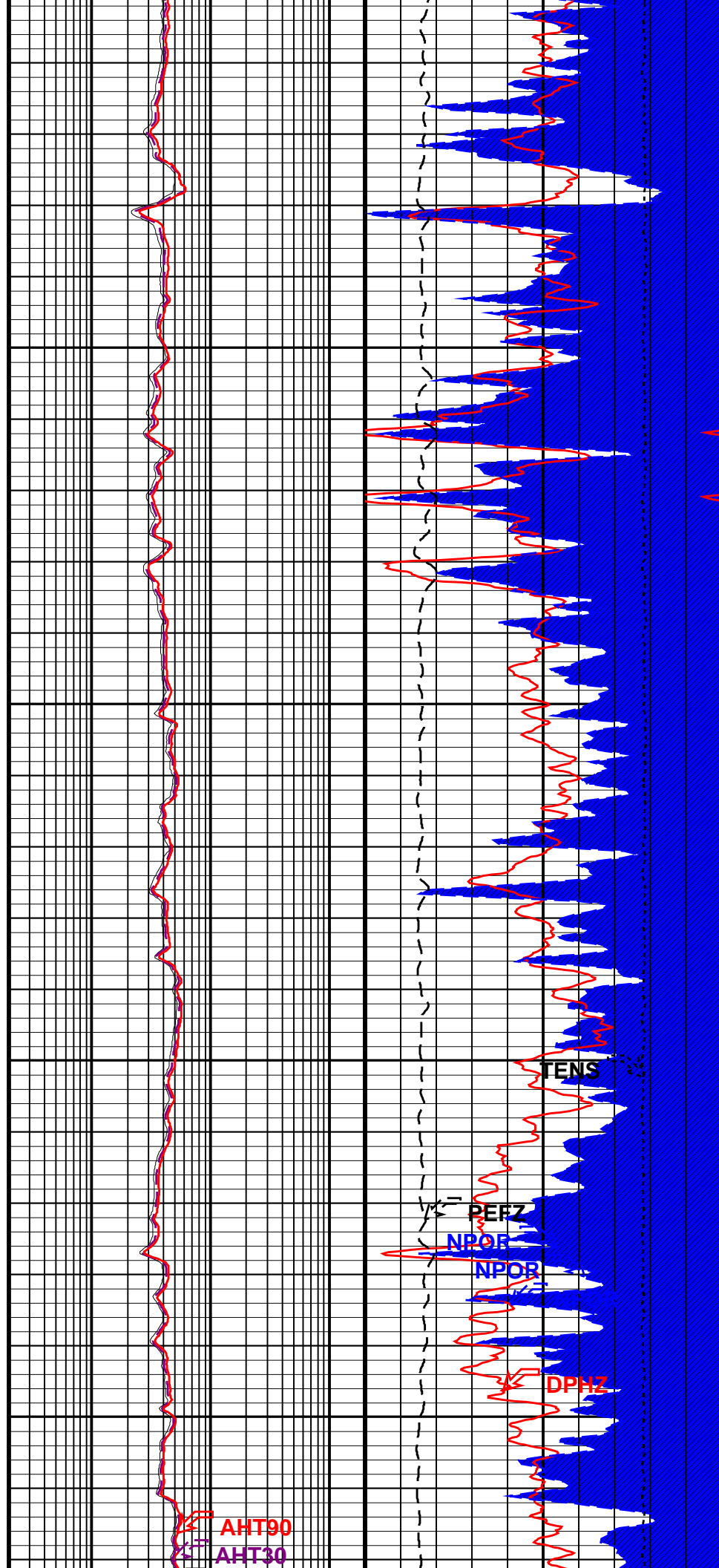






2600

2700



AHT90

AHT30

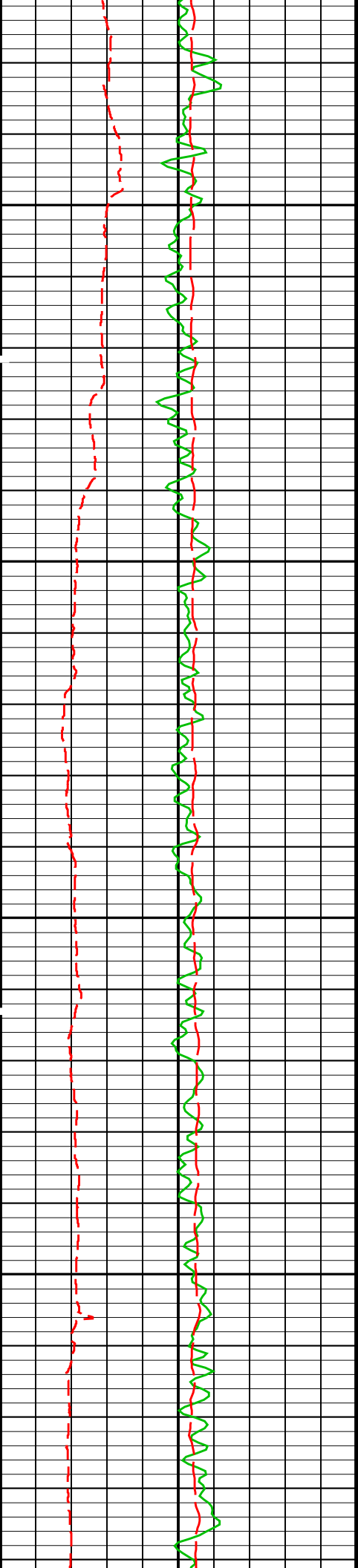
TENS

PEFZ

NPOR

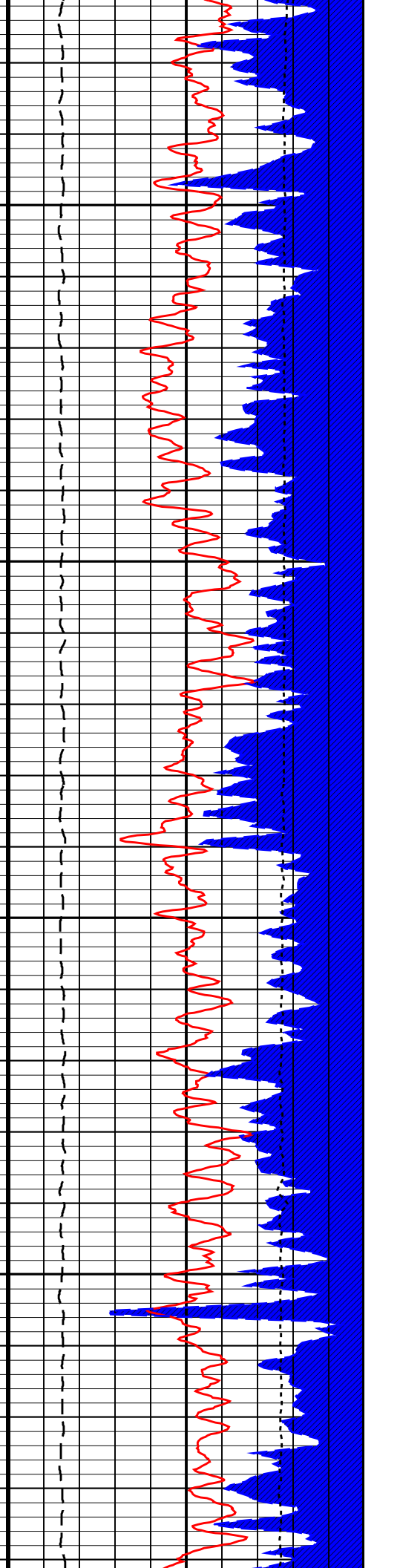
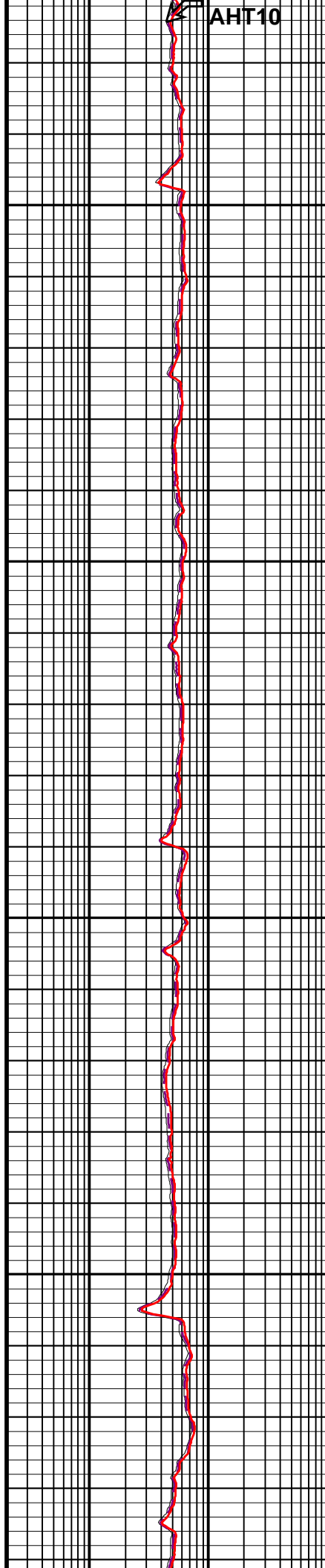
NPOR

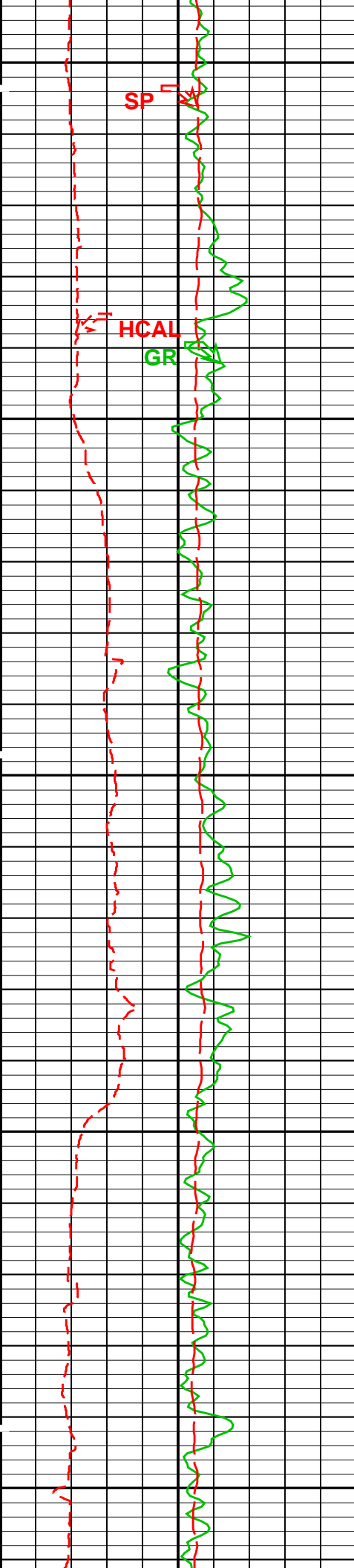
DPHZ



2800

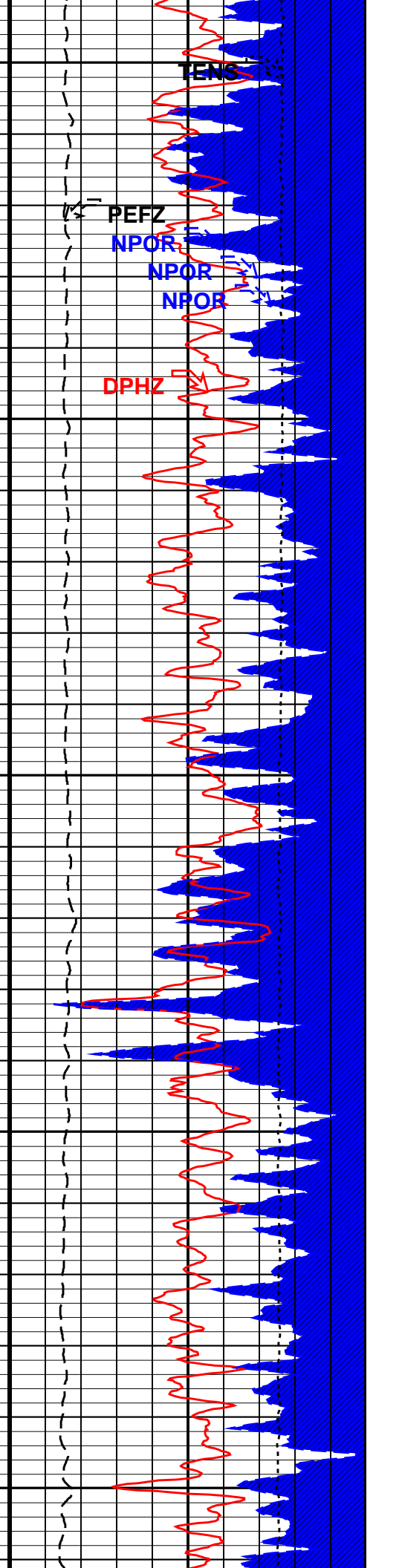
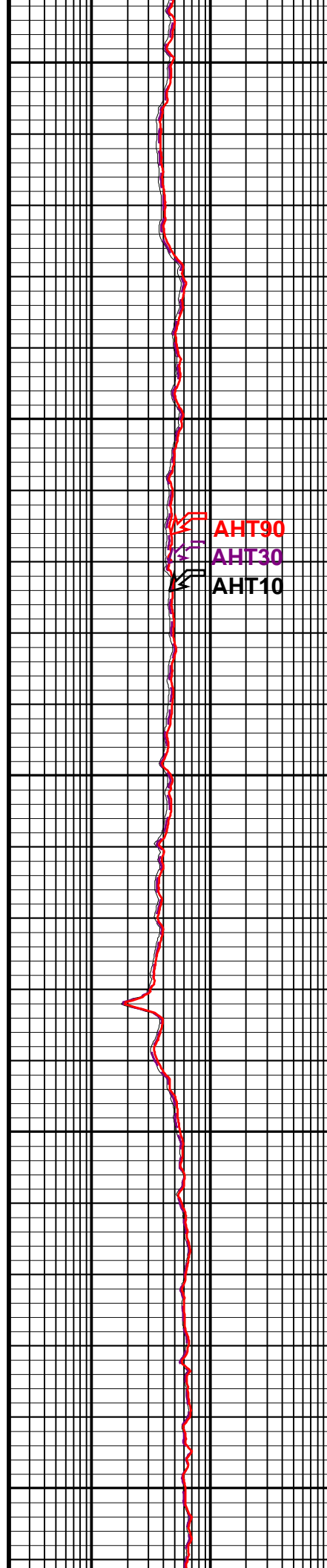
2900

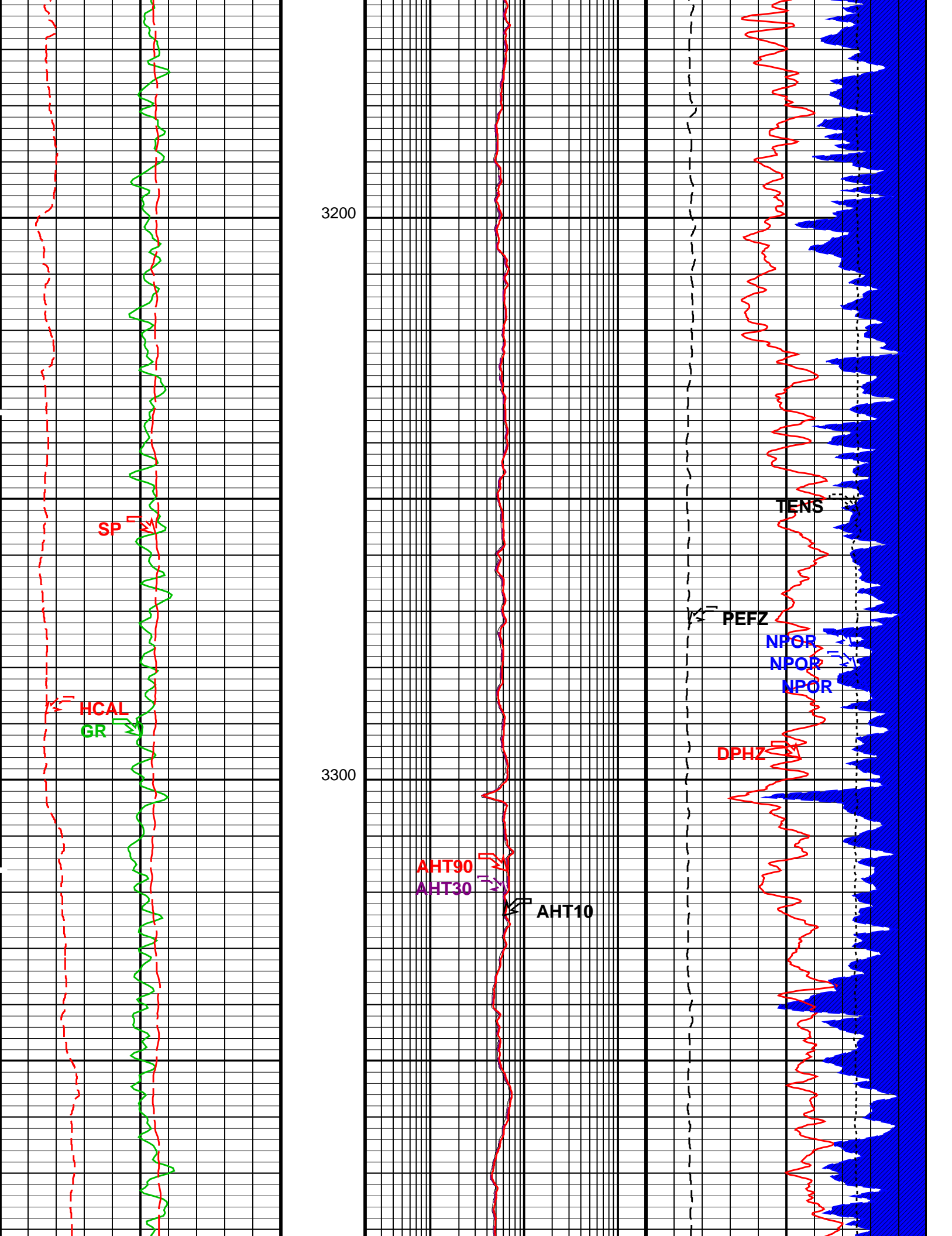


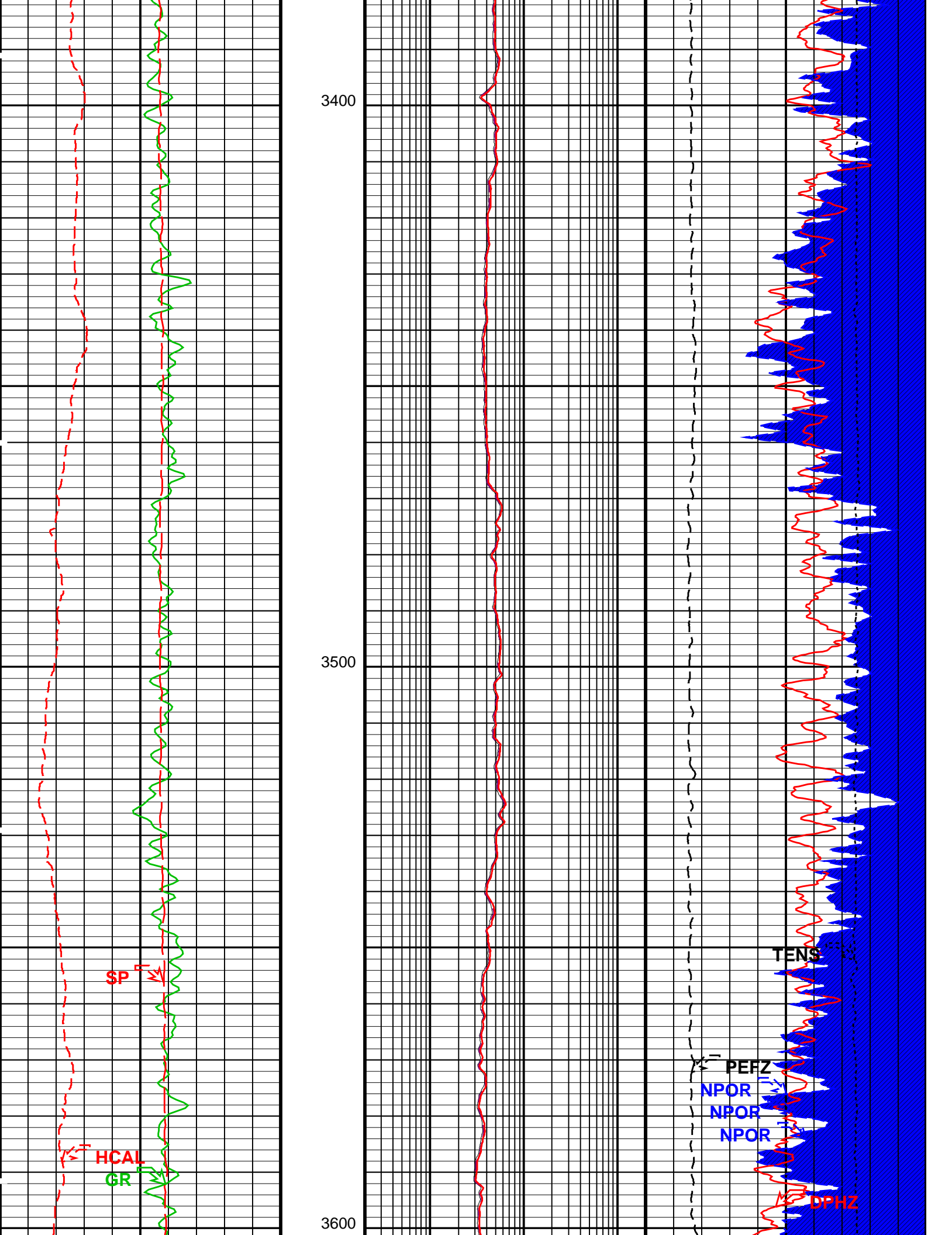


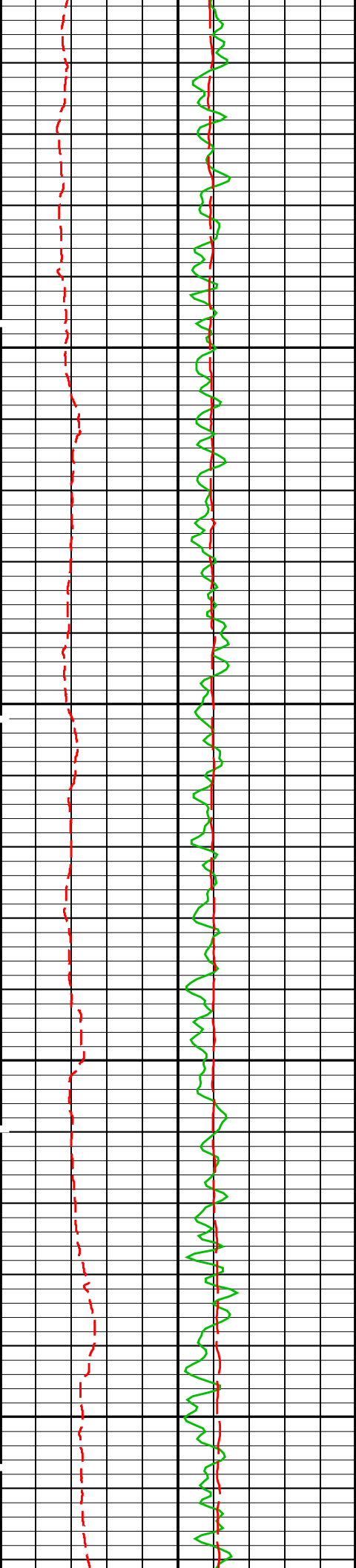
3000

3100



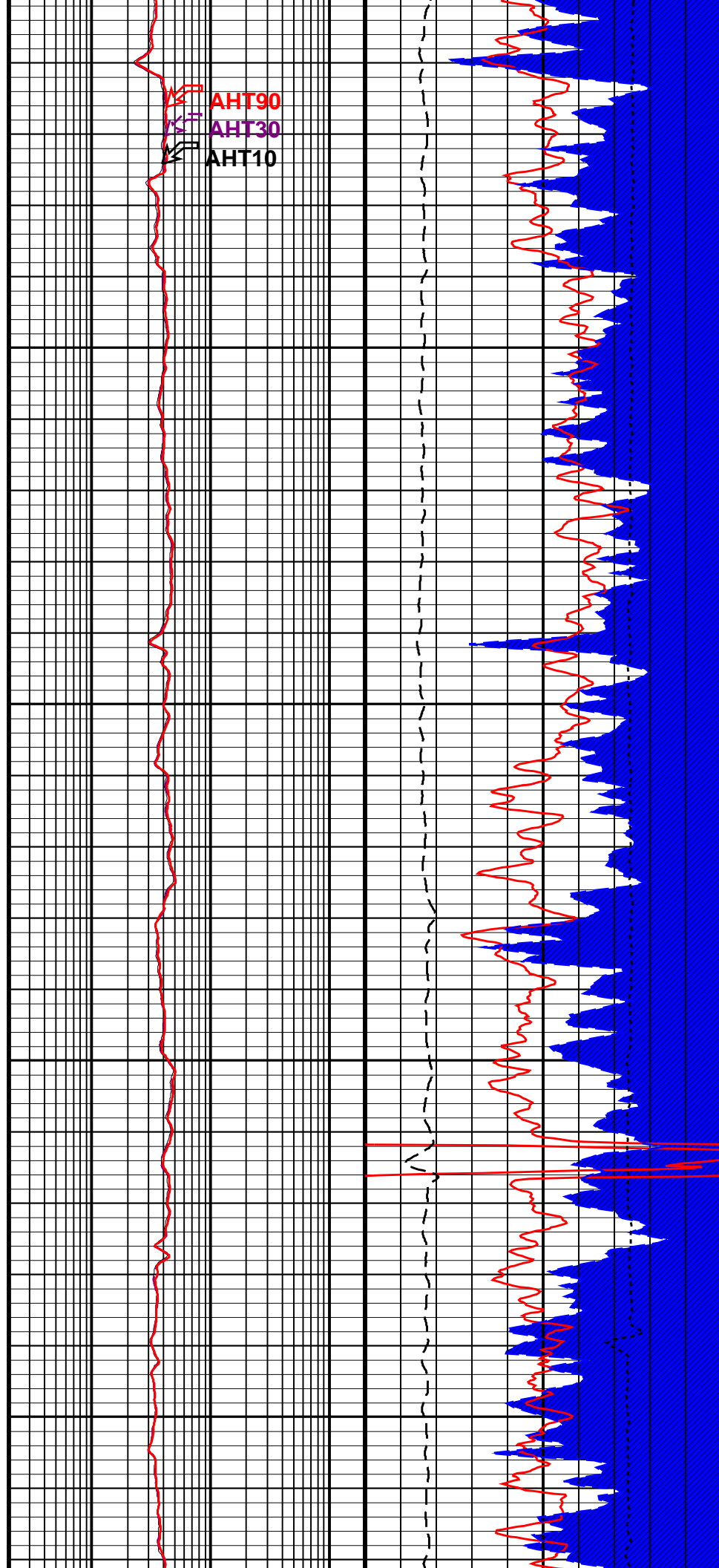


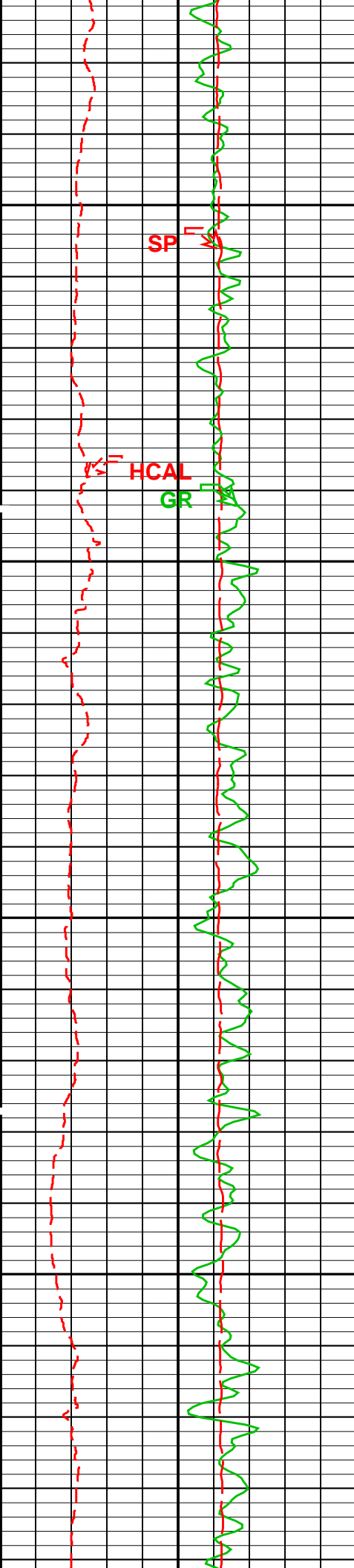




3700

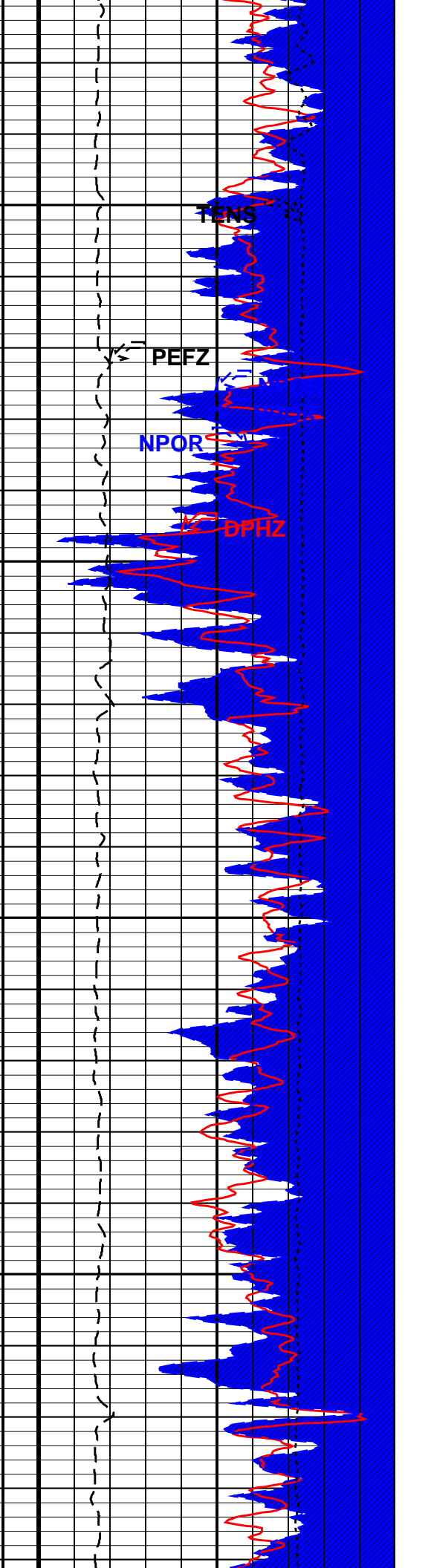
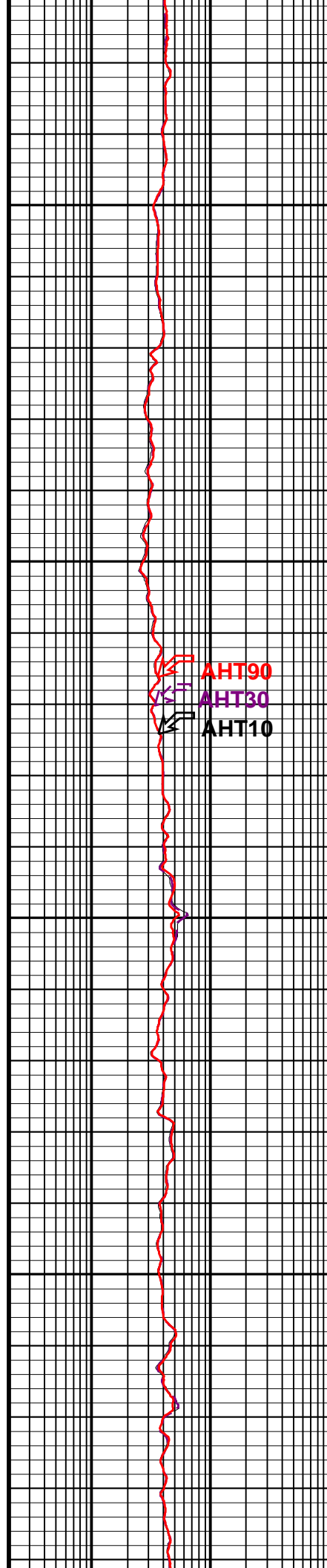
3800

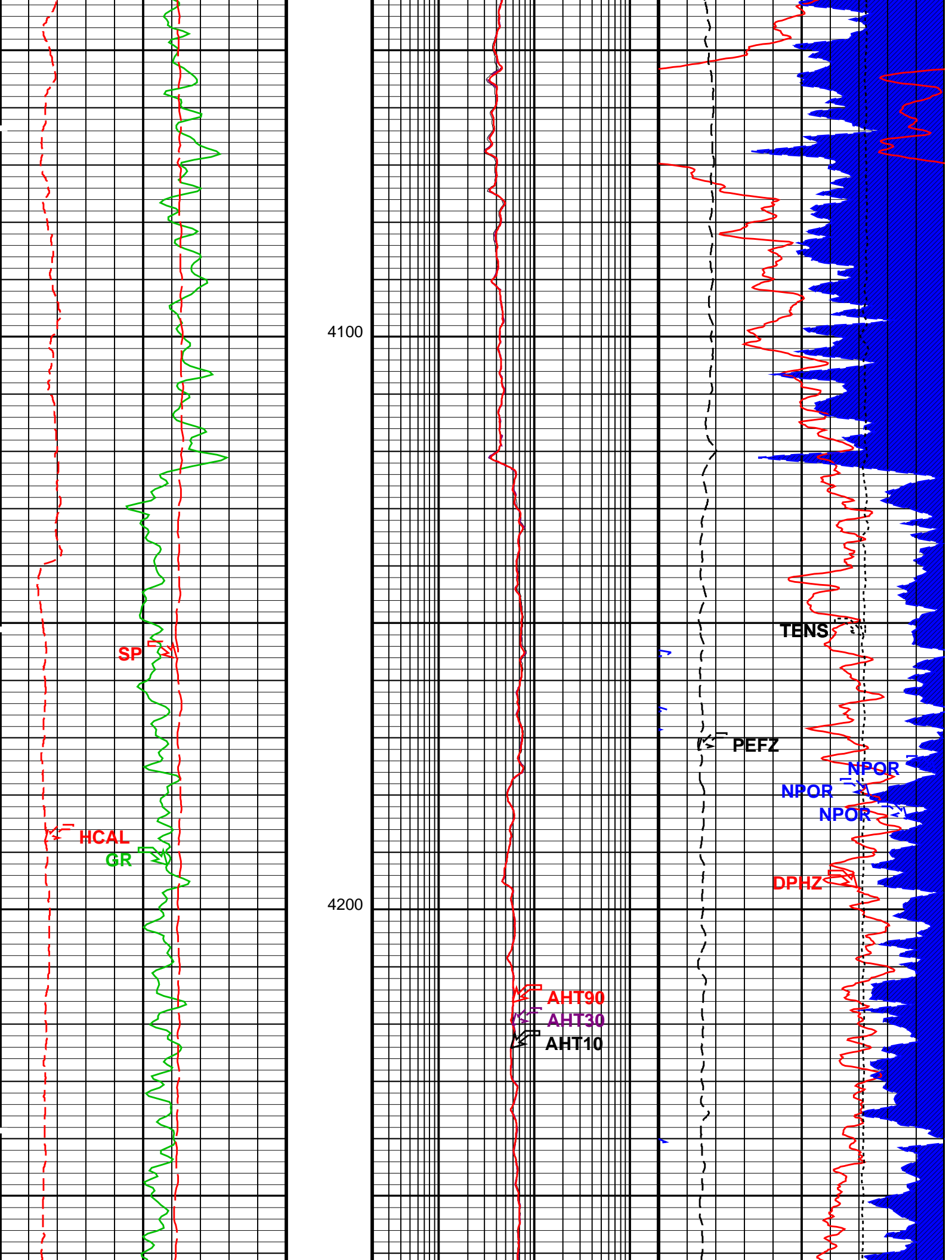


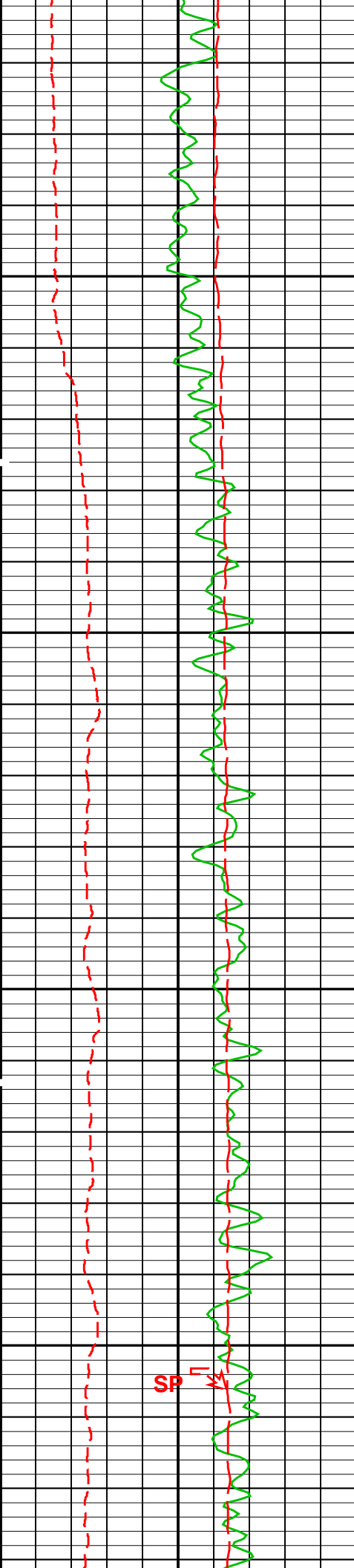


3900

4000

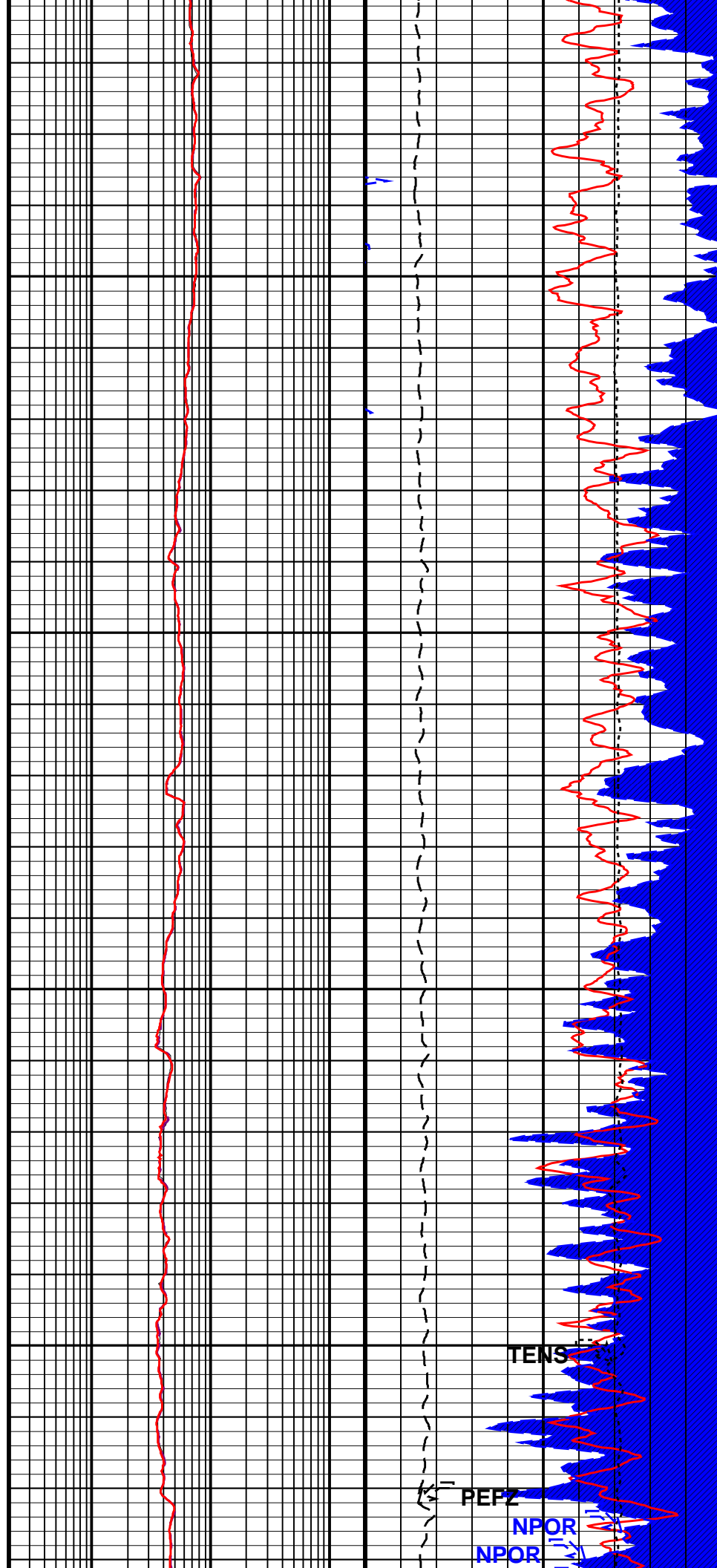


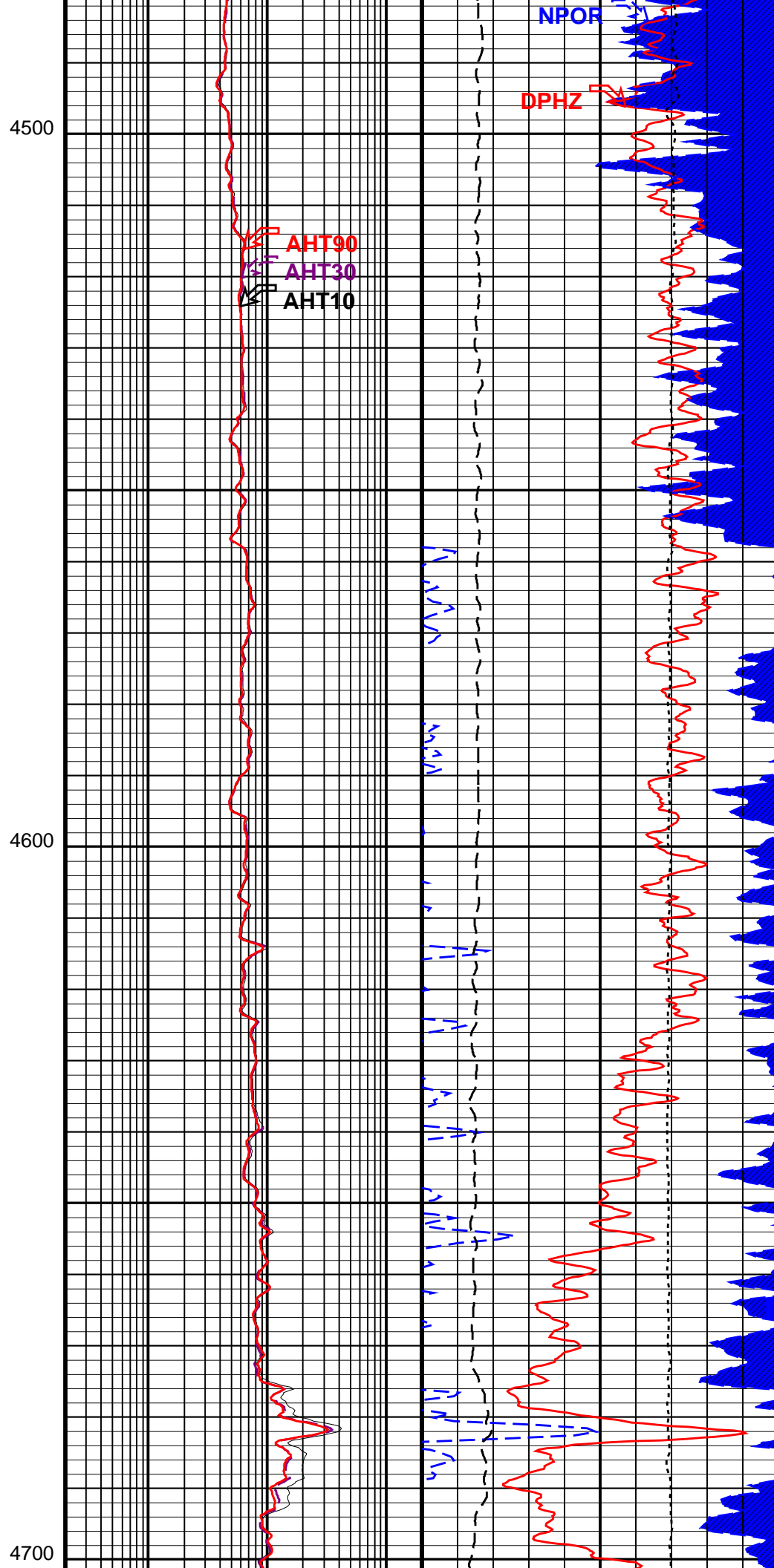
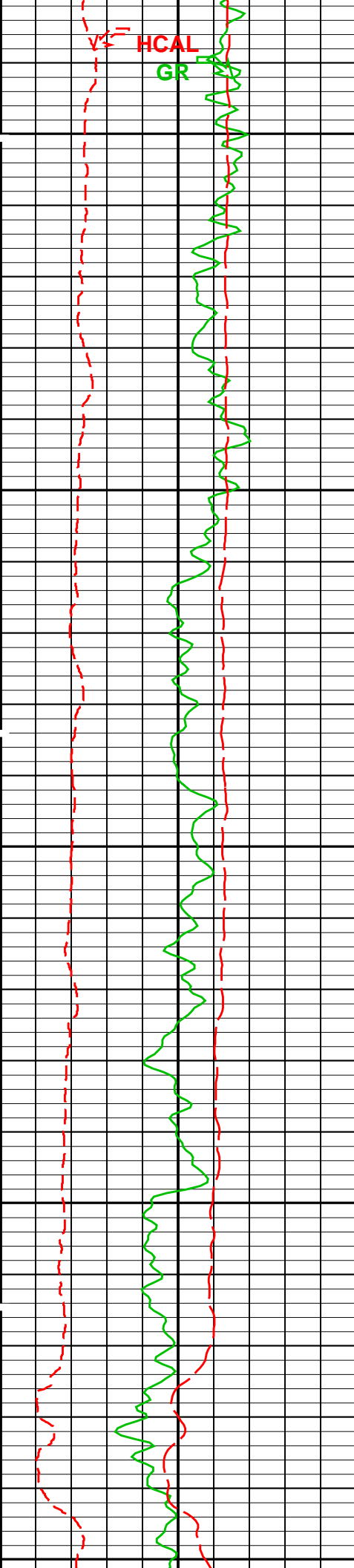


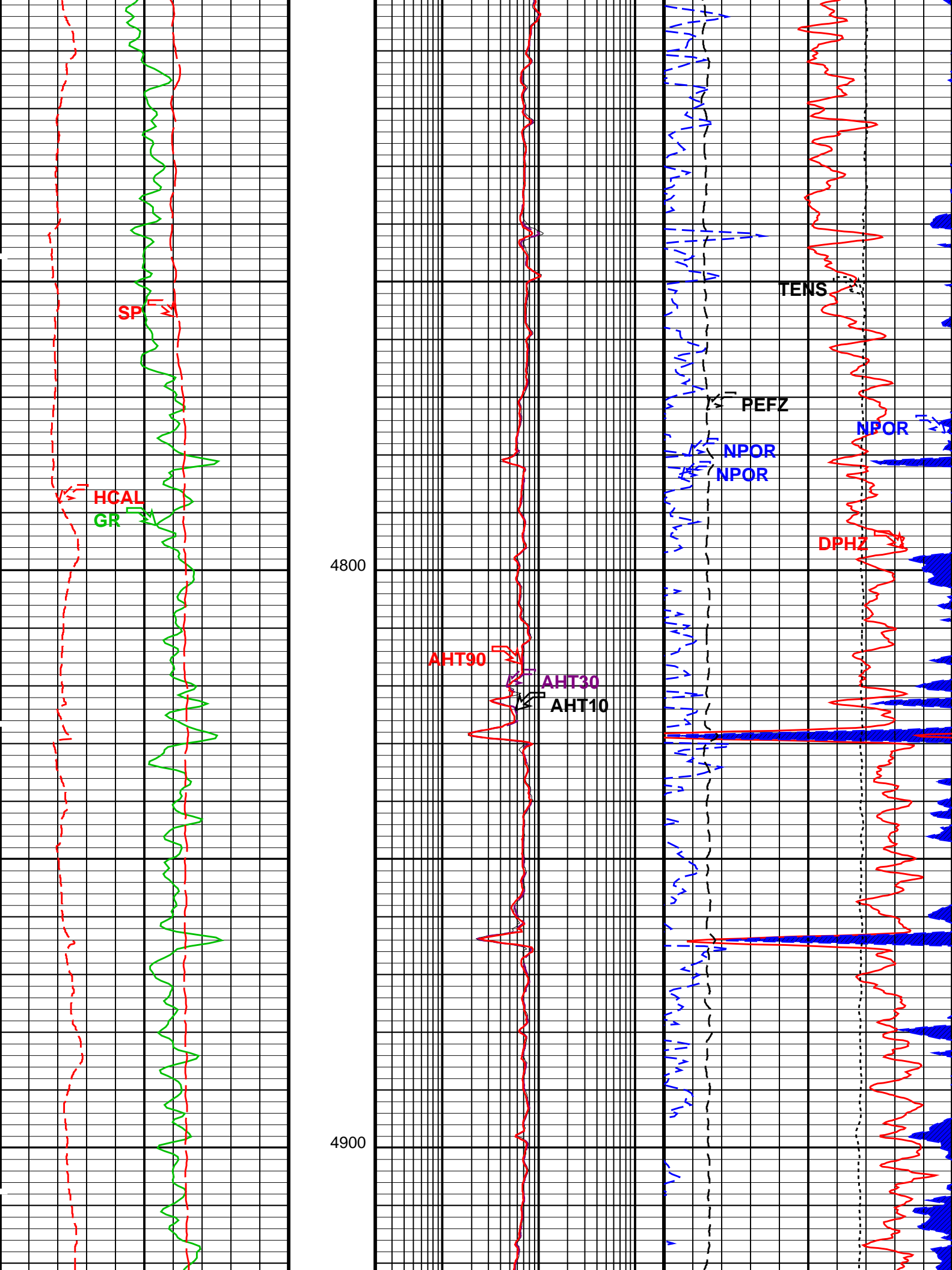


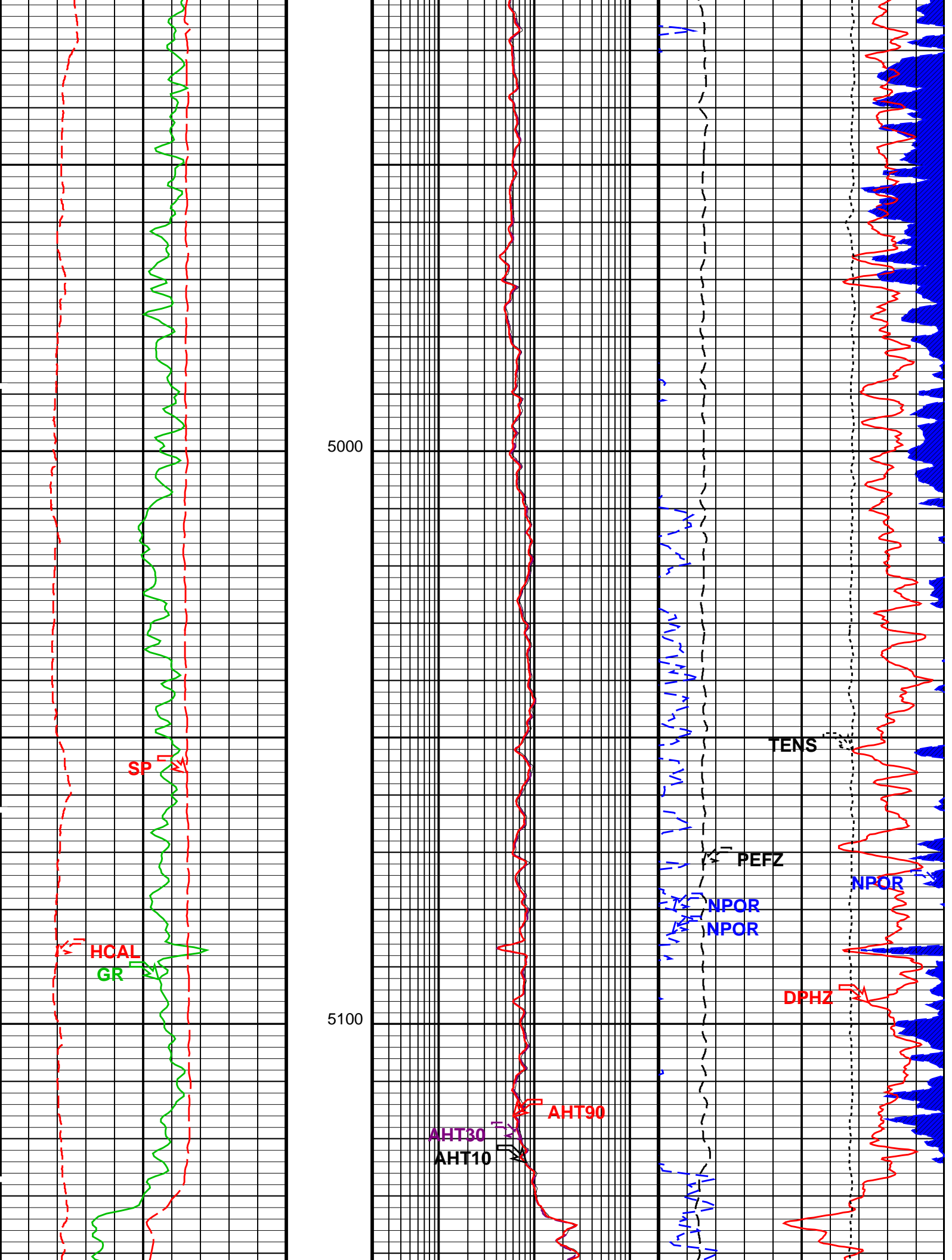
4300

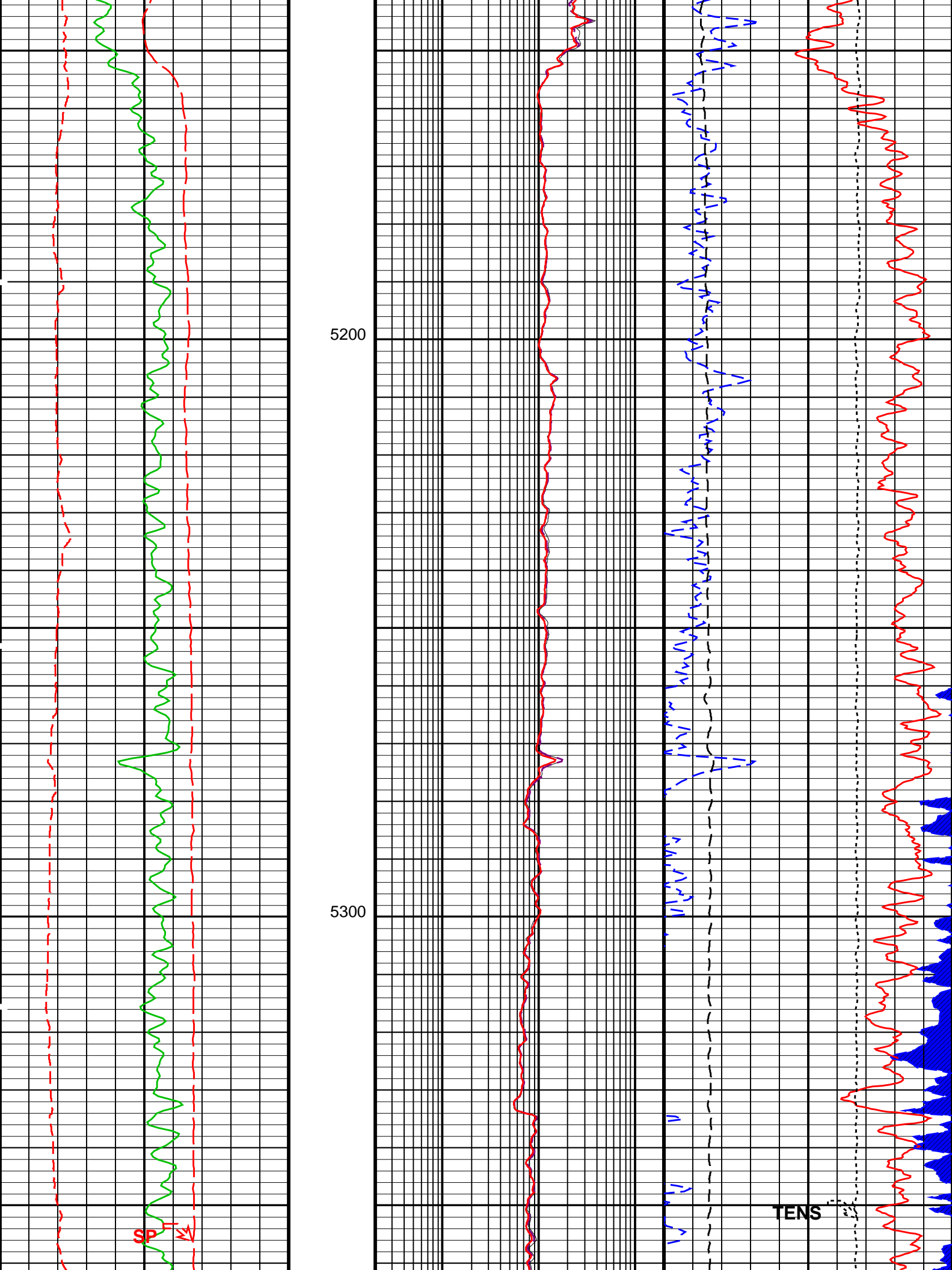
4400

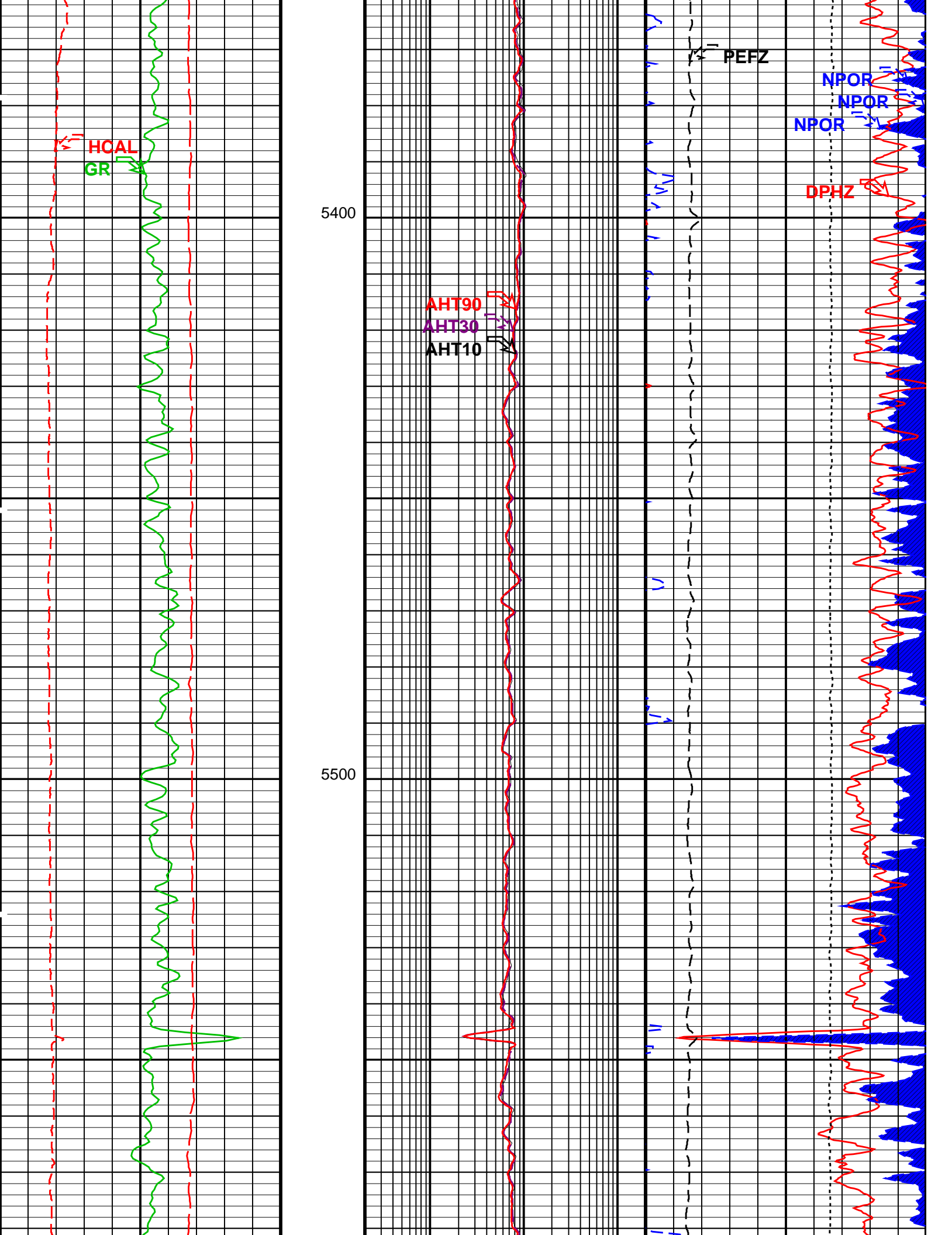


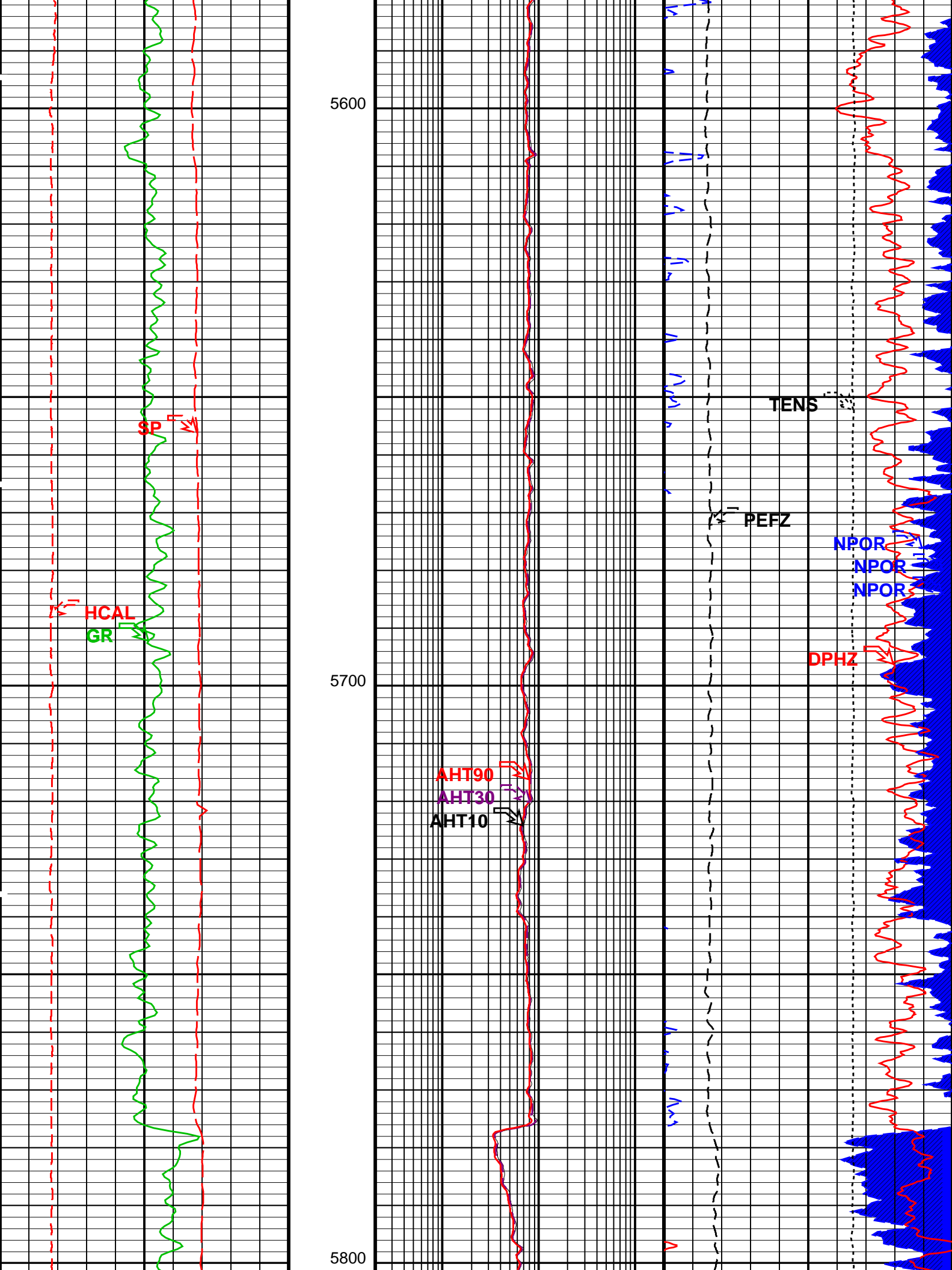


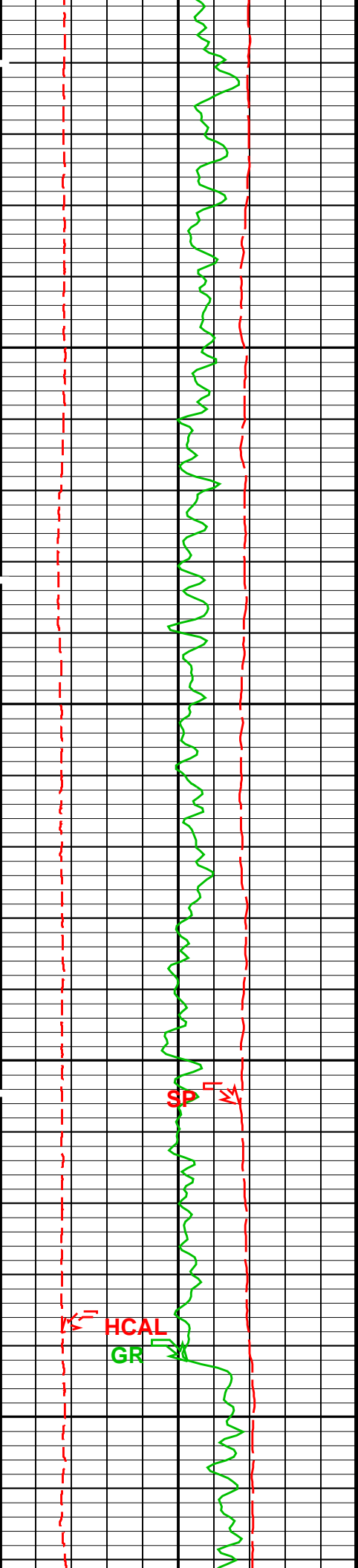






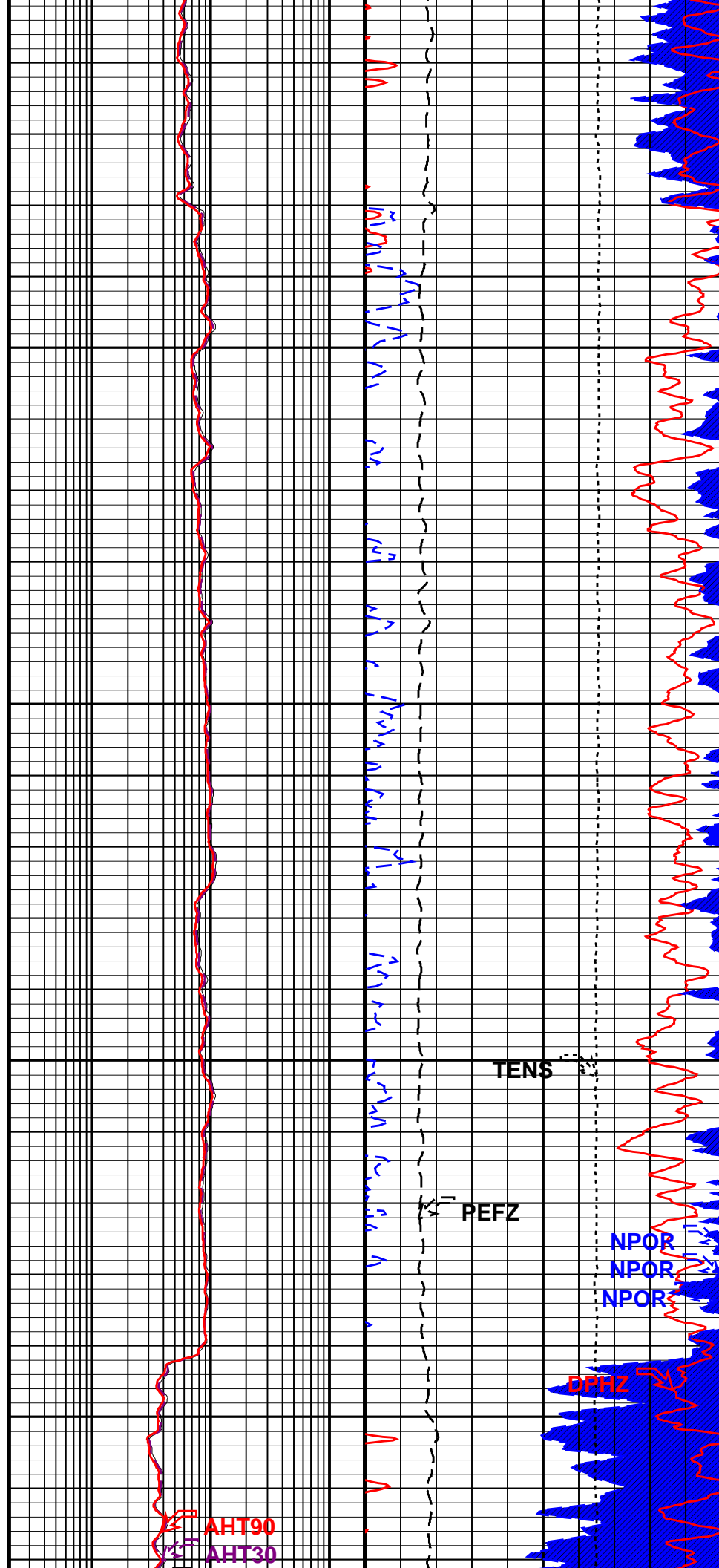






5900

6000



AHT90

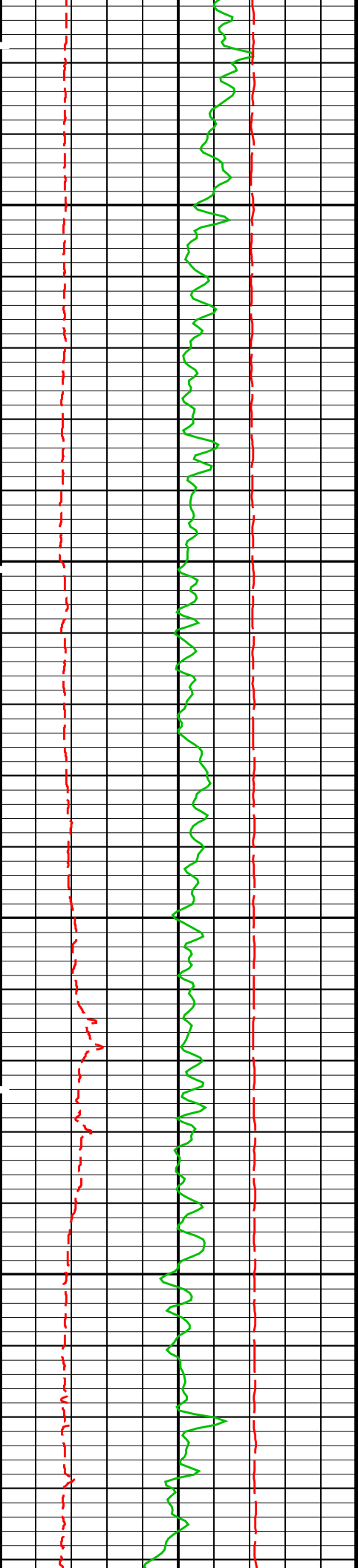
AHT30

TENS

PEFZ

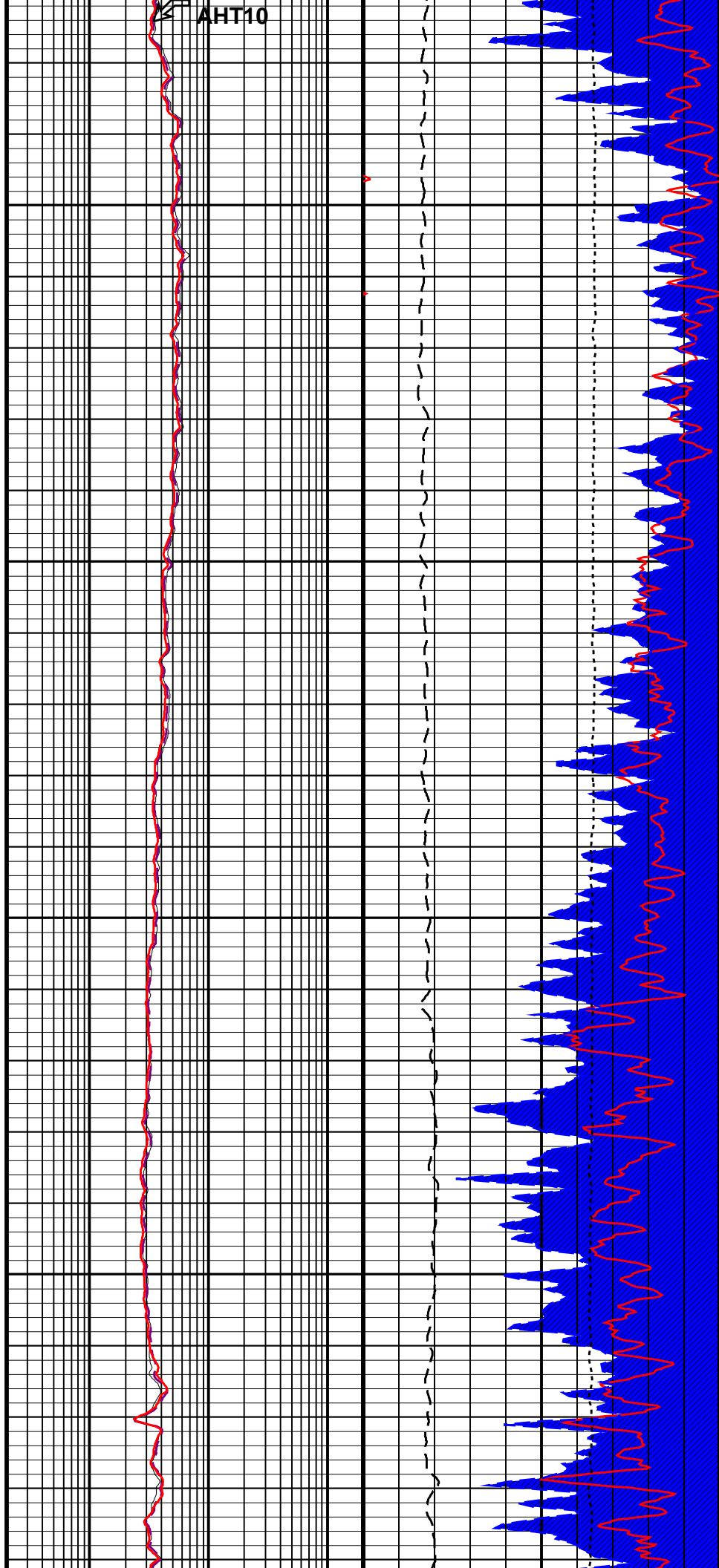
NPOR
NPOR
NPOR

DPHZ

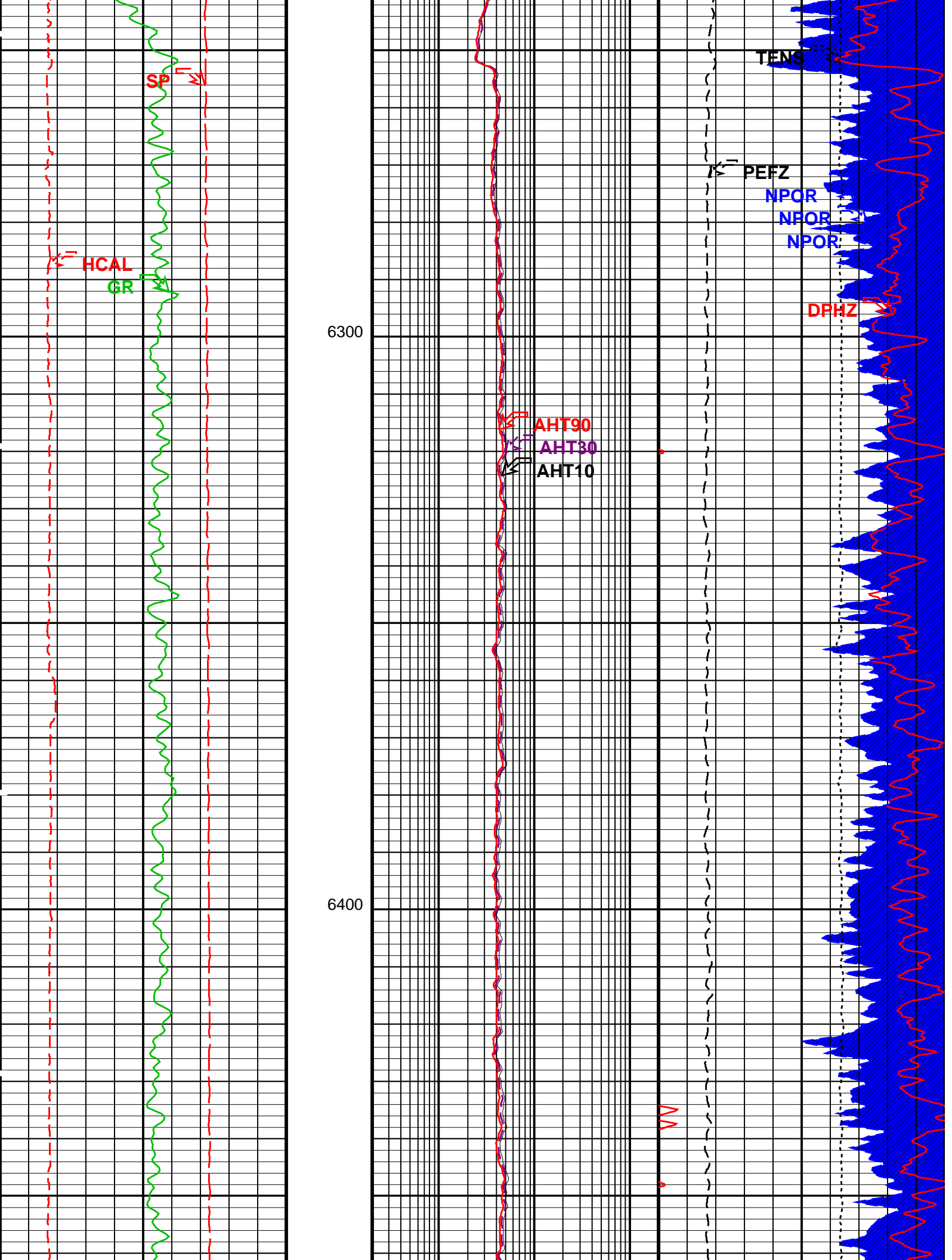


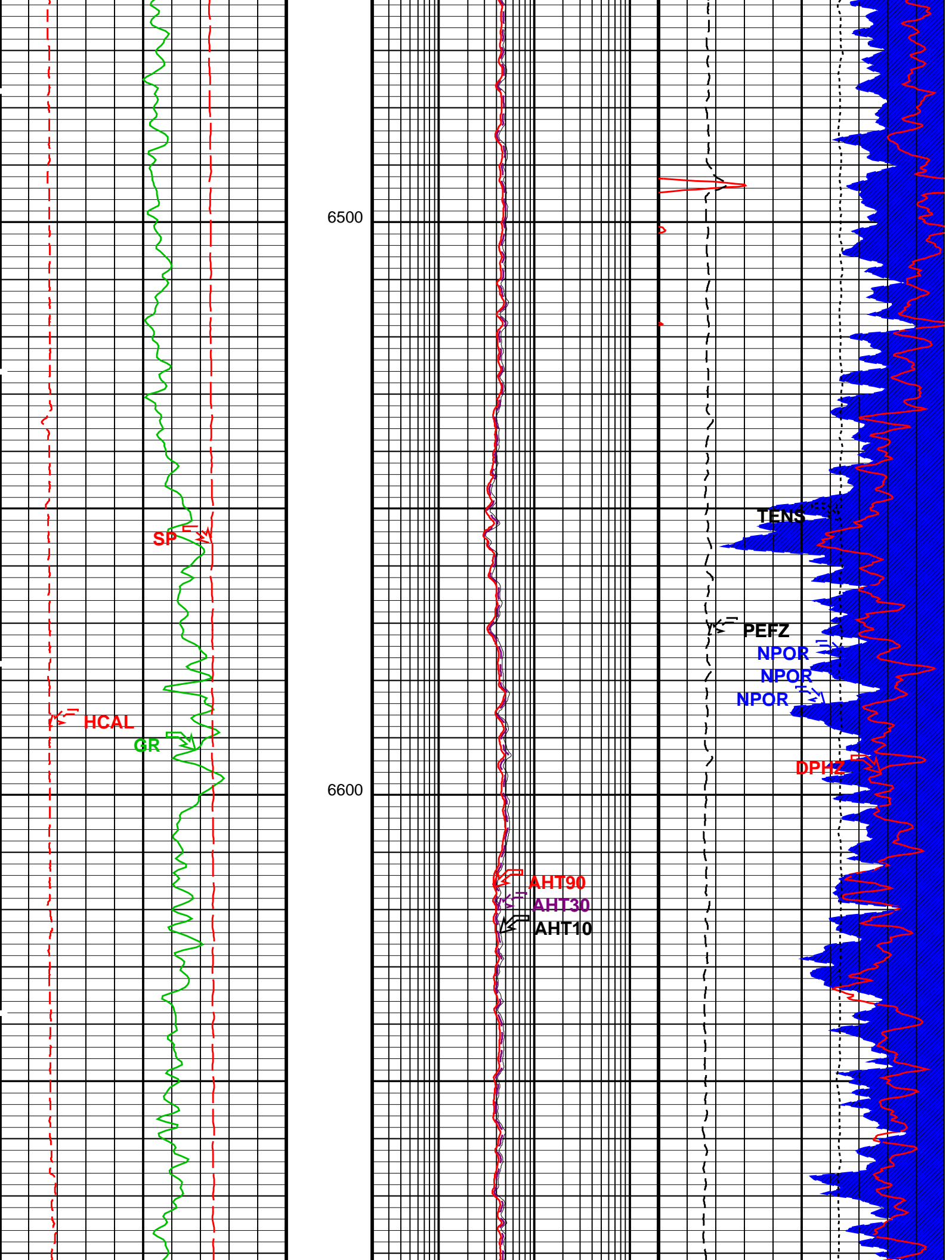
6100

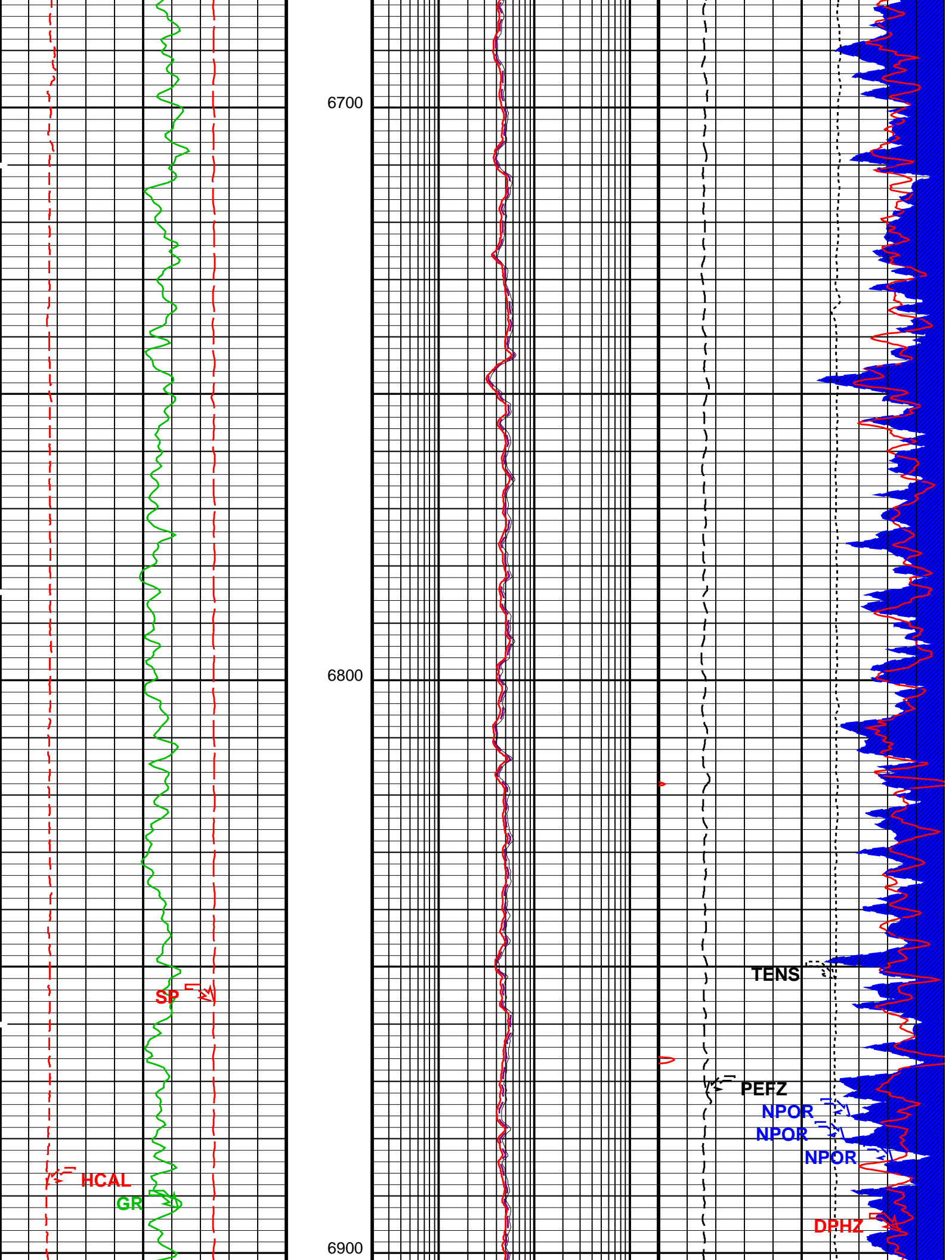
6200

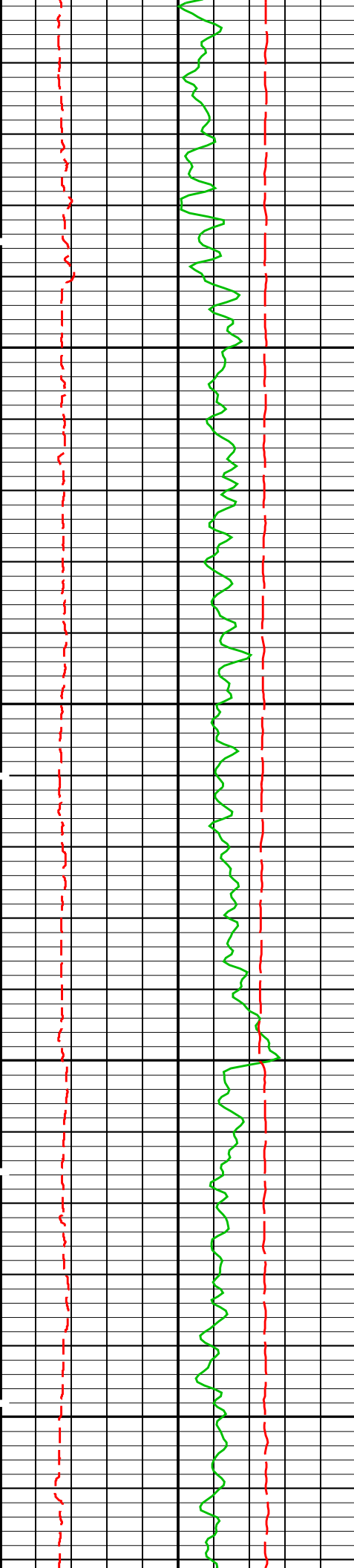


AHT10



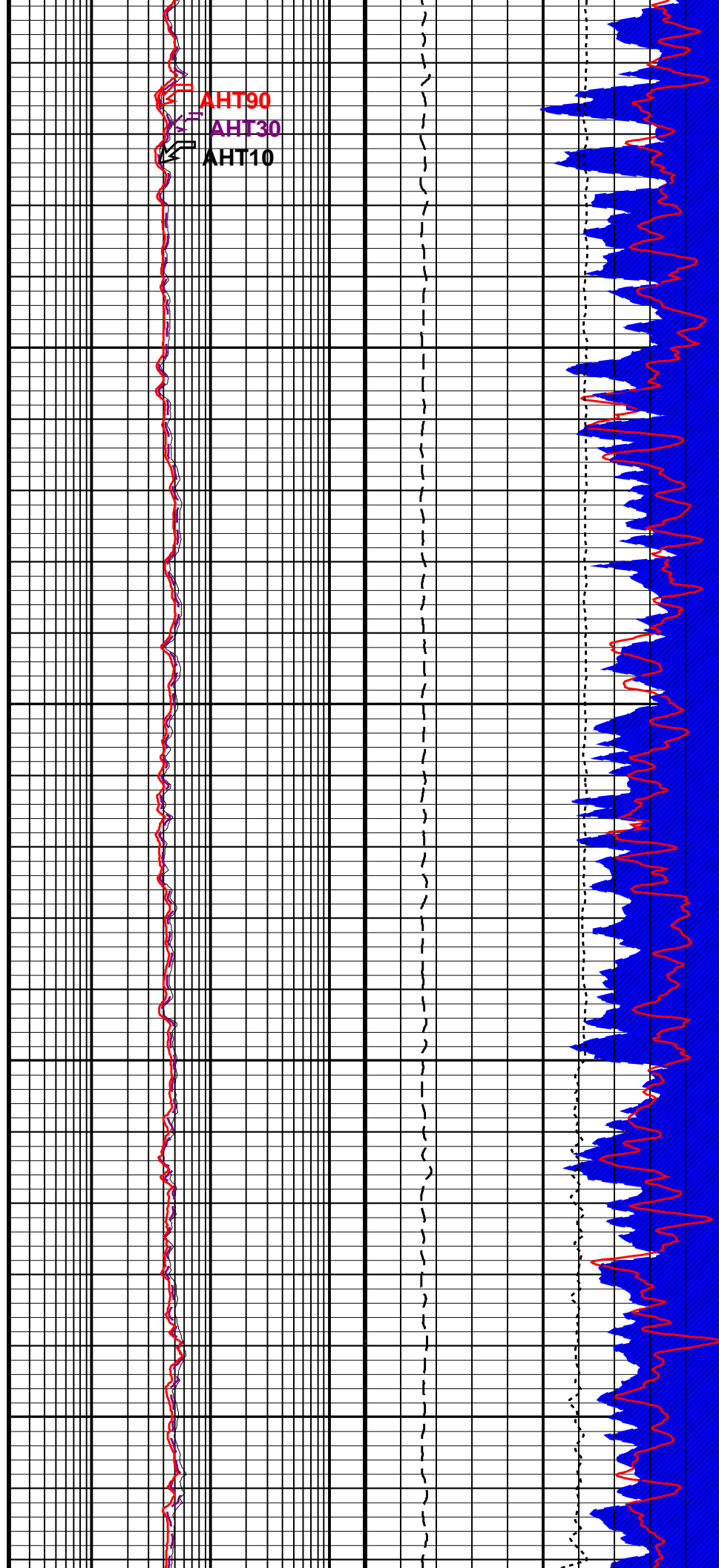


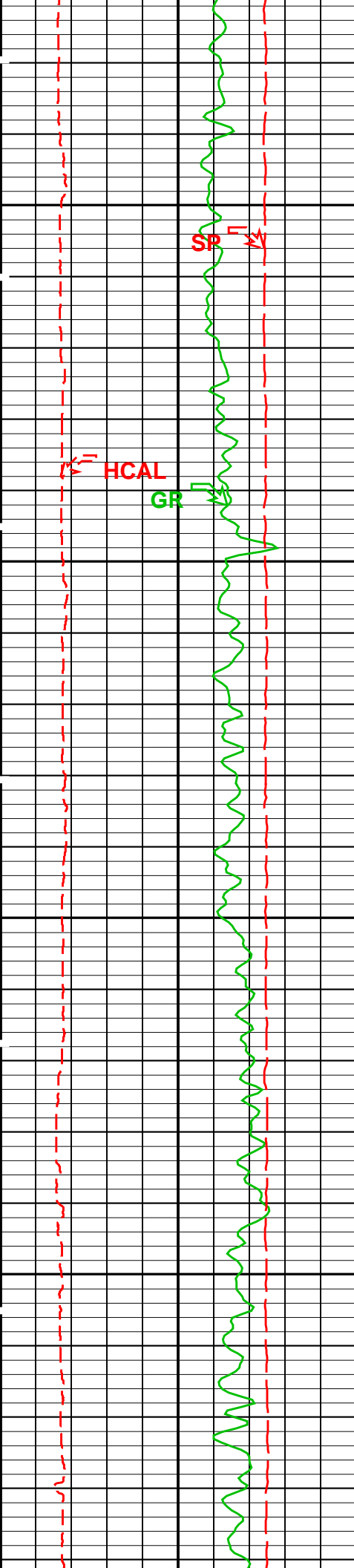




7000

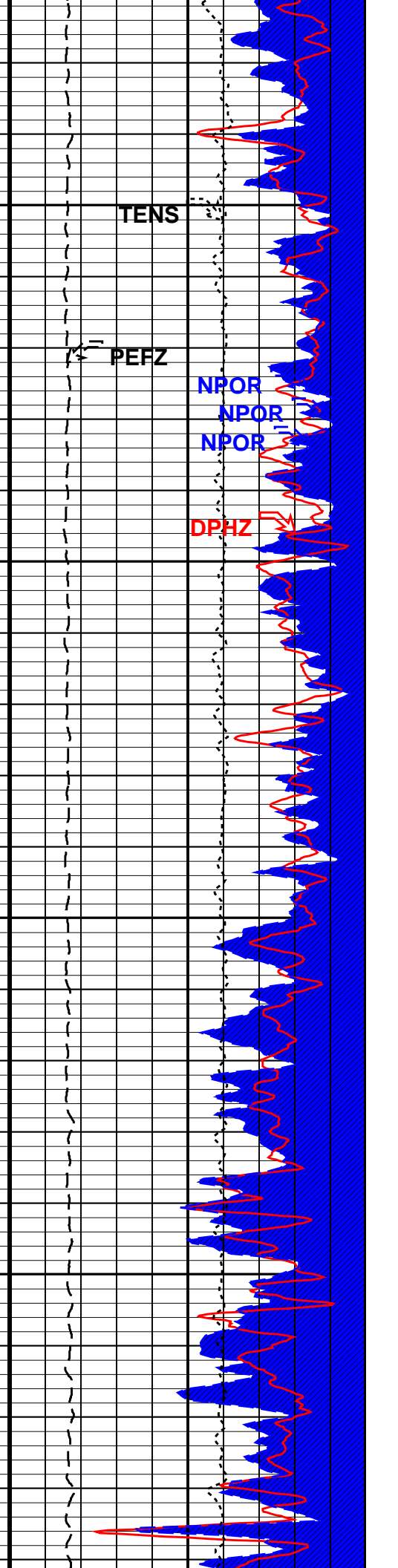
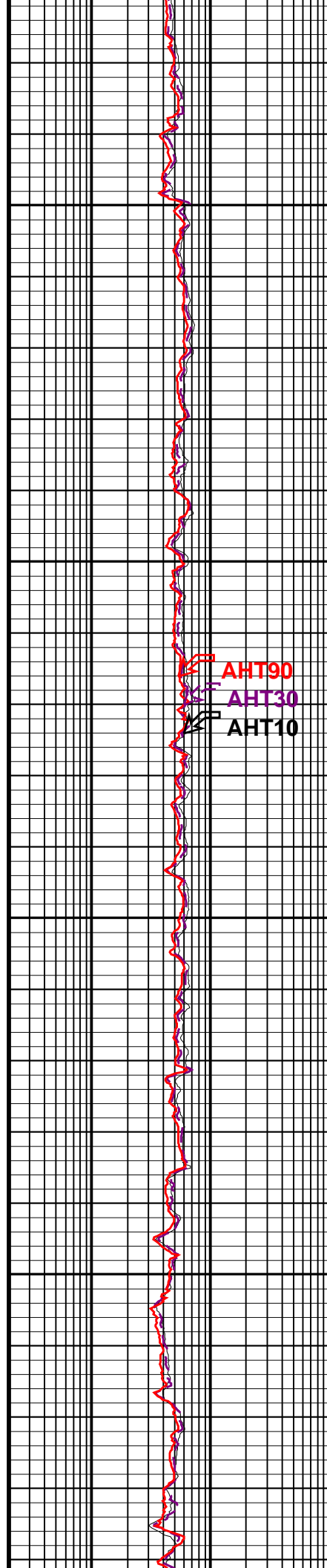
7100

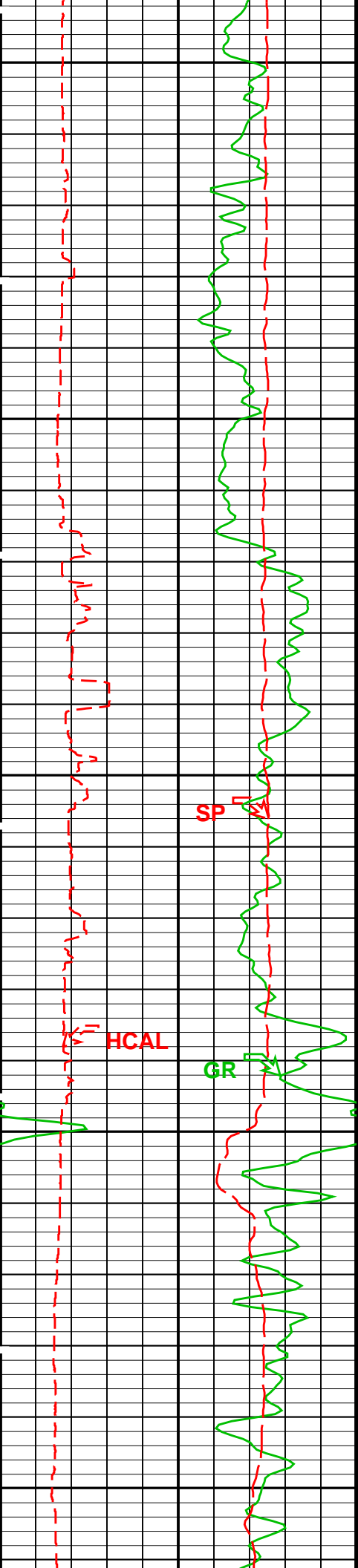




7200

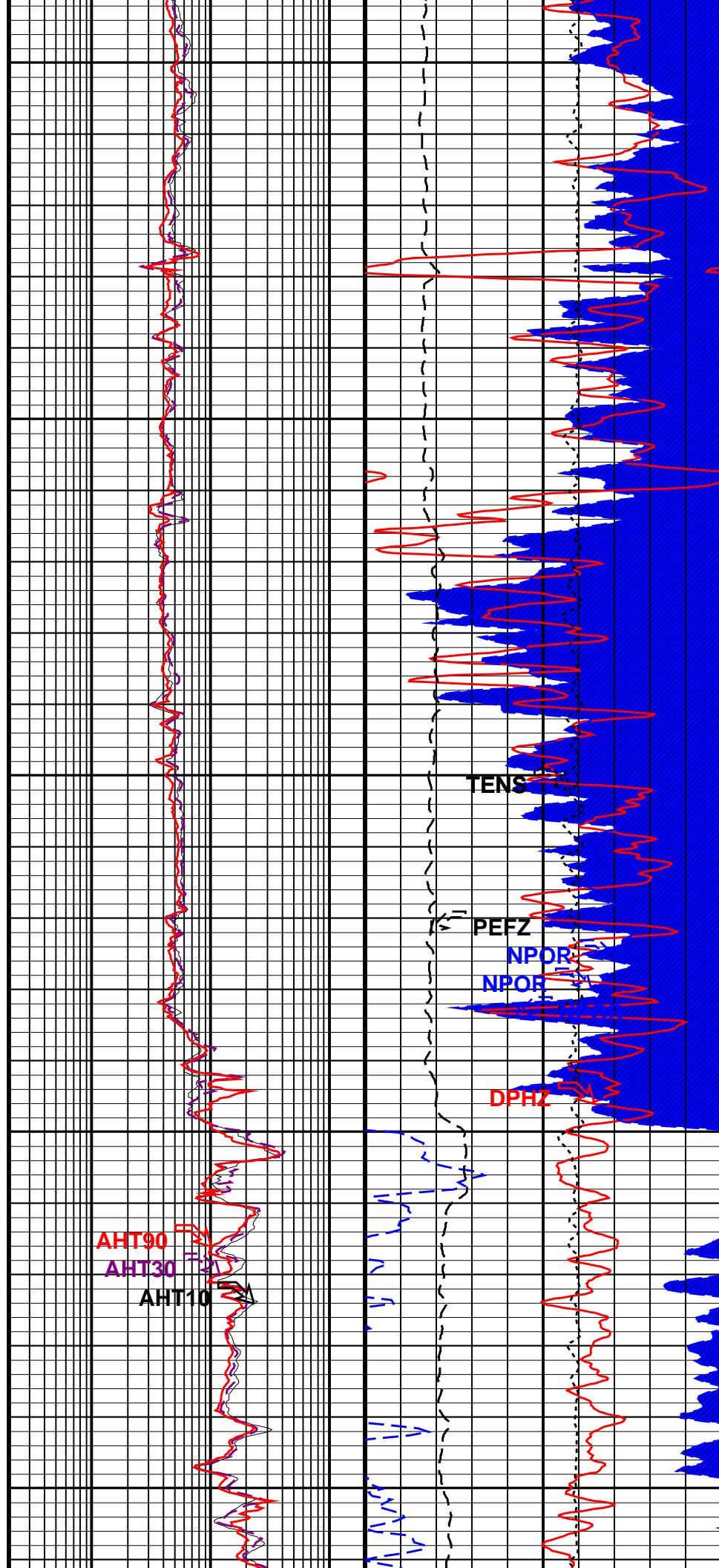
7300

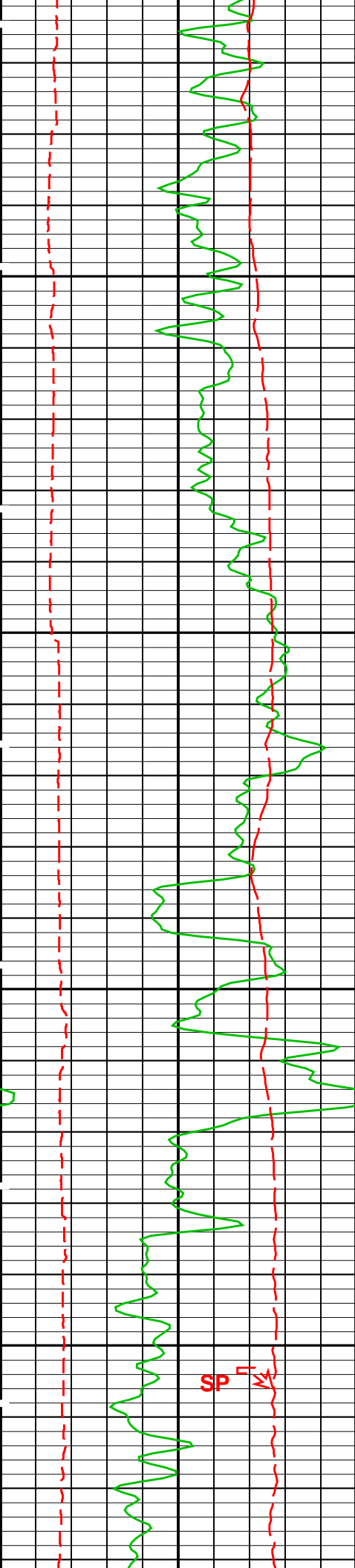




7400

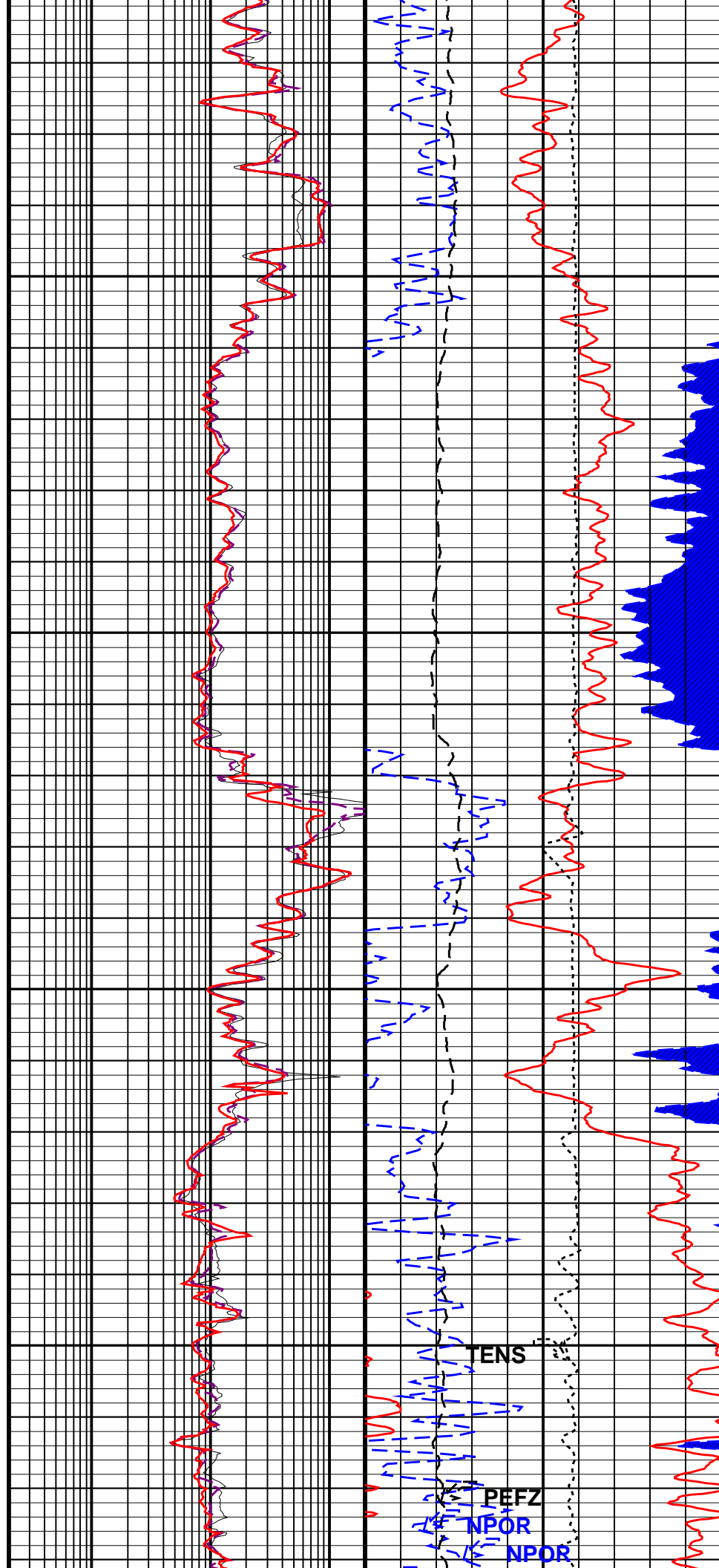
7500

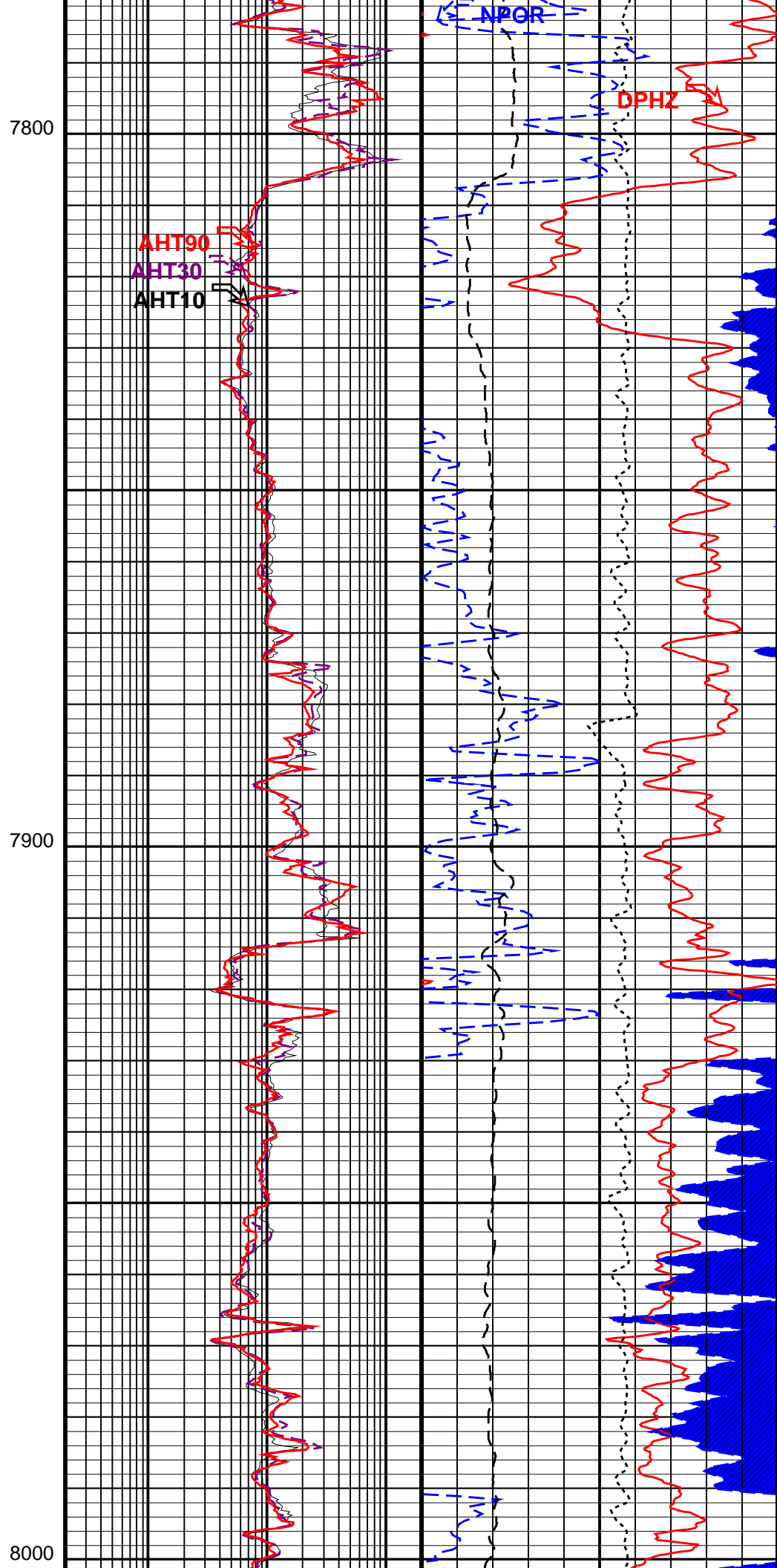
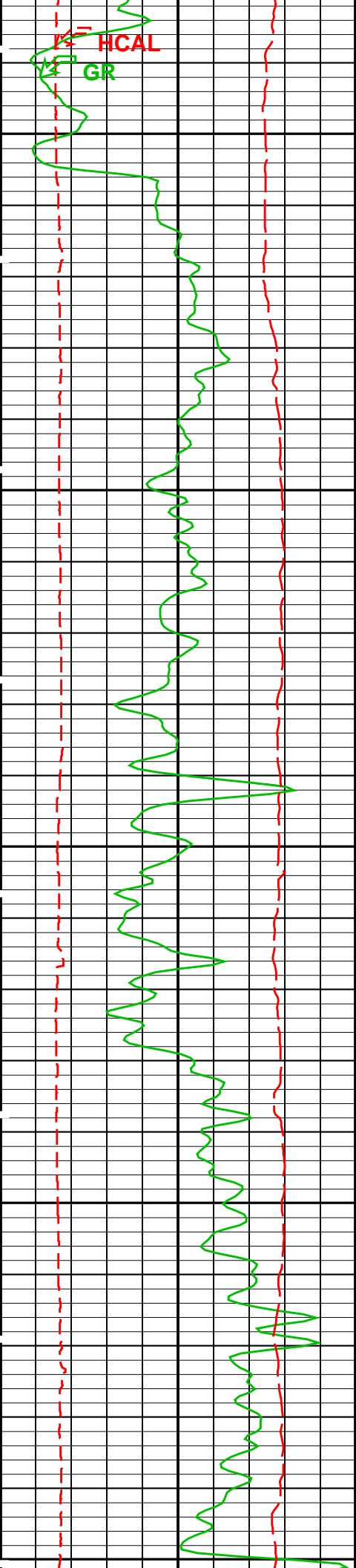


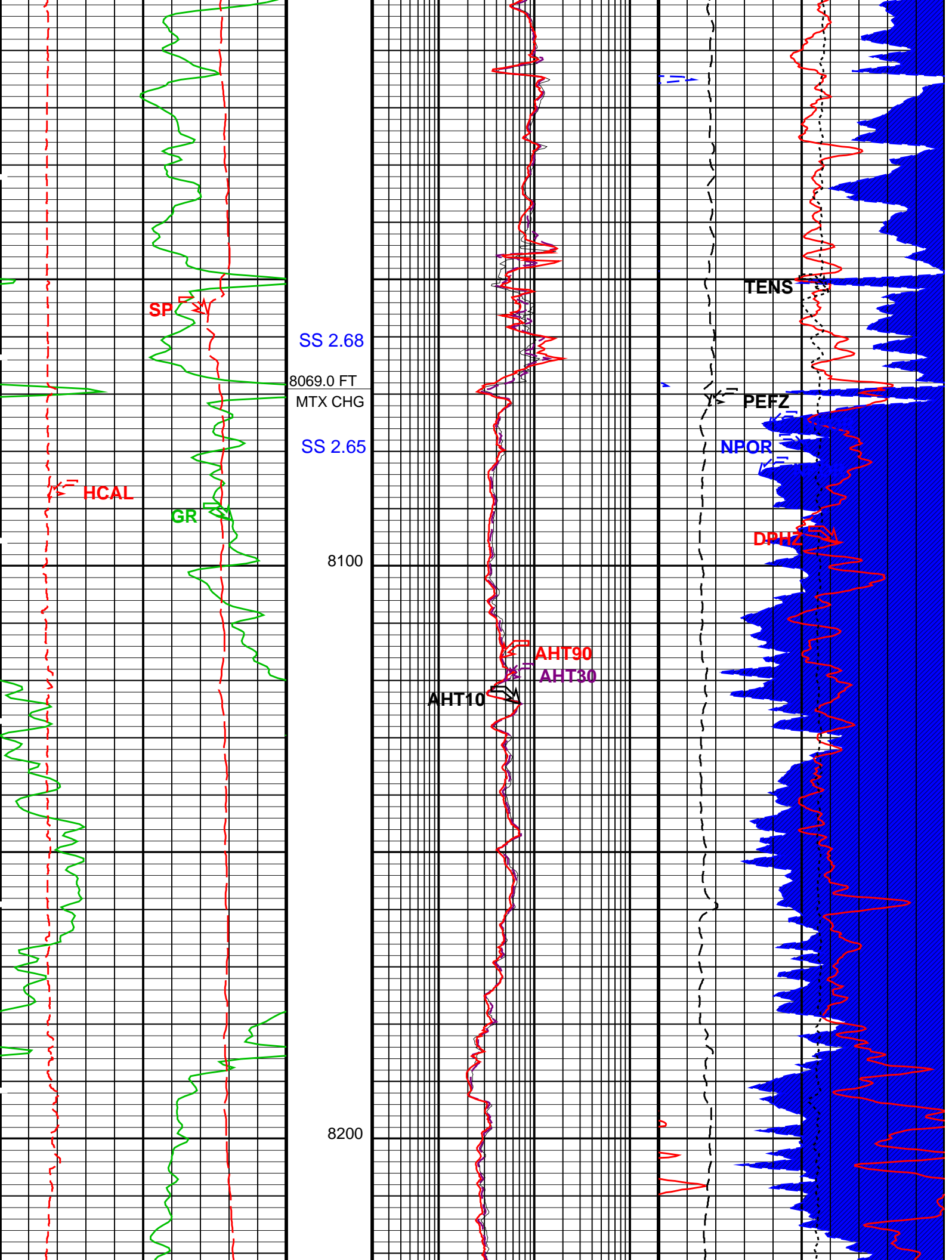


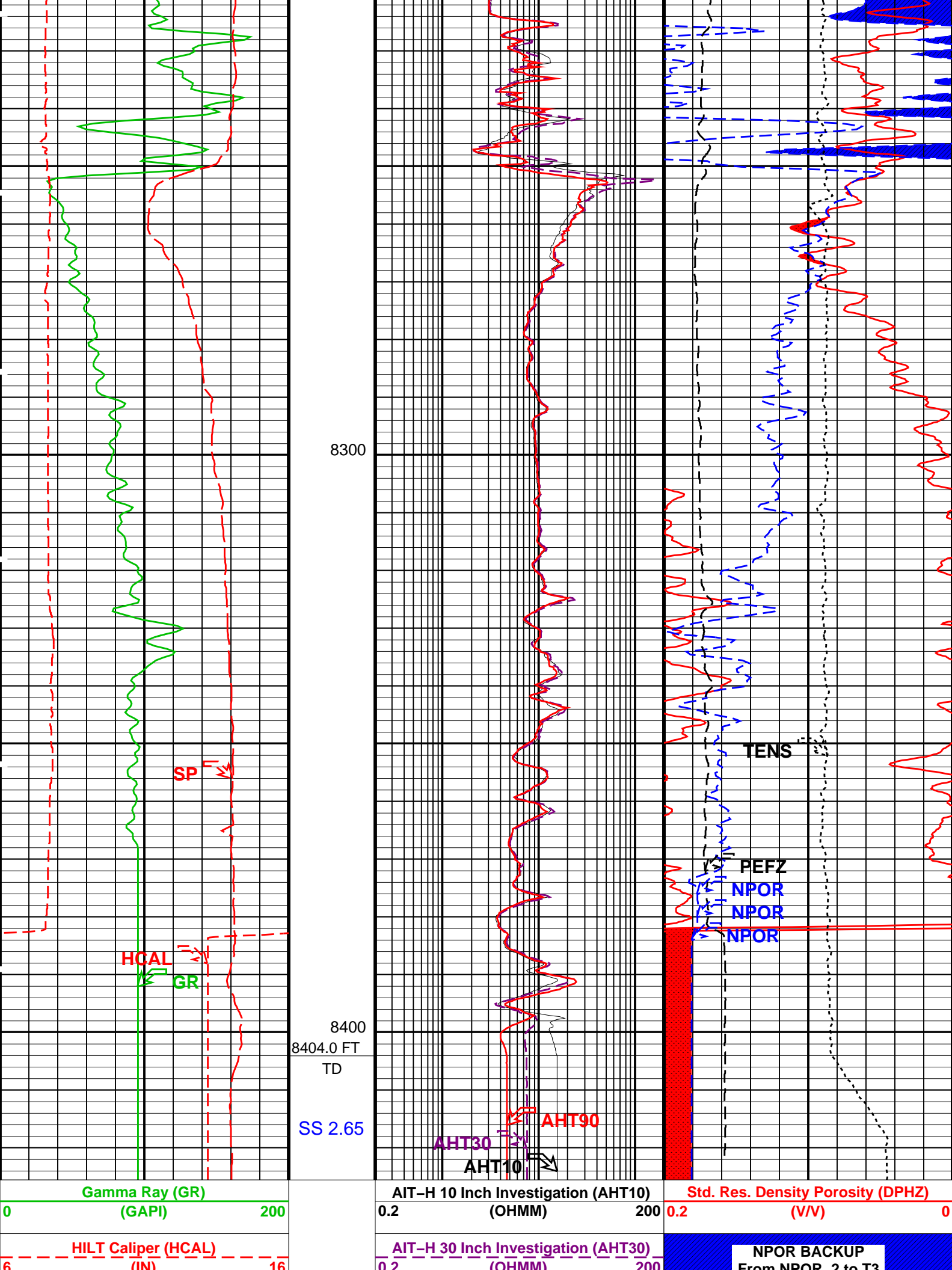
7600

7700









SP (SP) (MV)		AIT-H 90 Inch Investigation (AHT90) (OHMM)	GAS EFFECT From DPHZ to NPOR 1	
-160	40	0.2	200	
			Tension (TENS) 10000 (LBF)	
			Alpha Processed Neutron Porosity (NPOR) 0.2 (V/V)	
			Std. Res. Formation Pe (PEFZ) 0 (----) 10	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
HAIT-H: Array Induction Tool – H			
AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	900	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	223	
AHCDE	Array Induction Casing Detection Enable	Yes	
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20	
AHRFV	Array Induction Radial Profiling Code Version Number	701	
AHRPV	Array Induction Radial Parametrization Code Version Number	232	
AHSTA	Array Induction Tool Standoff	0.625	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	215	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
SPNV	SP Next Value	0	MV
MAPC-B: Multimode Array Sonic Power Cartridge			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	215	DEGF
BS	Bit Size	7.875	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
HILTB-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	215	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal-like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	

MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	NO	
MCCO	Mud Cake Correction Option	NATU	2.68	G/C3
MCOR	Matrix Density		NO	
MDEN	Mud Weight Correction Option		OFF	
MWCO	HRDD APS Activation Correction	NOBARITE		
NAAC	HILT Nuclear Mud Type	StdRes	1	IN
NMT	HRDD Processing Mode		NO	
NPRM	HRDD Depth Sampling Rate	SOCN	68	DEGF
NSAR	Pressure/Temperature Correction Option		0.125	IN
PTCO	Standoff Data Source		YES	
SDAT	Surface Hole Temperature			
SHT	Standoff Distance			
SOCN	Standoff Correction Option			
SOCO	Resistivity			
	RWA: Apparent Water			
FEXP	Form Factor Exponent		2	
FNUM	Form Factor Numerator		1	
	HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN		
BHT	Bottom Hole Temperature (used in calculations)	215		DEGF
GCSE	Generalized Caliper Selection	HCAL		
GDEV	Average Angular Deviation of Borehole from Normal	0		DEG
GGRD	Geothermal Gradient	0.01		DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST		
GTSE	Generalized Temperature Selection	HSTS_HTEM		
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE		
SHT	Surface Hole Temperature	68		DEGF
	STI: Stuck Tool Indicator			
TDL	Total Depth – Logger	8404.00		FT
	FEQL: Formation Evaluation Quick Look			
FEXP	Form Factor Exponent		2	
FNUM	Form Factor Numerator		1	
	PERT: Preliminary Evaluation – Real Time			
BHS	Borehole Status	OPEN		
BHT	Bottom Hole Temperature (used in calculations)	215		DEGF
FEXP	Form Factor Exponent		2	
FNUM	Form Factor Numerator		1	
GCSE	Generalized Caliper Selection	HCAL		
GDEV	Average Angular Deviation of Borehole from Normal	0		DEG
GGRD	Geothermal Gradient	0.01		DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST		
GTSE	Generalized Temperature Selection	HSTS_HTEM		
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE		
SHT	Surface Hole Temperature	68		DEGF
	System and Miscellaneous			
BSAL	Borehole Salinity	-50000.00		PPM
CSIZ	Current Casing Size	8.625		IN
CWEI	Casing Weight	24.00		LB/F
DFD	Drilling Fluid Density	9.70		LB/G
DO	Depth Offset for Playback	0.0		FT
FLEV	Fluid Level	300.00		FT
MST	Mud Sample Temperature	115.00		DEGF
PP	Playback Processing	RECOMPUTE		
RMFS	Resistivity of Mud Filtrate Sample	0.9457		OHMM
TD	Total Depth	8404		FT

Format: COMBO_S5 Vertical Scale: 5" per 100' Graphics File Created: 18-Aug-2011 15:58

OP System Version: 18C0-147

HAIT-H	18C0-147	PPC1-B	18C0-147
MAPC-B	SKK-4027-MAST	HILTB-FTB	18C0-147
DTC-H	18C0-147		

Input DLIS Files

DEFAULT	Splice_AIT_CAL_MAPC_022CUP	FN:1	PRODUCER	18-Aug-2011 15:56	8425.5 FT	783.0 FT
---------	----------------------------	------	----------	-------------------	-----------	----------

Output DLIS Files

DEFAULT	AIT_CAL_MAPC_TLD_023PUP	FN:21	PRODUCER	18-Aug-2011 15:58
---------	-------------------------	-------	----------	-------------------

Company: Encana Oil & Gas (USA) Inc.

Well: Puritan 4-6-34

Input DLIS Files

DEFAULT	AIT_CAL_MAPC_TLD_018PUP	FN:17	PRODUCER	18-Aug-2011 14:25	8425.5 FT	6972.5 FT
DEFAULT	AIT_CAL_MAPC_TLD_011PUP	FN:10	PRODUCER	18-Aug-2011 13:19	8430.0 FT	8056.5 FT

Output DLIS Files

DEFAULT	AIT_CAL_MAPC_TLD_020PUP	FN:19	PRODUCER	18-Aug-2011 14:28	8430.0 FT	8056.5 FT
---------	-------------------------	-------	----------	-------------------	-----------	-----------

OP System Version: 18C0-147

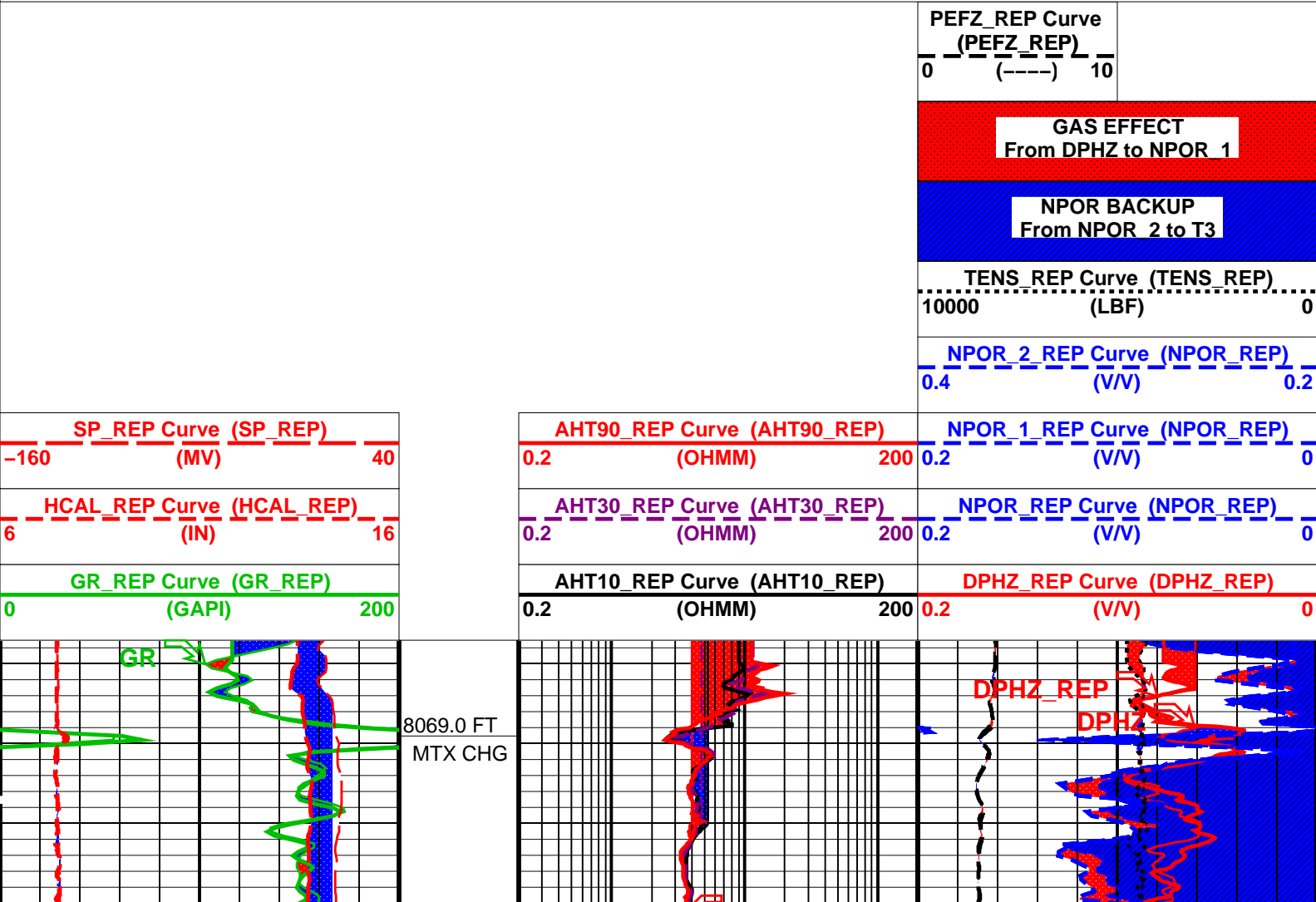
HAIT-H	18C0-147	PPC1-B	18C0-147
MAPC-B	SKK-4027-MAST	HILTB-FTB	18C0-147
DTC-H	18C0-147		

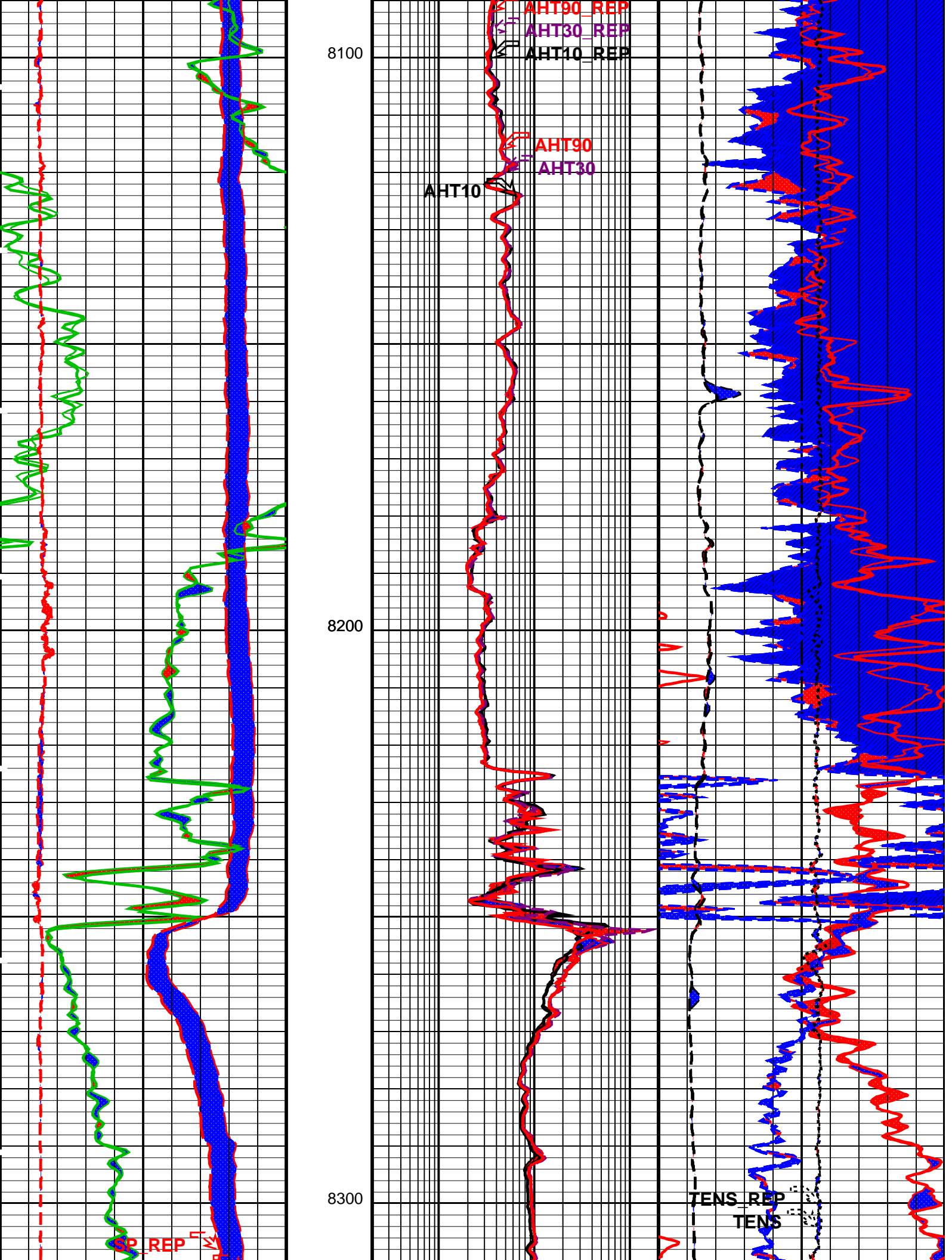
Changed Parameter Summary

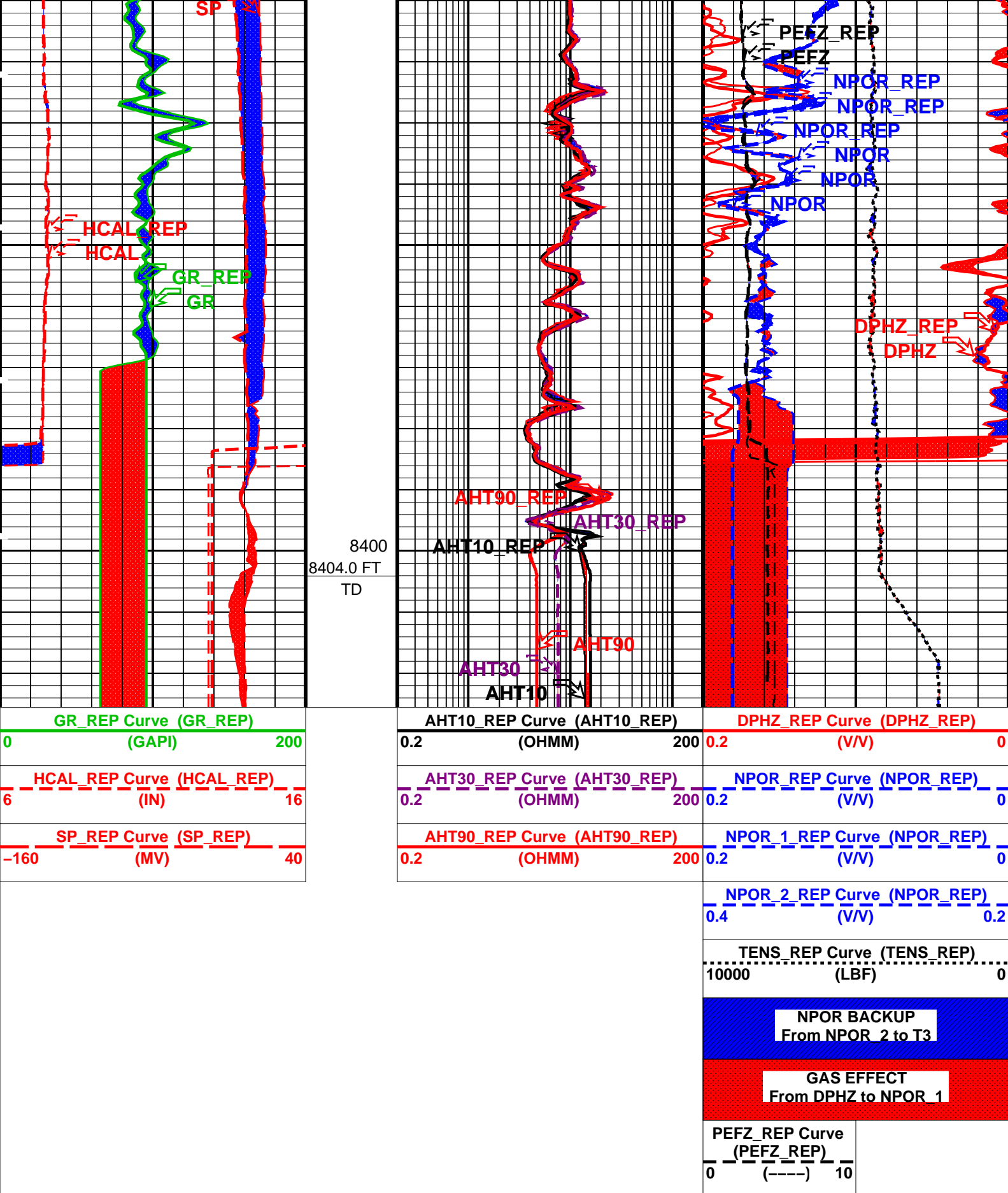
DLIS Name	New Value	Previous Value	Depth & Time
MATR	SANDSTONE	SANDSTONE	8430.0 14:28:52
	SANDSTONE	SANDSTONE	8069.0 14:29:03
MDEN	2.65 G/C3	2.68 G/C3	8430.0 14:28:52
	2.68 G/C3	2.65 G/C3	8069.0 14:29:03

PIP SUMMARY

Time Mark Every 60 S







PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
-----------	-------------	-------

HAIT-H: Array Induction Tool - H

AHBHM	Array Induction Borehole Correction Mode	2_ComputeStandoff	
AHBHV	Array Induction Borehole Correction Code Version Number	900	
AHBLM	Array Induction Basic Logs Mode	6_One_Two_and_Four	
AHBLV	Array Induction Basic Logs Code Version Number	223	
AHCDE	Array Induction Casing Detection Enable	Yes	
AHCEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered	
AHFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20	
AHMRF	Array Induction Mud Resistivity Factor	1	
AHORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20	
AHRFV	Array Induction Radial Profiling Code Version Number	701	
AHRPV	Array Induction Radial Parametrization Code Version Number	232	
AHSTA	Array Induction Tool Standoff	0.625	IN
AHTRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	215	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
SPNV	SP Next Value	0	MV
MAPC-B: Multimode Array Sonic Power Cartridge			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	215	DEGF
BS	Bit Size	7.875	IN
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
HILTB-FTB: High resolution Integrated Logging Tool-DTS			
BHFL	Borehole Fluid Type	WATER	
BHFL_TLD	HILT Nuclear Mud Base	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	215	DEGF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
FD	Fluid Density	1	G/C3
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
FSAL	Formation Salinity	-50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCLF	Germany Coal-like Formation Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.68	G/C3
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	StdRes	
NSAR	HRDD Depth Sampling Rate	1	IN
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0.125	IN
SOCO	Standoff Correction Option	YES	
RWA: Apparent Water Resistivity			
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	215	DEGF
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
STI: Stuck Tool Indicator			

TDL	Total Depth – Logger	8404.00	FT
FEQL	Formation Evaluation Quick Look		
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
PERT	Preliminary Evaluation – Real Time		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	215	DEGF
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	AITH_RESIST	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
	System and Miscellaneous		
BSAL	Borehole Salinity	–50000.00	PPM
CSIZ	Current Casing Size	8.625	IN
CWEI	Casing Weight	24.00	LB/F
DFD	Drilling Fluid Density	9.70	LB/G
DO	Depth Offset for Playback	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
FLEV	Fluid Level	300.00	FT
MST	Mud Sample Temperature	115.00	DEGF
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	0.9457	OHMM
TD	Total Depth	8404	FT

Format: COMBO_S5_REP Vertical Scale: 5" per 100' Graphics File Created: 18–Aug–2011 14:28

OP System Version: 18C0–147

HAIT–H	18C0–147	PPC1–B	18C0–147
MAPC–B	SKK–4027–MAST	HILTB–FTB	18C0–147
DTC–H	18C0–147		

Input DLIS Files

DEFAULT	AIT_CAL_MAPC_TLD_018PUP	FN:17	PRODUCER	18–Aug–2011 14:25	8425.5 FT	6972.5 FT
DEFAULT	AIT_CAL_MAPC_TLD_011PUP	FN:10	PRODUCER	18–Aug–2011 13:19	8430.0 FT	8056.5 FT

Output DLIS Files

DEFAULT	AIT_CAL_MAPC_TLD_020PUP	FN:19	PRODUCER	18–Aug–2011 14:28
---------	-------------------------	-------	----------	-------------------

Schlumberger

BEFORE CALIBRATIONS

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Array Induction Tool – H Wellsite Calibration – Electronics Calibration Check – Thru Cal Mag. & Phase							
Master: 19–Jul–2011 10:13 Before: 18–Aug–2011 8:14							
Thru Cal Magnitude – 0	0	0.6160	0.6167	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	1.259	1.261	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	0.6284	0.6292	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	0.7102	0.7111	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	1.323	1.325	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	1.928	1.930	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	1.926	1.929	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	1.373	1.377	N/A	N/A	N/A	V

Third Cal Magnitude = 7	0	1.373	1.377	N/A	N/A	N/A	V
Phase – 0	0	72.92	72.77	N/A	N/A	N/A	DEG
Phase – 1	0	71.80	71.66	N/A	N/A	N/A	DEG
Phase – 2	0	68.05	67.92	N/A	N/A	N/A	DEG
Phase – 3	0	67.26	67.13	N/A	N/A	N/A	DEG
Phase – 4	0	60.95	60.85	N/A	N/A	N/A	DEG
Phase – 5	0	59.03	58.94	N/A	N/A	N/A	DEG
Phase – 6	0	59.04	58.95	N/A	N/A	N/A	DEG
Phase – 7	0	55.31	55.35	N/A	N/A	N/A	DEG

Array Induction Tool – H Wellsite Calibration – Electronics Calibration Check – Auxilliary

Master: 19-Jul-2011 10:13 Before: 18-Aug-2011 8:14

Array Induction SPA Plus	990.5	992.9	993.3	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	0.06050	0.04901	N/A	N/A	N/A	MV
Array Induction Temperature PI	0.9150	0.9197	0.9201	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	0.00007260	0.00005808	N/A	N/A	N/A	V

Array Induction Tool – H Wellsite Calibration – Test Loop Gain Correction

Master: 19-Jul-2011 10:13

Test Loop Gain Magnitude – 0	0	1.016	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 1	0	1.017	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 2	0	1.018	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 3	0	1.012	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 4	0	0.9978	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 5	0	0.9906	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 6	0	0.9977	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 7	0	0.9981	N/A	N/A	N/A	N/A	V
Phase – 0	0	0.7501	N/A	N/A	N/A	N/A	DEG
Phase – 1	0	0.07848	N/A	N/A	N/A	N/A	DEG
Phase – 2	0	-0.1335	N/A	N/A	N/A	N/A	DEG
Phase – 3	0	0.03423	N/A	N/A	N/A	N/A	DEG
Phase – 4	0	-0.02399	N/A	N/A	N/A	N/A	DEG
Phase – 5	0	-0.2467	N/A	N/A	N/A	N/A	DEG
Phase – 6	0	0.1205	N/A	N/A	N/A	N/A	DEG
Phase – 7	0	-0.4226	N/A	N/A	N/A	N/A	DEG

Array Induction Tool – H Wellsite Calibration – Sonde Error Correction

Master: 19-Jul-2011 10:13

R Sonde Error Correction – 0	0	-72.68	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 1	0	191.9	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 2	0	108.4	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 3	0	66.62	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 4	0	25.79	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 5	0	14.04	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 6	0	9.981	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 7	0	-0.1971	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 0	0	-592.4	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 1	0	-69.72	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 2	0	-129.5	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 3	0	118.6	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 4	0	-36.24	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 5	0	6.216	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 6	0	-9.419	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 7	0	-5.815	N/A	N/A	N/A	N/A	MM/M

Array Induction Tool – H Wellsite Calibration – Mud Gain Correction

Master: 19-Jul-2011 10:13

Coarse – Mag, Real, Imag – 0	0	1.088	N/A	N/A	N/A	N/A
Coarse – Mag, Real, Imag – 1	0	1.088	N/A	N/A	N/A	N/A
Coarse – Mag, Real, Imag – 2	0	1.088	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 0	0	1.087	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 1	0	1.087	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 2	0	1.087	N/A	N/A	N/A	N/A

Powered Positioning Device/Caliper 1 Wellsite Calibration – PPC1 Caliper Calibration

Before: 8-Aug-2011 14:14

PPC1 Radius 1 Raw Small Radius	3.500	N/A	5.269	N/A	N/A	0.5000	IN
PPC1 Radius 1 Raw Large Radius	8.000	N/A	9.338	N/A	N/A	0.5000	IN
PPC1 Radius 2 Raw Small Radius	3.500	N/A	3.463	N/A	N/A	0.5000	IN
PPC1 Radius 2 Raw Large Radius	8.000	N/A	7.775	N/A	N/A	0.5000	IN
PPC1 Radius 3 Raw Small Radius	3.500	N/A	4.477	N/A	N/A	0.5000	IN
PPC1 Radius 3 Raw Large Radius	8.000	N/A	8.810	N/A	N/A	0.5000	IN
PPC1 Radius 4 Raw Small Radius	3.500	N/A	3.064	N/A	N/A	0.5000	IN
PPC1 Radius 4 Raw Large Radius	8.000	N/A	7.562	N/A	N/A	0.5000	IN

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Stab Measurement Summary

Before: 18-Aug-2011 8:14









BS Window Ratio	0.7278	N/A	0.7290	N/A	N/A	N/A	
BS Window Sum	9473	N/A	9473	N/A	N/A	N/A	CPS
SS Window Ratio	0.4775	N/A	0.4785	N/A	N/A	N/A	
SS Window Sum	9398	N/A	9380	N/A	N/A	N/A	CPS
LS Window Ratio	0.2927	N/A	0.2886	N/A	N/A	N/A	

LS Window Sum	1040	N/A	1037	N/A	N/A	N/A	CPS
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Photo–multiplier High Voltages Calibrations							
Before: 18–Aug–2011 8:14							
BS PM High Voltage (Command)	1664	N/A	1658	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1426	N/A	1434	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1530	N/A	1533	N/A	N/A	N/A	V
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Crystal Quality Resolutions Calibration							
Before: 18–Aug–2011 8:14							
BS Crystal Resolution	11.56	N/A	11.53	N/A	N/A	N/A	%
SS Crystal Resolution	10.01	N/A	10.09	N/A	N/A	N/A	%
LS Crystal Resolution	8.870	N/A	8.921	N/A	N/A	N/A	%
High resolution Integrated Logging Tool–DTS Wellsite Calibration – MCFL Calibration							
Before: 18–Aug–2011 8:17							
Raw B0 Resistivity	3875	N/A	3867	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3807	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3807	N/A	N/A	N/A	OHMM
High resolution Integrated Logging Tool–DTS Wellsite Calibration – HILT Caliper Calibration							
Before: 18–Aug–2011 8:16							
HILT Caliper Zero Measurement	8.000	N/A	8.655	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	12.93	N/A	N/A	N/A	IN
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Detector Calibration							
Before: 18–Aug–2011 8:12							
Gamma Ray Background	30.00	N/A	88.11	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkgd)	165.0	N/A	176.8	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Zero Measurement							
Master: 26–Jul–2011 8:44 Before: 18–Aug–2011 8:12							
CNTC Background	28.13	28.13	27.61	N/A	N/A	4.220	CPS
CFTC Background	25.95	25.95	26.05	N/A	N/A	3.893	CPS
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Ratio Measurement							
Master: 26–Jul–2011 8:44							
Thermal Near Corr. (Tank)	5800	4840	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2064	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.345	N/A	N/A	N/A	N/A	
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Accelerometer Calibration							
Before: 18–Aug–2011 12:05							
Z–Axis Acceleration	32.19	N/A	32.12	N/A	N/A	N/A	F/S2
The GLS–VJ source activity is acceptable.							
The HGNS Neutron Master Calibration was done with the following parameters :							
NCT–B Water Temperature	70.0	DEGF.					
Thermal Housing Size	3.372	IN.					
NSR–F serial number	5068						

Array Induction Tool – H / Equipment Identification			
Primary Equipment:			
Rm/SP Bottom Nose	AHRM – A		
Array Induction Sonde	AHIS – BA	392	
Auxiliary Equipment:			

Array Induction Tool – H Wellsite Calibration							
Electronics Calibration Check – Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Phase DEG	Nominal
0	Master	0.6160		0.6050	72.92		71.00
	Before	0.6167			72.77		
1	Master	1.259		1.270	71.80		70.00
	Before	1.261			71.66		









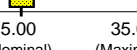
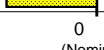
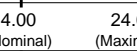

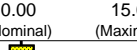

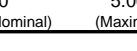

2	Master	0.6284			0.6230	68.05		66.00
	Before	0.6292				67.92		
3	Master	0.7102			0.7040	67.26		65.00
	Before	0.7111				67.13		
4	Master	1.323			1.337	60.95		59.00
	Before	1.325				60.85		
5	Master	1.928			1.955	59.03		57.00
	Before	1.930				58.94		
6	Master	1.926			1.955	59.04		57.00
	Before	1.929				58.95		
7	Master	1.373			1.415	55.31		53.00
	Before	1.377				55.35		
		60.00 %		140.0 %		Nom -60.00		Nom + 60.00
		(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)
Master: 19-Jul-2011 10:13					Before: 18-Aug-2011 8:14			

Array Induction Tool – H Wellsite Calibration							
Electronics Calibration Check – Auxilliary							
Phase	Array Induction SPA Plus MV		Value	Phase	Array Induction SPA Zero MV		Value
Master			992.9	Master			0.06050
Before			993.3	Before			0.04901
	941.0 (Minimum)	990.5 (Nominal)	1040 (Maximum)		-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
Phase	Array Induction Temperature Plus V		Value	Phase	Array Induction Temperature Zero V		Value
Master			0.9197	Master			7.260E-00
Before			0.9201	Before			5.808E-00
	0.8700 (Minimum)	0.9150 (Nominal)	0.9600 (Maximum)		-0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)
Master: 19-Jul-2011 10:13				Before: 18-Aug-2011 8:14			

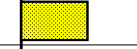





Array Induction Tool – H Wellsite Calibration					
Test Loop Gain Correction					
Idx	Value	Test Loop Gain Magnitude V		Value	Phase DEG
0	1.016			0.7501	
		0.9500	1.000	-3.000	0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
1	1.017			0.07848	
		0.9500	1.000	-3.000	0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
2	1.018			-0.1335	
		0.9500	1.000	-3.000	0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
3	1.012			0.03423	
		0.9500	1.000	-3.000	0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
4	0.9978			-0.02399	
		0.9500	1.000	-3.000	0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
5	0.9906			-0.2467	
		0.9500	1.000	-3.000	0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
6	0.9977			0.1205	
		0.9500	1.000	-3.000	0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
7	0.9981			-0.4226	
		0.9500	1.000	-3.000	0
		(Minimum)	(Nominal)	(Minimum)	(Nominal)
Master: 19-Jul-2011 10:13					

Array Induction Tool – H Wellsite Calibration					
---	--	--	--	--	--

Array Induction Tool – H Wellsite Calibration

Sonde Error Correction							
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M	
0	-72.68				-592.4		
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal) 2250 (Maximum)
1	191.9				-69.72		
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal) 625.0 (Maximum)
2	108.4				-129.5		
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal) 350.0 (Maximum)
3	66.62				118.6		
		39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)		-250.0 (Minimum)	0 (Nominal) 250.0 (Maximum)
4	25.79				-36.24		
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal) 63.00 (Maximum)
5	14.04				6.216		
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal) 50.00 (Maximum)
6	9.981				-9.419		
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal) 30.00 (Maximum)
7	-0.1971				-5.815		
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal) 30.00 (Maximum)
Master: 19-Jul-2011 10:13							

Master: 19-Jul-2011 10:13

Array Induction Tool – H Wellsite Calibration							
Mud Gain Correction							
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag	
0	1.088				1.087		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
1	1.088				1.087		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
2	1.088				1.087		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
Master: 19–Jul–2011 10:13							

Master: 19-Jul-2011 10:13

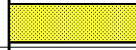
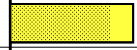


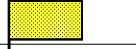
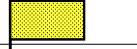
Powered Positioning Device/Caliper 1 / Equipment Identification



Primary Equipment:

PPC Powered Positioning Device/Caliper
PPC1 Caliper Standard

PPC1 – B
PPC_ –

Auxiliary Equipment:

Powered Positioning Device/Caliper 1 Wellsite Calibration					
PPC1 Caliper Calibration					
Phase	PPC1 Radius 1 Raw Small Radius IN	Value	Phase	PPC1 Radius 1 Raw Large Radius IN	Value
Before		5.269	Before		9.338
	1.200 (Minimum)			6.100 (Minimum)	
	3.500 (Nominal)			8.000 (Nominal)	
	5.600 (Maximum)			9.700 (Maximum)	
Phase	PPC1 Radius 2 Raw Small Radius IN	Value	Phase	PPC1 Radius 2 Raw Large Radius IN	Value
Before		3.463	Before		7.775
	1.200 (Minimum)			6.100 (Minimum)	
	3.500 (Nominal)			8.000 (Nominal)	
	5.600 (Maximum)			9.700 (Maximum)	
Phase	PPC1 Radius 3 Raw Small Radius IN	Value	Phase	PPC1 Radius 3 Raw Large Radius IN	Value
Before		4.477	Before		8.810
	1.200 (Minimum)			6.100 (Minimum)	
	3.500 (Nominal)			8.000 (Nominal)	
	5.600 (Maximum)			9.700 (Maximum)	

Phase PPC1 Radius 4 Raw Small Radius IN			Value	Phase PPC1 Radius 4 Raw Large Radius IN			Value
Before			3.064	Before			7.562
1.200 (Minimum)				6.100 (Minimum)			
3.500 (Nominal)				8.000 (Nominal)			
5.600 (Maximum)				9.700 (Maximum)			

Before: 8-Aug-2011 14:14

Multimode Array Sonic Power Cartridge / Equipment Identification

Primary Equipment:

Multimode Array Sonic Minimum Service So
Multimode Array Sonic Control Cartridge

MAMS – BA
MAPC – BA

Auxiliary Equipment:

Electronics Cartridge Housing

ECH – SF

High resolution Integrated Logging Tool–DTS / Equipment Identification

Primary Equipment:

HILT high–Resolution Mechanical Sonde
HILT Rxo Gamma–ray Device
HILT Micro Cylindrically Focused Log Dev
GR Logging Source
HILT High Res. Control Cartridge
HILT Gamma–Ray Neutron Sonde–DTS
HGNS Gamma–Ray Device
HGNS Neutron Detector with Alpha Source

HRMS – B 3841
HRGD – B 1748
MCFL –
GLS – VJ 5094
HRCC – B 3869
HGNS – B
HGR –
HCNT –

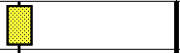
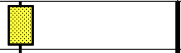
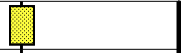



Auxiliary Equipment:

Neutron Calibration Tank
Gamma Source Radioactive
HGNS Housing

NCT – B
GSR – U/Y
HGNH –

High resolution Integrated Logging Tool–DTS Wellsite Calibration




Stab Measurement Summary

Phase	BS Window Ratio		Value	Phase	SS Window Ratio		Value	Phase	LS Window Ratio		Value
Before			0.7290	Before			0.4785	Before			0.2886
	0.6914 (Minimum)	0.7278 (Nominal)	0.7642 (Maximum)		0.4537 (Minimum)	0.4775 (Nominal)	0.5014 (Maximum)		0.2781 (Minimum)	0.2927 (Nominal)	0.3073 (Maximum)
Phase	BS Window Sum CPS		Value	Phase	SS Window Sum CPS		Value	Phase	LS Window Sum CPS		Value
Before			9473	Before			9380	Before			1037
	9000 (Minimum)	9473 (Nominal)	9947 (Maximum)		8928 (Minimum)	9398 (Nominal)	9868 (Maximum)		987.9 (Minimum)	1040 (Nominal)	1092 (Maximum)

Before: 18-Aug-2011 8:14

High resolution Integrated Logging Tool–DTS Wellsite Calibration

Photo–multiplier High Voltages Calibrations

Phase	BS PM High Voltage (Command) V		Value	Phase	SS PM High Voltage (Command) V		Value	Phase	LS PM High Voltage (Command) V		Value
Before			1658	Before			1434	Before			1533
	1564 (Minimum)	1664 (Nominal)	1764 (Maximum)		1326 (Minimum)	1426 (Nominal)	1526 (Maximum)		1430 (Minimum)	1530 (Nominal)	1630 (Maximum)

Before: 18-Aug-2011 8:14

High resolution Integrated Logging Tool–DTS Wellsite Calibration




Crystal Quality Resolutions Calibration



Phase	BS Crystal Resolution %		Value	Phase	SS Crystal Resolution %		Value	Phase	LS Crystal Resolution %		Value
Before			11.53	Before			10.09	Before			8.921
	10.56 (Minimum)	11.56 (Nominal)	12.56 (Maximum)		9.007 (Minimum)	10.01 (Nominal)	11.01 (Maximum)		7.870 (Minimum)	8.870 (Nominal)	9.870 (Maximum)


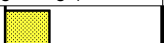
Before: 18-Aug-2011 8:14

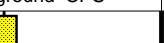
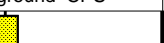


High resolution Integrated Logging Tool–DTS Wellsite Calibration



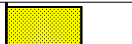
MCFL Calibration


Phase	Raw B0 Resistivity OHMM		Value	Phase	Raw B1 Resistivity OHMM		Value	Phase	Raw B2 Resistivity OHMM		Value
Before			3867	Before			3807	Before			3807
	3565 (Minimum)	3875 (Nominal)	4185 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)

High resolution Integrated Logging Tool-DTS Wellsite Calibration							
HILT Caliper Calibration							
Phase	HILT Caliper Zero Measurement IN		Value	Phase	HILT Caliper Plus Measurement IN		Value
Before			8.655	Before			12.93
	6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)		9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)
Before: 18-Aug-2011 8:16							

High resolution Integrated Logging Tool-DTS Wellsite Calibration							
Detector Calibration							
Phase	Gamma Ray Background GAPI		Value	Phase	Gamma Ray (Jig – Bkgd) GAPI		Value
Before			88.11	Before			176.8
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		157.1 (Minimum)	165.0 (Nominal)	206.3 (Maximum)
Before: 18-Aug-2011 8:12							

High resolution Integrated Logging Tool-DTS Wellsite Calibration									
Zero Measurement									
Phase	CNTC Background CPS			Value	Phase	CFTC Background CPS			Value
Master				28.13	Master				25.95
Before				27.61	Before				26.05
5.000 (Minimum)28.13 (Nominal)40.00 (Maximum)					5.000 (Minimum)25.95 (Nominal)40.00 (Maximum)				
Master: 26-Jul-2011 8:44					Before: 18-Aug-2011 8:12				

High resolution Integrated Logging Tool-DTS Wellsite Calibration														
Ratio Measurement														
Phase	Thermal Near Corr. (Tank) CPS			Value	Phase	Thermal Far Corr. (Tank) CPS			Value	Phase	CNTC/CFTC (Tank)			Value
Master				4840	Master				2064	Master				2.345
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)		1900 (Minimum)	2400 (Nominal)	2900 (Maximum)			2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)		
Master: 26-Jul-2011 8:44														

High resolution Integrated Logging Tool-DTS Wellsite Calibration			
Accelerometer Calibration			
Phase	Z-Axis Acceleration F/S2	Value	
Before		32.12	
	31.53 (Minimum)	32.19 (Nominal)	32.84 (Maximum)

Before: 18-Aug-2011 12:05

DTS Telemetry Tool / Equipment Identification

Primary Equipment:

DTC-H Auxiliary Cartridge
DTC-H Telemetry Cartridge

DTCH - A
DTCH - A

Auxiliary Equipment:

DTCH Telemetry Cartridge Housing

ECH - KC

Well: Puritan 4-6-34
Field: Spindle
County: Weld
State: Colorado

Platform Express
Triple Combo