

DEPTH SUMMARY LISTING

Date Created: 1-DEC-2010 13:52:35

Depth System Equipment

Depth Measuring Device	Tension Device	Logging Cable
Type: IDW-B	Type: CMTD-B/A	Type: 7-46ZV XS
Serial Number: 6122	Serial Number: 2537	Serial Number: 2105
Calibration Date: 29-JUNE-2010	Calibration Date: 21-AUG-2010	Length: 13500 FT
Calibrator Serial Number: 33	Calibrator Serial Number: 1159	Conveyance Method: Wireline Rig Type: LAND
Calibration Cable Type: 7-46P	Number of Calibration Points: 10	
Wheel Correction 1: -5	Calibration RMS: 64	
Wheel Correction 2: -4	Calibration Peak Error: 33	

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	320.80 FT
Rig Up Length At Bottom:	320.50 FT
Rig Up Length Correction:	0.30 FT
Stretch Correction:	7.00 FT
Tool Zero Check At Surface:	1.40 FT

Depth Control Remarks

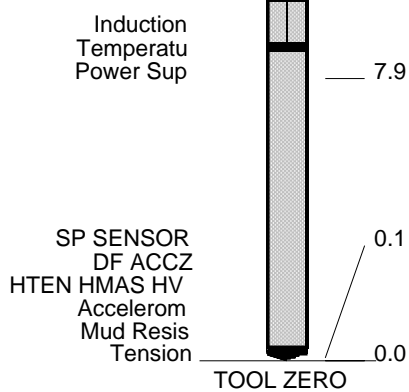
1. ALL SCHLUMBERGER DEPTH CONTROL POLICIES FOLLOWED
2. IDW USED AS PRIMARY DEPTH REFERENCE, Z-CHART USED AS SECONDARY
3.
4.
5.
6.

DISCLAIMER

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

OTHER SERVICES1	OTHER SERVICES2
OS1: FMI	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
TOOL RUN AS PER TOOL SKETCH	
0.125 IN WEAR RINGS ON HGNS	
STANDOFF CORRECTION APPLIED	
1.5 IN STANDOFFS ON AIT	
MATRIX: SANDSTONE	
MATRIX DENSITY: 2.68	
MAXIMUM HOI F DEVIATION REPORTED OBTAINED FROM CLIENT	

HAIT-H
AHIS-BA 392
AHRM-A



MAXIMUM STRING DIAMETER 4.63 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET



GAMMA RAY TO SURFACE

MAXIS Field Log

Company: ANTERO RESOURCES Well: MAVES A1

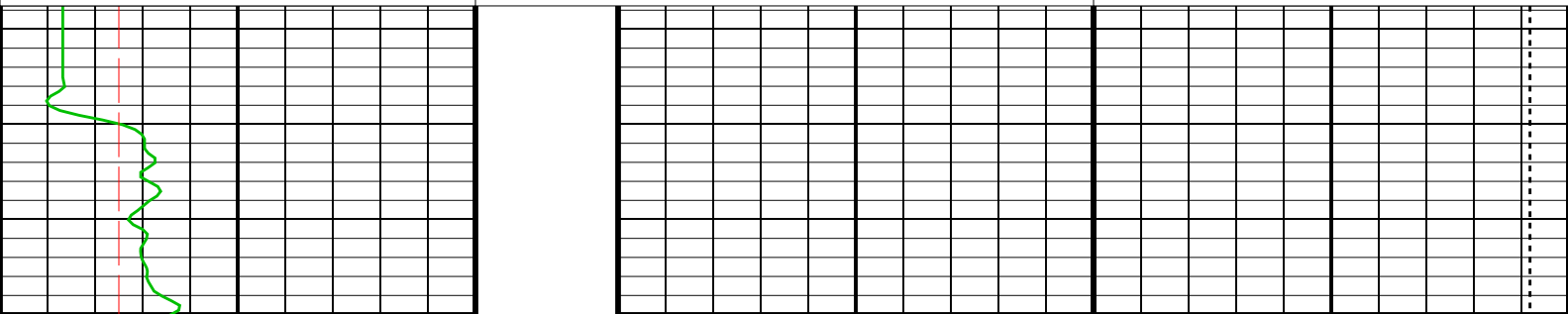
Input DLIS Files

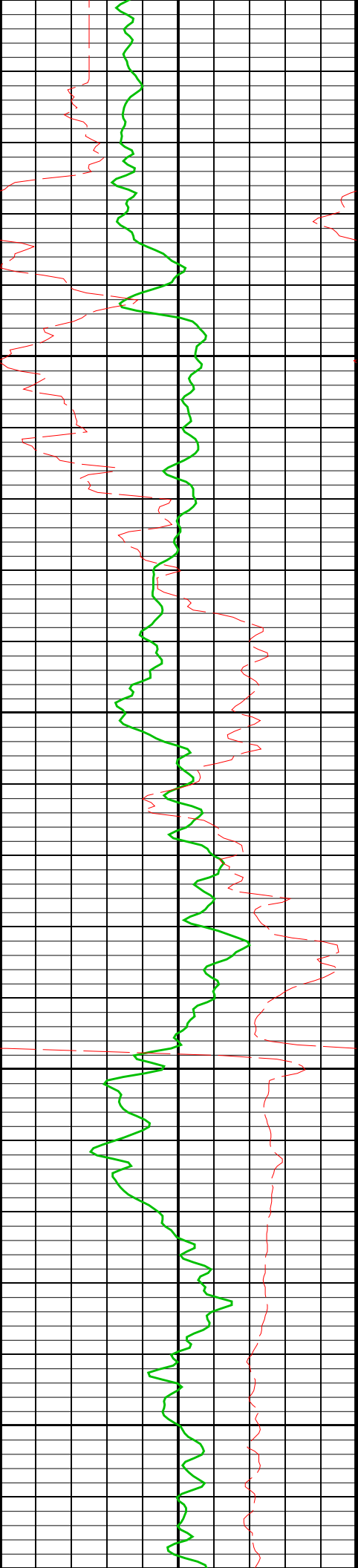
DEFAULT AIT_TLD_MCFL_CNL_011LUP FN:13 PRODUCER 05-Sep-2010 11:27 5628.0 FT 16.0 FT

OP System Version: 17C0-154

HAIT 17C0-154 HILTHD 17C0-154
EDTCB SRPC-3870_Q3_2009_OP17_V3_b

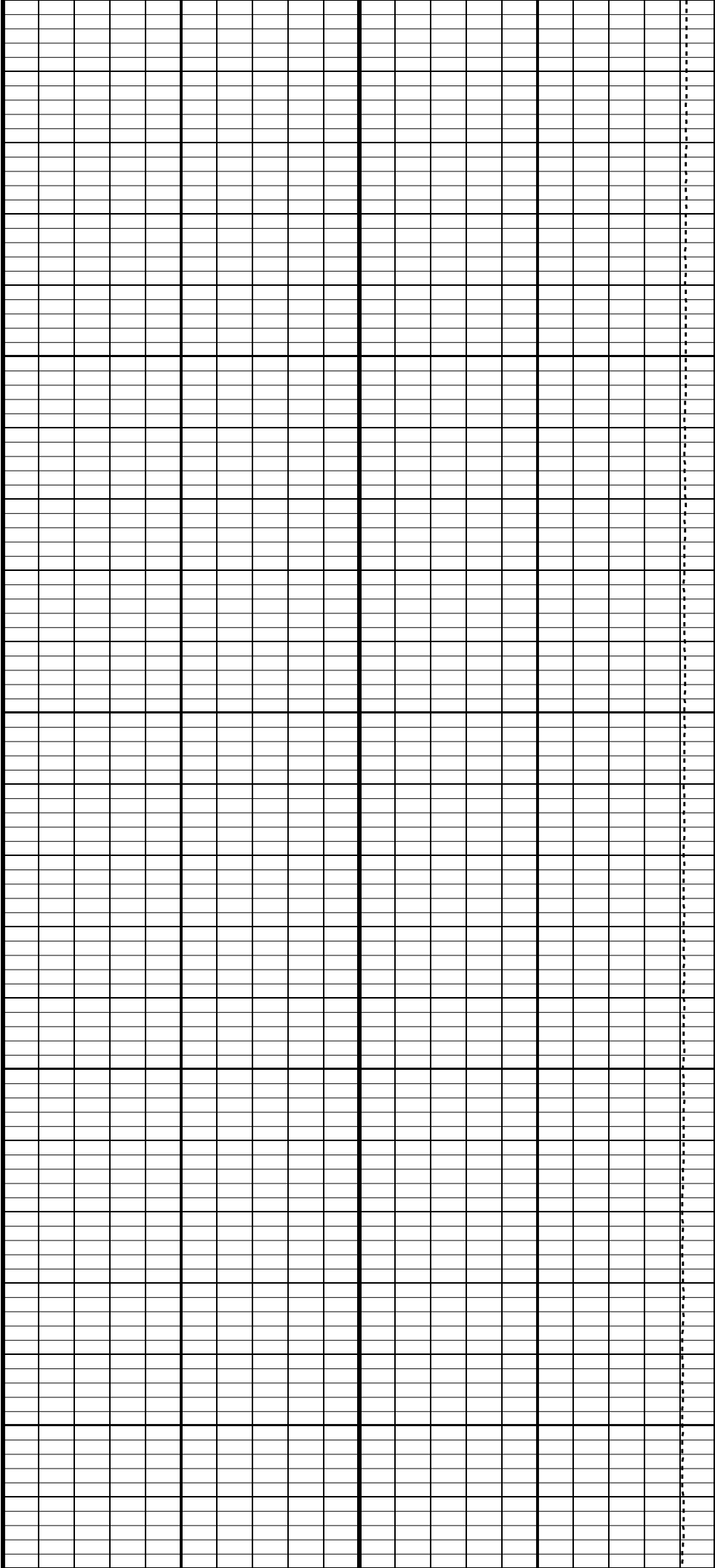
Gamma Ray (GR)				Tension (TENS)	
0	(GAPI)	150			10000
				(LBF)	
-80	SP (SP)	20			0

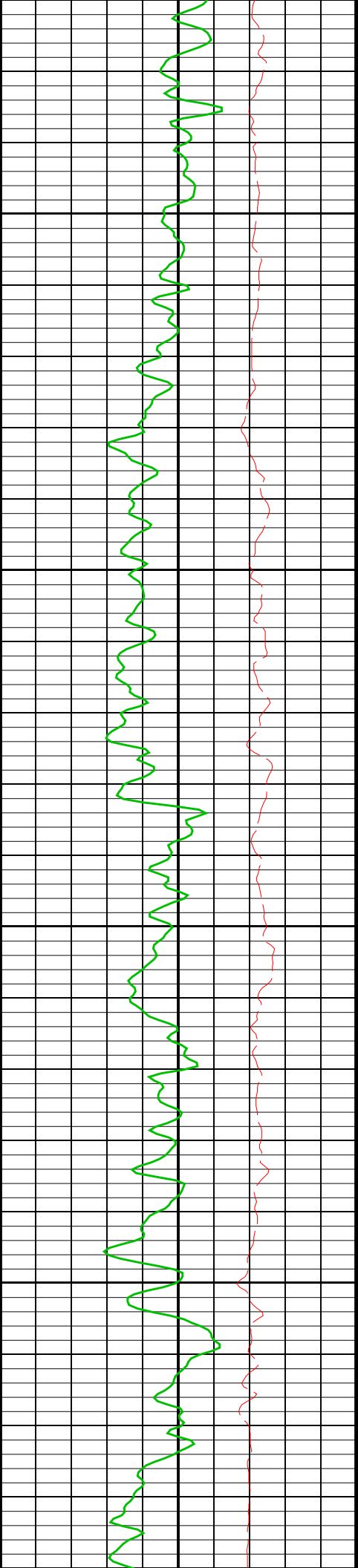




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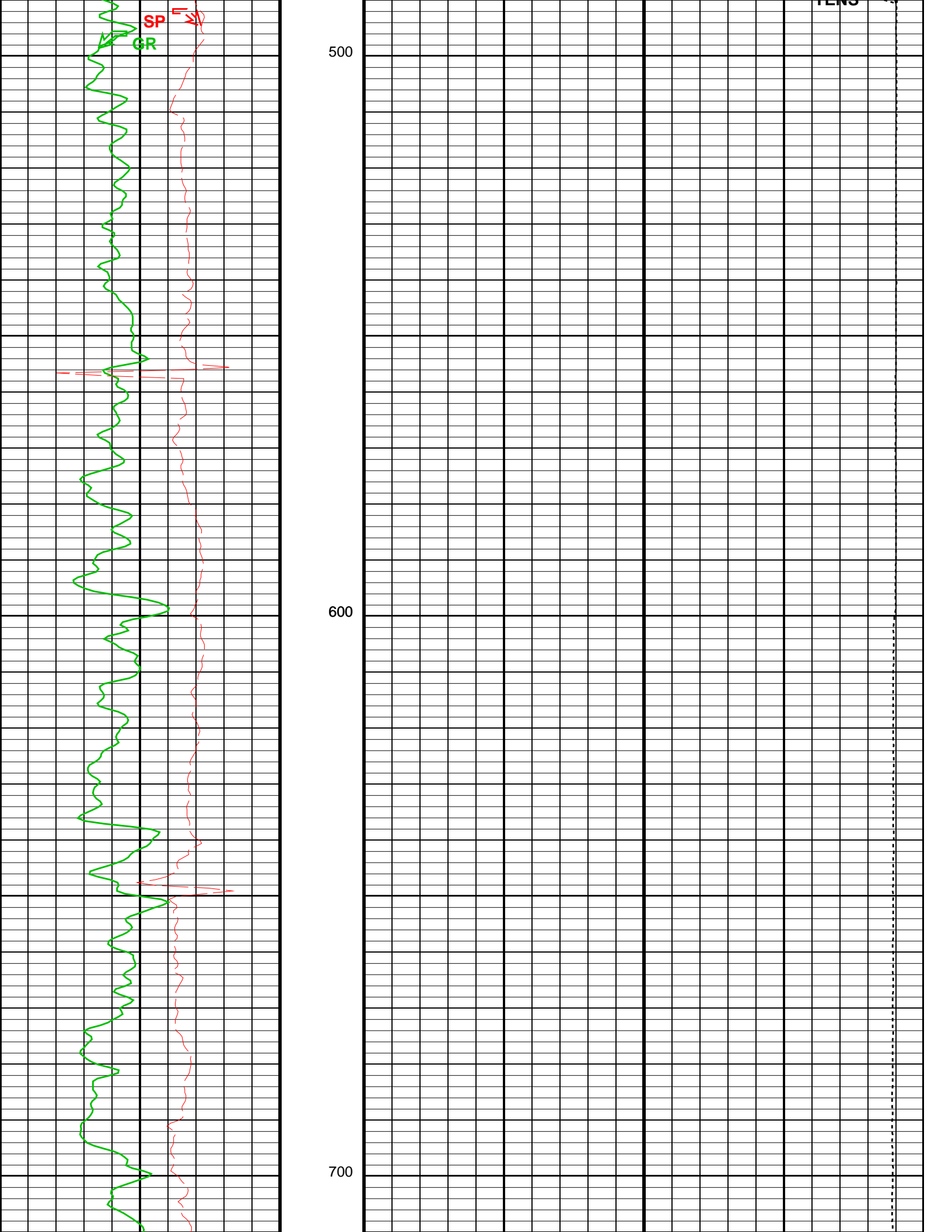
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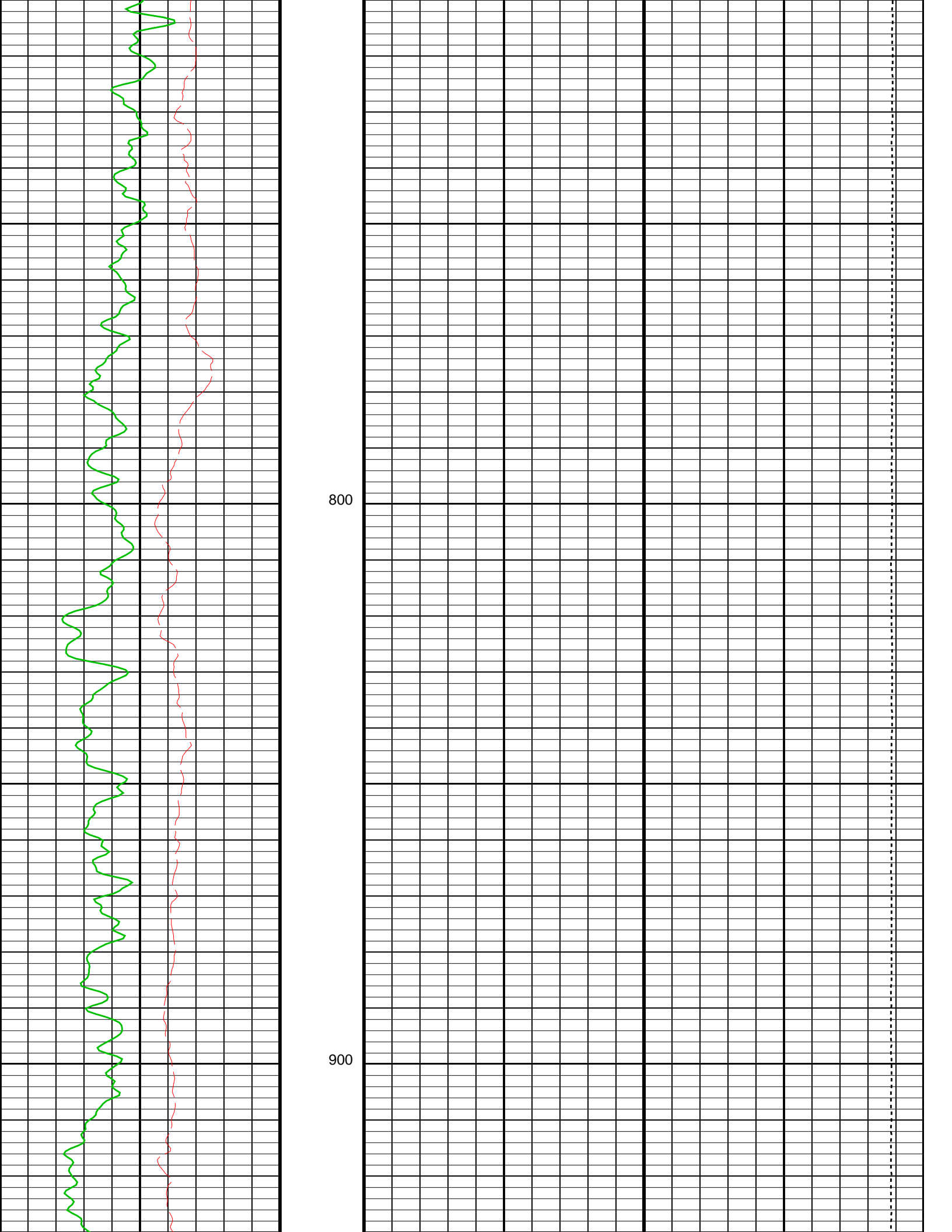


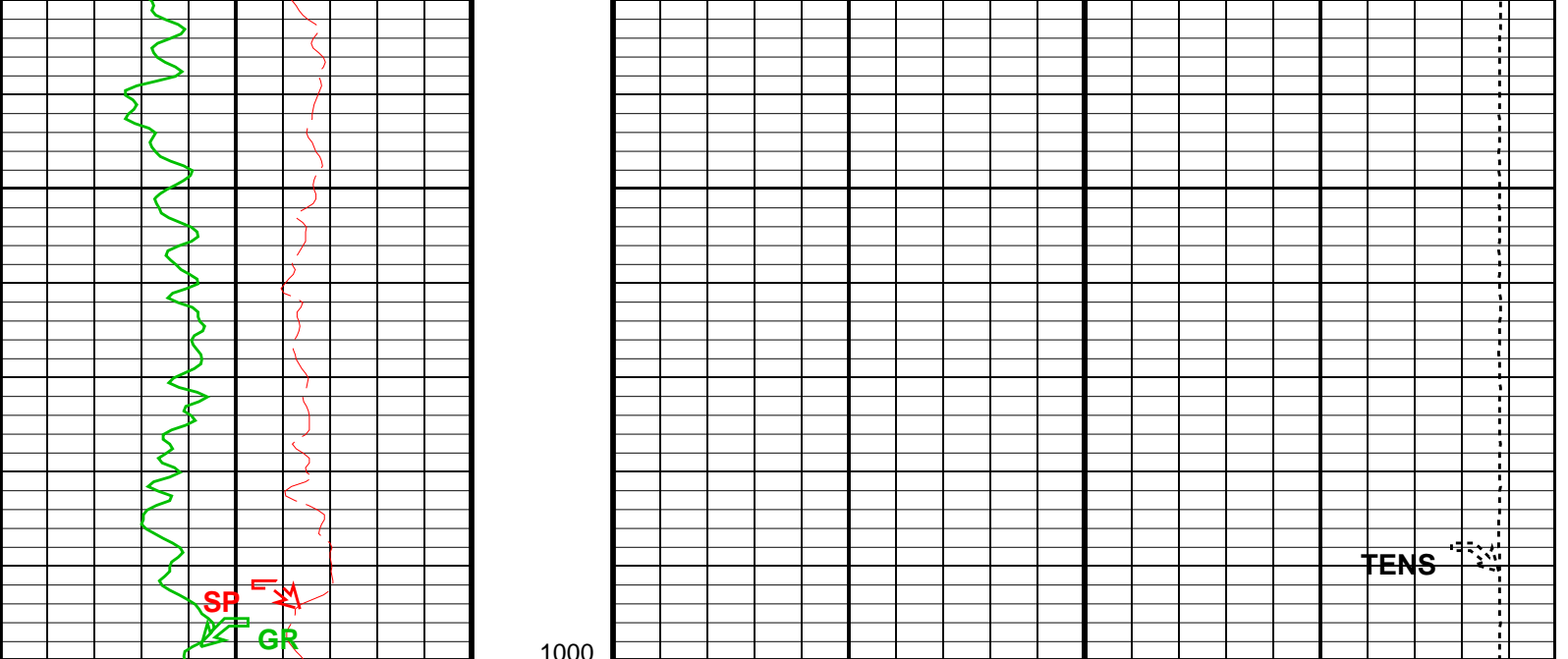


300

400







-80	SP (SP) (MV)	20
0	Gamma Ray (GR) (GAPI)	150

1000

10000	Tension (TENS) (LBF)	0
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Parameters

DLIS Name	Description	Value
DO	HAIT-H: Array Induction Tool - H Depth Offset	1.0 ft
SPDR	SP Drift	0.000 mV/ft
SPNV	SP Next Value	0.000 mV
DO	HILTH-FTB: High resolution Integrated Logging Tool-DTS Depth Offset	1.0 ft
DO	EDTC-B: Enhanced DTS Cartridge Depth Offset	1.0 ft
DO	HOLEV: Integrated Hole/Cement Volume Depth Offset	1.0 ft
DO	STI: Stuck Tool Indicator Depth Offset	1.0 ft
DO	System and Miscellaneous Depth Offset	1.0 ft

Format: CORRELATION Vertical Scale: 5" per 100' Graphics File Created: 05-Sep-2010 13:03

OP System Version: 17C0-154

HAIT	17C0-154	HILTHD	17C0-154
EDTCB	SRPC-3870_Q3_2009_OP17_V3_b		

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_011LUP	FN:13	PRODUCER	05-Sep-2010 11:27	5628.0 FT	0.0 FT
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MAIN PASS

Input DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_011LUP FN:13 PRODUCER 05-Sep-2010 11:27 5628.0 FT 0.0 FT

Output DLIS Files

HAIT .020 FN:17 05-Sep-2010 12:58 5628.0 FT 976.0 FT

Integrated Hole/Cement Volume Summary

Hole Volume = 1760.80 ft³
 Cement Volume = 1251.30 ft³ (assuming 4.50 in casing O.D.)
 Computed from 5621.5 ft to 1009.0 ft

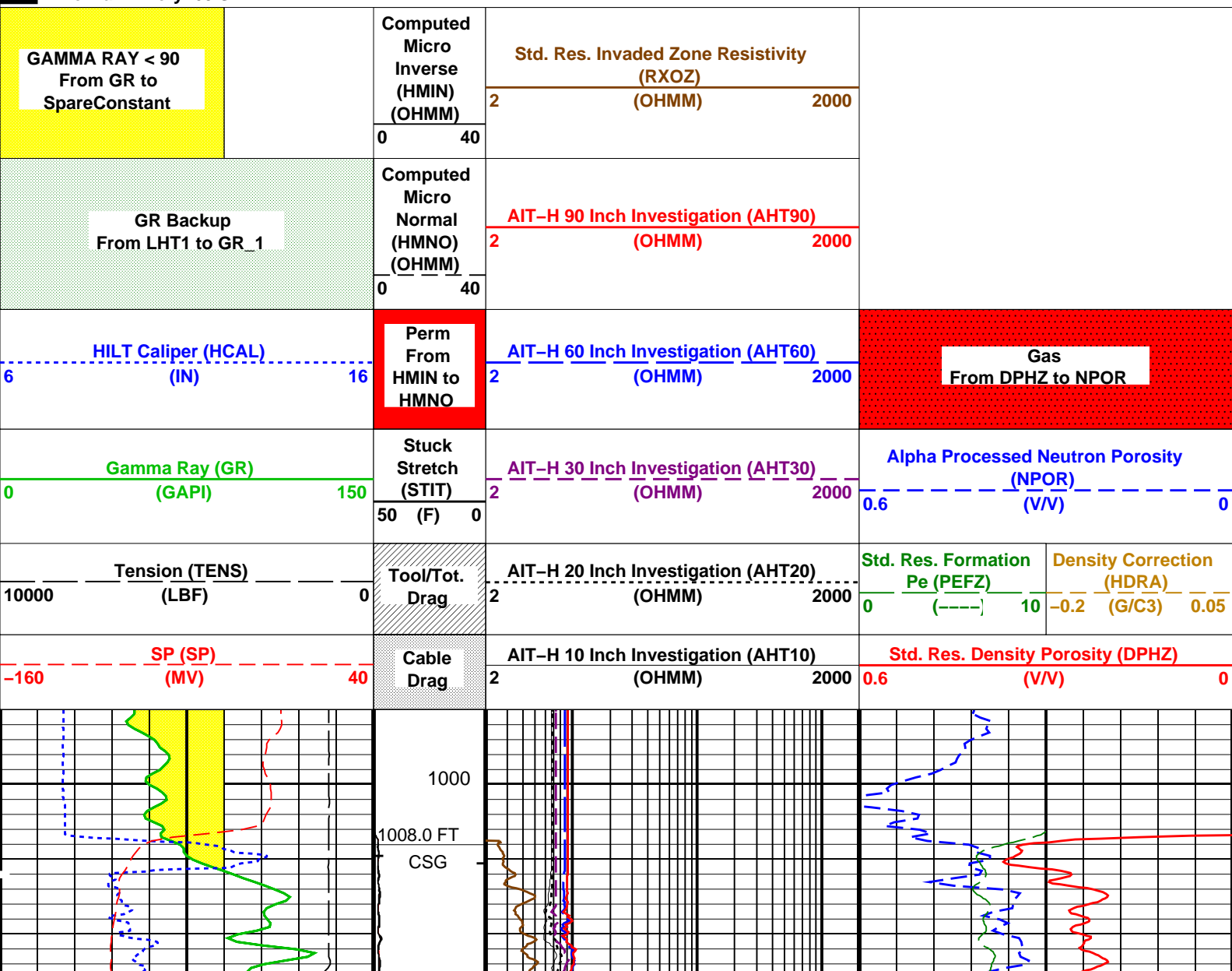
OP System Version: 17C0-154

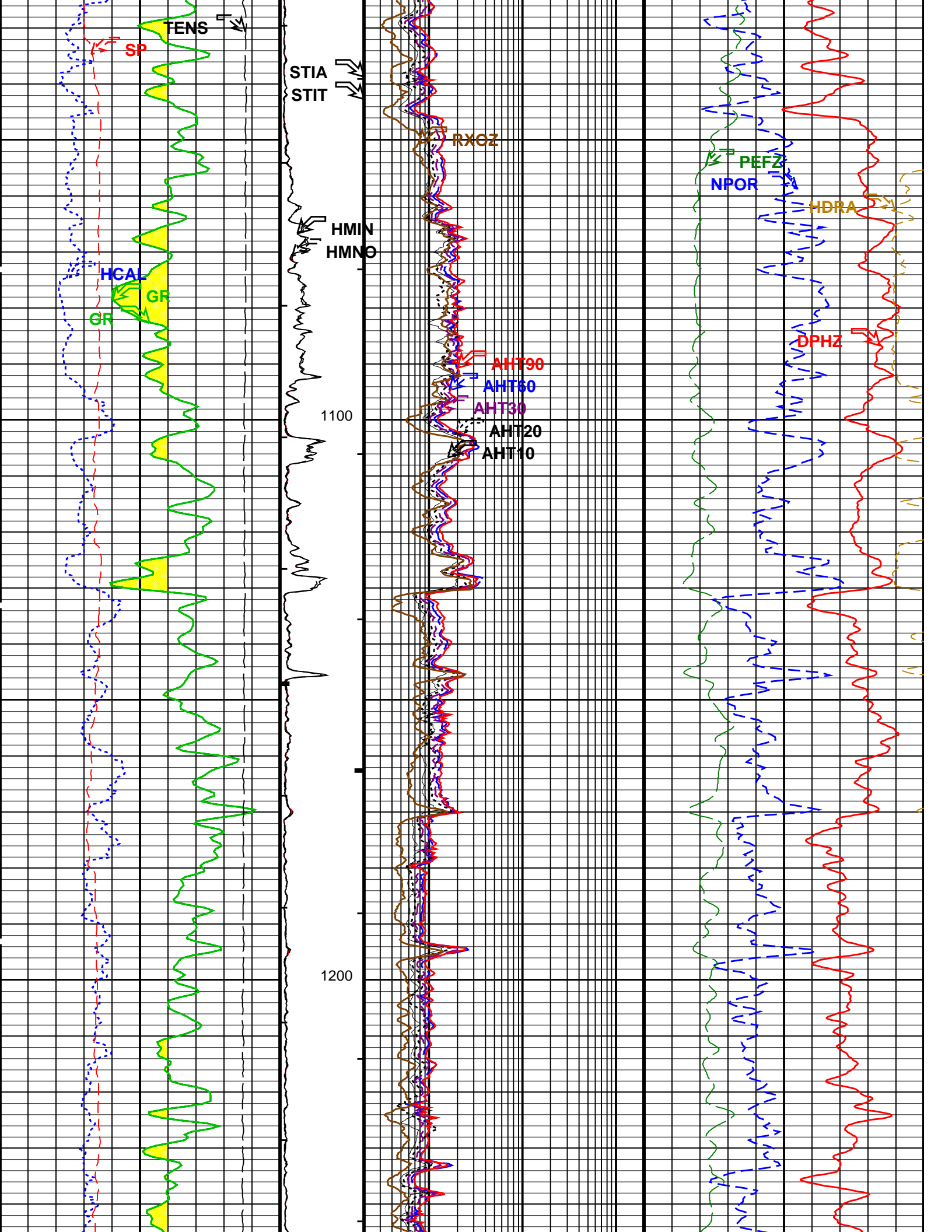
HAIT 17C0-154 HILTHD 17C0-154
 EDTCB SRPC-3870_Q3_2009_OP17_V3_b

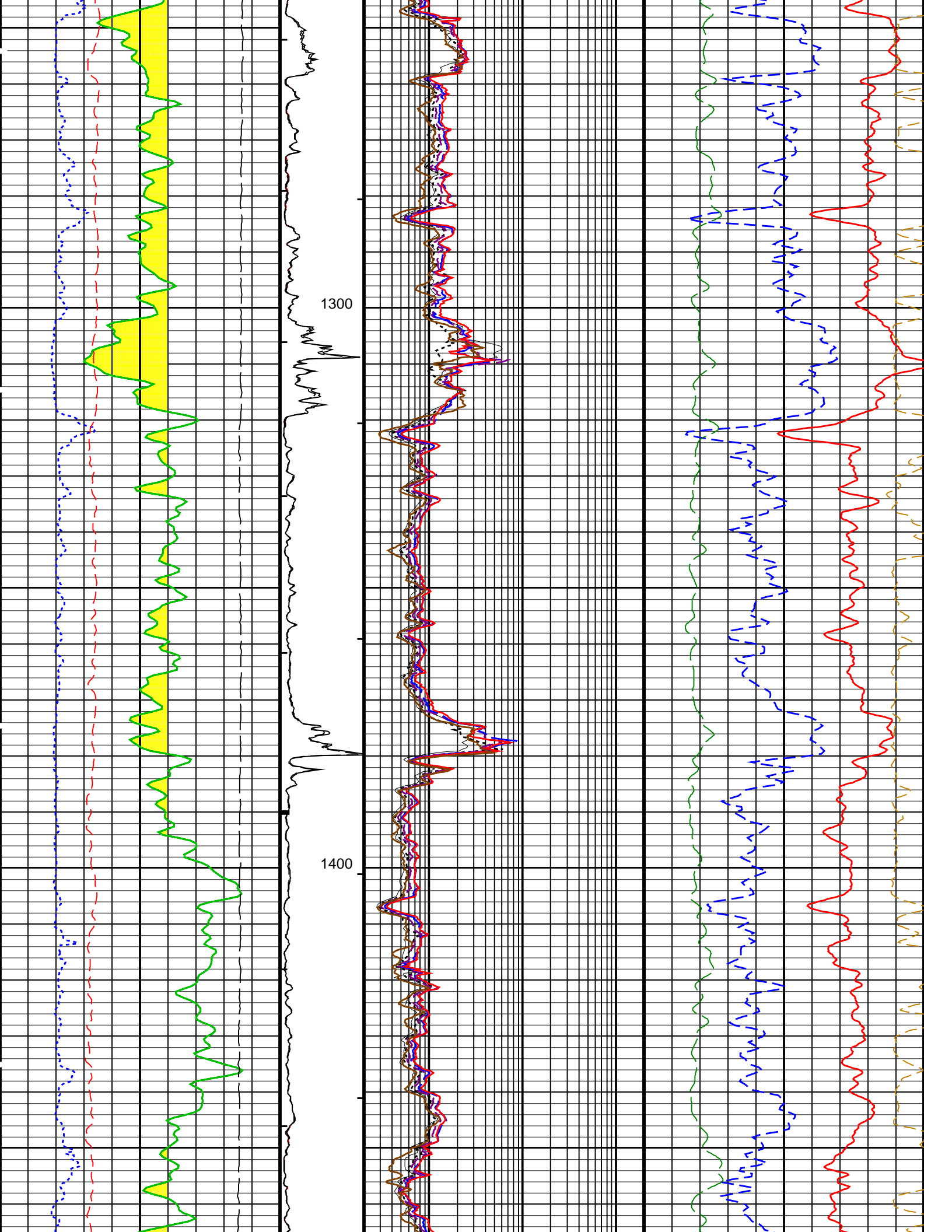
PIP SUMMARY

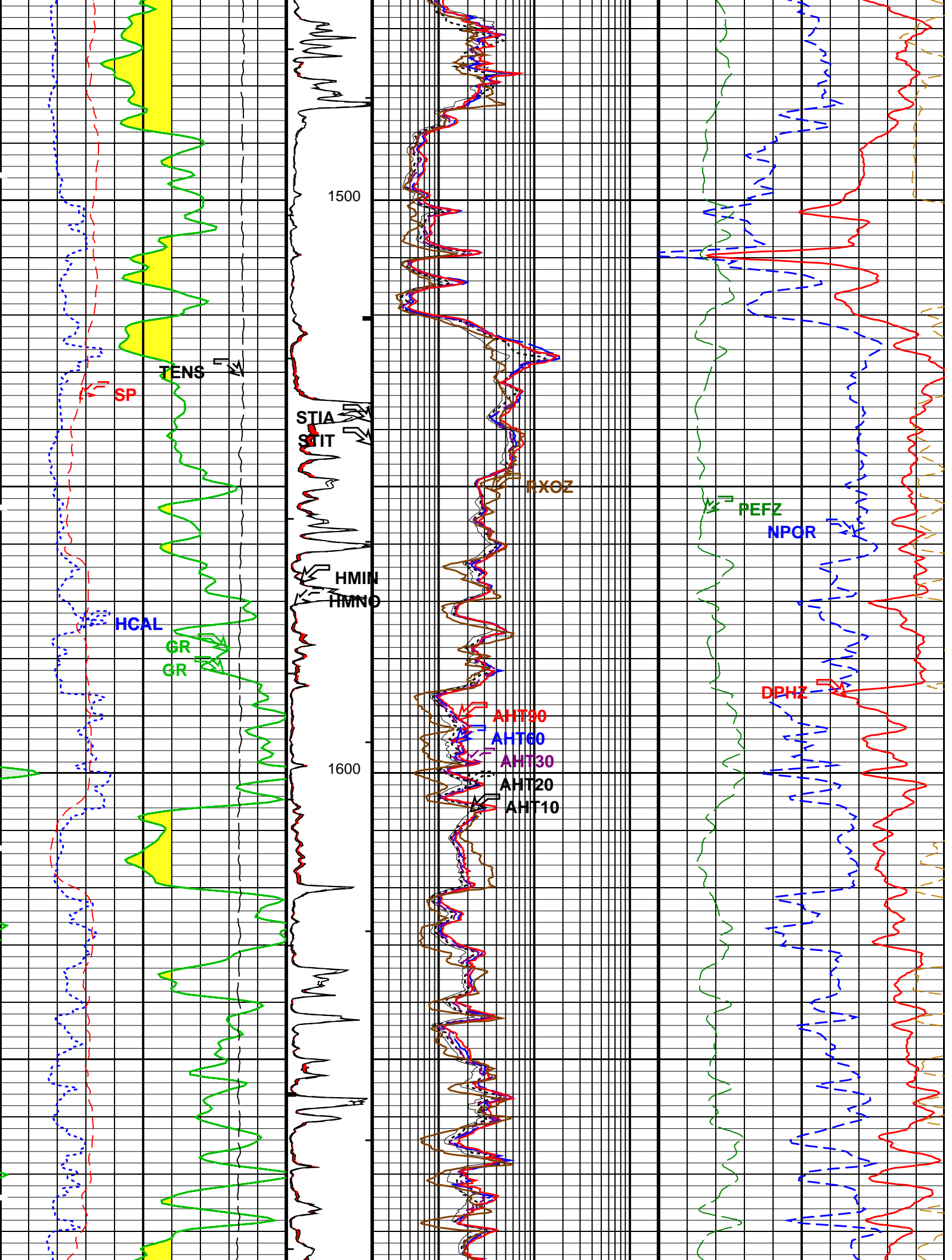
- ┆ Integrated Hole Volume Minor Pip Every 10 F3
- ┆ Integrated Hole Volume Major Pip Every 100 F3
- ┆ Integrated Cement Volume Minor Pip Every 10 F3
- ┆ Integrated Cement Volume Major Pip Every 100 F3

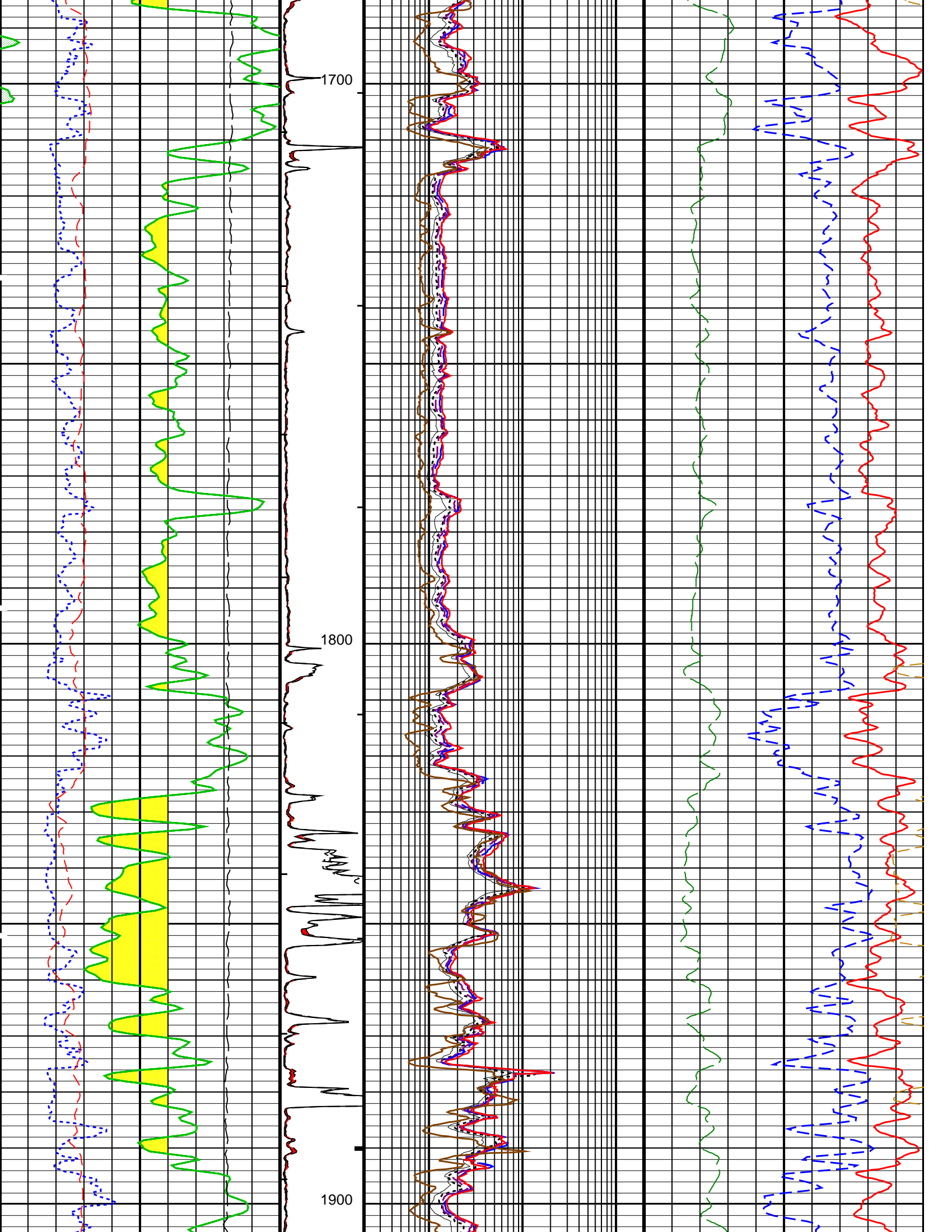
Time Mark Every 60 S

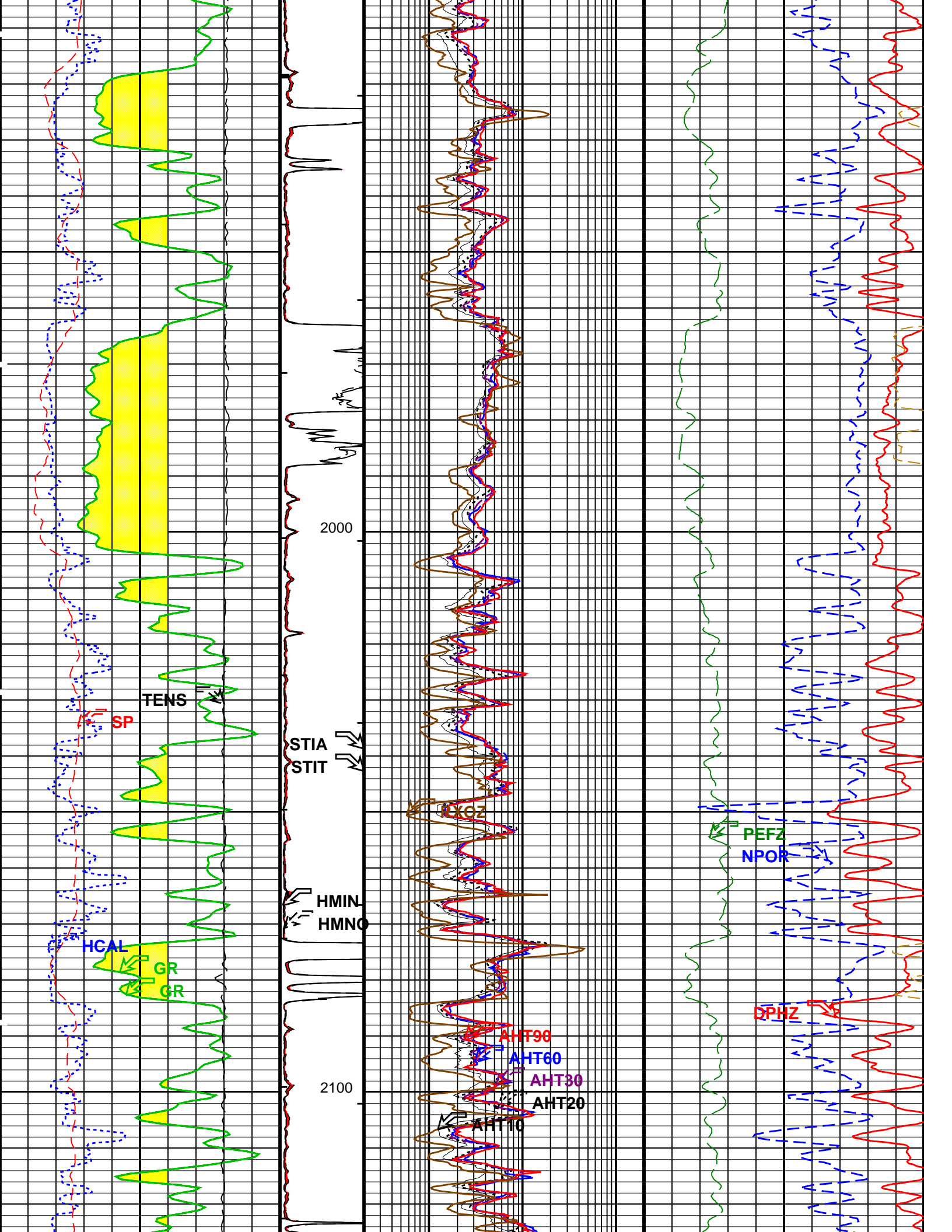


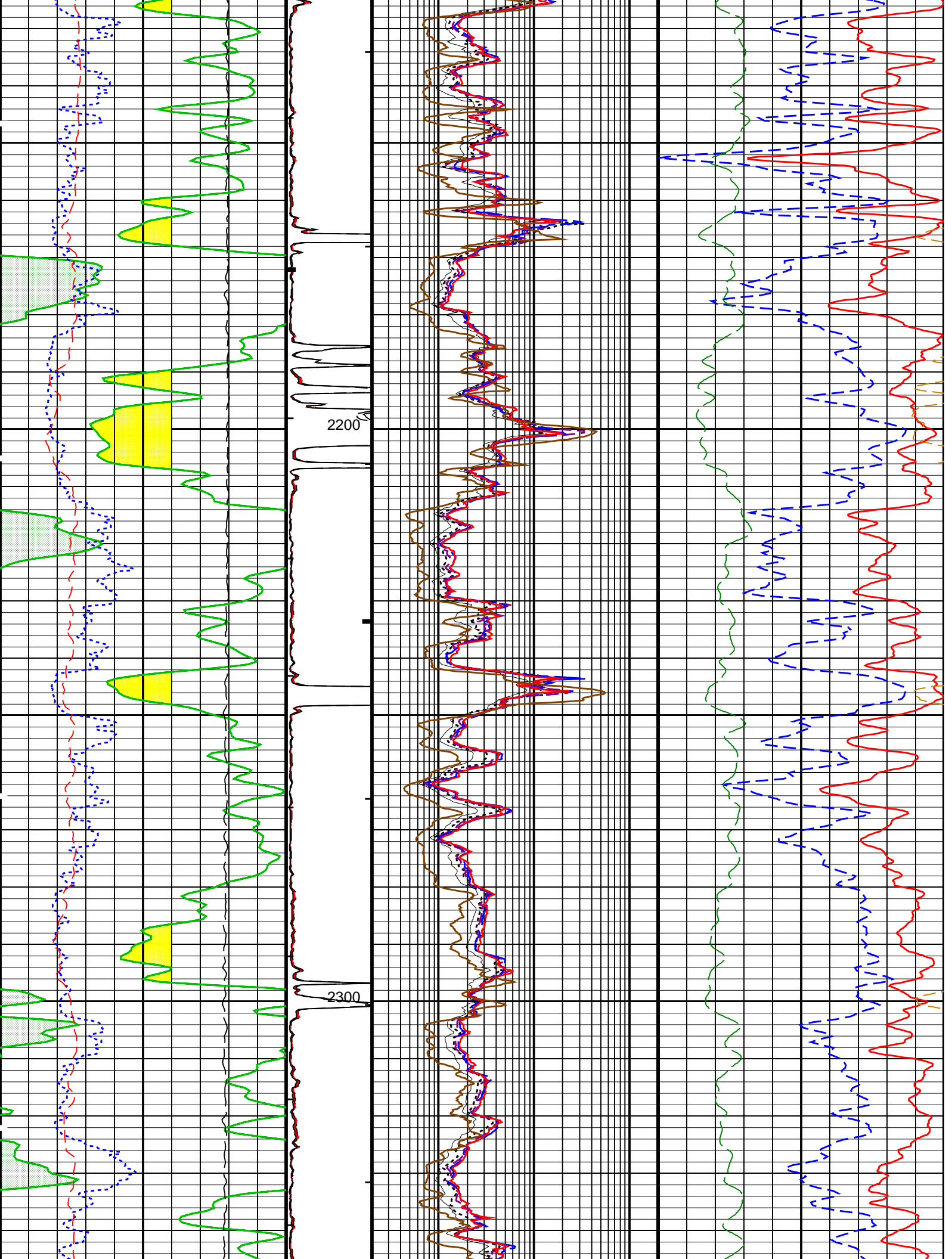


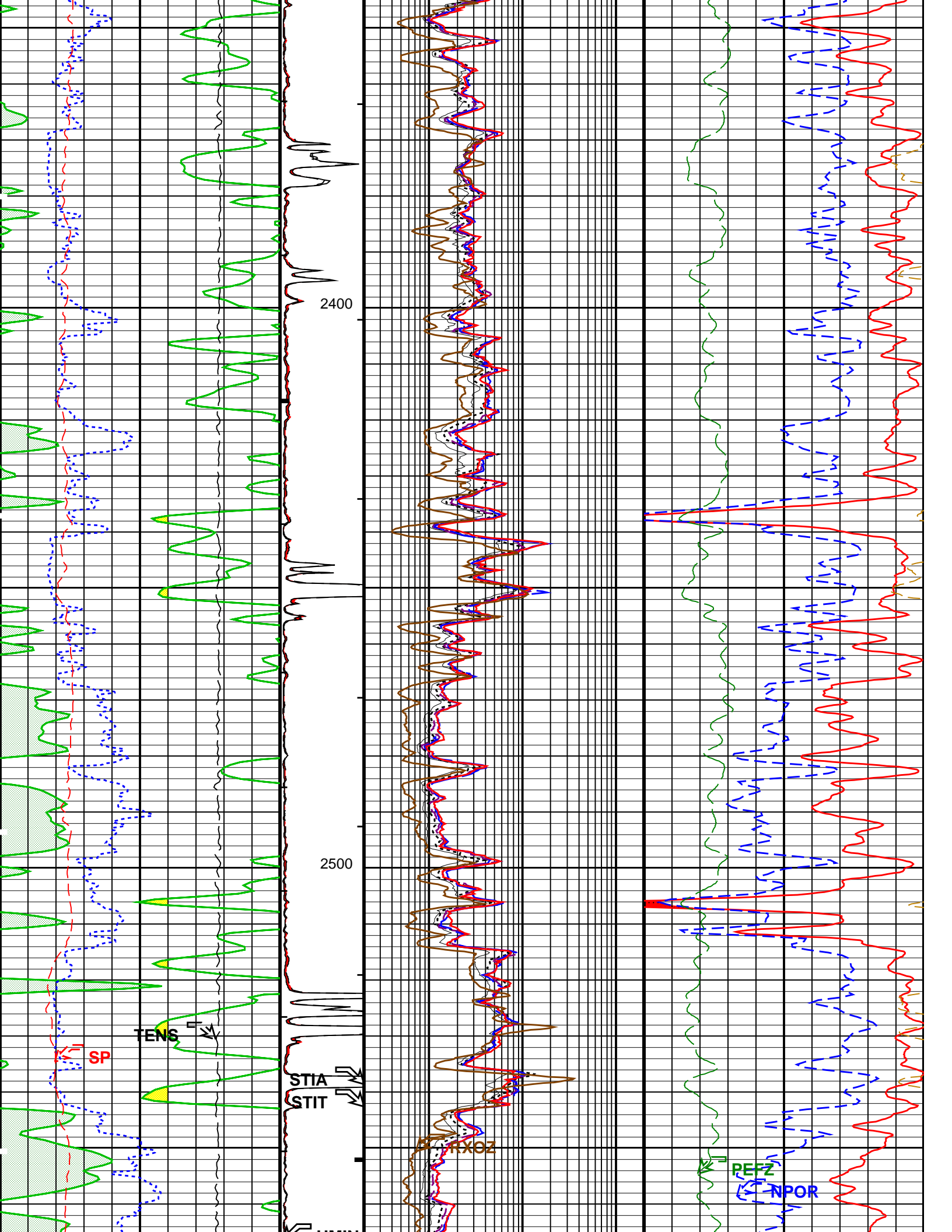


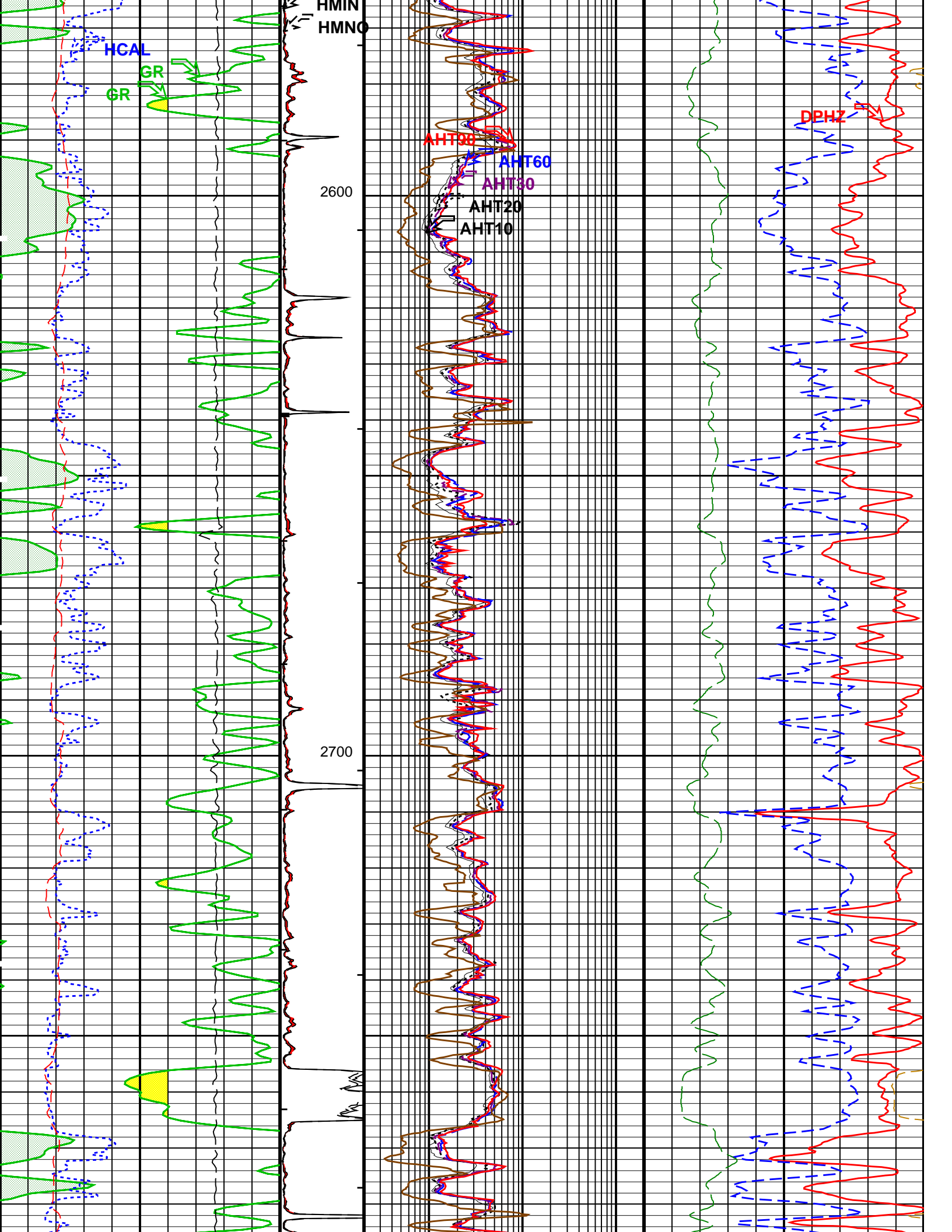


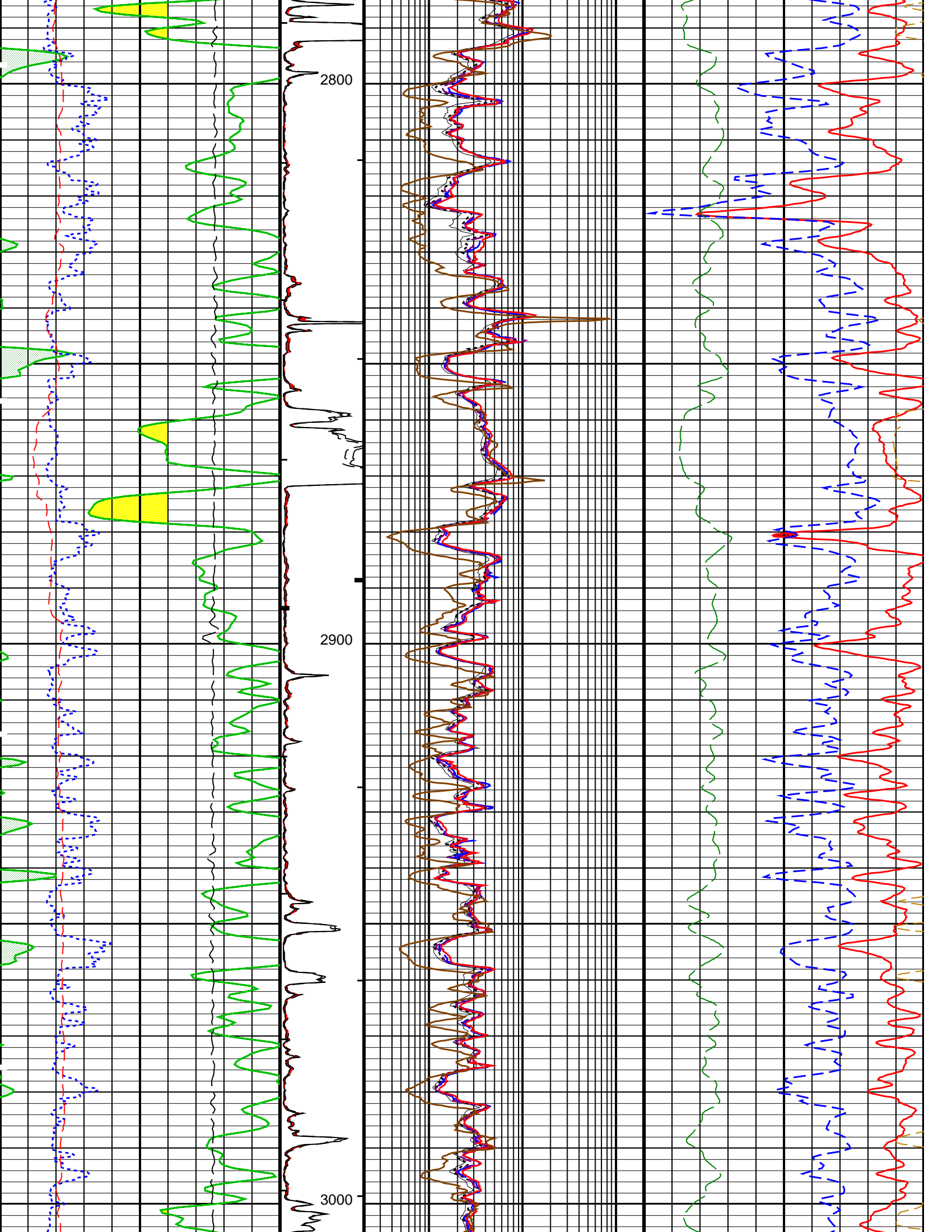


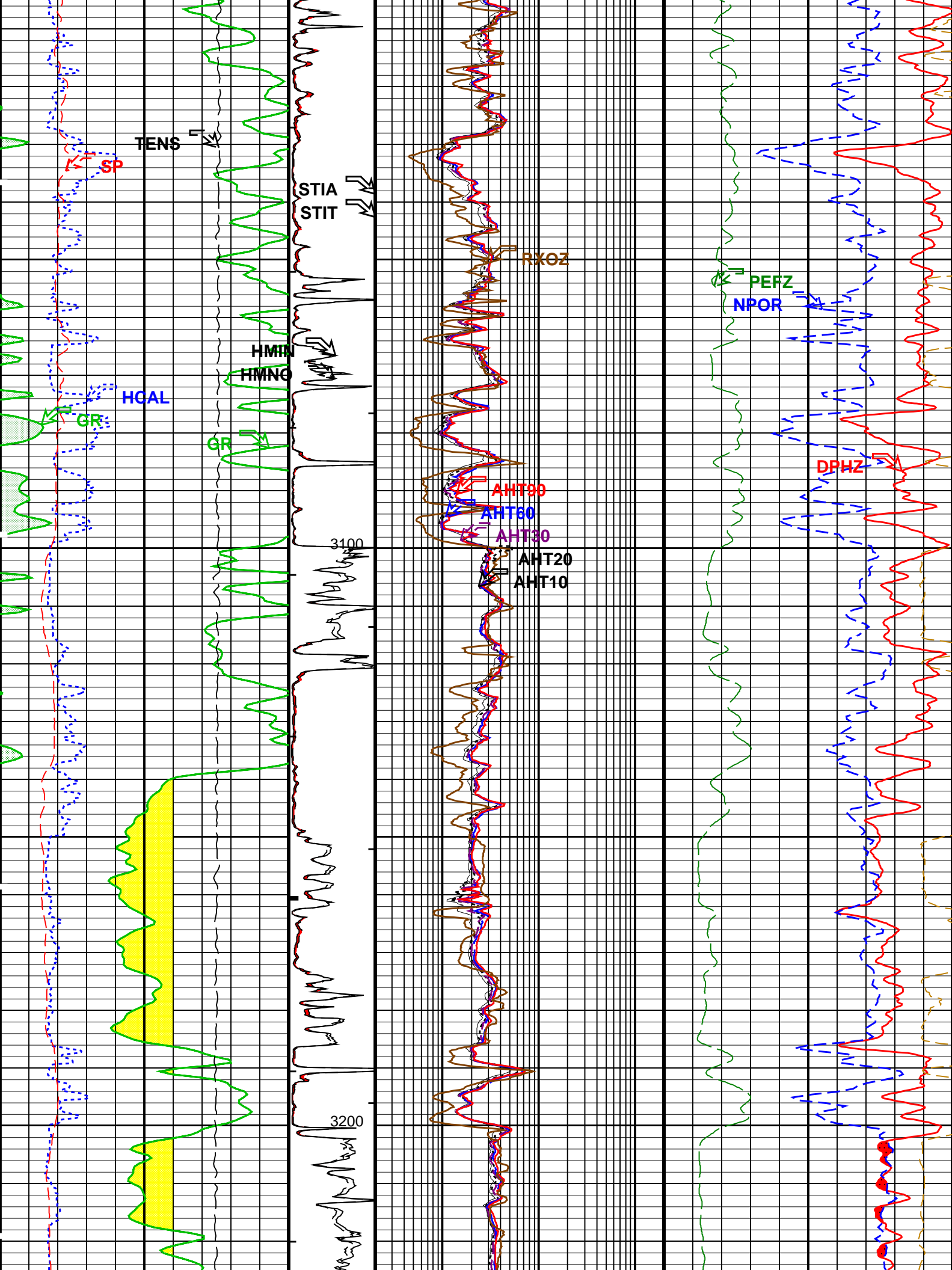


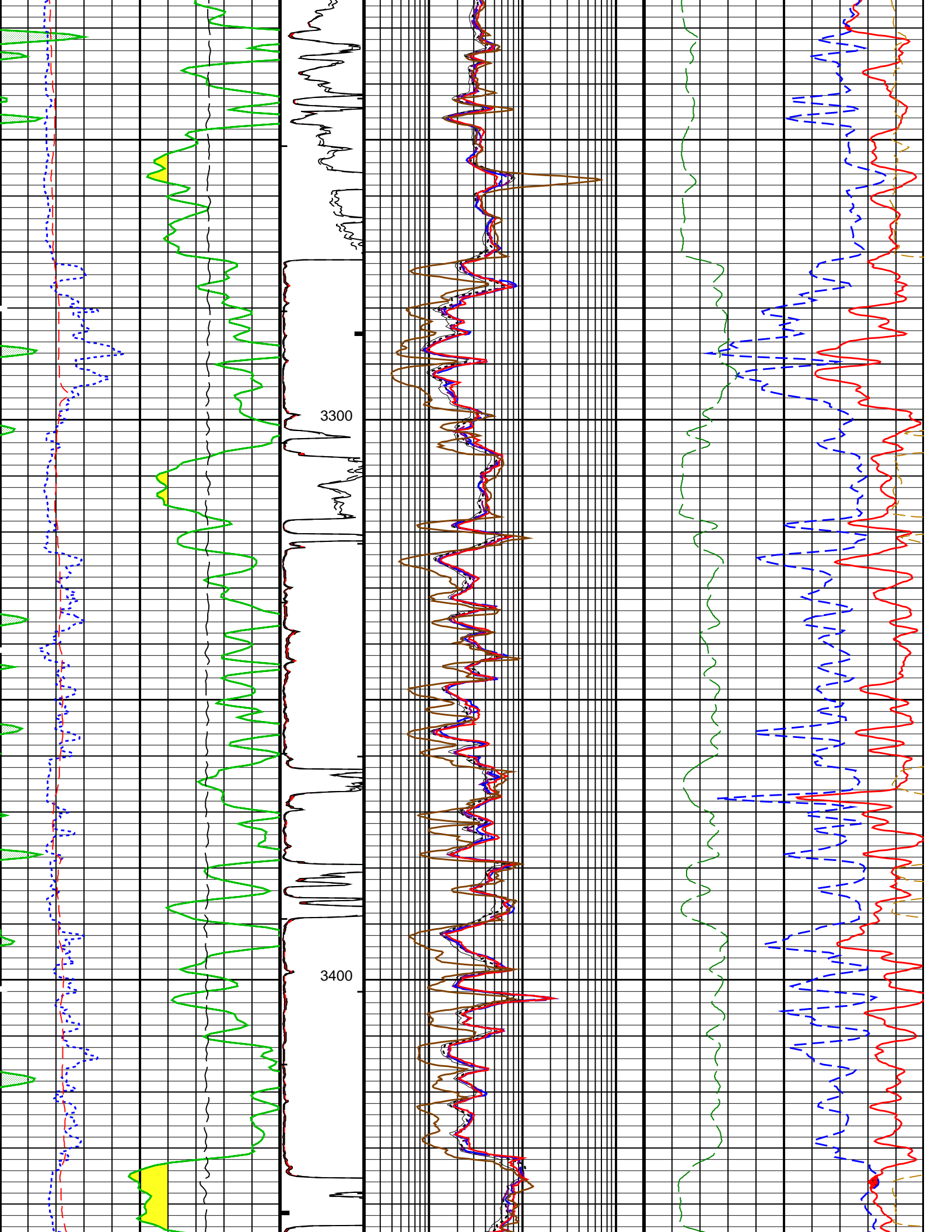


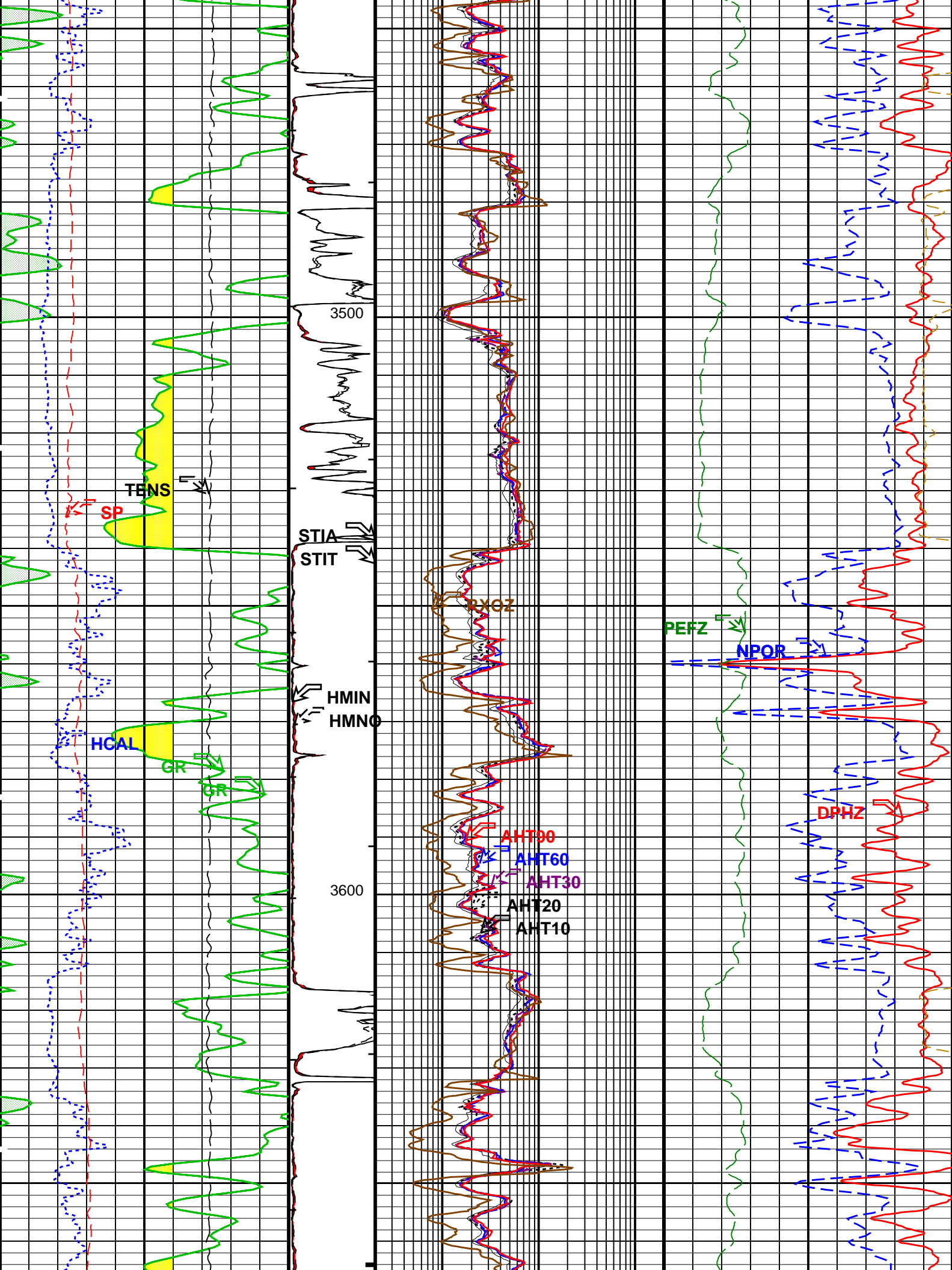


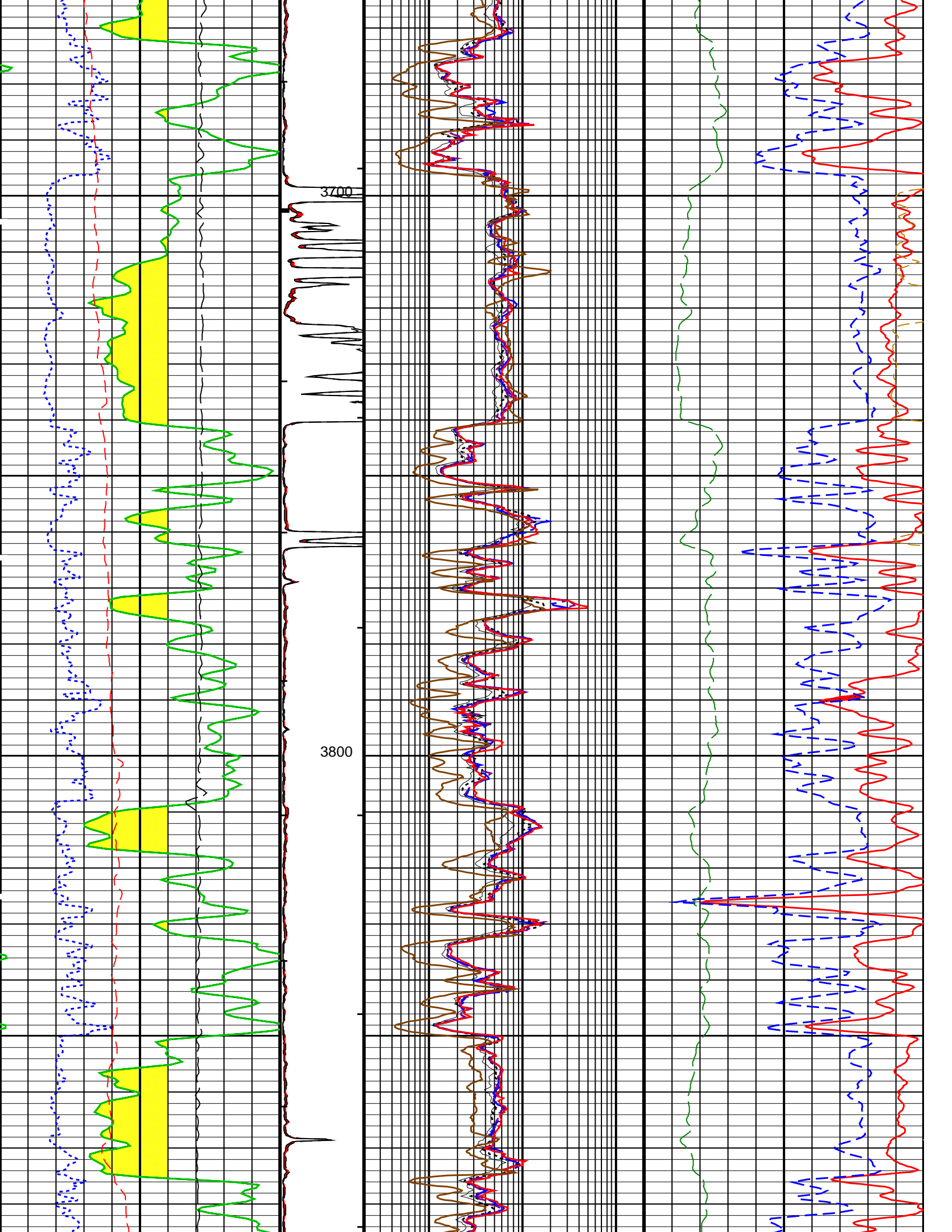


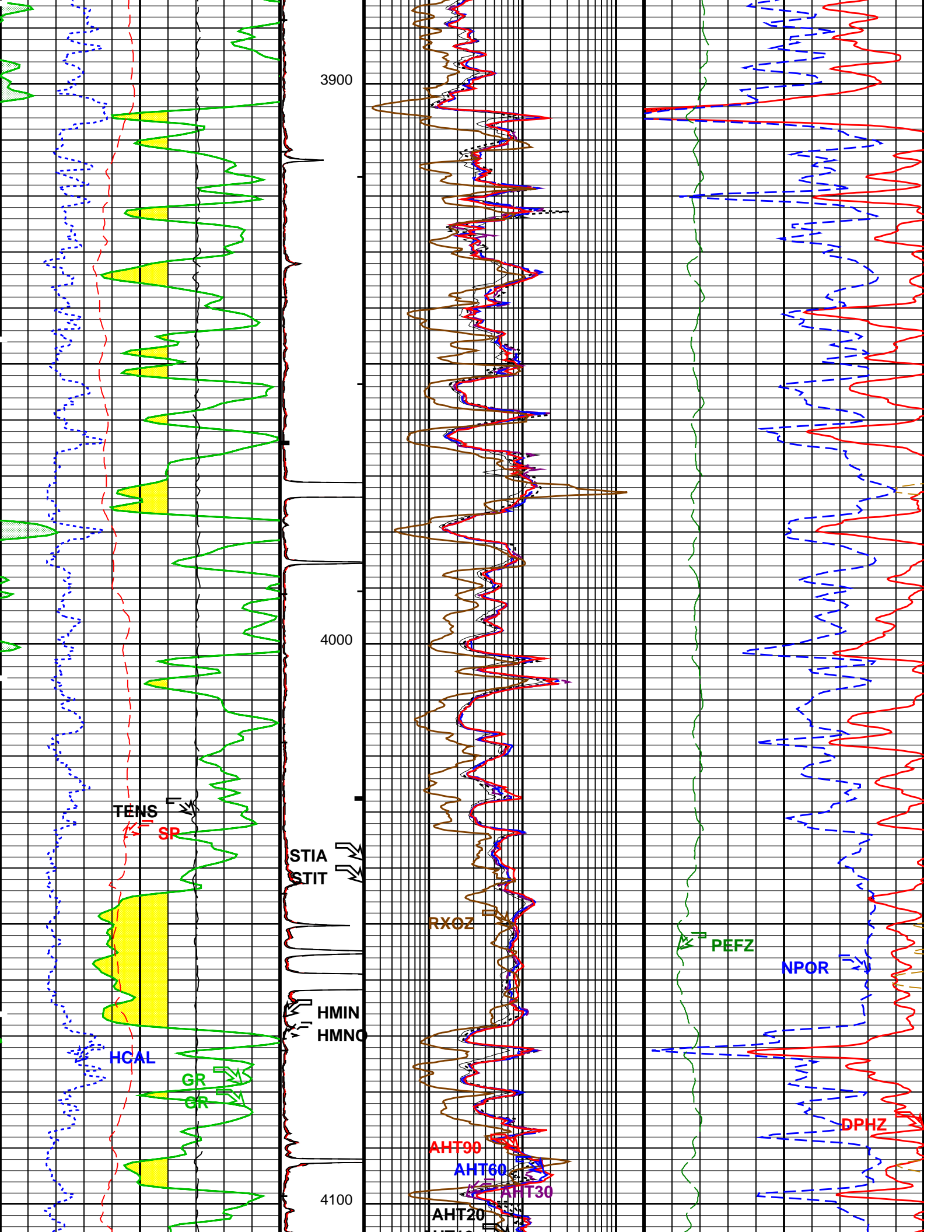




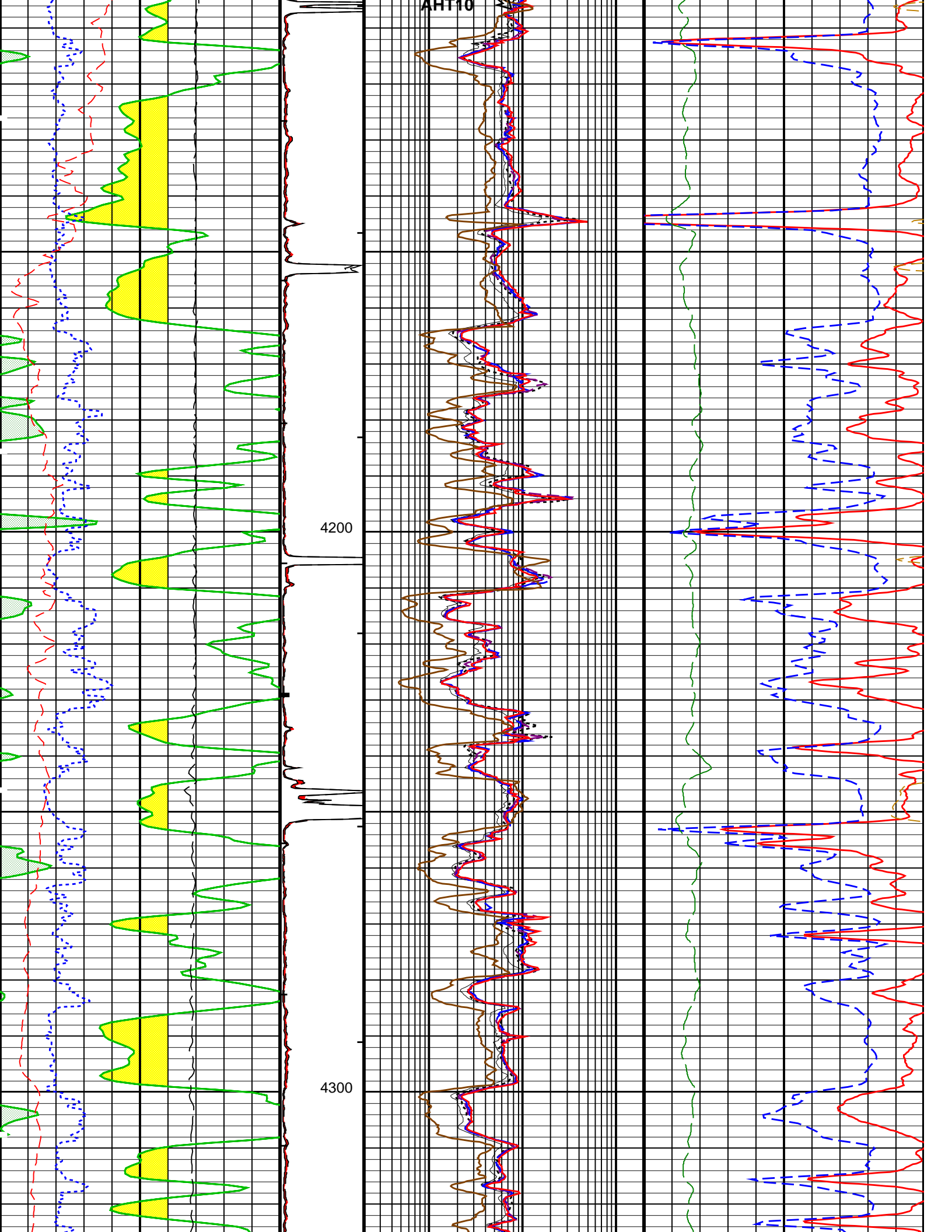


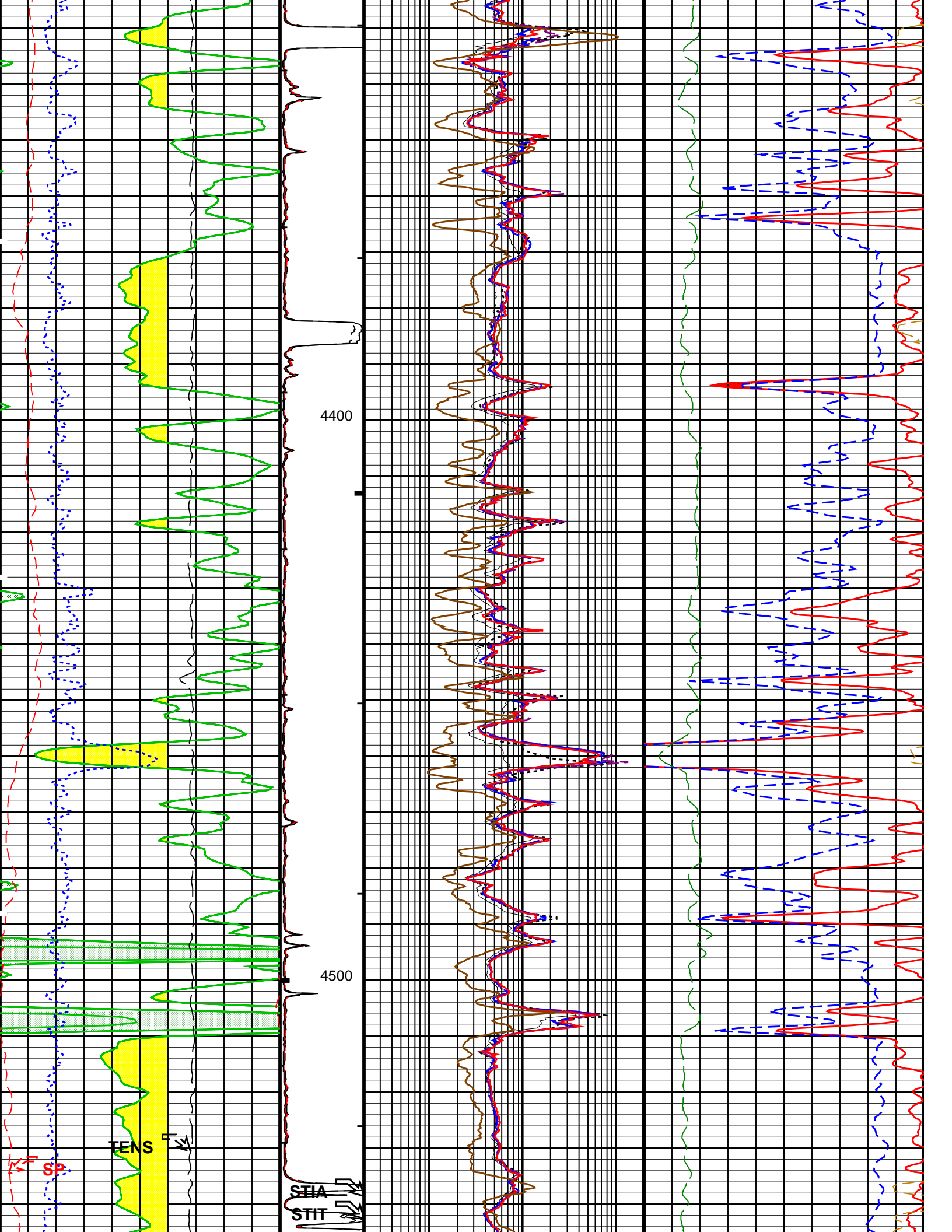


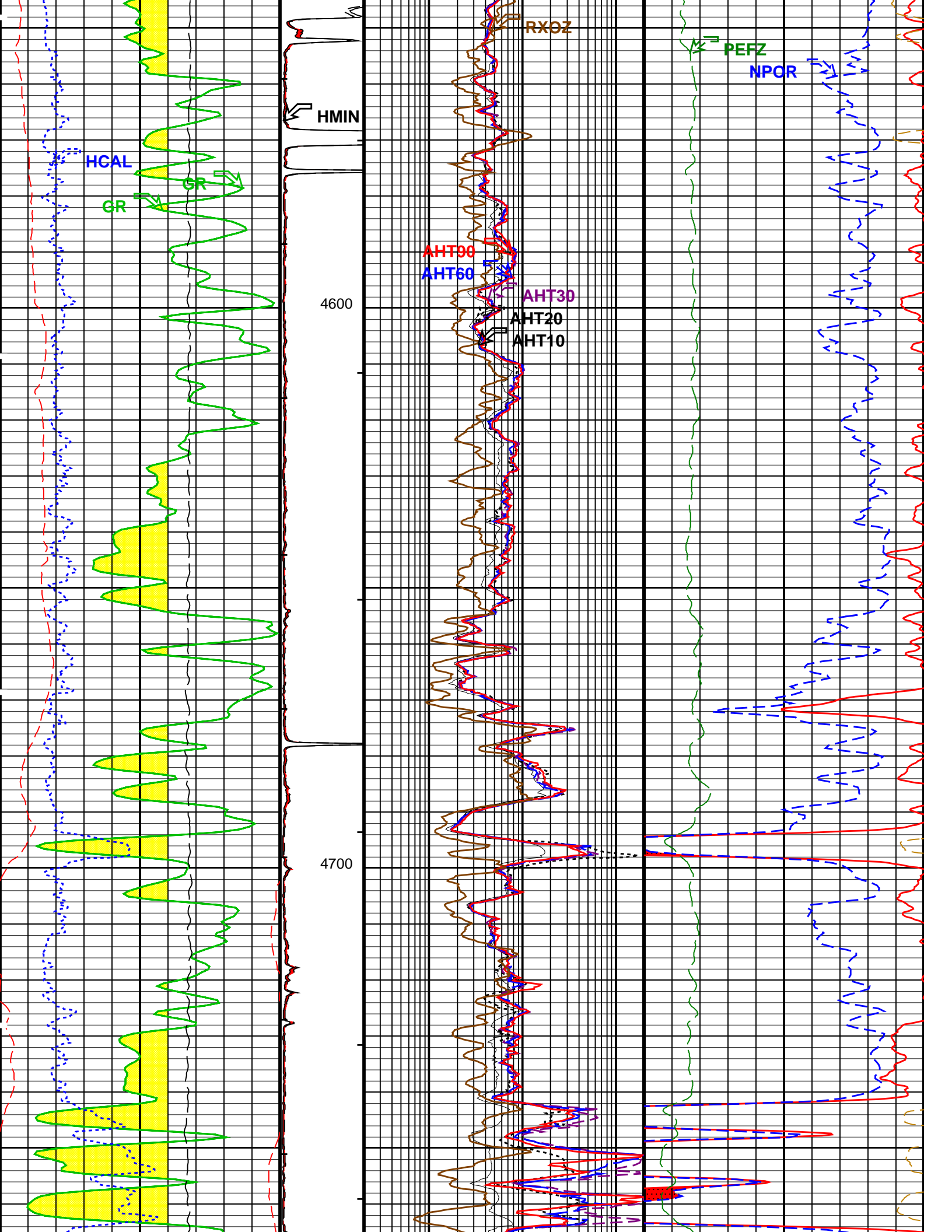


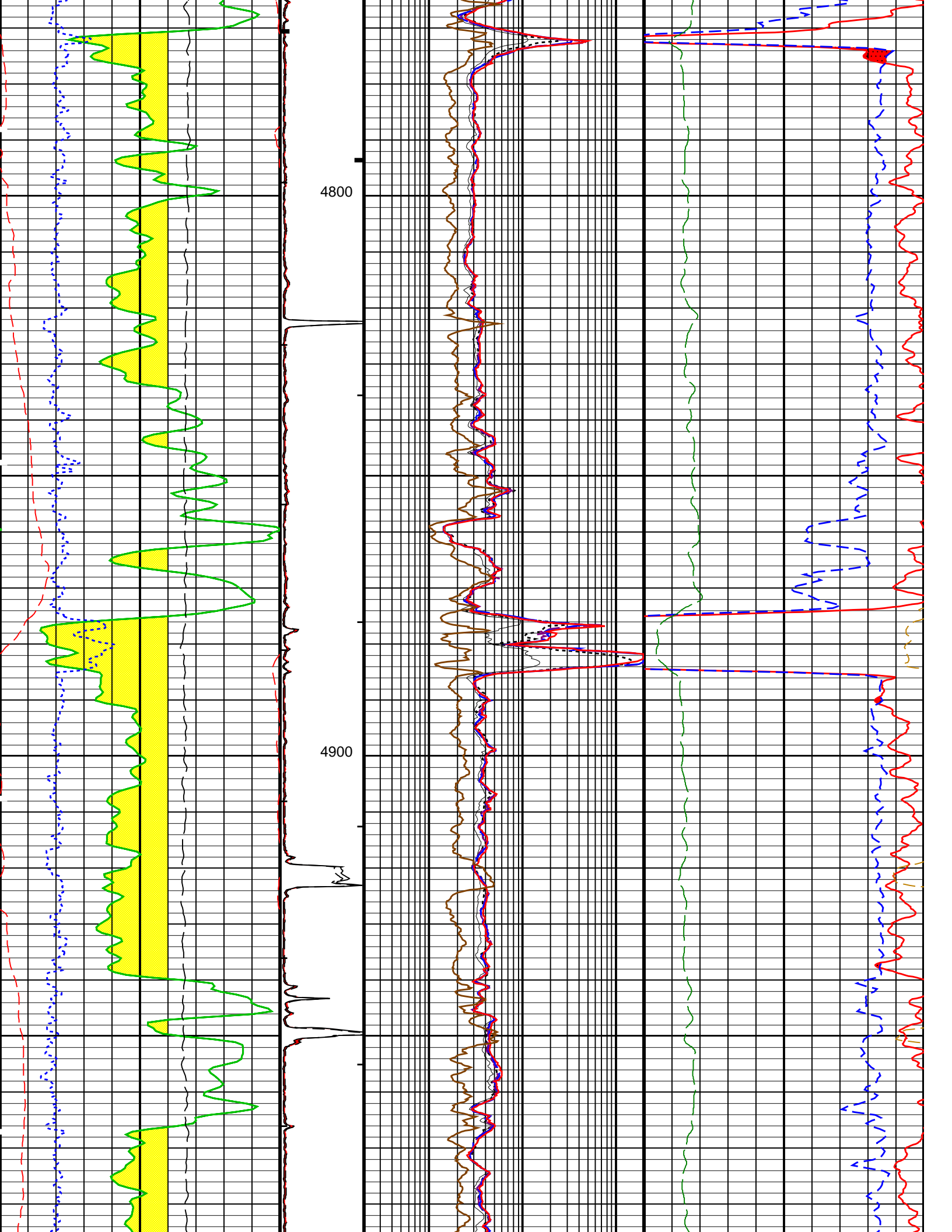


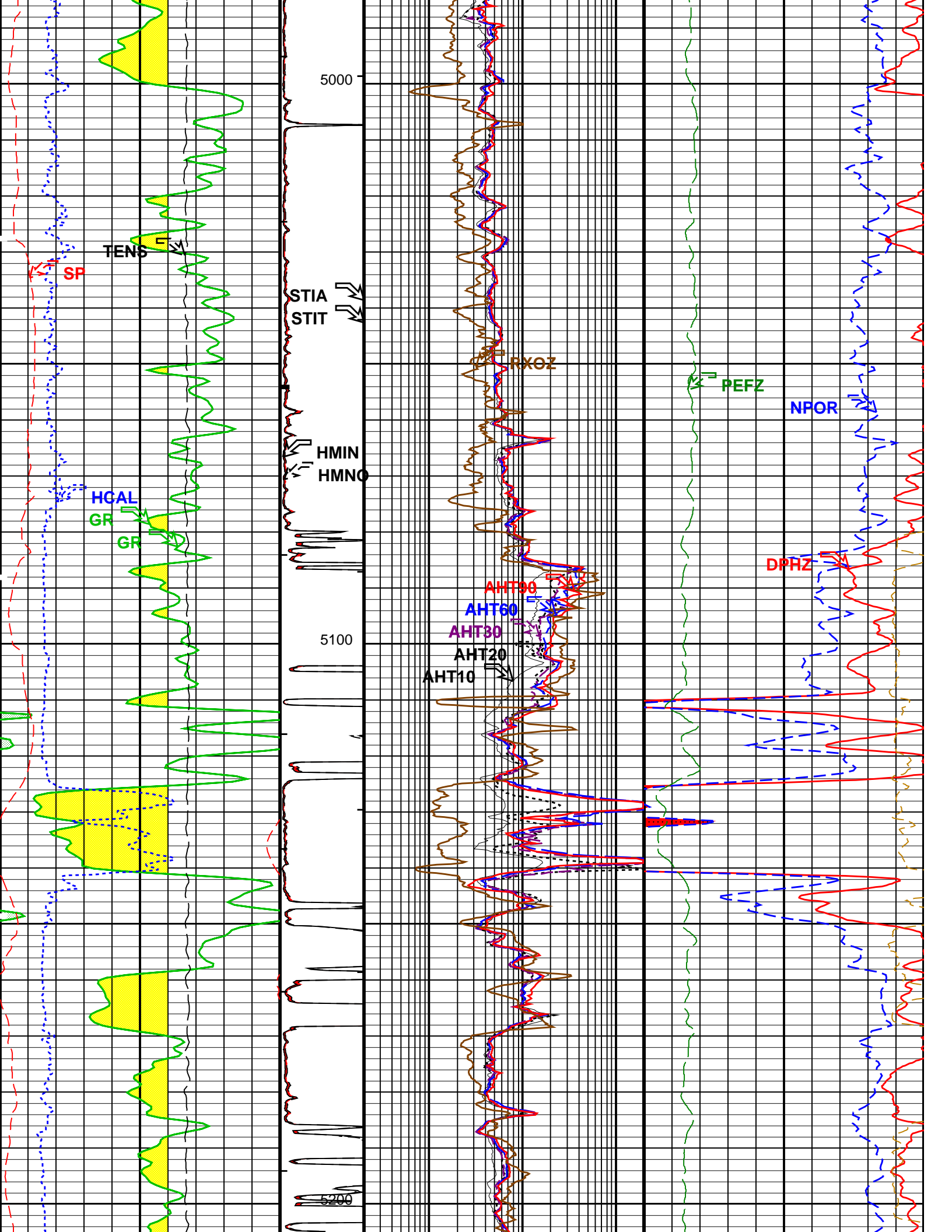
AH110

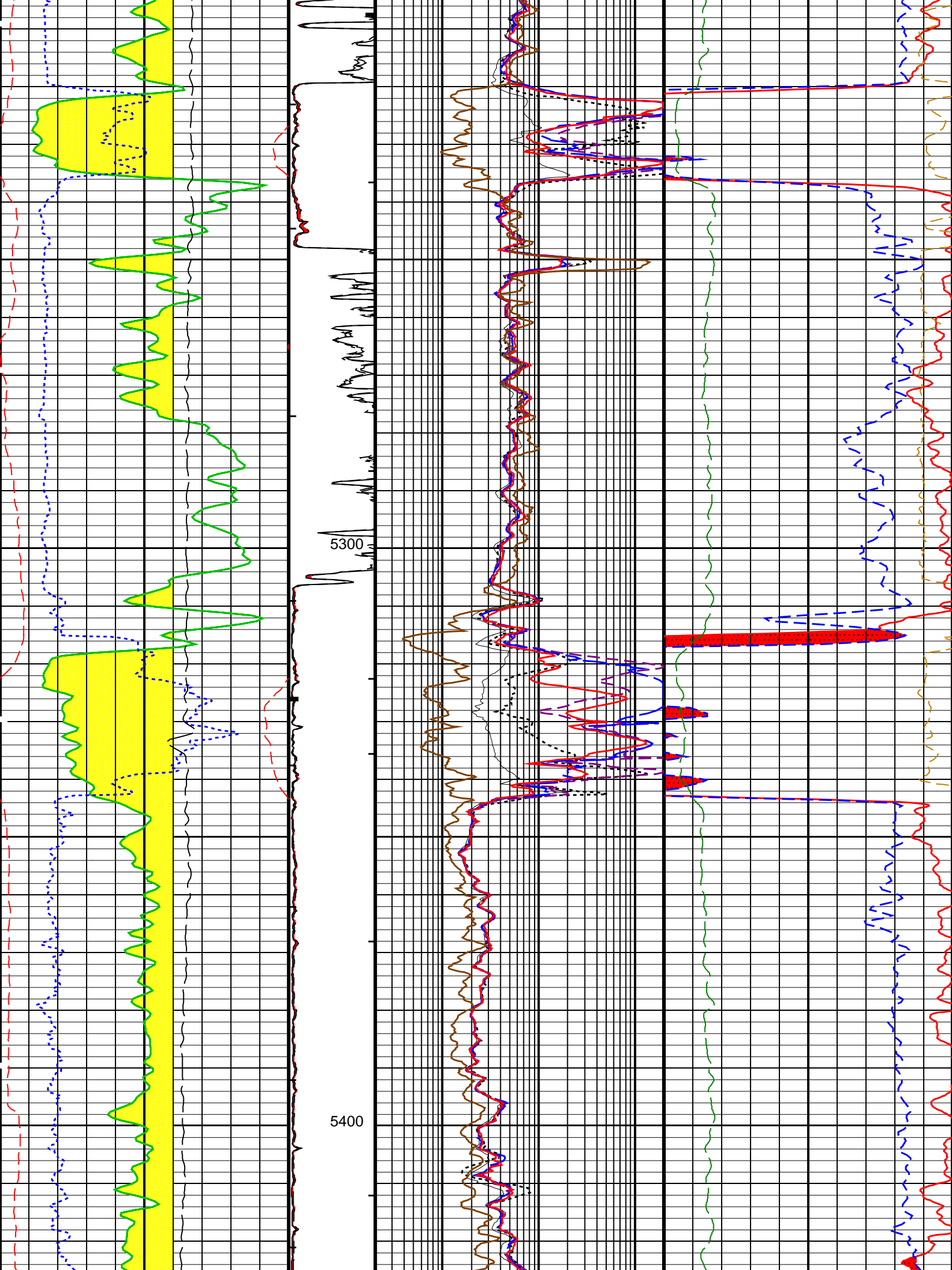


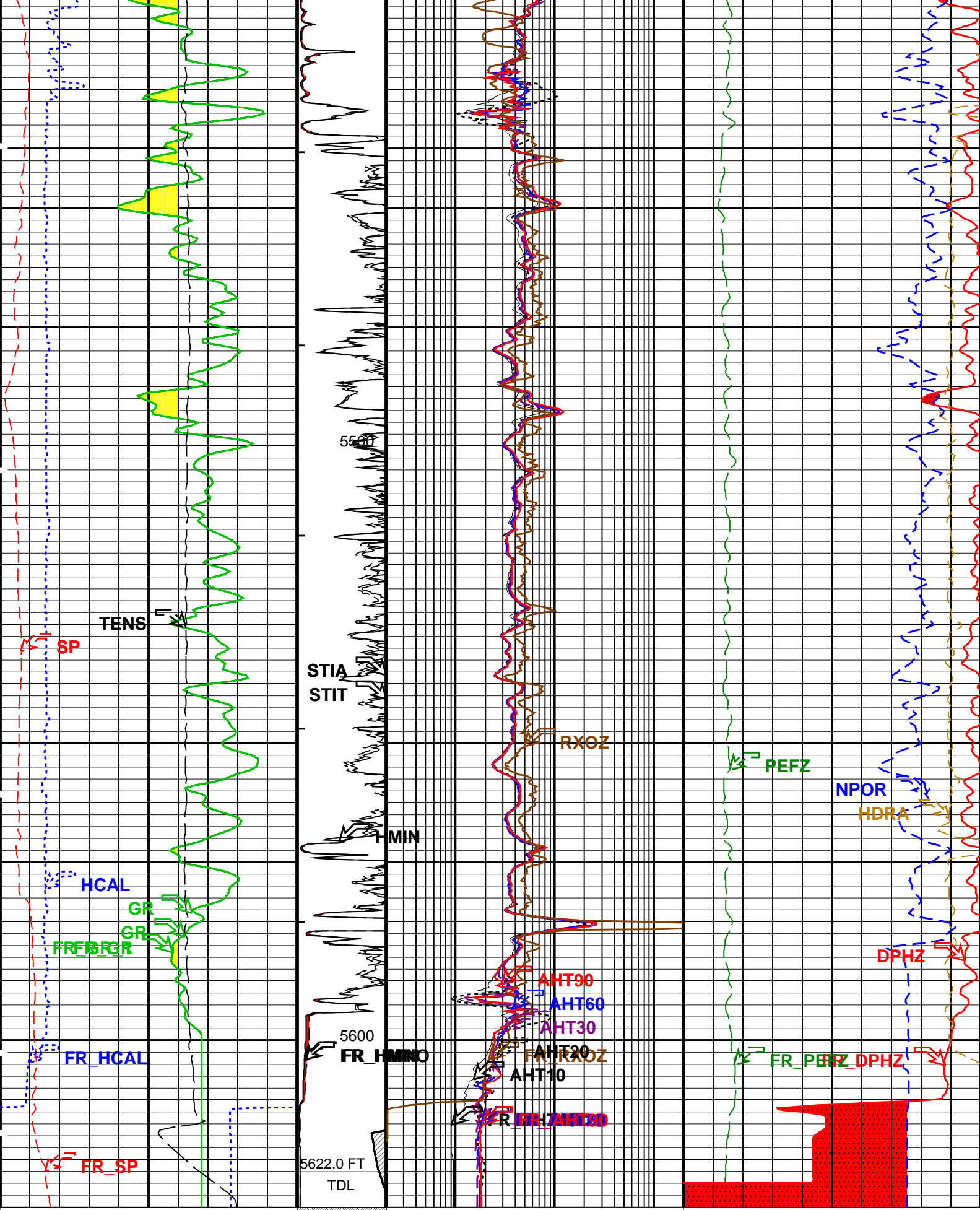












SP (SP) (MV)	Cable Drag	AIT-H 10 Inch Investigation (AHT10) (OHMM)	Std. Res. Density Porosity (DPHZ) (V/V)
-160	2	2000	0.6
40			0

Tension (TENS) (LBF)	Tool/Tot.	AIT-H 20 Inch Investigation (AHT20) (OHMM)	Std. Res. Formation Pe (PEFZ)	Density Correction (HDRA)
10000	2	2000		

00000 (LBF)	0	Drag	2	(OHMM)	2000	0	(----)	10	-0.2	(G/C3)	0.05
Gamma Ray (GR) (GAPI)	150	Stuck Stretch (STIT)	2	AIT-H 30 Inch Investigation (AHT30) (OHMM)	2000	0.6	Alpha Processed Neutron Porosity (NPOR) (VV)				0
		50 (F)	0								
HILT Caliper (HCAL) (IN)	16	Perm From HMNO to HMNO	2	AIT-H 60 Inch Investigation (AHT60) (OHMM)	2000		Gas From DPHZ to NPOR				
GR Backup From LHT1 to GR_1		Computed Micro Normal (HMNO) (OHMM)	2	AIT-H 90 Inch Investigation (AHT90) (OHMM)	2000						
		0	40								
GAMMA RAY < 90 From GR to SpareConstant		Computed Micro Inverse (HMNO) (OHMM)	2	Std. Res. Invaded Zone Resistivity (RXOZ) (OHMM)	2000						
		0	40								

PIP SUMMARY

- ┆ Integrated Hole Volume Minor Pip Every 10 F3
- ┆ Integrated Hole Volume Major Pip Every 100 F3
 - ┆ Integrated Cement Volume Minor Pip Every 10 F3
 - ┆ Integrated Cement Volume Major Pip Every 100 F3

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	1.000	
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	
AHSAP	Array Induction Suspend Answer Product Processing	0	NOSUSPENSION
AHSTA	Array Induction Tool Standoff	1.500	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)	140.0	degF
DO	Depth Offset	1.0	ft
FEXP	Form Factor Exponent	2.000	
FNUM	Form Factor Numerator	1.000	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GRGD	Geothermal Gradient	0.010	degF/ft
GRSE	Generalized Mud Resistivity Selection	AHMF	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
SHT	Surface Hole Temperature	68.000	degF
SPDR	SP Drift	0.000	mV/ft
SPNV	SP Next Value	0.000	mV
HILTH-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)	140.0	degF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
DO	Depth Offset	1.0	ft
FD	Fluid Density	1.000	g/cm3
FEXP	Form Factor Exponent	2.000	
FNUM	Form Factor Numerator	1.000	
FSCO	Formation Salinity Correction Option	NO	

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	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft
GRSE	Generalized Mud Resistivity Selection	AHMF	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.680	g/cm3
MPOF	MCFL Processing Operation Mode	ON	
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	1.000	in
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68.000	degF
SOCN	Standoff Distance	0.125	in
SOCO	Standoff Correction Option	YES	
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	140.0	degF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DO	Depth Offset	1.0	ft
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft
GRSE	Generalized Mud Resistivity Selection	AHMF	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68.000	degF
SOCN	Standoff Distance	0.125	in
SOCO	Standoff Correction Option	YES	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	140.0	degF
DO	Depth Offset	1.0	ft
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft
GRSE	Generalized Mud Resistivity Selection	AHMF	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
SHT	Surface Hole Temperature	68.000	degF
STI: Stuck Tool Indicator			
DO	Depth Offset	1.0	ft
STKT	STI Stuck Threshold	5.000	ft
TDD	Total Depth - Driller	5627.0	ft
TDL	Total Depth - Logger	5622.0	ft
System and Miscellaneous			
BS	Bit Size	7.875	in
BSAL	Borehole Salinity	900.0	ppm
CSIZ	Current Casing Size	9.625	in
CWEI	Casing Weight	32.000	lbm/ft
DFD	Drilling Fluid Density	9.800	lbm/gal
DO	Depth Offset	1.0	ft
FLEV	Fluid Level	0.000	ft
FSAL	Formation Salinity		
MST	Mud Sample Temperature	77.600	degF
RMFS	Resistivity of Mud Filtrate Sample		
TD	Total Depth	5622.0	ft

Format: TCOMBO_AIT Vertical Scale: 5" per 100'

Graphics File Created: 05-Sep-2010 12:58

OP System Version: 17C0-154

HAIT 17C0-154

HILTHD

17C0-154

EDTCB SRPC-3870_Q3_2009_OP17_V3_b

Input DLIS Files

Output DLIS Files

HAIT .020

FN:17

05-Sep-2010 12:58



REPEAT ANALYSIS

MAXIS Field Log

Company: ANTERO RESOURCES

Well: MAVES A1

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_011LUP	FN:13	PRODUCER	05-Sep-2010 11:27	5628.0 FT	0.0 FT
DEFAULT	AIT_TLD_MCFL_CNL_010PUP	FN:11	PRODUCER	05-Sep-2010 11:06	5635.5 FT	4991.5 FT

Integrated Hole/Cement Volume Summary

Hole Volume = 130.42 ft3
 Cement Volume = 88.61 ft3 (assuming 4.50 in casing O.D.)
 Computed from 5621.5 ft to 5243.5 ft

OP System Version: 17C0-154

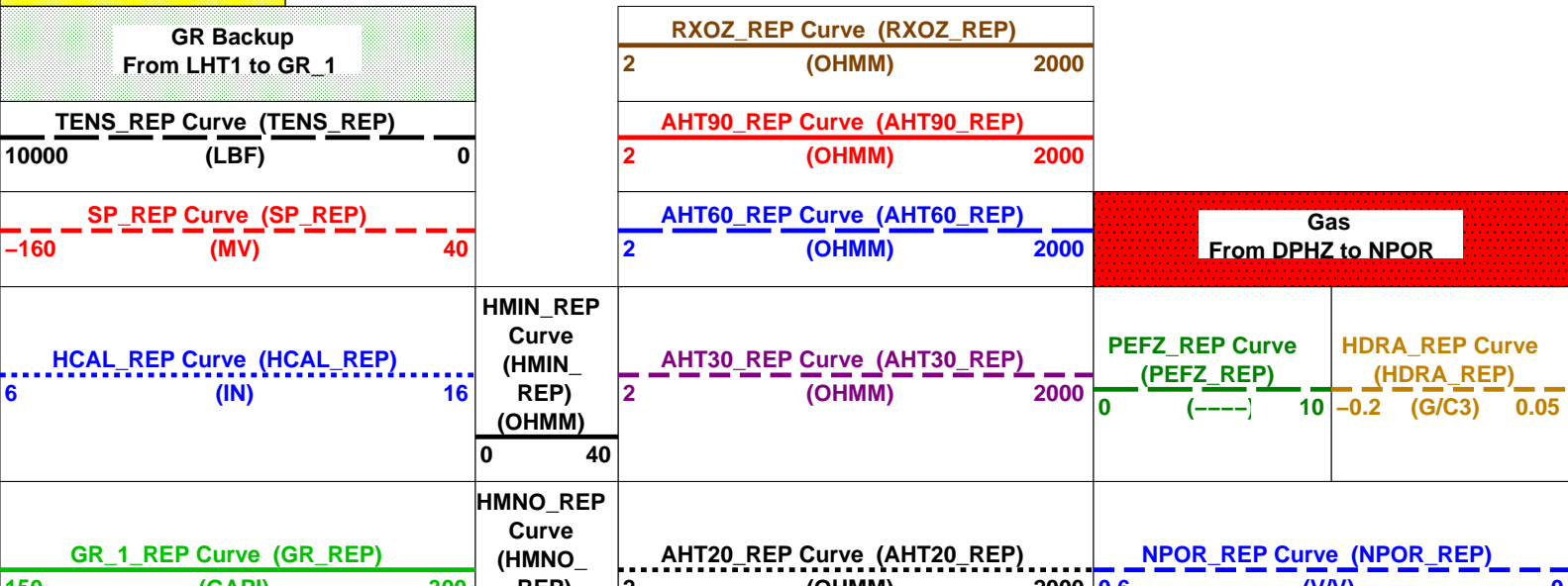
HAIT	17C0-154	HILTHD	17C0-154
EDTCB	SRPC-3870_Q3_2009_OP17_V3_b		

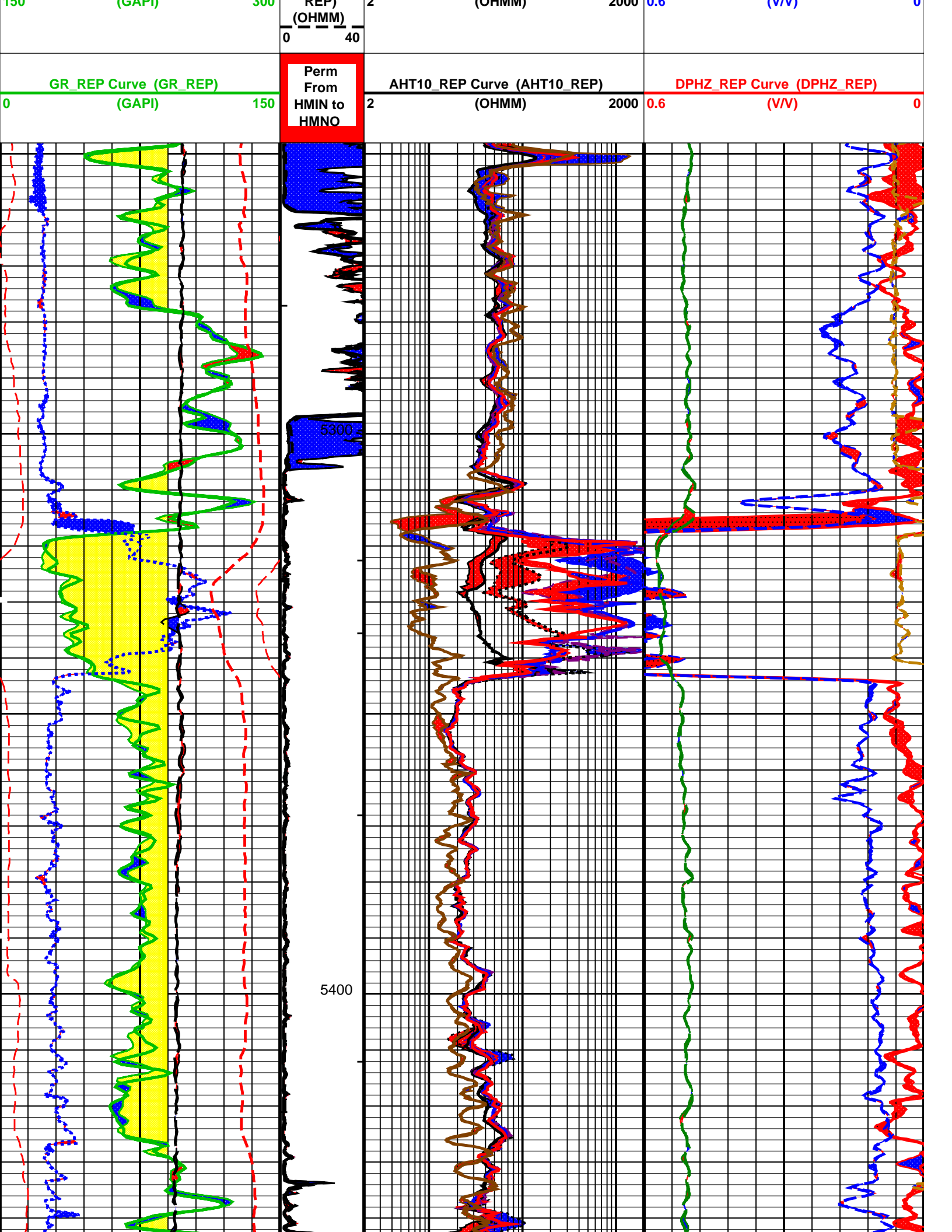
PIP SUMMARY

- ┆ Integrated Hole Volume Minor Pip Every 10 F3
- ┆ Integrated Hole Volume Major Pip Every 100 F3
- ┆ Integrated Cement Volume Minor Pip Every 10 F3
- ┆ Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

GAMMA RAY < 90
 From GR to
 SpareConstant





<p>HCAL_REP Curve (HCAL_REP) (IN) 6 16</p>	<p>HMIN_REP Curve (HMIN_REP) (OHMM) 0 40</p>	<p>AHT30_REP Curve (AHT30_REP) (OHMM) 2 2000</p>	<p>PEFZ_REP Curve (PEFZ_REP) 0 10</p>	<p>HDRA_REP Curve (HDRA_REP) -0.2 (G/C3) 0.05</p>
<p>SP_REP Curve (SP_REP) (MV) -160 40</p>	<p>AHT60_REP Curve (AHT60_REP) (OHMM) 2 2000</p>	<p>Gas From DPHZ to NPOR</p>		
<p>TENS_REP Curve (TENS_REP) (LBF) 10000 0</p>	<p>AHT90_REP Curve (AHT90_REP) (OHMM) 2 2000</p>			
<p>GR Backup From LHT1 to GR_1</p>	<p>RXOZ_REP Curve (RXOZ_REP) (OHMM) 2 2000</p>			
<p>GAMMA RAY < 90 From GR to SpareConstant</p>				

PIP SUMMARY

- ┆ Integrated Hole Volume Minor Pip Every 10 F3
- ┆ Integrated Hole Volume Major Pip Every 100 F3
 - ┆ Integrated Cement Volume Minor Pip Every 10 F3
 - ┆ Integrated Cement Volume Major Pip Every 100 F3

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	1.000	
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	
AHSAP	Array Induction Suspend Answer Product Processing	0_NOSUSPENSION	
AHSTA	Array Induction Tool Standoff	1.500	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)	140.0	degF
DO	Depth Offset	1.0	ft
FEXP	Form Factor Exponent	2.000	
FNUM	Form Factor Numerator	1.000	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft
GRSE	Generalized Mud Resistivity Selection	AHMF	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
SHT	Surface Hole Temperature	68.000	degF
SPDR	SP Drift	0.000	mV/ft
SPNV	SP Next Value	0.000	mV
HILTH-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)	140.0	degF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DHC	Density Hole Correction	BS	
DO	Depth Offset	1.0	ft
FD	Fluid Density	1.000	g/cm3
FEXP	Form Factor Exponent	2.000	
FNUM	Form Factor Numerator	1.000	
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	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft

GRSE	Generalized Mud Resistivity Selection	AHMF	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.680	g/cm3
MPOF	MCFL Processing Operation Mode	ON	
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	1.000	in
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68.000	degF
SOCN	Standoff Distance	0.125	in
SOCO	Standoff Correction Option	YES	
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	140.0	degF
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DO	Depth Offset	1.0	ft
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft
GRSE	Generalized Mud Resistivity Selection	AHMF	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
HSCO	Hole Size Correction Option	YES	
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68.000	degF
SOCN	Standoff Distance	0.125	in
SOCO	Standoff Correction Option	YES	
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	140.0	degF
DO	Depth Offset	1.0	ft
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft
GRSE	Generalized Mud Resistivity Selection	AHMF	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SAND	
SHT	Surface Hole Temperature	68.000	degF
STI: Stuck Tool Indicator			
DO	Depth Offset	1.0	ft
TDL	Total Depth - Logger	5622.0	ft
System and Miscellaneous			
BS	Bit Size	7.875	in
BSAL	Borehole Salinity	900.0	ppm
CSIZ	Current Casing Size	9.625	in
CWEI	Casing Weight	32.000	lbm/ft
DFD	Drilling Fluid Density	9.800	lbm/gal
DO	Depth Offset	1.0	ft
FLEV	Fluid Level	0.000	ft
FSAL	Formation Salinity		
MST	Mud Sample Temperature	77.600	degF
RMFS	Resistivity of Mud Filtrate Sample		
TD	Total Depth	5622.0	ft

Format: TCOMBO_AIT_REP Vertical Scale: 5" per 100' Graphics File Created: 05-Sep-2010 12:51

OP System Version: 17C0-154

HAIT	17C0-154	HILTHD	17C0-154
EDTCB	SRPC-3870_Q3_2009_OP17_V3_b		

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_011LUP	FN:13	PRODUCER	05-Sep-2010 11:27	5628.0 FT	0.0 FT
DEFAULT	AIT_TLD_MCFL_CNL_010PUP	FN:11	PRODUCER	05-Sep-2010 11:06	5635.5 FT	4991.5 FT

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: 13-Jul-2010 15:30 Before: 4-Sep-2010 14:49							
Thru Cal Magnitude – 0	0	0.6160	0.6154	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	1.259	1.258	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	0.6284	0.6279	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	0.7104	0.7096	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	1.323	1.322	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	1.928	1.926	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	1.927	1.925	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	1.376	1.373	N/A	N/A	N/A	V
Phase – 0	0	72.63	72.90	N/A	N/A	N/A	DEG
Phase – 1	0	71.53	71.79	N/A	N/A	N/A	DEG
Phase – 2	0	67.79	68.04	N/A	N/A	N/A	DEG
Phase – 3	0	67.00	67.25	N/A	N/A	N/A	DEG
Phase – 4	0	60.73	60.96	N/A	N/A	N/A	DEG
Phase – 5	0	58.82	59.04	N/A	N/A	N/A	DEG
Phase – 6	0	58.83	59.05	N/A	N/A	N/A	DEG
Phase – 7	0	55.30	55.40	N/A	N/A	N/A	DEG
Array Induction Tool – H Wellsite Calibration – Electronics Calibration Check – Auxilliary							
Master: 13-Jul-2010 15:30 Before: 4-Sep-2010 14:49							
Array Induction SPA Plus	990.5	993.4	993.1	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	0.05627	0.05748	N/A	N/A	N/A	MV
Array Induction Temperature PI	0.9150	0.9202	0.9199	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	0.00004296	0.00006897	N/A	N/A	N/A	V
Array Induction Tool – H Wellsite Calibration – Test Loop Gain Correction							
Master: 13-Jul-2010 15:30							
Test Loop Gain Magnitude – 0	0	1.015	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 1	0	1.015	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 2	0	1.017	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	0.9910	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 6	0	0.9978	N/A	N/A	N/A	N/A	V
Test Loop Gain Magnitude – 7	0	0.9953	N/A	N/A	N/A	N/A	V
Phase – 0	0	0.5545	N/A	N/A	N/A	N/A	DEG
Phase – 1	0	0.5577	N/A	N/A	N/A	N/A	DEG
Phase – 2	0	-0.1154	N/A	N/A	N/A	N/A	DEG
Phase – 3	0	-0.04472	N/A	N/A	N/A	N/A	DEG
Phase – 4	0	-0.04545	N/A	N/A	N/A	N/A	DEG
Phase – 5	0	-0.2909	N/A	N/A	N/A	N/A	DEG
Phase – 6	0	0.06993	N/A	N/A	N/A	N/A	DEG
Phase – 7	0	-0.4058	N/A	N/A	N/A	N/A	DEG
Array Induction Tool – H Wellsite Calibration – Sonde Error Correction							
Master: 13-Jul-2010 15:30							
R Sonde Error Correction – 0	0	-78.85	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 1	0	191.2	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 2	0	108.8	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 3	0	66.78	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 4	0	26.80	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 5	0	15.07	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 6	0	10.84	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 7	0	-1.548	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 0	0	-659.8	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 1	0	-4.922	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 2	0	-134.9	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 3	0	140.2	N/A	N/A	N/A	N/A	MM/M

X Sonde Error Correction – 4	0	-36.50	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 5	0	4.805	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 6	0	-12.87	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 7	0	-4.552	N/A	N/A	N/A	N/A	MM/M

Array Induction Tool – H Wellsite Calibration – Mud Gain Correction

Master: 13-Jul-2010 15:30

Coarse – Mag, Real, Imag – 0	0	0.9412	N/A	N/A	N/A	N/A
Coarse – Mag, Real, Imag – 1	0	0.9412	N/A	N/A	N/A	N/A
Coarse – Mag, Real, Imag – 2	0	0.9412	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 0	0	0.9507	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 1	0	0.9507	N/A	N/A	N/A	N/A
Fine – Mag, Real, Imag – 2	0	0.9507	N/A	N/A	N/A	N/A

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

Before: 4-Sep-2010 14:52

BS Window Ratio	0.7383	N/A	0.7364	N/A	N/A	N/A	
BS Window Sum	27320	N/A	27440	N/A	N/A	N/A	CPS
SS Window Ratio	0.4702	N/A	0.4738	N/A	N/A	N/A	
SS Window Sum	11920	N/A	11920	N/A	N/A	N/A	CPS
LS Window Ratio	0.2975	N/A	0.3017	N/A	N/A	N/A	
LS Window Sum	1356	N/A	1352	N/A	N/A	N/A	CPS

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Photo-multiplier High Voltages Calibrations

Before: 4-Sep-2010 14:52

BS PM High Voltage (Command)	1448	N/A	1437	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1367	N/A	1356	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1469	N/A	1480	N/A	N/A	N/A	V

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Crystal Quality Resolutions Calibration

Before: 4-Sep-2010 14:52

BS Crystal Resolution	11.54	N/A	11.53	N/A	N/A	N/A	%
SS Crystal Resolution	9.606	N/A	9.718	N/A	N/A	N/A	%
LS Crystal Resolution	7.915	N/A	7.984	N/A	N/A	N/A	%

High resolution Integrated Logging Tool–DTS Wellsite Calibration – MCFL Calibration

Before: 4-Sep-2010 14:58

Raw B0 Resistivity	3875	N/A	3877	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3811	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3831	N/A	N/A	N/A	OHMM

High resolution Integrated Logging Tool–DTS Wellsite Calibration – HILT Caliper Calibration

Before: 4-Sep-2010 14:55

HILT Caliper Zero Measurement	8.000	N/A	7.300	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	11.44	N/A	N/A	N/A	IN

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Detector Calibration

Before: 4-Sep-2010 14:50

Gamma Ray Background	30.00	N/A	56.99	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkgd)	165.0	N/A	174.9	N/A	N/A	15.00	GAPI

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Zero Measurement

Master: 2-Aug-2010 17:40 Before: 4-Sep-2010 14:58

CNTC Background	26.45	26.45	26.80	N/A	N/A	3.968	CPS
CFTC Background	26.28	26.28	26.21	N/A	N/A	3.942	CPS

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Ratio Measurement

Master: 2-Aug-2010 17:40

Thermal Near Corr. (Tank)	5800	5059	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2099	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.410	N/A	N/A	N/A	N/A	

High resolution Integrated Logging Tool–DTS Wellsite Calibration – Accelerometer Calibration

Before: 5-Sep-2010 9:02

Z-Axis Acceleration	32.19	N/A	32.08	N/A	N/A	N/A	F/S2
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The GLS–VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT–B Water Temperature	80.0	DEGF.
Thermal Housing Size	3.382	IN.
NSR–F serial number	2649	

Array Induction Tool – H / Equipment Identification

Primary Equipment:
Rm/SP Bottom Nose
Array Induction Sonde

AHRM – A
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	72.63		71.00
	Before	0.6154			72.90		
1	Master	1.259		1.270	71.53		70.00
	Before	1.258			71.79		
2	Master	0.6284		0.6230	67.79		66.00
	Before	0.6279			68.04		
3	Master	0.7104		0.7040	67.00		65.00
	Before	0.7096			67.25		
4	Master	1.323		1.337	60.73		59.00
	Before	1.322			60.96		
5	Master	1.928		1.955	58.82		57.00
	Before	1.926			59.04		
6	Master	1.927		1.955	58.83		57.00
	Before	1.925			59.05		
7	Master	1.376		1.415	55.30		53.00
	Before	1.373			55.40		
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)
Master: 13-Jul-2010 15:30				Before: 4-Sep-2010 14:49			

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		993.4	Master		0.05627	
Before		993.1	Before		0.05748	
		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		0.9202	Master		4.296E-00	
Before		0.9199	Before		6.897E-00	
		0.8700 (Minimum)	0.9150 (Nominal)	0.9600 (Maximum)		
				-0.05000 (Minimum)	0 (Nominal)	0.05000 (Maximum)
Master: 13-Jul-2010 15:30			Before: 4-Sep-2010 14:49			

Array Induction Tool – H Wellsite Calibration						
Test Loop Gain Correction						
Idx	Value	Test Loop Gain Magnitude V	Value	Phase DEG		
0	1.015		0.5545			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		
				-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
1	1.015		0.5577			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		
				-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)
2	1.017		-0.1154			
		0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)		
				-3.000 (Minimum)	0 (Nominal)	3.000 (Maximum)

3	1.012	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-0.04472	0 (Nominal)	3.000 (Maximum)
4	0.9978	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-0.04545	0 (Nominal)	3.000 (Maximum)
5	0.9910	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-0.2909	0 (Nominal)	3.000 (Maximum)
6	0.9978	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	0.06993	0 (Nominal)	3.000 (Maximum)
7	0.9953	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-0.4058	0 (Nominal)	3.000 (Maximum)

Master: 13-Jul-2010 15:30

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	-78.85	-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)	-659.8	-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	191.2	114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)	-4.922	-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	108.8	66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)	-134.9	-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	66.78	39.00 (Minimum)	64.00 (Nominal)	89.00 (Maximum)	140.2	-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	26.80	15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)	-36.50	-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	15.07	4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)	4.805	-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	10.84	5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)	-12.87	-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-1.548	-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)	-4.552	-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)

Master: 13-Jul-2010 15:30

Array Induction Tool – H Wellsite Calibration								
Mud Gain Correction								
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag		
0	0.9412	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.9507	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
1	0.9412	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.9507	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	0.9412	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.9507	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)

Master: 13-Jul-2010 15:30

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

HRMS – H 3969
HRGD – H 3995
MCFL – H

GR Logging Source
 HILT High Res. Control Cartridge
 HILT Gamma-Ray Neutron Sonde-DTS
 HGNS Gamma-Ray Device
 HGNS Neutron Detector with Alpha Source

GLS - VJ
 HRCC - H
 HGNS - H
 HGR -
 HCNT - H

1861
 4792

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			0.7364	Before			0.4738	Before			0.3017
	0.7014 (Minimum)	0.7383 (Nominal)	0.7752 (Maximum)		0.4467 (Minimum)	0.4702 (Nominal)	0.4937 (Maximum)		0.2826 (Minimum)	0.2975 (Nominal)	0.3124 (Maximum)
Phase	BS Window Sum CPS		Value	Phase	SS Window Sum CPS		Value	Phase	LS Window Sum CPS		Value
Before			27440	Before			11920	Before			1352
	25950 (Minimum)	27320 (Nominal)	28680 (Maximum)		11330 (Minimum)	11920 (Nominal)	12520 (Maximum)		1288 (Minimum)	1356 (Nominal)	1423 (Maximum)

Before: 4-Sep-2010 14:52

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			1437	Before			1356	Before			1480
	1348 (Minimum)	1448 (Nominal)	1548 (Maximum)		1267 (Minimum)	1367 (Nominal)	1467 (Maximum)		1369 (Minimum)	1469 (Nominal)	1569 (Maximum)

Before: 4-Sep-2010 14:52

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			9.718	Before			7.984
	10.54 (Minimum)	11.54 (Nominal)	12.54 (Maximum)		8.606 (Minimum)	9.606 (Nominal)	10.61 (Maximum)		6.915 (Minimum)	7.915 (Nominal)	8.915 (Maximum)

Before: 4-Sep-2010 14:52

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			3877	Before			3811	Before			3831
	3565 (Minimum)	3875 (Nominal)	4185 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)		3524 (Minimum)	3830 (Nominal)	4136 (Maximum)

Before: 4-Sep-2010 14:58

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			7.300	Before			11.44
	6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)		9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)

Before: 4-Sep-2010 14:55

High resolution Integrated Logging Tool-DTS Wellsite Calibration							
Detector Calibration							
Phase	Gamma Ray Background GAPI		Value	Phase	Gamma Ray (Jig - Bkgd) GAPI		Value
Before			56.99	Before			174.9
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		157.1 (Minimum)	165.0 (Nominal)	206.3 (Maximum)

Before: 4-Sep-2010 14:50

High resolution Integrated Logging Tool-DTS Wellsite Calibration							
Zero Measurement							
Phase	CNTC Background CPS		Value	Phase	CFTC Background CPS		Value
Before			0	Before			0
	0 (Minimum)	30 (Nominal)	120 (Maximum)		0 (Minimum)	30 (Nominal)	120 (Maximum)

Master			26.45	Master			26.28
Before			26.80	Before			26.21
	5.000 (Minimum)	26.45 (Nominal)	40.00 (Maximum)		5.000 (Minimum)	26.28 (Nominal)	40.00 (Maximum)
Master: 2-Aug-2010 17:40				Before: 4-Sep-2010 14:58			

High resolution Integrated Logging Tool-DTS Wellsite Calibration										
Ratio Measurement										
Phase	Thermal Near Corr. (Tank) CPS			Value	Phase	Thermal Far Corr. (Tank) CPS			Value	
Master				5059	Master				2099	
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)			1900 (Minimum)	2400 (Nominal)	2900 (Maximum)		
					Master				2.410	
						2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)		
Master: 2-Aug-2010 17:40										

High resolution Integrated Logging Tool-DTS Wellsite Calibration		
Accelerometer Calibration		
Phase	Z-Axis Acceleration F/S2	Value
Before		32.08
	31.53 (Minimum)	32.19 (Nominal)
		32.84 (Maximum)
Before: 5-Sep-2010 9:02		

Company: **ANTERO RESOURCES**

Schlumberger

Well: **MAVES A1**

Field: **MAMM CREEK**

County: **GARFIELD**

State: **COLORADO**

*** PLATFORM EXPRESS ***

COMPENSATED NEUTRON / LITHODENSITY

ARRAY INDUCTION TOOL