

Schlumberger

Company: Vecta Oil & Gas, LTD.

Well: Red Cloud 44-5

Field: Eureka Creek

County: Cheyenne

State: Colorado

Platform Express Triple Combo

Field: Eureka Creek
Location: Sec. 5 , T13S, R47W
Well: Red Cloud 44-5
Company: Vecta Oil & Gas, LTD.

LOCATION		Elev.: K.B. 4458.00 ft G.L. 4447.00 ft D.F. 4457.00 ft
Sec. 5, T13S, R47W	SHL: 635' FSL X 891' FEL SESE	
Permanent Datum:	Ground Level	
Log Measured From:	Kelly Bushing	
Drilling Measured From:	Kelly Bushing	Elev.: 4447.00 ft 11.00 ft above Perm. Datum
API Serial No. 05-017-07693-000C	Section 5	Township 13S
		Range 47W

Logging Date	23-Mar-2010
Run Number	1
Depth Driller	5760 ft
Schlumberger Depth	5759 ft
Bottom Log Interval	5751 ft
Top Log Interval	449 ft
Casing Driller Size @ Depth	8.625 in @ 451 ft
Casing Schlumberger	449 ft
Bit Size	7.875 in
Type Fluid In Hole	Gel & Chemical
Density	9.1 lbm/gal
Viscosity	55 s
Fluid Loss	8 cm3
PH	10
Source Of Sample	Mud Tank
RM @ Measured Temperature	1.624 ohm.m @ 61 degF
RMF @ Measured Temperature	1.218 ohm.m @ 61 degF
RMC @ Measured Temperature	2.436 ohm.m @ 61 degF
Source RMF	Calculated
RMC	Calculated
RM @ MRT	0.783 @ 134
RMF @ MRT	0.587 @ 134
Maximum Recorded Temperatures	134 degF
Circulation Stopped	23-Mar-2010 8:30
Logger On Bottom	23-Mar-2010 13:05
Unit Number	3055
Location	Ft. Morgan, CO
Recorded By	Philip Grant
Witnessed By	Matt Goolsby, Randy Say

	Run 1	Run 2	Run 3
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			
Logger On Bottom			
Unit Number			
Location			
Recorded By			
Witnessed By			

Data affected by extreme hole rugosity between the depths: 3430–3390 ft, 3150–3050 ft, 2550–2490 ft, 650–550 ft.	
Rig: Black Gold 69	
Crew: Jay Musgrave, Dave Marquez	

RUN 1			RUN 2		
SERVICE ORDER #:		BE0K-00001	SERVICE ORDER #:		
PROGRAM VERSION:		17C0-154	PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1

RUN 2

SURFACE EQUIPMENT

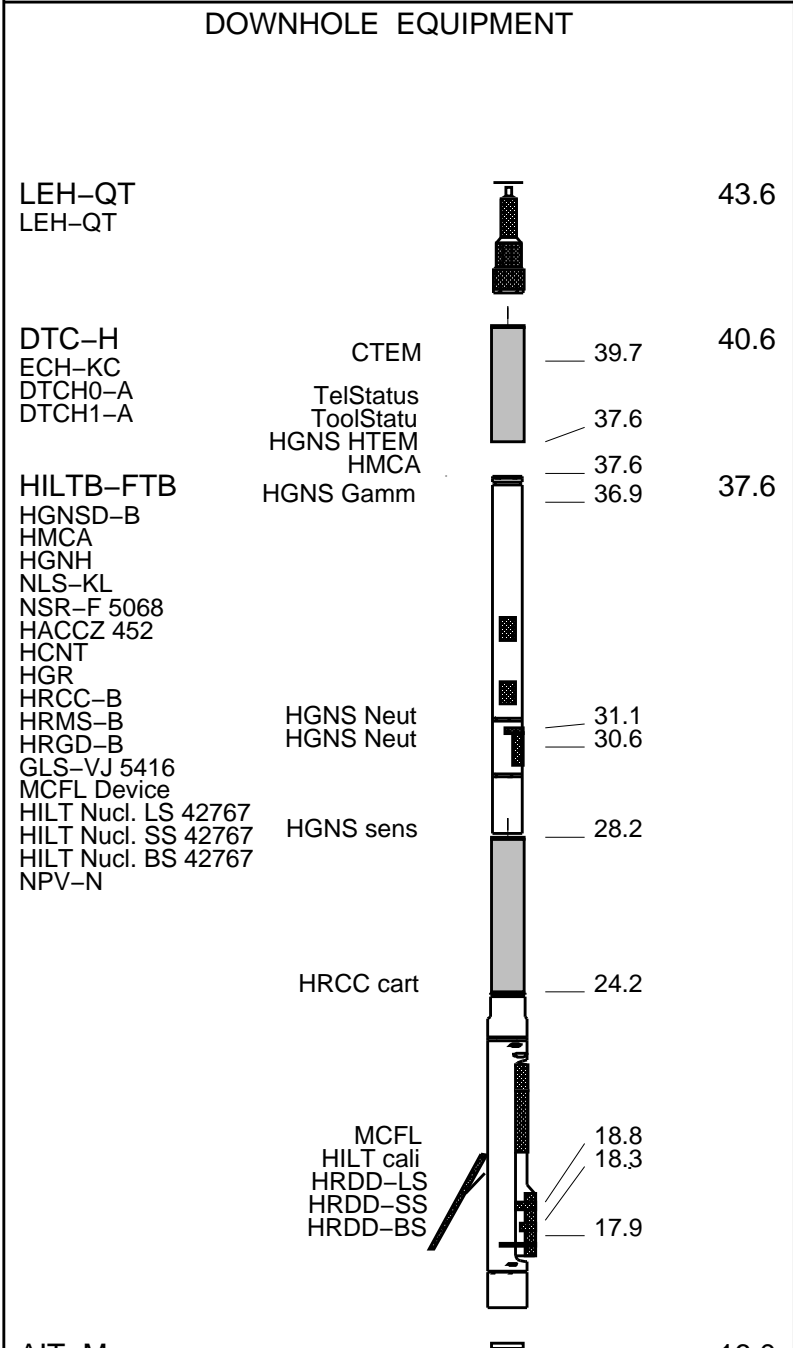
WITM (DTS)–A

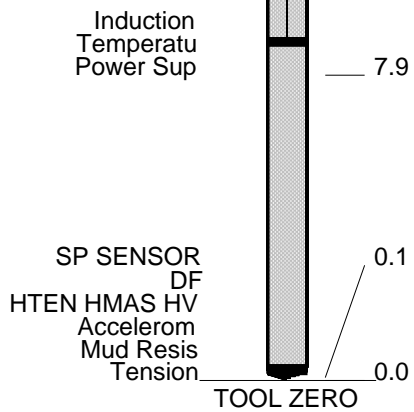
GSR–U/Y

NCT–B

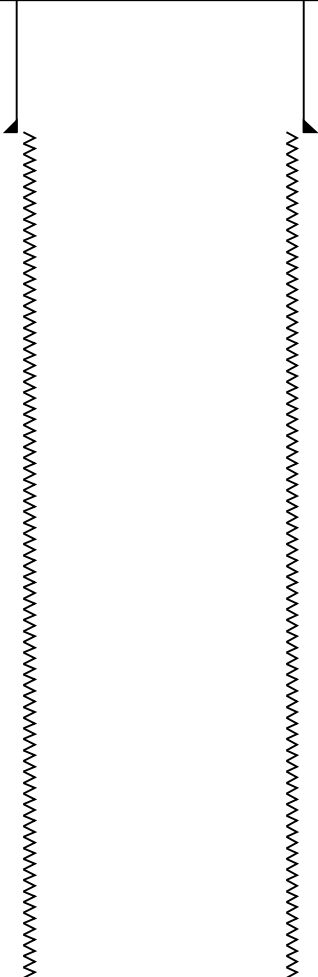
CNB–AB

NCS–VB





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

Production String	(in)		(ft)	Well Schematic	(ft)	(in)		Casing String
	OD	ID	MD		MD	OD	ID	
					0.0	8.625		Casing String
					451.0	8.625		Casing Shoe
					451.0	7.875		Borehole Segment

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All depths are driller's depths



Main Pass

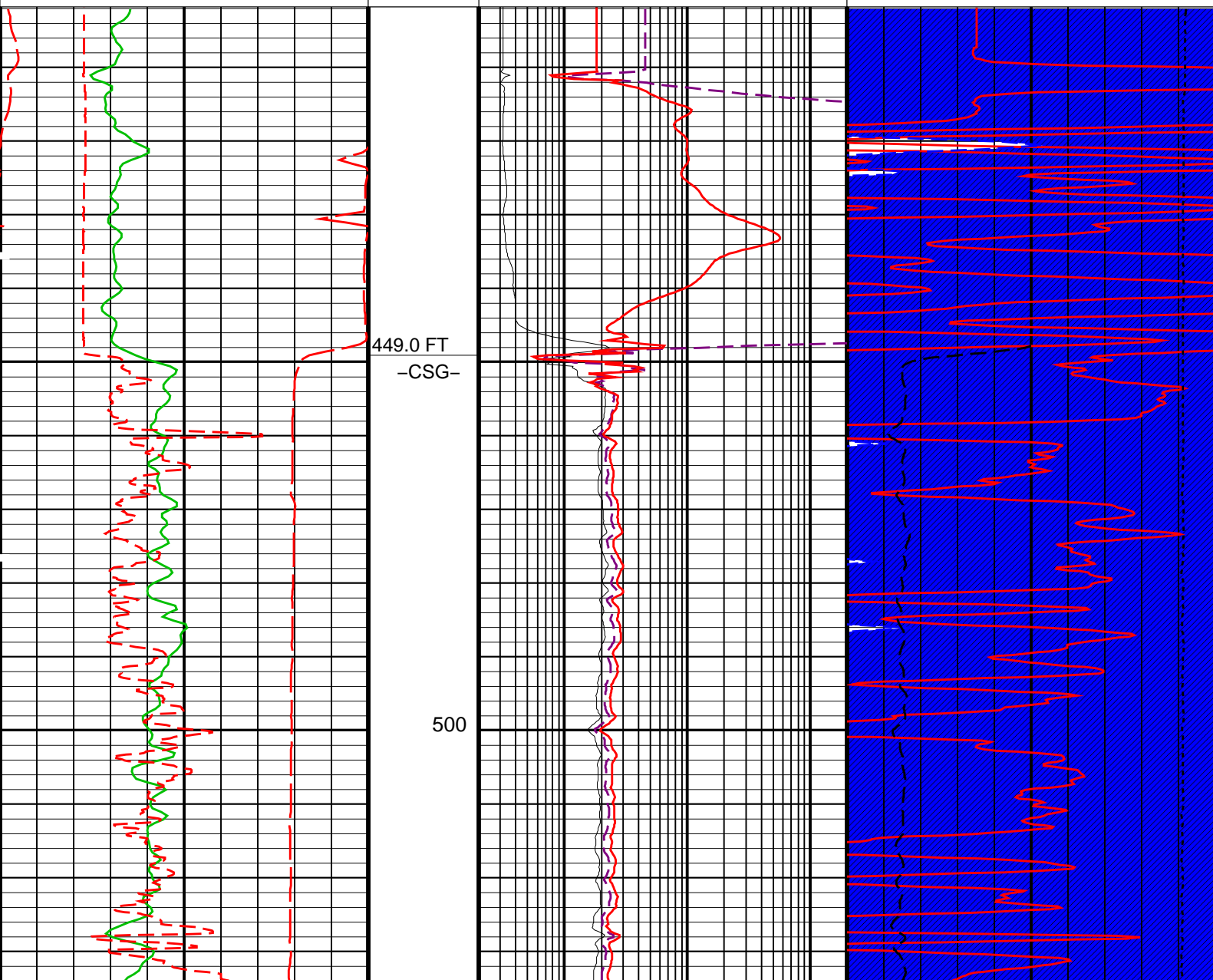
MAXIS Field Log

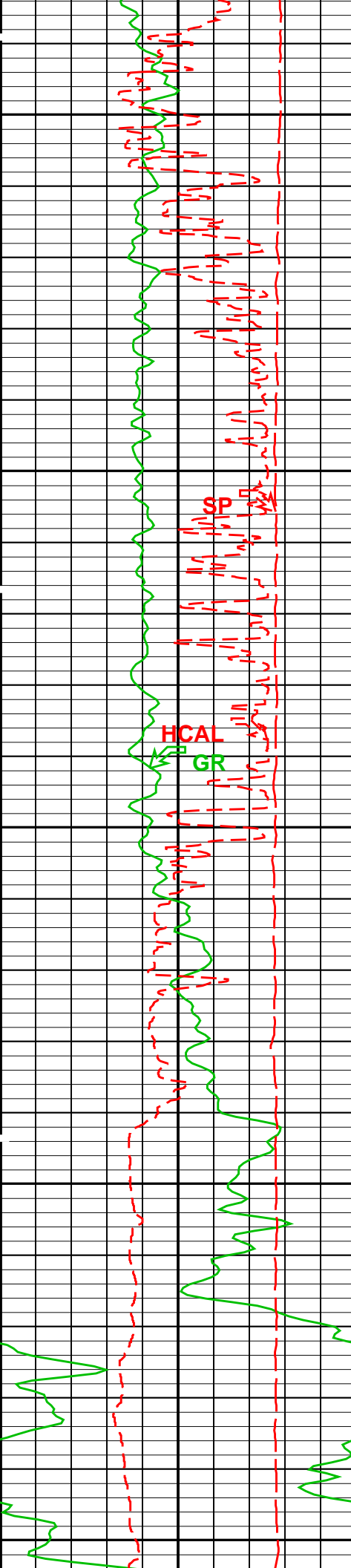
Company: Vecta Oil & Gas, LTD.

Well: Red Cloud 44-5

Input DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_008LUP	FN:7	PRODUCER	23-Mar-2010 13:43	5775.0 FT	401.5 FT
Output DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_017PUP	FN:16	PRODUCER	23-Mar-2010 15:04	5775.0 FT	401.5 FT
OP System Version: 17C0-154						
AIT-M DTC-H	17C0-154 17C0-154		HILTB-FTB	17C0-154		

Changed Parameter Summary			
DLIS Name	New Value	Previous Value	Depth & Time

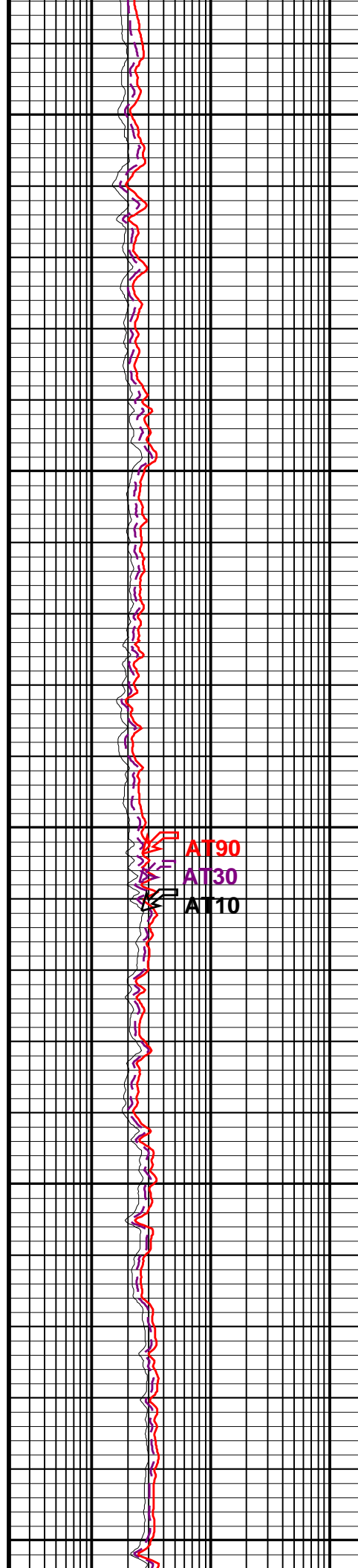




600

STIT

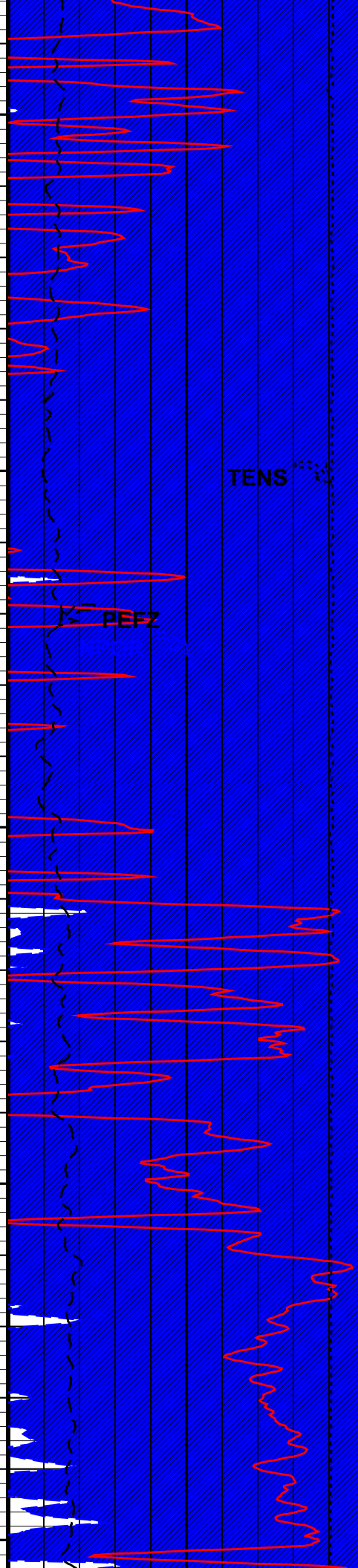
700



AT90

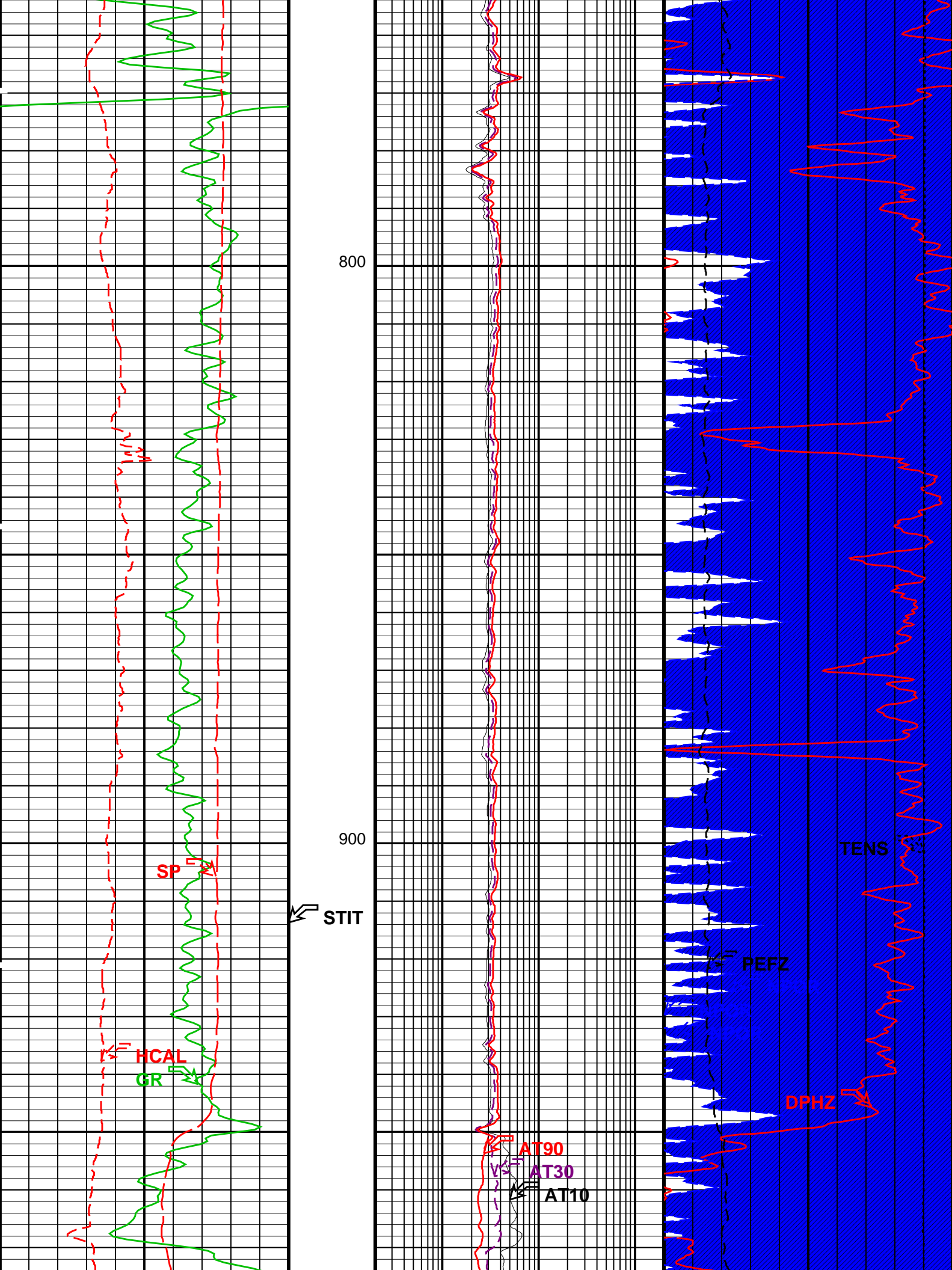
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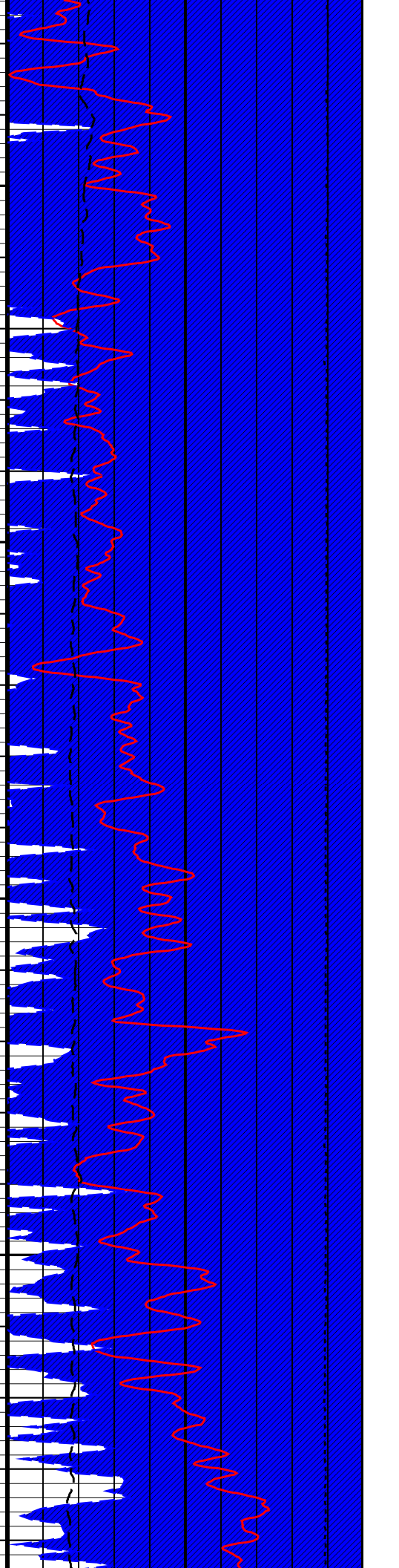
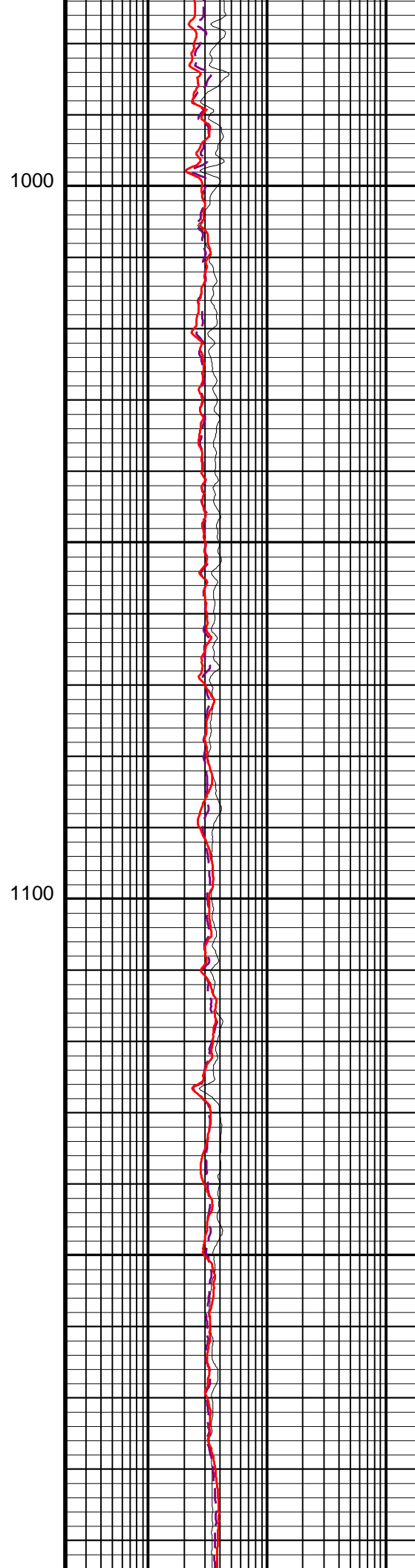
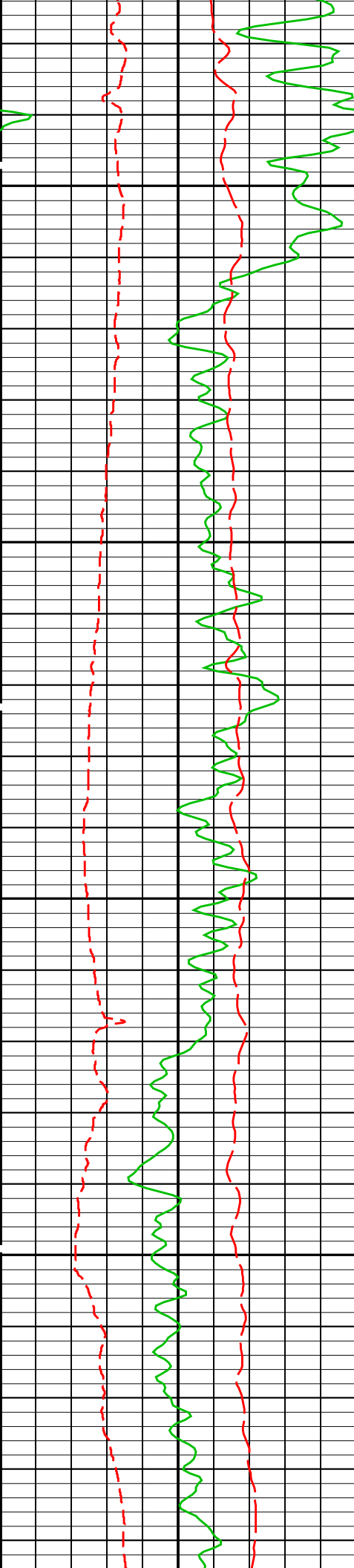
AT10

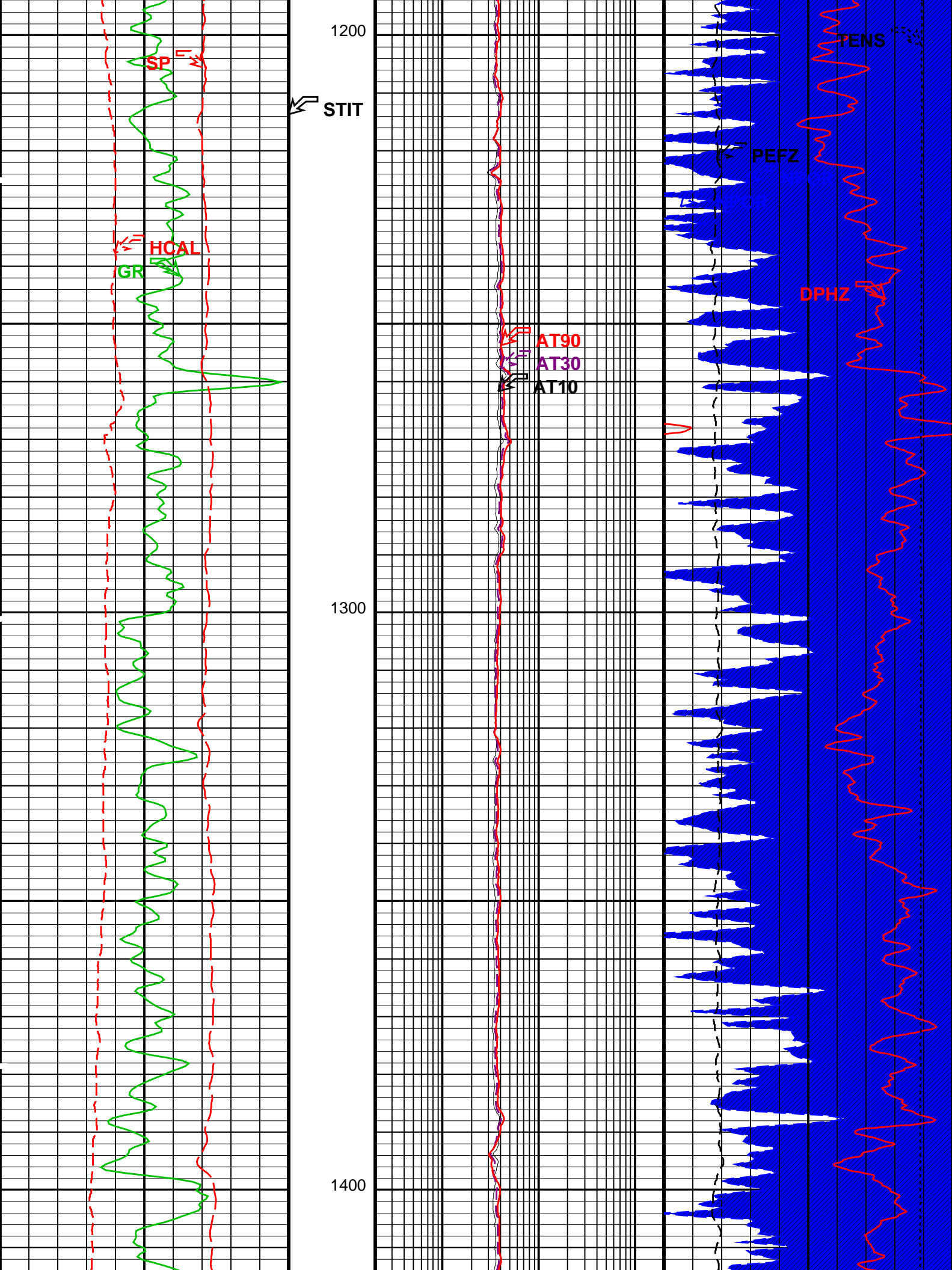


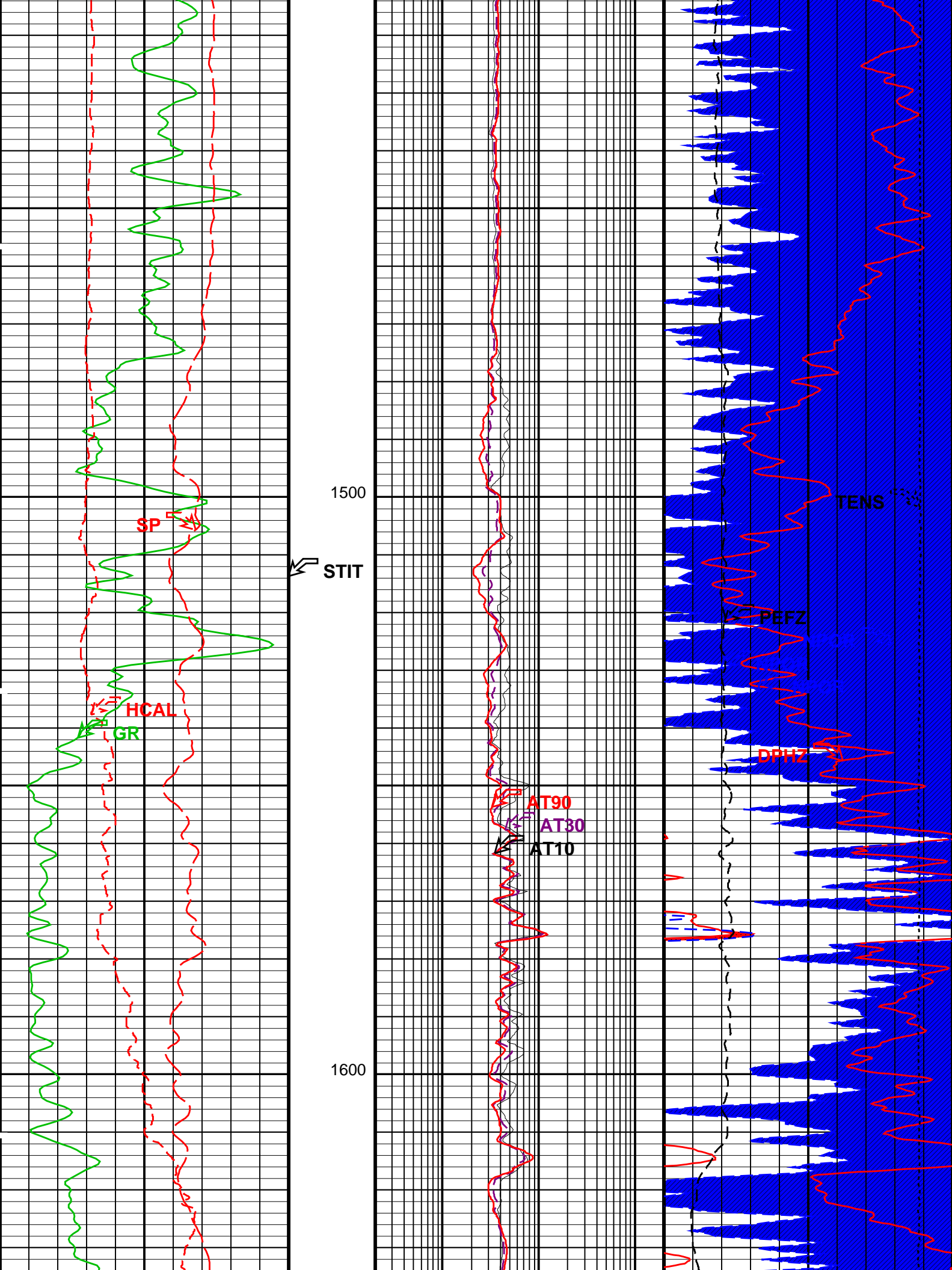
TENS

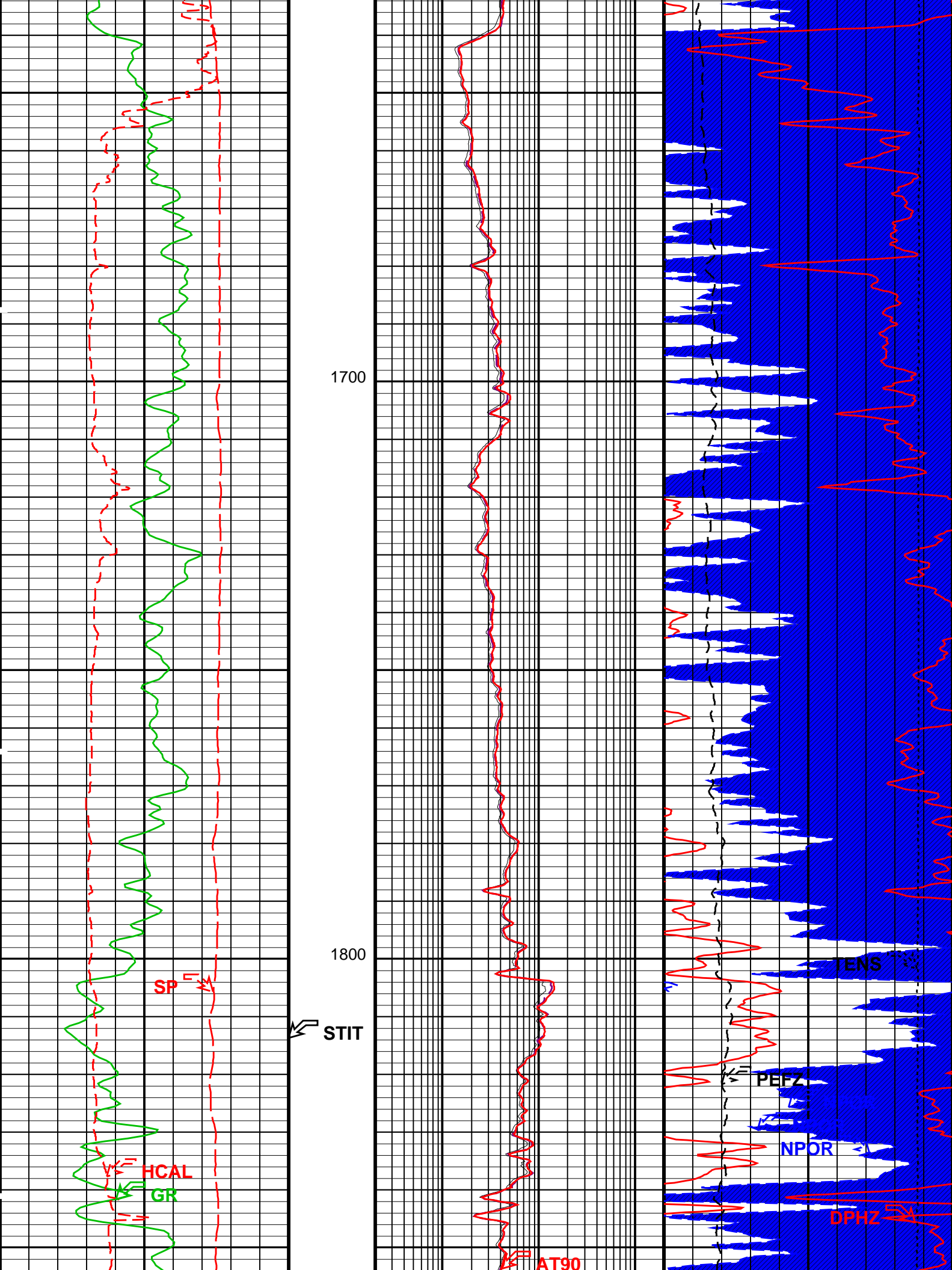
PEFZ

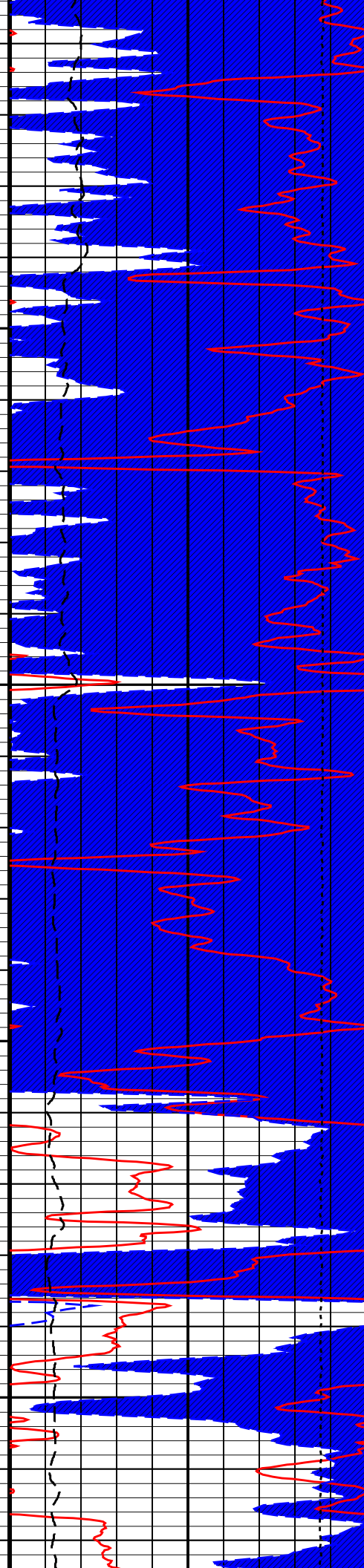
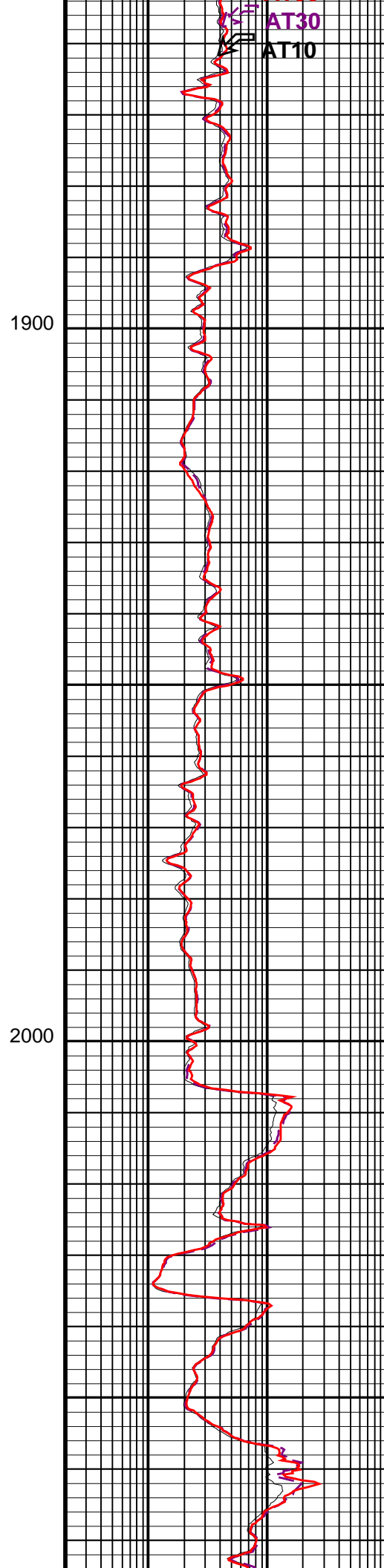
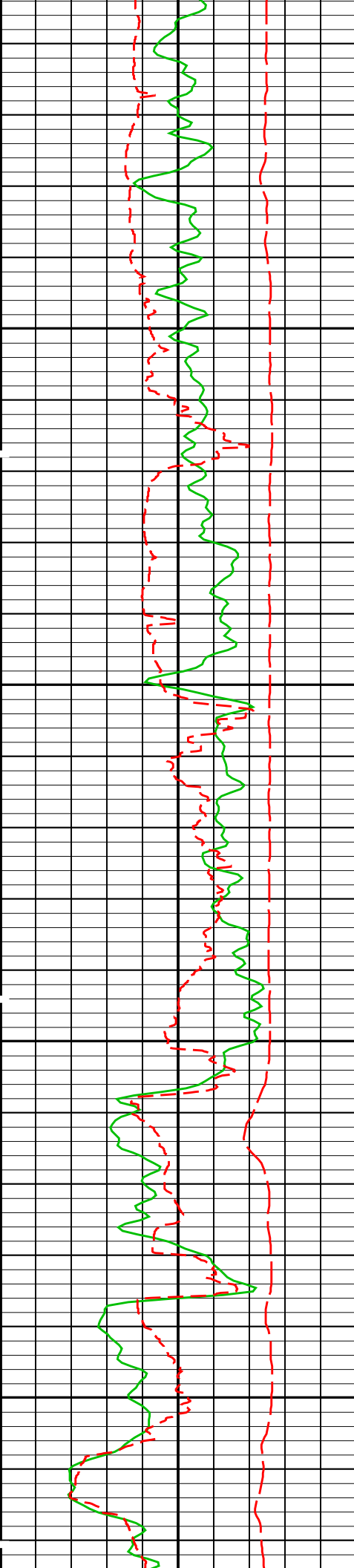


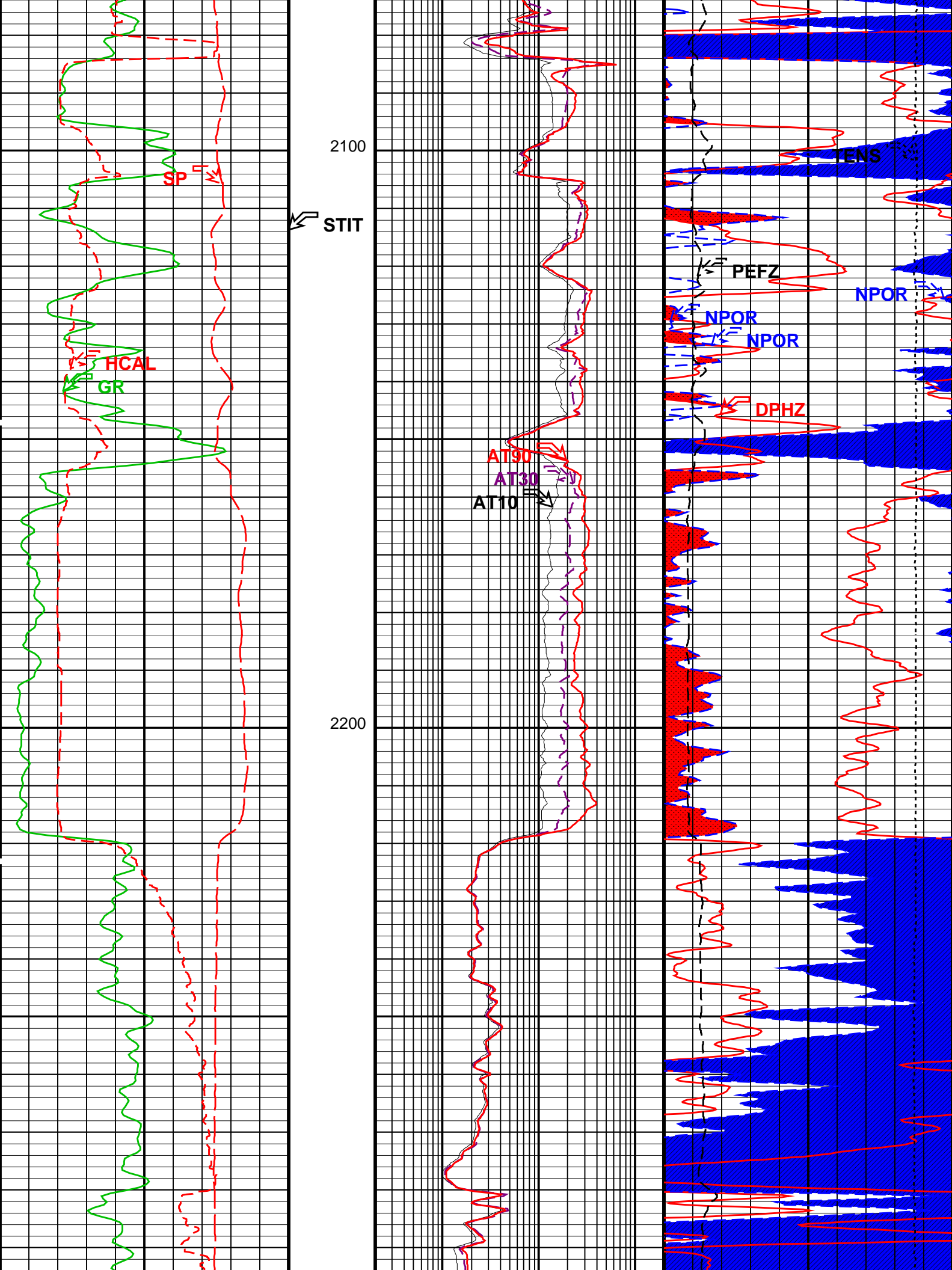


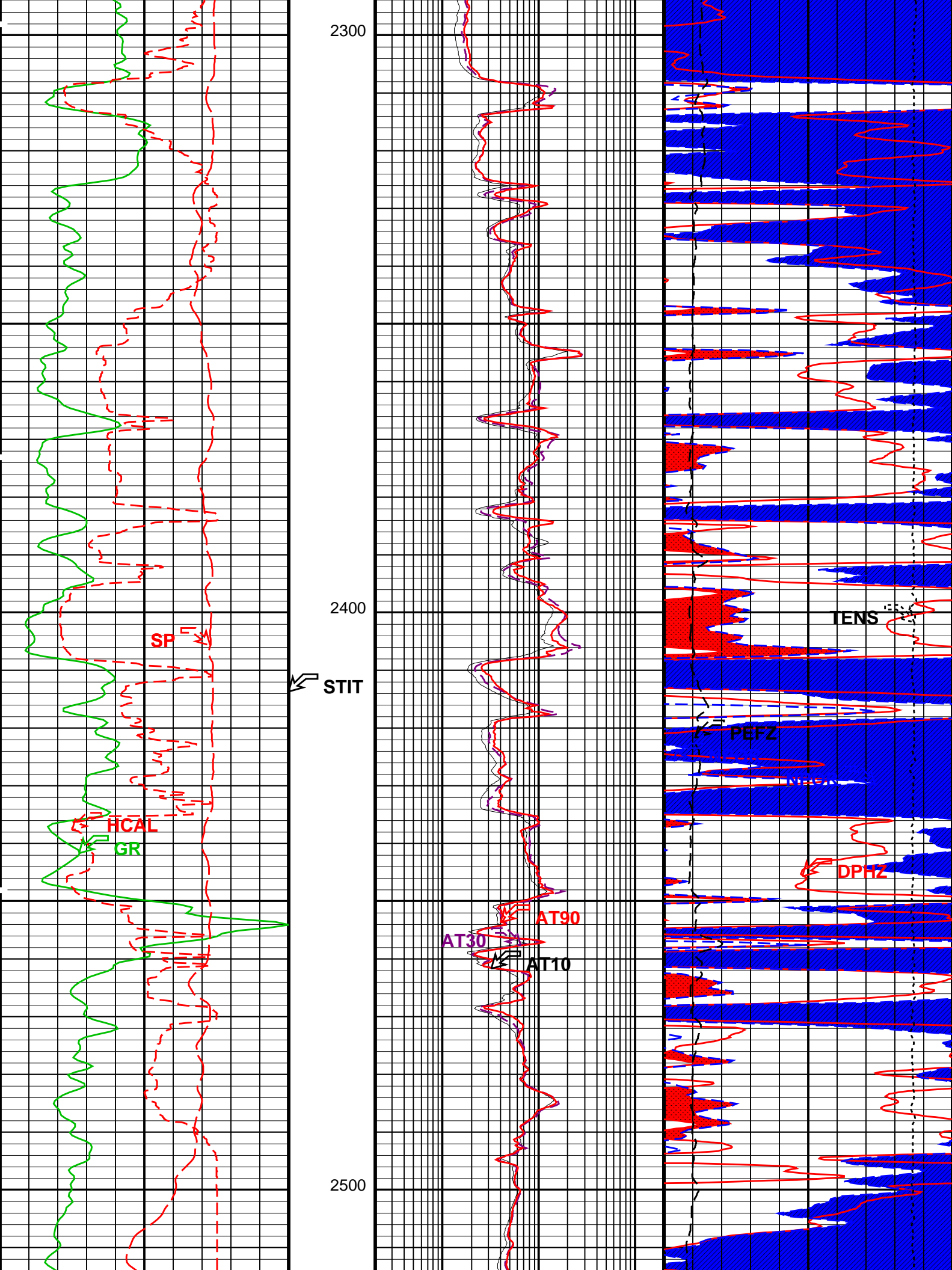


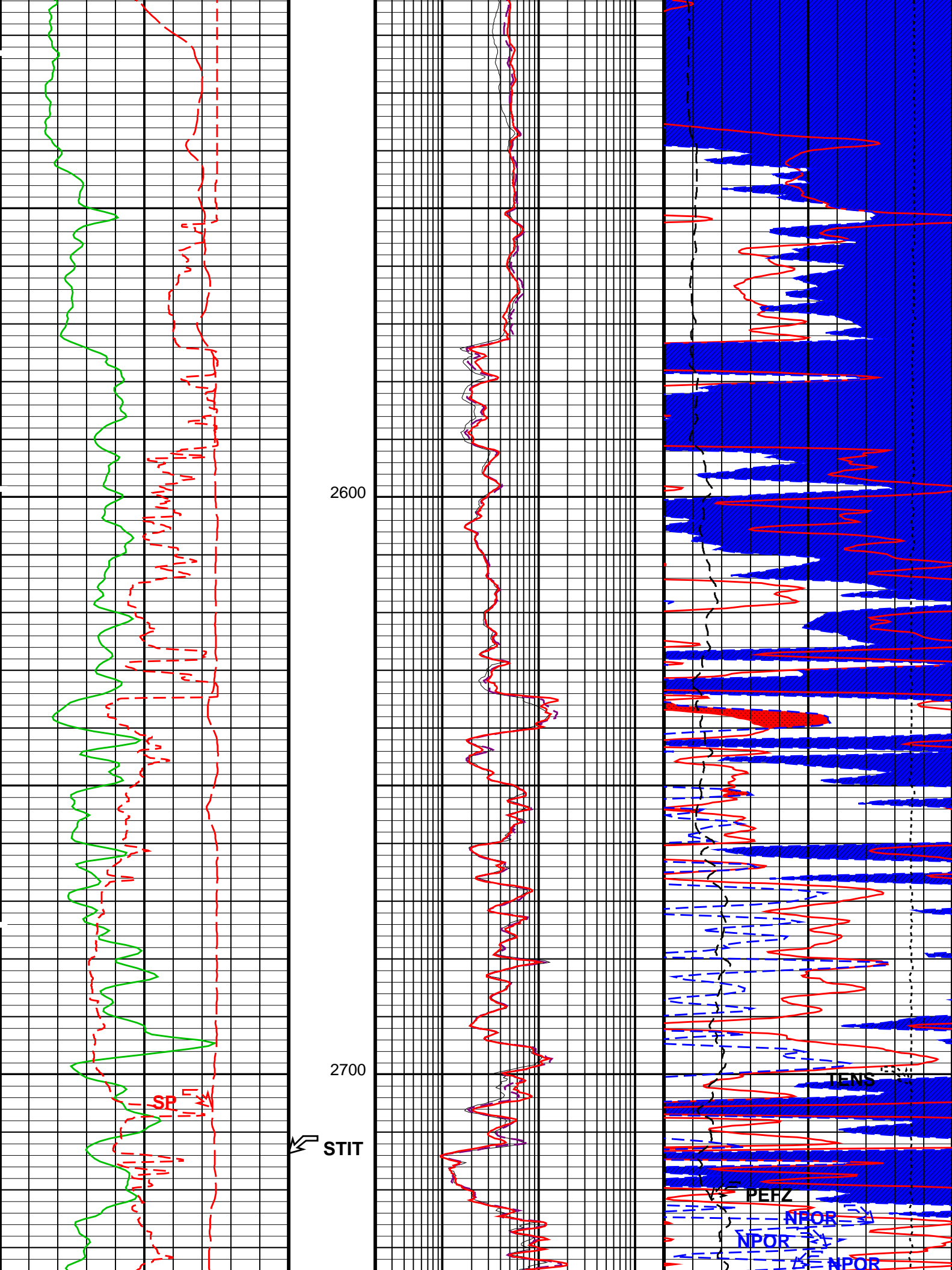


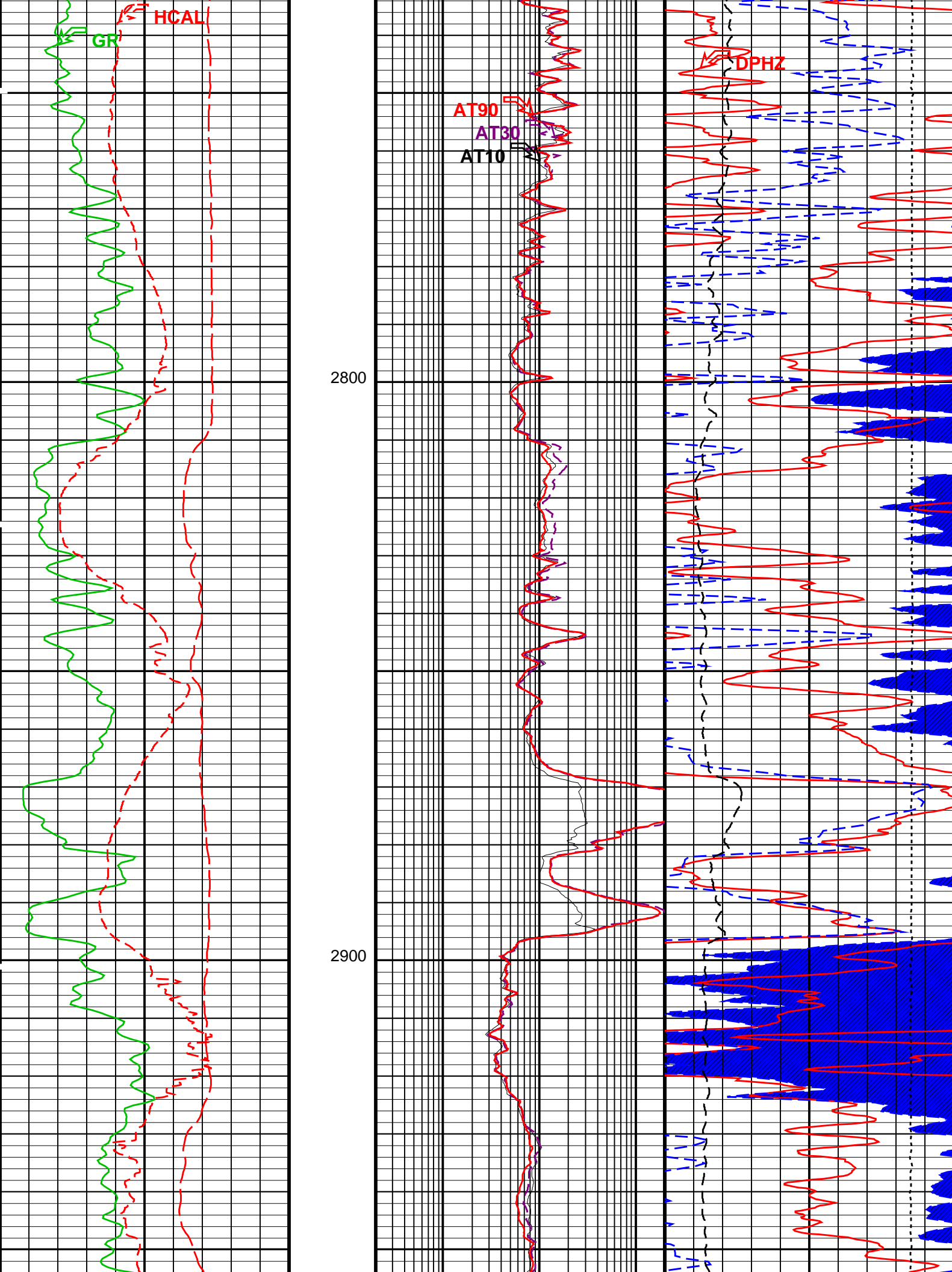


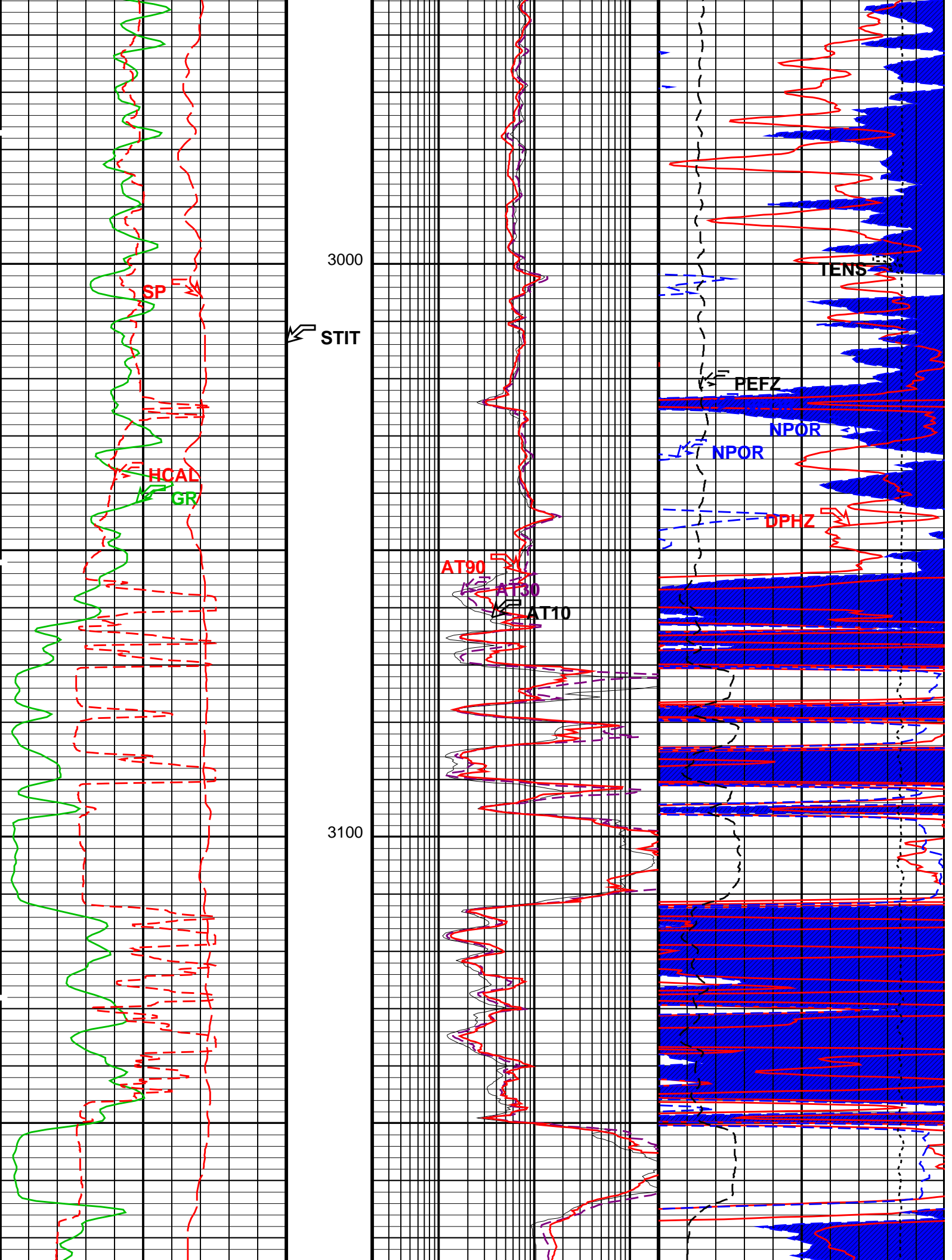


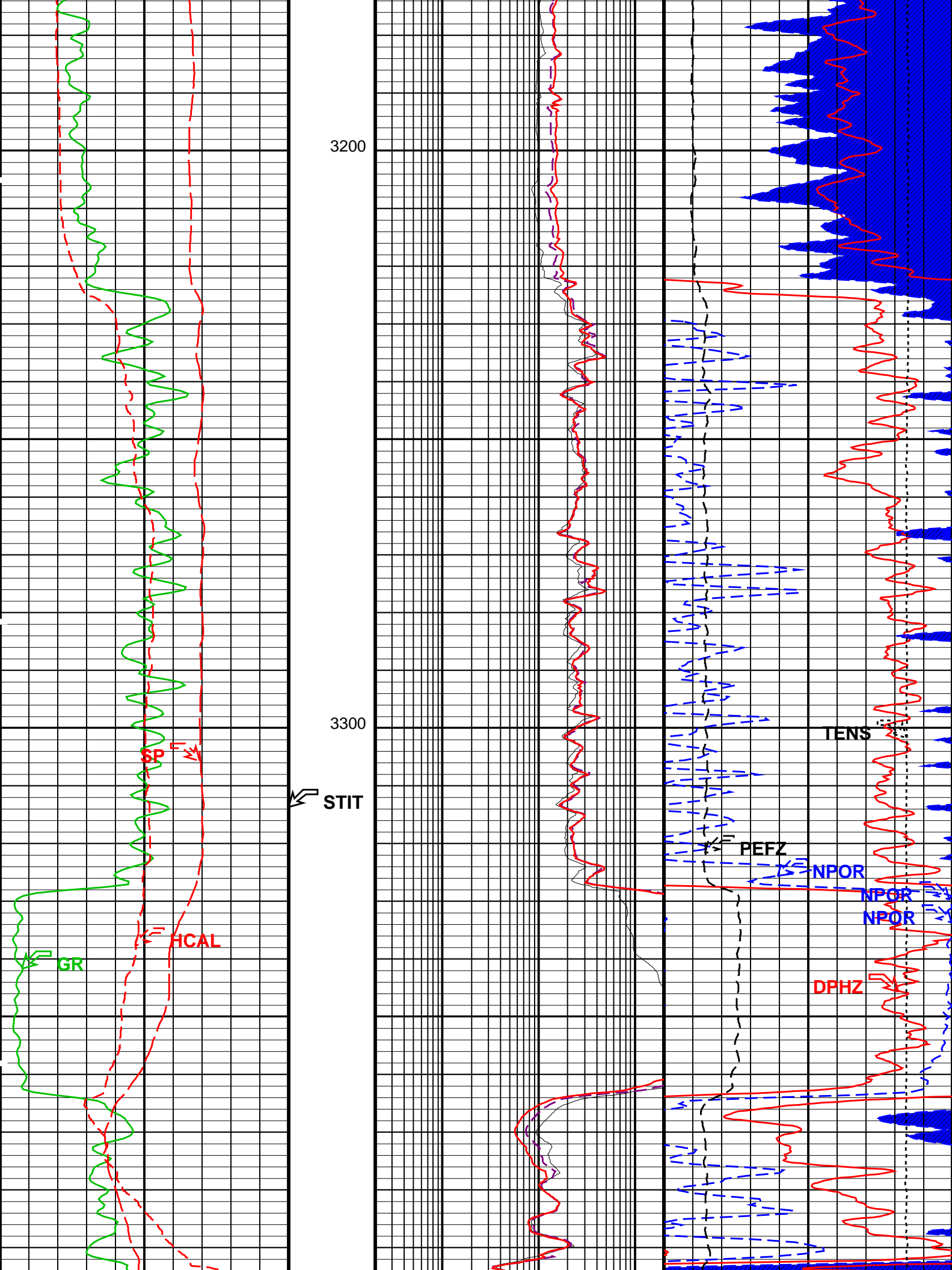


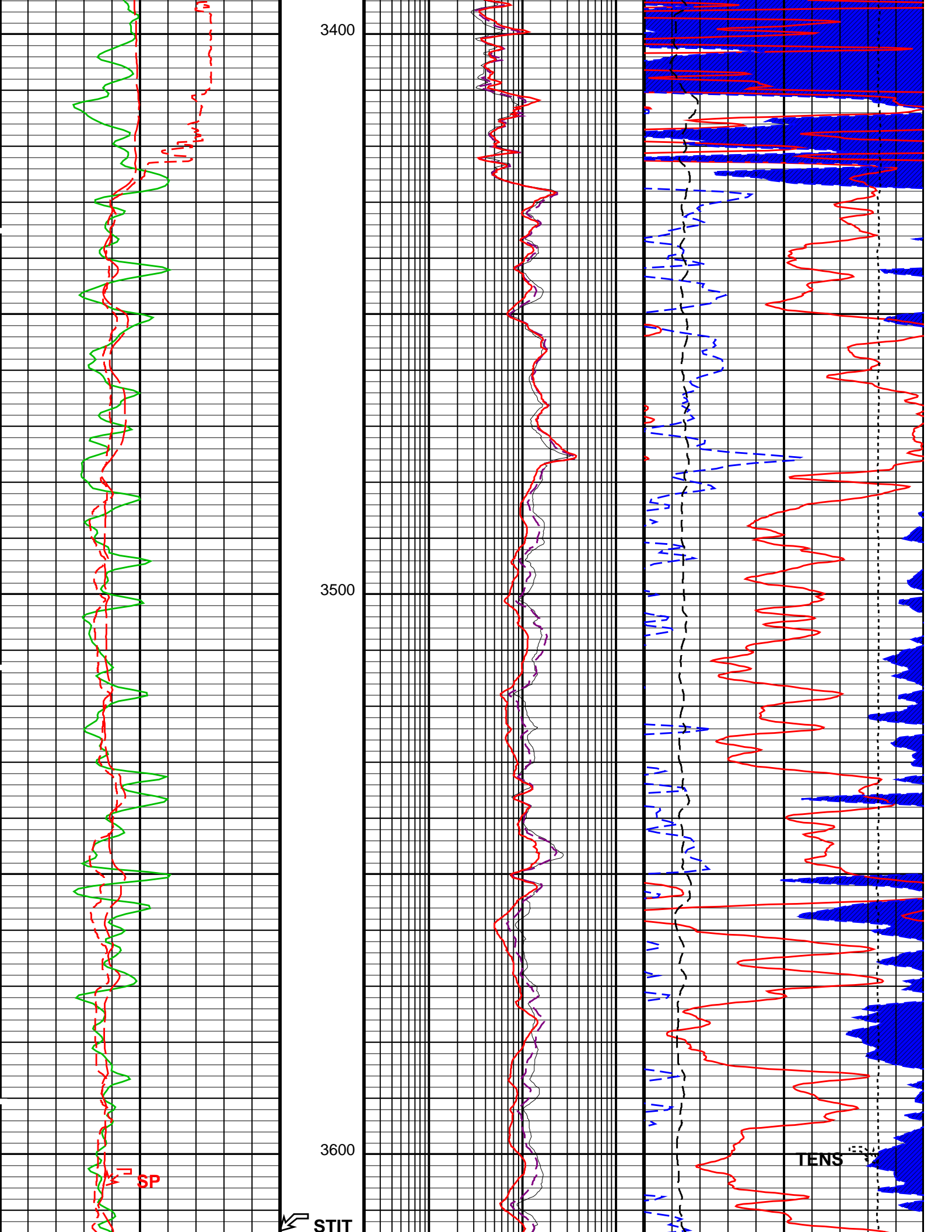


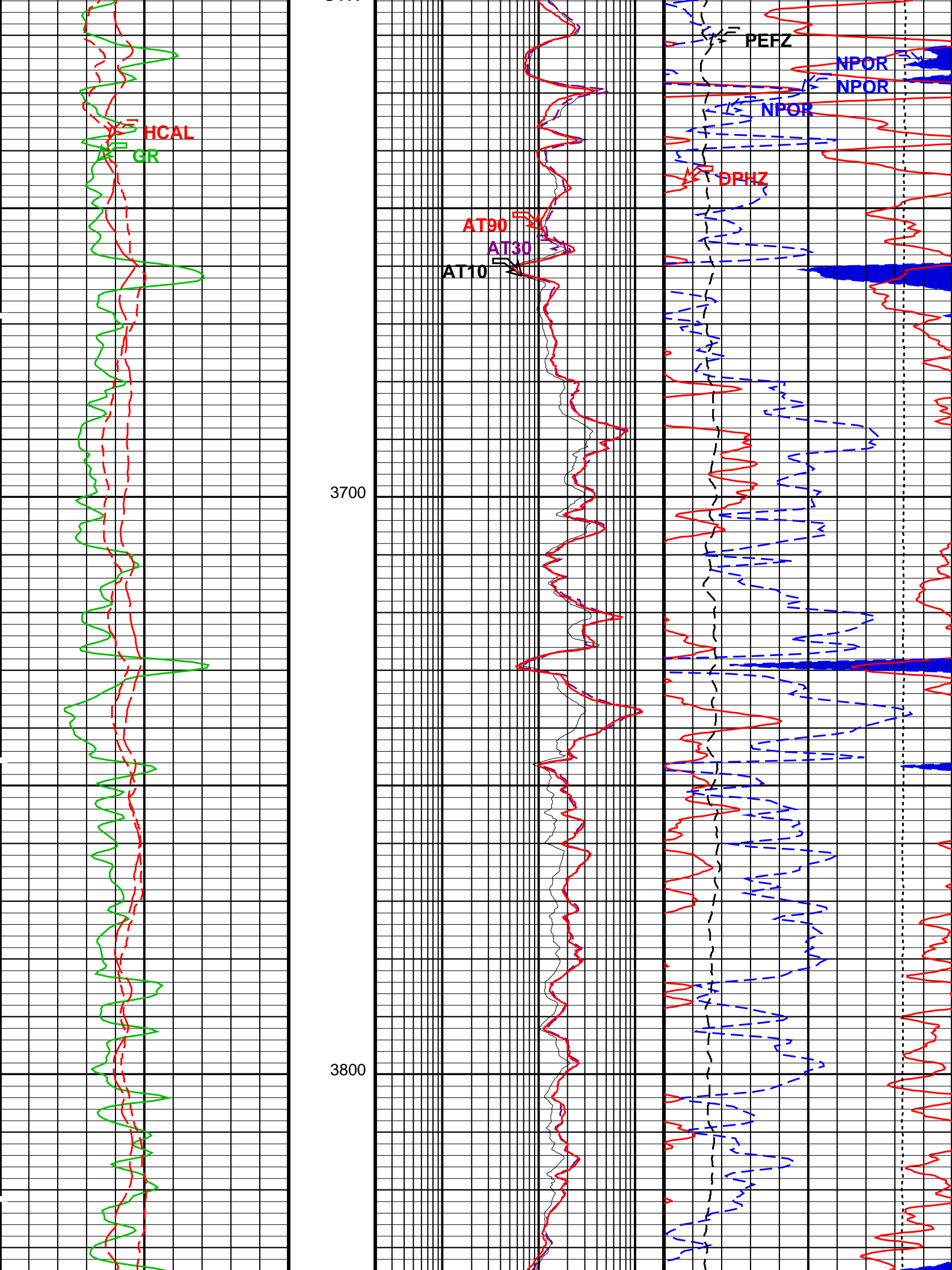


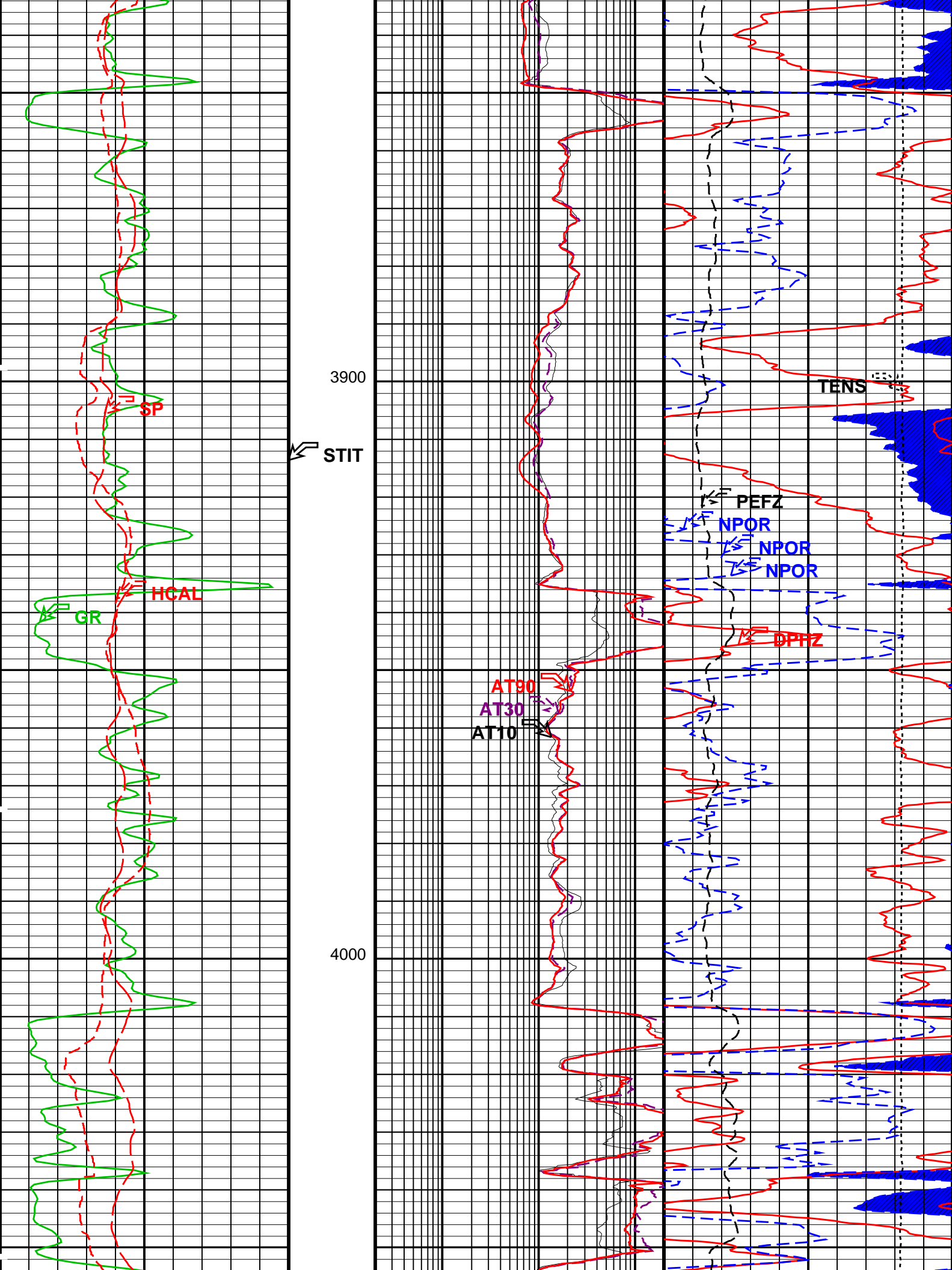


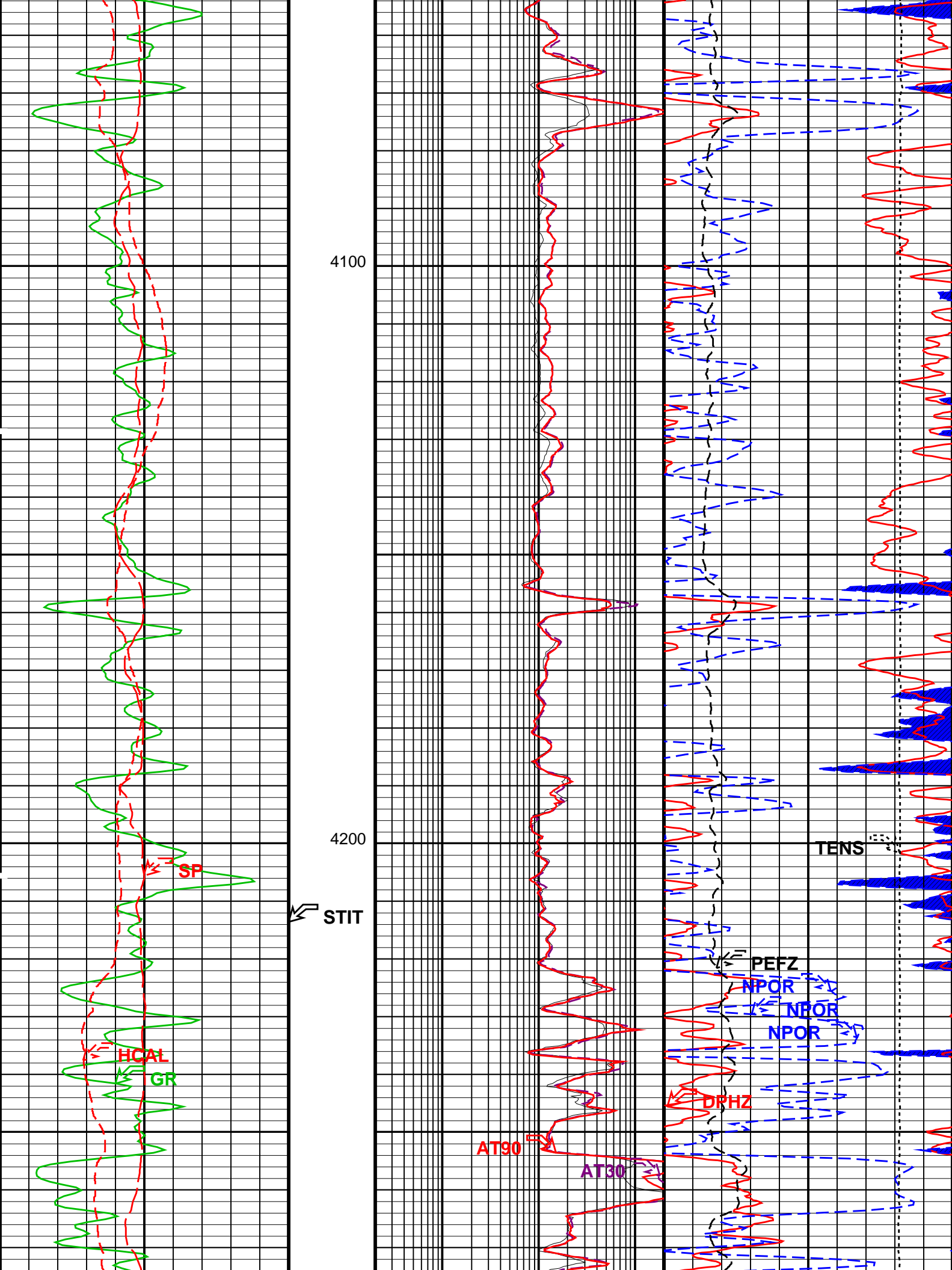








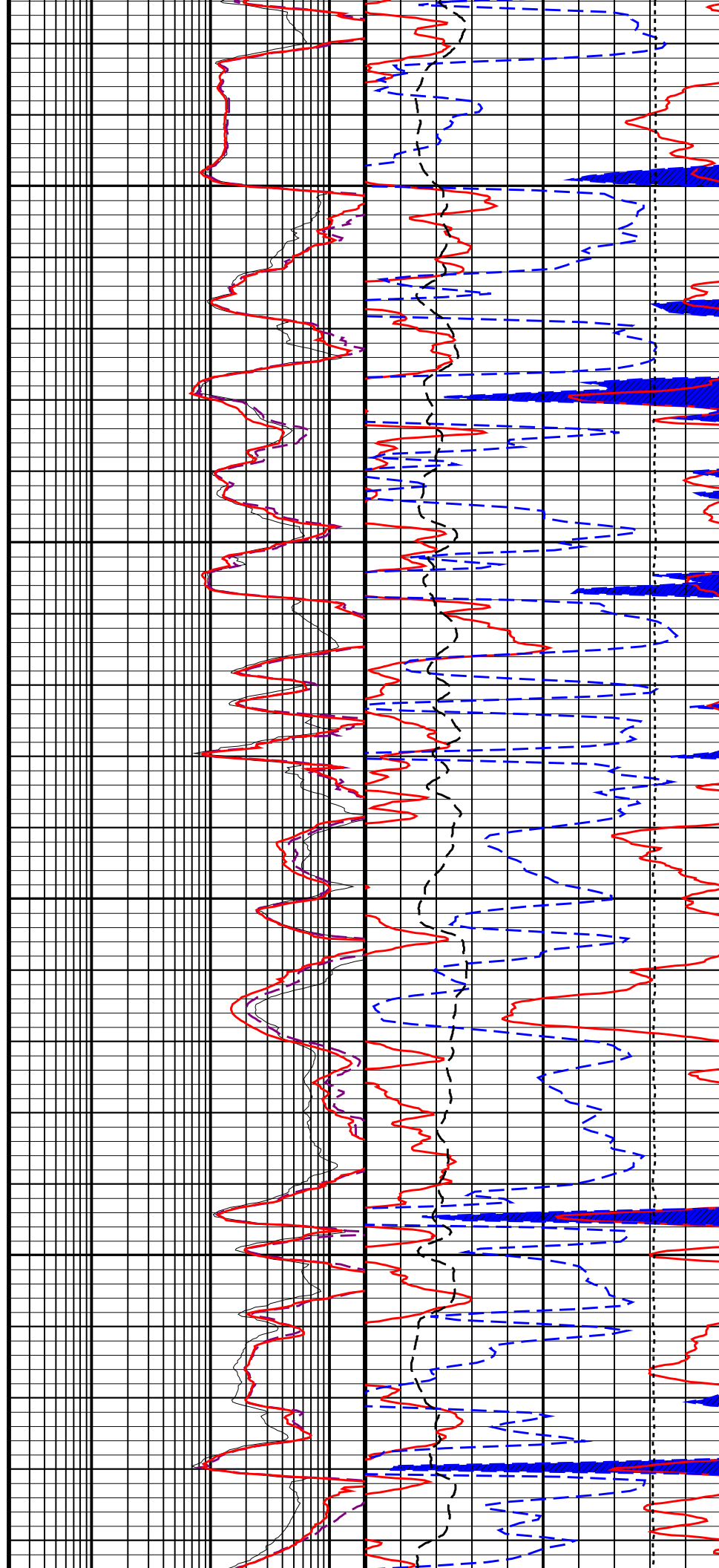


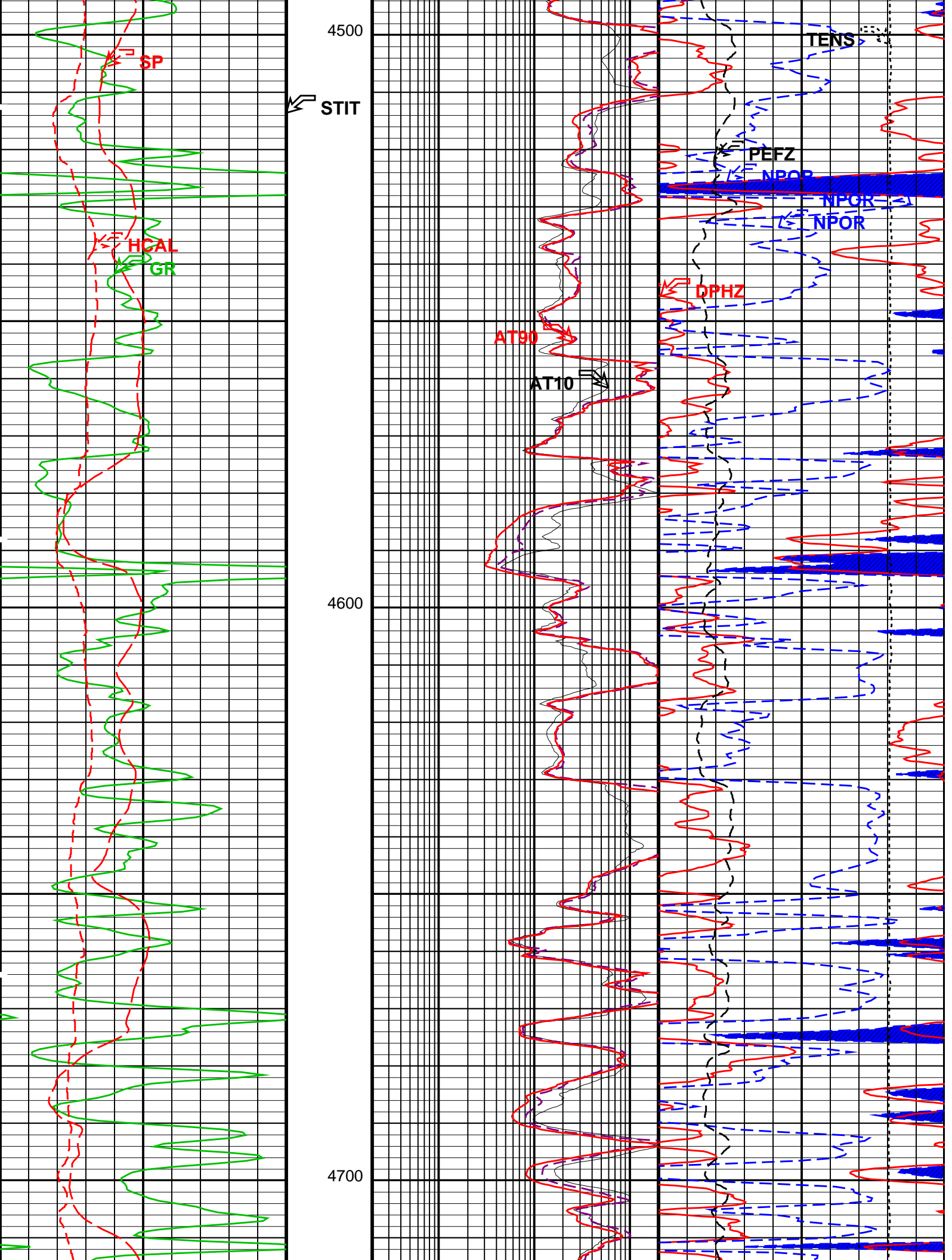


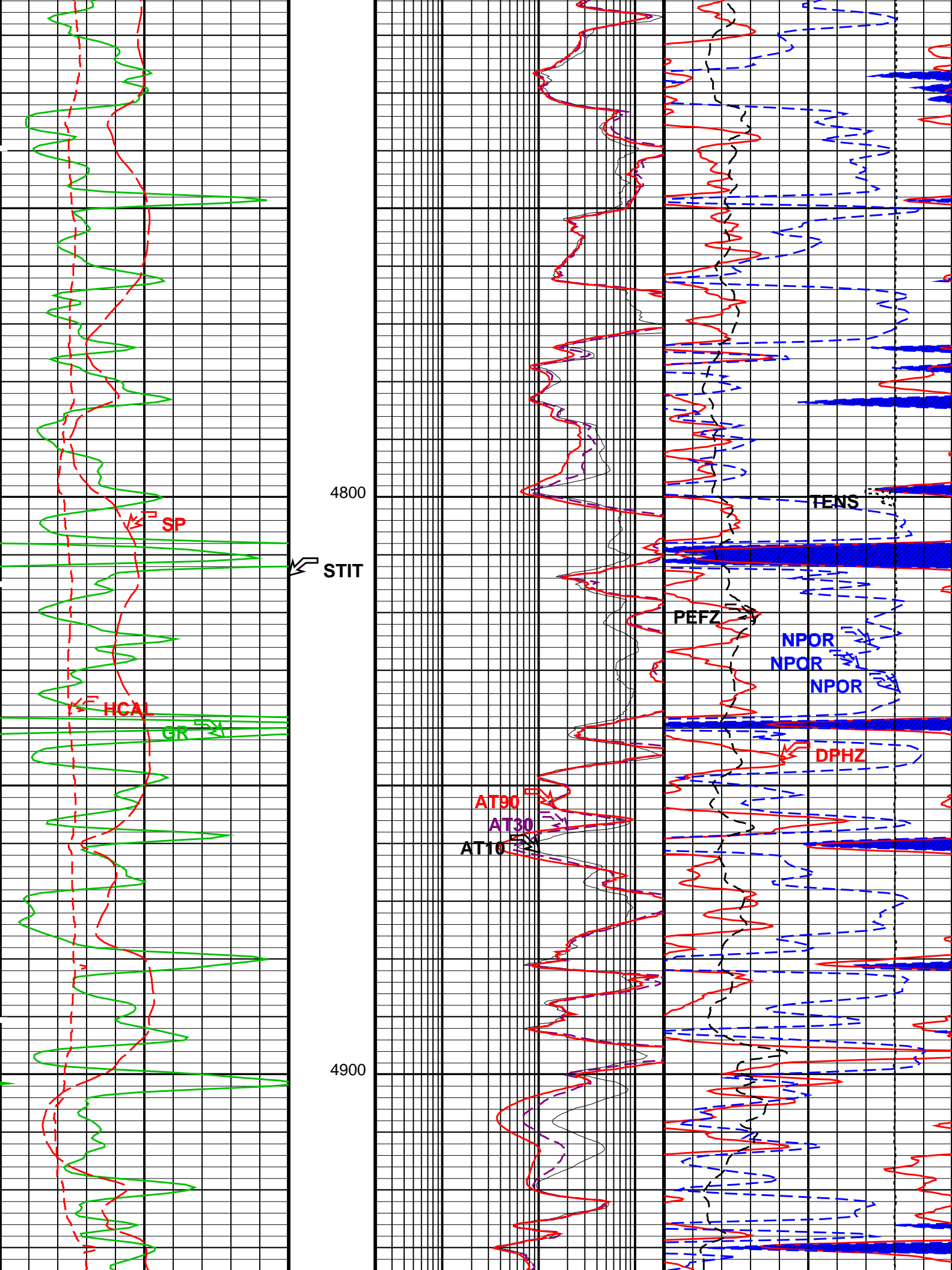


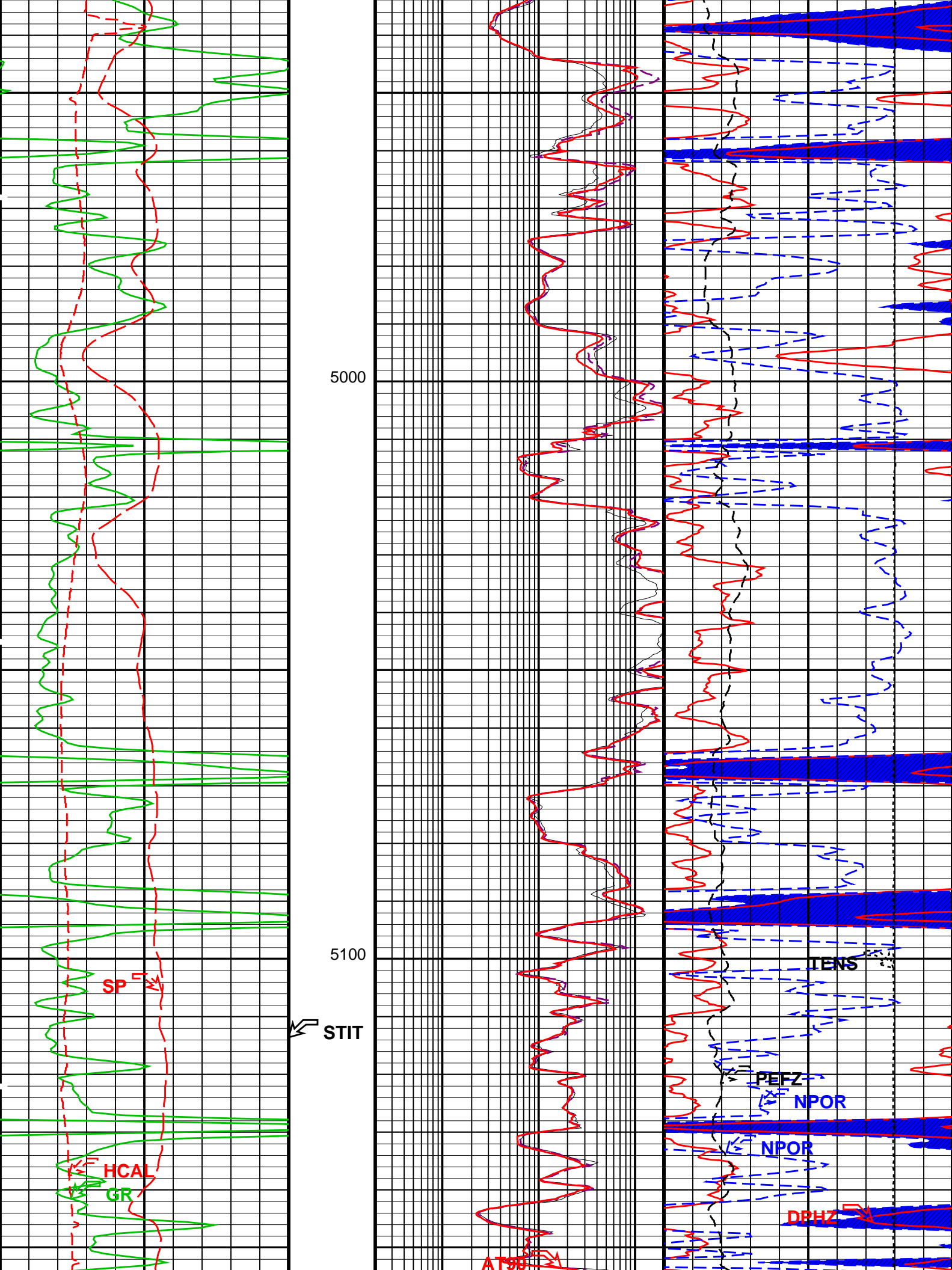
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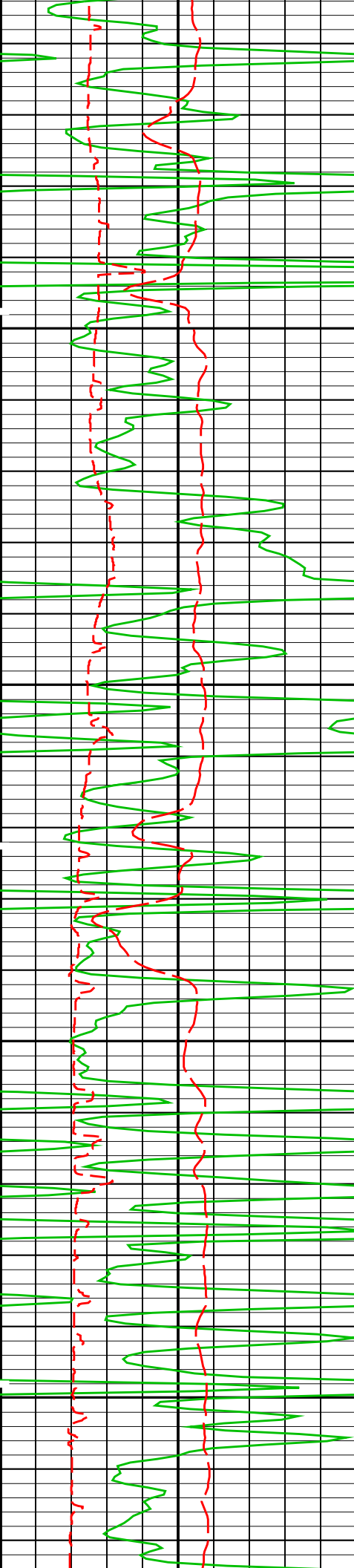
4400





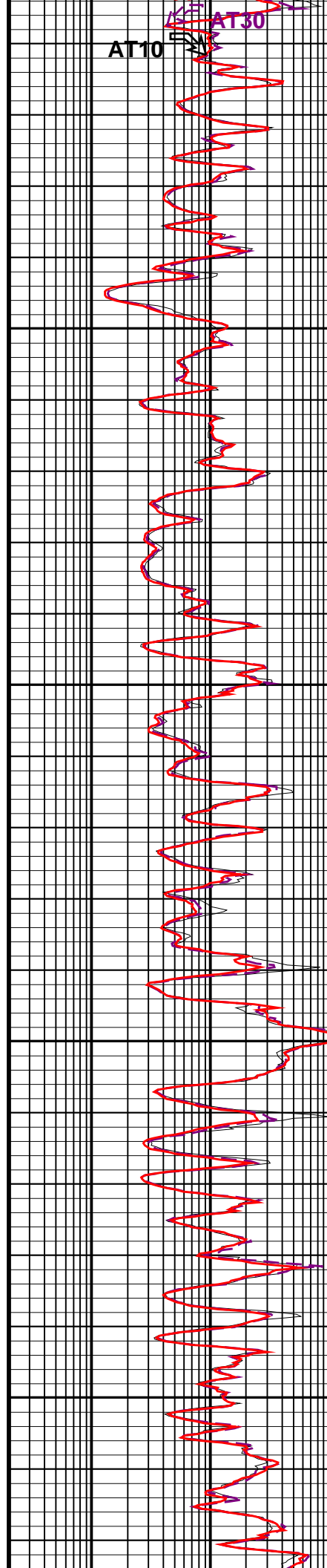






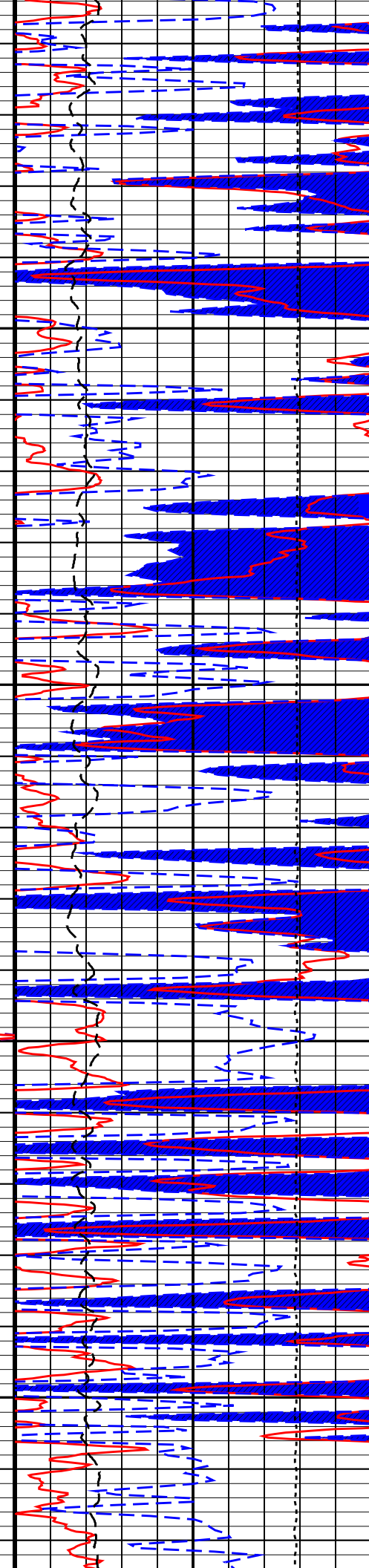
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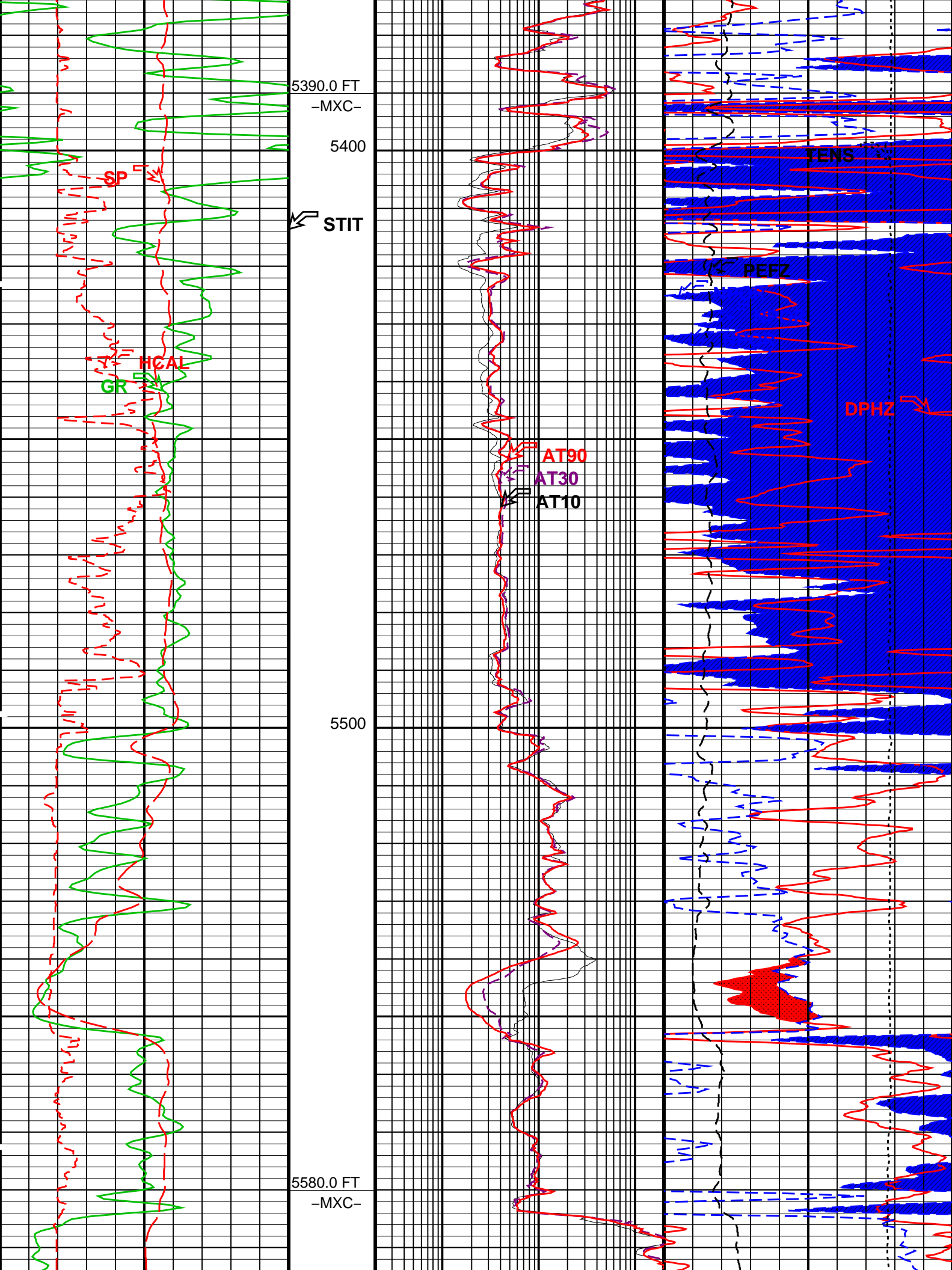
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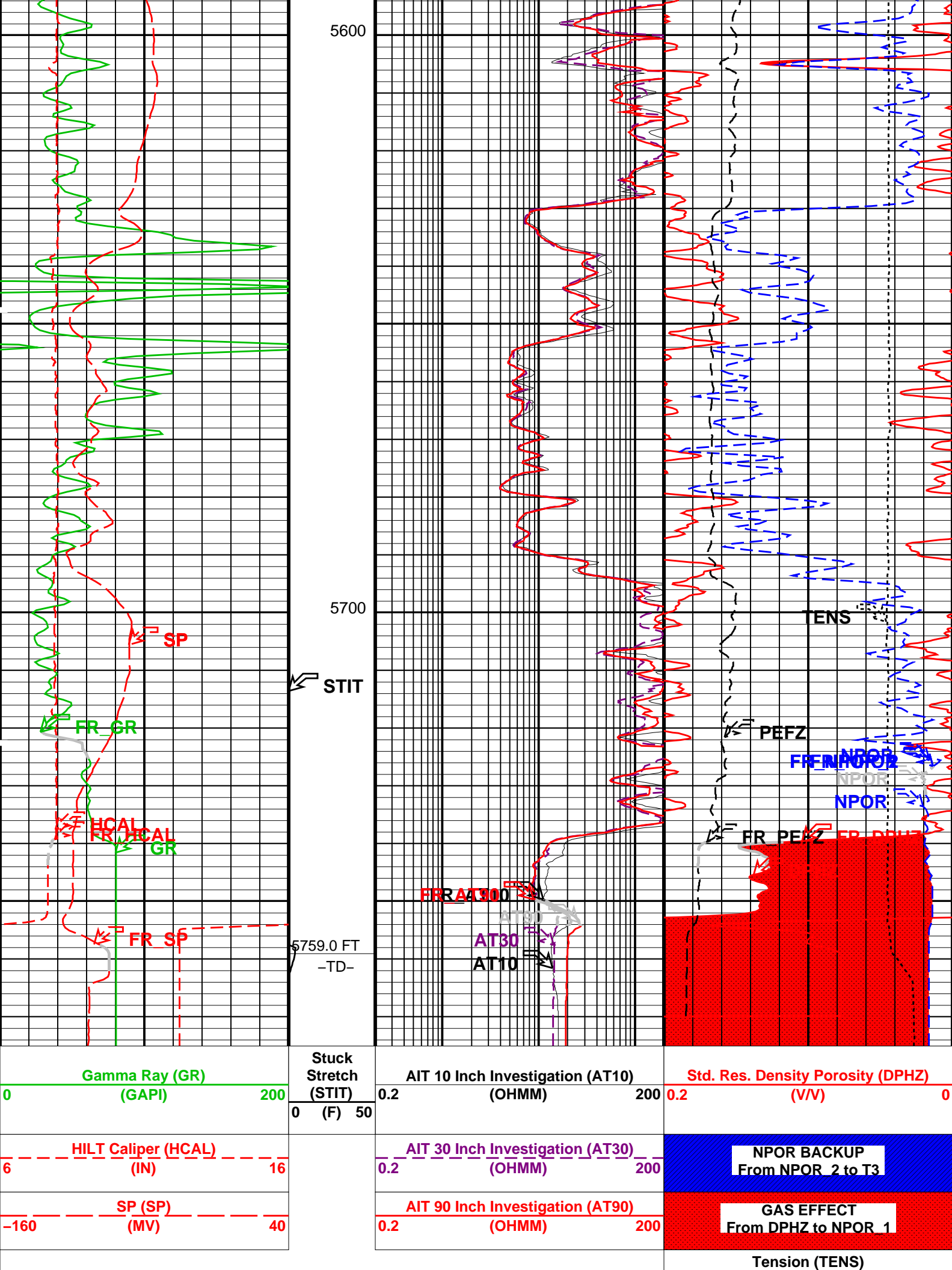


AT10

AT30







	10000	(LBF)	0
	Alpha Processed Neutron Porosity		
	(NPOR)		
	0.2	(V/V)	0
	Std. Res. Formation		
	Pe (PEFZ)		
	0	(----	10

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
AIT-M: Array Induction Tool - M		
ABHM	Array Induction Borehole Correction Mode	2_ComputeStandoff
ABHV	Array Induction Borehole Correction Code Version Number	900
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four
ABLV	Array Induction Basic Logs Code Version Number	223
ACDE	Array Induction Casing Detection Enable	No
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered
ACSED	Array Induction Casing Shoe Estimated Depth	-50000 FT
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes
AFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20
AIGS	Array Induction Select Akima Interpolation Gating	On
AMRF	Array Induction Mud Resistivity Factor	1
AORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20
ARFV	Array Induction Radial Profiling Code Version Number	701
ARPV	Array Induction Radial Parametrization Code Version Number	232
ASTA	Array Induction Tool Standoff	0.125 IN
ATRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal
AULV	Array Induction User Level Control	Normal
AZRSV	Array Induction Response Set Version for Z Resolution	00.10.25.00
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	134 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	CHART_GEN_9
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
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)	134 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	CHART_GEN_9
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	2.65 G/C3
MWCO	Mud Weight Correction Option	NO
NAAC	HRDD APS Activation Correction	OFF
NMT	HILT Nuclear Mud Type	NOBARITE
NPRM	HRDD Processing Mode	HiRes
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	
PERT: Preliminary Evaluation – Real Time			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	134	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	CHART_GEN 9	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	STI	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth – Driller	5760.00	FT
TDL	Total Depth – Logger	5759.00	FT
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	134	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	CHART_GEN 9	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
FEQL: Formation Evaluation Quick Look			
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
System and Miscellaneous			
BS	Bit Size	7.875	IN
BSAL	Borehole Salinity	300.00	PPM
CSIZ	Current Casing Size	8.625	IN
CWEI	Casing Weight	24.00	LB/F
DFD	Drilling Fluid Density	9.10	LB/G
DO	Depth Offset for Playback	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
FLEV	Fluid Level	-50000.00	FT
MST	Mud Sample Temperature	61.10	DEGF
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	1.2180	OHMM
TD	Total Depth	5759	FT

Format: COMBO Vertical Scale: 5" per 100' Graphics File Created: 23-Mar-2010 15:04

OP System Version: 17C0-154

AIT-M	17C0-154	HILTB-FTB	17C0-154
DTC-H	17C0-154		

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_008LUP	FN:7	PRODUCER	23-Mar-2010 13:43	5775.0 FT	401.5 FT
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Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_017PUP	FN:16	PRODUCER	23-Mar-2010 15:04
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Schlumberger

Repeat Analysis

MAXIS Field Log

Input DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_008LUP	FN:7	PRODUCER	23-Mar-2010 13:43	5775.0 FT	401.5 FT
DEFAULT	AIT_TLD_MCFL_CNL_016PUP	FN:15	PRODUCER	23-Mar-2010 15:02	5772.0 FT	4565.5 FT
Output DLIS Files						
DEFAULT	AIT_TLD_MCFL_CNL_017PUP	FN:16	PRODUCER	23-Mar-2010 15:04		

OP System Version: 17C0-154

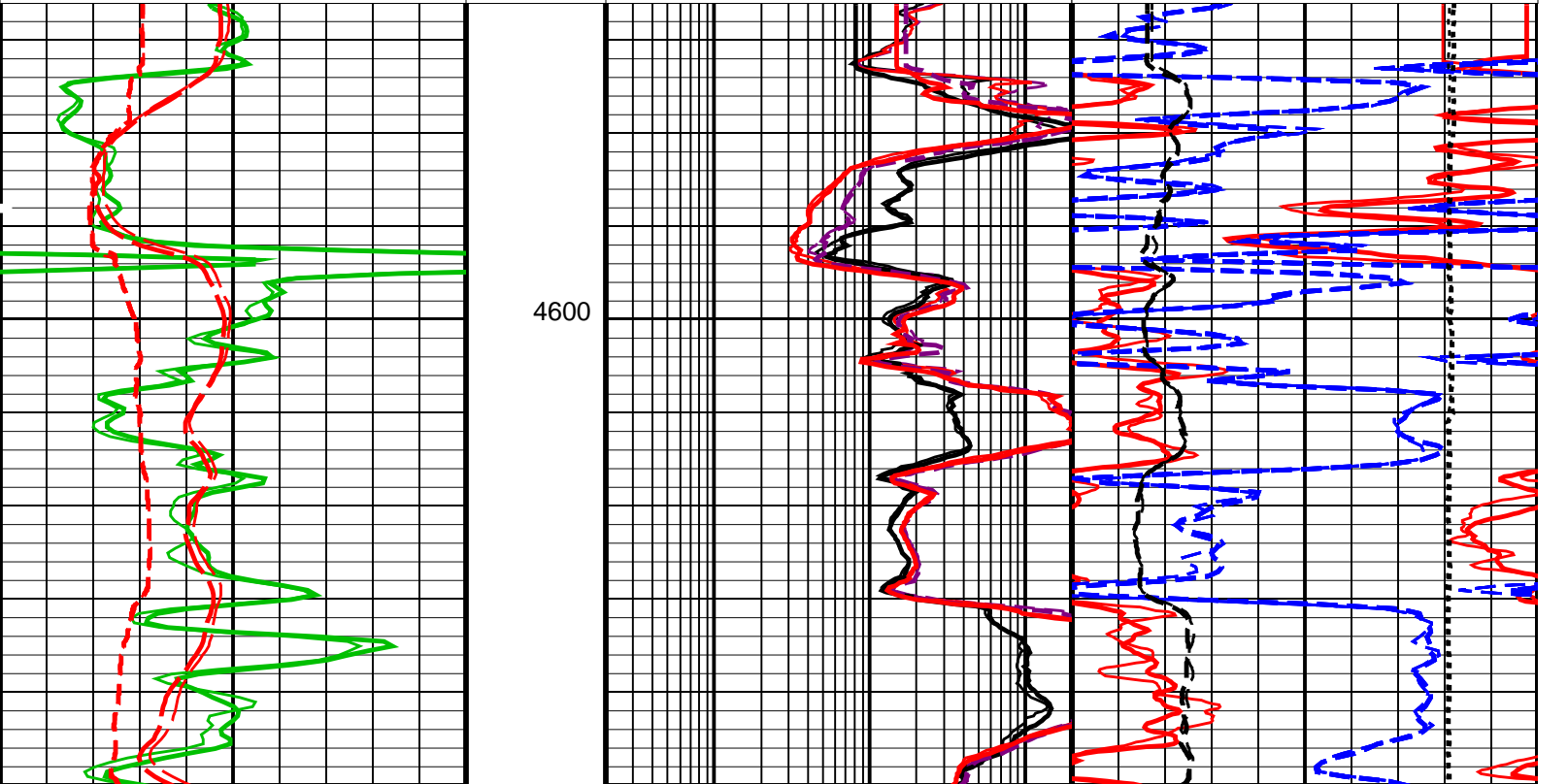
AIT-M	17C0-154	HILTB-FTB	17C0-154
DTC-H	17C0-154		

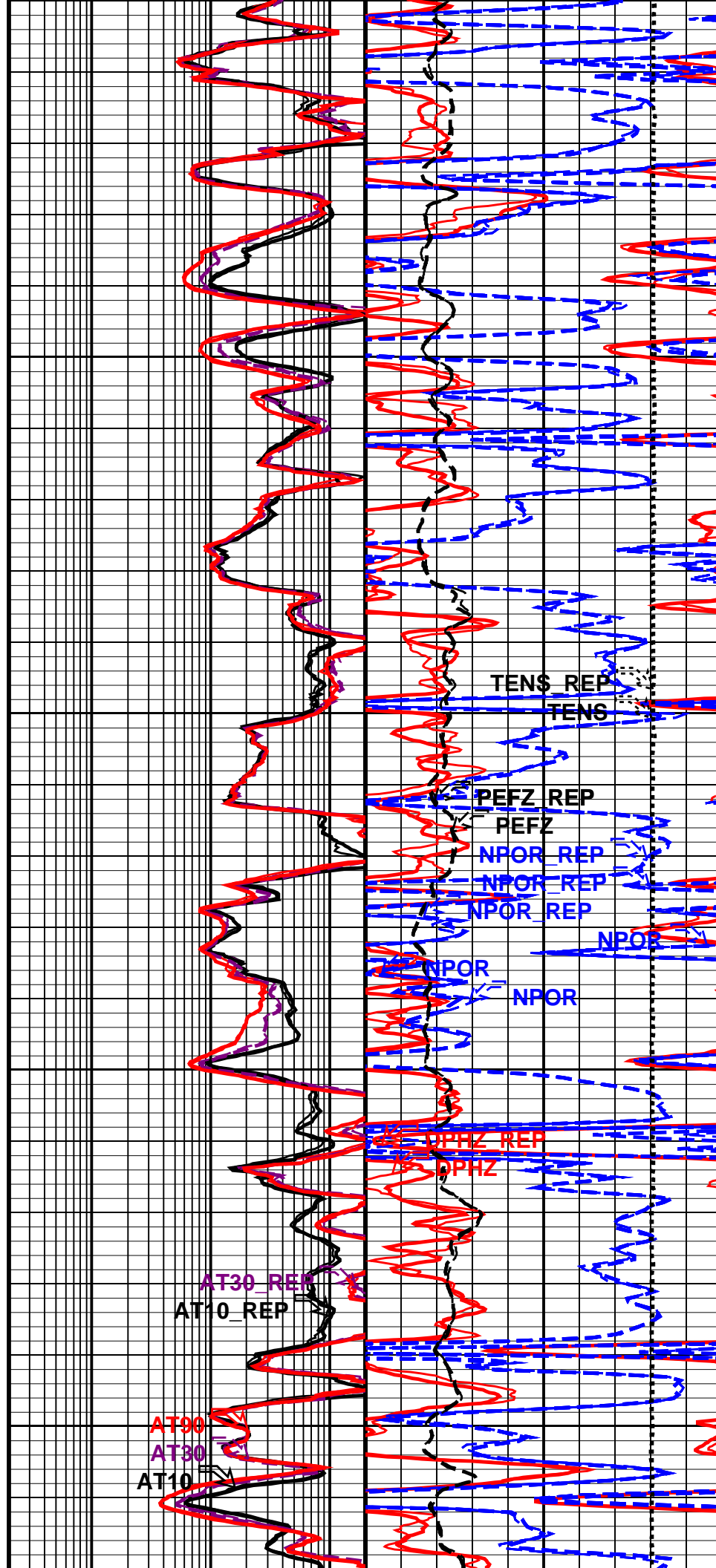
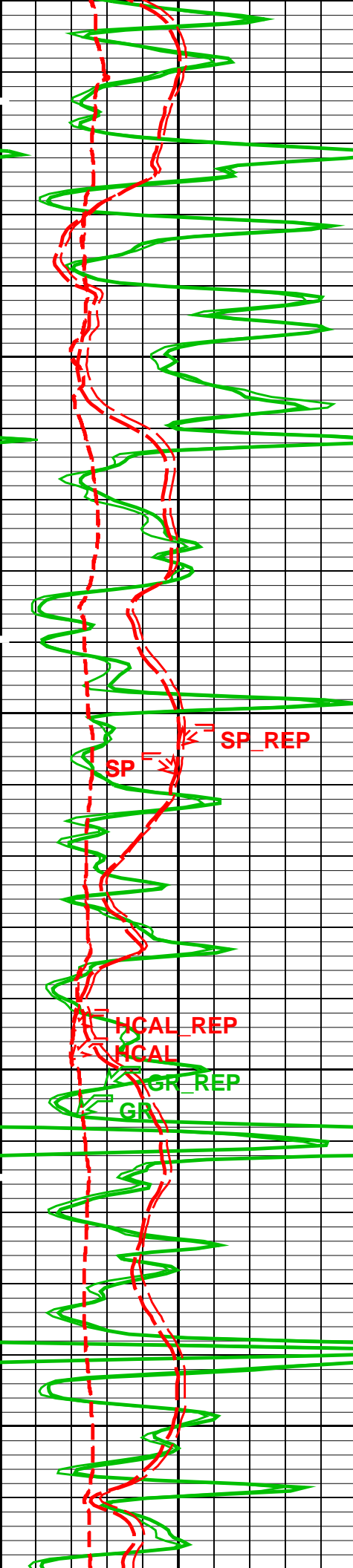
Changed Parameter Summary

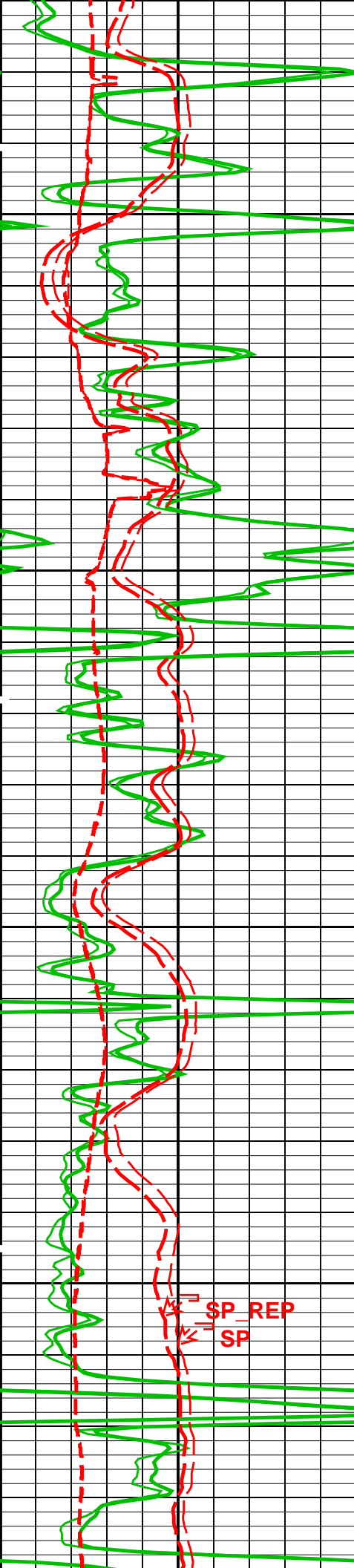
DLIS Name	New Value	Previous Value	Depth & Time
MATR	LIMESTONE	SANDSTONE	5775.0 15:04:49
MDEN	SANDSTONE	LIMESTONE	5390.0 15:05:01
	2.71 G/C3	2.65 G/C3	5775.0 15:04:49
	2.65 G/C3	2.71 G/C3	5390.0 15:05:01

PIP SUMMARY

Time Mark Every 60 S		PEFZ_REP Curve (PEFZ_REP)	
		0 (----) 10	
		TENS_REP Curve (TENS_REP)	
		10000 (LBF) 0	
		NPOR_2_REP Curve (NPOR_REP)	
		0.4 (V/V) 0.2	
SP_REP Curve (SP_REP)		NPOR_1_REP Curve (NPOR_REP)	
-160 (MV) 40		0.2 (V/V) 0	
HCAL_REP Curve (HCAL_REP)		AT90_REP Curve (AT90_REP)	
6 (IN) 16		0.2 (OHMM) 200	
GR_REP Curve (GR_REP)		AT30_REP Curve (AT30_REP)	
0 (GAPI) 200		0.2 (OHMM) 200	
		NPOR_REP Curve (NPOR_REP)	
		0.2 (V/V) 0	
		AT10_REP Curve (AT10_REP)	
		0.2 (OHMM) 200	
		DPHZ_REP Curve (DPHZ_REP)	
		0.2 (V/V) 0	



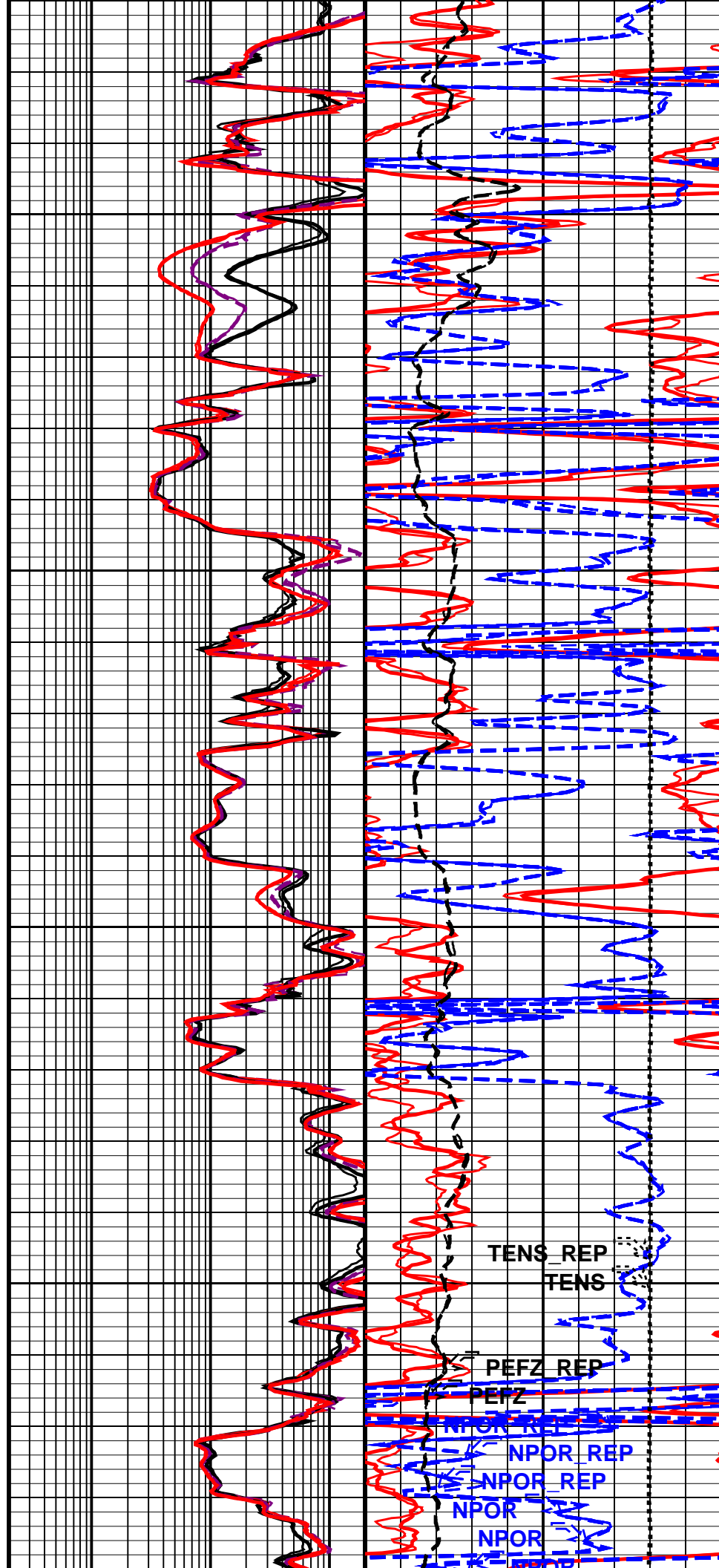




4900

5000

SP_REP
SP

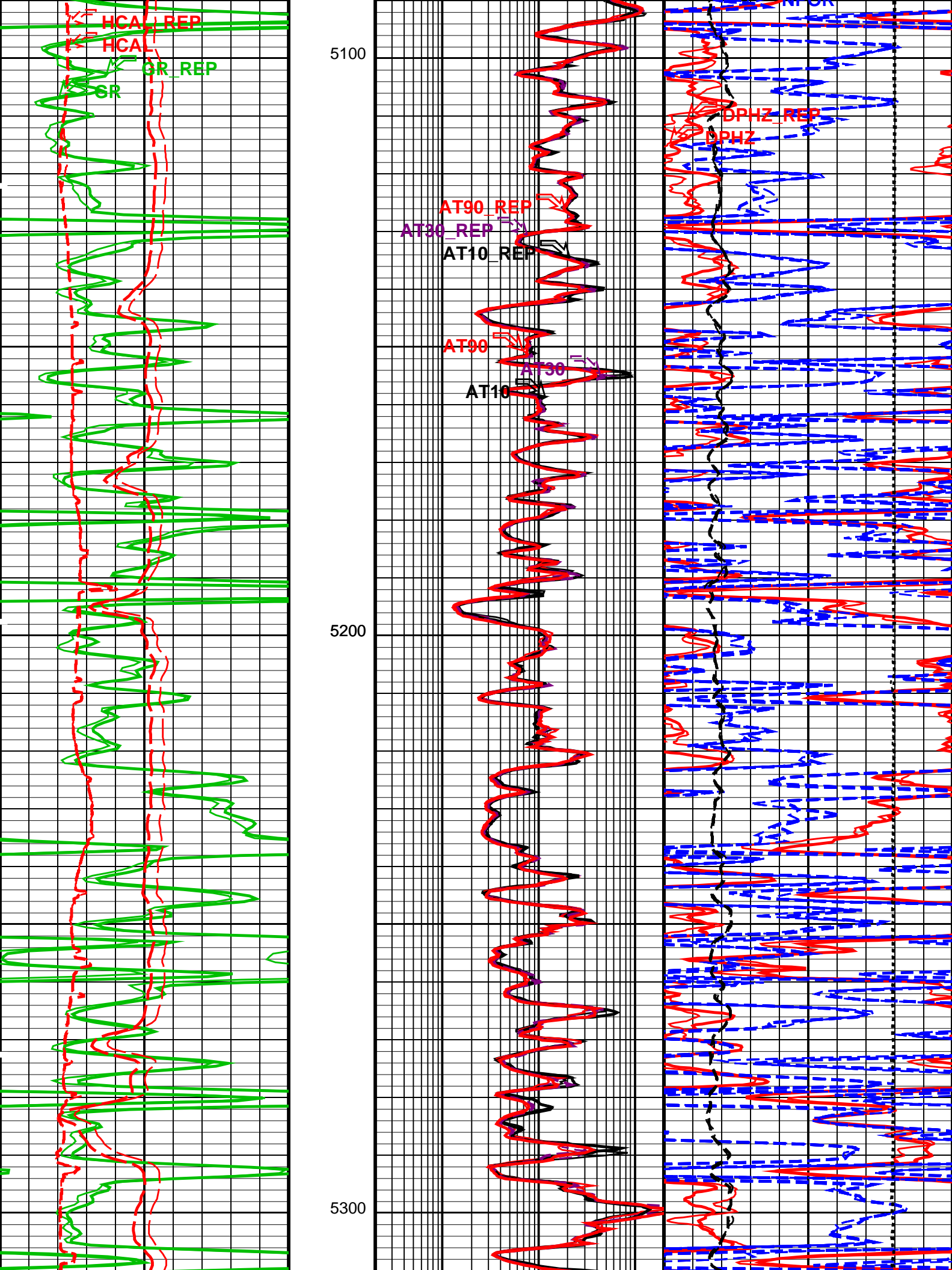


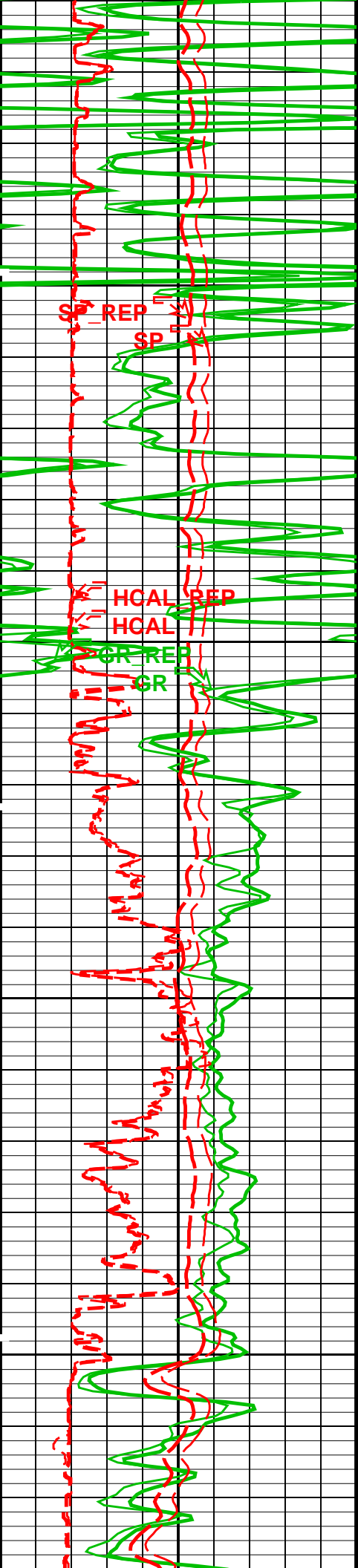
TENS_REP
TENS

PEFZ_REP
PEFZ

NPOR_REP
NPOR

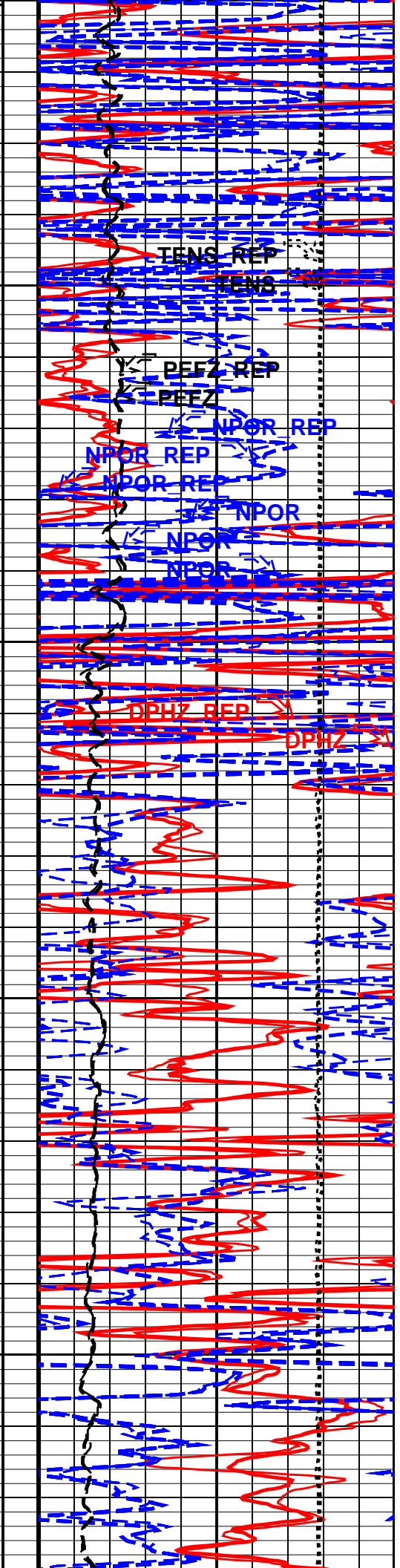
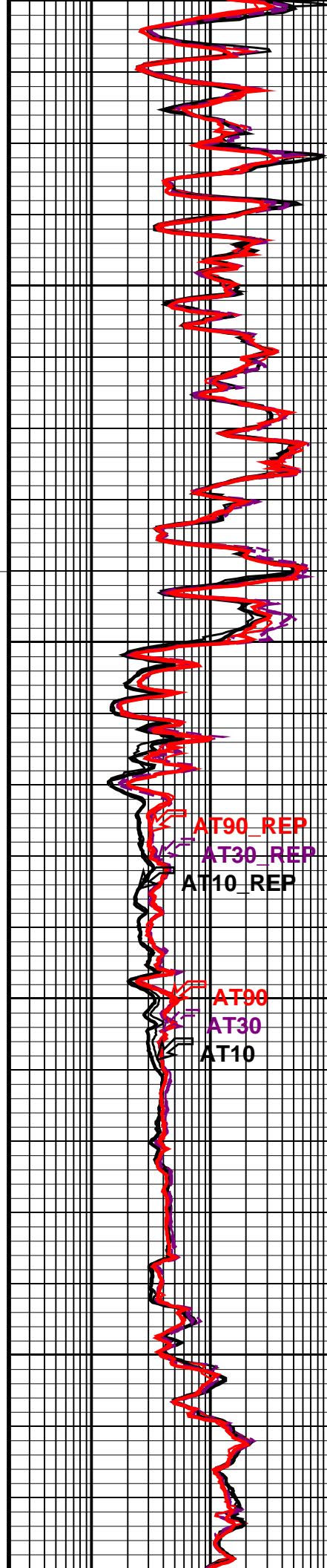
NPOR_REP
NPOR

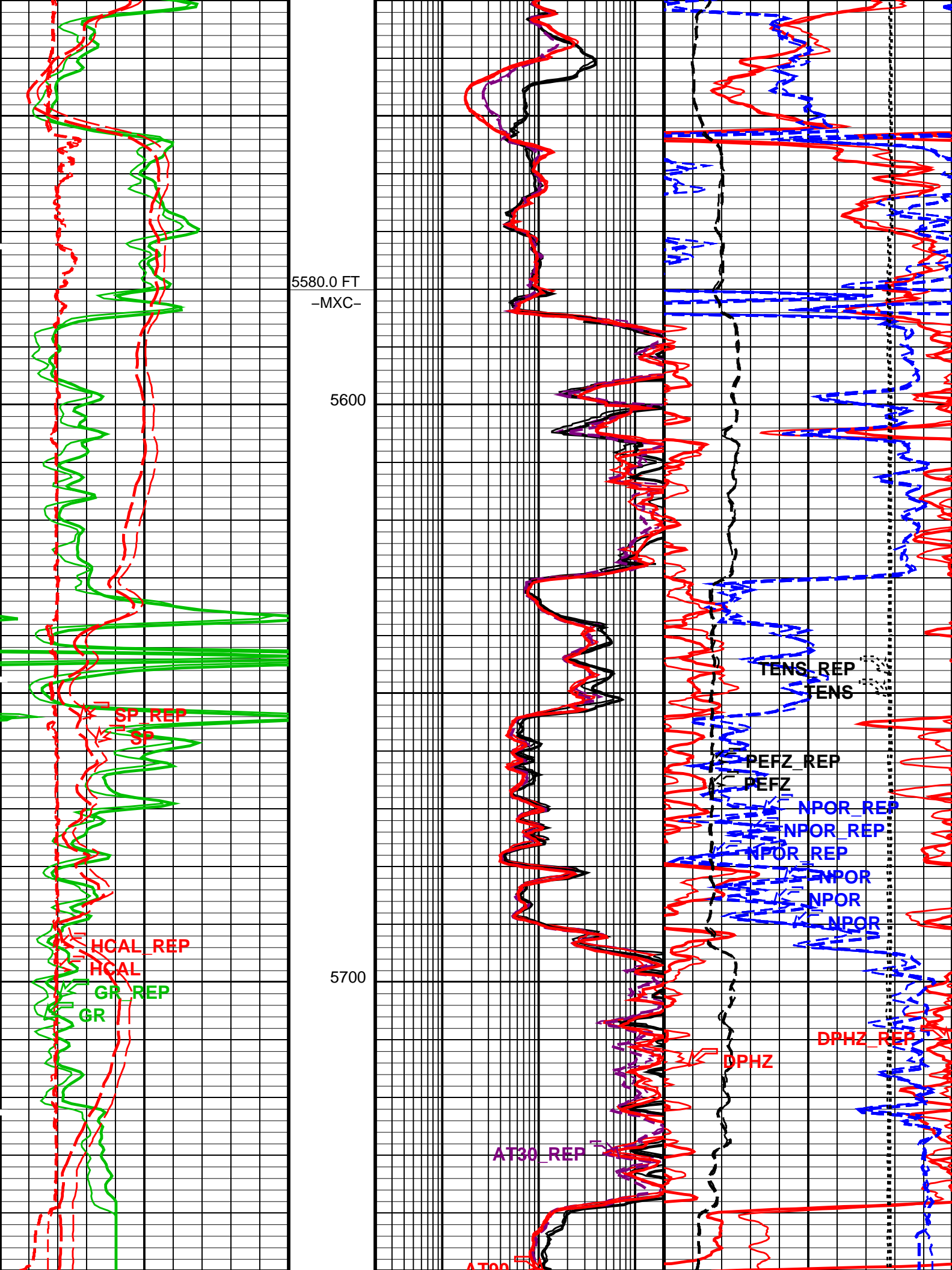


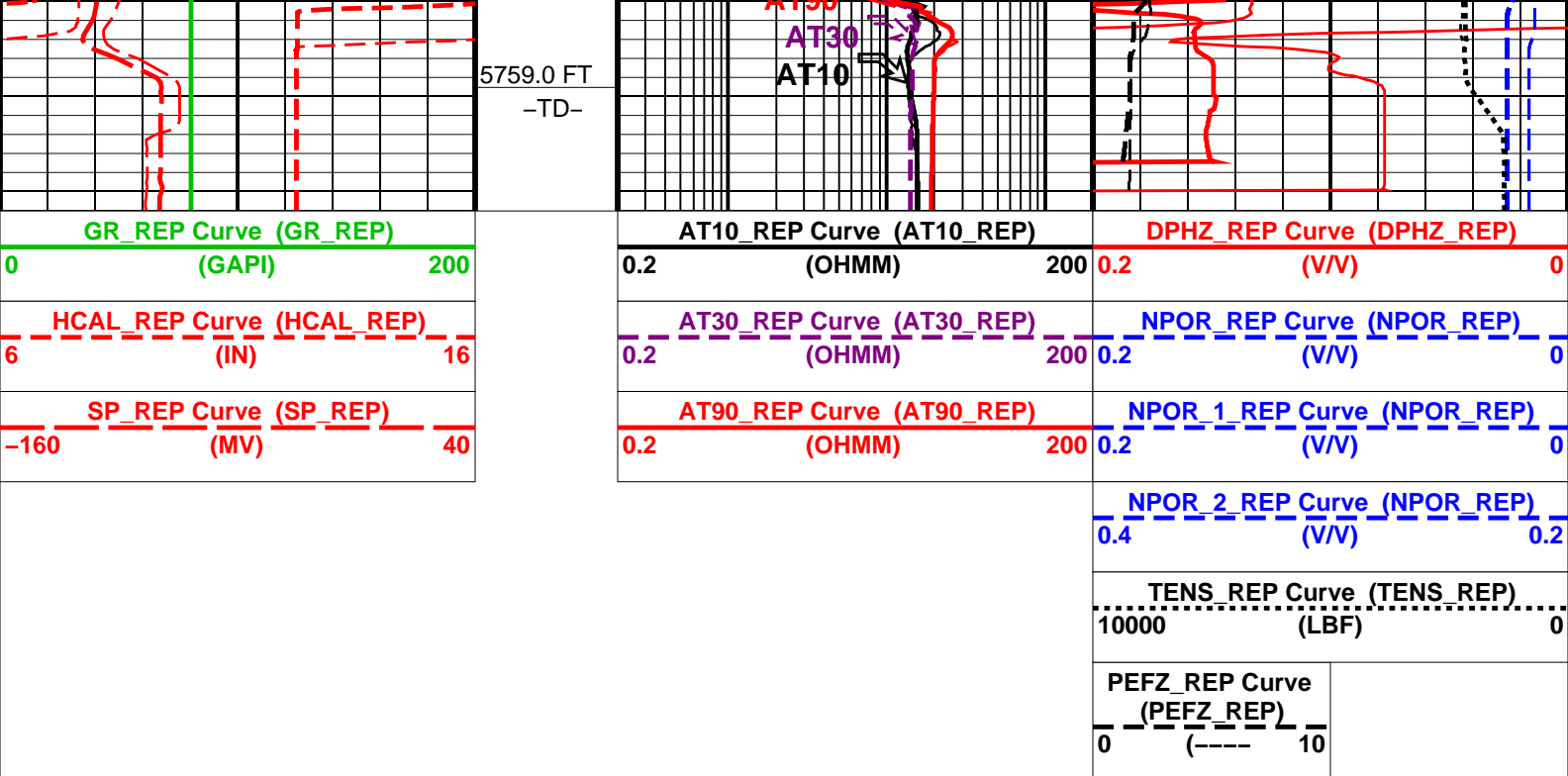


5390.0 FT
-MXC-
5400

5500







PIP SUMMARY

Parameters

DLIS Name	Description	Value
AIT-M: Array Induction Tool - M		
ABHM	Array Induction Borehole Correction Mode	2_ComputeStandoff
ABHV	Array Induction Borehole Correction Code Version Number	900
ABLM	Array Induction Basic Logs Mode	6_One_Two_and_Four
ABLV	Array Induction Basic Logs Code Version Number	223
ACDE	Array Induction Casing Detection Enable	No
ACEN	Array Induction Tool Centering Flag (in Borehole)	Eccentered
ACSED	Array Induction Casing Shoe Estimated Depth	-50000 FT
AETP	Array Induction Enable Sonde Error Temp&Pres Corr	Yes
AFRSV	Array Induction Response Set Version for Four ft Resolution	41.70.24.20
AIGS	Array Induction Select Akima Interpolation Gating	On
AMRF	Array Induction Mud Resistivity Factor	1
AORSV	Array Induction Response Set Version for One ft Resolution	41.70.24.20
ARFV	Array Induction Radial Profiling Code Version Number	701
ARPV	Array Induction Parametrization Code Version Number	232
ASTA	Array Induction Tool Standoff	0.125 IN
ATRSV	Array Induction Response Set Version for Two ft Resolution	41.70.24.20
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	Internal
AULV	Array Induction User Level Control	Normal
AZRSV	Array Induction Response Set Version for Z Resolution	00.10.25.00
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	134 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
GRGD	Geothermal Gradient	0.01 DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9
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
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)	134 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	CHART_GEN_9	
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	2.65	G/C3
MWCO	Mud Weight Correction Option	NO	
NAAC	HRDD APS Activation Correction	OFF	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	HiRes	
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	
PERT: Preliminary Evaluation – Real Time			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	134	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	CHART_GEN_9	
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	5759.00	FT
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	134	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	CHART_GEN_9	
GTSE	Generalized Temperature Selection	HSTS_HTEM	
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE	
SHT	Surface Hole Temperature	68	DEGF
FEQL: Formation Evaluation Quick Look			
FEXP	Form Factor Exponent	2	
FNUM	Form Factor Numerator	1	
System and Miscellaneous			
BS	Bit Size	7.875	IN
BSAL	Borehole Salinity	300.00	PPM
CSIZ	Current Casing Size	8.625	IN
CWEI	Casing Weight	24.00	LB/F
DFD	Drilling Fluid Density	9.10	LB/G
DO	Depth Offset for Playback	0.0	FT
DORL	Depth Offset for Repeat Analysis	0.0	FT
FLEV	Fluid Level	-50000.00	FT
MST	Mud Sample Temperature	61.10	DEGF
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	1.2180	OHMM
TD	Total Depth	5759	FT

Format: COMBO_REP Vertical Scale: 5" per 100' Graphics File Created: 23-Mar-2010 15:04

OP System Version: 17C0-154

AIT-M	17C0-154	HILTB-FTB	17C0-154
DTC-H	17C0-154		

Input DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_008LUP	FN:7	PRODUCER	23-Mar-2010 13:43	5775.0 FT	401.5 FT
DEFAULT	AIT_TLD_MCFL_CNL_016PUP	FN:15	PRODUCER	23-Mar-2010 15:02	5772.0 FT	4565.5 FT

Output DLIS Files

DEFAULT	AIT_TLD_MCFL_CNL_017PUP	FN:16	PRODUCER	23-Mar-2010 15:04
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MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Array Induction Tool – M Wellsite Calibration – Electronics Calibration Check – Thru Cal Mag. & Phase							
Master: 17-Mar-2010 8:50 Before: 22-Mar-2010 22:03							
Thru Cal Magnitude – 0	0	0.6194	0.6193	N/A	N/A	N/A	V
Thru Cal Magnitude – 1	0	1.269	1.269	N/A	N/A	N/A	V
Thru Cal Magnitude – 2	0	0.6307	0.6306	N/A	N/A	N/A	V
Thru Cal Magnitude – 3	0	0.7118	0.7117	N/A	N/A	N/A	V
Thru Cal Magnitude – 4	0	1.332	1.332	N/A	N/A	N/A	V
Thru Cal Magnitude – 5	0	1.950	1.950	N/A	N/A	N/A	V
Thru Cal Magnitude – 6	0	1.946	1.946	N/A	N/A	N/A	V
Thru Cal Magnitude – 7	0	1.418	1.417	N/A	N/A	N/A	V
Thru Cal Phase – 0	0	180.0	179.9	N/A	N/A	N/A	DEG
Thru Cal Phase – 1	0	178.9	178.8	N/A	N/A	N/A	DEG
Thru Cal Phase – 2	0	175.3	175.3	N/A	N/A	N/A	DEG
Thru Cal Phase – 3	0	174.6	174.5	N/A	N/A	N/A	DEG
Thru Cal Phase – 4	0	168.4	168.4	N/A	N/A	N/A	DEG
Thru Cal Phase – 5	0	166.7	166.7	N/A	N/A	N/A	DEG
Thru Cal Phase – 6	0	166.8	166.7	N/A	N/A	N/A	DEG
Thru Cal Phase – 7	0	165.9	165.9	N/A	N/A	N/A	DEG

Array Induction Tool – M Wellsite Calibration – Electronics Calibration Check – Auxiliary

Master: 17-Mar-2010 8:50 Before: 22-Mar-2010 22:03

Array Induction SPA Plus	991.0	983.6	983.5	N/A	N/A	N/A	MV
Array Induction SPA Zero	0	-0.2001	-0.1835	N/A	N/A	N/A	MV
Array Induction Temperature PI	0.9170	0.9114	0.9115	N/A	N/A	N/A	V
Array Induction Temperature Ze	0	-0.0002014	-0.0001035	N/A	N/A	N/A	V

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

Master: 17-Mar-2010 8:50

Test Loop Gain Correctio – 0	0	1.015	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 1	0	1.012	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 2	0	1.016	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 3	0	1.012	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 4	0	0.9937	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 5	0	0.9890	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 6	0	0.9937	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 7	0	1.006	N/A	N/A	N/A	N/A	V
Test Loop Gain Correctio – 0	0	0.3332	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 1	0	0.6161	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 2	0	0.1287	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 3	0	0.1700	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 4	0	0.1124	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 5	0	-0.06042	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 6	0	0.2973	N/A	N/A	N/A	N/A	DEG
Test Loop Gain Correctio – 7	0	-0.06541	N/A	N/A	N/A	N/A	DEG

Array Induction Tool – M Wellsite Calibration – Sonde Error Correction

Master: 17-Mar-2010 8:50

R Sonde Error Correction – 0	0	-65.75	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 1	0	176.6	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 2	0	119.4	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 3	0	66.51	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 4	0	27.71	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 5	0	12.62	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 6	0	9.430	N/A	N/A	N/A	N/A	MM/M
R Sonde Error Correction – 7	0	-1.425	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 0	0	-316.9	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 1	0	108.6	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 2	0	44.39	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 3	0	-31.03	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 4	0	20.82	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 5	0	10.41	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 6	0	5.205	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 7	0	-1.602	N/A	N/A	N/A	N/A	MM/M

X Sonde Error Correction – 4	0	20.82	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 5	0	-16.06	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 6	0	-4.953	N/A	N/A	N/A	N/A	MM/M
X Sonde Error Correction – 7	0	-11.76	N/A	N/A	N/A	N/A	MM/M
Array Induction Tool – M Wellsite Calibration – Mud Gain Correction							
Master: 17–Mar–2010 8:50							
Coarse – Mag, Real, Imag – 0	0	0.8486	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 1	0	0.8487	N/A	N/A	N/A	N/A	
Coarse – Mag, Real, Imag – 2	0	0.8487	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 0	0	0.8511	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 1	0	0.8512	N/A	N/A	N/A	N/A	
Fine – Mag, Real, Imag – 2	0	0.8512	N/A	N/A	N/A	N/A	
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Stab Measurement Summary							
Before: 22–Mar–2010 22:07							
BS Window Ratio	0.7392	N/A	0.7378	N/A	N/A	N/A	
BS Window Sum	10690	N/A	10700	N/A	N/A	N/A	CPS
SS Window Ratio	0.4732	N/A	0.4735	N/A	N/A	N/A	
SS Window Sum	10190	N/A	10190	N/A	N/A	N/A	CPS
LS Window Ratio	0.2975	N/A	0.2981	N/A	N/A	N/A	
LS Window Sum	1166	N/A	1163	N/A	N/A	N/A	CPS
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Photo–multiplier High Voltages Calibrations							
Before: 22–Mar–2010 22:07							
BS PM High Voltage (Command)	1509	N/A	1533	N/A	N/A	N/A	V
SS PM High Voltage (Command)	1777	N/A	1786	N/A	N/A	N/A	V
LS PM High Voltage (Command)	1896	N/A	1904	N/A	N/A	N/A	V
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Crystal Quality Resolutions Calibration							
Before: 22–Mar–2010 22:07							
BS Crystal Resolution	11.23	N/A	11.26	N/A	N/A	N/A	%
SS Crystal Resolution	11.03	N/A	11.11	N/A	N/A	N/A	%
LS Crystal Resolution	9.873	N/A	9.632	N/A	N/A	N/A	%
High resolution Integrated Logging Tool–DTS Wellsite Calibration – MCFL Calibration							
Before: 22–Mar–2010 22:08							
Raw B0 Resistivity	3875	N/A	3858	N/A	N/A	N/A	OHMM
Raw B1 Resistivity	3830	N/A	3808	N/A	N/A	N/A	OHMM
Raw B2 Resistivity	3830	N/A	3821	N/A	N/A	N/A	OHMM
High resolution Integrated Logging Tool–DTS Wellsite Calibration – HILT Caliper Calibration							
Before: 22–Mar–2010 22:03							
HILT Caliper Zero Measurement	8.000	N/A	9.711	N/A	N/A	N/A	IN
HILT Caliper Plus Measurement	12.00	N/A	13.84	N/A	N/A	N/A	IN
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Detector Calibration							
Before: 22–Mar–2010 21:59							
Gamma Ray Background	30.00	N/A	77.67	N/A	N/A	N/A	GAPI
Gamma Ray (Jig – Bkg)	177.2	N/A	177.2	N/A	N/A	16.11	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Zero Measurement							
Master: 20–Mar–2010 17:38 Before: 22–Mar–2010 22:05							
CNTC Background	28.30	28.30	26.87	N/A	N/A	4.245	CPS
CFTC Background	26.92	26.92	28.29	N/A	N/A	4.038	CPS
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Ratio Measurement							
Master: 20–Mar–2010 17:38							
Thermal Near Corr. (Tank)	5800	5716	N/A	N/A	N/A	N/A	CPS
Thermal Far Corr. (Tank)	2400	2390	N/A	N/A	N/A	N/A	CPS
CNTC/CFTC (Tank)	2.159	2.392	N/A	N/A	N/A	N/A	
High resolution Integrated Logging Tool–DTS Wellsite Calibration – Accelerometer Calibration							
Before: 23–Mar–2010 12:28							
Z–Axis Acceleration	32.19	N/A	31.78	N/A	N/A	N/A	F/S2
High resolution Integrated Logging Tool–DTS Master Calibration – Inversion results							
Master: 22–Mar–2010 21:20							
Rho Aluminum	2.596	2.602	---	---	---	---	G/C3
Rho Magnesium	1.686	1.688	---	---	---	---	G/C3
Pe Aluminum	2.570	2.565	---	---	---	---	
Pe Magnesium	2.650	2.609	---	---	---	---	
High resolution Integrated Logging Tool–DTS Master Calibration – Deviation Summary							
Master: 22–Mar–2010 21:20							
BS Average Deviation	0	0.3292	---	---	---	---	%
BS Max Deviation	0	0.6568	---	---	---	---	%
SS Average Deviation	0	0.4057	---	---	---	---	%
SS Max Deviation	0	1.954	---	---	---	---	%
LS Average Deviation	0	0.8119	---	---	---	---	%
LS Max Deviation	0	1.606	---	---	---	---	%

The GLS-VJ source activity is acceptable.

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









NCT-B Water Temperature 61.6 DEGF.
Thermal Housing Size 3.380 IN.
NSR-F serial number 5068

















Array Induction Tool – M / Equipment Identification

















Primary Equipment:
Rm/SP Bottom Nose
Array Induction Sonde
AMRM – A
AMIS – A
1372

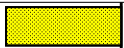
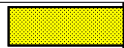


Auxiliary Equipment:

Array Induction Tool – M Wellsite Calibration							
Electronics Calibration Check – Thru Cal Mag. & Phase							
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Thru Cal Phase DEG	Nominal
0	Master	0.6194		0.6100	180.0		197.0
	Before	0.6193			179.9		
1	Master	1.269		1.270	178.9		196.0
	Before	1.269			178.8		
2	Master	0.6307		0.6200	175.3		192.0
	Before	0.6306			175.3		
3	Master	0.7118		0.7000	174.6		191.0
	Before	0.7117			174.5		
4	Master	1.332		1.340	168.4		185.0
	Before	1.332			168.4		
5	Master	1.950		1.960	166.7		182.0
	Before	1.950			166.7		
6	Master	1.946		1.960	166.8		181.0
	Before	1.946			166.7		
7	Master	1.418		1.410	165.9		175.0
	Before	1.417			165.9		
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)	Nom + 60.00 (Maximum)
Master: 17-Mar-2010 8:50				Before: 22-Mar-2010 22:03			

Array Induction Tool – M Wellsite Calibration									
Electronics Calibration Check – Auxiliary									
Phase	Array Induction SPA Plus MV		Value	Phase	Array Induction SPA Zero MV		Value		
Master			983.6	Master			−0.2001		
Before			983.5	Before			−0.1835		
941.0 (Minimum)			991.0 (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			0.9114	Master			−0.0002014		
Before			0.9115	Before			−0.0001035		
0.8710 (Minimum)			0.9170 (Nominal)	0.9630 (Maximum)	−0.05000 (Minimum)			0 (Nominal)	0.05000 (Maximum)
Master: 17–Mar–2010 8:50					Before: 22–Mar–2010 22:03				

Array Induction Tool – M Wellsite Calibration							
Test Loop Gain Correction							
Idx	Value	Test Loop Gain Correction Magnitude	Value	Test Loop Gain Correction Phase DEG			
0	1.015		0.3332				
		0.9500 (Minimum)1.000 (Nominal)1.050 (Maximum)		-3.000 (Minimum)0 (Nominal)3.000 (Maximum)			
1	1.012		0.6161				
		0.9500 (Minimum)1.000 (Nominal)1.050 (Maximum)		-3.000 (Minimum)0 (Nominal)3.000 (Maximum)			
2	1.016		0.1287				
		0.9500 (Minimum)1.000 (Nominal)1.050 (Maximum)		-3.000 (Minimum)0 (Nominal)3.000 (Maximum)			
3	1.012		0.1700				
		0.9500 (Minimum)1.000 (Nominal)1.050 (Maximum)		-3.000 (Minimum)0 (Nominal)3.000 (Maximum)			
4	0.9937		0.1124				
		0.9500 (Minimum)1.000 (Nominal)1.050 (Maximum)		-3.000 (Minimum)0 (Nominal)3.000 (Maximum)			
5	0.9890		-0.06042				
		0.9500 (Minimum)1.000 (Nominal)1.050 (Maximum)		-3.000 (Minimum)0 (Nominal)3.000 (Maximum)			
6	0.9937		0.2973				
		0.9500 (Minimum)1.000 (Nominal)1.050 (Maximum)		-3.000 (Minimum)0 (Nominal)3.000 (Maximum)			
7	1.006		-0.06541				
		0.9500 (Minimum)1.000 (Nominal)1.050 (Maximum)		-3.000 (Minimum)0 (Nominal)3.000 (Maximum)			
Master: 17-Mar-2010 8:50							

Array Induction Tool – M Wellsite Calibration							
Sonde Error Correction							
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M	
0	-65.75				-316.9		
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)	-2250 (Minimum)	0 (Nominal)	2250 (Maximum)
1	176.6				108.6		
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)	-625.0 (Minimum)	0 (Nominal)	625.0 (Maximum)
2	119.4				44.39		
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)	-350.0 (Minimum)	0 (Nominal)	350.0 (Maximum)
3	66.51				-31.03		
		39.00 (Minimum)	64.00 (Nominal)	89.30 (Maximum)	-250.0 (Minimum)	0 (Nominal)	250.0 (Maximum)
4	27.71				20.82		
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)	-63.00 (Minimum)	0 (Nominal)	63.00 (Maximum)
5	12.62				-16.06		
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)	-50.00 (Minimum)	0 (Nominal)	50.00 (Maximum)
6	9.430				-4.953		
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)	-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
7	-1.425				-11.76		
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)	-30.00 (Minimum)	0 (Nominal)	30.00 (Maximum)
Master: 17-Mar-2010 8:50							

Array Induction Tool – M Wellsite Calibration						
Mud Gain Correction						
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag
0	0.8486				0.8511	
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
1	0.8487				0.8512	
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)

0.8487	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.8512	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)
2	0.8487			0.8512			
	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)	

Master: 17-Mar-2010 8:50

Array Induction Tool – M Master Calibration						
Electronics Calibration Check – Thru Cal Mag. & Phase						
Idx	Phase	Value	Thru Cal Magnitude V	Nominal	Value	Thru Cal Phase DEG
0	Master	0.6194		0.6100	180.0	
1	Master	1.269		1.270	178.9	
2	Master	0.6307		0.6200	175.3	
3	Master	0.7118		0.7000	174.6	
4	Master	1.332		1.340	168.4	
5	Master	1.950		1.960	166.7	
6	Master	1.946		1.960	166.8	
7	Master	1.418		1.410	165.9	
		60.00 % (Minimum)	(Nominal)	140.0 % (Maximum)	Nom -60.00 (Minimum)	(Nominal)
					Nom + 60.00 (Maximum)	

















Master: 17-Mar-2010 8:50

Array Induction Tool – M Master Calibration					
Electronics Calibration Check – Auxiliary					
Phase	Array Induction SPA Plus MV	Value	Phase	Array Induction SPA Zero MV	Value
Master		983.6	Master		-0.2001
	941.0 (Minimum)	991.0 (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		0.9114	Master		-0.0002014
	0.8710 (Minimum)	0.9170 (Nominal)	0.9630 (Maximum)	-0.05000 (Minimum)	0 (Nominal)
				0.05000 (Maximum)	

Master: 17-Mar-2010 8:50





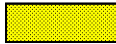
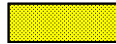
Array Induction Tool – M Master Calibration					
Test Loop Gain Correction					
Idx	Value	Test Loop Gain Correction Magnitude V	Value	Test Loop Gain Correction Phase DEG	
0	1.015		0.3332		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)
				3.000 (Maximum)	
1	1.012		0.6161		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)
				3.000 (Maximum)	
2	1.016		0.1287		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)
				3.000 (Maximum)	
3	1.012		0.1700		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)
				3.000 (Maximum)	
4	0.9937		0.1124		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)
				3.000 (Maximum)	
5	0.9890		-0.06042		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)
				3.000 (Maximum)	
6	0.9937		0.2973		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)
				3.000 (Maximum)	
7	1.006		-0.06541		
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)	-3.000 (Minimum)	0 (Nominal)
				3.000 (Maximum)	

Master: 17-Mar-2010 8:50

Array Induction Tool – M Master Calibration							
Sonde Error Correction							
Idx	Value	R Sonde Error Correction MM/M			Value	X Sonde Error Correction MM/M	
0	-65.75				-316.9		
		-231.0 (Minimum)	-56.00 (Nominal)	119.0 (Maximum)		-2250 (Minimum)	0 (Nominal) 2250 (Maximum)
1	176.6				108.6		
		114.0 (Minimum)	159.0 (Nominal)	204.0 (Maximum)		-625.0 (Minimum)	0 (Nominal) 625.0 (Maximum)
2	119.4				44.39		
		66.00 (Minimum)	111.0 (Nominal)	156.0 (Maximum)		-350.0 (Minimum)	0 (Nominal) 350.0 (Maximum)
3	66.51				-31.03		
		39.00 (Minimum)	64.00 (Nominal)	89.30 (Maximum)		-250.0 (Minimum)	0 (Nominal) 250.0 (Maximum)
4	27.71				20.82		
		15.00 (Minimum)	25.00 (Nominal)	35.00 (Maximum)		-63.00 (Minimum)	0 (Nominal) 63.00 (Maximum)
5	12.62				-16.06		
		4.000 (Minimum)	14.00 (Nominal)	24.00 (Maximum)		-50.00 (Minimum)	0 (Nominal) 50.00 (Maximum)
6	9.430				-4.953		
		5.000 (Minimum)	10.00 (Nominal)	15.00 (Maximum)		-30.00 (Minimum)	0 (Nominal) 30.00 (Maximum)
7	-1.425				-11.76		
		-5.000 (Minimum)	0 (Nominal)	5.000 (Maximum)		-30.00 (Minimum)	0 (Nominal) 30.00 (Maximum)

Master: 17-Mar-2010 8:50

Master: 17-Mar-2010 8:50

Array Induction Tool – M Master Calibration							
Mud Gain Correction							
Idx	Value	Coarse – Mag, Real, Imag			Value	Fine – Mag, Real, Imag	
0	0.8486				0.8511		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
1	0.8487				0.8512		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
2	0.8487				0.8512		
		0.8000 (Minimum)	1.000 (Nominal)	1.200 (Maximum)		0.8000 (Minimum)	1.000 (Nominal) 1.200 (Maximum)
Master: 17–Mar–2010 8:50							

Master: 17-Mar-2010 8:50

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
HRGD – B
MCFL –
GLS – VJ 5416
HRCC – B
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
Before				0.7378	Before				0.4735
	0.7022	0.7392	0.7762			0.4496	0.4732	0.4969	
Phase	LS Window Ratio			Value	Phase	LS Window Ratio			Value
Before				0.2981	Before				0.2981
	0.2827	0.2975	0.3124			0.2827	0.2975	0.3124	

(Minimum) (Nominal) (Maximum)			(Minimum) (Nominal) (Maximum)			(Minimum) (Nominal) (Maximum)					
Phase	BS Window Sum	CPS	Value	Phase	SS Window Sum	CPS	Value	Phase	LS Window Sum	CPS	Value
Before			10700	Before			10190	Before			1163
10160 (Minimum)	10690 (Nominal)	11230 (Maximum)		9680 (Minimum)	10190 (Nominal)	10700 (Maximum)		1108 (Minimum)	1166 (Nominal)	1224 (Maximum)	




Before: 22-Mar-2010 22:07

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				1533	Before				1786	Before				1904
	1409 (Minimum)	1509 (Nominal)	1609 (Maximum)			1677 (Minimum)	1777 (Nominal)	1877 (Maximum)			1796 (Minimum)	1896 (Nominal)	1996 (Maximum)	



Before: 22-Mar-2010 22:07

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				11.26	Before				11.11	Before				9.632			
	10.23 (Minimum)	11.23 (Nominal)	12.23 (Maximum)			10.03 (Minimum)	11.03 (Nominal)	12.03 (Maximum)			8.873 (Minimum)	9.873 (Nominal)	10.87 (Maximum)				




Before: 22-Mar-2010 22:07

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						3858	Before						3808	Before						3821
	3565 (Minimum)	3875 (Nominal)	4185 (Maximum)					3524 (Minimum)	3830 (Nominal)	4136 (Maximum)				3524 (Minimum)	3830 (Nominal)	4136 (Maximum)				





Before: 22-Mar-2010 22:08

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						9.711	Before						13.84
	6.000 (Minimum)	8.000 (Nominal)	10.00 (Maximum)					9.000 (Minimum)	12.00 (Nominal)	15.00 (Maximum)			
Before: 22-Mar-2010 22:03													

Before: 22-Mar-2010 22:03




High resolution Integrated Logging Tool–DTS Wellsite Calibration														
Detector Calibration														
Phase	Gamma Ray Background GAPI			Value	Phase	Gamma Ray (Jig – Bkg) GAPI			Value	Phase	Gamma Ray (Calibrated) GAPI			Value
Before				77.67	Before				177.2	Before				165.0
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)			161.1 (Minimum)	177.2 (Nominal)	193.3 (Maximum)			150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)	

Before: 22-Mar-2010 21:59

High resolution Integrated Logging Tool–DTS Wellsite Calibration													
Zero Measurement													
Phase	CNTC Background CPS					Value	Phase	CFTC Background CPS					Value
Master						28.30	Master						26.92
Before						26.87	Before						28.29
5.000 (Minimum) 28.30 (Nominal) 40.00 (Maximum)							5.000 (Minimum) 26.92 (Nominal) 40.00 (Maximum)						
Master: 20–Mar–2010 17:38							Before: 22–Mar–2010 22:05						


Master: 20-Mar-2010 17:38





Before: 22-Mar-2010 22:05







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						5716	Master						2390	Master						2.392
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)					1900 (Minimum)	2400 (Nominal)	2900 (Maximum)				2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)				



Master: 20-Mar-2010 17:38




High resolution Integrated Logging Tool-DTS

Wellsite Calibration		
Phase	Z-Axis Acceleration F/S2	Value
Before		31.78
	31.53 (Minimum) 32.19 (Nominal) 32.84 (Maximum)	
Before: 23-Mar-2010 12:28		

High resolution Integrated Logging Tool-DTS Master Calibration							
Inversion results							
Phase	Rho Aluminum G/C3		Value	Phase	Rho Magnesium G/C3		Value
Master			2.602	Master			1.688
	2.586 (Minimum)	2.596 (Nominal)			2.606 (Maximum)	1.676 (Minimum)	
Phase	Pe Aluminum		Value	Phase	Pe Magnesium		Value
Master			2.565	Master			2.609
	2.470 (Minimum)	2.570 (Nominal)			2.670 (Maximum)	2.550 (Minimum)	
Master: 22-Mar-2010 21:20							

High resolution Integrated Logging Tool–DTS Master Calibration														
Deviation Summary														
Phase	BS Average Deviation %			Value	Phase	SS Average Deviation %			Value	Phase	LS Average Deviation %			Value
Master				0.3292	Master				0.4057	Master				0.8119
	–0.6000 (Minimum)	0 (Nominal)	0.6000 (Maximum)			–1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)			–1.500 (Minimum)	0 (Nominal)	1.500 (Maximum)	
Phase	BS Max Deviation %			Value	Phase	SS Max Deviation %			Value	Phase	LS Max Deviation %			Value
Master				0.6568	Master				1.954	Master				1.606
	–1.600 (Minimum)	0 (Nominal)	1.600 (Maximum)			–2.500 (Minimum)	0 (Nominal)	2.500 (Maximum)			–3.500 (Minimum)	0 (Nominal)	3.500 (Maximum)	
Master: 22–Mar–2010 21:20														

High resolution Integrated Logging Tool-DTS Master Calibration									
Zero Measurement									
Phase	CNTC Background CPS			Value	Phase	CFTC Background CPS			Value
Master				28.30	Master				26.92
	5.000 (Minimum)	28.30 (Nominal)	40.00 (Maximum)			5.000 (Minimum)	26.92 (Nominal)	40.00 (Maximum)	
Master: 20-Mar-2010 17:38									

High resolution Integrated Logging Tool–DTS Master Calibration														
Tank Measurement														
Phase	Thermal Near Corr. (Tank) CPS			Value	Phase	Thermal Far Corr. (Tank) CPS			Value	Phase	CNTC/CFTC (Tank)			Value
Master				5716	Master				2390	Master				2.392
	4700 (Minimum)	5800 (Nominal)	6900 (Maximum)		1900 (Minimum)	2400 (Nominal)	2900 (Maximum)		2.120 (Minimum)	2.159 (Nominal)	2.540 (Maximum)			
Master: 20–Mar–2010 17:38														

DTS Telemetry Tool / Equipment Identification		
Primary Equipment:		
DTC-H Auxiliary Cartridge		DTCH - A
DTC-H Telemetry Cartridge		DTCH - A
Auxiliary Equipment:		
DTCH Telemetry Cartridge Housing		ECH - KC

Company:

Vecta Oil & Gas, LTD.

Schlumberger

Well:

Red Cloud 44–5

Field:

Eureka Creek

County:

Cheyenne

State:

Colorado

Platform Express

Triple Combo