Schlumberger

Company: Pine Ridge Oil & Gas, LLC

Well: Vortex 12-53-3-1

Field: Clifford

County: Lincoln State: Colorado

Platform Express

Triple Combo

County: Lincoln
Field: Clifford
Location: SHL: 622' FNL x 877' FEL
Well: Vortex 12-53-3-1
Company: Pine Ridge Oil & Gas, LLC

Location:		Elev.		
SHL: 622' FNL x 877' FEL			K.B.	4969.00 ft
			G.L.	4954.00 ft
			D.F.	4968.00 ft
Permanent Datum:	Ground Level	Elev.:	4954.00 f	
Log Measured From:	Kelly Bushing	15.00 ft	above Perm.Datum	
Drilling Measured From:	Kelly Bushing			

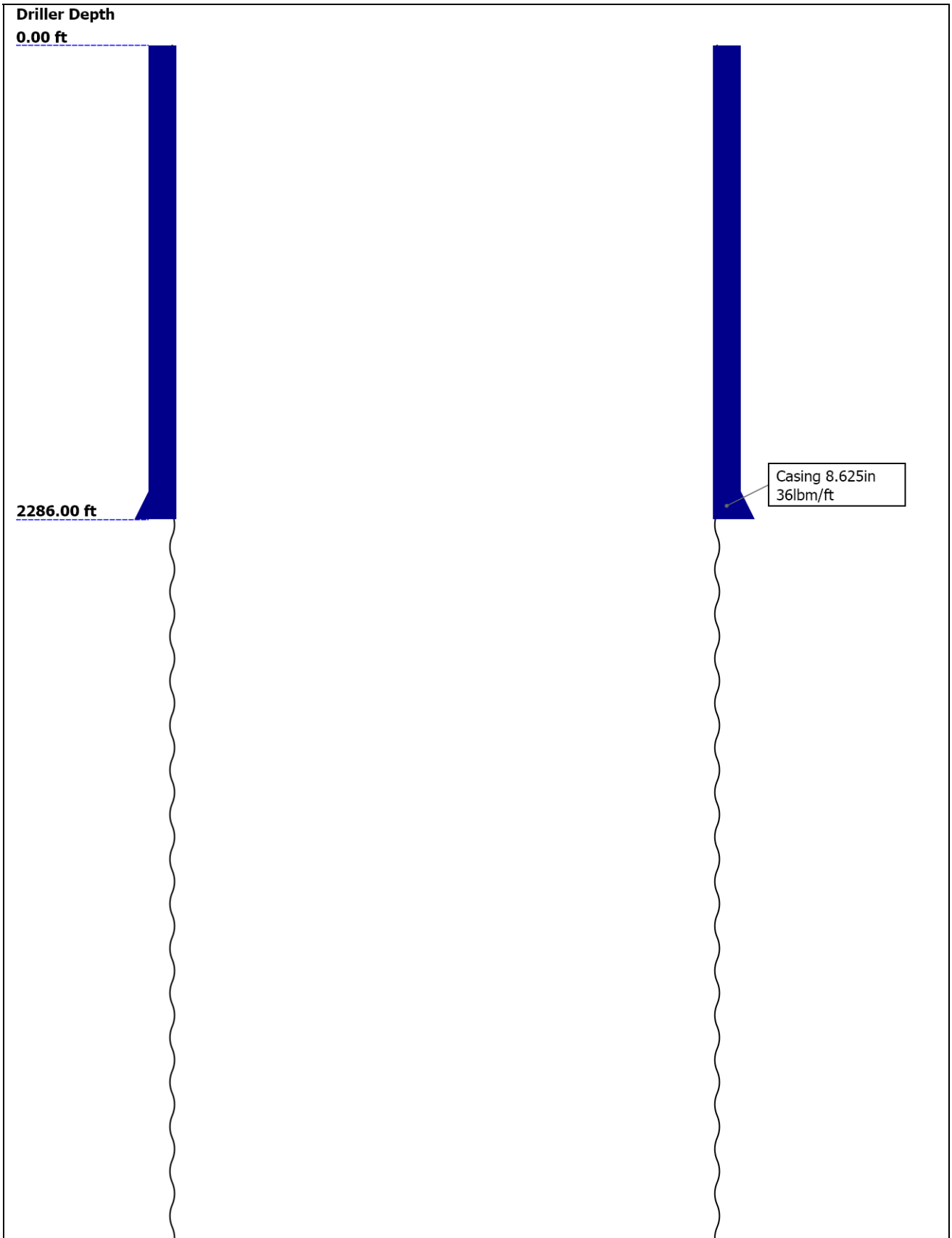
API Serial No.	Section:	Township:	Range:
05-073-06535-0000	3	12S	53W

Logging Date			09-Jul-2013			
Run Number			1			
Depth Driller			7377.00 ft			
Schlumberger Depth			7384.00 ft			
Bottom Log Interval			7368.00 ft			
Top Log Interval			2297.00 ft			
Casing Driller Size @ Depth			8.625 in @ 2286.00 ft			
Casing Schlumberger			2294 ft			
Bit Size			7.875 in			
Type Fluid In Hole			LSND/POLY			
MUD	Density	Viscosity	9.2 lbm/gal	58 s		
	Fluid Loss	PH	4 cm3	8		
	Source of Sample		Active Tank			
RM @ Meas Temp			0.76 ohm.m @ 73.6 degF			
RMF @ Meas Temp			0.57 ohm.m @ 73.6 degF			
RMC @ Meas Temp			1.13 ohm.m @ 73.6 degF			
Source RMF	RMC		Calculated	Calculated		
RM @ BHT	RMF @ BHT		0.31 @ 190	0.23 @ 190		
Max Recorded Temperatures			190 degF			
Circulation Stopped	Time		08-Jul-2013	19:00:00		
Logger on Bottom	Time		09-Jul-2013	04:15:00		
Unit Number	Location:		2154	Fort Morgan		
Recorded By			Daniil Kholin			
Witnessed By			Reed Johnson			

Disclaimer

Contents

Well Sketch

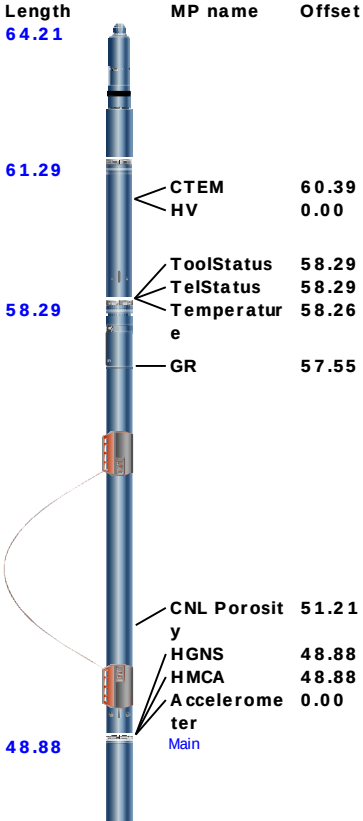


Borehole Size/Casing/Tubing Record

Bit						
Bit Size (in)	7.875					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	7377					
Bottom Logger (ft)	7384					
Casing						
Size (in)	8.625					
Weight (lbm/ft)	36					
Inner Diameter (in)	7.823					
Top Driller (ft)	0					
Top Logger (ft)	0					
Bottom Driller (ft)	2286					
Bottom Logger (ft)	2294					

Remarks and Equipment Summary

1: Toolstring



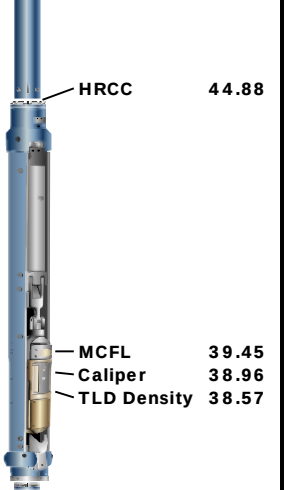
1: Remarks

Tool string run as per tool skecth.

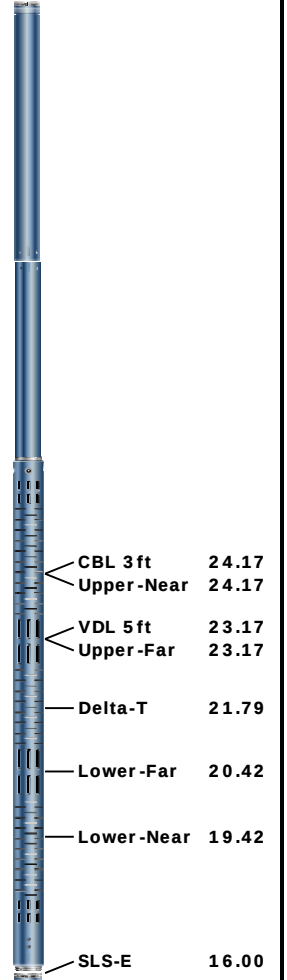
MATR: Limestone, 2.71g/cc

Crew: Derrick Hunter, David Marquez

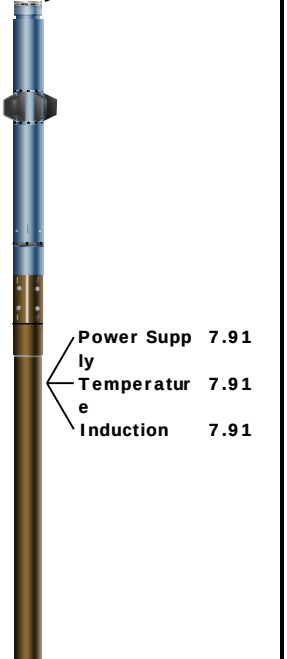
Short Spacing
GSR-J:5240
Long Spacing:28
910
GPV-Q
Backscatter
HRGD-H:4791



DSLT-H:8150 **36.64**
ECH-KH:8650
DSLC-H:8150
SLS-E:297



AIT-H:216 **16.00**
AHIS:216
AHRM:216



Lengths are in ft
Maximum Outer Diameter = 5.000 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

Depth Summary

Depth Control Parameters	**1**		
Conveyance Type	Wireline		
Stretch Correction (ft)	9.38		
Rig Type	Land		
Depth Remark Parameters	**1**		
Depth Remark 1	All Schlumberger Depth Control Procedures followed.		
Depth Remark 2	IDW used as Primary Depth Control		
Depth Remark 3	Z-chart used as Secondary Depth Control.		
Depth Measuring Device	**1**		
Type	IDW-JA		
Serial Number	6122		
Calibration Date	19-Jun-2013		
Calibration Cable Type	7-46 AXS		
Wheel Correction 1	-2		
Wheel Correction 2	-3		
Tension Device	**1**		
Type	CMTD-B/A		
Serial Number	1433		
Calibration Date	21-Jun-2013		
Calibrator Serial Number	78135A		
Calibration Points	10		
Calibration RMS	6		
Calibration Peak Error	9		
Logging Cable	**1**		
Type	7-46P-XS		
Serial Number	U713006		
Logging Cable Length (ft)	24000.00		

1

5" Triple Combo

Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit

Software Version

Acquisition System	Version
MaxWell	3.1.9755.0
Application Patch	SP-20130325-3.1.9755.1799

Computation	Description	Version
HENVIR	Computation Ensemble for the HGNS Neutron environmental corrections	3.1.9755.0
DepthCorrection	DepthCorrection	3.1.9755.1799

DepthCorrection	DepthCorrection		3.1.9755.1799

Tool Elements	Description	Software Version	Firmware Version
HRCC-H	HILT High-Resolution Control Cartridge, 150 degC	3.1.9755.0	2.0
HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC	3.1.9755.0	2.0
AHIS	Array Induction Sonde - H	3.1.9755.1799	
HRGD-H	HILT Resistivity Gamma-Ray Density Device, 150 degC	3.1.9755.0	3.0

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
1	Main[3]:Up	Up	2016.86 ft	7400.18 ft	09-Jul-2013 4:31:33 AM	09-Jul-2013 6:07:06 AM	0.00 ft	
All depths are referenced to toolstring zero								

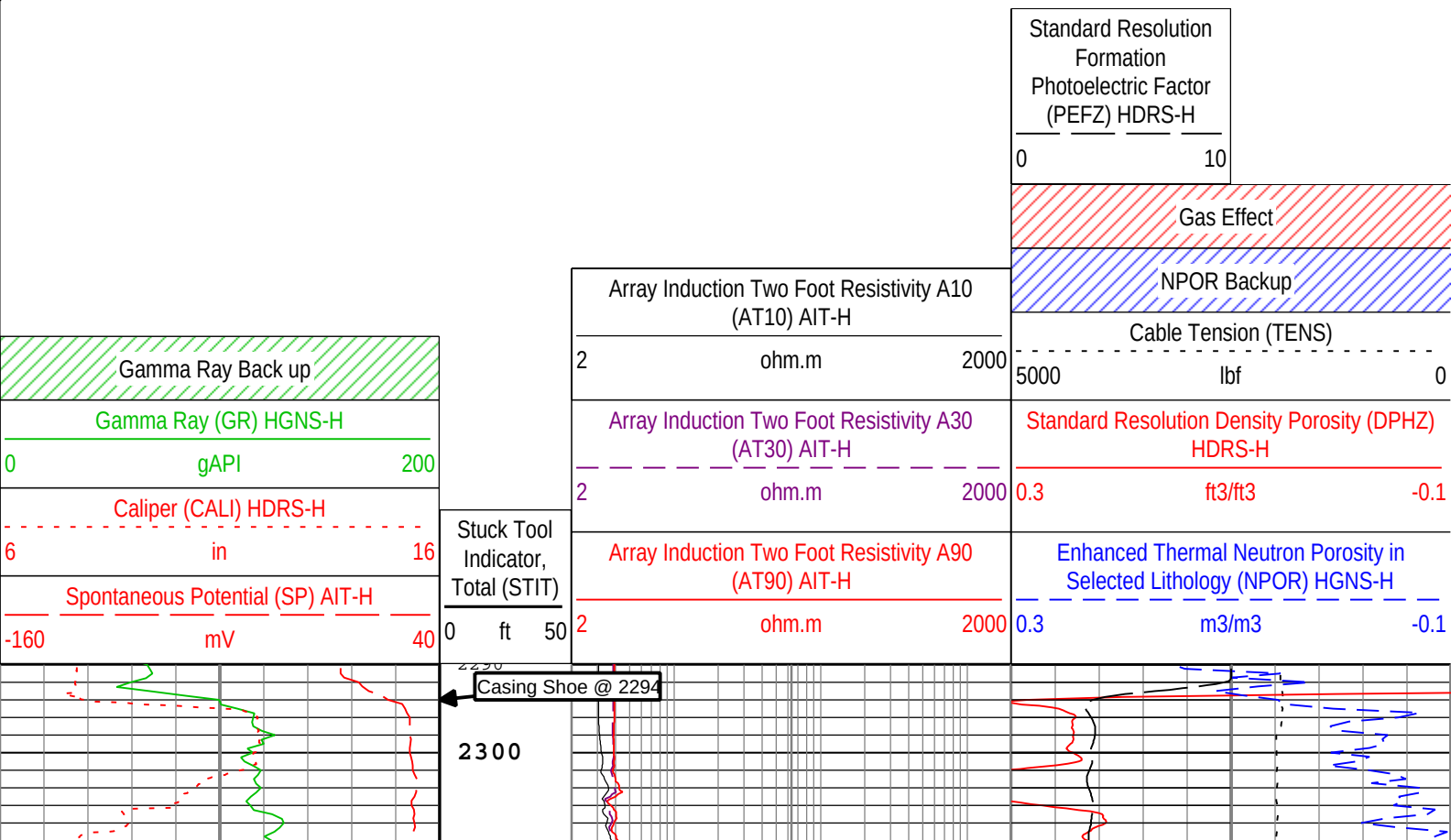
Log

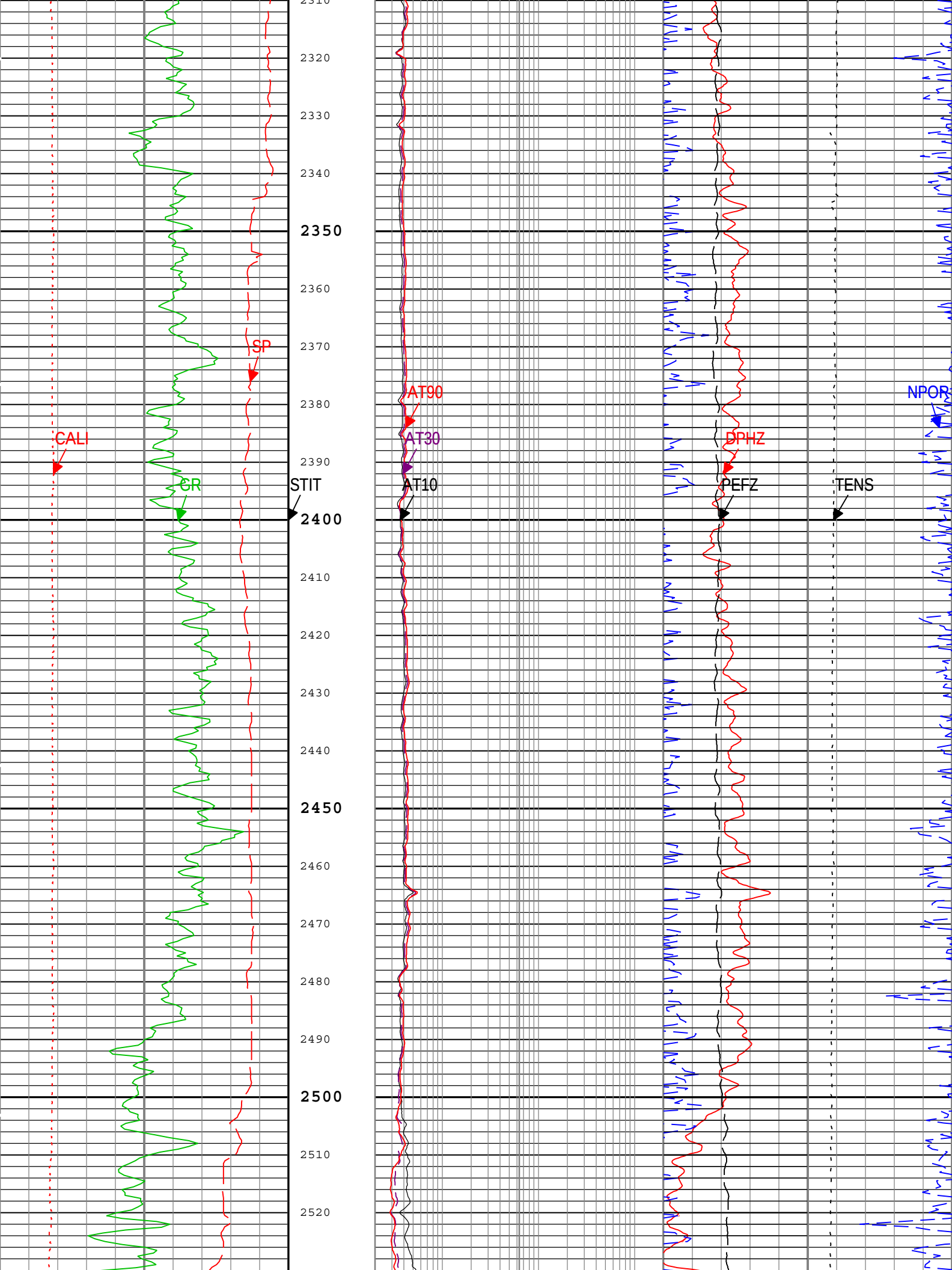
1: Main[3]:Up

Description: HGNS standard resolution porosities for Platform Express Format: Log (KM 5in Triple Combo) Index Scale: 5 in per 100 ft Index Unit: ft
Index Type: Measured Depth Creation Date: 09-Jul-2013 17:45:25

Channel	Source	Sampling
AT10	AIT-H:AHIS:AHIS	3in
AT30	AIT-H:AHIS:AHIS	3in
AT90	AIT-H:AHIS:AHIS	3in
CALI	HDRS-H:HRCC-H:HRCC-H	1in
DPHZ	HDRS-H:HRMS-H:HRGD-H	2in
GR	HGNS-H:HGNS-H:HGNS-H	6in
NPOR	HGNS-H:HGNS-H:HGNS-H	6in
PEFZ	HDRS-H:HRMS-H:HRGD-H	2in
SP	AIT-H:AHIS:AHIS	6in
STIT	DepthCorrection	6in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in

TIME_1900 - Time Marked every 60.00 (s)

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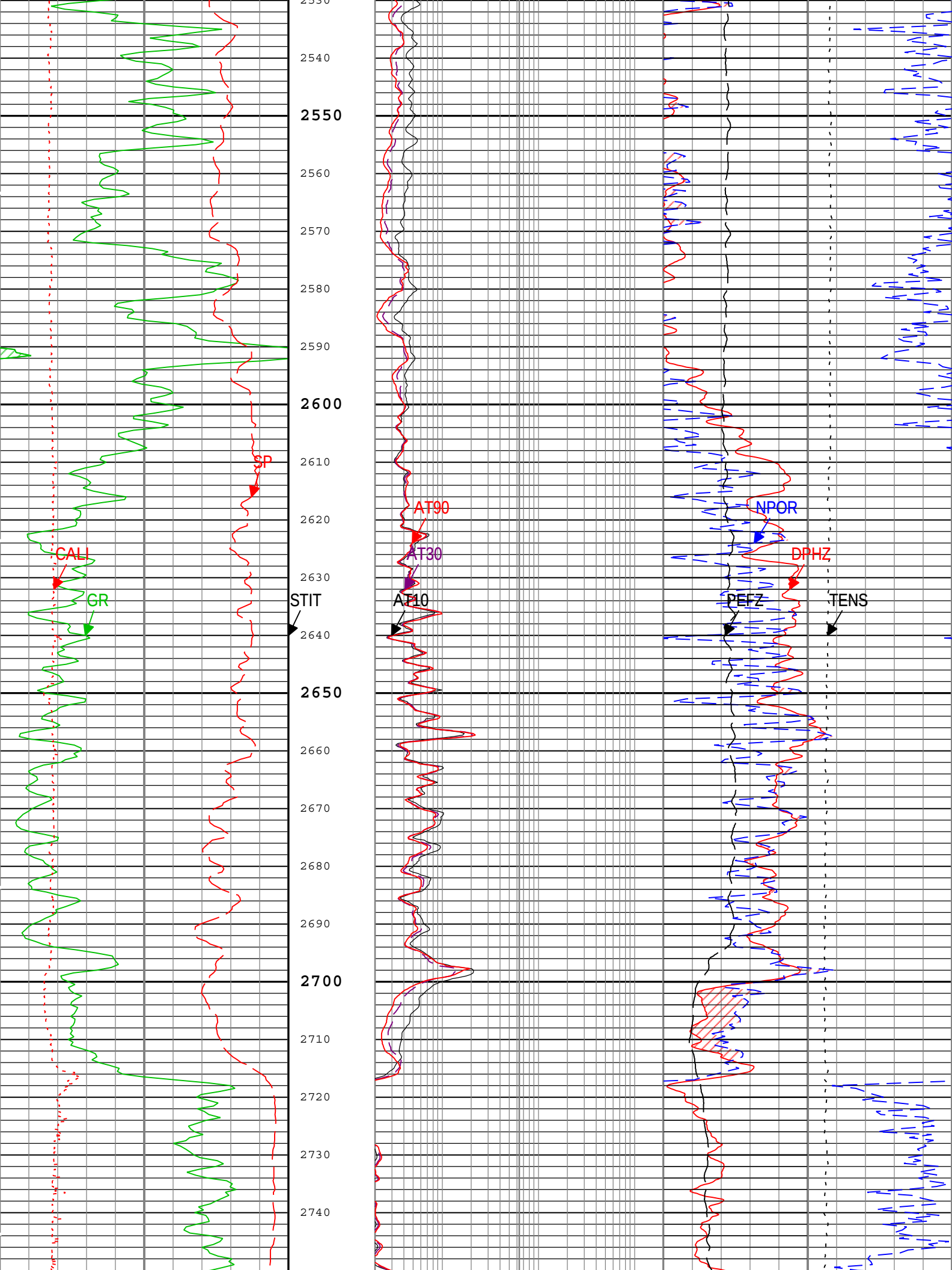
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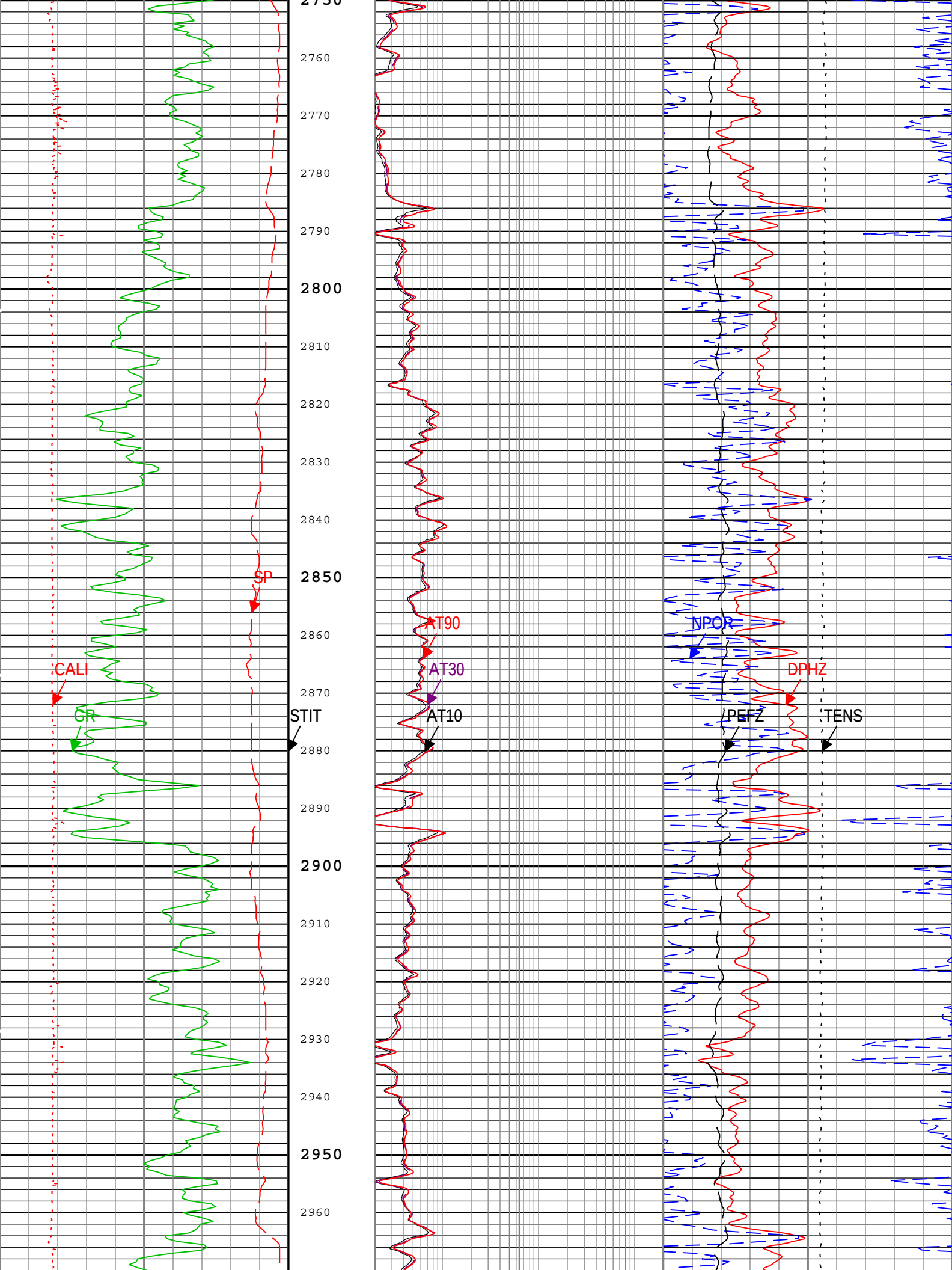
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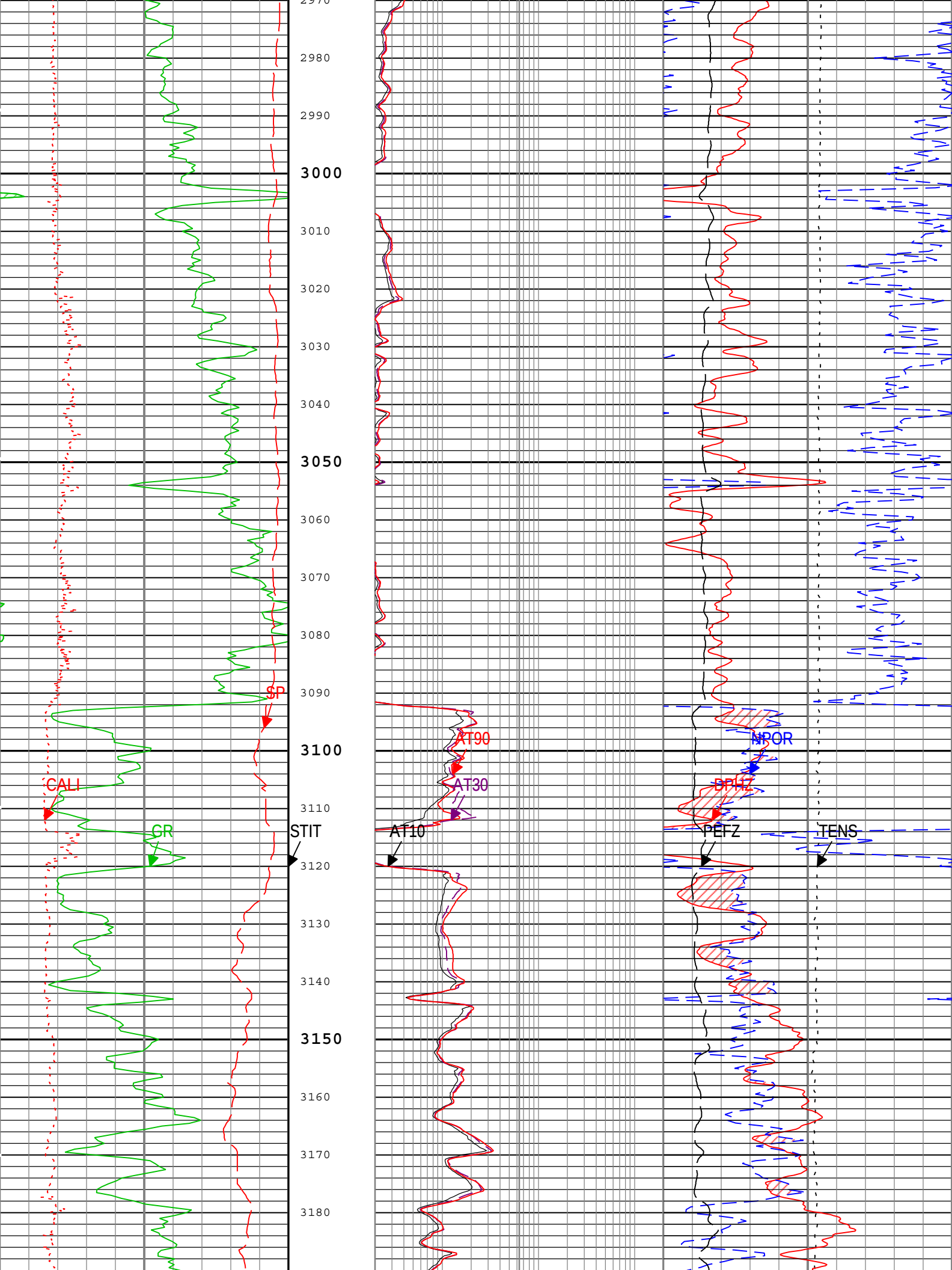
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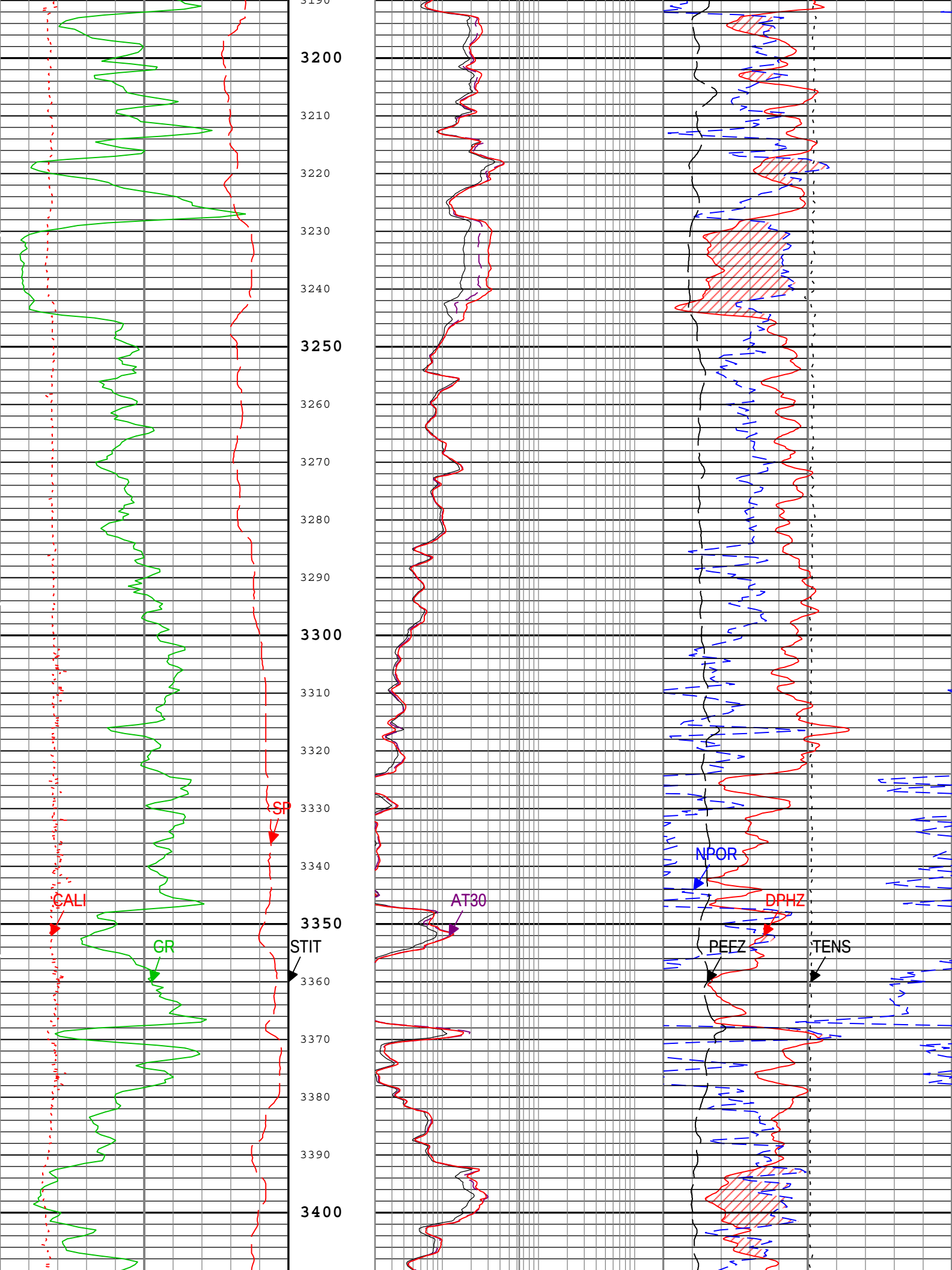
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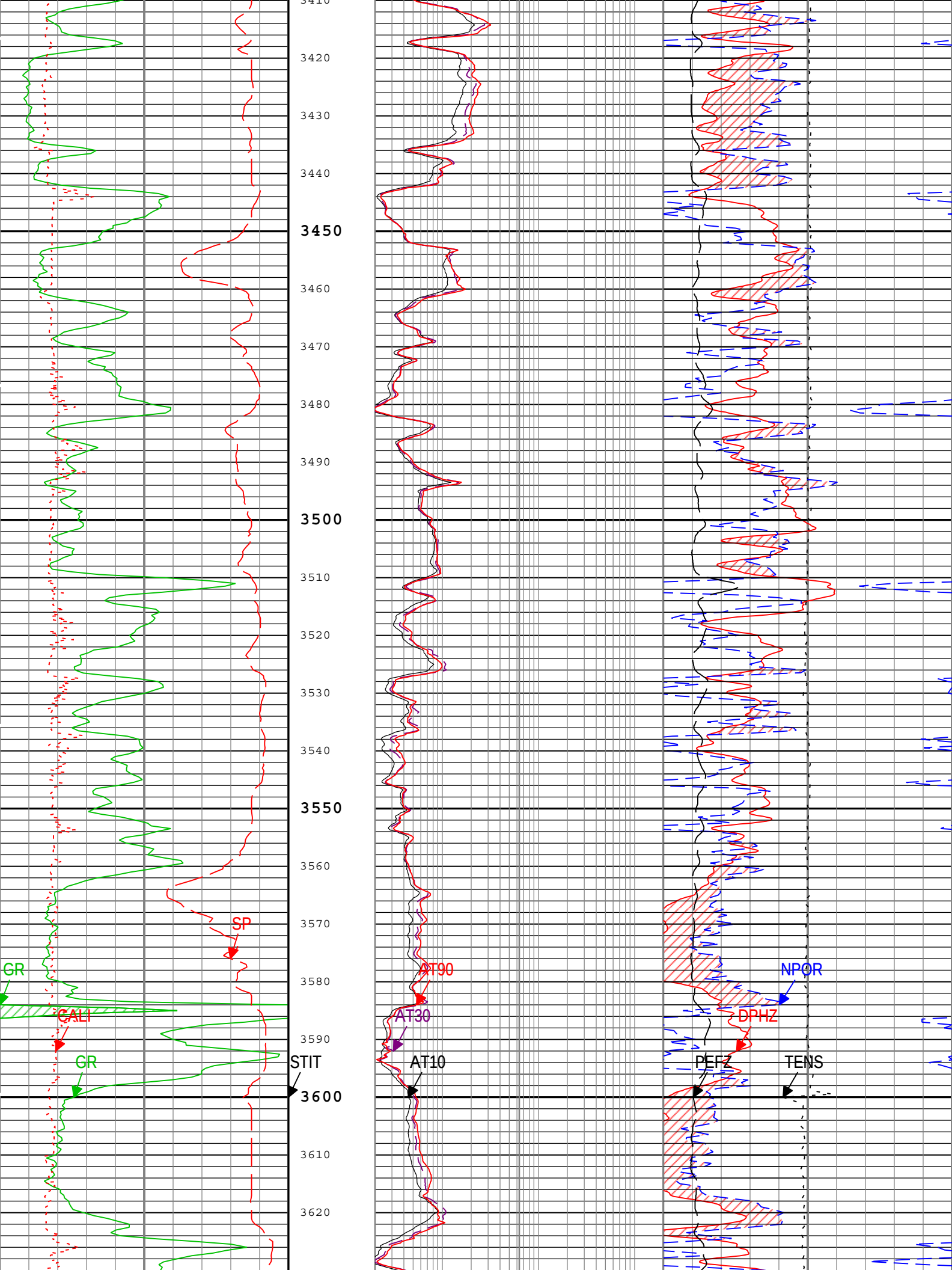
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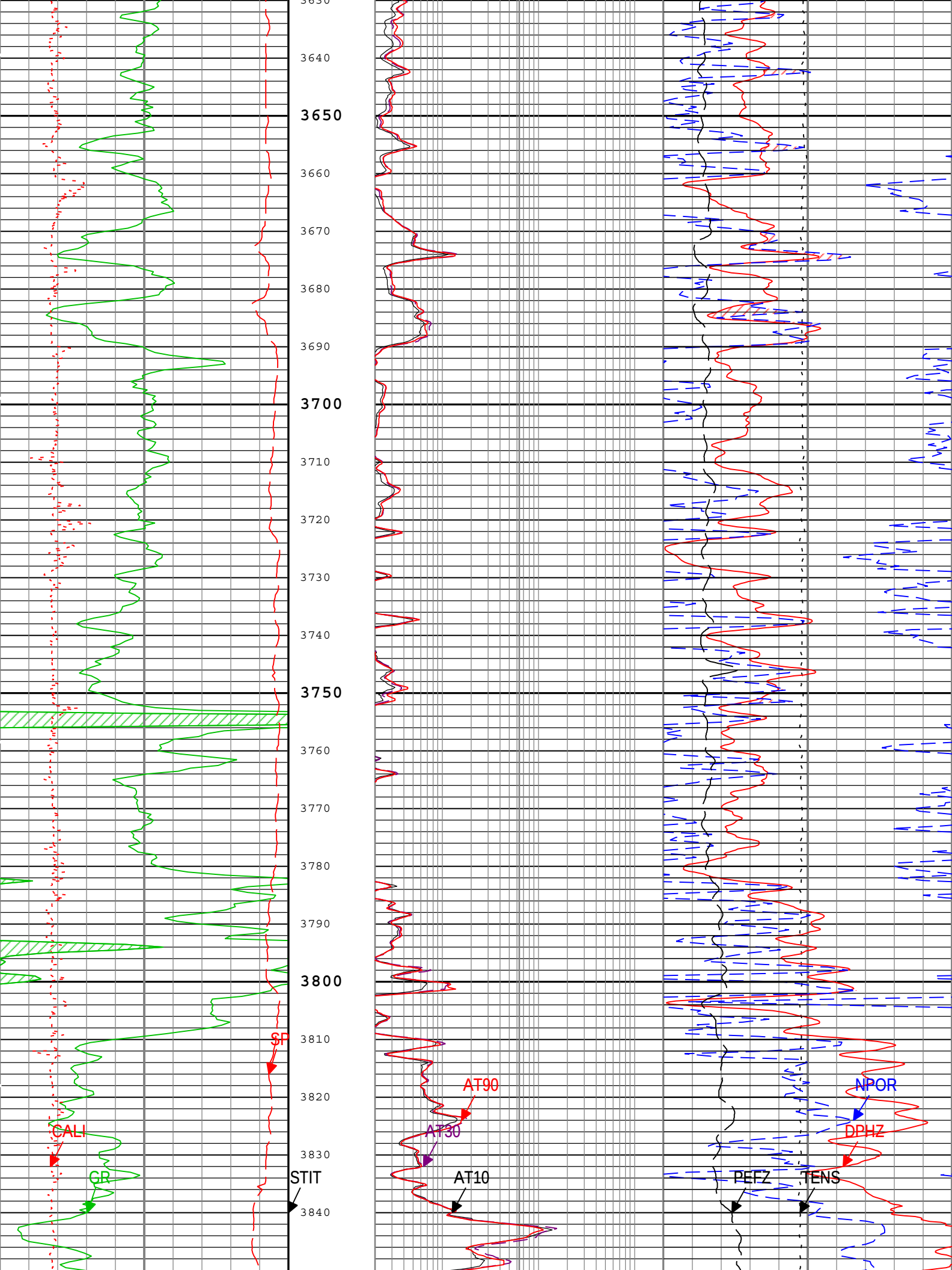
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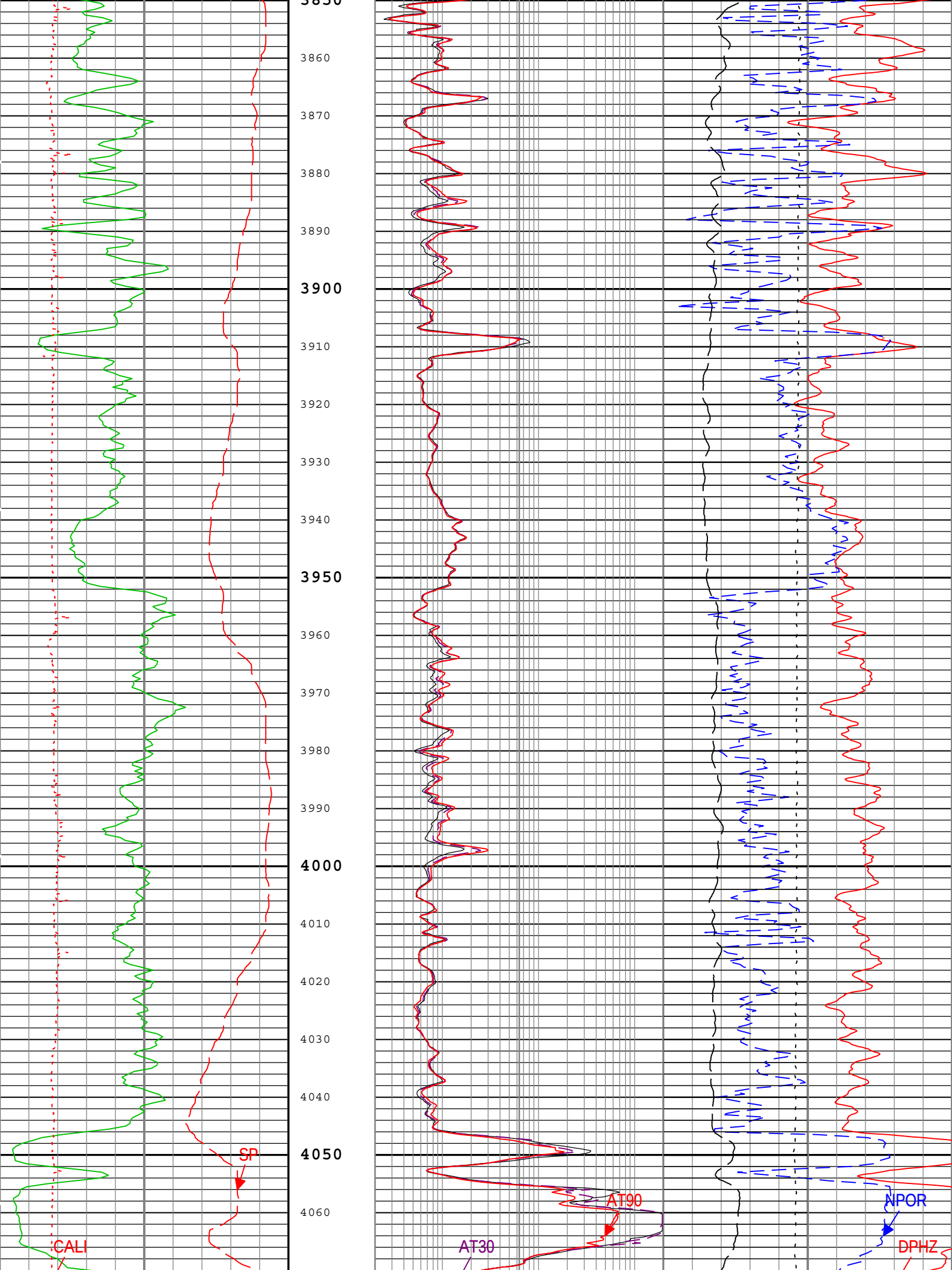
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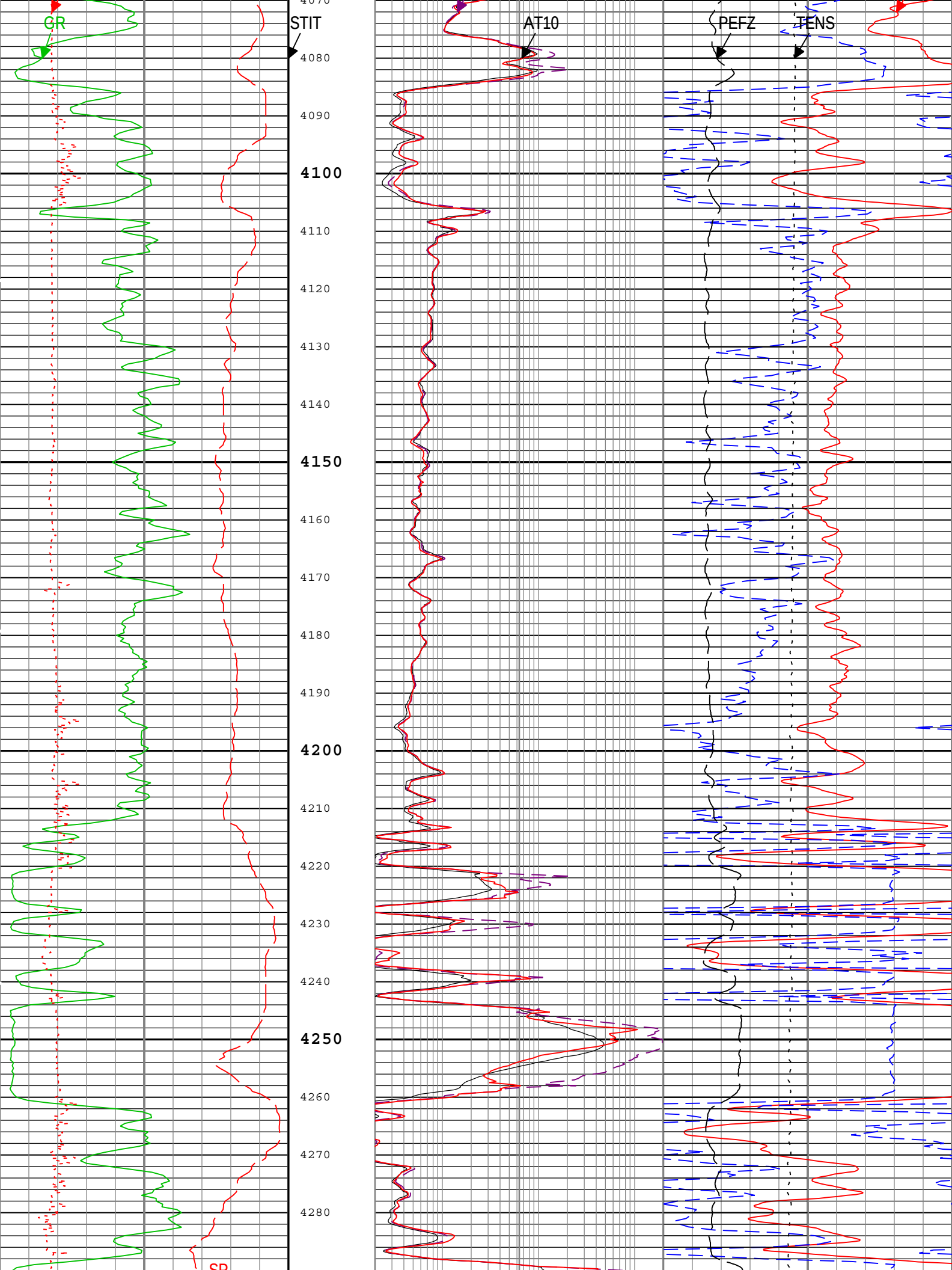
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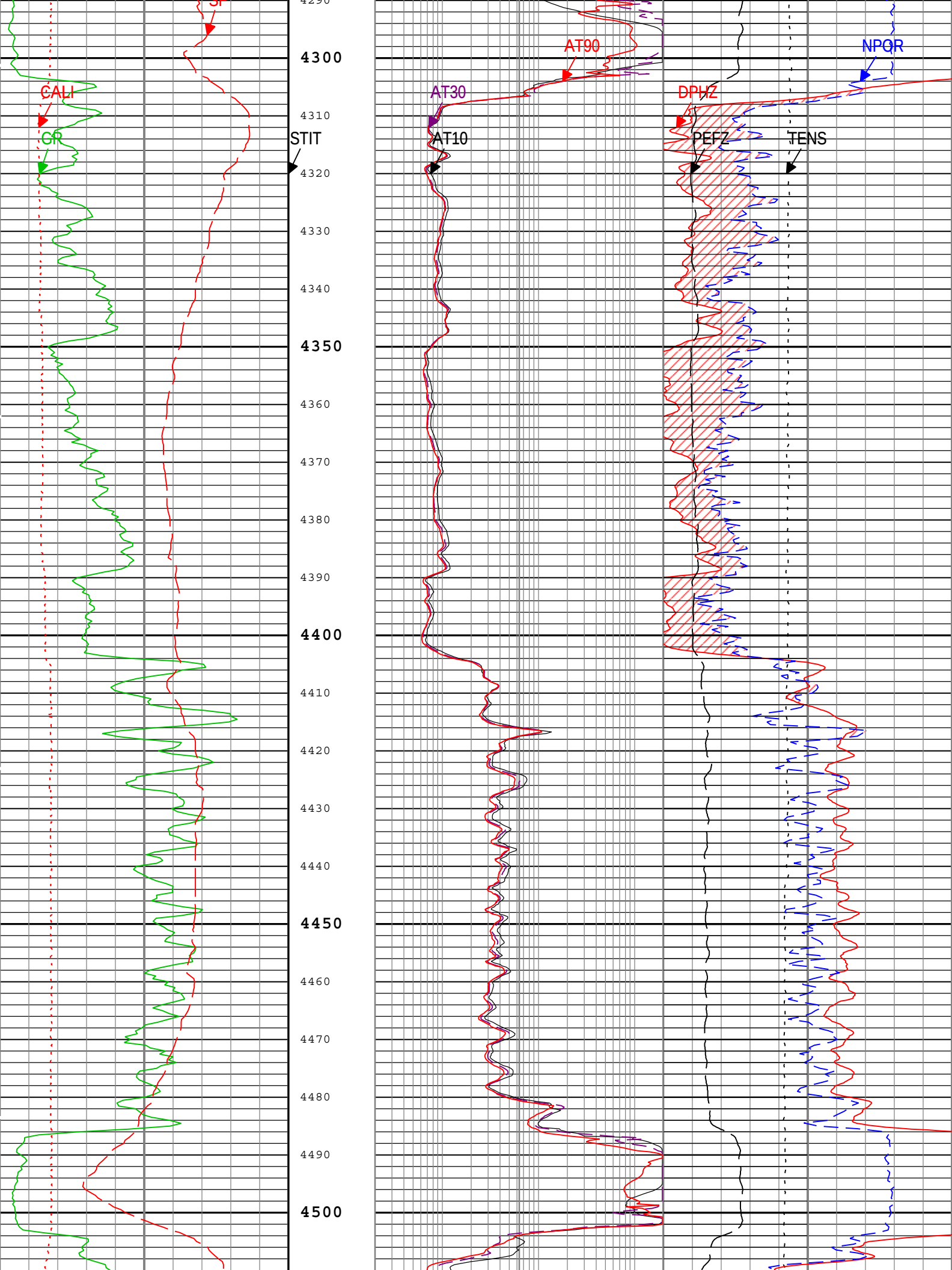
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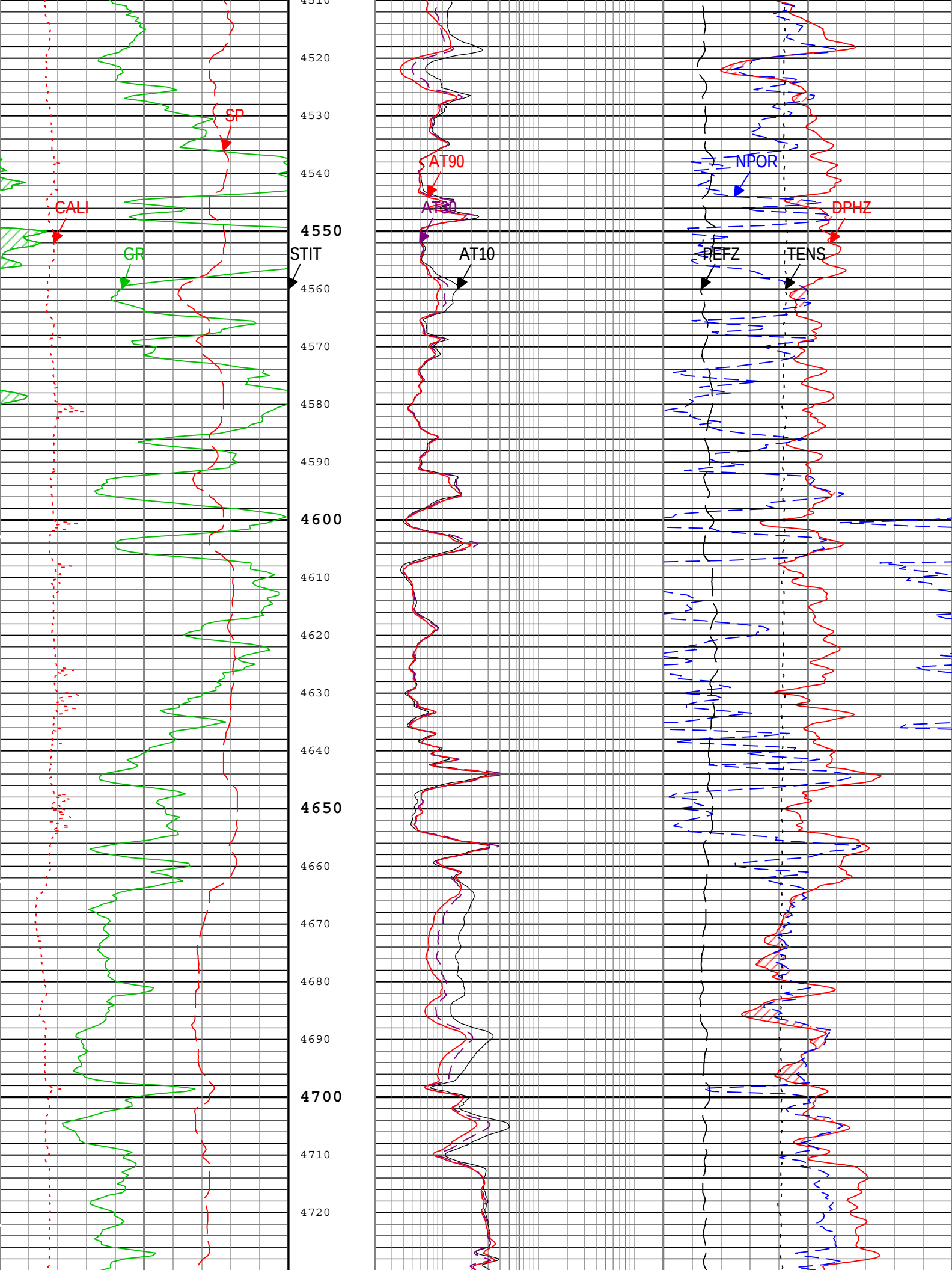
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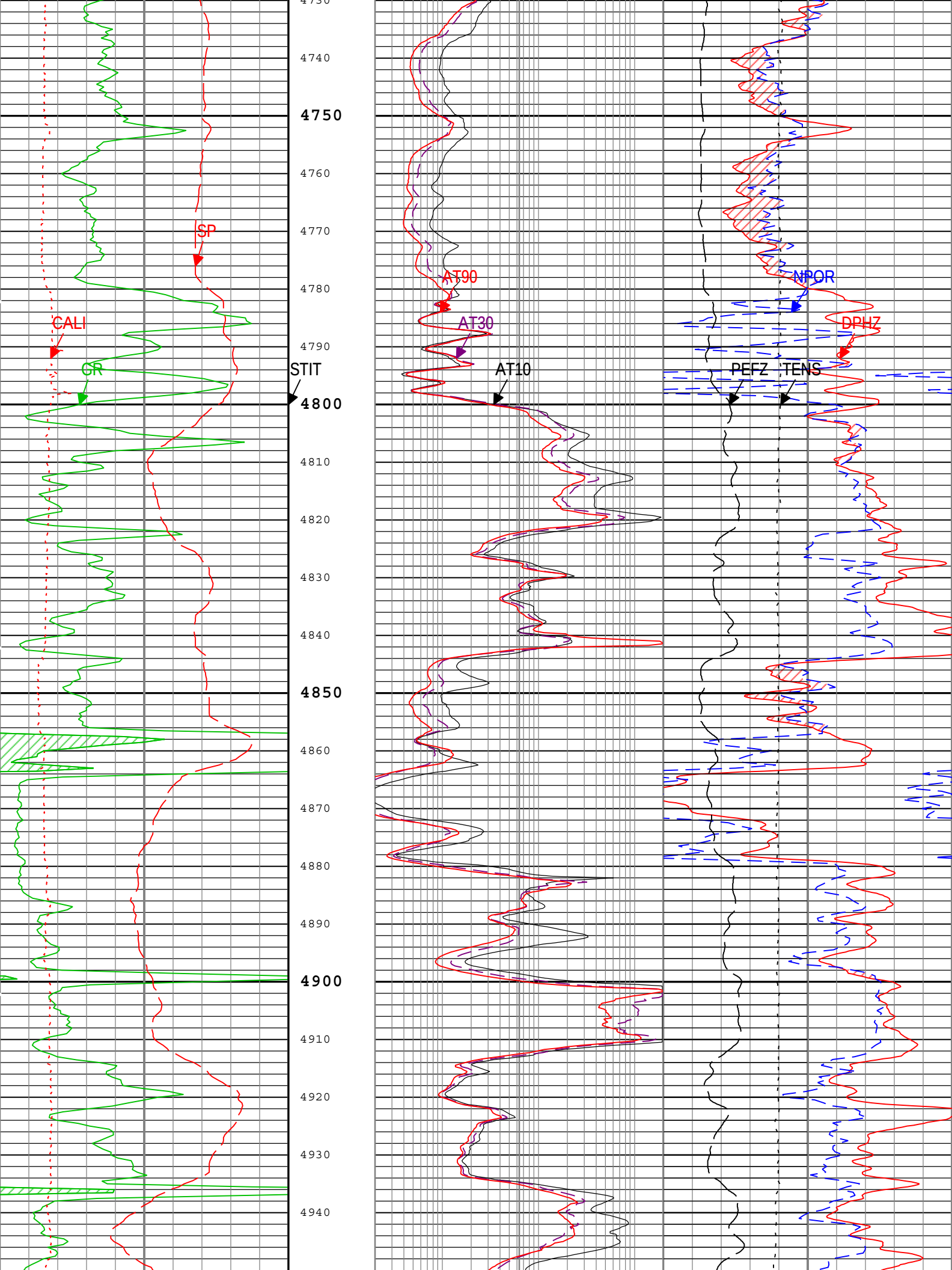
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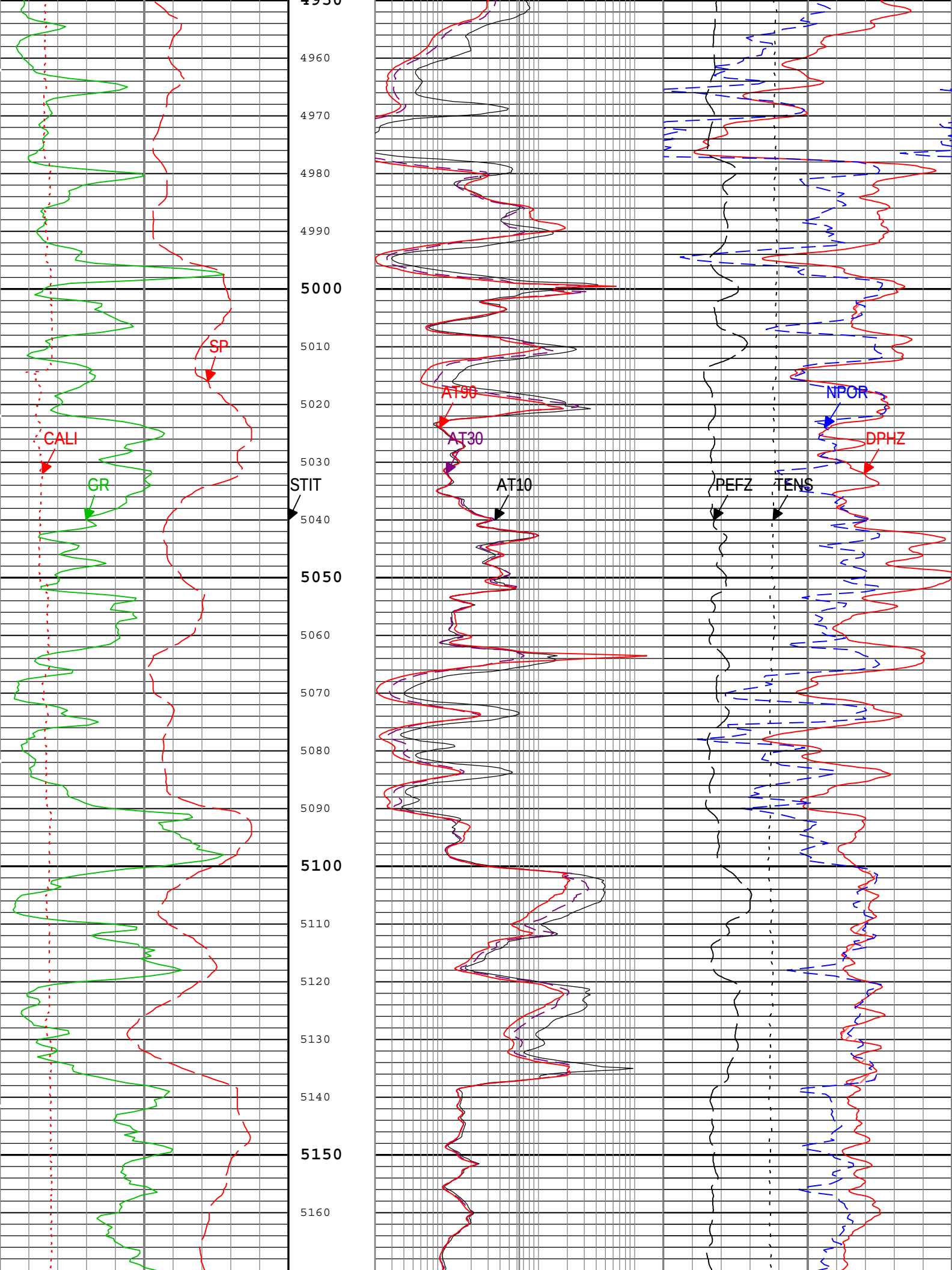
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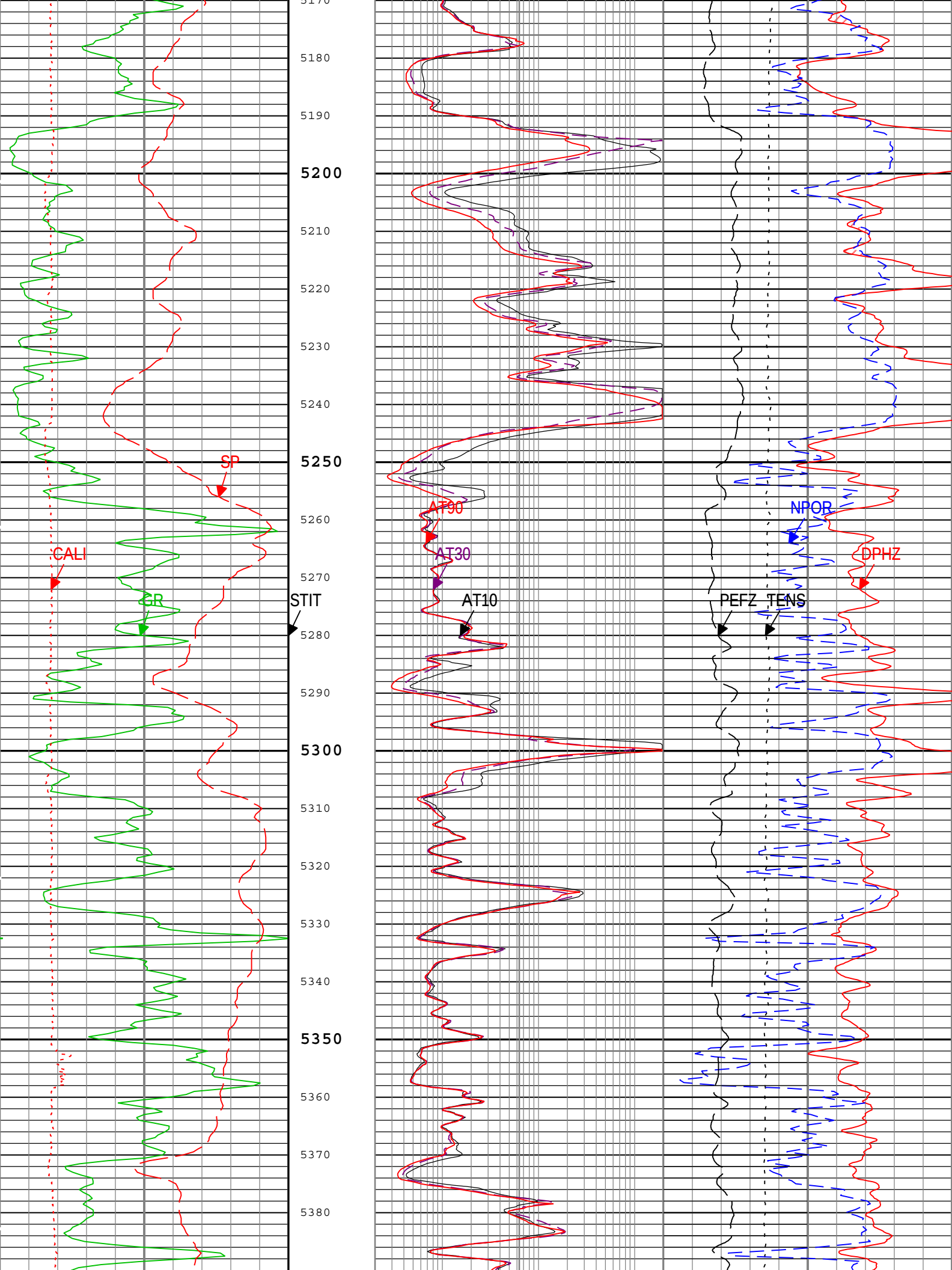
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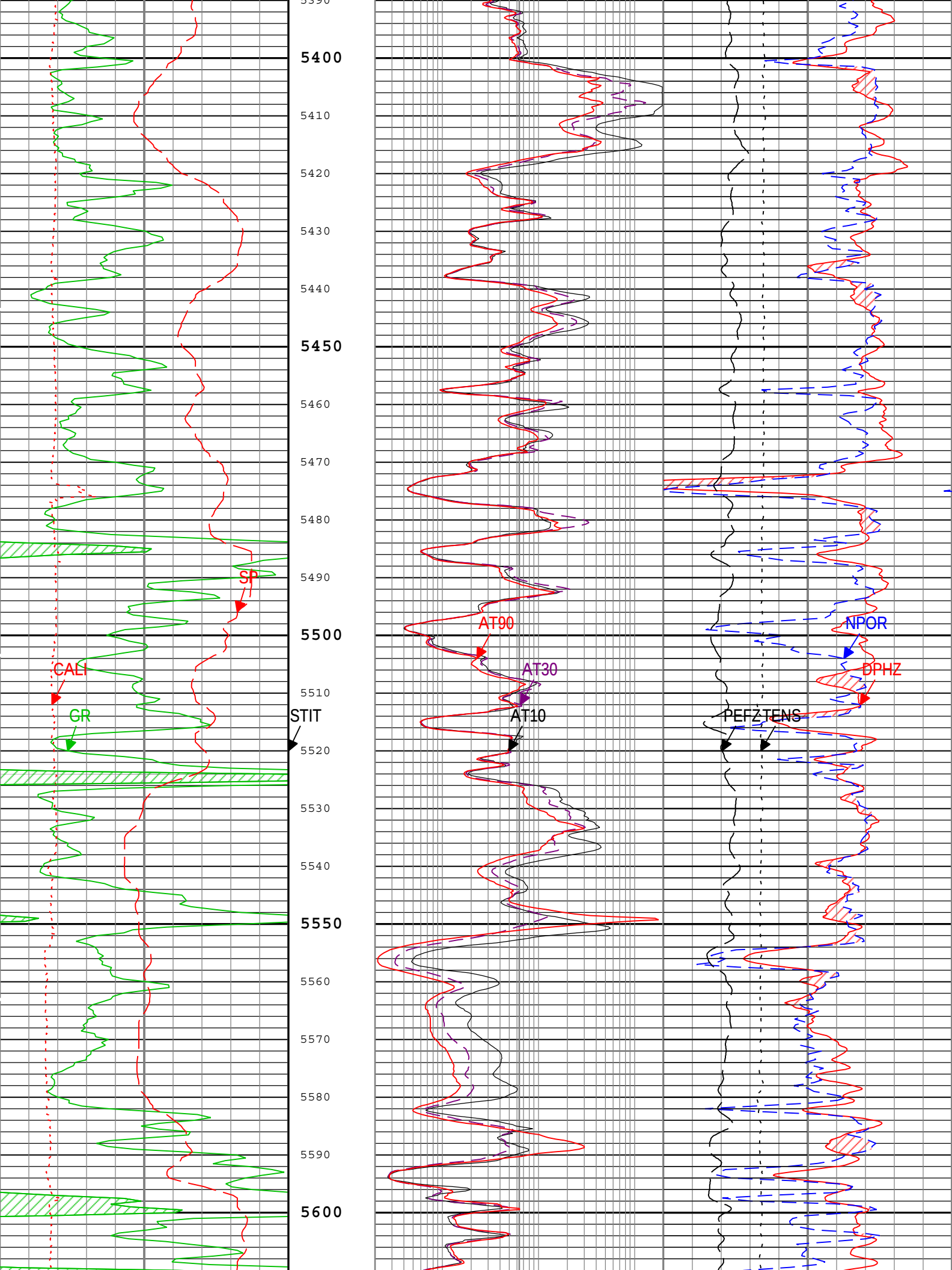
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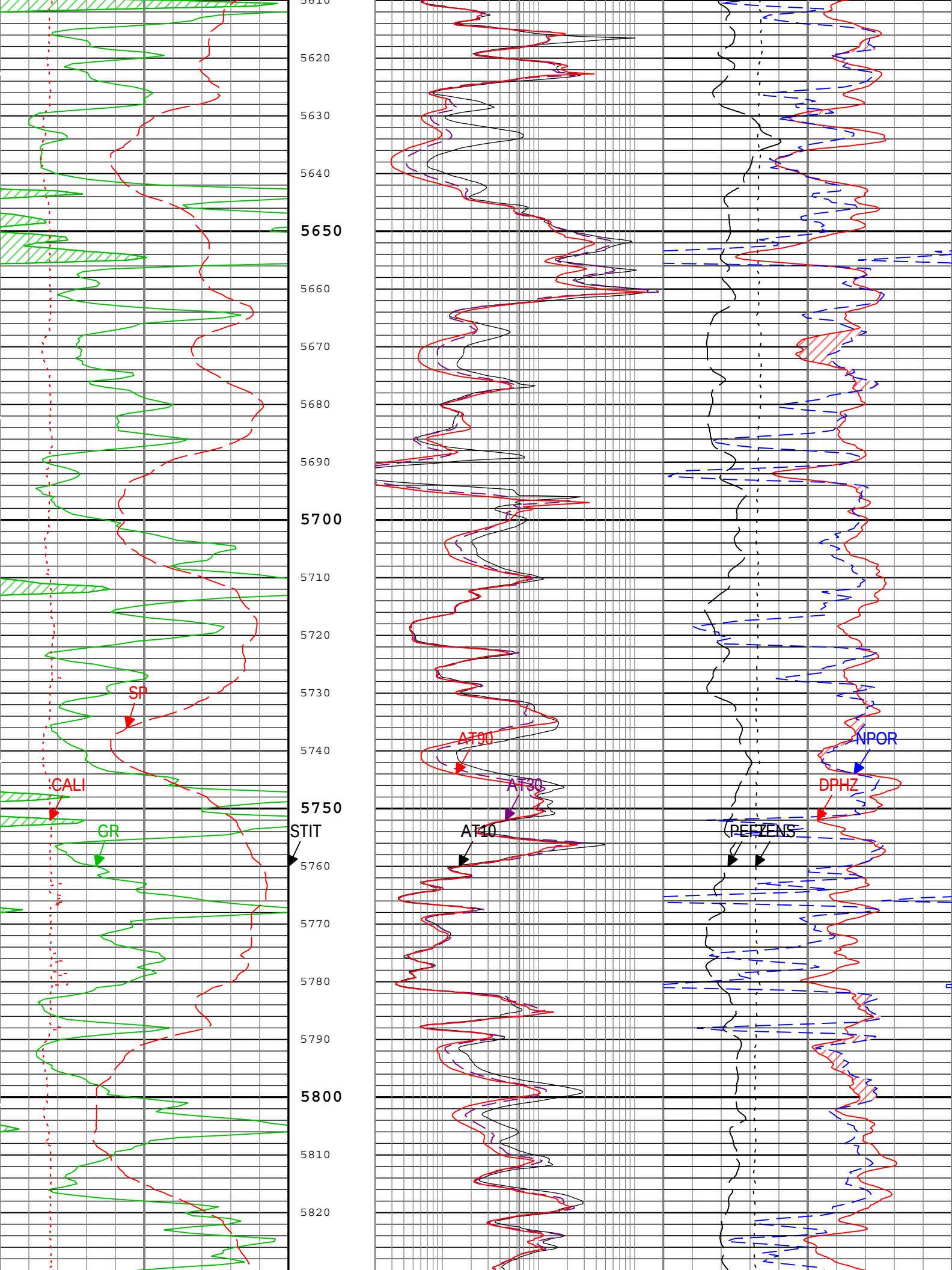
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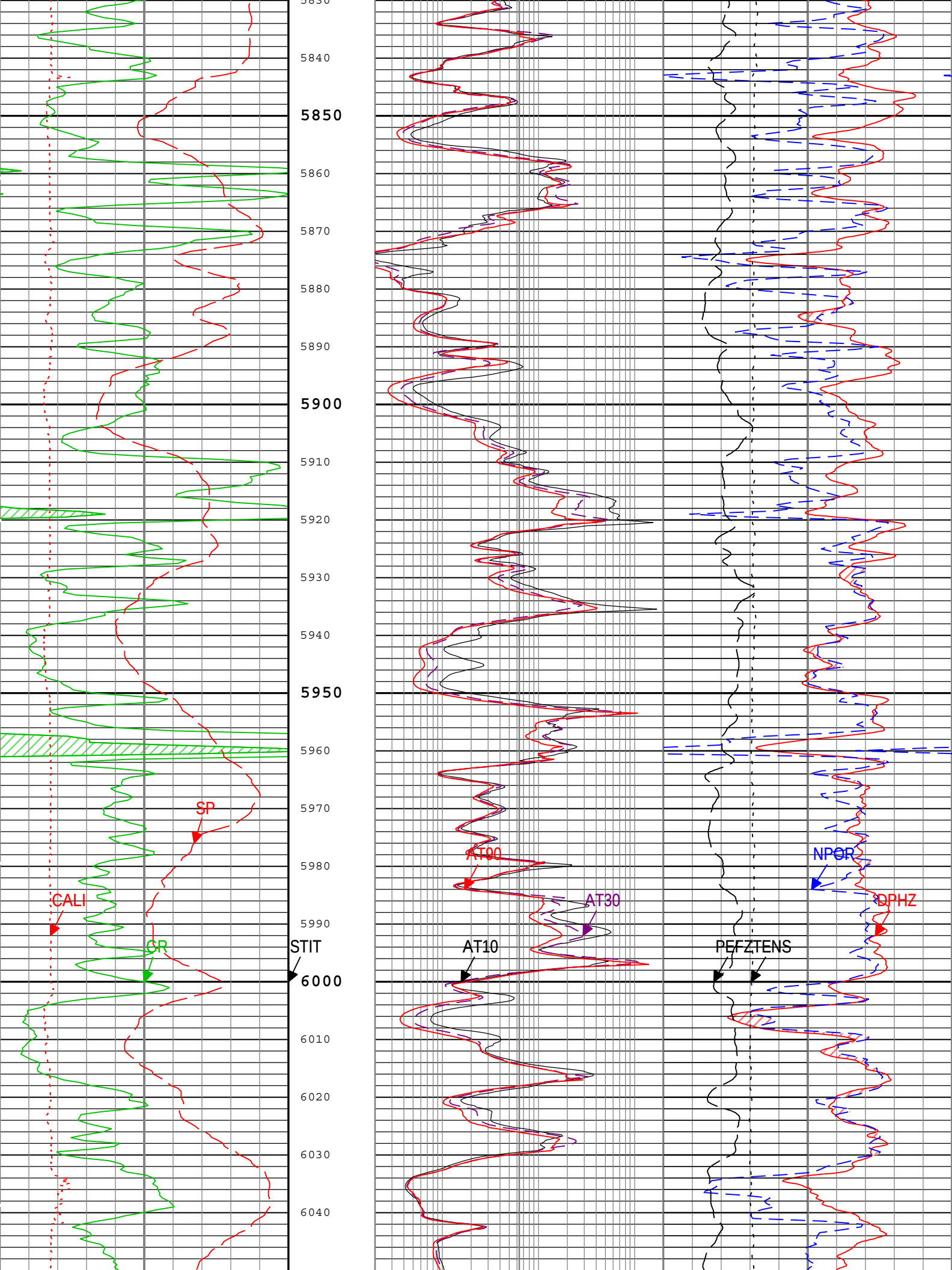
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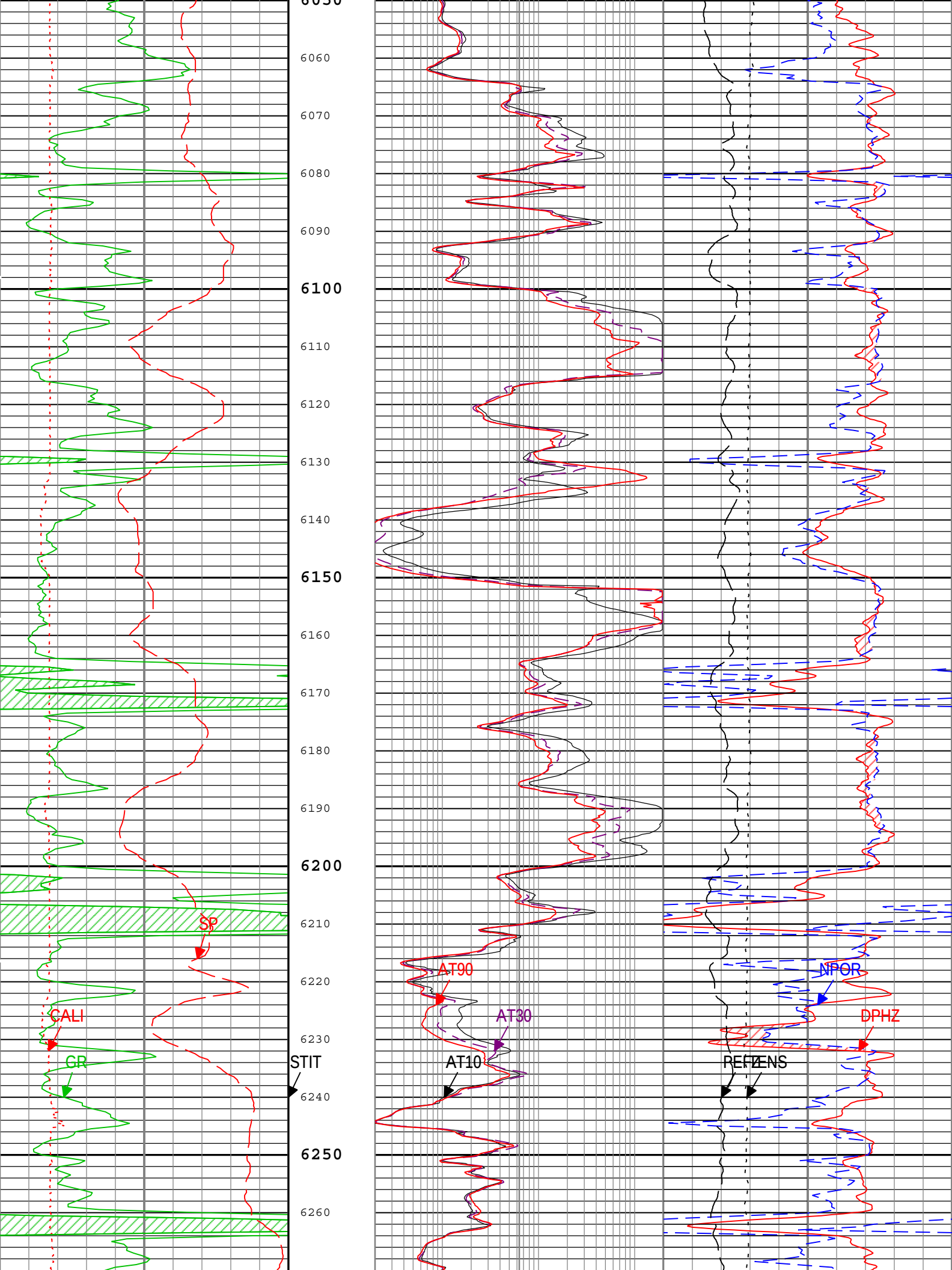
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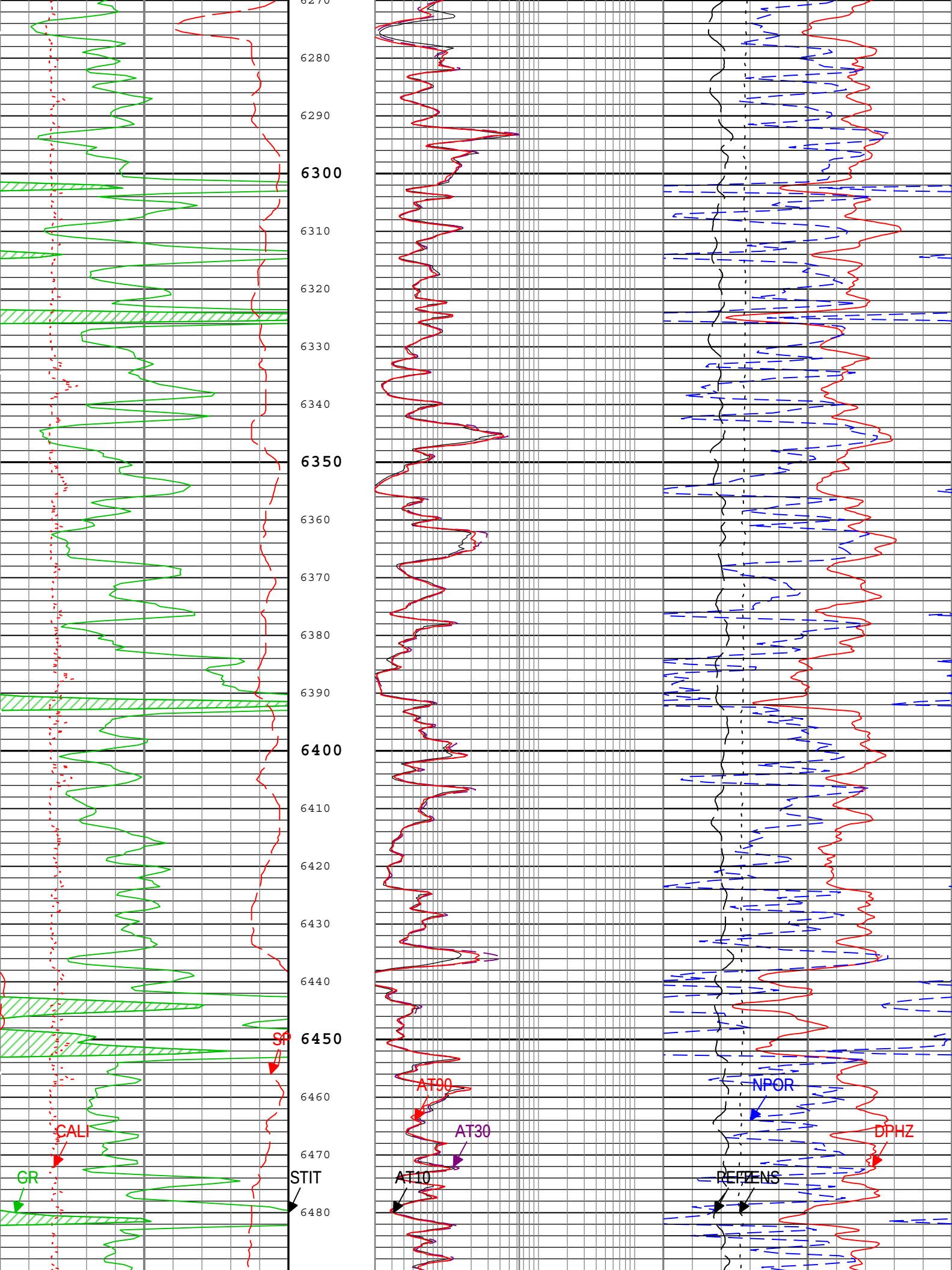
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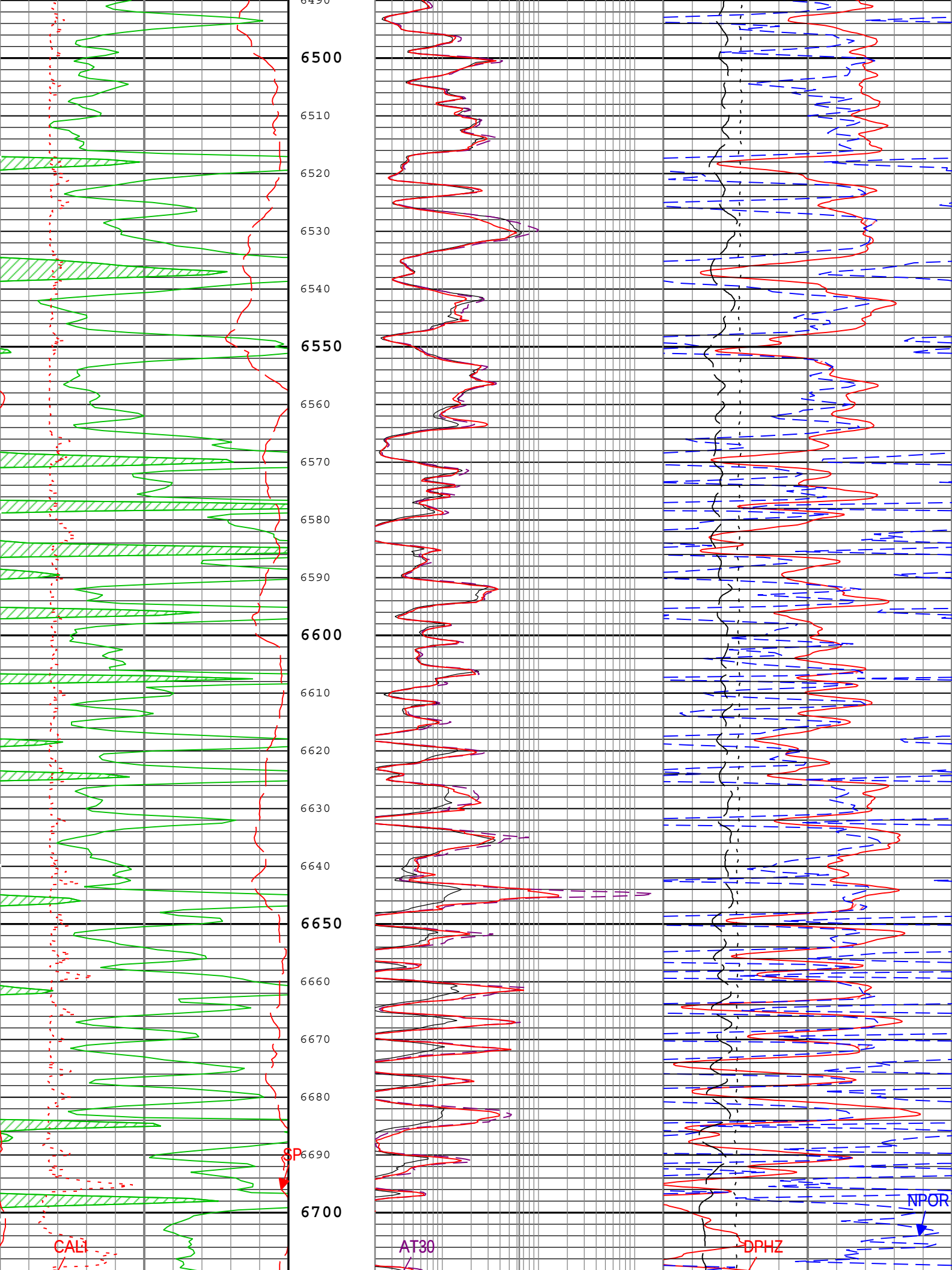
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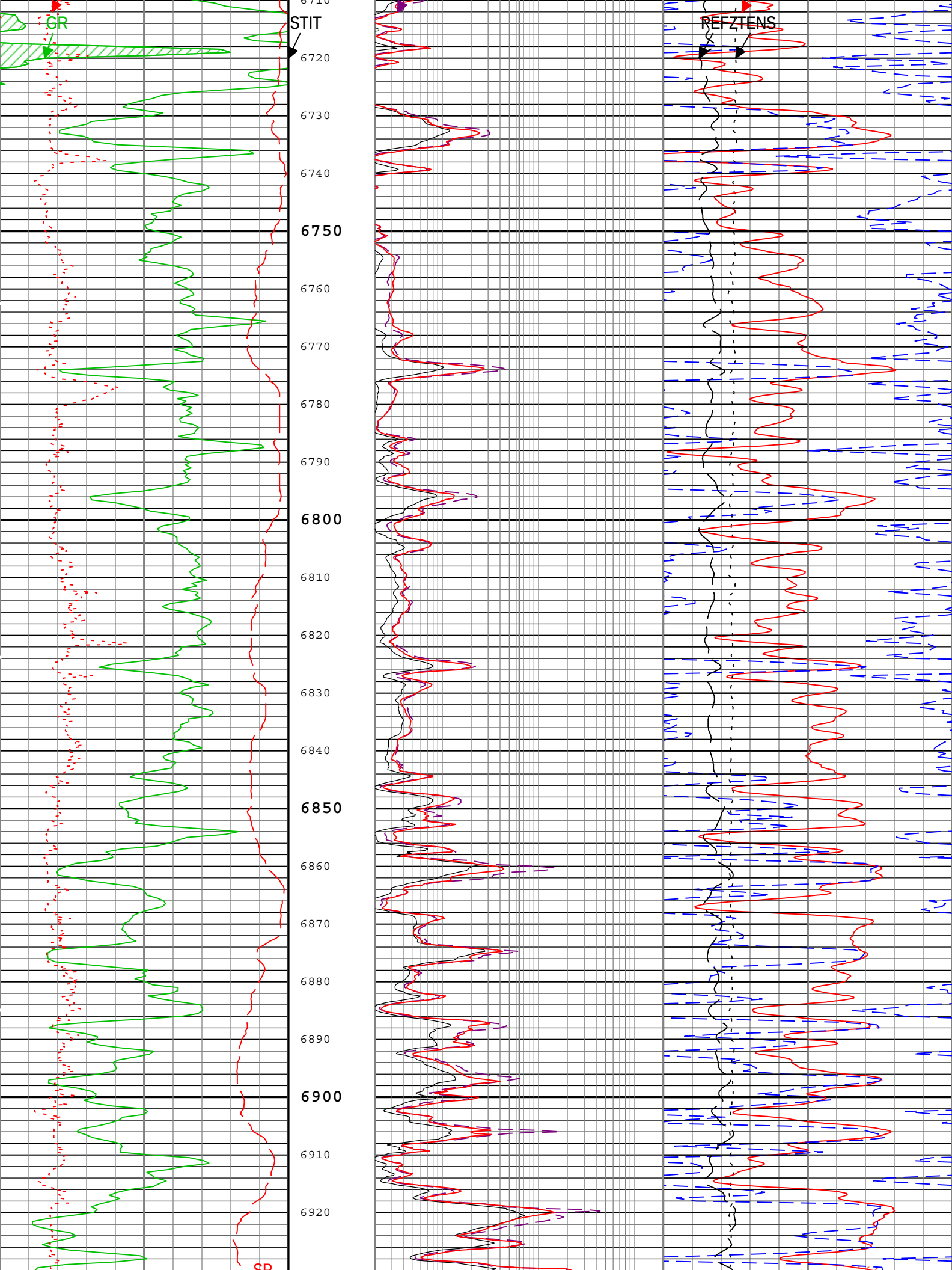
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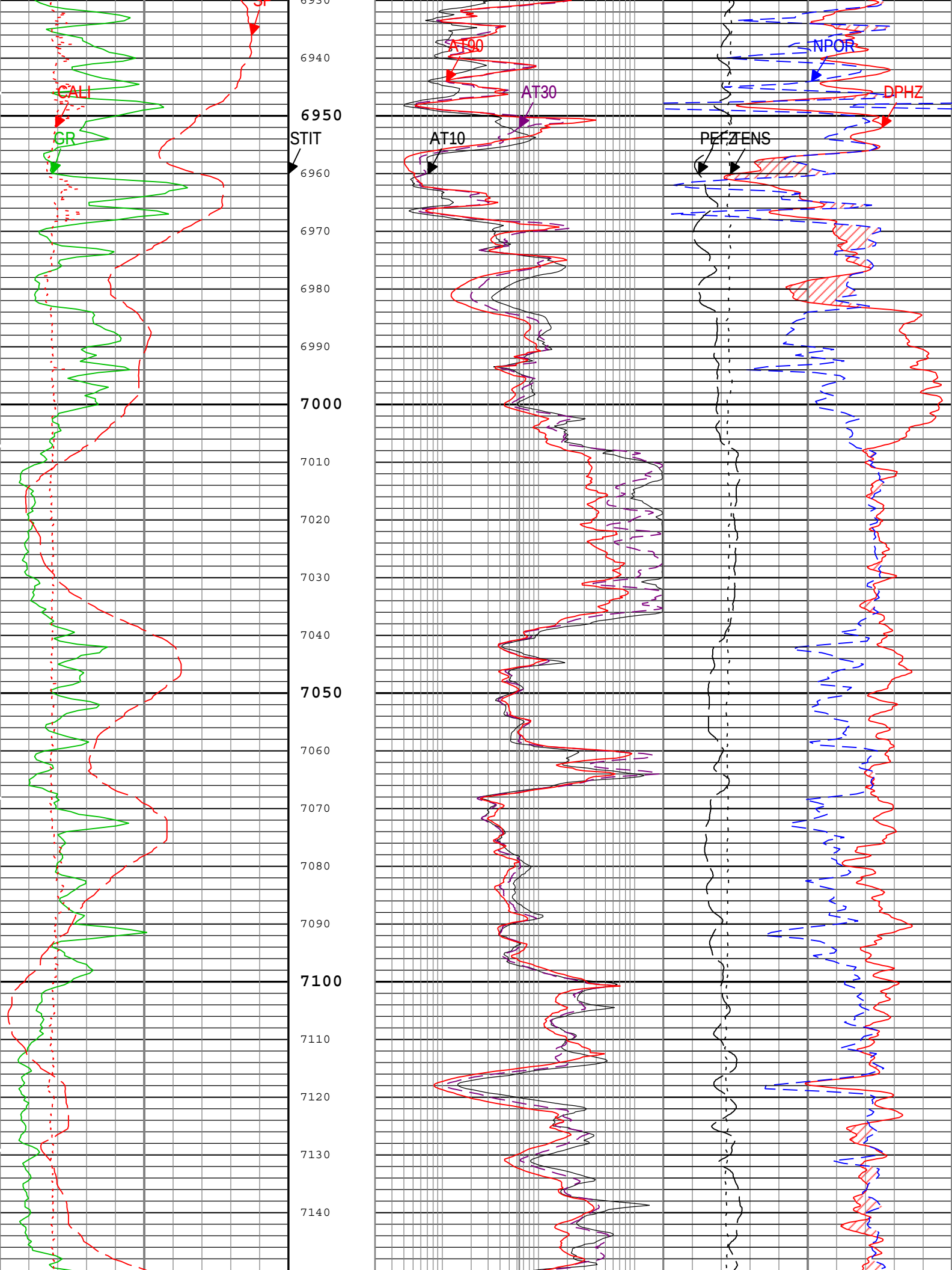
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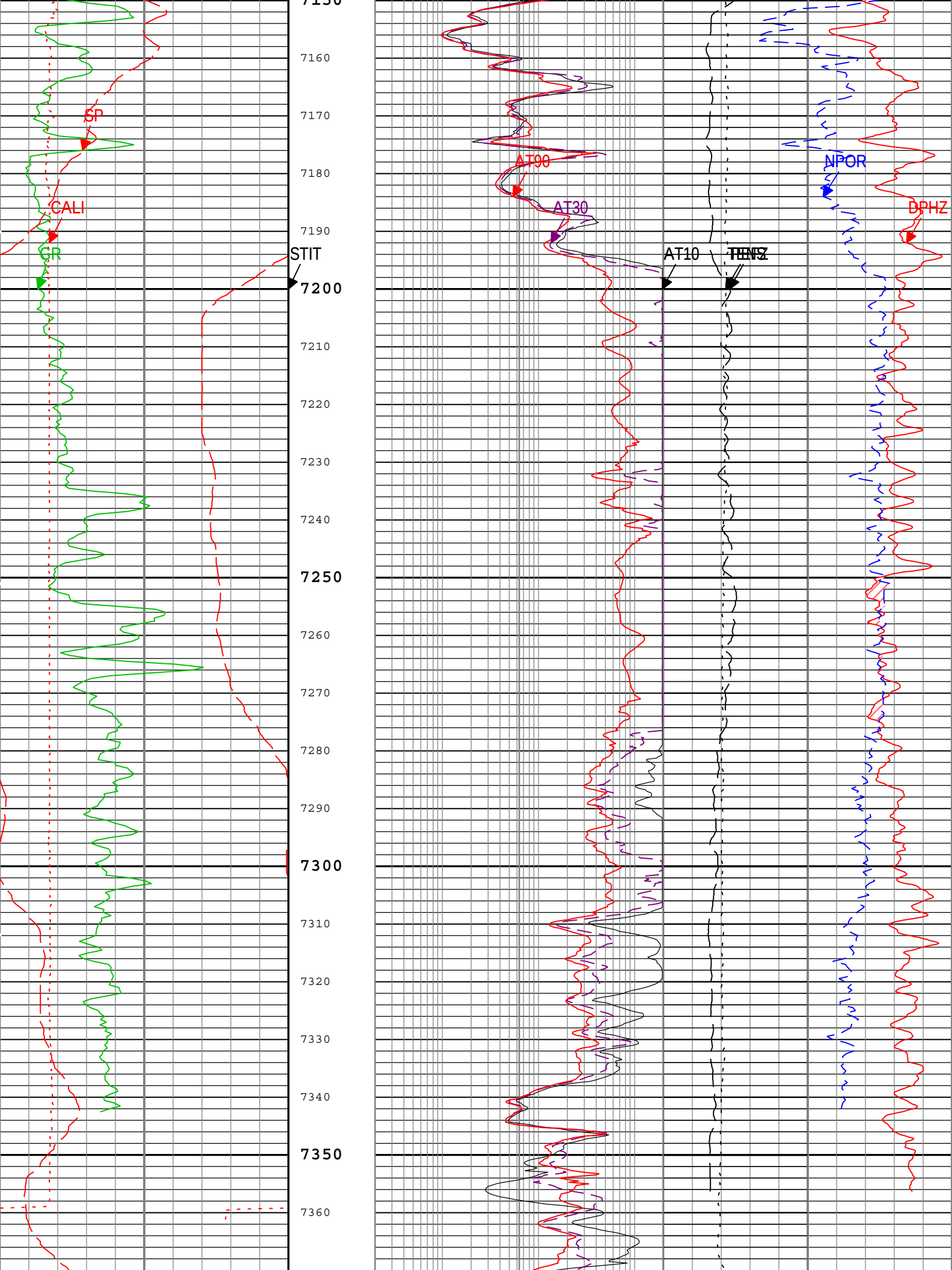
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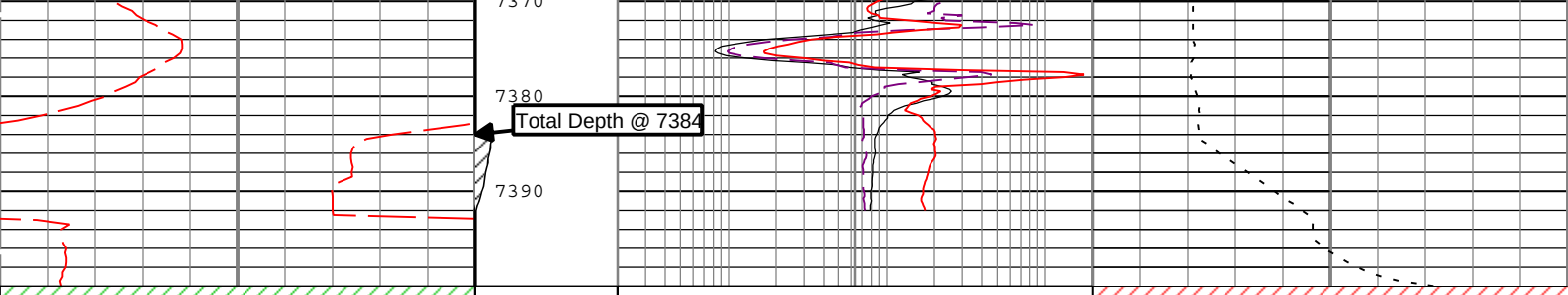

Gamma Ray Back up

Gamma Ray (GR) HGNS-H
0 gAPI 200

Caliper (CALI) HDRS-H
6 in 16

Spontaneous Potential (SP) AIT-H
-160 mV 40

Stuck Tool Indicator, Total (STIT)
0 ft 50

Array Induction Two Foot Resistivity A10 (AT10) AIT-H
2 ohm.m 2000

Array Induction Two Foot Resistivity A30 (AT30) AIT-H
2 ohm.m 2000

Array Induction Two Foot Resistivity A90 (AT90) AIT-H
2 ohm.m 2000

Gas Effect

NPOR Backup

Cable Tension (TENS)
5000 lbf 0

Standard Resolution Density Porosity (DPHZ) HDRS-H
0.3 ft3/ft3 -0.1

Enhanced Thermal Neutron Porosity in Selected Lithology (NPOR) HGNS-H
0.3 m3/m3 -0.1

Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H
0 10

TIME_1900 - Time Marked every 60.00 (s)

Description: HGNS standard resolution porosities for Platform Express Format: Log (KM 5in Triple Combo) Index Scale: 5 in per 100 ft Index Unit: ft
Index Type: Measured Depth Creation Date: 09-Jul-2013 17:45:25

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
ABHM	Array Induction Borehole Correction Mode	AIT-H	Compute Standoff	
ABLM	Array Induction Basic Logs Mode	AIT-H	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-H	Yes	
ASTA	Array Induction Tool Standoff	AIT-H	1.125	in
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	7.875	in
BSAL	Borehole Salinity	Borehole	7655.15	ppm
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0	in
CBLO	Casing Bottom (Logger)	WLSESSION	2294	ft
CDEN	Cement Density	HGNS-H	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DFD	Drilling Fluid Density	Borehole	9.2	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DFT_WATER	Drilling Fluid Water Type	Borehole	LSND/POLY	
DHC	Density Hole Correction	HDRS-H	Bit Size	
FD	Fluid Density	Borehole	1	g/cm3
FSAL	Formation Salinity	Borehole	0	ppm
GCSE_DOWN_PASS	Generalized Caliper Selection for WL Log Down Passes	Borehole	BS	
GCSE_UP_PASS	Generalized Caliper Selection for WL Log Up Passes	Borehole	CALI	
GRSE	Generalized Mud Resistivity Selection, from Measured or Computed Mud Resistivity	Borehole	AMF	

GTSE	Generalized Temperature Selection, from Measured or Computed Temperature	Borehole	CTEM	
HSCO	Hole Size Correction Option	HGNS-H	Yes	
MATR	Rock Matrix for Neutron Porosity Corrections	Borehole	LIMESTONE	
MDEN	Matrix Density for Density Porosity	Borehole	2.71	g/cm3
MFST	Mud Filtrate Sample Temperature	Borehole	73.6	degF
RMFS	Resistivity of Mud Filtrate Sample	Borehole	0.57	ohm.m
SOCO	Standoff Correction Option	HGNS-H	Yes	
SPDR	SP Drift Per Foot	AIT-H	0	mV/ft

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
HMCA_BRD_TYPE	HMCA Board Type	HGNS-H	1	
HRGD_BRD_TYPE	HRGD Board Type	HDRS-H	WITH_HET	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	3600	ft/h

Calibration Report

AIT-H (Array Induction Tool - H) Calibration - Run 1

Primary Equipment :

Array Induction Sonde - H	AHIS	216

Auxiliary Equipment :

AITH Rm/SP Bottom Nose	AHRM	216

AIT Sonde Calibration - Test Loop Gain

Master (EEPROM): 03:36:27 24-Jun-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Test Loop Gain - 0		Master	1.000	0.950	1.010	1.050
Test Loop Phase - 0	deg	Master	0	-3.000	0.408	3.000
Test Loop Gain - 1		Master	1.000	0.950	1.011	1.050
Test Loop Phase - 1	deg	Master	0	-3.000	0.440	3.000
Test Loop Gain - 2		Master	1.000	0.950	1.012	1.050
Test Loop Phase - 2	deg	Master	0	-3.000	-0.108	3.000
Test Loop Gain - 3		Master	1.000	0.950	1.014	1.050
Test Loop Phase - 3	deg	Master	0	-3.000	-0.043	3.000
Test Loop Gain - 4		Master	1.000	0.950	0.996	1.050
Test Loop Phase - 4	deg	Master	0	-3.000	-0.159	3.000
Test Loop Gain - 5		Master	1.000	0.950	0.987	1.050
Test Loop Phase - 5	deg	Master	0	-3.000	-0.309	3.000
Test Loop Gain - 6		Master	1.000	0.950	0.988	1.050
Test Loop Phase - 6	deg	Master	0	-3.000	1.269	3.000
Test Loop Gain - 7		Master	1.000	0.950	1.000	1.050
Test Loop Phase - 7	deg	Master	0	-3.000	-0.283	3.000

AIT Sonde Calibration - Sonde Error Correction

Master (EEPROM): 03:36:27 24-Jun-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-89.266	119.000
Sonde Error Correction Quad - 0		Master	-----	-2250.000	-129.906	2250.000
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	164.877	204.000
Sonde Error Correction Quad - 1		Master	-----	-625.000	-37.623	625.000
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	113.551	156.000
Sonde Error Correction Quad - 2		Master	-----	-350.000	-149.162	350.000
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	59.900	89.000
Sonde Error Correction Quad - 3		Master	-----	-250.000	-28.965	250.000
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	26.213	35.000
Sonde Error Correction Quad - 4		Master	-----	-63.000	-16.681	63.000
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	13.274	24.000
Sonde Error Correction Quad - 5		Master	-----	-50.000	-17.935	50.000
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	10.279	15.000
Sonde Error Correction Quad - 6		Master	-----	-30.000	0.135	30.000
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-0.320	5.000
Sonde Error Correction Quad - 7		Master	-----	-30.000	2.617	30.000

AIT Mud Calibration - Mud Calibration Gain

Master (EEPROM): 03:36:27 24-Jun-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Coarse Gain		Master	1.000	0.800	0.861	1.200
Fine Gain		Master	1.000	0.800	0.862	1.200

AIT Electronics Check - Thru Calibration Check

Master (EEPROM): 03:36:27 24-Jun-2013 Before (Measured): 10:37:55 05-Jul-2013 Expired by 2 days After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Thru Cal Mag - 0	V	Master	-----	0.363	0.628	0.847
		Before	-----	0.363	0.629	0.847
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 0	deg	Master	-----	11.000	51.009	131.000
		Before	-----	11.000	51.738	131.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.729	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 1	V	Master	-----	0.762	1.289	1.778
		Before	-----	0.762	1.288	1.778
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 1	deg	Master	-----	10.000	49.968	130.000
		Before	-----	10.000	50.708	130.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.740	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 2	V	Master	-----	0.374	0.639	0.872
		Before	-----	0.374	0.639	0.872
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.000	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 2	deg	Master	-----	6.000	46.158	126.000
		Before	-----	6.000	46.929	126.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.771	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 3	V	Master	-----	0.422	0.722	0.986
		Before	-----	0.422	0.722	0.986
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.000	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 3	deg	Master	-----	5.000	45.367	125.000
		Before	-----	5.000	46.140	125.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.773	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 4	V	Master	-----	0.802	1.359	1.872
		Before	-----	0.802	1.358	1.872
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 4	deg	Master	-----	-1.000	38.913	119.000
		Before	-----	-1.000	39.742	119.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.829	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 5	V	Master	-----	1.173	1.969	2.737
		Before	-----	1.173	1.970	2.737
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 5	deg	Master	-----	-3.000	36.966	117.000
		Before	-----	-3.000	37.828	117.000

		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.862	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 6	V	Master	-----	1.173	1.968	2.737
		Before	-----	1.173	1.969	2.737
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 6	deg	Master	-----	-3.000	36.958	117.000
		Before	-----	-3.000	37.820	117.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.862	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 7	V	Master	-----	0.849	1.402	1.981
		Before	-----	0.849	1.407	1.981
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.005	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 7	deg	Master	-----	-7.000	32.686	113.000
		Before	-----	-7.000	33.870	113.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	1.184	-----
		After-Before	-----	-----	-----	-----
SPA Zero	mV	Master		-50.000	0.048	50.000
		Before		-50.000	-0.027	50.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.075	-----
		After-Before	-----	-----	-----	-----
SPA Plus	mV	Master		941.000	991.855	1040.000
		Before		941.000	993.033	1040.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	1.178	-----
		After-Before	-----	-----	-----	-----
Temperature Zero	V	Master		-0.050	0.000	0.050
		Before		-0.050	0.000	0.050
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.000	-----
		After-Before	-----	-----	-----	-----
Temperature Plus	V	Master		0.870	0.920	0.960
		Before		0.870	0.921	0.960
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.001	-----
		After-Before	-----	-----	-----	-----

HDRS-H (HILT Density and Rxo Sonde, 150 degC) Calibration - Run 1

Primary Equipment :

HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	5705
HILT Resistivity Gamma-Ray Density Device, 150 degC	HRGD-H	4791

Auxiliary Equipment :

HRDD Backscatter Detector	Backscatter	
HRDD Long Spacing Detector	Long Spacing	28910
HRDD Short Spacing Detector	Short Spacing	
Cesium 137 Gamma-Ray Logging Source	GSR-J	5240
HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	5705
HILT High-Resolution Mechanical Sonde, 150 degC	HRMS-H	4826

Calibration Parameter :

Small Ring Size (Caliper Calibration Small Ring)	8.00
Large Ring Size (Caliper Calibration Large Ring)	12.00

HDRS Caliper Calibration - Caliper Accumulations

Before (Measured): 11:01:50 05-Jul-2013 Expired by 2 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Small Ring	in	Before	8.00	6.00	8.32	10.00

Large Ring	in	Before	12.00	9.00	12.59	15.00

HDRS Density Calibration - Inversion Results

Master (EEPROM): 17:53:32 19-Jun-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Rho Aluminum	g/cm3	Master	2.596	2.586	2.594	2.606
Rho Magnesium	g/cm3	Master	1.686	1.676	1.689	1.696
Pe Aluminum		Master	2.570	2.470	2.562	2.670
Pe Magnesium		Master	2.650	2.550	2.622	2.750

HDRS Density Calibration - Deviation Summary

Master (EEPROM): 17:53:32 19-Jun-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Average Deviation	%	Master	0	-0.6000	0.4541	0.6000
BS Max Deviation	%	Master	0	-1.6000	0.9048	1.6000
SS Average Deviation	%	Master	0	-1.0000	0.4998	1.0000
SS Max Deviation	%	Master	0	-2.5000	1.0703	2.5000
LS Average Deviation	%	Master	0	-1.5000	0.6537	1.5000
LS Max Deviation	%	Master	0	-3.5000	2.0591	3.5000

HDRS Density Calibration - Background Summary

Master (EEPROM): 17:53:32 19-Jun-2013 Before (Measured): 11:06:08 05-Jul-2013 Expired by 2 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Window Ratio		Master	1.0000		0.7389	
		Before	0.7389	0.7020	0.7383	0.7759
		Before-Master	-----	-----	-0.0006	-----
BS Window Sum	1/s	Master	1		25839	
		Before	25839	24547	25881	27131
		Before-Master	-----	-----	42	-----
SS Window Ratio		Master	1.0000		0.4833	
		Before	0.4833	0.4591	0.4846	0.5074
		Before-Master	-----	-----	0.0013	-----
SS Window Sum	1/s	Master	1		11529	
		Before	11529	10953	11505	12106
		Before-Master	-----	-----	-24	-----
LS Window Ratio		Master	1.0000		0.3002	
		Before	0.3002	0.2852	0.2993	0.3152
		Before-Master	-----	-----	-0.0009	-----
LS Window Sum	1/s	Master	1		1345	
		Before	1345	1277	1338	1412
		Before-Master	-----	-----	-7	-----

HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM): 17:53:32 19-Jun-2013 Before (Measured): 11:06:08 05-Jul-2013 Expired by 2 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS PM High Voltage	V	Master		1000	1315	2400
		Before		1000	1311	2400
		Before-Master	-----	-100	-4	100
SS PM High Voltage	V	Master		1000	1905	2400
		Before		1000	1906	2400
		Before-Master	-----	-100	1	100
LS PM High Voltage	V	Master		1000	1302	2400
		Before		1000	1308	2400
		Before-Master	-----	-100	6	100

HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM): 17:53:32 19-Jun-2013 Before (Measured): 11:06:08 05-Jul-2013 Expired by 2 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Crystal Resolution	%	Master		5.00	11.93	25.00
		Before		5.00	11.87	25.00
		Before-Master	-----	-1.00	-0.06	1.00
SS Crystal Resolution	%	Master		5.00	10.34	20.00
		Before		5.00	10.44	20.00
		Before-Master	-----	-1.00	0.10	1.00
LS Crystal Resolution	%	Master		5.00	8.56	20.00
		Before		5.00	8.42	20.00
		Before-Master	-----	-1.00	-0.14	1.00

HDRS MCFL Calibration - MCFL Accumulations

Before (Measured): 11:06:19 05-Jul-2013 Expired by 2 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Main Resistivity	ohm.m	Before	3875	3565	3854	4185
Deep Resistivity	ohm.m	Before	3830	3524	3789	4136
Shallow Resistivity	ohm.m	Before	3830	3524	3808	4136

HGNS-H (HILT Gamma-Ray and Neutron Sonde, 150 degC) Calibration - Run 1

Primary Equipment :

HILT Gamma-Ray and Neutron Sonde, 150 degC	HGNS-H	4865

Auxiliary Equipment :

HGNS Accelerometer, 150 degC	HACCZ-H	6991
AmBe Neutron Logging Source	NSR-F	2554

Calibration Parameter :

Water Temperature	
Housing Size	
JIG-BKG (Jig minus background reference)	165

HGNS Accelerometer Calibration - Accelerometer Accumulations

Before (Measured): 03:42:25 09-Jul-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
AZ Vertical Measurement	ft/s2	Before	32.2	31.5	32.1	32.8

HGNS Accelerometer EEPROM - Accelerometer EEPROM Read

Master (EEPROM): 19:00:00 14-May-2007

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Accelerometer Manufacturer		Master			QAT_160	
Accelerometer Reference Temperature	degF	Master		30.2	77.0	122.0
Accelerometer Coefficients - 0		Master	-----	-----	-4298.000	-----
Accelerometer Coefficients - 1		Master	-----	-----	50.180	-----
Accelerometer Coefficients - 2		Master	-----	-----	-0.002	-----
Accelerometer Coefficients - 3		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 4		Master	-----	-----	2.754	-----
Accelerometer Coefficients - 5		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 7		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 8		Master	-----	-----	300.500	-----
Accelerometer Coefficients - 9		Master	-----	-----	0.994	-----

HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM): 09:28:08 17-May-2013 Before (Measured): 10:35:14 05-Jul-2013 Expired by 2 days After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Near Zero Measurement	1/s	Master	0	5.0	27.4	40.0
		Before	0	5.0	28.0	40.0
		After	-----	-----	-----	-----
		Before-Master	-----	-4.1	0.6	4.1
		After-Before	-----	-----	-----	-----
Far Zero Measurement	1/s	Master	0	5.0	27.3	40.0
		Before	0	5.0	26.8	40.0
		After	-----	-----	-----	-----
		Before-Master	-----	-4.1	-0.5	4.1
		After-Before	-----	-----	-----	-----
Near Plus Measurement - 0	1/s	Master	6031.0	4700.0	6004.0	6900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
Far Plus Measurement - 0	1/s	Master	2793.0	1900.0	2543.0	2900.0
		Before	-----	-----	-----	-----
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

Near Corrected Plus Measurement - 0	1/s	Master		4700.0	5686.0	6900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Far Corrected Plus Measurement - 0	1/s	Master		1900.0	2326.0	2900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured): 10:37:04 05-Jul-2013 Expired by 2 days After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
RGR Zero Measurement	gAPI	Before	30.0	0	85.7	120.0
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
RGR Plus Measurement	gAPI	Before	185.4	157.1	166.8	206.3
		After			NOT DONE	
		After-Before	-----	-----	-----	-----
GR Calibration Gain		Before	0.89	0.80	0.99	1.05
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----

Company: Pine Ridge Oil & Gas, LLC

Schlumberger

Well: Vortex 12-53-3-1

Field: Clifford

County: Lincoln

State: Colorado

Platform Express

Triple Combo