Schlumberger

Company: SOURCE ENERGY MIDCON LLC

Well: NEVILLE 12-11-12-14H

Field: WILDCAT

County: SUMNER State: KANSAS

QUAD-COMBO

PLATFORM EXPRESS

BOREHOLE COMPENSATED SONIC

County: SUMNER
Field: WILDCAT
Location: SHL: 350' FNL, 350' FWL
Well: NEVILLE 12-11-12-14H
Company: SOURCE ENERGY MIDCON LLC

Location:				
SHL: 350' FNL, 350' FWL	Elev.	K.B.	1306.60	ft
LAT: 37.2895 DEG NORTH		G.L.	1293.00	ft
LONG: 97,2748 DEG WEST		D.F.	1306.60	ft

Permanent Datum:	Ground Level	Elev.:	1293.00 f
Log Measured From:	Kelly Bushing	13.60 ft	above Perm.Datum
Drilling Measured From:	Kelly Bushing		

API Serial No.	Section:	Township:	Range:
15-191-22679-01-00	12	32S	1E

Logging Date			14-Jun-2013			
Run Number			ONE			
Depth Driller			4017.00 ft			
Schlumberger Depth			3998.00 ft			
Bottom Log Interval			3998.00 ft			
Top Log Interval			310.00 ft			
Casing Driller Size @ Depth			9.625 in @ 317.00 ft			
Casing Schlumberger			310 ft			
Bit Size			8.75 in			
Type Fluid In Hole			Fresh WBM			
MUD	Density	Viscosity	8.7 lbm/gal	54 s		
	Fluid Loss	PH	0 cm3	9.8		
	Source of Sample		Active Tank			
RM @ Meas Temp			1.28 ohm.m @ 86 degF			
RMF @ Meas Temp			1.08 ohm.m @ 86 degF			
RMC @ Meas Temp			1.79 ohm.m @ 86 degF			
Source RMF	RMC		Calculated	Calculated		
RM @ BHT	RMF @ BHT		0.95 @ 118	0.8 @ 118		
Max Recorded Temperatures			118 degF	118	118	
Circulation Stopped	Time		14-Jun-2013	10:30:00		
Logger on Bottom	Time		14-Jun-2013	18:25:52		
Unit Number	Location:		2281	ELK CITY, OK		
Recorded By			MATT CRAMER / DERYK REQUE			
Witnessed By			CHARLES VALLOT			

Disclaimer

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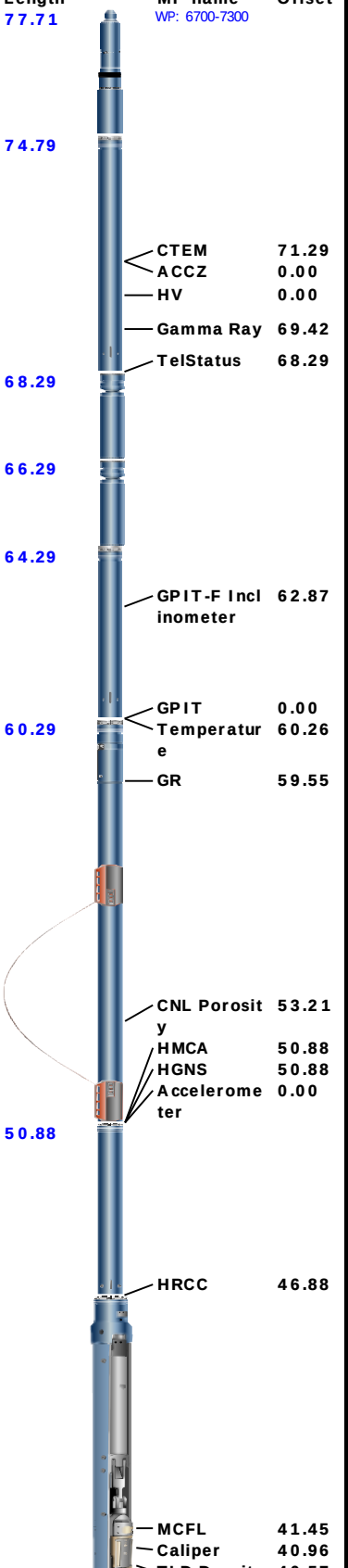
Remarks and Equipment Summary

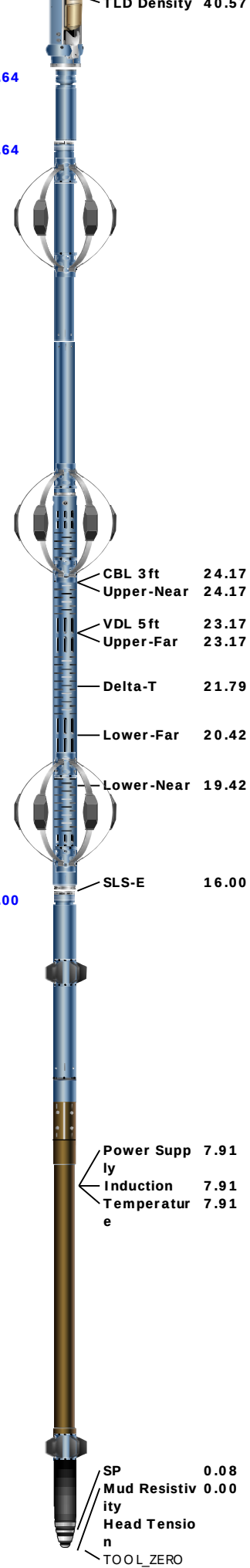
ONE: Toolstring

Equip name	Length	MP name (WP: 6700-7300)	Offset
LEH-QT:2546 LEH-QT:2546	77.71		
EDTC-B:8615 EDTH-B:8609 EDTG-A:77747 EDTC-B:8615	74.79		
		CTEM	71.29
		ACCZ	0.00
		HV	0.00
		Gamma Ray	69.42
		TelStatus	68.29
AH-184[3]	68.29		
AH-184[2]:4713	66.29		
GPIT-F:827 GPIH-B:1969 DHRU-F:806 GPIC-F:827	64.29		
		GPIT-F Inclinometer	62.87
		GPIT	0.00
HGNS-H:3819 HGNH:2844 NPV-N NSR-F:5226 HGNS-H:3819 HMCA-H HACCZ-H:2102	60.29	**Temperature**	60.26
		GR	59.55
		CNL Porosity	53.21
		HMCA	50.88
		HGNS	50.88
		Accelerometer	0.00
HDRS-H:3748 ECH-MEB:2972 HRCC-H:3821 HRMS-H:3748 Short Spacing Backscatter HRGD-H:4866 GPV-Q GSR-J:5350 Long Spacing	50.88		
		HRCC	46.88
		MCFL	41.45
		Caliper	40.96



ONE: Remarks

Tool string was run as illustrated in the toolsketch.
A bow-spring was used to eccentralize the HGNS. CME-Z were used to centralize the BHC Sonic.
All logs computed on a Limestone matrix. MDEN = 2.71 g/cc, DTM = 47.6 us/ft.
Maximum temperature in the well as recorded by the HGNS was 118 degF.
Hole cement volume computed using a 7" future casing diameter.
Logs correlated to down log at a prominent GR peak near 3930'.
Nuclear measurements affected by borehole ruggosity.



Lengths are in ft
Maximum Outer Diameter = 9.000 in
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

All measurements are relative to TOOL ZERO

Depth Summary

Depth Control Parameters	ONE		
Conveyance Type	Wireline		
Log Sequence	First Trip to Wellsite		
Rig Type	LAND (one-armed bandit, double)		
Depth Remark Parameters	**ONE**		
Depth Remark 1	All Schlumberger depth control procedures were followed.		
Depth Remark 2	An IDW was used as the primary depth control device. A z-chart was filled out for secondary depth control.		
Depth Remark 3	This was the first trip to wellsite.		
Depth Measuring Device	**ONE**		
Type	IDW-B		
Serial Number	5904		
Calibration Date	13-NOV-2013		
Calibrator Serial Number	33		
Calibration Cable Type	7-46A-XS		
Wheel Correction 1	-8		
Wheel Correction 2	-6		
Tension Device	**ONE**		
Type	CMTD-B/A		
Serial Number	2576		
Calibration Date	06-JUN-2013		
Calibrator Serial Number	1018		
Calibration Points	10		
Calibration RMS	8		
Calibration Peak Error	11		
Logging Cable	**ONE**		
Type	7-46P-XS		
Serial Number	U712142		
Logging Cable Length (ft)	30000.00		

ONE

Main Pass 5

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
	EXP_APL-AIT-3.1.9755.1746
	EXP_APL-MSCT-3.1.9755.1908

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

Tool Elements	Description	Software Version	Firmware Version
HRCC-H	HILT High-Resolution Control Cartridge, 150 degC	3.1.9755.0	2.0
HRGD-H	HILT Resistivity Gamma-Ray Density Device, 150 degC	3.1.9755.0	3.0

HGNS-H	HILT Gamma-Ray and Neutron Sonde, 150 degC	3.1.9755.0	2.0
AMIS	Array Induction Sonde - M	3.1.9755.1746	1

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data
ONE	Main[8]:Up	Up	84.33 ft	4007.57 ft	14-Jun-2013 6:48:00 PM	14-Jun-2013 8:11:08 PM	0.00 ft	
All depths are referenced to toolstring zero								

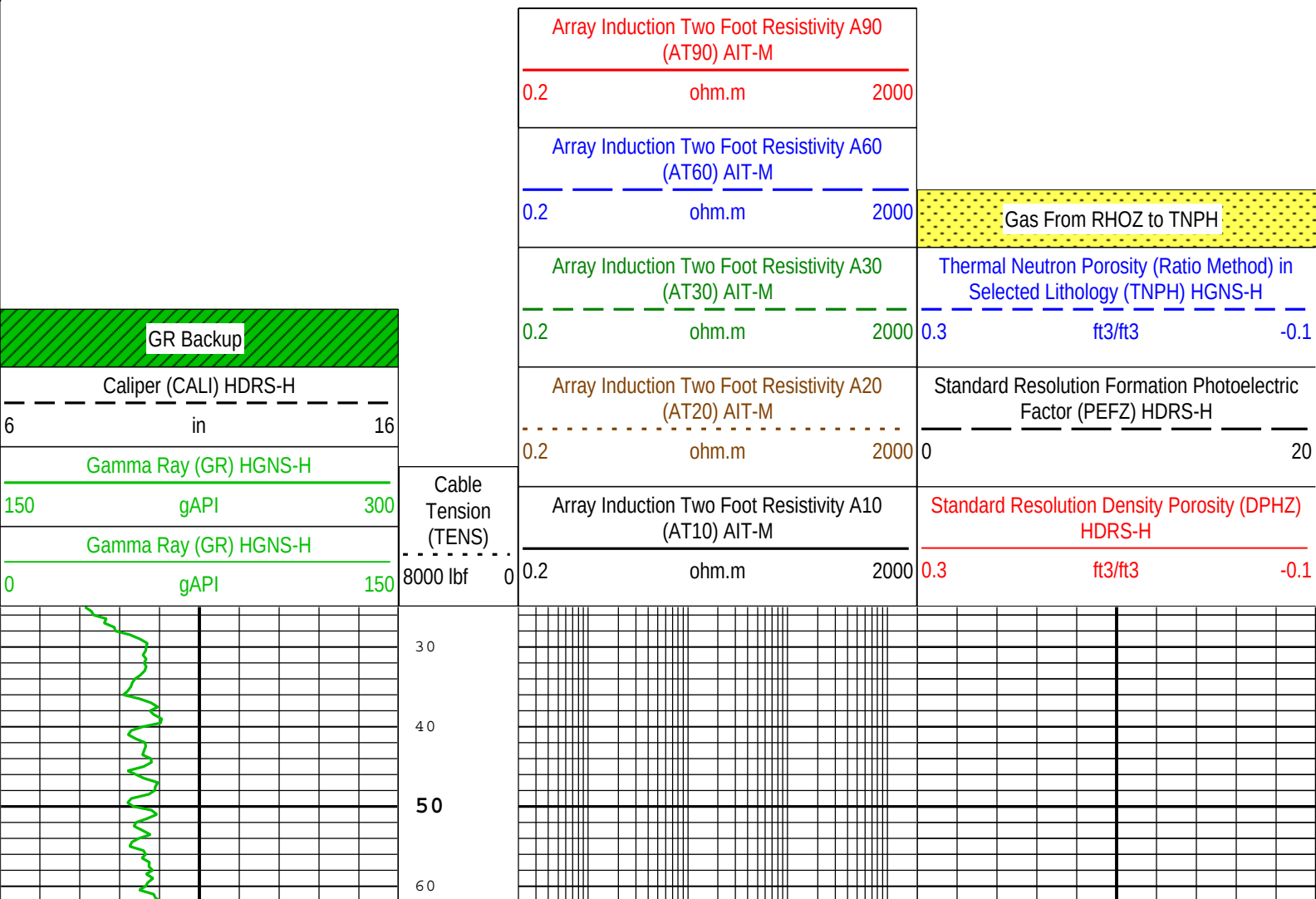
Log

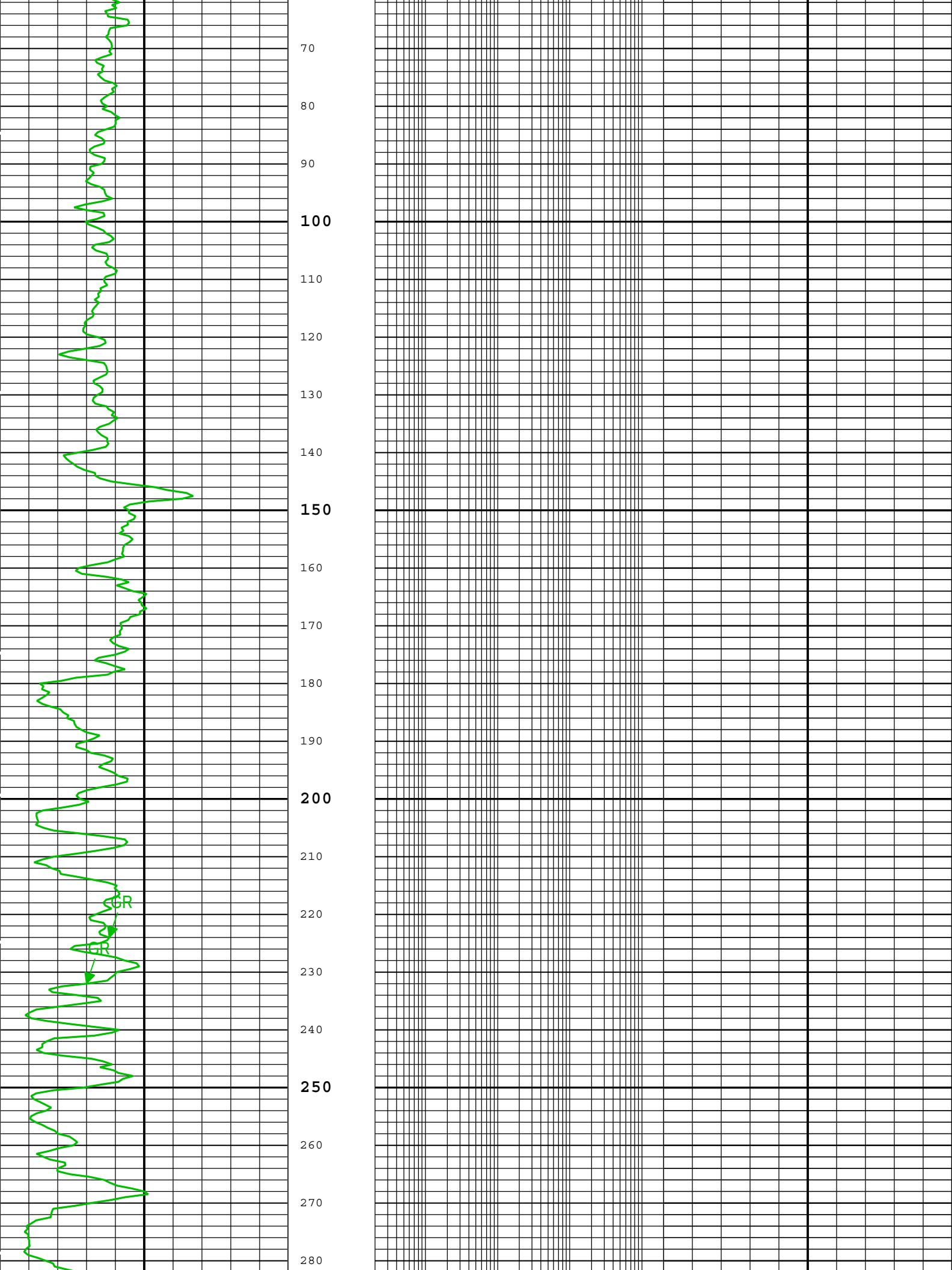
ONE: Main[8]:Up

Description: AIT Basic Log Two Format: Log (Shell AIT 5) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 14-Jun-2013 20:17:37

Channel	Source	Sampling
AT10	AIT-M:AMIS:AMIS	3in
AT20	AIT-M:AMIS:AMIS	3in
AT30	AIT-M:AMIS:AMIS	3in
AT60	AIT-M:AMIS:AMIS	3in
AT90	AIT-M:AMIS:AMIS	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
PEFZ	HDRS-H:HRMS-H:HRGD-H	2in
TENS	WLWorkflow	6in
TIME_1900	WLWorkflow	0.1in
TNPH	HGNS-H:HGNS-H:HGNS-H	6in

TIME_1900 - Time Marked every 60.00 (s)

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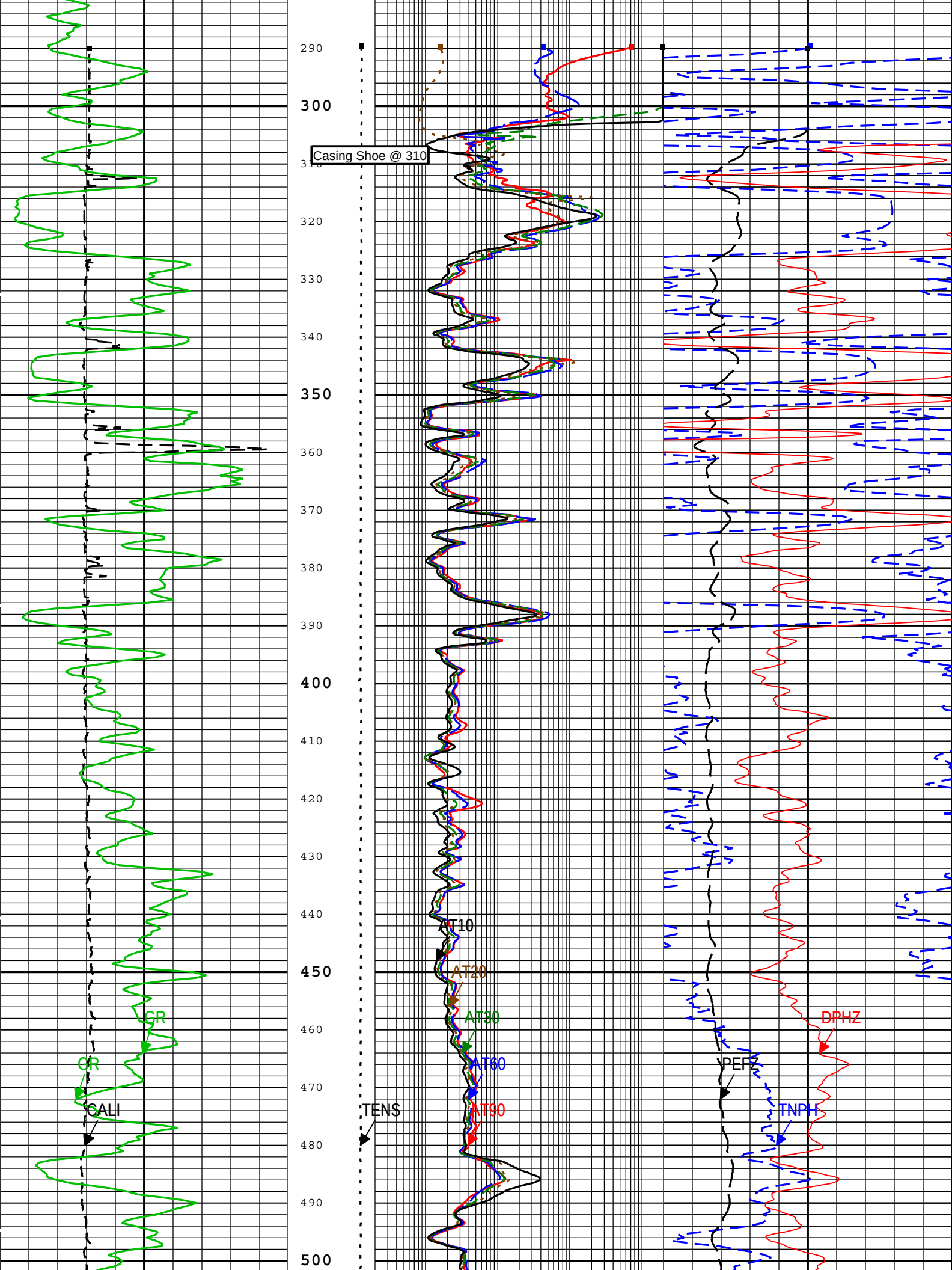
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Casing Shoe @ 310
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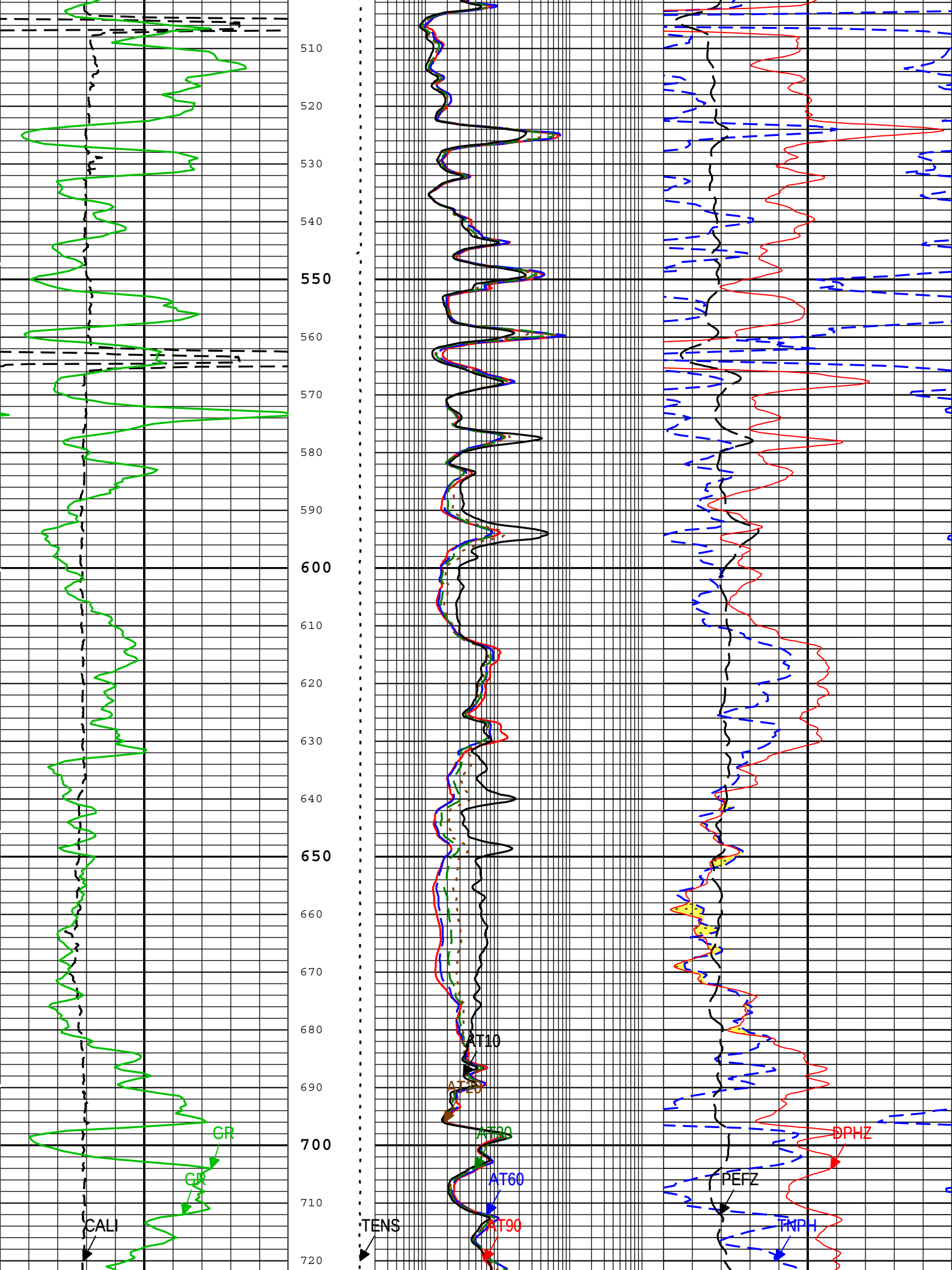
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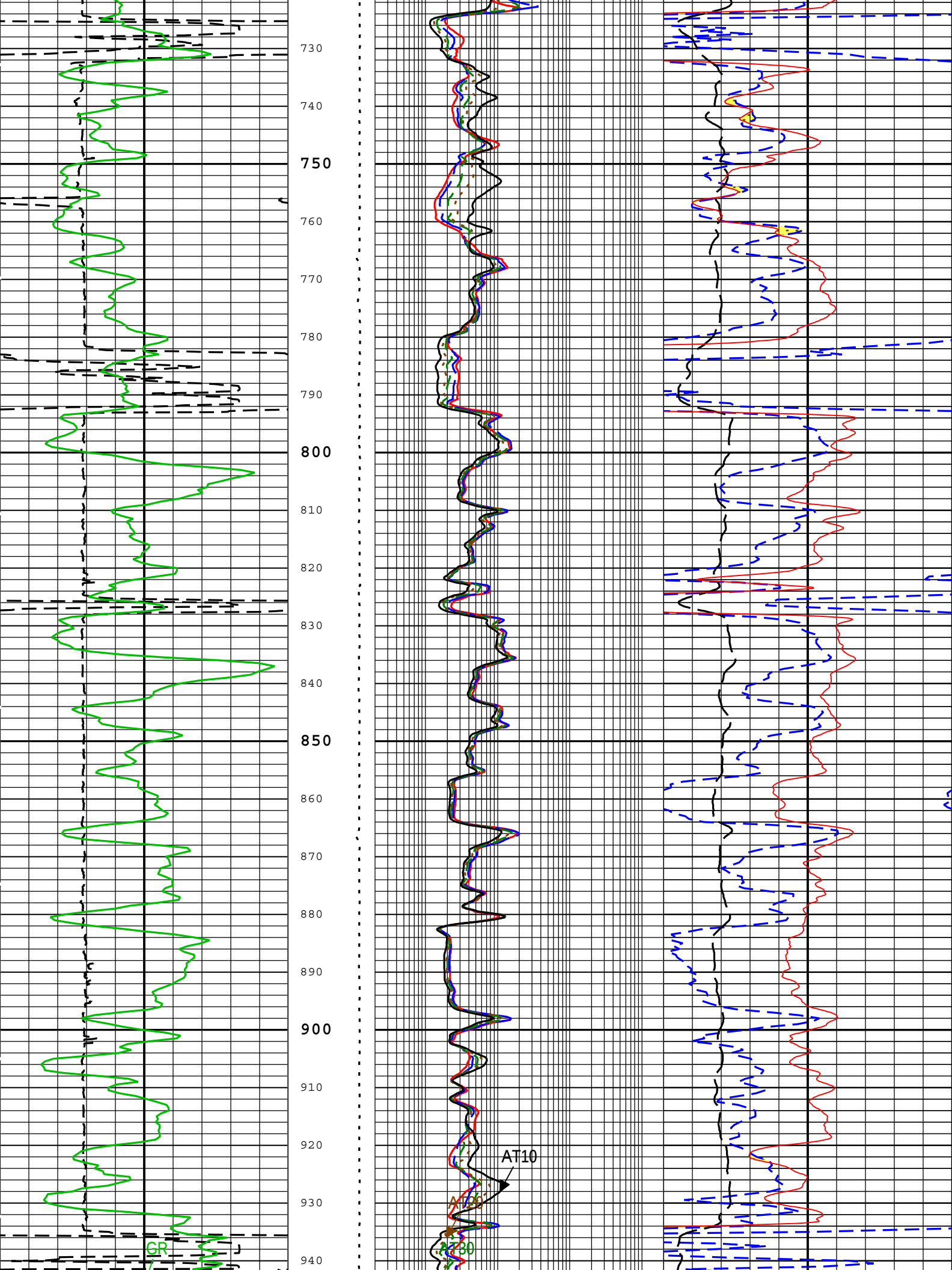
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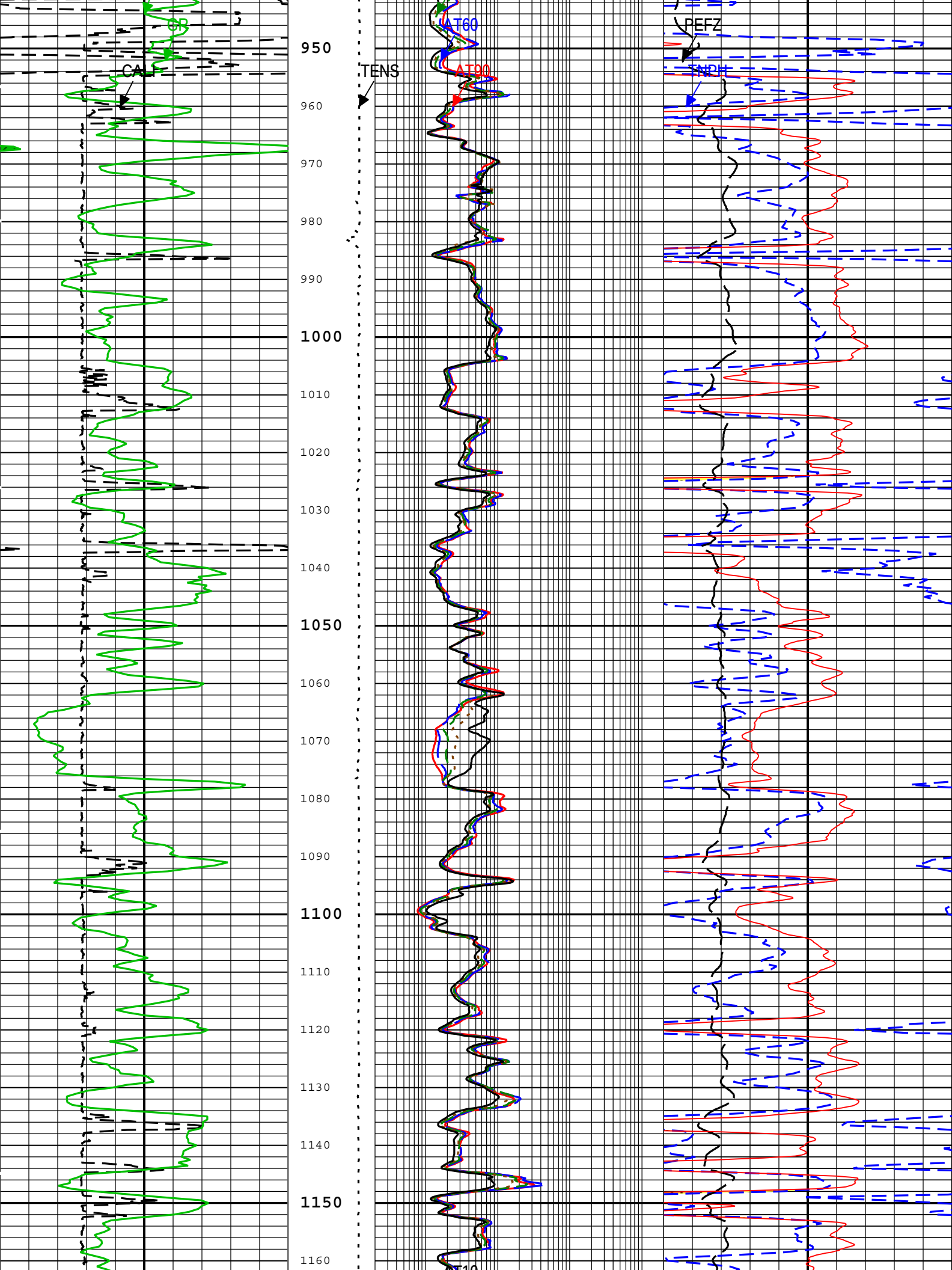
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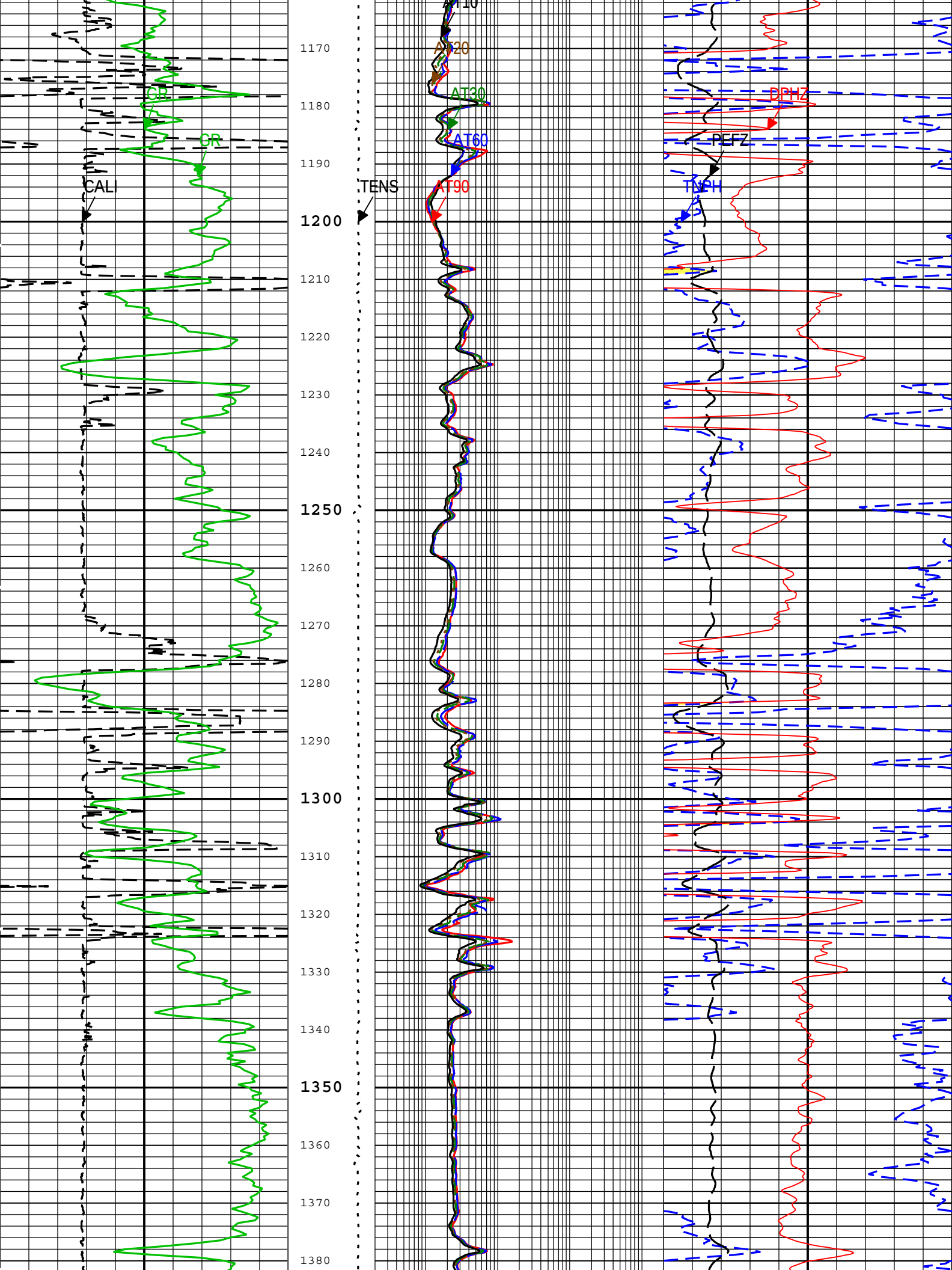
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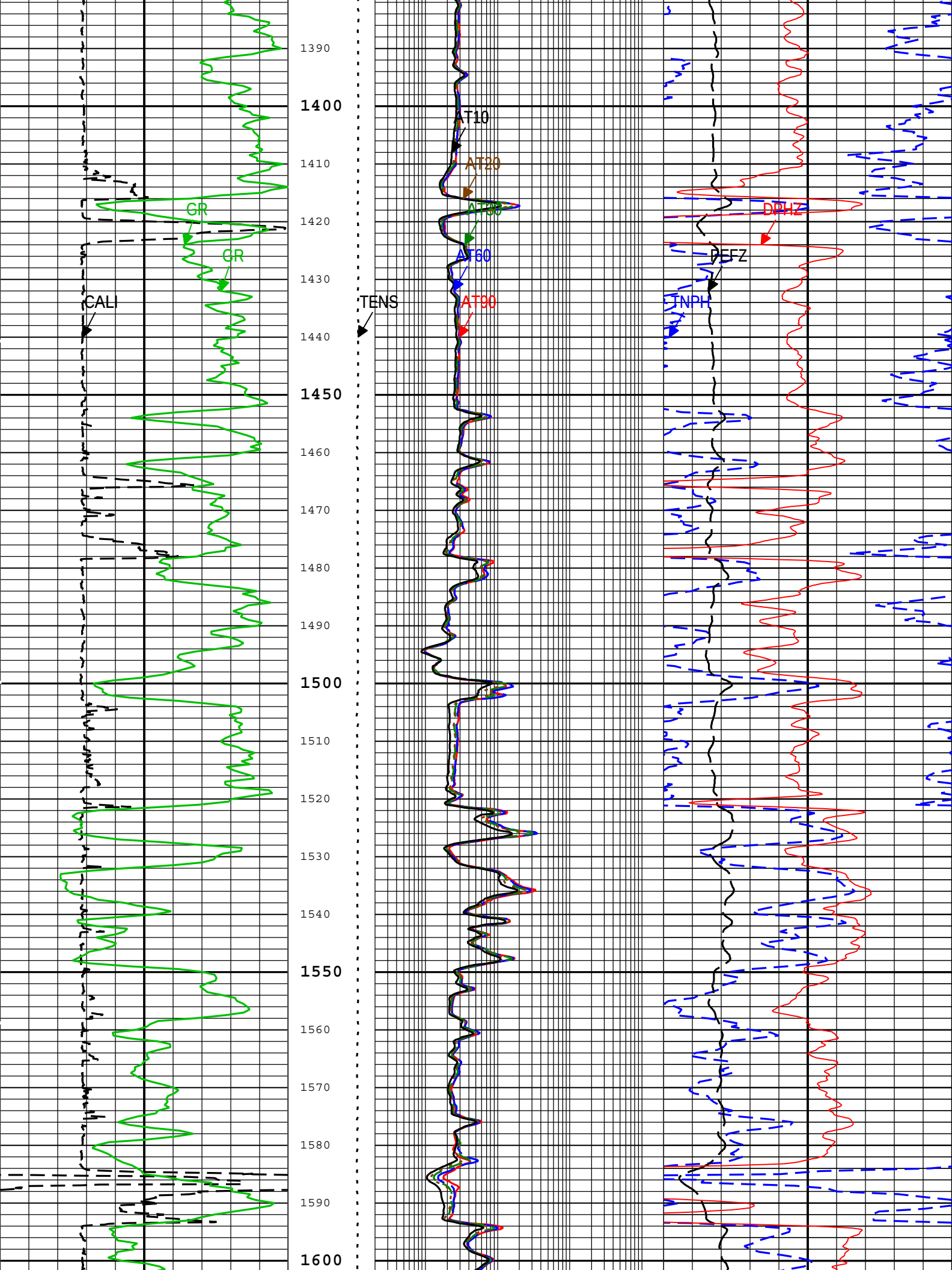
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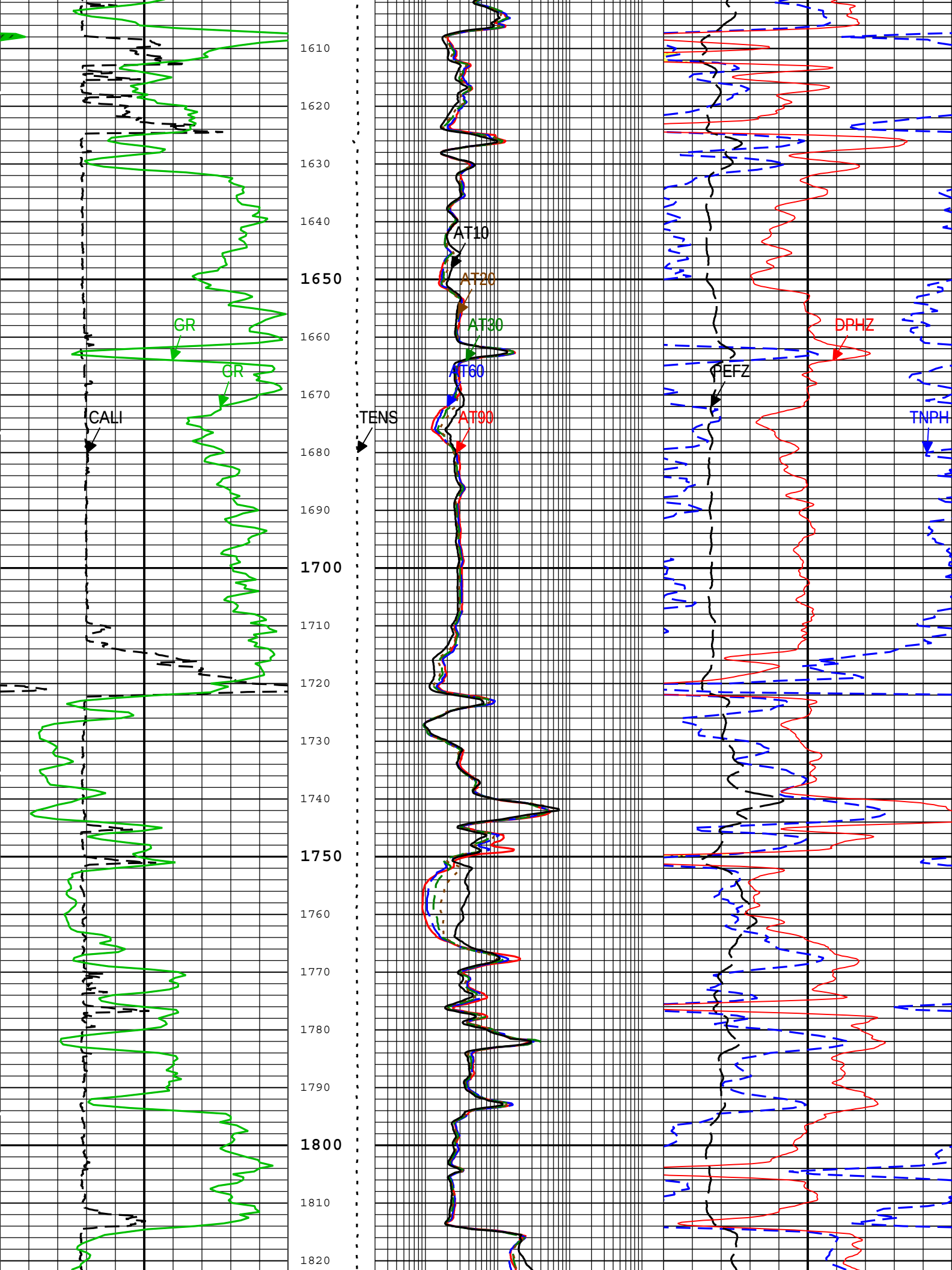
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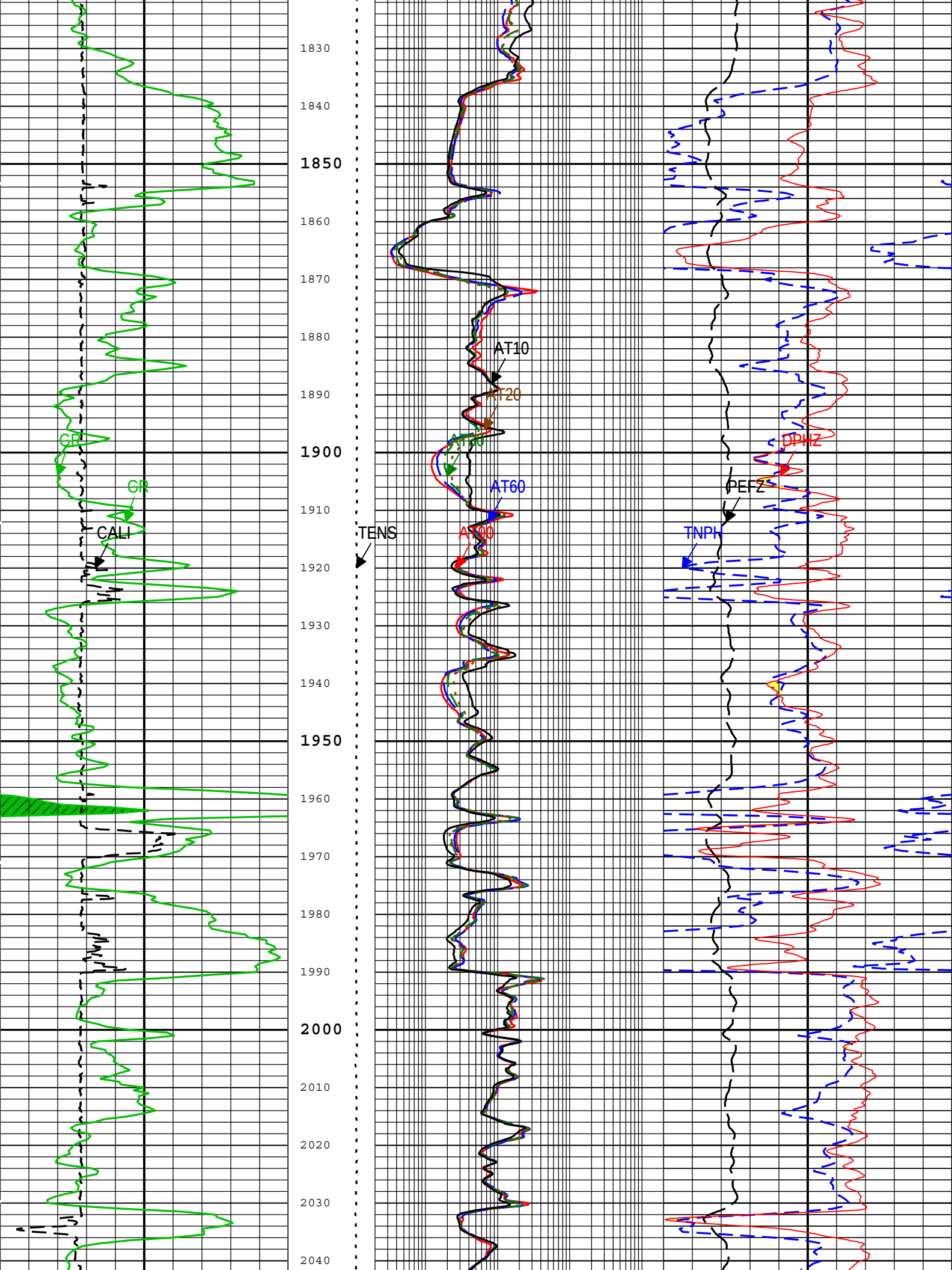
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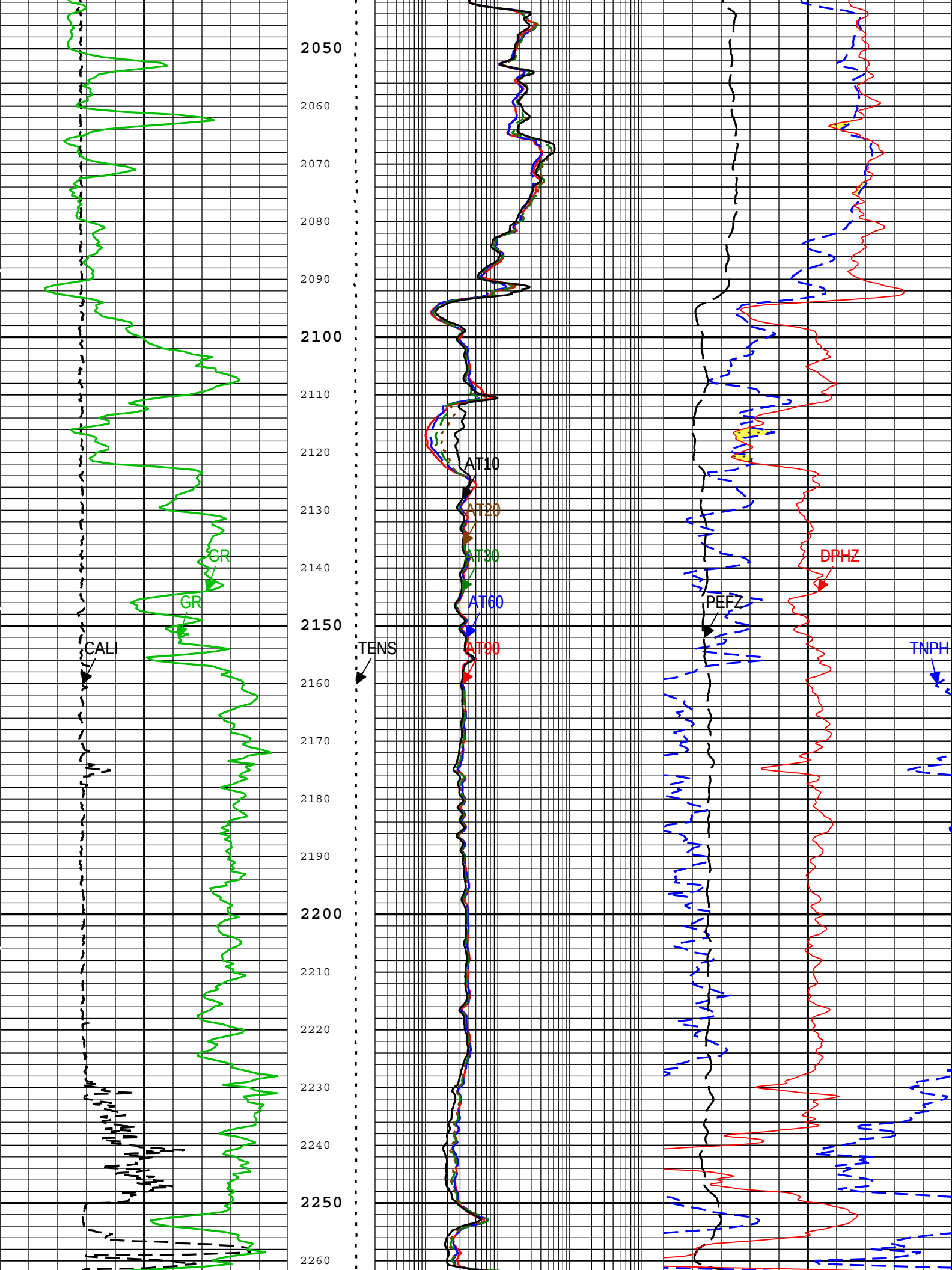
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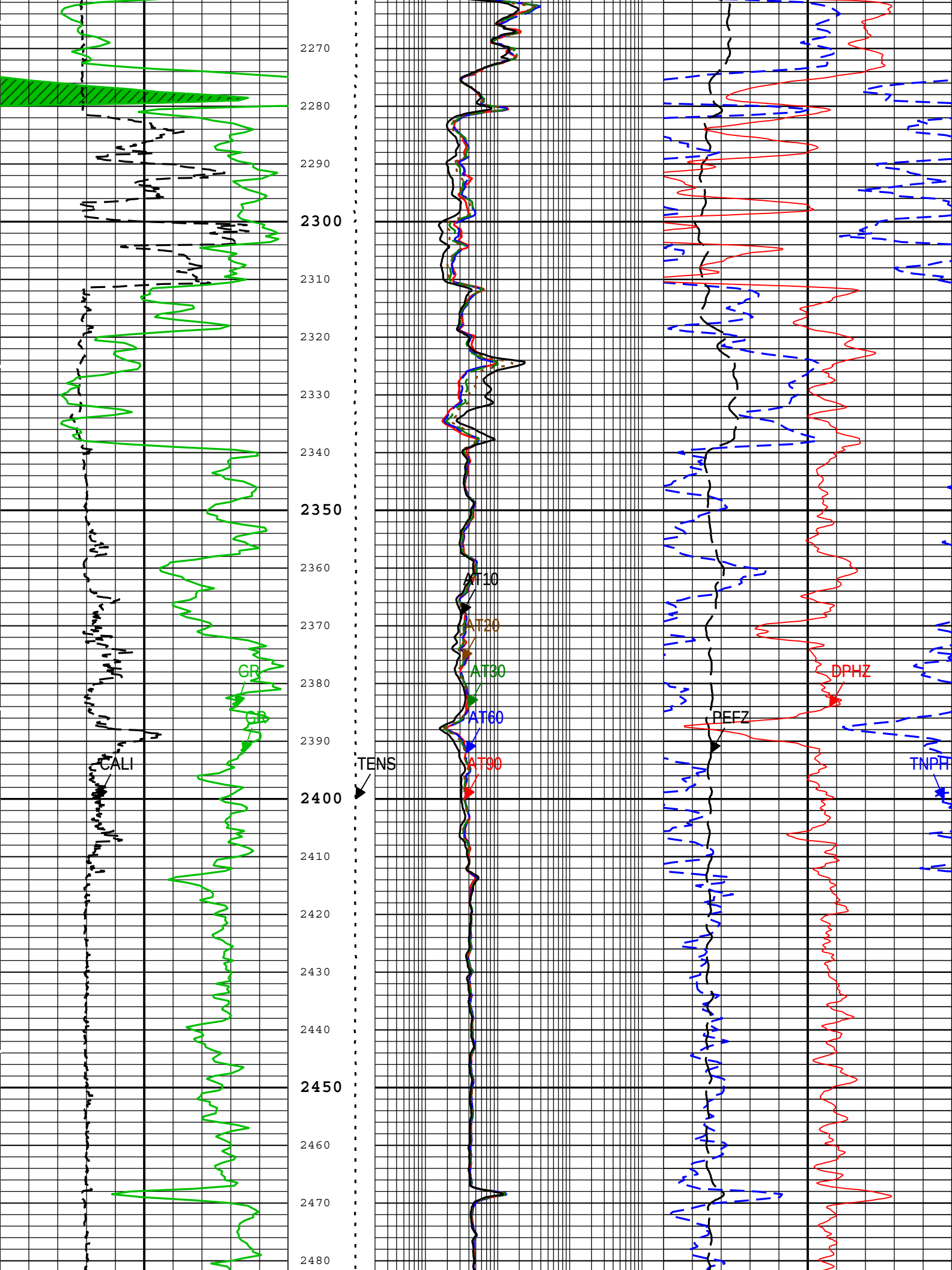
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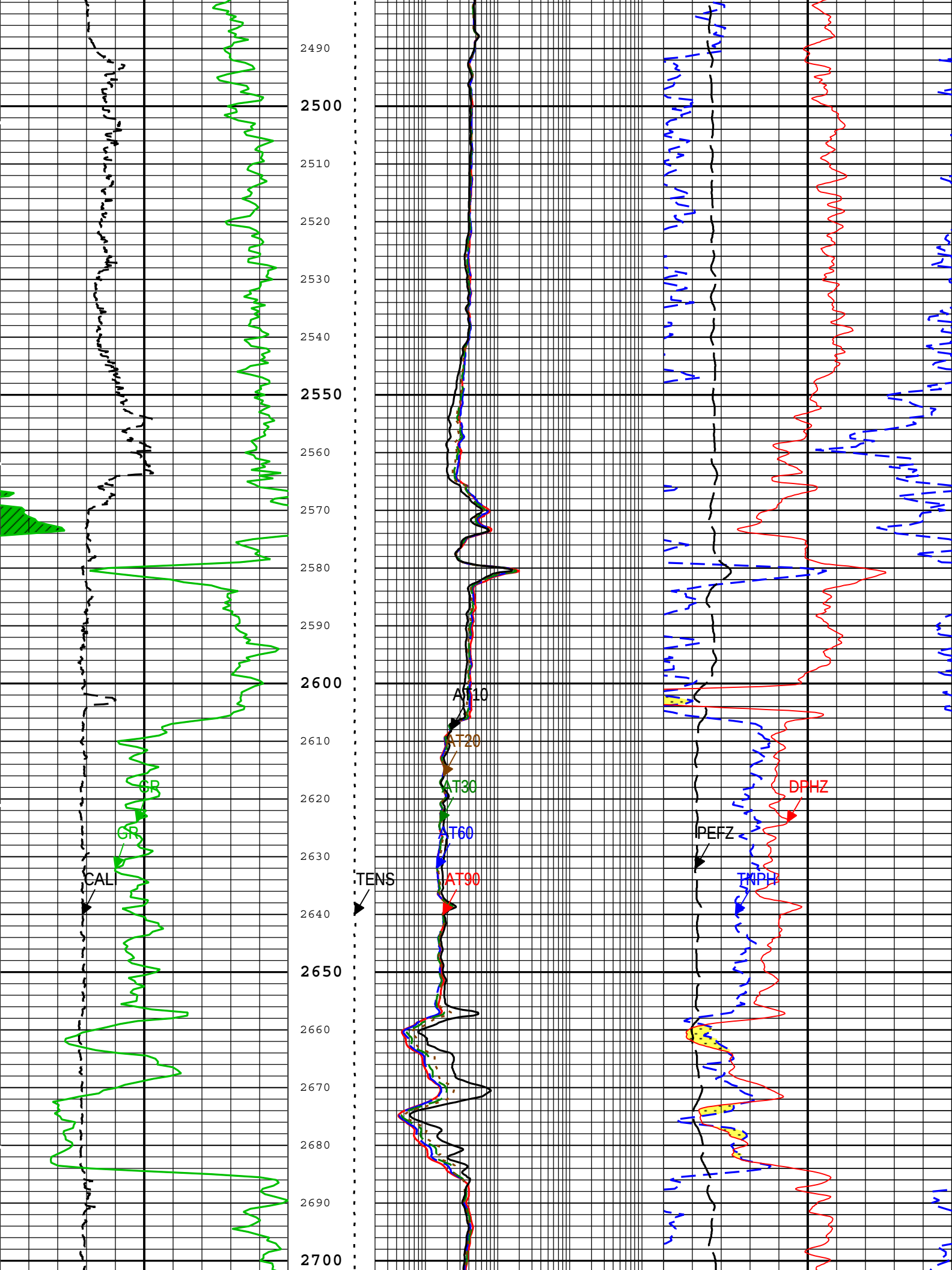
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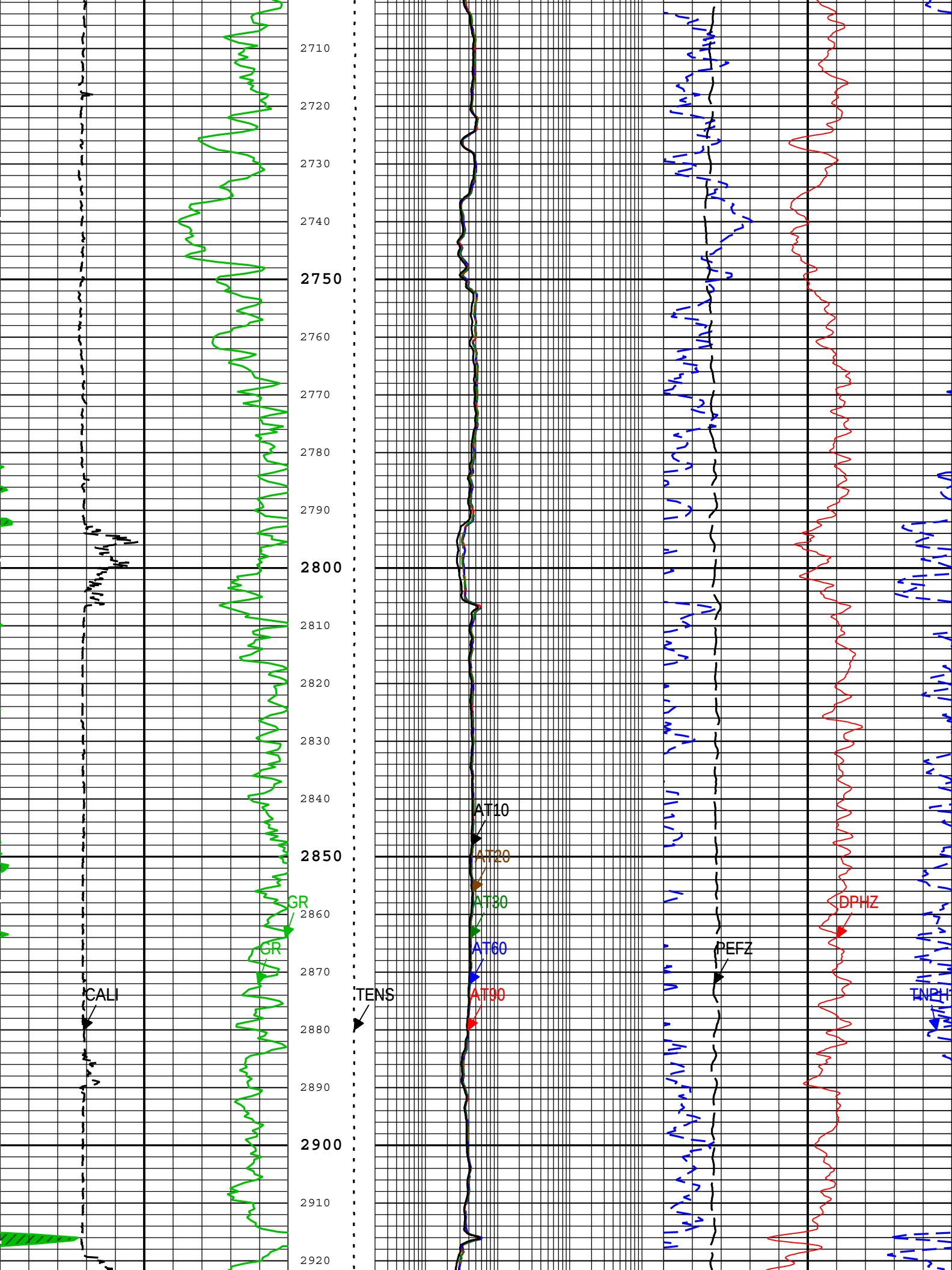
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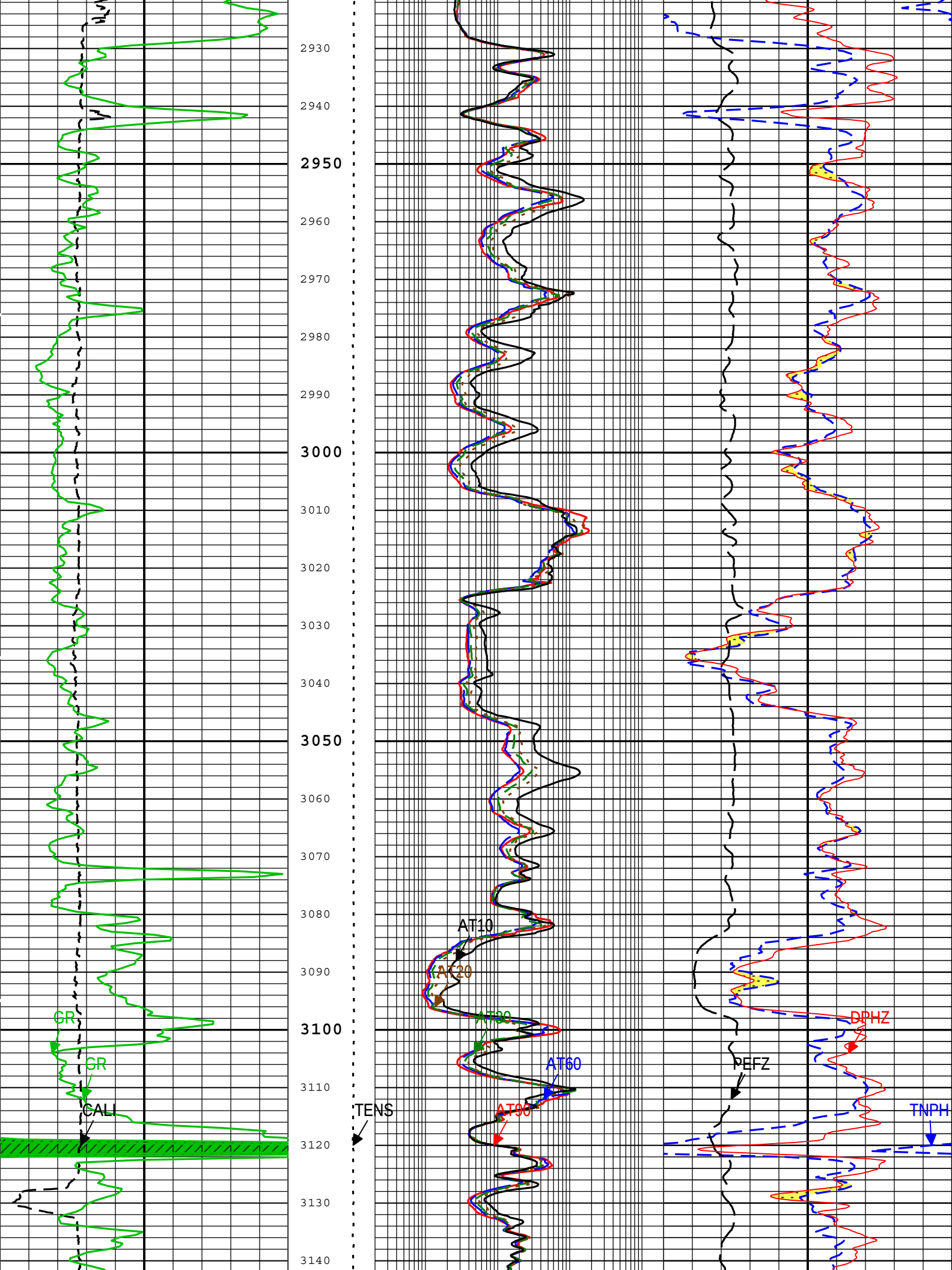
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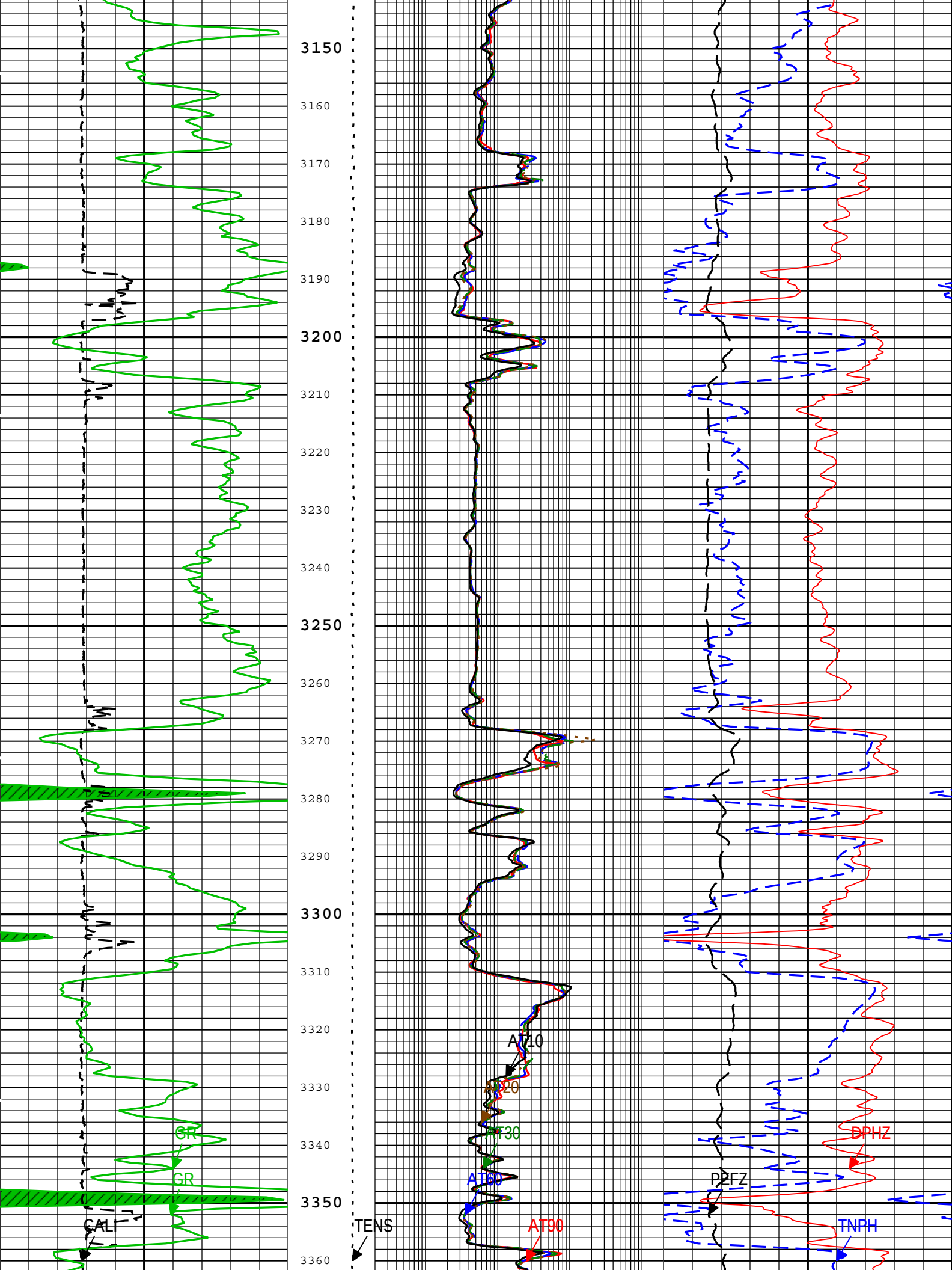
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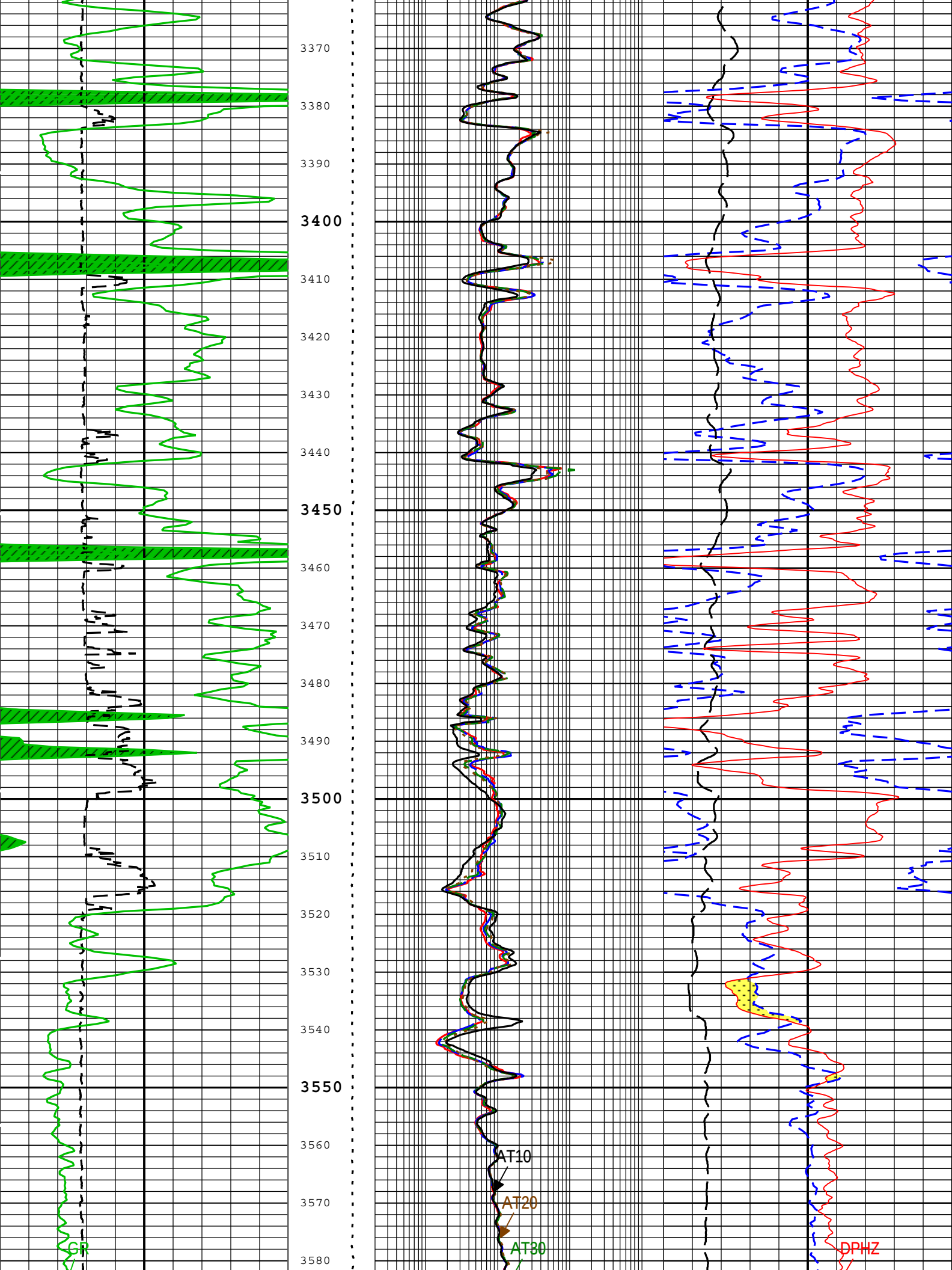
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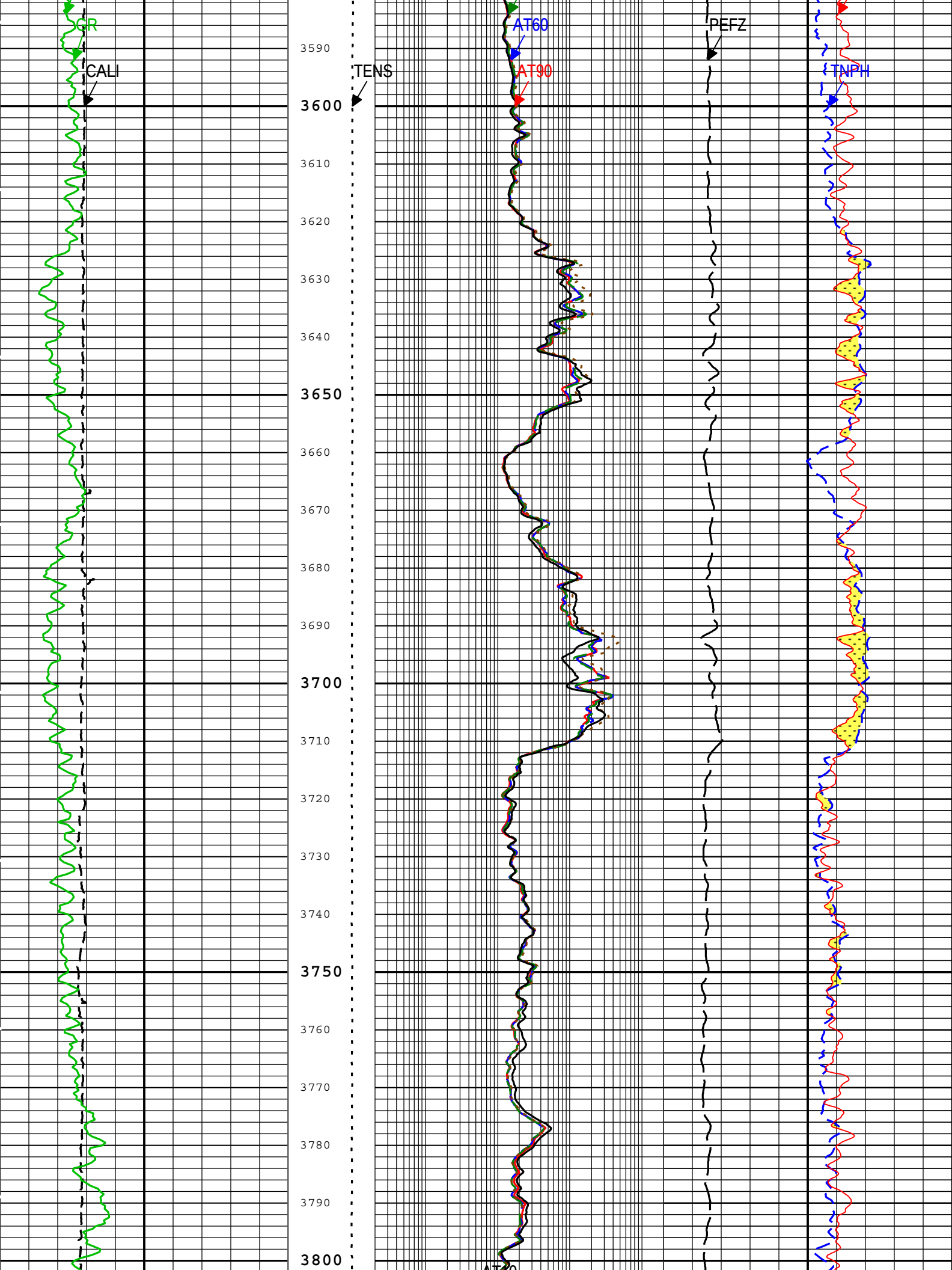
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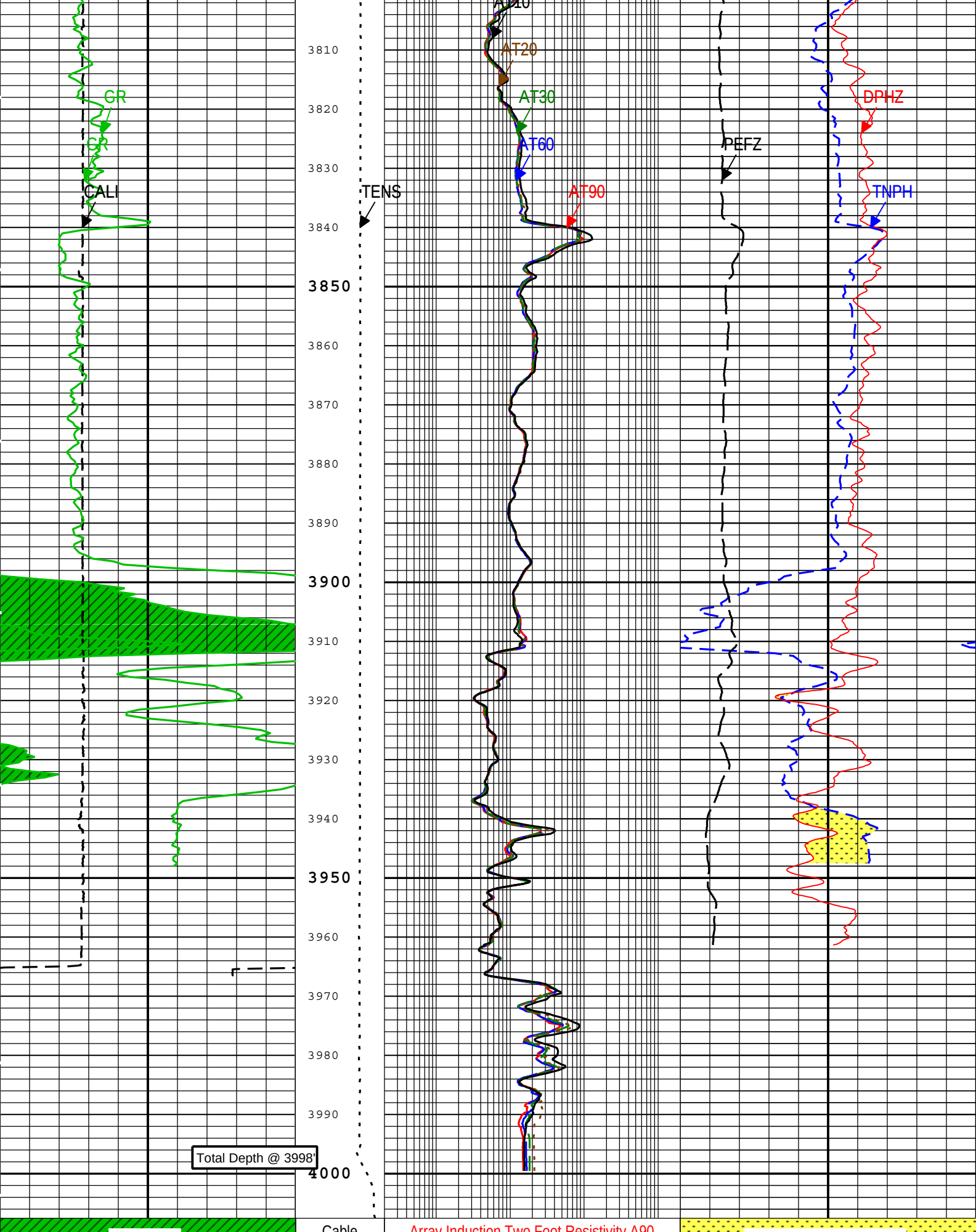

GR Backup

Caliper (CALI) HDRS-H

Cable Tension (TENS)

8000 lbf 0

Array Induction Two Foot Resistivity A90 (AT90) AIT-M

0.2 ohm.m 2000

Gas From RHOZ to TNPH

Thermal Neutron Porosity (Ratio Method) in Selected Lithology (TNPH) HGNS-H

6 in 16

Gamma Ray (GR) HGNS-H

150 gAPI 300

Gamma Ray (GR) HGNS-H

0 gAPI 150

6000 lbf 0

Array Induction Two Foot Resistivity A60 (AT60) AIT-M

0.2 ohm.m 2000

Array Induction Two Foot Resistivity A30 (AT30) AIT-M

0.2 ohm.m 2000

Array Induction Two Foot Resistivity A20 (AT20) AIT-M

0.2 ohm.m 2000

Array Induction Two Foot Resistivity A10 (AT10) AIT-M

0.2 ohm.m 2000

0.3 ft3/ft3 -0.1

Standard Resolution Formation Photoelectric Factor (PEFZ) HDRS-H

0 20

Standard Resolution Density Porosity (DPHZ) HDRS-H

0.3 ft3/ft3 -0.1

TIME_1900 - Time Marked every 60.00 (s)

Description: AIT Basic Log Two Format: Log (Shell AIT 5) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 14-Jun-2013 20:17:37

Channel Processing Parameters

Parameter	Description	Tool	Value	Unit
AAPL	Array Induction Answer Product Level(Depth Log/View only)	AIT-M	Radial	
ABHM	Array Induction Borehole Correction Mode	AIT-M	Compute Standoff	
ABLM	Array Induction Basic Logs Mode	AIT-M	Normal	
ACDE	Array Induction Casing Detection Enable	AIT-M	No	
ACEN	Array Induction Tool Centering Flag (in Borehole)	AIT-M	Eccentered	
AMRF	Array Induction Mud Resistivity Factor	AIT-M	1	
ASTA	Array Induction Tool Standoff	AIT-M	0.625	in
ATSE	Array Induction Temperature Selection(Sonde Error Correction)	AIT-M	Internal	
AZ_ENABLE	Z-Axis Acceleration Channel Enabled for Real-Time Depth Correction	DepthCorrection	No	
BARI	Barite Mud Presence Flag	Borehole	No	
BHS	Borehole Status (Open or Cased Hole)	Borehole	Open	
BS	Bit Size	WLSESSION	8.75	in
BSAL	Borehole Salinity	Borehole	3750.08	ppm
BSCO	Borehole Salinity Correction Option	HGNS-H	No	
CALI_SHIFT	CALI Supplementary Offset	HDRS-H	0.2	in
CBLO	Casing Bottom (Logger)	WLSESSION	310	ft
CCCO	Casing & Cement Thickness Correction Option	HGNS-H	No	
CDEN	Cement Density	HGNS-H	2	g/cm3
DC_MODE	Depth Correction Mode	DepthCorrection	Real-time	
DC_RT_ENABLE	Depth Correction Real-Time Enabled	DepthCorrection	No	
DFD	Drilling Fluid Density	Borehole	8.7	lbm/gal
DFT	Drilling Fluid Type	Borehole	Water	
DFT_WATER	Drilling Fluid Water Type	Borehole	Fresh WBM	
DHC	Density Hole Correction	HDRS-H	Bit Size	
FD	Fluid Density	Borehole	1	g/cm3
FSAL	Formation Salinity	Borehole	0	ppm
FSCO	Formation Salinity Correction Option	HGNS-H	No	
GCLF	Coal-Like Formation	HDRS-H	No	
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	
GR_MULTIPLIER	Gamma Ray Multiplier	HGNS-H	1	

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	
MCCO	Mud Cake Correction Option	HGNS-H	No	
MDEN	Matrix Density for Density Porosity	Borehole	2.71	g/cm3
MFST	Mud Filtrate Sample Temperature	Borehole	86	degF
MWCO	Mud Weight Correction Option	HGNS-H	No	
NAAC	Switch for the correction of formation activation by the APS	HDRS-H	Off	
NPRM	HRDD Nuclear Processing Mode	HDRS-H	High Resolution	
NTCO	HRDD Nuclear Temperature Correction Option	HDRS-H	On	
PTCO	Pressure Temperature Correction Option	HGNS-H	No	
RMFS	Resistivity of Mud Filtrate Sample	Borehole	1.08	ohm.m
SOCN	Standoff Distance	HGNS-H	0.125	in
SOCO	Standoff Correction Option	HGNS-H	Yes	
TPOS	Tool Position: Centered or Eccentered	HGNS-H	Eccentered	

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	1800	ft/h
NDTC	Nuclear Dead Time Correction	HDRS-H	On	
NPUC	Nuclear Pile-Up Correction	HDRS-H	Off	
STSO_HRDD	Temperature Source for the Density Algorithm	HDRS-H	HET data channel	

Calibration Report

AIT-M (Array Induction Tool - M) Calibration - Run ONE

Primary Equipment :

Array Induction Sonde - M	AMIS	34

Auxiliary Equipment :

AITM Rm/SP Bottom Nose	AMRM	34

AIT Sonde Calibration - Test Loop Gain

Master (EEPROM): 16:19:08 26-Apr-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Test Loop Gain - 0		Master	1.000	0.950	1.012	1.050
Test Loop Phase - 0	deg	Master	0	-3.000	0.505	3.000
Test Loop Gain - 1		Master	1.000	0.950	1.010	1.050
Test Loop Phase - 1	deg	Master	0	-3.000	0.622	3.000
Test Loop Gain - 2		Master	1.000	0.950	1.013	1.050
Test Loop Phase - 2	deg	Master	0	-3.000	0.041	3.000
Test Loop Gain - 3		Master	1.000	0.950	1.005	1.050
Test Loop Phase - 3	deg	Master	0	-3.000	0.112	3.000
Test Loop Gain - 4		Master	1.000	0.950	0.993	1.050
Test Loop Phase - 4	deg	Master	0	-3.000	0.090	3.000
Test Loop Gain - 5		Master	1.000	0.950	0.985	1.050
Test Loop Phase - 5	deg	Master	0	-3.000	-0.192	3.000
Test Loop Gain - 6		Master	1.000	0.950	0.994	1.050
Test Loop Phase - 6	deg	Master	0	-3.000	0.166	3.000
Test Loop Gain - 7		Master	1.000	0.950	1.004	1.050
Test Loop Phase - 7	deg	Master	0	-3.000	-0.133	3.000

AIT Sonde Calibration - Sonde Error Correction

Master (EEPROM): 16:19:08 26-Apr-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Sonde Error Correction Real - 0	mS/m	Master	-----	-231.000	-43.156	119.000

Sonde Error Correction Quad - 0		Master	-----	-2250.000	-491.859	2250.000
Sonde Error Correction Real - 1	mS/m	Master	-----	114.000	175.504	204.000
Sonde Error Correction Quad - 1		Master	-----	-625.000	-429.450	625.000
Sonde Error Correction Real - 2	mS/m	Master	-----	66.000	94.606	156.000
Sonde Error Correction Quad - 2		Master	-----	-350.000	-57.484	350.000
Sonde Error Correction Real - 3	mS/m	Master	-----	39.000	57.803	89.000
Sonde Error Correction Quad - 3		Master	-----	-250.000	48.583	250.000
Sonde Error Correction Real - 4	mS/m	Master	-----	15.000	23.128	35.000
Sonde Error Correction Quad - 4		Master	-----	-63.000	-10.301	63.000
Sonde Error Correction Real - 5	mS/m	Master	-----	4.000	11.901	24.000
Sonde Error Correction Quad - 5		Master	-----	-50.000	-13.380	50.000
Sonde Error Correction Real - 6	mS/m	Master	-----	5.000	9.356	15.000
Sonde Error Correction Quad - 6		Master	-----	-30.000	-5.238	30.000
Sonde Error Correction Real - 7	mS/m	Master	-----	-5.000	-1.511	5.000
Sonde Error Correction Quad - 7		Master	-----	-30.000	4.245	30.000

AIT Mud Calibration - Mud Calibration Gain

Master (EEPROM): 16:19:08 26-Apr-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Coarse Gain		Master	1.000	0.800	1.141	1.200
Fine Gain		Master	1.000	0.800	1.142	1.200

AIT Electronics Check - Thru Calibration Check

Master (EEPROM): 16:19:08 26-Apr-2013 Before (Measured): 10:11:38 12-Jun-2013 Expired by 1 days After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Thru Cal Mag - 0	V	Master	-----	0.366	0.586	0.854
		Before	-----	0.366	0.585	0.854
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 0	deg	Master	-----	137.000	-164.944	-103.000
		Before	-----	137.000	-164.877	-103.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.067	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 1	V	Master	-----	0.762	1.199	1.778
		Before	-----	0.762	1.198	1.778
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 1	deg	Master	-----	136.000	-166.003	-104.000
		Before	-----	136.000	-165.938	-104.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.065	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 2	V	Master	-----	0.372	0.595	0.868
		Before	-----	0.372	0.594	0.868
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 2	deg	Master	-----	132.000	-169.465	-108.000
		Before	-----	132.000	-169.403	-108.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.062	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 3	V	Master	-----	0.420	0.672	0.980
		Before	-----	0.420	0.672	0.980
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.000	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 3	deg	Master	-----	131.000	-170.209	-109.000
		Before	-----	131.000	-170.147	-109.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.062	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 4	V	Master	-----	0.804	1.262	1.876
		Before	-----	0.804	1.261	1.876

		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 4	deg	Master	-----	125.000	-176.243	-115.000
		Before	-----	125.000	-176.185	-115.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.058	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 5	V	Master	-----	1.176	1.835	2.744
		Before	-----	1.176	1.833	2.744
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.002	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 5	deg	Master	-----	122.000	-177.826	-118.000
		Before	-----	122.000	-177.771	-118.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.055	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 6	V	Master	-----	1.176	1.836	2.744
		Before	-----	1.176	1.835	2.744
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 6	deg	Master	-----	121.000	-177.811	-119.000
		Before	-----	121.000	-177.758	-119.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.053	-----
		After-Before	-----	-----	-----	-----
Thru Cal Mag - 7	V	Master	-----	0.846	1.332	1.974
		Before	-----	0.846	1.331	1.974
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.001	-----
		After-Before	-----	-----	-----	-----
Thru Cal Phase - 7	deg	Master	-----	115.000	-178.579	-125.000
		Before	-----	115.000	-178.546	-125.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.033	-----
		After-Before	-----	-----	-----	-----
SPA Zero	mV	Master		-50.000	0.113	50.000
		Before		-50.000	0.110	50.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	-0.003	-----
		After-Before	-----	-----	-----	-----
SPA Plus	mV	Master		941.000	989.805	1040.000
		Before		941.000	990.134	1040.000
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.329	-----
		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	0.917	0.960
		Before		0.870	0.917	0.960
		After	-----	-----	-----	-----
		Before-Master	-----	-----	0.000	-----
		After-Before	-----	-----	-----	-----

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

Primary Equipment :

HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	3821
HILT Resistivity Gamma-Ray Density Device, 150 degC	HRGD-H	4866

Auxiliary Equipment :

HRDD Backscatter Detector	Backscatter

HRDD Long Spacing Detector	Long Spacing	
HRDD Short Spacing Detector	Short Spacing	
Cesium 137 Gamma-Ray Logging Source	GSR-J	5350
HILT High-Resolution Control Cartridge, 150 degC	HRCC-H	3821
HILT High-Resolution Mechanical Sonde, 150 degC	HRMS-H	3748

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): 10:19:05 12-Jun-2013 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Small Ring	in	Before	8.00	6.00	7.69	10.00
Large Ring	in	Before	12.00	9.00	12.05	15.00

HDRS Density Calibration - Inversion Results

Master (EEPROM): 14:02:00 11-Jun-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Rho Aluminum	g/cm3	Master	2.596	2.586	2.595	2.606
Rho Magnesium	g/cm3	Master	1.686	1.676	1.687	1.696
Pe Aluminum		Master	2.570	2.470	2.546	2.670
Pe Magnesium		Master	2.650	2.550	2.641	2.750

HDRS Density Calibration - Deviation Summary

Master (EEPROM): 14:02:00 11-Jun-2013

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Average Deviation	%	Master	0	-0.6000	0.4411	0.6000
BS Max Deviation	%	Master	0	-1.6000	0.8815	1.6000
SS Average Deviation	%	Master	0	-1.0000	0.3949	1.0000
SS Max Deviation	%	Master	0	-2.5000	0.8263	2.5000
LS Average Deviation	%	Master	0	-1.5000	0.7098	1.5000
LS Max Deviation	%	Master	0	-3.5000	1.4324	3.5000

HDRS Density Calibration - Background Summary

Master (EEPROM): 14:02:00 11-Jun-2013 Before (Measured): 10:24:29 12-Jun-2013 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Window Ratio		Master	1.0000		0.7413	
		Before	0.7413	0.7042	0.7382	0.7784
		Before-Master	-----	-----	-0.0031	-----
BS Window Sum	1/s	Master	1		26850	
		Before	26850	25507	26747	28192
		Before-Master	-----	-----	-103	-----
SS Window Ratio		Master	1.0000		0.4830	
		Before	0.4830	0.4589	0.4830	0.5072
		Before-Master	-----	-----	0.0000	-----
SS Window Sum	1/s	Master	1		11964	
		Before	11964	11366	11949	12562
		Before-Master	-----	-----	-15	-----
LS Window Ratio		Master	1.0000		0.2991	
		Before	0.2991	0.2842	0.3005	0.3141
		Before-Master	-----	-----	0.0014	-----
LS Window Sum	1/s	Master	1		1343	
		Before	1343	1276	1332	1411
		Before-Master	-----	-----	-11	-----

HDRS Density Calibration - Photo-multiplier High Voltages

Master (EEPROM): 14:02:00 11-Jun-2013 Before (Measured): 10:24:29 12-Jun-2013 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS PM High Voltage	V	Master		1000	1480	2400
		Before		1000	1488	2400
		Before-Master	-----	-100	8	100
SS PM High Voltage	V	Master		1000	1583	2400
		Before		1000	1591	2400
		Before-Master	-----	-100	8	100
LS PM High Voltage	V	Master		1000	1212	2400

		Before		1000	1220	2400
		Before-Master	-----	-100	8	100

HDRS Density Calibration - Crystal Quality Resolutions

Master (EEPROM): 14:02:00 11-Jun-2013 Before (Measured): 10:24:29 12-Jun-2013 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
BS Crystal Resolution	%	Master		5.00	10.65	25.00
		Before		5.00	10.65	25.00
		Before-Master	-----	-1.00	0.00	1.00
SS Crystal Resolution	%	Master		5.00	9.71	20.00
		Before		5.00	9.83	20.00
		Before-Master	-----	-1.00	0.12	1.00
LS Crystal Resolution	%	Master		5.00	8.60	20.00
		Before		5.00	8.54	20.00
		Before-Master	-----	-1.00	-0.06	1.00

HDRS MCFL Calibration - MCFL Accumulations

Before (Measured): 10:08:12 12-Jun-2013 Expired by 1 days

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Main Resistivity	ohm.m	Before	3875	3565	3901	4185
Deep Resistivity	ohm.m	Before	3830	3524	3844	4136
Shallow Resistivity	ohm.m	Before	3830	3524	3853	4136

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

Primary Equipment :

HILT Gamma-Ray and Neutron Sonde, 150 degC	HGNS-H	3819

Auxiliary Equipment :

HGNS Accelerometer, 150 degC	HACCZ-H	2102
AmBe Neutron Logging Source	NSR-F	5226

Calibration Parameter :

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

HGNS Accelerometer Calibration - Accelerometer Accumulations

Before (Measured): 16:42:33 14-Jun-2013

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

HGNS Accelerometer EEPROM - Accelerometer EEPROM Read

Master (EEPROM): 00:00:00 15-Feb-2003

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	-----	-----	-2847.000	-----
Accelerometer Coefficients - 1		Master	-----	-----	13.547	-----
Accelerometer Coefficients - 2		Master	-----	-----	-0.002	-----
Accelerometer Coefficients - 3		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 4		Master	-----	-----	2.752	-----
Accelerometer Coefficients - 5		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 6		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 7		Master	-----	-----	0.000	-----
Accelerometer Coefficients - 8		Master	-----	-----	299.200	-----
Accelerometer Coefficients - 9		Master	-----	-----	1.004	-----

HGNS Neutron Calibration - HGNS Neutron Accumulations

Master (EEPROM): 12:22:16 09-May-2013 Before (Measured): 10:09:43 12-Jun-2013 Expired by 1 days After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
Near Zero Measurement	1/s	Master	0	5.0	27.2	40.0
		Before	0	5.0	28.3	40.0
		After	-----	-----	-----	-----
		Before-Master	-----	-4.1	1.1	4.1
		After-Before	-----	-----	-----	-----

Far Zero Measurement	1/s	Master	0	5.0	27.0	40.0	
		Before	0	5.0	27.6	40.0	
		After	-----	-----	-----	-----	
		Before-Master	-----	-4.1	0.6	4.1	
		After-Before	-----	-----	-----	-----	
Near Plus Measurement - 0	1/s	Master	6031.0	4700.0	5036.0	6900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Far Plus Measurement - 0	1/s	Master	2793.0	1900.0	2066.0	2900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Near Corrected Plus Measurement - 0	1/s	Master		4700.0	5050.0	6900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
Far Corrected Plus Measurement - 0	1/s	Master		1900.0	2065.0	2900.0	
		Before	-----	-----	-----	-----	
		After	-----	-----	-----	-----	
		Before-Master	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

HGNS Gamma-Ray Calibration - Gamma-Ray Accumulations

Before (Measured): 01:59:03 15-Jun-2013 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
RGR Zero Measurement	gAPI	Before	30.0	0	24.3	120.0	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	
RGR Plus Measurement	gAPI	Before	185.4	157.1	171.7	206.3	
		After			NOT DONE		
		After-Before	-----	-----	-----	-----	
GR Calibration Gain		Before	0.89	0.80	0.96	1.05	
		After	-----	-----	-----	-----	
		After-Before	-----	-----	-----	-----	

Company: SOURCE ENERGY MIDCON LLC

Schlumberger

Well: NEVILLE 12-11-12-14H

Field: WILDCAT

County: SUMNER

State: KANSAS

QUAD-COMBO

PLATFORM EXPRESS

BOREHOLE COMPENSATED SONIC