ThruBit
A Schlumberger Company

ARRAY INDUCTION GAMMA RAY MEMORY LOG

Company SANDRIDGE ENERGY
Well LANIE 3408 1-32H
Field WALDRON WEST
County HARPER
State KANSAS

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Field WALDRON WEST
County HARPER
State KANSAS

Location: API # : 15-007-21893-01-00
200' FSL & 1980' FWL
SEC 32 TWP 34S RGE 8W

Other Services
THRUBIT
PORTAL
BIT

Permanent Datum G.L. Elevation 1241'
Log Measured From K.B. 15' ABOVE PERM DATUM
Drilling Measured From K.B.

Elevation
K.B. 1256'
D.F. 1256'
G.L. 1241'

Date	2 DEC 2012		
Run Number	ONE		
Depth Driller	9132'		
Depth Logger	9093'		
Bottom Logged Interval	9074'		
Top Log Interval	3000'		
Casing Driller	7" @ 5232'		
Casing Logger	5231'		
Bit Size	6.125"		
Type Fluid in Hole	WBM		
Density / Viscosity	8.4 / 27		
pH / Fluid Loss	7.0 / N/C		
Source of Sample	MUD SENSOR		
Rm @ Meas. Temp	1.85 OHM@65DEGF		
Rmf @ Meas. Temp	1.55 OHM@65DEGF		
Rmc @ Meas. Temp	2.06 OHM@65DEGF		
Source of Rmf / Rmc	CALCULATED		
Rm @ BHT	1.14 OHM@128DEGF		
Time Circulation Stopped	18:37 1 DEC 2012		
Time Logger on Bottom	19:44 1 DEC 2012		
Maximum Recorded Temperature	128 DEGF		
Equipment Number	T005		
Location	OKC,OK		
Recorded By	C. PARKER		
Witnessed By	A.LEIJA		

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Comments

SERVICE: HORIZONTAL PUMP DOWN MEMORY BIT DEPTH: 9020' LOG TO: 3000'
ALL SCALES AND PRESENTATIONS PER CLIENT REQUEST
LIMESTONE MATRIX, 2.71 g/cc, USED FOR POROSITY MEASUREMENTS
TOOLS RAN WITH DECENTRALIZER AND SWIVEL
TBHV REPRESENTS TOTAL BOREHOLE VOLUME, ft3
ABHV REPRESENTS ANNULAR BOREHOLE VOLUME, ft3, CALCULATED FOR 4.5" CASING
USED RIGMINDER WITH PASON TO ACQUIRE LOG DEPTH
CORRELATED TO MWD LOG PROVIDED BY CUSTOMER

RIG: UNIT 310
CREW: C.PARKER R.CRESSWELL I.HERNANDEZ

Service Ticket No. 1610 API No. 15-007-21893-01-00 PGM Ver WARRIOR 7.0

The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client

EQUIPMENT DATA

GAMMA RAY	NEUTRON	DENSITY	INDUCTION

Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	PS27T	Serial No.	ENP5N	Serial No.	PS44D	Serial No.	PS38R
Model No.	PS	Model No.	PS	Model No.	PS	Model No.	PS
Diameter	2.125"	Diameter	2.125"	Diameter	2.125"	Diameter	2.125"

LOGGING DATA

General Data

Pass	Depths		Well Head	Speed	Logging Run Comments
No.	From	To	Pressure	Ft/Min	
ONE	9093'	3000'		35 FPM	

	GAMMA RAY		NEUTRON		DENSITY		INDUCTION	
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
ONE	0 API	150 API	30 %	-10 %	30 %	-10 %	0.2 OHM-M	2000 OHM-M

DIRECTIONAL INFORMATION

Maximum Deviation	93.07	deg. @	6753'	KOP	3852'	

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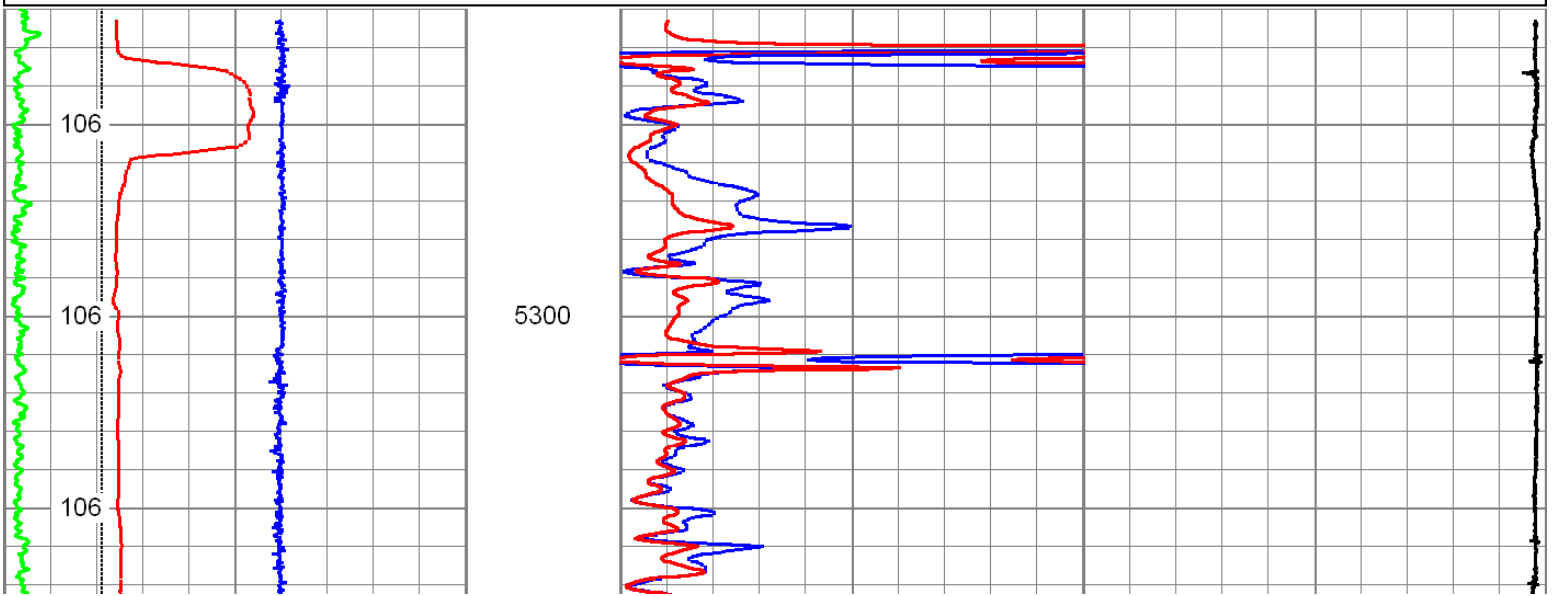
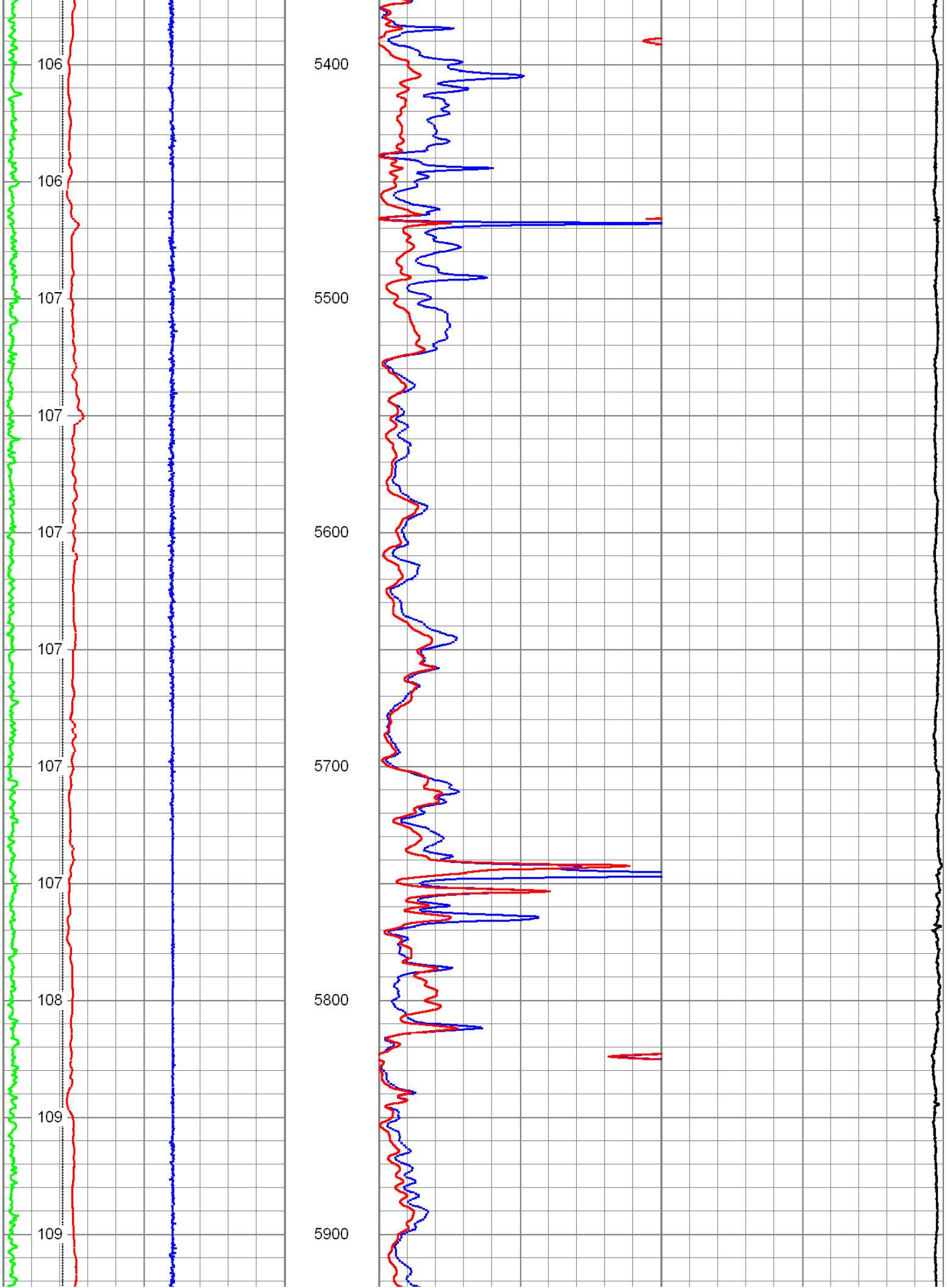
MAIN PASS

Database File: c:\documents and settings\t006\desktop\lanie 3408 1-32h\sandridge_laine_3408_1_32h_mem.db
Dataset Pathname: proc1/pass1.2
Presentation Format: 6_2r_chk
Dataset Creation: Sun Dec 02 02:32:07 2012
Charted by: Depth in Feet scaled 1:600

0	GR (GAPI)	150
4	DCAL (in)	14
-5	ACCY	5
4	BOREID (in)	14
450	GR (GAPI)	600
GRTEMP (degF)		

50	20in 2ft Res (Ohm-m)	500
50	90in 2ft Res (Ohm-m)	500
1000	DEEP COND (mmho/m)	0
0	20in 2ft Res (Ohm-m)	50
0	90in 2ft Res (Ohm-m)	50

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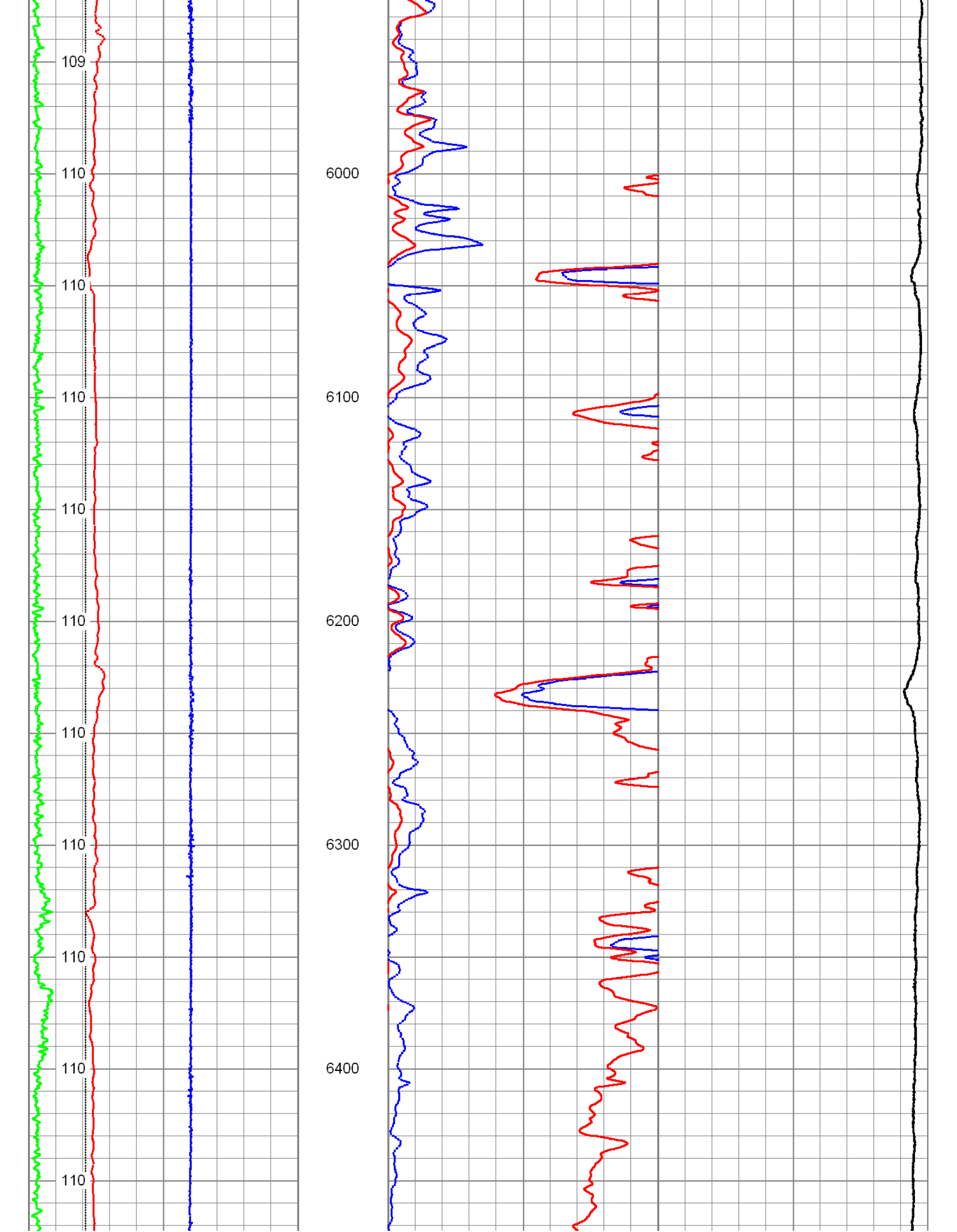
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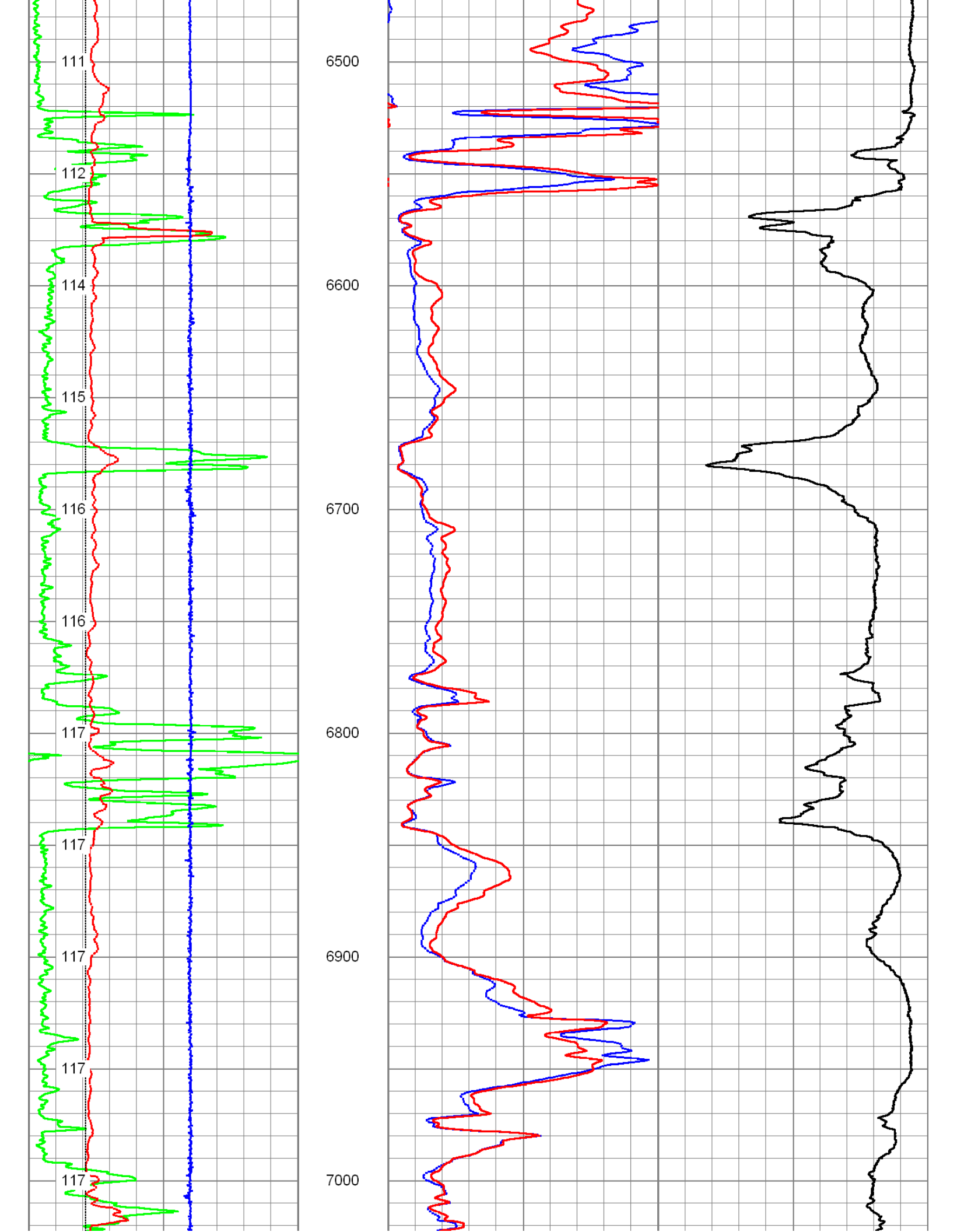
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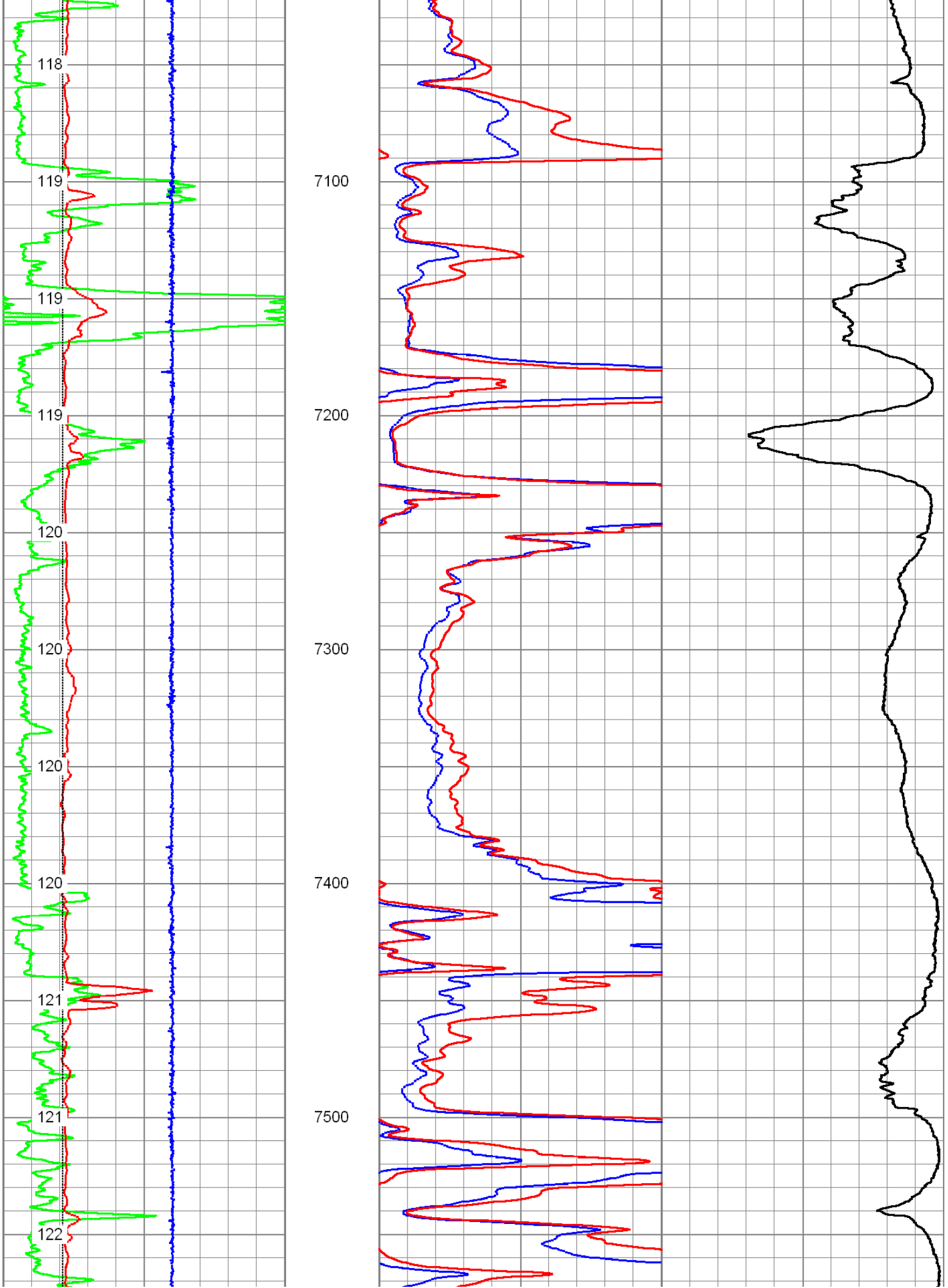
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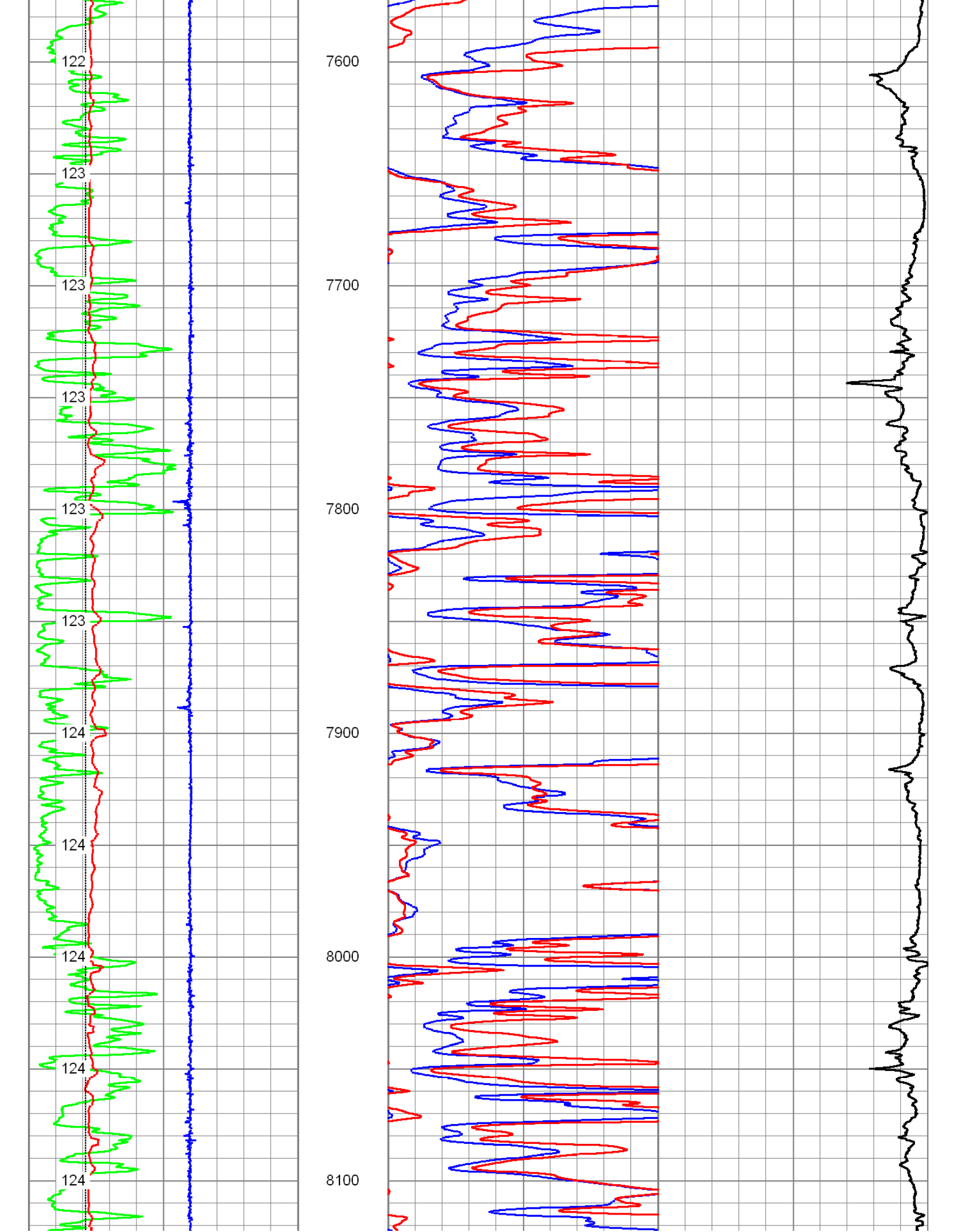
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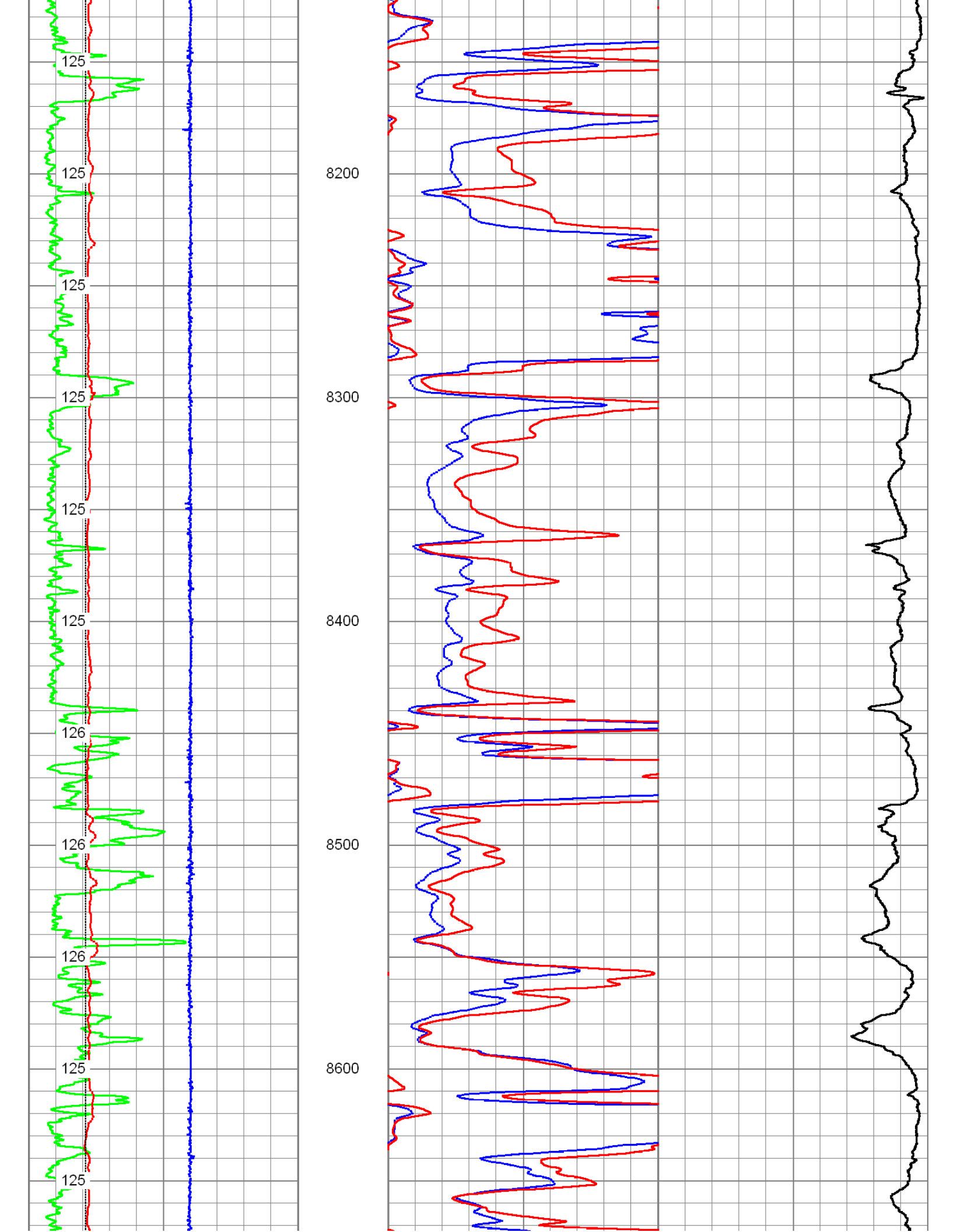
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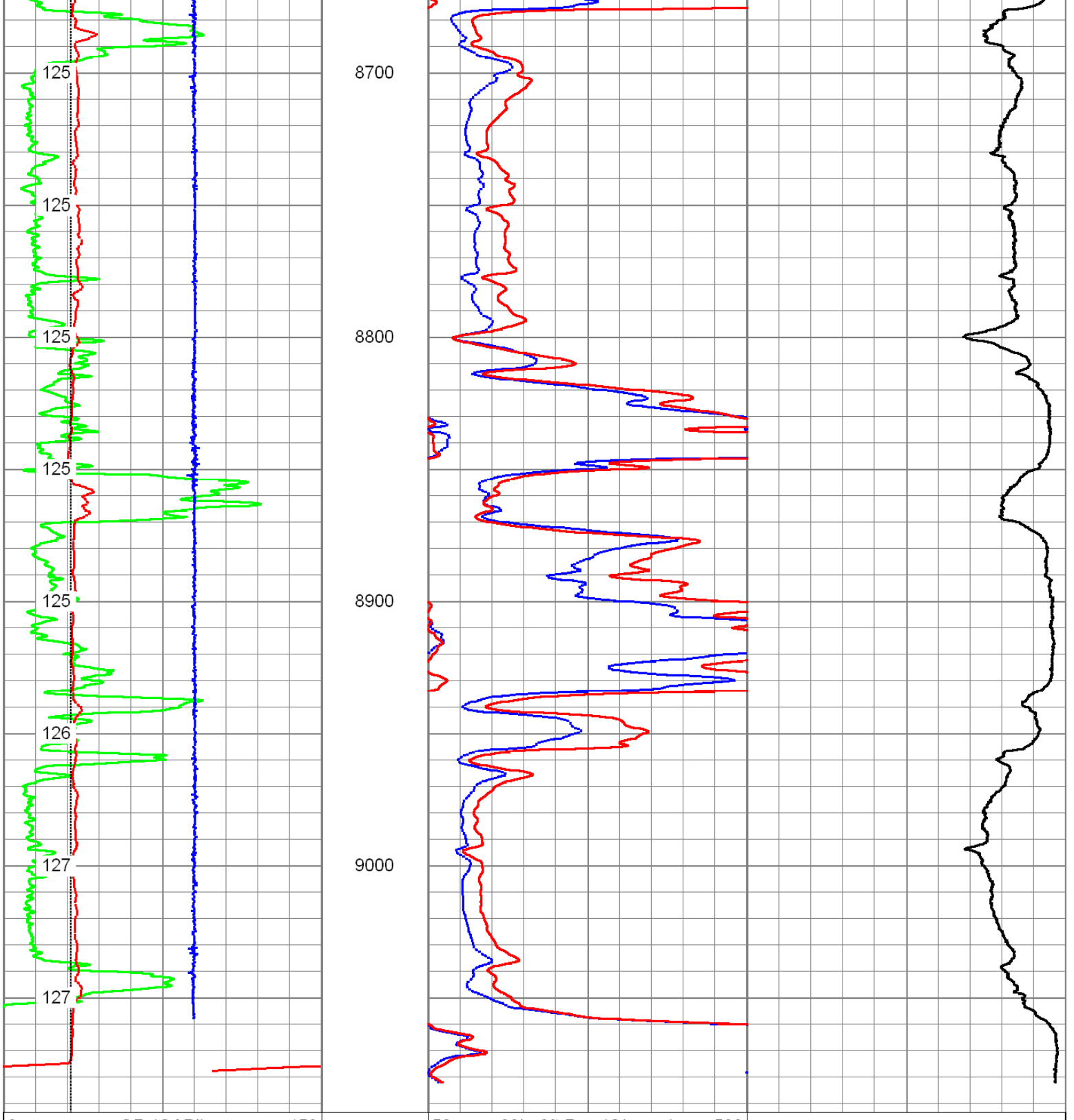

0	GR (GAPI)	150
4	DCAL (in)	14
-5	ACCY	5
4	BOREID (in)	14
450	GR (GAPI)	600

GRTEMP (degF)

50	20in 2ft Res (Ohm-m)	500
50	90in 2ft Res (Ohm-m)	500
1000	DEEP COND (mmho/m)	0
0	20in 2ft Res (Ohm-m)	50
0	90in 2ft Res (Ohm-m)	50

MAIN PASS

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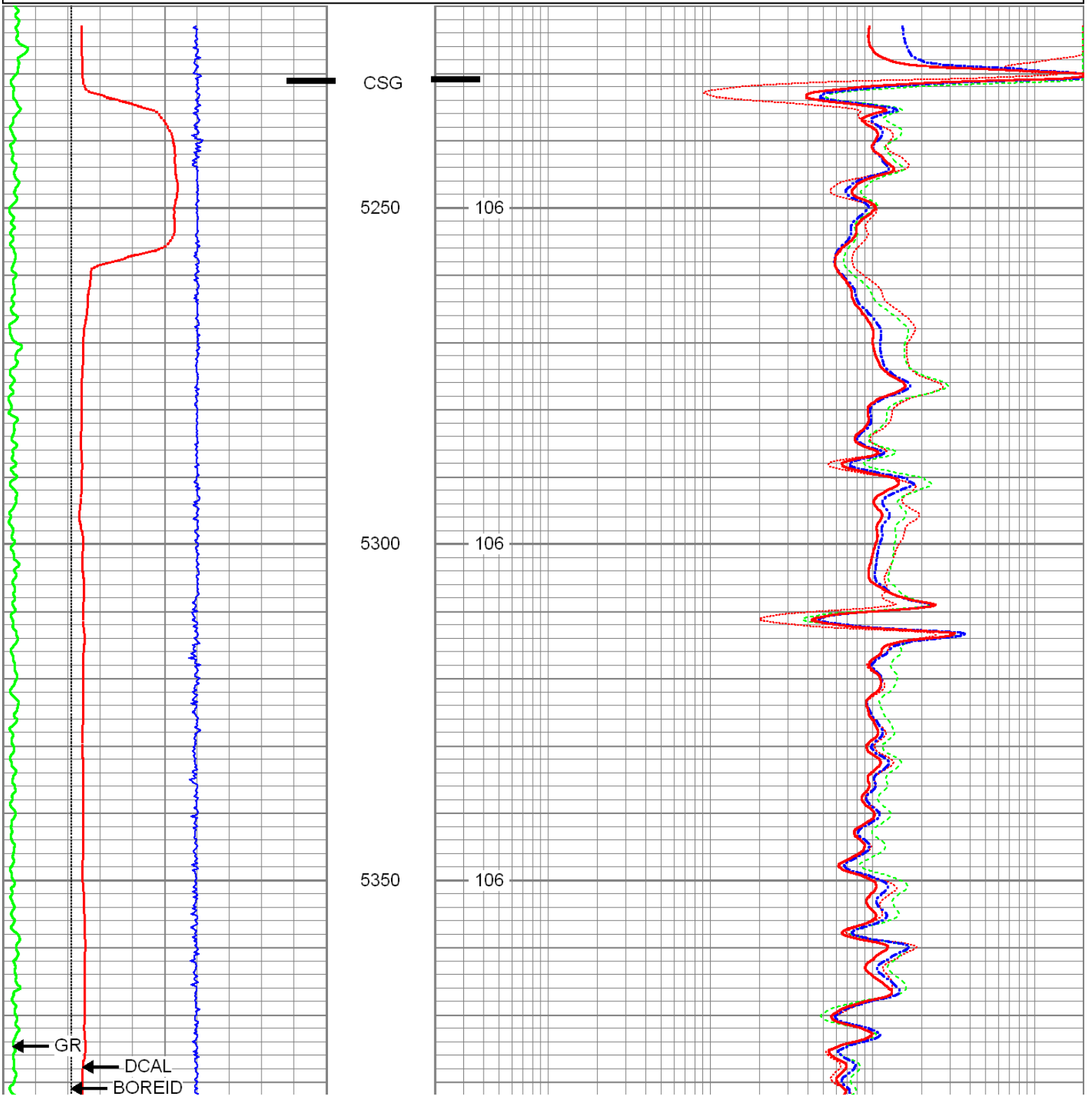
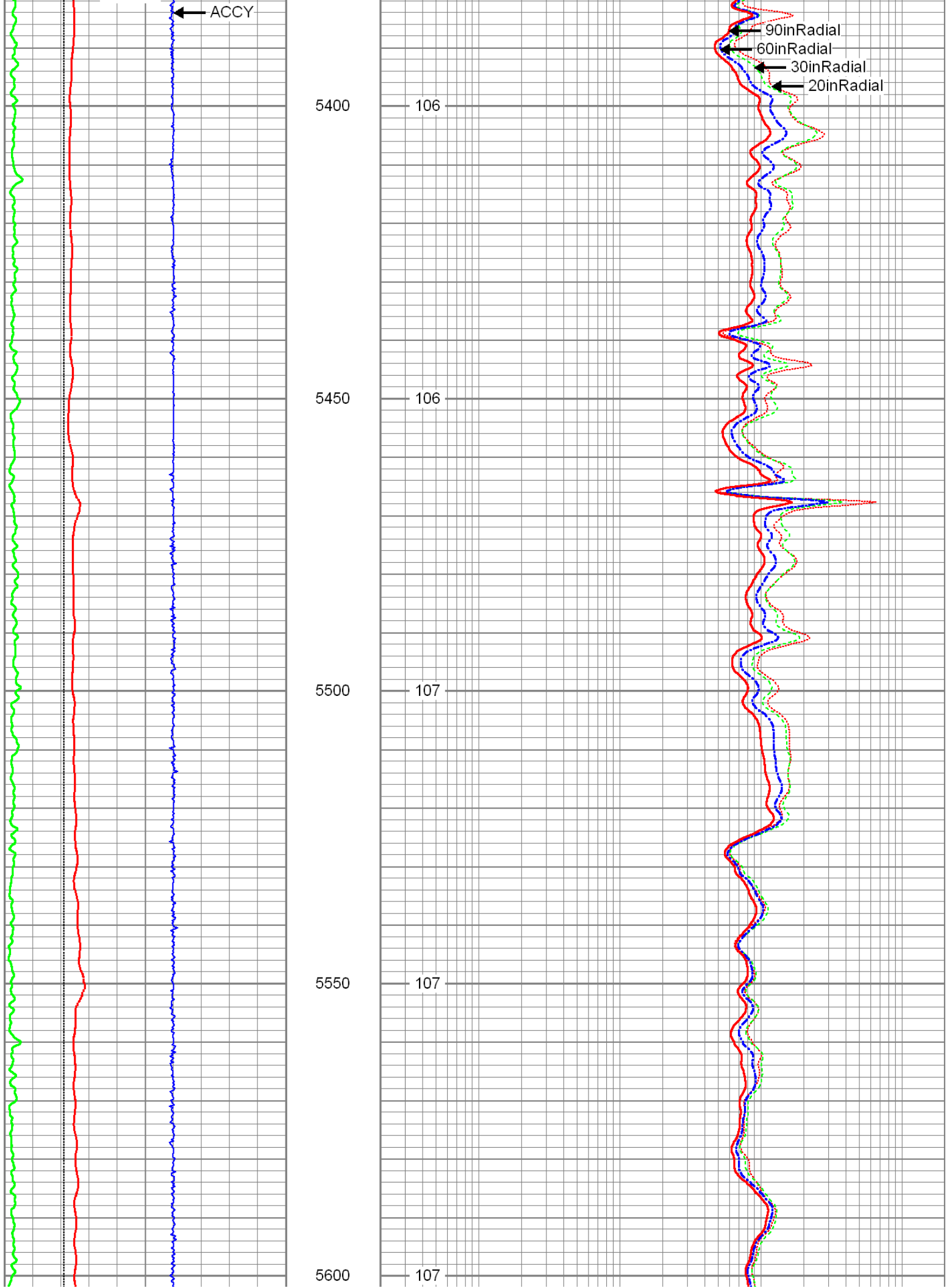
Database File:	c:\documents and settings\t006\desktop\lanie 3408 1-32h\sandridge_laine_3408_1_32h_mem.db
Dataset Pathname:	proc1/pass1.2
Presentation Format:	6_5r_chk
Dataset Creation:	Sun Dec 02 02:32:07 2012
Charted by:	Depth in Feet scaled 1:240

0	GR (GAPI)	150
4	BOREID (in)	14
4	DCAL (in)	14
-5	ACCY	5

0.2	20inRadial (Ohm-m)	2000
0.2	30inRadial (Ohm-m)	2000
0.2	60inRadial (Ohm-m)	2000
0.2	90inRadial (Ohm-m)	2000

GRTEMP (degF)

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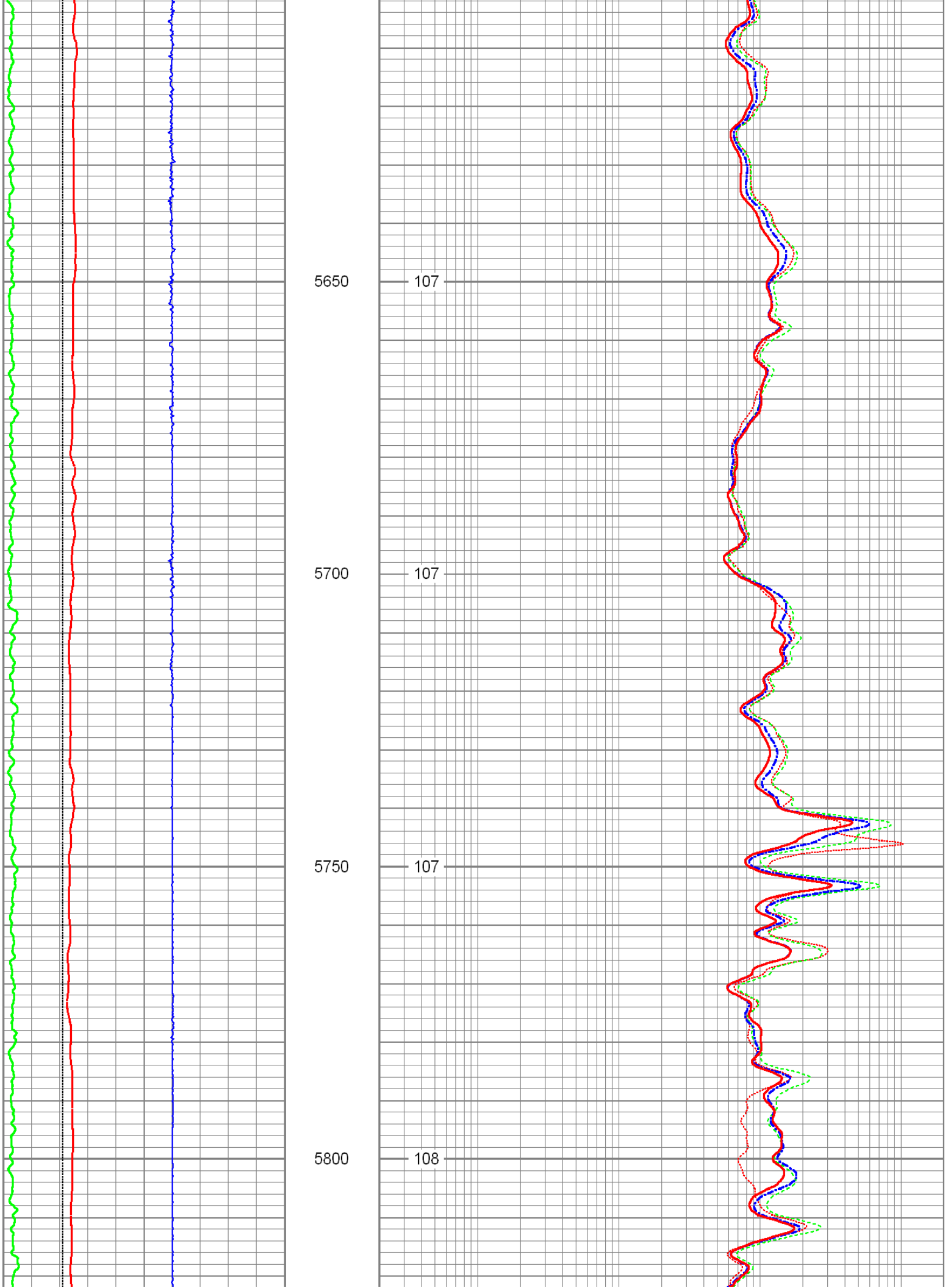
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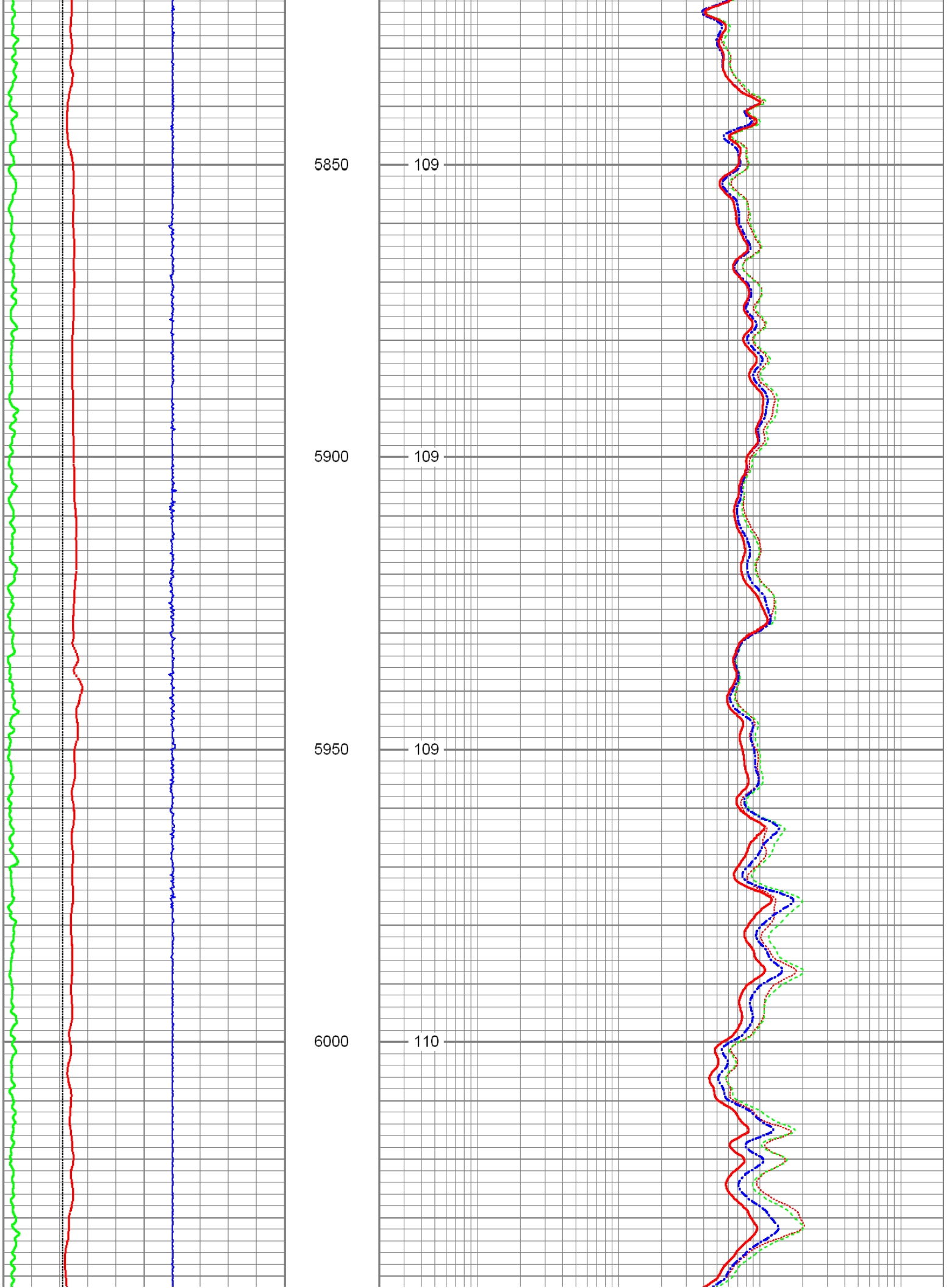
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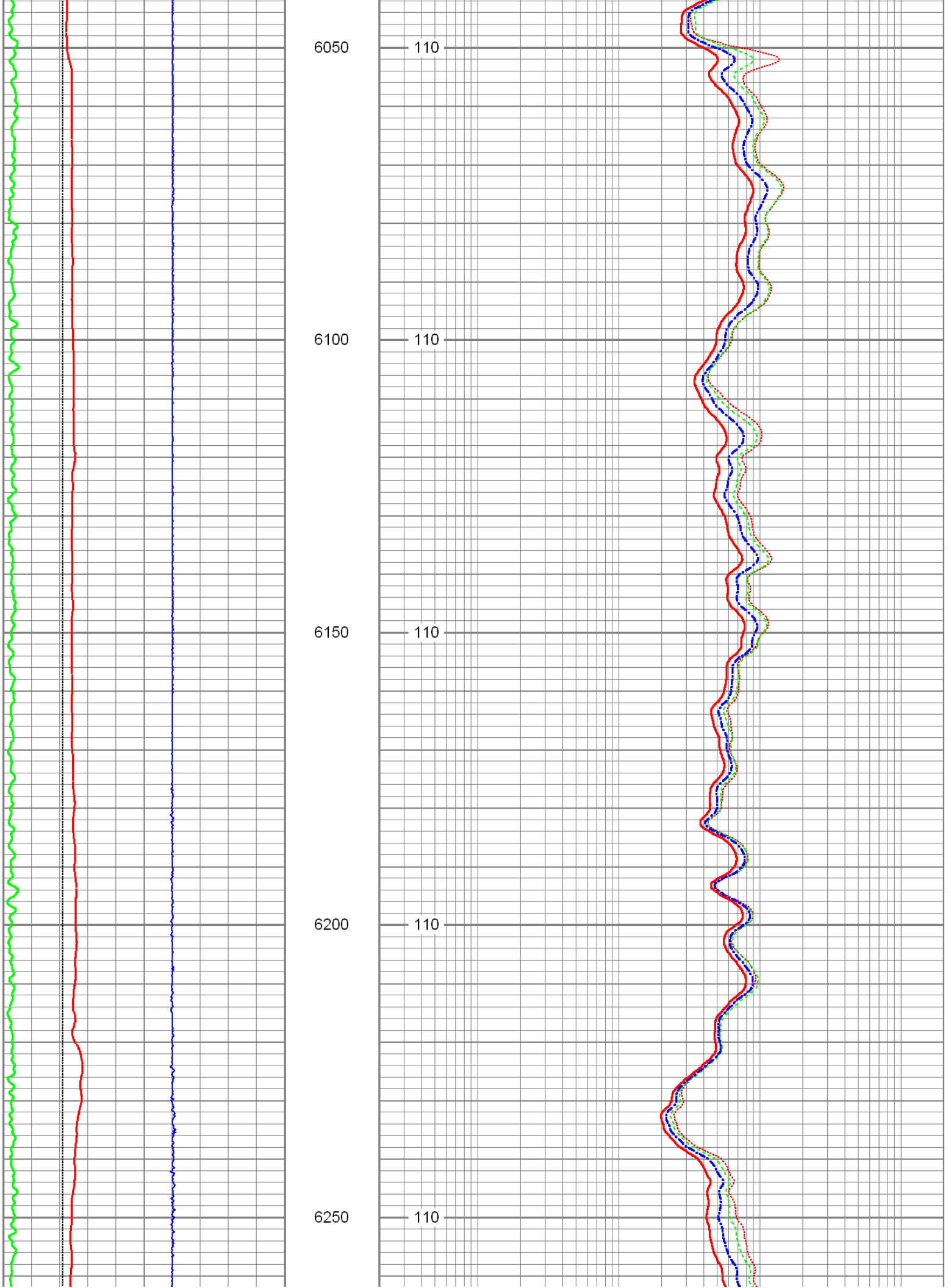
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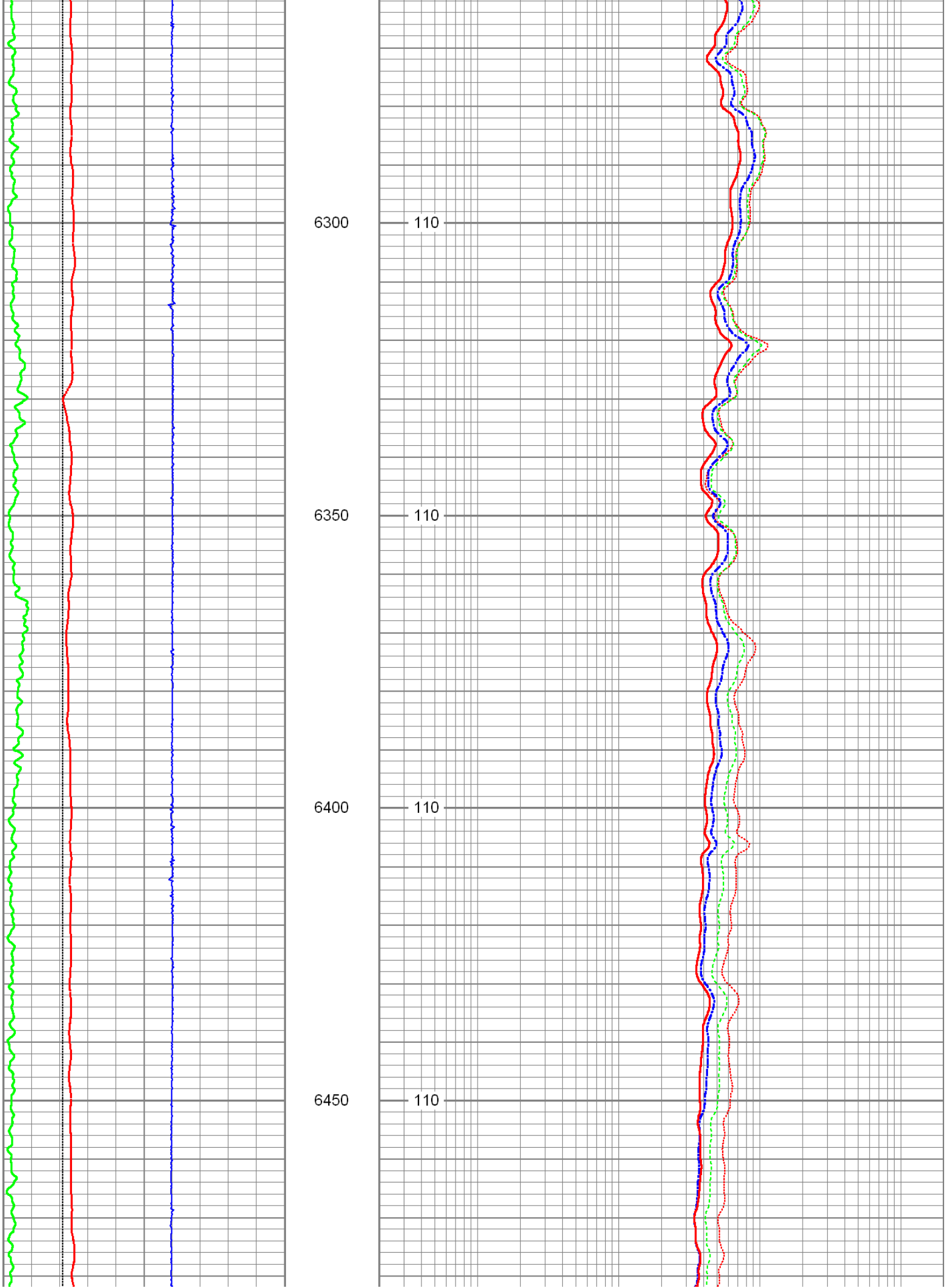
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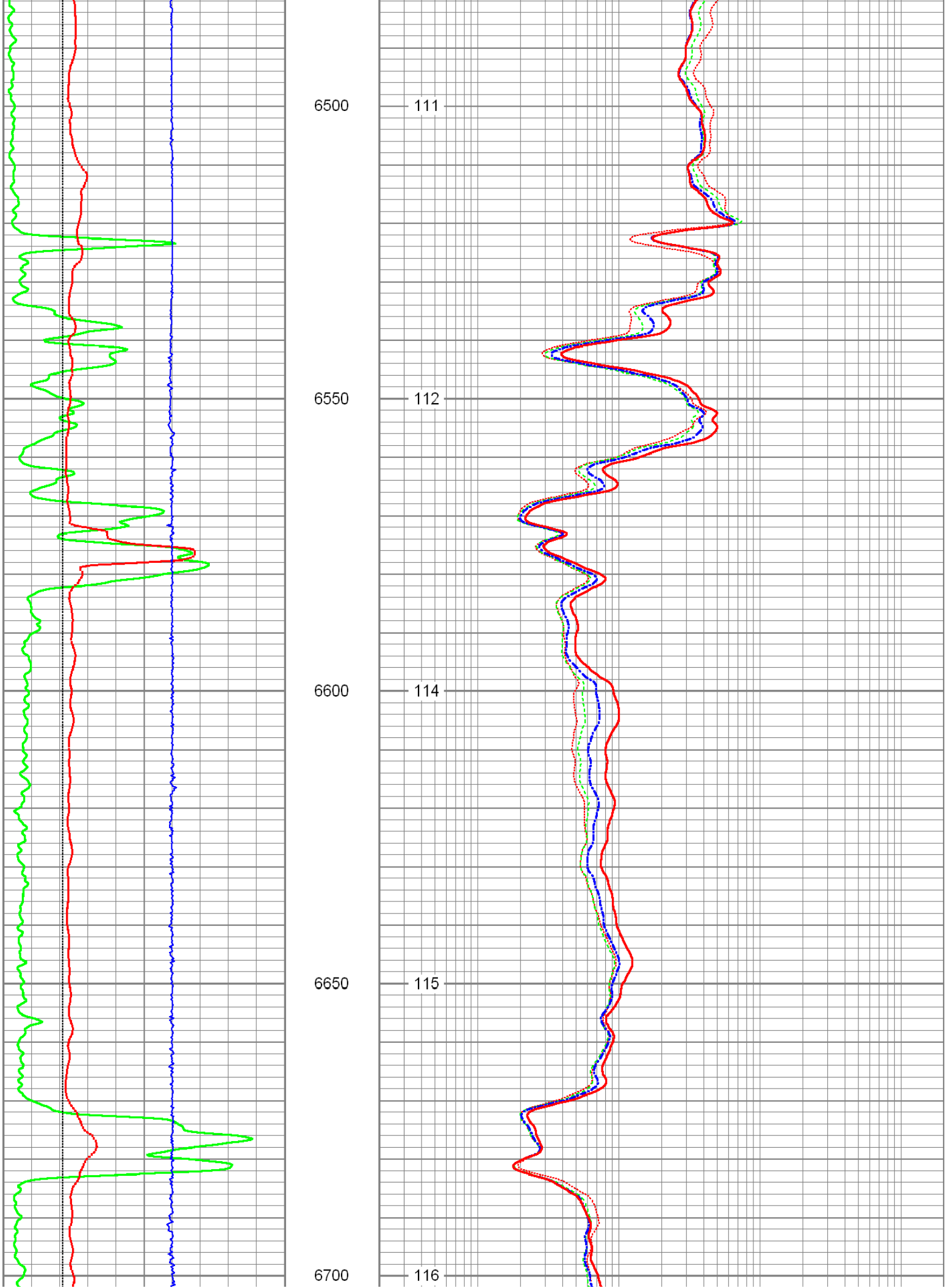
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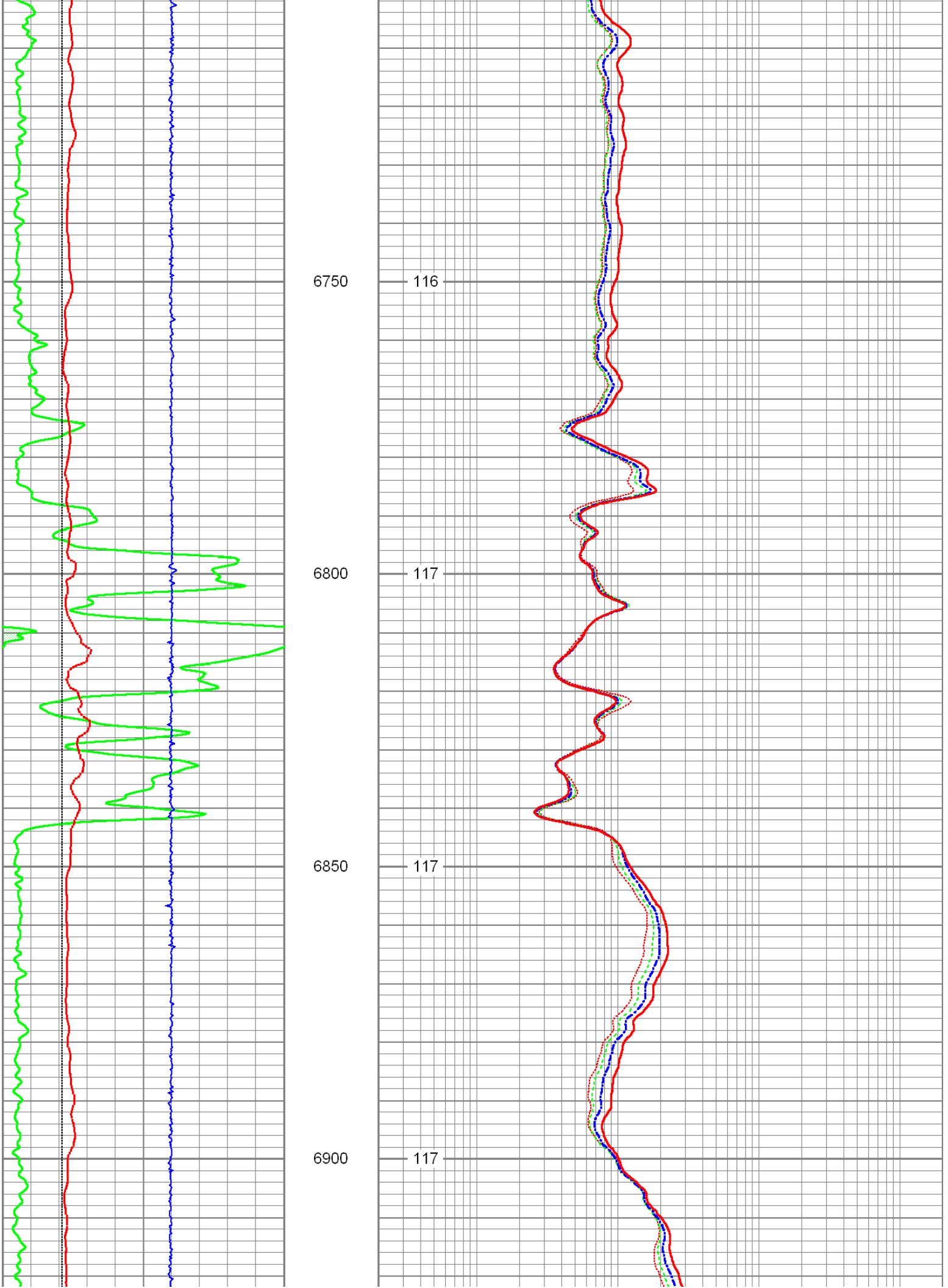
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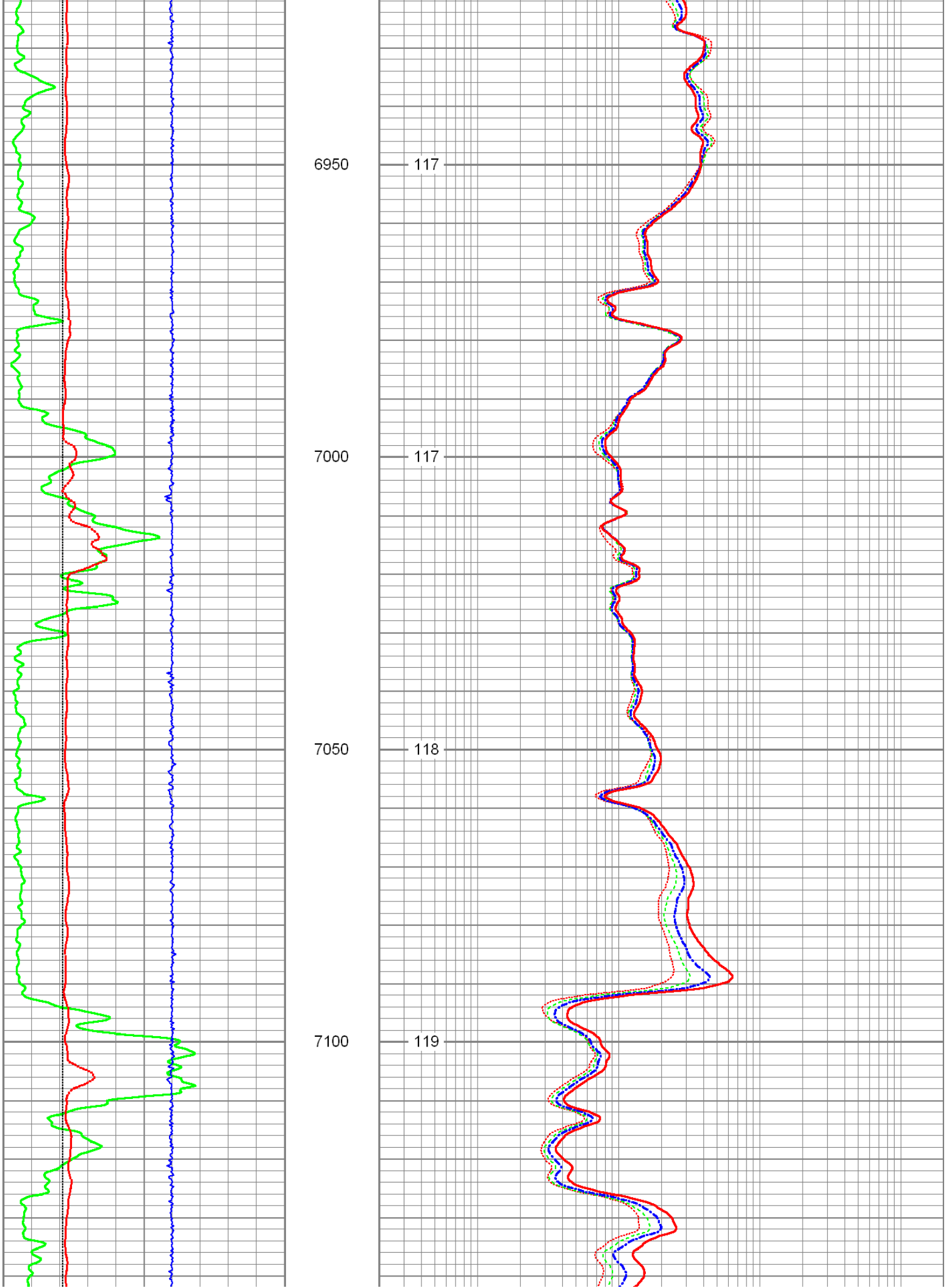
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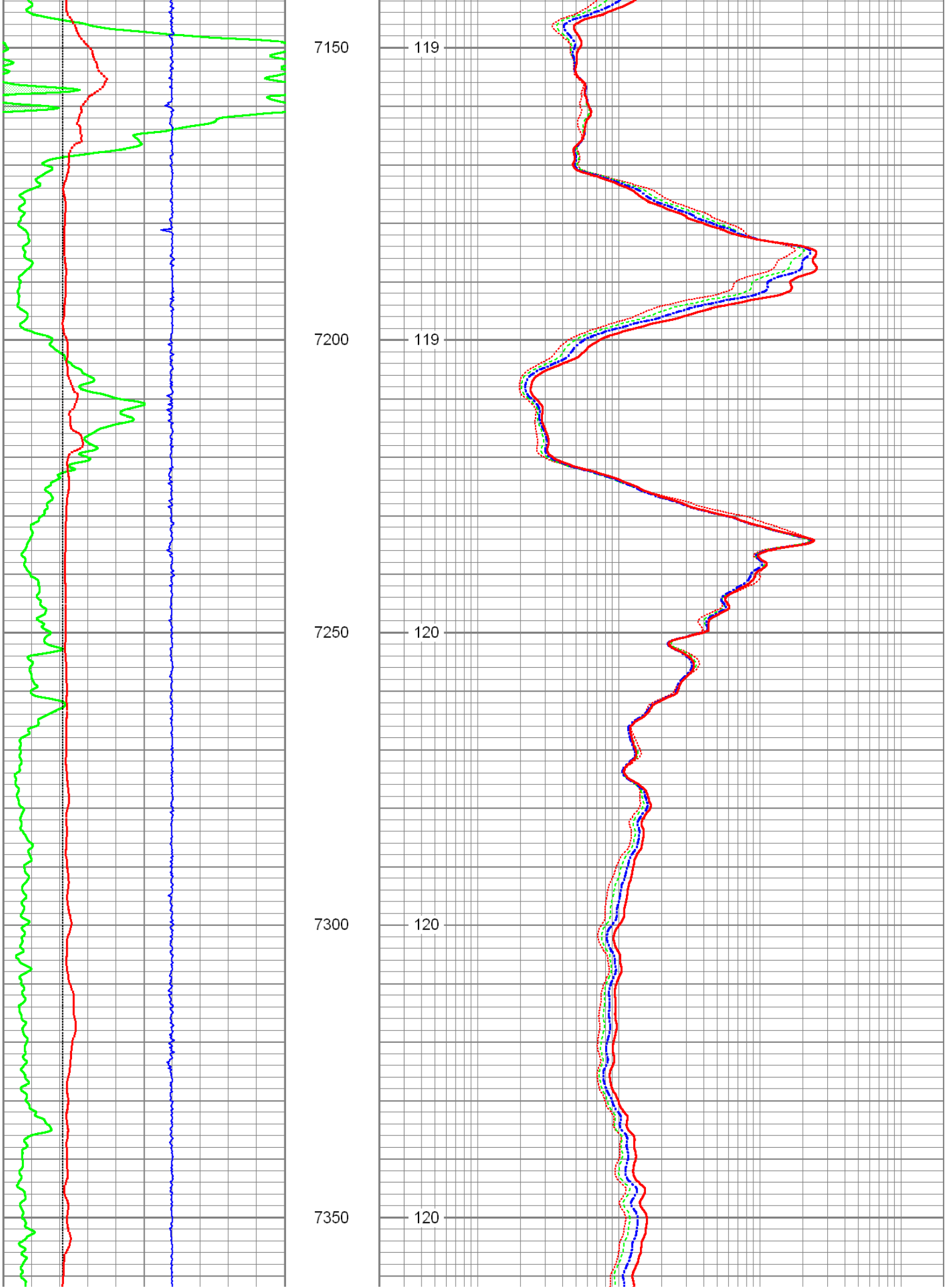
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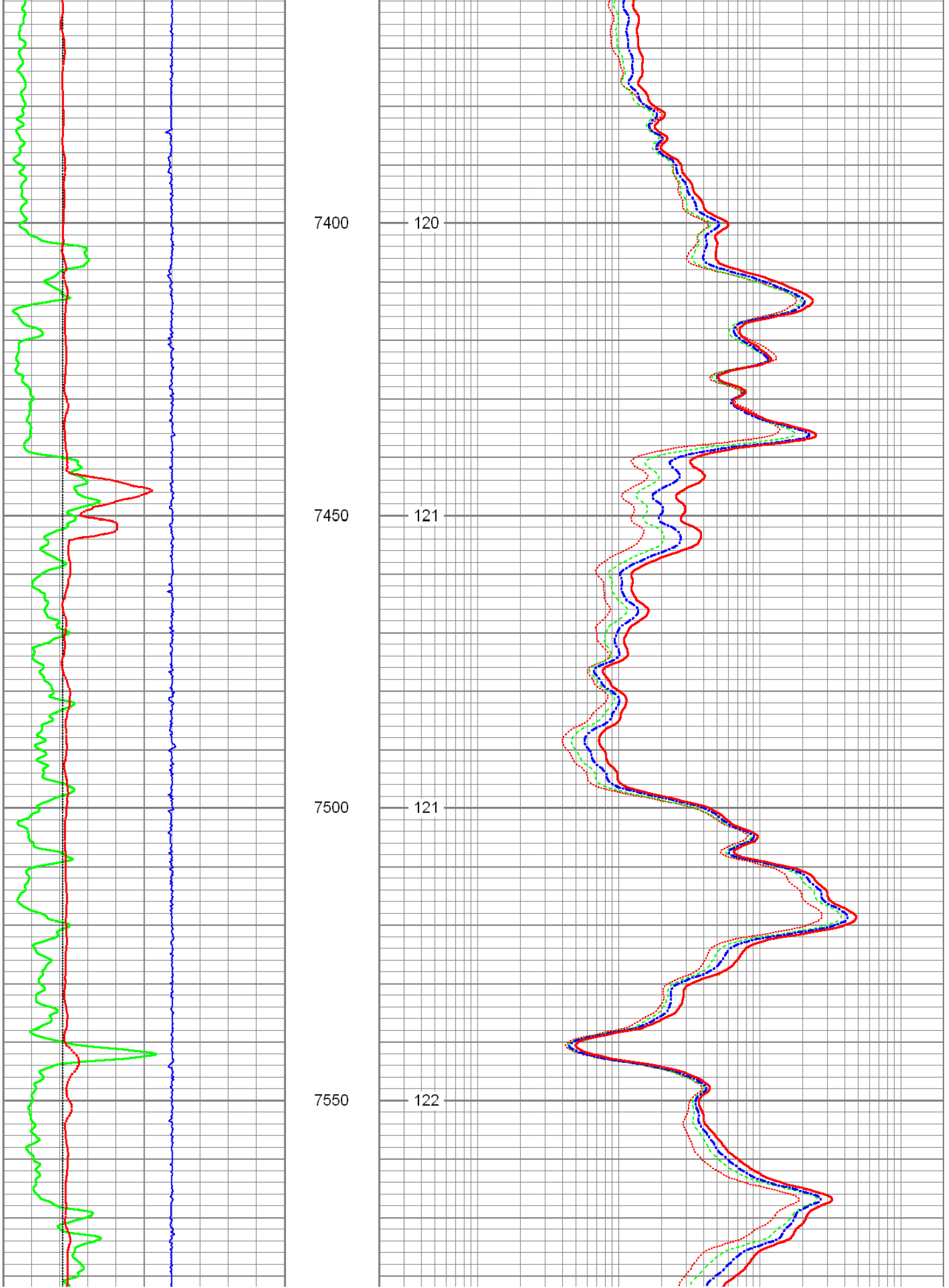
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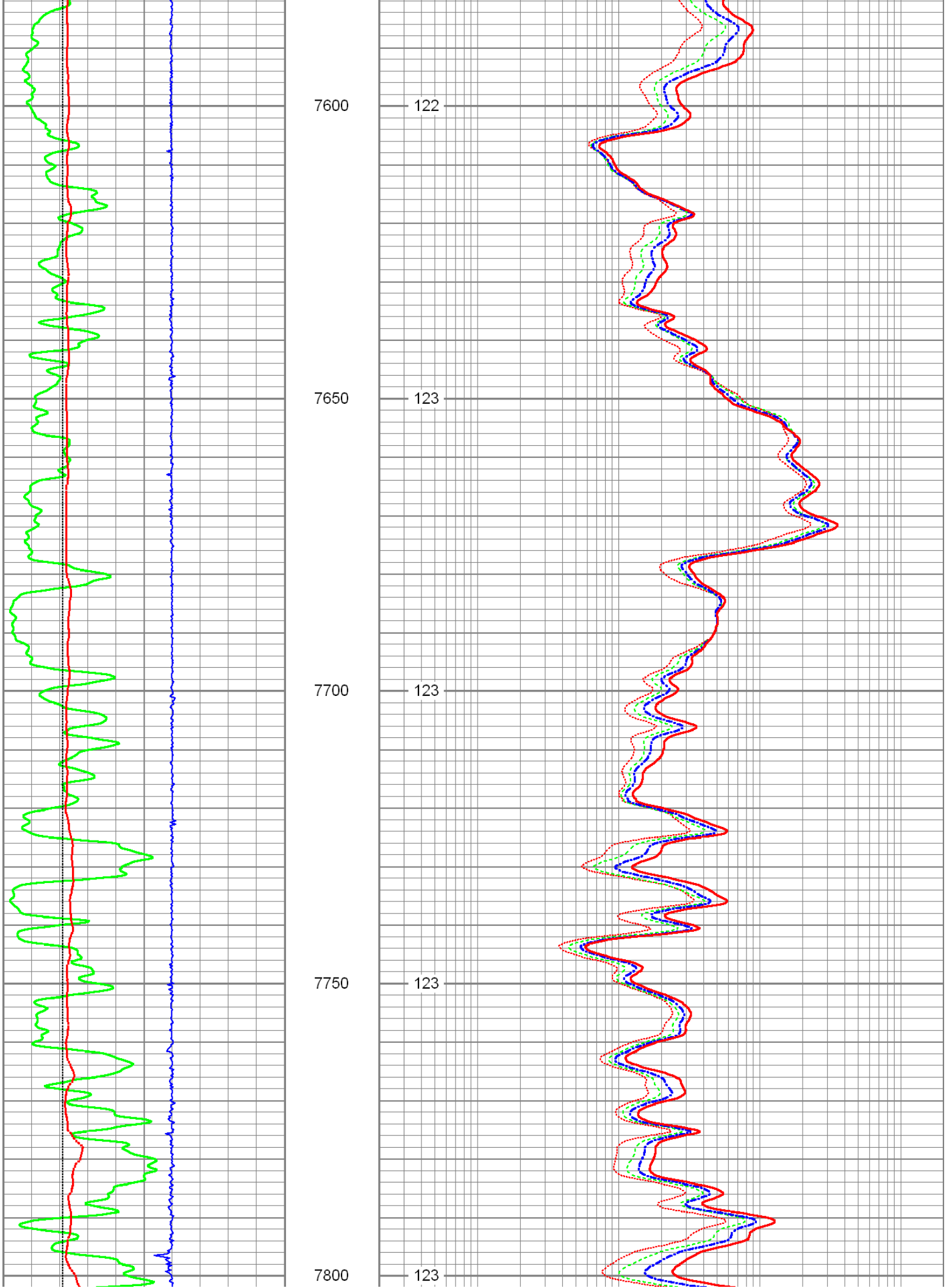
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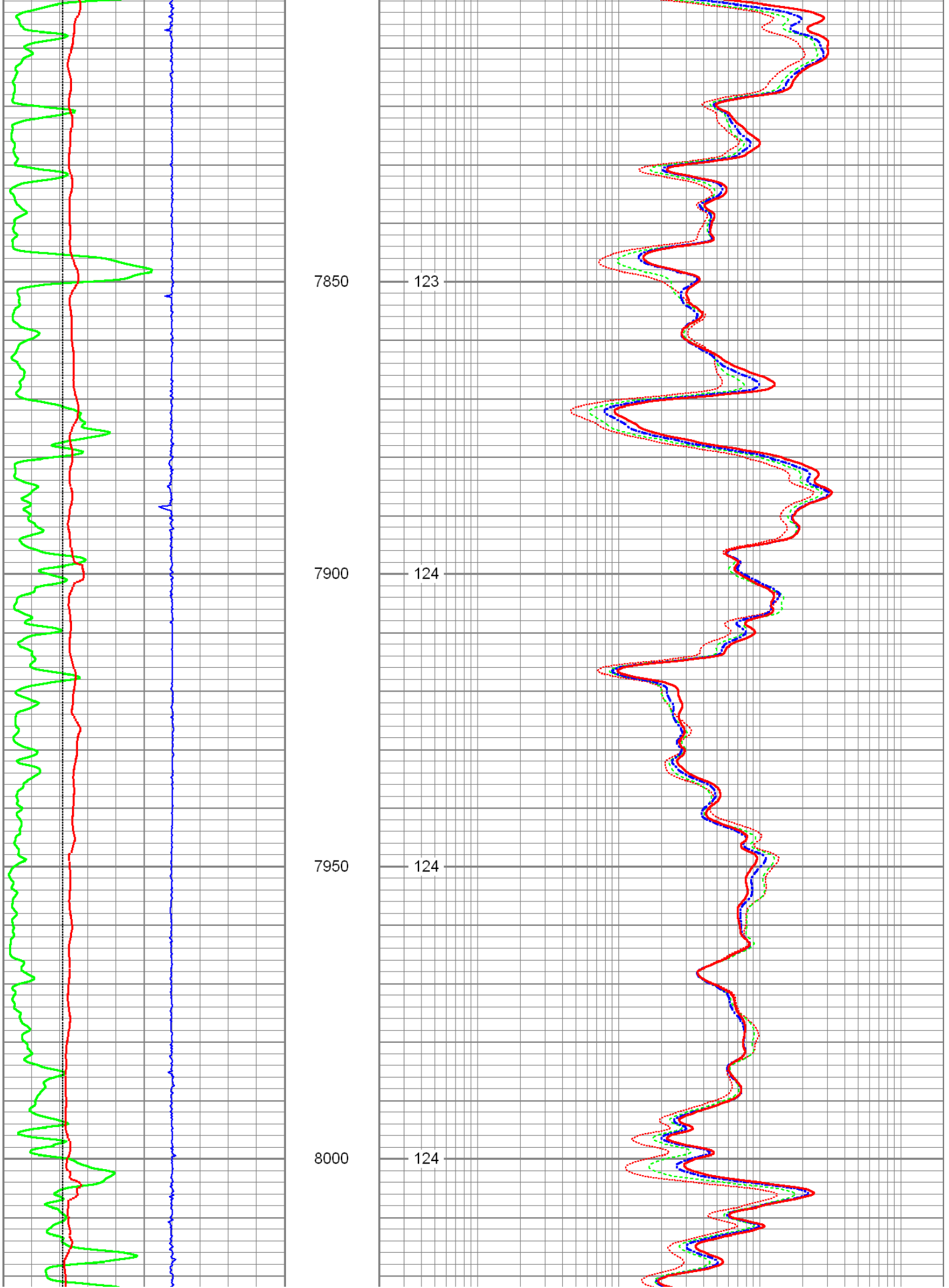
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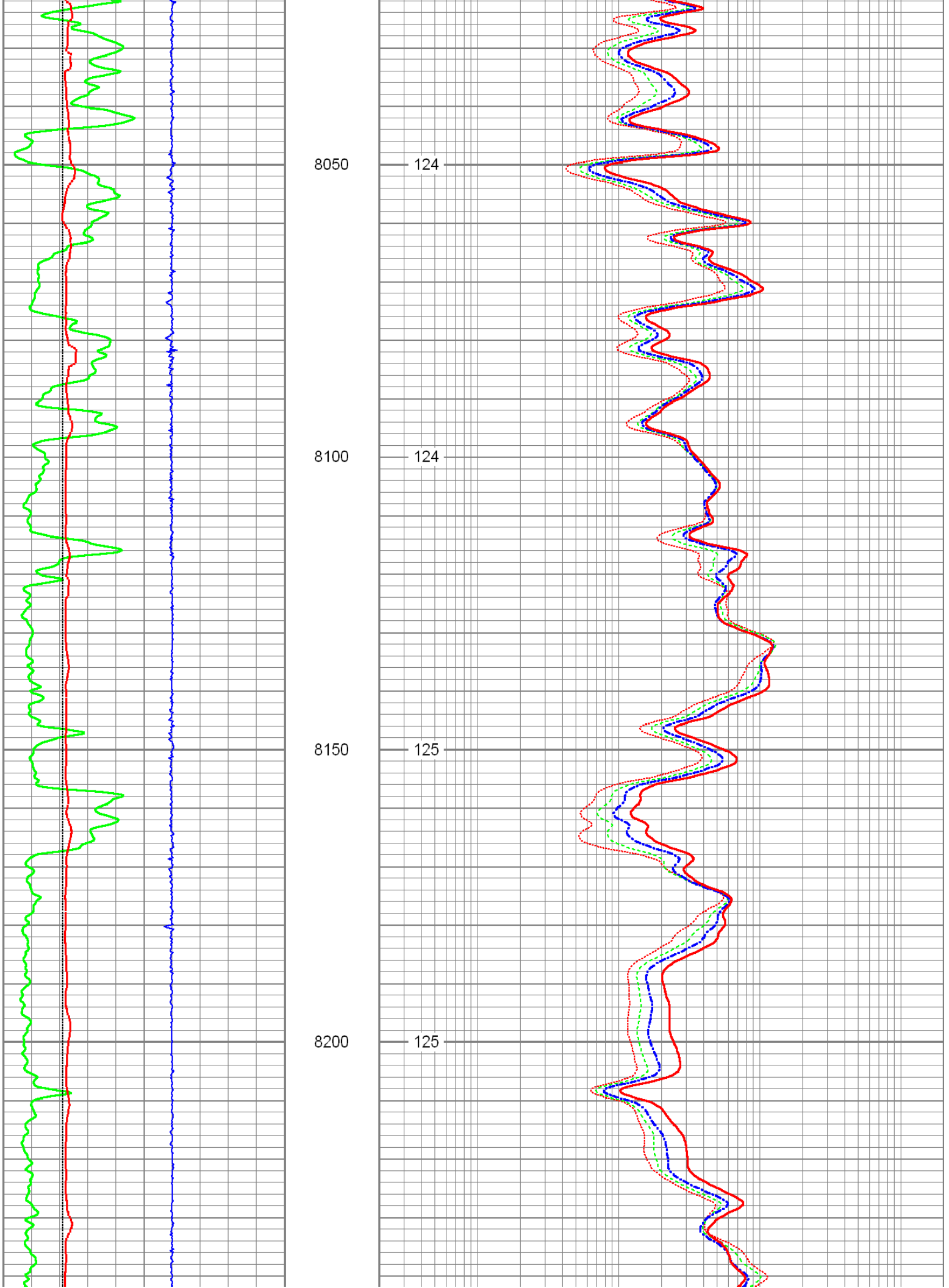
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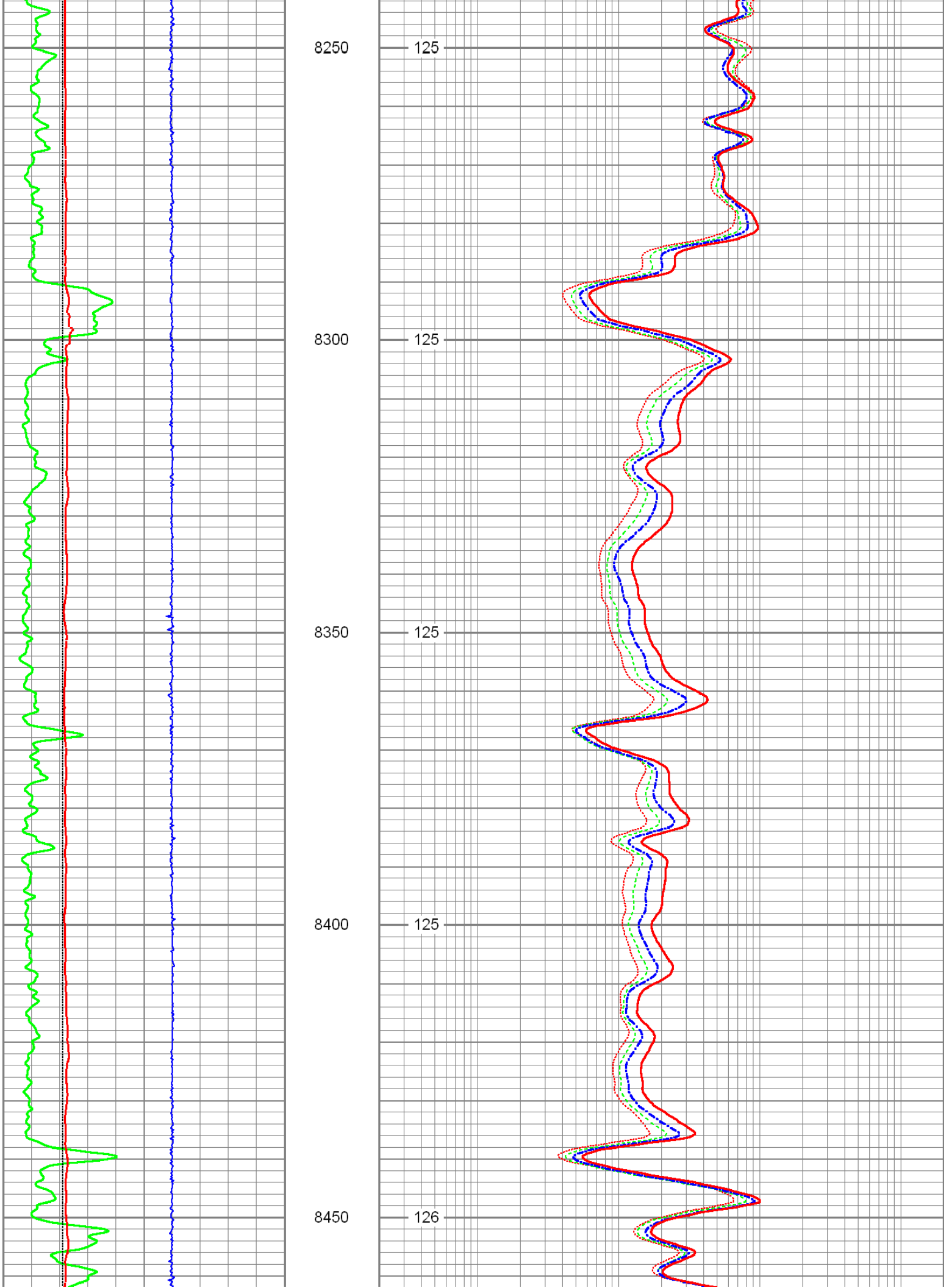
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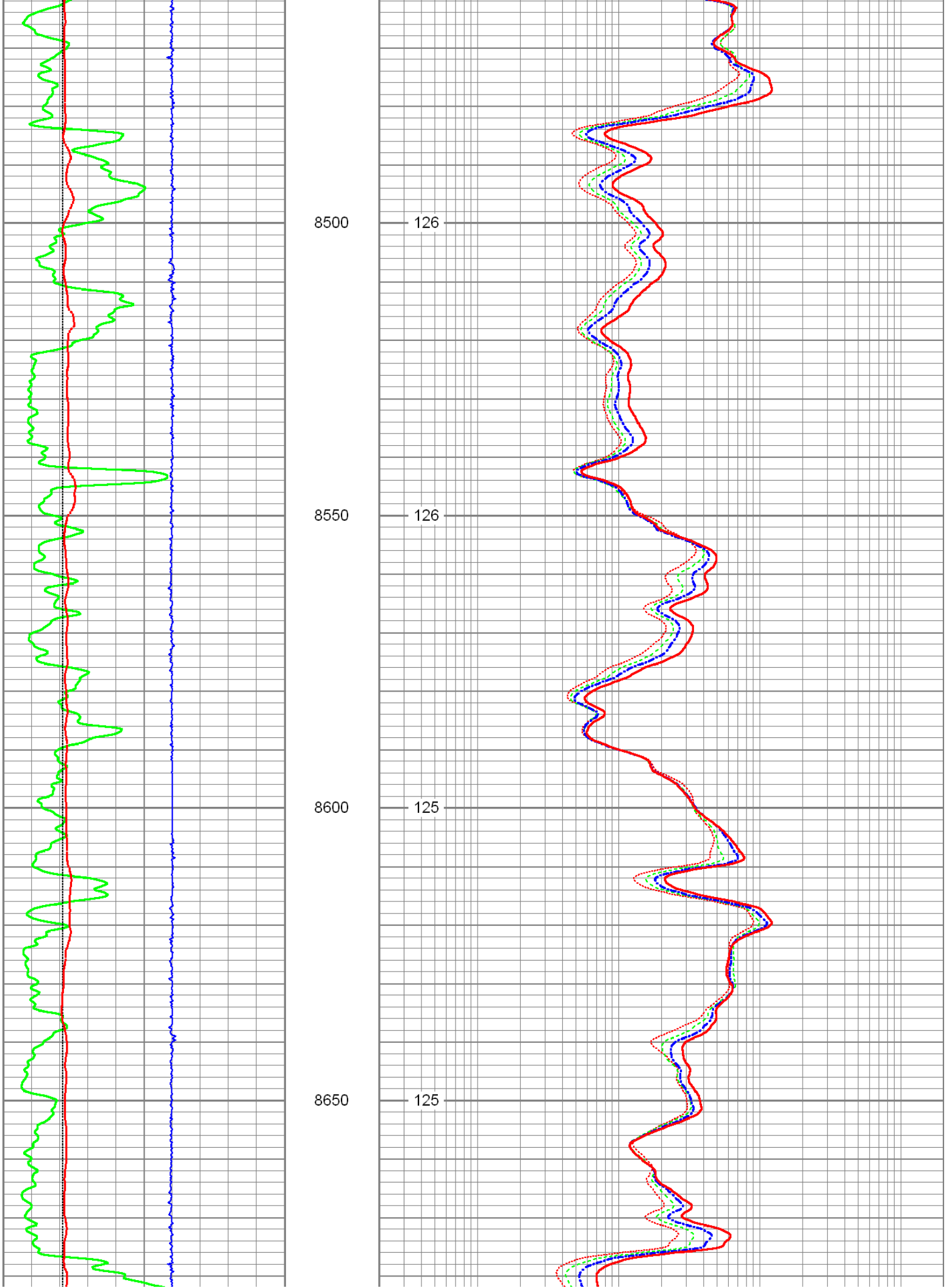
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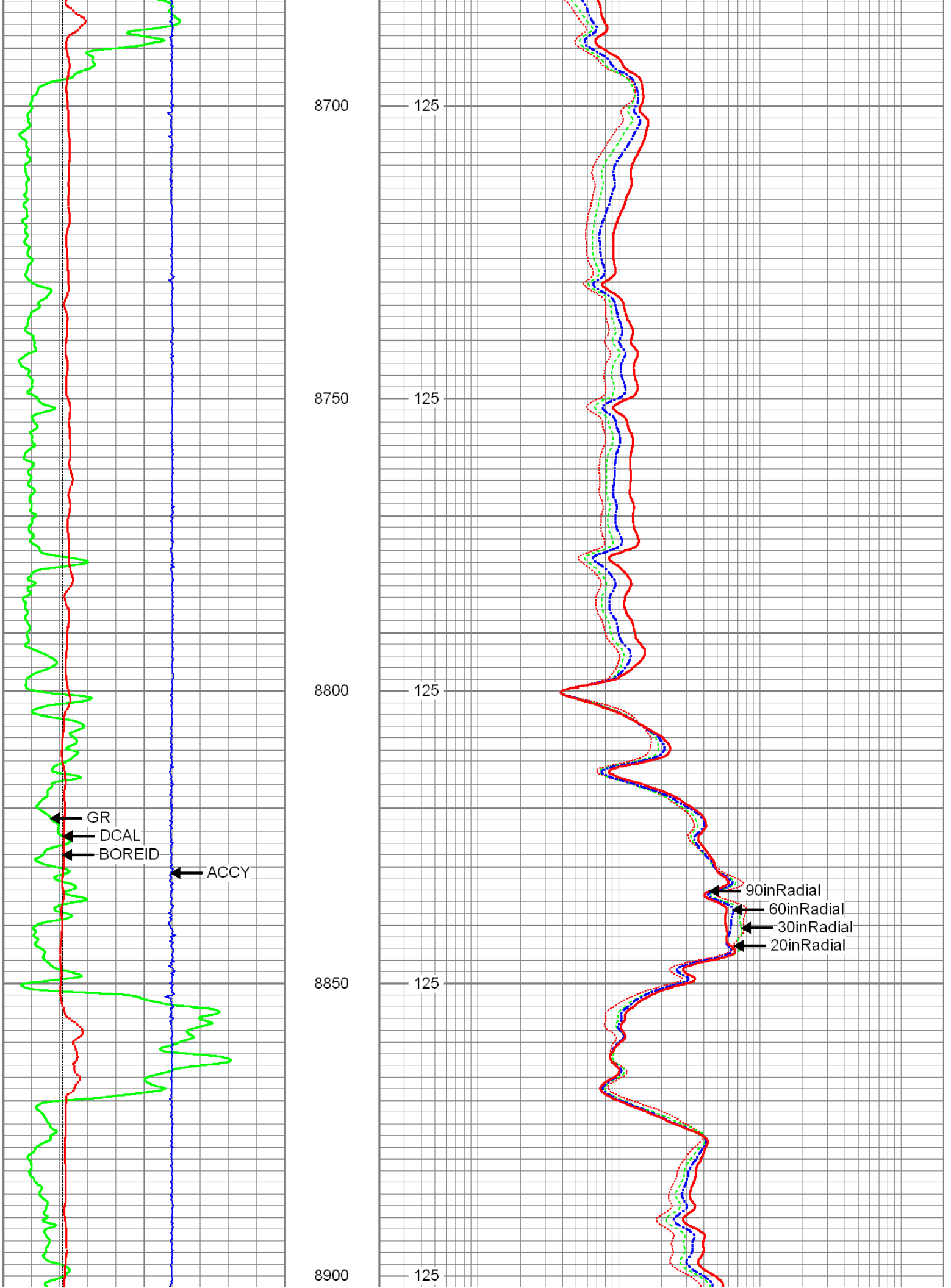
8700
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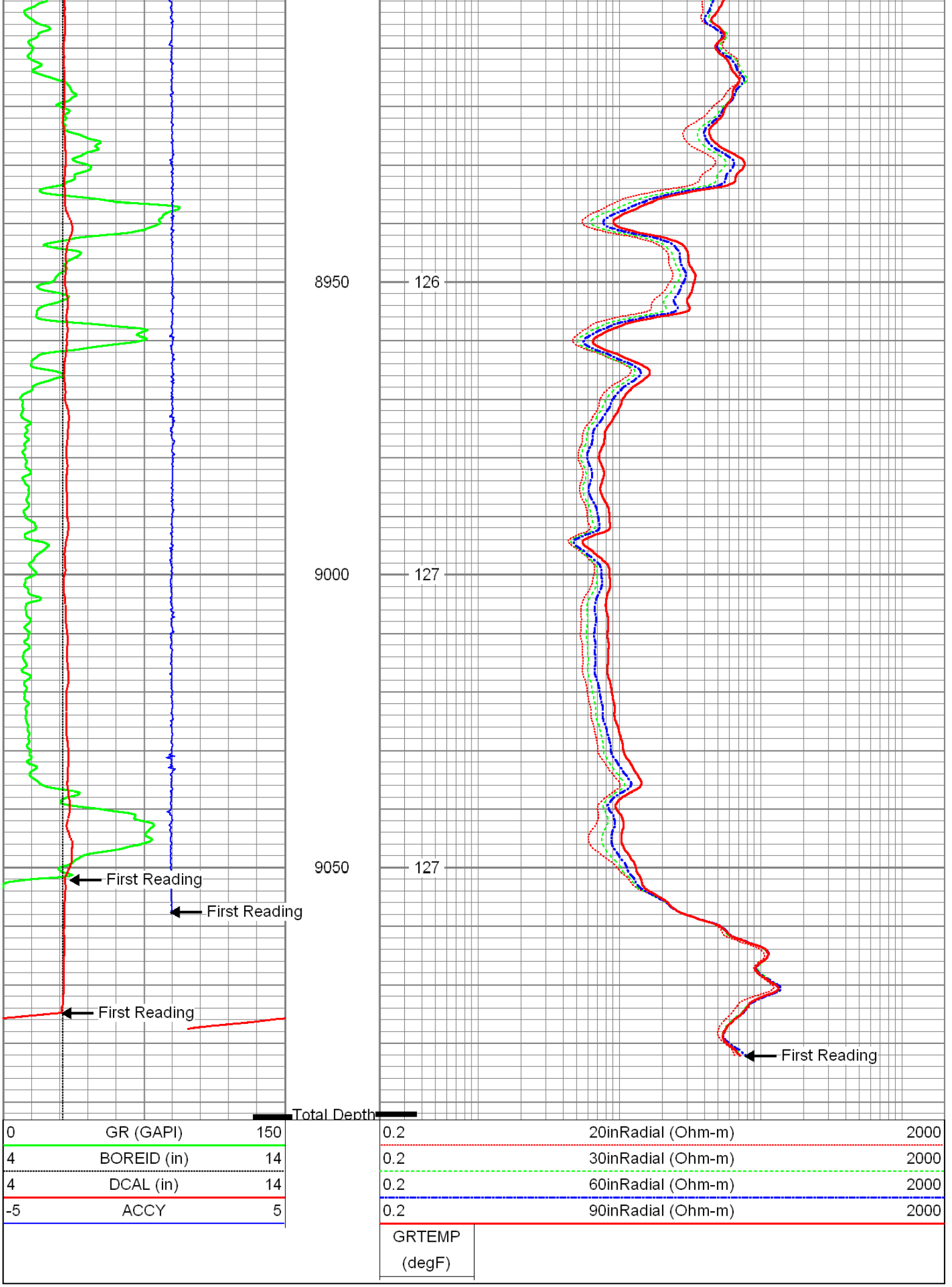
GR
DCAL
BOREID
ACCY
90inRadial
60inRadial
30inRadial
20inRadial


8950
9000
9050
126
127
127
First Reading
First Reading
First Reading
First Reading
Total Depth
0
GR (GAPI)
150
4
BOREID (in)
14
4
DCAL (in)
14
-5
ACCY
5
0.2
20inRadial (Ohm-m)
2000
0.2
30inRadial (Ohm-m)
2000
0.2
60inRadial (Ohm-m)
2000
0.2
90inRadial (Ohm-m)
2000
GRTEMP
(degF)

Log Variables

Database:c:\documents and settings\t006\desktop\lanie 3408 1-32h\sandridge_laine_3408_1_32h_m
Dataset: field/well/proc1/pass1.2

Top - Bottom

BHCOR	BHFL_TYPE	BHFLRES Ohm-m	BHFLRESSRC	BHIDSRC	BOREID in	BOTTEMP degF
On	WBM	1	MUDCELL	CURVE	6.125	128
CASED?	CASEOD in	CASETHCK in	CEMWATERSA kppm	CMNTTHCK in	DPORSEL	FLUIDDEN g/cc
No	4.5	0	0	0	RHOB	1
FRMSALIN kppm	LATNOR	MATRXDEN g/cc	MUDSALIN kppm	MudWgt lb/gal	NPORSEL	PERFS
0	Off	2.71	0.6	8.4	Limestone	0
RESTMPSRC	SO in	SRFTEMP degF	SZCOR	TDEPTH ft	TMPCOR	TOOLPOS
INTERNAL	0.5	65	On	9132	On	Ec-centered
XXXX						
0						

Calibration Report

Database File: c:\documents and settings\t006\desktop\lanie 3408 1-32h\sandridge_laine_3408_1_32h_mem.db
Dataset Pathname: proc1/pass1.2
Dataset Creation: Sun Dec 02 02:32:07 2012

ThruBit Induction Calibration Report

Tool Model-Serial Number: PS-PS38R

Shop Calibration Performed: Wed Sep 19 09:28:12 2012

BASELINE

	R	Expected	X	Expected
Freq 1				
A1	-478.6470	[-500.00, -400.00]	173.0000	[-500.00, 500.00]
A2	-136.1660	[-180.00, -100.00]	298.4330	[-500.00, 500.00]
A3	-26.9944	[-50.00, -10.00]	-68.1870	[-500.00, 500.00]
A4	-16.5753	[-30.00, -10.00]	252.8430	[-500.00, 500.00]
A5	-14.5693	[-30.00, -10.00]	150.3510	[-500.00, 500.00]
Freq 2				
A1	-252.6960	[-280.00, -180.00]	84.1946	[-500.00, 500.00]
A2	-87.5233	[-130.00, -50.00]	165.5460	[-500.00, 500.00]
A3	-19.5990	[-50.00, -10.00]	-97.2460	[-500.00, 500.00]
A4	-19.8898	[-30.00, -10.00]	75.3812	[-500.00, 500.00]
A5	-19.5554	[-30.00, -10.00]	-0.3546	[-500.00, 500.00]
Freq 3				
A1	-163.6960	[-180.00, -80.00]	-7.9103	[-500.00, 500.00]
A2	-67.0263	[-130.00, -30.00]	78.9750	[-500.00, 500.00]
A3	-16.3076	[-50.00, -10.00]	-130.2510	[-500.00, 500.00]
A4	-21.4341	[-30.00, -10.00]	-42.9782	[-500.00, 500.00]
A5	-22.0719	[-30.00, -10.00]	-109.4460	[-500.00, 500.00]
Freq 4				
A1	-91.5984	[-120.00, -40.00]	-163.9400	[-500.00, 500.00]
A2	-48.3989	[-110.00, -10.00]	-37.1792	[-500.00, 500.00]

A3	-13.2104	[-50.00, -10.00]	-195.2460	[-500.00, 500.00]
A4	-24.0555	[-30.00, -10.00]	-219.8520	[-500.00, 500.00]
A5	-26.9658	[-30.00, -10.00]	-291.9350	[-500.00, 500.00]

CALIBRATION COEFFICIENTS

	R	Expected	X	Expected
Freq 1				
A1	0.9932	[0.95, 1.05]	-0.0014	[-0.05, 0.05]
A2	0.9912	[0.95, 1.05]	0.0015	[-0.05, 0.05]
A3	1.0012	[0.95, 1.05]	-0.0059	[-0.05, 0.05]
A4	0.9886	[0.95, 1.05]	0.0041	[-0.05, 0.05]
A5	0.9941	[0.95, 1.05]	0.0005	[-0.05, 0.05]
Freq 2				
A1	0.9875	[0.95, 1.05]	-0.0069	[-0.05, 0.05]
A2	0.9856	[0.95, 1.05]	-0.0048	[-0.05, 0.05]
A3	0.9898	[0.95, 1.05]	-0.0048	[-0.05, 0.05]
A4	0.9843	[0.95, 1.05]	-0.0026	[-0.05, 0.05]
A5	0.9899	[0.95, 1.05]	-0.0066	[-0.05, 0.05]
Freq 3				
A1	0.9906	[0.95, 1.05]	-0.0084	[-0.05, 0.05]
A2	0.9890	[0.95, 1.05]	-0.0064	[-0.05, 0.05]
A3	0.9929	[0.95, 1.05]	-0.0065	[-0.05, 0.05]
A4	0.9861	[0.95, 1.05]	-0.0043	[-0.05, 0.05]
A5	0.9936	[0.95, 1.05]	-0.0085	[-0.05, 0.05]
Freq 4				
A1	0.9898	[0.95, 1.05]	-0.0038	[-0.05, 0.05]
A2	0.9878	[0.95, 1.05]	-0.0023	[-0.05, 0.05]
A3	0.9935	[0.95, 1.05]	-0.0043	[-0.05, 0.05]
A4	0.9844	[0.95, 1.05]	0.0001	[-0.05, 0.05]
A5	0.9985	[0.95, 1.05]	-0.0062	[-0.05, 0.05]
Temperature	26.7102 degC			

ThruBit Density Calibration Report

Tool Model-Serial Number:	PS-PS44D
Source Number:	
Shop Calibration Performed:	Thu Nov 29 11:41:46 2012

REFERENCE

	Density	Units
Aluminium	2.607	g/cc
Magnesium	1.752	g/cc

READINGS

Outputs	Counts	Units	Expected
SS1 Background	130.13	cps	[130.00, 170.00]
LS1 Background	146.20	cps	[130.00, 170.00]
LS4 Background	29.56	cps	[27.00, 35.00]
SS1 Aluminium	5613.30	cps	[4500.00, 5500.00]
LS1 Aluminium	950.33	cps	[750.00, 950.00]
LS4 Aluminium	1057.35	cps	[843.00, 1068.00]
SS1 Magnesium	9246.22	cps	[7000.00, 9000.00]

LS1 Magnesium	6219.22	cps	[5250.00, 6250.00]
LS1 Al + Fe	795.70	cps	[650.00, 800.00]
LS4 Al + Fe	456.59	cps	[382.00, 471.00]

RESULTS

SS Slope	1.68	[1.52, 1.77]
LS Slope	0.42	[0.38, 0.45]
PEF K Factor	5.058	[3.510, 6.170]
PEF B Factor	-0.501	[-0.700, -0.410]

Caliper Shop Calibration performed: Thu Nov 29 11:41:46 2012

RESULTS

Reference	Reading	Units
12.00	1853.08	in
9.00	2007.18	in
6.00	2165.36	in

DENSITY PRE-SURVEY CHECK Performed: Thu Nov 29 12:14:29 2012

Outputs	Counts	Units	Expected
SS1 Background	130.64	cps	[126.23, 134.04]
LS1 Background	144.92	cps	[141.82, 150.59]
LS4 Background	29.57	cps	[27.79, 31.34]

DENSITY POST-SURVEY CHECK Performed: Wed Dec 31 18:00:00 1969

Outputs	Counts	Units	Expected
SS1 Background	0.00	cps	[126.23, 134.04]
LS1 Background	0.00	cps	[141.82, 150.59]
LS4 Background	0.00	cps	[27.79, 31.34]

CALIPER PRE-SURVEY CHECK Performed: Thu Nov 29 12:12:12 2012

Reference	Readings	Units	Expected
6.00	5.99	in	[5.80, 6.20]

CALIPER POST-SURVEY CHECK Performed: Wed Dec 31 18:00:00 1969

Reference	Readings	Units	Expected
0.00	0.00	in	[-0.20, 0.20]

Compensated Neutron Calibration Report

Tool Model-Serial Number: ENP-ENP5N
Source Number:

Calibration Tank Temperature: 63.7 degF
Shop Calibration Performed: Fri Nov 16 09:23:04 2012

BACKGROUND MEASUREMENT

Outputs	Measured	Units	Expected
SS Counts	0.1	cps	<10

LS Counts	0.3	cps	<4

WATER TANK REFERENCE

Outputs	Measured	Units	Expected
SS Counts	875.1	cps	
LS Counts	29.6	cps	
Tank Ratio Ref	30.9580	SS/LS	
Tank Ratio	29.5826	SS/LS	
Tank Ratio Gain	1.0465		[0.85, 1.15]

ALUMINUM SLEEVE REFERENCE

Outputs	Measured	Units	Expected
SS Counts	9775.7	cps	
LS Counts	925.1	cps	
Al Ratio Ref	10.797	SS/LS	
Al Ratio	11.059	SS/LS	
Al Ratio Gain	0.98		[0.90, 1.10]
Sleeve Porosity	14.46	pu	

PRE-SURVEY BACKGROUND CHECK Performed: Thu Nov 29 12:08:16 2012

Outputs	Measured	Units	Expected
SS Counts	0.0	cps	<10
LS Counts	0.3	cps	<4

POST-SURVEY BACKGROUND CHECK Performed:

Outputs	Measured	Units	Expected
SS Counts	0.0	cps	<10
LS Counts	0.0	cps	<4

Gamma Ray Calibration Report

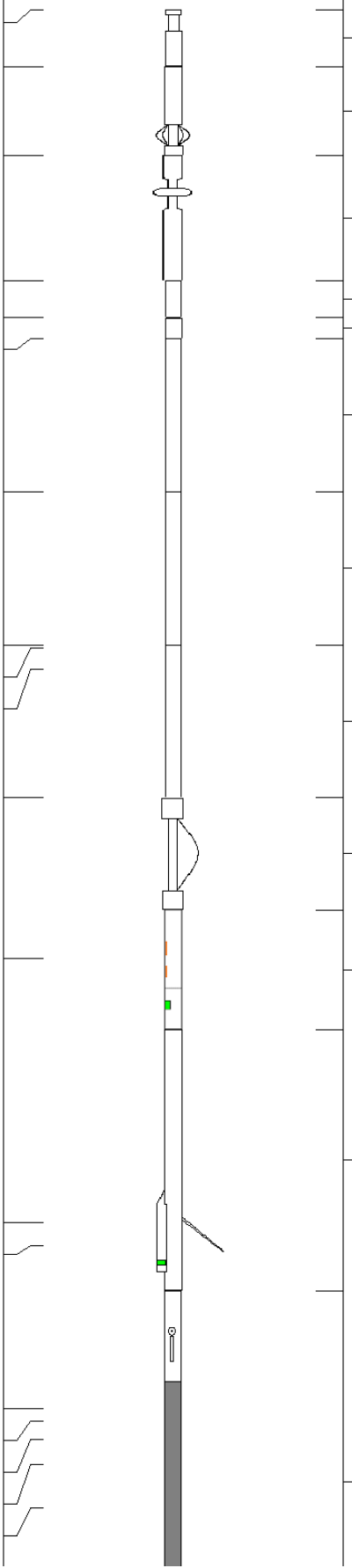
Tool Model-Serial Number:	PS-PS27T	
Performed:	Thu Sep 27 07:45:16 2012	
Calibrator Value:	162.7	GAPI
Background Reading:	65.1	cps
Calibrator Reading:	402.7	cps
Sensitivity:	0.3750	GAPI/cps

Inclinometer Calibration Report

Performed: Sun Jun 13 14:33:21 1993

	Low Read.	High Read.	Low Ref.	High Ref.
X Accelerometer				

	0.00	1.00	0.00	1.00	gee
Y Accelerometer	0.00	1.00	0.00	1.00	gee
Z Accelerometer	0.00	1.00	0.00	1.00	gee

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
Thrubit	66.60		Cablehead-S Solid Weakpoint	2.31	2.13	5.00
Thrubit	64.29					
			BDOT	3.54	2.25	35.00
Thrubit	60.75					
			HangOff_Tool	5.00	2.38	60.00
Thrubit	55.75		Universal Joint	1.46	2.06	15.00
Thrubit	54.29		10-1	0.88	2.13	3.95
TBBAT2	53.41		TBBAT2-A (PS33B) Thrubit Battery	6.13	2.13	40.00
TBBAT	47.29		TBBAT-A (PS34B) Thrubit Battery	6.13	2.13	38.20
TMG	41.16					
GR	41.04					
GRTEMP	40.20		TMG-PS (PS27T) ThruBit Telemetry Gamma Ray	6.13	2.13	45.00
Thrubit	35.04		Decentralizer Decentralizer (Small)	4.50	2.13	70.00
CNLSC	28.60		TBN-ENP (ENP5N) ThruBit Neutron	4.77	2.13	63.00
			TBD-PS (PS44D) Thrubit Density	10.48	2.13	91.00
LSW1	18.04					
DCAL	17.13					
A1_P	10.60					
A2_P	10.10					
A3_P	9.35		TBI-PS (PS38R) Thrubit Induction	15.29	2.13	94.00
A4_P	8.35					
A5_P	6.60					

Dataset:	sandridge_laine_3408_1_32h_mem.db: field/well/proc1/pass1.2
Total Length:	66.60 ft
Total Weight:	560.15 lb
O.D.	2.38 in

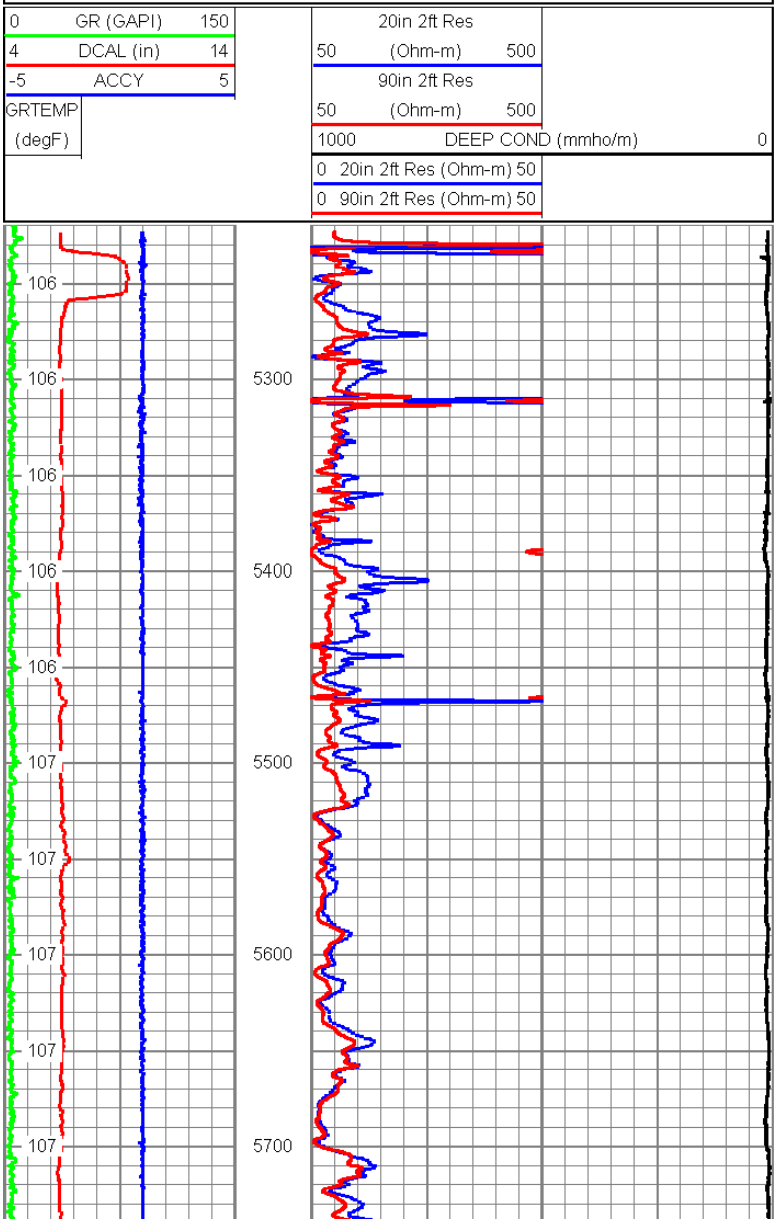
ThruBit
A Schlumberger Company

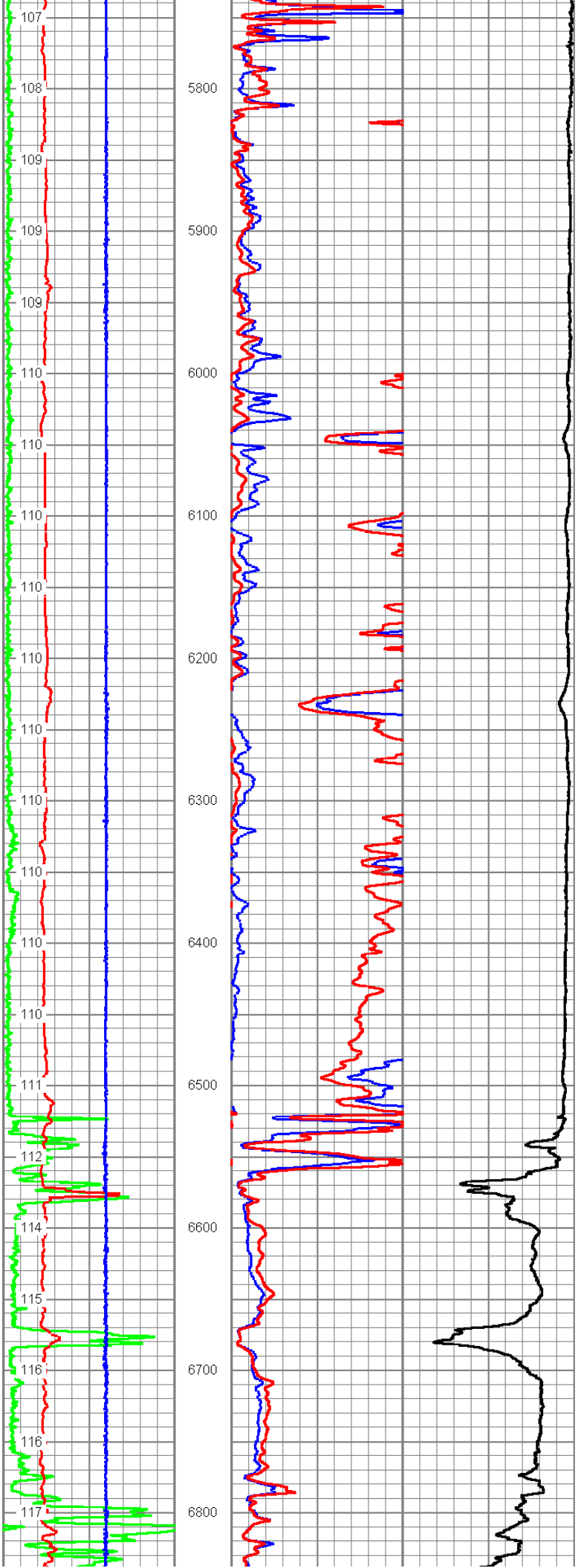
Company	SANDRIDGE ENERGY
Well	LANIE 3408 1-32H
Field	WALDRON WEST
County	HARPER
State	KANSAS

ThruBit
A Schlumberger Company

MAIN PASS

Database File:	c:\documents and settings\t006\desktop\lanie 3408 1-32h\sandridge_la
Dataset Pathname:	proc1/pass1.2
Presentation Format:	6_1r_chk
Dataset Creation:	Sun Dec 02 02:32:07 2012
Charted by:	Depth in Feet scaled 1:1200

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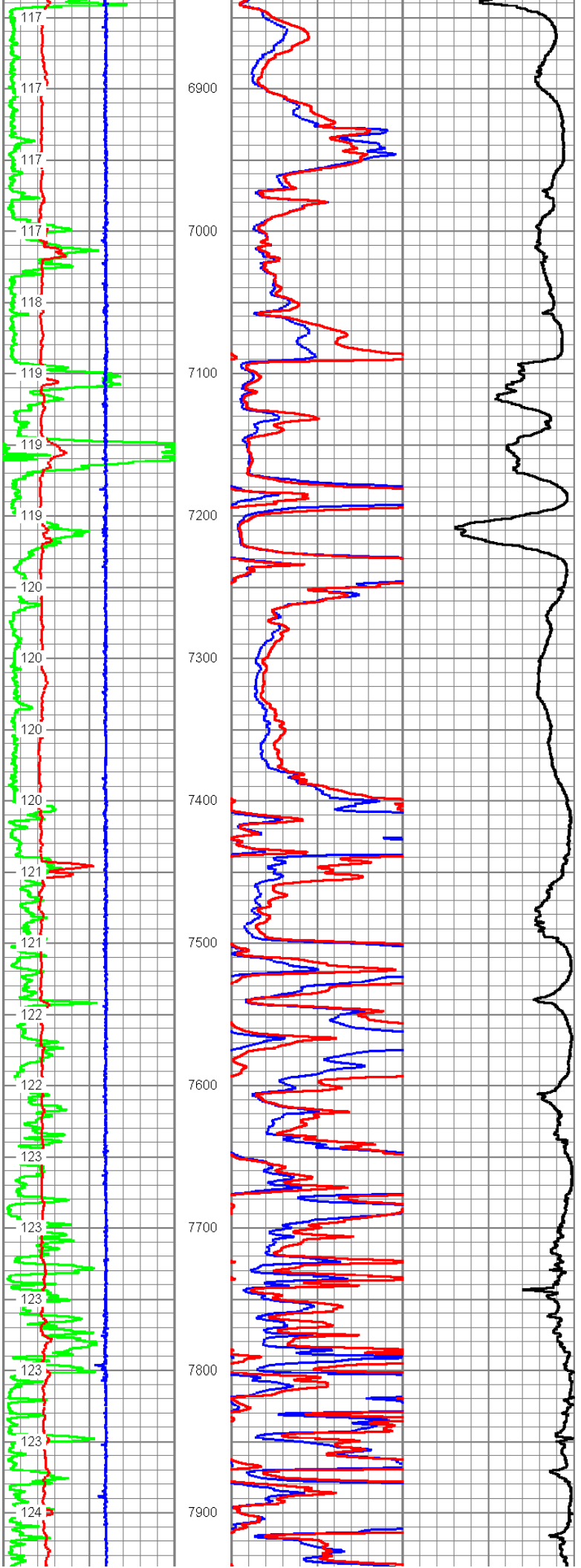
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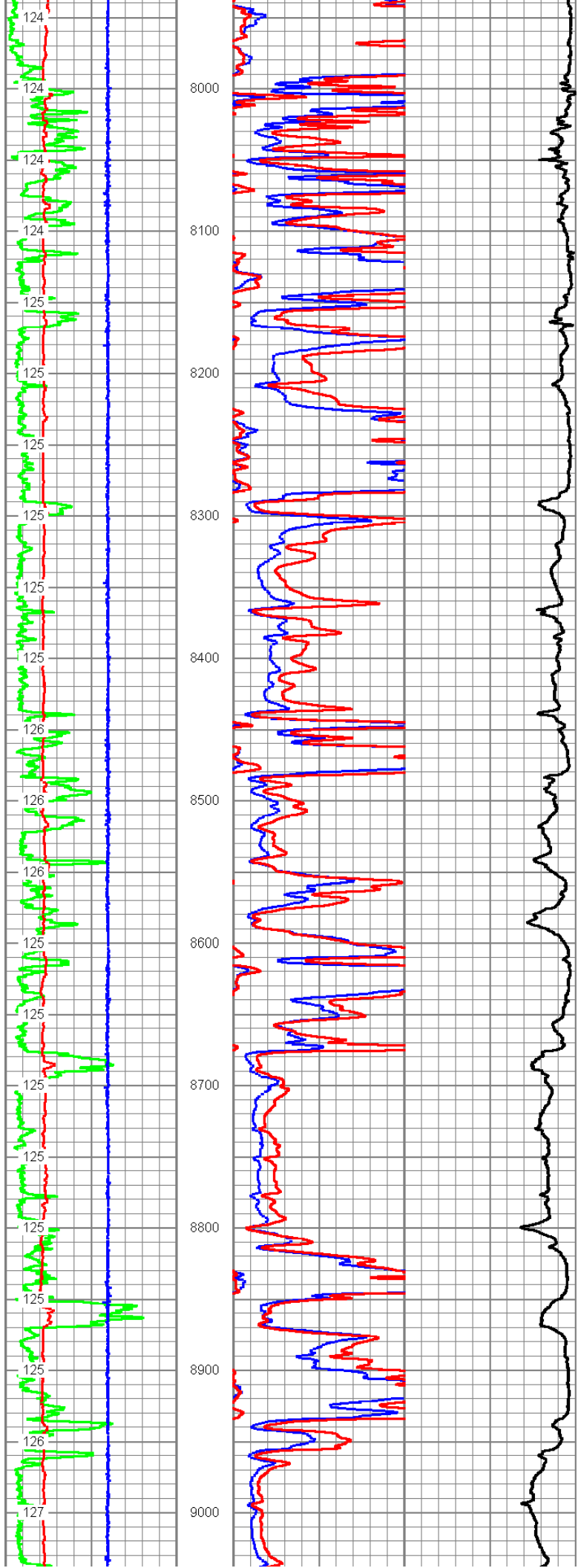
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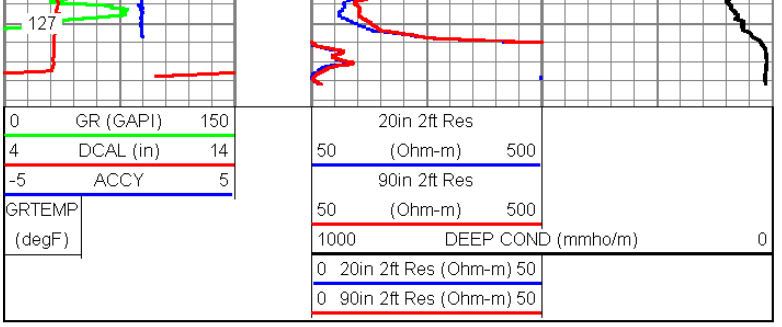

0	GR (GAPI)	150
4	DCAL (in)	14
-5	ACCY	5
GRTEMP (degF)		

	20in 2ft Res	
50	(Ohm-m)	500
	90in 2ft Res	
50	(Ohm-m)	500
1000	DEEP COND (mmho/m)	0

0	20in 2ft Res (Ohm-m)	50
0	90in 2ft Res (Ohm-m)	50