Schlumberger

Company: **SANDRIDGE ENERGY**

Well: **RANDY 3508 2−3H 1L**
Field: **BOUSE**
County: **HARPER** State: **KANSAS**

County: HARPER
Field: BOUSE
Location: 235' FSL & 1300' FWL
Well: RANDY 3508 2−3H 1L
Company: SANDRIDGE ENERGY

SPECTRAL DENSITY
DUAL SPACED NEUTRON
MEMORY LOG

LOCATION: 235' FSL & 1300' FWL

Elev.: K.B. 1283.00 ft
G.L. 1261.00 ft
D.F. 1283.00 ft

Permanent Datum: GROUND LEVEL Elev.: 1261.00 ft
Log Measured From: K.B. 22.00 ft above Perm. Datum
Drilling Measured From: K.B.

API Serial No.	Section	Township	Range
15077220850200	3	35S	8W

	Run 1	Run 2	Run 1	Run 2
Logging Date	17−Sep−2014		Logging Date	
Run Number	1		Run Number	
Depth Driller	9872 ft		Depth Driller	
Schlumberger Depth	9771 ft		Schlumberger Depth	
Bottom Log Interval	9750 ft		Bottom Log Interval	
Top Log Interval	3000 ft		Top Log Interval	
Casing Driller Size @ Depth	7.000 in @ 5334 ft	@	Casing Driller Size @ Depth	@
Casing Schlumberger	5322 ft		Casing Schlumberger	
Bit Size	6.125 in		Bit Size	
Type Fluid In Hole	WBM		Type Fluid In Hole	
MUD Density / Viscosity	8.5 lbm/gal / 32 s		MUD Density / Viscosity	
MUD Fluid Loss / PH	60 cm3 / 9		MUD Fluid Loss / PH	
MUD Source Of Sample	MUD SENSOR		MUD Source Of Sample	
RM @ Measured Temperature	2.690 ohm.m @ 65 degF	@	RM @ Measured Temperature	@
RMF @ Measured Temperature	2.290 ohm.m @ 65 degF	@	RMF @ Measured Temperature	@
RMC @ Measured Temperature	3.090 ohm.m @ 65 degF	@	RMC @ Measured Temperature	@
Source RMF / RMC	CALCULATED / CALCULATED		Source RMF / RMC	
RM @ MRT / RMF @ MRT	1.315 @ 140 / 1.120 @ 140	@ / @	RM @ MRT / RMF @ MRT	@ / @
Maximum Recorded Temperatures	140 degF		Maximum Recorded Temperatures	
Circulation Stopped / Time	16−Sep−2014 / 23:42		Circulation Stopped / Time	
Logger On Bottom / Time	17−Sep−2014 / 0:22		Logger On Bottom / Time	
Unit Number / Location	5 / OKC		Unit Number / Location	
Recorded By	C.PARKER		Recorded By	
Witnessed By	J.BIAA		Witnessed By	

Run 3

Run 4

DISCLAIMER

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

OTHER SERVICES1	OTHER SERVICES2
OS1: TBI−TBD−TBN−TMG	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
SERVICE:HORIZONTAL PUMP DOWN MEMORY BIT DEPTH: 9705' LOGGED TO: 3000'	
ALL SCALES AND PRESENTATIONS PER CLIENT REQUEST	
LIMESTONE MATRIX 2.71 g/cc USED FOR POROSITY MEASUREMENTS	
TOOLSTRING RAN WITH SWIVEL AND SMALL DE−CENTRALIZE	
TBHV REPRESENTS TOTAL BOREHOLE VOLUME, ft3	
ABHV REPRESENTS ANNULAR HOLE COLUME, CALCULATED FOR 4.5" CSG, ft3	
HSPM USED TO ACQUIRE LOG DEPTH	
LOG CORRELATED TO MWD GR	
RIG:LATSHAW 27	
CREW: C.PARKER R.CRESSWELL R.WILSON	

RUN 1		RUN 2	
SERVICE ORDER #:	3245	SERVICE ORDER #:	
PROGRAM VERSION:	19C2−270	PROGRAM VERSION:	
FLUID LEVEL:	0 ft	FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1

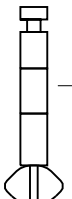
SURFACE EQUIPMENT

WITM (ThruBit)

DOWNHOLE EQUIPMENT

TBT−A 67.1
THEAD
CCL
BDOT−B 14
THOT 29
T10_1
TBAT1 13
TBAT2 35

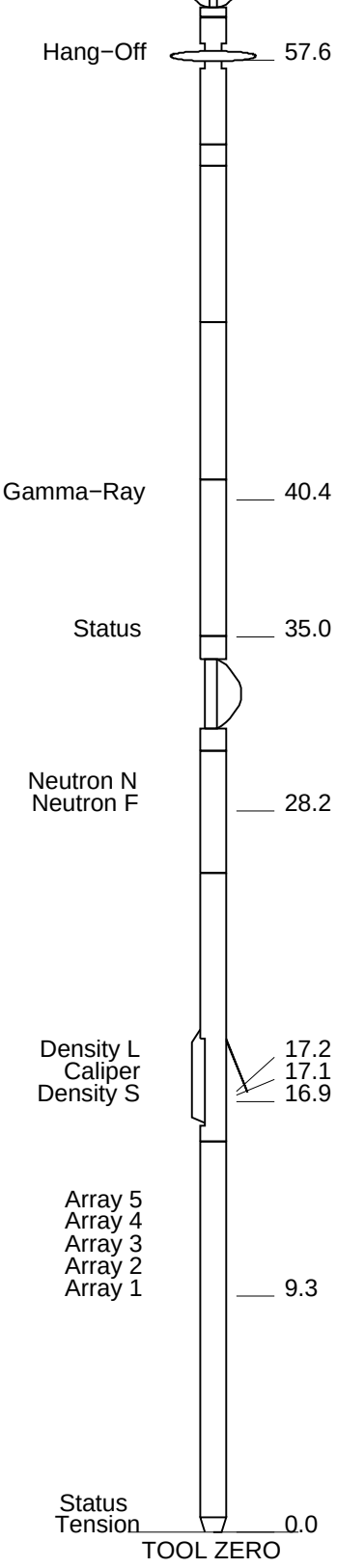
CCL



64.2

RUN 2

TMG−A 24
TILE−A
TBN−A 6
NNLS−EWA 4484
TBD−A 46
GGLS−FZ 3216
TBI−A 19



MAXIMUM STRING DIAMETER 2.13 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Schlumberger

MAIN PASS

MAXIS Field Log

Company: SANDRIDGE ENERGY **Well: RANDY 3508 2−3H 1L**

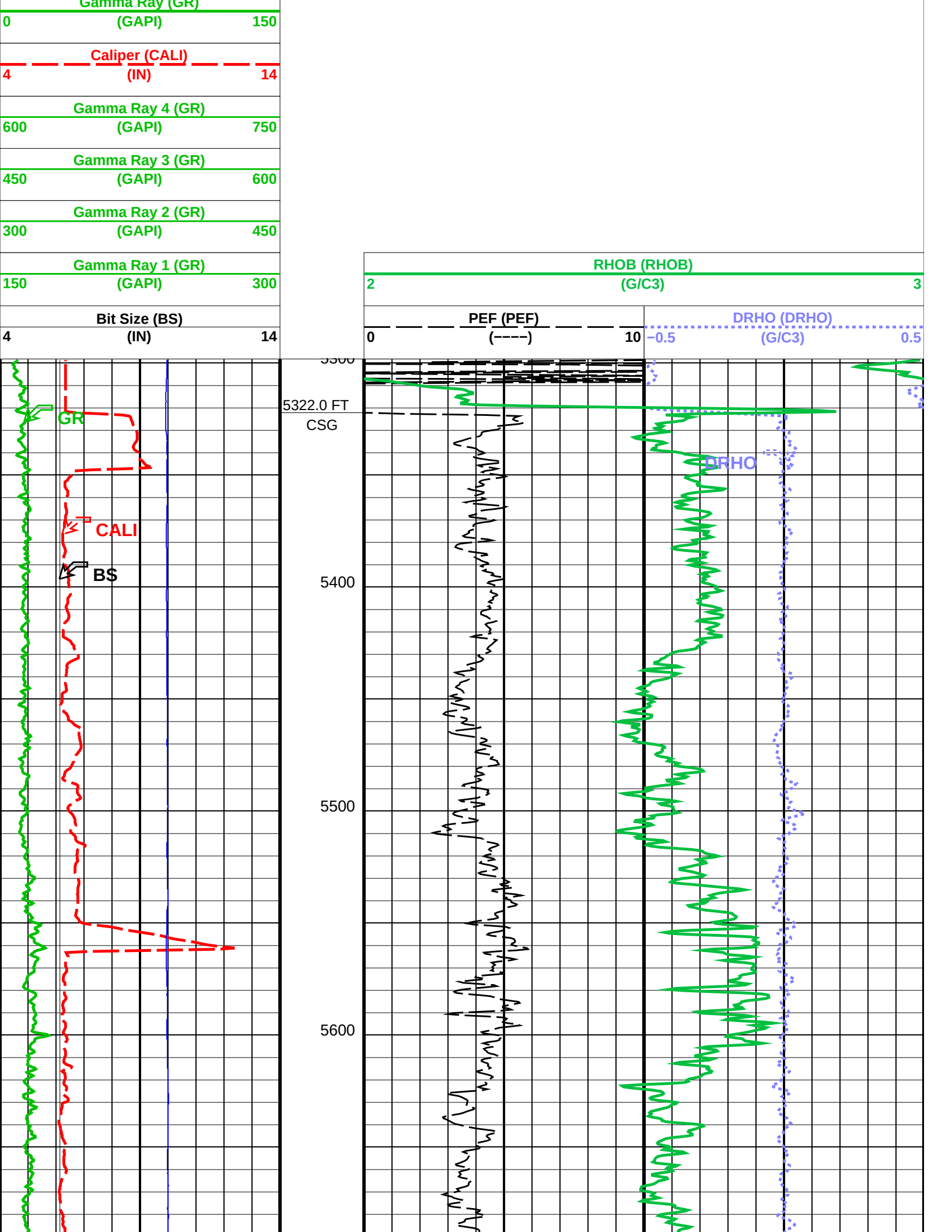
Input DLIS Files

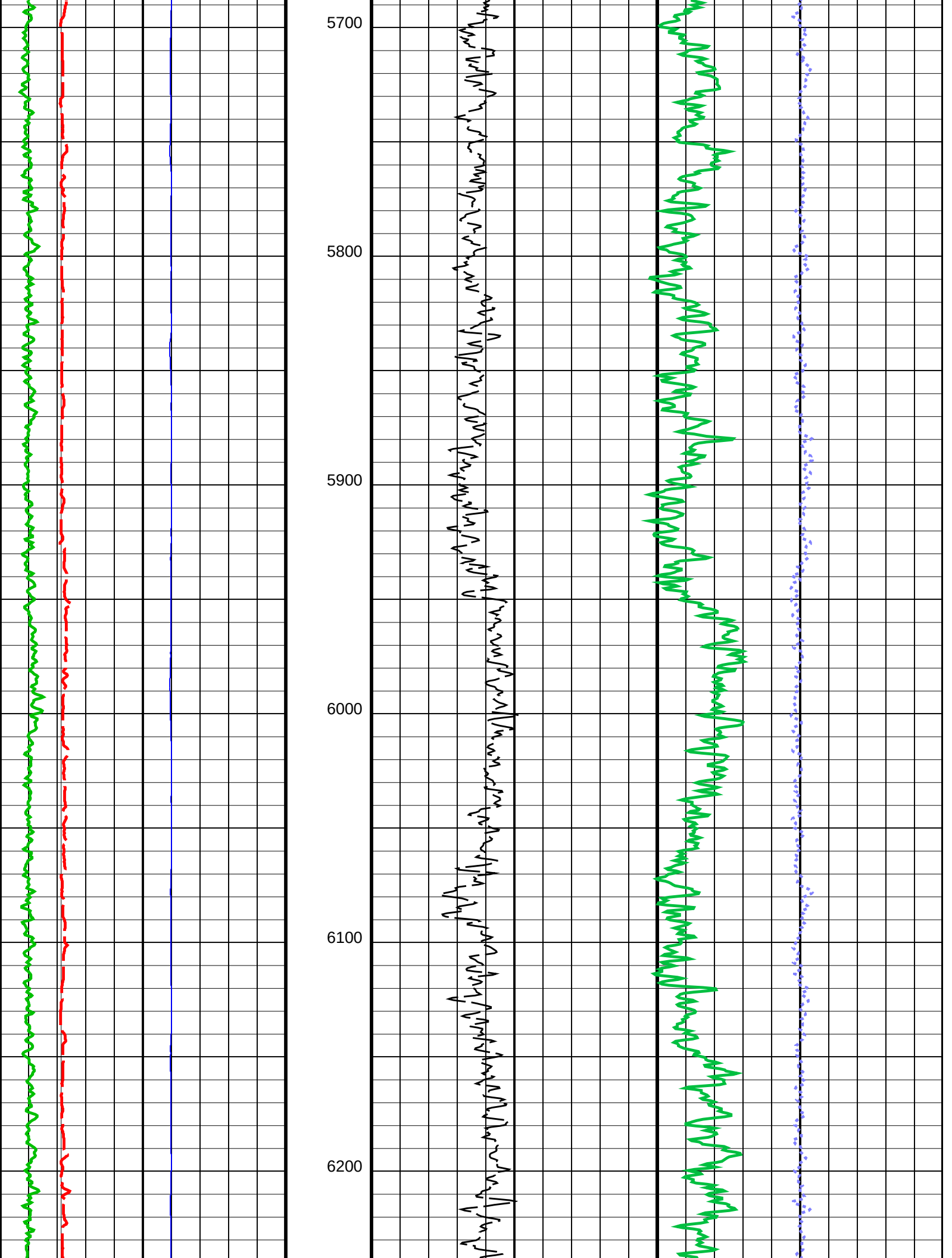
ThruBit_003PUP	FN:2	17−Sep−2014 06:46	9765.0 FT	2970.0 FT

OP System Version: 19C2−270

TBT **SRPC−5303−ThruBit**

	Relative Bearing (RB)
	0 (DEG) 940
gr wrap4 From LHT1 to GR4	
gr wrap3 From LHT1 to GR3	
gr wrap2 From LHT1 to GR2	
gr wrap1 From LHT1 to GR1	
Gamma Ray (GR)	


Gamma Ray (GR)
0
(GAPI)
150
Caliper (CALI)
4
(IN)
14
Gamma Ray 4 (GR)
600
(GAPI)
750
Gamma Ray 3 (GR)
450
(GAPI)
600
Gamma Ray 2 (GR)
300
(GAPI)
450
Gamma Ray 1 (GR)
150
(GAPI)
300
Bit Size (BS)
4
(IN)
14
RHOB (RHOB)
2
(G/C3)
3
PEF (PEF)
0
(----)
10
DRHO (DRHO)
−0.5
(G/C3)
0.5
GR
CALI
BS
5322.0 FT
CSG
DRHO
5400
5500
5600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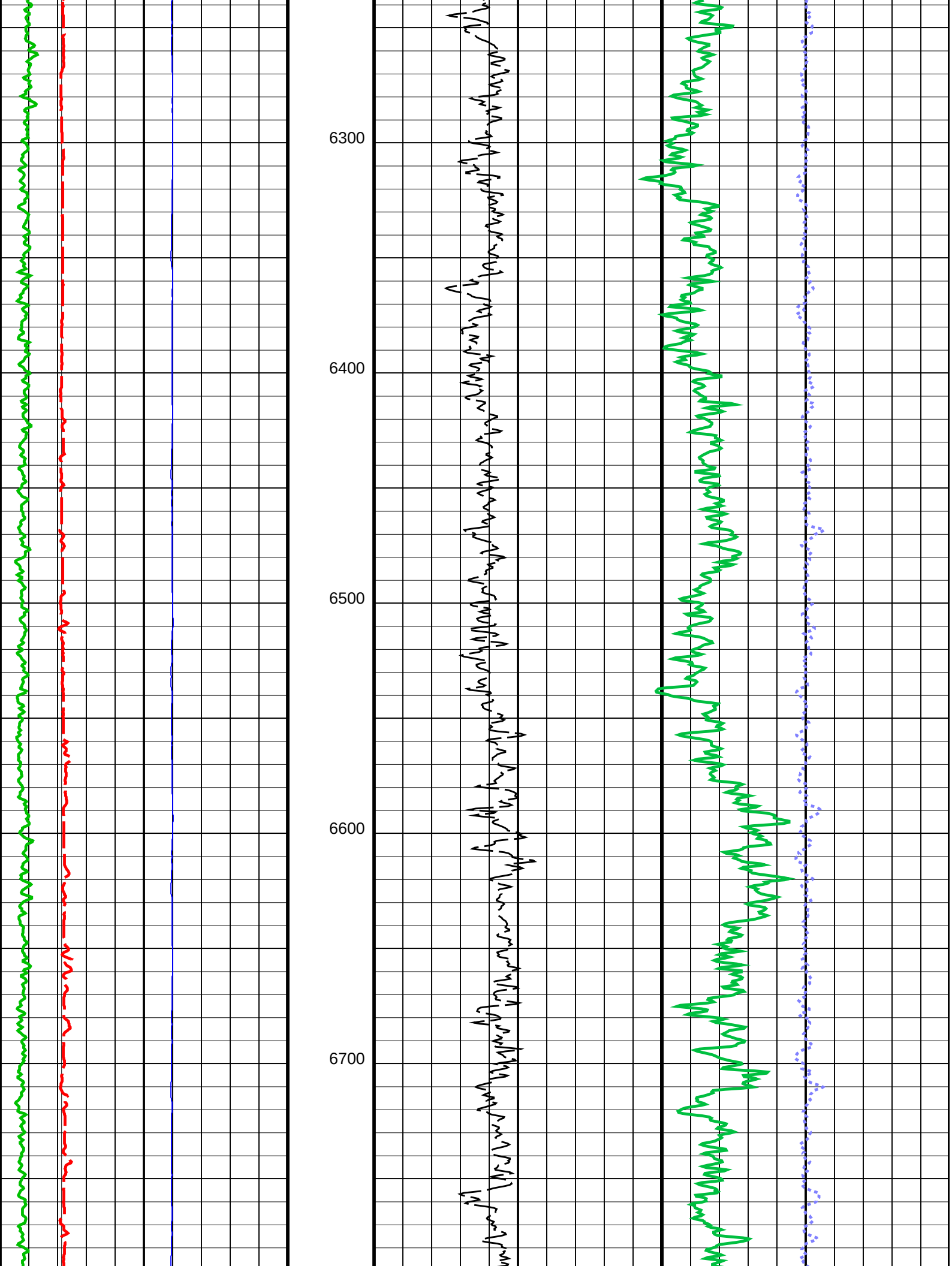
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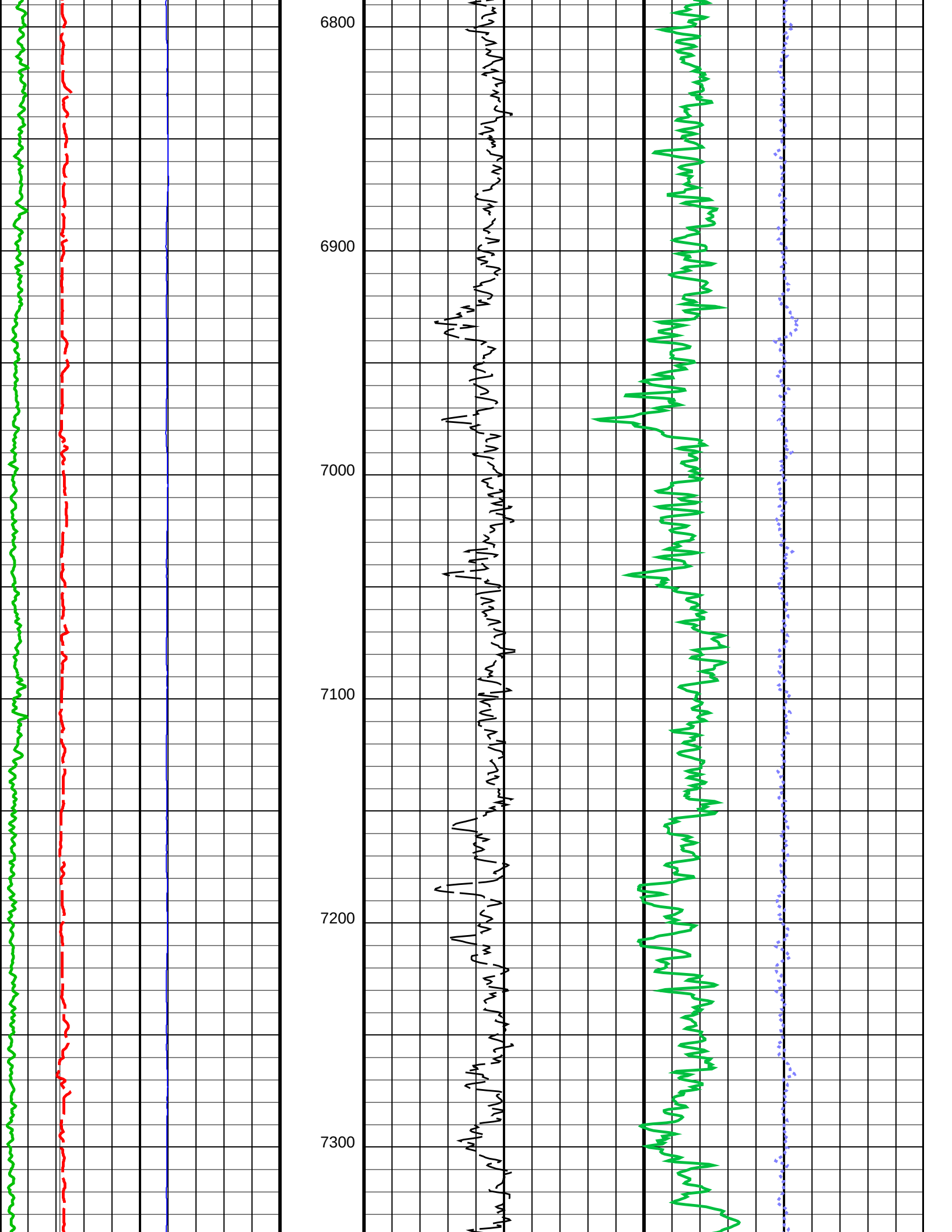
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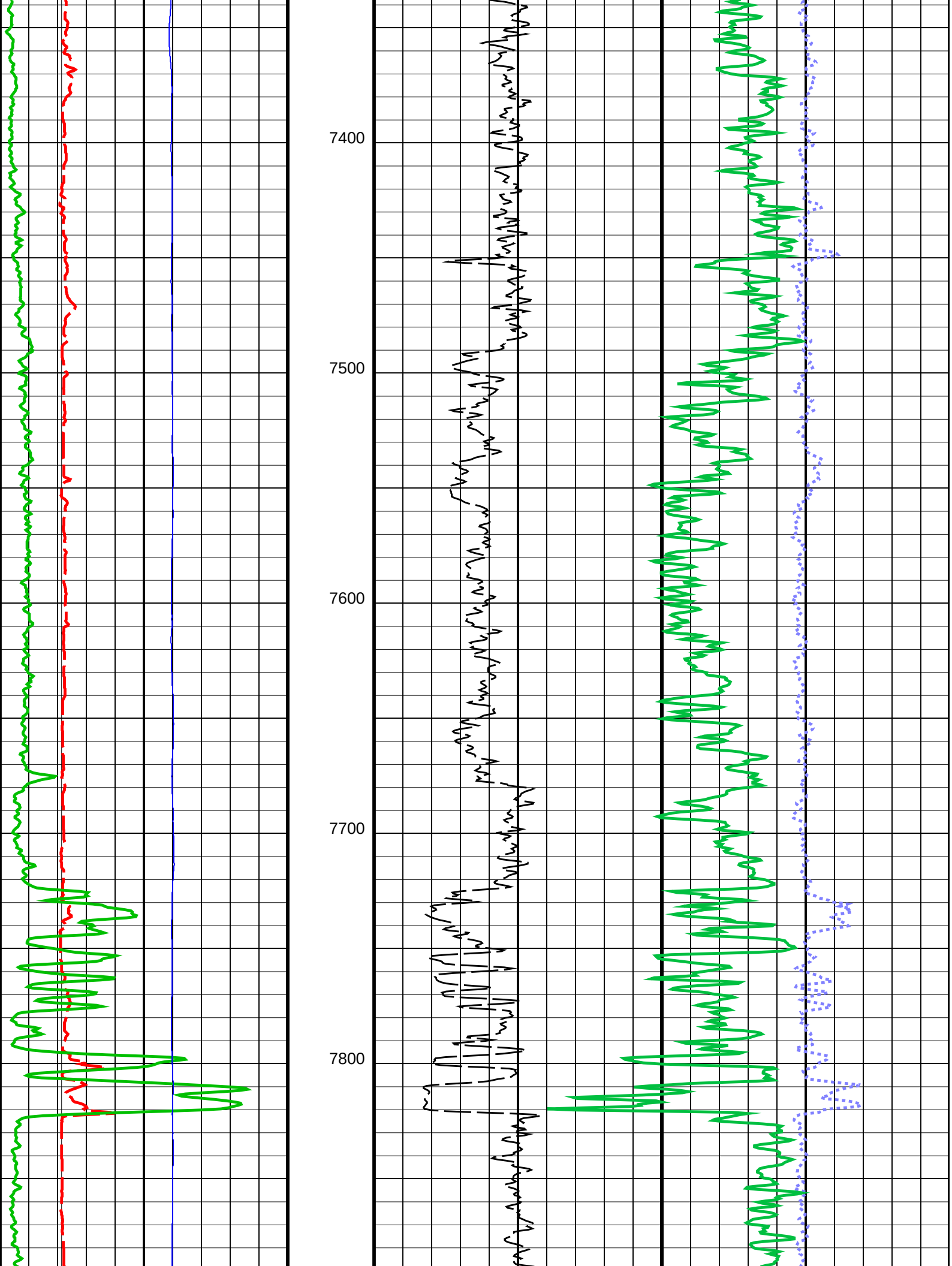
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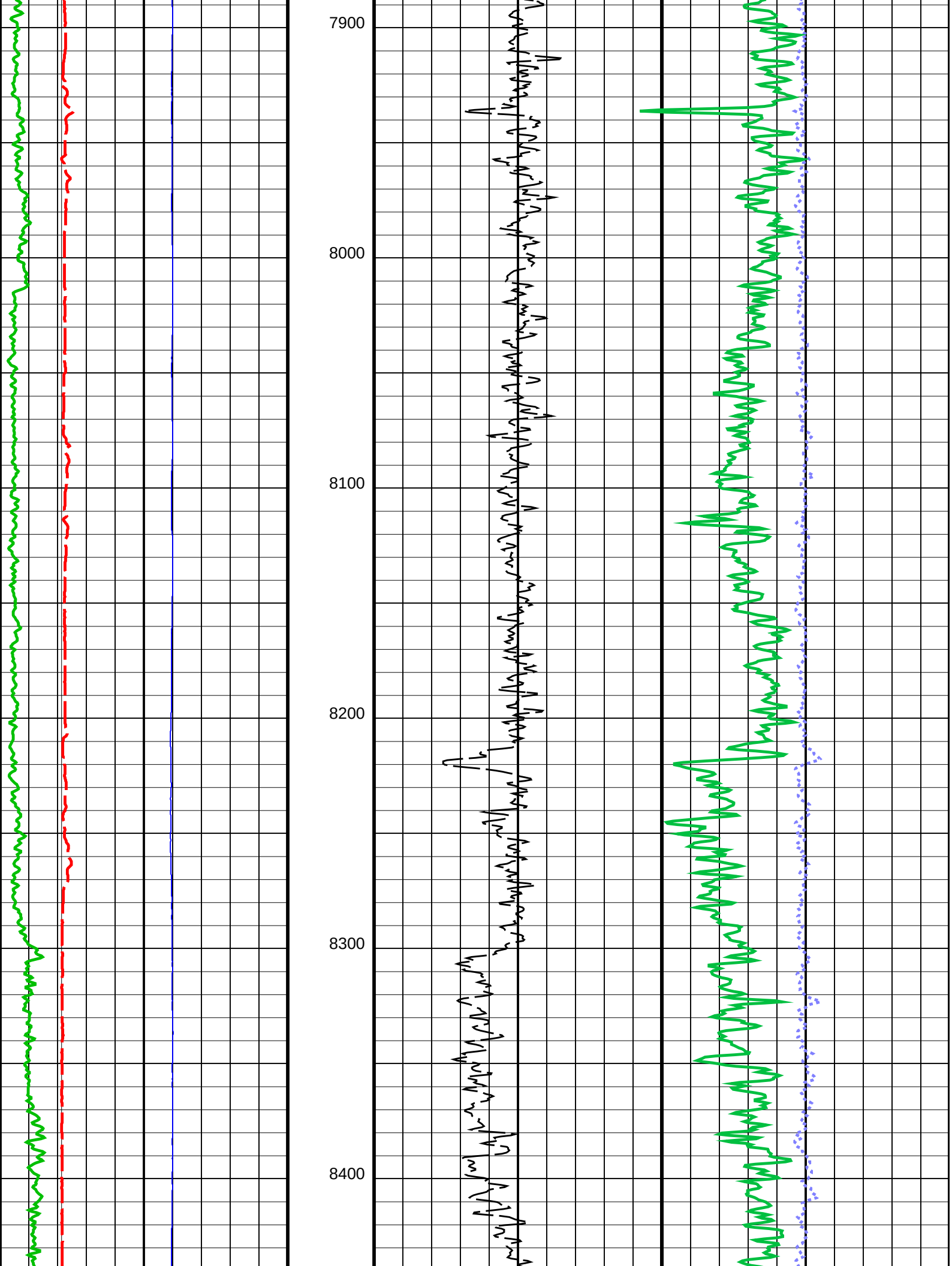
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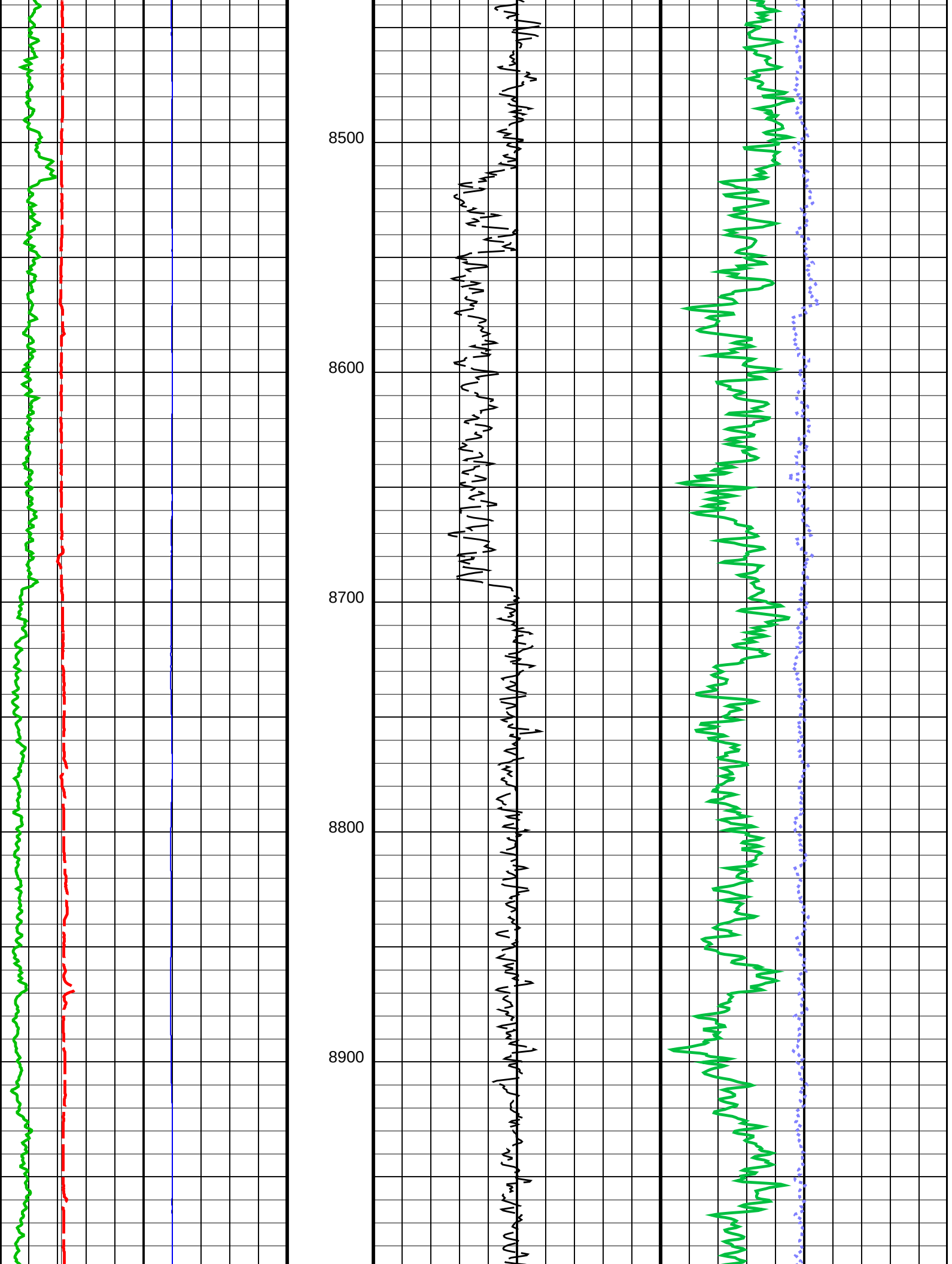
8400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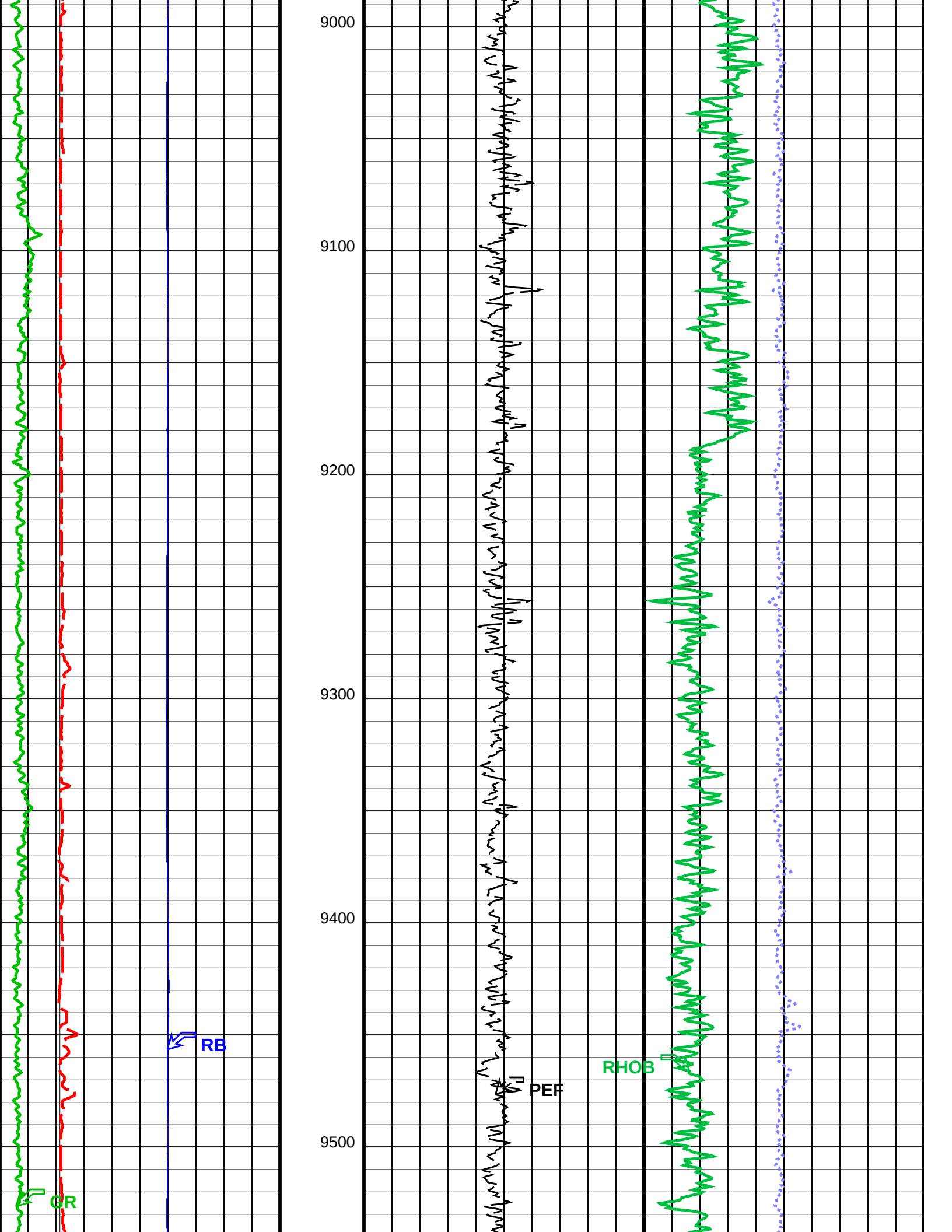
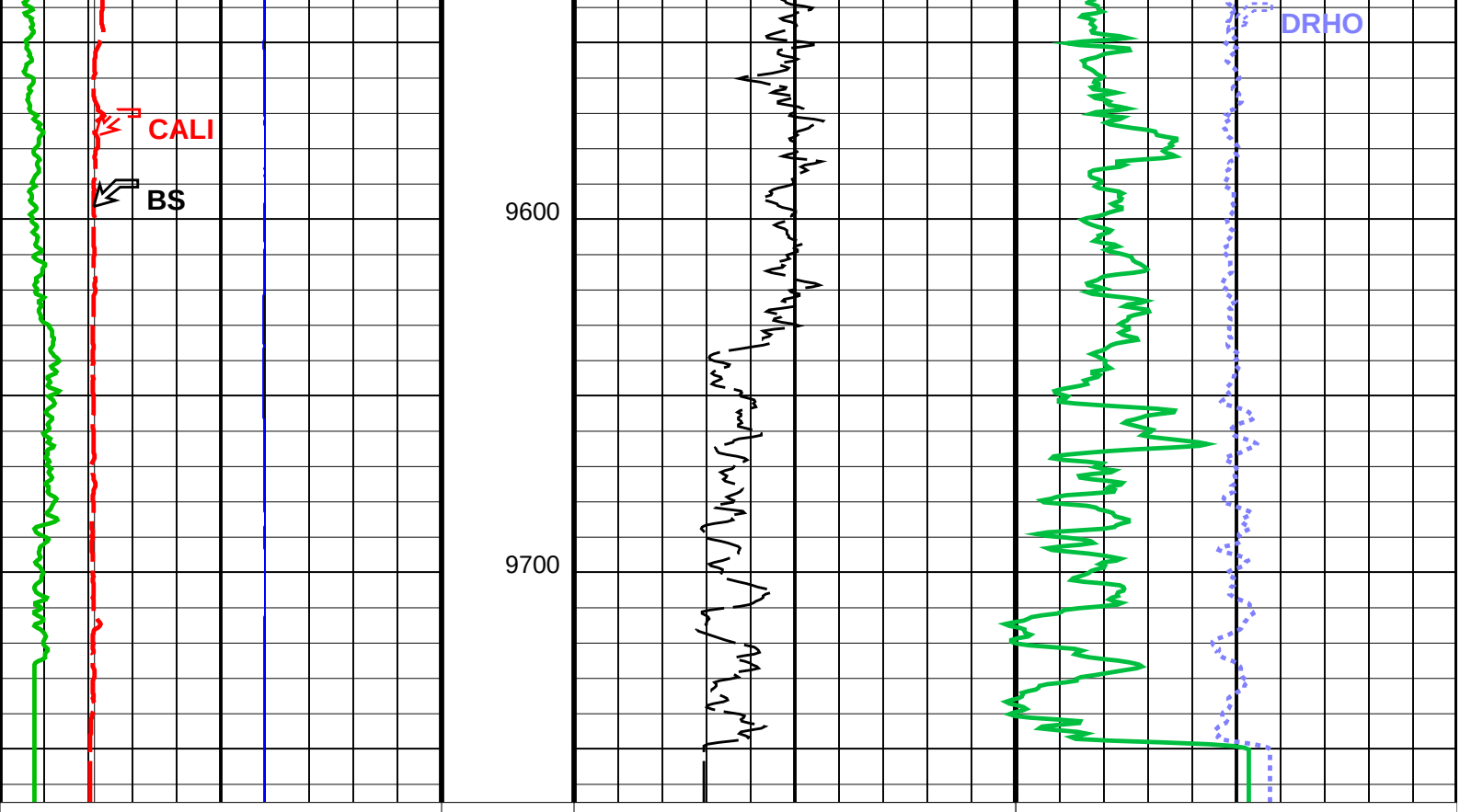
8900


9000
9100
9200
9300
9400
9500
RB
GR
PEF
RHOB



Bit Size (BS)		
4	(IN)	14

Gamma Ray 1 (GR)		
150	(GAPI)	300

Gamma Ray 2 (GR)		
300	(GAPI)	450

Gamma Ray 3 (GR)		
450	(GAPI)	600

Gamma Ray 4 (GR)		
600	(GAPI)	750

Caliper (CALI)		
4	(IN)	14

Gamma Ray (GR)		
0	(GAPI)	150

gr wrap1
From LHT1 to GR1

gr wrap2
From LHT1 to GR2

gr wrap3
From LHT1 to GR3

gr wrap4
From LHT1 to GR4

Relative Bearing (RB)		
0	(DEG)	940

PEF (PEF)		
0	(----)	10

DRHO (DRHO)		
−0.5	(G/C3)	0.5

RHOB (RHOB)		
2	(G/C3)	3

Parameters

DLIS Name	Description	Value

DLIS Name	Description	Value	
	TBT−A: ThruBit String		
DHC	Density Hole Correction	CALIPER	
RB_OFFSET	Additional RB offset (degrees)	0.000	deg
TBD_CAL_BLOCK	TBD Calibration Block Type	THRUBIT	
TBD_SPIKE_REJECT	TBD Spike Detection Option	CORRECT	
TBD_SPIKE_THRESHOLD	TBD Attenuation Change Threshold for Spike Detection	5.000	%
WMUD	Mud Weight	8.500	lbm/gal
	System and Miscellaneous		
BS	Bit Size	6.125	in

Format: TB_2INCH_NUCLEAR Vertical Scale: 2" per 100' Graphics File Created: 17−Sep−2014 06:54

OP System Version: 19C2−270

TBT SRPC−5303−ThruBit

Input DLIS Files

ThruBit_003PUP FN:2 17−Sep−2014 06:46 9765.0 FT 2970.0 FT

Schlumberger

MAIN PASS

MAXIS Field Log

Company: SANDRIDGE ENERGY Well: RANDY 3508 2−3H 1L

Input DLIS Files

ThruBit_003PUP FN:2 17−Sep−2014 06:46 9765.0 FT 2970.0 FT

OP System Version: 19C2−270

TBT SRPC−5303−ThruBit

PIP SUMMARY

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

Relative Bearing (RB)

0 (DEG) 940

gr wrap4 From LHT1 to GR4

gr wrap3 From LHT1 to GR3

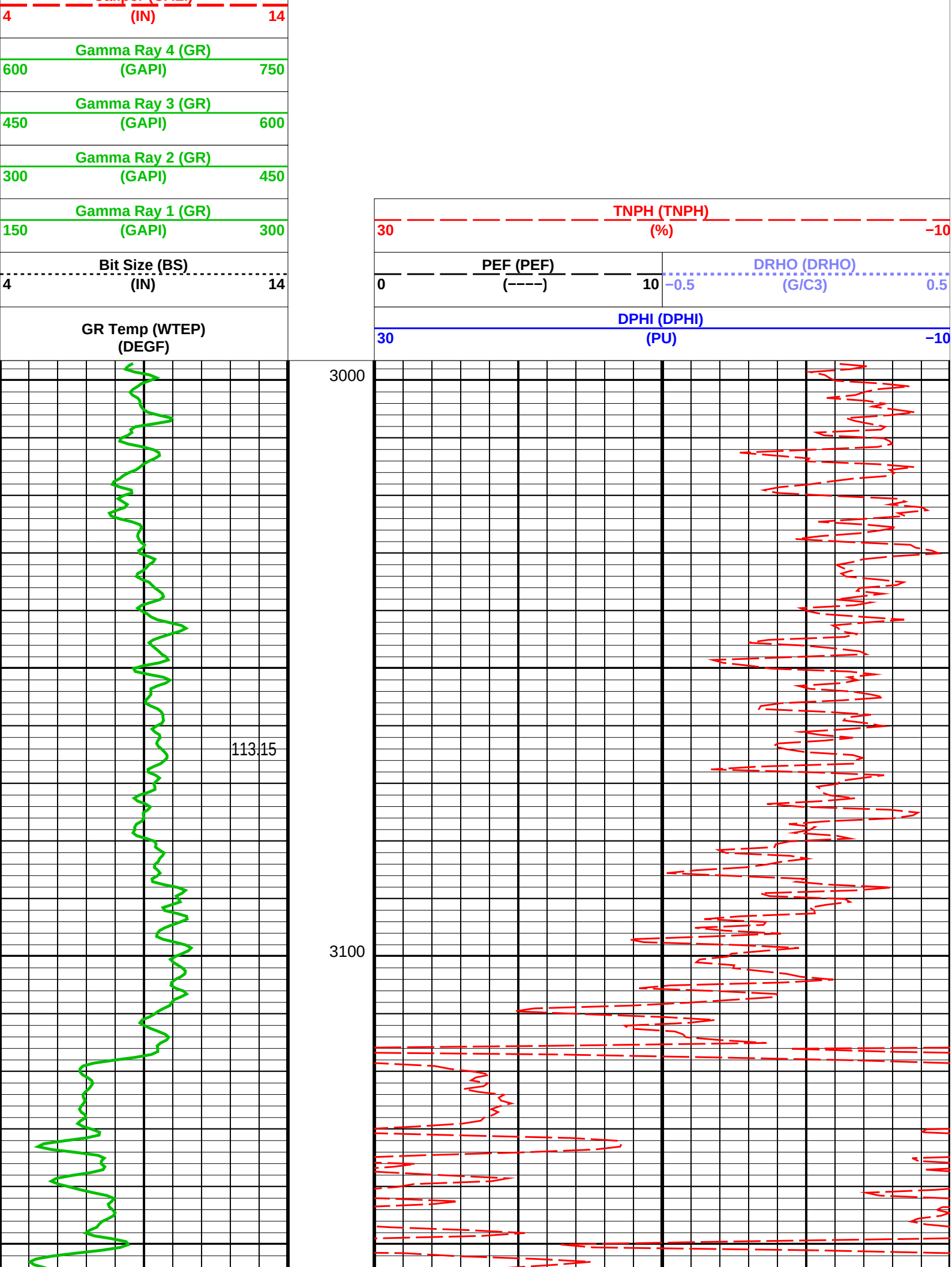
gr wrap2 From LHT1 to GR2

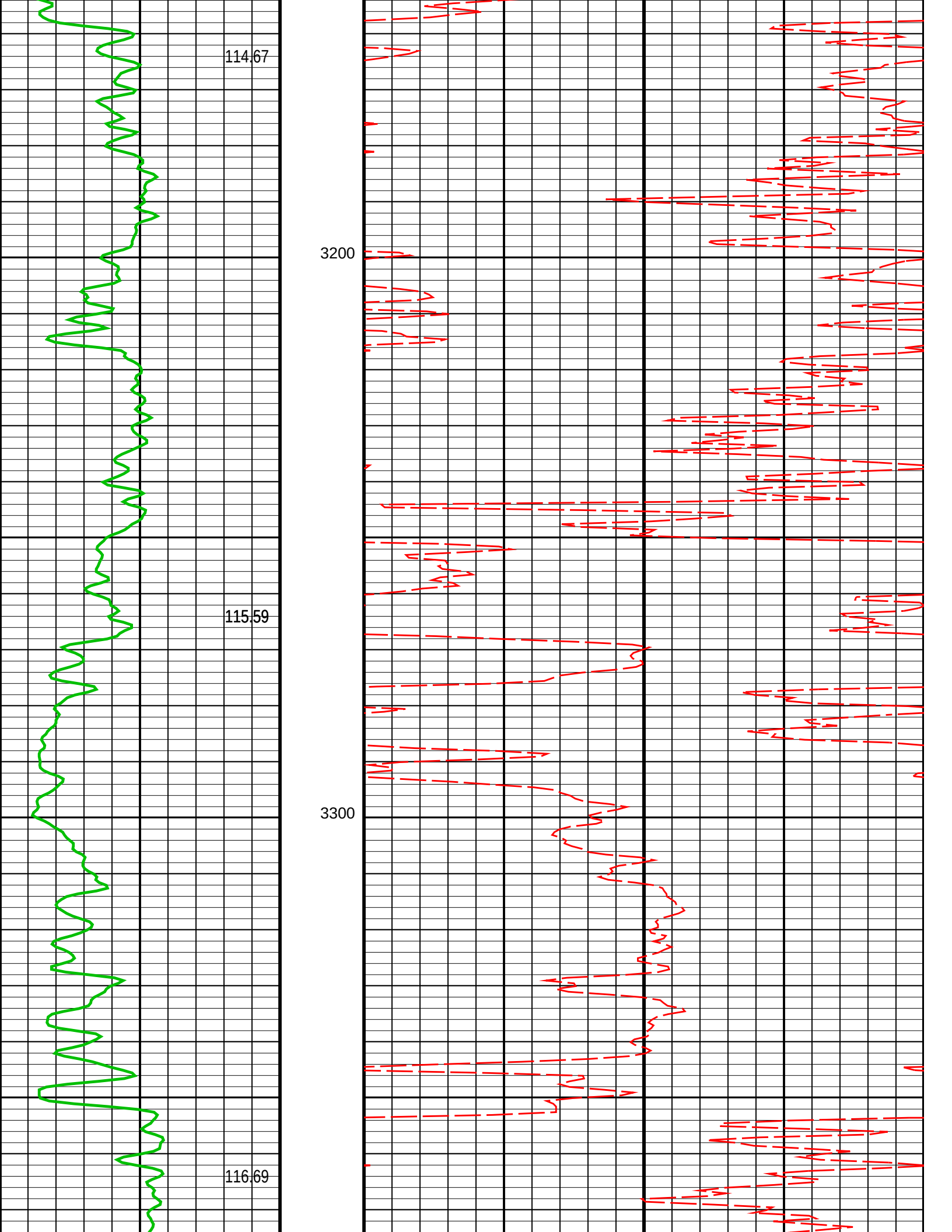
gr wrap1 From LHT1 to GR1

Gamma Ray (GR)

0 (GAPI) 150

Caliper (CALI)


4
(IN)
14
Gamma Ray 4 (GR)
600
(GAPI)
750
Gamma Ray 3 (GR)
450
(GAPI)
600
Gamma Ray 2 (GR)
300
(GAPI)
450
Gamma Ray 1 (GR)
150
(GAPI)
300
Bit Size (BS)
4
(IN)
14
GR Temp (WTEP)
(DEGF)
TNPH (TNPH)
30
(%)
−10
PEF (PEF)
0
(−−−−)
10
DRHO (DRHO)
−0.5
(G/C3)
0.5
DPHI (DPHI)
30
(PU)
−10
3000
113.15
3100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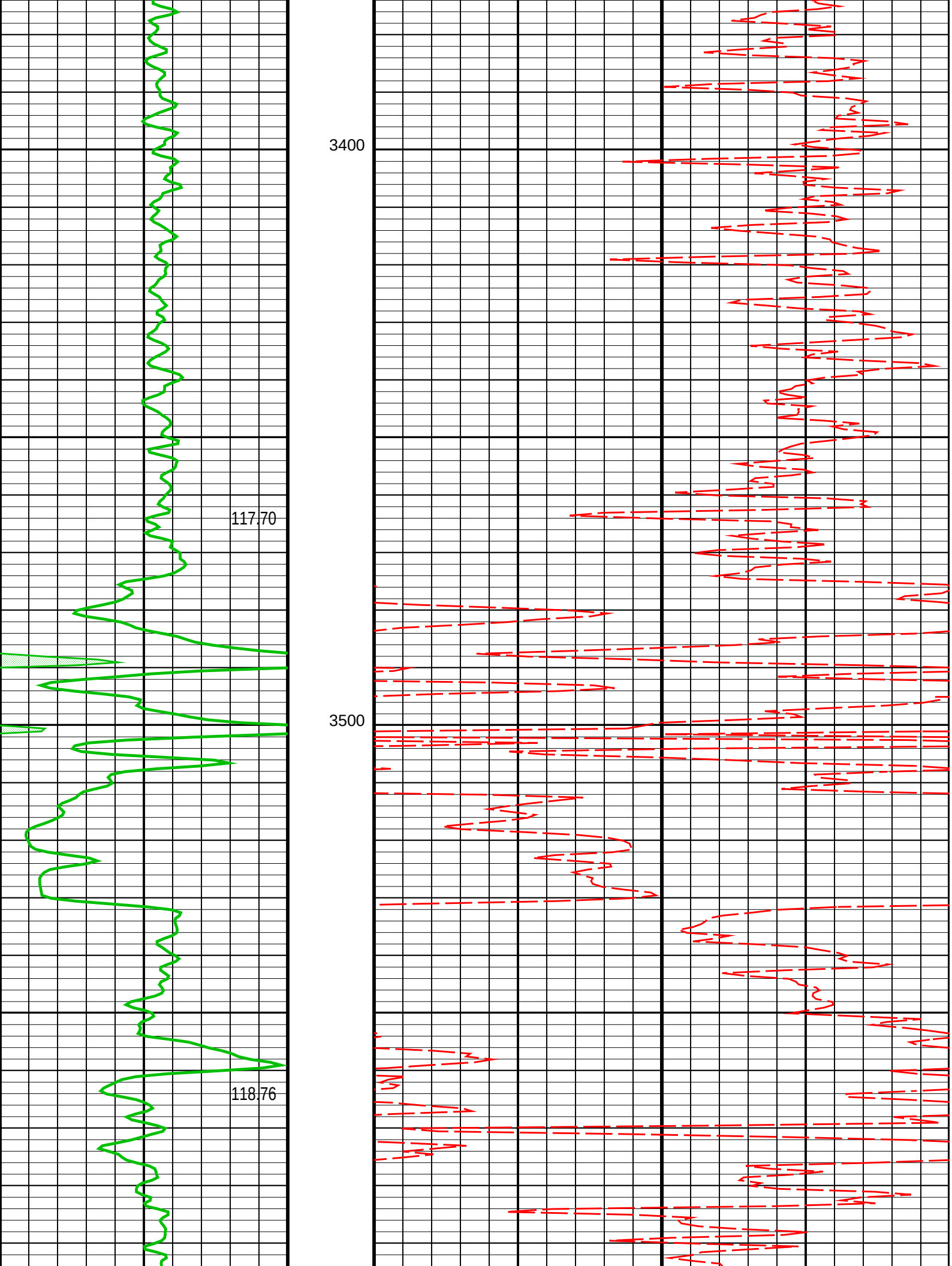
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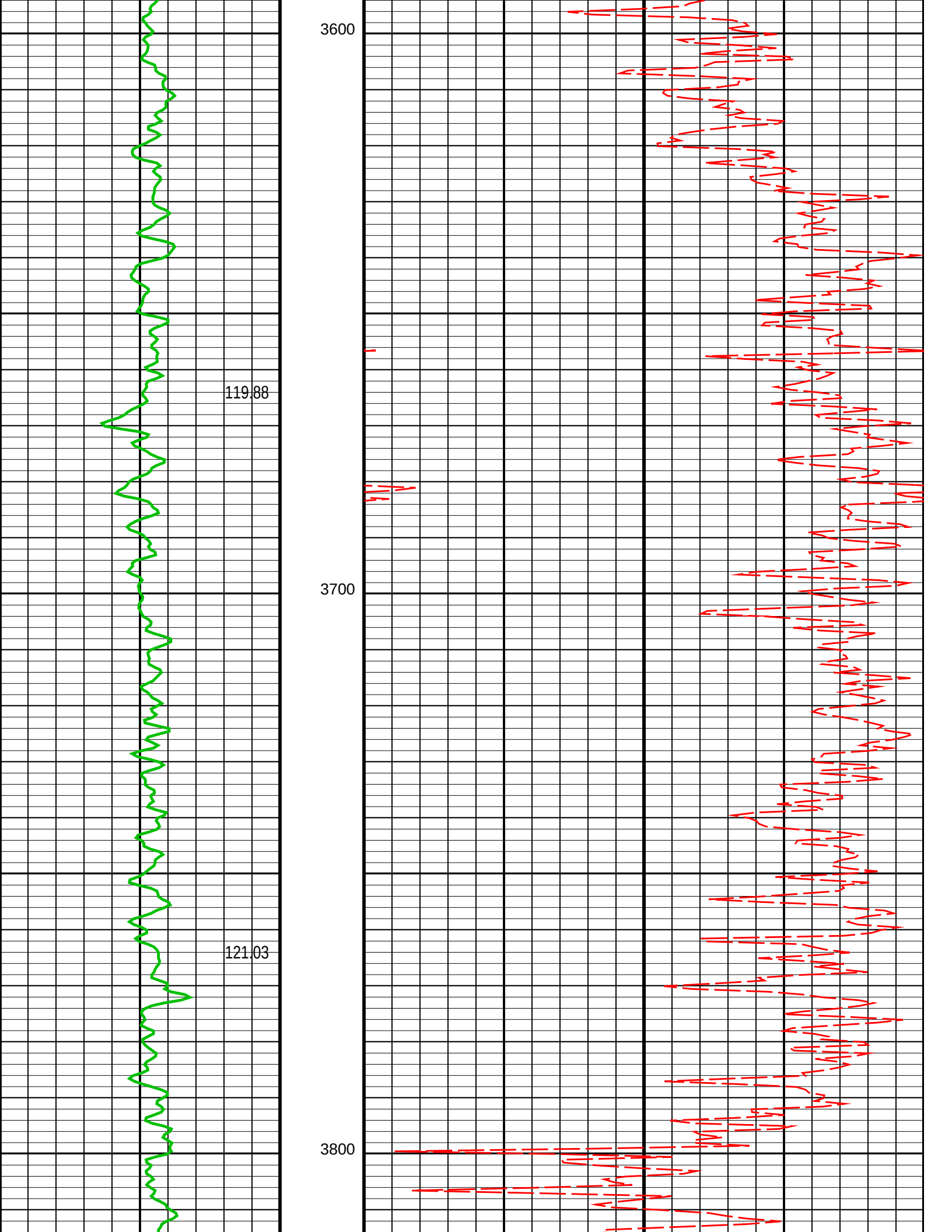
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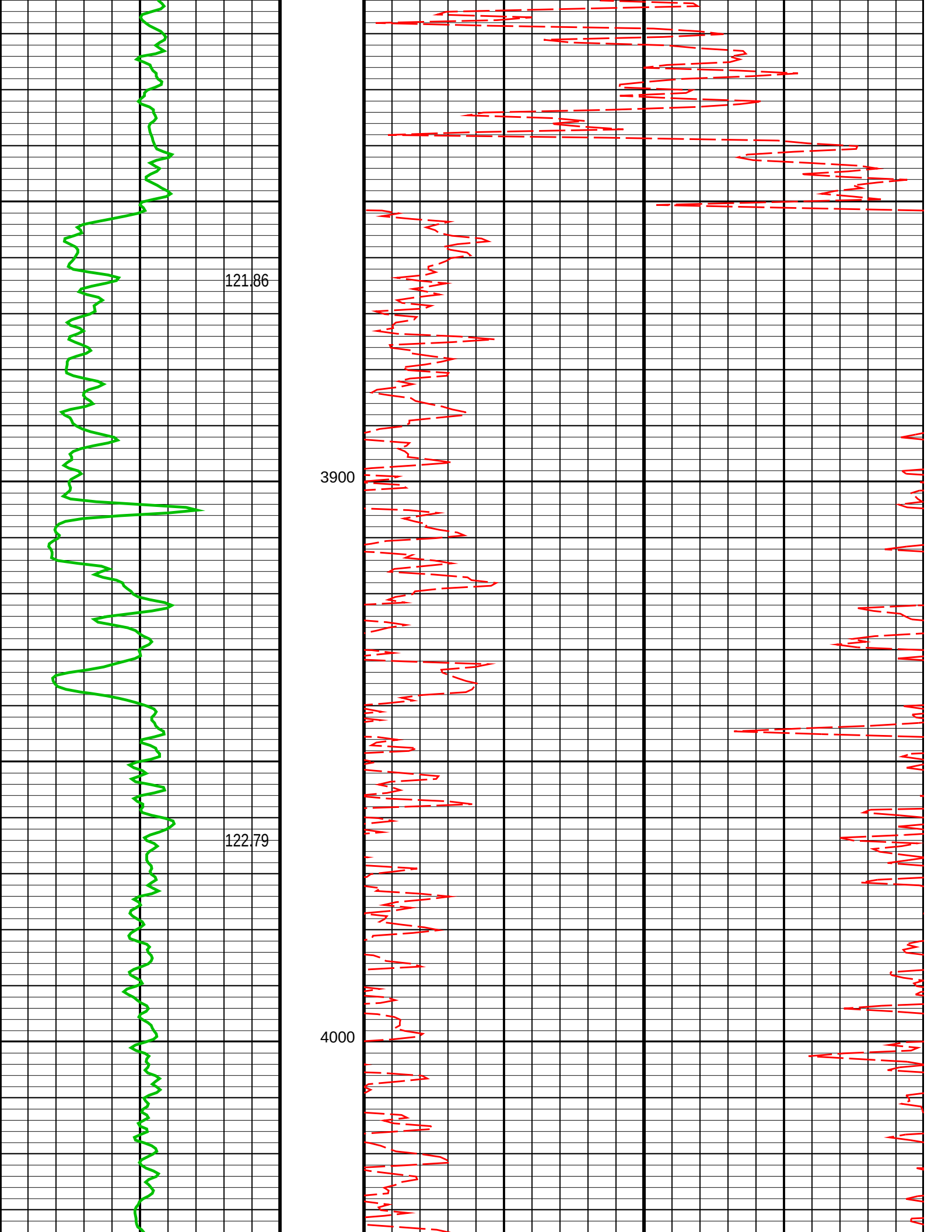
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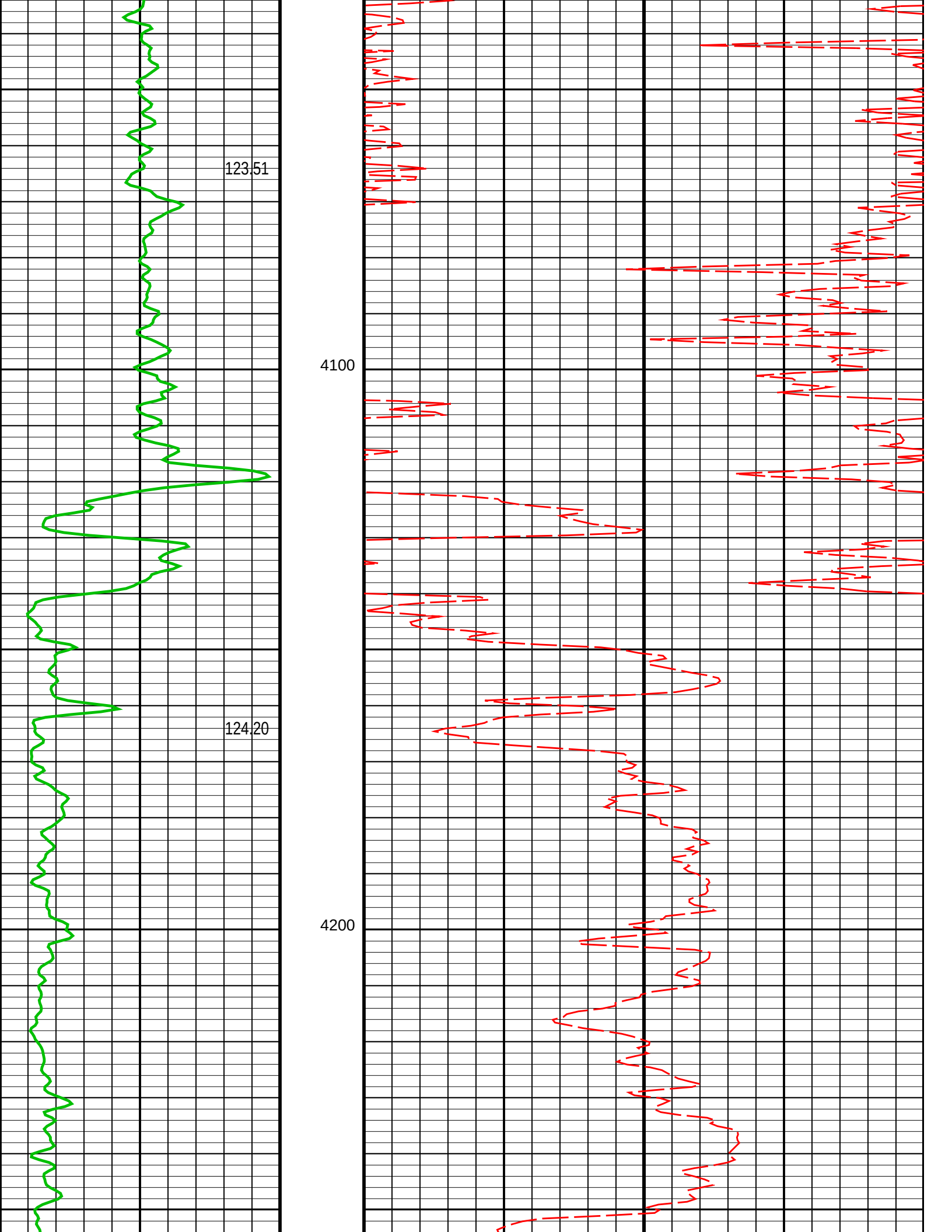
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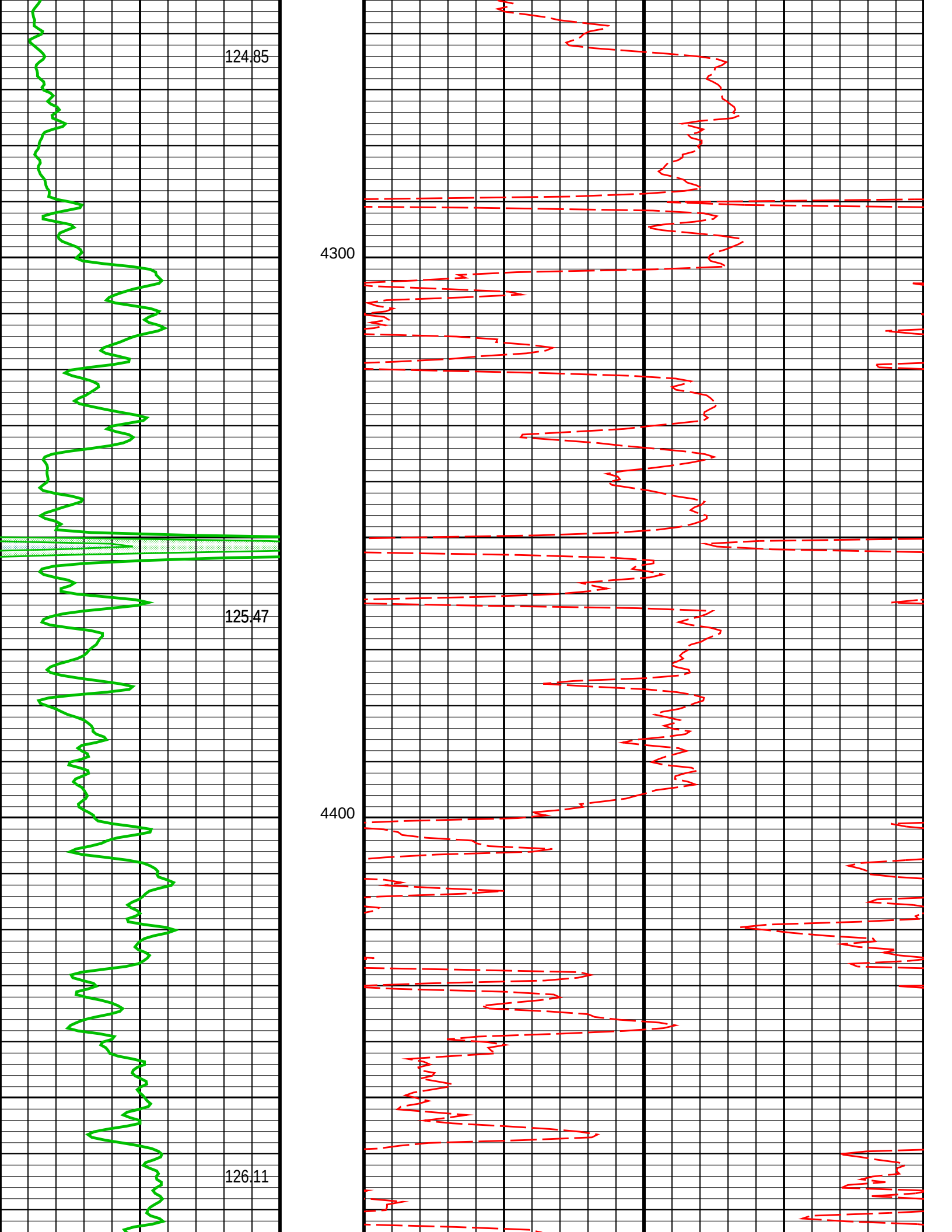
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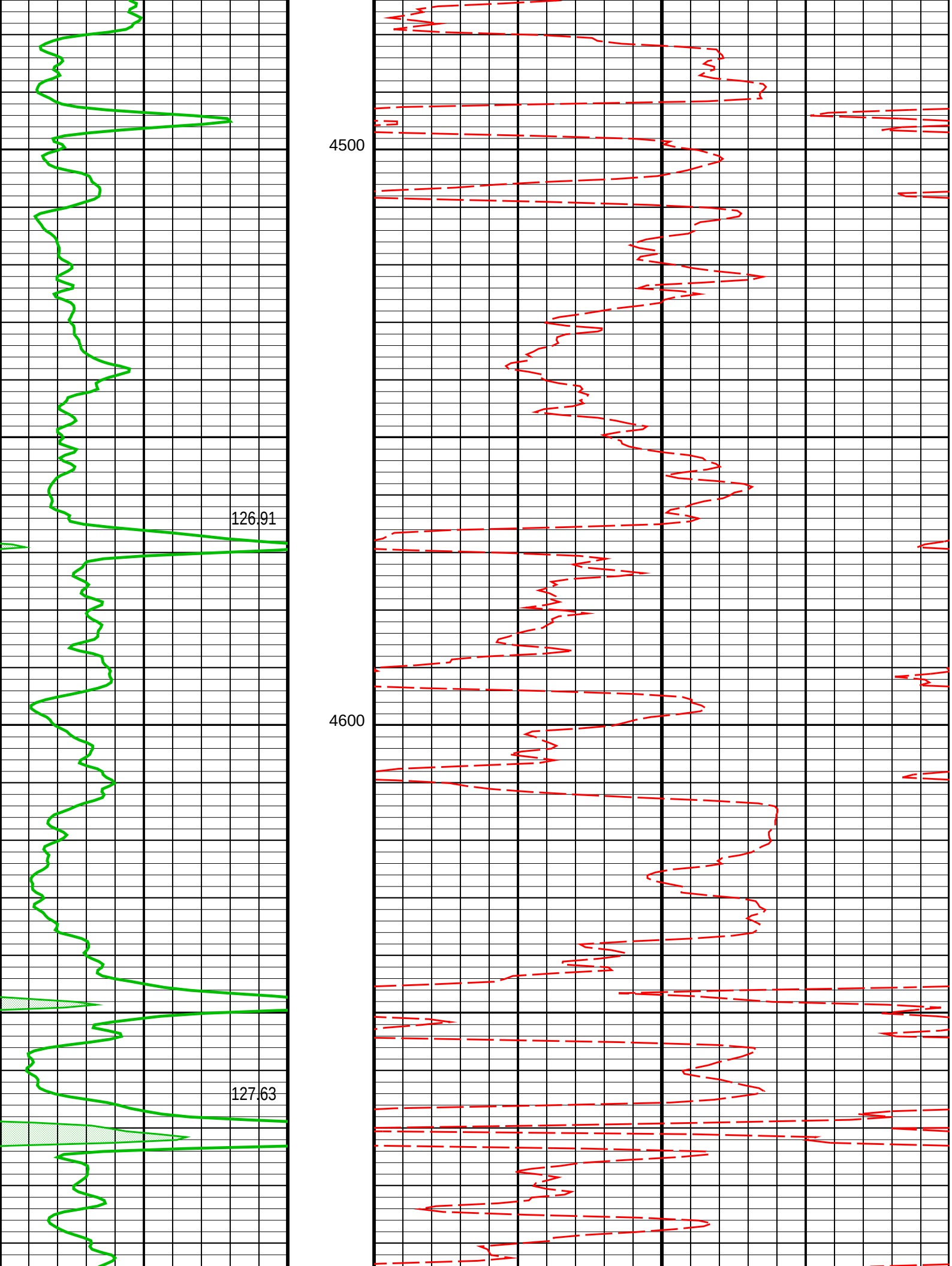
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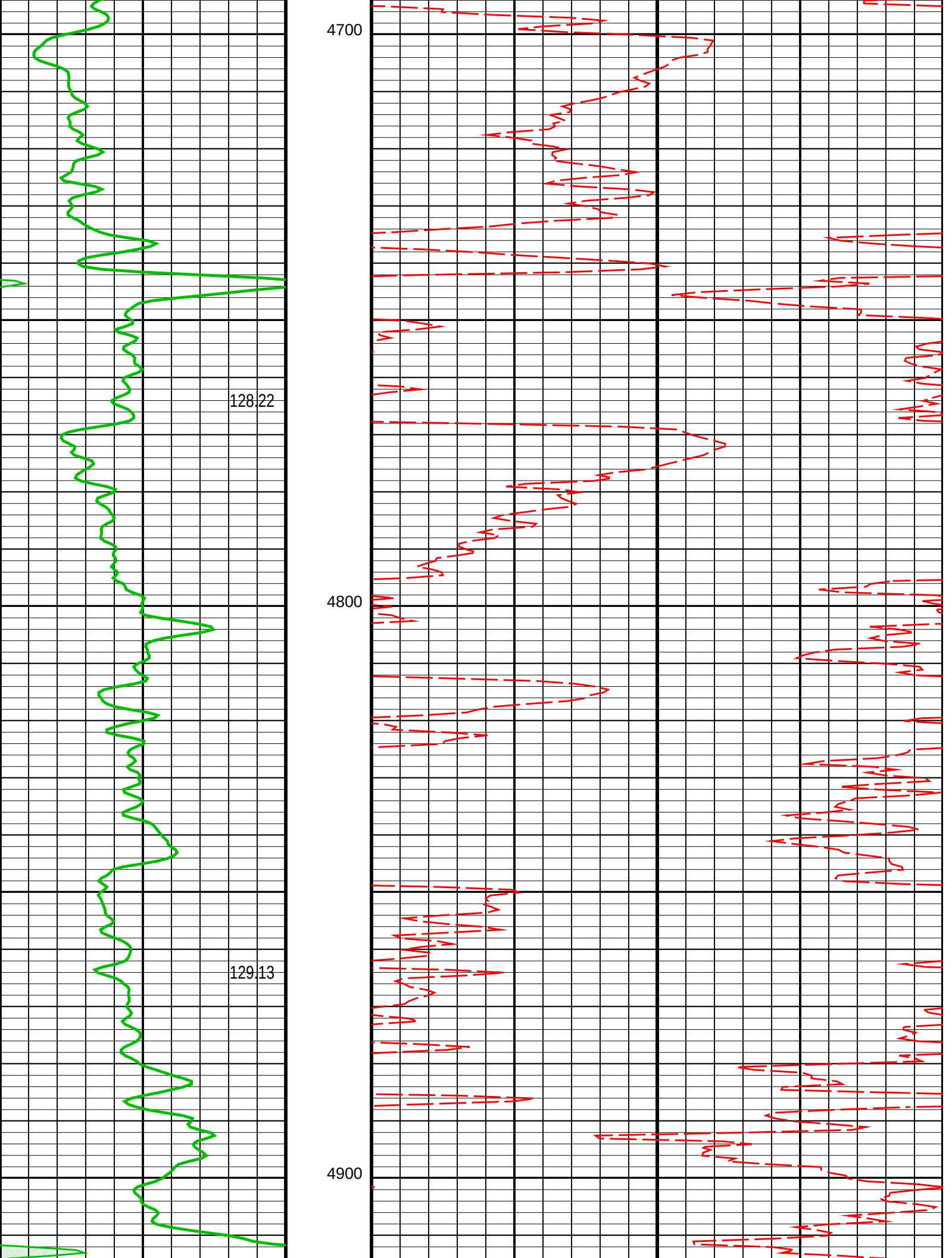
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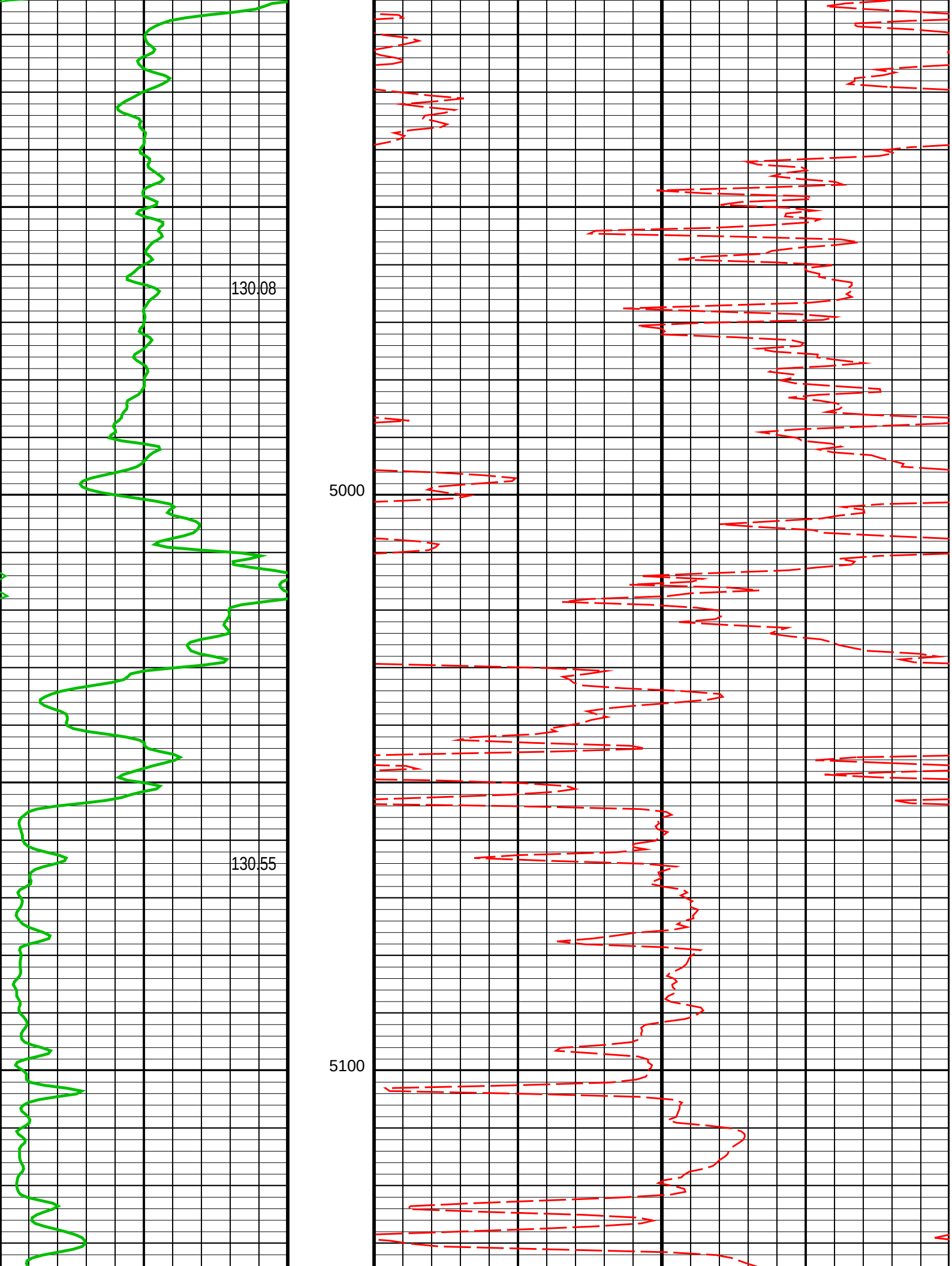
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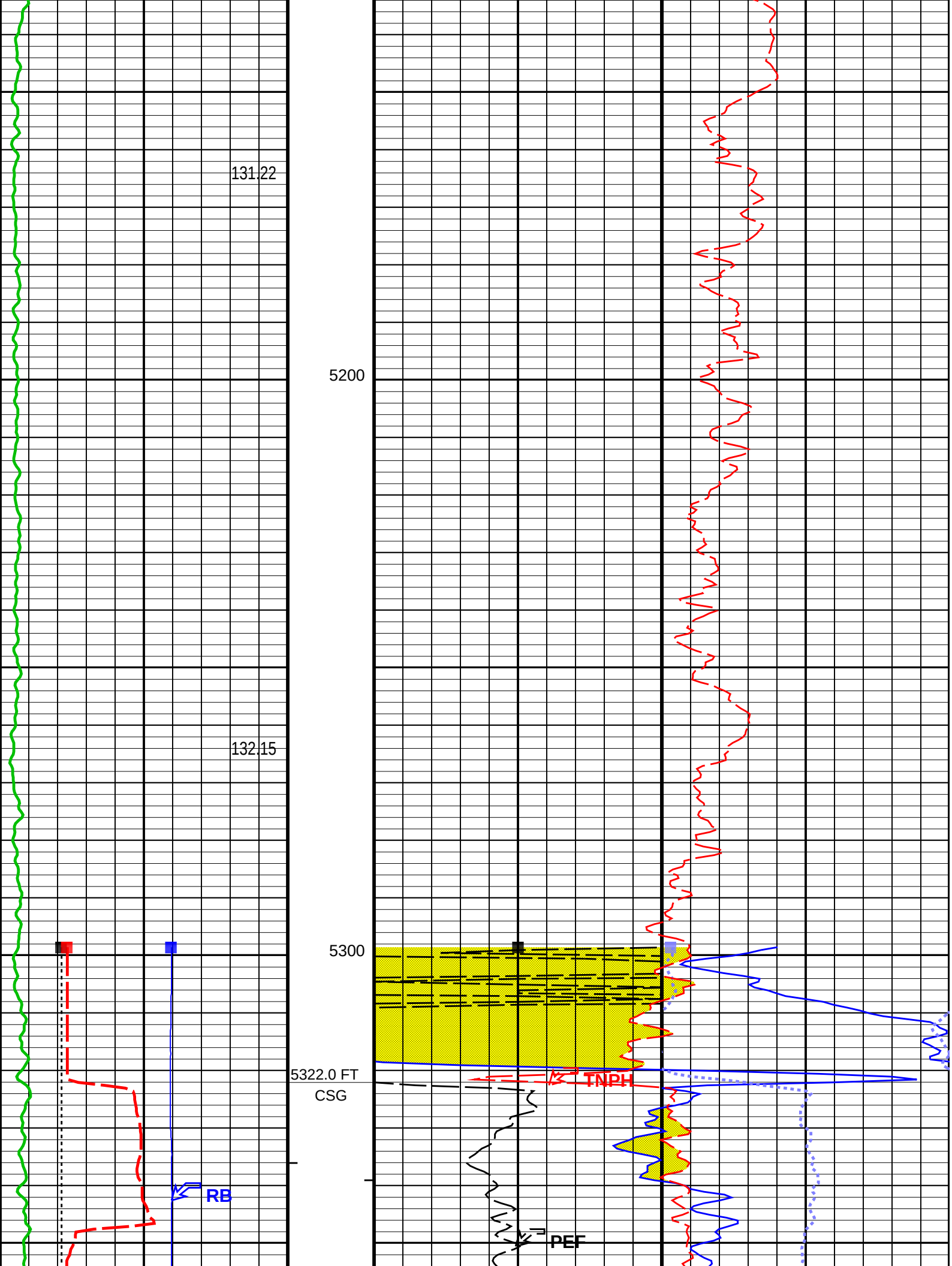
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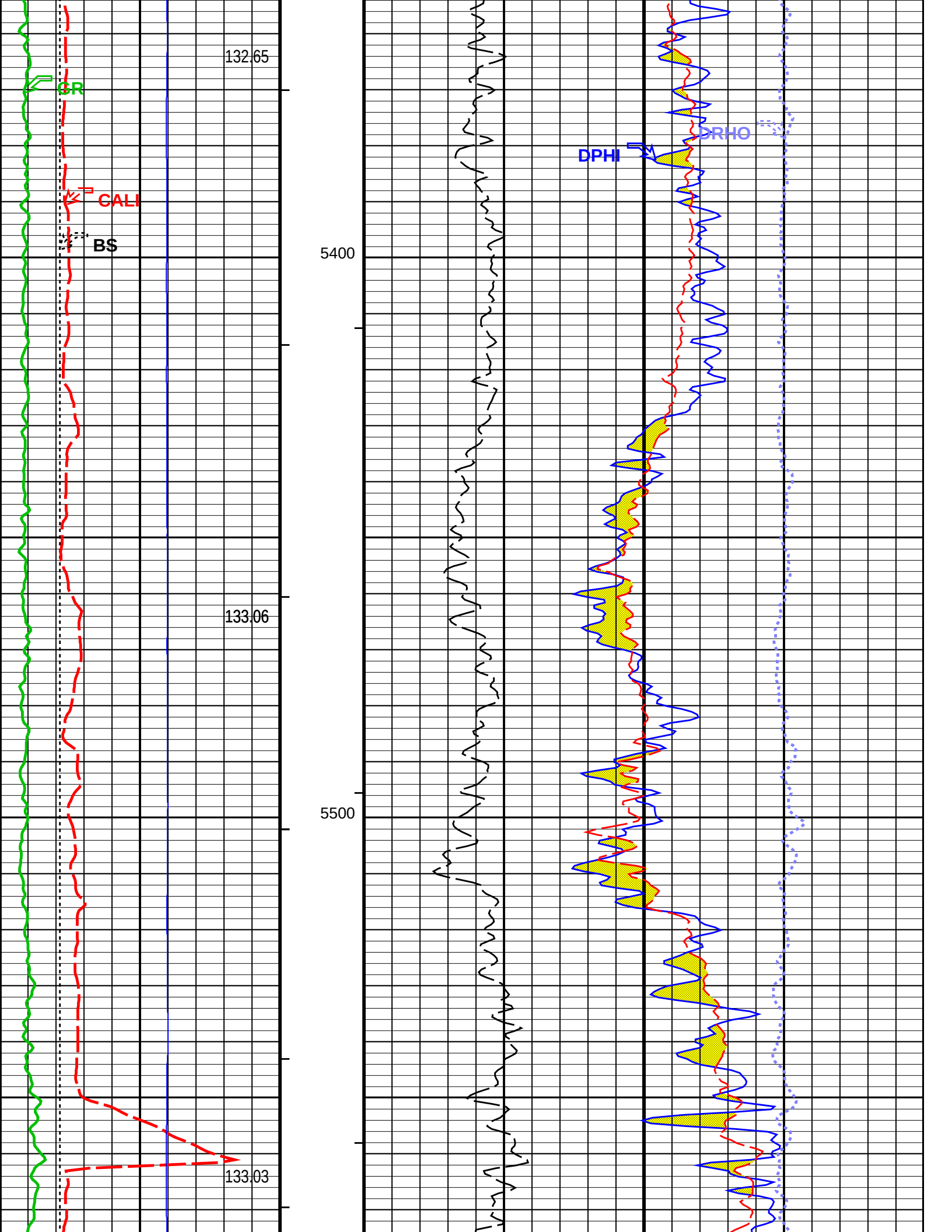
5322.0 FT
CSG
TNPH
RB
PEF


GR
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BS
DPHI
DRHO
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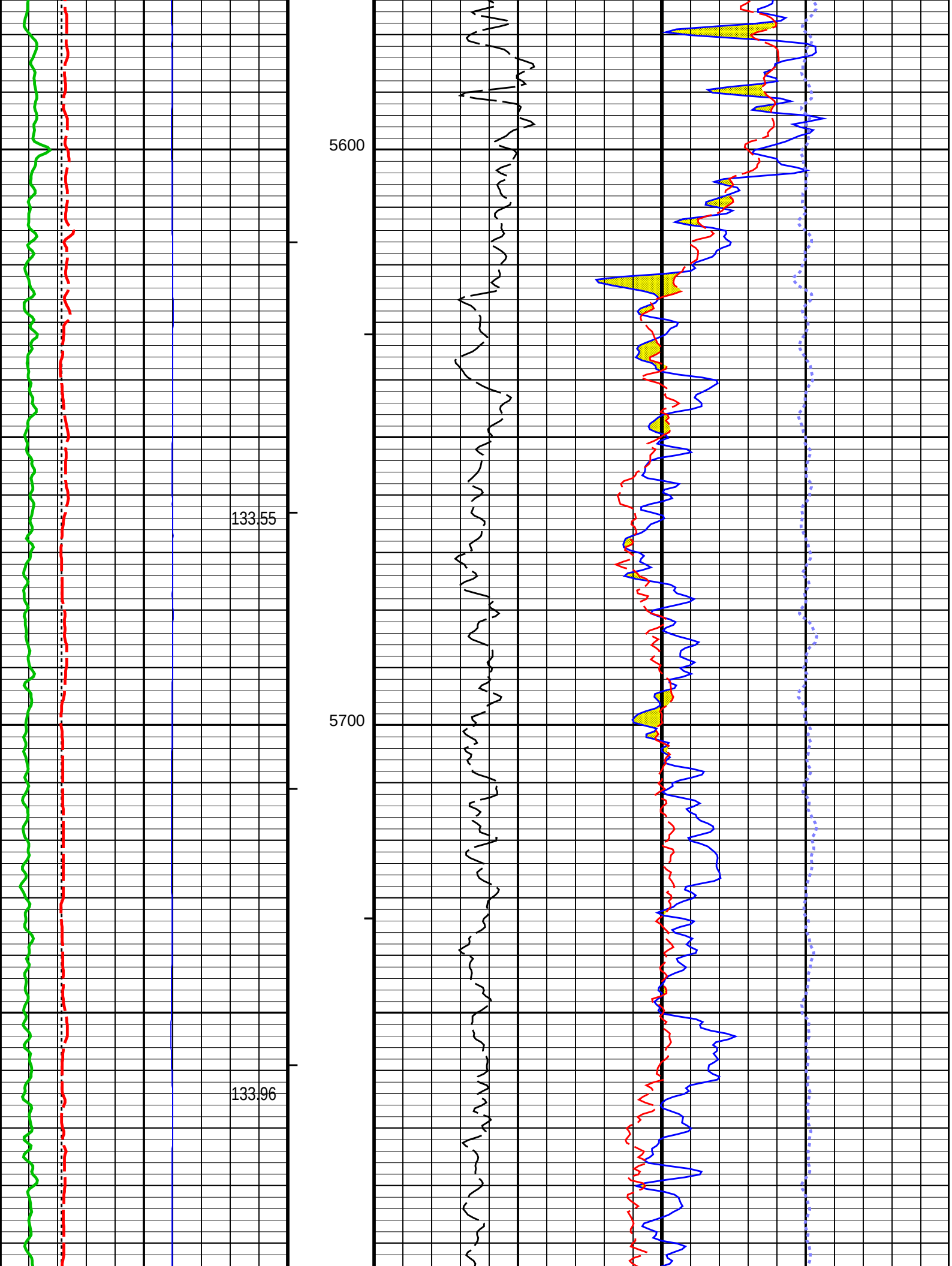
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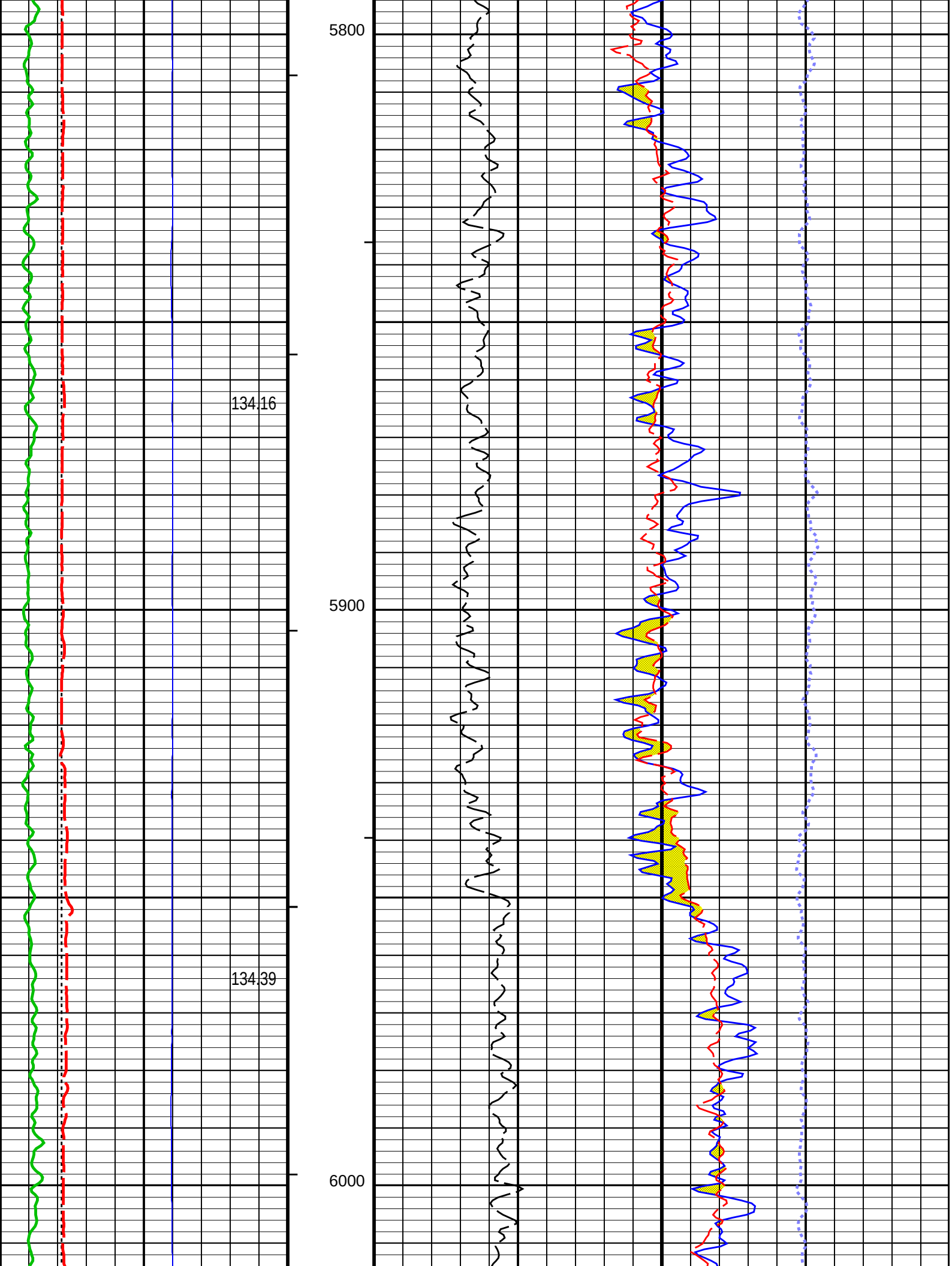
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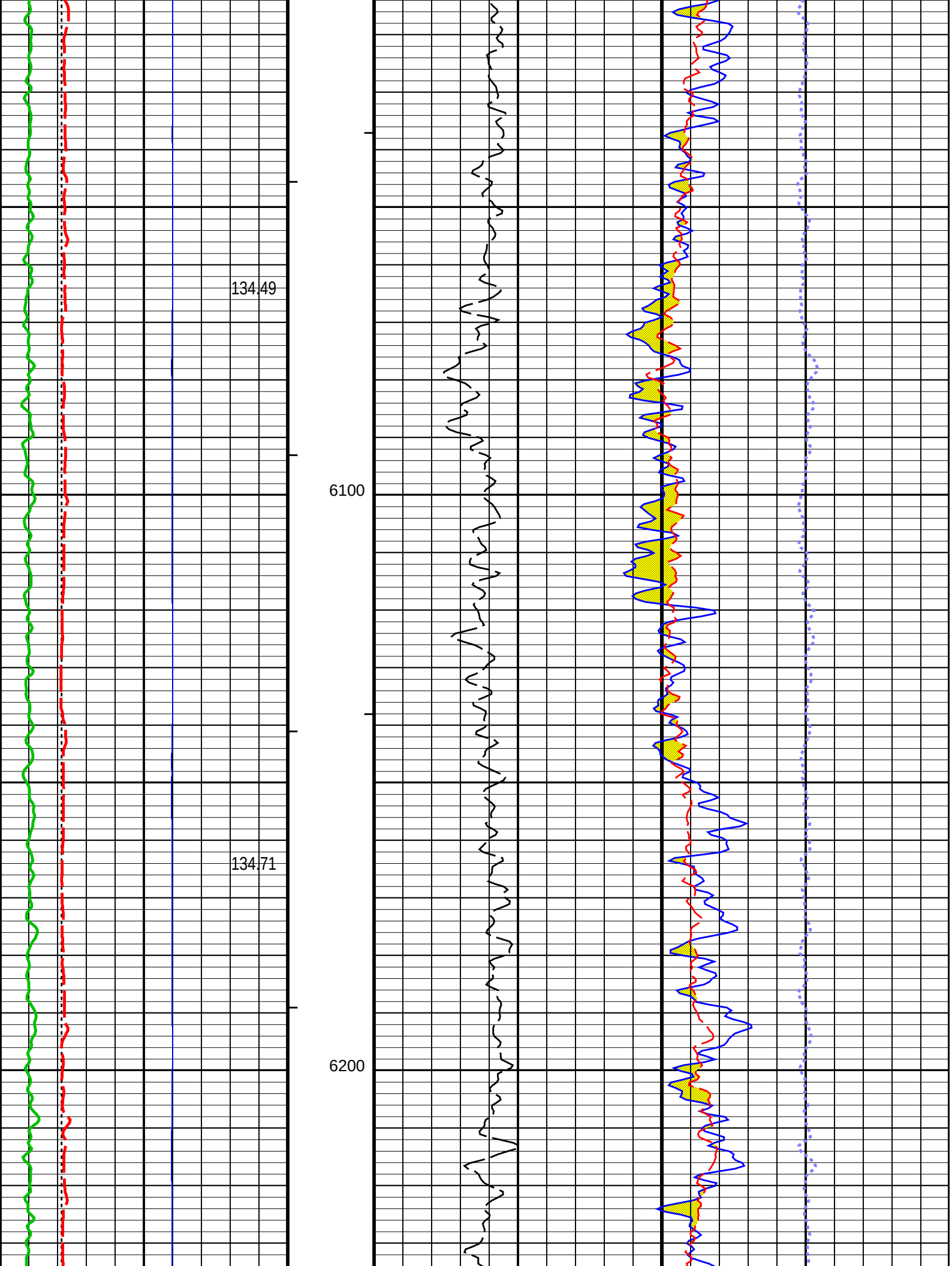
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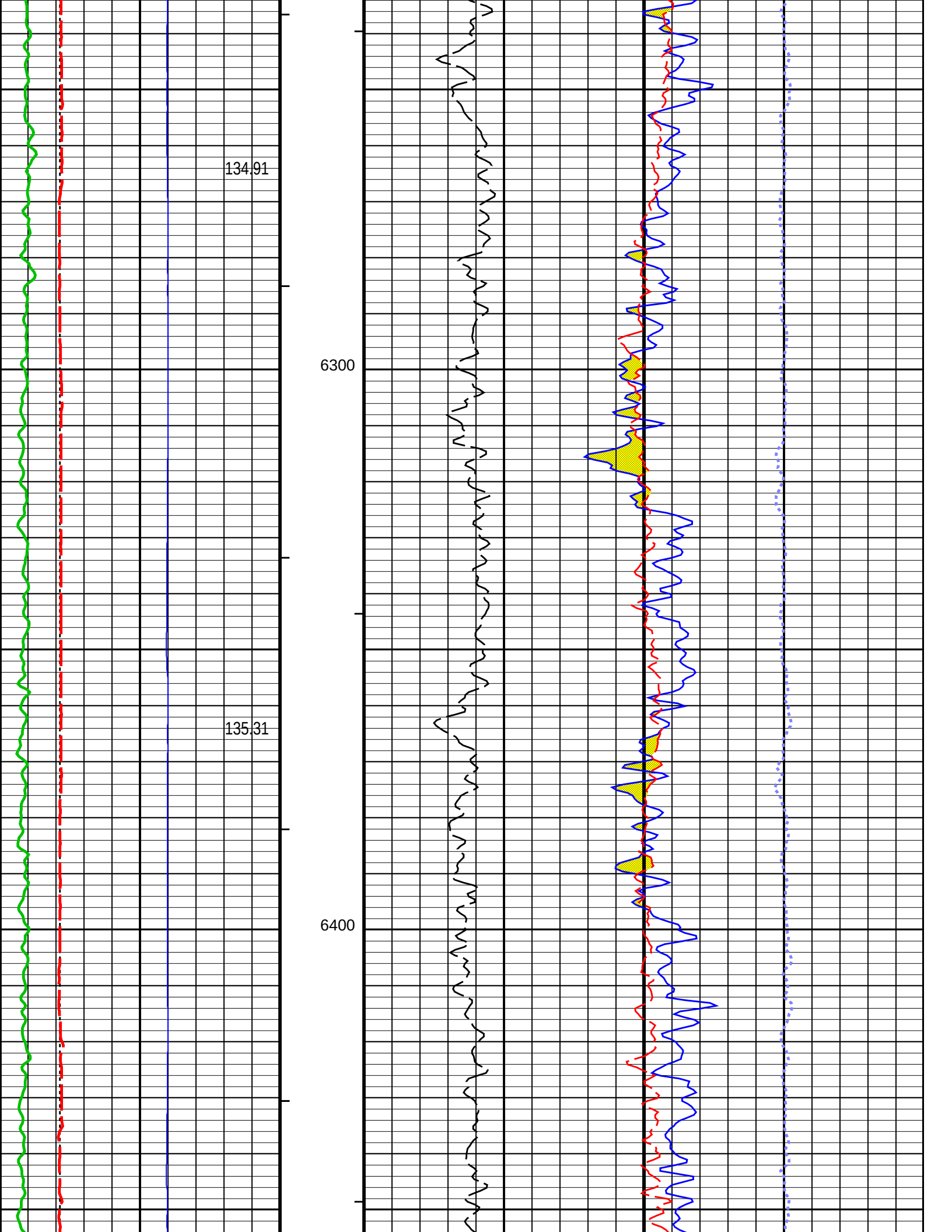
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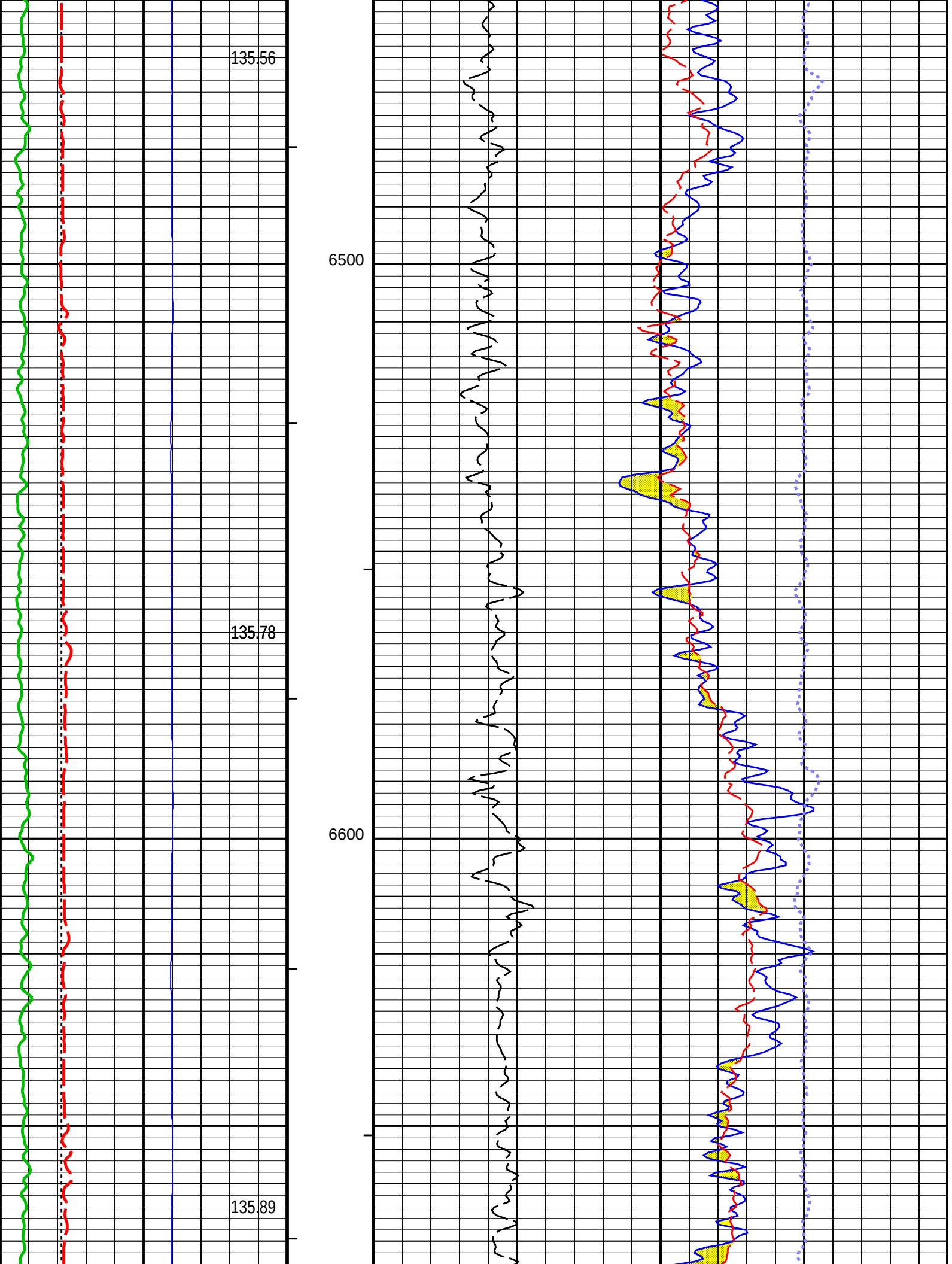
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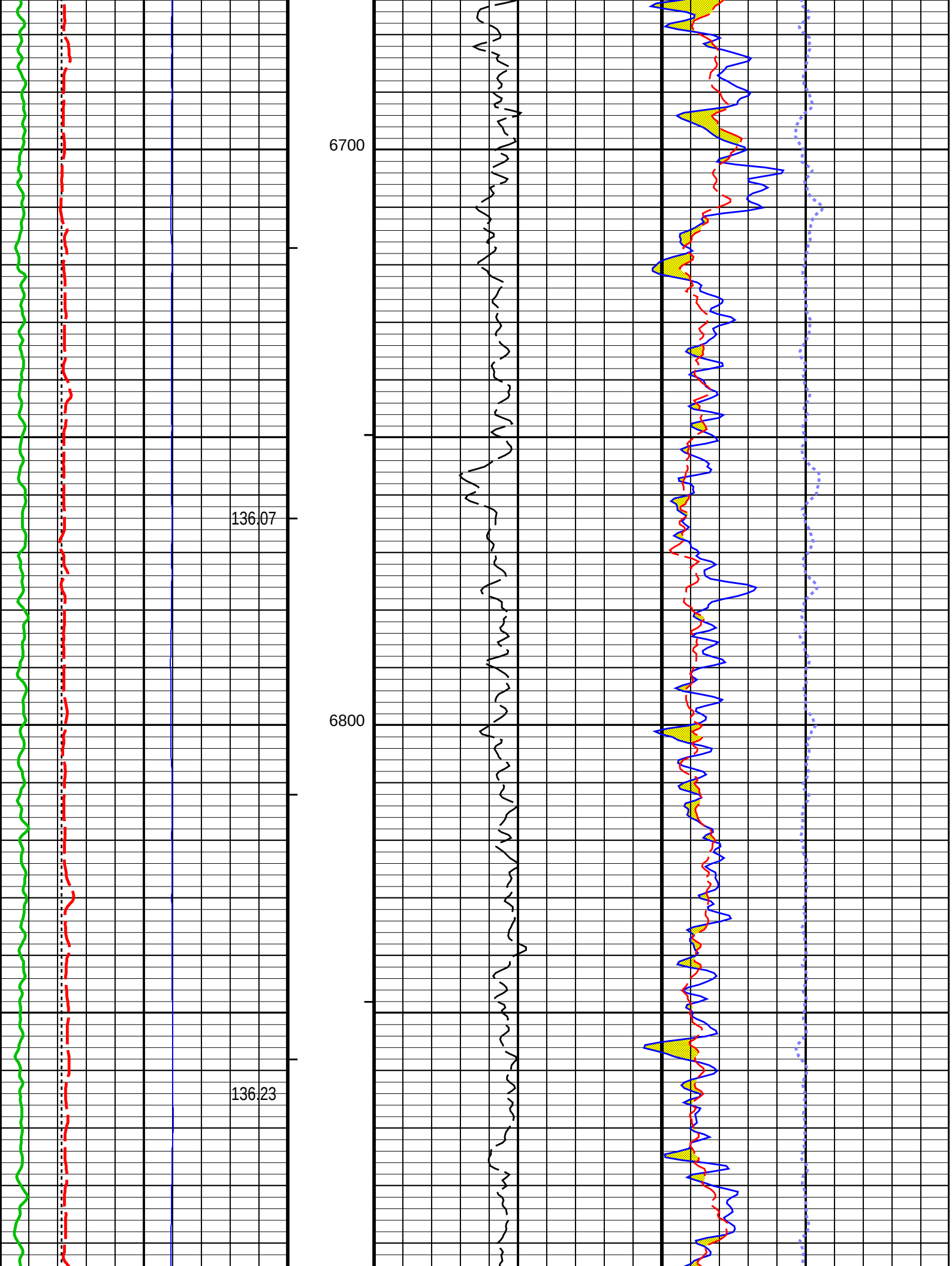
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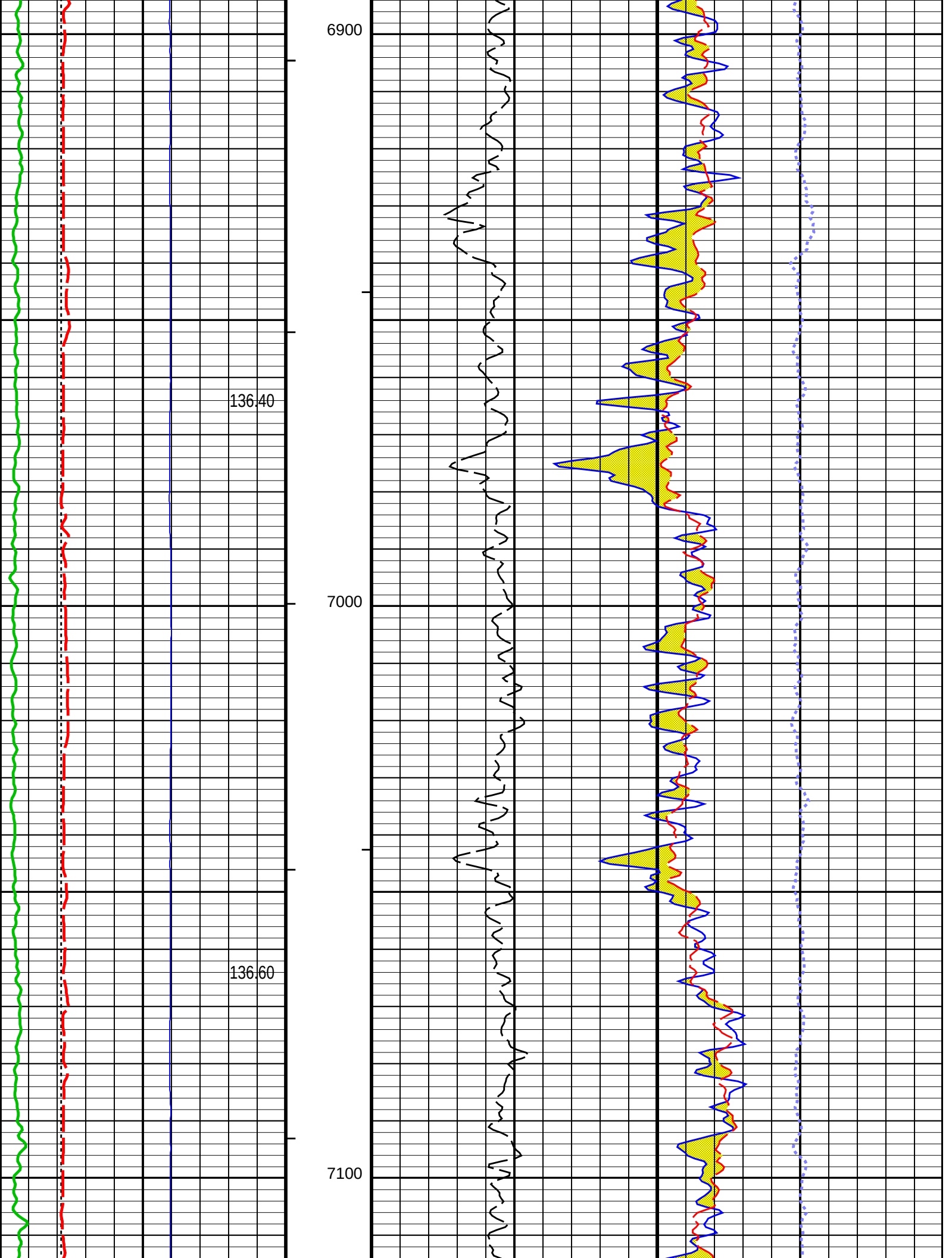
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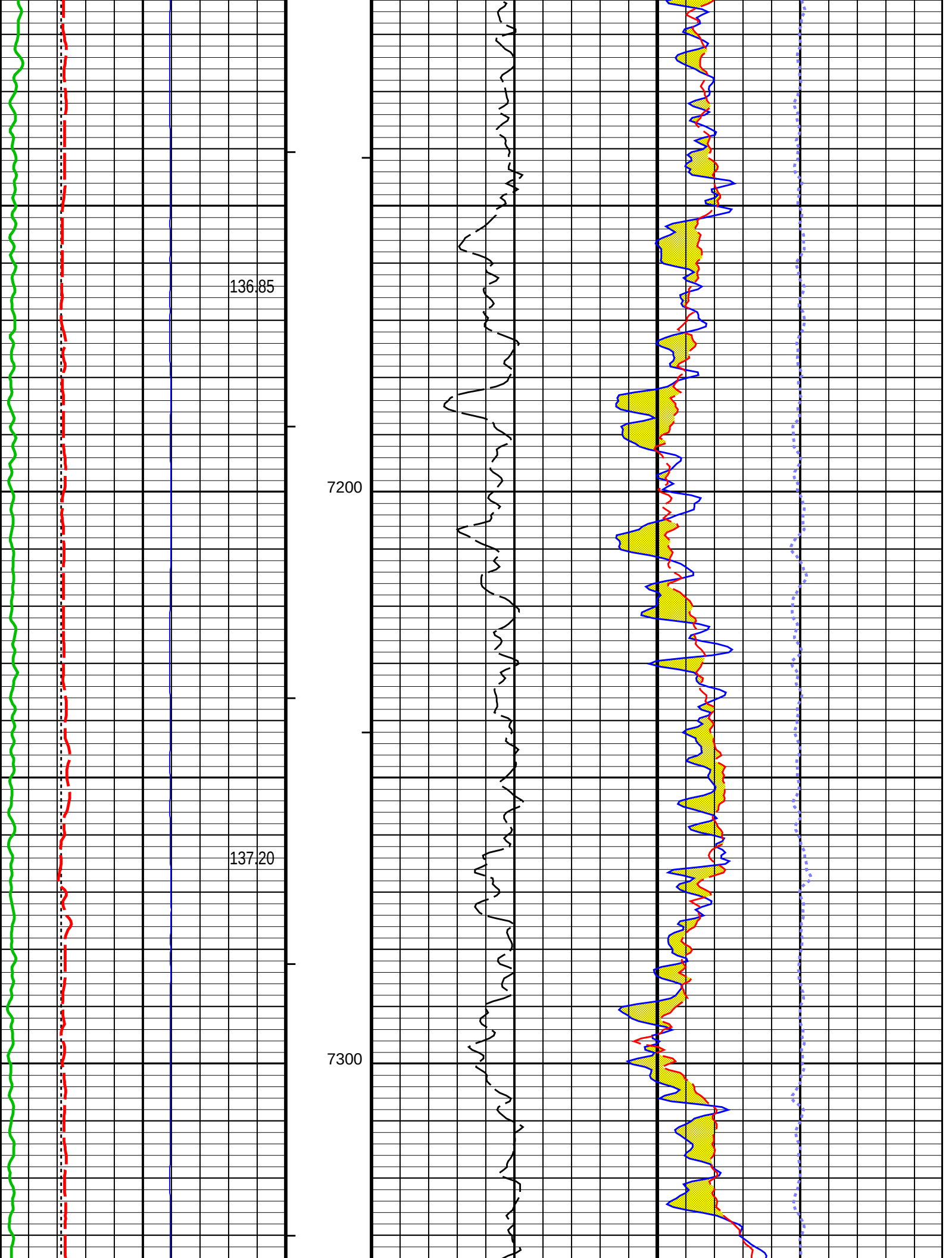
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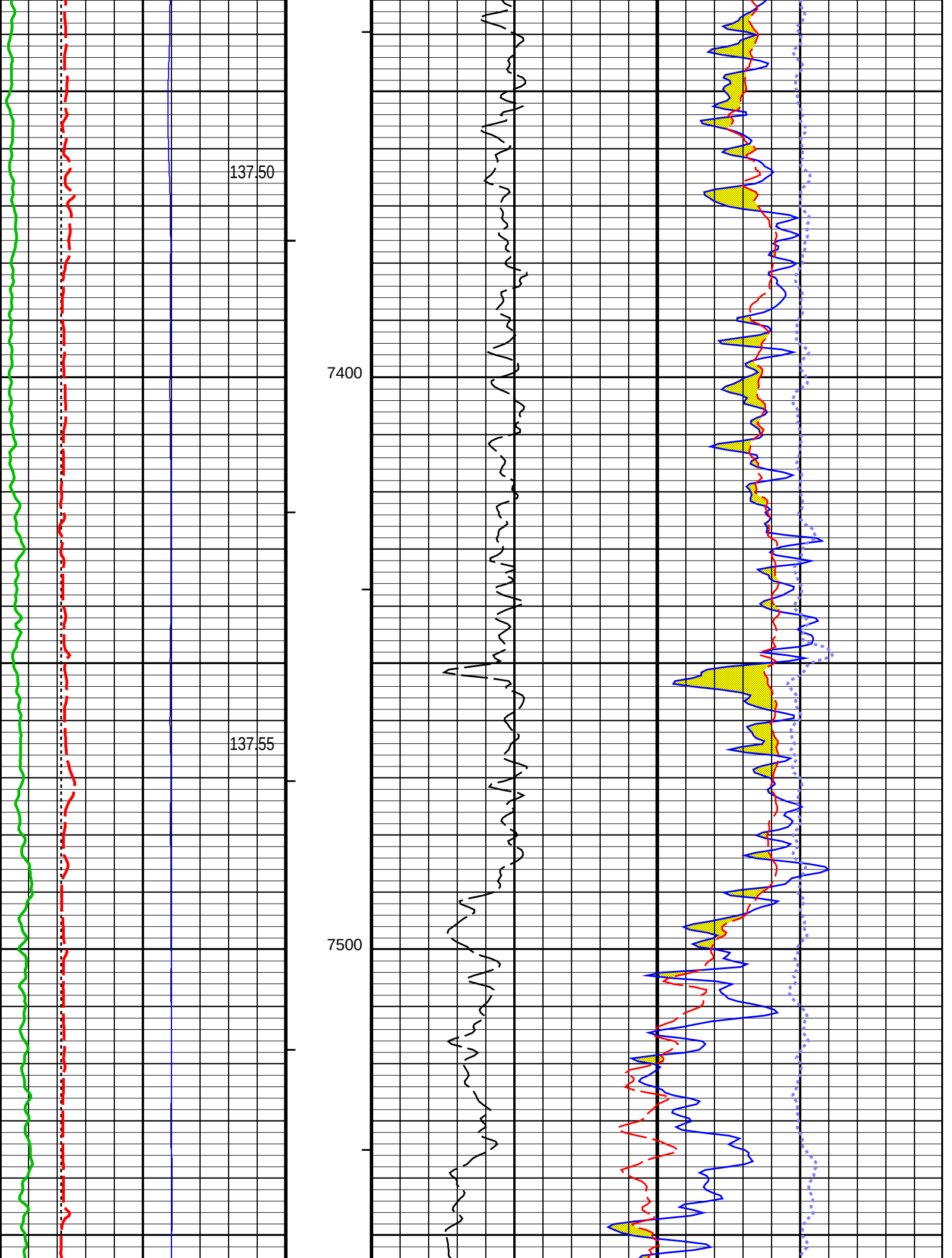
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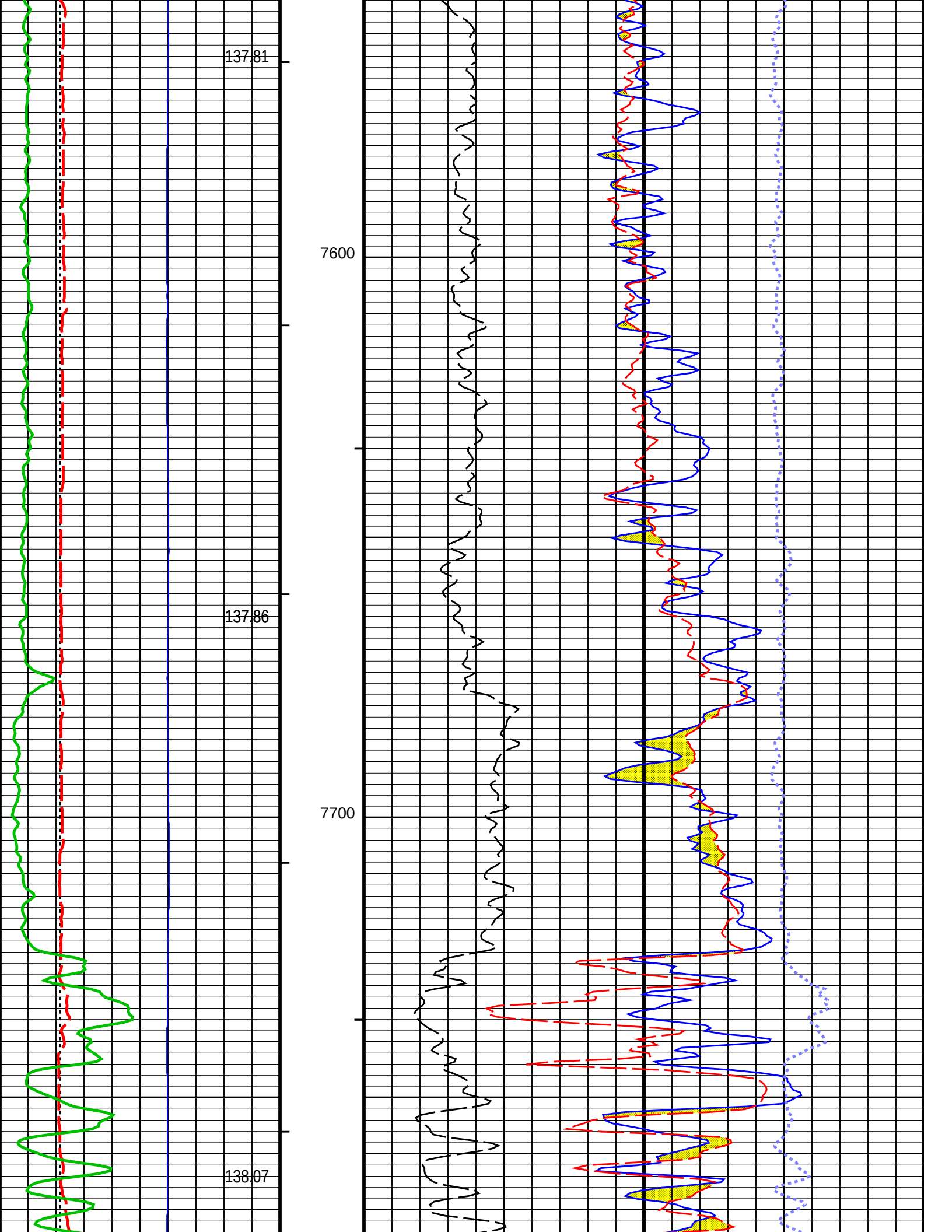
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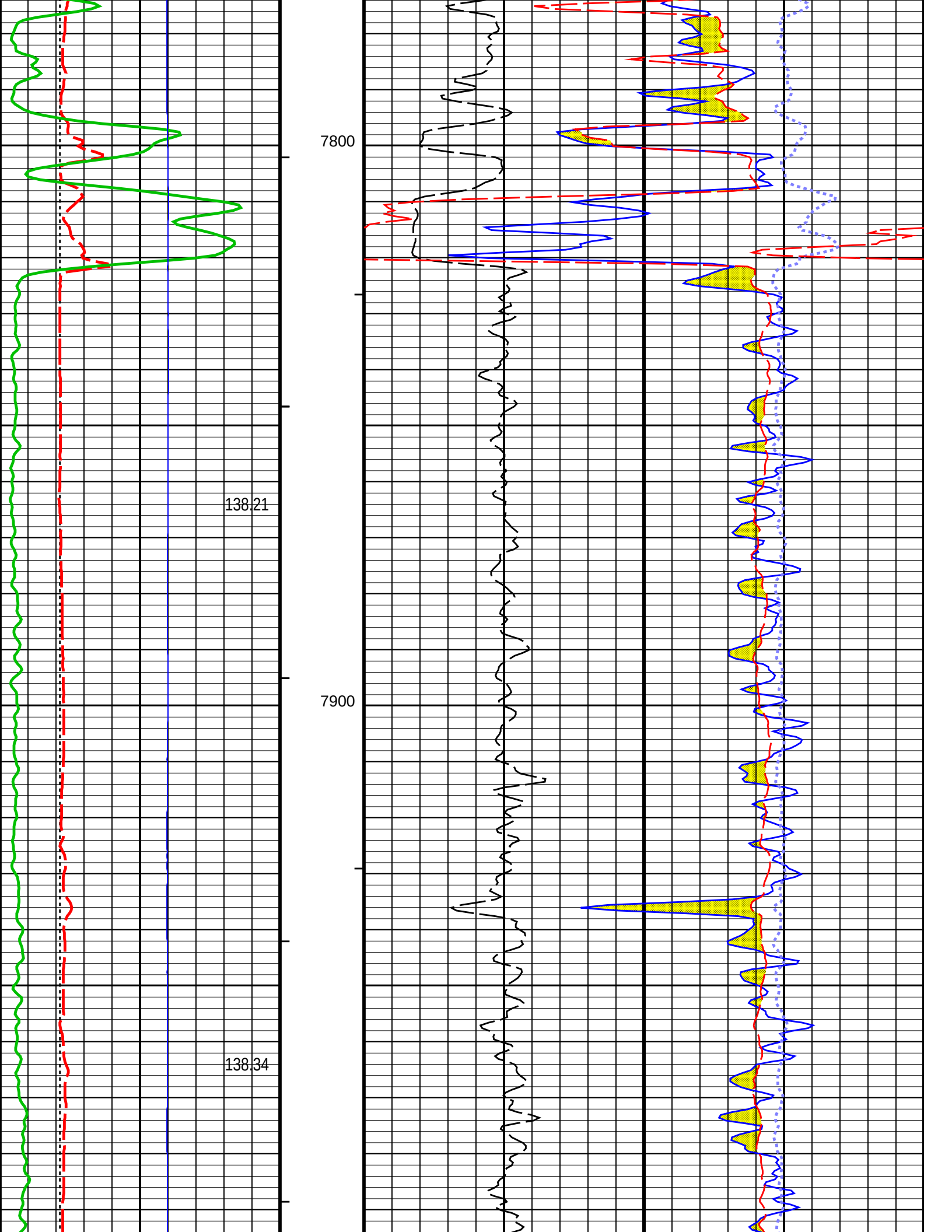
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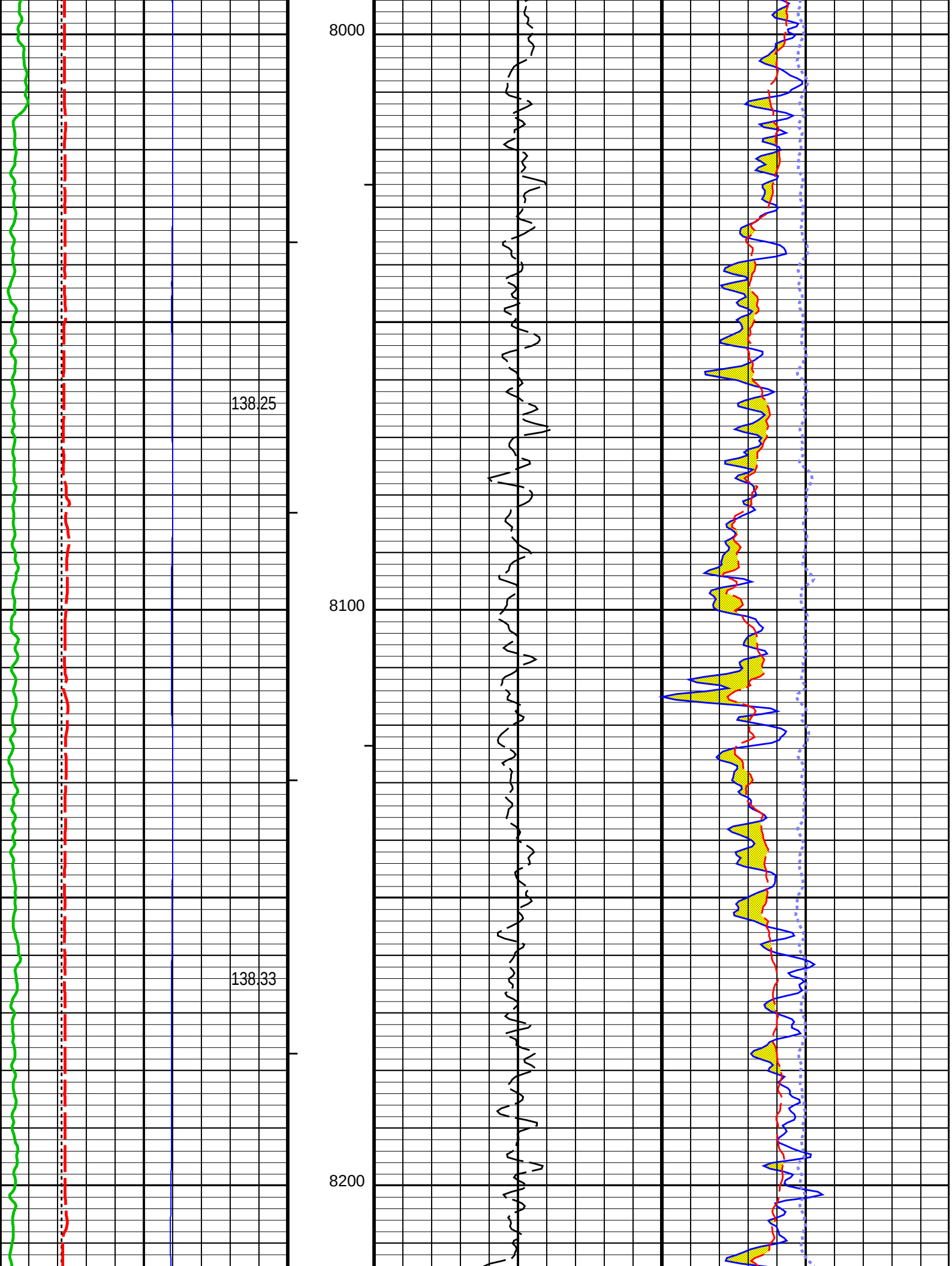
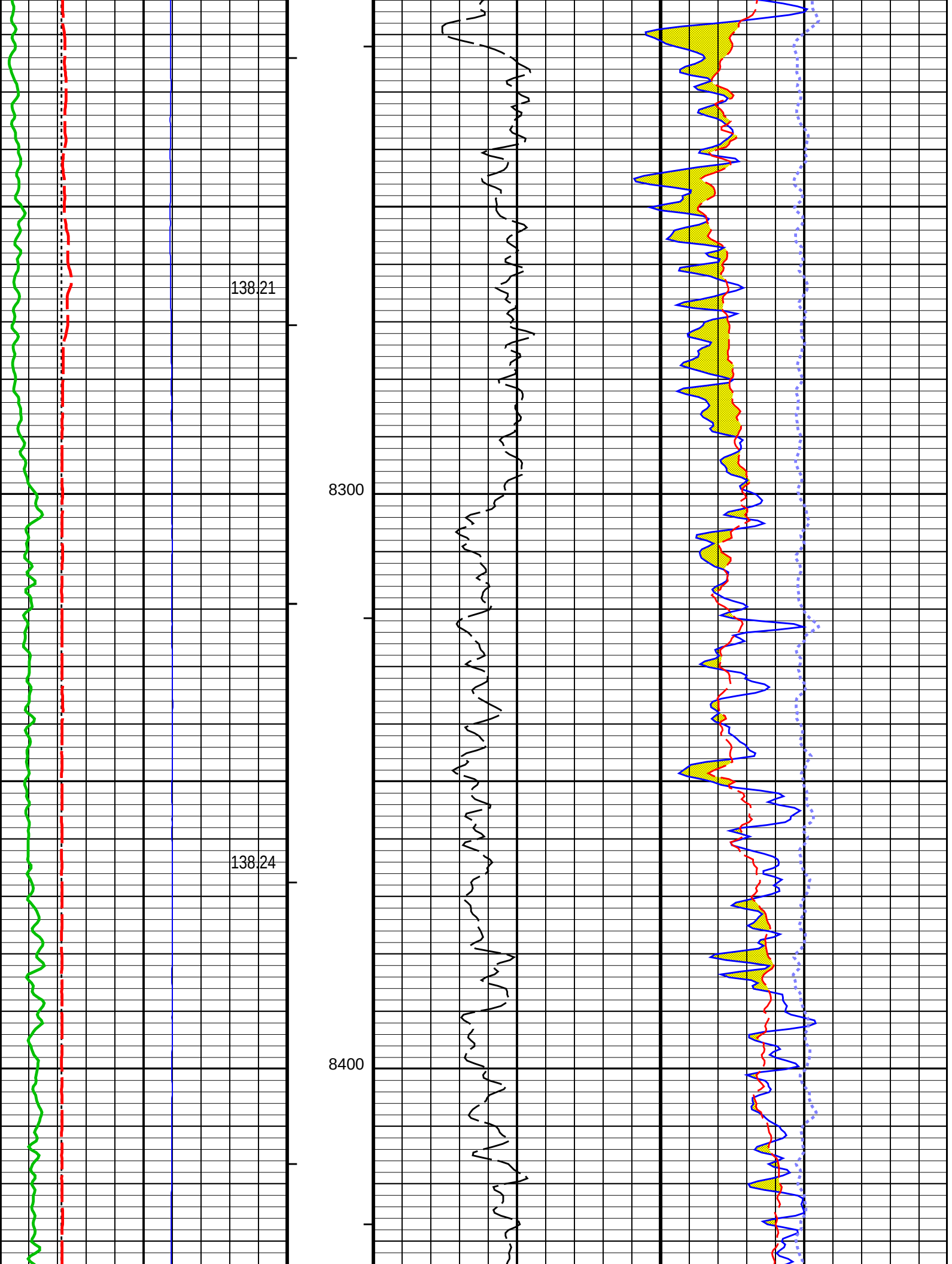
138.34


8000
138.25
8100
138.33
8200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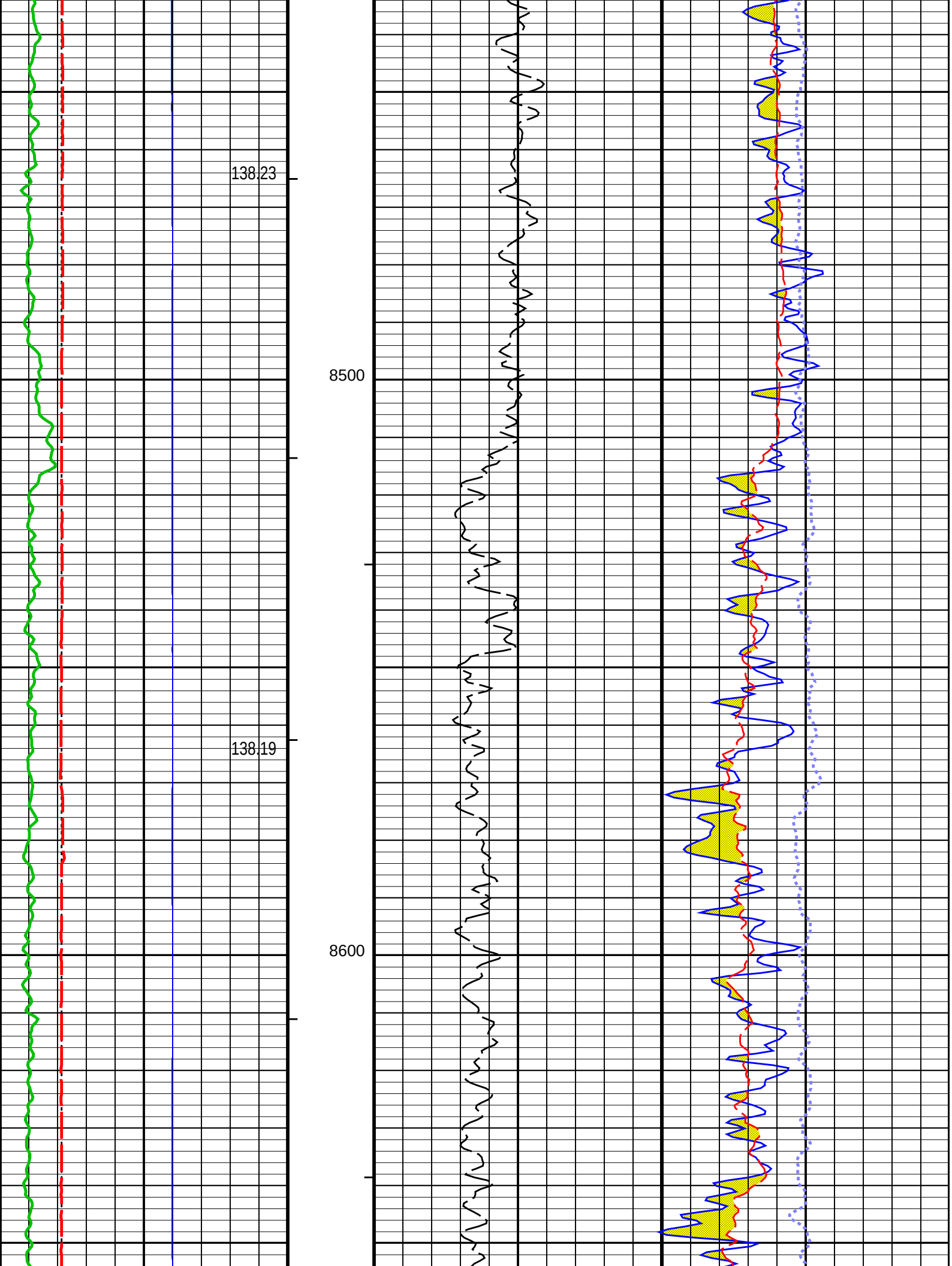
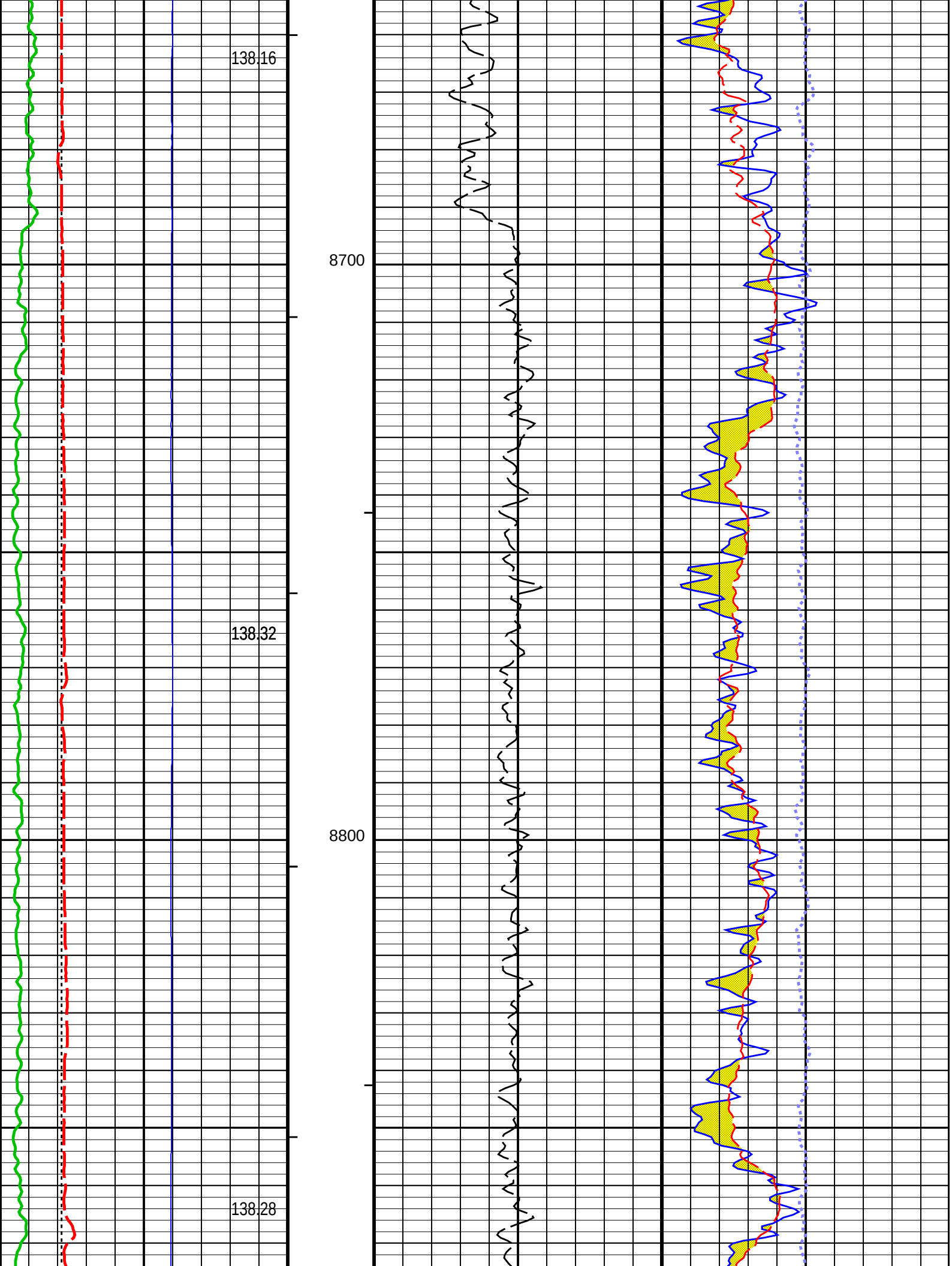
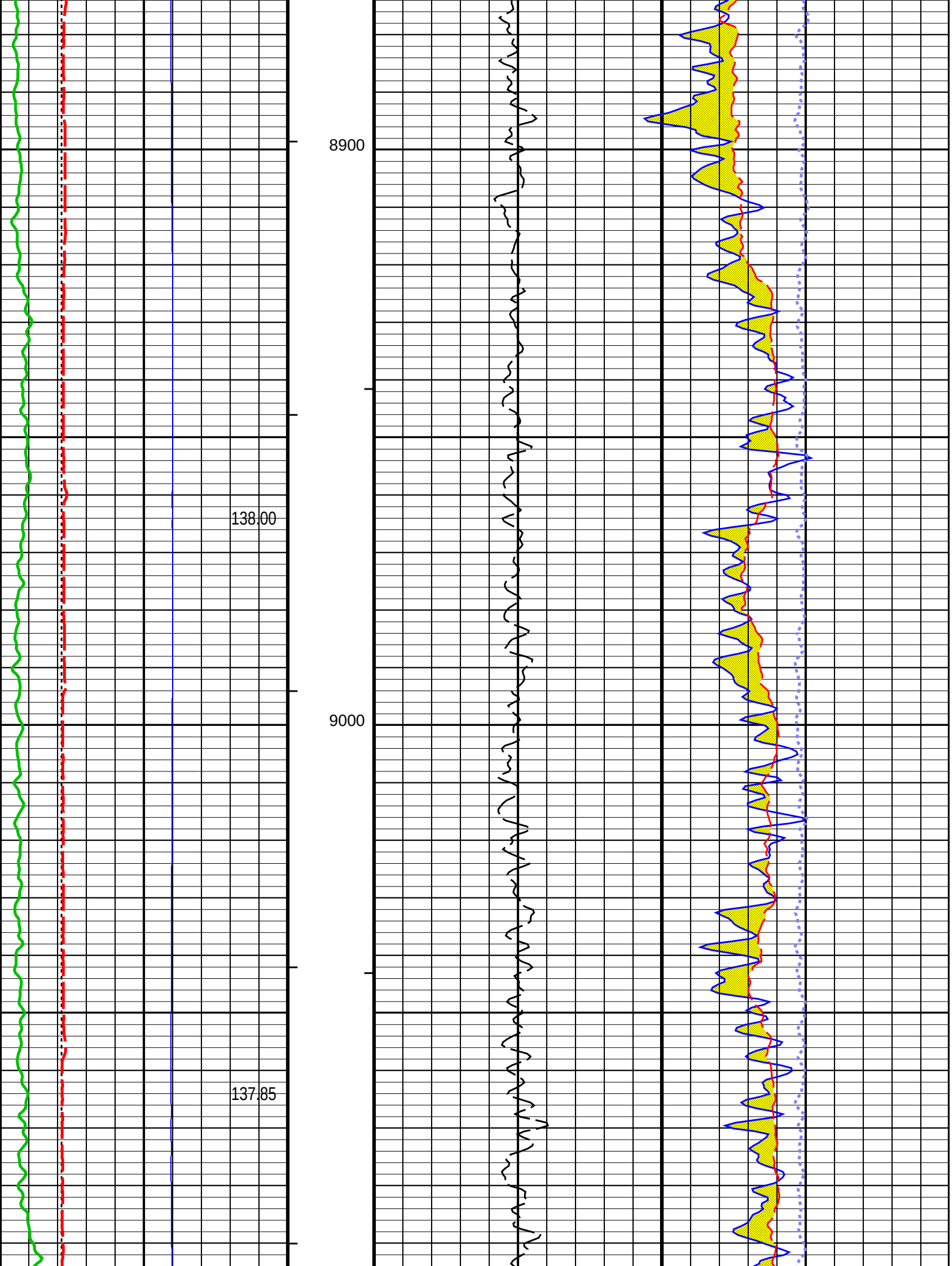
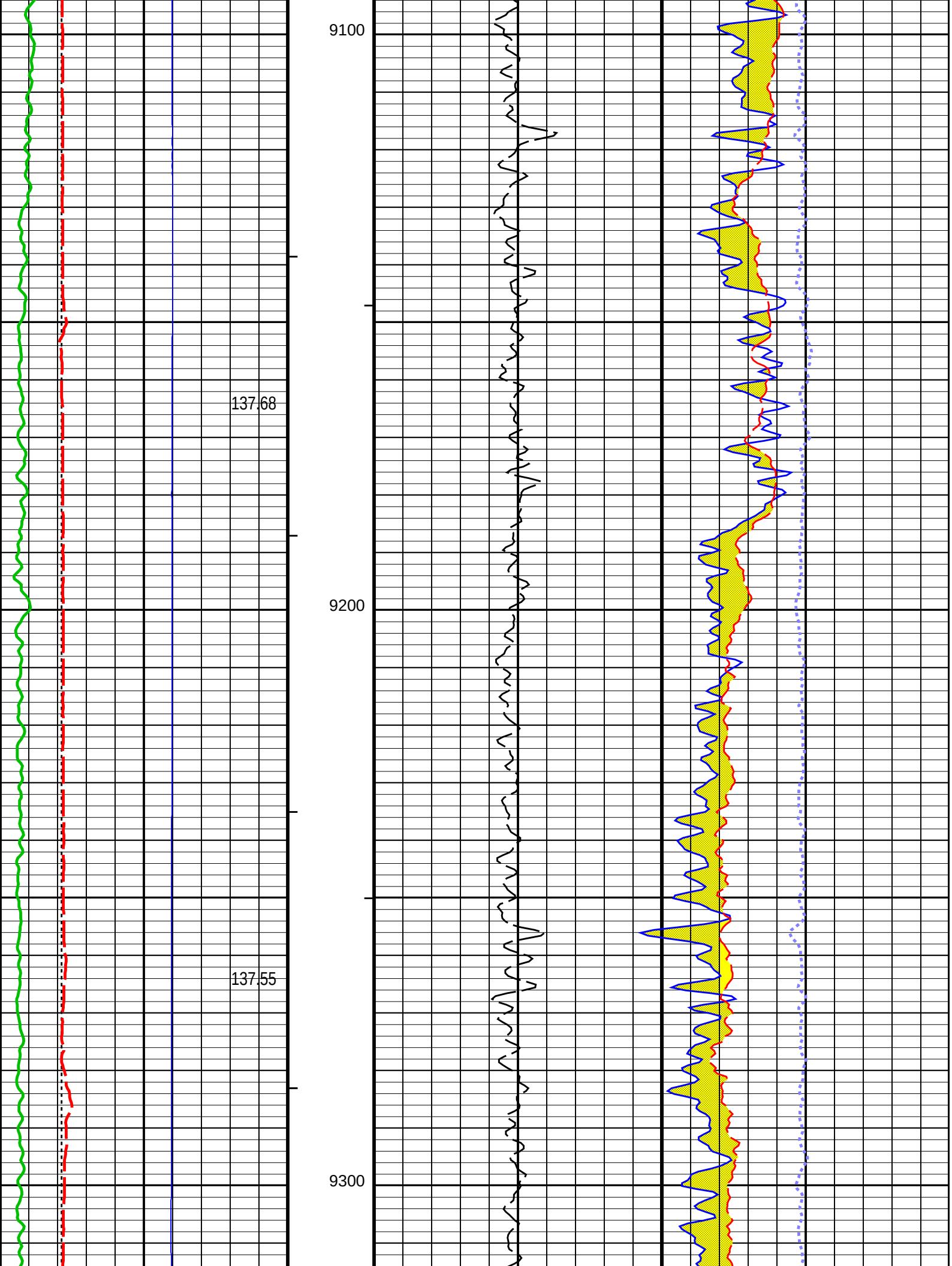
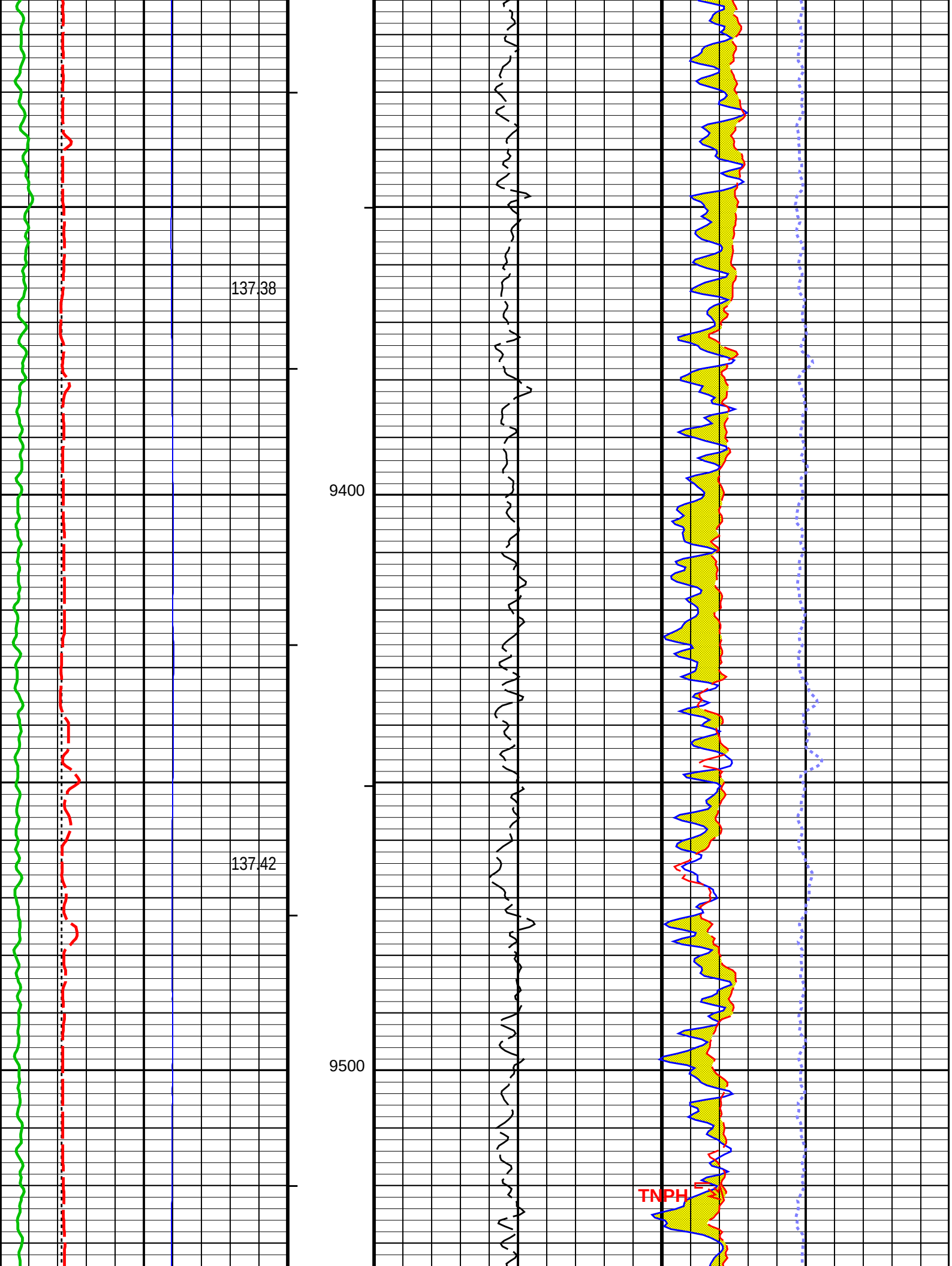
8300
138.24
8400

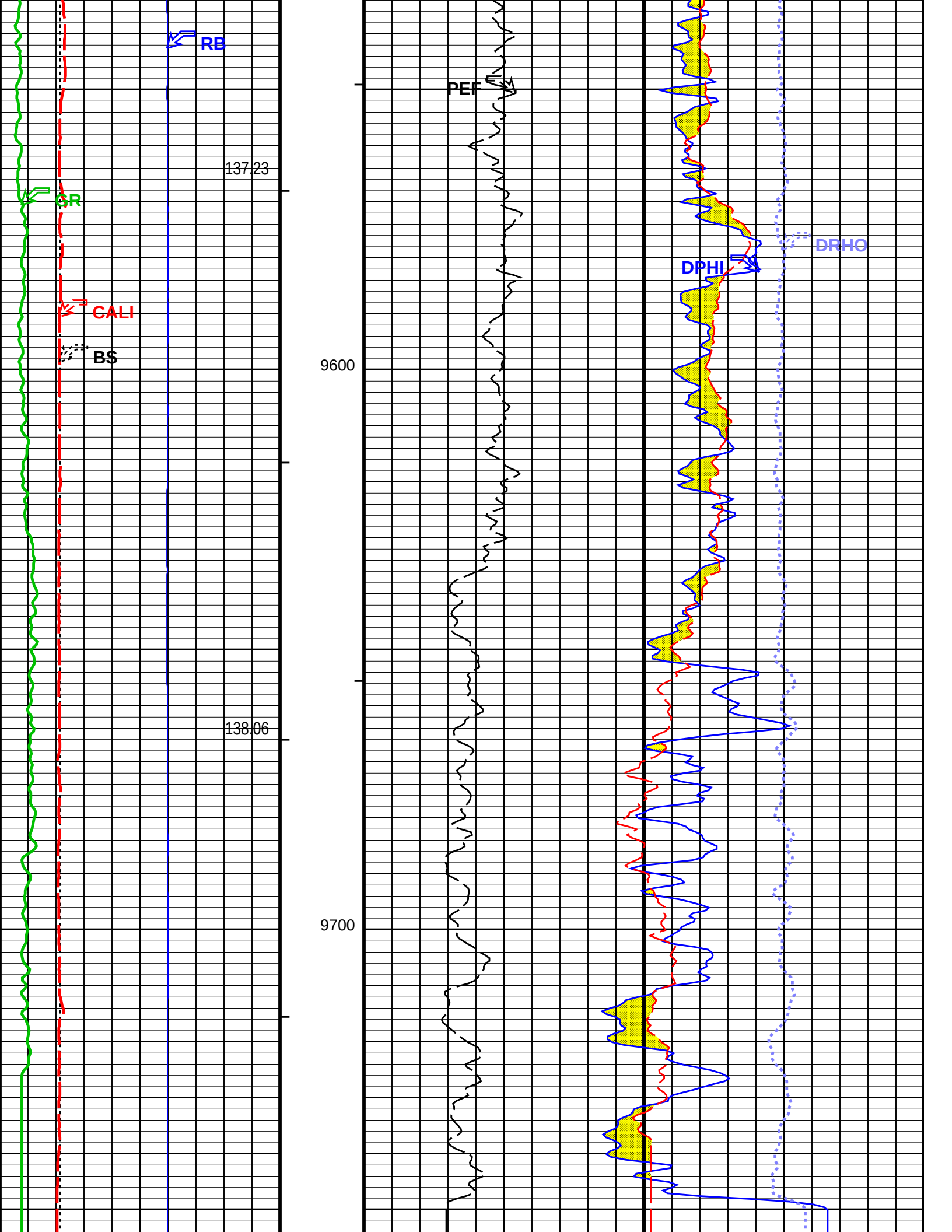

138.23
8500
138.19
8600

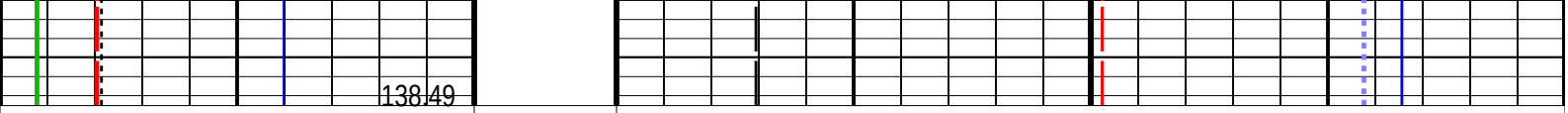

138.16
8700
138.32
8800
138.28


8900
138.00
9000
137.85


9100
137.68
9200
137.55
9300


137.38
137.42
9400
9500
TNPH


RB
137.23
GR
CALI
BS
9600
138.06
9700
PEF
DRHO
DPHI



GR Temp (WTEP)
(DEGF)

Bit Size (BS)
4 (IN) 14

Gamma Ray 1 (GR)
150 (GAPI) 300

Gamma Ray 2 (GR)
300 (GAPI) 450

Gamma Ray 3 (GR)
450 (GAPI) 600

Gamma Ray 4 (GR)
600 (GAPI) 750

Caliper (CALI)
4 (IN) 14

Gamma Ray (GR)
0 (GAPI) 150

gr wrap1
From LHT1 to GR1

gr wrap2
From LHT1 to GR2

gr wrap3
From LHT1 to GR3

gr wrap4
From LHT1 to GR4

Relative Bearing
(RB)
0 (DEG) 940

DPHI (DPHI)
30 (PU) −10

PEF (PEF)
0 (−−−−) 10

DRHO (DRHO)
−0.5 (G/C3) 0.5

TNPH (TNPH)
30 (%) −10

PIP SUMMARY

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

Parameters

DLIS Name	Description	Value	
TBT−A: ThruBit String			
BHS	Borehole Status	OPEN	
CSAL	Cement Salinity	0.000	ppm
CSID	Casing Size I.D.	6.500	in
DHC	Density Hole Correction	CALIPER	
FD	Fluid Density	1.000	g/cm3
FSAL	Formation Salinity	0.000	ppm
FSCO	Formation Salinity Correction Enabled? (for TBN)	NO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIME	
MDEN	Matrix Density	2.710	g/cm3
MT	Mud Type (for TBN and TBI correction)	WBM	
MWCO	Mud−Weight Correction Enabled? (for TBN)	NO	
RB_OFFSET	Additional RB offset (degrees)	0.000	deg
SOCO	Stand−Off Correction Enabled? (for TBN)	NO	
SOFF	TBN Standoff	0.000	in
TBD_CAL_BLOCK	TBD Calibration Block Type	THRUBIT	
TBD_SPIKE_REJECT	TBD Spike Detection Option	CORRECT	
TBD_SPIKE_THRESHOLD	TBD Attenuation Change Threshold for Spike Detection	5.000	%
TBN_BHC_OP	Borehole Correction Option (for TBN)	CALIPER	

TBN_CAL_TANK	TBN Calibration Tank Type	THRUBIT	
TBN_PRES_OP	Pressure Correction Enabled? (for TBN)	NO	
TBN_TEMP_OP	Temperature Correction Enabled? (for TBN)	NO	
TBN_WPRE	Well Pressure (for TBN)	14.696	psi
WMUD	Mud Weight	8.500	lbm/gal
	HOLEV: Integrated Hole/Cement Volume		
BHS	Borehole Status	OPEN	
MATR	Rock Matrix for Neutron Porosity Corrections	LIME	
	System and Miscellaneous		
BS	Bit Size	6.125	in
BSAL	Borehole Salinity	1400.0	ppm
CSIZ	Current Casing Size	7.000	in

Format: TB_5INCH_NUCLEAR **Vertical Scale: 5" per 100'** **Graphics File Created: 17−Sep−2014 06:55**

OP System Version: 19C2−270

TBT **SRPC−5303−ThruBit**

Input DLIS Files

ThruBit_003PUP **FN:2** **17−Sep−2014 06:46** **9765.0 FT** **2970.0 FT**

Schlumberger

CALIBRATIONS

MAXIS Field Log

ThruBit String / Equipment Identification

Primary Equipment:

Induction Resistivity	TBI − A	19
Density	TBD − A	46
Gamma−Ray Logging Source	GGLS − FZ	3216
Thermal Neutron	TBN − A	6
Neutron Logging Source	NNLS − EWA	4484
Telemetry Memory GR	TMG − A	24
Battery	TBAT −	35
Battery	TBAT −	13

Auxiliary Equipment:

ThruBit String Master Calibration

TBI Master Calibration Sonde Errors

Freq 1, A1, R	Value	Nominal	Freq 1, A1, X	Value	Nominal
	−501.175	−457.000		−132.542	300.000
−556.000 (Minimum) −387.000 (Maximum)			−500.000 (Minimum) 1100.00 (Maximum)		
Freq 1, A2, R	**Value**	**Nominal**	**Freq 1, A2, X**	**Value**	**Nominal**
	−151.191	−141.000		16.3318	320.000
−182.000 (Minimum) −120.000 (Maximum)			−75.0000 (Minimum) 700.000 (Maximum)		
Freq 1, A3, R	**Value**	**Nominal**	**Freq 1, A3, X**	**Value**	**Nominal**
	−29.8364	−28.0000		−48.3363	50.0000
−38.0000 (Minimum) −18.0000 (Maximum)			−375.000 (Minimum) 475.000 (Maximum)		
Freq 1, A4, R	**Value**	**Nominal**	**Freq 1, A4, X**	**Value**	**Nominal**
	−17.1567	−16.0000		218.068	300.000
−24.0000 (Minimum) −8.00000 (Maximum)			25.0000 (Minimum) 575.000 (Maximum)		
Freq 1, A5, R	**Value**	**Nominal**	**Freq 1, A5, X**	**Value**	**Nominal**

Freq 1, A5, R	Value	Nominal	Freq 1, A5, X	Value	Nominal
	−14.2031	−14.0000		114.044	150.000
−21.0000 (Minimum)	−7.00000 (Nominal) (Maximum)		25.0000 (Minimum)	300.000 (Nominal) (Maximum)	
Freq 2, A1, R	Value	Nominal	Freq 2, A1, X	Value	Nominal
	−264.524	−237.000		−117.857	150.000
−313.000 (Minimum)	−186.000 (Nominal) (Maximum)		−375.000 (Minimum)	675.000 (Nominal) (Maximum)	
Freq 2, A2, R	Value	Nominal	Freq 2, A2, X	Value	Nominal
	−97.7719	−92.0000		−18.7953	160.000
−126.000 (Minimum)	−76.0000 (Nominal) (Maximum)		−100.000 (Minimum)	425.000 (Nominal) (Maximum)	
Freq 2, A3, R	Value	Nominal	Freq 2, A3, X	Value	Nominal
	−21.3012	−21.0000		−85.2752	−20.0000
−28.0000 (Minimum)	−13.0000 (Nominal) (Maximum)		−325.000 (Minimum)	250.000 (Nominal) (Maximum)	
Freq 2, A4, R	Value	Nominal	Freq 2, A4, X	Value	Nominal
	−19.8394	−20.0000		59.2524	100.000
−28.0000 (Minimum)	−10.0000 (Nominal) (Maximum)		−75.0000 (Minimum)	275.000 (Nominal) (Maximum)	
Freq 2, A5, R	Value	Nominal	Freq 2, A5, X	Value	Nominal
	−18.8111	−20.0000		−15.4752	−25.0000
−27.0000 (Minimum)	−10.0000 (Nominal) (Maximum)		−125.000 (Minimum)	100.000 (Nominal) (Maximum)	
Freq 3, A1, R	Value	Nominal	Freq 3, A1, X	Value	Nominal
	−169.026	−149.000		−157.427	25.0000
−213.000 (Minimum)	−108.000 (Nominal) (Maximum)		−375.000 (Minimum)	425.000 (Nominal) (Maximum)	
Freq 3, A2, R	Value	Nominal	Freq 3, A2, X	Value	Nominal
	−74.1193	−70.0000		−56.4180	70.0000
−101.000 (Minimum)	−57.0000 (Nominal) (Maximum)		−125.000 (Minimum)	250.000 (Nominal) (Maximum)	
Freq 3, A3, R	Value	Nominal	Freq 3, A3, X	Value	Nominal
	−17.0567	−17.0000		−122.429	−90.0000
−23.0000 (Minimum)	−11.0000 (Nominal) (Maximum)		−300.000 (Minimum)	125.000 (Nominal) (Maximum)	
Freq 3, A4, R	Value	Nominal	Freq 3, A4, X	Value	Nominal
	−21.0103	−22.0000		−47.1540	−50.0000
−31.0000 (Minimum)	−11.0000 (Nominal) (Maximum)		−200.000 (Minimum)	100.000 (Nominal) (Maximum)	
Freq 3, A5, R	Value	Nominal	Freq 3, A5, X	Value	Nominal
	−21.0473	−22.0000		−110.211	−110.000
−32.0000 (Minimum)	−11.0000 (Nominal) (Maximum)		−250.000 (Minimum)	0 (Nominal) (Maximum)	
Freq 4, A1, R	Value	Nominal	Freq 4, A1, X	Value	Nominal
	−93.5993	−80.0000		−260.416	−190.000
−128.000 (Minimum)	−54.0000 (Nominal) (Maximum)		−450.000 (Minimum)	75.0000 (Nominal) (Maximum)	
Freq 4, A2, R	Value	Nominal	Freq 4, A2, X	Value	Nominal
	−54.0924	−50.0000		−122.848	−75.0000
−80.0000 (Minimum)	−41.0000 (Nominal) (Maximum)		−200.000 (Minimum)	50.0000 (Nominal) (Maximum)	
Freq 4, A3, R	Value	Nominal	Freq 4, A3, X	Value	Nominal
	−13.7423	−14.0000		−191.764	−190.000
−19.0000 (Minimum)	−8.00000 (Nominal) (Maximum)		−350.000 (Minimum)	−25.0000 (Nominal) (Maximum)	
Freq 4, A4, R	Value	Nominal	Freq 4, A4, X	Value	Nominal
	−23.8896	−25.0000		−205.910	−235.000
−37.0000 (Minimum)	−11.0000 (Nominal) (Maximum)		−400.000 (Minimum)	−75.0000 (Nominal) (Maximum)	
Freq 4, A5, R	Value	Nominal	Freq 4, A5, X	Value	Nominal
	−26.3873	−28.0000		−268.933	−300.000
−43.0000 (Minimum)	−12.0000 (Nominal) (Maximum)		−475.000 (Minimum)	−100.000 (Nominal) (Maximum)	

ThruBit String Master Calibration

TBI Master Calibration COMPLEX GAINS

Freq 1, R	Value	Nominal	Freq 1, X	Value	Nominal
	1.007	1.000		−0.01592	0
	0.9934	1.000		0.0002760	0
	0.9967	1.000		−0.007775	0
	0.9876	1.000		0.002827	0
	0.9944	1.000		0.0007001	0
0.9500 (Minimum) 1.050 (Nominal) (Maximum)			−0.05000 (Minimum) 0.05000 (Nominal) (Maximum)		

Freq 2, R	Value	Nominal	Freq 2, X	Value	Nominal
	1.002	1.000		−0.01924	0
	0.9876	1.000		−0.007856	0
	0.9851	1.000		−0.008198	0
	0.9827	1.000		−0.005510	0
	0.9920	1.000		−0.008001	0
0.9500 (Minimum) 1.050 (Nominal) (Maximum)			−0.05000 (Minimum) 0.05000 (Nominal) (Maximum)		

Freq 3, R	Value	Nominal	Freq 3, X	Value	Nominal
	1.009	1.000		−0.01504	0
	0.9947	1.000		−0.005868	0
	0.9921	1.000		−0.006617	0
	0.9884	1.000		−0.004212	0
	1.001	1.000		−0.006129	0
0.9500 (Minimum) 1.050 (Nominal) (Maximum)			−0.05000 (Minimum) 0.05000 (Nominal) (Maximum)		

Freq 4, R	Value	Nominal	Freq 4, X	Value	Nominal
	1.006	1.000		−0.02628	0
	0.9912	1.000		−0.01994	0
	0.9906	1.000		−0.02261	0
	0.9848	1.000		−0.01839	0
	1.010	1.000		−0.02268	0
0.9300 (Minimum) 1.070 (Nominal) (Maximum)			−0.05000 (Minimum) 0.05000 (Nominal) (Maximum)		

Master: 10−Sep−2014 9:33

ThruBit String Master Calibration

TBD Caliper Master Calibration

Caliper 12in Ring IN	Value	Nominal	Caliper 9in Ring IN	Value	Nominal	Caliper 6in Ring IN	Value	Nominal
	1880.1	1949.8		2029.0	2096.7		2182.9	2285.7
1799.8 (Minimum) 2099.8 (Nominal) (Maximum)			1946.7 (Minimum) 2246.7 (Nominal) (Maximum)			2135.7 (Minimum) 2435.7 (Nominal) (Maximum)		

Master: 28−Aug−2014 15:19

ThruBit String Master Calibration

TBD Density Master Calibration. Be Window, Thrubit blocks

Aluminium Density G/C3	Value	Nominal	Magnesium Density G/C3	Value	Nominal
	2.607	2.607		1.752	1.752
2.557 (Minimum) 2.657 (Nominal) (Maximum)			1.702 (Minimum) 1.802 (Nominal) (Maximum)		

LS1 Background CPS	Value	Nominal	SS1 Background CPS	Value	Nominal
	136.40	140.00		132.05	140.00
100.00 (Minimum) 187.00 (Nominal) (Maximum)			100.00 (Minimum) 185.00 (Nominal) (Maximum)		

LS4 Background CPS	Value	Nominal	SS1 Aluminium CPS	Value	Nominal
	27.82	29.00		4577.00	4850.00

20.00 (Minimum)	38.00 (Maximum)		4076.00 (Minimum)	5613.00 (Maximum)	

LS1 Aluminium CPS	Value	Nominal	SS1 Magnesium CPS	Value	Nominal
	837.28	870.00		7616.22	8000.00
750.00 (Minimum) 982.00 (Maximum)			6695.00 (Minimum) 9269.00 (Maximum)		

LS4 Aluminium CPS	Value	Nominal
	971.63	955.00
796.00 (Minimum) 1169.0 (Maximum)		

LS1 Al + Sleeve CPS	Value	Nominal
	774.98	725.00
650.00 (Minimum) 838.00 (Maximum)		

LS4 Al + Sleeve CPS	Value	Nominal
	492.05	426.50
382.00 (Minimum) 638.00 (Maximum)		

LS1 Magnesium CPS	Value	Nominal
	5475.24	5800.00
5158.00 (Minimum) 6486.00 (Maximum)		

SS Slope	Value	Nominal
	1.622	1.645
1.520 (Minimum) 1.770 (Maximum)		

LS Slope	Value	Nominal
	0.4180	0.4150
0.3800 (Minimum) 0.4500 (Maximum)		

Pef K Factor	Value	Nominal
	4.925	4.840
3.510 (Minimum) 6.170 (Maximum)		

Pef B Factor	Value	Nominal
	−0.6519	−0.5550
−0.7000 (Minimum) −0.4100 (Maximum)		

Master: 9−Sep−2014 11:14

ThruBit String Master Calibration

Thermal Neutron Master Calibration

TNF, Background CPS	Value	Nominal	TNN, Background CPS	Value	Nominal
	0.10	1.0		0.033	1.0
0 (Minimum) 2.0 (Maximum)			0 (Minimum) 2.0 (Maximum)		

TNF, Tank CPS	Value	Nominal	TNN, Tank CPS	Value	Nominal
	89.88	96.00		2635.5	2860.0
25.00 (Minimum) 200.0 (Maximum)			750.00 (Minimum) 5700.0 (Maximum)		

TNF, Tank + Al Sleeve CPS	Value	Nominal	TNN, Tank + Al Sleeve CPS	Value	Nominal
	2891.4	3040.0		30175.8	32350.0
727.00 (Minimum) 6080.0 (Maximum)			8000.00 (Minimum) 64700.0 (Maximum)		

Tank + Al Sleeve Ratio	Value	Nominal	Tank + Al Sleeve Porosity PU	Value	Nominal
	11.019	10.797		14.46	14.40
10.300 (Minimum) 11.300 (Maximum)			13.40 (Minimum) 15.40 (Maximum)		

Tank, Ratio	Value	Nominal	Tank, Temperature DEGF	Value	Nominal
	29.321	30.958		86.2	70.0
28.000 (Minimum) 34.000 (Maximum)			20.0 (Minimum) 120 (Maximum)		

Master: 3−Sep−2014 11:05

ThruBit String Master Calibration

TMG Accelerometer Calibration

Minimum Ax, m/s2	Value	Nominal	Maximum Ax, m/s2	Value	Nominal
NOT DONE	N/A	−9.810	NOT DONE	N/A	9.810
−10.81 (Minimum) (Nominal) −8.810 (Maximum)			8.810 (Minimum) (Nominal) 10.81 (Maximum)		

Minimum Ay, m/s2	Value	Nominal	Maximum Ay, m/s2	Value	Nominal
NOT DONE	N/A	−9.810	NOT DONE	N/A	9.810
−10.81 (Minimum) (Nominal) −8.810 (Maximum)			8.810 (Minimum) (Nominal) 10.81 (Maximum)		

Minimum Az, m/s2	Value	Nominal	Maximum Az, m/s2	Value	Nominal
NOT DONE	N/A	0	NOT DONE	N/A	9.810
−1.000 (Minimum) (Nominal) 1.000 (Maximum)			8.810 (Minimum) (Nominal) 10.81 (Maximum)		

RB Offset, degrees	Value	Nominal
	−17.00	0
−360.0 (Minimum) (Nominal) 360.0 (Maximum)		

Master: Calibration not done

ThruBit String Master Calibration

TMG Gamma−Ray Calibration

GR Background GAPI	Value	Nominal	GR Jig−Background GAPI	Value	Nominal
	27.12	30.00		158.9	160.0
0 (Minimum) (Nominal) 120.0 (Maximum)			128.0 (Minimum) (Nominal) 192.0 (Maximum)		

Master: 14−Aug−2014 13:55

Company: **SANDRIDGE ENERGY**

Schlumberger

Well: **RANDY 3508 2−3H 1L**
Field: **BOUSE**
County: **HARPER**
State: **KANSAS**

SPECTRAL DENSITY
DUAL SPACED NEUTRON
MEMORY LOG