



Company: SANDRIDGE ENERGY

Well: HENRY 3306 2-2H

Field: STOHRRVILLE

County: HARPER

State: KANSAS

ARRAY INDUCTION
GAMMA RAY
MEMORY LOG

County: HARPER
Field: STOHRRVILLE
Location: SHL: 265' FNL & 1140' FEL
Well: HENRY 3306 2-2H
Company: SANDRIDGE ENERGY

LOCATION		SHL: 265' FNL & 1140' FEL	Elev.: K.B. 1352.00 ft
		PBHL: 330' FNL & 1060' FEL	G.L. 1334.00 ft
			D.F. 1352.00 ft
Permanent Datum:	GROUND LEVEL	Elev.: 1334.00 ft	
Log Measured From:	K.B.	18.00 ft above Perm. Datum	
Drilling Measured From:	K.B.		
API Serial No.	Section	Township	Range
15077220200000	2	33S	6W

Logging Date	23-Mar-2014	
Run Number	ONE	
Depth Driller	9300 ft	
Schlumberger Depth	9224 ft	
Bottom Log Interval	9214 ft	
Top Log Interval	5120 ft	
Casing Driller Size @ Depth	7.000 in @ 5127 ft	
Casing Schlumberger	5120 ft	
Bit Size	6.125 in	
Type Fluid In Hole	WBM	
Density	8.4 lbm/gal	31 s
Fluid Loss	60 cm3	7.5
Source Of Sample	MUD SENSOR	
RM @ Measured Temperature	0.190 ohm.m	@ 65 degF
RMF @ Measured Temperature	0.140 ohm.m	@ 65 degF
RMC @ Measured Temperature	0.240 ohm.m	@ 65 degF
Source RMF	CALCULATED	CALCULATED
RM @ MRT	0.119 @ 108	0.088 @ 108
Maximum Recorded Temperatures	108 degF	
Circulation Stopped	Time	16:00
Logger On Bottom	Time	17:15
Unit Number	11	OKC, OK
Recorded By	DENGLER	
Witnessed By	CLAUDE HALLMARK	

Logging Date	Run 1	Run 2	Run
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth			
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
Density			
Fluid Loss			
Source Of Sample			
RM @ Measured Temperature			
RMF @ Measured Temperature			
RMC @ Measured Temperature			
Source RMF			
RM @ MRT			
Maximum Recorded Temperatures			
Circulation Stopped			
Logger On Bottom			
Unit Number			
Recorded By			
Witnessed By			

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
 OS1: THRU BIT
 OS2: PORTAL BIT
 OS3:
 OS4:
 OS5:

OTHER SERVICES2
 OS1:
 OS2:
 OS3:
 OS4:
 OS5:

REMARKS: RUN NUMBER 1
 SERVICE: HORIZONTAL MEMORY PUMP DOWN- BIT DEPTH 9159' LOGGED TO 5120'
 ALL SCALES AND PRESENTATIONS PER CLIENT REQUEST
 LIMESTONE POROSITY, 2.71 G/CC USED FOR POROSITY CALCULATIONS
 LOG RAN WITH SWIVEL, DECENTRALIZER AND NO STANDOFFS
 TBHV REPRESENTS TOTAL BOREHOLE VOLUME, FT3
 ABHV REPRESENTS ANNULAR BOREHOLE VOLUME, FT3, CALCULATED FOR 4.5" CASING
 HSPM AND RIGSENSE USED TO CREATE DEPTH LOG
 LOG DEPTH CORRELATED TO MWD LOG PROVIDED BY CUSTOMER
 RIG: LARIAT 45
 CREW: J. DENGLER, Z. HOWARD, E. PRICE
 LOG RAN WITH NO RETURNS

REMARKS: RUN NUMBER 2

RUN 1		
SERVICE ORDER #:	2688	
PROGRAM VERSION:	19C2-270	
FLUID LEVEL:	0 ft	
LOGGED INTERVAL	START	STOP

RUN 2		
SERVICE ORDER #:		
PROGRAM VERSION:		
FLUID LEVEL:		
LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1

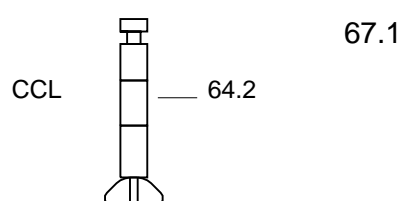
SURFACE EQUIPMENT

WITM (ThruBit)

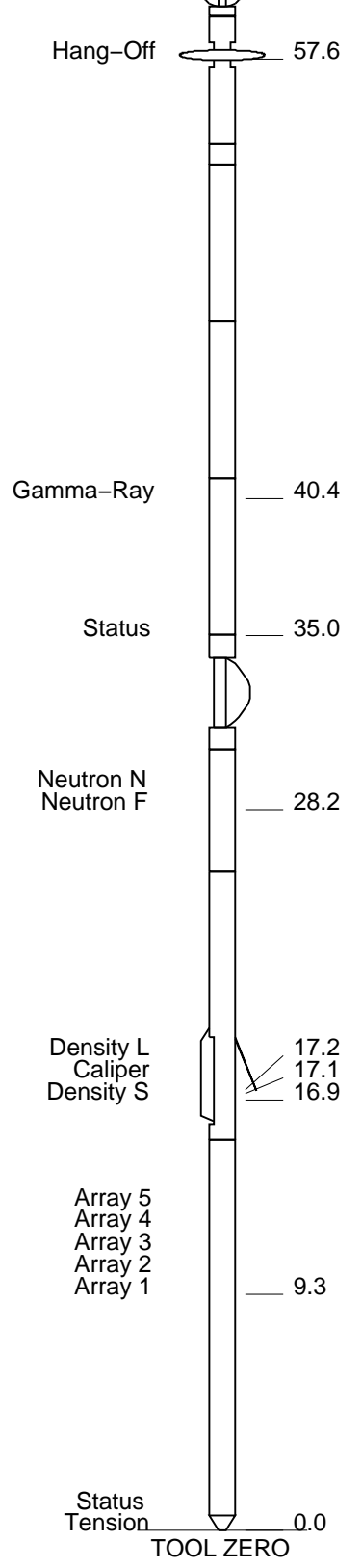
RUN 2

DOWNHOLE EQUIPMENT

TBT-A
 THEAD
 CCL
 BDOT-B 11
 THOT
 T10_1
 TBAT1 29
 TBAT2 30



TMG-A 39
TBEX-A 42
TBN-A 27
NNLS-EWA 3754
TBD-A 24
GGLS-FZ 3351
TBI-A 23



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: HENRY 3306 2-2H

Input DLIS Files

DEFAULT ThruBit_010PUP FN:9 PRODUCER 24-Mar-2014 01:39 9224.0 FT 2588.0 FT

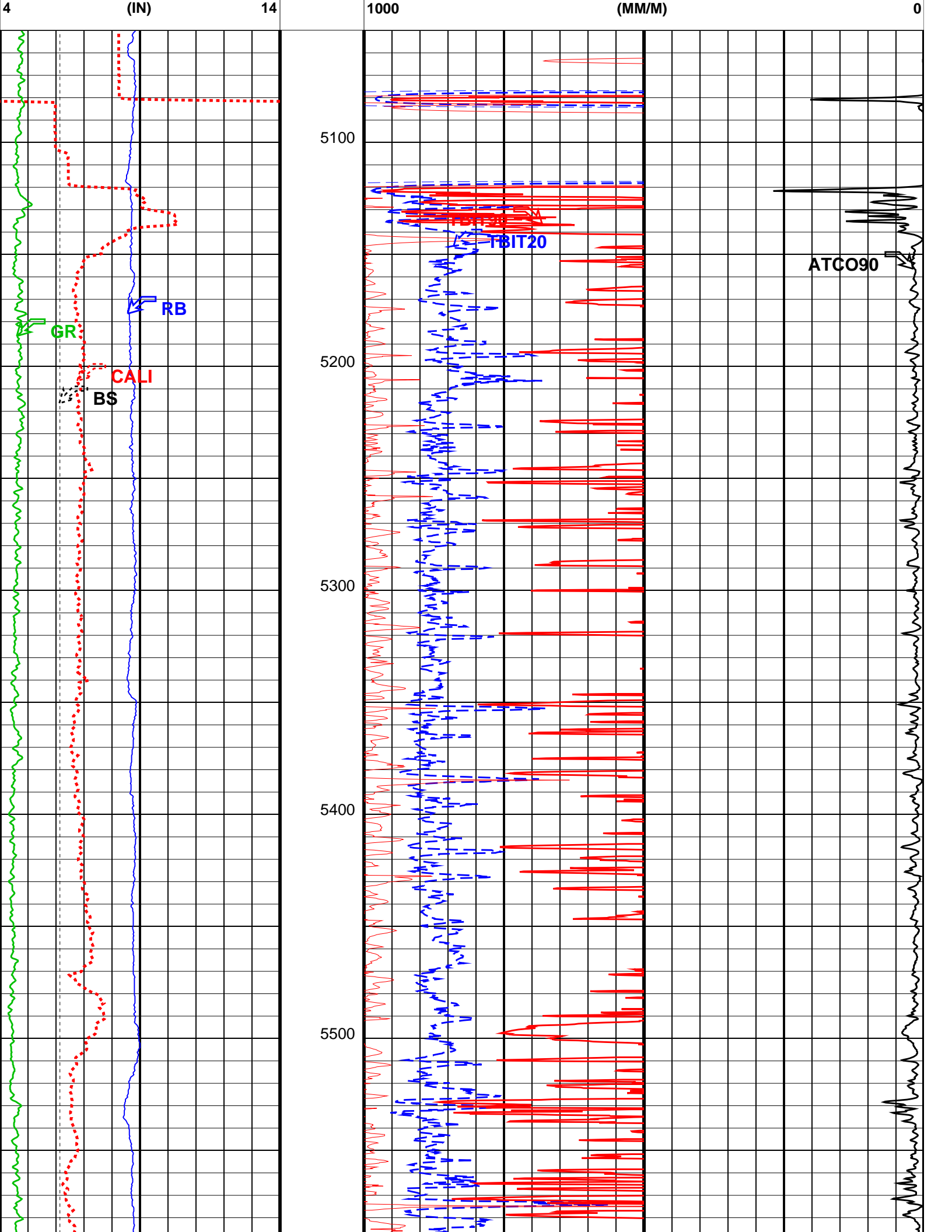
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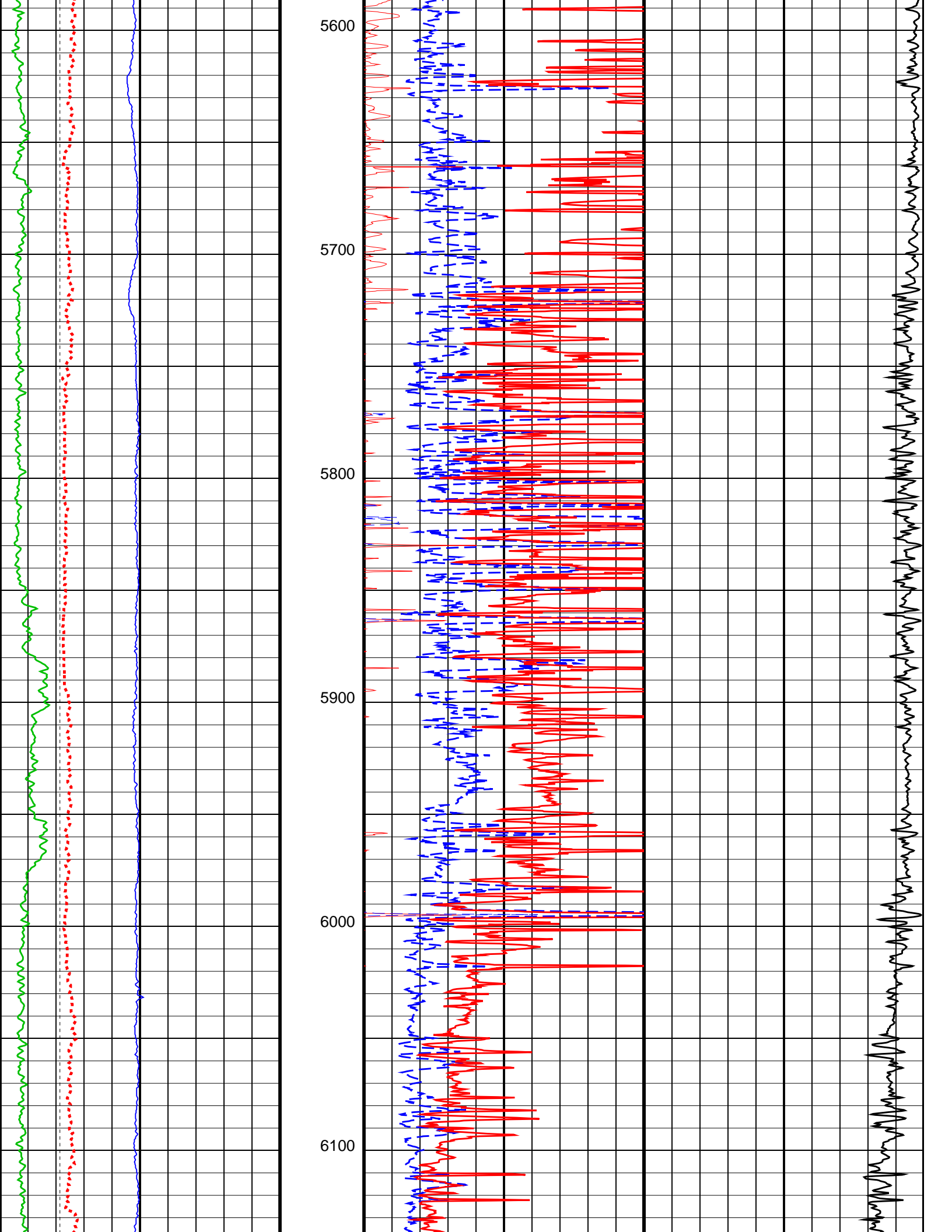
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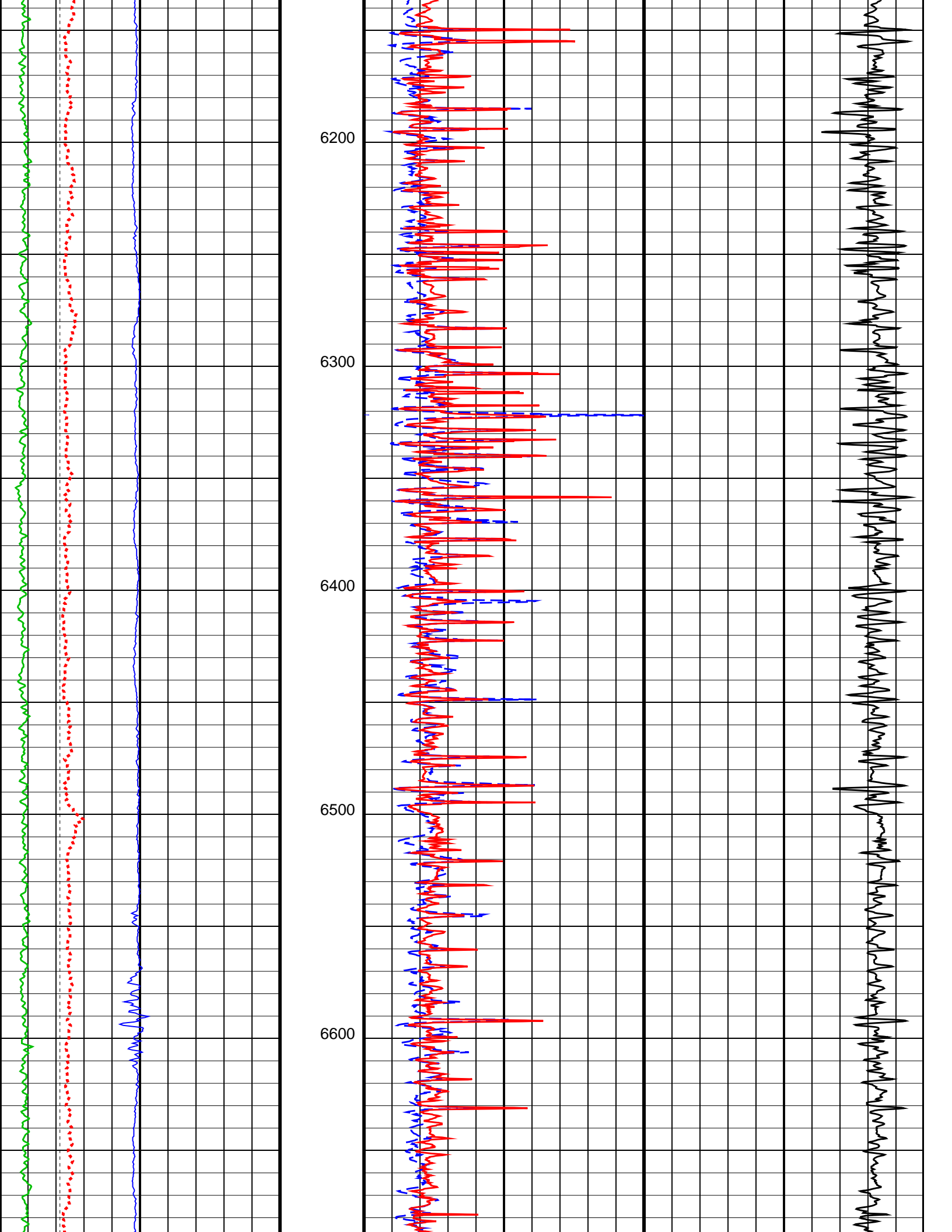
OP System Version: 19C2-270

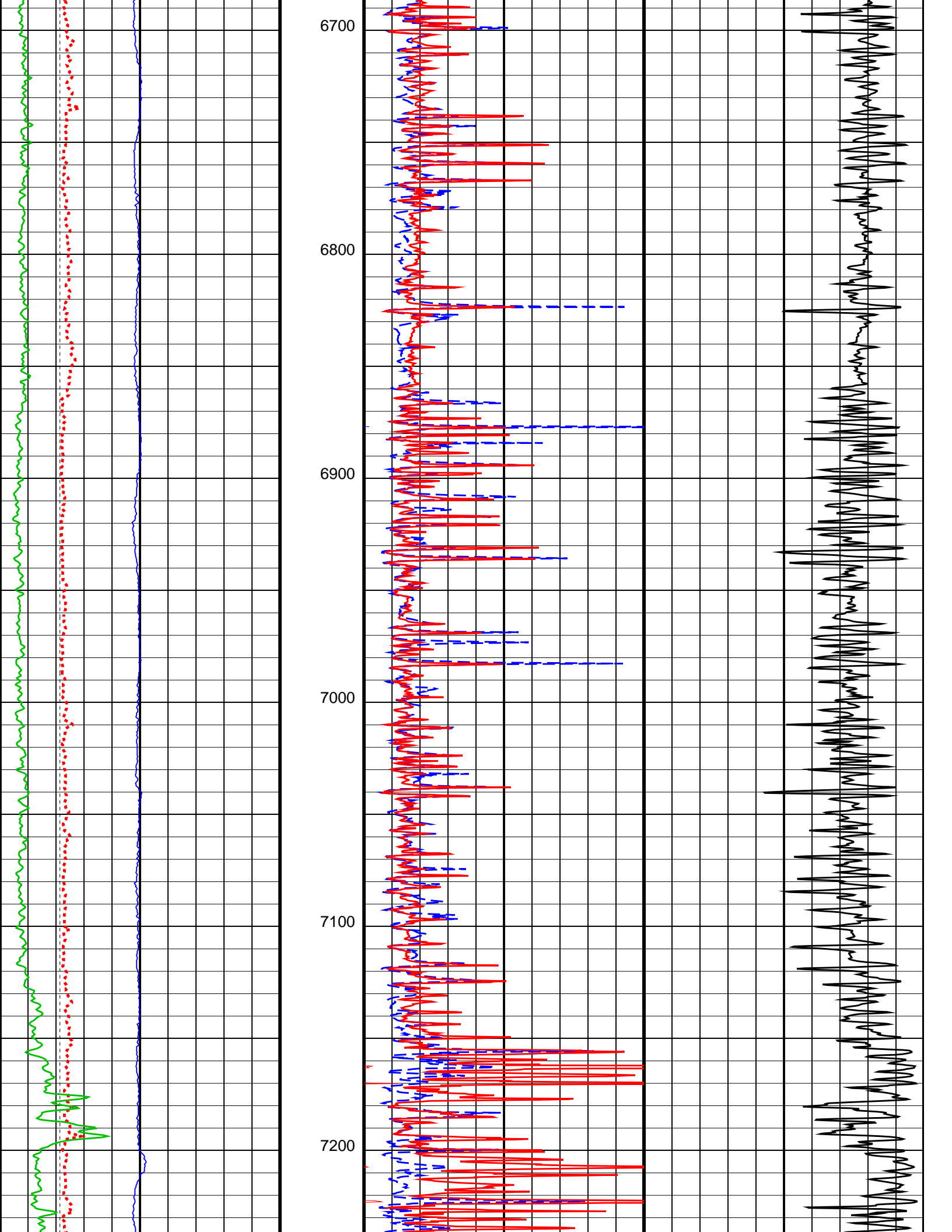
TBT SRPC-5292-ThruBit_RevA

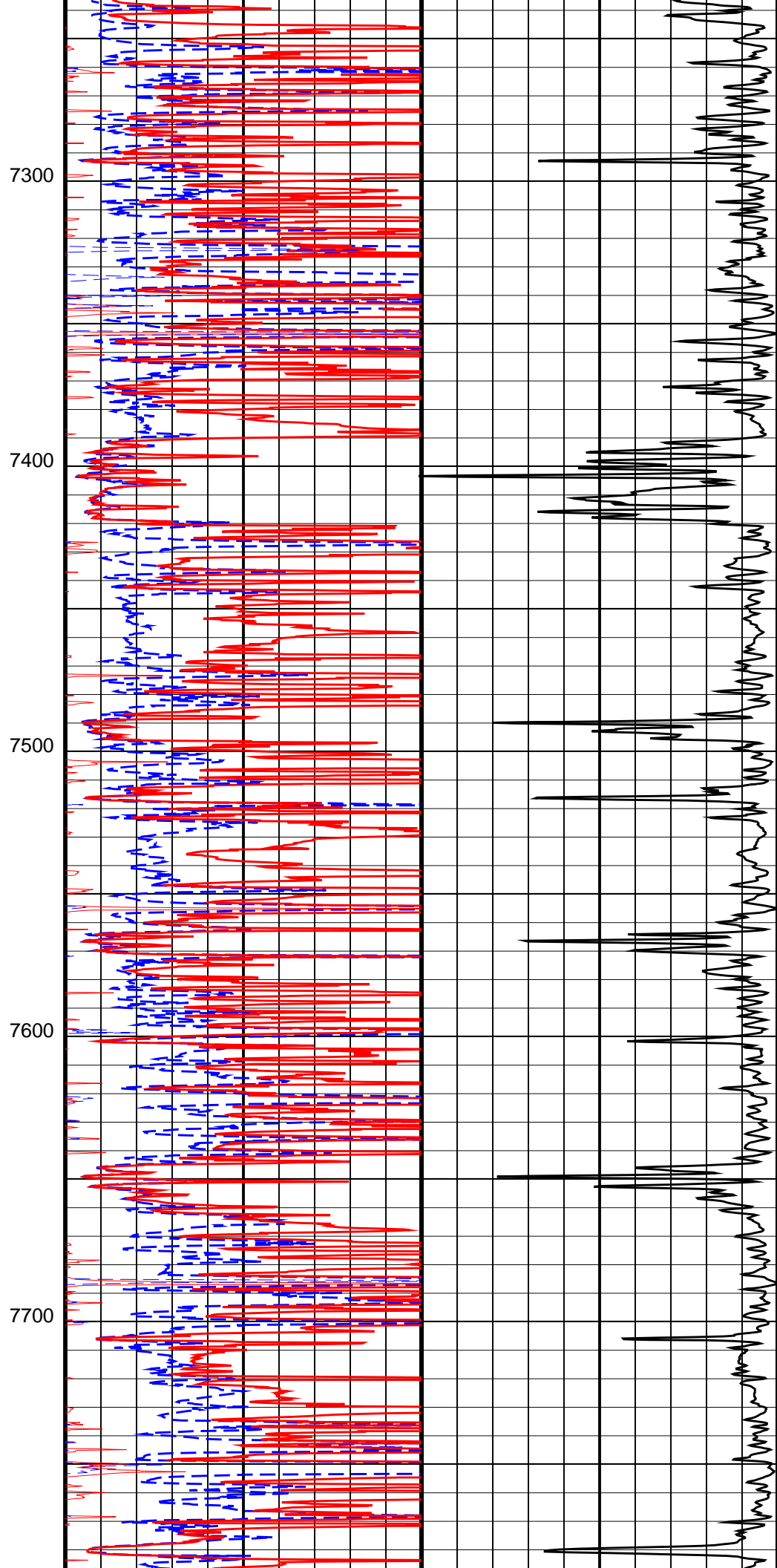
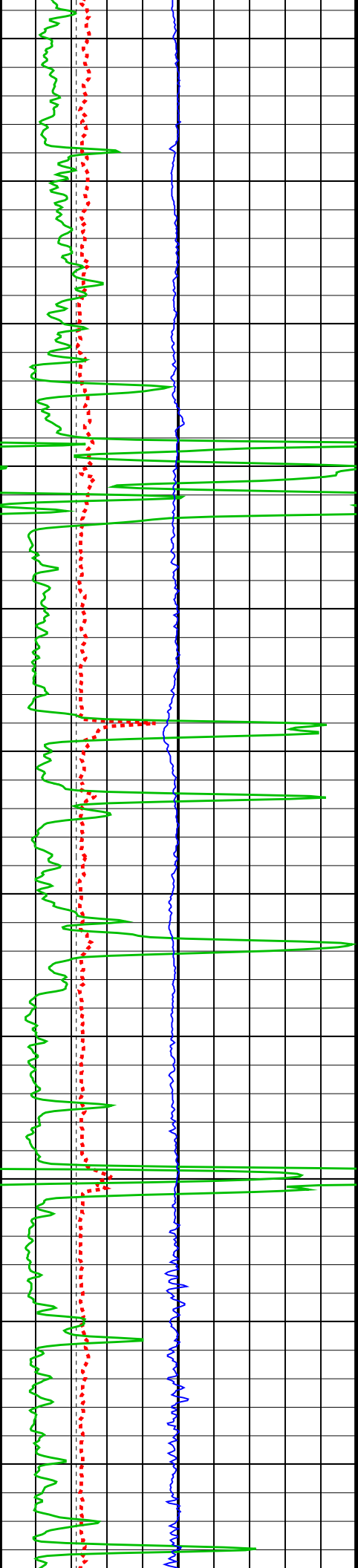
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<u>Caliper (CALI)</u> 4 (IN) 14	<u>TBI 90 Inch Investigation (TBIT90)</u> 50 (OHMM) 500	
<u>Gamma Ray (GR)</u> 0 (GAPI) 150	<u>TBI 90 Inch Investigation (TBIT90)</u> 0 (OHMM) 50	
<u>Relative Bearing (RB)</u> 0 (DEG) 360	<u>TBI 20 Inch Investigation (TBIT20)</u> 0 (OHMM) 50	
<u>Bit Size (BS)</u>	TBI 90 Inch Conductivity (ATCO90)	

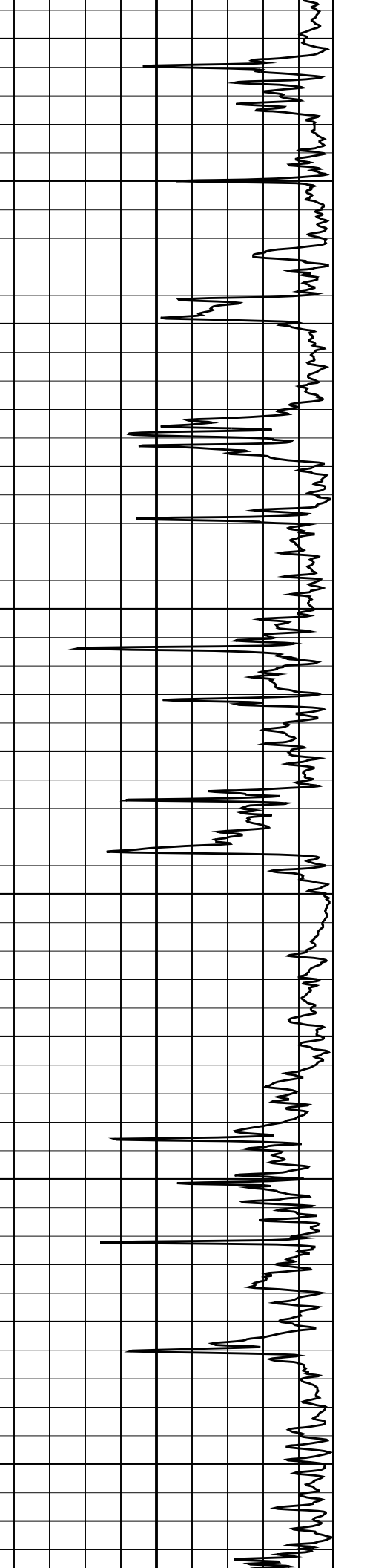
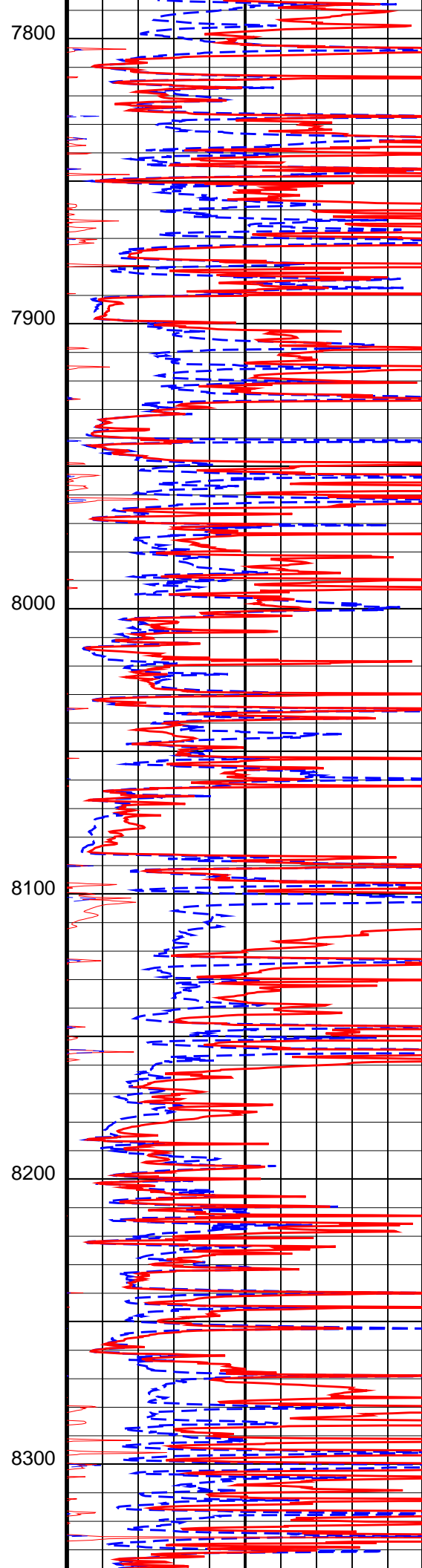
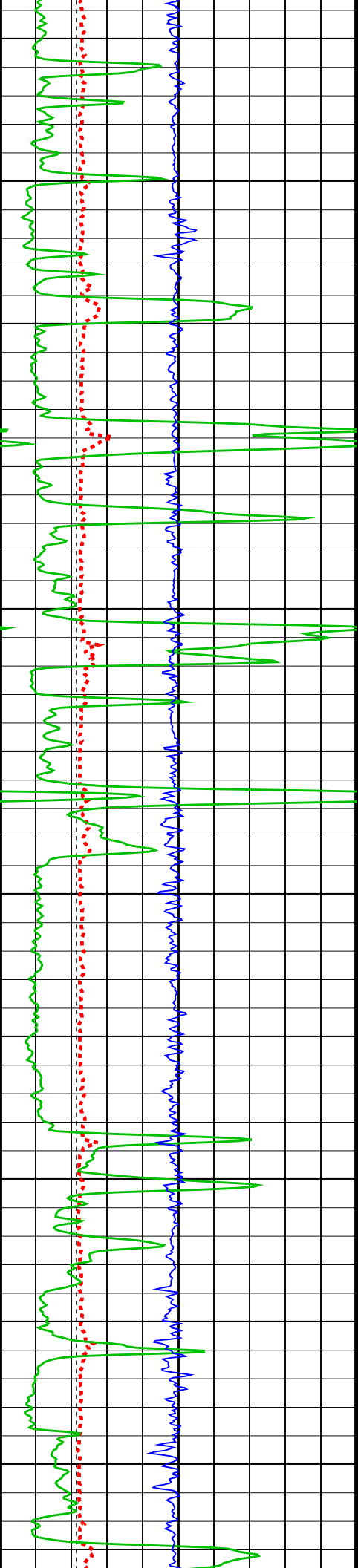


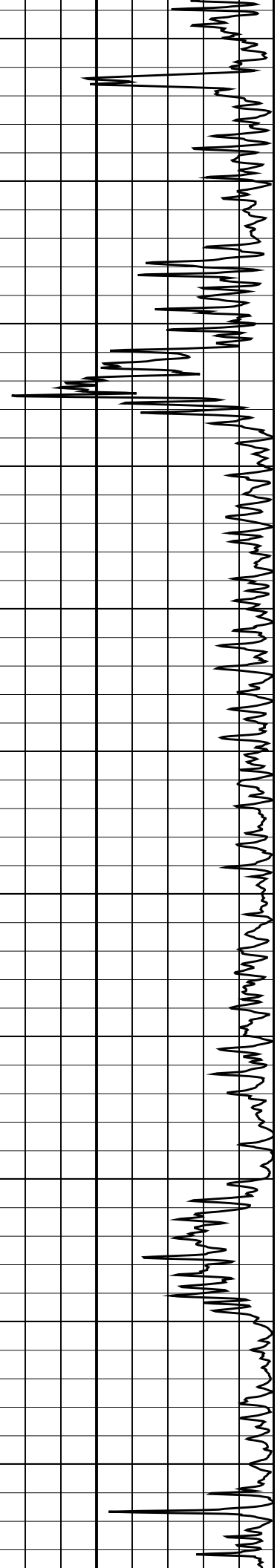
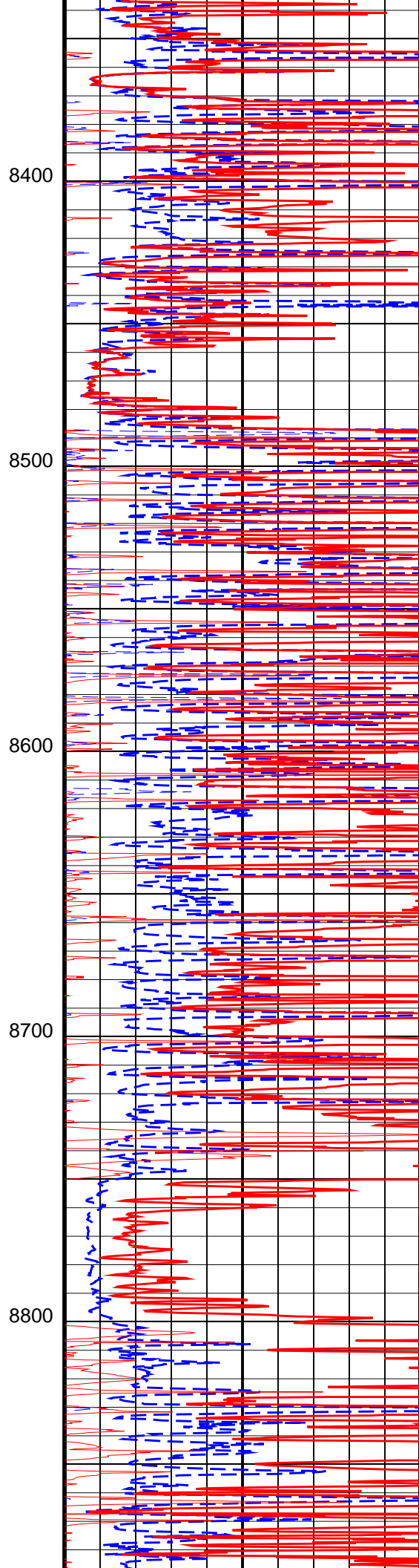
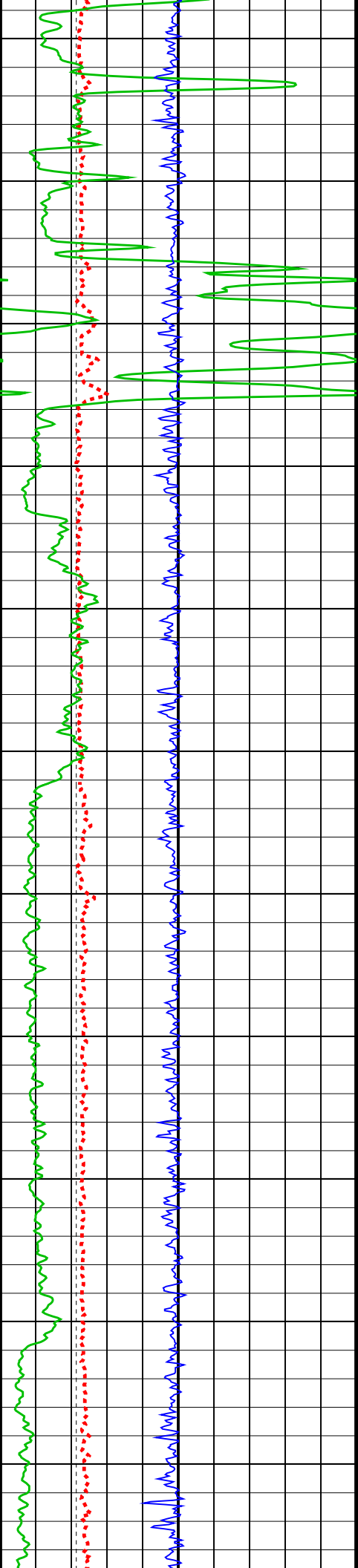


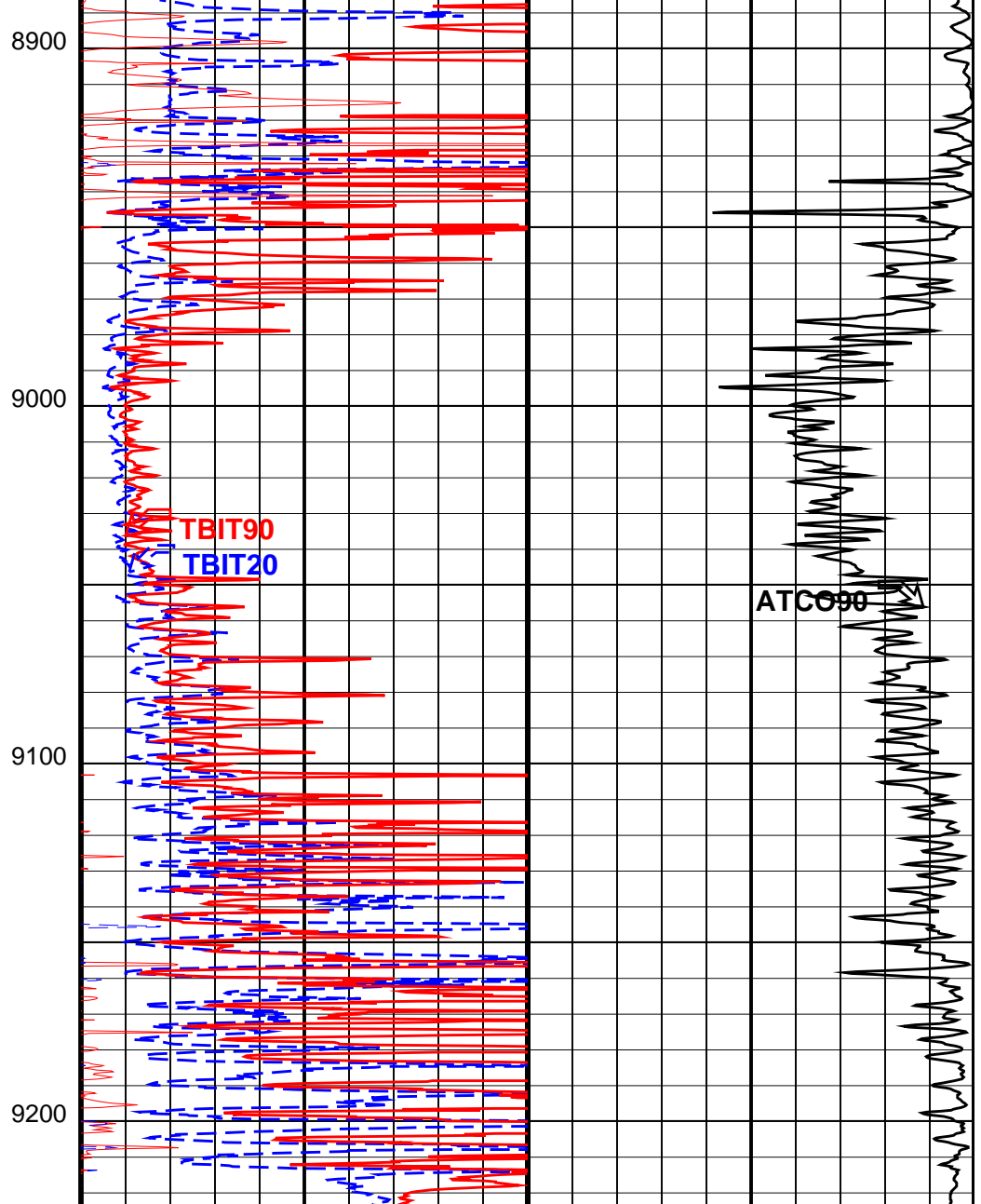
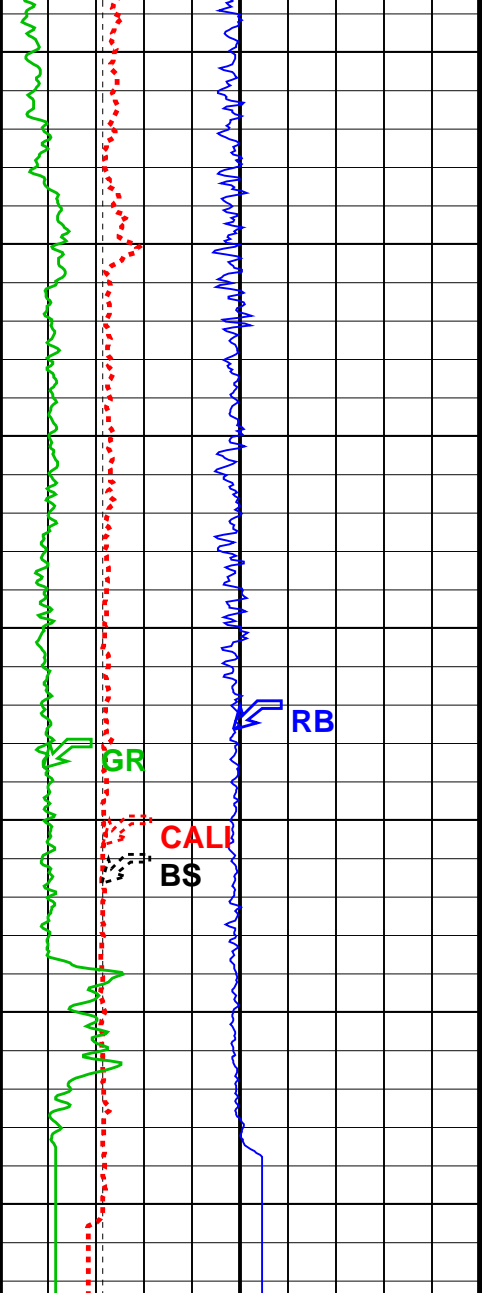












Bit Size (BS)		(IN)	
4			14
Relative Bearing (RB)		(DEG)	
0			360
Gamma Ray (GR)		(GAPI)	
0			150
Caliper (CALI)		(IN)	
4			14

TBI 90 Inch Conductivity (ATCO90)		(MM/M)	
1000			0
TBI 20 Inch Investigation (TBIT20)		(OHMM)	
0			50
TBI 90 Inch Investigation (TBIT90)		(OHMM)	
0			50
TBI 90 Inch Investigation (TBIT90)		(OHMM)	
50			500
TBI 20 Inch Investigation (TBIT20)		(OHMM)	
50			500

Parameters

DLIS Name	Description	Value
TBT-A: ThruBit String		
MT	Mud Type (for TBN and TBI correction)	WBM
RB_OFFSET	Additional RB offset (degrees)	0.000 deg
TBI_ALGO	TBI Algorithm Selection	AIT
TBI_BHC_OP	Borehole Correction Option (for TBI)	CALIPER
TBI_CALTYP	TBI Mastercal Type	THRUBIT
TBI_REPL_ARRAY_DEST	TBI: Replace This Array	NONE
TBI_REPL_ARRAY_SOURCE	TBI: With This Array	NONE
TBI_TC_OP	Induction Temperature Correction Option	LOWER

OP System Version: 19C2-270

TBT SRPC-5292-ThruBit_RevA

Input DLIS Files

DEFAULT	ThruBit_010PUP	FN:9	PRODUCER	24-Mar-2014 01:39	9224.0 FT	2588.0 FT
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Output DLIS Files

TBT .012	FN:11	24-Mar-2014 01:47
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MAIN PASS

MAXIS Field Log

Company: SANDRIDGE ENERGY

Well: HENRY 3306 2-2H

Input DLIS Files

DEFAULT	ThruBit_010PUP	FN:9	PRODUCER	24-Mar-2014 01:39	9224.0 FT	2588.0 FT
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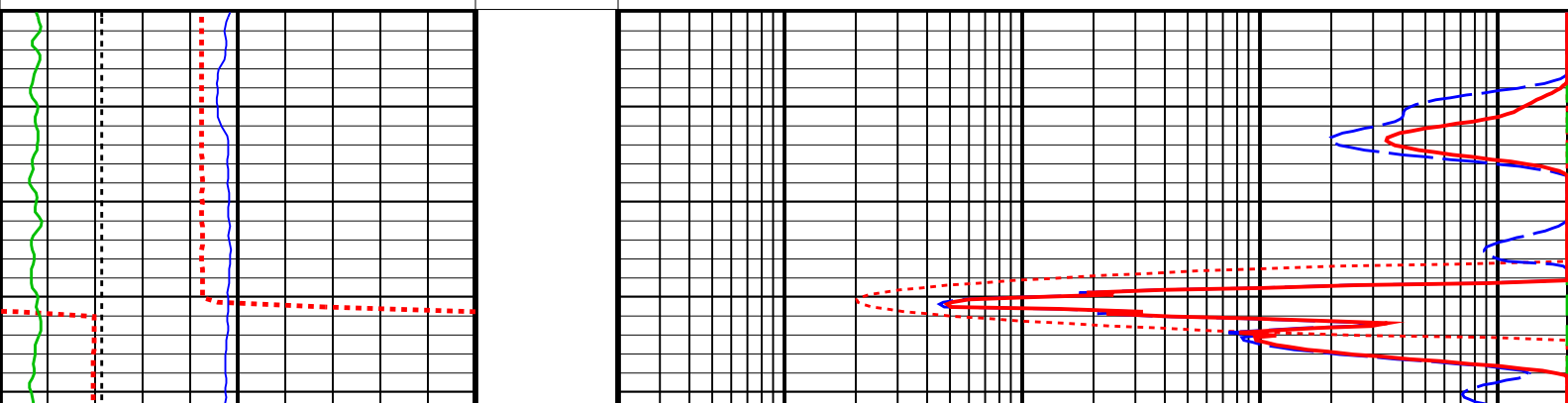
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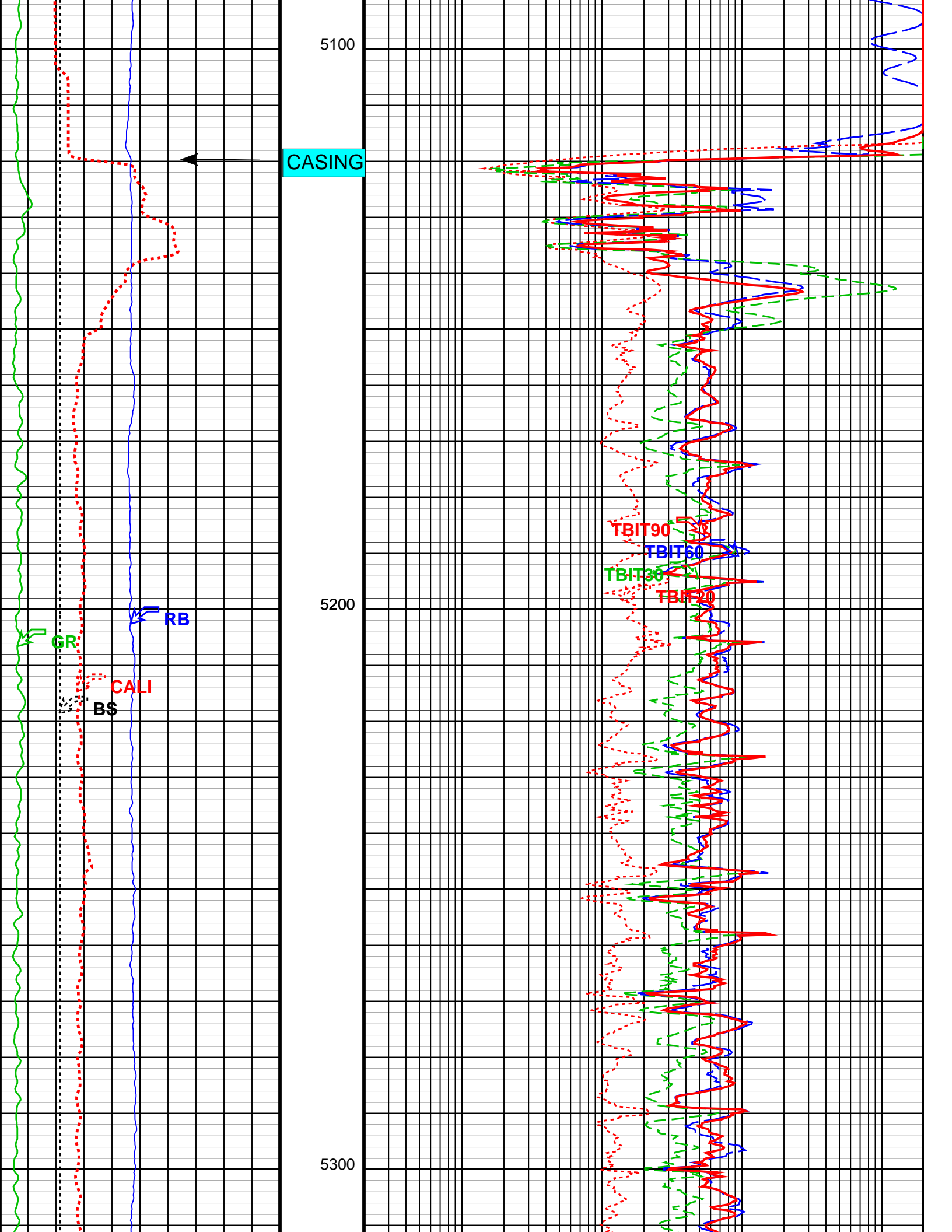
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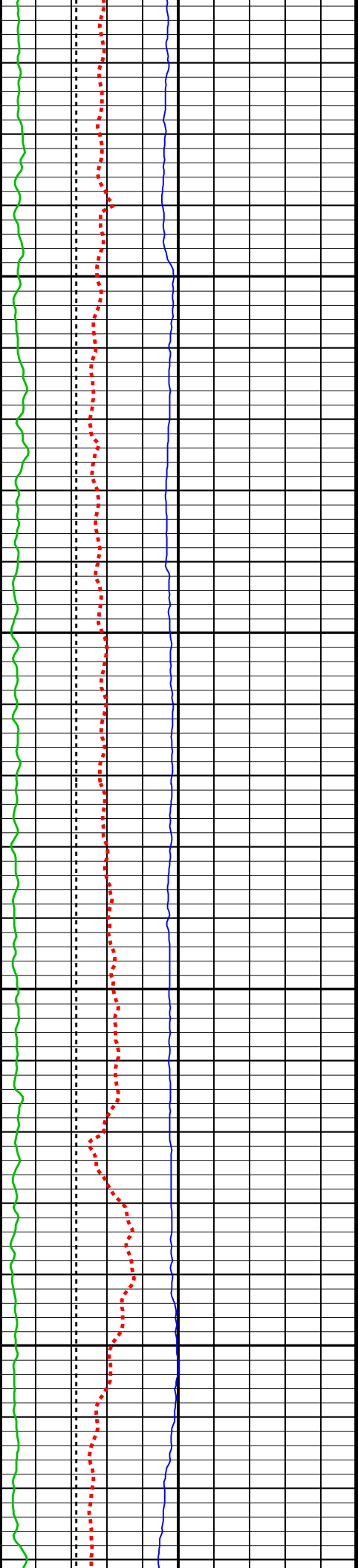
OP System Version: 19C2-270

TBT SRPC-5292-ThruBit_RevA

<p>Caliper (CALI) 4 (IN) 14</p> <p>Gamma Ray (GR) 0 (GAPI) 150</p> <p>Bit Size (BS) 4 (IN) 14</p> <p>Relative Bearing (RB) 0 (DEG) 360</p>	<p>TBI 90 Inch Investigation (TBIT90) 0.2 (OHMM) 2000</p> <p>TBI 60 Inch Investigation (TBIT60) 0.2 (OHMM) 2000</p> <p>TBI 30 Inch Investigation (TBIT30) 0.2 (OHMM) 2000</p> <p>TBI 20 Inch Investigation (TBIT20) 0.2 (OHMM) 2000</p>
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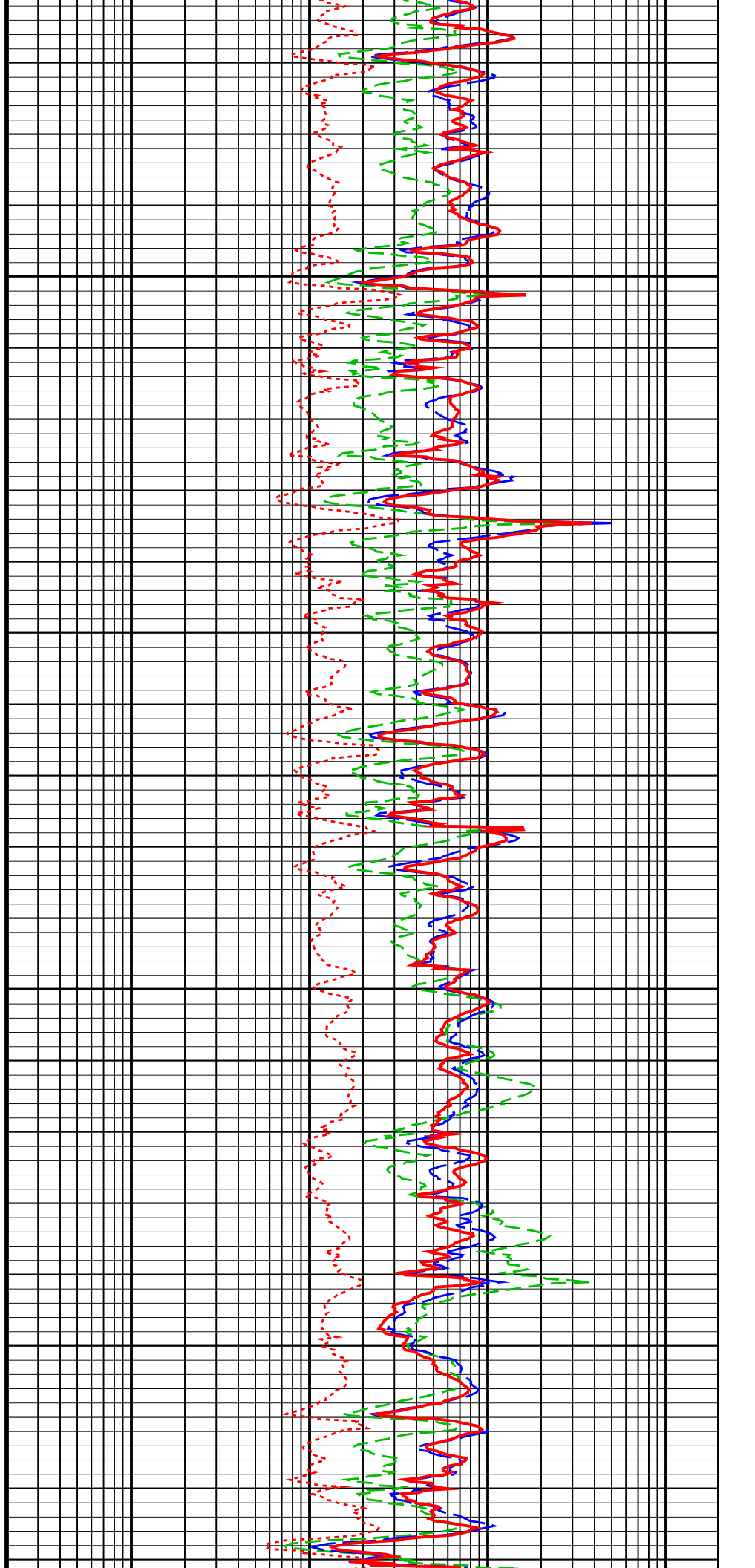


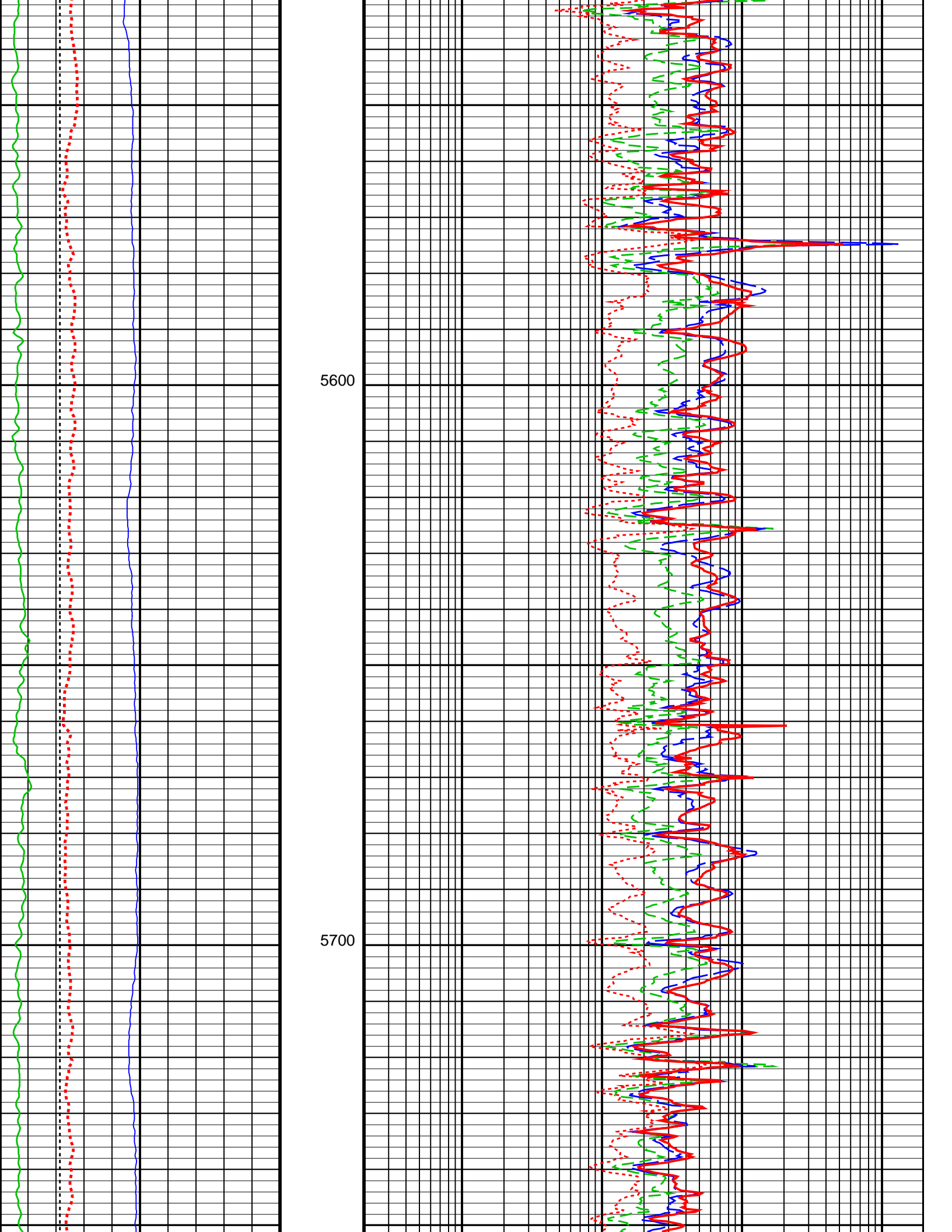




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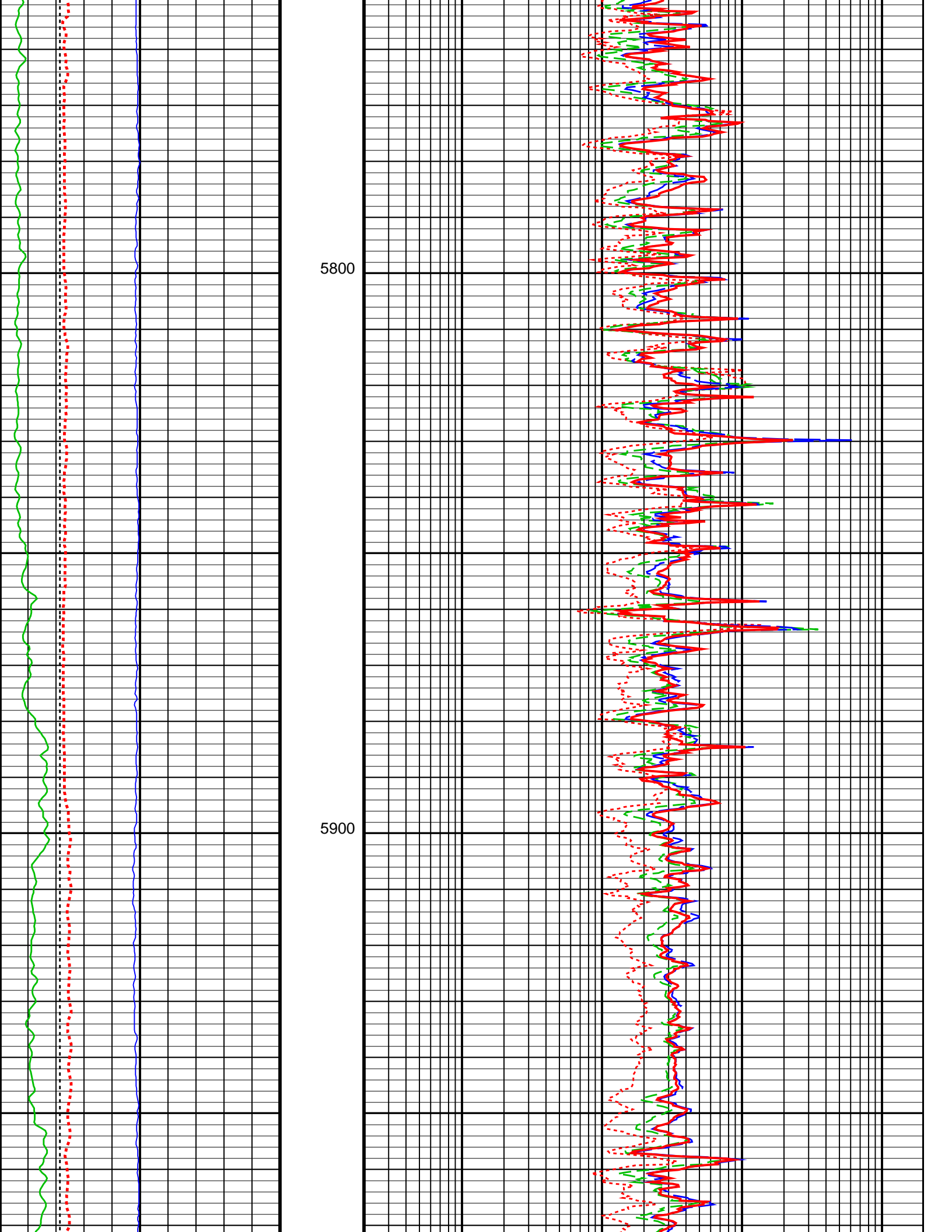
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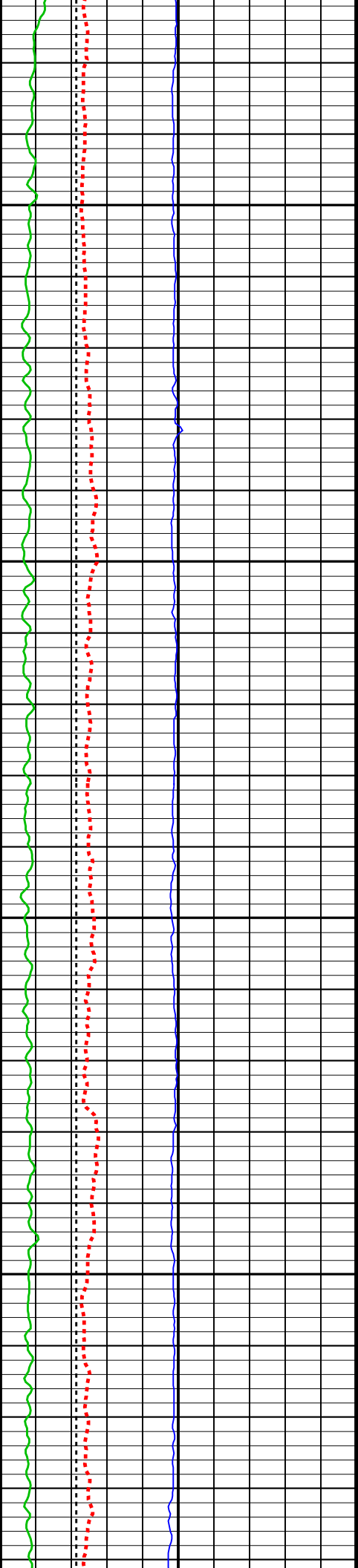




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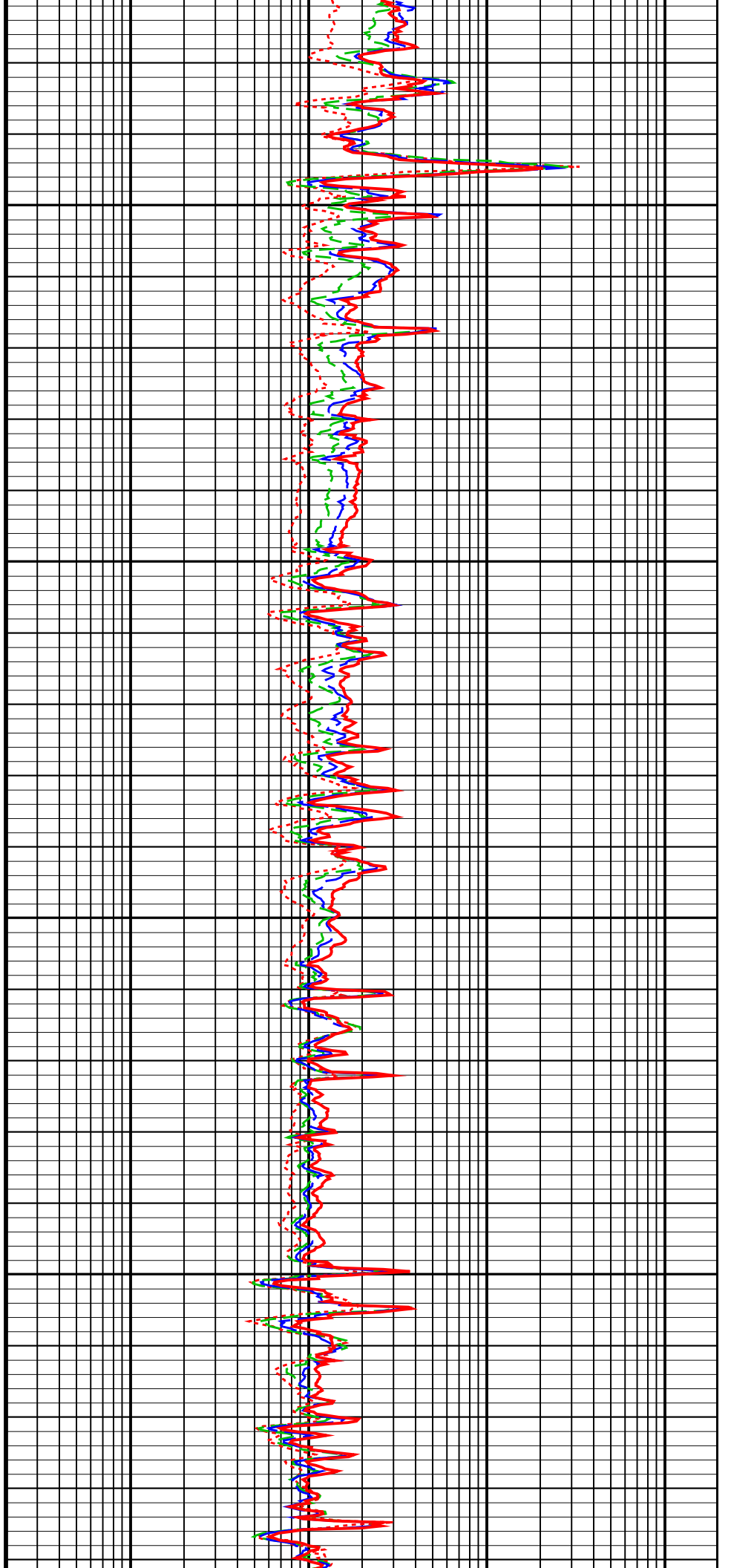
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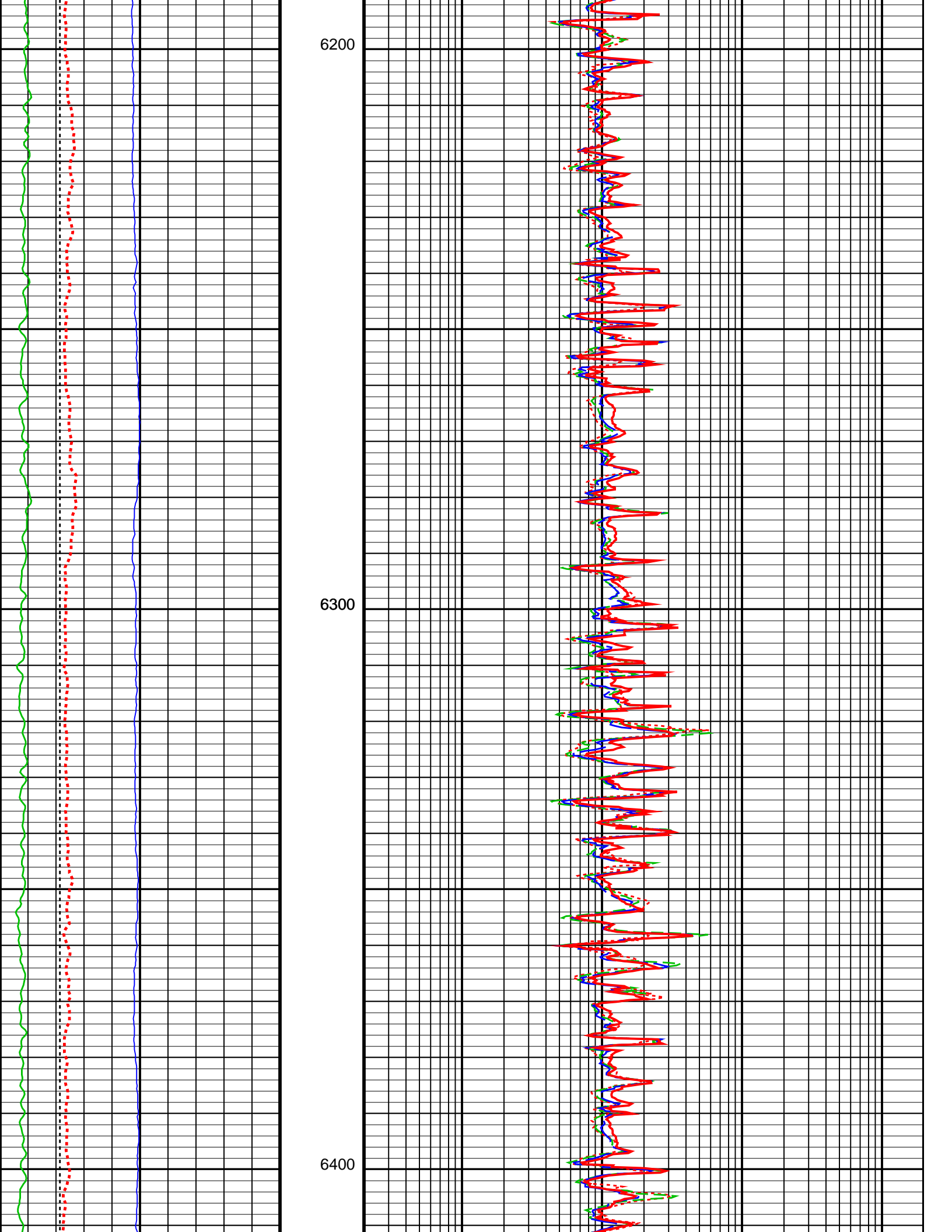


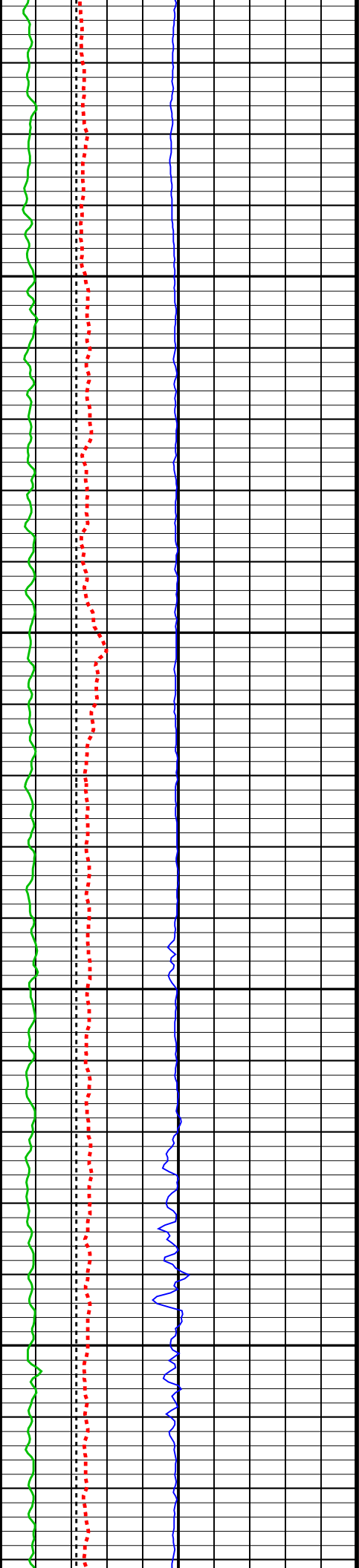


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6100

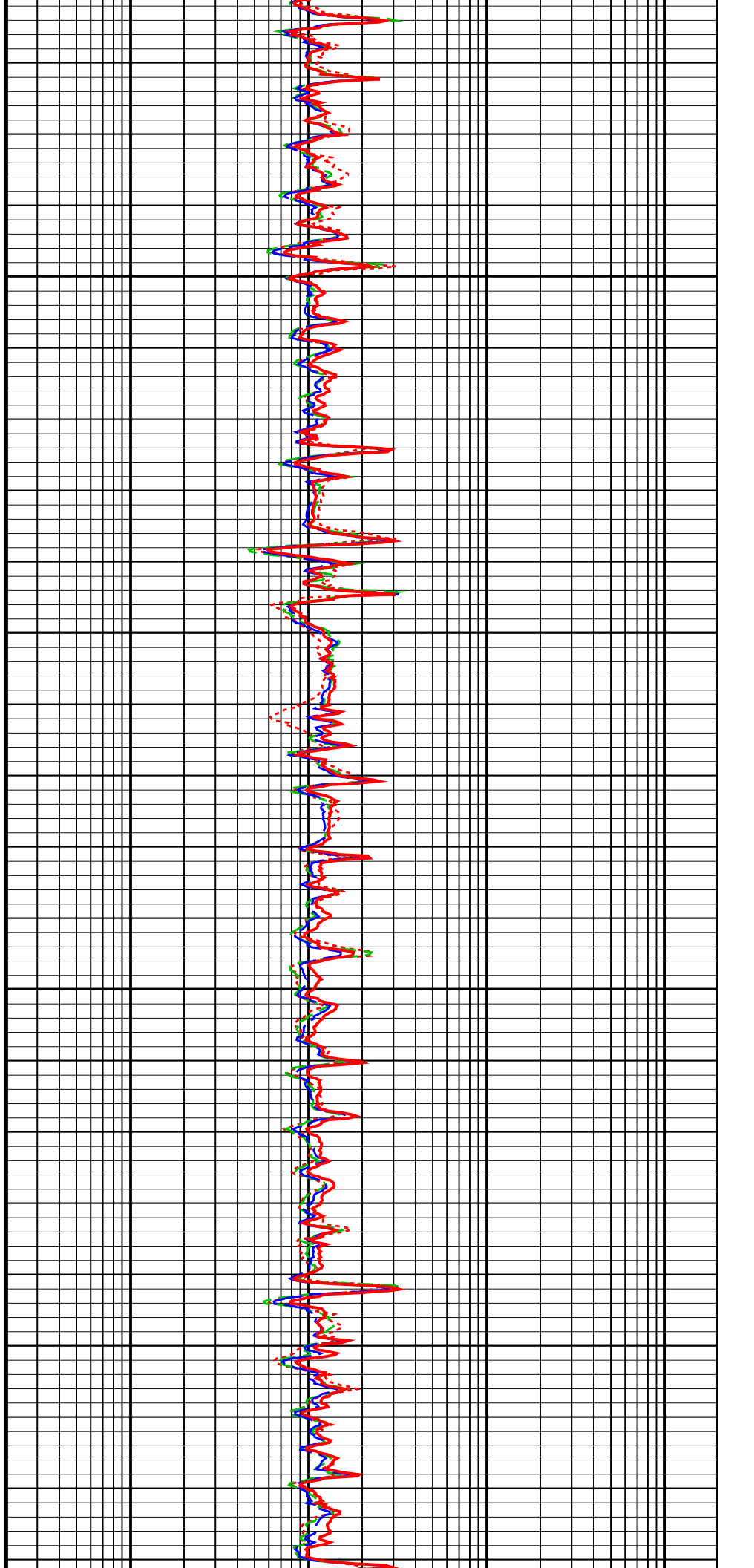


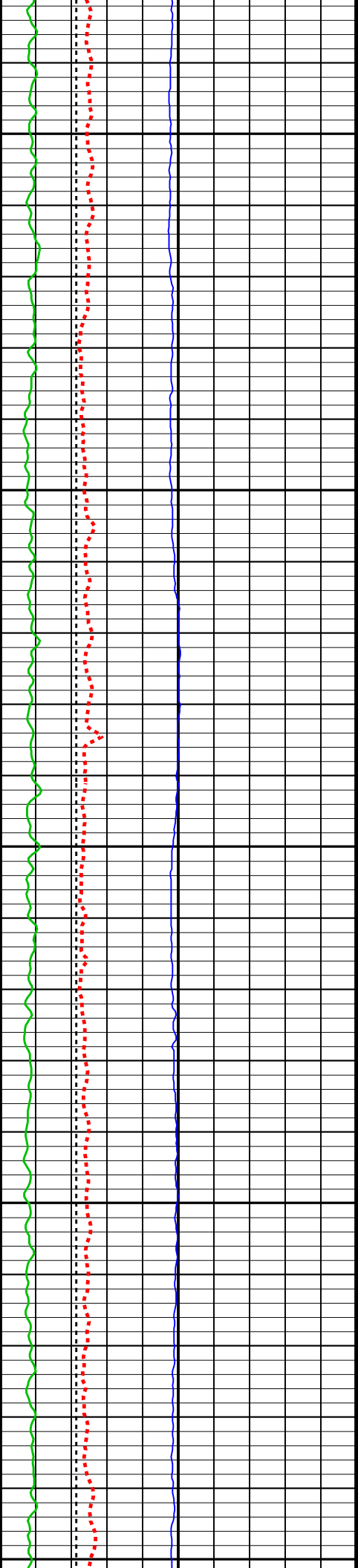




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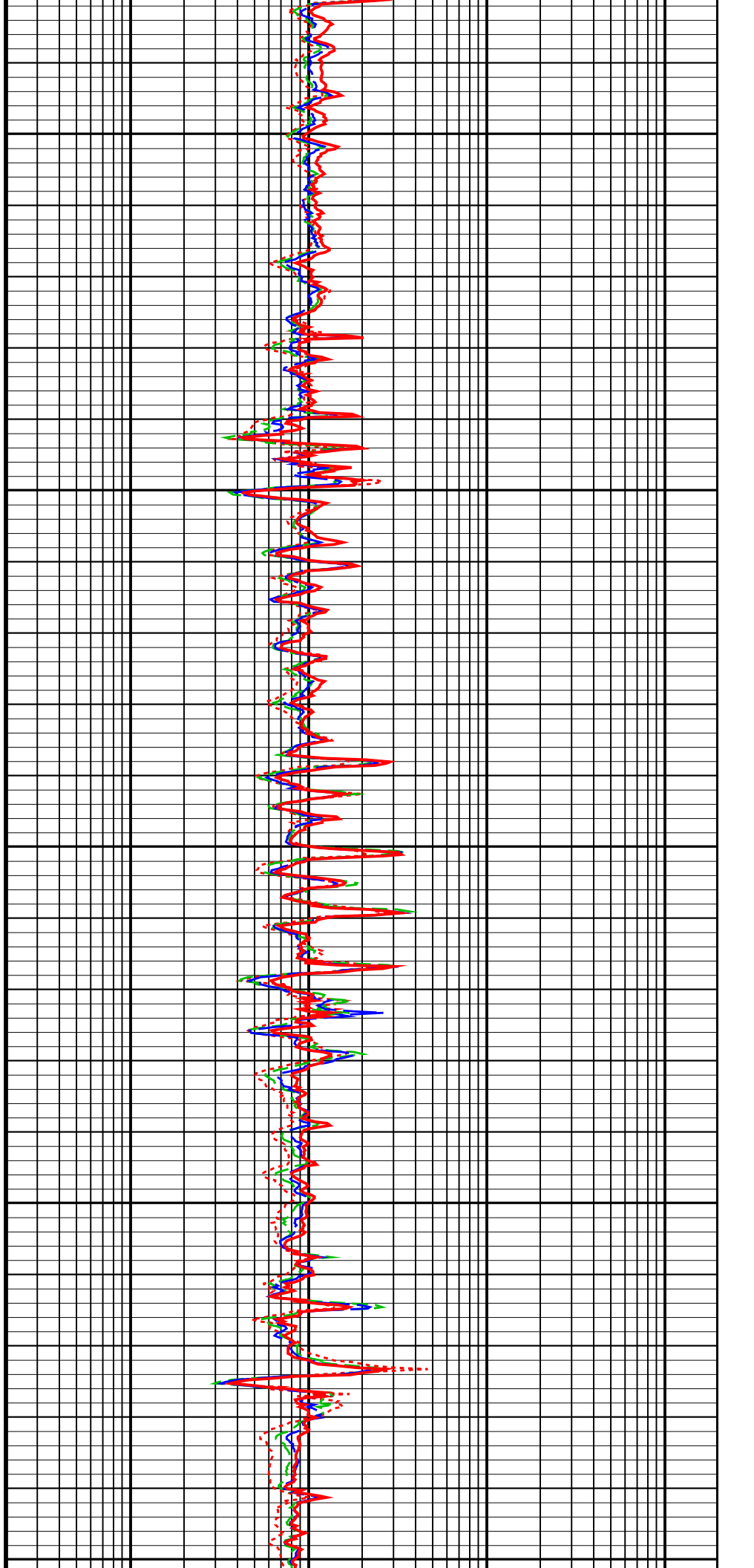
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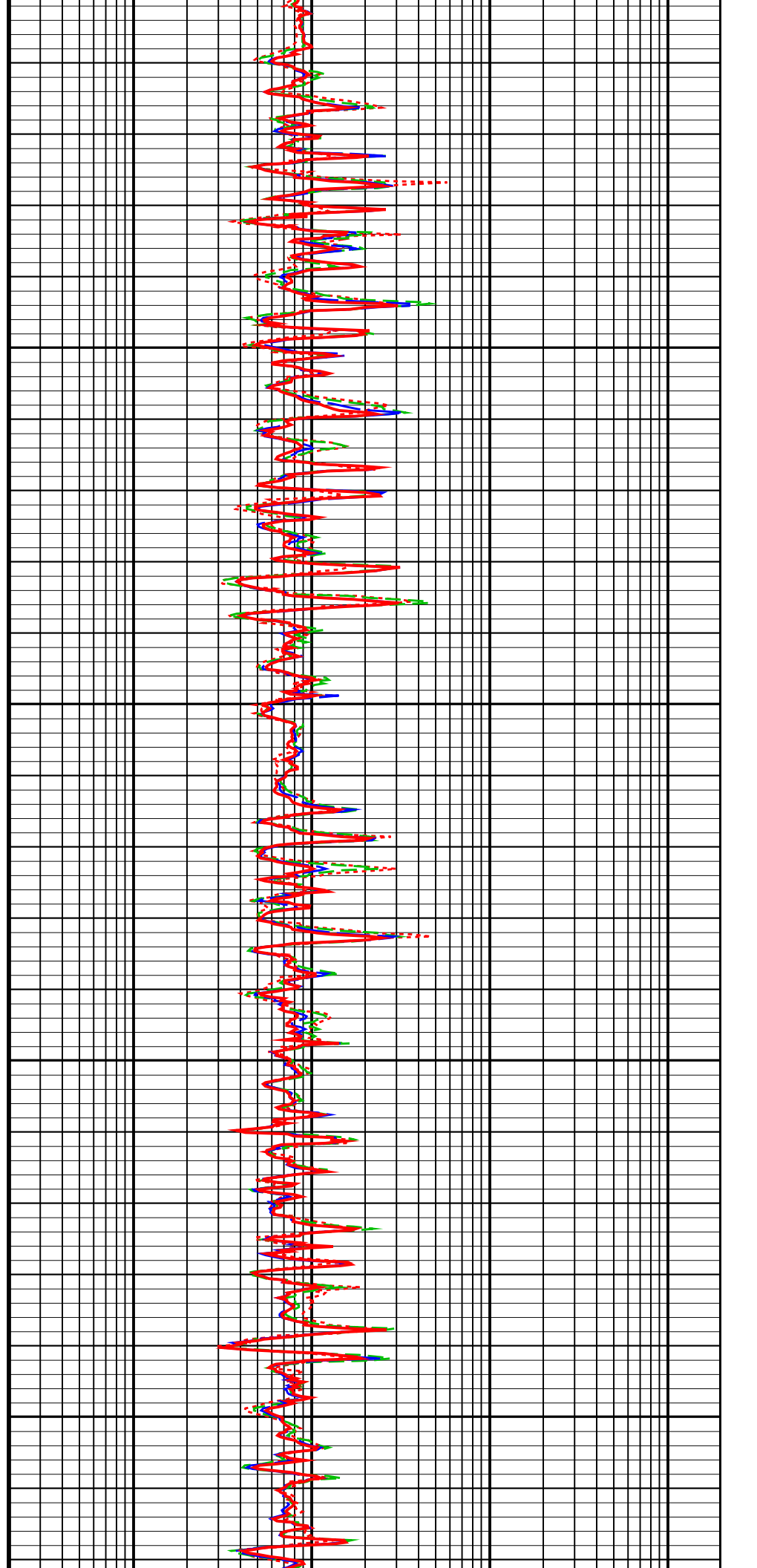
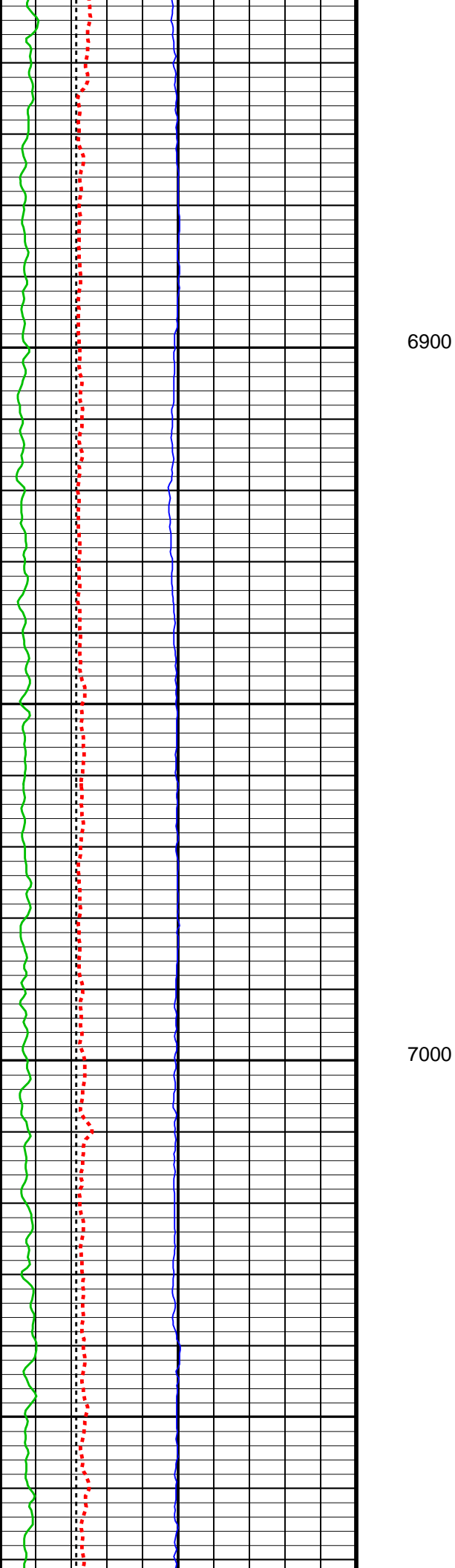


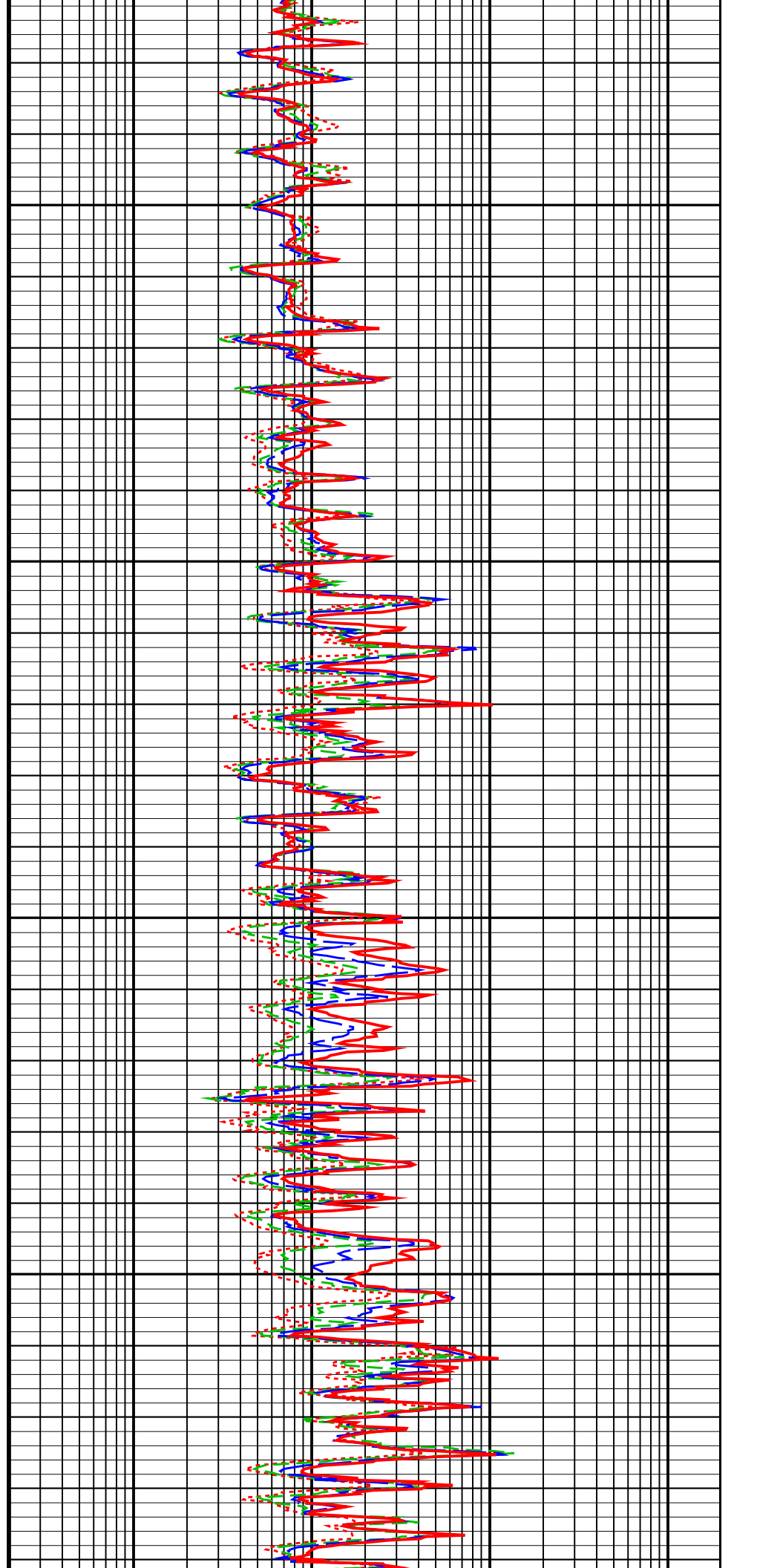
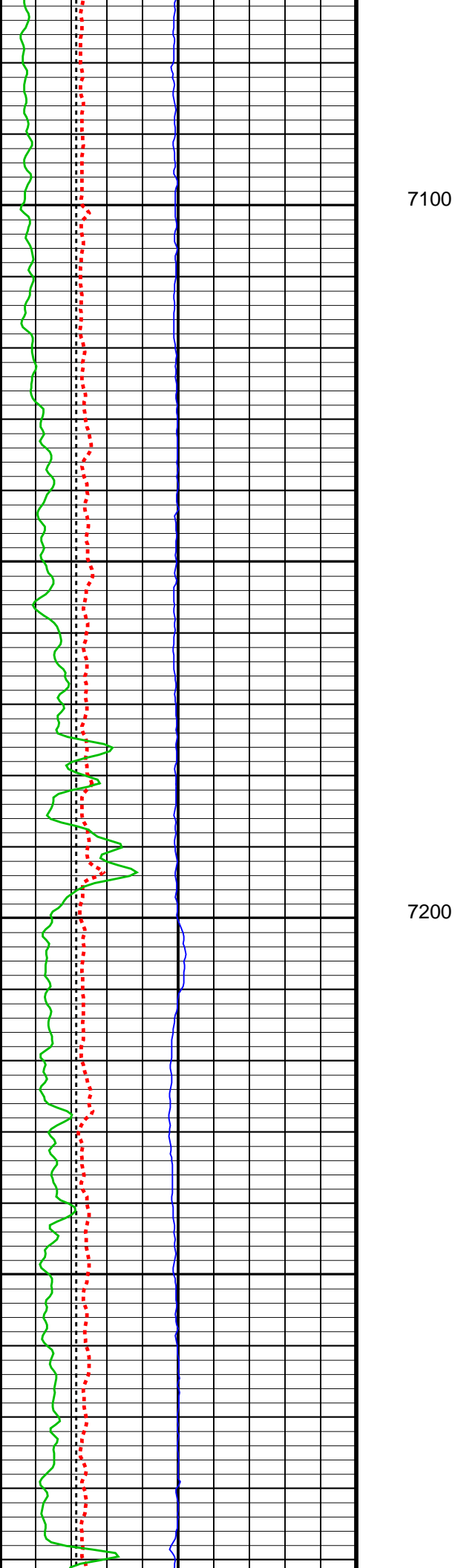


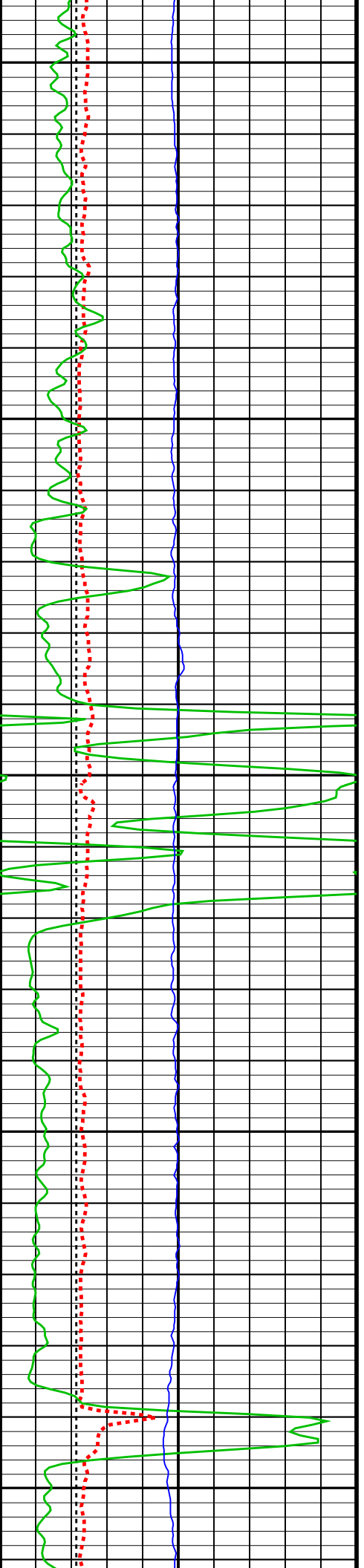
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6800





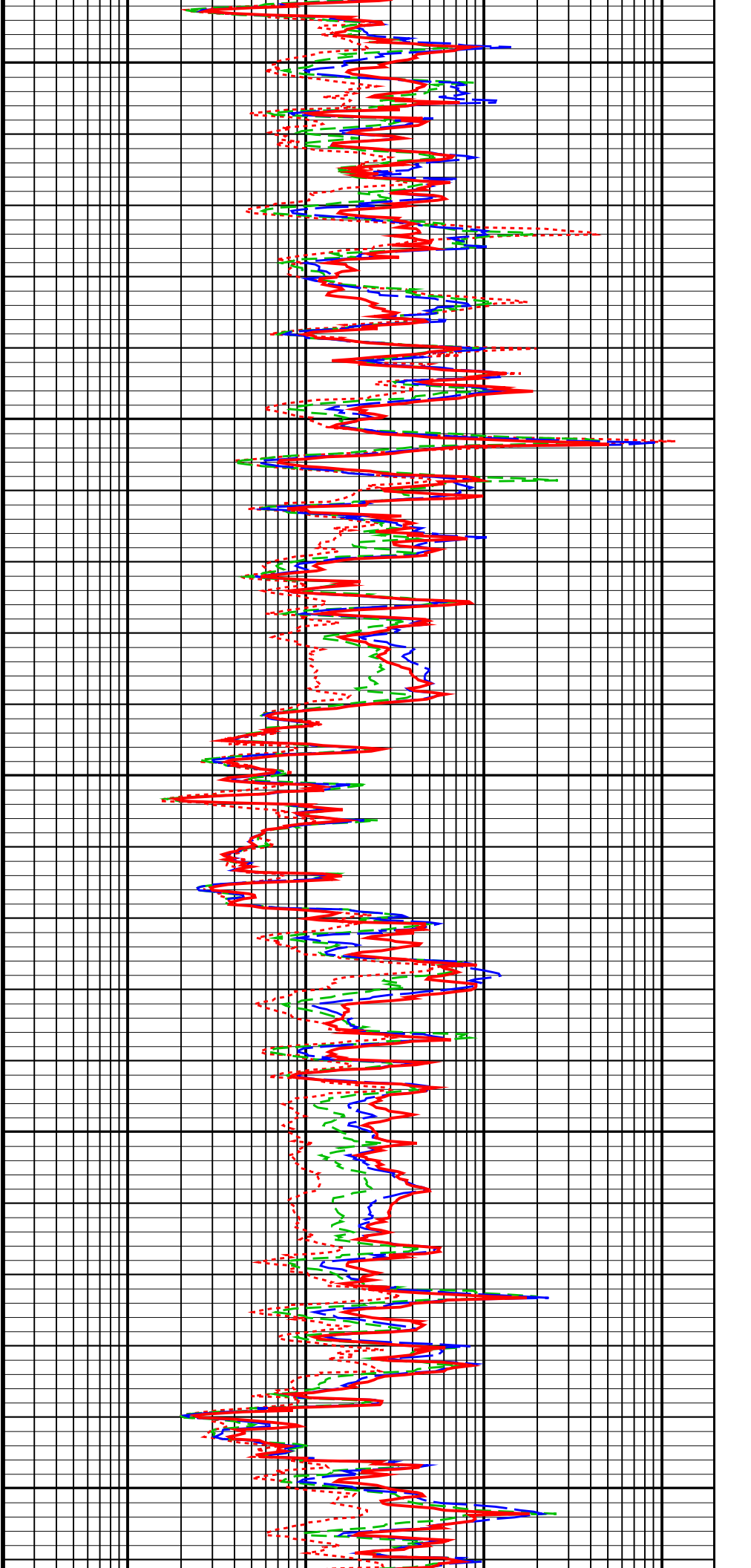


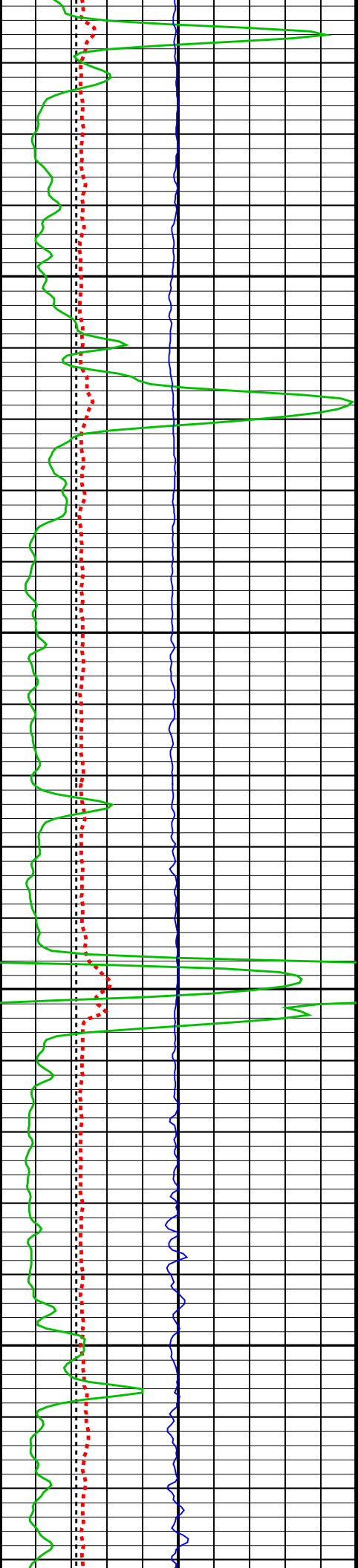


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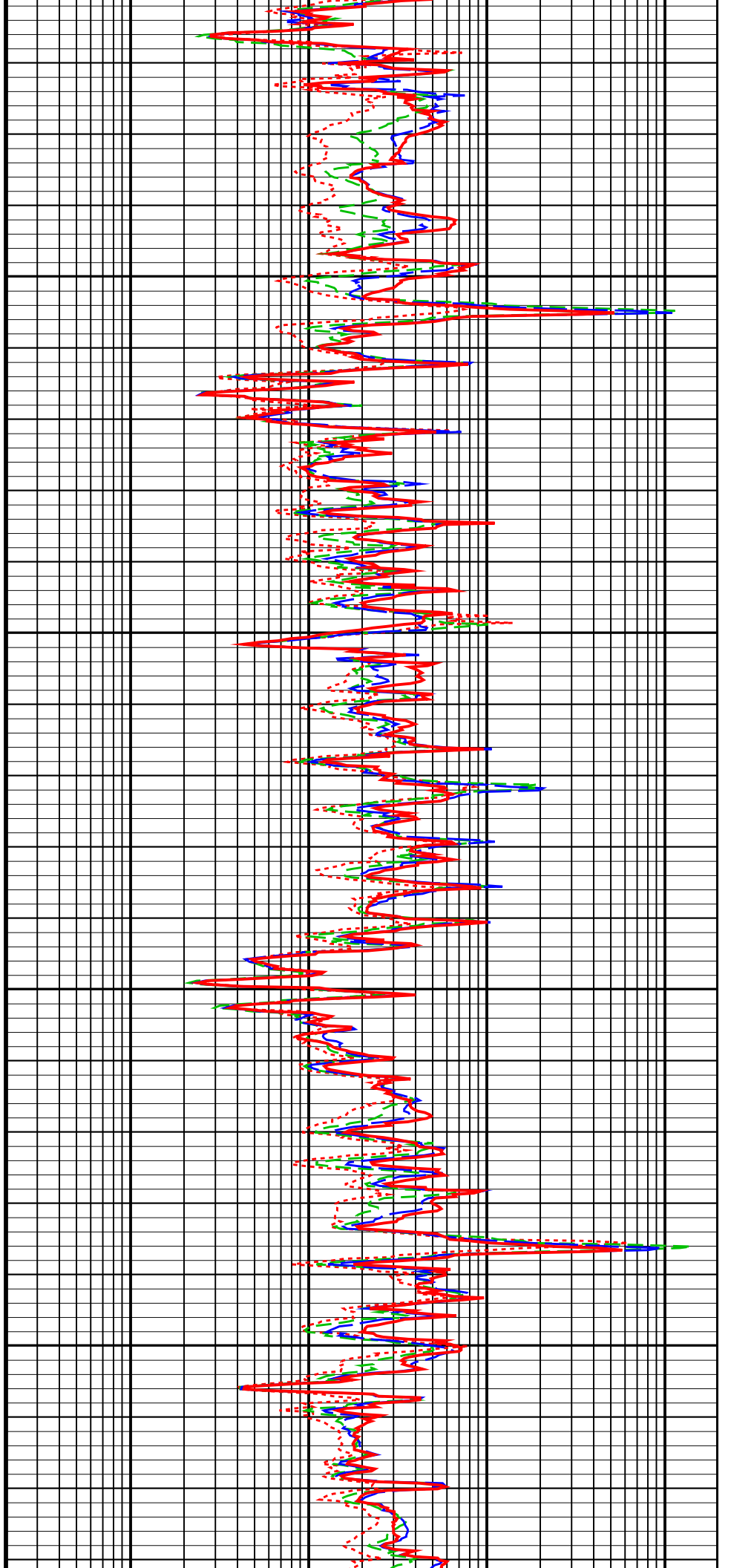
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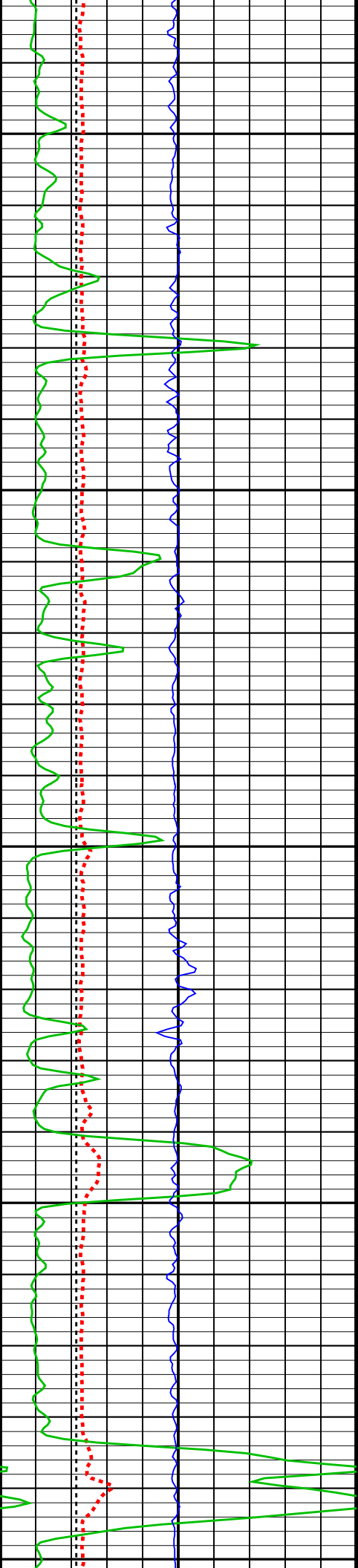




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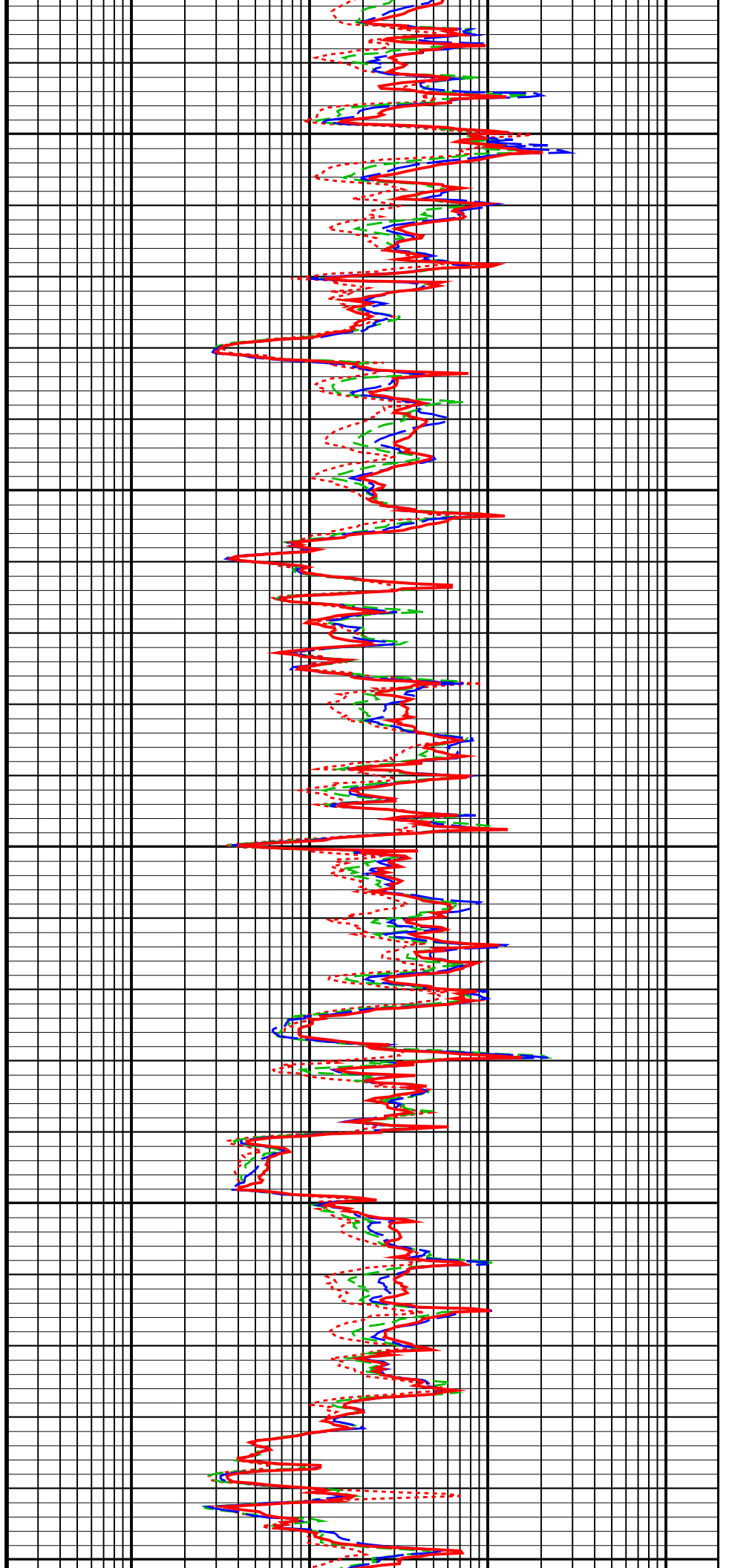
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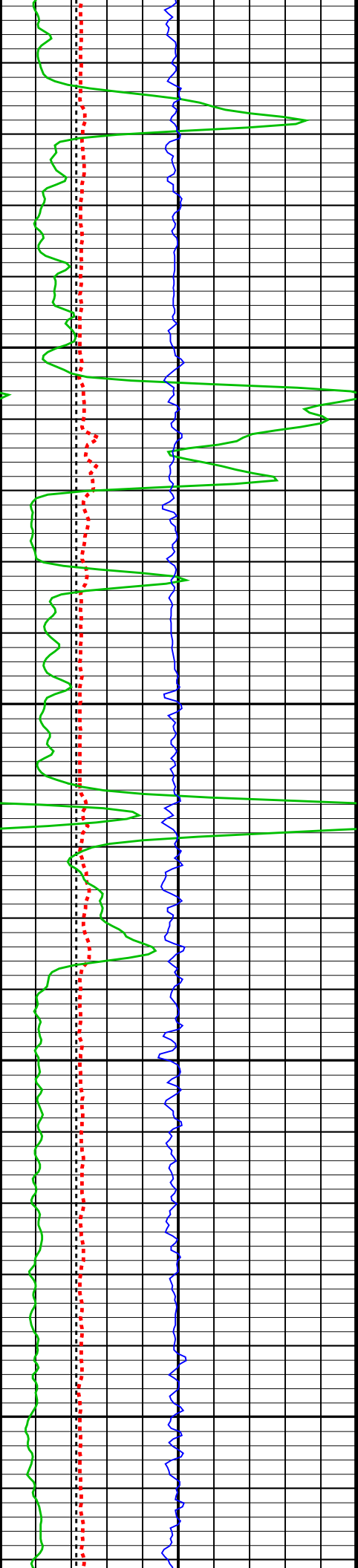




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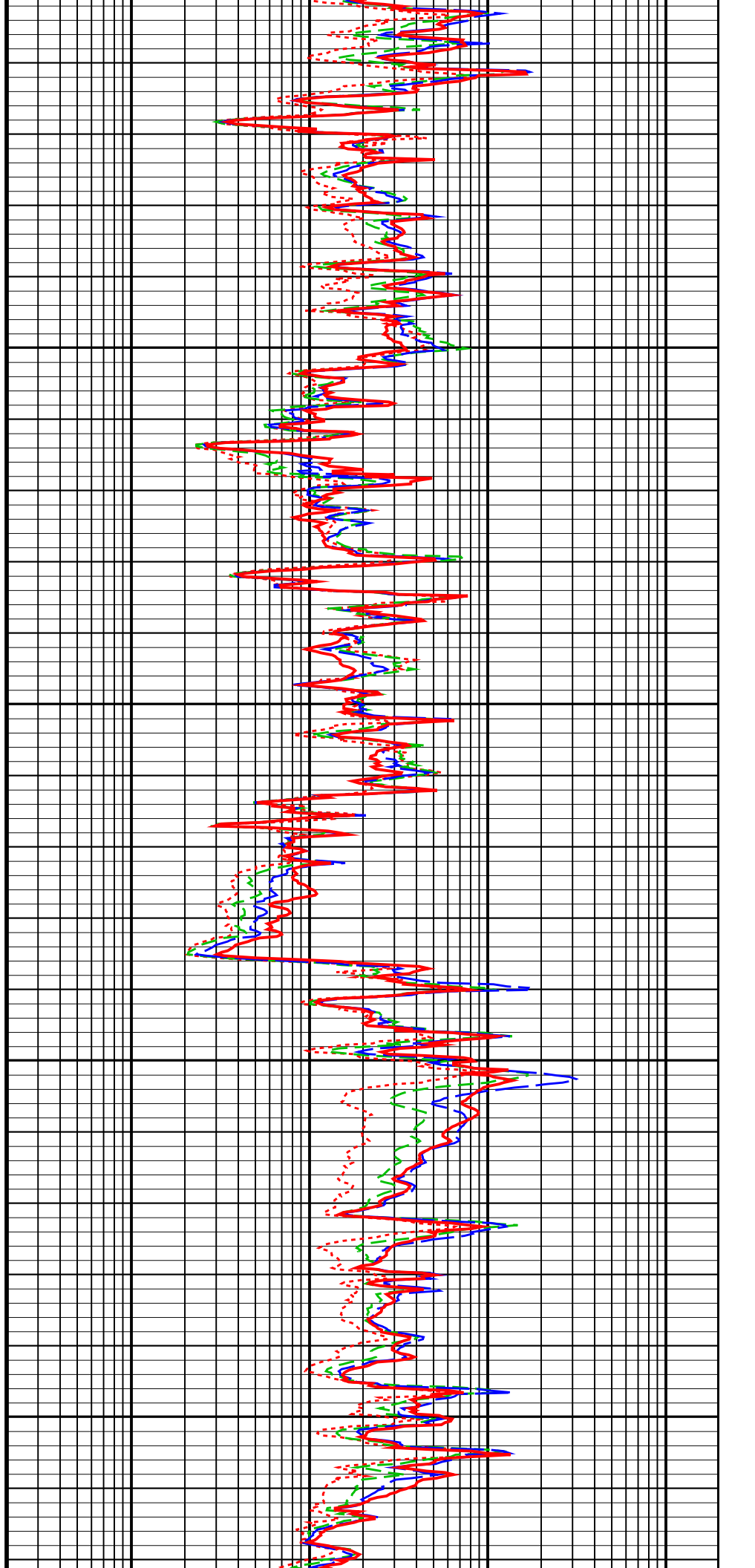
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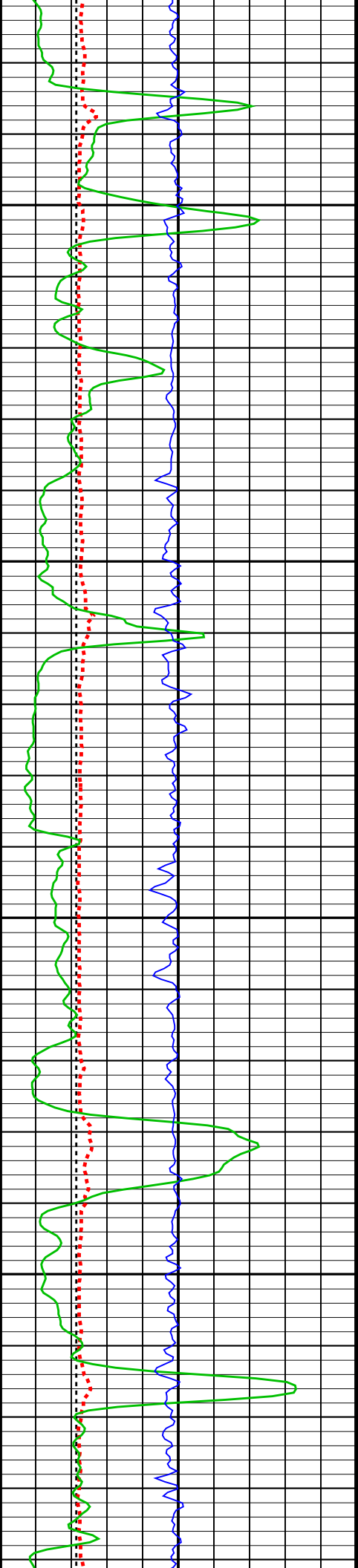




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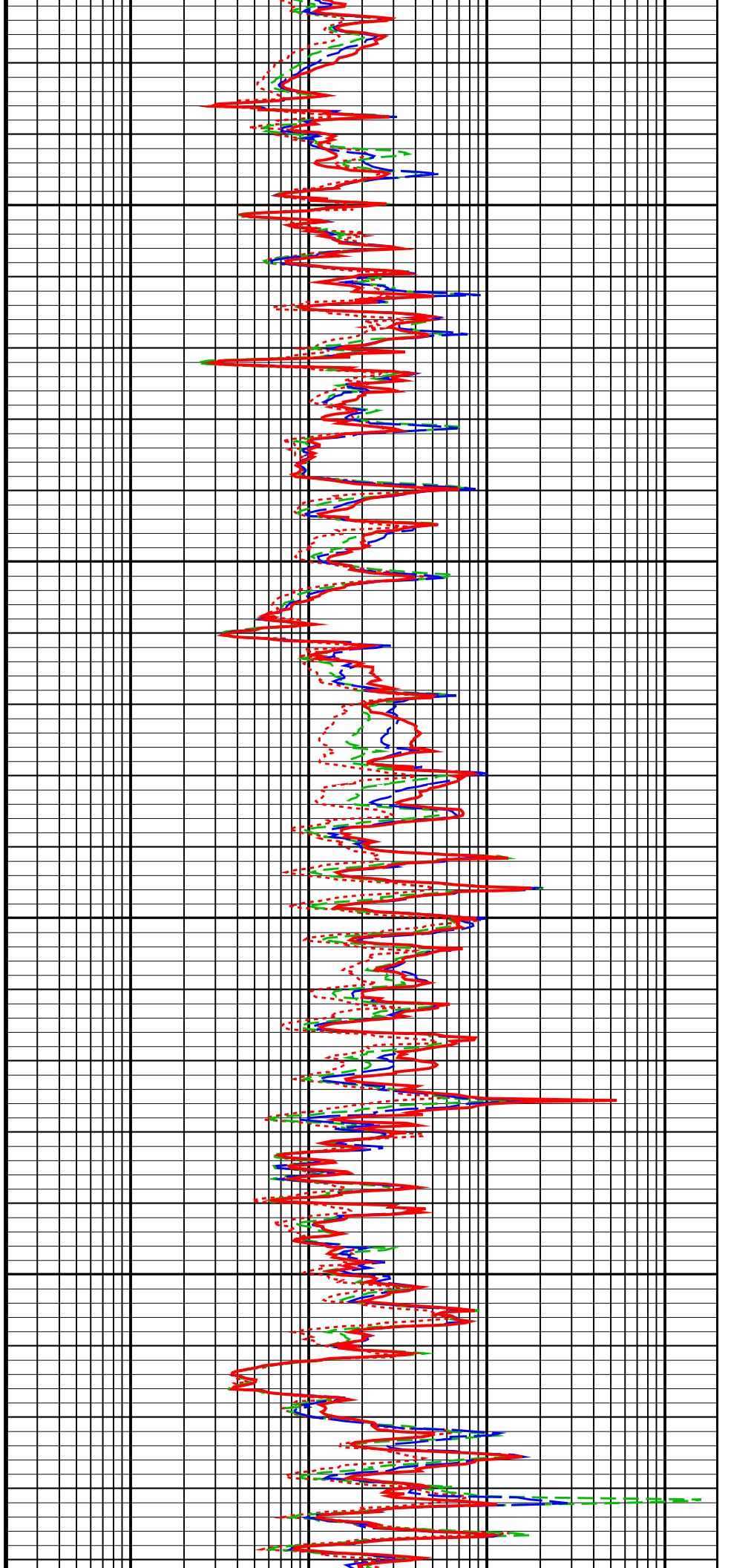
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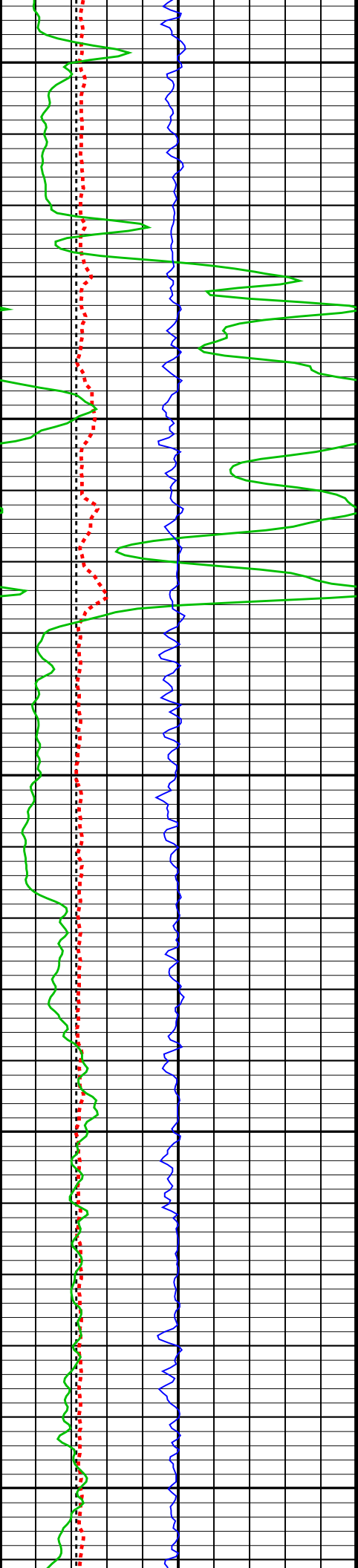




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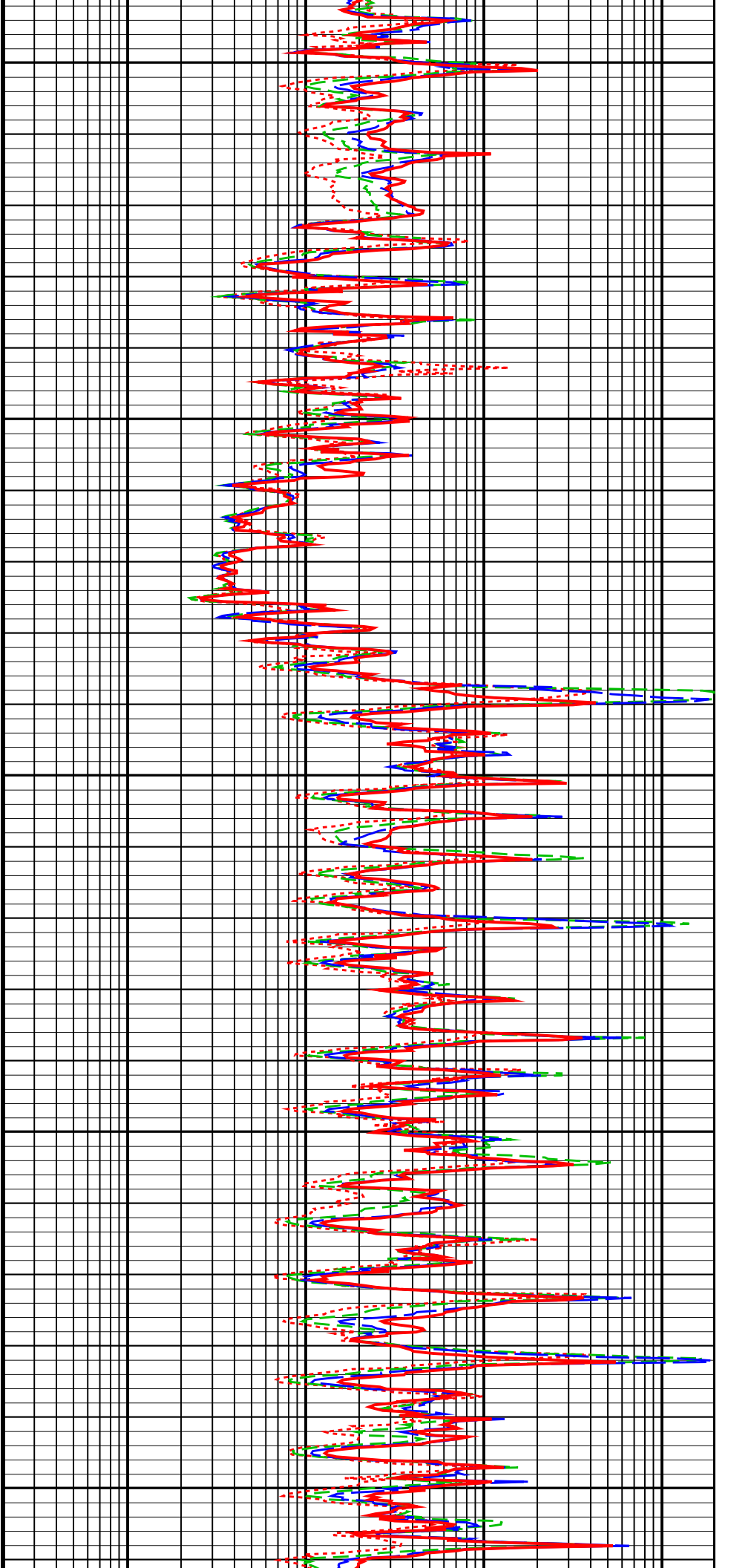


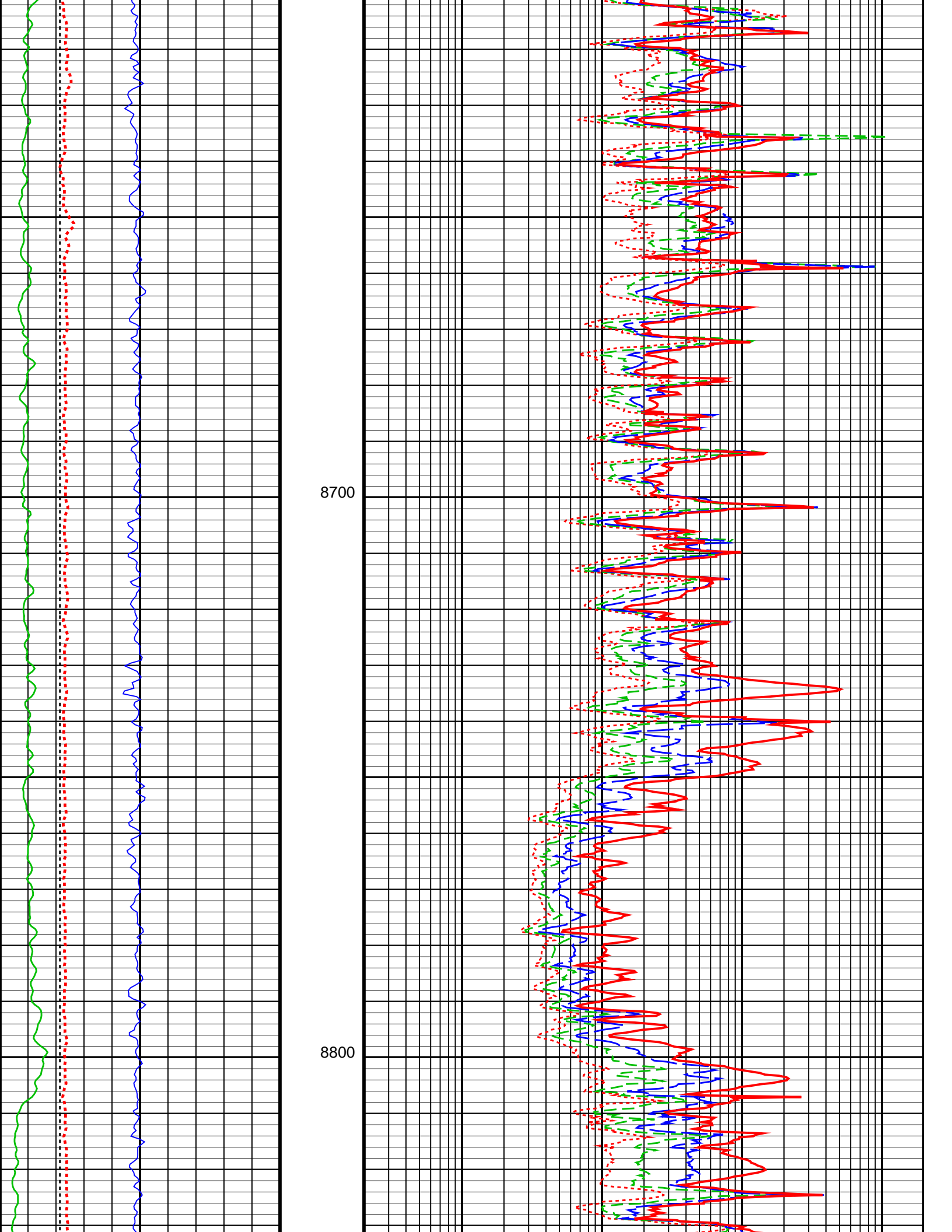


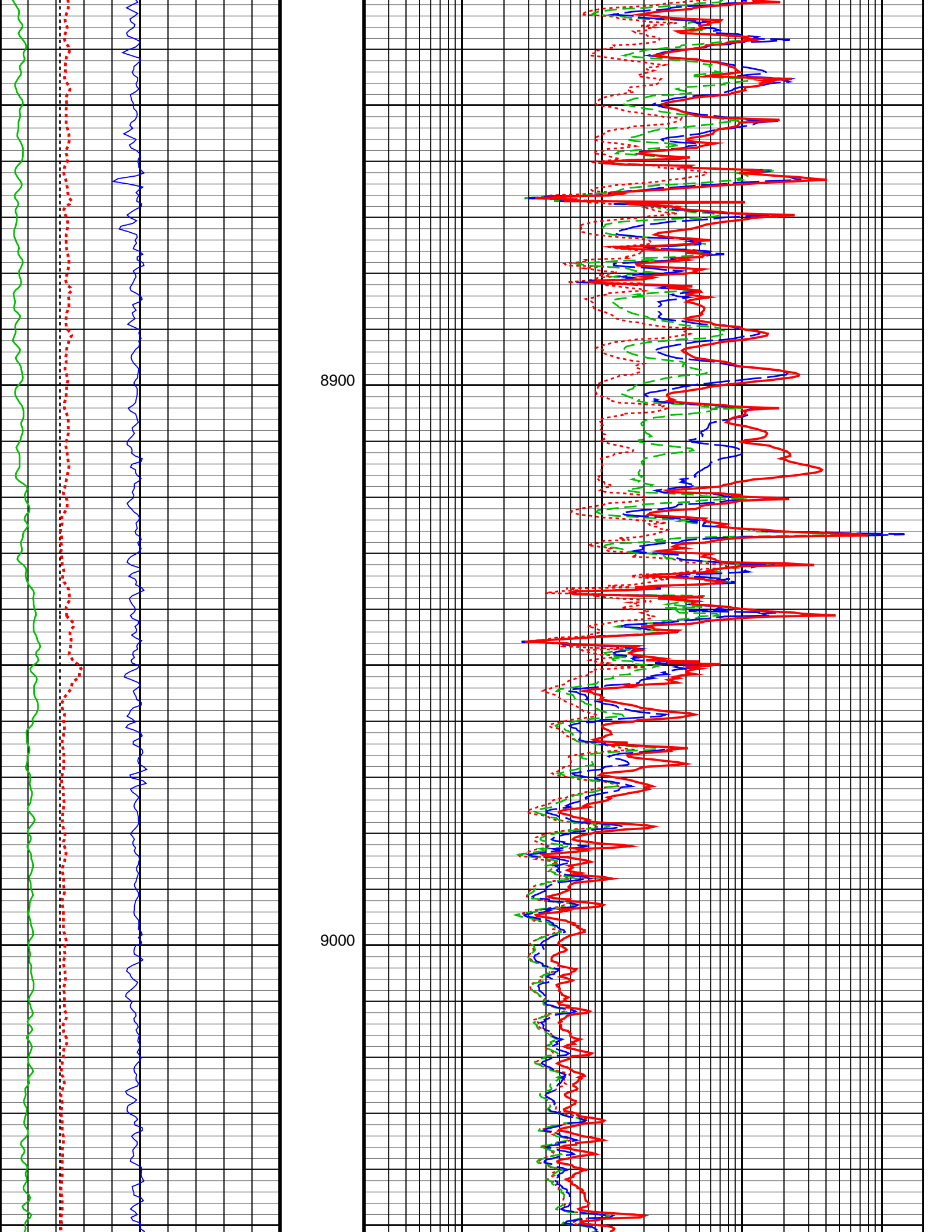
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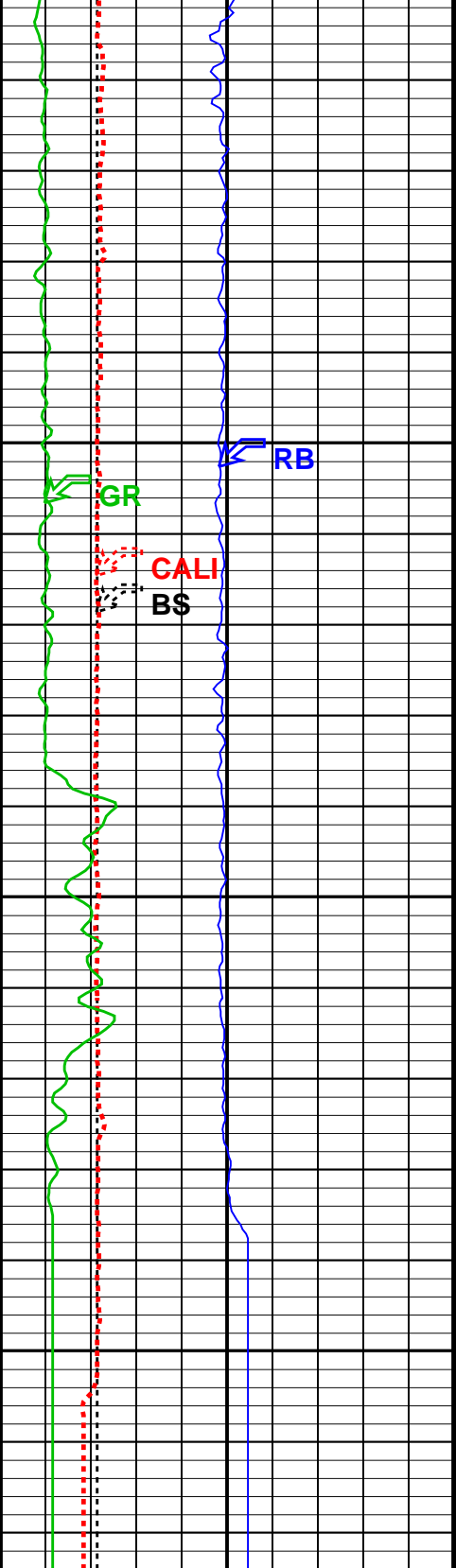
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8600



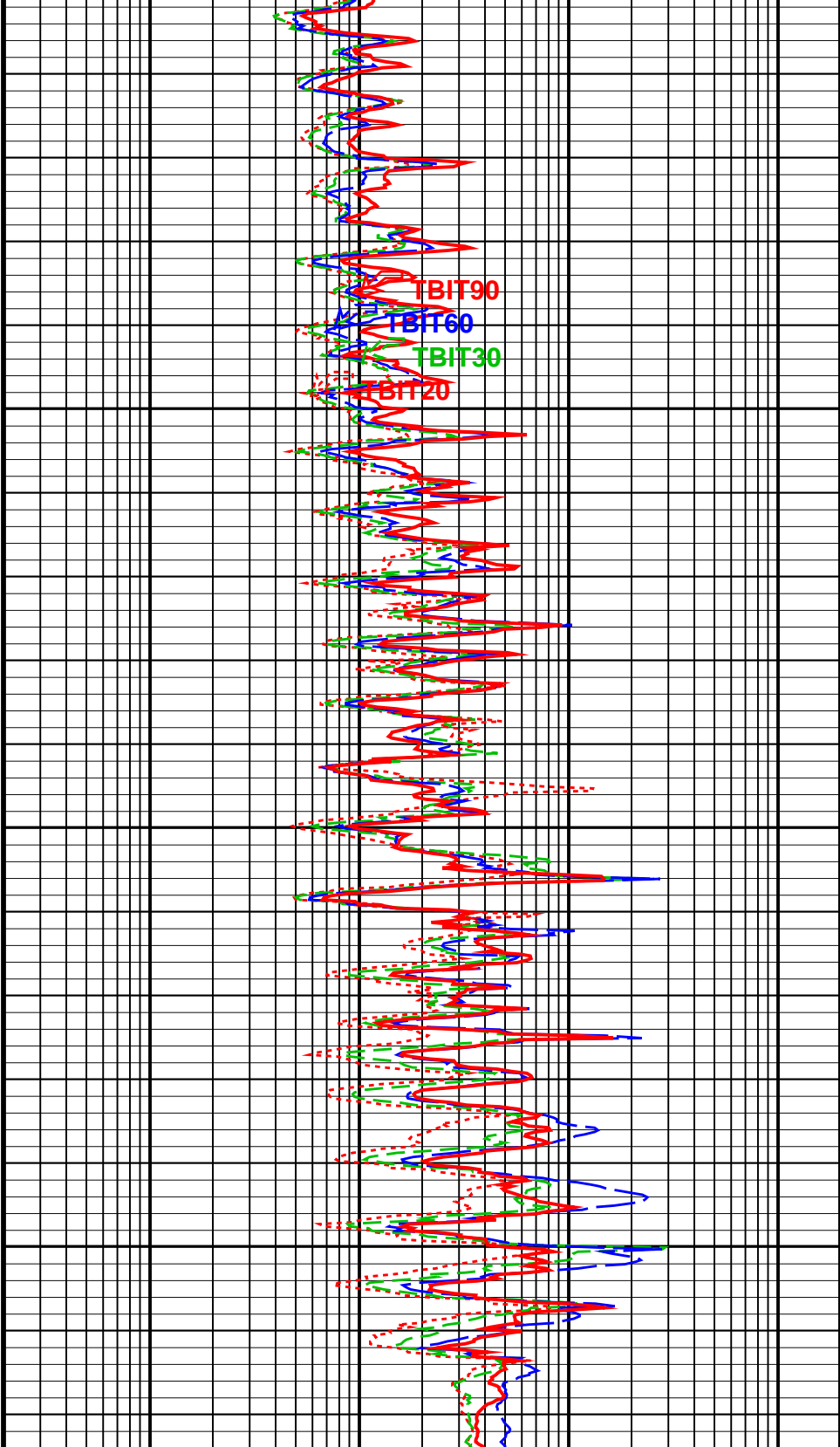






9100

9200



Relative Bearing (RB)		
0	(DEG)	360
Bit Size (BS)		
4	(IN)	14
Gamma Ray (GR)		
0	(GAPI)	150
Caliper (CALI)		
4	(IN)	14

TBI 20 Inch Investigation (TBIT20)		
0.2	(OHMM)	2000
TBI 30 Inch Investigation (TBIT30)		
0.2	(OHMM)	2000
TBI 60 Inch Investigation (TBIT60)		
0.2	(OHMM)	2000
TBI 90 Inch Investigation (TBIT90)		
0.2	(OHMM)	2000

Parameters

DLIS Name	Description	Value
TBT-A: ThruBit String		
MT	Mud Type (for TBN and TBI correction)	WBM
RB_OFFSET	Additional RB offset (degrees)	0.000 deg
TBI_ALGO	TBI Algorithm Selection	AIT
TBI_BHC_OP	Borehole Correction Option (for TBI)	CALIPER
TBI_CALTYP	TBI Mastercal Type	THRUBIT
TBI_REPL_ARRAY_DEST	TBI: Replace This Array	NONE
TBI_REPL_ARRAY_SOURCE	TBI: With This Array	NONE
TBI_TC_OP	Induction Temperature Correction Option	LOWER
System and Miscellaneous		
BS	Bit Size	6.125 in

Format: TB_5INCH_RESISTIVITY Vertical Scale: 5" per 100' Graphics File Created: 24-Mar-2014 01:47

OP System Version: 19C2-270

TBT SRPC-5292-ThruBit_RevA

Input DLIS Files

DEFAULT	ThruBit_010PUP	FN:9	PRODUCER	24-Mar-2014 01:39	9224.0 FT	2588.0 FT
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Output DLIS Files

TBT	.012	FN:11		24-Mar-2014 01:47		
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





























CALIB

MAXIS Field Log

ThruBit String / Equipment Identification

Primary Equipment:		
Induction Resistivity	TBI - A	23
Density	TBD - A	24
Gamma-Ray Logging Source	GGLS - FZ	
Thermal Neutron	TBN - A	27
Neutron Logging Source	NNLS - EWA	
Telemetry Memory GR	TMG - A	39
Battery	TBAT -	30
Battery	TBAT -	29
Auxiliary Equipment:		

ThruBit String Master Calibration					
TBI Master Calibration Sonde Errors					
Freq 1, A1, R	Value	Nominal	Freq 1, A1, X	Value	Nominal
	-457.625	-457.000		112.967	300.000
-536.000 <small>(Minimum)</small>	-387.000 <small>(Maximum)</small>		-500.000 <small>(Minimum)</small>	1100.00 <small>(Maximum)</small>	
(Nominal)			(Nominal)		
Freq 1, A2, R	Value	Nominal	Freq 1, A2, X	Value	Nominal
	-146.666	-141.000		221.973	320.000
-162.000 <small>(Minimum)</small>	-120.000 <small>(Maximum)</small>		-75.0000 <small>(Minimum)</small>	700.000 <small>(Maximum)</small>	
(Nominal)			(Nominal)		
Freq 1, A3, R	Value	Nominal	Freq 1, A3, X	Value	Nominal
	-26.5102	-28.0000		107.168	50.0000
-38.0000 <small>(Minimum)</small>	-18.0000 <small>(Maximum)</small>		-375.000 <small>(Minimum)</small>	475.000 <small>(Maximum)</small>	
(Nominal)			(Nominal)		

Freq 1, A4, R		Value	Nominal	Freq 1, A4, X		Value	Nominal
		-16.6401	-16.0000			259.166	300.000
-24.0000 (Minimum)	(Nominal)	-8.00000 (Maximum)		25.0000 (Minimum)	(Nominal)	575.000 (Maximum)	
Freq 1, A5, R		Value	Nominal	Freq 1, A5, X		Value	Nominal
		-14.1077	-14.0000			128.345	150.000
-21.0000 (Minimum)	(Nominal)	-7.00000 (Maximum)		25.0000 (Minimum)	(Nominal)	275.000 (Maximum)	
Freq 2, A1, R		Value	Nominal	Freq 2, A1, X		Value	Nominal
		-236.044	-237.000			43.4501	150.000
-293.000 (Minimum)	(Nominal)	-186.000 (Maximum)		-375.000 (Minimum)	(Nominal)	675.000 (Maximum)	
Freq 2, A2, R		Value	Nominal	Freq 2, A2, X		Value	Nominal
		-95.3698	-92.0000			118.470	160.000
-106.000 (Minimum)	(Nominal)	-76.0000 (Maximum)		-100.000 (Minimum)	(Nominal)	425.000 (Maximum)	
Freq 2, A3, R		Value	Nominal	Freq 2, A3, X		Value	Nominal
		-20.2933	-21.0000			20.0920	-20.0000
-28.0000 (Minimum)	(Nominal)	-13.0000 (Maximum)		-325.000 (Minimum)	(Nominal)	250.000 (Maximum)	
Freq 2, A4, R		Value	Nominal	Freq 2, A4, X		Value	Nominal
		-19.5455	-20.0000			82.0408	100.000
-28.0000 (Minimum)	(Nominal)	-10.0000 (Maximum)		-75.0000 (Minimum)	(Nominal)	275.000 (Maximum)	
Freq 2, A5, R		Value	Nominal	Freq 2, A5, X		Value	Nominal
		-19.1508	-20.0000			-15.3045	-25.0000
-27.0000 (Minimum)	(Nominal)	-10.0000 (Maximum)		-125.000 (Minimum)	(Nominal)	75.0000 (Maximum)	
Freq 3, A1, R		Value	Nominal	Freq 3, A1, X		Value	Nominal
		-147.072	-149.000			-37.0271	25.0000
-193.000 (Minimum)	(Nominal)	-108.000 (Maximum)		-375.000 (Minimum)	(Nominal)	425.000 (Maximum)	
Freq 3, A2, R		Value	Nominal	Freq 3, A2, X		Value	Nominal
		-72.8328	-70.0000			46.7292	70.0000
-81.0000 (Minimum)	(Nominal)	-57.0000 (Maximum)		-125.000 (Minimum)	(Nominal)	250.000 (Maximum)	
Freq 3, A3, R		Value	Nominal	Freq 3, A3, X		Value	Nominal
		-16.6199	-17.0000			-41.1071	-90.0000
-23.0000 (Minimum)	(Nominal)	-11.0000 (Maximum)		-300.000 (Minimum)	(Nominal)	125.000 (Maximum)	
Freq 3, A4, R		Value	Nominal	Freq 3, A4, X		Value	Nominal
		-21.0722	-22.0000			-35.1629	-50.0000
-31.0000 (Minimum)	(Nominal)	-11.0000 (Maximum)		-200.000 (Minimum)	(Nominal)	100.000 (Maximum)	
Freq 3, A5, R		Value	Nominal	Freq 3, A5, X		Value	Nominal
		-21.8976	-22.0000			-120.439	-110.000
-32.0000 (Minimum)	(Nominal)	-11.0000 (Maximum)		-250.000 (Minimum)	(Nominal)	-25.0000 (Maximum)	
Freq 4, A1, R		Value	Nominal	Freq 4, A1, X		Value	Nominal
		-78.2752	-80.0000			-181.264	-190.000
-108.000 (Minimum)	(Nominal)	-54.0000 (Maximum)		-450.000 (Minimum)	(Nominal)	75.0000 (Maximum)	
Freq 4, A2, R		Value	Nominal	Freq 4, A2, X		Value	Nominal
		-52.8100	-50.0000			-53.5731	-75.0000
-60.0000 (Minimum)	(Nominal)	-41.0000 (Maximum)		-200.000 (Minimum)	(Nominal)	50.0000 (Maximum)	
Freq 4, A3, R		Value	Nominal	Freq 4, A3, X		Value	Nominal
		-13.5504	-14.0000			-132.819	-190.000
-19.0000 (Minimum)	(Nominal)	-8.00000 (Maximum)		-350.000 (Minimum)	(Nominal)	-25.0000 (Maximum)	
Freq 4, A4, R		Value	Nominal	Freq 4, A4, X		Value	Nominal
		-24.0733	-25.0000			-209.293	-235.000
-37.0000 (Minimum)	(Nominal)	-11.0000 (Maximum)		-400.000 (Minimum)	(Nominal)	-75.0000 (Maximum)	

Freq 4, A5, R		Value	Nominal	Freq 4, A5, X		Value	Nominal
		-27.8922	-28.0000			-299.501	-300.000
-43.0000 (Minimum)	(Nominal)	-12.0000 (Maximum)		-475.000 (Minimum)	(Nominal)	-125.000 (Maximum)	

Master: 16-Jan-2014 9:46

ThruBit String Master Calibration							
TBI Master Calibration COMPLEX GAINS							
Freq 1, R		Value	Nominal	Freq 1, X		Value	Nominal
		0.9918	1.000			0.0003467	0
		0.9952	1.000			0.001852	0
		1.003	1.000			-0.006379	0
		0.9919	1.000			0.003083	0
		0.9965	1.000			0.0002911	0
0.9500 (Minimum)	(Nominal)	1.050 (Maximum)		-0.05000 (Minimum)	(Nominal)	0.05000 (Maximum)	
Freq 2, R		Value	Nominal	Freq 2, X		Value	Nominal
		0.9867	1.000			-0.008212	0
		0.9899	1.000			-0.006485	0
		0.9919	1.000			-0.007312	0
		0.9875	1.000			-0.005491	0
		0.9934	1.000			-0.009135	0
0.9500 (Minimum)	(Nominal)	1.050 (Maximum)		-0.05000 (Minimum)	(Nominal)	0.05000 (Maximum)	
Freq 3, R		Value	Nominal	Freq 3, X		Value	Nominal
		0.9932	1.000			-0.002411	0
		0.9967	1.000			-0.0007500	0
		0.9986	1.000			-0.001762	0
		0.9923	1.000			-0.0005145	0
		1.001	1.000			-0.003652	0
0.9500 (Minimum)	(Nominal)	1.050 (Maximum)		-0.05000 (Minimum)	(Nominal)	0.05000 (Maximum)	
Freq 4, R		Value	Nominal	Freq 4, X		Value	Nominal
		1.004	1.000			-0.01244	0
		1.006	1.000			-0.01187	0
		1.011	1.000			-0.01484	0
		1.002	1.000			-0.01249	0
		1.020	1.000			-0.01775	0
0.9300 (Minimum)	(Nominal)	1.070 (Maximum)		-0.05000 (Minimum)	(Nominal)	0.05000 (Maximum)	

Master: 16-Jan-2014 9:46

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
	1896.4	1949.8		2056.1	2096.7		2210.8	2285.7
1799.8 (Minimum)	(Nominal)	2099.8 (Maximum)	1946.7 (Minimum)	(Nominal)	2246.7 (Maximum)	2135.7 (Minimum)	(Nominal)	2435.7 (Maximum)

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ThruBit String Master Calibration							
TBD Density Master Calibration. PEEK 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)	(Nominal)	2.657 (Maximum)		1.702 (Minimum)	(Nominal)	1.802 (Maximum)	
LS1 Background CPS		Value	Nominal	SS1 Background CPS		Value	Nominal

130.00 (Minimum)	140.87 (Nominal)	170.00 (Maximum)	150.00	130.00 (Minimum)	156.41 (Nominal)	170.00 (Maximum)	150.00
LS4 Background CPS		Value	Nominal	SS1 Aluminium CPS		Value	Nominal
		30.48	31.00			4234.44	4900.00
27.00 (Minimum)	35.00 (Nominal)	35.00 (Maximum)		4500.00 (Minimum)	5500.00 (Nominal)	5500.00 (Maximum)	
LS1 Aluminium CPS		Value	Nominal	SS1 Magnesium CPS		Value	Nominal
		831.41	850.00			6996.90	8000.00
750.00 (Minimum)	950.00 (Nominal)	950.00 (Maximum)		7000.00 (Minimum)	9000.00 (Nominal)	9000.00 (Maximum)	
LS4 Aluminium CPS		Value	Nominal				
		967.84	955.00				
843.00 (Minimum)	1068.0 (Nominal)	1068.0 (Maximum)					
LS1 Al + Sleeve CPS		Value	Nominal				
		748.66	725.00				
650.00 (Minimum)	800.00 (Nominal)	800.00 (Maximum)					
LS4 Al + Sleeve CPS		Value	Nominal				
		479.98	426.50				
382.00 (Minimum)	471.00 (Nominal)	471.00 (Maximum)					
LS1 Magnesium CPS		Value	Nominal				
		5379.44	5750.00				
5250.00 (Minimum)	6250.00 (Nominal)	6250.00 (Maximum)					
SS Slope		Value	Nominal				
		1.634	1.645				
1.520 (Minimum)	1.770 (Nominal)	1.770 (Maximum)					
LS Slope		Value	Nominal				
		0.4188	0.4150				
0.3800 (Minimum)	0.4500 (Nominal)	0.4500 (Maximum)					
Pef K Factor		Value	Nominal				
		4.924	4.840				
3.510 (Minimum)	6.170 (Nominal)	6.170 (Maximum)					
Pef B Factor		Value	Nominal				
		-0.6690	-0.5550				
-0.7000 (Minimum)	-0.4100 (Nominal)	-0.4100 (Maximum)					

Master: 15-Mar-2014 16:18

ThruBit String Master Calibration							
Thermal Neutron Master Calibration							
TNF, Background CPS		Value	Nominal	TNN, Background CPS		Value	Nominal
		0.31	1.0			0.24	1.0
0 (Minimum)	2.0 (Nominal)	2.0 (Maximum)		0 (Minimum)	2.0 (Nominal)	2.0 (Maximum)	
TNF, Tank CPS		Value	Nominal	TNN, Tank CPS		Value	Nominal
		70.73	96.00			2047.1	2860.0
25.00 (Minimum)	200.0 (Nominal)	200.0 (Maximum)		750.00 (Minimum)	5700.0 (Nominal)	5700.0 (Maximum)	
TNF, Tank + Al Sleeve CPS		Value	Nominal	TNN, Tank + Al Sleeve CPS		Value	Nominal
		2336.5	3040.0			24102.3	32350.0
727.00 (Minimum)	6080.0 (Nominal)	6080.0 (Maximum)		8000.00 (Minimum)	64700.0 (Nominal)	64700.0 (Maximum)	
Tank + Al Sleeve Ratio		Value	Nominal	Tank + Al Sleeve Porosity PU		Value	Nominal
		11.034	10.797			14.46	14.40
10.300 (Minimum)	11.300 (Nominal)	11.300 (Maximum)		13.40 (Minimum)	15.40 (Nominal)	15.40 (Maximum)	
Tank, Ratio		Value	Nominal	Tank, Temperature DEGF		Value	Nominal
		28.942	30.958			59.3	70.0

28.000 (Minimum)	(Nominal)	34.000 (Maximum)	20.0 (Minimum)	(Nominal)	120 (Maximum)
Master: 19-Mar-2014 14:34					

ThruBit String Master Calibration					
TMG Accelerometer Calibration					
Minimum Ax, m/s2		Value	Nominal	Maximum Ax, m/s2	
NOT DONE		N/A	-9.810	NOT DONE	
-10.81 (Minimum)	(Nominal)	-8.810 (Maximum)		8.810 (Minimum)	10.81 (Maximum)
Minimum Ay, m/s2		Value	Nominal	Maximum Ay, m/s2	
NOT DONE		N/A	-9.810	NOT DONE	
-10.81 (Minimum)	(Nominal)	-8.810 (Maximum)		8.810 (Minimum)	10.81 (Maximum)
Minimum Az, m/s2		Value	Nominal	Maximum Az, m/s2	
NOT DONE		N/A	0	NOT DONE	
-1.000 (Minimum)	(Nominal)	1.000 (Maximum)		8.810 (Minimum)	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	
-		26.71	30.00	-	
0 (Minimum)	(Nominal)	120.0 (Maximum)		130.2 (Minimum)	195.2 (Maximum)
Master: 19-Mar-2014 15:34					

Company: **SANDRIDGE ENERGY**

Well: **HENRY 3306 2-2H**
 Field: **STOHRVILLE**
 County: **HARPER**
 State: **KANSAS**



ARRAY INDUCTION
 GAMMA RAY
 MEMORY LOG



MAIN PASS

Input DLIS Files

DEFAULT ThruBit_010PUP FN:9 PRODUCER 24-Mar-2014 01:39 9224.0 FT 2588.0 FT

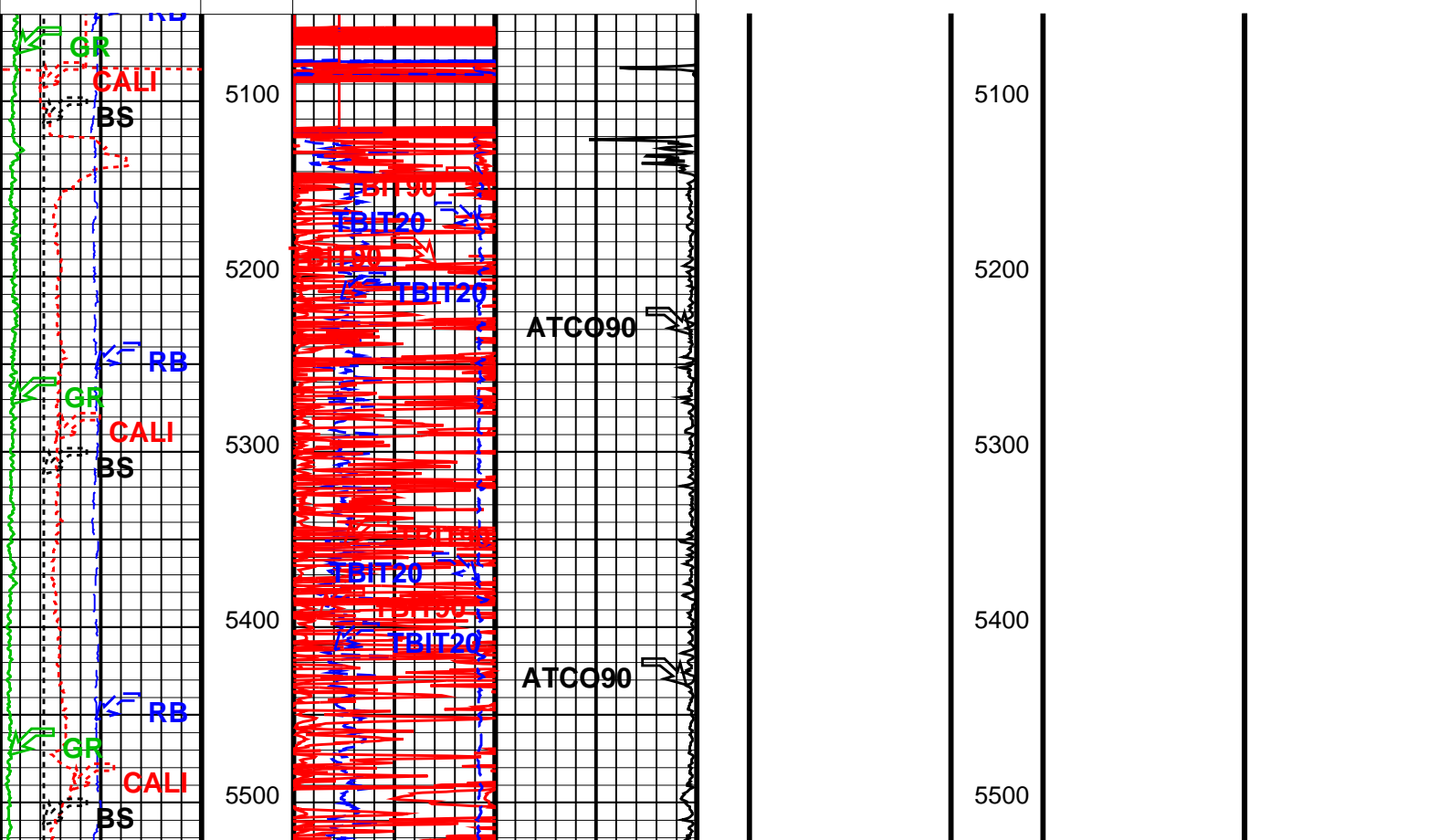
Output DLIS Files

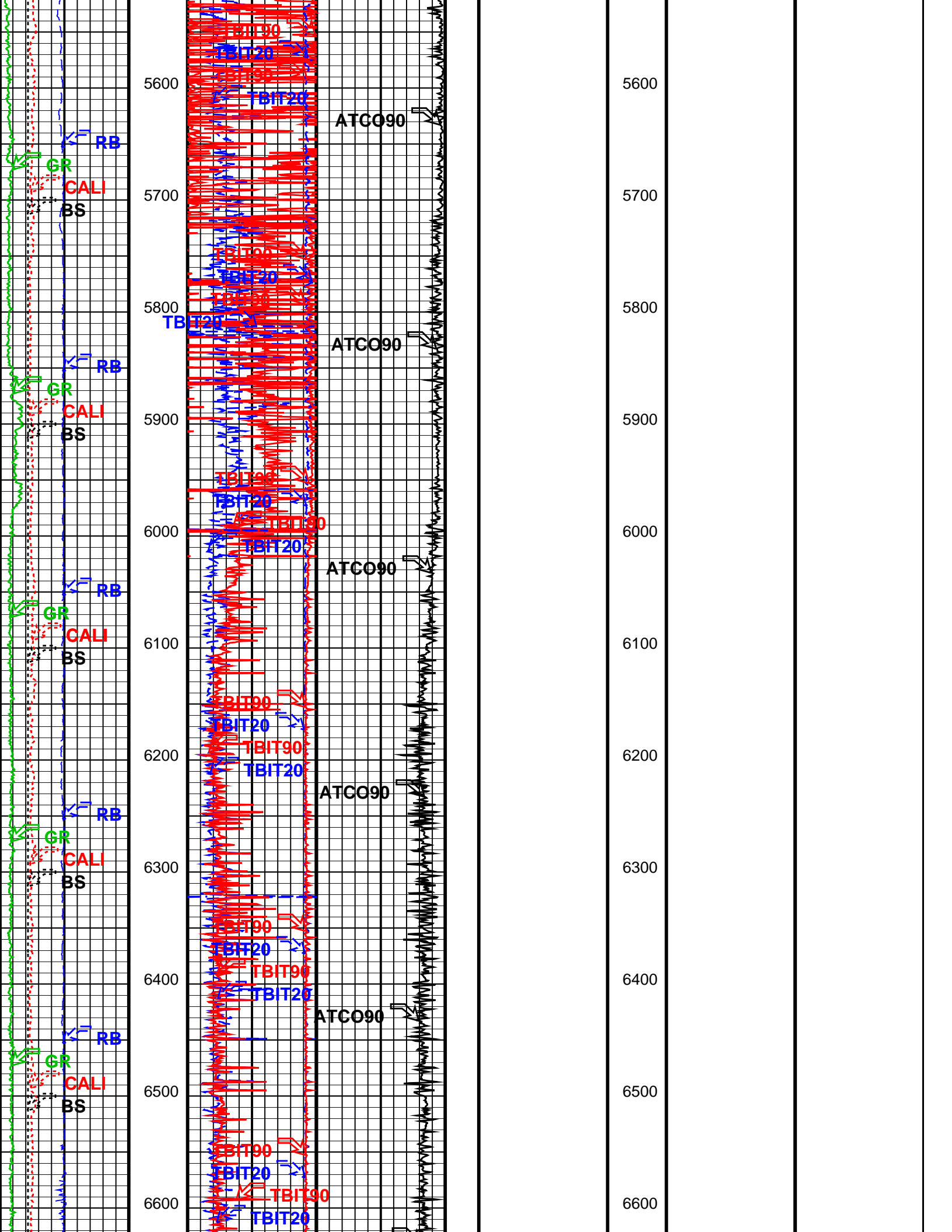
TBT .012 FN:11 24-Mar-2014 01:47 9224.0 FT 5044.0 FT

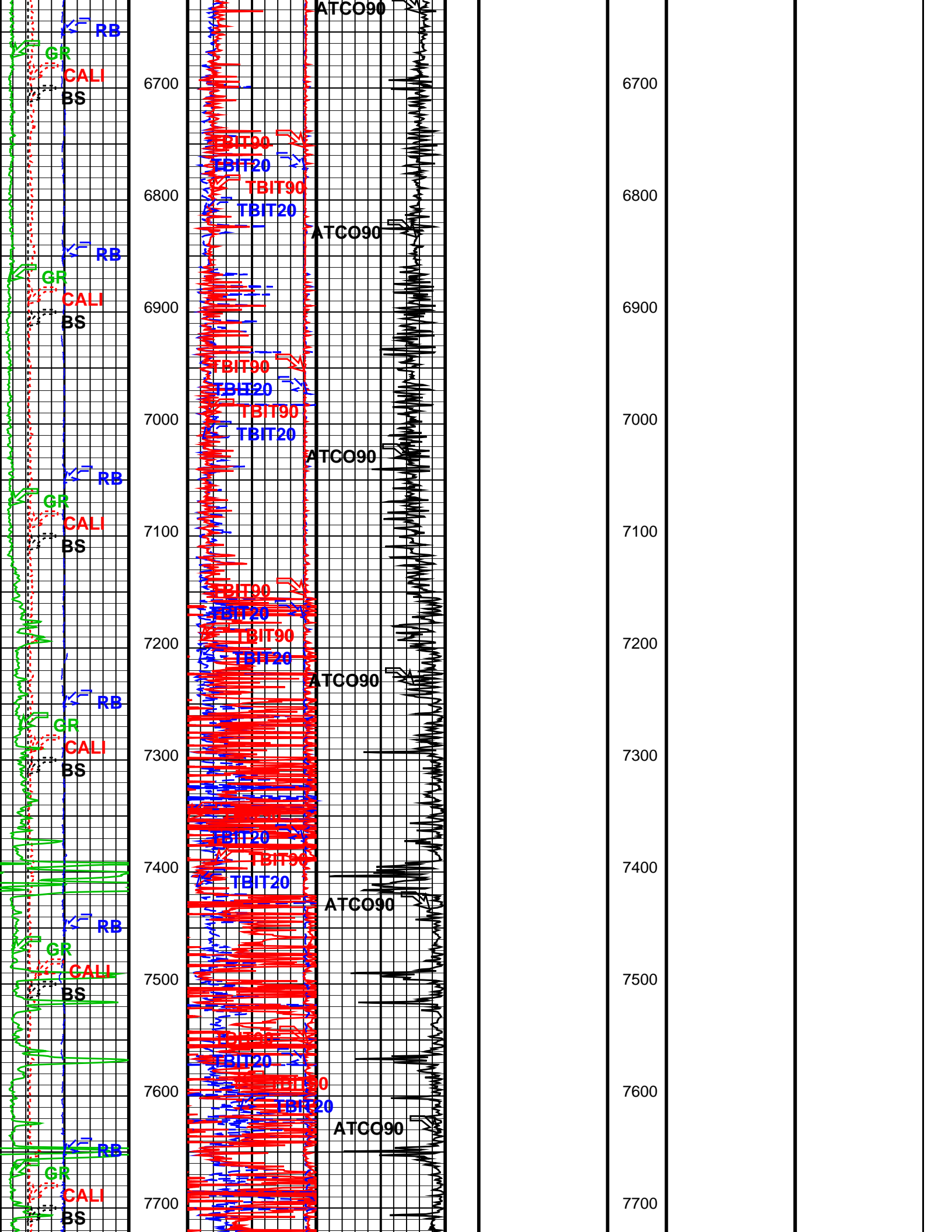
OP System Version: 19C2-270

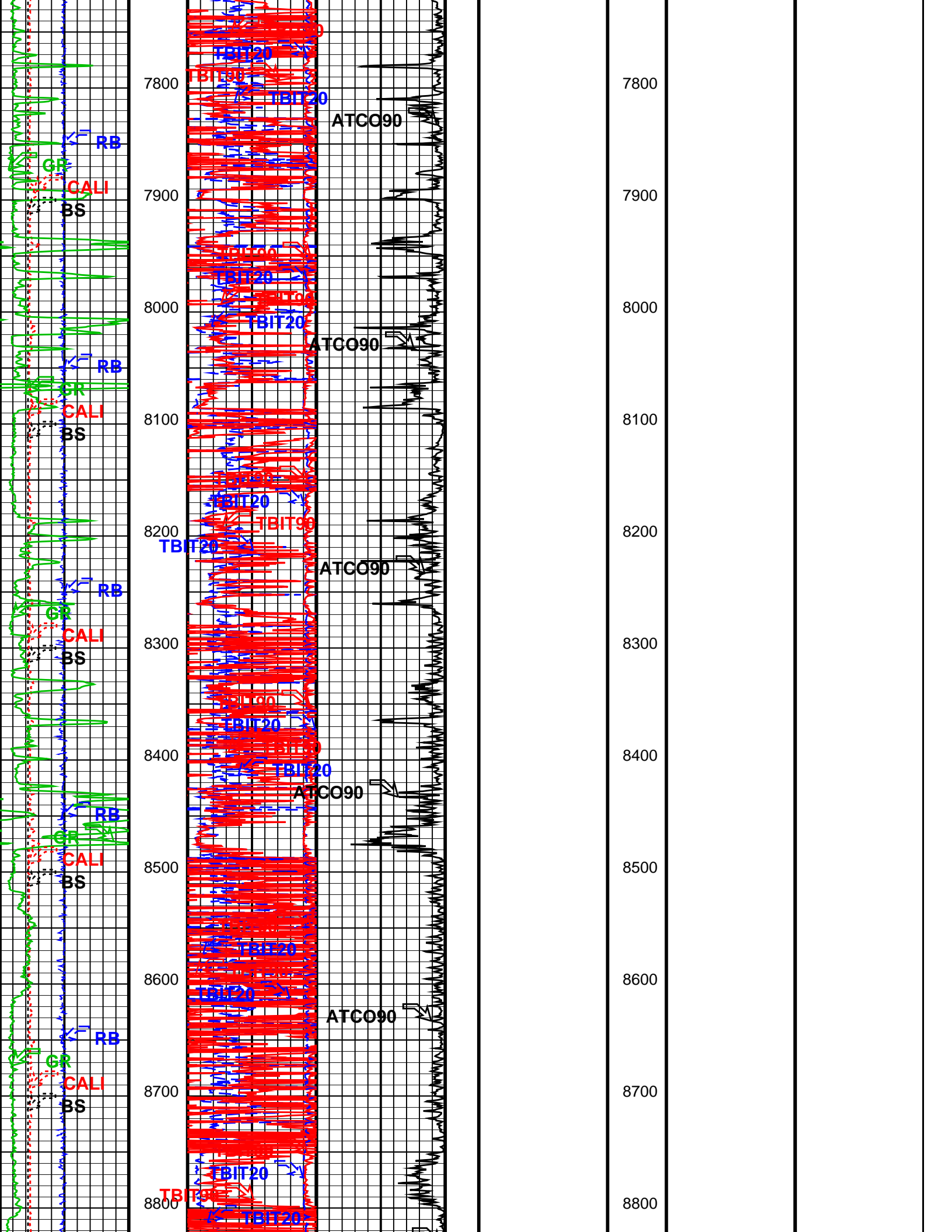
TBT SRPC-5292-ThruBit_RevA

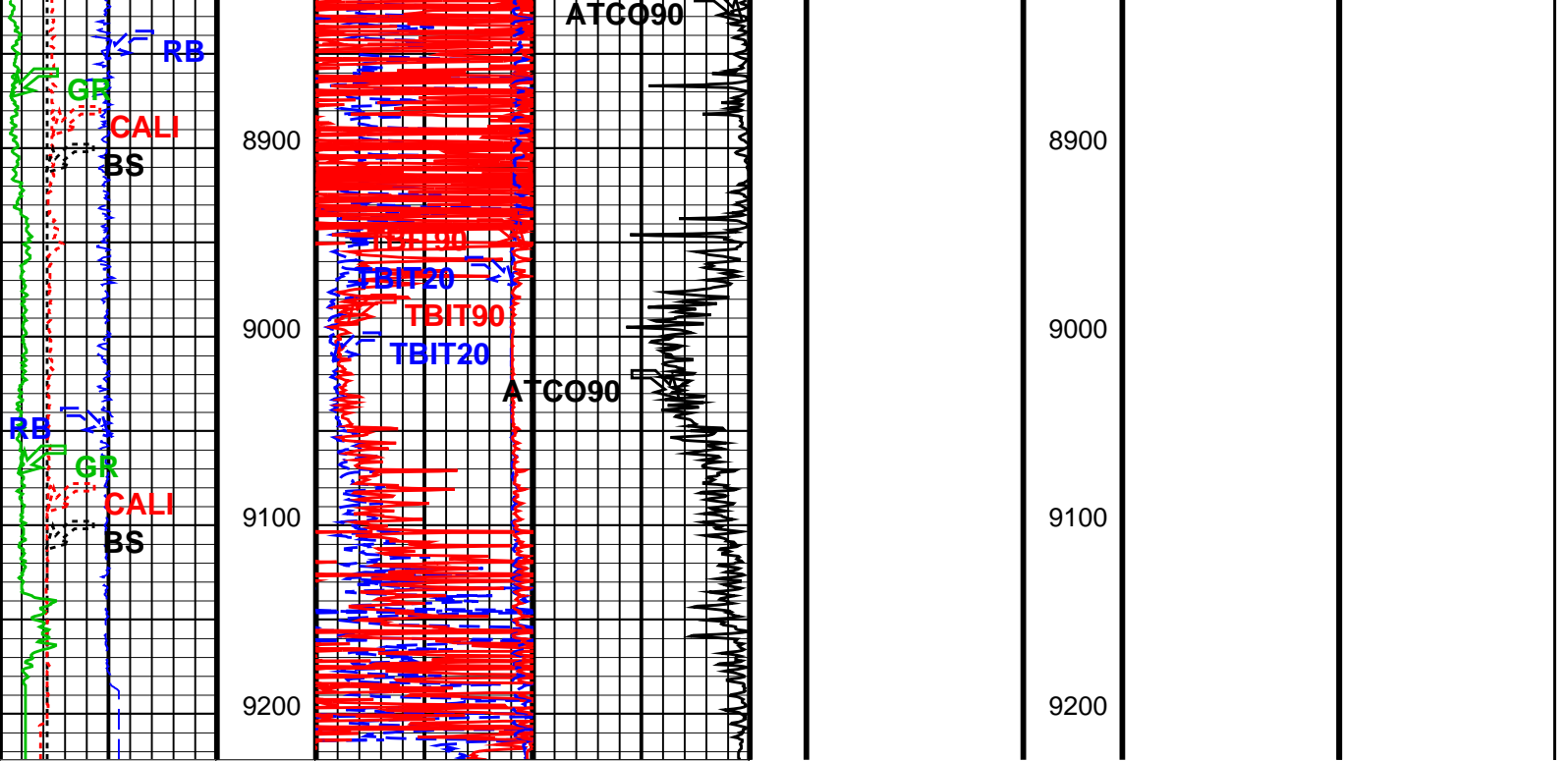
	TBI 90 Inch Investigation (TBIT90) 50 (OHMM) 500	
Relative Bearing (RB) 0 (DEG) 360	TBI 20 Inch Investigation (TBIT20) 50 (OHMM) 500	
Gamma Ray (GR) 0 (GAPI) 150	TBI 90 Inch Investigation (TBIT90) 0 (OHMM) 50	
Caliper (CALI) 4 (IN) 14	TBI 20 Inch Investigation (TBIT20) 0 (OHMM) 50	
Bit Size (BS) 4 (IN) 14	Curve (ATCO90) 1000 (MM/M) 0	











Bit Size (BS) 4 (IN) 14
Caliper (CALI) 4 (IN) 14
Gamma Ray (GR) 0 (GAPI) 150
Relative Bearing (RB) 0 (DEG) 360

Curve (ATCO90) 1000 (MM/M) 0
TBI 20 Inch Investigation (TBIT20) 0 (OHMM) 50
TBI 90 Inch Investigation (TBIT90) 0 (OHMM) 50
TBI 20 Inch Investigation (TBIT20) 50 (OHMM) 500
TBI 90 Inch Investigation (TBIT90) 50 (OHMM) 500

Parameters

DLIS Name	Description	Value	
TBT-A: ThruBit String			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	112.0	degF
CCLG	Casing Collar Locator Gain	1.000	
CSAL	Cement Salinity	0.000	ppm
CSID	Casing Size I.D.	6.500	in
DHC	Density Hole Correction		BS
FD	Fluid Density	1.000	g/cm3
FEXP	Form Factor Exponent	2.000	
FNUM	Form Factor Numerator	1.000	
FPHI	Form Factor Porosity Source	DPHI	
FSAL	Formation Salinity	0.000	ppm
FSCO	Formation Salinity Correction Enabled? (for TBN)	NO	
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft
GRSE	Generalized Mud Resistivity Selection	GEN9	
GTSE	Generalized Temperature Selection	TEMP	
ISSBAR	Barite Mud Switch	NOBARITE	
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
SHT	Surface Hole Temperature	68.000	degF
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	DETECT	
TBD_SPIKE_THRESHOLD	TBD Attenuation Change Threshold for Spike Detection	5.000	%
TBI_ALGO	TBI Algorithm Selection	AIT	
TBI_BHC_OP	Borehole Correction Option (for TBI)	CALIPER	
TBI_CALTYP	TBI Mastercal Type	THRUBIT	
TBI_REPL_ARRAY_DEST	TBI: Replace This Array	NONE	
TBI_REPL_ARRAY_SOURCE	TBI: With This Array	NONE	
TBI_TC_ID	Induction Temperature Coefficient Tool ID	000PS23R	
TBI_TC_OP	Induction Temperature Correction Option	LOWER	
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
TBT_BARI	Barite Mud Presence Flag	NO	
TB_CORR_CH_1	Correlation Channel	GR (API)	
TMG_BHC_OP	Borehole Correction Option (for TMG)	NONE	
TOJI	Time Of Job Initialization	1395550800	s
WMUD	Mud Weight	8.400	lbm/gal
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	112.0	degF
CD	Casing Shoe Depth	5120.0	ft
FCD	Future Casing (Outer) Diameter	4.500	in
GCSE	Generalized Caliper Selection	CALI	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft
GRSE	Generalized Mud Resistivity Selection	GEN9	
GTSE	Generalized Temperature Selection	TEMP	
HVCS	Integrated Hole Volume Caliper Selection	AUTOMATIC	
IHVC	Integrated Hole Volume Control	SNAP	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIME	
SHT	Surface Hole Temperature	68.000	degF
VCEM	Cumulated Cement Volume	465.0	ft3
VHOL	Cumulated Hole Volume	917.6	ft3
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	STI	
STKT	STI Stuck Threshold	2.500	ft
TDD	Total Depth - Driller	9300.0	ft
System and Miscellaneous			
ALTDPCCHAN	Name of alternate depth channel	SPEEDCORRECTEDDEPTH	
AMD	Azimuth of Maximum Deviation		
APD	Above Permanent Datum	14.000	ft
APIN	API Serial Number	15077220200000	
BG	Gas Formation Volume Factor, Bg		
BLI	Bottom Log Interval		
BO	Oil Formation Volume Factor, Bo		
BPP	Bubble Point Pressure		
BPT	Bubble Point Temperature		
BS	Bit Size	6.125	in
BSAL	Borehole Salinity	15000.0	ppm
BSDF	Bit Size Depth From		
BSDT	Bit Size Depth To		
BW	Water Formation Volume Factor, Bw		
CADD	Cement Additives		
CADT	Casing Depth To		
CASG	Casing Grade		
CASN	Casing String Number		
CBDR	Casing Bottom of Driller	5127.0	ft
CBLO	Casing Bottom of Logger		
CDEN	Cement Density		
CDF	Casing Depth From		
CJT	Cement Job Type	Primary	
CLAB	County/Rig Label	County:	
CN	Company Name	SANDRIDGE ENERGY	
CN1	Company Name Line 1		
CONT	Continent		
CONTYP	Conveyance Type	WIRELINE	
COUN	County or Rig Name	HARPER	
CSIZ	Current Casing Size	7.000	in
CTOP	Estimated Cement Top		
CWEI	Casing Weight	0.000	lbm/ft
CWLO	Cement Water Loss		
DATE	Date as Month-Day-Year	23-Mar-2014	
DCS	Date Circulation Stopped	23-Mar-2014	
DEPREM1	Depth Remark 1		
DEPREM2	Depth Remark 2		

DEPREM2	Depth Remark 2		
DEPREM3	Depth Remark 3		
DEPREM4	Depth Remark 4		
DEPREM5	Depth Remark 5		
DEPREM6	Depth Remark 6		
DFD	Drilling Fluid Density	8.400	lbm/gal
DFL	Drilling Fluid Loss	60.000	cm3
DFPH	Drilling Fluid PH	7.500	
DFT	Drilling Fluid Type	WBM	
DFV	Drilling Fluid Viscosity	31.000	s
DIFF	Maximum Permitted Depth Difference	1.000	ft
DLAB	Date Logger At Bottom	23-Mar-2014	
DMF	Drilling Measured From	K.B.	
EDF	Elevation of Derrick Floor	1352.0	ft
EGL	Elevation of Ground Level	1334.0	ft
EKB	Elevation of Kelly Bushing	1352.0	ft
ELZ	Elevation of Log Zero	1352.0	ft
ENGI	Engineer's Name	DENGLER	
ENVI	Acquisition Environment	ANALOG	
EPD	Elevation of Permanent Datum	1338.0	ft
EWAFAE_VER	eWAFAE Version		
EWTEST	eWAFAE Power API Test command	OFF	
FL	Field Location	SHL: 265' FNL & 1140' FEL PBHL: 330' FNL & 1060' FEL	
FL1	Field Location Line 1		
FL2	Field Location Line 2		
FLEV	Fluid Level	0.000	ft
FLSHSTRM	Flush depth--delayed streams to output at end	DOWNLOG_ONLY	
FN	Field Name	STOHRVILLE	
GGRA	Gas Gravity		
HID1	Header Identifier Line 1	GAMMA RAY	
HID2	Header Identifier Line 2	MEMORY LOG	
HIDE	Header Identifier	ARRAY INDUCTION	
HLD	Header Legal Disclaimer	INCLUDE	
IBG	1/Gas Formation Volume Factor, 1/Bg		
IDWCD	IDW Calibration Date (dd-mmm-yyyy)		
IDWCSN	IDW Calibrator Serial Number		
IDWLCN	IDW Calibration Cable Type	7-46P	
IDWSN	IDW Serial Number		
IDWTYP	IDW Type	IDW-B	
IDWWC1	IDW Wheel Correction 1		
IDWWC2	IDW Wheel Correction 2		
ILL1	Instrumentation Logo Line 1		
ILL2	Instrumentation Logo Line 2		
JETA	Job Events Auto Save	ALLOW	
LATI	Latitude		
LCC	Logging Company Code	440	
LCL	Logging Cable Length	24000	ft
LCMT	Lead Cement Type		
LCN	Logging Cable Name (Type)	7-46P	
LCSN	Logging Cable Serial Number		
LCVO	Lead Cement Volume		
LLAB	Section Label	Section	
LMF	Log Measured From	K.B.	
LOGMODE	Depth Logging Mode	MEASURED_DEPTH	
LOGSEQ	Log Sequence	FIRST_LOG_IN_WELL	
LONG	Longitude		
LUL	Logging Unit Location	OKC, OK	
LUN	Logging Unit Number	11	
MCSS	Mud Cake Sample Source	CALCULATED	
MCST	Mud Cake Sample Temperature	65.000	degF
MFSS	Mud Filtrate Sample Source	CALCULATED	
MFST	Mud Filtrate Sample Temperature	65.000	degF
MHD	Maximum Hole Deviation	91.300	deg
MMDU	Magnetic Mark Depth Units	FEET	
MRT	Maximum Recorded Temperature		
MRT1	Maximum Recorded Temperature 1		
MRT2	Maximum Recorded Temperature 2		
MRT3	Maximum Recorded Temperature 3		
MSS	Mud Sample Source	MUD SENSOR	
MST	Mud Sample Temperature	65.000	degF
NATI	Nation		
NLS	Nominal Logging Speed		
ODEN	Oil Density		
OPER	Operator's Code		
OS1	Other Services Line 1	THRUBIT	
OS2	Other Services Line 2	PORTAL BIT	
OS3	Other Services Line 3		
OS4	Other Services Line 4		
OS5	Other Services Line 5		
PBVSADP	Use alternate depth channel for playback	NO	
PDAT	Permanent Datum	GROUND LEVEL	
PVER	Program Version	19C2-270	
R1	Remark Line 1		
R10	Remark Line 10	SERVICE: HORIZONTAL MEMORY PUMP DOWN- BIT DEPTH LOGGED TO CREW: J. DENGLER, Z. HOWARD, E. PRICE	

R11	Remark Line 11		
R12	Remark Line 12		
R13	Remark Line 13		
R14	Remark Line 14		
R15	Remark Line 15		
R16	Remark Line 16		
R17	Remark Line 17		
R2	Remark Line 2		
	ALL SCALES AND PRESENTATIONS PER CLIENT REQUEST		
R3	Remark Line 3		
	LIMESTONE POROSITY, 2.71 G/CC USED FOR POROSITY CALCULATIONS		
R4	Remark Line 4		
	LOG RAN WITH SWIVEL, DECENTRALIZER AND NO STANDOFFS		
R5	Remark Line 5	TBHV REPRESENTS TOTAL BOREHOLE VOLUME, FT3	
R6	Remark Line 6		
	ABHV REPRESENTS ANNULAR BOREHOLE VOLUME, FT3, CALCULATED FOR 4.5" CASING		
R7	Remark Line 7	HSPM AND RIGSENSE USED TO CREATE DEPTH LOG	
R8	Remark Line 8		
	LOG DEPTH CORRELATED TO MWD LOG PROVIDED BY CUSTOMER		
R9	Remark Line 9	RIG: LARIAT 45	
RANG	Range		6W
RIGTYP	Rig Type		
RLAB	Range Label		Range
RLDT	Reference Log Date (dd-mmm-yyyy)		
RLNM	Reference Log Name		
RLRN	Reference Log Run Number		
RMB	Resistivity of Mud - BHT		
RMCS	Resistivity of Mud Cake Sample		
RMFB	Resistivity of Mud Filtrate - BHT		
RMFS	Resistivity of Mud Filtrate Sample		
RMS	Resistivity of Mud Sample		
RULB	Rig Up Length at Bottom	0.000	ft
RULS	Rig Up Length at Surface	0.000	ft
RUN	Run Number	ONE	
RW	Resistivity of Connate Water	1.000	ohm.m
SCD_ACCEL	Accelerometer driving Speed Corrected Depth	NONE	
SCORR	Stretch Correction		
SECT	Section		2
SGOR	Solution Gas Oil Ratio		
SIMULATE_DELAY	Simulate Acquisition Delay	-99999.000	
SLAB	State/Province Label		State:
SON	Service Order Number	2688	
SPEE	Simulated Logging Speed	1800	ft/h
STAT	State or Province	KANSAS	
STDLC	Subsequent Trip Down Log Correction		
STEM	Surface Temperature	65.000	degF
TCA	Tail Cement Additives		
TCDE	Tail Cement Density		
TCS	Time Circulation Stopped		
TCTY	Tail Cement Type		
TCV	Tail Cement Volume		
TCWL	Tail Cement Water Loss		
TD	Total Depth	9300.0	ft
TDL	Total Depth - Logger		
TLAB	Time Logger At Bottom		
TLI	Top Log Interval		
TLLAB	Township Label		Township
TNDALPTS	Number of Tension Calibration Points		0
TNDCD	Tension Device Calibration Date (dd-mmm-yyyy)		
TNDCSN	Tension Device Calibrator Serial Number		
TNDGN	Tension Device Gain		
TNDOFF	Tension Device Offset		
TNDPE	Tension Device Calibration Peak Error		
TNDRMS	Tension Device Calibration RMS		
TNDSN	Tension Device Serial Number		
TNDTYP	Tension Device		CMTD-B/A
TOWN	Township		33S
TREF	Reference Tension of the Cable	1000.0	lbf
TWS	Temperature of Connate Water Sample	100.0	degF
UWID	Unique Well Identification Number	15077220200000	
WITN	Witness's Name		
WN	Well Name	HENRY 3306 2-2H	
ZRCS	Tool Zero Reference Check at Surface		

Format: TB_1INCH_HALFSCALE Vertical Scale: 1" per 100' Graphics File Created: 24-Mar-2014 01:48

OP System Version: 19C2-270

TBT SRPC-5292-ThruBit_RevA

Input DLIS Files

DEFAULT ThruBit_010PIUP EN-9 PRODUCER 24-Mar-2014 01:39 9224.0 FT 2588.0 FT

Output DLIS Files

TBT .012

FN:11

24-Mar-2014 01:47