HALLIBURTON | **Sperry Drilling**

PROPRIETARY

1 : 240

ROP Rate of Penetration
DGR Dual Gamma Ray
ADR Azimuthal Deep Resistivity
EWR Electromagnetic Wave Resistivity
ALD Azimuthal Lithodensity
CTN Compensated Thermal Neutron
XCAL Azimuthal Acoustic Caliper

Country	: **USA**
Field	: **Posey 6912**
Location	: **Lat: 71° 10' 24.06" North** **Long: 163° 28' 18.67" West**
Well	: **OCS-Y-2321 BJ001 ST00BP00**
Company	: **Shell Gulf of Mexico Inc.**
Rig	: **Polar Pioneer**

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Well : **OCS-Y-2321 BJ001 ST00BP00**
Field : **Posey 6912**
Country : **USA**
API Number : **55-352-00004-00**

LOCATION

Latitude : **71° 10' 24.06" North**
Longitude : **163° 28' 18.67" West**
Final UTM Easting = 555,034.550 m
Final UTM Northing = 7,897,425.308 m

Other Services
PWD, DDSr
XBAT, MRIL-WD

Permanent Datum : **Mean Sea Level** Elevation : **0.00 ft**
Log Measured From : **Drill Floor** **76.00 ft** Above Permanent Datum
Drilling Measured From : **Drill Floor**

MD LOG

Elev. KB **N/A**
DF **76.00 ft**
GL **N/A**
WD **146.00 ft**

Depth Logged : **222.00 ft** To **6,800.00 ft**
Date Logged : **30-Jul-15** To **21-Sep-15**
Total Depth MD : **6,800.00 ft** TVD : **6,795.34 ft**
Spud Date : **30-Jul-15**

Unit No. : **1**
Plot Type : **Final**
Plot Date : **01-Nov-15**

Job No. : **AK-XX-0901604700**

Run No.	Borehole Record (MD)			Size	Casing Record (MD)		
	Size	From	To		Weight	From	To
1	8.500 in	222.00 ft	1,512.00 ft	36.000 in	746.00 lbpf	257.00 ft	375.00 ft
5	17.500 in	1,512.00 ft	2,963.00 ft	22.000 in	224.00 lbpf	257.00 ft	1,475.00 ft
6	12.250 in	2,963.00 ft	5,423.00 ft	14.000 in	114.00 lbpf	257.00 ft	2,933.00 ft
7	8.500 in	5,423.00 ft	6,800.00 ft	9.625 in	53.00 lbpf	2,653.00 ft	5,408.00 ft

WELL INFORMATION

MWD Run Number	100	600	700		
Date run completed	01-Aug-15	14-Sep-15	22-Sep-15		
Rig Bit Number	1	6	7		
Bit Size (in)	8.500	12.250	8.500		
Tool Nominal OD (in)	6.75	8.000	6.750		
Log Start Depth (MD, ft)	222.00	2,963.00	5,423.00		
Log End Depth (MD, ft)	1,512.00	5,423.00	6,800.00		
Drill or Wipe	Drill	Drill	Drill		
Drill/Wipe Start Date and Time	30-Jul-15 17:05	12-Sep-15 01:20	20-Sep-15 08:52		
Drill/Wipe End Date and Time	01-Aug-15 11:21	13-Sep-15 16:35	21-Sep-15 23:09		
Min Inc (deg) @ Depth (MD, ft)	0.00 @ 0.00	0.58 @ 3,074.55	3.42 @ 5,980.70		
Max Inc (deg) @ Depth (MD, ft)	0.51 @ 320.88	3.70 @ 5,299.05	3.99 @ 6,745.05		
Bit TFA(in2) / Bit Type	0.71 / Tricone	0.99 / PDC	0.55 / PDC		
Flow Rate (gpm)	449.40	828.00	550.00		
Max AV (fpm) / CV (fpm) @ MWD	774.0 / 984.0	239.0 / 357.0	549.0 / 1,000.0		
Fluid Type	Sea Water	Polymer	Polymer		
Density (ppg) / Viscosity (spqt)	8.55 / 27.00	11.40 / 56.00	12.00 / 79.00		
Filtrate CL (ppm)	35,000.00	100,000.00	135,000.00		
pH / Fluid Loss (mptm)	8.50 / 0	9.10 / 4	9.30 / 6		
PV (cP) / YP (lhf2)	17 / 31.00	20 / 27.00	23 / 33.00		
% Solids / % Sand	.01 / .01	16 / 0.5	18 / 0.5		
% Oil / Oil:Water Ratio	0 / 0:100	0 / 0:84	0 / 0:79		
Rm @ Measured Temp (degF)	0.350 @ 35.60	0.080 @ 88.00	0.070 @ 70.00		
Rmf @ Measured Temp (degF)	N/A @ N/A	0.050 @ 88.00	0.060 @ 70.00		
Rmc @ Measured Temp (degF)	N/A @ N/A	0.120 @ 88.00	0.140 @ 70.00		
Max Tool Temp (degF) / Source	42.60 / HCIM	144.94 / HCIM	152.00 / HCIM		

Rm @ Max Tool Temp (degF)	0.3004 @ 42.60	0.0849 @ 144.94	0.0338 @ 152.00		
Lead MWD Engineer	Nick Weeks	Jack Kleinhans	Jack Kleinhans		
Customer Representative	Doug Sloan	Matt Cazalet	Scott Lapiene		

SENSOR INFORMATION

Downhole Processor Information

Tool Type	HCIM	HCIM	HCIM		
Software Version	88.58	88.58	88.58		
Sub Serial Number	12272466	11902800	11320539		
Insert Serial Number	14776659	12136690	11752800		
Date and Time Initialized	30-Jul-15 10:14	11-Sep-15 01:12	19-Sep-15 15:17		
Date and Time Read	01-Aug-15 18:48	18-Sep-15 18:26	25-Sep-15 08:40		
ECMB SW Version	N/A	N/A	generic 1.1.1 Linux 2.6.23.1		

Directional Sensor Information

Tool Type	PCDC	PCDC	PCDC		
Distance From Bit (ft)	16.80	56.82	48.80		
Software Version	6.33	6.33	6.33		
Sub Serial Number	12510194	12606713	12460872		
Sonde Serial Number	12059421	12059488	11902192		
Sensor ID Number	N/A	N/A	N/A		
Toolface Offset (deg)	0.00	208.54	301.32		

Gamma Ray Sensor Information

Tool Type	DGR	DGR	DGR		
Distance From Bit (ft)	6.67	37.22	38.40		
Recorded Sample Period (sec)	14	10	10		
Software Version	N/A	N/A	N/A		
Sub Serial Number	12519619	11651705	12519617		
Insert/Sonde Serial Number	12464236	12351708	12041832		

Resistivity Sensor Information

Tool Type		EWR-P4			
Distance From Bit (ft)		45.42			
Recorded Sample Period (sec)		10			
Software Version		1.50			
Sub Serial Number		12209748			
Receiver Insert Serial Number		11827850			
Transmitter Insert Serial Number		12277919			
Receiver Orientation		Down			

Neutron Sensor Information

Tool Type	CTN	CTN	CTN		
Distance From Bit (ft)	92.13	106.44	126.09		
Recorded Sample Period (sec)	14	10	10		
Sub Serial Number	12473205	12228154	12120657		
Insert Serial Number	12428642	11524484	12034145		
Source Serial Number	23646G	23647G	59459B		
Source Factor	N/A	N/A	N/A		
Pin Orientation	Down	Down	Down		

Density Sensor Information

Tool Type	ALD	ALD	ALD		
Distance From Bit (ft)	79.17	87.77	113.16		
Recorded Sample Period (sec)	14	10	10		

Recorded Sample Period (sec)	14		10		
Software Version	3.13	3.12	3.12		
Sub Serial Number	12522518	12279568	10853150		
Insert Serial Number	12541284	10718012	11496392		
Sensor ID Number	32767	32767	2		
Source Serial Number	46836B	39634B	39364b		
Pin Orientation	Down	Down	Down		
Stabilizer Blade O.D. (in)	8.25	11.90	8.20		
DPA Offset	135.00	45.00	135.00		

ADR SENSOR INFORMATION

Tool Type	ADR		ADR		
Tool Orientation	Deep Receiver Down		Deep Receiver Down		
Distance From SWRO to Bit (ft)	59.89		95.88		
Recorded Sample Period (sec)	14		10		
Tool SAP	11747086		12005268		
Receiver Insert SAP	11557203		11724109		
Transmitter Insert SAP	11829390		11292744		
Antenna Collar SAP	11747085		12005268		
App Firmware Version	415		415		
Processor Board FirmWare Version	306		306		
Processor FPGA FirmWare Version	4		4		
Transmitter PIC SW Version	1,025		1,025		
Tool Size	6.75"		6.75"		
Processor SIDS No.	281475276964047		281475276977376		
Processor PCB Rev.	N/A		N/A		
Receiver Board Upper SIDS No.	16607023626362025		16607023626541899		
Receiver Board Upper PCB Rev.	N/A		N/A		
Receiver Board Lower SIDS No.	16607023626361630		16607023626763496		
Receiver Board Lower PCB Rev.	N/A		N/A		
Receiver Board Deep SIDS No.	16607023626341336		16607023626764947		
Receiver Board Deep PCB Rev.	N/A		N/A		
Receiver Insert SIDS No.	11258999109368272		11258999116242384		
Transmitter Insert SIDS No.	4503634027974443		4503634016072279		
Antenna Collar SIDS No.	12666374086518188		12666374059062624		

REMARKS

1. ALL DEPTHS ARE MEASURED DEPTHS (MD), UNLESS OTHERWISE NOTED. THESE DEPTHS ARE BIT DEPTHS AND ARE CALLIBRATED TO THE DRILLERS PIPE TALLY. NO DEPTH CORRECTIONS HAVE BEEN MADE FOR PIPE STRETCH OR COMPRESSION.

2. ALL VERTICAL DEPTHS ARE TRUE VERTICAL DEPTHS (TVD), UNLESS OTHERWISE NOTED. ONLY INVERTED / REVERTED SECTIONS GREATER THAN 30' TVD ARE PRESENTED

3. ALL DATA PRESENTED IS RECORDED DATA UNLESS OTHERWISE STATED.

4. LWD RUN 1 WAS COMPRISED OF DIRECTIONAL, DUAL GAMMA RAY (DGR) UTILIZING GEIGER-MUELLER TUBE TYPE DETECTORS, AZIMUTHAL DEEP ELECTROMAGNETIC WAVE RESISTIVITY (ADR), PRESSURE WHILE DRILLING (PWD) DRILLSTRING DYNAMICS SENSOR (DDSr), AZIMUTHAL LITHODENSITY (ALD), COMPENSATED THERMAL NEUTRON (CTN), MAGNETIC RESONANCE WHILE DRILLING (MRIL-WD), AZIMUTHAL BIMODAL ACOUSTIC TOOL (XBAT), AND THE AZIMUTHAL ACOUSTIC CALIPER TOOL (XCAL).

5. RUN 200 WAS A 36” HOLE OPENING RUN, RUN 300 WAS A 42” HOLE OPENING RUN, RUN 400 WAS A CLEANOUT RUN TO DRILL OUT THE SHOE TRACK AND 30’ OF NEW FORMATION. NO LWD SENSORS WERE UTILIZED. THEREFOR THEY ARE NOT PRESENTED.

6. MWD RUN 500 WAS A 17.5” DRILLING RUN UTILIZING DIRECTIONAL AND PWD. NO LOGGING SENSORS WERE PRESENT, ONLY ROP IS PRESENTED.

7. LWD RUN 6 WAS COMPRISED OF DIRECTIONAL, DUAL GAMMA RAY (DGR) UTILIZING GEIGER-MUELLER TUBE TYPE

DETECTORS, ELECTROMAGNETIC WAVE RESISTIVITY PHASE 4 (EWR-P4), PRESSURE WHILE DRILLING (PWD) DRILLSTRING DYNAMICS SENSOR (DDSr), AZIMUTHAL LITHODENSITY (ALD), COMPENSATED THERMAL NEUTRON (CTN), AZIMUTHAL BIMODAL ACOUSTIC TOOL (XBAT), AND THE AZIMUTHAL ACOUSTIC CALIPER TOOL (XCAL).

8. LWD RUN 7 WAS COMPRISED OF DIRECTIONAL, DUAL GAMMA RAY (DGR) UTILIZING GEIGER-MUELLER TUBE TYPE DETECTORS, AZIMUTHAL DEEP ELECTROMAGNETIC WAVE RESISTIVITY (ADR), PRESSURE WHILE DRILLING (PWD) DRILLSTRING DYNAMICS SENSOR (DDSr), AZIMUTHAL LITHODENSITY (ALD), COMPENSATED THERMAL NEUTRON (CTN), MAGNETIC RESONANCE WHILE DRILLING (MRIL-WD), AZIMUTHAL BIMODAL ACOUSTIC TOOL (XBAT), AND THE AZIMUTHAL ACOUSTIC CALIPER TOOL (XCAL).

9. OVER THE COURSE OF THE 12.25” HOLE SECTION THERE ARE SEVERAL INSTANCES WHERE THE BOREHOLE RUGOSITY HAS CREATED “SPIKES” IN THE RESISTIVITY DATA. THIS IS DUE TO ONE RECIEVER READING THE HIGH SALINITY BOREHOLE FLUID (WASHOUT) AND THE OTHER READING THE FORMATION. THERE ARE ALSO AREAS ACROSS THE LOGGED INTERVAL THAT SHOW AN UNDERGAUGE HOLE.

10. RUNS 1- 7 REPRESENT THE OCS-Y-2321 BJ001 ST00BP00 WELL WITH AN API# OF 55-352-00004-00. THIS WELL REACHED A TOTAL DEPTH OF 6,800'MD / 6,795'TVD

LOG MNEUMONICS:

MNEMONICS	CURVE DESCRIPTION
ROPA	AVERAGE RATE OF PENETRATION
DGRCC	DGR COMBINED GAMMA RAY BC
ARH16PC	ADR AVERAGE 2mhz 16" PHASE RESISTIVITY BC
ARH32PC	ADR AVERAGE 2mhz 32" PHASE RESISTIVITY BC
ARH48PC	ADR AVERAGE 2mhz 48" PHASE RESISTIVITY BC
R09PC	EWR AVERAGE 2mhz 09" PHASE RESISTIVITY BC
R15PC	EWR AVERAGE 2mhz 15" PHASE RESISTIVITY BC
R27PC	EWR AVERAGE 2mhz 27" PHASE RESISTIVITY BC
R39PC	EWR AVERAGE 2mhz 39" PHASE RESISTIVITY BC
ADXT	ADR FORMATION EXPOSURE TIME
EWXT	EWR FORMATION EXPOSURE TIME
TNPS	CTN NEUTRON POROSITY - SANDSTONE
ALCDLC	ALD LOW COUNT RATE BIN DENSITY
ALDCLC	ALD LOW COUNT RATE BIN STAND OFF CORRECTION
ALPELC	ALD LOW COUNT RATE BIN PHOTOELECTRIC FACTOR
XBEDA	XCAL EQUIVALENT HOLE DIAMETER

PARAMETERS USED IN NUCLEAR LOG PROCESSING:

HOLE SIZE:	FIXED @ 8.50” AND 12.25”
MUD WEIGHT:	8.6 – 12.0 PPG
WHOLE MUD CHLORIDES:	18,000 PPM Cl- R100, 100,000-125,000 PPM Cl-
FORMATION WATER SALINITY:	21,200 PPM Cl-
FLUID DENSITY:	1.0 g/cc
MATRIX DENSITY:	2.65 g/cc
LITHOLOGY:	SANDSTONE

ALL 1:1200 DATA CURVES ARE PRESENTED AT A STEP OF 1.0', AND SMOOTHED OVER A 3.0' WINDOW. GAP FILL IS SET TO 5'. ALL 1:240 DATA CURVES ARE PRESENTED AT A STEP OF 0.5', AND ARE SMOOTHED OVER A 0.5' WINDOW, EXCEPT FOR ROPA WHICH IS SMOOTHED OVER A 1.2' WINDOW.

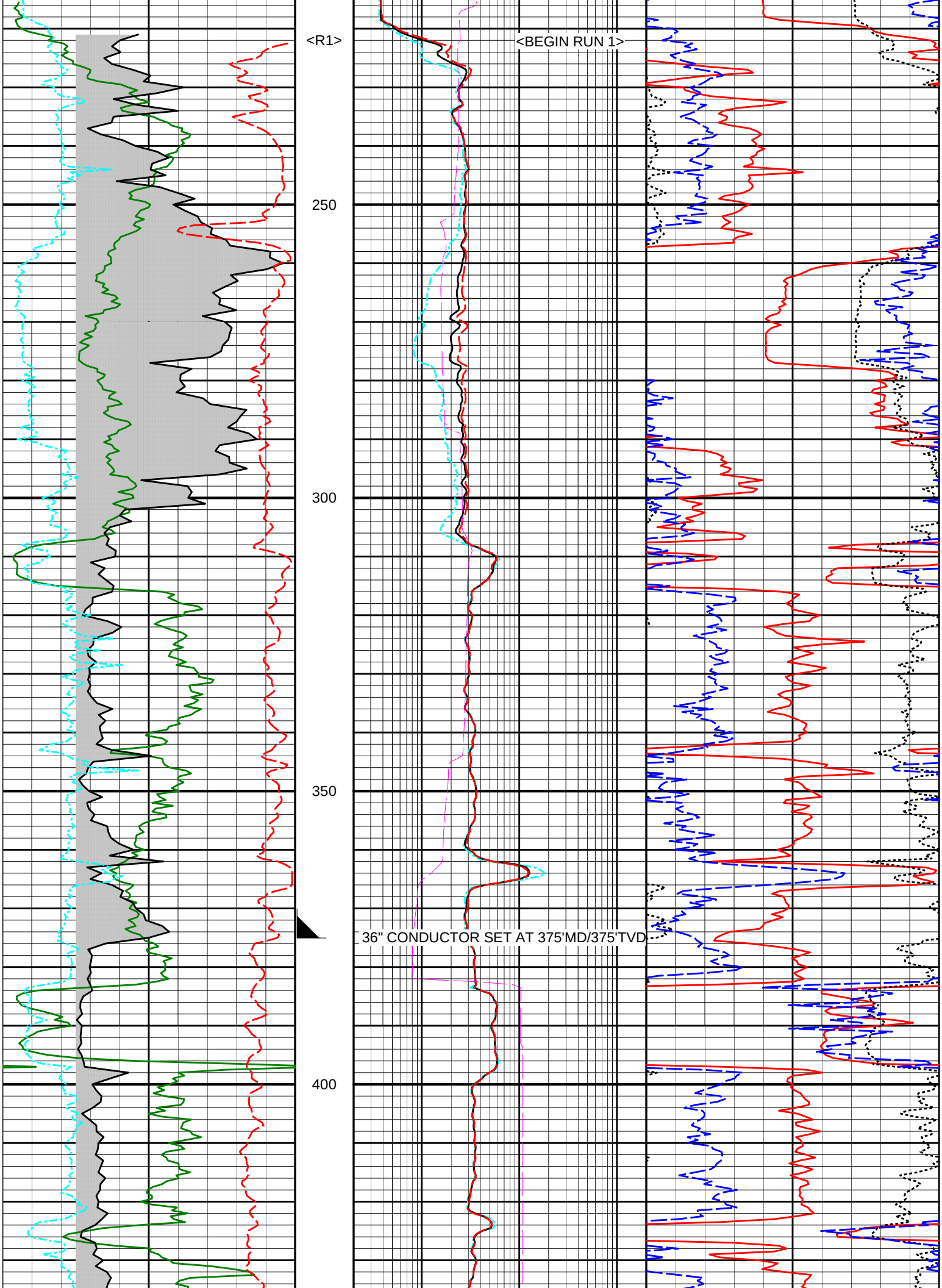
WARRANTY

	Avg 48in 2M Ph Res Cor (ARH48PC) 0.2 ohm-metre 200	
	Avg 32in 2M Ph Res Cor (ARH32PC) 0.2 ohm-metre 200	
	Avg 16in 2M Ph Res Cor (ARH16PC) 0.2 ohm-metre 200	
	39in Phase Resistivity BC (R39PC) 0.2 ohmm 200	
XCAL Ellipse Avg Diameter (XBEDA) 6 inches 16	27in Phase Resistivity BC (R27PC) 0.2 ohmm 200	
DGR Comb Gamma Ray BCorr (DGRCC) 0 api 150	15in Phase Resistivity BC (R15PC) 0.2 ohmm 200	CTN Porosity Sandstone (TNPS) 60 pu 0
ALD LCRB Pe Factor (ALPELC) 0 10	9in Phase Resistivity BC (R09PC) 0.2 ohmm 200	ALD LCRB Den Correction (ALDCLC) -0.8 g/cc 0.2
Avg Rate of Penetration (ROPA) 500 feet per hr 0	MD ft 1 : 240	Resistivity Formation Exposure Time (ADXT / EWXT) 0.2 hours 200
		ALD LCRB Comp Density (ALCDLC) 1.65 g/cc 2.65

150

200

ALL LWD SENSORS LOGGED IN SEAWATER TO SEA FLOOR @ 222'MD / 222'TVD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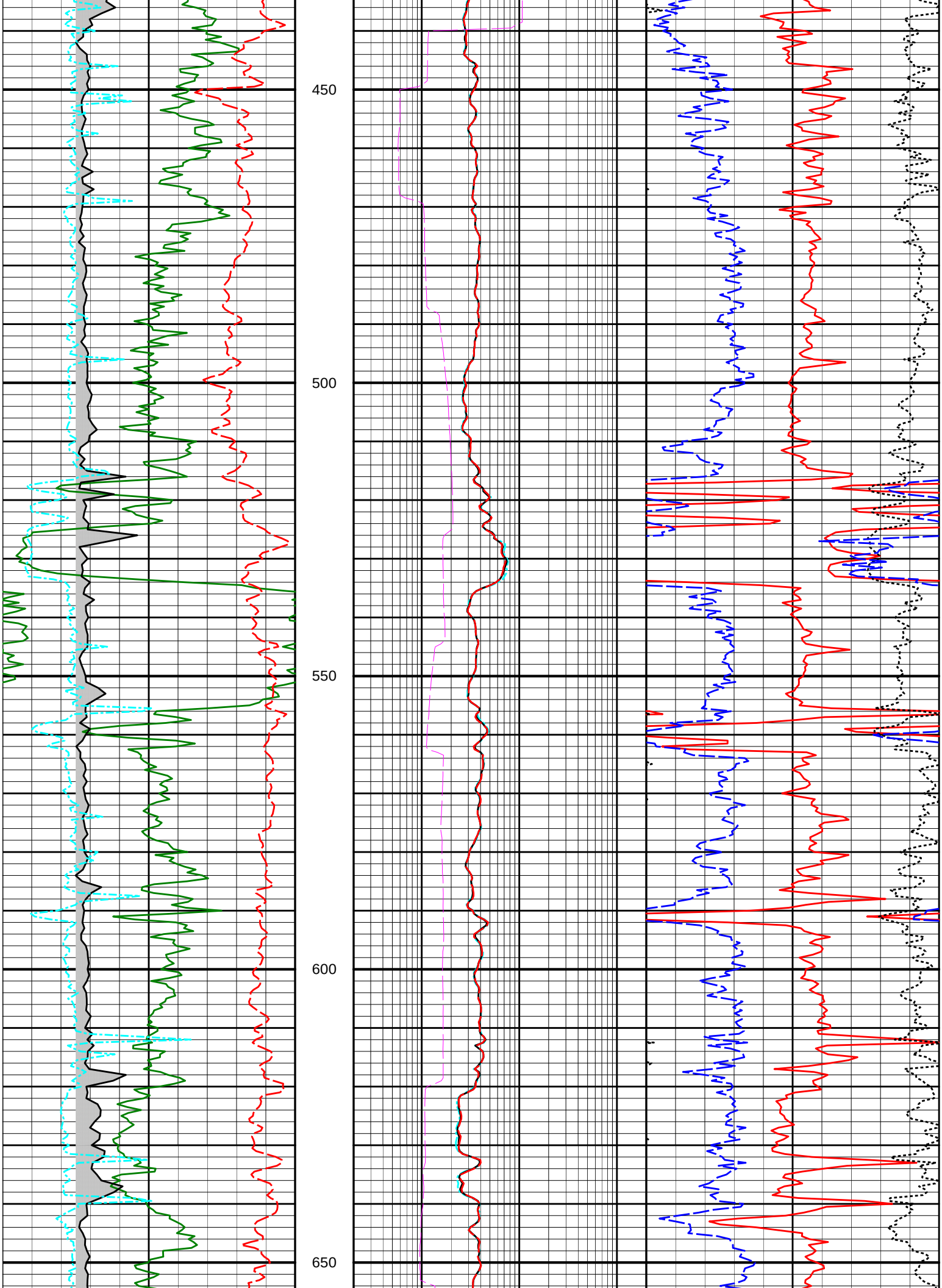
<BEGIN RUN 1>
250
300
350
36" CONDUCTOR SET AT 375'MD/375'TVD
400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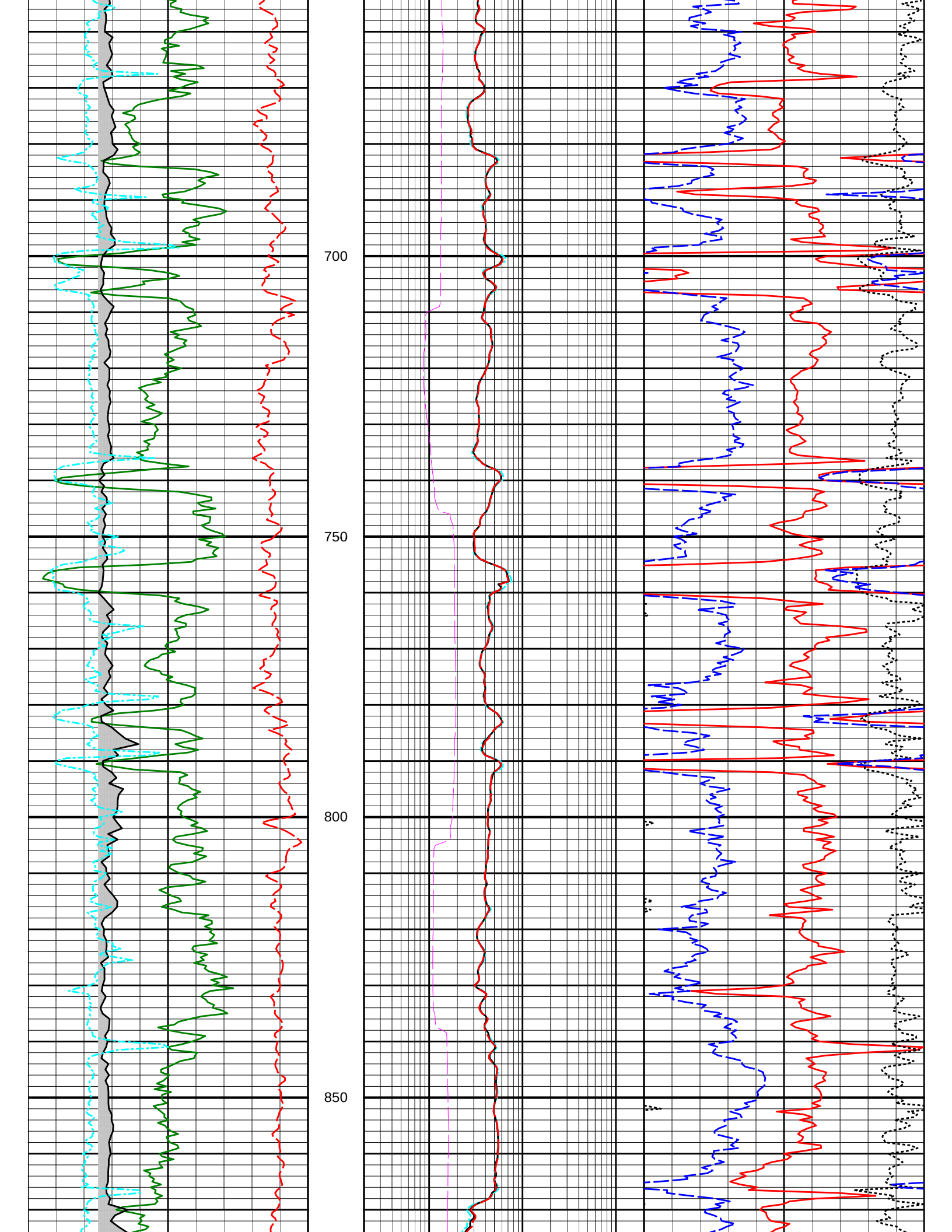
500
550
600
650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800
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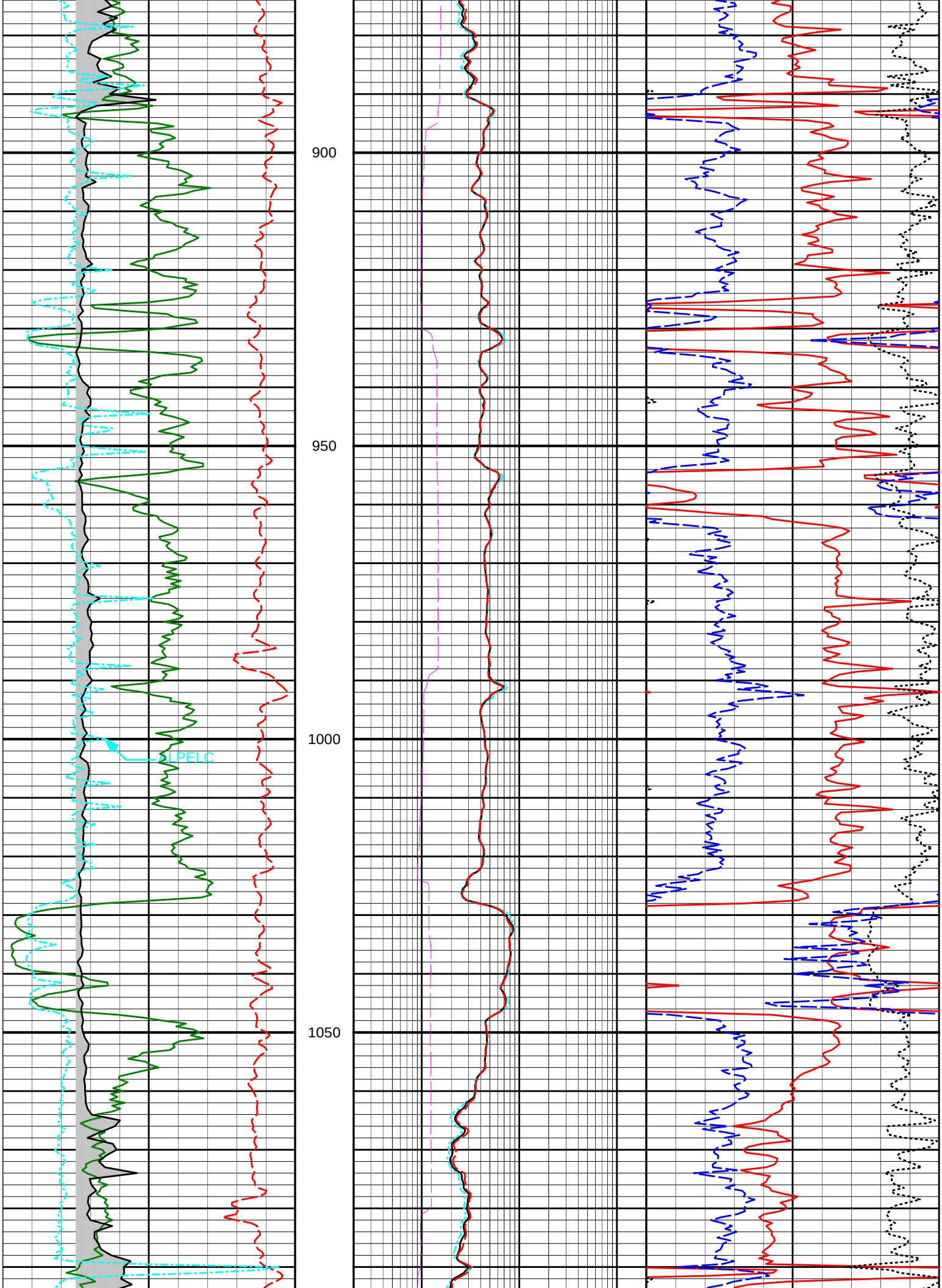
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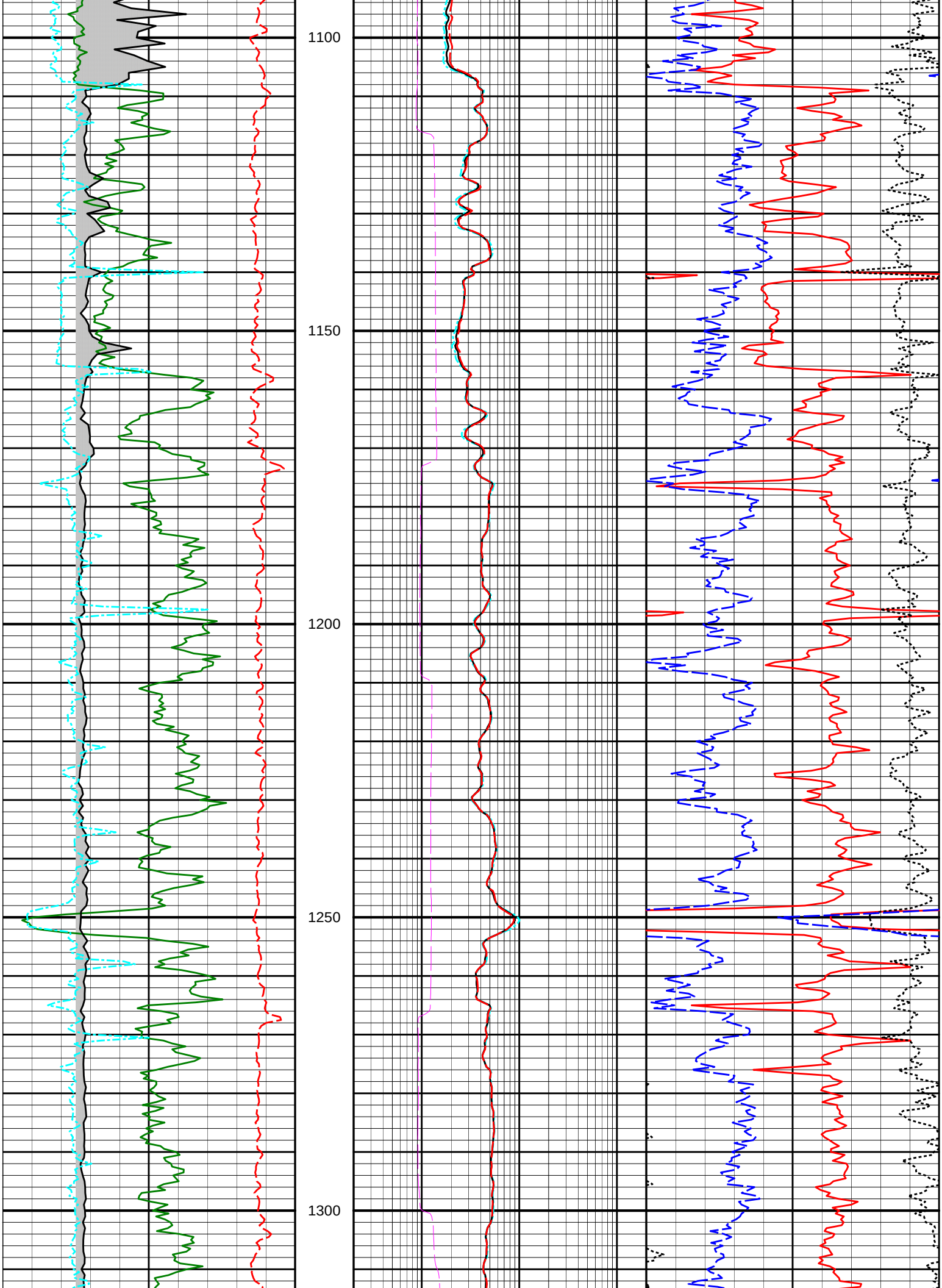
1050
LPELC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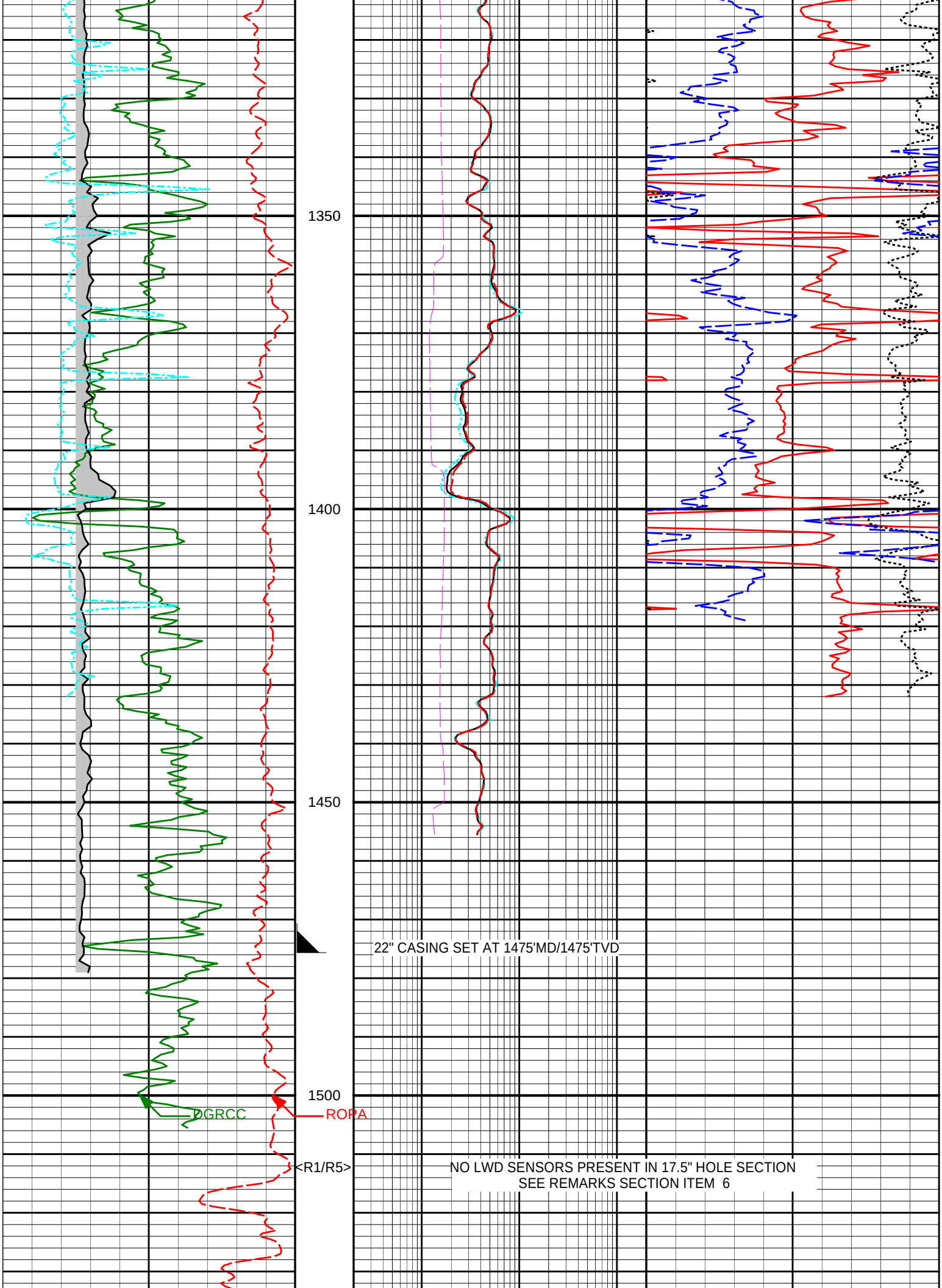
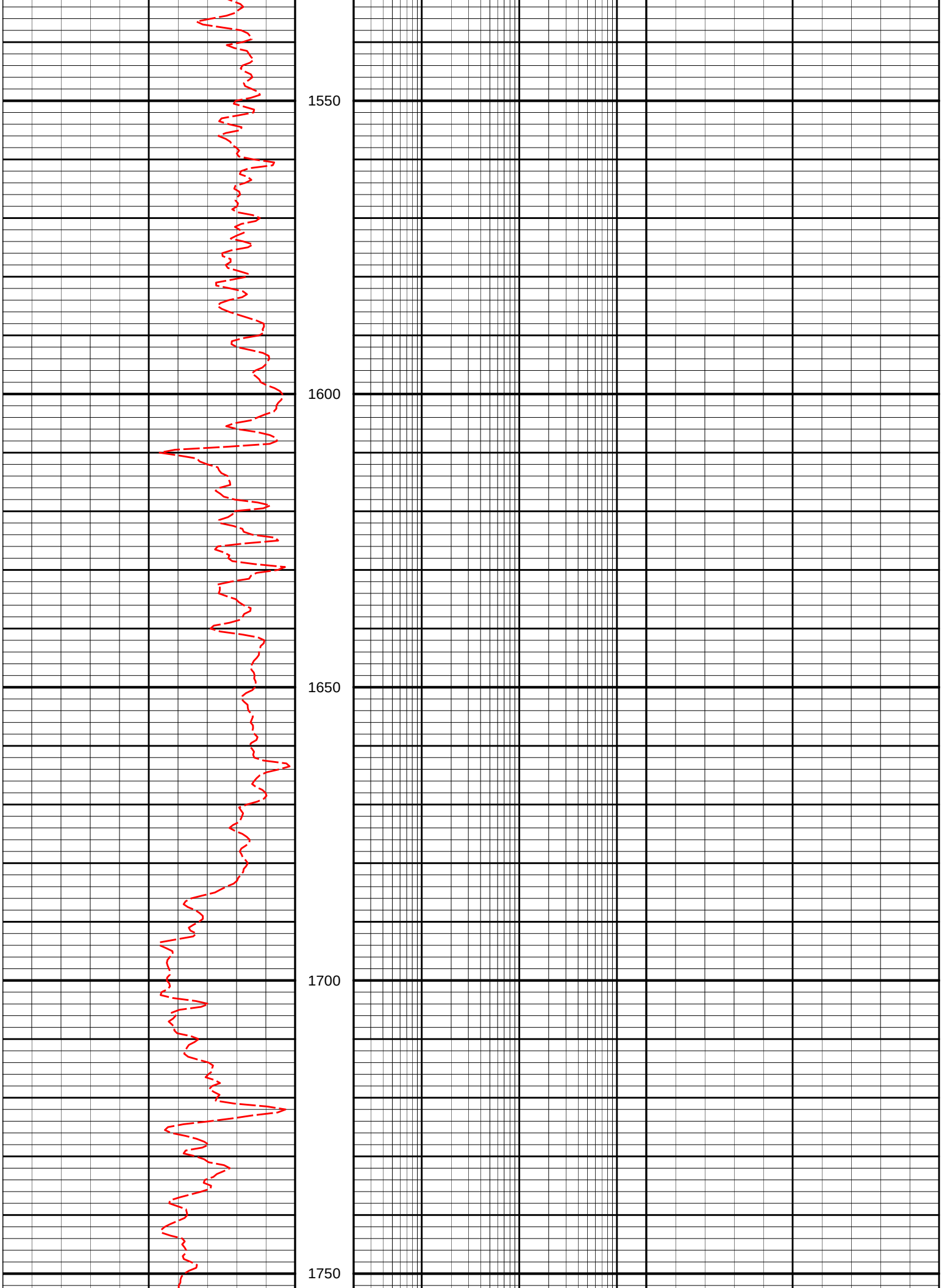
1200
1250
1300


1350
1400
1450
22" CASING SET AT 1475'MD/1475'TVD
1500
DGRCC
ROPA
<R1/R5>
NO LWD SENSORS PRESENT IN 17.5" HOLE SECTION
SEE REMARKS SECTION ITEM 6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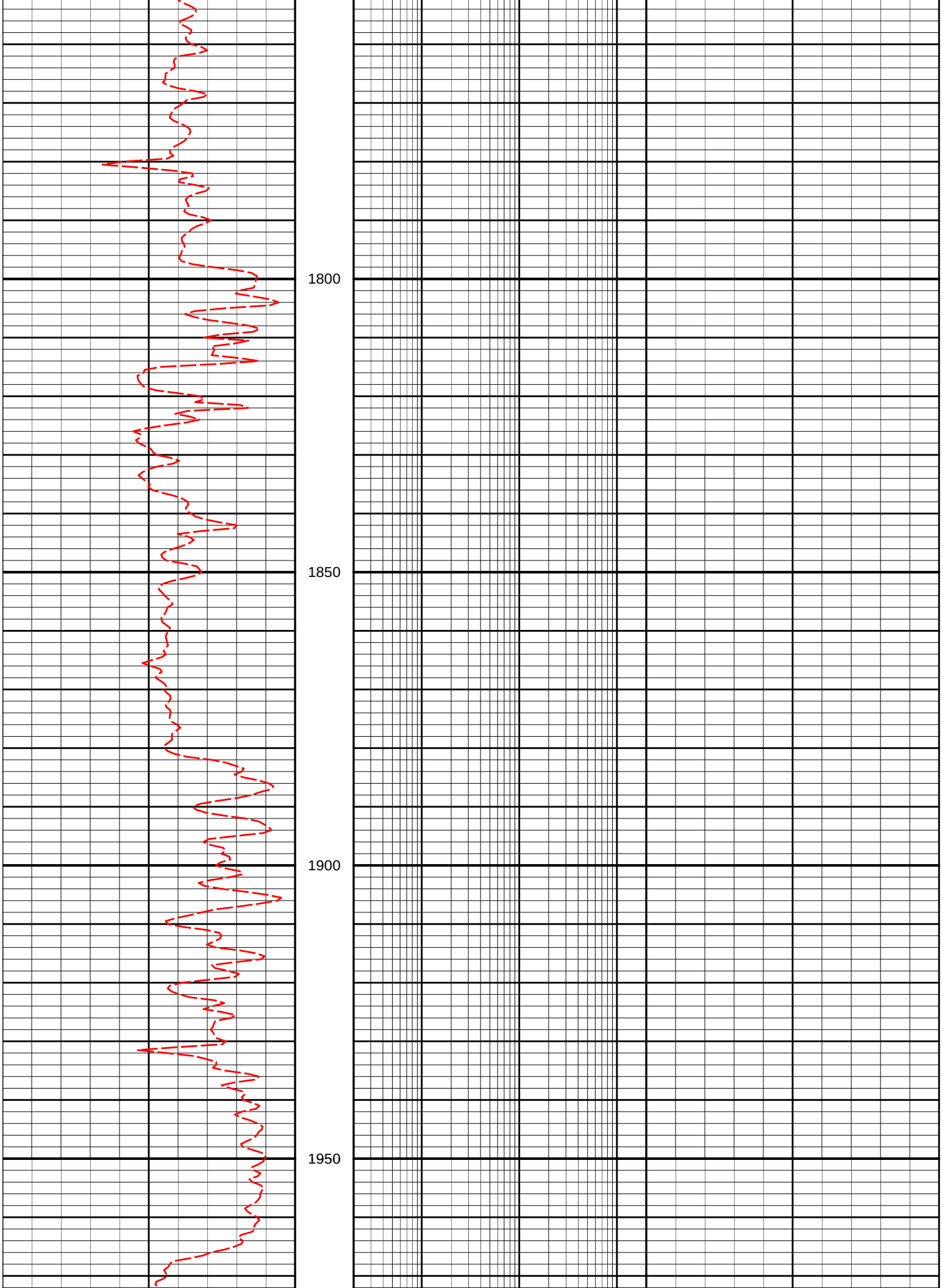
1700
1750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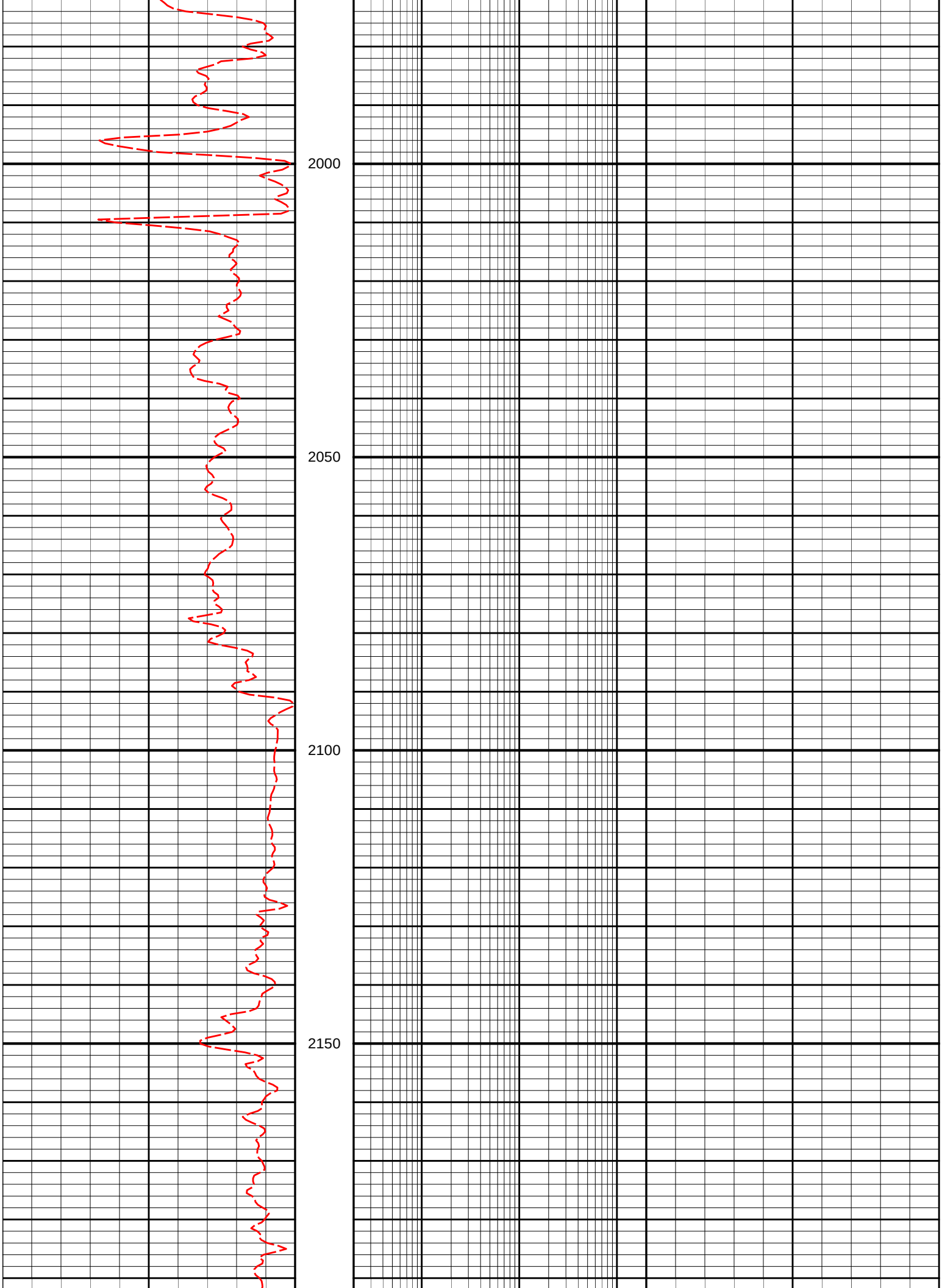
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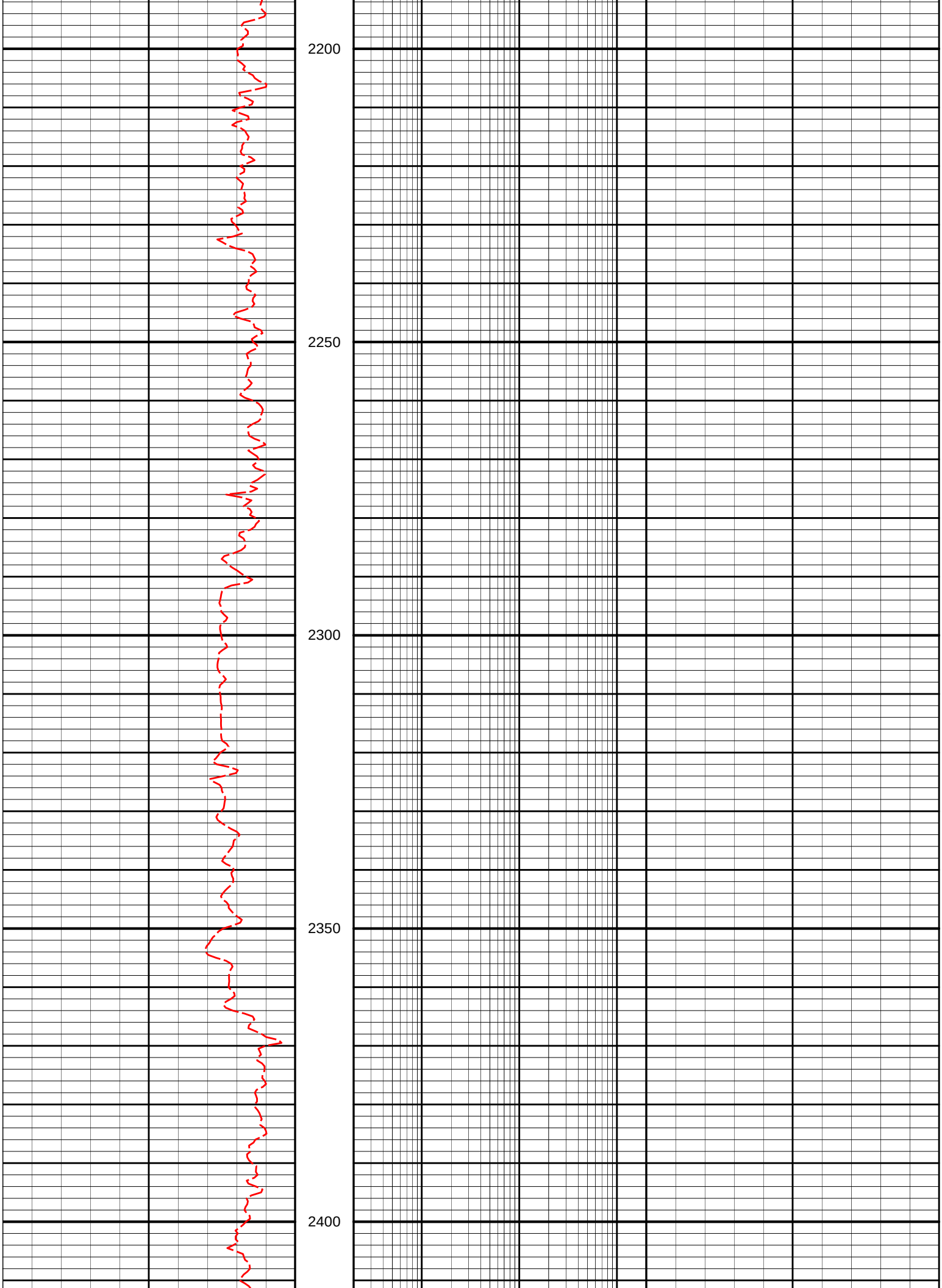
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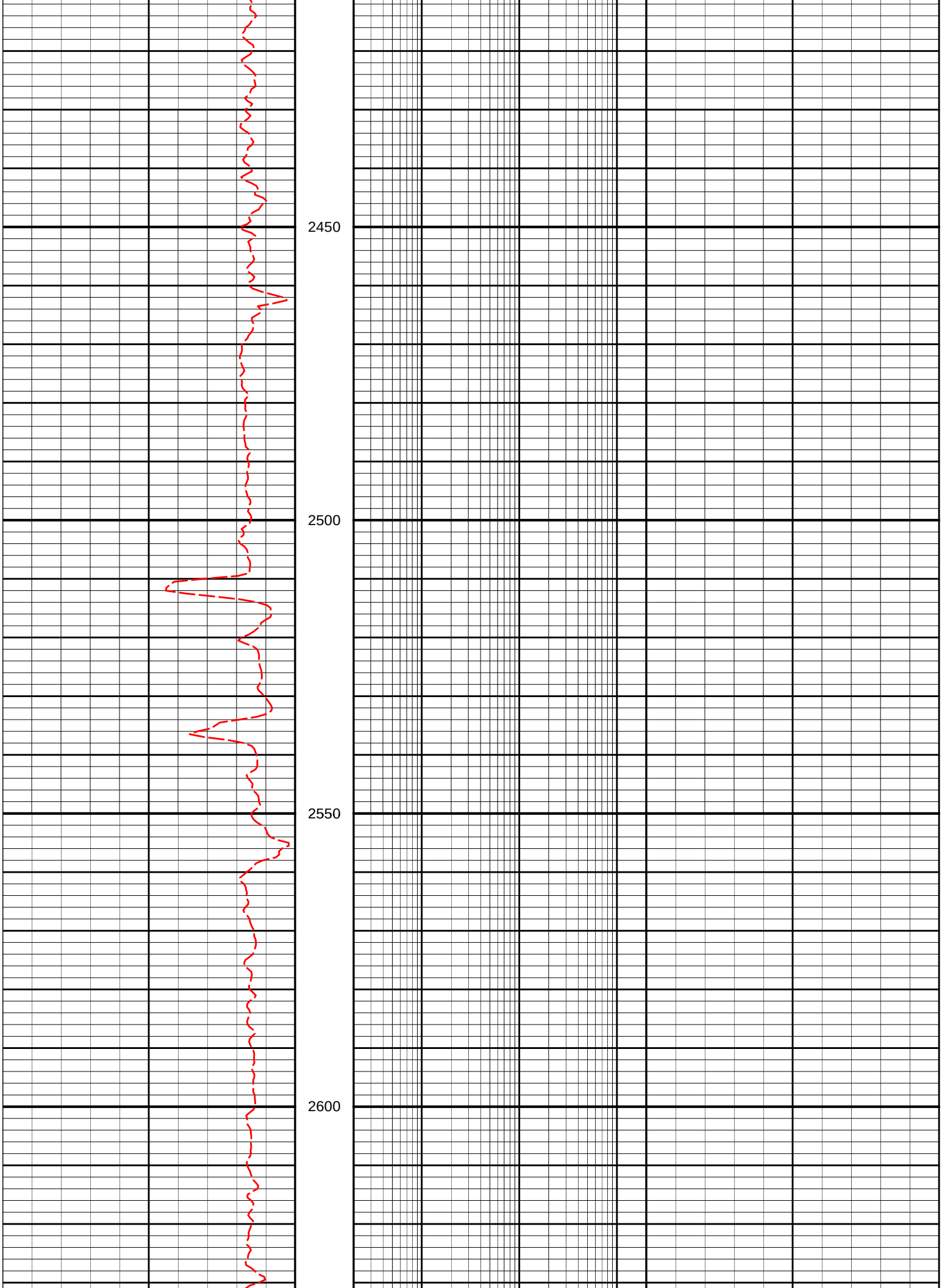
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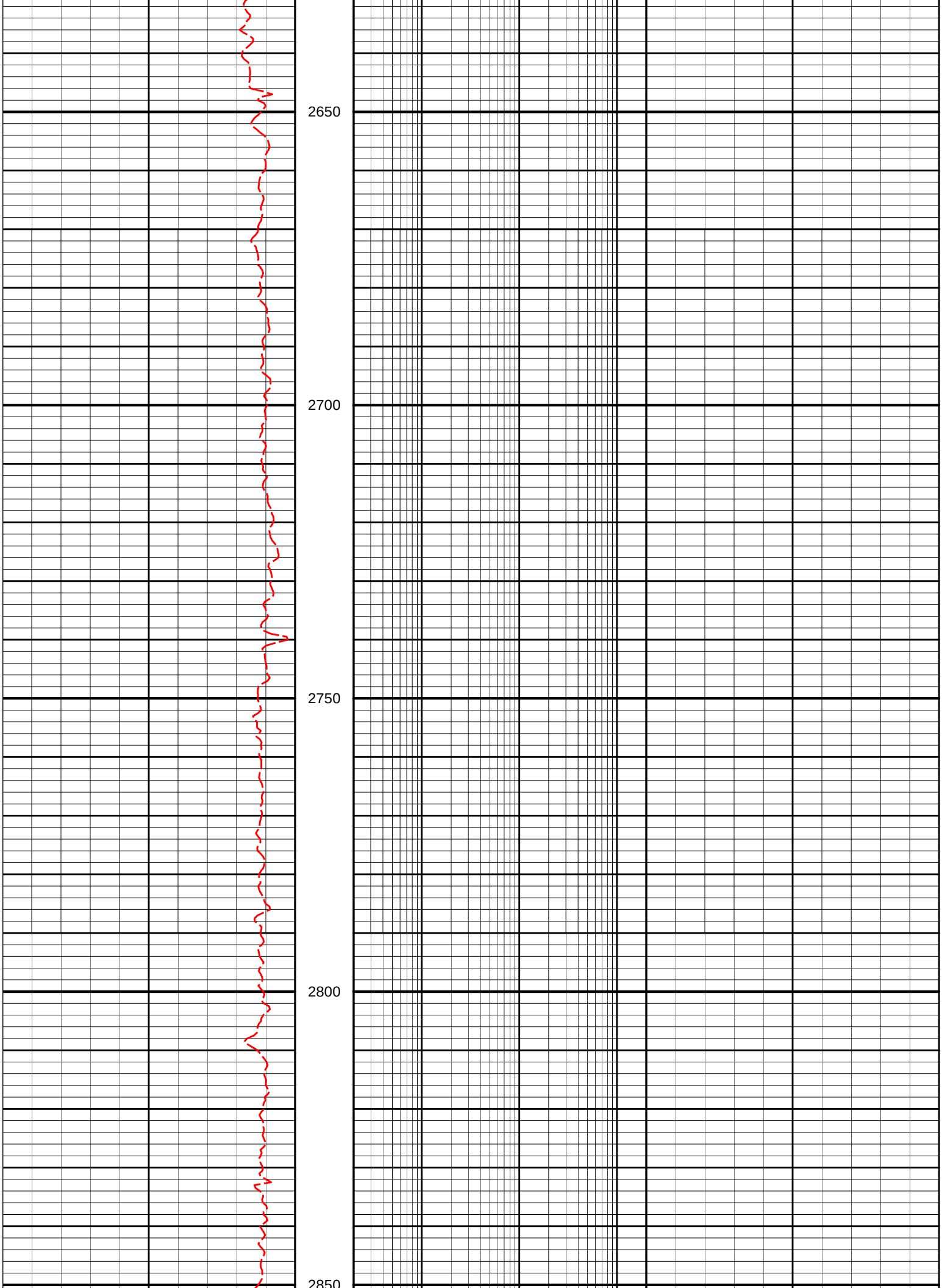
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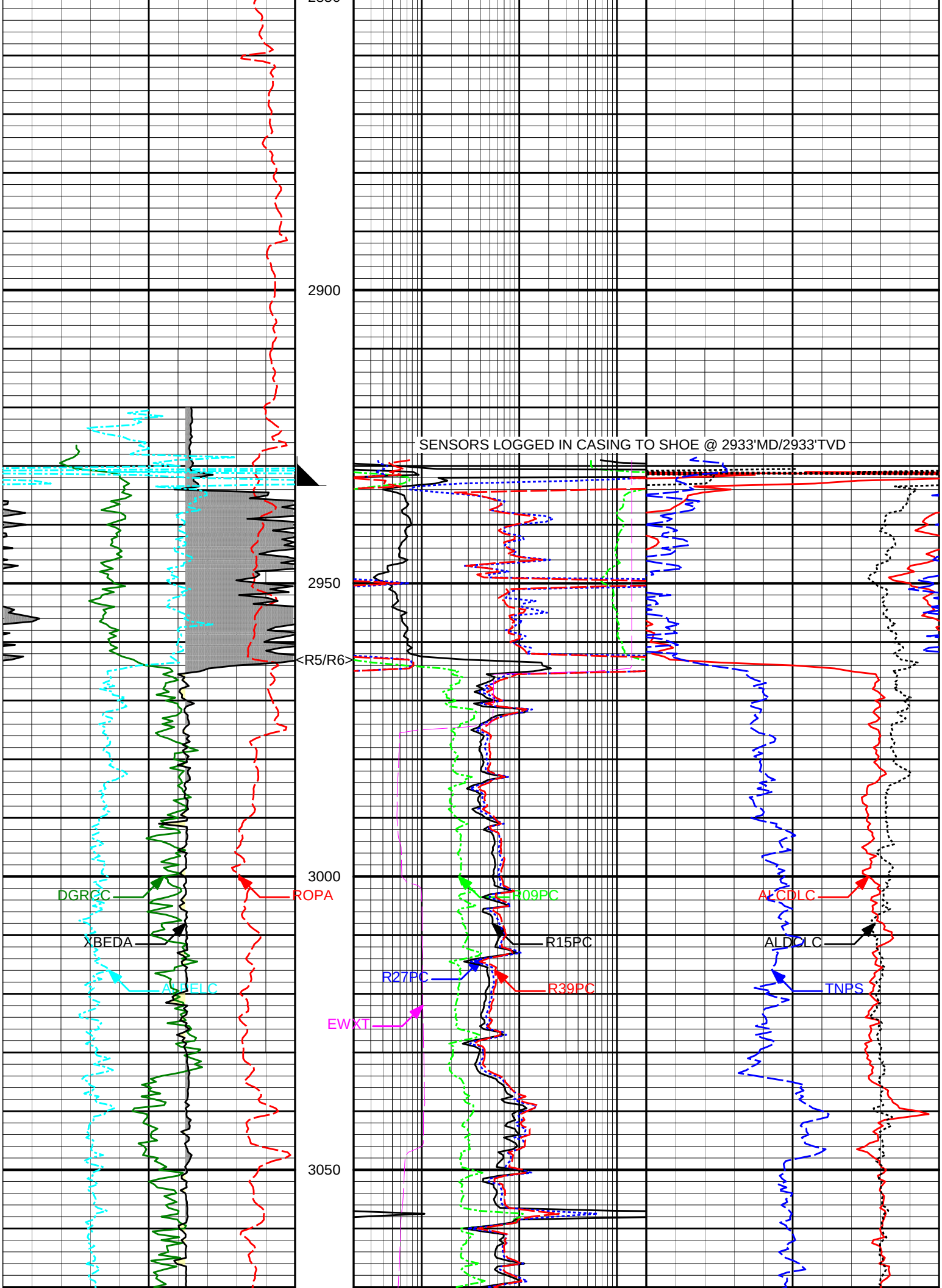
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SENSORS LOGGED IN CASING TO SHOE @ 2933'MD/2933'TVD
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R15PC
R27PC
R39PC
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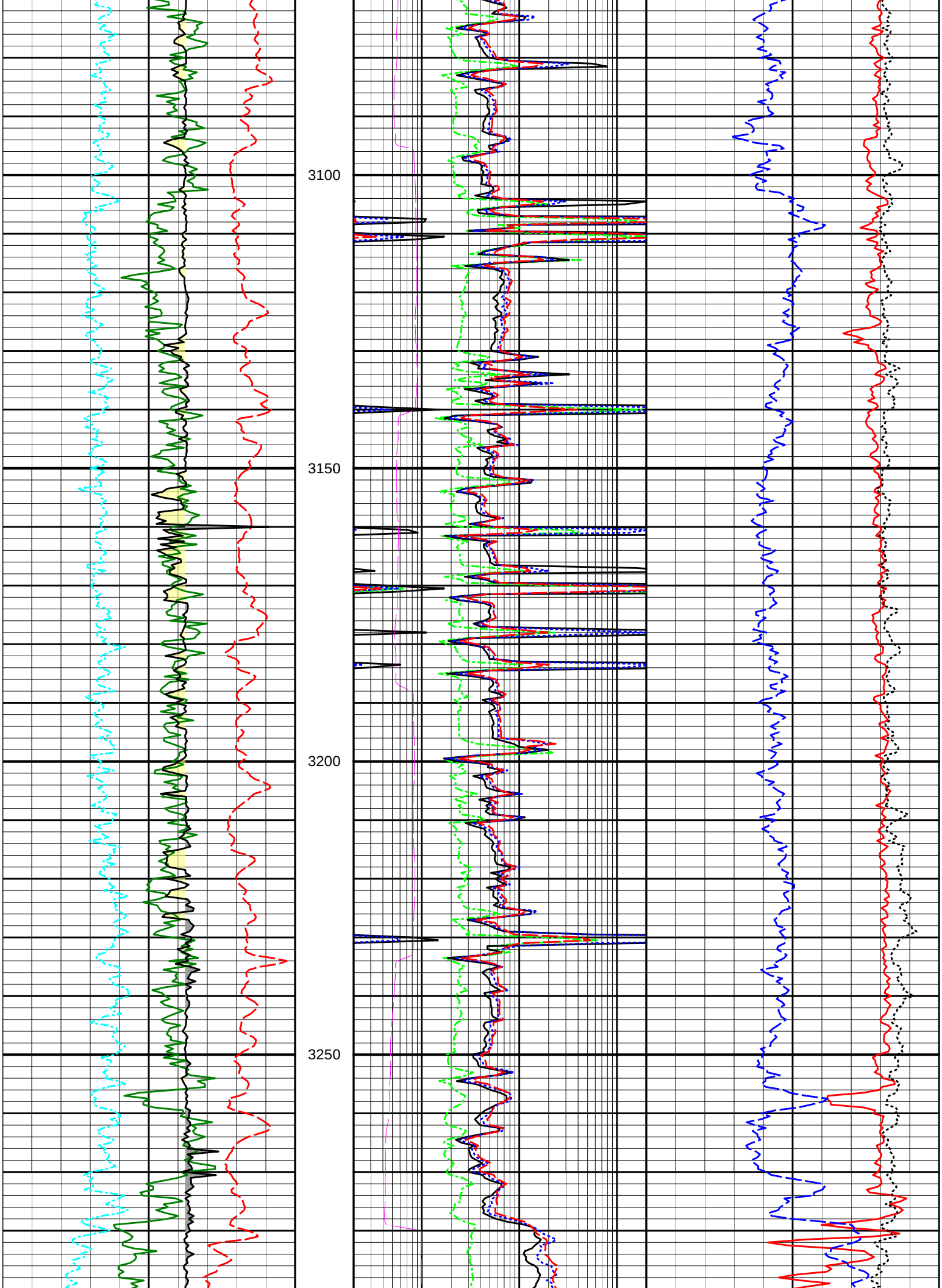
ALCDLC
ALDCLC
TNPS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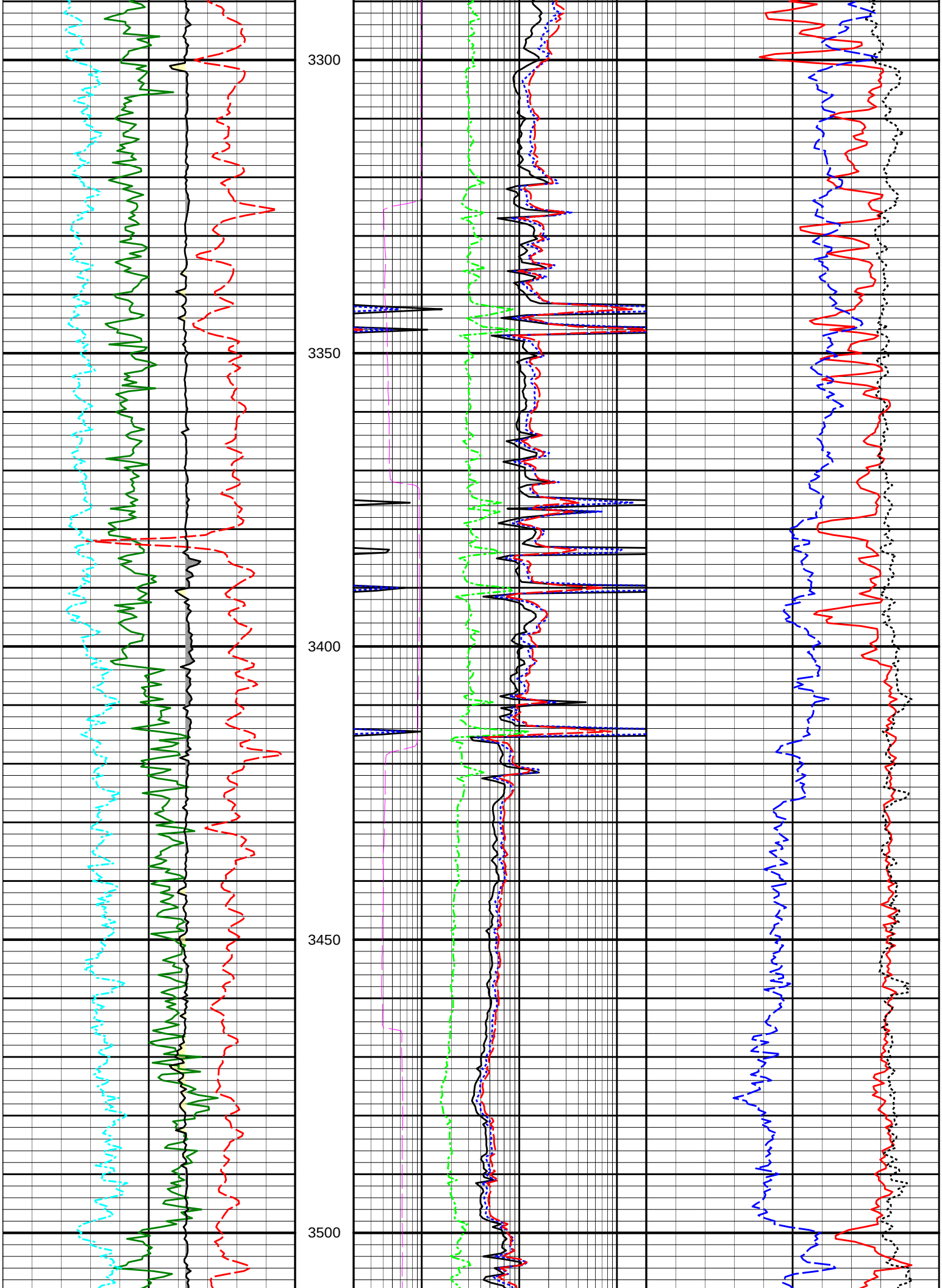
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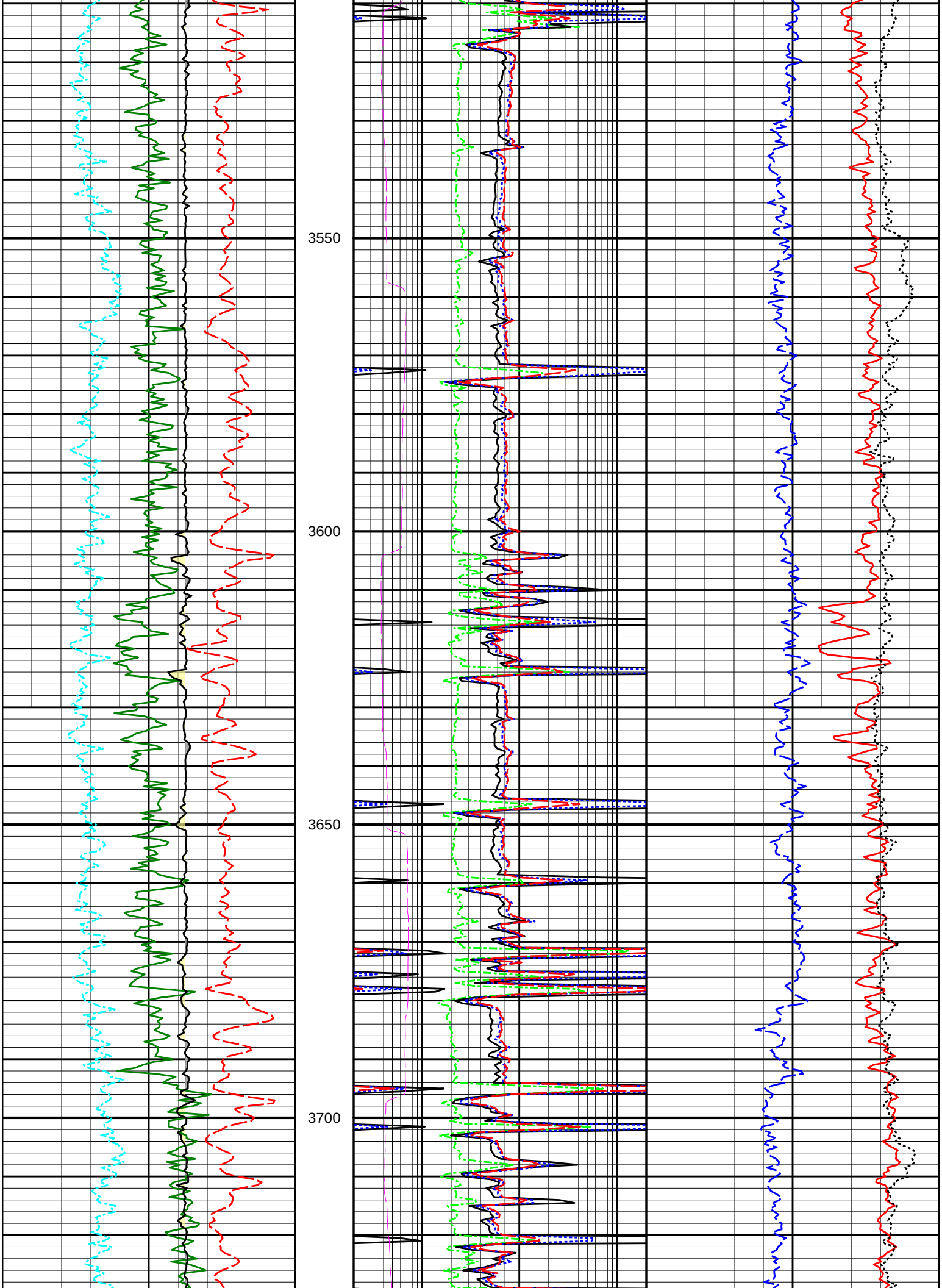
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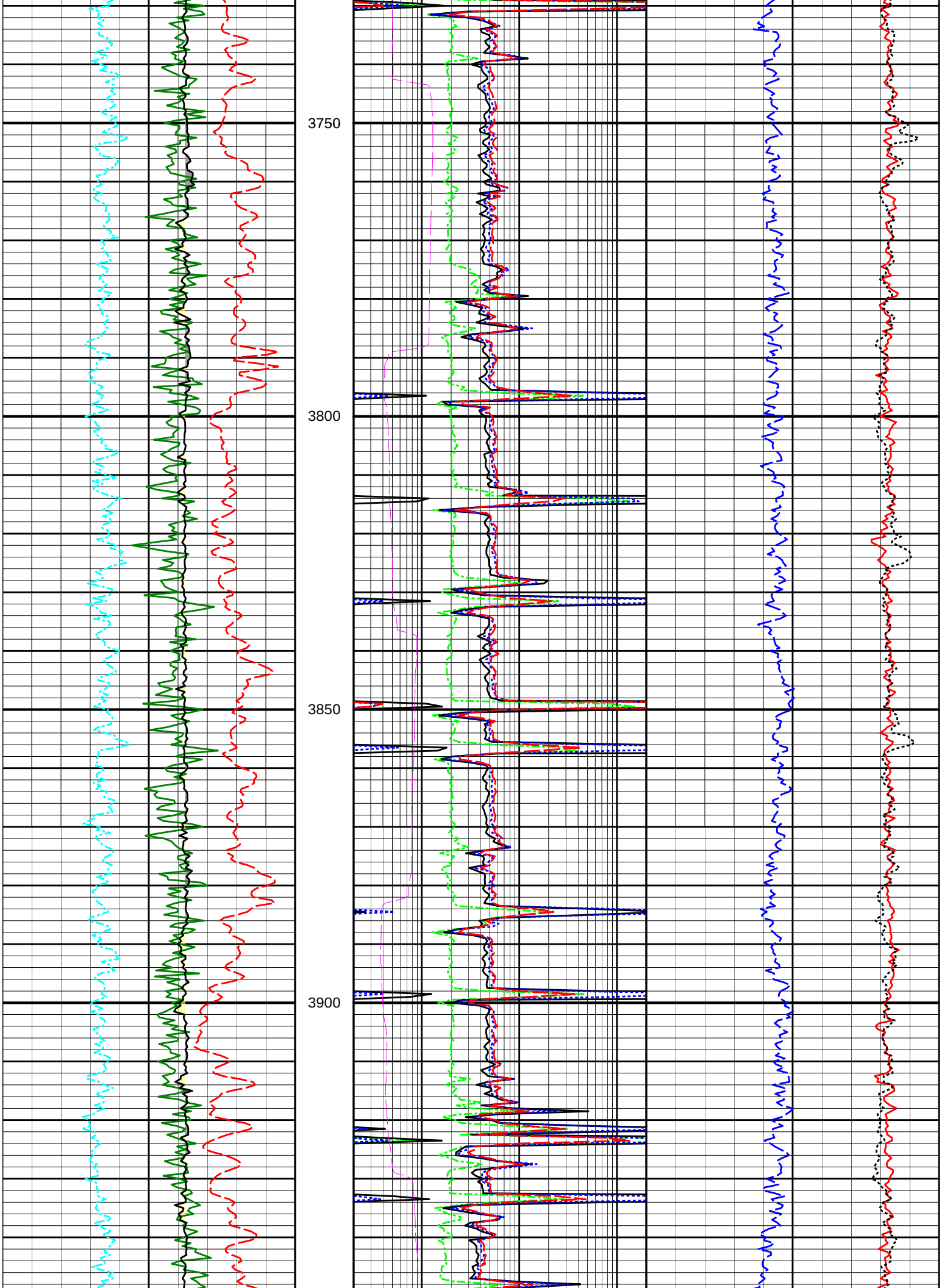
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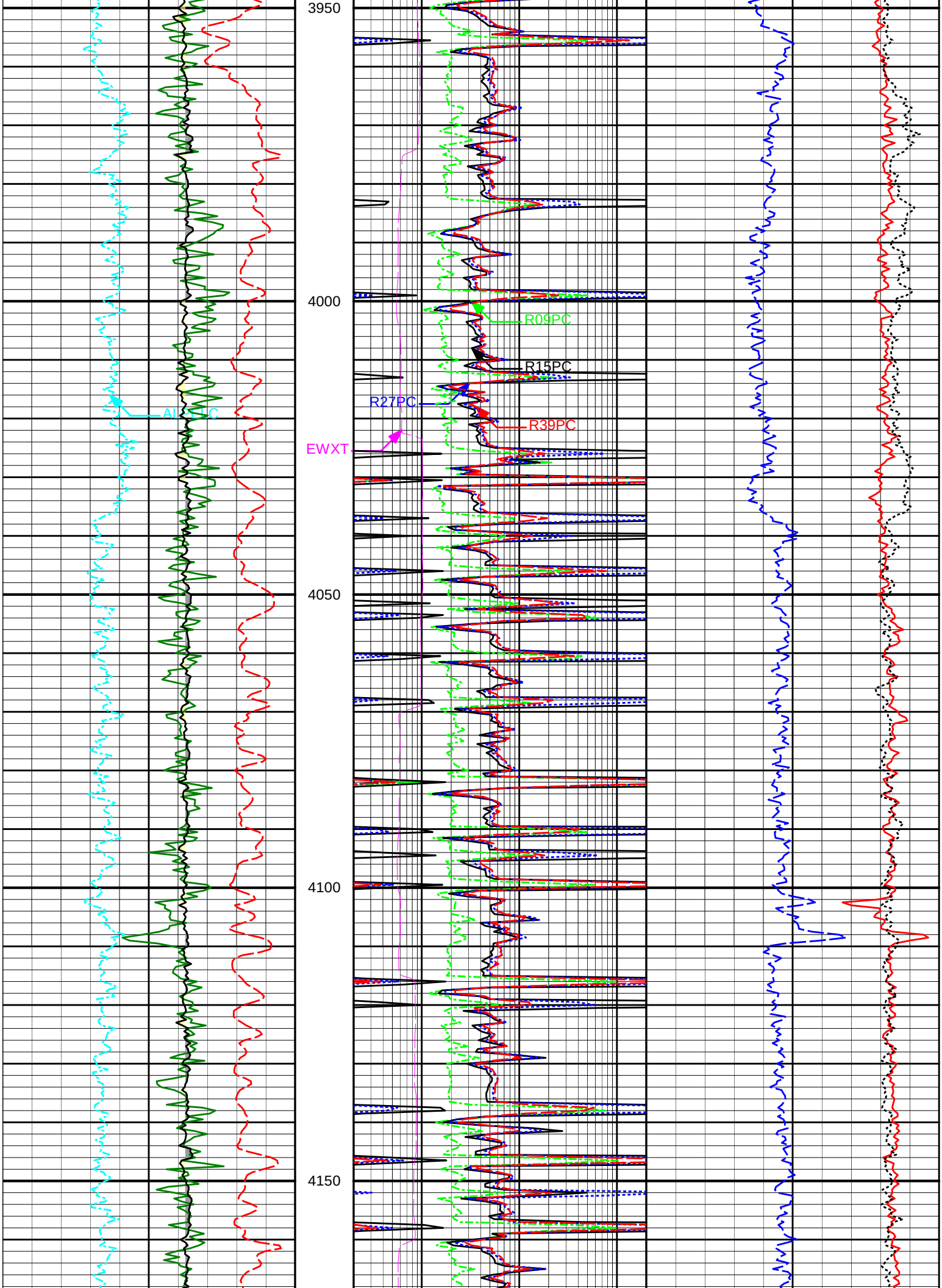
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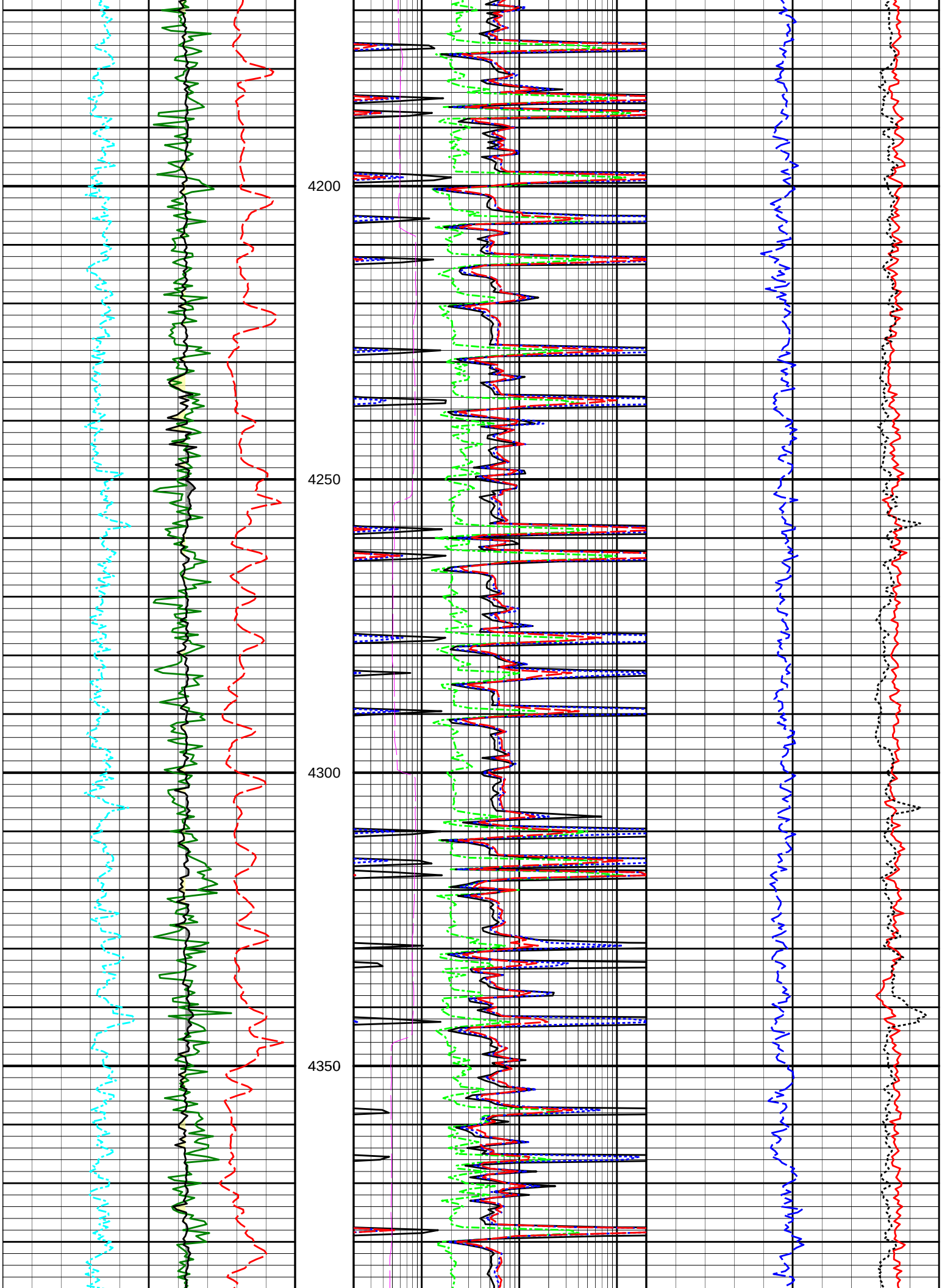
R15PC
R27PC
R39PC
EWXT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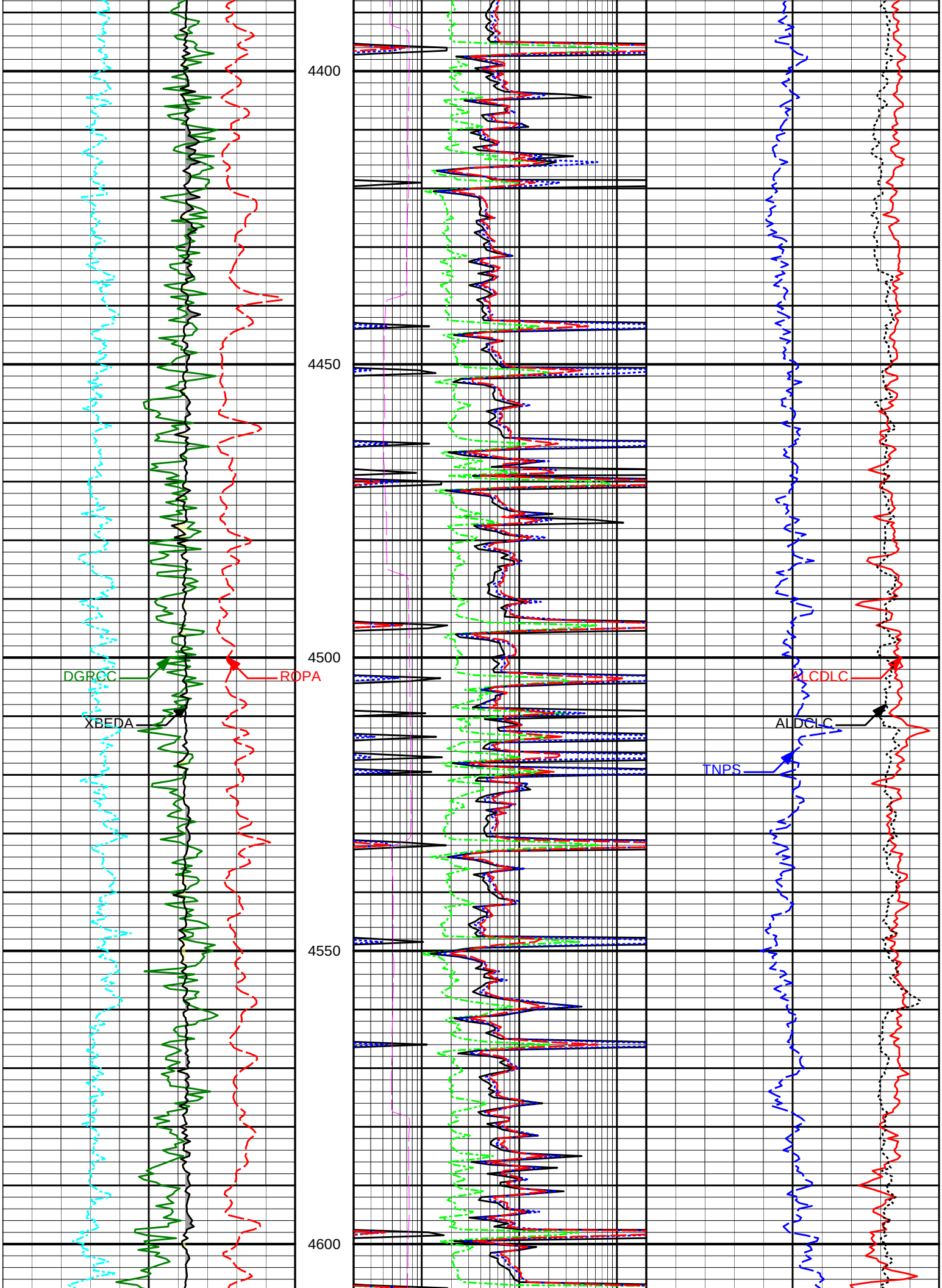
4400
4450
4500
4550
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DGRCC
ROPA
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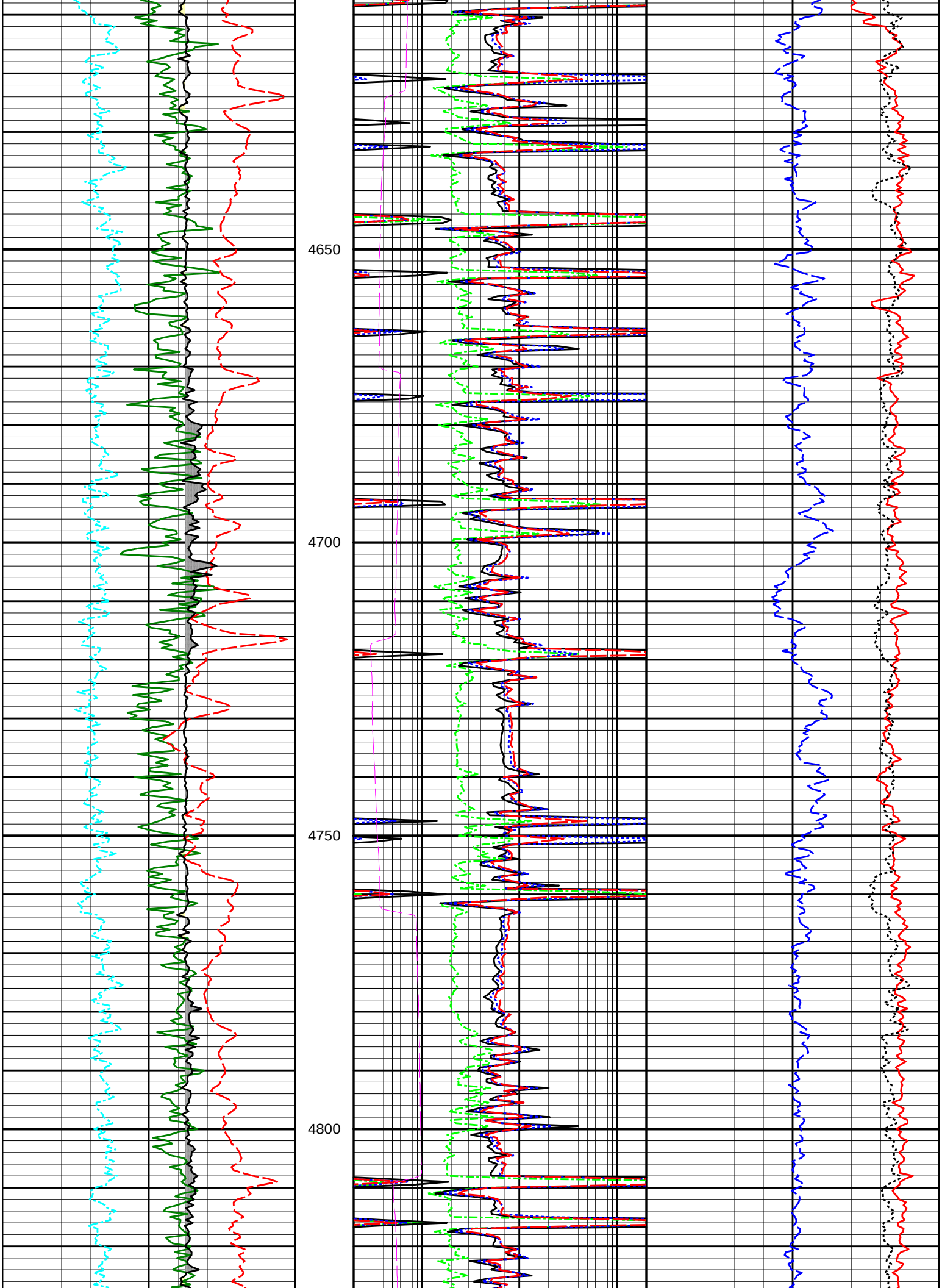
TNPS
ALCDLC
ALDCLC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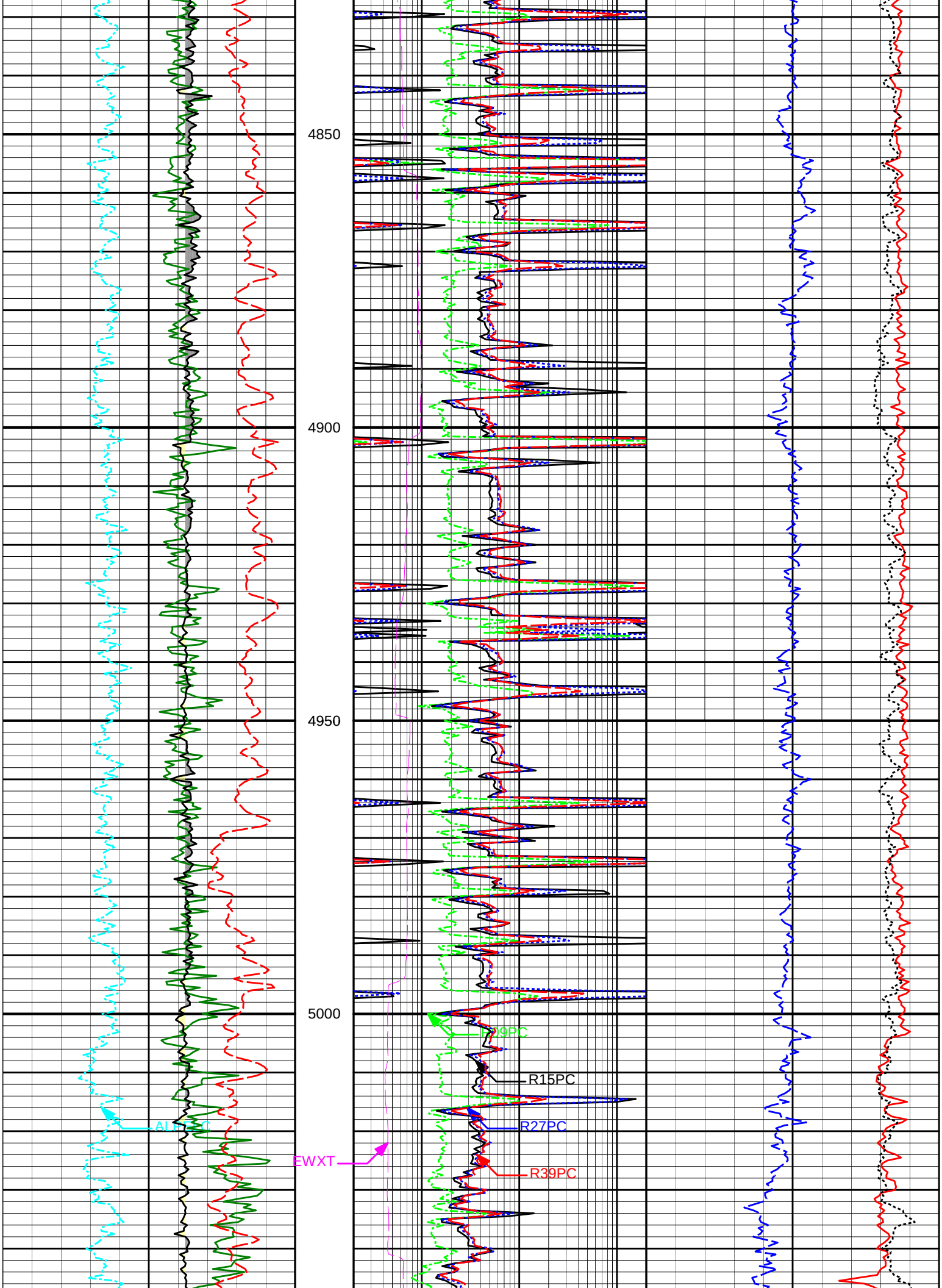
4700
4750
4800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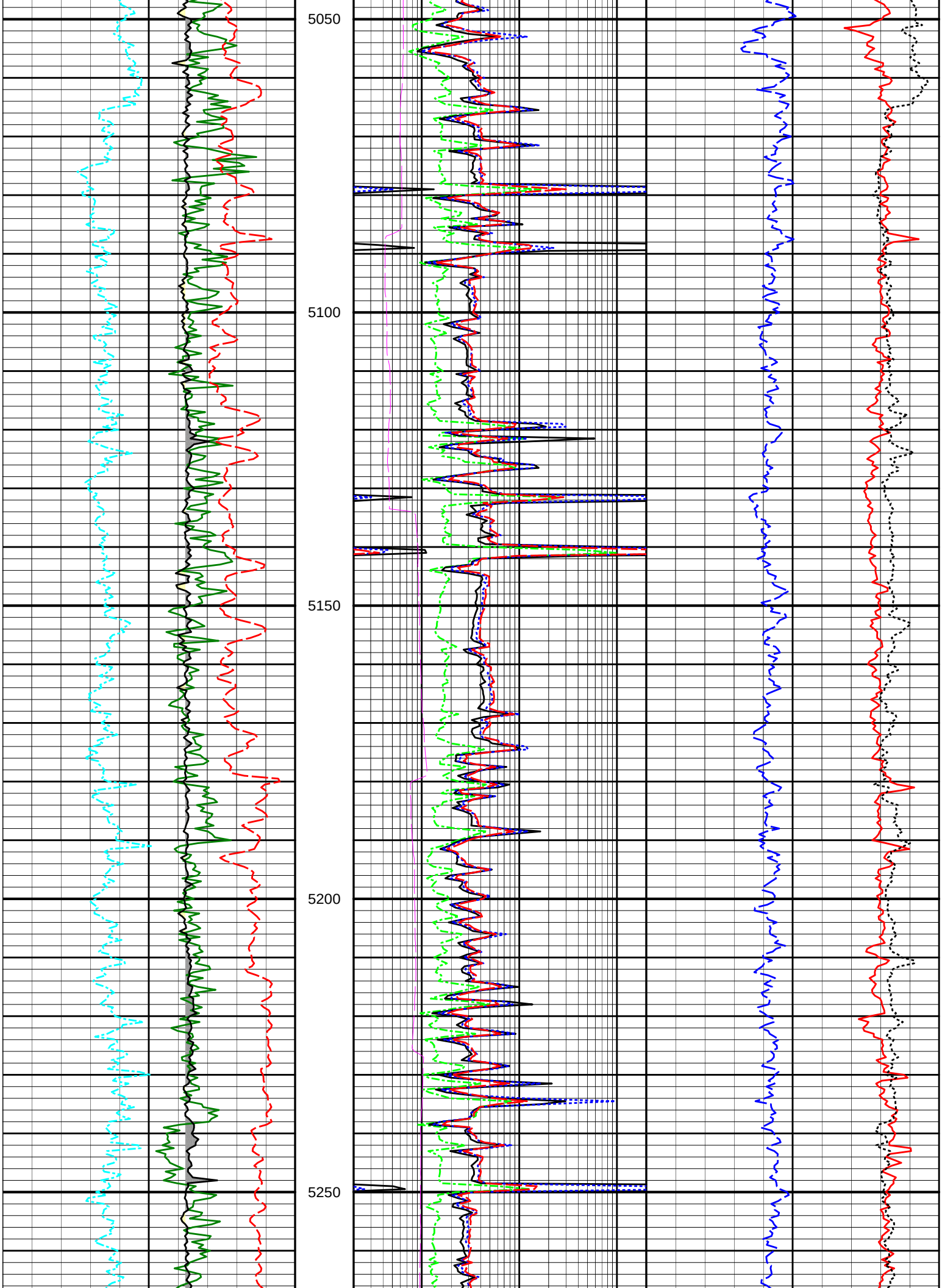
R09PC
R15PC
R27PC
R39PC
EWXT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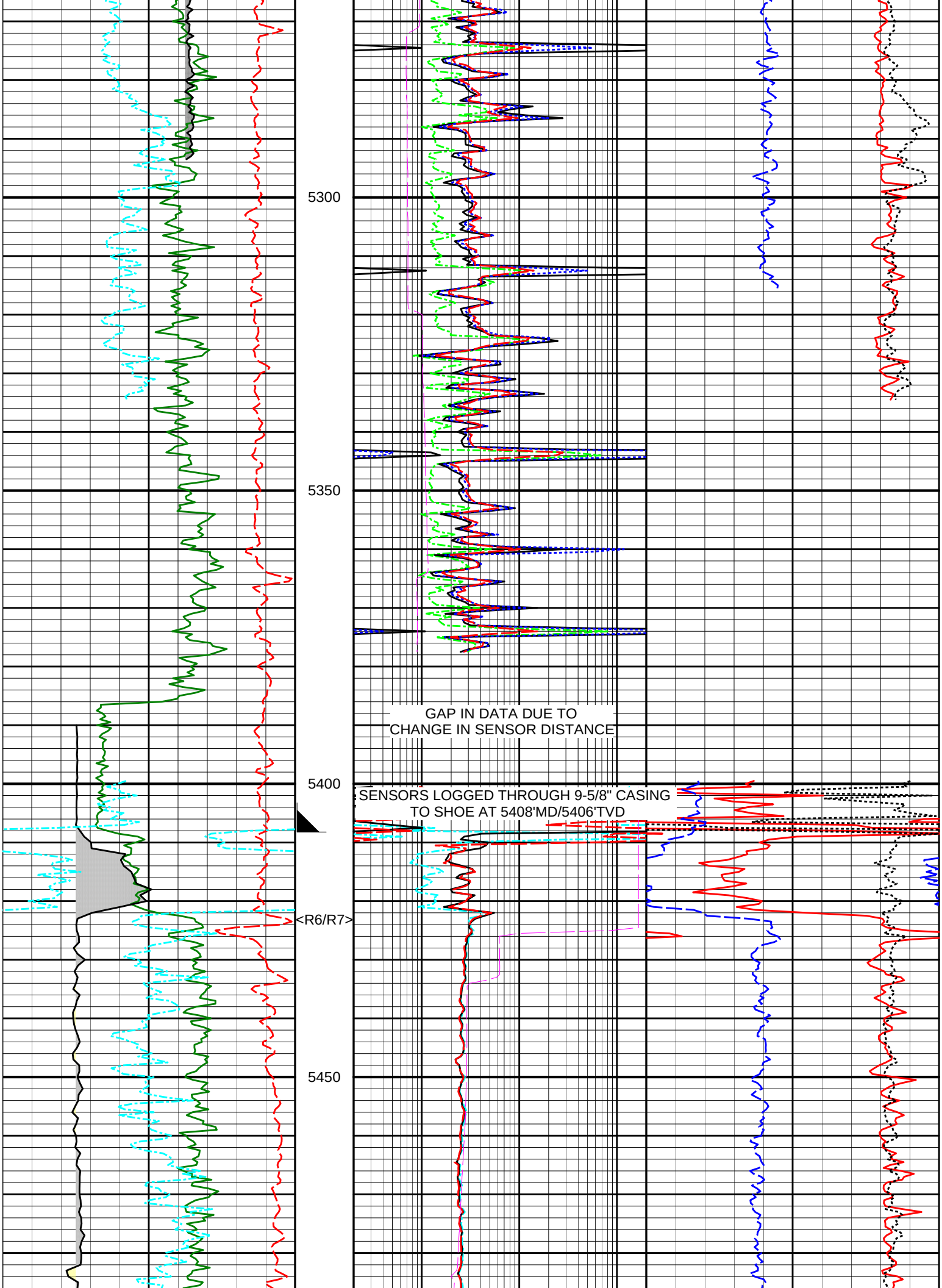
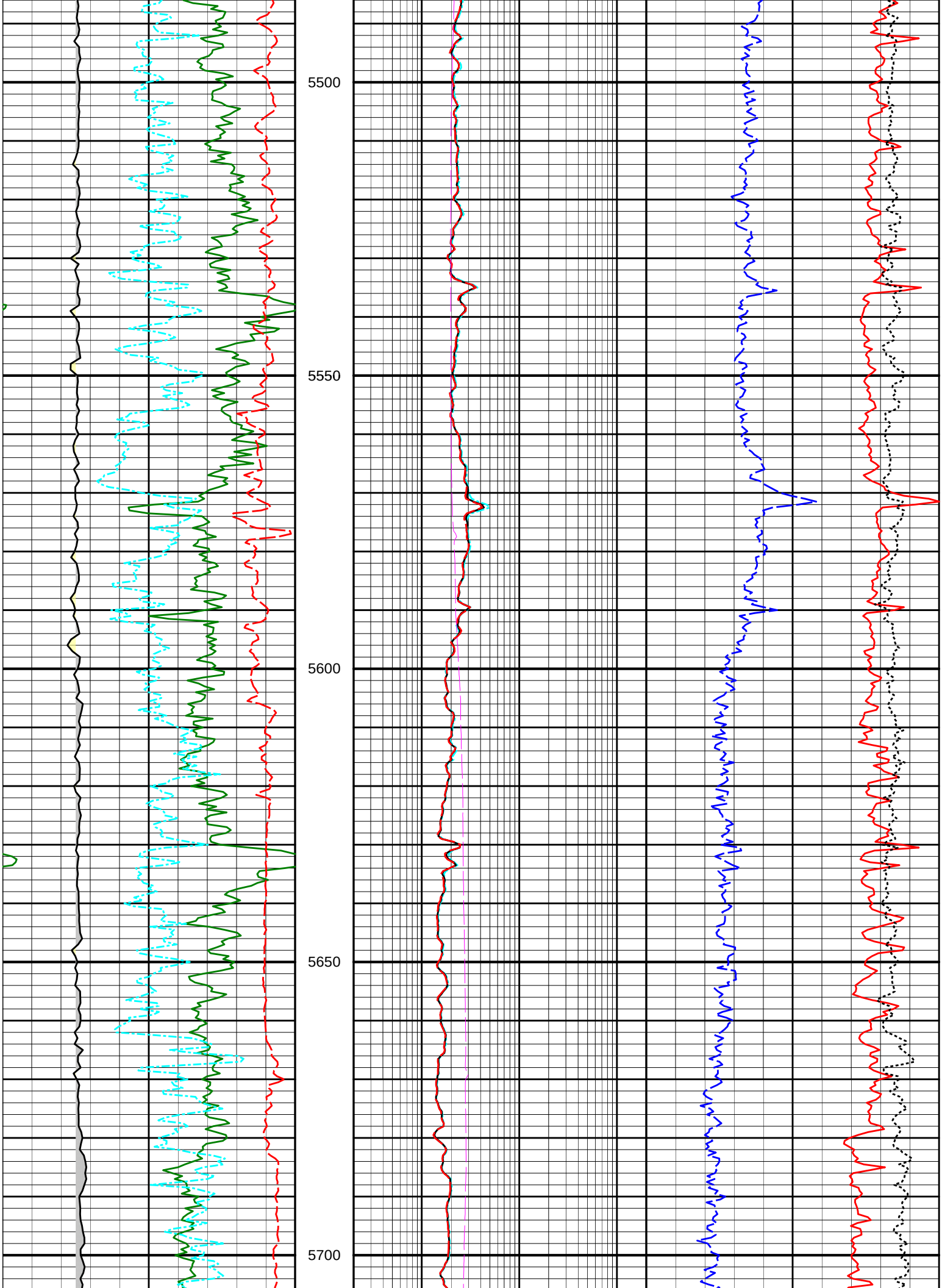

5300
5350
GAP IN DATA DUE TO
CHANGE IN SENSOR DISTANCE
5400
SENSORS LOGGED THROUGH 9-5/8" CASING
TO SHOE AT 5408'MD/5406'TVD
<R6/R7>
5450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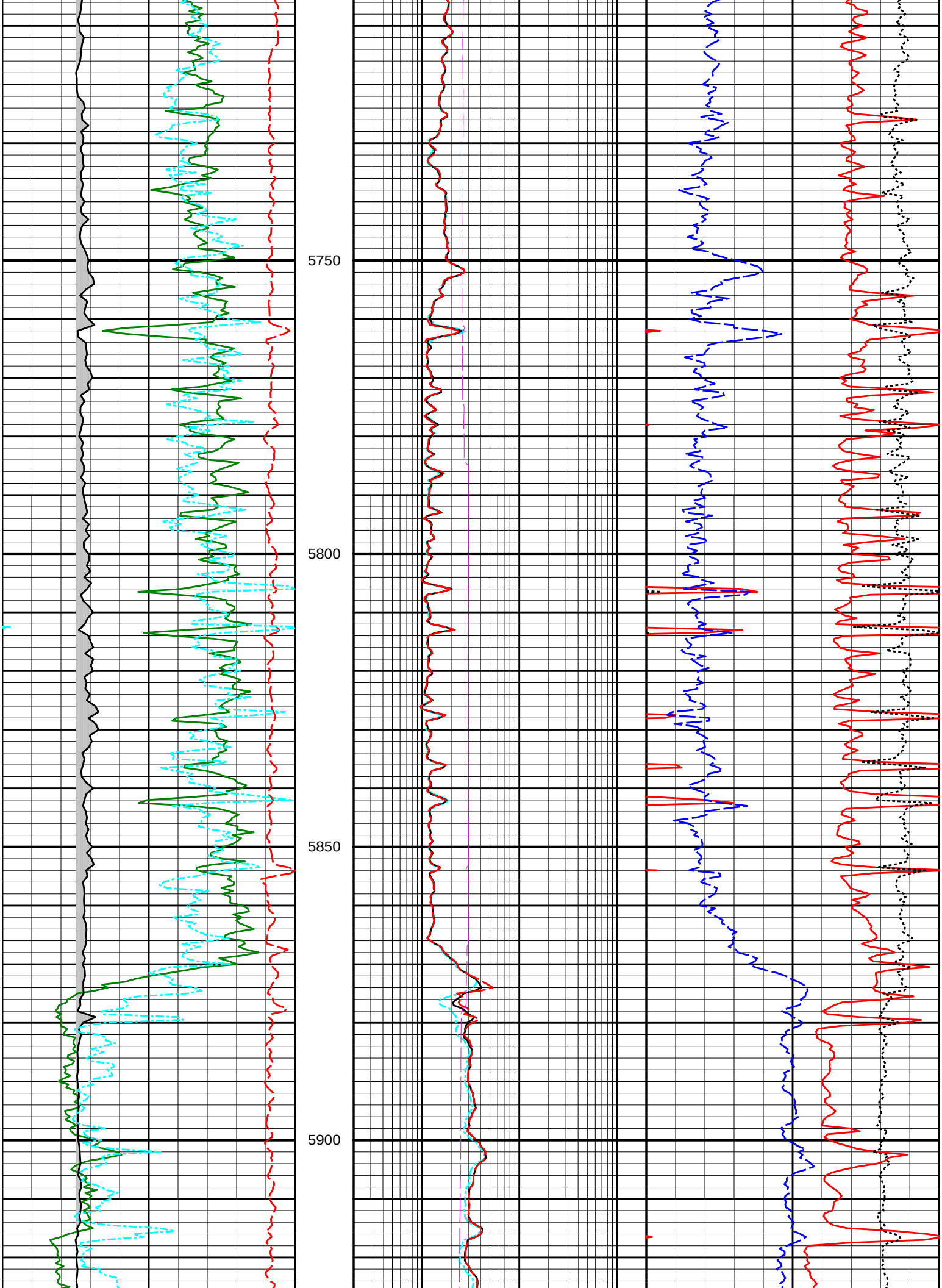
5700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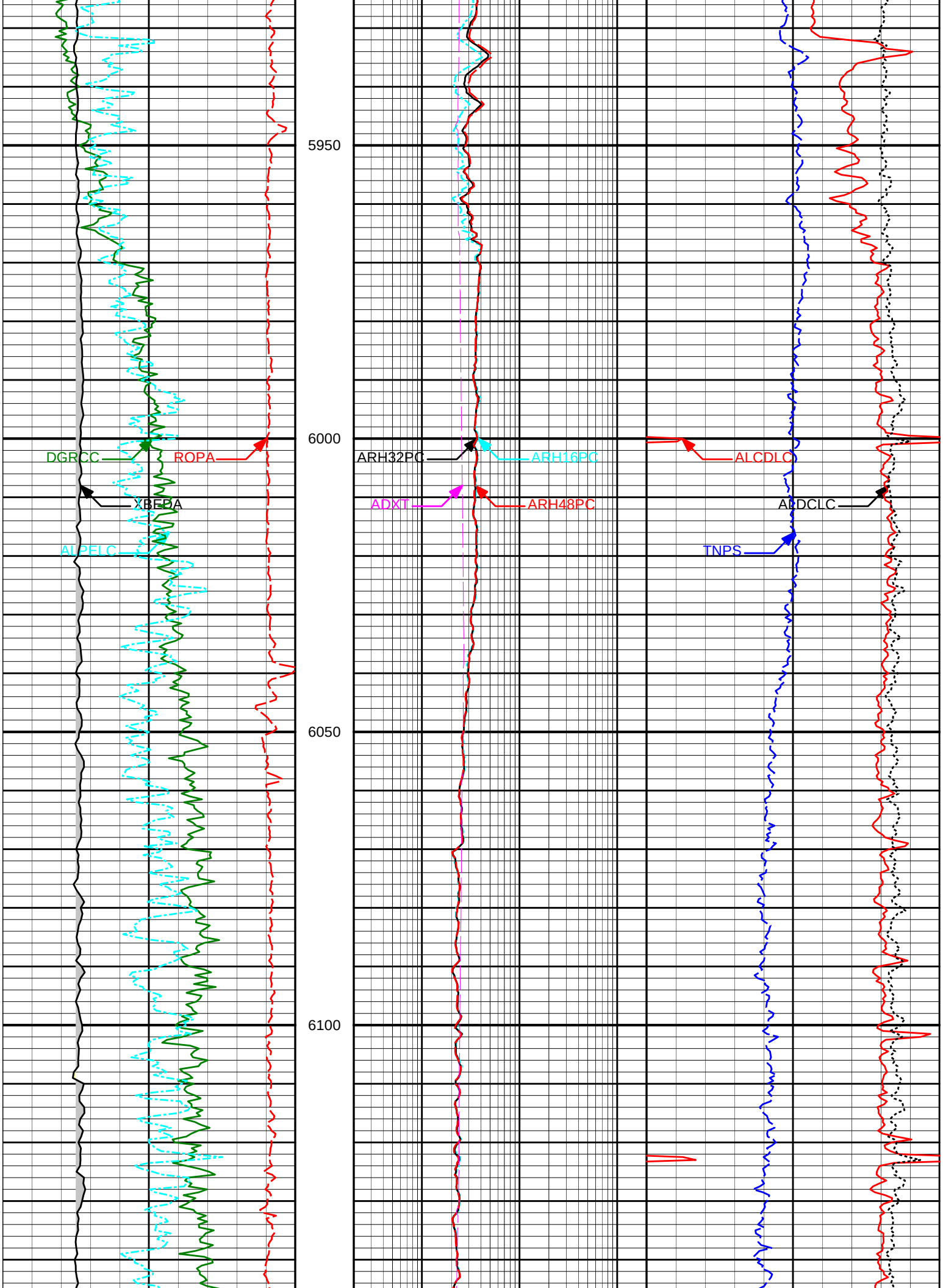
5950
6000
6050
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DGRCC
ROPA
XBEPA
ALPELC
ARH32PC
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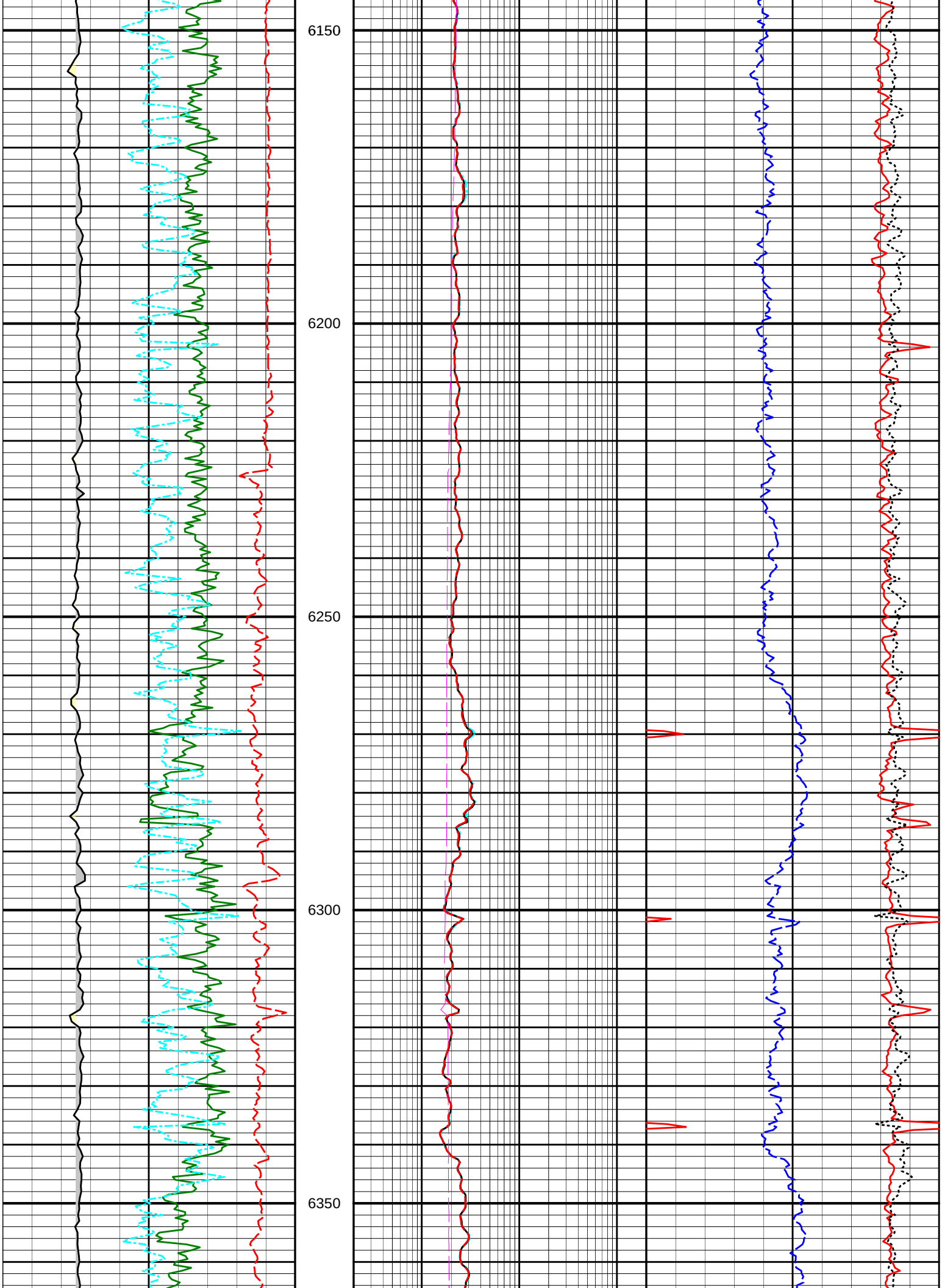
ADXT
ARH48PC
ALCDLC
ALDCLC
TNPS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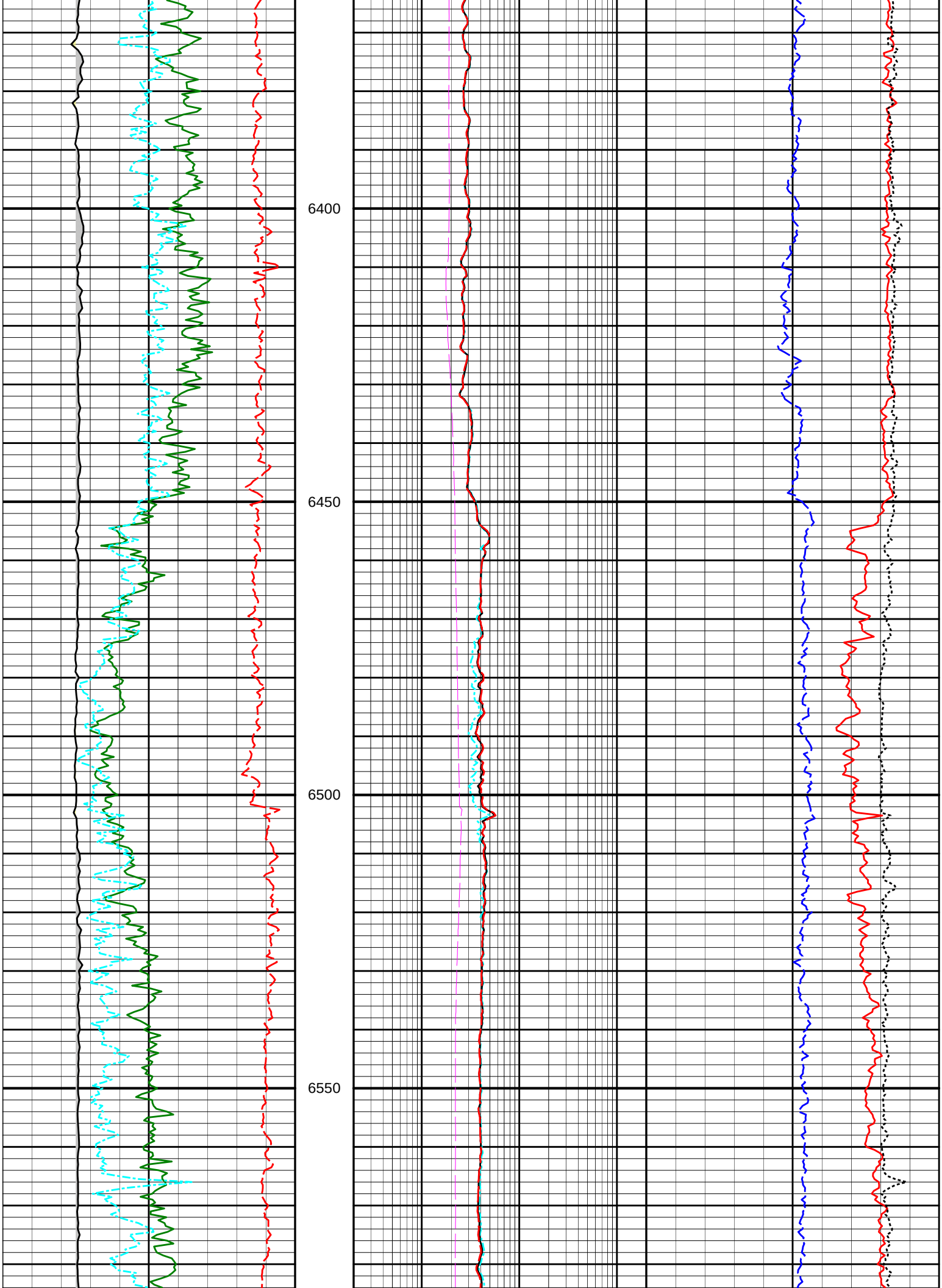
6300
6350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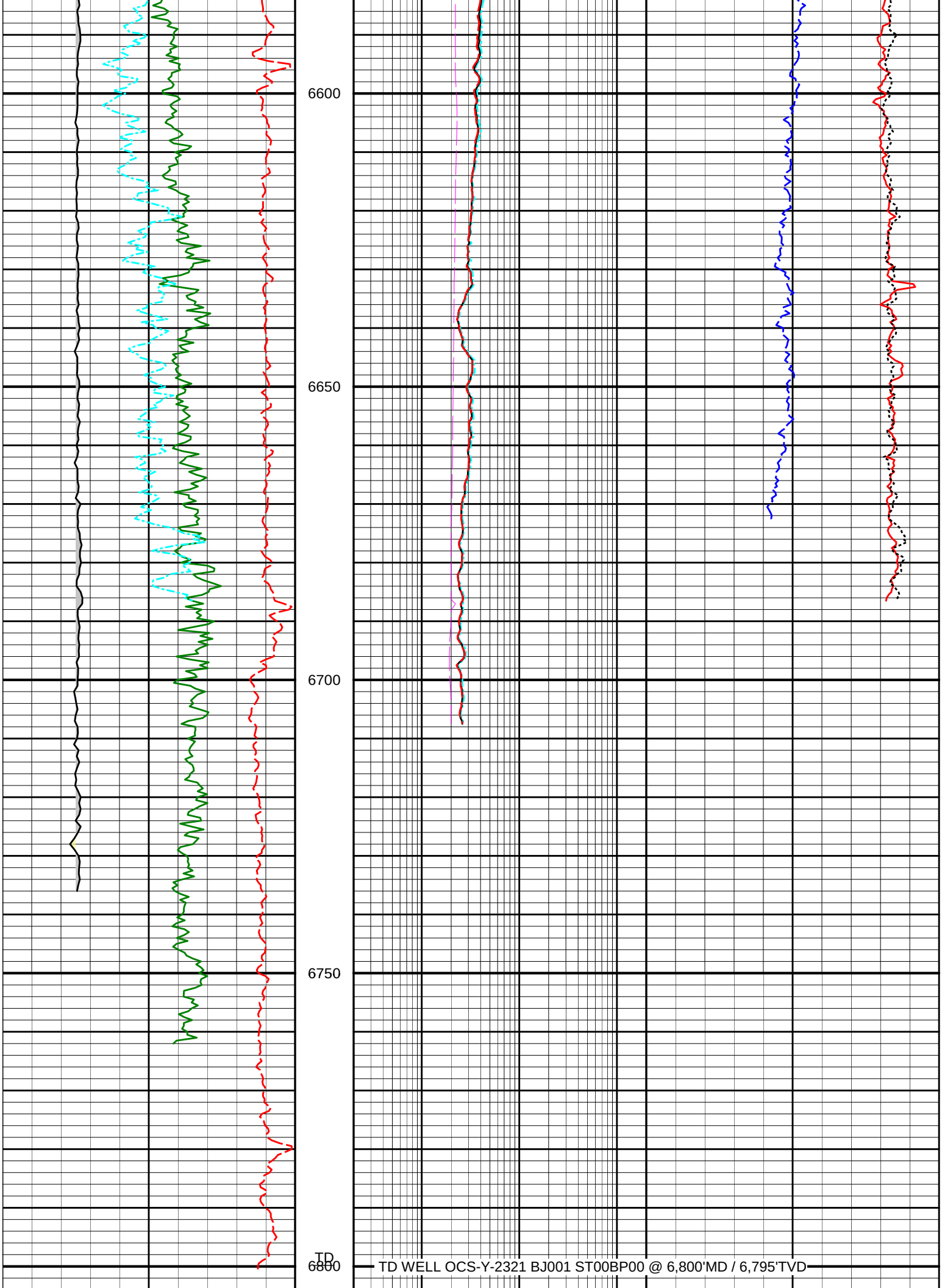
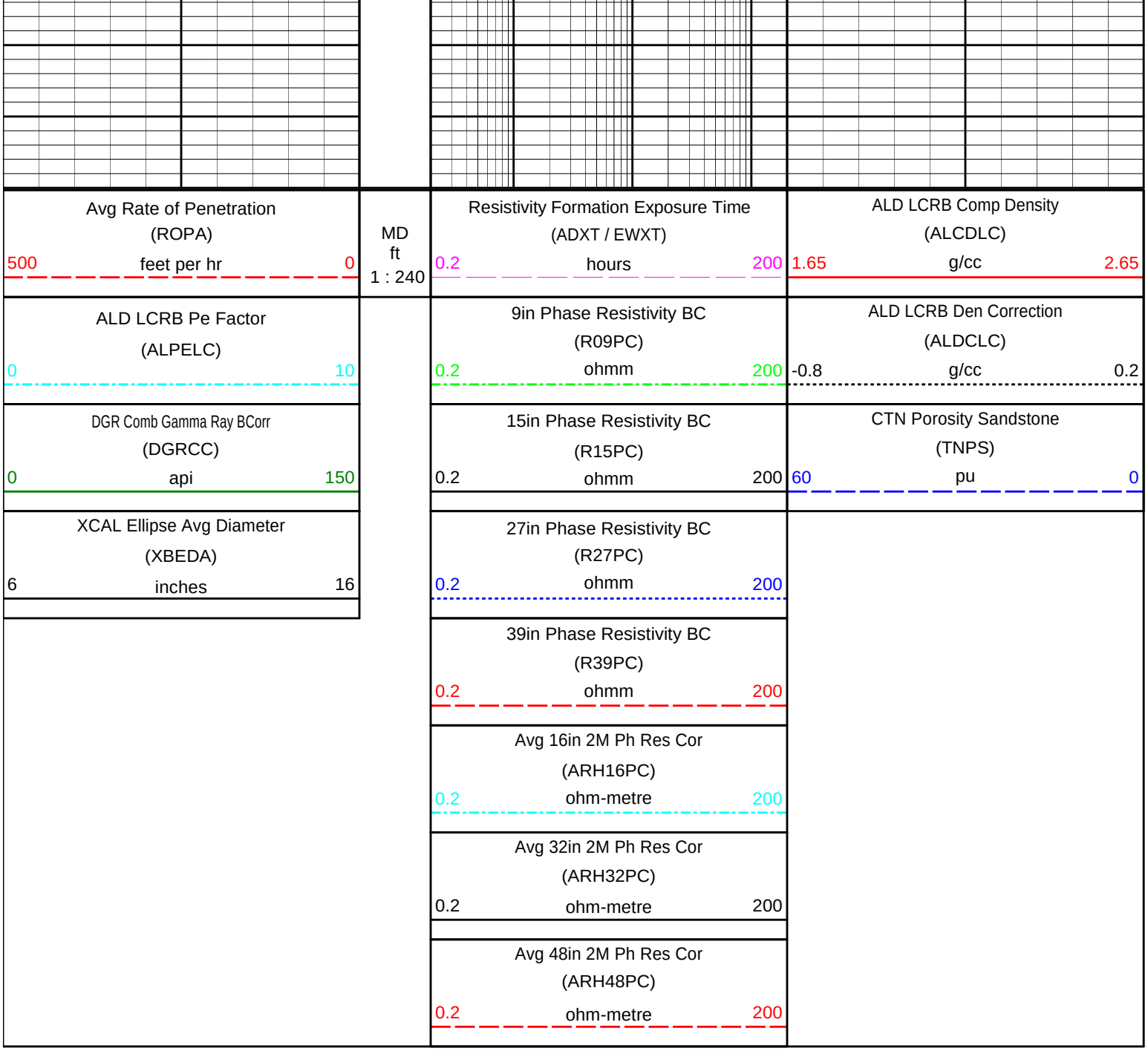

6600
6650
6700
6750
TD
6800
TD WELL OCS-Y-2321 BJ001 ST00BP00 @ 6,800'MD / 6,795'TVD



HALLIBURTON

DIRECTIONAL SURVEY REPORT

Shell Gulf of Mexico Inc.
OCS-Y-2321 BJ001 ST00BP00
Posey 6912
Alaska
USA
AK-XX-0901604700
Final Survey is projected to well TD

Measured Depth (feet)	*Inclination (degrees)*	*Direction (degrees)*	*Vertical Depth (feet)*	*Latitude (feet)*	*Departure (feet)*	*Vertical Section (feet)*	*Dogleg (deg/100ft)*
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00	TIE-IN
220.00	0.00	0.00	220.00	0.00 N	0.00 E	0.00	0.00
320.88	0.51	129.60	320.88	0.29 S	0.35 E	-0.29	0.50
406.77	0.31	89.93	406.76	0.53 S	0.88 E	-0.53	0.39
495.25	0.99	122.22	495.24	0.93 S	1.76 E	-0.93	0.84

590.43	0.31	82.72	590.41	1.34 S	2.71 E	-1.34	0.81
684.05	0.64	327.24	684.03	0.87 S	2.68 E	-0.87	0.88
866.10	0.28	101.20	866.08	0.09 S	2.55 E	-0.09	0.47
957.99	0.00	269.46	957.97	0.13 S	2.77 E	-0.13	0.30
1051.65	0.14	176.72	1051.63	0.24 S	2.78 E	-0.24	0.15
1144.54	0.26	120.65	1144.52	0.46 S	2.97 E	-0.46	0.23
1235.66	0.41	134.11	1235.63	0.80 S	3.38 E	-0.80	0.19
1328.60	0.51	59.75	1328.58	0.83 S	3.98 E	-0.83	0.61
1378.50	0.25	111.62	1378.48	0.76 S	4.27 E	-0.76	0.81
1540.18	0.12	50.83	1540.15	0.78 S	4.74 E	-0.78	0.14
1723.74	0.39	34.99	1723.71	0.14 S	5.26 E	-0.14	0.15
1818.58	0.58	50.01	1818.55	0.43 N	5.81 E	0.43	0.24
2003.18	1.06	39.81	2003.12	2.35 N	7.62 E	2.35	0.27
2095.93	0.87	35.51	2095.87	3.57 N	8.57 E	3.57	0.22
2186.15	0.69	72.12	2186.07	4.30 N	9.49 E	4.30	0.57
2373.34	0.75	76.36	2373.25	4.93 N	11.76 E	4.93	0.04
2463.93	0.78	75.65	2463.83	5.23 N	12.93 E	5.23	0.03
2555.30	0.79	70.25	2555.19	5.59 N	14.13 E	5.59	0.08
2646.22	0.79	76.51	2646.11	5.95 N	15.33 E	5.95	0.10
2743.03	0.70	74.08	2742.91	6.27 N	16.55 E	6.27	0.10
2837.42	0.74	67.59	2837.29	6.66 N	17.68 E	6.66	0.10
2875.38	0.64	69.95	2875.25	6.83 N	18.10 E	6.83	0.27
2978.31	0.74	64.69	2978.17	7.31 N	19.25 E	7.31	0.11
3074.55	0.58	52.33	3074.40	7.88 N	20.20 E	7.88	0.22
3169.04	0.67	47.05	3168.89	8.55 N	20.99 E	8.55	0.11
3258.93	0.77	27.36	3258.77	9.44 N	21.65 E	9.44	0.30
3351.80	0.94	33.05	3351.63	10.64 N	22.35 E	10.64	0.21
3445.40	0.89	33.34	3445.22	11.90 N	23.18 E	11.90	0.06
3537.90	0.88	39.68	3537.71	13.05 N	24.03 E	13.05	0.11
3630.29	0.86	29.57	3630.09	14.20 N	24.82 E	14.20	0.17
3724.13	1.05	46.97	3723.91	15.40 N	25.80 E	15.40	0.37
3815.47	1.16	37.46	3815.23	16.71 N	26.98 E	16.71	0.24
3909.95	1.11	27.77	3909.70	18.28 N	27.99 E	18.28	0.21
4001.96	1.54	18.87	4001.69	20.24 N	28.80 E	20.24	0.52
4095.18	1.55	21.22	4094.87	22.60 N	29.67 E	22.60	0.07
4189.17	1.52	19.27	4188.83	24.97 N	30.54 E	24.97	0.06
4280.67	1.73	13.84	4280.29	27.46 N	31.27 E	27.46	0.28
4373.26	2.11	22.24	4372.83	30.39 N	32.25 E	30.39	0.51
4465.71	1.69	19.56	4465.23	33.26 N	33.35 E	33.26	0.46
4559.04	2.02	19.56	4558.51	36.11 N	34.37 E	36.11	0.35
4651.17	2.19	23.91	4650.58	39.24 N	35.62 E	39.24	0.25
4743.27	2.64	25.07	4742.59	42.77 N	37.23 E	42.77	0.49
4836.87	3.09	32.03	4836.08	46.87 N	39.49 E	46.87	0.61
4929.20	3.15	34.87	4928.26	51.06 N	42.26 E	51.06	0.18
5021.52	3.28	37.85	5020.45	55.22 N	45.33 E	55.22	0.23
5113.59	3.34	39.69	5112.36	59.37 N	48.66 E	59.37	0.13
5206.14	3.59	47.76	5204.74	63.39 N	52.52 E	63.39	0.59
5299.05	3.70	48.27	5297.46	67.34 N	56.92 E	67.34	0.12
5364.19	3.45	52.11	5362.48	69.95 N	60.04 E	69.95	0.54
5429.81	3.65	46.91	5427.97	72.59 N	63.12 E	72.59	0.58
5518.31	3.73	45.18	5516.29	76.55 N	67.22 E	76.55	0.15
5612.70	3.58	42.26	5610.48	80.90 N	71.39 E	80.90	0.25
5704.09	3.56	42.97	5701.70	85.09 N	75.24 E	85.09	0.06
5795.19	3.47	41.51	5792.62	89.22 N	79.00 E	89.22	0.13
5889.32	3.48	42.48	5886.58	93.46 N	82.82 E	93.46	0.06
5980.70	3.42	42.67	5977.80	97.52 N	86.54 E	97.52	0.07
6075.07	3.43	41.69	6072.00	101.69 N	90.33 E	101.69	0.06
6167.81	3.55	39.12	6164.57	105.99 N	93.98 E	105.99	0.21
6259.59	3.53	39.52	6256.17	110.37 N	97.57 E	110.37	0.03
6346.61	3.75	37.26	6343.02	114.70 N	100.99 E	114.70	0.30
6445.34	3.99	34.54	6441.52	120.10 N	104.89 E	120.10	0.31
6536.48	3.96	35.37	6532.44	125.27 N	108.51 E	125.27	0.07
6628.63	3.92	37.01	6624.37	130.38 N	112.25 E	130.38	0.13
6721.62	3.89	35.41	6717.15	135.49 N	115.99 E	135.49	0.12
6745.05	3.99	35.86	6740.52	136.80 N	116.93 E	136.80	0.46
6800.00	3.99	35.86	6795.34	139.90 N	119.17 E	139.90	0.00

CALCULATION BASED ON MINIMUM CURVATURE METHOD

SURVEY COORDINATES RELATIVE TO WELL SYSTEM REFERENCE POINT
TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

TVD VALUES GIVEN RELATIVE TO DRILLING MEASUREMENT POINT

VERTICAL SECTION RELATIVE TO WELL HEAD
VERTICAL SECTION IS COMPUTED ALONG A DIRECTION OF 0.00 DEGREES (GRID)
A TOTAL CORRECTION OF 10.95 DEG FROM MAGNETIC NORTH TO GRID NORTH HAS BEEN APPLIED

HORIZONTAL DISPLACEMENT IS RELATIVE TO THE WELL HEAD.
HORIZONTAL DISPLACEMENT(CLOSURE) AT 6800.00 FEET
IS 183.78 FEET ALONG 40.42 DEGREES (GRID)

Map System: NAD 83 UTM Zones
Geo Datum: North American Datum of 1983
Map Zone: Universal Transverse Mercator Zone 03N

Date Printed:31 October 2015