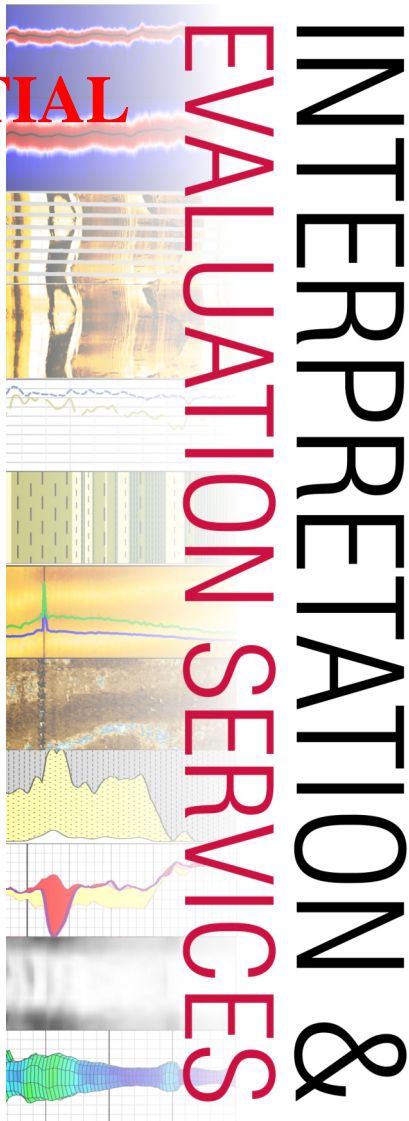




Weatherford

CROSSED DIPOLE
DUAL SHEAR SEMBLANCE



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Company	ALTA MESA SERVICES LLC
Well	ML INVESTMENTS 3-10
Field	WILLOW
County	PAYETTE
State/Province	IDAHO
Country	U.S.A
UWI/API	11-075-20031
Log Date	22-Nov-2017
Location	1376 FWL & 3044 FNL
Location 2	
Lat / Long	44.045240 / -116.805930

Permanent Datum GL, Elevation 2551.00 ft	
Log Measured From KB, 12.00 ft above Permanent Datum	
Drilling Measured From KB	
Elevations	
KB	2263.00 ft
DF	2263.00 ft
GL	2251.00 ft

Date	22-Nov-2017	FIELD
Run Number	ONE	ALL IN
Depth Driller	5000.00 ft	CUSTOM
Depth Logger	5002.00 ft	TOOLS
First Reading	4994.57 ft	SKJ, SH
Last Reading	1098.00 ft	RAN IN
Casing Driller	1107.00 ft	HARD
Casing Logger	1098.00 ft	ECCEN
Bit Size	8.50 inches	SUPPO
Hole Fluid Type	WBM	(MANI
Density/Viscosity	10.50 lb/USg / 42.00 sec/Qt	MATRI
PH/Fluid Loss	7.10 / 4.00 ml/30Min	CC.
Sample Source	FLOWLINE	LAT: 44
Rm @ Measured Temp	2.42 ohm.m @ 105.00 degF	48.21.1
Rmf @ Measured Temp	1.81 ohm.m @ 105.00 DegF	TOTAL
Rmc @ Measured Temp	3.05 ohm.m @ 105.00 degF	CASIN
Rm @ BHT	1.44 ohm.m @ 186.00 degF	ANNU
Max Recorded Temp	186.00 degF	PROD
Engineer	ARBER CUKU	CASIN
Base	CASPER	HOLE
Service Order	6443-198147325	FROM

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In interpreting, communicating or providing information and/or material, or oral, as to logs or test or other data, type or amount of material, or or manner of performance, or in predicting results to be obtained, the benefit of the Contractor's best judgment based on its experience and and workmanlike manner. Any interpretation of test or other data, description based upon such interpretations, are opinions based upon empirical relationships and assumptions, which inferences and ass respect to which professional engineers and analysts may differ.

ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESI AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CAN ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTE WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PRO SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERN

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REMARKS
 INTERVALS LOGGED AND SCALED PER
 OPERATOR'S REQUEST
 : RUN 1: MAI, MFE, MXC, SKJ, MIS, E,
 HA, MVC, MPD, MDN, MCG, SHA, CBH
 IN COMBINATION
 AWARE: MPD: 8 INCH PROFILE PLATE
 MDN: DUAL
 CENTRALIZER
 MPD SIDE -WALL
 ORDERED BY MVC BELOW
 MAI: INLINE CENTRALIZER
 (DREL)
 X FOR POROSITY CALCULATION : 2.65g/
 1202'42.86582" N, LONG: 1167
 34825" W: GIVEN BY CLIENT:
 HOLE VOLUME FROM TD TO SURFACE
 G = 1720 CUBIC FEET
 CLAR VOLUME WITH 5.5 INCH
 UCTION CASING FROM TD TO SURFACE
 G = 1080 CUBIC FEET
 AND ANNULAR VOLUME CALCULATED
 DENSITY CALPER (CLDC) CURVE.
 HOLE RUGGOSITY AND WASHOUTS MAY
 T REPEATABILITY AND DATA QUALITY.
 INTERVAL: 3973-3984 FT CALPERS
 CLOSED PIPE TO TIGHT PULLS ON THE

making recommendations, either written
 Work or other service to be furnished,
 Contractor will give the Company the
 d will perform all such Work in a good
 and any recommendation or reservoir
 in inferences from measurements and
 umptions are not infallible, and with

ULTING FROM THE SERVICES WILL BE
 NNOT AND DOES NOT WARRANT THE
 RPRETATION OR RECOMMENDATION,
 O NOT, THEREFORE, UNDER ANY
 R ANY DRILLING, COMPLETION, WELL
 CEDURE INVOLVING ANY RISK TO THE
 / OR ANY OTHER INDIVIDUAL. THE
 INING THE SERVICES.

PLOT TYPE: CXD MONOPOLE DIPOLE ARRAY SEMBLANCE

DTCQ, DTSXQ and DTSYQ are flags for zones where semblance quality drops below 65%.

Caution should be exercised if DTC, DTSX and/or DTSY are used in analysis and interpretation where these flags occur.

Another flag of potentially inaccurate responses is the borehole rugosity as indicated by the callper(s).

In the upper portion of the well, above 3870 ft the shear DT(s) have been nulled due to low confidence, dipole data shows Stoneley contamination due to the borehole condition.

Velocity Ratio: DTS/DTC

XX DIPOLE Shear Processing
 Receiver levels: R1, R2, R3, R4, R5, R6, R7, R8.
 Frequency pre-filtered 1500 - 2800 Hz bell filter.
 Slowness Configuration 40-440 usec/ft, peak from 80 to 160 usec/ft.
 Corridor width +100, -100.
 Semblance @ x16 resolution.

YY DIPOLE Shear Processing
 Receiver levels: R1, R2, R3, R4, R5, R6, R7, R8.
 Frequency pre-filtered 1500 - 2800 Hz bell filter.
 Slowness Configuration 40-440 usec/ft, peak from 80 to 160 usec/ft.
 Corridor width +100, -100.
 Semblance @ x16 resolution.

MONOPOLE Compressional Processing
 Receiver levels:
 R1, R2, R3, R4, R5, R6, R7, R8. First receiver offset 6.8 feet.
 Frequency pre-filtered 7500 - 14000 Hz bell filter.
 Slowness Configuration 40-240 usec/ft, peak from 45 to 80 usec/ft.
 Corridor width +100, -100.
 Semblance @ x16 resolution.

 PROGRAM: P11.1.87.27

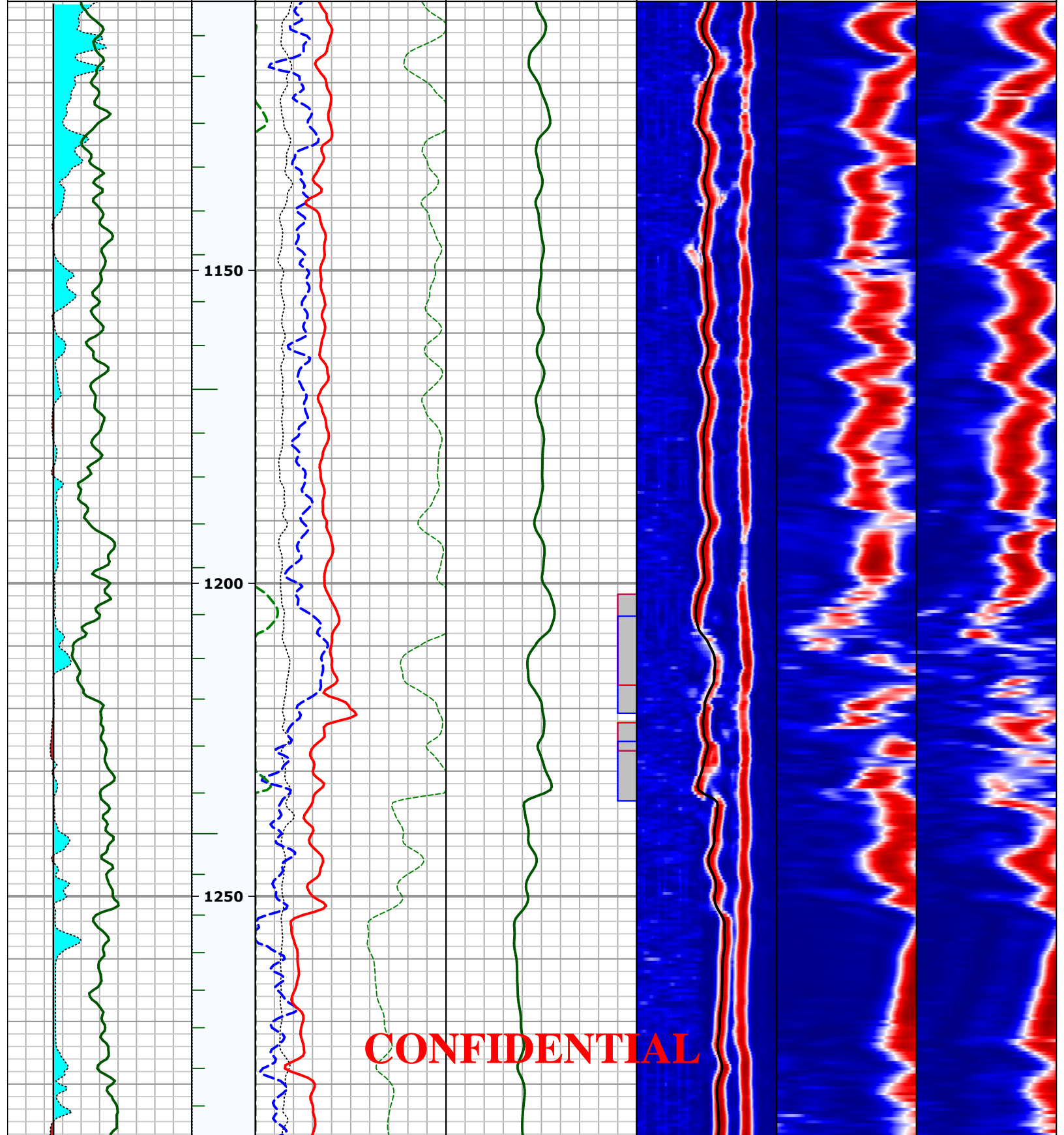
Analysis Date	Log Analyst	Location
JUL-14-2017	D. CARRERO	OKC

Auxiliary Curves	Porosity	Slowness Curves	Monopole Semblance	XX Dipole Semblance	YY Dipole Semblance
Mudcake / Washout					
Gamma Ray					
0 gAPI 150	60 PERC 100				

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Density Caliper			ITT	Density Porosity			YY Shear Slowness											
6	in	16	msec	60	PERC	0	480	us/ft	40	Semblance			Semblance			Semblance		
Bit Size				Neutron Porosity			XX Shear Slowness			1.00			0.00			1.00		
6	in	16		60	PERC	0	480	us/ft	40	1.00			0.00			1.00		
Velocity Ratio			reference (ft)	Bulk Density Correction			Compressional Slowness			Compressional DT			XX Shear Slowness			YY Shear Slowness		
1.4	none	3.4	1:240	-0.1	g/cm3	0.9	240	us/ft	40	40	us/ft	240	40	us/ft	480	40	us/ft	480

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1300

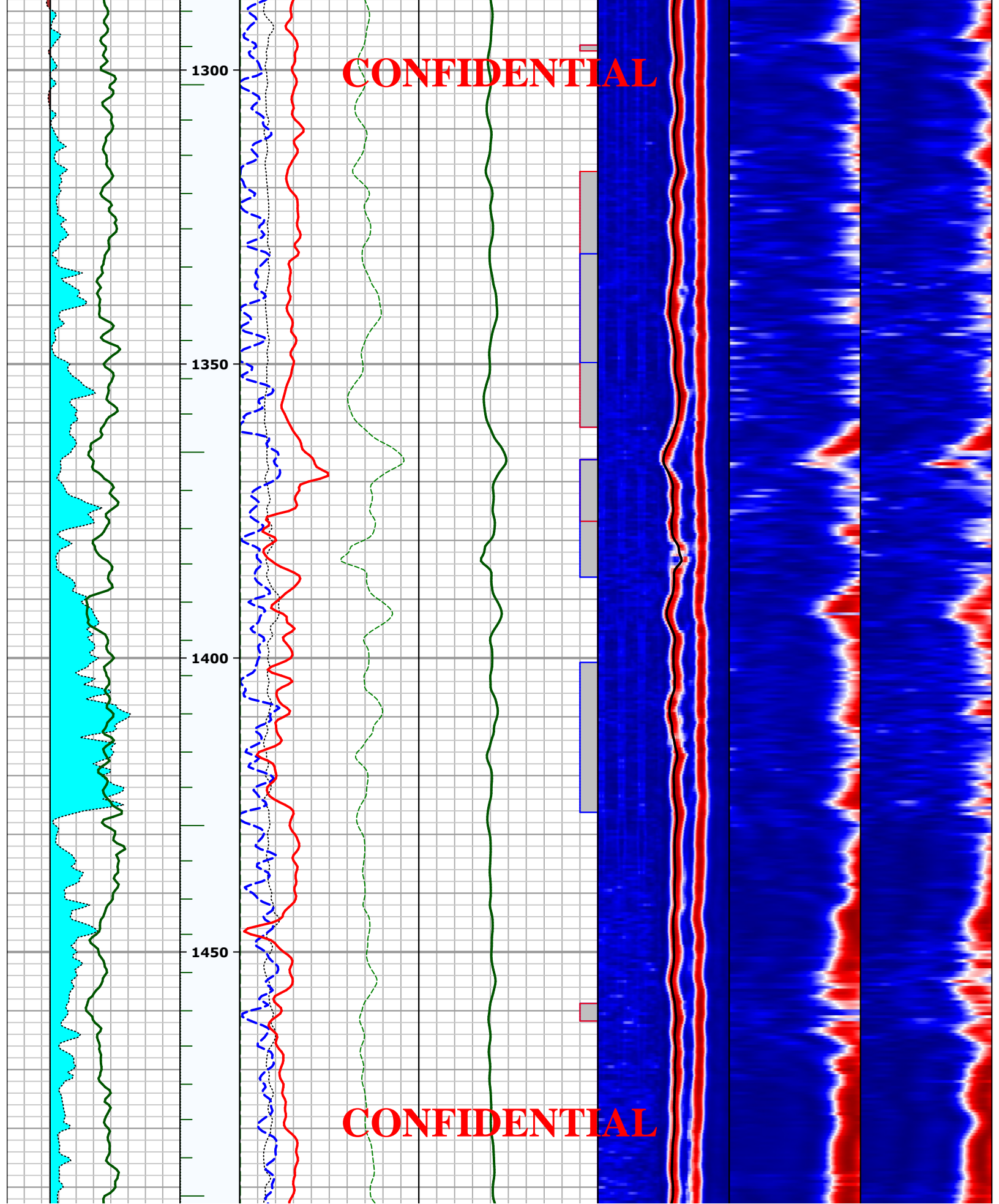
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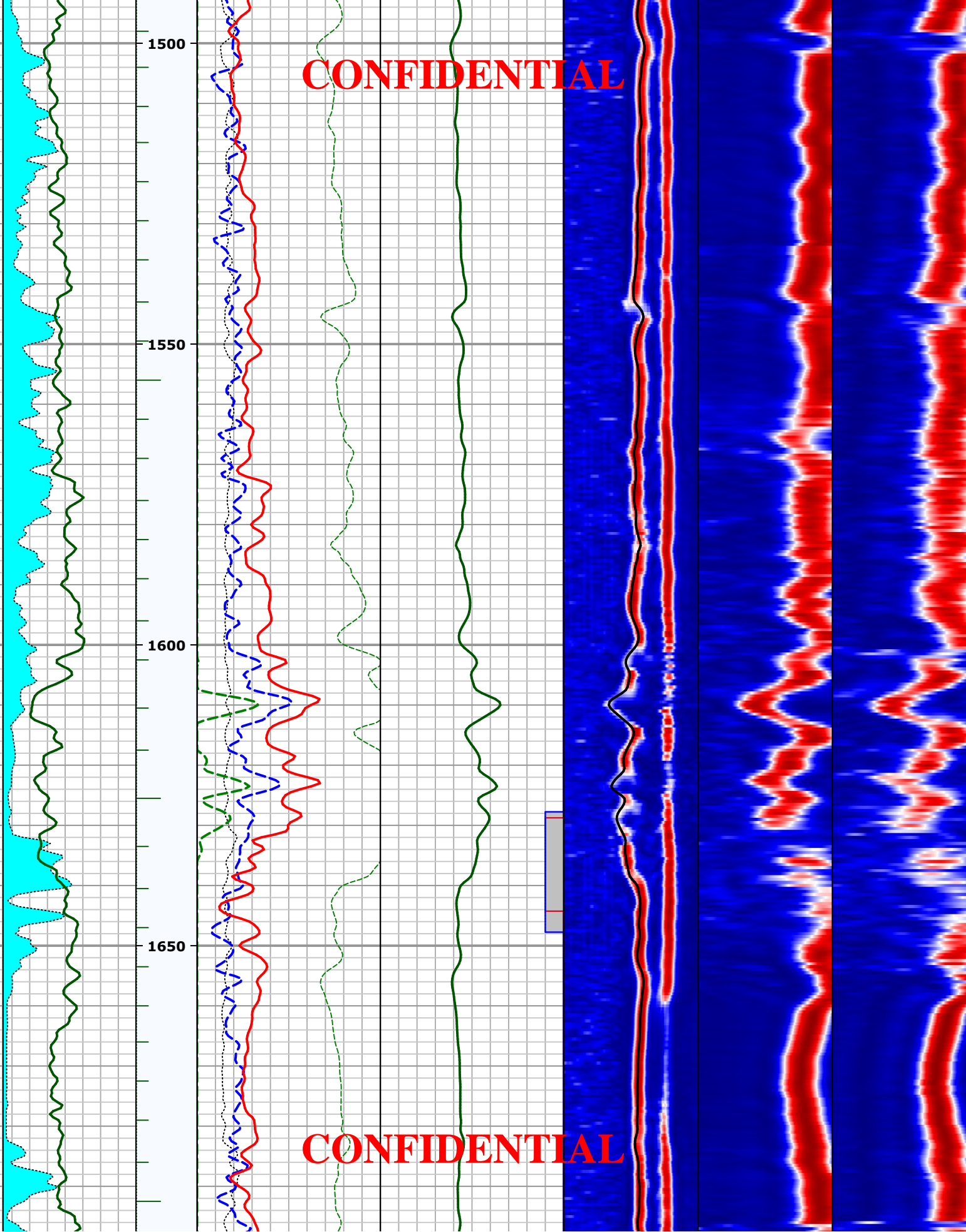
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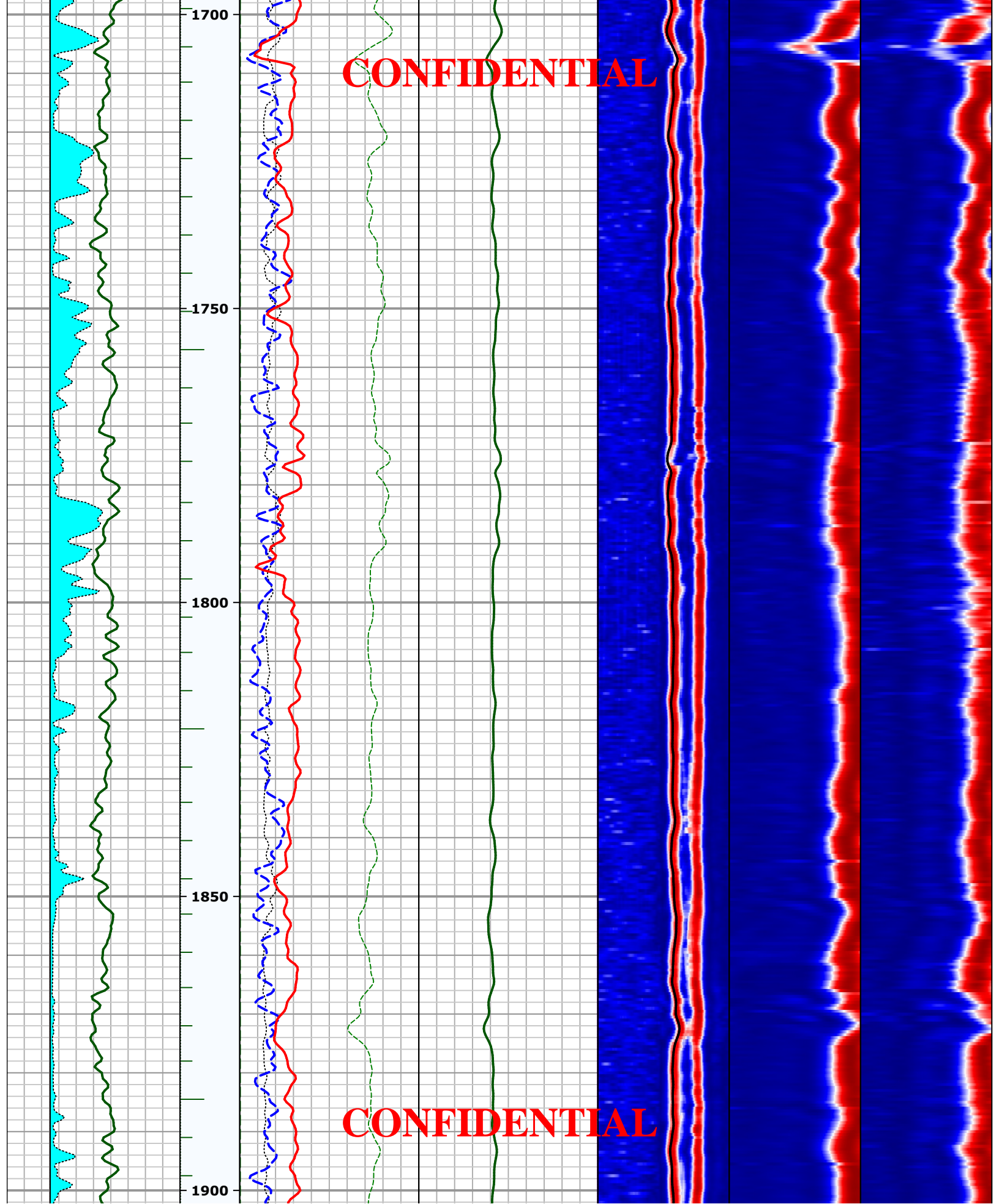
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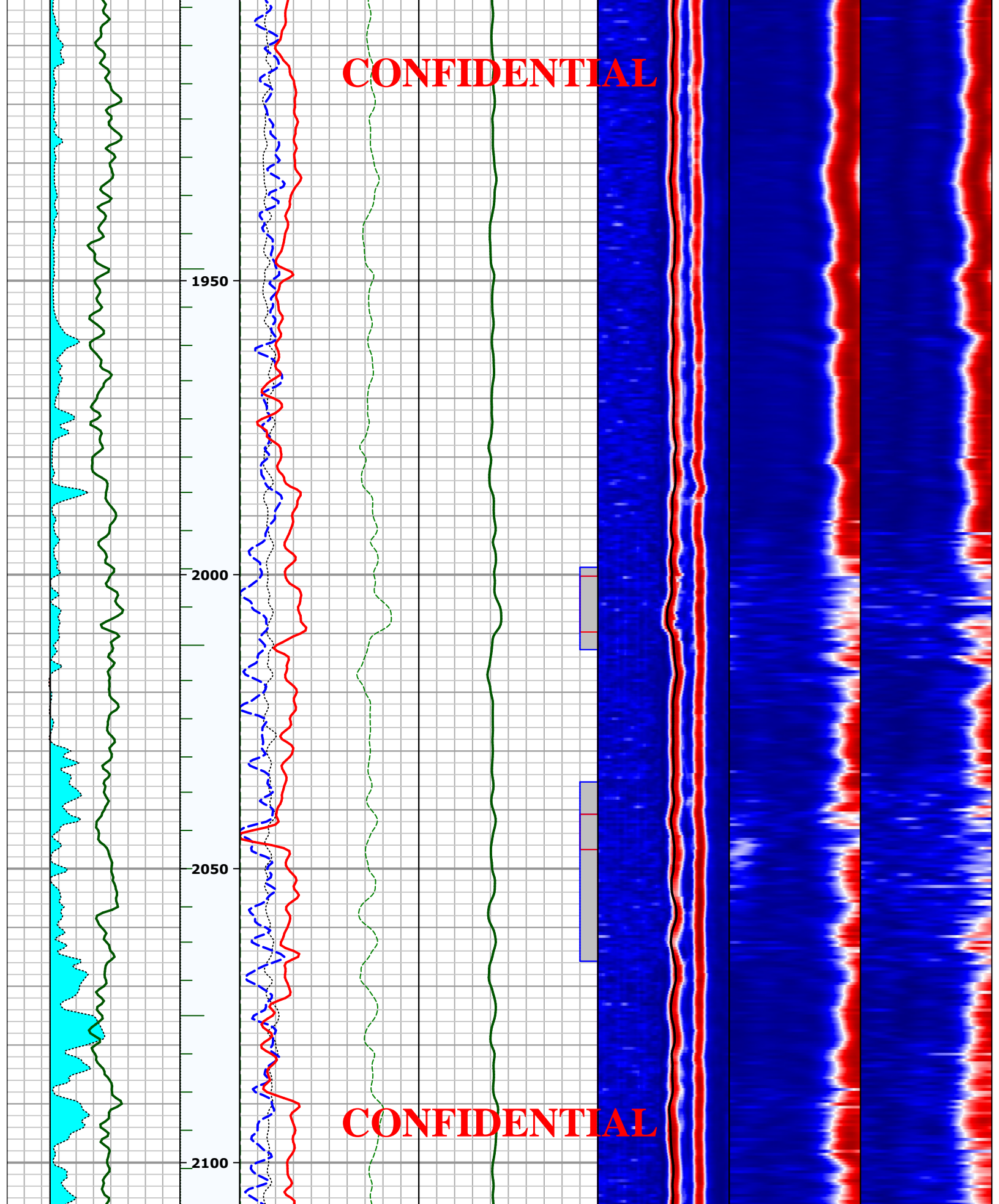
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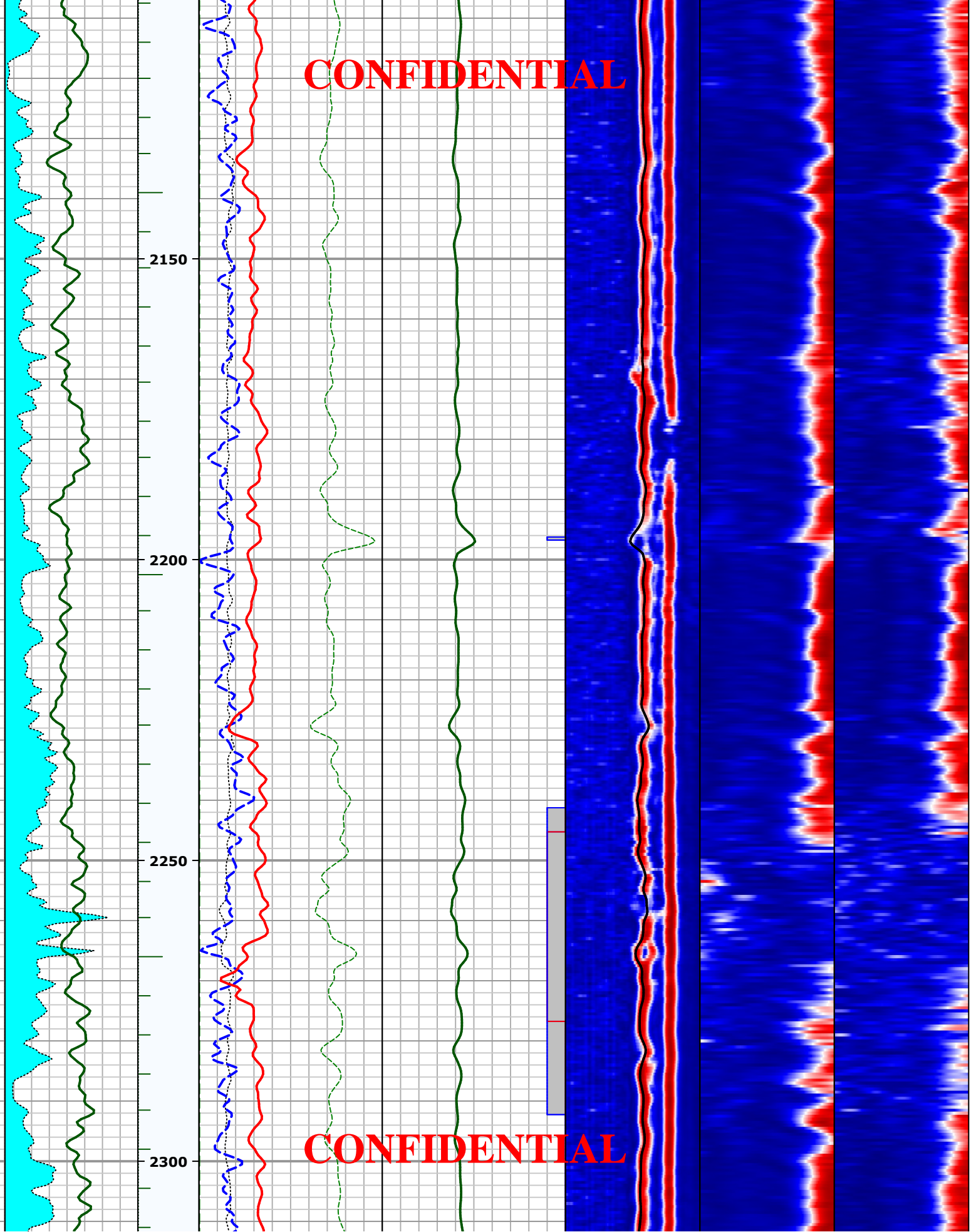
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2100

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2150

2200

2250

2300

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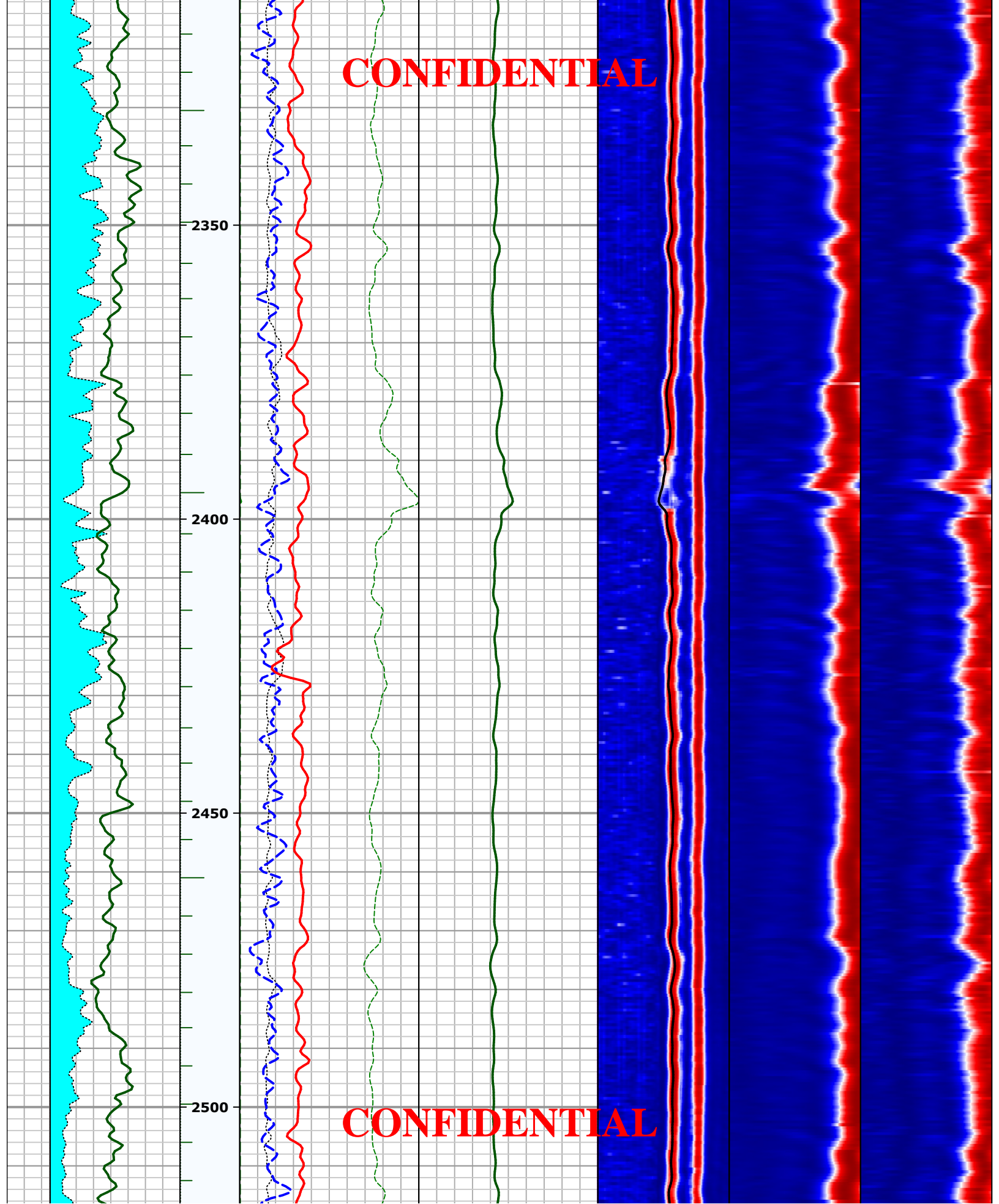
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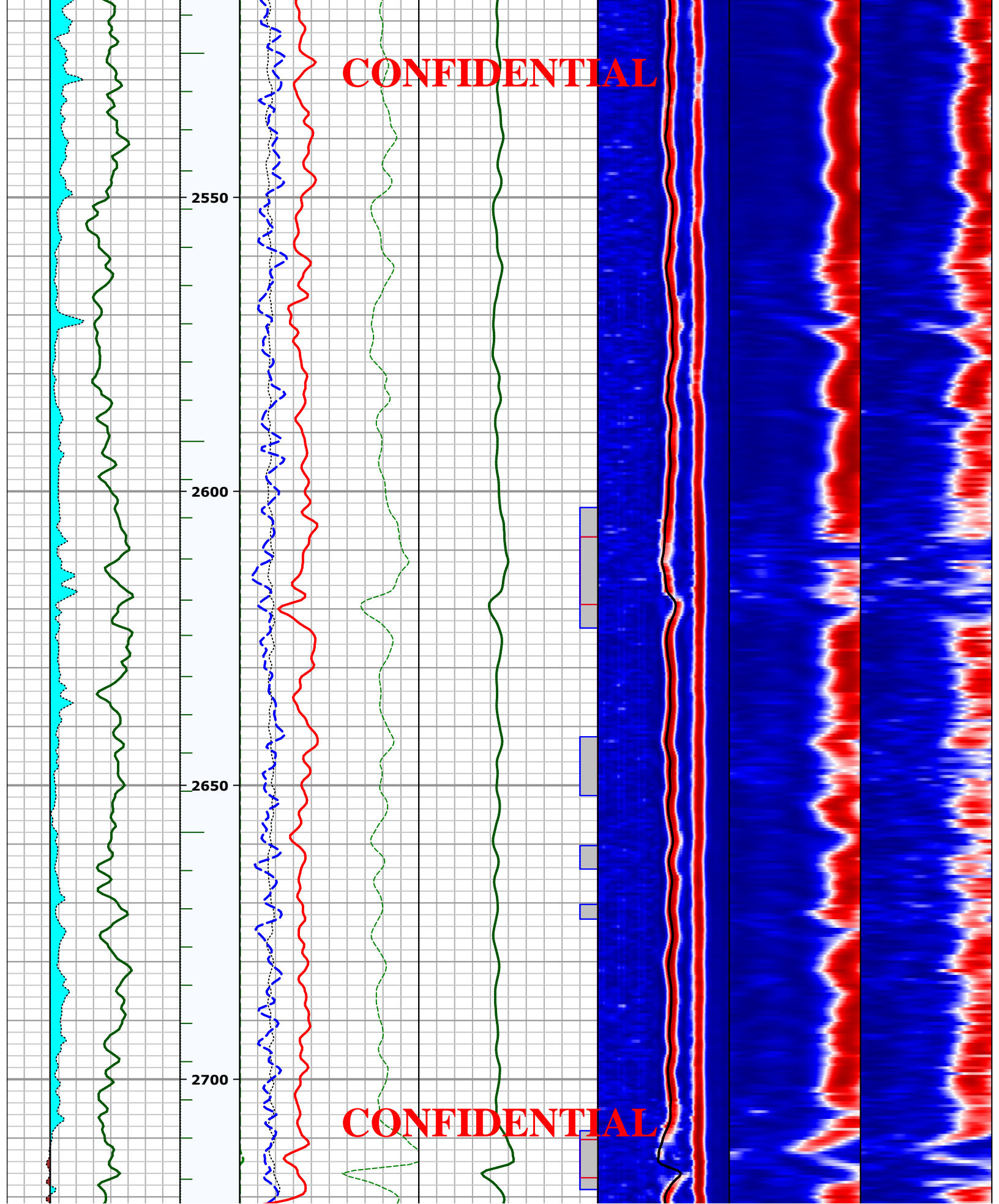
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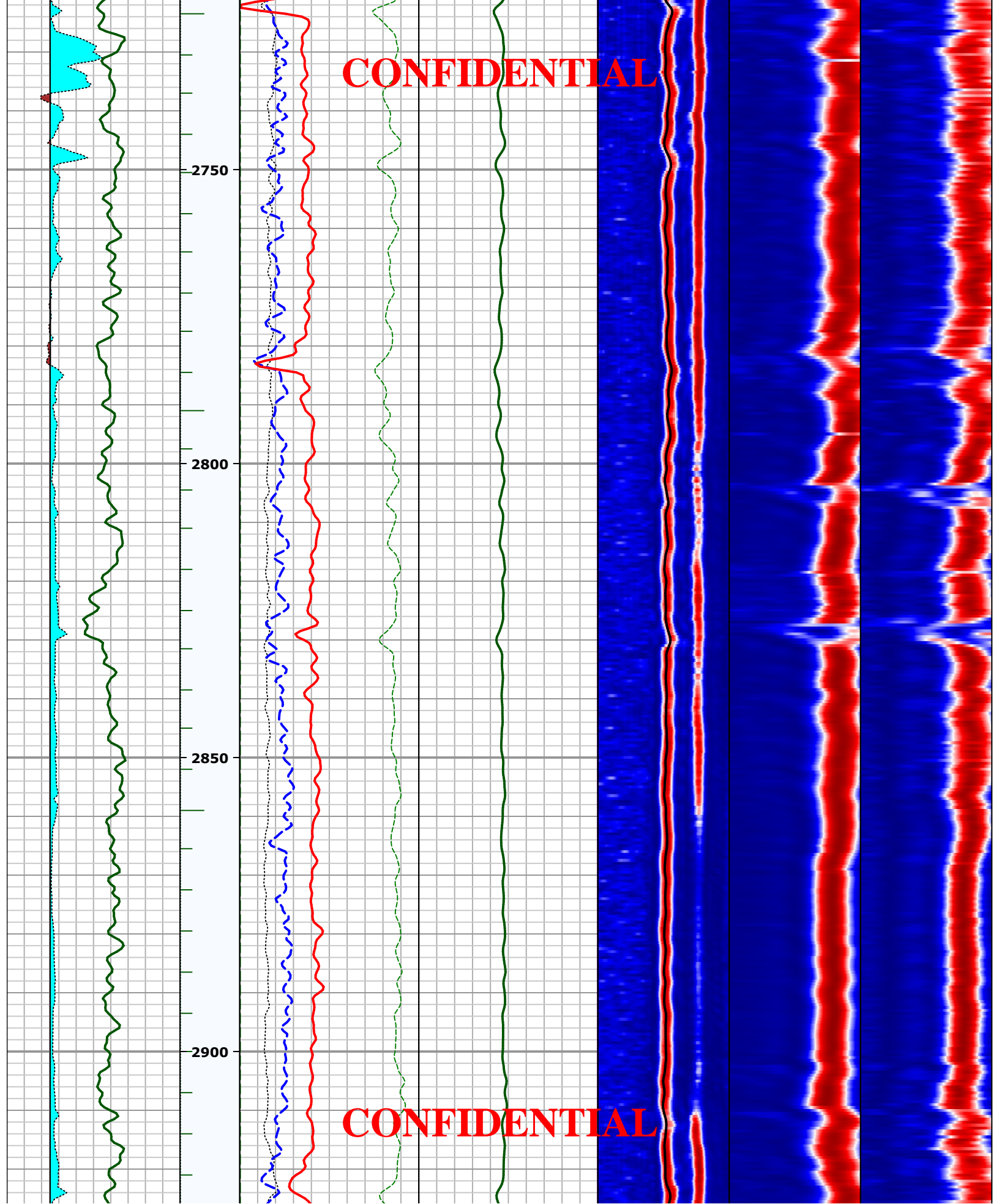
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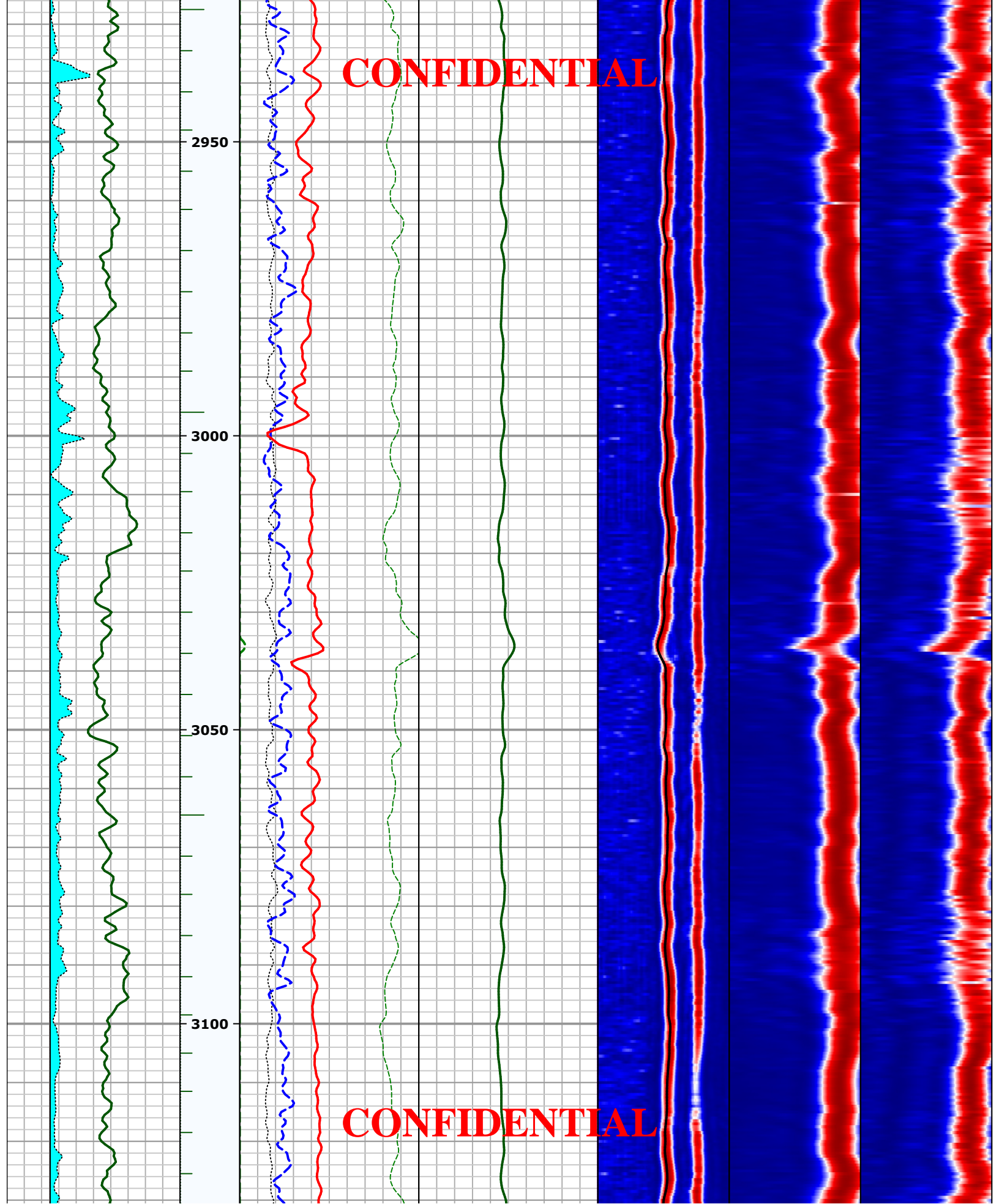
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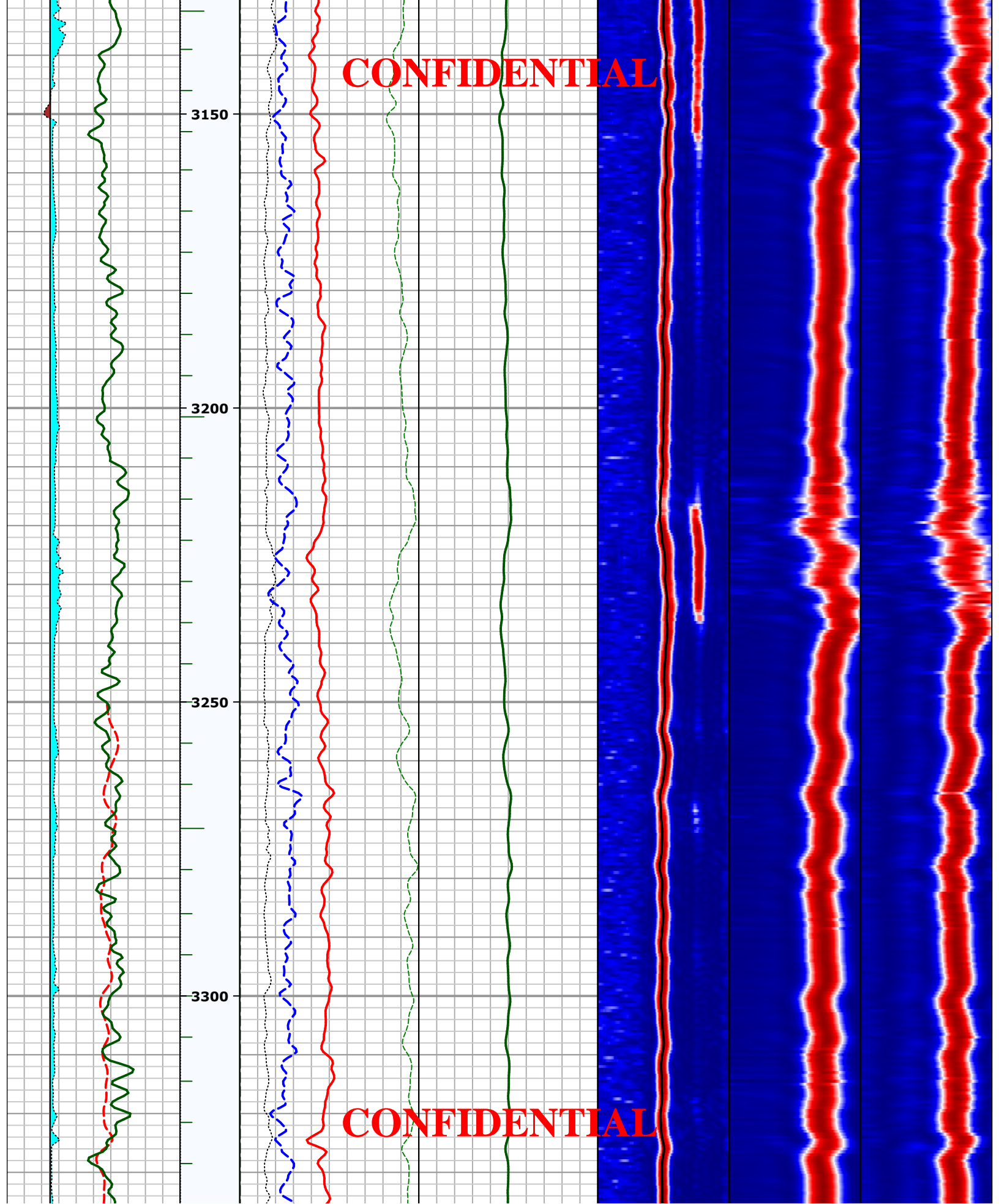
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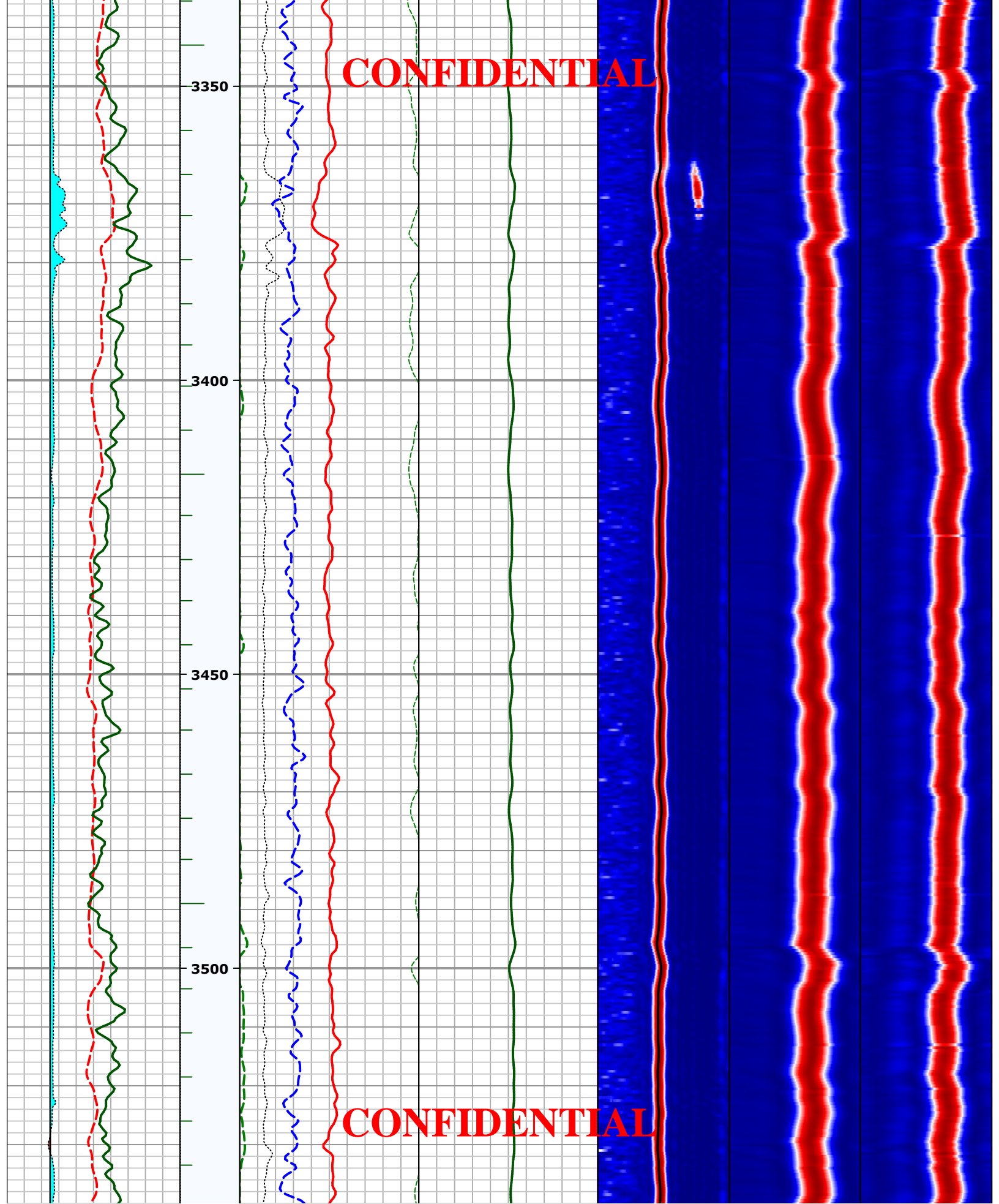
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3300

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3350

3400

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3500

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3550

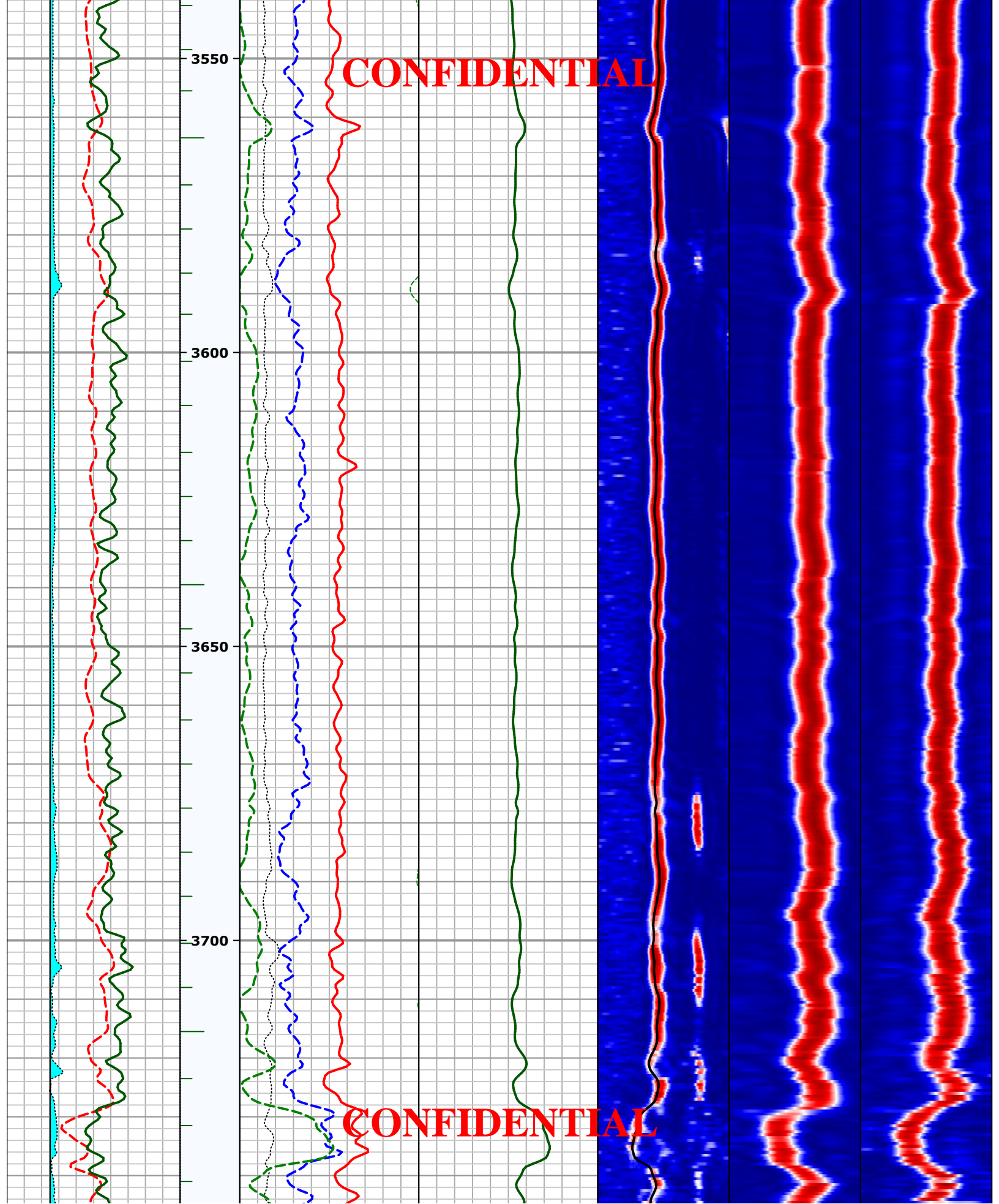
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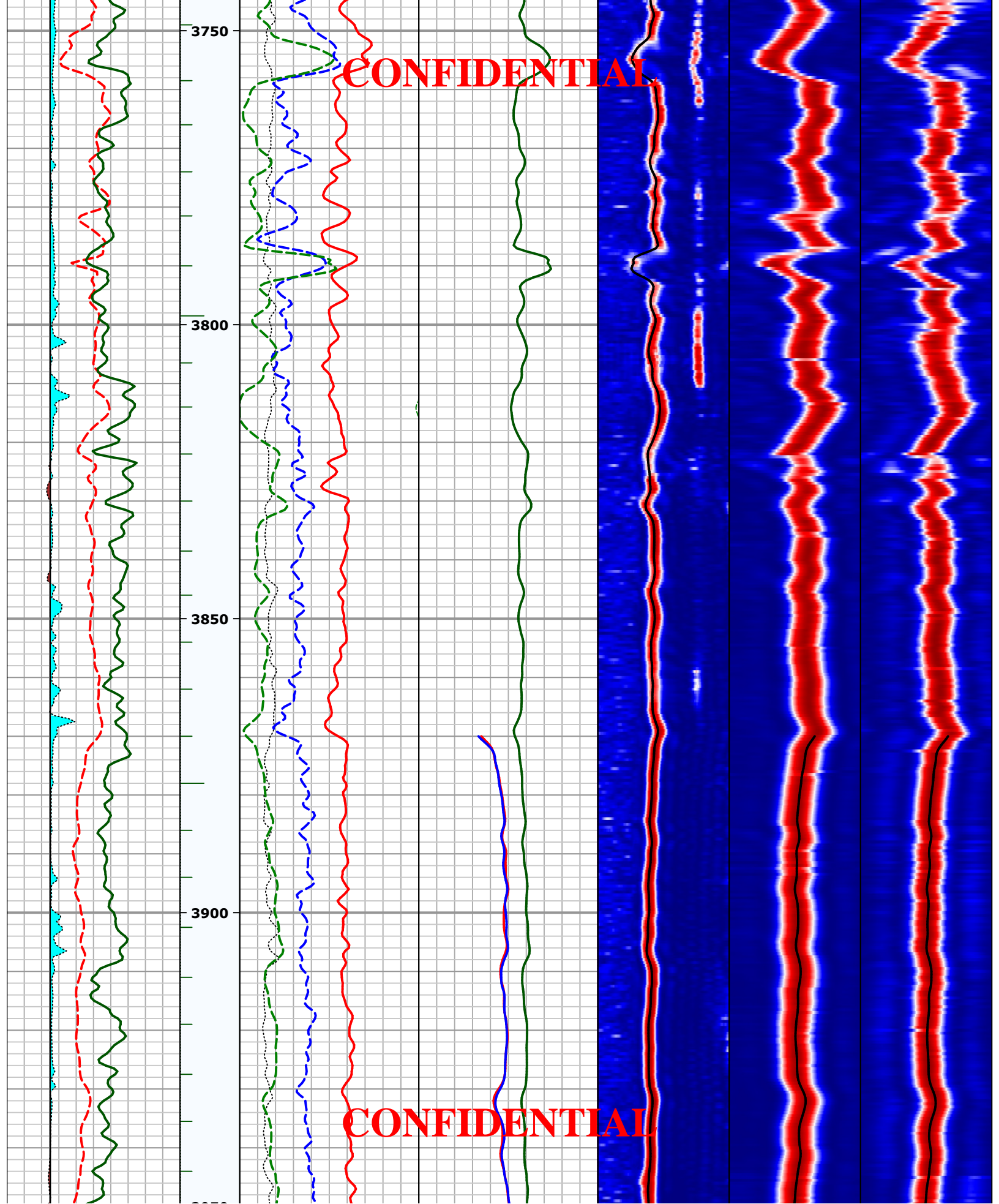
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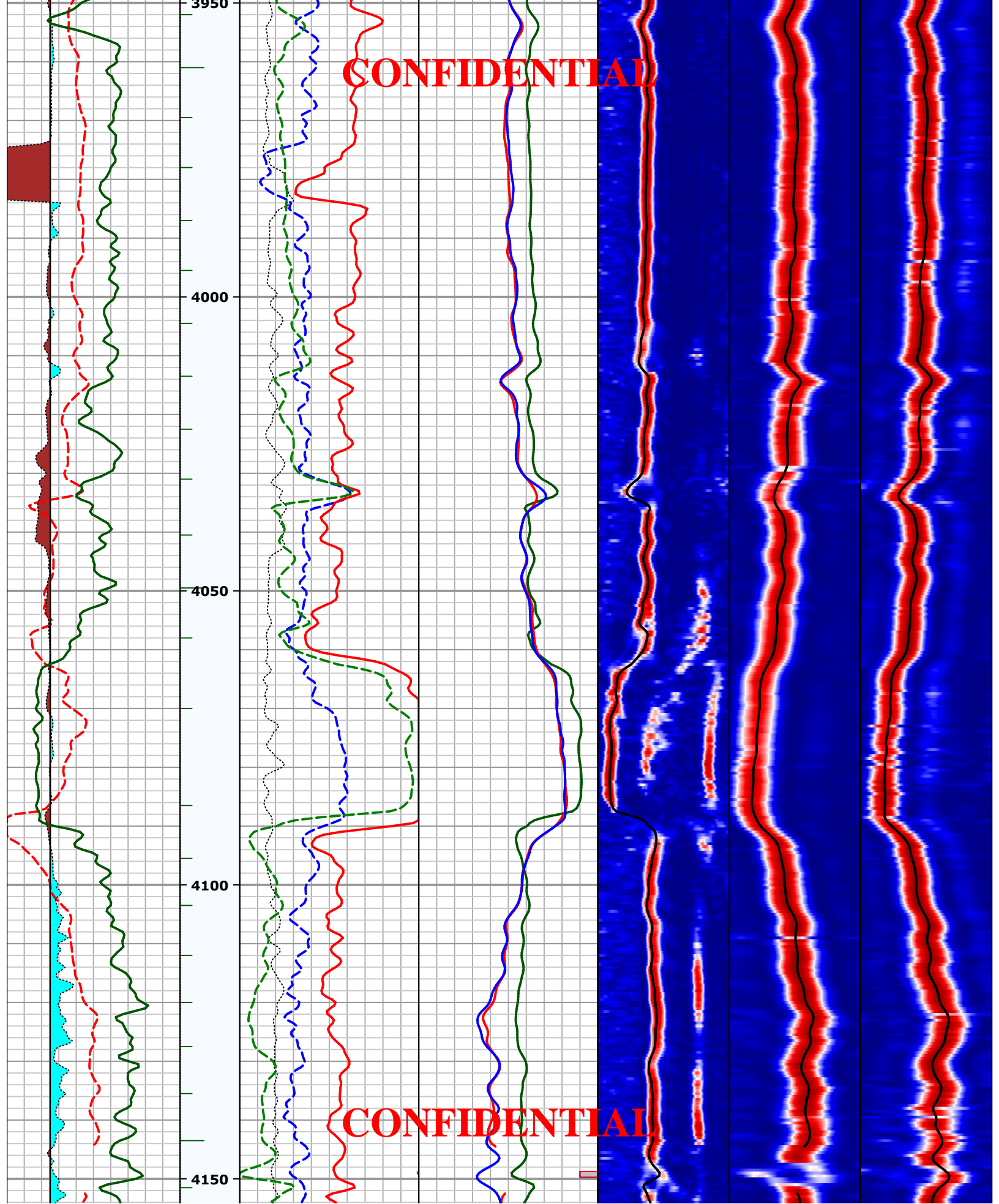
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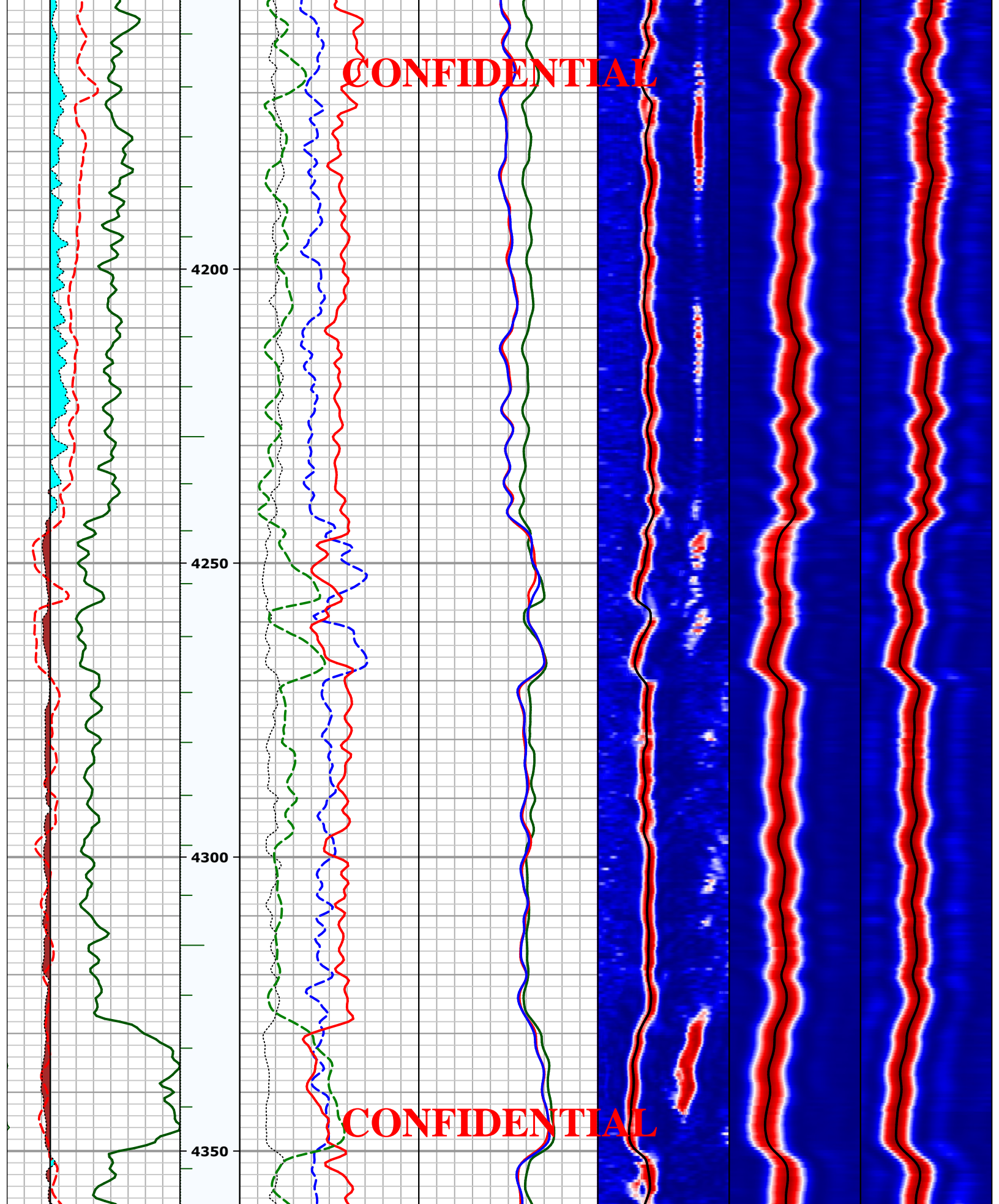
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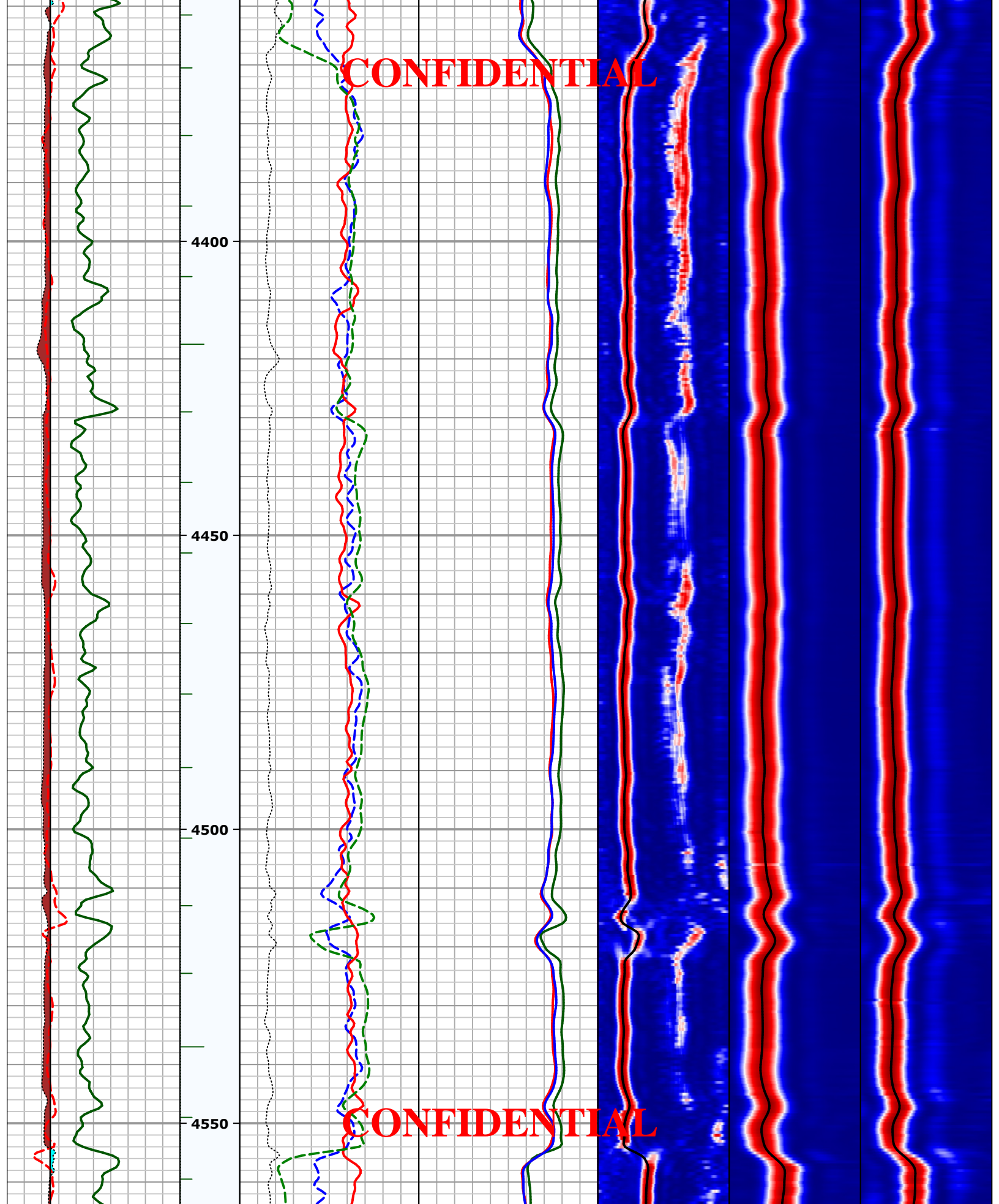


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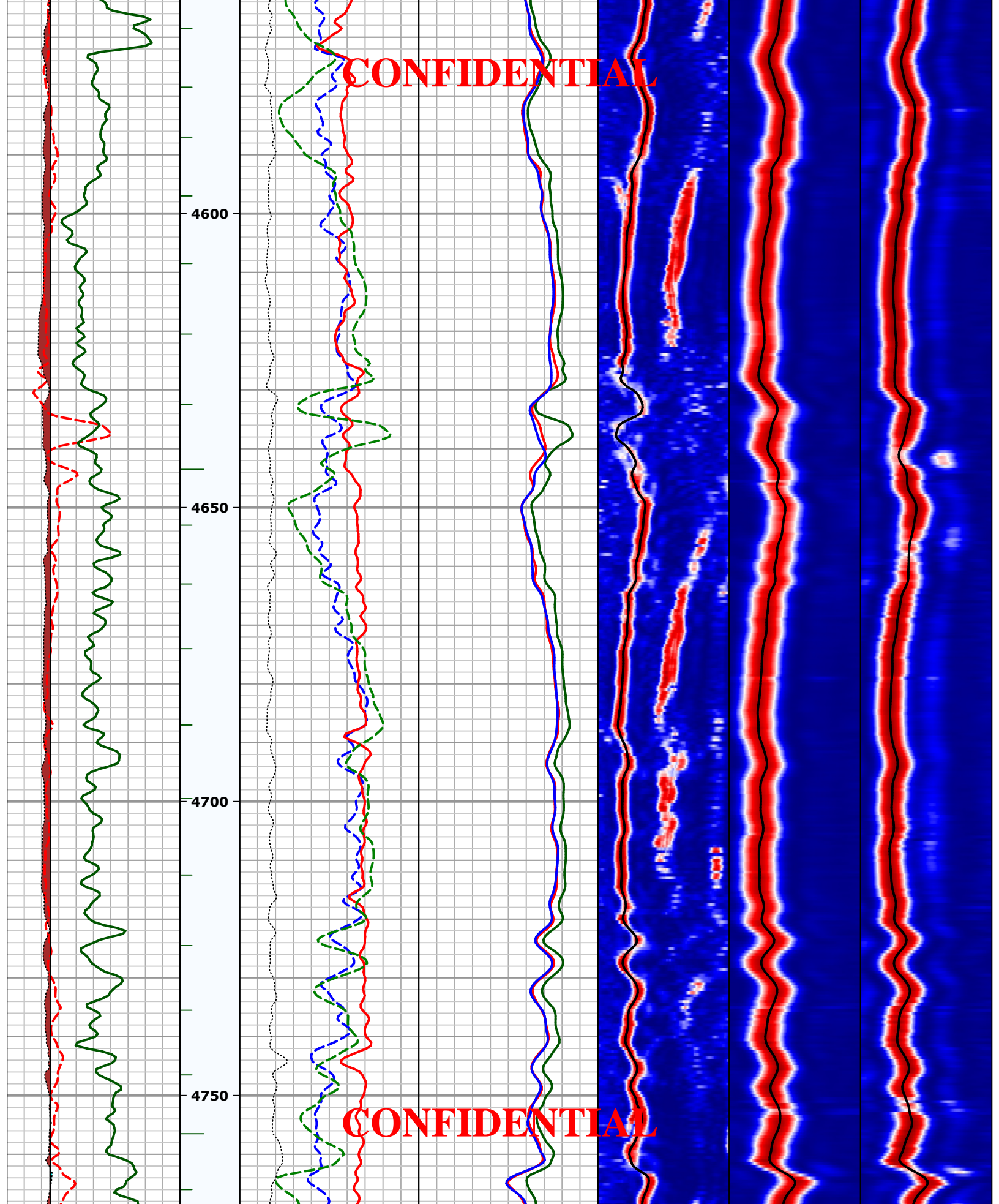
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4500

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4600

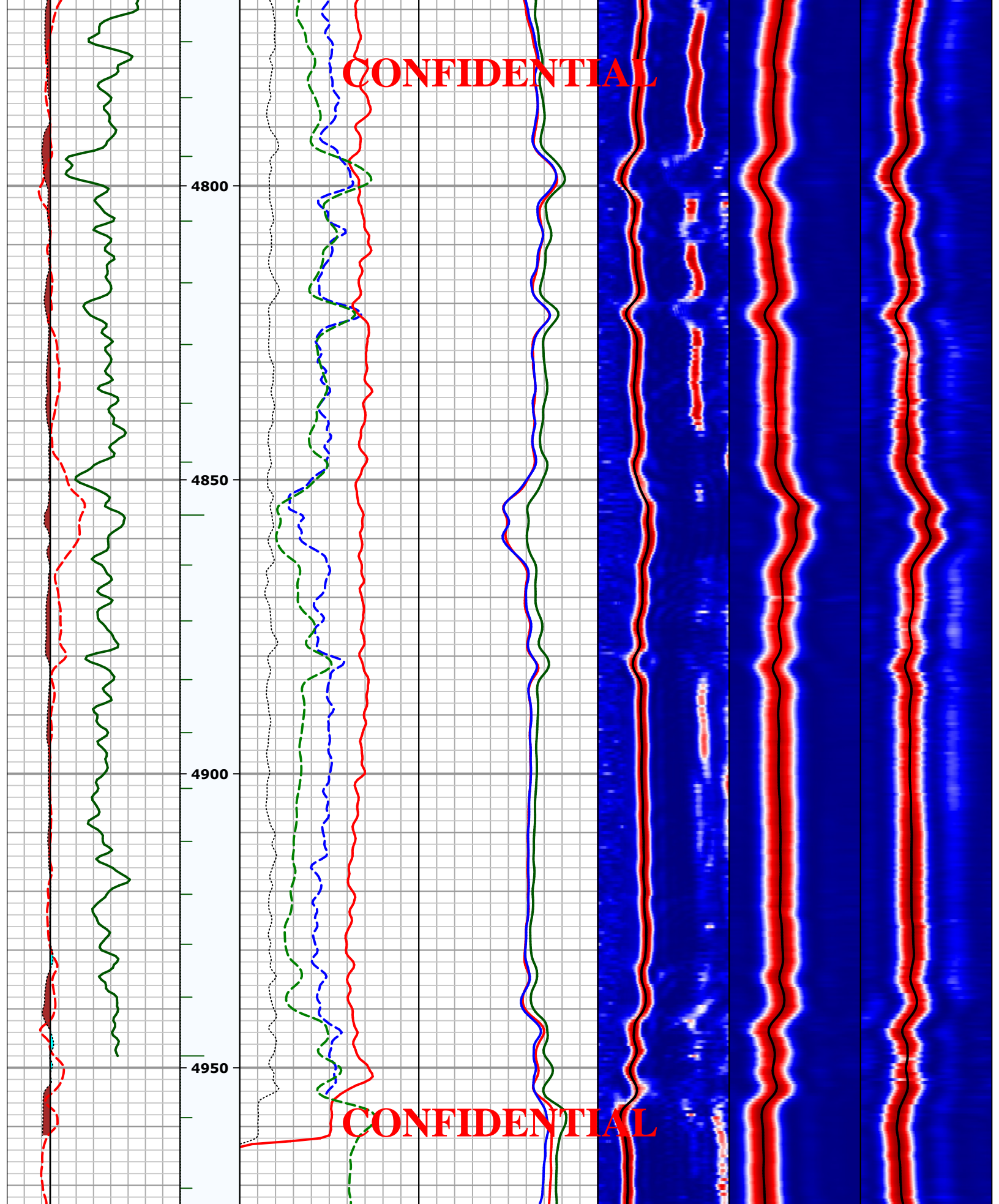
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4700

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4800

4850

4900

4950

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Mudcake / Washout		ITT	Sonic Porosity		Semblance Quality Flag								
Gamma Ray			PERC		YY Shear Slowness								
0	gAPI 150	msec	Density Porosity		480 us/ft 40			Semblance	Semblance	Semblance			
Density Caliper			PERC		XX Shear Slowness								
6	in 16	referenc (ft) 1:240	Neutron Porosity		480 us/ft 40			0.00	1.00	0.00	1.00	0.00	1.00
Bit Size			PERC		Compressional Slowness			Compressional DT		XX Shear Slowness		YY Shear Slowness	
6	in 16	Bulk Density Correction		240 us/ft 40			40 us/ft 240		40 us/ft 480		40 us/ft 480		
Velocity Ratio		g/cm3											
1.4	none 3.4	Porosity		Slowness Curves			Monopole Semblance		XX Dipole Semblance		YY Dipole Semblance		
Auxiliary Curves													

Company	ALTA MESA SERVICES LLC
Well	ML INVESTMENTS 3-10
Field	WILLOW
State/Province	IDAHO
UWI/API	11-075-20031



CROSSED DIPOLE
DUAL SHEAR SEMBLANCE

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