

Company Antero Resources		Well Jameson 3H		Field Marcellus		County Tyler		State West Virginia	
Company Antero Resources		Well Jameson 3H		Field Marcellus		County Tyler		State West Virginia	
Location:		APL #: 47095024710		Latitude:		Longitude:		Other Services	
Permanent Datum		SEC		TWP		RGE		Elevation	
Log Measured From		Ground Level		Elevation		-		K.B. -	
Drilling Measured From		Kelly Bushing		Ground Level		-		D.F. -	
				-				G.L. -	

Date	13 - December - 2018						
Run Number	One						
Depth Driller	18,395 ft						
Depth Logger	6,543 ft						
Bottom Logged Interval	6,533 ft						
Top Log Interval	Surface						
Open Hole Size	N/A						
Type Fluid	Fresh Water						
Density / Viscosity	8.3 lbs/gal						
Max. Recorded Temp.	135 °F						
Estimated Cement Top	4,730 ft						
Time Well Ready	09:20						
Time Logger on Bottom	10:03						
Equipment Number	2612						
Location	Irwin, PA						
Recorded By	Jim Cleland						
Witnessed By	Curt Anderson						
Borehole Record			Tubing Record				
Run Number	Bit	From	To	Size	Weight	From	To
Casing Record							
Surface String	Size	13-3/8"	Wg/Ft	-	-	Top	Bottom
Prot. String	Size	9-5/8"	Wg/Ft	-	-	-	-
Production String	Size	5 1/2 in	Wg/Ft	20#	-	-	18,395 ft
Liner							

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Bond tool centralized with two inline bowspring centralizers and noe overbody rigid centralizers
 Logged from 6,533 ft to Surface with a maximum temperature of 135° F
 Tool zeroed at ground level and corrected 24 ft to KB
 Estimated top of cement bond detected at 4,730 ft
 Free pipe calibration taken Jim 3H
 Marker joint detected from 6,009 ft to 6,019 ft then corrected to casing tally
 Casing tally denotes marker joint at 6,005 ft - 6,015 ft
 1,500 psi applied

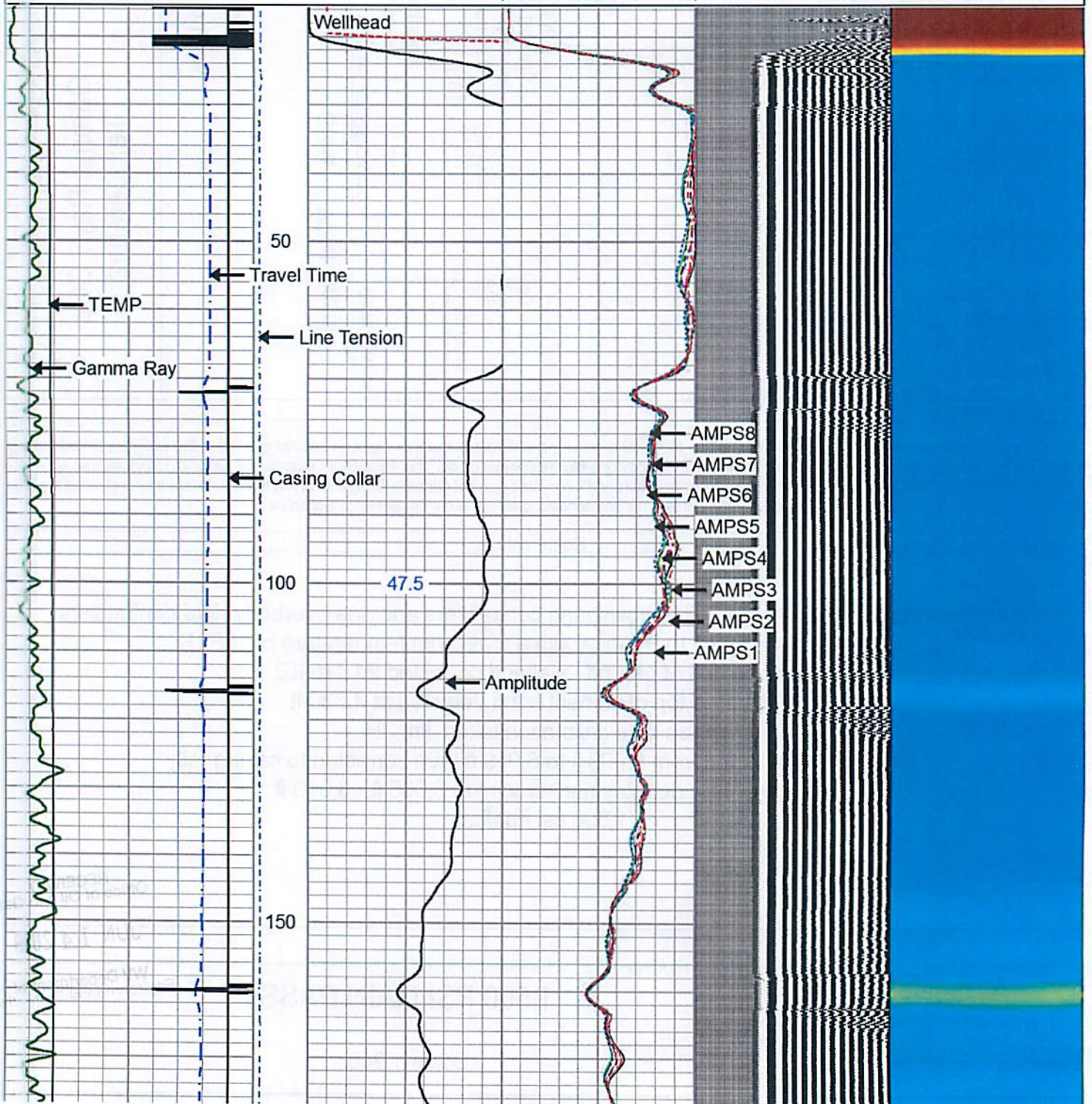
RECEIVED
Office of Oil and Gas

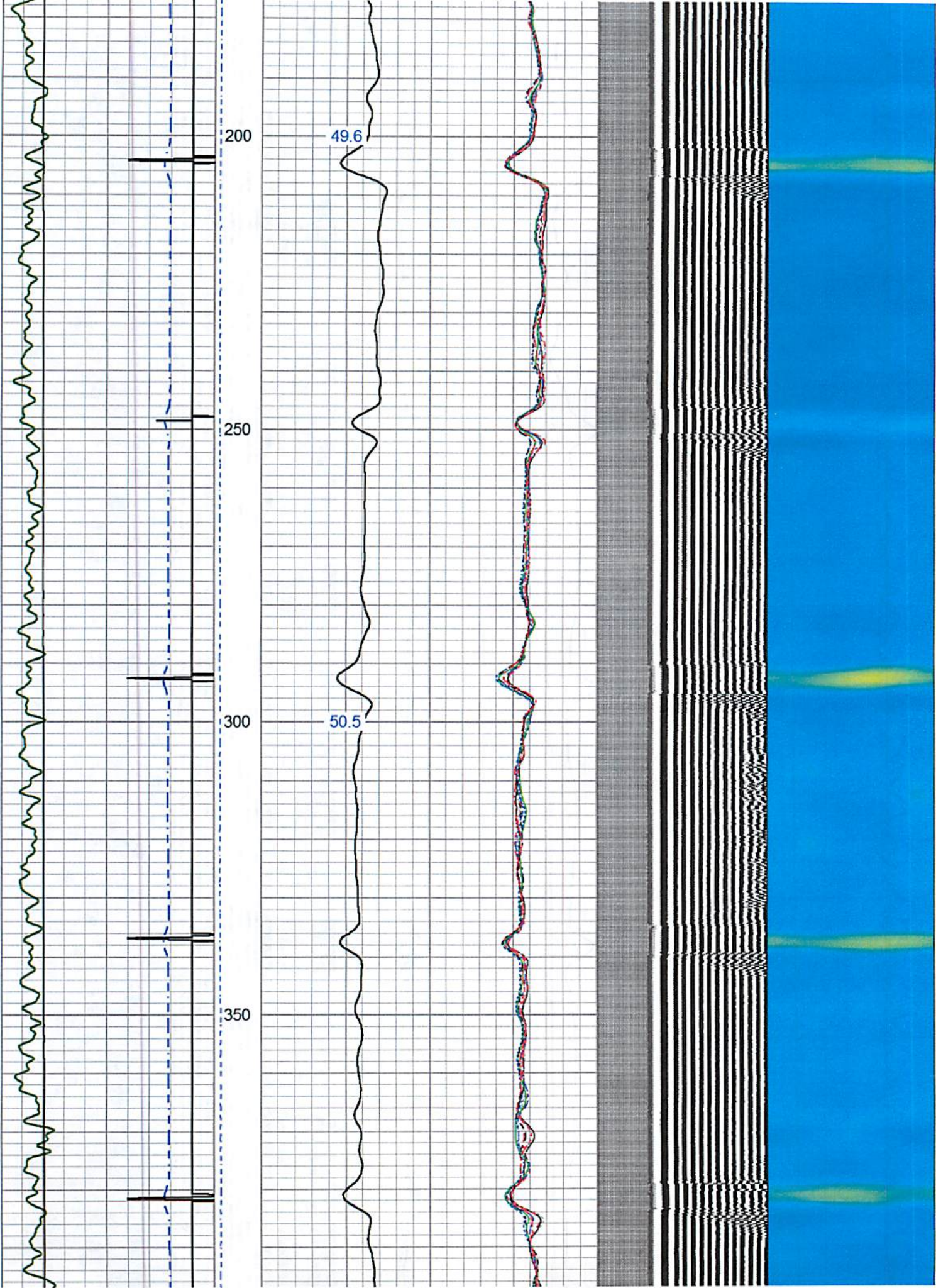
JUN 14 2019

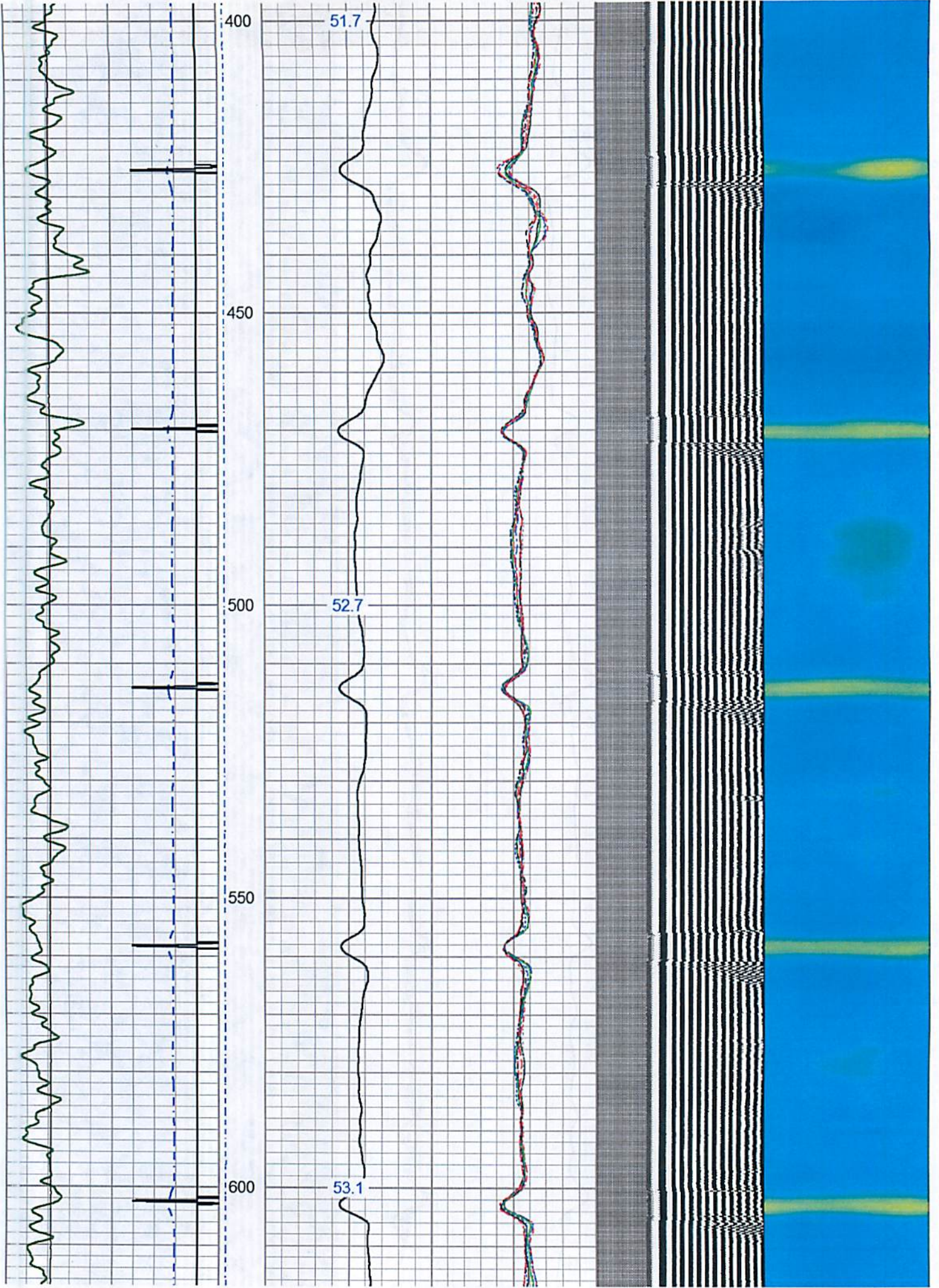
WV Department of
Environmental Protection

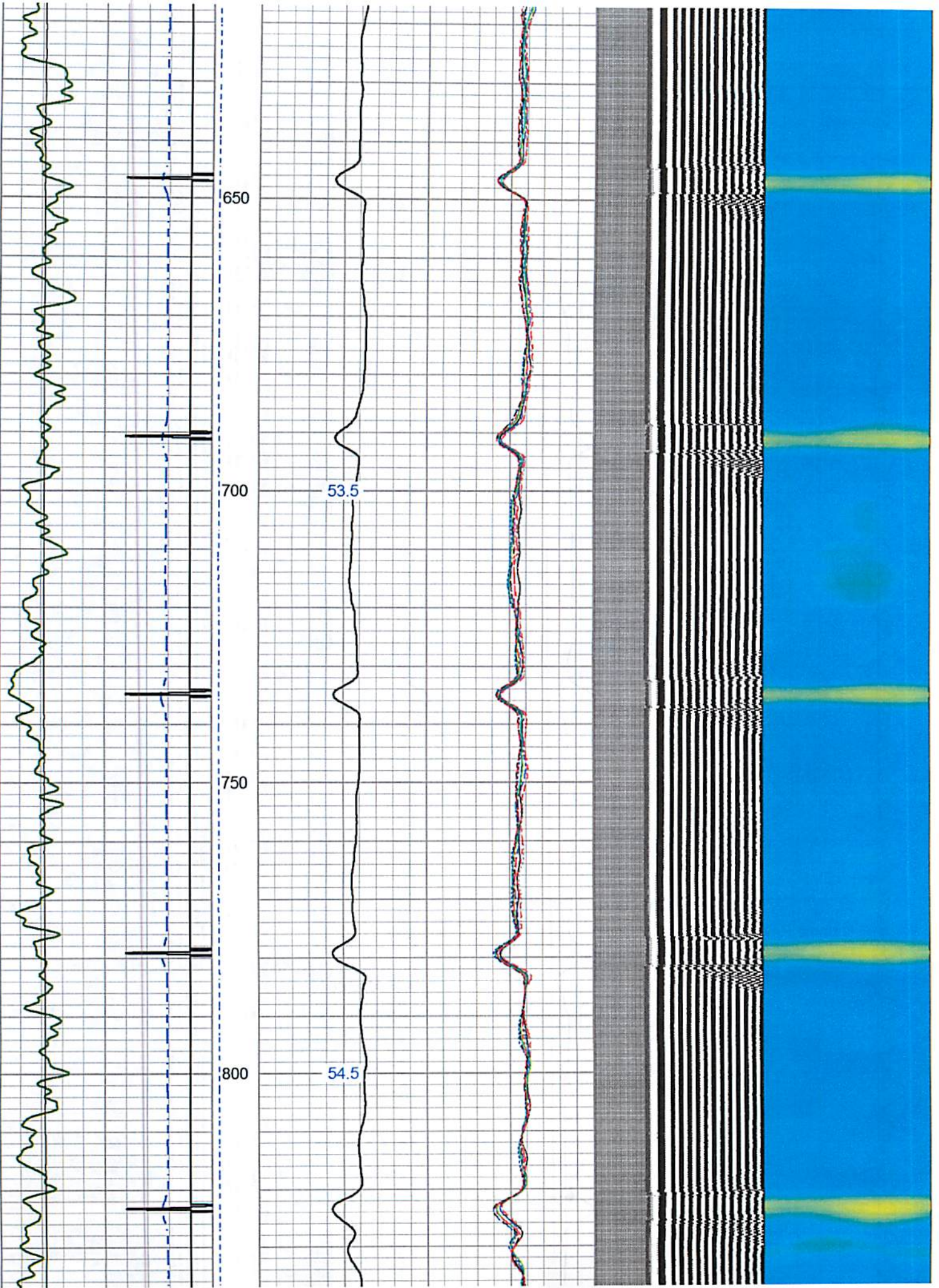
Database File c:\users\user\desktop\antero neat logs\antero resources_jameson_unit3h_rcbl.db
 Dataset Pathname Main Pass
 Presentation Format ahws_rcbl_jc
 Dataset Creation Thu Dec 13 12:01:35 2018
 Charted by Depth in Feet scaled 1:240

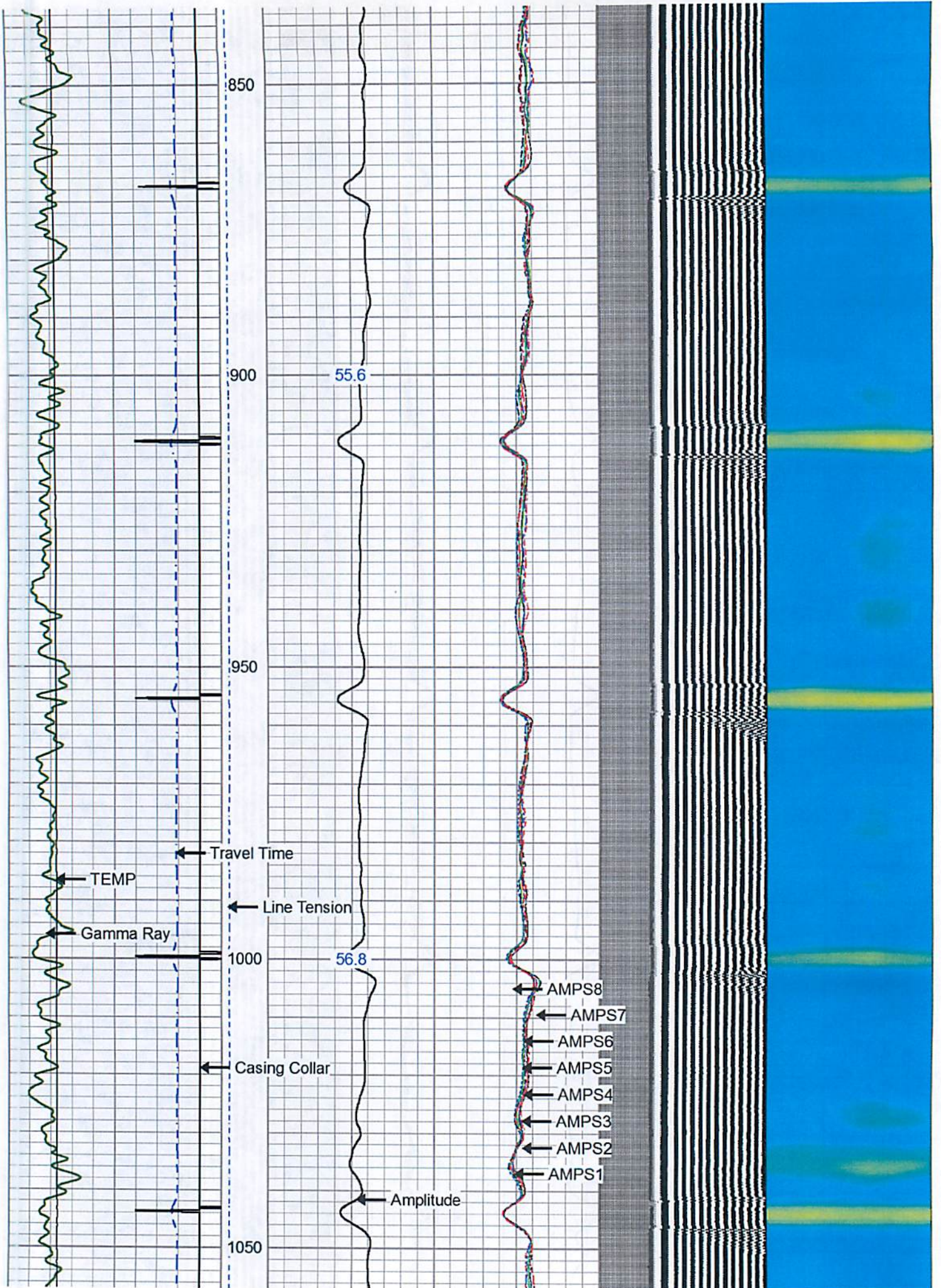
420	Travel Time (usec)	220	e Tens	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	(lb)	0	Amplified Amplitude	-5	AMPS2	150	200	1200	0		100
0	Gamma Ray (GAPI)	300	(2500)	0	(mV)	10	-5	AMPS3	150				
0	TEMP (degF)	250			TEMP		-5	AMPS4	150				
					(degF)		-5	AMPS5	150				
							-5	AMPS6	150				
							-5	AMPS7	150				
							-5	AMPS8	150				

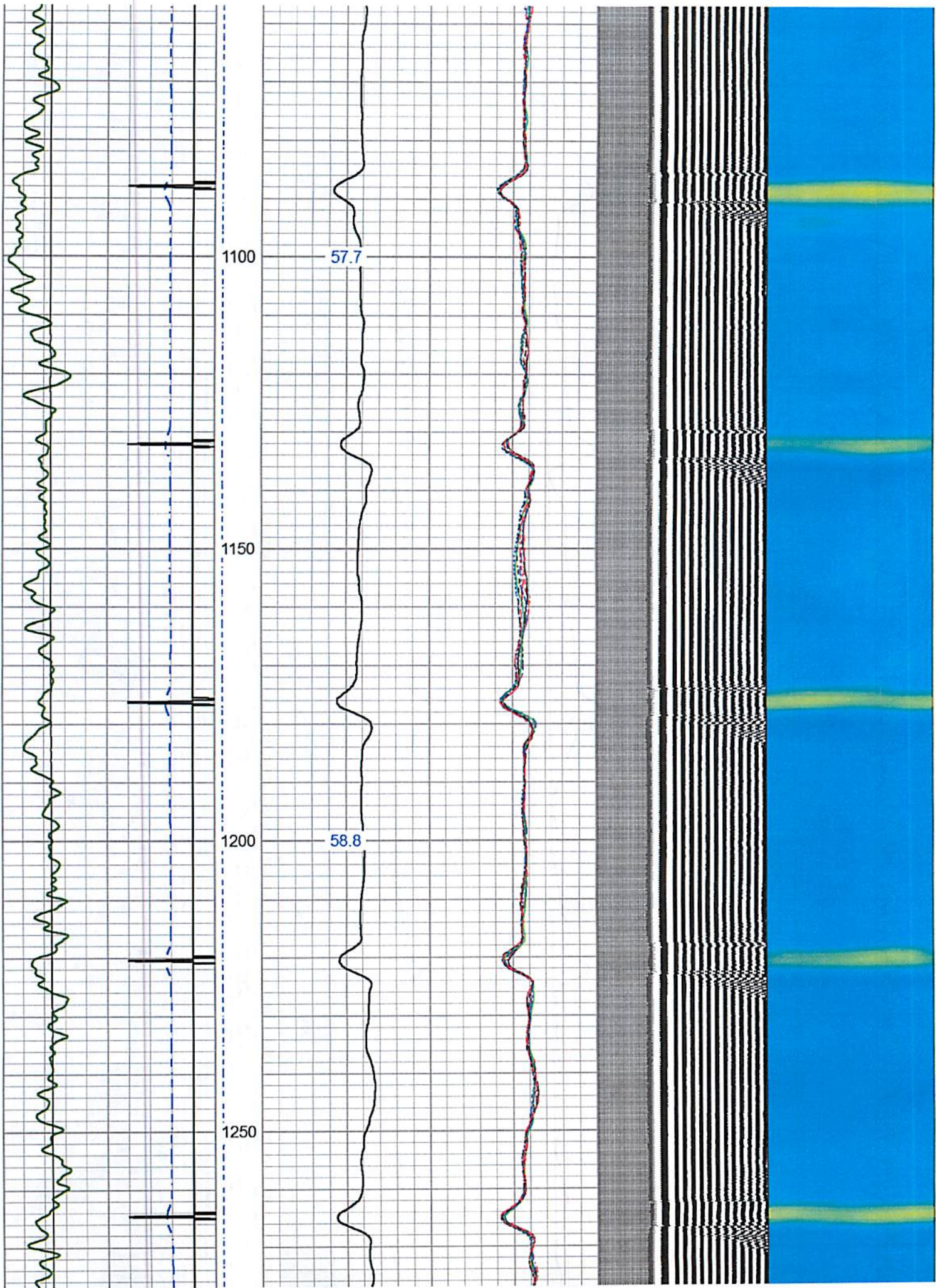


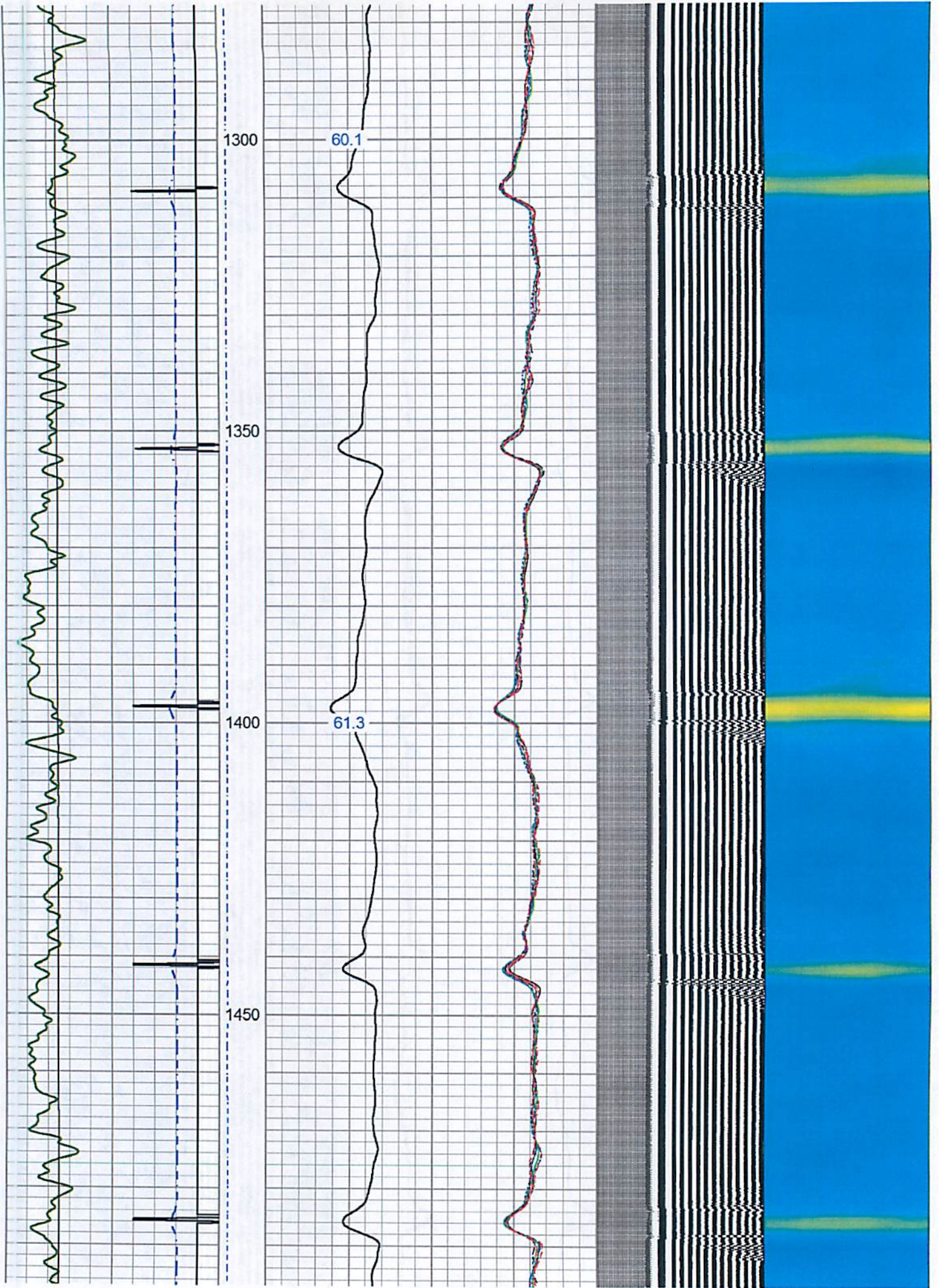


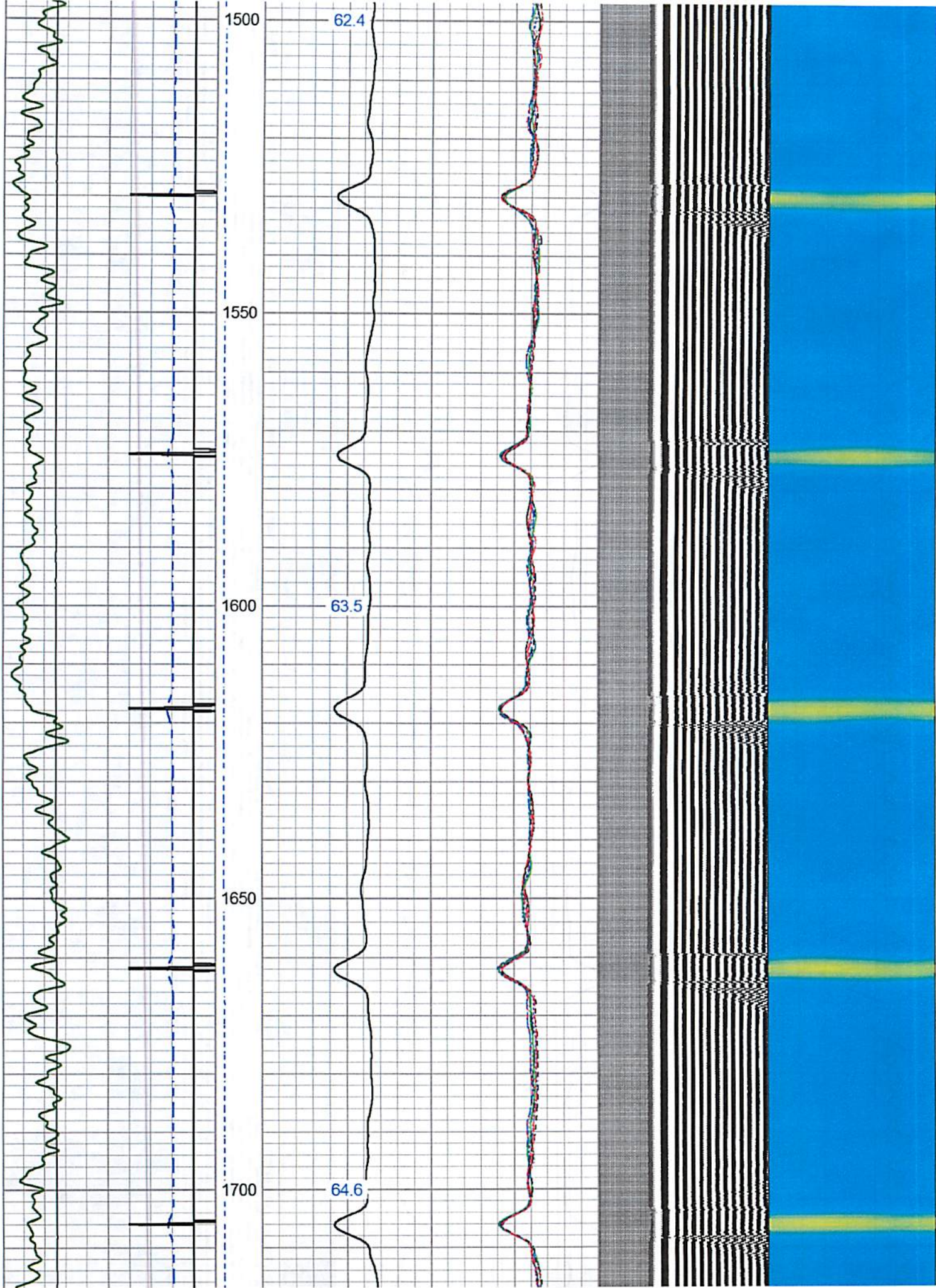


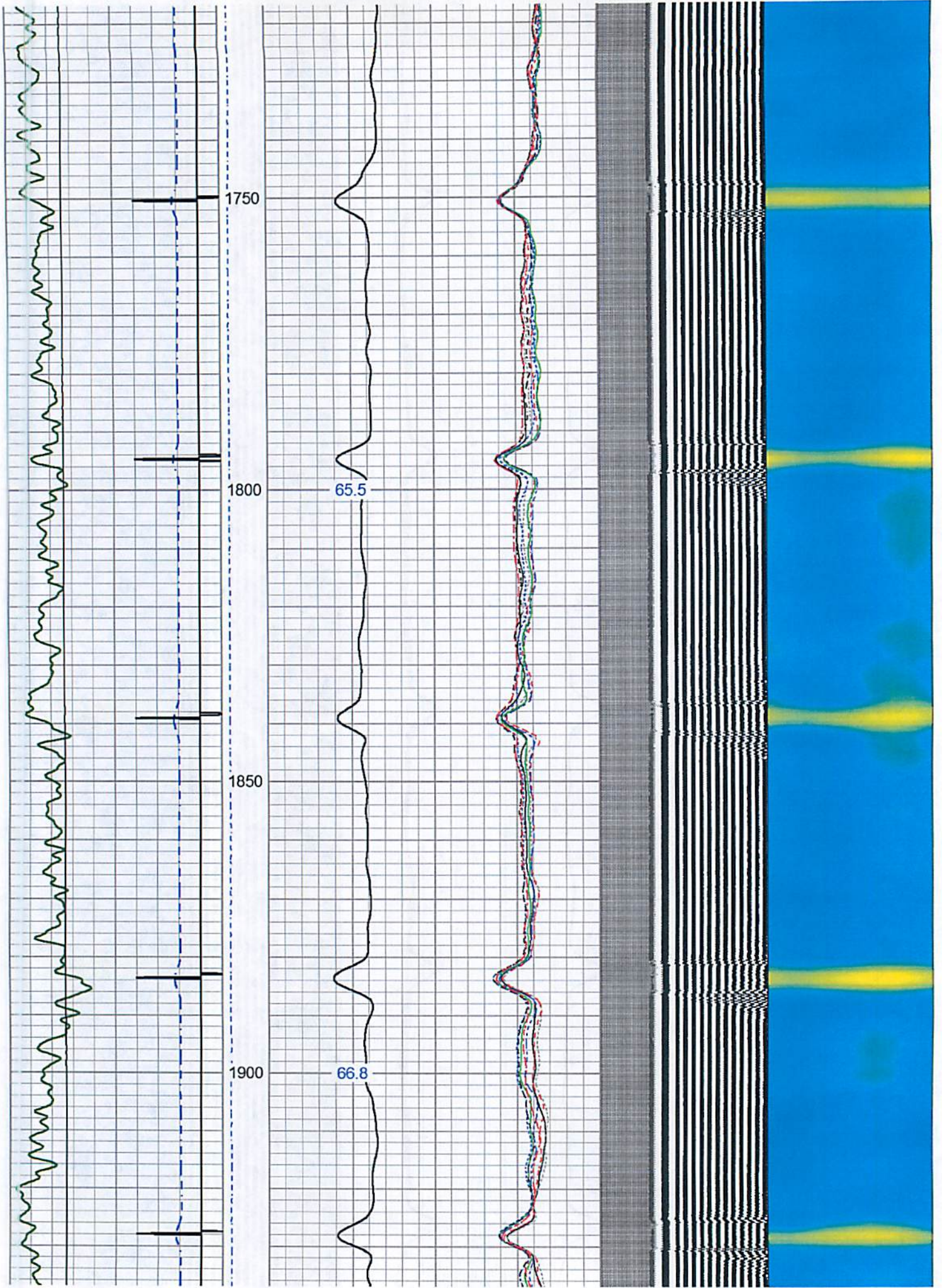


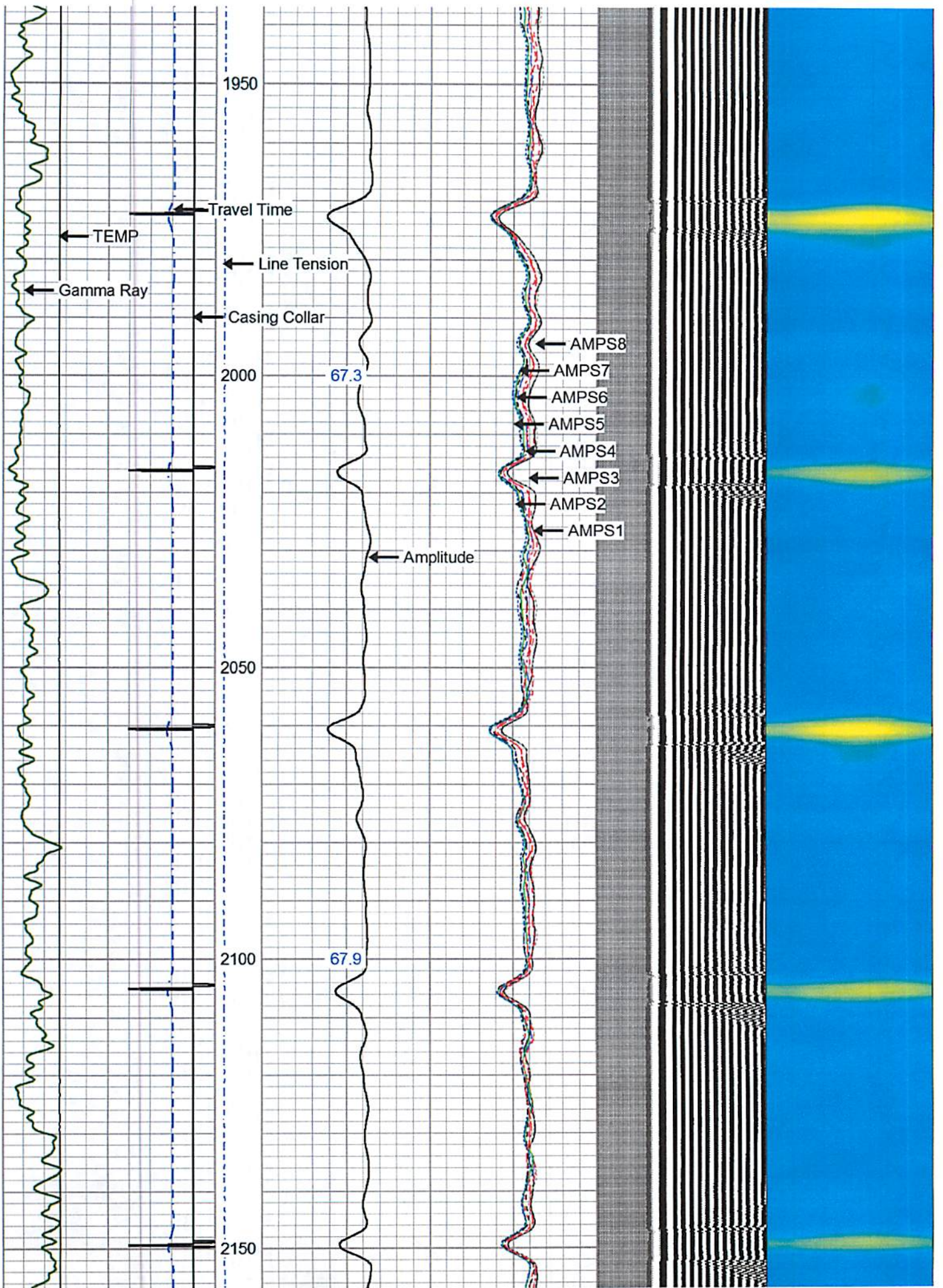


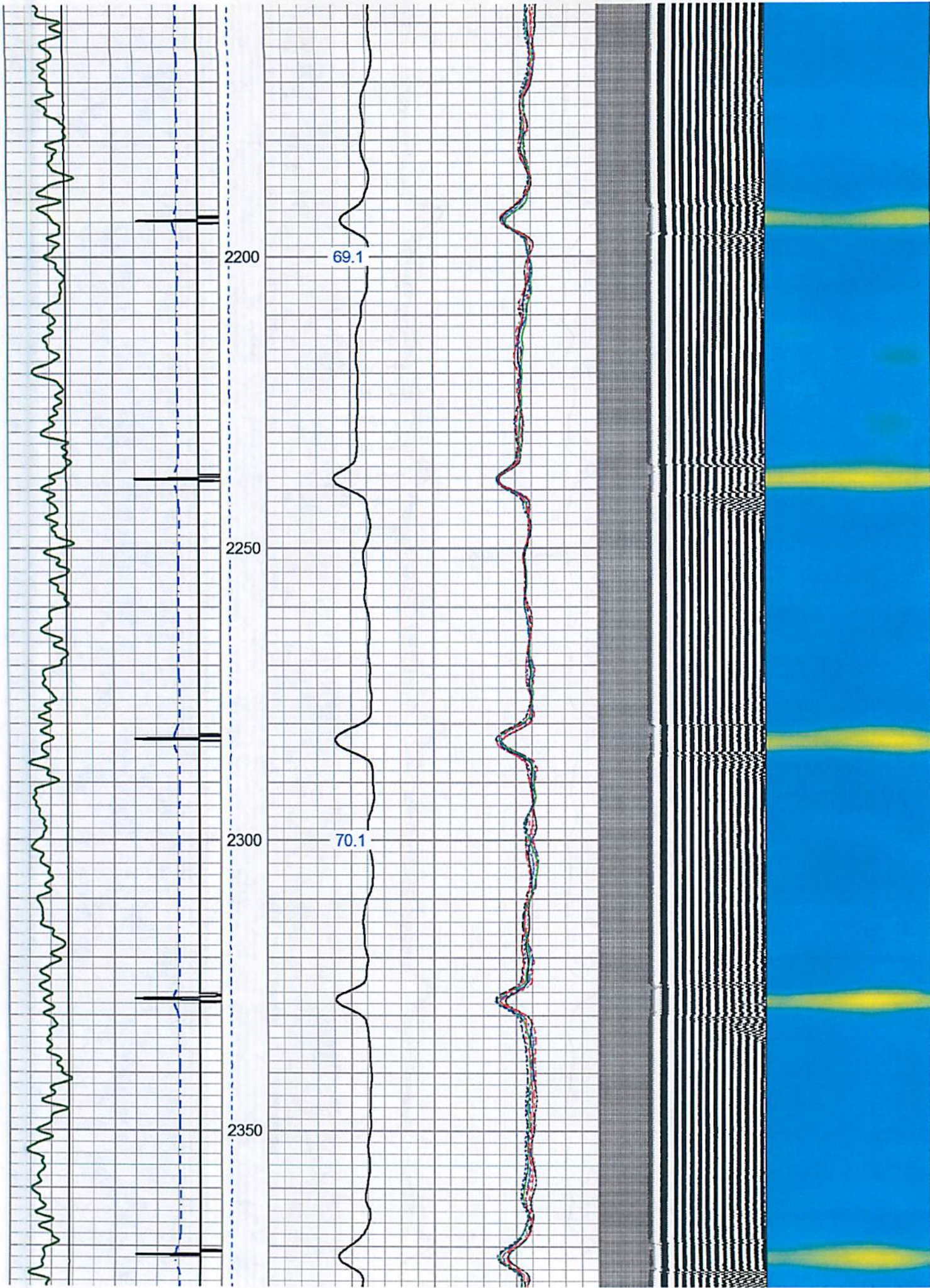


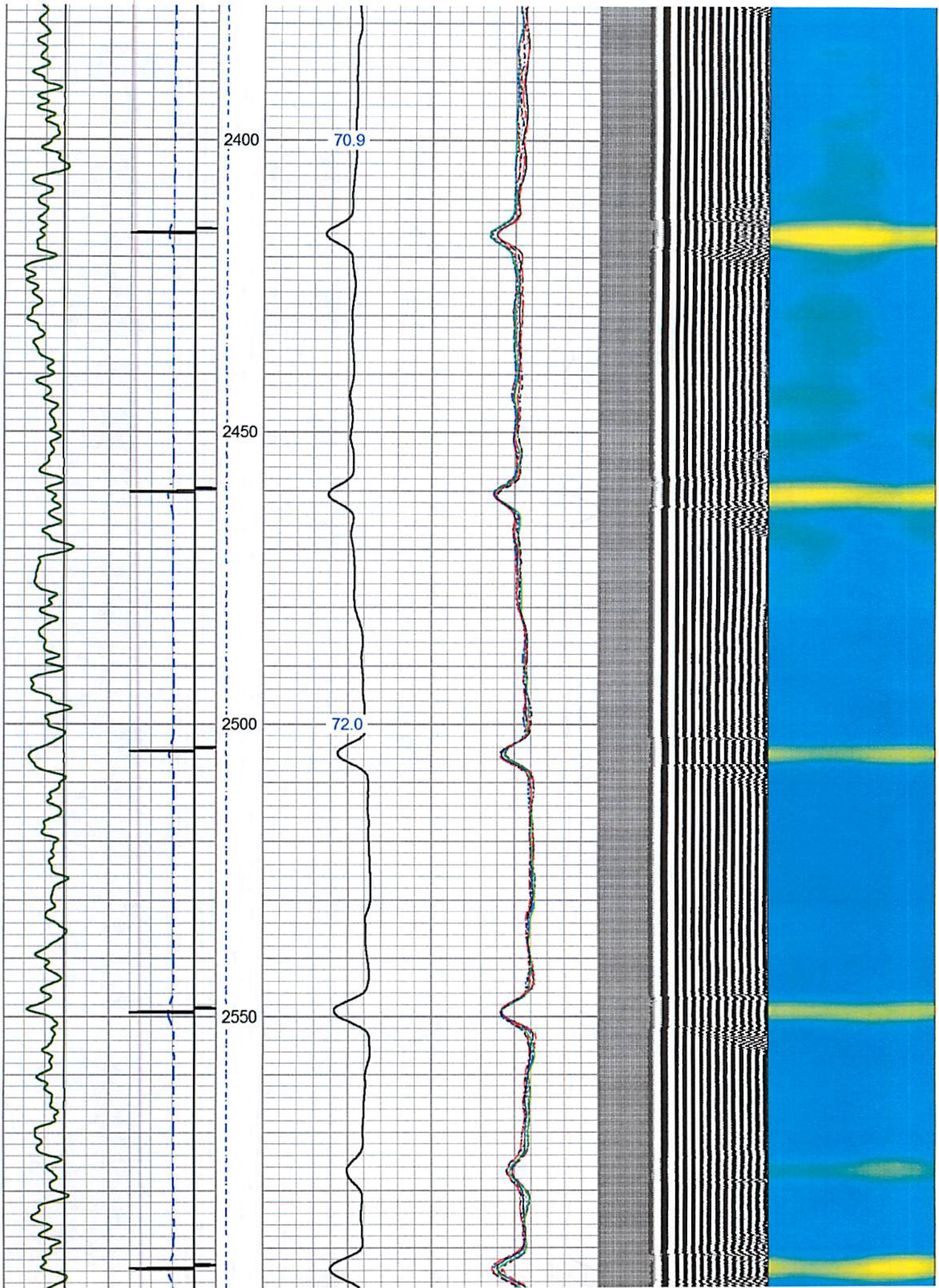


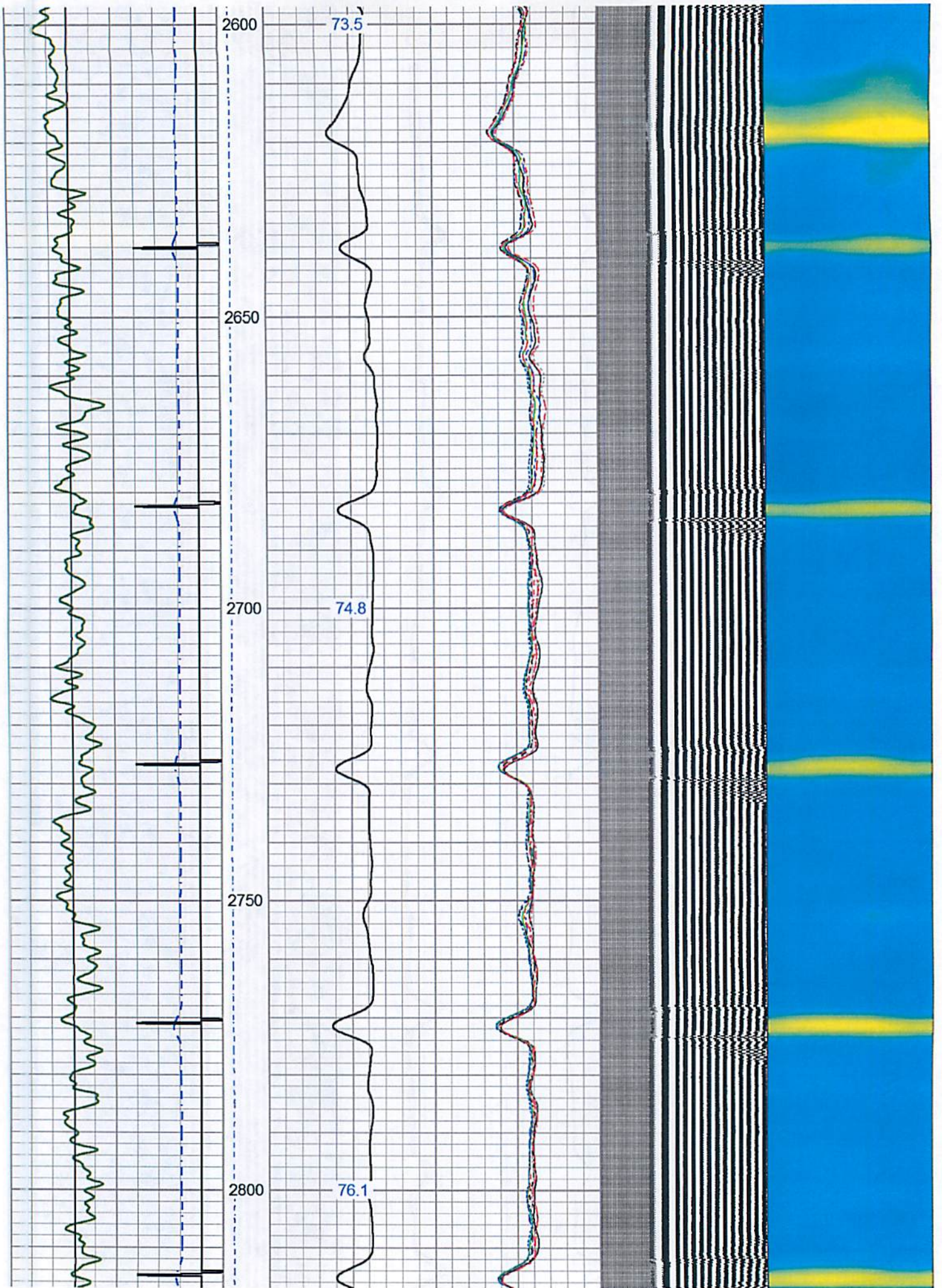


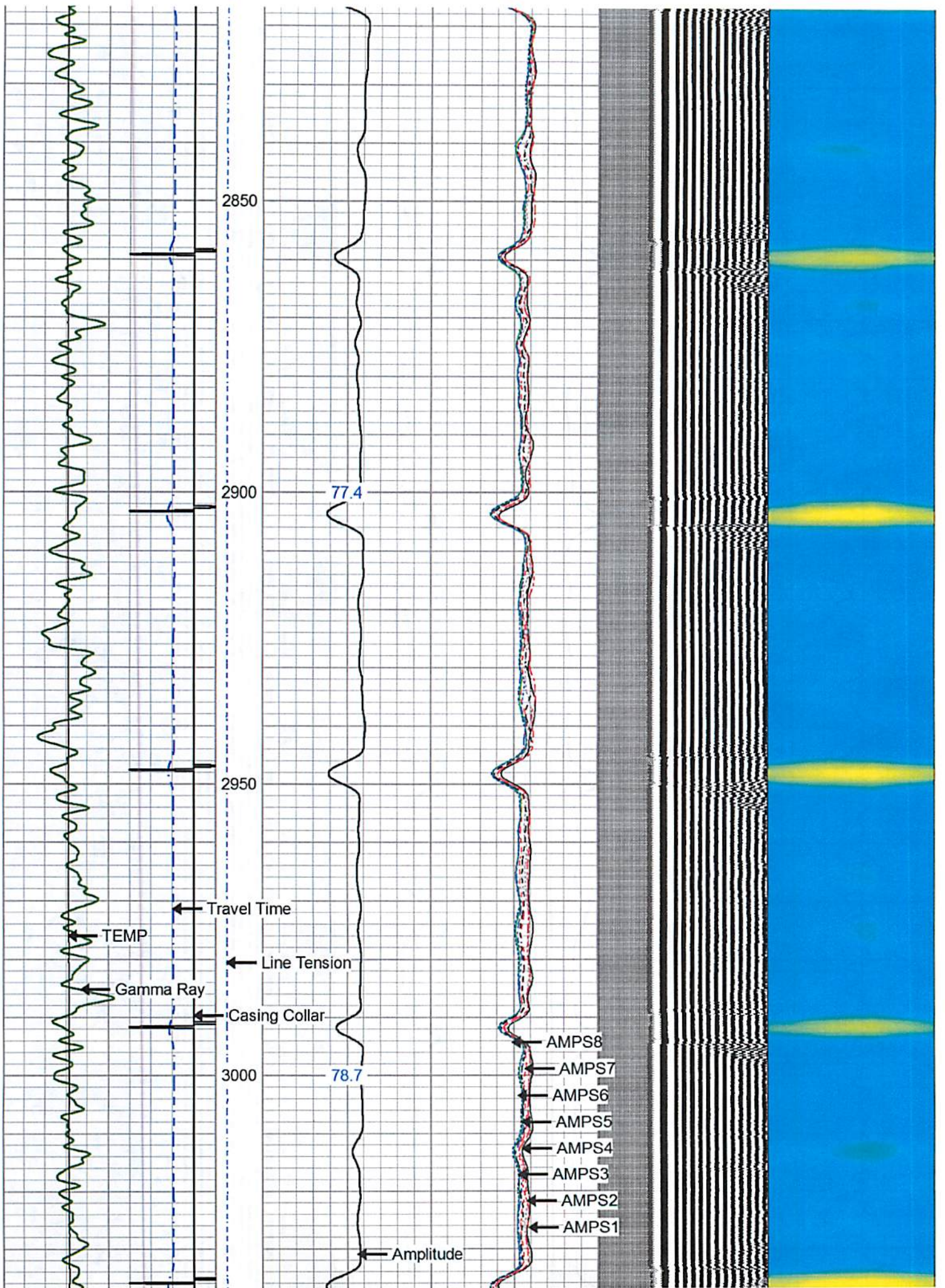


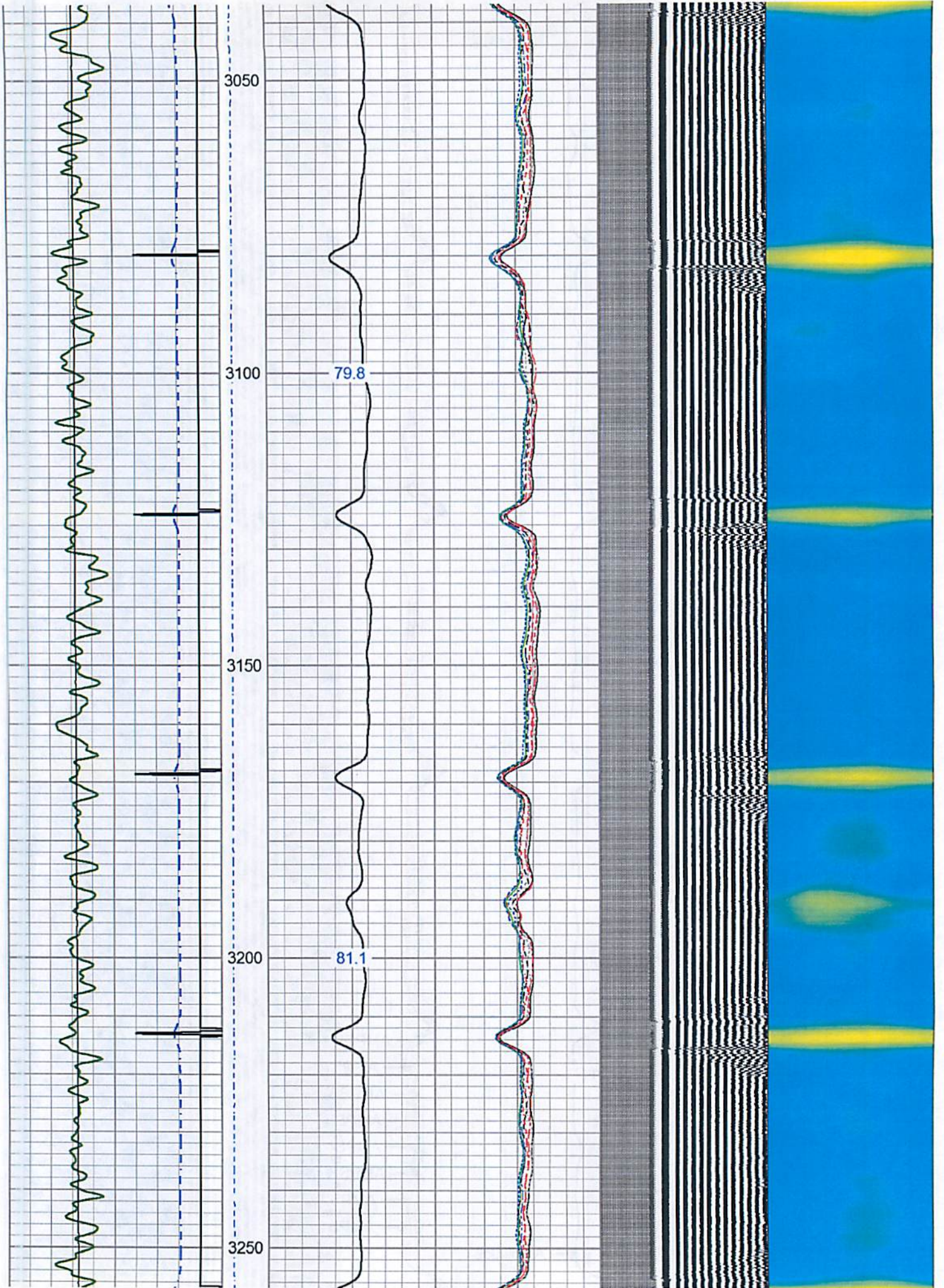


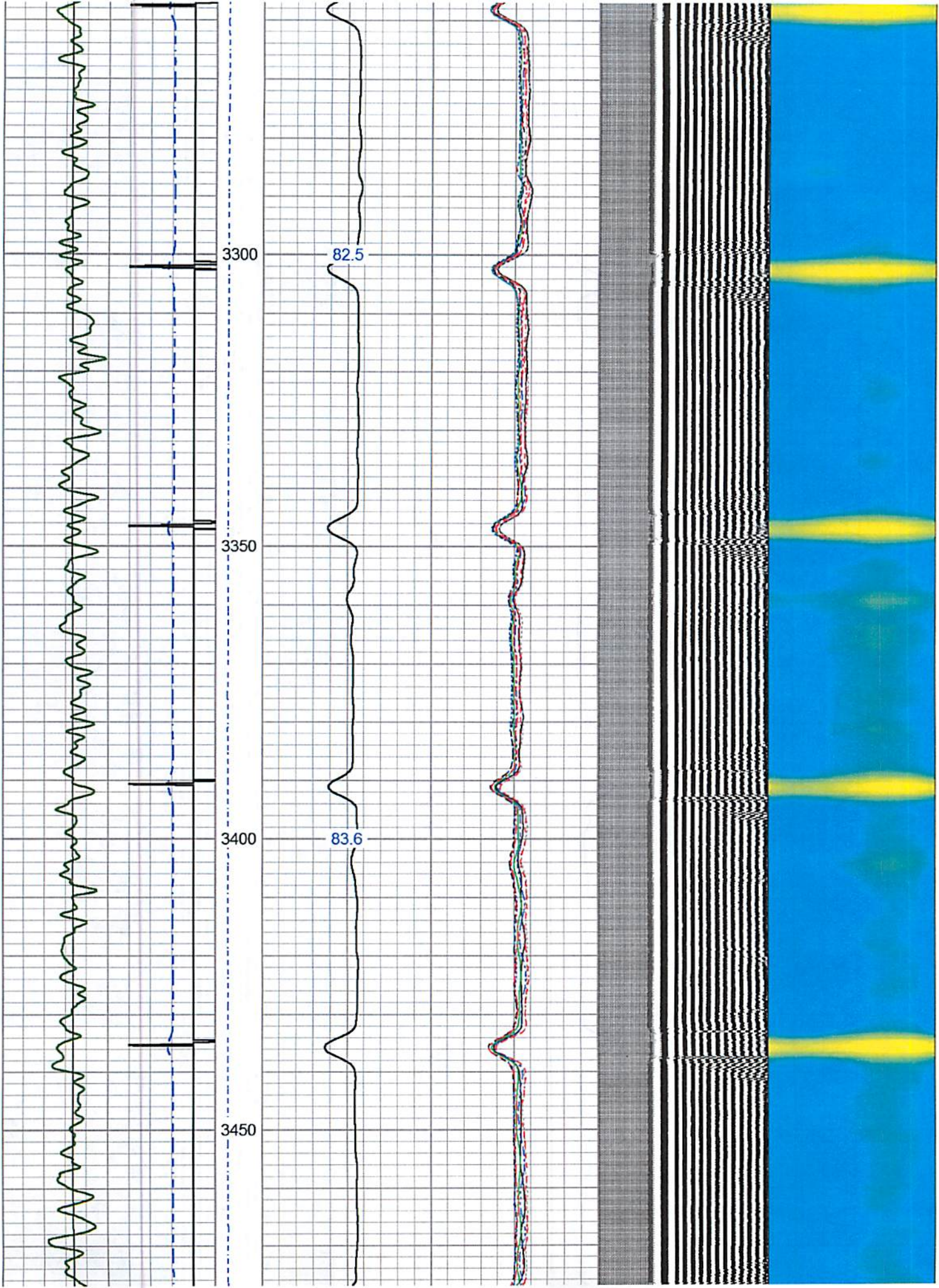


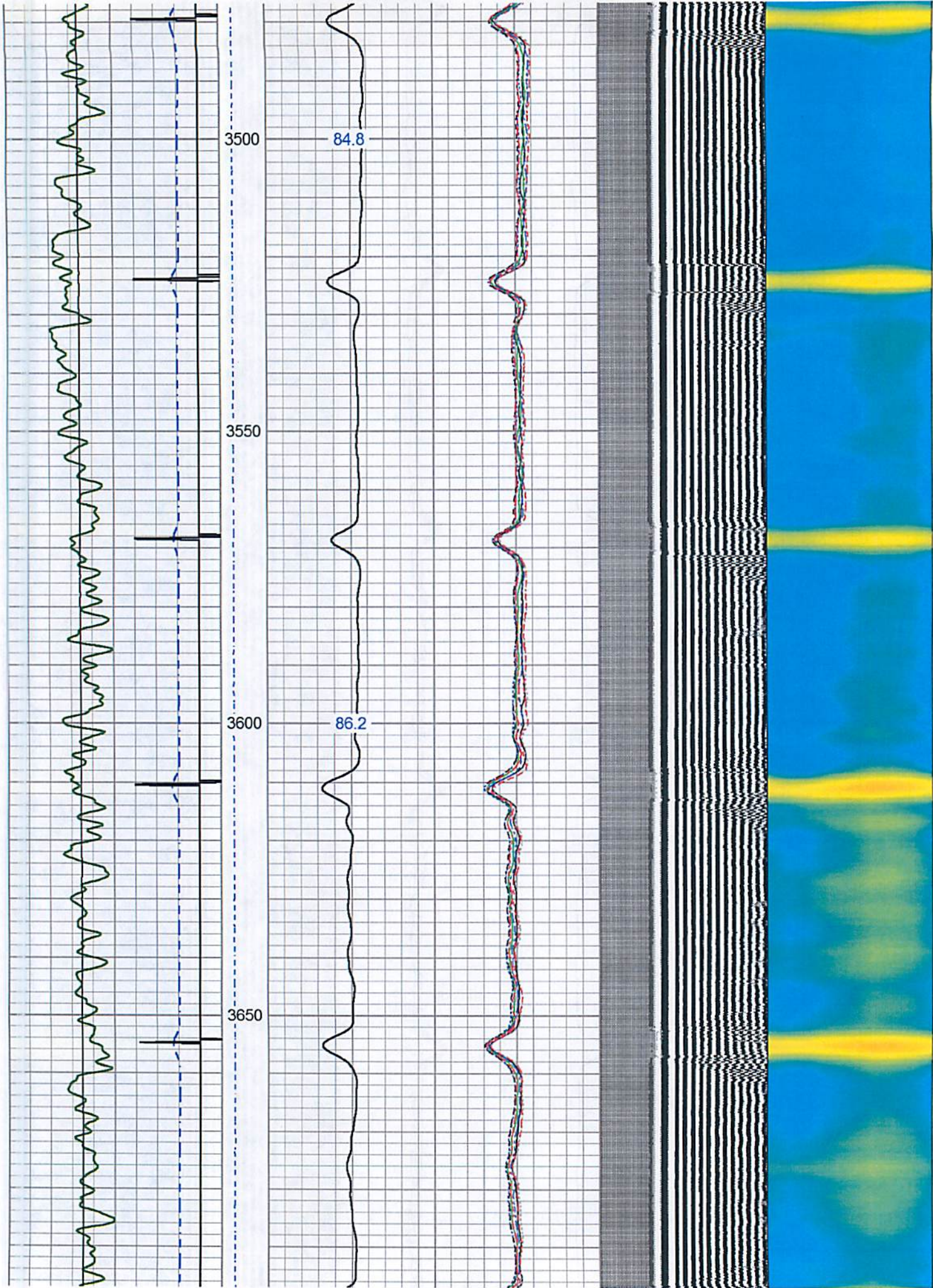


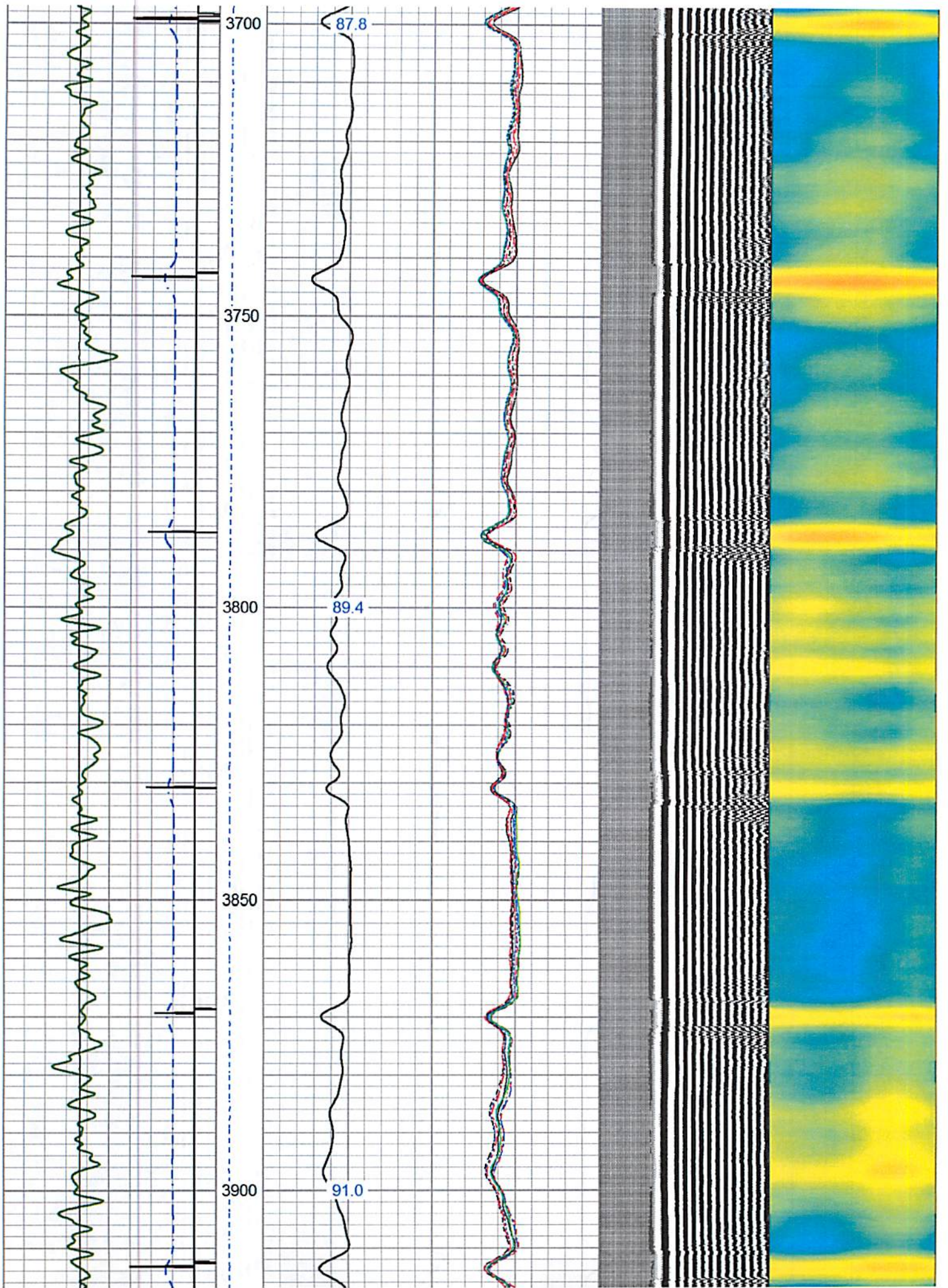


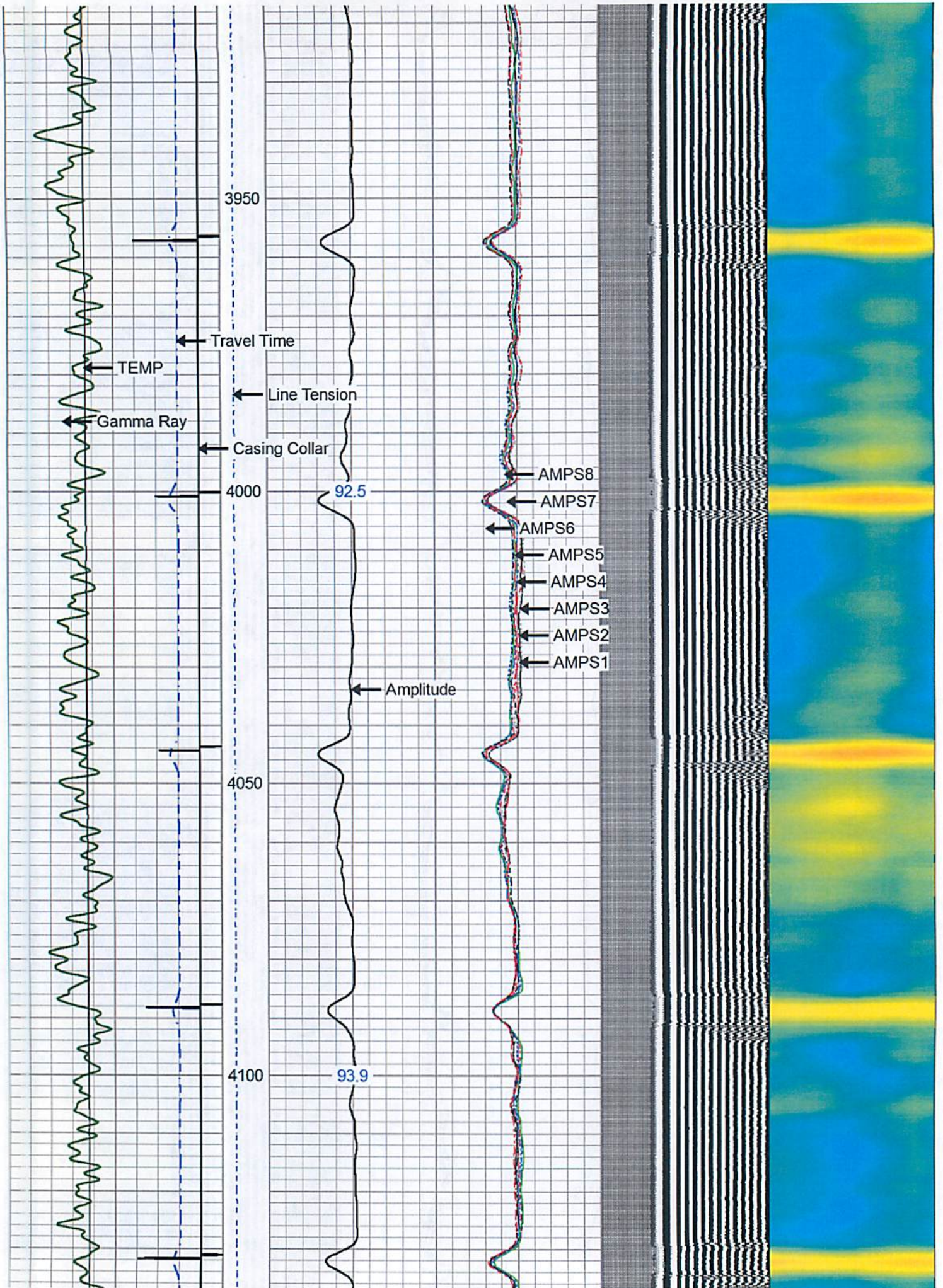


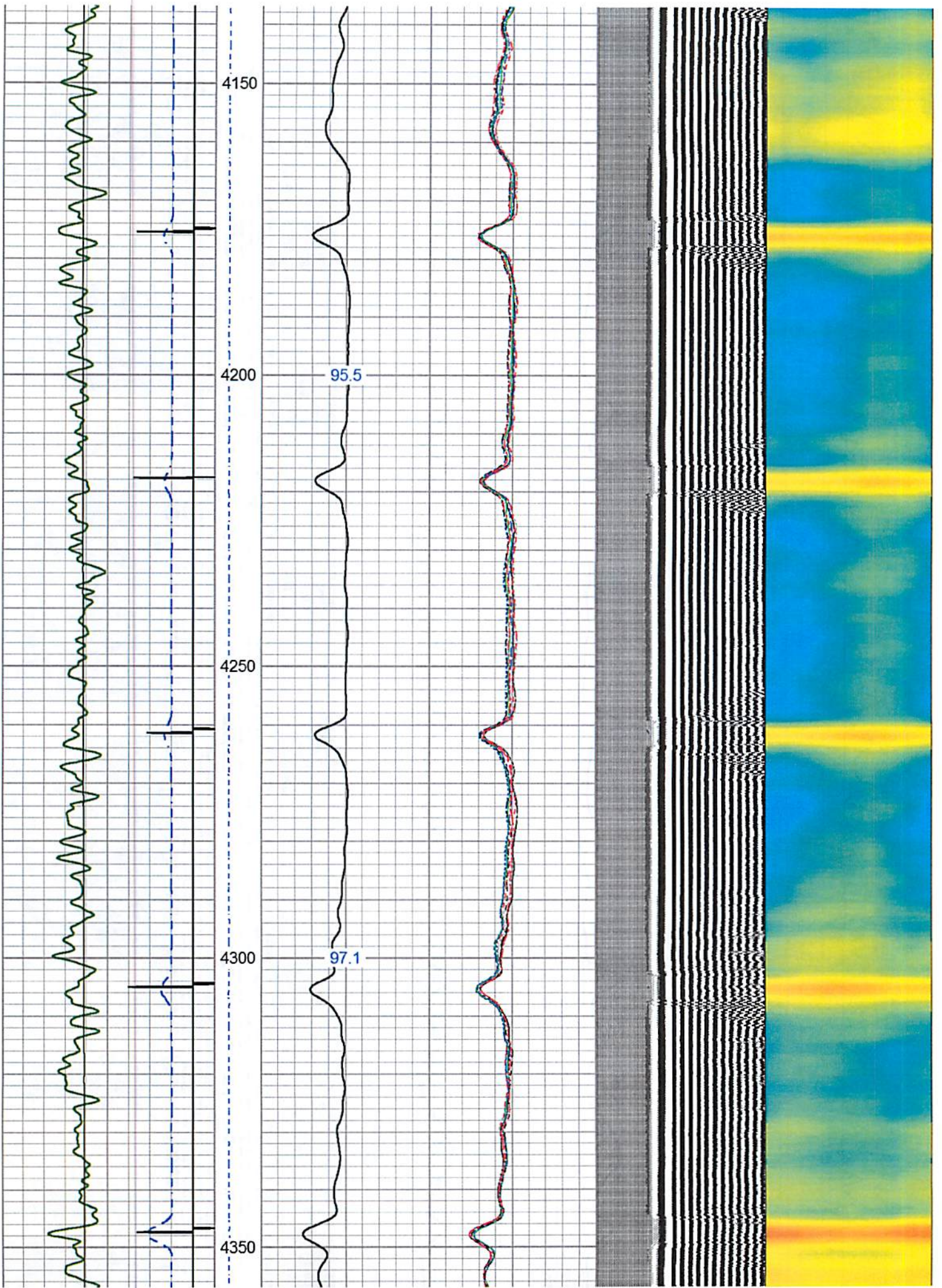


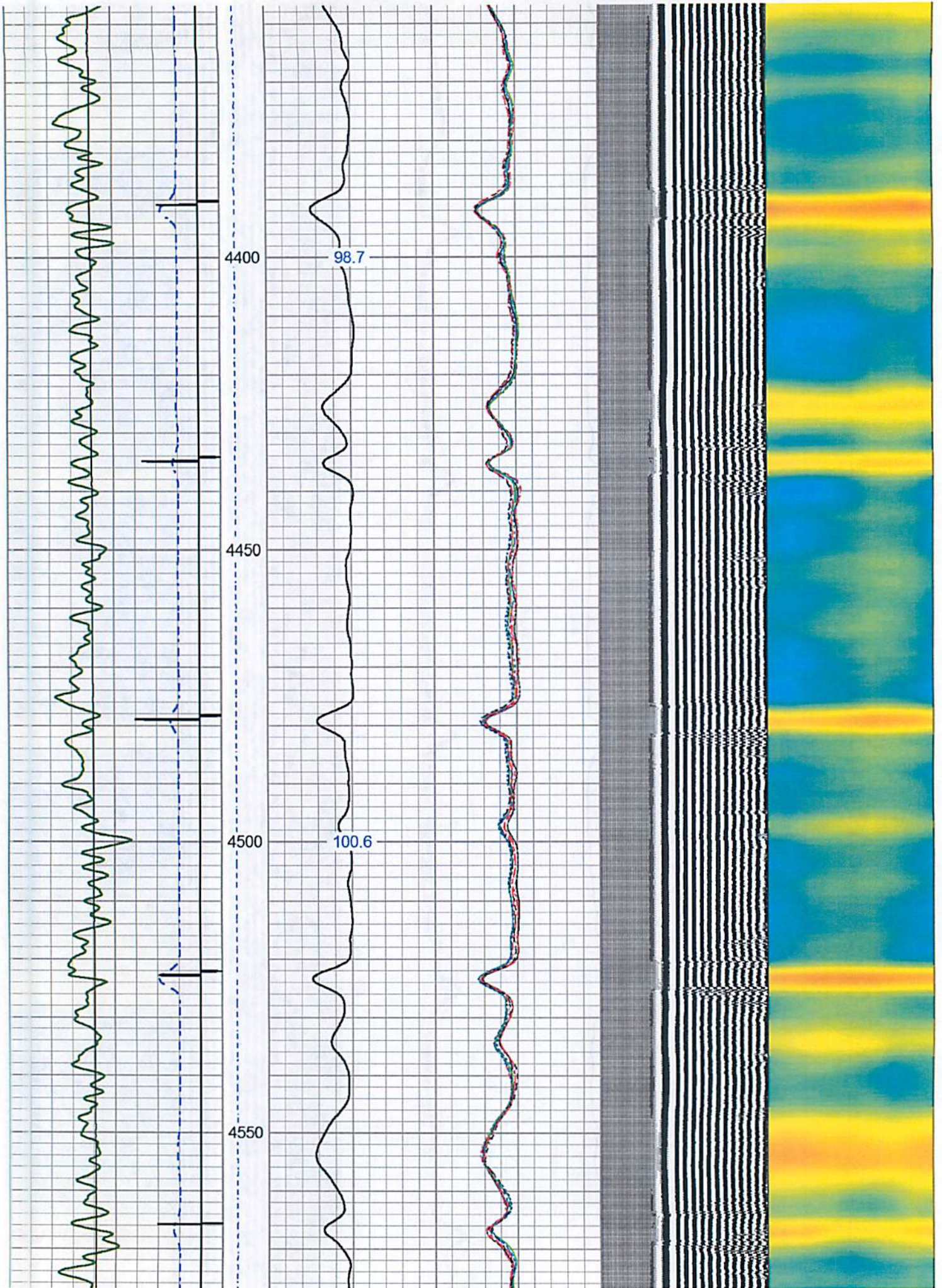


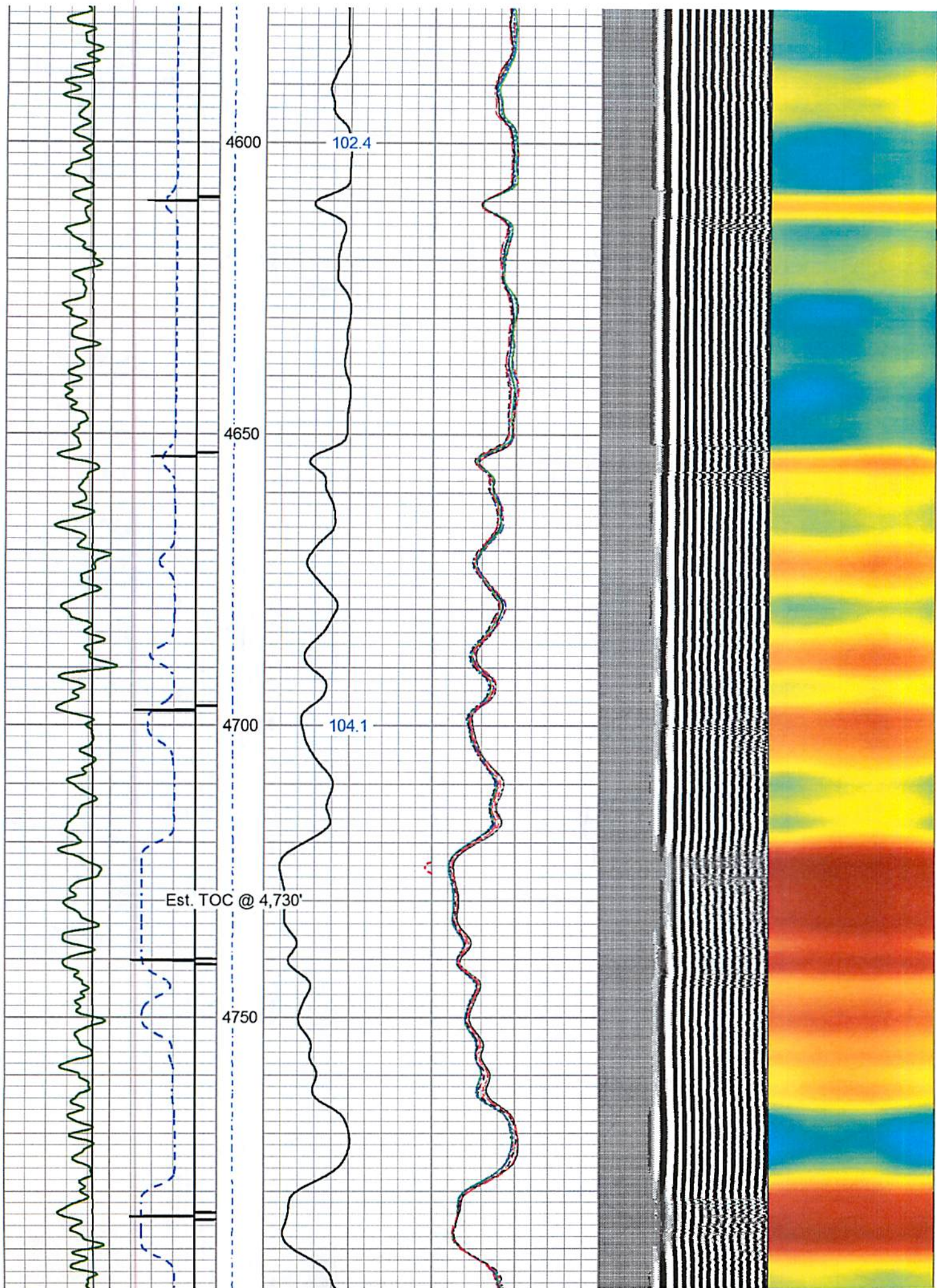


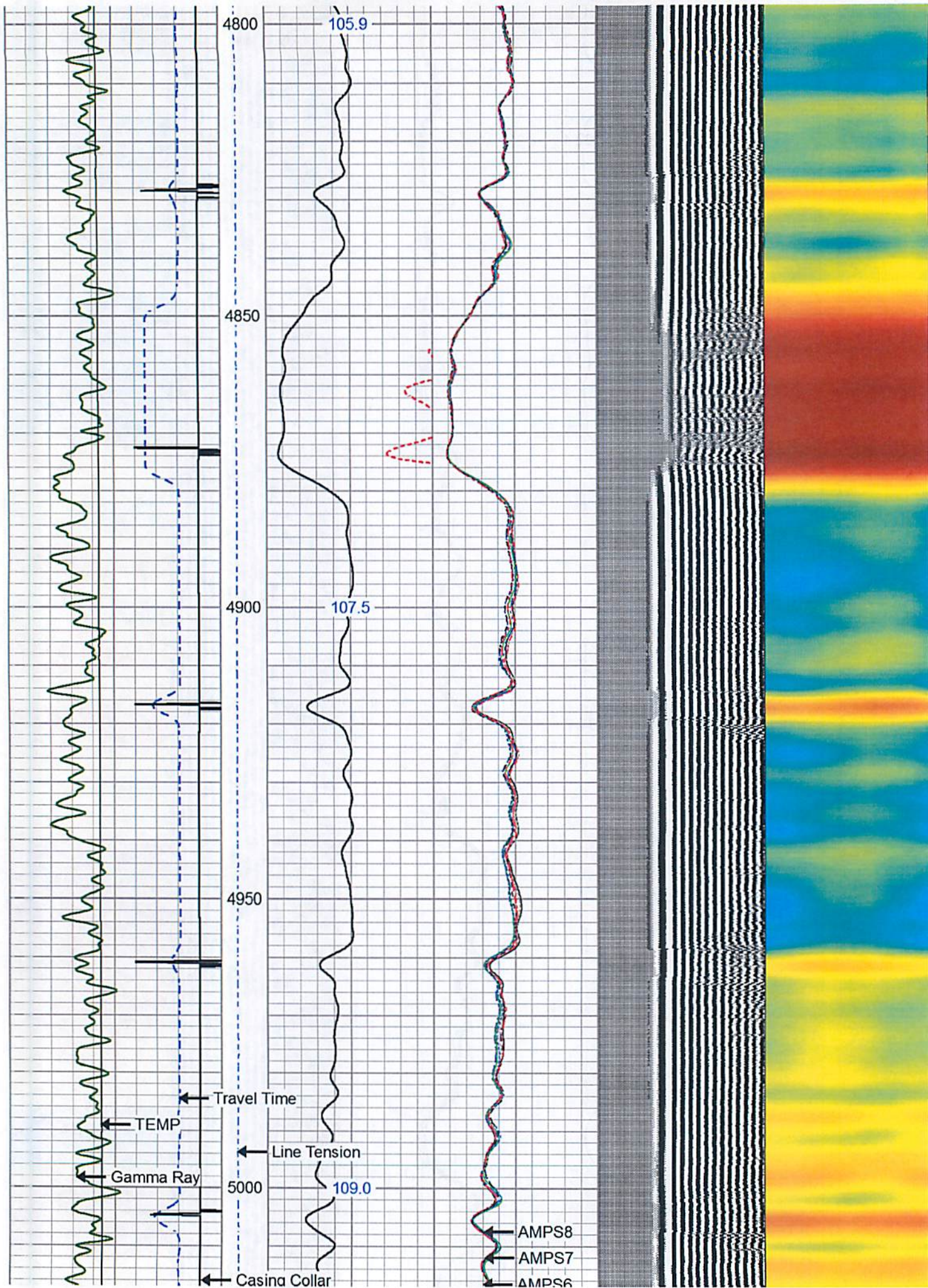


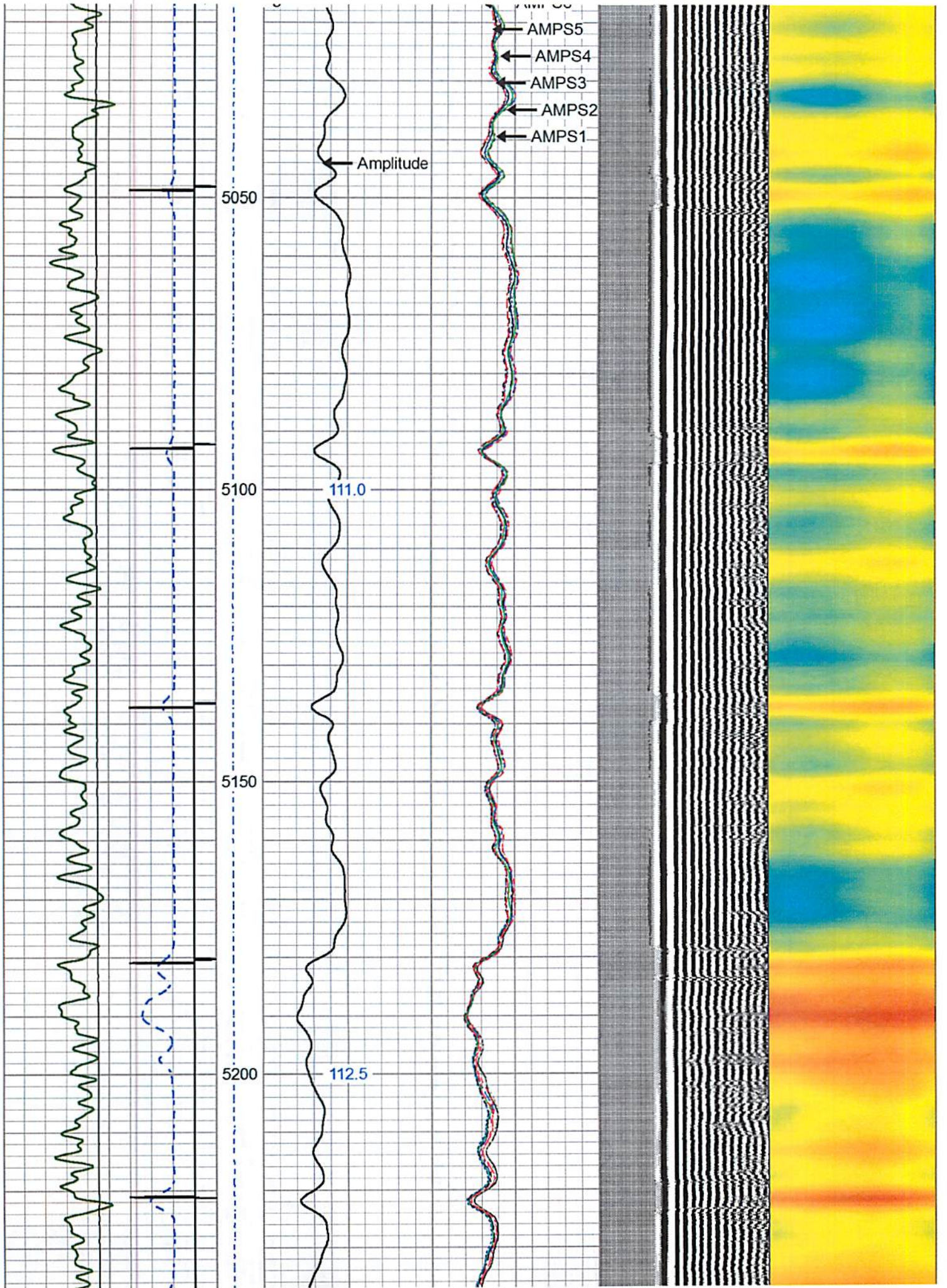


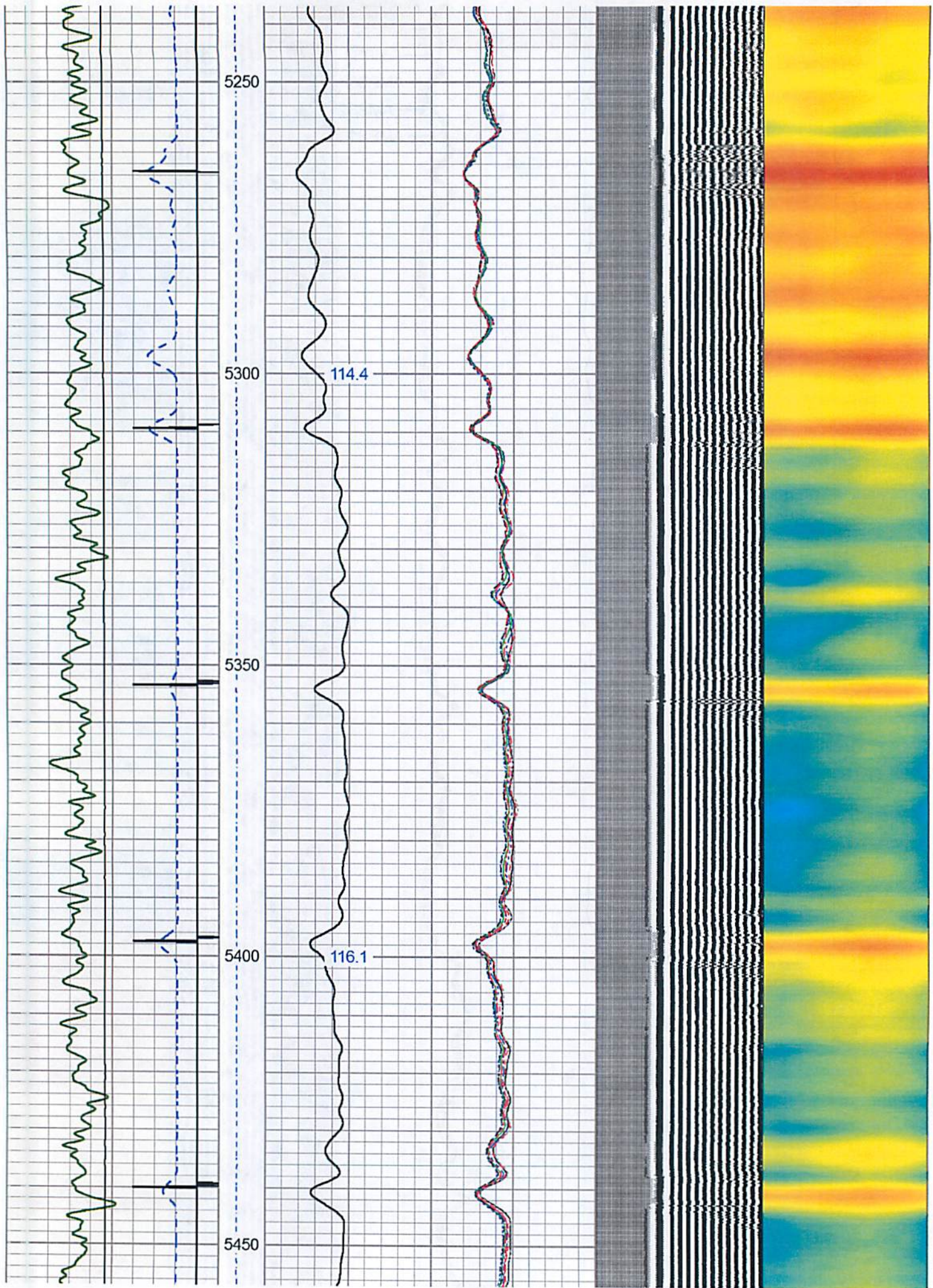


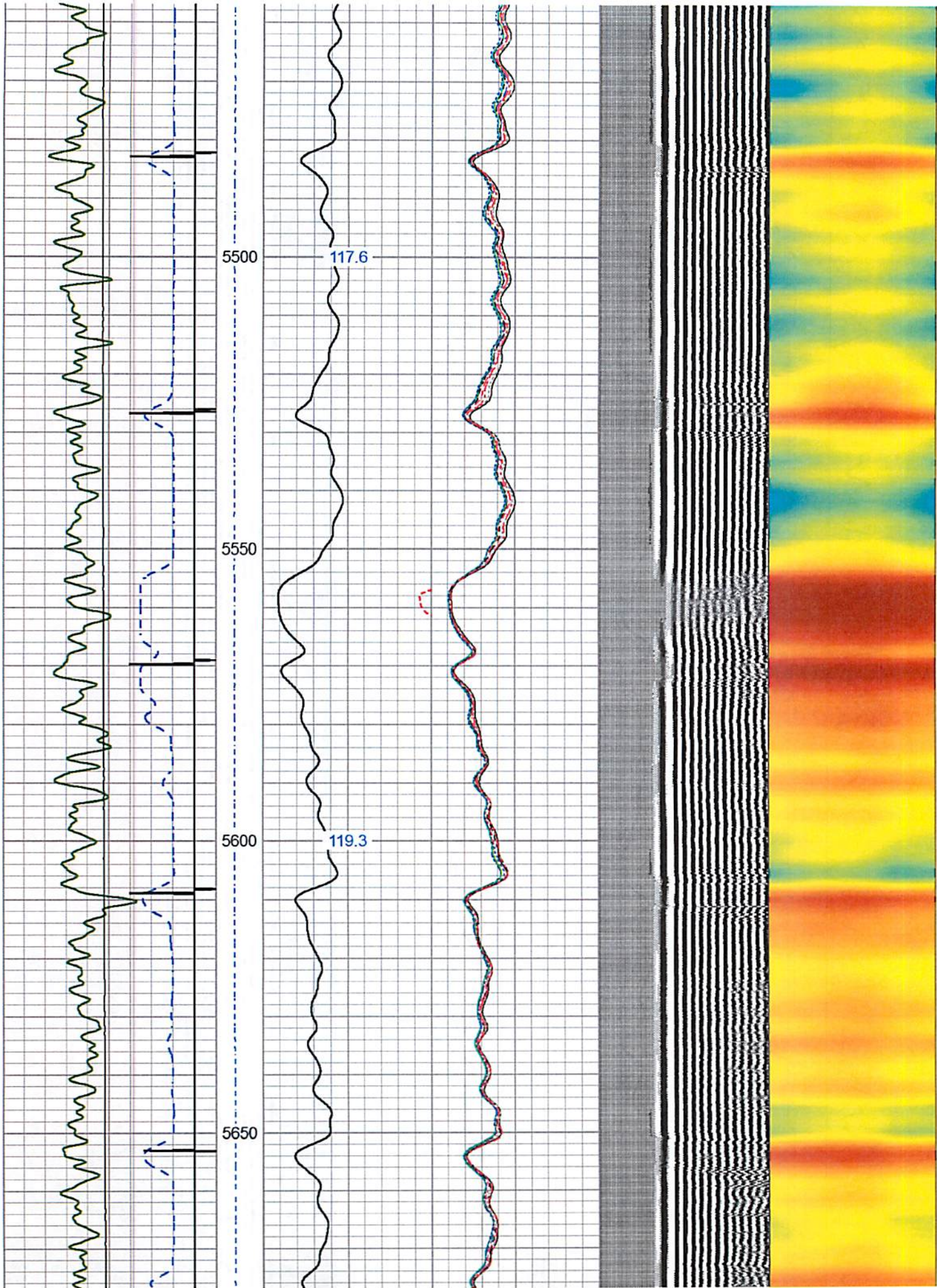


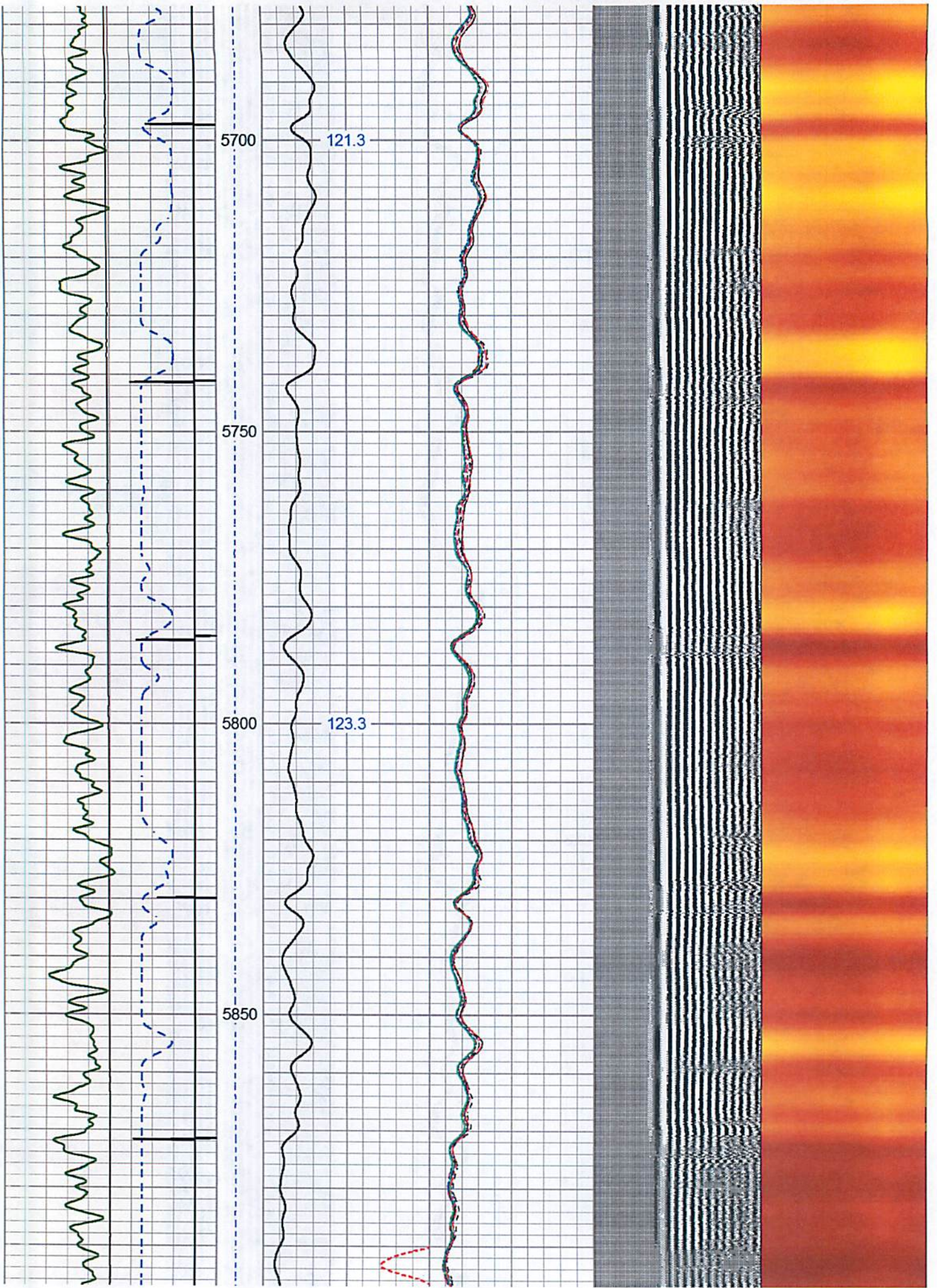


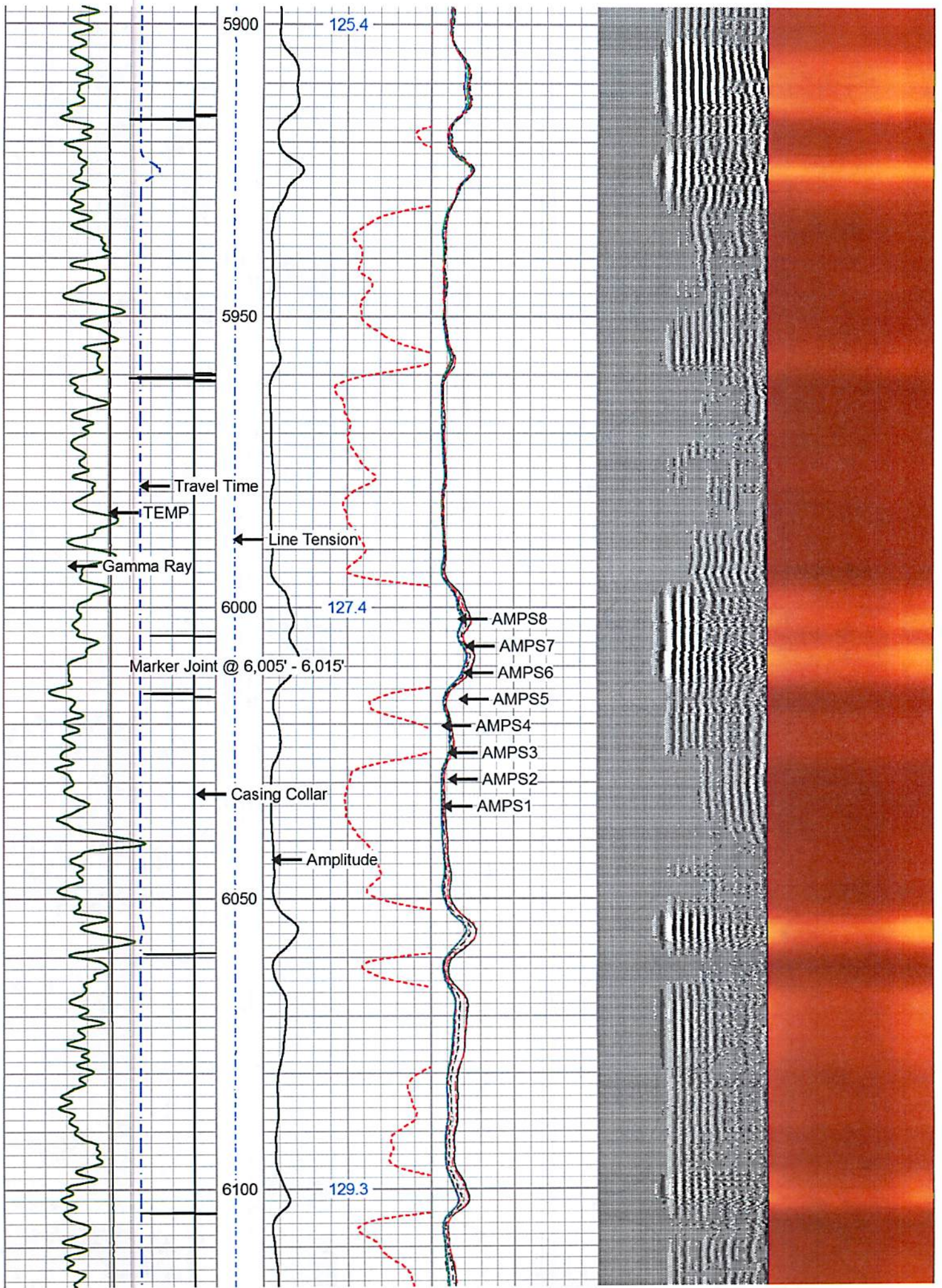


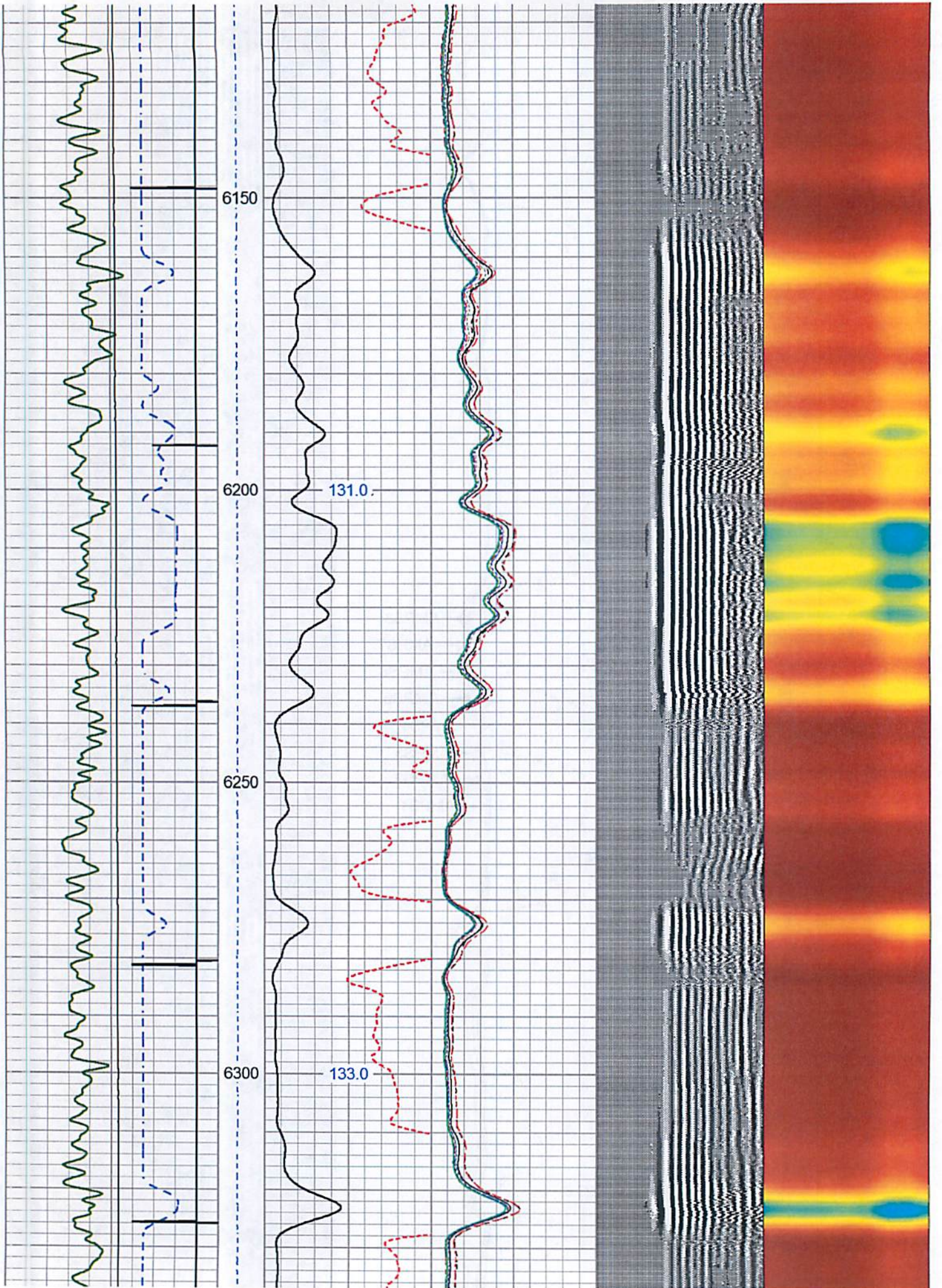


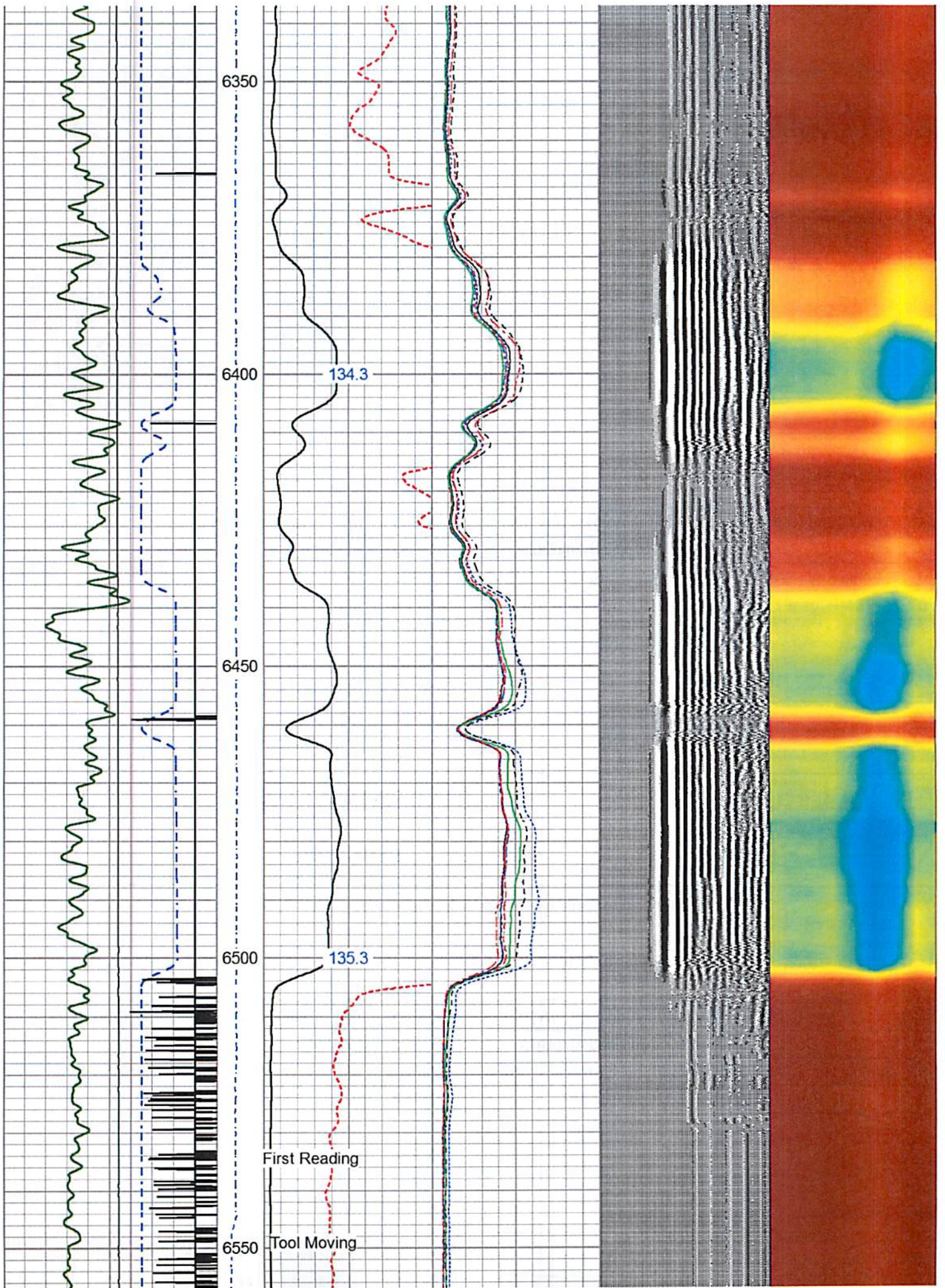


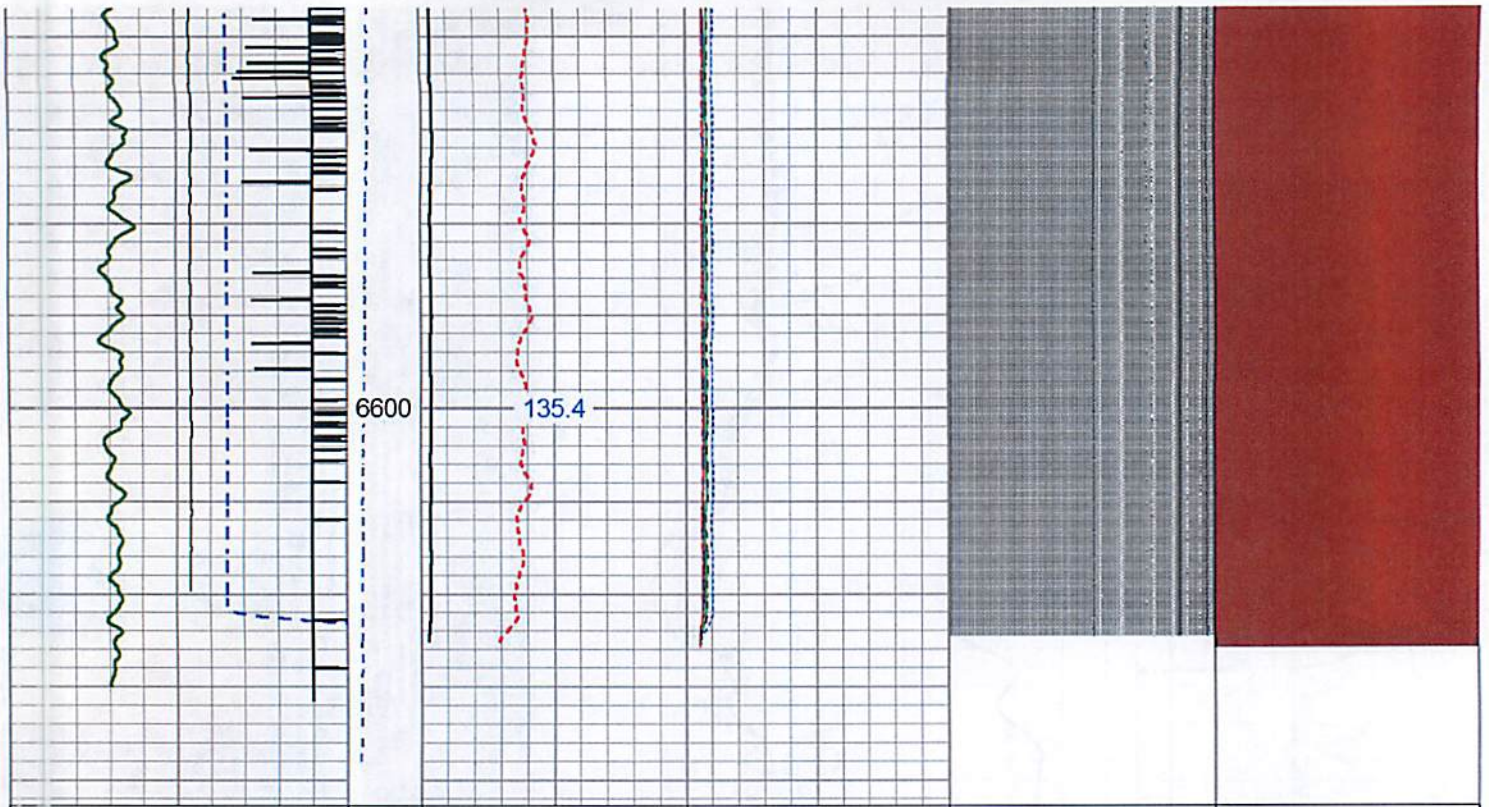












420	Travel Time (usec)	220	e Tens	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	(lb)	0	Amplified Amplitude	-5	AMPS2	150	200				
0	Gamma Ray (GAPI)	300	(2500)	0	(mV)	10	-5	AMPS3	150				
0	TEMP (degF)	250			TEMP		-5	AMPS4	150				
					(degF)		-5	AMPS5	150				
							-5	AMPS6	150				
							-5	AMPS7	150				
							-5	AMPS8	150				

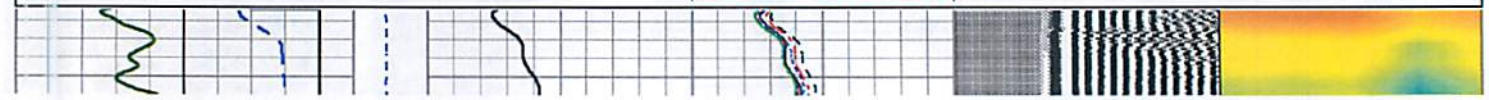
ALLIED HORIZONTAL WIRELINE SERVICES

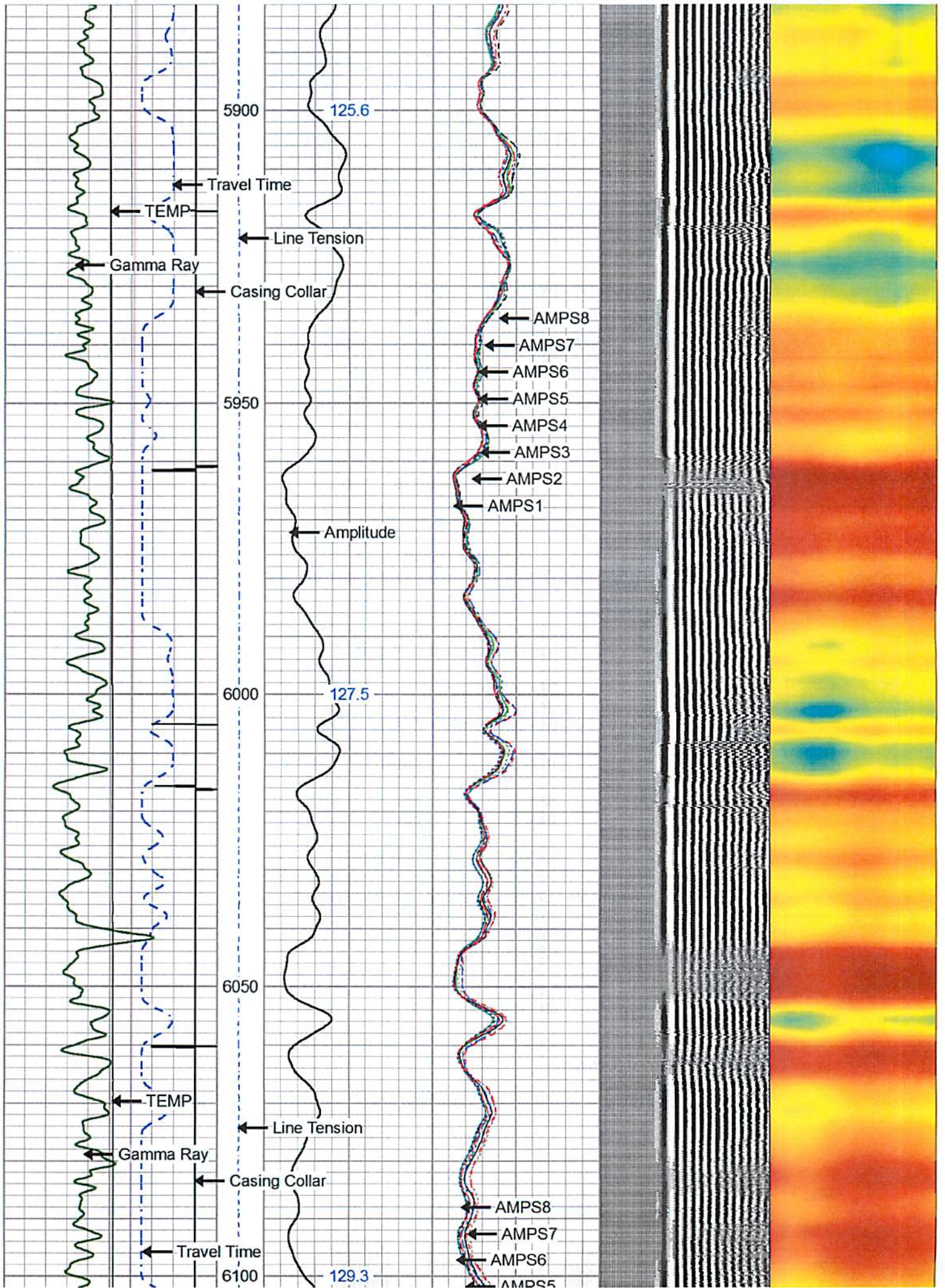
0 PSI REPEAT PASS

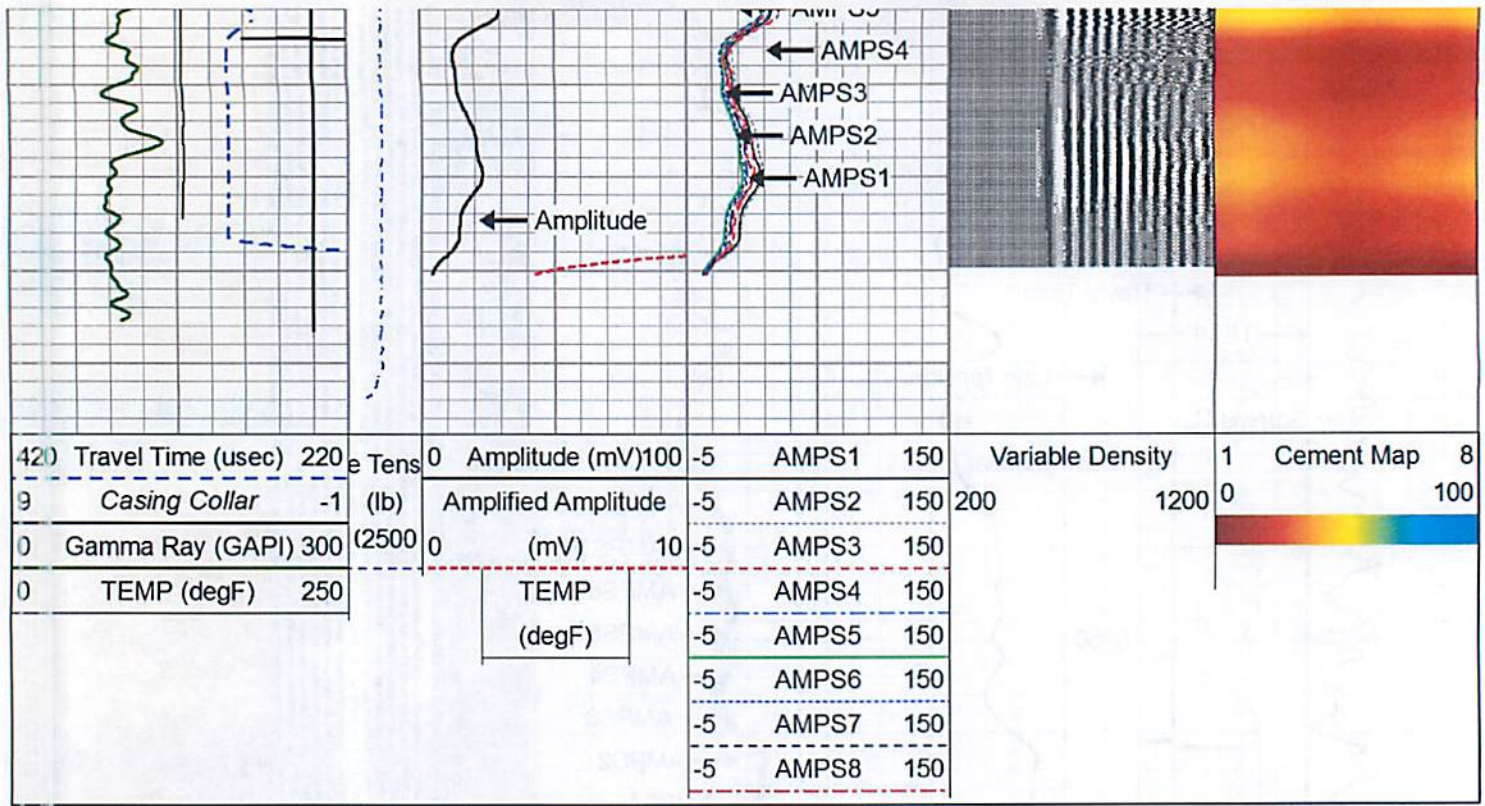
Scale 1:240

Database File c:\users\user\desktop\antero neat logs\antero resources_jameson_unit3h_rcbl.db
 Dataset Pathname pass2
 Presentation Format ahws_rcbl_jc
 Dataset Creation Thu Dec 13 09:52:10 2018
 Charted by Depth in Feet scaled 1:240

420	Travel Time (usec)	220	e Tens	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	(lb)	0	Amplified Amplitude	-5	AMPS2	150	200				
0	Gamma Ray (GAPI)	300	(2500)	0	(mV)	10	-5	AMPS3	150				
0	TEMP (degF)	250			TEMP		-5	AMPS4	150				
					(degF)		-5	AMPS5	150				
							-5	AMPS6	150				
							-5	AMPS7	150				
							-5	AMPS8	150				







Calibration Report

Database File c:\users\user\desktop\antero neat logs\antero resources_jameson_unit3h_rcbl.db
 Dataset Pathname Main Pass
 Dataset Creation Thu Dec 13 12:01:35 2018

Gamma Ray Calibration Report

Serial Number: FW1408-38 Corr
 Tool Model: GC_C3
 Performed: Thu May 25 15:00:07 2017
 Calibrator Value: 1636.0 GAPI
 Background Reading: 40.1 cps
 Calibrator Reading: 1964.2 cps
 Sensitivity: 0.8503 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1406-126
 Tool Model: RBTC3 Temp
 Calibration Casing Diameter: 5.500 in
 Calibration Depth: 593.242 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.007	0.249	1.000	72.000	277.183	2.856
CAL	-0.010	0.383				
5'	-0.005	0.223	1.000	72.000	311.666	2.543
SUM						
S1	-0.007	0.260	0.000	100.000	374.196	2.567
S2	-0.007	0.257	0.000	100.000	379.022	2.573
S3	-0.007	0.252	0.000	100.000	386.424	2.524

S4	-0.007	0.248	0.000	100.000	391.647	2.824
S5	-0.007	0.242	0.000	100.000	402.079	2.618
S6	-0.007	0.241	0.000	100.000	403.656	2.686
S7	-0.007	0.245	0.000	100.000	397.276	2.597
S8	-0.007	0.252	0.000	100.000	387.100	2.541

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.010	0.383	1.000	0.000

Air Zero Calibration, performed Thu Feb 15 08:40:59 2018:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Offset	
3'	0.000		0.000		0.000	
5'	0.000		0.000		0.000	
SUM						
S1	0.000		0.000		0.000	
S2	0.000		0.000		0.000	
S3	0.000		0.000		0.000	
S4	0.000		0.000		0.000	
S5	0.000		0.000		0.000	
S6	0.000		0.000		0.000	
S7	0.000		0.000		0.000	
S8	0.000		0.000		0.000	

Log Variables

Database: \users\user\desktop\antero neat logs\antero resources_jameson_unit3h_rcbl.db
Dataset field/well/run1/Main Pass/_vars_

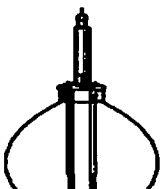
Top - Bottom

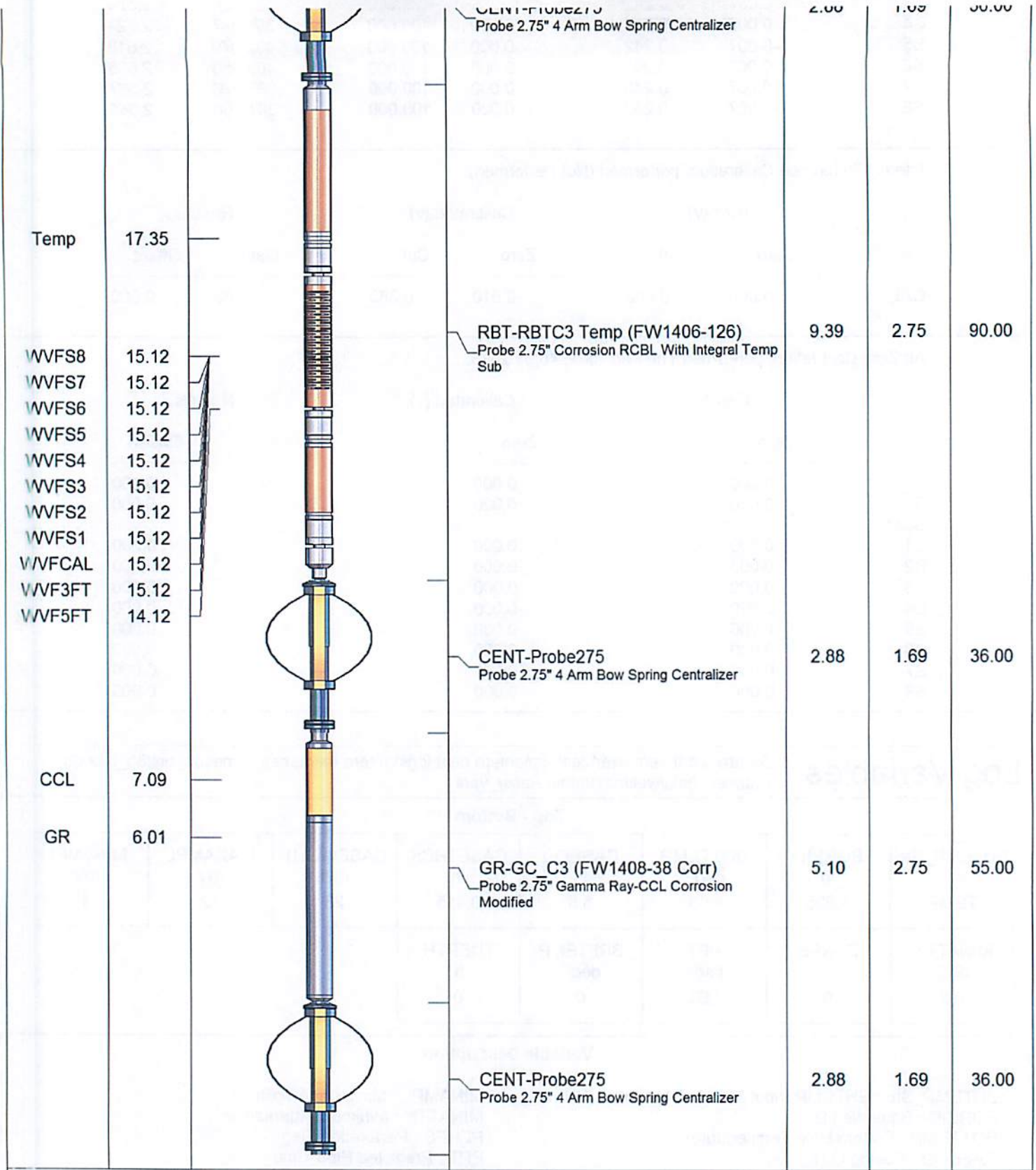
BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in	degF	in	in	lb/ft	mV	mV
	8.625	100	5.5	0.415	23	72	1
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft		usec	degF	ft			
0.8	0	260	0	0			

Variable Description

BHTEMP_Src : BHTEMP Input Source Selector
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
CASEWGHT : Casing Weight
MAXAMPL : Maximum Amplitude

MINAMPL : Minimum Amplitude
MINATTN : Minimum Attenuation
PERFS : Perforation Flag
PPT : Predicted Pipe Time
SRFTEMP : Surface Temperature
TDEPTH : Total Depth

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			CHD-STNDRD (GOI) Standard Cable Head	1.00	1.69	10.00
			CENT Probe 275	2.88	1.69	26.00



Dataset:	antero resources_jameson_unit3h_rcbl.db: field/well/run1/Main Pass		
Total length:	24.15 ft		
Total weight:	263.00 lb		
O.D.:	2.75 in		

<h1>ALLIED HORIZONTAL</h1>	Company	Antero Resources
	Well	Jameson 3H
	Field	Marcellus
	Country	USA

WIRELINE SERVICES

County

City

State

West Virginia

Country