



# RADIAL BOND LOG

Company ANTERO  
Well GRIBBEN UNIT 1H  
Field MARCELLUS  
County WETZEL  
State WV

Company ANTERO  
Well GRIBBEN UNIT 1H  
Field MARCELLUS  
County WETZEL State WV

Location: API #: 47103034260000  
Other Services GR CCL  
Elevation  
Permanent Datum GL Elevation 30'  
Log Measured From KB  
Drilling Measured From KB  
K.B. 1338'  
D.F. 1337'  
G.L. 1308'

Date	JAN-15-2022
Run Number	ONE
Depth Driller	21,698'
Depth Logger	7,480'
Bottom Logged Interval	7,464'
Top Log Interval	SURFACE
Open Hole Size	8.50"
Type Fluid	PRODUCED
Density / Viscosity	8.3#
Max. Recorded Temp.	146°F
Estimated Cement Top	4,734'
Time Well Ready	1815
Time Logger on Bottom	1905
Equipment Number	TK 111
Location	CHARLEROI, PA
Recorded By	D. JOSEPHIK
Witnessed By	REDGIE TAYLOR

Borehole Record				Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	13.375"	54.5#	SURFACE	624'
Prot. String	9.625"	36#	SURFACE	2,626'
Production String	5.5"	20#	SURFACE	21,678'
Liner				

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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

LOG CORRELATED TO MARKER JOINT ( 6340 - 6350 ) PER CASING TALLY

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WV Department of Environmental Protection

100% FREE = 71.9MV  
100% BOND = 2.2MV  
ETOC = 4,734'

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
CHD	23.96		CHD-Titan	1.02	1.44	1.00
CENT	22.94		Standard 1 7/16" Cable Head			

				CENT-BC275-0000 Probe 2.75" Bowspring Centralizer	2.83	2.75	24.00
RBT HeadVolt	20.11 20.05						
Temp	17.20						
WVFS8	14.97			RBT-Probe275T (FW1312-32) Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS7	14.97						
WVFS6	14.97						
WVFS5	14.97						
WVFS4	14.97						
WVFS3	14.97						
WVFS2	14.97						
WVFS1	14.97						
WVF3FT	14.97						
WVF5FT	13.97						
CENT	10.72						
WVFCAL	10.72						
HEADVOLT	10.72			CENT-BC275-0000 Probe 2.75" Bowspring Centralizer	2.83	2.75	24.00
GR	7.89						
CCL	6.98						
GR	5.64			GR-Probe (FW1211-86) Probe 2 3/4" Logging Gamma Ray	4.78	2.75	57.00
CENT	3.10						
				CENT-BC275-0000 Probe 2.75" Bowspring Centralizer	2.83	2.75	24.00
Bull_Plug	0.27			Bull_Plug-1_7/16_GO Titan 1 7/16" Female Bull Plug	0.27	1.44	1.00

Dataset: antero\_dogwood\_gribben1h\_rcbl-1-15-22.db: field/well/RCBL/MAIN  
 Total length: 23.96 ft  
 Total weight: 221.00 lb  
 O.D.: 2.75 in



## MAIN LOG

1500 PSI APPLIED



Database File antero\_dogwood\_gribben1h\_rcbl-1-15-22.db  
 Dataset Pathname RCBL/MAIN  
 Presentation Format rcbl 2  
 Dataset Creation Sat Jan 15 19:26:24 2022  
 Charted by Depth in Feet scaled 1:240

295	Travel Time (usec)	195
9	Casing Collar	-1
0	Gamma Ray (GAPI)	150
0	Line Tension (lb)	5000
-100	LSPD (ft/min)	100

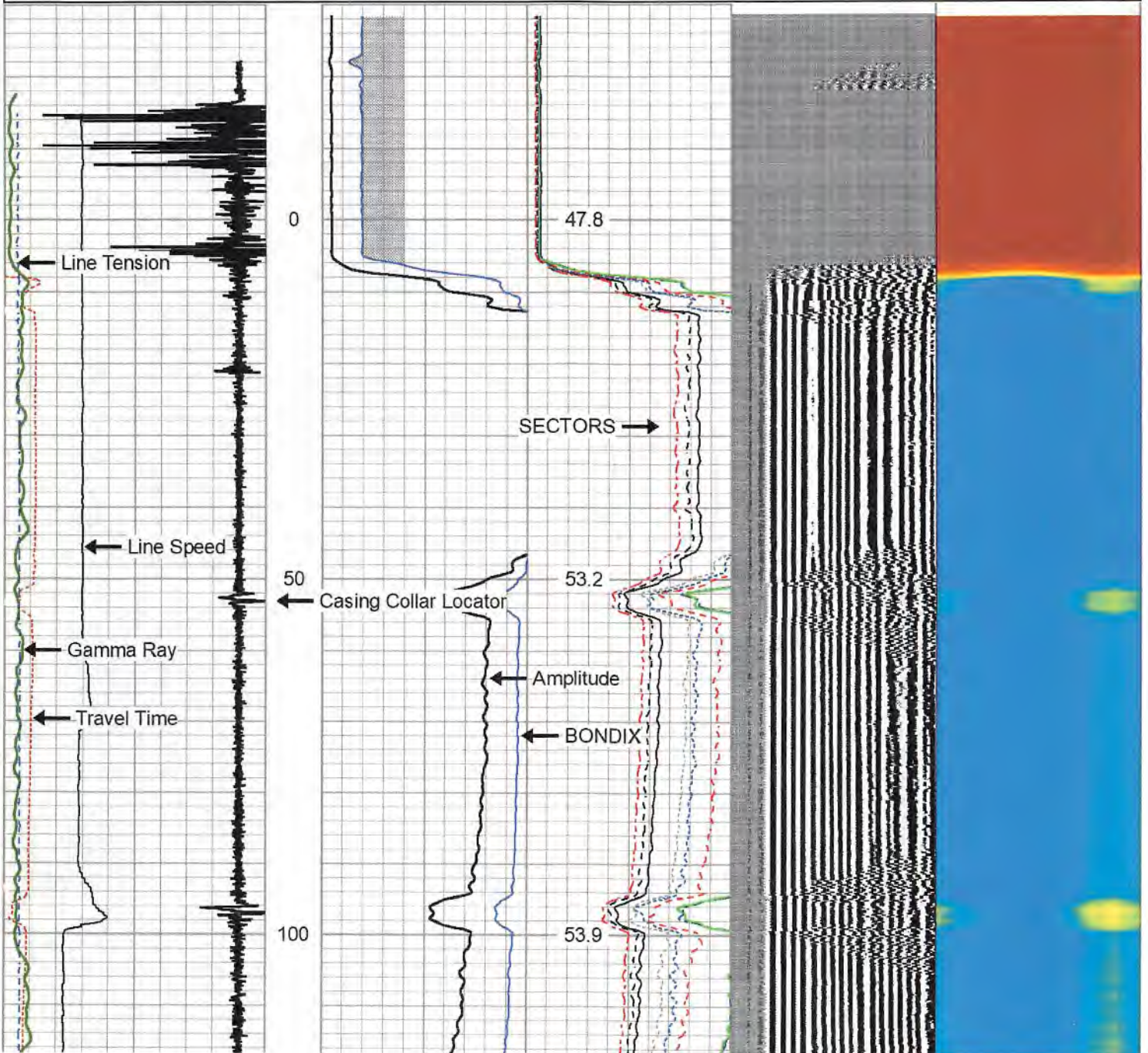
0	Amplitude (mV)	100	-5	Sector 1	150
1	BONDIX	0	-5	Sector 2	150
			-5	Sector 3	150
			-5	Sector 4	150
			-5	Sector 5	150
			-5	Sector 6	150
			-5	Sector 7	150
			-5	Sector 8	150

Variable Density  
 200 (usec) 1200

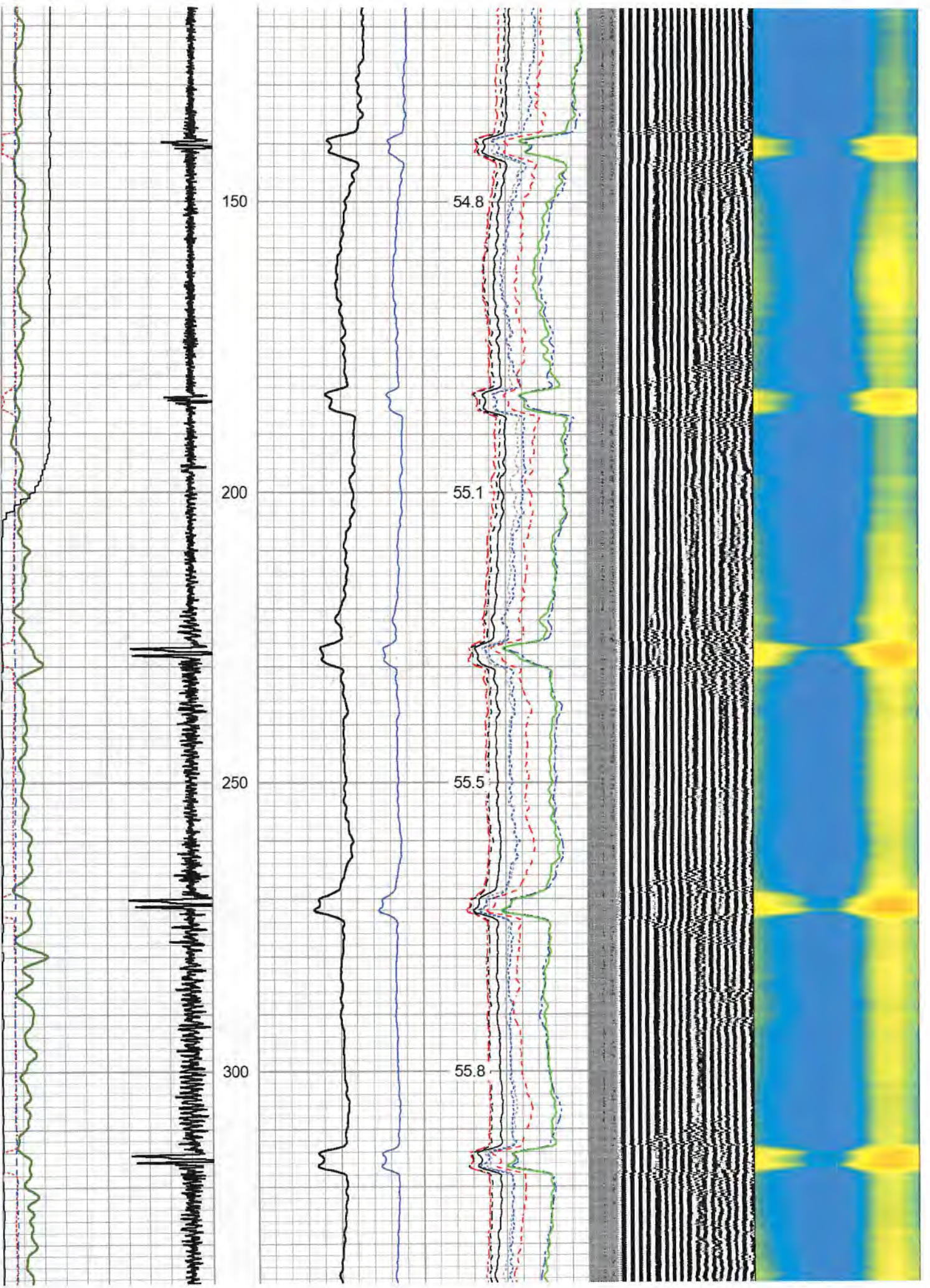
1 Cement Map 8

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 Environmental Protection

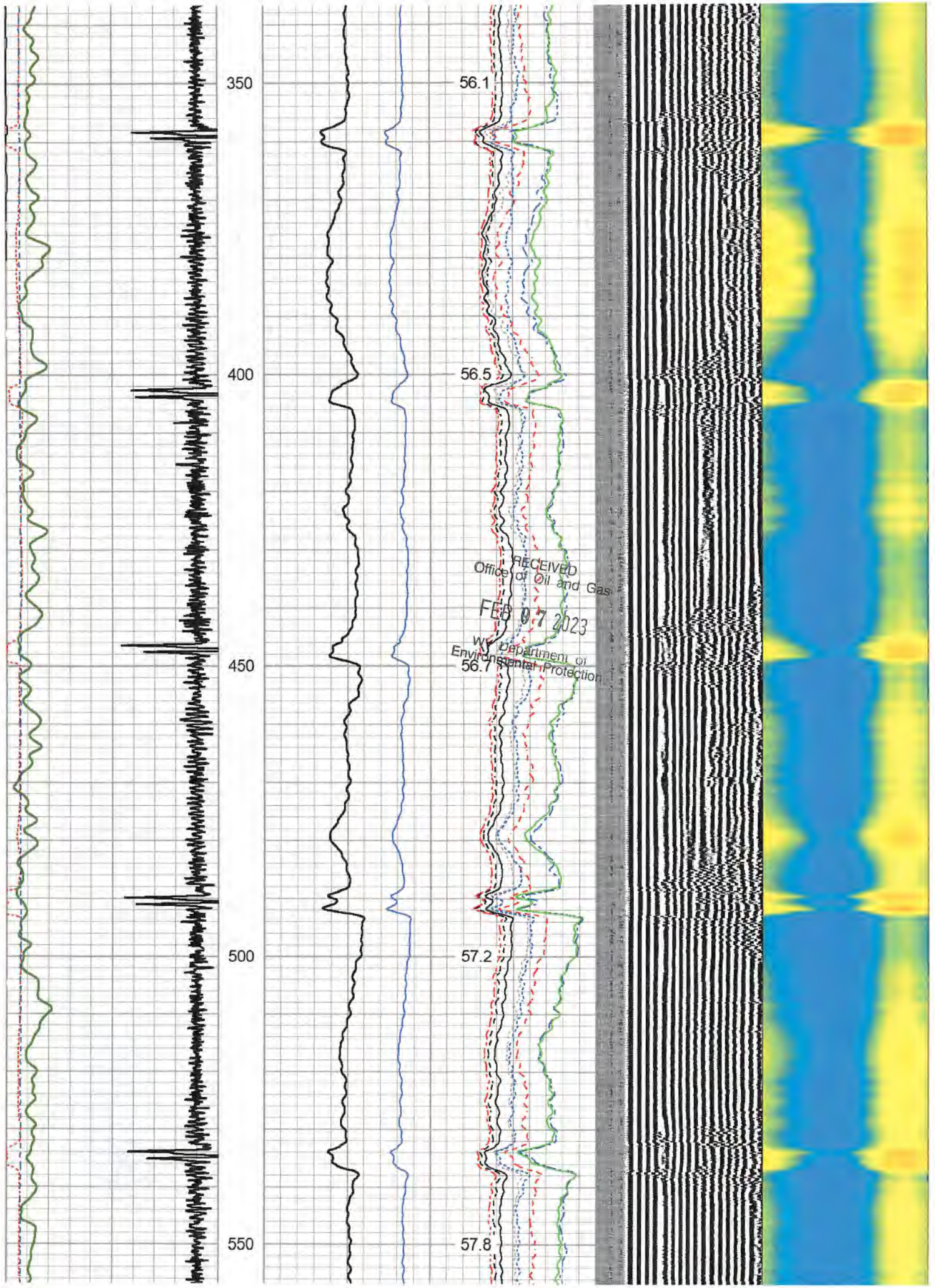
TEMP  
 (degF)



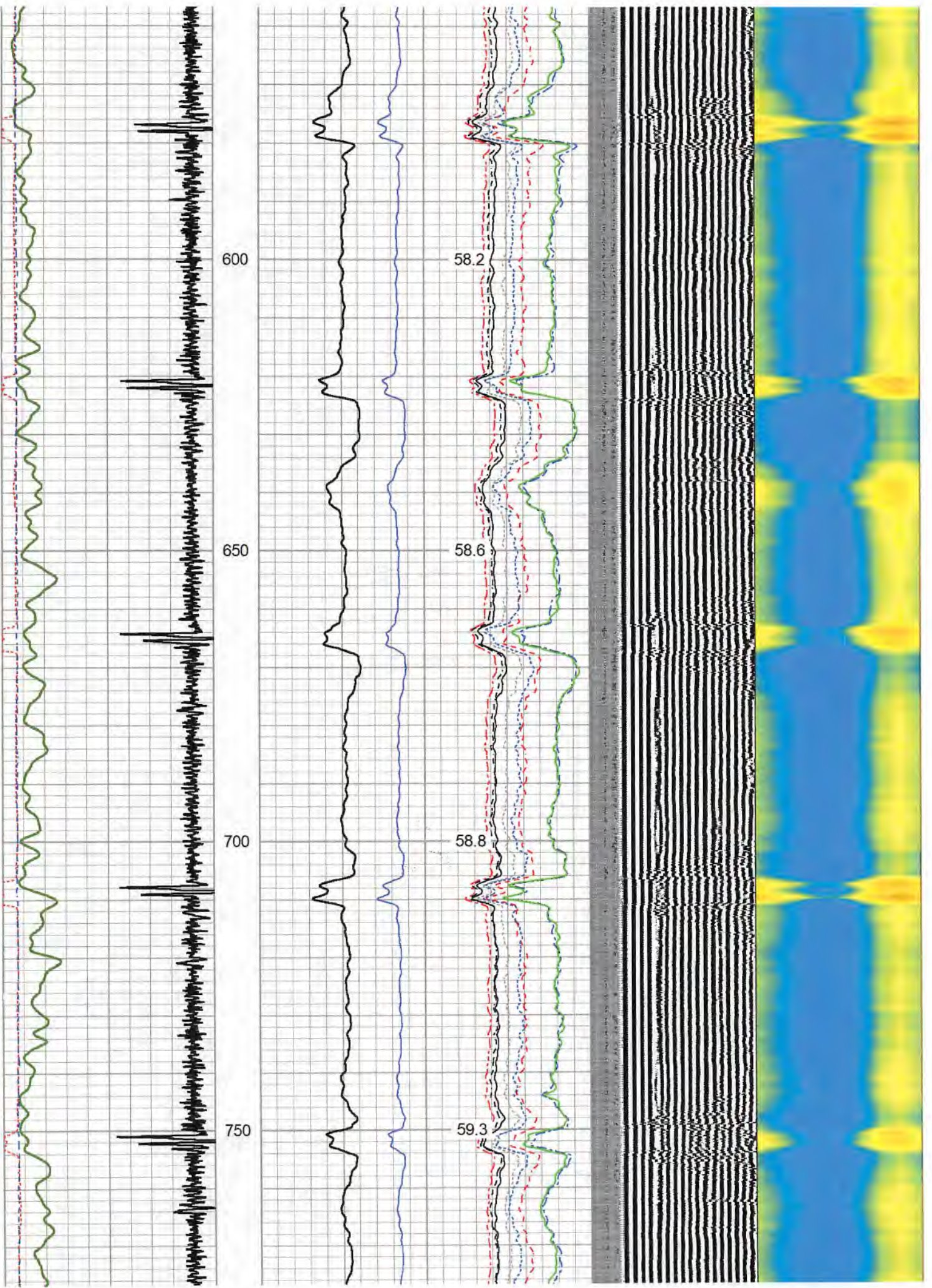




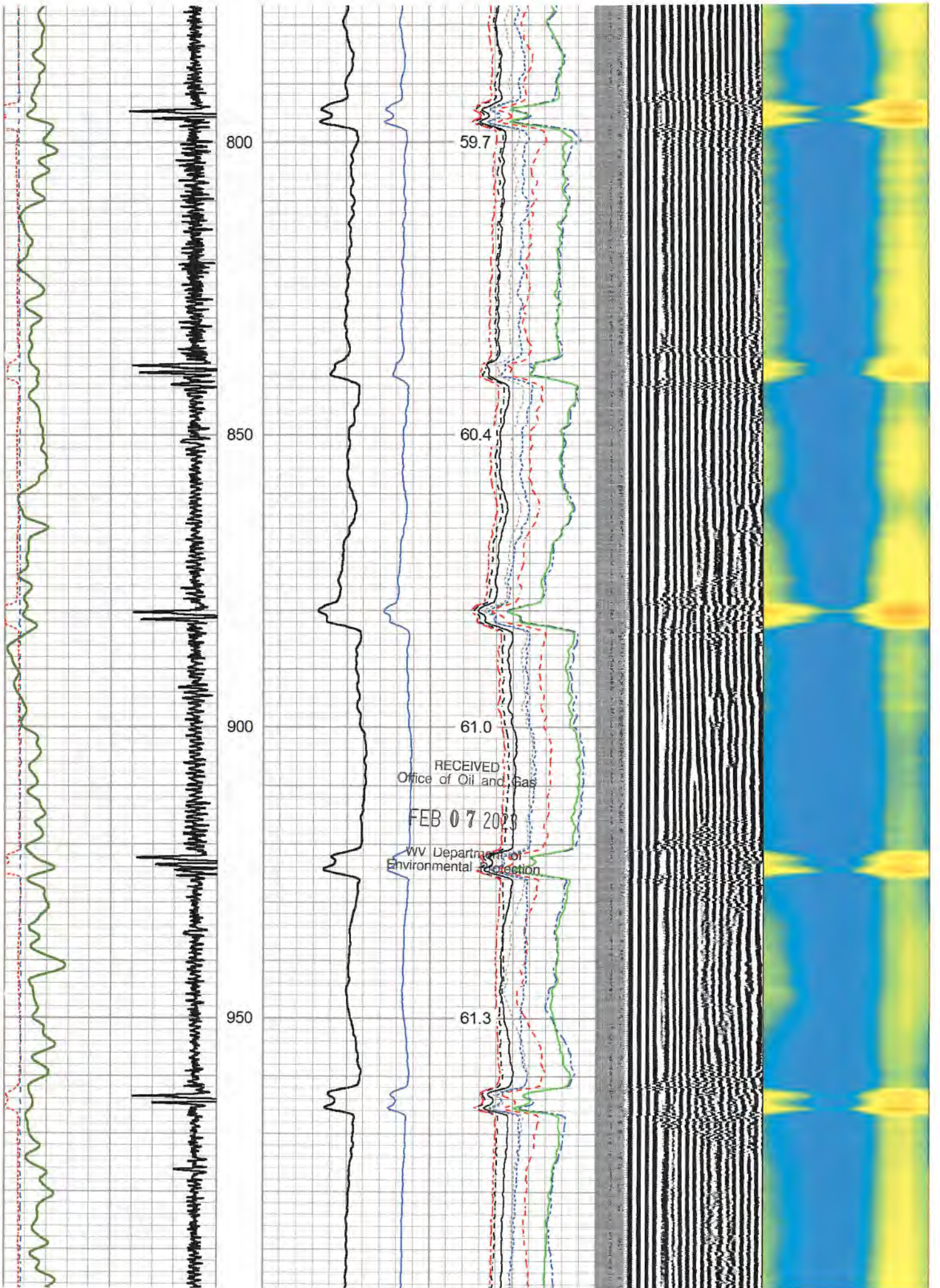








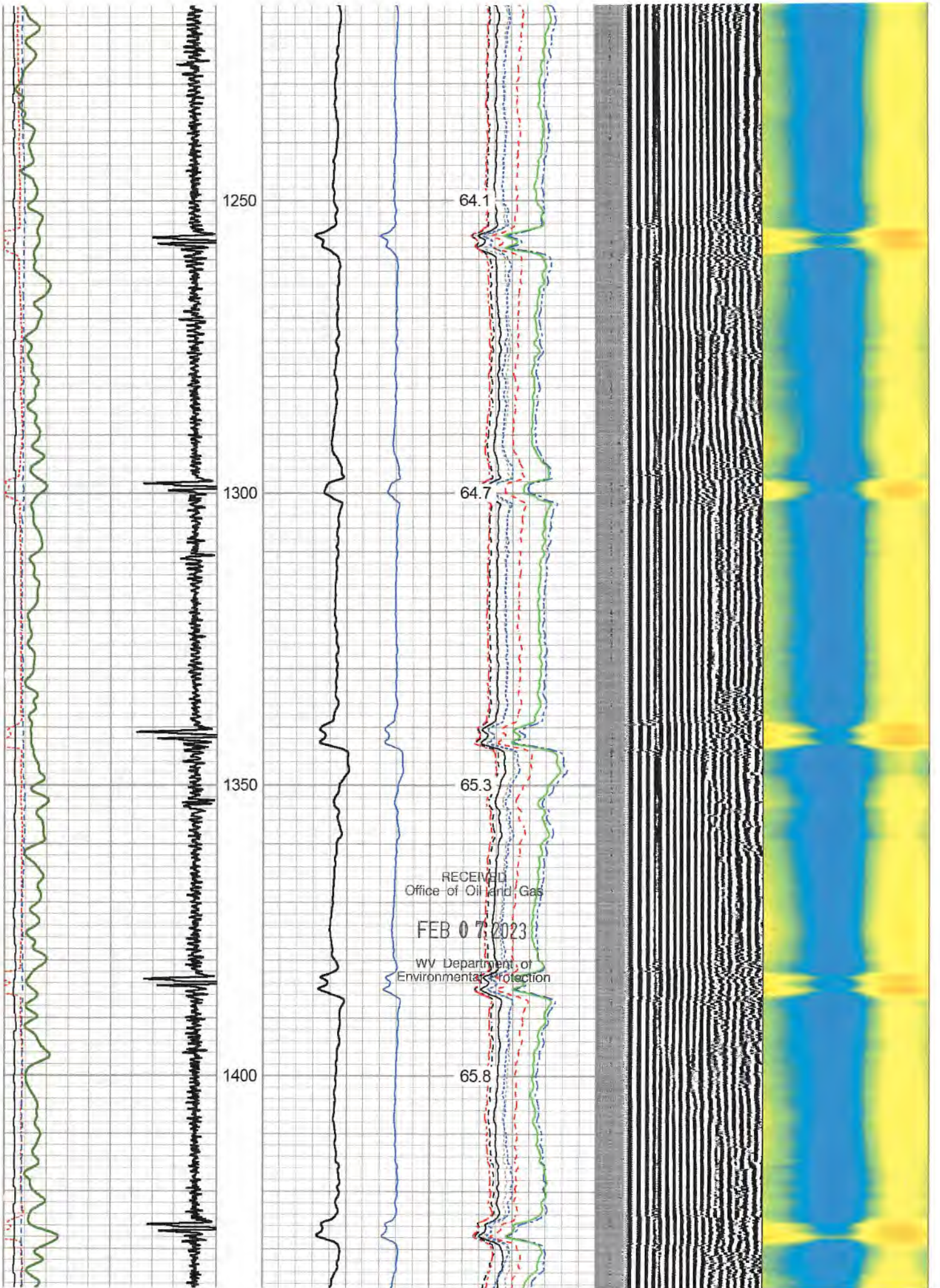




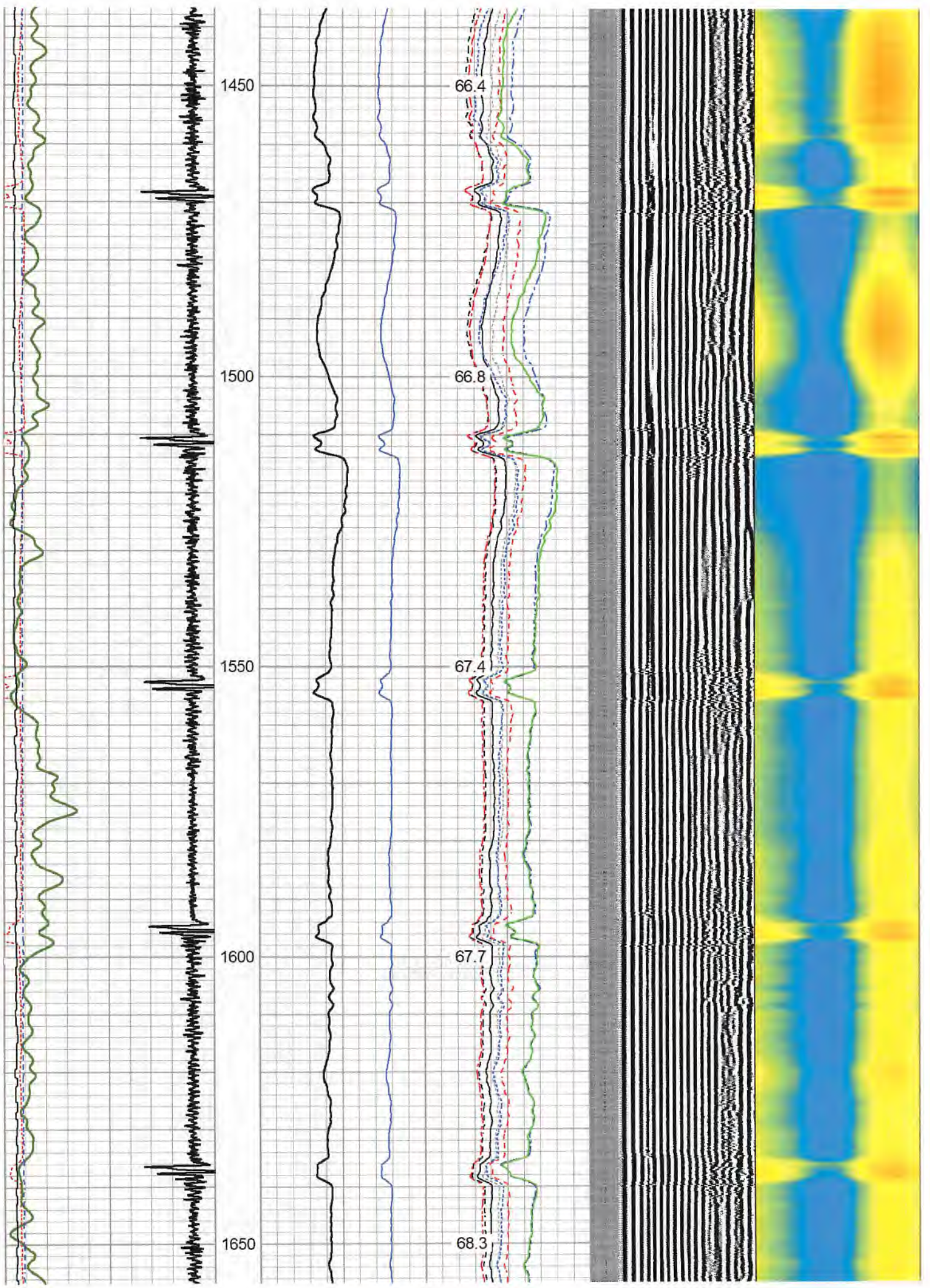




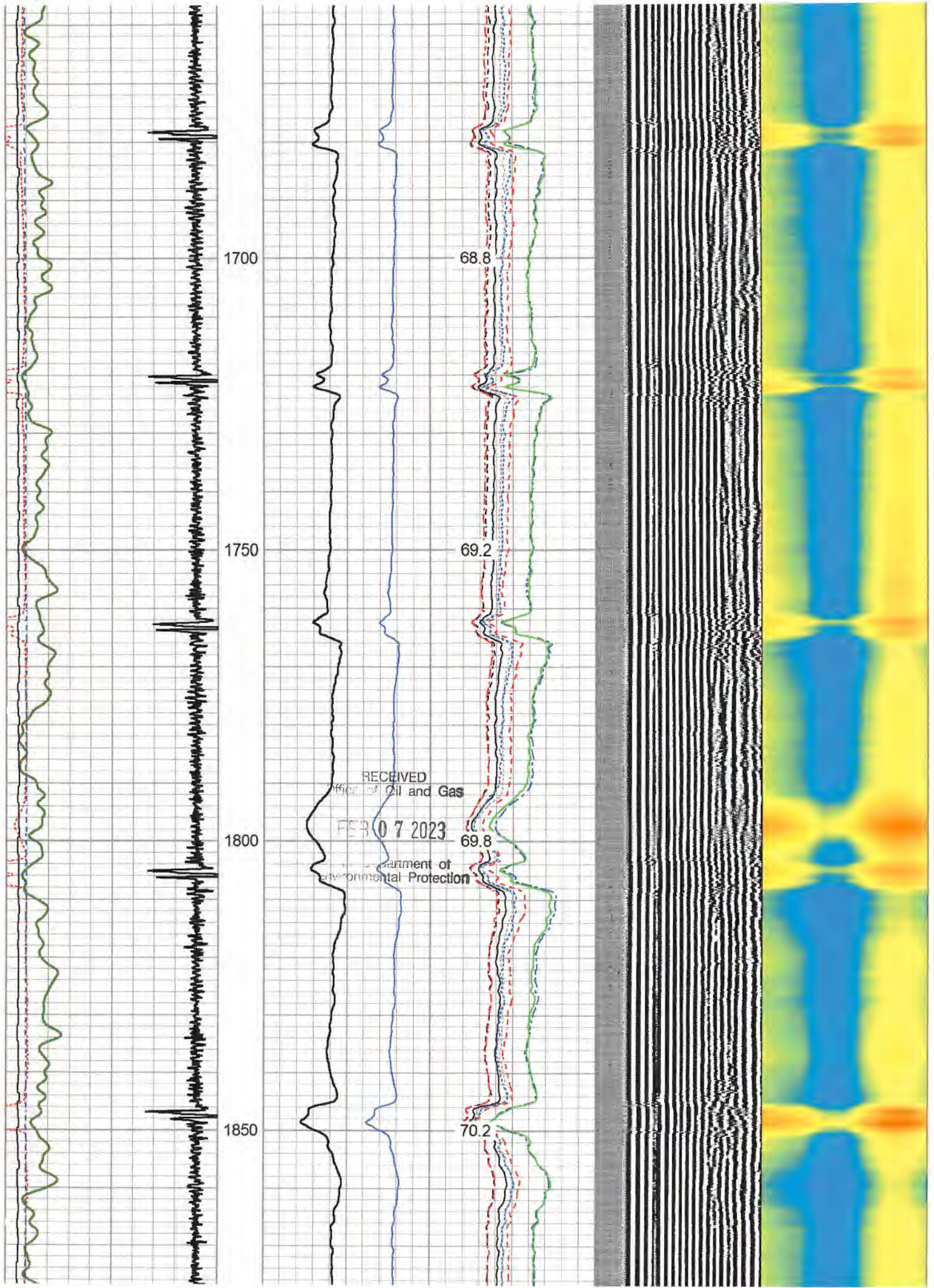




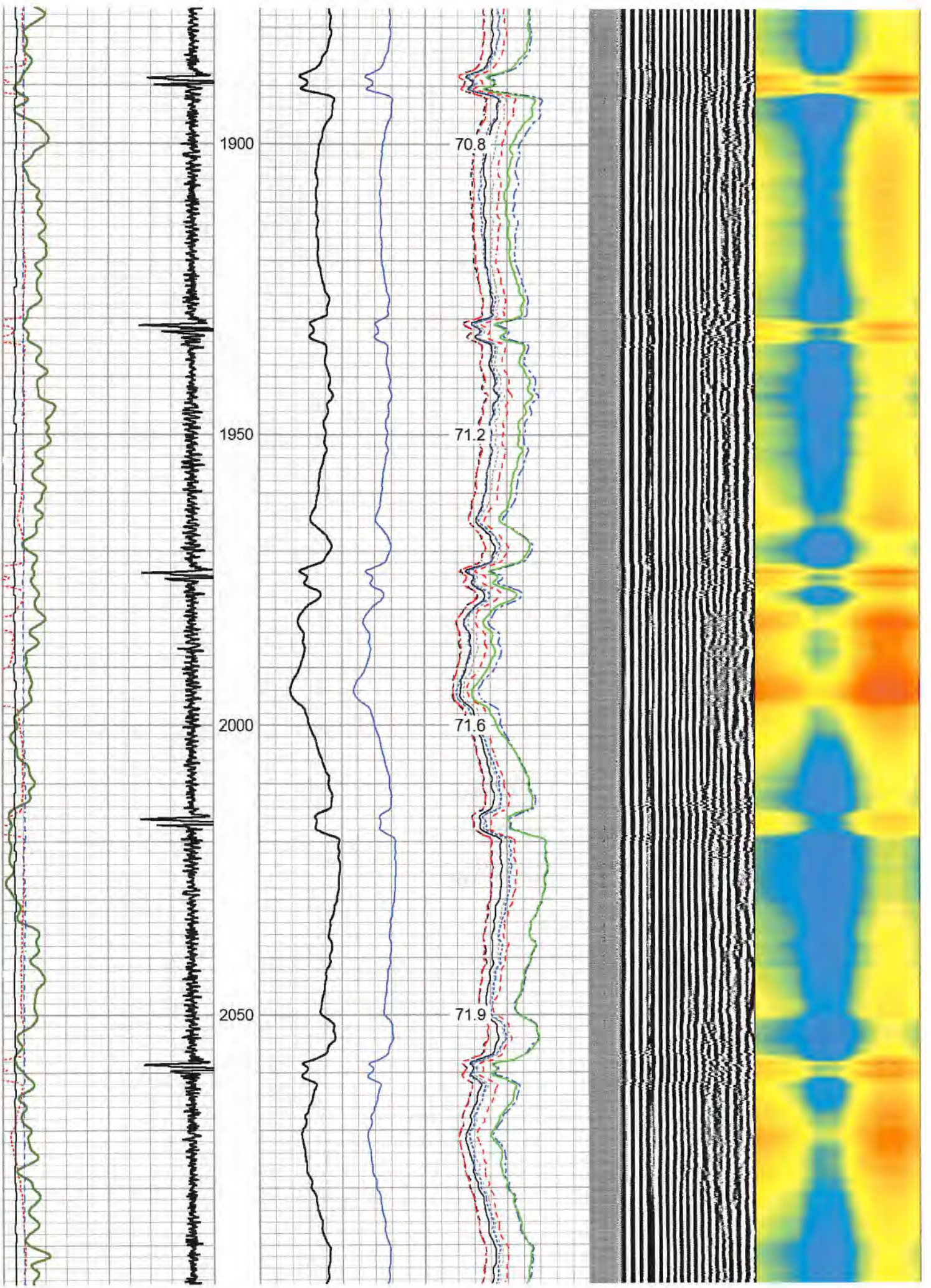




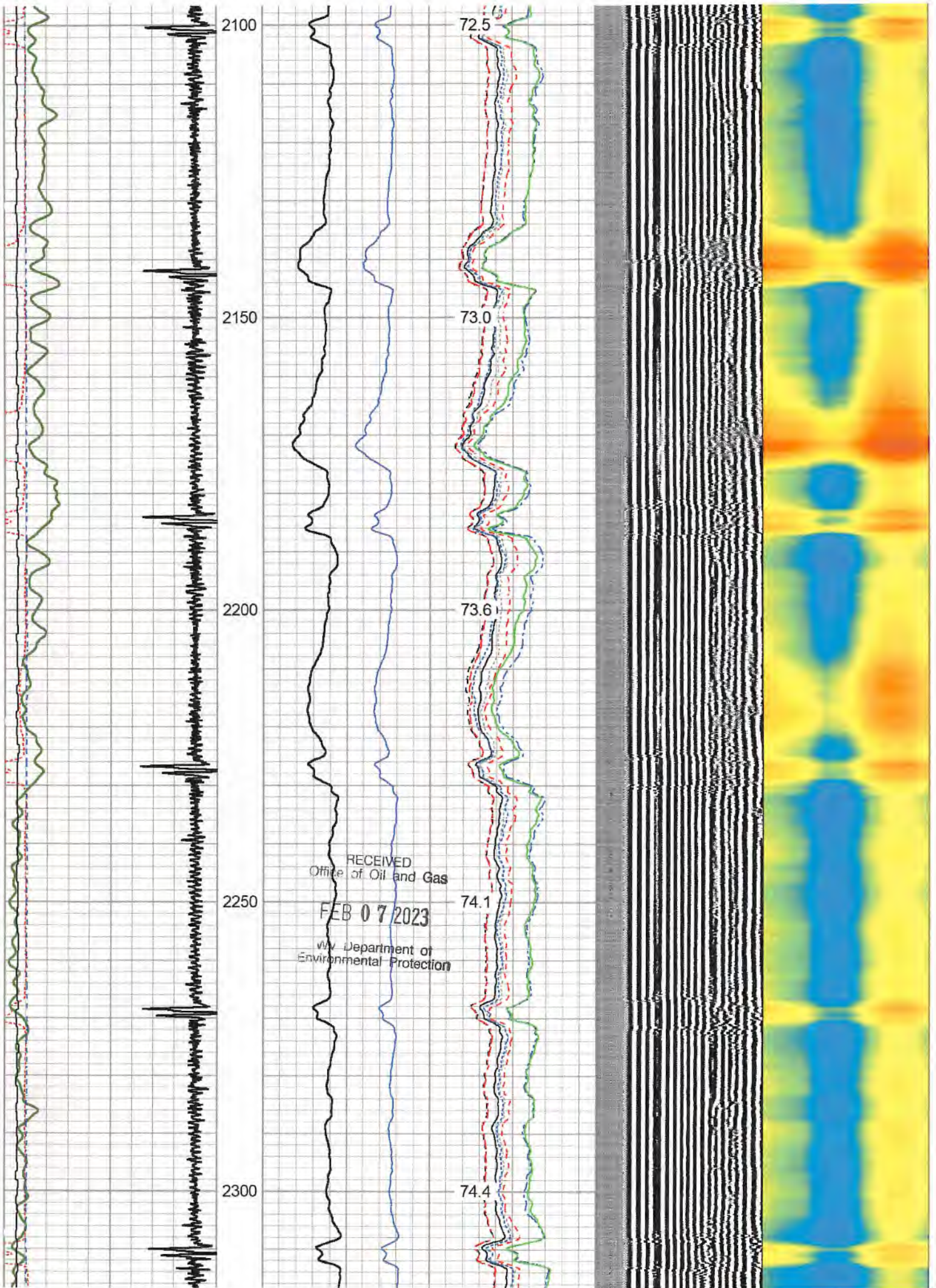




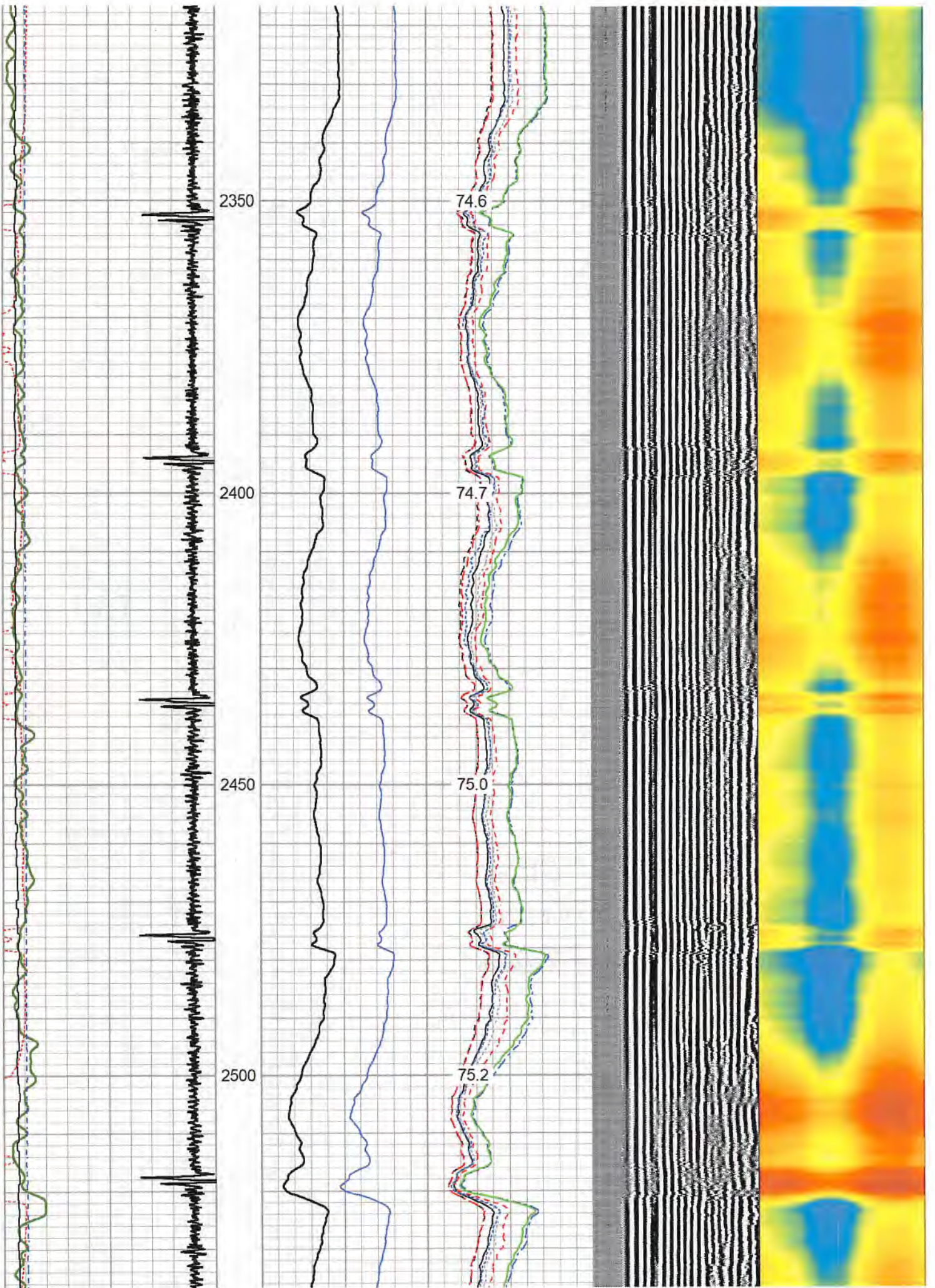




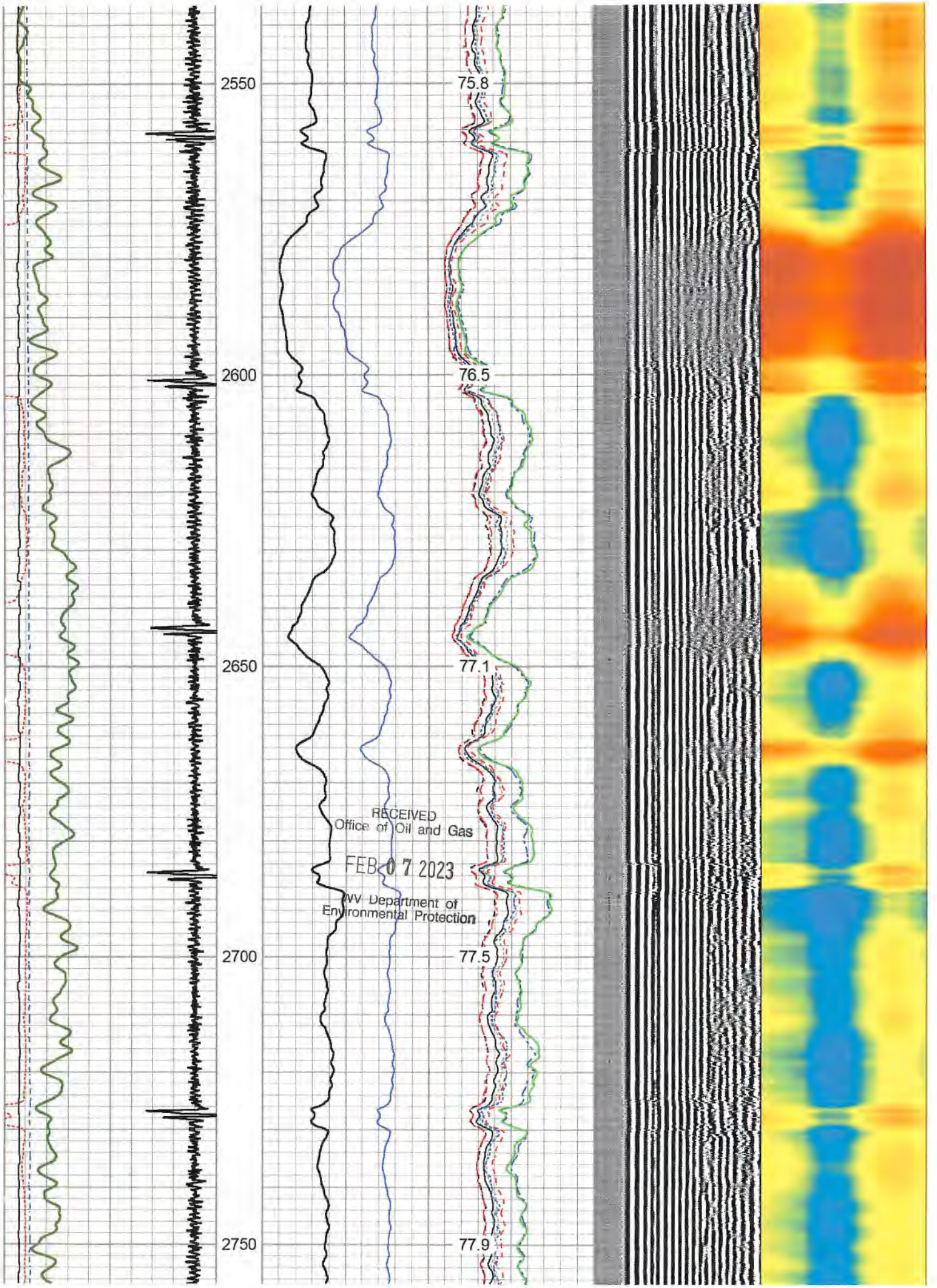




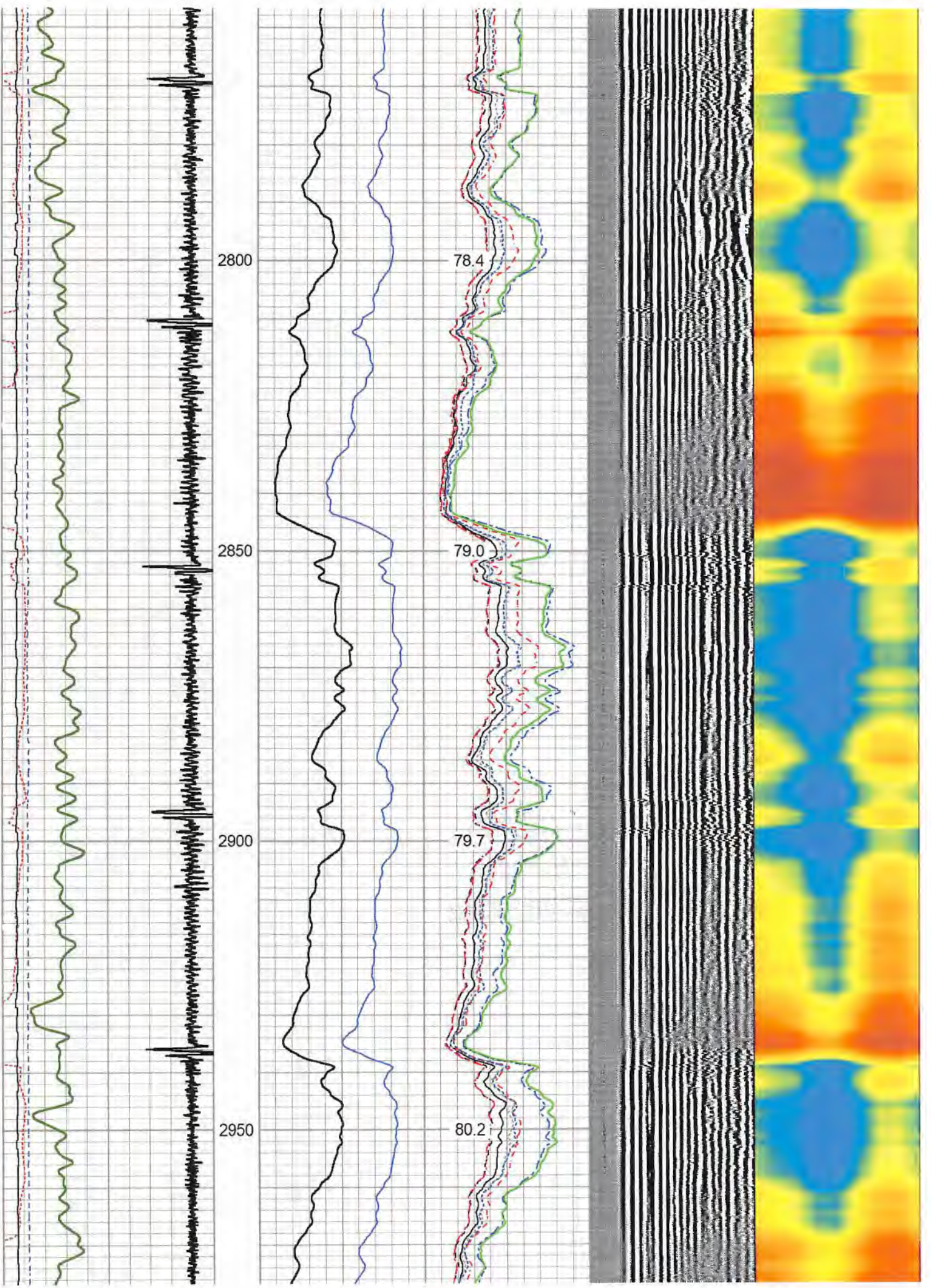




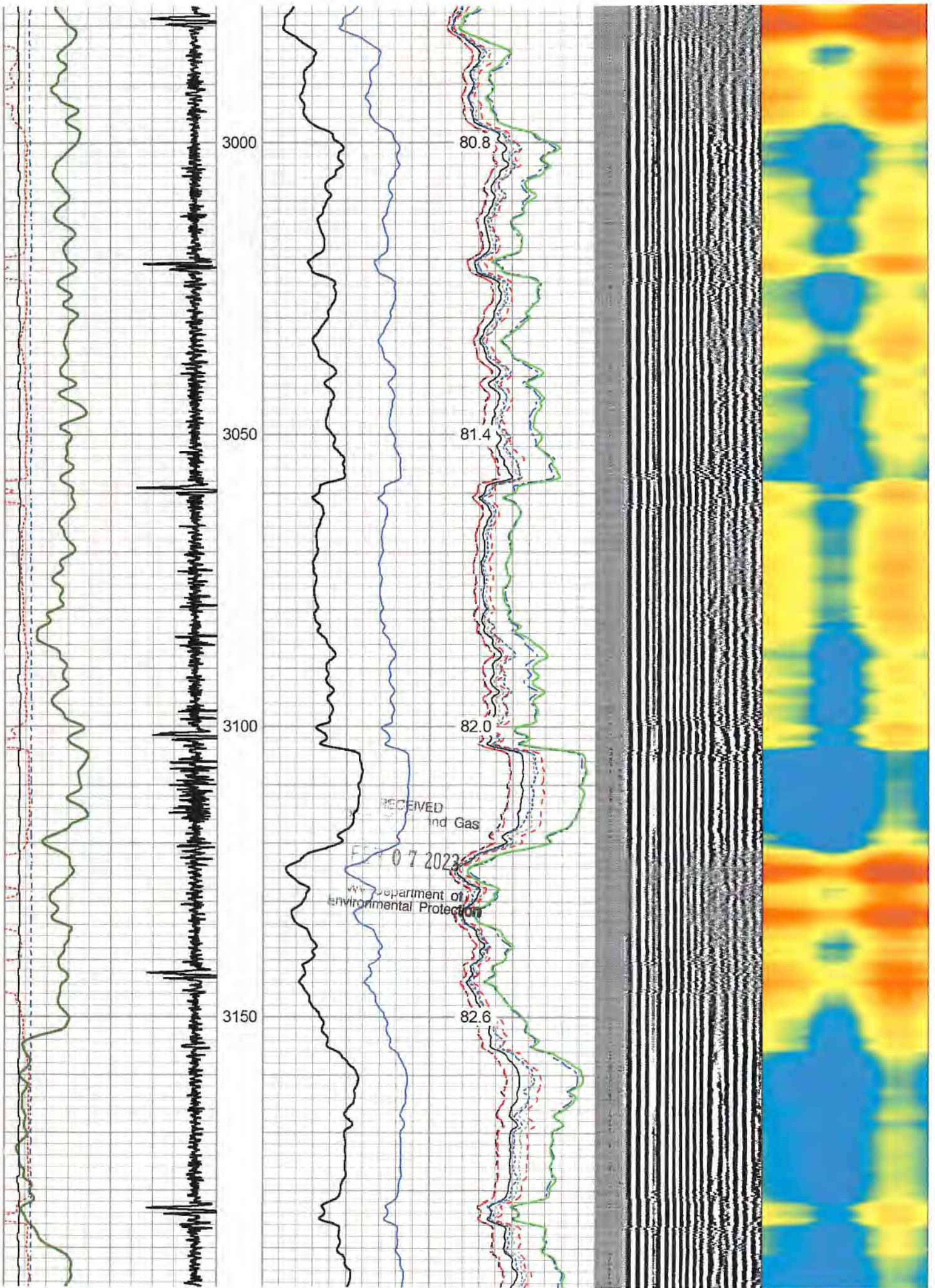




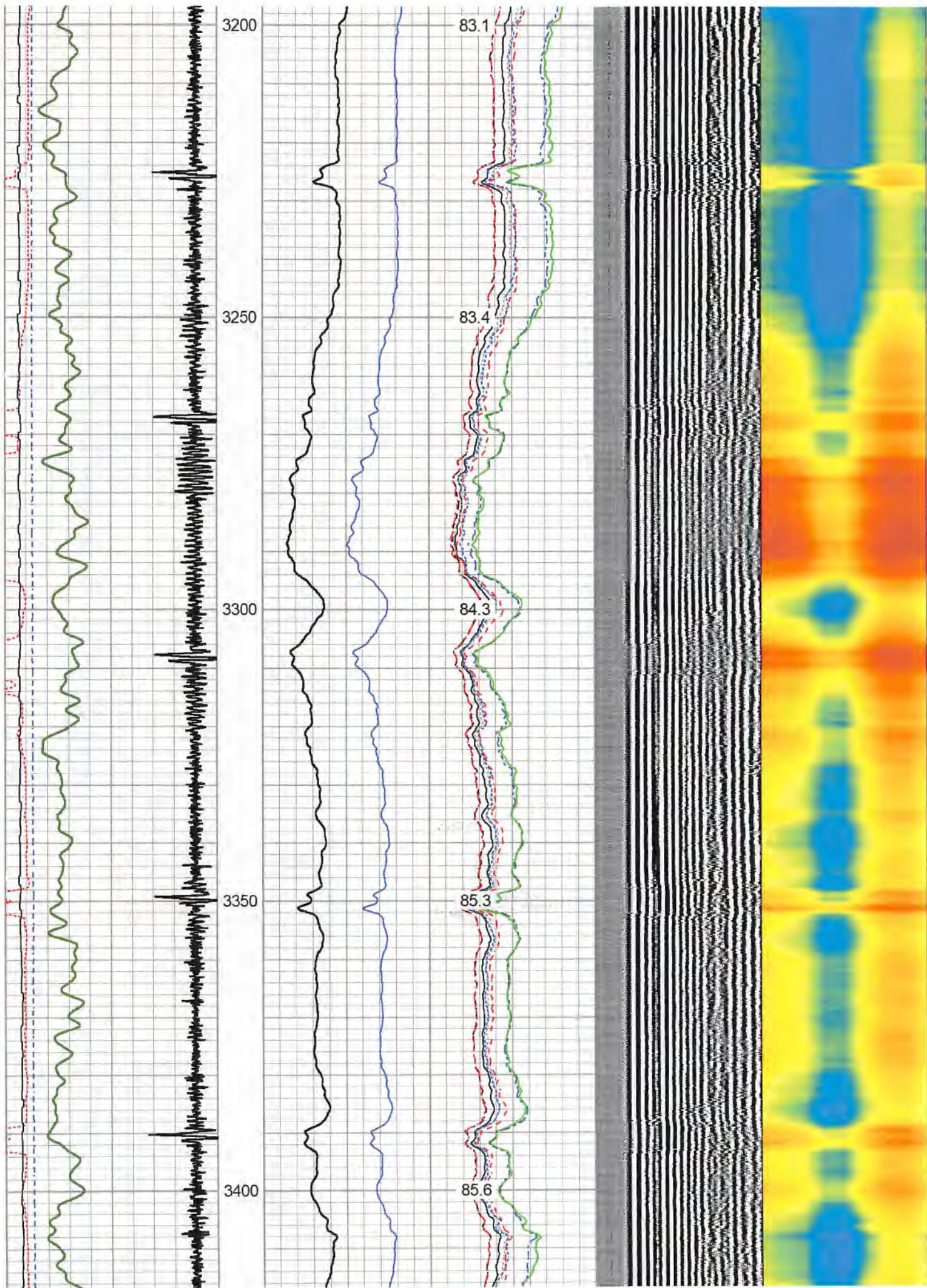




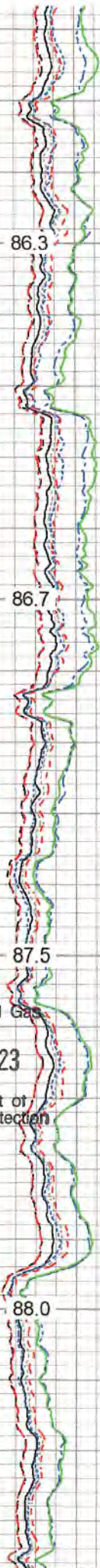
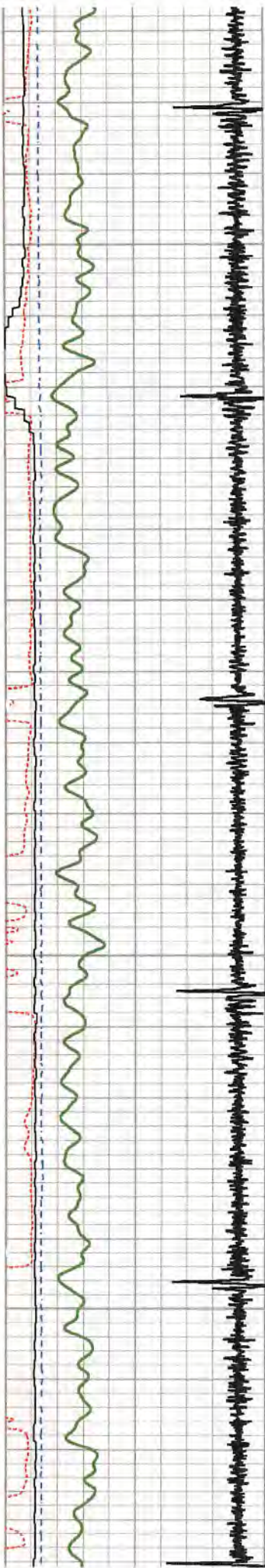




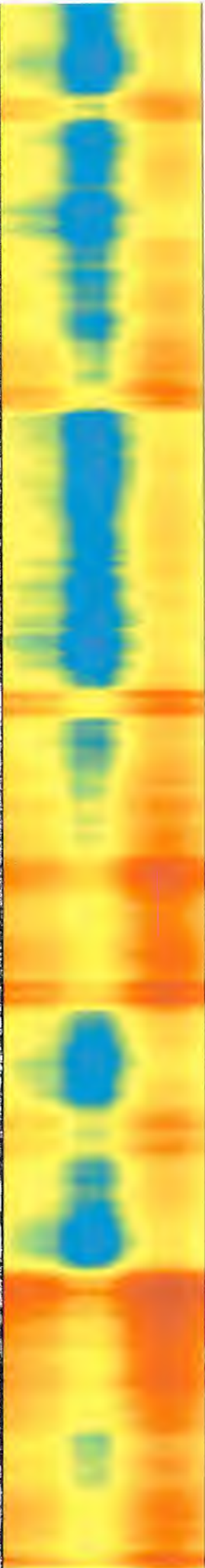
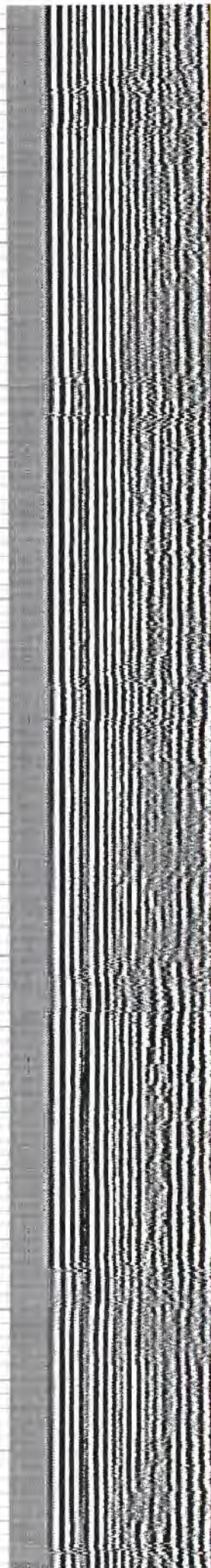




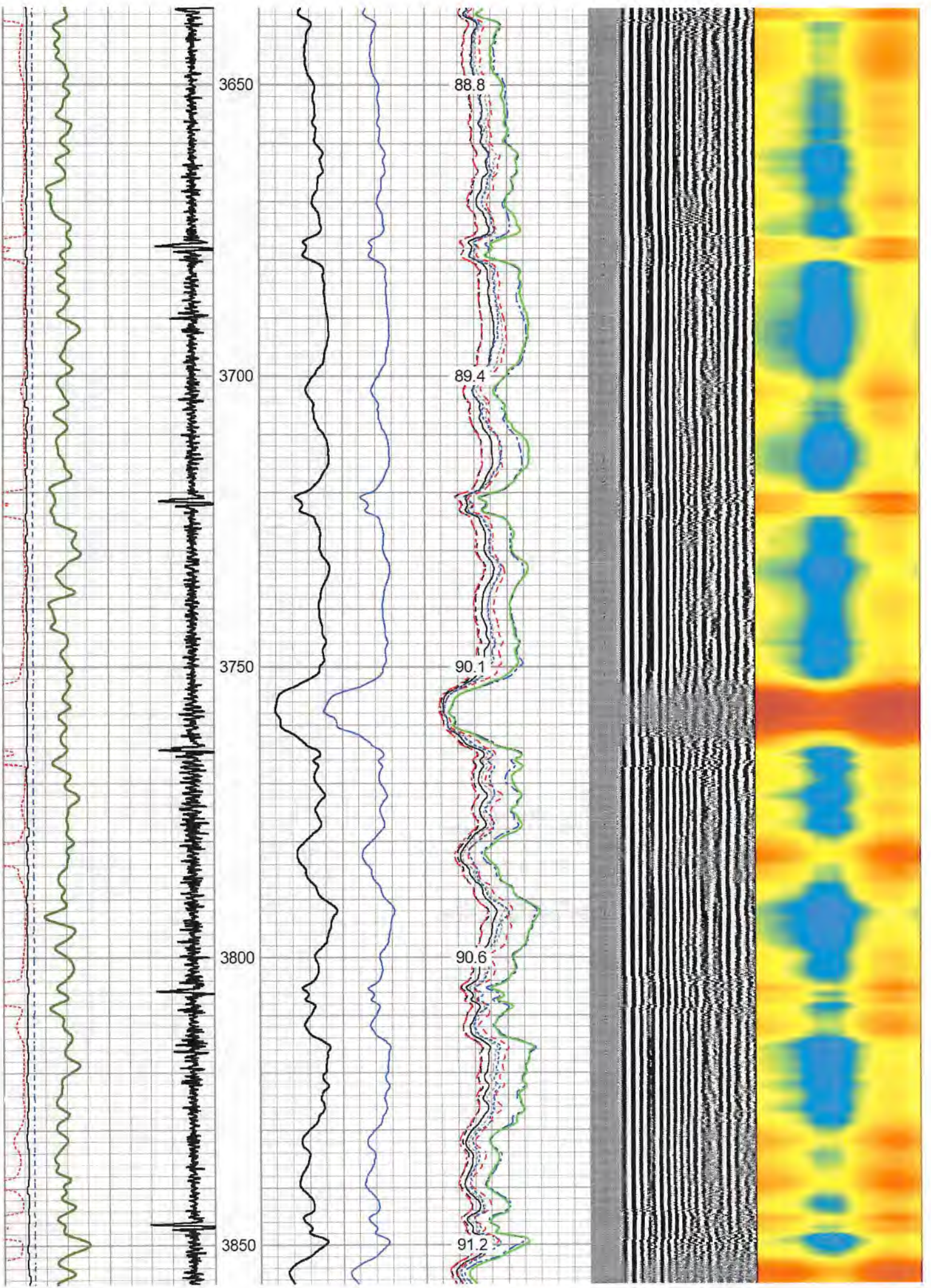




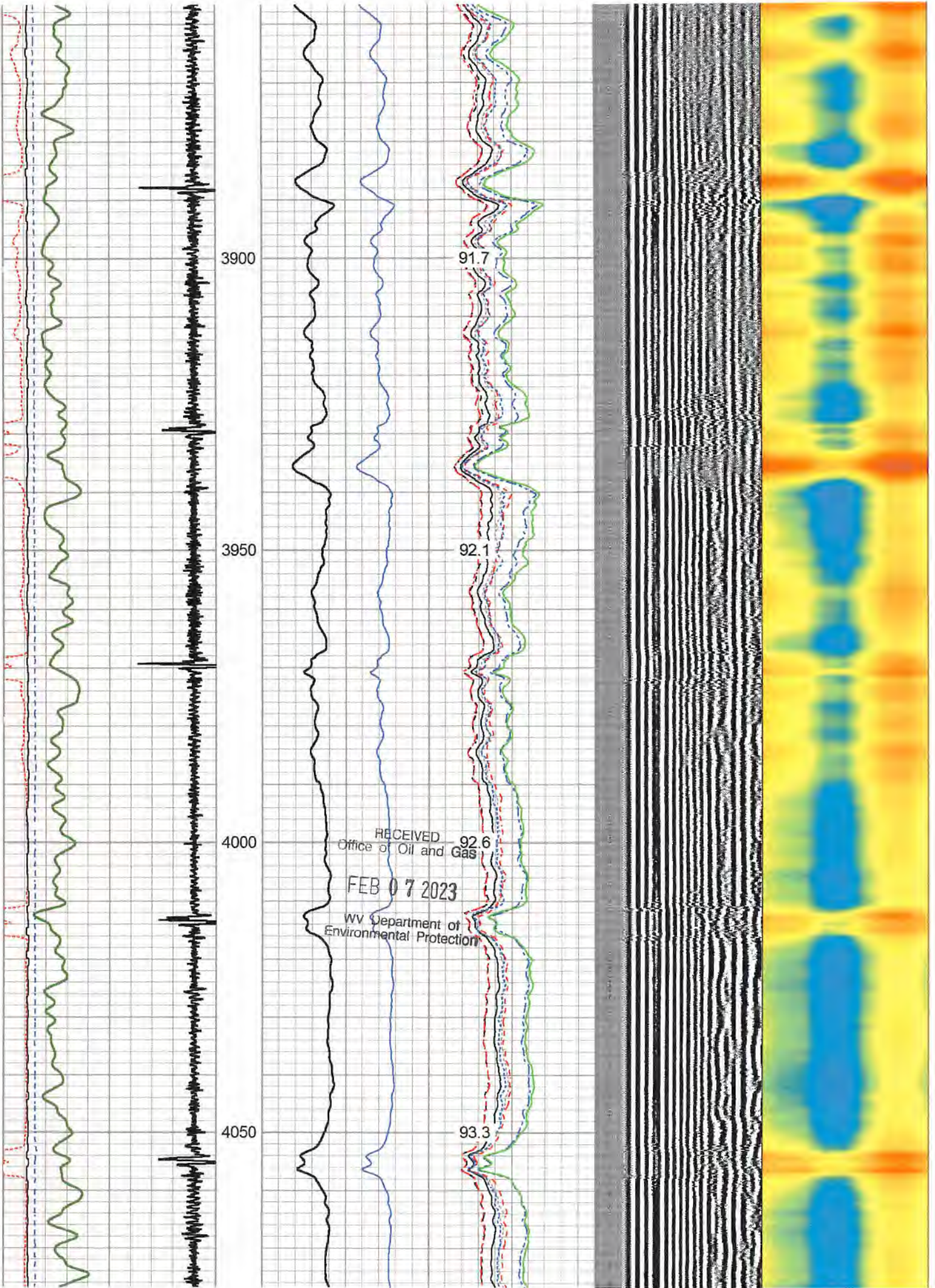
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WV Department of  
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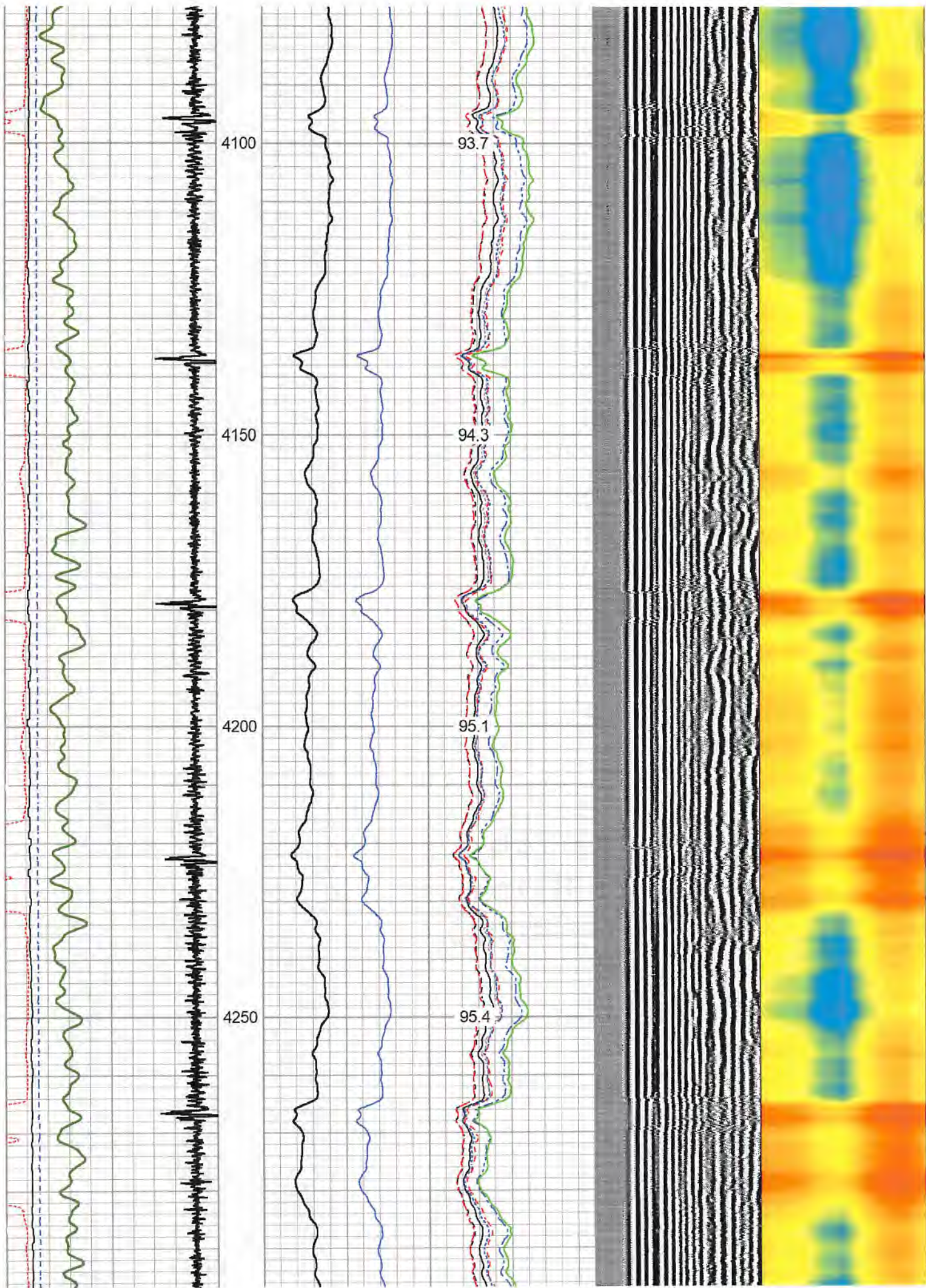




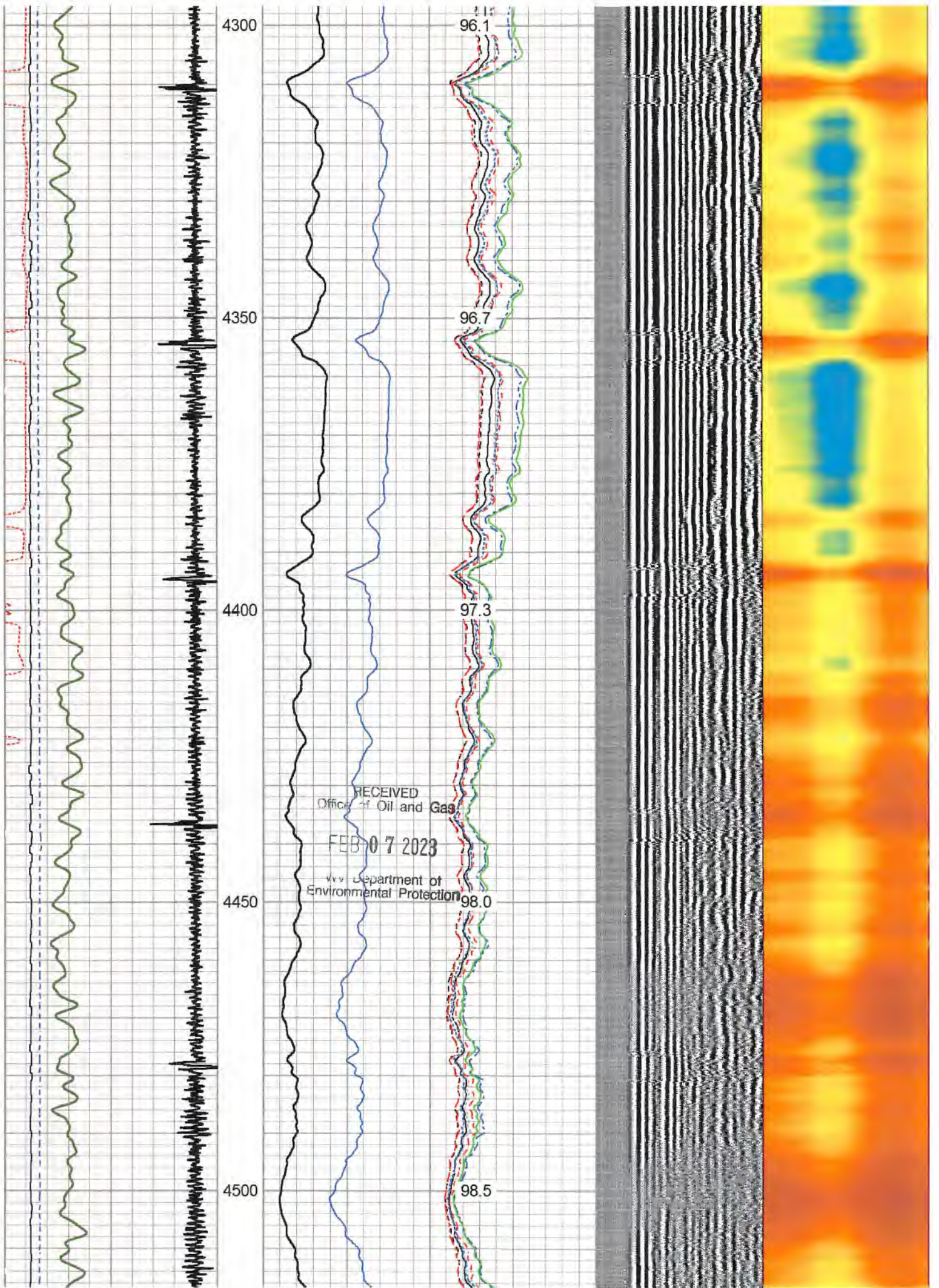




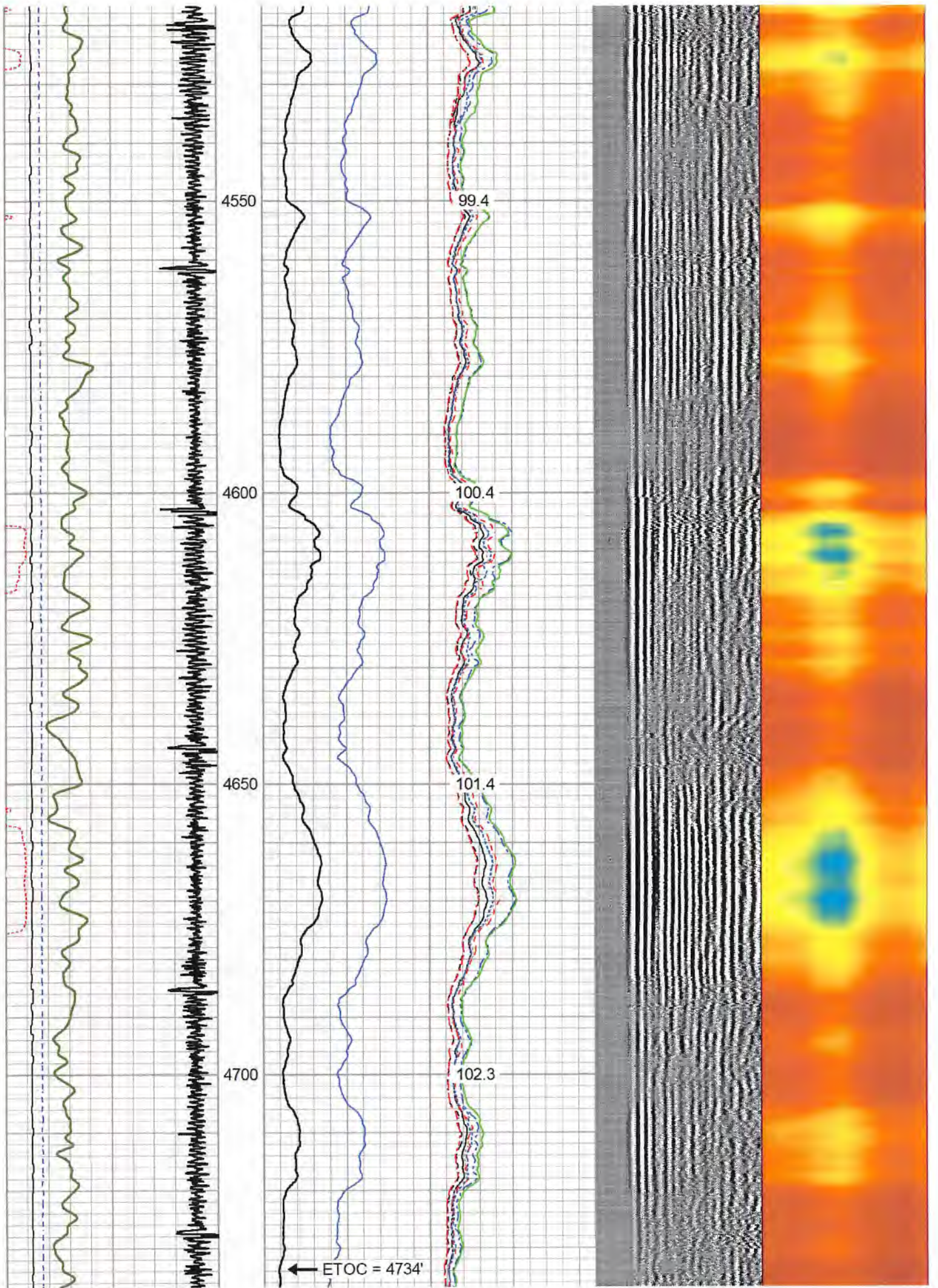




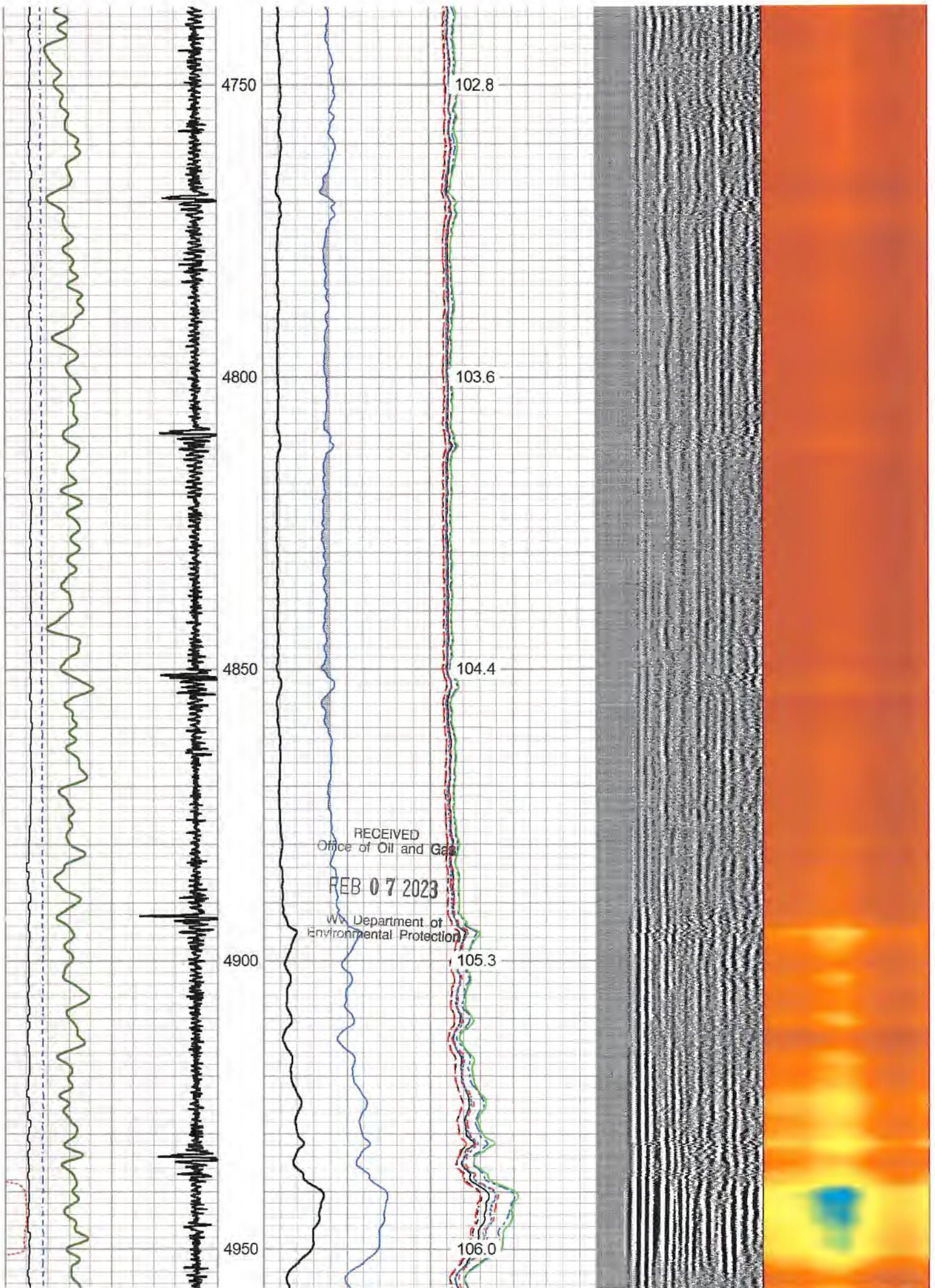




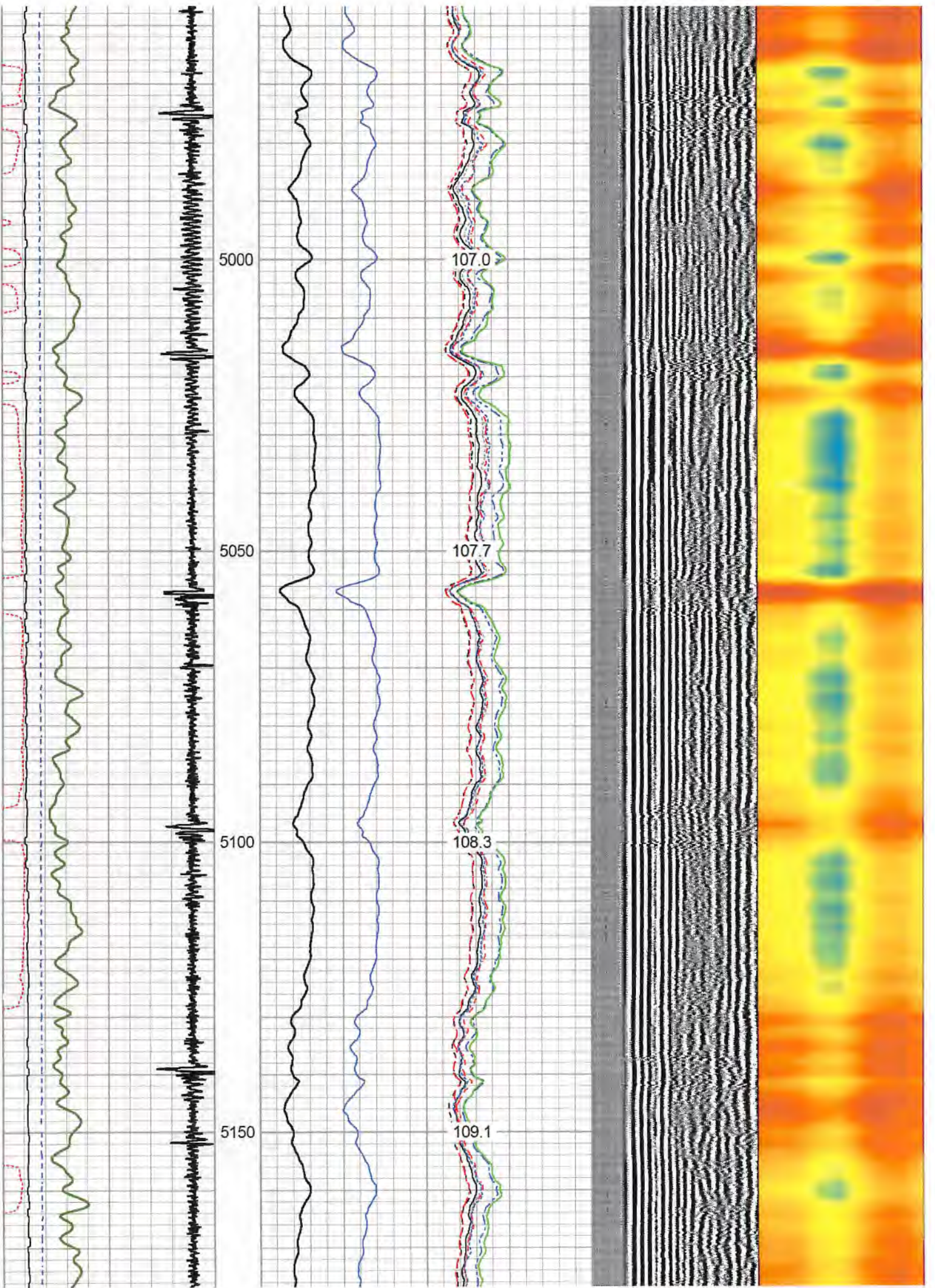




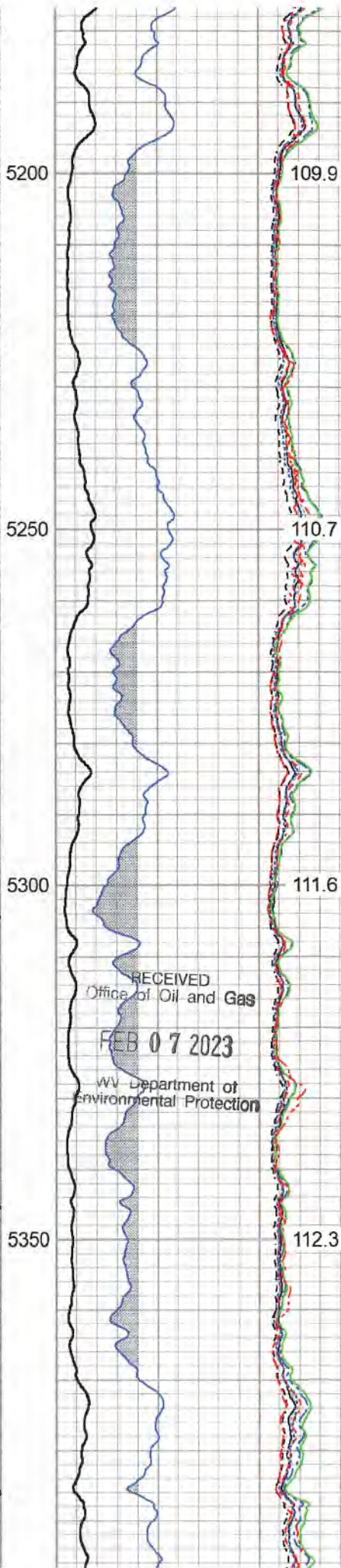
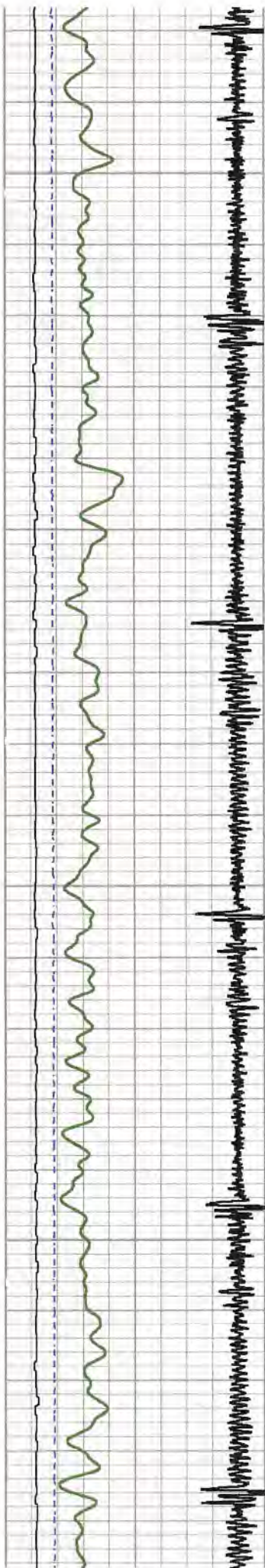




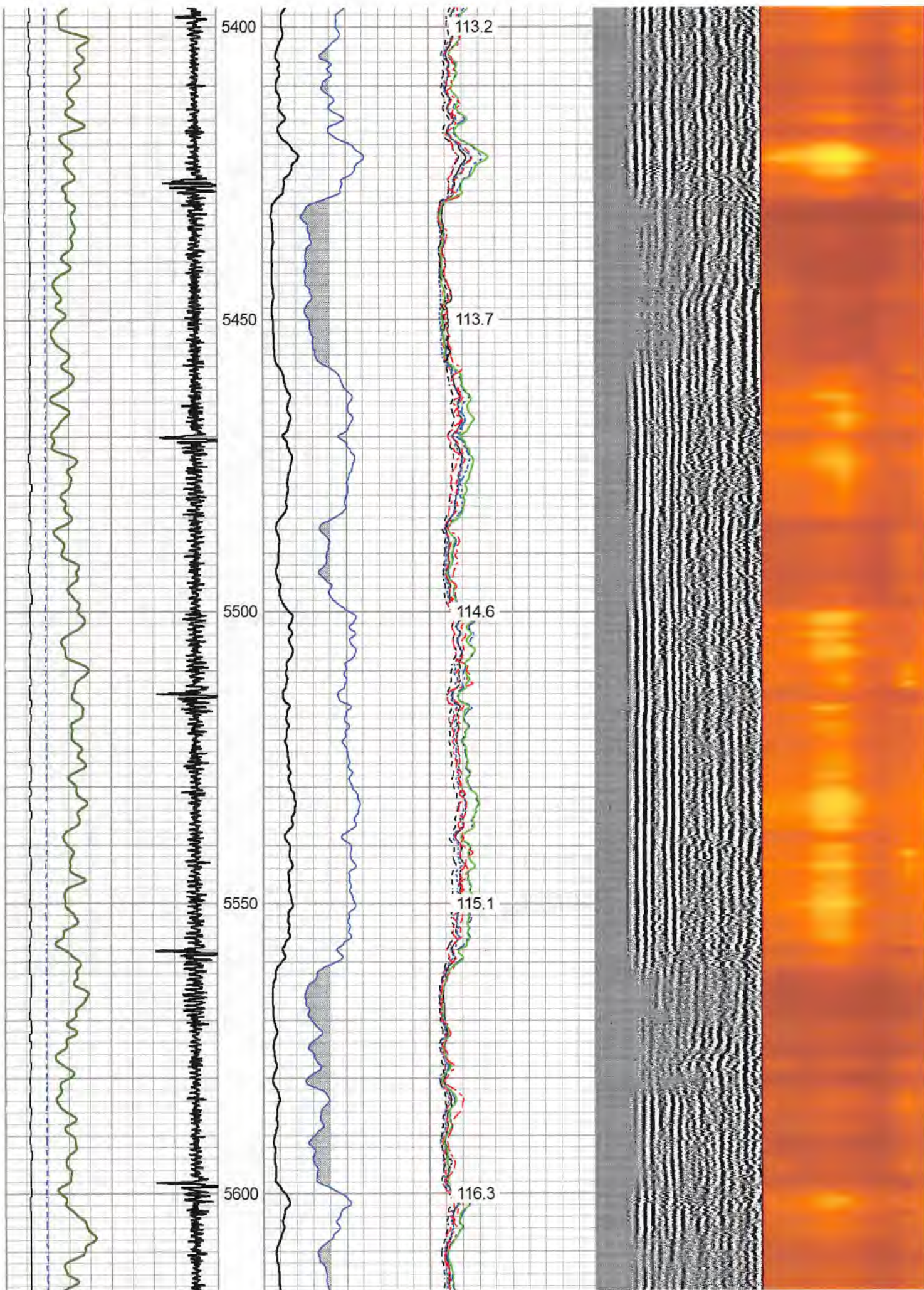




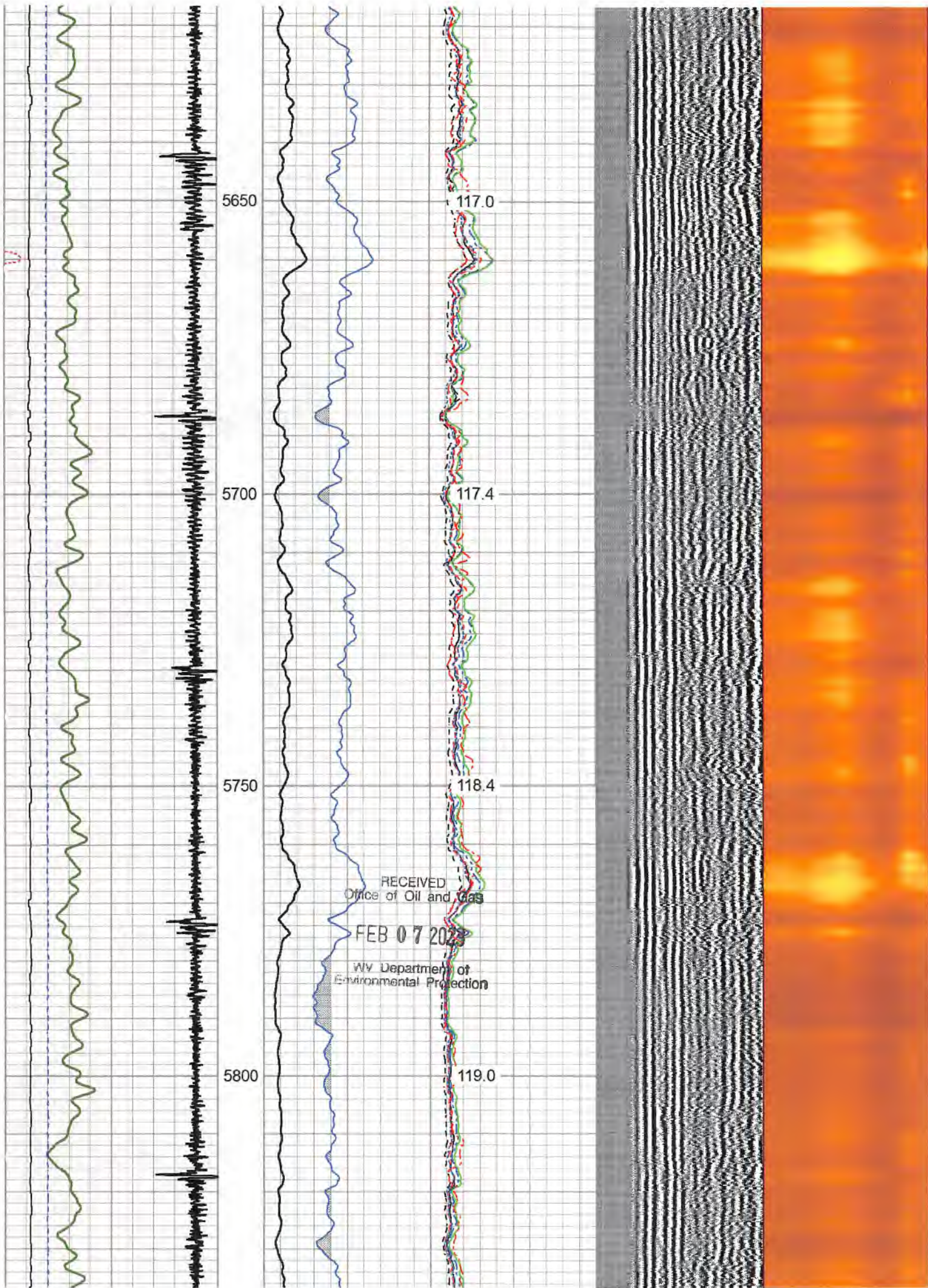




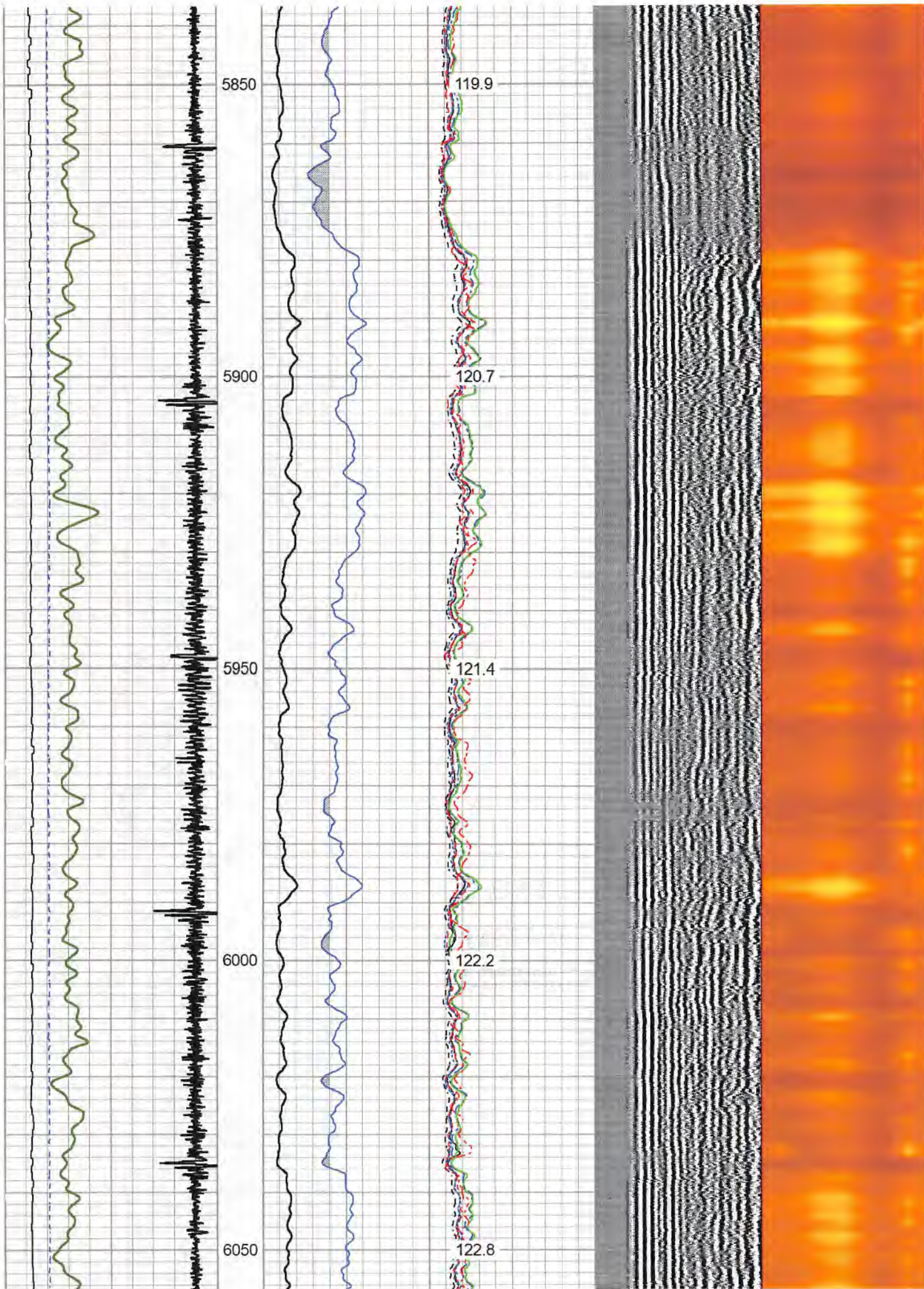




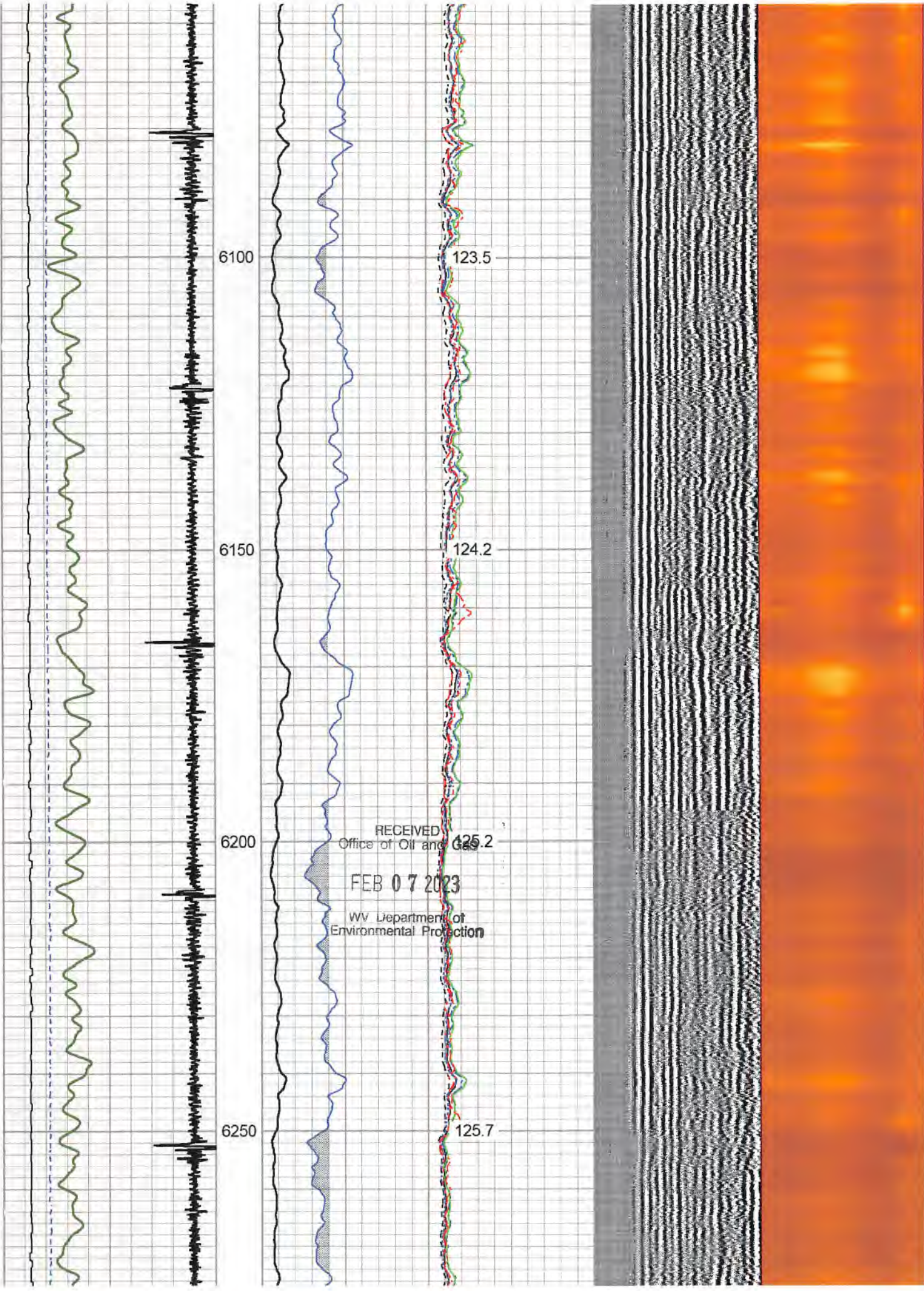




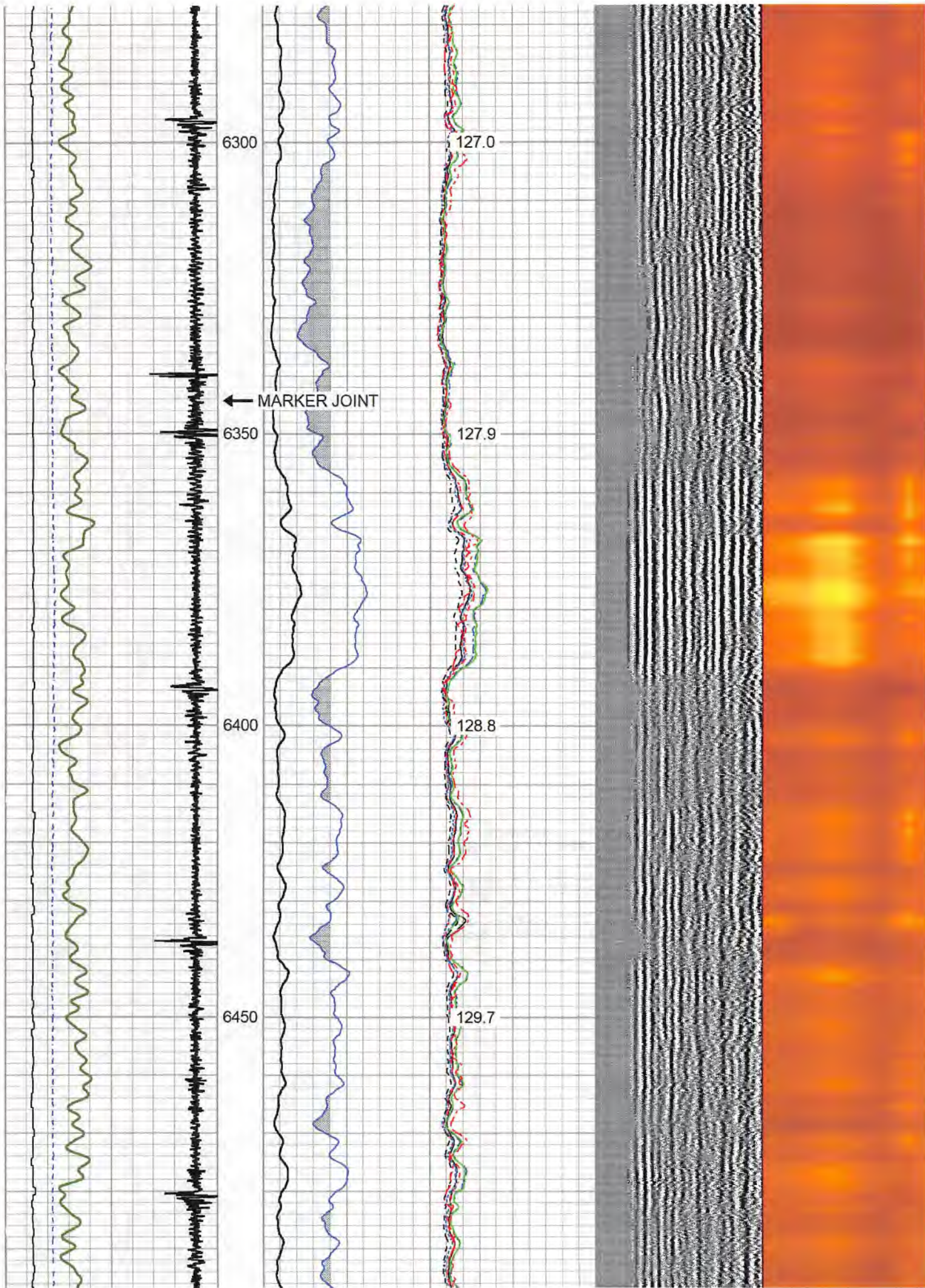




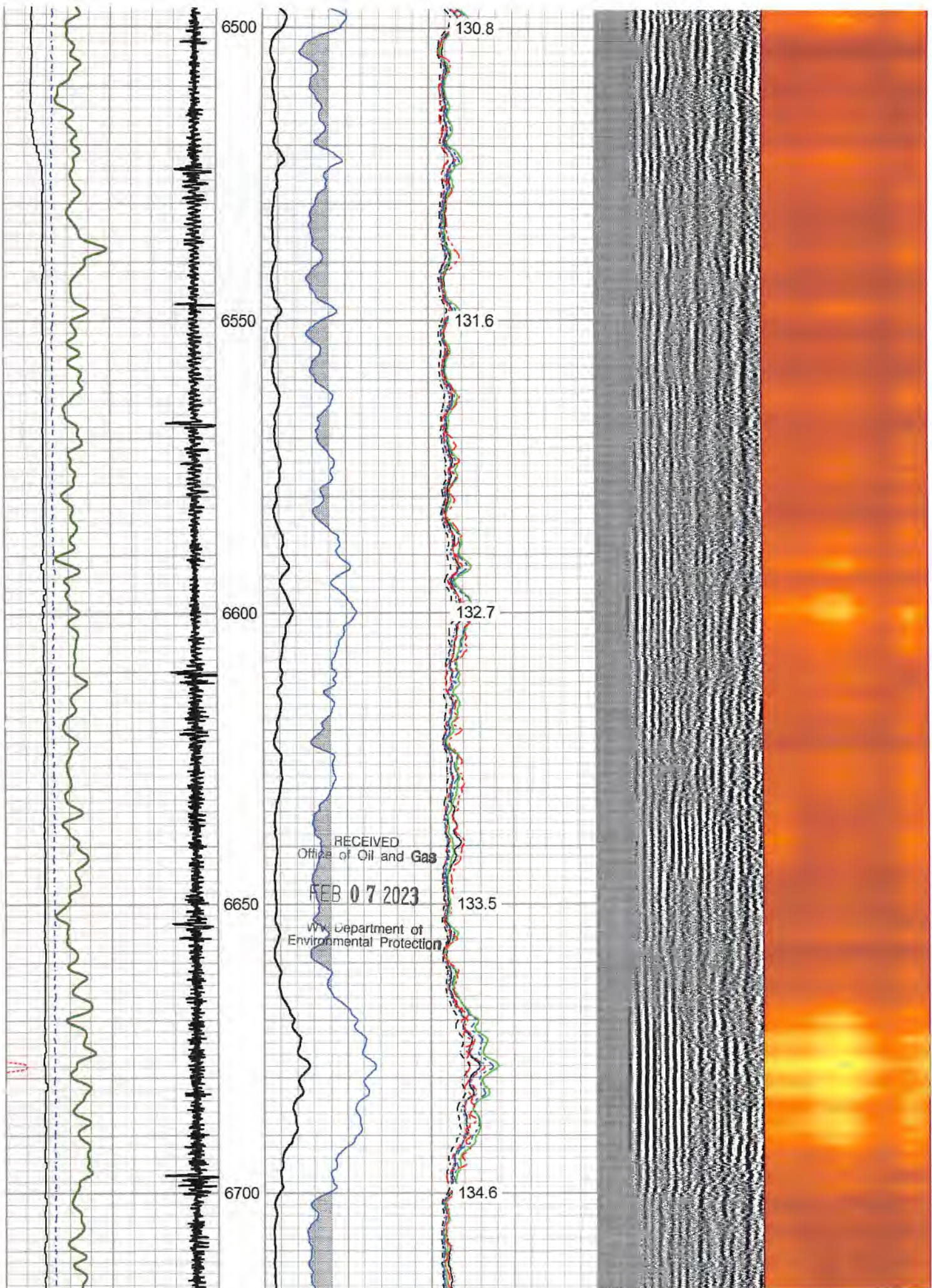




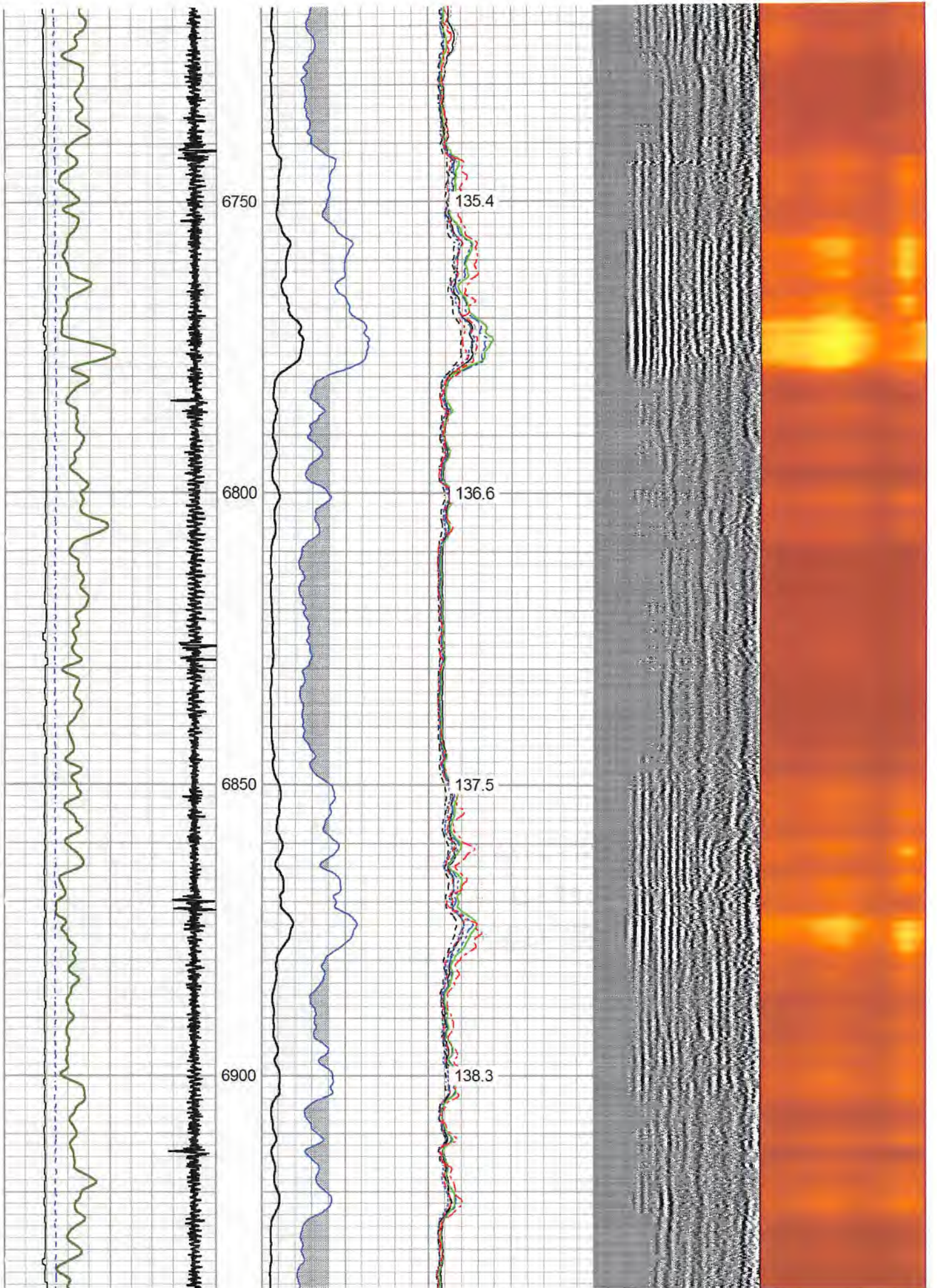




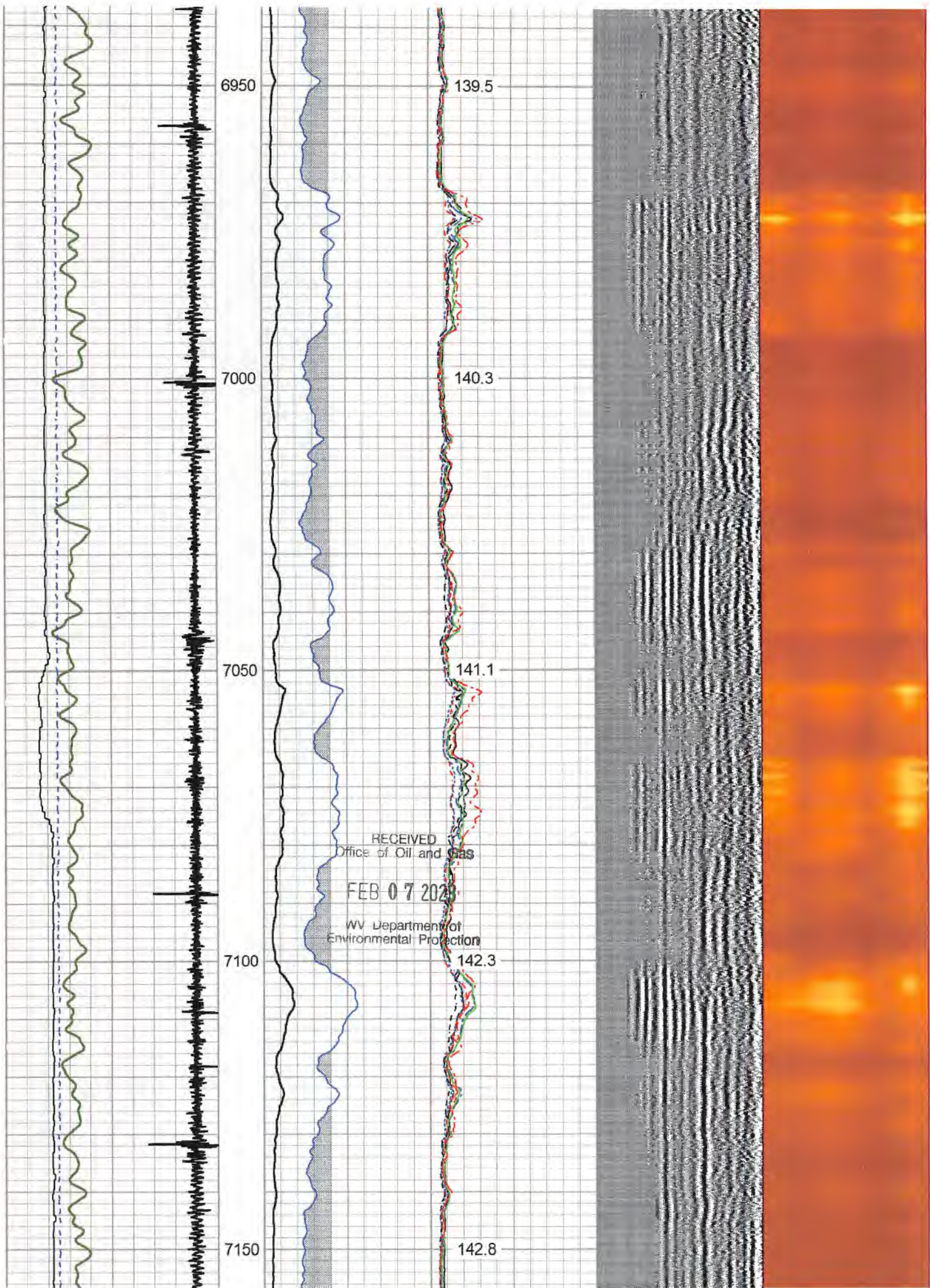




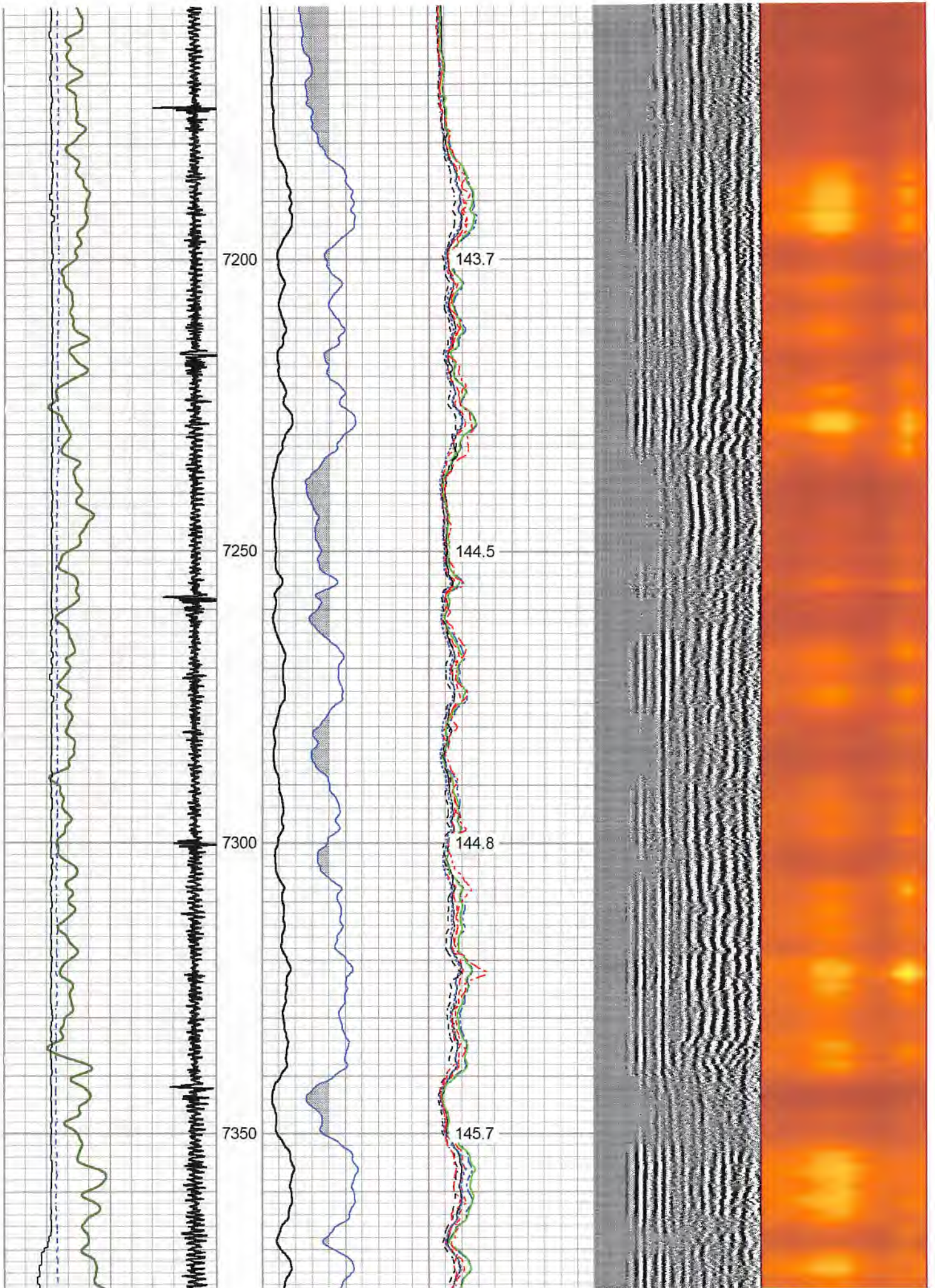




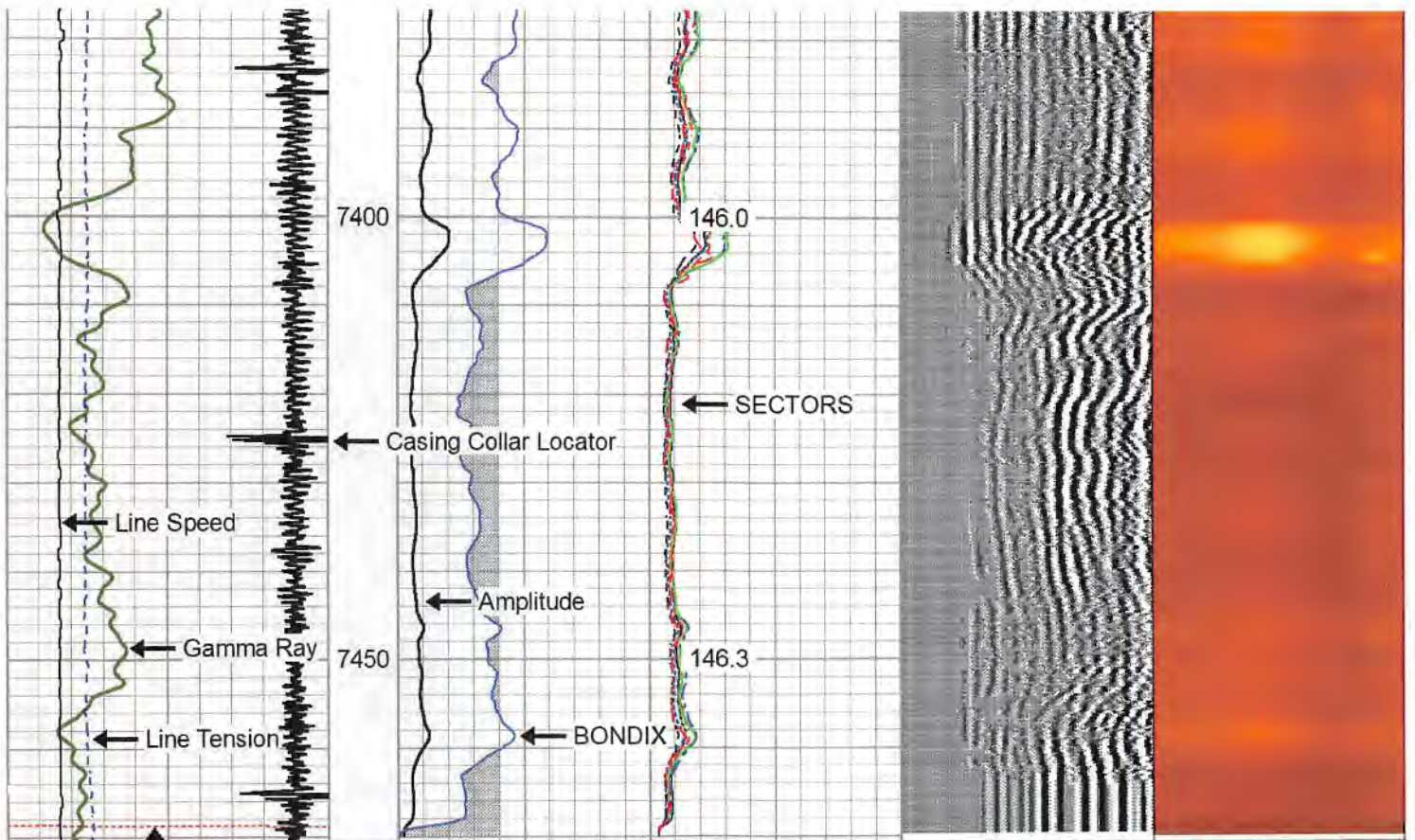













295	Travel Time (usec)	195
9	Casing Collar	-1
0	Gamma Ray (GAPI)	150
0	Line Tension (lb)	5000
-100	LSPD (ft/min)	100

0	Amplitude (mV)	100	-5	Sector 1	150
1	BONDIX	0	-5	Sector 2	150
			-5	Sector 3	150
			-5	Sector 4	150
			-5	Sector 5	150
			-5	Sector 6	150
			-5	Sector 7	150
			-5	Sector 8	150

Variable Density	1	Cement Map	8
200 (usec)	1200		

TEMP
(degF)

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New York Department of  
Environmental Protection



# REPEAT LOG

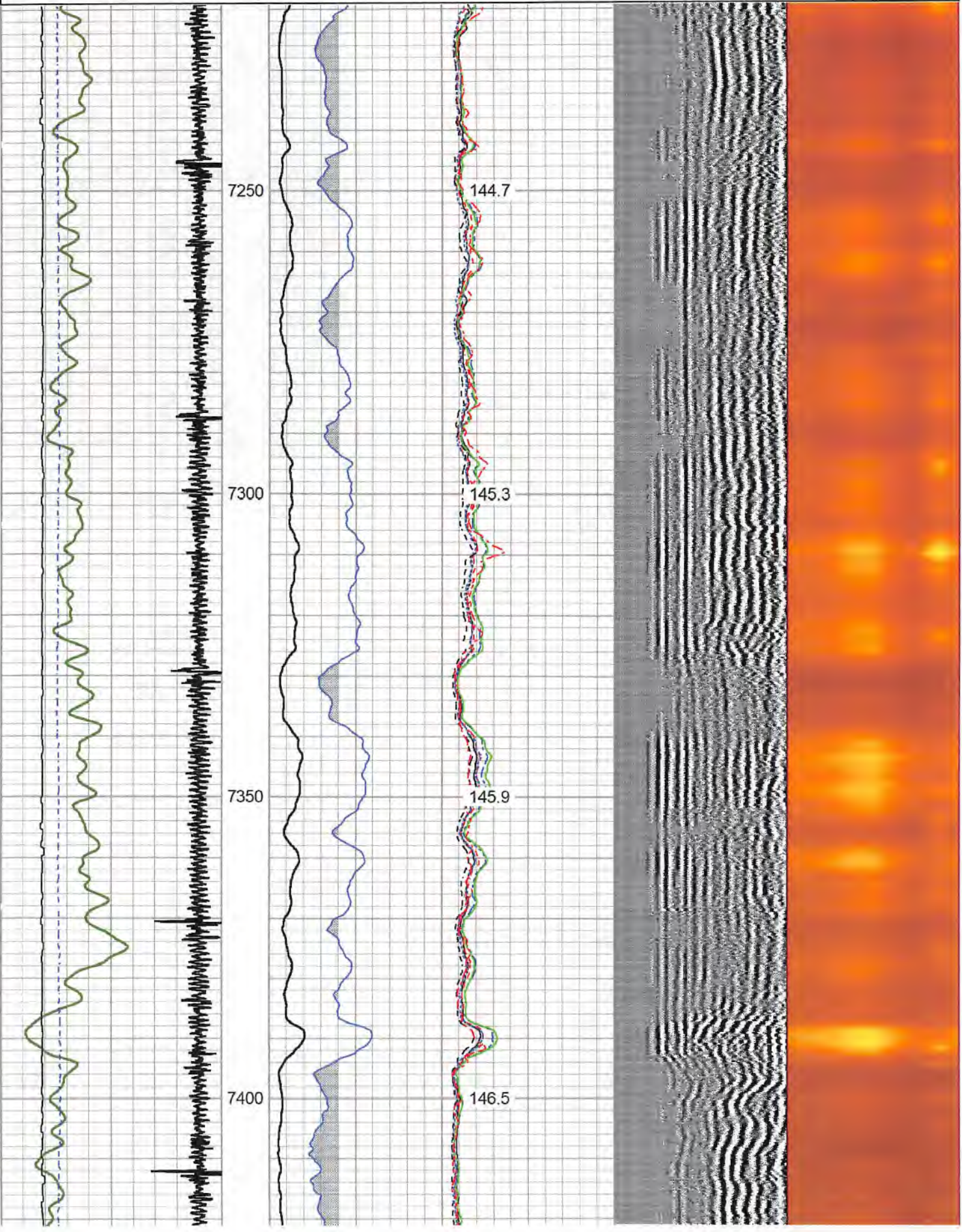
## 1500 PSI APPLIED

Database File	antero_dogwood_gribben1h_rcbl-1-15-22.db
Dataset Pathname	RCBL/REPEAT
Presentation Format	rcbl 2
Dataset Creation	Sat Jan 15 19:07:03 2022
Charted by	Depth in Feet scaled 1:240

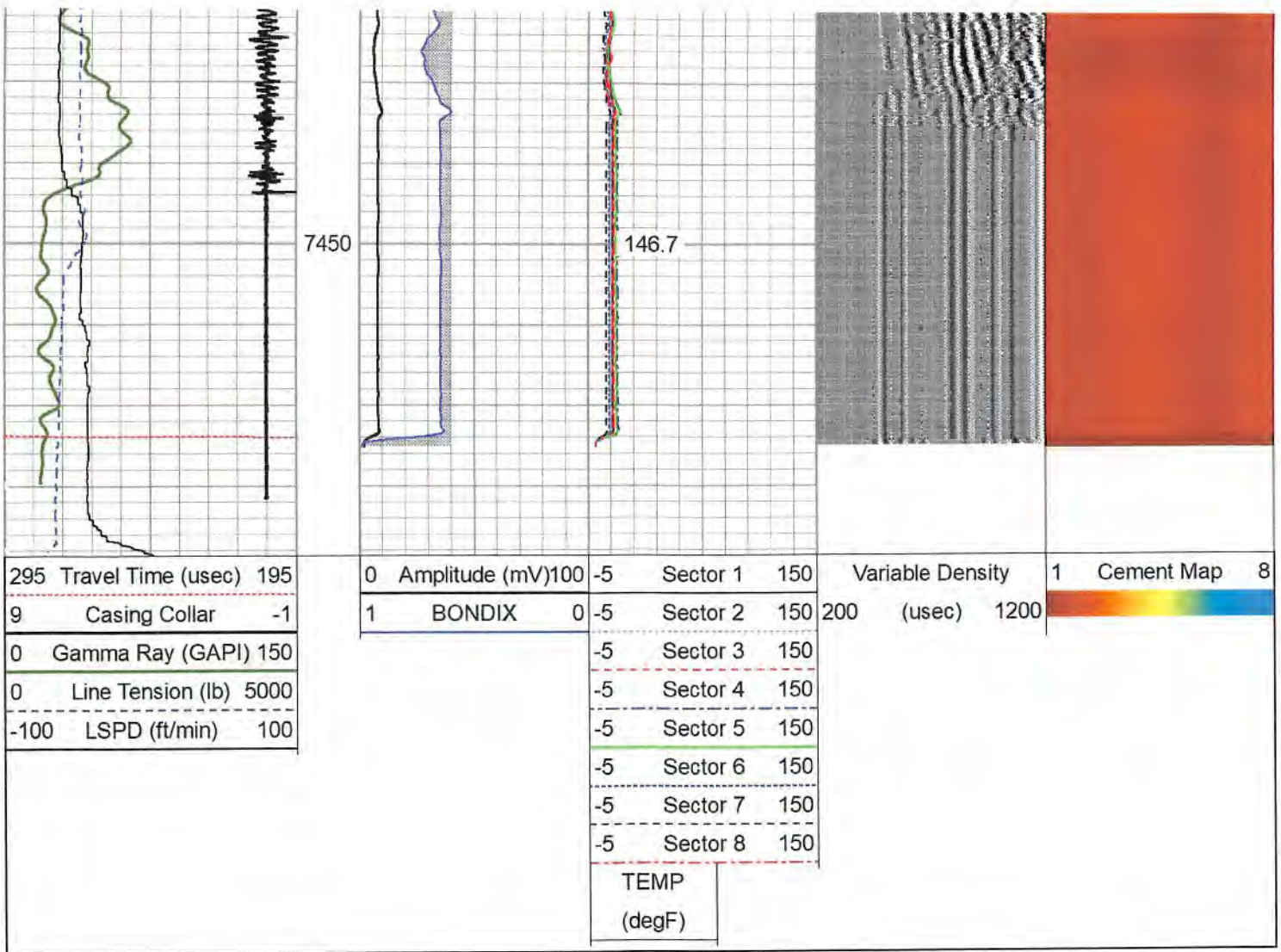
295	Travel Time (usec)	195	0	Amplitude (mV)	100	-5	Sector 1	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	-5	Sector 2	150	200 (usec)	1200		
0	Gamma Ray (GAPI)	150				-5	Sector 3	150				
0	Line Tension (lb)	5000				-5	Sector 4	150				
-100	LSPD (ft/min)	100				-5	Sector 5	150				
						-5	Sector 6	150				
						-5	Sector 7	150				



Sector 7 150  
-5 Sector 8 150  
TEMP  
(degF)







<b>Log Variables</b>	Database C:\ProgramData\Warrior\Data\antero_dogwood_gribben1h_rcbl-1-15-22.db			Dataset field/well/RCBL/MAIN/_vars_			
<b>Top - Bottom</b>							
BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in 7.875	degF 100	in 5.5	in 0	lb/ft 20	mV 71.9	mV 2.2
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft 0.8	No	usec 260	degF 0	ft 0			
<b>Variable Description</b>							
BHTEMP_Src : BHTEMP Input Source Selector			MINAMPL : Minimum Amplitude				
BOREID : Borehole I.D.			MINATTN : Minimum Attenuation				
BOTTEMP : Bottom Hole Temperature			PERFS : Perforation Flag				
CASEOD : Casing O.D.			PPT : Predicted Pipe Time				
CASETHCK : Casing Thickness			SRFTEMP : Surface Temperature				
CASEWGHT : Casing Weight			TDEPTH : Total Depth				
MAXAMPL : Maximum Amplitude							

<b>Calibration Report</b>	
Database File	antero_dogwood_gribben1h_rcbl-1-15-22.db
Dataset Pathname	RCBL/MAIN
Dataset Creation	Sat Jan 15 19:26:24 2022



**Gamma Ray Calibration Report**

Serial Number: FW1211-86  
 Tool Model: Probe  
 Performed: Sun Aug 29 01:22:07 2021

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps

Sensitivity: 0.5000 GAPI/cps

**Segmented Cement Bond Log Calibration Report**

Serial Number: FW1312-32  
 Tool Model: Probe275T

Calibration Casing Diameter: 5.500 in  
 Calibration Depth: 366.267 ft

**Master Calibration, performed Sat Jan 15 15:39:37 2022:**

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.001	1.336	2.200	71.921	52.156	2.258
CAL	-0.001	0.861				
5'	-0.001	1.627	2.200	71.921	42.825	2.251
SUM						
S1	-0.001	1.590	0.000	100.000	62.854	0.072
S2	-0.001	1.244	0.000	100.000	80.316	0.094
S3	-0.001	1.178	0.000	100.000	84.775	0.095
S4	-0.001	1.181	0.000	100.000	84.620	0.096
S5	-0.001	1.176	0.000	100.000	84.939	0.097
S6	-0.001	1.330	0.000	100.000	75.114	0.089
S7	-0.001	1.654	0.000	100.000	60.409	0.078
S8	-0.001	1.820	0.000	100.000	54.907	0.060

**Internal Reference Calibration, performed (Not Performed):**

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.001	0.861	1.000	0.000

**Air Zero Calibration, performed Sat Jan 15 12:04:54 2022:**

	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





Company	ANTERO
Well	GRIBBEN UNIT 1H
Field	MARCELLUS
County	WETZEL
State	WV

RECEIVED  
Office of Oil and Gas

07 2023

Department of  
Environmental Protection