



PIONEER

Pioneer Energy Services

**RADIAL BOND LOG
WITH GAMMA RAY**

Company **WHITING OIL & GAS CORP**
Well **HORSETAIL FEDERAL 07F-0605**
Field **WILDCAT**
County **WELD** State **CO**

Comp. **WHITING OIL & GAS CORP**
Well **HORSETAIL FEDERAL 07F-0605**
Field **WILDCAT**
Co. **WELD**
State **CO**

Location: API #: 05123417680000 Other Services
SHL: 2593' FNL & 2147' FWL
SENV
SEC 7 TWP 10N RGE 57W
Permanent Datum GL Elevation 4899'
Log Measured From KB 21' Above Perm. Datum
Drilling Measured From KB G.L. 4899'

JBGR

Date of Service MAY 9, 2016

Run Number ONE

Depth Driller or PBTD 13487'

Depth Logger 6179'

Bottom Log Interval 6177'

Top Log Interval SURFACE

Open Hole Size 8.50"

Type Fluid WATER

Fluid Level SURFACE

Fluid Density 8.33 PPG

Max. Recorded Temperature 200 F

Max. Wellhead Pressure 1500 PSI

Wellhead Connection 7-1/16" 10K FLANGE

Estimated Cement Top 212'

Unit Number P53

Wireline Size 9/32"

Location FT MORGAN, CO

Recorded By SCHUMAN

Witnessed By MR ED MOORE

Size

Wt/Ft

Top

Bottom

Tubing Record

Surface Casing 9.625"

36#

2006'

Production Casing 5.5"

20#

SURFACE

13487'

Liner Record

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not 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.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.
LOG CORRELATED TO KB.
NO FREE PIPE OUTSIDE OF SURF CASING TO RUN FREE PIPE PASS.
CUSTOMER SPECIFIC LOG FORMAT PRESENTATION REQUIRED.

THANK YOU FOR USING PIONEER ENERGY SERVICES!

Your Pioneer Energy Services Crew

Tool Data - Services

Serial Number

Engineer: SCHUMAN
Operator: BURNS
Operator: BRIGANTE
Operator:

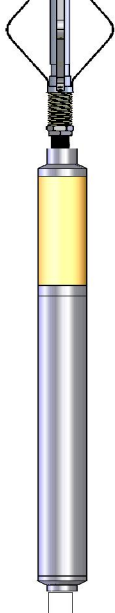
SCBL 141166
GR 111211


BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL
TEMP	in	degF	in	in	lb/ft	mV
	8.75	200	5.5	0.361	20	0
MINAMPL	MINATTN	PERFS	PPT	SRFTEMP	TDEPTH	
mV	db/ft		usec	degF	ft	
2.2	0.08	0	0	0	0	

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)
			Cable Head-Titan 143 1 7/16" Titan Cable Head	1.03	1.43	2.00
			Centralizer-169 Titan Non-ADJ Titan 1 11/16" Non Adjustable Centralizer	2.17	2.88	22.00
TEMP	13.46					
WVFS8	11.23		SCBL-275 Probe w Temp New Mod (141119.17 Probe Radii Bond Tool with Temperature		2.75	95.00
WVFS7	11.23					
WVFS6	11.23					
WVFS5	11.23					
WVFS4	11.23					
WVFS3	11.23					
WVFS2	11.23					
WVFS1	11.23					
WVFCAL	11.23					
WVF3FT	11.23					
WVF5FT	10.23					
HEADVOLT	6.98					

CCL	3.91		Centralizer-169 Titan Non-ADJ Titan 1 11/16" Non Adjustable Centralizer	2.17	2.88	22.00
			GR_CCL-275 Probe GR-CCL Corrosion (F4.54108-1C2.75) Probe 2 3/4" Gamma Ray / CCL Corrosion Digital			60.00
			Bullnose-Titan GO Pin Pressure Cap	0.27	1.38	1.00
GR	1.17					
Dataset: horsetail 07f-0605.db: field/well/RBL/pass4 Total length: 19.34 ft Total weight: 202.00 lb O.D.: 2.88 in						



PIONEER

Pioneer Energy Services

MAIN LOG

1500 PSI APPLIED AT SURFACE

Database File

Dataset Pathname

Presentation Format

Dataset Creation

Charted by

horsetail 07f-0605.db

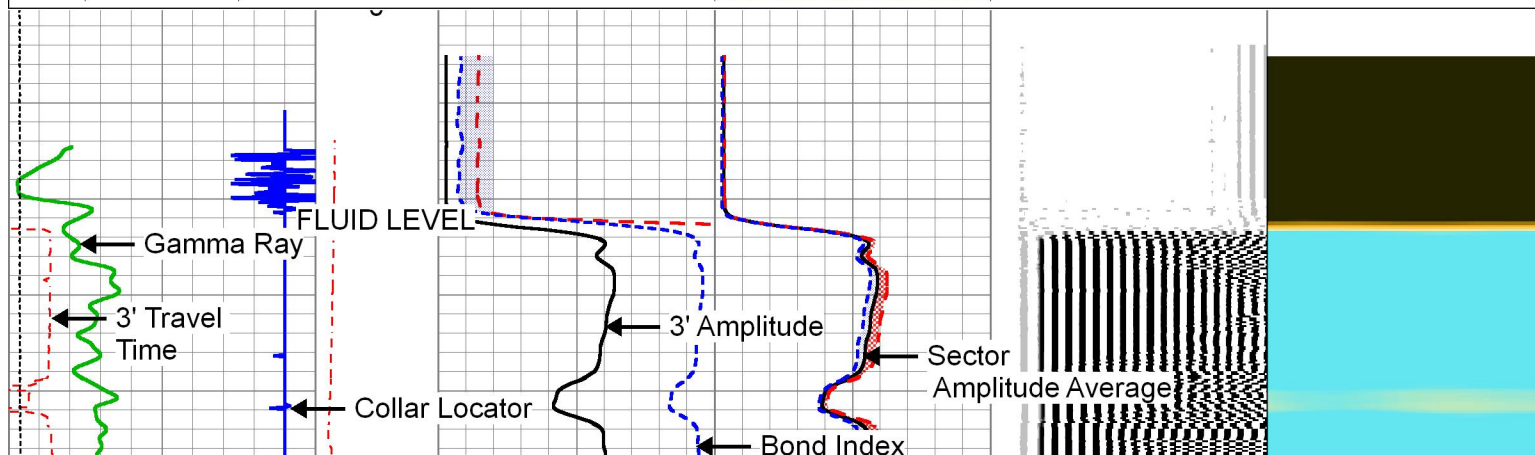
RBL/pass4

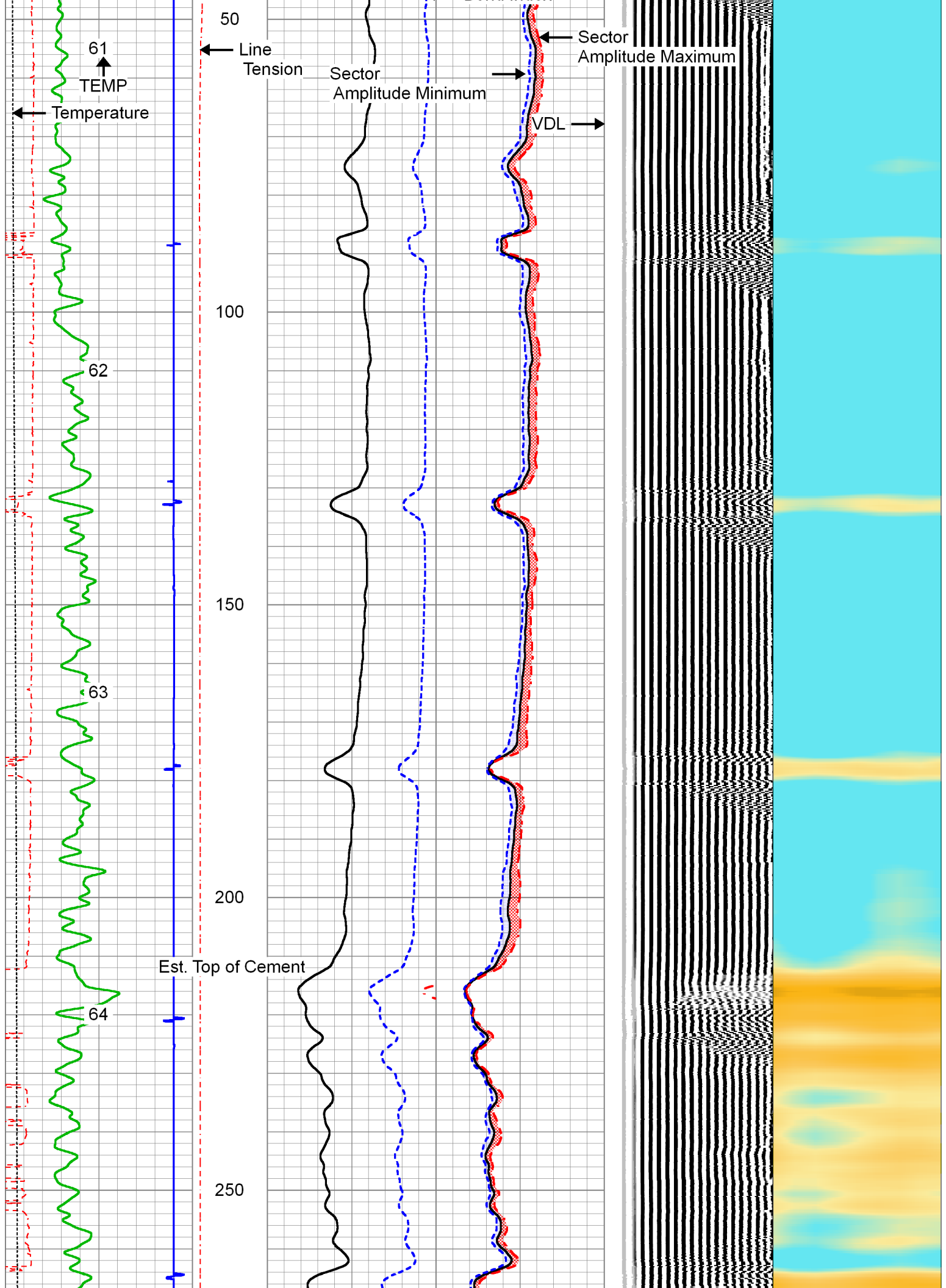
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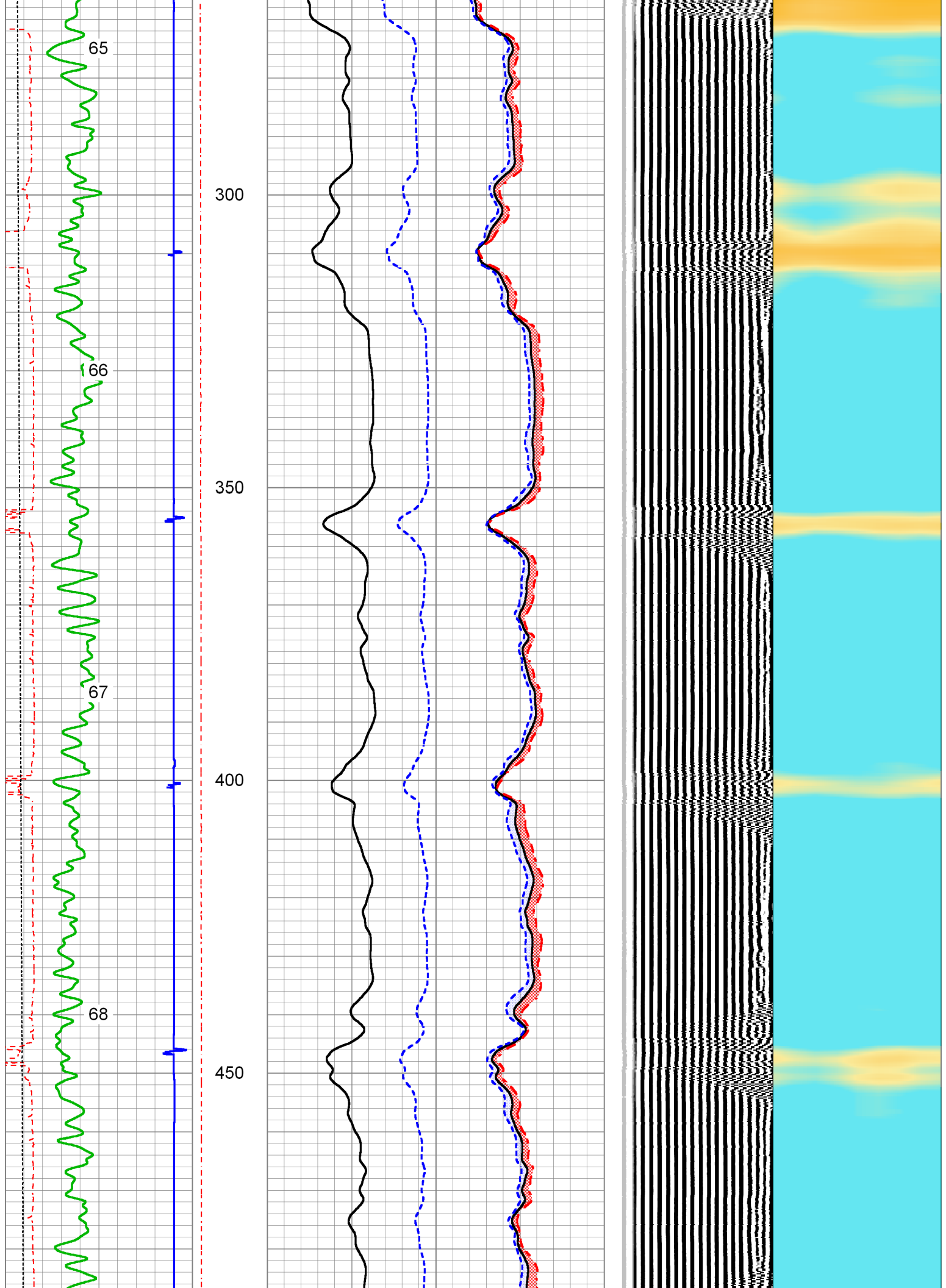
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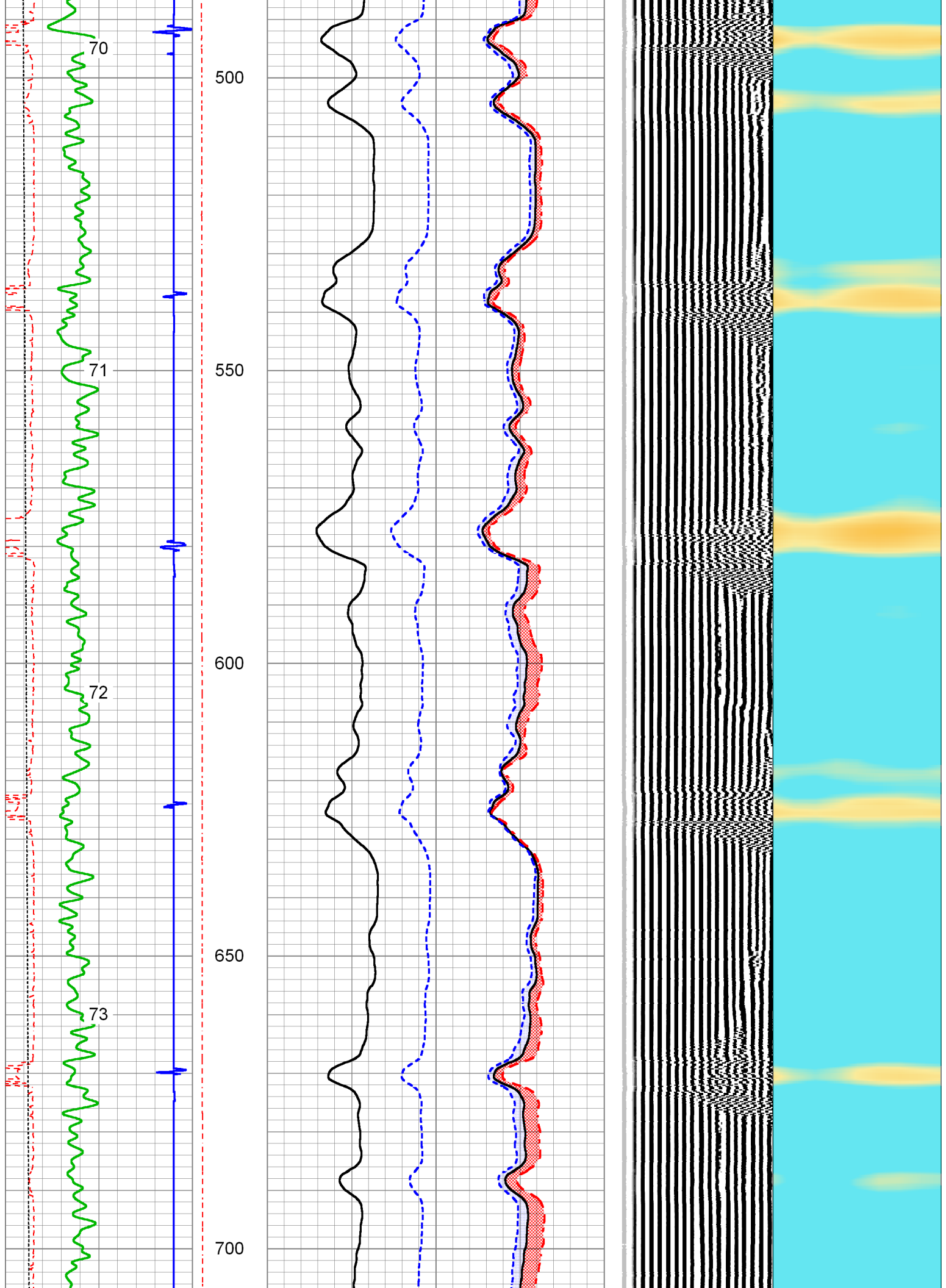
Depth in Feet scaled 1:240

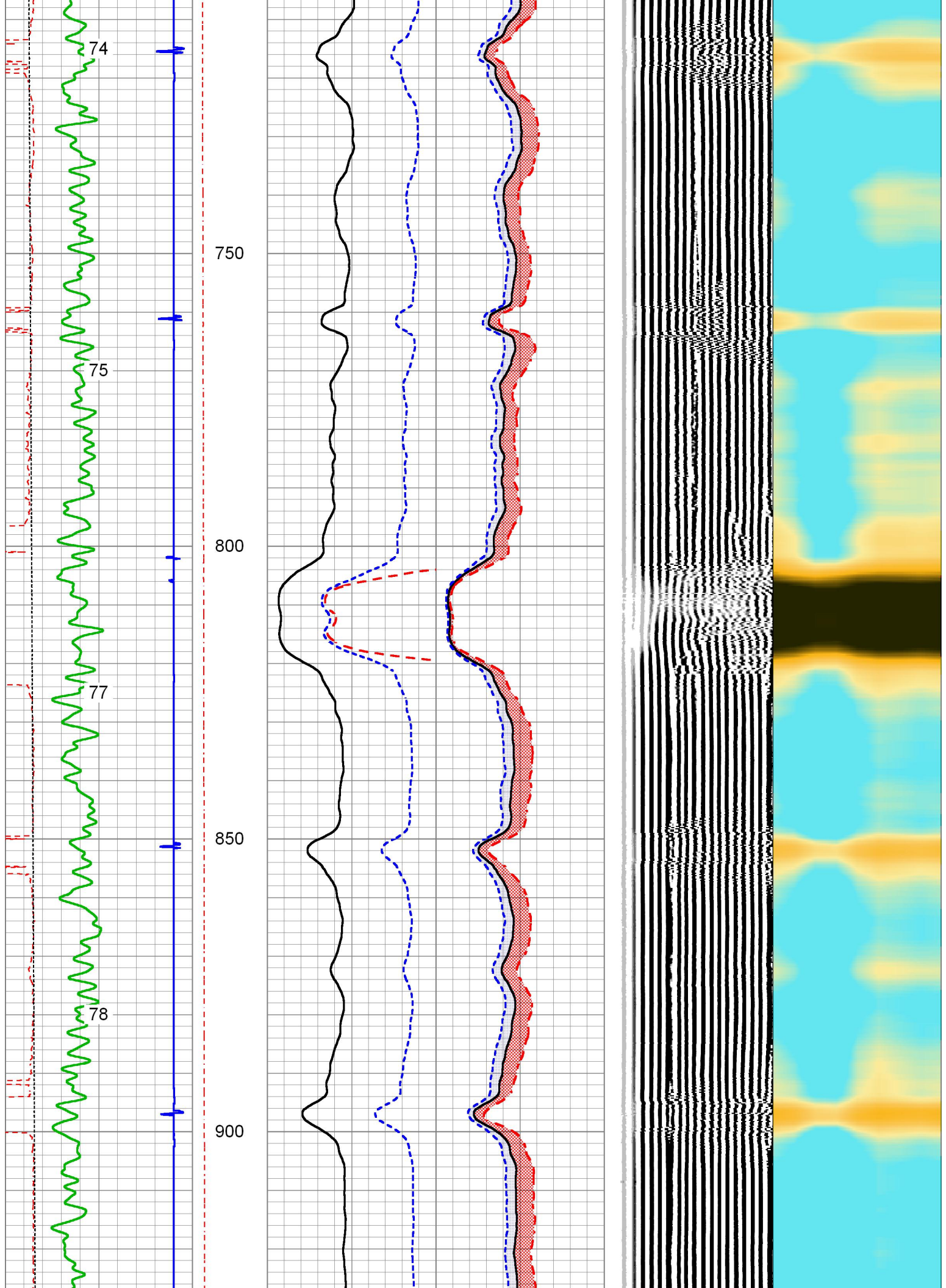
3' Travel Time	Line Tension	3' Amplitude	Sector	200	VDL	1200	1	Sector Map	8
280 (usec) 180	0 (2000)	0 (mV) 100	Amplitude Average						
-9 Collar Locator 1		3' Amplified Amplitude X 5	-5 150						
Gamma Ray		0 (mV) 20	Sector Amplitude Maximum						
0 (GAPI) 150		1 Bond Index 0	-5 150						
55 TEMP (degF) 205			Sector Amplitude Minimum						
TEMP (degF)			-5 150						

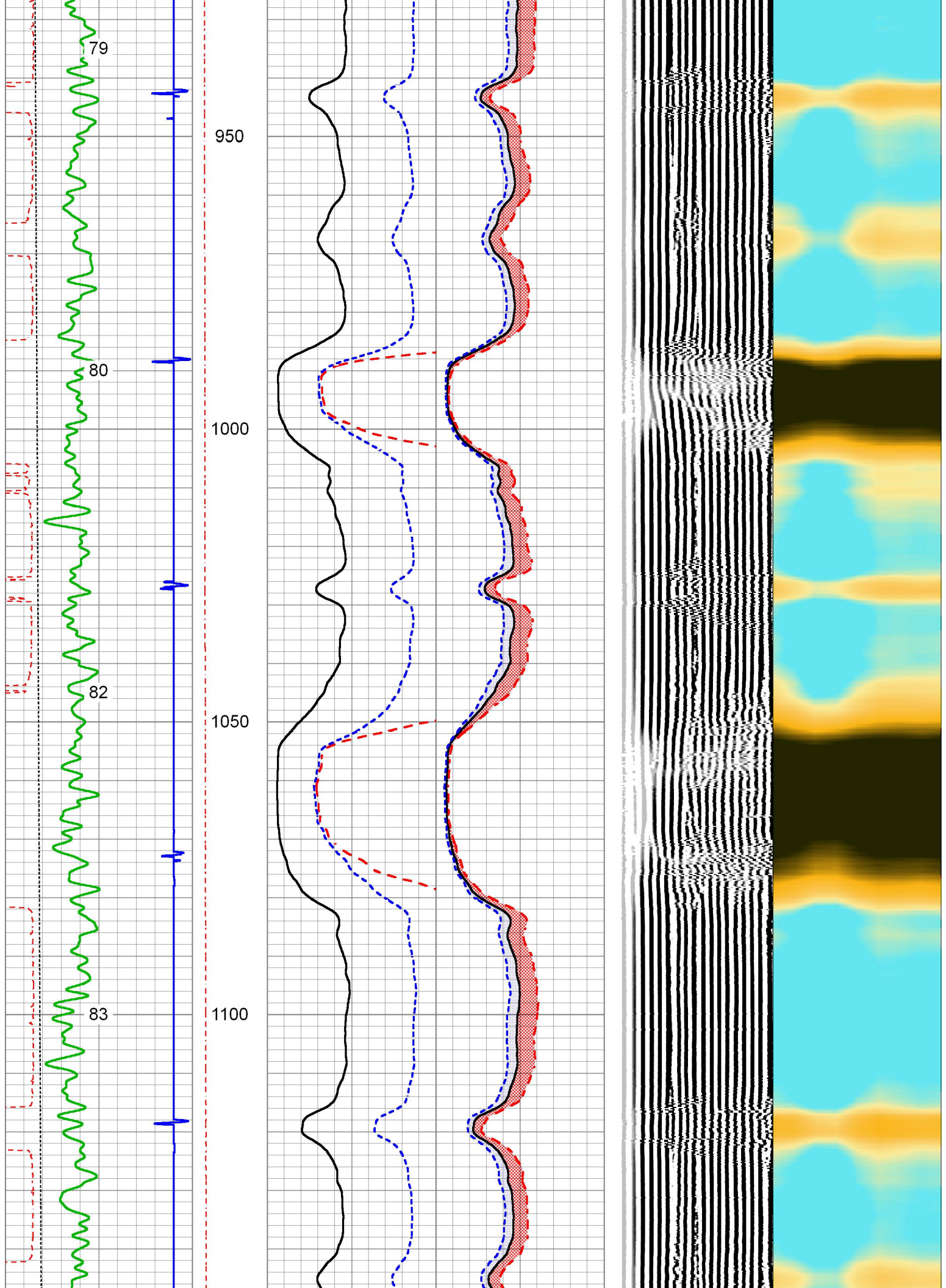


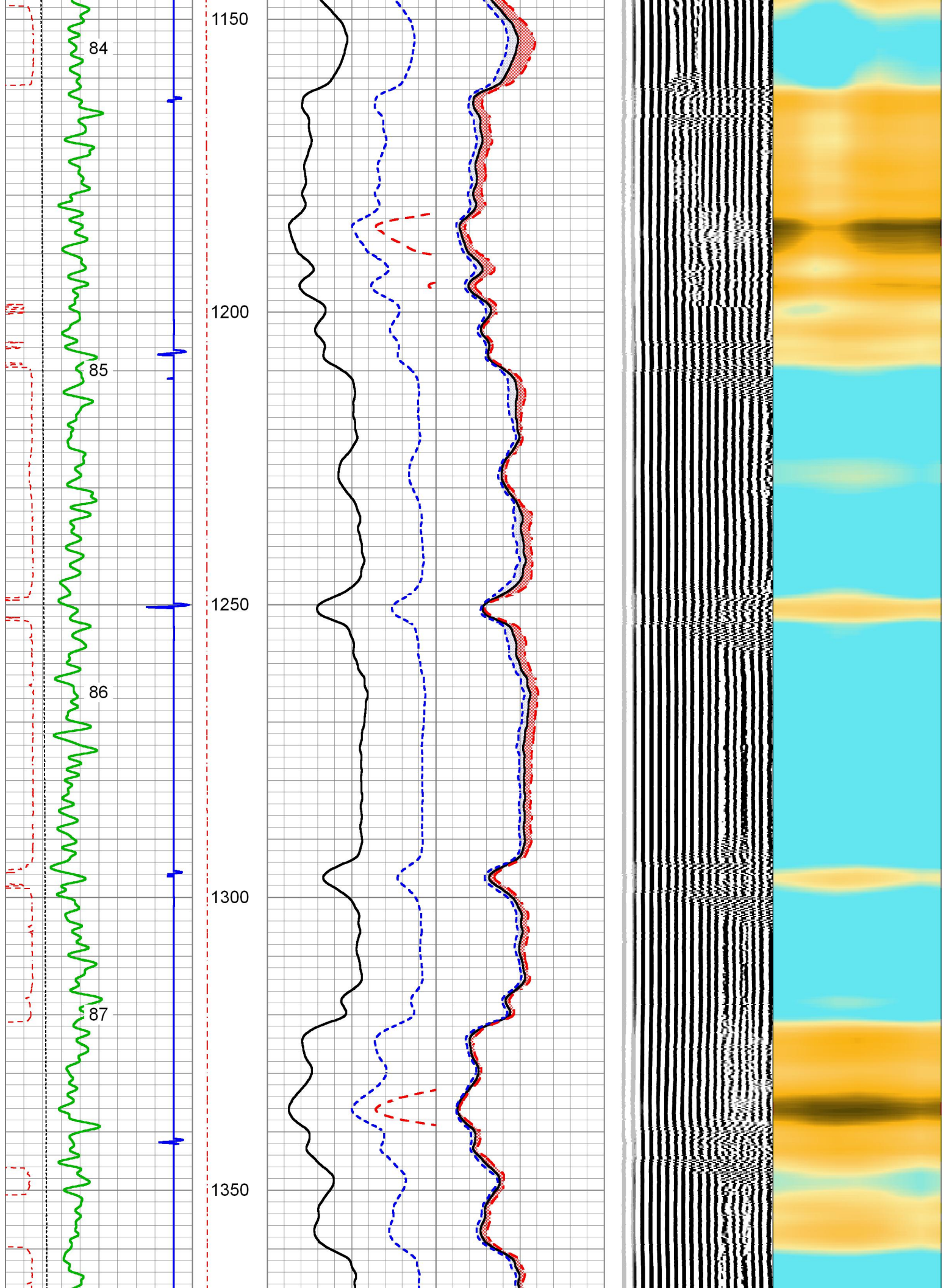


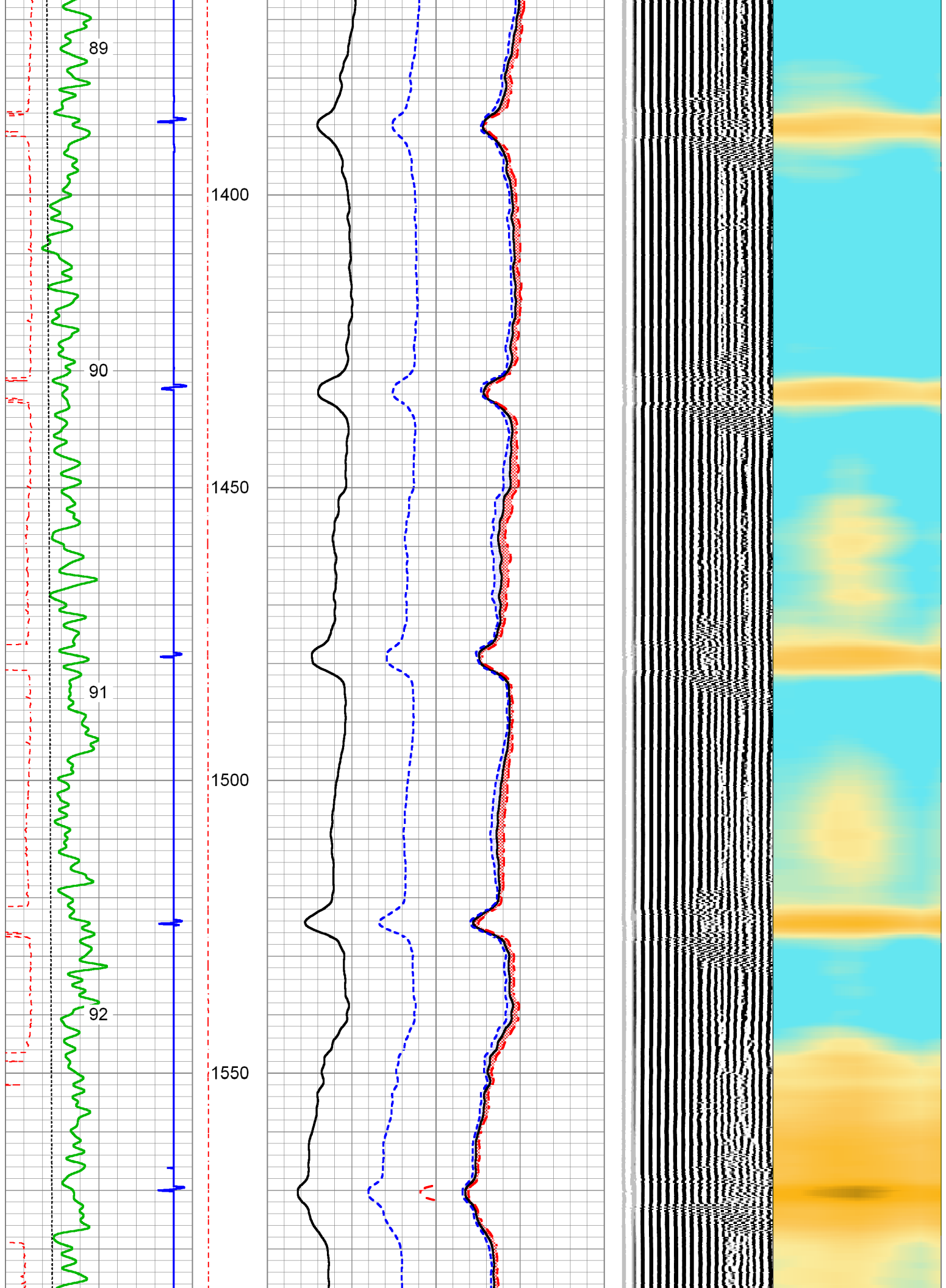


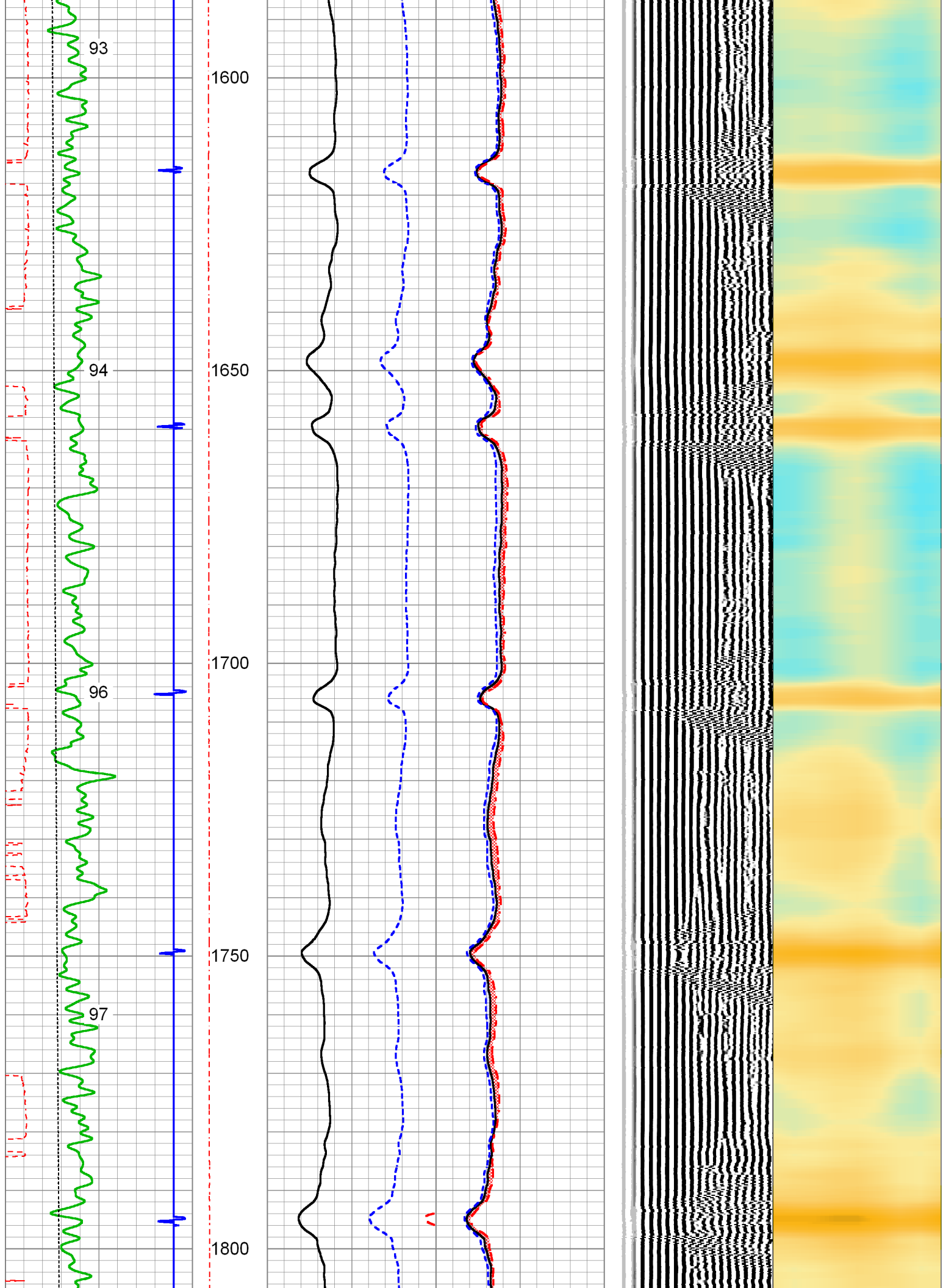


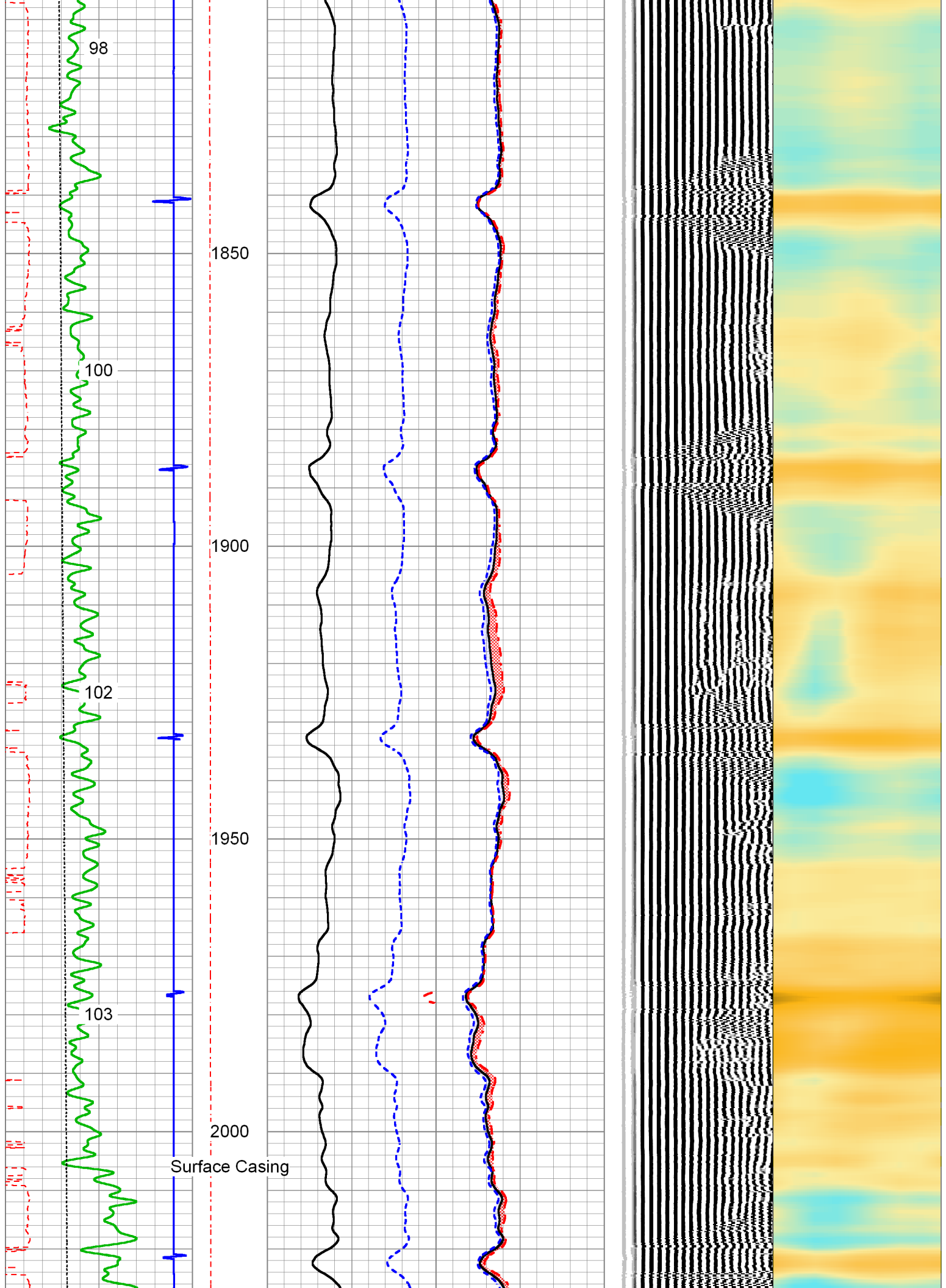


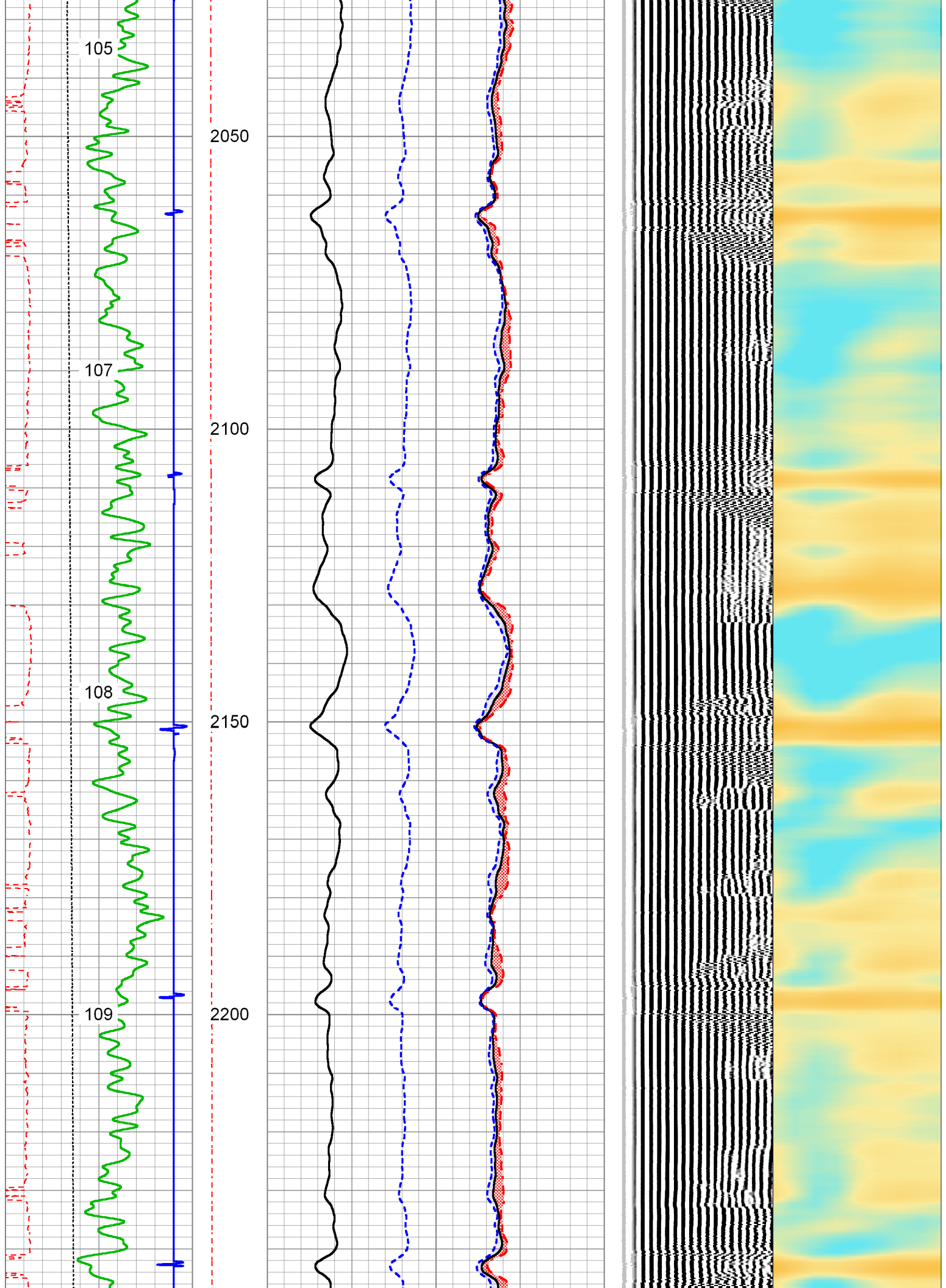


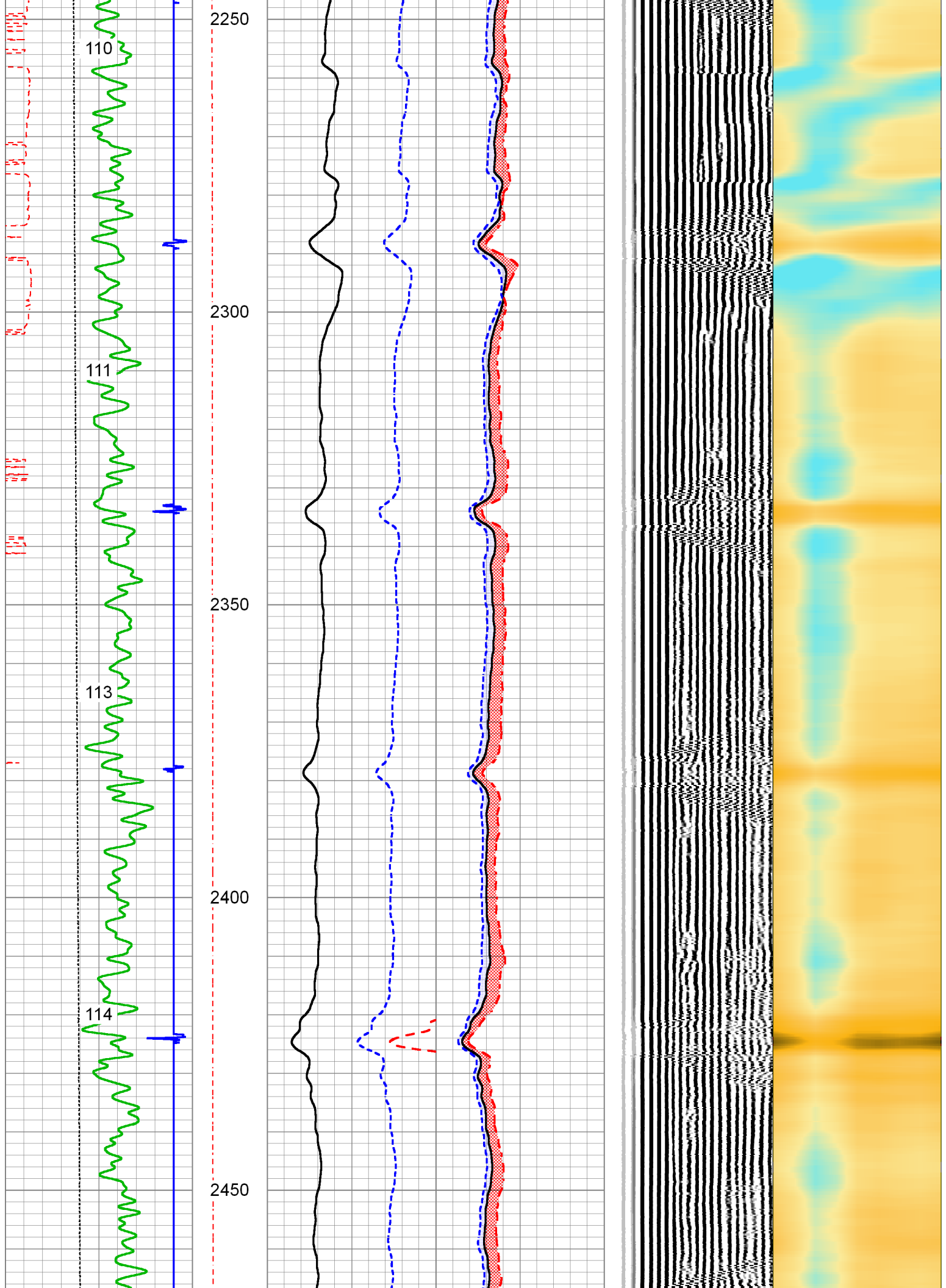


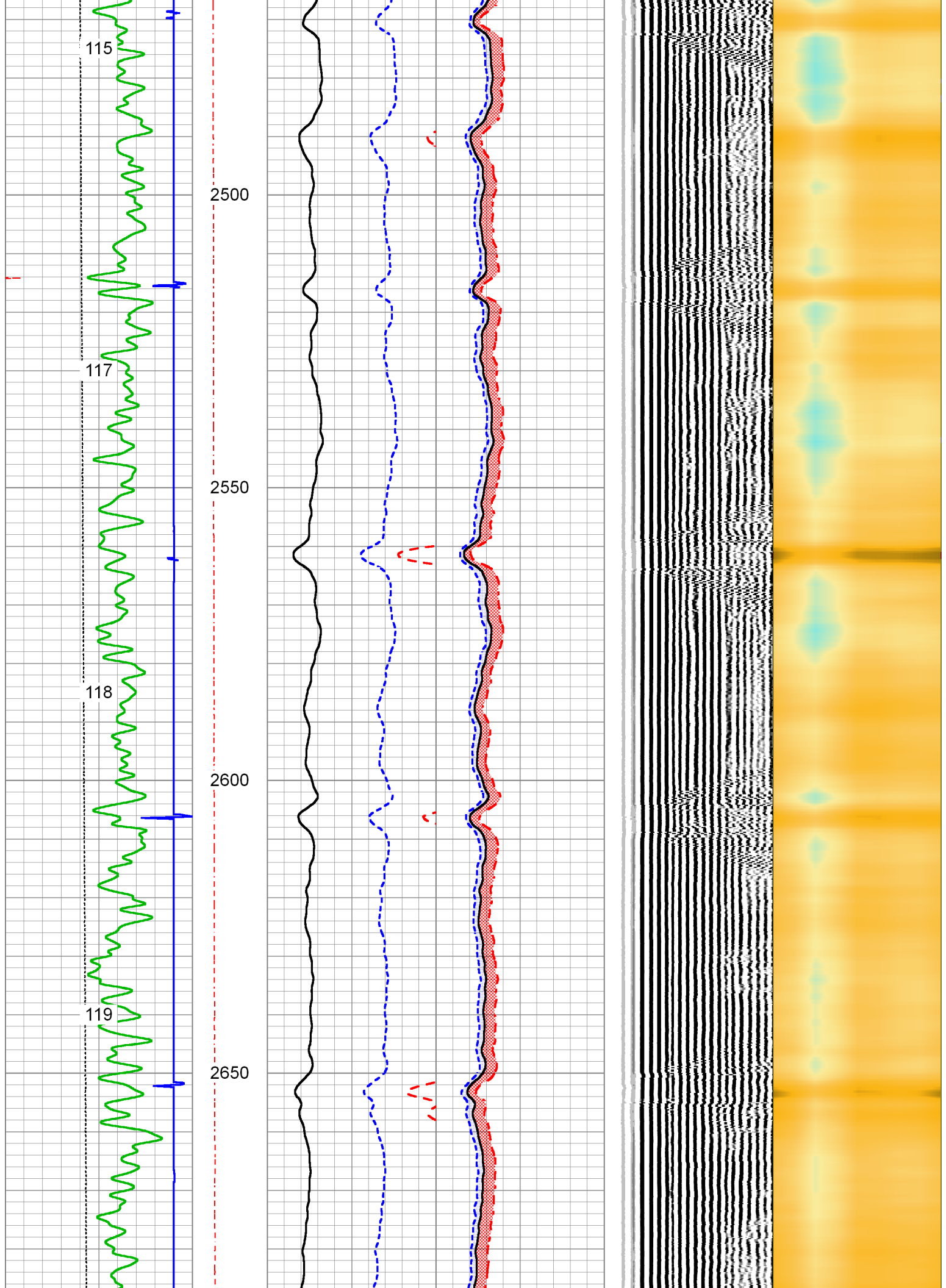


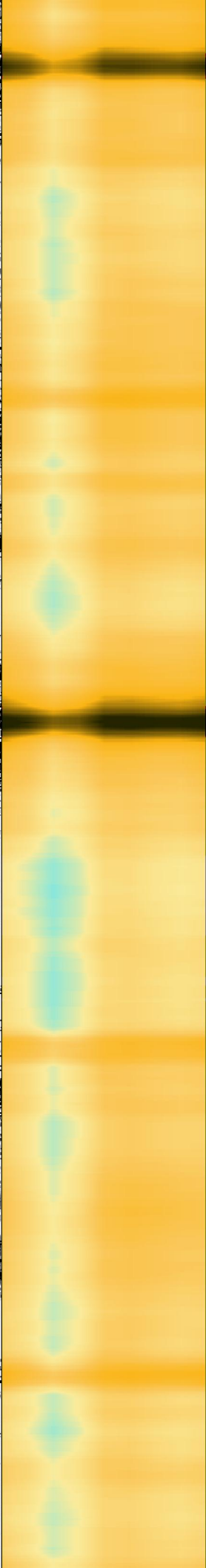
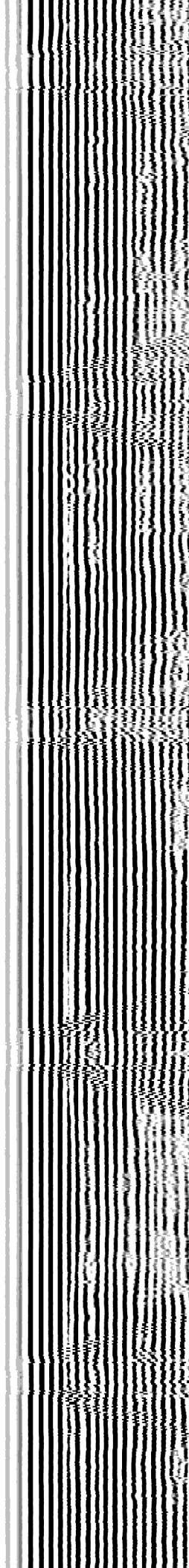
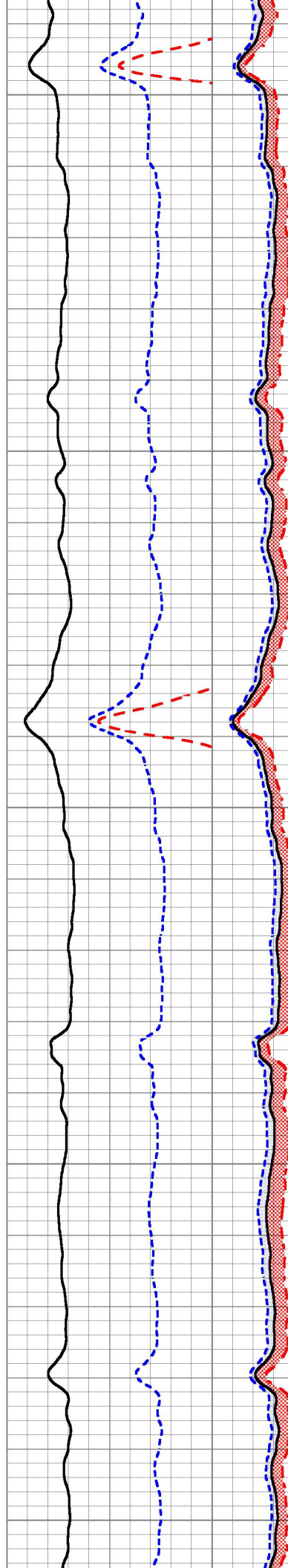
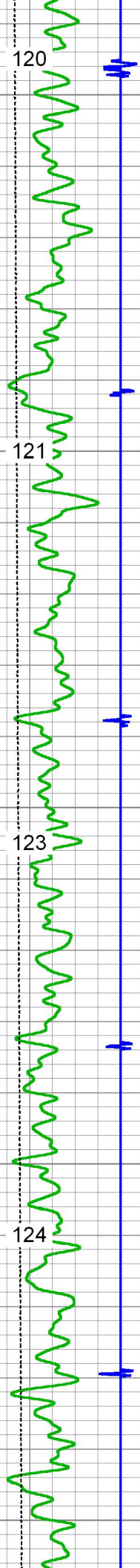


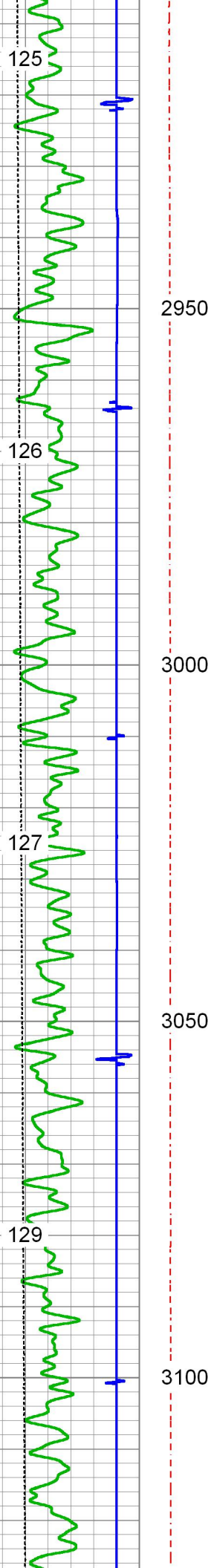










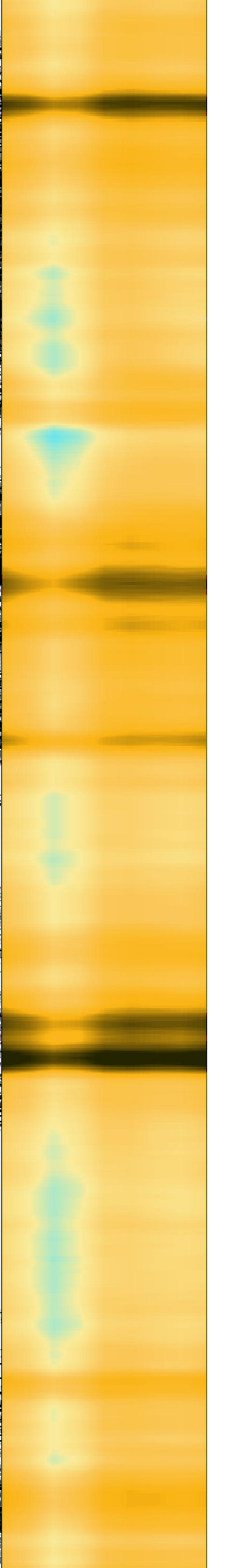
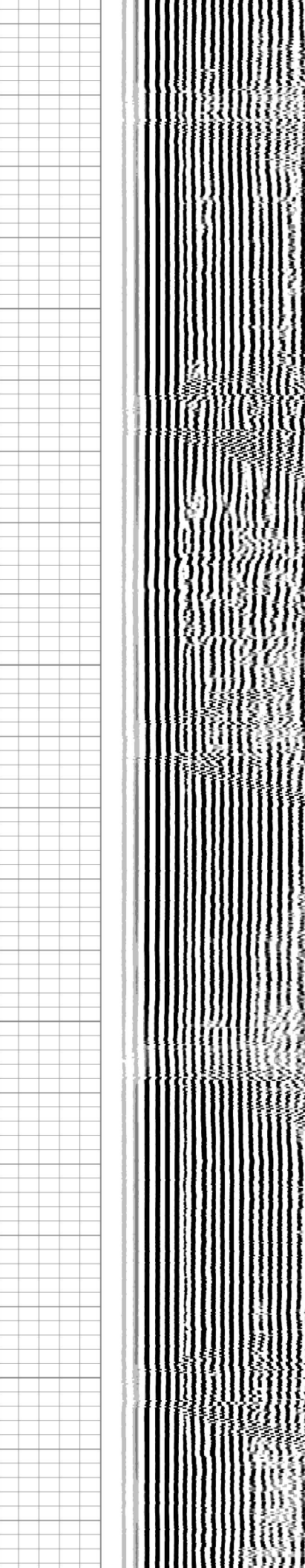
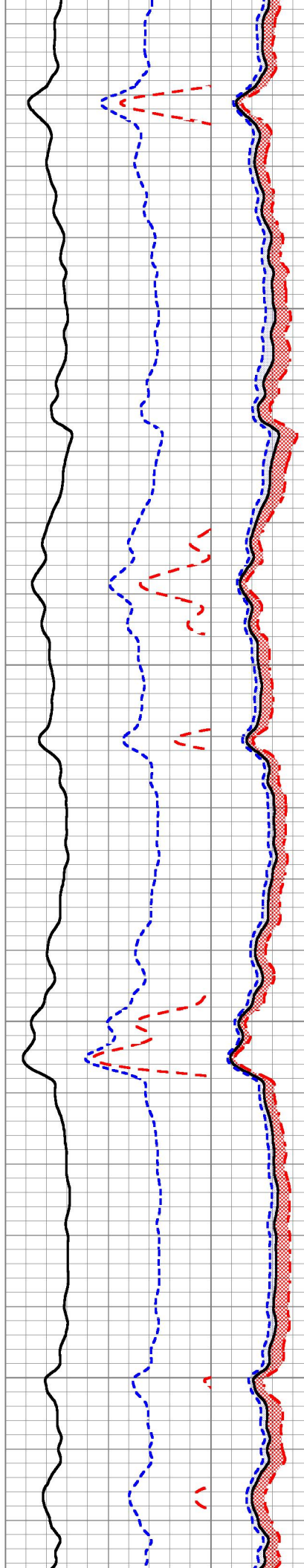


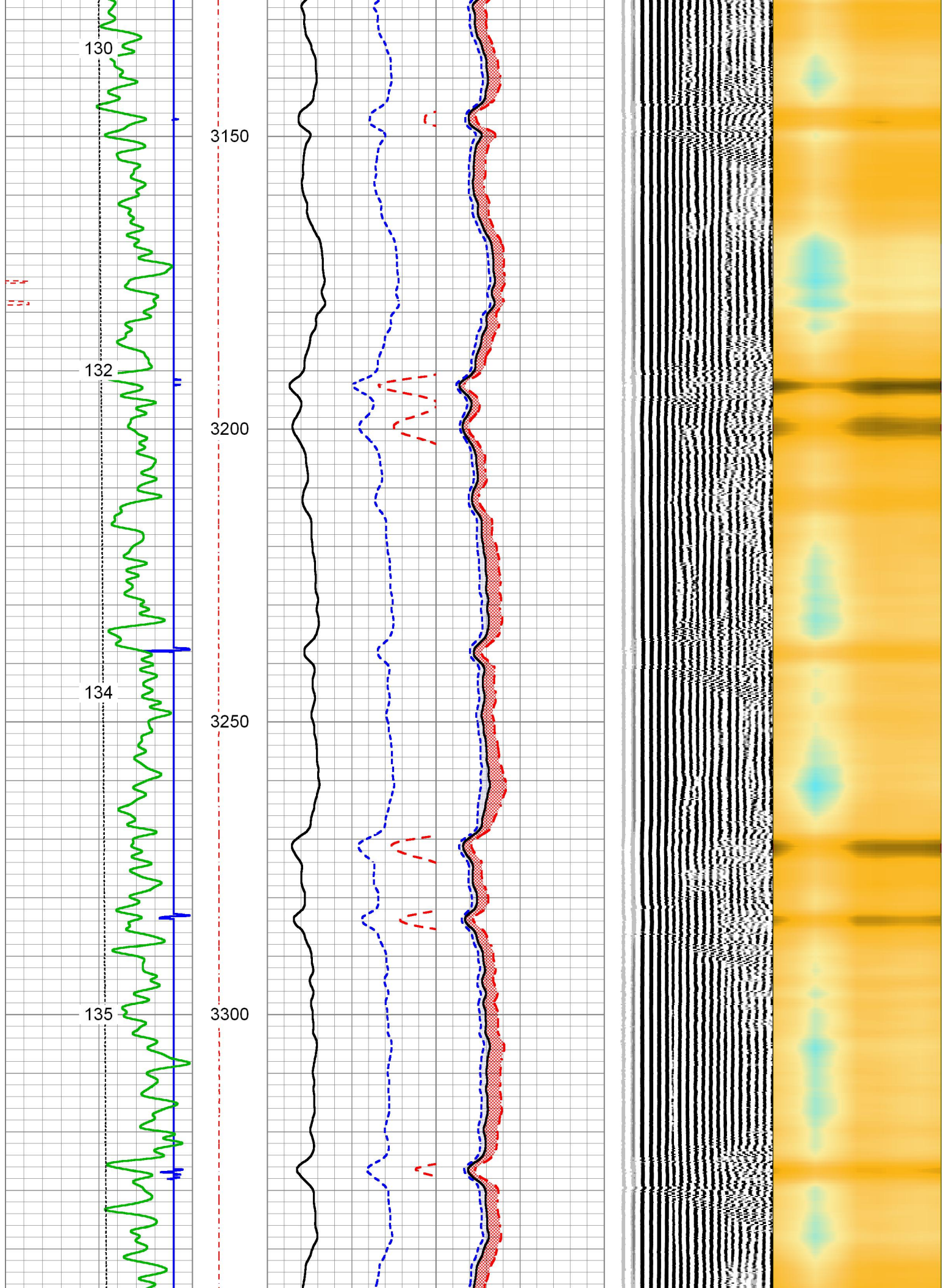
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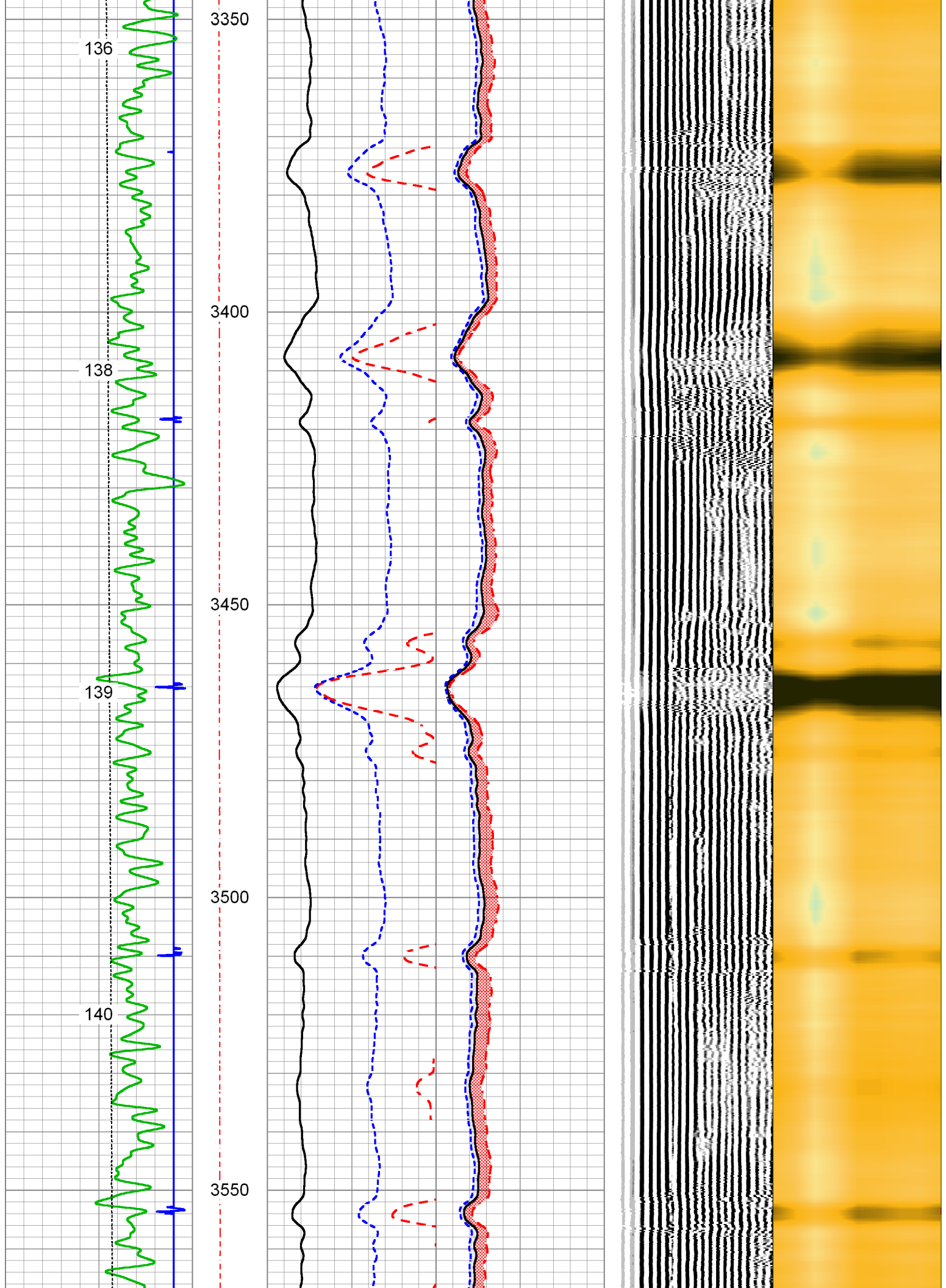
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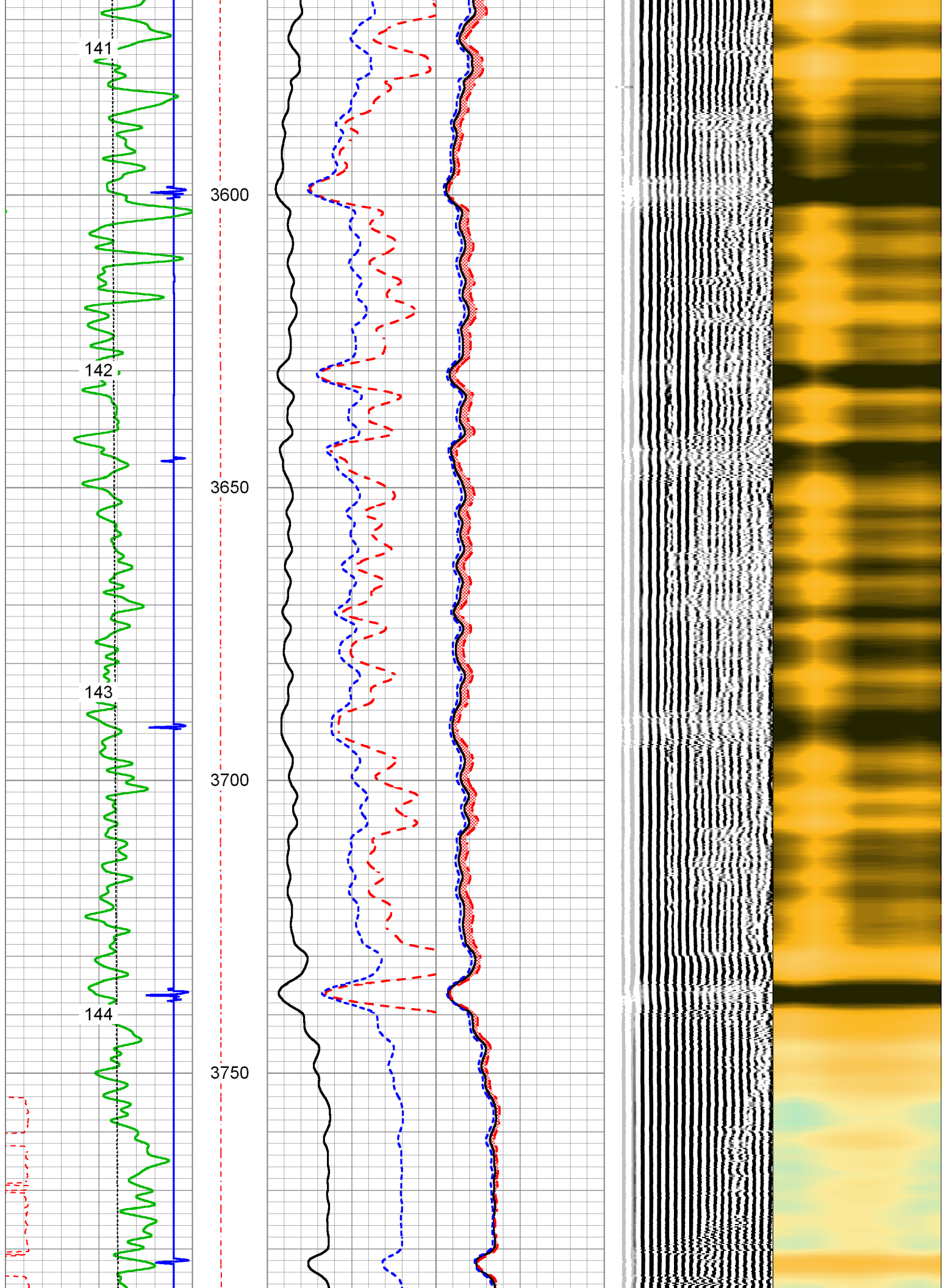
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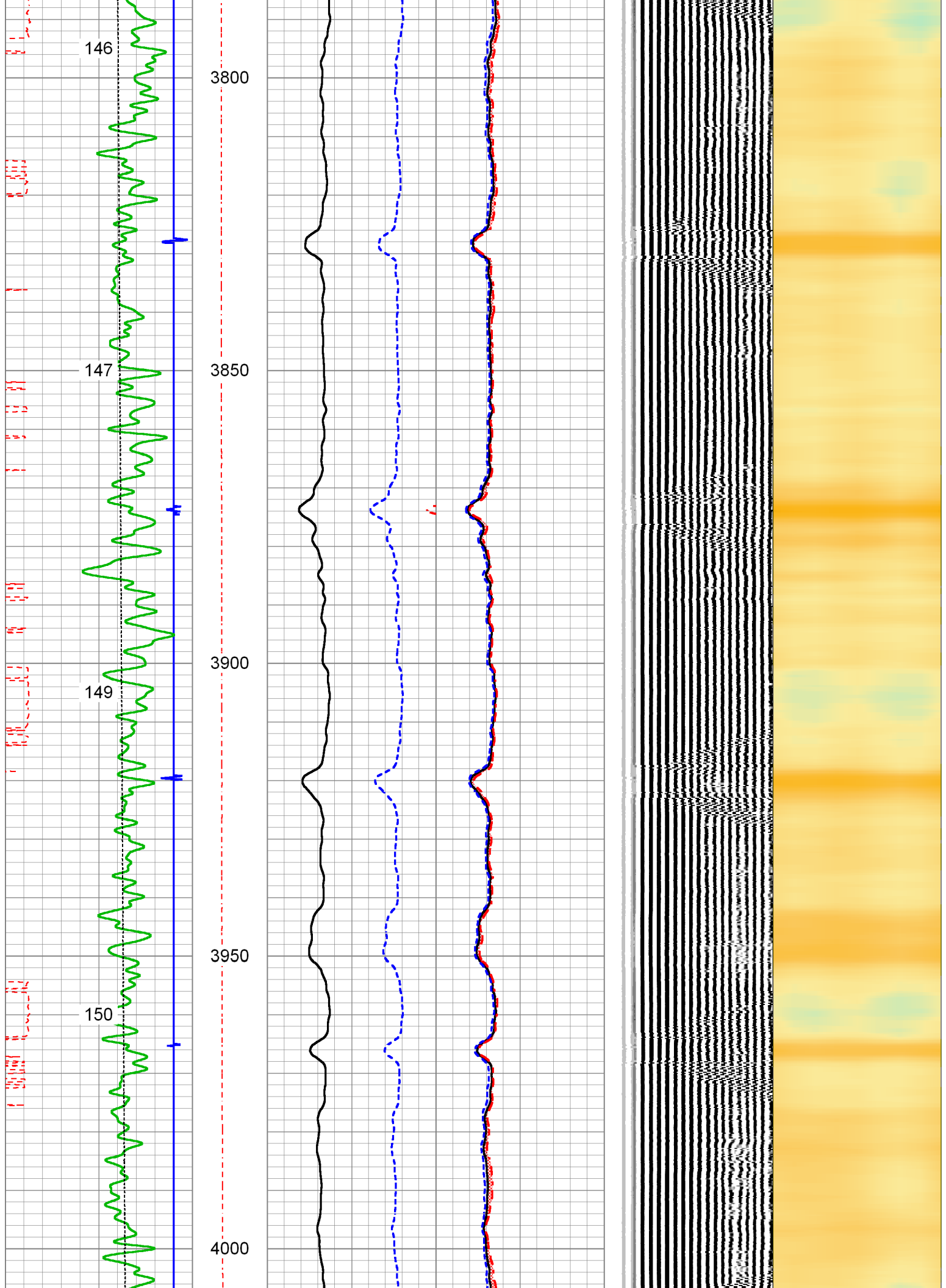
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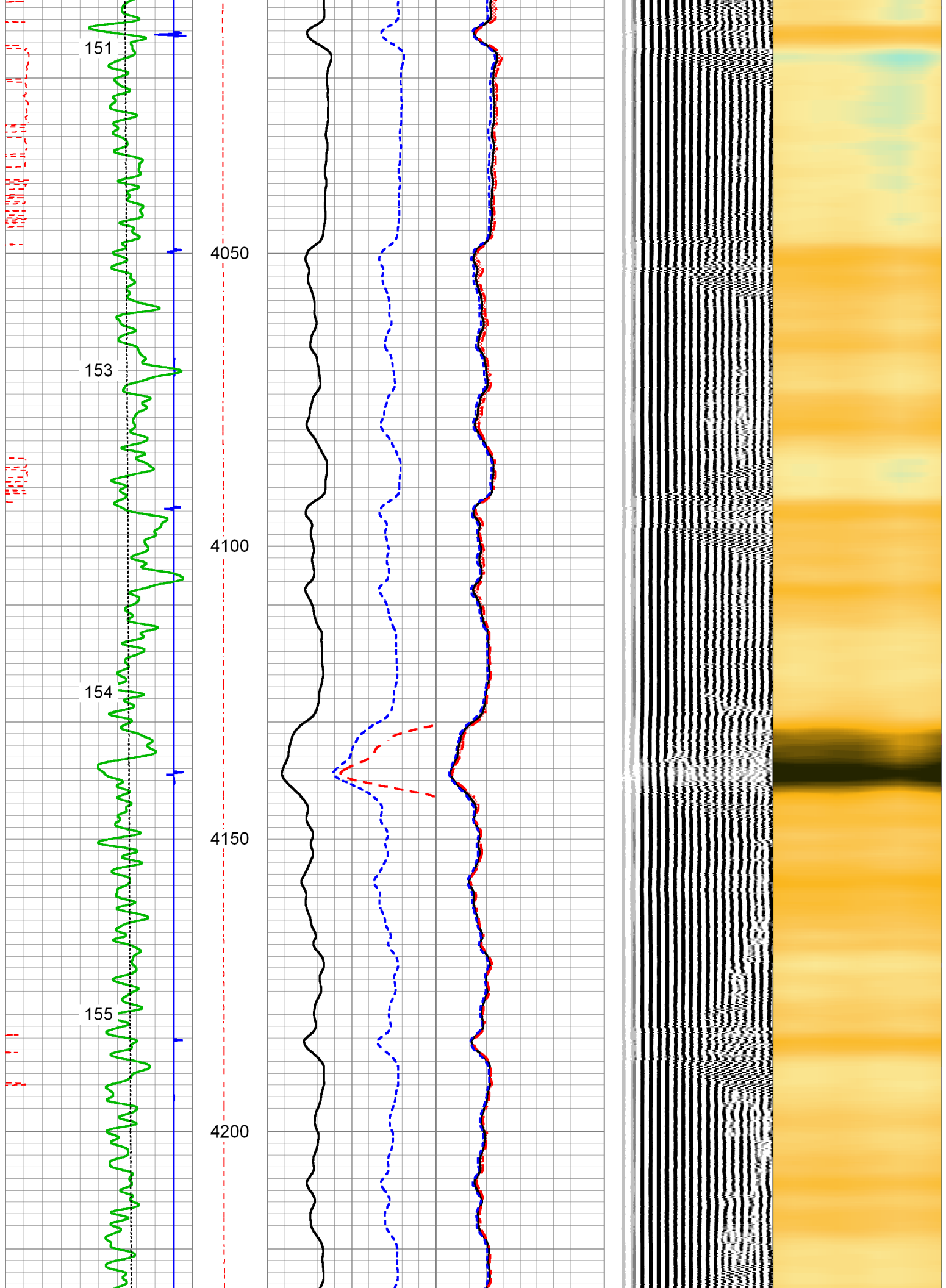












156

157

159

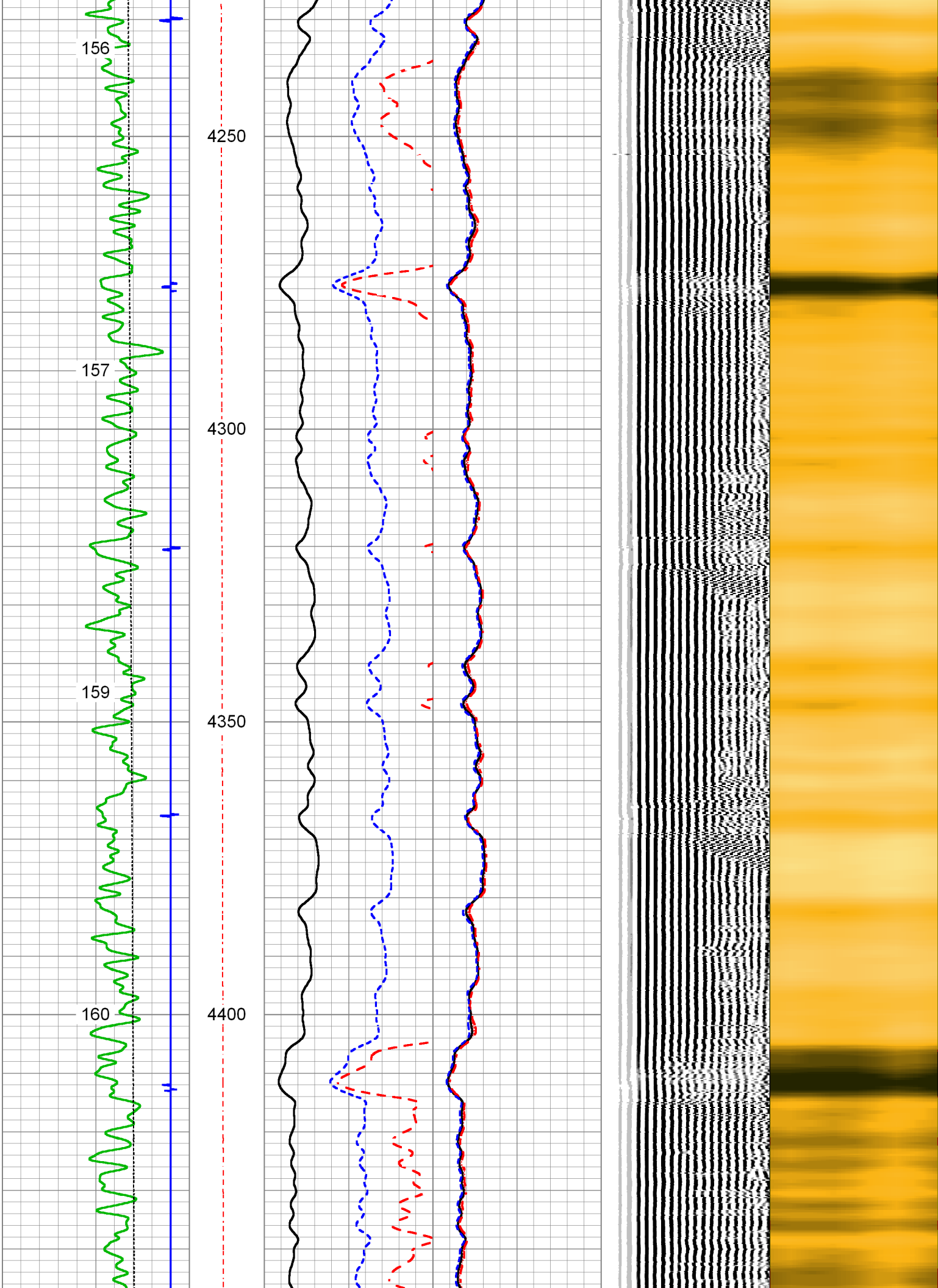
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4250

4300

4350

4400



161

163

164

165

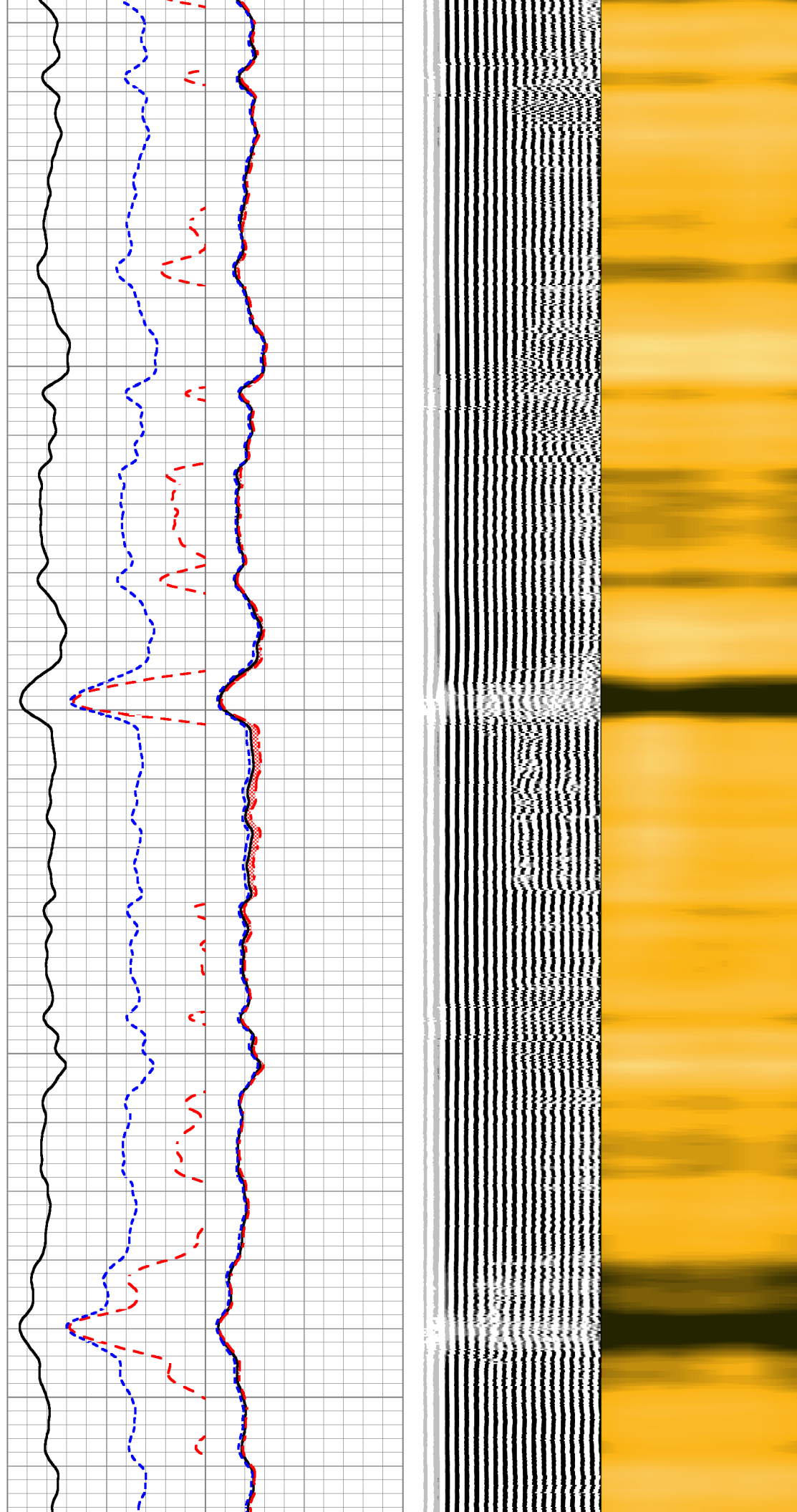
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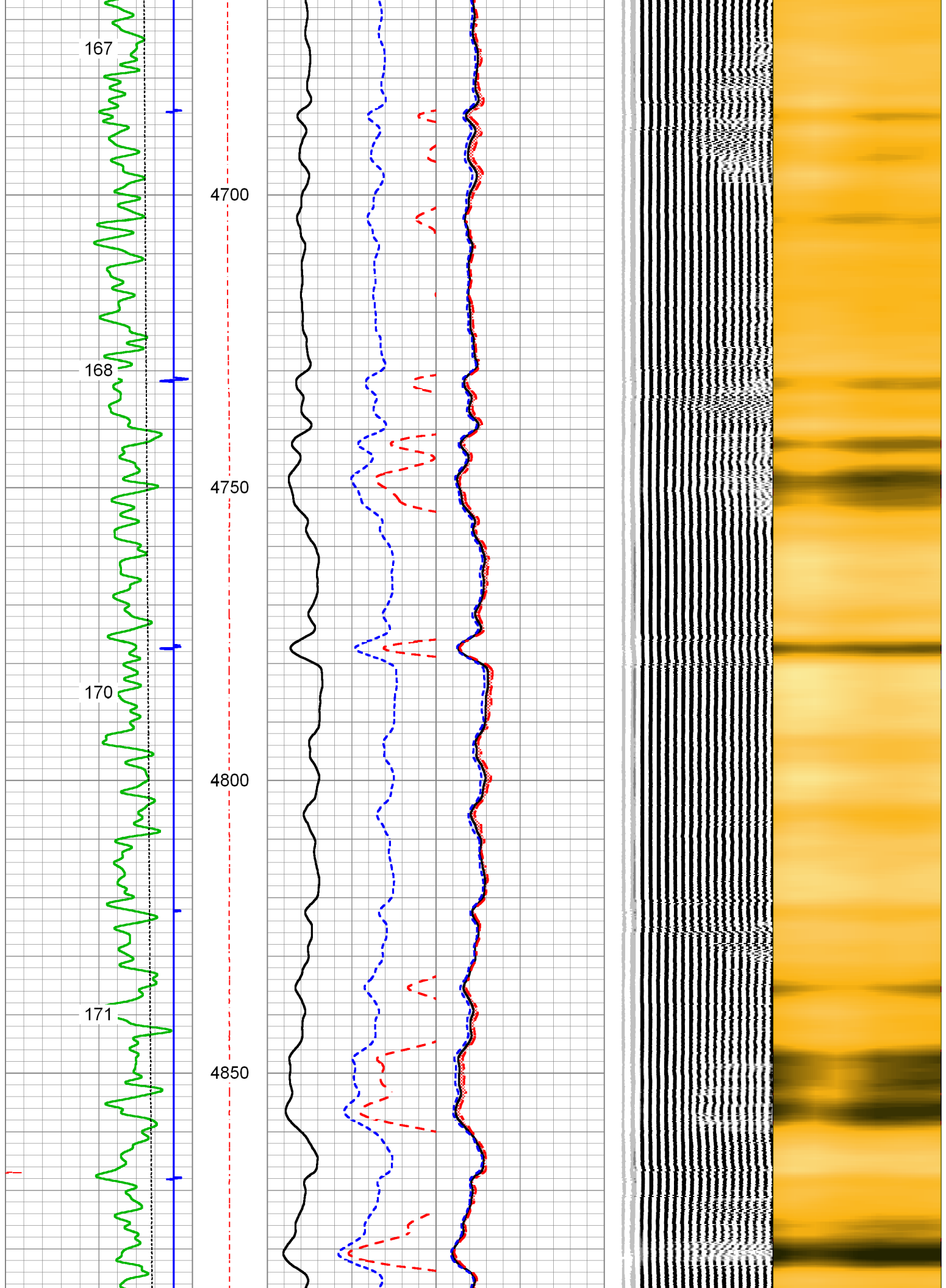
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4550

4600

4650





173

4900

175

4950

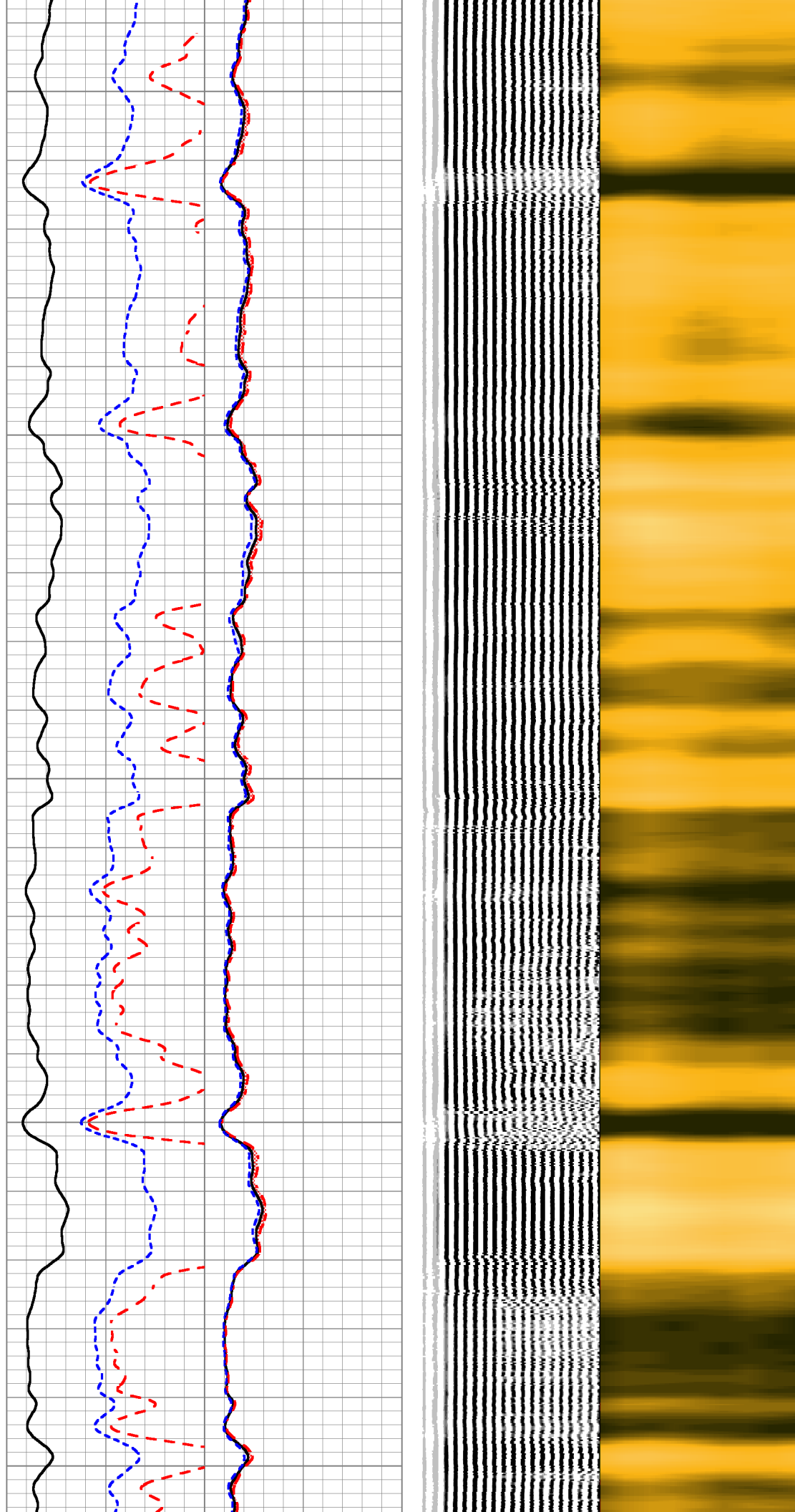
176

5000

179

Short Jt.

5100



181

182

184

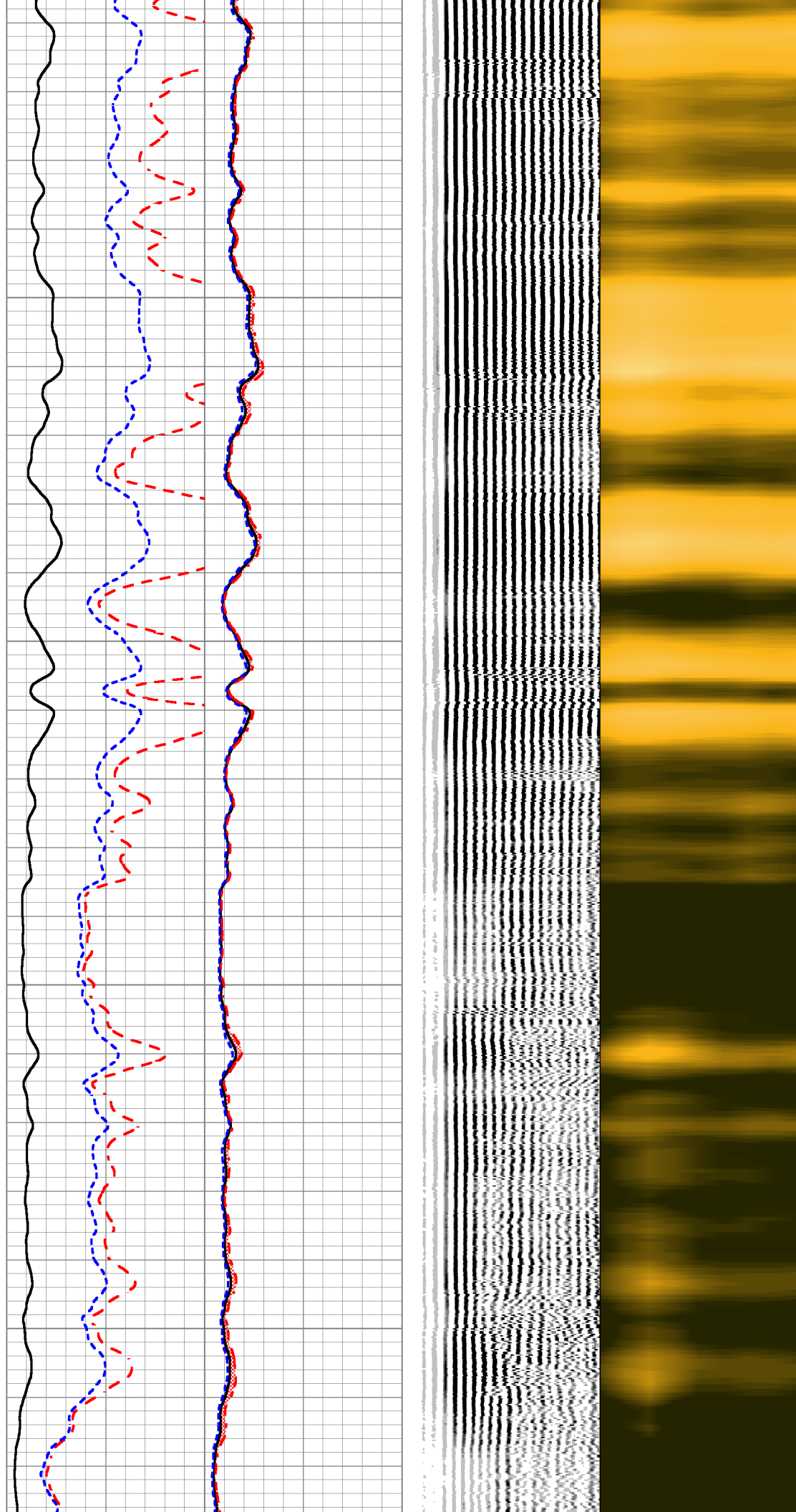
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5150

5200

5250

5300



187

5350

188

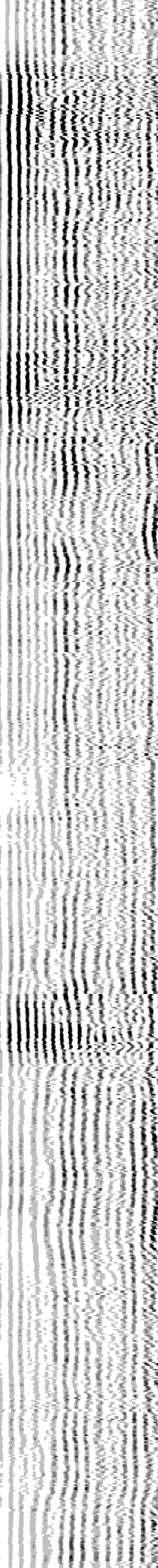
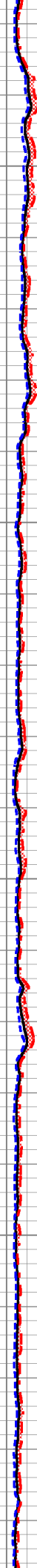
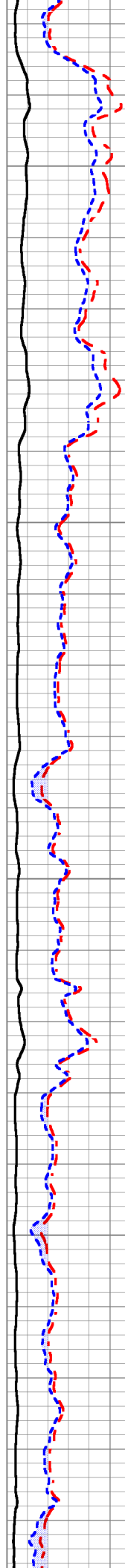
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189

5450

190

5500



191

193

194

195

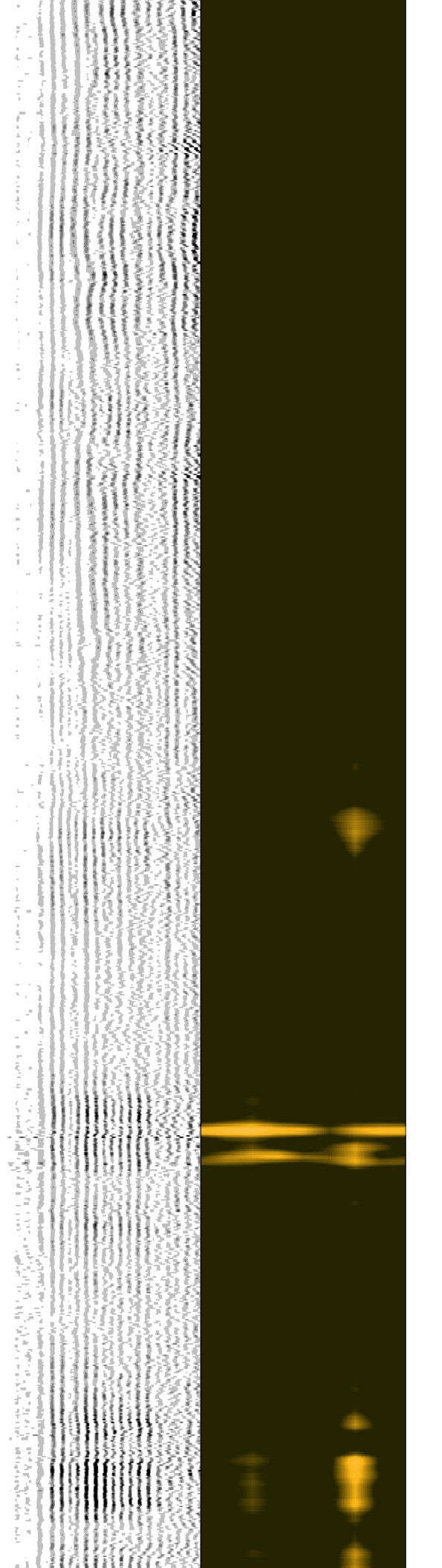
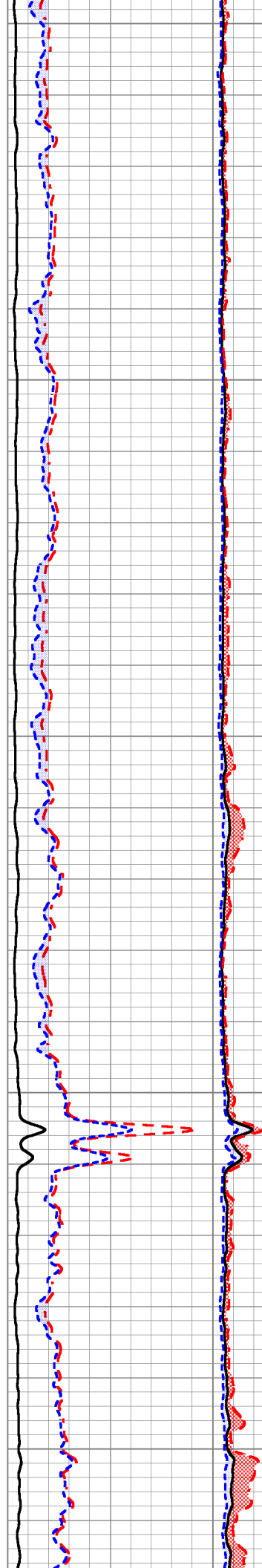
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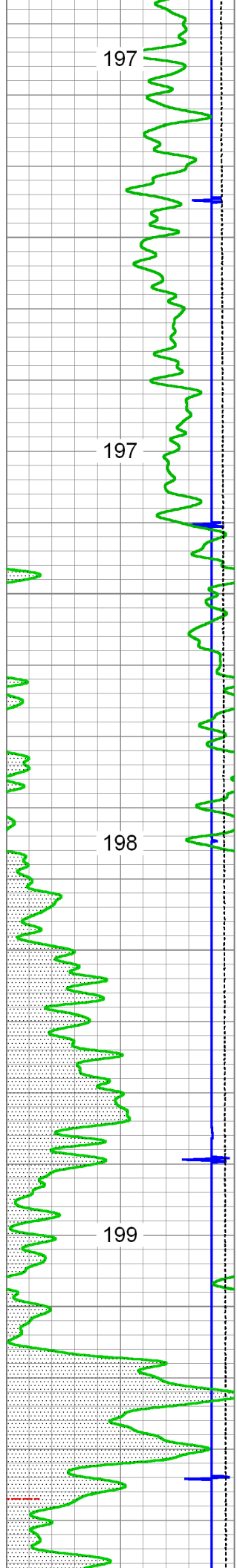
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5650

5700

5750



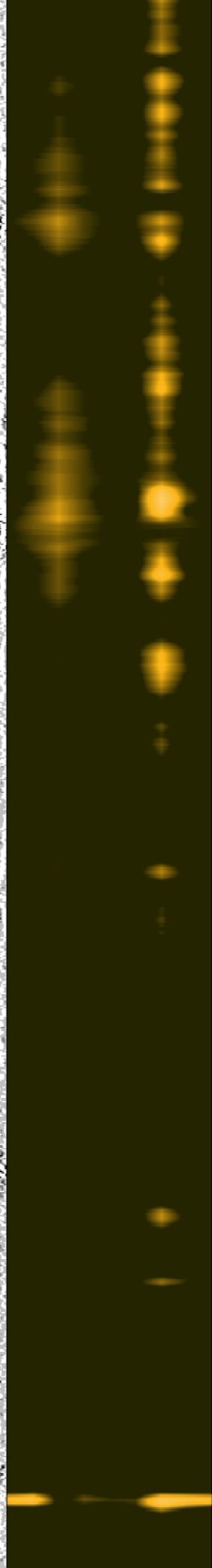
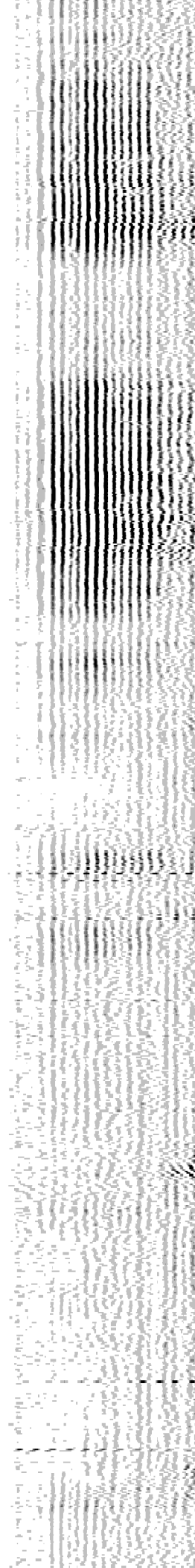
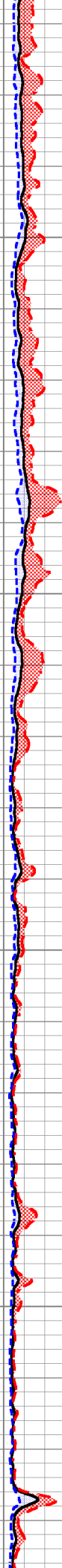
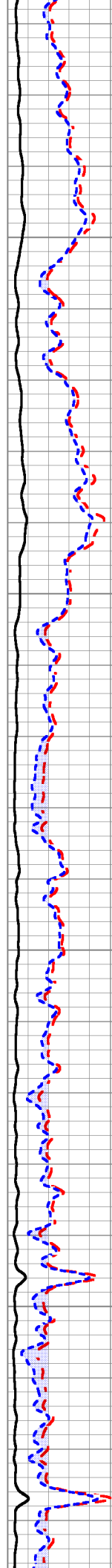


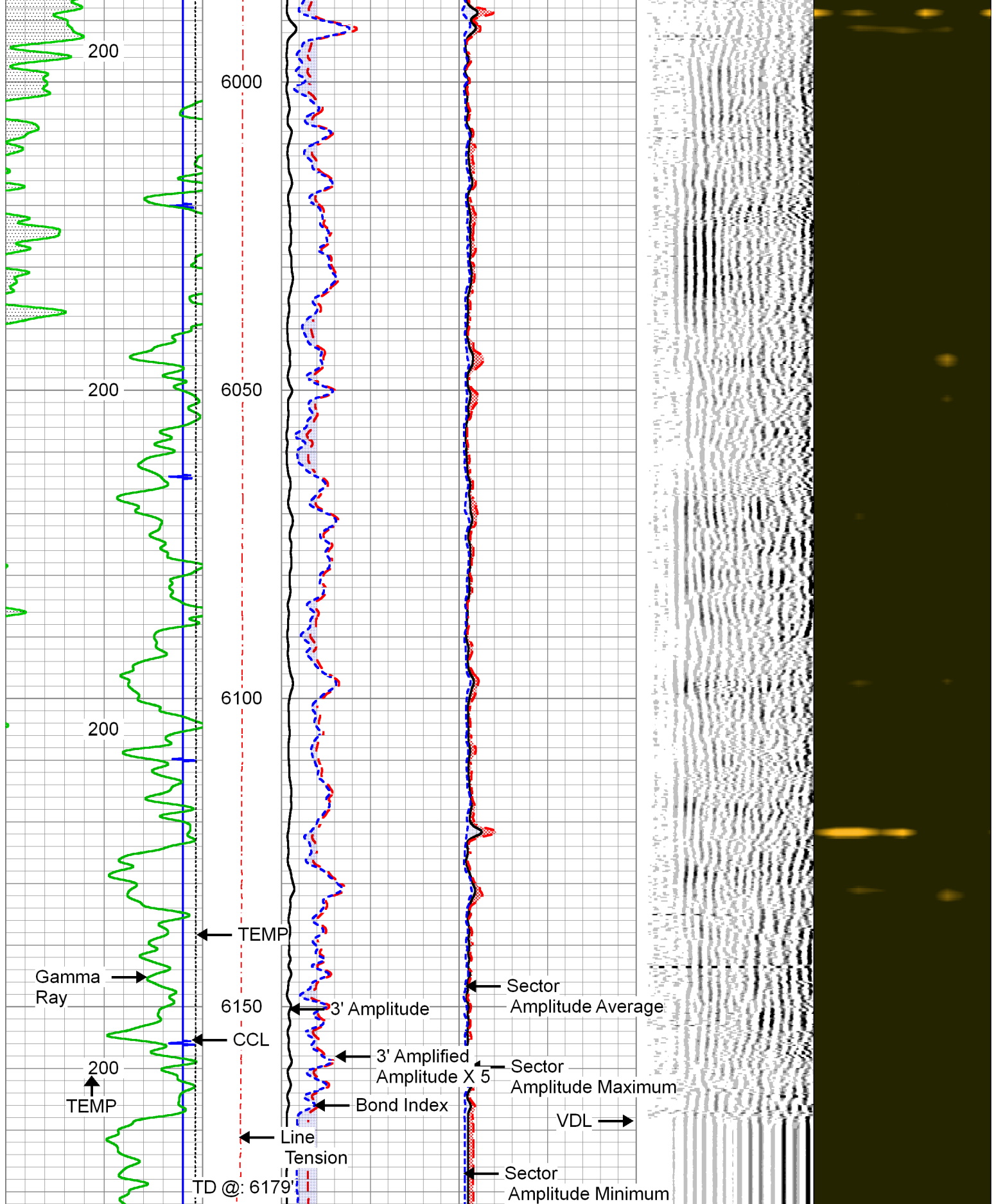
5800

5850

5900


5950





3' Travel Time	Line Tension	3' Amplitude (mV)	Sector Amplitude Average	200	VDL	1200	1	Sector Map	8
280 (usec)	0 (2000)	0 100	-5 150						
-9 Collar Locator	1	3' Amplified Amplitude X 5	Sector Amplitude Maximum						
Gamma Ray		0 (mV) 20							

0	(GAPI)	150	1	Bond Index	0	-5	150
55	TEMP (degF)	205				Sector	
	TEMP					Amplitude Minimum	
	(degF)					-5	150

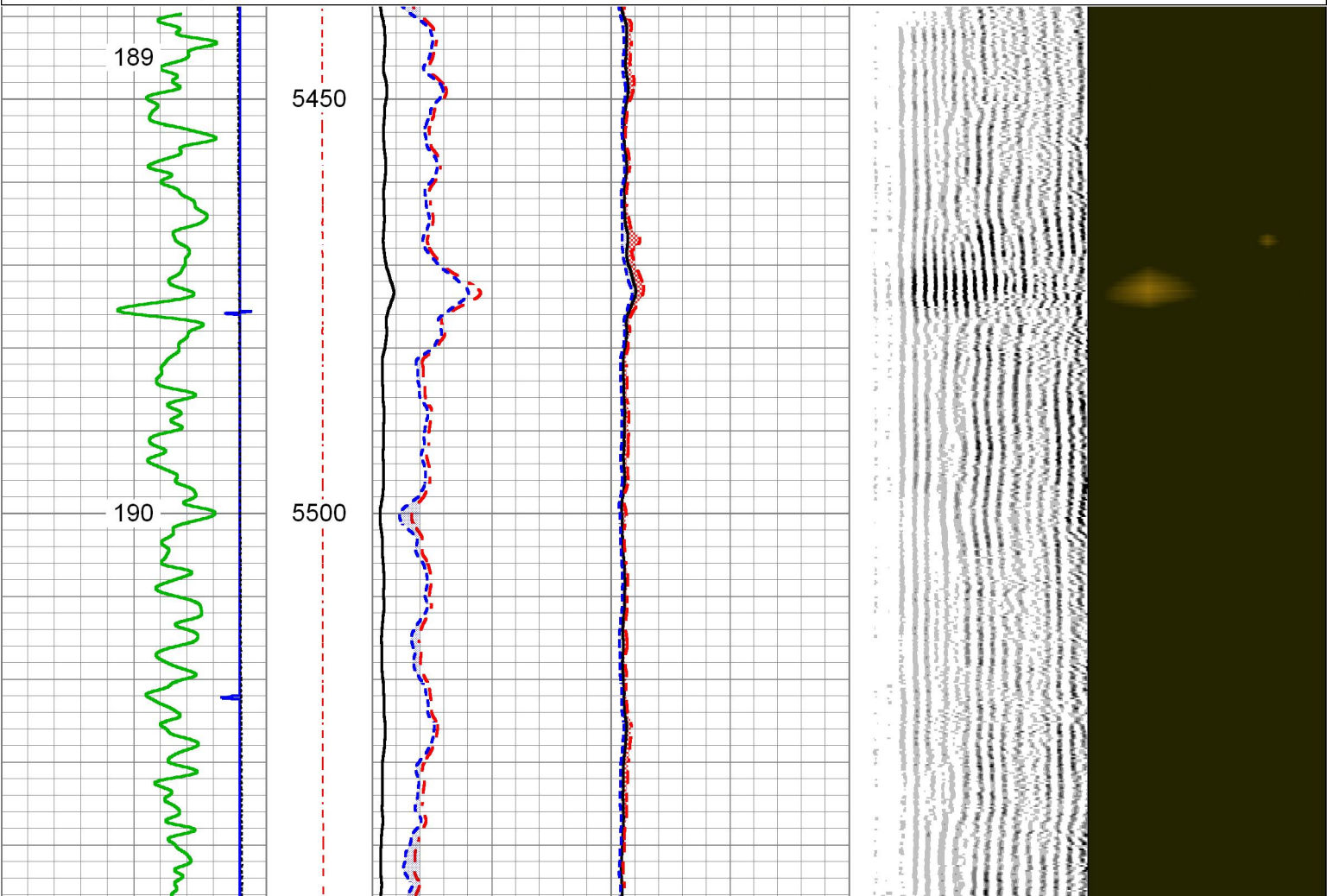


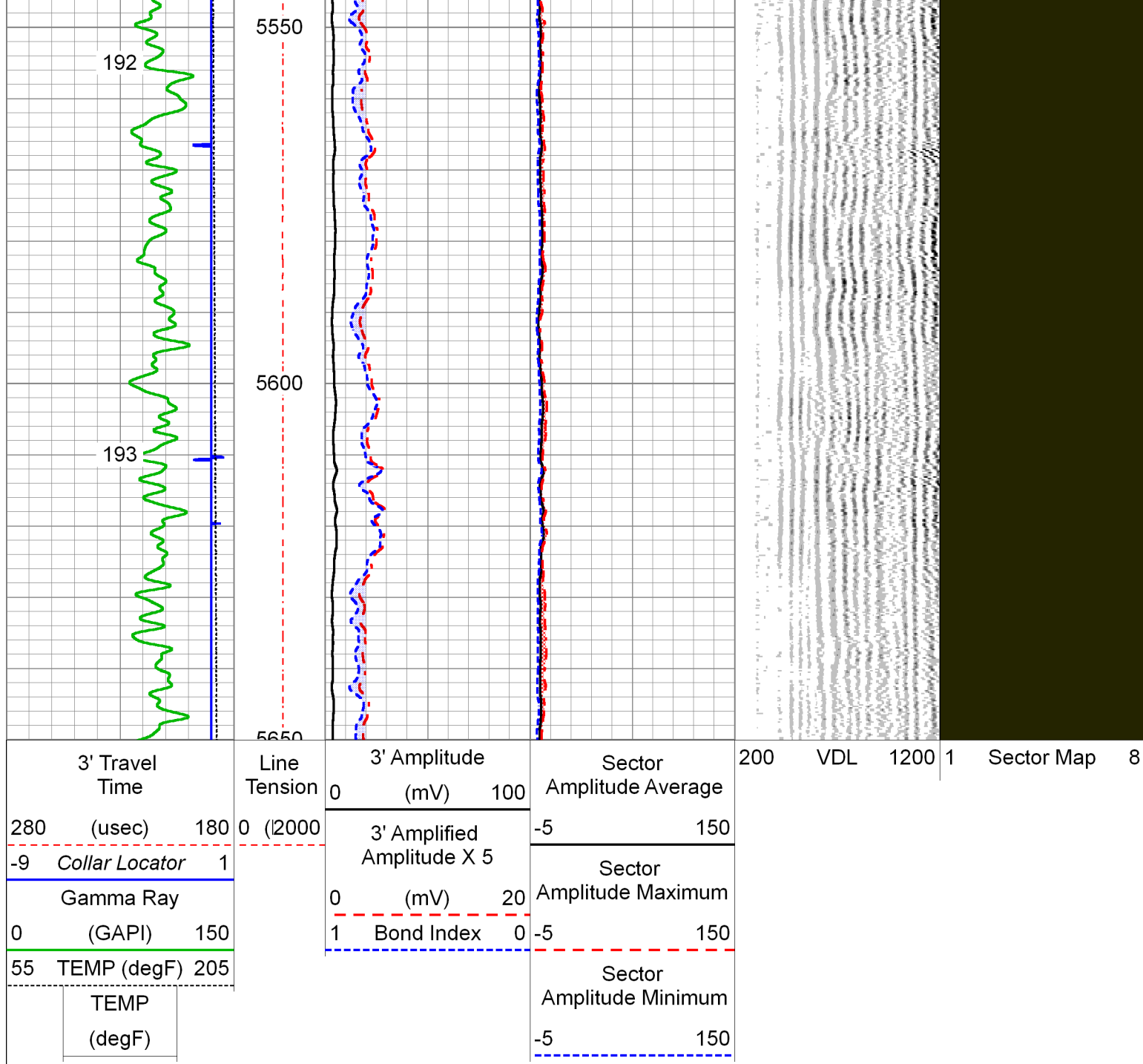
REPEAT SECTION

1500 PSI APPLIED AT SURFACE

Database File	horsetail 07f-0605.db
Dataset Pathname	RBL/pass2.1
Presentation Format	PINR_S~1
Dataset Creation	Mon May 09 10:52:45 2016
Charted by	Depth in Feet scaled 1:240

3' Travel Time	Line Tension	3' Amplitude (mV)	Sector Amplitude Average	200	VDL	1200	1	Sector Map	8
280 (usec)	0 (2000)	0 100	-5 150						
-9 Collar Locator 1		3' Amplified Amplitude X 5							
Gamma Ray		0 (mV) 20	Sector Amplitude Maximum						
0 (GAPI) 150		1 Bond Index 0	-5 150						
55 TEMP (degF) 205			Sector Amplitude Minimum						
TEMP (degF)			-5 150						





Calibration Report		
Database File	horsetail 07f-0605.db	
Dataset Pathname	RBL/pass2	
Dataset Creation	Mon May 09 10:34:30 2016	
Gamma Ray Calibration Report		
Serial Number:	FW1408-106	
Tool Model:	275 Probe GR-CCL Corrosion	
Performed:	Thu May 05 13:01:14 2016	
Calibrator Value:	320.0	GAPI
Background Reading:	0.2	cps
Calibrator Reading:	1.3	cps
Sensitivity:	0.9000	GAPI/cps

Serial Number:	141166	
Tool Model:	275 Probe w Temp New Mod	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	2053.475	ft

Master Calibration, performed Sun Apr 24 11:40:15 2016:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.007	1.712	2.200	71.921	40.887	2.500
CAL	0.003	1.764				
5'	0.009	1.667	2.200	71.921	42.052	1.802
SUM						
S1	0.005	1.722	0.000	100.000	58.238	-0.264
S2	0.003	1.730	0.000	100.000	57.886	-0.147
S3	0.003	1.720	0.000	100.000	58.262	-0.197
S4	-0.001	1.741	0.000	100.000	57.396	0.067
S5	-0.000	1.740	0.000	100.000	57.460	0.004
S6	0.001	1.722	0.000	100.000	58.088	-0.043
S7	0.002	1.704	0.000	100.000	58.744	-0.125
S8	0.001	1.708	0.000	100.000	58.597	-0.056

Temperature Calibration Report

Serial Number: 141166
Tool Model: 275 Probe w Temp New Mod
Performed: Mon May 02 10:03:36 2016

	Reference	Reading
Low Reference:	35.00 degF	0.27 degF
High Reference:	212.00 degF	1.59 degF
Gain:	0.78	
Offset:	9.00	
Delta Spacing	1	



Company	WHITING OIL & GAS CORP
Well	HORSETAIL FEDERAL 07F-0605
Field	WILDCAT
County	WELD
State	CO