



Pioneer Energy Services

# GAMMA RAY CCL CEMENT BOND VDL SECTOR MAP

Company	EnCana Oil & Gas (USA) Inc.	Country	USA
Well	Billings 3A-18H		
Field	Wattenberg		
County	Weld		
State	Colorado		
Location:	APL # : 05-123-36983	Other Services	None
SHL: 1619' FSL & 762' FWL SWSW			
SEC 18	TWP 3N	RGE 68W	
Permanent Datum	GL	Elevation	5156
Log Measured From	KB		K.B. 5186 D.F. 5186 G.L. 5156
Drilling Measured From	KB		

Date	October 23, 2014
Run Number	1
Depth Driller	14040
Depth Logger	7450
Bottom Logged Interval	7450
Top Log Interval	0
Open Hole Size	8-3/4"
Type Fluid	WBM
Density / Viscosity	13 / 42
Max. Recorded Temp.	NA
Estimated Cement Top	690
Time Well Ready	0100
Time Logger on Bottom	0140
Equipment Number	49
Location	Ft. Morgan, CO
Recorded By	Shaun Stump
Witnessed By	Ricky Lee

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

Casing Record	Size	Wgt/Ft	Top	Bottom
Surface String	16	80	0	30
Prot. String	9 5/8	40	0	880
Production String	7"	26 lbs	0	7802
Liner				

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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.

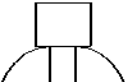
## Comments

Depth Correlated to 7" Tally

Patterson 326

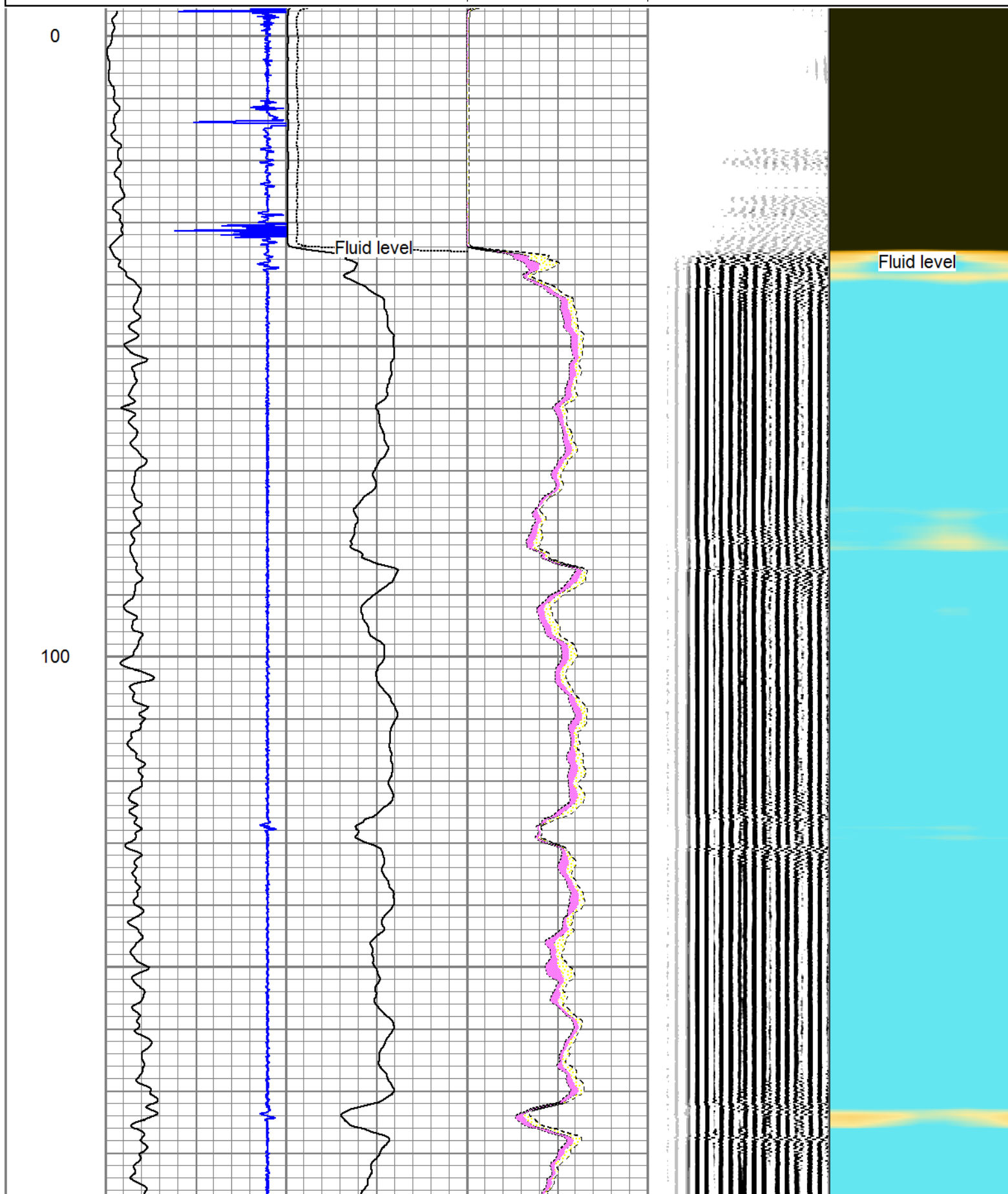
Thank You for using Pioneer Energy Services

SO# 2-013698

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
						

Tool Joint	Tool Joint Depth (ft)	Tool Joint Description	Tool Joint Weight (lb)	Tool Joint Length (ft)	Tool Joint O.D. (in)
IntTemp	14.66				
TEMP	13.64				
WVF3FT	11.41				
WVFCAL	11.41				
WVFS1	11.41				
WVFS2	11.41				
WVFS3	11.41				
WVFS4	11.41				
WVFS5	11.41				
WVFS6	11.41				
WVFS7	11.41				
WVFS8	11.41				
WVF5FT	10.41				
CCL	3.92				
GR	1.13				
<p>Dataset: 13698.db: field/well/run1/pass2</p> <p>Total Length: 19.32 ft</p> <p>Total Weight: 230.00 lb</p> <p>O.D. 2.75 in</p>					

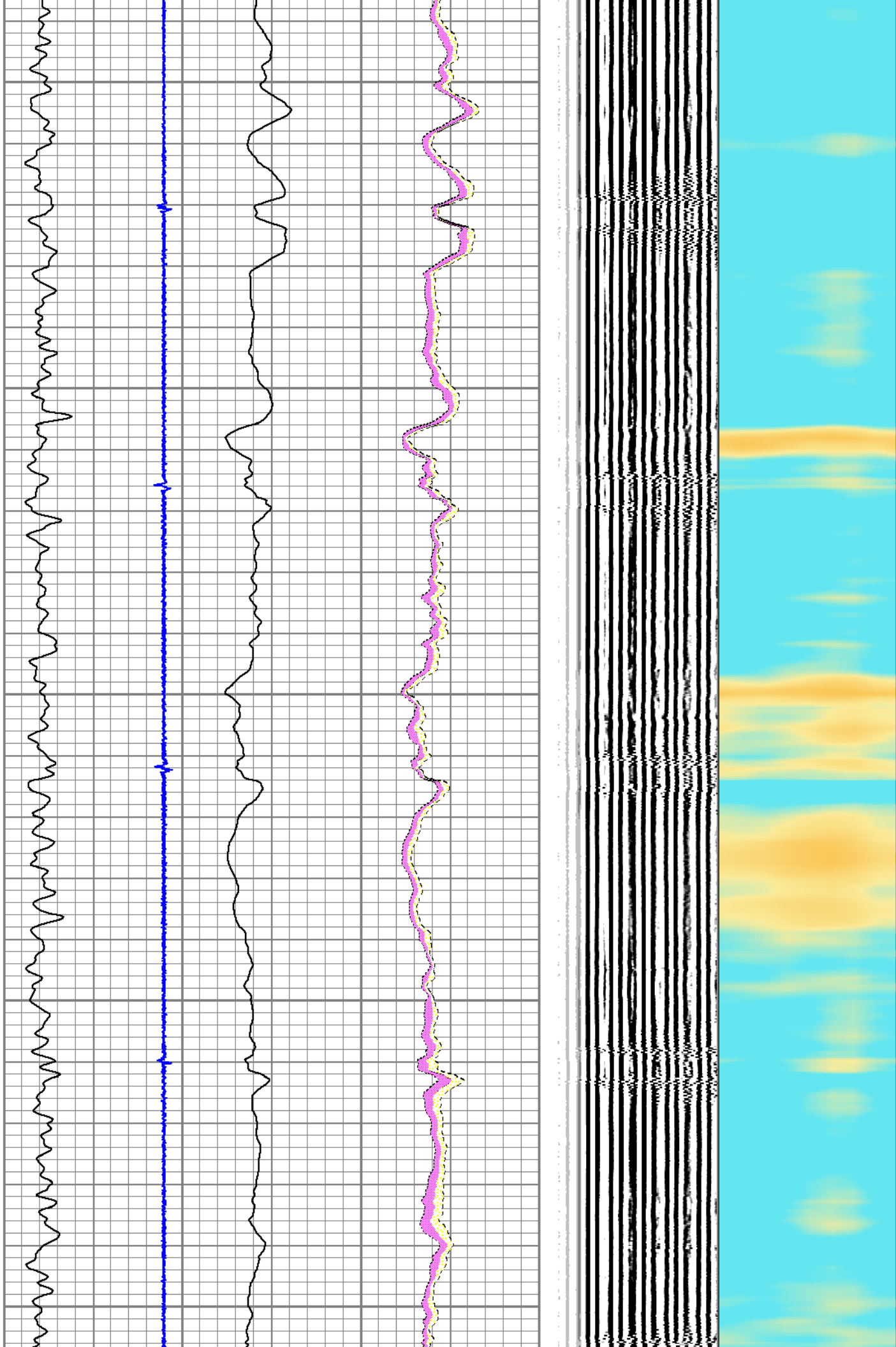
-9	CCL	1	0	AMP (mV)	100	0	AMPAVG	150	200	VDL	1200	1	SECTOR MAP	8
0	GR (GAPI)	200	0	AMPx5 (mV)	20	0	AMPMAX	150				10		60
						0	AMPMIN	150						



200

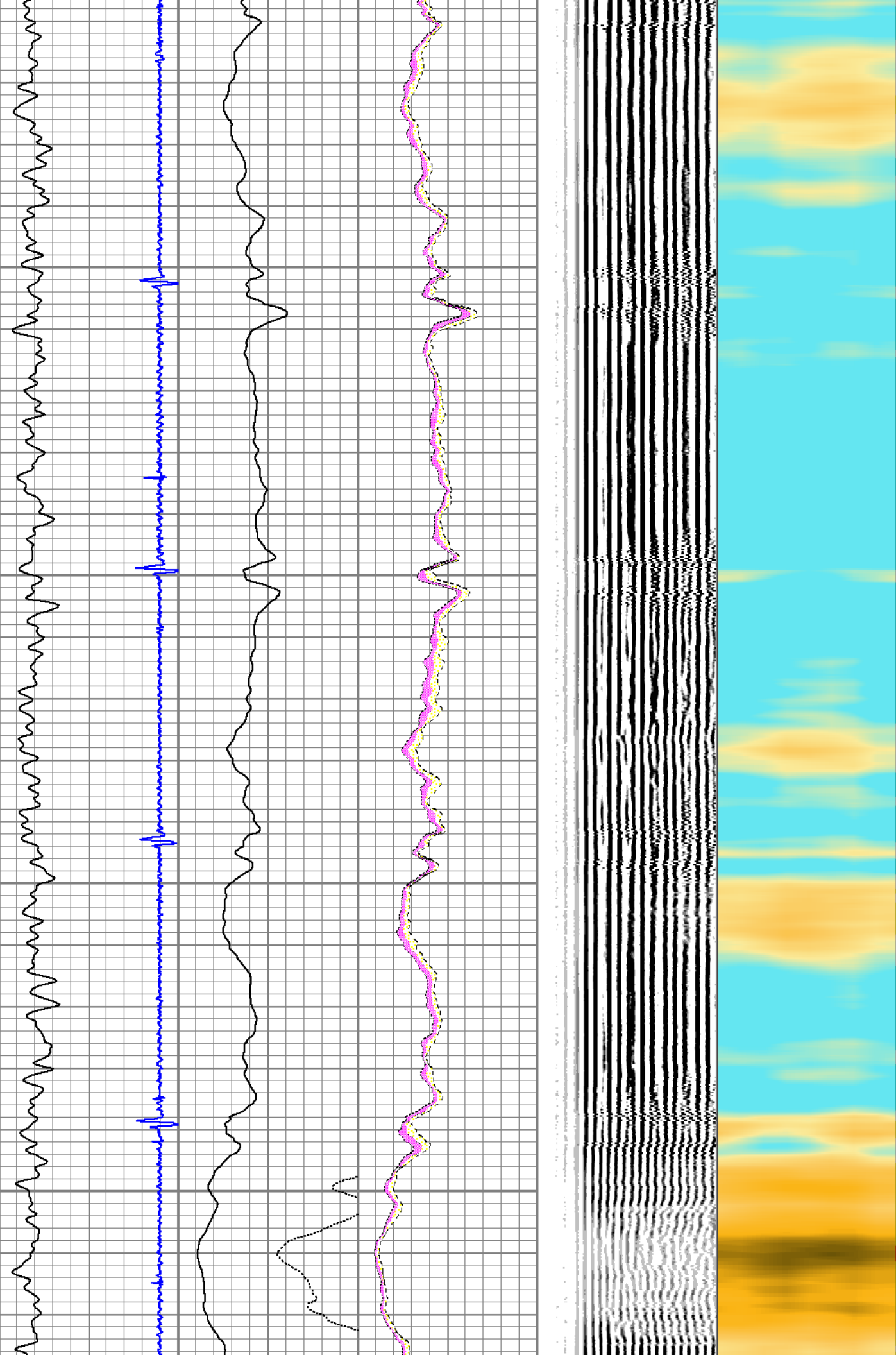
300

400



500

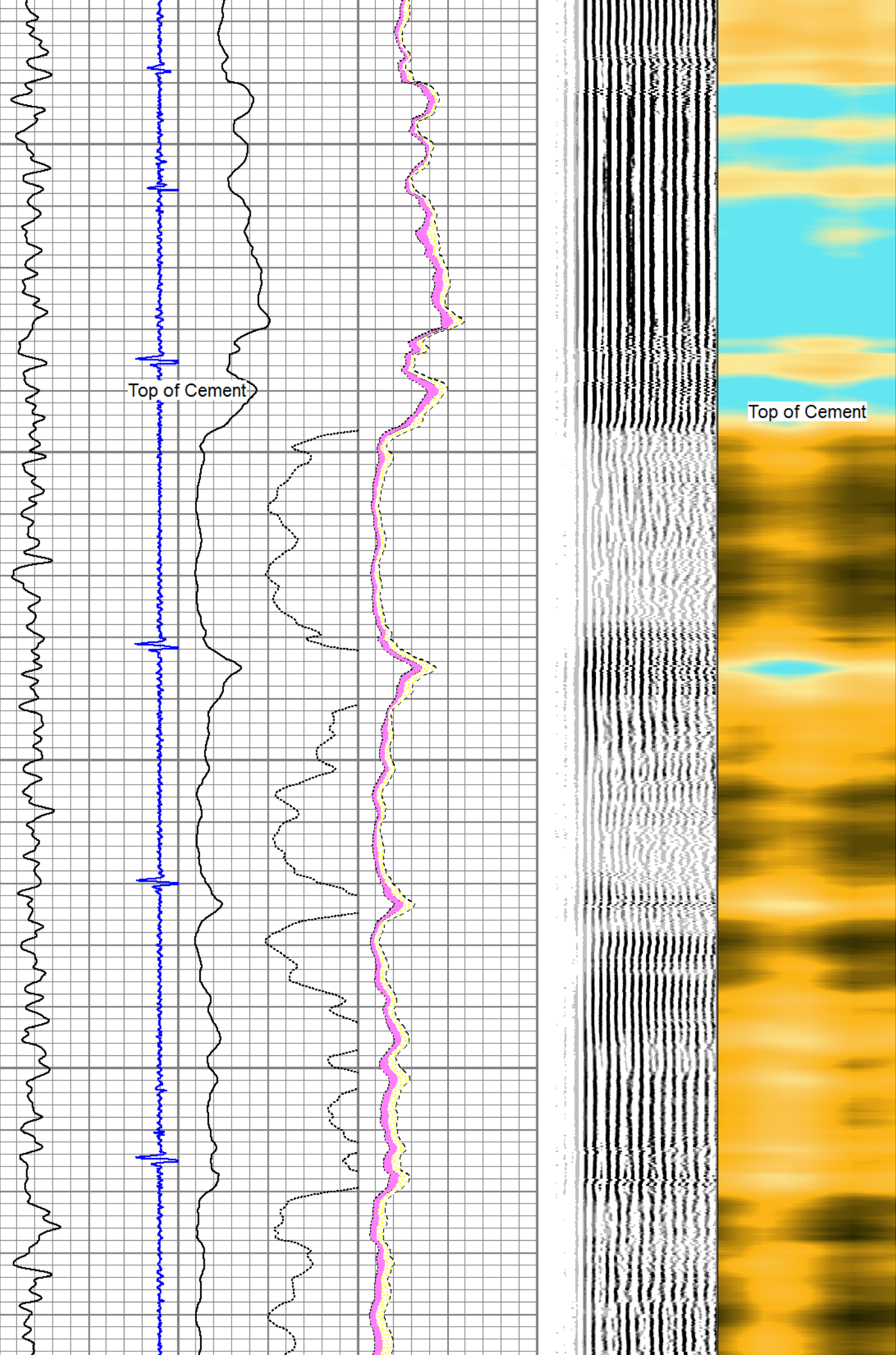
600





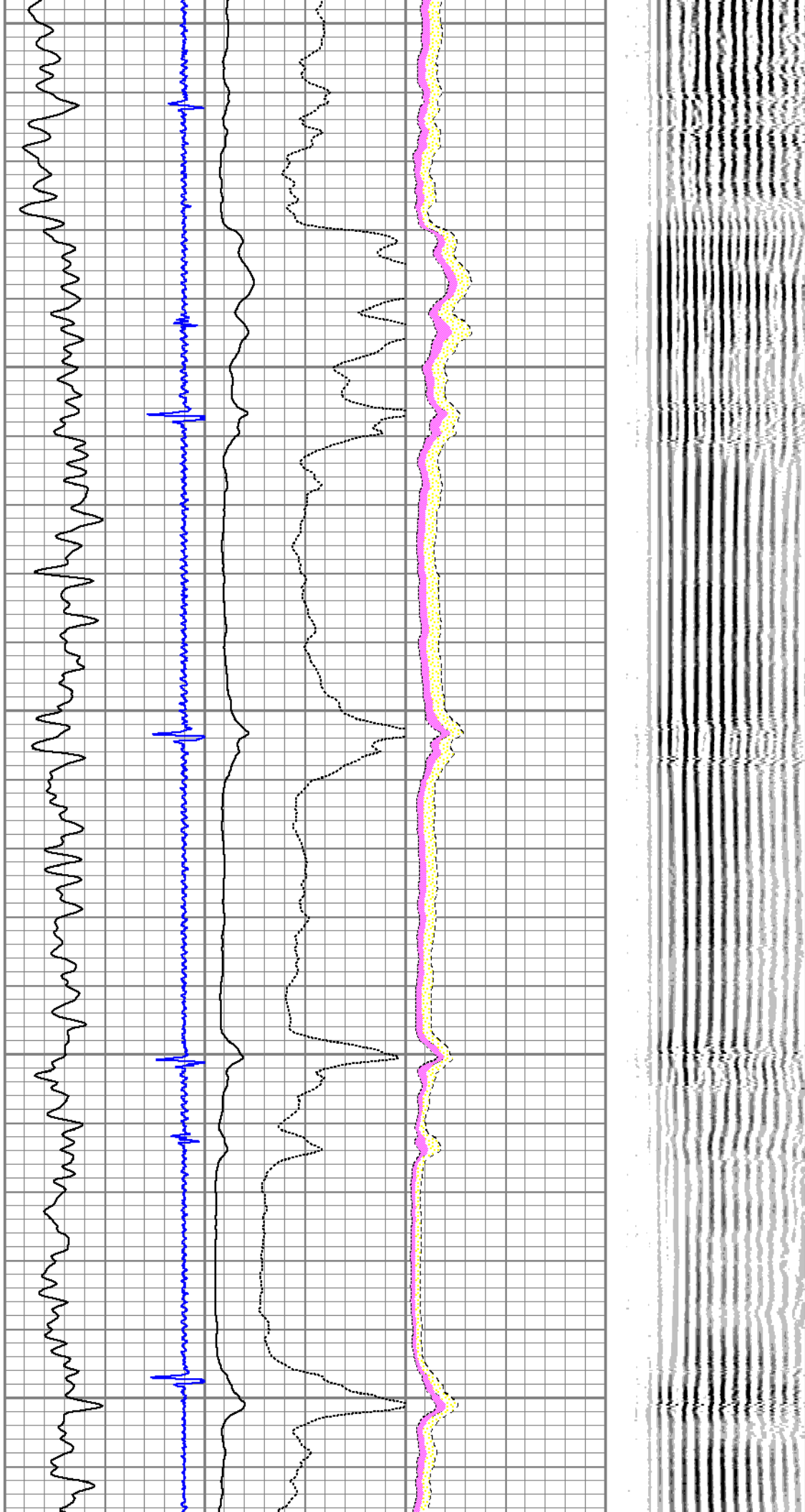
700

800



900

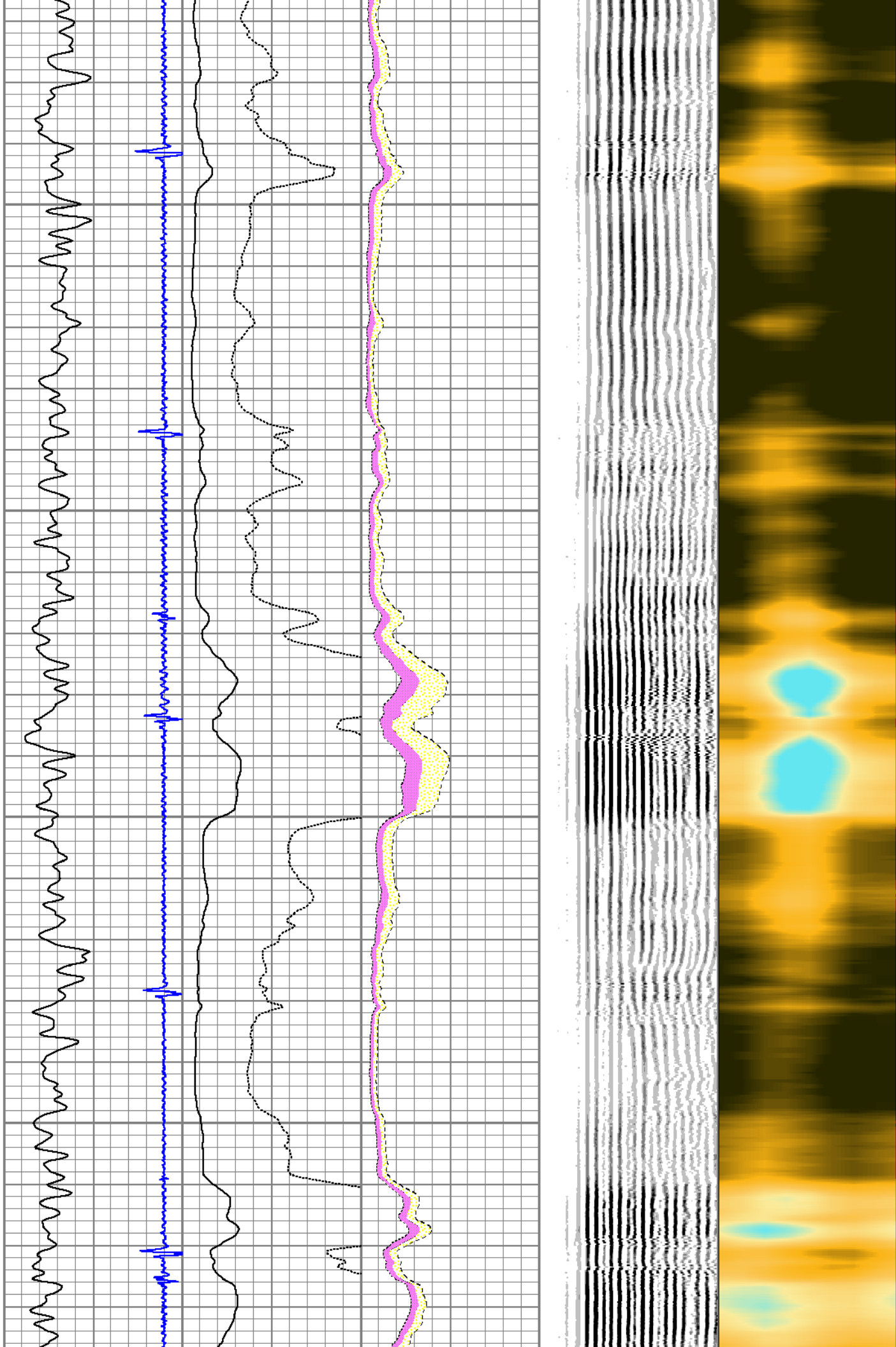
1000





1100

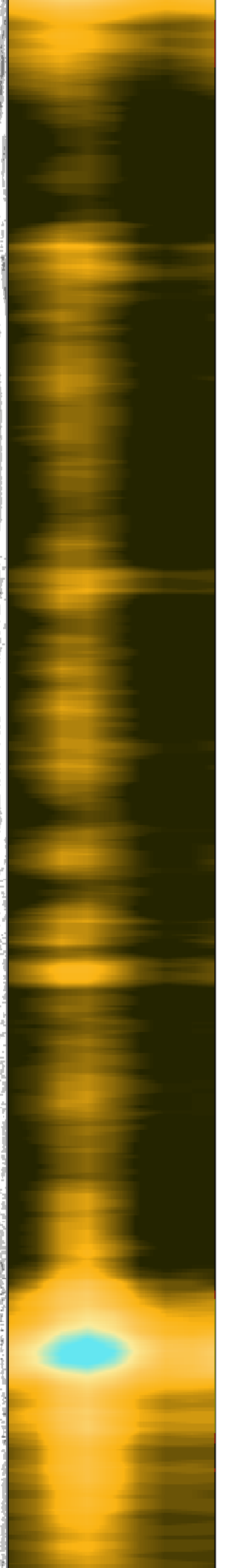
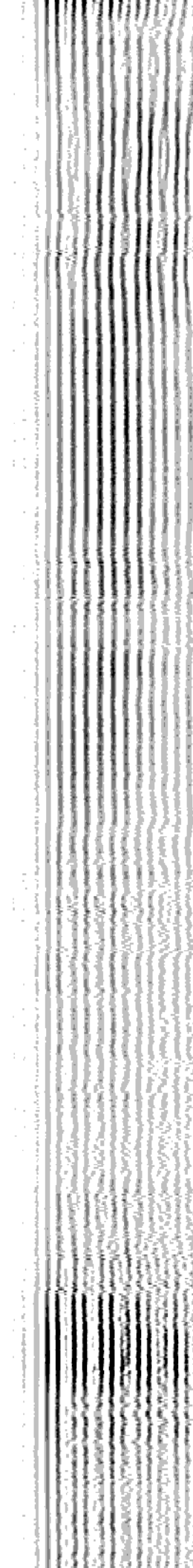
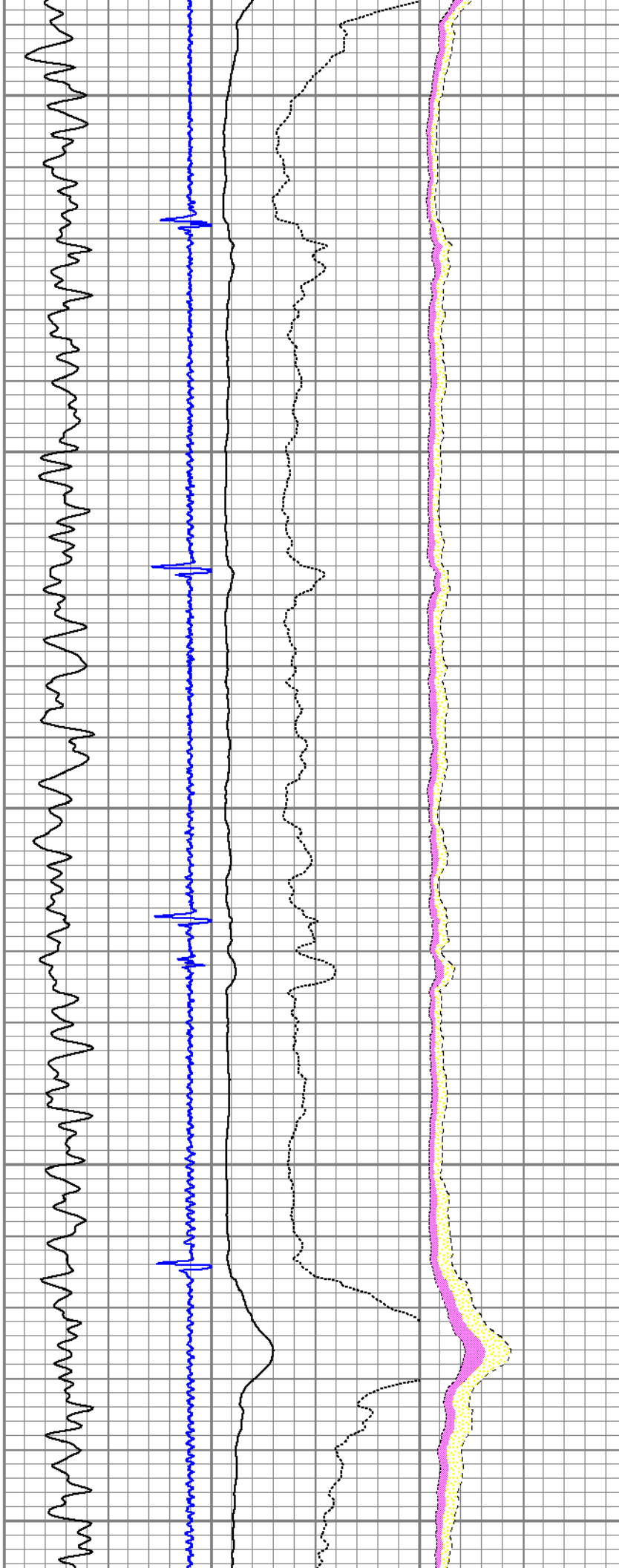
1200



1300

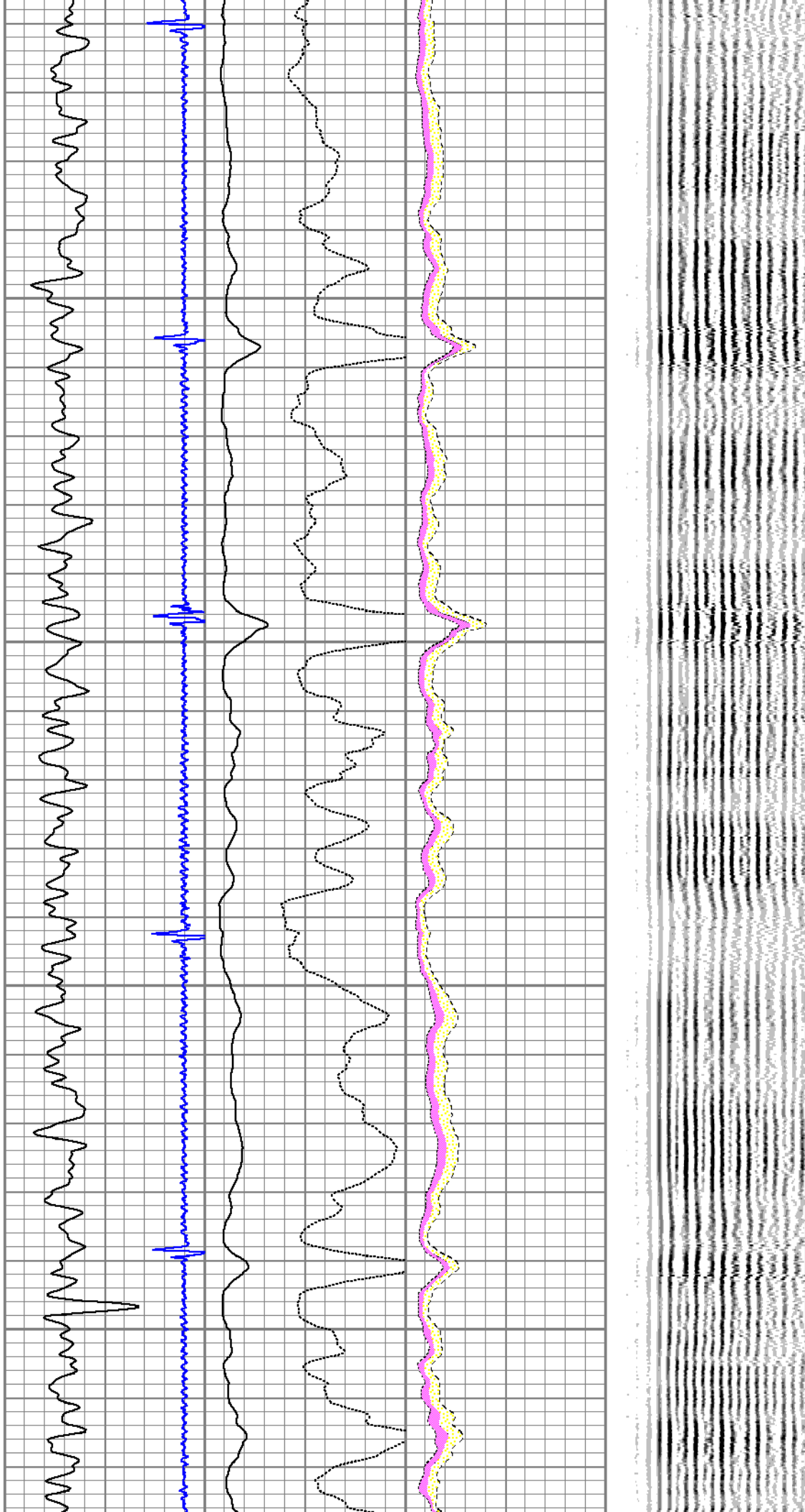
1400

1500

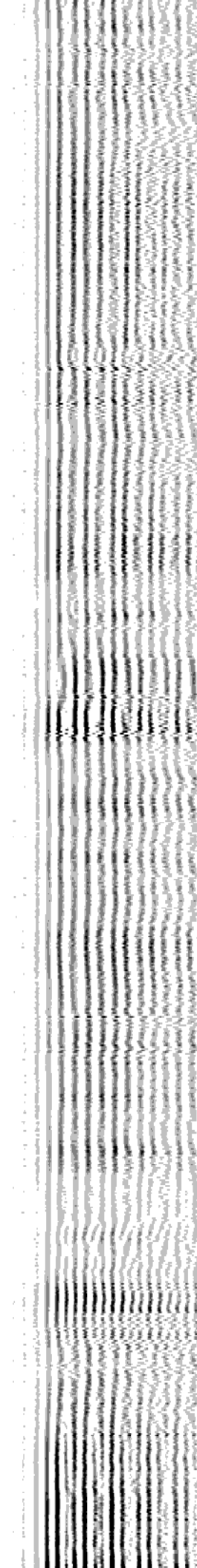
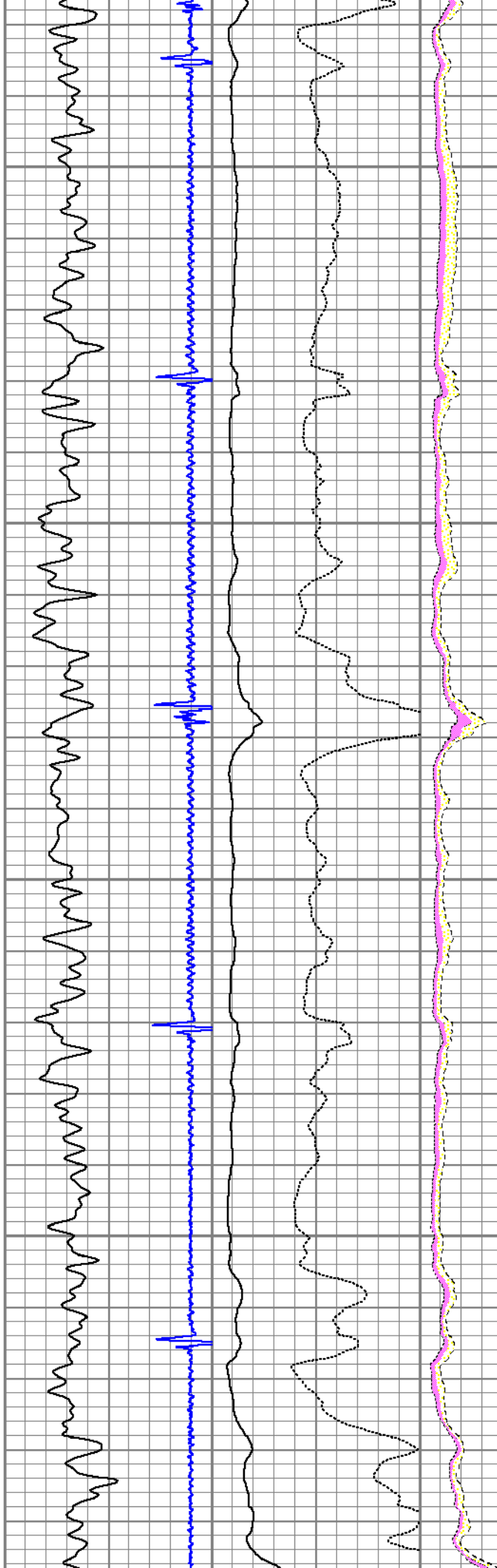


1600

1700



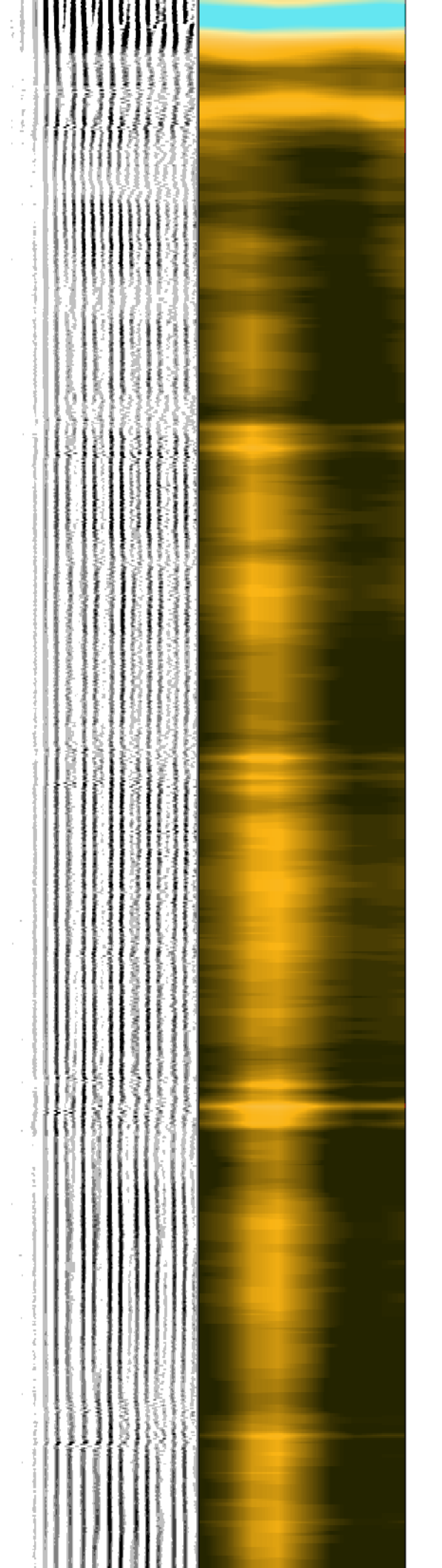
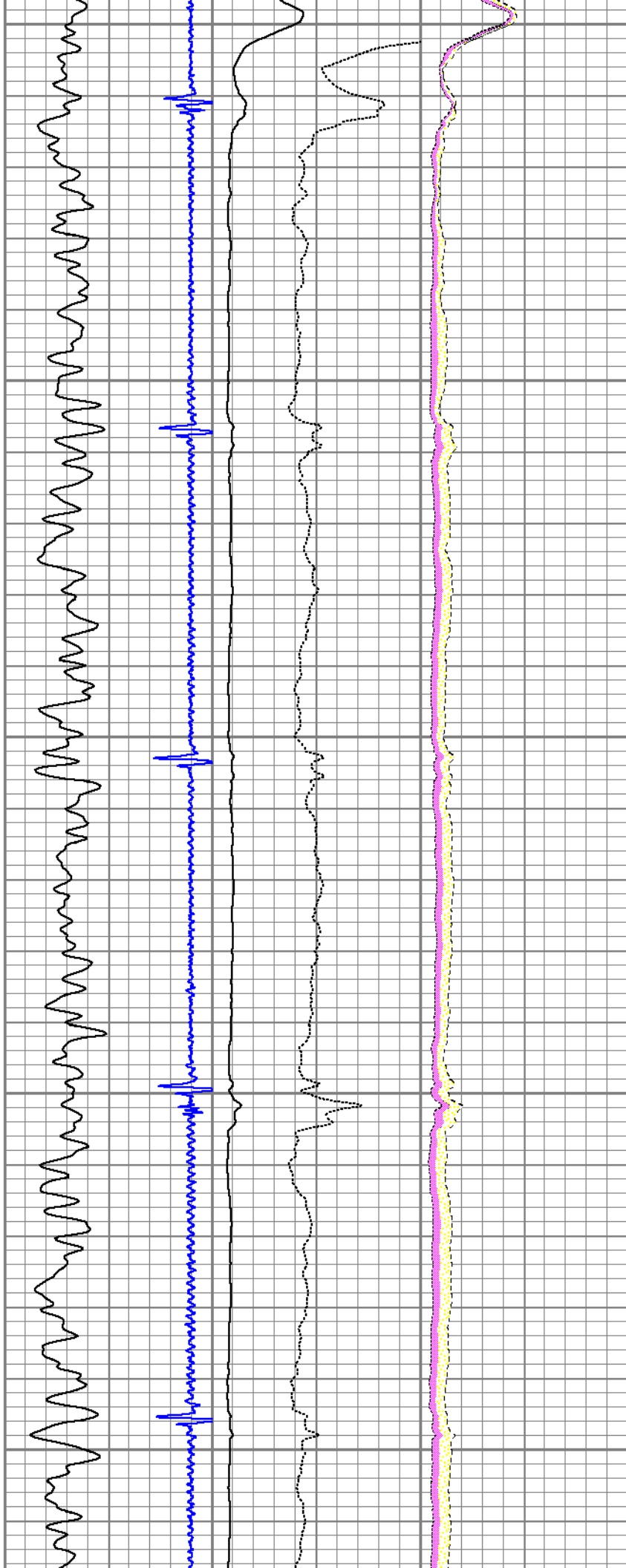
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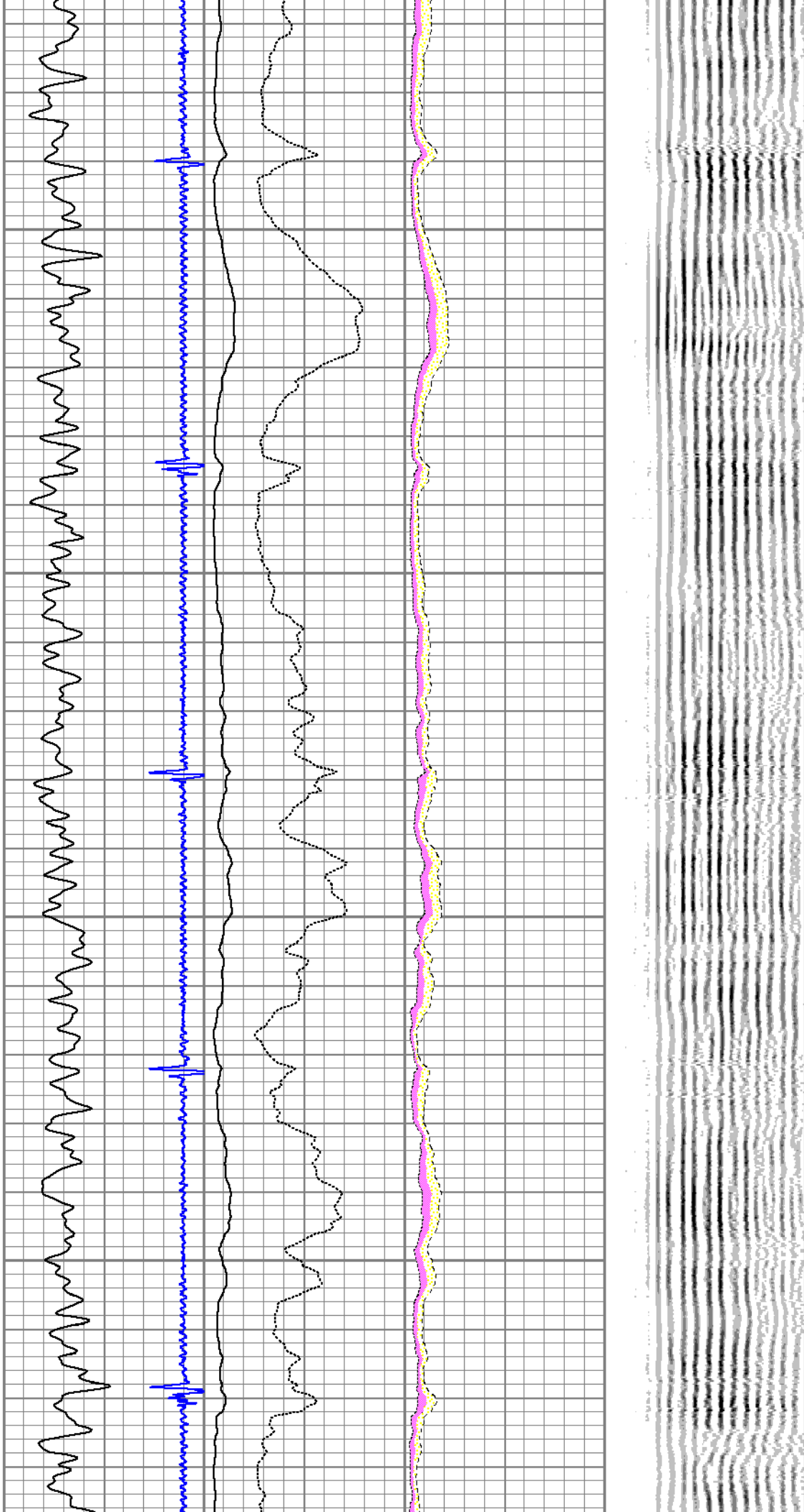
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2100



2200

2300

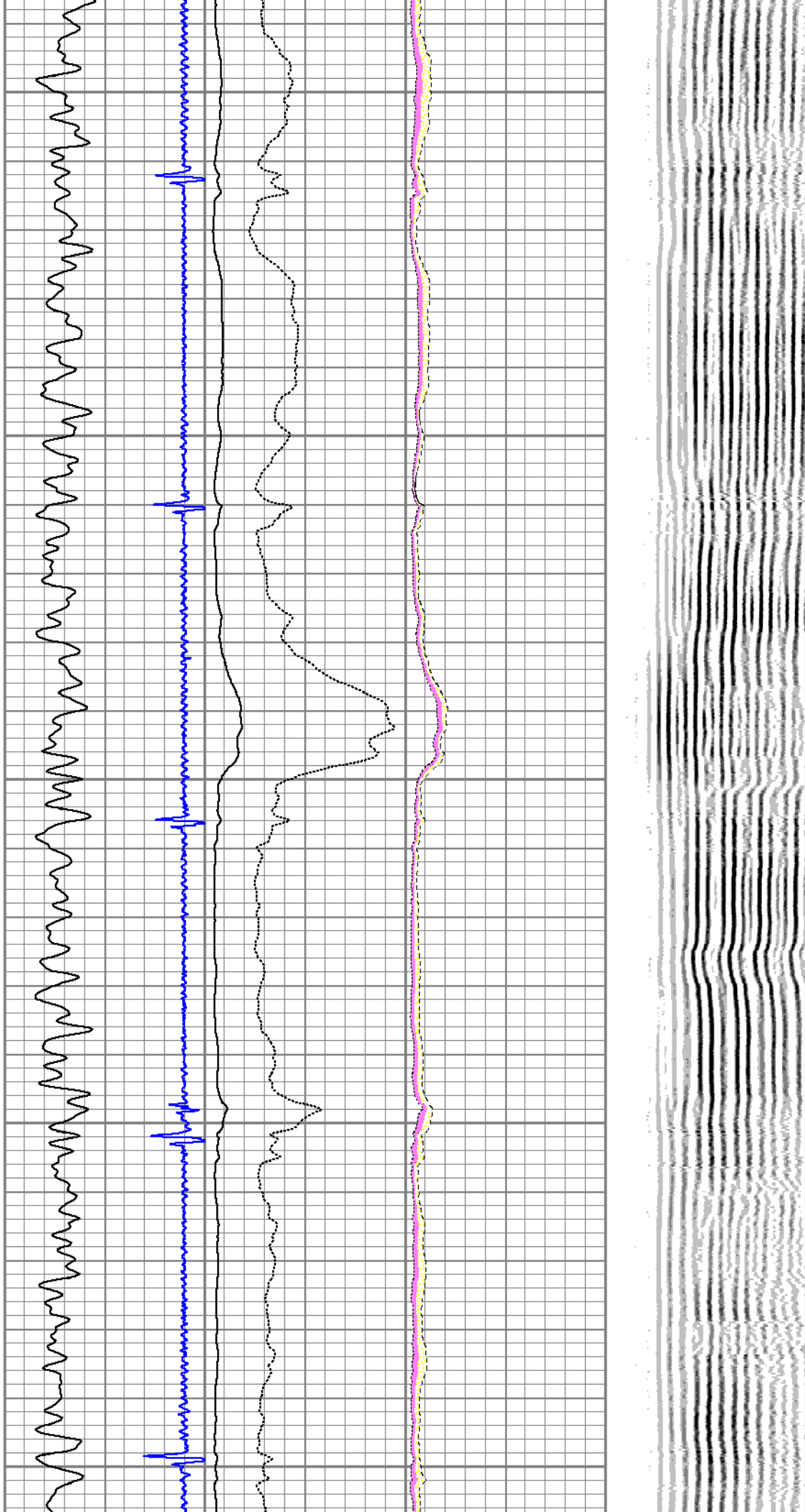




2400

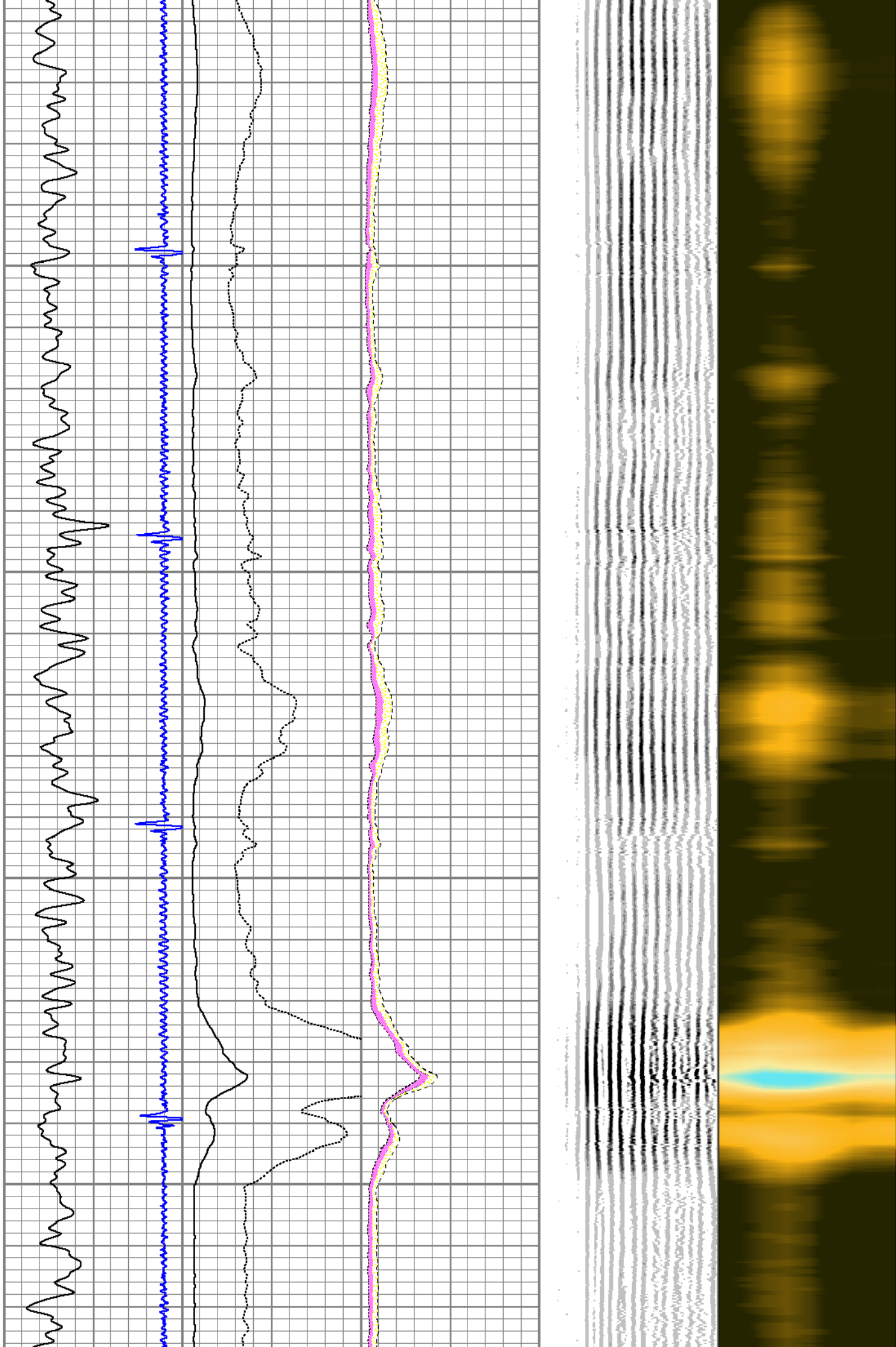
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2600



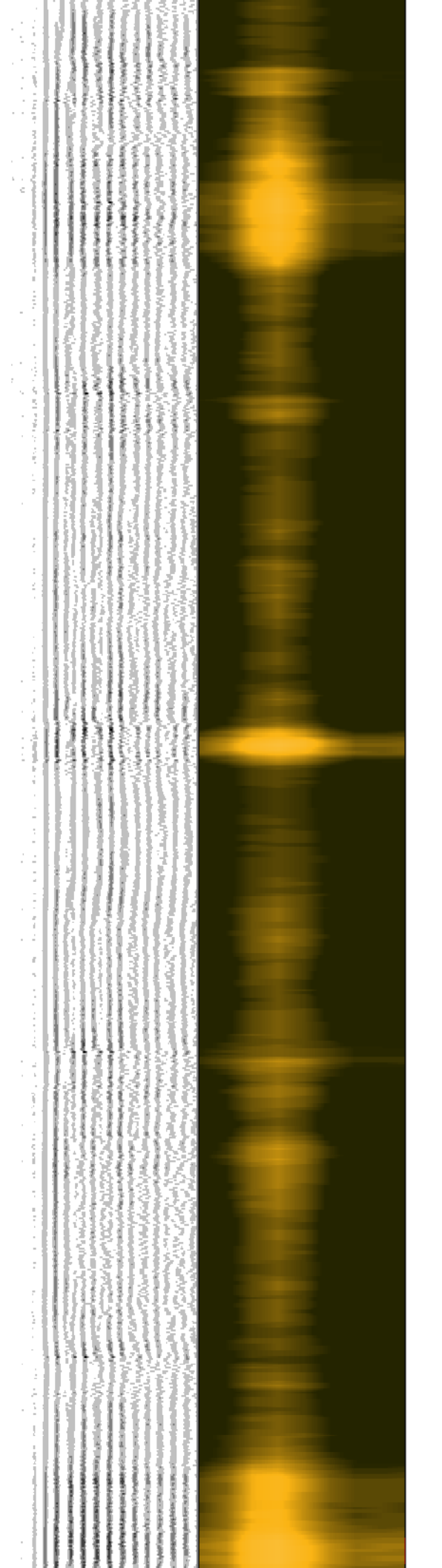
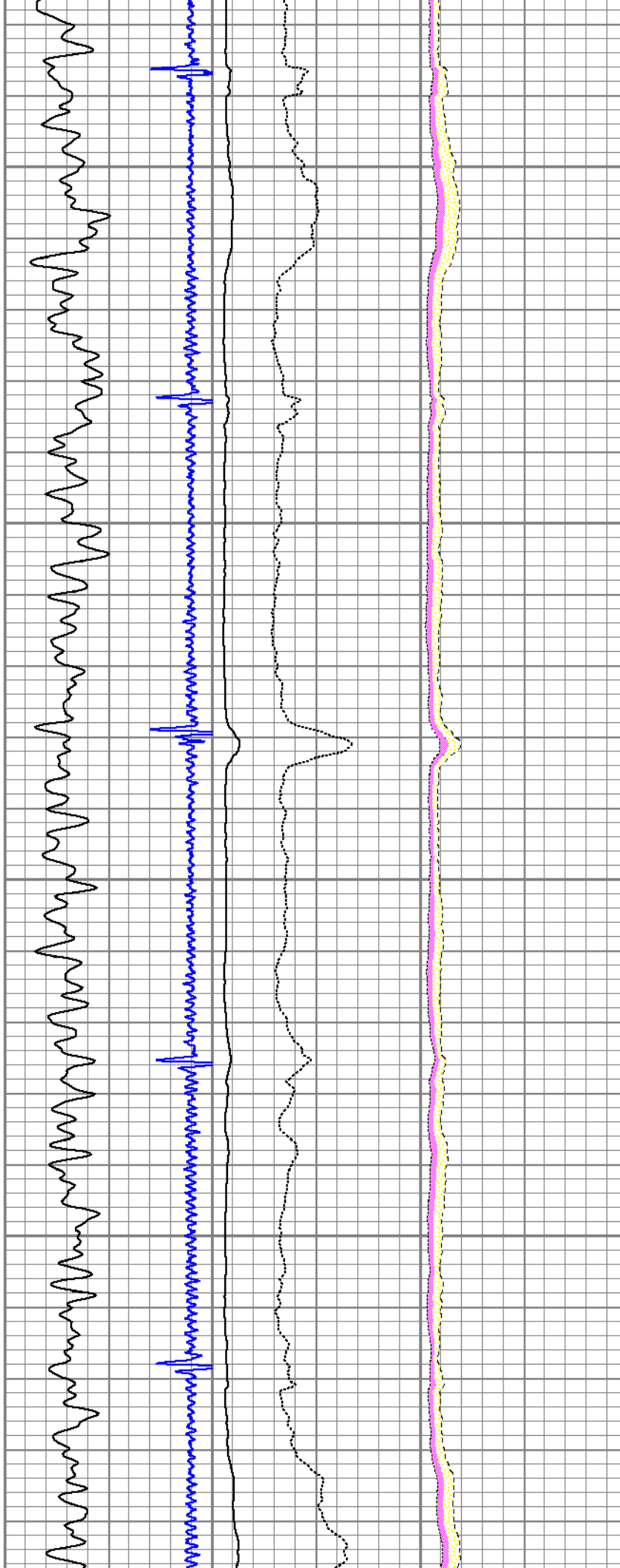
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2800



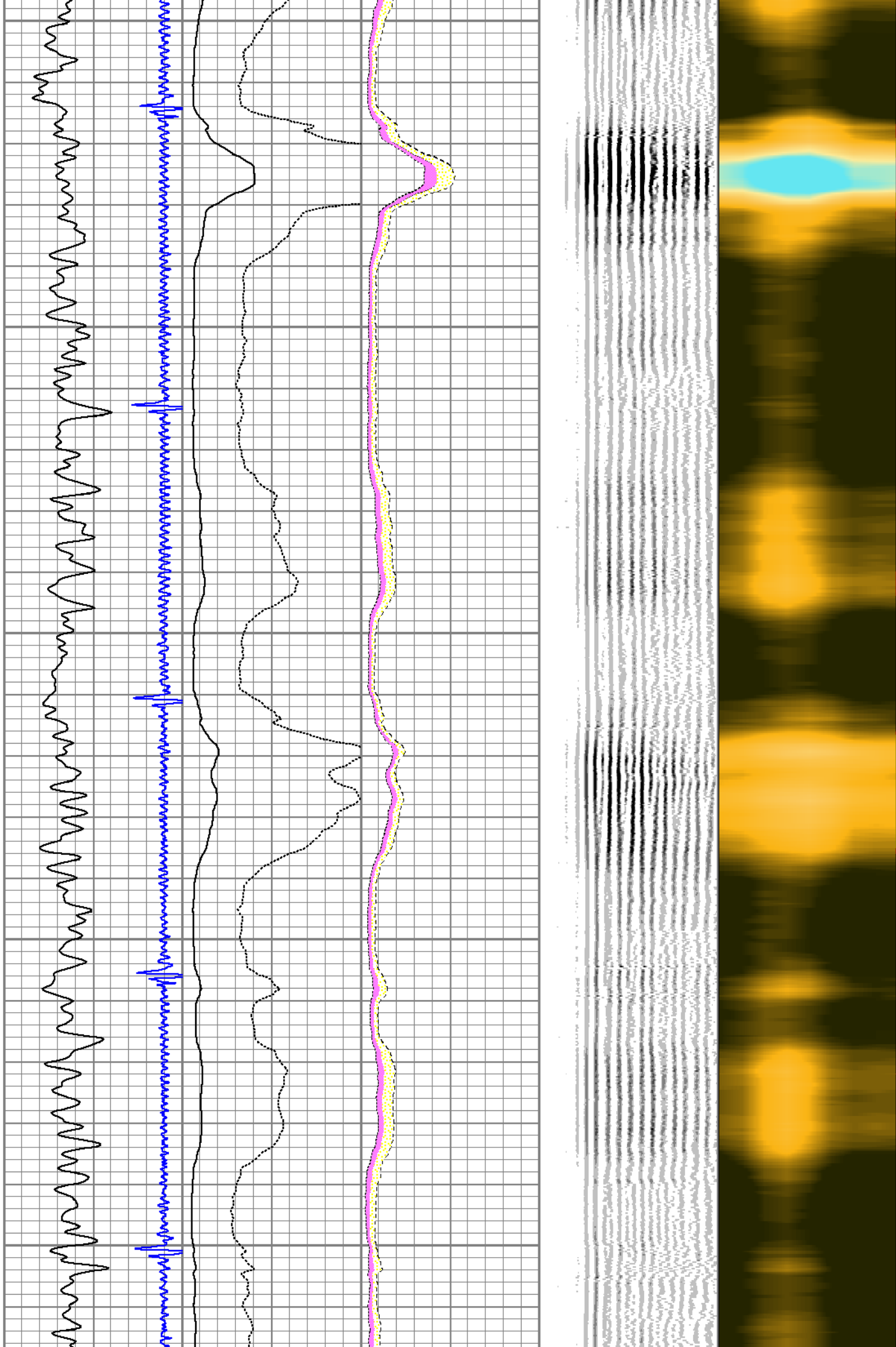
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3000



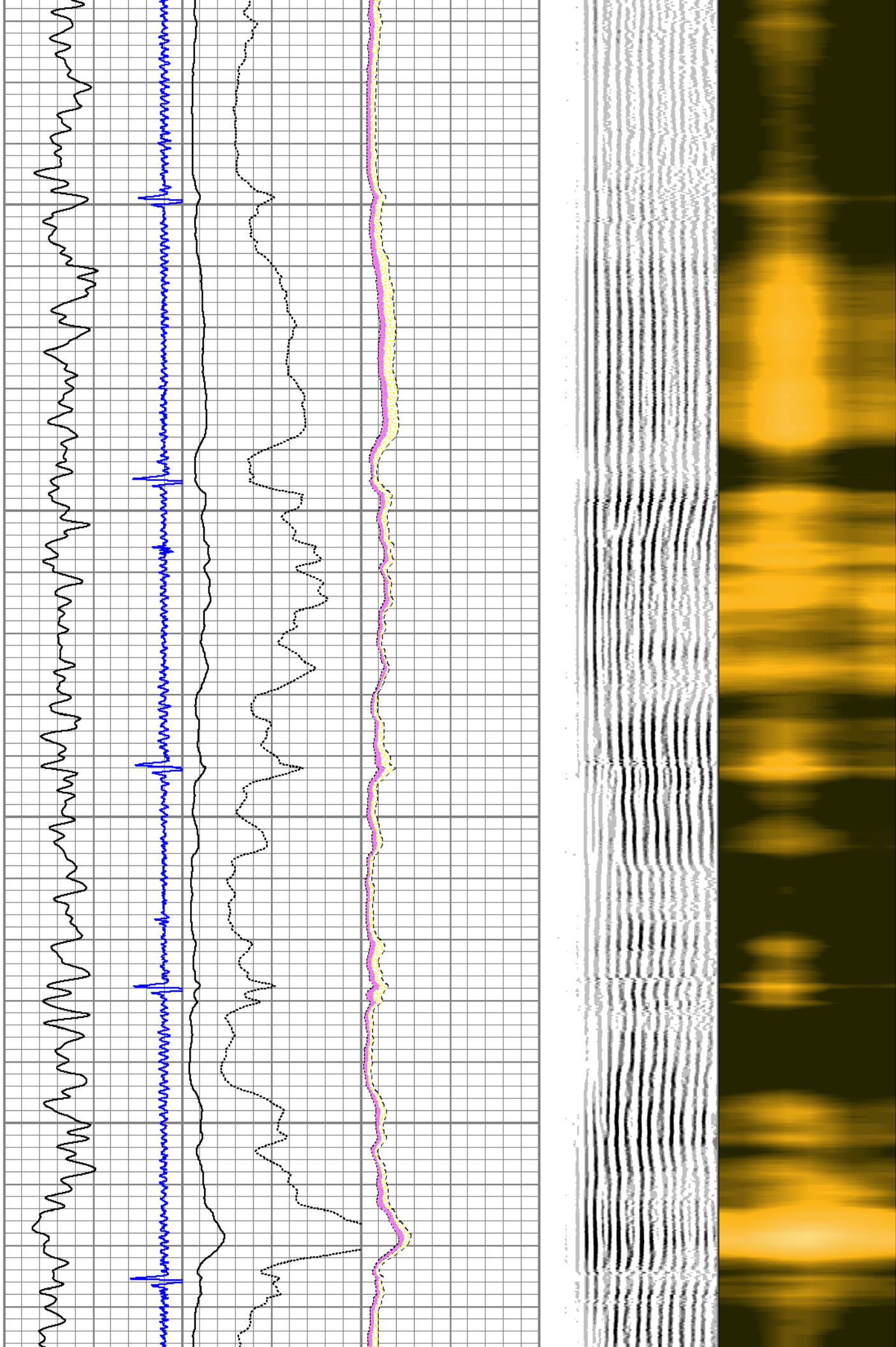
3100

3200



3300

3400

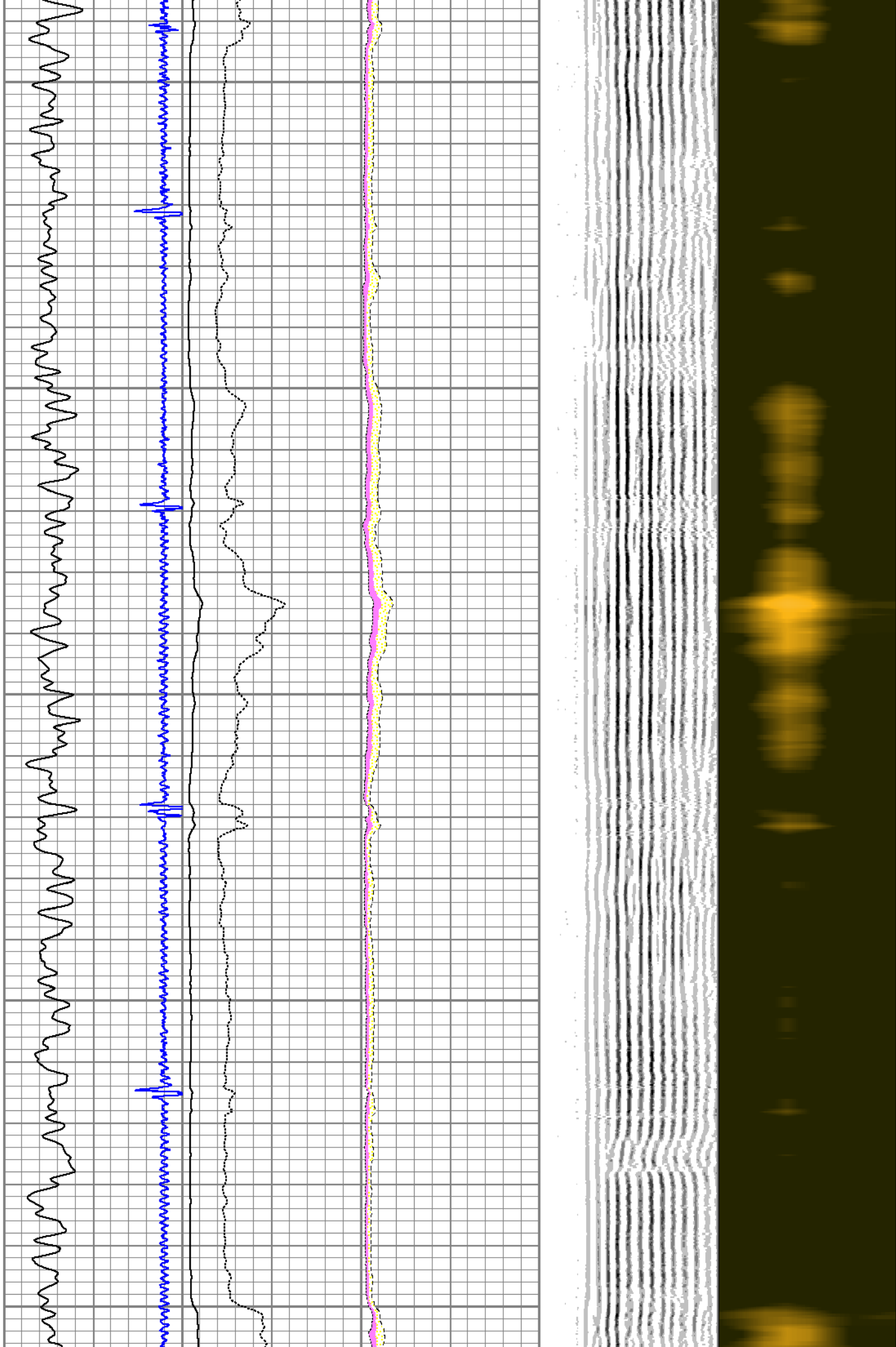




3500

3600

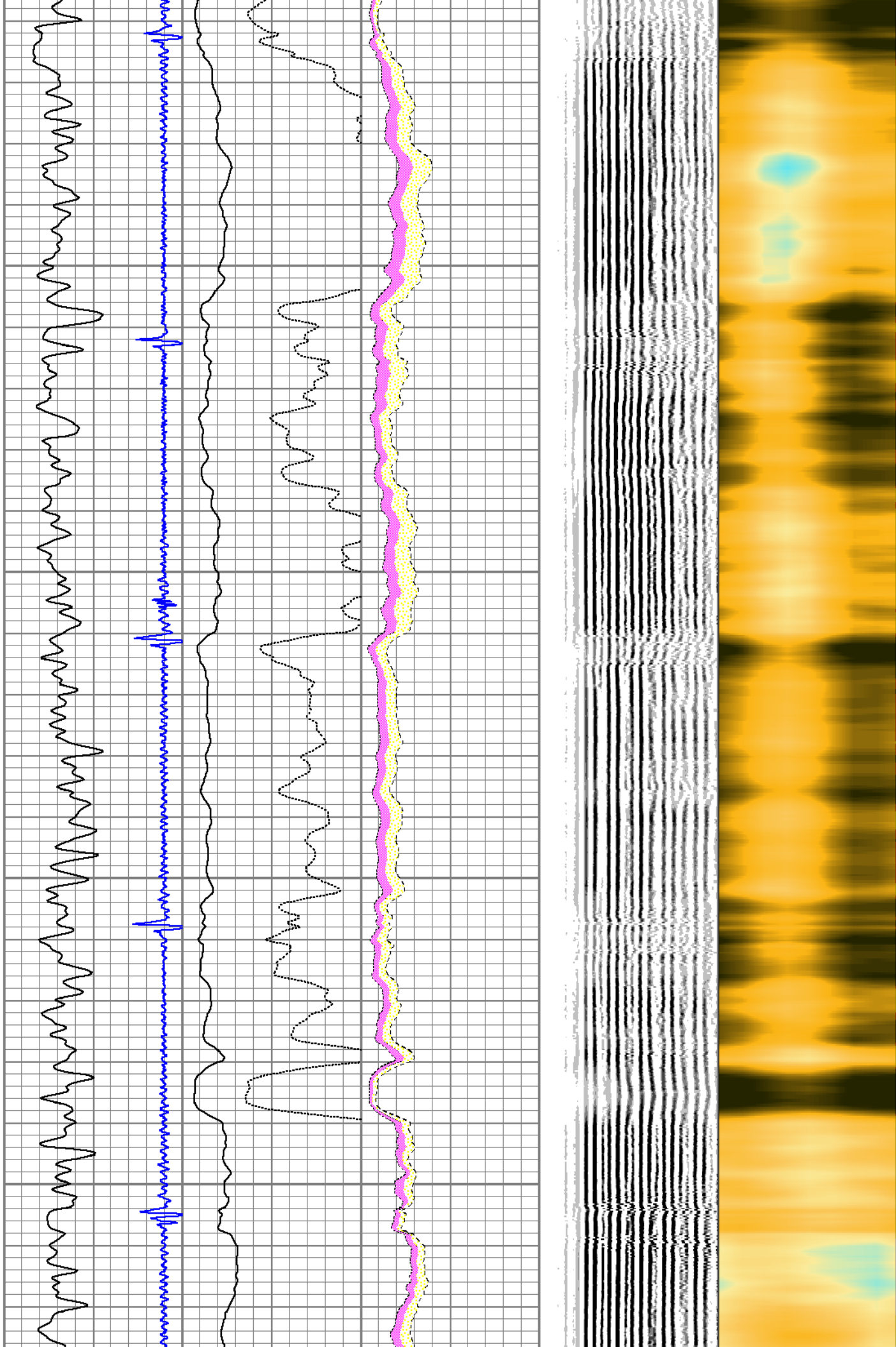
3700





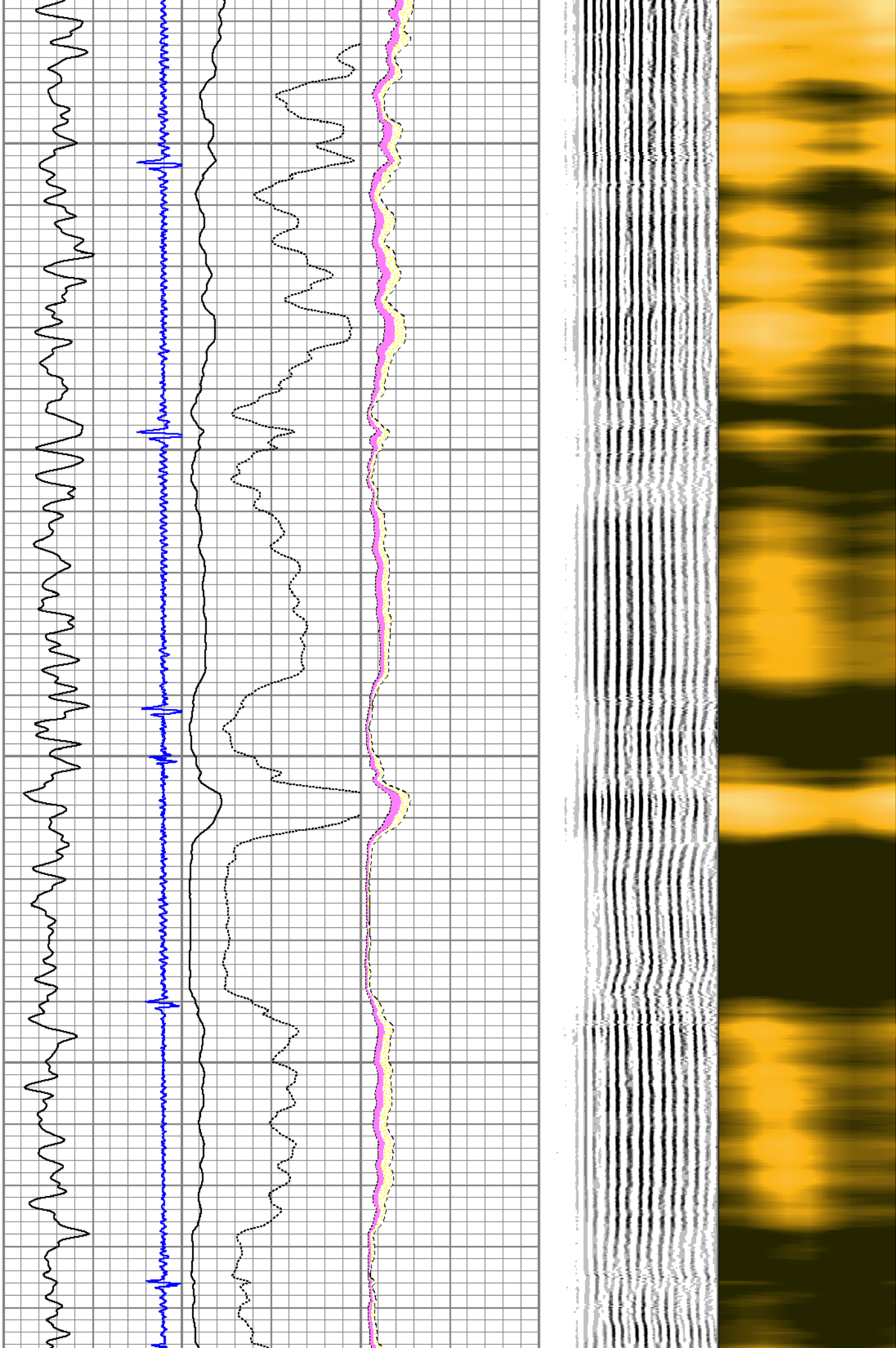
3800

3900



4000

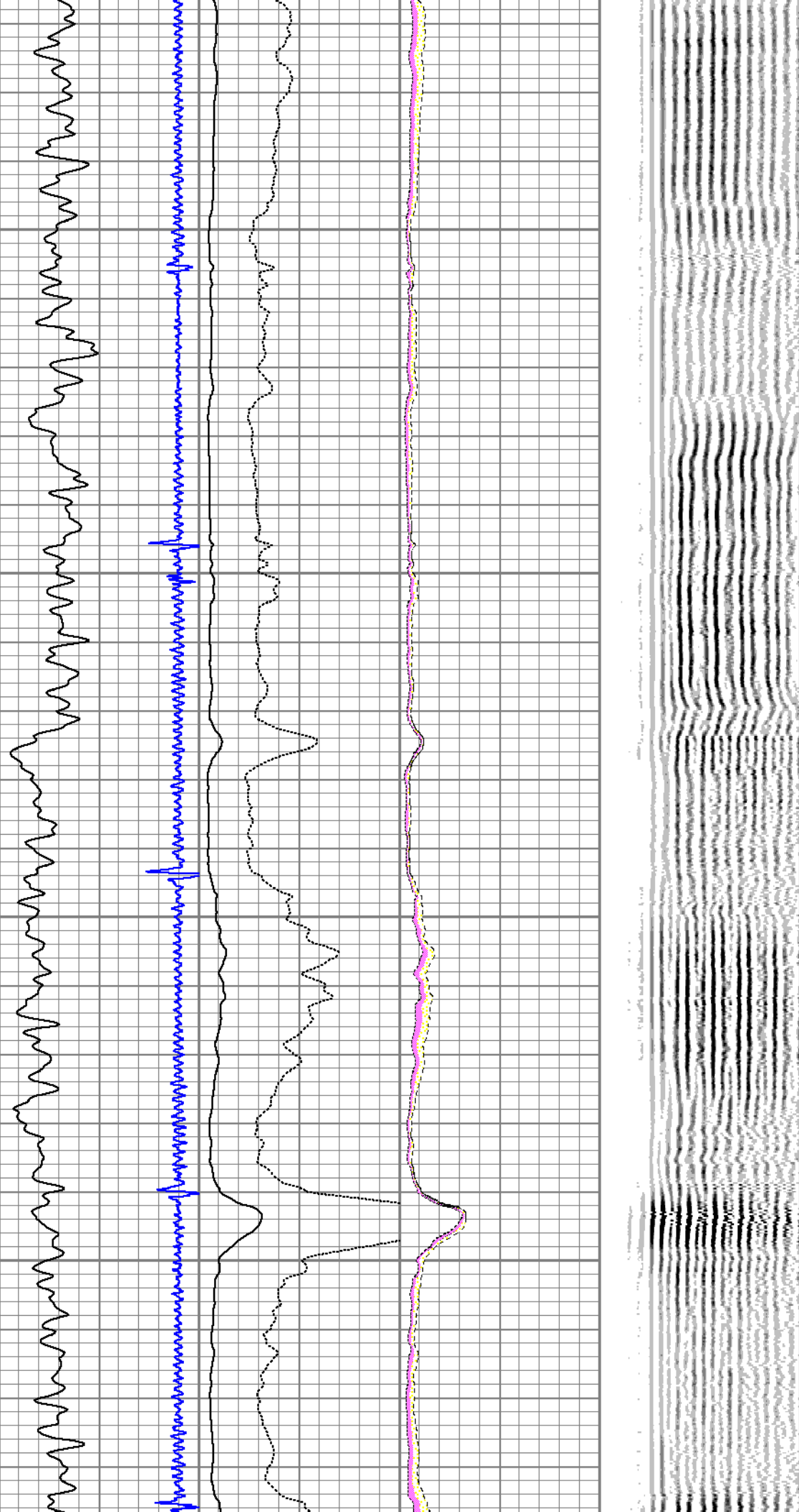
4100



4300

4400

4500

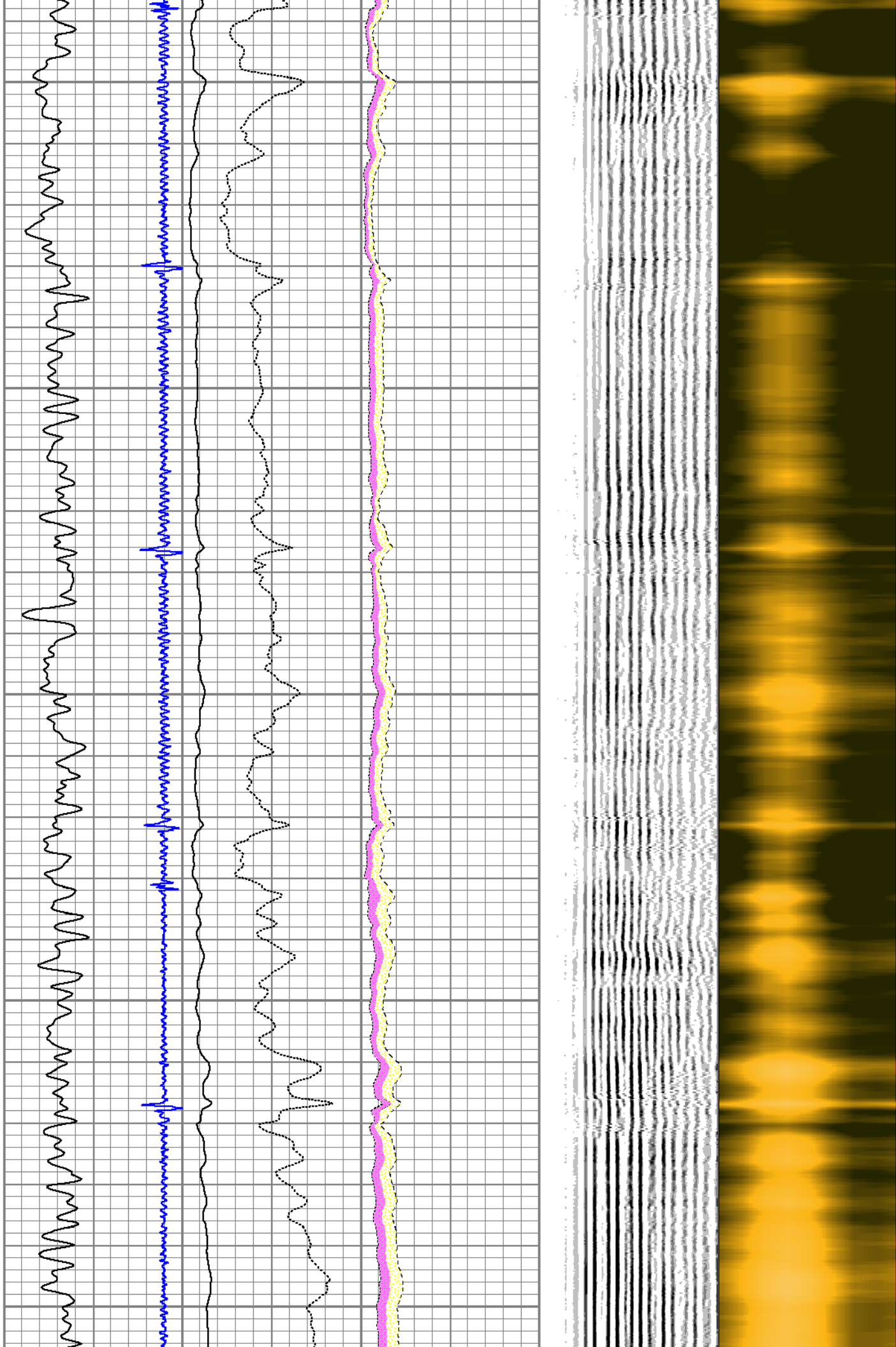




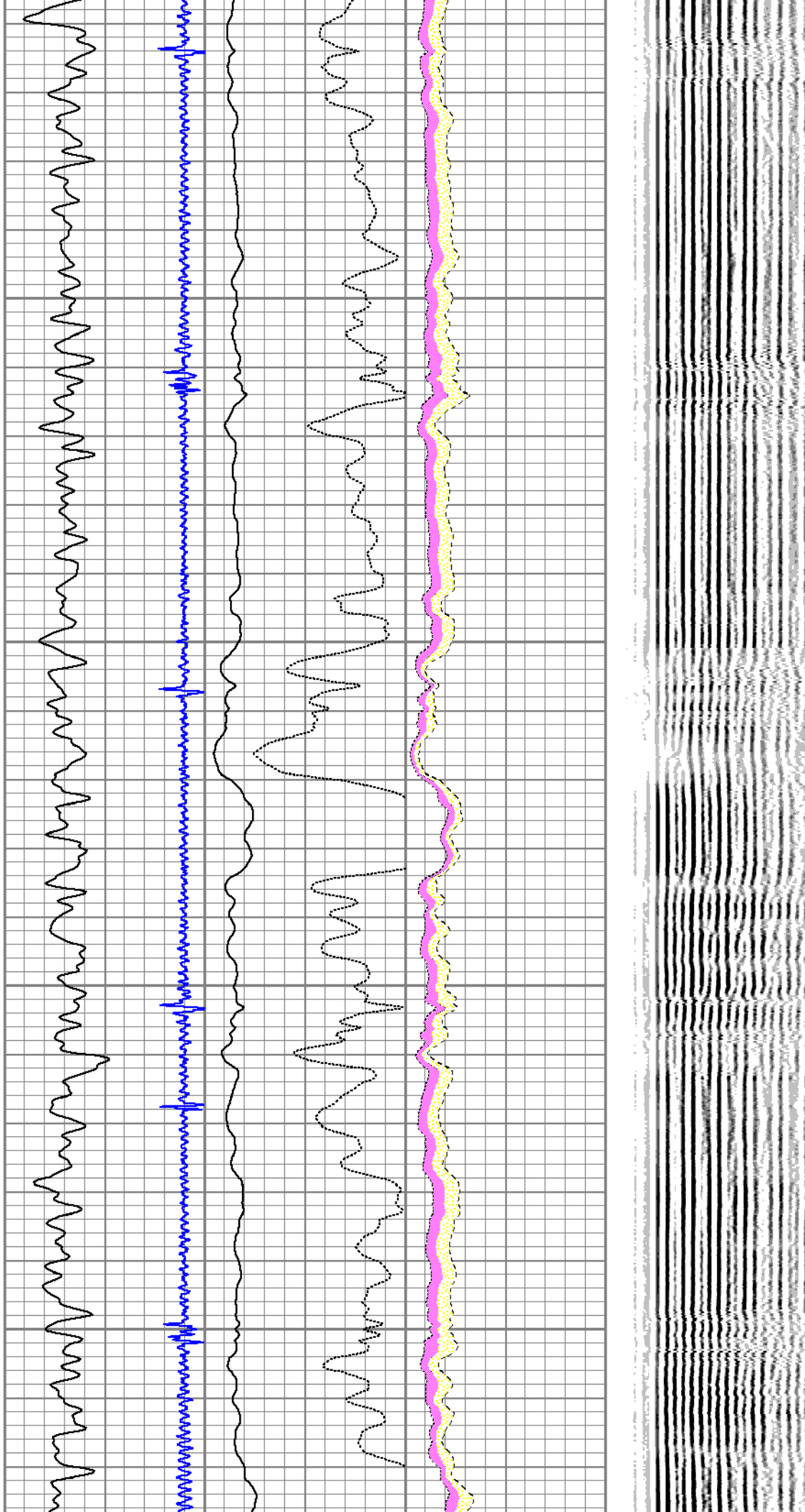
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4700

4800



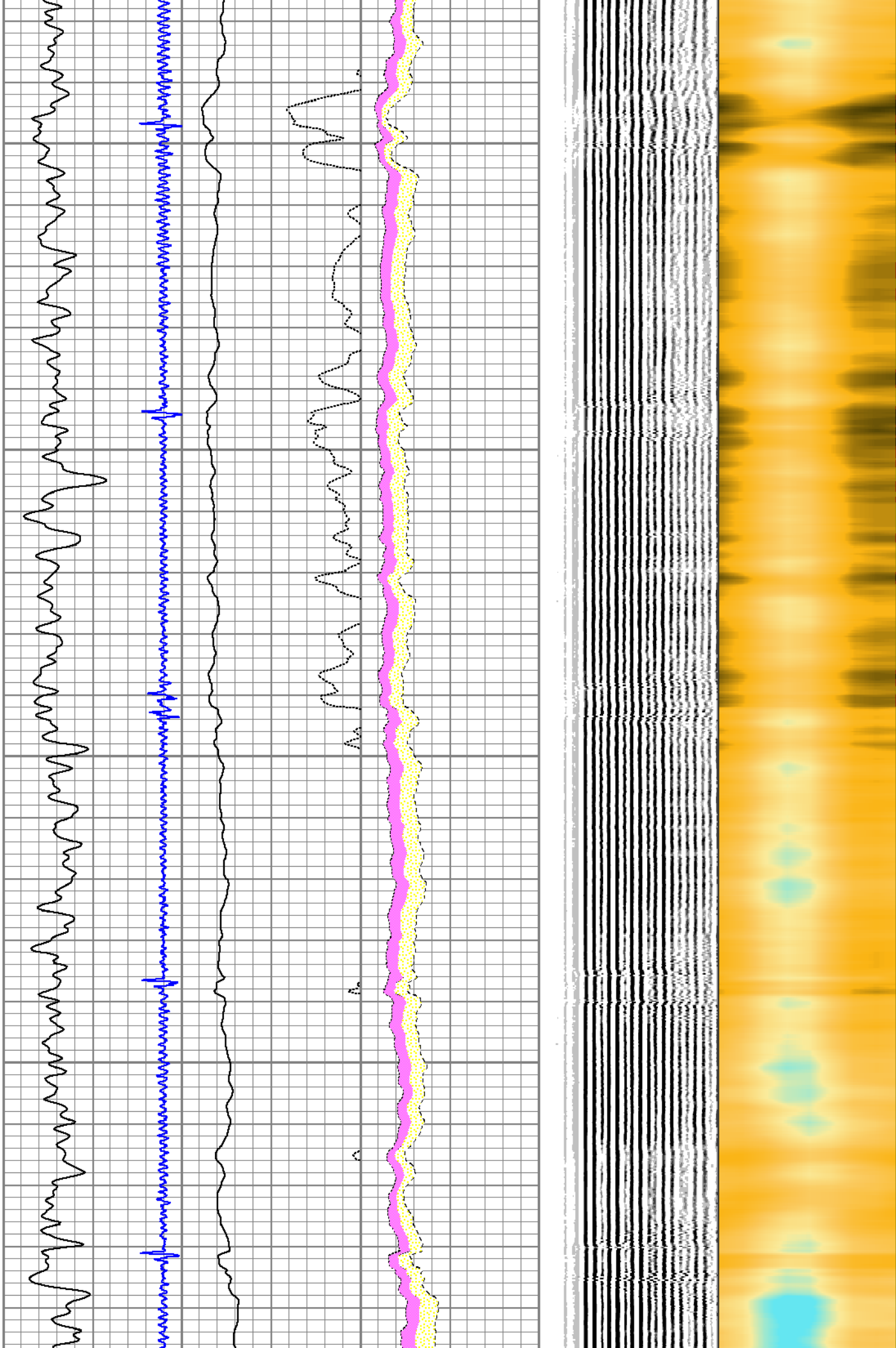
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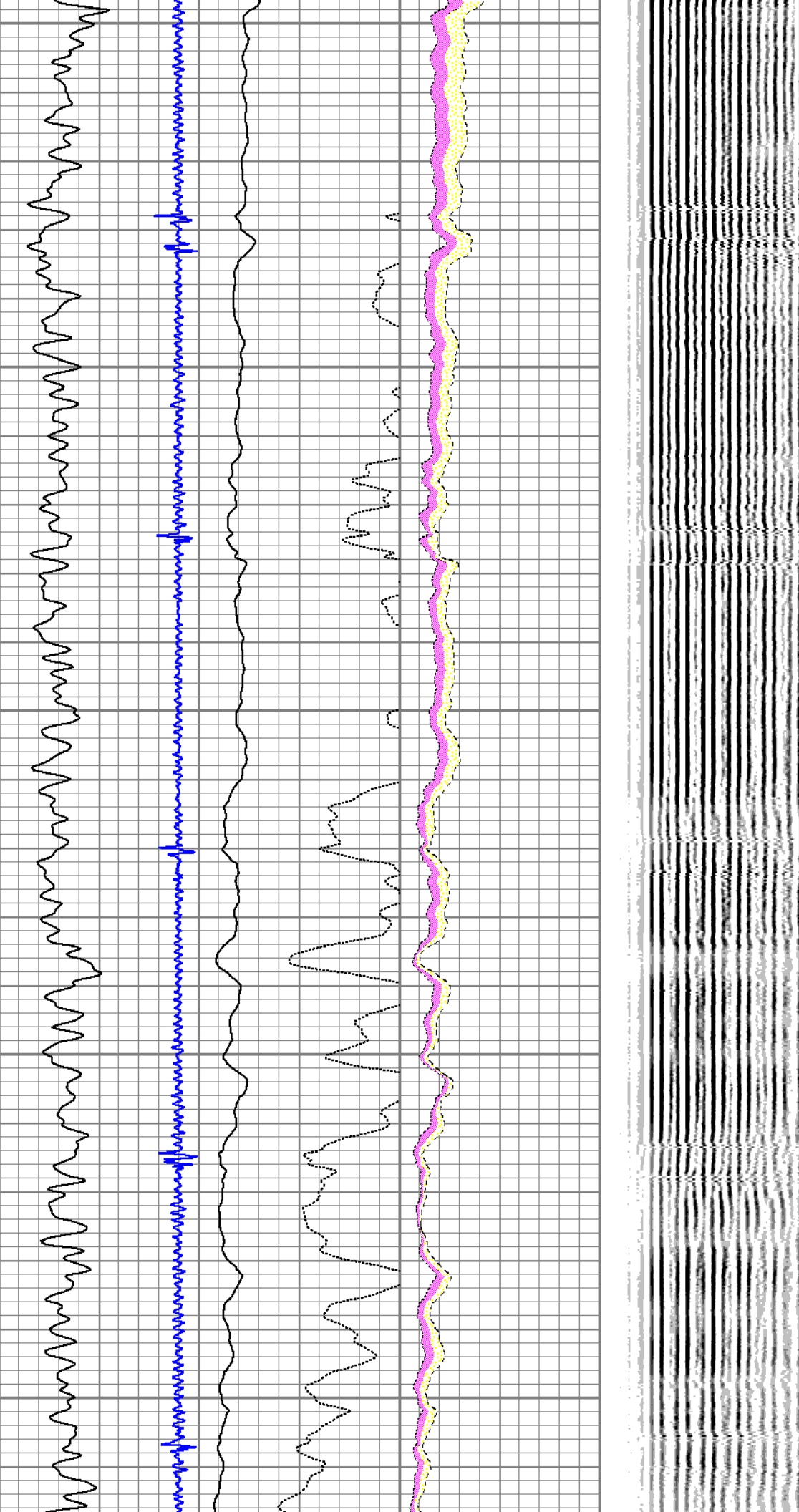
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5200



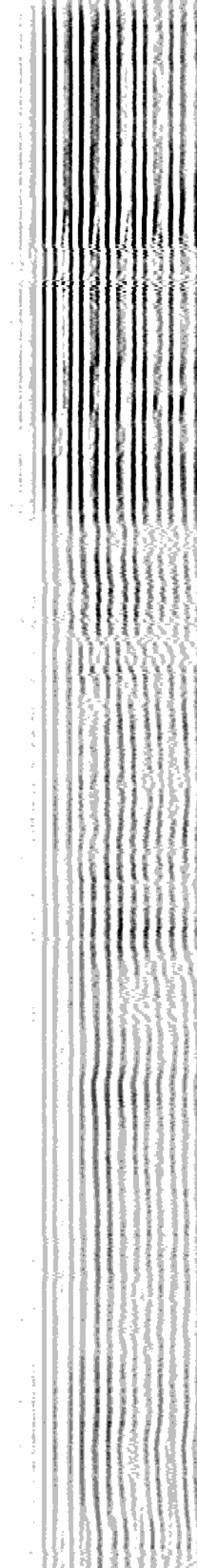
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5400



5500

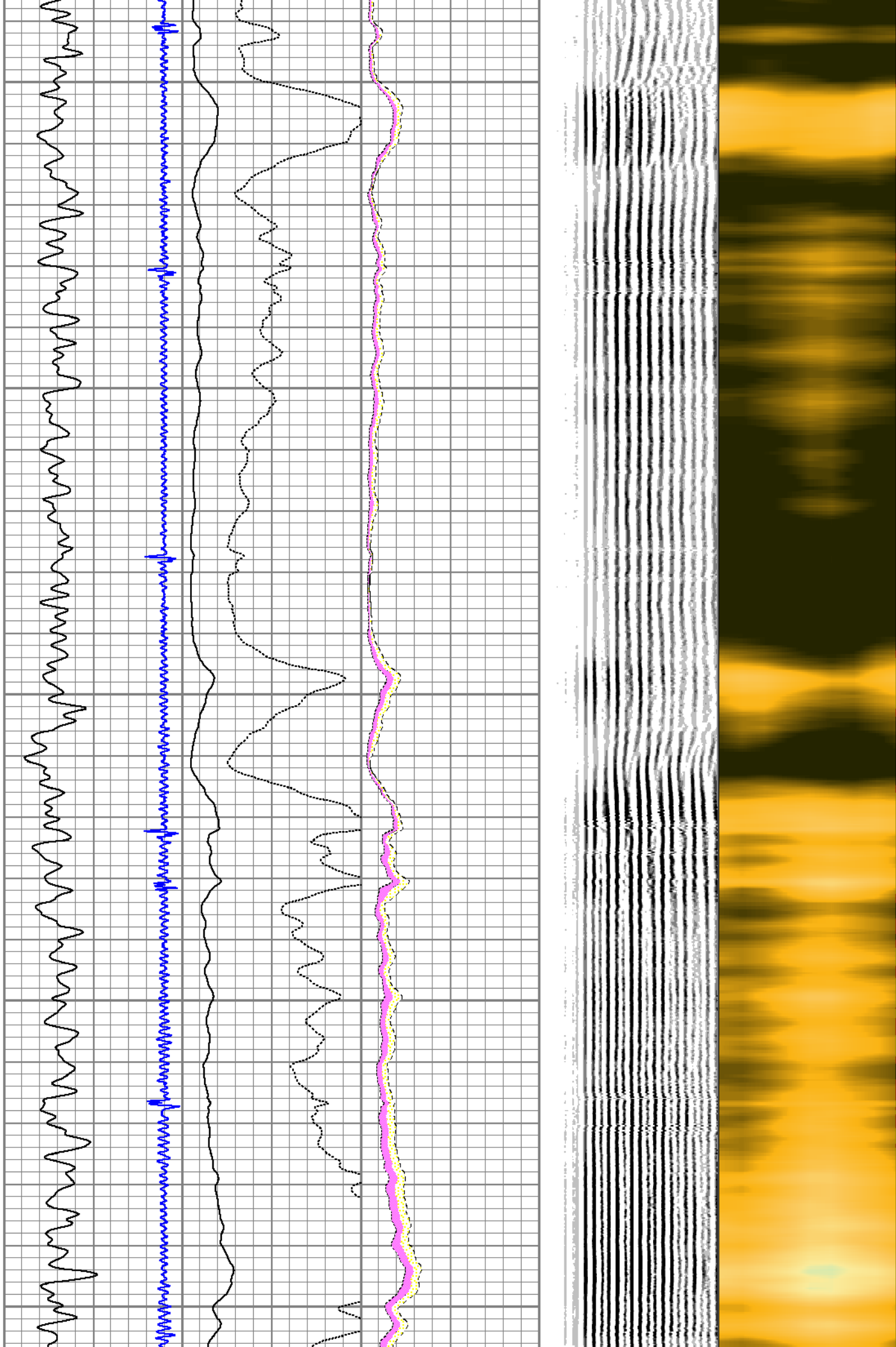
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5700

5800

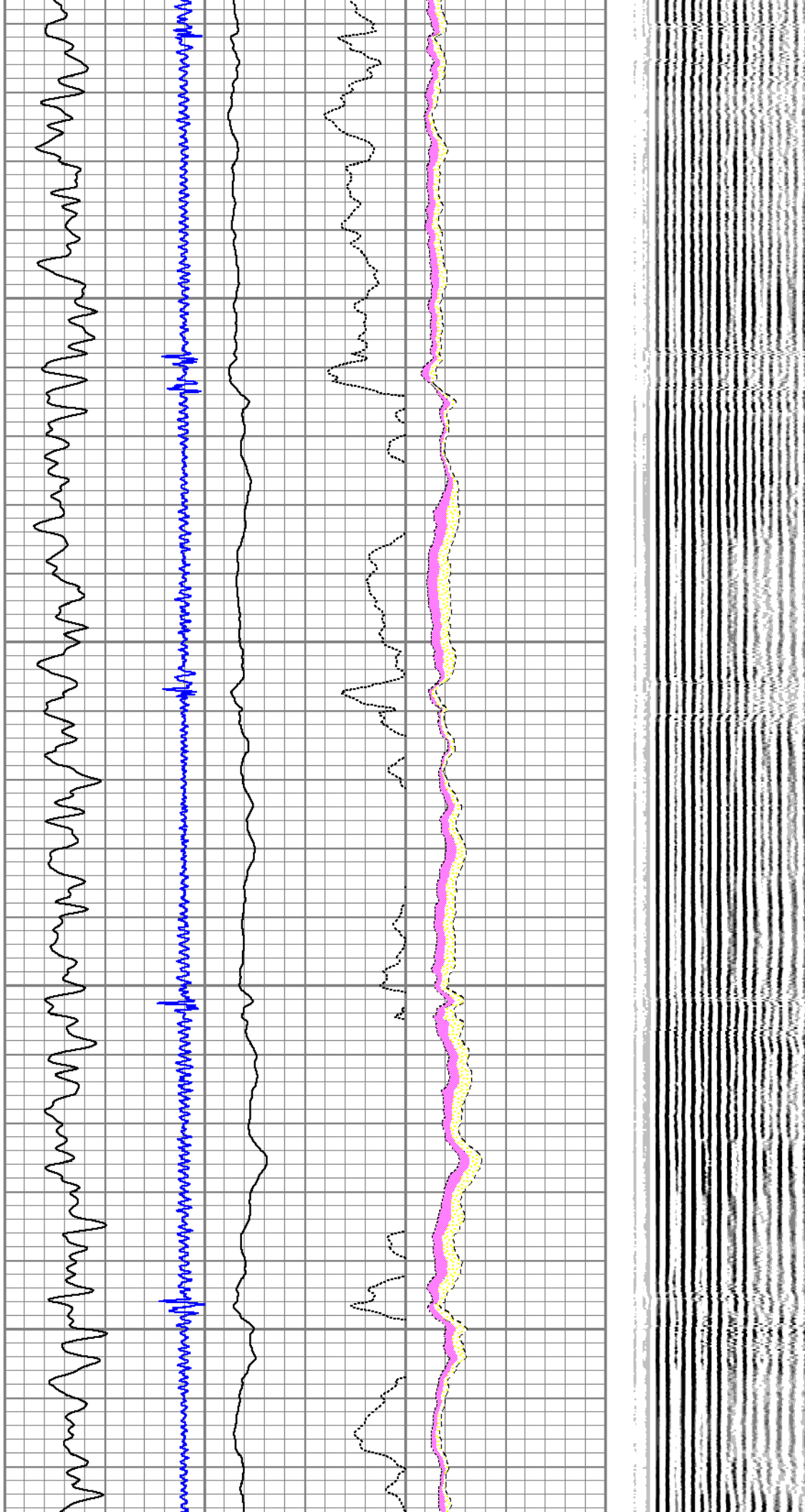
5900





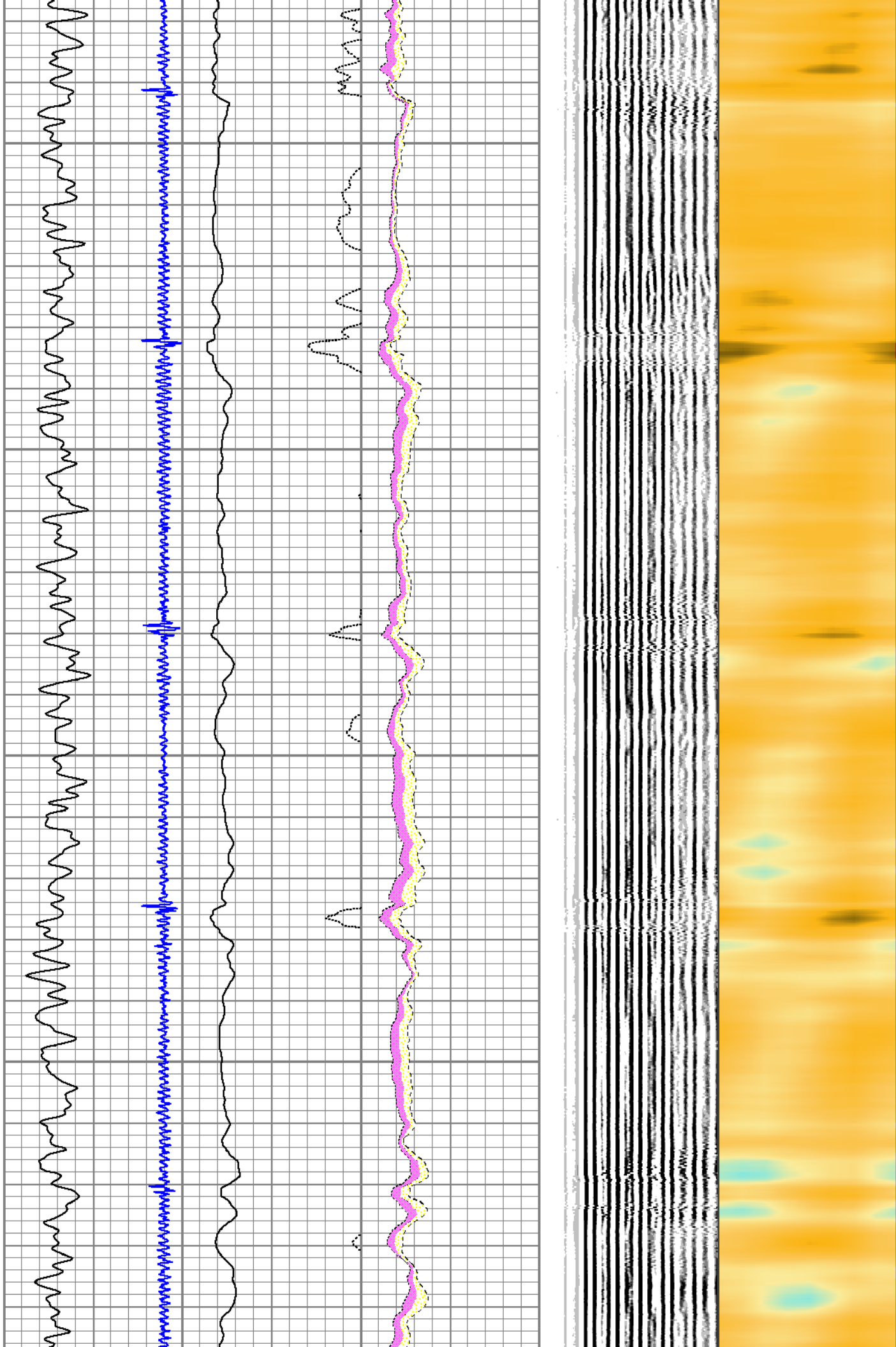
6000

6100



6200

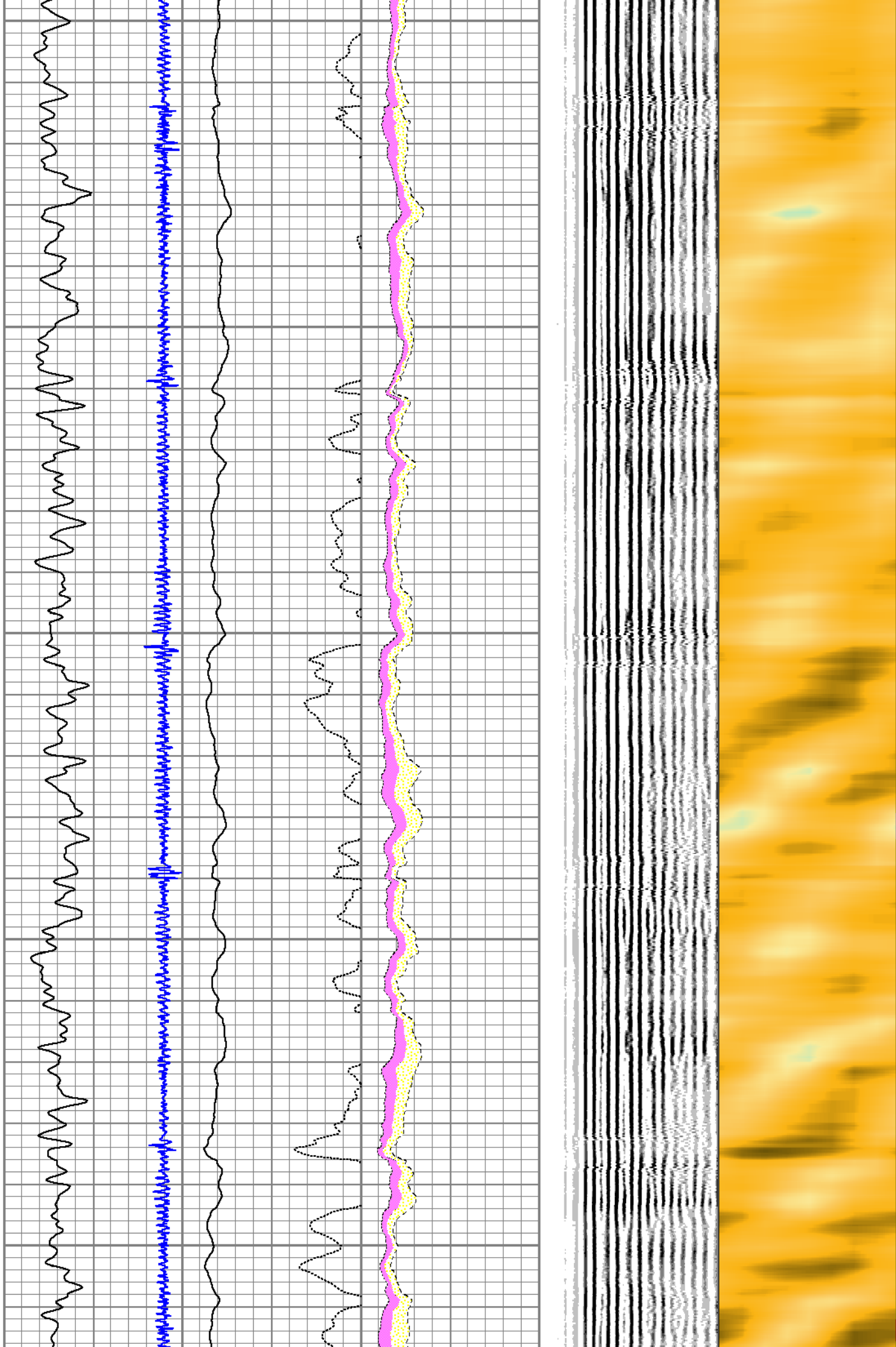
6300





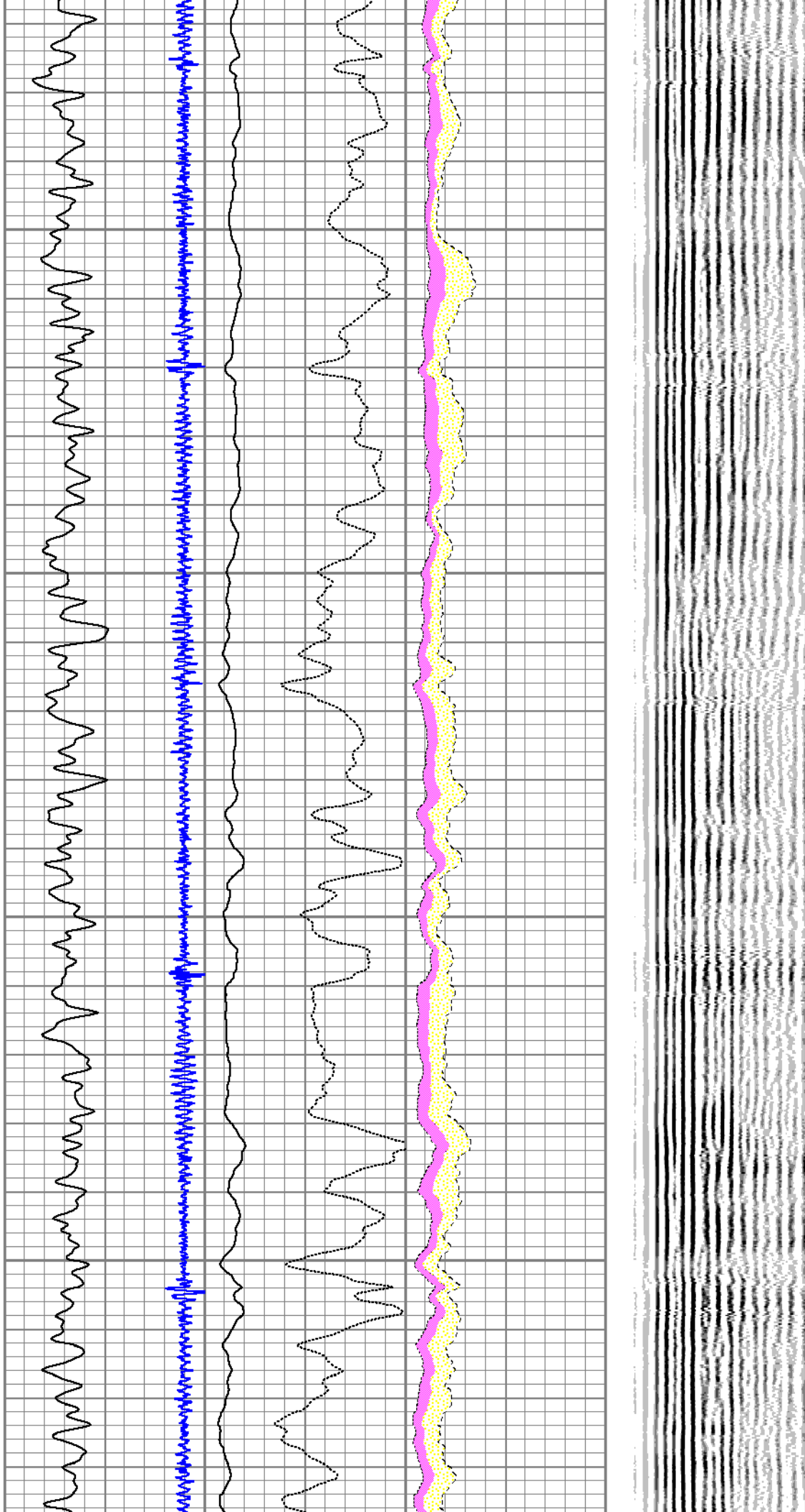
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6500



6600

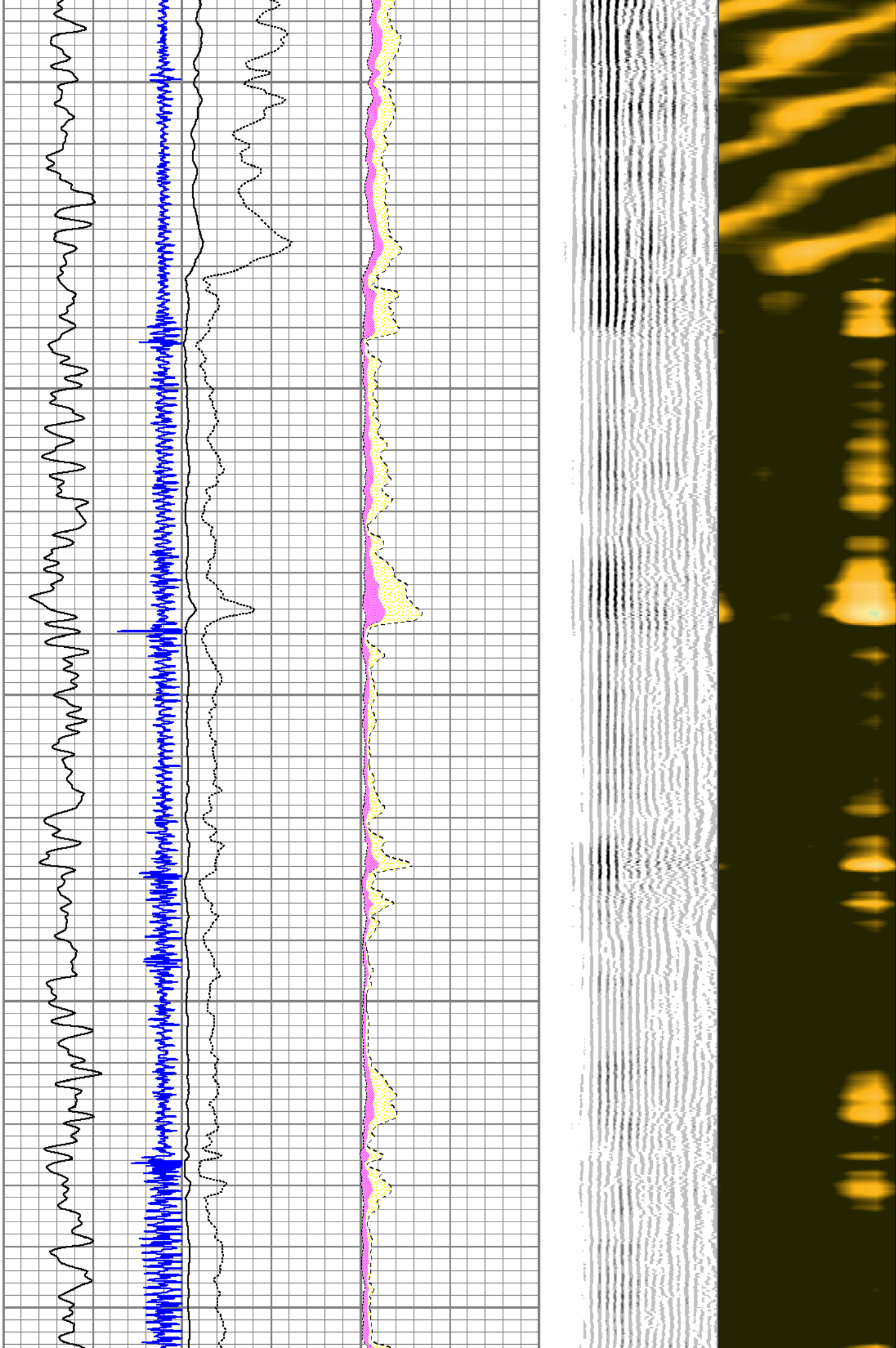
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6800

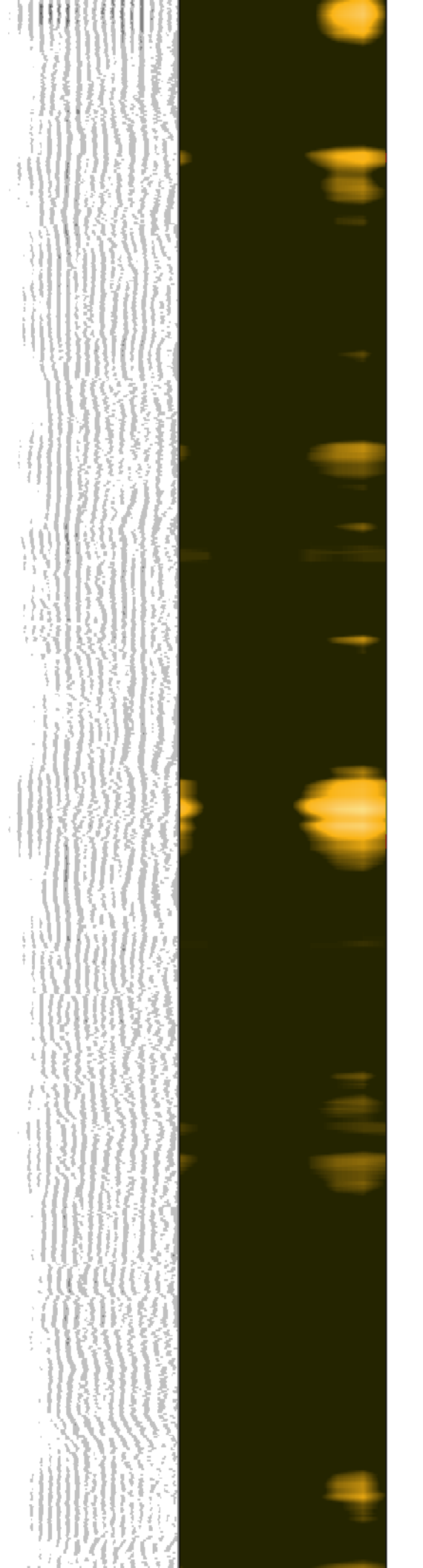
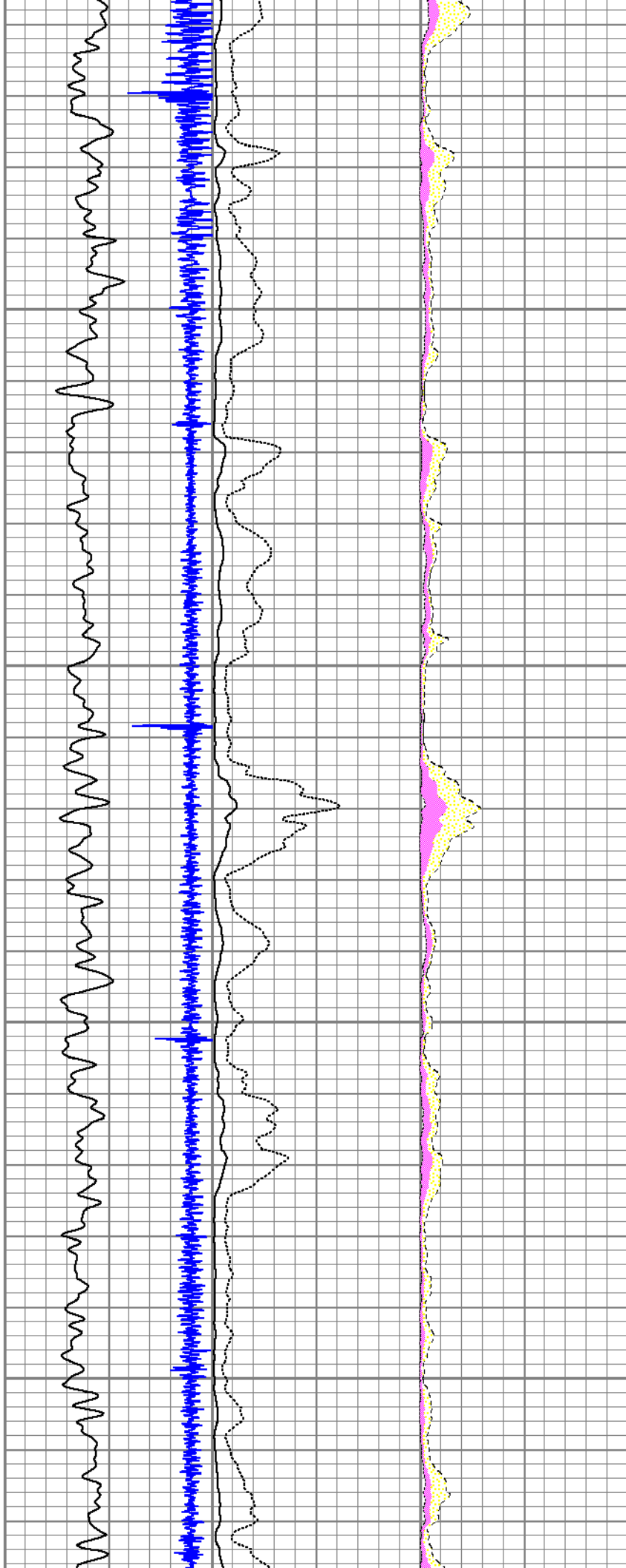
6900

7000



7100

7200





7300

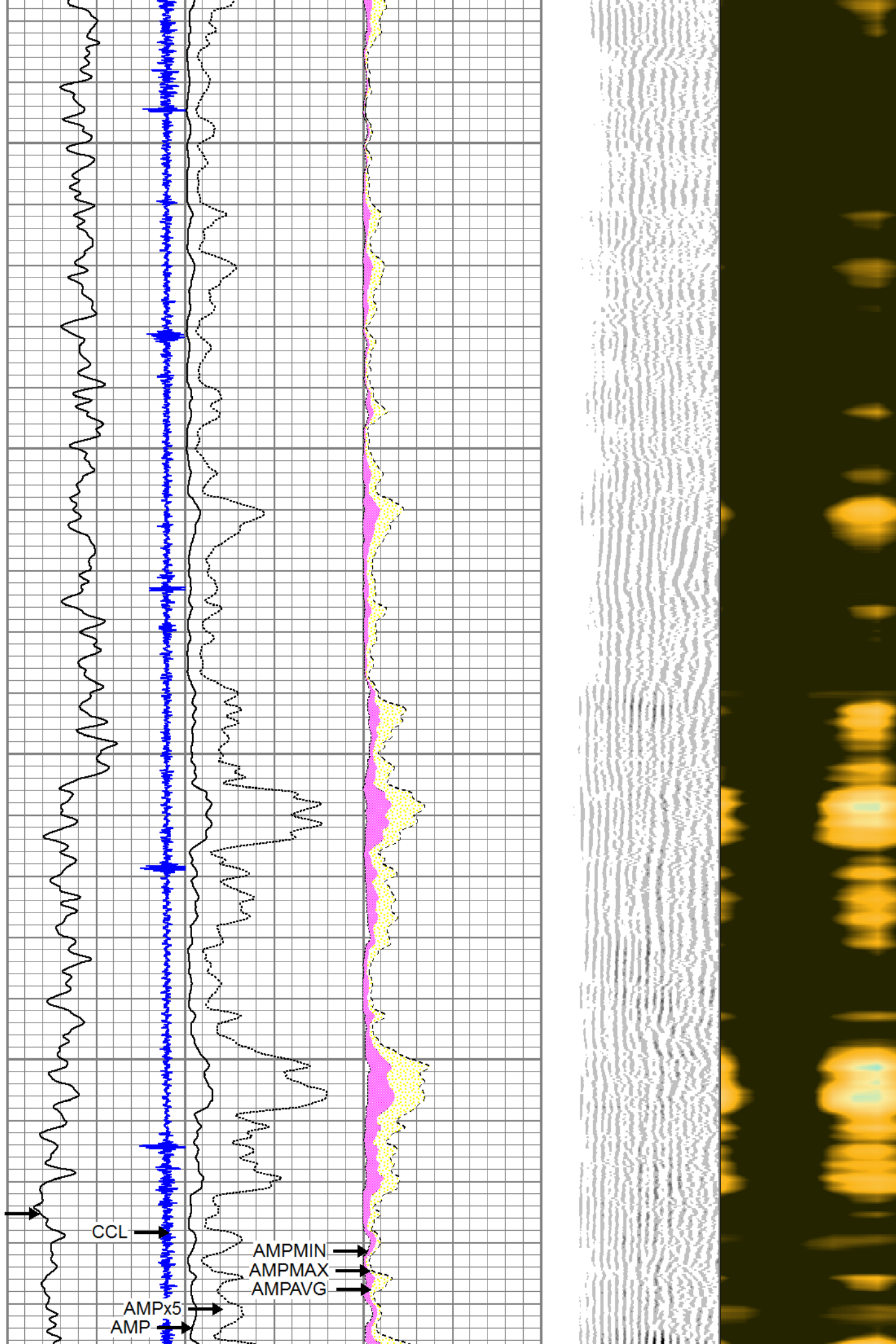
7400

GR

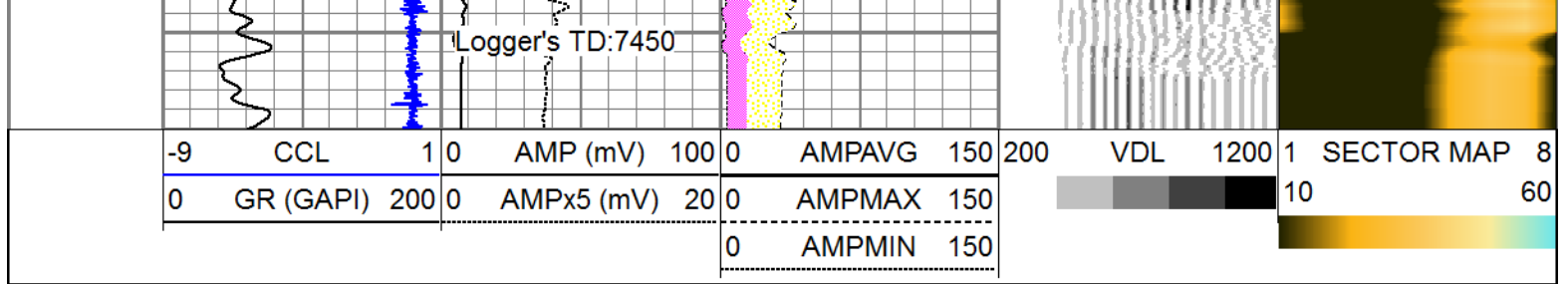
CCL

AMPx5  
AMP

AMPMIN  
AMPMAX  
AMPAVG







### Calibration Report

Database File: 13698.db  
 Dataset Pathname: pass1  
 Dataset Creation: Thu Oct 23 01:53:56 2014 by Log 0

### Gamma Ray Calibration Report

Serial Number: 51013  
 Tool Model: probe 2.75  
 Performed: Thu Oct 23 02:18:02 2014

Calibrator Value: 1400.0 GAPI

Background Reading: 26.8 cps  
 Calibrator Reading: 1120.0 cps

Sensitivity: 1.0000 GAPI/cps

### Segmented Cement Bond Log Calibration Report

Serial Number: 130584  
 Tool Model: RBT-C3

Calibration Casing Diameter: 7.000 in  
 Calibration Depth: 145.996 ft

Master Calibration, performed Wed Oct 22 09:27:54 2014:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.012	0.378	1.500	62.165	69.000	-0.570
CAL	0.012	1.029				
5'	0.012	0.239	1.500	62.165	70.000	-1.811
SUM						
S1	0.010	0.384	0.000	100.000	102.000	-2.698
S2	0.012	0.425	0.000	100.000	101.000	-3.023
S3	0.012	0.441	0.000	100.000	102.500	-2.894
S4	0.012	0.420	0.000	100.000	103.000	-3.034
S5	0.012	0.378	0.000	100.000	104.000	-3.372
S6	0.010	0.352	0.000	100.000	105.000	-2.925
S7	0.012	0.346	0.000	100.000	102.000	-3.679
S8	0.012	0.362	0.000	100.000	103.000	-3.547

Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.012	1.029	1.000	0.000

Air Zero Calibration, performed Mon Sep 08 11:38:23 2014:

	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

### Temperature Calibration Report

Serial Number: 130584  
Tool Model: RBT-C3  
Performed: Wed Aug 13 16:18:33 2014

	Reference	Reading
Low Reference:	0.00 degF	0.00 degF
High Reference:	1.00 degF	1.00 degF

Gain: 0.77  
Offset: 15.00  
Delta Spacing 1

## Log Variables

Database: C:\Warrior\Data\13698.db  
Dataset: field/well/run1/pass2

### Top - Bottom

PPT usec 0	CASEWGHT lb/ft 26	MAXAMPL mV 0	MINAMPL mV 1	MINATTN db/ft 0.08	CASEOD in 7	PERFS 0
TDEPTH ft 0	BOTTEMP degF 211	BOREID in 7.875				