



SECTOR,
GAMMA RAY
CCL LOG

Company		OCCIDENTAL PETROLEUM CORP	
Well		HOWARD 27N-28HZ	
Field		WATTENBURG	
County		WELD	
State		CO	
Country		USA	
Company		OCCIDENTAL PETROLEUM CORP	
Well		HOWARD 27N-28HZ	
Field		WATTENBURG	
County		WELD	
State		CO	
Country		USA	
Location:		API # : 05-123-36928	
Permanent Datum		GL	
Log Measured From		KB	
Drilling Measured From		KB	
SEC 28 TWP 1N RGE 67W		NENE 310' FNL & 1094' FEL	
Elevation		4983'	
Other Services		K.B. 4999' D.F. 4998' G.L. 4983'	
Date		27-JUN-2022	
Run Number		ONE	
Depth Driller		12017'	
Depth Logger		2500'	
Bottom Logged Interval		2500'	
Top Log Interval		SURFACE	
Open Hole Size		9.63"	
Type Fluid		WATER	
Density / Viscosity		NA	
Max. Recorded Temp.		88° F	
Estimated Cement Top		N/A	
Time Well Ready		N/A	
Time Logger on Bottom		N/A	
Equipment Number		1016	
Location		BRIGHTON CO.	
Recorded By		PHIL LOPEZ	
Witnessed By		V. ILDELFONSO	
Borehole Record		Tubing Record	
Run Number		Bit	
From		To	
Size		Weight	
From		To	
Casing Record		Top	
Surface String		Bottom	
Prot. String		1032'	
Production String		SURFACE	
Liner		7952'	
4.5"		6925'	
11.6		12017'	


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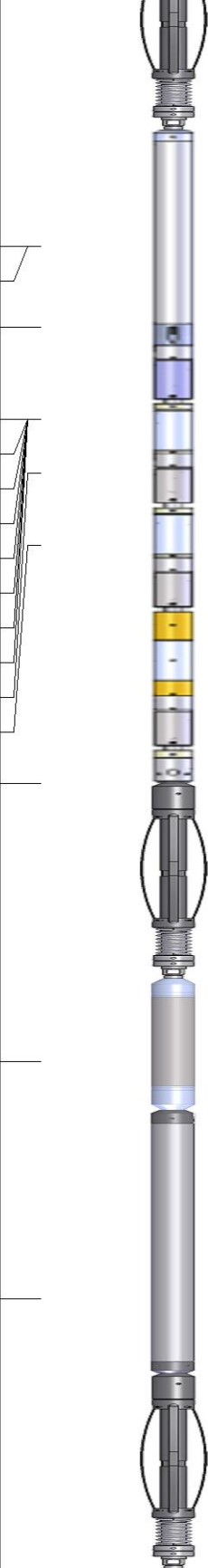
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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

THANK YOU FOR USING RANGER ENERGY SERVICES!

LOG CORRELATED TO SCHLUMBER ISOLATION SCANNER LOG DATED 17-JUN-2022

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			Cable_Head-1_7/16 Titan 1 7/16" Cable Head	1.02	1.44	3.31

			Centralizers-8071-275-200 Tekco 2 3/4" Adjustable Centralizer	2.73	2.75	25.00
WVFSYNC	18.46					
WVFCAL	18.46					
TEMP	17.33					
WVFS8	16.04					
WVFS7	16.04		SCBLTEKSECT-275 Temp JS (IBUCO04) TekCo 2 3/4" 400 Deg. F Sector Tool with Temperature	9.13	2.75	130.00
WVFS6	16.04					
WVFS5	16.04					
WVFS4	16.04					
WVFS3	16.04					
WVFS2	16.04					
WVFS1	16.04					
WVF3FT	15.29					
WVF5FT	14.29					
WVFTEMP	10.96					
			Centralizers-8071-275-200 Tekco 2 3/4" Adjustable Centralizer	2.73	2.75	25.00
CCL	7.08		CCL-275tekco (111) Tekco 2 3/4" 450 Deg. F Rare Earth Magnets	1.83	2.75	33.00
GR	3.77		GR-Tek-Co 2 3/4 (0111) Tekco 2 3/4" 400 Deg. F Logging Gamma Ray	3.67	2.75	40.00
			Centralizers-8071-275-200 Tekco 2 3/4" Adjustable Centralizer	2.73	2.75	25.00
Dataset: 436786_oxy_howard27n-28hz_0512336928_20220627_scbl.db: field/well/run1/pass6 Total length: 23.83 ft Total weight: 281.31 lb O.D.: 2.75 in						

Database File436786_oxy_howard27n-28hz_0512336928_20220627_scbl.db

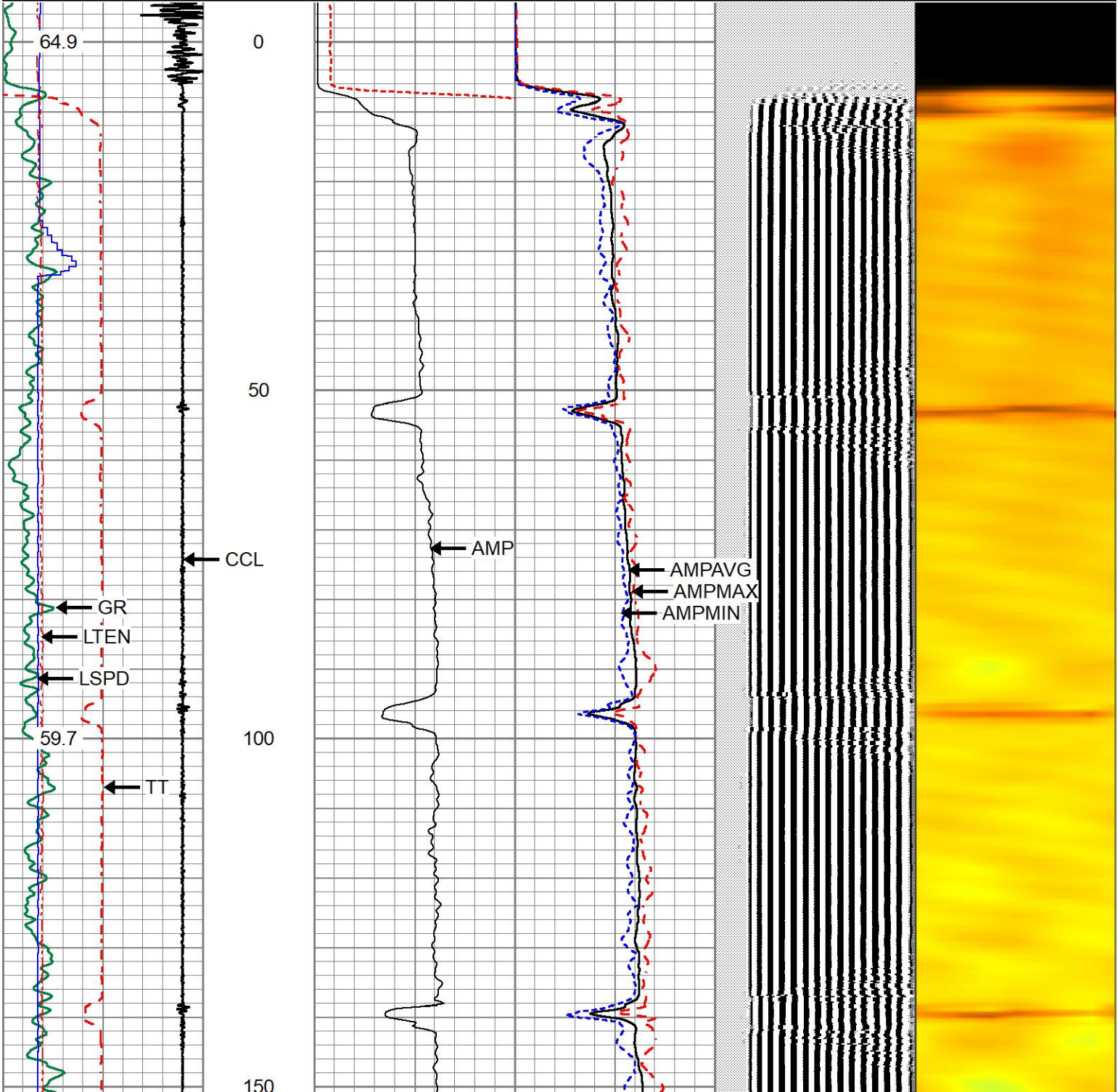
Dataset Pathnamepass6

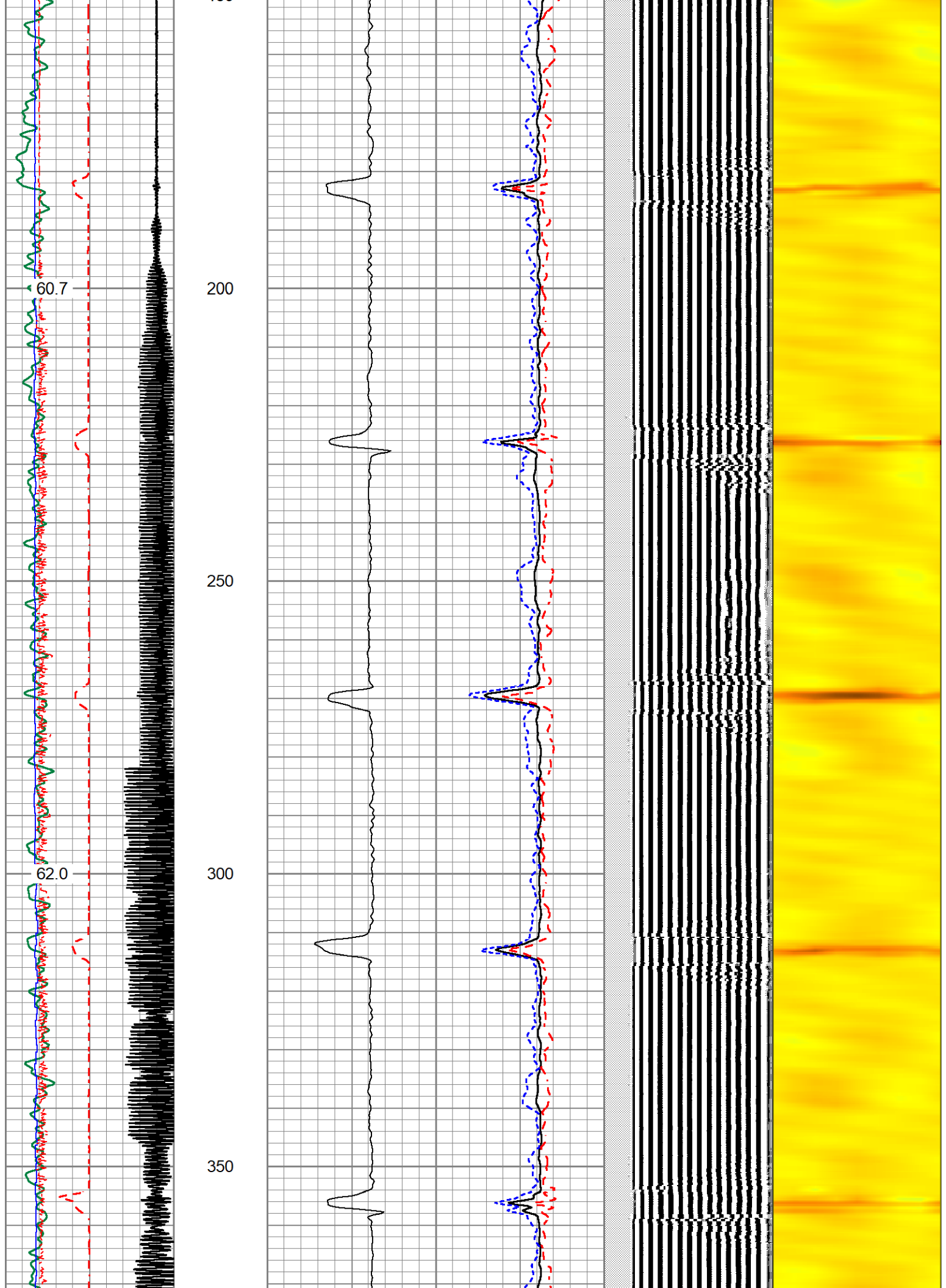
Presentation Format1patriotradii

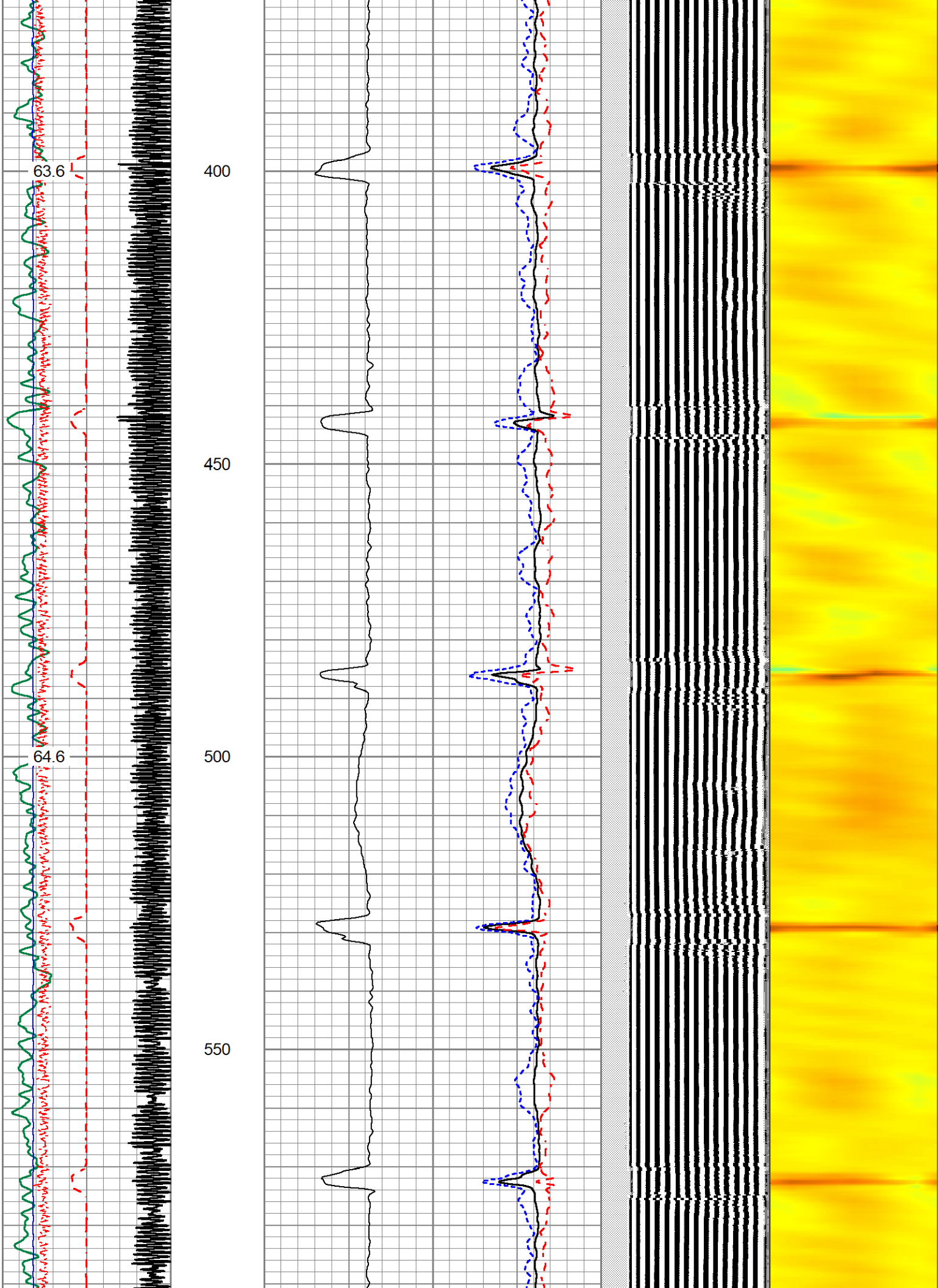
Dataset CreationMon Jun 27 17:36:14 2022

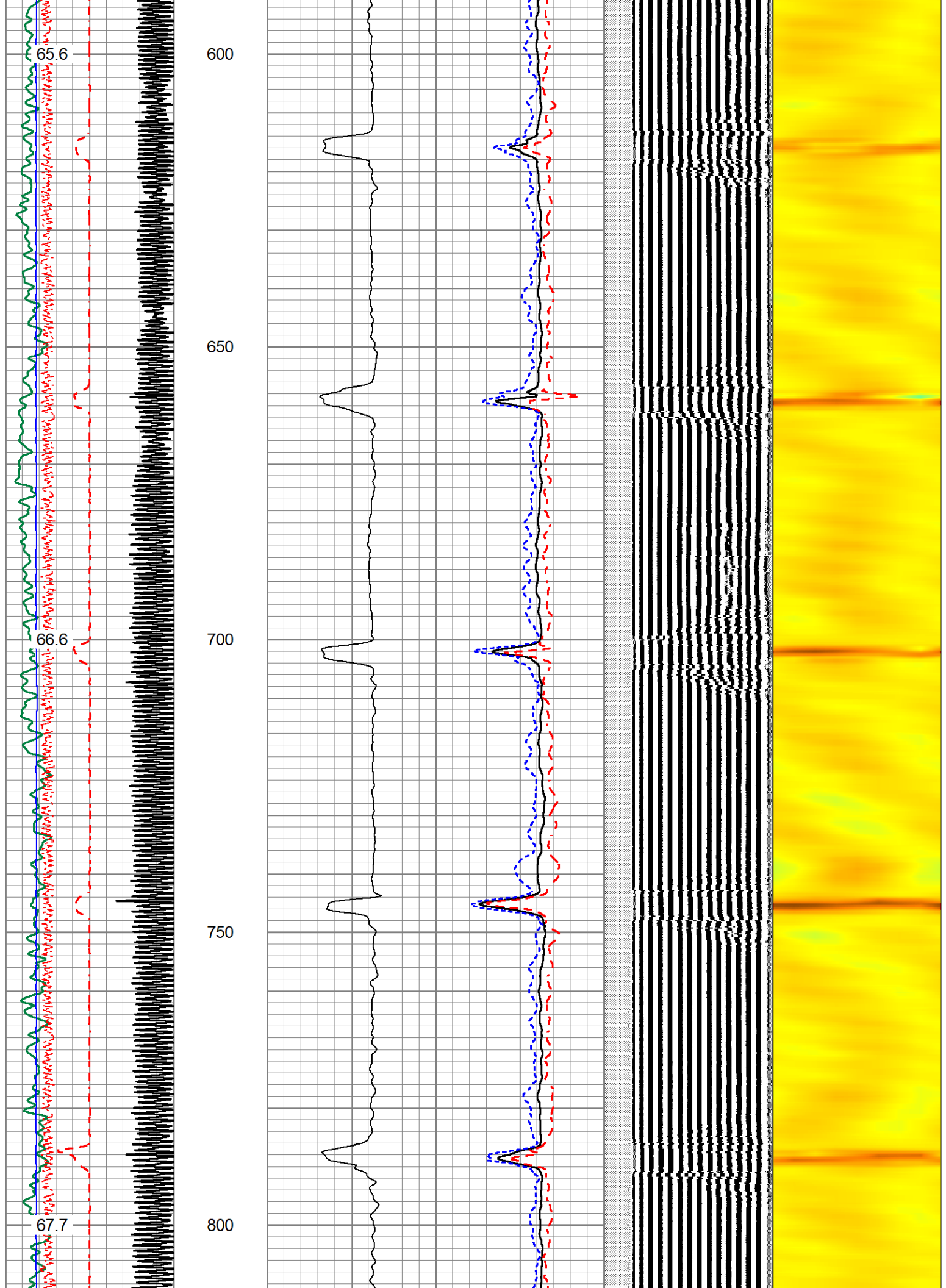
Charted byDepth in Feet scaled 1:240

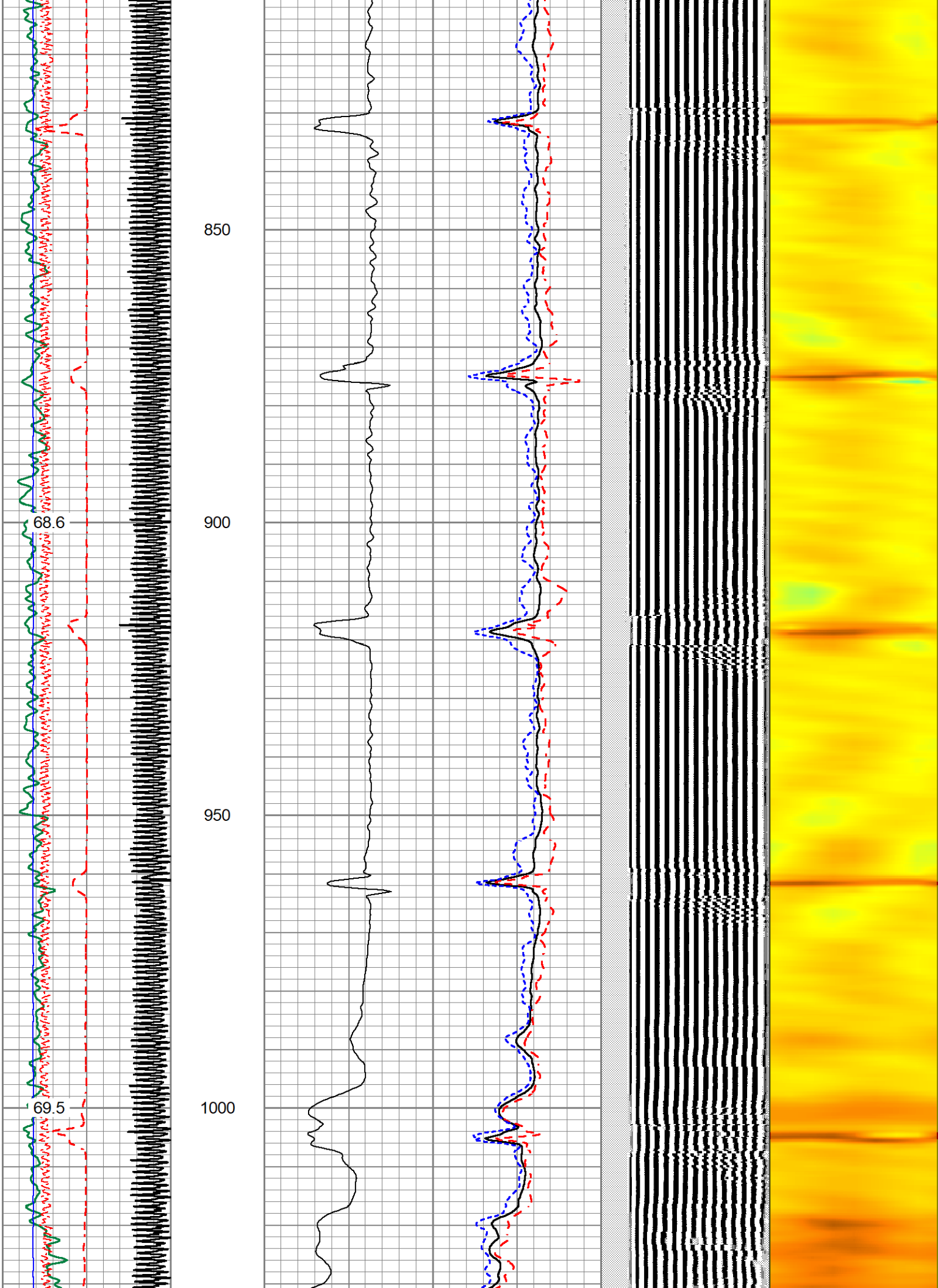
305	TT (usec)	205	0	AMP (mV)	100	0	AMPAVG	100	200	VDL (usec)	1200	1	RADIAL MAP	8
0	GR (GAPI)	150	0	3FT X 5 (mV)	20	0	AMPMAX	100						
9	CCL	-1	0			0	AMPMIN	100						
	LSPD													
-100	(ft/min)	100												
0	LTEN (lb)	2000												
	TEMP													
	(degF)													

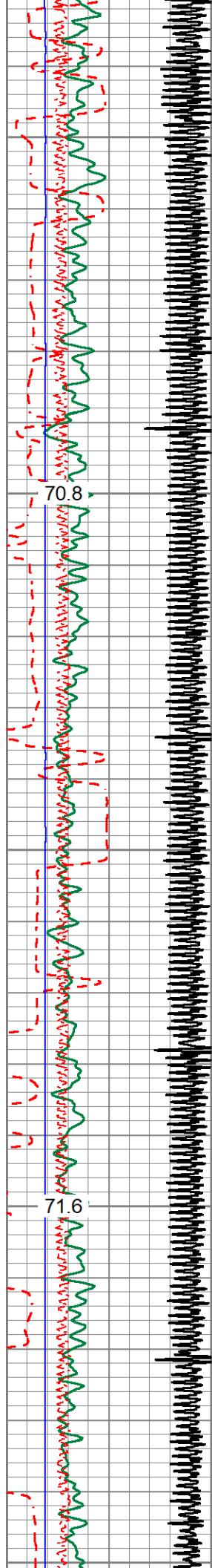












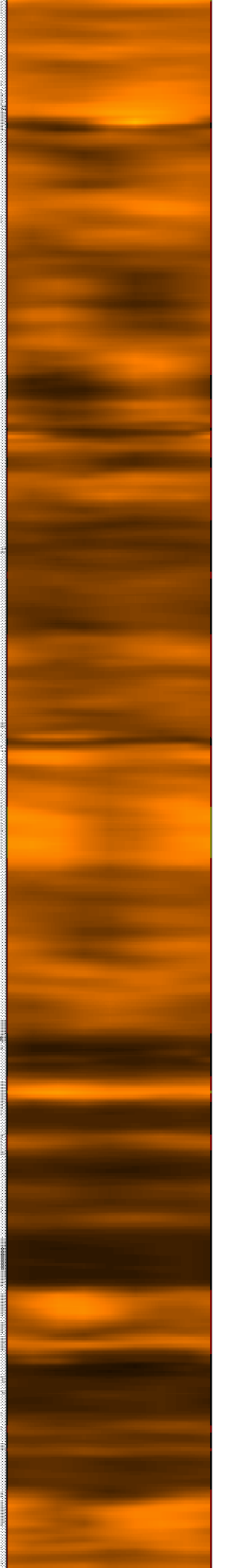
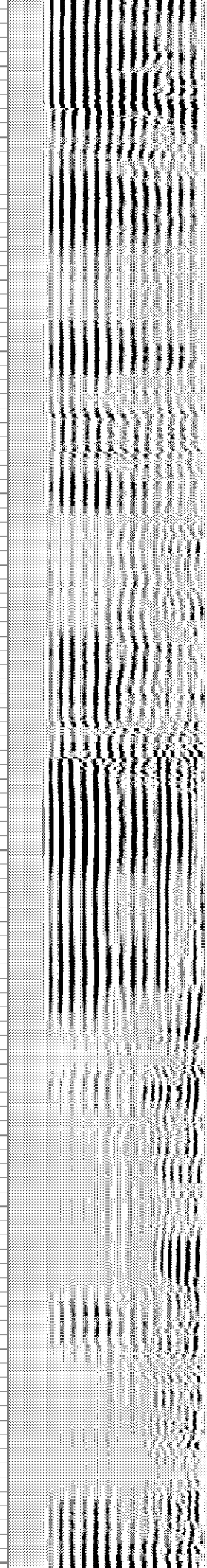
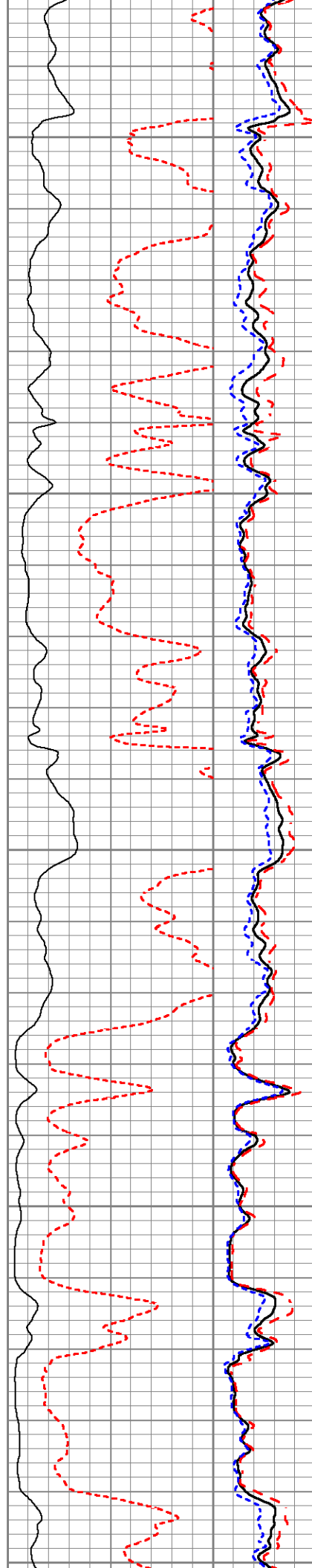
1050

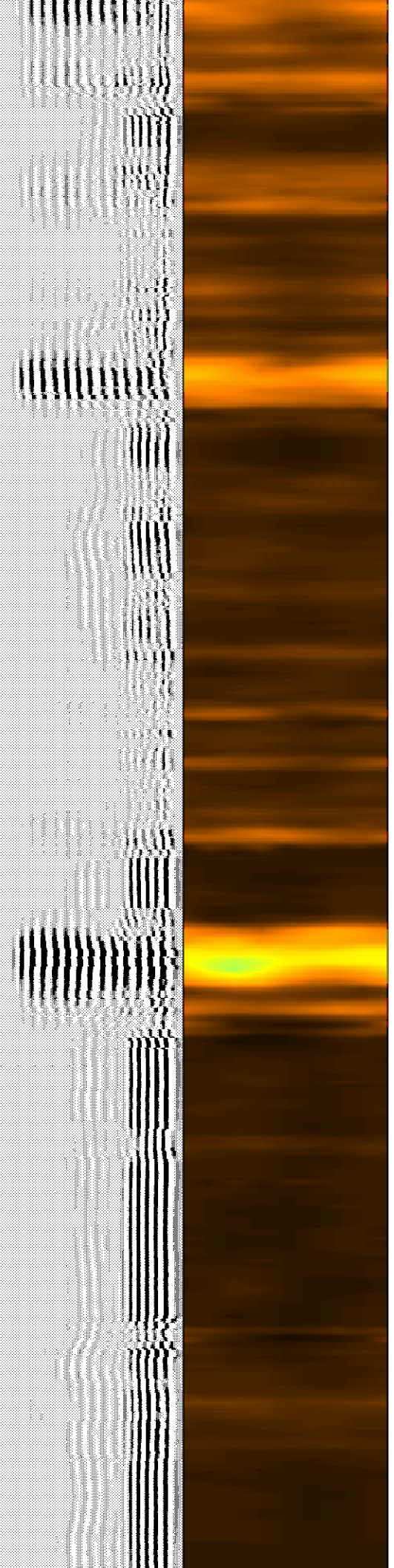
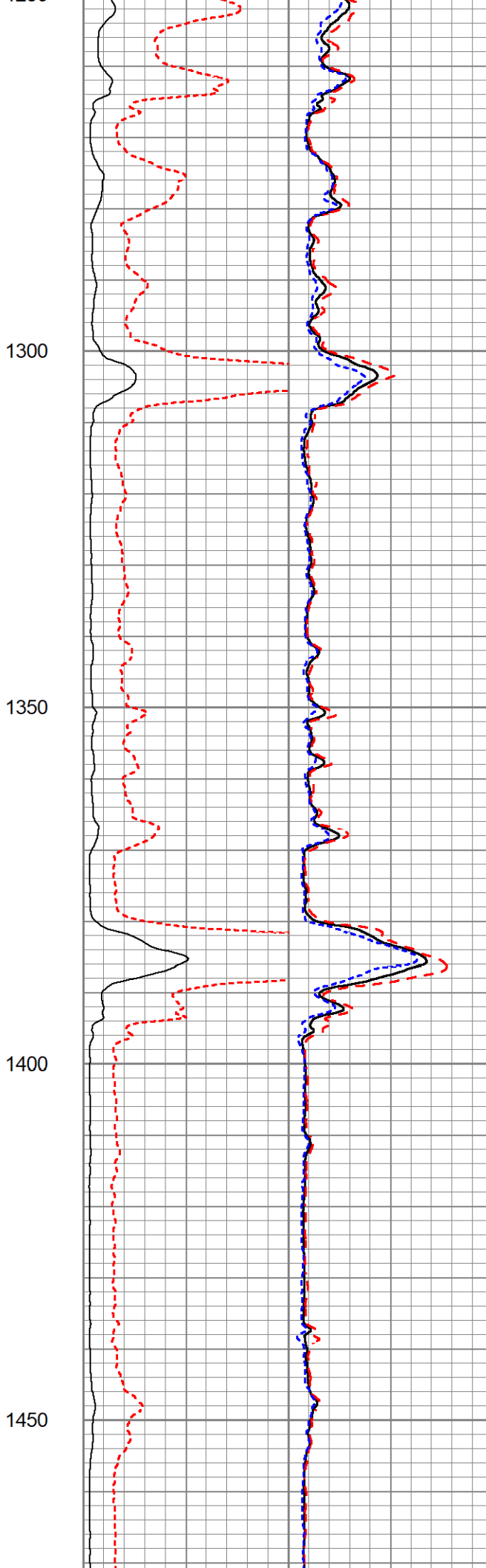
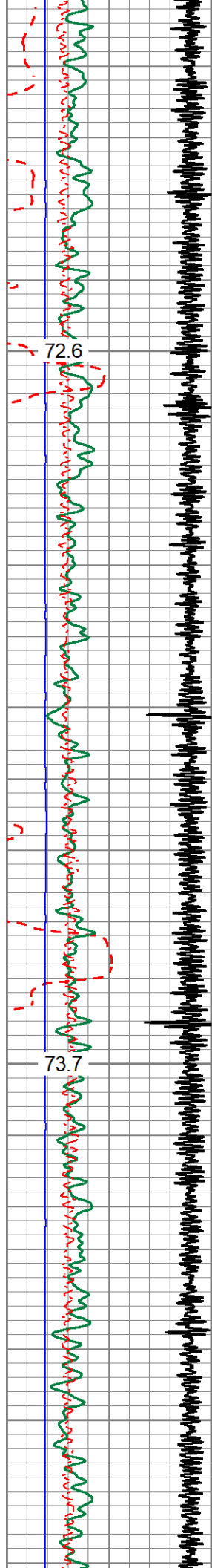
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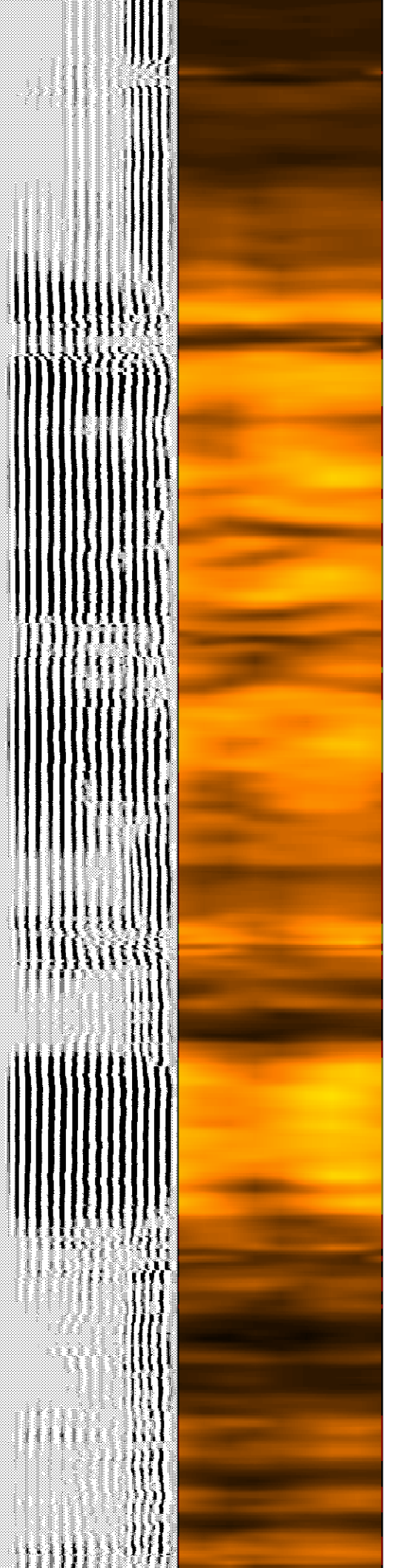
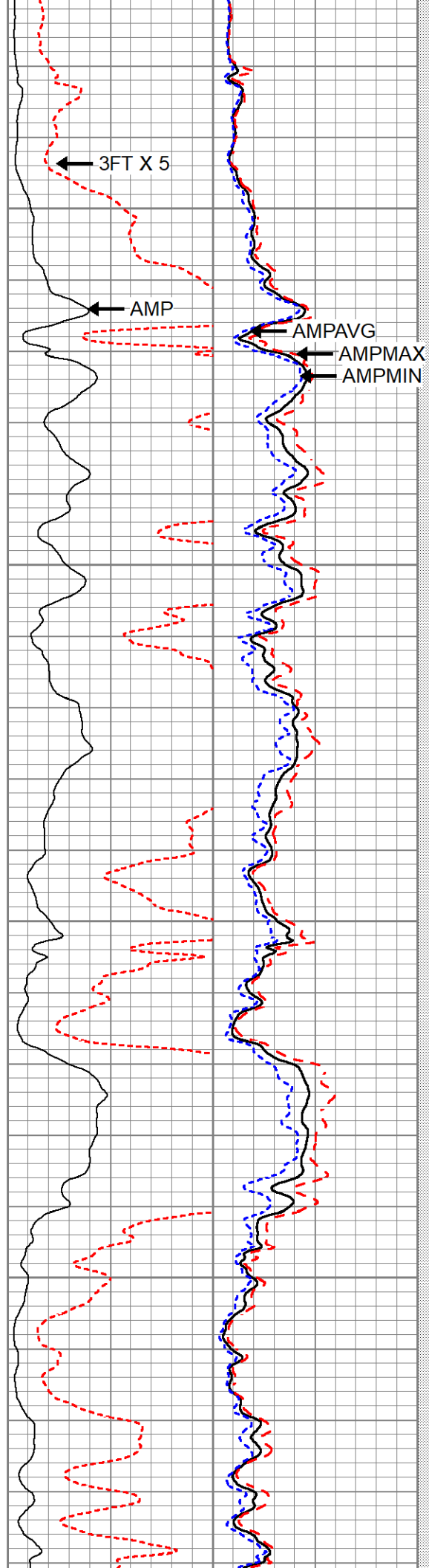
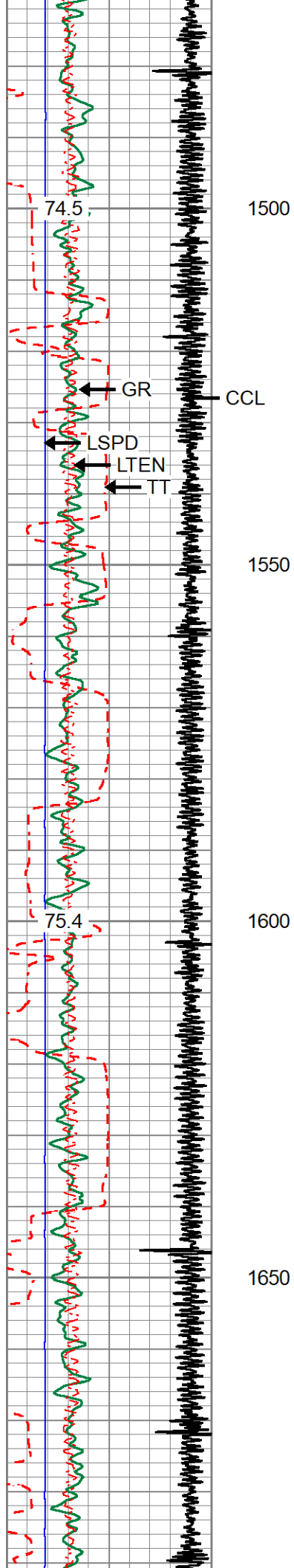
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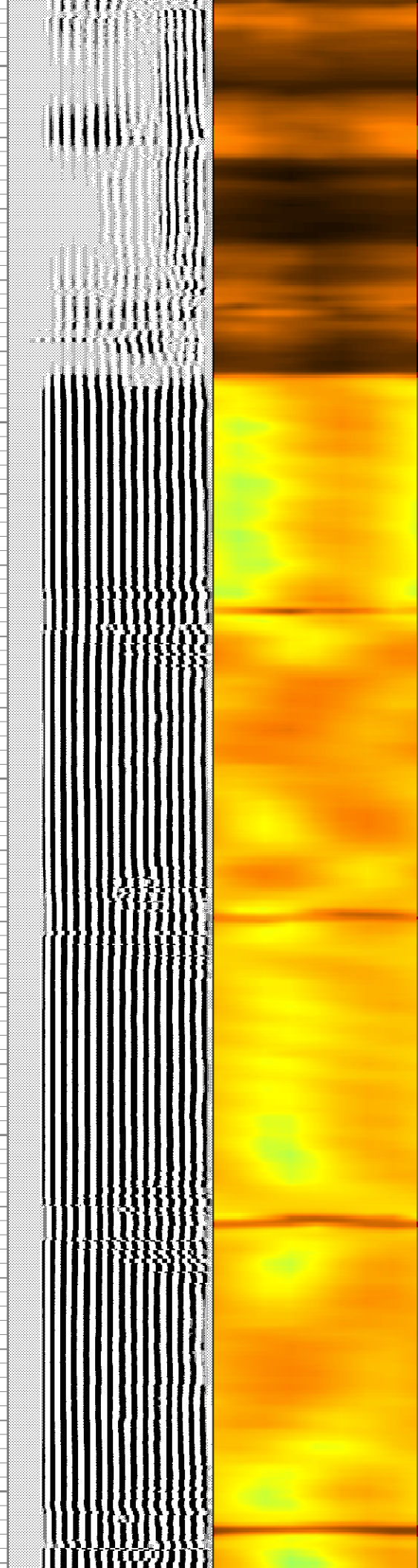
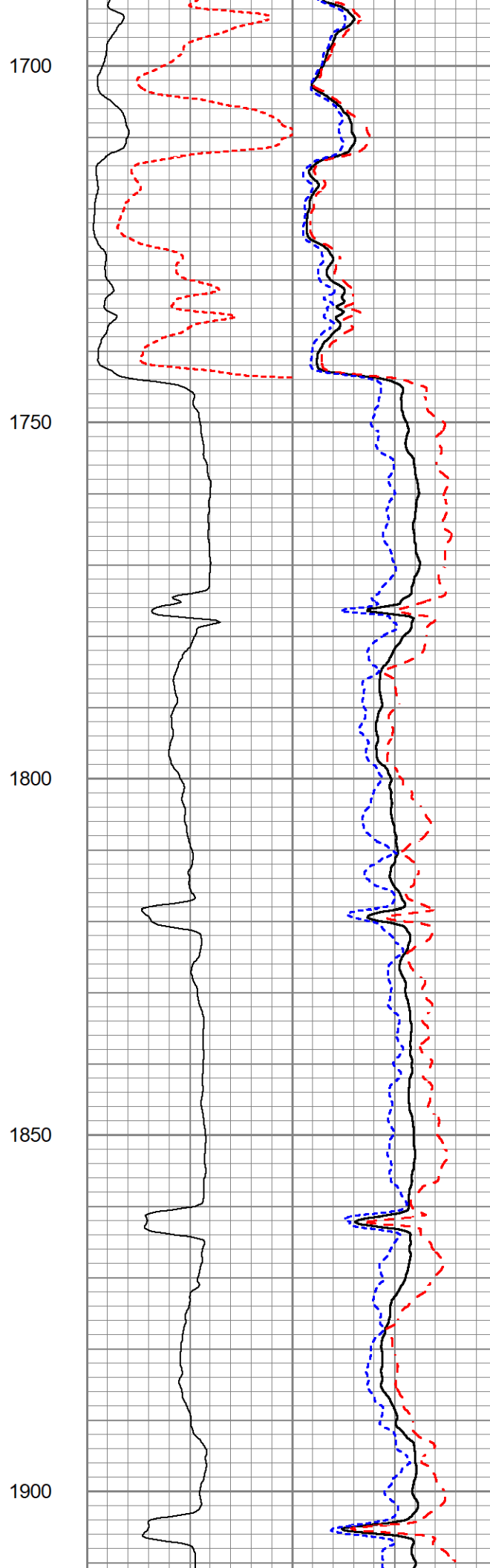
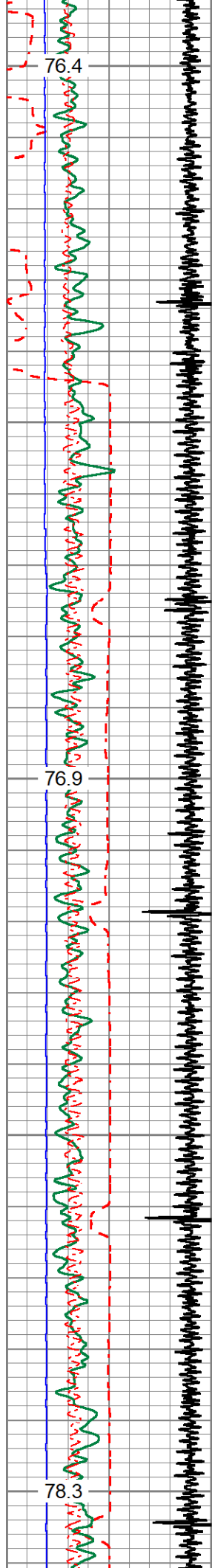
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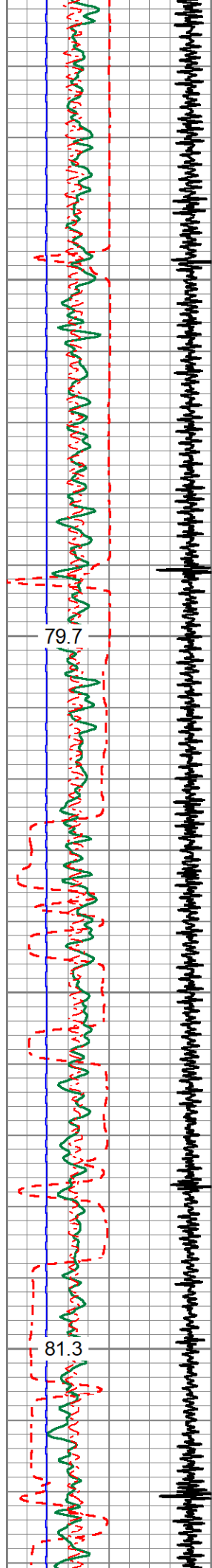
1250











1950

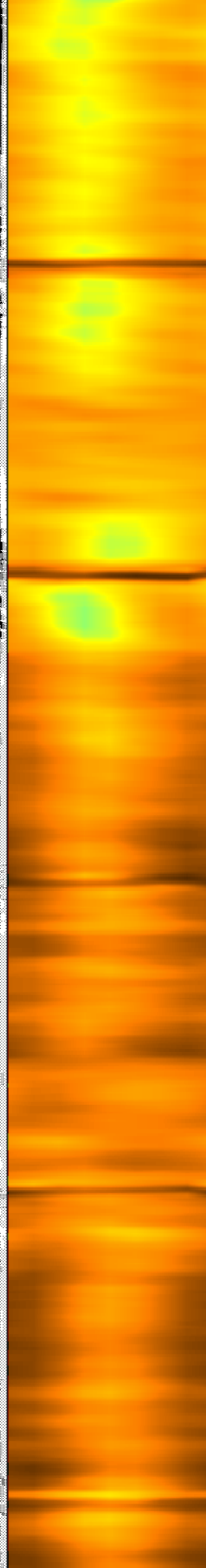
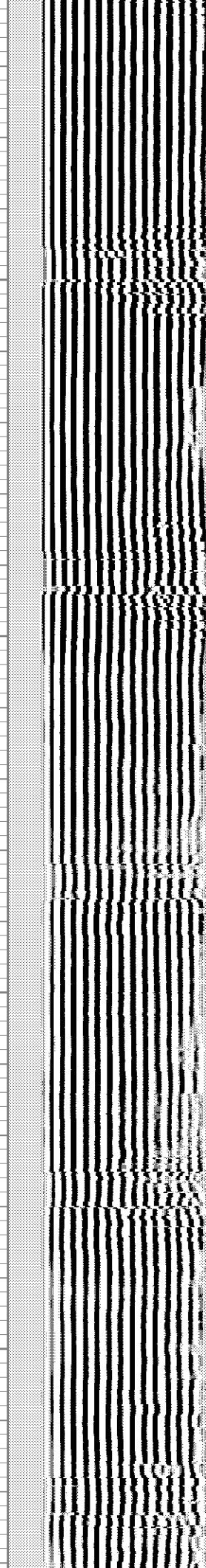
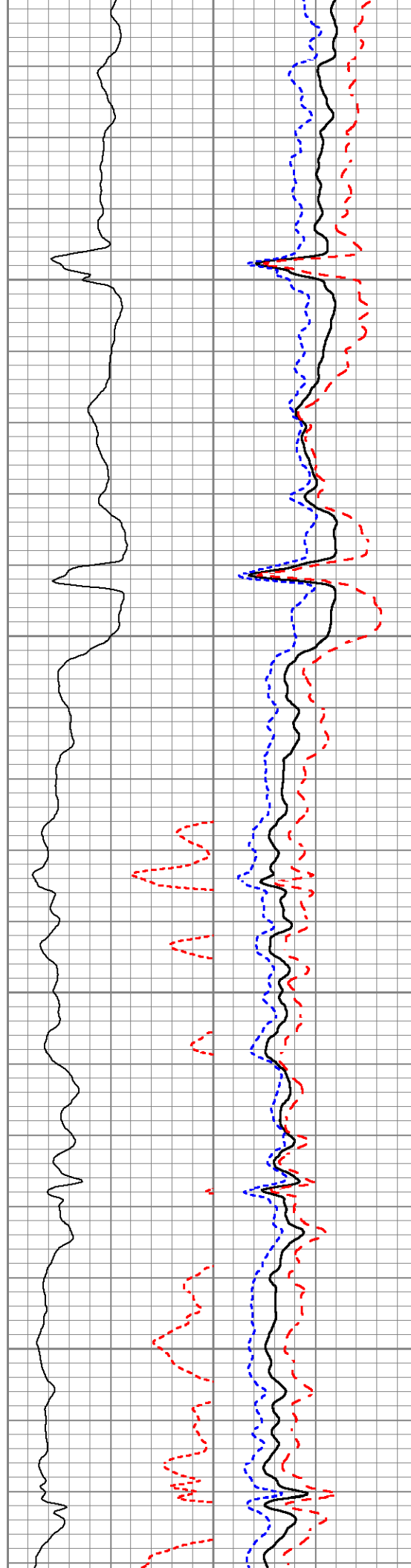
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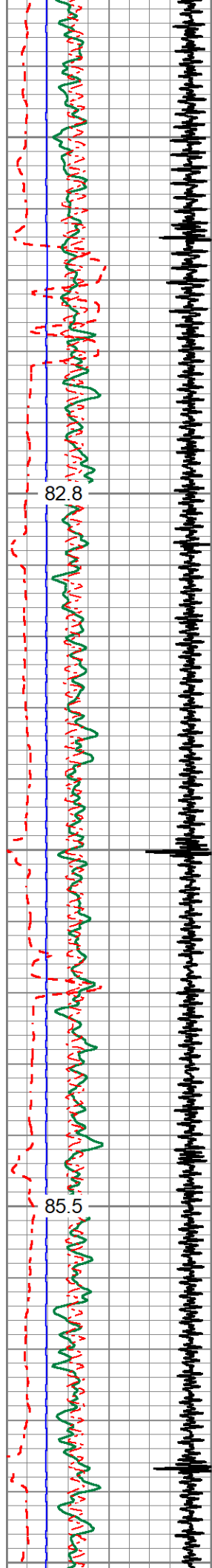
2050

2100

79.7

81.3





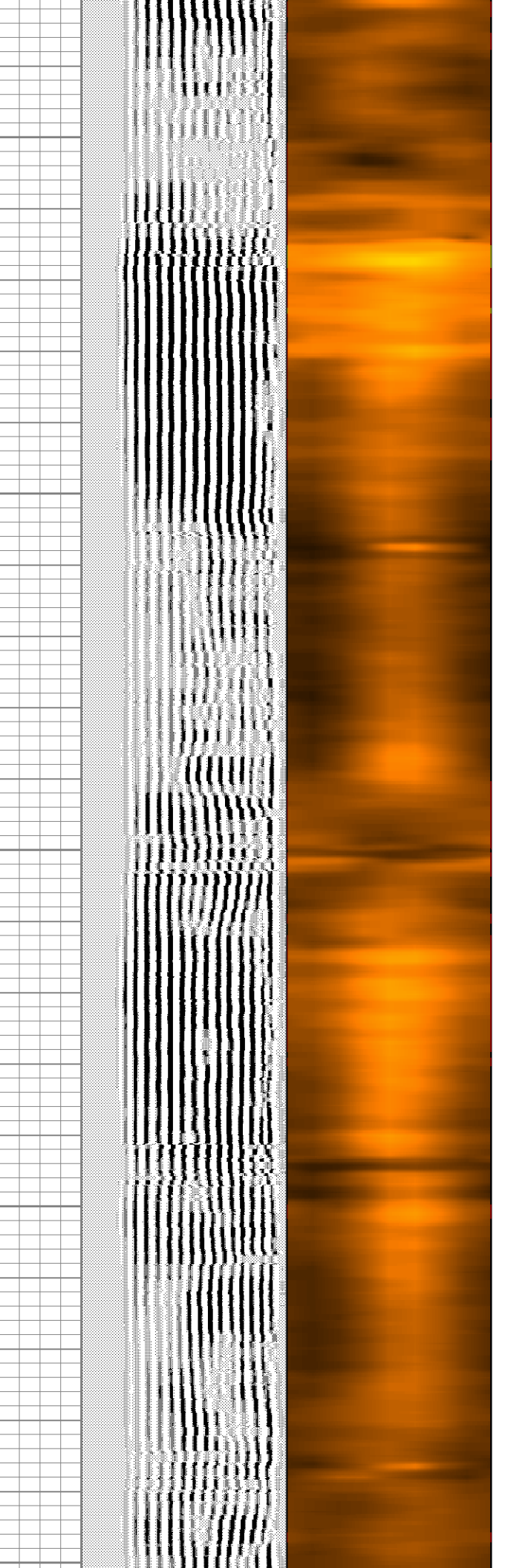
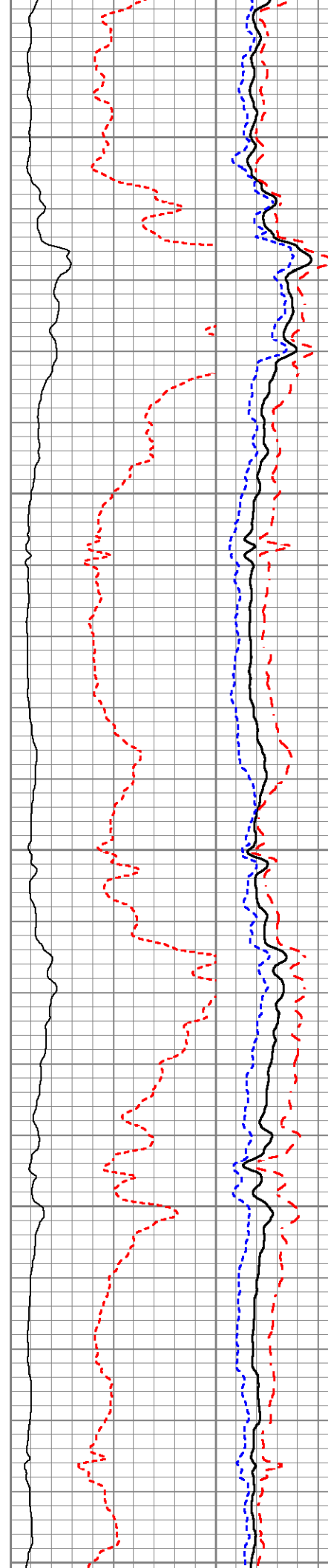
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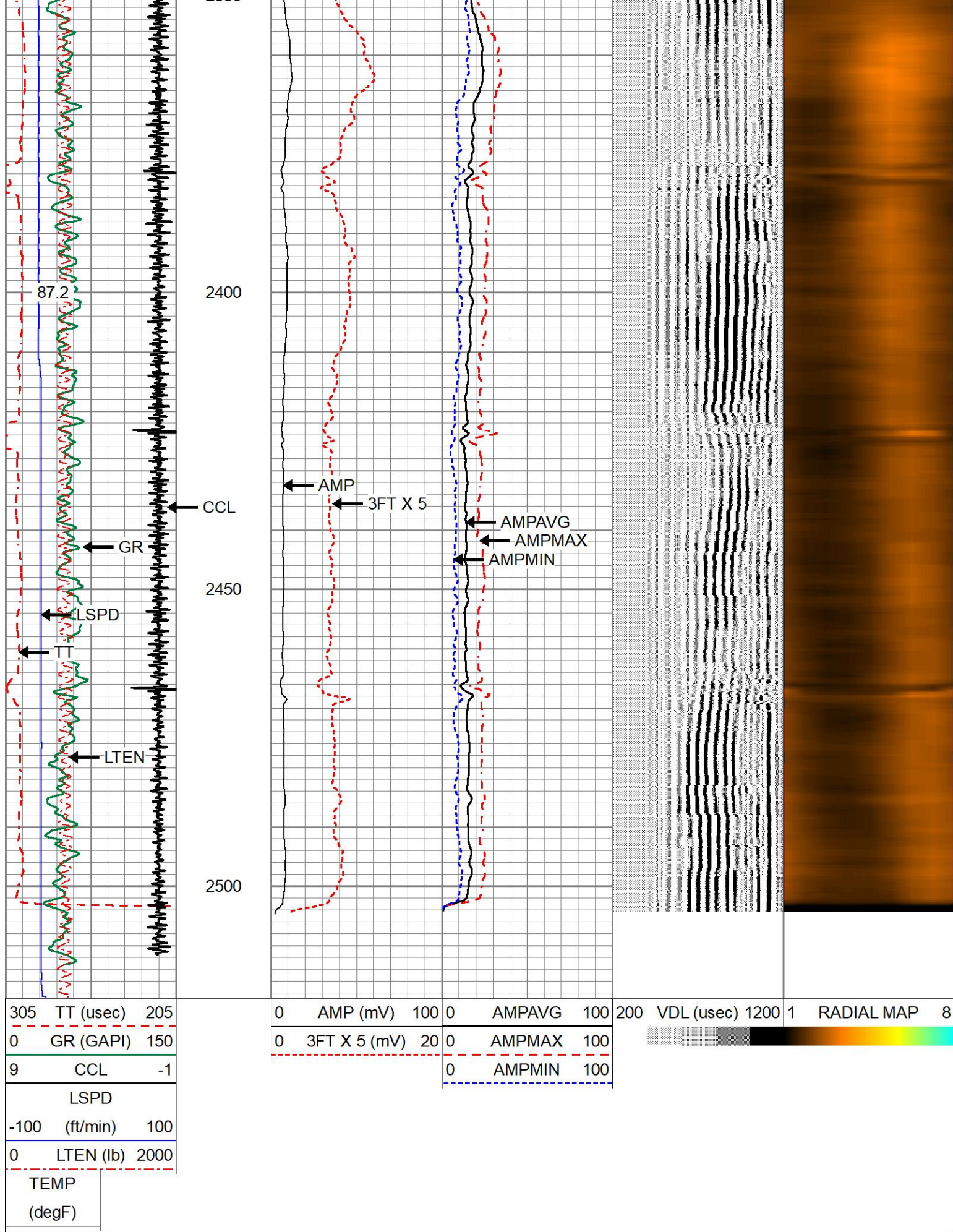
2200

2250

2300

2350







REPEAT PASS

Database File 436786_oxy_howard27n-28hz_0512336928_20220627_scbl.db
Dataset Pathname pass4
Presentation Format 1patriotradii
Dataset Creation Mon Jun 27 17:30:34 2022
Charted by Depth in Feet scaled 1:240

305 TT (usec) 205
0 GR (GAPI) 150
9 CCL -1

LSPD
-100 (ft/min) 100

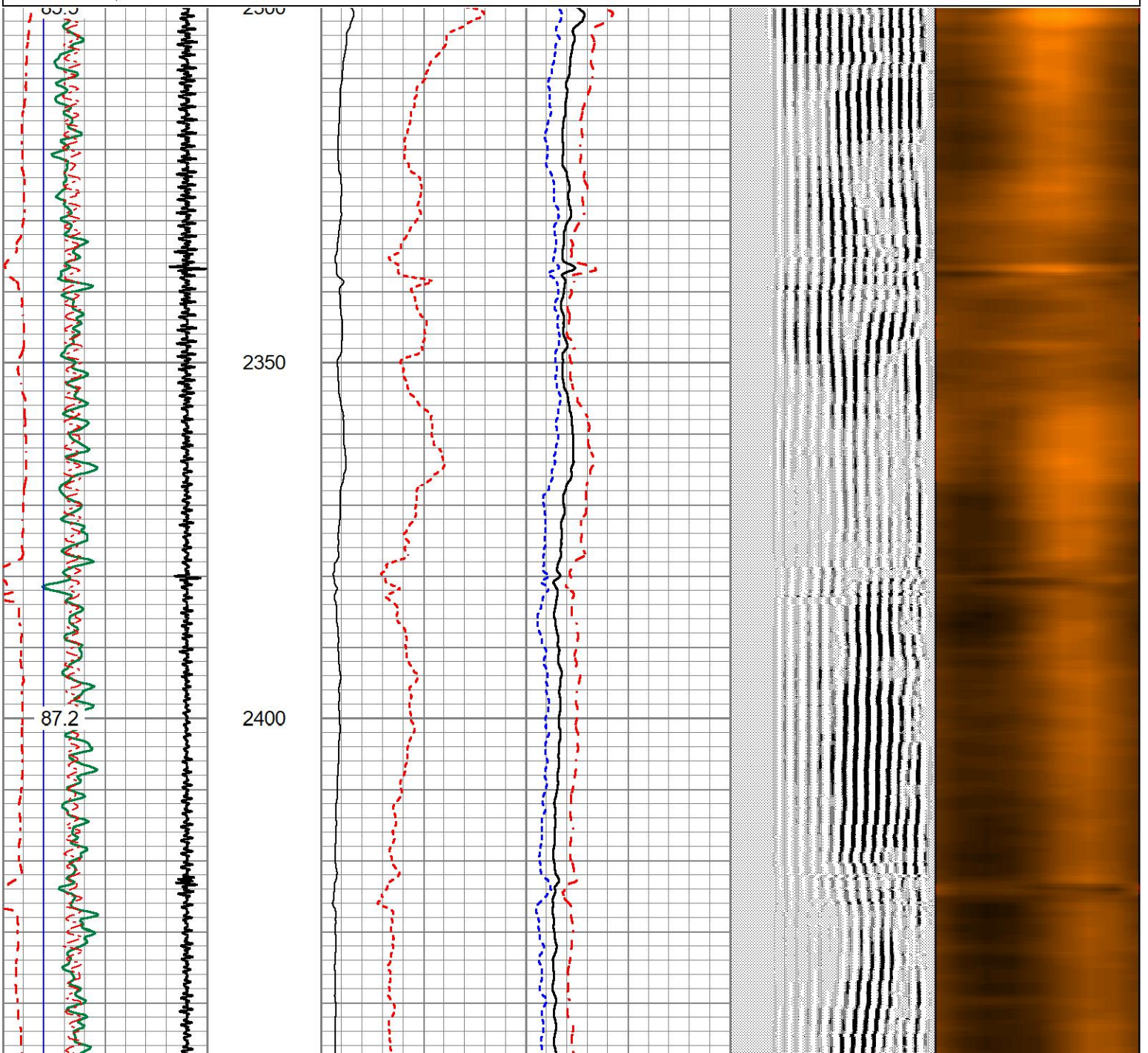
0 LTEN (lb) 2000

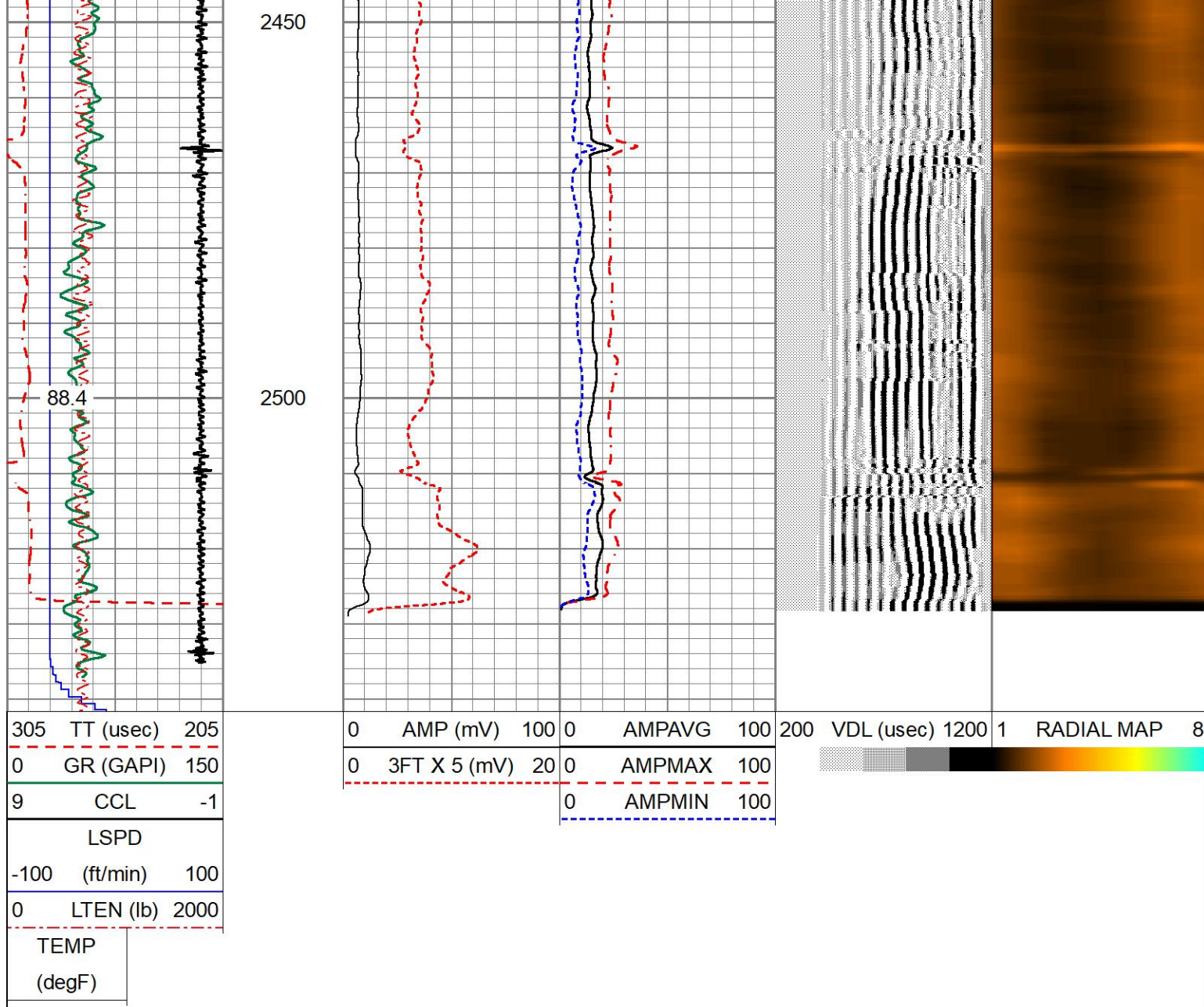
TEMP
(degF)

0 AMP (mV) 100
0 3FT X 5 (mV) 20

0 AMPAVG 100
0 AMPMAX 100
0 AMPMIN 100

200 VDL (usec) 1200 1 RADIAL MAP 8





Calibration Report

Database File 436786_oxy_howard27n-28hz_0512336928_20220627_scbl.db
Dataset Pathname pass6
Dataset Creation Mon Jun 27 17:36:14 2022

Gamma Ray Calibration Report

Serial Number: 0111
Tool Model: Tek-Co 2 3/4
Performed: Fri Apr 29 12:47:17 2022

Calibrator Value: 0.8 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.8000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: IBUCO04
Tool Model: 275 Temp JS

Calibration Casing Diameter: 7.000 in

Master Calibration, performed Mon Jun 27 17:18:52 2022:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.007	0.519	1.500	62.165	115.461	2.295
CAL	-0.007	0.471				
5'	-0.006	1.044	1.500	62.165	57.730	1.873
SUM						
S1	-0.007	0.481	0.000	62.165	127.496	0.831
S2	-0.007	0.428	0.000	62.165	142.957	0.946
S3	-0.007	0.371	0.000	62.165	164.755	1.088
S4	-0.007	0.333	0.000	62.165	182.955	1.197
S5	-0.007	0.354	0.000	62.165	172.495	1.135
S6	-0.006	0.405	0.000	62.165	150.940	0.967
S7	-0.007	0.472	0.000	62.165	129.922	0.868
S8	-0.007	0.497	0.000	62.165	123.546	0.808

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.007	0.471	1.000	0.000

Air Zero Calibration, performed Wed Jan 11 14:45:22 2017:

	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: IBUCO04
 Tool Model: 275 Temp JS
 Performed: Mon Jun 27 07:33:44 2022

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

Gain: 0.25
 Offset: 0.00
 Delta Spacing 1



Company OCCIDENTAL PETROLEUM CORP

Well HOWARD STEEL CASE



Well	HOWARD 27N-28HZ		
Field	WATTENBURG		
County	WELD		
State	CO	Country	USA