



**RADIAL CEMENT BOND LOG
GAMMA RAY / CCL / VDL
TEMP / CEMENT MAP**

Company ANTERO RESOURCES CORPORATION
Well ALPINE WEST UNIT 1H
Field MARCELLUS
County TYLER
State WV Country US

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Well ALPINE WEST UNIT 1H
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Location: AFE # A10511
API #: 47095026000000
Other Services

Permanent Datum SEC TWP RGE Elevation N/A
Log Measured From KB KB D.F. N/A
Drilling Measured From KB 30 FT G.L. N/A

Date	6 AUG 2020	
Run Number	1	
Depth Driller	22.089	
Depth Logger	6291	
Bottom Logged Interval	SURFACE	
Top Log Interval	SURFACE	
Open Hole Size	N/A	
Type Fluid	WATER	
Density / Viscosity	N/A	
Max. Recorded Temp.	137	
Estimated Cement Top	4530	
Time Well Ready	ON ARRIVAL	
Time Logger on Bottom	9:50	
Equipment Number	214182	
Location	BRIDGEPORT WV	
Recorded By	K.LINGER	
Witnessed By	MR. CARTER	
Borehole Record		
Run Number	Bit	From To
Tubing Record		
Run Number	Size	Weight From To
Casing Record		
Surface String	Size	Wgt/Ft Top Bottom
Prot. String	9.625	N/A SURFACE SURFACE 465
Production String	5.5	23 SURFACE SURFACE 2602
Liner		22.091

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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 RAN UNDER 1500 PSI
CORRELATED TO PIPE TALLY
SHIFTED DOWN HOLE 5.5 FT TO MATCH
MARKER JOINT @ 5052-5061
CEMENT TOP 4530

RECEIVED
Office of Oil and Gas
FEB 17 2023
WV Department of
Environmental Protection



MAIN PASS

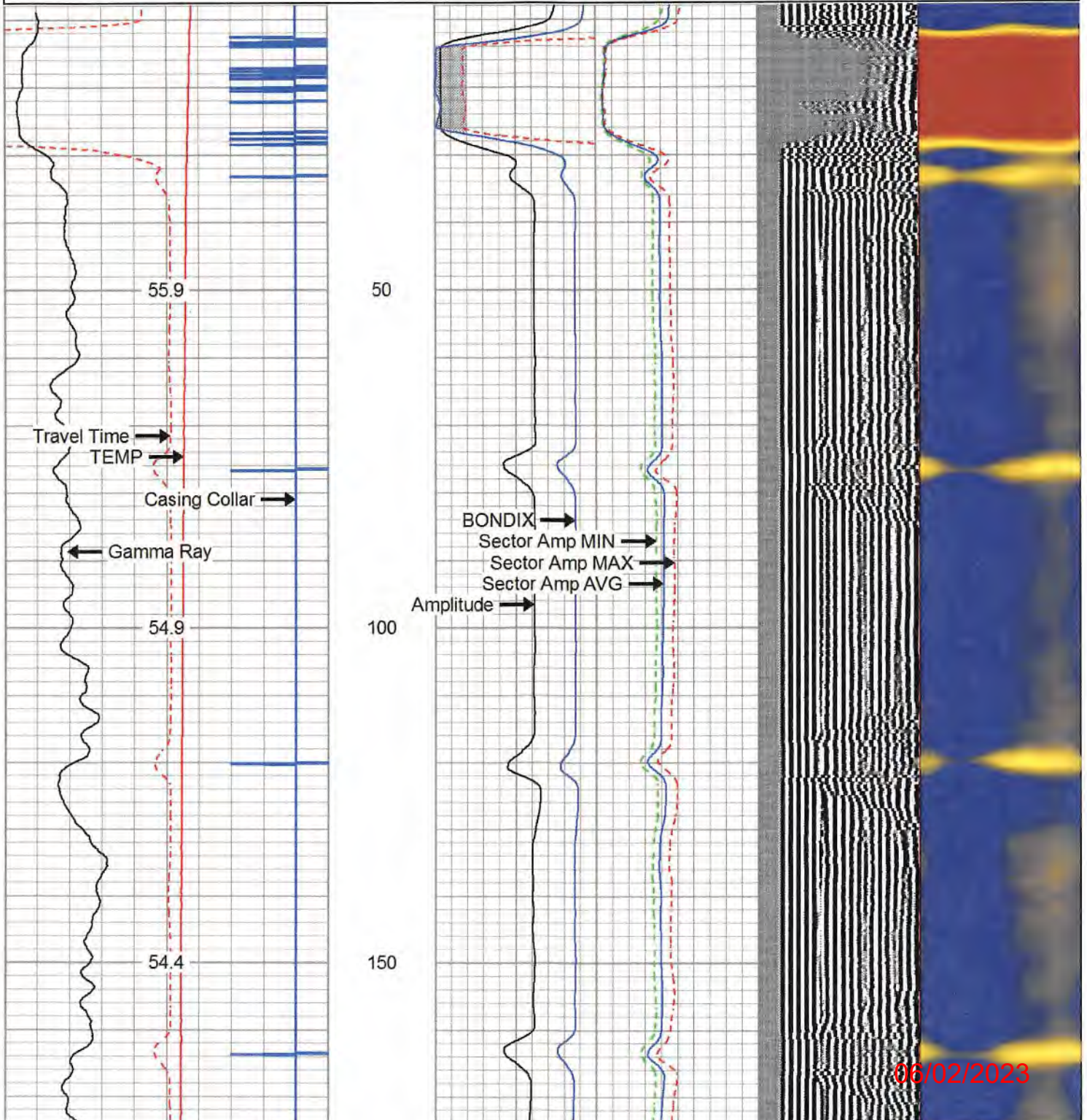
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 Dataset Pathname pass6.3
 Presentation Format antero
 Dataset Creation Fri Aug 07 15:05:59 2020
 Charted by Depth in Feet scaled 1:240

280	Travel Time (usec)	180
9	Casing Collar	-1
0	Gamma Ray	180
0	TEMP (degF)	100
180	GR	360

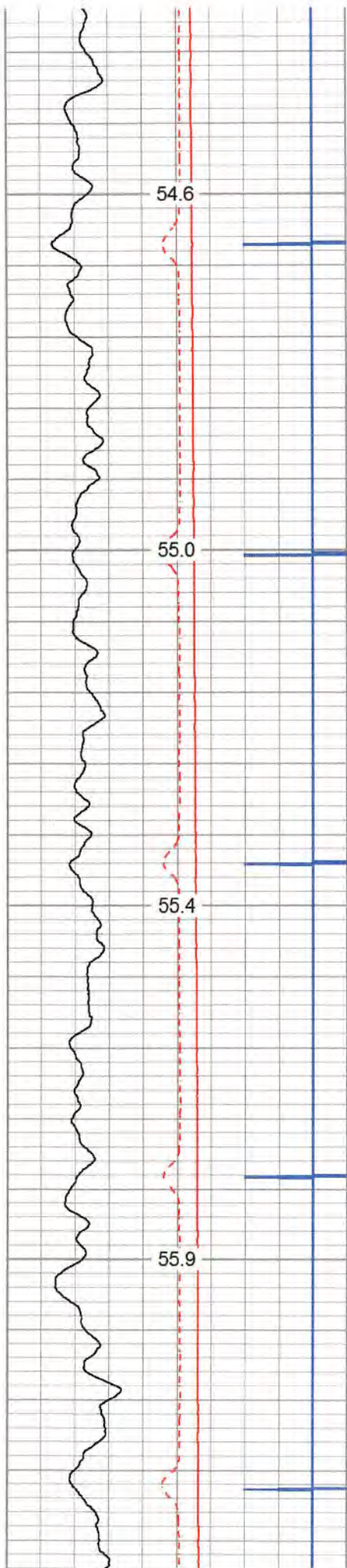
Amplitude	Sector Amp AVG	VDL
0 (mV) 100	Sector Amp MAX	200 (usec) 1200
Amp X5	Sector Amp MIN	
0 (mV) 20		
1 BONDIX 0		



TEMP (degF)



06/02/2023

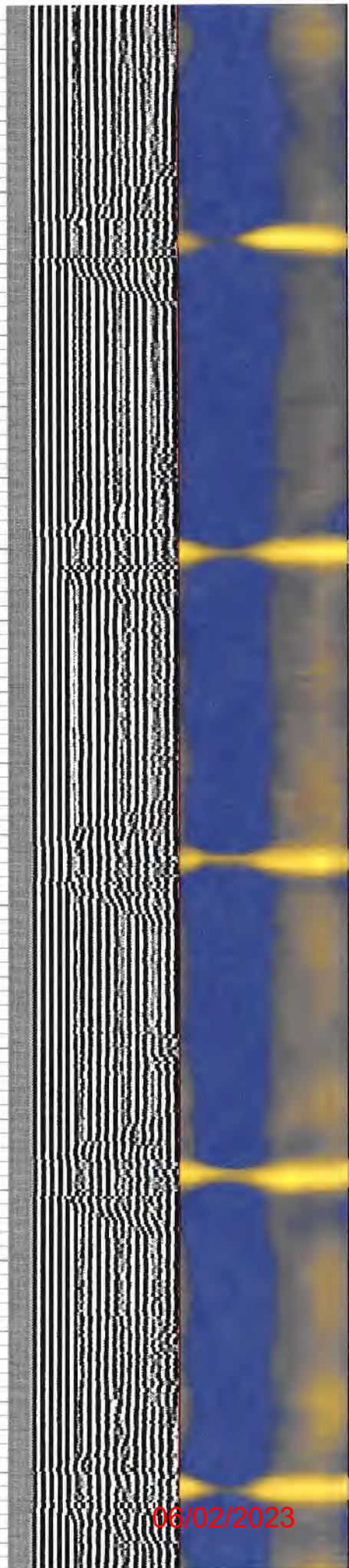
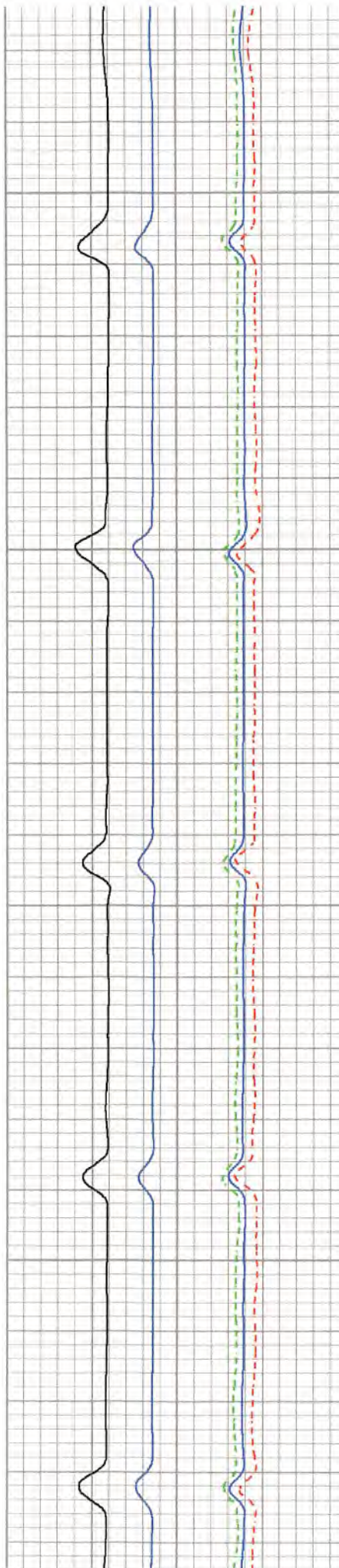


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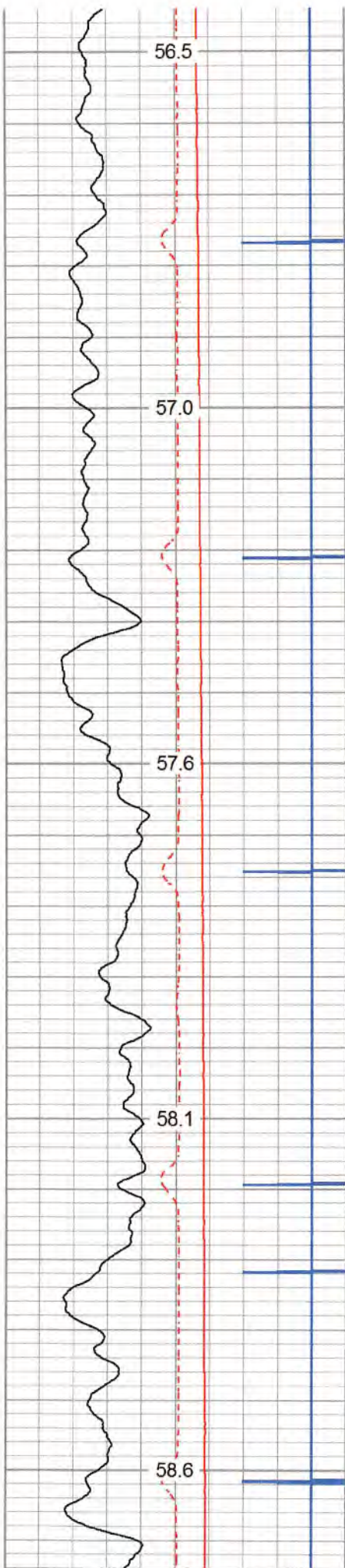
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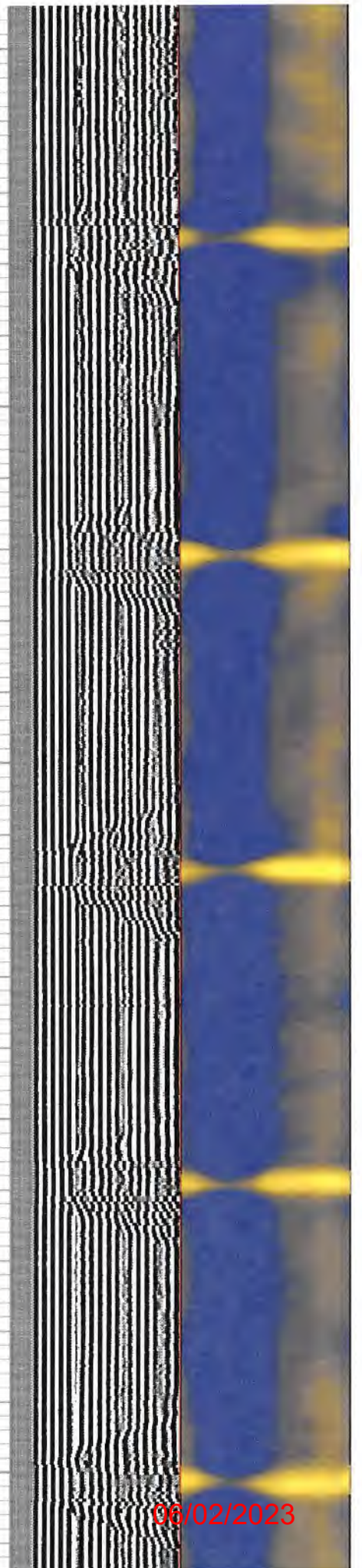
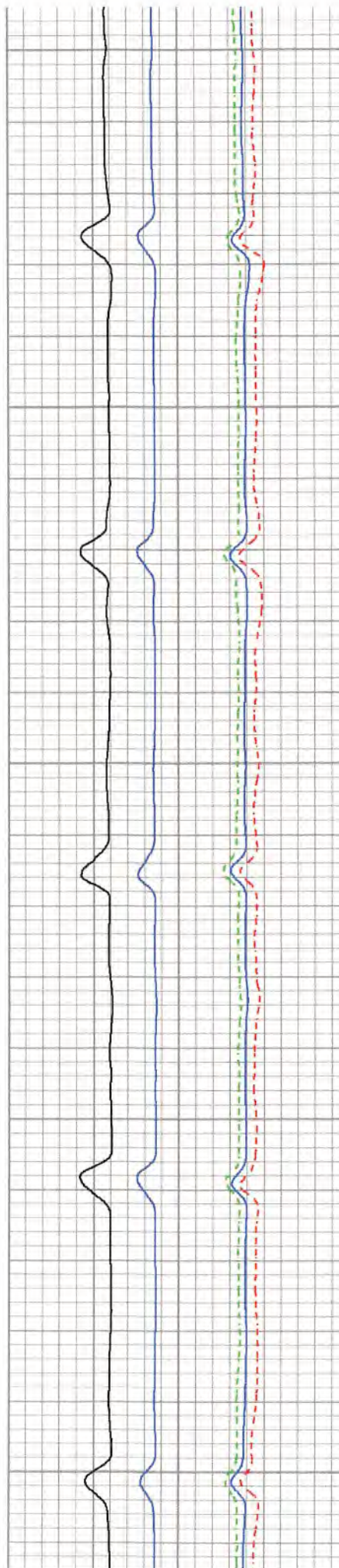
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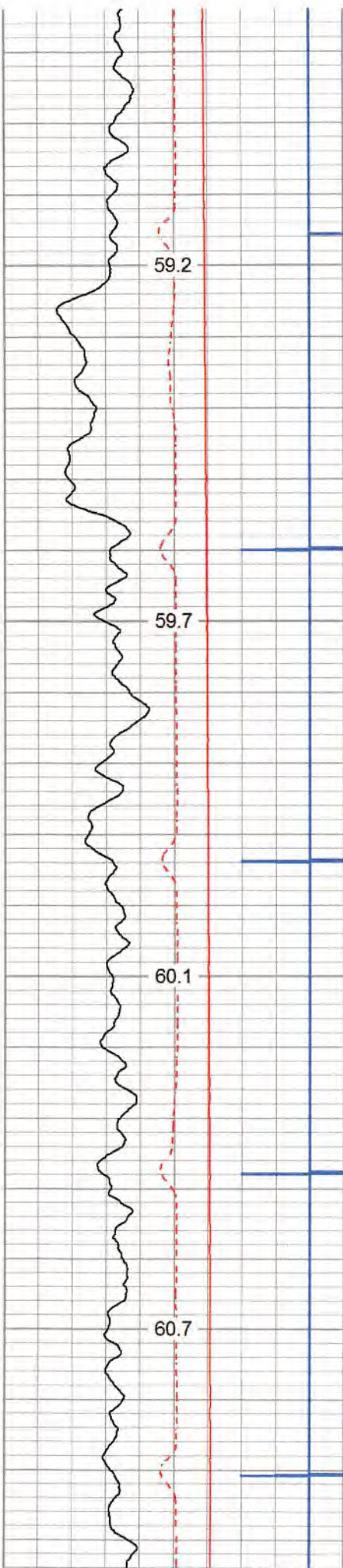
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400
450
500
550
600



06/02/2023

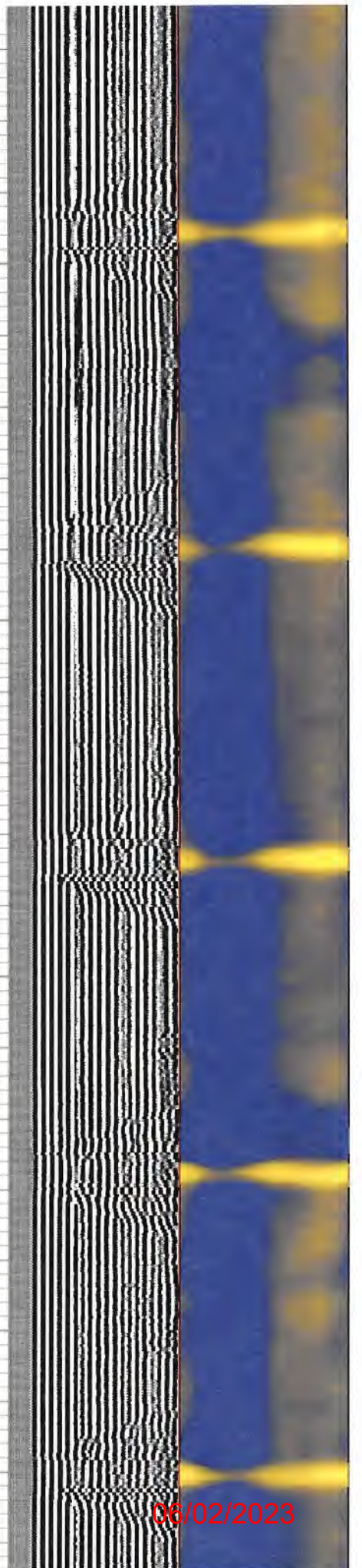
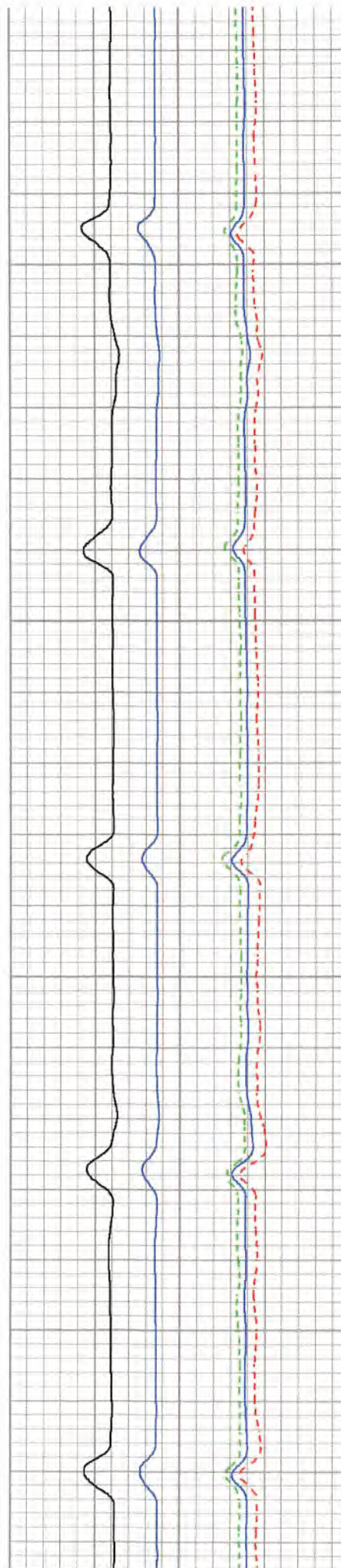


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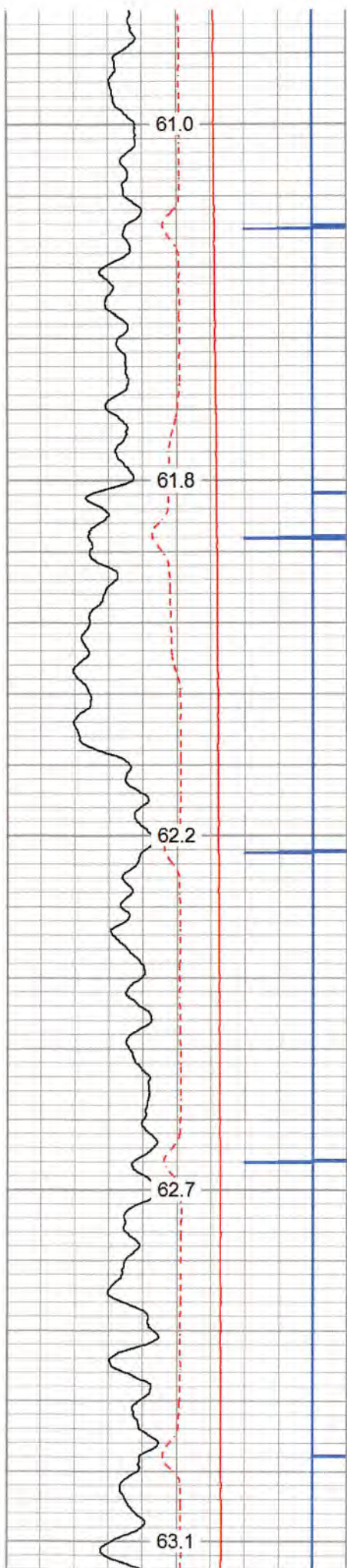
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06/02/2023



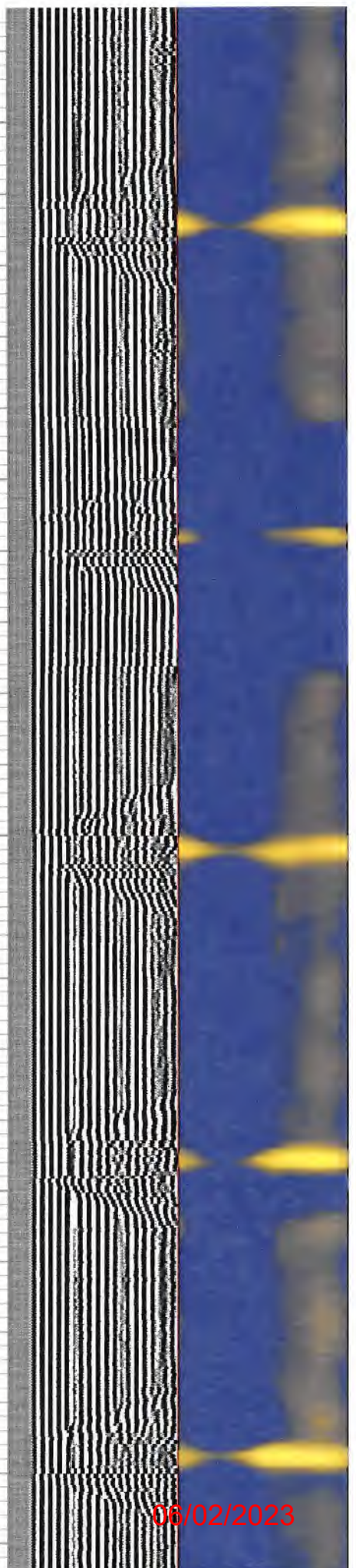
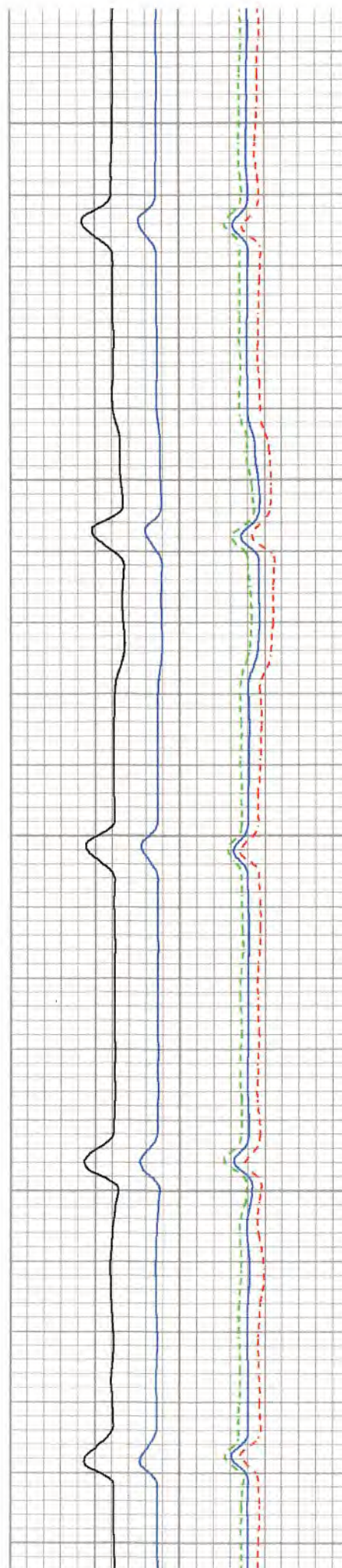
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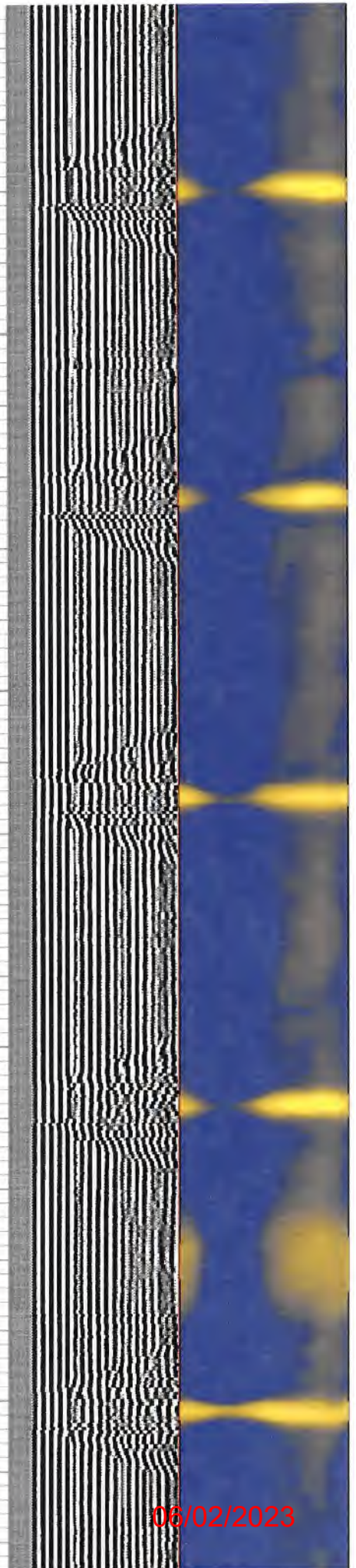
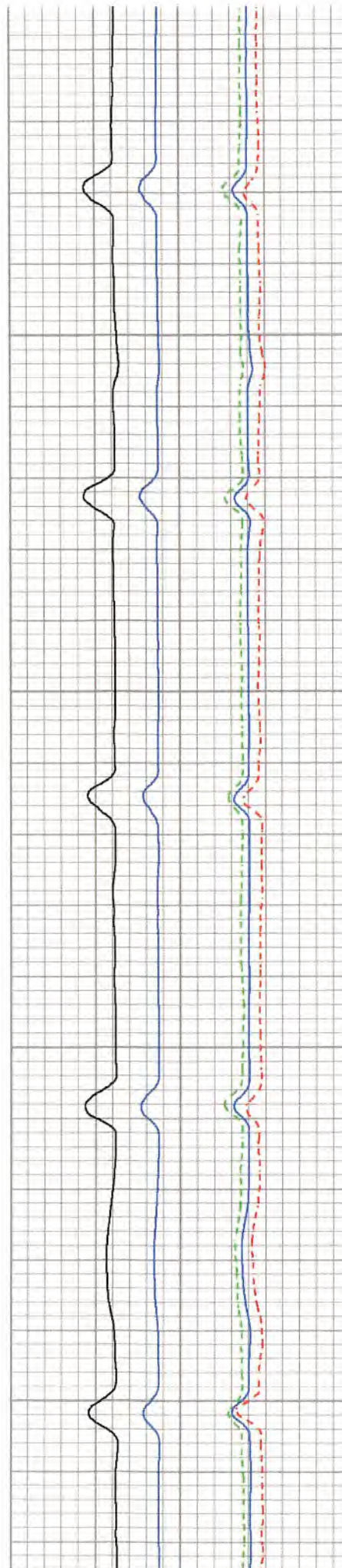
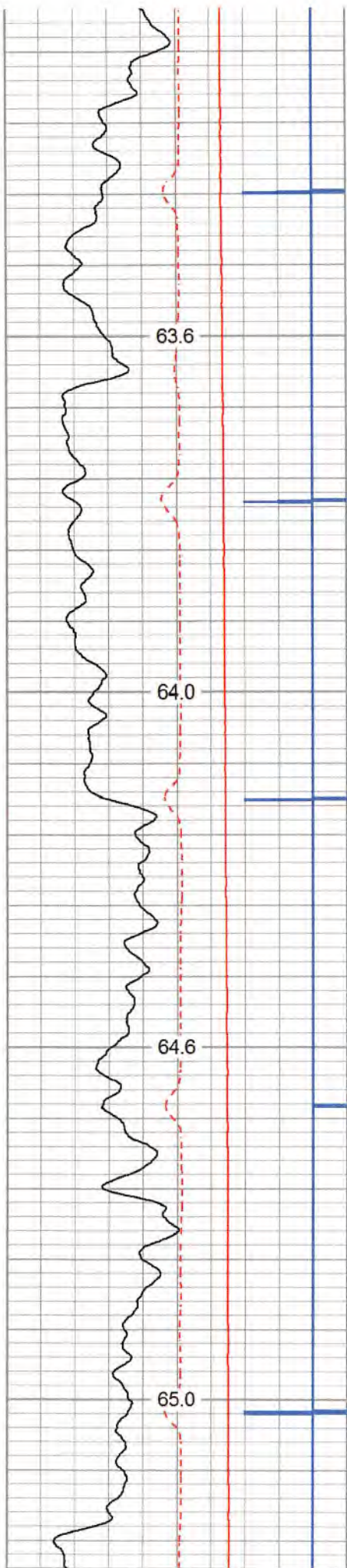
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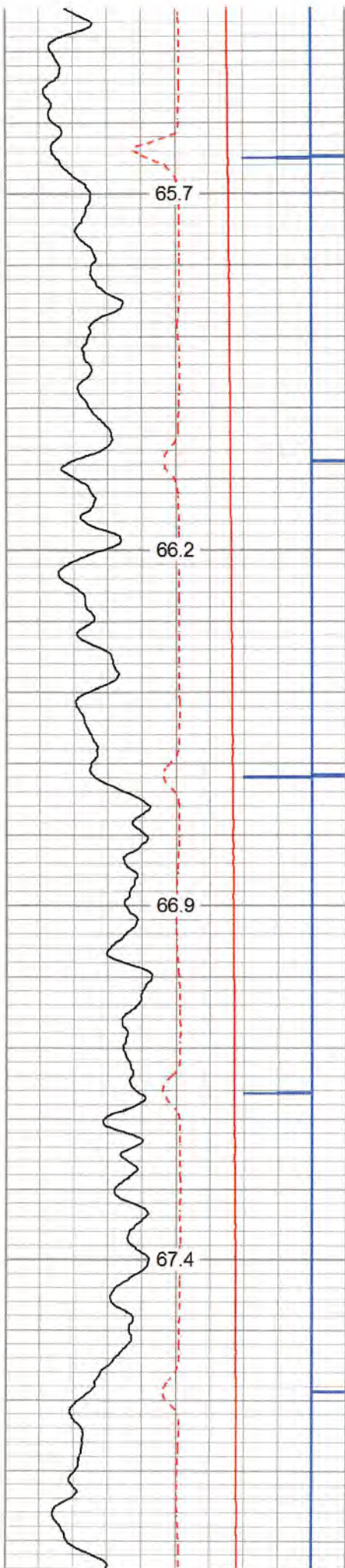
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06/02/2023



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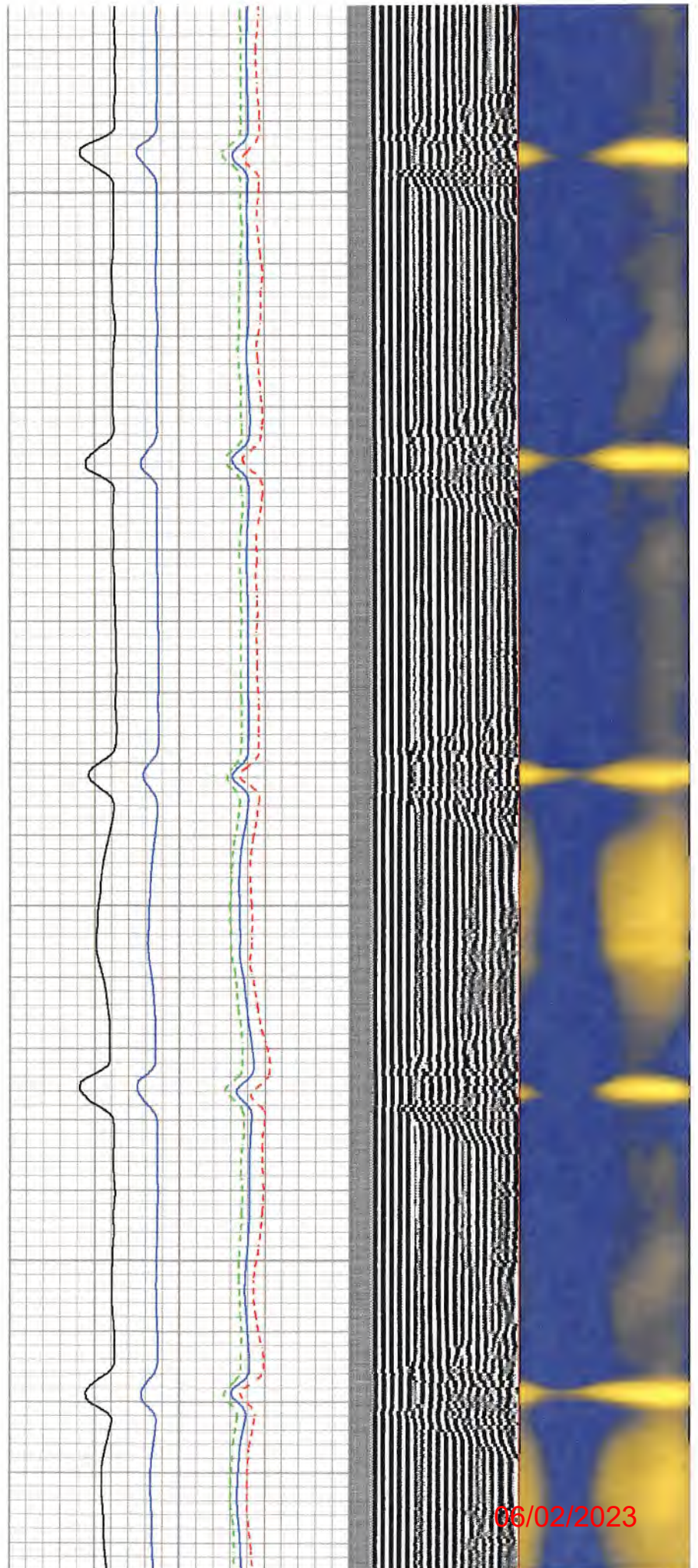


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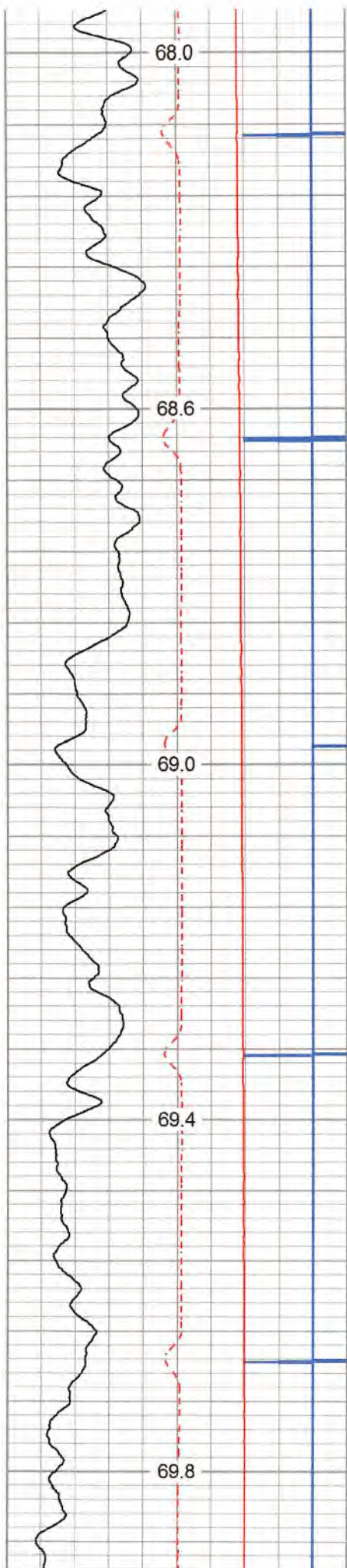
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1450



06/02/2023



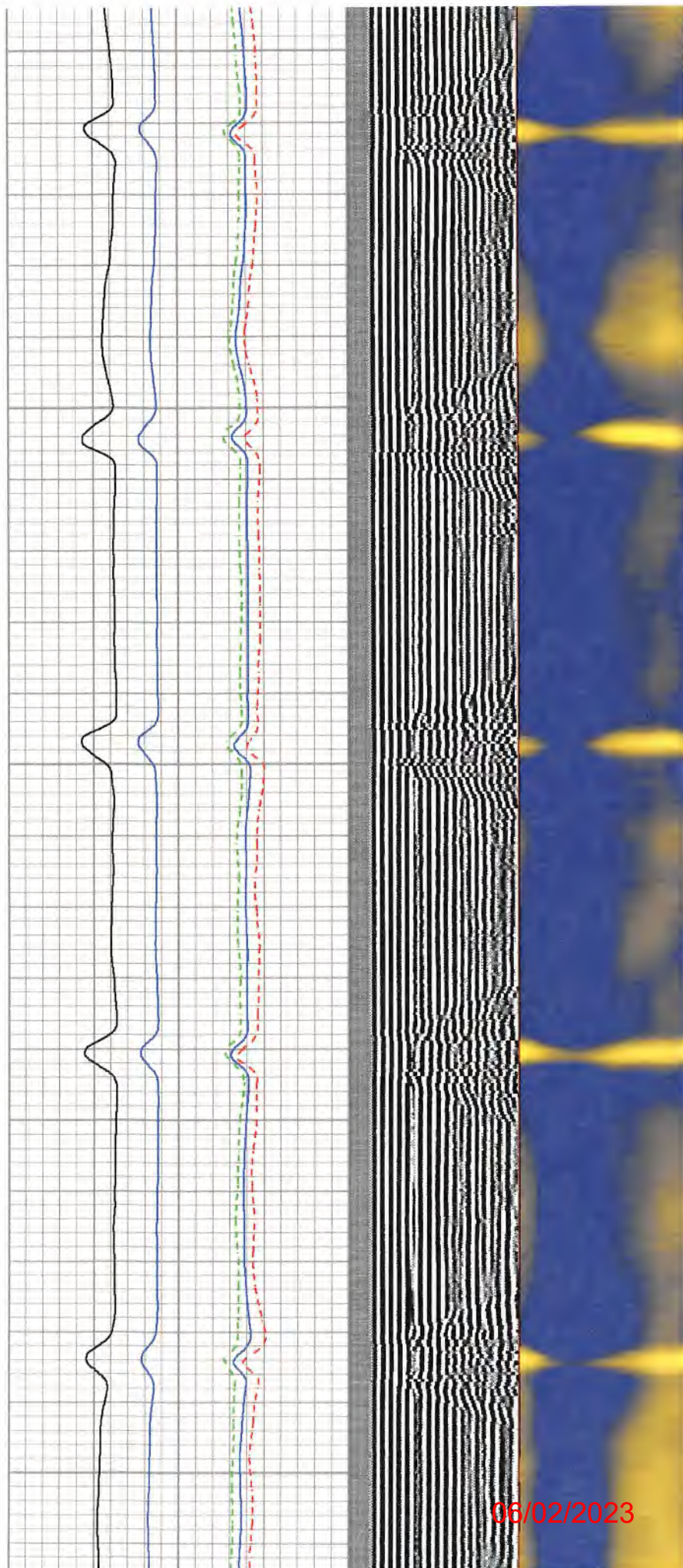
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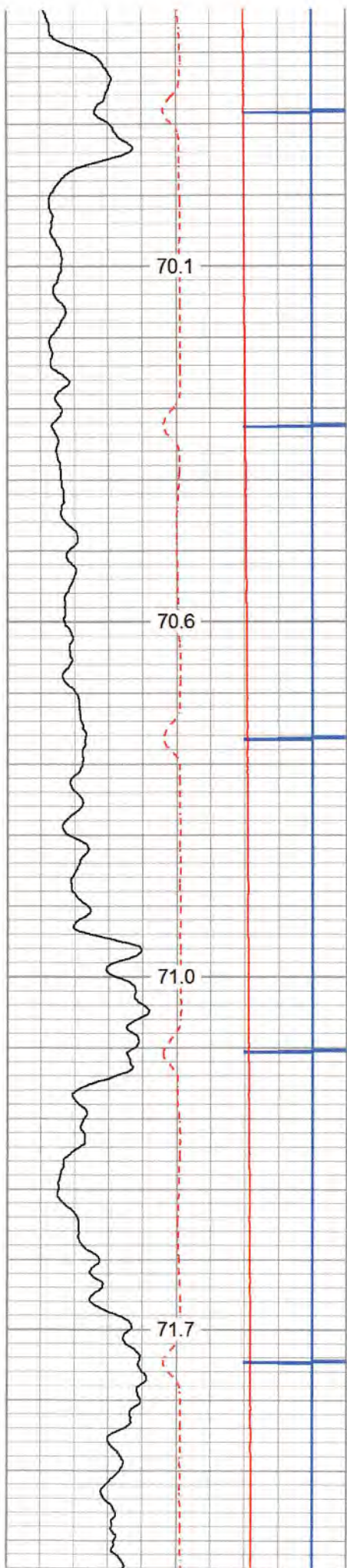
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1700



06/02/2023

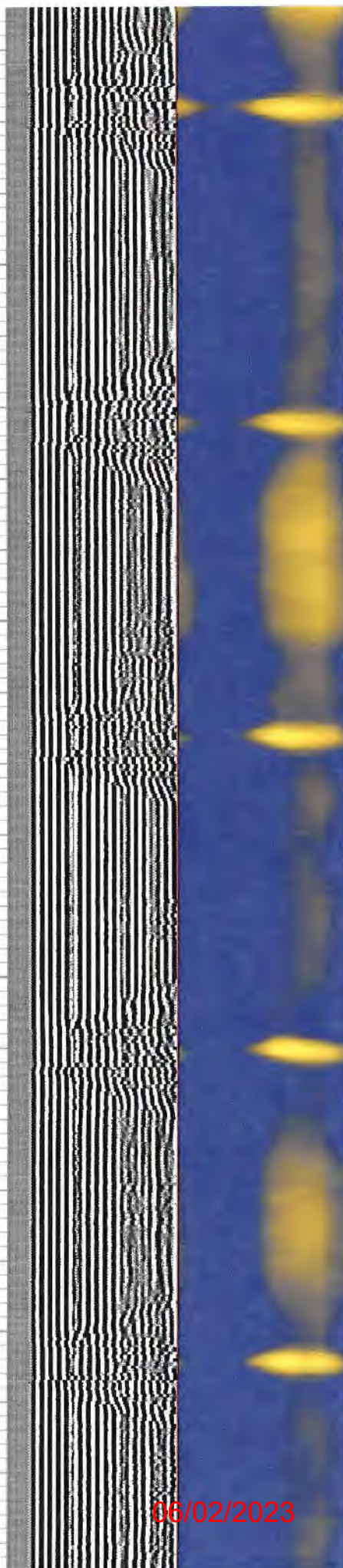
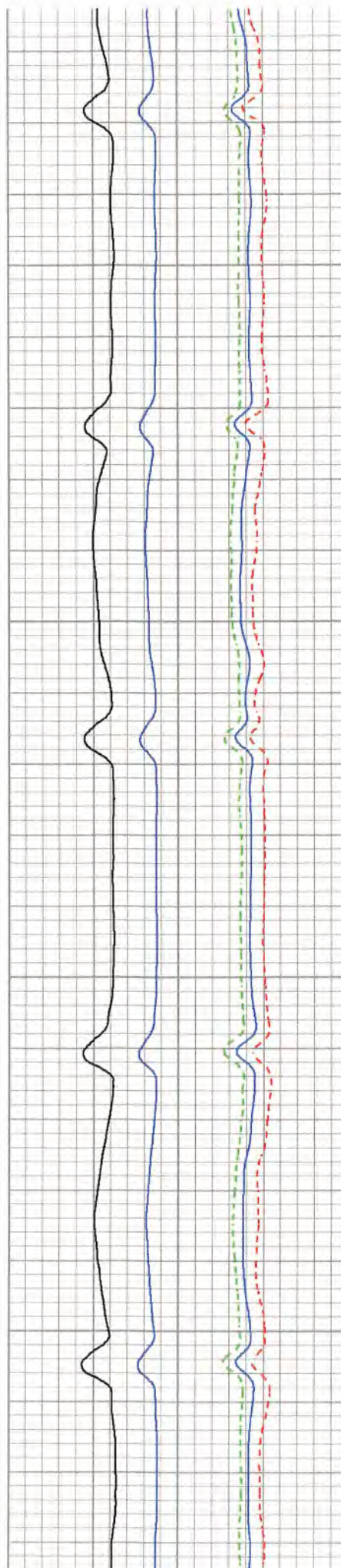


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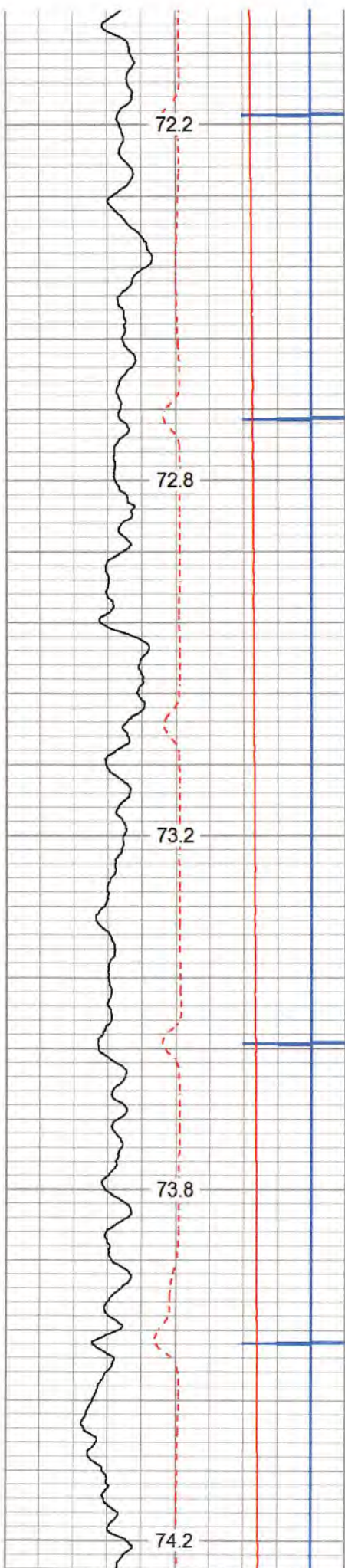
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1850

1900



06/02/2023



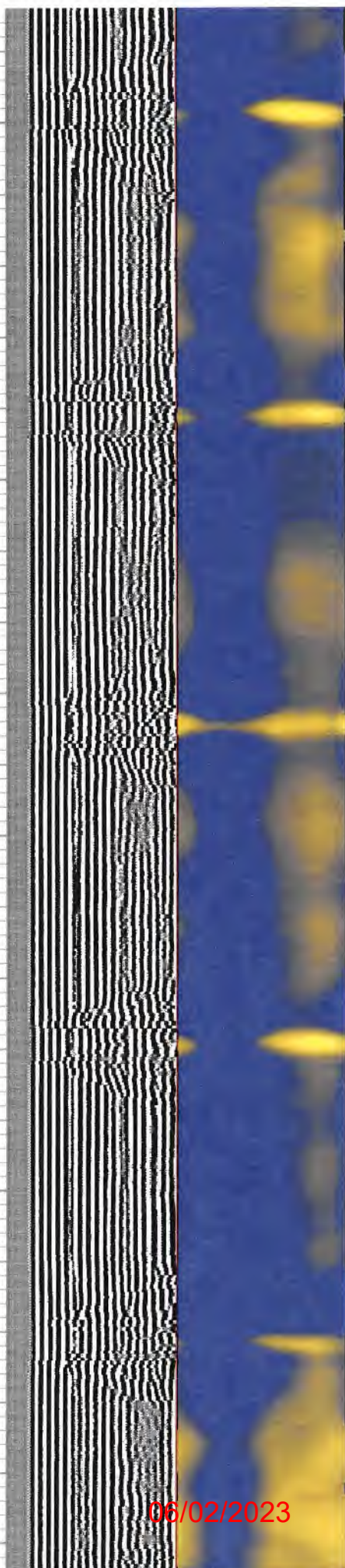
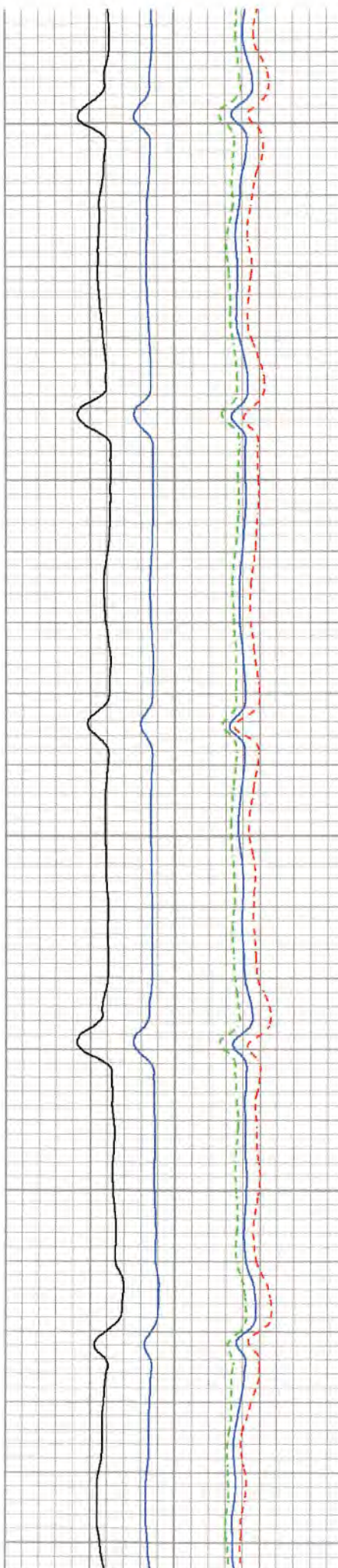
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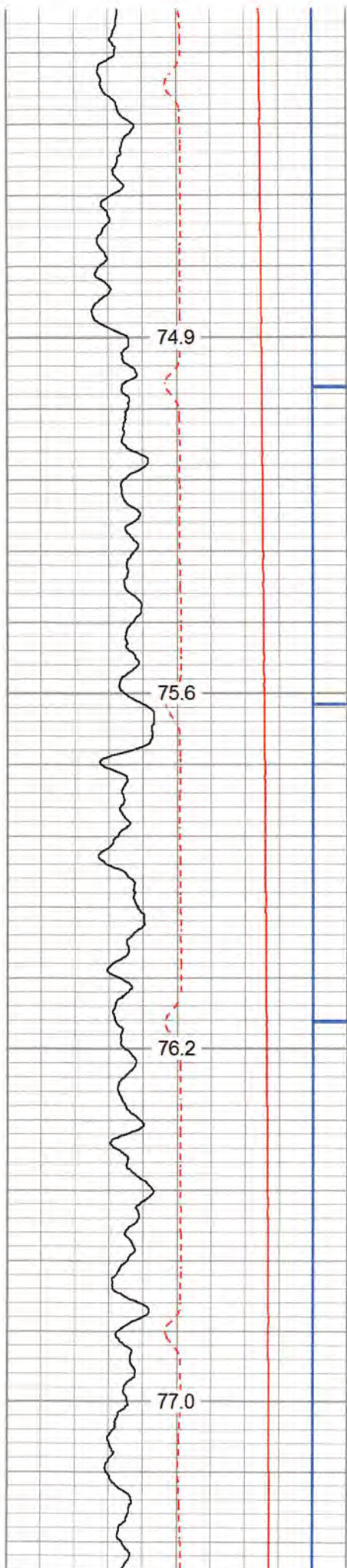
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06/02/2023

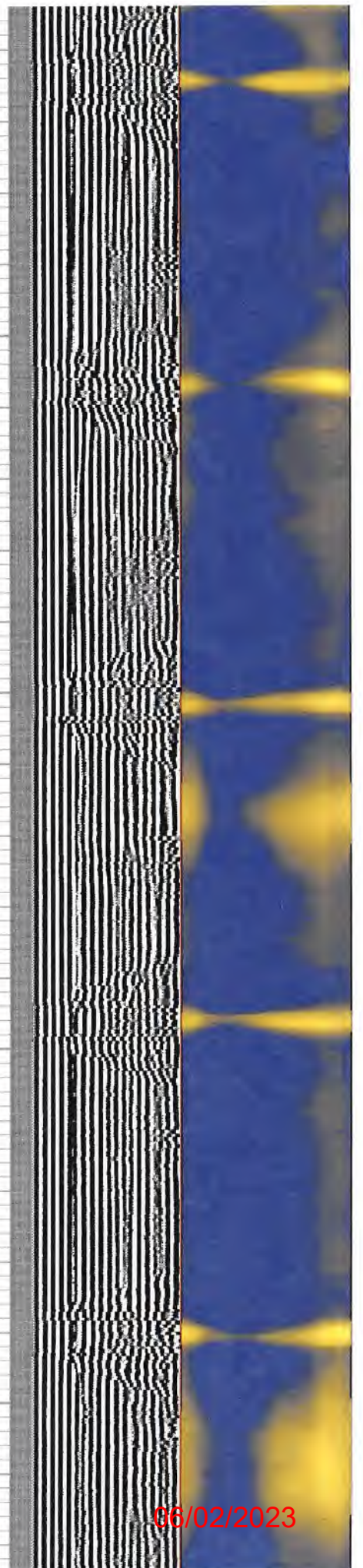
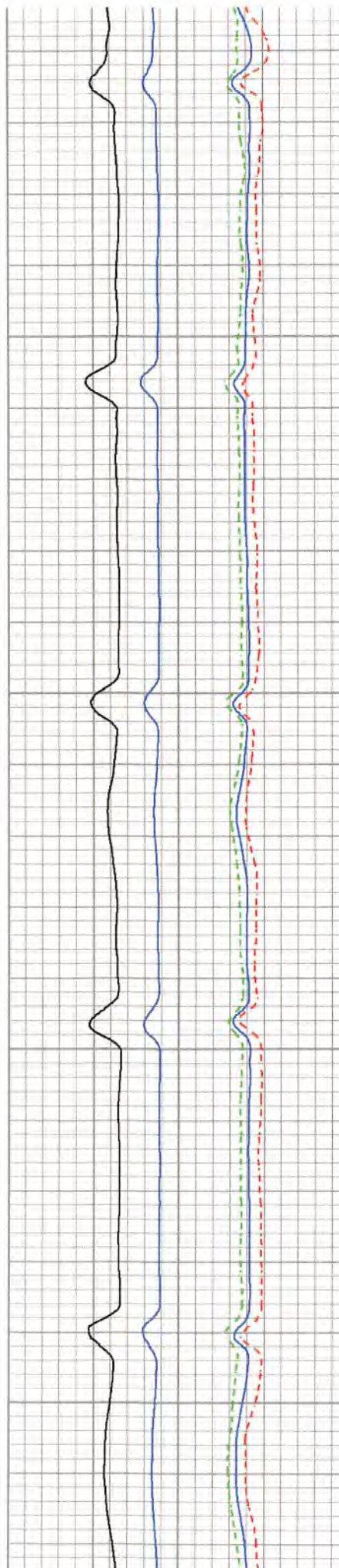


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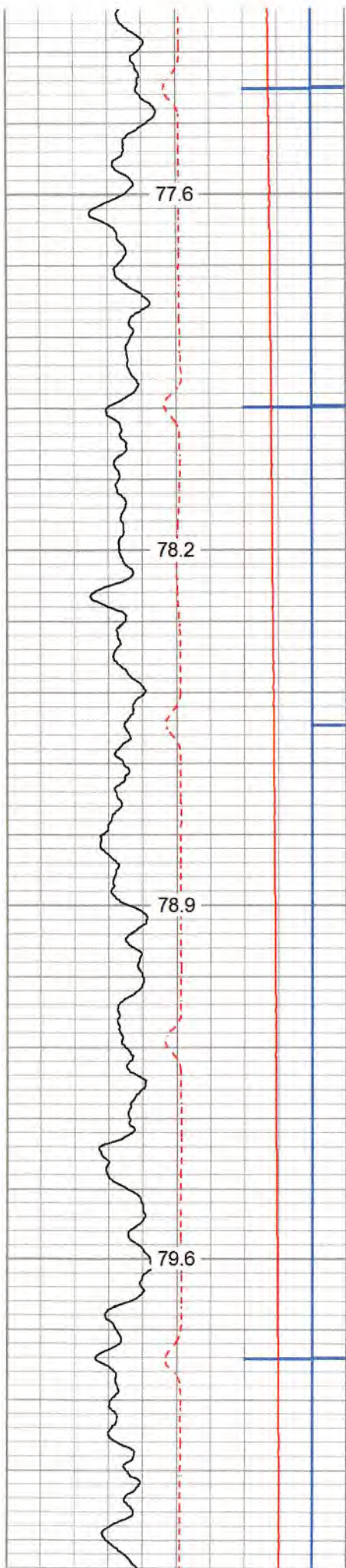
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2300

2350



06/02/2023

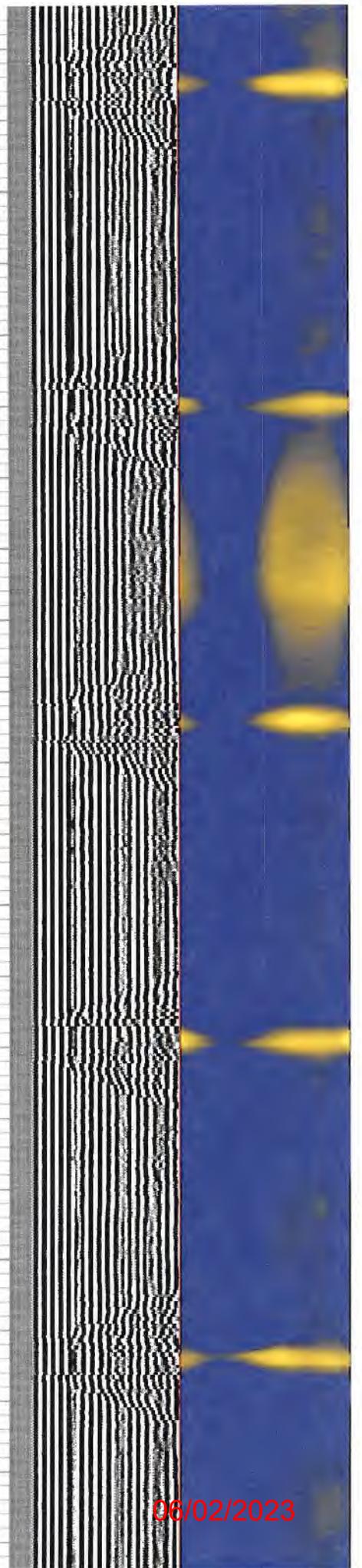
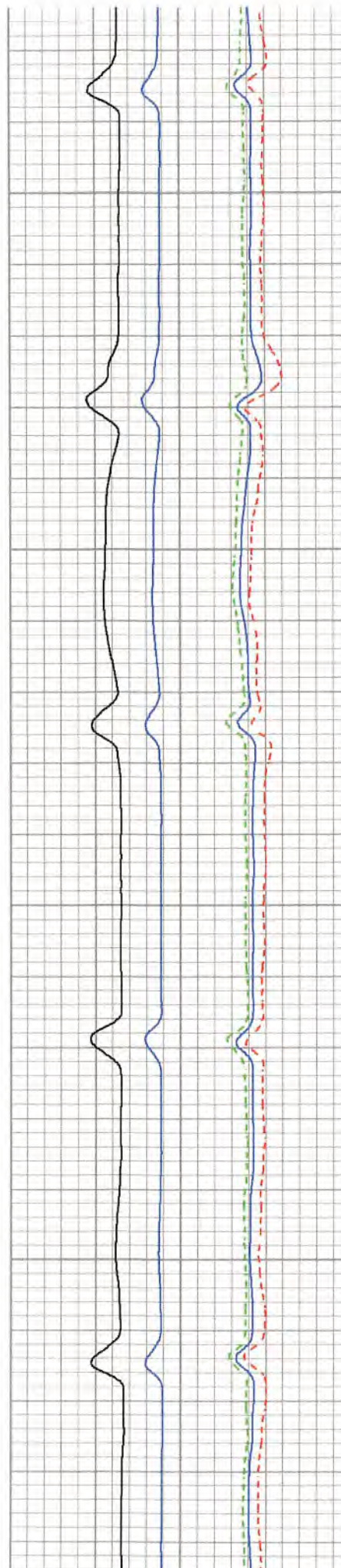


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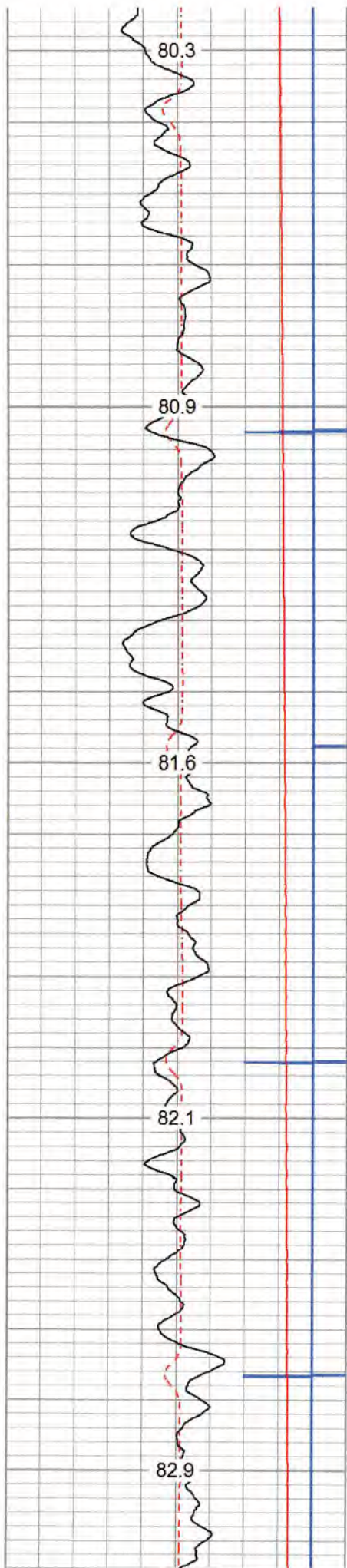
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2550



06/02/2023



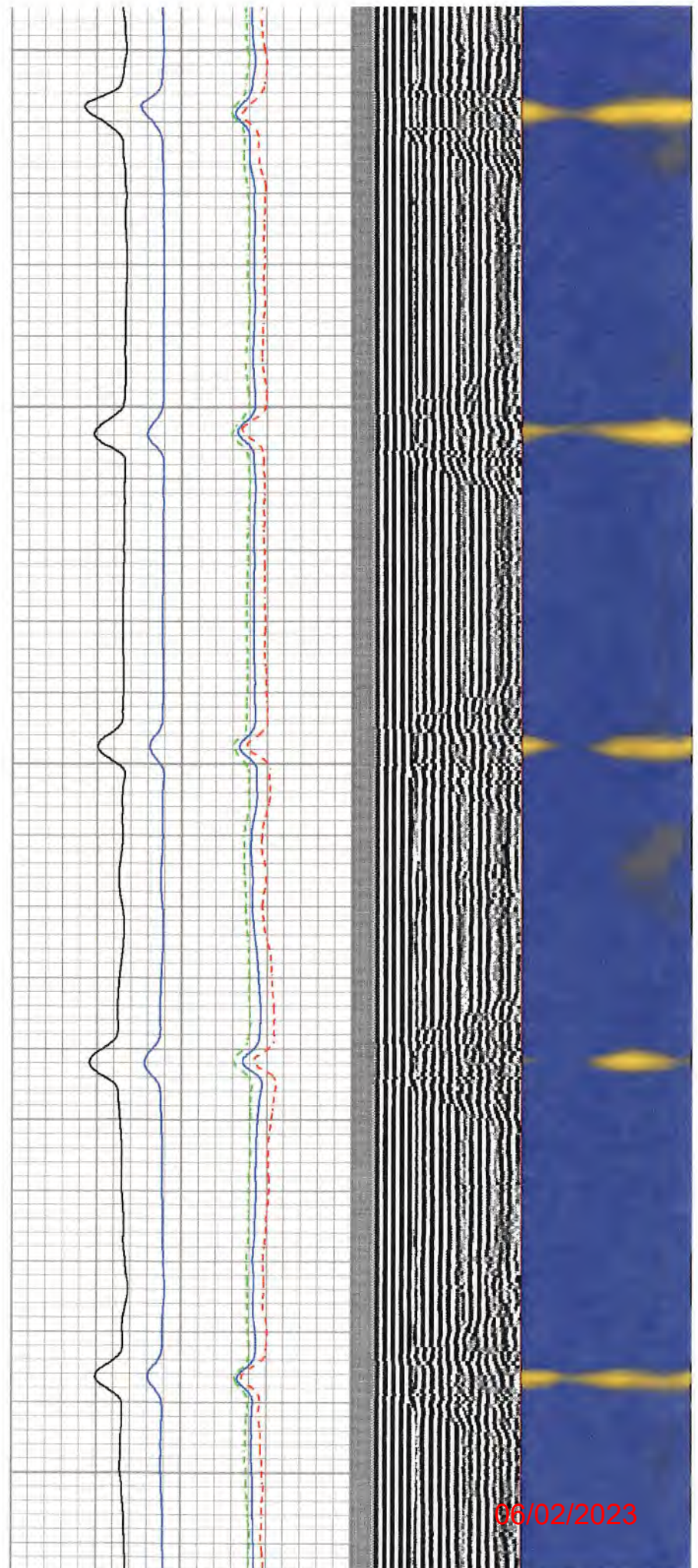
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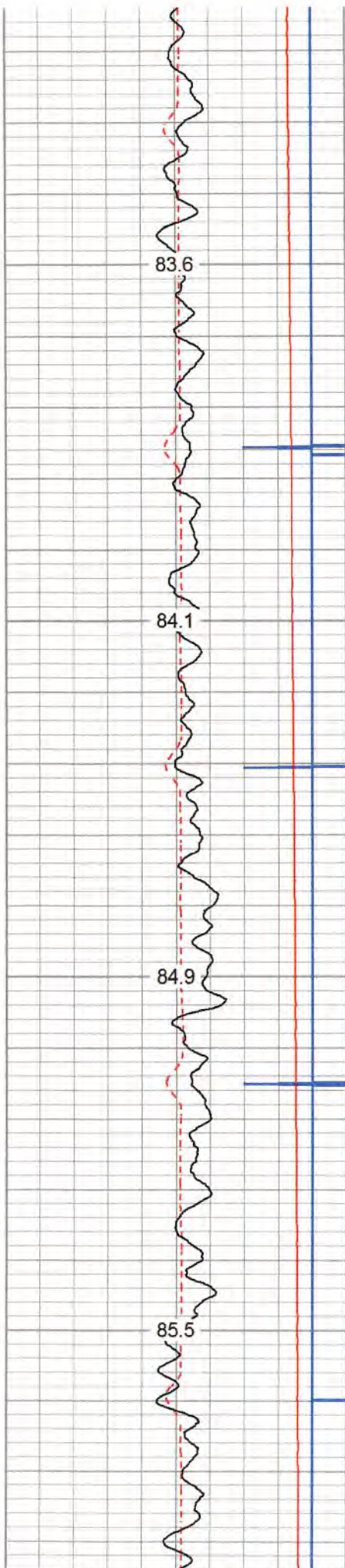
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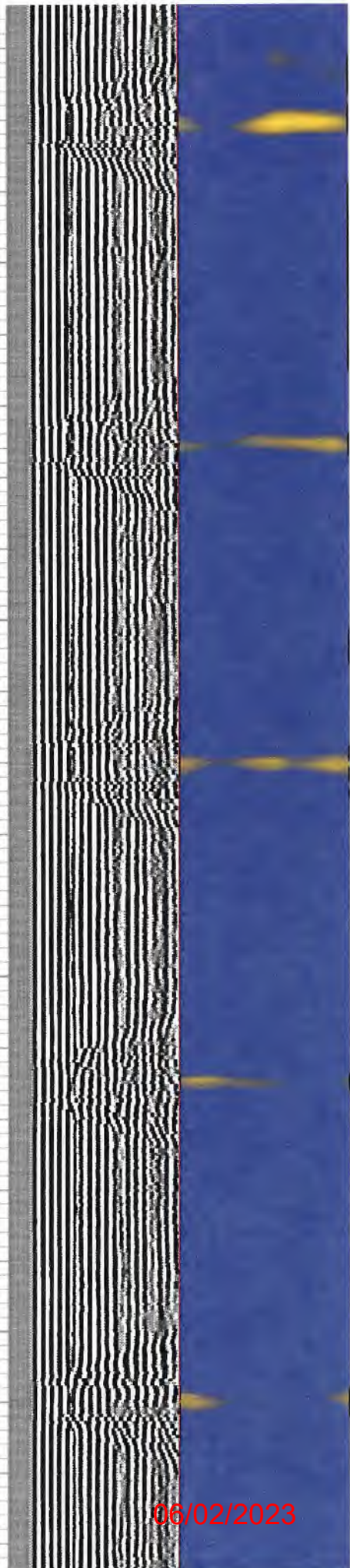
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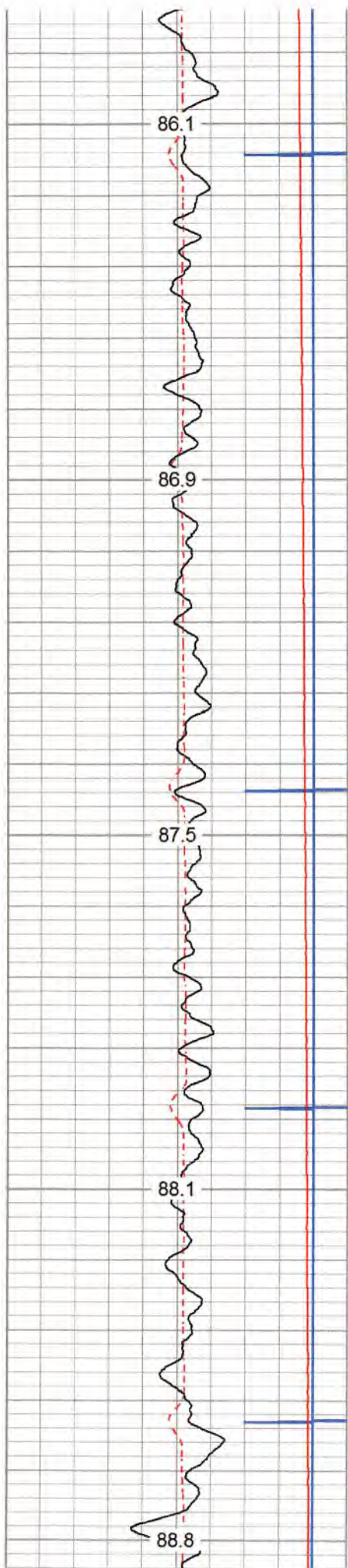




2850
2900
2950
3000



06/02/2023



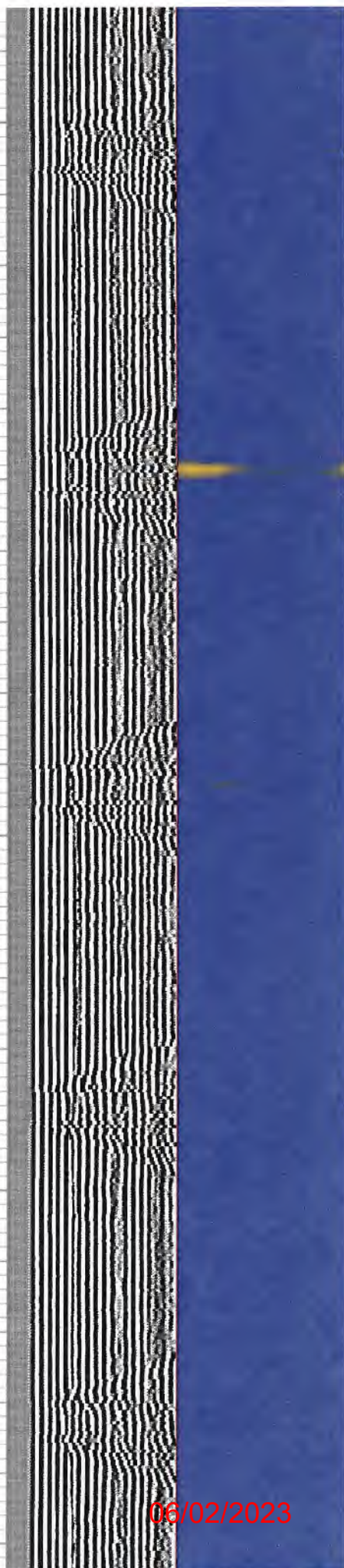
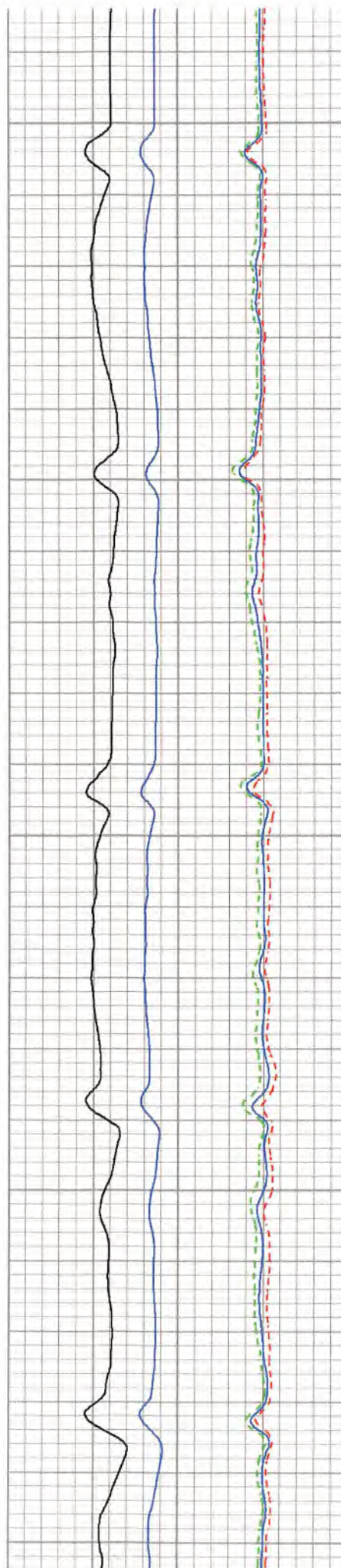
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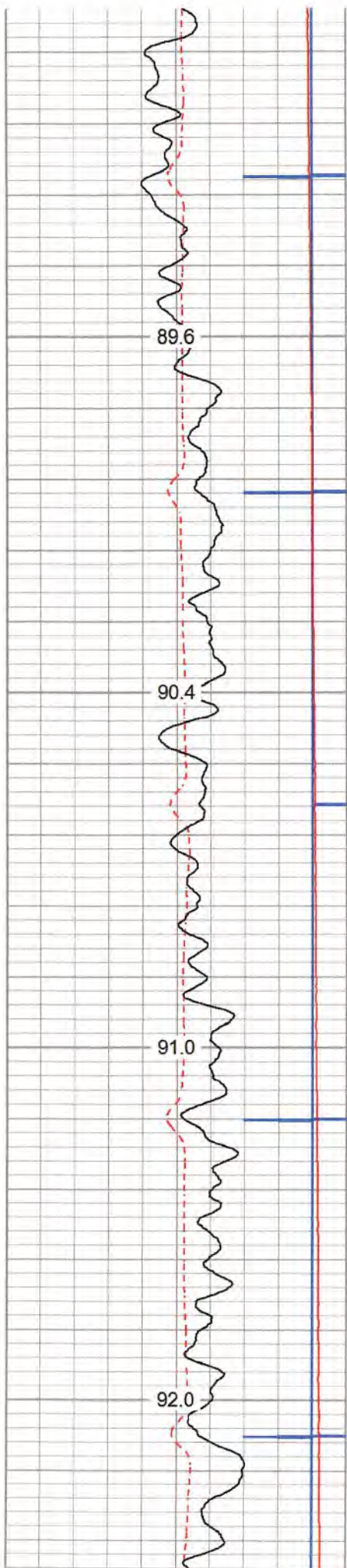
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06/02/2023

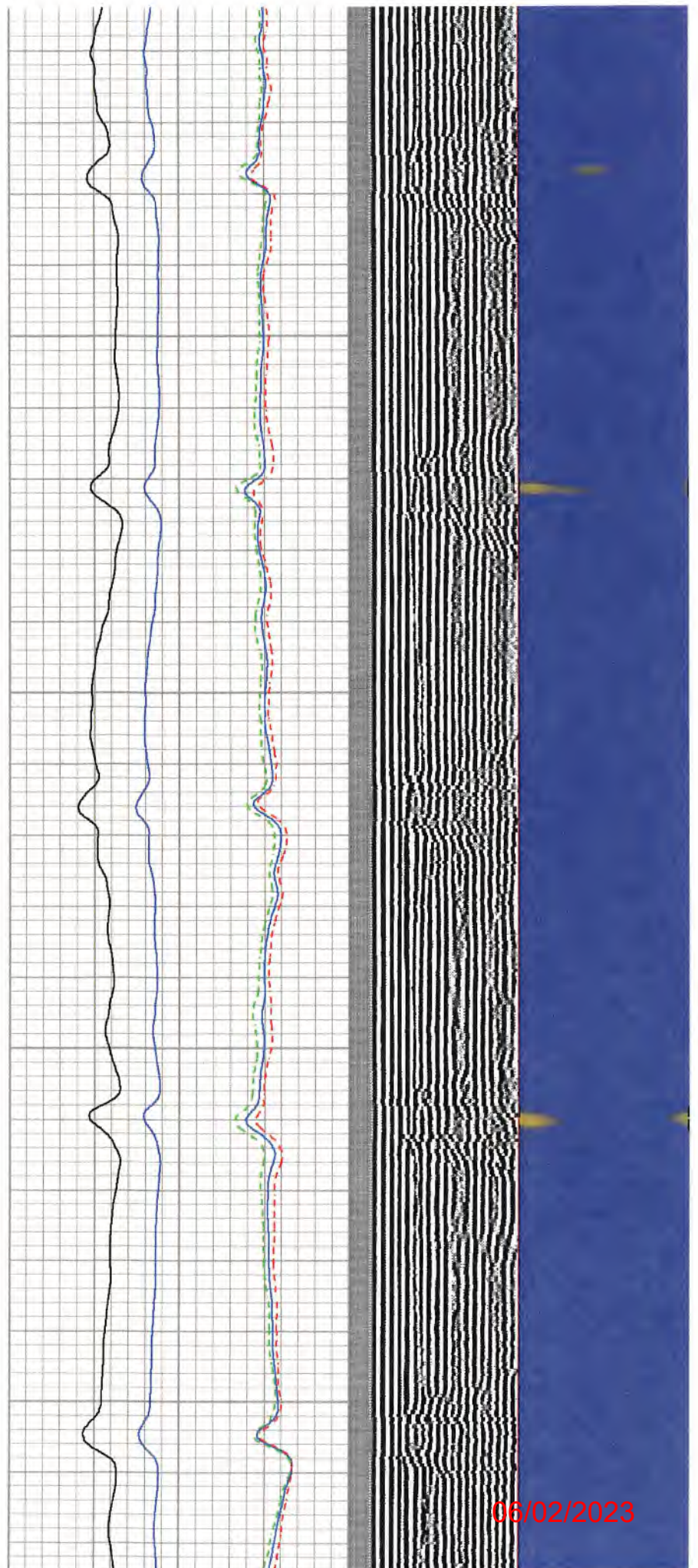


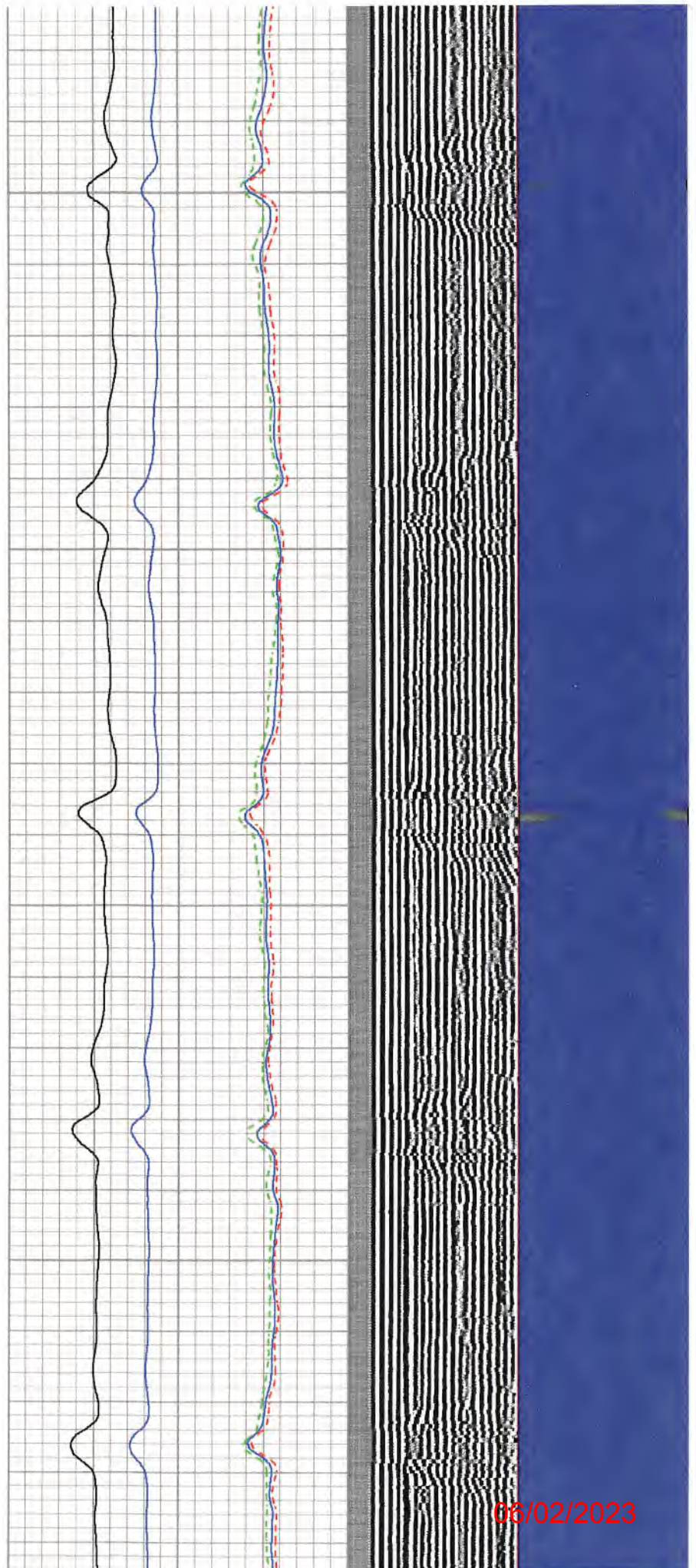
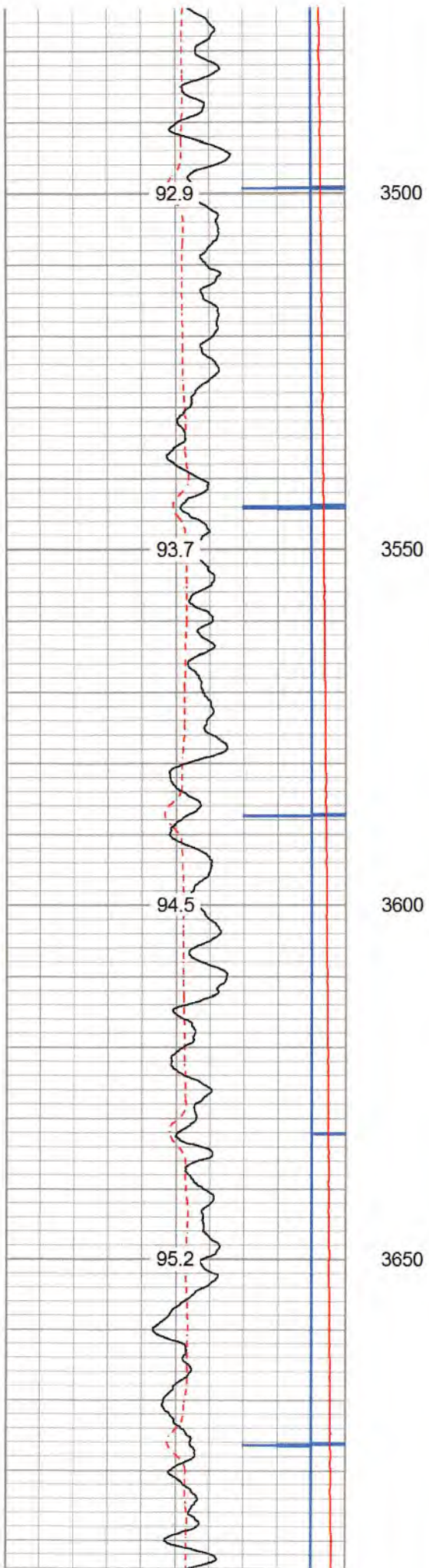
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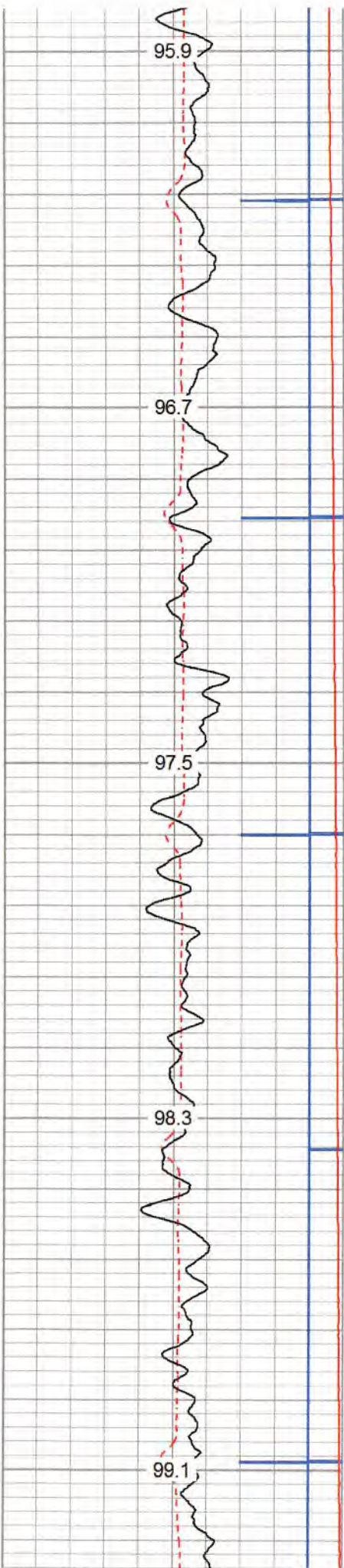
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3450







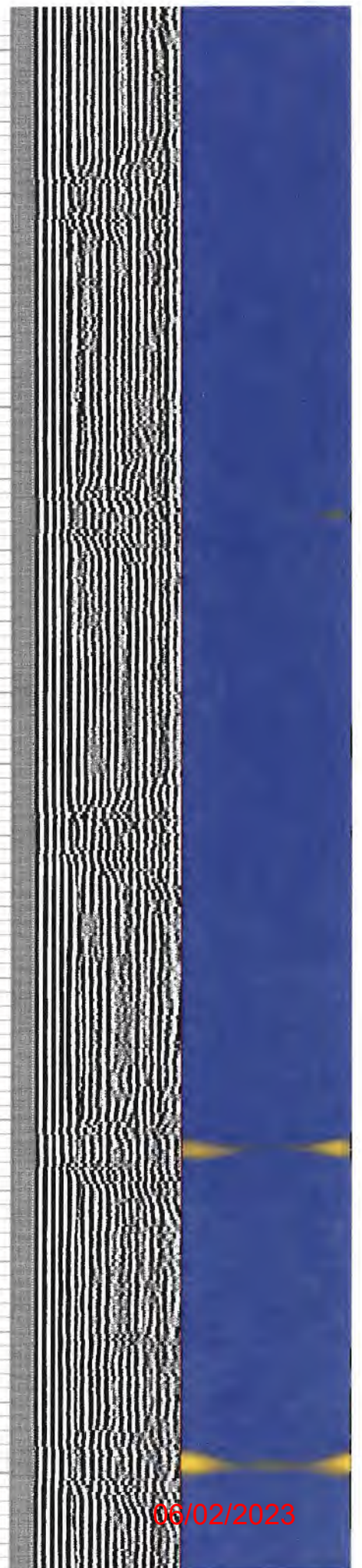
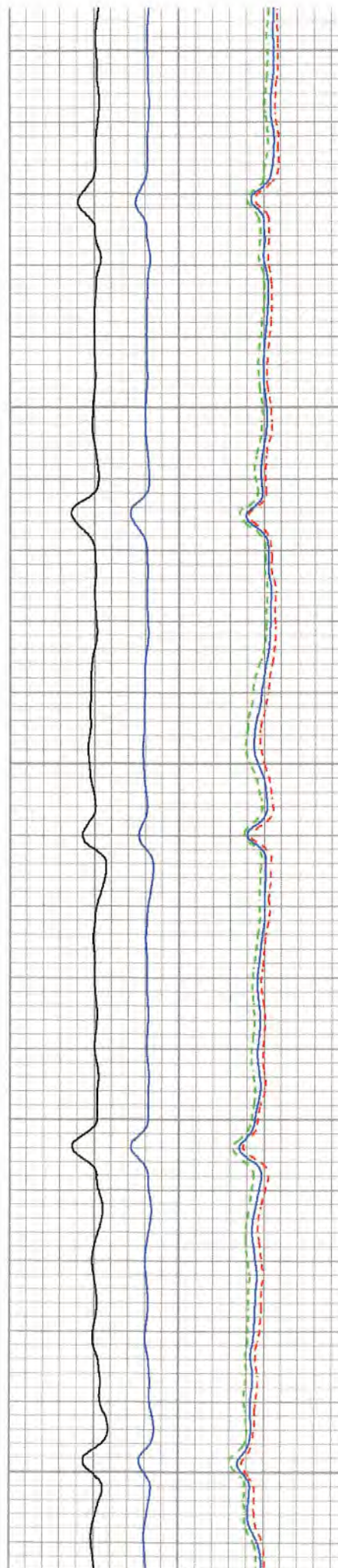
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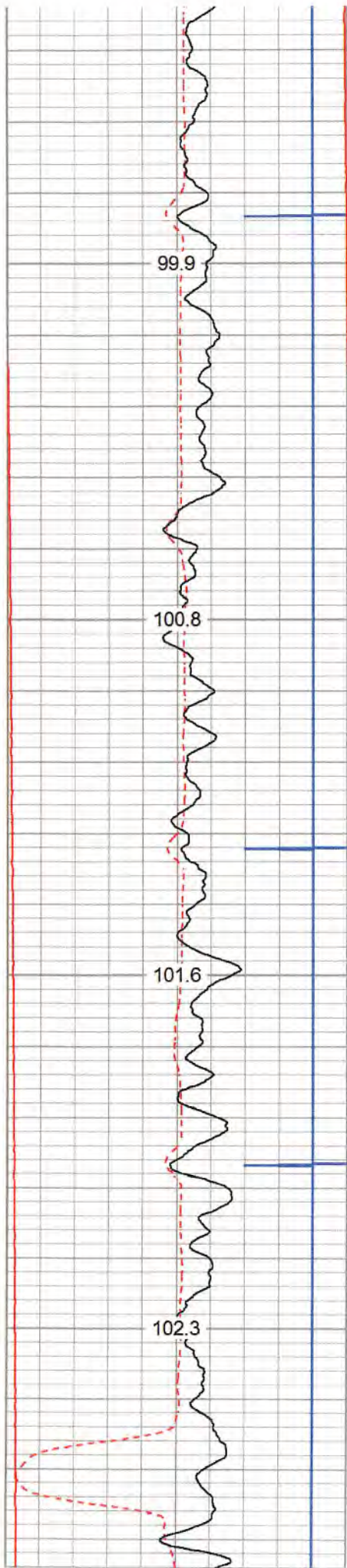
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06/02/2023

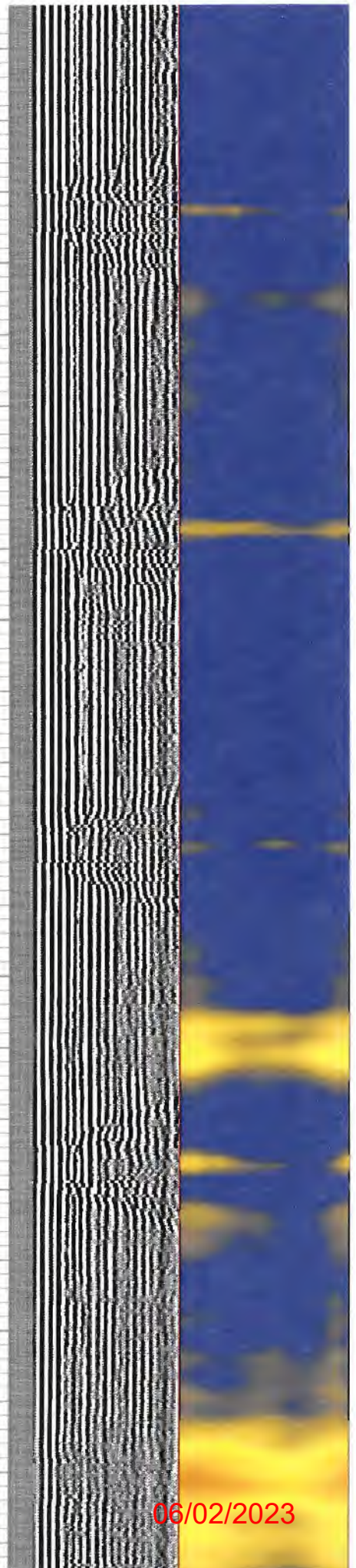
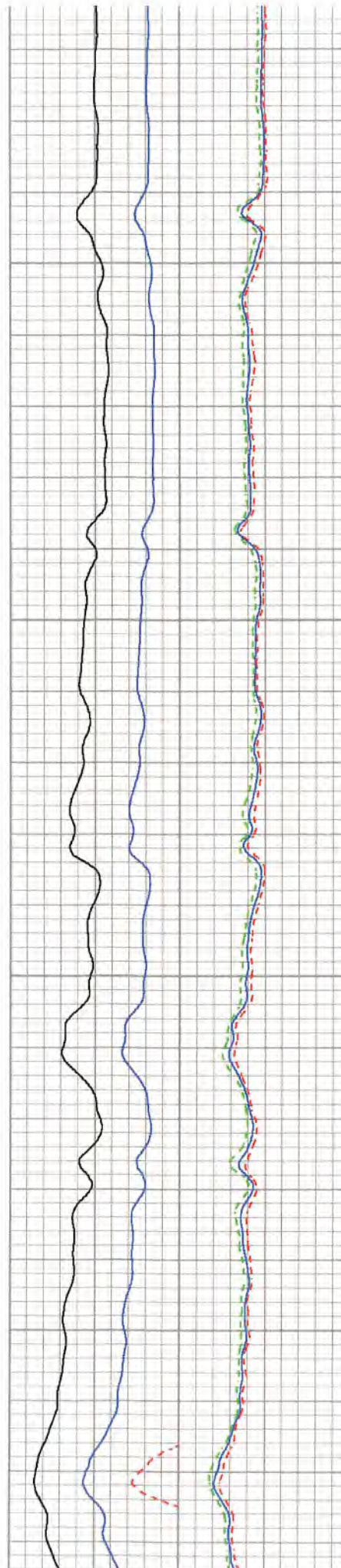


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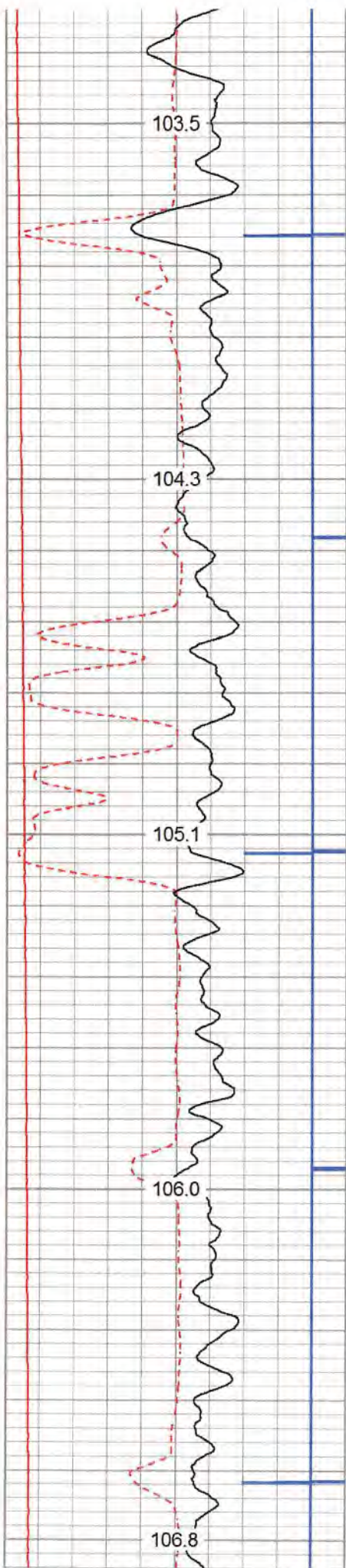
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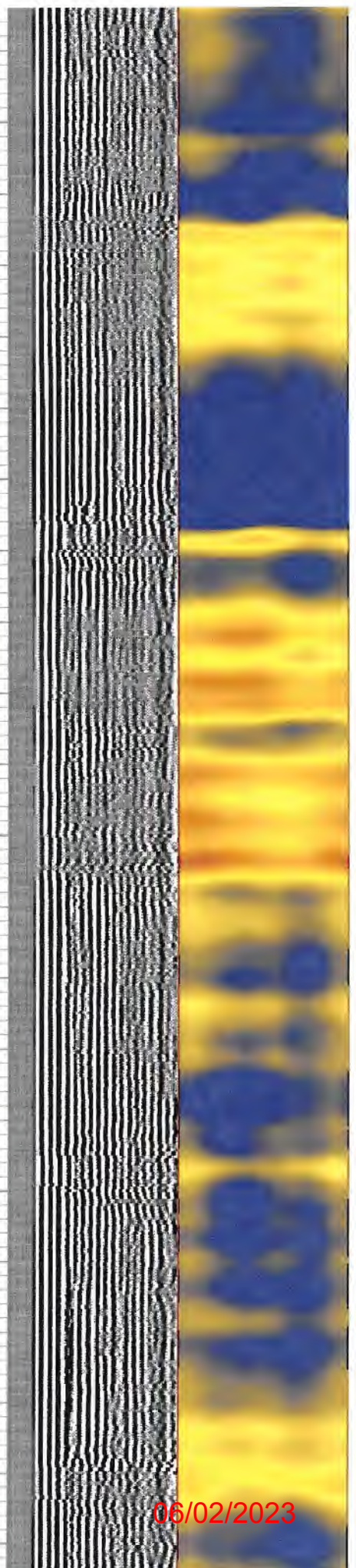
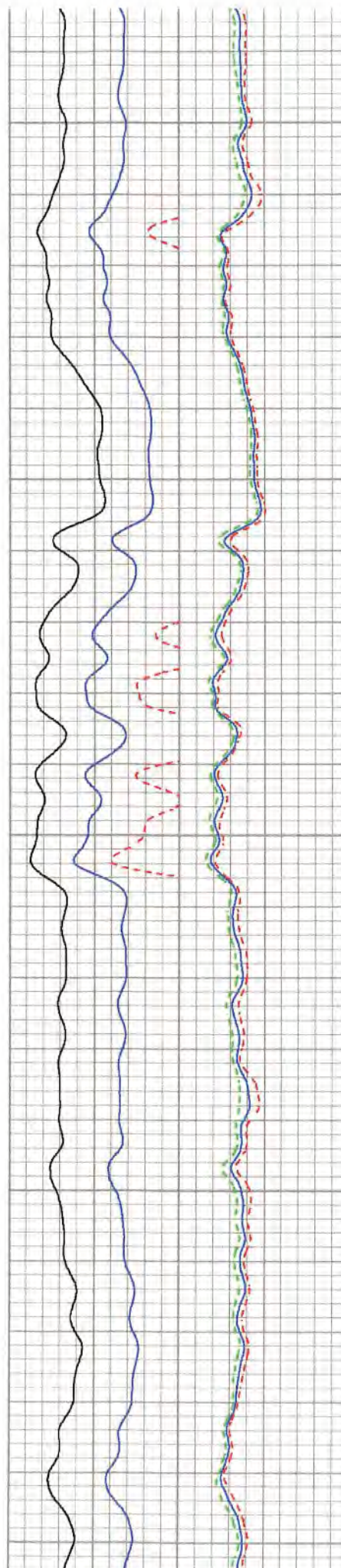
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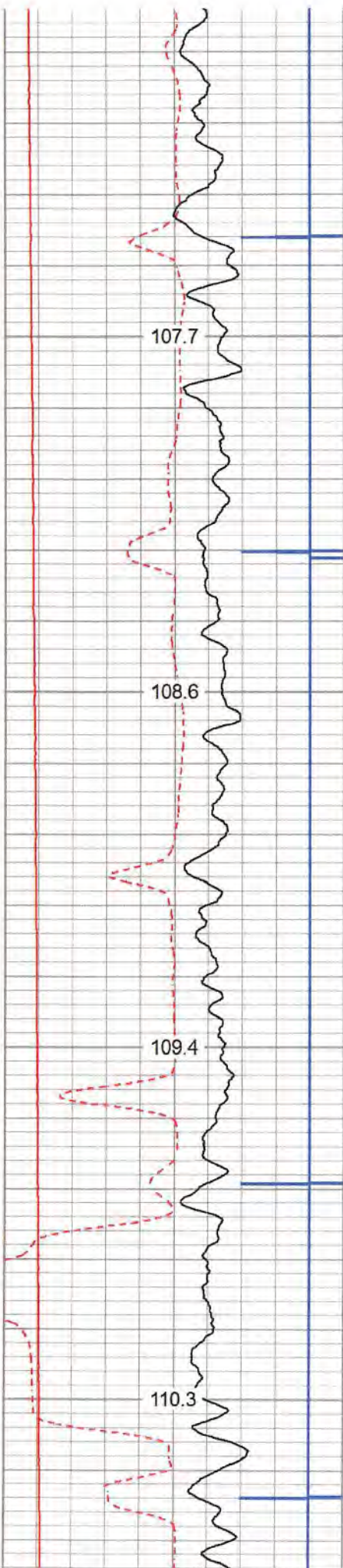
06/02/2023



4150
4200
4250
4300
4350



06/02/2023

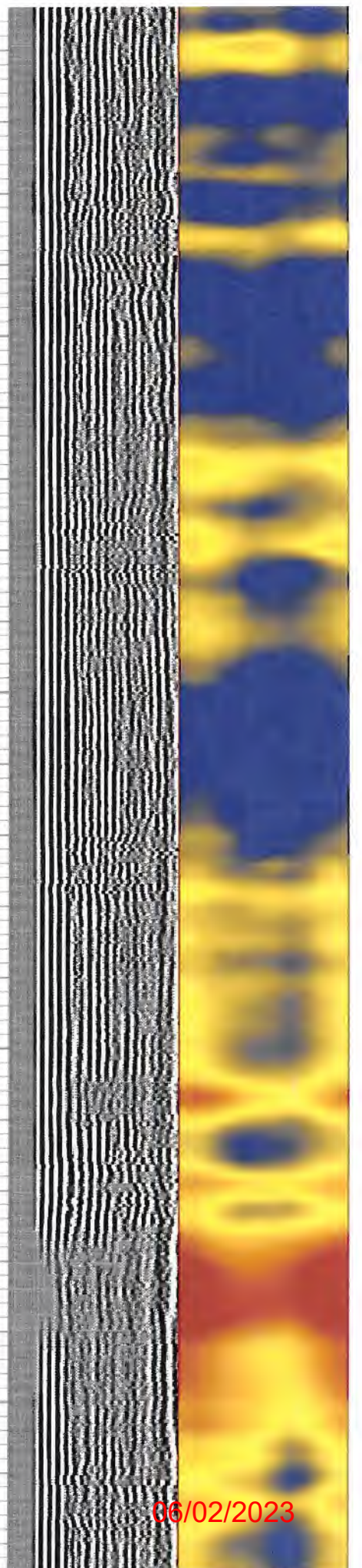
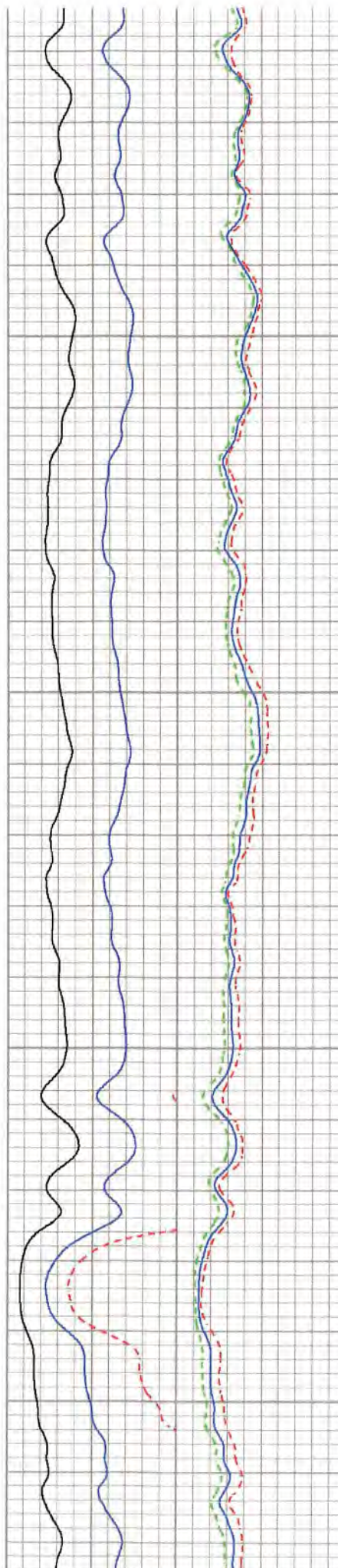


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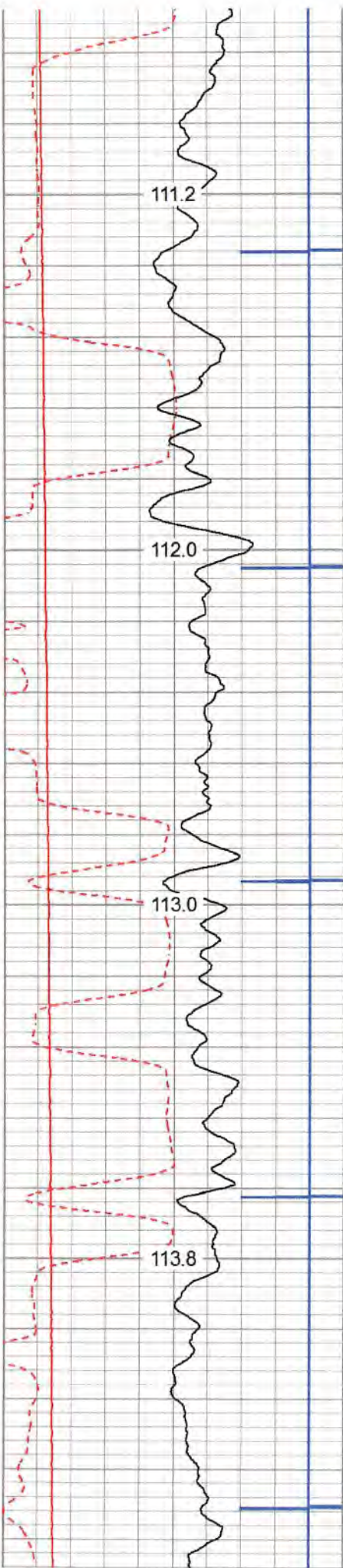
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4550



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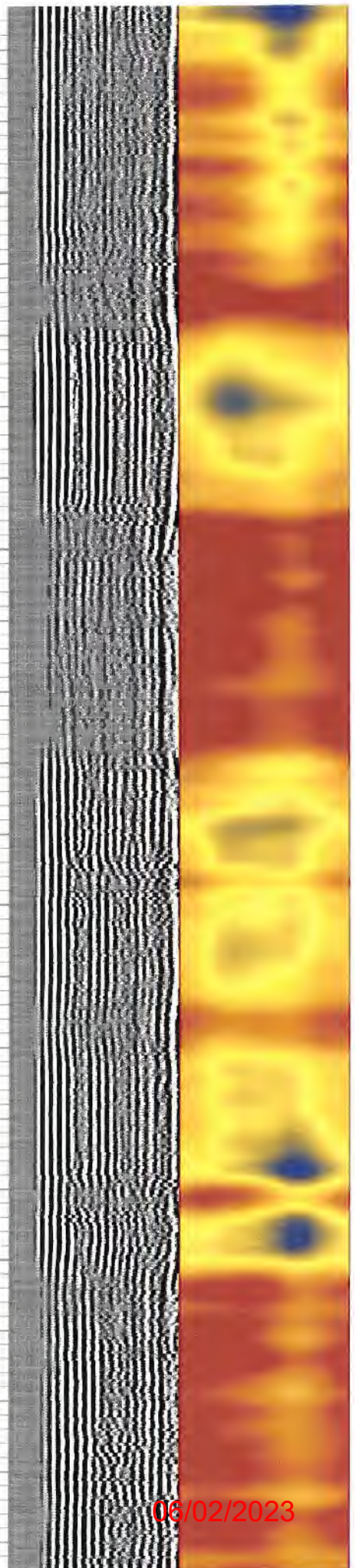
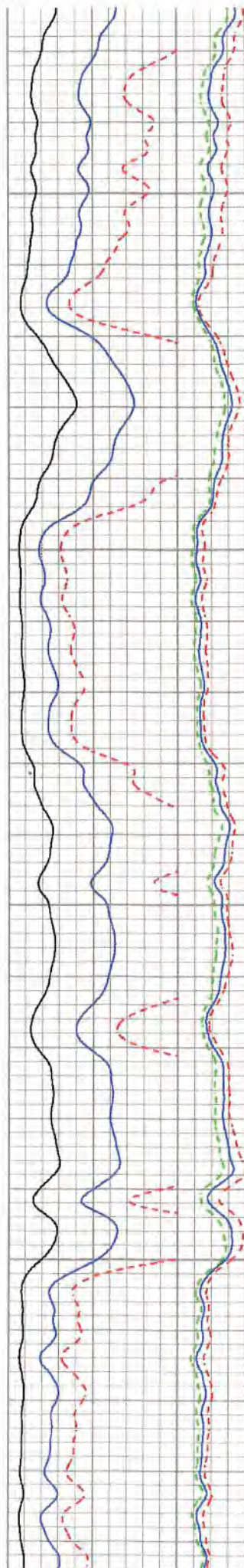


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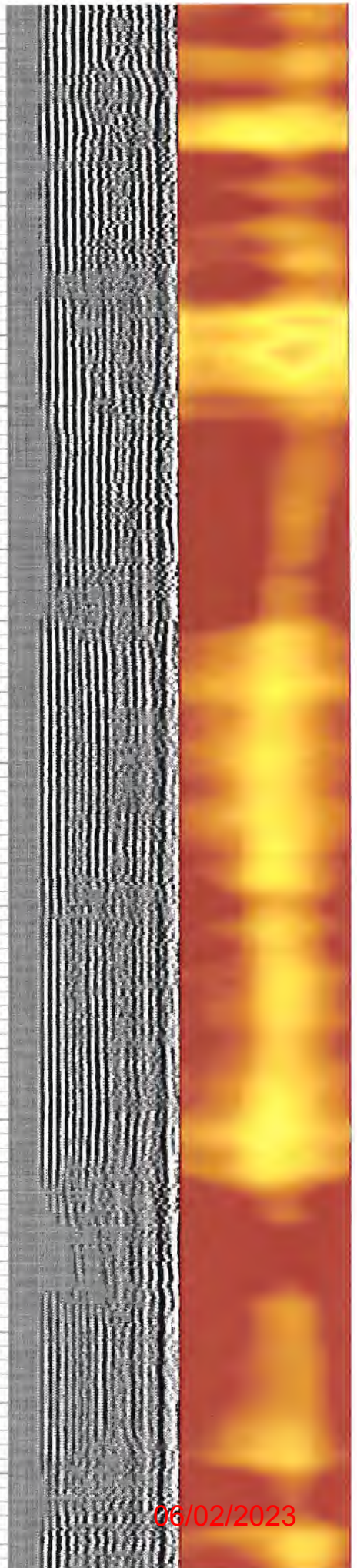
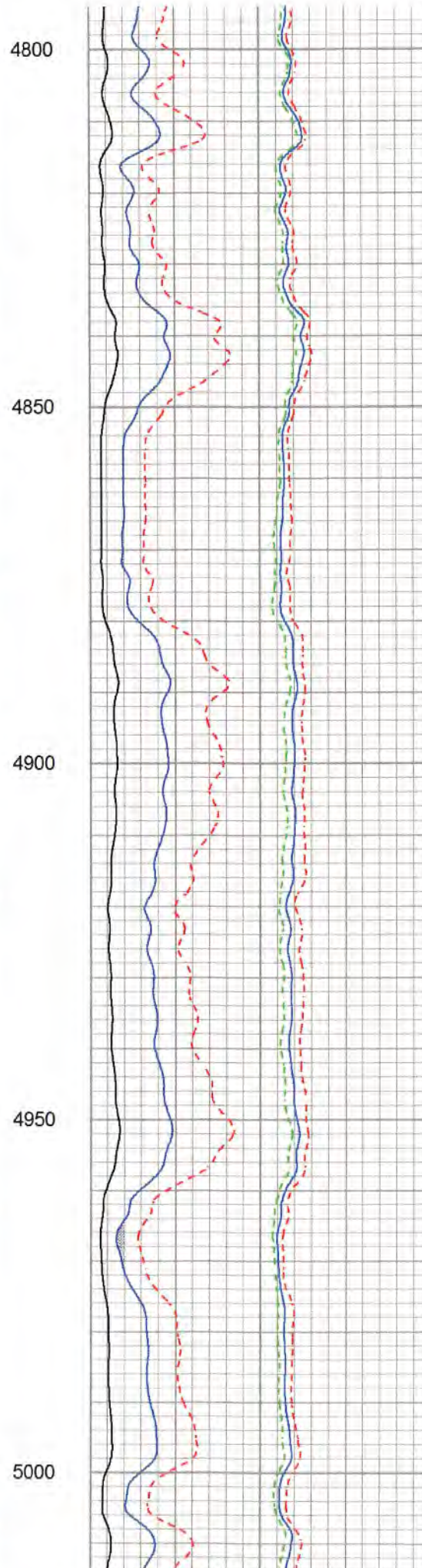
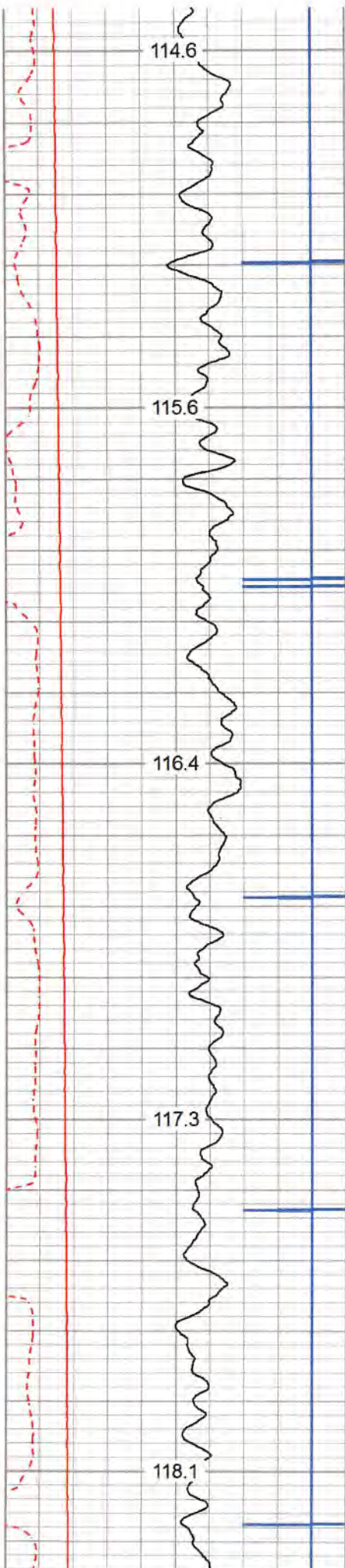
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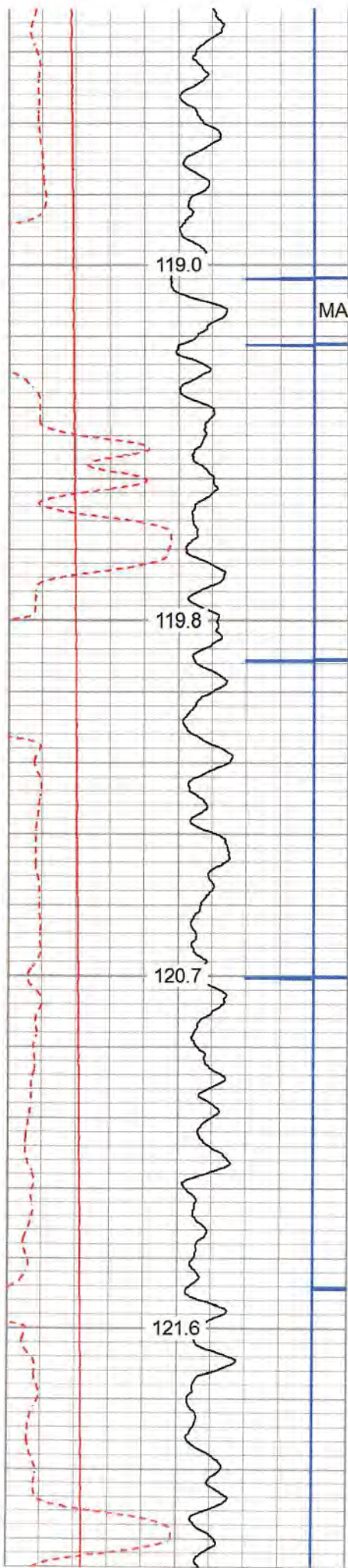
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06/02/2023



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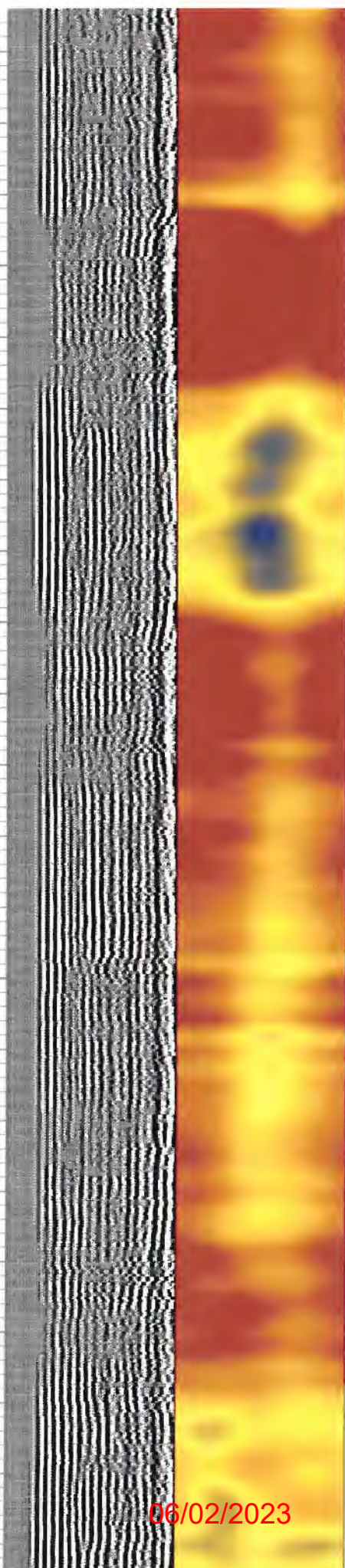
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MARKER JOINT

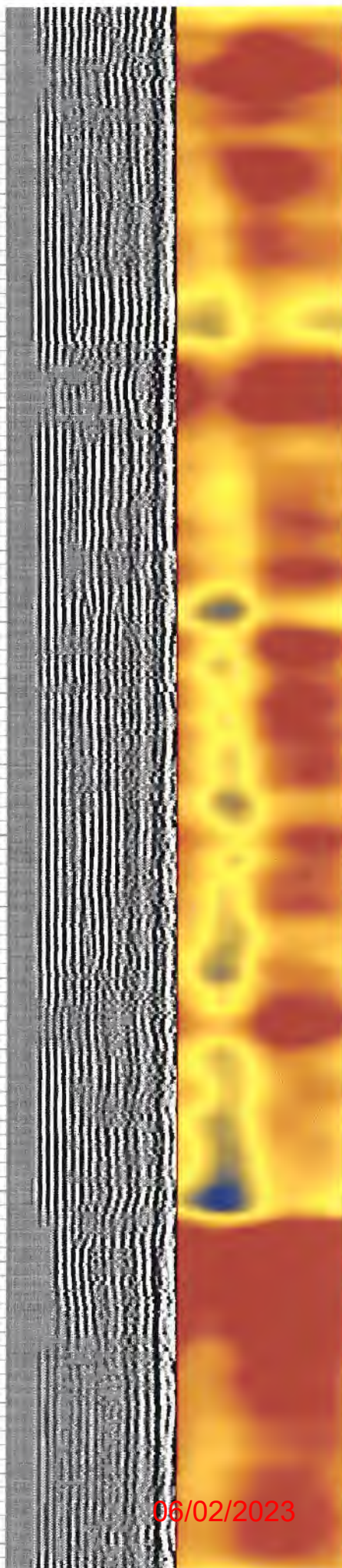
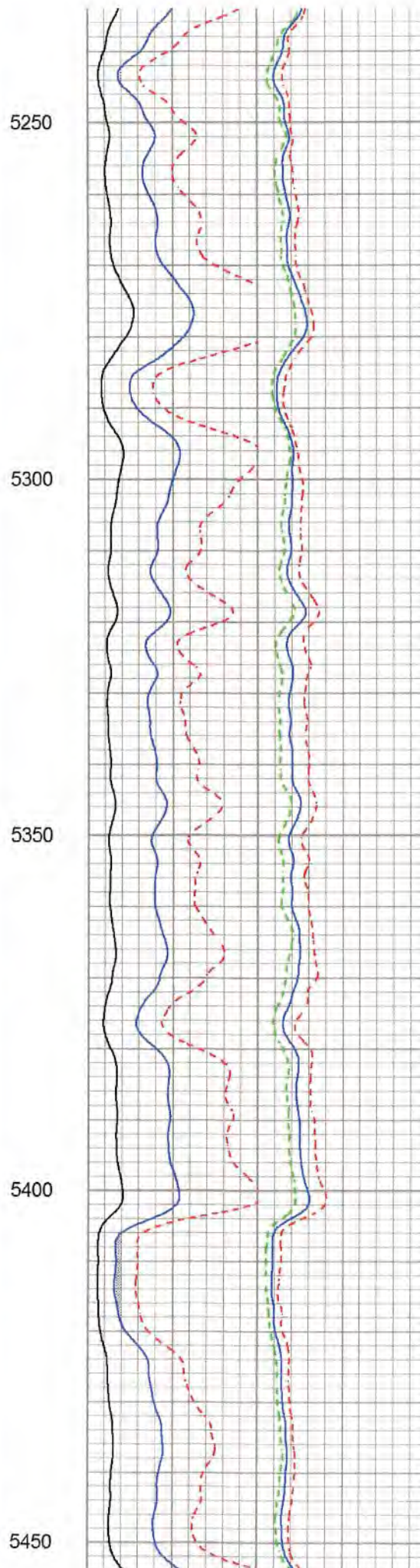
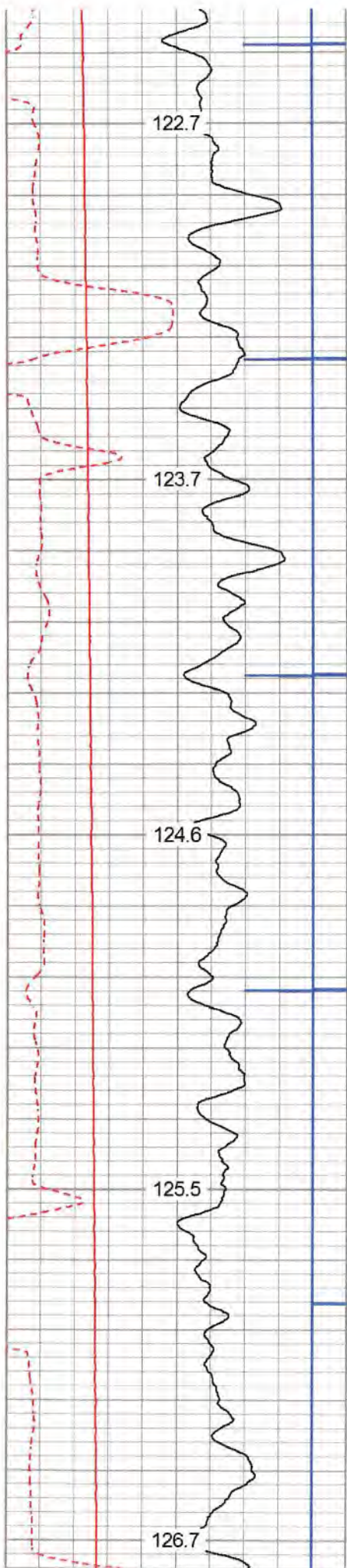
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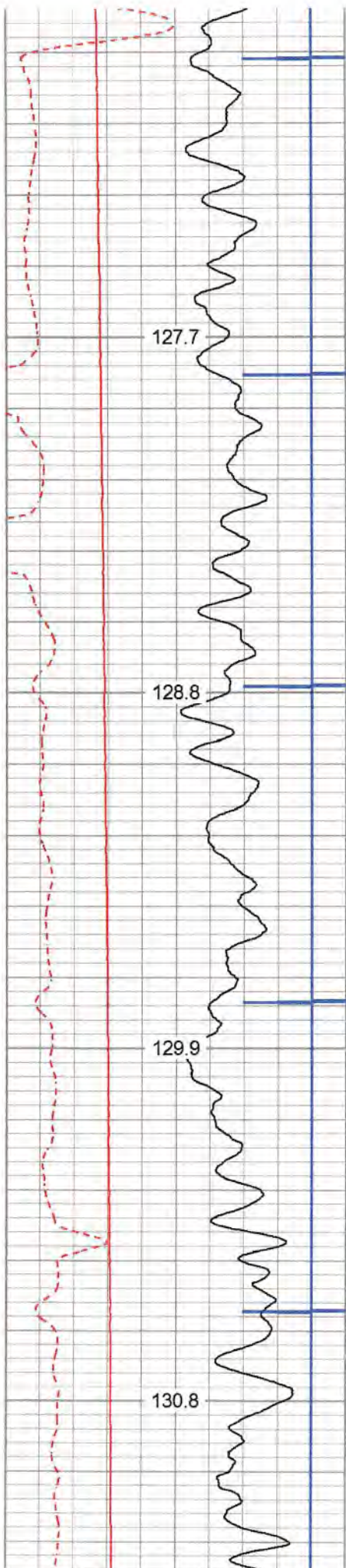
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06/02/2023



06/02/2023

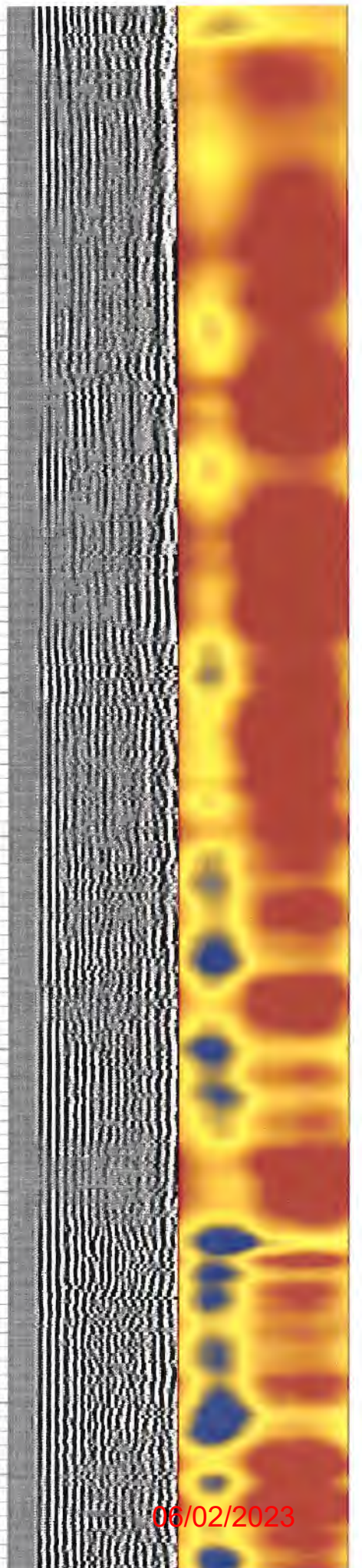
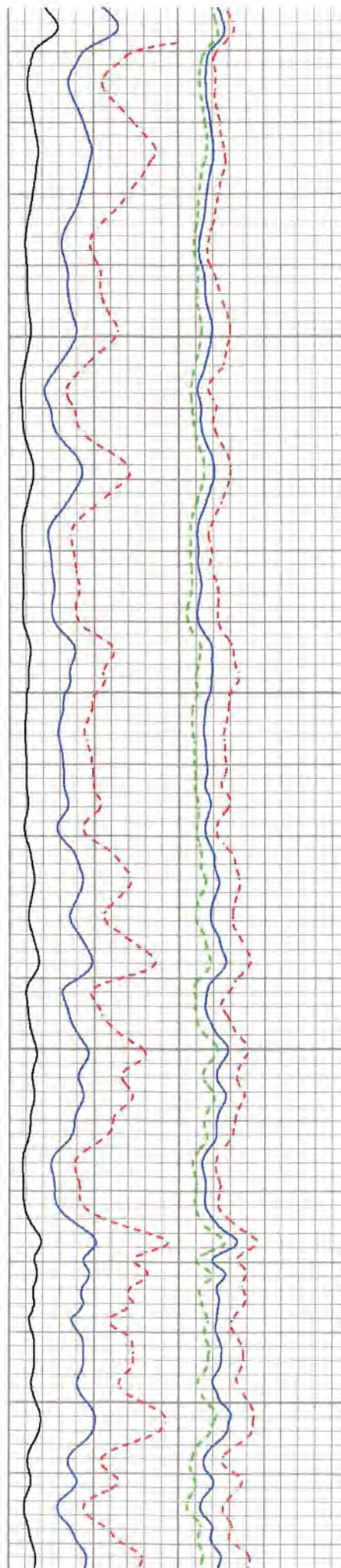


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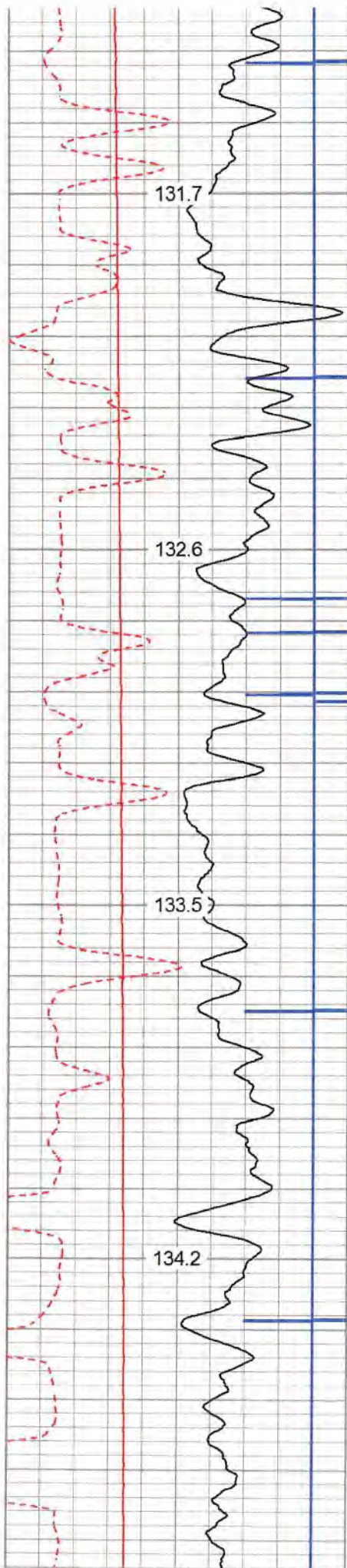
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5600

5650



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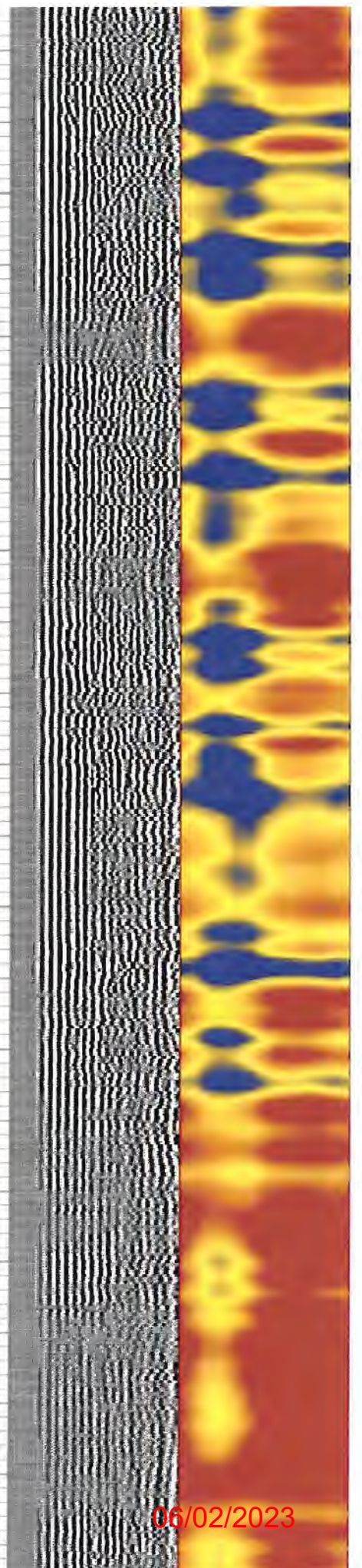
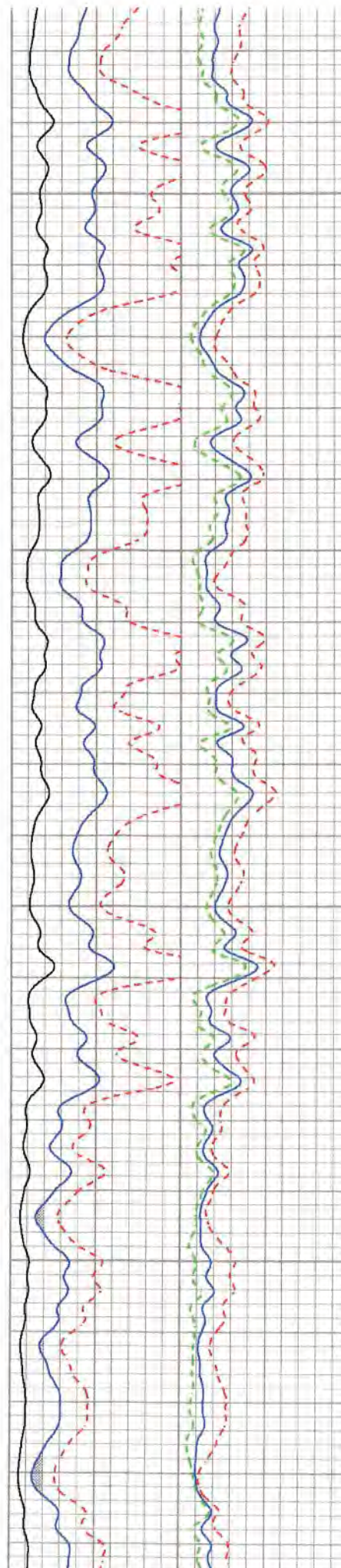


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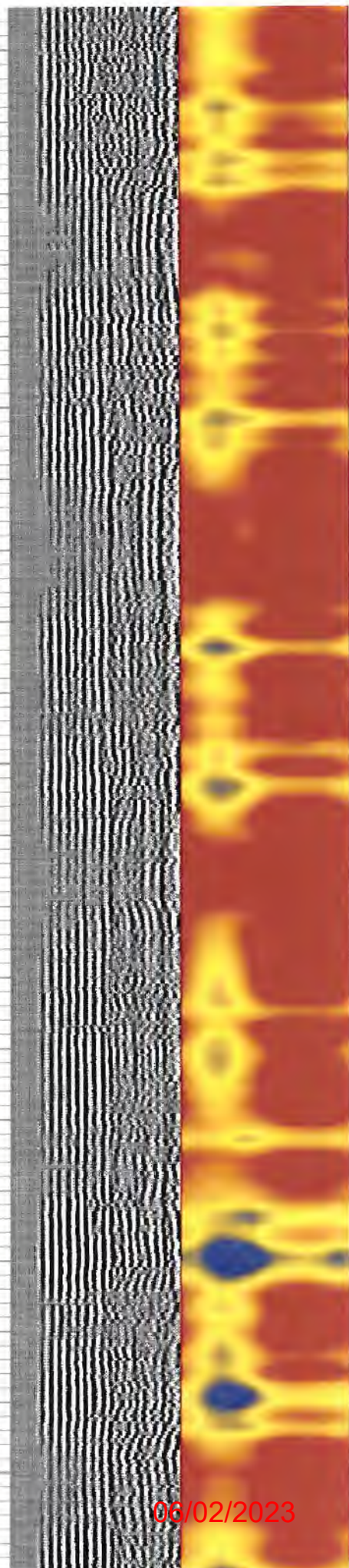
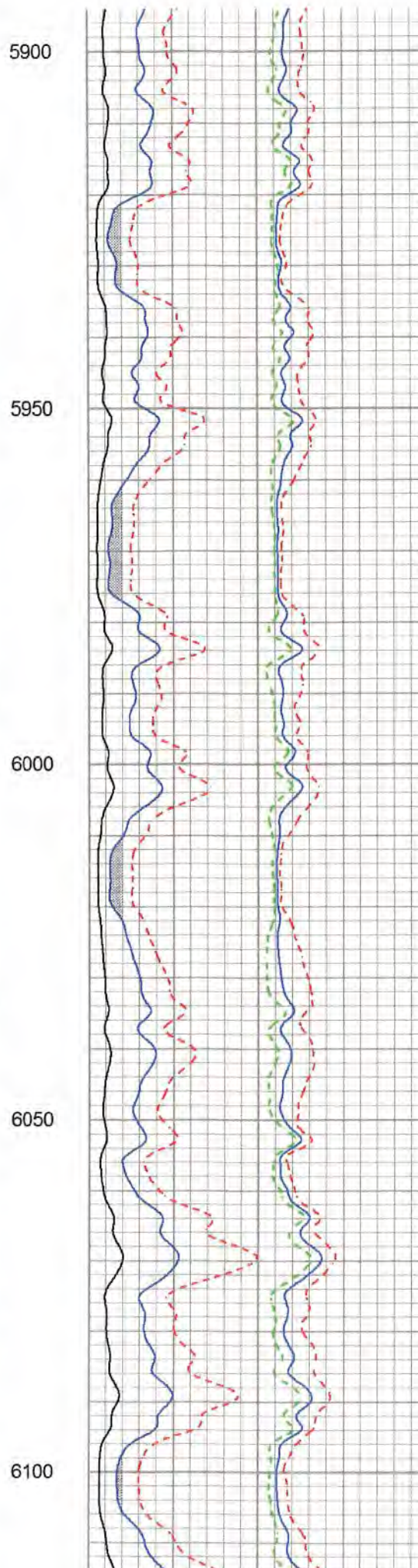
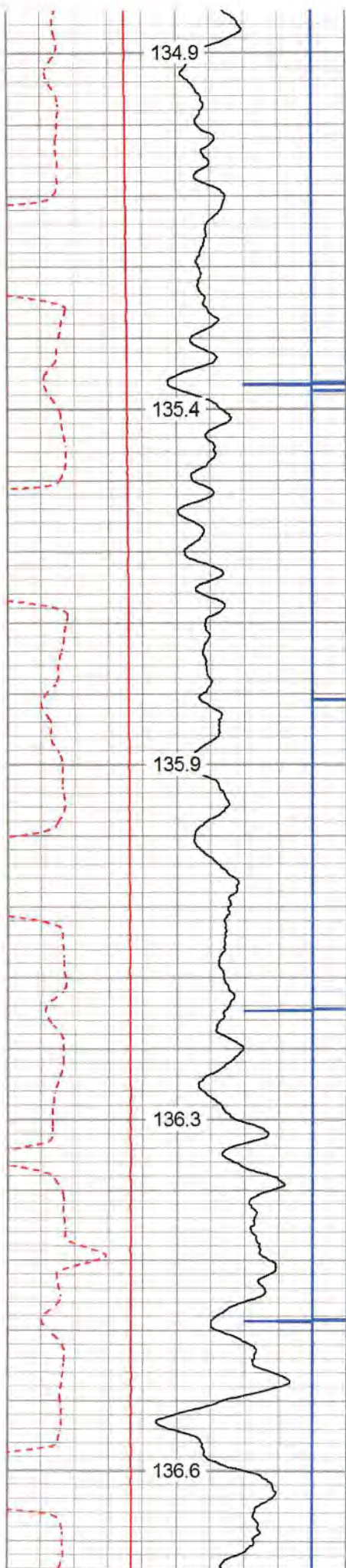
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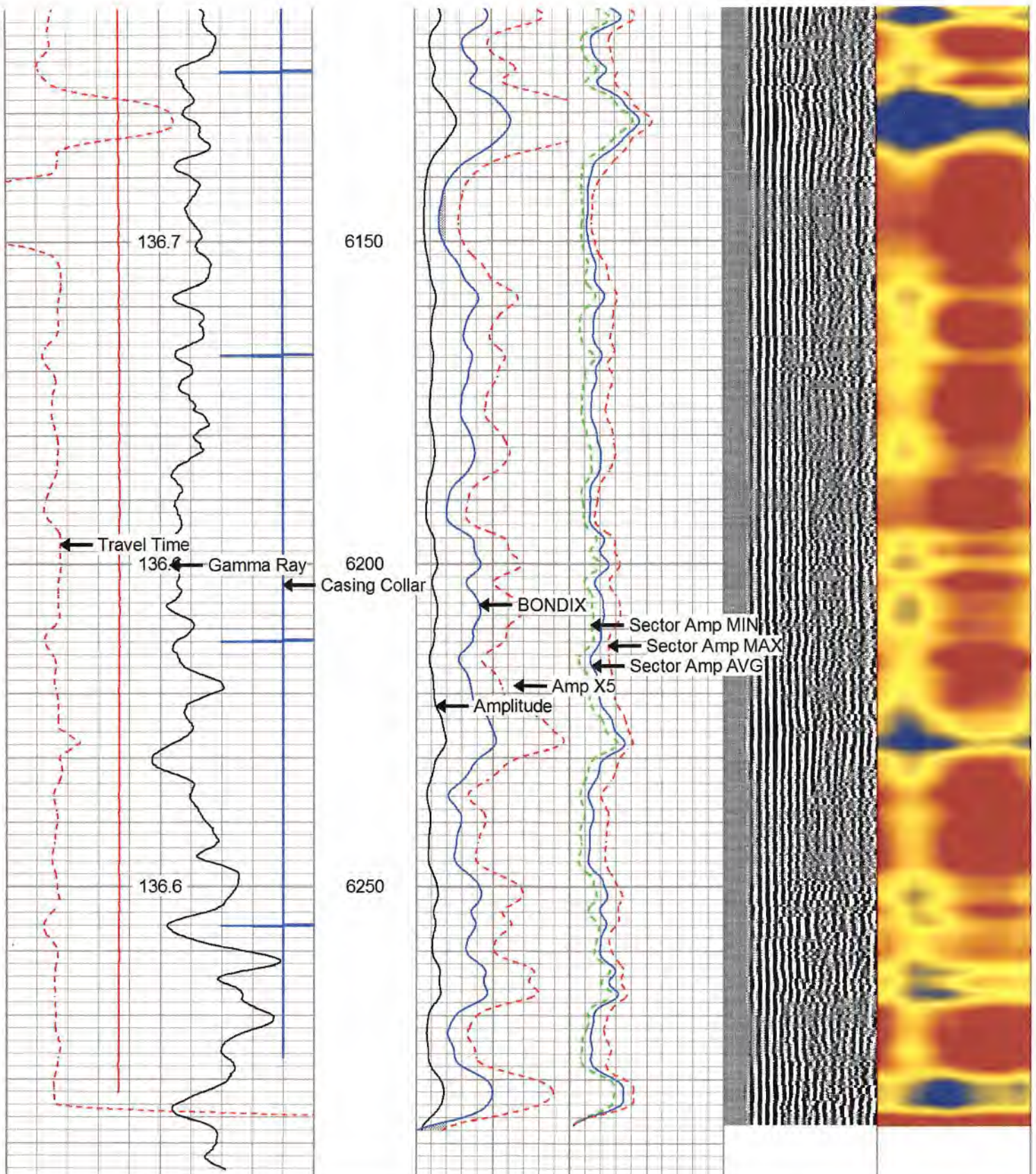
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06/02/2023



06/02/2023



280	Travel Time (usec)	180
9	Casing Collar	-1
0	Gamma Ray	180
0	TEMP (degF)	100
180	GR	360

0	Amplitude	100
0	(mV)	20
0	Amp X5	20
0	(mV)	20
1	BONDIX	0

Sector Amp AVG
Sector Amp MAX
Sector Amp MIN

VDL	200	(usec)	1200
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1	Sector Map	12
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TEMP
(degF)

06/02/2023

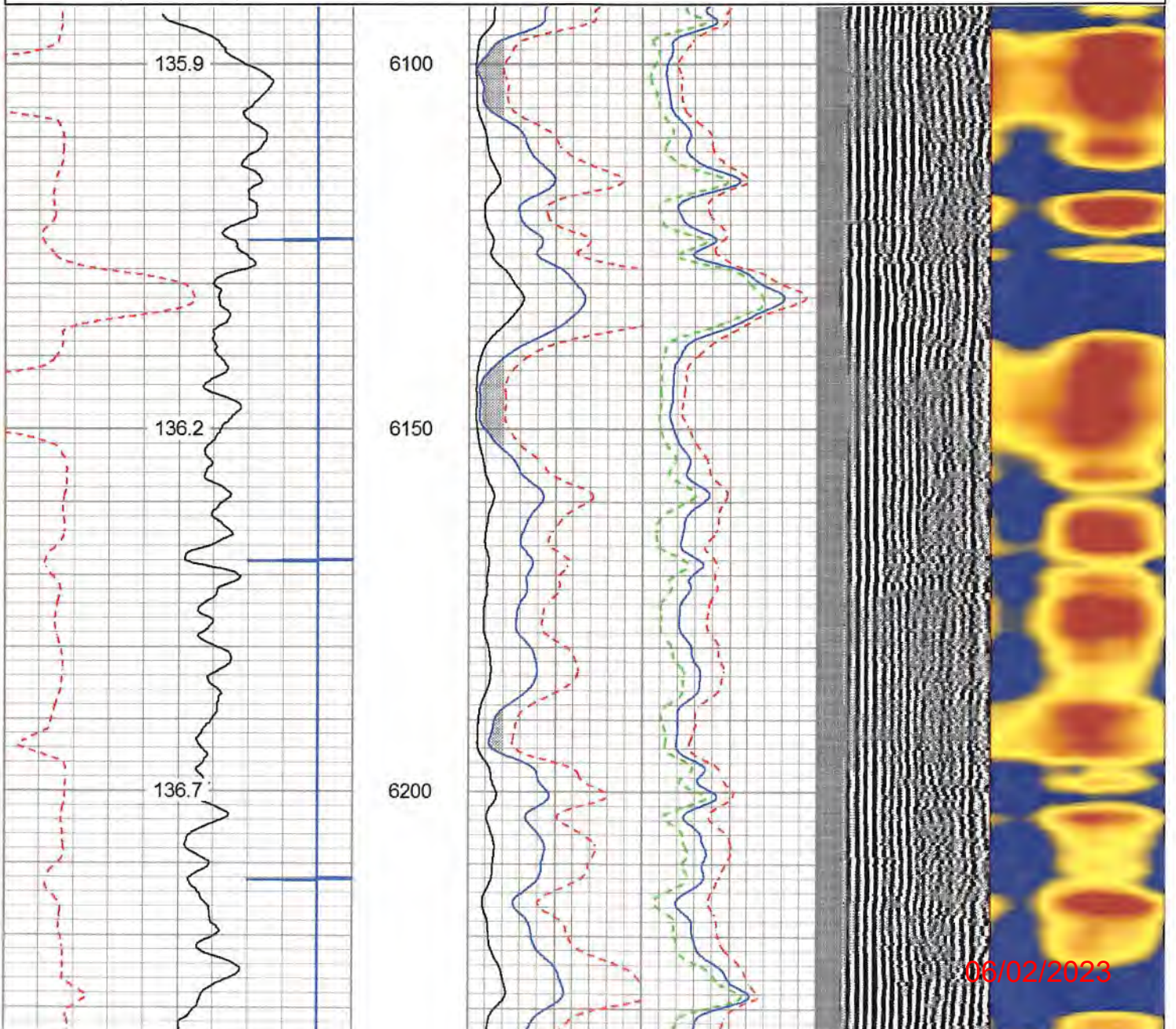


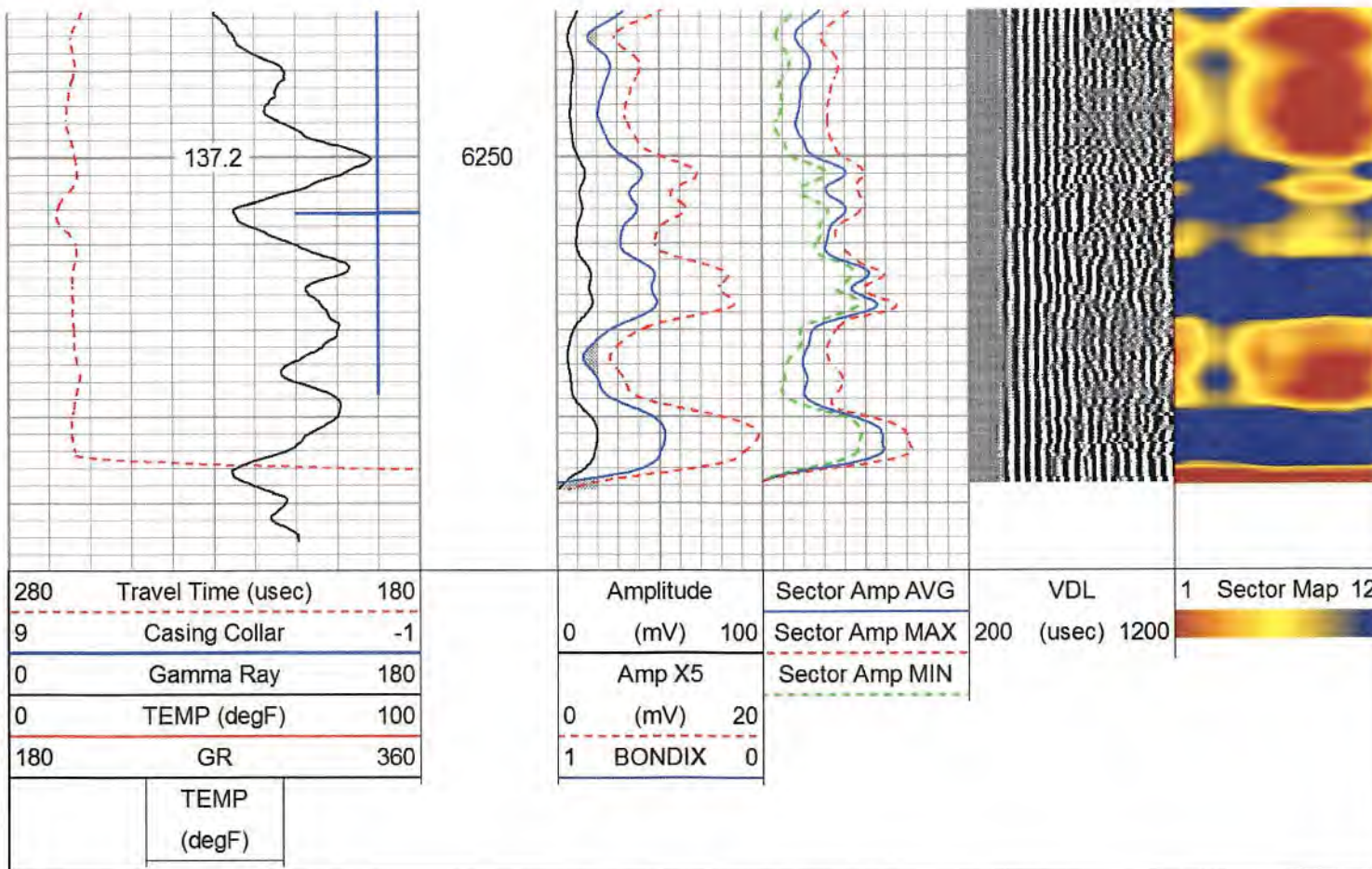
REPEAT PASS 1500 PSI

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 Dataset Pathname pass5
 Presentation Format antero
 Dataset Creation Thu Aug 06 09:53:11 2020
 Charted by Depth in Feet scaled 1:240

280	Travel Time (usec)	180	Amplitude	Sector Amp AVG	VDL	1	Sector Map	12
9	Casing Collar	-1	0 (mV) 100	Sector Amp MAX	200 (usec) 1200			
0	Gamma Ray	180	Amp X5	Sector Amp MIN				
0	TEMP (degF)	100	0 (mV) 20					
180	GR	360	1 BONDIX 0					

TEMP (degF)





Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
CCL	20.30		CCL-312tekco (IO8X3-01) Tekco 3 1/8" 450 Deg. "F" SmCo Logging CCL	1.82	3.12	25.00
			Tek-3.125 3 1/8" Titan Adjustable Centralizer	3.42	3.13	50.00
TEMP	13.46					
WVFS12	12.17					
WVFS11	12.17					
WVFS10	12.17					
WVFS9	12.17					
WVFS8	12.17					
WVFS7	12.17					
WVFS6	12.17					
			SCBL-Tek12 (IOL40-03_5_5) Tekco 400 Deg F 12 Sector RIB with Temp	9.13	3.25	135.00

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WVFS5	12.17					
WVFS4	12.17					
WVFS3	12.17					
WVFS2	12.17					
WVFS1	12.17					
WVFCAL	11.42					
WVF3FT	11.42					
WVF5FT	10.42					
WVFSYNC	7.08					
WVFTEMP	7.08					
			Tek-3.125 3 1/8" Titan Adjustable Centralizer	3.42	3.13	50.00
			GR-Tek-Co 2 3/4 (IPSNO-03) Tekco 2 3/4" 400 Deg. F Logging Gamma Ray	3.67	2.75	40.00
GR	1.04					

Dataset: 8_6_20_antero_alpinewestunit1h.db: field/well/run1/pass6.1
 Total length: 21.44 ft
 Total weight: 300.00 lb
 O.D.: 3.25 in

Calibration Report

Database File e:\8_6_20_antero_alpinewestunit1h.db
 Dataset Pathname pass6.3
 Dataset Creation Fri Aug 07 15:05:59 2020

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Gamma Ray Calibration Report

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Serial Number: IPSNO-03
 Tool Model: Tek-Co 2 3/4
 Performed: Tue Nov 12 16:11:18 2019

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Calibrator Value: 1.0
 Background Reading: 0.0 cps
 Calibrator Reading: 1.0 cps
 Sensitivity: 0.5000 /cps

Segmented Cement Bond Log Calibration Report

Serial Number: IOL40-03_5_5
 Tool Model: Tek12
 Calibration Casing Diameter: 5.500 in
 Calibration Depth: 1850.792 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.001	0.782	3.400	71.921	87.745	3.272

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CAL	0.865	0.413				
5'	-0.000	0.802	3.400	71.921	85.397	3.435
SUM						
S1	0.011	1.945	3.400	100.000	49.957	2.842
S2	0.010	1.905	3.400	100.000	50.985	2.884
S3	0.012	1.889	3.400	100.000	51.465	2.788
S4	0.013	1.844	3.400	100.000	52.760	2.707
S5	0.013	1.838	3.400	100.000	52.929	2.716
S6	0.015	1.989	3.400	100.000	48.947	2.664
S7	0.015	2.010	3.400	100.000	48.423	2.654
S8	0.014	2.058	3.400	100.000	47.243	2.751
S9	0.013	2.110	3.400	100.000	46.071	2.790
S10	0.012	2.113	3.400	100.000	45.995	2.834
S11	0.012	2.041	3.400	100.000	47.611	2.850
S12	0.012	1.999	3.400	100.000	48.626	2.820

Temperature Calibration Report

Serial Number: IOL40-03_5_5
Tool Model: Tek12
Performed: Fri Oct 20 09:51:21 2017

	Reference		Reading	
Low Reference:	0.00	degF	0.00	usec
High Reference:	1.00	degF	1.00	usec
Gain:	0.33			
Offset:	0.00			
Delta Spacing	2			

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Company	ANTERO RESOURCES CORPORATION	
Well	ALPINE WEST UNIT 1H	
Field	MARCELLUS	
County	TYLER	
State	WV	Country US