



DUAL INDUCTION LOG

Company PRATER OIL & GAS OPERATIONS, INC.

Well STUDER #6

Field GRIMES

County PRATT State KANSAS

Location: API #: 15-151-22563-0000

1650' FSL & 4290' FEL
SE - NW - SW

SEC 4 TWP 27S RGE 12W

Permanent Datum GROUND LEVEL Elevation 1866
Log Measured From KELLY BUSHING 13' A.G.L.
Drilling Measured From KELLY BUSHING

Other Services
CDL/CNL
MEL

Elevation

K.B. 1879
D.F. 1877
G.L. 1866

Date	2/13/23
Run Number	ONE
Depth Driller	4445
Depth Logger	4446
Bottom Logged Interval	4444
Top Log Interval	00
Casing Driller	13 3/8"@262'
Casing Logger	262
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.4/52
pH / Fluid Loss	9.0/9.0
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.95@61F
Rmf @ Meas. Temp	.713@61F
Rmc @ Meas. Temp	1.14@61F
Source of Rmf / Rmc	MEASUREMENT
Rm @ BHT	.483@120F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	2:30 A.M.
Maximum Recorded Temperature	120F
Equipment Number	8916
Location	HAYS, KANSAS
Recorded By	JEFF LUEBBERS
Witnessed By	SCOTT ALBERG

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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 ELI WIRELINE, HAYS, KS. (785) 628-6395
DIRECTIONS:
PRATT, KS., 7 MILES N.E. ON HWY 61 TO MM #7 TURN RIGHT ON "NE 50TH AVE.", 1/3 S., TURN LEFT ON "NE 50TH ST." 1/4 MILE, N. INTO

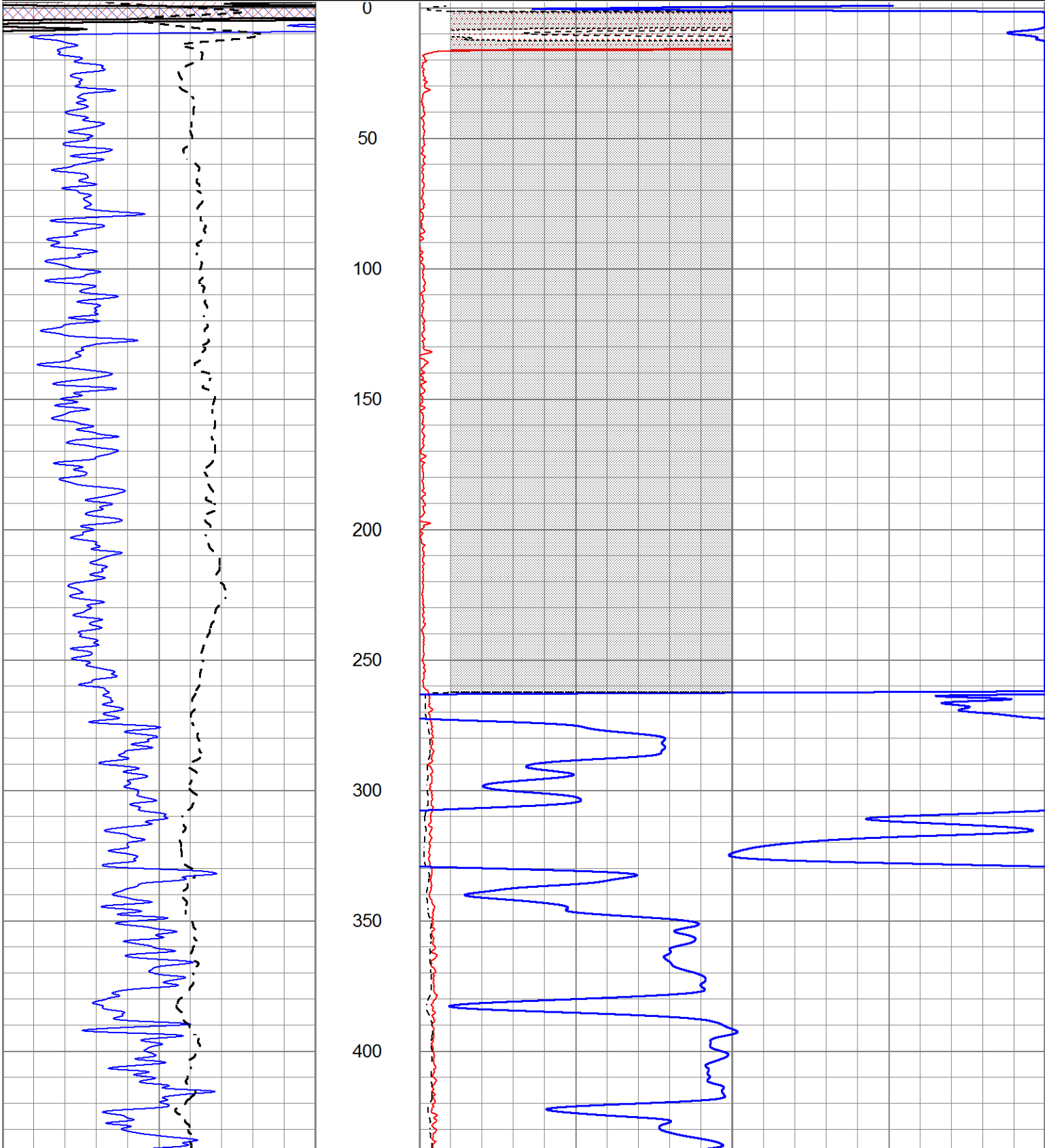


MAIN SECTION

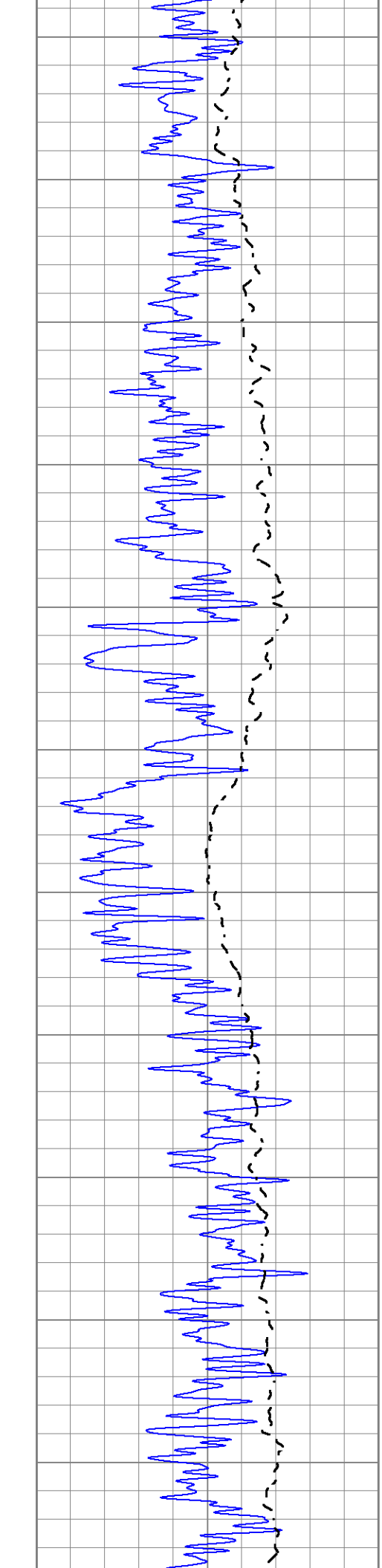
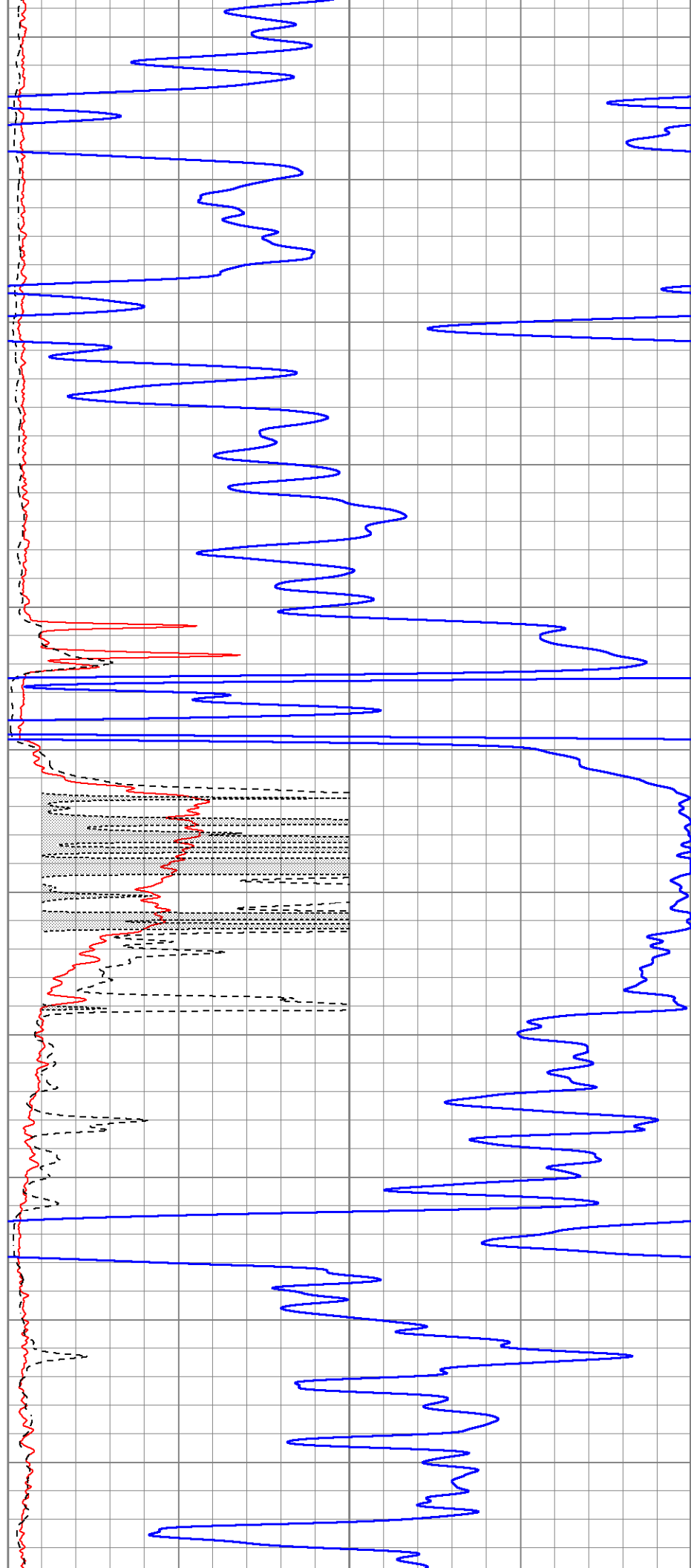
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 Dataset Creation Mon Feb 13 04:40:58 2023
 Charted by Depth in Feet scaled 1:600

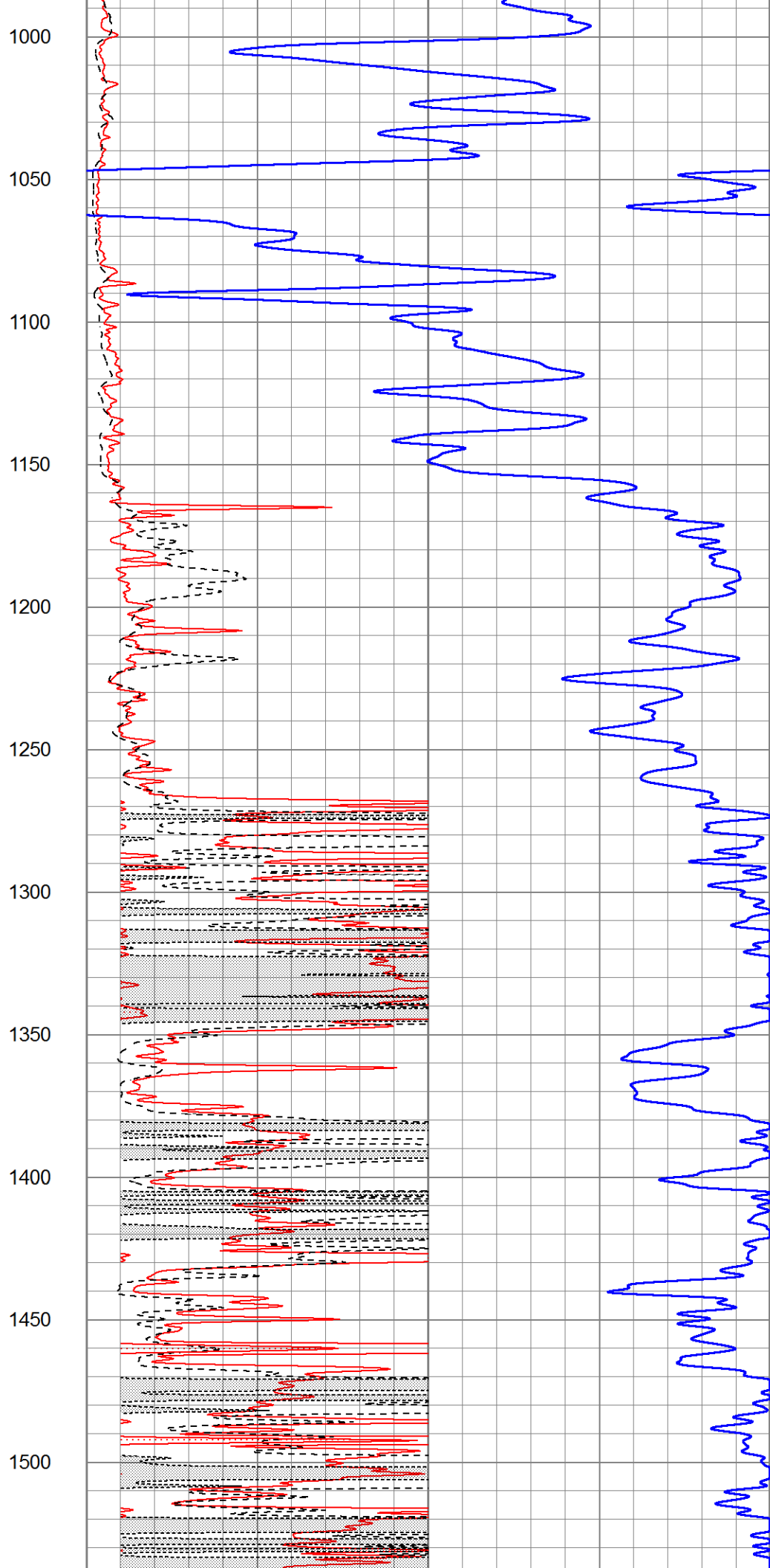
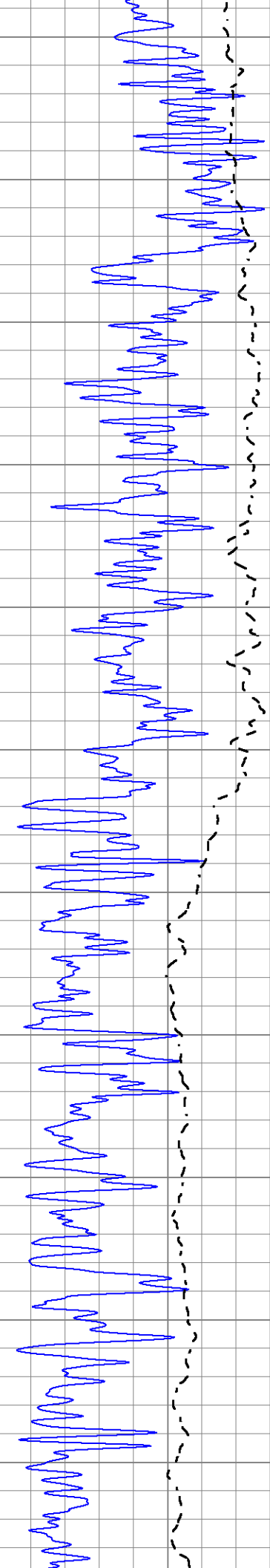
0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

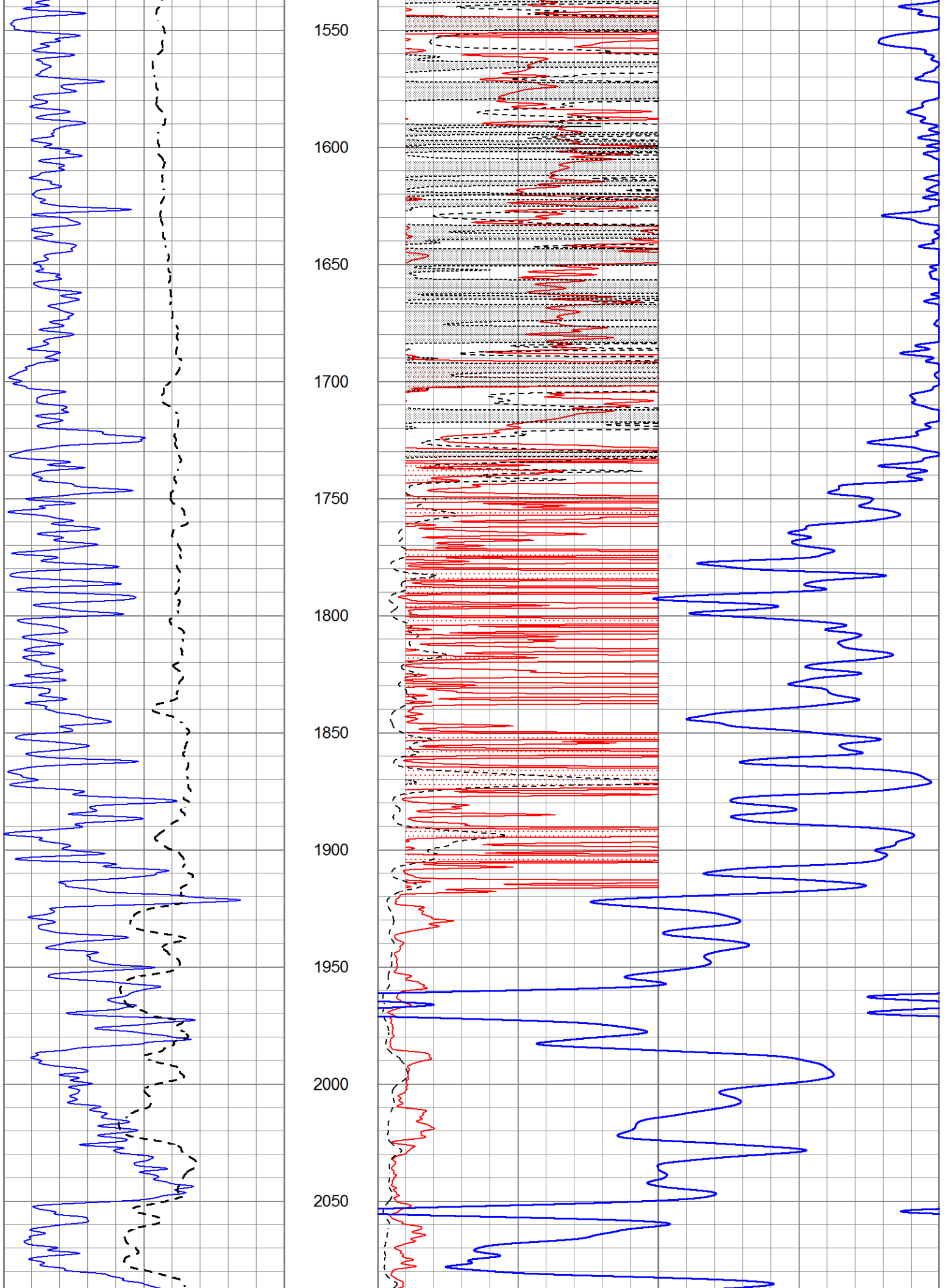
1000	CILD (mmho/m)	0
0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

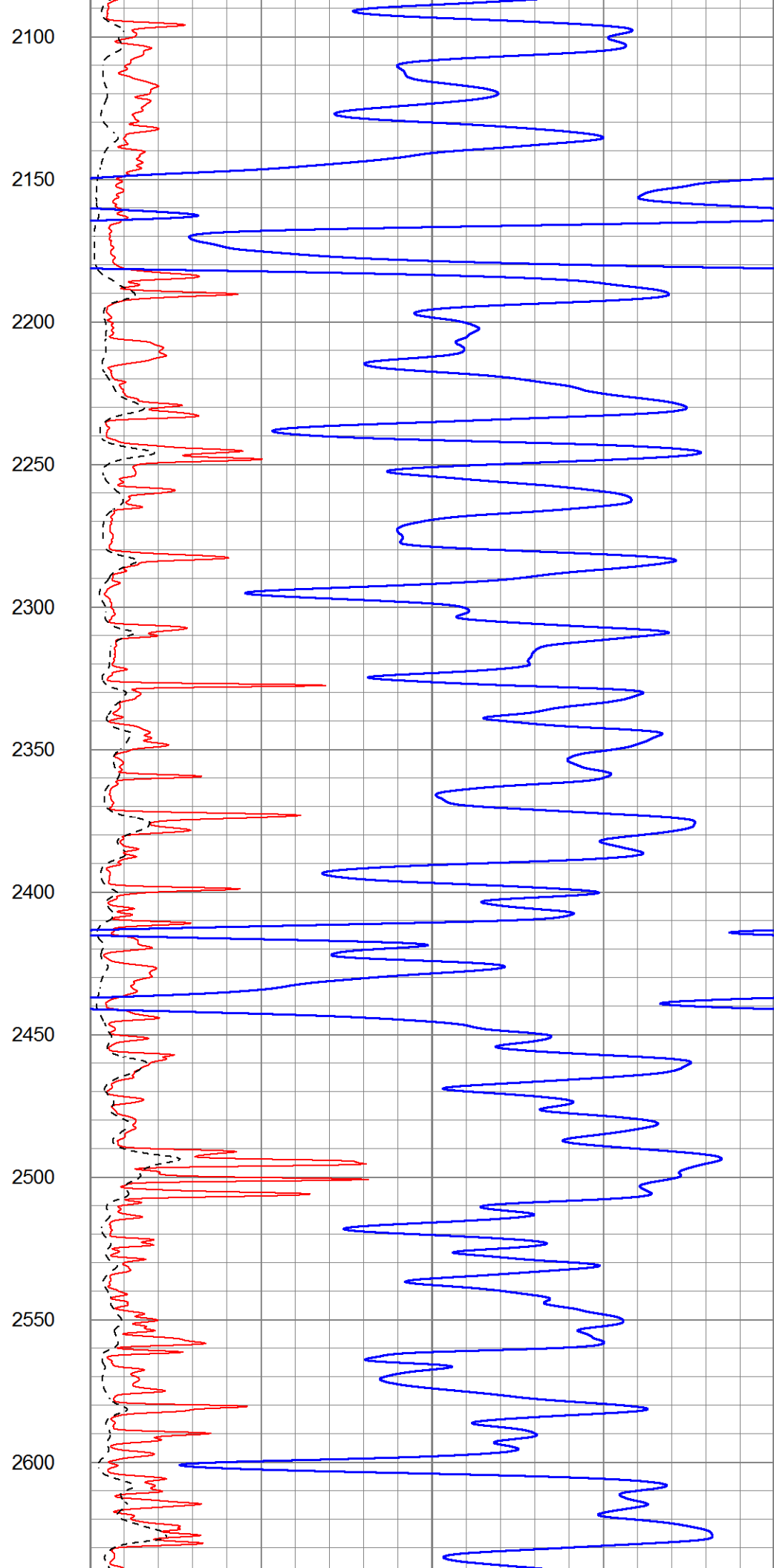
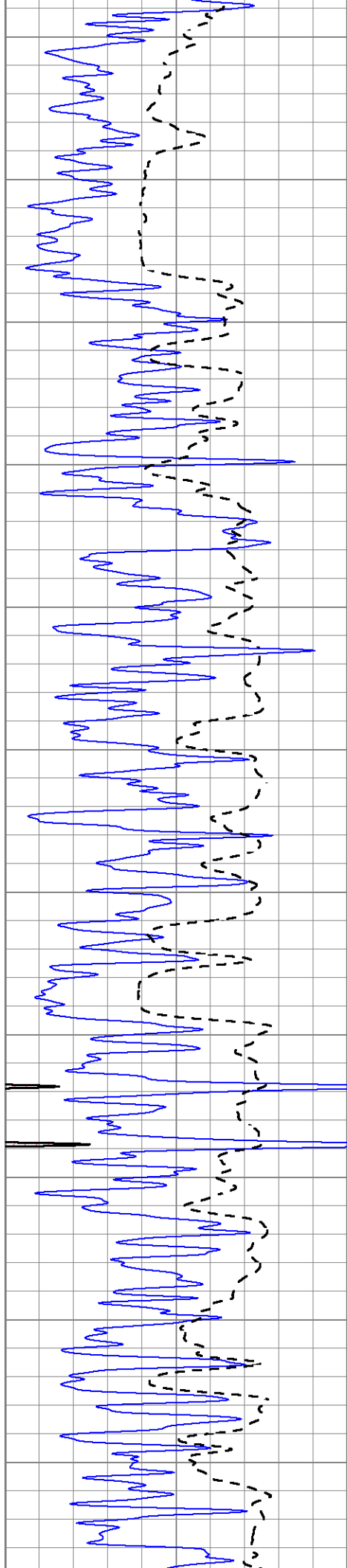


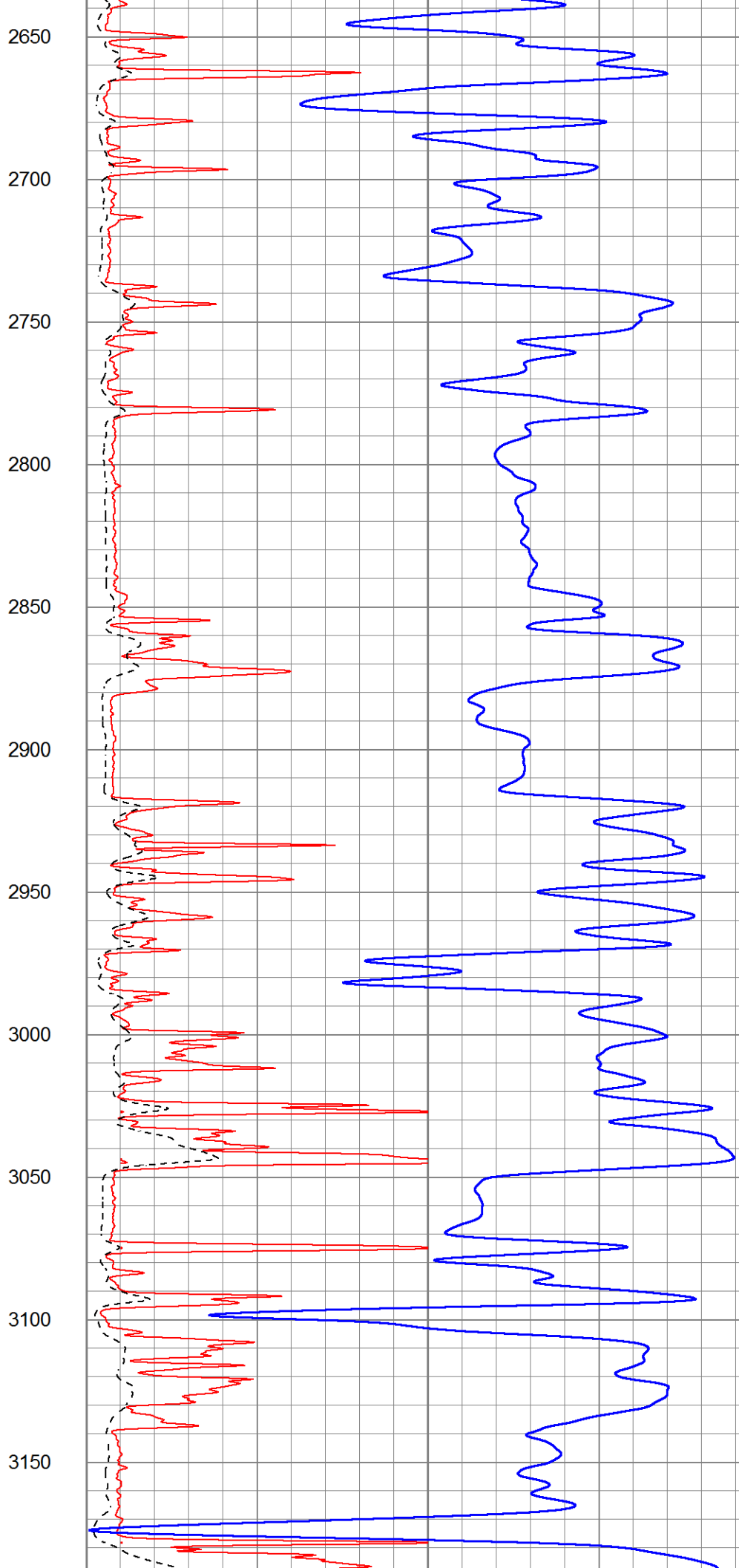
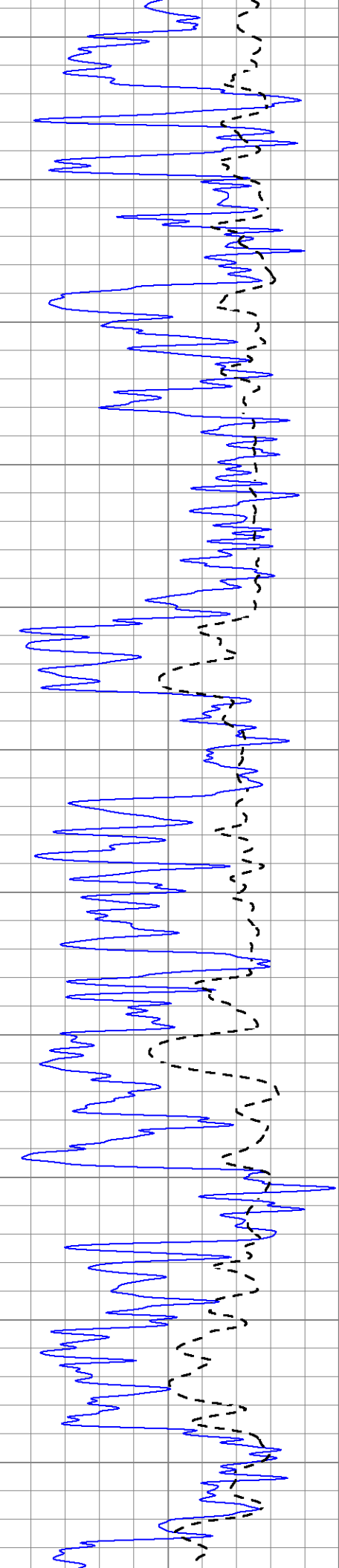
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500
550
600
650
700
750
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850
900
950

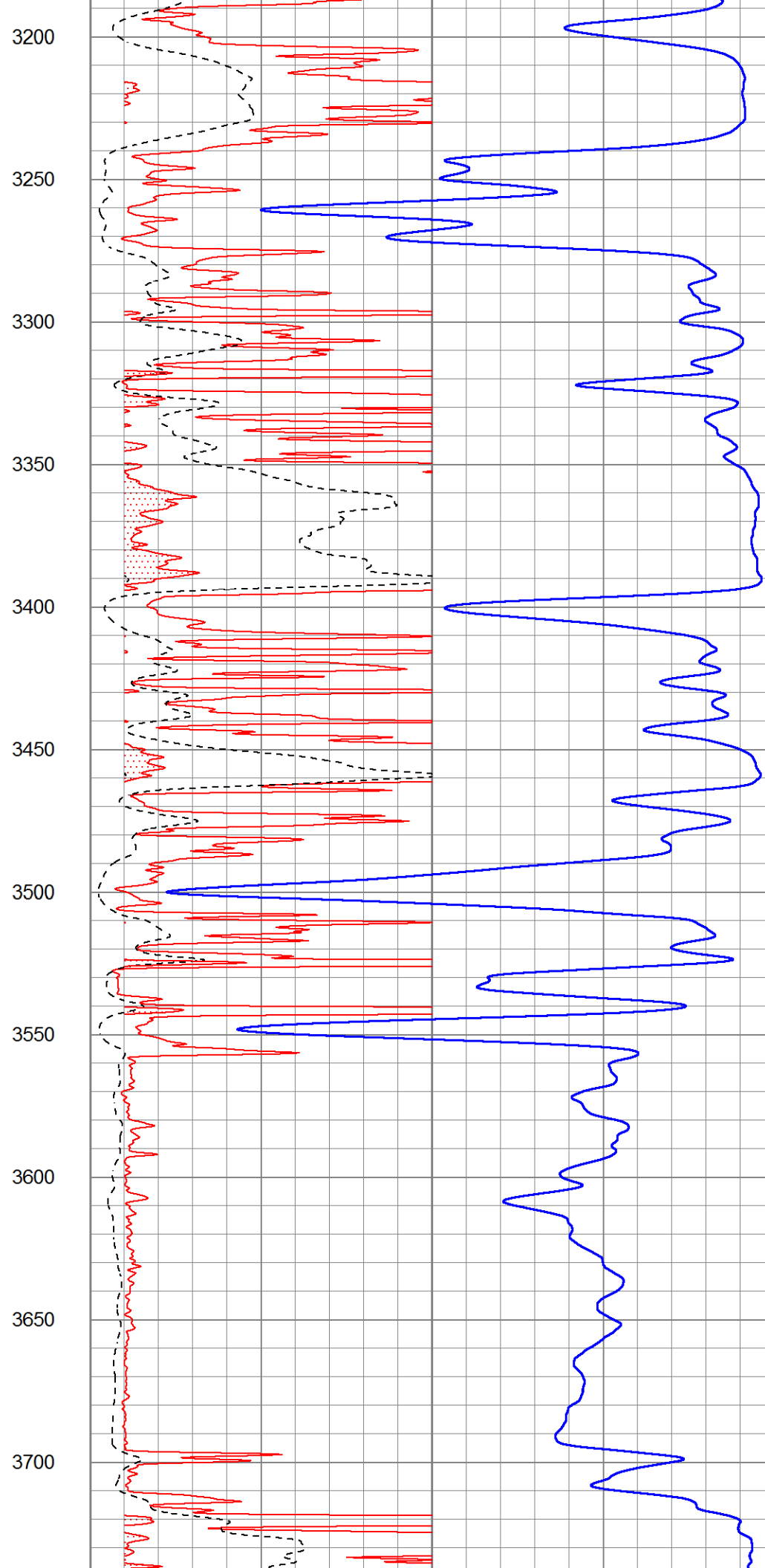
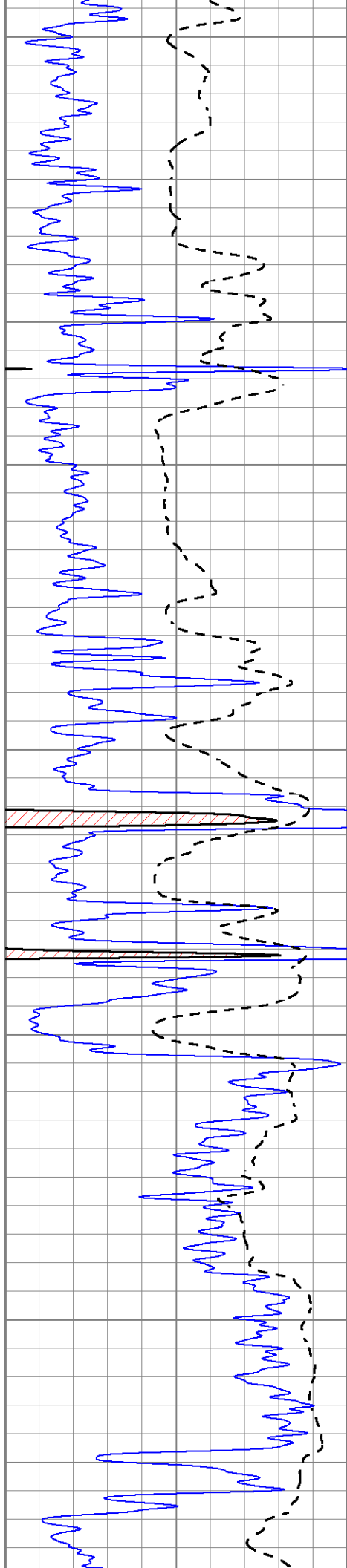


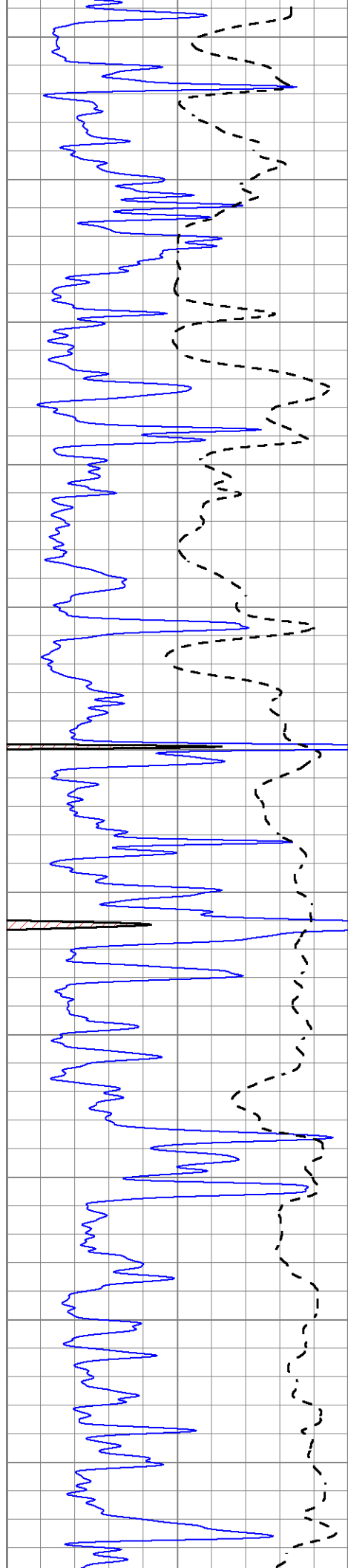












3750

3800

3850

3900

3950

4000

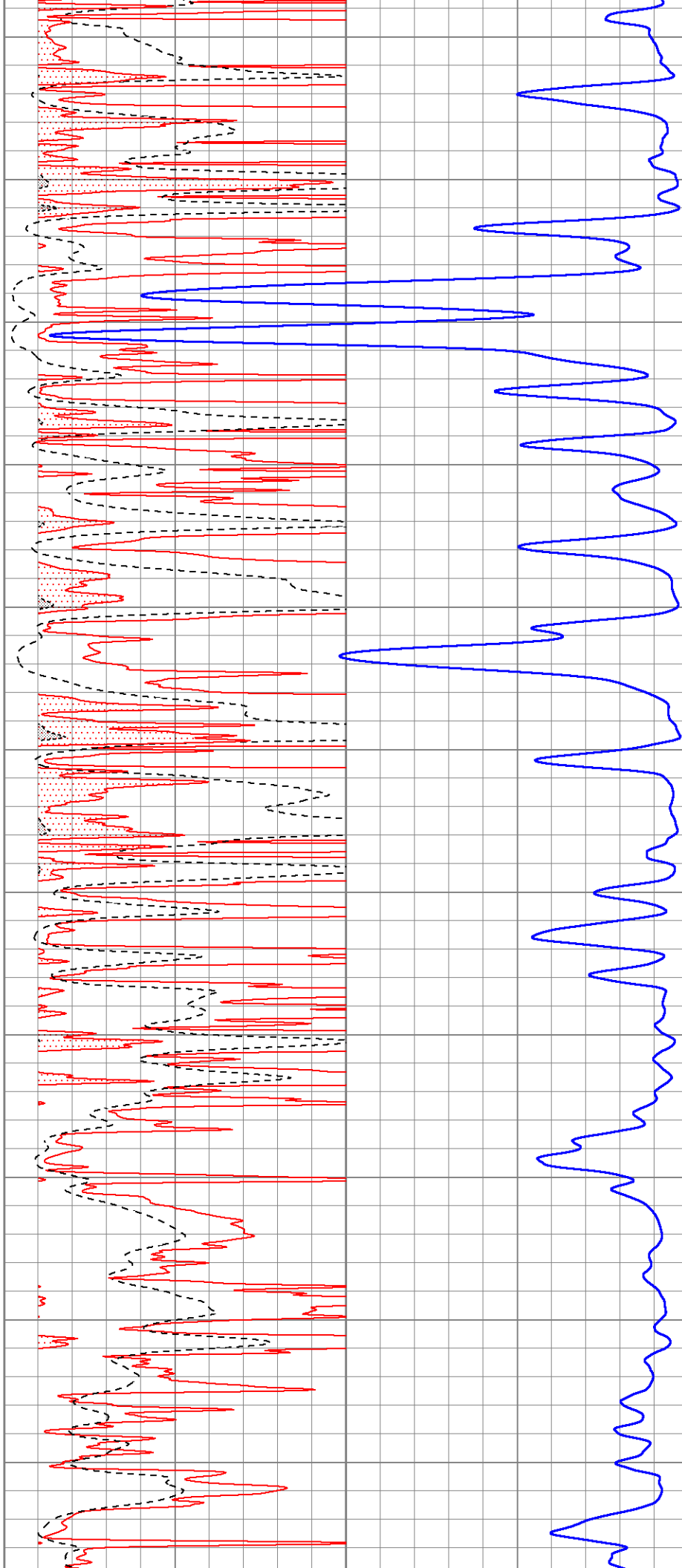
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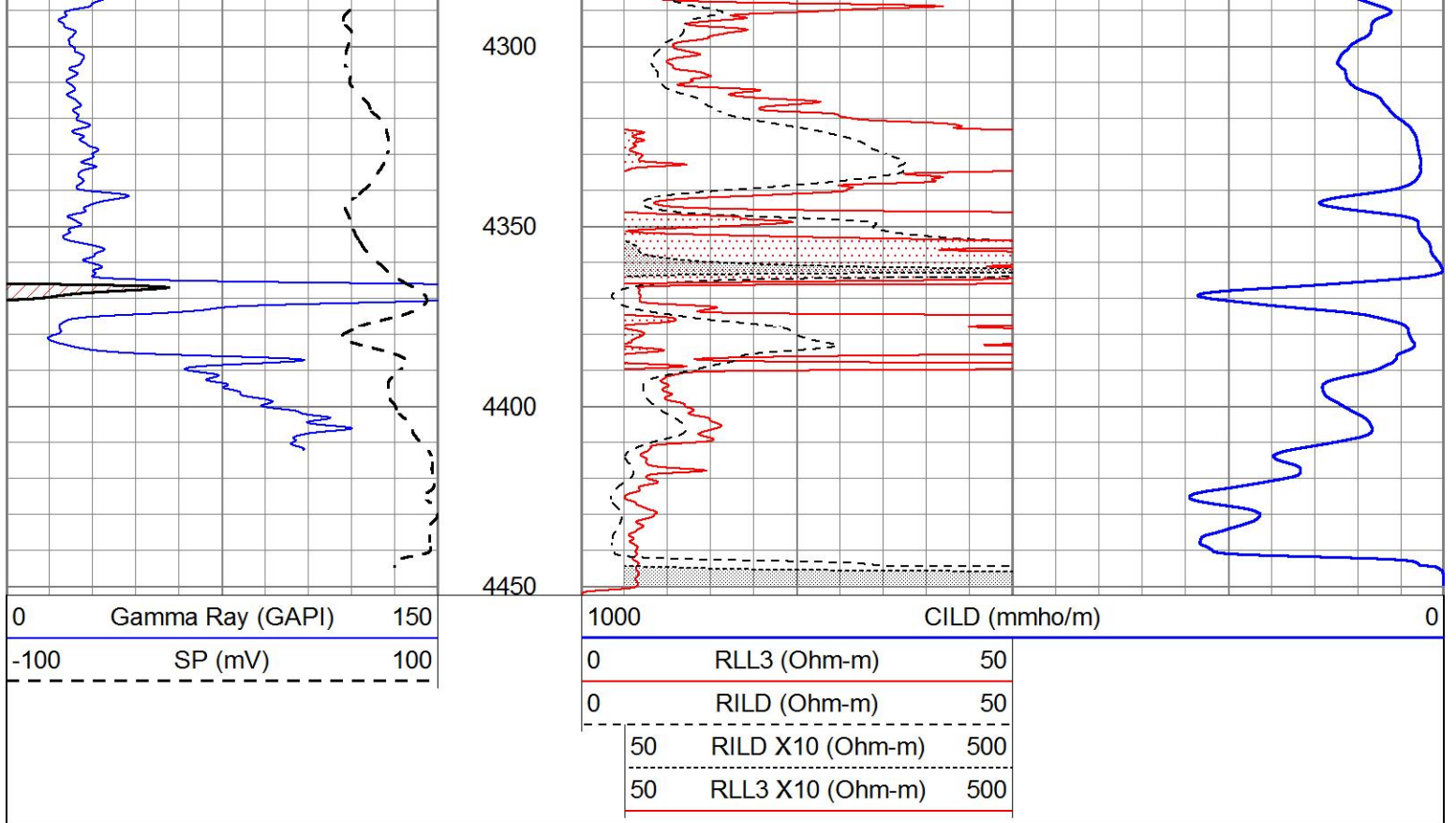
4100

4150

4200

4250



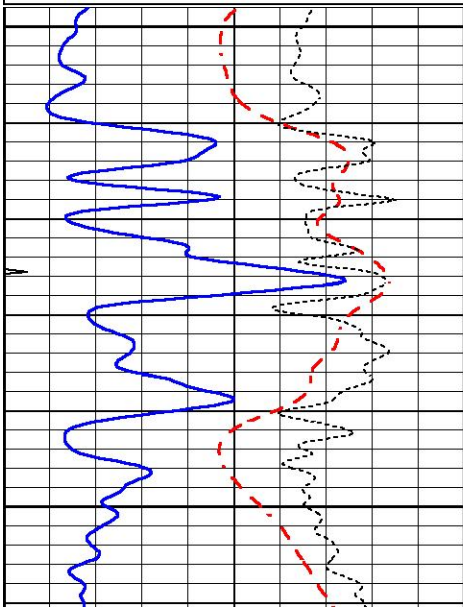


MAIN SECTION

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 Presentation Format _dil
 Dataset Creation Mon Feb 13 04:40:58 2023
 Charted by Depth in Feet scaled 1:240

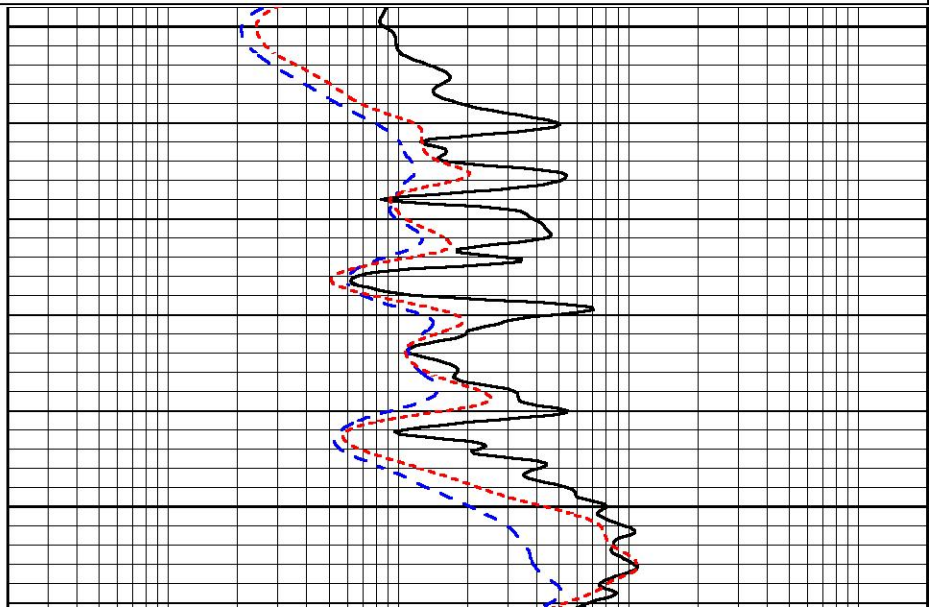
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

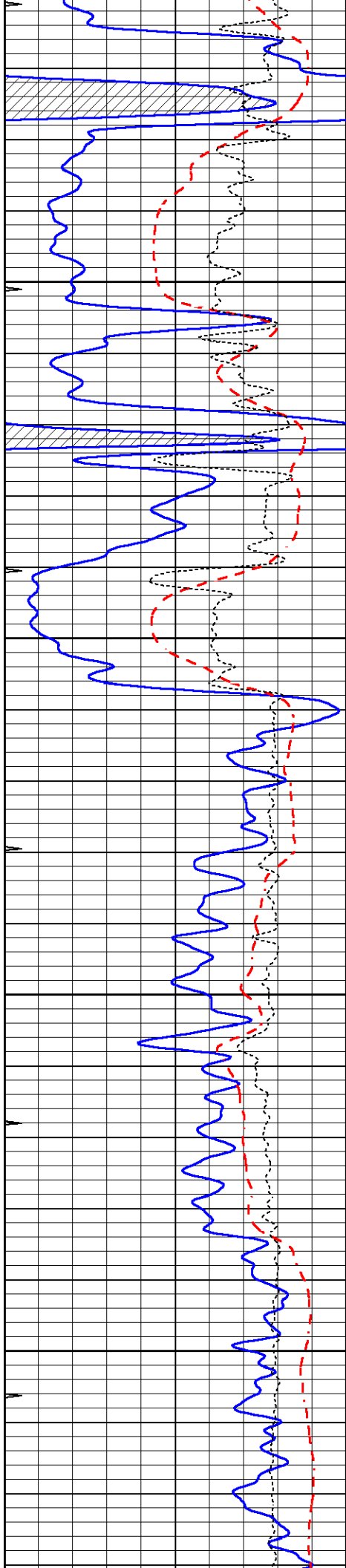
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3400

3450





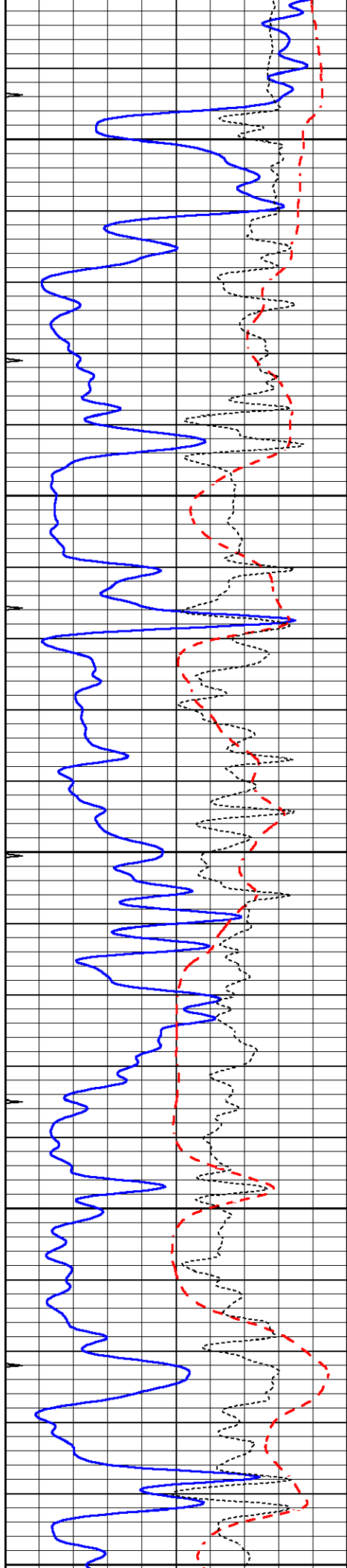
3500

3550

3600

3650





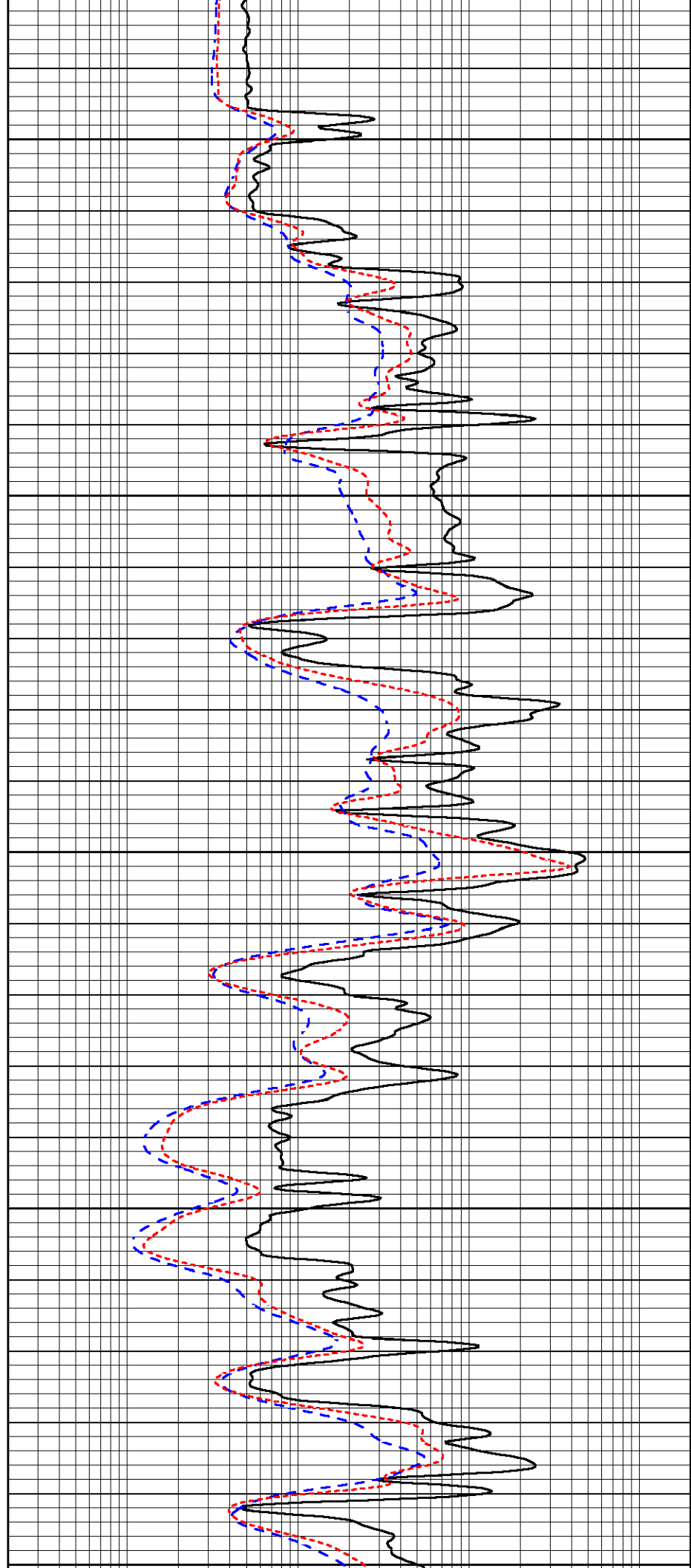
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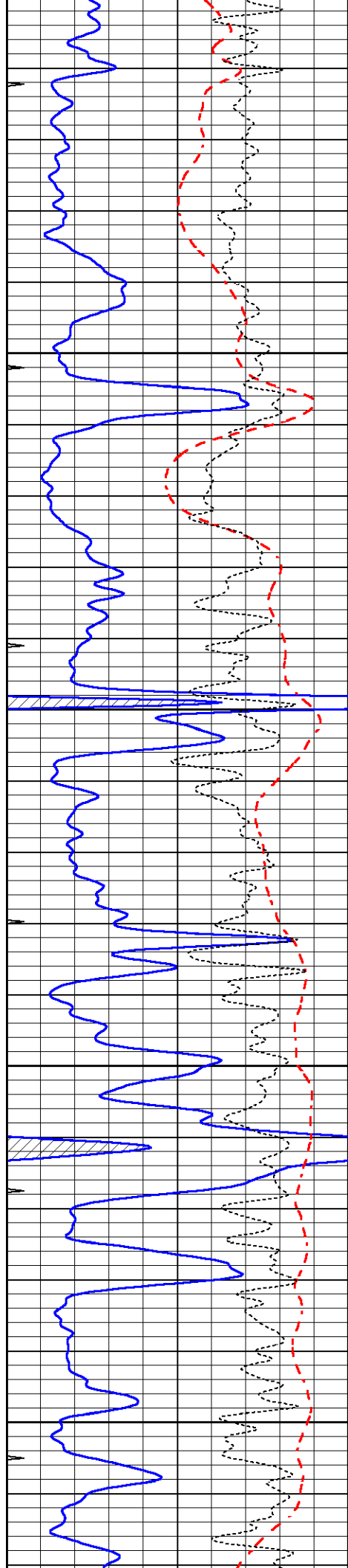
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3800

3850

3900





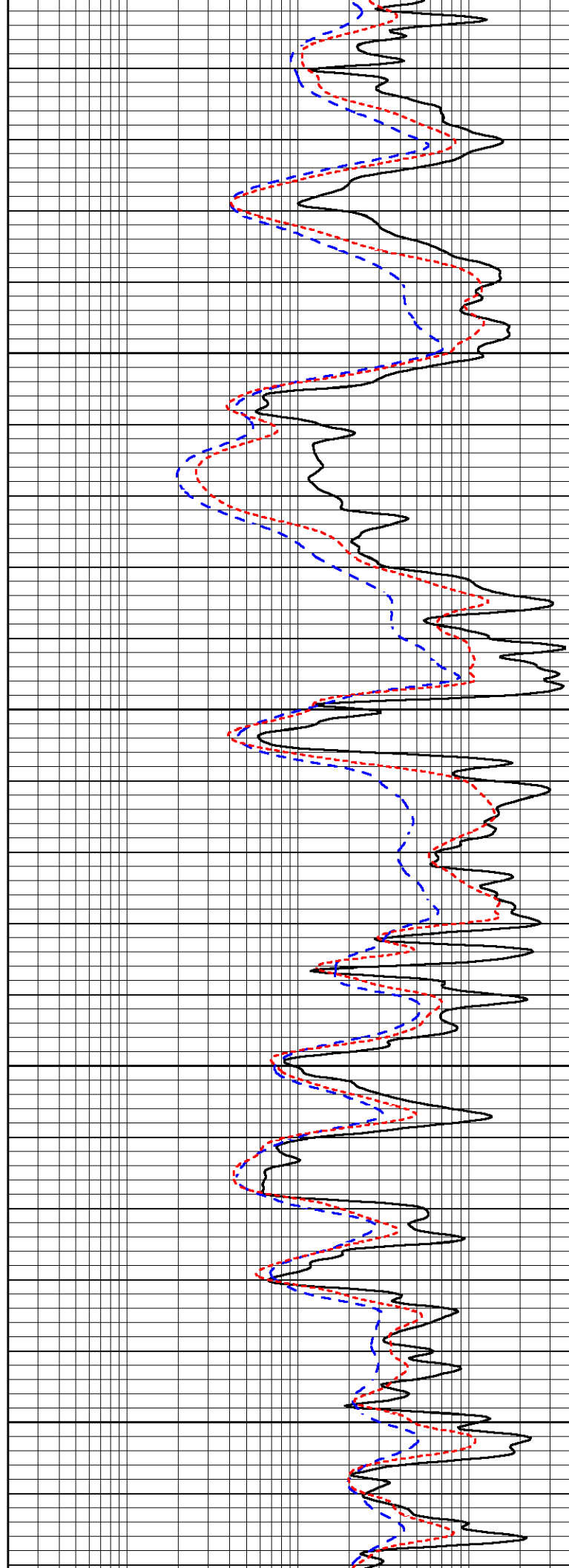
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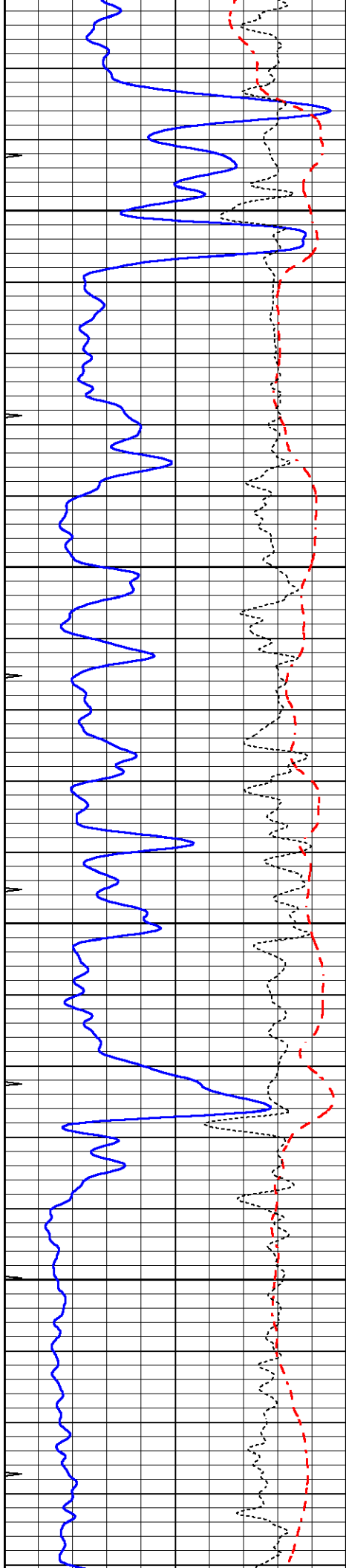
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4000

4050

4100



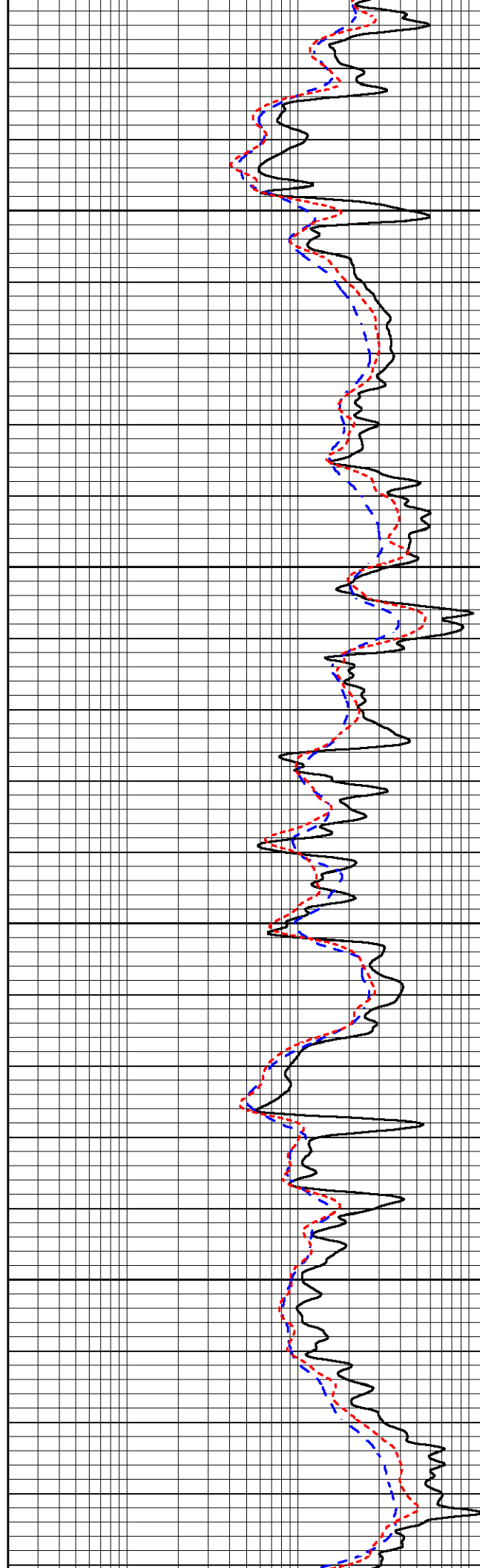


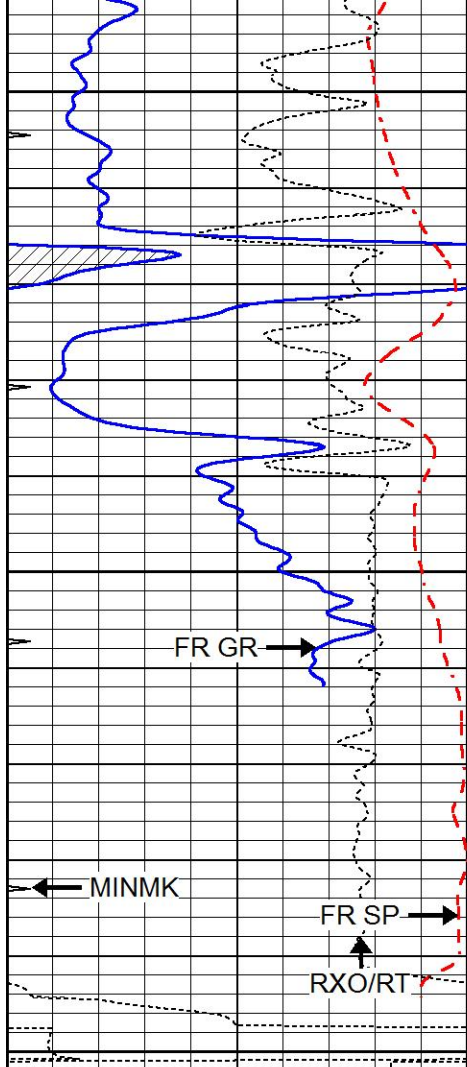
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4200

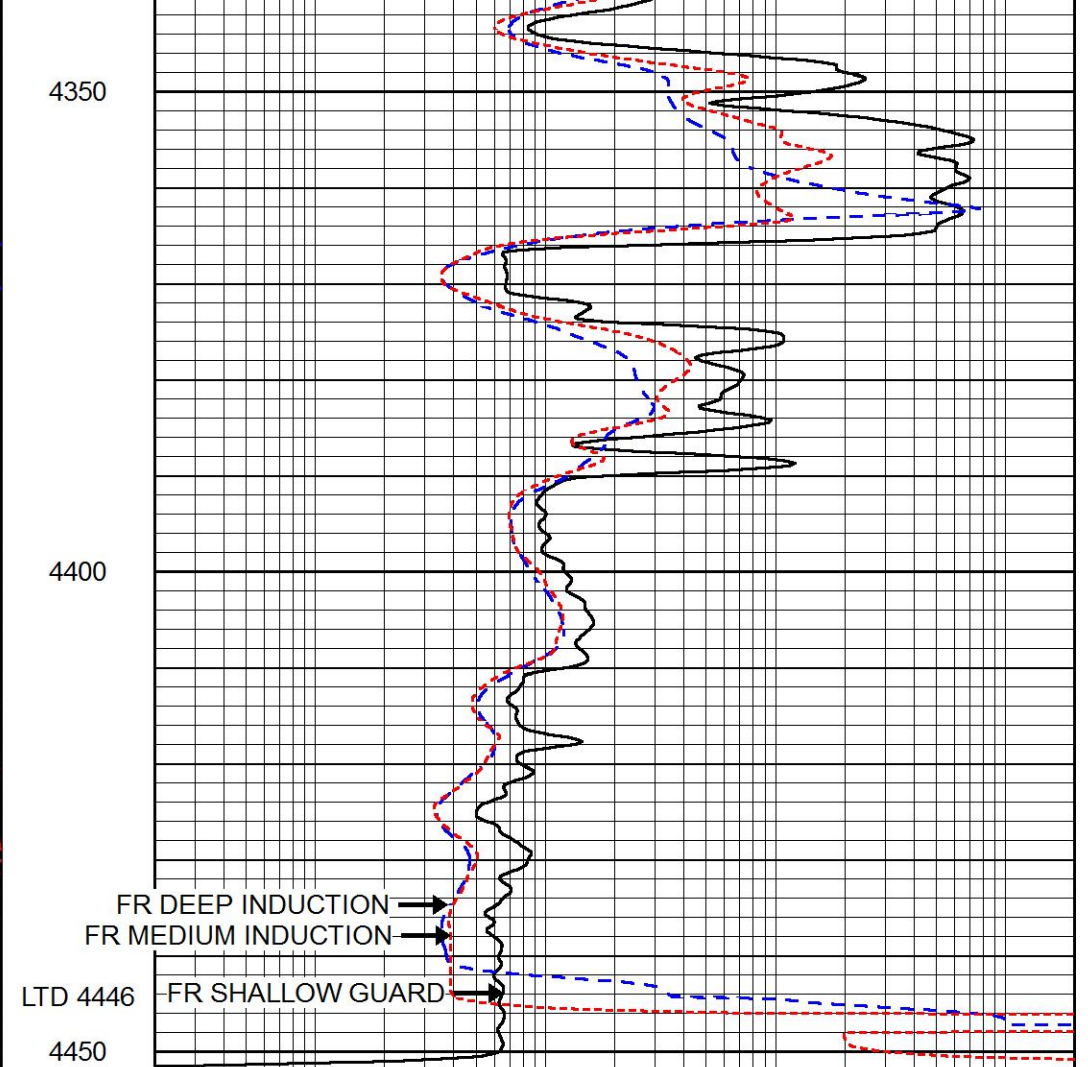
4250

4300





0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20



0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

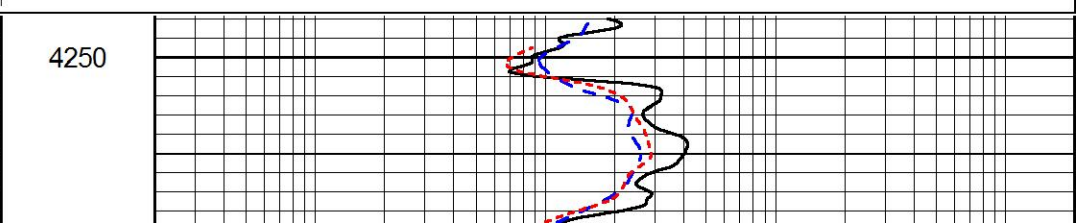
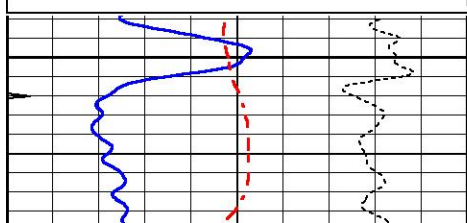


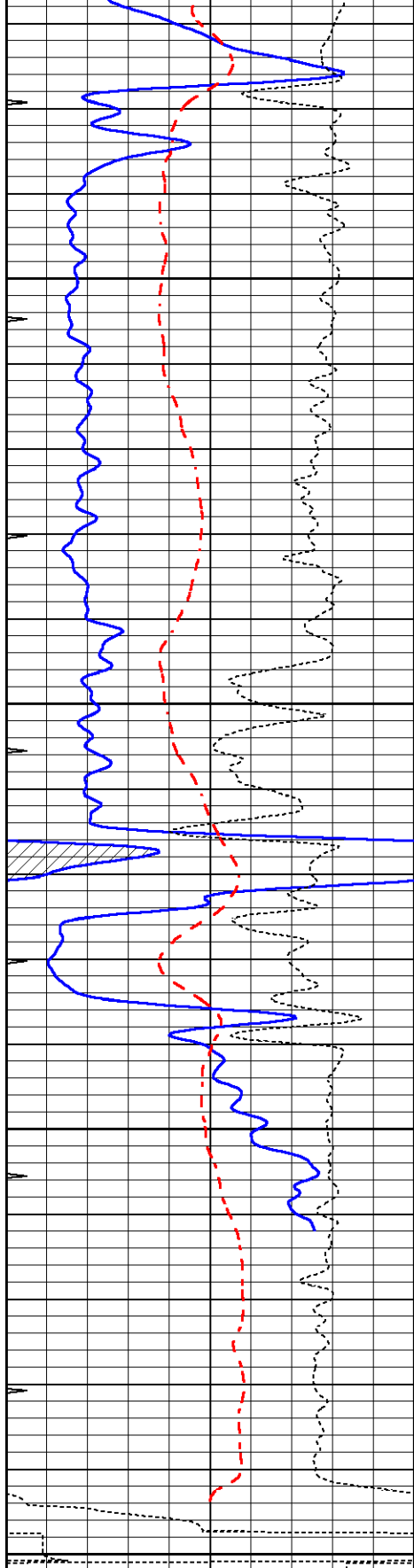
REPEAT SECTION

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 Presentation Format _dil
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 Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

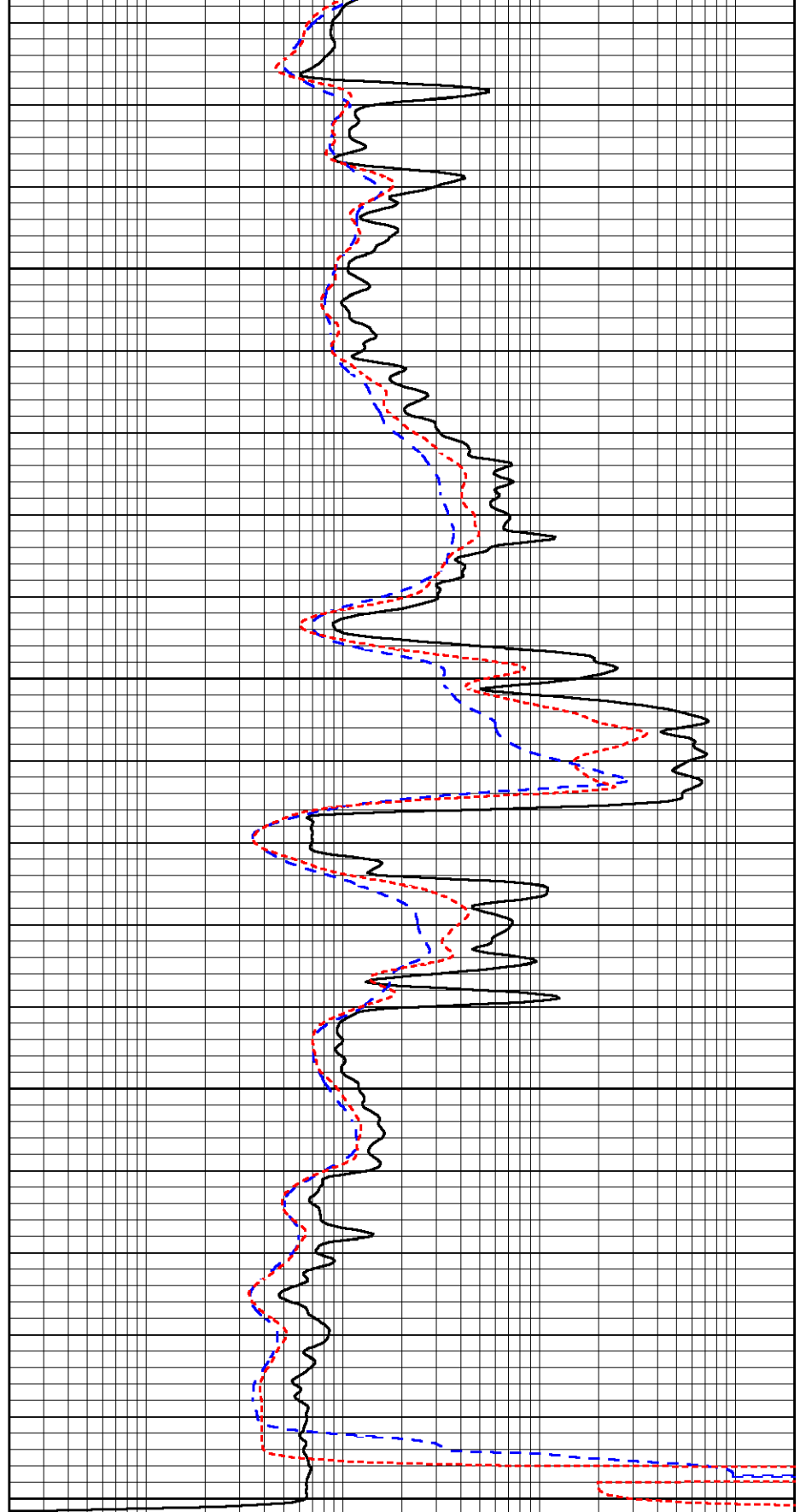
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000





0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

4300
4350
4400
4450



0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

Calibration Report

Dual Induction Calibration Report

Serial-Model: DIL7-GEAR
 Surface Cal Performed: Mon Feb 13 03:29:35 2023
 Downhole Cal Performed: Tue Jul 22 10:15:08 2008
 After Survey Verification Performed: Wed Jan 18 02:07:20 2023

Surface Calibration

Loop:	Readings			References			Results	
	Air	Loop		Air	Loop		m	b
Deep	0.019	0.660	V	0.000	400.000	mmho/m	660.000	16.000
Medium	-0.006	0.655	V	0.000	462.500	mmho/m	720.000	-36.000
Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.010	0.665	V	0.000	400.000	mmho/m	610.018	-5.925
Medium	0.009	0.655	V	0.000	400.000	mmho/m	618.983	-5.564

Downhole Calibration

Internal:	Readings			References			Results	
	Zero	Cal		Zero	Cal		m	b
Deep	0.000	0.000	mmho/m	-6.200	401.333	mmho/m	1.000	0.000
Medium	0.000	0.000	mmho/m	-1.141	472.660	mmho/m	1.000	0.000
Shallow	2.521	0.019	V	500.000	2.000	Ohm-m	200.000	0.000

After Survey Verification

Internal:	Readings			Targets			Results	
	Zero	Cal		Zero	Cal		m'	b'
Deep	0.000	1.000	mmho/m	0.000	1.000	mmho/m	1.000	0.000
Medium	0.000	1.000	mmho/m	0.000	1.000	mmho/m	1.000	0.000
Shallow	2.500	0.010	Ohm-m	500.000	2.000	Ohm-m	200.000	0.000

Litho Density Calibration Report
 Serial: 003 Model: PRB

Master Calibration

Performed Mon May 23 11:17:03 2022

	Background	Magnesium	Aluminum	Aluminum+Fe	
Window 1	1534.6	7493.5	2826.7	2582.0	cps
Window 2	1420.9	6721.0	2571.8	2369.3	cps
Window 3	1312.7	5269.1	2170.5	2053.0	cps
Window 4	355.7	361.0	357.7	357.5	cps
Long Space	0.0	5300.1	1150.9	948.4	cps
Short Space	2.8	2092.4	1420.0	1195.6	cps
Rho		1.7100	2.5900	0.0000	g/cc
Pe		2.0000	2.7500	5.7900	
Rib Angle	: 45.8	Rib Slope	: 1.027	Density/Spine Ratio	: 0.559
Spine Angle	: 75.8	Spine Slope	: 3.939	Spine Intercept	: -21.5

Before Survey Verification

Performed Wed Dec 31 18:00:00 1969

Window 1	0.0	0.0	0.0	0.0	cps
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Window 2	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho		0.0000	0.0000	0.0000	g/cc
Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	

After Survey Verification		Performed Wed Dec 31 18:00:00 1969			
Window 1	0.0	0.0	0.0	0.0	cps
Window 2	0.0	0.0	0.0	0.0	cps
Window 3	0.0	0.0	0.0	0.0	cps
Window 4	0.0	0.0	0.0	0.0	cps
Long Space	0.0	0.0	0.0	0.0	cps
Short Space	0.0	0.0	0.0	0.0	cps
Measured Rho		0.0000	0.0000	0.0000	g/cc
Measured Correction		0.0000	0.0000	0.0000	g/cc
Measured Pe			0.0000	0.0000	

Compensated Neutron Calibration Report

Serial Number: 6I
Tool Model: G

CALIBRATION						
	Detector	Readings		Target		Normalization
	Short Space	1.00	cps	1.00	cps	1.0000
	Long Space	1.00	cps	1.00	cps	1.0000

PRE-SURVEY VERIFICATION						
	Detector	Readings		Measured		Target
1)	Short Space		cps			
	Long Space		cps	pu		pu
2)	Short Space		cps			
	Long Space		cps	pu		
3)	Short Space		cps			
	Long Space		cps	pu		

POST-SURVEY VERIFICATION						
	Detector	Readings		Measured		Target
1)	Short Space		cps			
	Long Space		cps	pu		pu
2)	Short Space		cps			
	Long Space		cps	pu		pu
3)	Short Space		cps			
	Long Space		cps	pu		pu

Gamma Ray Calibration Report

Serial Number: GR6
Tool Model: OPEN
Performed: Wed Jan 25 05:12:22 2023

Performed:	Wed Jan 25 05:13:23 2023	
Calibrator Value:	150.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	276.0	cps
Sensitivity:	0.8500	GAPI/cps