



# DUAL INDUCTION LOG

Company PHILLIPS EXPLORATION COMPANY L.C.  
 Well GEYER #3-34  
 Field SALINE VALLEY  
 County GRAHAM  
 State KANSAS

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 Well GEYER #3-34  
 Field SALINE VALLEY  
 County GRAHAM State KANSAS

Location: API #: 15-065-24208-0000  
 330' FSL & 330' FEL  
 SEC 34 TWP 10S RGE 24W  
 Permanent Datum GROUND LEVEL Elevation 2360  
 Log Measured From KELLY BUSHING 5' A.G.L.  
 Drilling Measured From KELLY BUSHING  
 Other Services CDL/CNL/ML  
 Elevation K.B. 2365  
 D.F. 2363  
 G.L. 2360

Date	11/04/20
Run Number	ONE
Depth Driller	4000
Depth Logger	3999
Bottom Logged Interval	3997
Top Log Interval	00
Casing Driller	8 5/8" @ 210
Casing Logger	210
Bit Size	7 7/8"
Type Fluid in Hole	CHEMICAL MUD
Density / Viscosity	9.1/62
pH / Fluid Loss	11.0/5.4
Source of Sample	FLOWLINE
Rm @ Meas. Temp	1.4 @ 60F
Rmf @ Meas. Temp	1.05 @ 60F
Rmc @ Meas. Temp	1.72 @ 60F
Source of Rmf / Rmc	MEASURED
Rm @ BHT	.72 @ 116F
Time Circulation Stopped	2 HOURS
Time Logger on Bottom	////
Maximum Recorded Temperature	116F
Equipment Number	1523
Location	HAYS, KANSAS
Recorded By	GUS PFANENSTIEL
Witnessed By	PAT DEENIHAN

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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: WAKEENEY NORTH TO B RD.  
 6 WEST TO 200 RD., NORTH TO ROAD A, EAST 1/8, NORTH INTO.

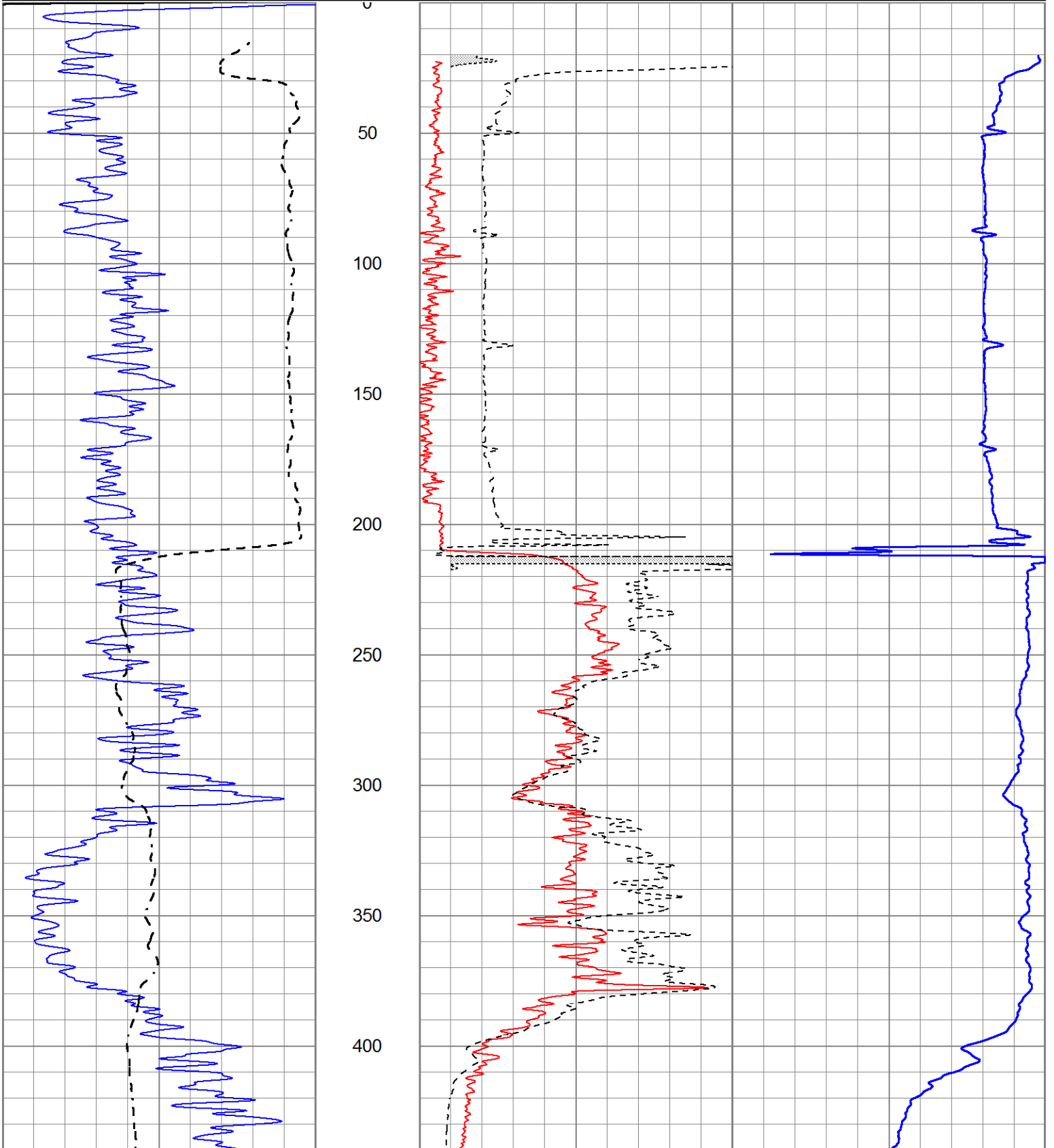


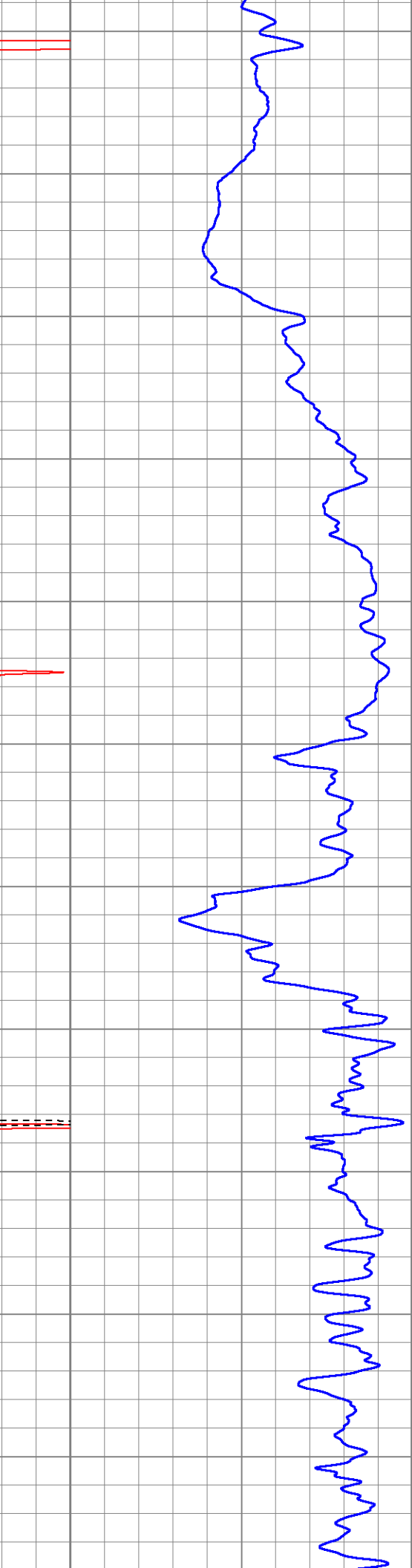
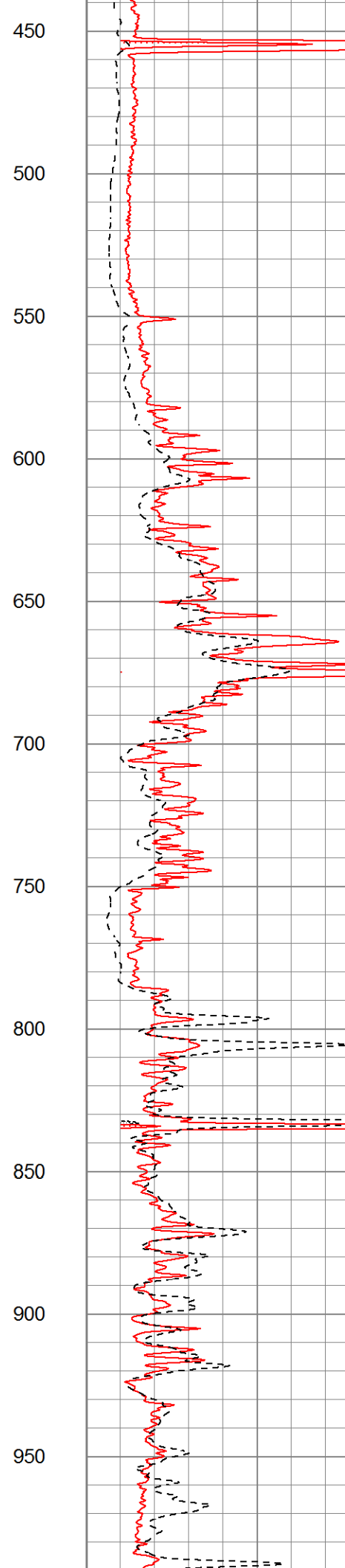
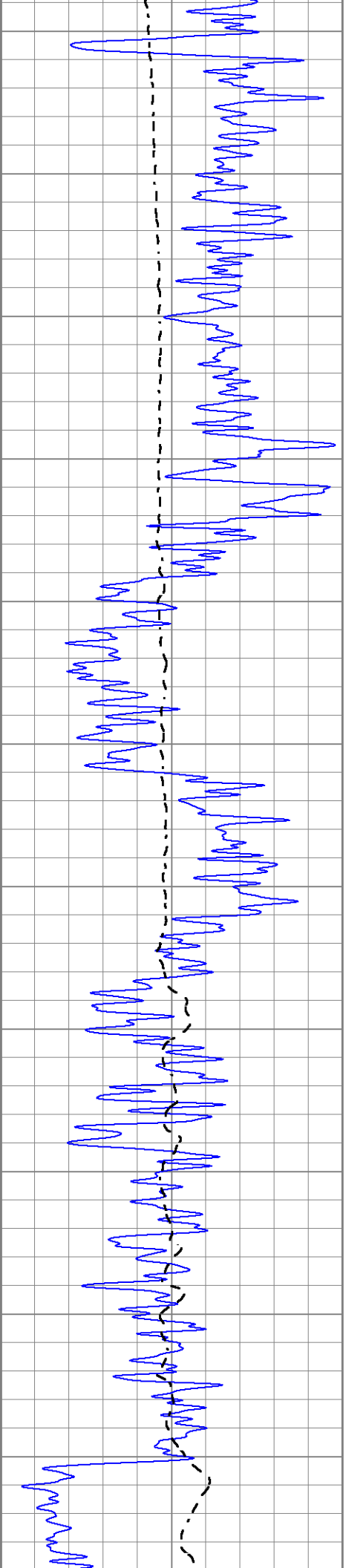
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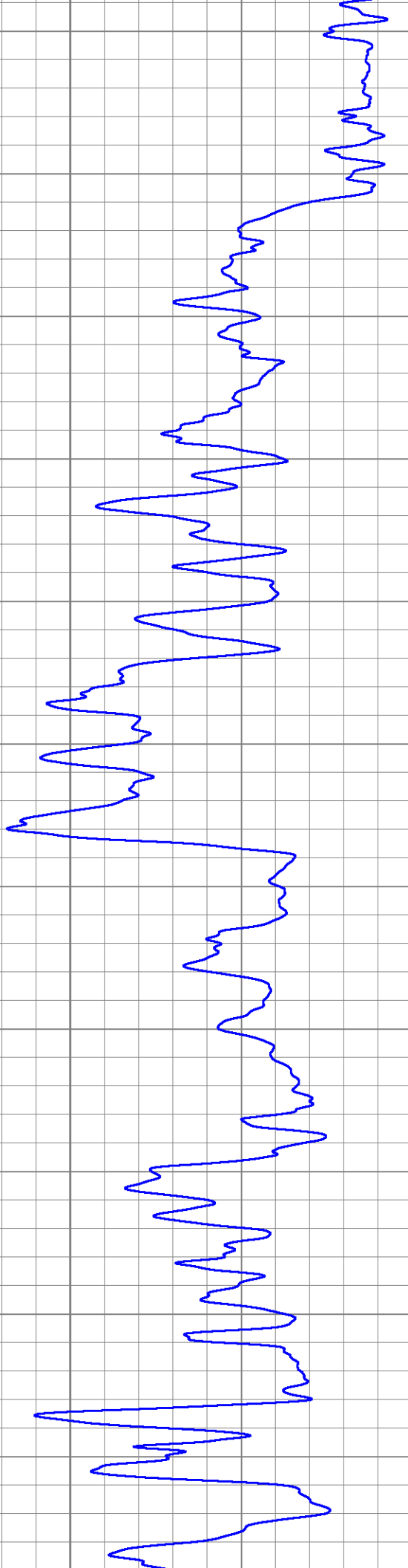
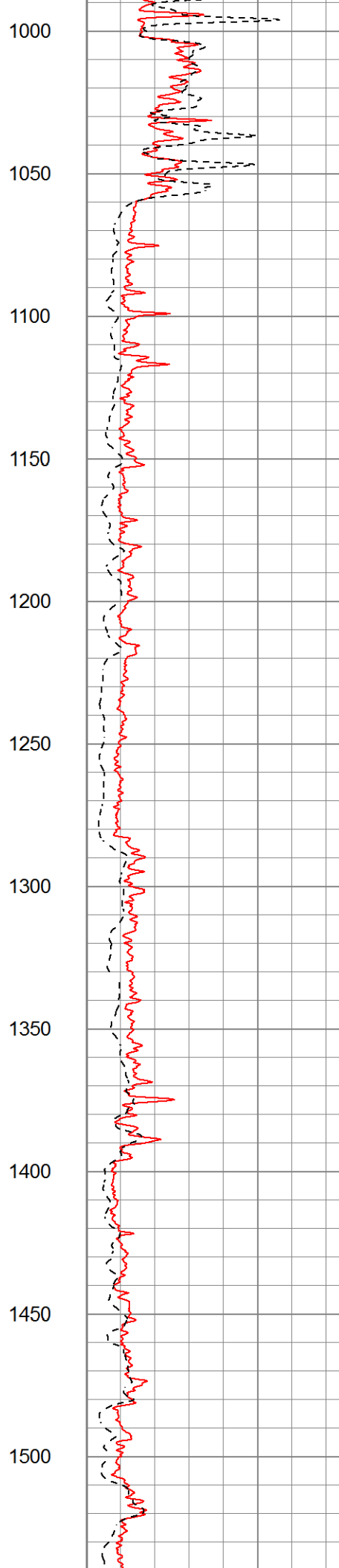
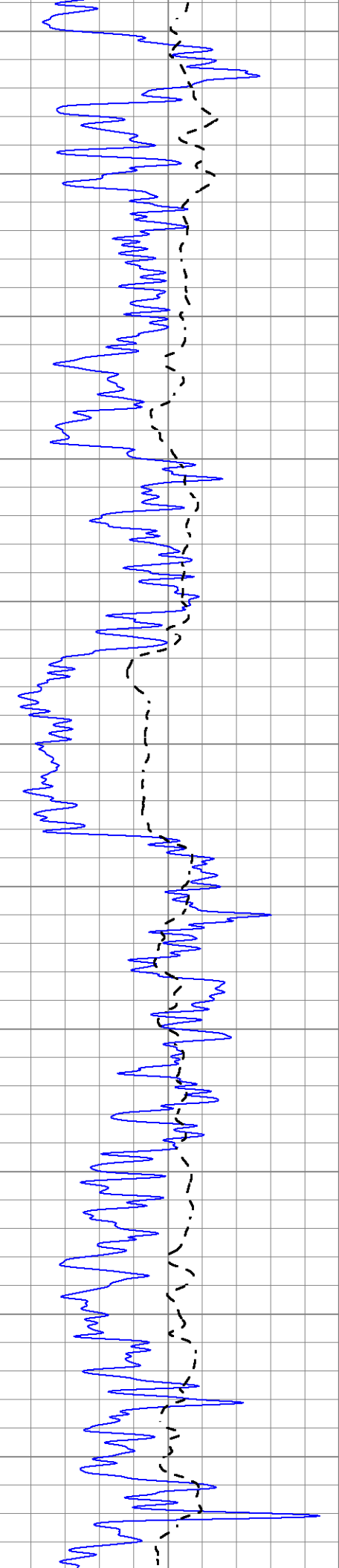
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 Presentation Format \_dil2  
 Dataset Creation Thu Nov 04 05:14:35 2021  
 Charted by Depth in Feet scaled 1:600

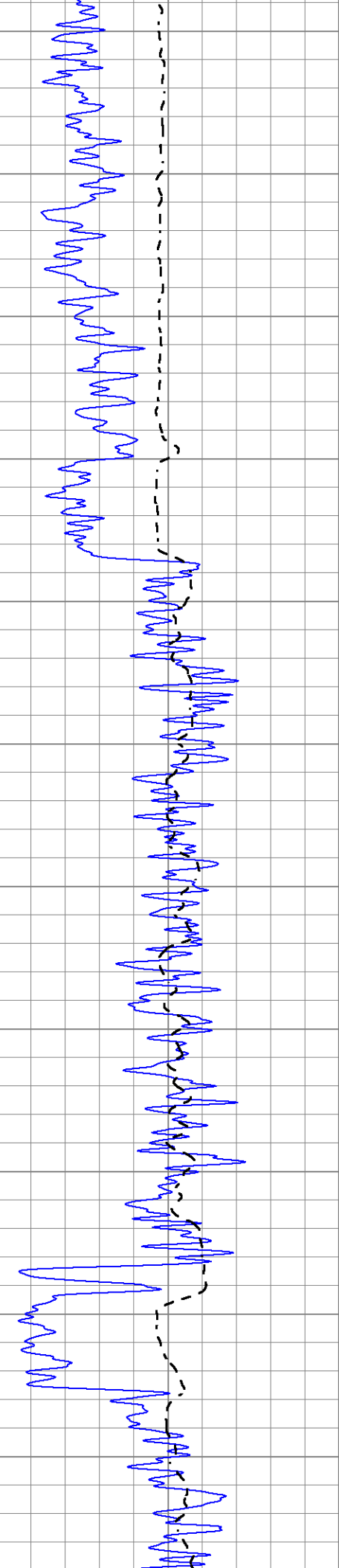
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-100	SP (mV)	100

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

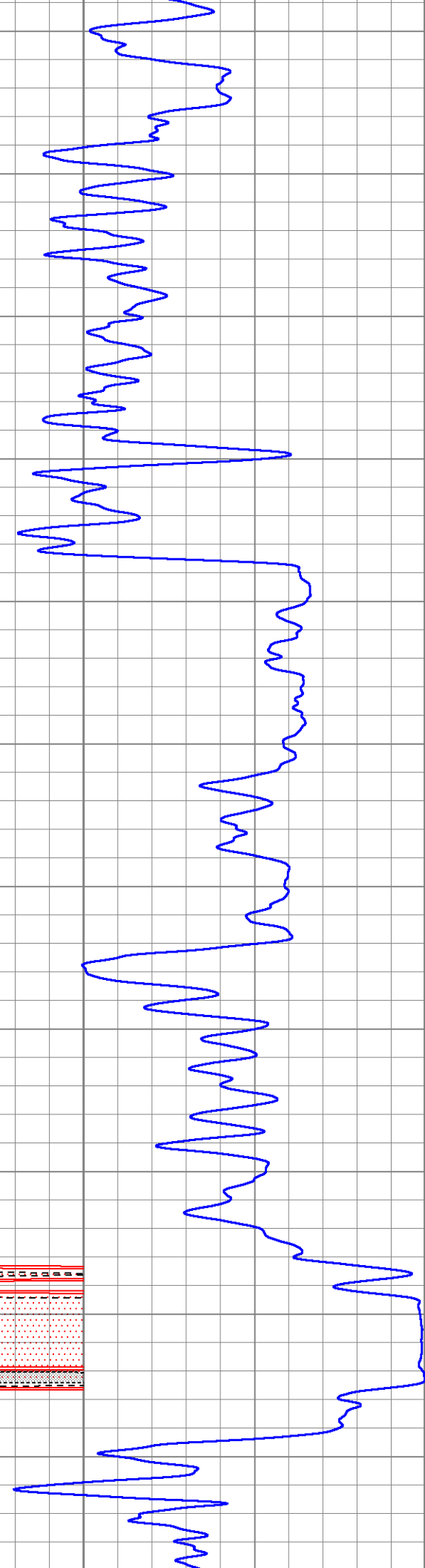
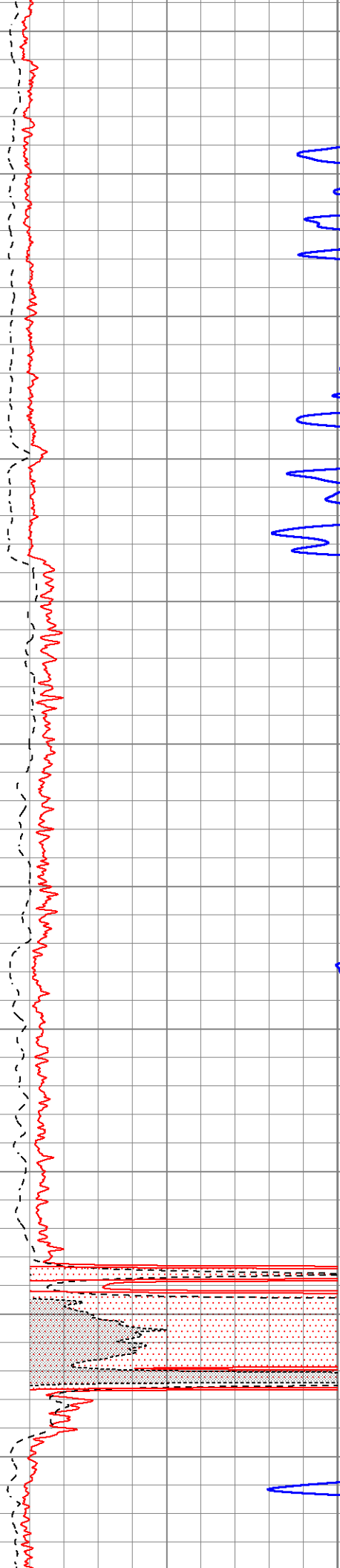


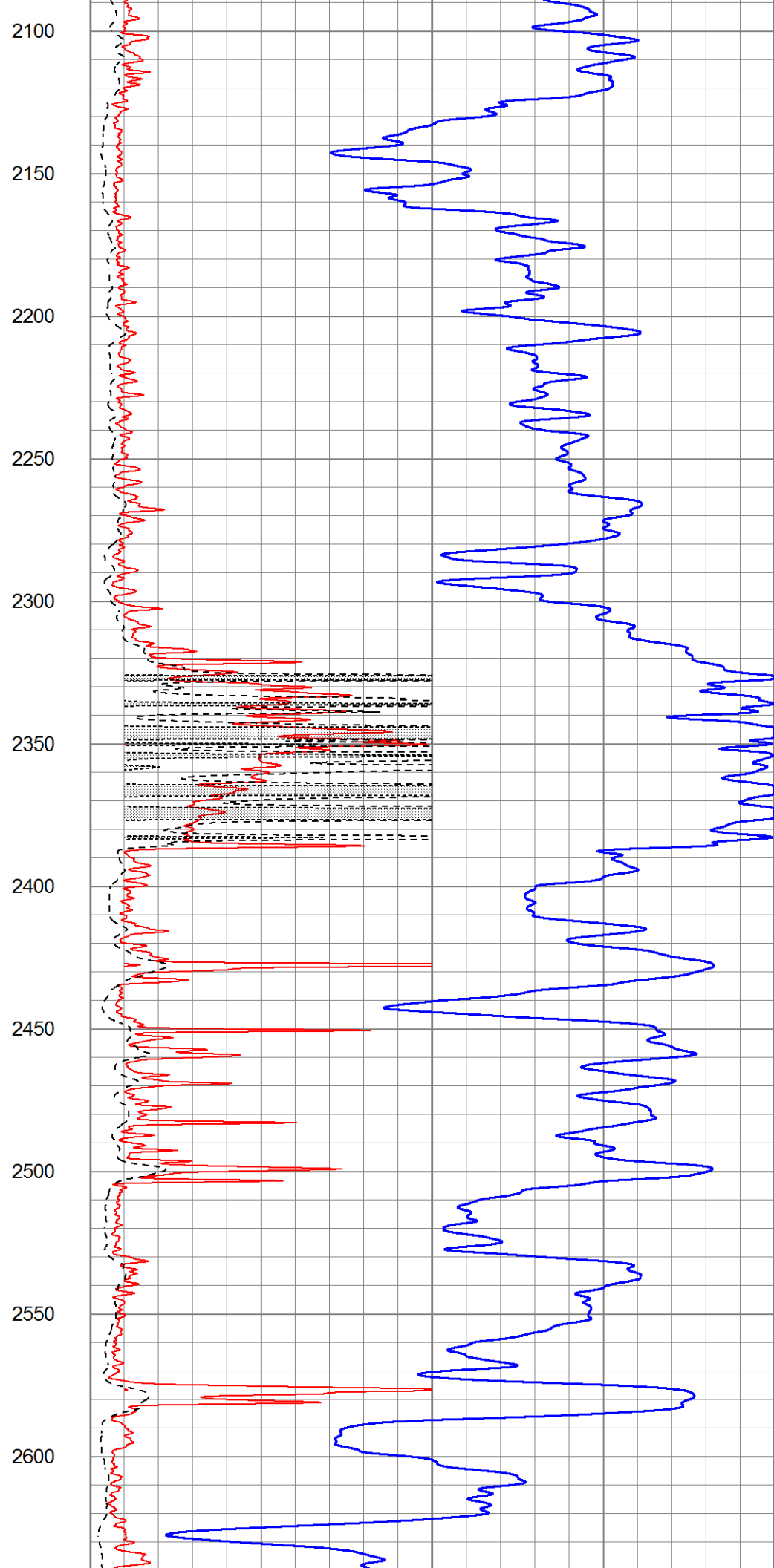
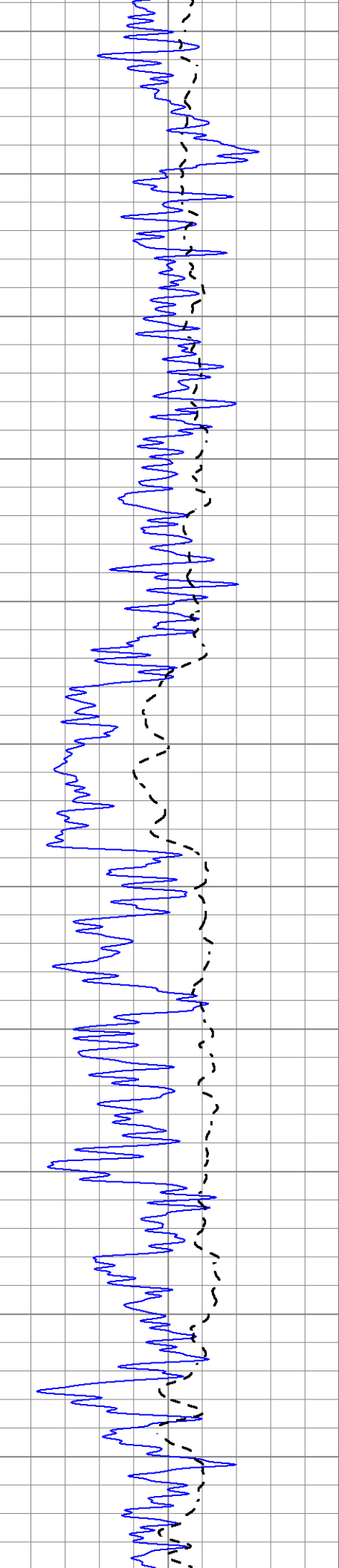


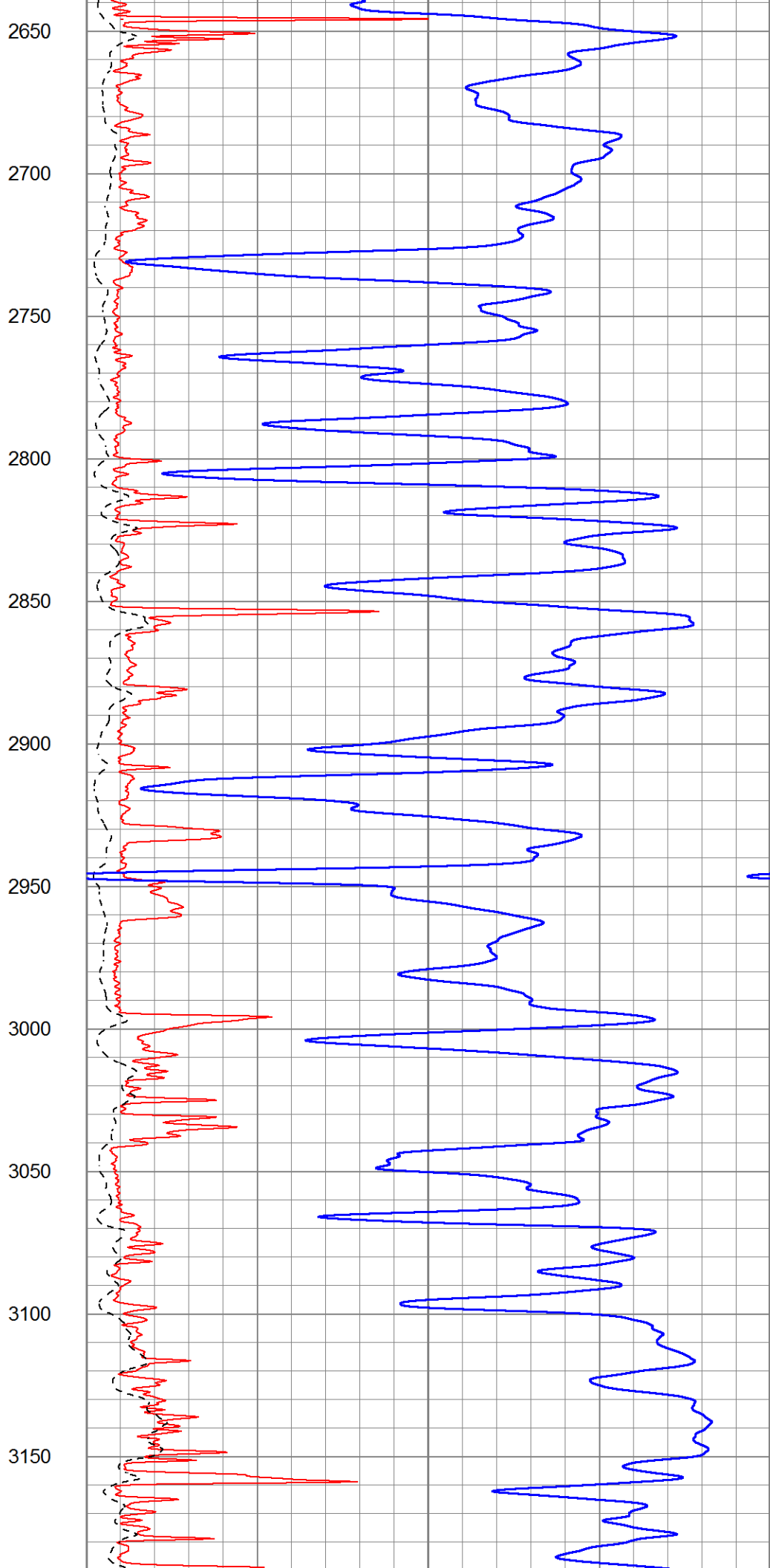
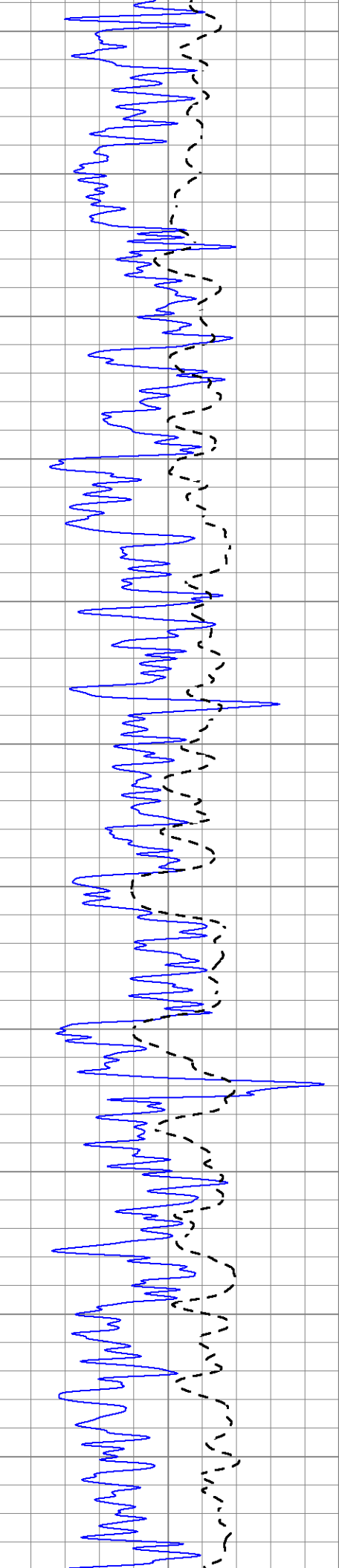


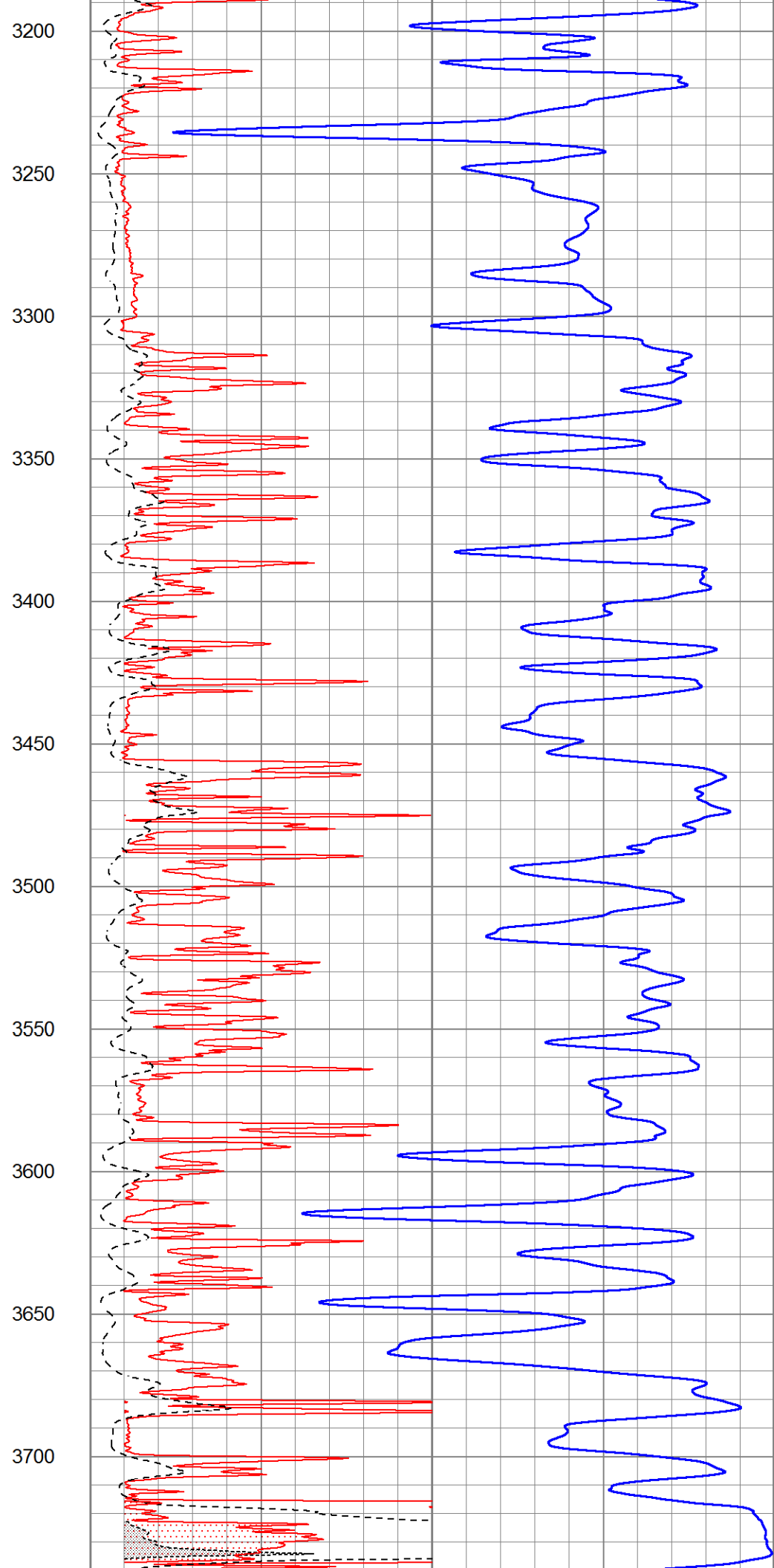
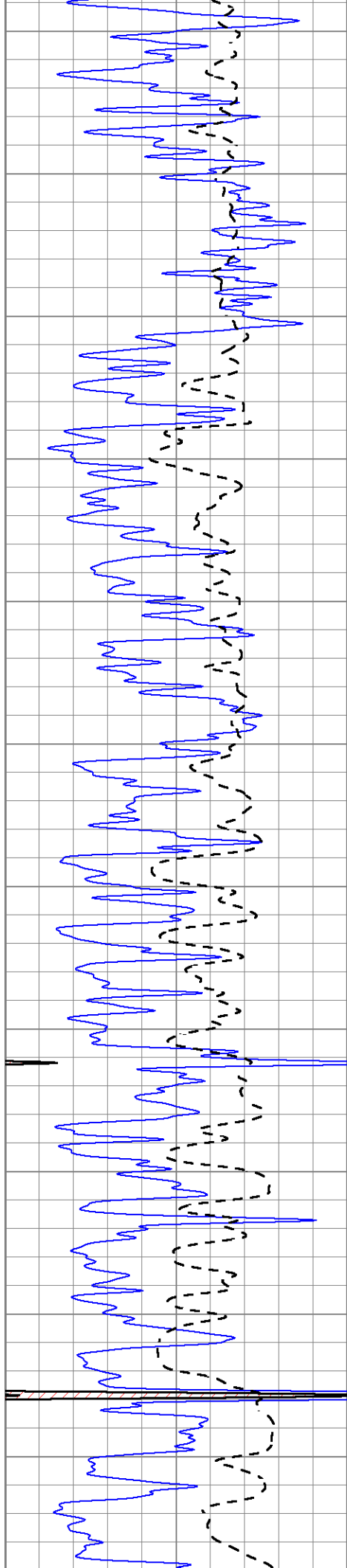


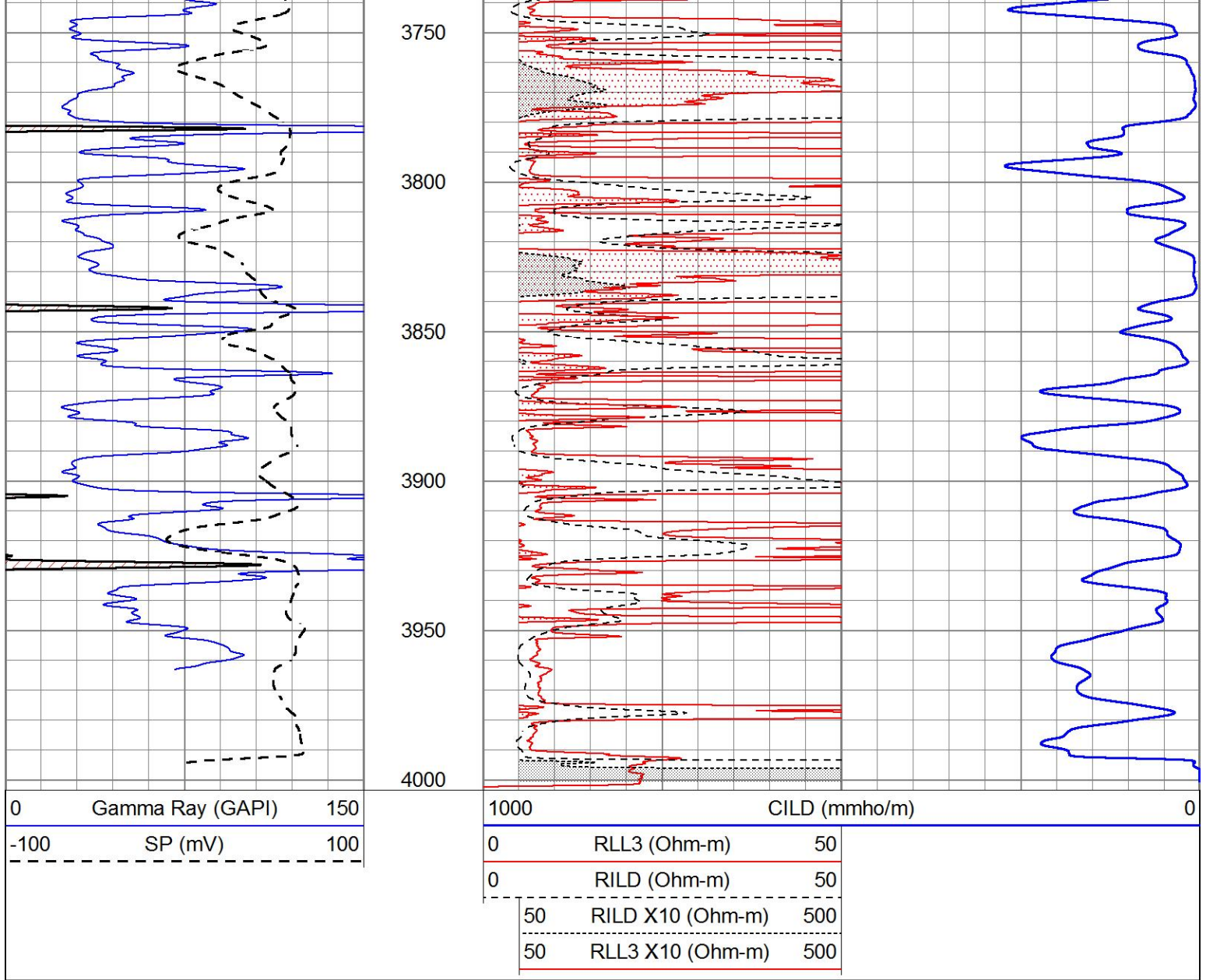
1550  
1600  
1650  
1700  
1750  
1800  
1850  
1900  
1950  
2000  
2050









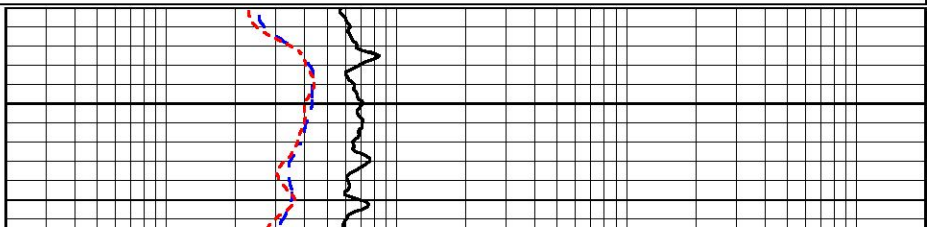
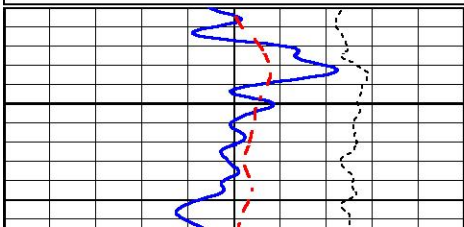


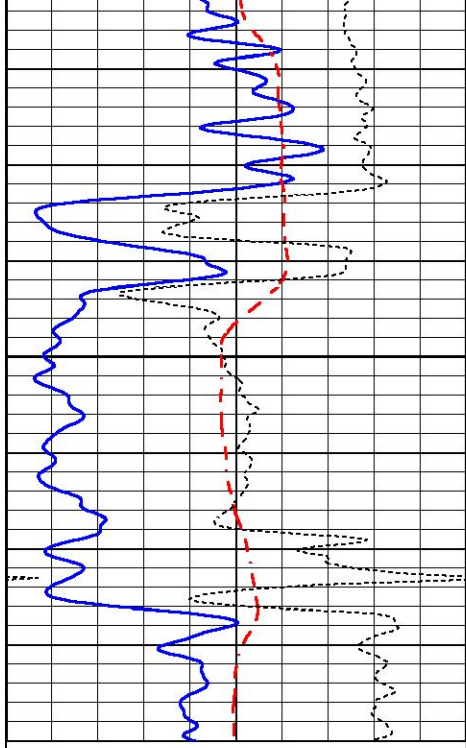
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 Dataset Creation Thu Nov 04 05:14:35 2021  
 Charted by Depth in Feet scaled 1:240

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

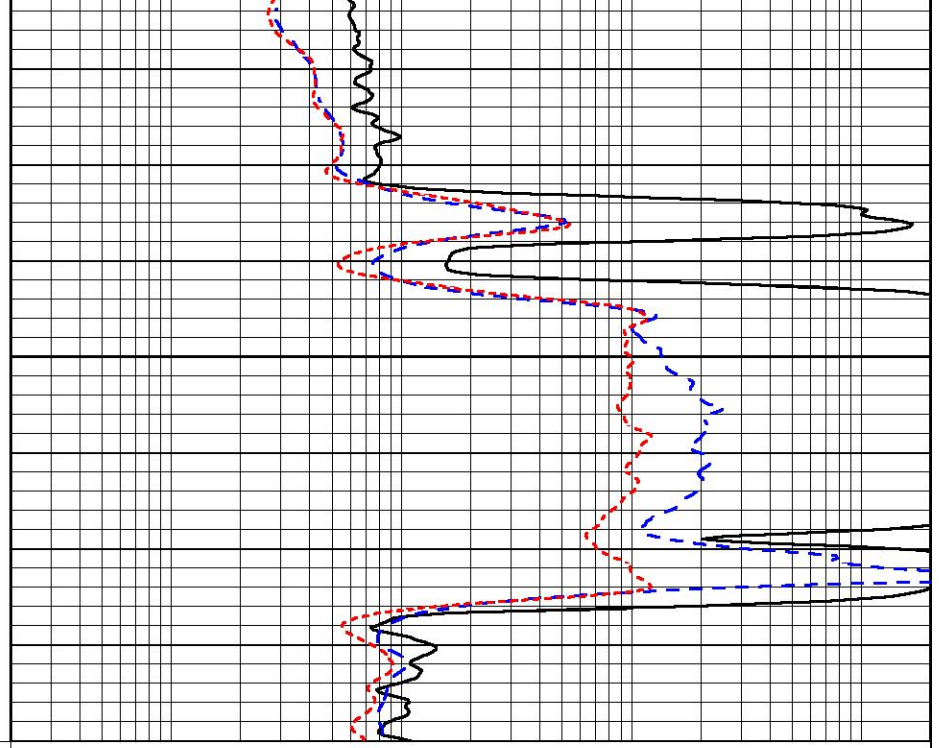
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000





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

2000



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

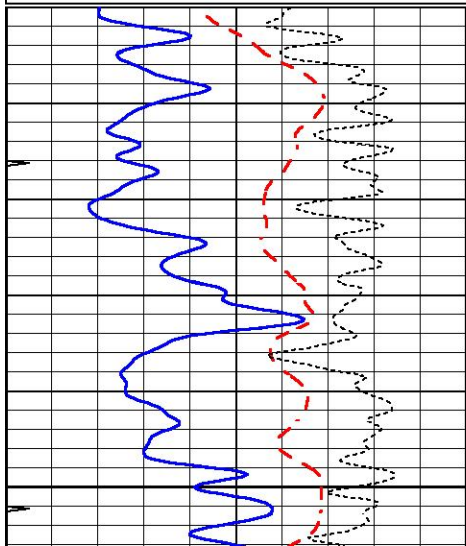


# MAIN PASS

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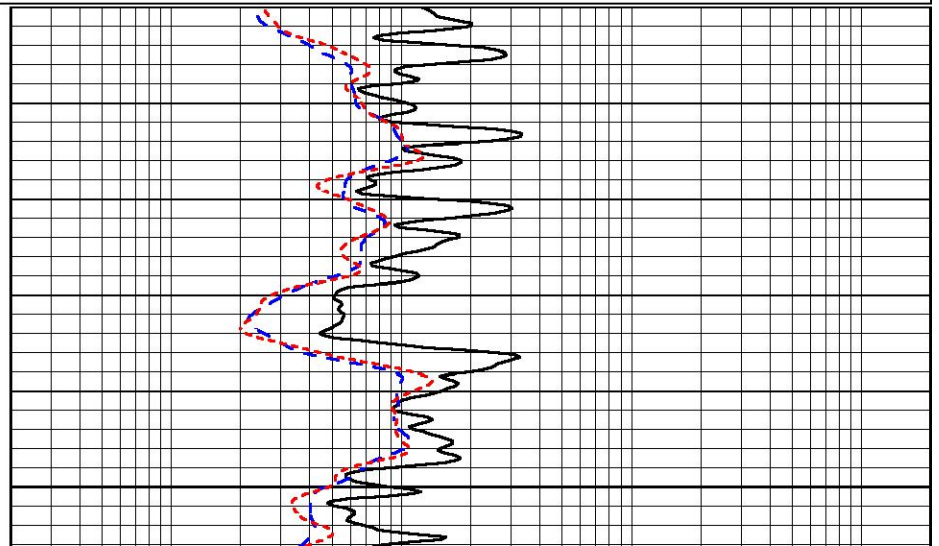
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-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

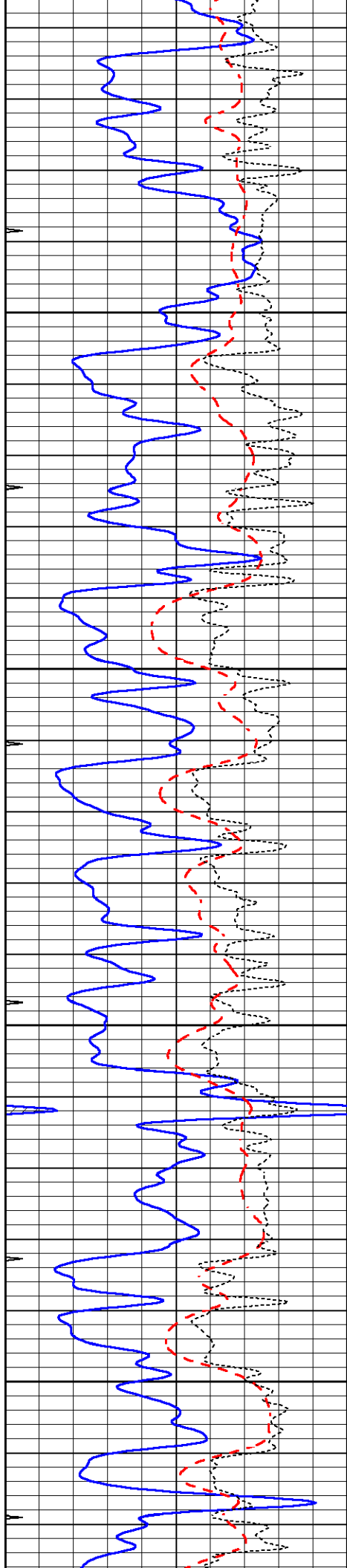
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3500

3400



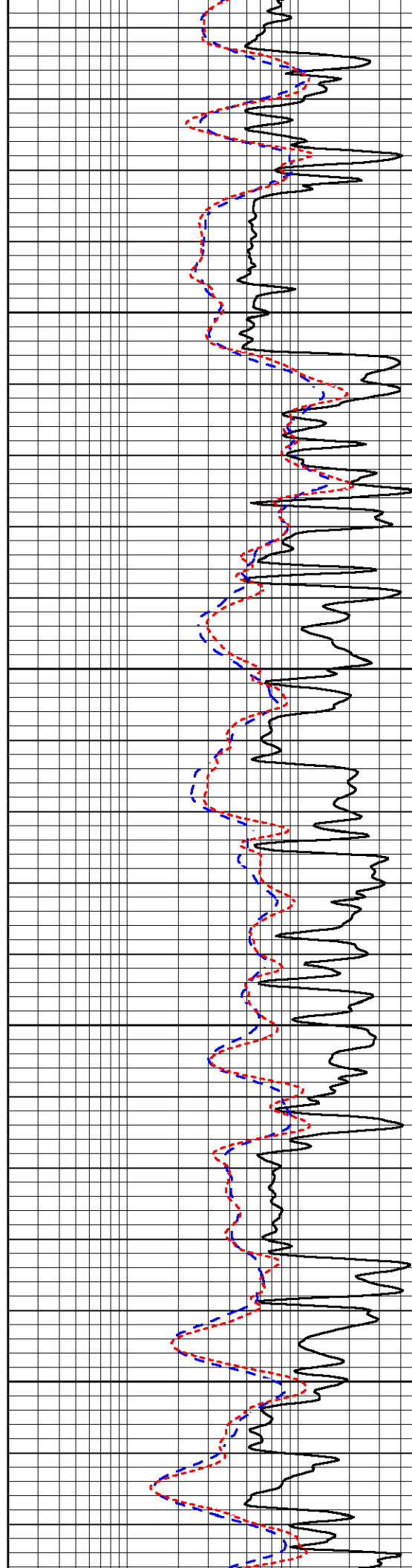


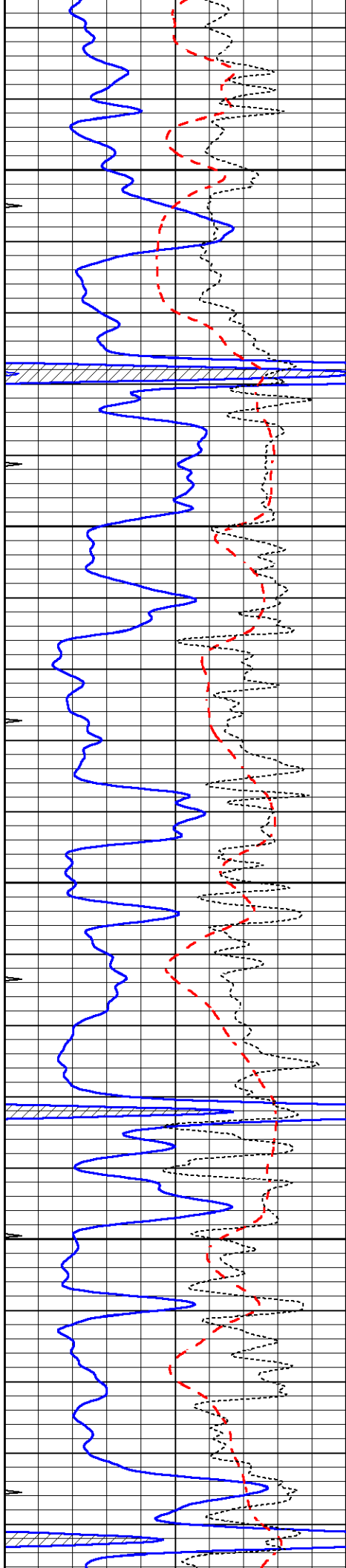
3450

3500

3550

3600



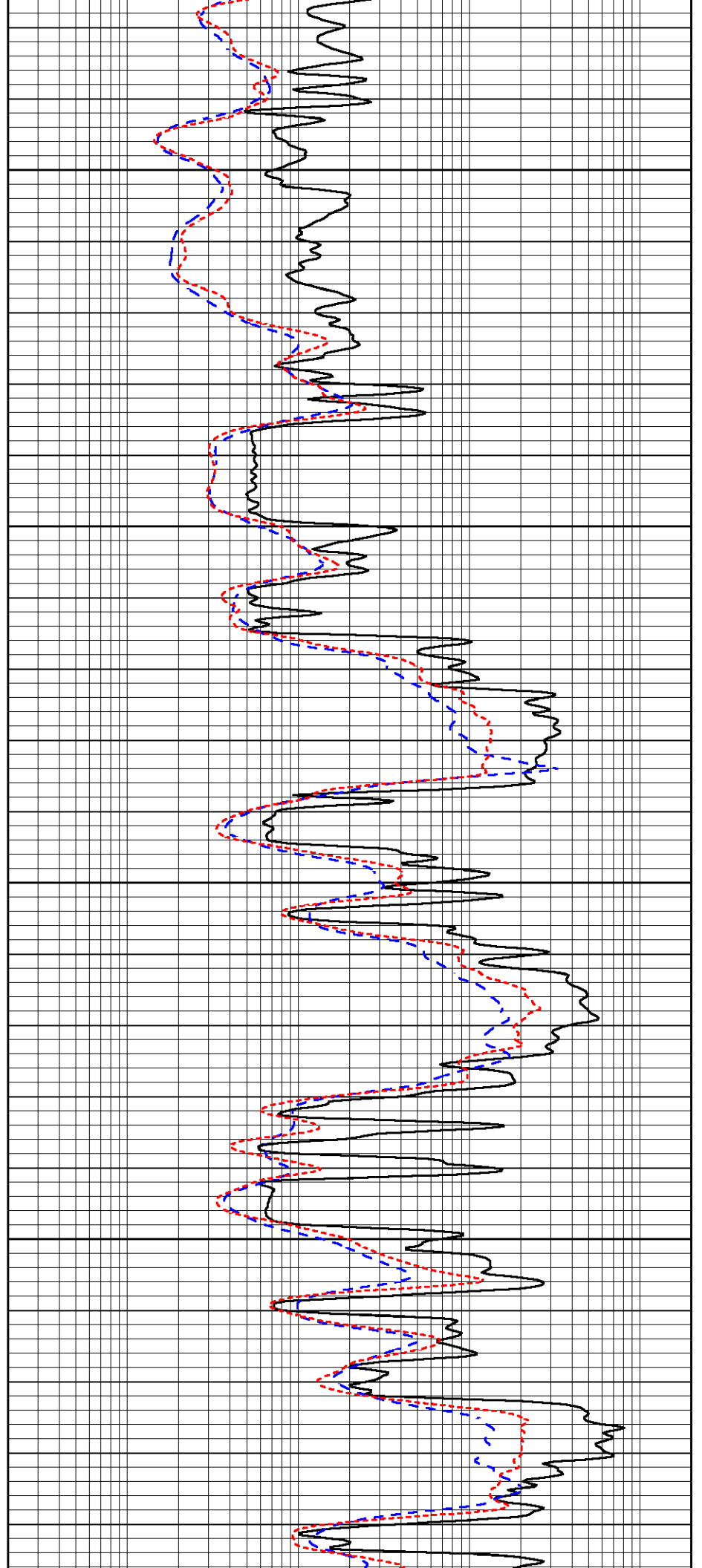


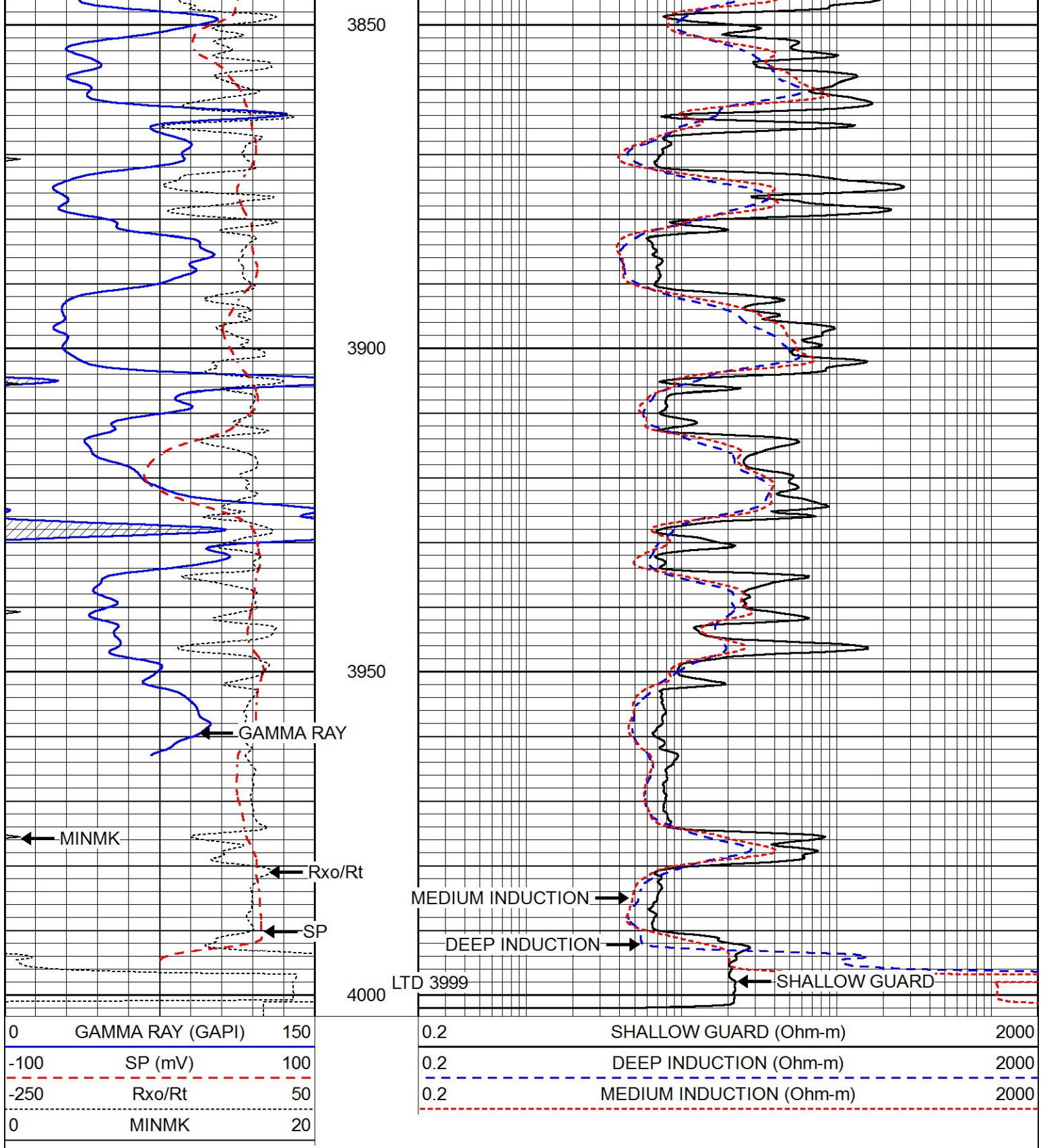
3650

3700

3750

3800



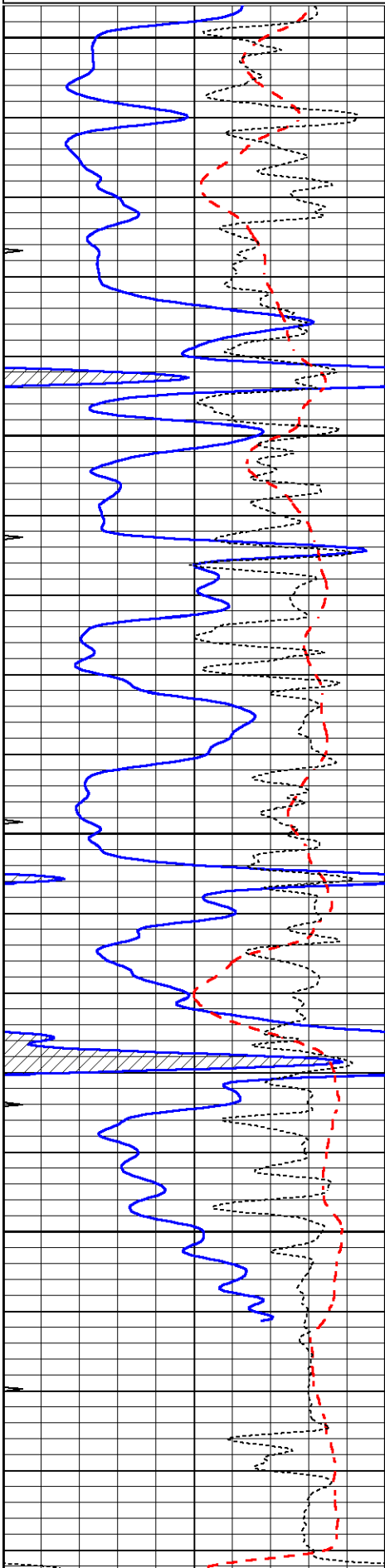


# REPEAT SECTION

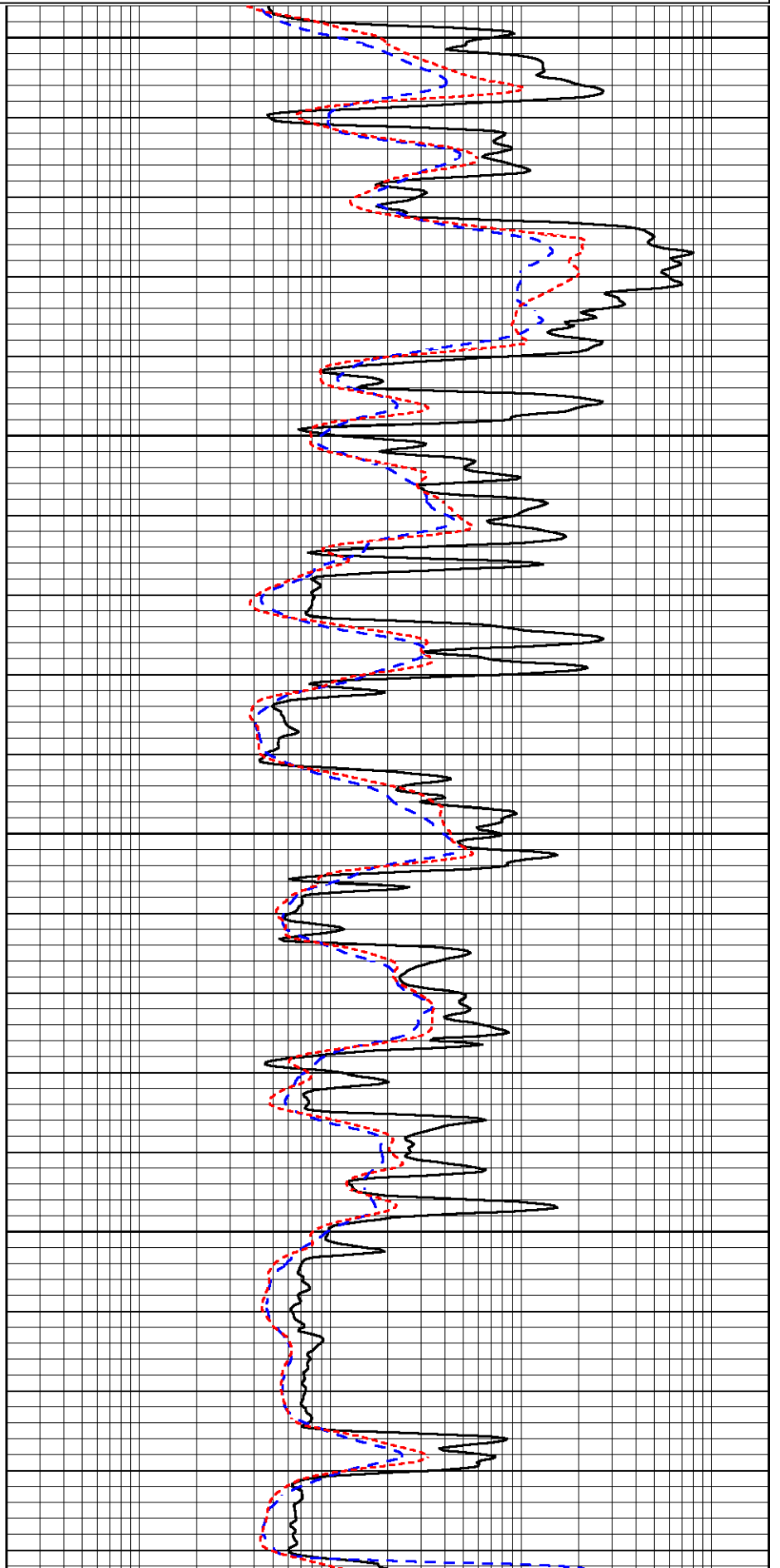
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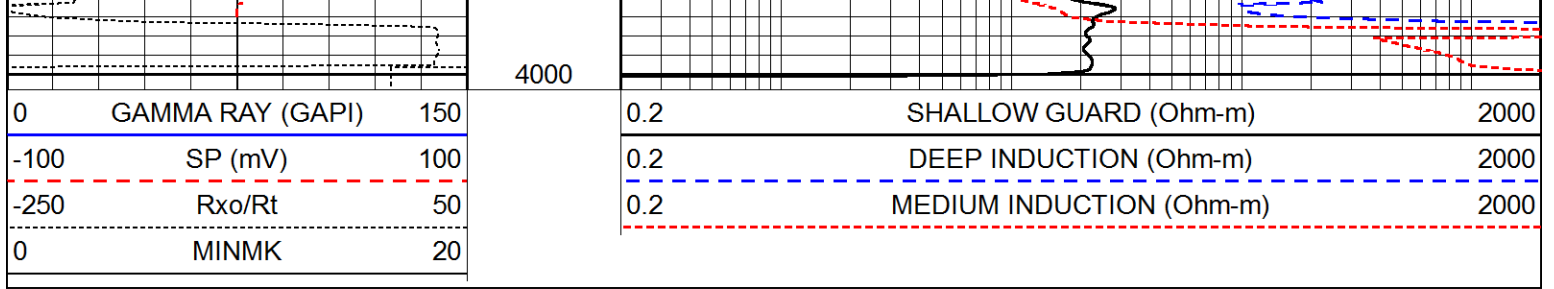
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

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



3800  
3850  
3900  
3950





**Calibration Report**

Database File 5889.db  
 Dataset Pathname pass2.1  
 Dataset Creation Thu Nov 04 05:30:42 2021

**Dual Induction Calibration Report**

Serial-Model: DIL4-GEAR  
 Surface Cal Performed: Tue Mar 01 11:19:26 2011  
 Downhole Cal Performed: Tue Sep 25 17:01:29 2001  
 After Survey Verification Performed: Sat Jun 11 16:07:12 2005

**Surface Calibration**

Loop:	Readings				References			Results	
	Air	Loop			Air	Loop		m	b
Deep	0.008	0.666	V	0.000	400.000	mmho/m	470.000	-6.000	
Medium	-0.003	0.769	V	0.000	462.500	mmho/m	460.000	-8.000	
Internal:	Zero	Cal		Zero	Cal		m	b	
Deep	0.013	0.651	V	0.000	400.000	mmho/m	627.541	-8.365	
Medium	0.020	0.754	V	0.000	462.500	mmho/m	630.311	-12.549	

**Downhole Calibration**

Internal:	Readings				References			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	2.525	0.026	V	500.000	2.000	Ohm-m	220.000	-6.300	

**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	0.000	0.000	Ohm-m	500.000	2.000	Ohm-m	1.000	0.000	

**Litho Density Calibration Report**  
 Serial: 002N Model: PRB

**Master Calibration**

Performed Tue Mar 10 15:08:00 2020

	Background	Magnesium	Aluminum	Aluminum+Fe	
Window 1	780.1	6981.9	2088.6	1871.2	cps
Window 2	718.6	5898.2	1813.8	1664.1	cps
Window 3	580.0	2989.5	1088.0	1039.1	cps
Window 4	172.8	175.7	175.3	173.5	cps

Long Space	0.0	5179.6	1095.2	945.5	cps
Short Space	1.1	1228.6	821.2	690.4	cps
Rho		1.7100	2.5900	0.0000	g/cc
Pe		2.0000	2.7500	5.7900	

Rib Angle	: 45.5	Rib Slope	: 1.016	Density/Spine Ratio	: 0.548
Spine Angle	: 75.5	Spine Slope	: 3.857	Spine Intercept	: -18.9

Before 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	

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
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1)	Short Space Long Space	cps cps	pu	pu
2)	Short Space Long Space	cps cps	pu	pu
3)	Short Space Long Space	cps cps	pu	pu

Gamma Ray Calibration Report

Serial Number:	GR6		
Tool Model:	OPEN		
Performed:	Thu Jul 30 20:04:35 2020		
Calibrator Value:	150.0	GAPI	
Background Reading:	0.0	cps	
Calibrator Reading:	276.0	cps	
Sensitivity:	0.7500	GAPI/cps	