



MIDWEST WIRELINE

DUAL INDUCTION LOG

Company **Cobalt Energy, LLC**
 Well **Darvin #1-22**
 Field **Wildcat**
 County **Graham** State **Kansas**

Company **Cobalt Energy, LLC**
 Well **Darvin #1-22**
 Field **Wildcat**
 County **Graham**
 State **Kansas**

Location: **API #: 15-065-24303-00-00**
NE NW SW SE
1207 FSL & 2076 FEL
SEC 20 TWP 10S RGE 22W
 Permanent Datum **Ground Level** Elevation **2331**
 Log Measured From **Kelly Bushing**
 Drilling Measured From **Kelly Bushing**
 Other Services **CNL/CDL MEL/BHCS**
 Elevation **K.B. 2336 D.F. G.L. 2331**

Date	11/24/2023
Run Number	One
Depth Driller	3900
Depth Logger	3898
Bottom Logged Interval	3897
Top Log Interval	250
Casing Driller	8:625 @ 259
Casing Logger	258
Bit Size	7.875
Type Fluid in Hole	Chemical
Salinity, ppm CL	1600
Density / Viscosity	9.2 50
pH / Fluid Loss	10.0 6.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	0.75 @ 55
Rmt @ Meas. Temp	0.56 @ 55
Rmc @ Meas. Temp	1.01 @ 55
Source of Rmf/ Rmc	CHARTS
Rm @ BHT	0.36 @ 115
Operating Rig Time	5 Hours
Max Rec. Temp. F	115
Equipment Number	P-108
Location	HAYS
Recorded By	D. Schmidt
Witnessed By	Larry Nicholson

<<< Fold Here >>>

All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest Wireline 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

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.

Wakeeney,
 North to Rd D (Graham County),
 5 East, 1 South Rd C, 1/2 East,
 North into

39.164528688 -99.761612634

Log Measured From: **Kelly Bushing** 5 Ft. Above Permanent Datum

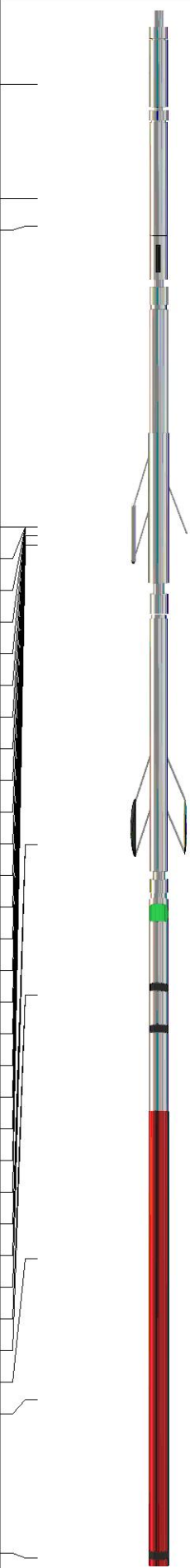
THANK YOU FOR USING MIDWEST WIRELINE LLC
785-625-3858

Your Midwest Wireline Crew

Engineer: **D. Schmidt**
 Operator:
 Operator:
 Operator:

This Log Record Was Witnessed By

Primary Witness: **Larry Nicholson**
 Secondary Witness:
 Secondary Witness:
 Secondary Witness:

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
GR	40.23		GR-M&W (105)	3.00	3.50	50.00	
CNLSC CNSSC	37.13 36.38		CNT-M&W (210)	5.00	3.50	100.00	
				MWLith-STEP LITHO Short (701-01)	8.40	5.00	250.00
LCAL	28.21						
LLW8N	28.21						
LLW7N	28.21						
LLW6N	28.21						
LLW5N	28.21						
LLW4N	28.21						
LLW3N	28.21						
LLW2N	28.21			ML-PSI STKBL ML (402)	7.58	4.00	65.00
LLW1N	28.21						
LSLOCK	27.96						
LLLOCK	27.96						
PELTMPR	27.96						
LSHVNG	27.96						
LLHVNG	27.96						
LSW8N	27.71						
LSW7N	27.71						
LSW6N	27.71						
LSW5N	27.71						
LSW4N	27.71						
LSW3N	27.71						
LSW2N	27.71						
LSW1N	27.71						
MCAL	19.58		DIL-M&W (505 HT)	18.25	3.50	220.00	
MI	19.58						
MN	19.58						
RLL3F	15.50						
RLL3	15.50						
CILD	8.33						
CILM	4.50						
SP	0.20						

Dataset: cobalt_darwin 1-22.db: field/well/stkml/pass4.1
 Total length: 42.23 ft
 Total weight: 685.00 lb
 O.D.: 5.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\cobalt_darvin 1-22.db
 Dataset field/well/stkml/pass4.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	115	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	No	-1	5.35	184	30	Off	3898

Variable Description

A : Cement Factor (a)
 BOREID : Borehole I.D.
 BOTTEMP : Bottom Hole Temperature
 CASEOD : Casing O.D.
 CASETHCK : Casing Thickness
 FLUIDDEN : Fluid Density
 M : Cement Exp (m)
 MATRXDEN : Matrix Density

NPORSEL : Neutron Porosity Curve Select
 PERFS : Perforation Flag
 SNDERR : Deep Sonde Error Correction
 SNDERRM : Medium Sonde Error Correction
 SPSHIFT : S.P. Baseline Offset
 SRFTEMP : Surface Temperature
 SZCOR : CN Size Cor. ?
 TDEPTH : Total Depth

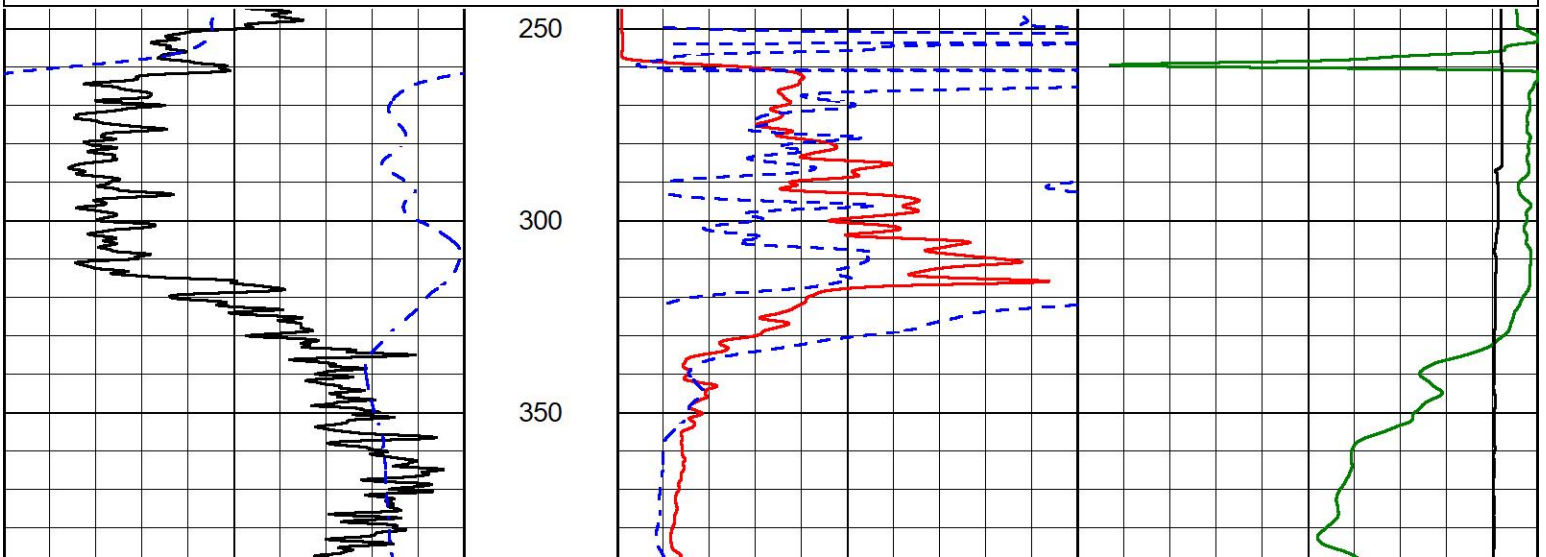


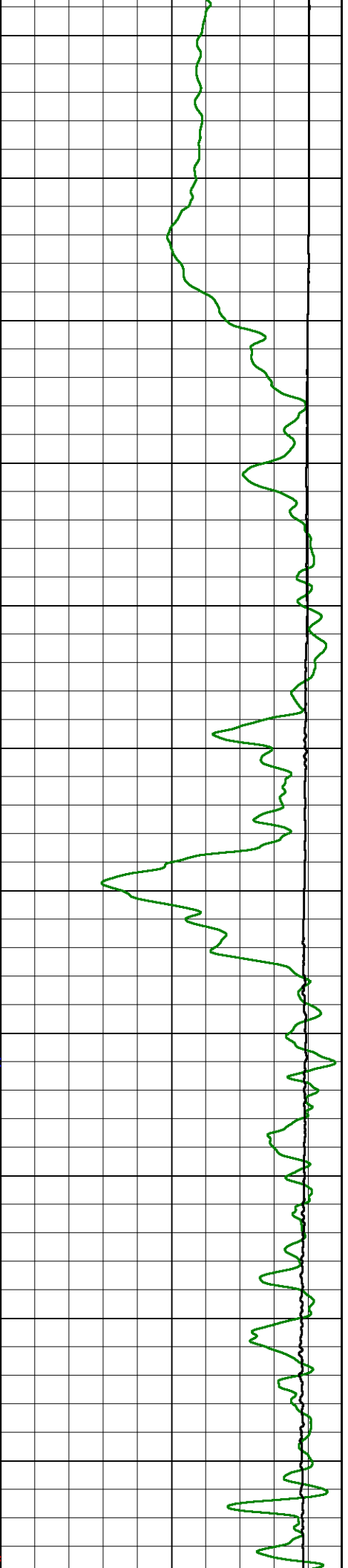
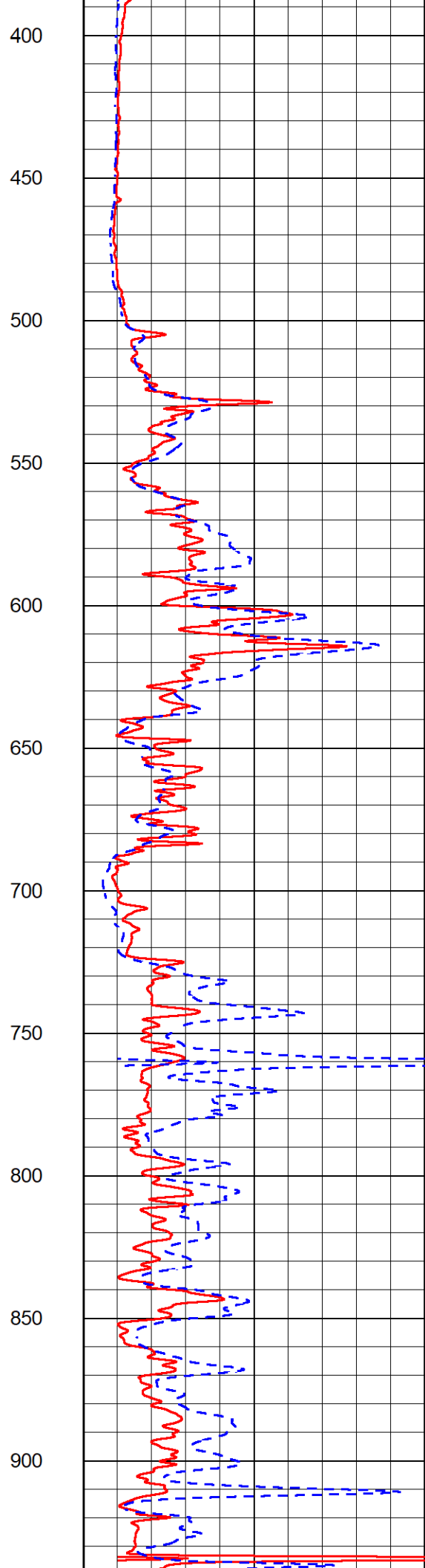
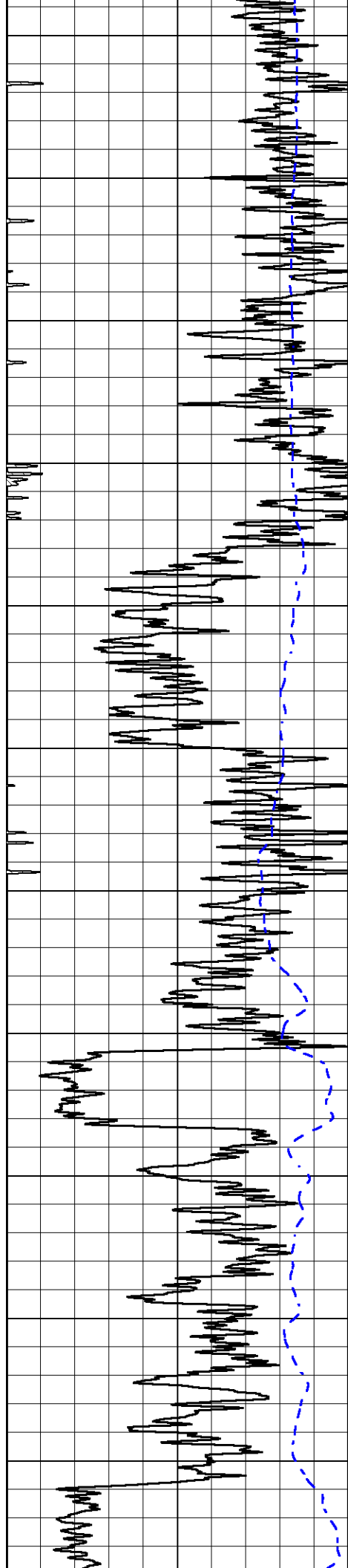
2" SCALE RESISTIVITY

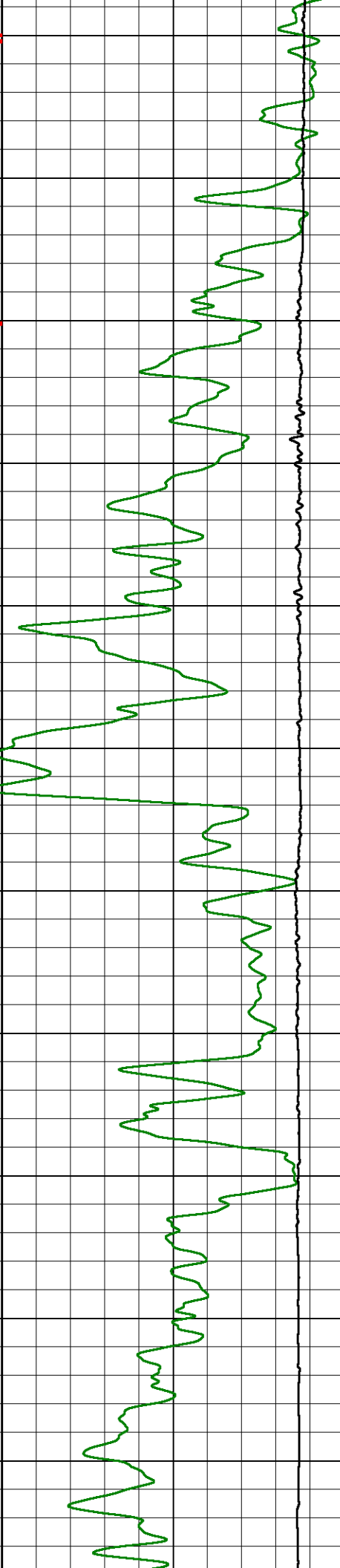
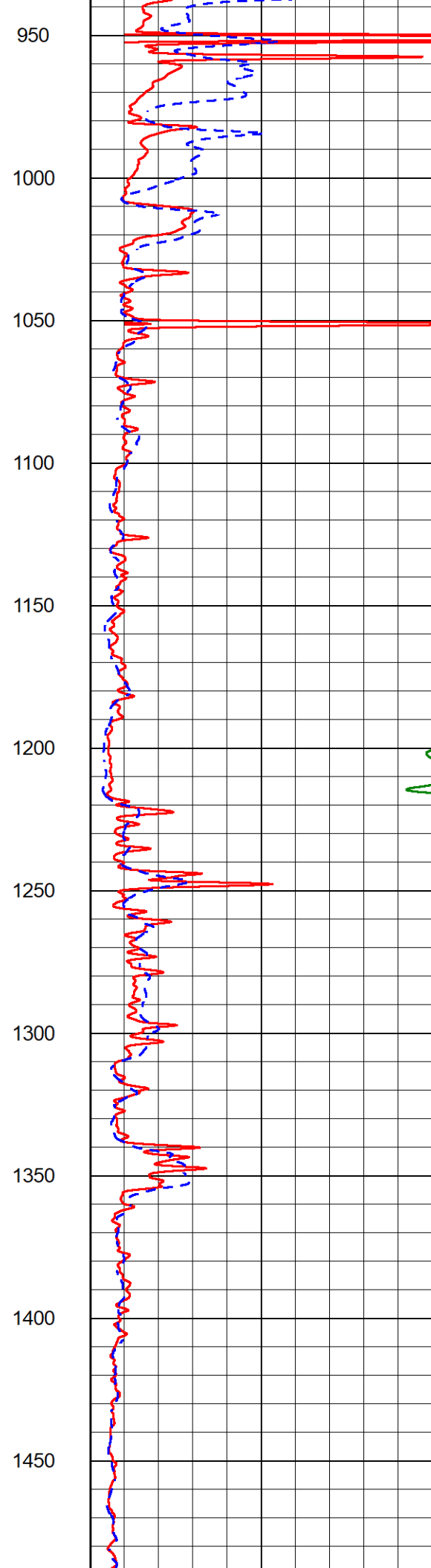
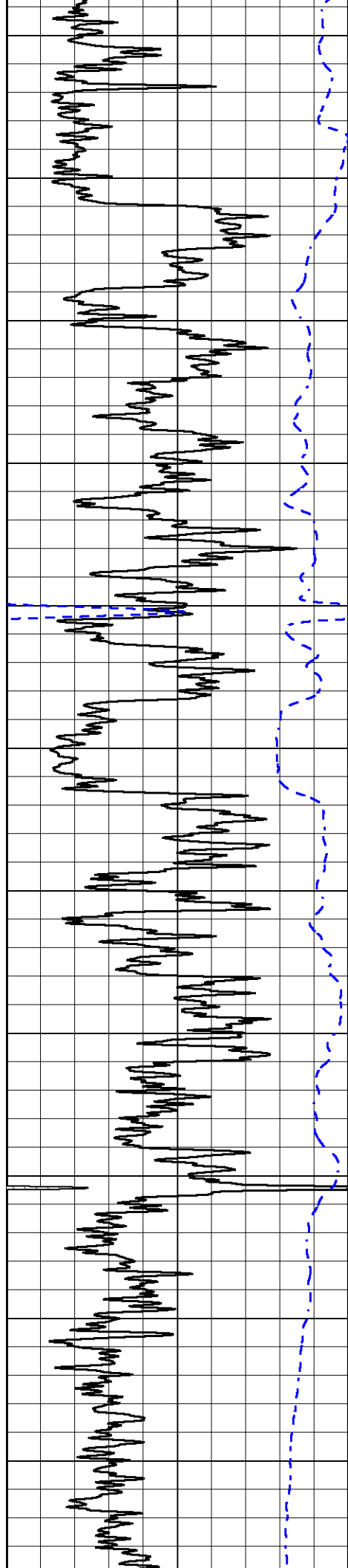
MAIN PASS

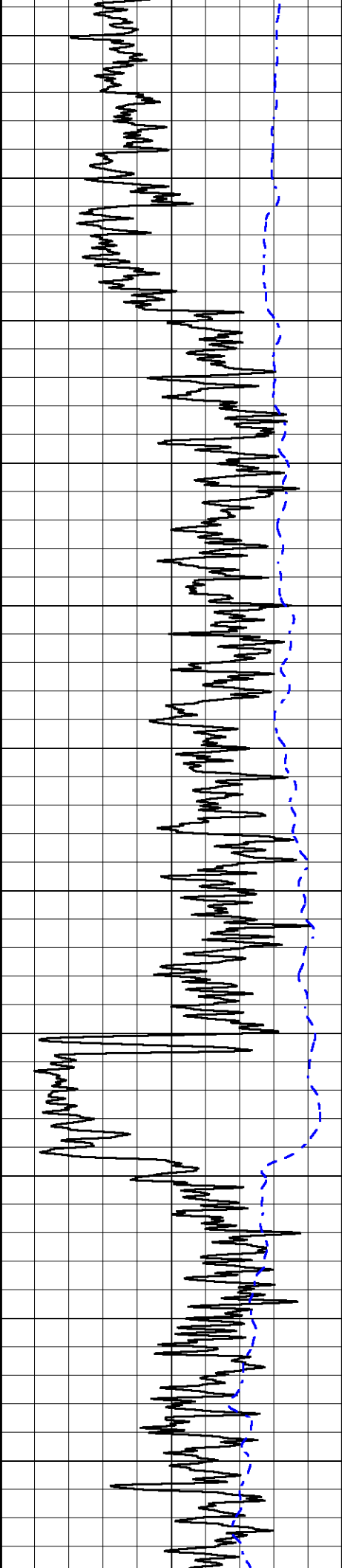
Database File cobalt_darvin 1-22.db
 Dataset Pathname stkml/pass4.3
 Presentation Format _dil2in
 Dataset Creation Fri Nov 24 17:25:17 2023
 Charted by Depth in Feet scaled 1:600

0	Gamma Ray (GAPI)	150	1000	Conductivity (mmho/m)	0
-200	SP (mV)	0	15000	Line Tension (lb)	0
		0 Shallow Resistivity (Ohm-m)		50	
		0 Deep Resistivity (Ohm-m)		50	
		Shallow Resistivity			
		50	(Ohm-m)	200	
		50 Deep Resistivity (Ohm-m)		200	

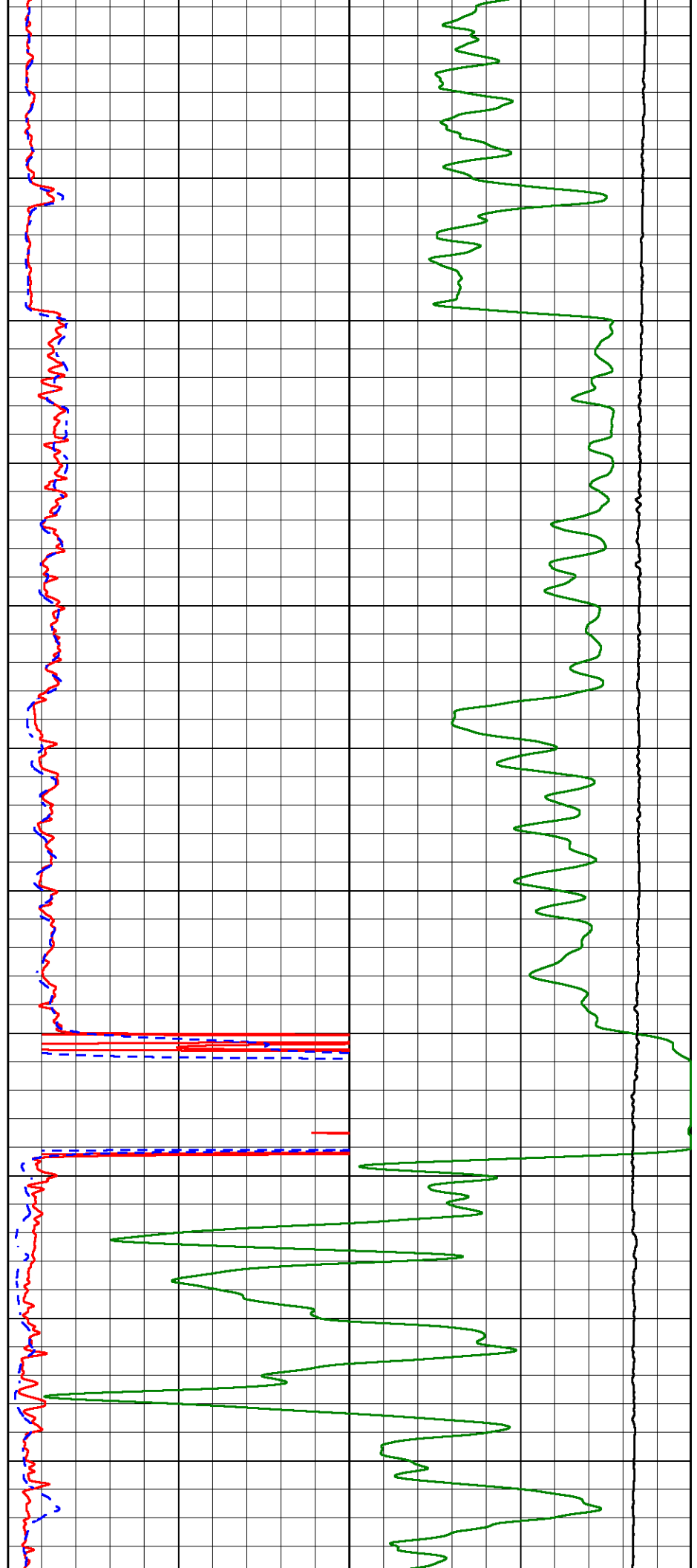


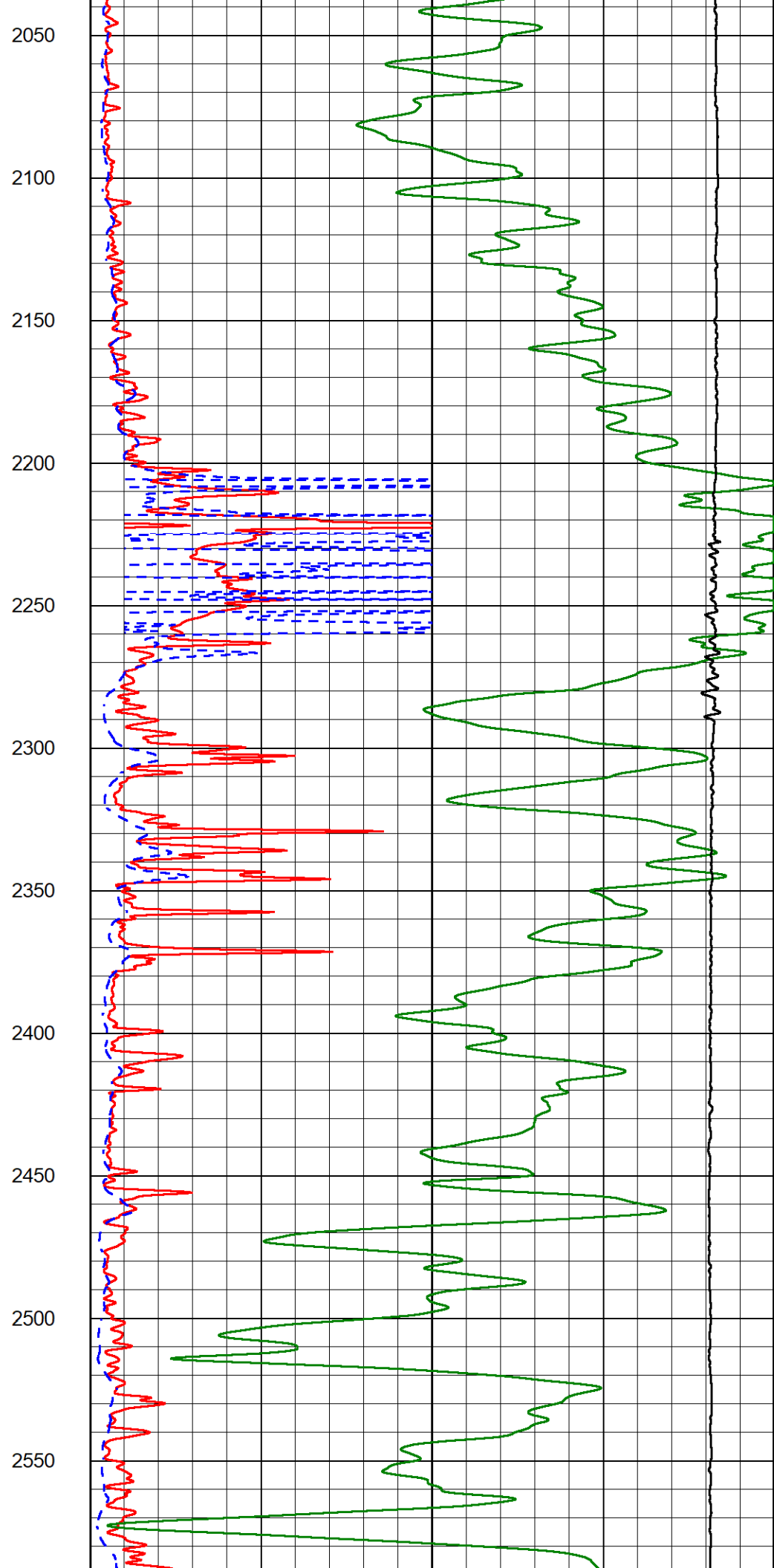
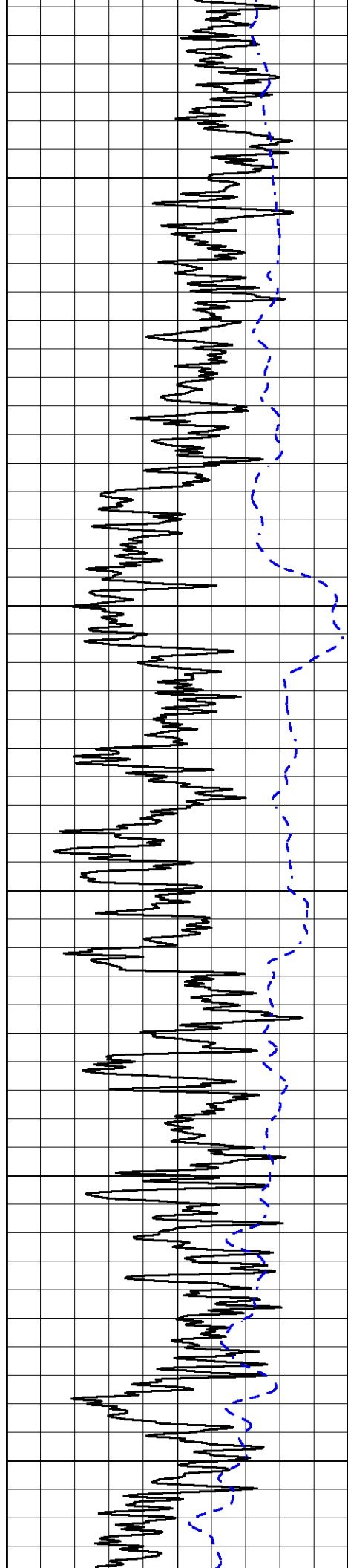


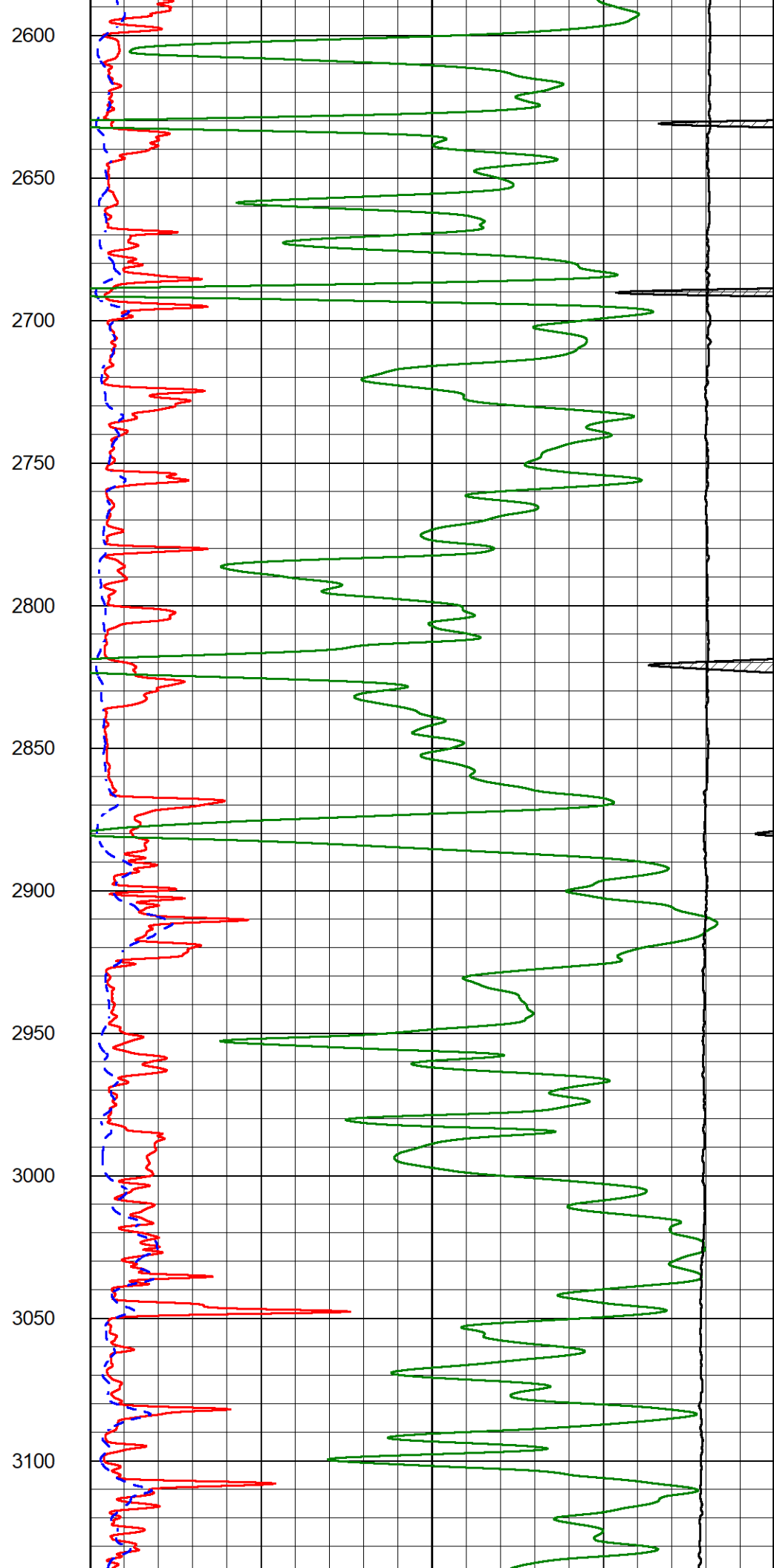
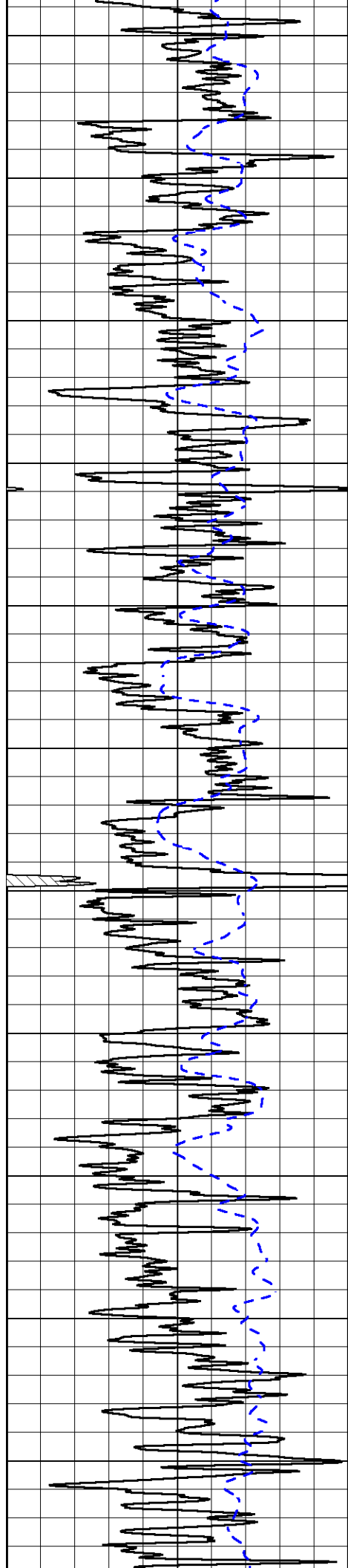


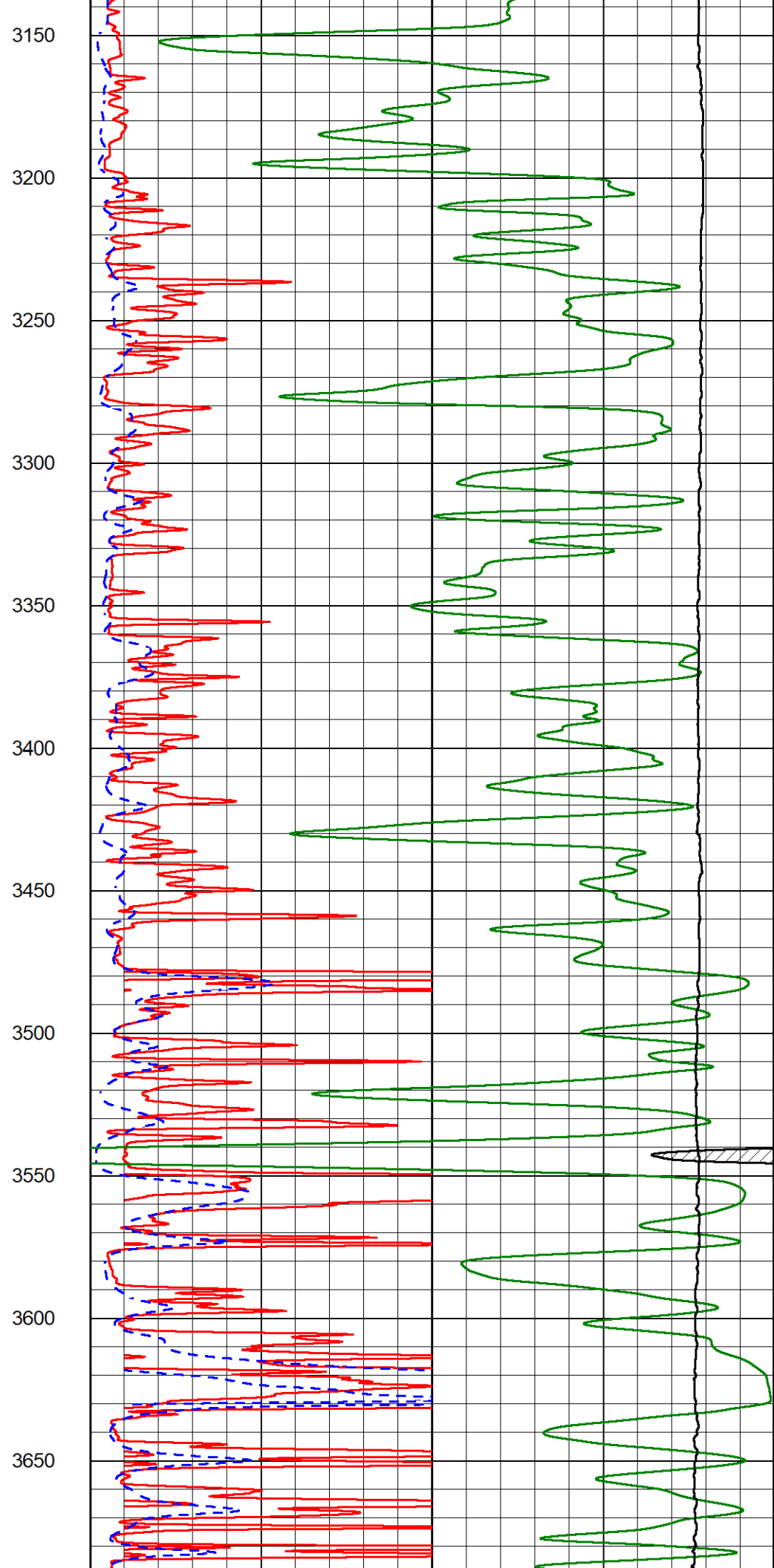
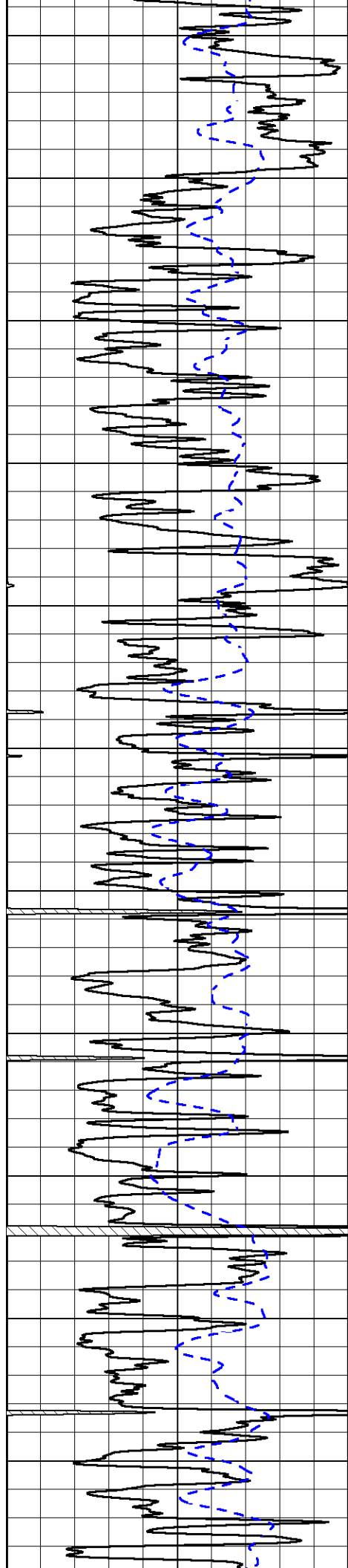


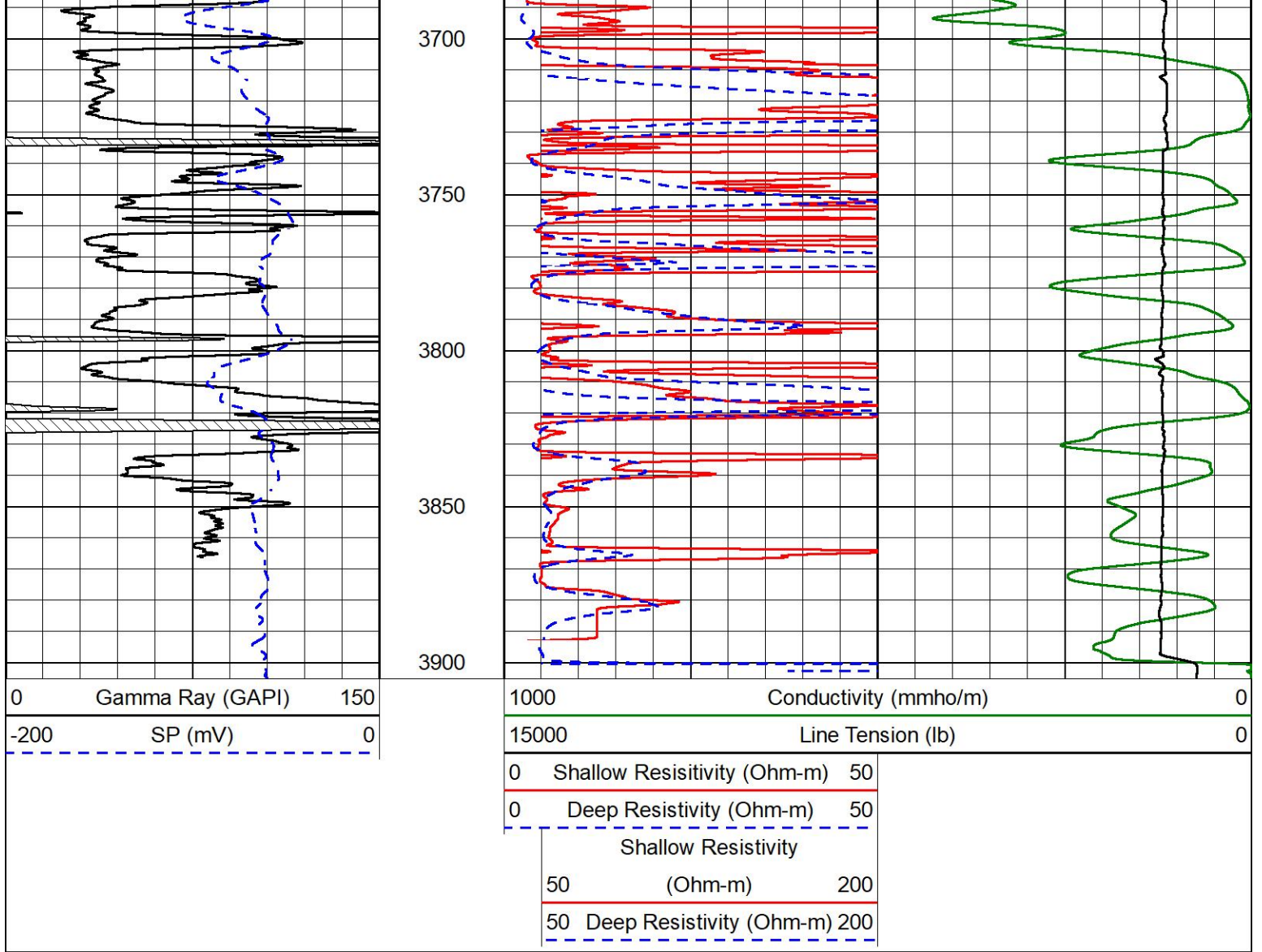
1500
1550
1600
1650
1700
1750
1800
1850
1900
1950
2000







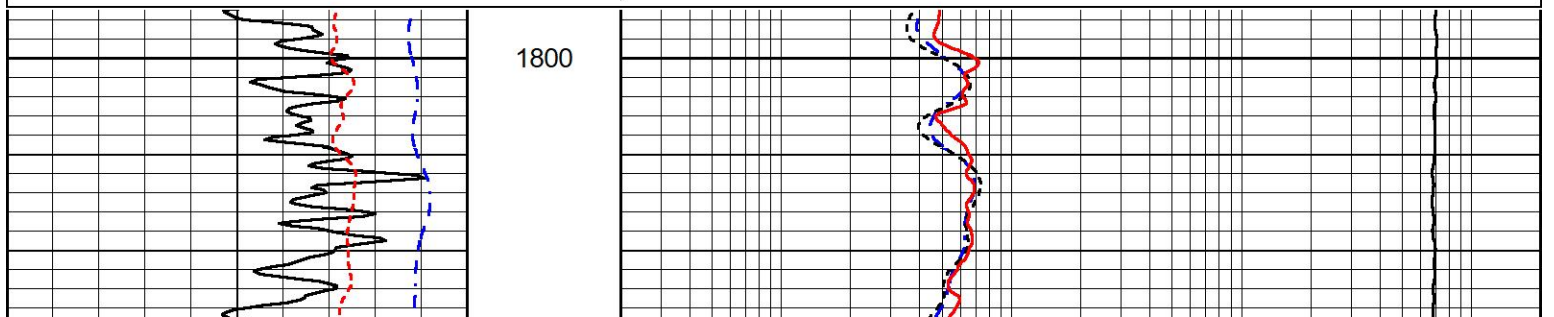
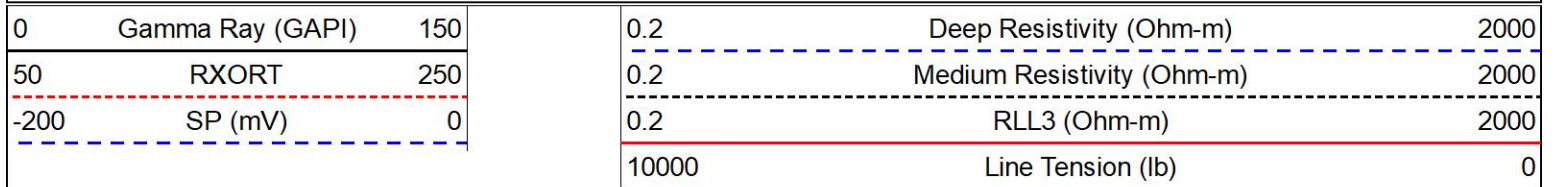


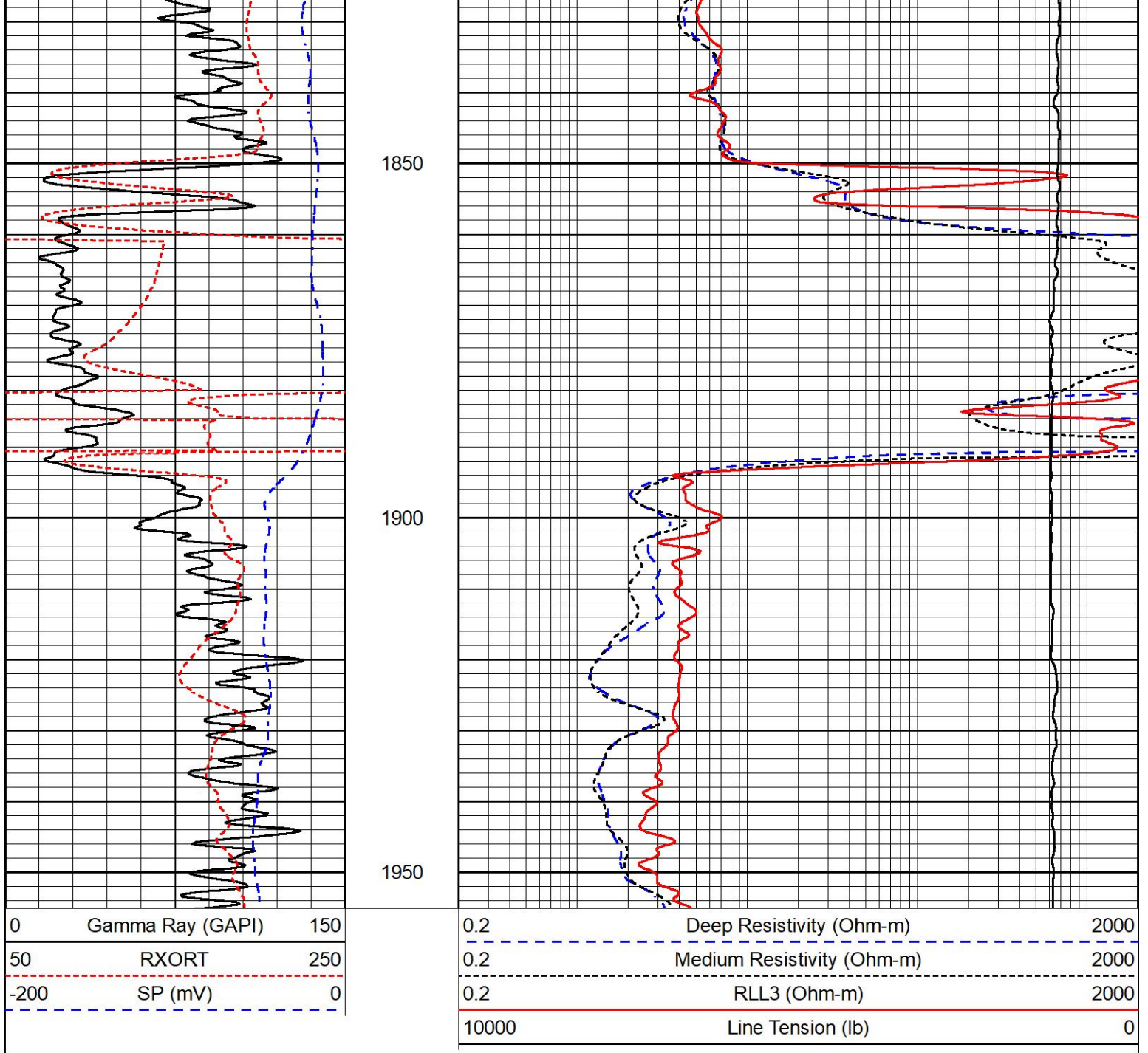


ANHYDRITE SECTION

MAIN PASS

Database File cobalt_darvin 1-22.db
 Dataset Pathname stkml/pass4.4
 Presentation Format _dil
 Dataset Creation Fri Nov 24 17:25:26 2023
 Charted by Depth in Feet scaled 1:240



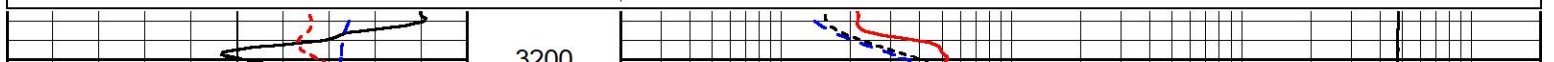
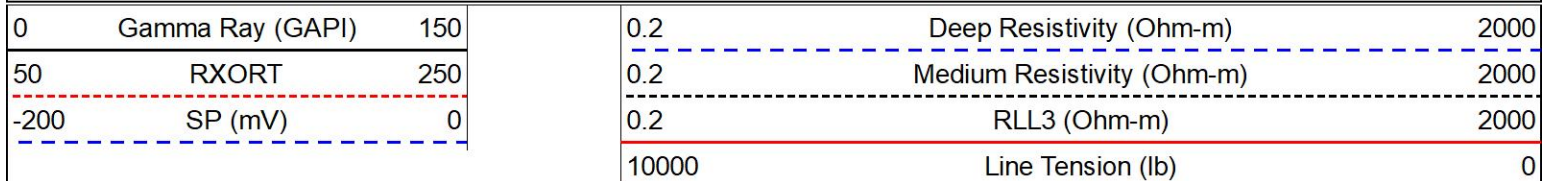


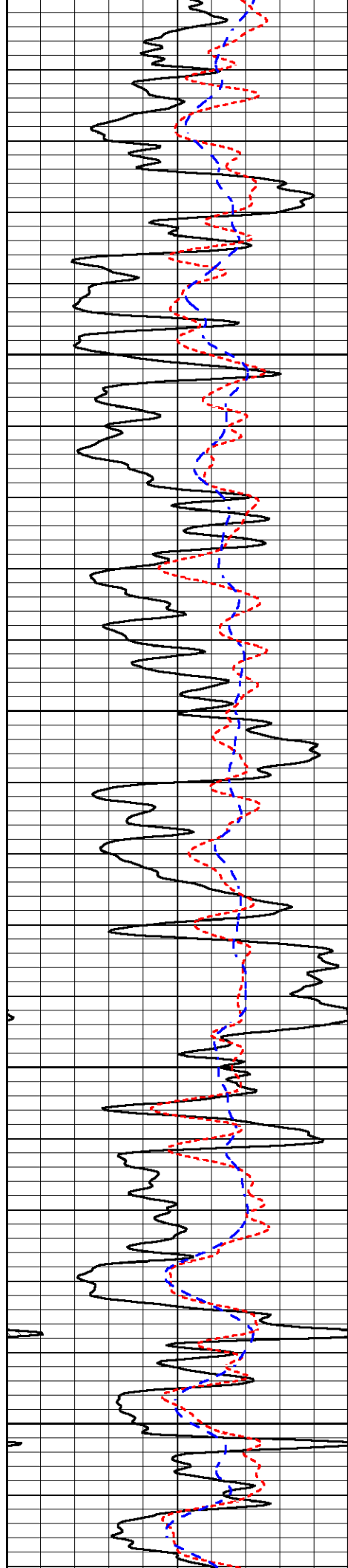
MIDWEST WIRELINE

DETAIL SECTION

MAIN PASS

Database File cobalt_darwin 1-22.db
 Dataset Pathname stkml/pass4.1
 Presentation Format _dil
 Dataset Creation Fri Nov 24 17:17:58 2023
 Charted by Depth in Feet scaled 1:240





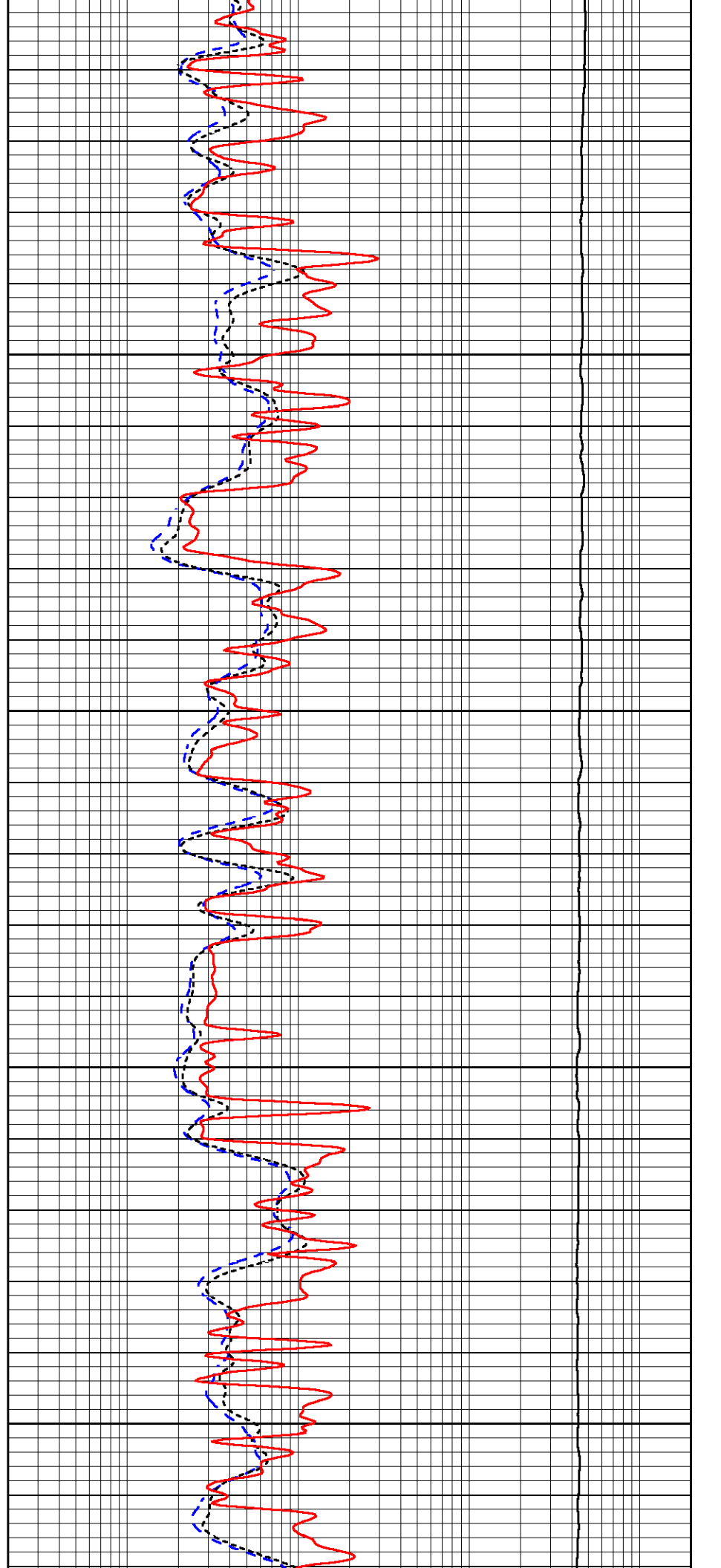
3200

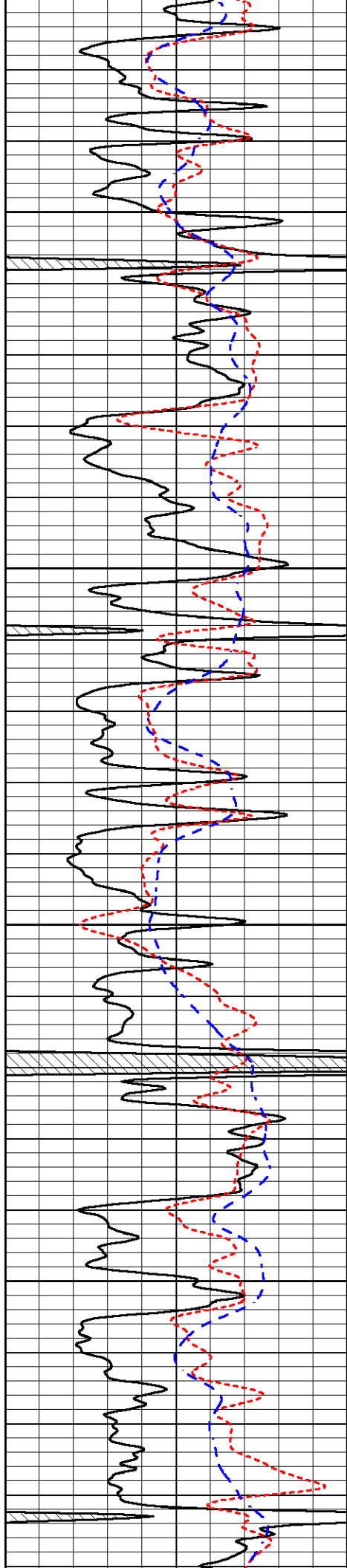
3250

3300

3350

3400



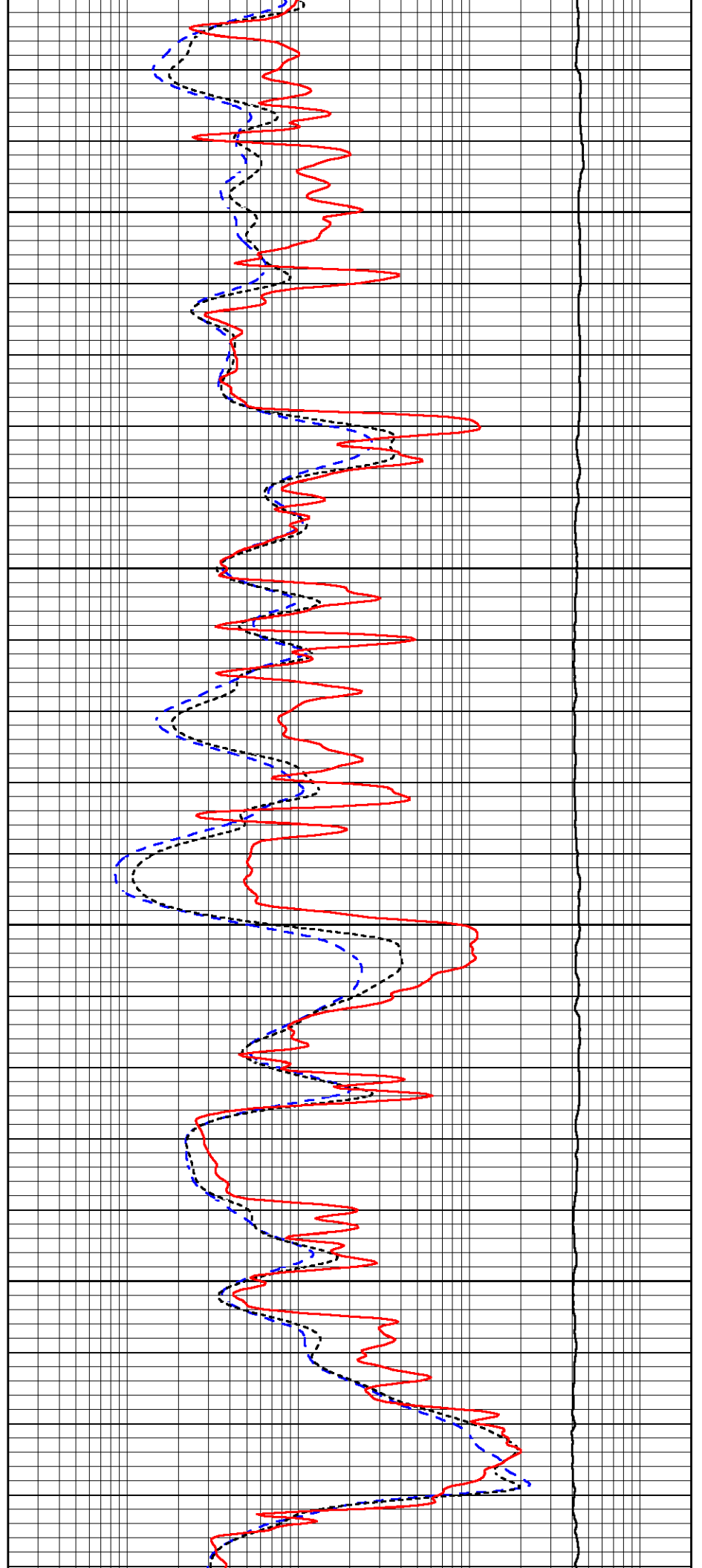


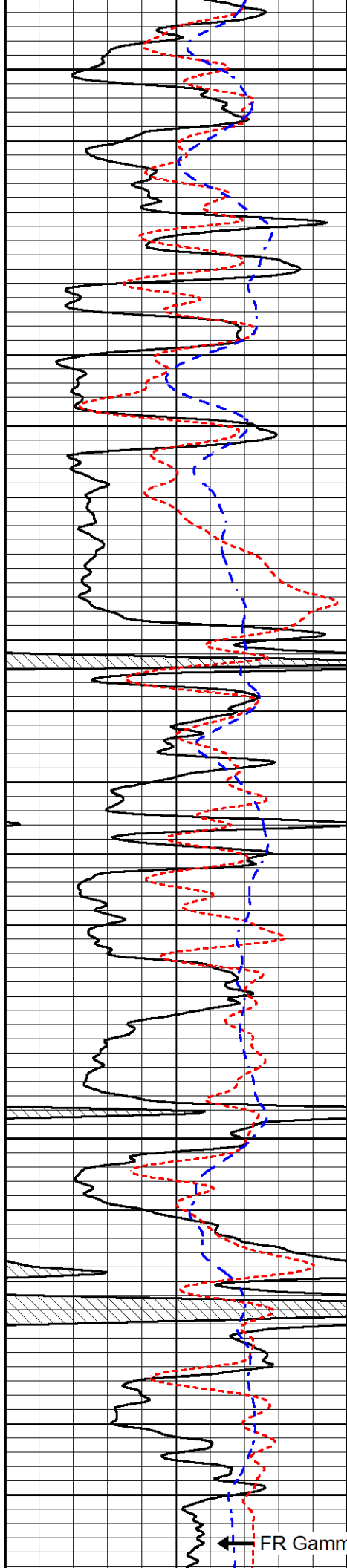
3450

3500

3550

3600





3650

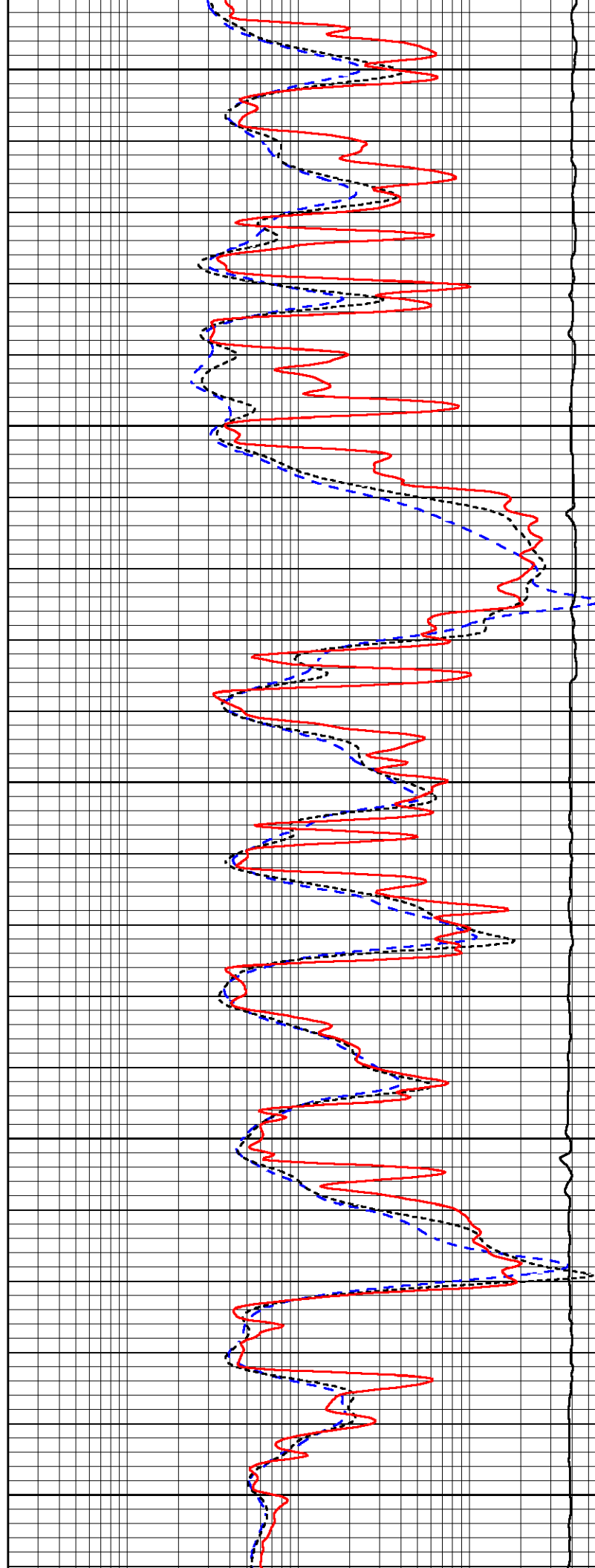
3700

3750

3800

3850

FR Gamma Ray



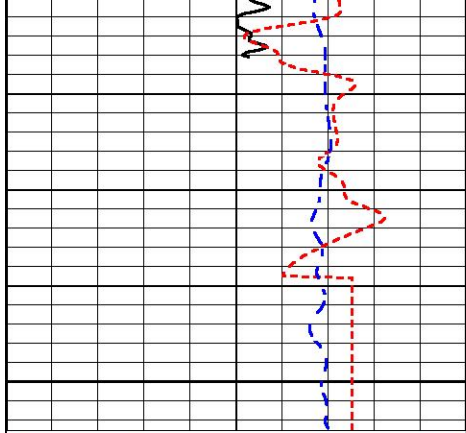
3650

3700

3750

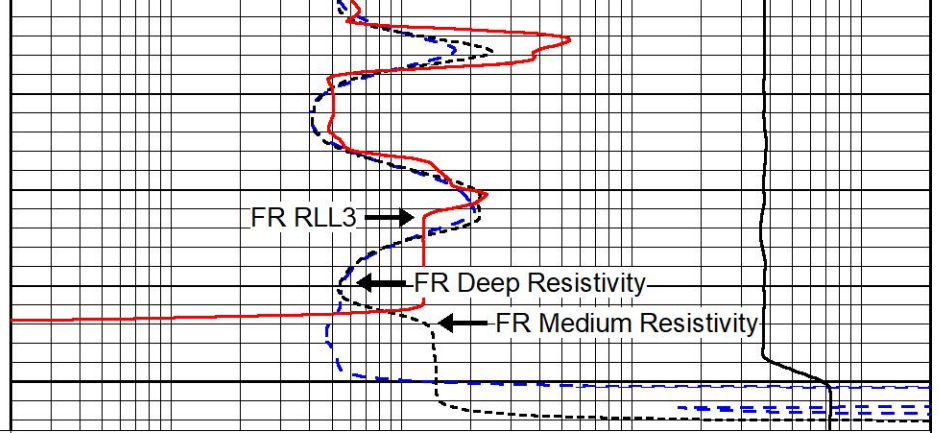
3800

3850



0	Gamma Ray (GAPI)	150
50	RXORT	250
-200	SP (mV)	0

3900



0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0



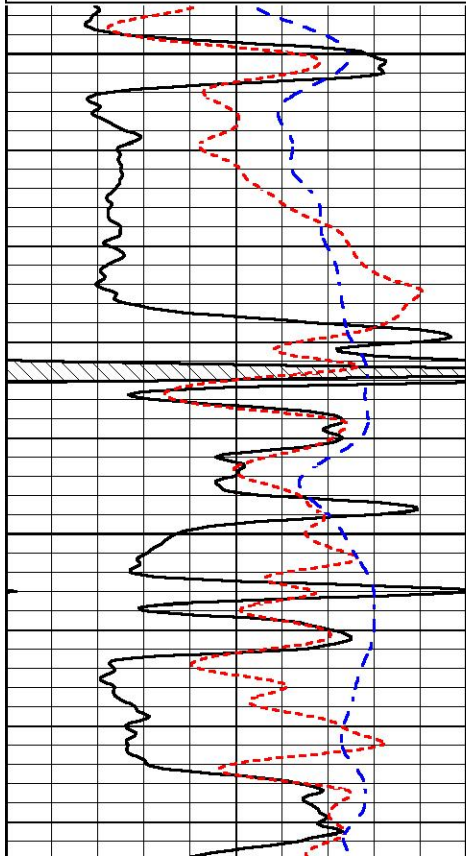
REPEAT SECTION

REPEAT PASS

Database File cobalt_darwin 1-22.db
 Dataset Pathname stkml/pass3.1
 Presentation Format _dil
 Dataset Creation Fri Nov 24 17:06:01 2023
 Charted by Depth in Feet scaled 1:240

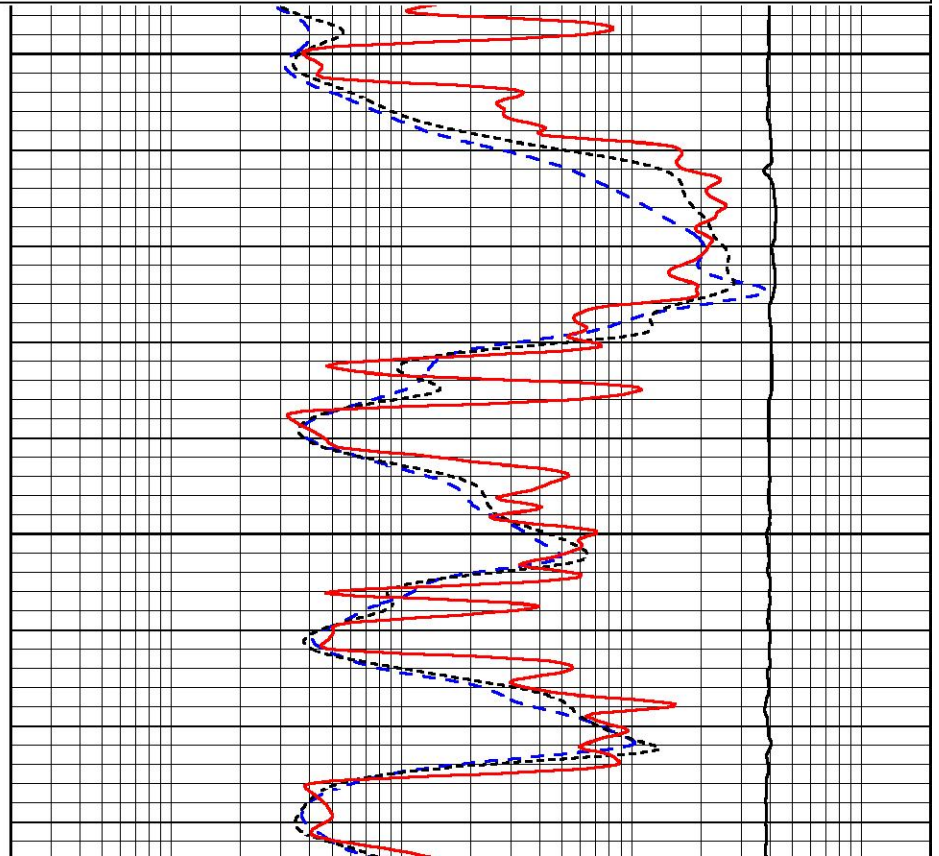
0	Gamma Ray (GAPI)	150
50	RXORT	250
-200	SP (mV)	0

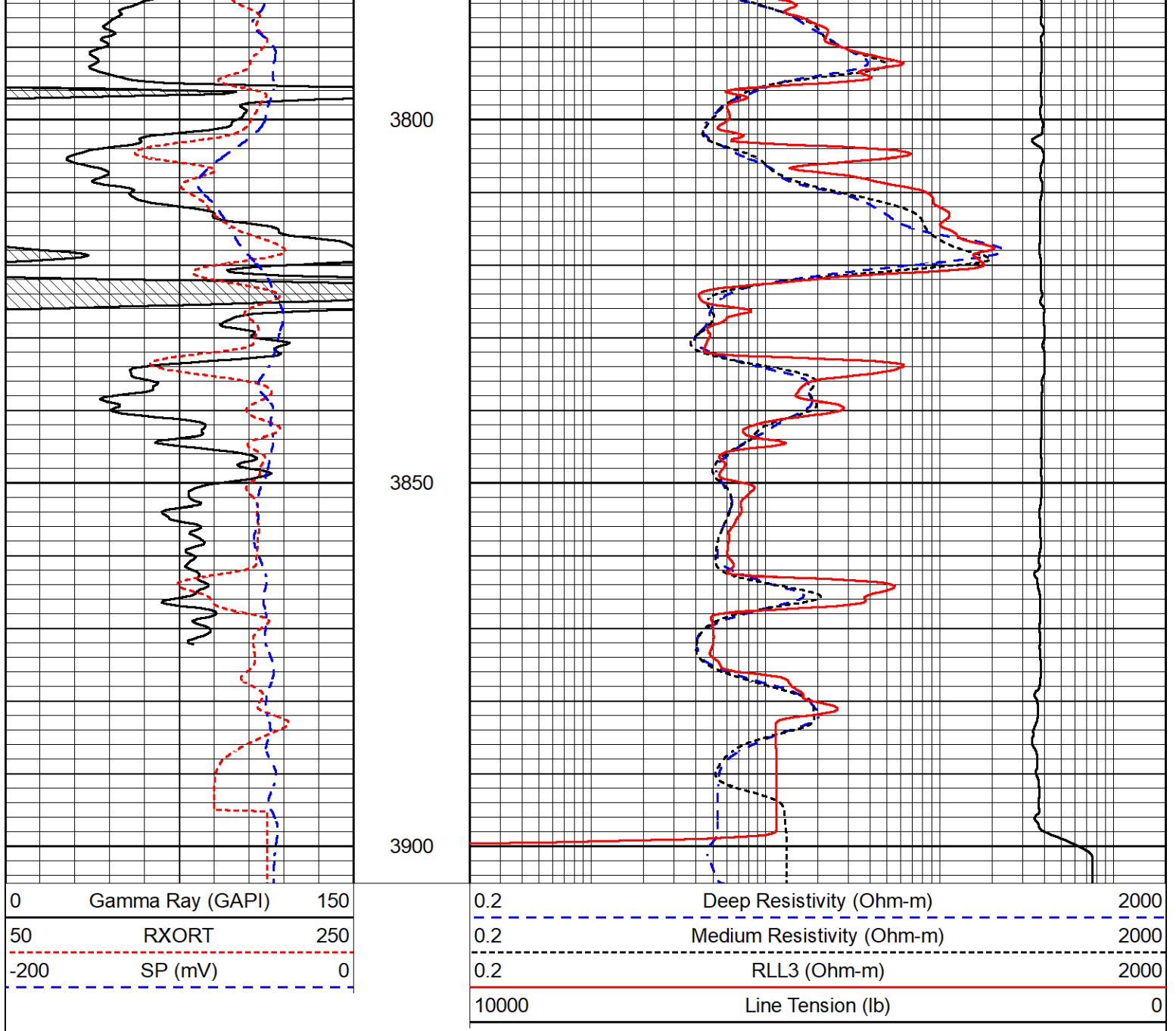
0.2	Deep Resistivity (Ohm-m)	2000
0.2	Medium Resistivity (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	Line Tension (lb)	0



3700

3750





Calibration Report

Database File cobalt_darvin 1-22.db
 Dataset Pathname stkml/pass4.1
 Dataset Creation Fri Nov 24 17:17:58 2023

Dual Induction Calibration Report

Serial-Model: 505 HT-M&W
 Surface Cal Performed: Thu Nov 9 13:00:56 2023

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop	mmho/m	m	b
Deep	167.000	835.000	0.000	255.800	mmho/m	0.550	-56.000
Medium	1348.000	1348.000	0.000	255.800	mmho/m	0.450	-55.000

Microlog Calibration Report

Serial-Model: 402-PSI STKBL ML

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0037	0.0043	0.0000	10.0000	Ohm-m	23000.0000	-1.0000
Inverse	0.1208	0.0013	0.0000	10.0000	Ohm-m	21000.0000	0.0000
Caliper	1.0046	1.1419	5.5000	20.0000	in	50.0000	-44.4500

LITHODENSITY Calibration Report

Serial Number: 701-01
 Tool Model: STEP LITHO Short
 Performed: Wed Nov 8 15:09:59 2023

Source:

	Win1	Win2	Win3	Win4	Win5	Win6	Win7	Win8	
Background:									
SS:	52	54	204	252	23	67	44	1	cps
LS:	78	87	326	426	46	135	86	3	cps
Aluminum:									
SS:	790	958	2239	2075	45	71	45	2	cps
LS:	877	1656	3109	1518	56	132	85	4	cps
Magnesium:									
SS:	1295	1558	3653	2988	50	71	47	3	cps
LS:	3705	6851	12249	4886	93	127	85	12	cps
Aluminum+Iron:									
SS:	500	668	1858	1761	40	72	47	2	cps
LS:	514	1150	2612	1334	53	134	84	4	cps

	Density Actual	Calibrated	PE Actual	Calibrated	Quality
Background:					
SS:					0.209
LS:					0.223
Aluminum:					
SS:	2.6000	2.6000	g/cc		0.229
LS:	2.6000	2.6000	g/cc		0.218
Magnesium:					
SS:	1.6800	1.6800	g/cc	2.5700	2.5700
LS:	1.6800	1.6800	g/cc	2.5700	2.5700
Aluminum+Iron:					
SS:				6.1800	0.207
LS:				6.1800	0.229

Caliper: Reference: Reading:
 Small Ring: 6.0 in 100.0
 Large Ring: 16.0 in 400.0
 Gain: 14.000
 Offset: 1.960

Compensated Neutron Calibration Report

Serial Number: 210
 Tool Model: M&W

CALIBRATION

Detector	Readings	Target	Normalization
Short Space	6240.00 cps	1000.00 cps	1.6025
Long Space	460.00 cps	1000.00 cps	1.9500

Gamma Ray Calibration Report

Serial Number:	105	
Tool Model:	M&W	
Performed:	Sat Oct 21 23:48:19 2023	
Calibrator Value:	500.0	GAPI
Background Reading:	24.0	cps
Calibrator Reading:	637.0	cps
Sensitivity:	0.6000	GAPI/cps



Company	Cobalt Energy, LLC
Well	Darvin #1-22
Field	Wildcat
County	Graham
State	Kansas