



MIDWEST WIRELINE

MICRORESISTIVITY LOG

Company **Cobalt Energy LLC**
 Well **Deer Creek #1-25**
 Field **Little Beaver Creek North**
 County **Cheyenne** State **Kansas**

Location: API #: 15-023-21581-00-00
 SE SE NW NW
 1206 FNL & 1195 FWL
 NAD 39.681113017 & 101.4258333436
 SEC 25 TWP 4S RGE 37W
 Permanent Datum Ground Level Elevation 3348
 Log Measured From Kelly Bushing
 Drilling Measured From Kelly Bushing
 Other Services
 CNL/CDL
 DIL
 Elevation
 K.B. 3353
 D.F.
 G.L. 3348

Date	11/3/2022
Run Number	One
Depth Driller	4980
Depth Logger	4980
Bottom Logged Interval	4979
Top Log Interval	3900
Casing Driller	8.625 @ 301
Casing Logger	300
Bit Size	7.875
Type Fluid in Hole	Chemical
Salinity, ppm CL	3000
Density / Viscosity	9.4 63
pH / Fluid Loss	10.0 8.0
Source of Sample	Flowline
Rm @ Meas. Temp	0.85 @ 72
Rmt @ Meas. Temp	0.64 @ 72
Rmc @ Meas. Temp	1.15 @ 72
Source of Rmf / Rmc	Charts
Rm @ BHT	0.49 @ 126
Operating Rig Time	2.5 Hours
Max Rec. Temp. F	126
Equipment Number	P-24
Location	Hays
Recorded By	T. Martin
Witnessed By	Larry Nicholson

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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.

McDonald, KS, 3.75 S on Rd 3 to Rd L,
 3 W to Rd 34, 3 S, E & SE into

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: T. Martin
 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	40.33		GR-M&W (106)	3.00	3.50	50.00
CNLSC CNSSC	37.23 36.48		CNT-M&W (207-MW)	5.00	3.50	100.00
LSD DCAL SSD	28.18 28.17 27.68		CDL-M&W (307-11)	8.50	4.00	250.00
ML-PSIML (401)			ML-PSIML (401)	7.58	4.00	65.00
MCAL MI MN	19.58 19.58 19.58		DIL-M&W (501 HT)	18.25	3.50	220.00
RLL3F RLL3	15.50 15.50					
CILD	8.33					
CILM	4.50					
SP	0.20					

Dataset: cobalt_deer creek #1-25.db: field/well/StkMI/pass3.1
 Total length: 42.33 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

Log Variables

DatabaseC:\ProgramData\Warrior\Data\cobalt_deer creek #1-25.db
 Dataset field/well/StkMI/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	126	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	0	0	320	50	Off	4980

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



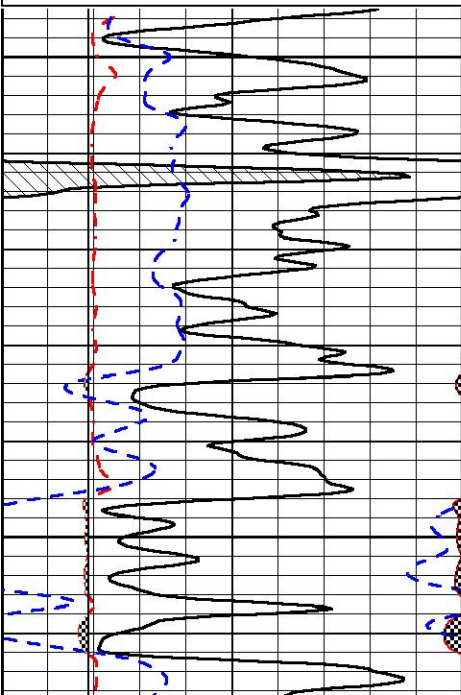
DETAIL SECTION

MAIN PASS

Database File cobalt_deer creek #1-25.db
 Dataset Pathname StkMI/pass3.1
 Presentation Format _micro
 Dataset Creation Thu Nov 03 19:16:25 2022
 Charted by Depth in Feet scaled 1:240

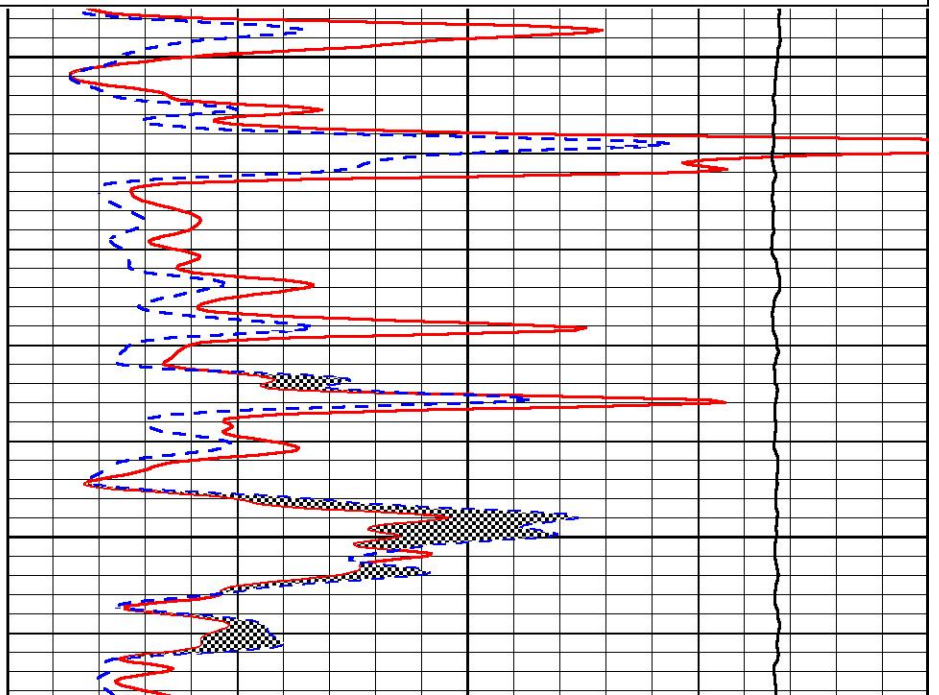
0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
2.875	mcal (in)	7.875
-200	sp (mV)	0

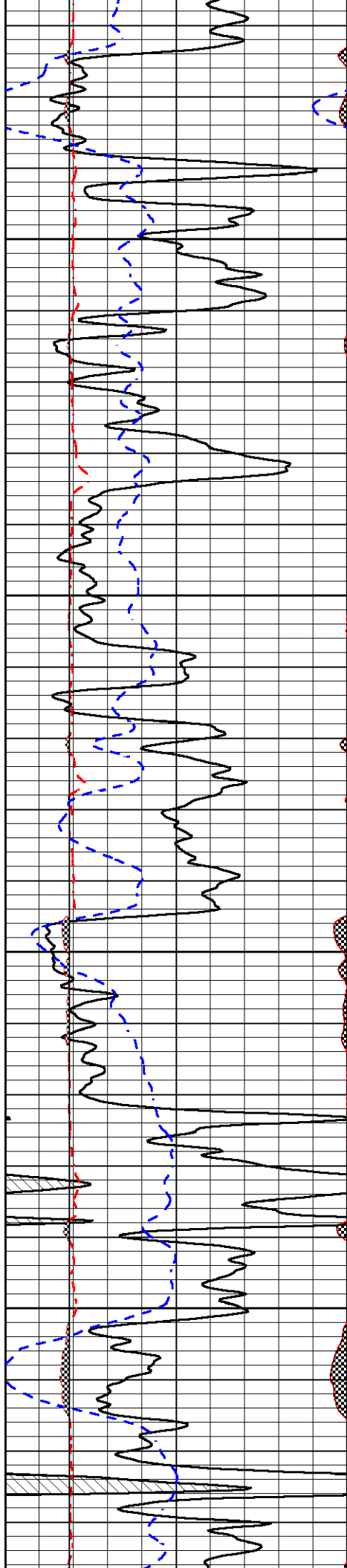
0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0



3900

3950



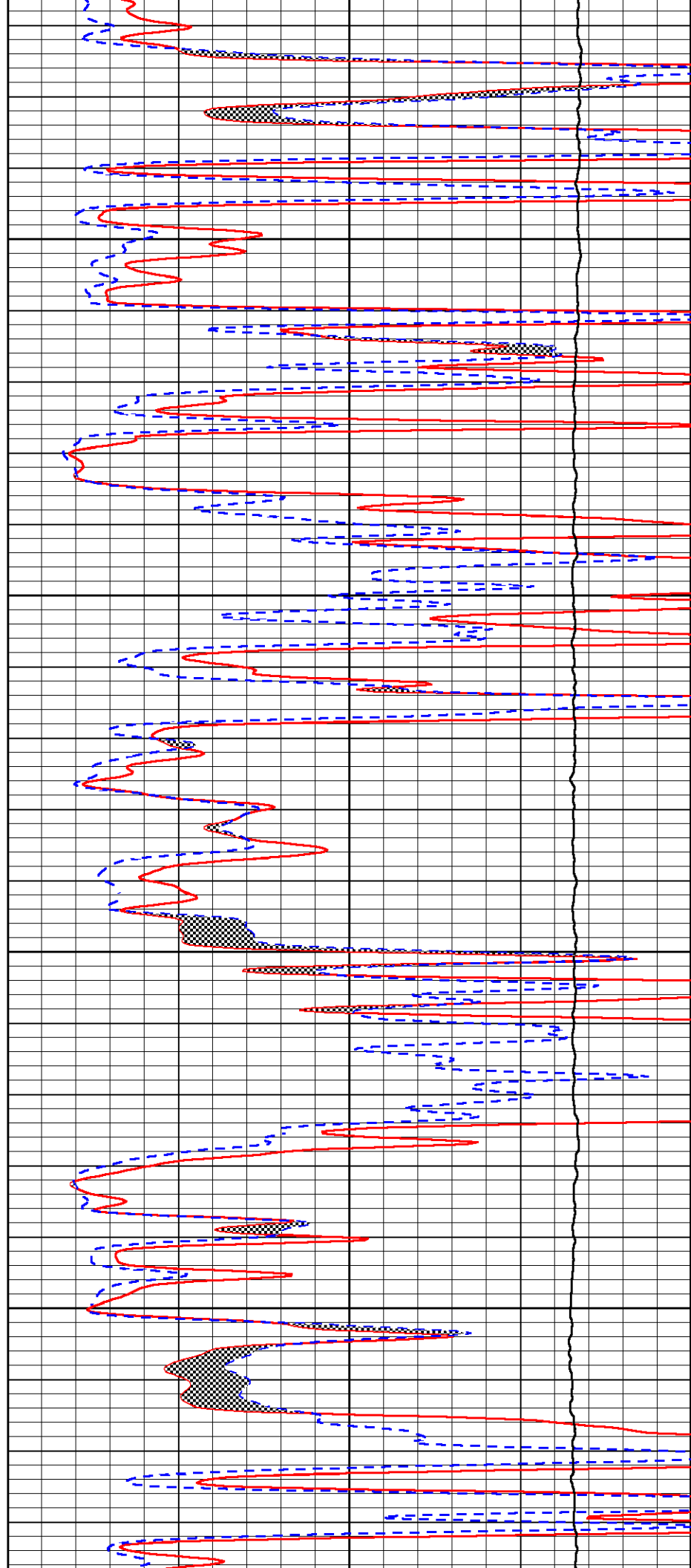


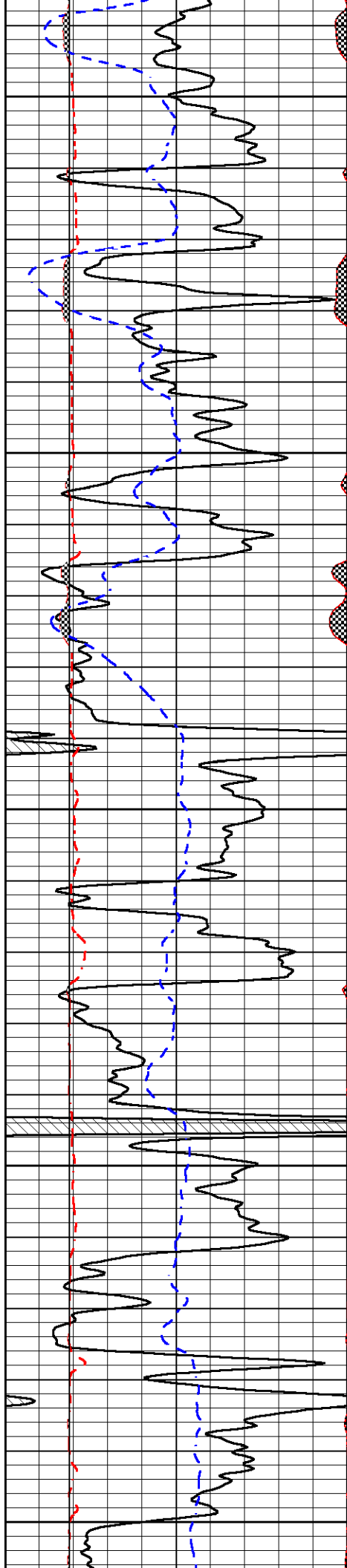
4000

4050

4100

4150





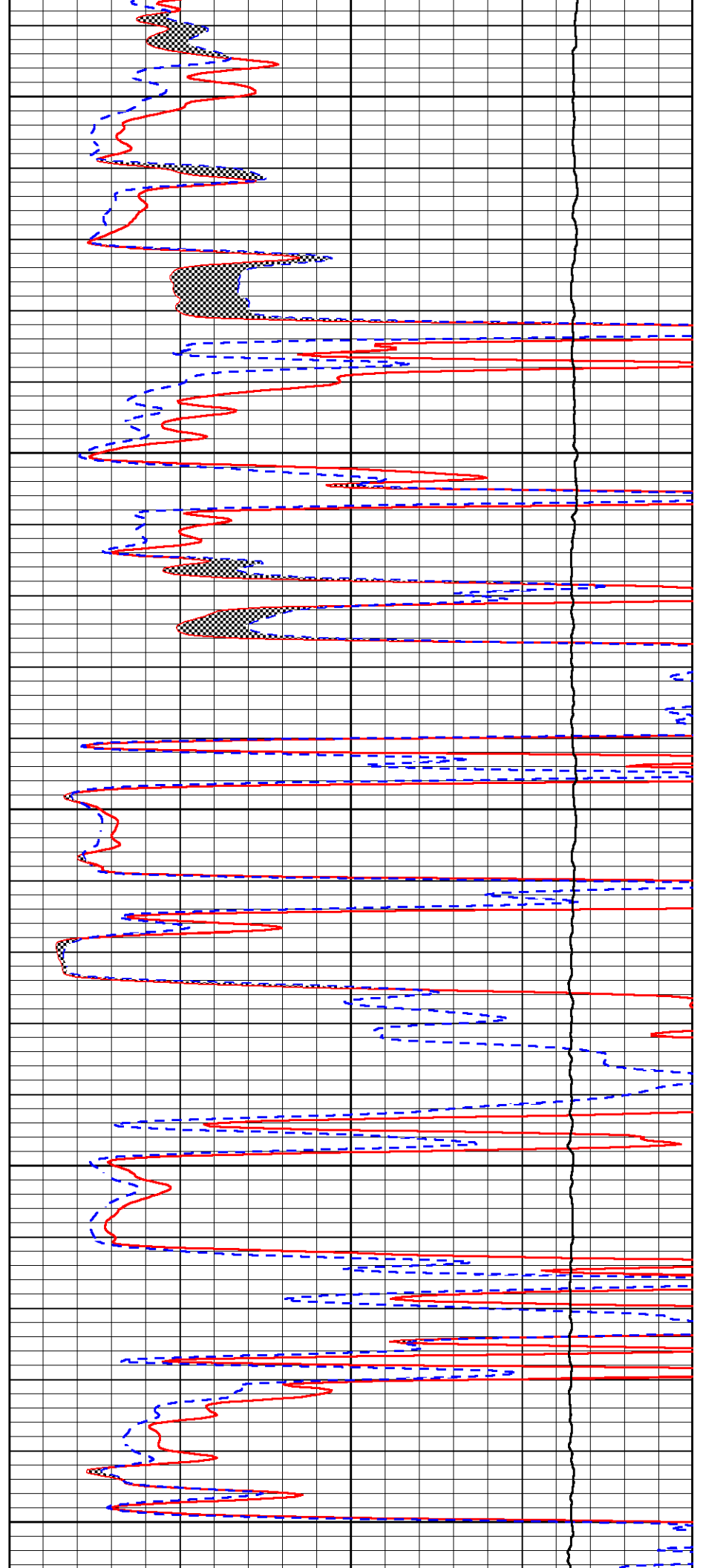
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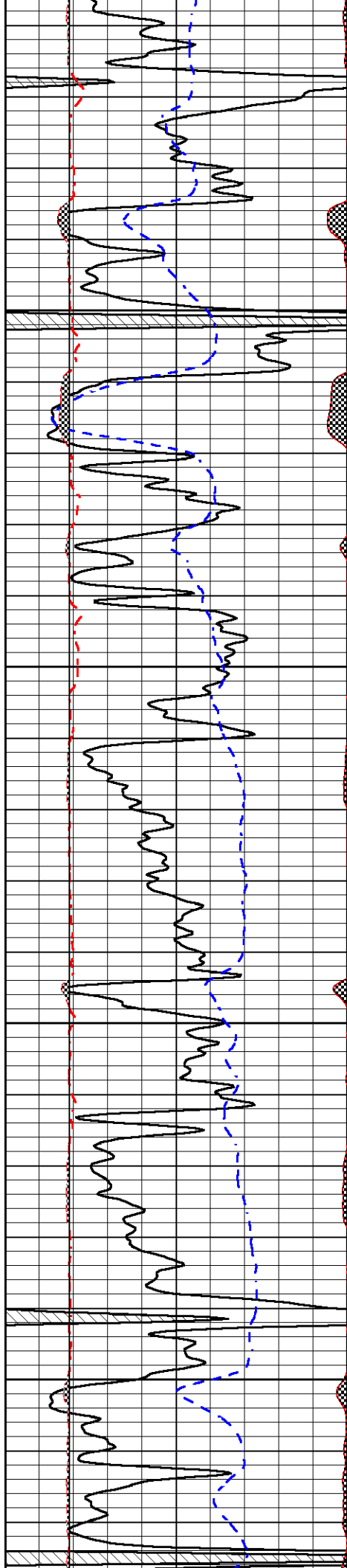
4250

4300

4350

4400



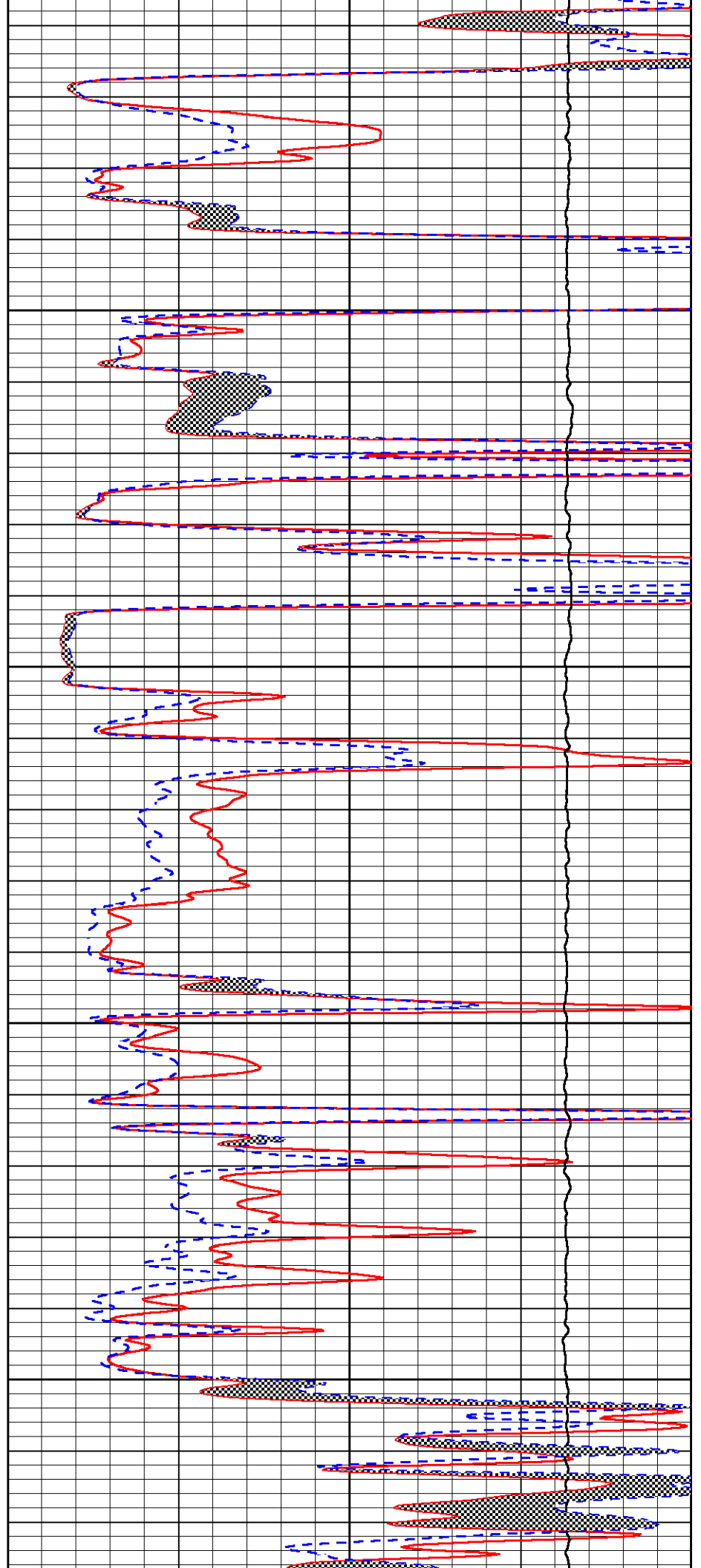


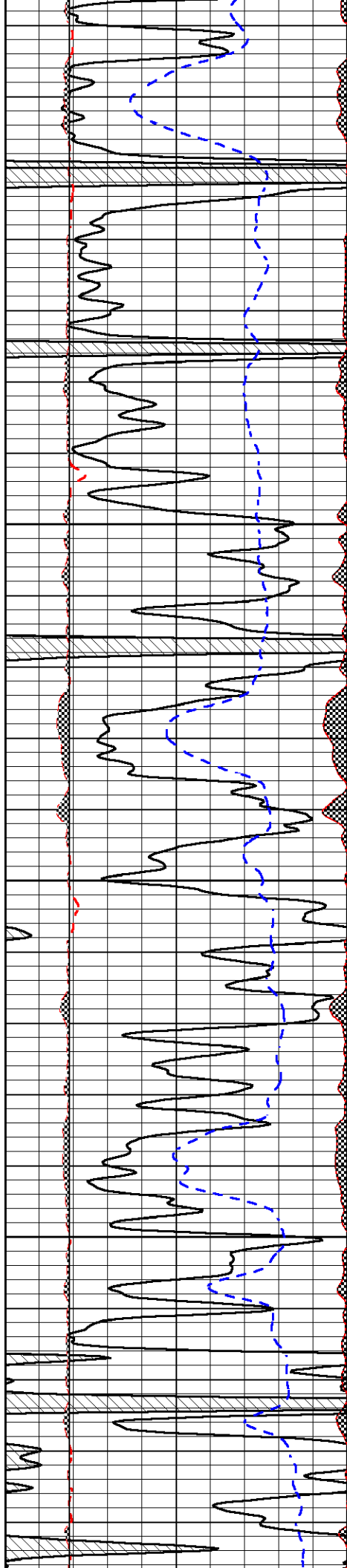
4450

4500

4550

4600



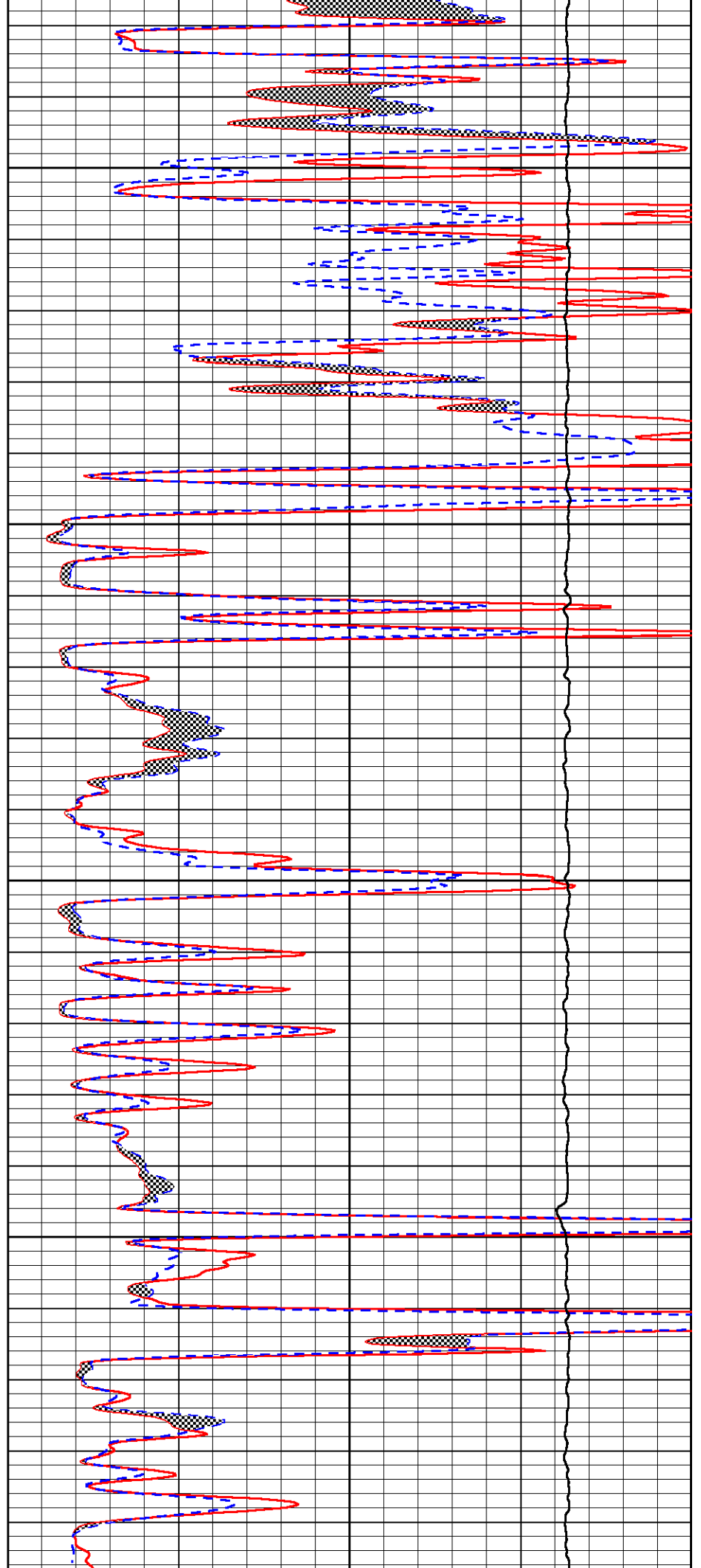


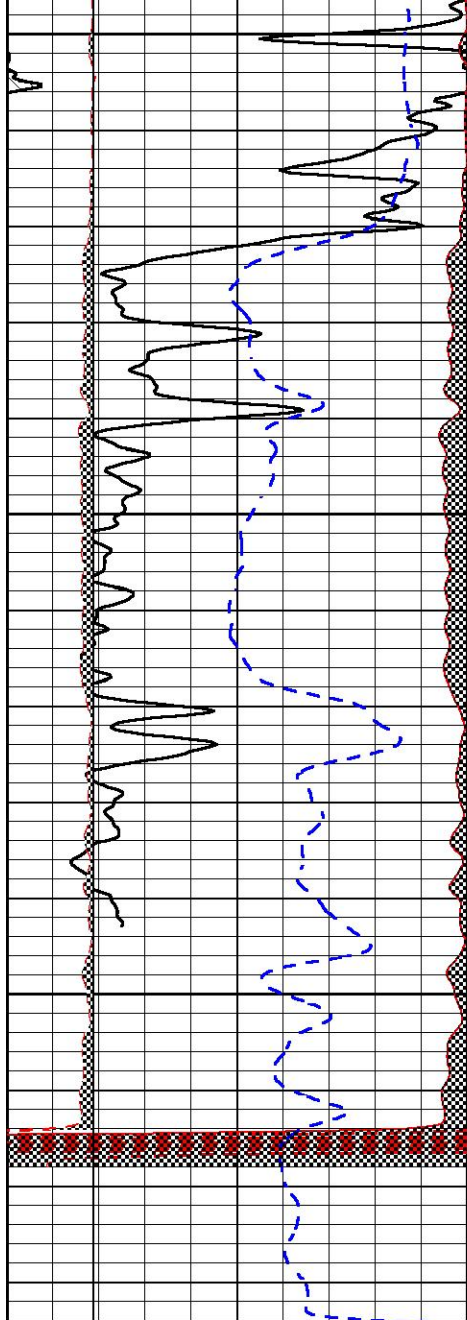
4650

4700

4750

4800



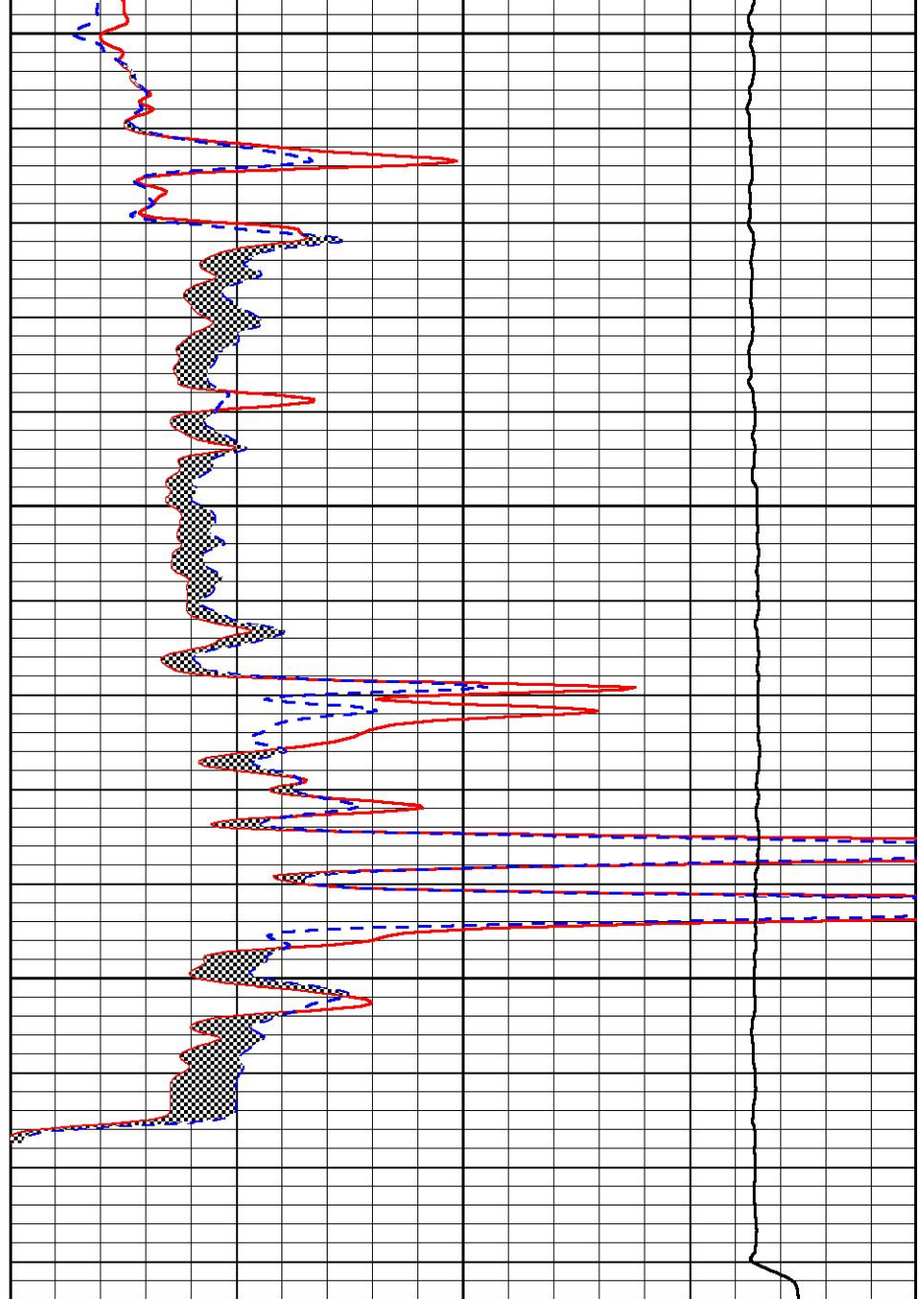


4850

4900

4950

0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
2.875	mcal (in)	7.875
-200	sp (mV)	0



0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0



MIDWEST WIRELINE

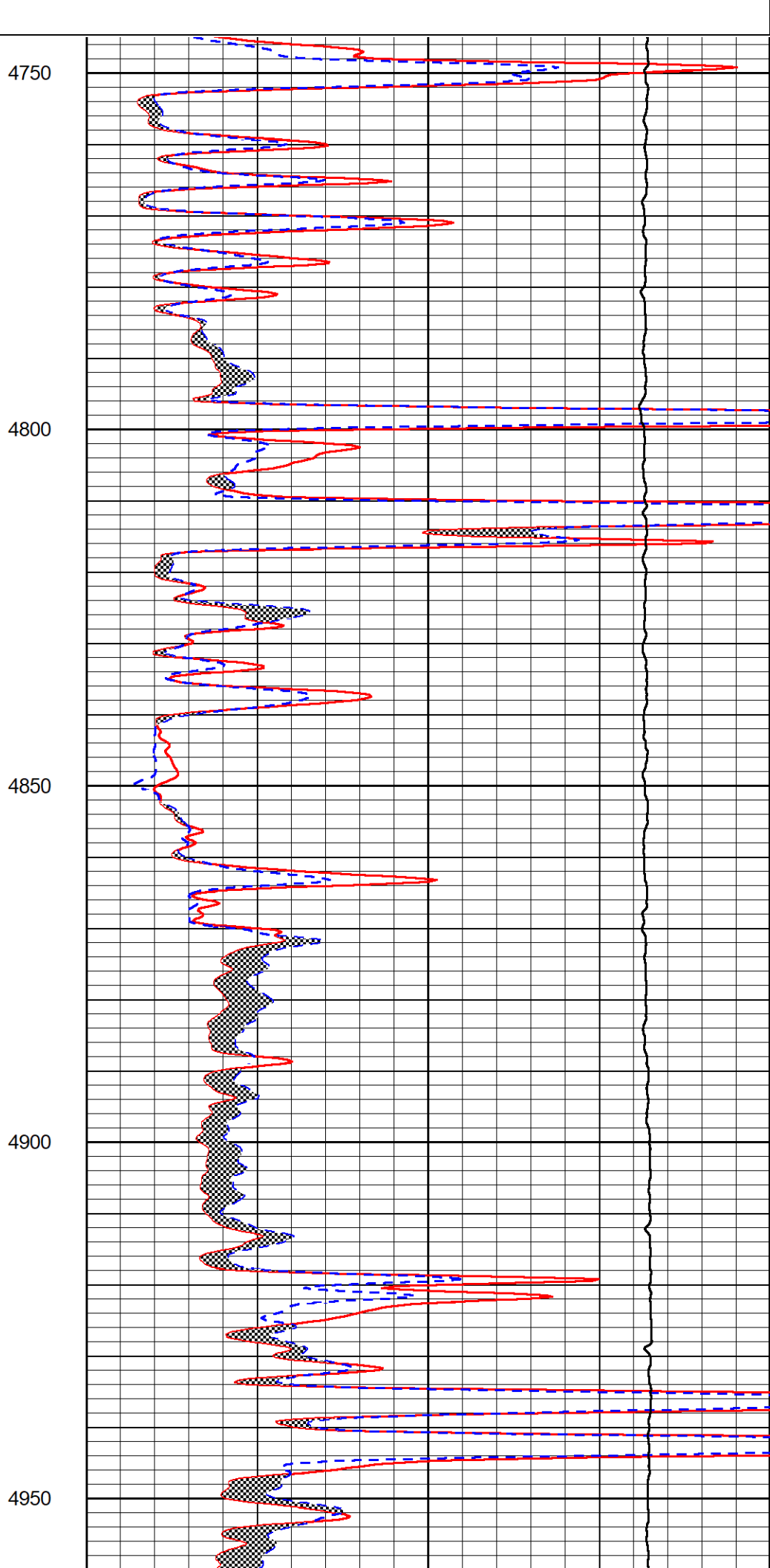
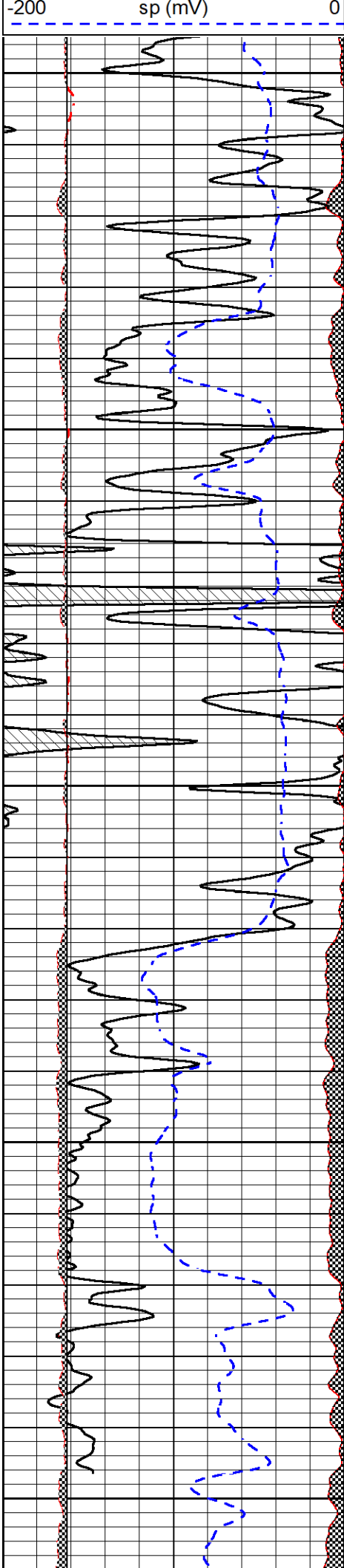
REPEAT SECTION

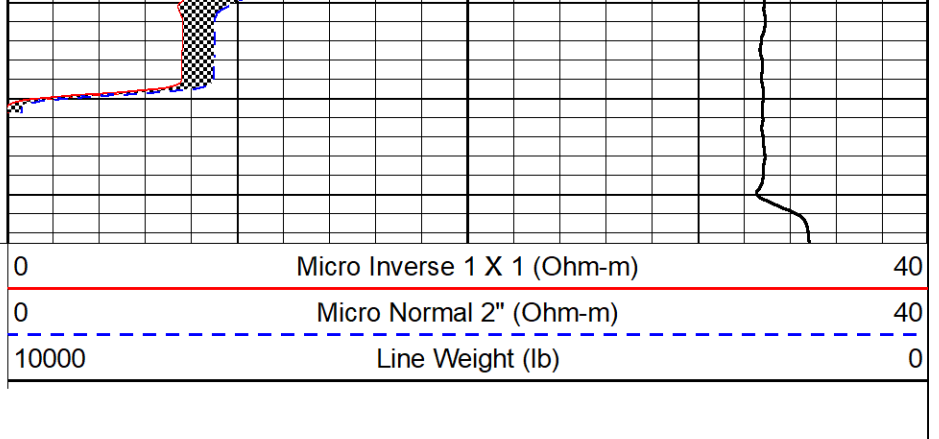
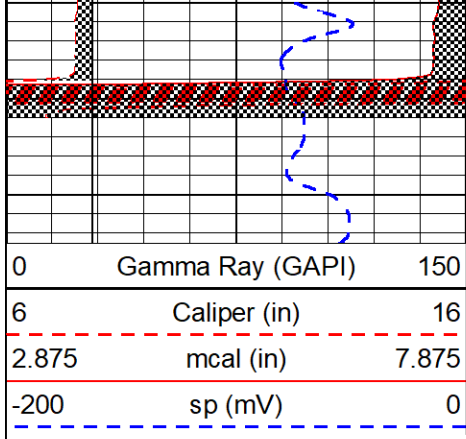
REPEAT PASS

Database File cobalt_deer creek #1-25.db
 Dataset Pathname StkMI/pass2.1
 Presentation Format _micro
 Dataset Creation Thu Nov 03 18:30:52 2022
 Charted by Depth in Feet scaled 1:240

0	Gamma Ray (GAPI)	150
6	Caliper (in)	16
2.875	mcal (in)	7.875

0	Micro Inverse 1 X 1 (Ohm-m)	40
0	Micro Normal 2" (Ohm-m)	40
10000	Line Weight (lb)	0





Calibration Report

Database File cobalt_deer creek #1-25.db
 Dataset Pathname StkMI/pass3.1
 Dataset Creation Thu Nov 03 19:16:25 2022

Dual Induction Calibration Report

Serial-Model: 501 HT-M&W
 Surface Cal Performed: Tue Oct 11 22:01:45 2022

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		m	b
Deep	83.639	487.104	0.000	183.000	mmho/m	0.455	-36.500
Medium	113.335	1585.690	0.000	442.000	mmho/m	0.305	-34.500

Microlog Calibration Report

Serial-Model: 401-PSIML
 Performed: Wed Oct 19 20:26:45 2022

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	12000.0000	0.6000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	14500.0000	0.0000
Caliper	1.0052	1.0858	5.0000	16.5000	in	98.0000	-93.1500

Compensated Density Calibration Report

Serial-Model: 307-11-M&W
 Source #: 20762B
 Master Calibration Performed: Sat Aug 27 10:20:16 2022

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	3600.52	4768.22	cps
Aluminum	2.670	g/cc	693.98	3106.20	cps

Spine Angle = 75.41

Density/Spine Ratio = 0.538

	Size		Reading
Small Ring	6.00	in	1.16

Compensated Neutron Calibration Report

Serial Number: 207-MW
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

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: 106
Tool Model: M&W
Performed: Fri Dec 3 15:10:46 2021

Calibrator Value: 500.0 GAPI

Background Reading: 24.0 cps
Calibrator Reading: 637.0 cps

Sensitivity: 0.5500 GAPI/cps



Company Cobalt Energy LLC
Well Deer Creek #1-25
Field Little Beaver Creek North
County Cheyenne
State Kansas