



PIONEER
Pioneer Energy Services

MICRORESISTIVITY LOG

Company RITCHIE EXPLORATION, INC.
Well EATON ENTERPRISES NO. 1
Field WILDCAT
County SCOTT
State KANSAS

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Location: API #: 15-171-21226-00-00

Other Services

1118' FNL & 736' FWL
SEC 30 TWP 16S RGE 31W

CNL/CDL
DIL

Permanent Datum GROUND LEVEL Elevation 2956'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2967'
D.F. N/A
G.L. 2956'

Date 7/11/2018

Run Number ONE

Depth Driller 4730'

Depth Logger 4730'

Bottom Logged Interval 4729'

Top Log Interval 3500'

Casing Driller 8.625" @ 266'

Casing Logger 264'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 5500

Density / Viscosity 9.4 55

pH / Fluid Loss 10.5 8.8

Source of Sample FLOWLINE

Rm @ Meas. Temp .65 @ 72

Rmt @ Meas. Temp .49 @ 72

Rmc @ Meas. Temp .88 @ 72

Source of Rmf / Rmc CHARTS

Rm @ BHT .38 @ 123

Operating Rig Time 2 HOURS

Max Rec. Temp. F 123 DEGF

Equipment Number 108

Location HAYS

Recorded By J. HENRICKSON

Witnessed By KENT MATSON

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

HEALY KANSAS

WEST TO RODEO ROAD, 3 NORTH, 1/8 EAST, SOUTH INTO

Log Measured From: KELLY BUSHING

11 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES

www.pioneerenergy.com

785-625-3858

Your Pioneer Energy Services Crew

This Log Record Was Witnessed By

Engineer: J. HENRICKSON

Primary Witness: KENT MATSON

Operator:

Secondary Witness:

Operator:

Secondary Witness:

Operator:

Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 100	in 5.5	in 0	g/cc 1	2	g/cc 2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m 0	mmho/m -8	mV -180	degF 95	Off	ft 4730

Sensor	Offset (ft)	Schematic		Description	Length (ft)	O.D. (in)	Weight (lb)
GR	40.58			GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC	37.48			CNT-M&W (tk10-MW)	5.50	3.50	100.00
CNSSC	36.73						
LSD DCAL SSD	28.43 28.42 27.93			CDL-M&W (979-229)	8.50	4.00	250.00
ML-PSI STKBL ML (PSI-01) Stackable Microlog Tools	7.58						
MCAL	19.83						
MI	19.83						
MN	19.83						
RLL3	15.80						
RLL3F	15.79						
CILD	8.00			DIL-M&W (1987)	18.50	3.50	220.00

CILM

4.70

SP

0.20

Dataset: ritchie_eaton_enterprises_1.db: field/well/stackml/pass3.1
Total length: 43.08 ft
Total weight: 685.00 lb
O.D.: 4.00 in

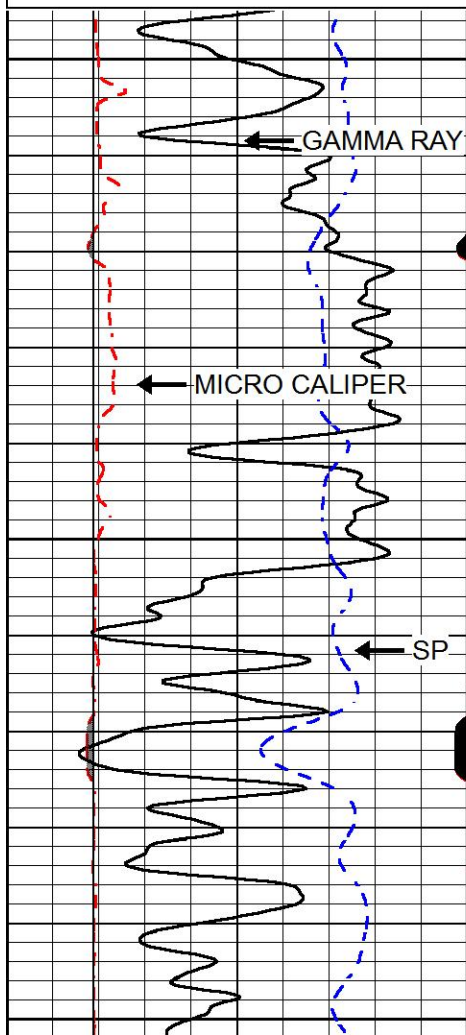


MAIN PASS

Database File ritchie_eaton_enterprises_1.db
Dataset Pathname stackml/pass3.1
Presentation Format micro
Dataset Creation Wed Jul 11 12:54:44 2018
Charted by Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0



3500

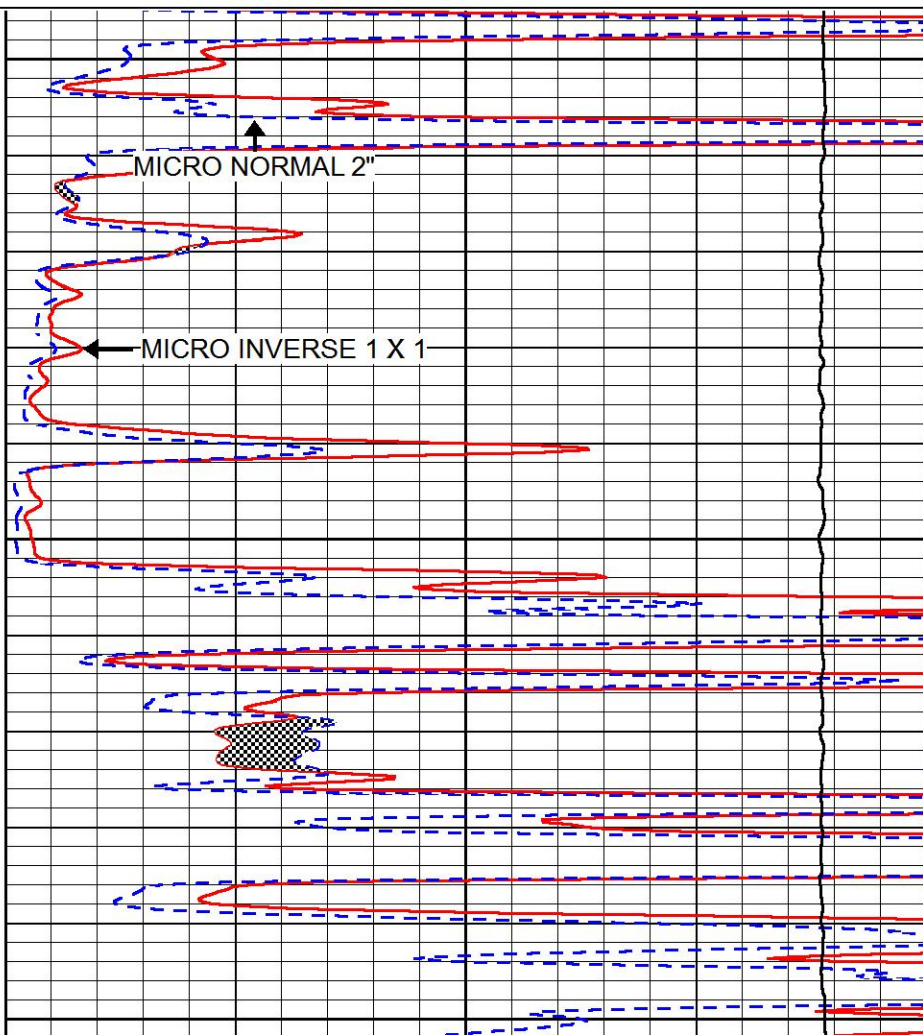
← GAMMA RAY

← MICRO CALIPER

← SP

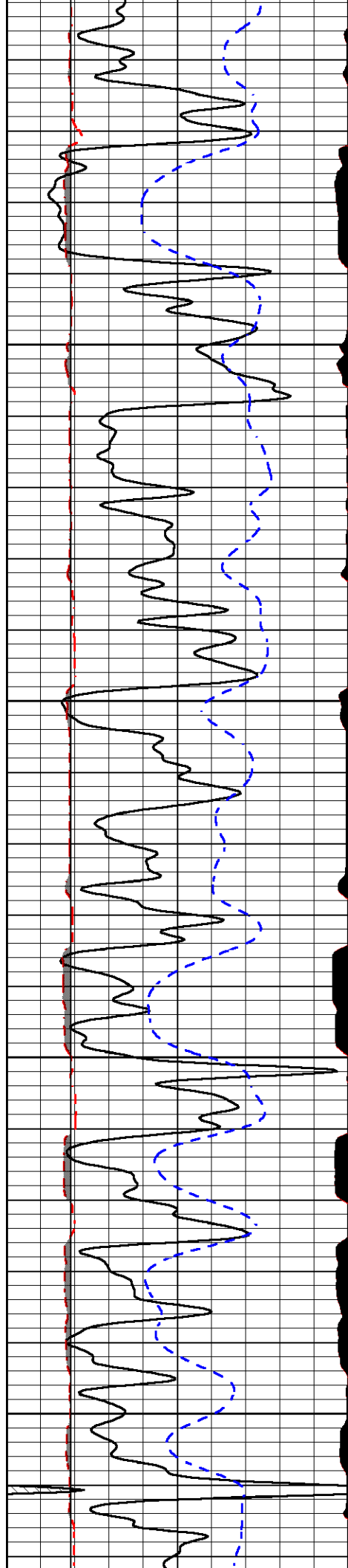
3550

3600



↑ MICRO NORMAL 2"

← MICRO INVERSE 1 X 1

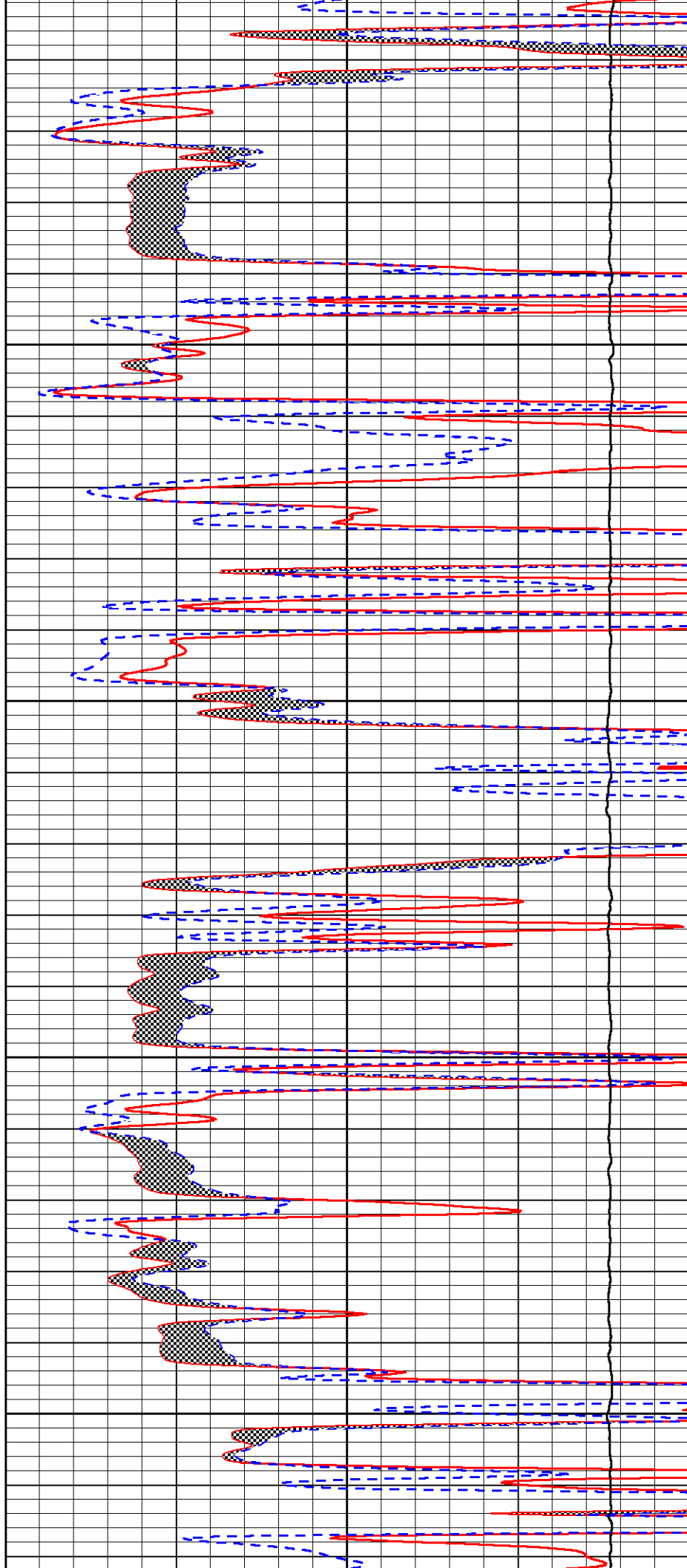


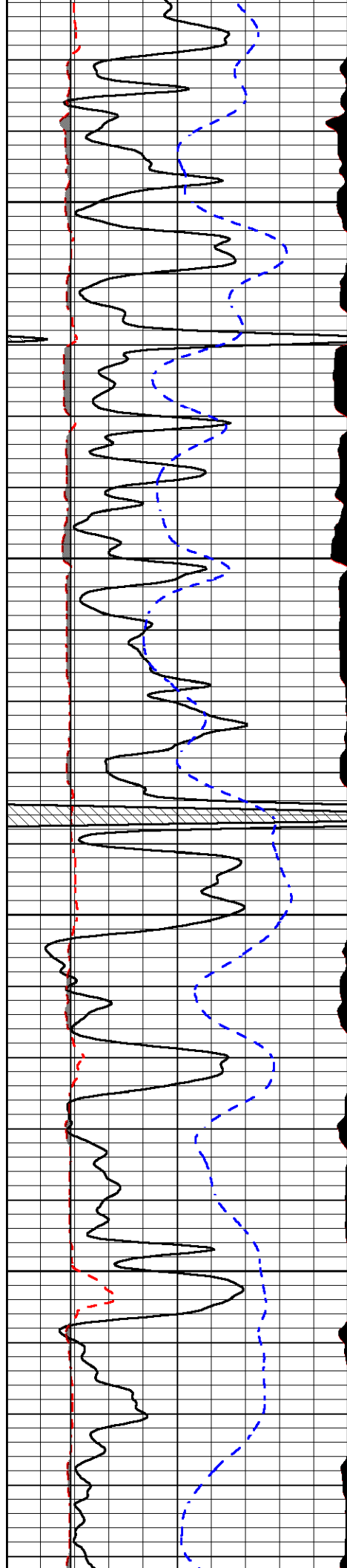
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3700

3750

3800



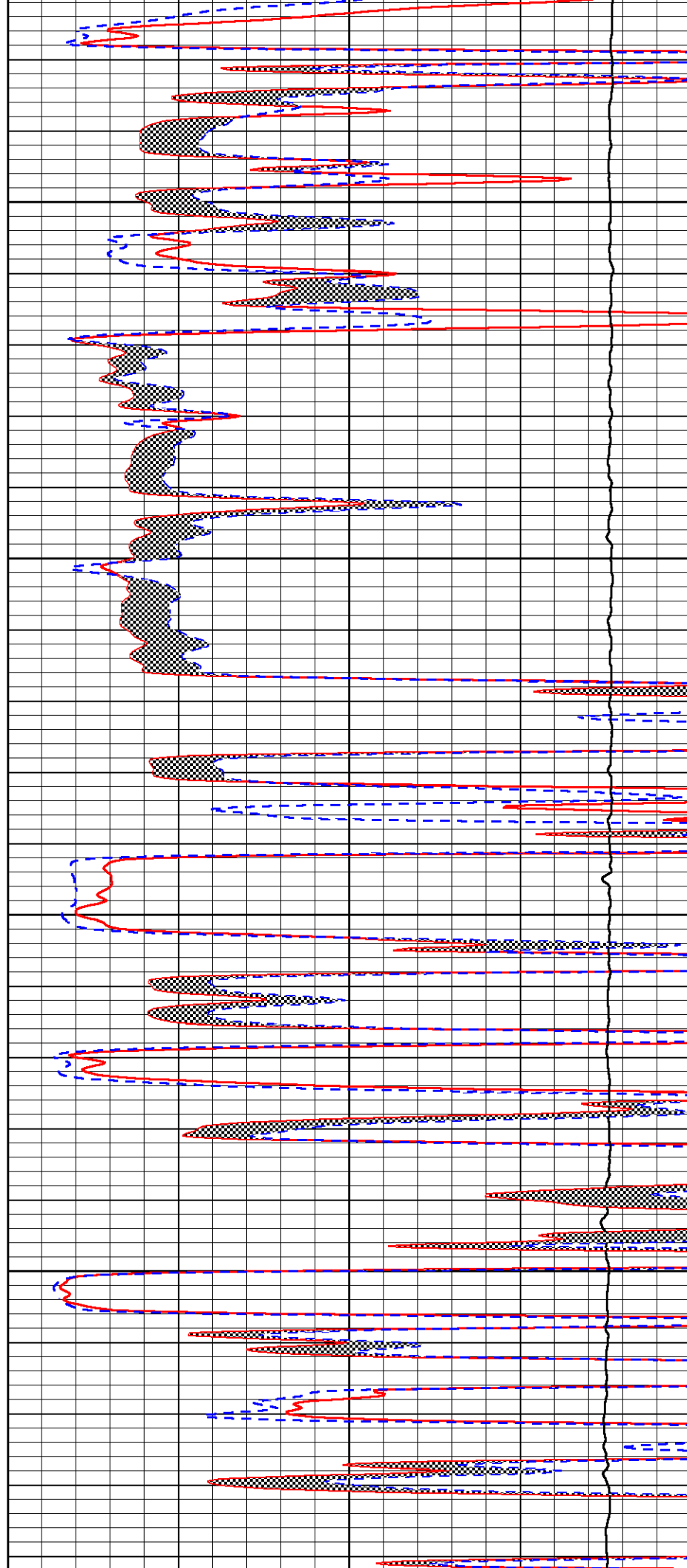


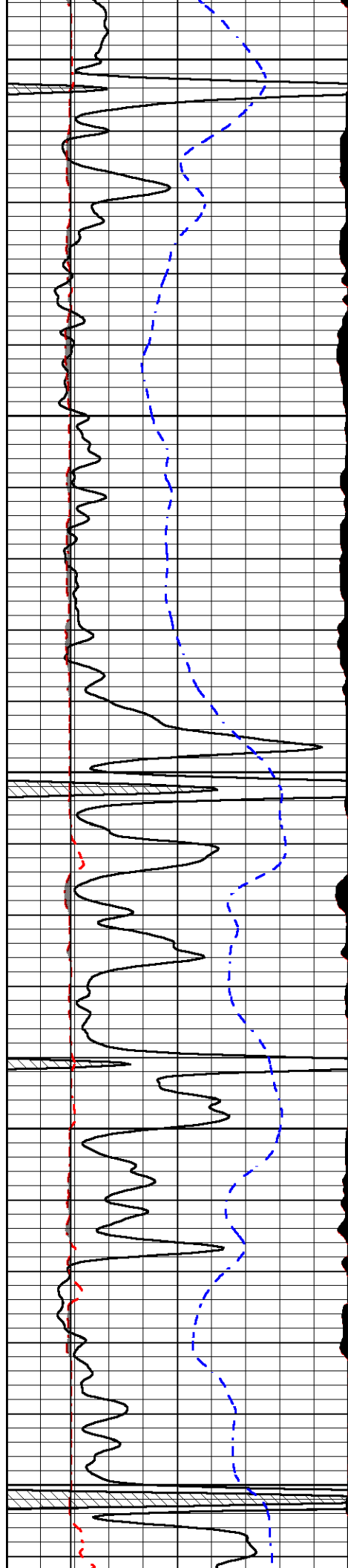
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3900

3950

4000





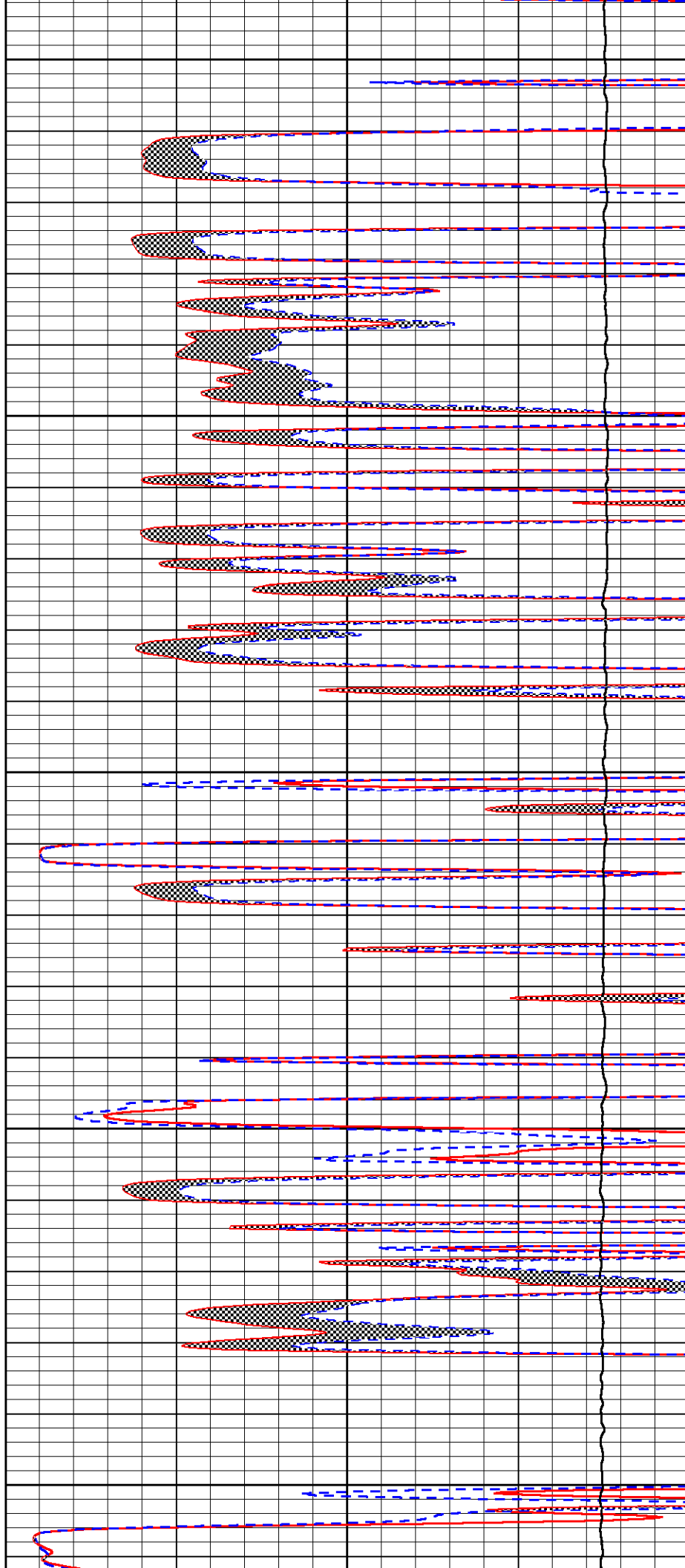
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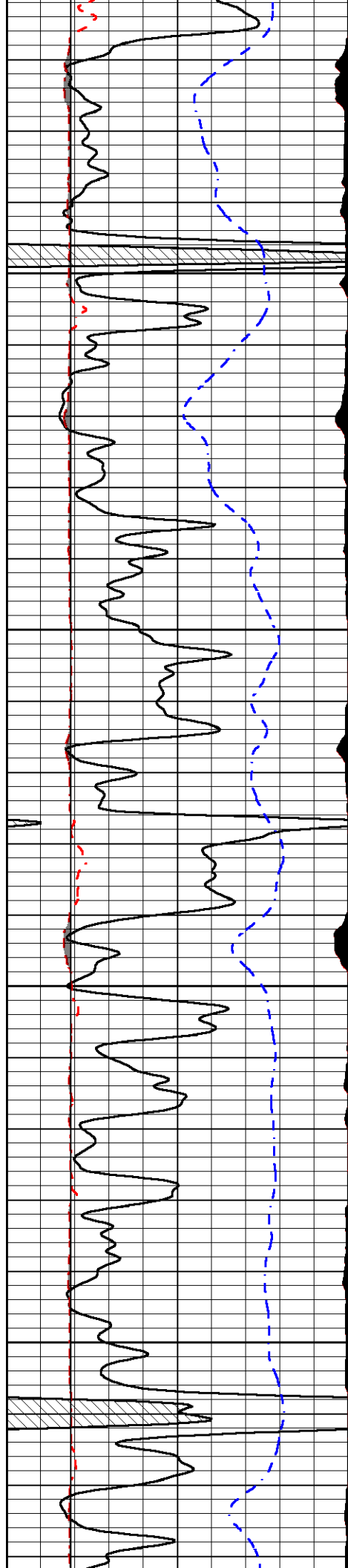
4100

4150

4200

4250



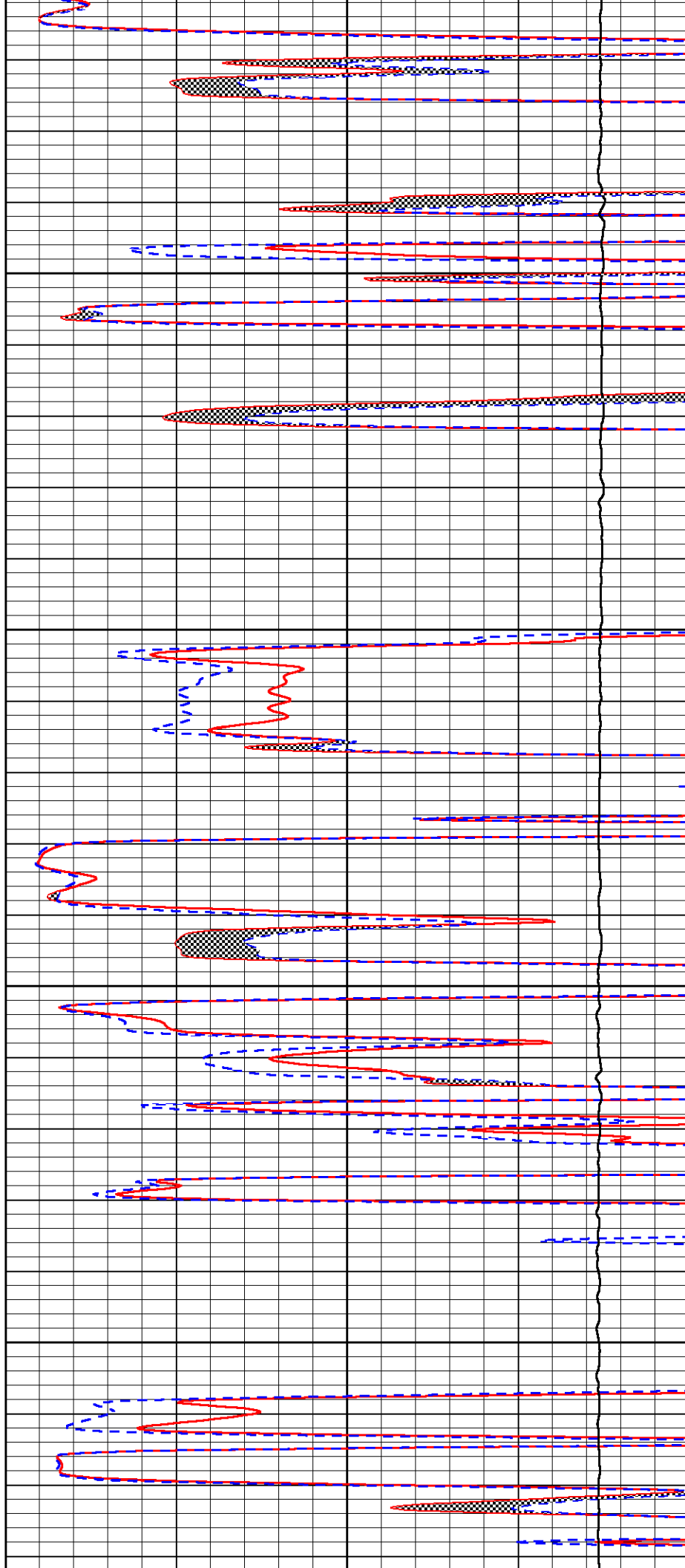


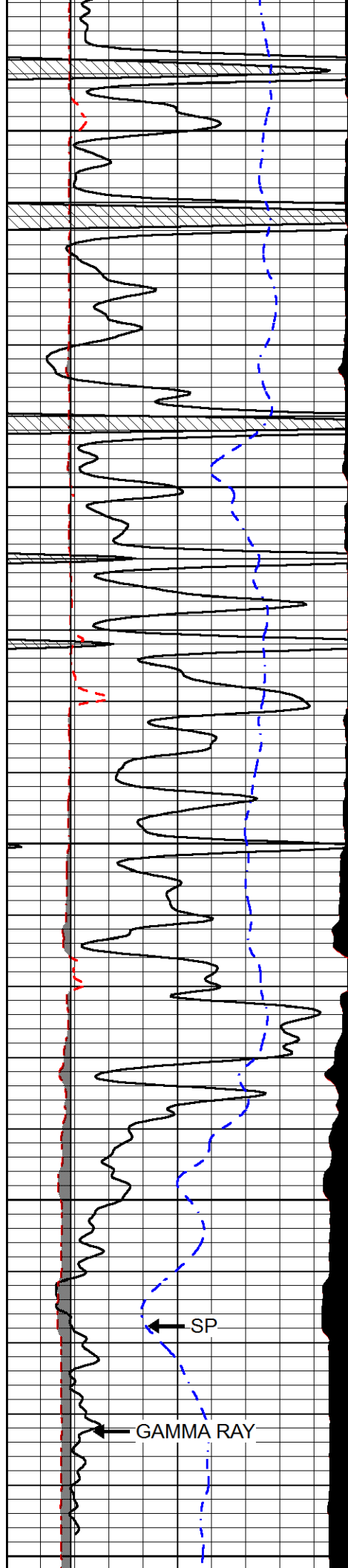
4300

4350

4400

4450





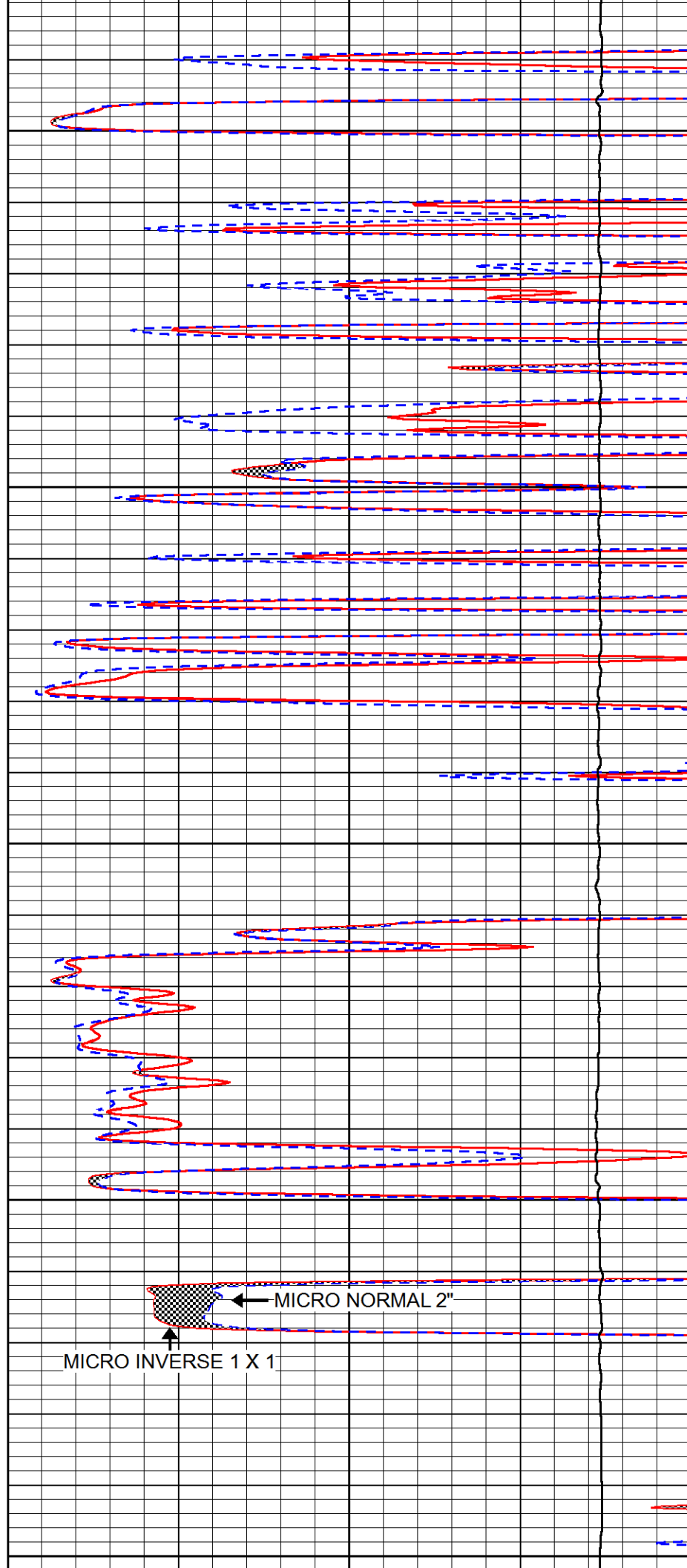
4500

4550

4600

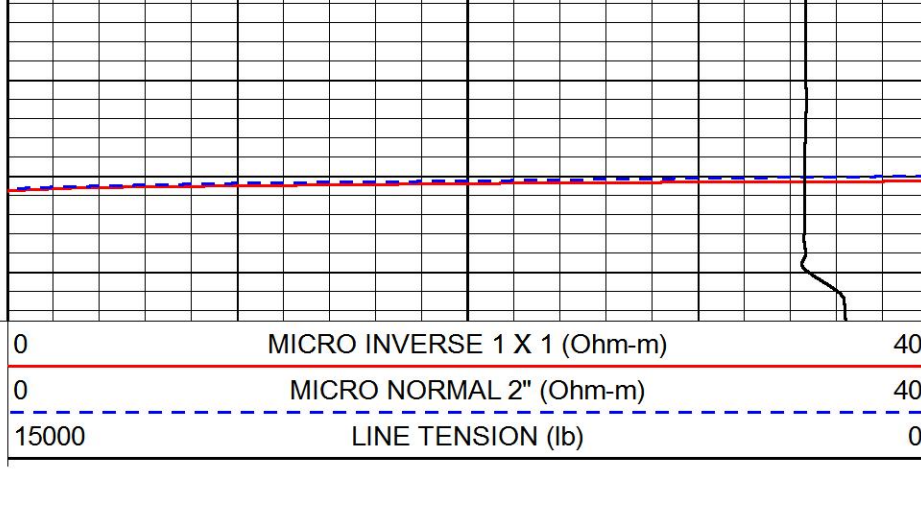
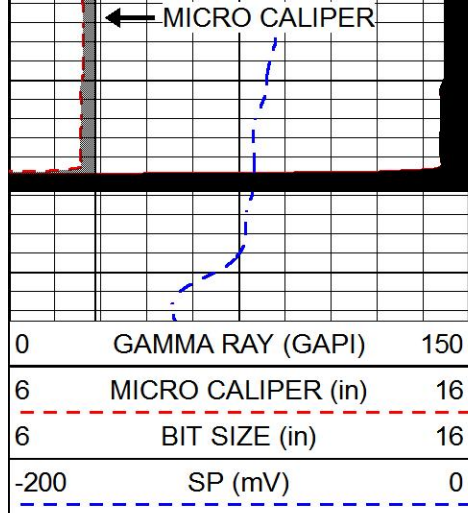
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4700



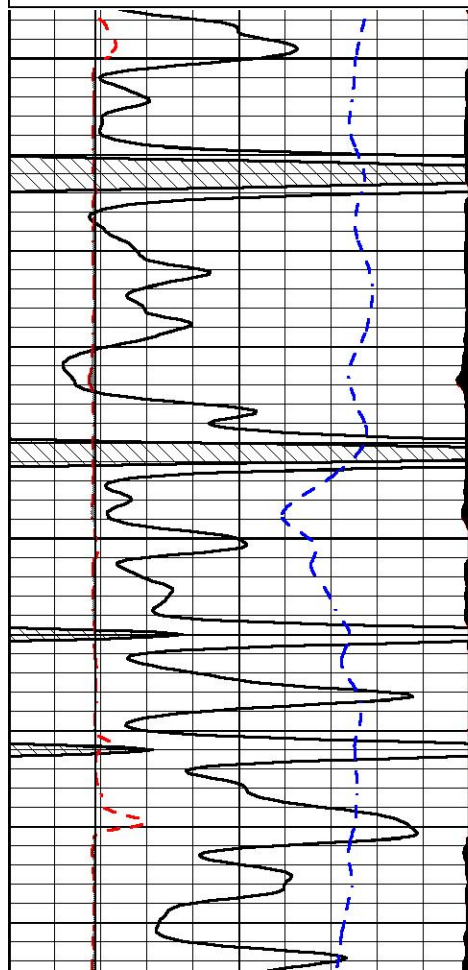
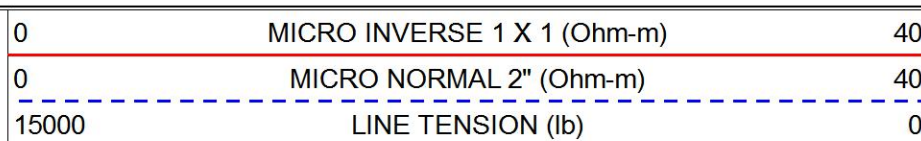
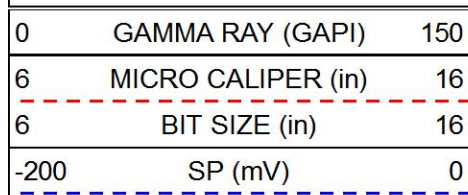
MICRO INVERSE 1 X 1

MICRO NORMAL 2"



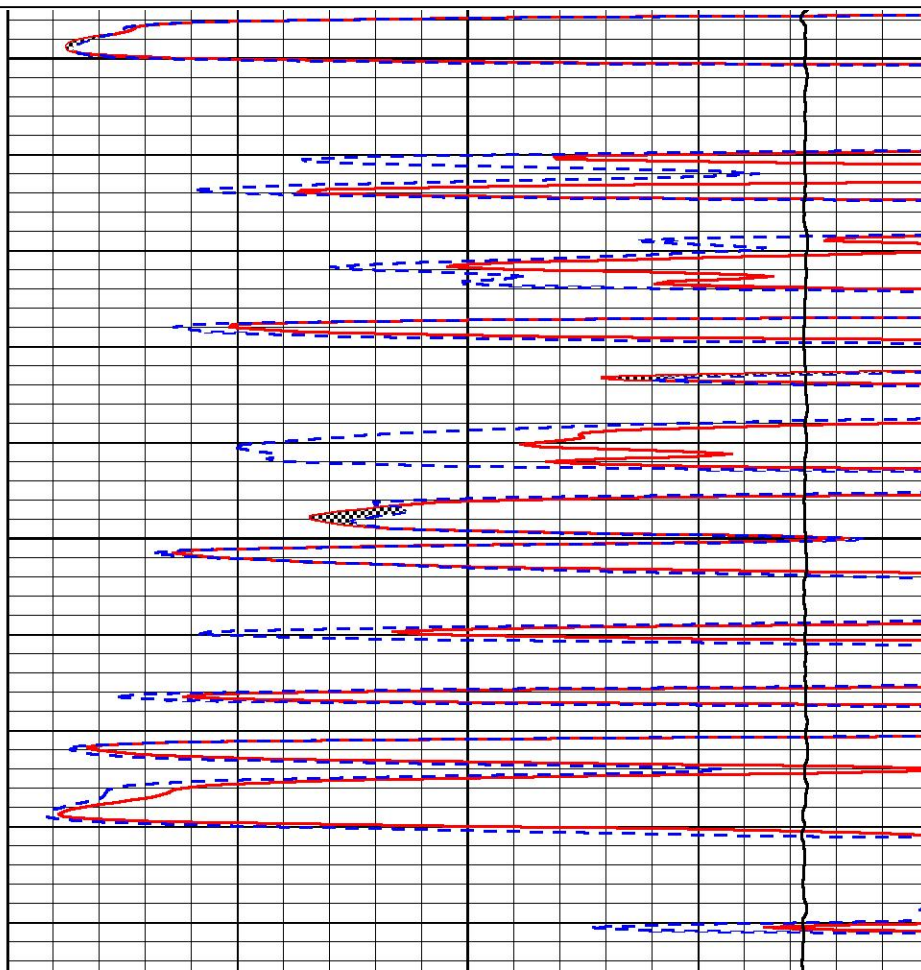
REPEAT SECTION

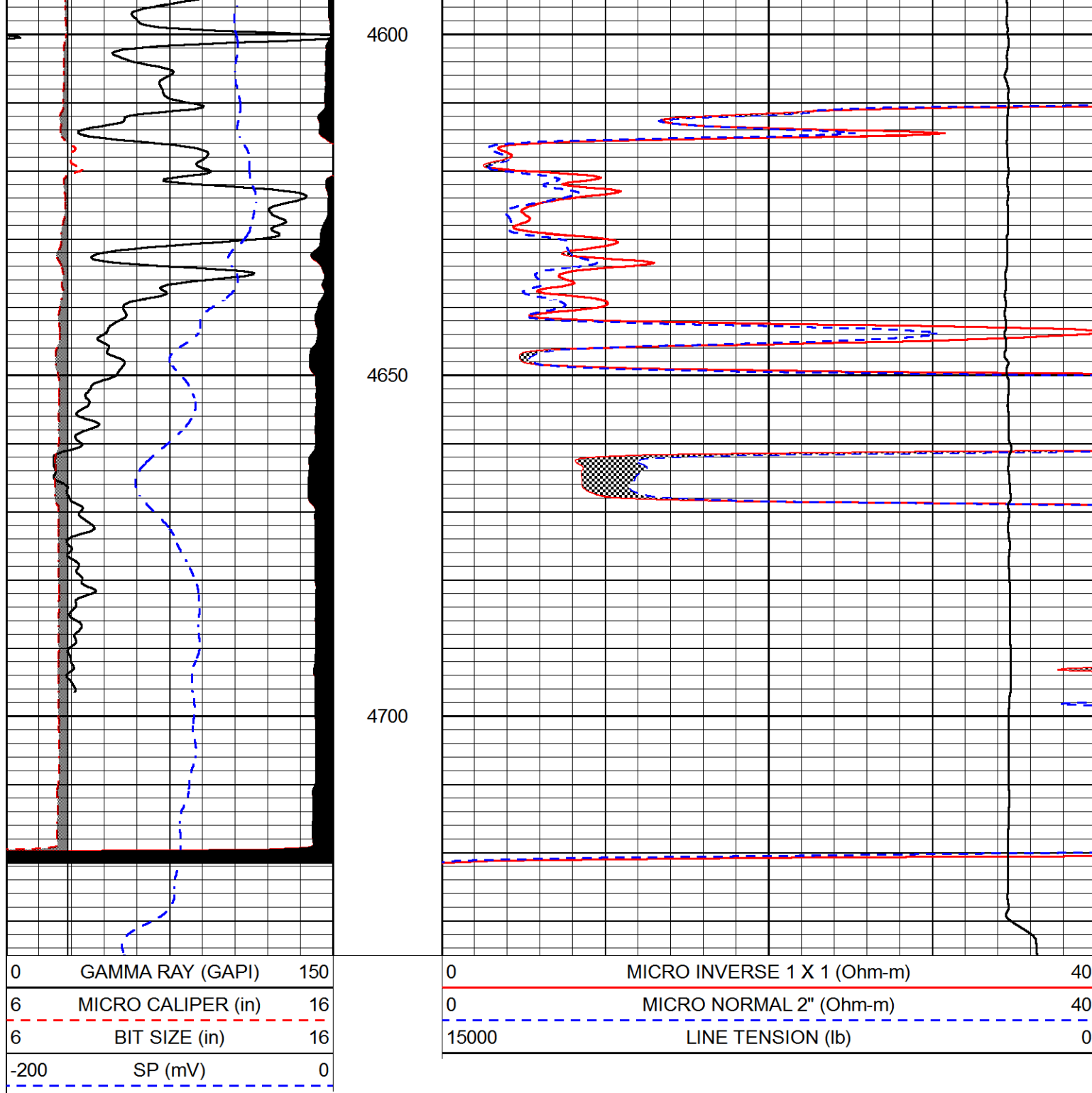
Database File ritchie_eaton_enterprises_1.db
 Dataset Pathname stackml/pass2.1
 Presentation Format micro
 Dataset Creation Wed Jul 11 12:54:53 2018
 Charted by Depth in Feet scaled 1:240



4500

4550





Calibration Report

Database File ritchie_eaton_enterprises_1.db
 Dataset Pathname stackml/pass3.1
 Dataset Creation Wed Jul 11 12:54:44 2018

Dual Induction Calibration Report

Serial-Model: 1987-M&W
 Calibration Performed: Tue Apr 11 17:07:38 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop	mmho/m	Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-36.500

Medium 161.982 1441.110 0.000 255.800 mmho/m 0.440 -110.500

Microlog Calibration Report

Serial-Model: PSI-01-PSI STKBL ML
Performed: Thu Mar 31 18:14:32 2016

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	22500.0000	-1.0000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	29500.0000	-1.0000
Caliper	1.0001	1.1397	6.5000	18.5000	in	86.0000	-82.9000

Compensated Density Calibration Report

Serial-Model: 979-229-M&W
Source / Verifier: 21170B /
Master Calibration Performed: Tue Jun 26 07:59:32 2018

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	7726.98	9910.47	cps
Aluminum	2.680	g/cc	1442.93	6391.03	cps
Spine Angle = 75.35			Density/Spine Ratio = 0.533		
	Size		Reading		
Small Ring	4.00	in	1.16		
Large Ring	16.00	in	1.03		

Compensated Neutron Calibration Report

Serial Number: tk10-MW
Tool Model: M&W
Calibration Performed: Wed Nov 16 11:21:36 2016

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: 89-M&W
Tool Model: M&W
Calibration Performed: Tue Apr 11 17:08:01 2017

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps





Well	EATON ENTERPRISES NO. 1
Field	WILDCAT
County	SCOTT
State	KANSAS