



PIONEER

Pioneer Energy Services

MICRORESISTIVITY LOG

Company VAL ENERGY, INC.

Well KOUGH MATTSON UNIT #1-4

Field

County THOMAS

State KANSAS

Location:

API #: 15-193-20981-00-00

Other Services

SE NE SE SW
893' FSL & 2517' FWL

SEC 4 TWP 8S RGE 35W

CNL/CDL
DIL/BHCS

Permanent Datum GROUND LEVEL Elevation 3311'

Log Measured From KELLY BUSHING

Elevation
K.B. 3316'
D.F. N/A
G.L. 3311'

Drilling Measured From KELLY BUSHING

12/10/2016

Run Number TWO

Depth Driller 4870'

Depth Logger 4872'

Bottom Logged Interval 4871'

Top Log Interval 3800'

Casing Driller 8.625" @ 264'

Casing Logger 263'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 5500

Density / Viscosity 9.2 49

pH / Fluid Loss 10.5 8.0

Source of Sample FLOWLINE

Rm @ Meas. Temp 0.4 @ 64

Rmt @ Meas. Temp 0.3 @ 64

Rmc @ Meas. Temp 0.54 @ 64

Source of Rmt / Rmc CHARTS

Rm @ BHT 0.21 @ 125

Operating Rig Time 4 1/2 HOURS

Max Rec. Temp. F 125 DEG F

Equipment Number 108

Location COLBY

Recorded By T. MARTIN

Witnessed By TIM PRIEST

<<< Fold Here >>>

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.

LEVANT, KS, 1 1/2 W ON R RD,
CROSS RR AND STAY N INTO

Log Measured From: KELLY BUSHING 5 Ft. Above Permanent Datum

THANK YOU FOR USING PIONEER ENERGY SERVICES
www.pioneerenergy.com 785-625-3858

Your Pioneer Energy Services Crew

Engineer: T. MARTIN
Operator: C. SCHOENROGGE
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: TIM PRIEST
Secondary Witness:
Secondary Witness:
Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\val_koughmattsonunit_#1-4.db
Dataset field/well/stack/pass3.1/_vars_

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in	degF	in	in	g/cc	2	g/cc
	7.875	125	5.5	0	1		2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m	mmho/m	mV	degF	Off	ft
		0	0	-375	20		4872

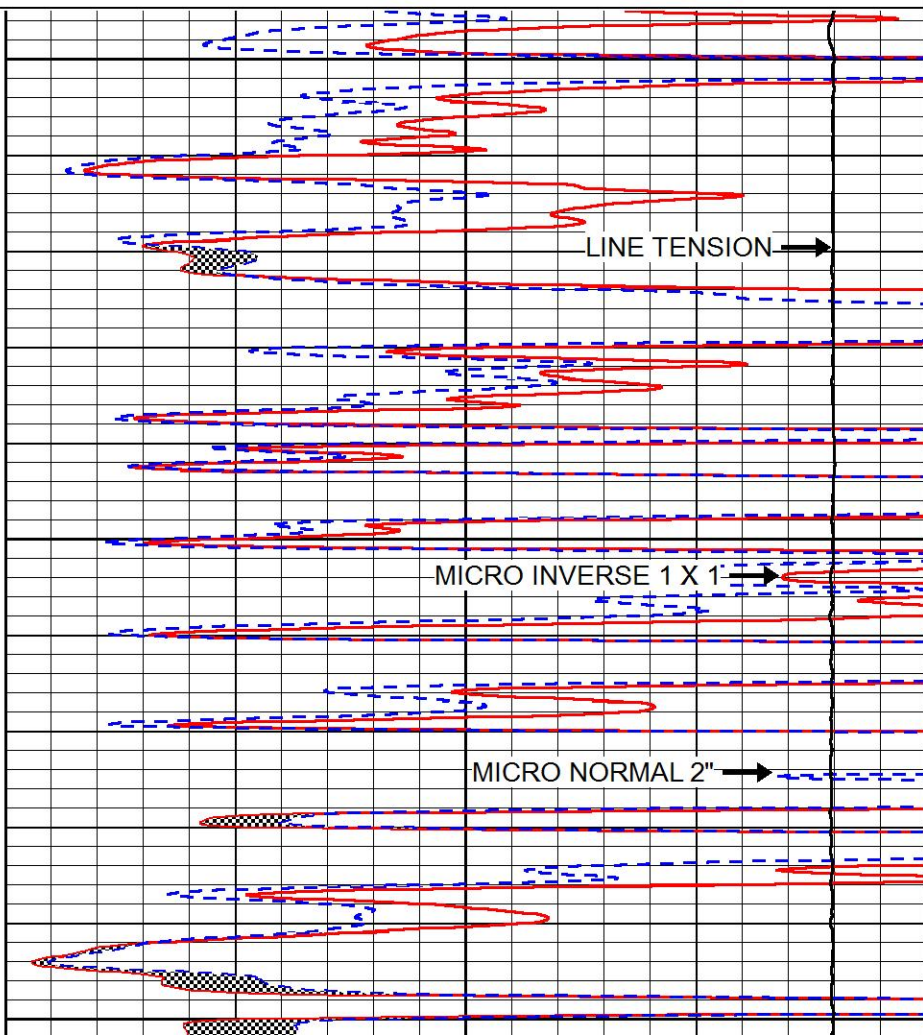
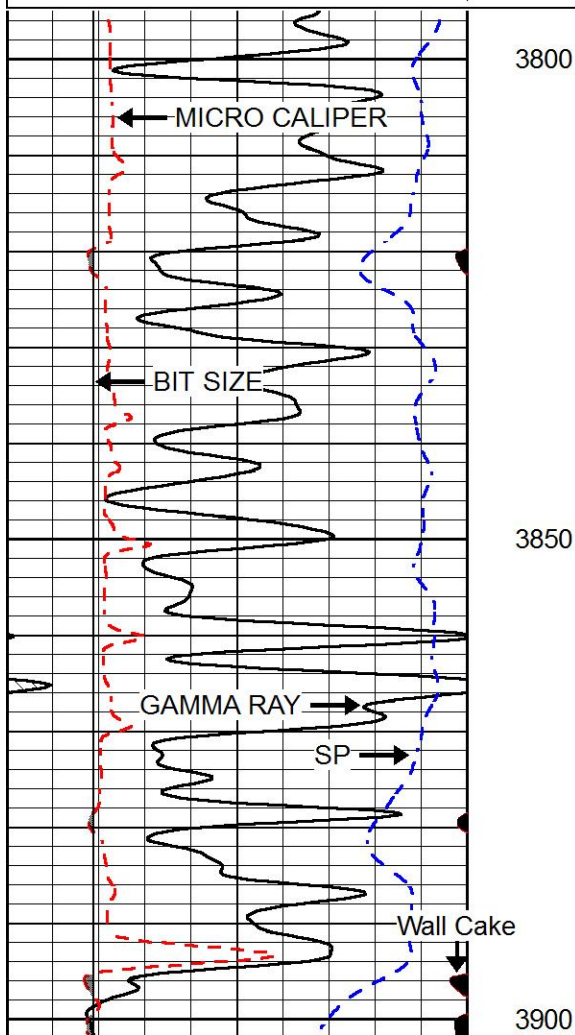


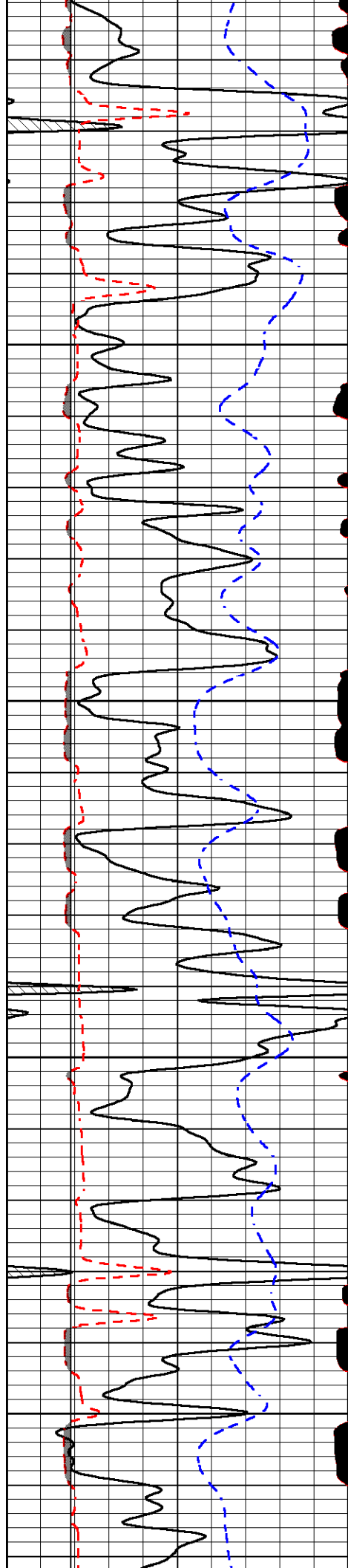
MAIN PASS

Database File val_koughmattsonunit_#1-4.db
Dataset Pathname stack/pass3.1
Presentation Format micro
Dataset Creation Sat Dec 10 10:54:21 2016
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



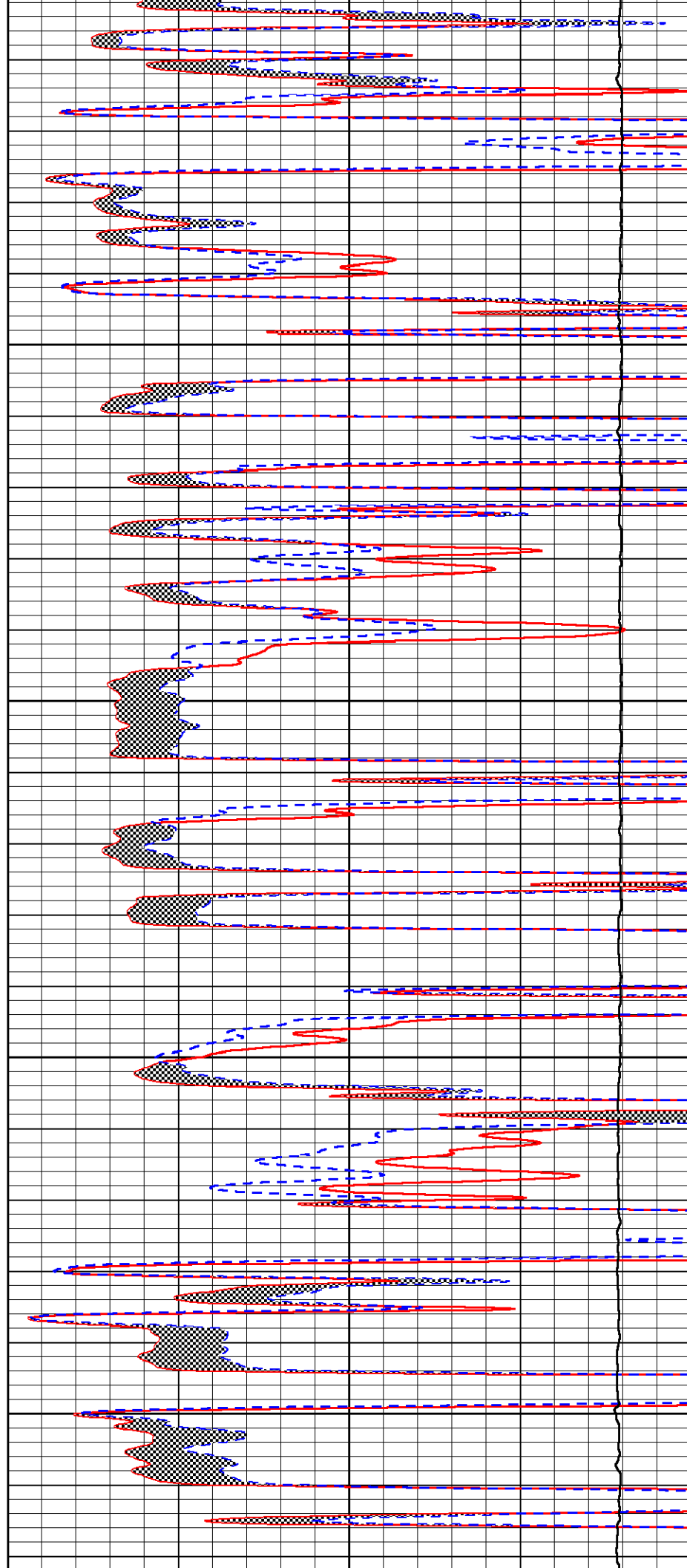


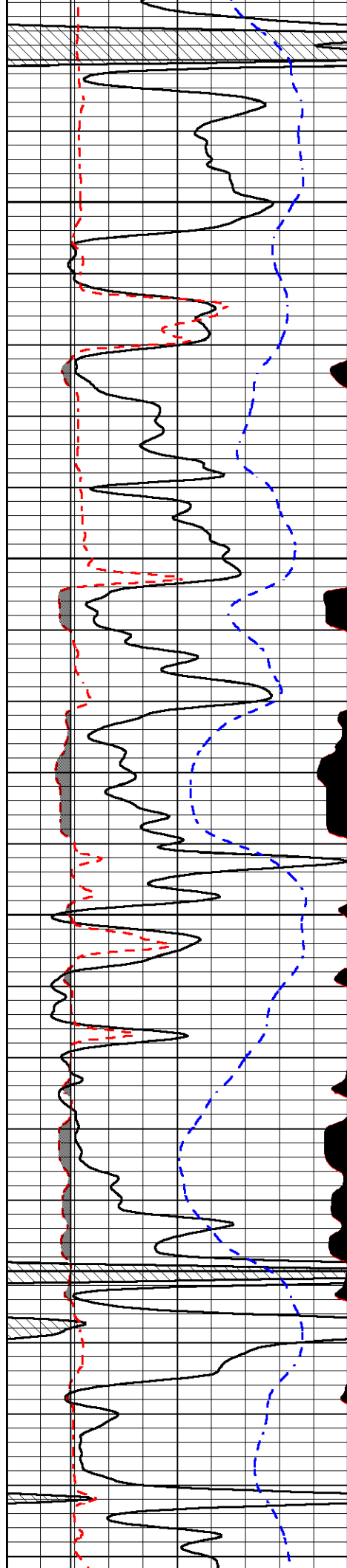
3950

4000

4050

4100



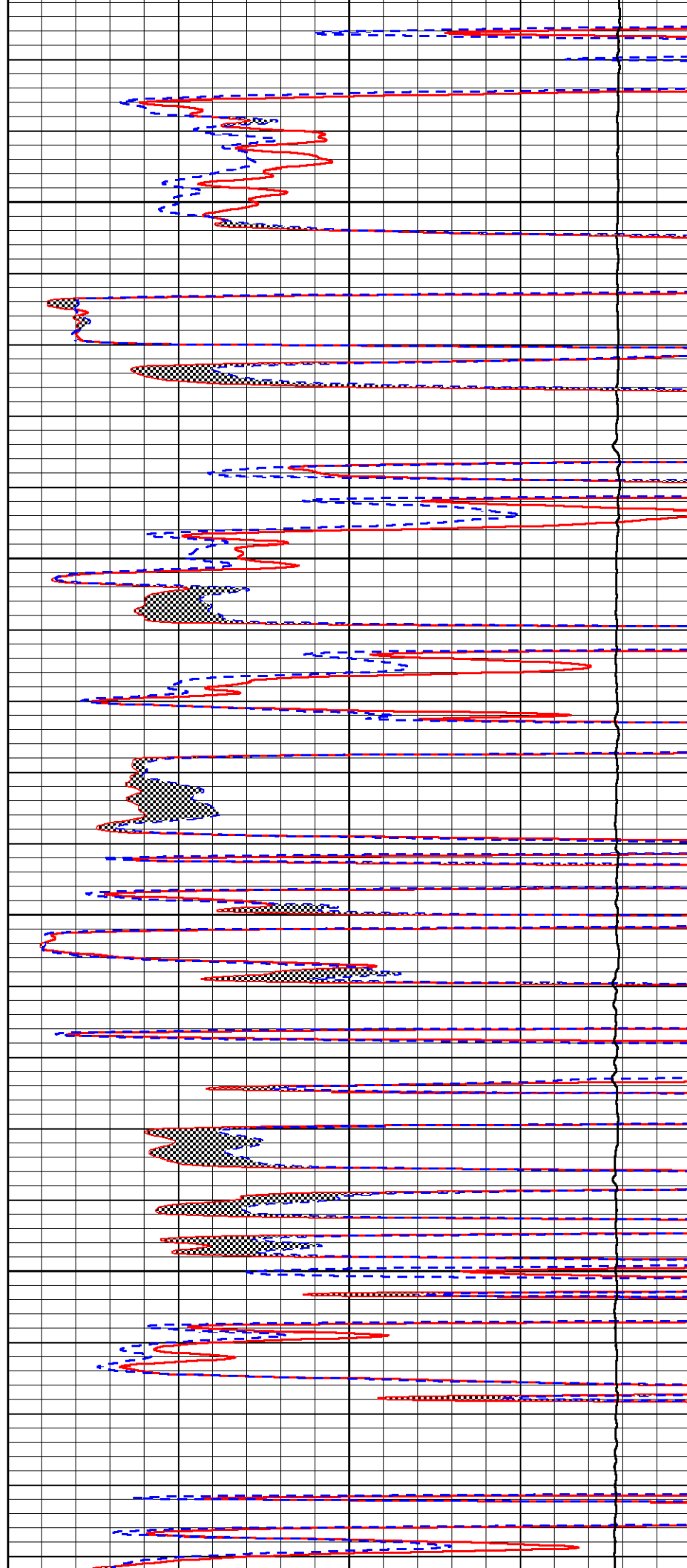


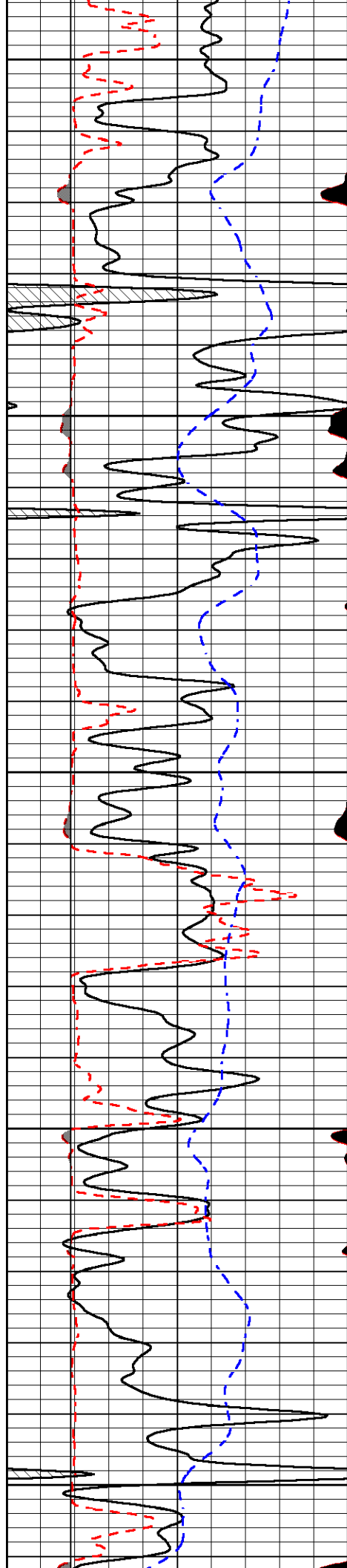
4150

4200

4250

4300





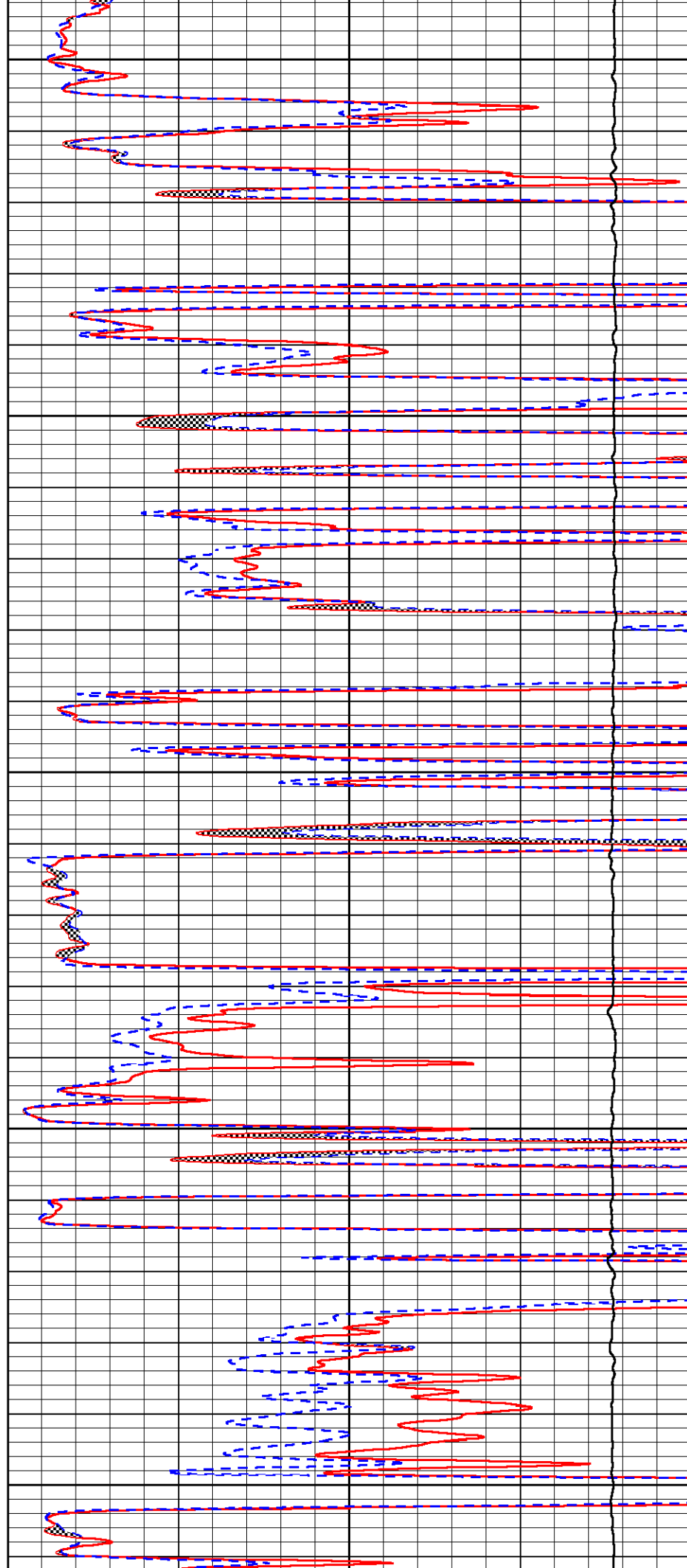
4350

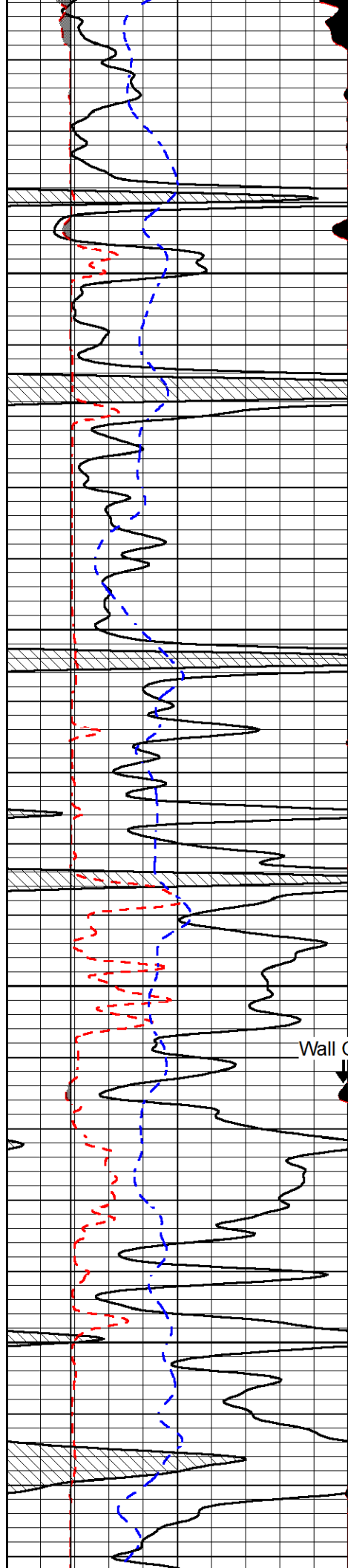
4400

4450

4500

4550





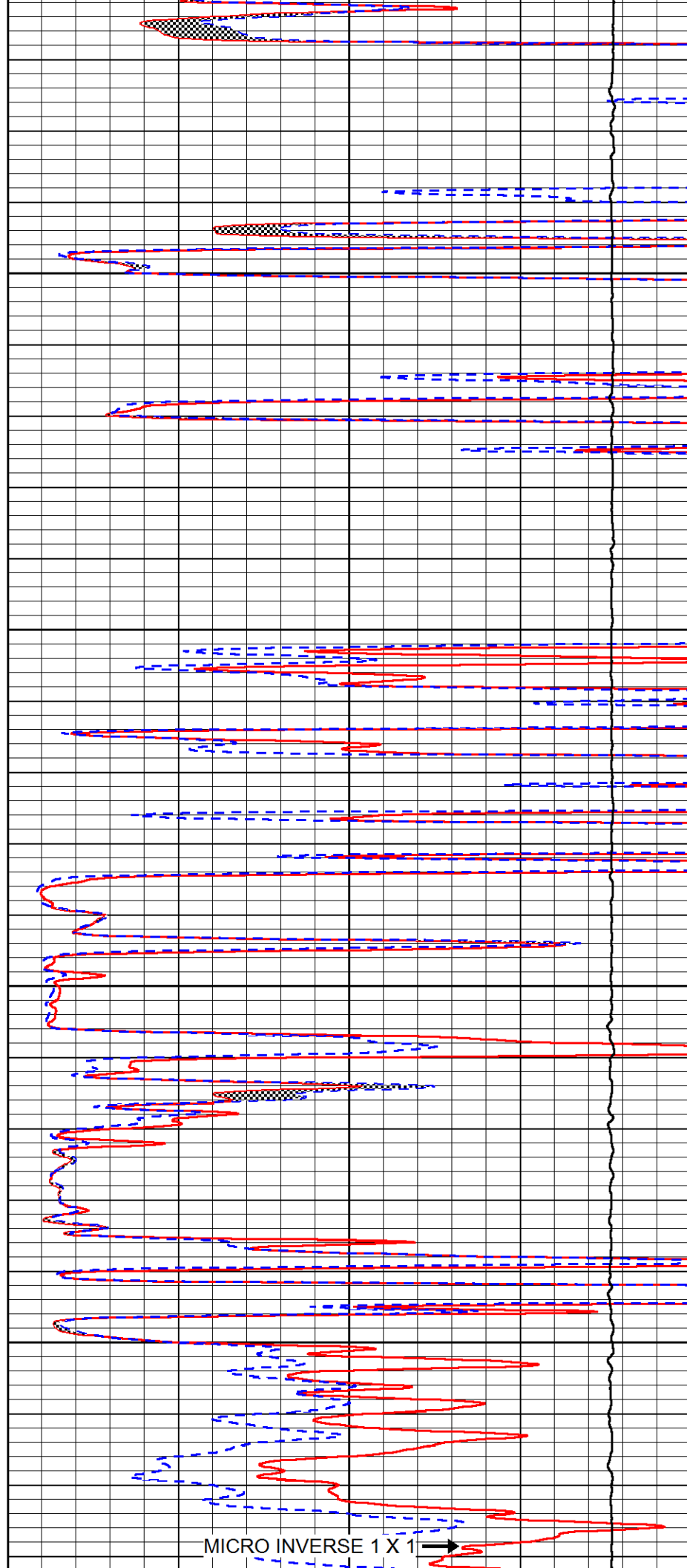
4600

4650

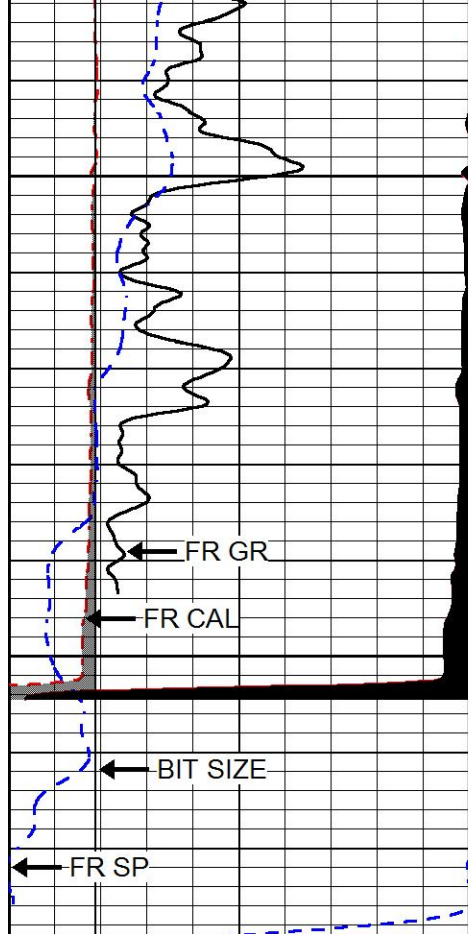
4700

Wall Cake

4750



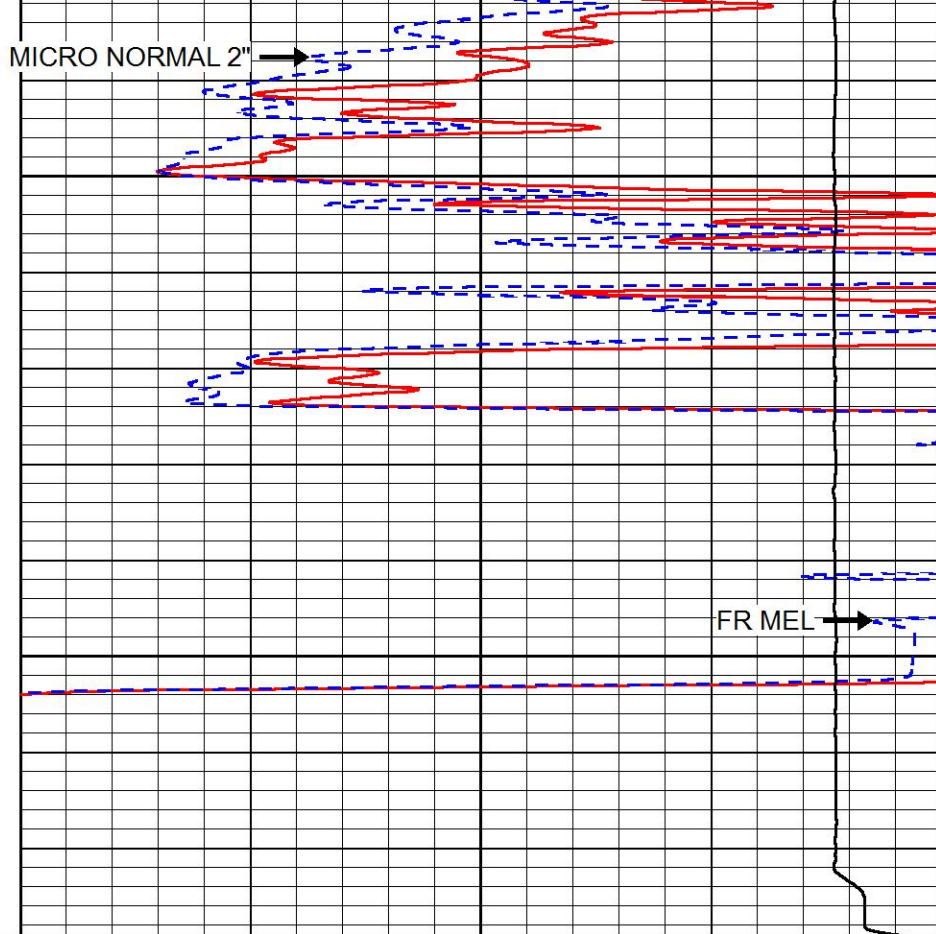
MICRO INVERSE 1 X 1



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

4800

4850



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

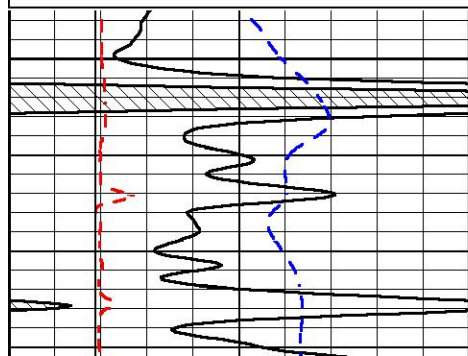


REPEAT SECTION

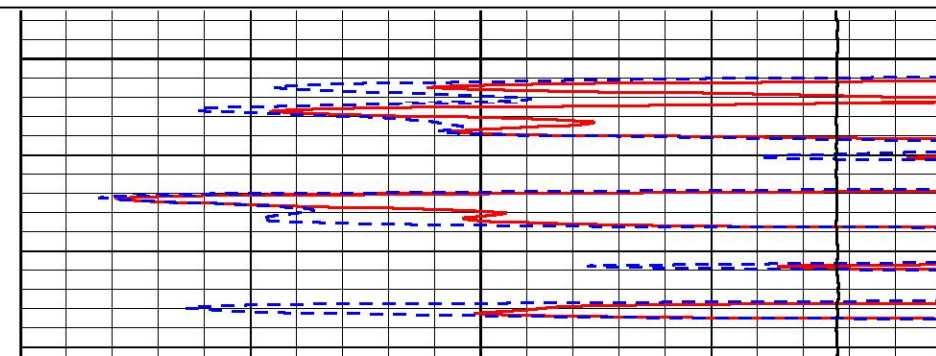
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 Dataset Pathname stack/pass2.1
 Presentation Format micro
 Dataset Creation Sat Dec 10 09:54:32 2016
 Charted by Depth in Feet scaled 1:240

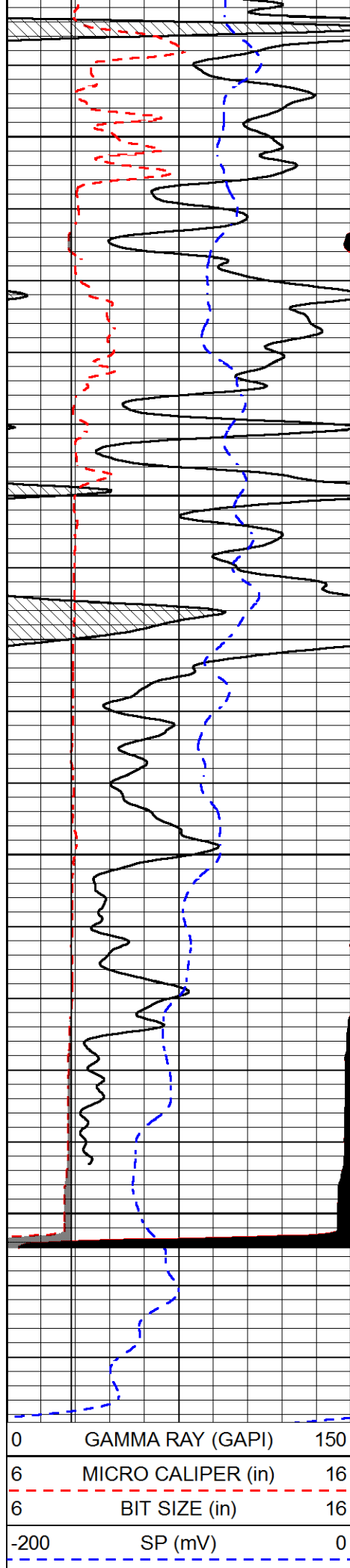
0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

4650



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



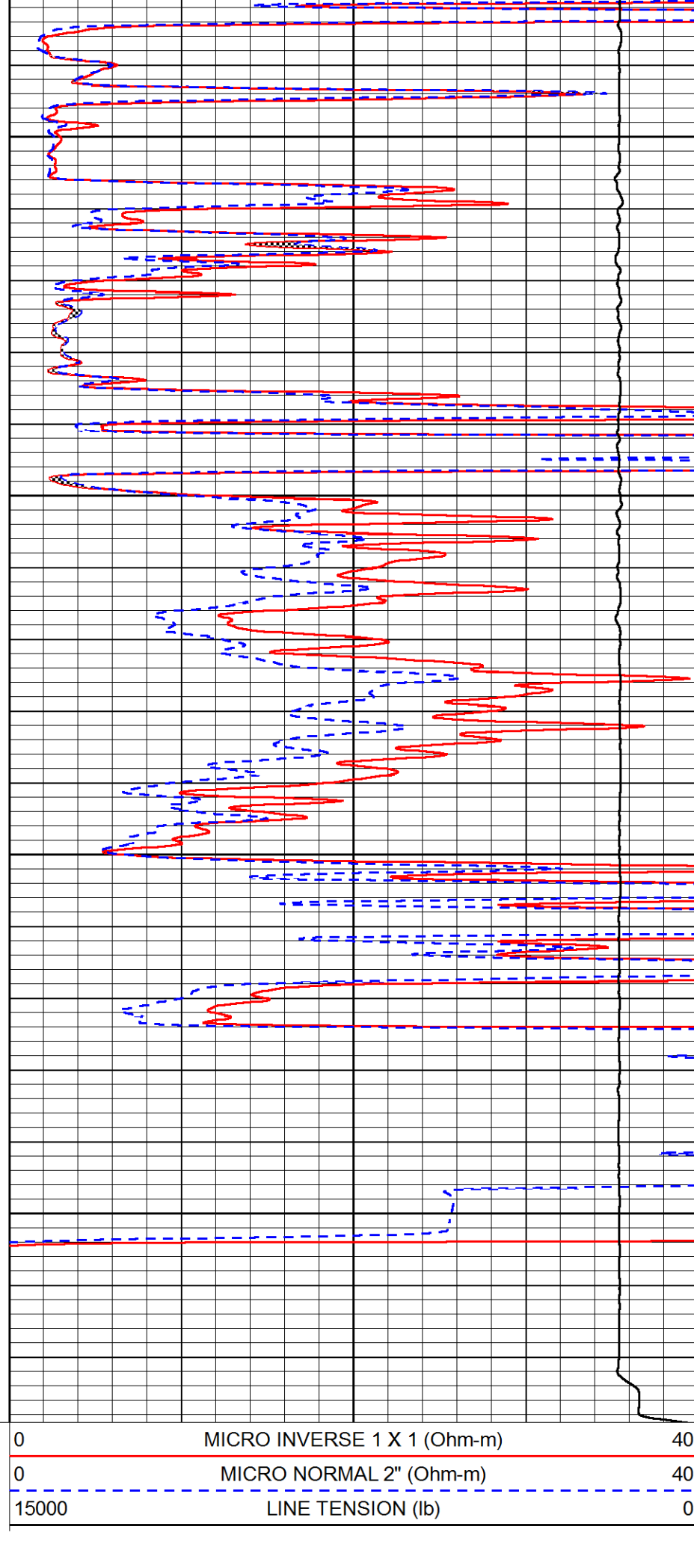


4700

4750

4800

4850



Database File		val_koughmattsonunit_#1-4.db
Dataset Pathname		stack/pass3.1
Dataset Creation		Sat Dec 10 10:54:21 2016

Calibration Report

Dual Induction Calibration Report

Serial-Model:	1987-M&W
Calibration Performed:	Thu Nov 17 20:52:56 2016

		Readings		References		Results	
Loop:	Air	Loop		Air	Loop	Gain	Offset
Deep	178.615	710.235		0.000	255.800 mmho/m	0.530	-38.500
Medium	161.982	1441.110		0.000	255.800 mmho/m	0.440	-116.000

Compensated Density Calibration Report

Serial-Model:	71-914-M&W
Source / Verifier:	/
Master Calibration Performed:	Thu Nov 17 21:42:33 2016

Master Calibration					
	Density			Far Detector	Near Detector
Magnesium	1.755	g/cc		4314.49	5307.52 cps
Aluminum	2.675	g/cc		822.19	3456.36 cps
	Spine Angle = 75.49			Density/Spine Ratio = 0.537	
	Size			Reading	
Small Ring	4.00	in		1.16	
Large Ring	14.00	in		1.57	

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:	Thu Nov 17 21:13:32 2016	
Calibrator Value:	1000.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	6.2	cps
Sensitivity:	0.5200	GAPI/cps

Calibration Report

Database File val_koughmattsonunit_#1-4.db
Dataset Pathname sonmel/pass3.5
Dataset Creation Sat Dec 10 12:24:46 2016

Microlog Calibration Report

Serial-Model:
Performed:

Armadillo-1-Armadillo
Fri Nov 18 10:19:49 2016

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m	b
Normal	0.0122	1.0361	V	0.0000	10.0000	Ohm-m	42.5000	-1.5000
Inverse	-0.0037	0.9549	V	0.0000	10.0000	Ohm-m	31.0000	-0.6000
Caliper	1.1139	8.3644	V	5.0000	19.0000	in	1.9309	3.0493

		Company	VAL ENERGY, INC.
		Well	KOUGH MATTSON UNIT #1-4
		Field	
		County	THOMAS
		State	KANSAS