



PIONEER
Pioneer Energy Services

MICRORESISTIVITY LOG

Company THOMAS GARNER INC.
Well MARY #1
Field KACHELMAN
County STAFFORD
State KANSAS

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Well MARY #1
Field KACHELMAN
County STAFFORD State KANSAS

Location: API #: 15-185-24036-00-00

Other Services

SEC 18 TWP 25S RGE 13W
2155 'FNL & 550' FEL

CNL/CDL
DIL/BHCS

Permanent Datum GROUND LEVEL Elevation 1952'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 1963'
D.F. N/A
G.L. 1952'

Date 11/9/2018

Run Number	TWO
Depth Driller	4360'
Depth Logger	4356'
Bottom Logged Interval	4354'
Top Log Interval	3200'
Casing Driller	8.625" @ 376'
Casing Logger	376'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	5400
Density / Viscosity	9.2 62
pH / Fluid Loss	10.0 9.6
Source of Sample	FLOWLINE
Rm @ Meas. Temp	0.70 @ 56
Rmt @ Meas. Temp	0.53 @ 56
Rmc @ Meas. Temp	0.95 @ 56
Source of Rmf / Rmc	CHARTS
Rm @ BHT	0.33 @ 120
Operating Rig Time	5 HOURS
Max Rec. Temp. F	120
Equipment Number	108
Location	HAYS
Recorded By	IAN MABB
Witnessed By	TOM GARNER

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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.

ST. JOHN KS.

SOUTH TO HWY 50, 7 MILE SOUTH, 2 MILE WEST, 1 1/2 NORTH,
WEST 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

Engineer: IAN MABB

Operator:

Operator:

Operator:

This Log Record Was Witnessed By

Primary Witness: TOM GARNER

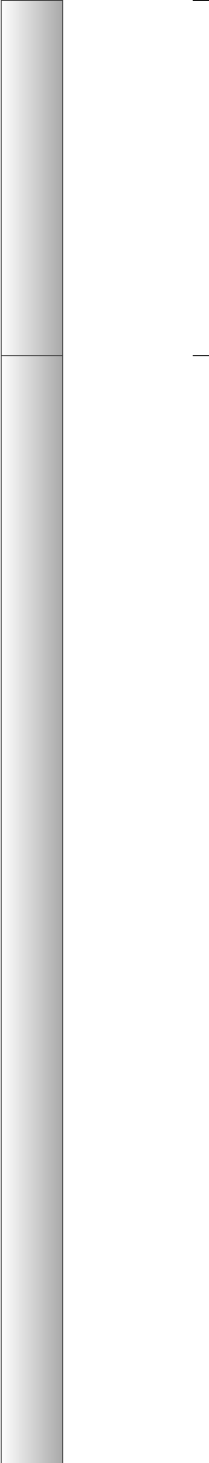
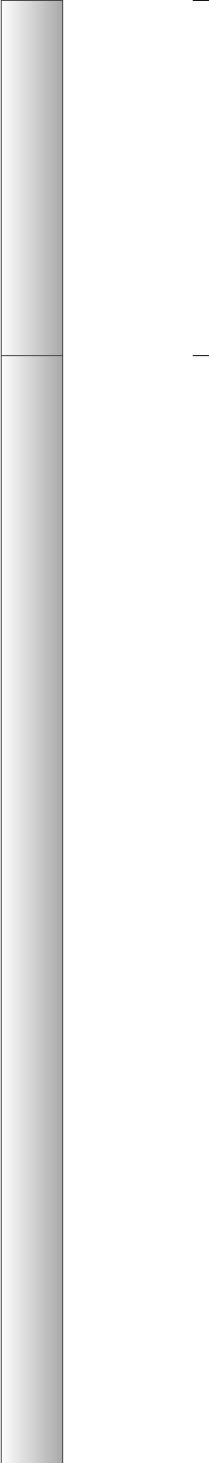
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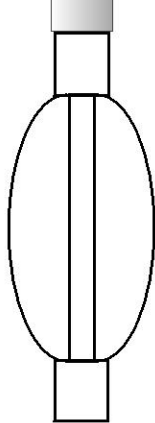
Secondary Witness:

Secondary Witness:

Top - Bottom

A 1	BOREID in 7.875	BOTTEMP degF 100	CASEOD in 5.5	CASETHCK in 0	COMPACT 1	FLUIDDEN g/cc 1	M 2
MATRXDEN g/cc 2.71	NPORSEL Limestone	PERFS 0	SNDERR mmho/m 0	SNDERRM mmho/m 0	SPSHIFT mV 0	SRFTEMP degF 0	SVFLUID usec/ft 189
SVMATRIX usec/ft 47.6	SZCOR Off	TDEPTH ft 0					

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
MCAL MI MN	22.50		ML-Armadillo (Armadillo-1) Pengo micro log tool mandrel with Armadillo Electronics	5.00	3.50	100.00
	22.50					
	22.50					
WVF4 WVF1	13.50 13.50		SLT-PENGO (0001)	16.00	3.50	300.00
WVF3 WVF2	11.50 11.50					



CENT-PENGO

5.50

3.00

70.00

Dataset: thomas_garner_mary_1.db: field/well/MELSON/pass2.10
Total length: 26.50 ft
Total weight: 470.00 lb
O.D.: 3.50 in

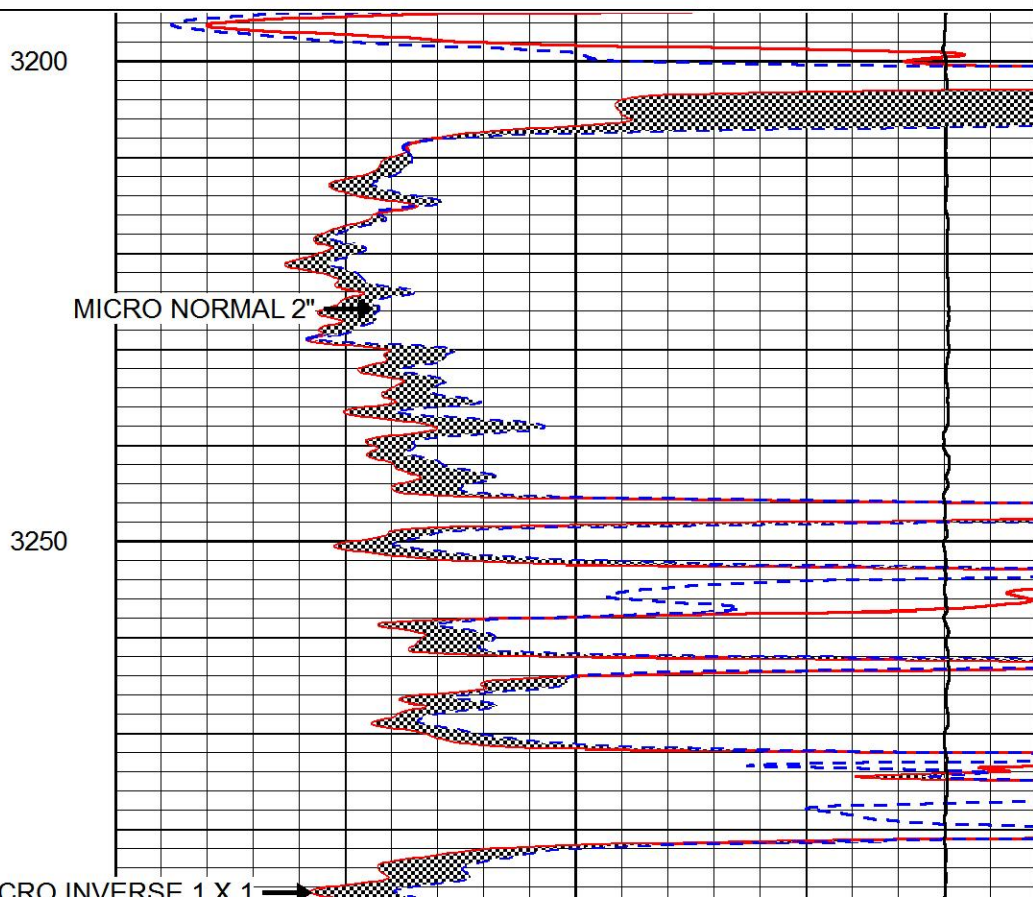
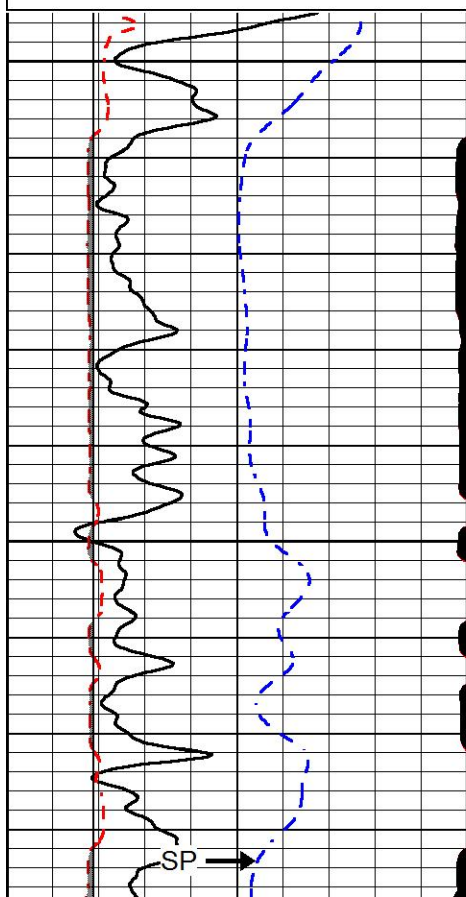


MAIN PASS

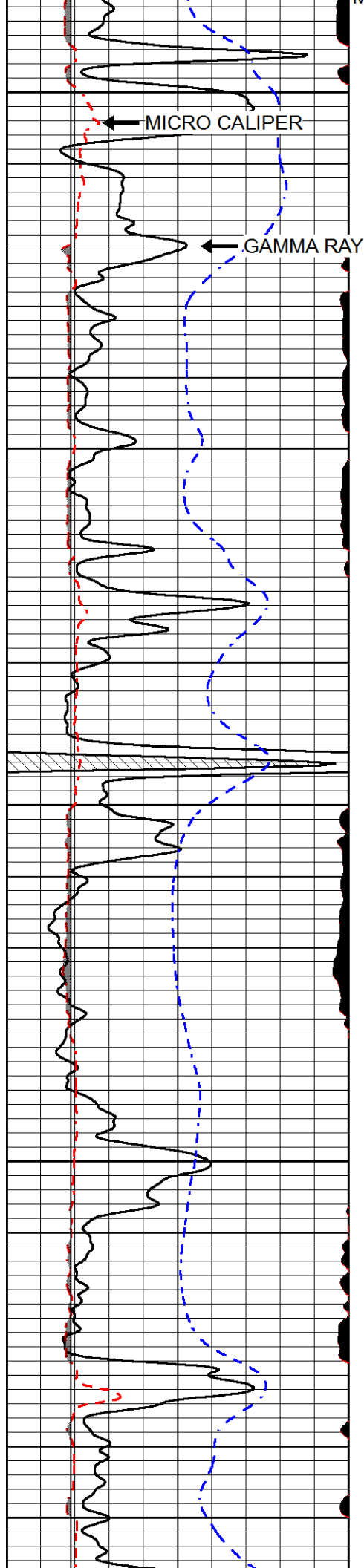
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Dataset Pathname stack/pass4.1
Presentation Format micro
Dataset Creation Fri Nov 09 22:41:30 2018
Charted by Depth in Feet scaled 1:240

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



MICRO INVERSE FAX



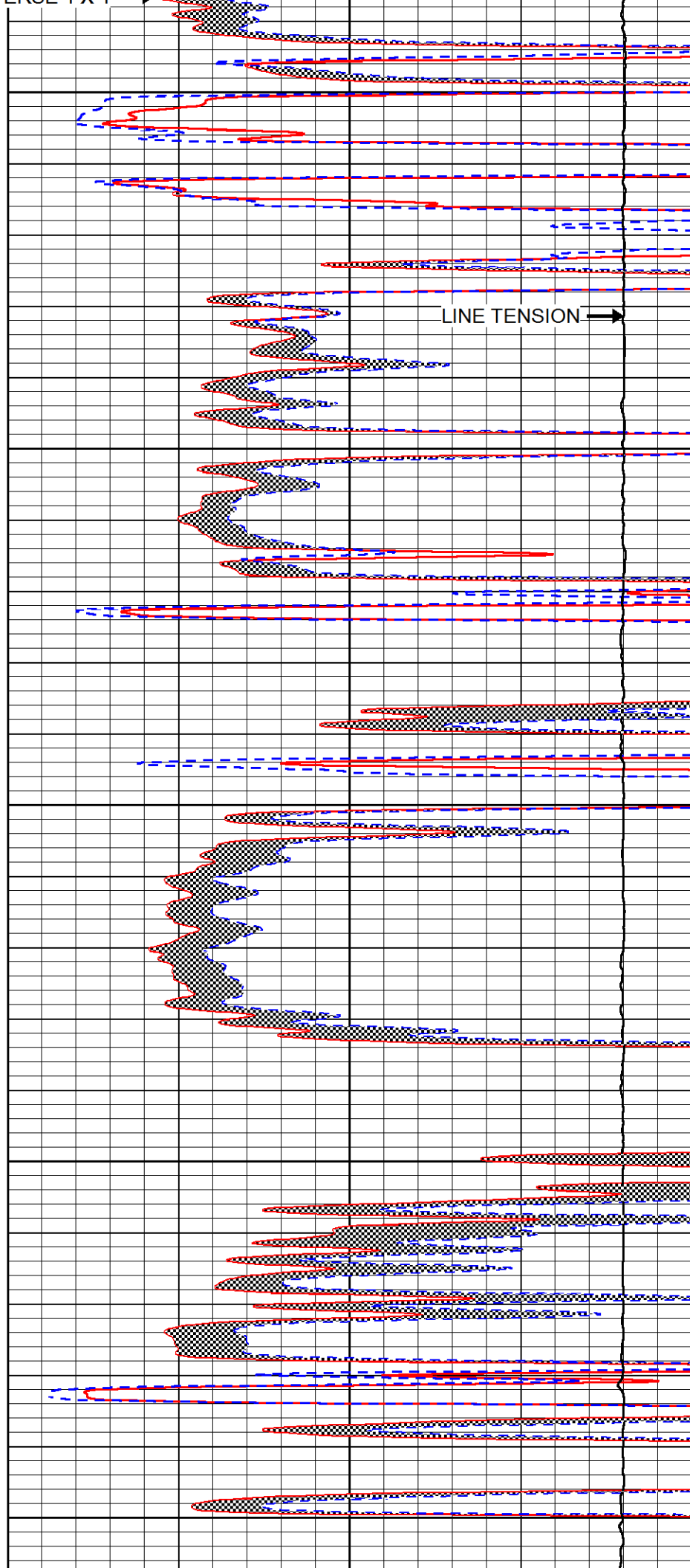
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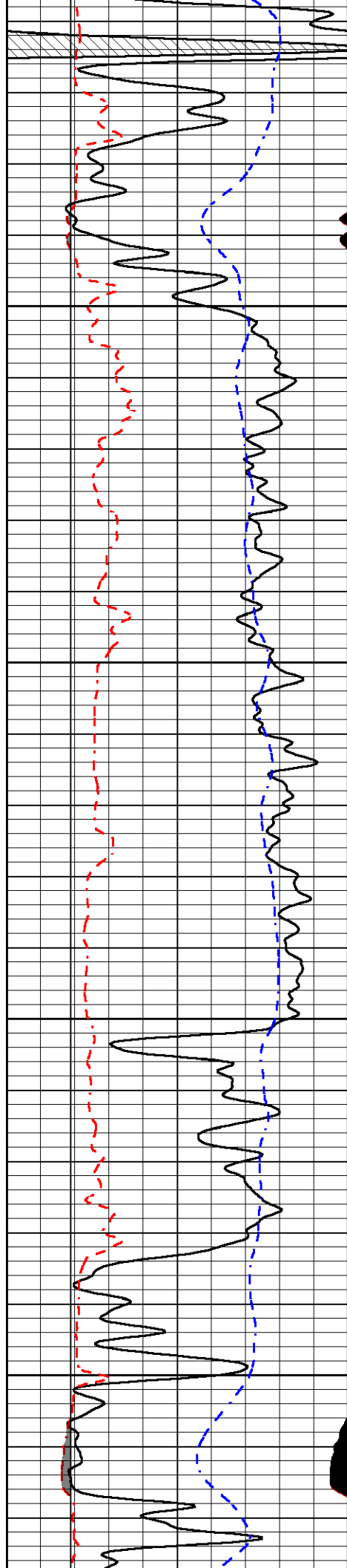
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3400

3450

3500



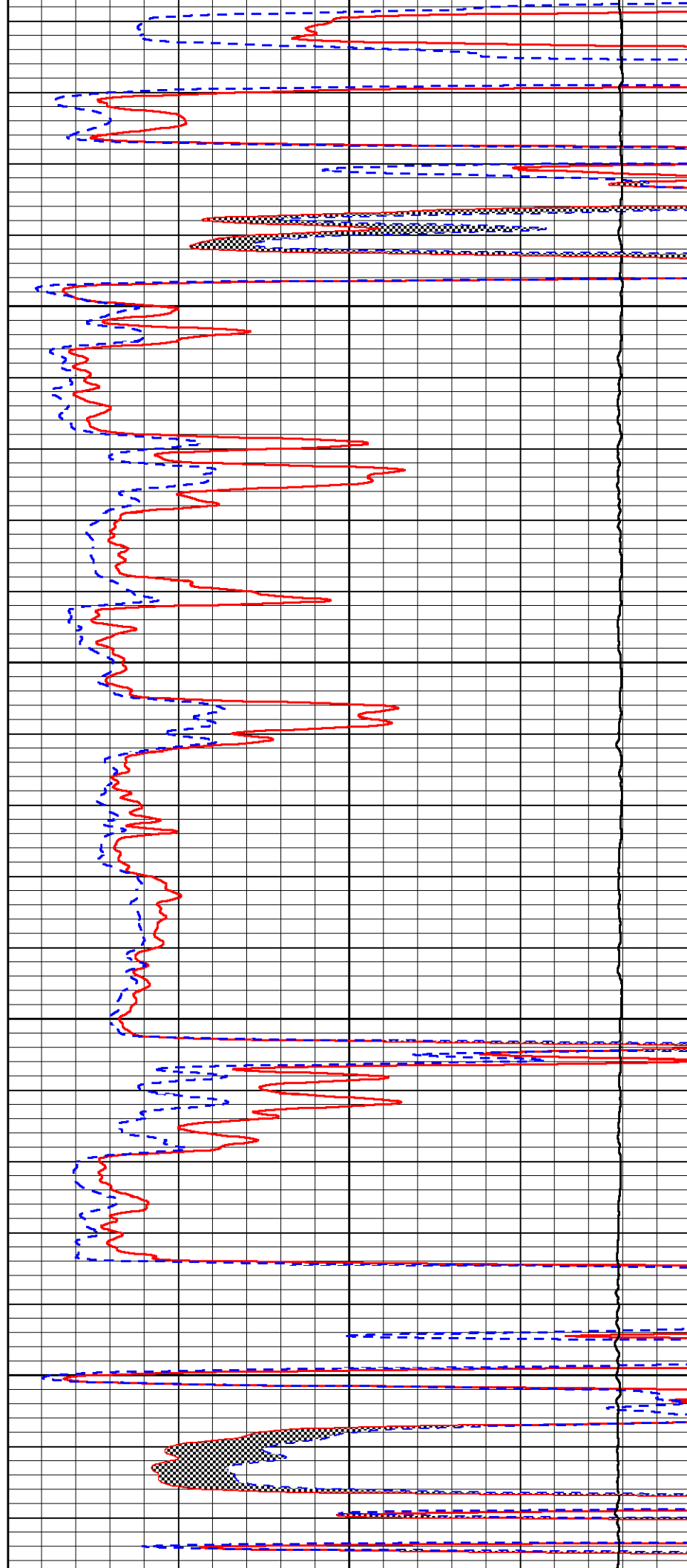


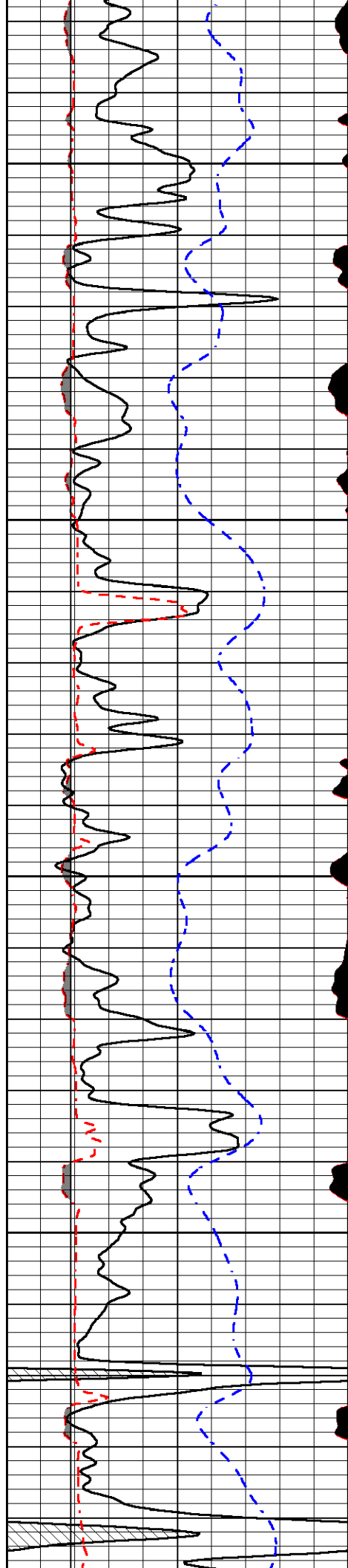
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3600

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3700



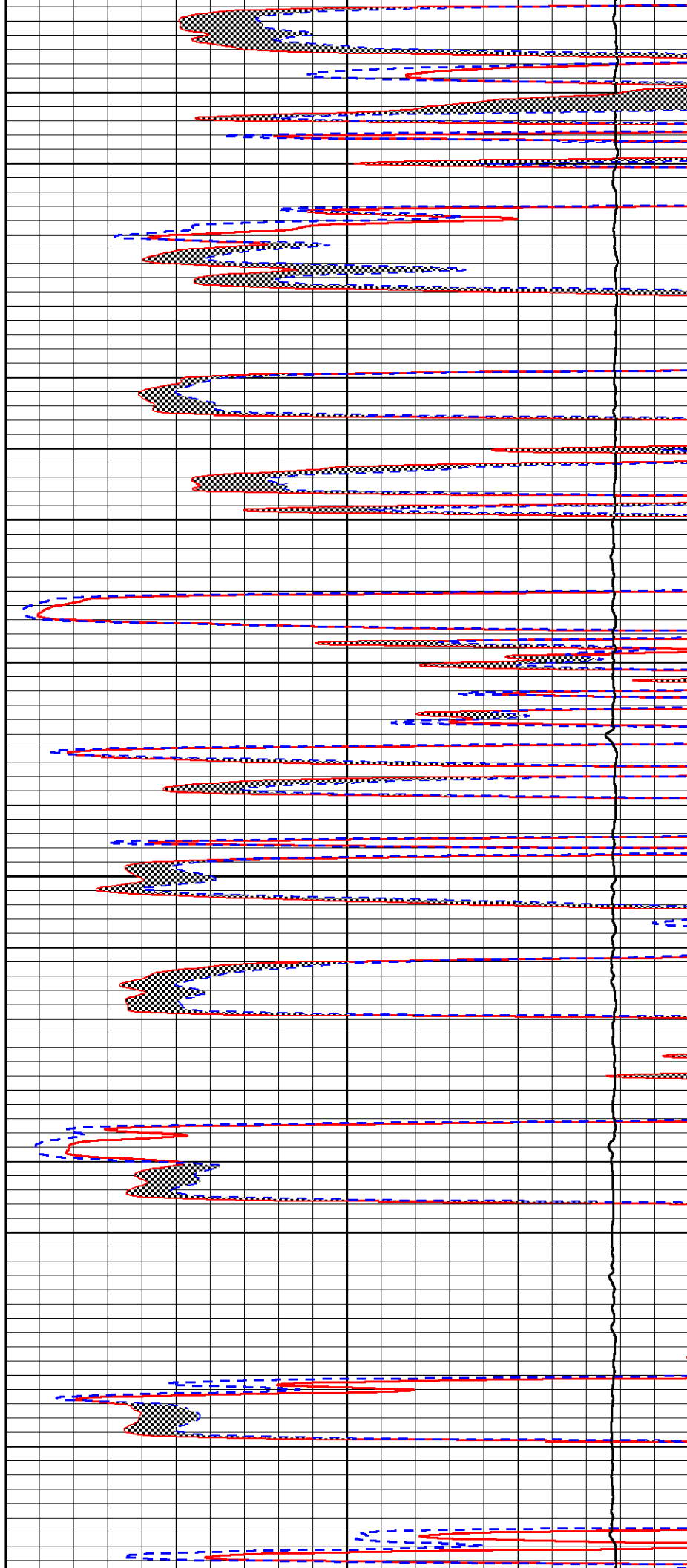


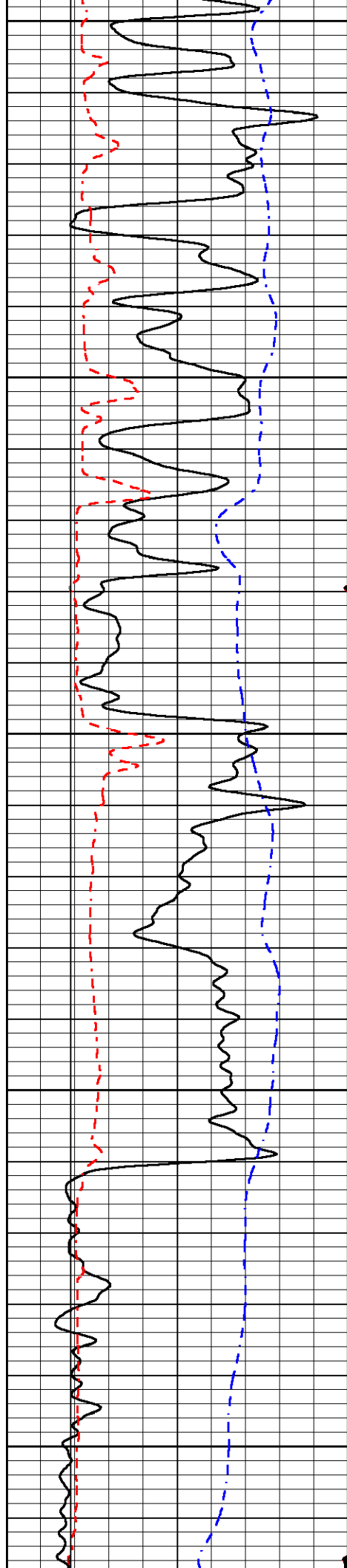
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3800

3850

3900





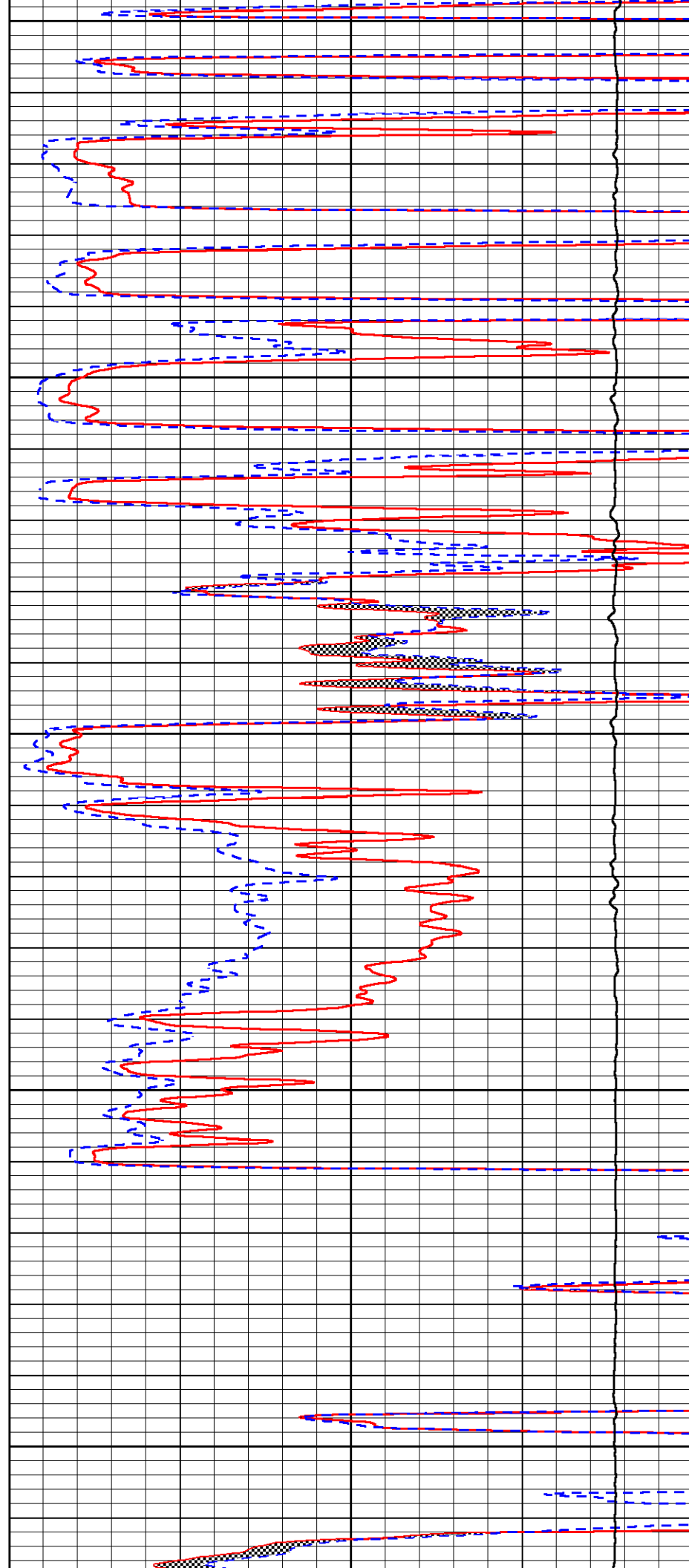
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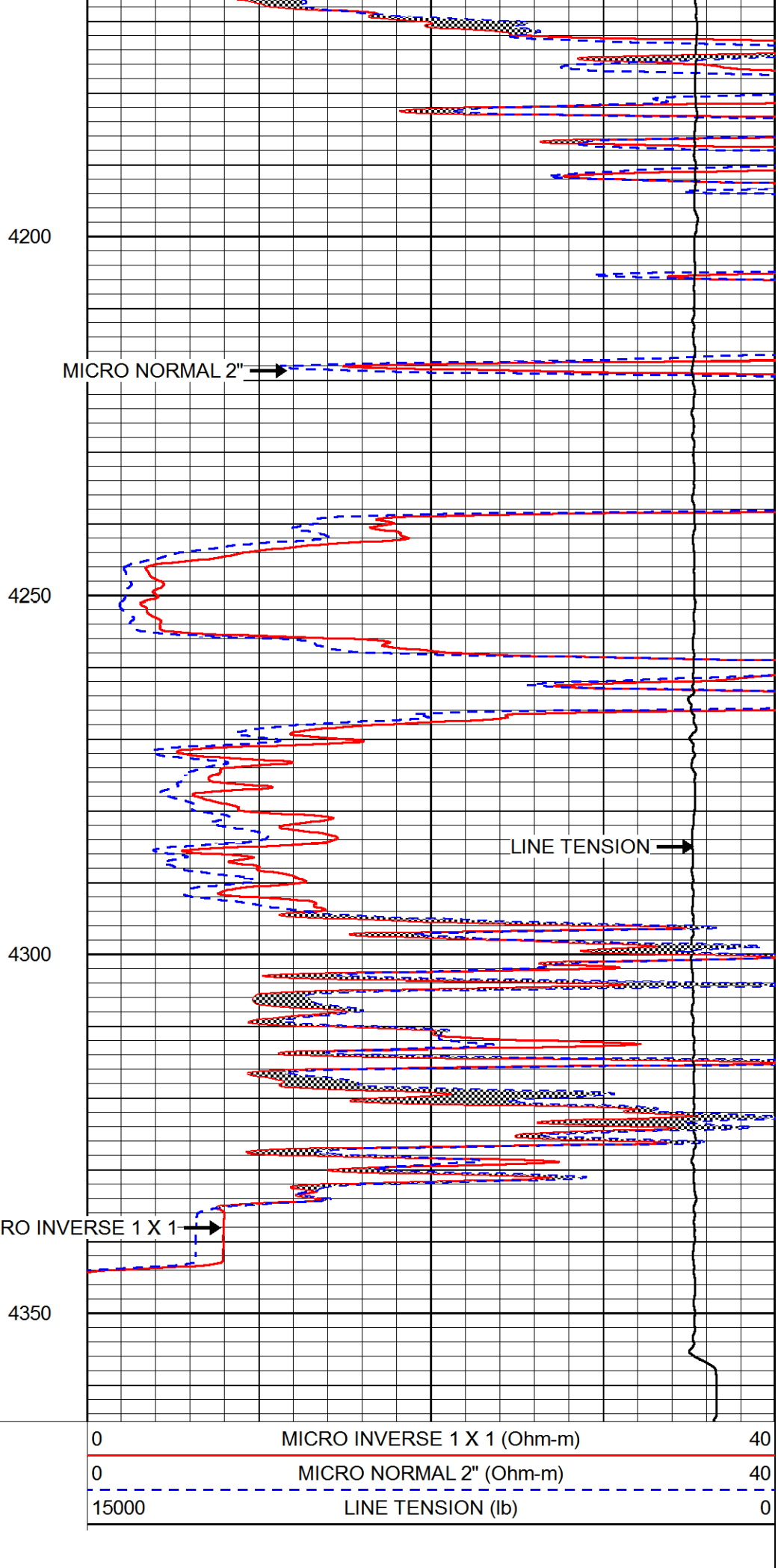
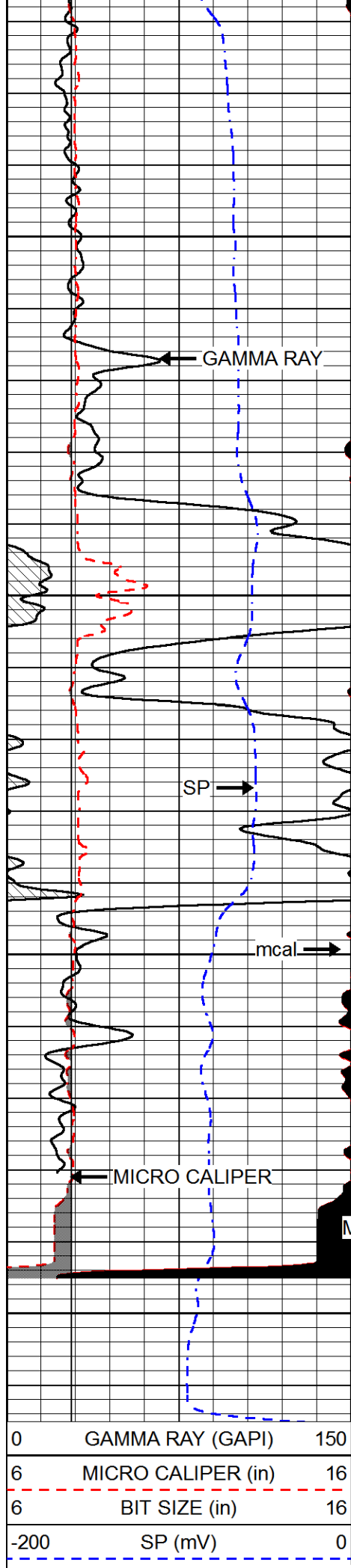
4000

4050

4100

4150



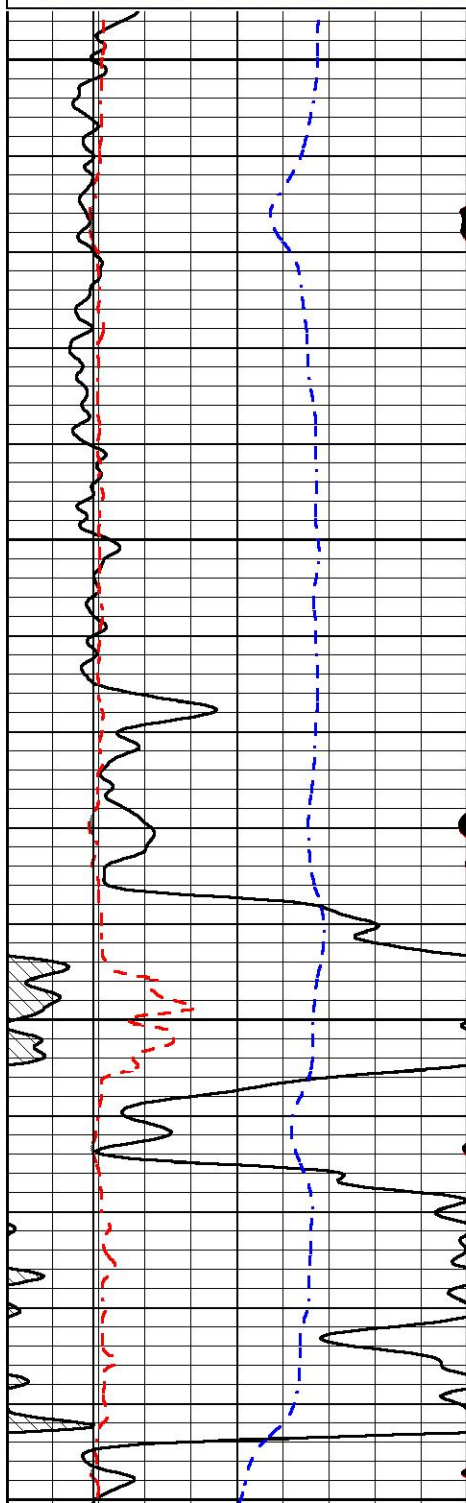


REPEAT SECTION

Database File thomas_garner_mary_1.db
Dataset Pathname stack/pass2.1
Presentation Format micro
Dataset Creation Fri Nov 09 22:35:03 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

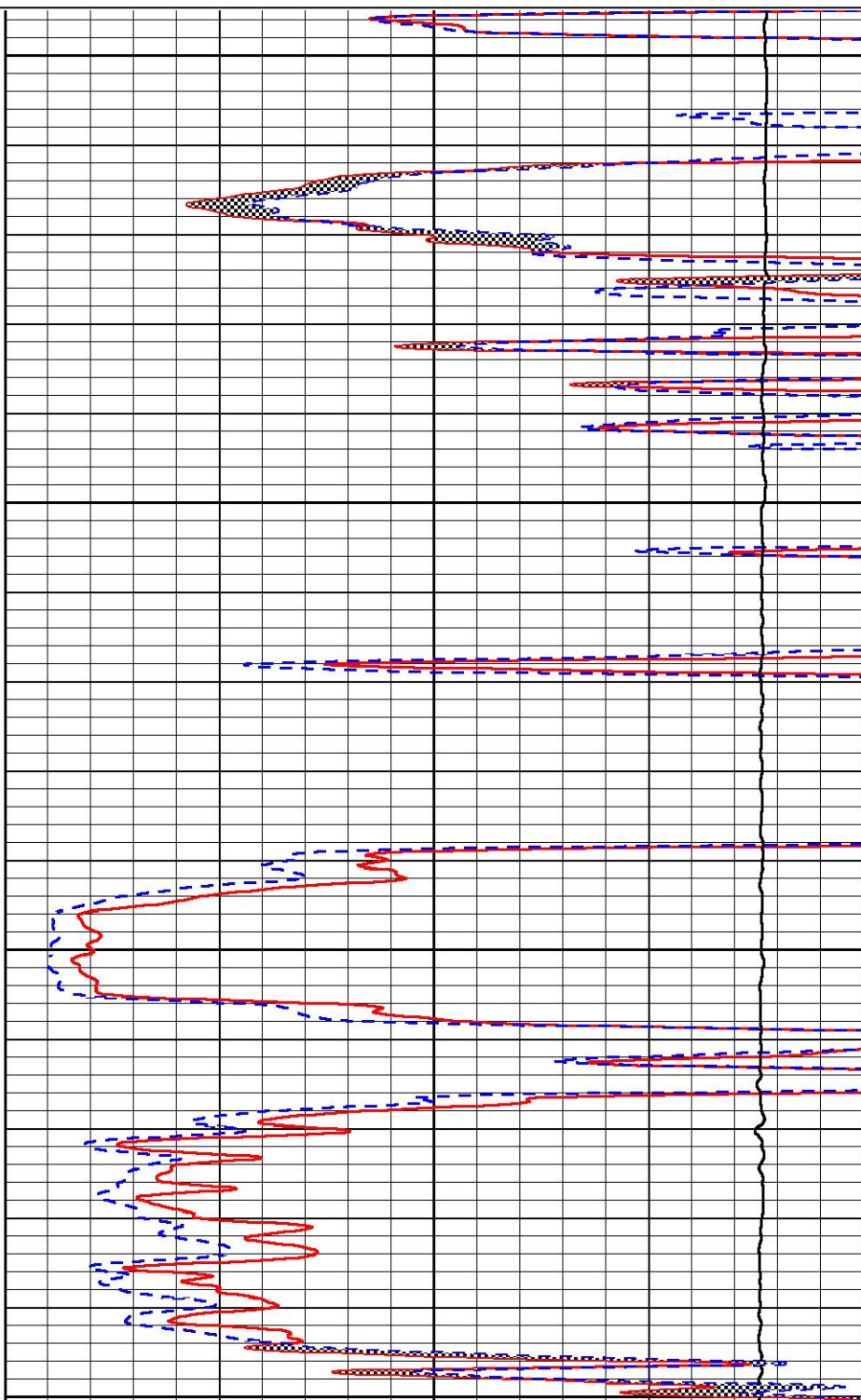


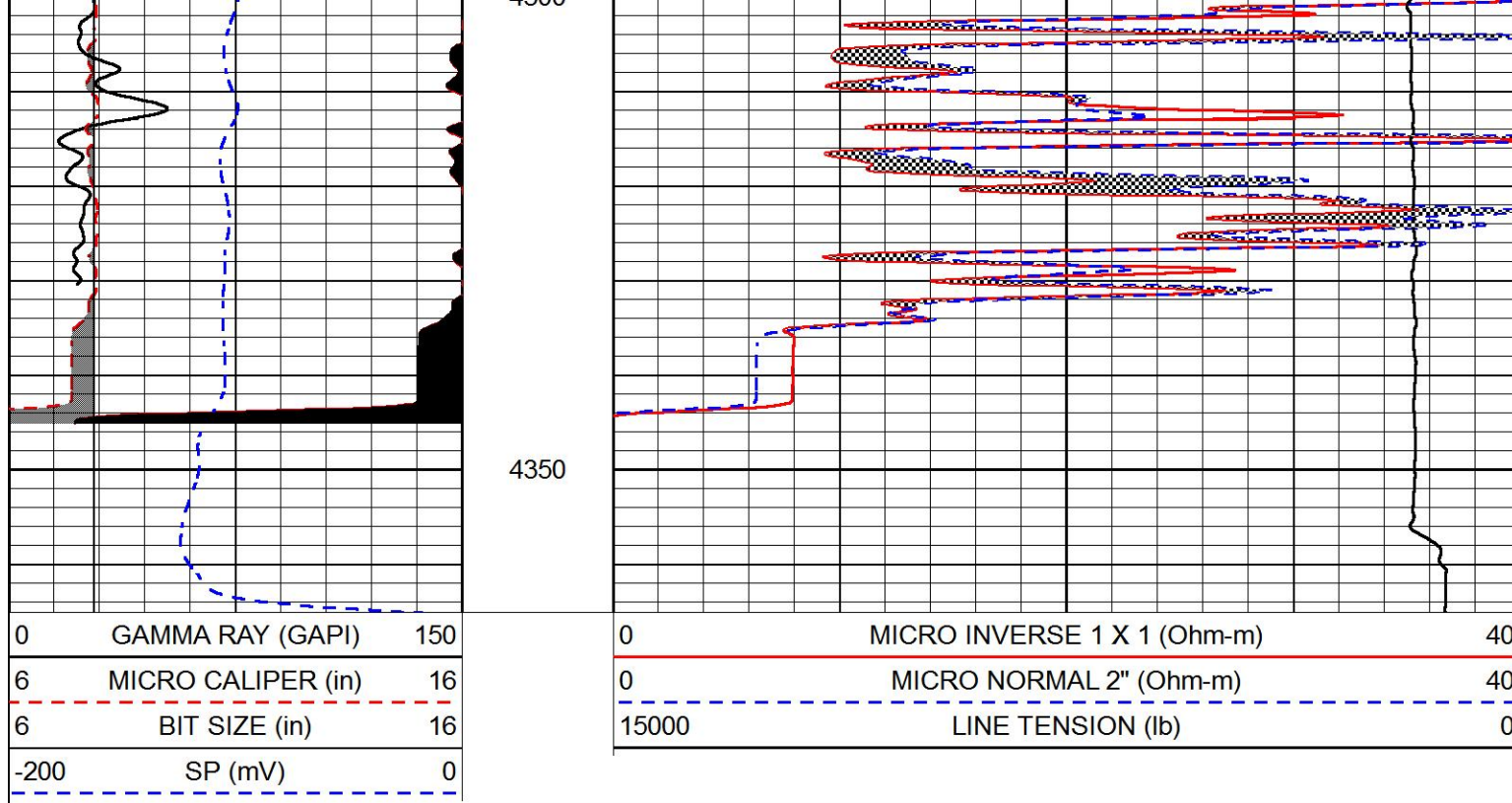
4150

4200

4250

4300





Calibration Report

Database File: thomas_garner_mary_1.db
 Dataset Pathname: MELSON/pass2.10
 Dataset Creation: Fri Nov 09 23:34:50 2018

Microlog Calibration Report

Serial-Model: Armadillo-1-Armadillo
 Performed: Fri Nov 18 11:19:49 2016

	Readings			References			Results	
	Zero	Cal		Zero	Cal		m	b
Normal	0.0122	1.0361	V	0.0000	10.0000	Ohm-m	39.0000	-2.0000
Inverse	-0.0037	0.9549	V	0.0000	10.0000	Ohm-m	25.0000	-0.6000
Caliper	1.1139	8.3644	V	5.0000	19.0000	in	1.9309	3.7493

		Company	THOMAS GARNER INC.
		Well	MARY #1
		Field	KACHELMAN
		County	STAFFORD
		State	KANSAS