



PIONEER
Pioneer Energy Services

MICRORESISTIVITY LOG

Company RJM OIL COMPANY		Company RJM OIL COMPANY	
Well RIEDL NO. 4		Well RIEDL NO. 4	
Field LARKIN		Field LARKIN	
County BARTON		County BARTON	
State KANSAS		State KANSAS	
Location: SEC 10 TWP 17S RGE 14W		Location: API #: 15-009-26190-00-00	
Permanent Datum GROUND LEVEL		Other Services CNL/CDL DIL/BHCS	
Log Measured From KELLY BUSHING		Elevation K.B. 1986' D.F. N/A G.L. 1978'	
Drilling Measured From KELLY BUSHING			
Date	11/21/2017		
Run Number	TWO		
Depth Driller	3550'		
Depth Logger	3552'		
Bottom Logged Interval	3551'		
Top Log Interval	2900'		
Casing Driller	8.625" @ 558'		
Casing Logger	556'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity, ppm CL	8000		
Density / Viscosity	9.2 59		
pH / Fluid Loss	9.5 8.0		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.76 @ 56		
Rmt @ Meas. Temp	.56 @ 56		
Rmc @ Meas. Temp	1.01 @ 56		
Source of Rmt / Rmc	CHARTS		
Rm @ BHT	.38 @ 112		
Operating Rig Time	4 HOURS		
Max Rec. Temp. F	112 DEGF		
Equipment Number	108		
Location	HAYS		
Recorded By	J. HENRICKSON		
Witnessed By	JIM MUSGROVE		

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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.

RUSSELL KANSAS
25 SOUTH, WEST INTO
(3 NORTH OF HWY 4)

Log Measured From: KELLY BUSHING 8 Ft. Above Permanent Datum

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

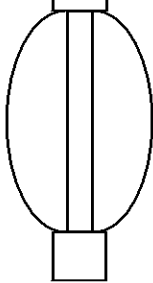
Your Pioneer Energy Services Crew		This Log Record Was Witnessed By	
Engineer: J. HENRICKSON		Primary Witness: JIM MUSGROVE	
Operator:		Secondary Witness:	
Operator:		Secondary Witness:	
Operator:		Secondary Witness:	

DatabaseC:\ProgramData\Warrior\Data\rijm_riedl_4.db
Dataset field/well/stack/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	100	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	0	0	Off	0

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
MCAL MI MN	28.00		ML-Armadillo (Armadillo-4) Pengo micro log tool mandrel with Armadillo Electronics	5.00	3.50	100.00
	28.00		CENT-PENGO	5.50	3.00	70.00
	28.00					
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

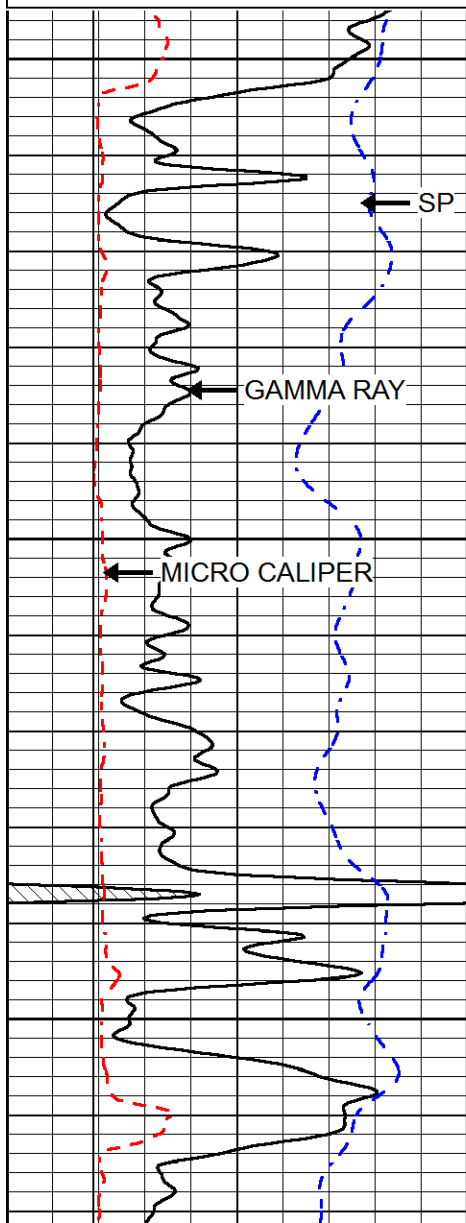
70.00

Dataset: rjm_riedl_4.db: field/well/SONMEL/pass3
Total length: 32.00 ft
Total weight: 540.00 lb
O.D.: 3.50 in

Database File rjm_riedl_4.db
Dataset Pathname stack/pass3.1
Presentation Format micro
Dataset Creation Tue Nov 21 09:14:41 2017
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

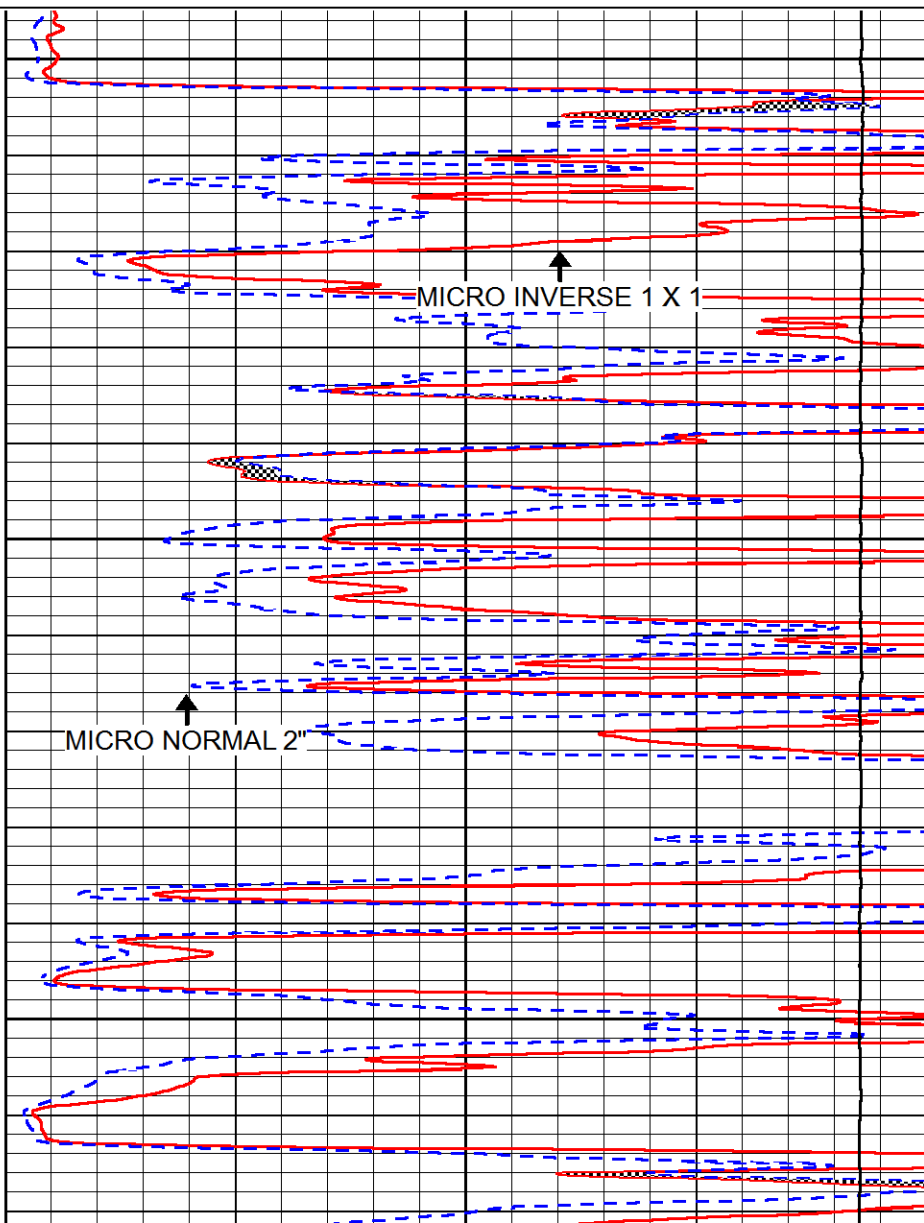
0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0

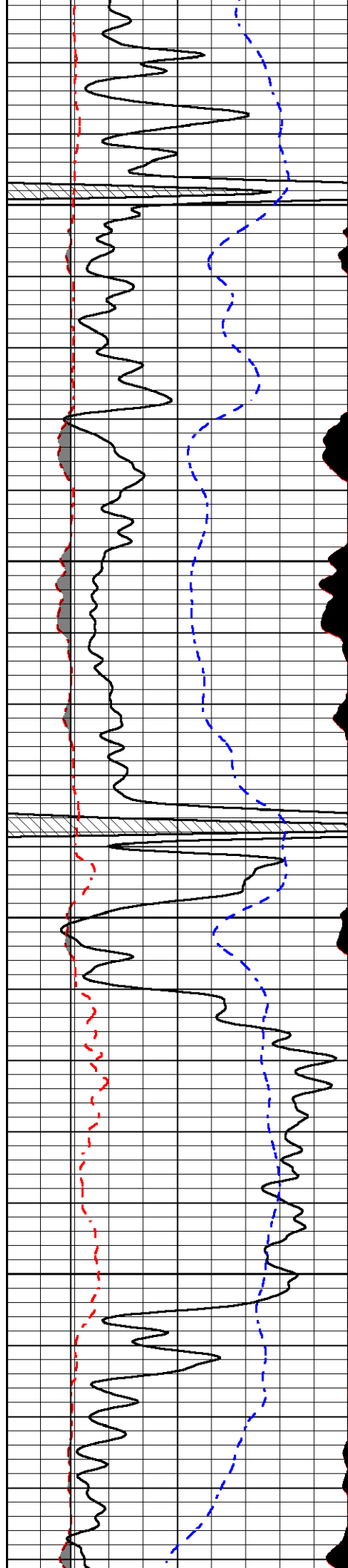


2900

2950

3000



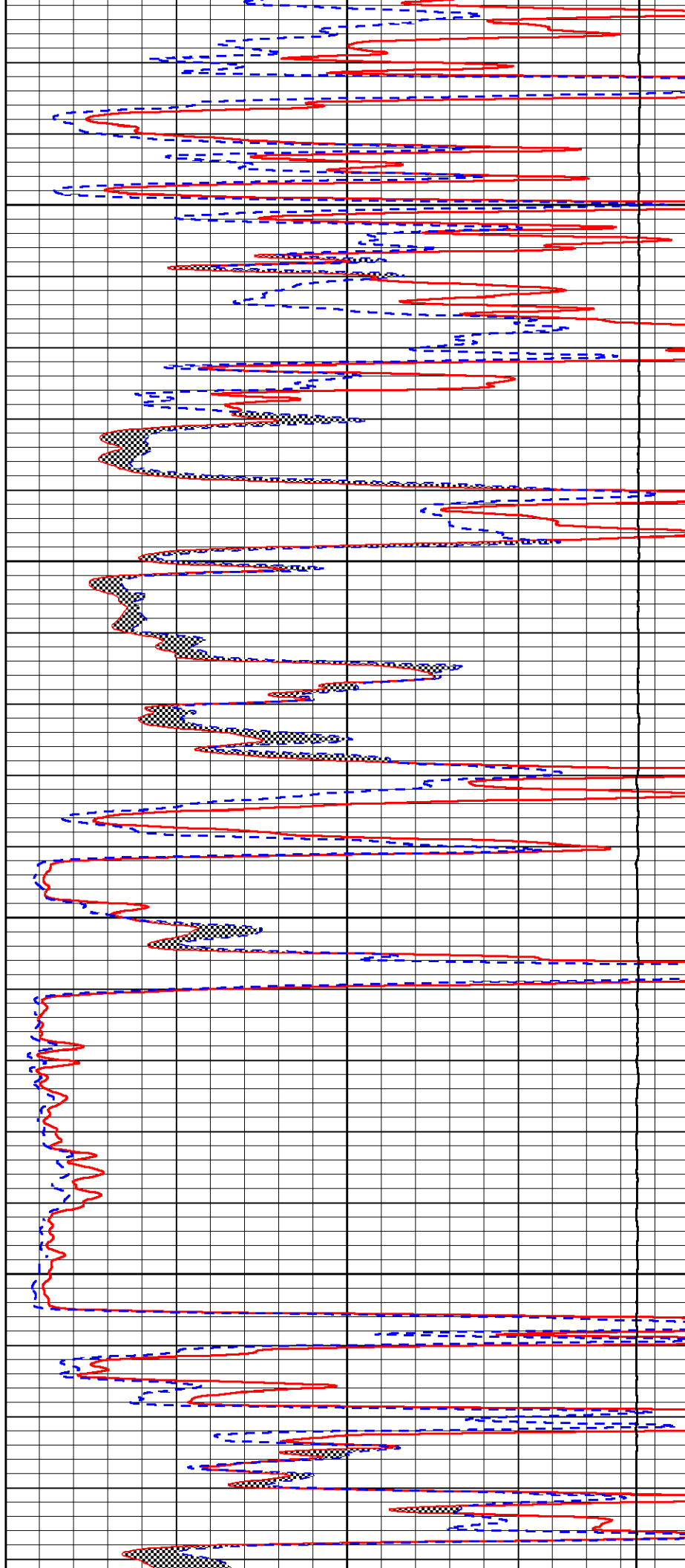


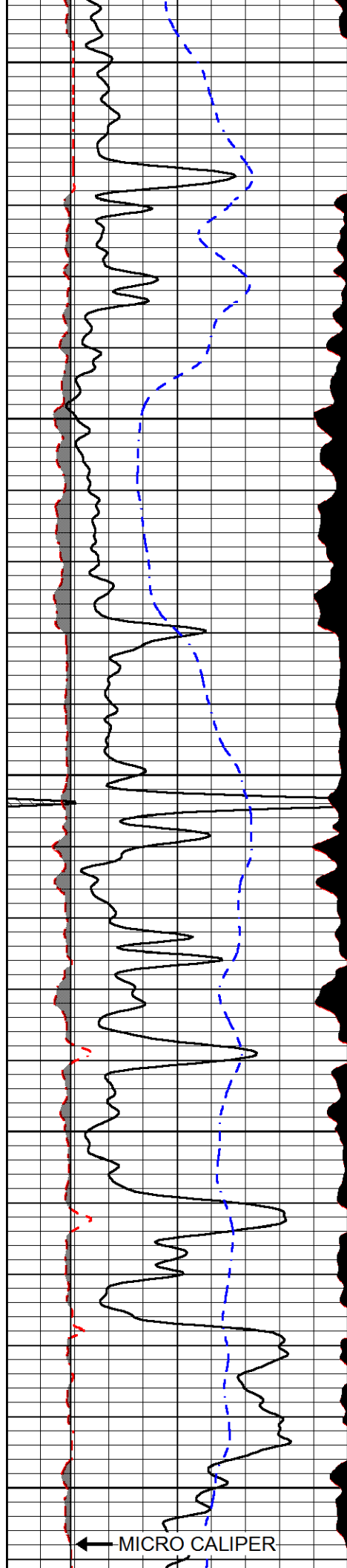
3050

3100

3150

3200





3250

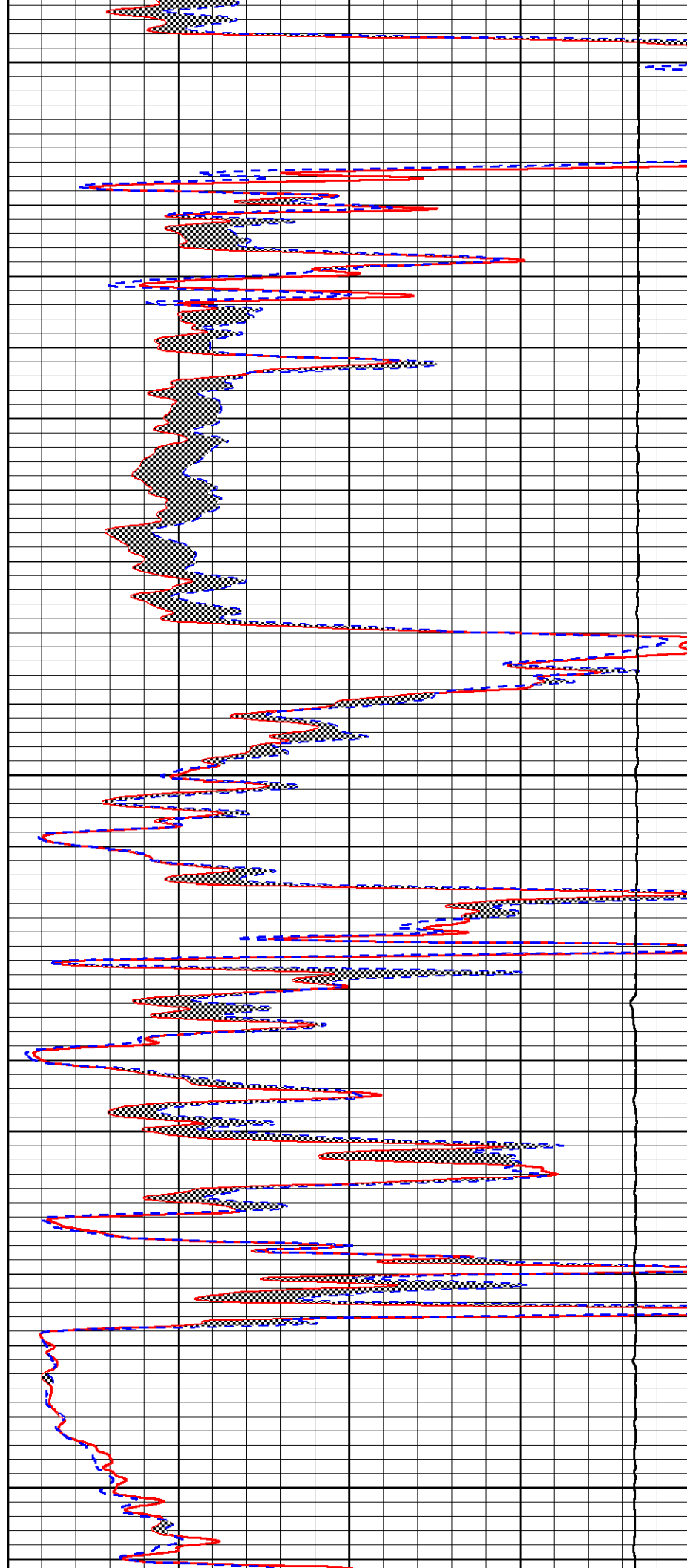
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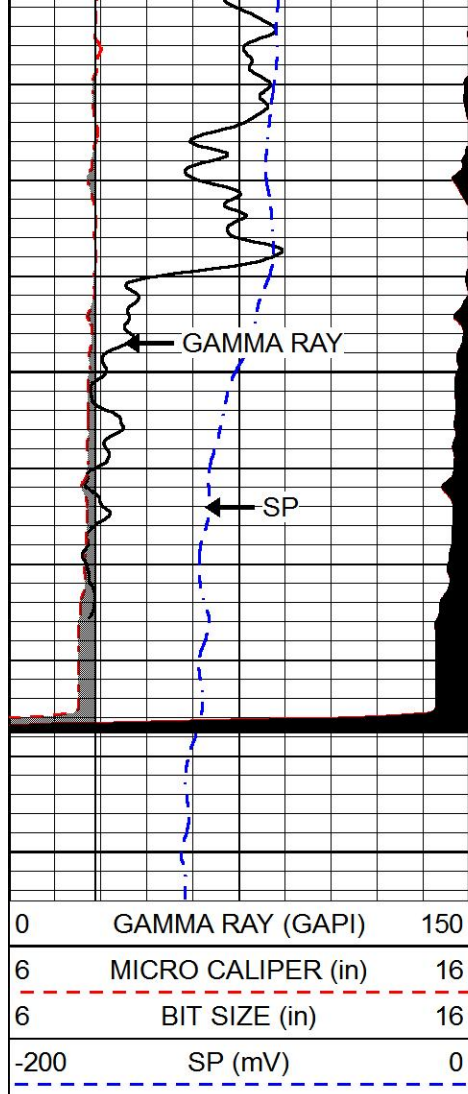
3350

3400

3450

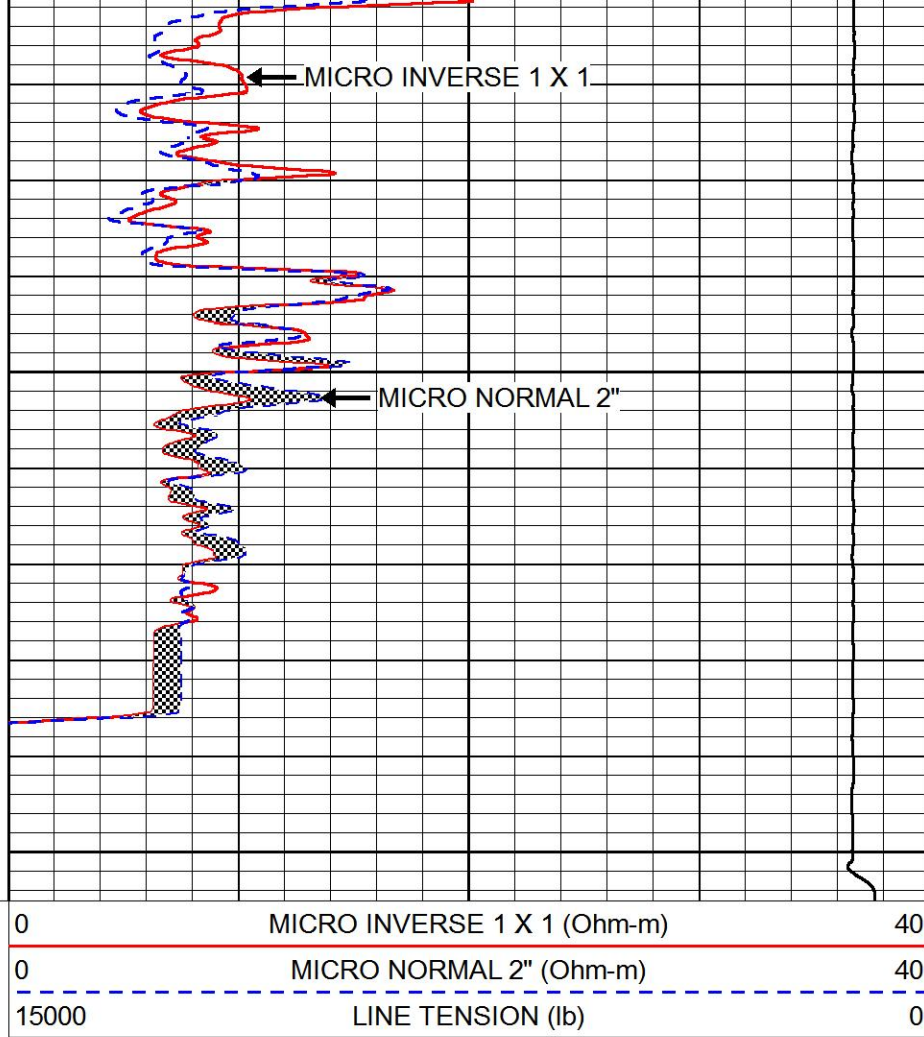
← MICRO CALIPER





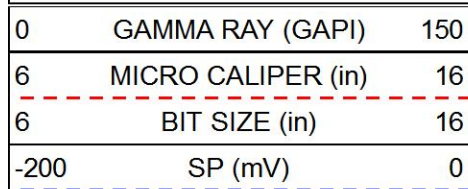
3500

3550

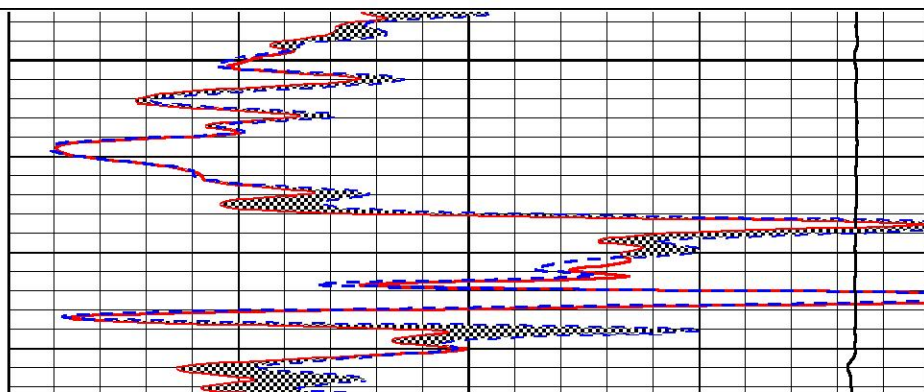
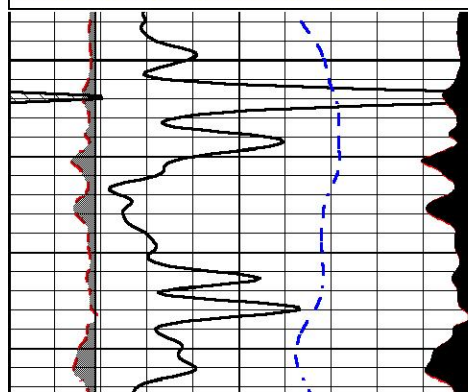
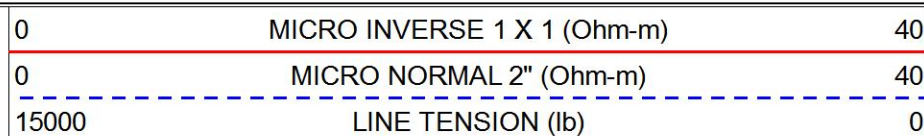


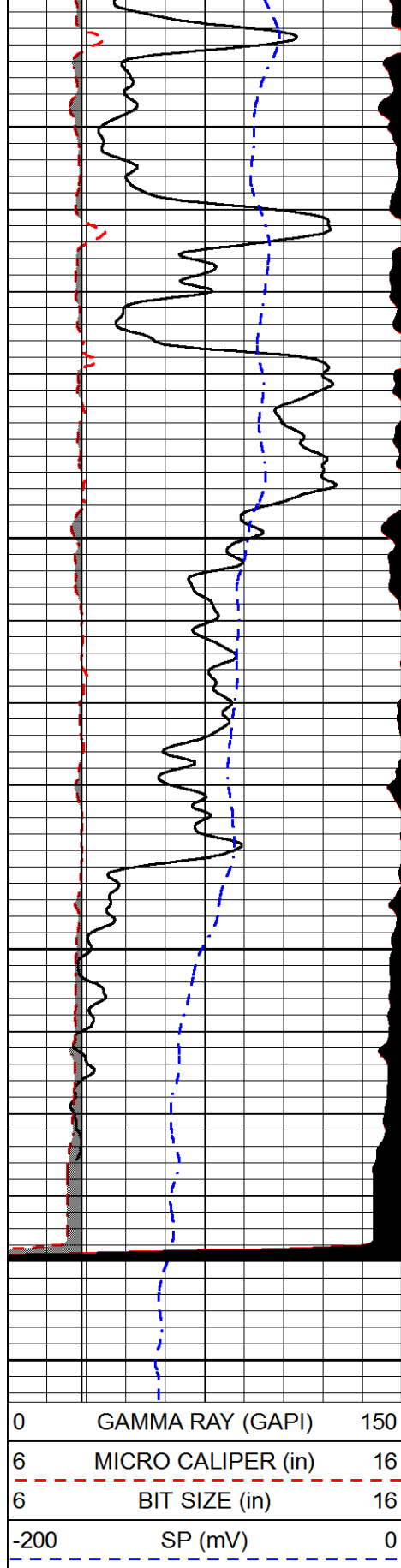
REPEAT SECTION

Database File rjm_riedl_4.db
 Dataset Pathname stack/pass2.1
 Presentation Format micro
 Dataset Creation Tue Nov 21 09:14:54 2017
 Charted by Depth in Feet scaled 1:240



3350



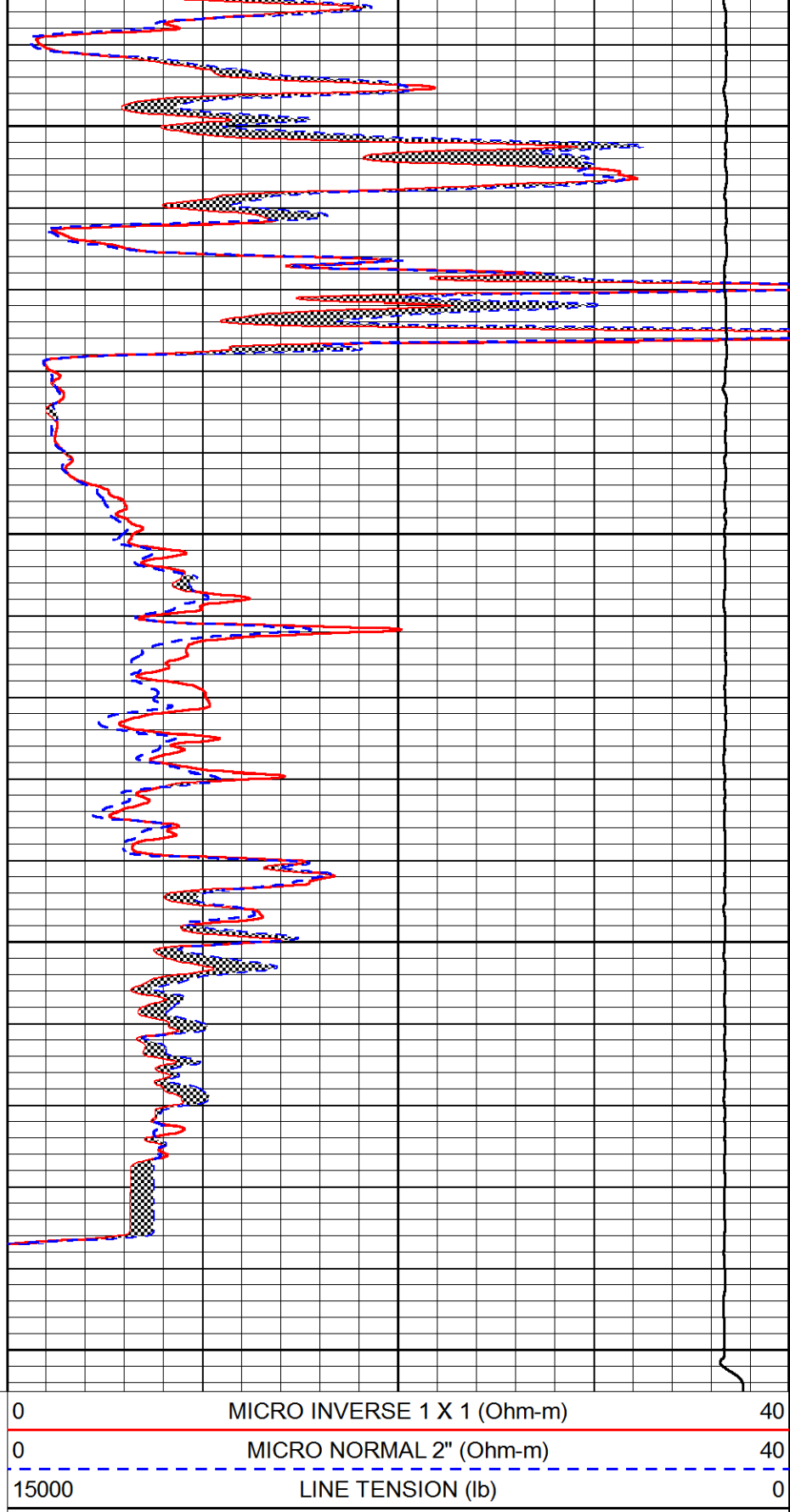


3400

3450

3500

3550



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

Calibration Report

Database File rjm_riedl_4.db
Dataset Pathname stack/pass3.1
Dataset Creation Tue Nov 21 09:14:41 2017

Serial-Model:
Calibration Performed:

1987-M&W
Tue Apr 11 17:07:38 2017

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		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

Compensated Density Calibration Report

Serial-Model: 168-986-M&W
Source / Verifier: /
Master Calibration Performed: Tue Apr 11 17:07:47 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.695	g/cc	859.57	3020.22	cps
Spine Angle = 74.61			Density/Spine Ratio = 0.534		
	Size		Reading		
Small Ring	4.00	in	1.03		
Large Ring	14.00	in	1.23		

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



PIONEER

Company RJM OIL COMPANY
Well RIEDL NO. 4
Field LARKIN
County BARTON

Pioneer Energy Services

State

KANSAS