



PIONEER
Pioneer Energy Services

**MICRORESISTIVITY
LOG**

Company STRATAKAN EXPLORATION, LLC
Well GASKILL RANGE-BERTRAND 5-1
Field WILDCAT
County LOGAN State KANSAS

Location: API #: 15-109-21524-00-00
56' FSL & 2048' FWL
SEC 5 TWP 12S RGE 33W
Permanent Datum GROUND LEVEL Elevation 3167'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING
Other Services
CNL/CDL
DIL/BHCS
Elevation
K.B. 3172'
D.F. N/A
G.L. 3167'

Date	9/17/2017
Run Number	TWO
Depth Driller	4790'
Depth Logger	4789'
Bottom Logged Interval	4788'
Top Log Interval	3700'
Casing Driller	8.625" @ 260'
Casing Logger	259'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	5,000
Density / Viscosity	9.2 56
pH / Fluid Loss	9.5 8.0
Source of Sample	FLOWLINE
Rm @ Meas. Temp	.75 @ 67
Rmt @ Meas. Temp	.56 @ 67
Rmc @ Meas. Temp	1.01 @ 67
Source of Rmf / Rmc	CHARTS
Rm @ BHT	.41 @ 124
Operating Rig Time	4 HOURS
Max Rec. Temp. F	124 DEGF
Equipment Number	108
Location	HAYS
Recorded By	J. HENRICKSON
Witnessed By	JASON ALM

<<< 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.

MONUMENT KANSAS
5 SOUTH, EAST INTO

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

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

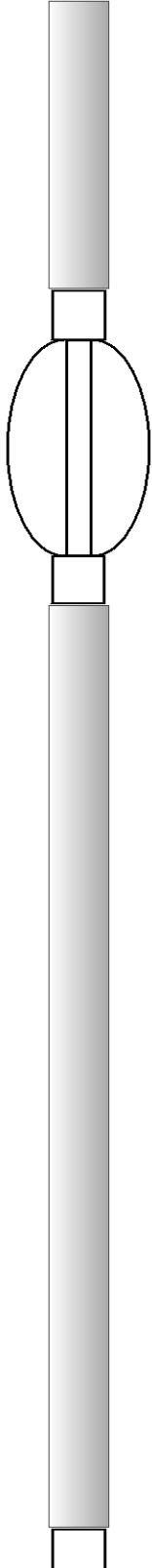
Your Pioneer Energy Services Crew	This Log Record Was Witnessed By
Engineer: J. HENRICKSON	Primary Witness: JASON ALM
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

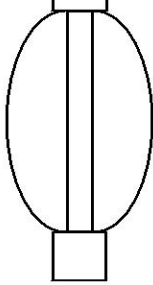
Log Variables

DatabaseC:\ProgramData\Warrior\Data\stratakan_gaskill_range_bertrand_unit_5_1.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	124	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	-225	57	Off	4789

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
MCAL MI MN	28.00 28.00 28.00		ML-Armadillo (Armadillo-4) Pengo micro log tool mandrel with Armadillo Electronics	5.00	3.50	100.00
			CENT-PENGO	5.50	3.00	70.00
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: stratakan_gaskill_range_bertrand_unit_5_1.db: field/well/SONMEL/pass3
 Total length: 32.00 ft
 Total weight: 540.00 lb
 O.D.: 3.50 in

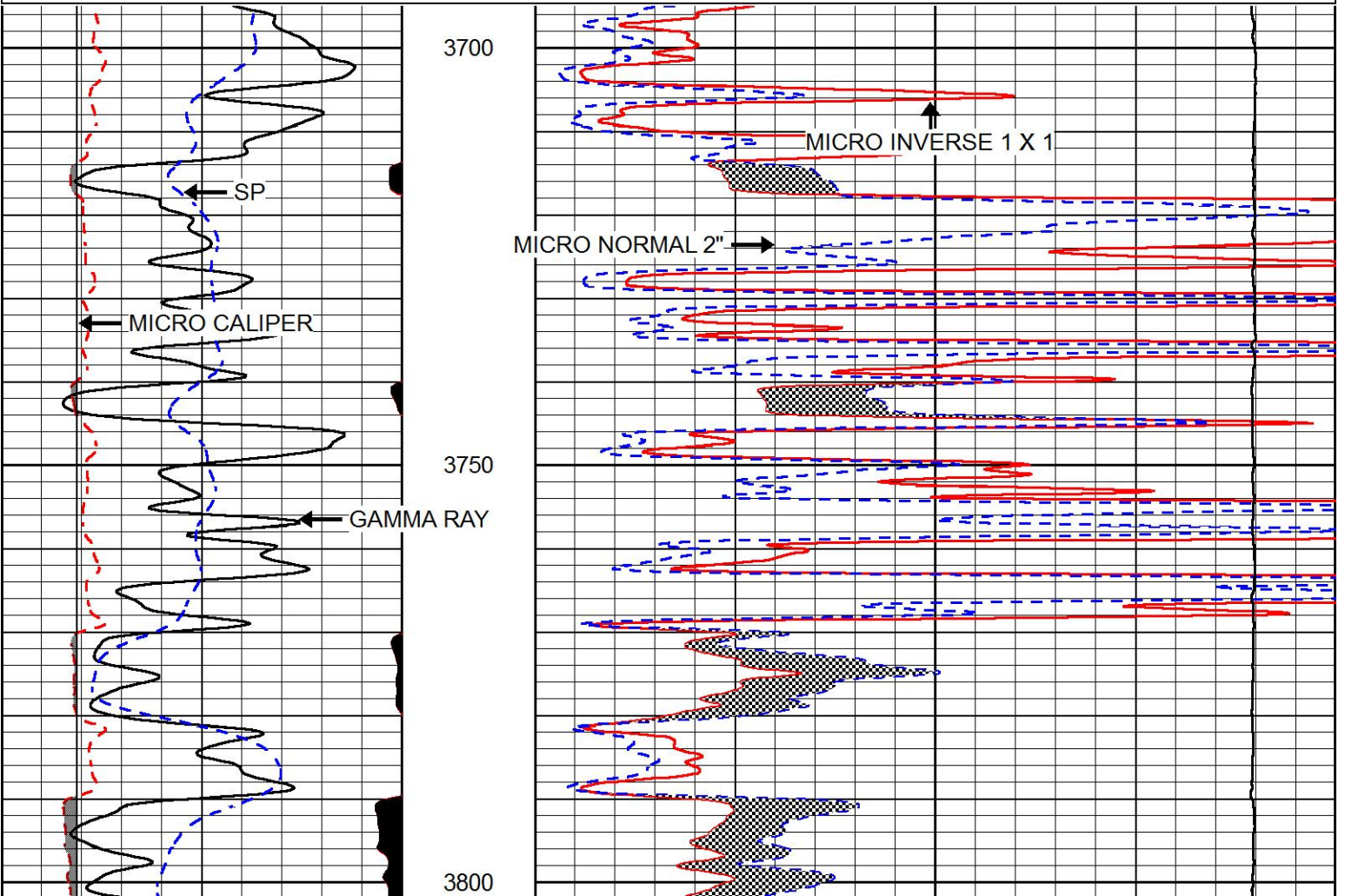


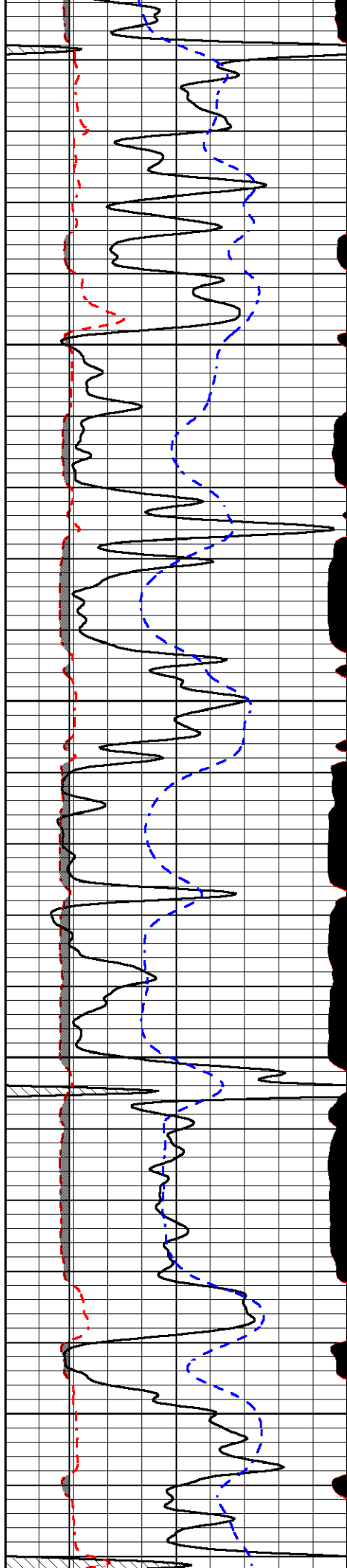
MAIN PASS

Database File stratakan_gaskill_range_bertrand_unit_5_1.db
 Dataset Pathname stack/pass3.1
 Presentation Format micro
 Dataset Creation Sun Sep 17 17:17:20 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



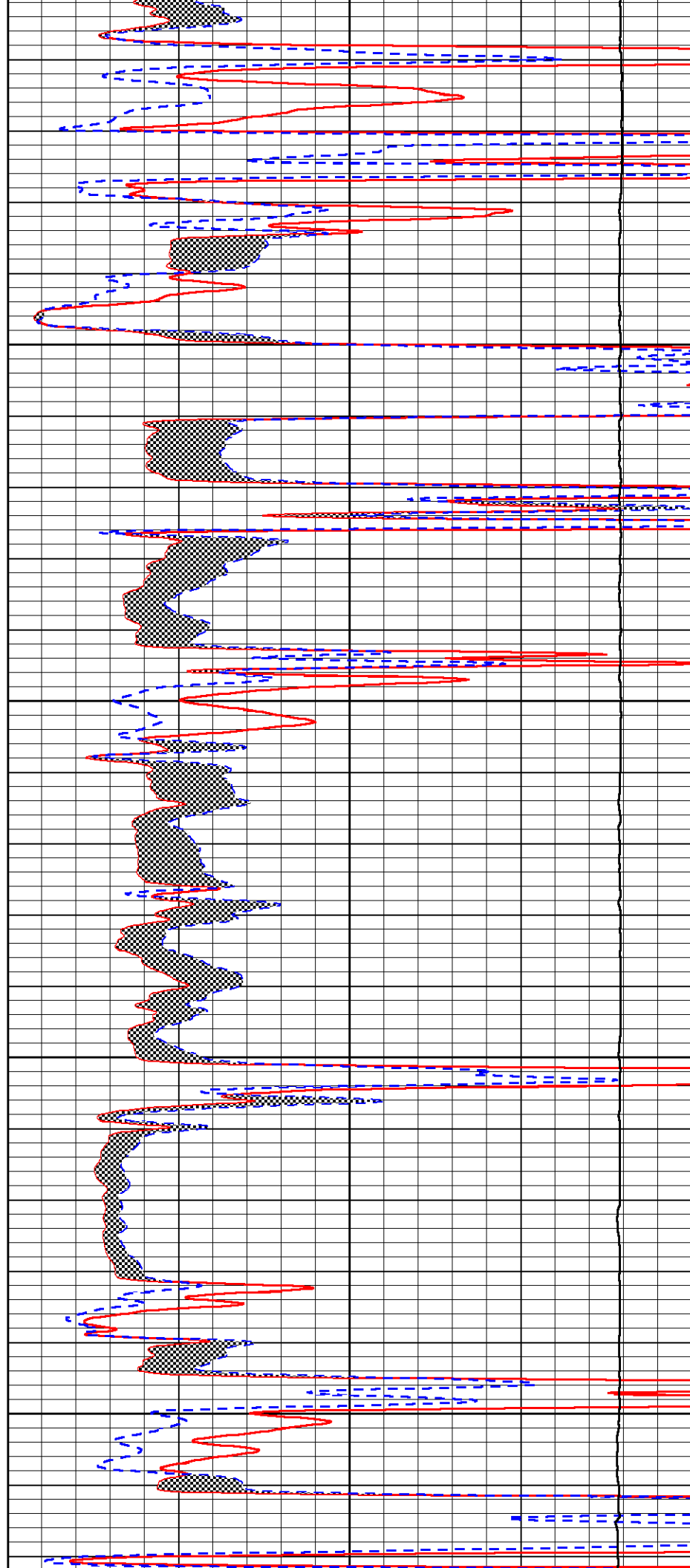


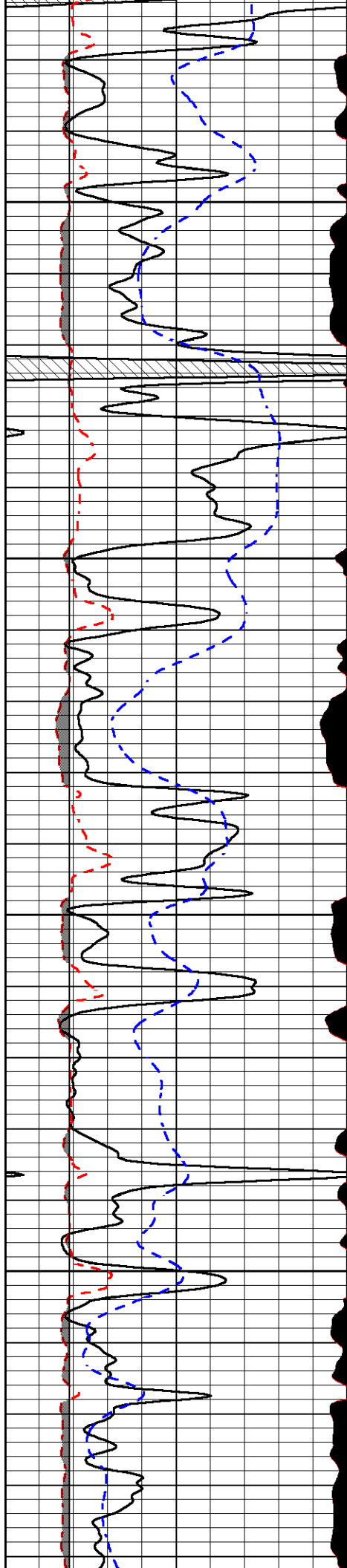
3850

3900

3950

4000



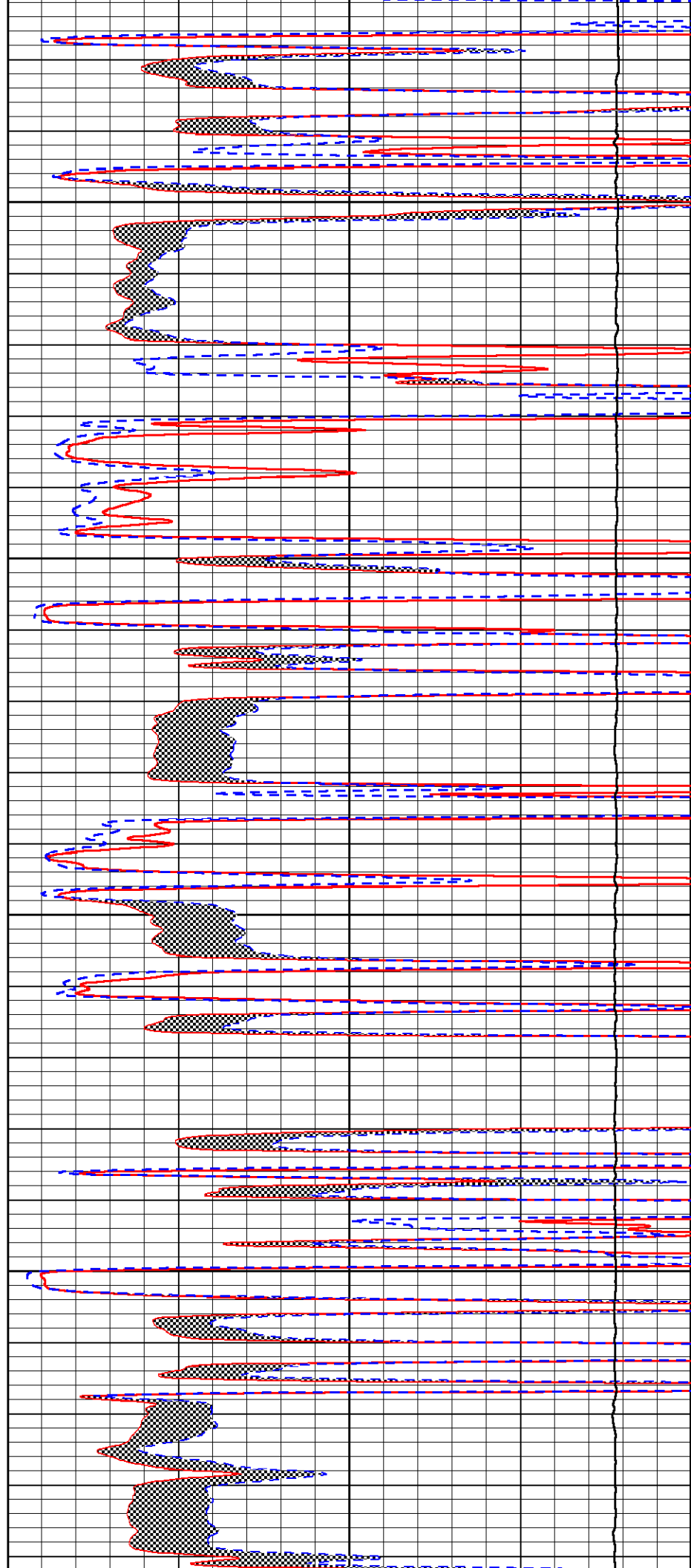


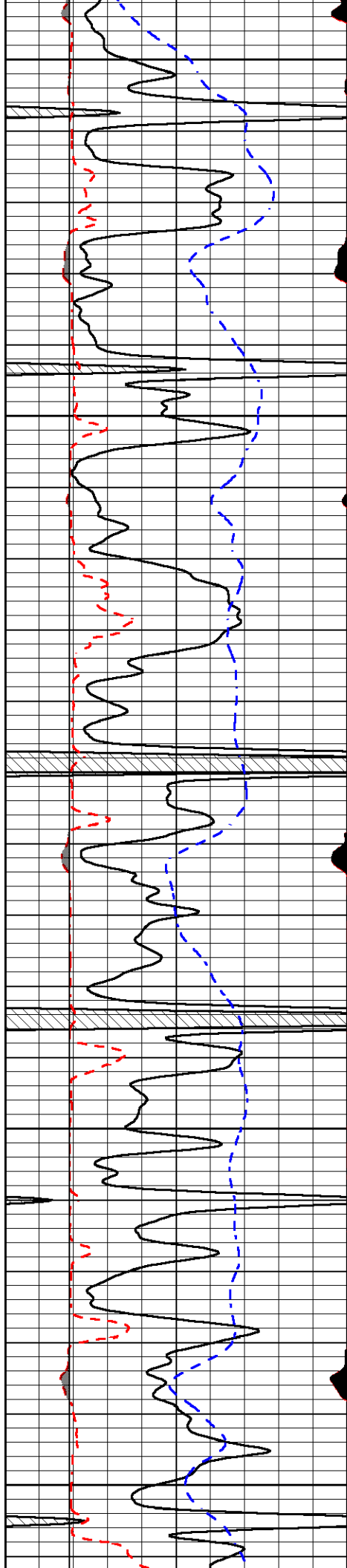
4050

4100

4150

4200





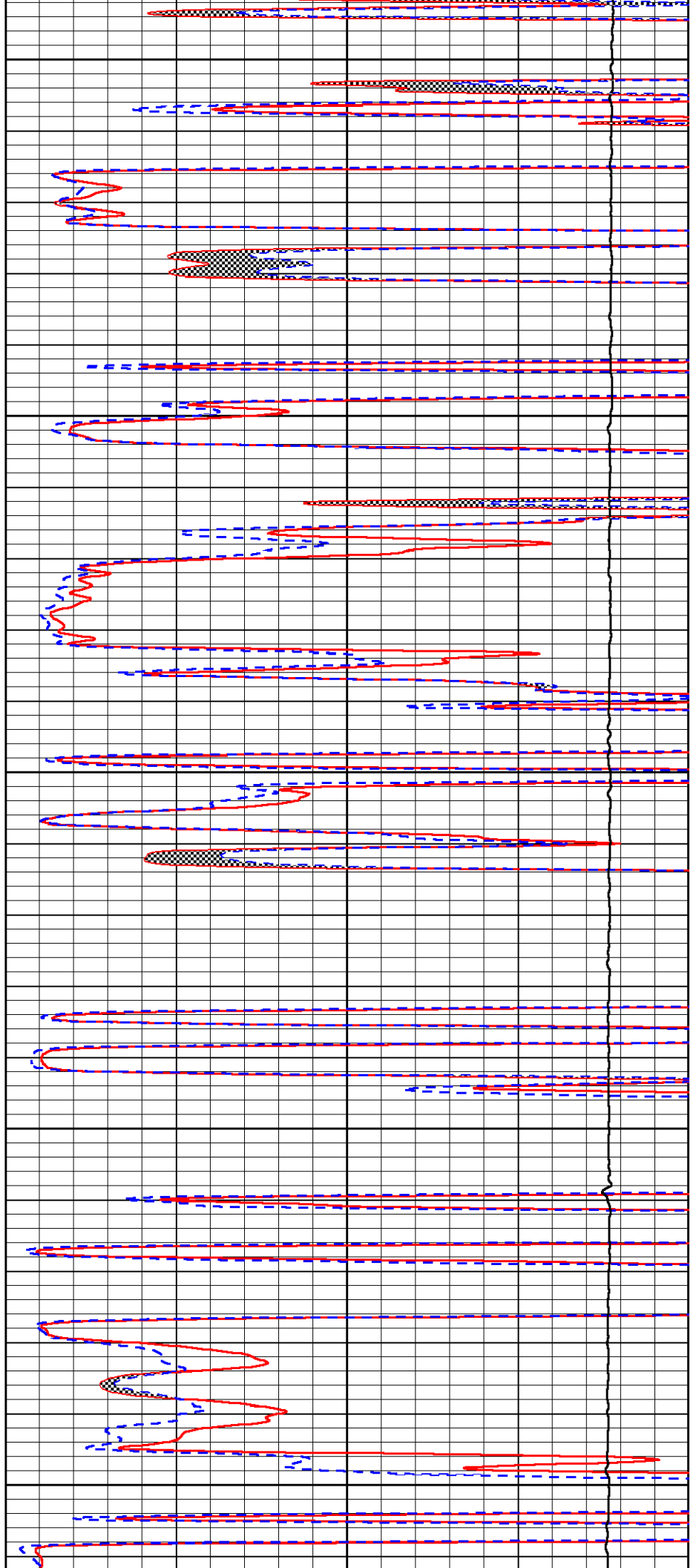
4250

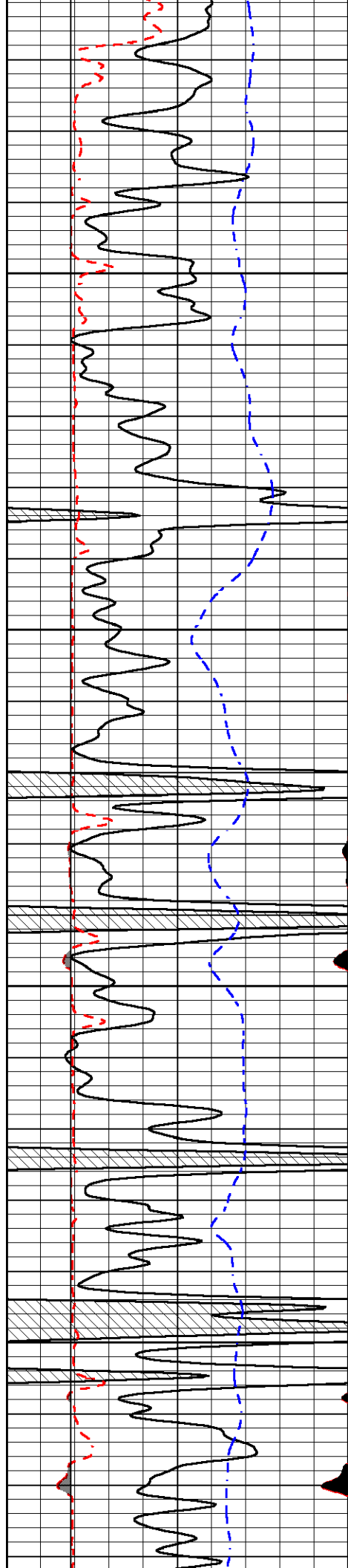
4300

4350

4400

4450



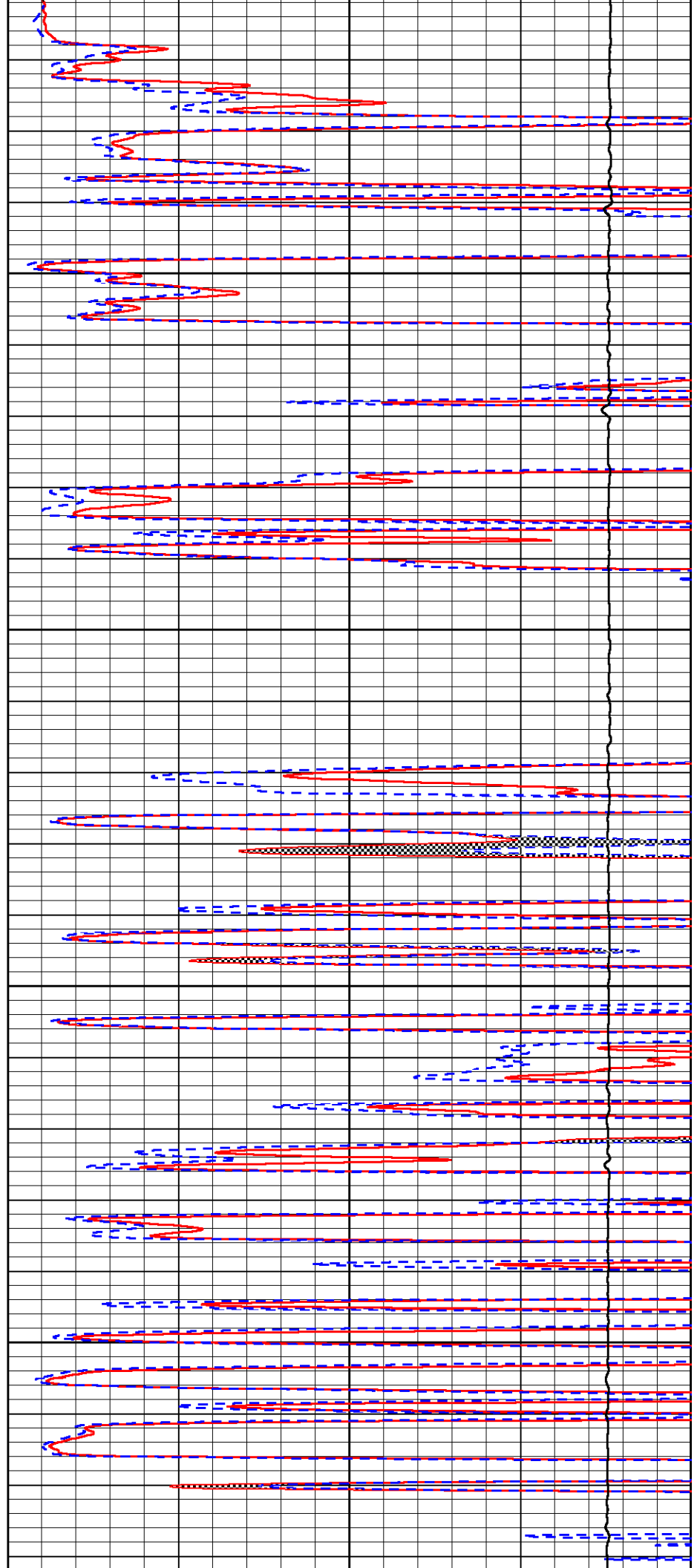


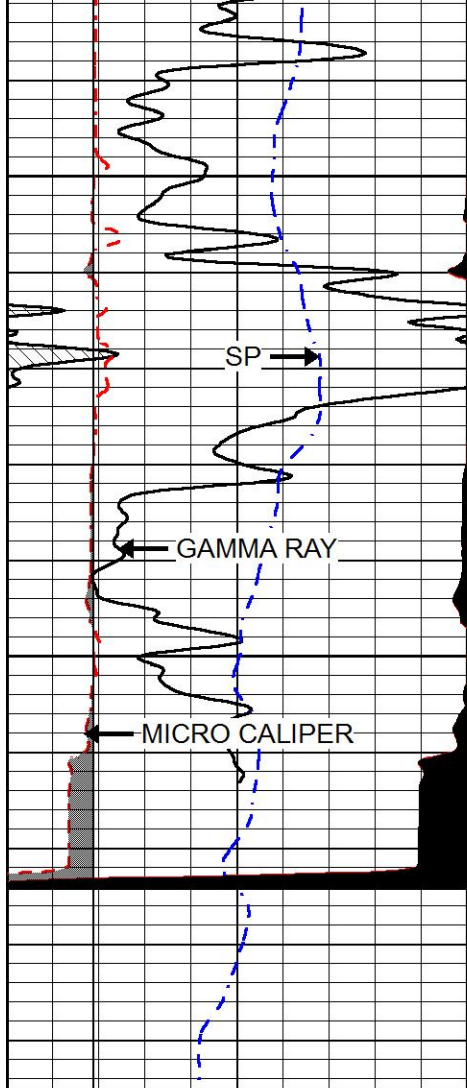
4500

4550

4600

4650





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

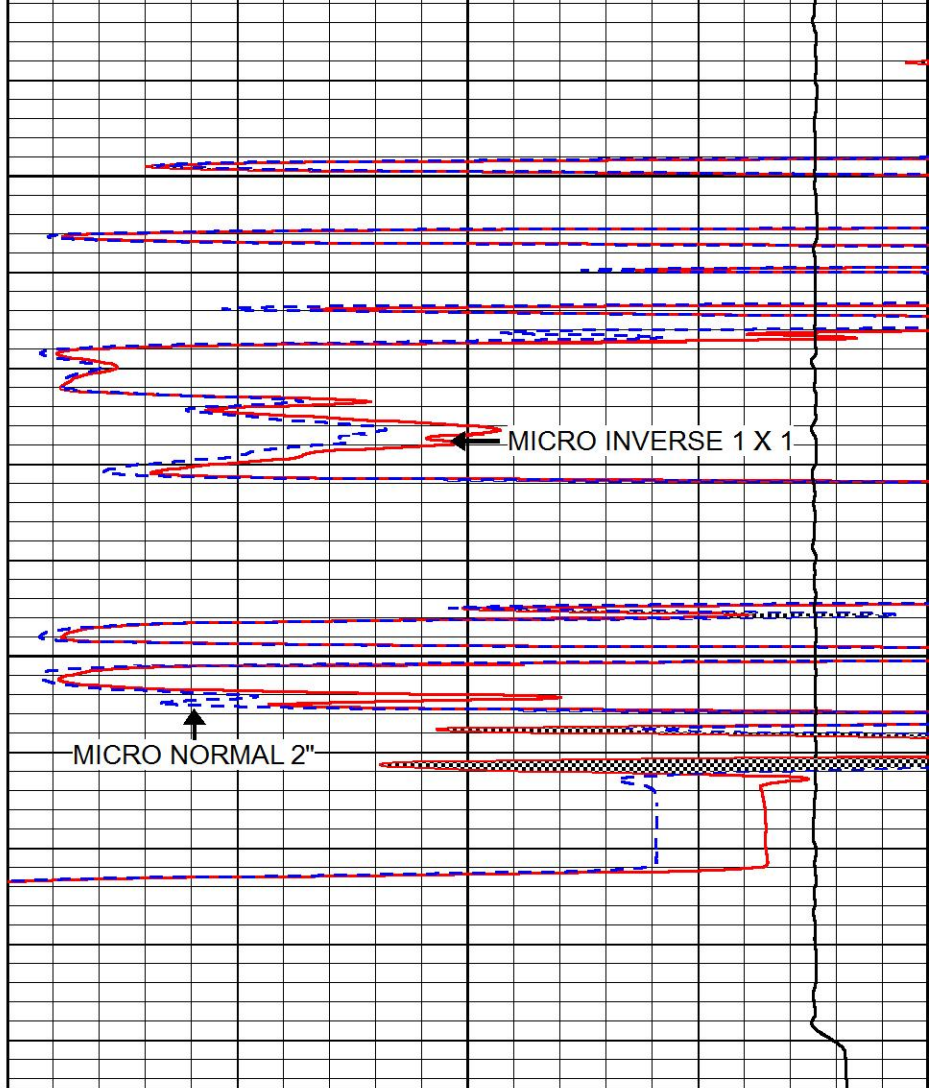
4700

SP →

← GAMMA RAY

← MICRO CALIPER

4750



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

← MICRO INVERSE 1 X 1

↑ MICRO NORMAL 2"

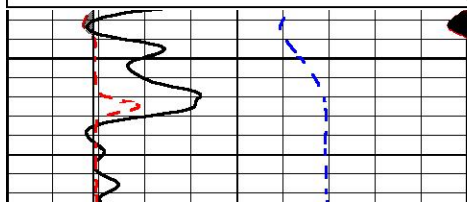


REPEAT SECTION

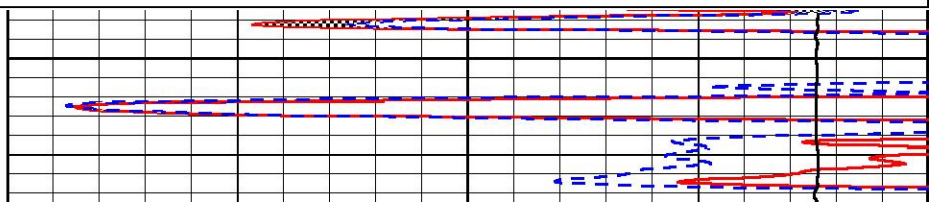
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 Presentation Format micro
 Dataset Creation Sun Sep 17 16:32:22 2017
 Charted by Depth in Feet scaled 1:240

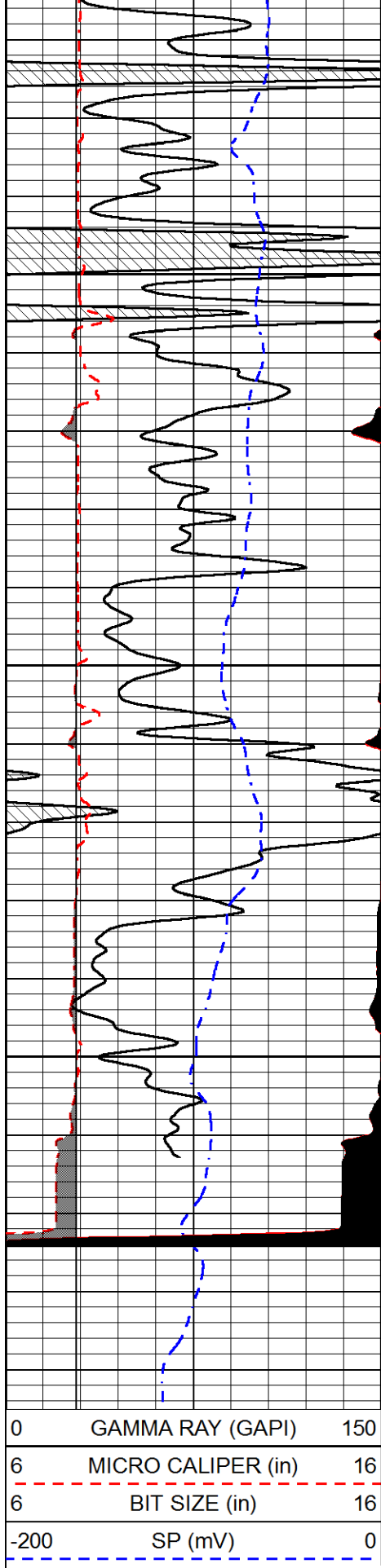
0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

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



4600

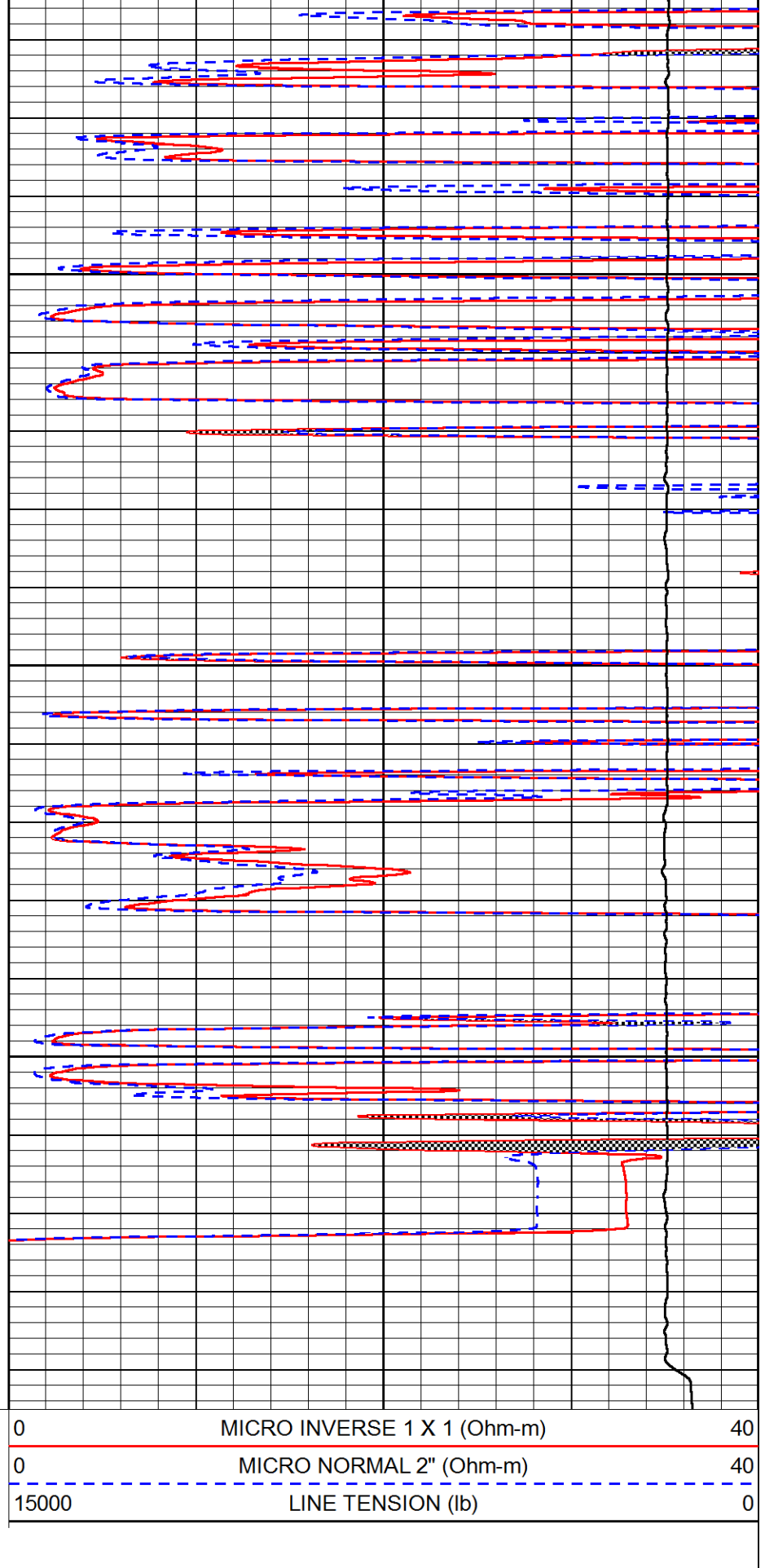




4650

4700

4750



Calibration Report

Database File stratakan_gaskill_range_bertrand_unit_5_1.db
 Dataset Pathname stack/pass3.1
 Dataset Creation Sun Sep 17 17:17:20 2017

Dual Induction Calibration Report

Serial-Model: 1987-M&W
 Calibration Performed: Tue Apr 11 16:07:38 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

Compensated Density Calibration Report

Serial-Model: 168-986-M&W
 Source / Verifier: /
 Master Calibration Performed: Tue Apr 11 16:07:47 2017

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4691.86	4818.19	cps
Aluminum	2.675	g/cc	859.57	3020.22	cps
Spine Angle = 74.61			Density/Spine Ratio = 0.523		
	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 16:08:01 2017

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps
 Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps



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Well GASKILL RANGE-BERTRAND 5-1

PIONEER

Pioneer Energy Services

Field

WILDCAT

County

LOGAN

State

KANSAS