



**PIONEER**  
Pioneer Energy Services

**MICRORESISTIVITY  
LOG**

Company **STRATAKAN EXPLORATION, INC.**  
Well **ANDREWS B #22-1**  
Field **KENILWORTH**  
County **STAFFORD** State **KANSAS**

Location: **API #: 15-185-23967-00-00**  
**950' FNL & 2050' FWL**  
SEC 22 TWP 22S RGE 13W  
Permanent Datum **GROUND LEVEL** Elevation **1890'**  
Log Measured From **KELLY BUSHING**  
Drilling Measured From **KELLY BUSHING**  
Other Services  
**CNL/CDL  
DIL**  
Elevation  
K.B. 1895'  
D.F. N/A  
G.L. 1890'

Date	10/8/2016
Run Number	ONE
Depth Driller	4010'
Depth Logger	4009'
Bottom Logged Interval	4008'
Top Log Interval	2850'
Casing Driller	8.625" @ 692'
Casing Logger	690'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	7000
Density / Viscosity	9.1 49
pH / Fluid Loss	9.0 9.6
Source of Sample	FLOWLINE
Rm @ Meas. Temp	0.67 @ 62
Rmt @ Meas. Temp	0.50 @ 62
Rmc @ Meas. Temp	0.90 @ 62
Source of Rmf / Rmc	CHARTS
Rm @ BHT	0.36 @ 116
Operating Rig Time	2 1/2 HOURS
Max Rec. Temp. F	116 DEG F
Equipment Number	108
Location	COLBY
Recorded By	T. MARTIN
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.**

**GREAT BEND, S TO 120 RD,  
1/2 E, S INTO**

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

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

<b>Your Pioneer Energy Services Crew</b>	<b>This Log Record Was Witnessed By</b>
Engineer: T. MARTIN	Primary Witness: JASON ALM
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\stratakan\_andrews\_b\_#22-1.db  
Dataset field/well/stkml/pass3.1/\_vars\_

## Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	116	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	-320	50	Off	4009

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 CNSSC	37.48 36.73		CNT-M&W (tk10-MW)	5.50	3.50	100.00
LSD DCAL SSD	28.43 28.42 27.93		CDL-M&W (71-914)	8.50	4.00	250.00
MCAL MI MN	19.83 19.83 19.83		ML-PSI STKBL ML (PSI-02) Stackable Microlog Tools	7.58	4.00	65.00
RLL3 RLL3F	15.80 15.79					
CILD	8.00		DIL-M&W (1987)	18.50	3.50	220.00

CILM 4.70

SP 0.20

Dataset: stratakan\_andrews\_b\_#22-1.db: field/well/stkml/pass3.1  
 Total length: 43.08 ft  
 Total weight: 685.00 lb  
 O.D.: 4.00 in

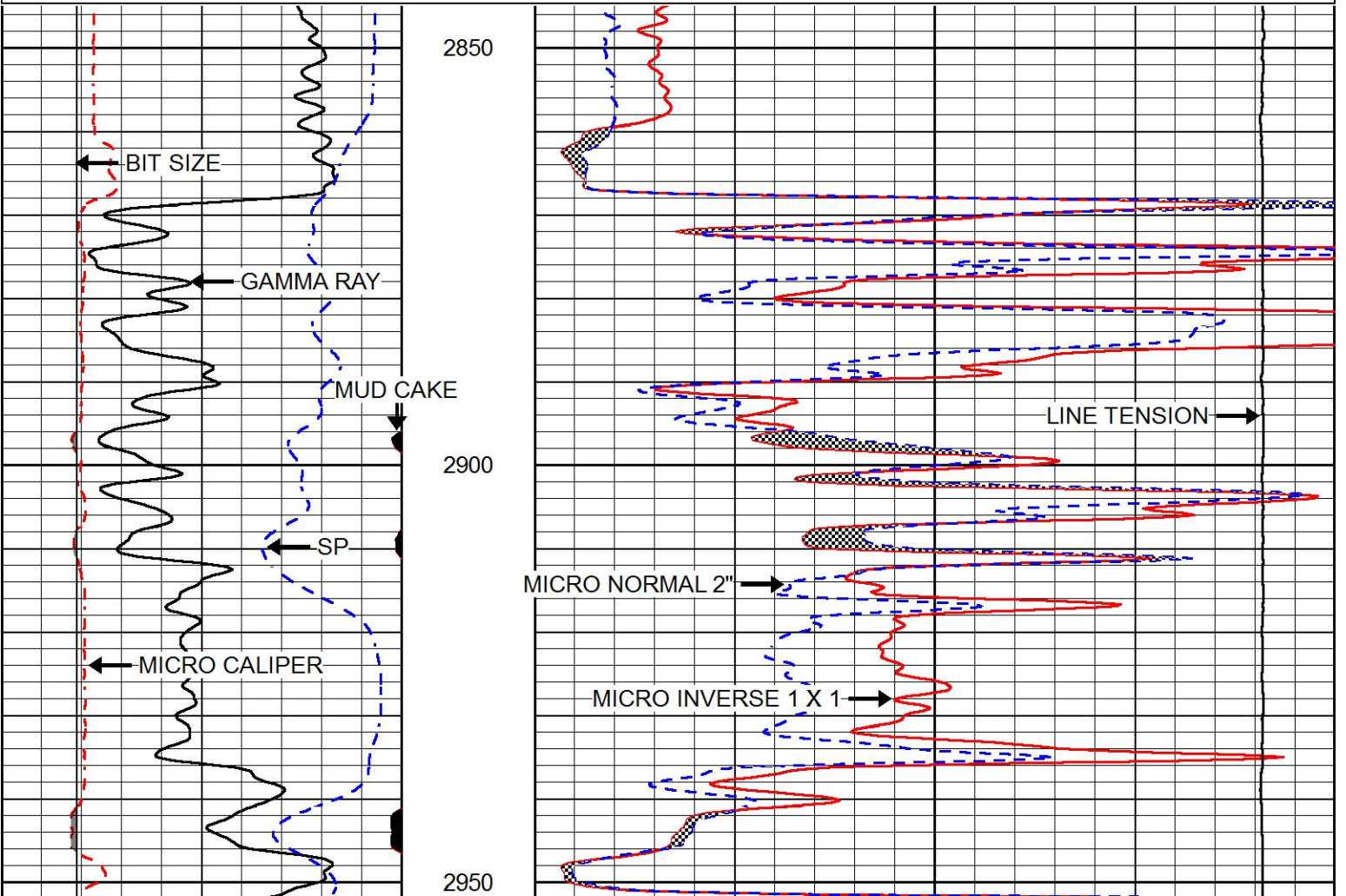


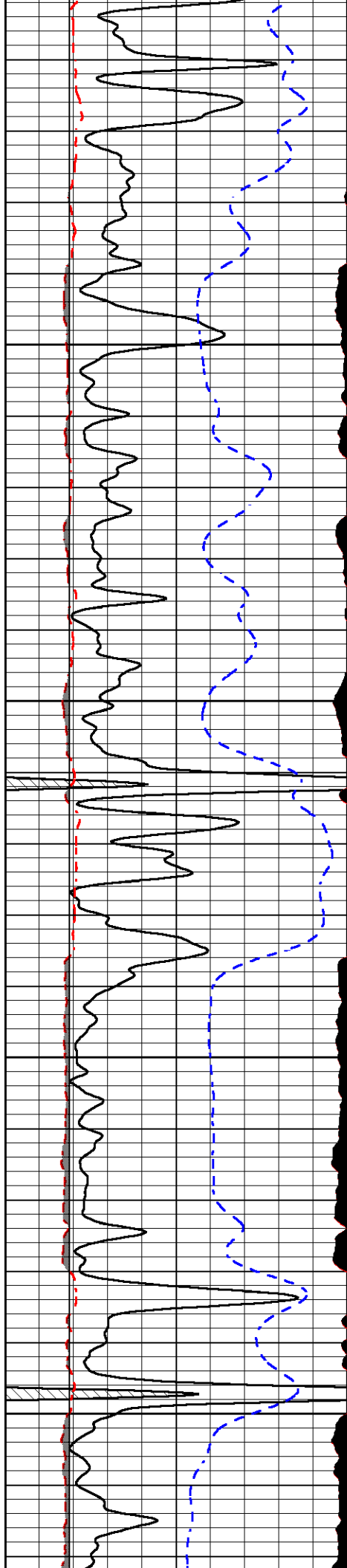
# MAIN PASS

Database File stratakan\_andrews\_b\_#22-1.db  
 Dataset Pathname stkml/pass3.1  
 Presentation Format micro  
 Dataset Creation Sat Oct 08 02:32:42 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



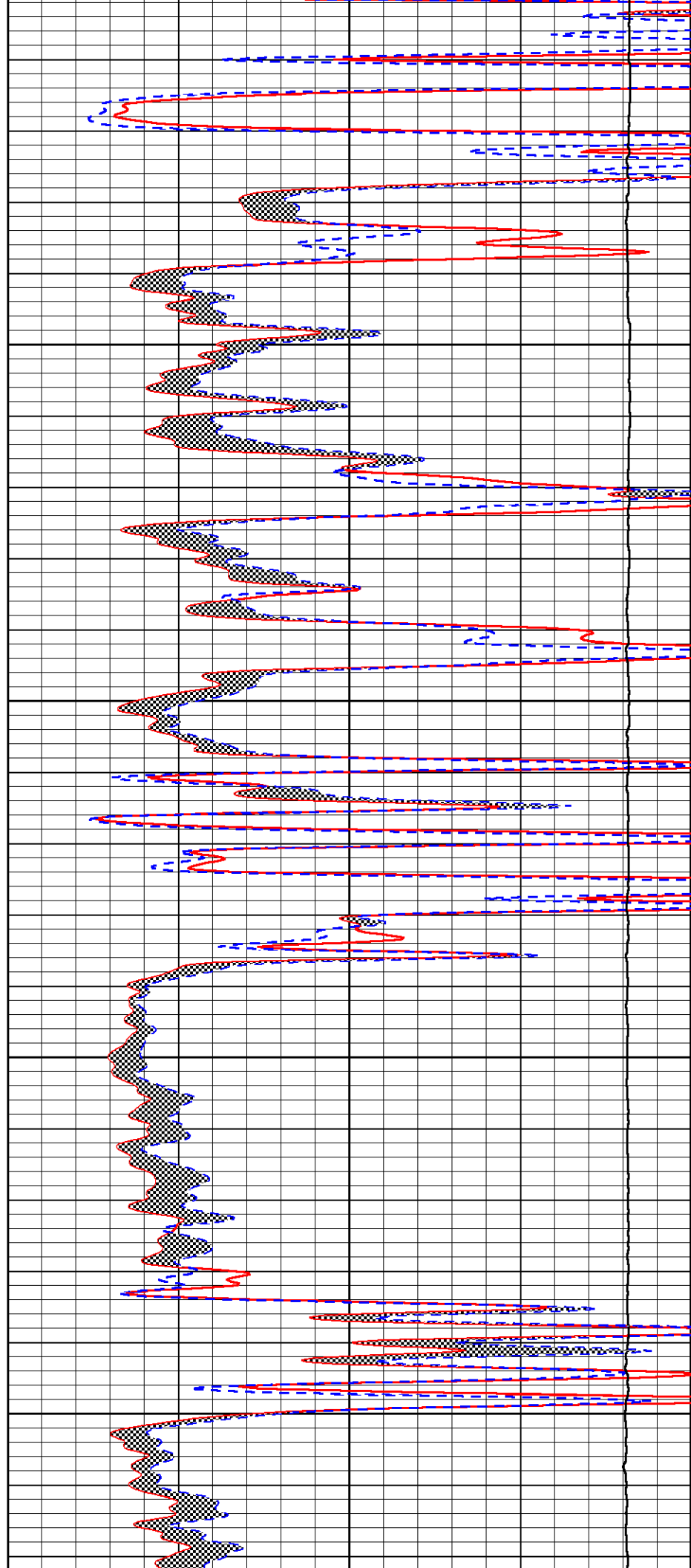


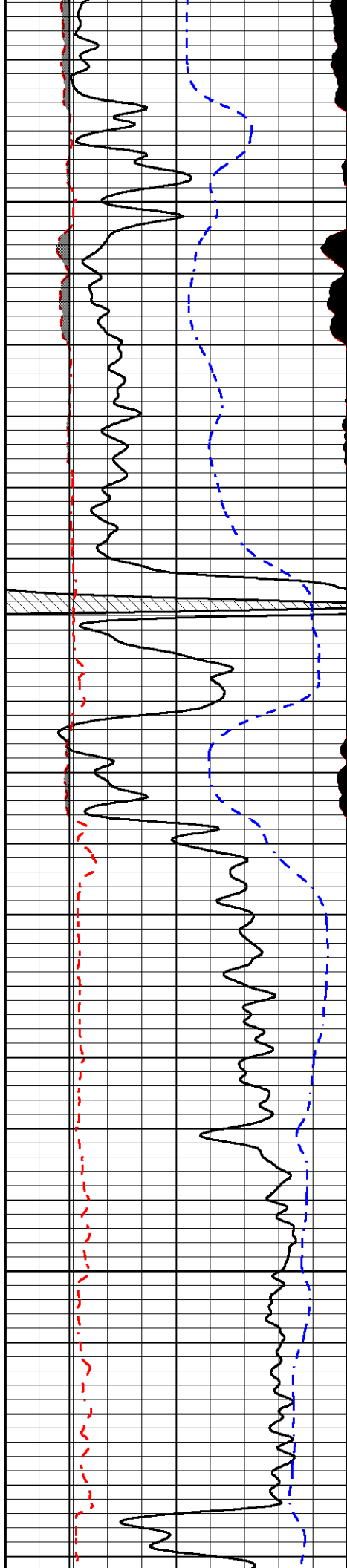
3000

3050

3100

3150



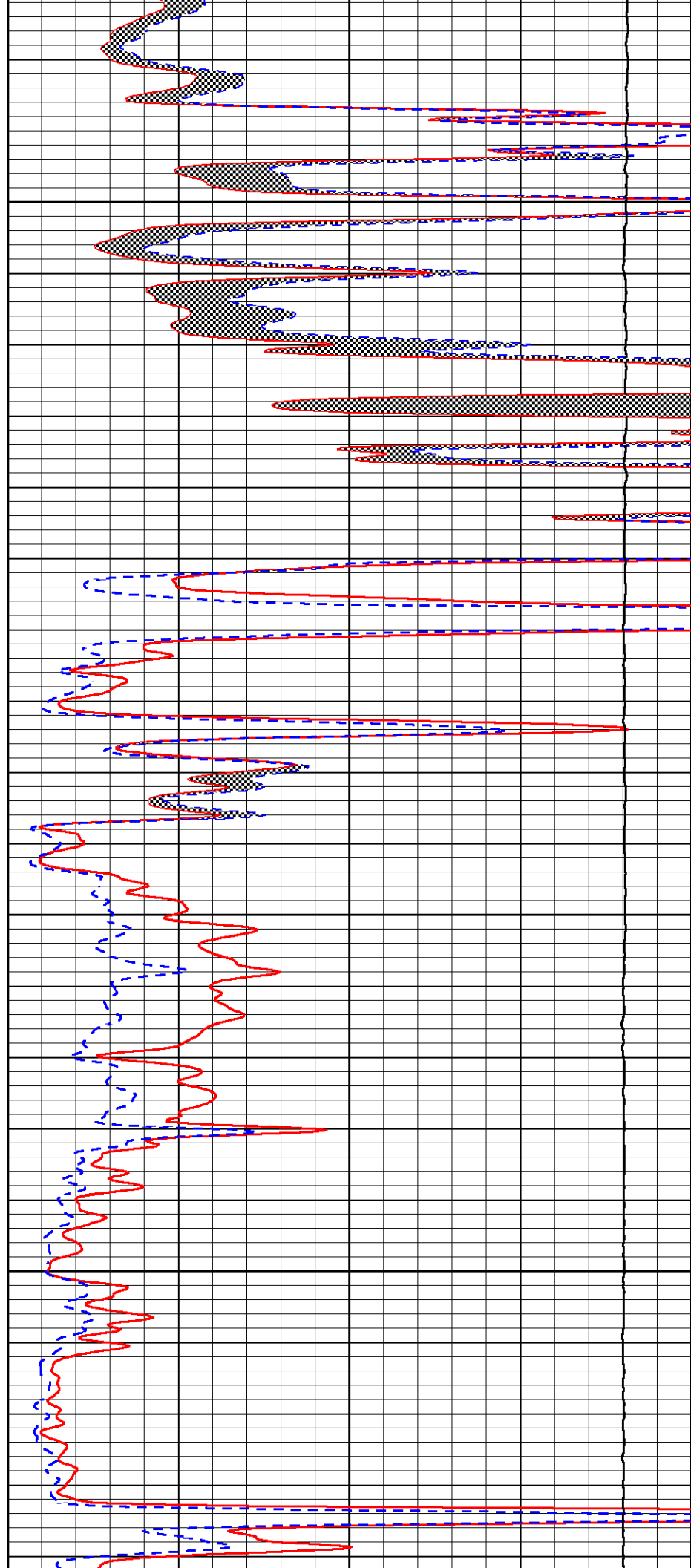


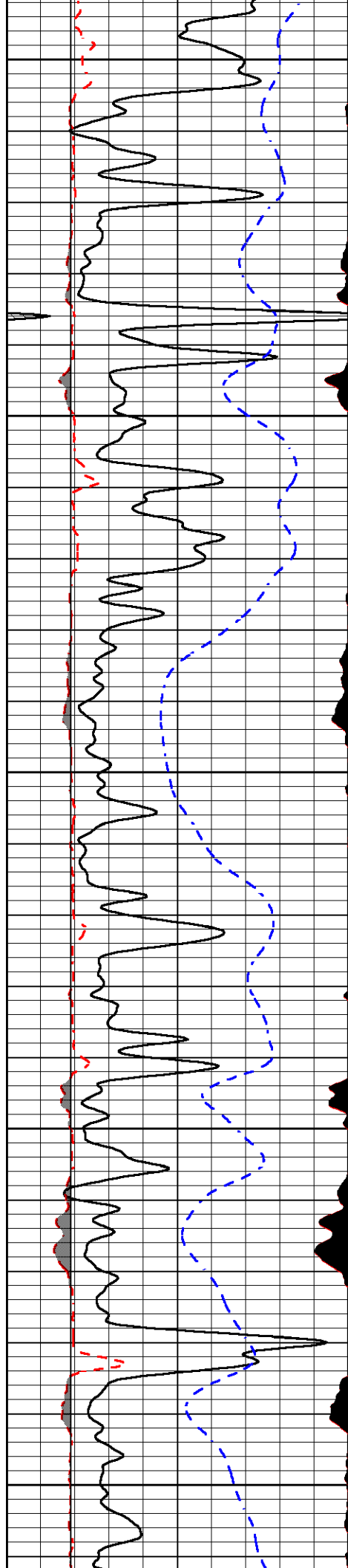
3200

3250

3300

3350





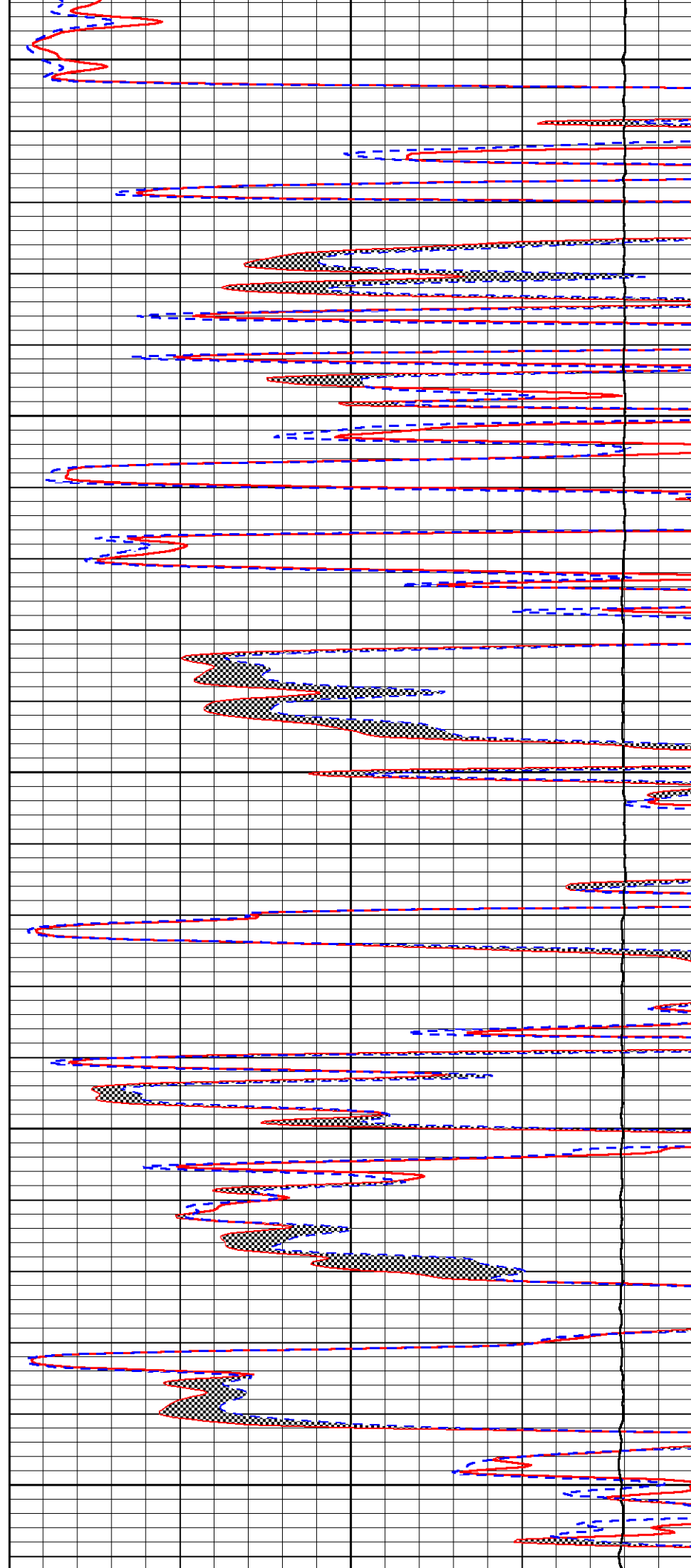
3400

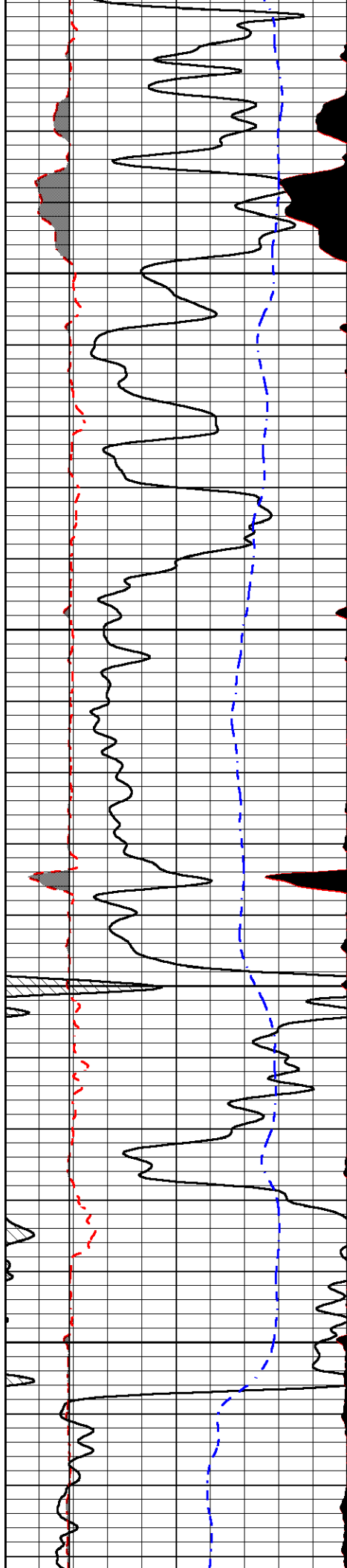
3450

3500

3550

3600



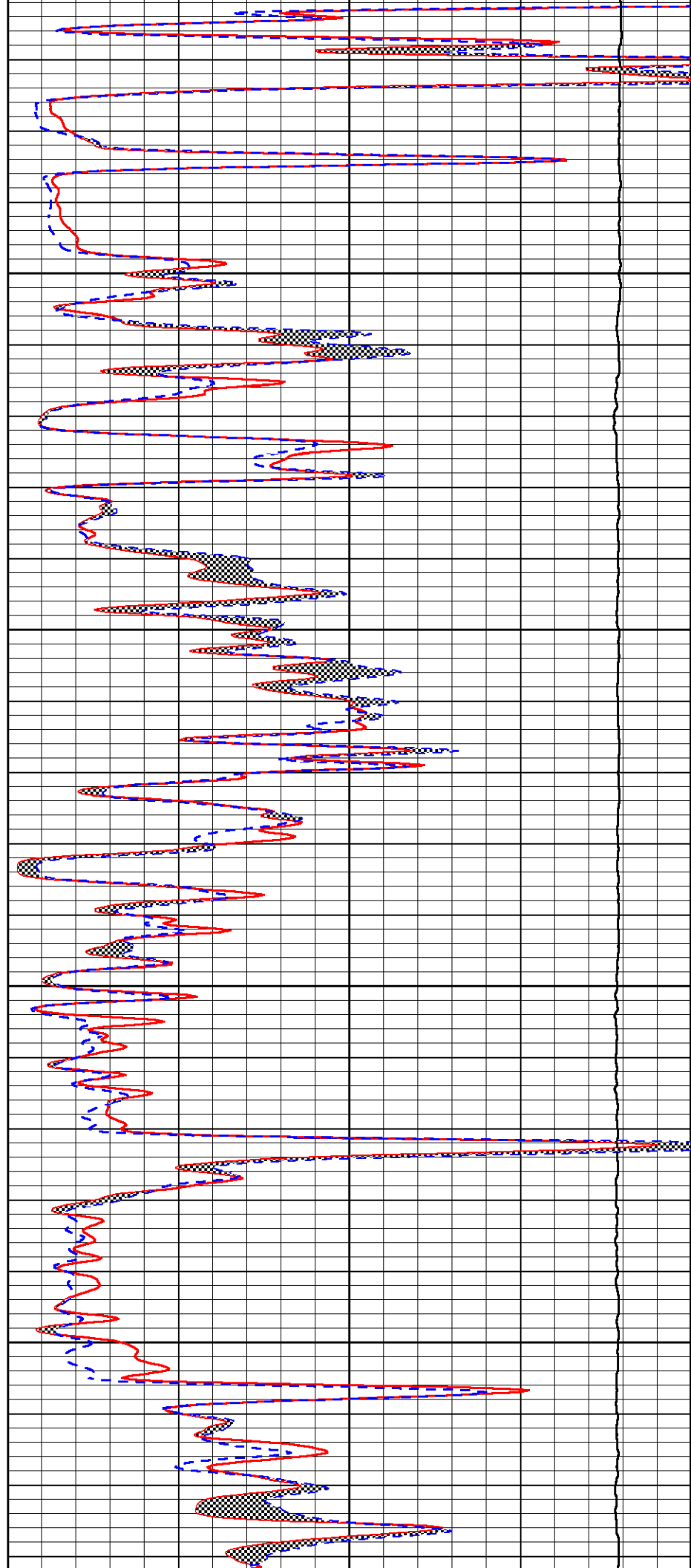


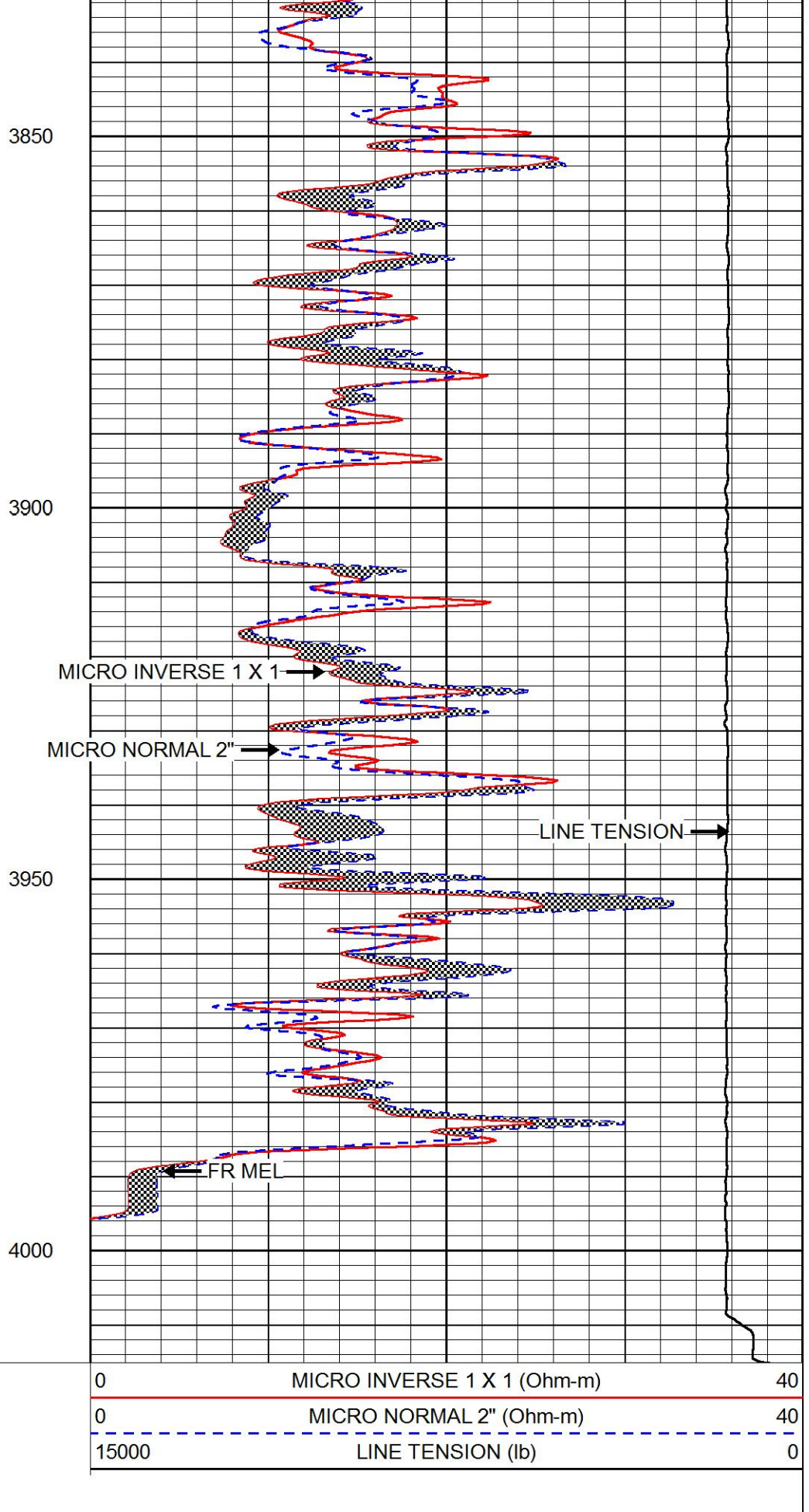
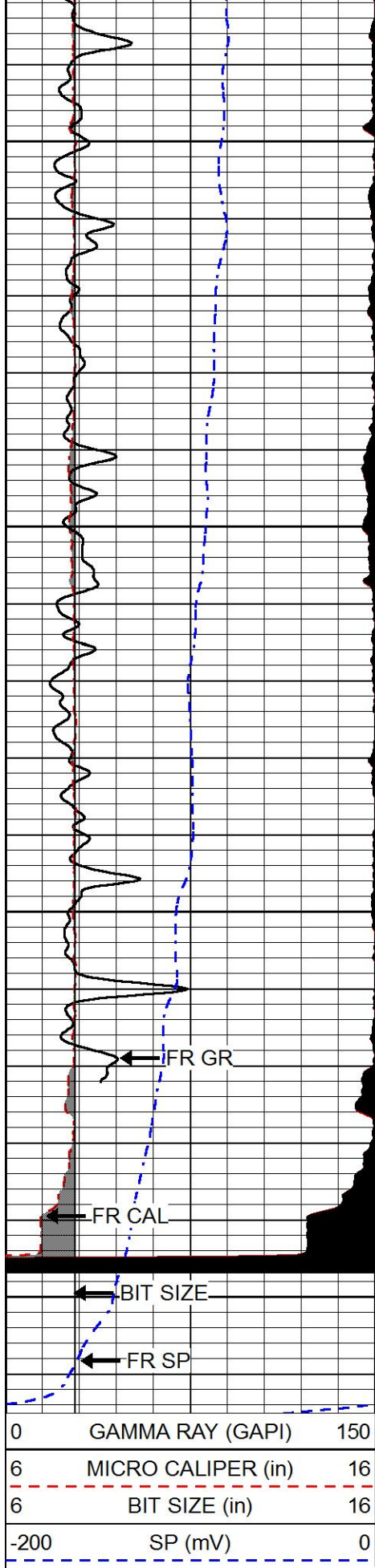
3650

3700

3750

3800





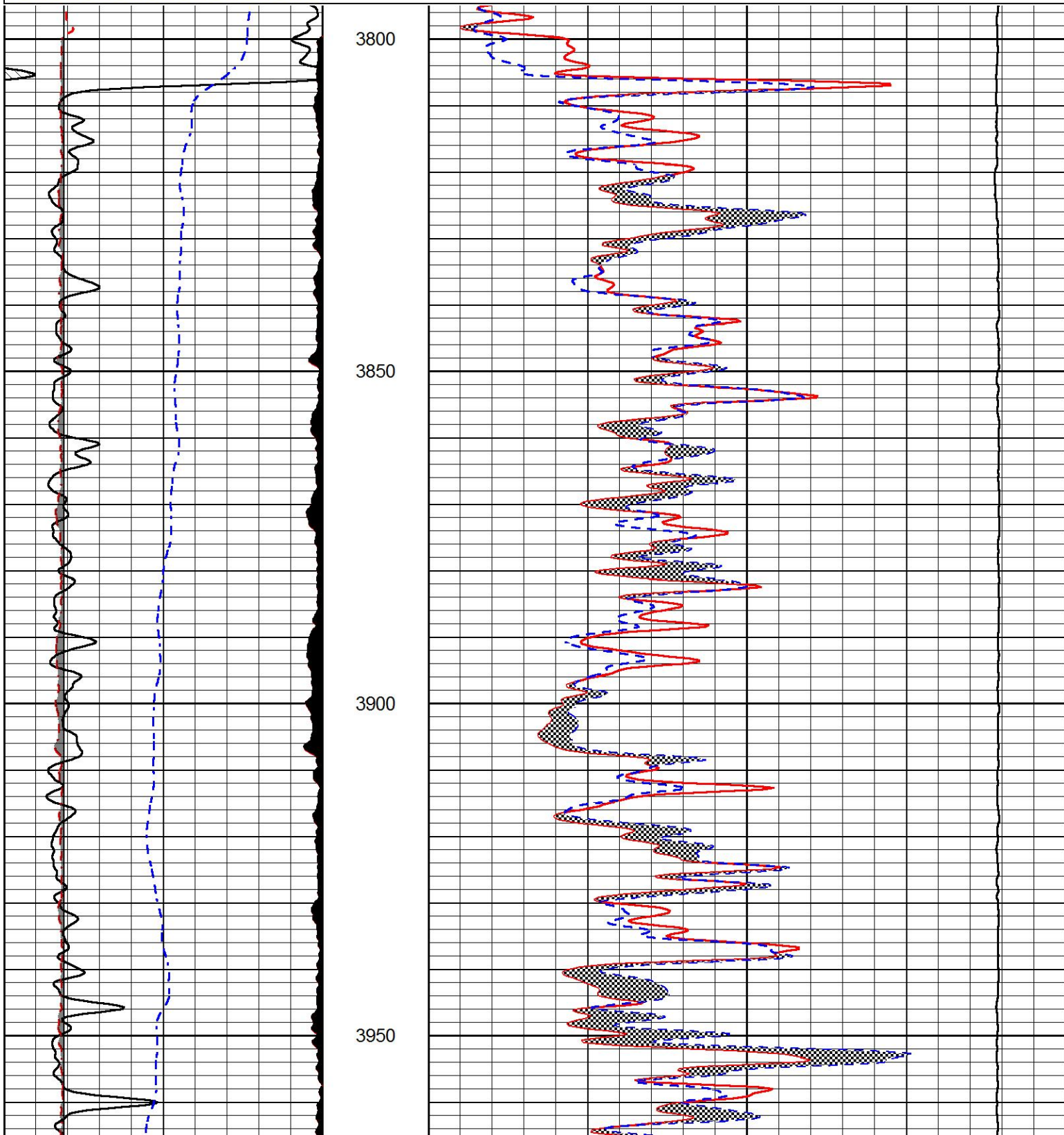
**REPEAT SECTION**

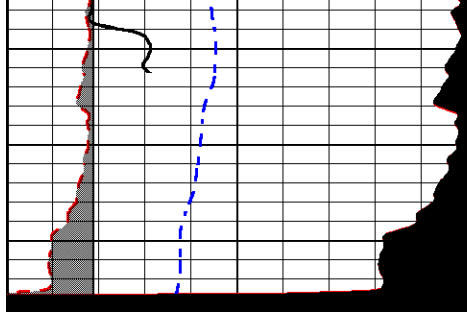


Database File stratakan\_andrews\_b\_#22-1.db  
Dataset Pathname stkml/pass2.1  
Presentation Format micro  
Dataset Creation Sat Oct 08 01:57:10 2016  
Charted by Depth in Feet scaled 1:240

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

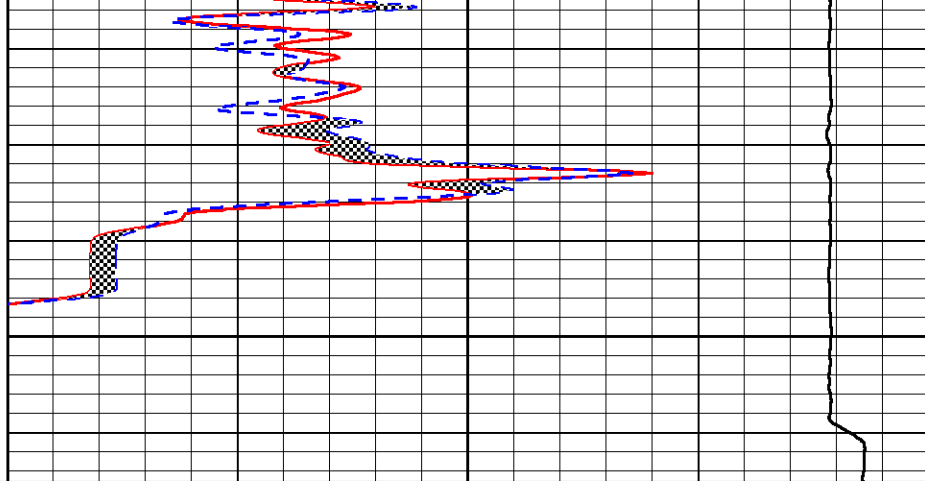
0	MICRO INVERSE 1 X 1 (Ohm-m)	40
0	MICRO NORMAL 2" (Ohm-m)	40
15000	LINE TENSION (lb)	0





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

4000



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 stratakan\_andrews b\_#22-1.db  
 Dataset Pathname stkml/pass3.1  
 Dataset Creation Sat Oct 08 02:32:42 2016

### Dual Induction Calibration Report

Serial-Model: 1987-M&W  
 Calibration Performed: Tue Aug 30 16:23:58 2016

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-40.000
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.440	-109.000

### Microlog Calibration Report

Serial-Model: PSI-02-PSI STKBL ML  
 Performed: Thu Oct 06 17:34:17 2016

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	24000.0000	-2.0000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	23575.0000	-1.5000
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.3200

### Compensated Density Calibration Report

Serial-Model: 71-914-M&W  
 Source / Verifier: /  
 Master Calibration Performed: Fri Oct 07 08:39:26 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: Sat Oct 1 10:01:53 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: Fri Sep 30 22:06:47 2016

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps



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