



PIONEER
Pioneer Energy Services

MICRORESISTIVITY LOG

Company AMERICAN WARRIOR, INC.
Well CHARVAT NO. 1-25
Field WILDCAT
County RUSSELL
State KANSAS

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Location: API #: 15-167-24047-00-00

480' FNL & 1,636' FEL

SEC 25 TWP 15S RGE 11W

Permanent Datum GROUND LEVEL Elevation 1775'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 1783'
D.F. N/A
G.L. 1775'

Date 6/26/2016

Run Number ONE

Depth Driller 3385'

Depth Logger 3385'

Bottom Logged Interval 3384'

Top Log Interval 2500'

Casing Driller 8.625" @ 489'

Casing Logger 487'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 4700

Density / Viscosity 9.35 55

pH / Fluid Loss 10.5 9.6

Source of Sample FLOWLINE

Rm @ Meas. Temp .68 @ 88

Rmt @ Meas. Temp .51 @ 88

Rmc @ Meas. Temp .92 @ 88

Source of Rmt / Rmc CHARTS

Rm @ BHT .54 @ 110

Operating Rig Time 2 HOURS

Max Rec. Temp. F 110

Equipment Number 108

Location COLBY

Recorded By J. LONG

Witnessed By JASON ALM

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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.

WILSON, 7 SOUTH TO STICKNEY ROAD, 1/3 WEST, SOUTH INTO

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

Engineer: J. LONG
Operator: T. MARTIN
Operator:
Operator:

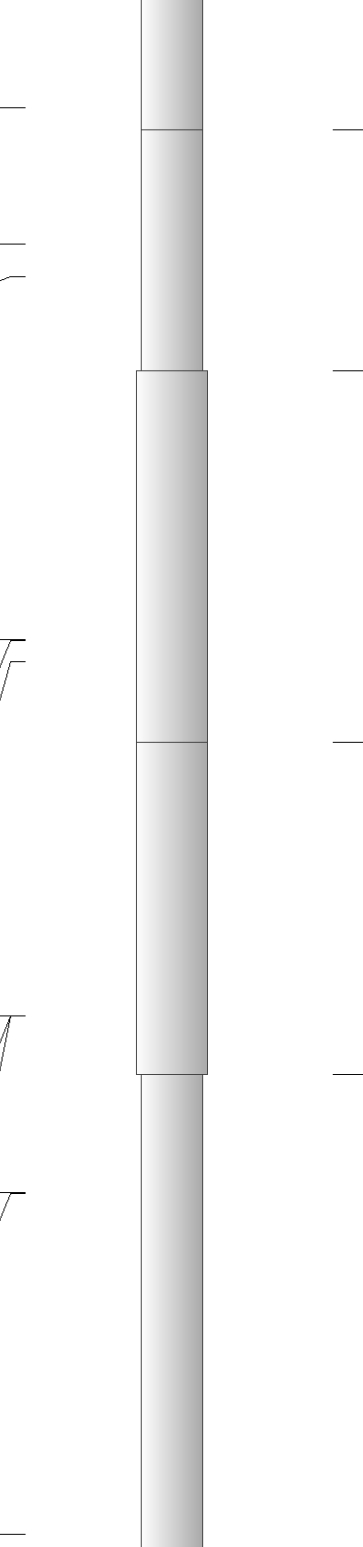
This Log Record Was Witnessed By

Primary Witness: JASON ALM
Secondary Witness:
Secondary Witness:
Secondary Witness:

DatabaseC:\ProgramData\Warrior\Data\amwarrior_charvat_1-25.db
Dataset field/well/stack/pass3.1/_vars_

Dataset field/well/stack/pass3.1/_vars_

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	110	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	-347	84	Off	3385

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 (168-986)	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: amwarrior_charvat_1-25.db: field/well/stack/pass3.1
Total length: 43.08 ft
Total weight: 685.00 lb
O.D.: 4.00 in



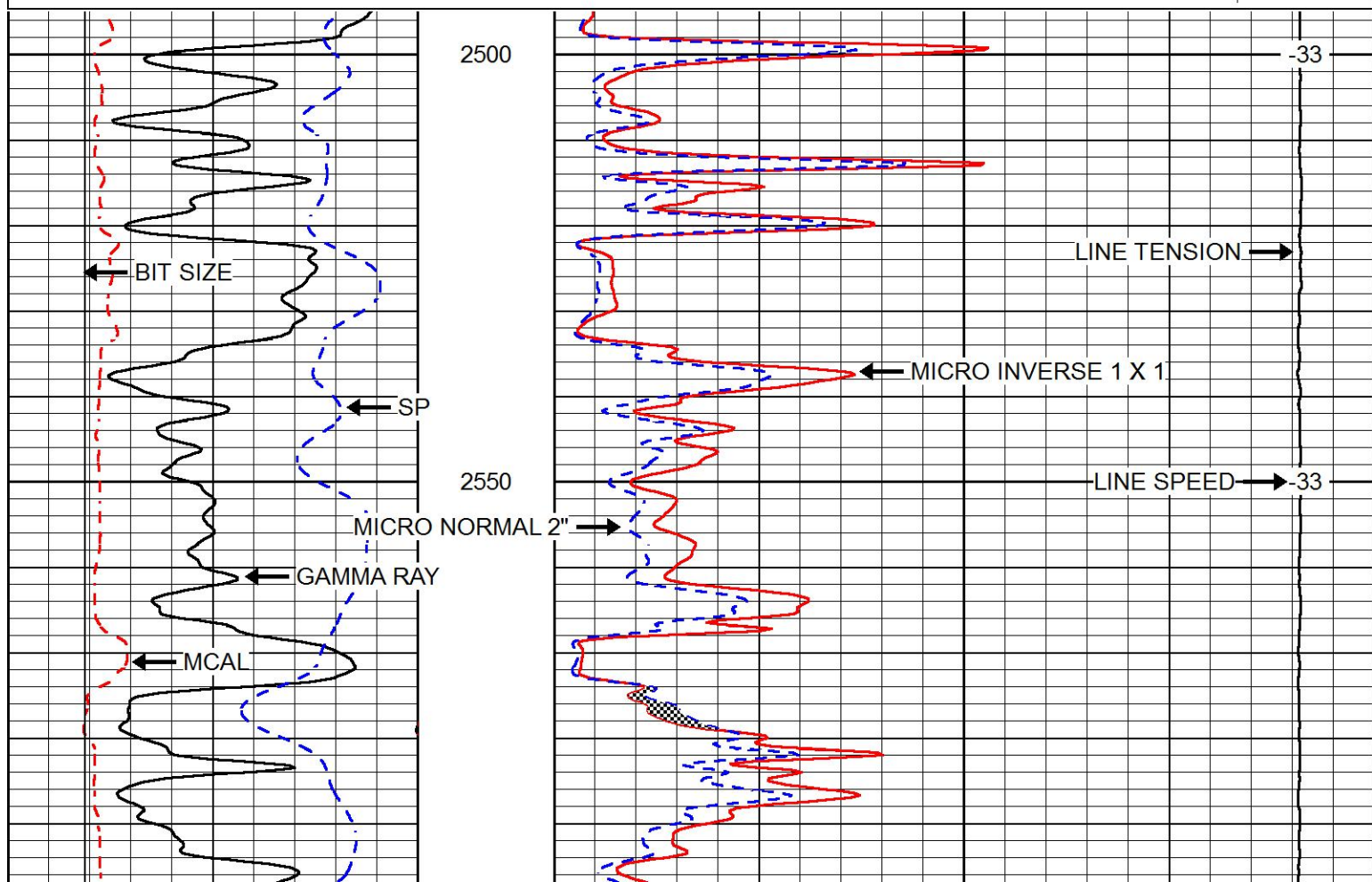
MAIN PASS

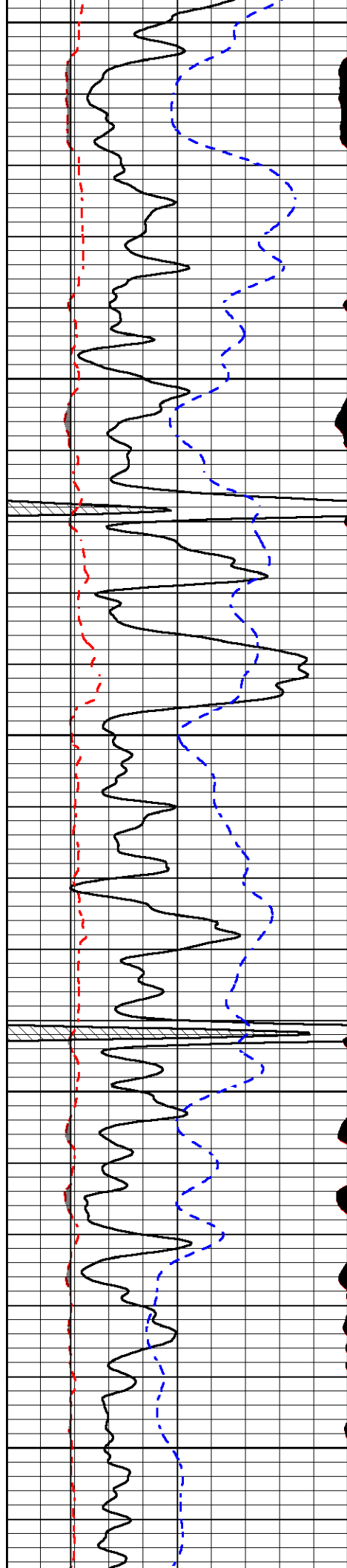
Database File amwarrior_charvat_1-25.db
Dataset Pathname stack/pass3.1
Presentation Format micro
Dataset Creation Thu Jun 23 15:22:57 2016
Charted by Depth in Feet scaled 1:240

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

LINE SPEED
(ft/min)





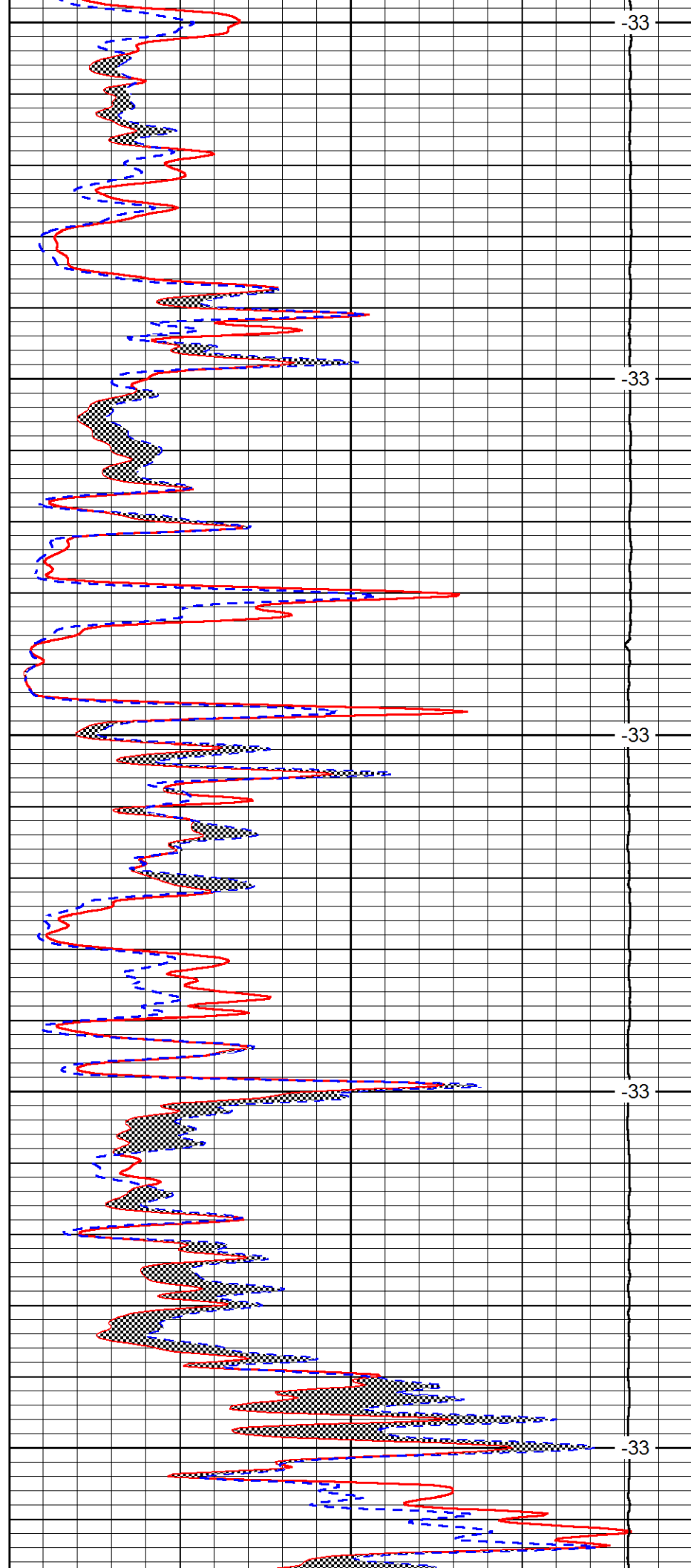
2600

2650

2700

2750

2800



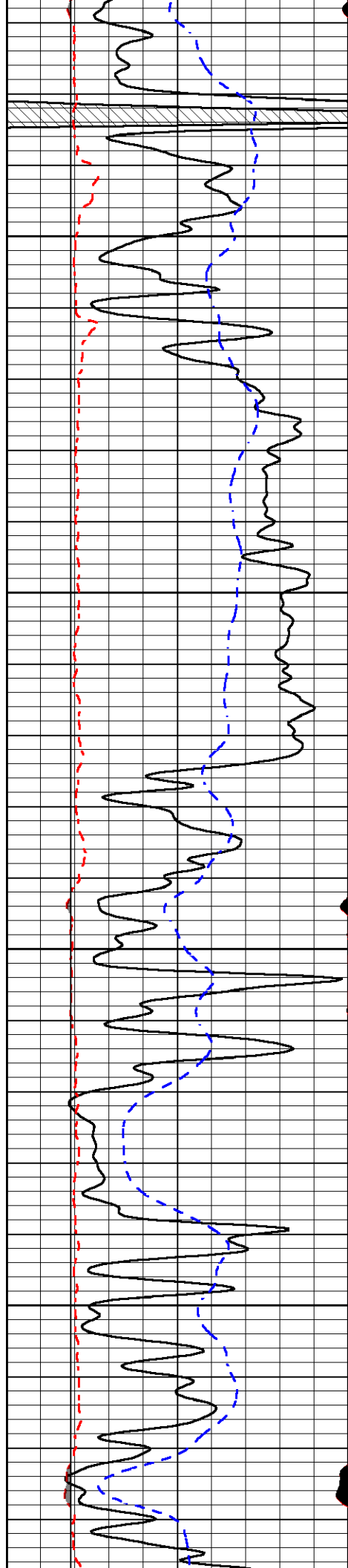
-33

-33

-33

-33

-33

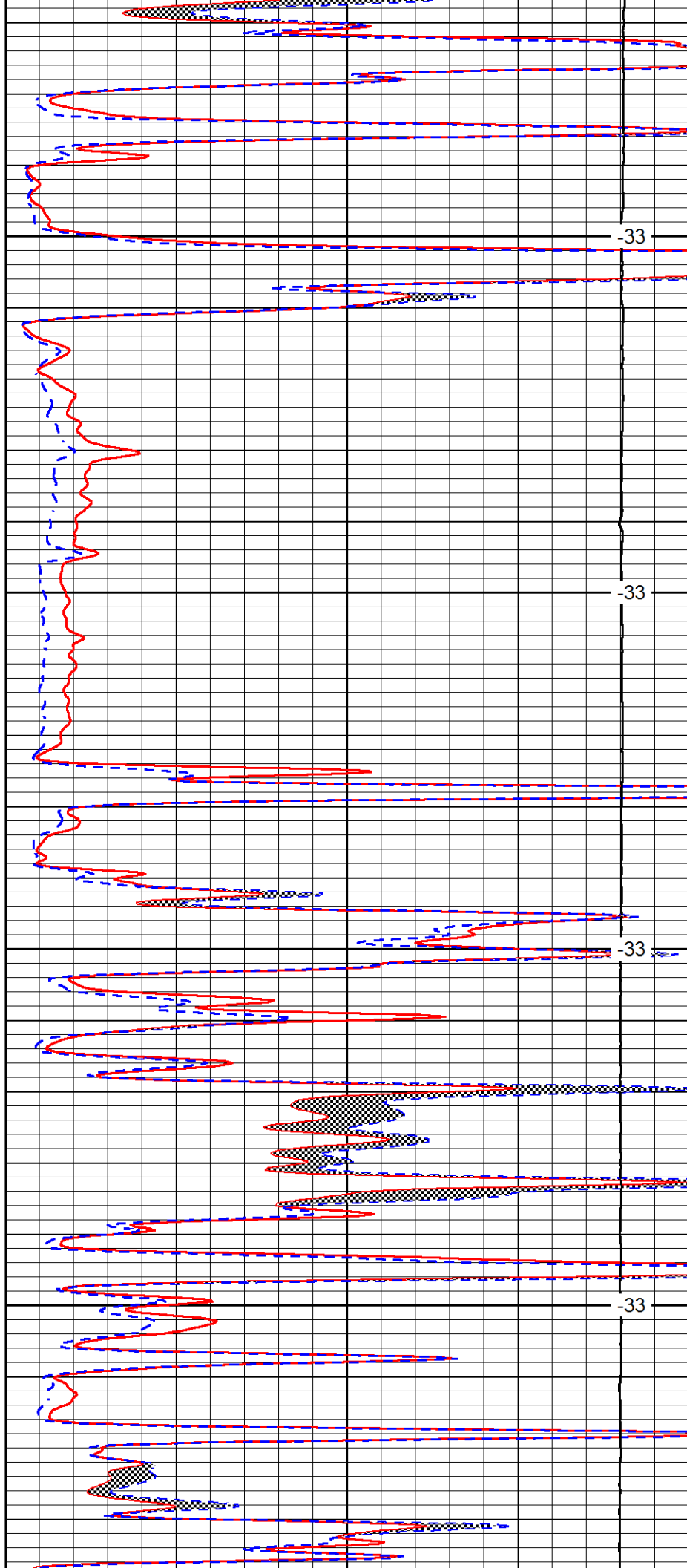


2850

2900

2950

3000

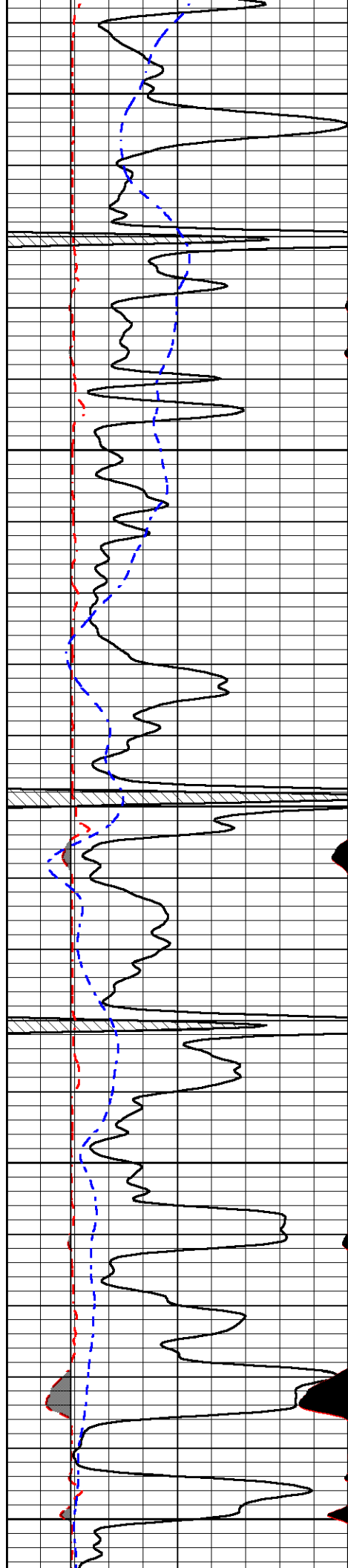


-33

-33

-33

-33



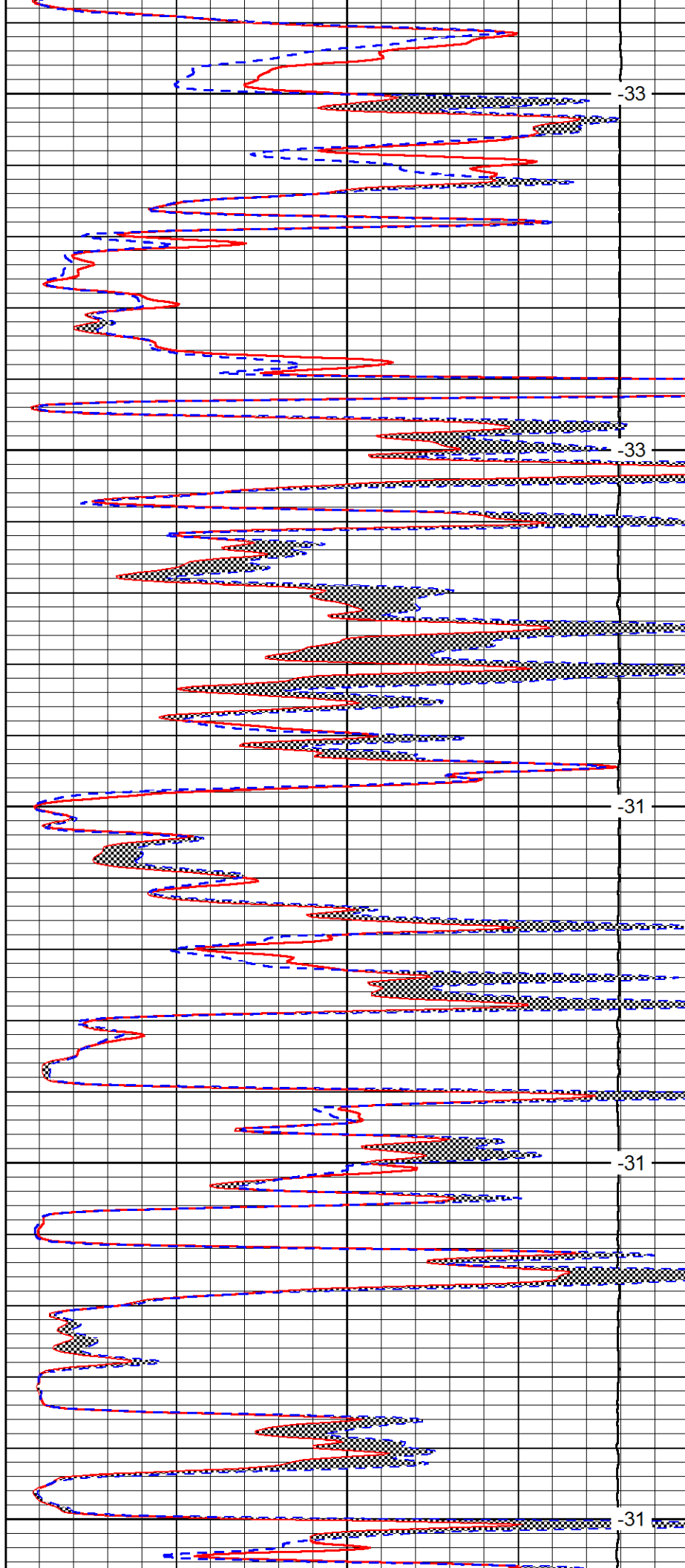
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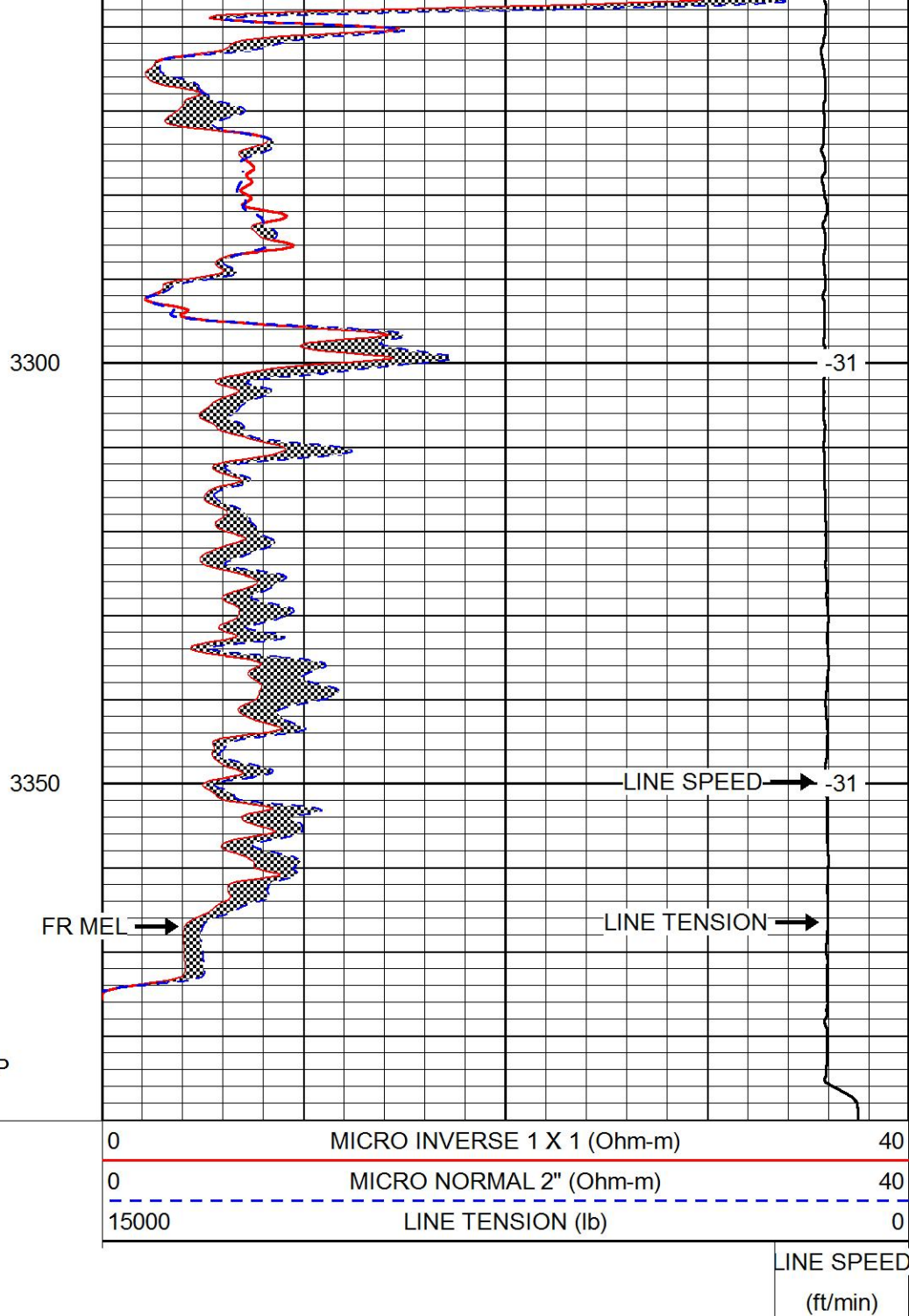
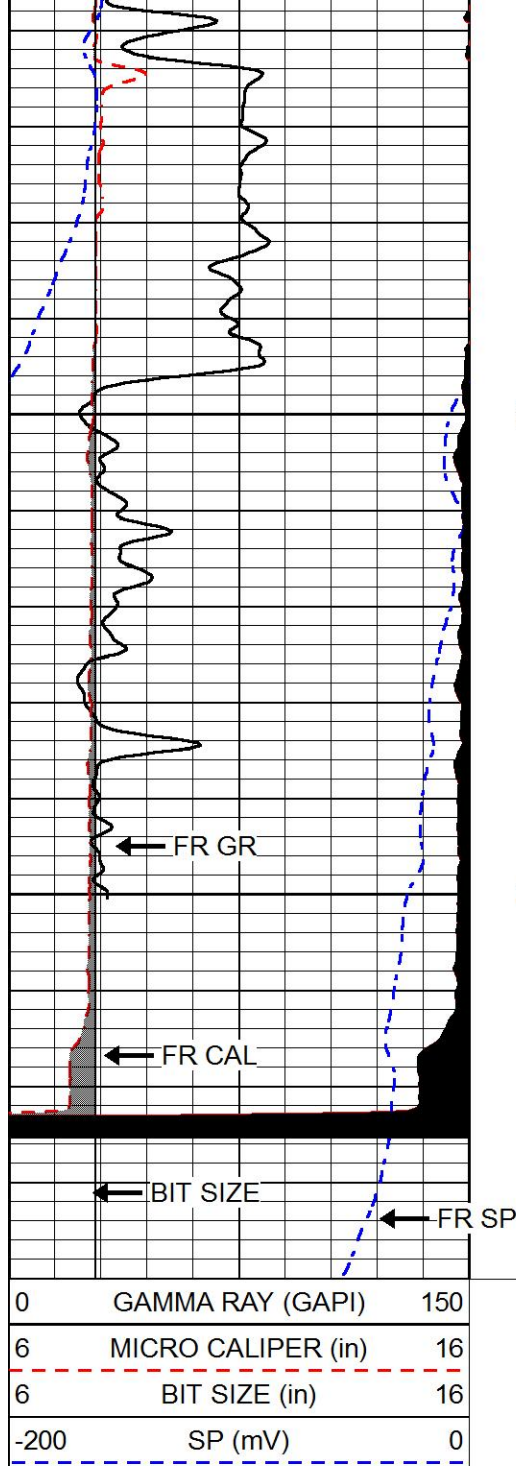
3100

3150

3200

3250





REPEAT SECTION

Database File amwarrior_charvat_1-25.db
 Dataset Pathname stack/pass2.1
 Presentation Format micro
 Dataset Creation Thu Jun 23 15:07:45 2016
 Charted by Depth in Feet scaled 1:240

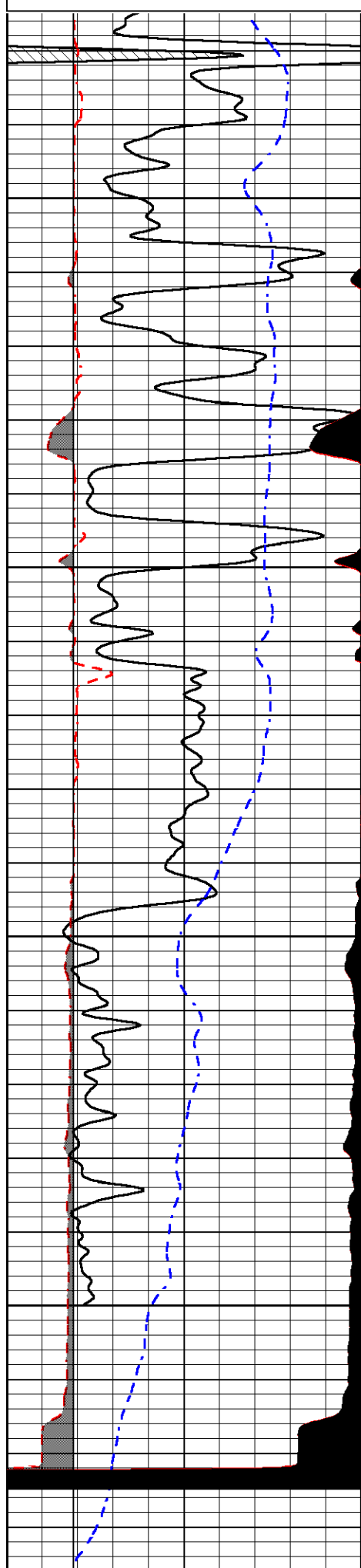
0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

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

-200 SP (mv) 0

LINE SPEED

(ft/min)

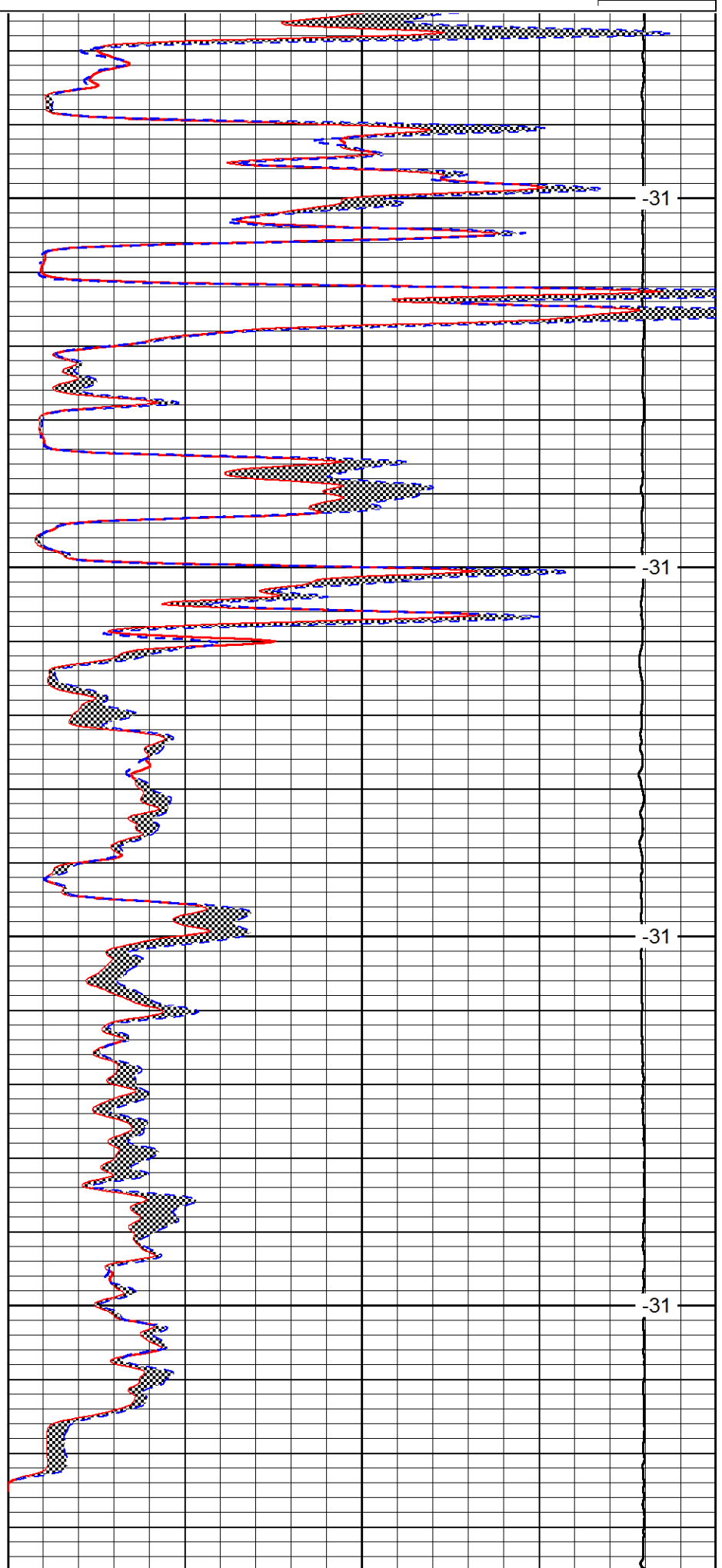


3200

3250

3300

3350



-31

-31

-31

-31

Database File		amwarrior_charvat_1-25.db		Calibration Report			
Dataset Pathname		stack/pass3.1					
Dataset Creation		Thu Jun 23 15:22:57 2016					
Dual Induction Calibration Report							
Serial-Model:				1987-M&W			
Calibration Performed:				Thu May 05 13:07:05 2016			
Readings			References			Results	
Loop:	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.530	-37.000
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:				Sun May 22 04:14:29 2016			
Readings			References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	8808.9400	-0.2000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	7967.2700	-0.0096
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.2800
Compensated Density Calibration Report							
Serial-Model:				168-986-M&W			
Source / Verifier:				/			
Master Calibration Performed:				Thu Mar 31 16:31:00 2016			
Master Calibration							
	Density			Far Detector		Near Detector	
Magnesium	1.755	g/cc		4691.86		4818.19	cps
Aluminum	2.690	g/cc		859.57		3020.22	cps
Spine Angle = 74.61			Density/Spine Ratio = 0.531				
	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 May 4 11:04:05 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:	Sun May 22 04:14:23 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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State	KANSAS