



PIONEER
Pioneer Energy Services

MICRORESISTIVITY LOG

Company **LARSON ENGINEERING, INC.**
Well **PARIS NO. 2-7**
Field **HINEMAN NORTHWEST**
County **LANE**
State **KANSAS**

Company **LARSON ENGINEERING, INC.**
Well **PARIS NO. 2-7**
Field **HINEMAN NORTHWEST**
County **LANE** State **KANSAS**

Location: API #: 15-101-22595-00-00

Other Services

1180' FNL & 619' FWL
SEC 7 TWP 19S RGE 28W

CNL/CDL
DIL

Permanent Datum **GROUND LEVEL** Elevation **2790'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**

Elevation
K.B. 2800'
D.F. N/A
G.L. 2790'

Date **7/13/2017**

Run Number **ONE**

Depth Driller **4675'**

Depth Logger **4673'**

Bottom Logged Interval **4672'**

Top Log Interval **3600'**

Casing Driller **8.625" @ 266'**

Casing Logger **262'**

Bit Size **7.875"**

Type Fluid in Hole **CHEMICAL**

Salinity, ppm CL **3,500**

Density / Viscosity **9.4 50**

pH / Fluid Loss **10.0 9.6**

Source of Sample **FLOWLINE**

Rm @ Meas. Temp **.70 @ 72**

Rmt @ Meas. Temp **.53 @ 72**

Rmc @ Meas. Temp **.95 @ 72**

Source of Rmt / Rmc **CHARTS**

Rm @ BHT **.41 @ 123**

Operating Rig Time **3 HOURS**

Max Rec. Temp. F **123 DEGF**

Equipment Number **108**

Location **HAYS**

Recorded By **J. HENRICKSON**

Witnessed By **VERN SCHRAG**

<<< 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.

DIGHTON KANSAS
4 1/2 SOUTH, EAST INTO
(LEASE ROAD IMMEDIATELY CUTS BACK NORTH THEN CURVES BACK EAST)

Log Measured From: **KELLY BUSHING** 10 Ft. Above Permanent Datum

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

Your Pioneer Energy Services Crew

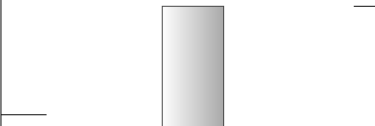
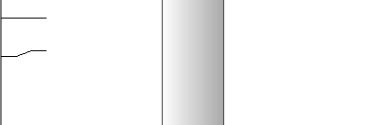
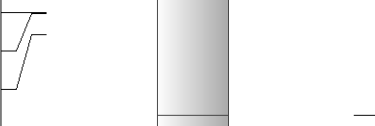
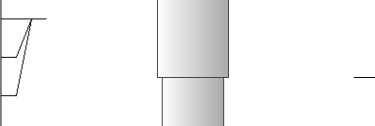
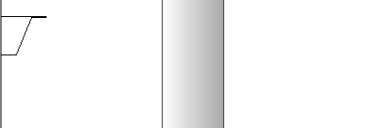
Engineer: **J. HENRICKSON**
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: **VERN SCHRAG**
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 123	in 4.5	in 0	g/cc 1	2	g/cc 2.71
NPORSEL	PERFS	SNDERR	SNDERRM	SPSHIFT	SRFTEMP	SZCOR	TDEPTH
Limestone	0	mmho/m 0	mmho/m 0	mV -200	degF 78	Off	ft 4673

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	37.48			CNT-M&W (tk10-MW)	5.50	3.50	100.00
CNSSC	36.73			CDL-M&W (168-986)	8.50	4.00	250.00
LSD	28.43					ML-PSI STKBL ML (PSI-02)	7.58
DCAL	28.42	Stackable Microlog Tools					
SSD	27.93			ML-PSI STKBL ML (PSI-02)	7.58	4.00	65.00
MCAL	19.83			Stackable Microlog Tools			
MI	19.83			ML-PSI STKBL ML (PSI-02)	7.58	4.00	65.00
MN	19.83			Stackable Microlog Tools			
RLL3	15.80			DIL-M&W (1987)	18.50	3.50	220.00
RLL3F	15.79						
CILD	8.00			DIL-M&W (1987)	18.50	3.50	220.00

CILM

4.70

SP

0.20

Dataset: laron_pais_2_7.db: field/well/stack/pass3.1
 Total length: 43.08 ft
 Total weight: 685.00 lb
 O.D.: 4.00 in

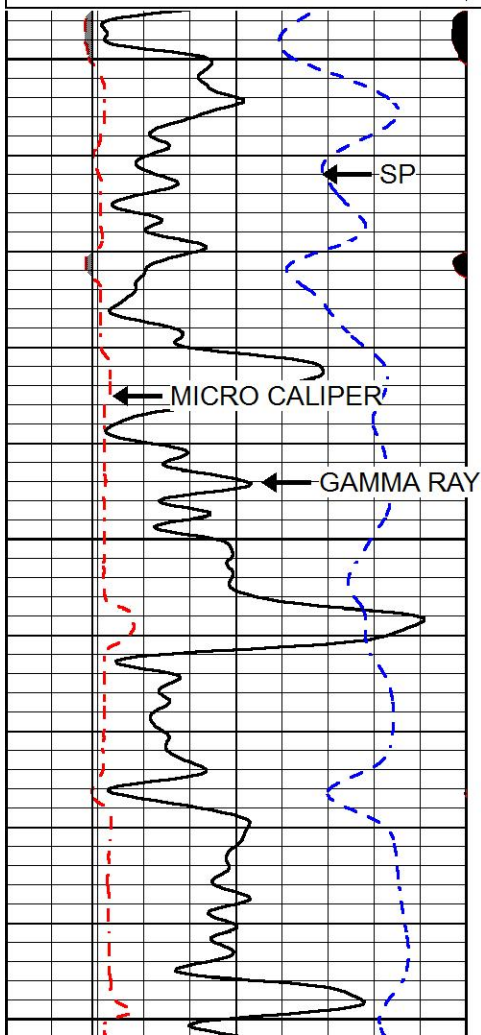


MAIN PASS

Database File laron_pais_2_7.db
 Dataset Pathname stack/pass3.1
 Presentation Format micro
 Dataset Creation Thu Jul 13 20:18:36 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



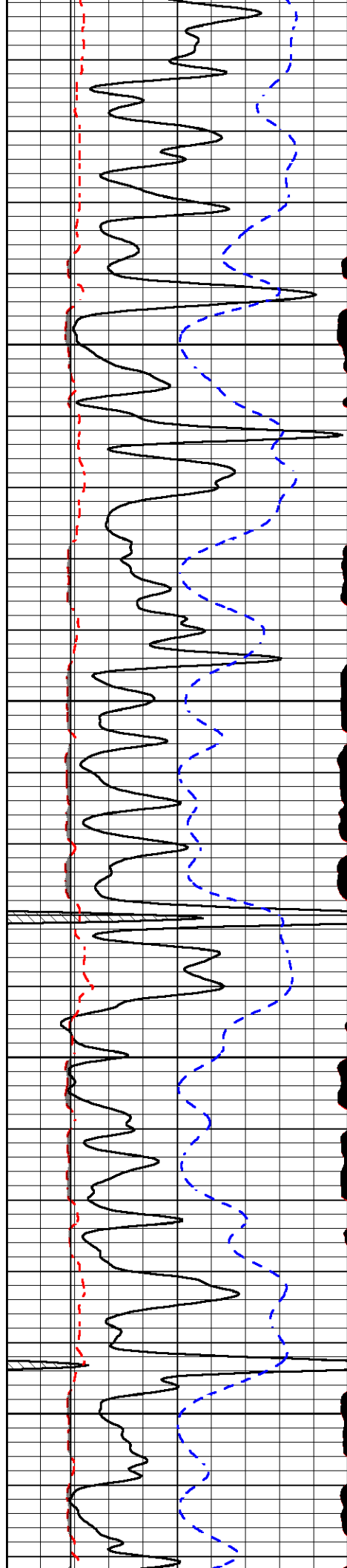
3600

MICRO INVERSE 1 X 1

MICRO NORMAL 2"

3650

3700

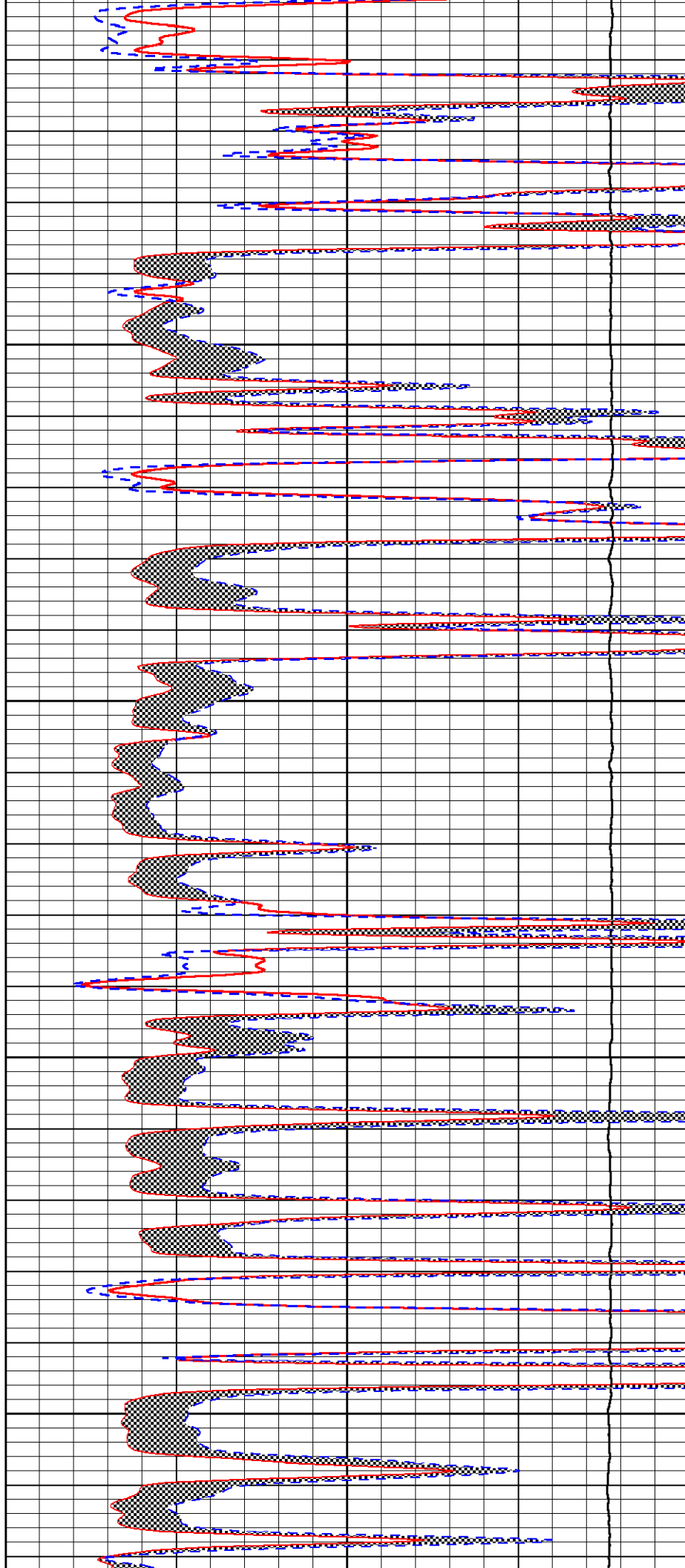


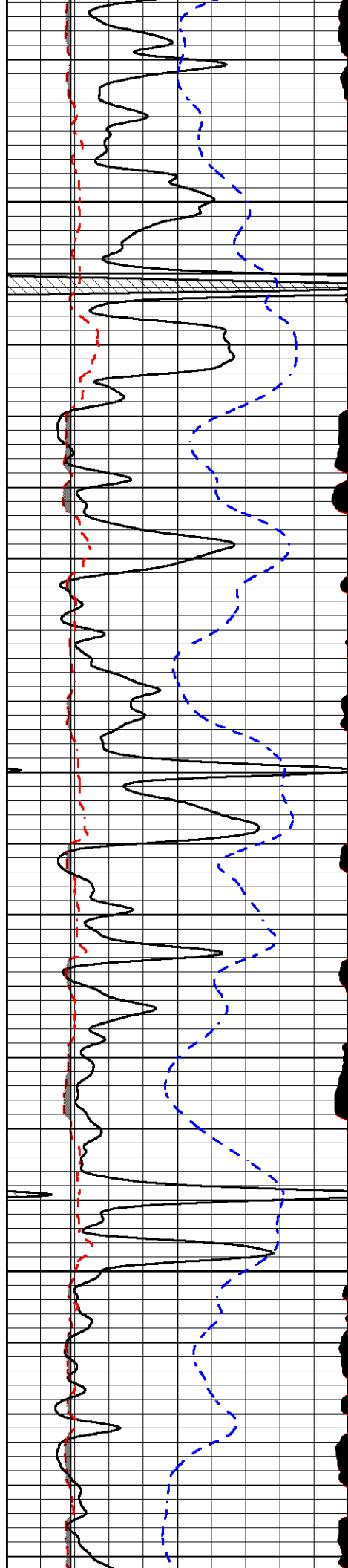
3750

3800

3850

3900



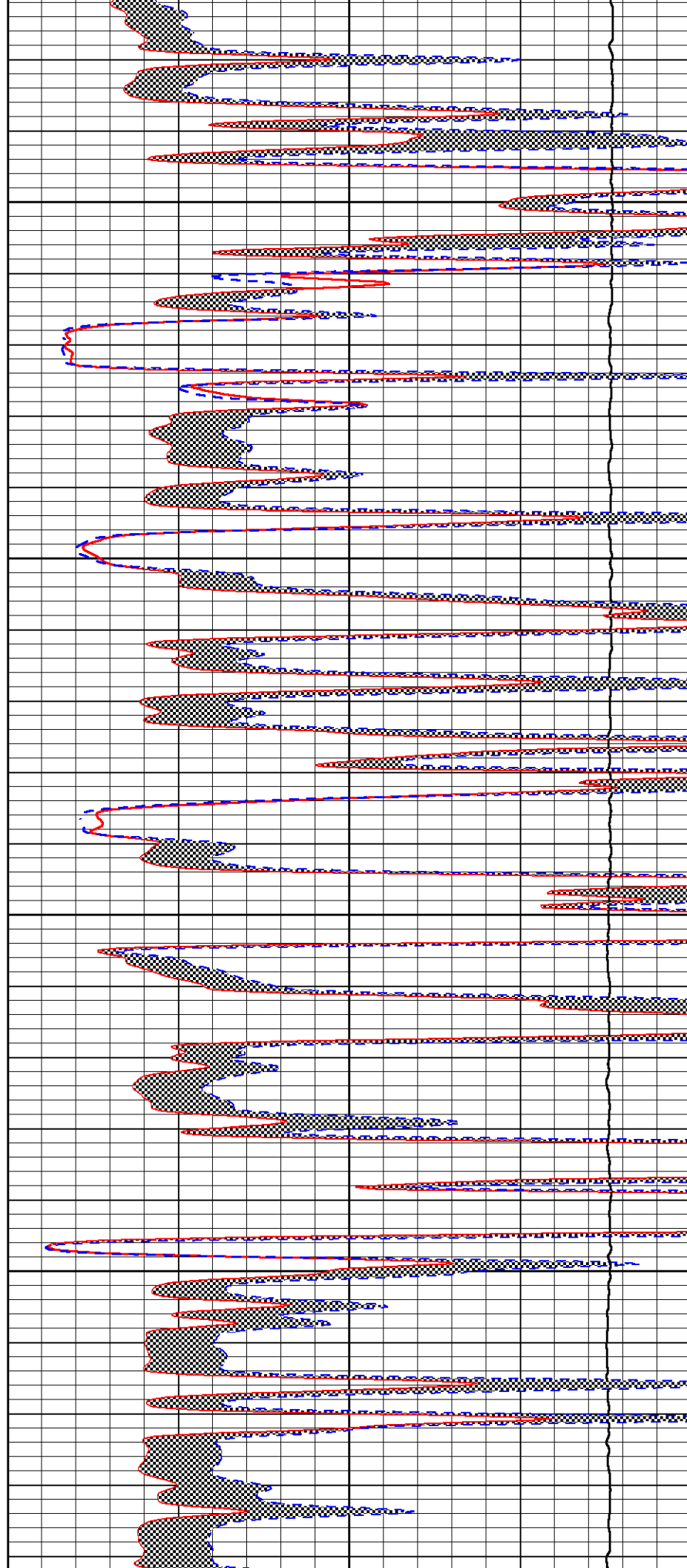


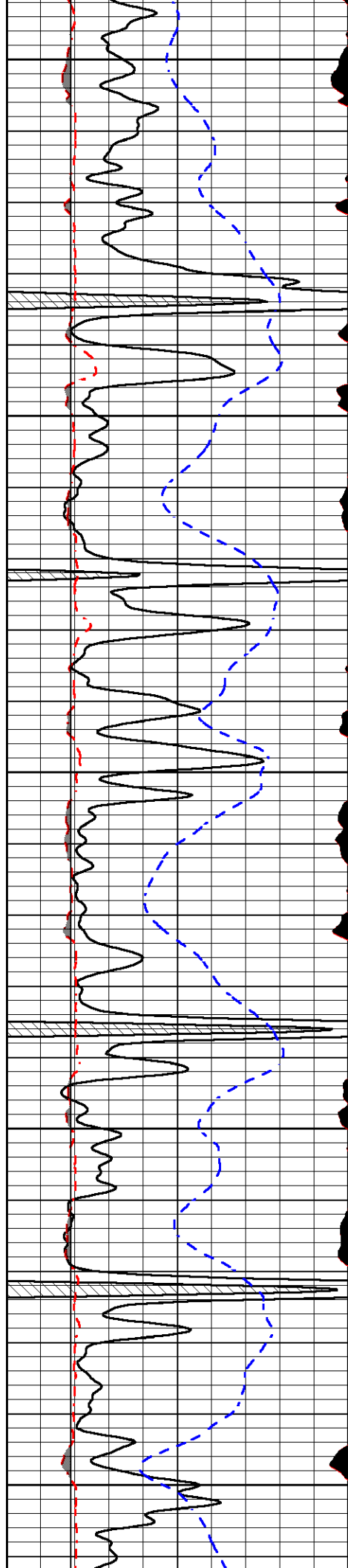
3950

4000

4050

4100





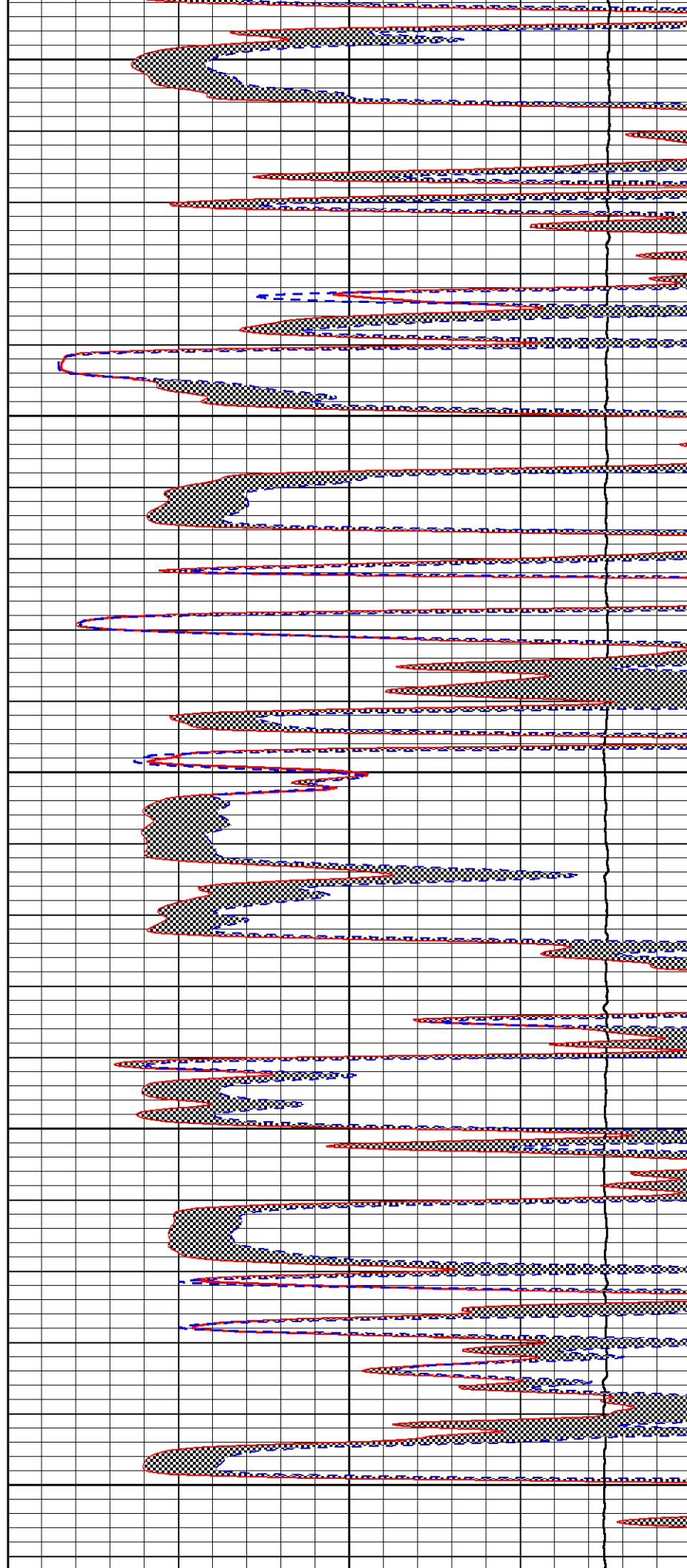
4150

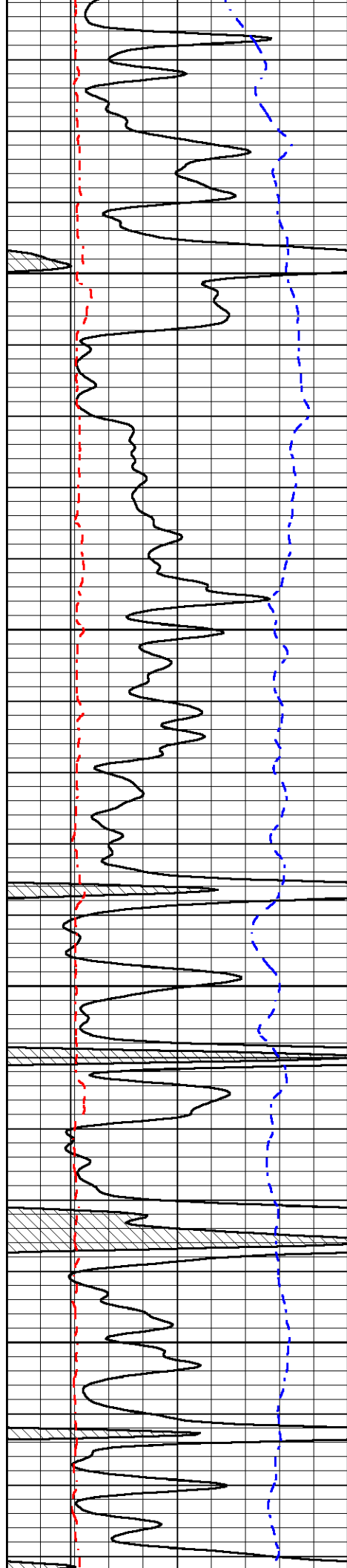
4200

4250

4300

4350



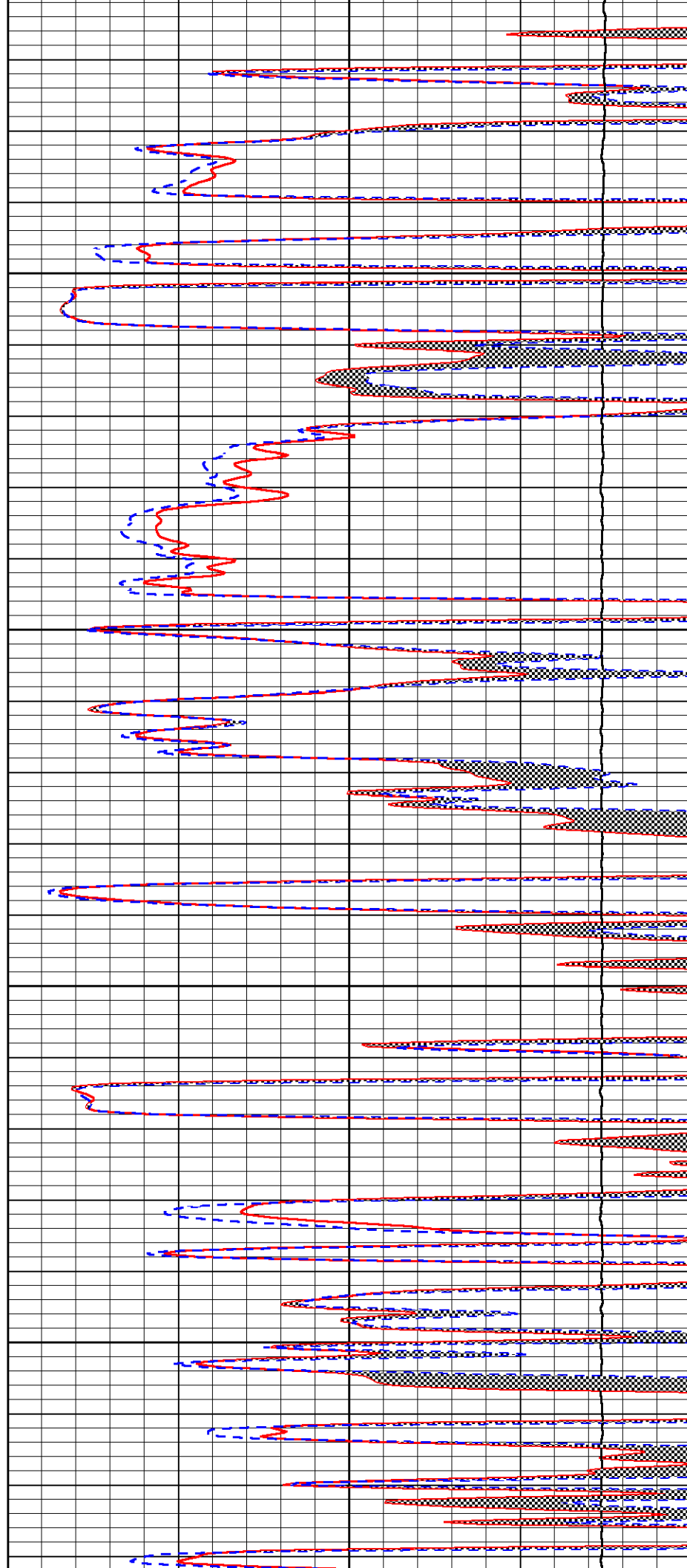


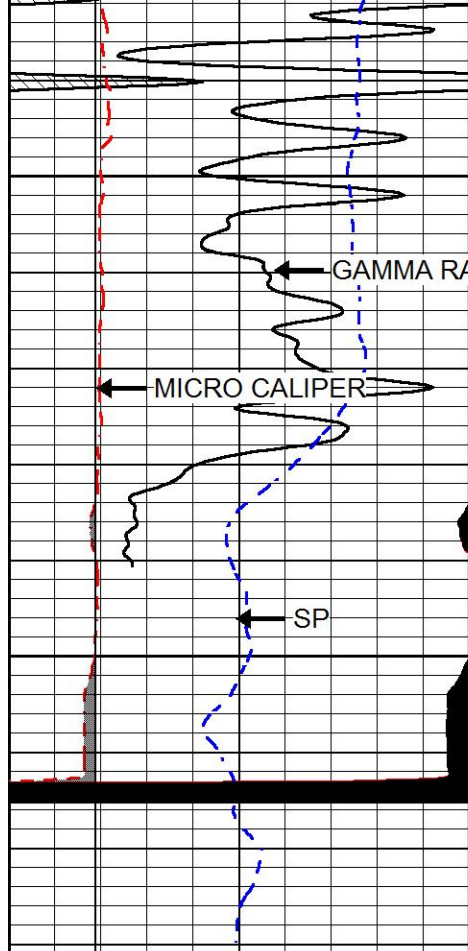
4400

4450

4500

4550





4600

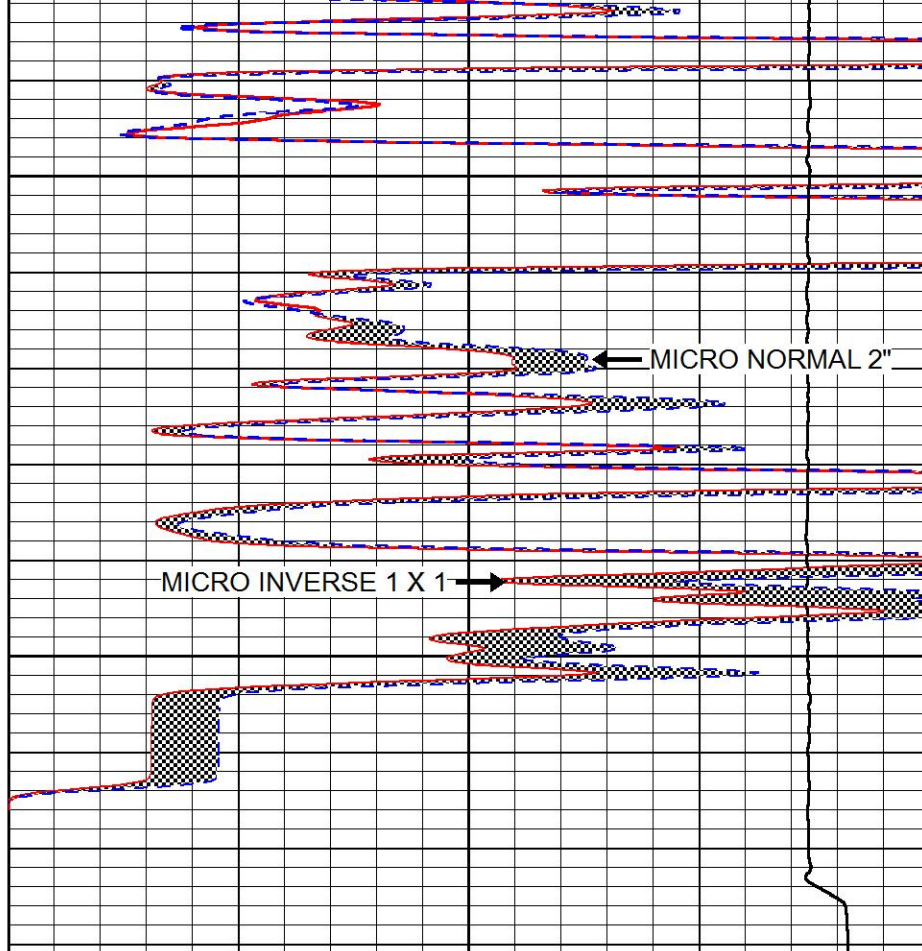
GAMMA RAY

MICRO CALIPER

SP

4650

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



MICRO NORMAL 2"

MICRO INVERSE 1 X 1

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

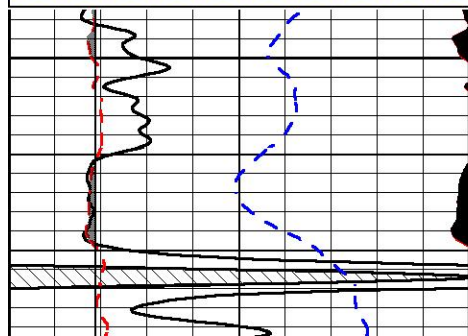


REPEAT SECTION

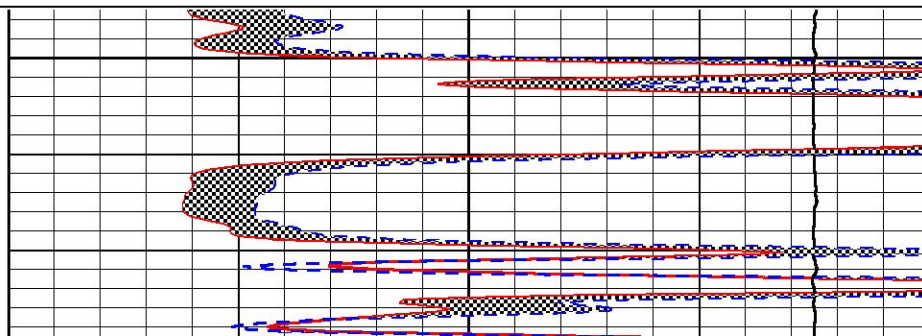
Database File: laron_paris_2_7.db
 Dataset Pathname: stack/pass2.1
 Presentation Format: micro
 Dataset Creation: Thu Jul 13 19:45:28 2017
 Charted by: Depth in Feet scaled 1:240

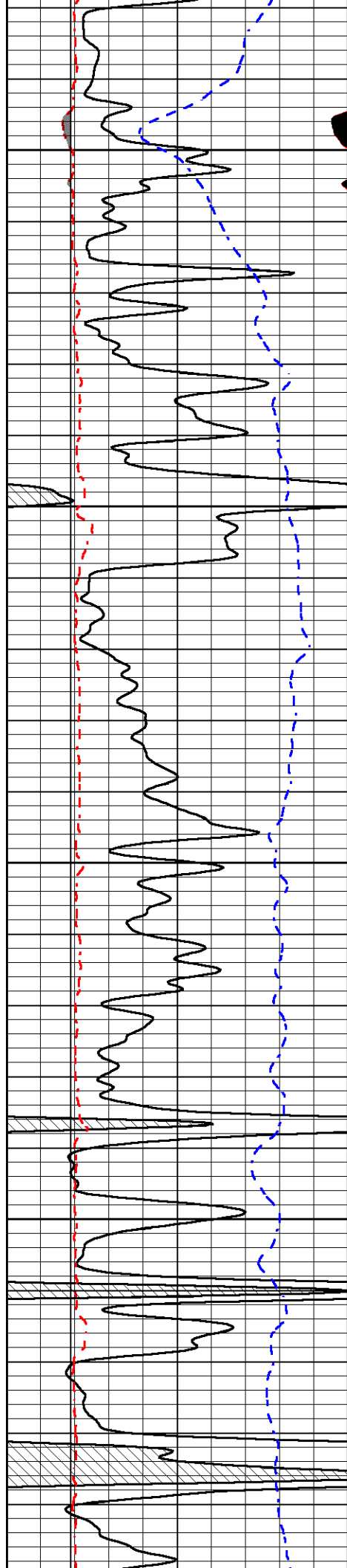
0	GAMMA RAY (GAPI)	150
6	MICRO CALIPER (in)	16
6	BIT SIZE (in)	16
-200	SP (mV)	0

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



4300



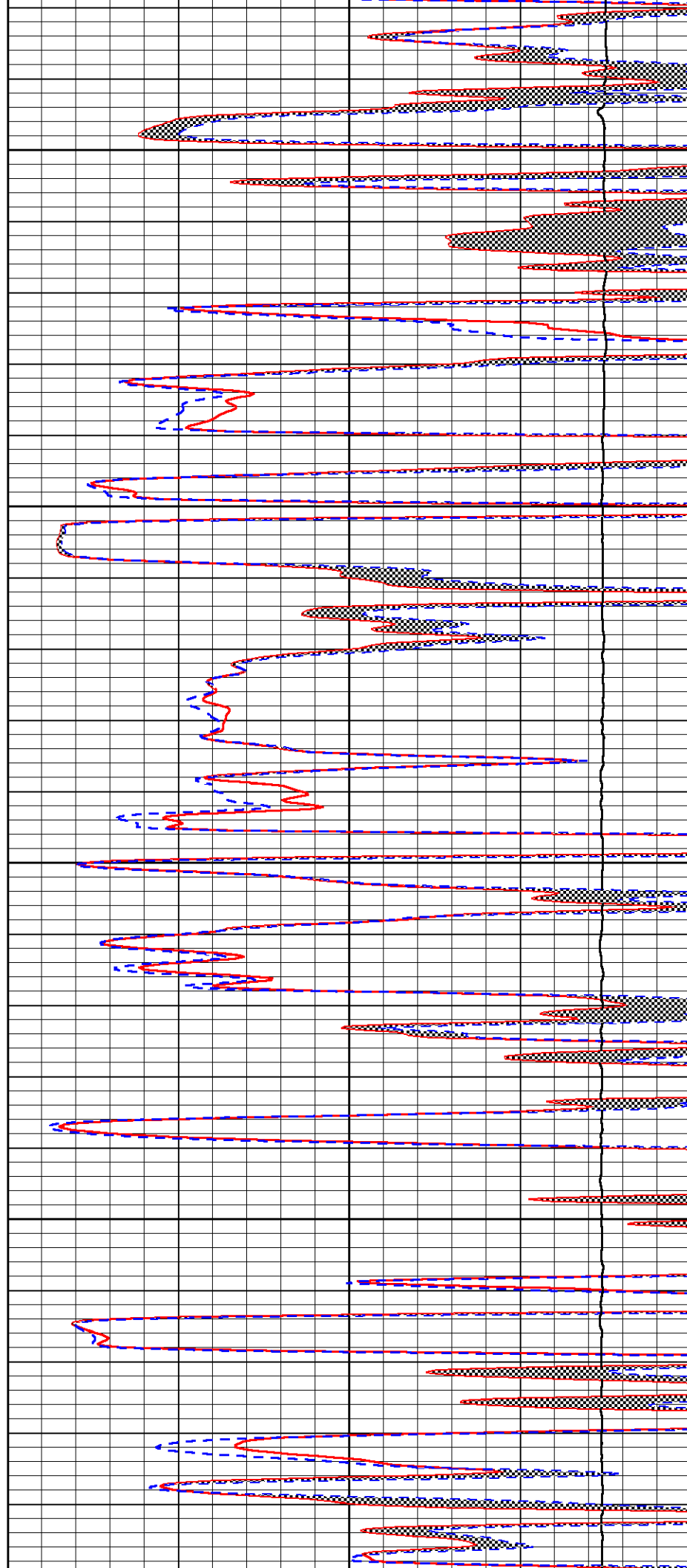


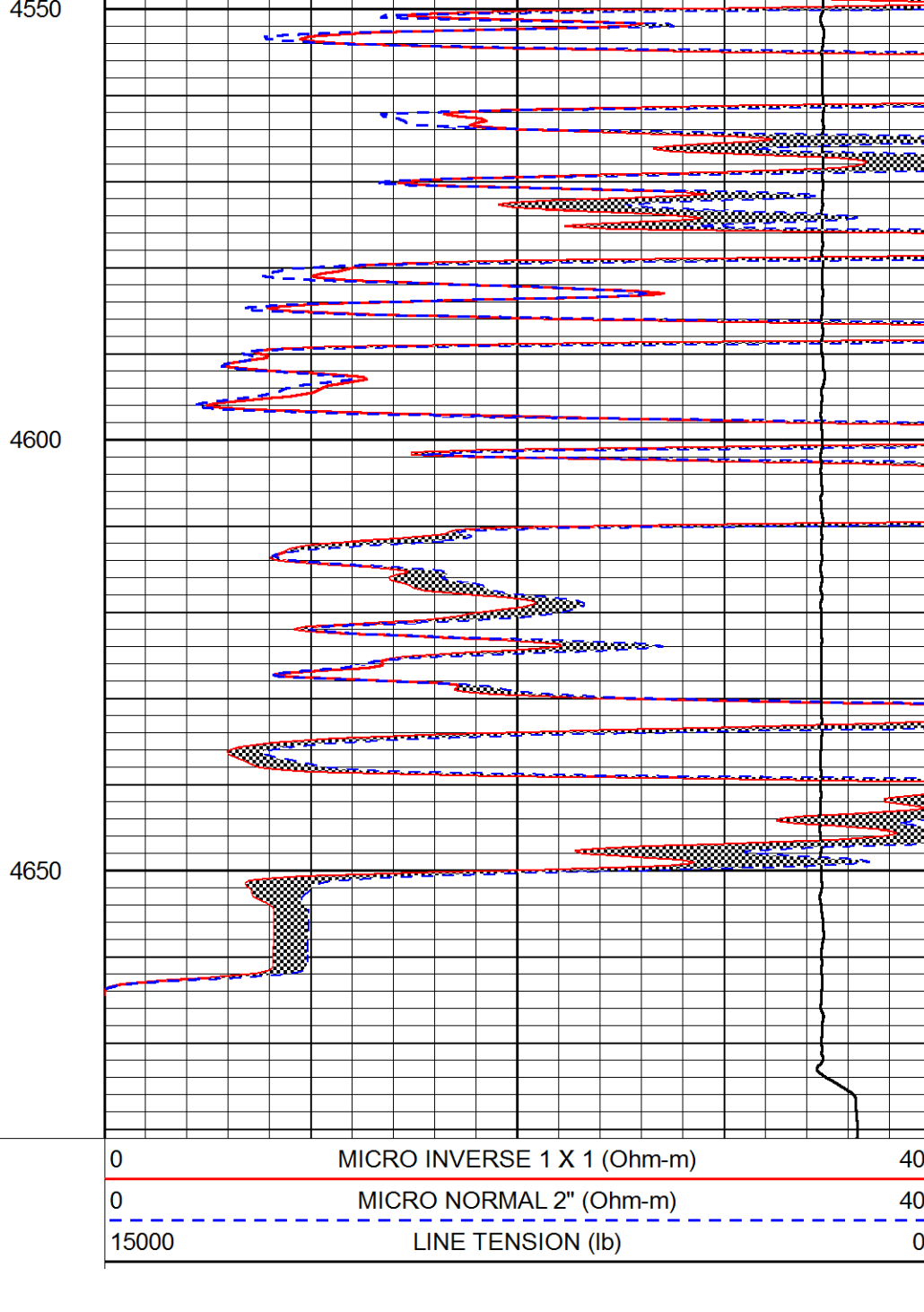
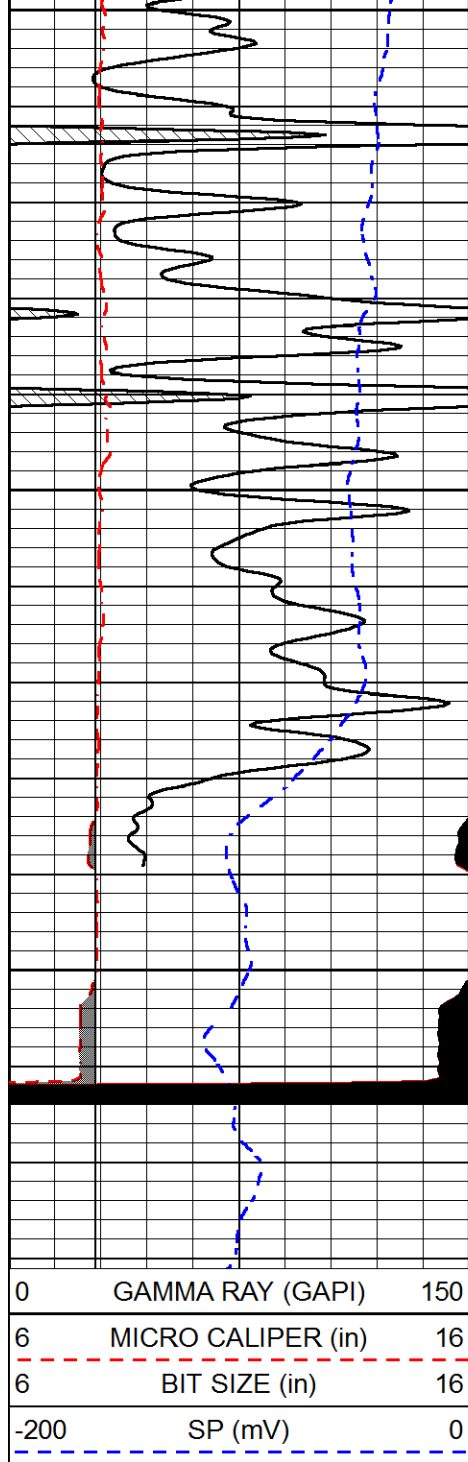
4350

4400

4450

4500





Calibration Report

Database File laron_pari_2_7.db
 Dataset Pathname stack/pass3.1
 Dataset Creation Thu Jul 13 20:18:36 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		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.510	-36.500
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.450	-110.500

Microlog Calibration Report

Serial-Model:
Performed:PSI-02-PSI STKBL ML
Fri Jun 23 00:25:19 2017

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0031	0.0043	0.0000	10.0000	Ohm-m	12000.0000	0.0000
Inverse	0.0000	0.0013	0.0000	10.0000	Ohm-m	14000.0000	0.0000
Caliper	1.0020	1.0834	5.5000	16.5000	in	135.1560	-131.2500

Compensated Density Calibration Report

Serial-Model:
Source / Verifier:
Master Calibration Performed:168-986-M&W
/
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 2017Calibrator Value: 1000.0 GAPI
Background Reading: 0.0 cps
Calibrator Reading: 6.2 cps
Sensitivity: 0.5200 GAPI/cpsCompany LARSON ENGINEERING, INC.
Well PARIS NO. 2-7
Field HINEMAN NORTHWEST

PIONEER

Pioneer Energy Services

Field

PIREMAN NORTHWEST

County

LANE

State

KANSAS