



PIONEER

Pioneer Energy Services

DUAL INDUCTION LOG

Company CYNOSURE ENERGY, LLC
Well LEIKER NO. 2-25-15-20
Field WILDCAT
County ELLIS State KANSAS

Location: API #: 15-051-26848-00-00

Other Services

SE/4 NE/4 SE/4 SW/4
740' FSL & 2,506' FWL
SEC 25 TWP 15S RGE 20W

CNL/CDL
MEL/BHCS

Permanent Datum GROUND LEVEL Elevation 2123'
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
K.B. 2131'
D.F. N/A
G.L. 2123'

Date 11/1/2016

Run Number ONE

Depth Driller 3800'

Depth Logger 3799'

Bottom Logged Interval 3798'

Top Log Interval 1350'

Casing Driller 8.625" @ 1371'

Casing Logger 1366'

Bit Size 7.875"

Type Fluid in Hole CHEMICAL

Salinity, ppm CL 6800

Density / Viscosity 9.0 49

pH / Fluid Loss 11.0 6.8

Source of Sample FLOWLINE

Rm @ Meas. Temp .51 @ 68

Rmt @ Meas. Temp .38 @ 68

Rmc @ Meas. Temp .69 @ 68

Source of Rmt / Rmc CHARTS

Rm @ BHT .30 @ 114

Operating Rig Time 4 HOURS

Max Rec. Temp. F 114

Equipment Number 108

Location COLBY

Recorded By J. LONG

Witnessed By CHARLIE STURDAVANT

<<< 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.

SCHOENCHEN, 9 1/2 WEST (1/2 WEST OF 160TH AVENUE), 1/8 NORTH, WEST 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: C. PFEIFER
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: CHARLIE STURDAVANT
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

A	BOREID	BOTTEMP	CASEOD	CASETHCK	FLUIDDEN	M	MATRXDEN
1	in 7.875	degF 114	in 5.5	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 -160	degF 55	Off	ft 3799

Sensor	Offset (ft)	Schematic		Description	Length (ft)	O.D. (in)	Weight (lb)
GR	33.00			GR-M&W (89-M&W)	3.00	3.50	50.00
CNLSC CNSSC	29.90			CNT-M&W (tk10-MW)	5.50	3.50	100.00
	29.15						
LSD DCAL SSD	20.85			CDL-M&W (71-914)	8.50	4.00	250.00
	20.83						
	20.35						
RLL3 RLL3F	15.80			DIL-M&W (1987)	18.50	3.50	220.00
	15.79						
CILD	8.00						

CILM 4.70

SP 0.20

Dataset: cynosureenergy_leiker_2-25-15-20.db: field/well/stack/pass1
Total length: 35.50 ft
Total weight: 620.00 lb
O.D.: 4.00 in

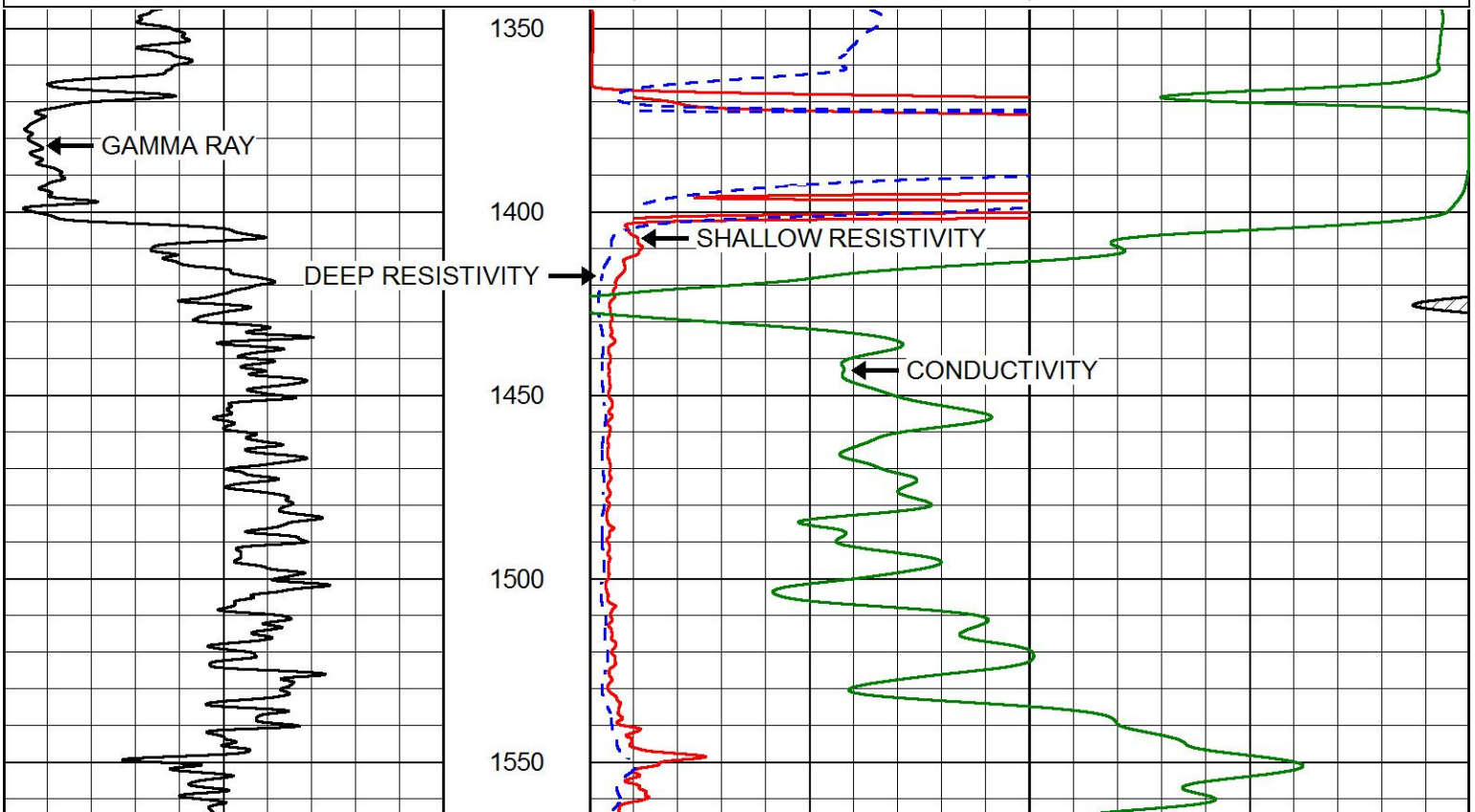


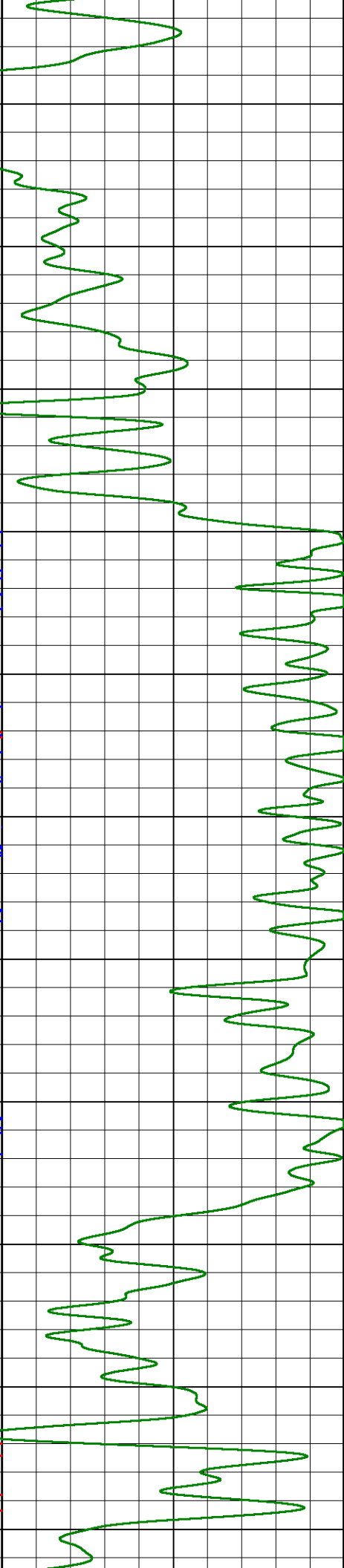
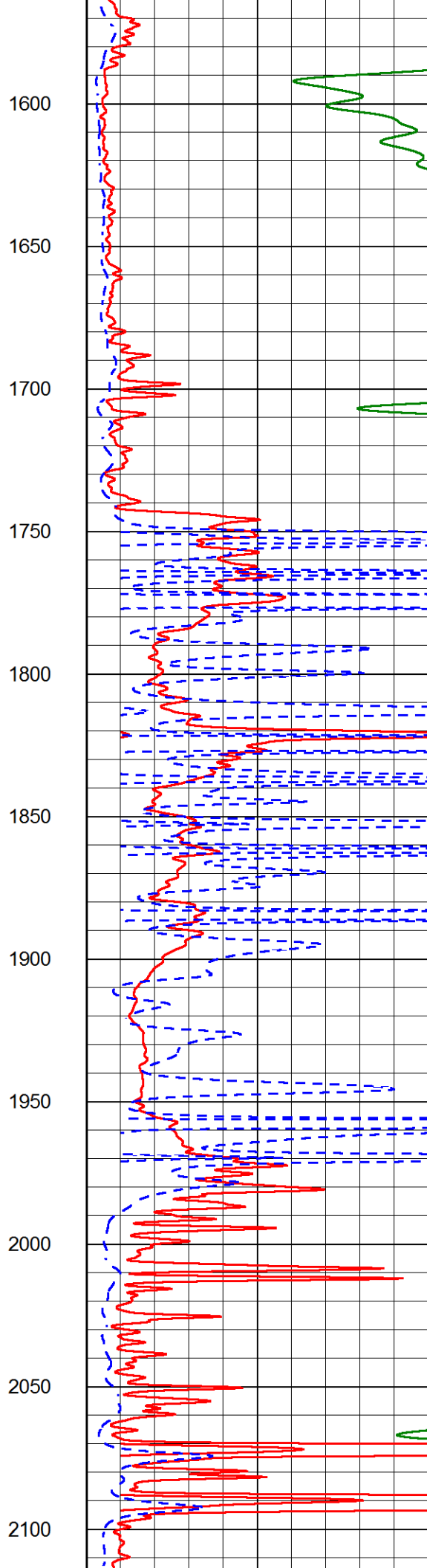
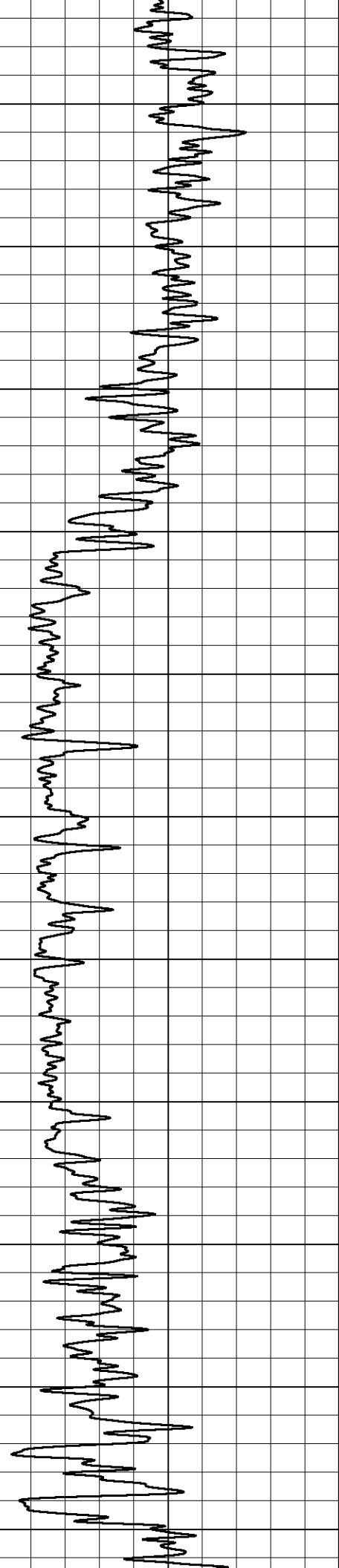
2" SCALE RESISTIVITY

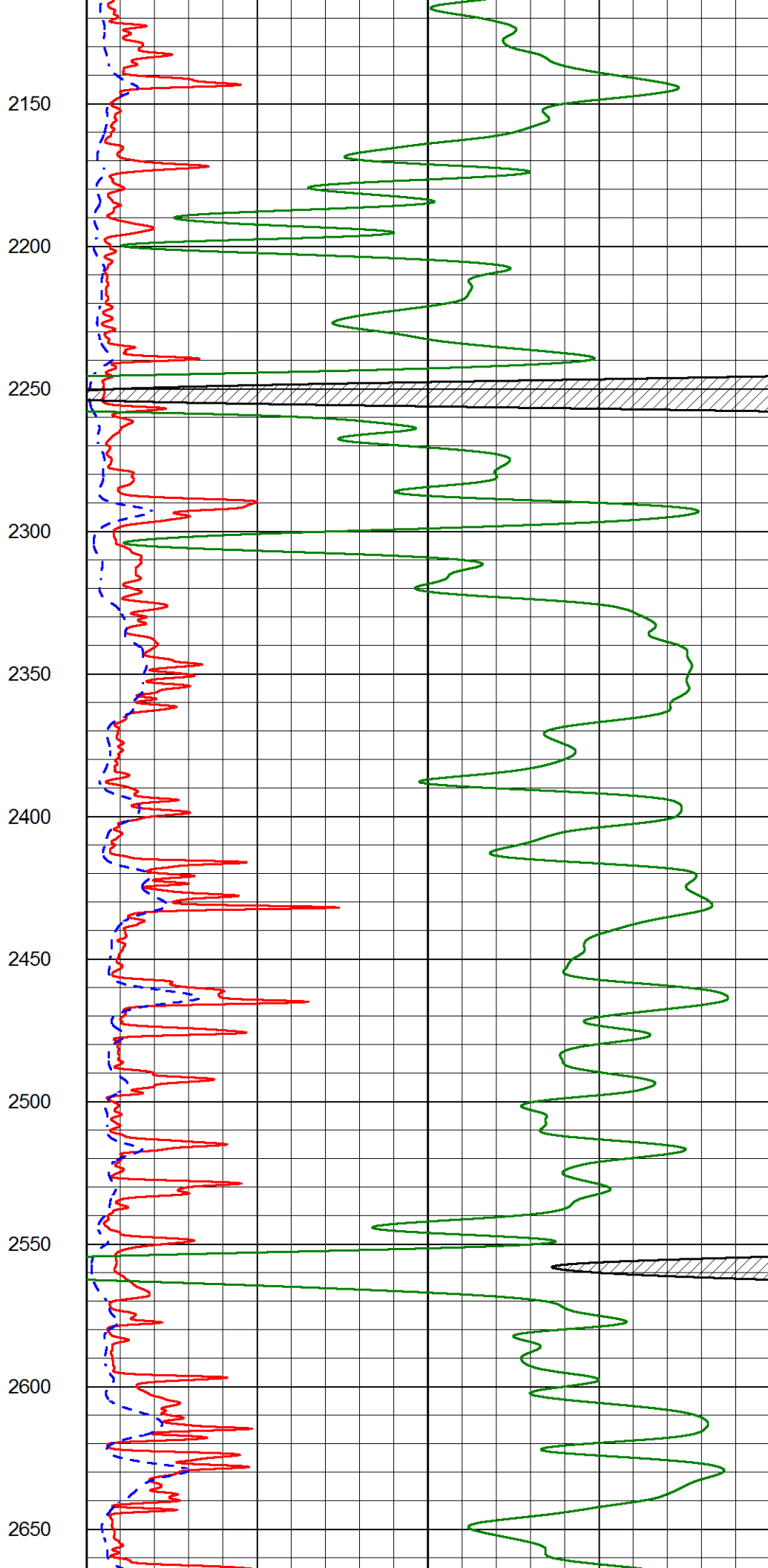
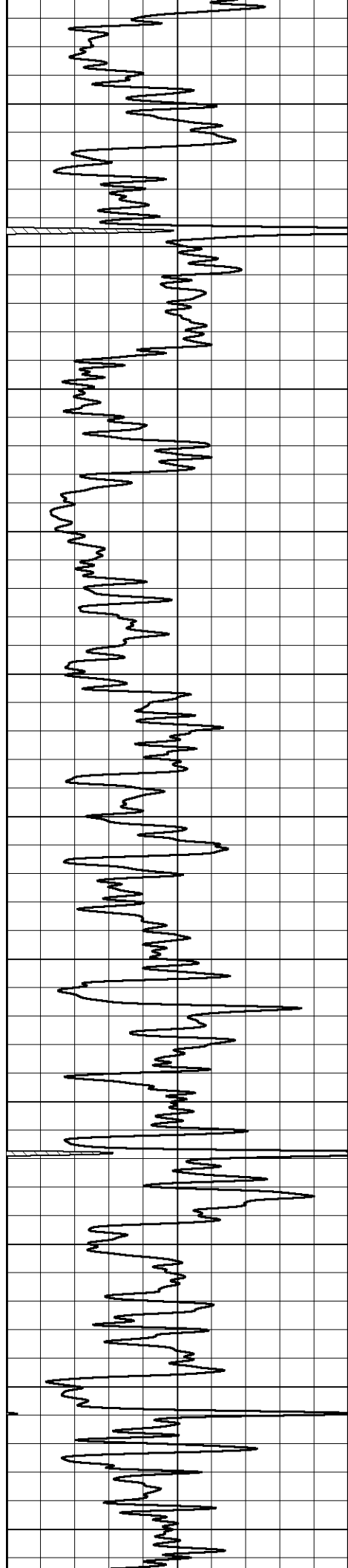
MAIN PASS

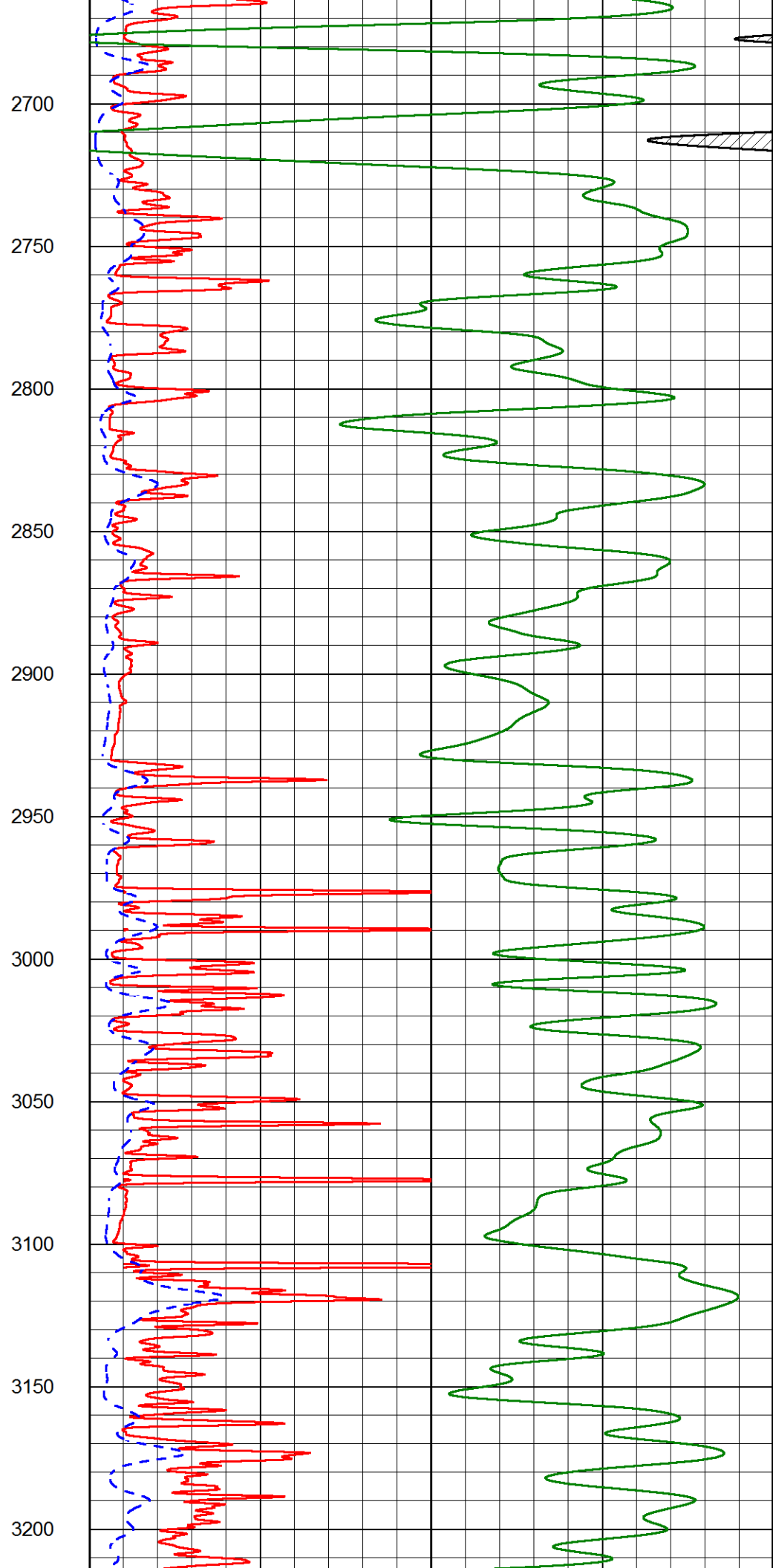
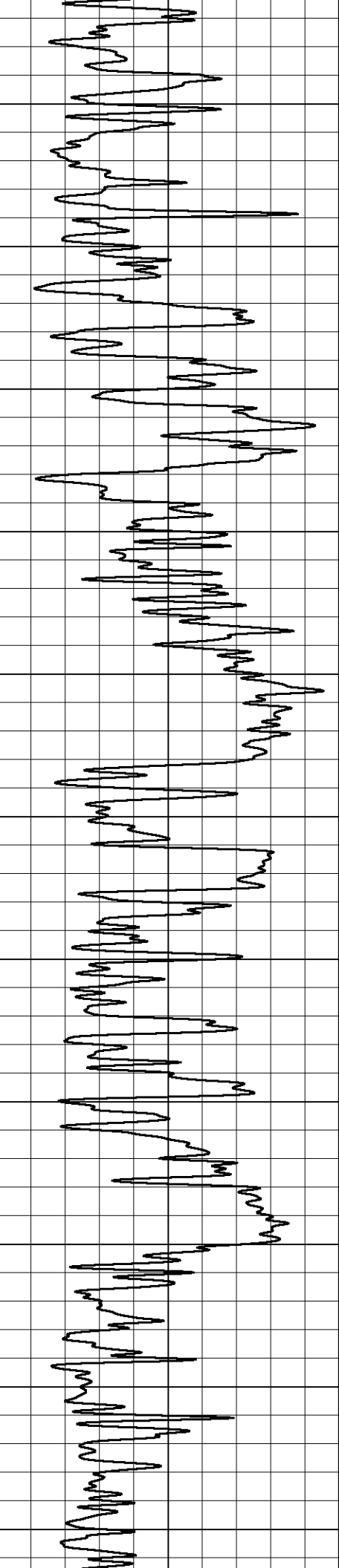
Database File cynosureenergy_leiker_2-25-15-20.db
Dataset Pathname stack/pass4.2
Presentation Format dil2in
Dataset Creation Wed Nov 02 01:09:02 2016
Charted by Depth in Feet scaled 1:600

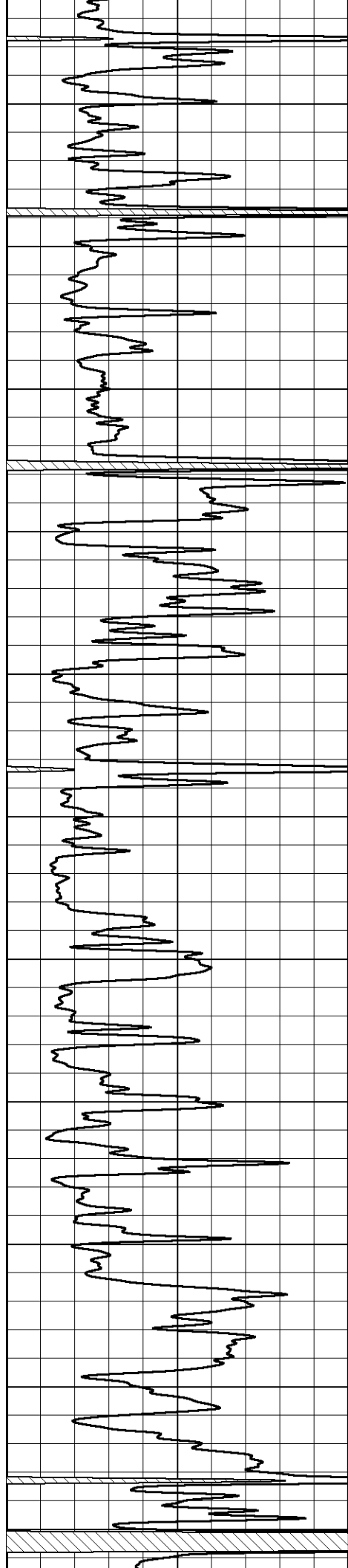
0	GAMMA RAY (GAPI)	150	1000	CONDUCTIVITY (mmho/m)	0
			SHALLOW RESISTIVITY		
0	(Ohm-m)	50			
0	DEEP RESISTIVITY (Ohm-m)	50			
			SHALLOW RESISTIVITY		
50	(Ohm-m)	500			
			DEEP RESISTIVITY		
50	(Ohm-m)	500			











3250

3300

3350

3400

3450

3500

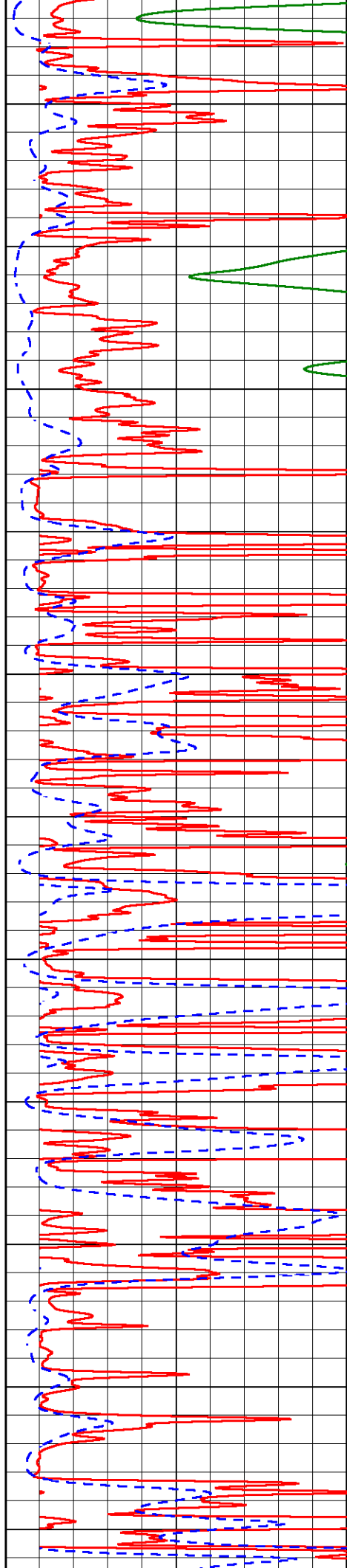
3550

3600

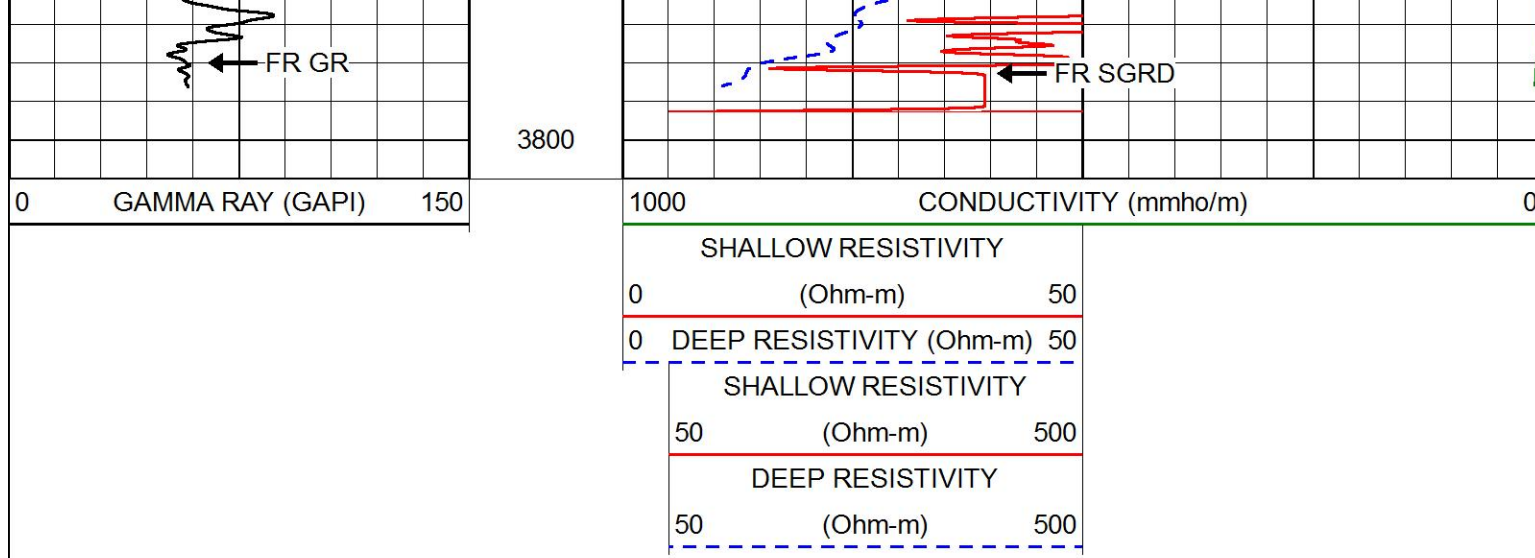
3650

3700

3750



CONDUCTIVITY →





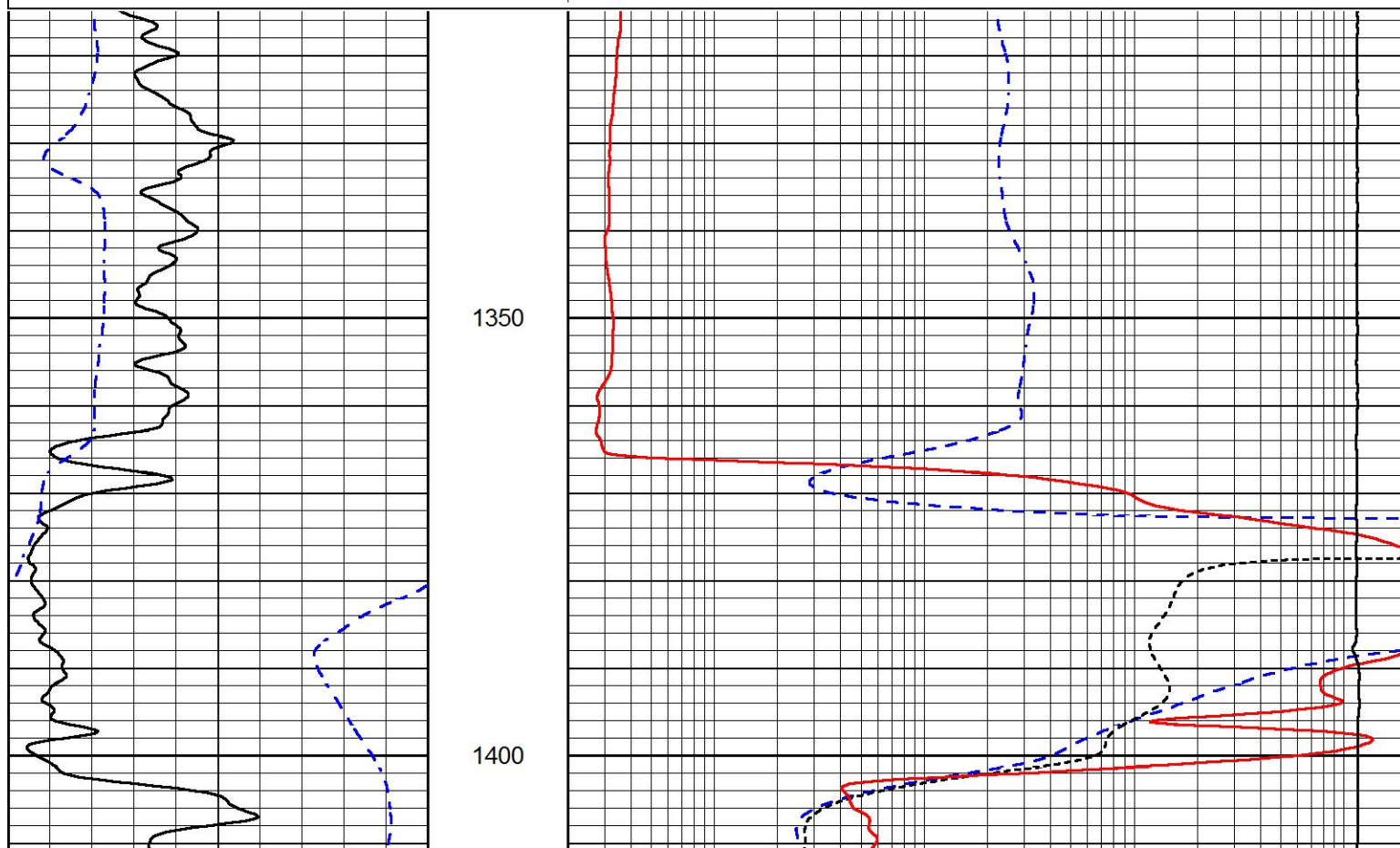
PIONEER
Pioneer Energy Services

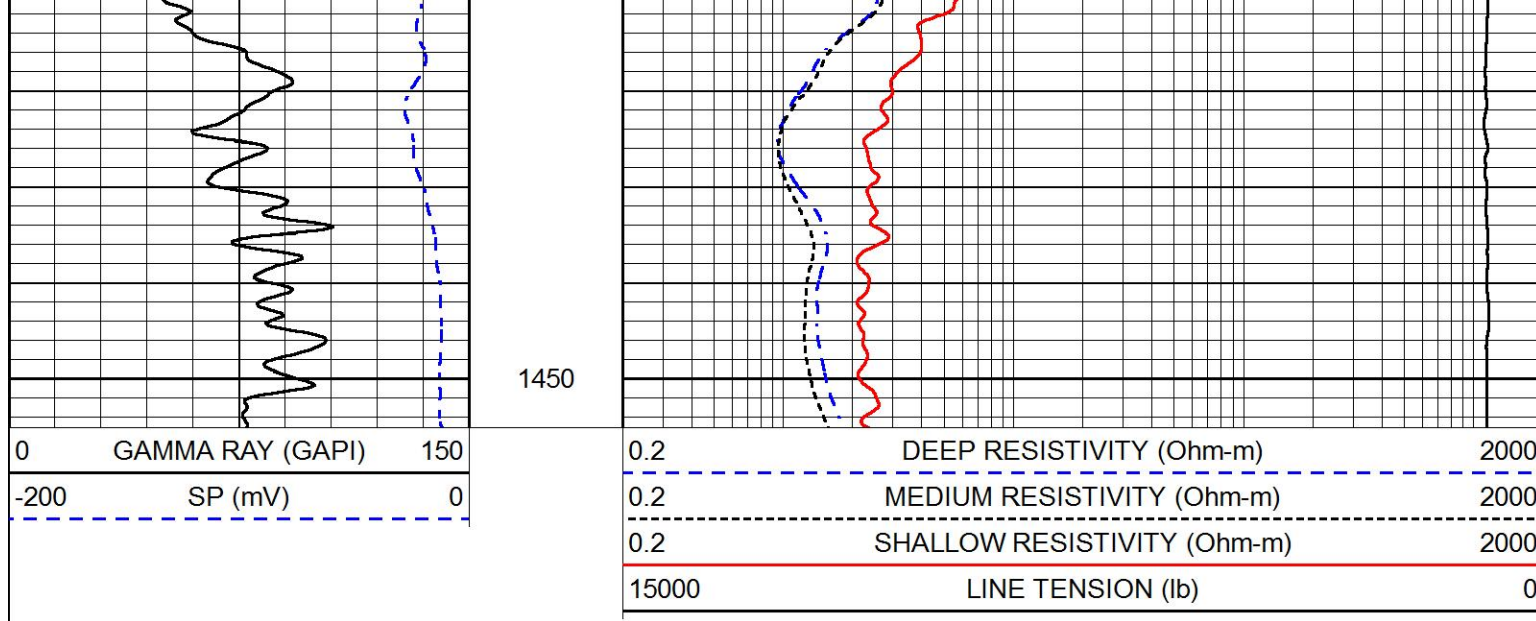
ANHYDRITE SECTION

MAIN PASS

Database File	cynosureenergy_leiker_2-25-15-20.db
Dataset Pathname	stack/pass4.4
Presentation Format	dil
Dataset Creation	Wed Nov 02 01:09:51 2016
Charted by	Depth in Feet scaled 1:240

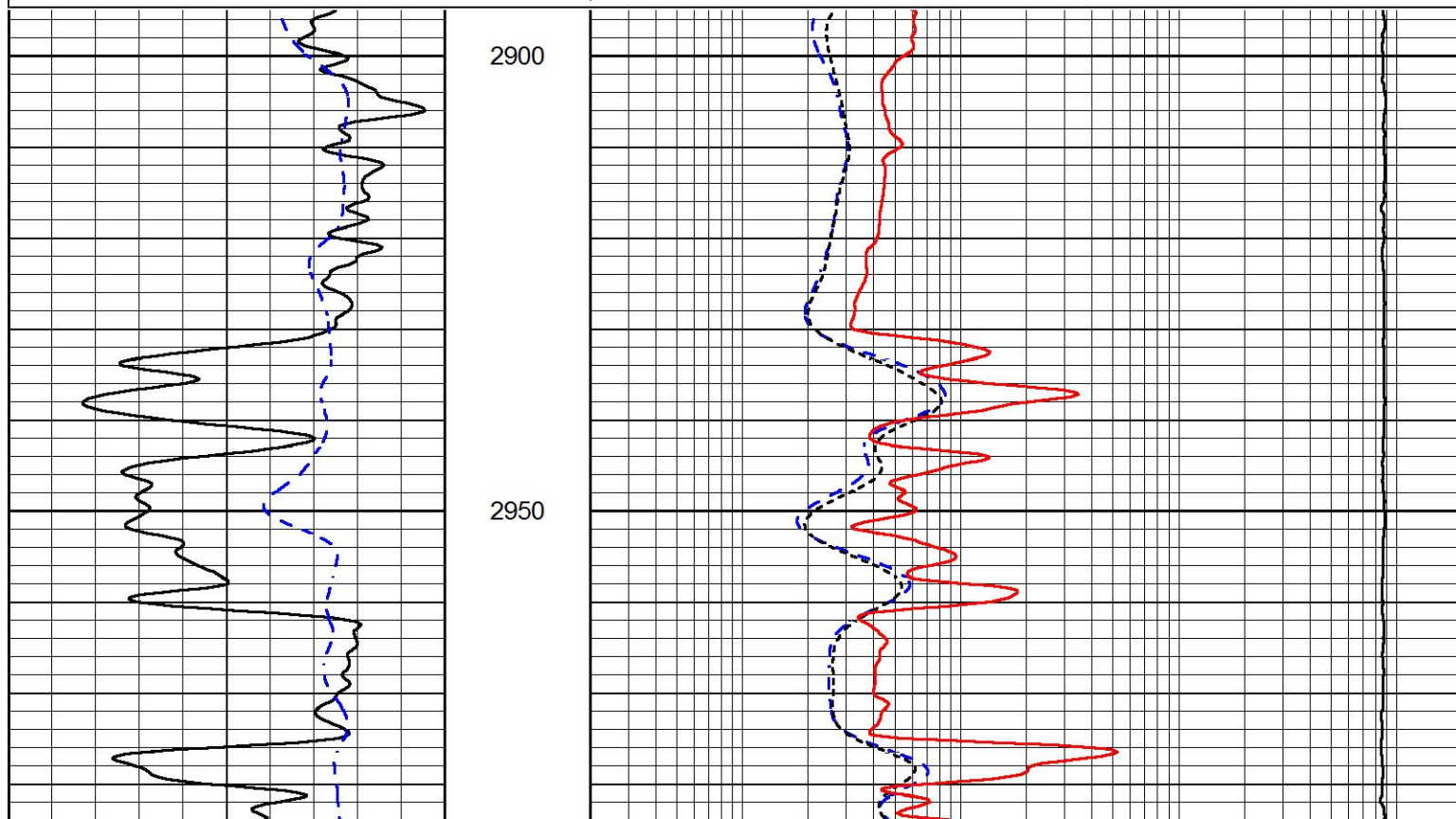
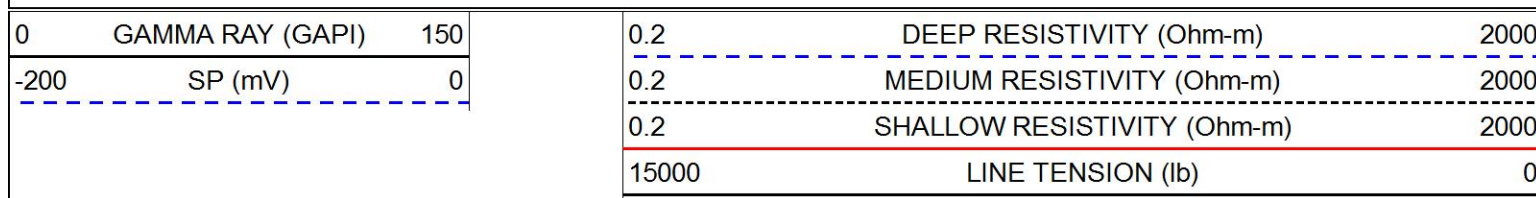
0 GAMMA RAY (GAPI) 150	0.2 DEEP RESISTIVITY (Ohm-m) 2000
-200 SP (mV) 0	0.2 MEDIUM RESISTIVITY (Ohm-m) 2000
	0.2 SHALLOW RESISTIVITY (Ohm-m) 2000
	15000 LINE TENSION (lb) 0

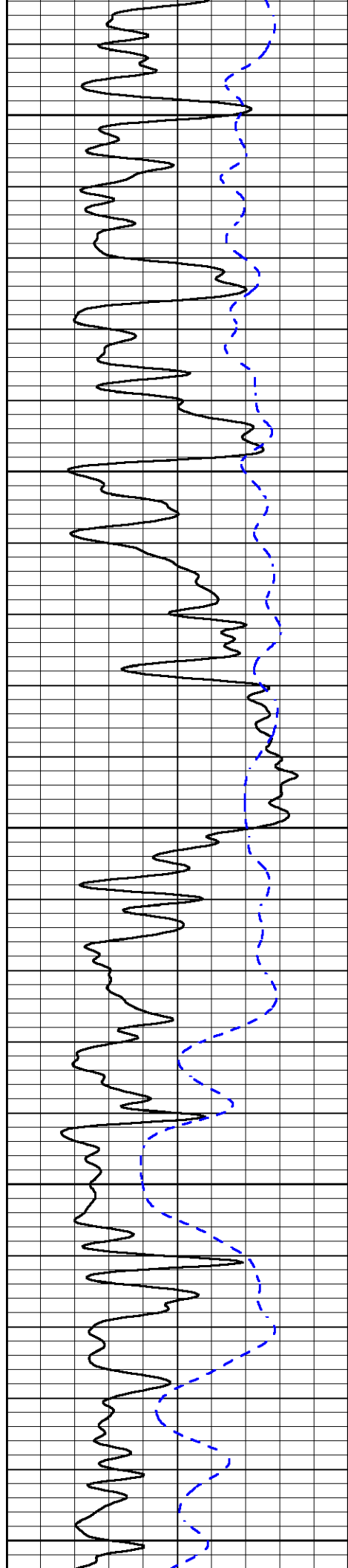




MAIN PASS

Database File: cynosureenergy_leiker_2-25-15-20.db
 Dataset Pathname: stack/pass4.1
 Presentation Format: dil
 Dataset Creation: Wed Nov 02 01:08:16 2016
 Charted by: Depth in Feet scaled 1:240





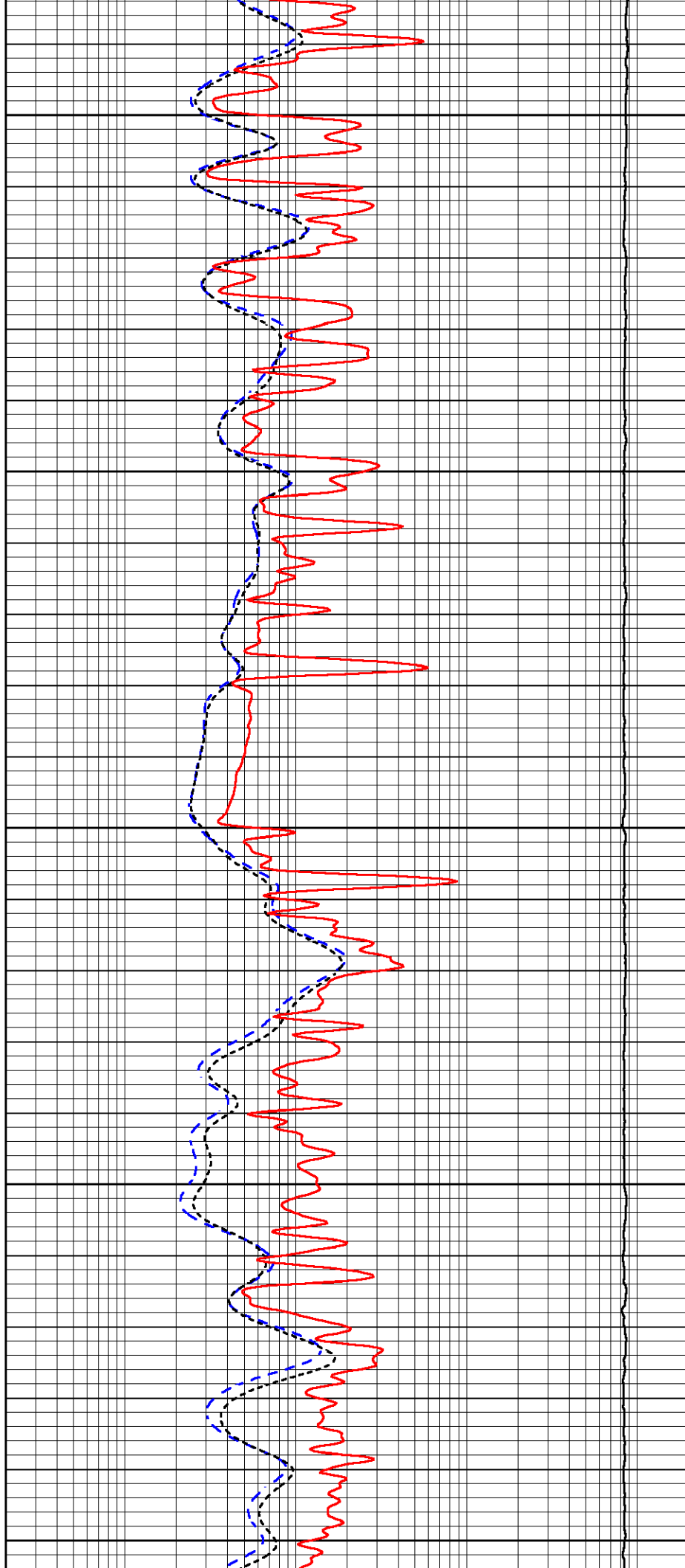
3000

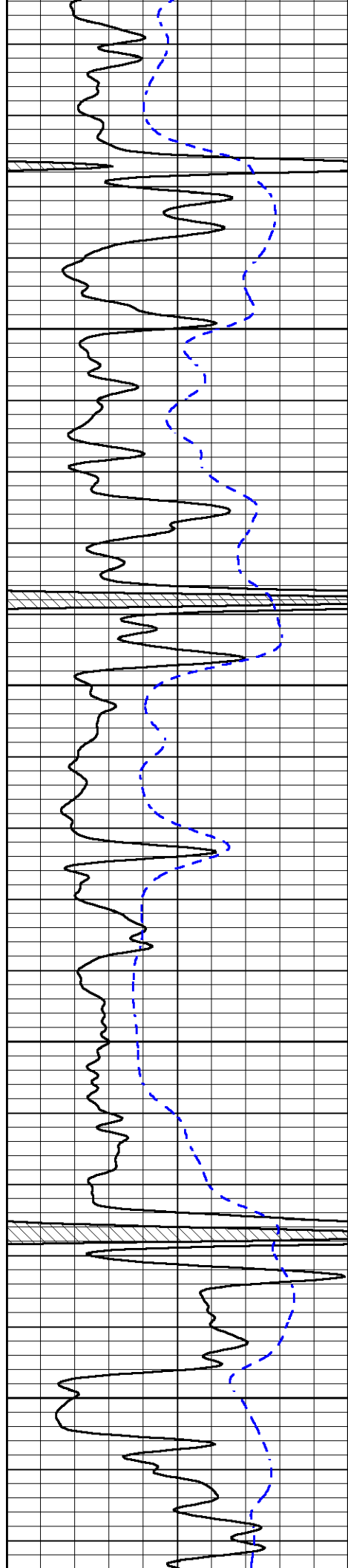
3050

3100

3150

3200



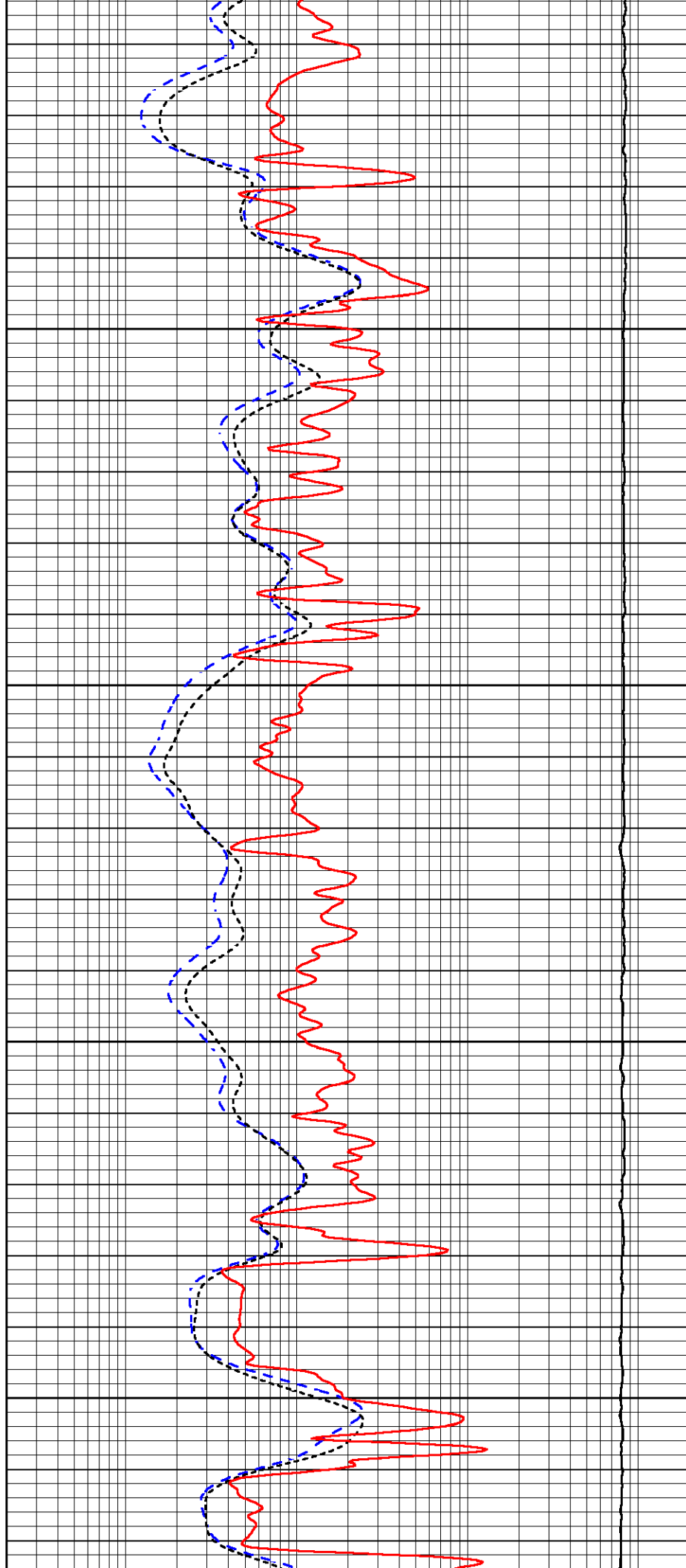


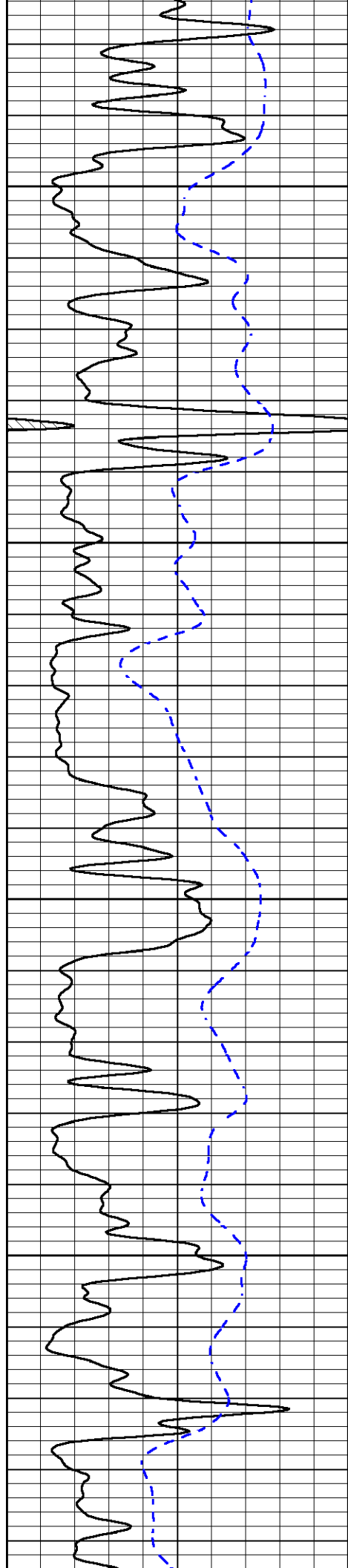
3250

3300

3350

3400



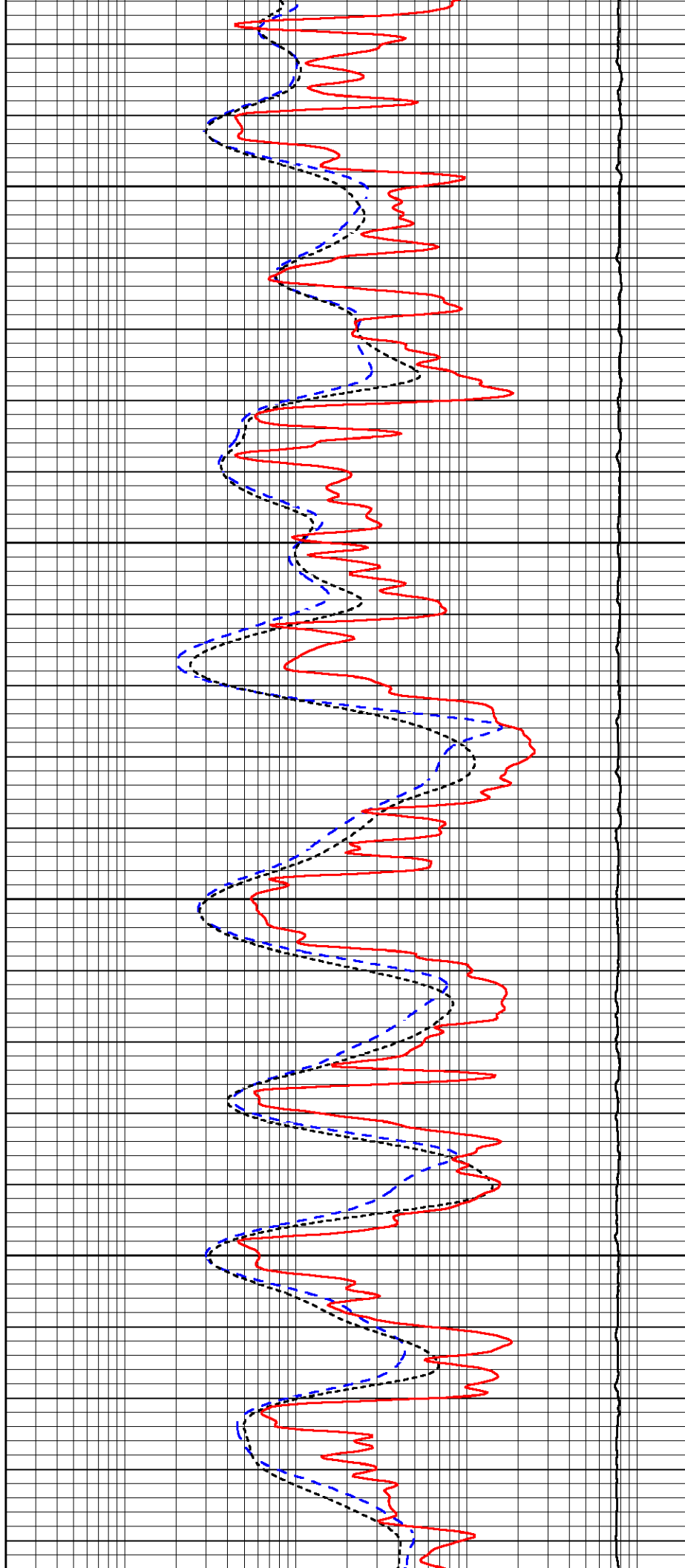


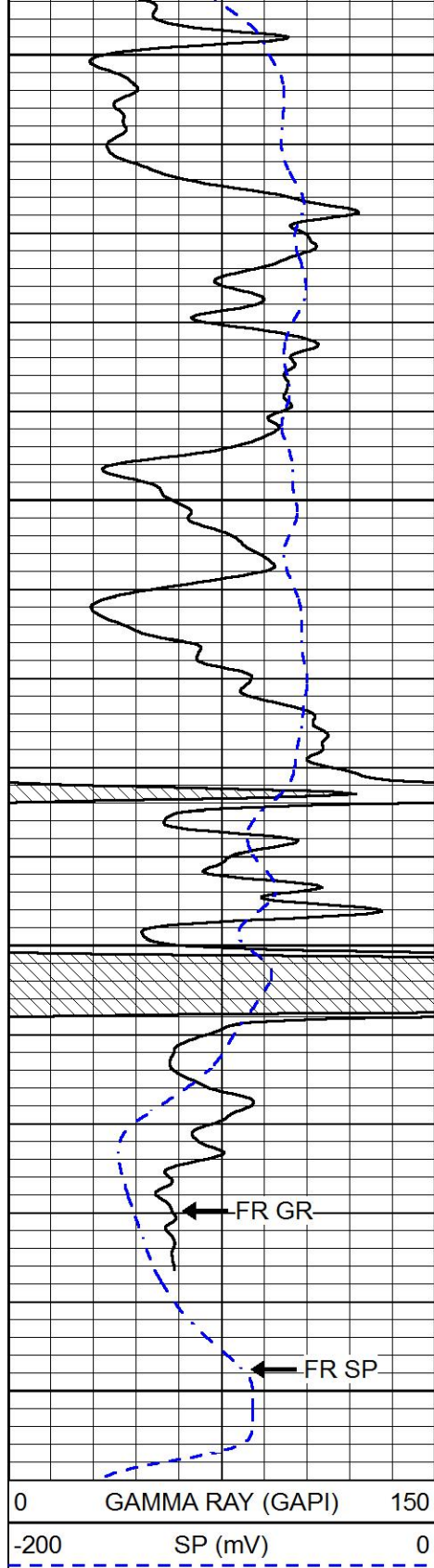
3450

3500

3550

3600



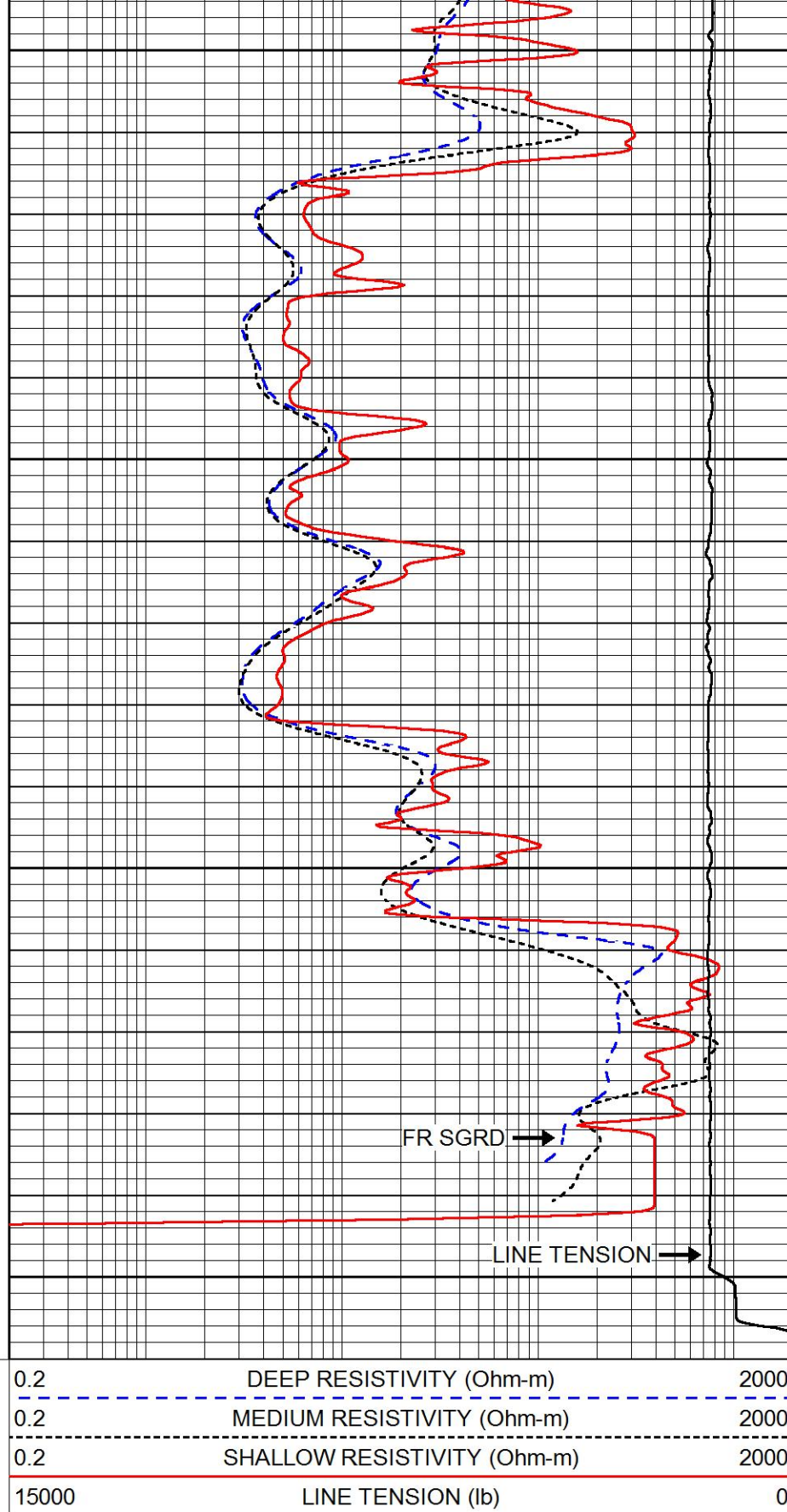


3650

3700

3750

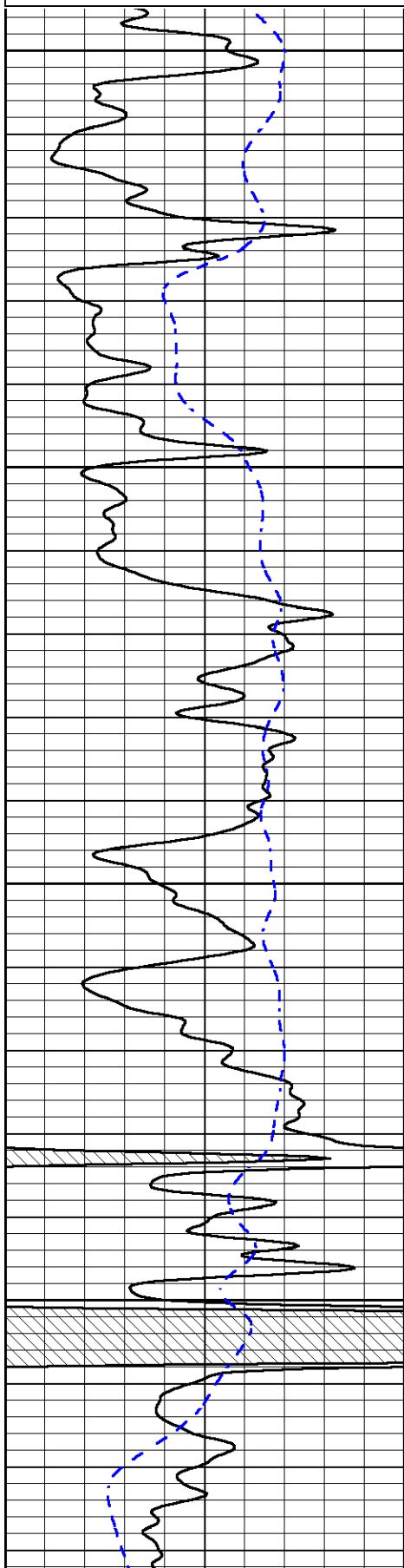
3800



REPEAT SECTION

0	GAMMA RAY (GAPI)	150
-200	SP (mV)	0

0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	SHALLOW RESISTIVITY (Ohm-m)	2000
15000	LINE TENSION (lb)	0

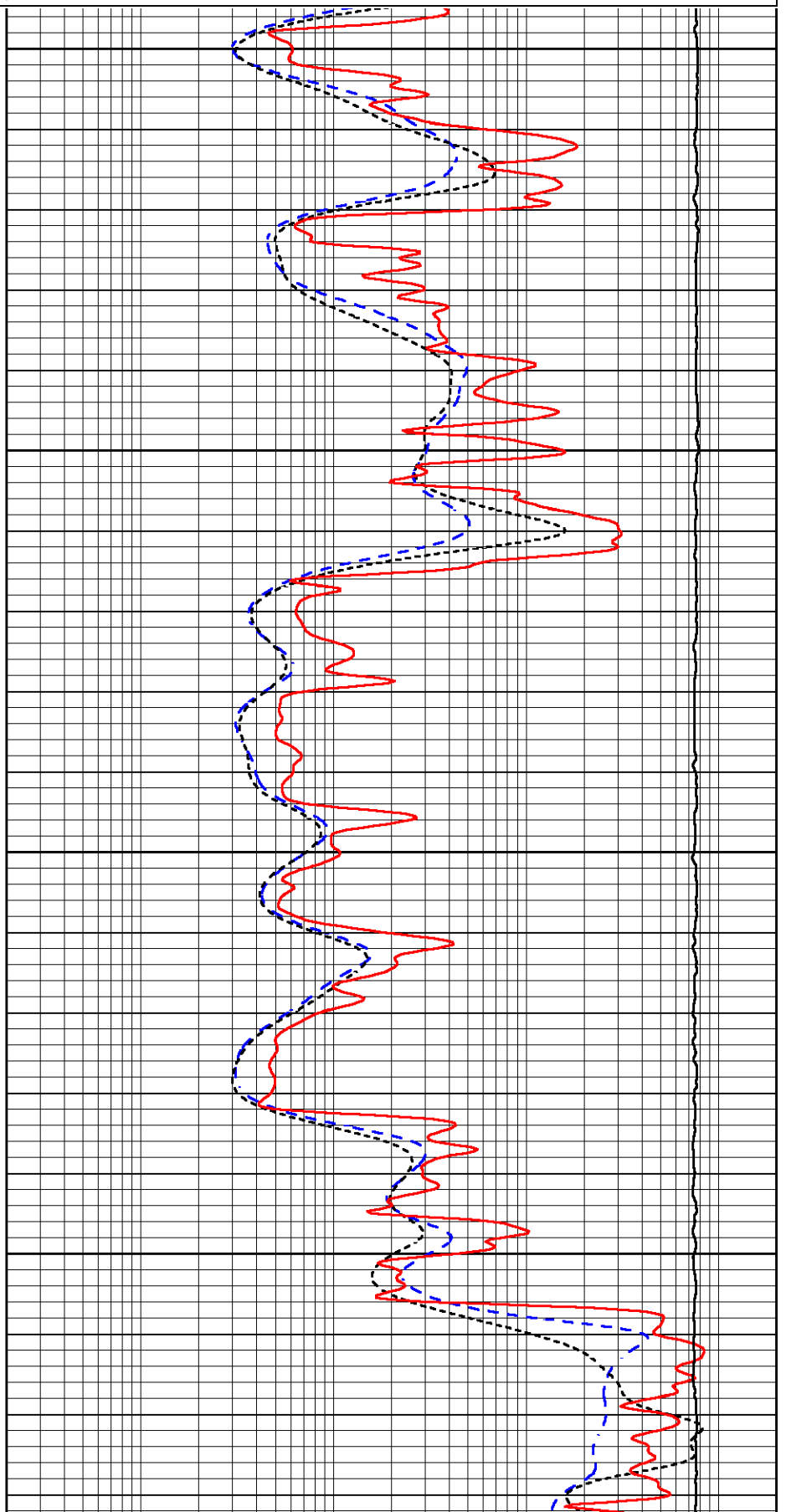


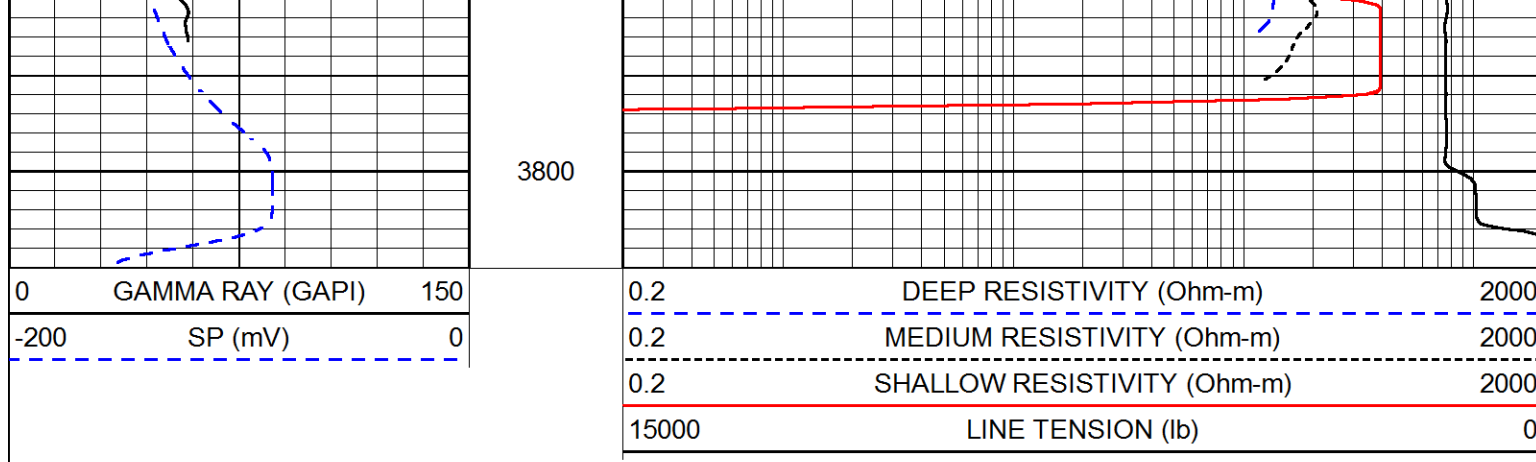
3600

3650

3700

3750





Calibration Report	
Database File	cynosureenergy_leiker_2-25-15-20.db
Dataset Pathname	stack/pass1
Dataset Creation	Tue Nov 01 23:00:35 2016

Dual Induction Calibration Report

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

		Readings				References				Results	
Loop:		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:	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



Company	CYNOSURE ENERY, LLC
Well	LEIKER NO. 2-25-15-20
Field	WILDCAT
County	ELLIS
State	KANSAS