

MIDWEST WIRELINE

DUAL INDUCTION LOG

Company Berexco LLC		Company Berexco LLC	
Well Fred #12	Well Fred #12		
Field Solomon	Field Solomon		
County Ellis	County Ellis		
State Kansas	State Kansas		
Location: API #: 15-051-27001-00-00		Other Services	
SE NE NW 990' FNL & 330' FEL SEC 15 TWP 11S RGE 19W		CNL/CDL MEL/BHCS	
Permanent Datum	Ground Level	Elevation	1957'
Log Measured From	Kelly Bushing		K.B. 1967'
Drilling Measured From	Kelly Bushing		D.F. N/A
			G.L. 1957'
Date	5/20/2021		
Run Number	One		
Depth Driller	3574'		
Depth Logger	3581'		
Bottom Logged Interval	3580'		
Top Log Interval	300'		
Casing Driller	8.625" @ 307'		
Casing Logger	307'		
Bit Size	7.875"		
Type Fluid in Hole	Chemical		
Salinity, ppm CL	6000		
Density / Viscosity	9.2 46		
pH / Fluid Loss	9.0 10.4		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	0.7 @ 74		
Rmt @ Meas. Temp	0.53 @ 74		
Rmc @ Meas. Temp	0.95 @ 74		
Source of Rmt / Rmc	CHARTS		
Rm @ BHT	0.46 @ 112		
Operating Rig Time	4 Hours		
Max Rec. Temp. F	112 Deg F		
Equipment Number	P-24		
Location	HAYS		
Recorded By	T. Martin		
Witnessed By	Pete Vollmer		

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All interpretations are opinions based on inferences from electrical or other measurements and Midwest Wireline LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Midwest Wireline 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.

Hays, KS, N on 183 to Saline River Rd, 6 W, S into

Log Measured From: Kelly Bushing

10 Ft. Above Permanent Datum

THANK YOU FOR USING MIDWEST WIRELINE LLC
785-625-3858

Your Midwest Wireline Crew

Engineer: T. Martin
Operator:
Operator:
Operator:

This Log Record Was Witnessed By

Primary Witness: Pete Vollmer
Secondary Witness:
Secondary Witness:
Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\berexco_fred #12.db
Dataset field/Fred_#12/StkMI/pass4.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	112	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	No	0	0	290	70	Off	3581

Variable Description

A : Cement Factor (a)
BOREID : Borehole I.D.
BOTTEMP : Bottom Hole Temperature
CASEOD : Casing O.D.
CASETHCK : Casing Thickness
FLUIDDEN : Fluid Density
M : Cement Exp (m)
MATRXDEN : Matrix Density

NPORSEL : Neutron Porosity Curve Select
PERFS : Perforation Flag
SNDERR : Deep Sonde Error Correction
SNDERRM : Medium Sonde Error Correction
SPSHIFT : S.P. Baseline Offset
SRFTEMP : Surface Temperature
SZCOR : CN Size Cor. ?
TDEPTH : Total Depth

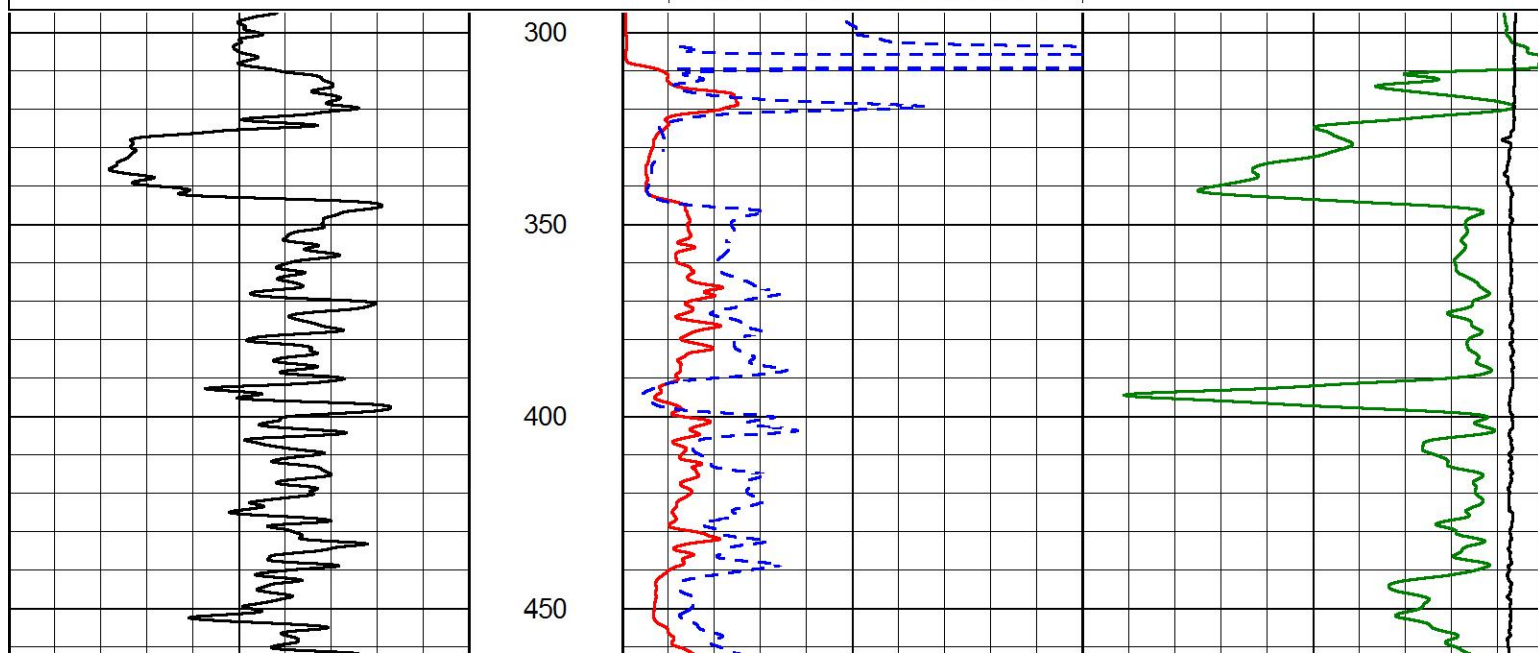


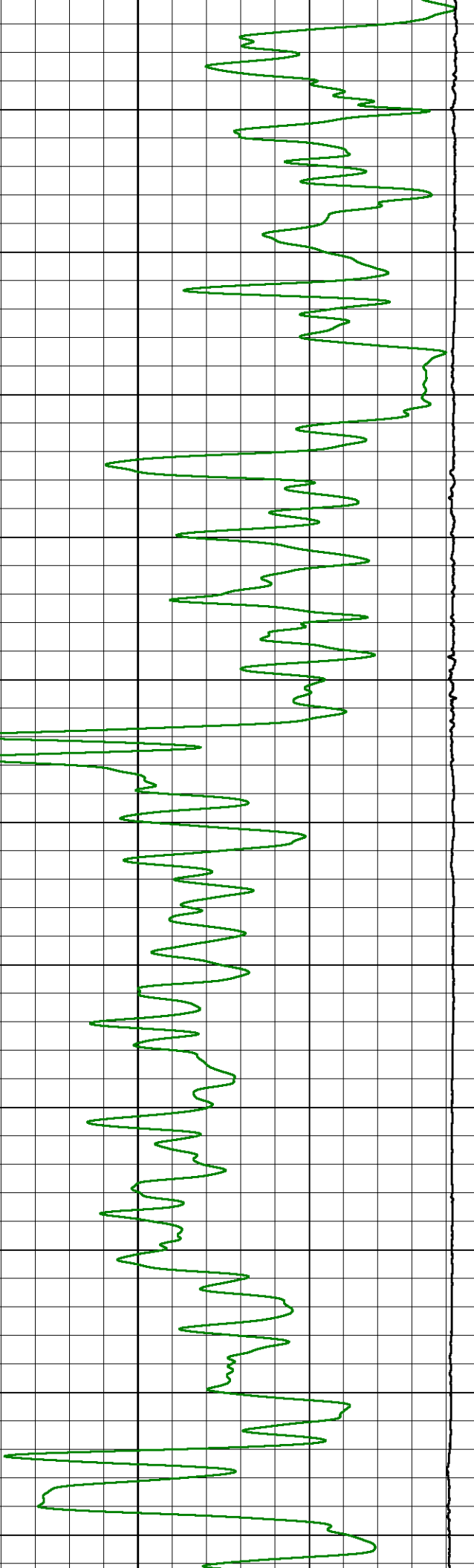
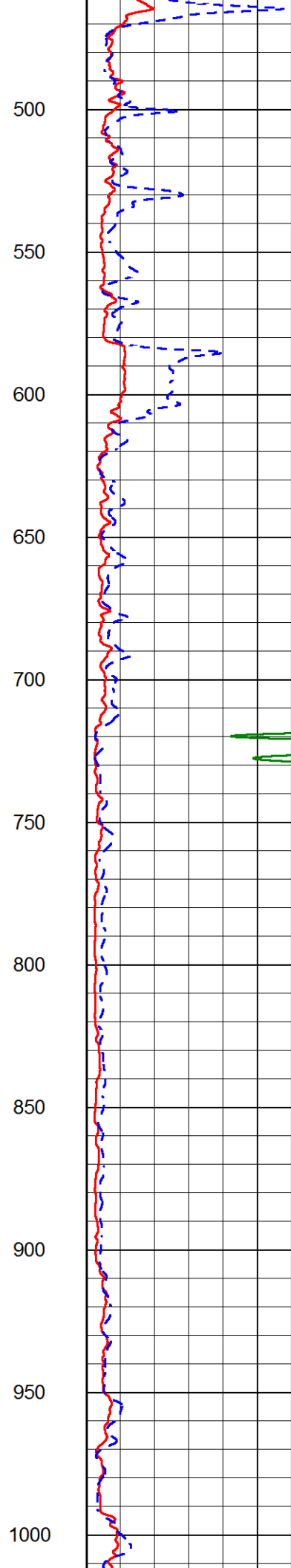
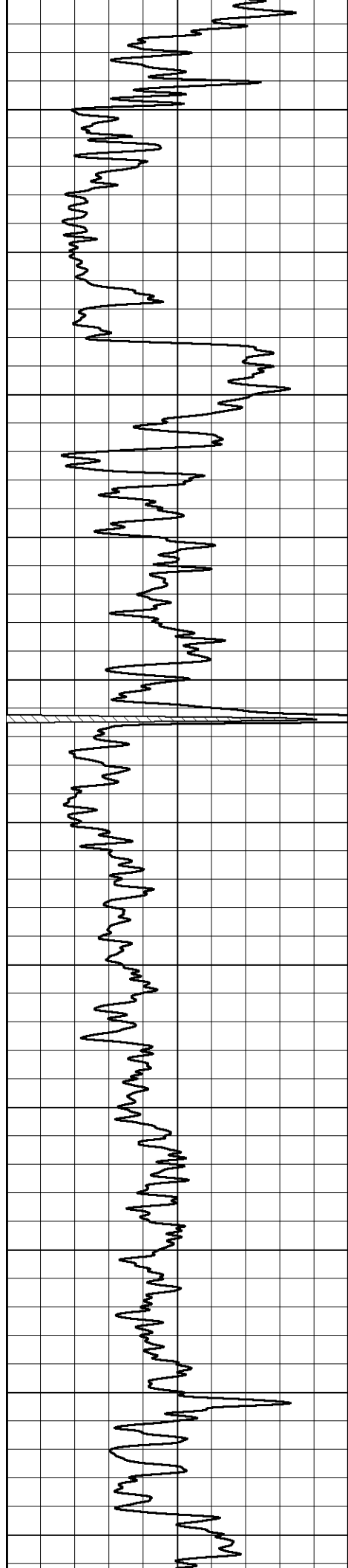
2" SCALE RESISTIVITY

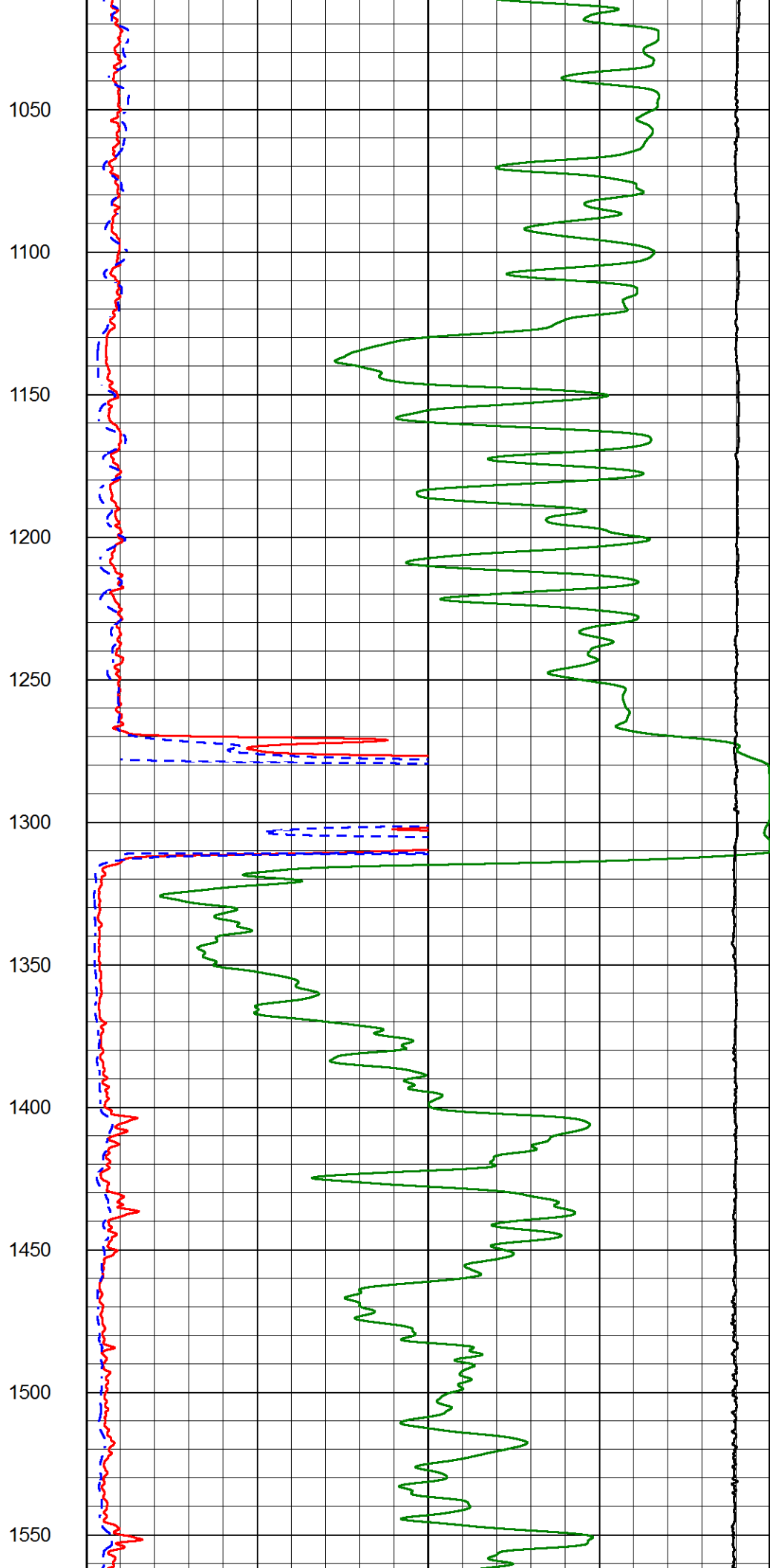
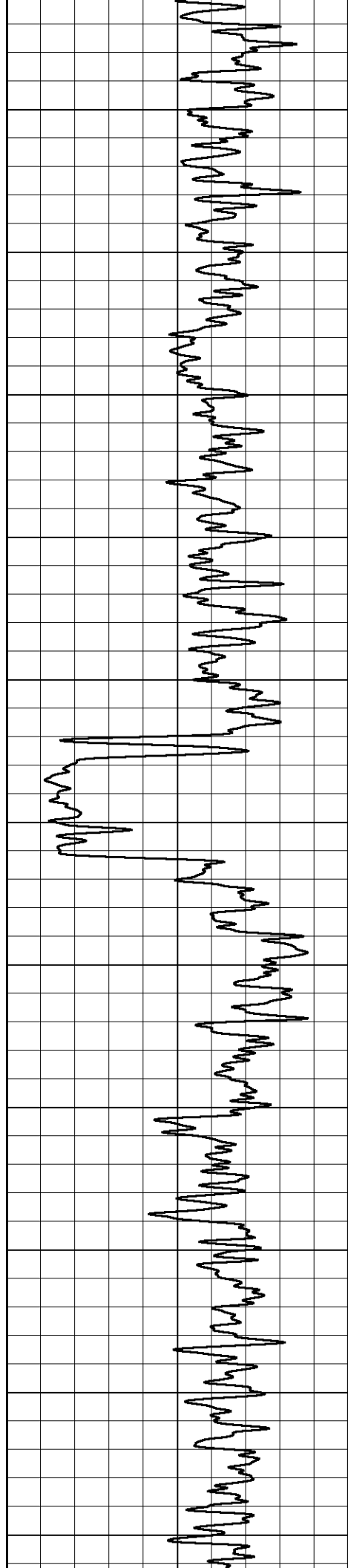
MAIN PASS

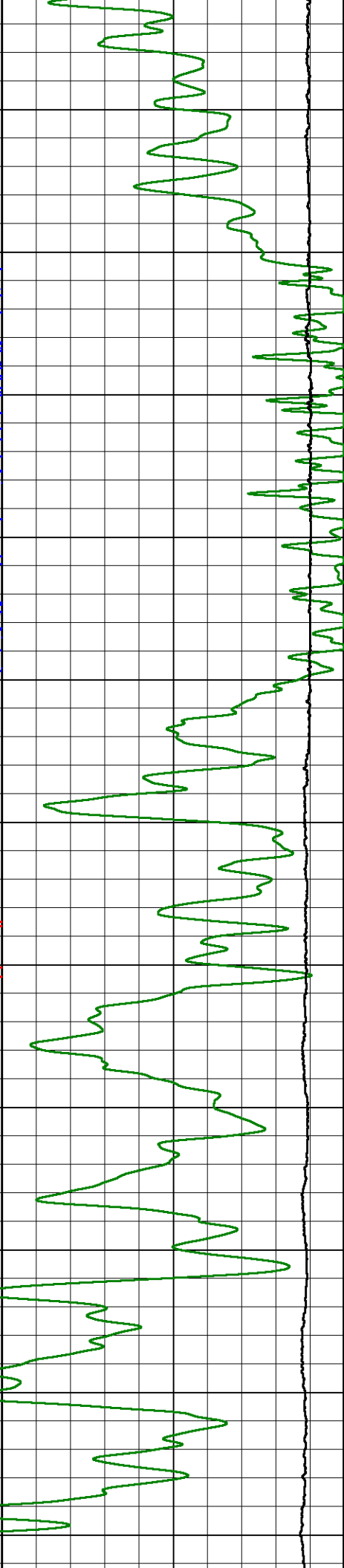
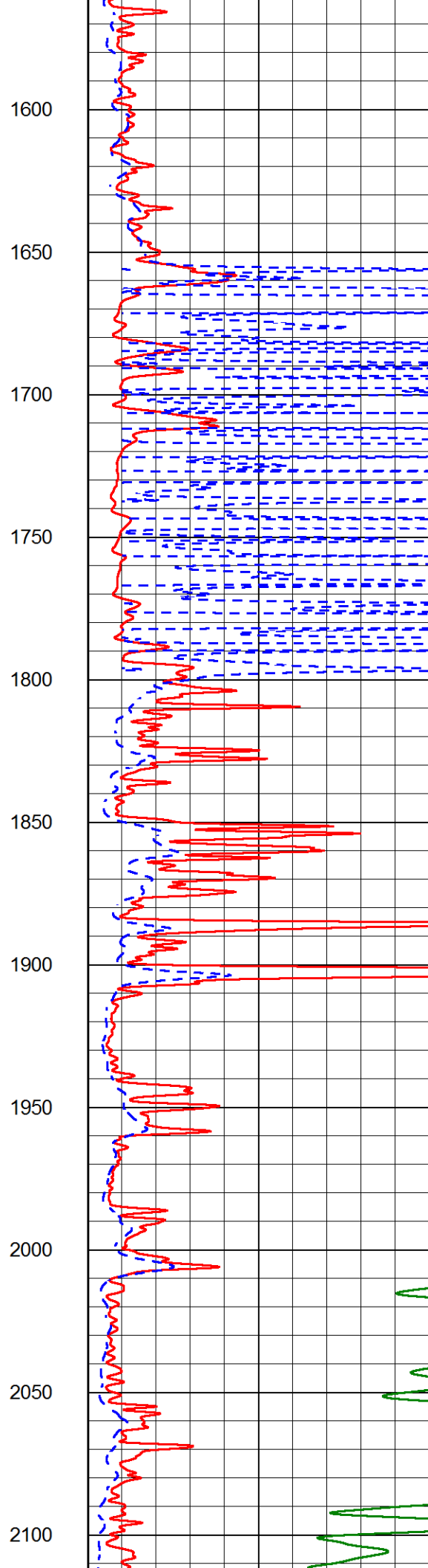
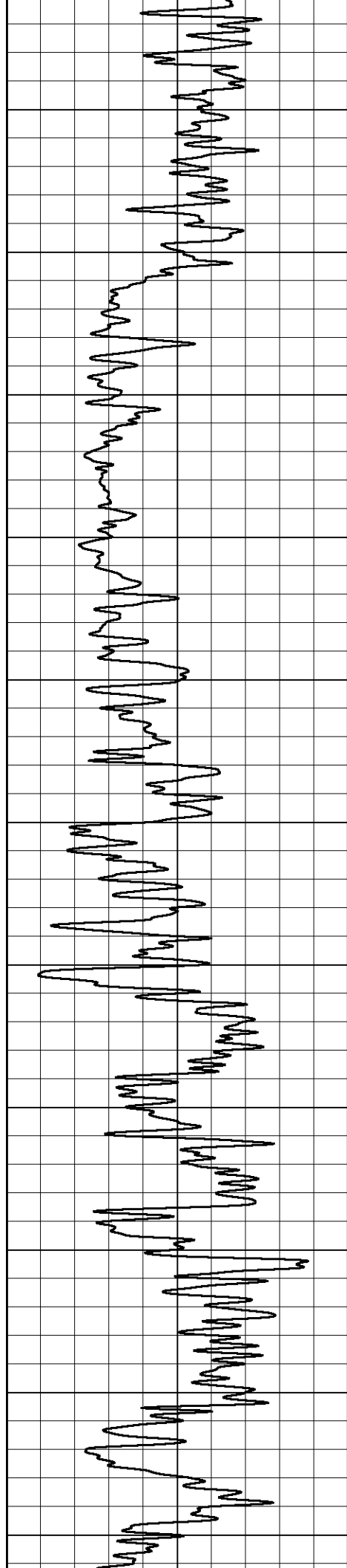
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Dataset Creation Thu May 20 02:30:12 2021
Charted by Depth in Feet scaled 1:600

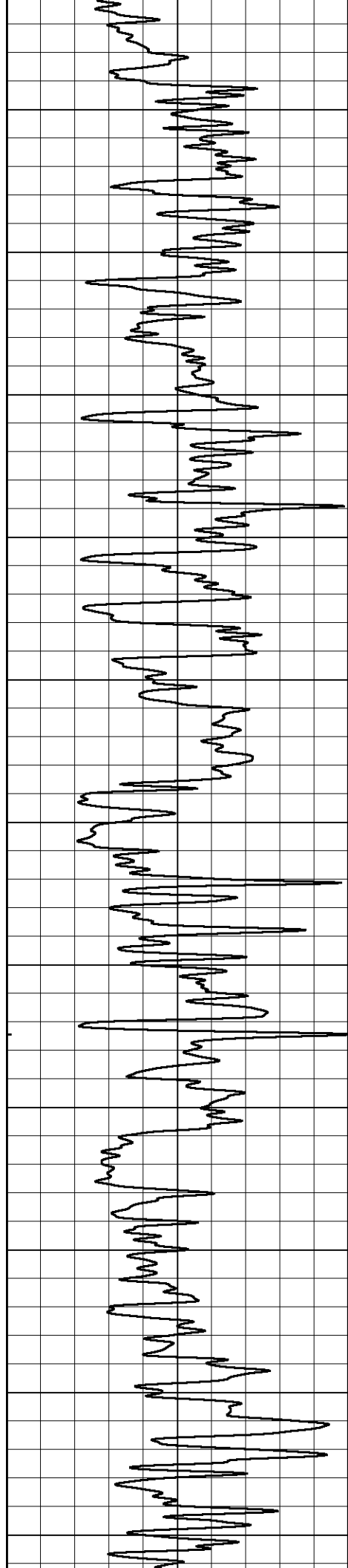
0	GAMMA RAY (GAPI)	150	1000	CONDUCTIVITY (mmho/m)	0
			15000	Line Tension (lb)	0
			0	RLL3 (Ohm-m)	50
			0	RILD (Ohm-m)	50
			50	Deep Resistivity (Ohm-m)	200



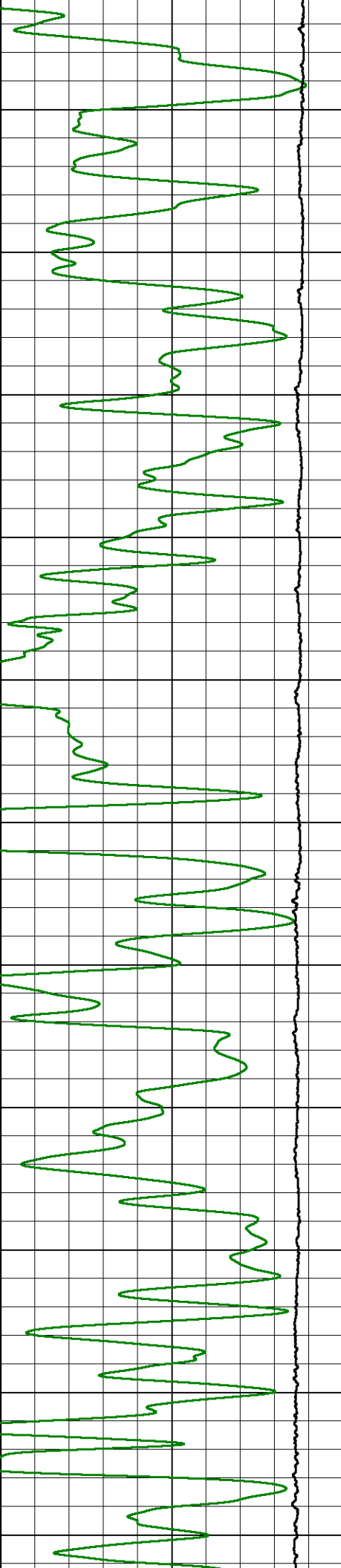
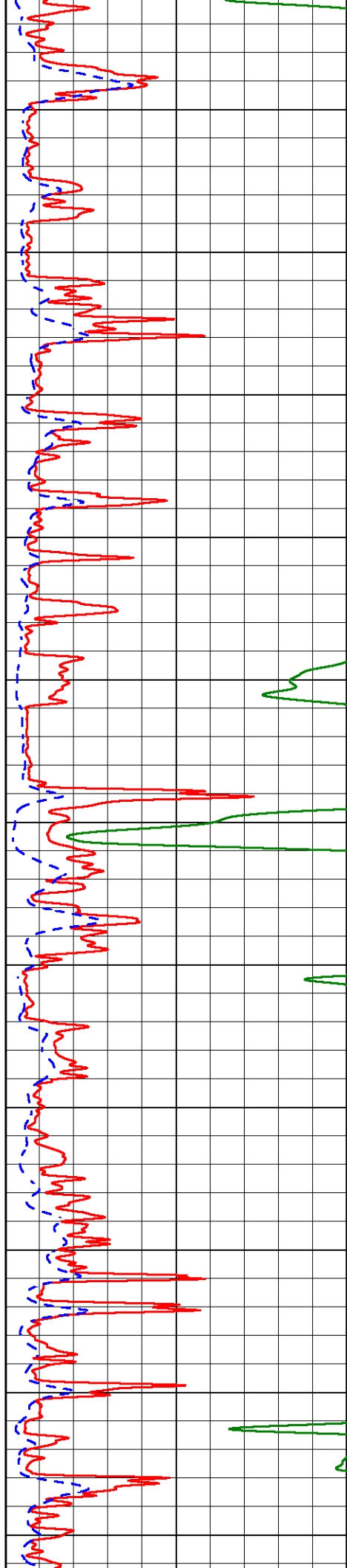


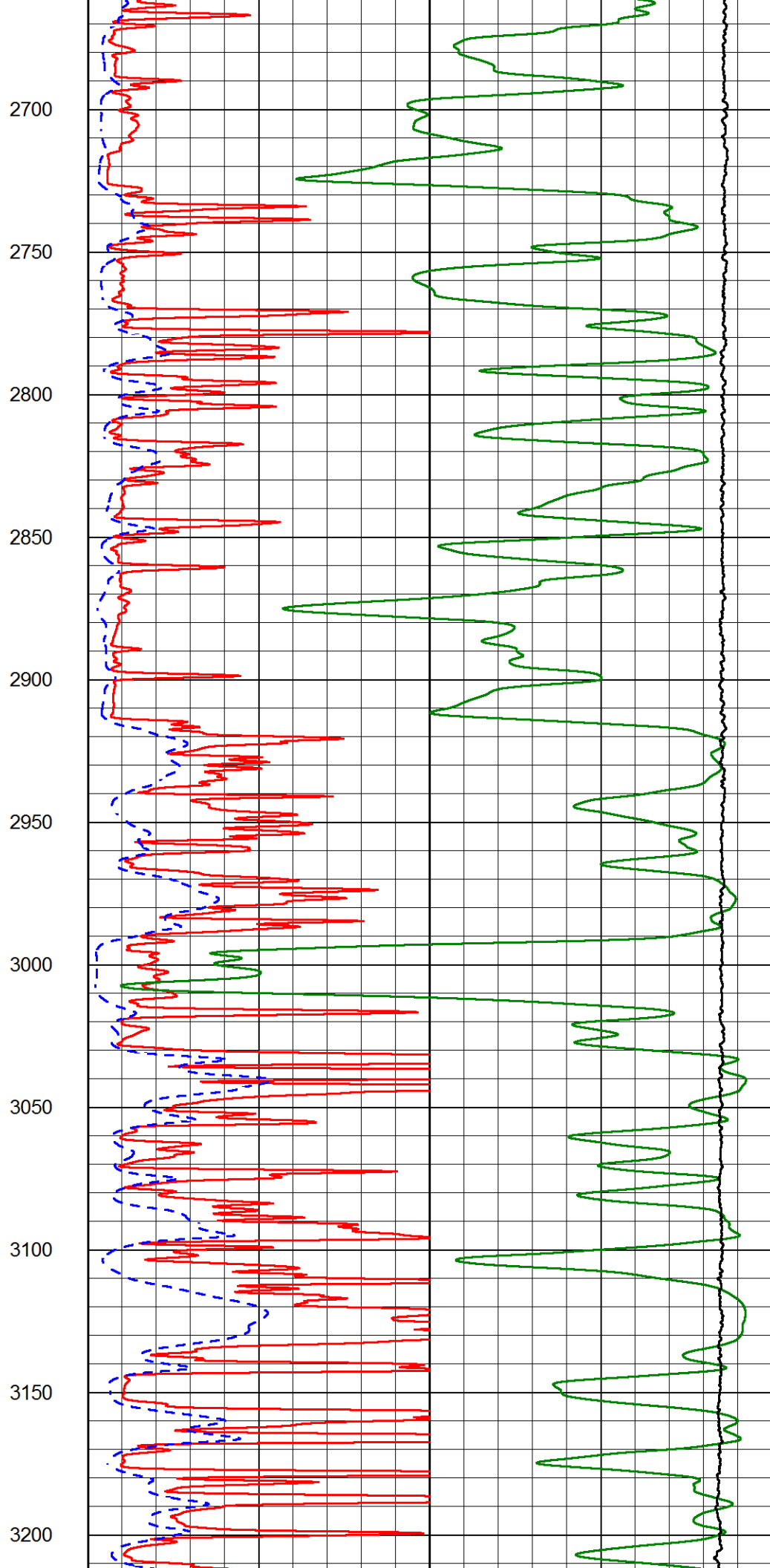
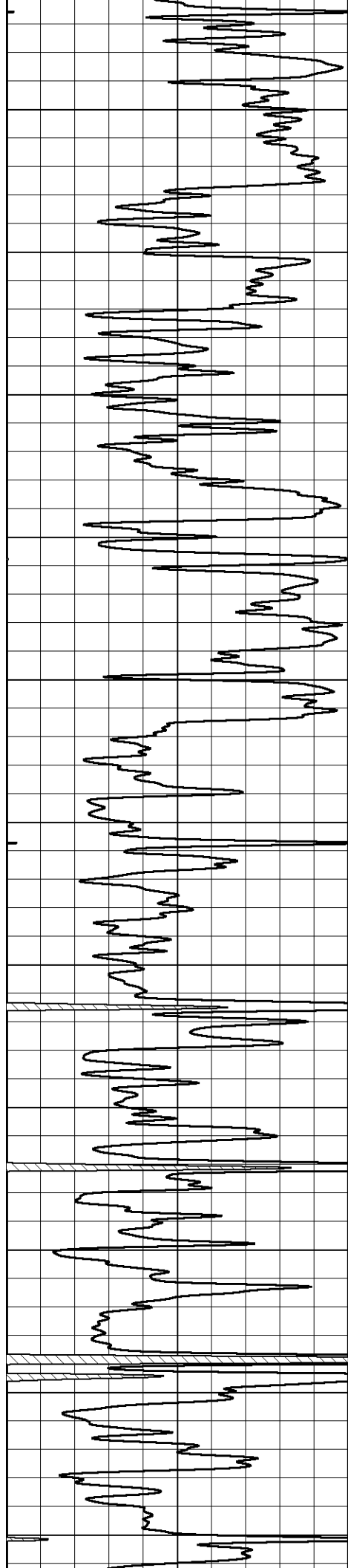


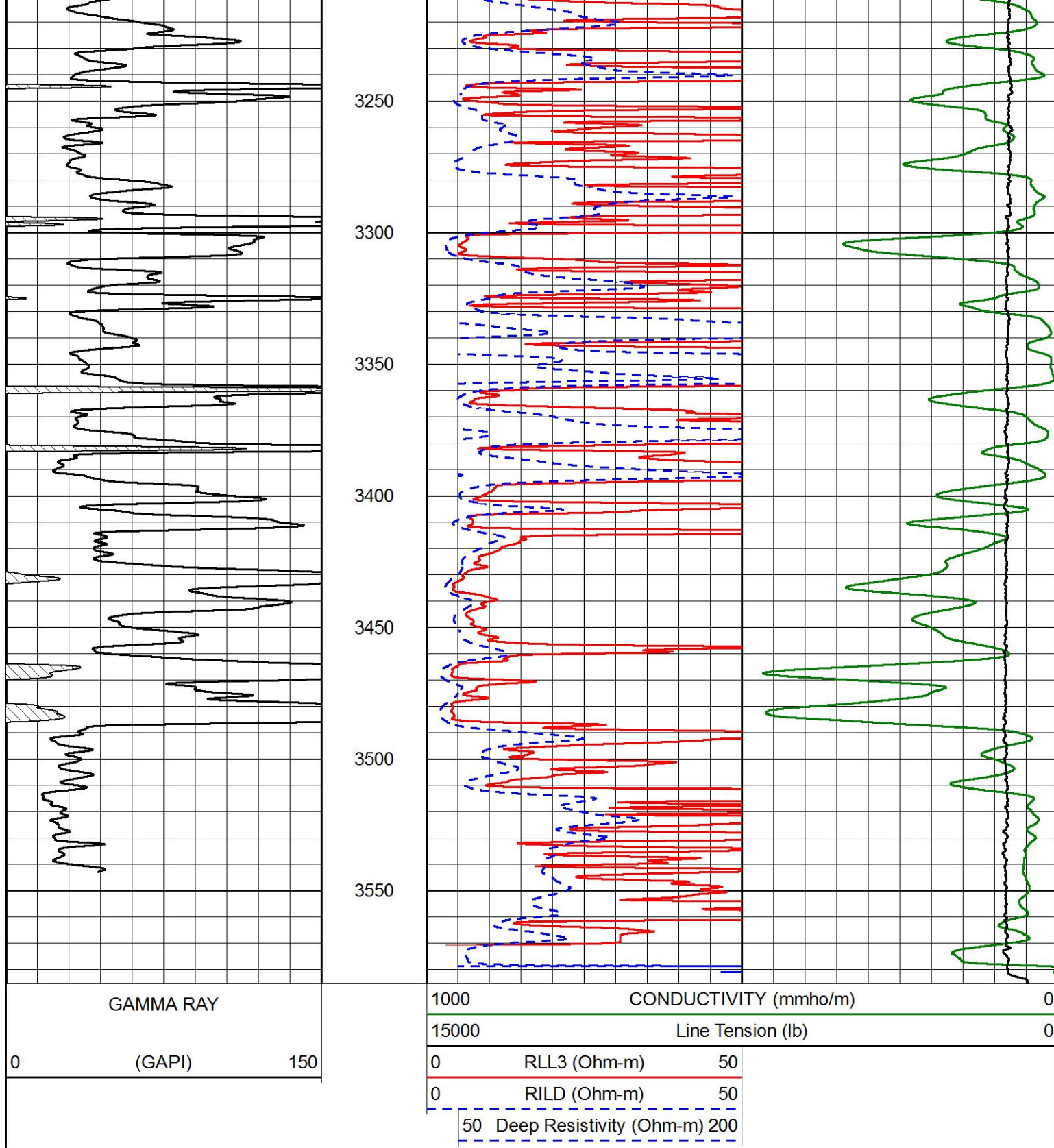




2150
2200
2250
2300
2350
2400
2450
2500
2550
2600
2650





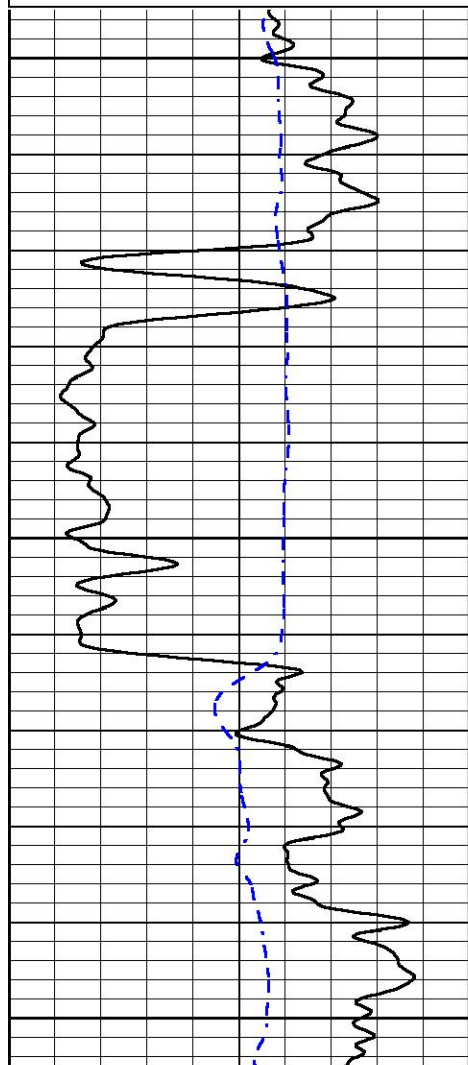


ANHYDRITE SECTION

MAIN PASS

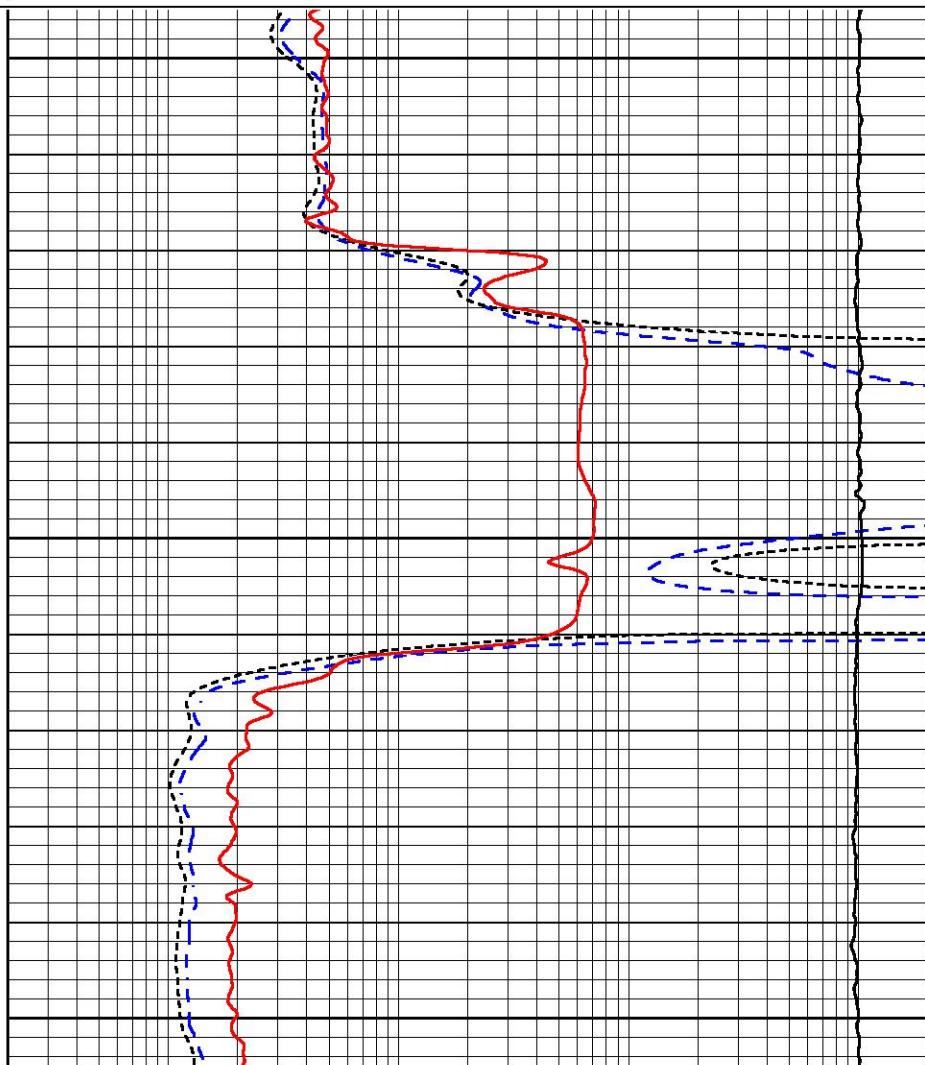
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 Presentation Format _dil
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 Charted by Depth in Feet scaled 1:240

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



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	RLL3 (Ohm-m)	2000
10000	LINE TENSION (lb)	0



0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	LINE TENSION (lb)	0



MIDWEST WIRELINE

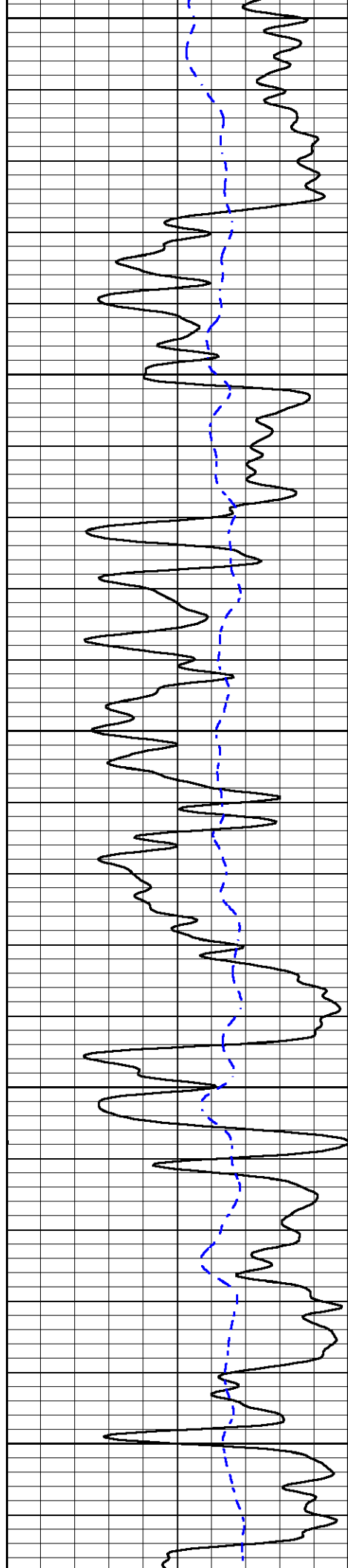
DETAIL SECTION

MAIN PASS

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 Presentation Format _dil
 Dataset Creation Thu May 20 02:30:24 2021
 Charted by Depth in Feet scaled 1:240

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	RLL3 (Ohm-m)	2000
10000	LINE TENSION (lb)	0



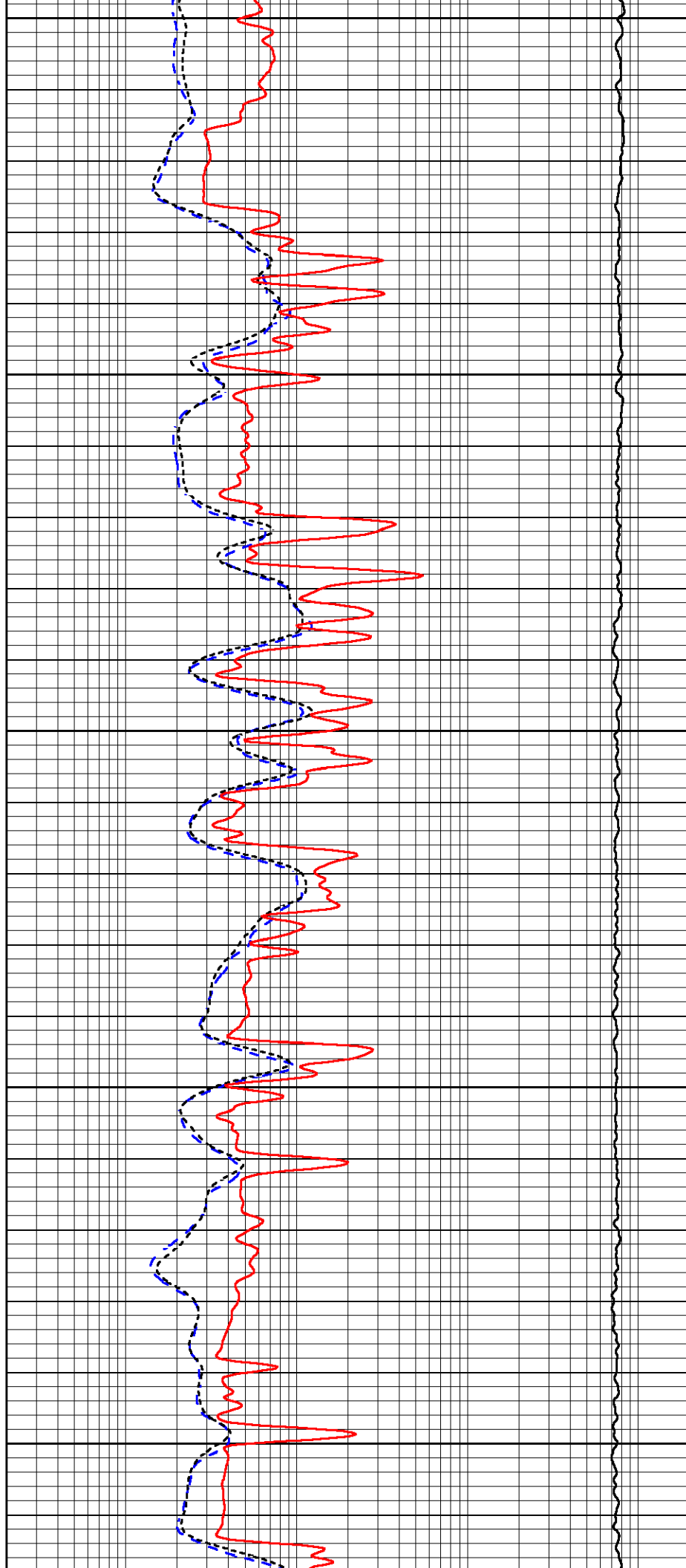
2700

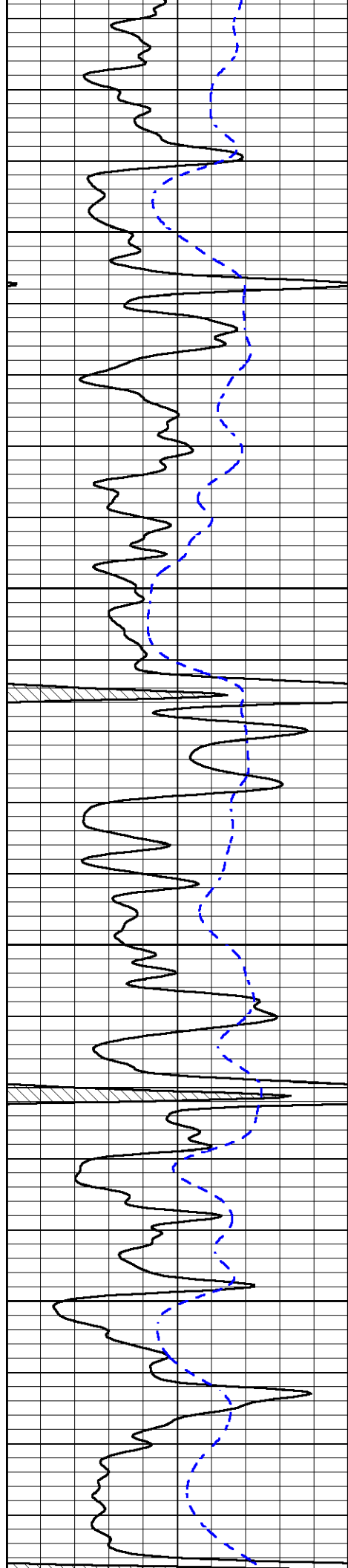
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2800

2850

2900



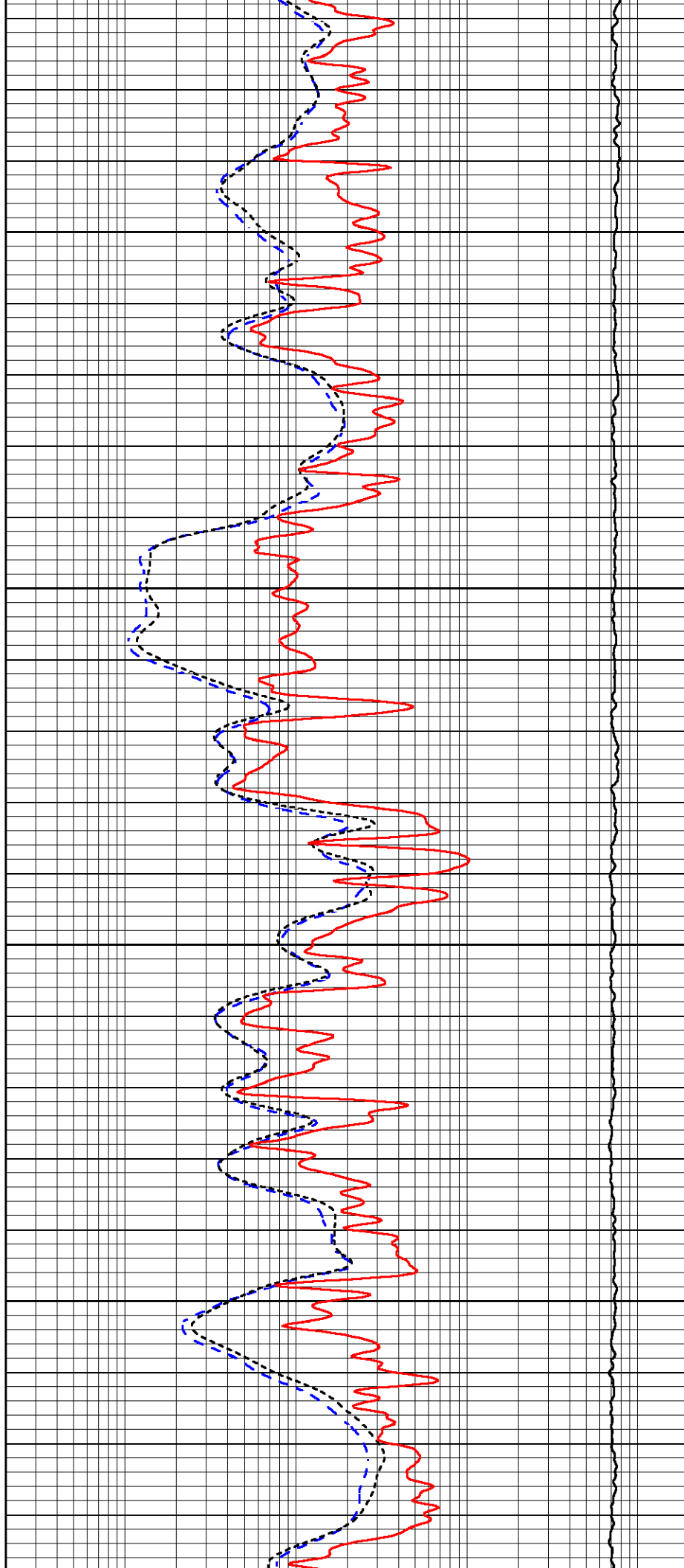


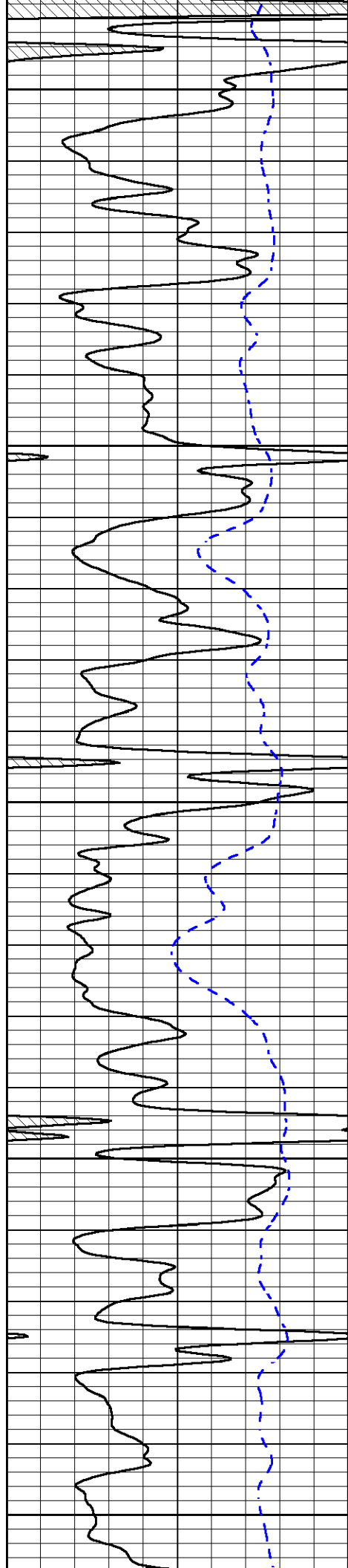
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3000

3050

3100





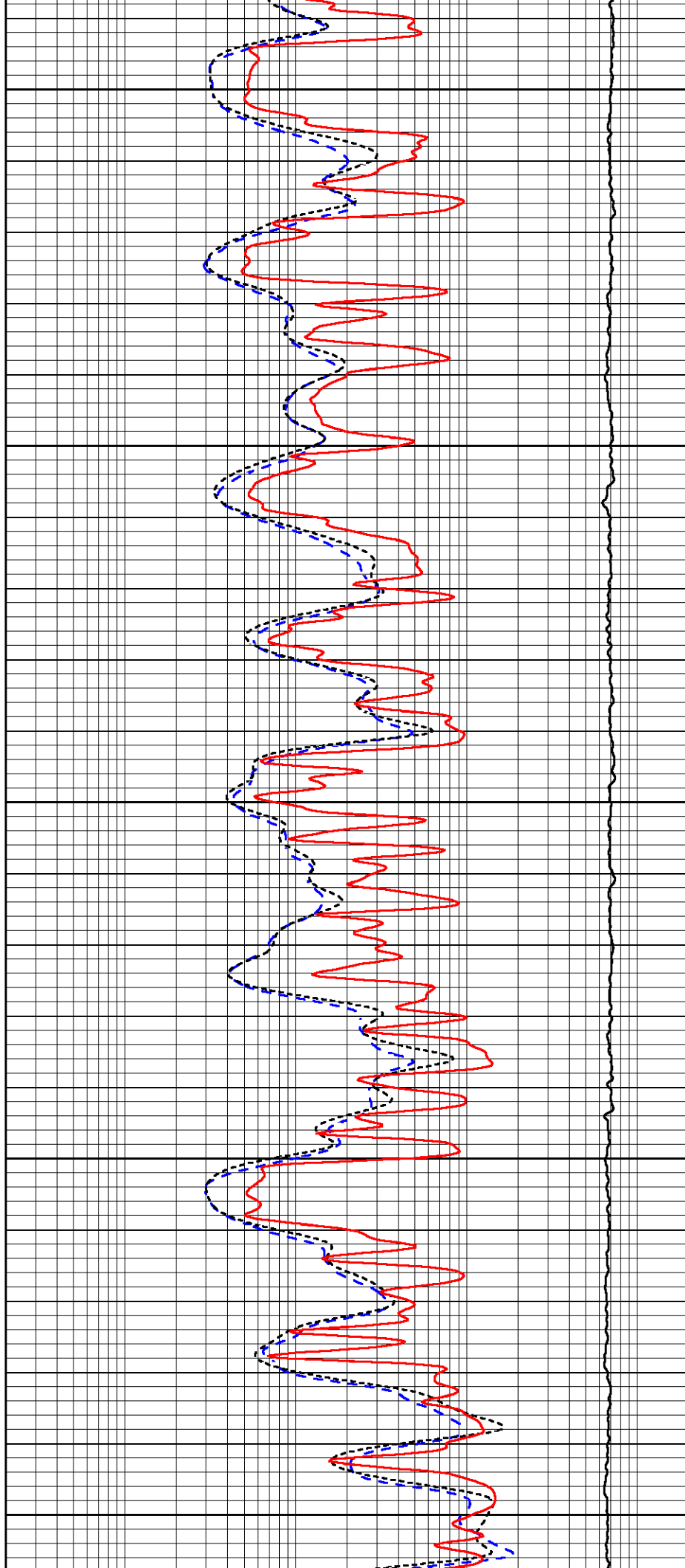
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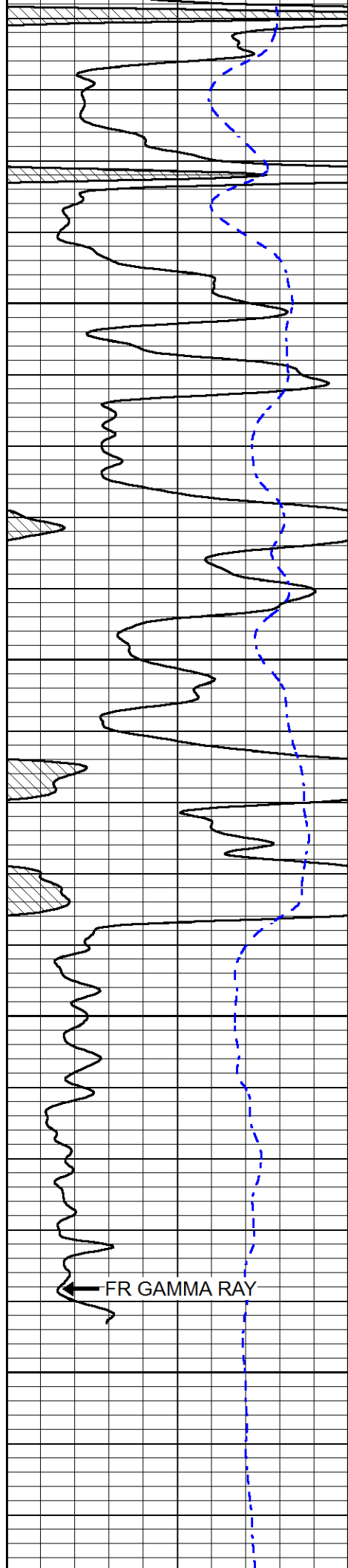
3200

3250

3300

3350





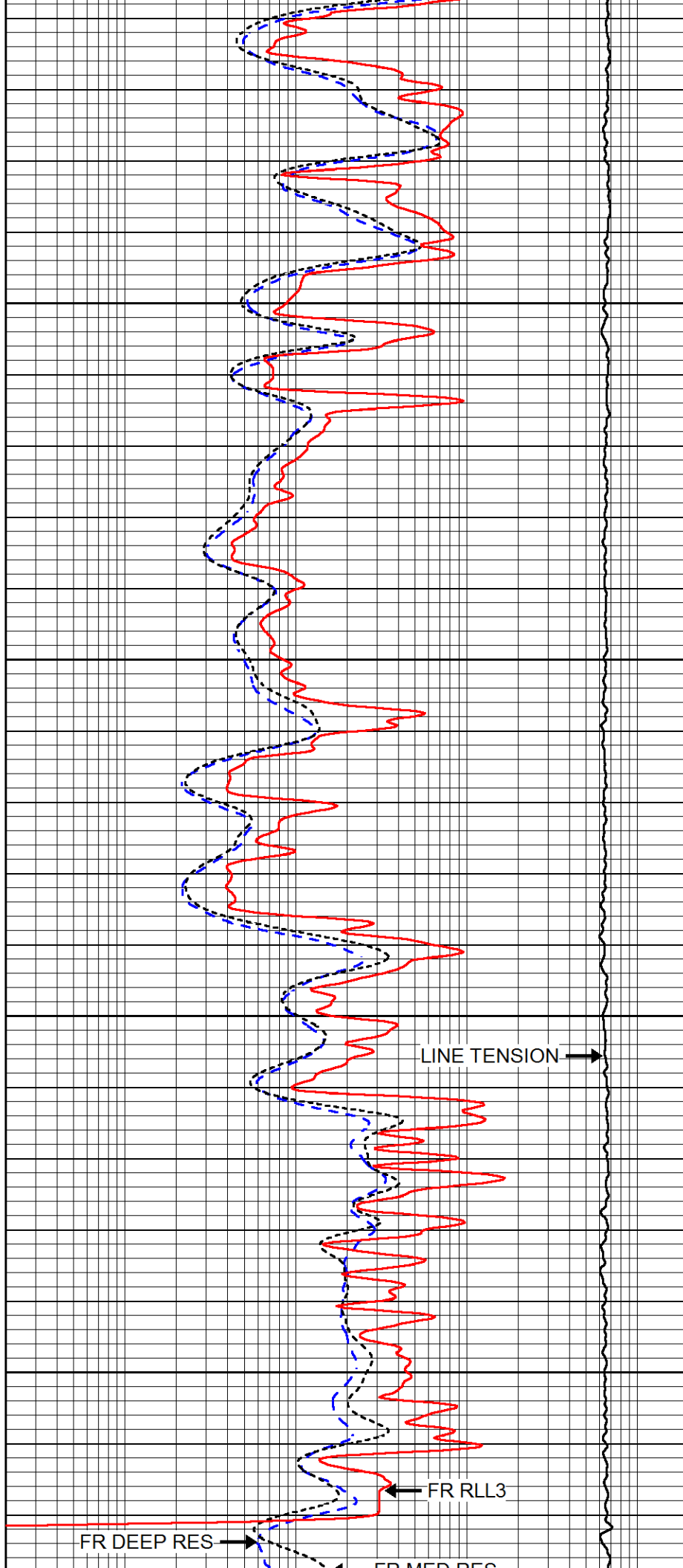
3400

3450

3500

3550

FR GAMMA RAY

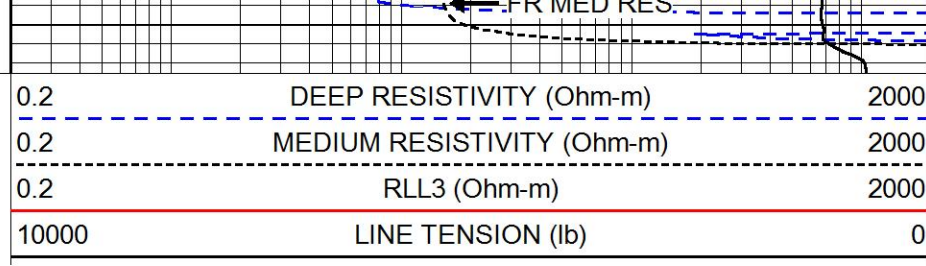
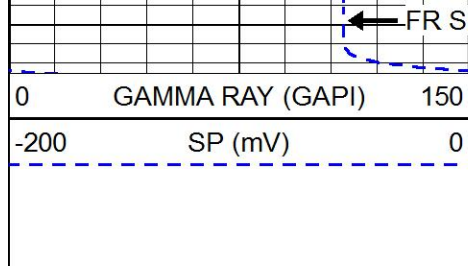


LINE TENSION

FR RLL3

FR DEEP RES

FR MED RES

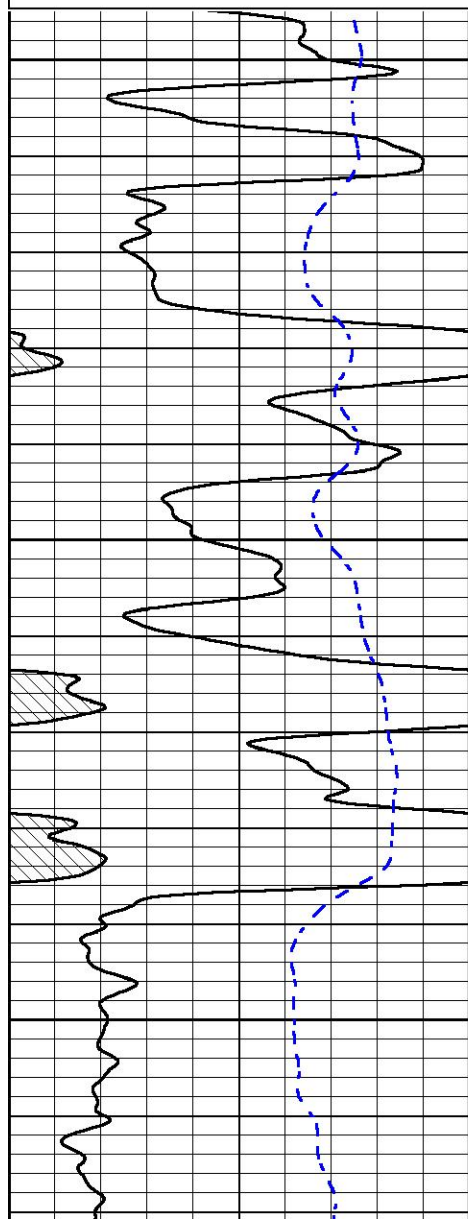
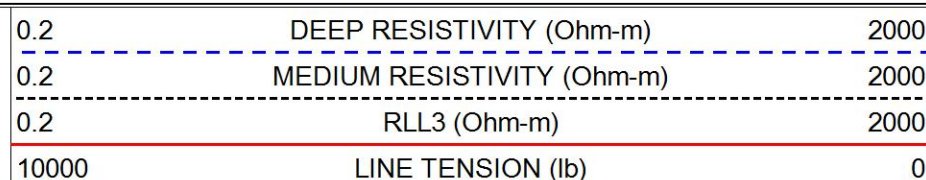
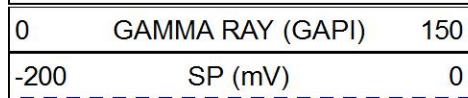


MIDWEST WIRELINE

REPEAT SECTION

REPEAT PASS

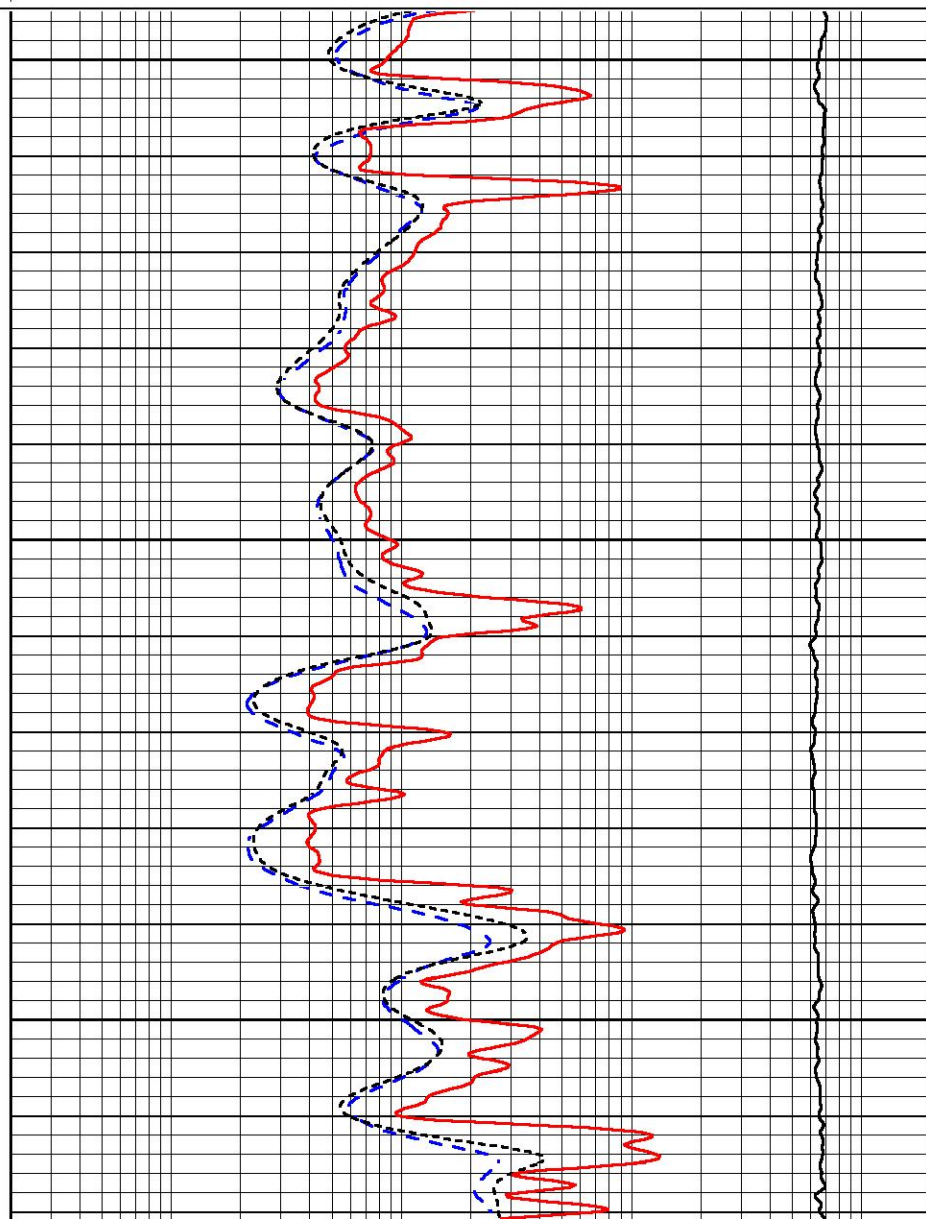
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Charted by Depth in Feet scaled 1:240

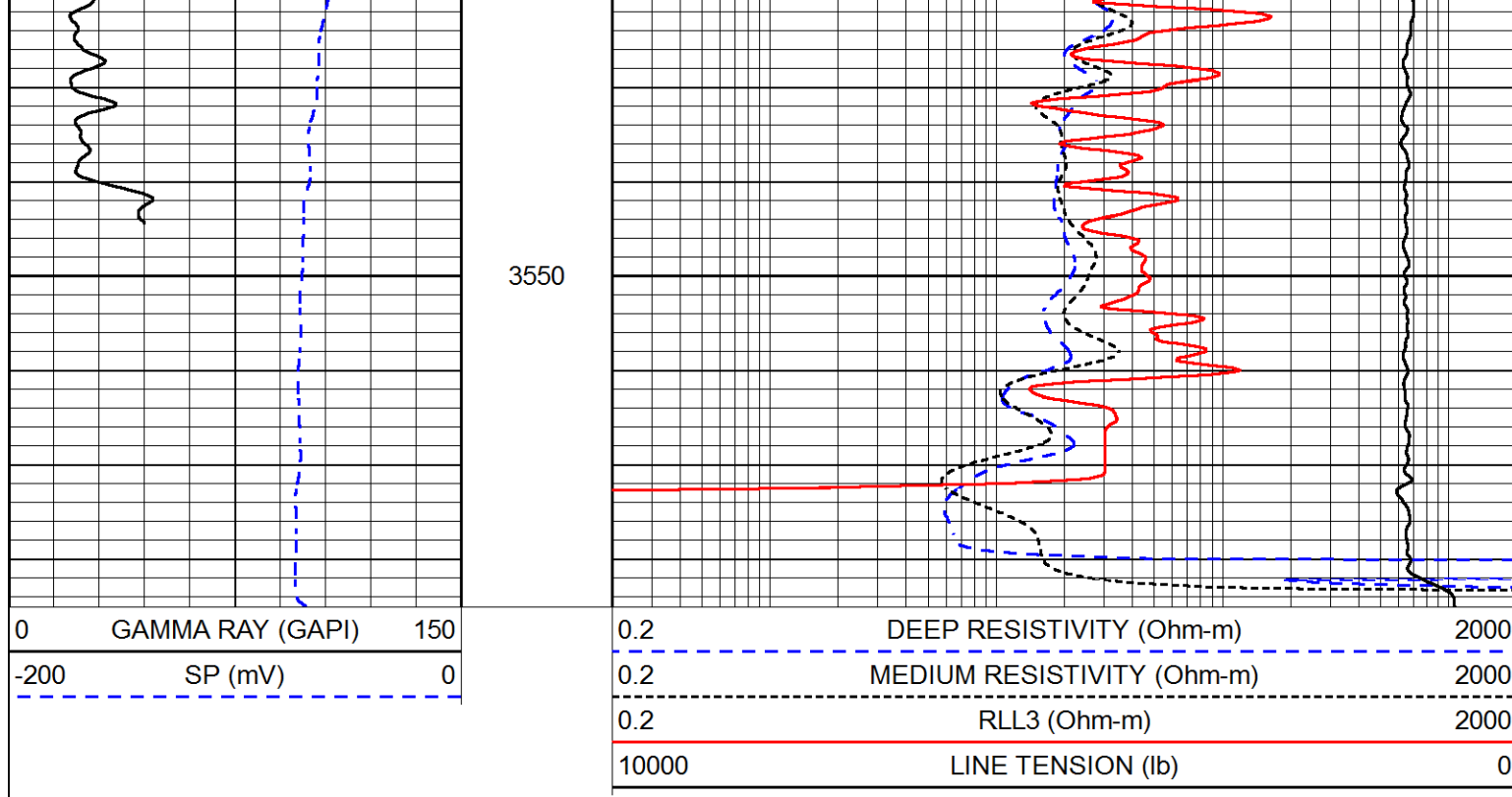


3400

3450

3500





Calibration Report

Database File berexco_fred #12.db
 Dataset Pathname Fred_#12/StkMI/pass4.1
 Dataset Creation Thu May 20 02:30:24 2021

Dual Induction Calibration Report

Serial-Model: 952-828-PSI HIGH TEMP
 Surface Cal Performed:

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		m	b
Deep	167.000	835.000	0.000	255.000	mmho/m	0.455	-35.000
Medium	0.000	1348.000	142.000	255.000	mmho/m	0.325	-34.000

Microlog Calibration Report

Serial-Model: 775-778-PSIML
 Performed: (Not Performed)

	Readings		References			Results	
	Zero	Cal	Zero	Cal		m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	13000.0000	-1.5000
Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	12000.0000	-0.5000
Caliper	1.0033	1.0841	5.0000	16.5000	in	142.3500	-138.6500

Compensated Density Calibration Report

Serial-Model: 817-947-M&W
 Source / Verifier: 16955B / 2ci
 Master Calibration Performed: Mon Apr 12 21:28:06 2021
 Before Survey Verification Performed:
 After Survey Verification Performed:

Master Calibration						
	Density			Far Detector		Near Detector
Magnesium	1.755	g/cc		5708.83	5527.94	cps
Aluminum	2.680	g/cc		1049.66	3515.58	cps
	Spine Angle = 75.04			Density/Spine Ratio = 0.528		
	Size			Reading		
Small Ring	6.00	in		1.02		
Large Ring	32.00	in		1.19		
Before Survey Verification						
	Target			Measured		
		g/cc			g/cc	
		g/cc			g/cc	
		g/cc			g/cc	
After Survey Verification						
	Target			Measured		
		g/cc			g/cc	
		g/cc			g/cc	
		g/cc			g/cc	
Compensated Neutron Calibration Report						
	Serial Number:			207-MW		
	Tool Model:			M&W		
CALIBRATION						
	Detector	Readings		Target		Normalization
	Short Space	6240.00	cps	1000.00	cps	1.6025
	Long Space	460.00	cps	1000.00	cps	1.9500
PRE-SURVEY VERIFICATION						
	Detector	Readings		Measured		Target
1)	Short Space		cps			
	Long Space		cps	pu		pu
2)	Short Space		cps			
	Long Space		cps	pu		
3)	Short Space		cps			
	Long Space		cps	pu		
POST-SURVEY VERIFICATION						
	Detector	Readings		Measured		Target
1)	Short Space		cps			
	Long Space		cps	pu		pu
2)	Short Space		cps			
	Long Space		cps	pu		pu
3)	Short Space		cps			
	Long Space		cps	pu		pu

Gamma Ray Calibration Report

Serial Number:	233-M&W	
Tool Model:	M&W	
Performed:	Mon Apr 12 21:28:16 2021	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.5500	GAPI/cps



Company	Berexco LLC
Well	Fred #12
Field	Solomon
County	Ellis
State	Kansas