



DUAL INDUCTION LOG

Pioneer Energy Services

Company THOMAS GARNER, INC.
 Well SHRACK UNIT #1
 Field VAN LIEU
 County STAFFORD State KANSAS

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 Well SHRACK UNIT #1
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Location: API #: 15-185-24065-00-00
 1145' FNL & 100' FEL
 SE - SE - NE - NE
 SEC 20 TWP 24S RGE 13W
 Permanent Datum GROUND LEVEL Elevation 1922'
 Log Measured From KELLY BUSHING
 Drilling Measured From KELLY BUSHING
 Other Services
 CNL/CDL
 MEL
 Elevation
 K.B. 1933'
 D.F. N/A
 G.L. 1922'

Date	1/3/2020
Run Number	ONE
Depth Driller	4120'
Depth Logger	4120'
Bottom Logged Interval	4119'
Top Log Interval	300'
Casing Driller	8.625" @ 307'
Casing Logger	308'
Bit Size	7.875"
Type Fluid in Hole	CHEMICAL
Salinity, ppm CL	6000
Density / Viscosity	9.4 103
pH / Fluid Loss	10.5 8.8
Source of Sample	FLOWLINE
Rm @ Meas. Temp	0.65 @ 60
Rmt @ Meas. Temp	0.49 @ 60
Rmc @ Meas. Temp	0.88 @ 60
Source of Rmf / Rmc	CHARTS
Rm @ BHT	0.33 @ 117
Operating Rig Time	3 HOURS
Max Rec. Temp. F	117
Equipment Number	P-24
Location	HAYS
Recorded By	IAN MABB
Witnessed By	JOSH AUSTIN

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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.
 ST. JOHN, KS.
 HWY 281 & HWY 50, WEST 1 MILE TO SW 10TH AVE,
 SOUTH 3/8 OF A MILE & WEST INTO

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	This Log Record Was Witnessed By
Engineer: IAN MABB	Primary Witness: JOSH AUSTIN
Operator:	Secondary Witness:
Operator:	Secondary Witness:
Operator:	Secondary Witness:

Log Variables

DatabaseC:\ProgramData\Warrior\Data\thomas_garner_shrack_unit_1.db
Dataset field/well/stackmel/pass3.1/_vars_

Top - Bottom

A	BOREID in	BOTTEMP degF	CASEOD in	CASETHCK in	FLUIDDEN g/cc	M	MATRXDEN g/cc
1	7.875	100	5.5	0	1	2	2.71
NPORSEL	PERFS	SNDERR mmho/m	SNDERRM mmho/m	SPSHIFT mV	SRFTEMP degF	SZCOR	TDEPTH ft
Limestone	0	3	4	0	0	Off	4120

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
GR	44.50		GR-M&W (233-M&W)	3.00	3.50	50.00	
CNLSC CNSSC	41.40 40.65		CNT-M&W (207-MW)	5.50	3.50	100.00	
LSD DCAL SSD	32.35 32.33 31.85		CDL-M&W (817-947)	8.50	4.00	250.00	
MCAL MI MN	20.87 20.87 20.87		ML-PSI UDM ML (UDM-01) Stackable Microlog Tools	11.50	4.00	215.00	
RLL3F RLL3	15.80 15.80						
CILD	8.00			DIL-PSI HIGH TEMP (952-828)	18.50	3.50	220.00

CILM 4.70

SP 0.20

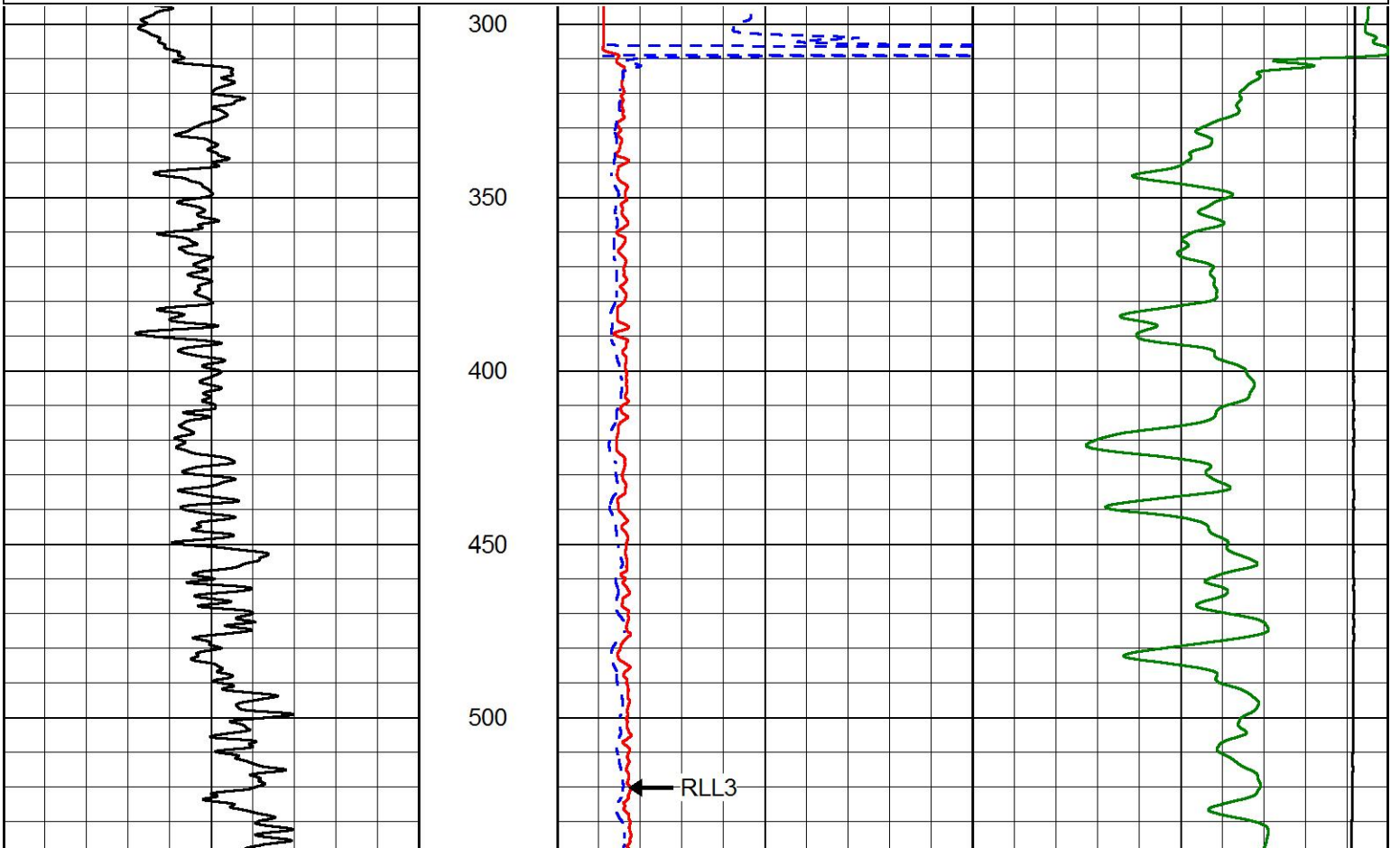
Dataset: thomas_garner_shrack_unit_1.db: field/well/stackmel/pass3.1
 Total length: 47.00 ft
 Total weight: 835.00 lb
 O.D.: 4.00 in

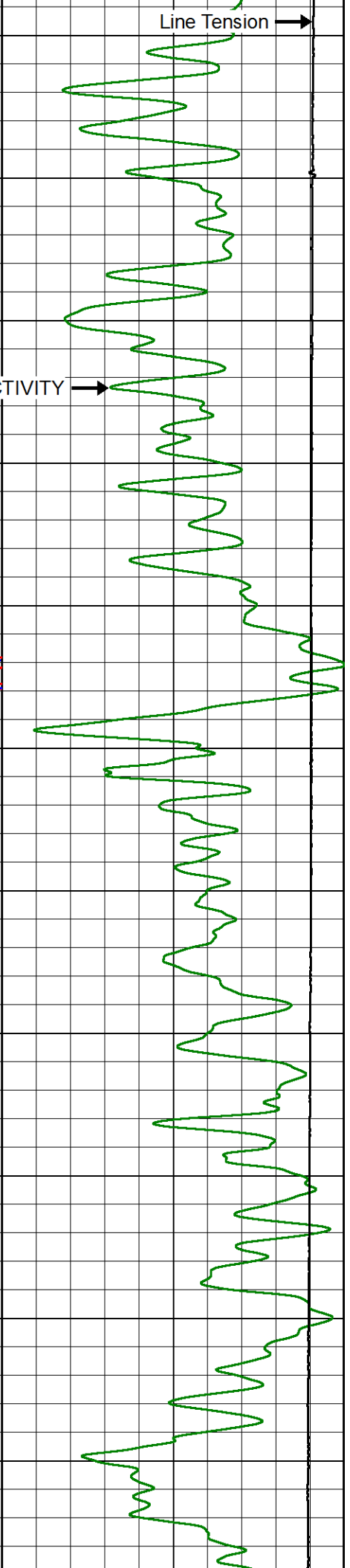
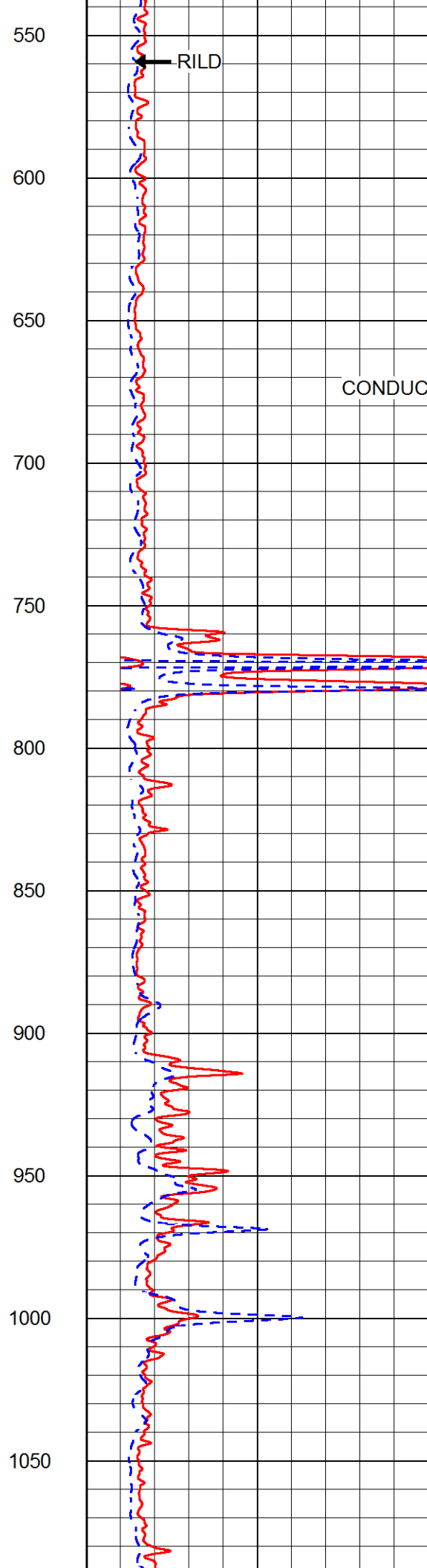
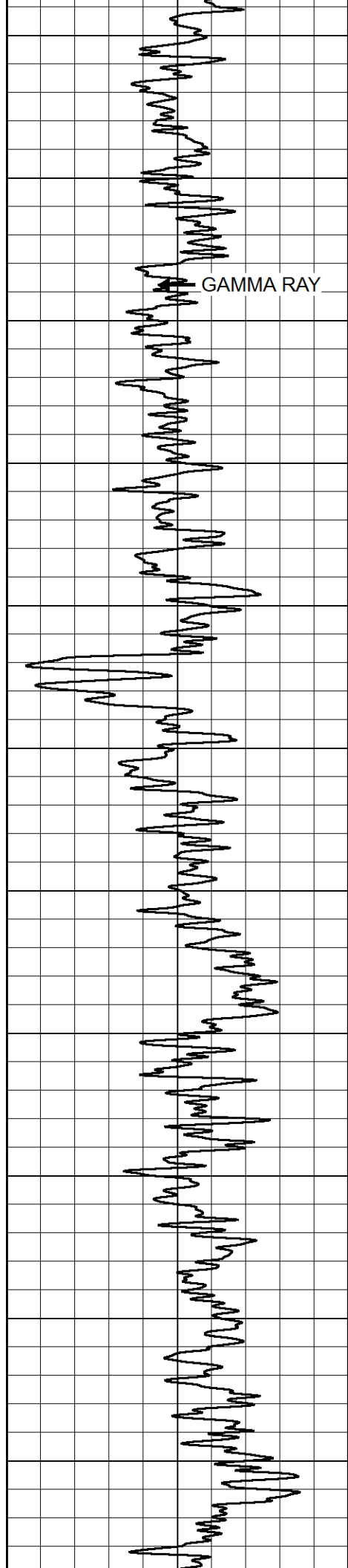


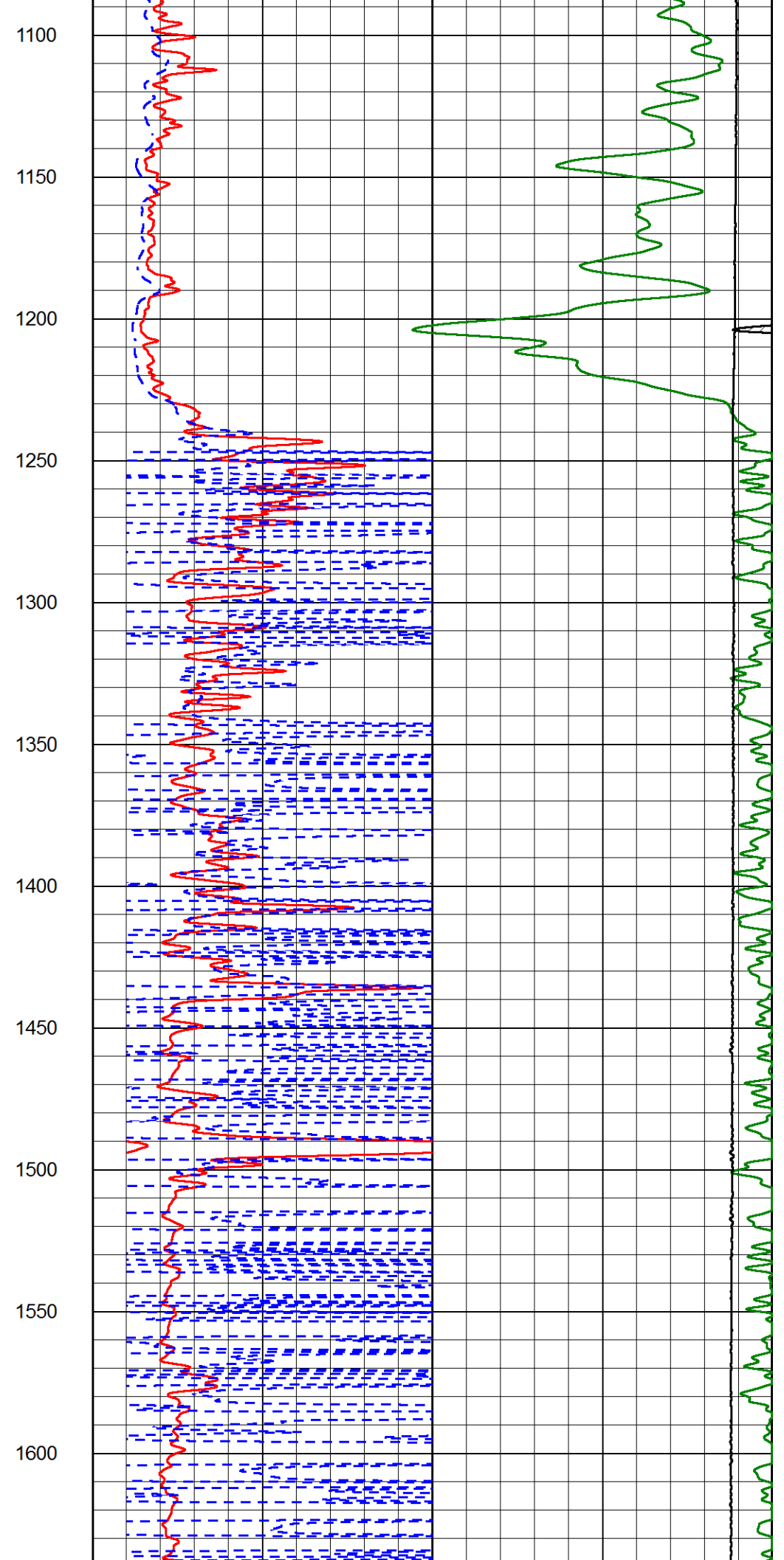
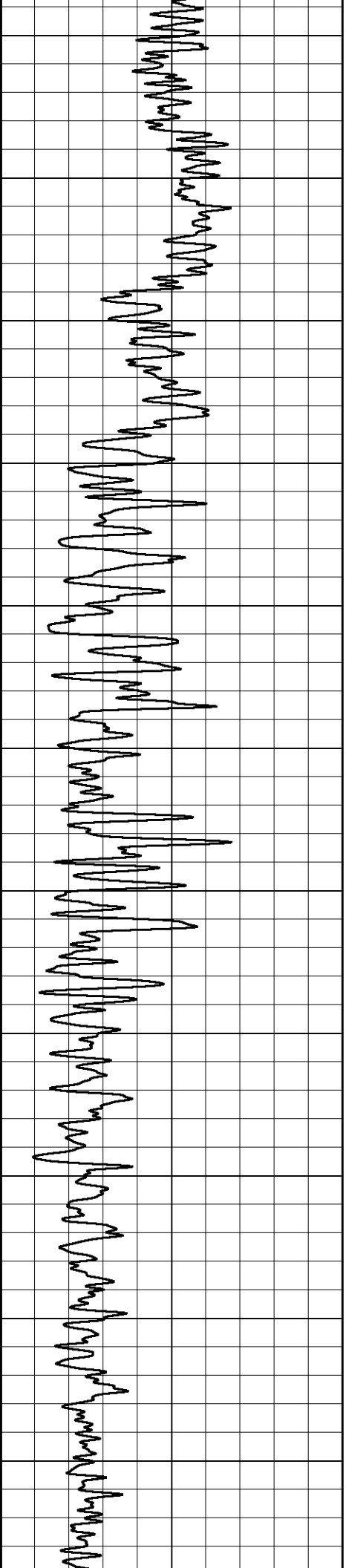
MAIN PASS

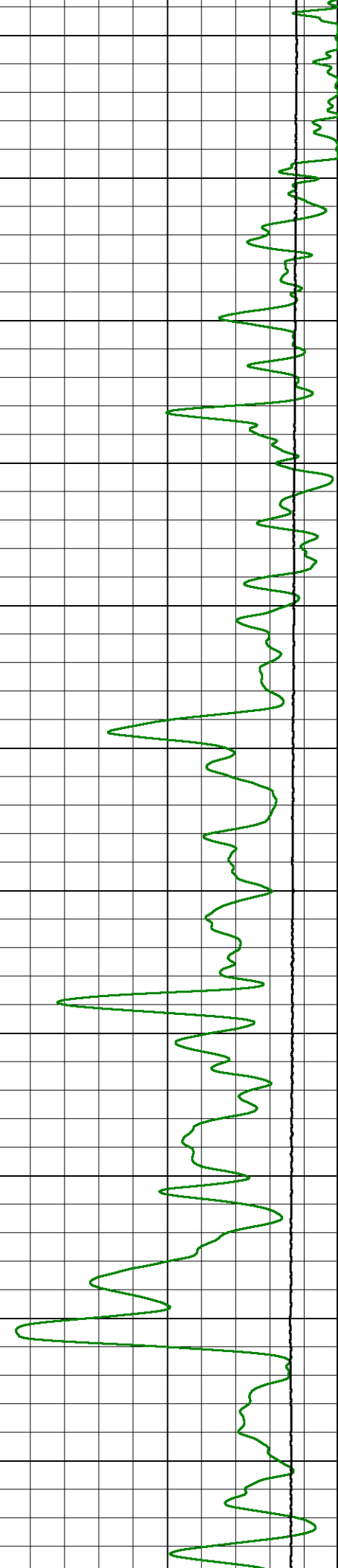
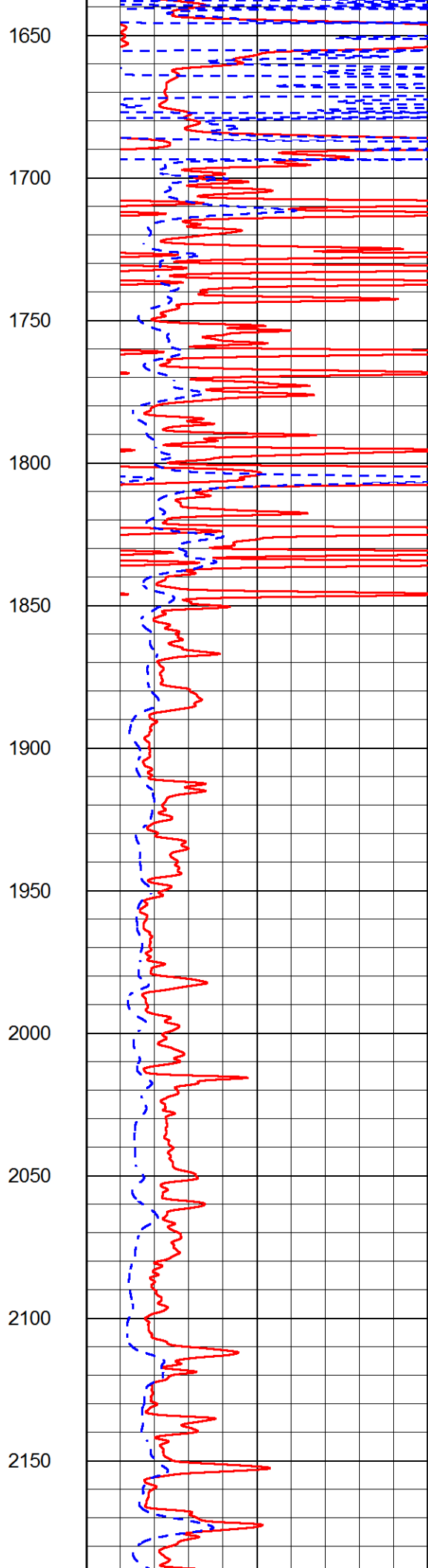
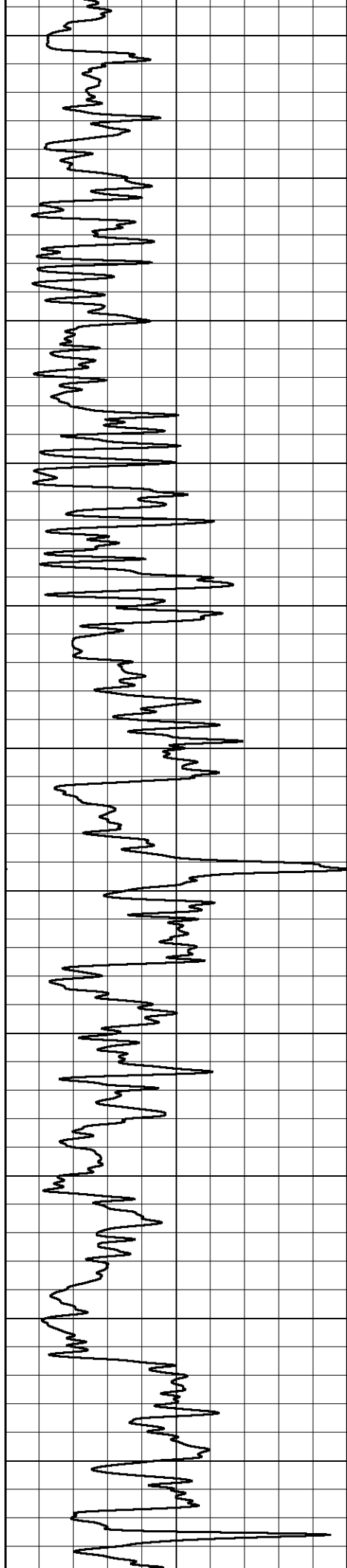
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 Dataset Pathname stackmel/pass4.1
 Presentation Format _dil2in
 Dataset Creation Fri Jan 03 04:51:18 2020
 Charted by Depth in Feet scaled 1:600

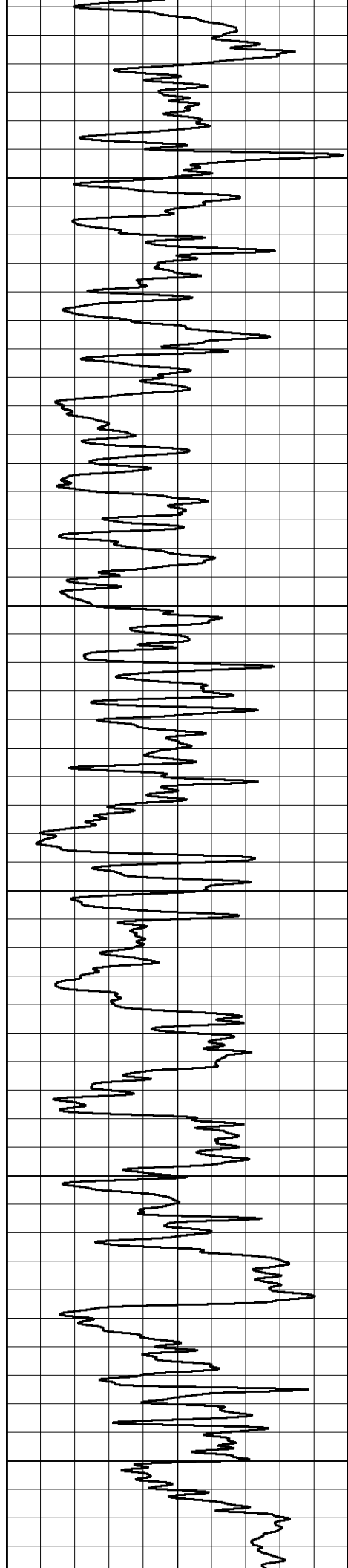
GAMMA RAY		2000	CONDUCTIVITY (mmho/m)		0	
0	(GAPI)	150				
-200	SP (mV)	0	15000	Line Tension (lb)		0
		0	RLL3 (Ohm-m)	50		
		50	RLL3 (Ohm-m)	200		
		0	RILD (Ohm-m)	50		
		50	Deep Resistivity (Ohm-m)	200		











2200

2250

2300

2350

2400

2450

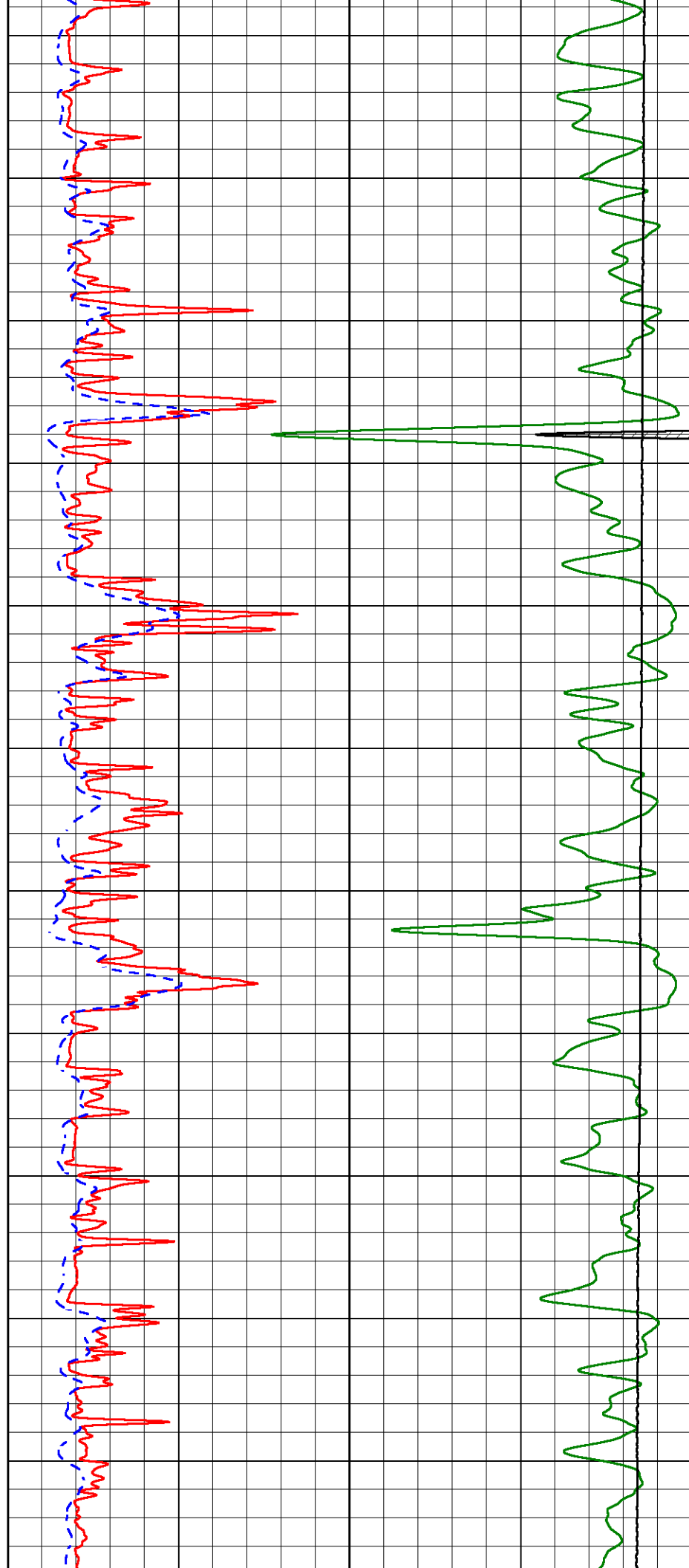
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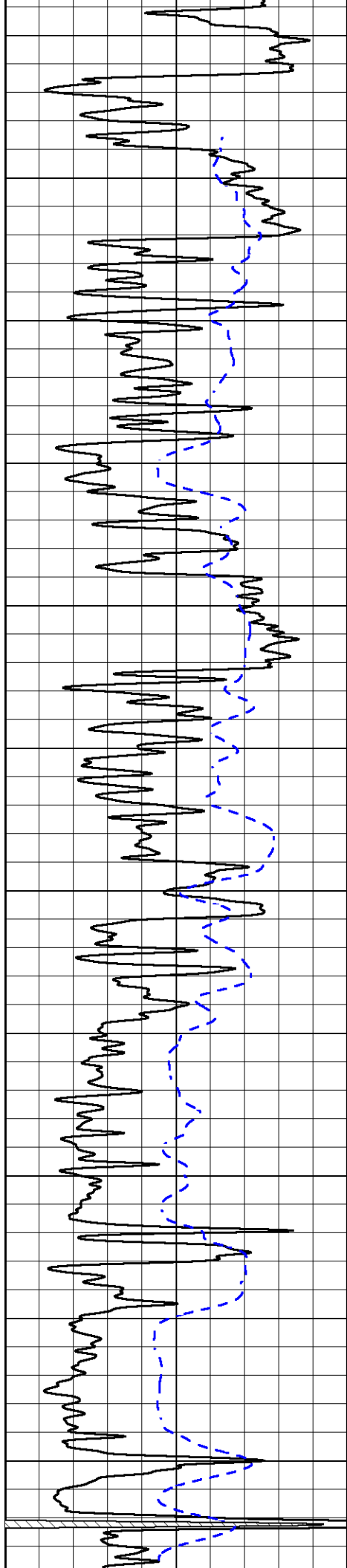
2550

2600

2650

2700





2750

2800

2850

2900

2950

3000

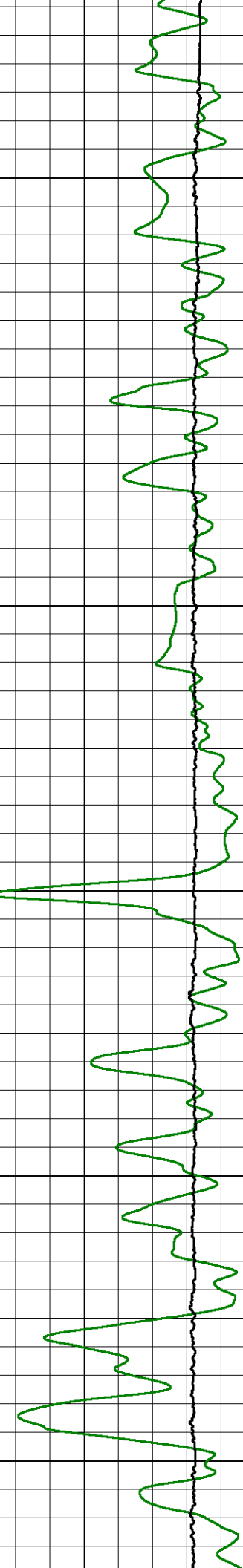
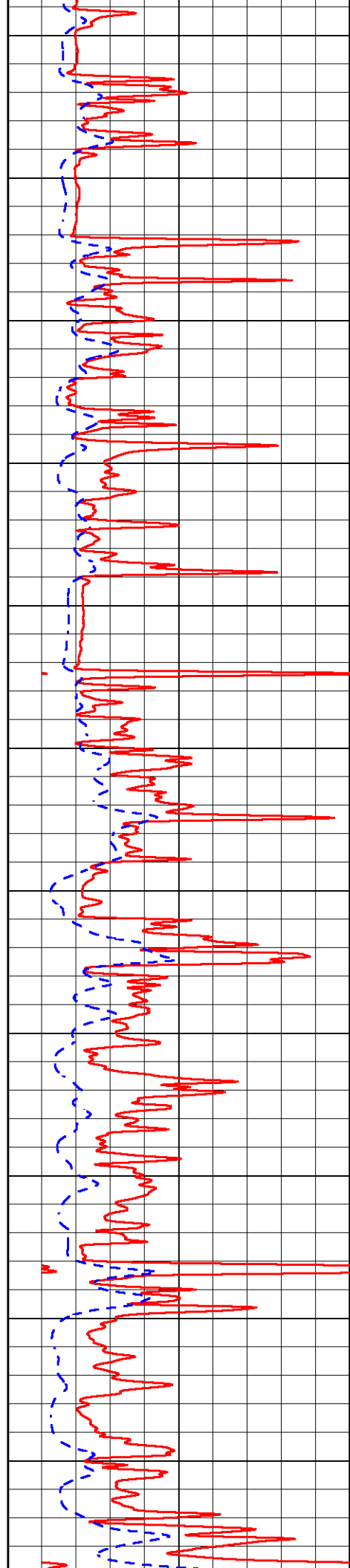
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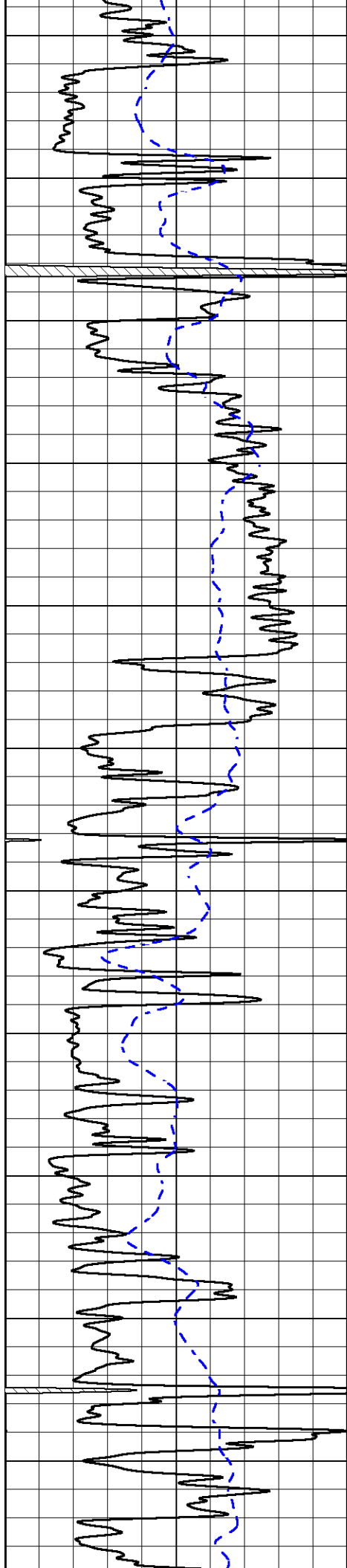
3100

3150

3200

3250





3300

3350

3400

3450

3500

3550

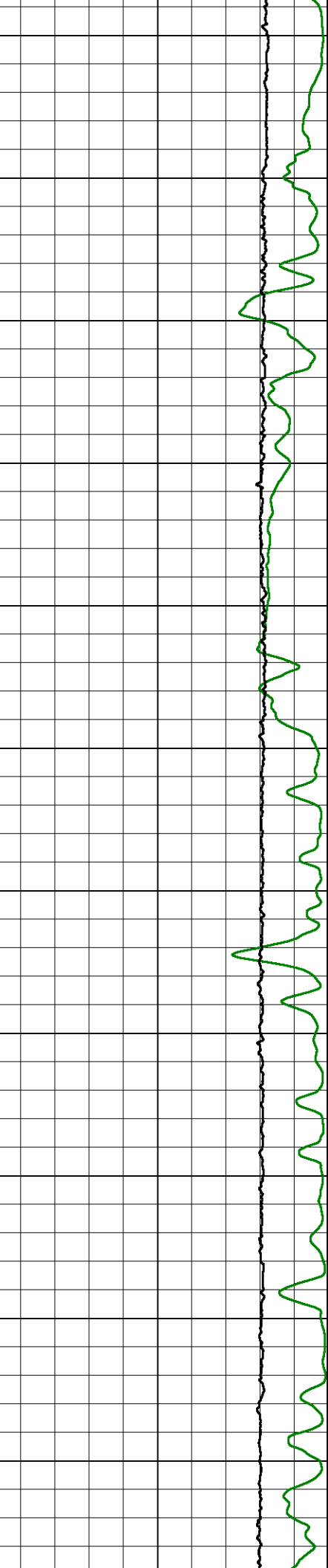
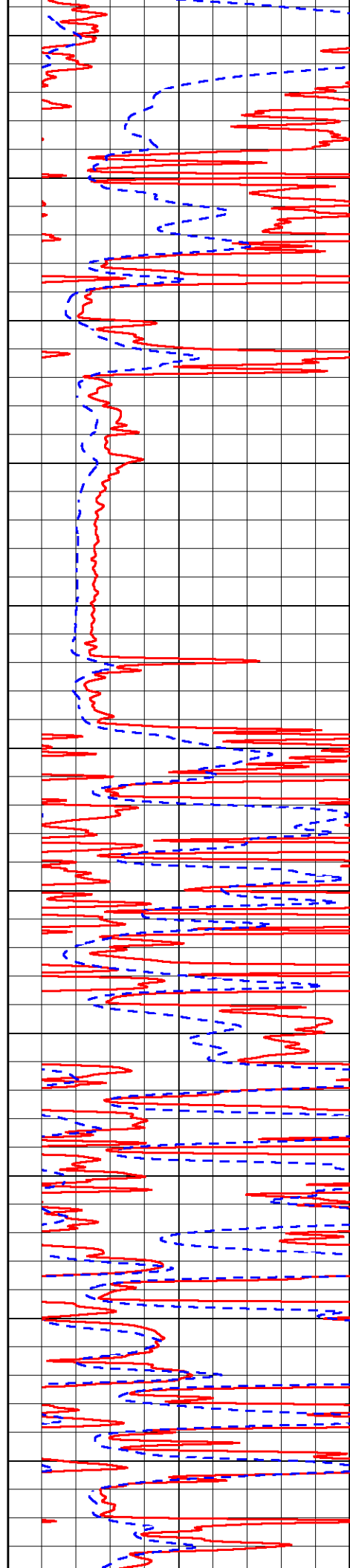
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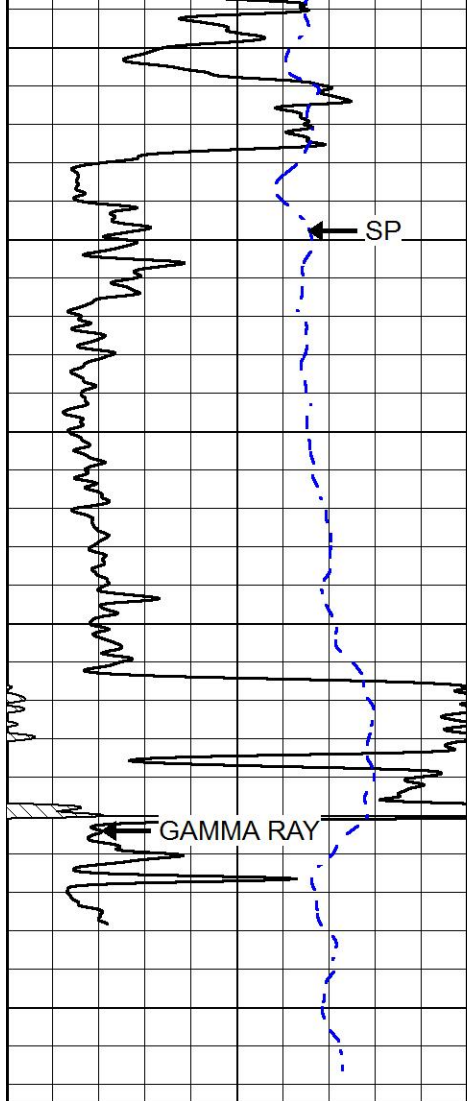
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3700

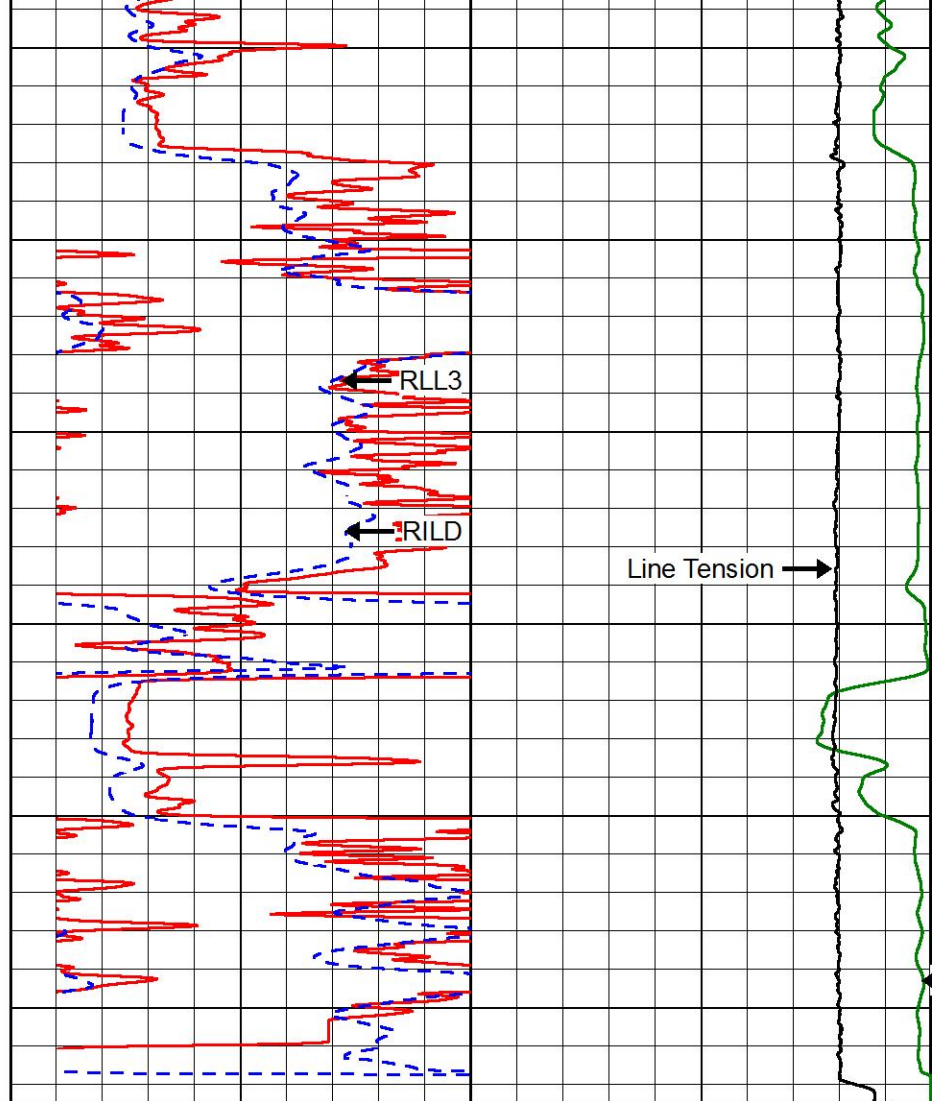
3750

3800





3850
3900
3950
4000
4050
4100



2000	CONDUCTIVITY (mmho/m)	0
15000	Line Tension (lb)	0
0	RLL3 (Ohm-m)	50
50	RLL3 (Ohm-m)	200
0	RILD (Ohm-m)	50
50	Deep Resistivity (Ohm-m)	200

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

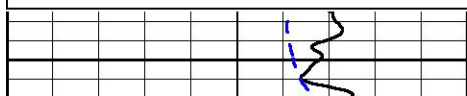


MAIN PASS

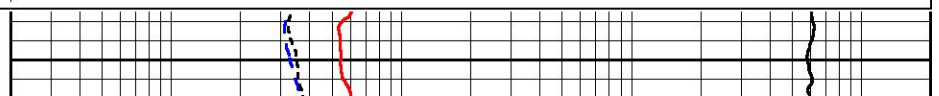
Database File	thomas_garner_shrack_unit_1.db
Dataset Pathname	stackmel/pass3.1
Presentation Format	_dil
Dataset Creation	Fri Jan 03 04:25:18 2020
Charted by	Depth in Feet scaled 1:240

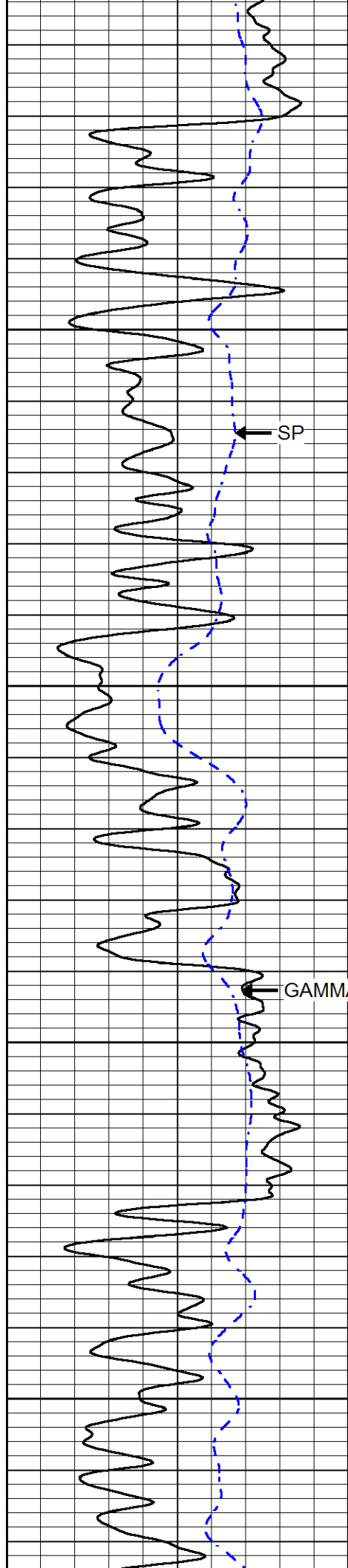
0	GAMMA RAY (GAPI)	150
-200	SP (mV)	0

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



2800





2850

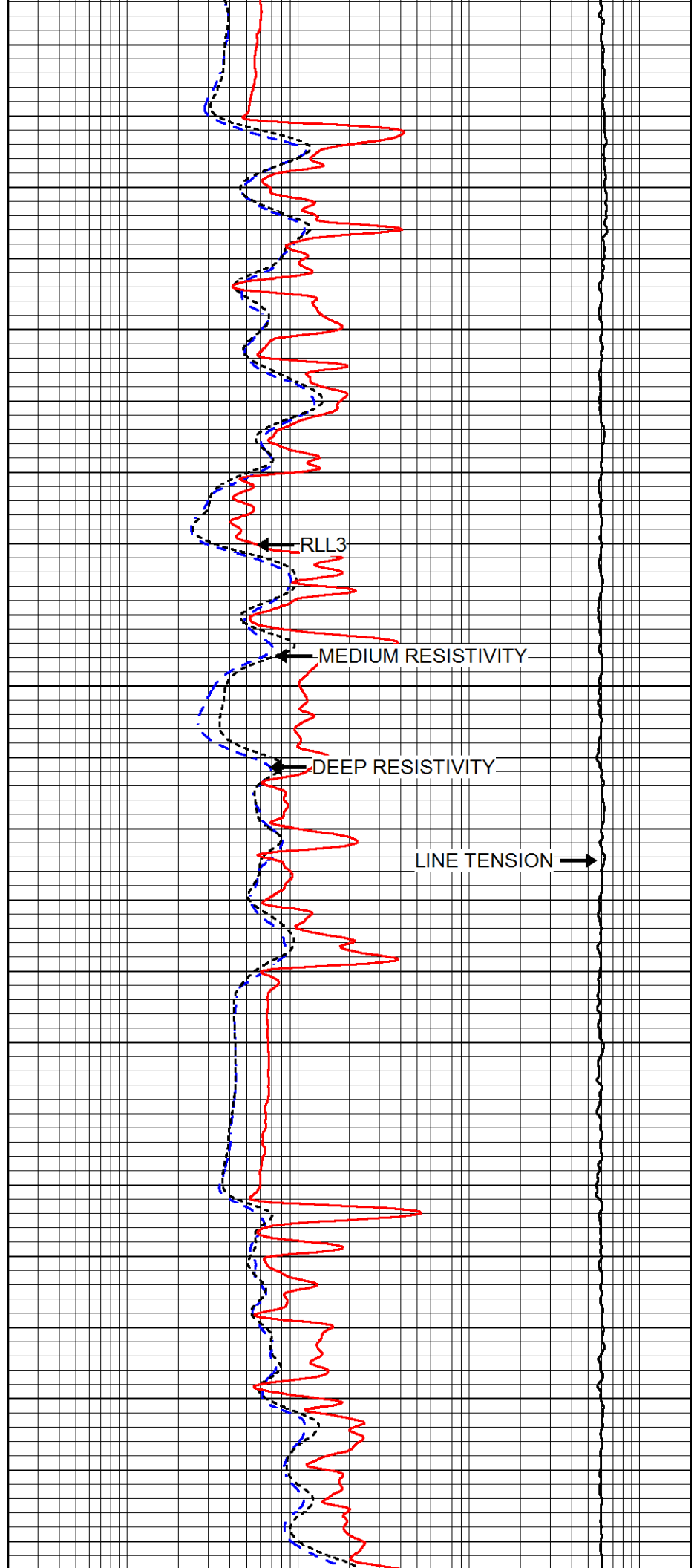
SP

2900

GAMMA RAY

2950

3000

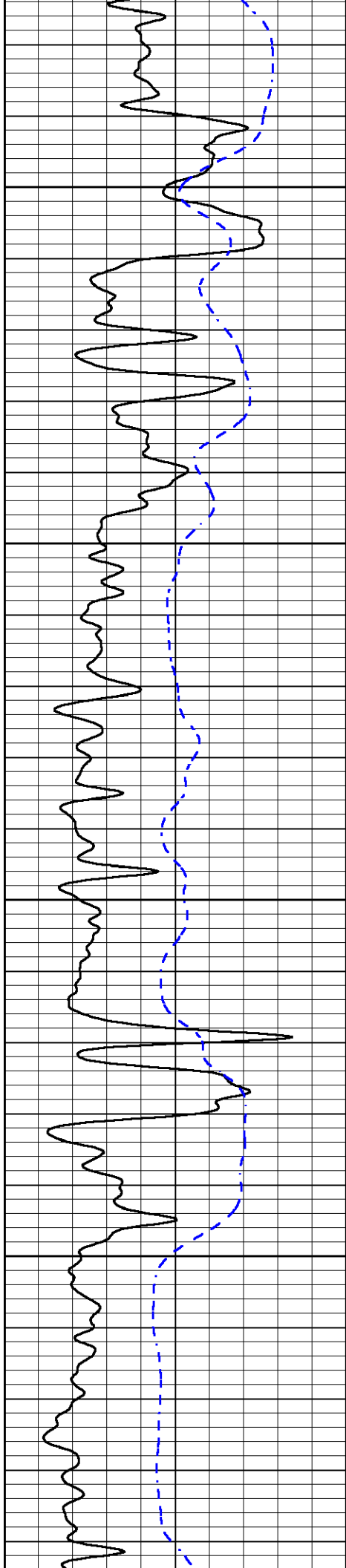


RLL3

MEDIUM RESISTIVITY

DEEP RESISTIVITY

LINE TENSION

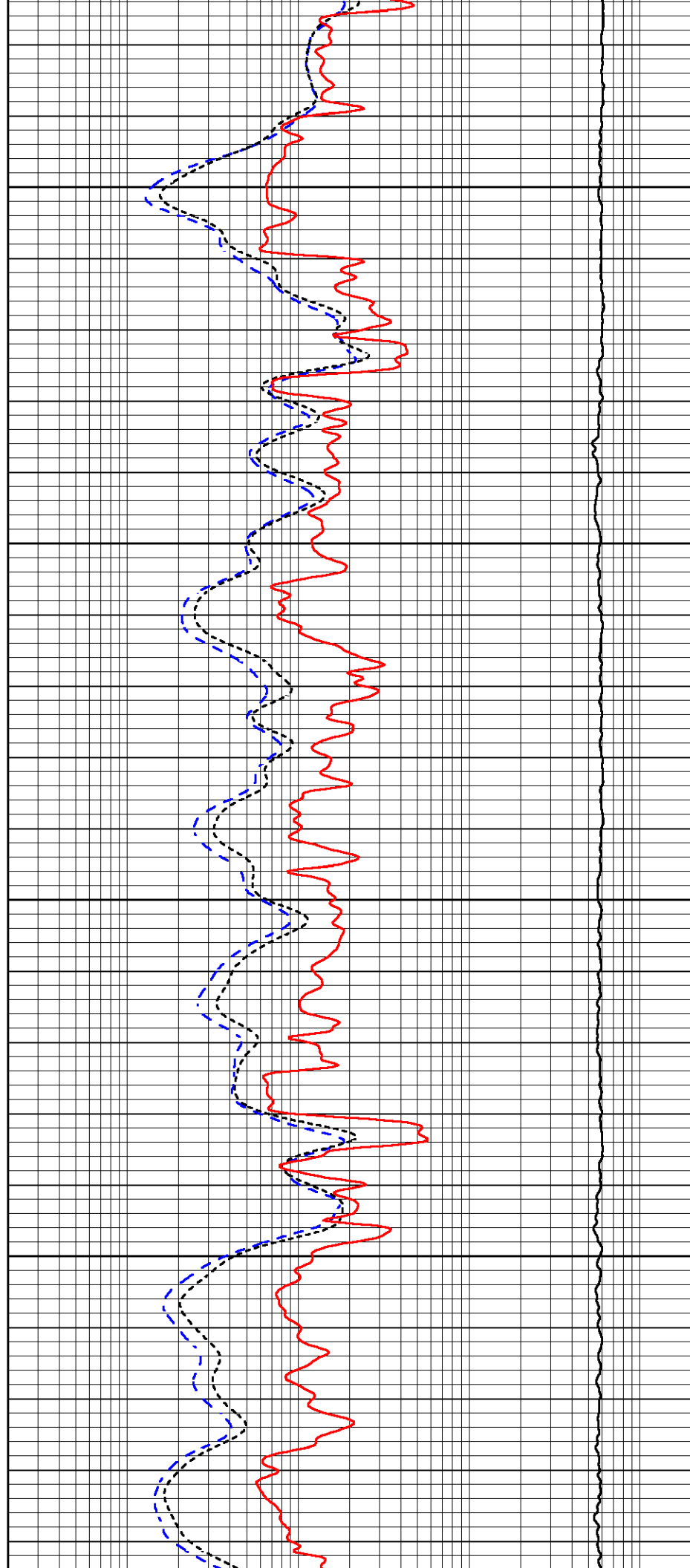


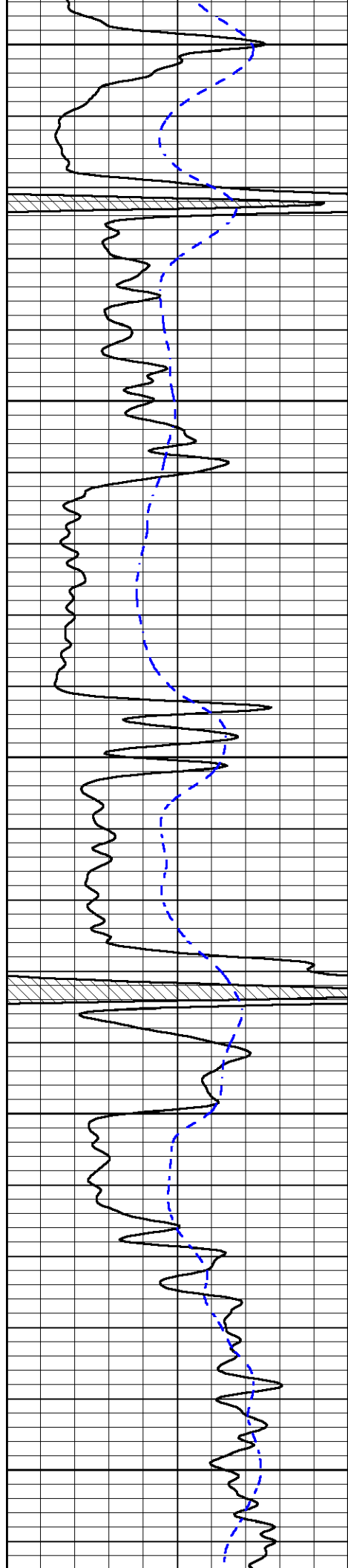
3050

3100

3150

3200





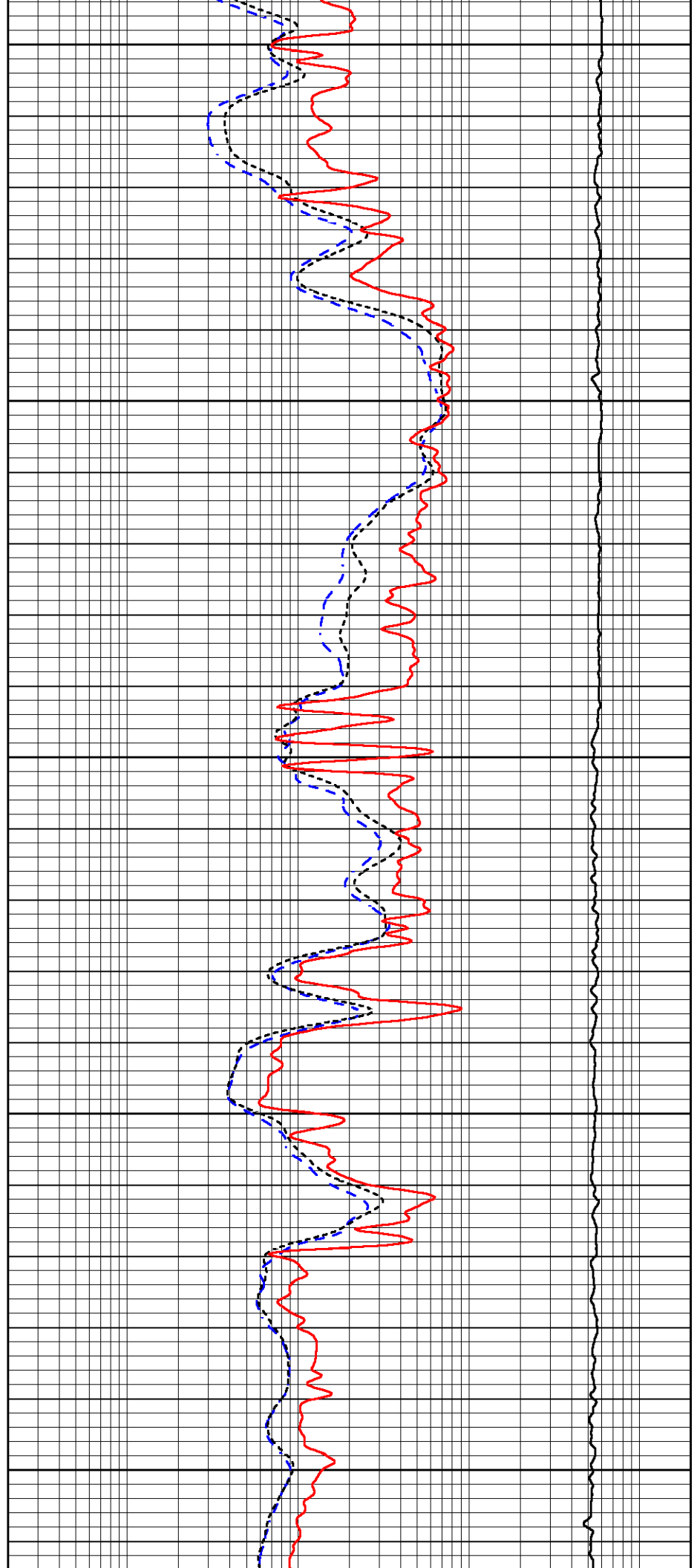
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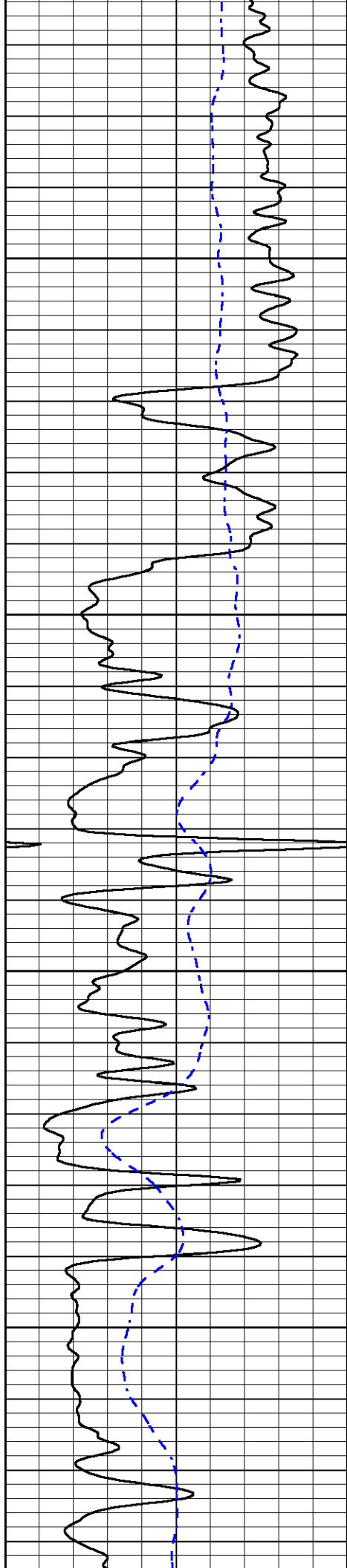
3300

3350

3400

3450



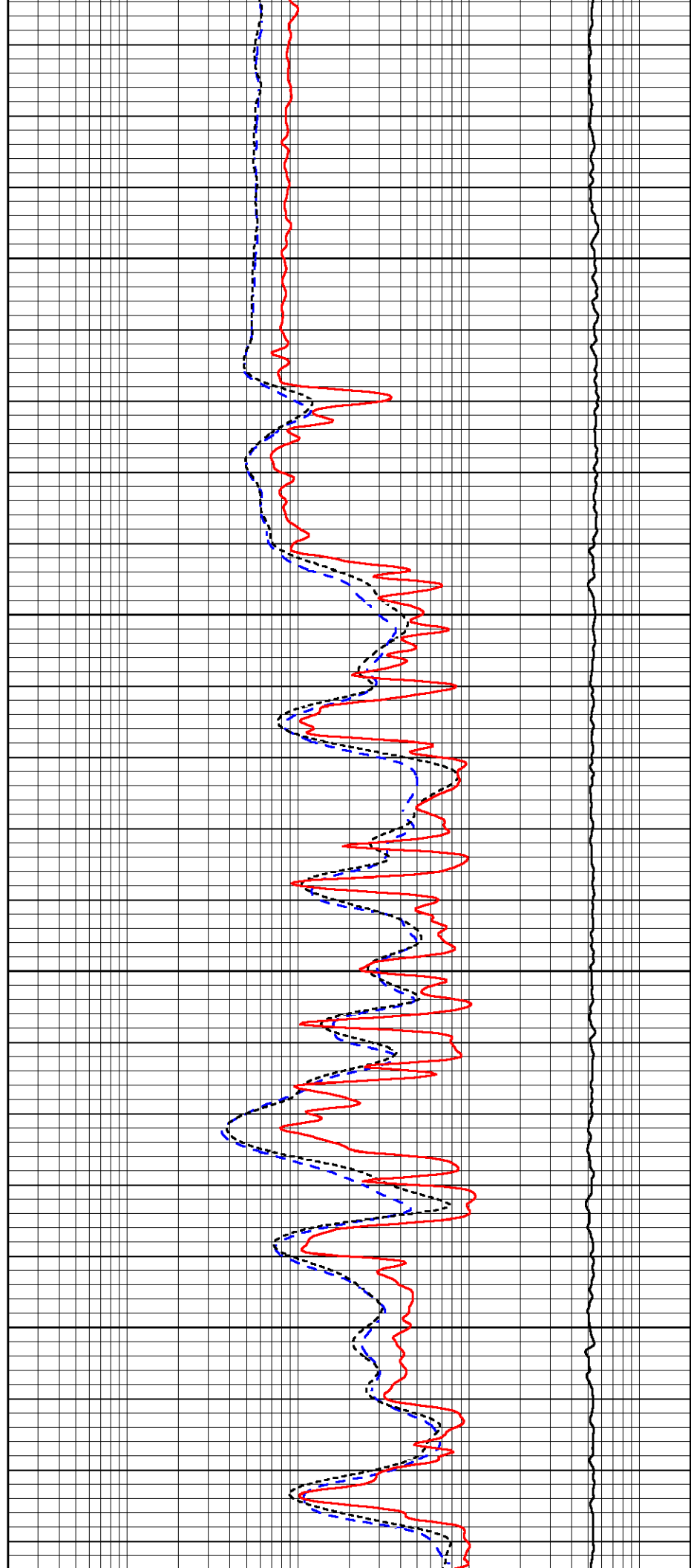


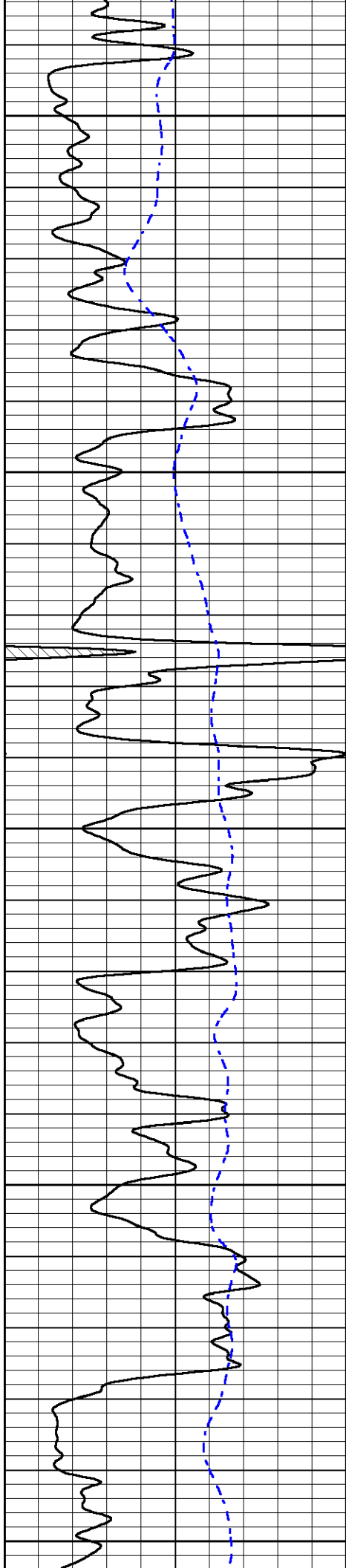
3500

3550

3600

3650





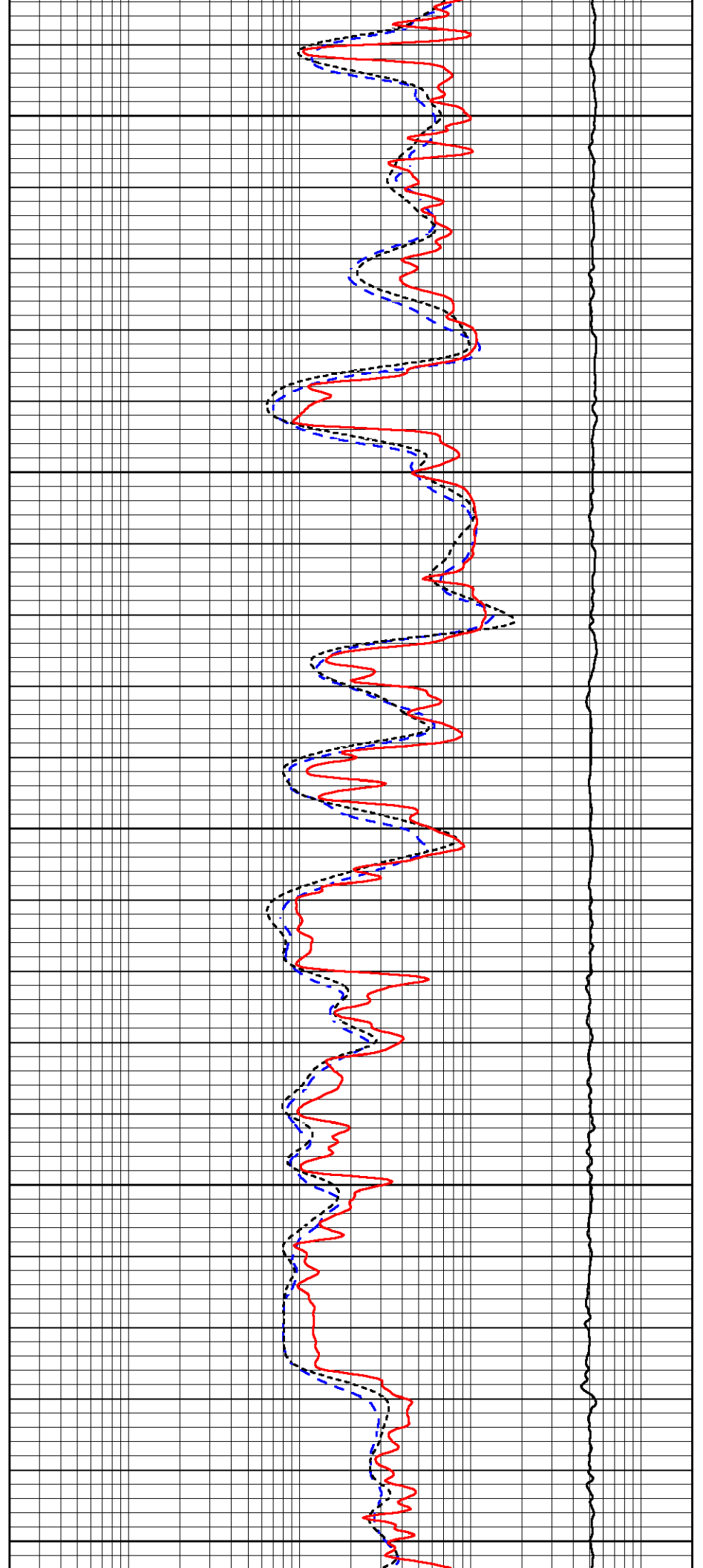
3700

3750

3800

3850

3900



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

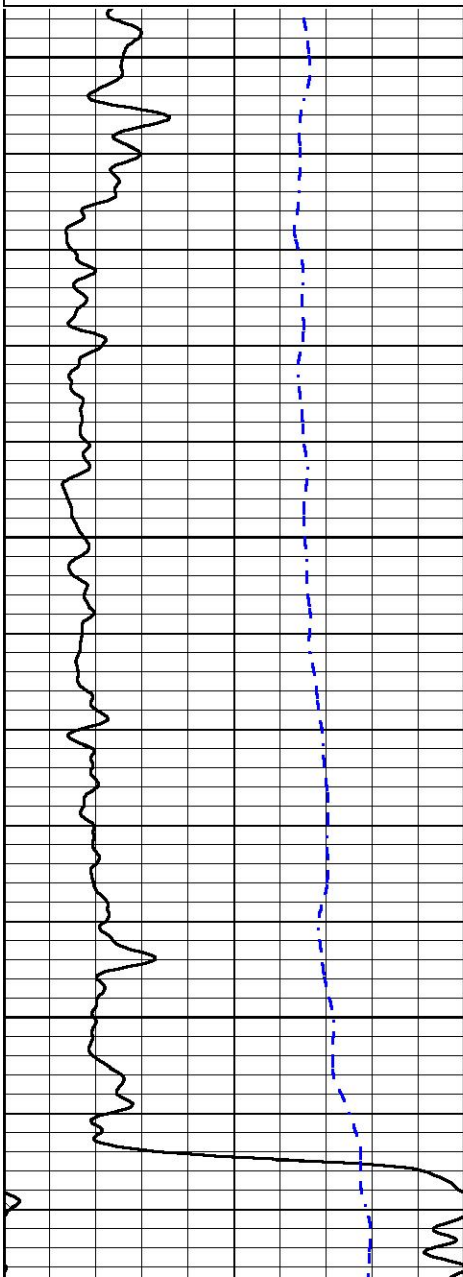


REPEAT SECTION

Database File	thomas_garner_shrack_unit_1.db
Dataset Pathname	stackmel/pass2.1
Presentation Format	_dil
Dataset Creation	Fri Jan 03 04:33:17 2020
Charted by	Depth in Feet scaled 1:240

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

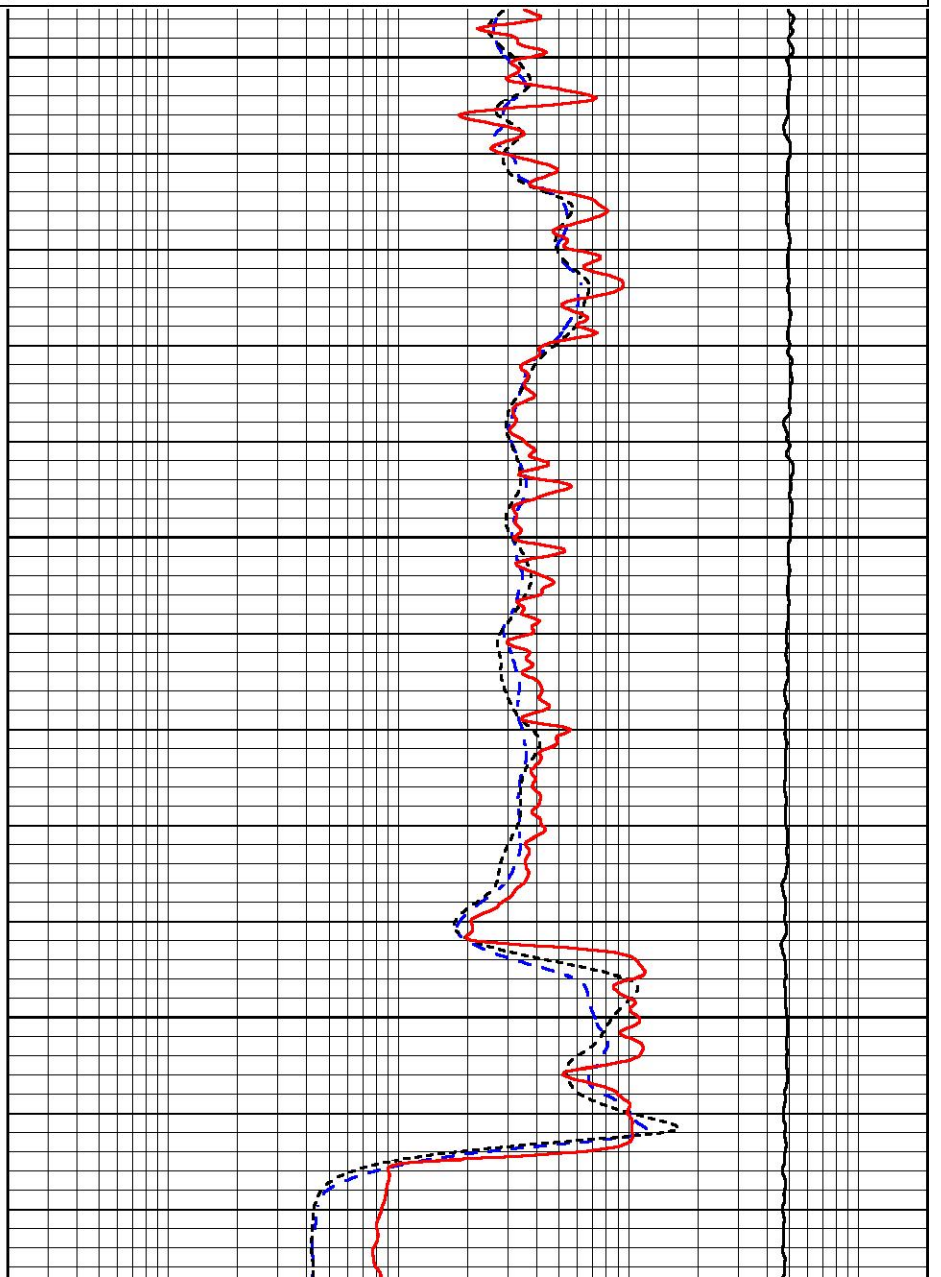
0.2	DEEP RESISTIVITY (Ohm-m)	2000
0.2	MEDIUM RESISTIVITY (Ohm-m)	2000
0.2	RLL3 (Ohm-m)	2000
10000	LINE TENSION (lb)	0

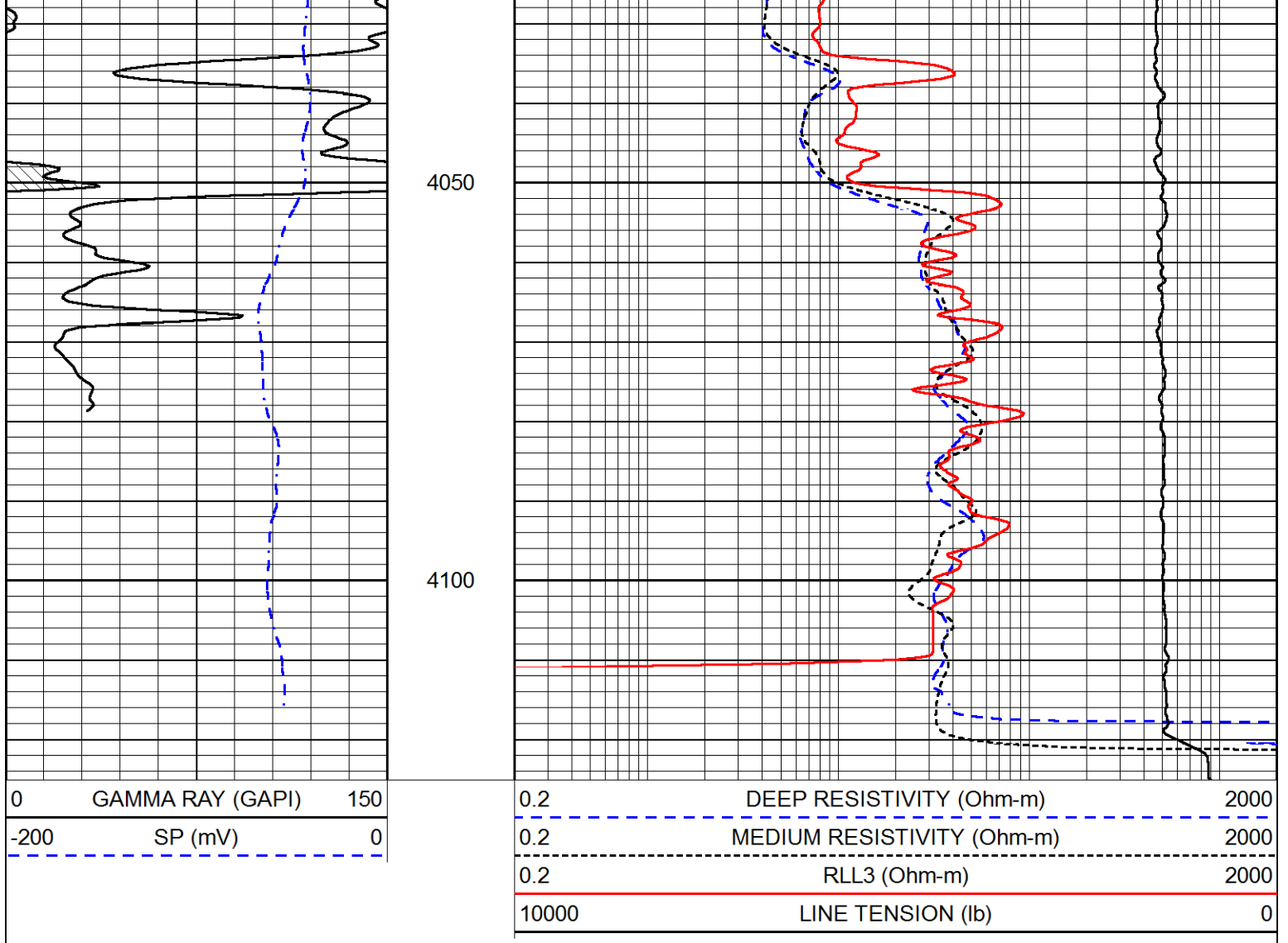


3900

3950

4000





Calibration Report

Database File thomas_garner_shrack_unit_1.db
 Dataset Pathname stackmel/pass3.1
 Dataset Creation Fri Jan 03 04:25:18 2020

Dual Induction Calibration Report

Serial-Model: 952-828-PSI HIGH TEMP
 Calibration Performed: Wed Oct 09 13:38:53 2019

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop	mmho/m	Gain	Offset
Deep	167.000	835.000	0.000	255.000	mmho/m	0.400	-27.500
Medium	0.000	1348.000	142.000	255.000	mmho/m	0.275	-27.000

Microlog Calibration Report

Serial-Model: UDM-01-PSI UDM ML
 Performed: (Not Performed)

	Readings		References			Results	
	Zero	Cal	Zero	Cal	Ohm-m	m	b
Normal	0.0000	1.0000	0.0000	1.0000	Ohm-m	32000.0000	0.5000

Inverse	0.0000	1.0000	0.0000	1.0000	Ohm-m	32000.0000	0.5000
Caliper	0.0000	1.0000	0.0000	1.0000	in	6.2000	0.0000

Compensated Density Calibration Report

Serial-Model:	817-947-M&W
Source / Verifier:	16955B / 2ci
Master Calibration Performed:	Tue Sep 24 21:18:50 2019

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	6127.15	5922.31	cps
Aluminum	2.680	g/cc	1141.85	3762.09	cps
Spine Angle = 74.89			Density/Spine Ratio = 0.532		
	Size		Reading		
Small Ring	4.50	in	1.02		
Large Ring	15.00	in	1.34		

Compensated Neutron Calibration Report

Serial Number:	207-MW
Tool Model:	M&W
Calibration Performed:	WED FEB 13 10:30:30 2019

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:	233-M&W	
Tool Model:	M&W	
Calibration Performed:	Fri Feb 07 01:42:40 2014	
Calibrator Value:	1.0	GAPI
Background Reading:	0.0	cps
Calibrator Reading:	1.0	cps
Sensitivity:	0.5500	GAPI/cps



Company	THOMAS GARNER, INC.
Well	SHRACK UNIT #1
Field	VAN LIEU
County	STAFFORD
State	KANSAS