



PIONEER
Pioneer Energy Services

DUAL INDUCTION LOG

Company CHOLLA PRODUCTION, LLC		Company CHOLLA PRODUCTION, LLC	
Well	SCHLEGEL # 1-4	Well	SCHLEGEL # 1-4
Field	WILDCAT	Field	WILDCAT
County	NESS	County	NESS
State	KANSAS	State	KANSAS
Location: API #: 15-135-26054-00-00		Other Services	
1080' FNL & 510' FEL		CNL/CDL MEL/BHCS	
SEC 4 TWP 20S RGE 25W			
Permanent Datum	GROUND LEVEL	Elevation	2416'
Log Measured From	KELLY BUSHING	K.B.	2423'
Drilling Measured From	KELLY BUSHING	D.F.	N/A
		G.L.	2416'
Date	7/10/2019		
Run Number	ONE		
Depth Driller	4520'		
Depth Logger	4518'		
Bottom Logged Interval	4517'		
Top Log Interval	250'		
Casing Driller	8.625" @ 260'		
Casing Logger	263'		
Bit Size	7.875"		
Type Fluid in Hole	CHEMICAL		
Salinity, ppm CL	6000		
Density / Viscosity	9.5 48		
pH / Fluid Loss	8.0 9.6		
Source of Sample	FLOWLINE		
Rm @ Meas. Temp	.55 @ 79		
Rmt @ Meas. Temp	.41 @ 79		
Rmc @ Meas. Temp	.74 @ 79		
Source of Rmt / Rmc	CHARTS		
Rm @ BHT	.36 @ 121		
Operating Rig Time	4 HOURS		
Max Rec. Temp. F	121 DEGF		
Equipment Number	P-108		
Location	HAYS		
Recorded By	J. HENRICKSON		
Witnessed By	CLAYTON ERICKSON		

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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.

NESS CITY, KANSAS
WEST TO J ROAD, 8 SOUTH, 1 WEST, SOUTH INTO

Log Measured From: KELLY BUSHING 7 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: CLAYTON ERICKSON
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

A 1	BOREID in 7.875	BOTTEMP degF 121	CASEOD in 5.5	CASETHCK in 0	FLUIDDEN g/cc 1	M 2	MATRXDEN g/cc 2.71
NPORSEL Limestone	PERFS 0	SNDERR mmho/m 0	SNDERRM mmho/m 0	SPSHIFT mV 130	SRFTEMP degF 62	SZCOR Off	TDEPTH ft 4518

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 20.83 20.35			CDL-M&W (144-84)	8.50	4.00	250.00
RLL3 RLL3F	15.80 15.79			DIL-M&W (PSI 988)	18.50	3.50	220.00
CILD	8.00						

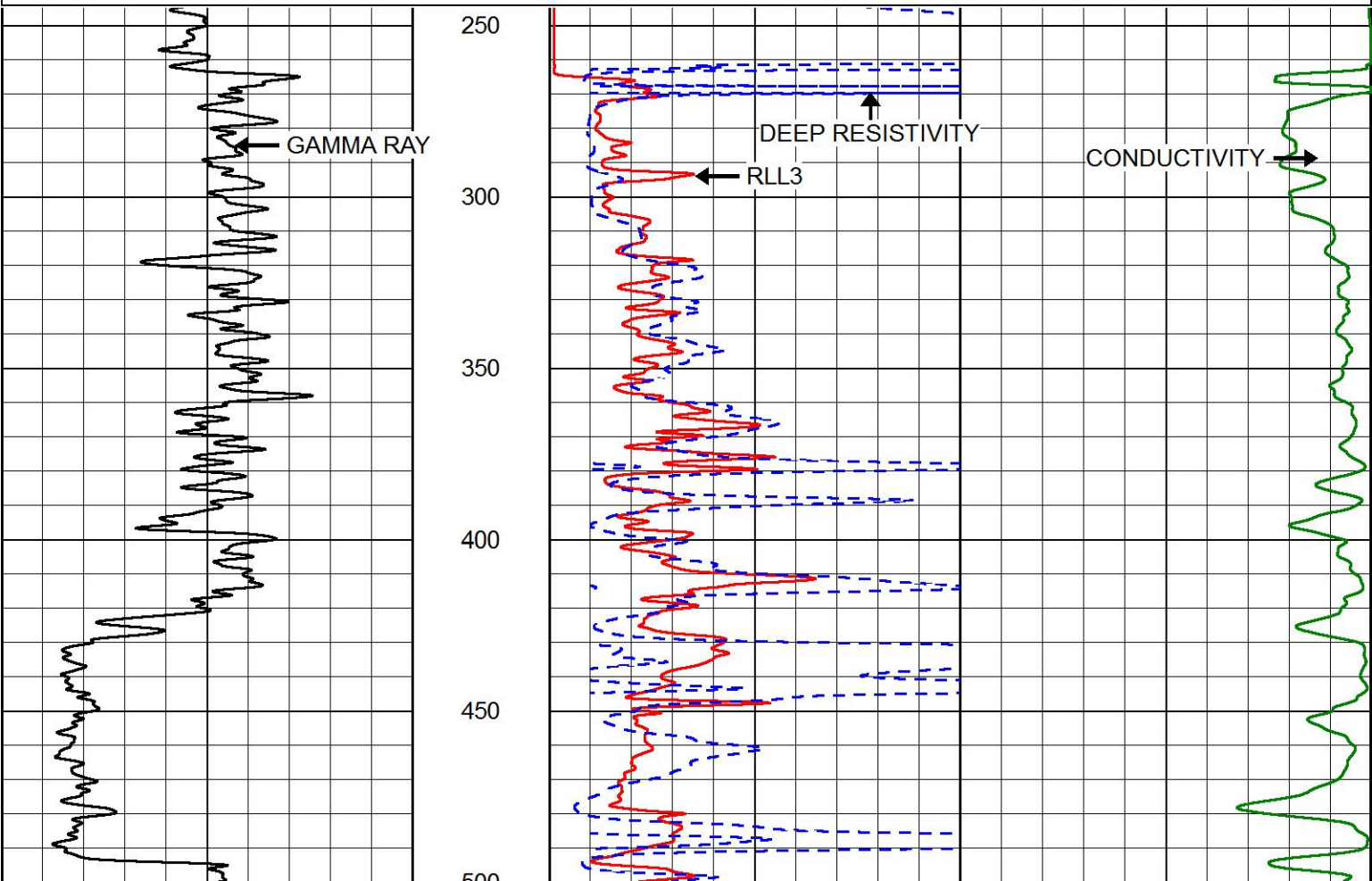
CILM	4.70								
SP	0.20								
Dataset: cholla_schlegel_1_4.db: field/well/stack/pass3.1 Total length: 35.50 ft Total weight: 620.00 lb O.D.: 4.00 in									



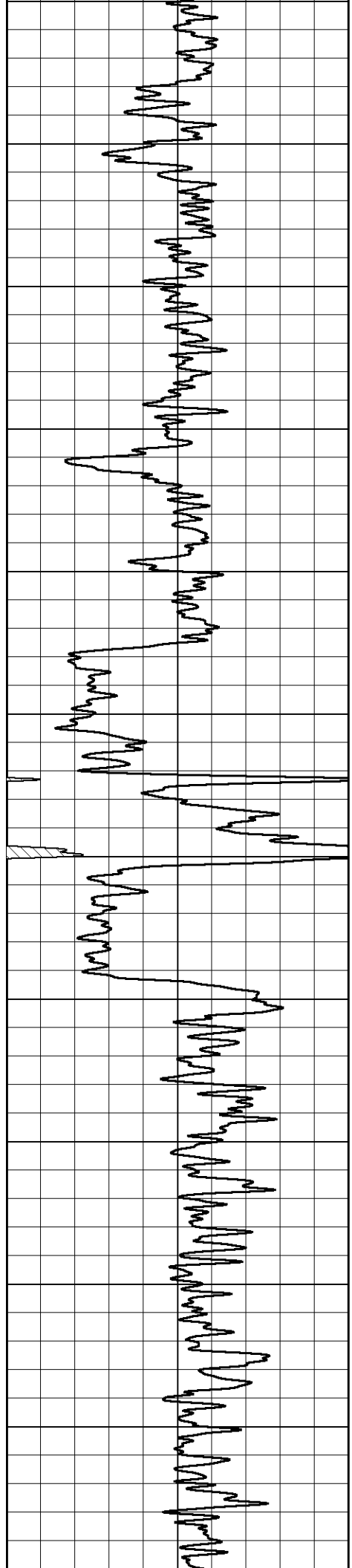
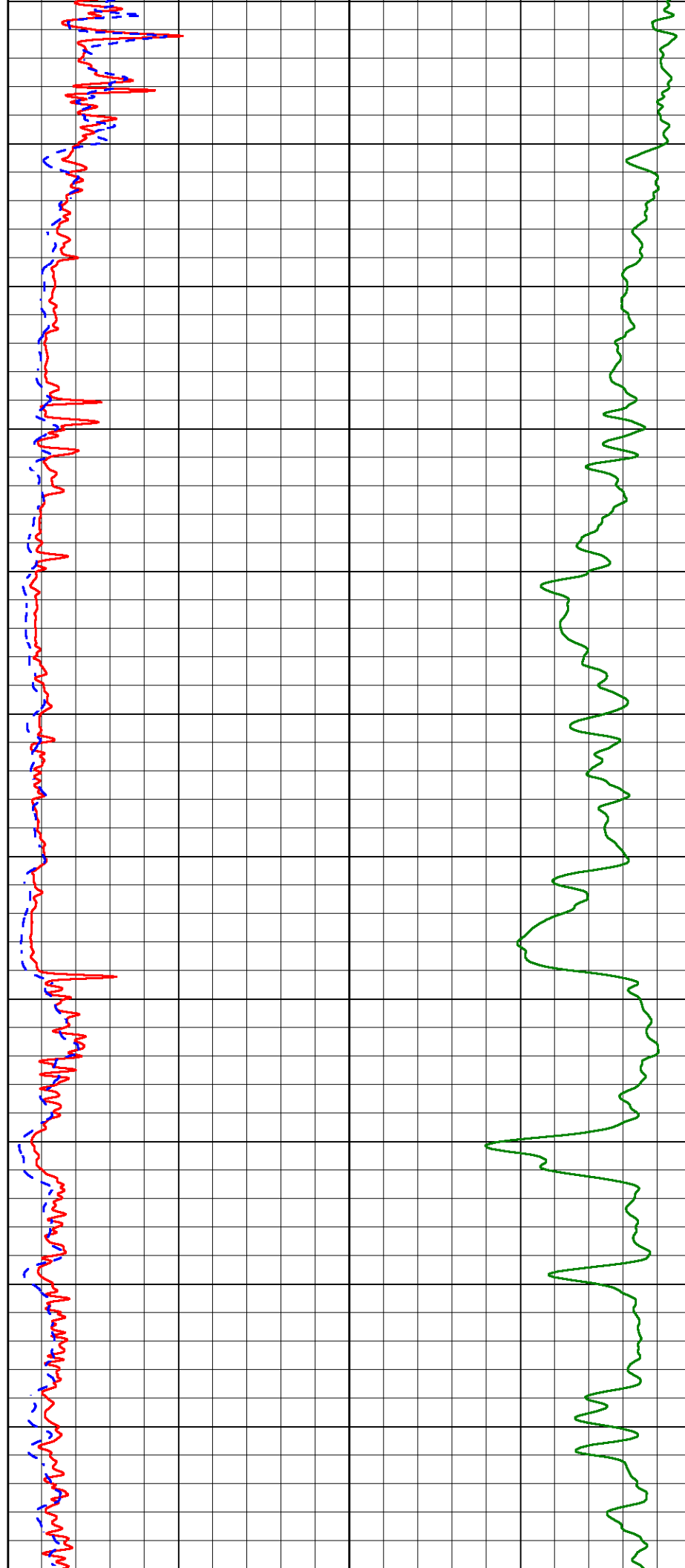
MAIN PASS

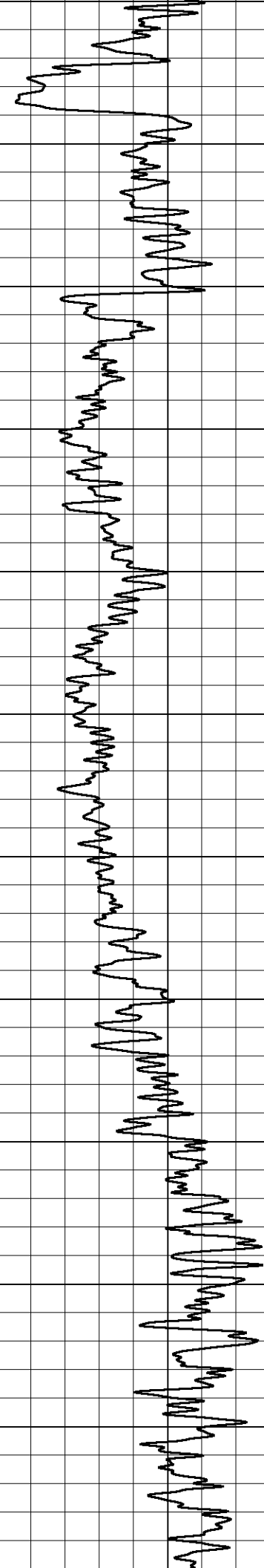
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Dataset Pathname	stack/pass3.1
Presentation Format	dil2in
Dataset Creation	Wed Jul 10 03:24:34 2019
Charted by	Depth in Feet scaled 1:600

0	GAMMA RAY (GAPI)	150	2000	CILD (mmho/m)	0
0	RLL3 (Ohm-m)	50			
0	DEEP RESISTIVITY (Ohm-m)	50			
50	RLL3 (Ohm-m)	200			
50	RILD (Ohm-m)	200			

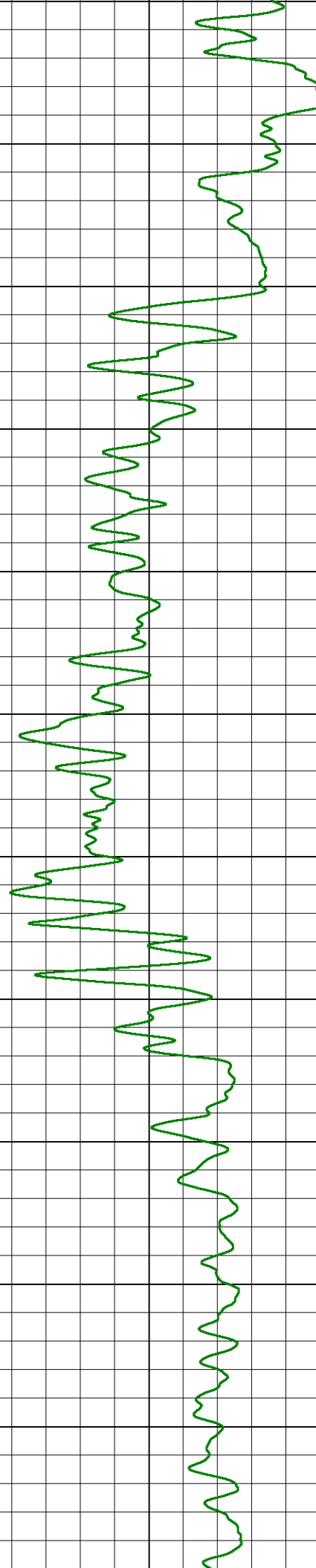
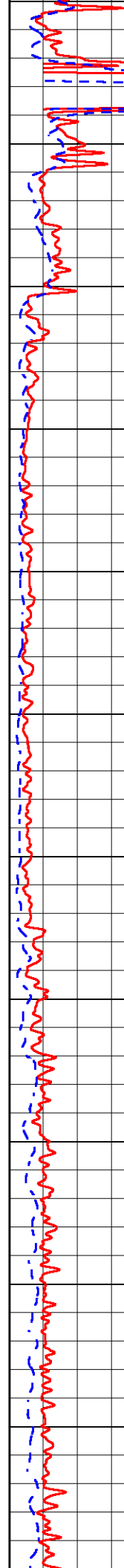


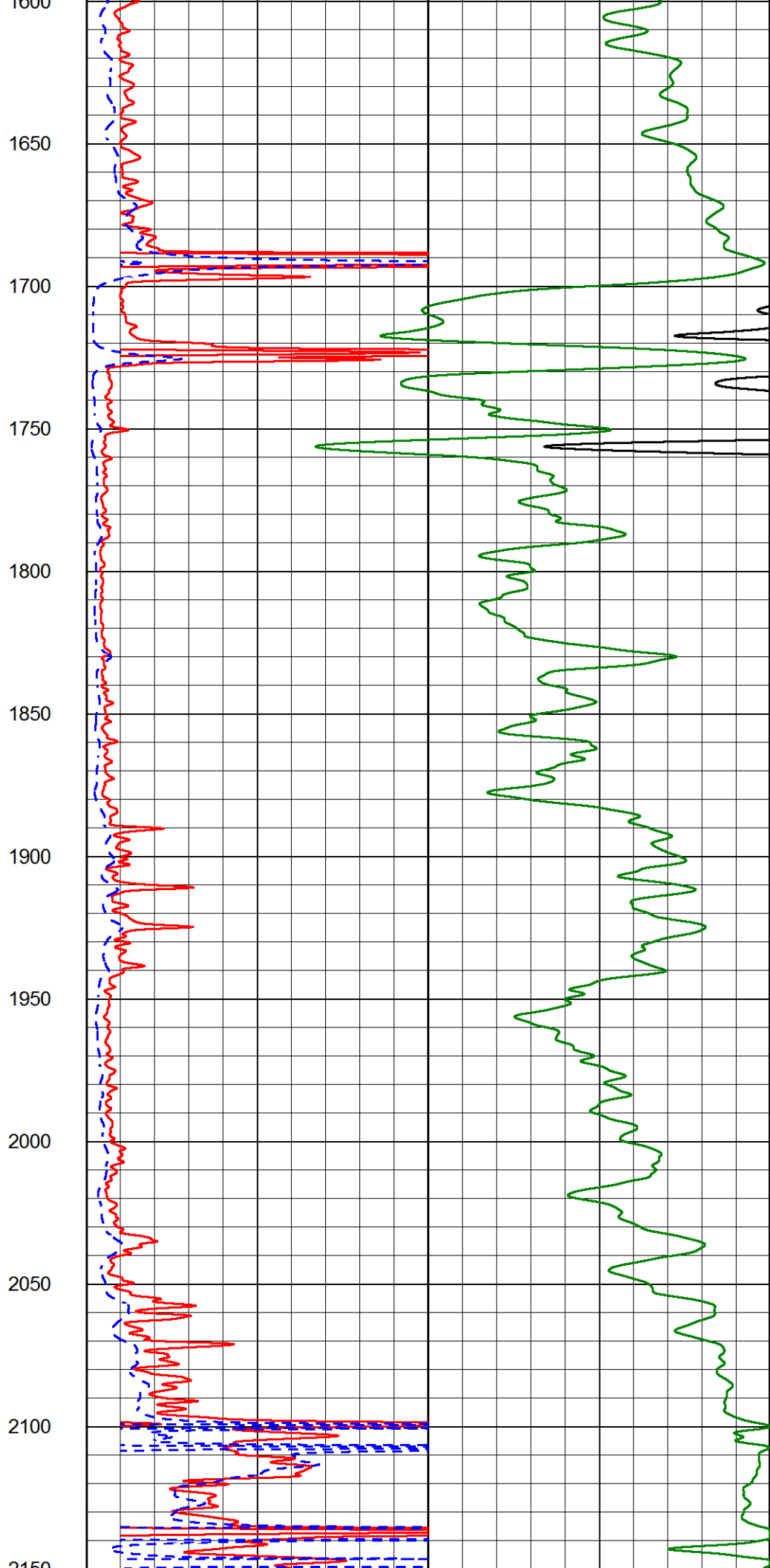
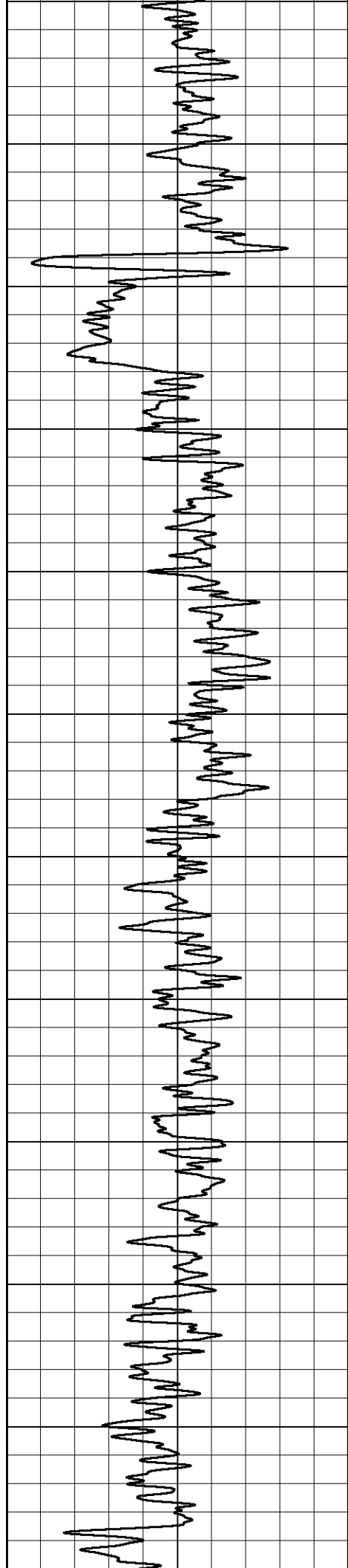
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550
600
650
700
750
800
850
900
950
1000
1050

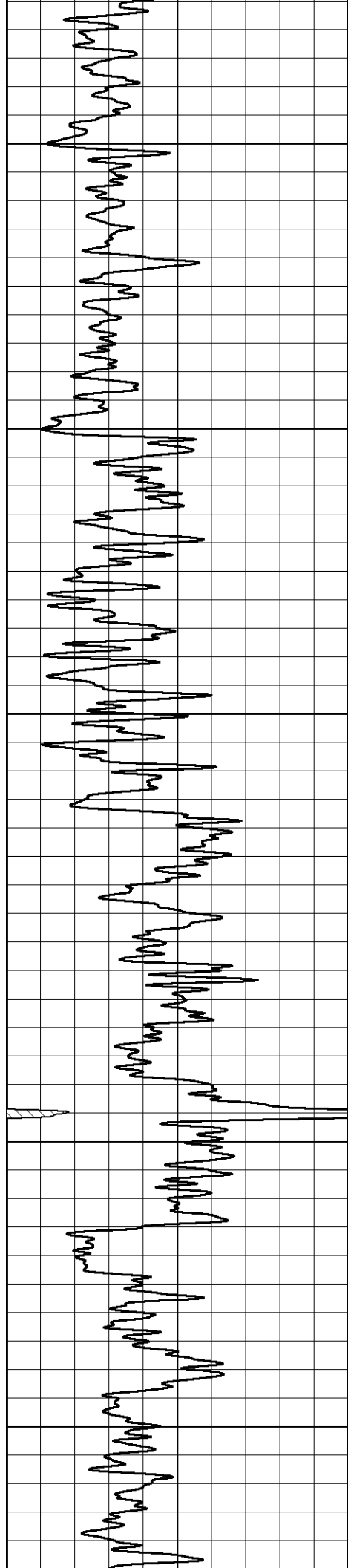




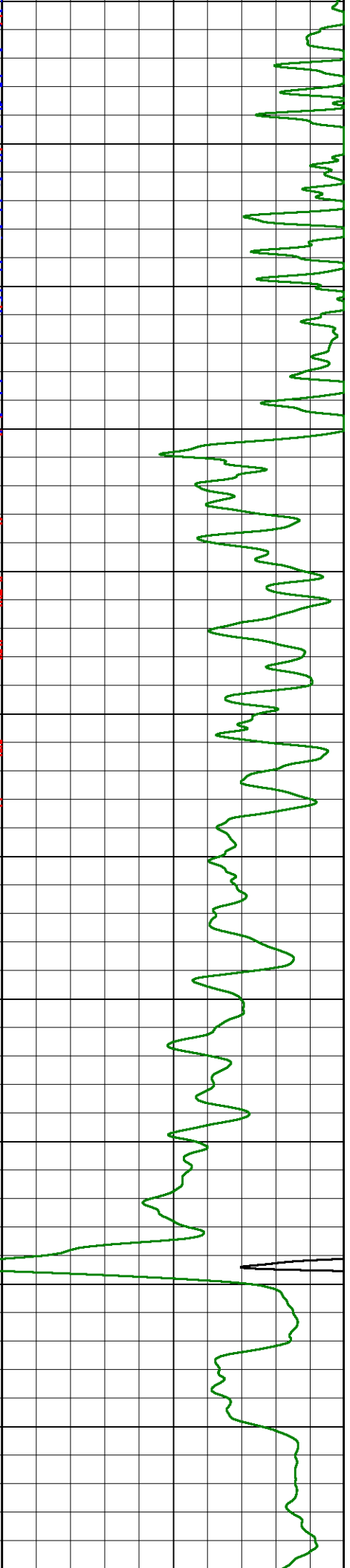
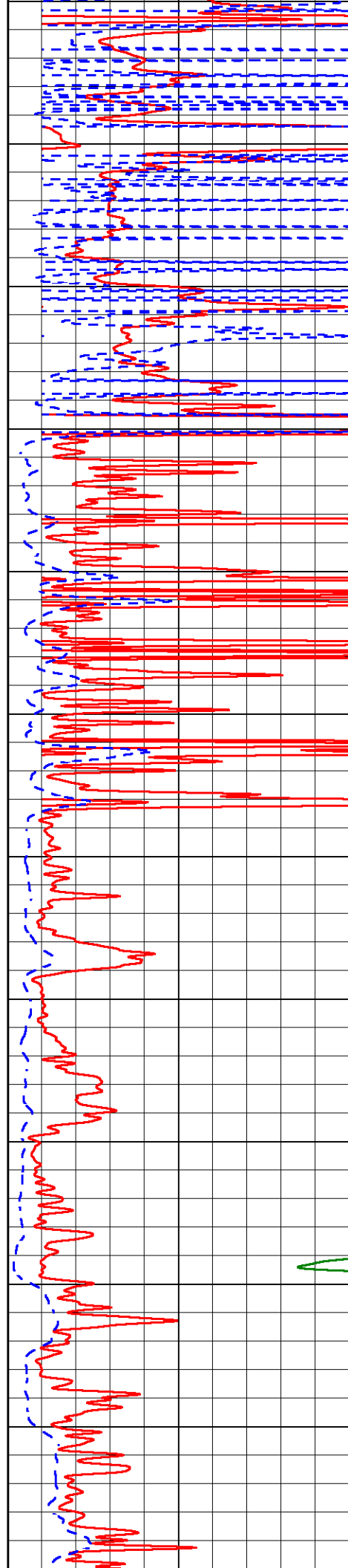
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1100
1150
1200
1250
1300
1350
1400
1450
1500
1550
1600

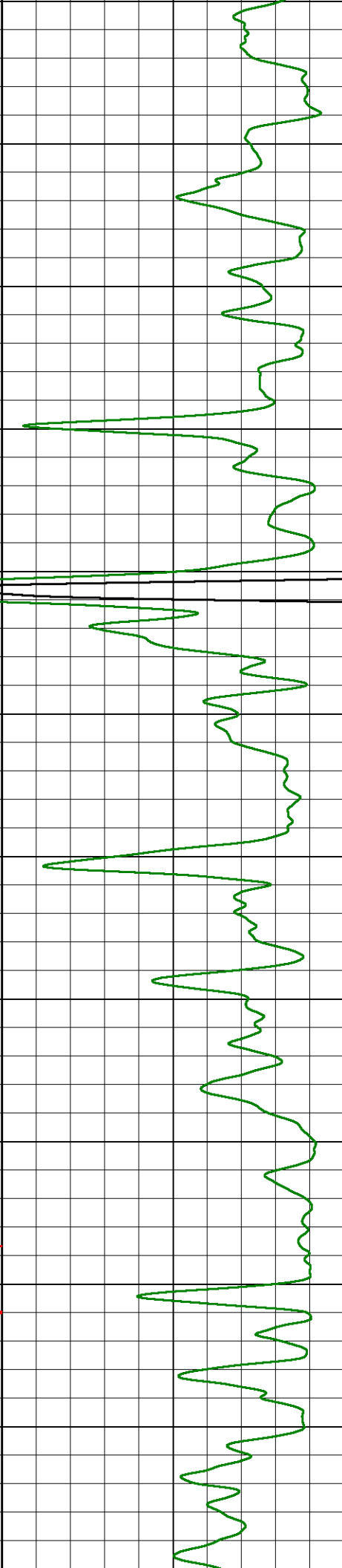
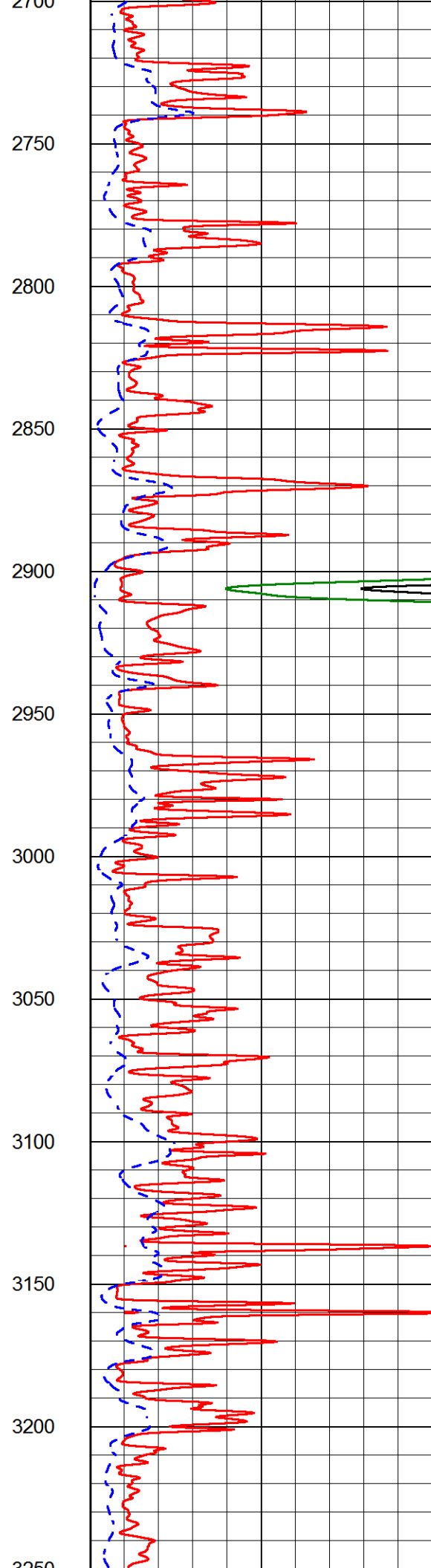
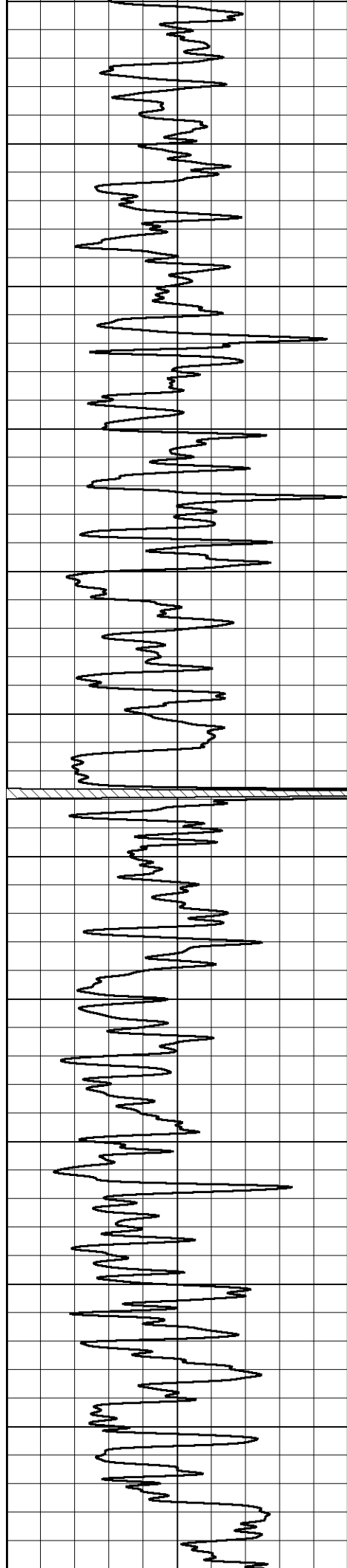


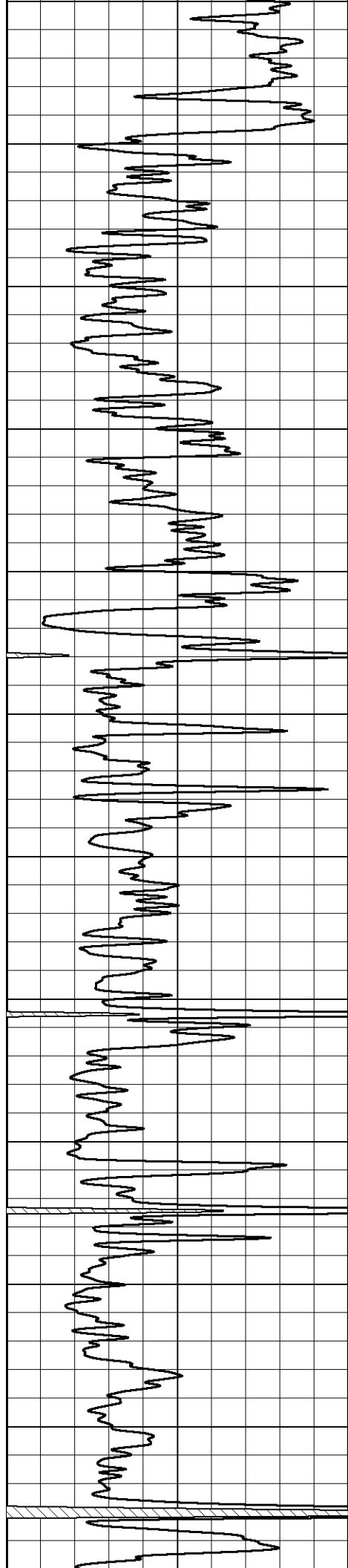




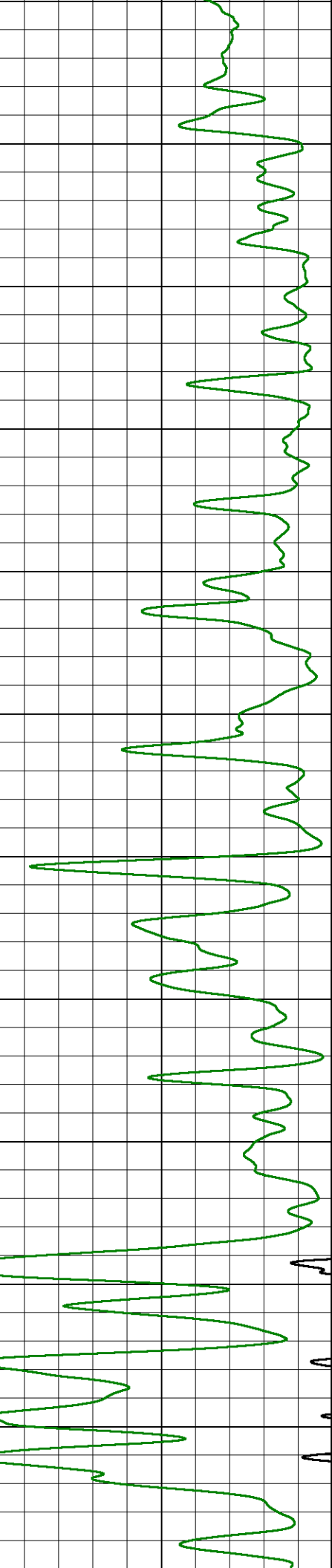
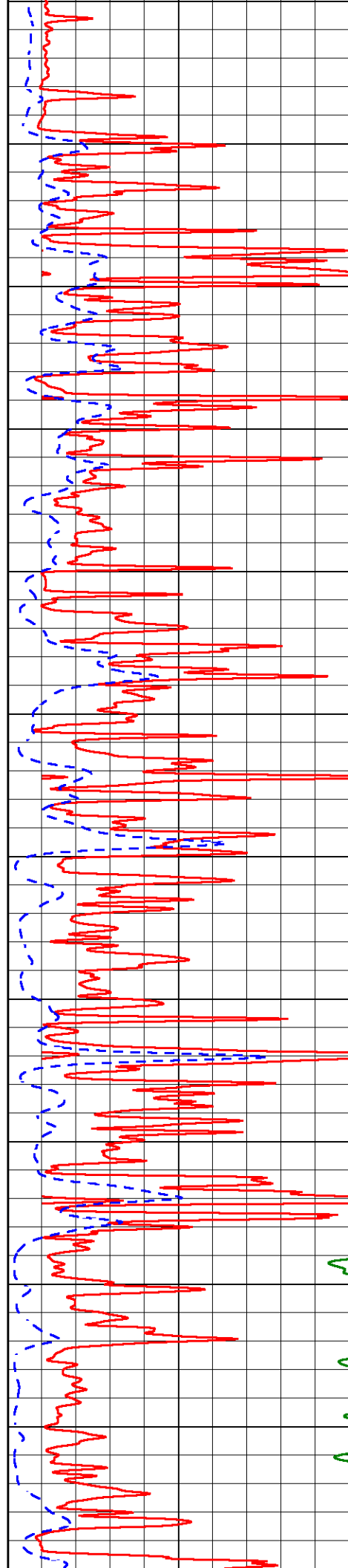
2150
2200
2250
2300
2350
2400
2450
2500
2550
2600
2650
2700

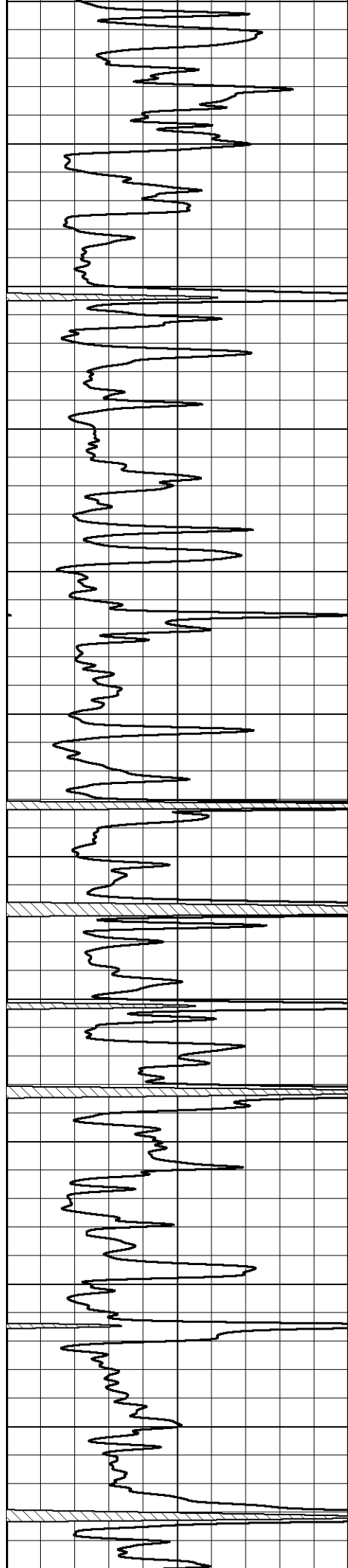




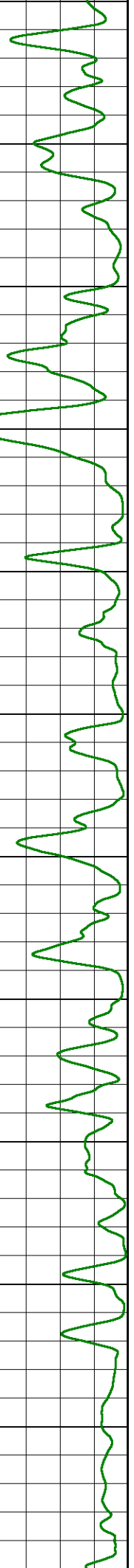
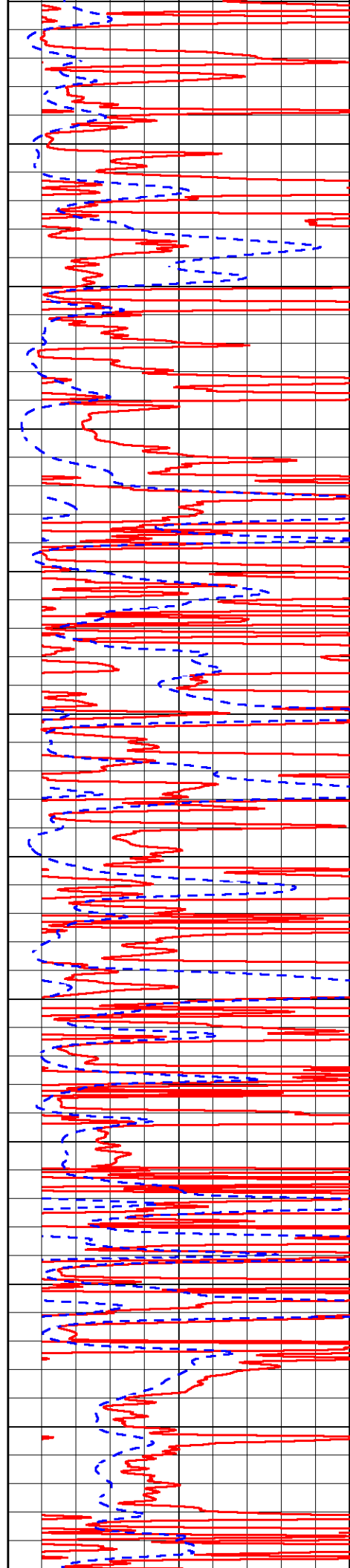


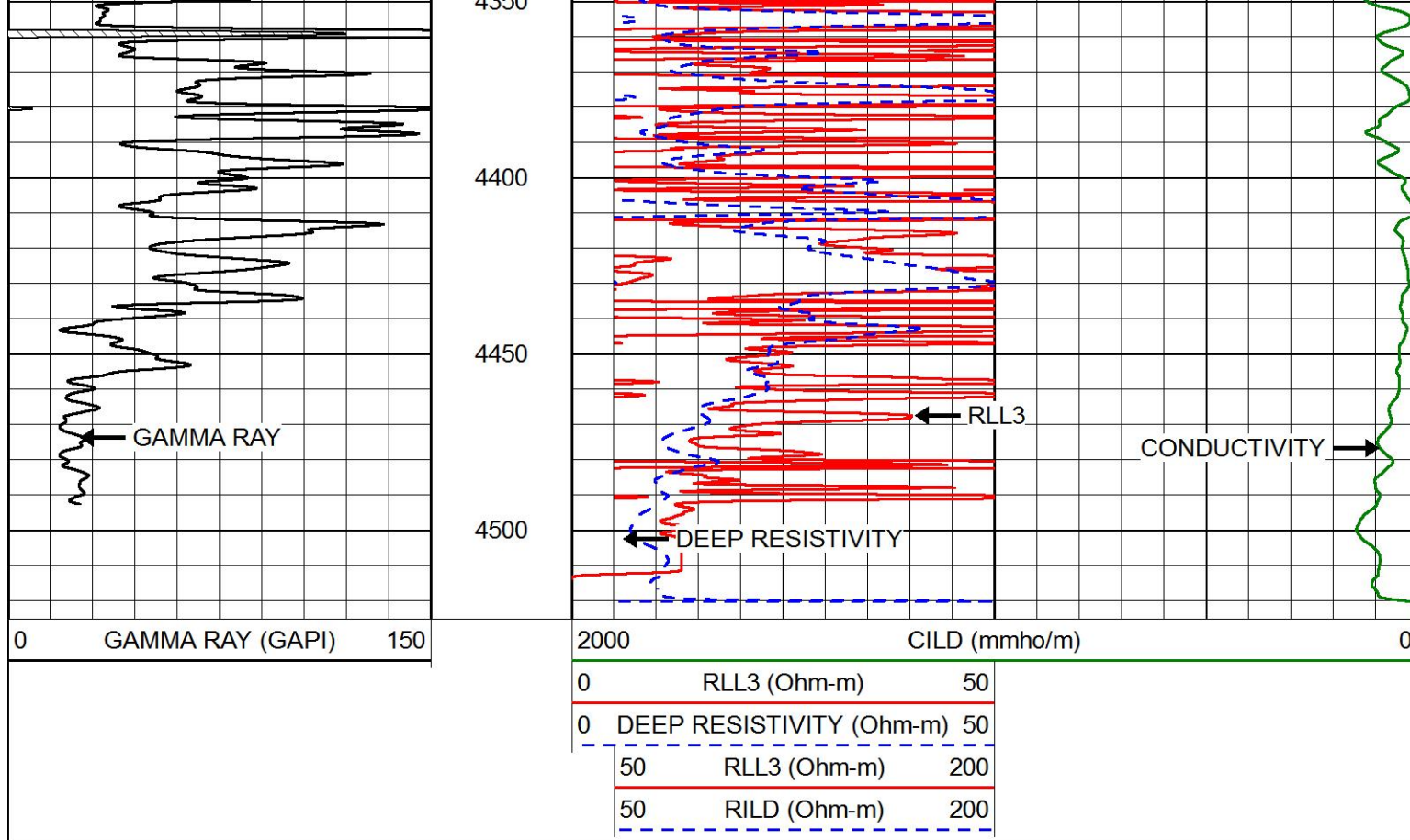
3250
3300
3350
3400
3450
3500
3550
3600
3650
3700
3750
3800





3800
3850
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3950
4000
4050
4100
4150
4200
4250
4300
4350

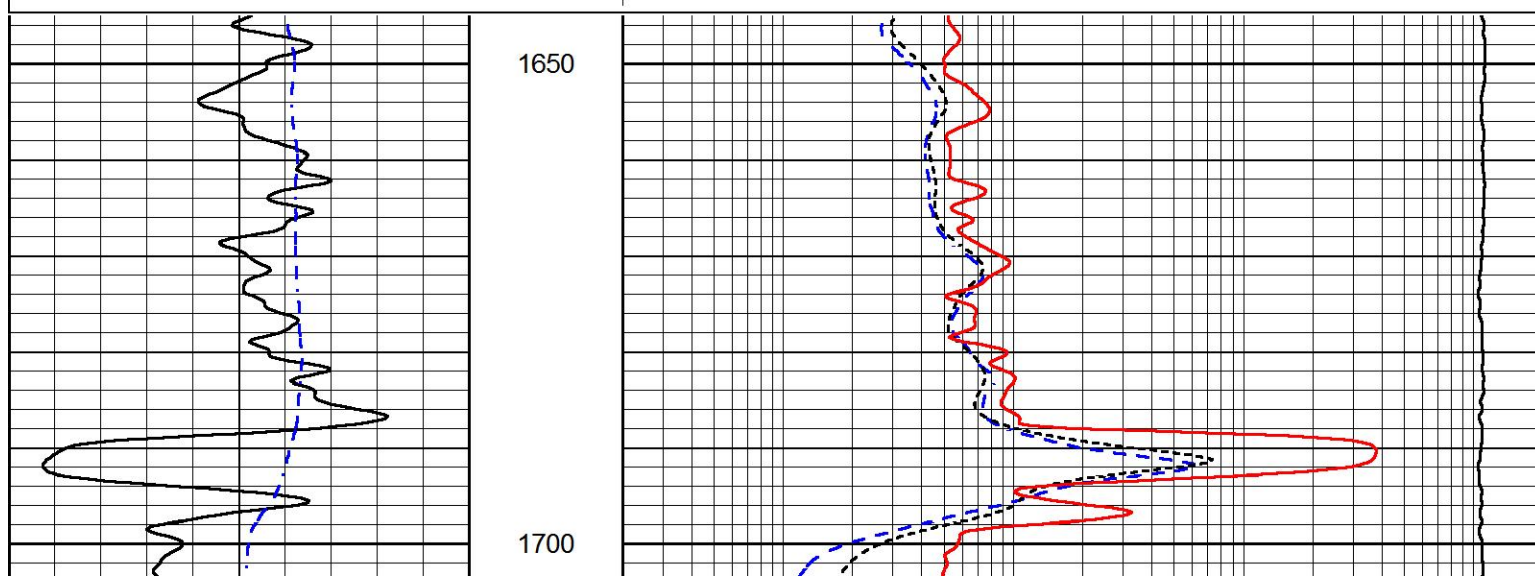


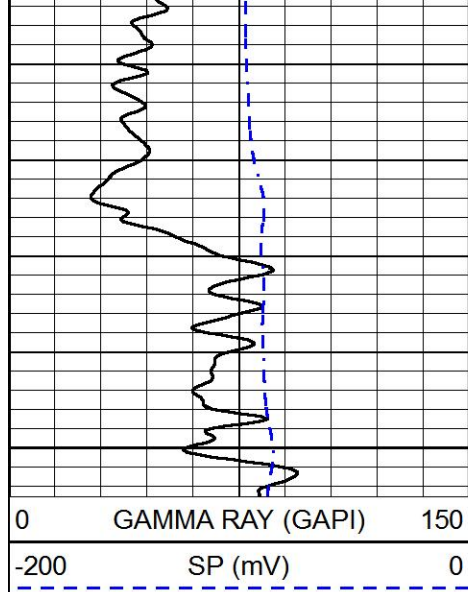


MAIN PASS

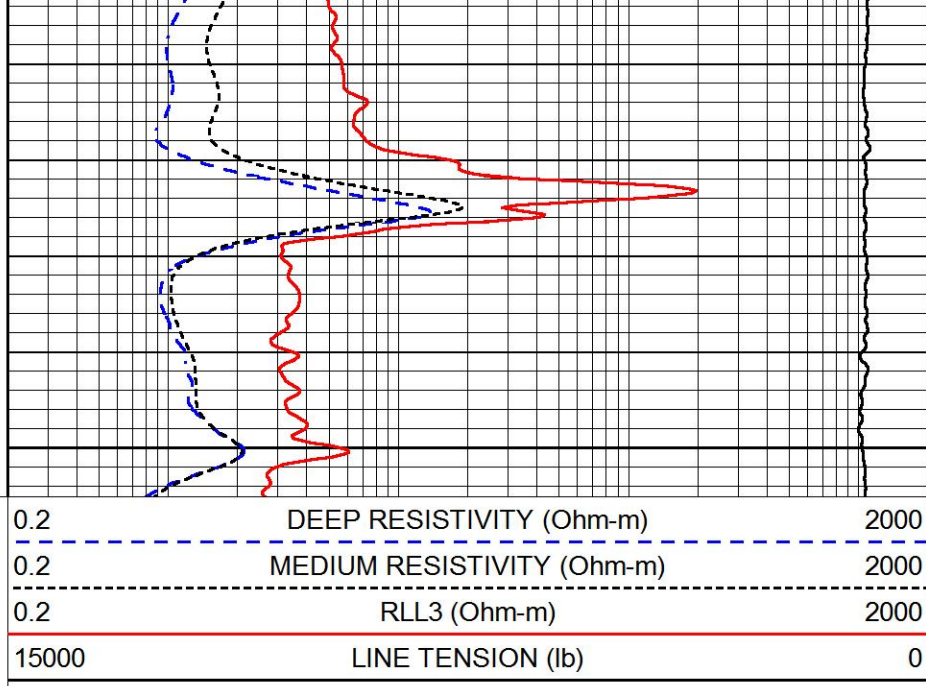
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 Dataset Pathname: stack/pass3.1
 Presentation Format: dil
 Dataset Creation: Wed Jul 10 03:24:34 2019
 Charted by: Depth in Feet scaled 1:240

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	RLL3 (Ohm-m)	2000
			15000	LINE TENSION (lb)	0



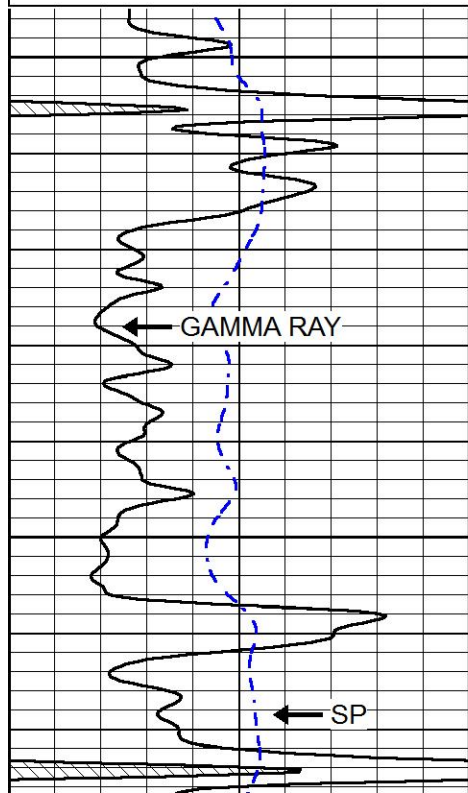
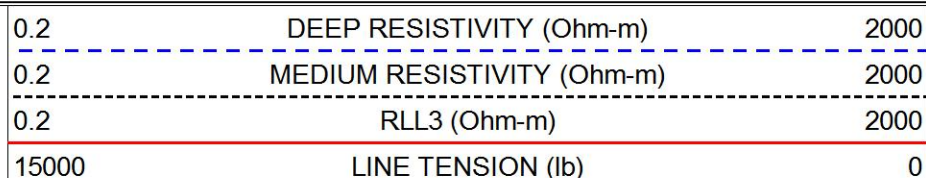
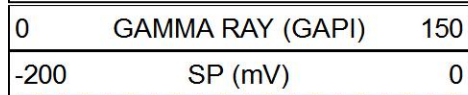


1750



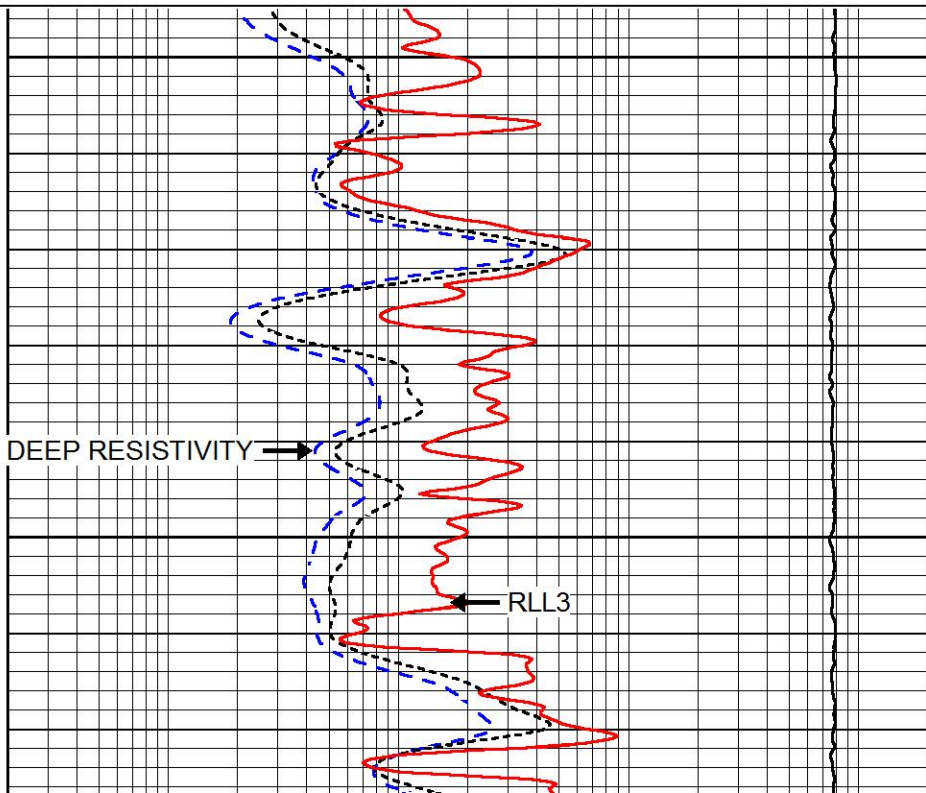
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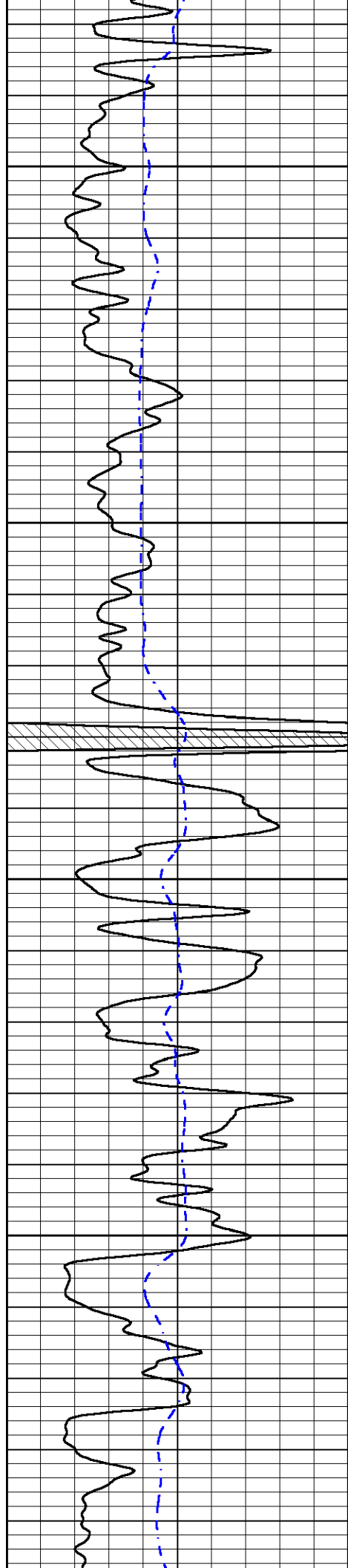
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Dataset Pathname stack/pass3.1
Presentation Format dil
Dataset Creation Wed Jul 10 03:24:34 2019
Charted by Depth in Feet scaled 1:240



3600

3650



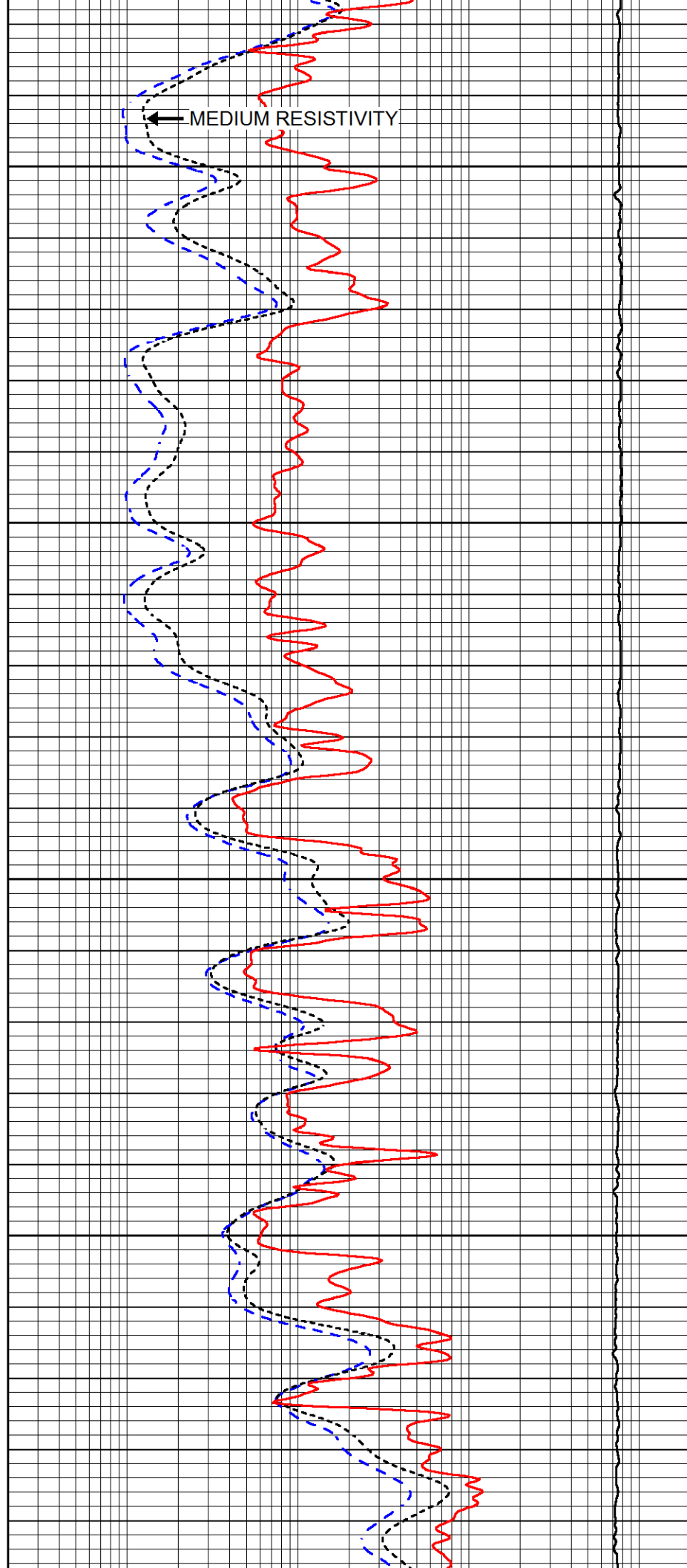


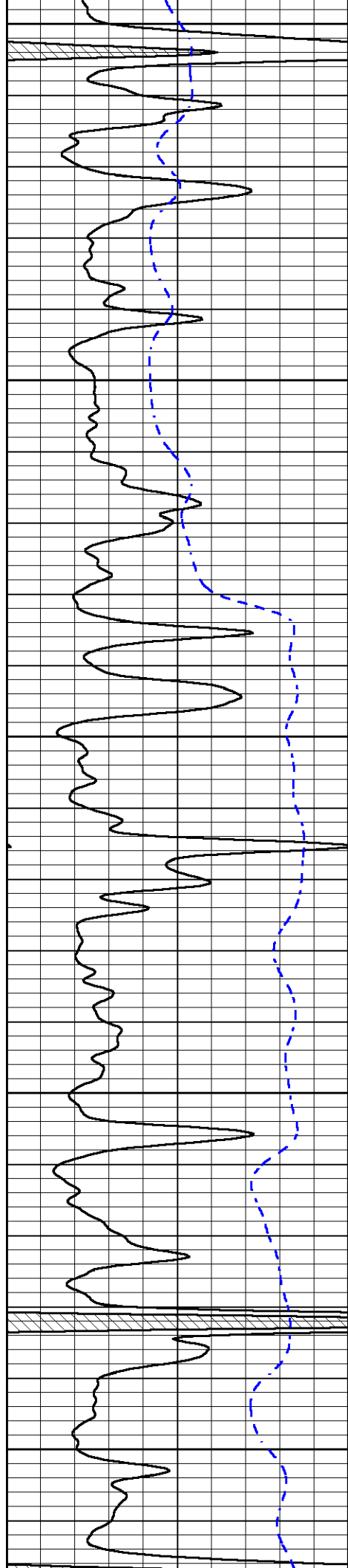
3700

3750

3800

3850





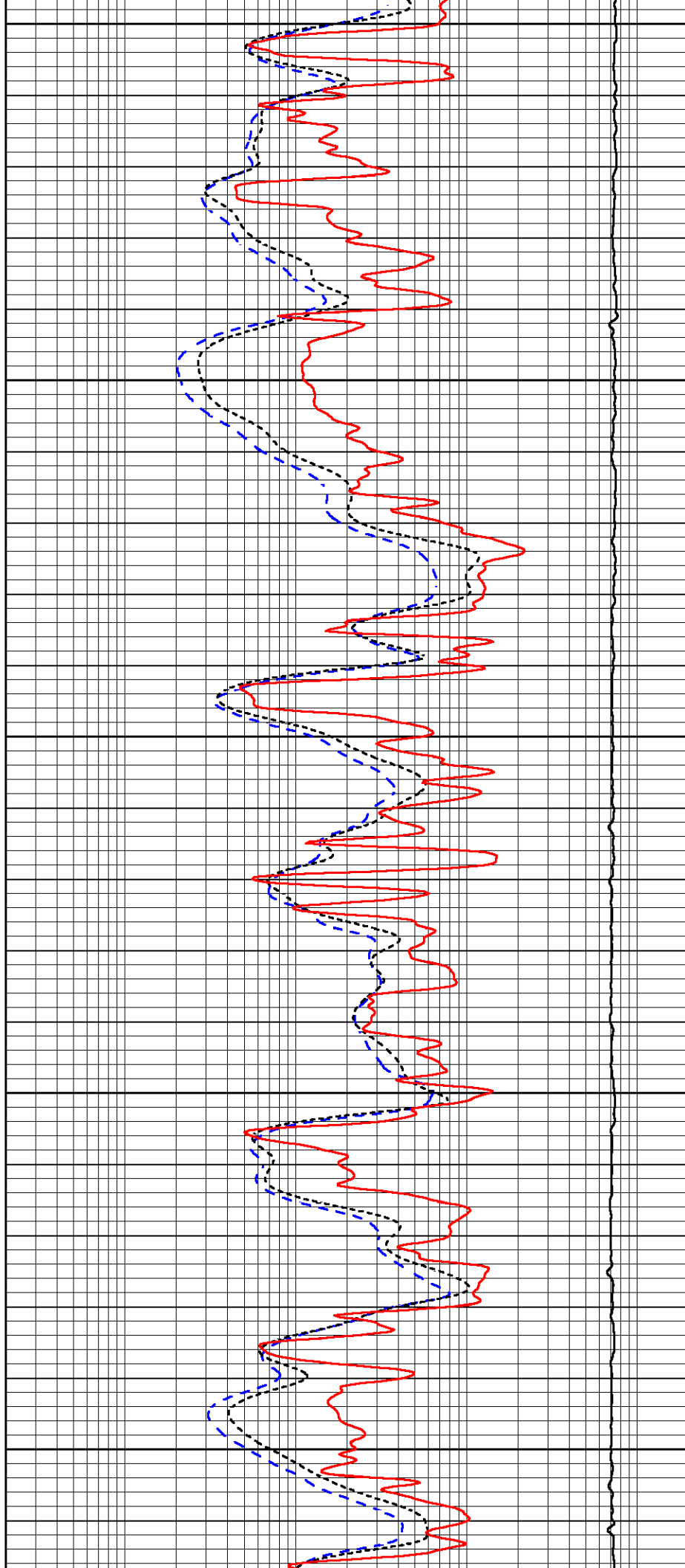
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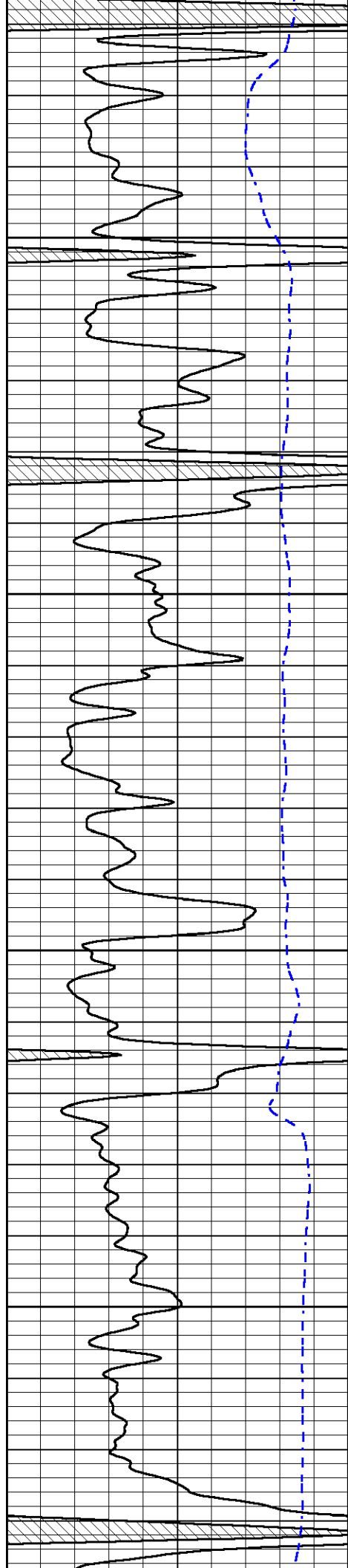
3950

4000

4050

4100



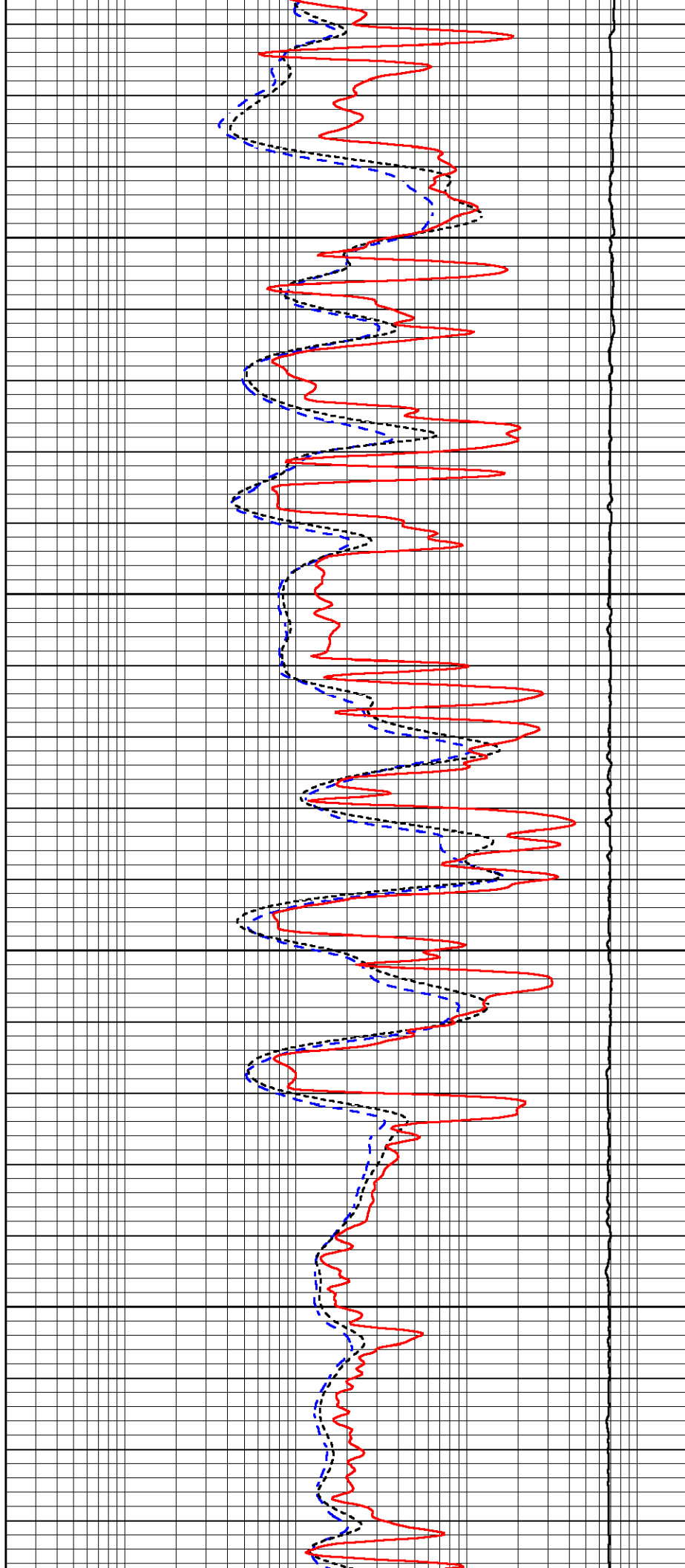


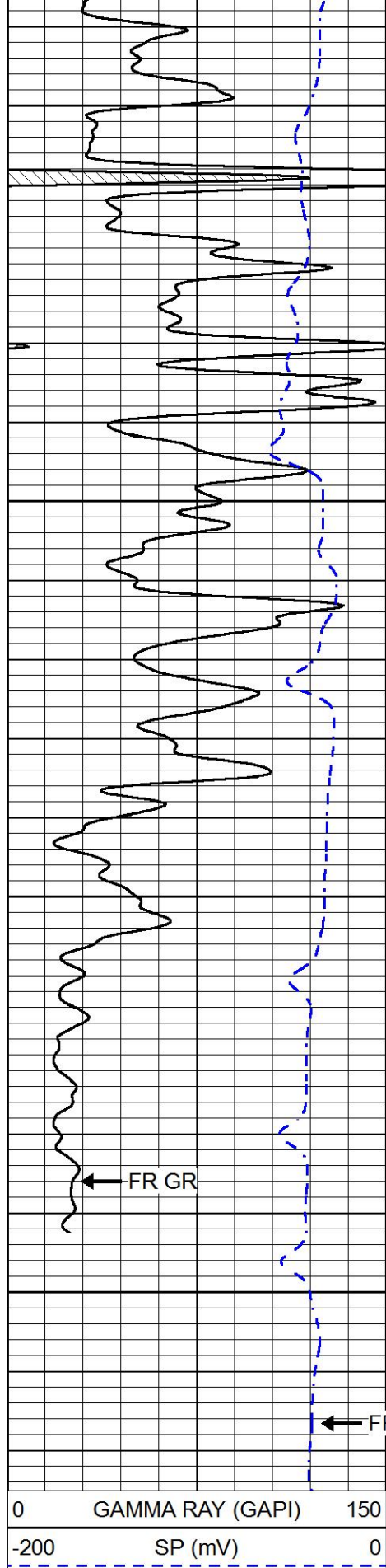
4150

4200

4250

4300





4350

4400

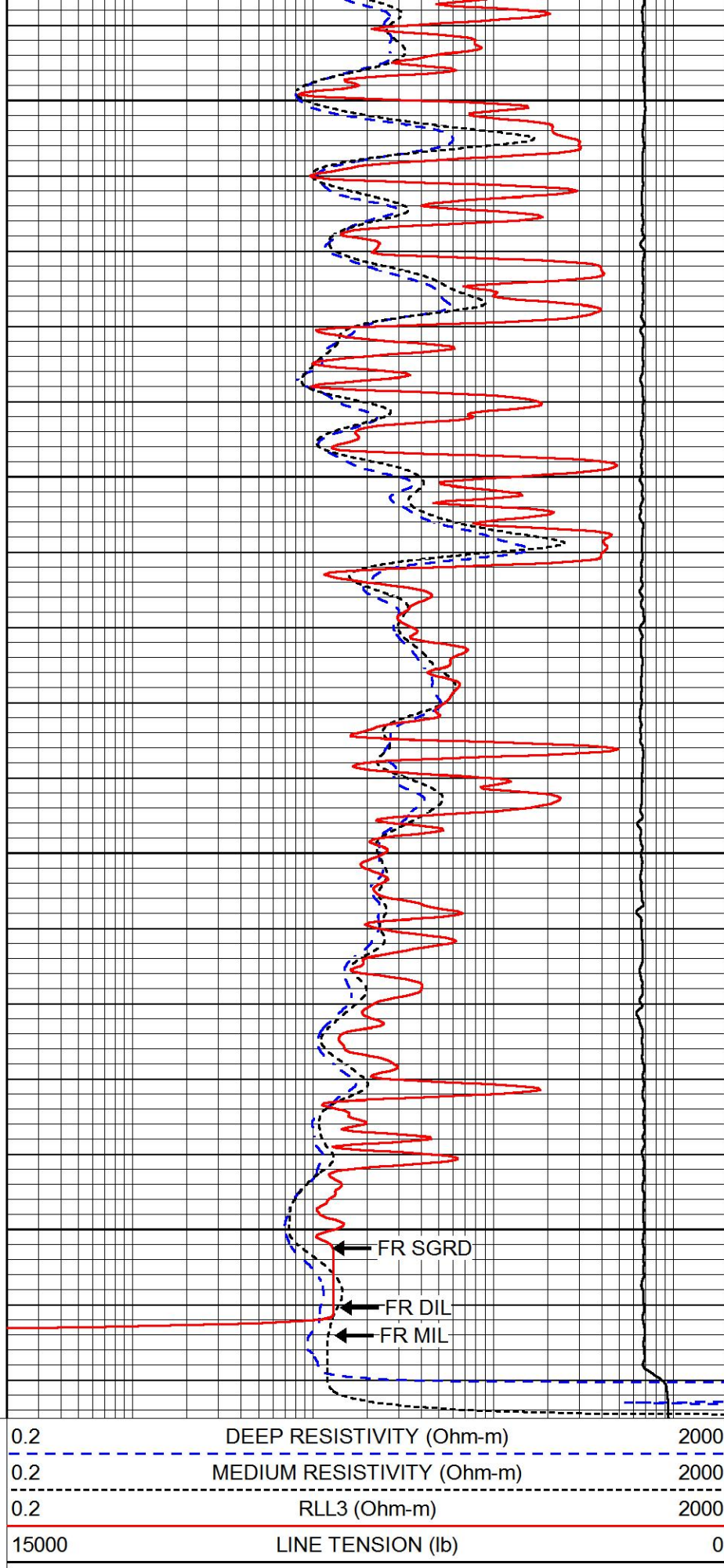
4450

4500

FR GR

FR SP

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



FR SGRD

FR DIL

FR MIL

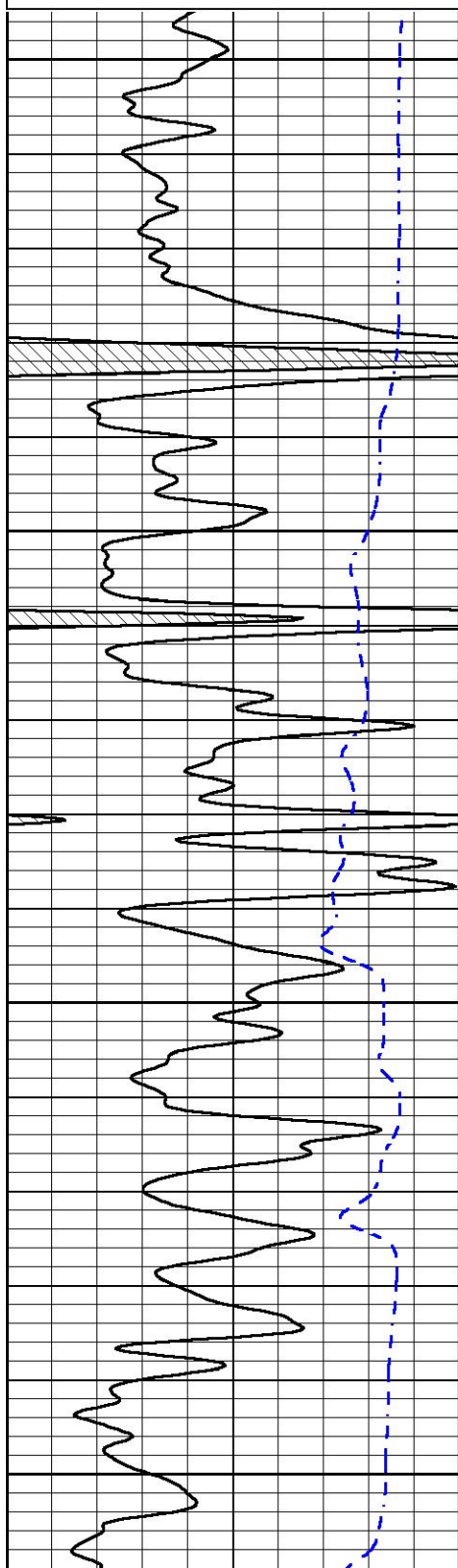
0.2 DEEP RESISTIVITY (Ohm-m) 2000
0.2 MEDIUM RESISTIVITY (Ohm-m) 2000
0.2 RLL3 (Ohm-m) 2000
15000 LINE TENSION (lb) 0

REPEAT SECTION

Database File cholla_schlegel_1_4.db
 Dataset Pathname stack/pass2.1
 Presentation Format dil
 Dataset Creation Wed Jul 10 03:24:49 2019
 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
 15000 LINE TENSION (lb) 0

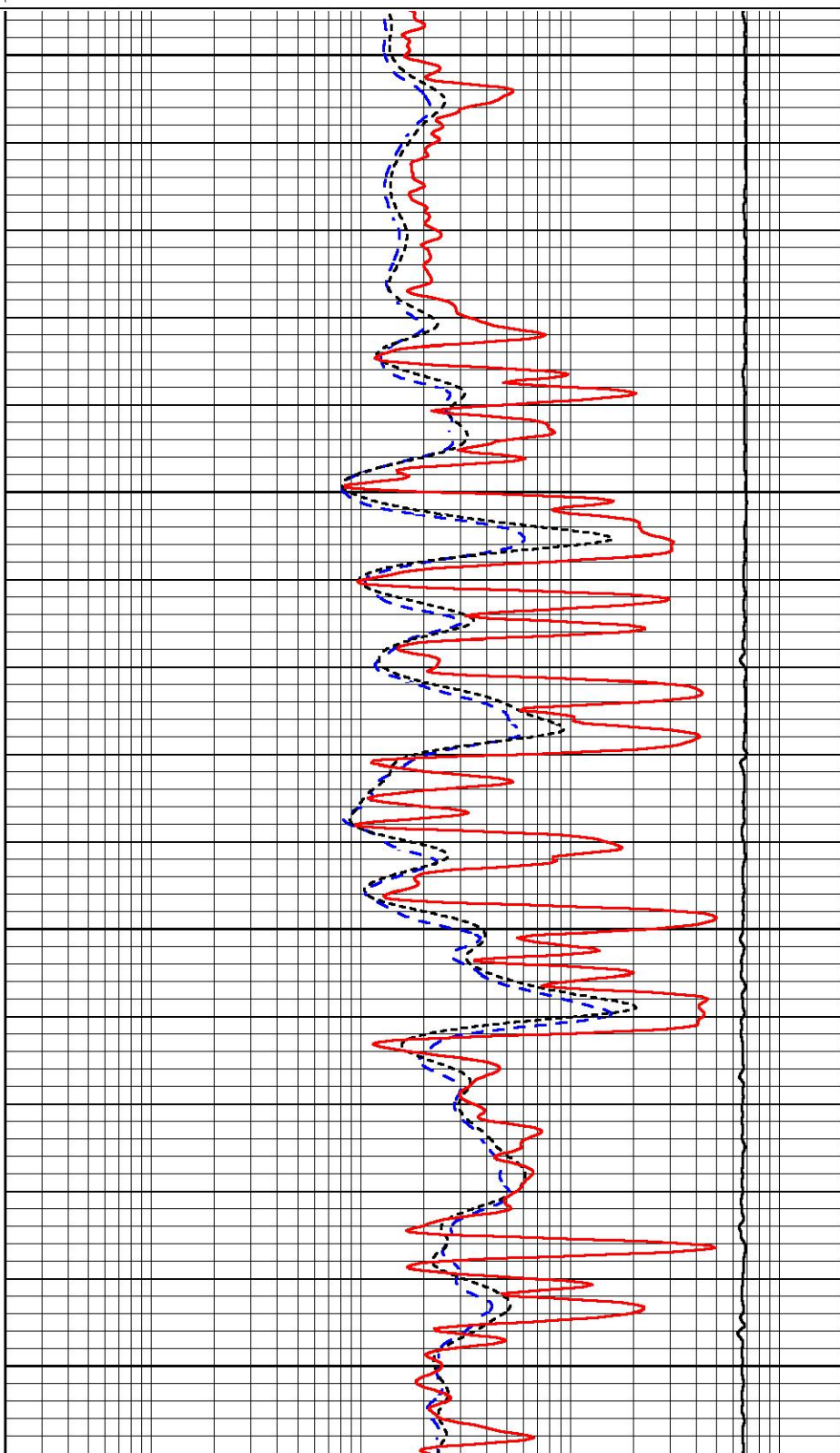


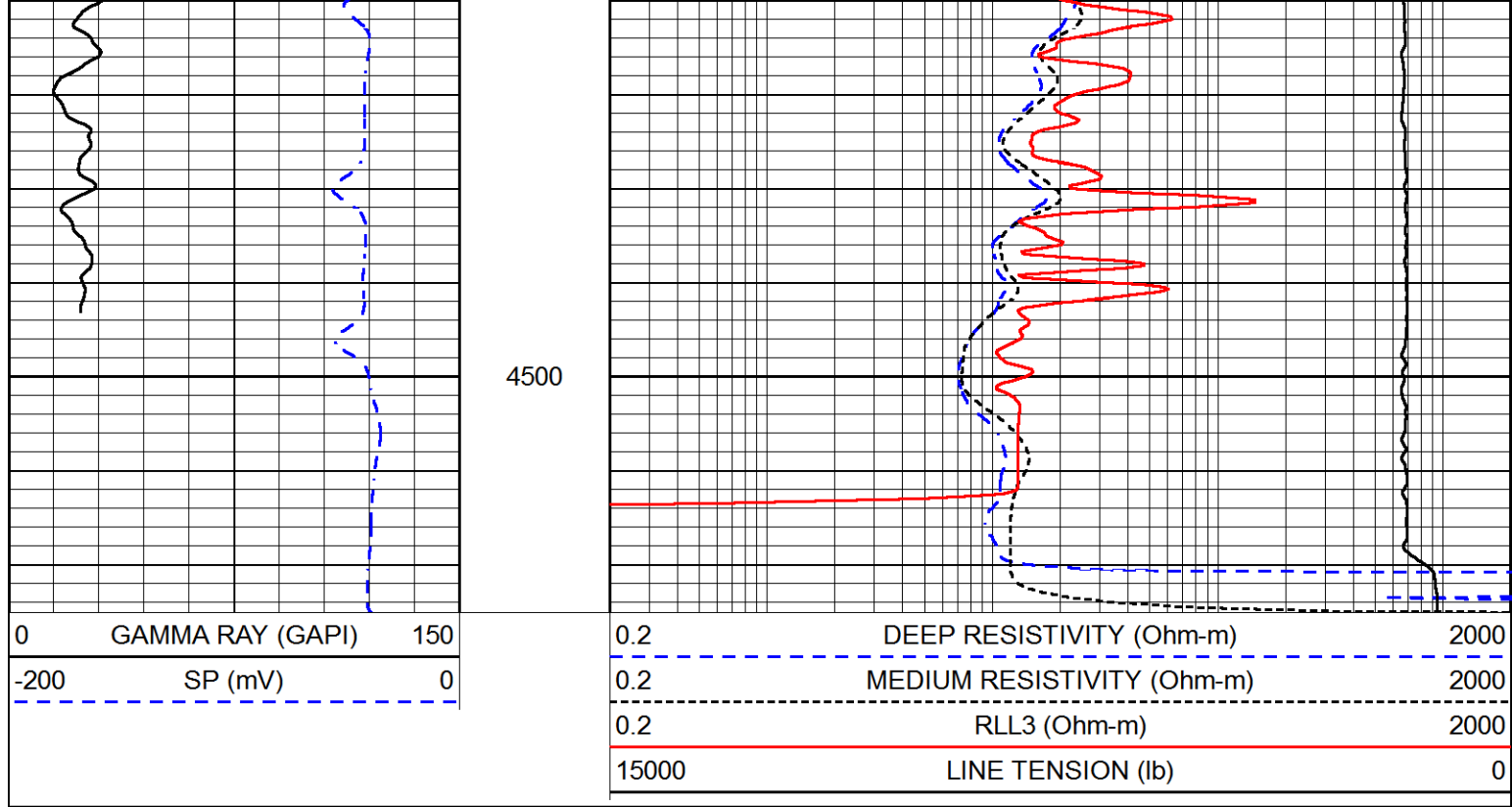
4300

4350

4400

4450





Calibration Report

Database File cholla_schlegel_1_4.db
 Dataset Pathname stack/pass3.1
 Dataset Creation Wed Jul 10 03:24:34 2019

Dual Induction Calibration Report

Serial-Model: PSI 988-M&W
 Calibration Performed: Tue Nov 20 10:50:19 2018

Loop:	Readings		References			Results	
	Air	Loop	Air	Loop		Gain	Offset
Deep	178.615	710.235	0.000	255.800	mmho/m	0.525	-44.000
Medium	161.982	1441.110	0.000	255.800	mmho/m	0.380	-17.000

Compensated Density Calibration Report

Serial-Model: 144-84-M&W
 Source / Verifier: /
 Master Calibration Performed: Mon Jan 07 15:00:31 2019

Master Calibration

	Density		Far Detector	Near Detector	
Magnesium	1.755	g/cc	4315.49	5309.89	cps
Aluminum	2.675	g/cc	825.26	3443.46	cps

Spine Angle = 75.33

Density/Spine Ratio = 0.538

	Size		Reading
Small Ring	4.00	in	0.69
Large Ring	14.00	in	0.04

Large Ring

14.00

in

0.04

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 17:08:01 2017

Calibrator Value: 1000.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 6.2 cps

Sensitivity: 0.5200 GAPI/cps



Company CHOLLA PRODUCTION, LLC
Well SCHLEGEL # 1-4
Field WILDCAT
County NESS
State KANSAS