



PIONEER
Pioneer Energy Services

**DUAL IND / DUAL COMP
POROSITY LOG**

Company **EXTRACTION OIL & GAS, LLC**
Well **VARRA #10**
Field **WATTENBERG**
County **WELD**
State **COLORADO**

Company **EXTRACTION OIL & GAS, LLC**
Well **VARRA #10**
Field **WATTENBERG**
County **WELD** State **COLORADO**

Location: API #: 05-123-39990-00
1511' FSL & 786' FWL
SEC 5 TWP 6N RGE 67W
Permanent Datum **GROUND LEVEL** Elevation **4872'**
Log Measured From **KELLY BUSHING**
Drilling Measured From **KELLY BUSHING**
Other Services
NONE
Elevation
K.B. 4897'
D.F. N/A
G.L. 4872'

| | | | |
|------------------------|----------------|--|--|
| Date | 11/10/2016 | | |
| Run Number | ONE | | |
| Depth Driller | N/A | | |
| Depth Logger | 6853' | | |
| Bottom Logged Interval | 6852' | | |
| Top Log Interval | 1550' | | |
| Casing Driller | 9.625" @ 1586' | | |
| Casing Logger | 1585' | | |
| Bit Size | 8.5" | | |
| Type Fluid in Hole | OIL BASED MUD | | |
| Salinity, ppm CL | N/A | | |
| Density / Viscosity | 9.7 N/A | | |
| pH / Fluid Loss | N/A N/A | | |
| Source of Sample | FLOWLINE | | |
| Rm @ Meas. Temp | N/A @ N/A | | |
| Rmf @ Meas. Temp | N/A @ N/A | | |
| Rmc @ Meas. Temp | N/A @ N/A | | |
| Source of Rmf / Rmc | CHARTS | | |
| Rm @ BHT | N/A @ 212 | | |
| Operating Rig Time | 3 HOURS | | |
| Max Rec. Temp. F | 212 | | |
| Equipment Number | 91 | | |
| Location | COLBY | | |
| Recorded By | D. SCHMIDT | | |
| Witnessed By | LARRY SIEGEL | | |

<<< 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.
SO# 1-51203

Log Measured From: KELLY BUSHING 25 Ft. Above Permanent Datum

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www.pioneerenergy.com 785-625-3858

Your Pioneer Energy Services Crew


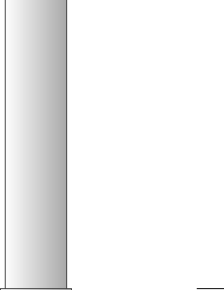
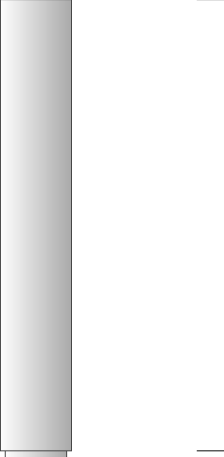

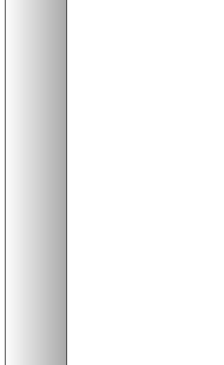
Engineer: D. SCHMIDT
Operator:
Operator:
Operator:

This Log Record Was Witnessed By


Primary Witness: LARRY SIEGEL
Secondary Witness:
Secondary Witness:
Secondary Witness:

Top - Bottom

| | | | | | | | |
|------------------|-----------------|----------------|--------------|------------------|------------------|-----------------|-------------------|
| M | A | SZCOR | NPORSEL | FLUIDDEN g/cc | MATRXDEN g/cc | SPSHIFT mV | SNDERRM mmho/m |
| 2 | 1 | Off | Limestone | 1 | 2.71 | 0 | 0 |
| SNDERR mmho/m | SRFTEMP degF | CASETHCK in | CASEOD in | PERFS | TDEPTH ft | BOTTEMP degF | BOREID in |
| 0 | 54 | 0 | 5.5 | 0 | 6853 | 212 | 8.5 |

| Sensor | Offset (ft) | Schematic | Description | Length (ft) | O.D. (in) | Weight (lb) |
|--------------------|-------------------------|---|-------------------|-------------|-----------|-------------|
| GR | 33.00 |  | GR-M&W (89) | 3.00 | 3.50 | 50.00 |
| CNLSC CNSSC | 29.90 29.15 |  | CNT-M&W (207-MW) | 5.50 | 3.50 | 100.00 |
| LSD DCAL SSD | 20.85 20.83 20.35 |  | CDL-M&W (90-1031) | 8.50 | 4.00 | 250.00 |
| RLL3F RLL3 | 15.80 15.80 |  | | | | |
| CILD | 8.00 |  | DIL-M&W (PSI 13) | 18.50 | 3.50 | 220.00 |

| | | | | | | | | | |
|---|------|--|--|--|--|--|--|--|--|
| CILM | 4.70 | | | | | | | | |
| SP | 0.20 | | | | | | | | |
| Dataset: extraction_varra_10.db: field/well/STACK/pass4.1 Total length: 35.50 ft Total weight: 620.00 lb O.D.: 4.00 in | | | | | | | | | |



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MAIN PASS

Database File

extraction_varra_10.db

Dataset Pathname

STACK/pass5.1

Presentation Format

split

Dataset Creation

Fri Nov 11 00:23:19 2016

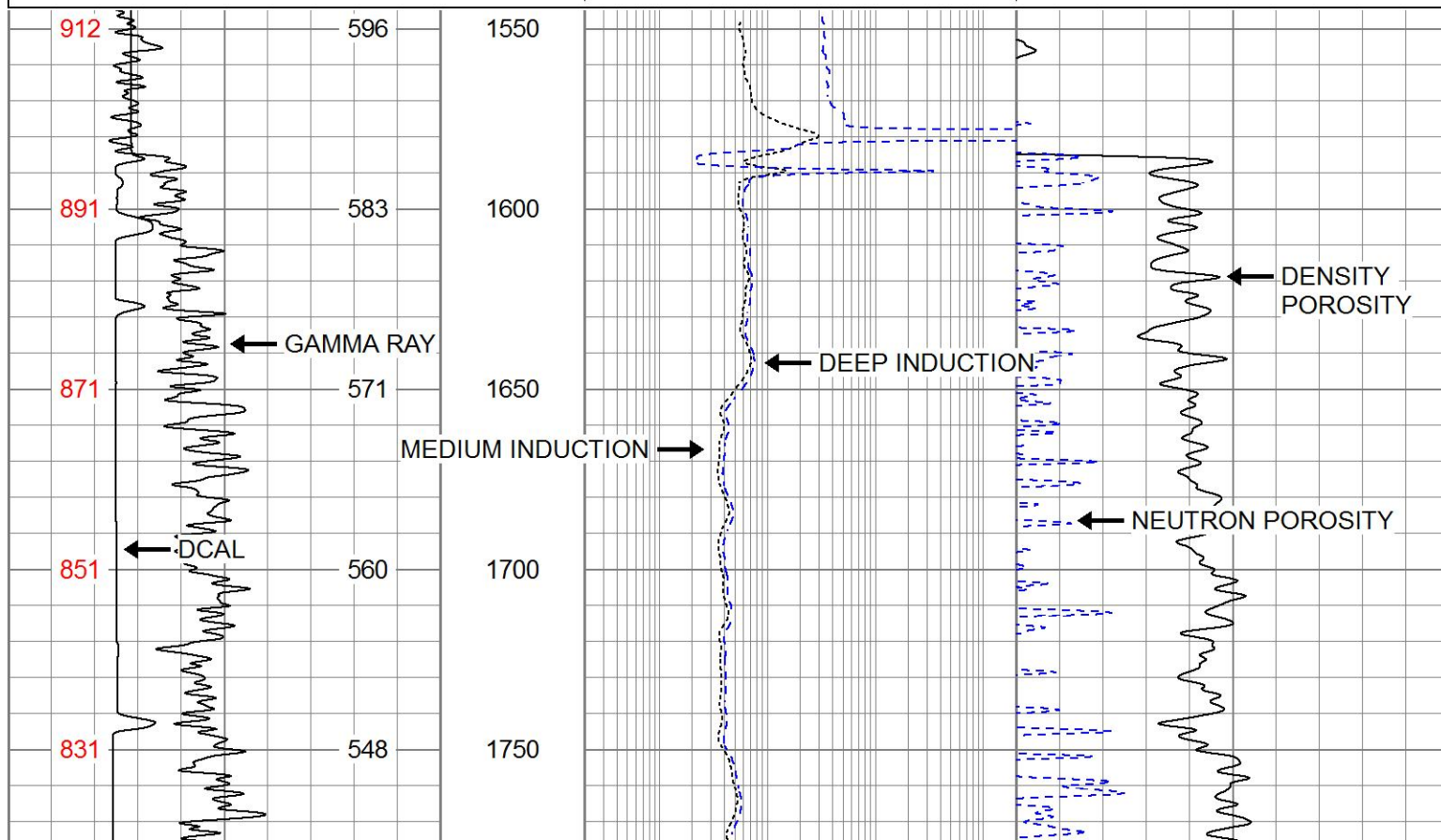
Charted by

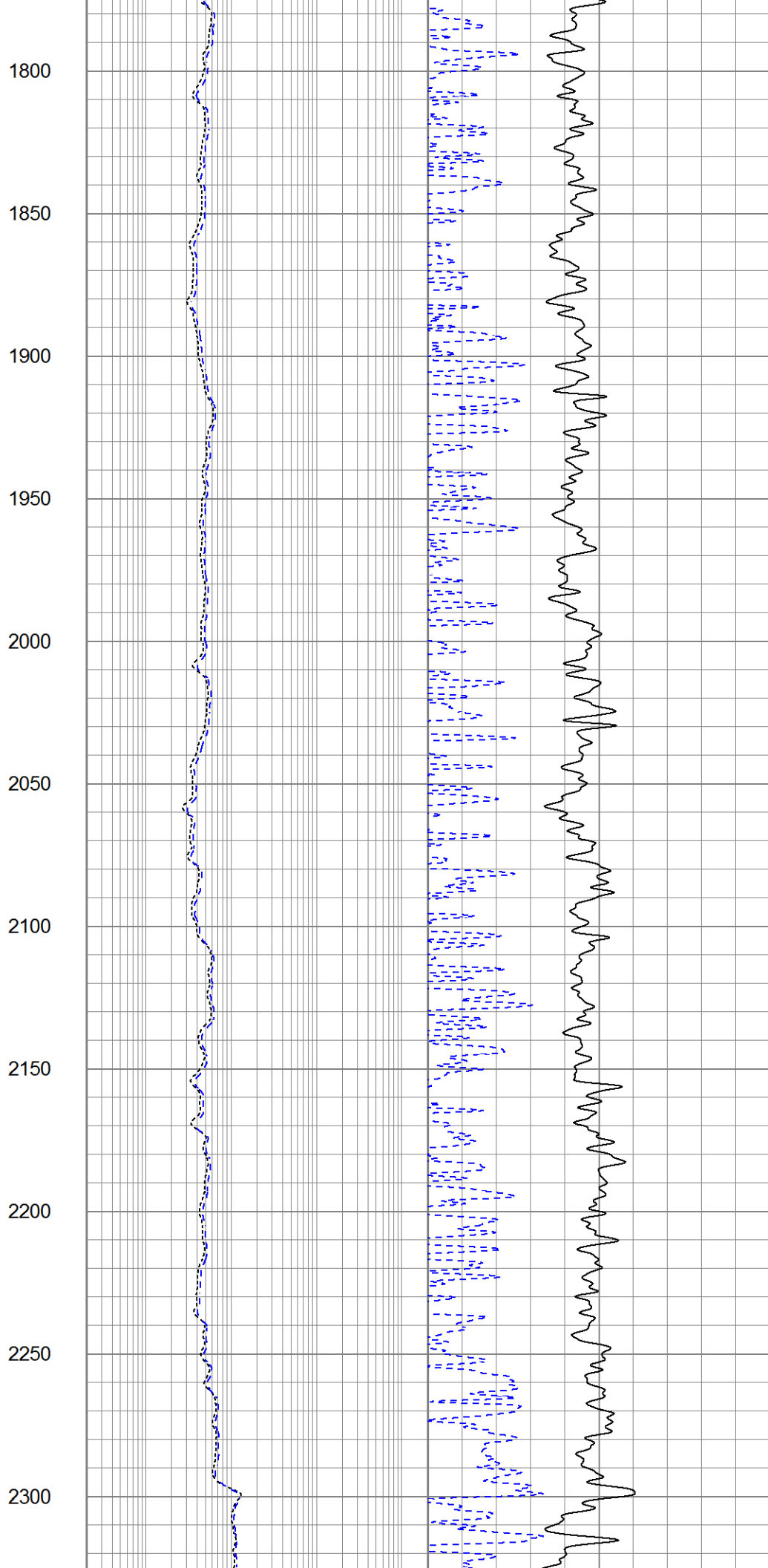
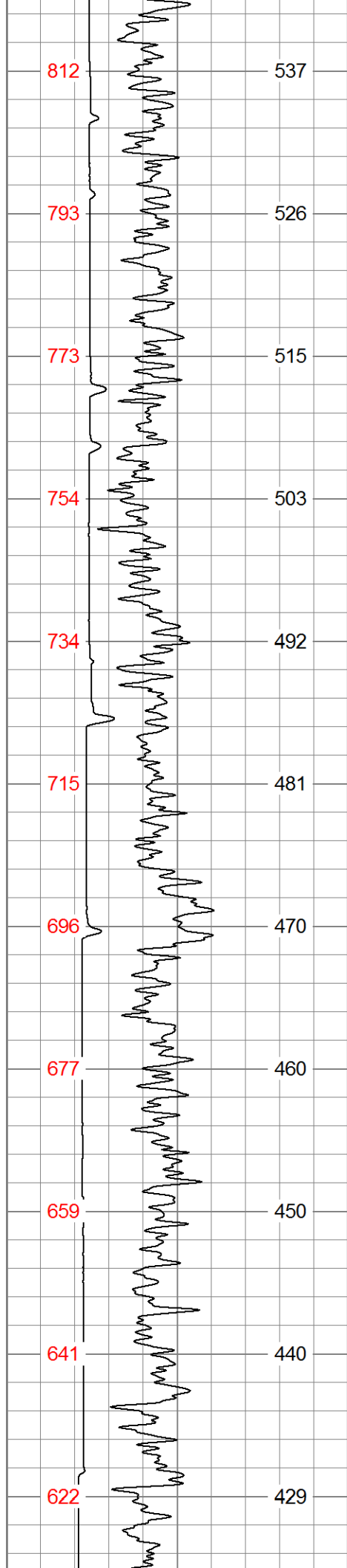
Depth in Feet scaled 1:600

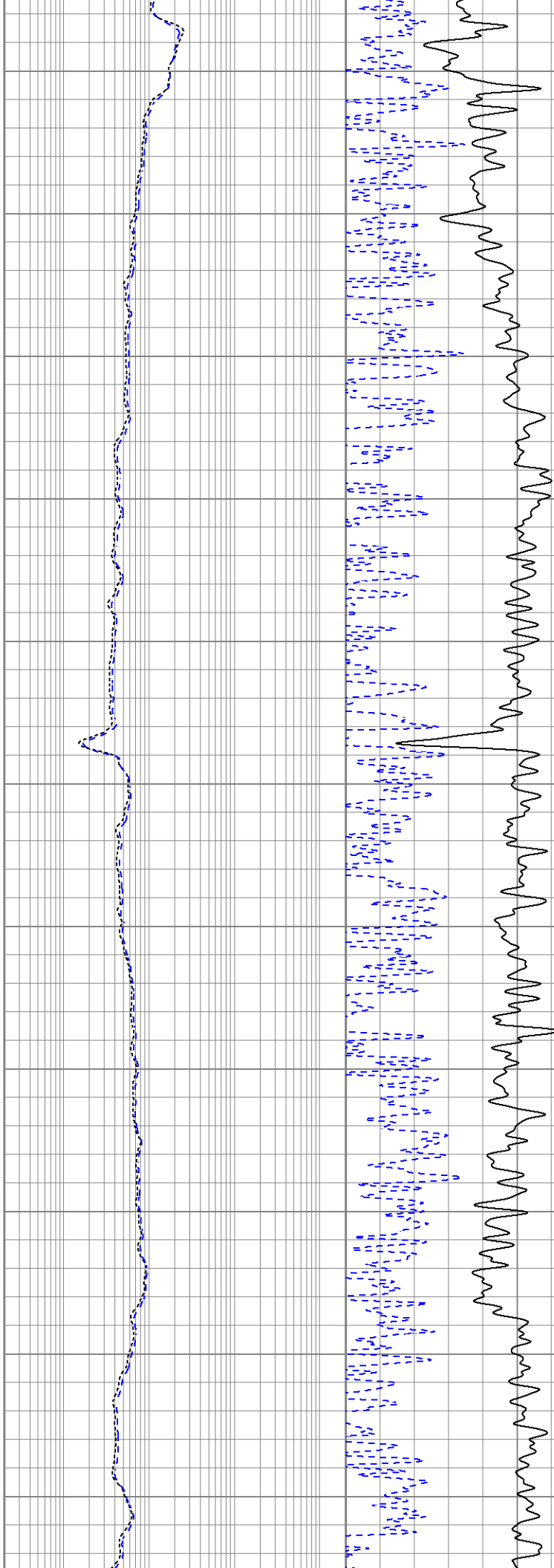
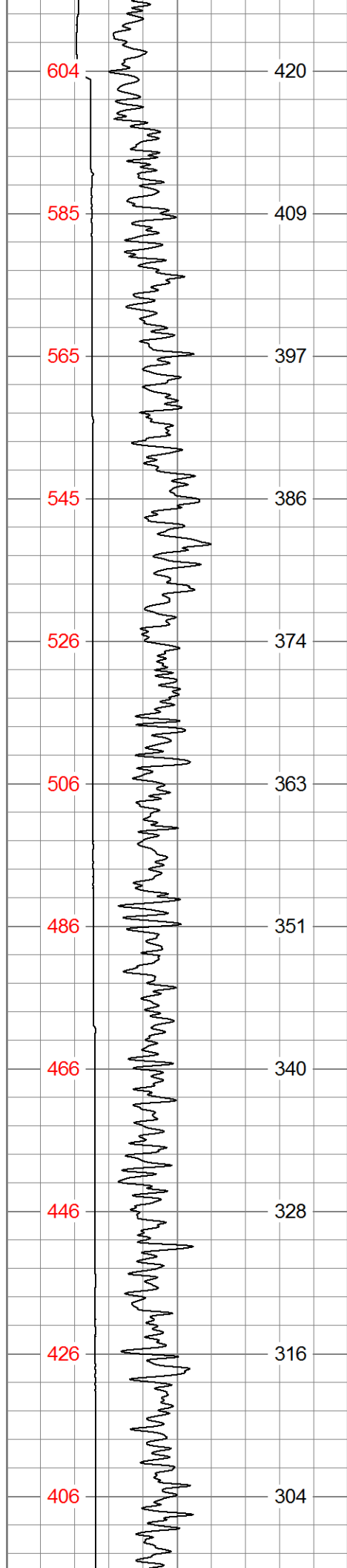
| | | |
|---|------------------|-----|
| 0 | GAMMA RAY (GAPI) | 200 |
| 6 | CALIPER (in) | 16 |
| 6 | DCAL (in) | 16 |

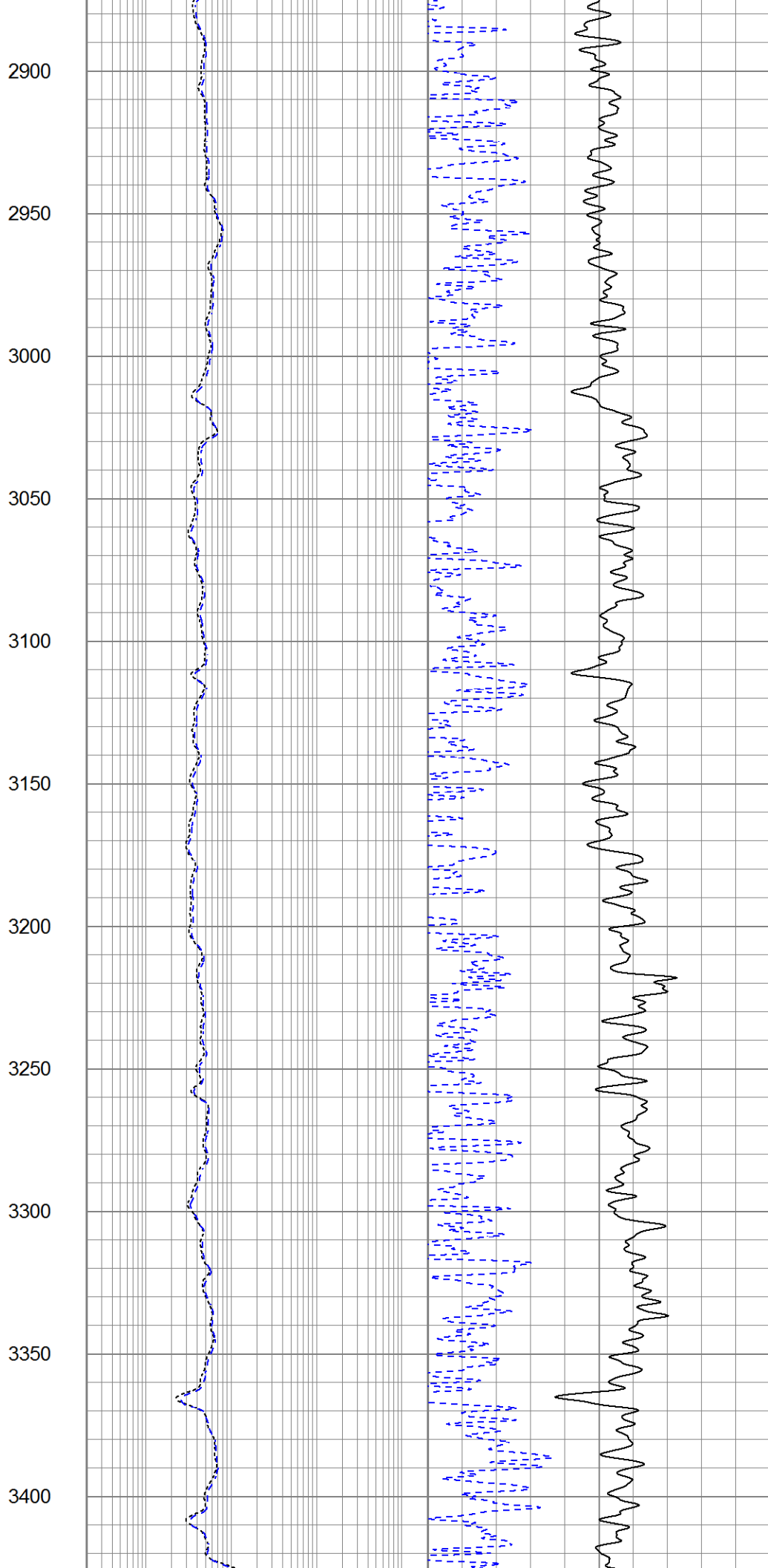
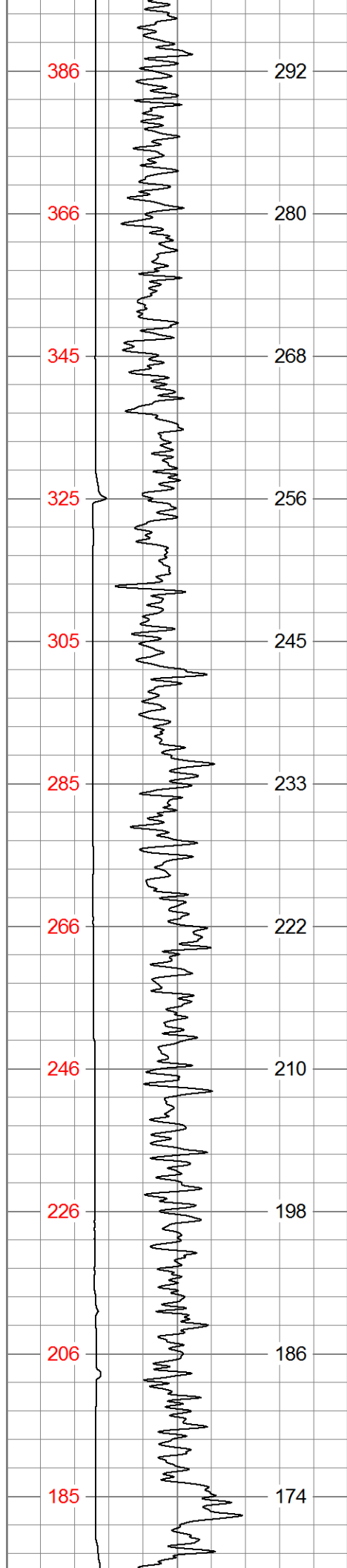
| | | |
|------------------|---------|------|
| MEDIUM INDUCTION | | |
| 0.2 | (Ohm-m) | 2000 |
| DEEP INDUCTION | | |
| 0.2 | (Ohm-m) | 2000 |

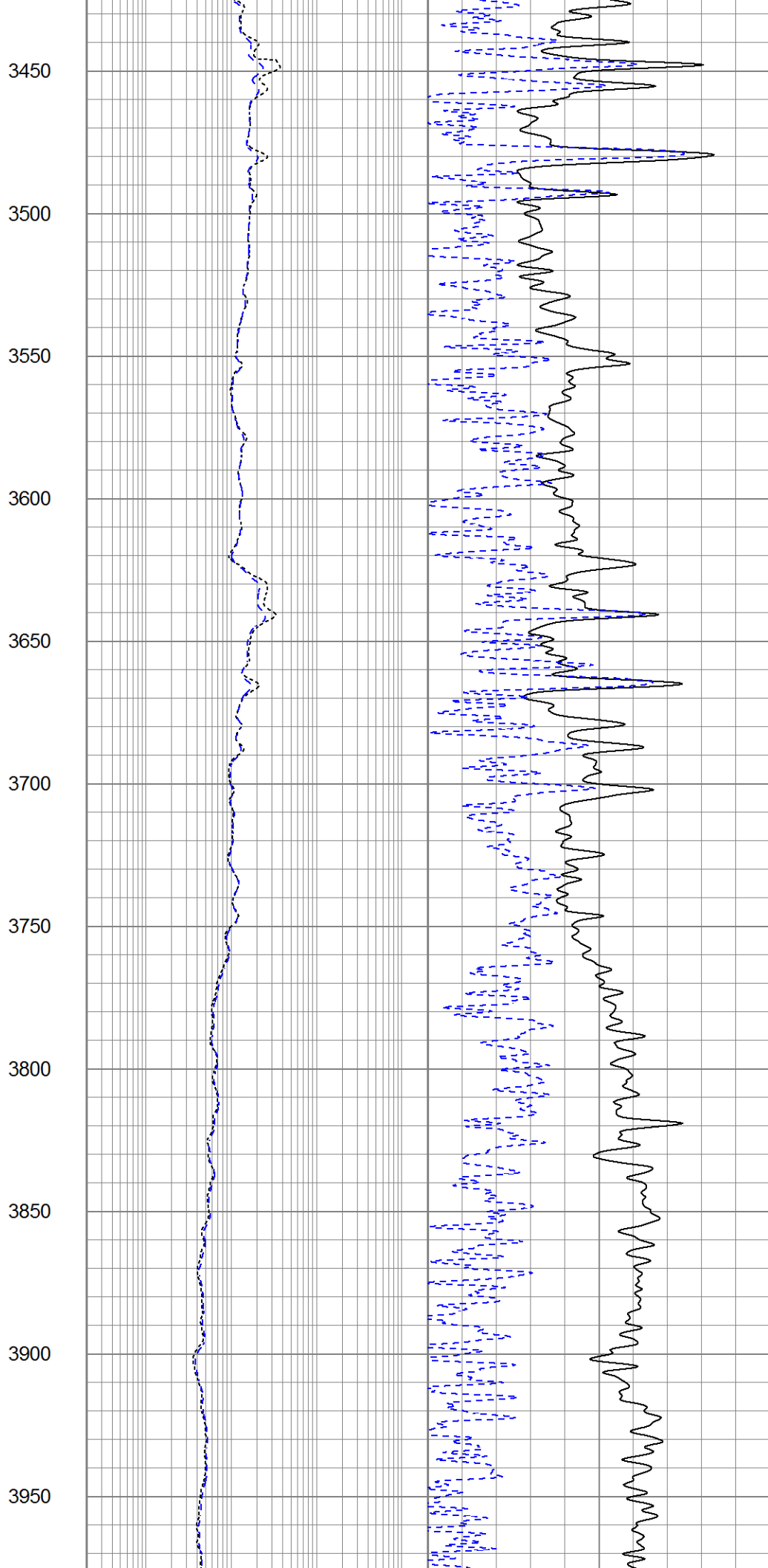
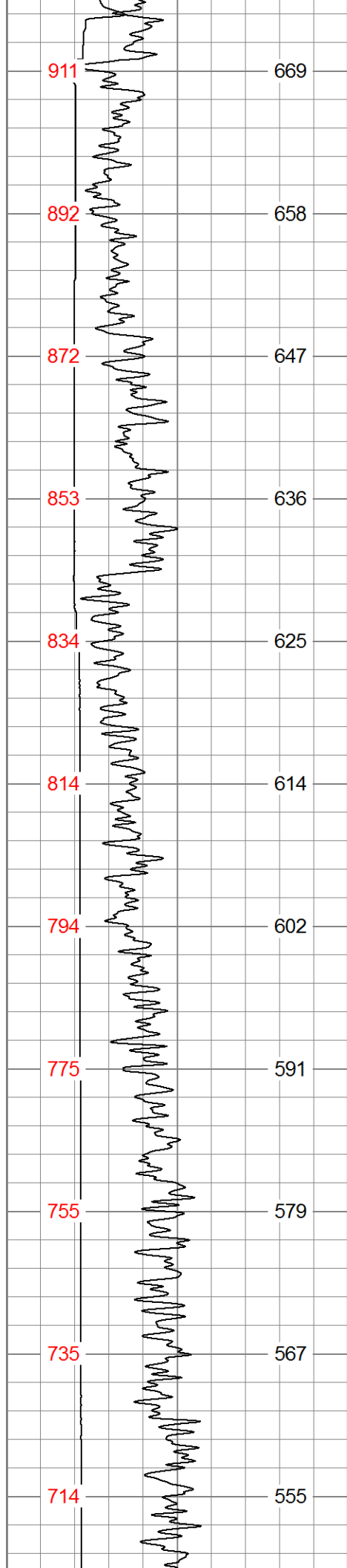
| | | |
|----|-----------------------|---|
| 30 | DENSITY POROSITY (pu) | 0 |
| 30 | NEUTRON POROSITY (pu) | 0 |

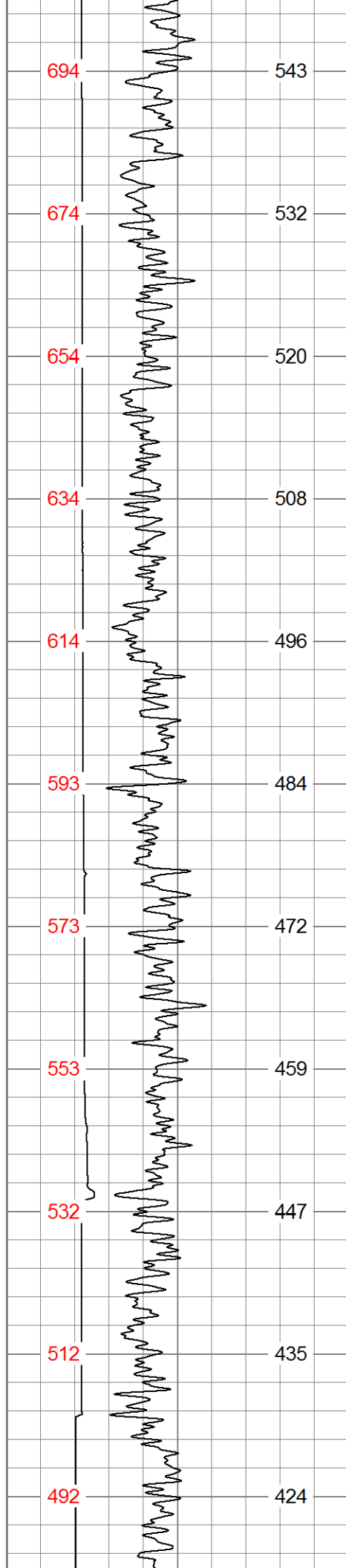












4000

4050

4100

4150

4200

4250

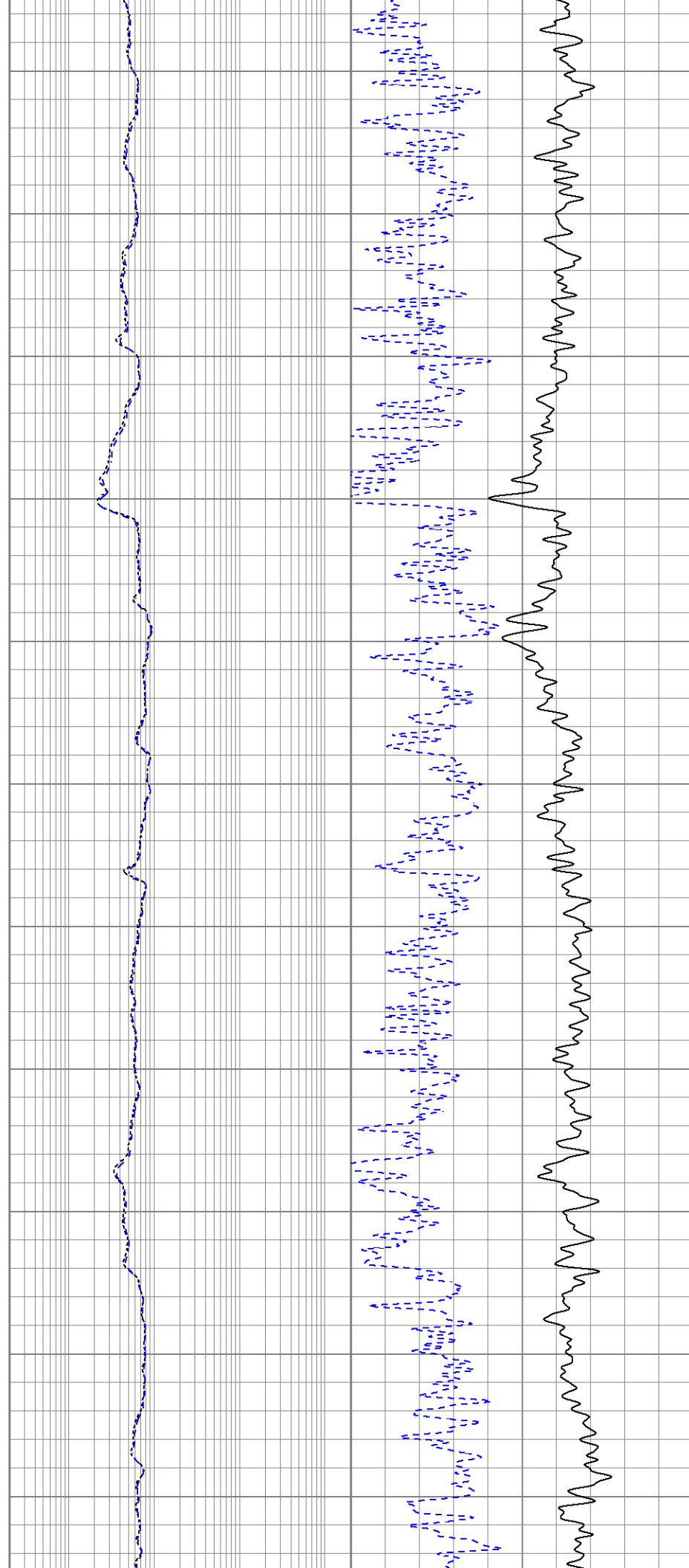
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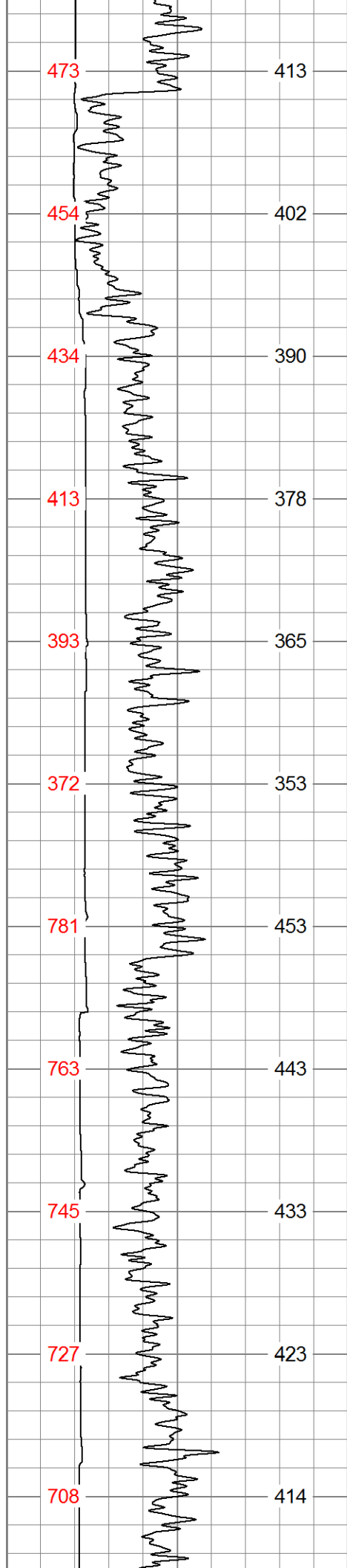
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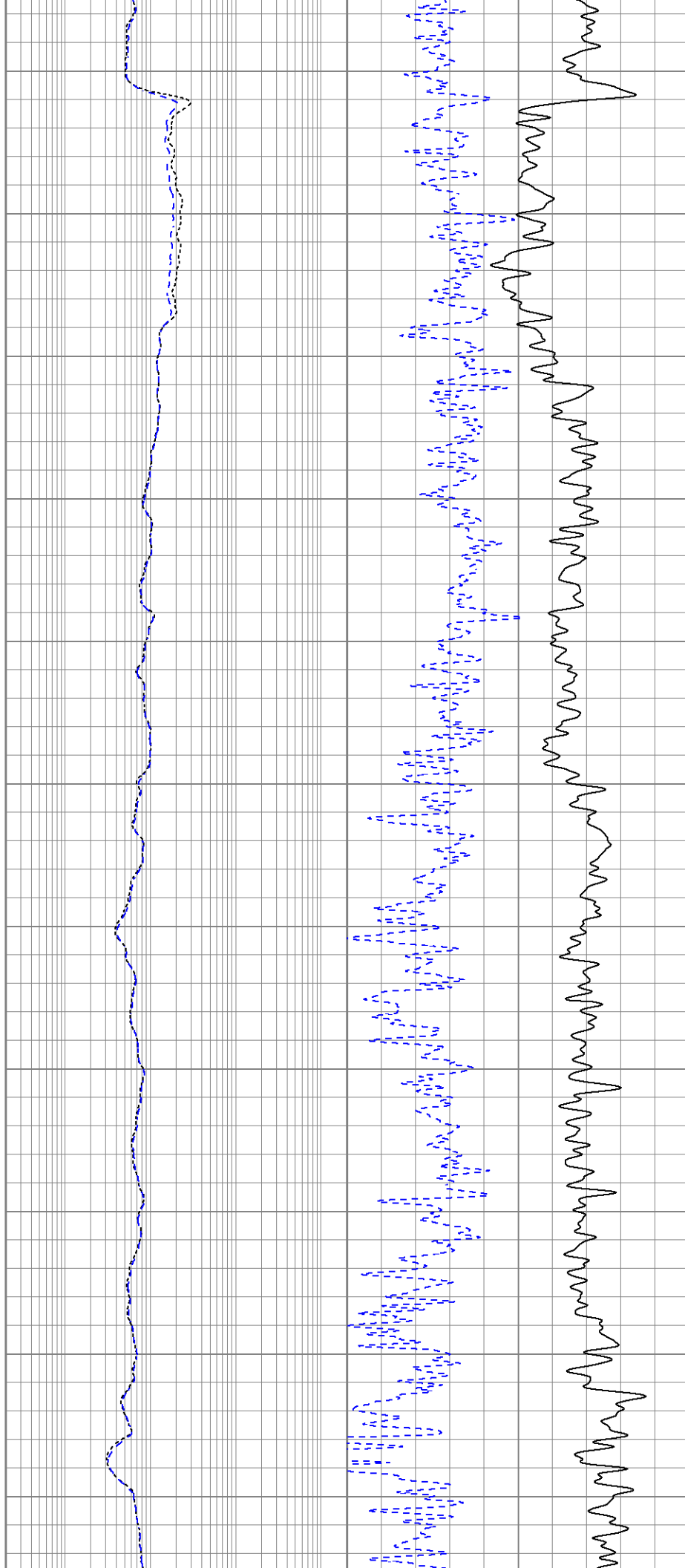
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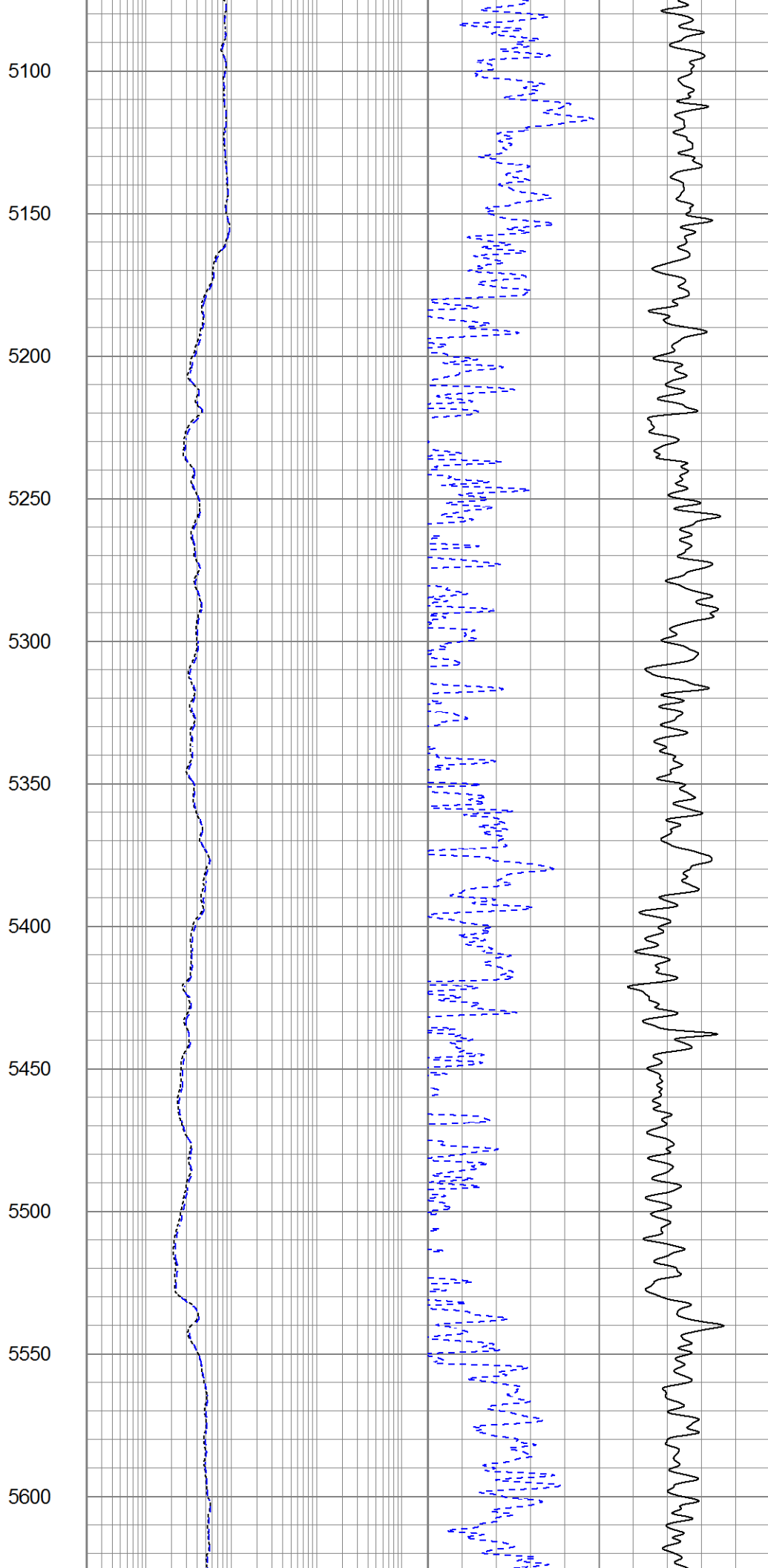
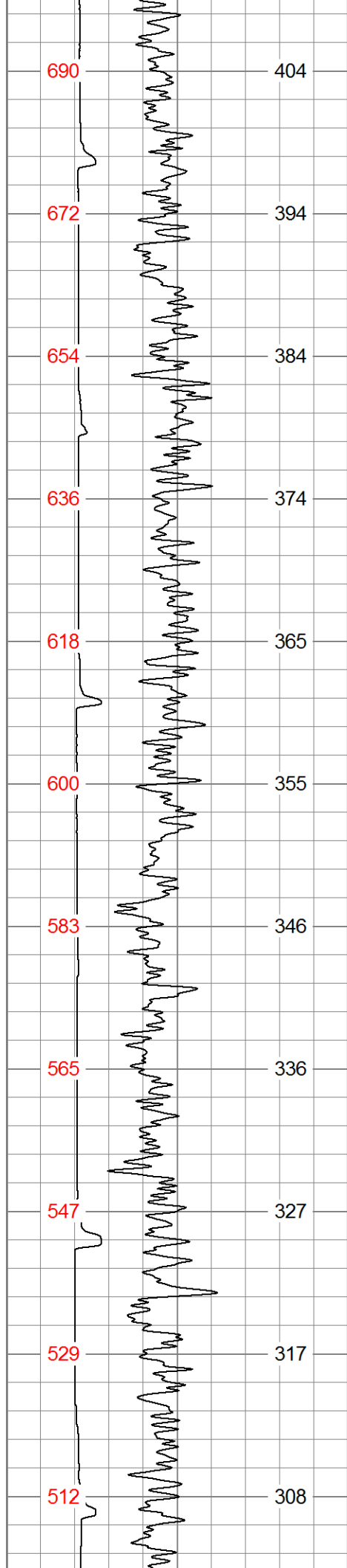
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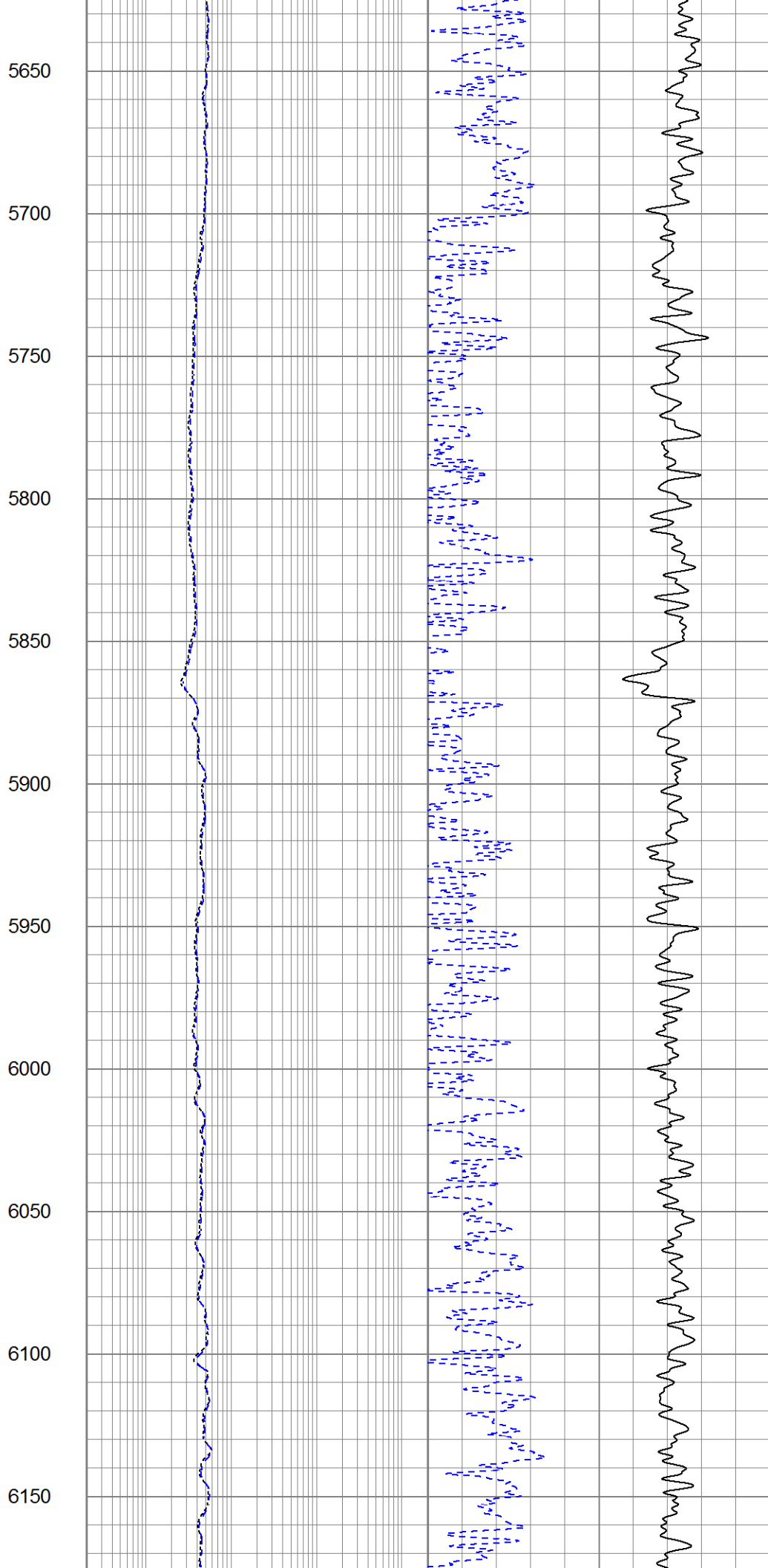
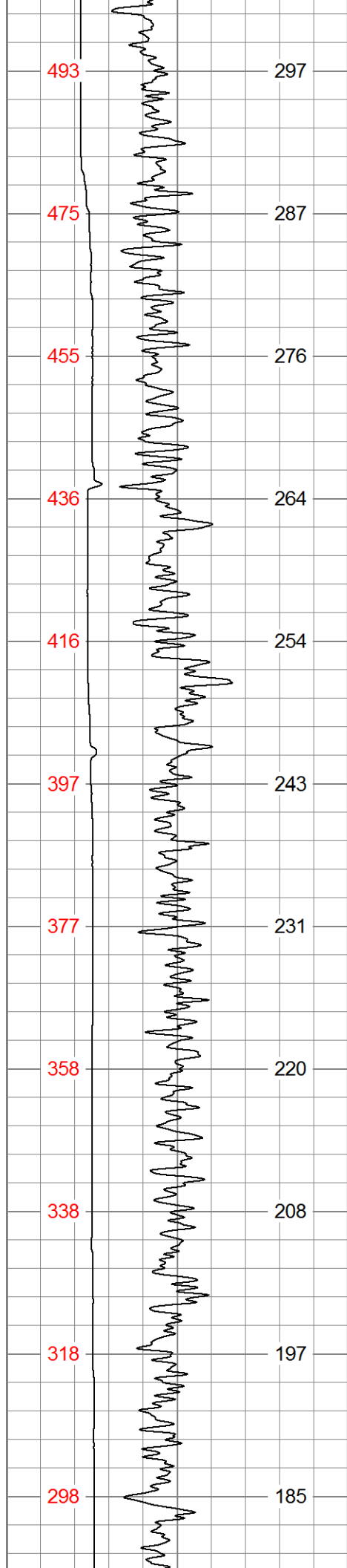


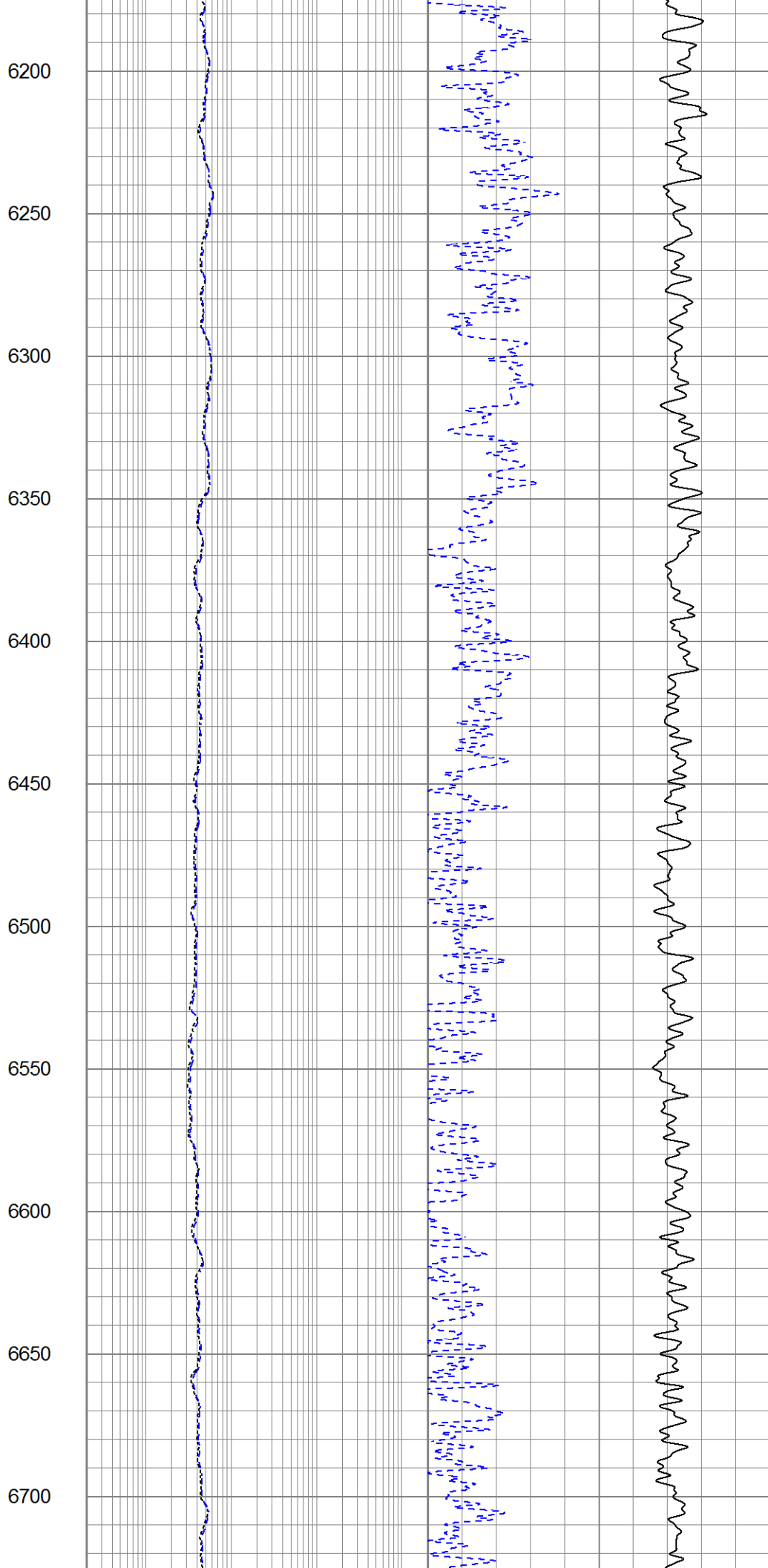
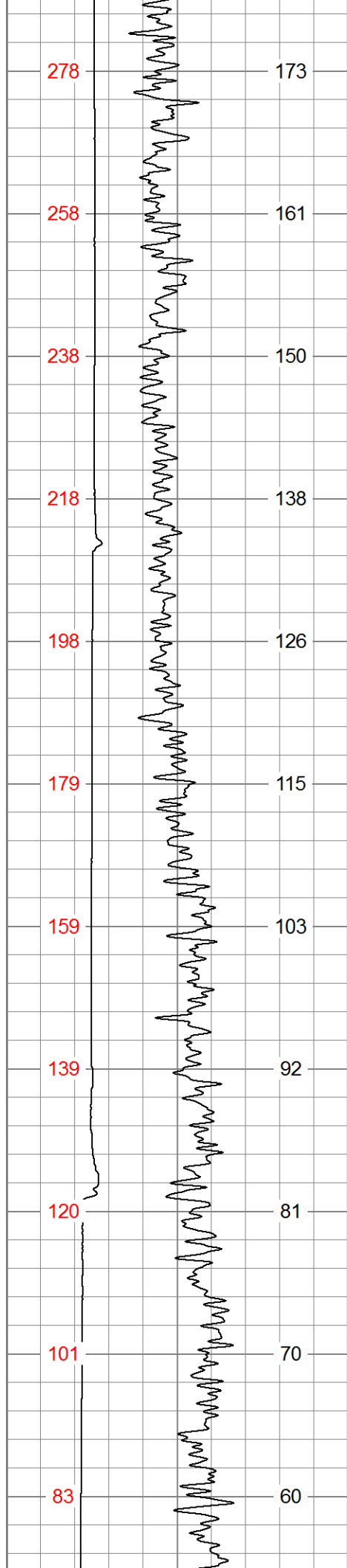


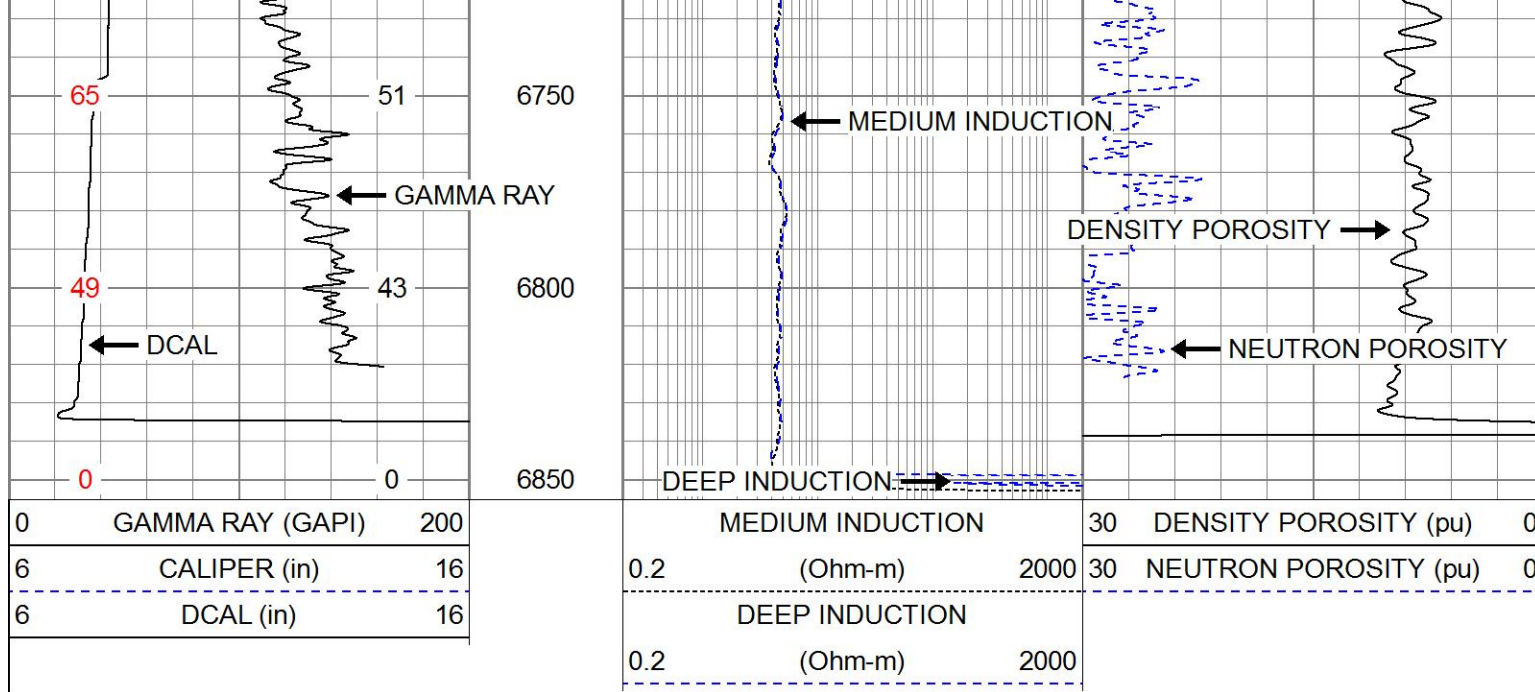
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4700
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4800
4850
4900
4950
5000
5050









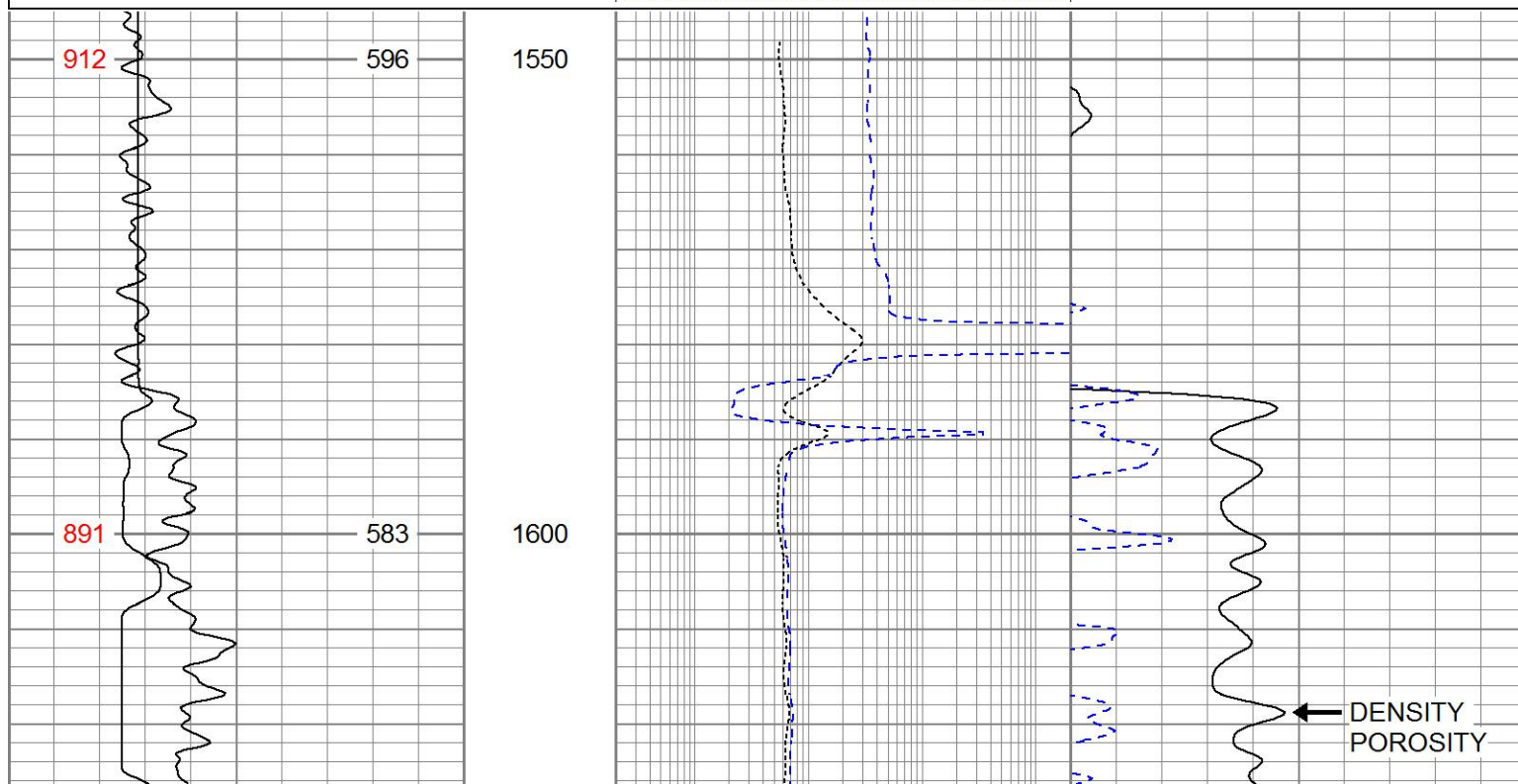
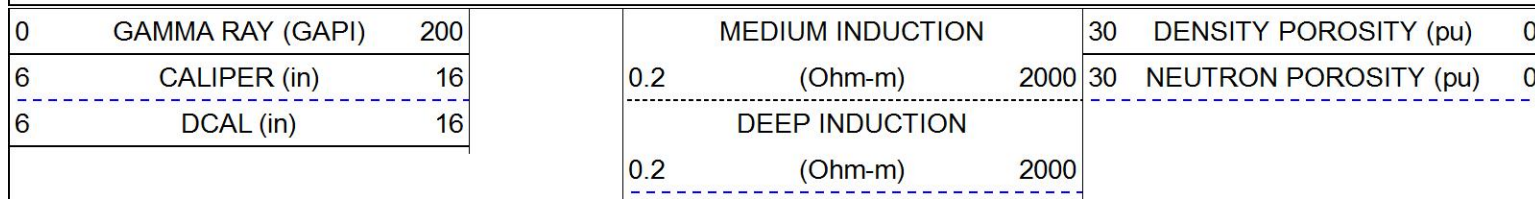


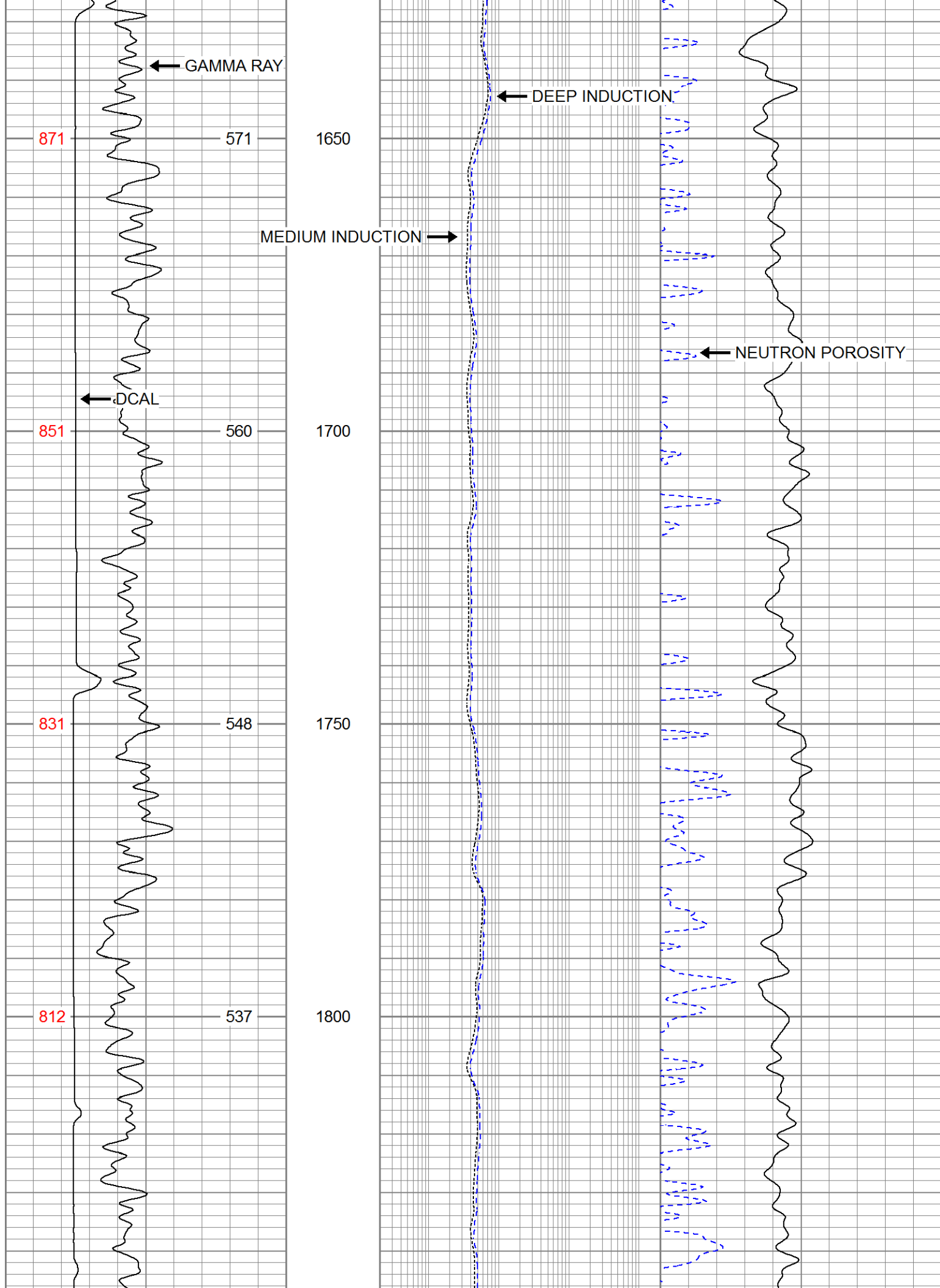


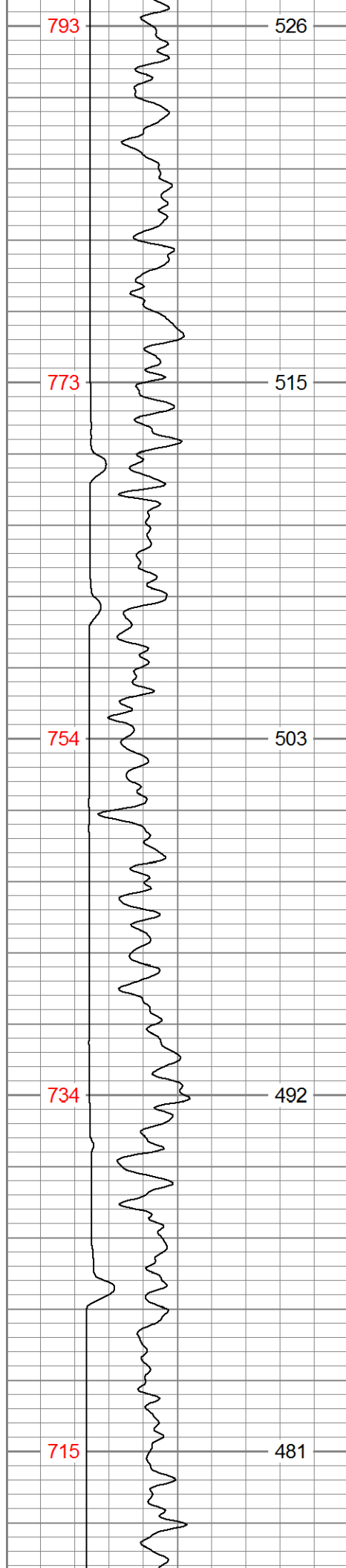
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MAIN PASS

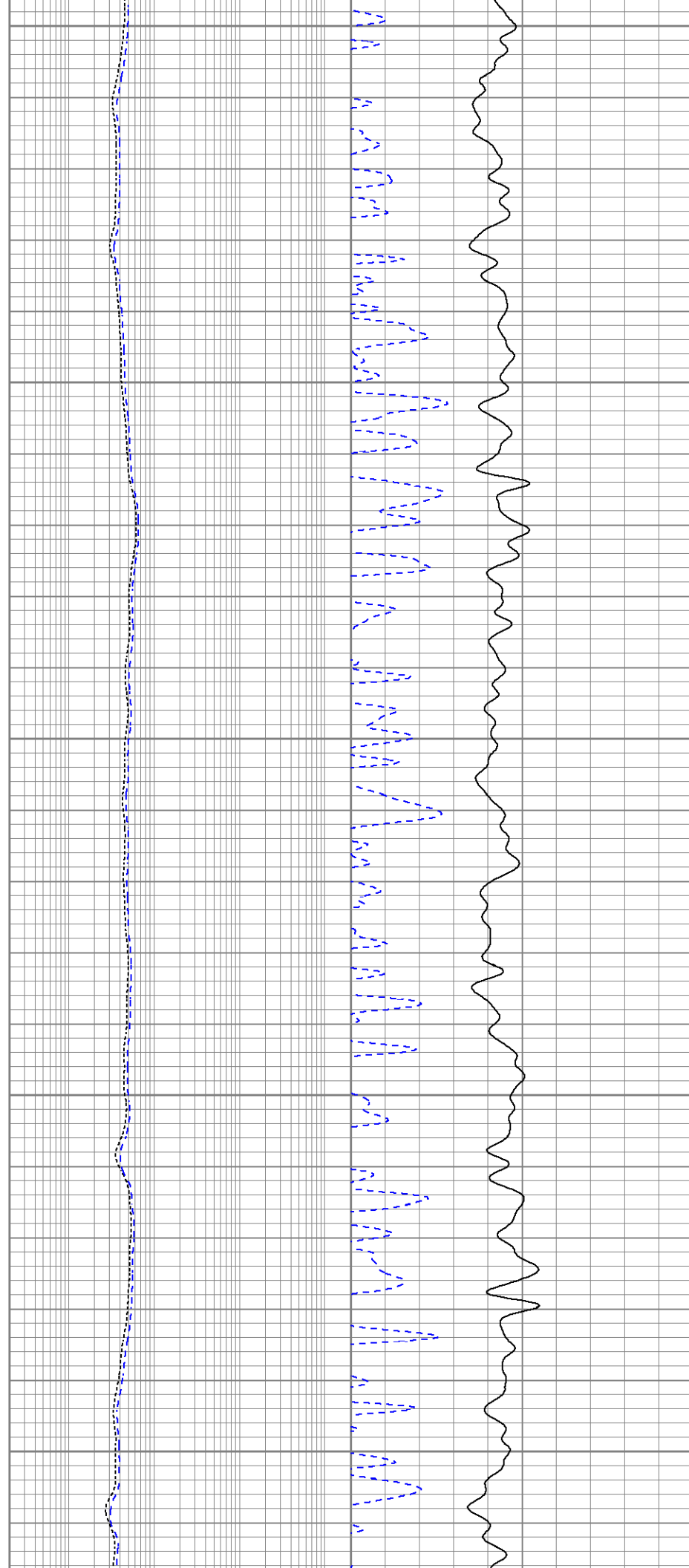
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 Dataset Pathname STACK/pass5.1
 Presentation Format split
 Dataset Creation Fri Nov 11 00:23:19 2016
 Charted by Depth in Feet scaled 1:240

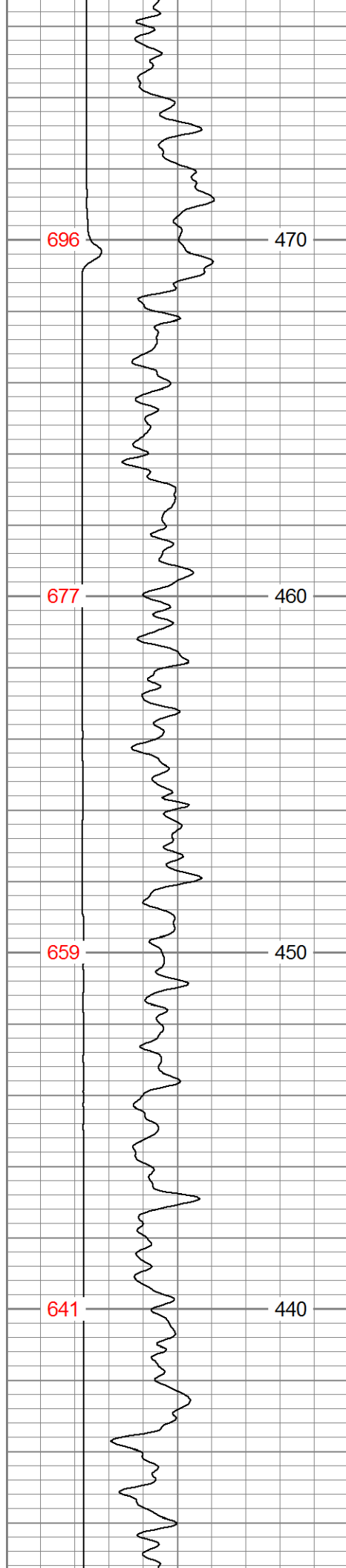






1850
1900
1950
2000
2050



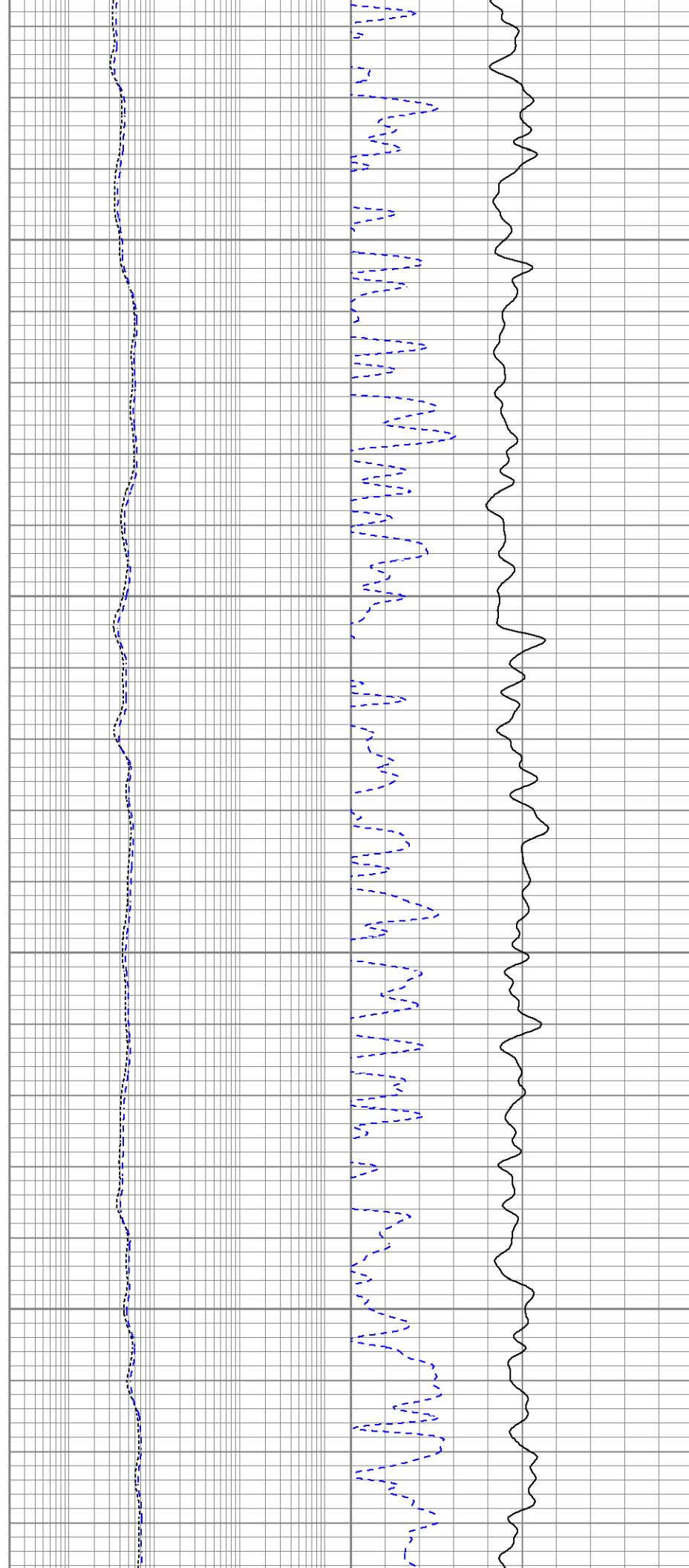


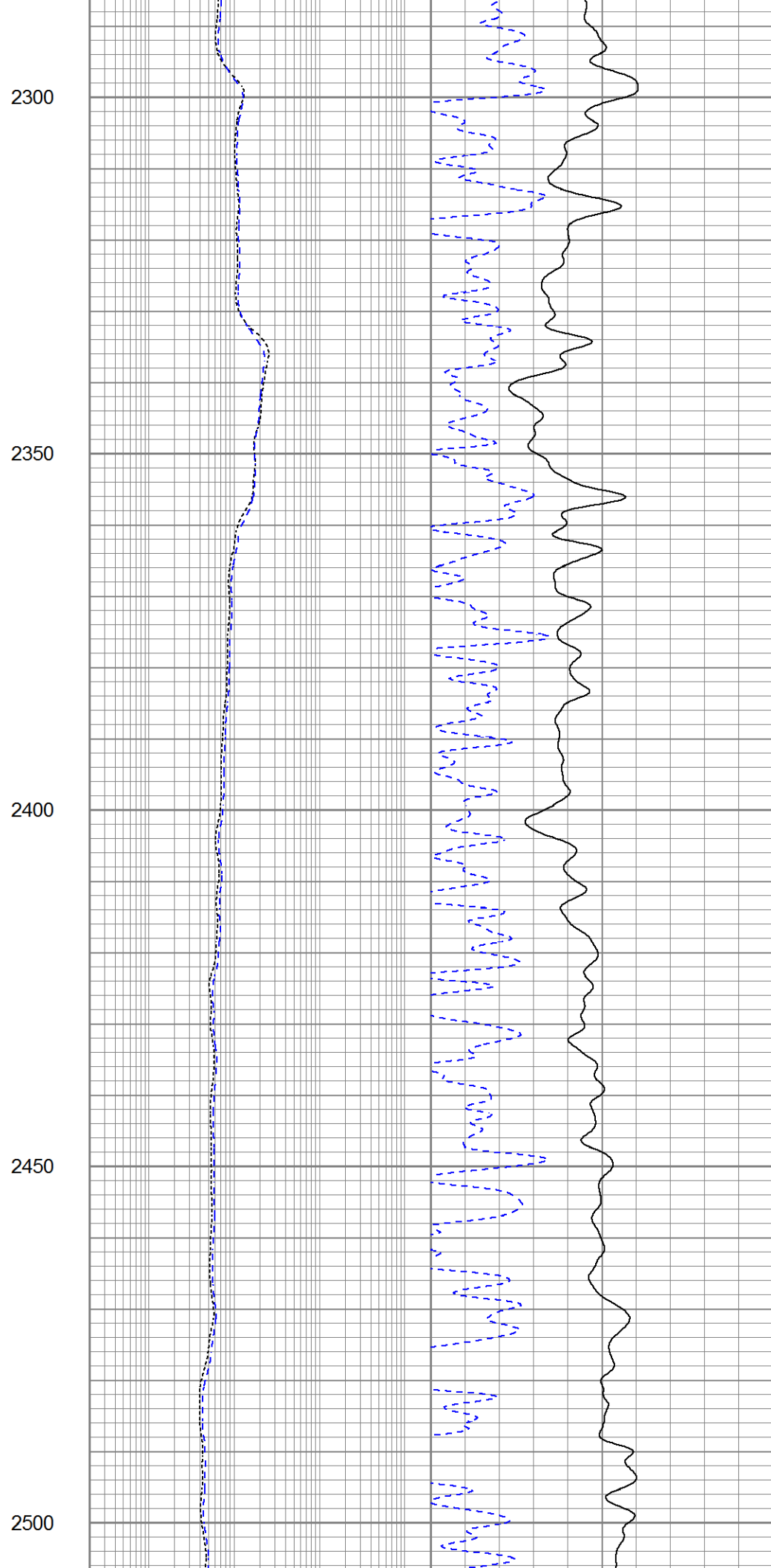
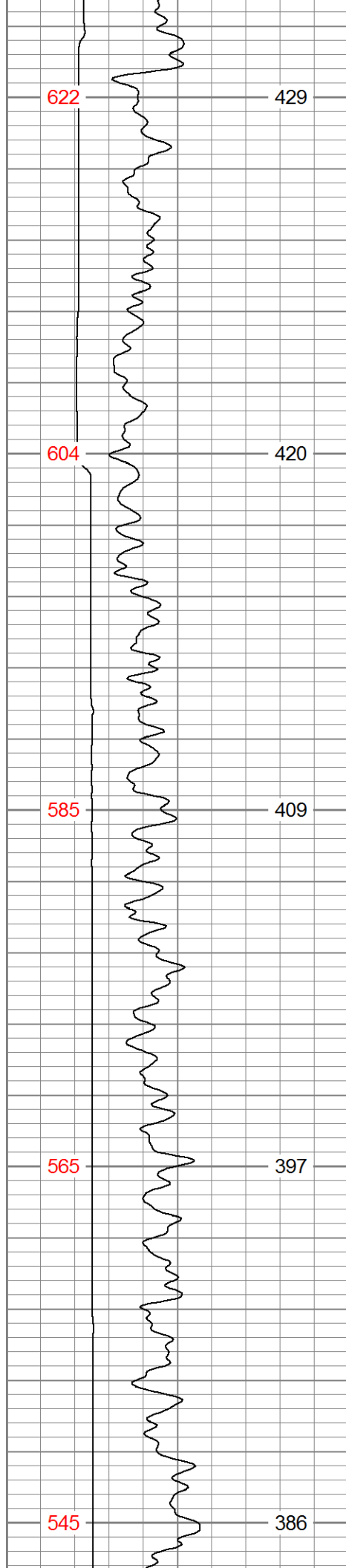
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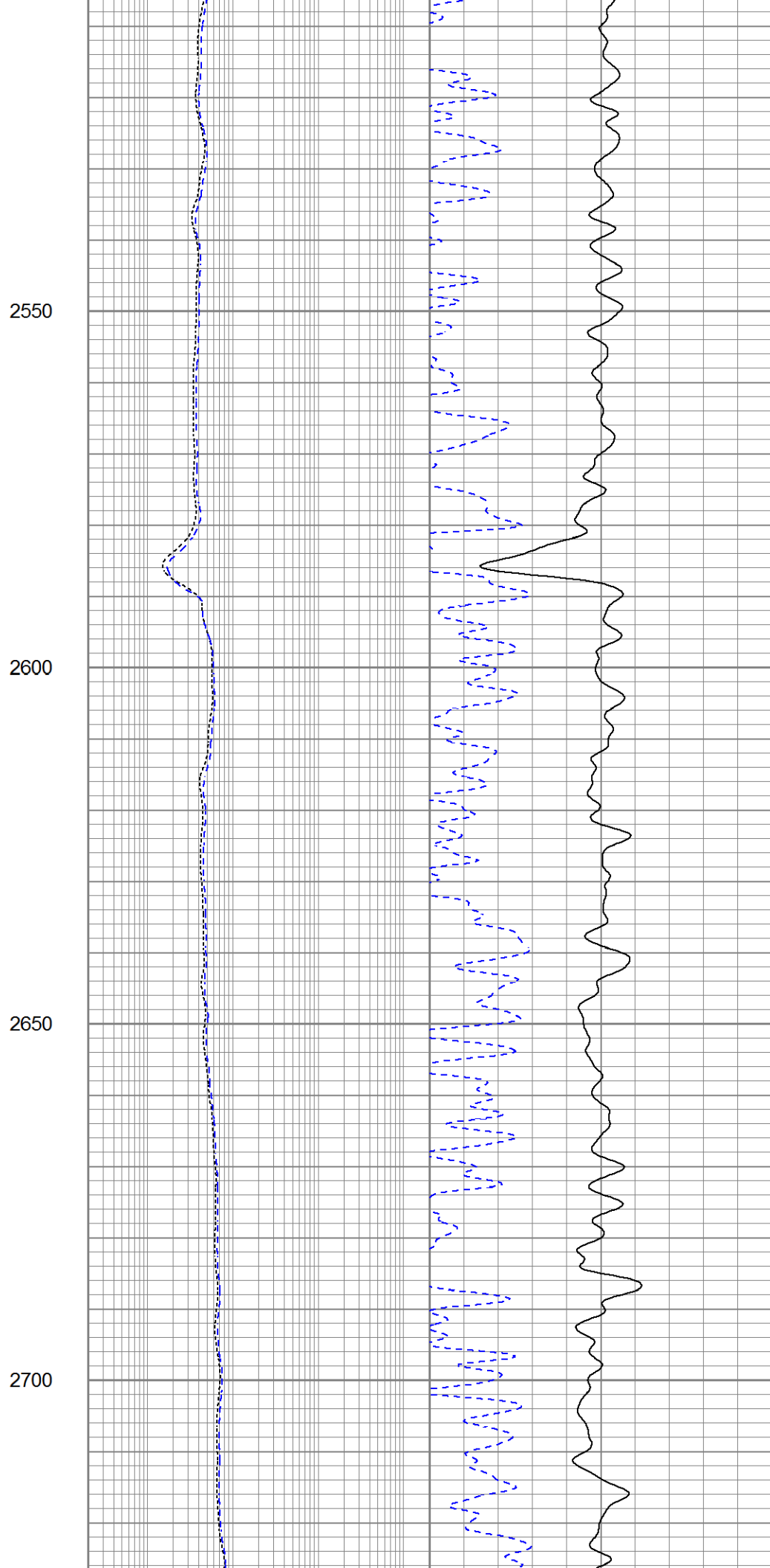
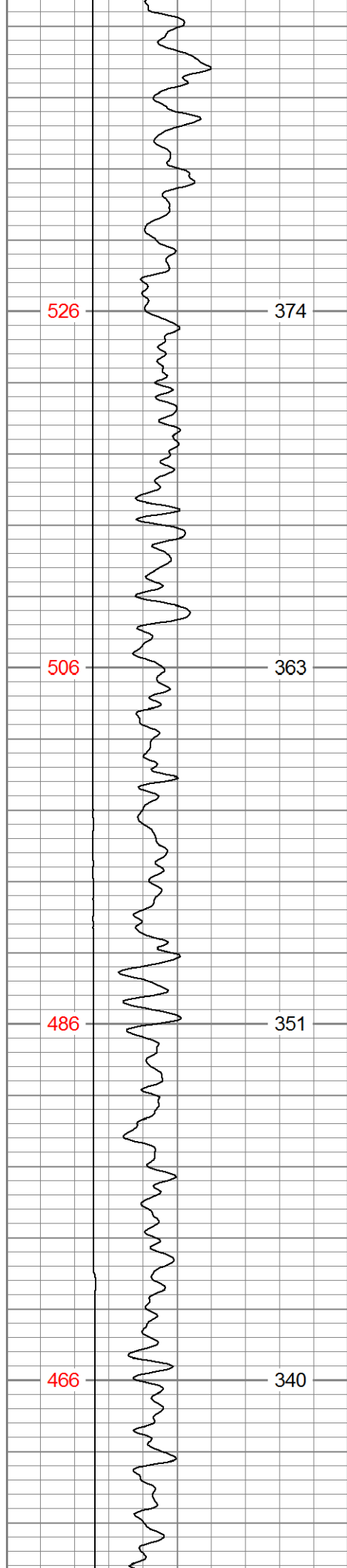
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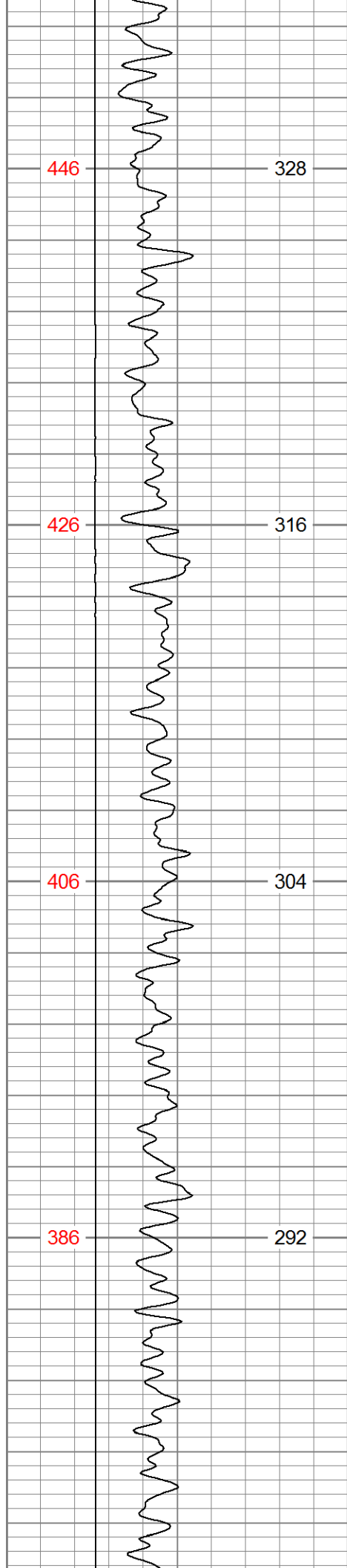
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2250







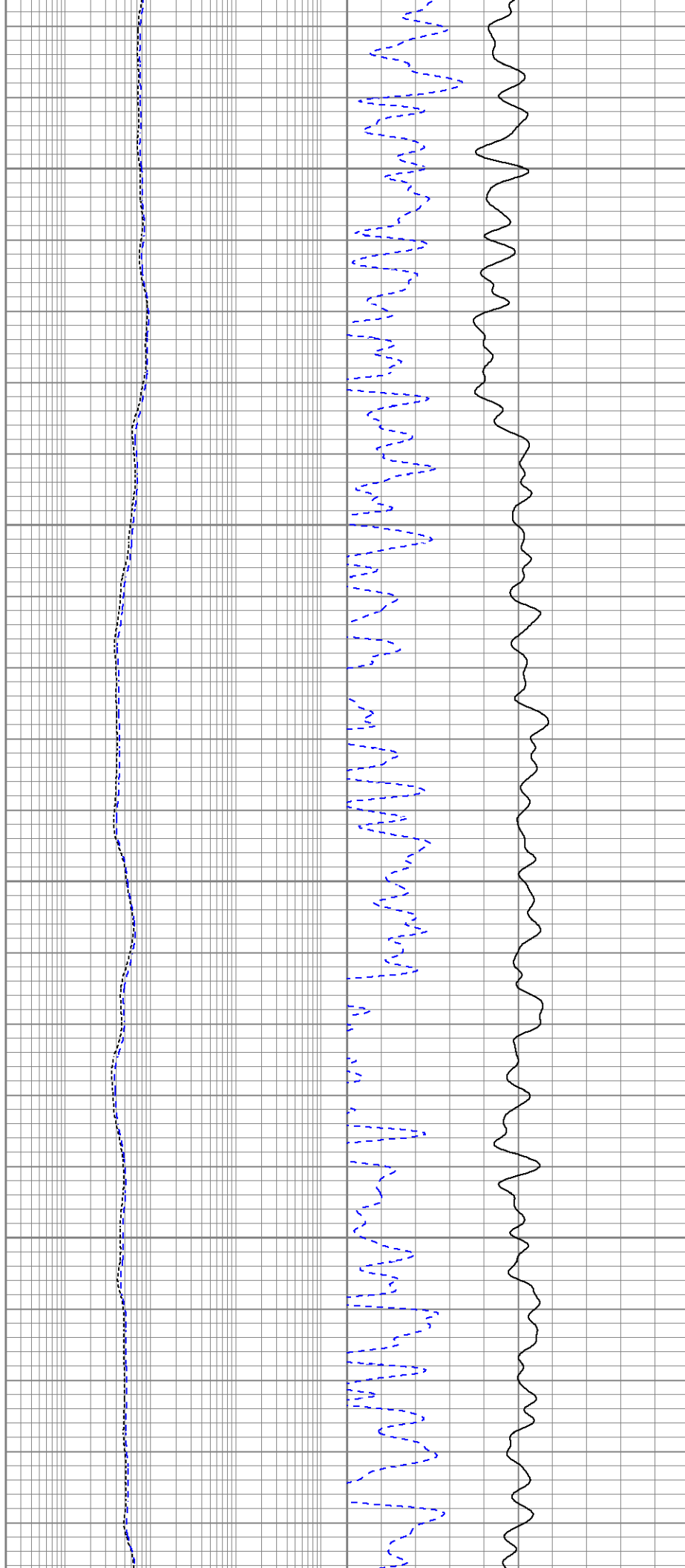


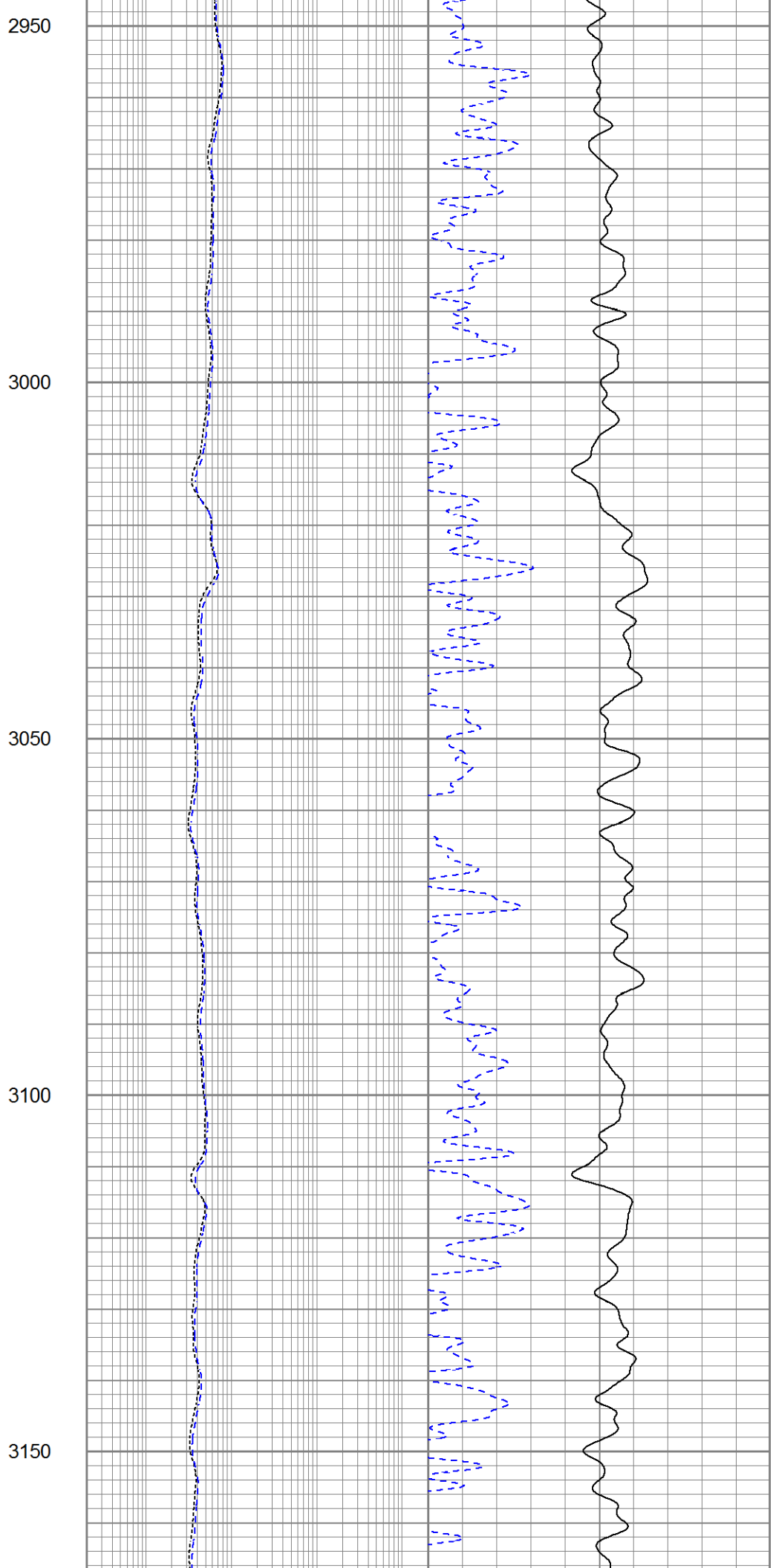
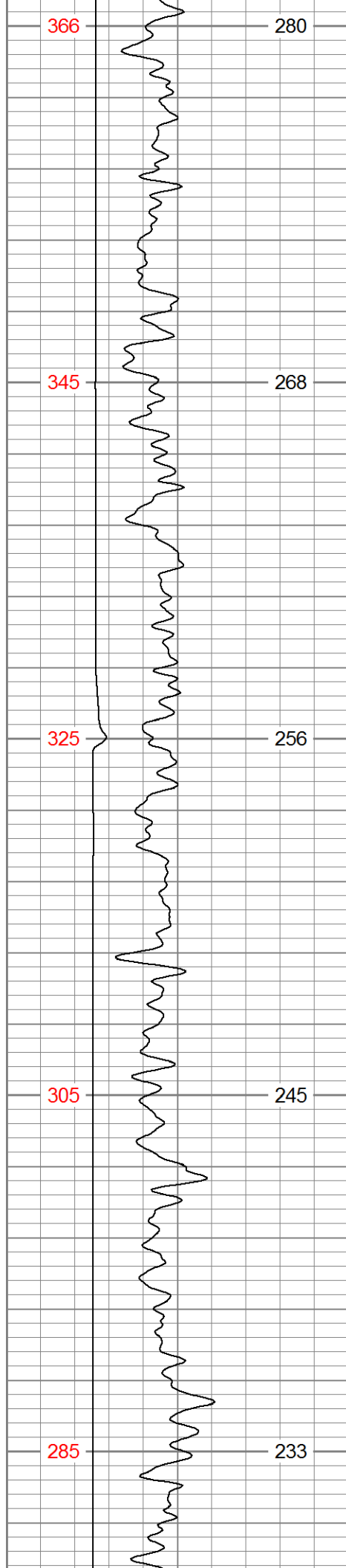
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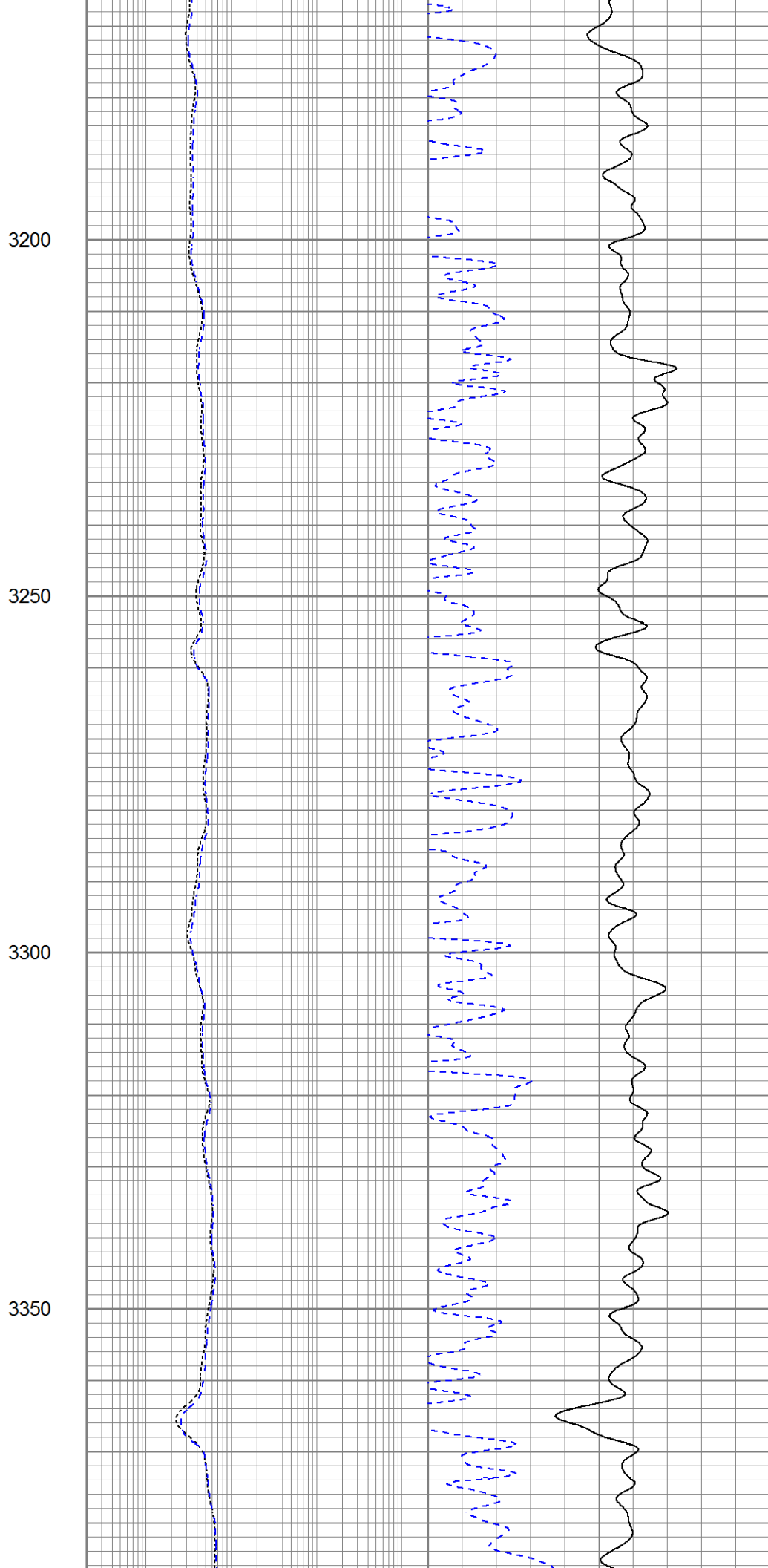
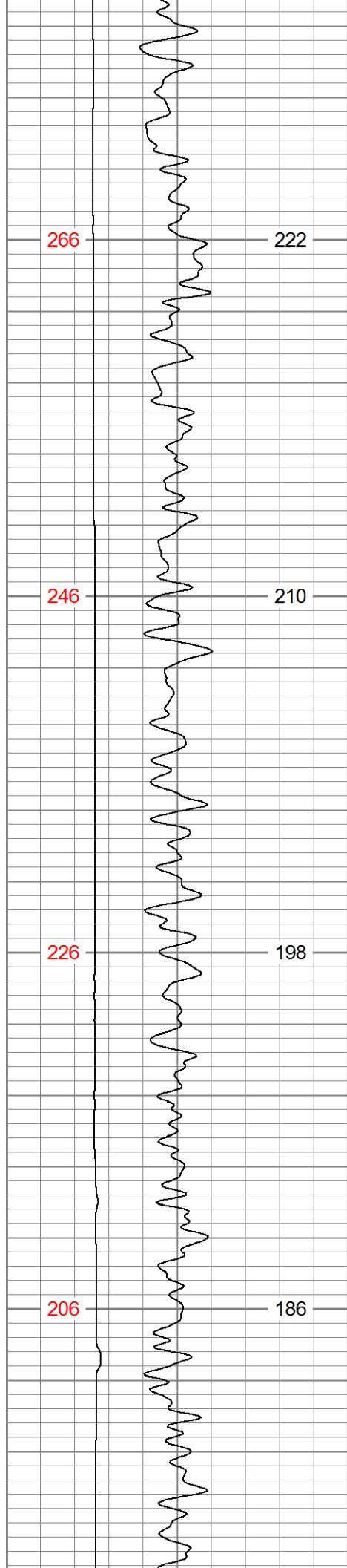
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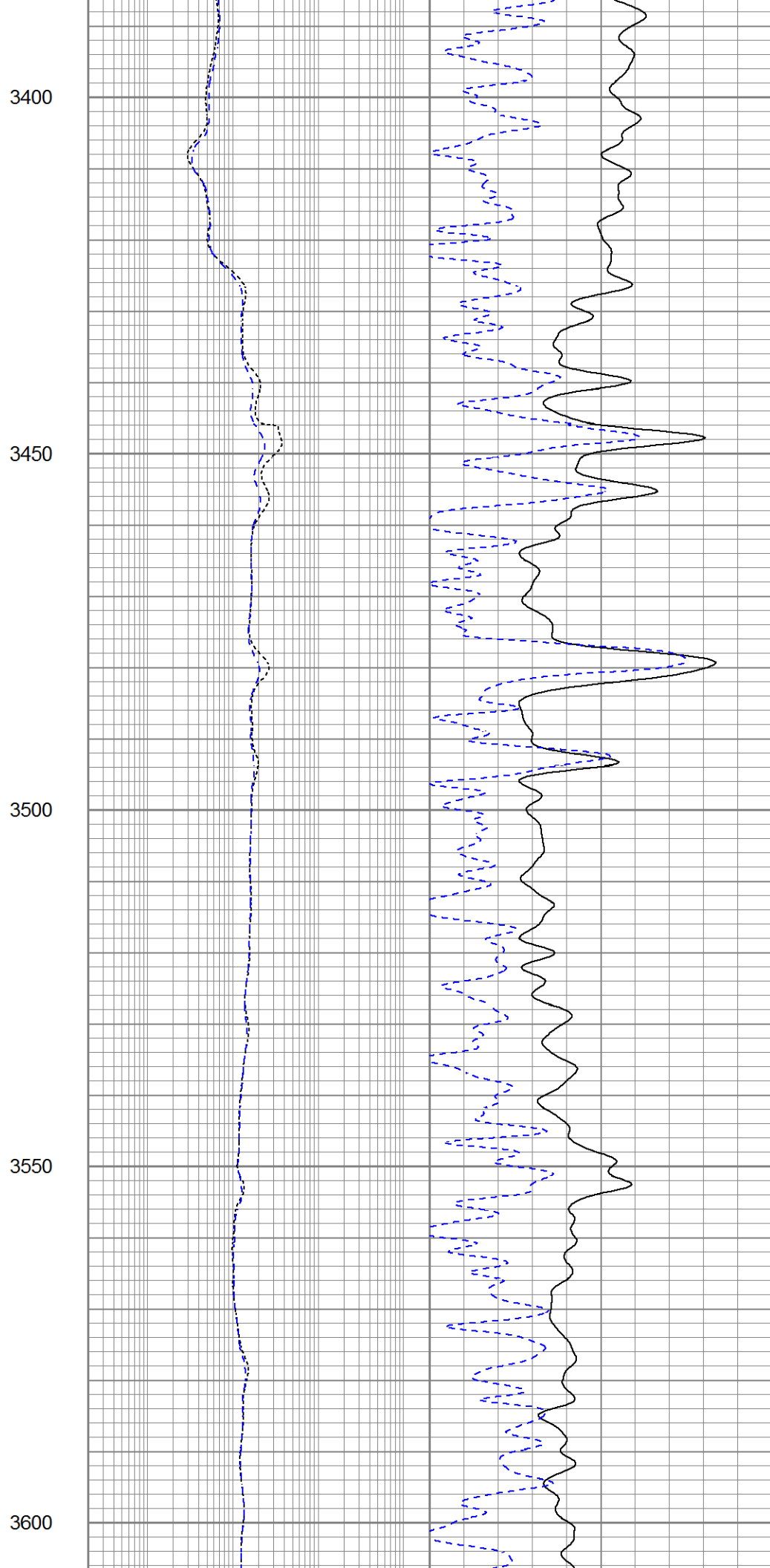
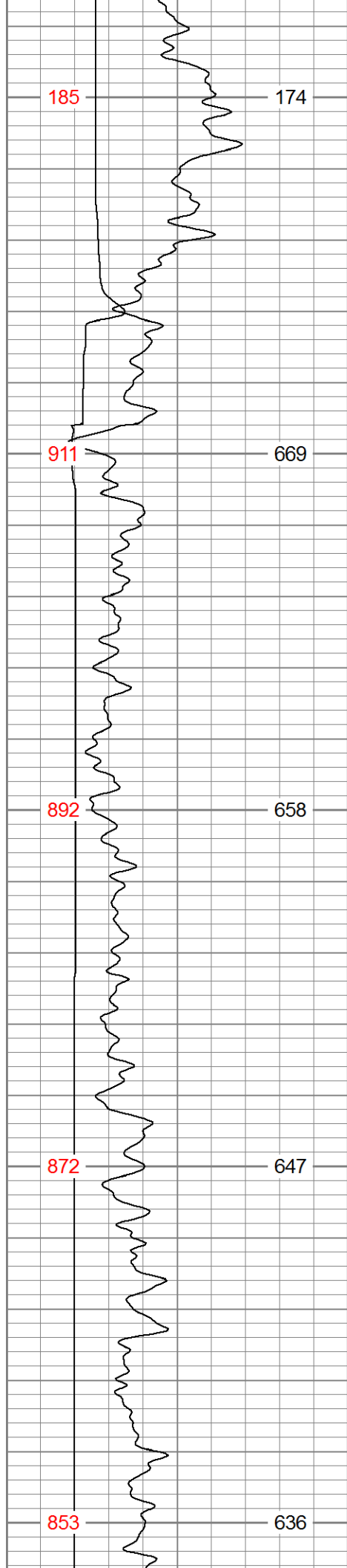
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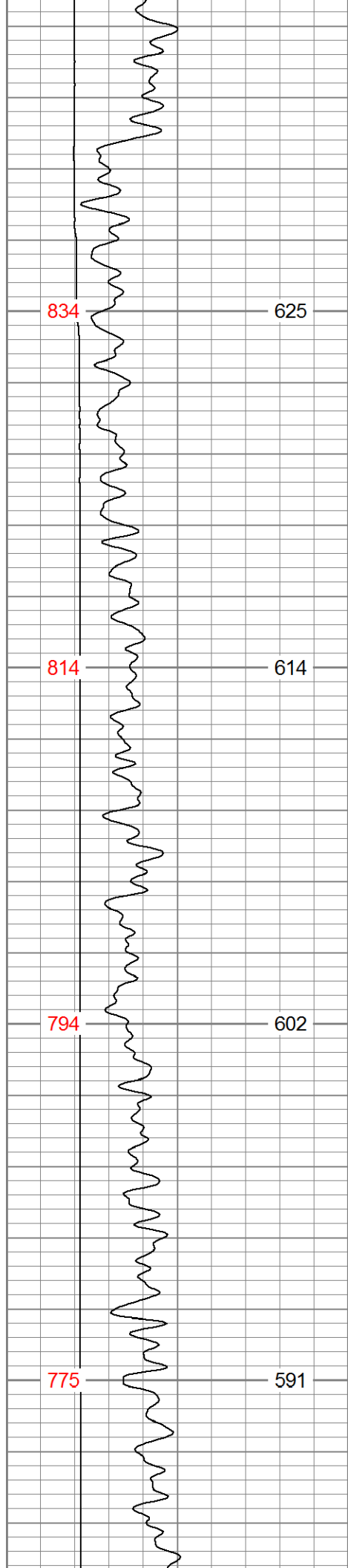
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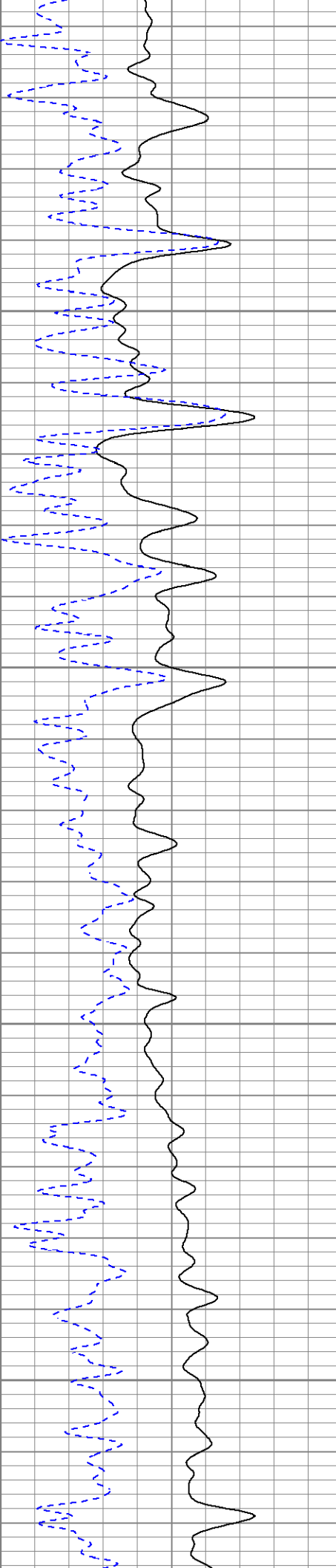
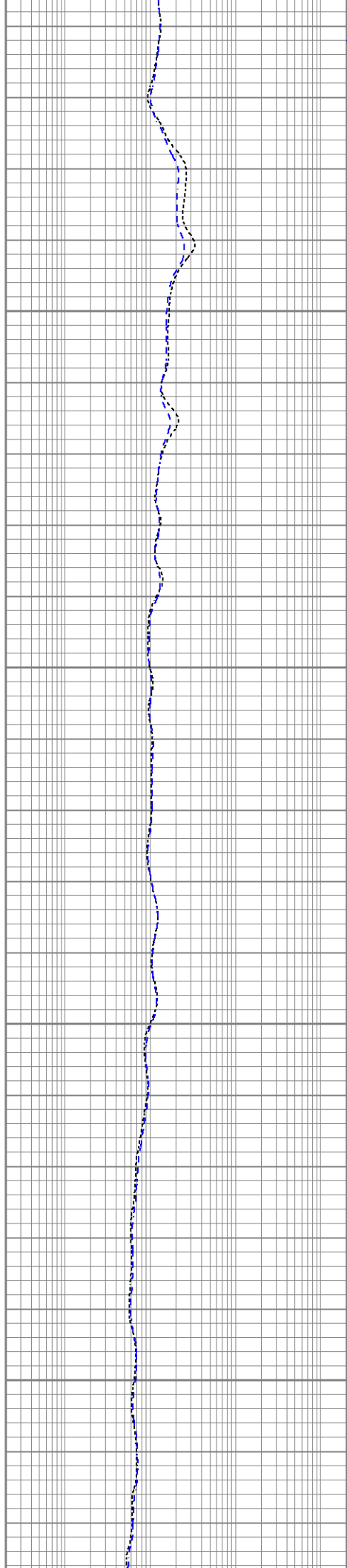


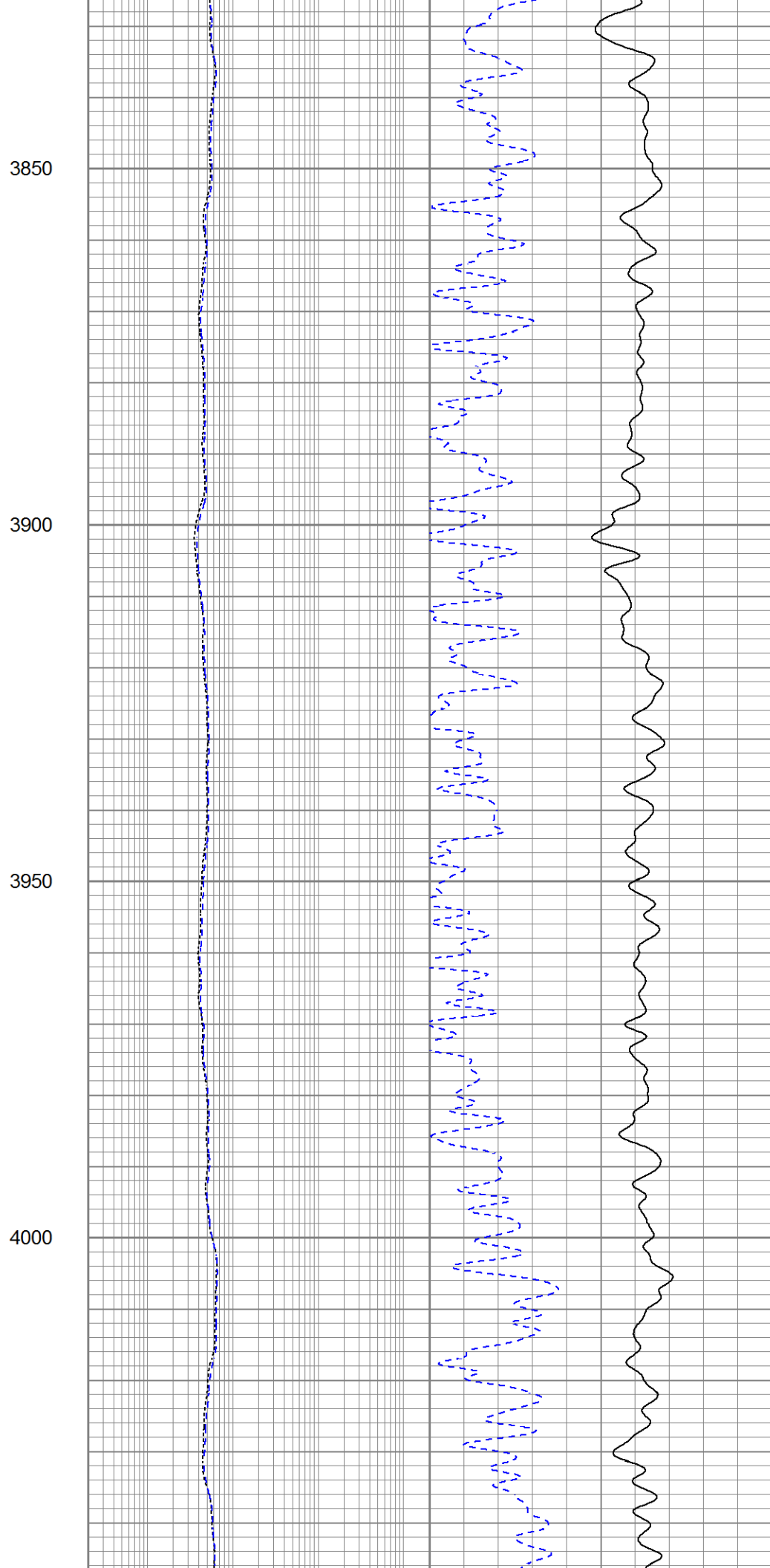
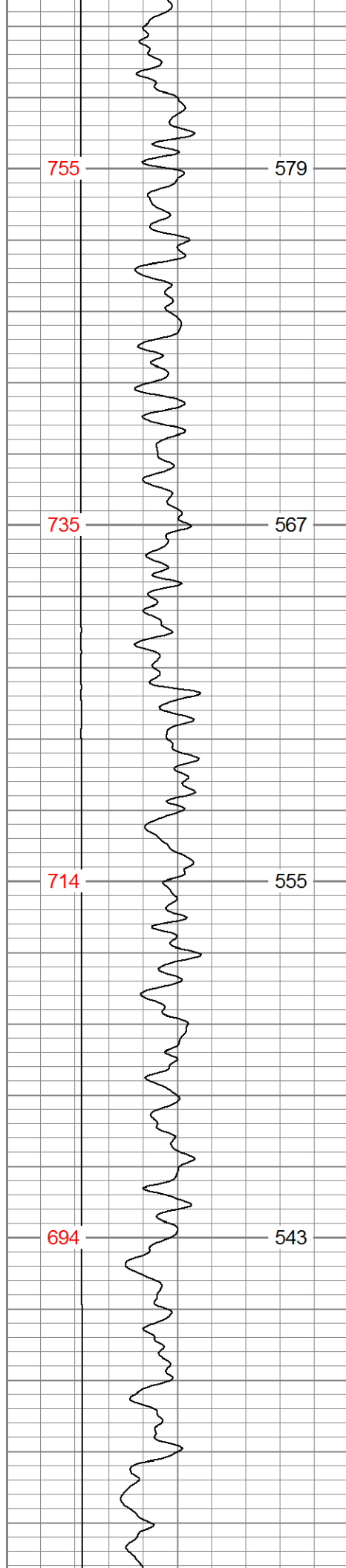


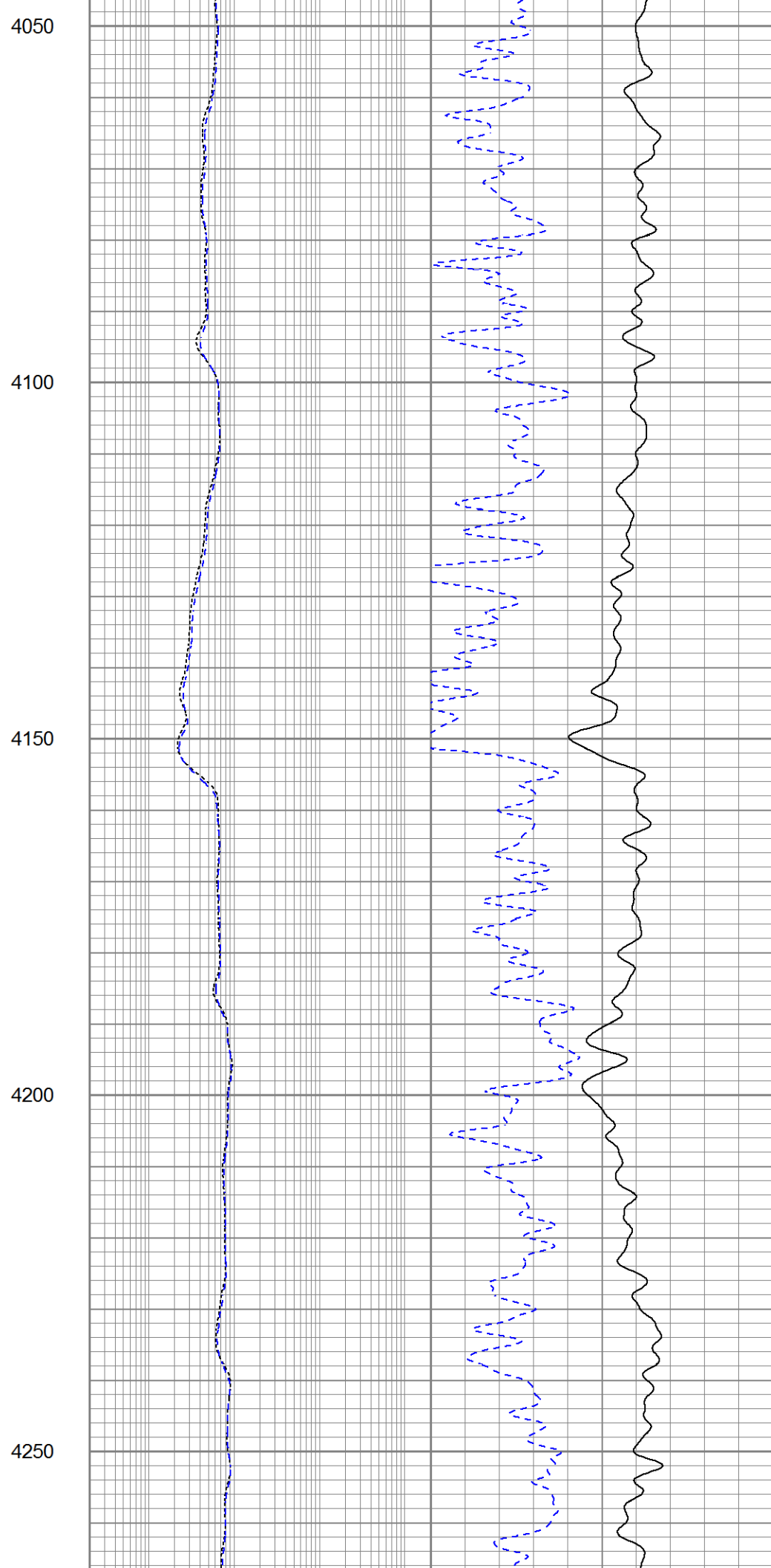
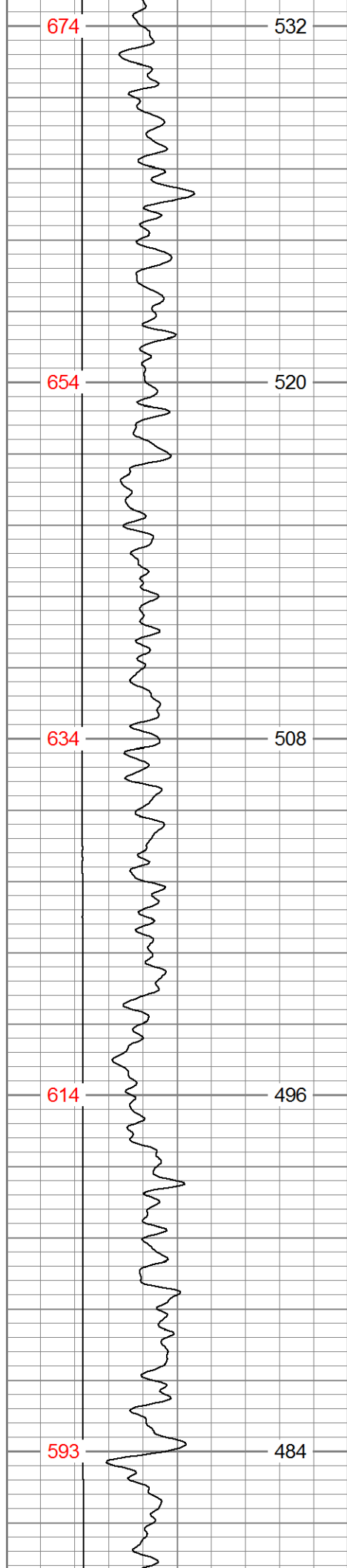


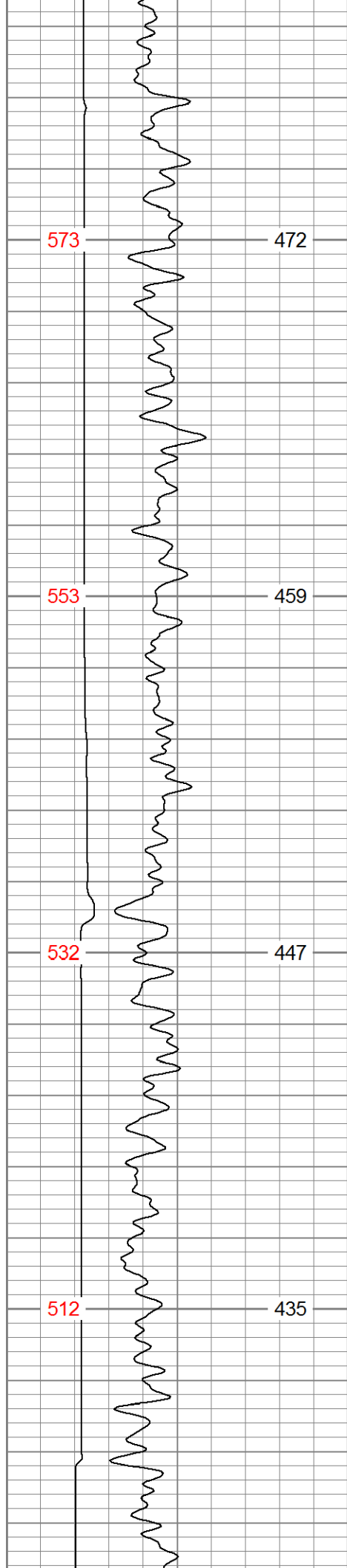


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3700
3750
3800







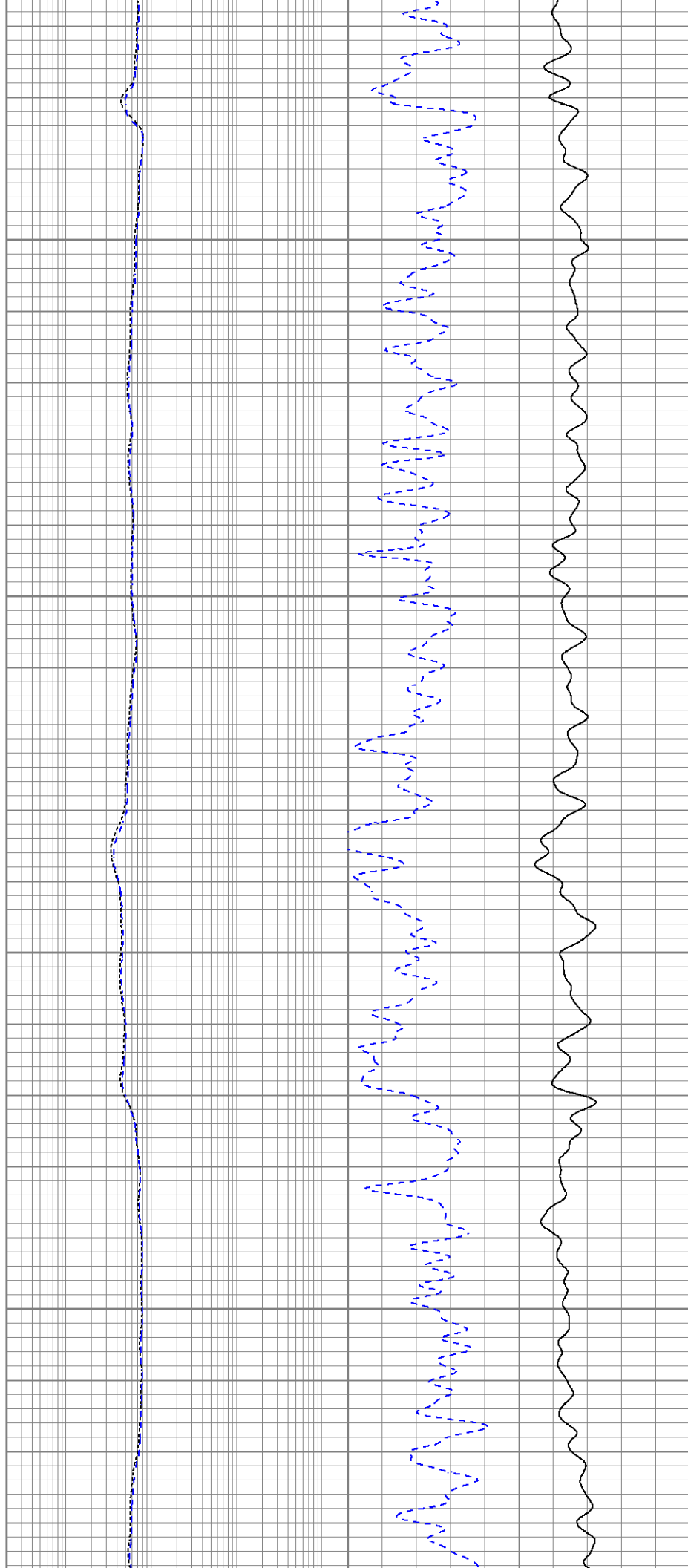


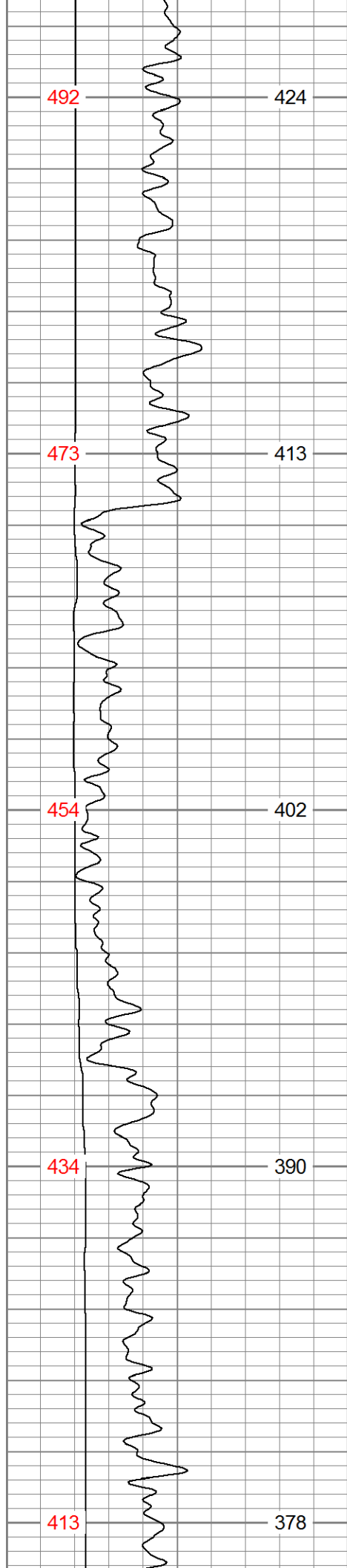
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4350

4400

4450





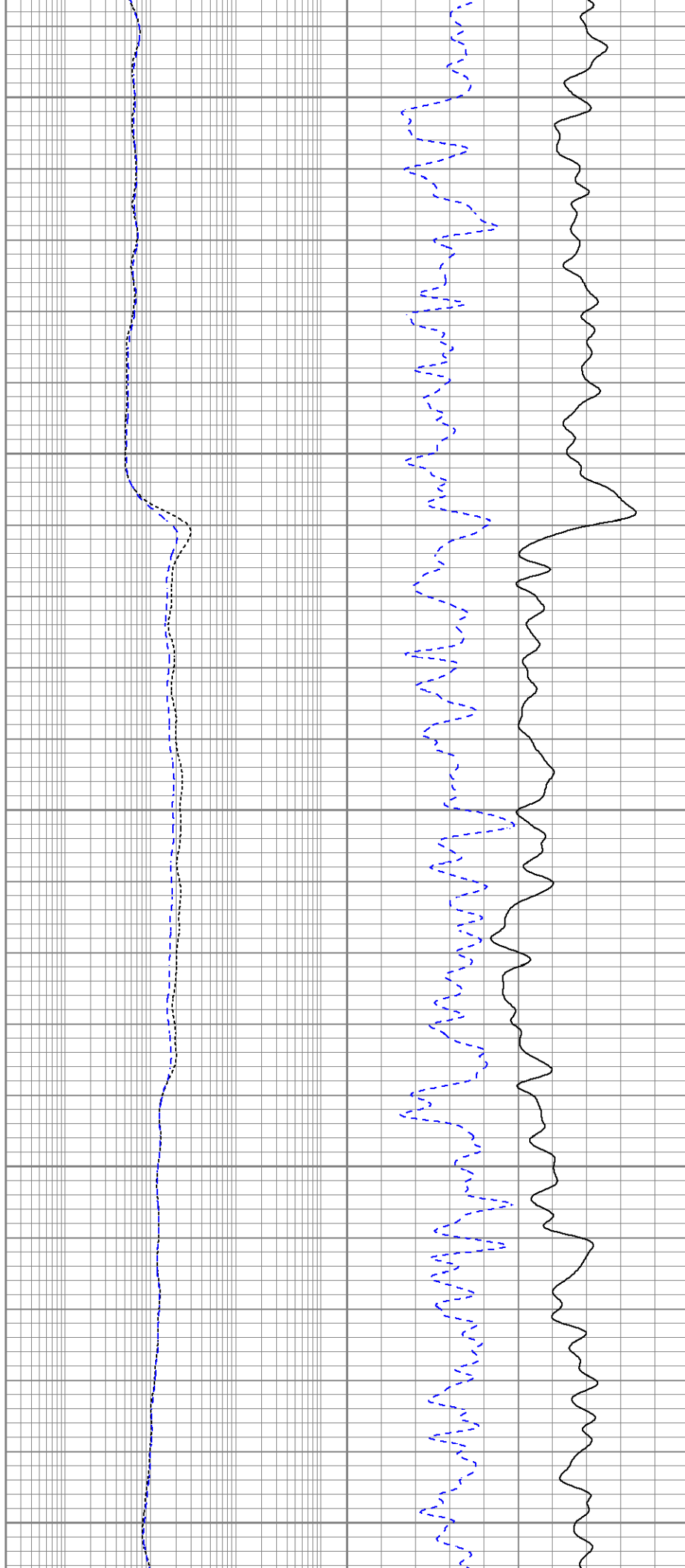
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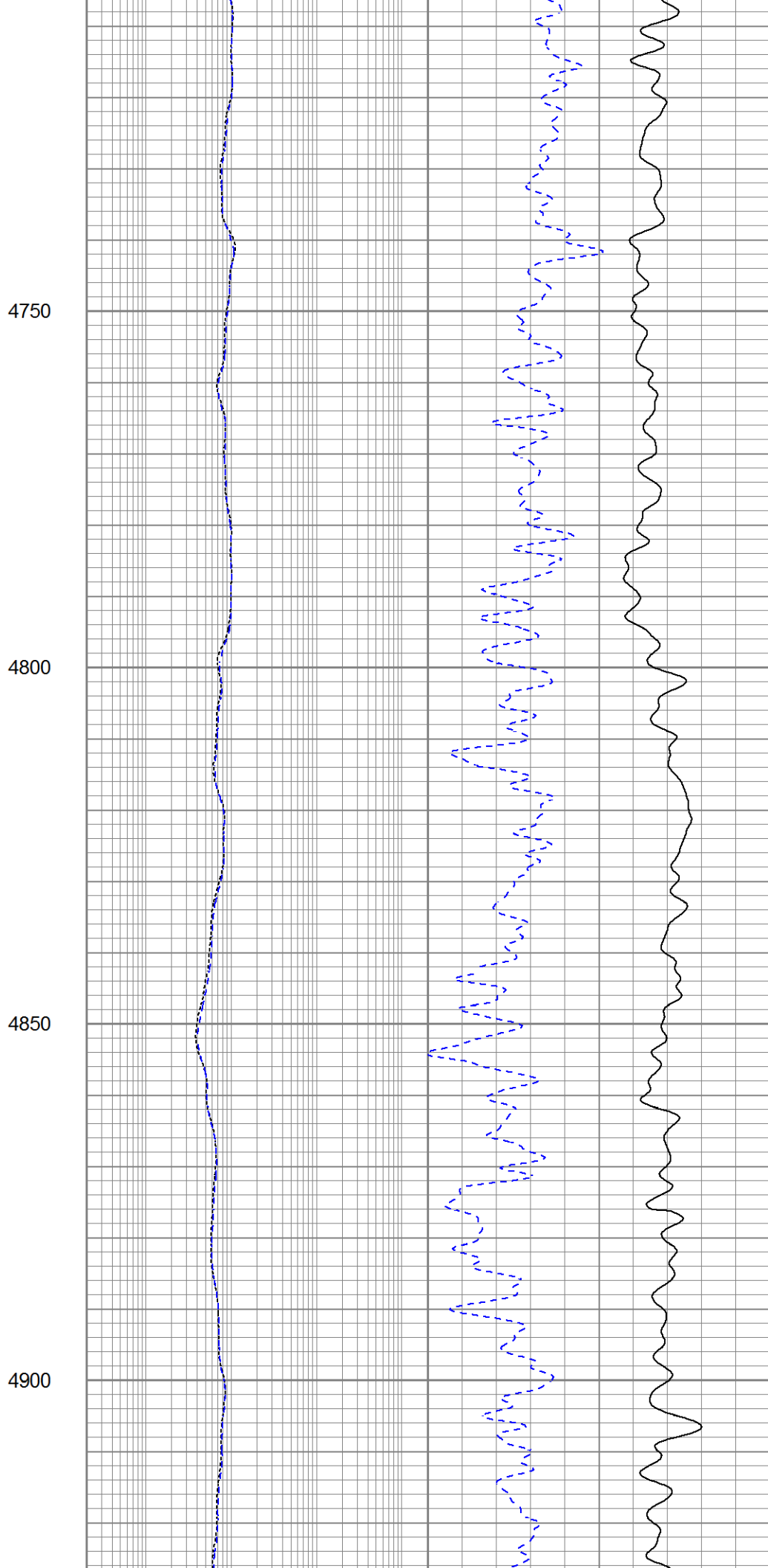
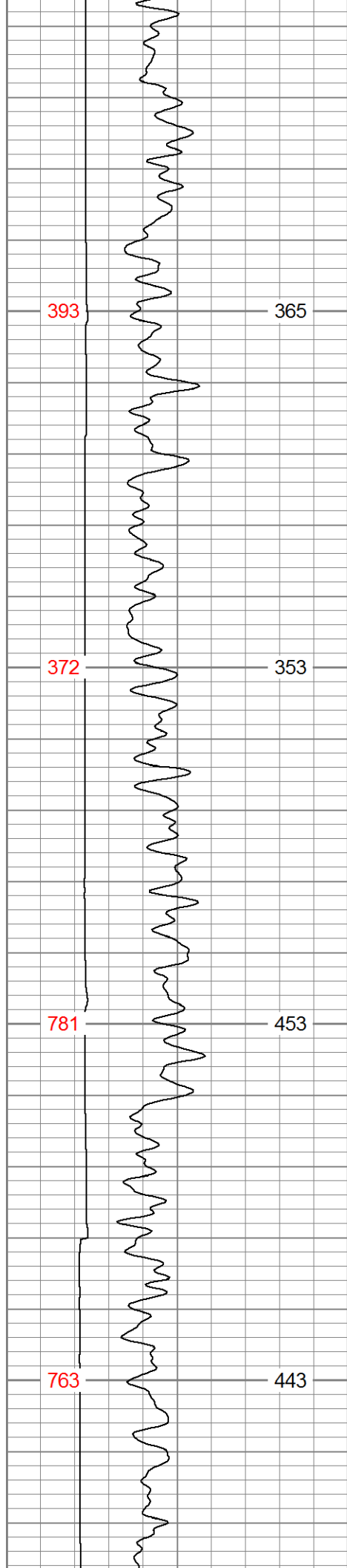
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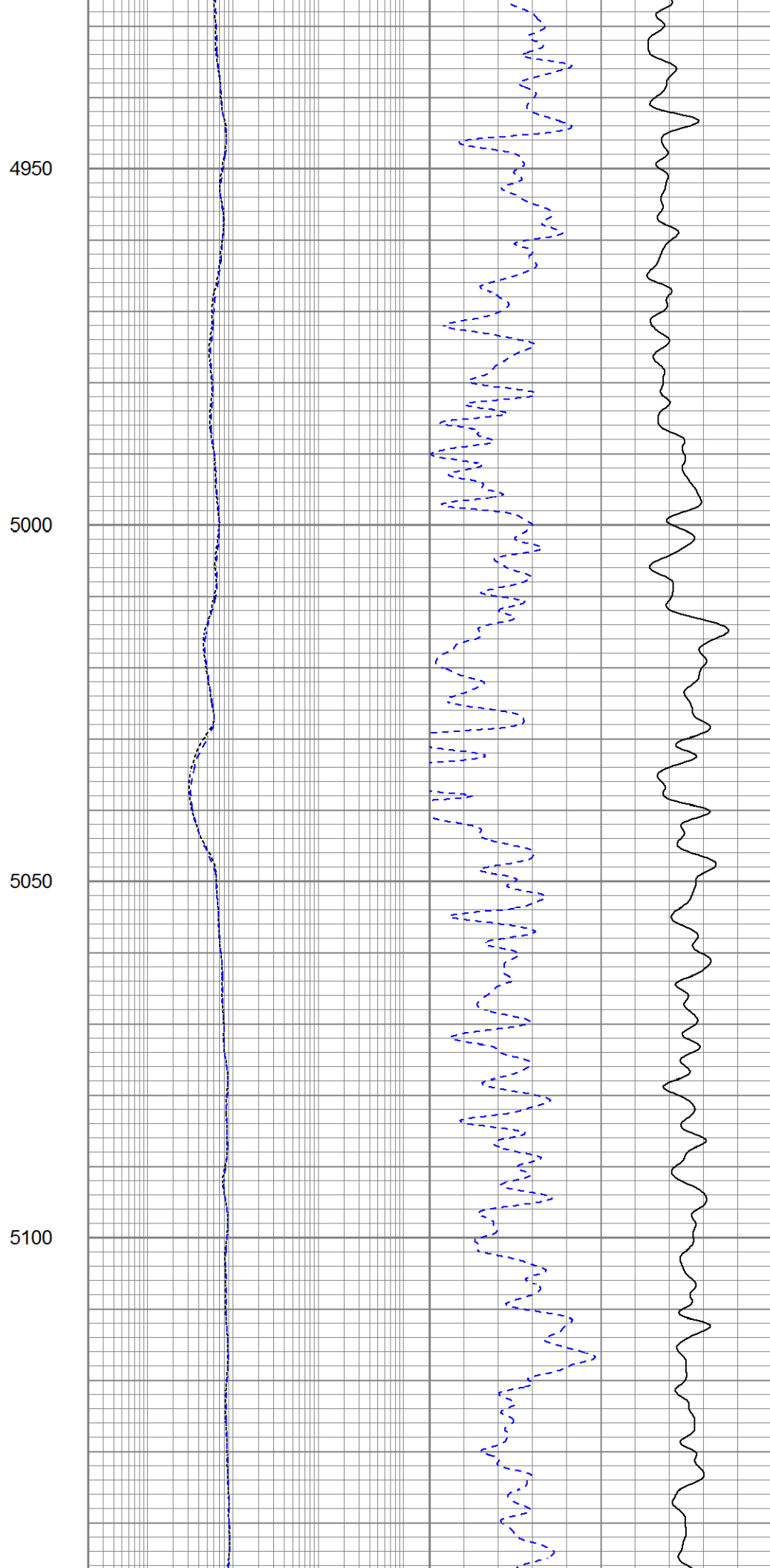
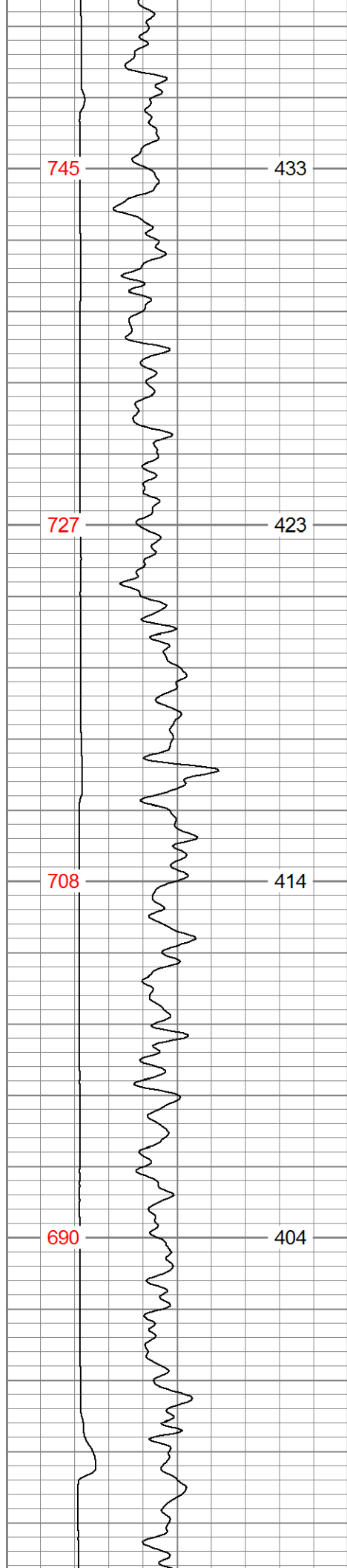
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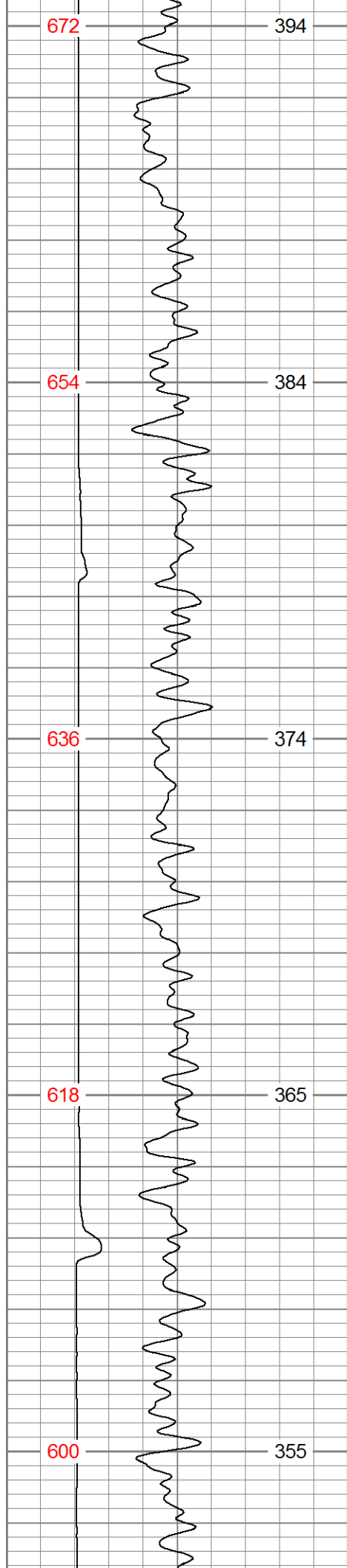
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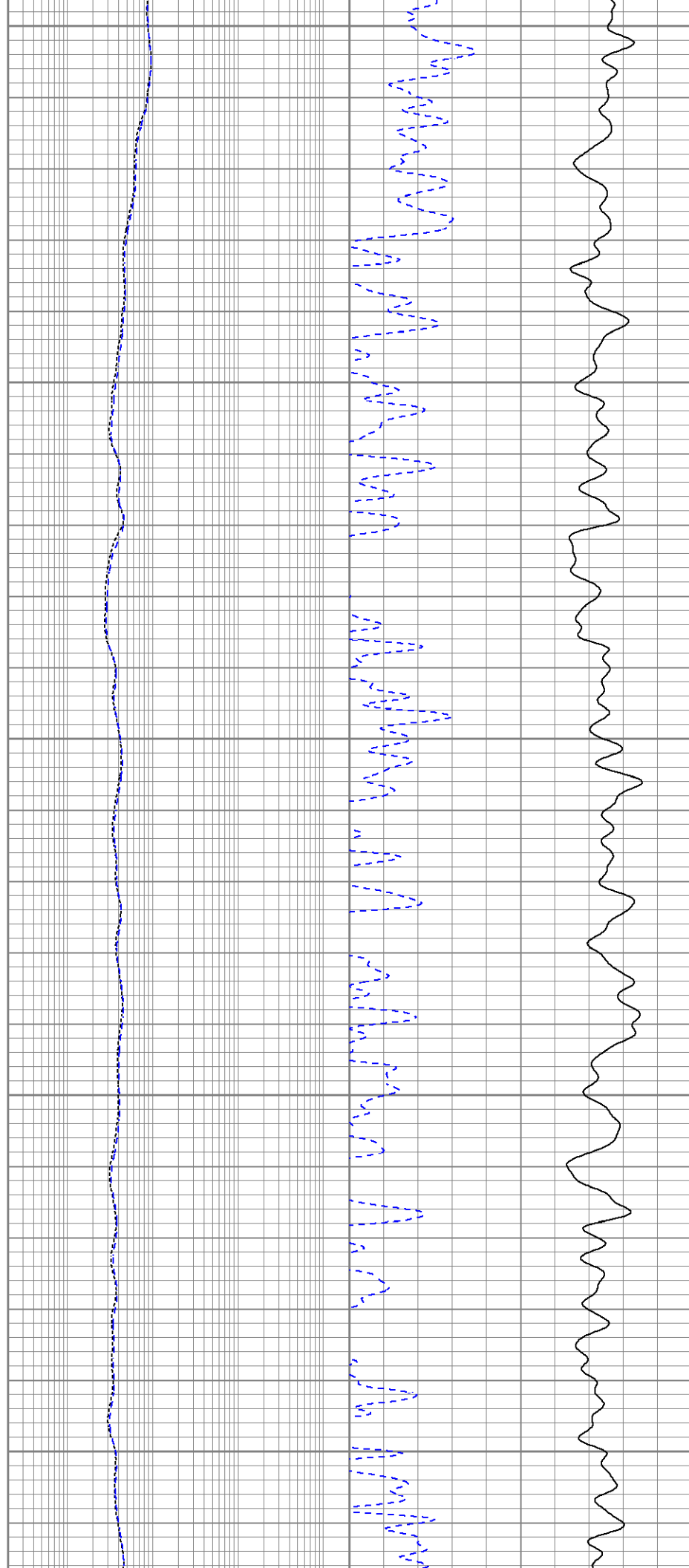


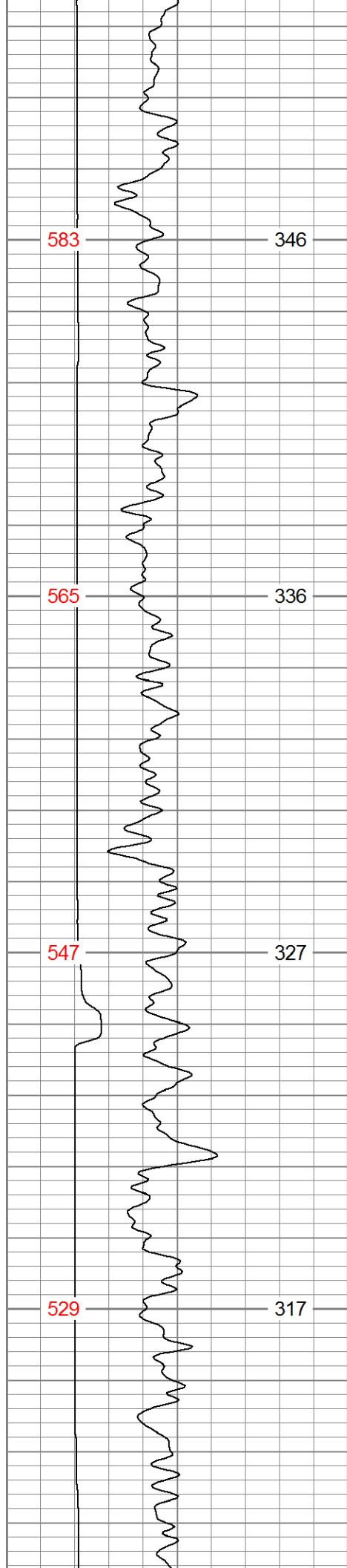






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5200
5250
5300
5350



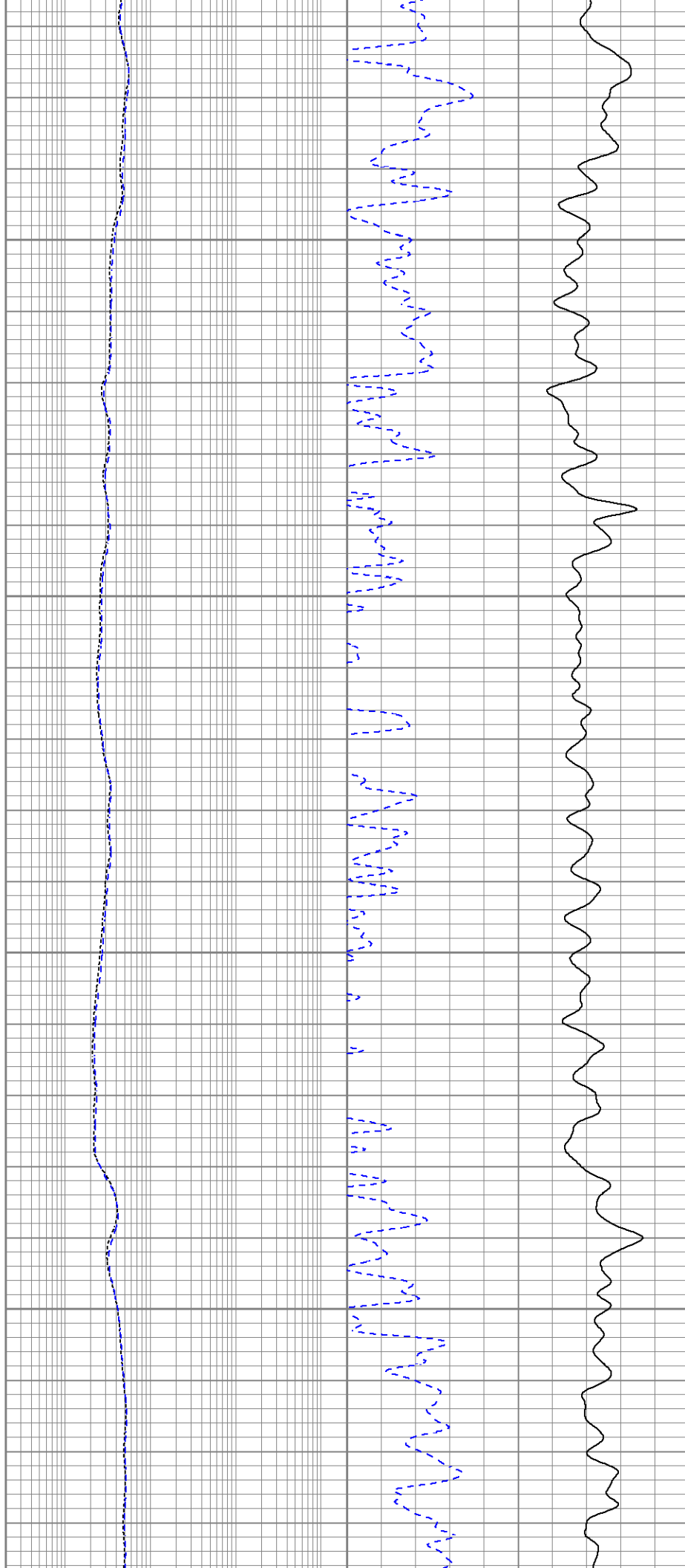


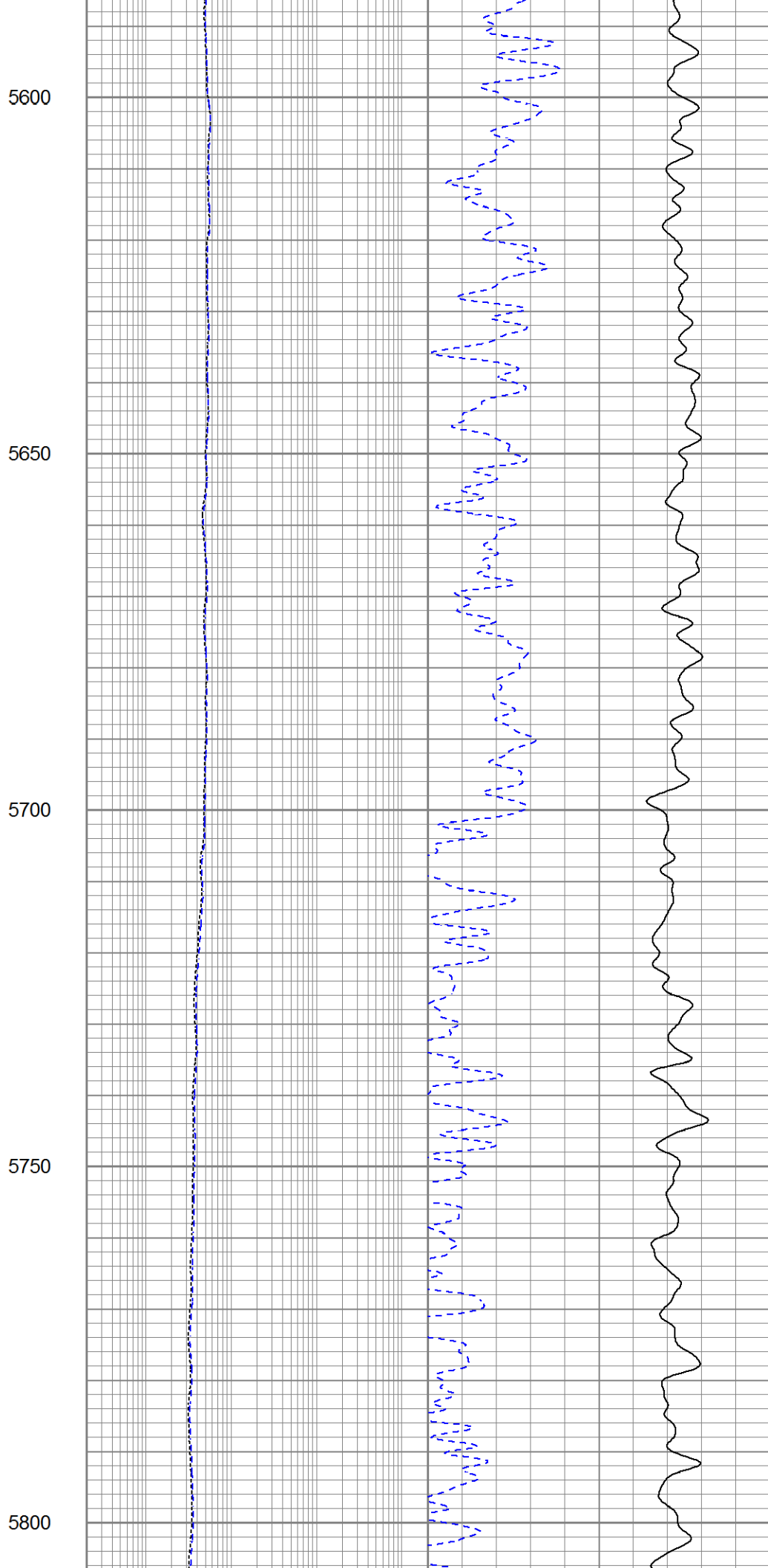
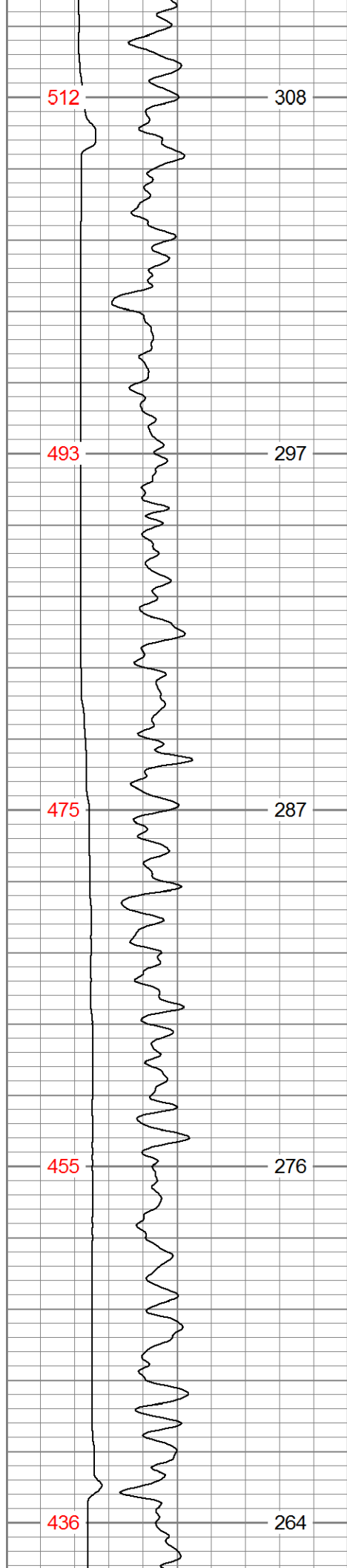
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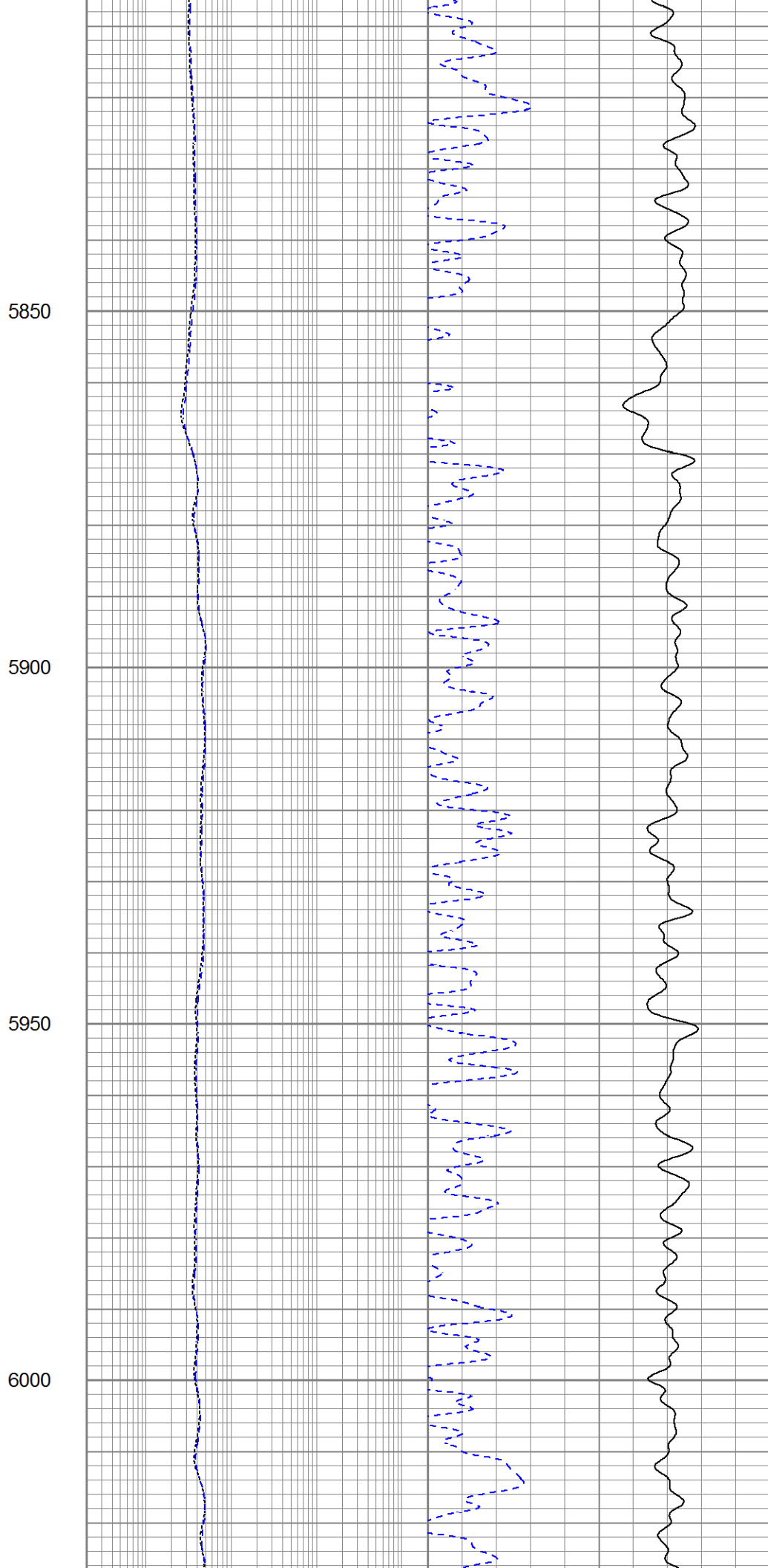
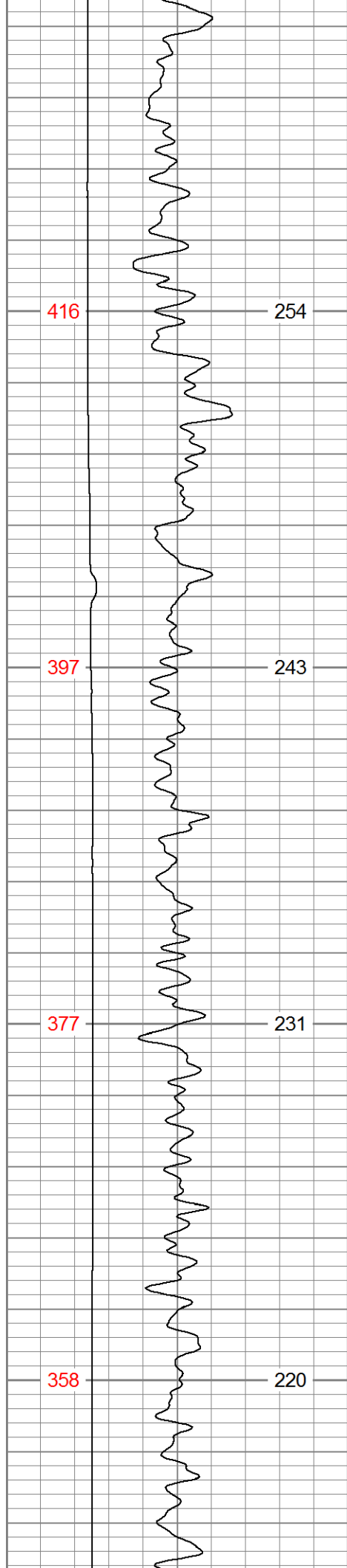
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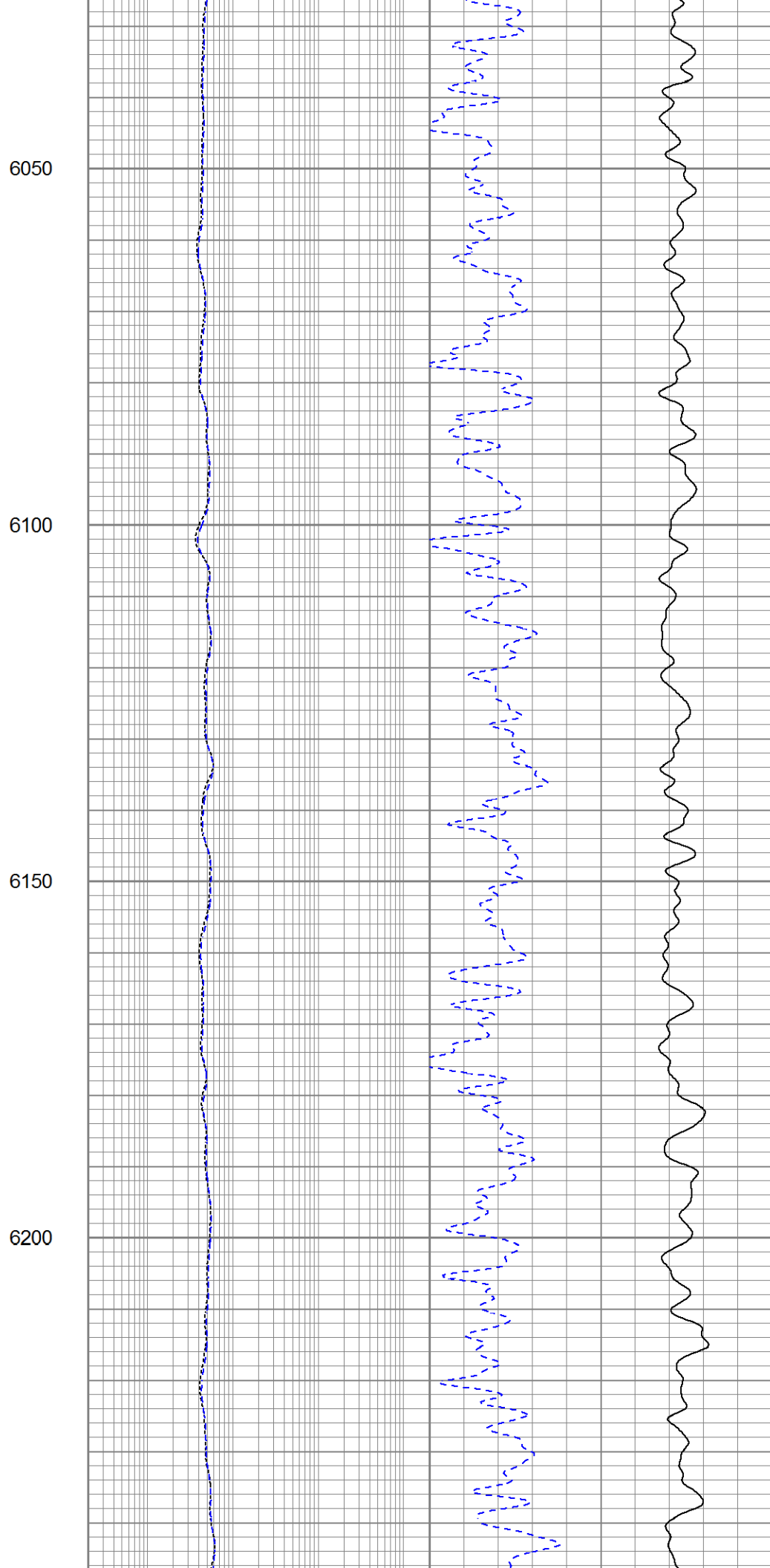
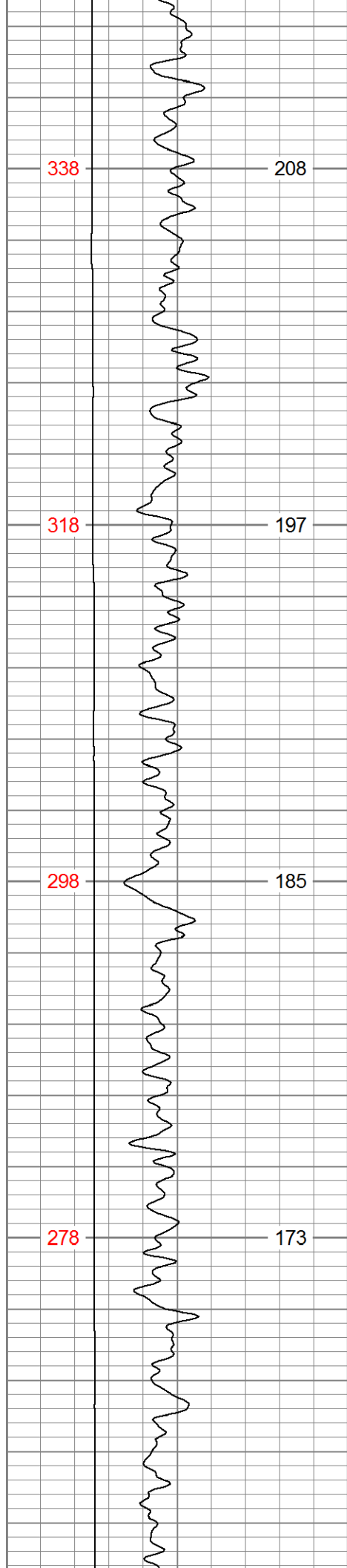
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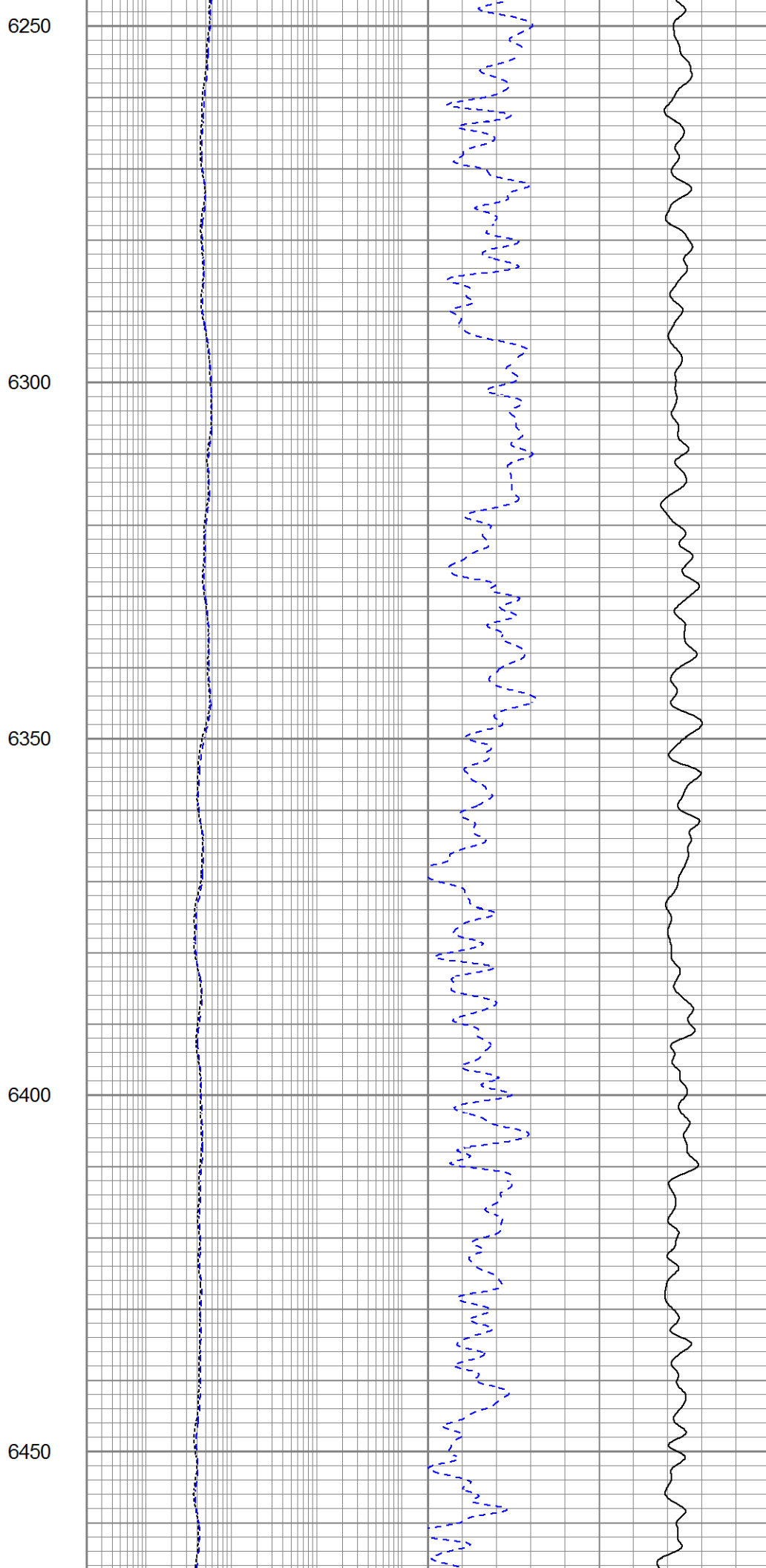
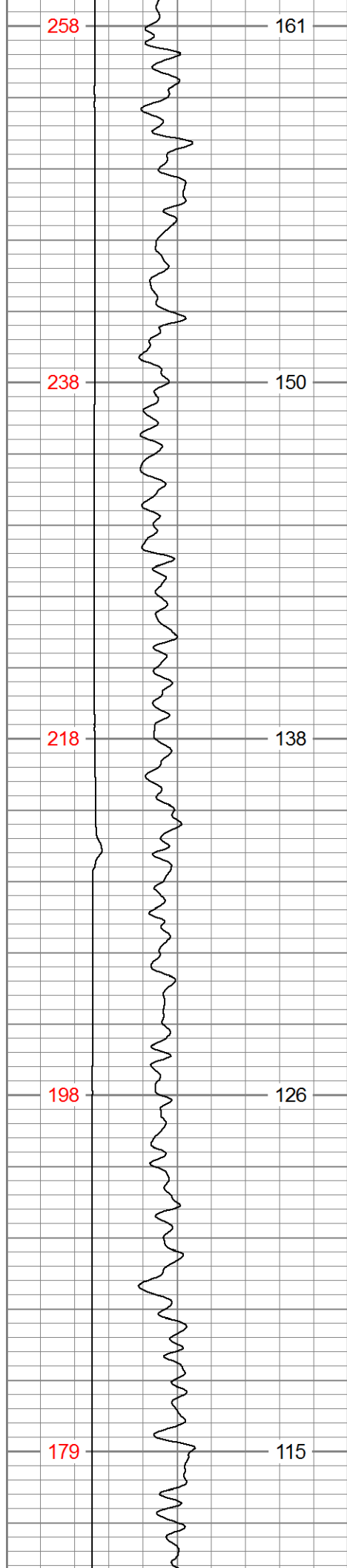
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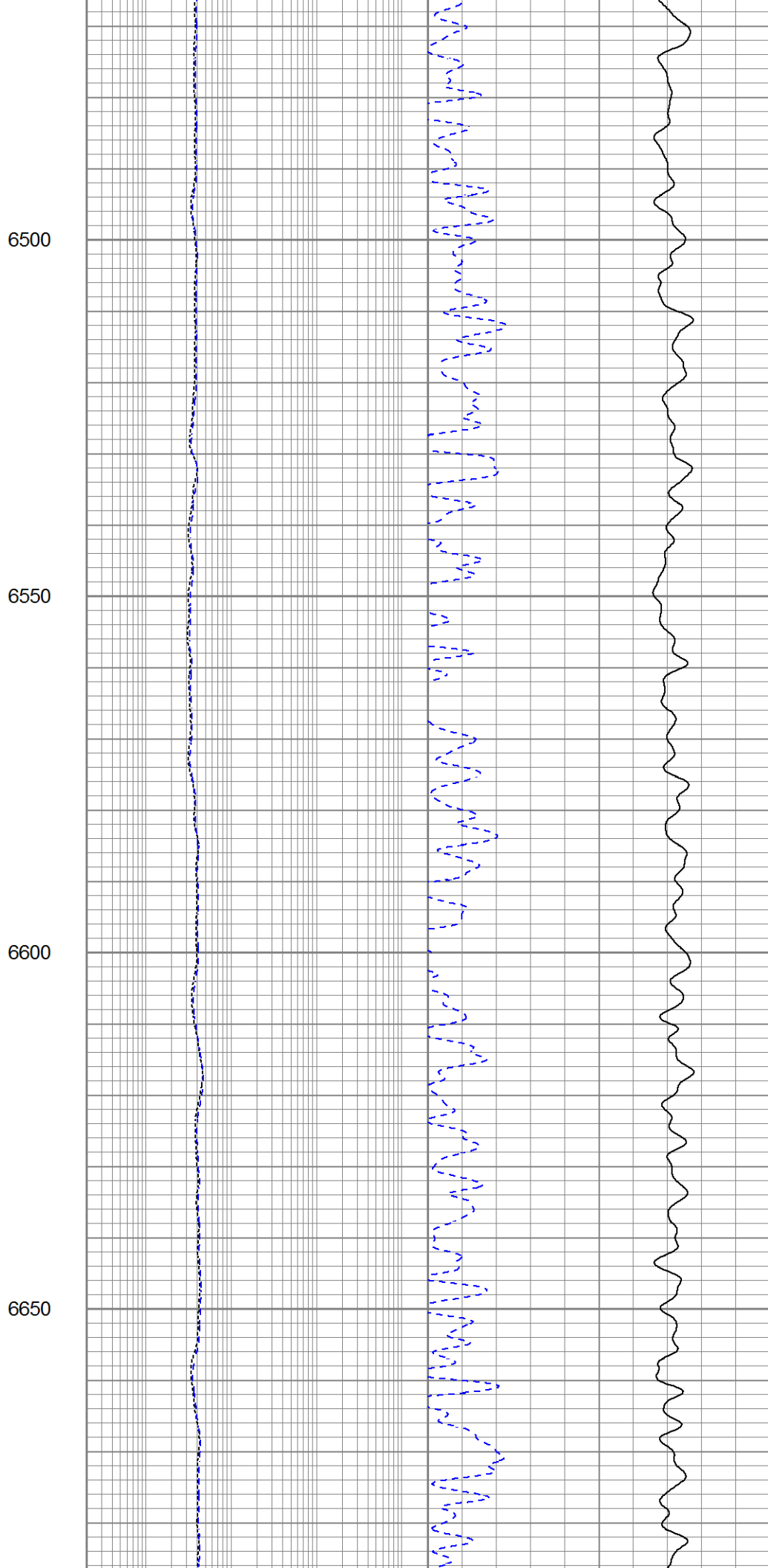
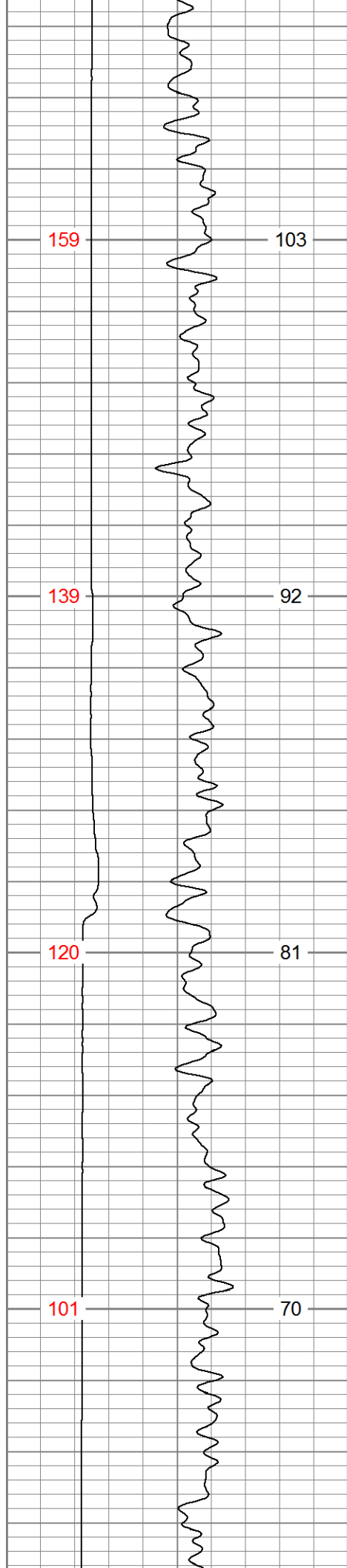


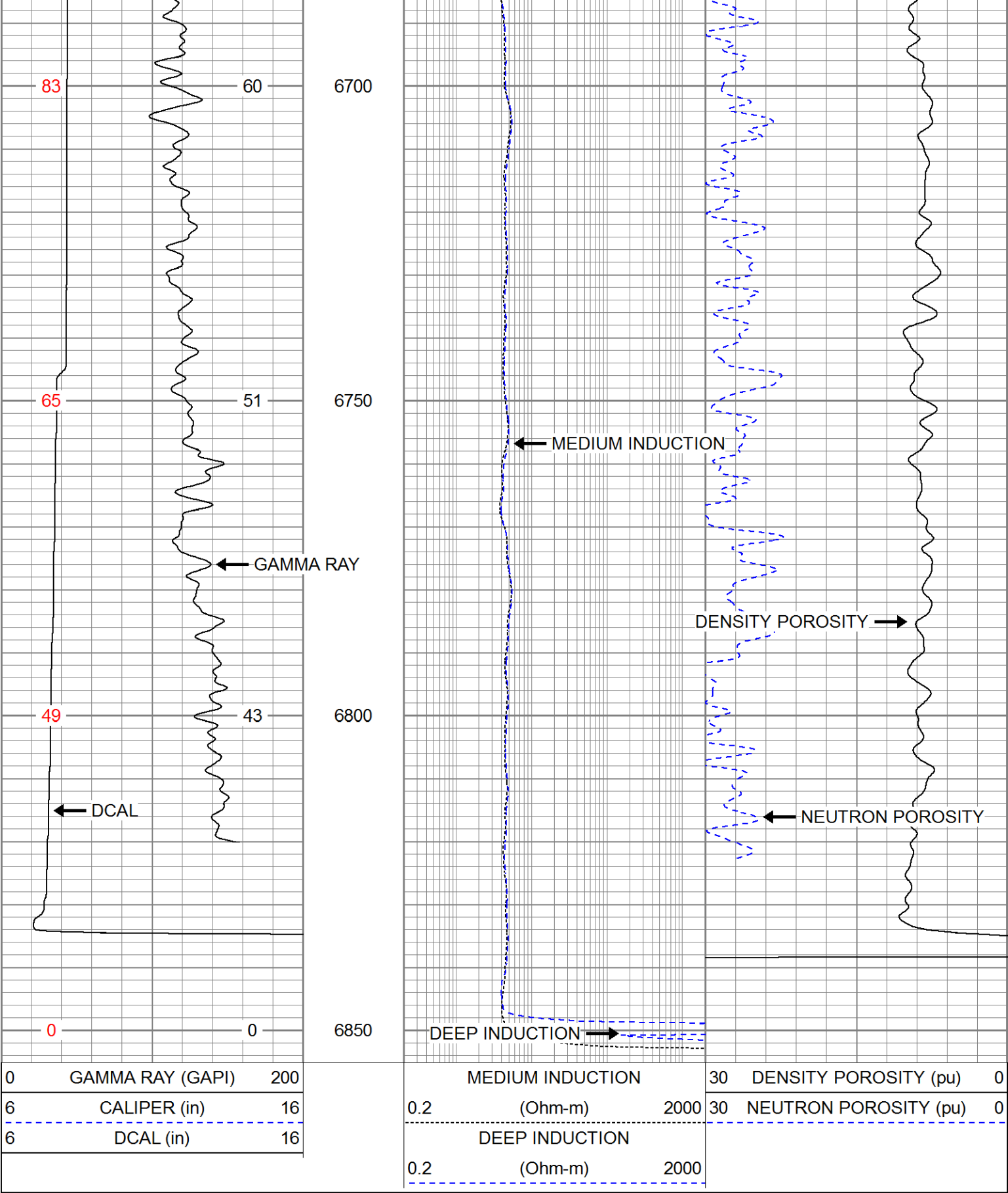












Calibration Report

Database File extraction_varra_10.db
Dataset Pathname STACK/pass4.1
Dataset Creation Fri Nov 11 00:20:40 2016

Dual Induction Calibration Report

Serial-Model:

Calibration Performed:

PSI 13-M&W

Sun Oct 23 06:26:28 2016

| Loop: | Readings | | References | | | Results | |
|--------|----------|----------|------------|---------|--------|---------|---------|
| | Air | Loop | Air | Loop | | Gain | Offset |
| Deep | 166.796 | 835.089 | 0.000 | 255.800 | mmho/m | 1.000 | -28.500 |
| Medium | 142.009 | 1348.560 | 0.000 | 255.800 | mmho/m | 0.950 | -27.000 |

Compensated Density Calibration Report

Serial-Model:

Source / Verifier:

Master Calibration Performed:

90-1031-M&W

16955B / 2ci

Sun Oct 23 06:26:18 2016

Master Calibration

| | Density | | Far Detector | Near Detector | |
|---------------------|---------|------|-----------------------------|---------------|-----|
| Magnesium | 1.755 | g/cc | 5174.18 | 6425.27 | cps |
| Aluminum | 2.665 | g/cc | 963.17 | 4037.42 | cps |
| Spine Angle = 74.55 | | | Density/Spine Ratio = 0.522 | | |
| | Size | | Reading | | |
| Small Ring | 6.00 | in | 1.83 | | |
| Large Ring | 16.00 | in | 1.48 | | |

Compensated Neutron Calibration Report

Serial Number:

Tool Model:

Calibration Performed:

207-MW

M&W

Wed Sep 28 10:30:30 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:

Tool Model:

Calibration Performed:

89

M&W

Thu Nov 10 00:16:26 2016

Calibrator Value:

1.0

GAPI

Background Reading:

0.0

cps

Calibrator Reading:

1.0

cps

Sensitivity:

1.0800

GAPI/cps



Company

EXTRACTION OIL & GAS, LLC

Well

VARRA #10

Field

WATTENBERG

County

WELD

Pioneer Energy Services

State COLORADO