



## DUAL INDUCTION LOG

Company John O. Farmer, Inc.

Well Schroeder Unit #1

Field Wildcat

County Thomas

State KS

Location:

API #: 15 193 20965

165' FNL & 2135' FWL

SEC 14 TWP 6S RGE 33W

Permanent Datum Ground Level Elevation 3088'  
Log Measured From KB 8' AGL  
Drilling Measured From KB

Other Services  
ML  
CDNL  
BCS  
Elevation  
K.B. 3096'  
D.F. 3095'  
G.L. 3088'

Date 7-11-16

Run Number One

Depth Driller 4600'

Depth Logger 4600'

Bottom Logged Interval 4598'

Top Log Interval 200'

Casing Driller 263'

Casing Logger 263'

Bit Size 7 7/8"

Type Fluid in Hole Chemical Mud

Density / Viscosity 8.9/67

pH / Fluid Loss 9/9.6

Source of Sample Pit

Rm @ Meas. Temp 2.2@72degf

Rmf @ Meas. Temp 1.65@72degf

Rmc @ Meas. Temp 2.64@72degf

Source of Rmf / Rmc Calculated

Rm @ BHT 1.26@125degf

Time Circulation Stopped 5:30 p.m.

Time Logger on Bottom 8:30 p.m.

Maximum Recorded Temperature 125 degf

Equipment Number T127

Location Hays, KS.

Recorded By Gus Pfannenstiel

Witnessed By Mr. Austin Klaus

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, 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. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

### Comments

North of Colby to CC Rd., East 4 miles

Thank you for using Gemini Wireline  
785-625-1182

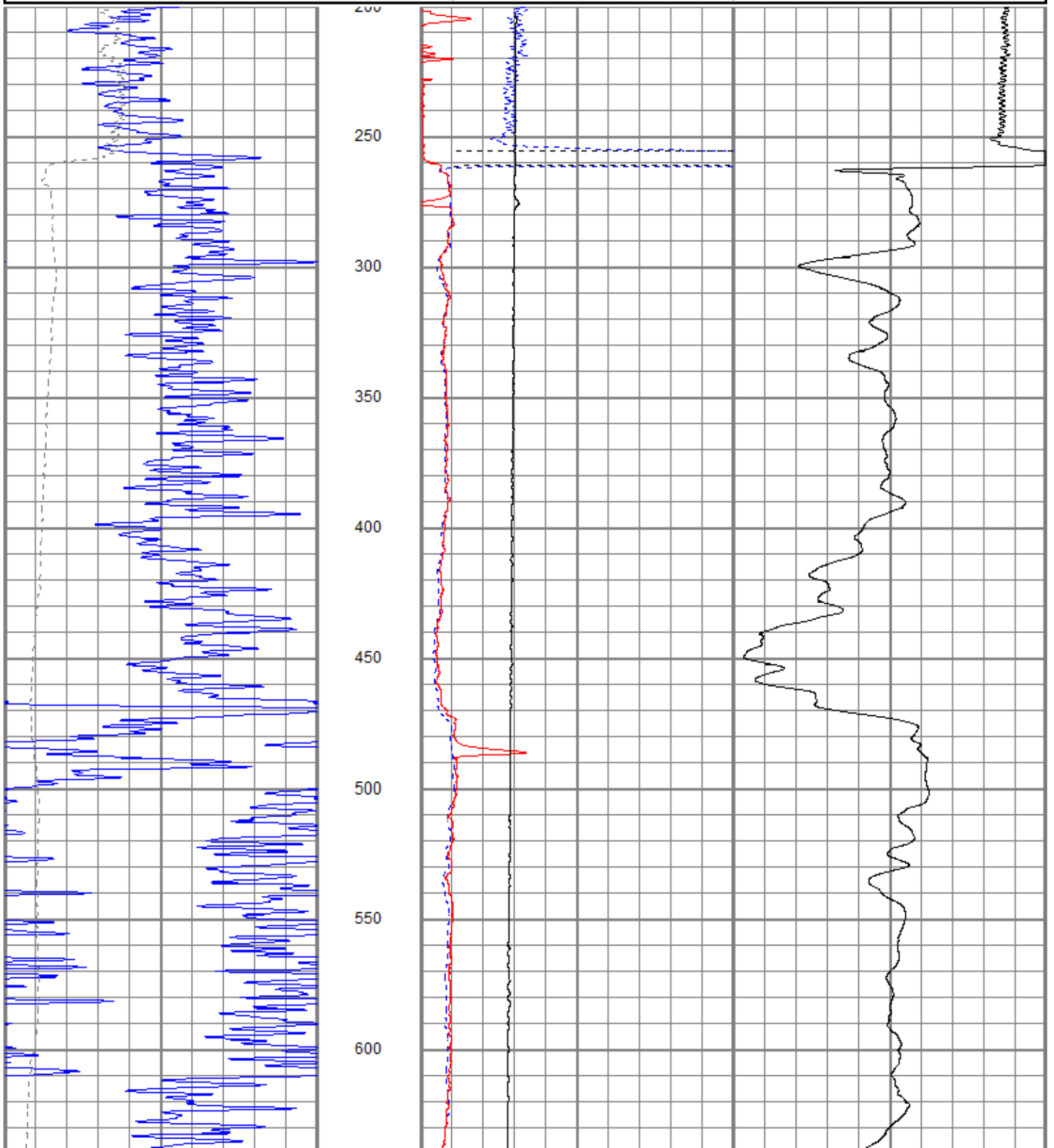


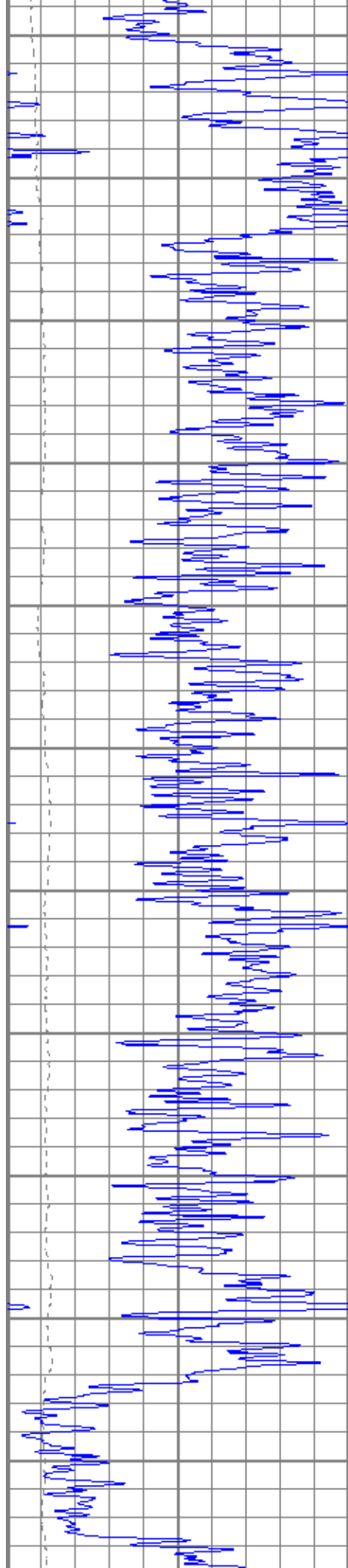
# Main Pass

Database File jofschroederunit#1oh.db  
Dataset Pathname pass4.1  
Presentation Format kdillin2  
Dataset Creation Mon Jul 11 22:29:23 2016  
Charted by Depth in Feet scaled 1:600

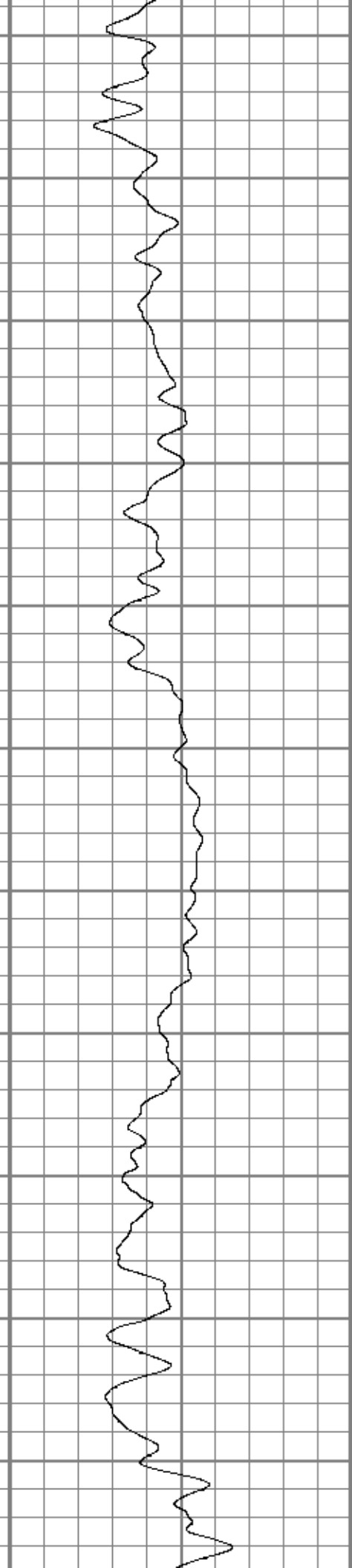
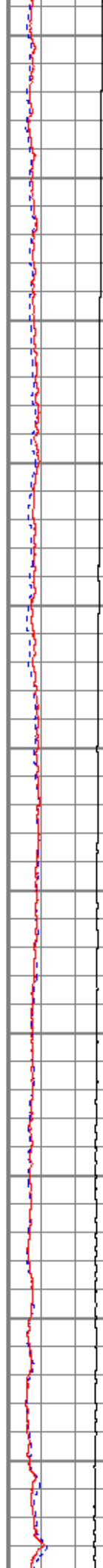
|      |           |     |
|------|-----------|-----|
| 0    | GR (GAPI) | 150 |
| -200 | SP (mV)   | 0   |

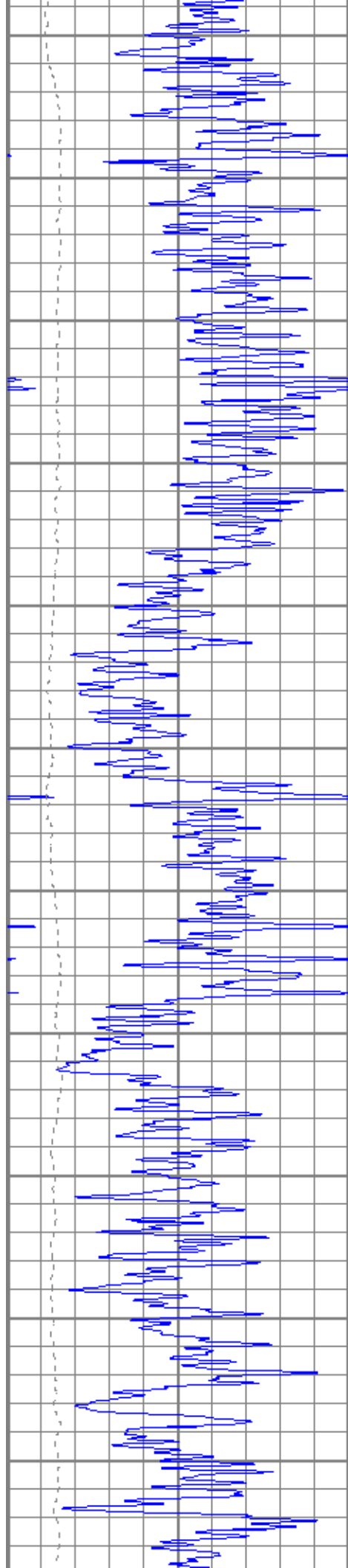
|       |                   |     |
|-------|-------------------|-----|
| 1000  | CILD (mmho/m)     | 0   |
| 10000 | LTEN (lb)         | 0   |
| 0     | RILD (Ohm-m)      | 50  |
| 0     | RLL3 (Ohm-m)      | 50  |
| 50    | RILD x 10 (Ohm-m) | 500 |
| 50    | RLL3 x 10 (Ohm-m) | 500 |



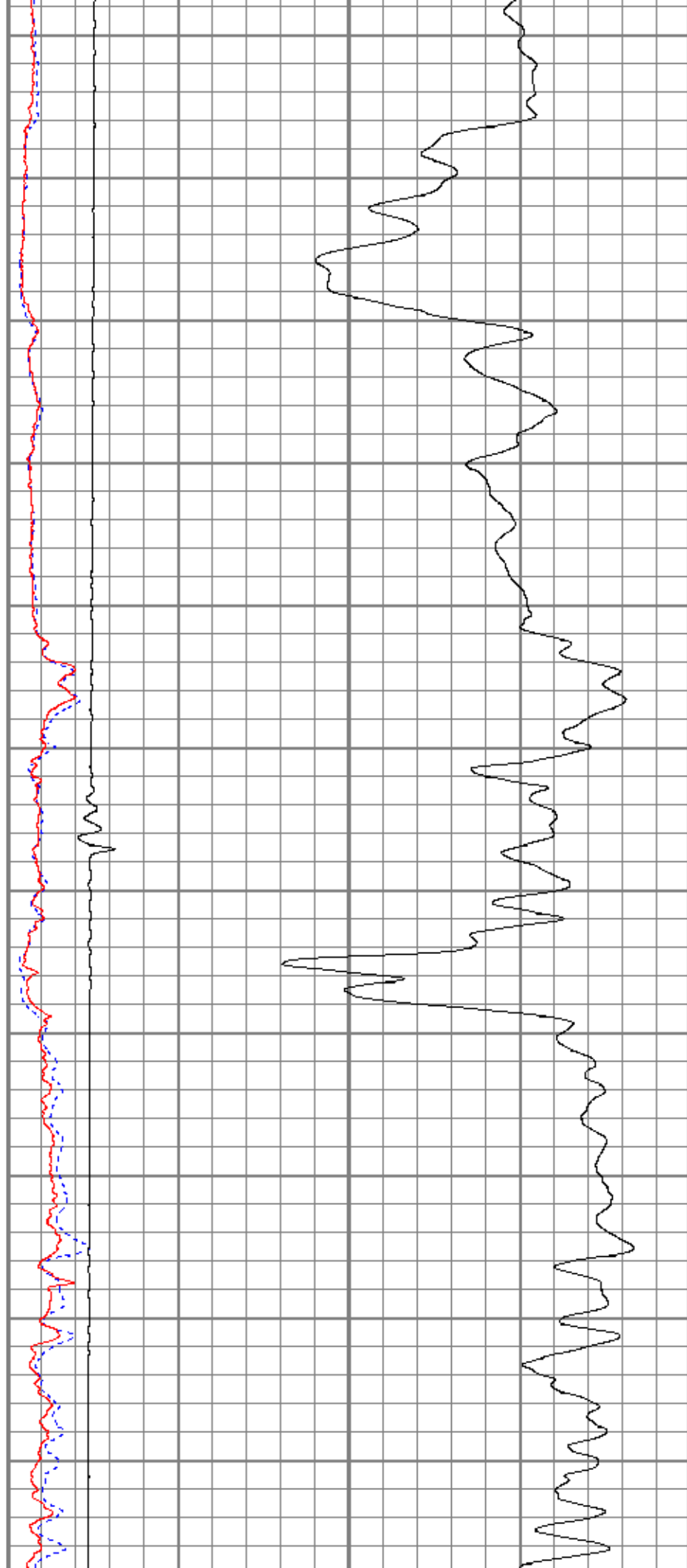


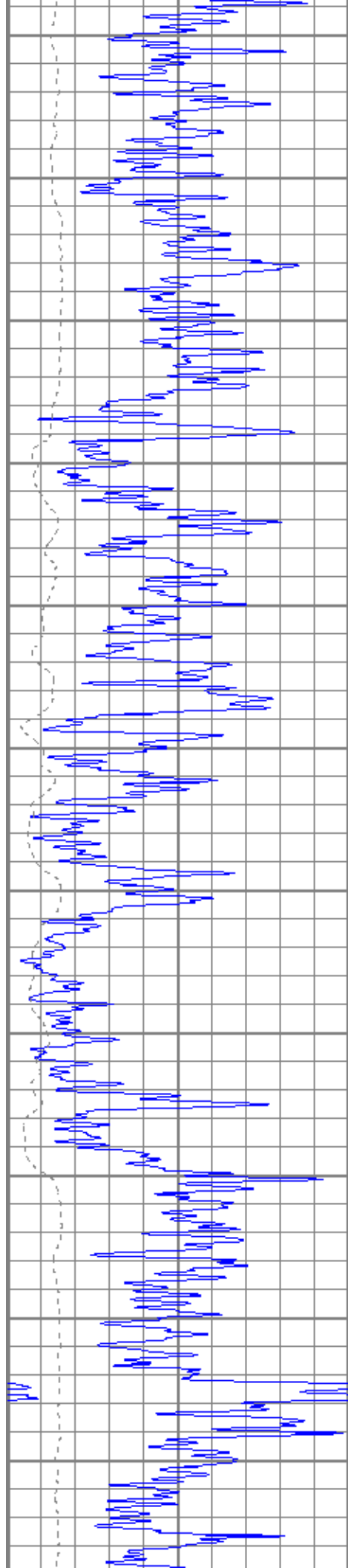
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800  
850  
900  
950  
1000  
1050  
1100  
1150



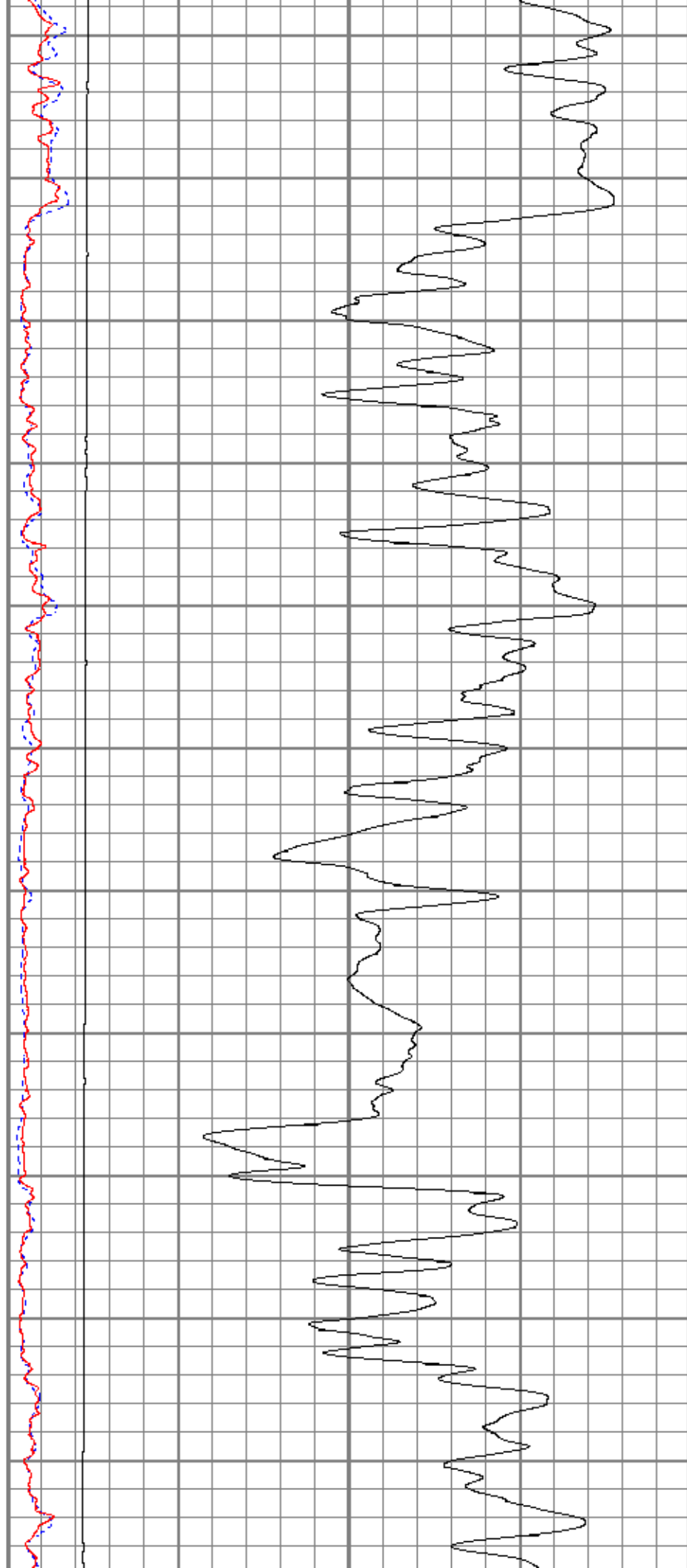


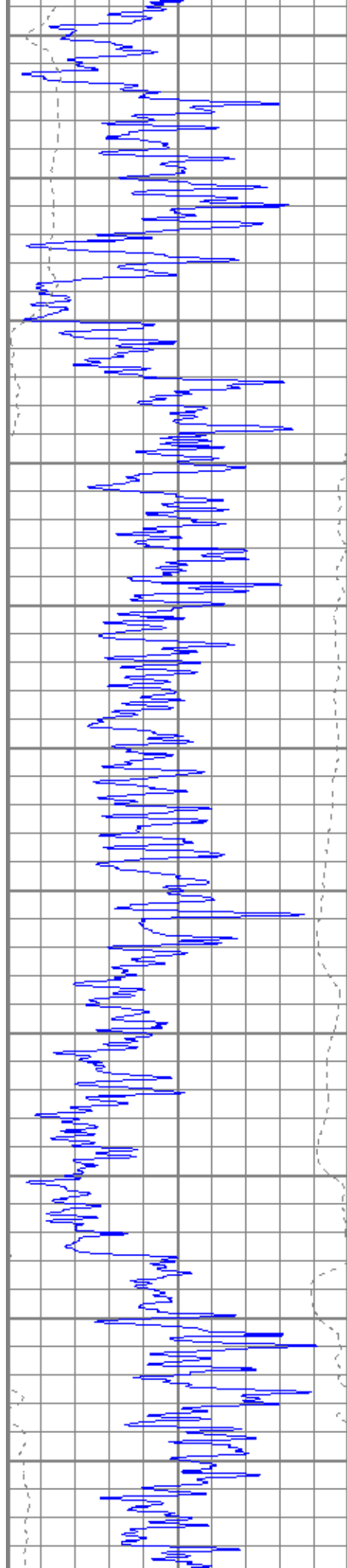
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1650  
1700





1750  
1800  
1850  
1900  
1950  
2000  
2050  
2100  
2150  
2200  
2250





2300

2350

2400

2450

2500

2550

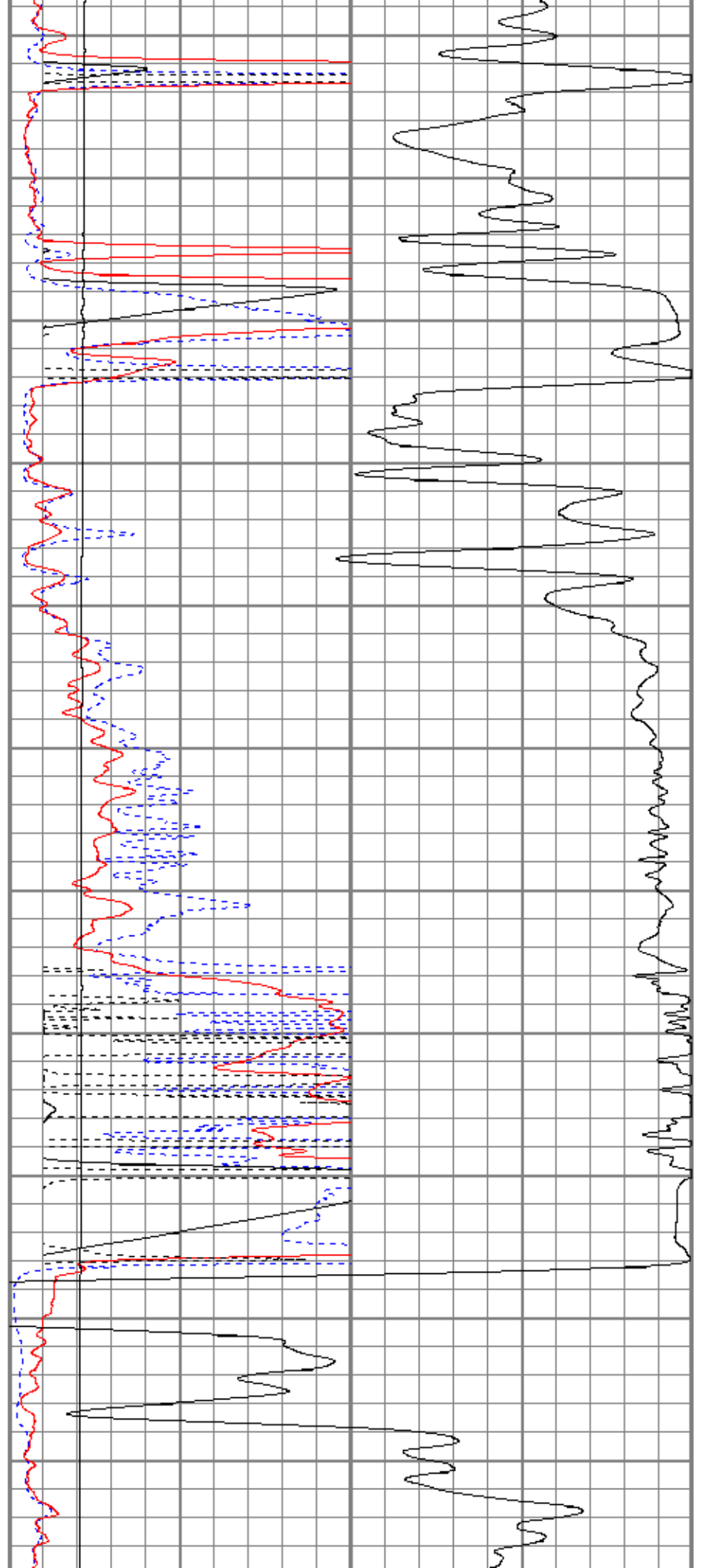
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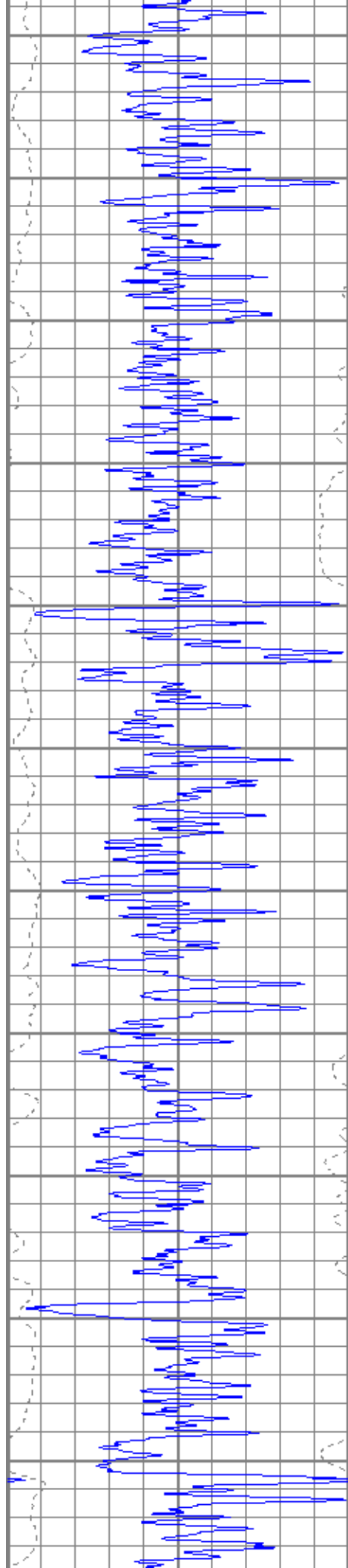
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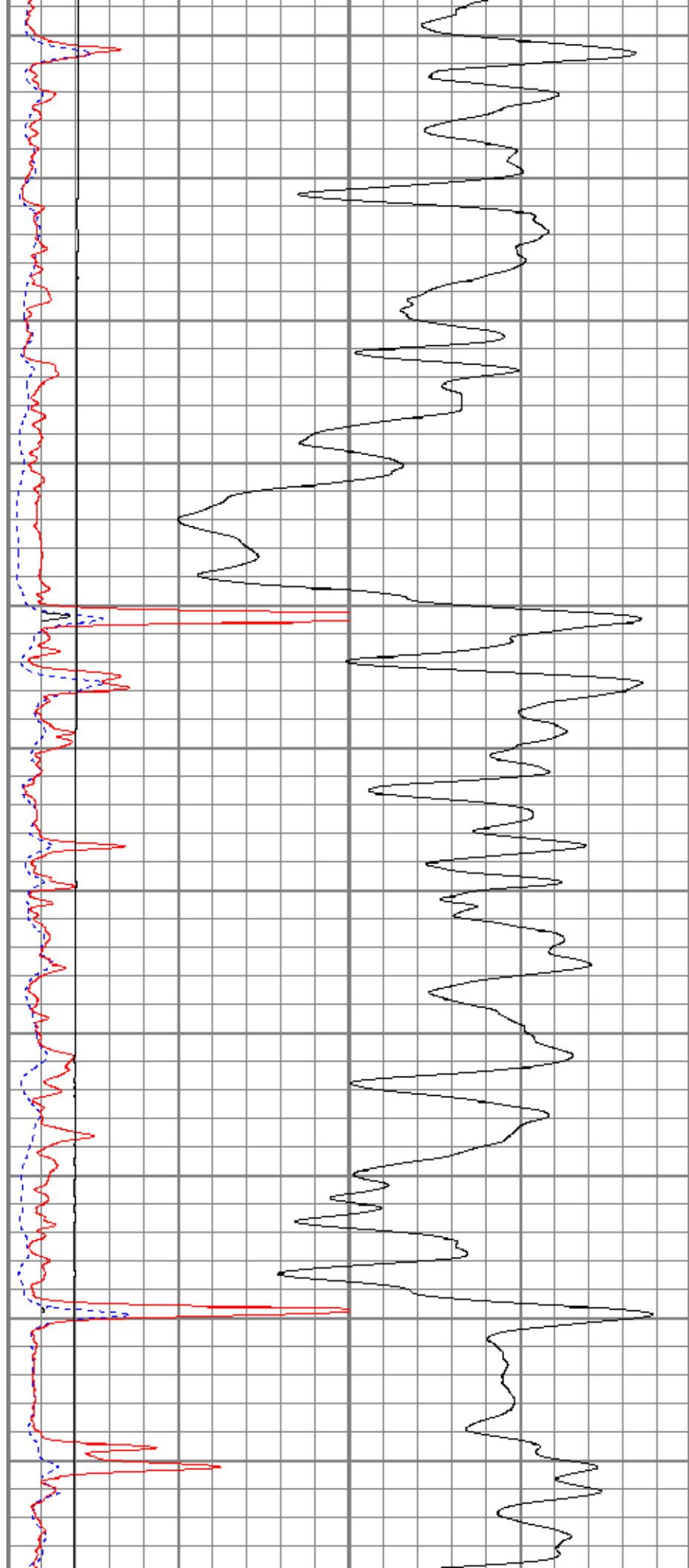
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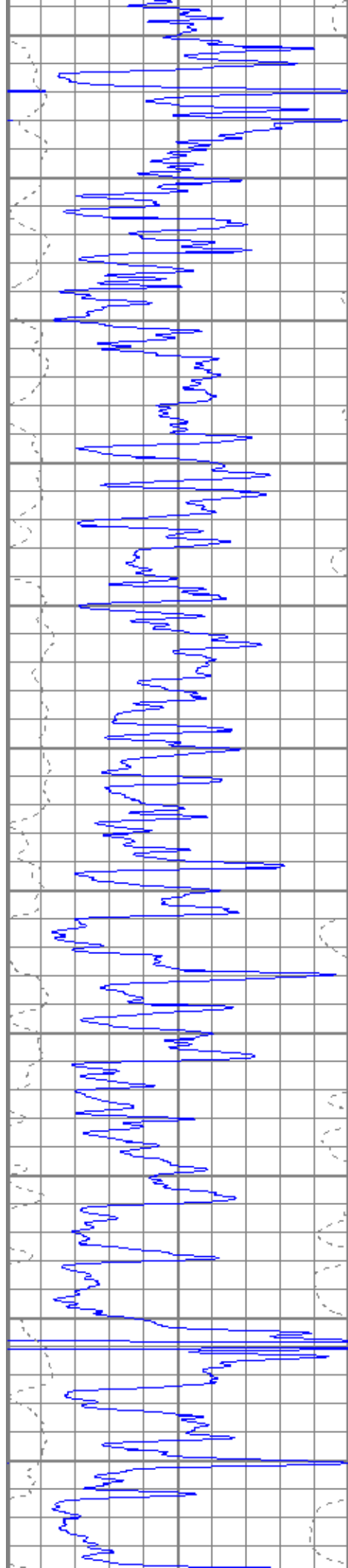
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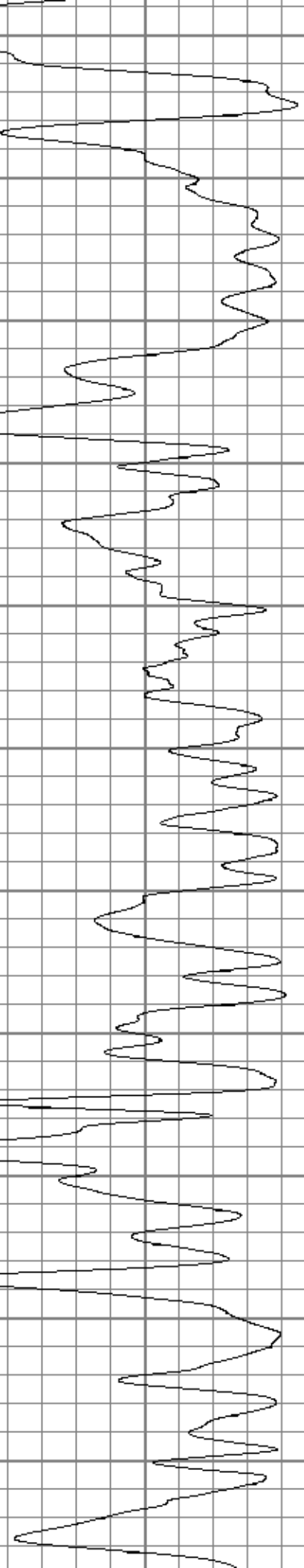
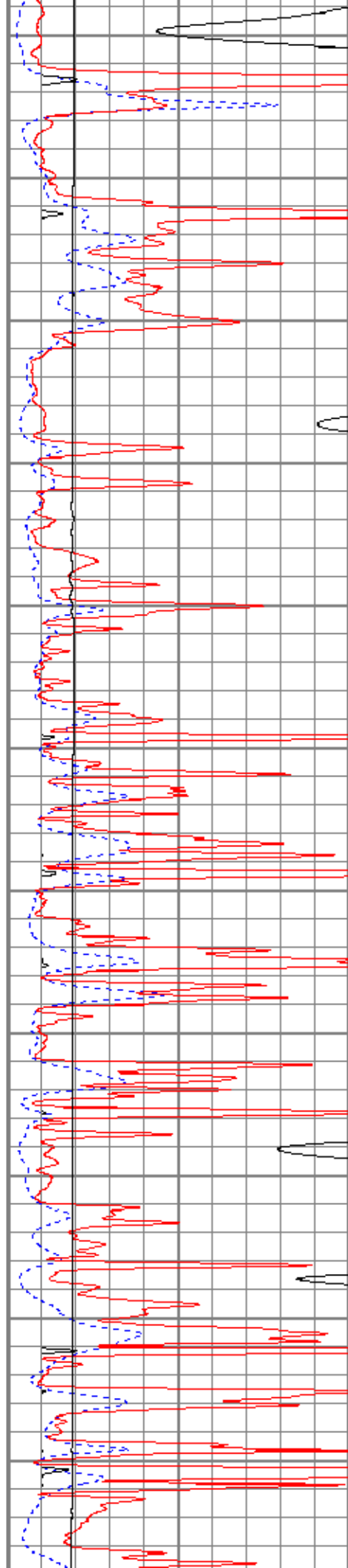


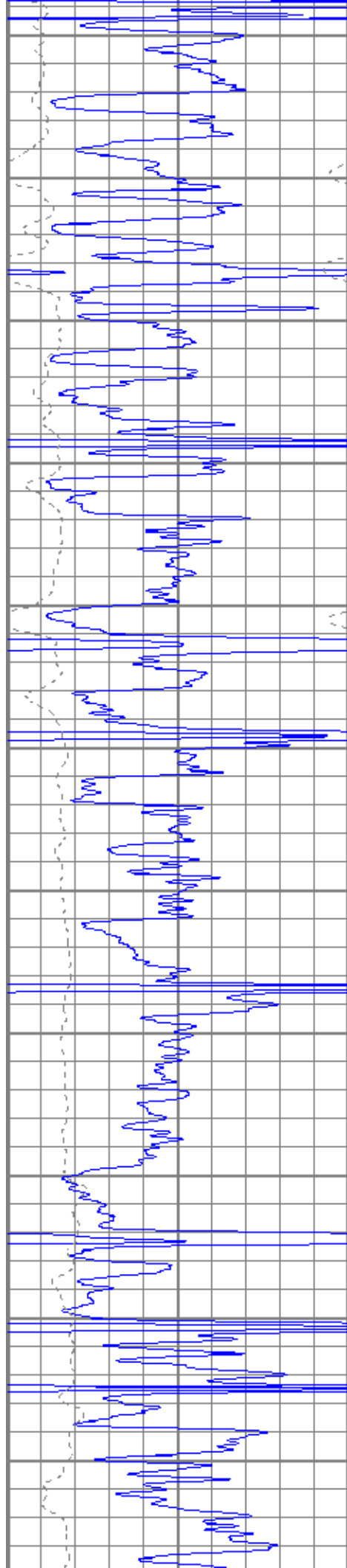
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3050  
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3150  
3200  
3250  
3300  
3350





3400  
3450  
3500  
3550  
3600  
3650  
3700  
3750  
3800  
3850  
3900





3950

4000

4050

4100

4150

4200

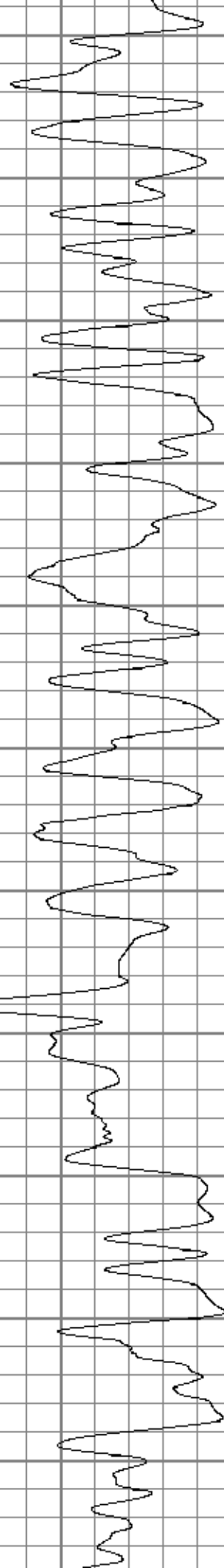
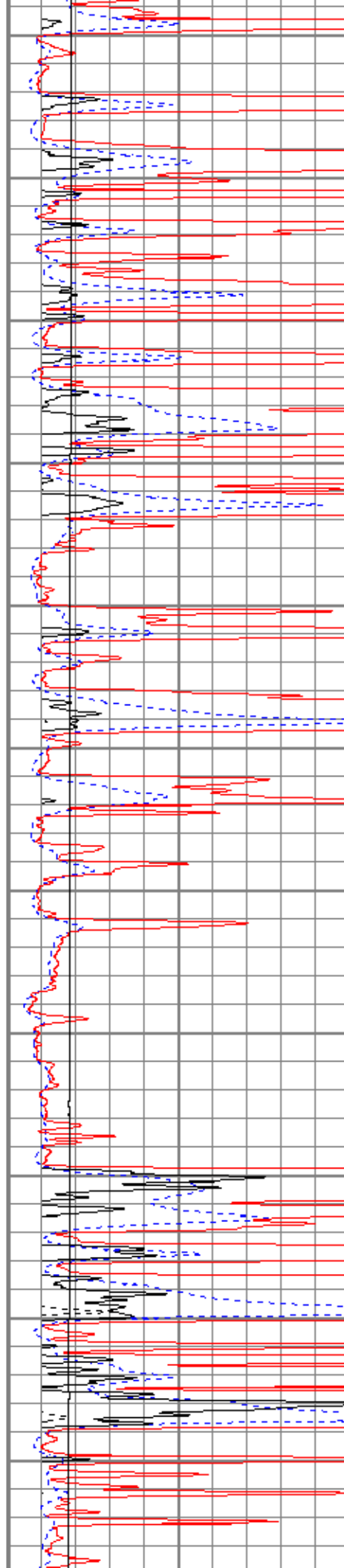
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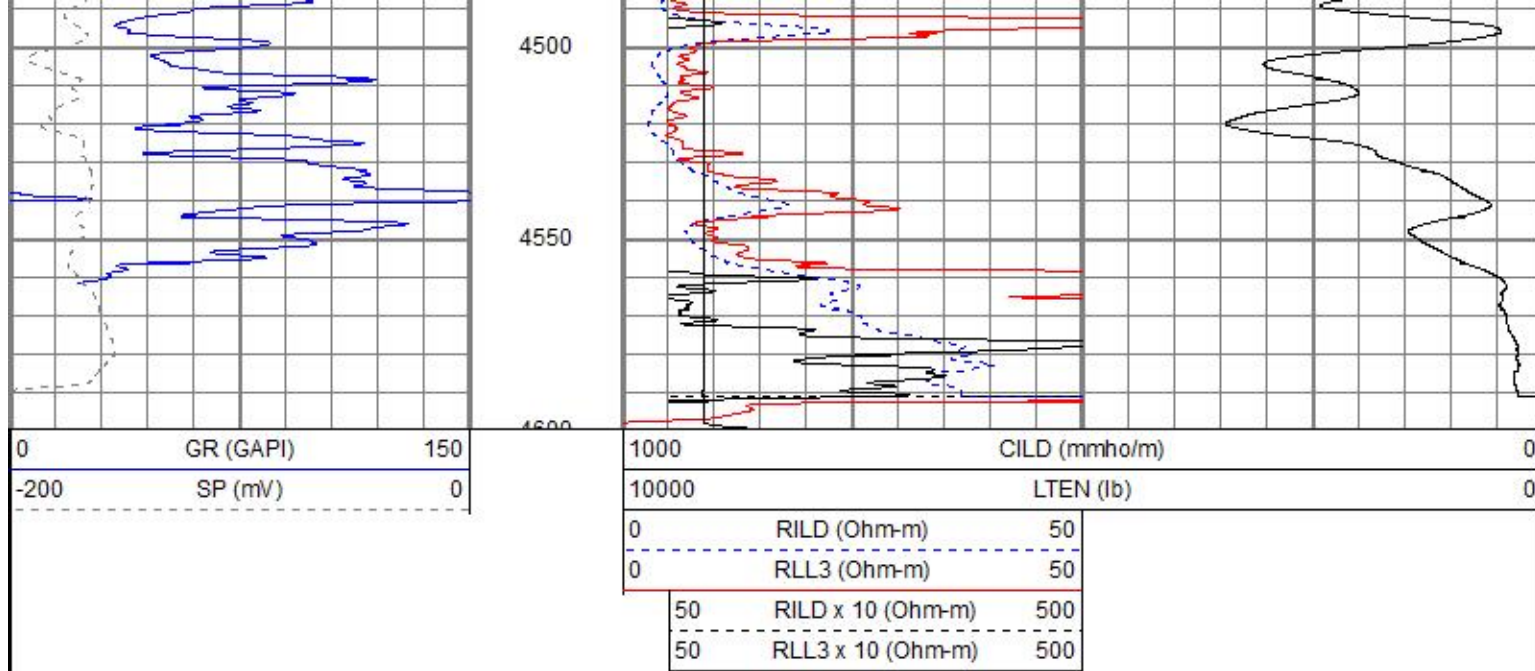
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4350

4400

4450

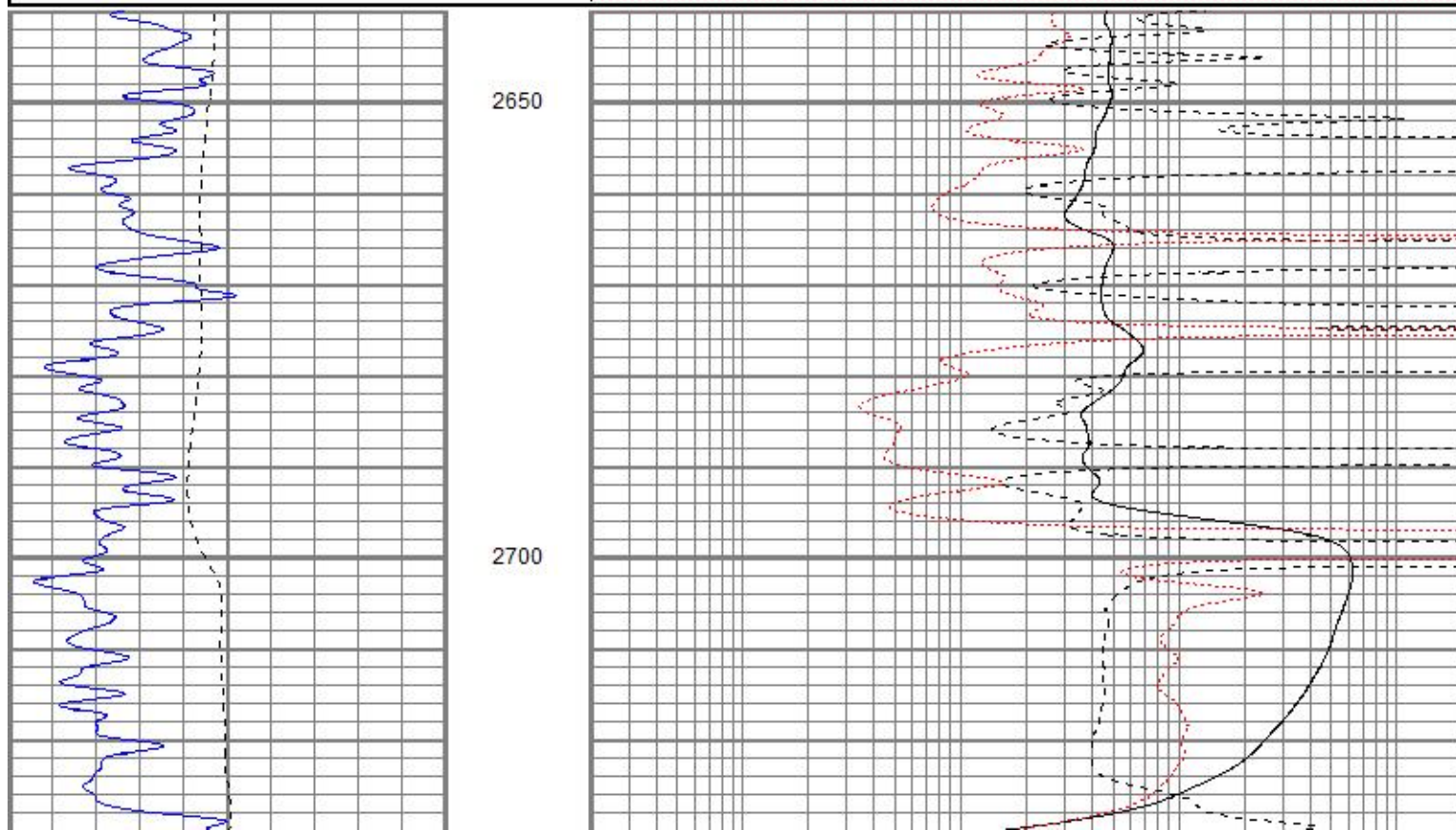


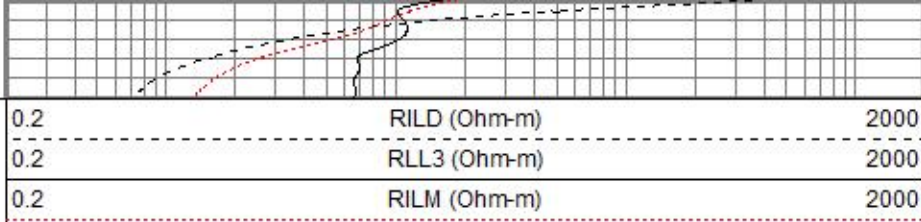
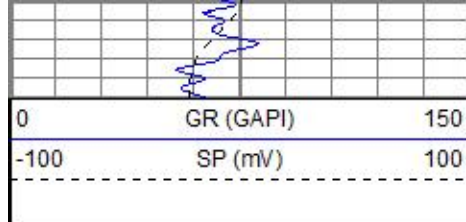


# Main Pass

Database File jofschroederunit#1oh.db  
 Dataset Pathname pass4.1  
 Presentation Format kdil  
 Dataset Creation Mon Jul 11 22:29:23 2016  
 Charted by Depth in Feet scaled 1:240

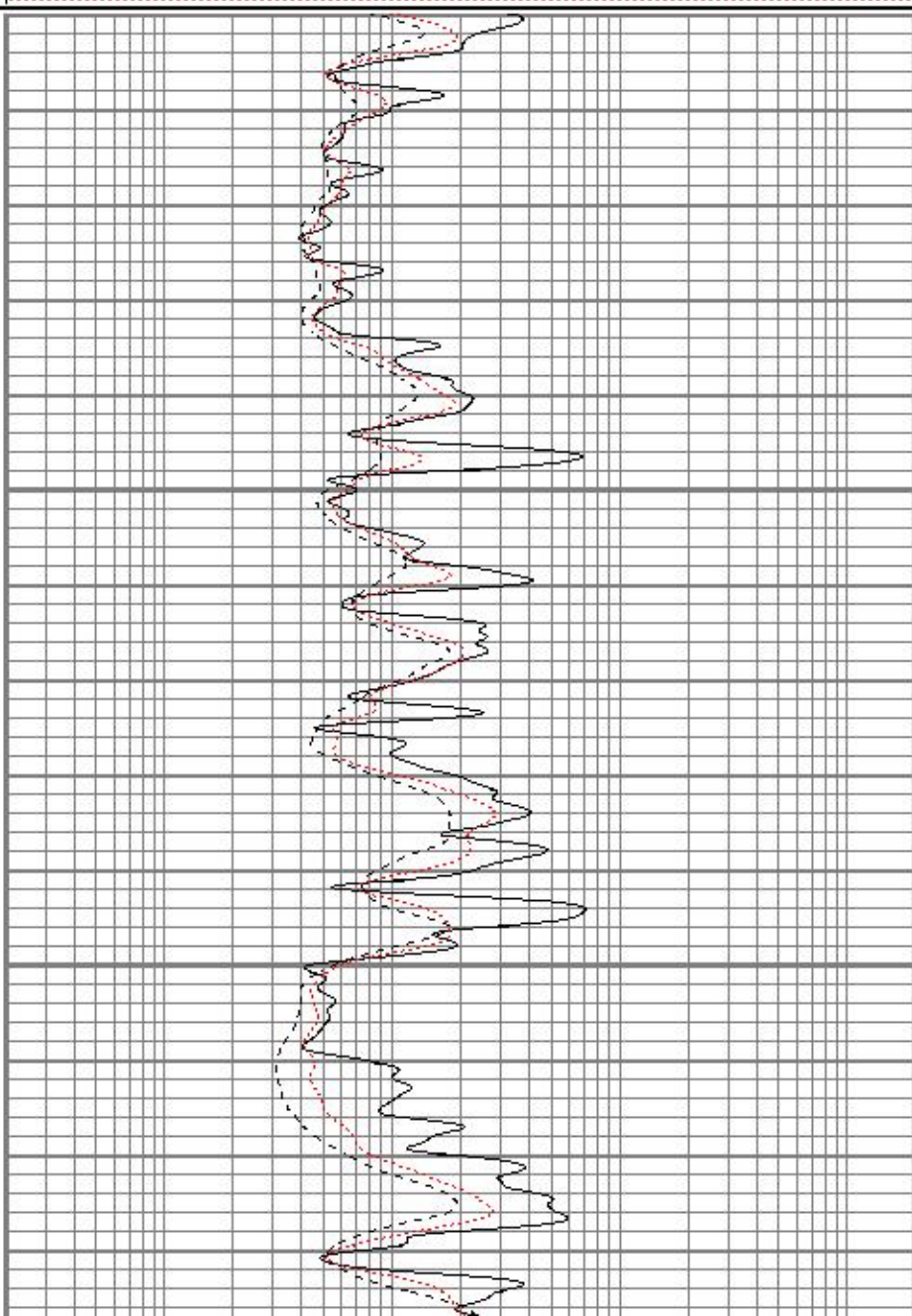
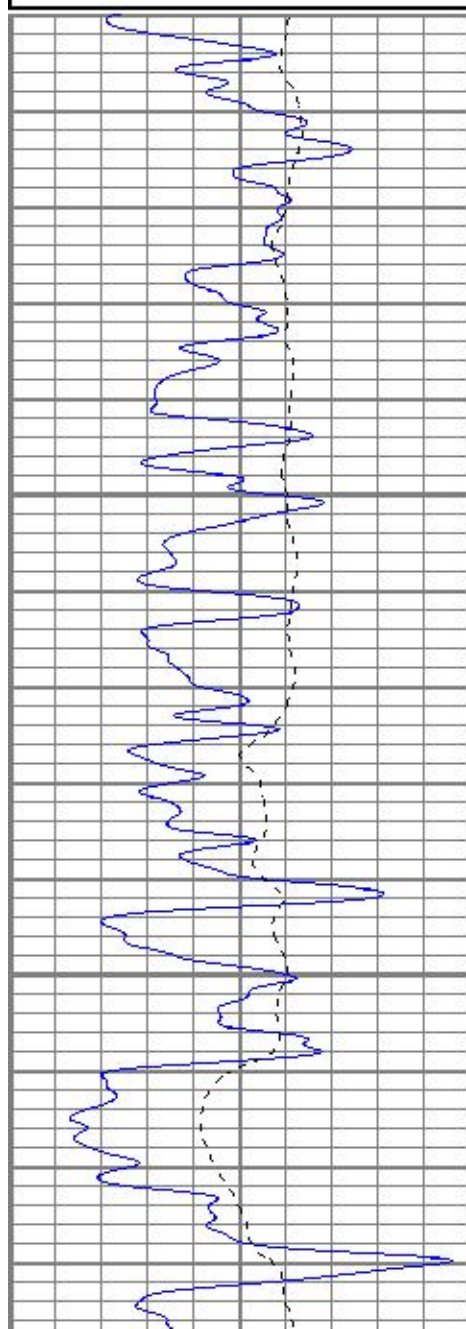
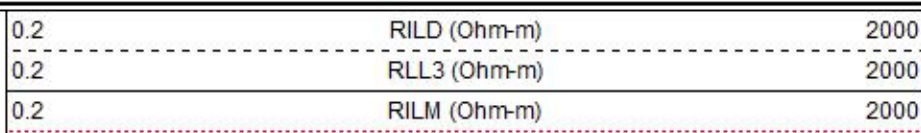
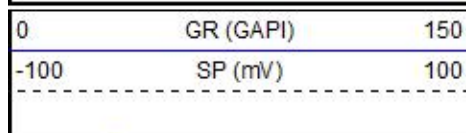
|      |           |     |     |              |      |
|------|-----------|-----|-----|--------------|------|
| 0    | GR (GAPI) | 150 | 0.2 | RILD (Ohm-m) | 2000 |
| -100 | SP (mV)   | 100 | 0.2 | RLL3 (Ohm-m) | 2000 |
|      |           |     | 0.2 | RILM (Ohm-m) | 2000 |

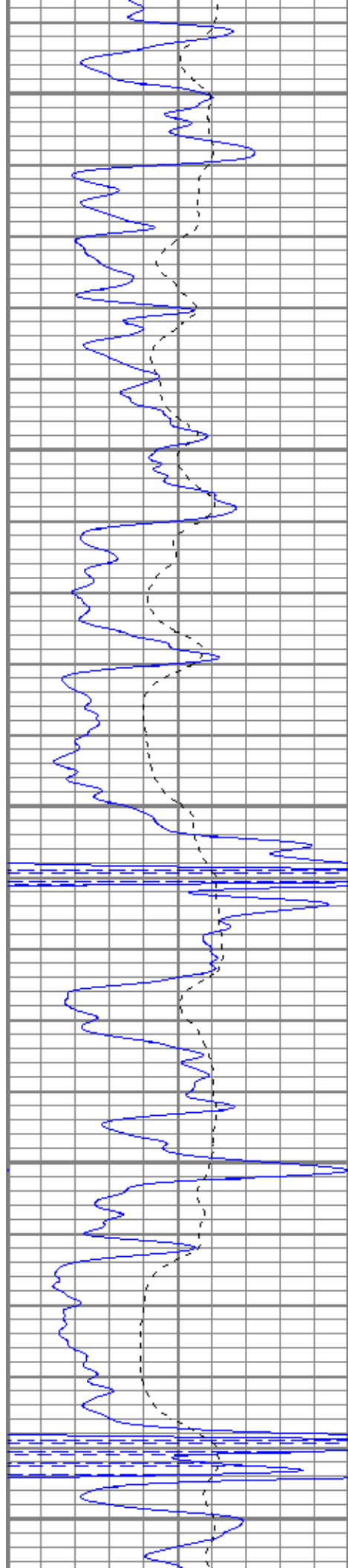




# Main Pass

Database File jofschroederunit#1oh.db  
Dataset Pathname pass4.1  
Presentation Format kdil  
Dataset Creation Mon Jul 11 22:29:23 2016  
Charted by Depth in Feet scaled 1:240





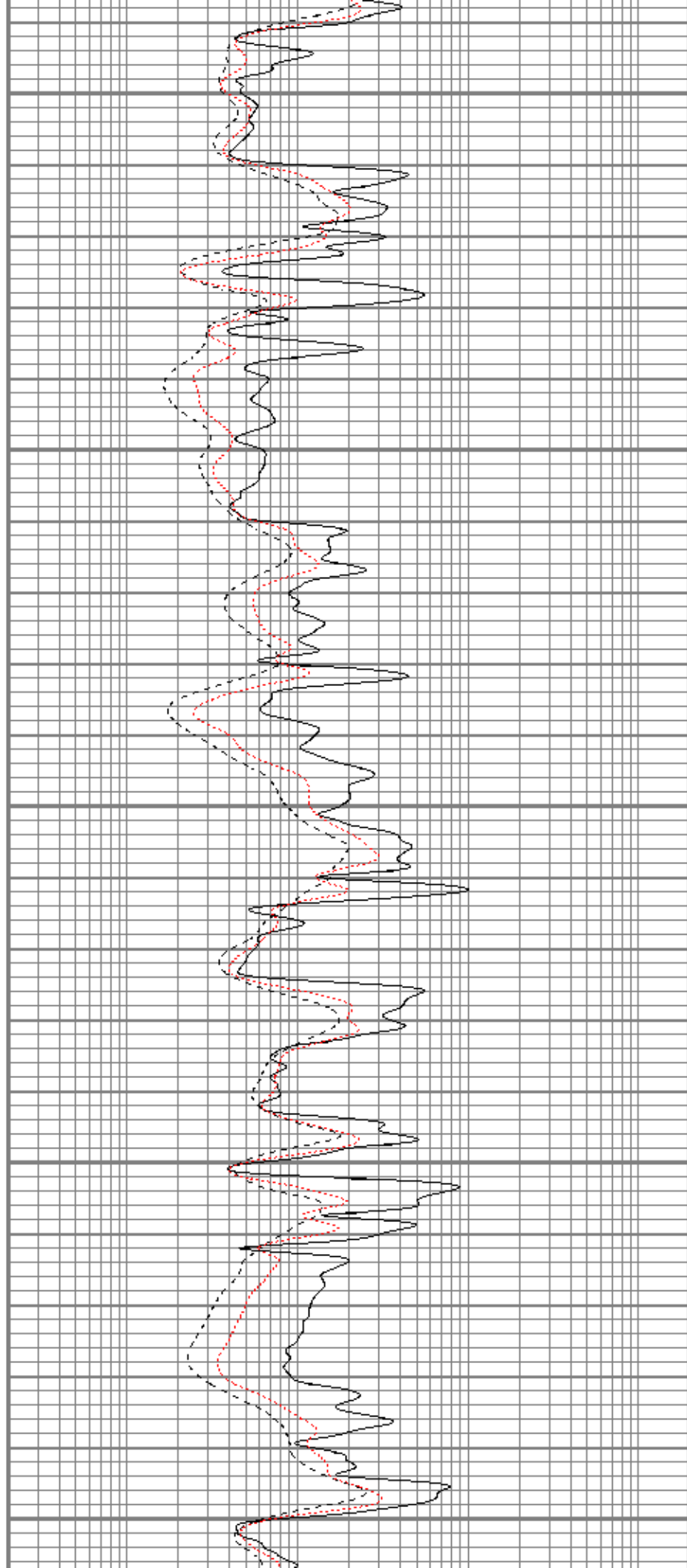
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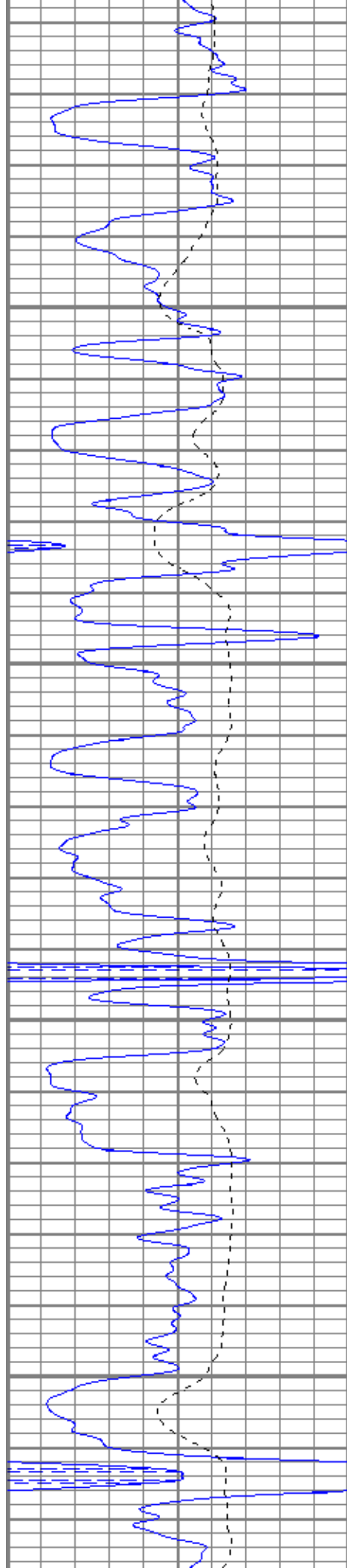
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3850

3900

3950



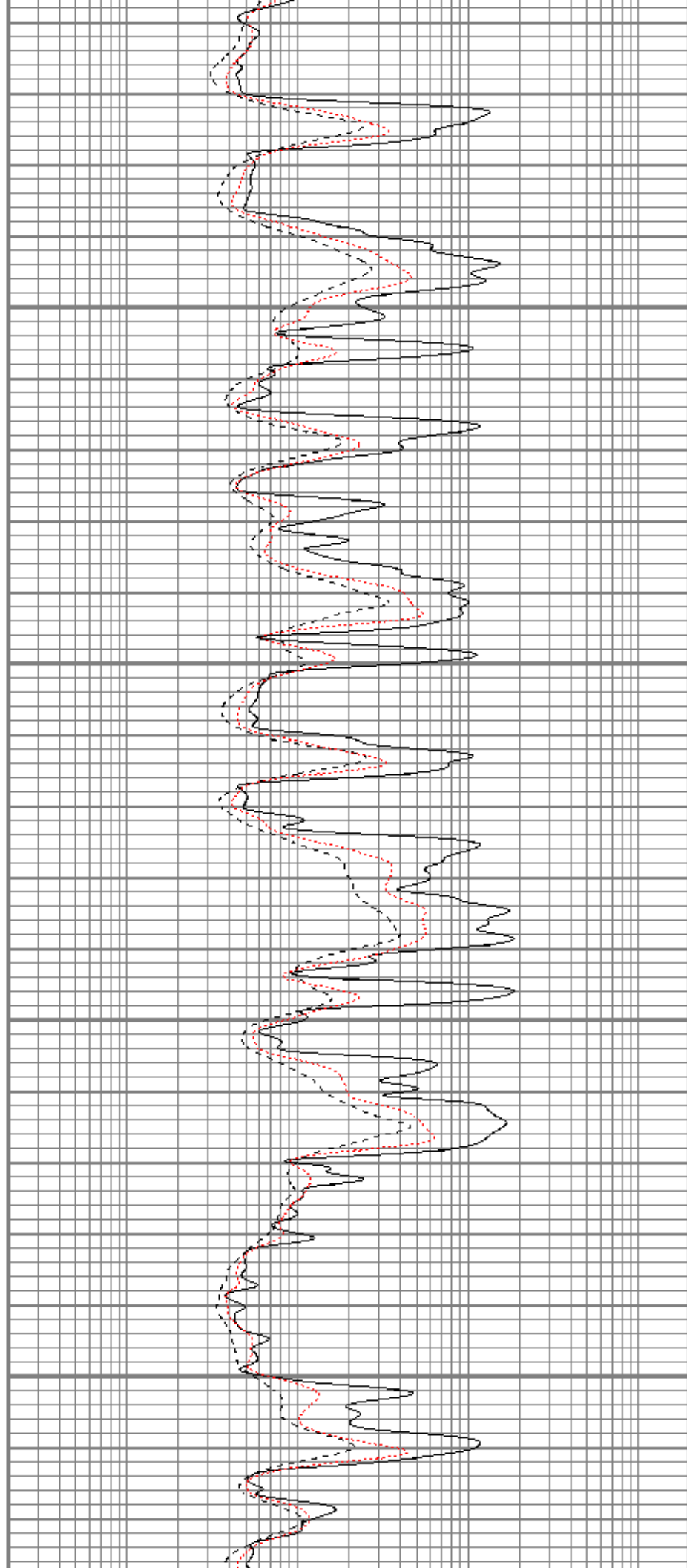


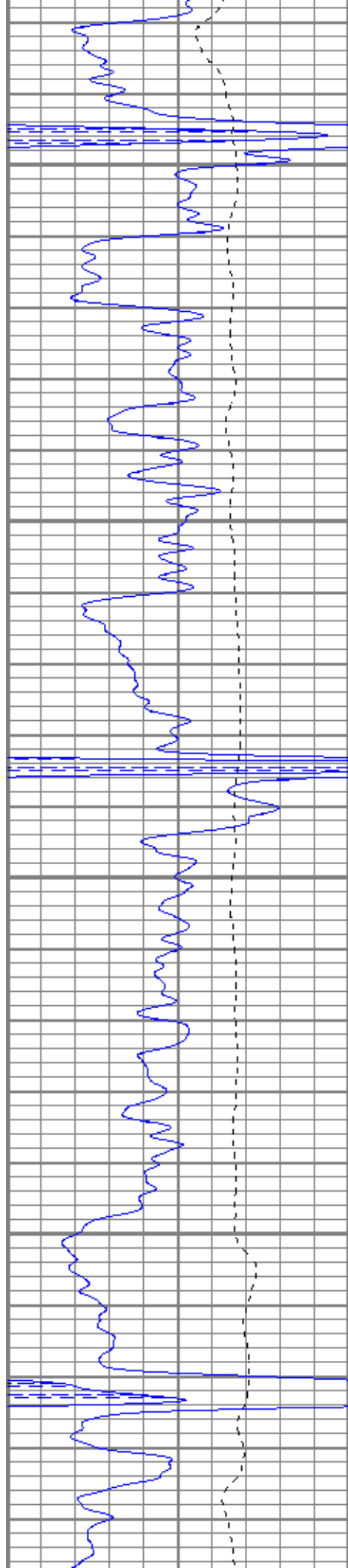
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4050

4100

4150



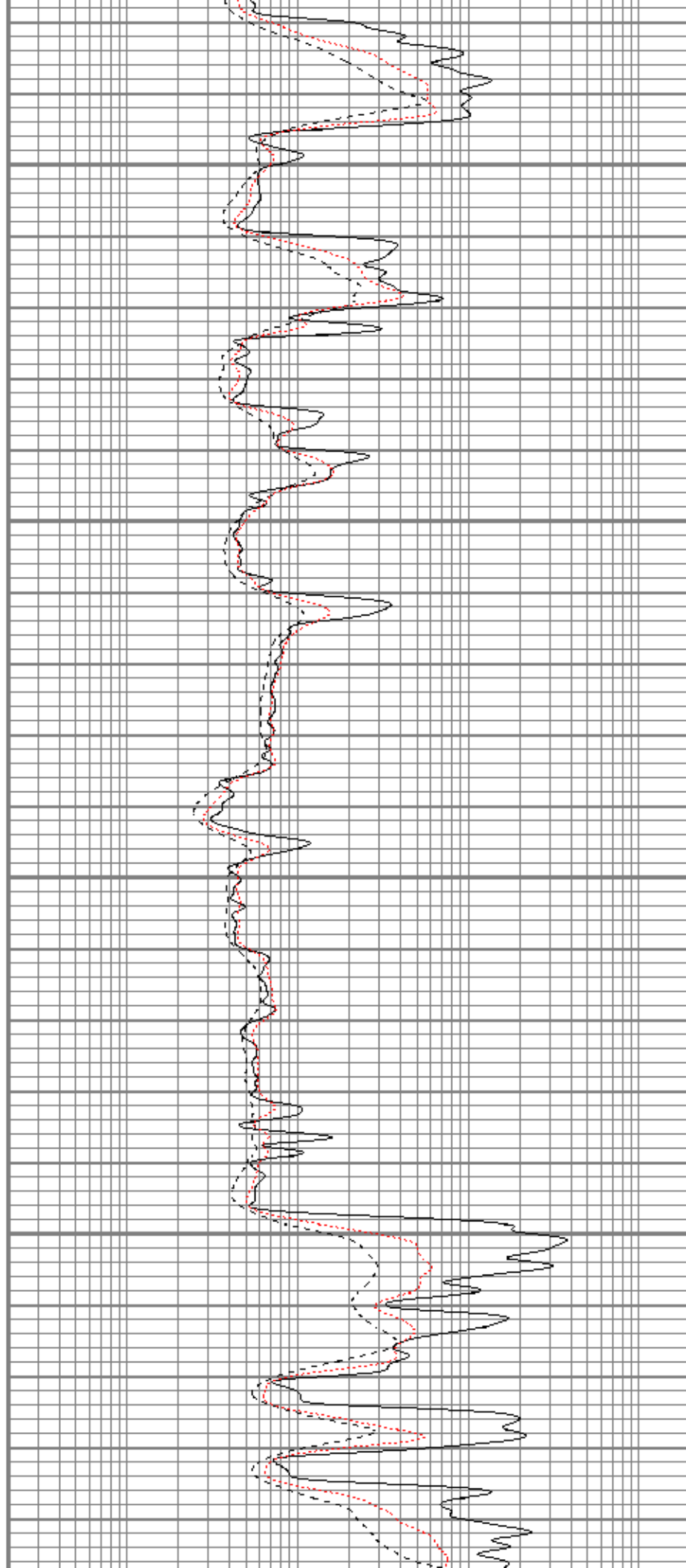


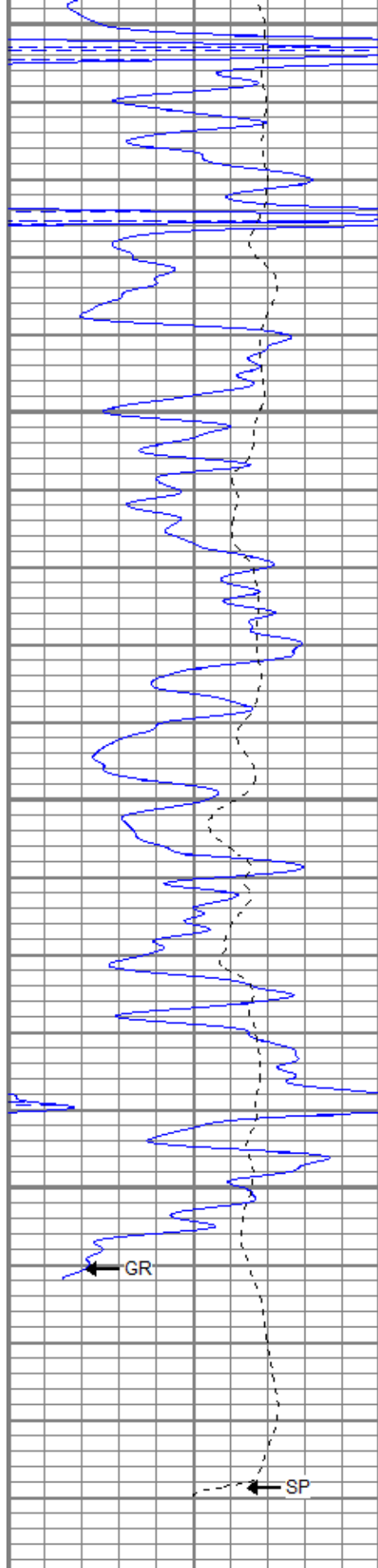
4200

4250

4300

4350





|      |           |     |
|------|-----------|-----|
| 0    | GR (GAPI) | 150 |
| -100 | SP (mV)   | 100 |

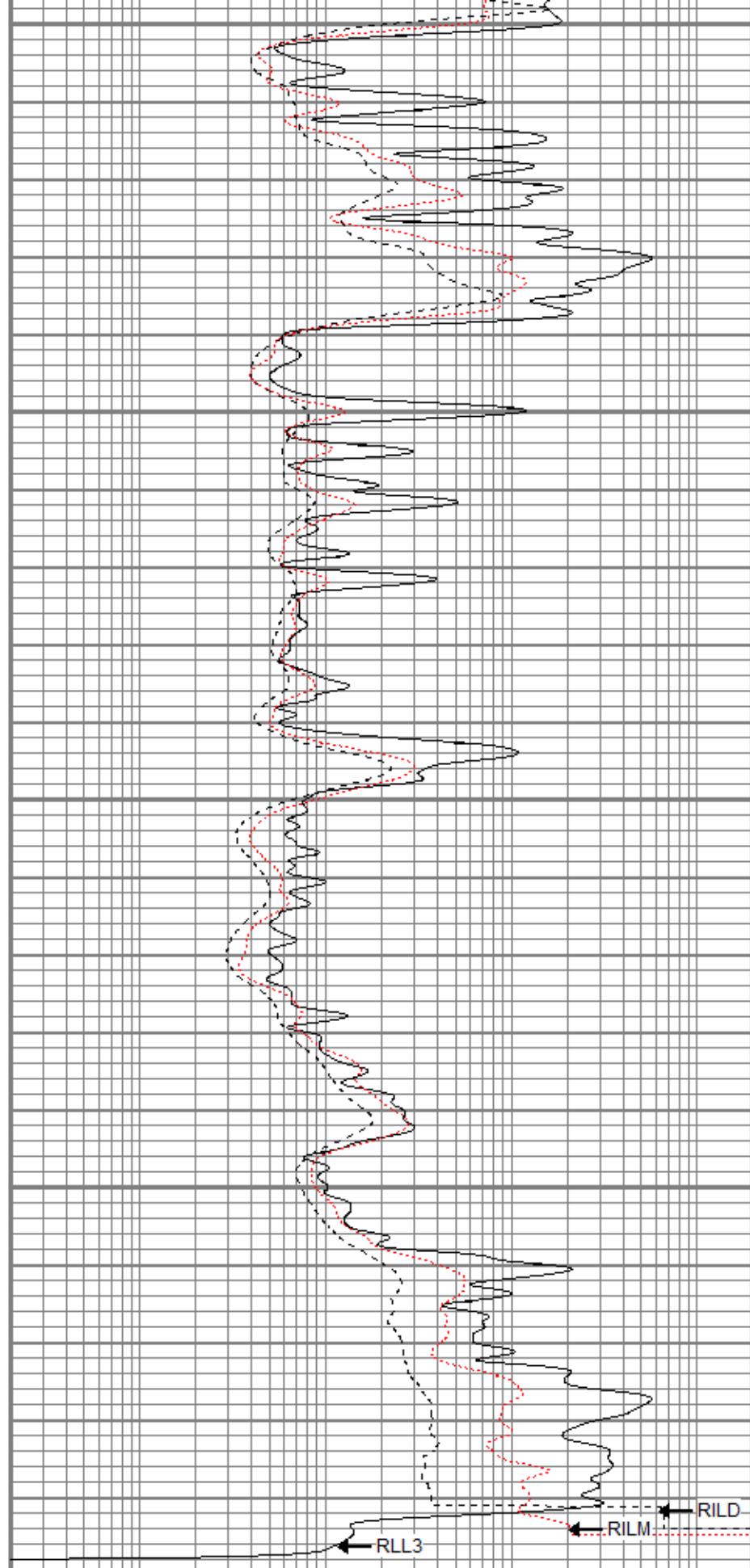
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4500

4550

4600



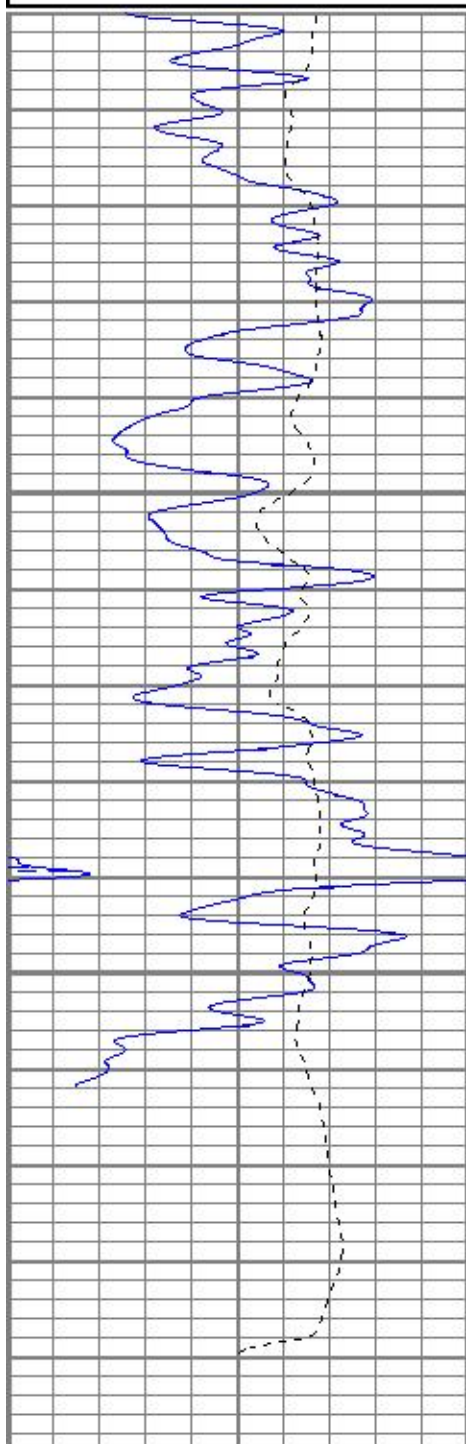
|     |              |      |
|-----|--------------|------|
| 0.2 | RILD (Ohm-m) | 2000 |
| 0.2 | RLL3 (Ohm-m) | 2000 |
| 0.2 | RILM (Ohm-m) | 2000 |



# Repeat Pass

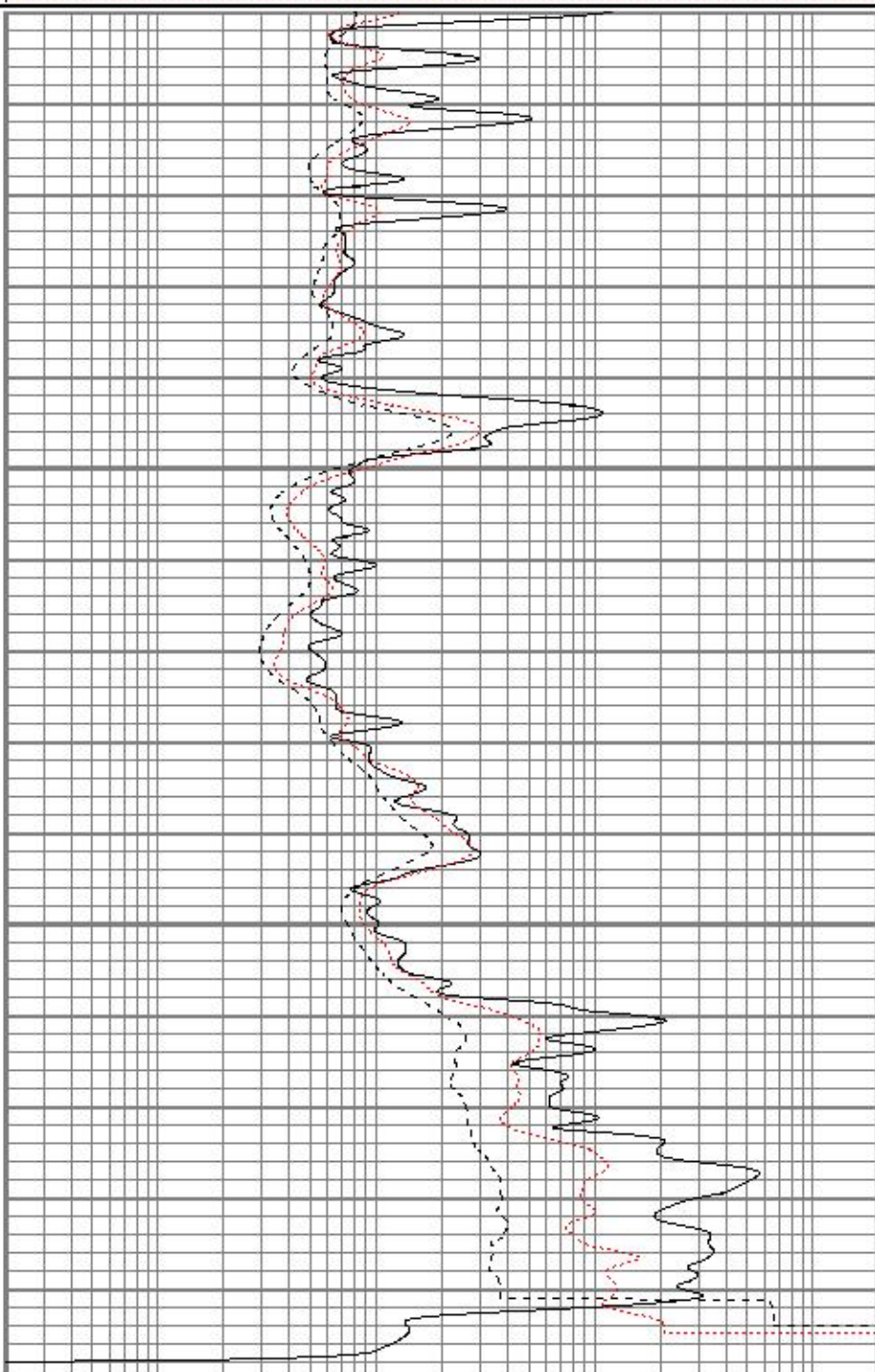
Database File jofschroederunit#1oh.db  
Dataset Pathname pass3.2dil  
Presentation Format kdil  
Dataset Creation Mon Jul 11 22:34:42 2016  
Charted by Depth in Feet scaled 1:240

|      |           |     |
|------|-----------|-----|
| 0    | GR (GAPI) | 150 |
| -100 | SP (mV)   | 100 |



|      |           |     |
|------|-----------|-----|
| 0    | GR (GAPI) | 150 |
| -100 | SP (mV)   | 100 |

|     |              |      |
|-----|--------------|------|
| 0.2 | RILD (Ohm-m) | 2000 |
| 0.2 | RLL3 (Ohm-m) | 2000 |
| 0.2 | RILM (Ohm-m) | 2000 |



|     |              |      |
|-----|--------------|------|
| 0.2 | RILD (Ohm-m) | 2000 |
| 0.2 | RLL3 (Ohm-m) | 2000 |
| 0.2 | RILM (Ohm-m) | 2000 |

| Calibration Report                   |                          |          |                          |         |         |        |            |        |         |  |
|--------------------------------------|--------------------------|----------|--------------------------|---------|---------|--------|------------|--------|---------|--|
| Database File                        | jofschroederunit#1oh.db  |          |                          |         |         |        |            |        |         |  |
| Dataset Pathname                     | pass3.2dil               |          |                          |         |         |        |            |        |         |  |
| Dataset Creation                     | Mon Jul 11 22:34:42 2016 |          |                          |         |         |        |            |        |         |  |
| Dual Induction Calibration Report    |                          |          |                          |         |         |        |            |        |         |  |
| Serial-Model:                        |                          |          | 1989-ADM                 |         |         |        |            |        |         |  |
| Surface Cal Performed:               |                          |          | Mon Jul 11 21:35:42 2016 |         |         |        |            |        |         |  |
| Downhole Cal Performed:              |                          |          | Mon Jul 11 21:36:11 2016 |         |         |        |            |        |         |  |
| After Survey Verification Performed: |                          |          | Mon Jul 11 21:36:11 2016 |         |         |        |            |        |         |  |
| Surface Calibration                  |                          |          |                          |         |         |        |            |        |         |  |
|                                      |                          | Readings |                          |         |         |        | References |        | Results |  |
| Loop:                                | Air                      | Loop     |                          | Air     | Loop    |        | m          | b      |         |  |
| Deep                                 | 0.002                    | 0.656    | V                        | 0.000   | 350.000 | mmho/m | 535.560    | -1.118 |         |  |
| Medium                               | 0.003                    | 0.745    | V                        | 0.000   | 400.000 | mmho/m | 538.828    | -1.427 |         |  |
| Internal:                            | Zero                     | Cal      |                          | Zero    | Cal     |        | m          | b      |         |  |
| Deep                                 | 0.002                    | 0.656    | V                        | 0.000   | 350.000 | mmho/m | 535.220    | -1.003 |         |  |
| Medium                               | 0.003                    | 0.745    | V                        | 0.000   | 550.000 | mmho/m | 741.357    | -2.036 |         |  |
| Downhole Calibration                 |                          |          |                          |         |         |        |            |        |         |  |
|                                      |                          | Readings |                          |         |         |        | References |        | Results |  |
| Internal:                            | Zero                     | Cal      |                          | Zero    | Cal     |        | m          | b      |         |  |
| Deep                                 | -0.036                   | 349.993  | mmho/m                   | -0.114  | 350.108 | mmho/m | 1.001      | -0.078 |         |  |
| Medium                               | 0.039                    | 400.181  | mmho/m                   | 0.053   | 399.799 | mmho/m | 0.999      | 0.013  |         |  |
| Shallow                              | 2.503                    | 0.015    | V                        | 500.000 | 2.000   | Ohm-m  | 200.177    | -1.046 |         |  |
| After Survey Verification            |                          |          |                          |         |         |        |            |        |         |  |
|                                      |                          | Readings |                          |         |         |        | Targets    |        | Results |  |
| Internal:                            | Zero                     | Cal      |                          | Zero    | Cal     |        | m'         | b'     |         |  |
| Deep                                 | 0.000                    | 0.000    | mmho/m                   | -0.036  | 349.993 | mmho/m | 1.001      | -0.078 |         |  |
| Medium                               | 0.000                    | 0.000    | mmho/m                   | 0.039   | 400.181 | mmho/m | 0.999      | 0.013  |         |  |
| Shallow                              | 0.000                    | 0.000    | Ohm-m                    | 500.000 | 2.000   | Ohm-m  | 1.000      | 0.000  |         |  |

| Sensor     | Offset (ft)    | Schematic                                                                           | Description                      | Length (ft) | O.D. (in) | Weight (lb) |
|------------|----------------|-------------------------------------------------------------------------------------|----------------------------------|-------------|-----------|-------------|
|            |                |  | CHD-None                         | 0.75        | 1.50      | 5.00        |
| SP<br>CILD | 10.60<br>10.60 |  | DIL-ADM (1989)<br>Dual Induction | 19.71       | 4.00      | 300.00      |
| CILM       | 6.89           |  |                                  |             |           |             |
| RLL3       | 1.70           |  |                                  |             |           |             |

|               |                                                     |
|---------------|-----------------------------------------------------|
| Dataset:      | jofschroederunit#1oh.db: field/well/run1/pass3.2dil |
| Total length: | 20.46 ft                                            |
| Total weight: | 305.00 lb                                           |
| O.D.:         | 4.00 in                                             |