Schlumberger

Company: **Caerus Piceance LLC**

Well: **NPR 11C−9−596**
Field: **Wildcat**
County: **Garfield** State: **Colorado**

Triple Combo

County: Garfield
Field: Wildcat
Location: SENW Sec. 9 T5S R96W
Well: NPR 11C−9−596
Company: Caerus Piceance LLC

LOCATION

SENW Sec. 9 T5S R96W
925 FNL & 2200 FEL
Latitude: 39.632025 Longitude: −108.175175

Elev.: K.B. 24.00 ft
G.L. 7648.00 ft
D.F. 23.00 ft

Permanent Datum: Ground Level Elev.: 7648.00 ft
Log Measured From: Kelly Bushing 24.00 ft above Perm. Datum
Drilling Measured From: Kelly Bushing

| API Serial No. | Section | Township | Range |
|---|---|---|---|
| 05−045−23873 | 9 | 5S | 96W |

| | Run 1 | Run 2 | Run |
|---|---|---|---|
| Logging Date | 18−Jan−2018 | | |
| Run Number | 1 | | |
| Depth Driller | 10185 ft | | |
| Schlumberger Depth | 10141.7 ft | | |
| Bottom Log Interval | 10141.7 ft | | |
| Top Log Interval | 2492 ft | | |
| Casing Driller Size @ Depth | 9.625 in @ 2500 ft | @ | @ |
| Casing Schlumberger | 2492 ft | | |
| Bit Size | 8.750 in | | |
| Type Fluid In Hole | WBM | | |
| MUD Density / Viscosity | 9.65 lbm/gal / 48 s | | |
| MUD Fluid Loss / PH | 0 cm3 / | | |
| MUD Source Of Sample | Sample | | |
| RM @ Measured Temperature | 0.942 ohm.m @ 75 degF | @ | @ |
| RMF @ Measured Temperature | 0.707 ohm.m @ 75 degF | @ | @ |
| RMC @ Measured Temperature | 1.413 ohm.m @ 75 degF | @ | @ |
| Source RMF / RMC | Calculated / Calculated | | |
| RM @ MRT / RMF @ MRT | 0.300 @ 250 / 0.225 @ 250 | @ / @ | @ / @ |
| Maximum Recorded Temperatures | 250 degF | | |
| Circulation Stopped / Time | 17−Jan−2018 / 7:30 | | |
| Logger On Bottom / Time | 18−Jan−2018 / 2:00 | | |
| Unit Number / Location | 9102 / Fort Morgan | | |
| Recorded By | Stephen Tang | | |
| Witnessed By | Mike Leibovitz | | |

| | Run 1 | Run 2 | Run |
|---|---|---|---|
| Logging Date | | | |
| Run Number | | | |
| Depth Driller | | | |
| Schlumberger Depth | | | |
| Bottom Log Interval | | | |
| Top Log Interval | | | |
| Casing Driller Size @ Depth | @ | | |
| Casing Schlumberger | | | |
| Bit Size | | | |
| Type Fluid In Hole | | | |
| MUD Density / Viscosity | / | | |
| MUD Fluid Loss / PH | / | | |
| MUD Source Of Sample | | | |
| RM @ Measured Temperature | @ | | |
| RMF @ Measured Temperature | @ | | |
| RMC @ Measured Temperature | @ | | |
| Source RMF / RMC | / | | |
| RM @ MRT / RMF @ MRT | @ / @ | | |
| Maximum Recorded Temperatures | | | |
| Circulation Stopped / Time | / | | |
| Logger On Bottom / Time | / | | |
| Unit Number / Location | / | | |
| Recorded By | | | |
| Witnessed By | | | |

Run 3

Run 4

DISCLAIMER

THE USE OF AND RELIANCE UPON THIS RECORDED−DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED−DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED−DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED−DATA.

| OTHER SERVICES1 | OTHER SERVICES2 |
|---|---|
| OS1: | OS1: |
| OS2: | OS2: |
| OS3: | OS3: |
| OS4: | OS4: |
| OS5: | OS5: |

| REMARKS: RUN NUMBER 1 | REMARKS: RUN NUMBER 2 |
|---|---|
| Toolstring ran as per toolsketch. | |
| Log depth recorded as driller depth. | |
| Logs processed from memory data. | |
| First log in well. | |

RUN 1

SERVICE ORDER #: DW01−00091
PROGRAM VERSION: 19C2−270
FLUID LEVEL:

| LOGGED INTERVAL | START | STOP |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

RUN 2

SERVICE ORDER #:
PROGRAM VERSION:
FLUID LEVEL:

| LOGGED INTERVAL | START | STOP |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

# EQUIPMENT DESCRIPTION

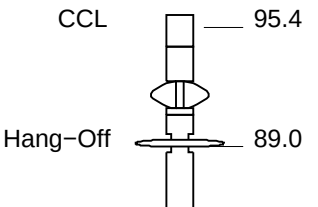
RUN 1 RUN 2

## SURFACE EQUIPMENT

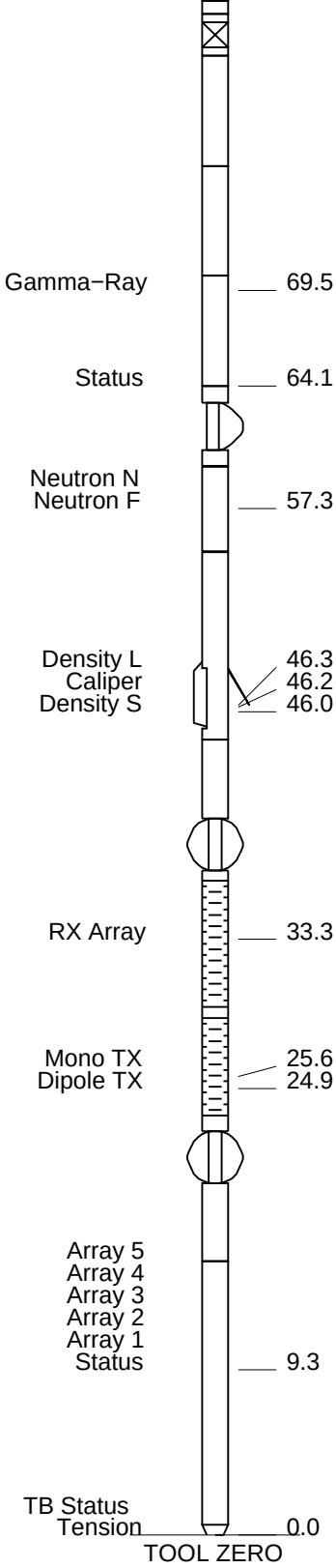
WITM (ThruBit)

## DOWNHOLE EQUIPMENT

TBT−A
CCL
BDOT−B
THOT
T10_1
SAH−TB
TBAT1
TBAT2



WCIB
TMG−A
TILE−A
TBN−A
NNLS−EWA
TBD−A
GGLS−FZ
TBDS−B
TBI−A




MAXIMUM STRING DIAMETER 2.13 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Schlumberger

# 5" Main Pass

MAXIS Field Log

**Company: Caerus Pieance LLC** **Well: NPR 11C−9−596**

## Output DLIS Files

| | | | | | | |
|---|---|---|---|---|---|---|
| DEFAULT | ThruBit_011PUP | FN:10 | PRODUCER | 20−Jan−2019 00:50 | 10138.9 FT | 2386.4 FT |

## Integrated Hole/Cement Volume Summary

Hole Volume = 3577.31 F3

Cement Volume = 1535.86 F3 (assuming 7.00 IN casing O.D.)

Computed from 10138.9 FT to 2500.4 FT using data channel(s) CALI

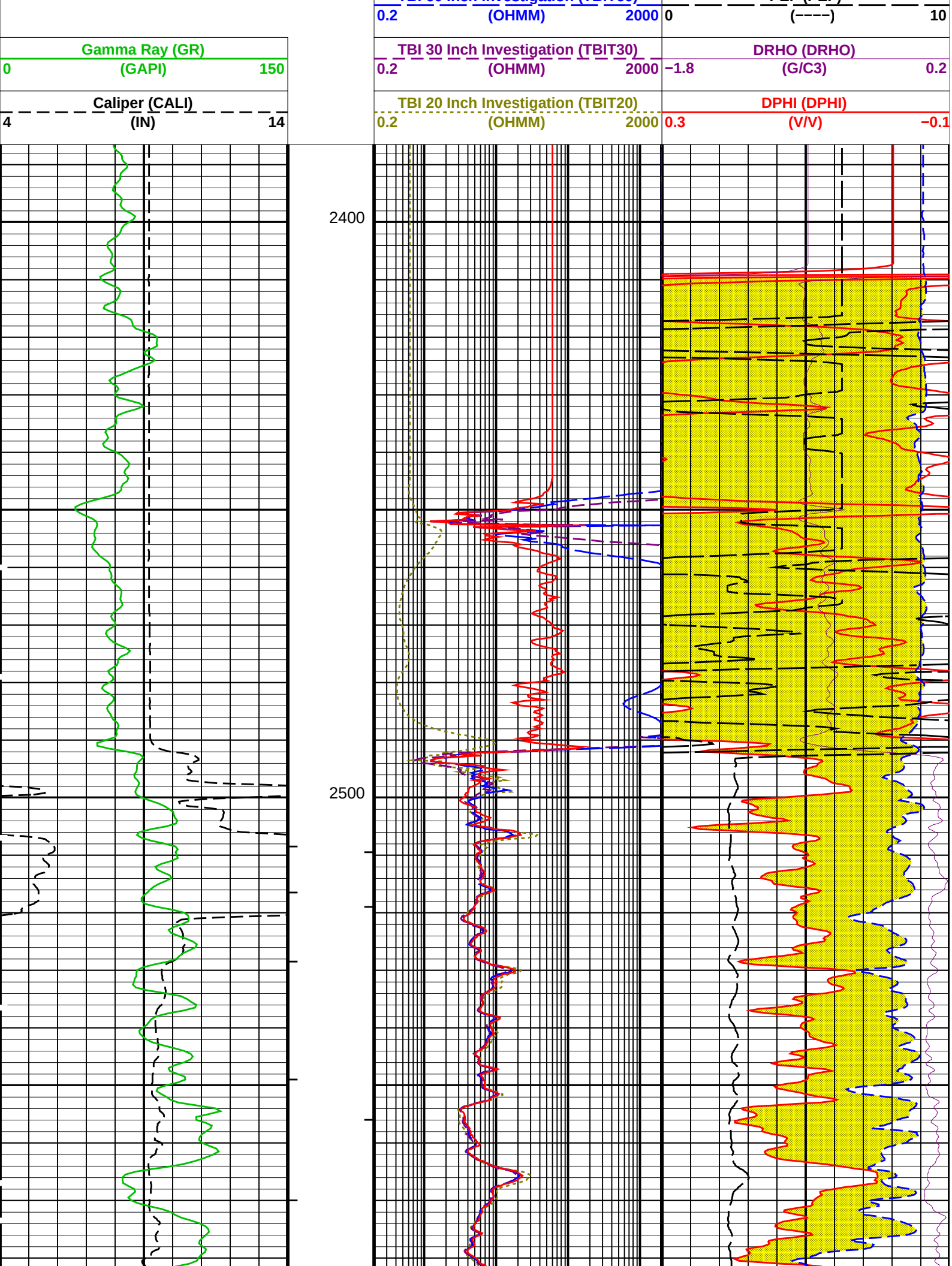
## OP System Version: 19C2−270

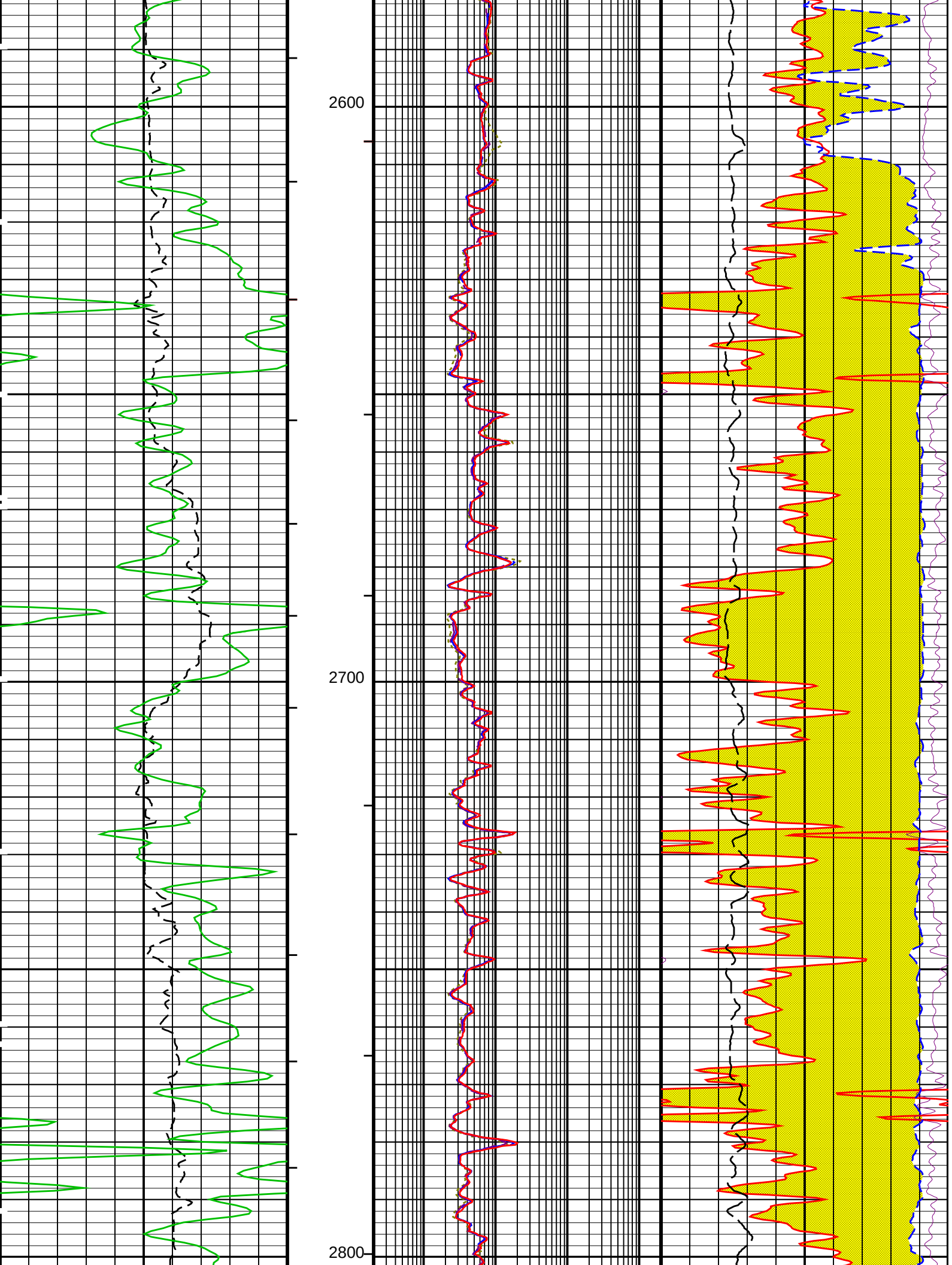
TBT−A SRPC−5318−Thrubit−SP3.4

PIP SUMMARY

- Integrated Cement Volume Major Pip Every 100 F3
- Integrated Cement Volume Minor Pip Every 10 F3
- Integrated Hole Volume Major Pip Every 100 F3
- Integrated Hole Volume Minor Pip Every 10 F3
- Time Mark Every 60 S

| | TBI 90 Inch Investigation (TBIT90) | TNPH (TNPH) |
|---|---|---|
| | 0.2 (OHMM) 2000 | 30 (%) −10 |
| | TBI 60 Inch Investigation (TBIT60) | PEF (PEF) |


0.2 (OHMM) 2000
0 (----) 10
Gamma Ray (GR)
0 (GAPI) 150
TBI 30 Inch Investigation (TBIT30)
0.2 (OHMM) 2000
DRHO (DRHO)
−1.8 (G/C3) 0.2
Caliper (CALI)
4 (IN) 14
TBI 20 Inch Investigation (TBIT20)
0.2 (OHMM) 2000
DPHI (DPHI)
0.3 (V/V) −0.1
2400
2500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2700
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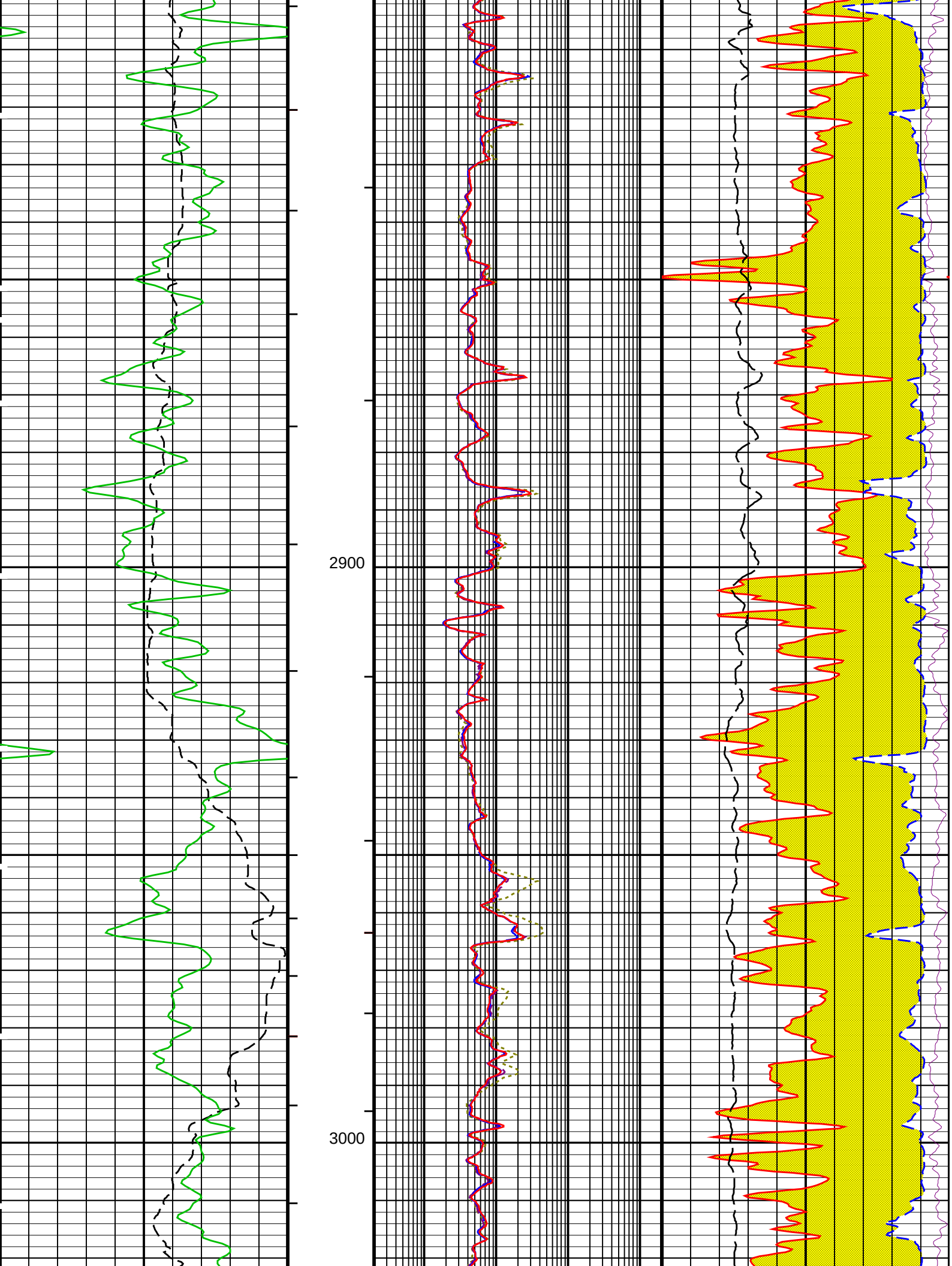
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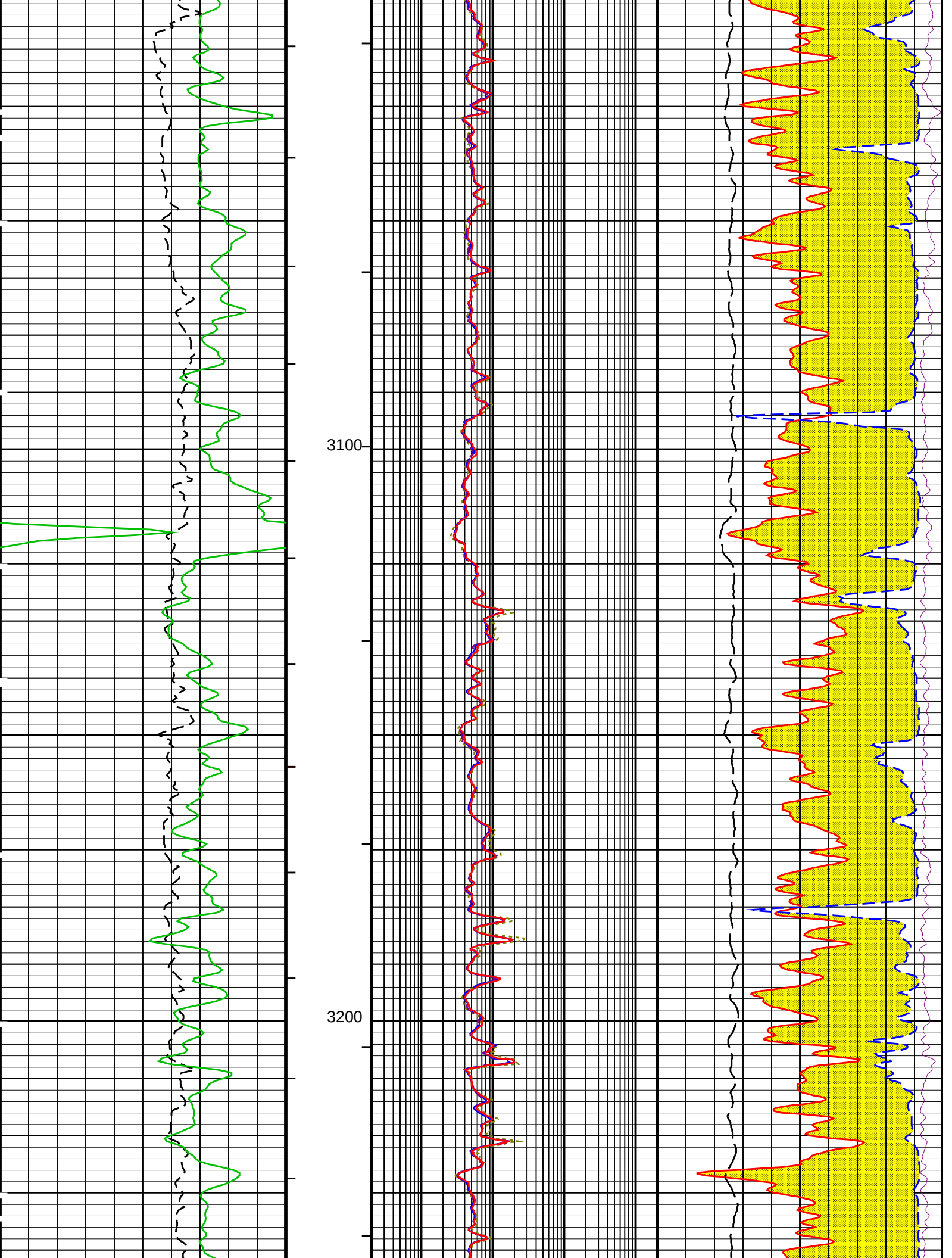
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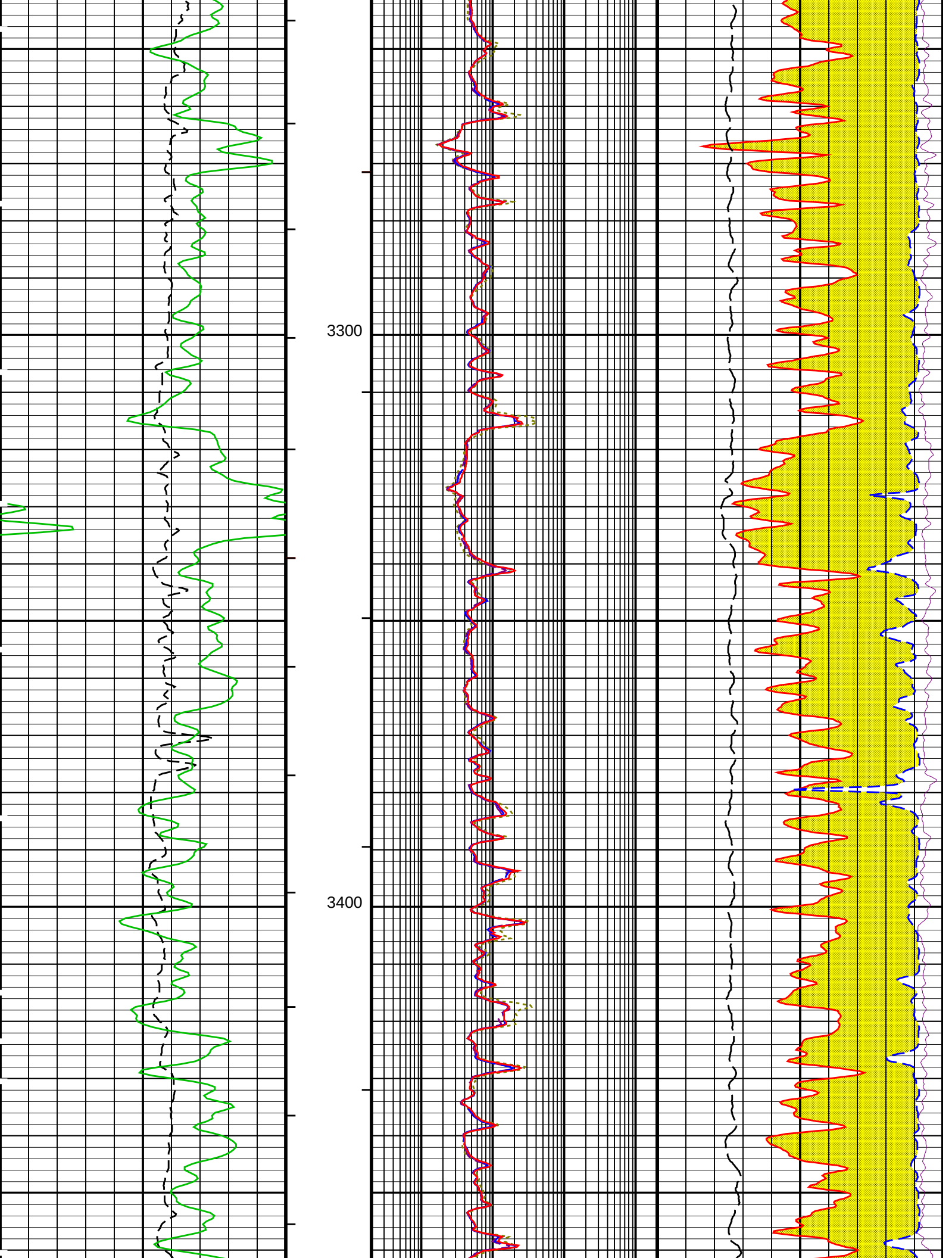
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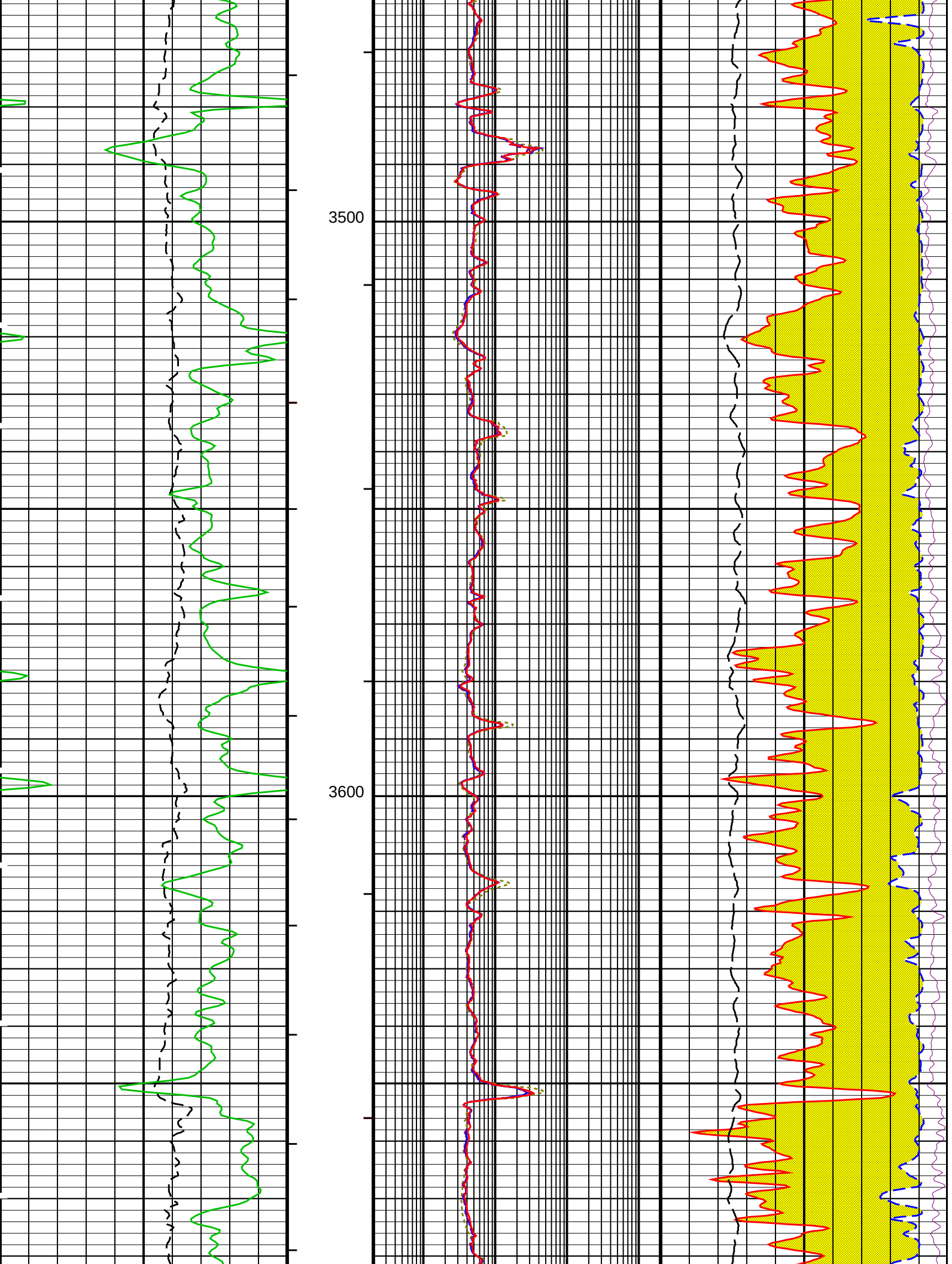
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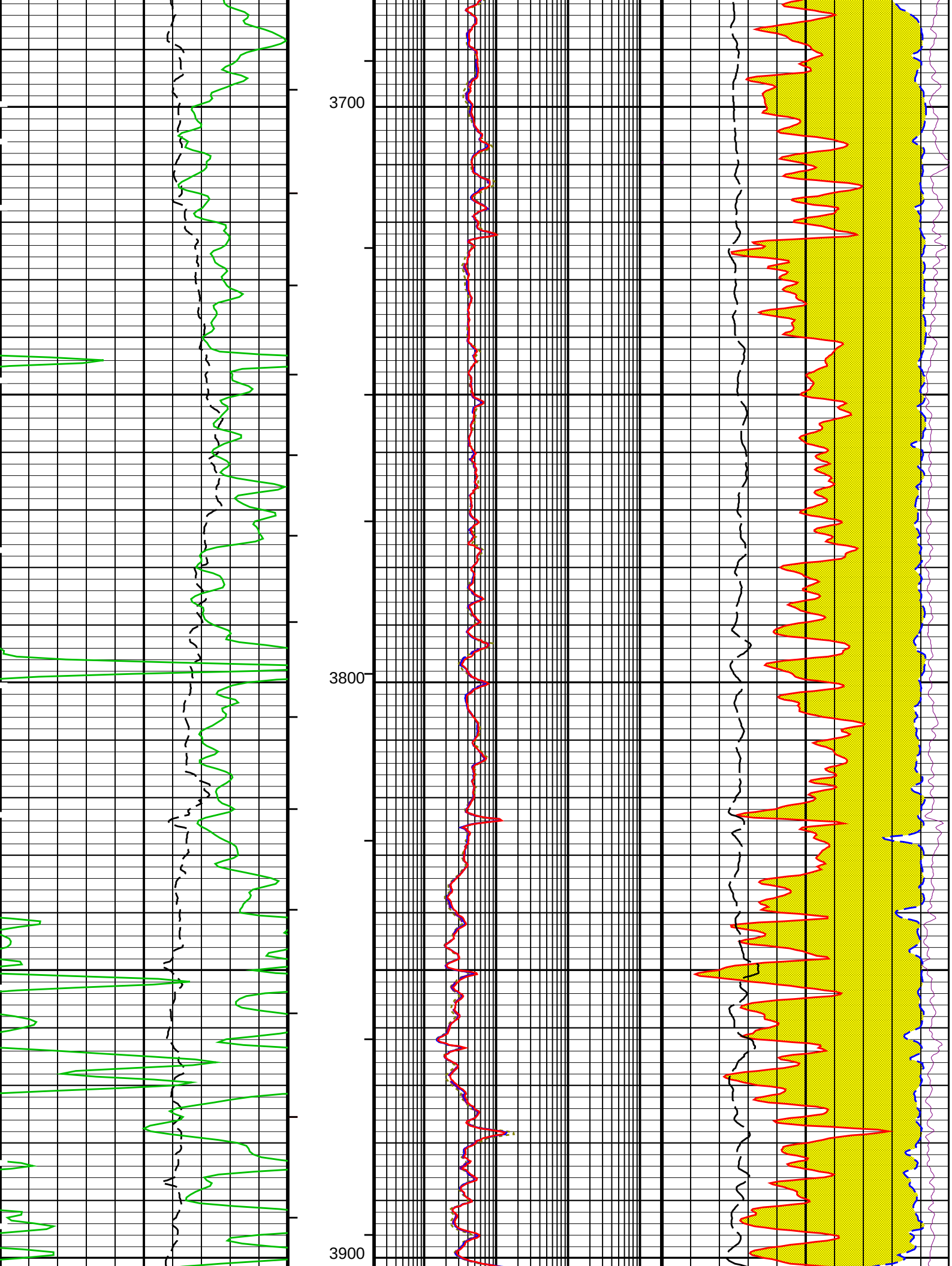
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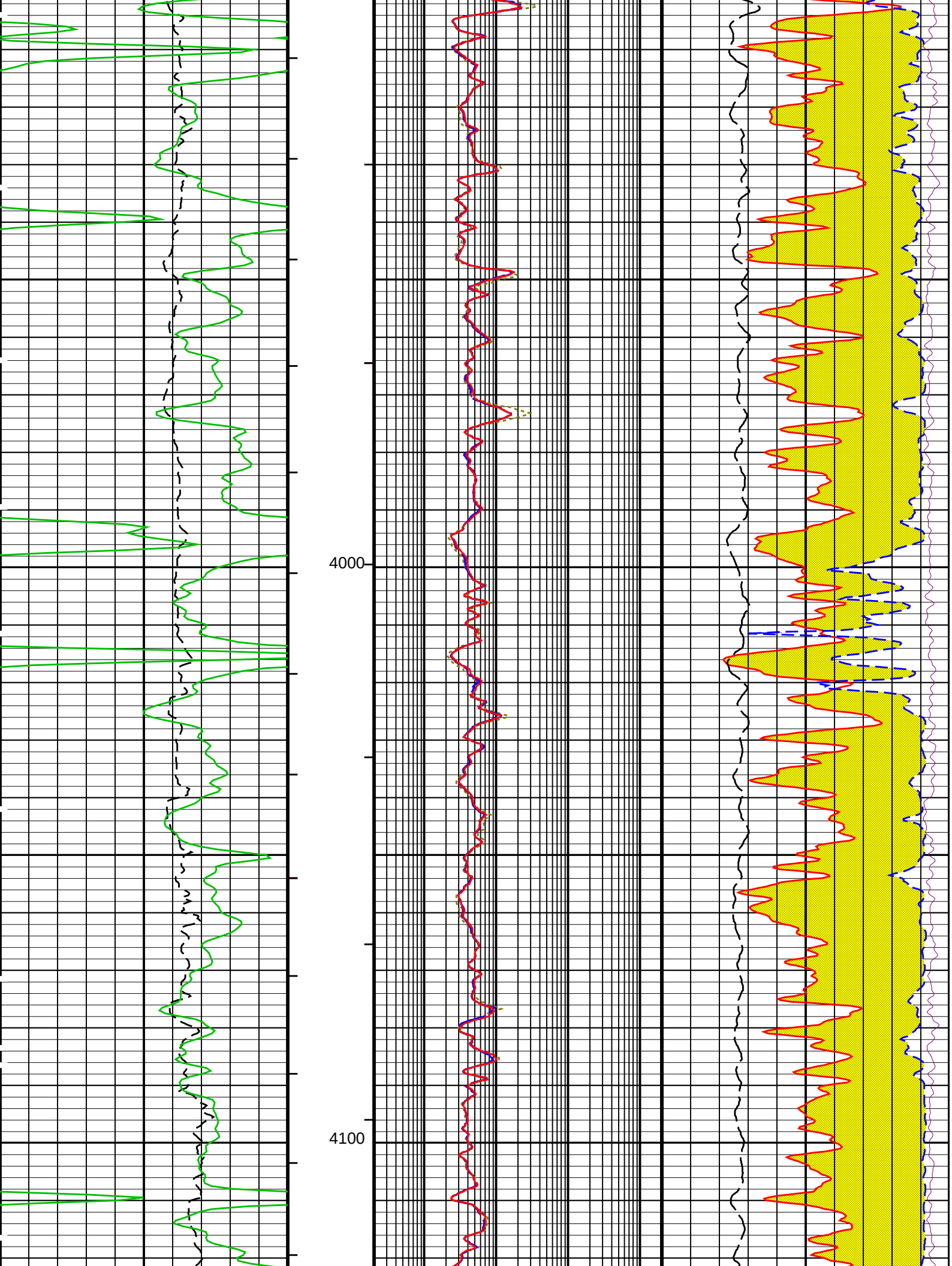
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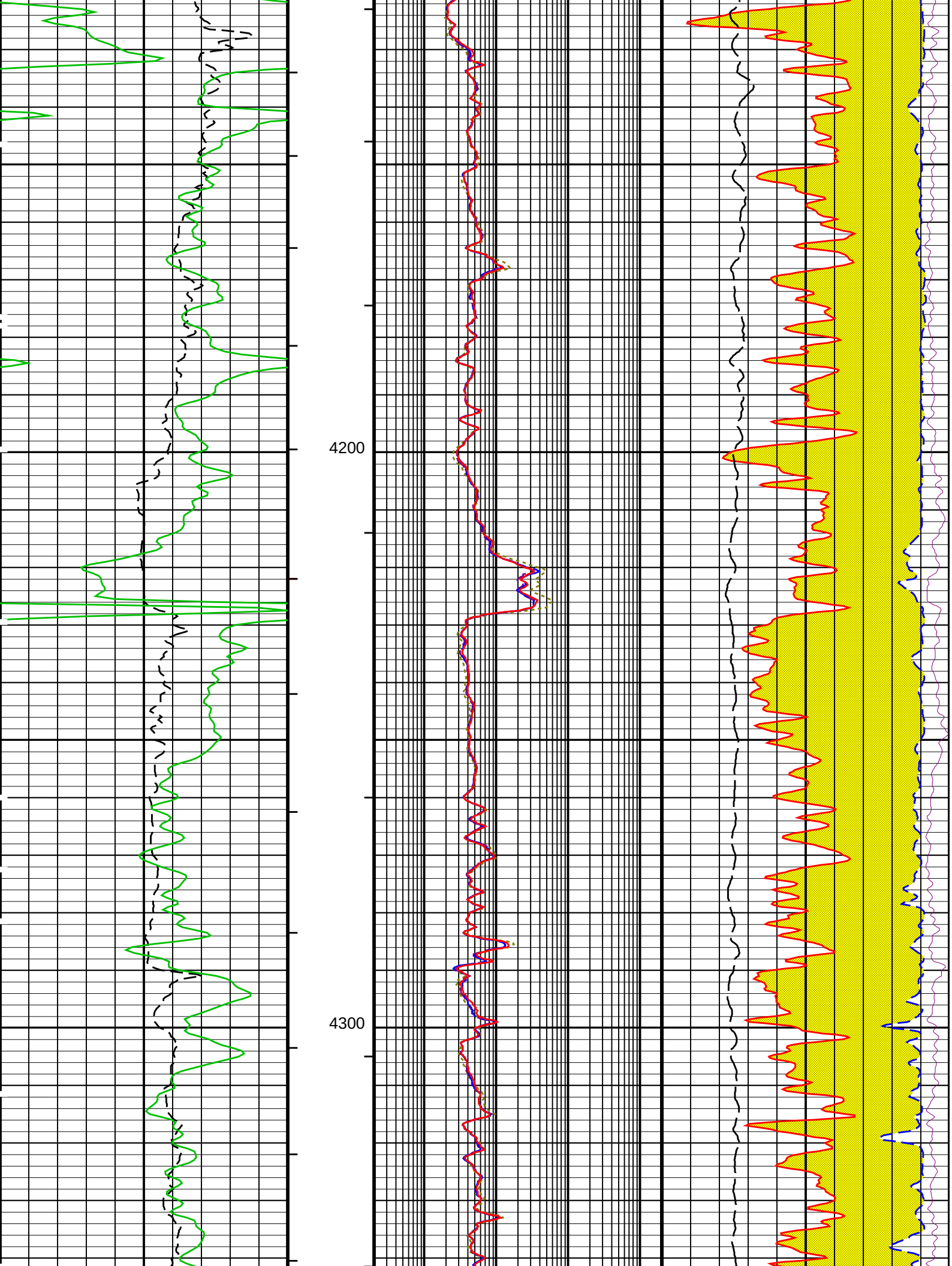
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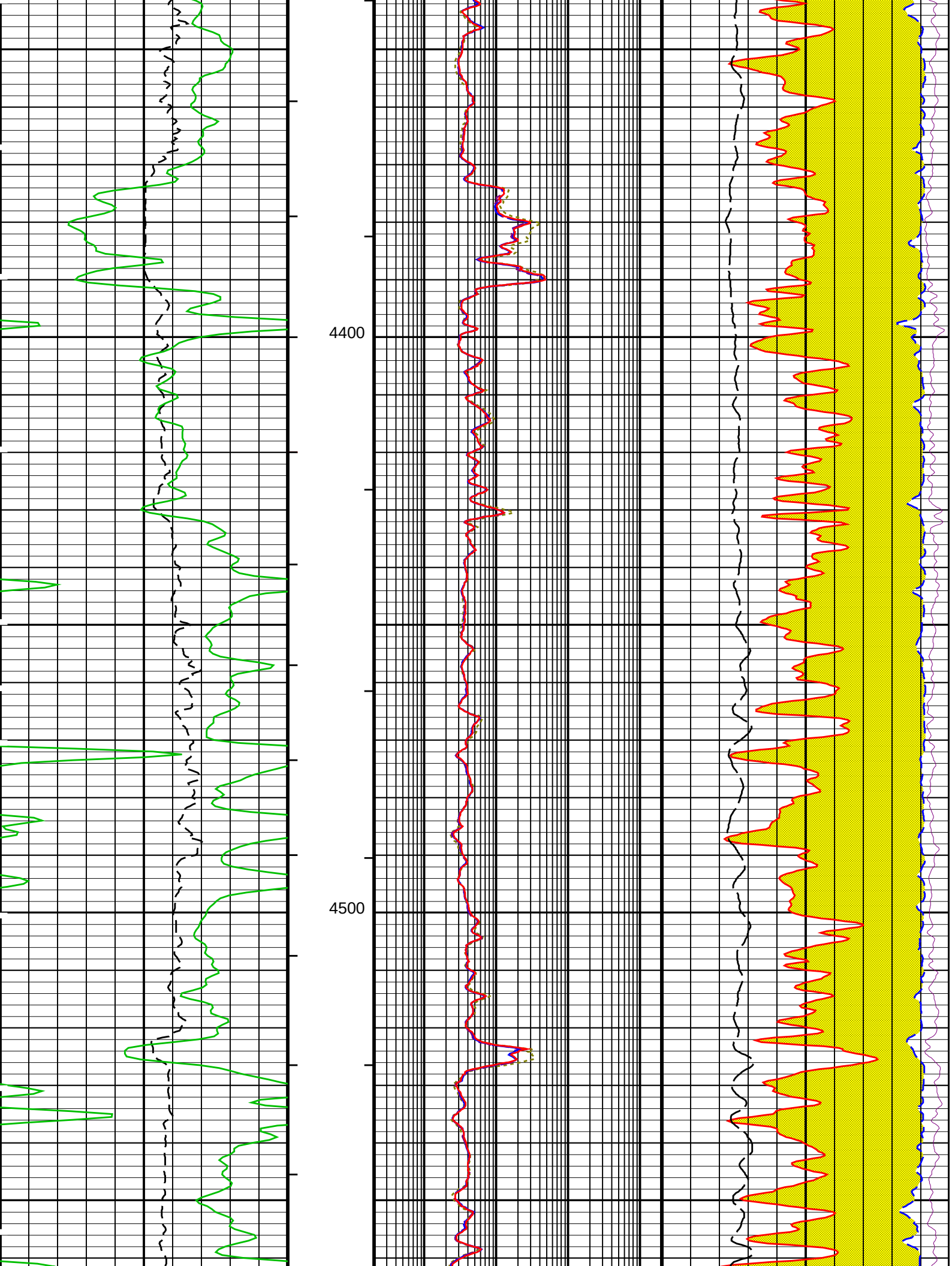
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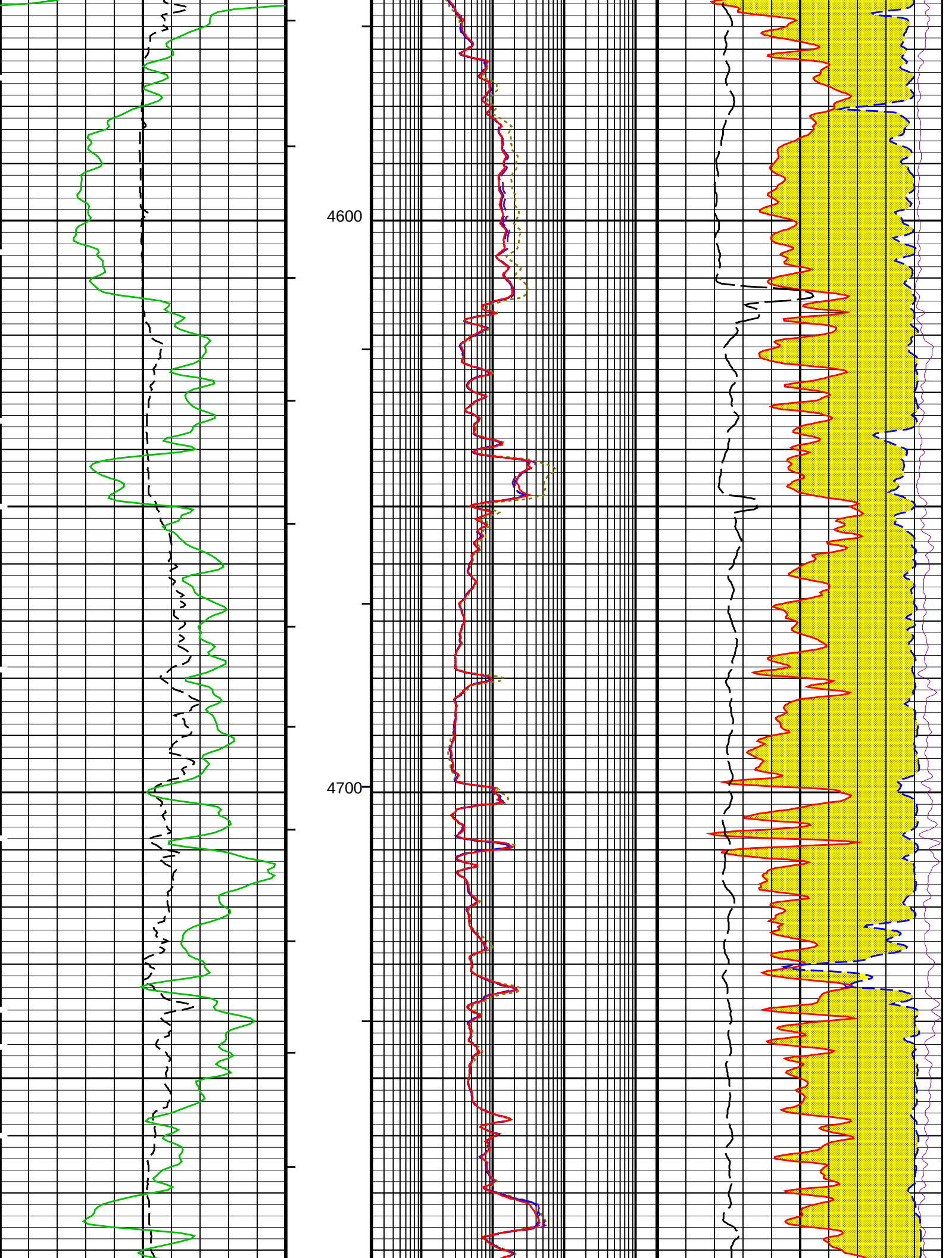
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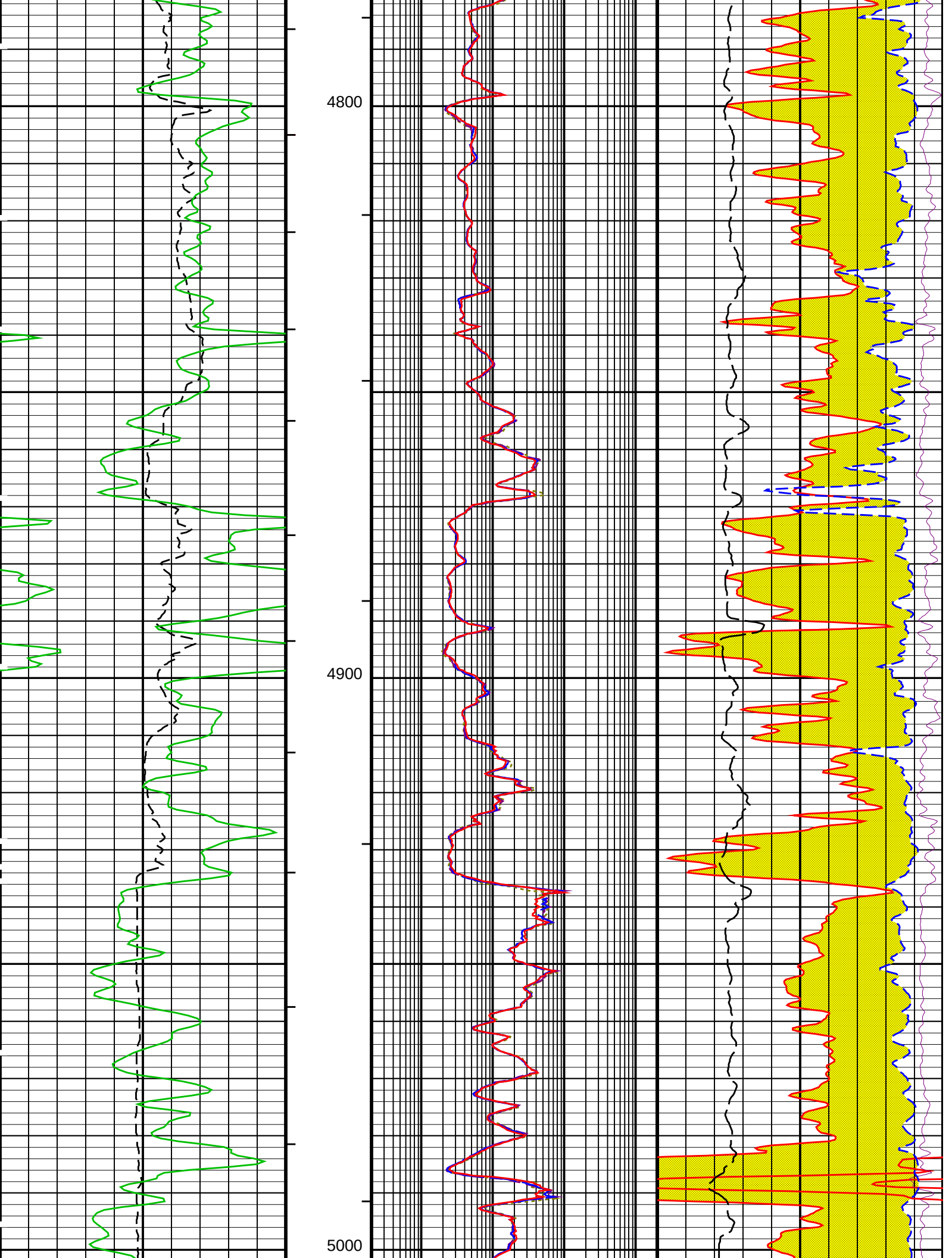
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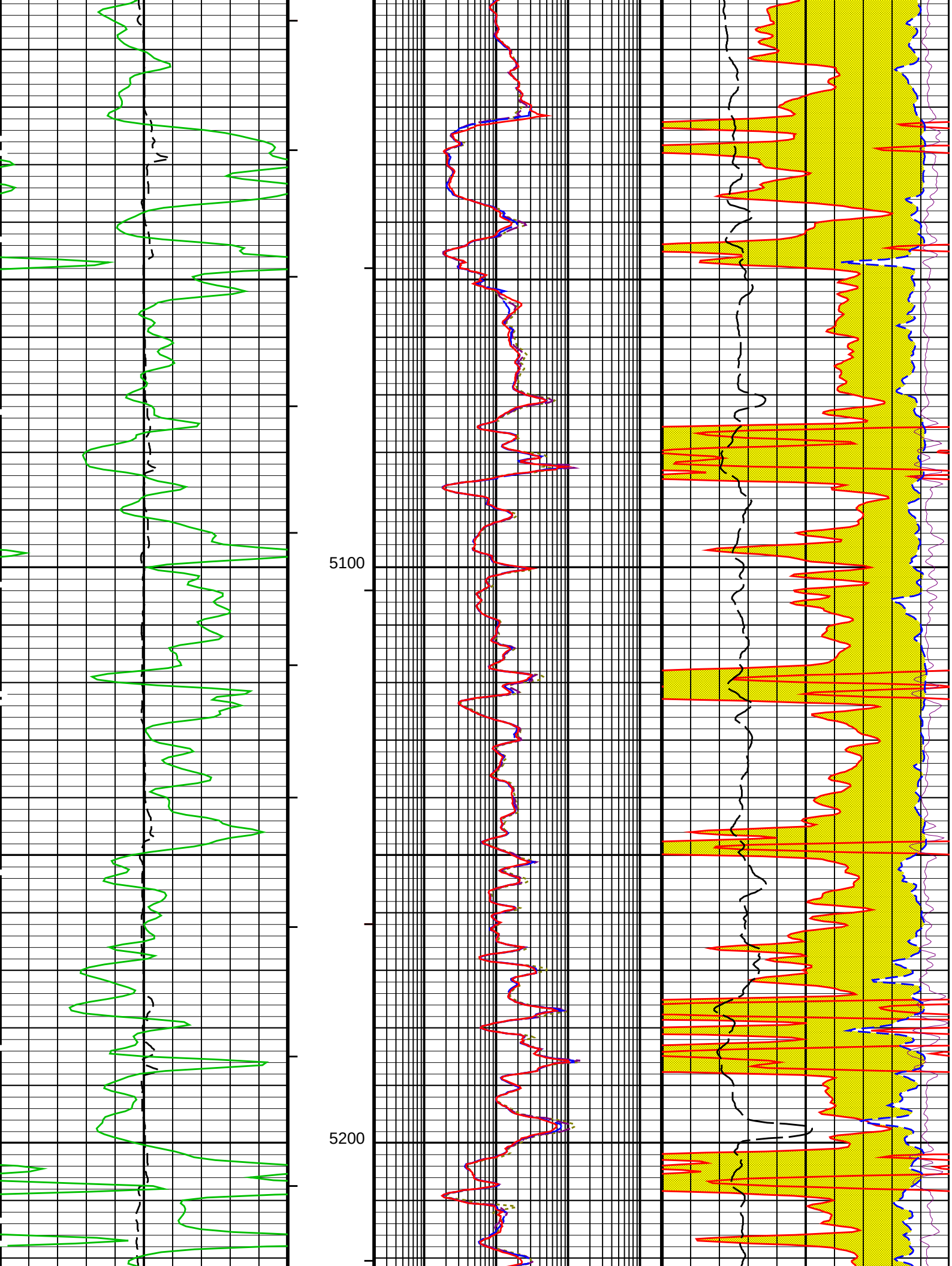
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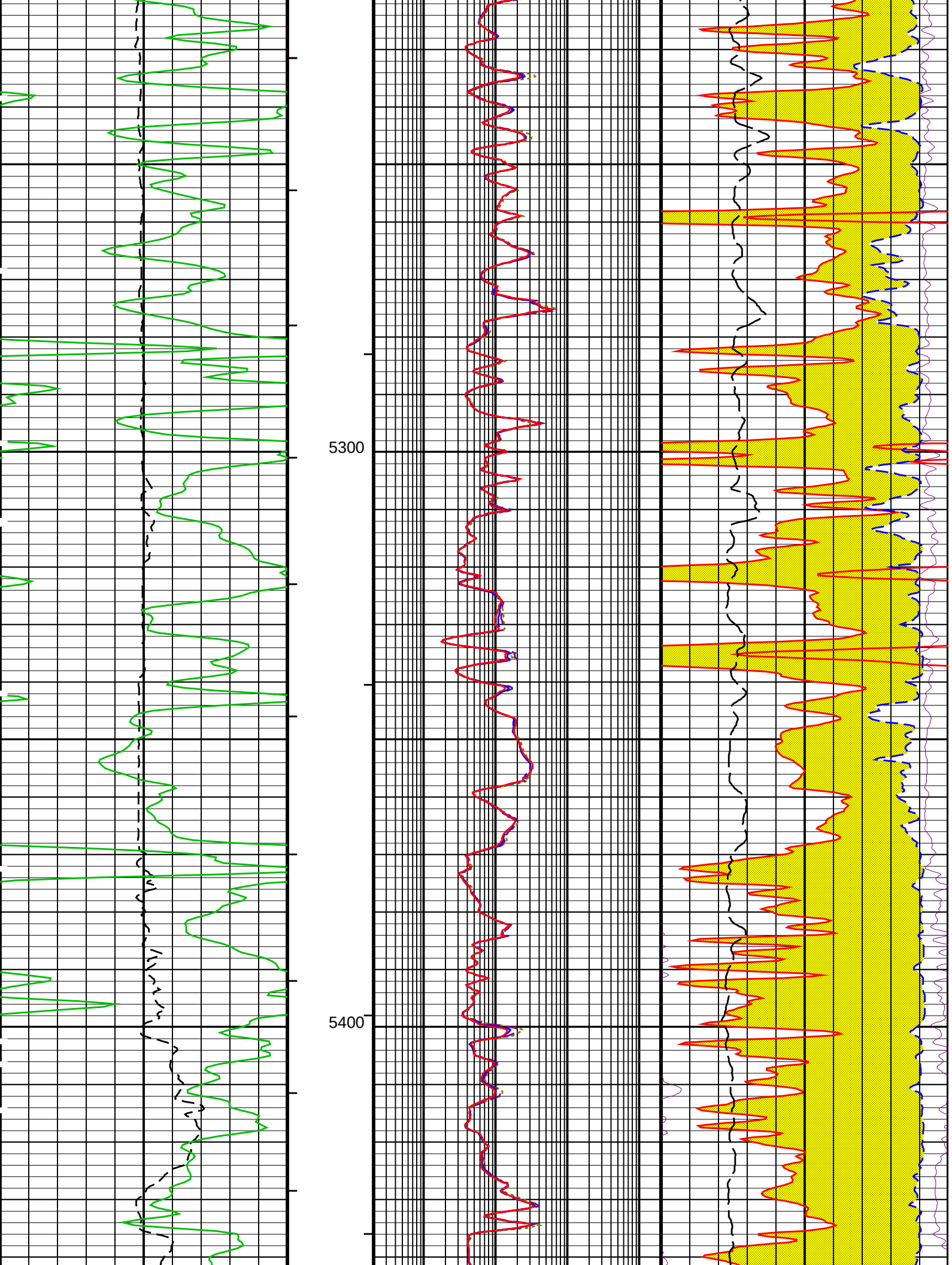
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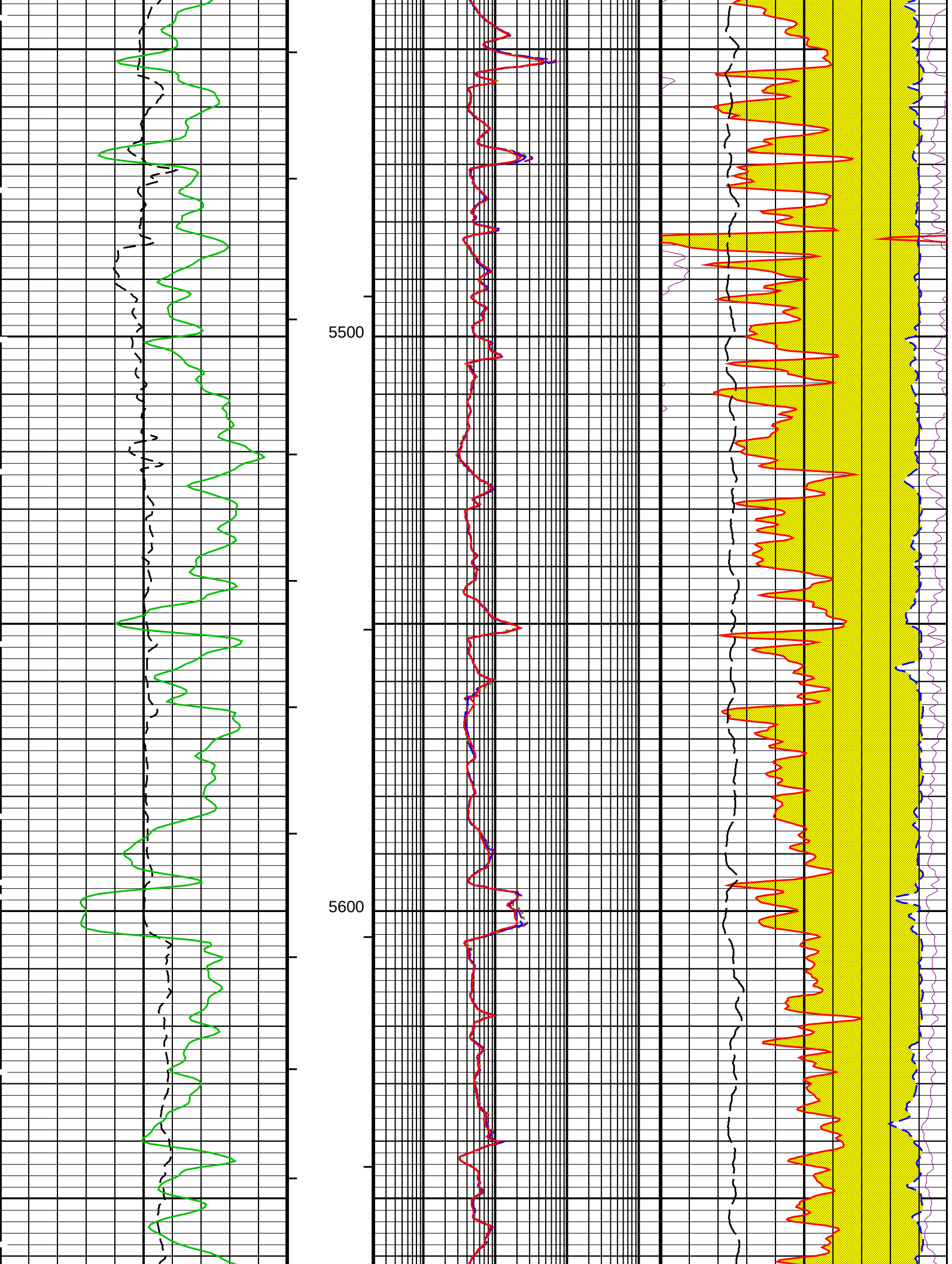
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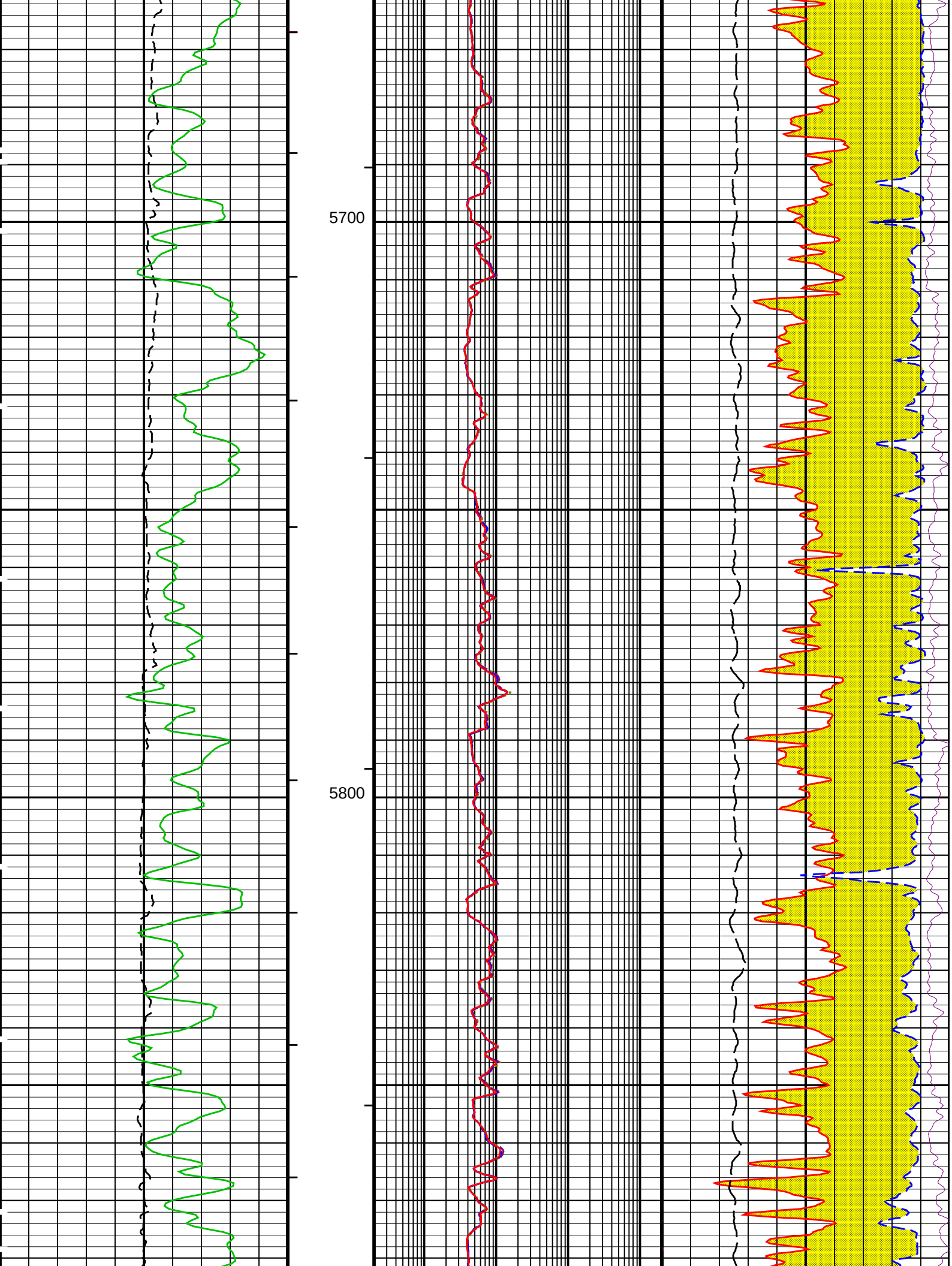
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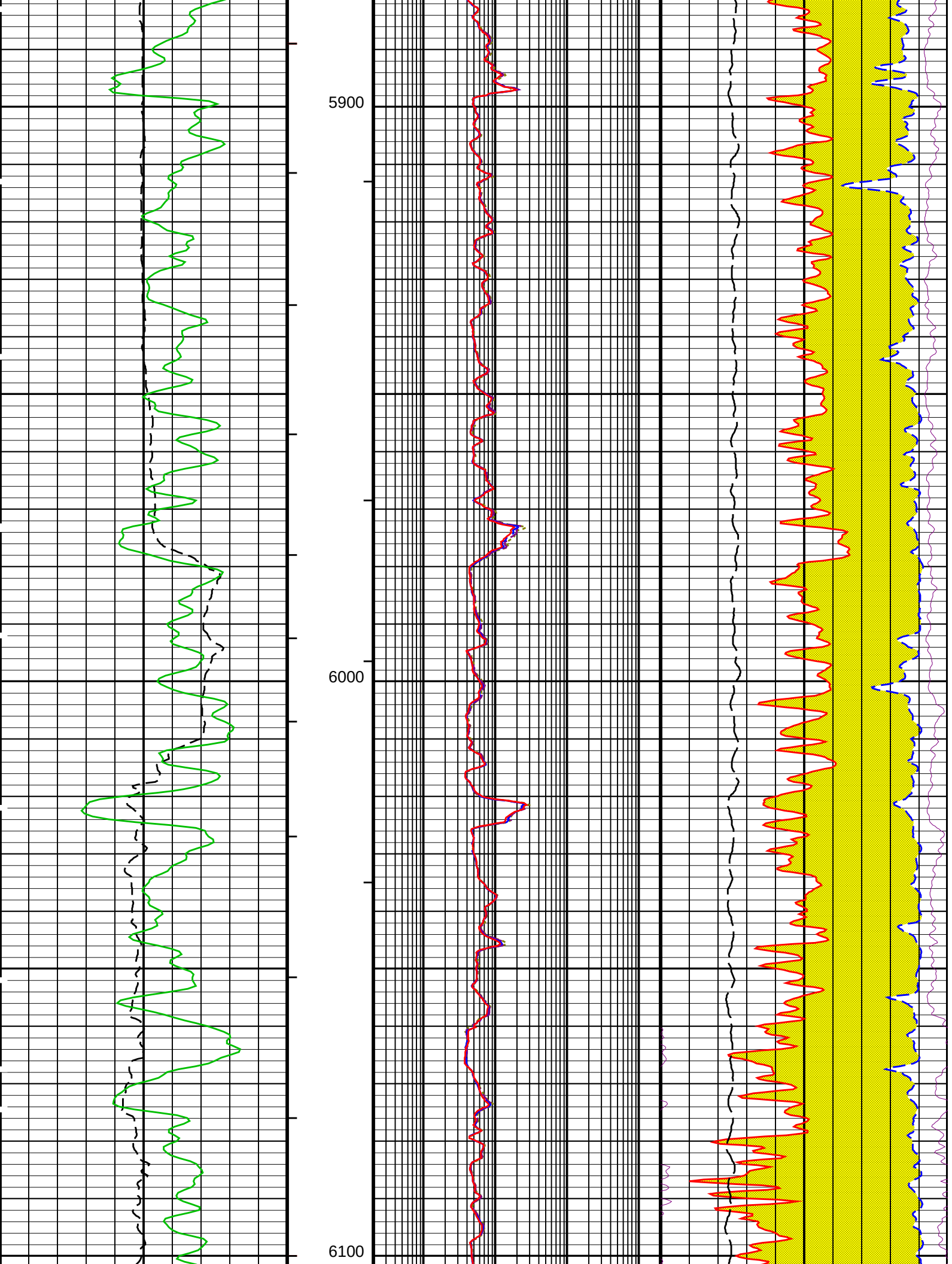
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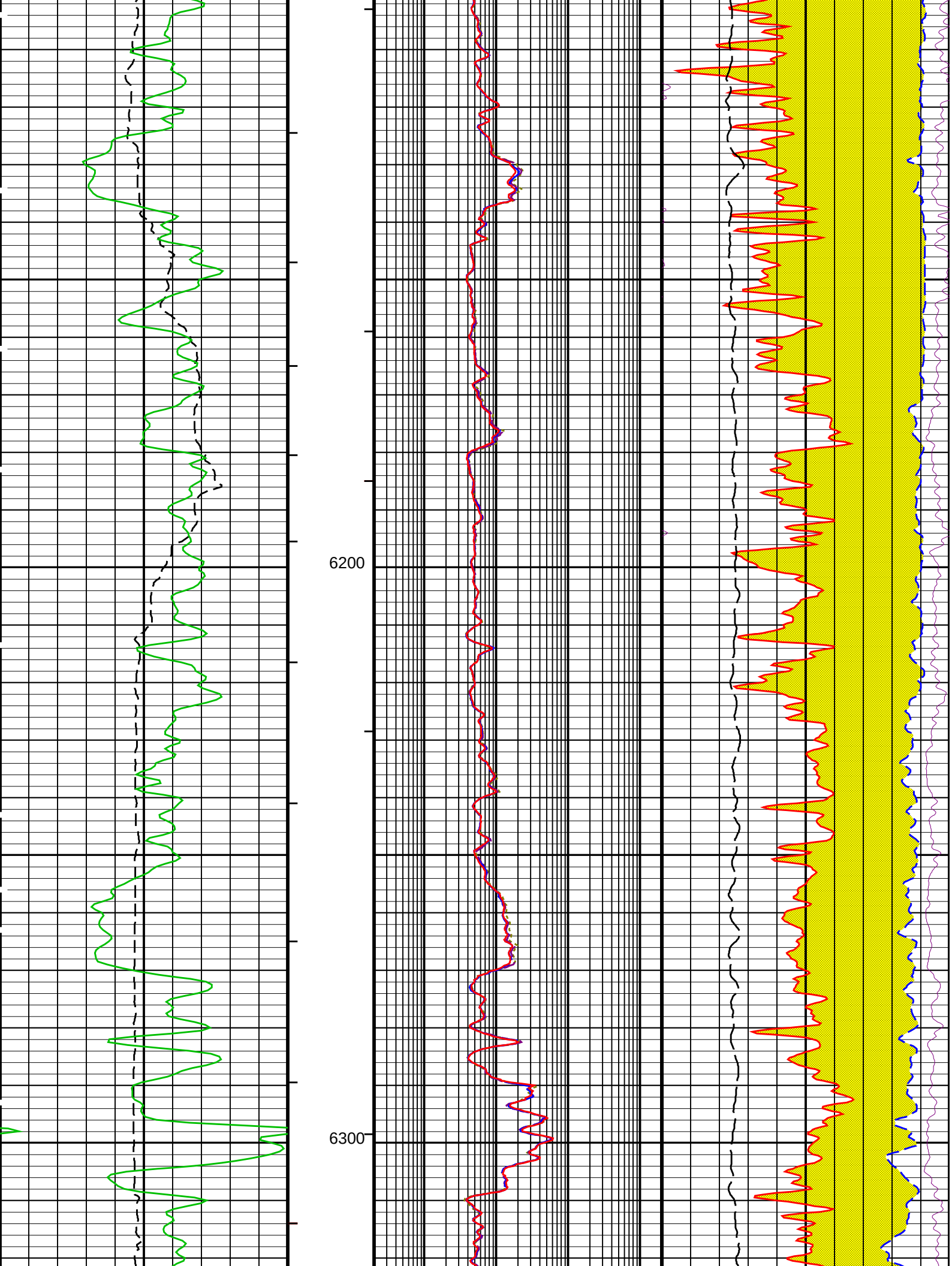
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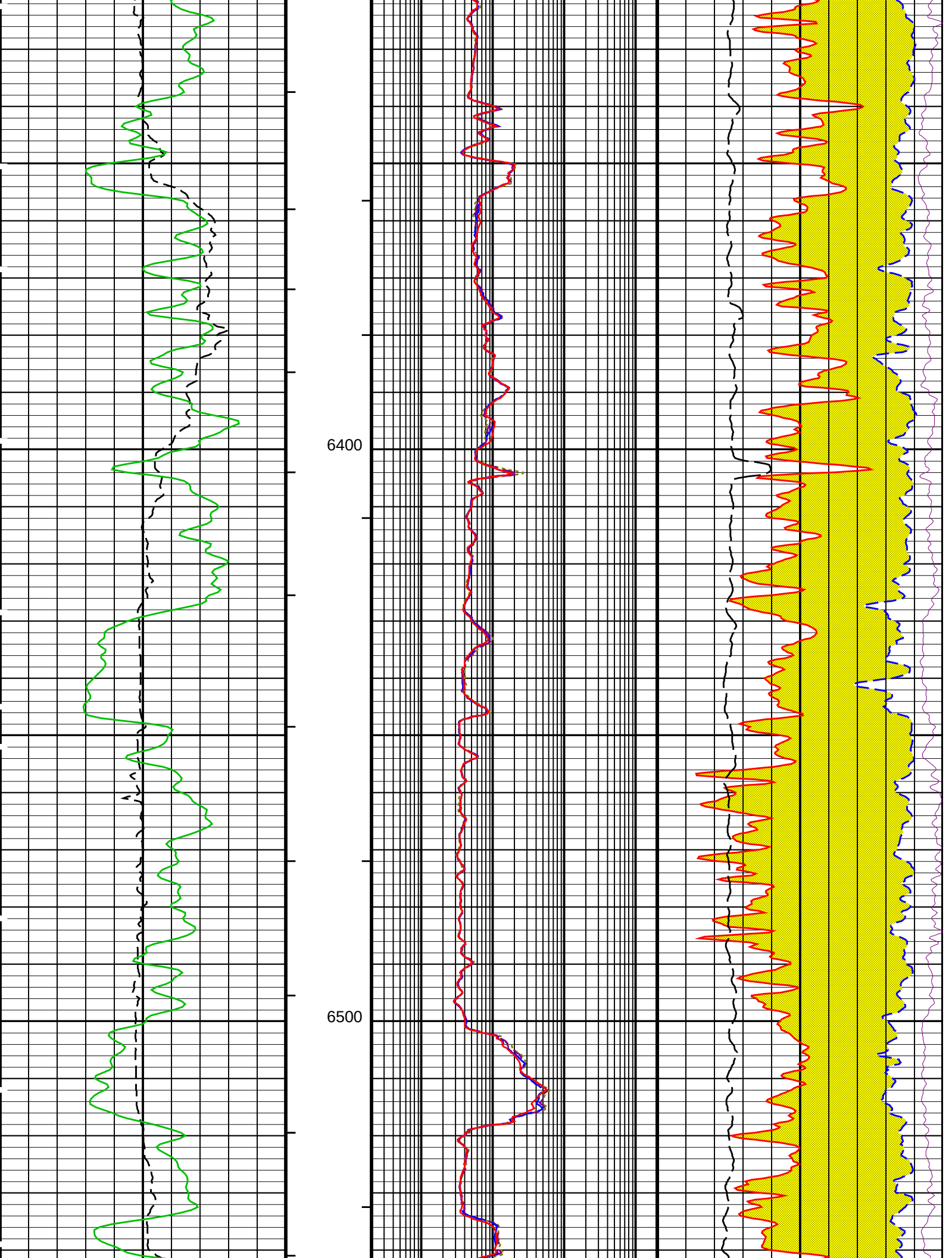
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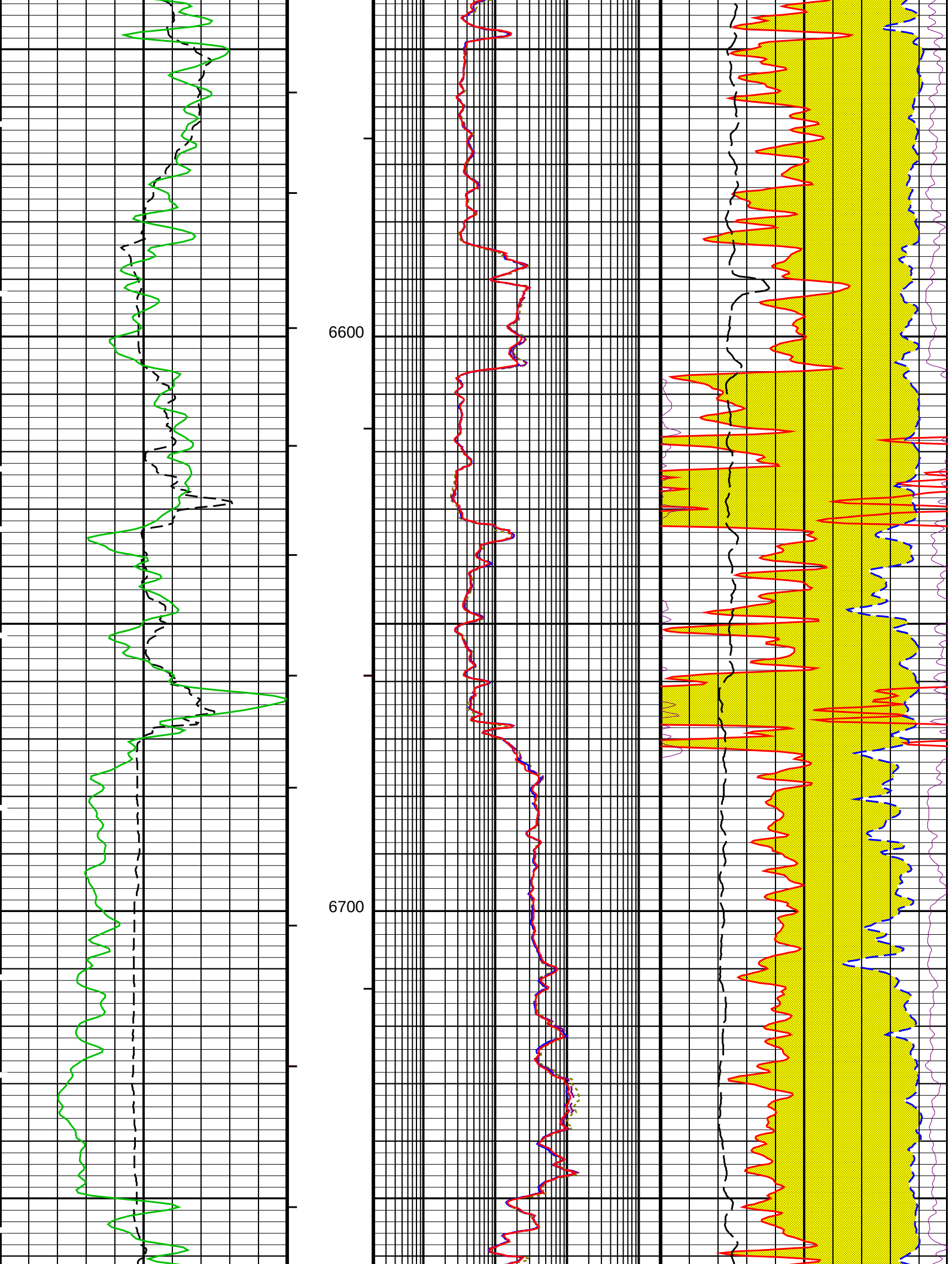
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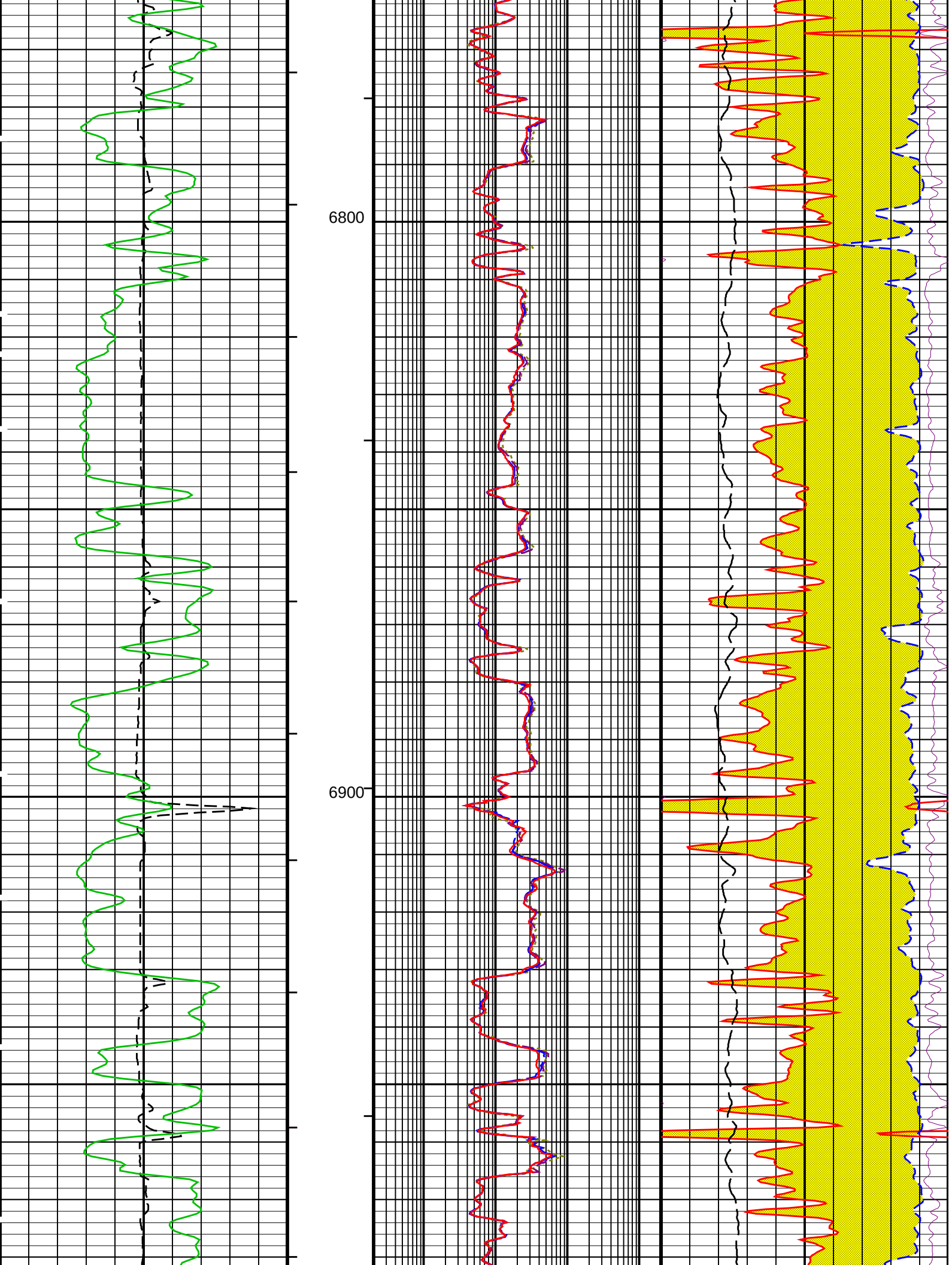
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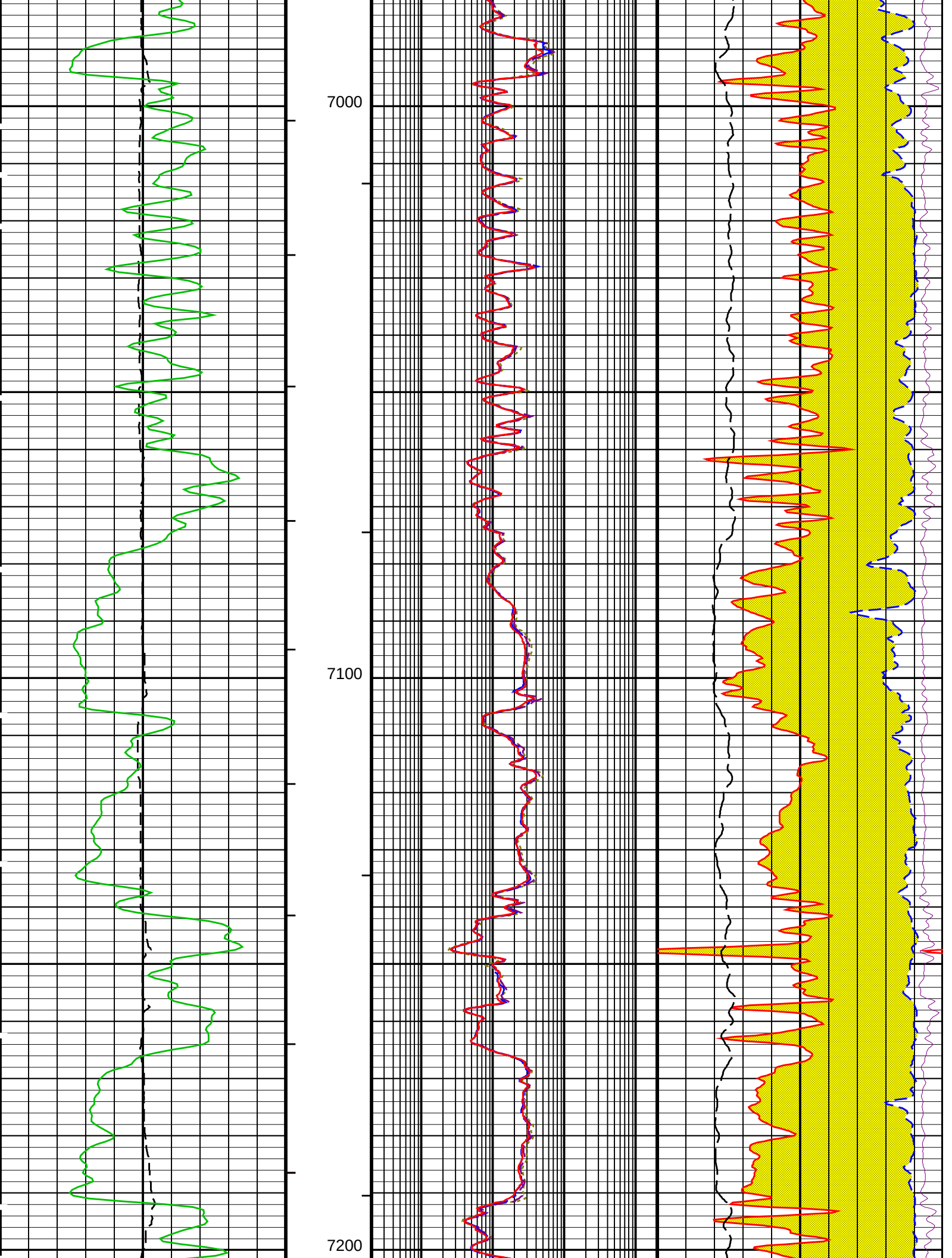
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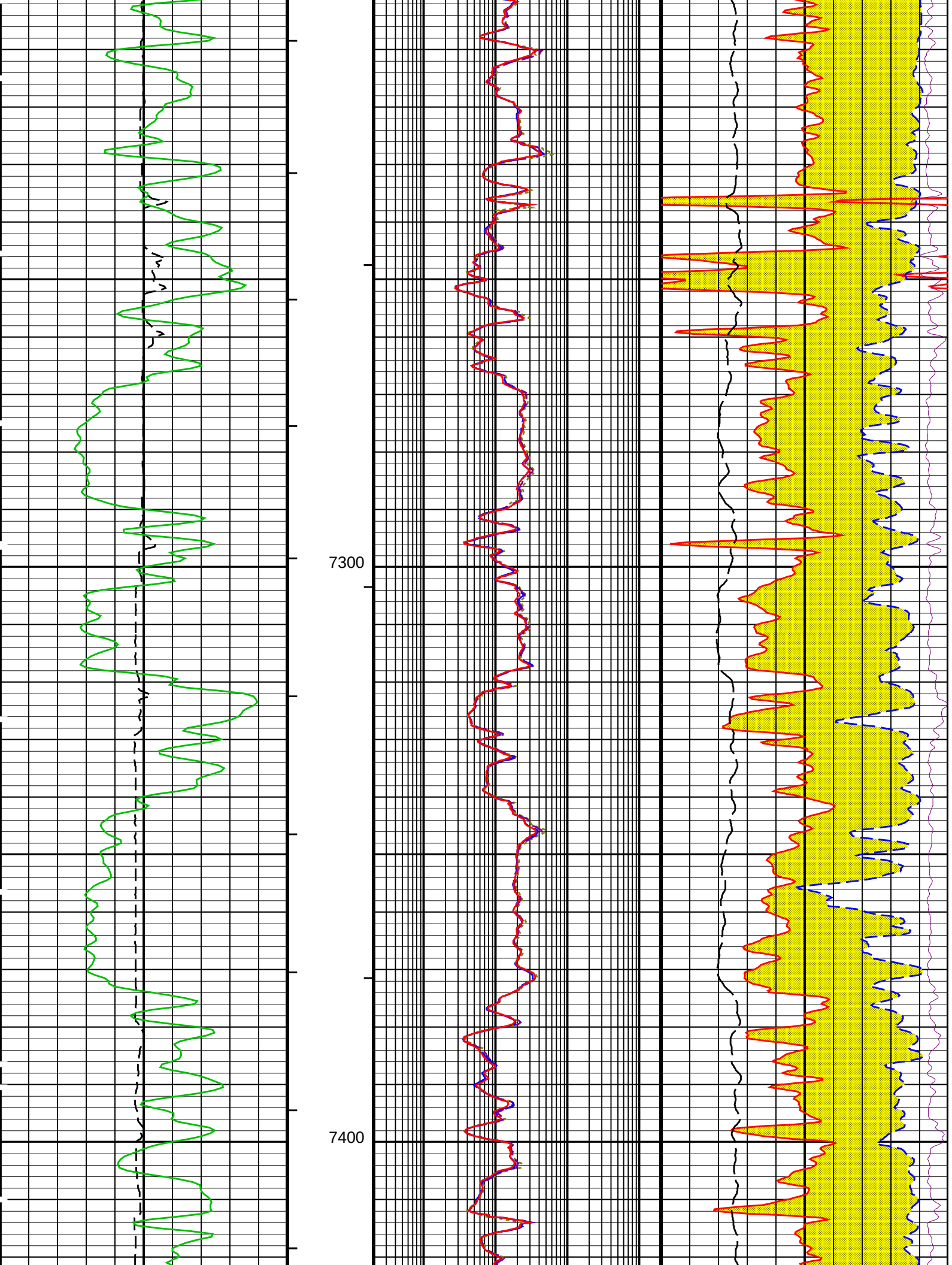
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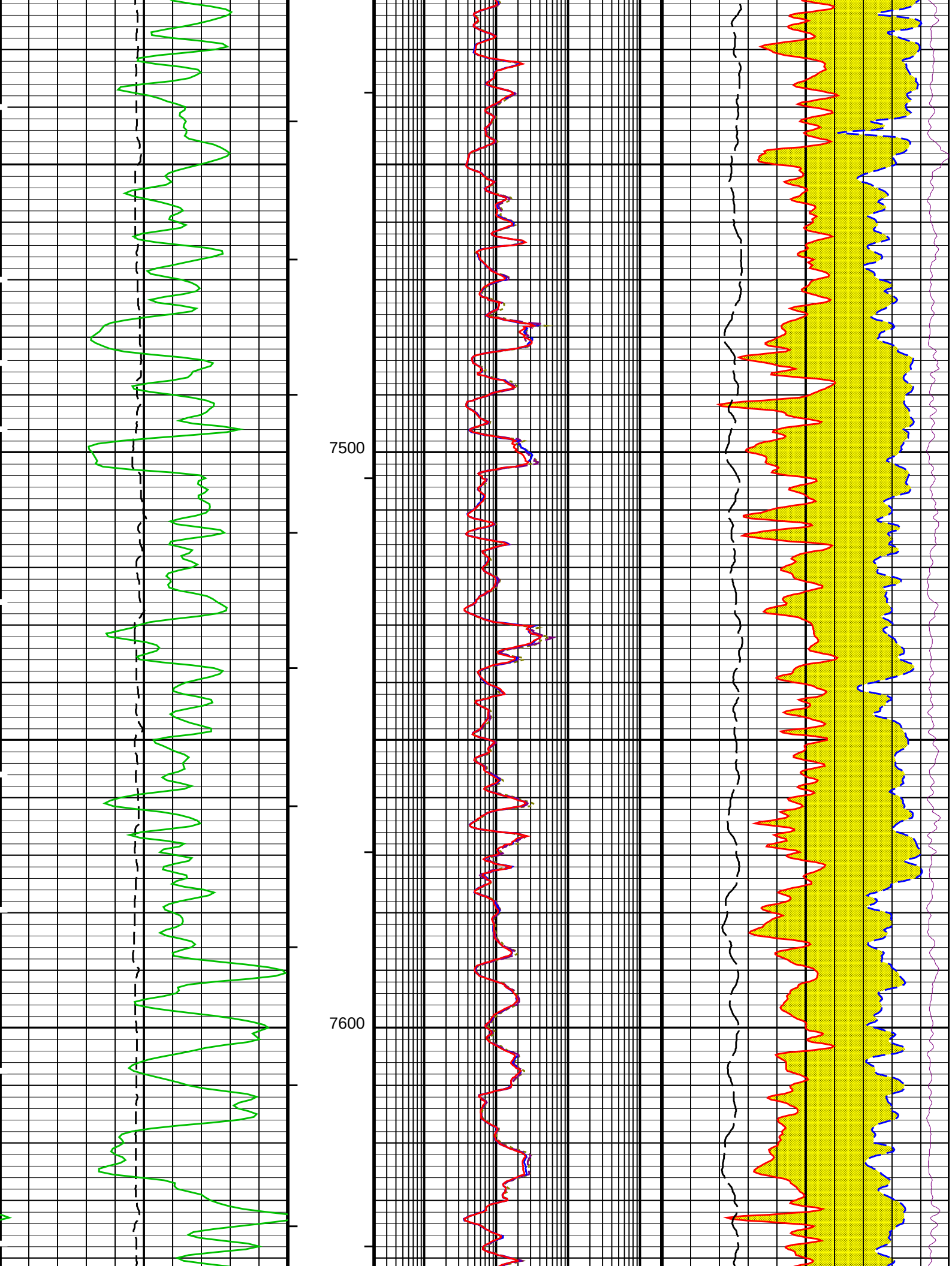
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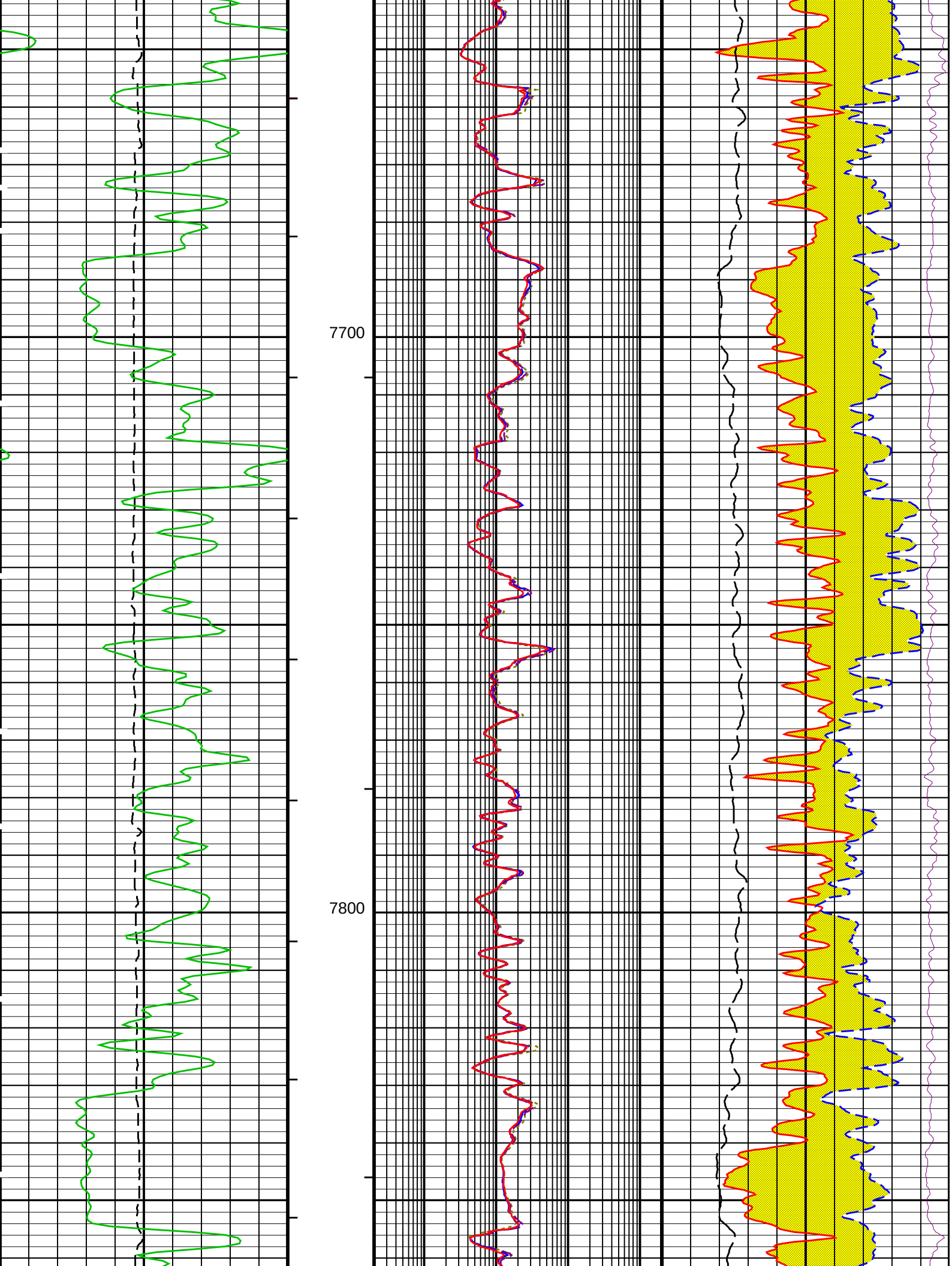
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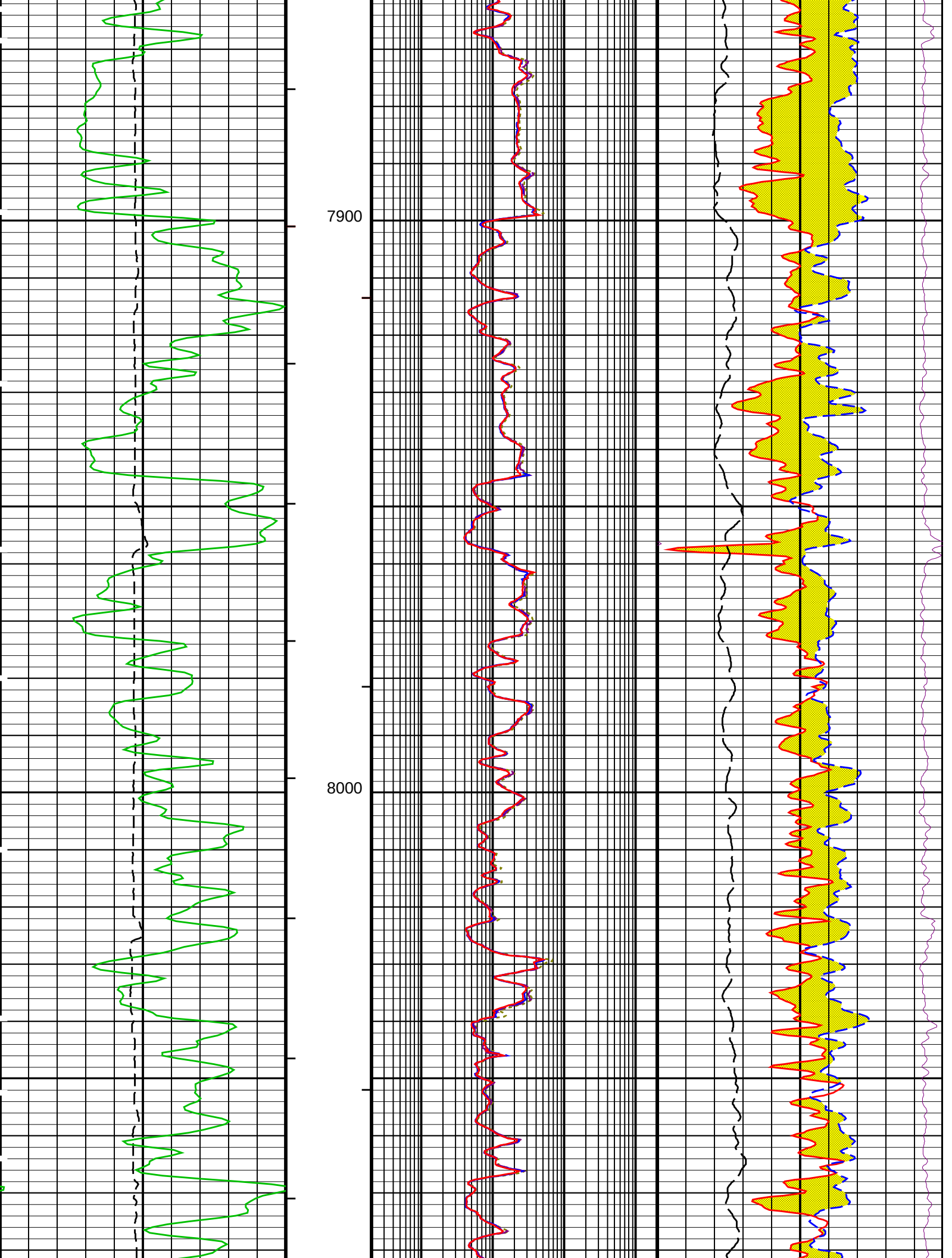
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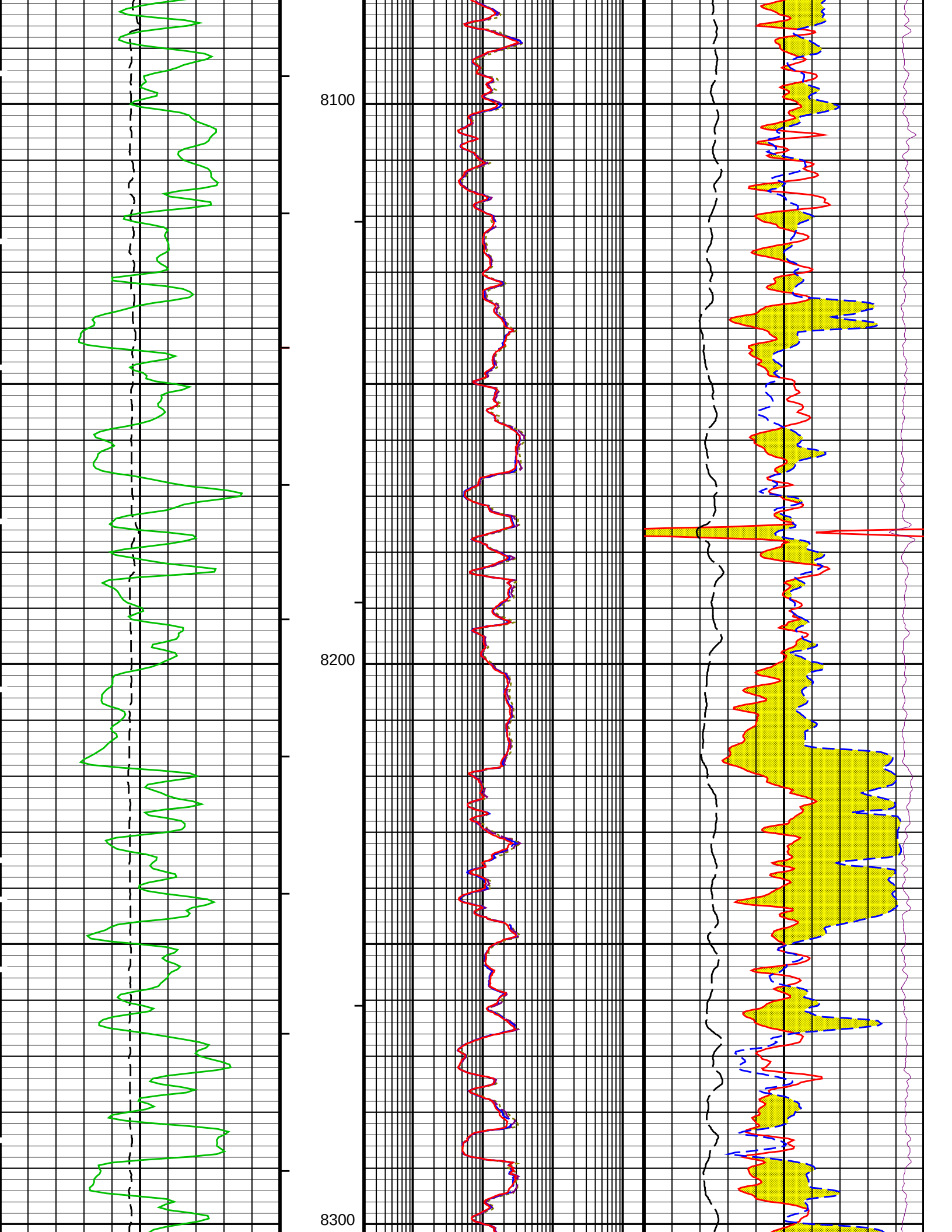
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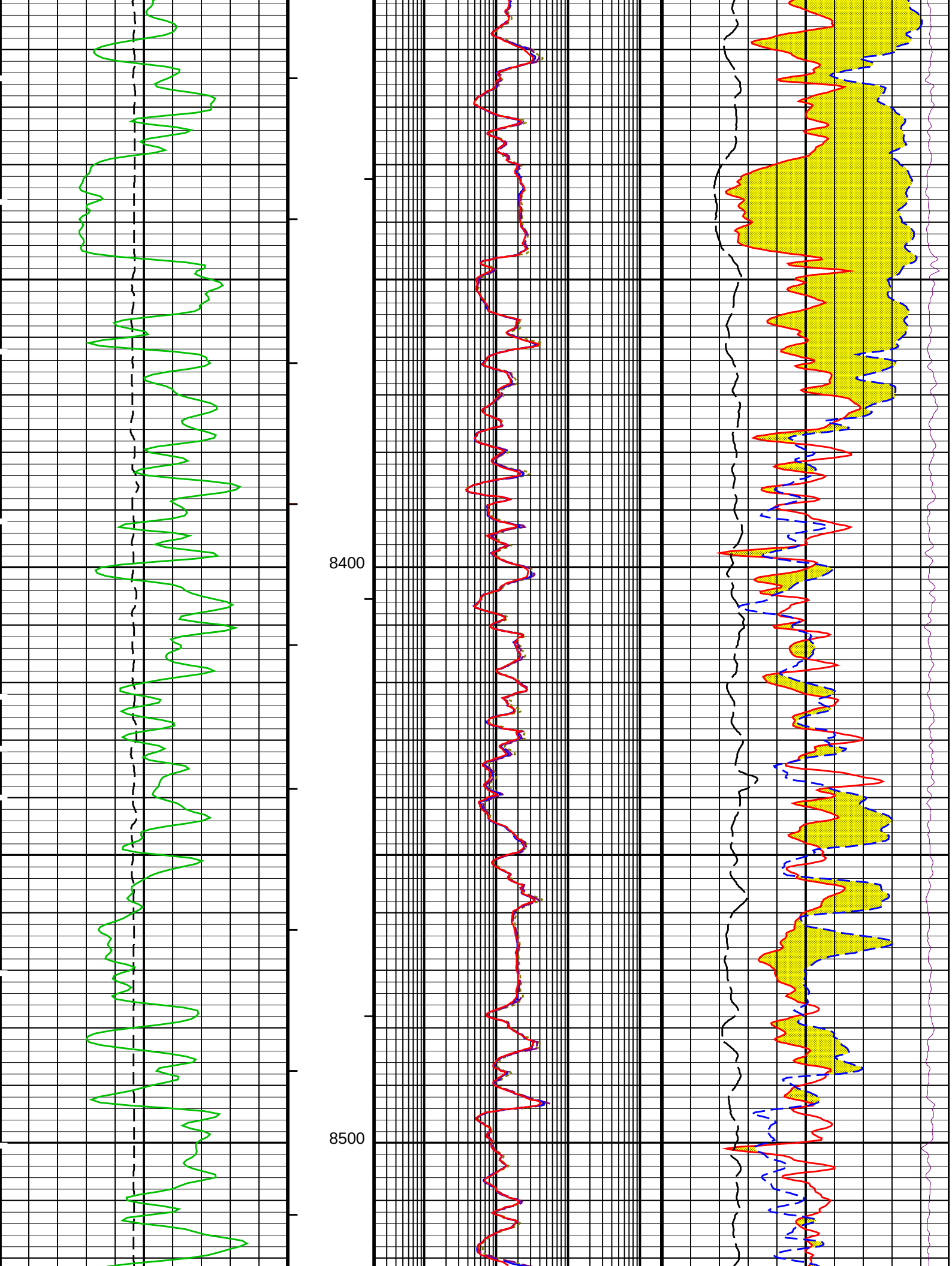
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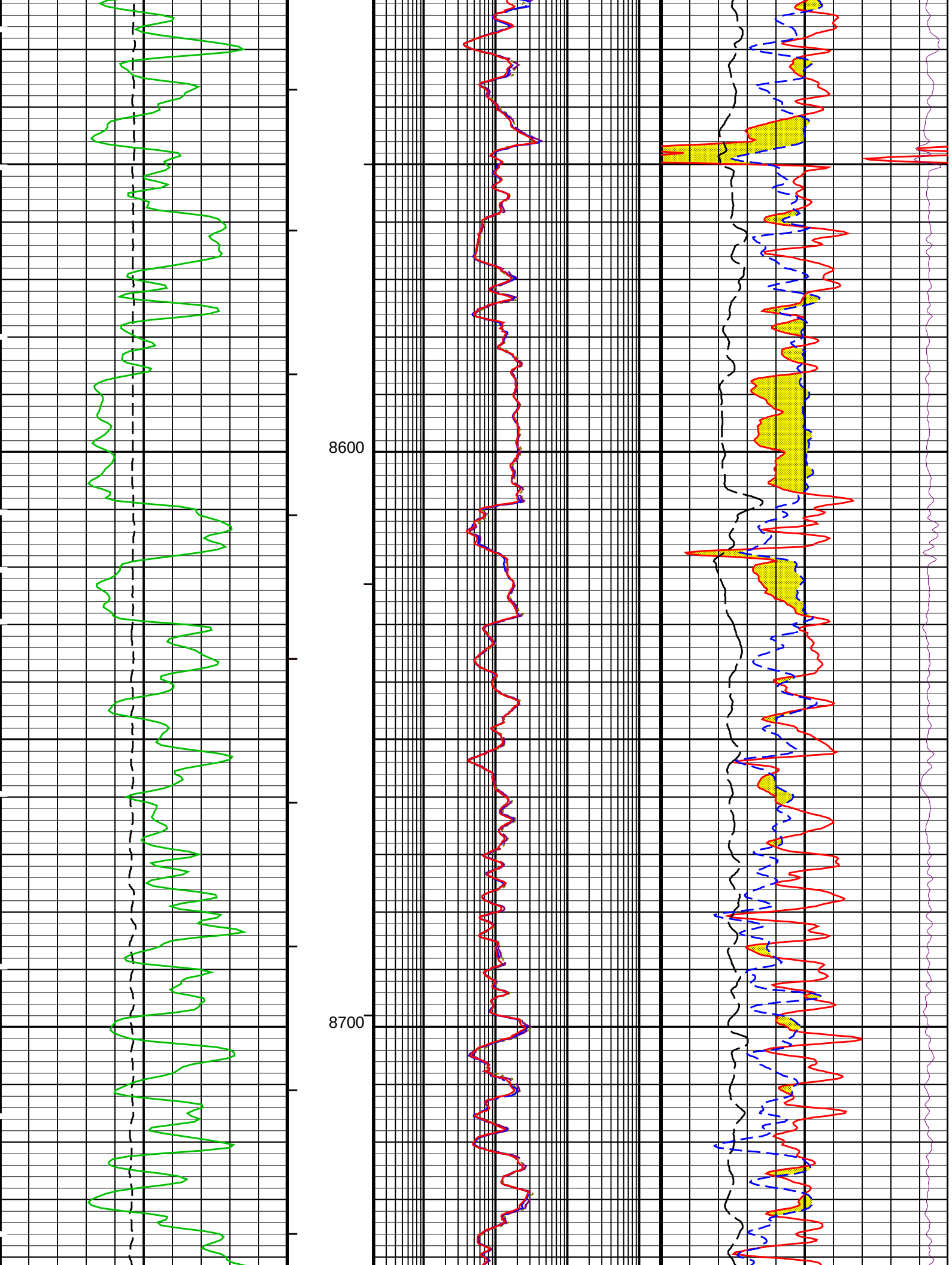
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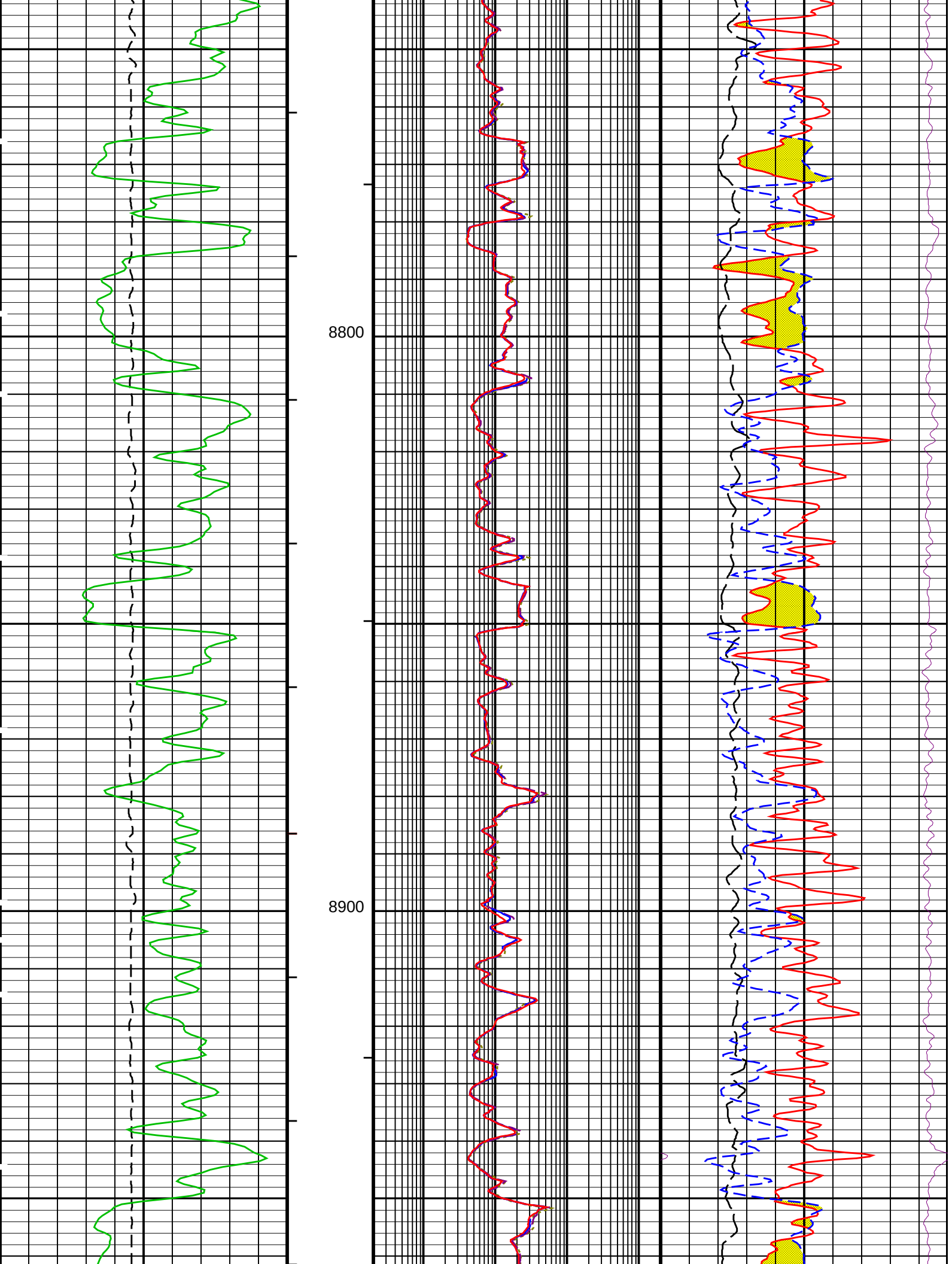
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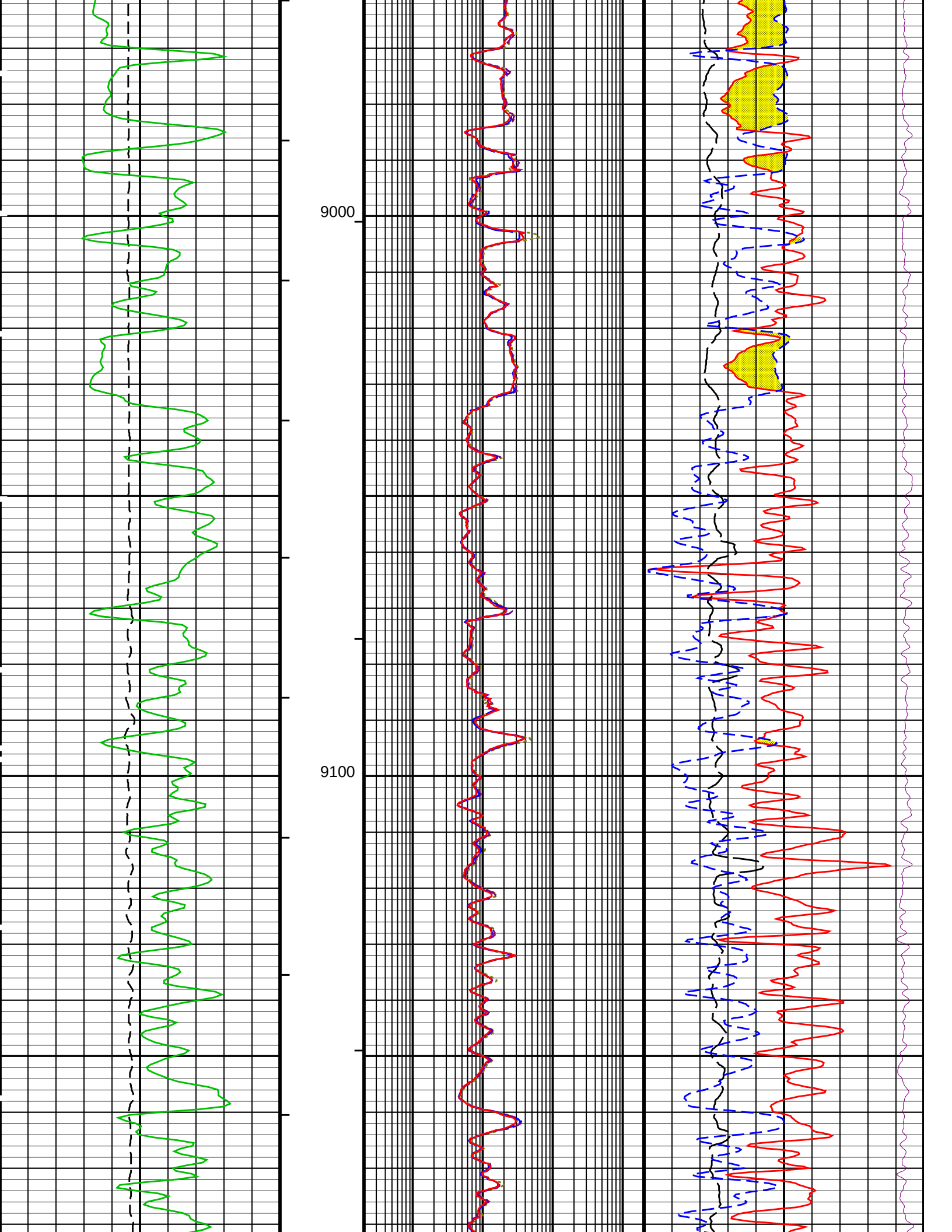
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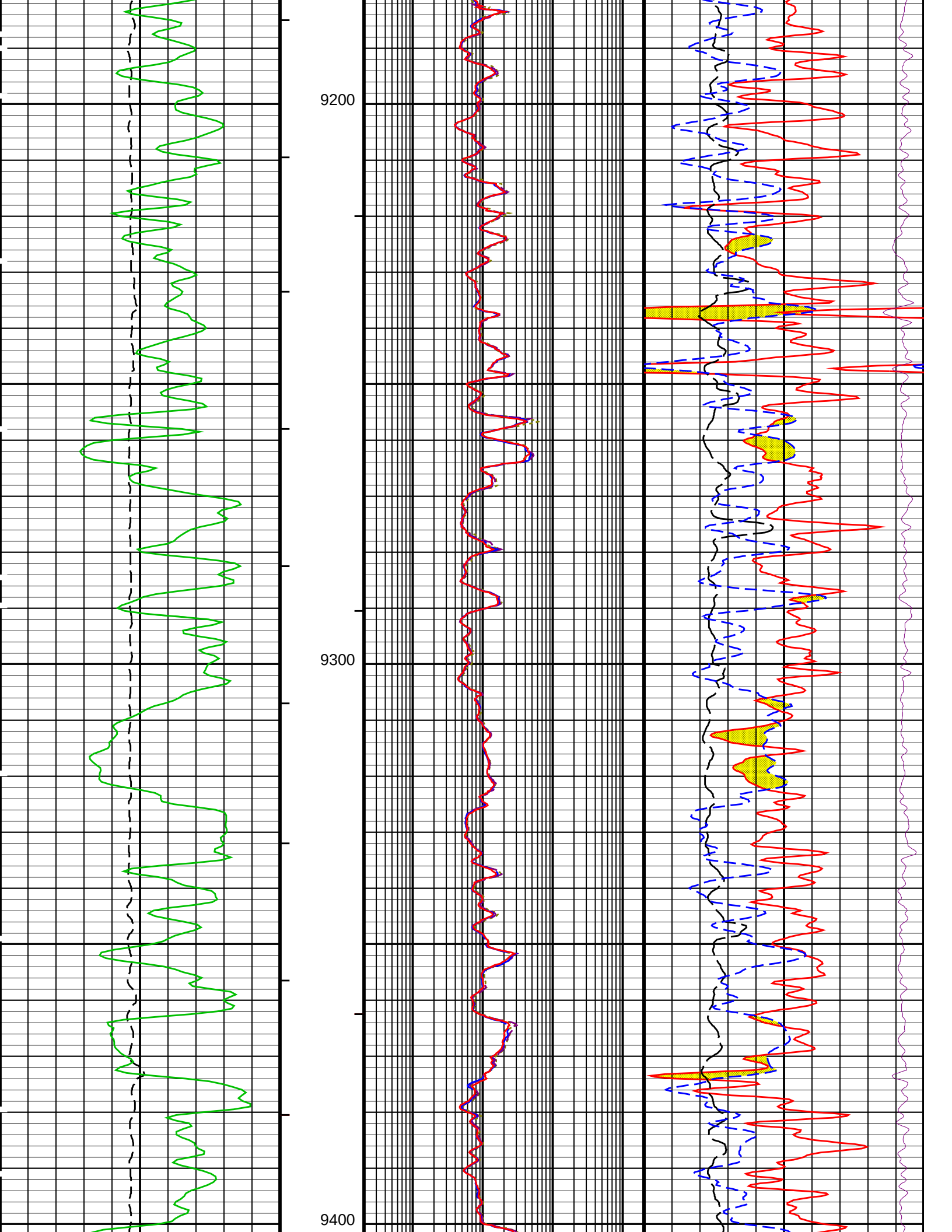
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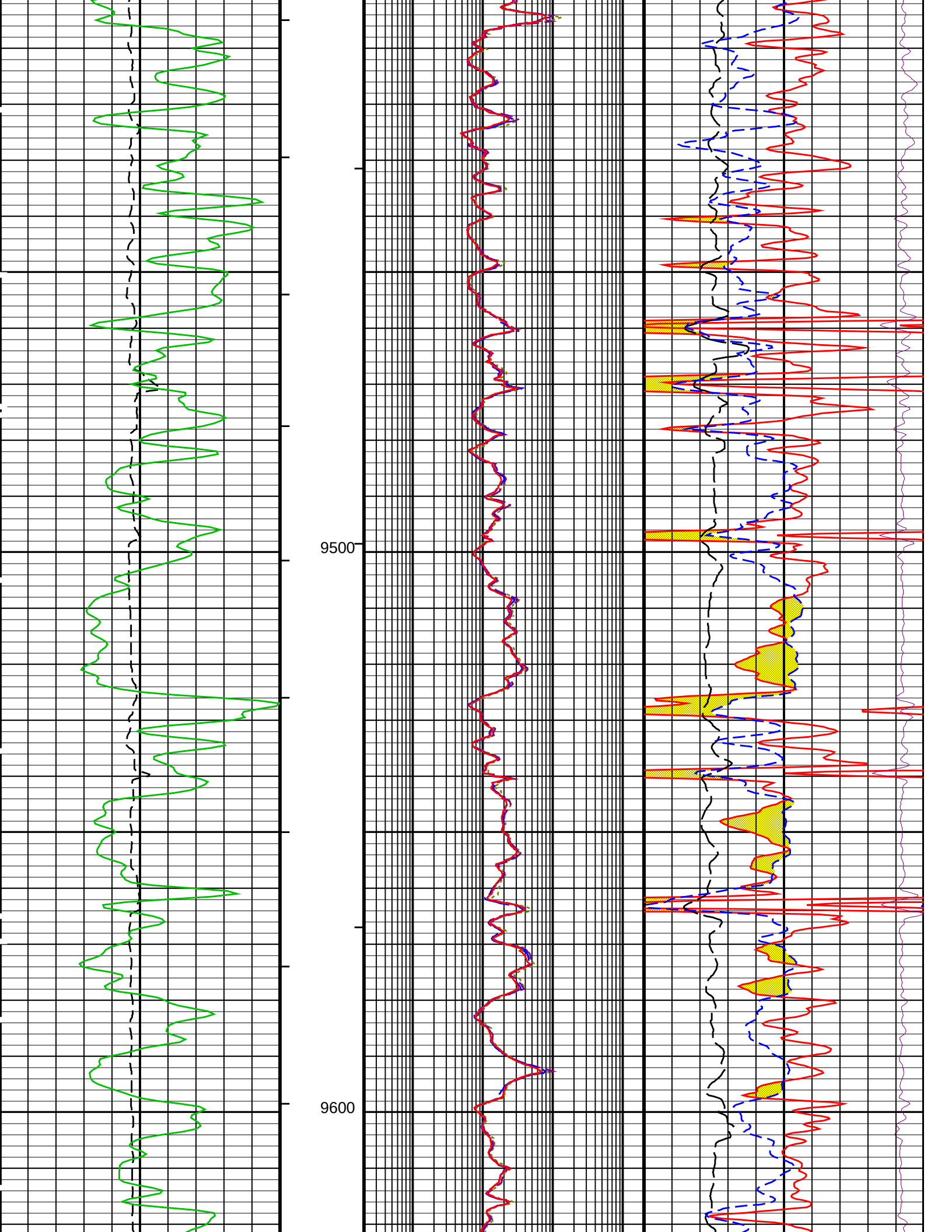
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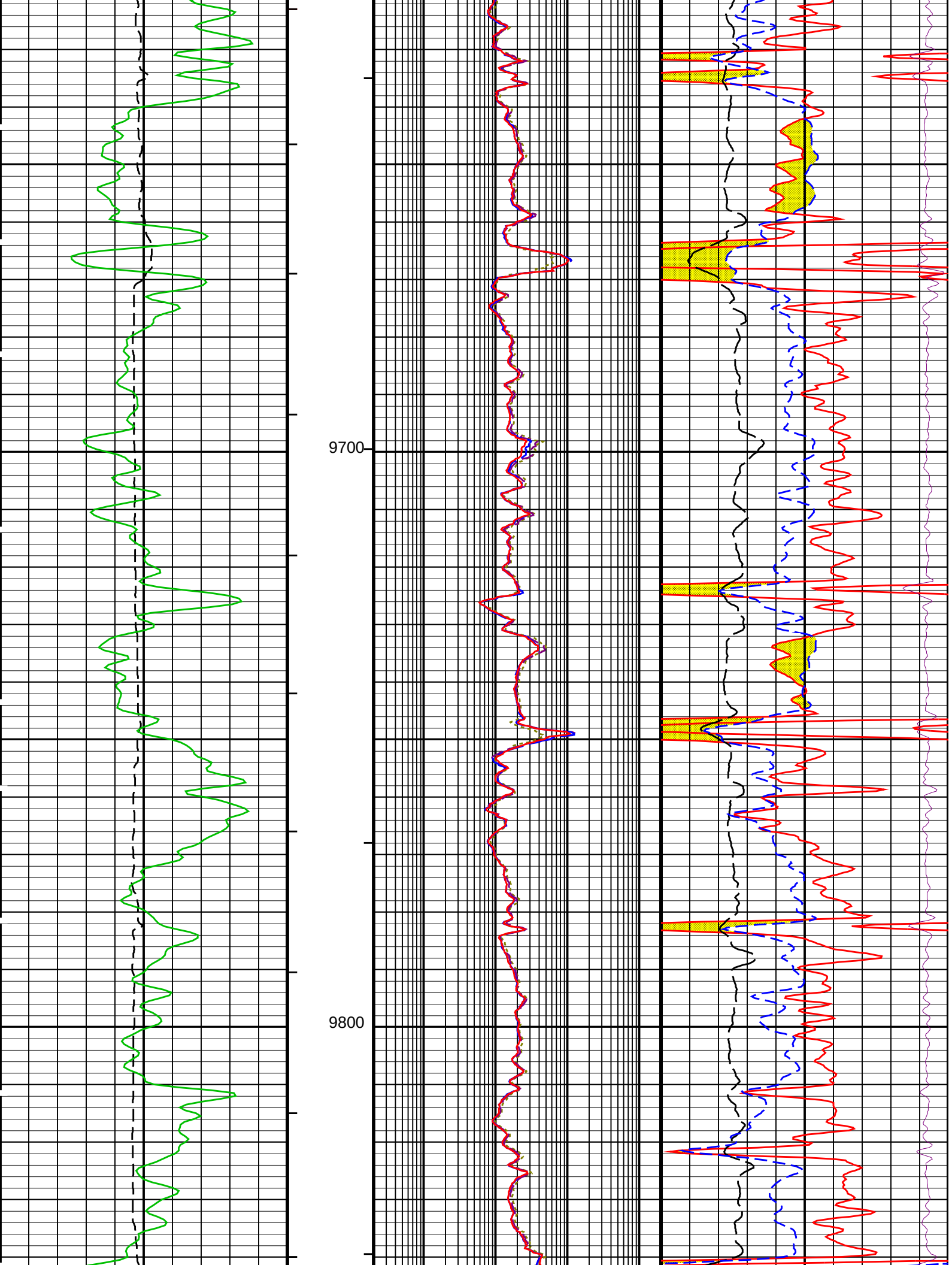
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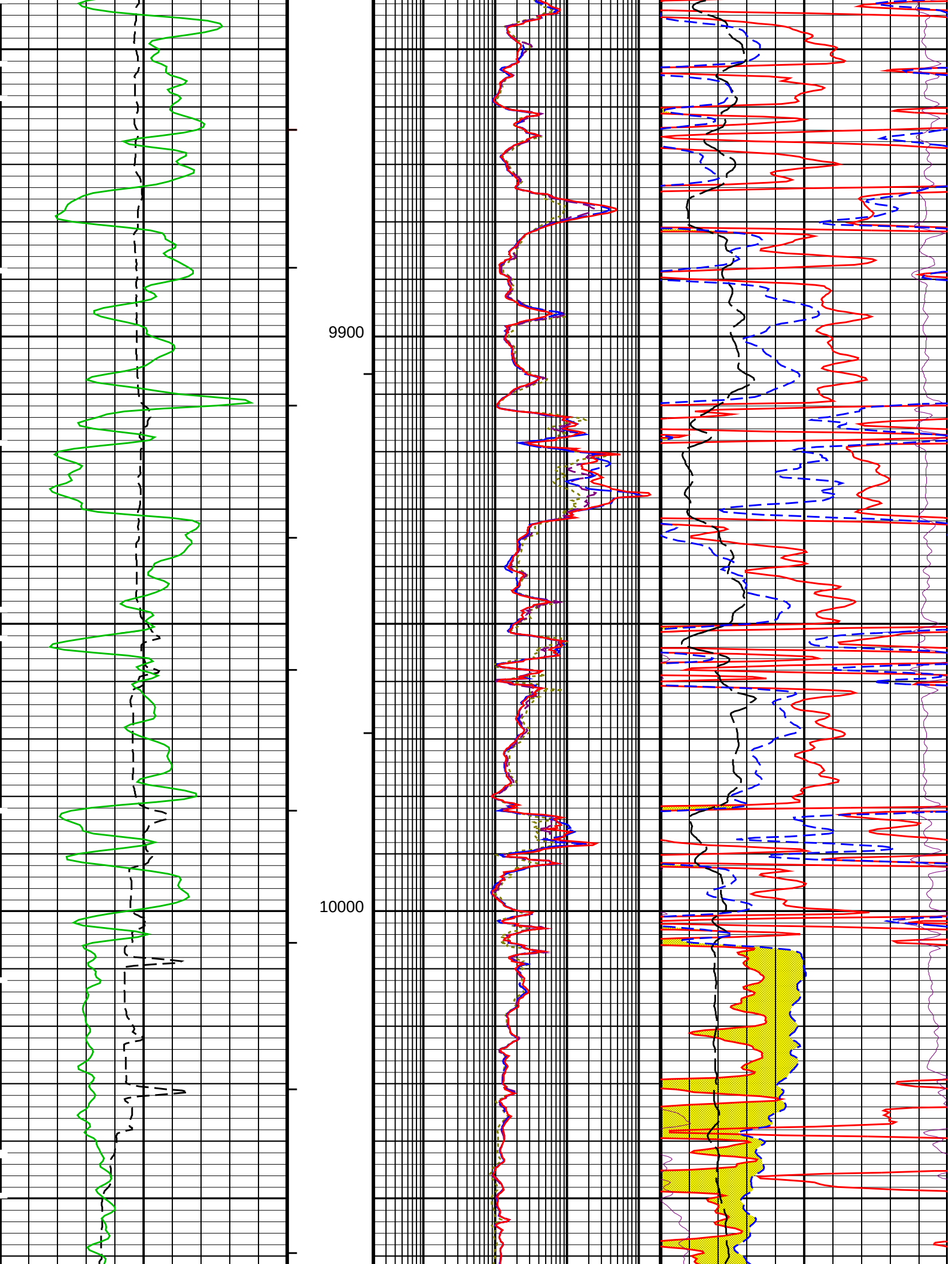
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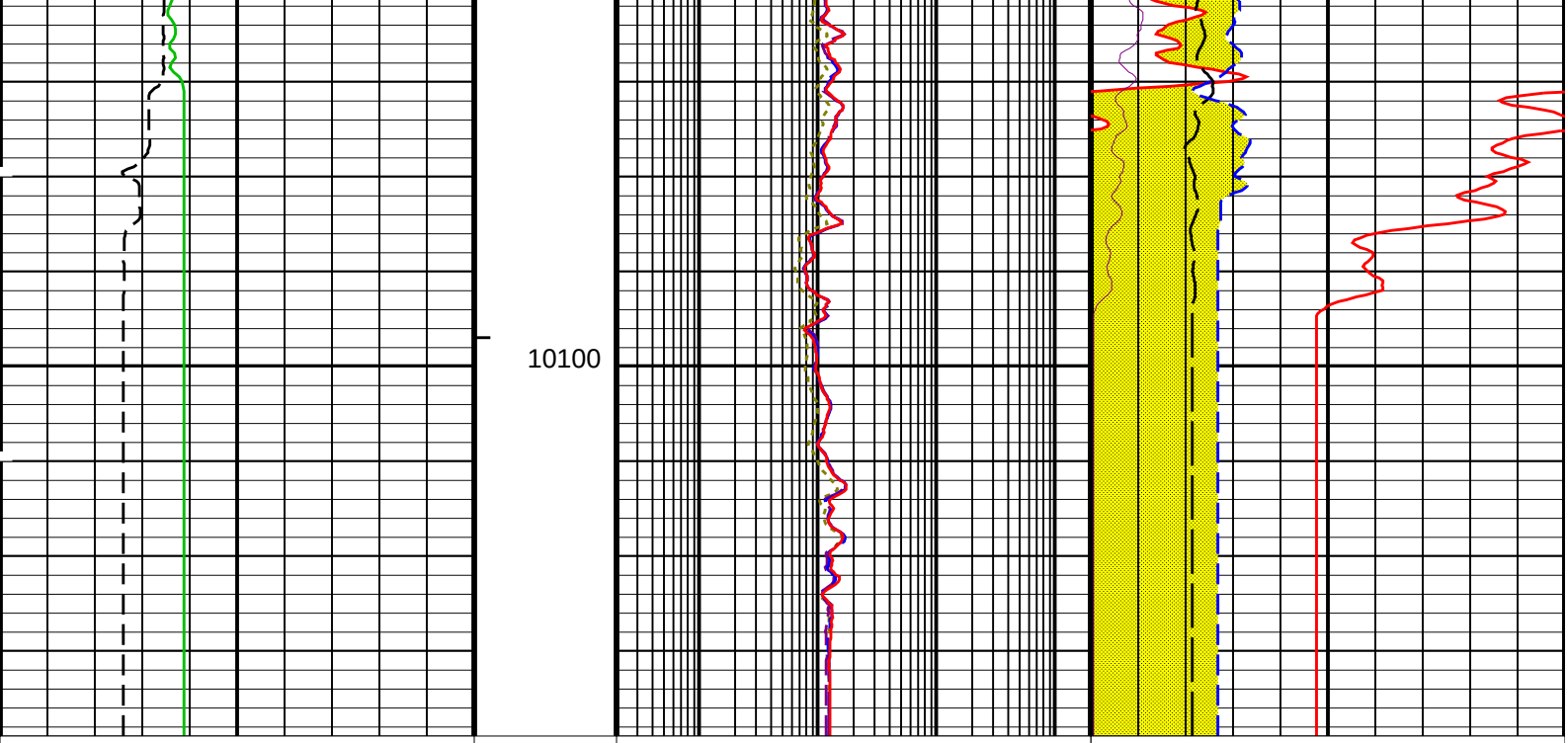


| Caliper (CALI) | | | TBI 20 Inch Investigation (TBIT20) | | | DPHI (DPHI) | | |
|---|---|---|---|---|---|---|---|---|
| 4 | (IN) | 14 | 0.2 | (OHMM) | 2000 | 0.3 | (V/V) | −0.1 |
| **Gamma Ray (GR)** | | | **TBI 30 Inch Investigation (TBIT30)** | | | **DRHO (DRHO)** | | |
| 0 | (GAPI) | 150 | 0.2 | (OHMM) | 2000 | −1.8 | (G/C3) | 0.2 |
| | | | **TBI 60 Inch Investigation (TBIT60)** | | | **PEF (PEF)** | | |
| | | | 0.2 | (OHMM) | 2000 | 0 | (−−−−) | 10 |
| | | | **TBI 90 Inch Investigation (TBIT90)** | | | **TNPH (TNPH)** | | |
| | | | 0.2 | (OHMM) | 2000 | 30 | (%) | −10 |

**PIP SUMMARY**

- Integrated Cement Volume Major Pip Every 100 F3
- Integrated Cement Volume Minor Pip Every 10 F3
- Integrated Hole Volume Major Pip Every 100 F3
- Integrated Hole Volume Minor Pip Every 10 F3

Time Mark Every 60 S

# Parameters

| DLIS Name | Description | Value | |
|---|---|---|---|
| TBT−A: ThruBit String | | | |
| | Description of this pass | | |
| BHS | Borehole Status | OPEN | |
| BSCO | Borehole Salinity Correction Enabled? (for TBN) | No | |
| CSAL | Cement Salinity | 0 | PPM |
| CSID | Casing Size I.D. | 6.5 | IN |
| DHC | Density Hole Correction | CALIPER | |
| FD | Fluid Density | 1 | G/C3 |
| FSAL | Formation Salinity | 0 | PPM |
| FSCO | Formation Salinity Correction Enabled? (for TBN) | No | |
| MATR | Rock Matrix for Neutron Porosity Corrections | SANDSTONE | |
| MDEN | Matrix Density | 2.68 | G/C3 |
| MT | Mud Type (for TBN and TBI correction) | WBM | |
| MWCO | Mud Weight Correction Enabled? (for TBN) | No | |
| SOCO | Stand−Off Correction Enabled? (for TBN) | No | |
| SOFF | TBN Standoff | 0 | IN |
| TBDS_SAMPLING | TBDS Sampling | 6_Inches | |
| TBD_CAL_BLOCK | TBD Calibration Block Type | Schlumberger | |
| TBD_SPIKE_REJECT | TBD Spike Detection Option | Correct | |
| TBD_SPIKE_THRESHOLD | TBD Attenuation Change Threshold for Spike Detection | 5 | % |
| TBI_ALGO | TBI Algorithm Selection | AIT | |
| TBI_BHC_MODE | Borehole Correction Mode (for TBI) | Solve_For_Standoff | |
| TBI_BHC_OP | Borehole Correction Option (for TBI) | Caliper | |
| TBI_CALTYP | TBI Mastercal Type | Schlumberger | |
| TBI_REPL_ARRAY_DEST | TBI: Replace This Array | None | |
| TBI_REPL_ARRAY_SOURCE | TBI: With This Array | None | |
| TBI_RMUD_SRC | RMUD Source for Borehole Correction (for TBI) | Data_Channel_RMUD | |

| | | | |
|---|---|---|---|
| TBI_TC_OP | Induction Temperature Correction Option | Lower | |
| TBN_ALGO | Porosity Algorithm | Schmid_McKeon | |
| TBN_BHC_OP | Borehole Correction Option (for TBN) | Caliper | |
| TBN_CAL_TANK | TBN Calibration Tank Type | Schlumberger | |
| TBN_FILTER | Filter Length | 3_point | |
| TBN_PRES_OP | Pressure Correction Enabled? (for TBN) | No | |
| TBN_TEMP_OP | Temperature Correction Enabled? (for TBN) | No | |
| TBN_WPRE | Well Pressure (for TBN) | 0 | PSIG |
| WMUD | Mud Weight | 9.65 | LB/G |
| HOLEV: Integrated Hole/Cement Volume | | | |
| BHS | Borehole Status | OPEN | |
| FCD | Future Casing (Outer) Diameter | 7 | IN |
| HVCS | Integrated Hole Volume Caliper Selection | AUTOMATIC | |
| MATR | Rock Matrix for Neutron Porosity Corrections | SANDSTONE | |
| System and Miscellaneous | | | |
| BSAL | Borehole Salinity | 425.00 | PPM |
| CSIZ | Current Casing Size | 9.625 | IN |
| MST | Mud Sample Temperature | 75.00 | DEGF |
| RMB | Resistivity of Mud − BHT | 0.3000 | OHMM |
| RMS | Resistivity of Mud Sample | 0.9421 | OHMM |
| TD | Total Depth | −50000 | FT |

**Format: TB_TCOM** **Vertical Scale: 5" per 100'** **Graphics File Created: 20−Jan−2019 00:50**

## OP System Version: 19C2−270

**TBT−A** **SRPC−5318−Thrubit−SP3.4**

## Output DLIS Files

**DEFAULT** **ThruBit_011PUP** **FN:10** **PRODUCER** **20−Jan−2019 00:50**

Schlumberger

# Calibrations

MAXIS Field Log

Calibration and Check Summary

| Measurement | Nominal | Master | Before | After | Change | Limit | Units |
|---|---|---|---|---|---|---|---|
| ThruBit String Master Calibration − TBI Master Calibration Sonde Errors | | | | | | | |
| Master: 10−Nov−2018 5:11 | | | | | | | |
| Freq 2, A1, R | −249.000 | −250.635 | −− | −− | −− | −− | |
| Freq 2, A1, X | 150.000 | 50.6610 | −− | −− | −− | −− | |
| Freq 2, A2, R | −98.0000 | −90.3318 | −− | −− | −− | −− | |
| Freq 2, A2, X | 160.000 | −36.4857 | −− | −− | −− | −− | |
| Freq 2, A3, R | −23.0000 | −22.6071 | −− | −− | −− | −− | |
| Freq 2, A3, X | −20.0000 | −88.8562 | −− | −− | −− | −− | |
| Freq 2, A4, R | −19.0000 | −21.8101 | −− | −− | −− | −− | |
| Freq 2, A4, X | 100.000 | 40.2863 | −− | −− | −− | −− | |
| Freq 2, A5, R | −20.0000 | −20.3950 | −− | −− | −− | −− | |
| Freq 2, A5, X | −25.0000 | −50.6527 | −− | −− | −− | −− | |
| ThruBit String Master Calibration − TBI Master Calibration COMPLEX GAINS | | | | | | | |
| Master: 10−Nov−2018 5:11 | | | | | | | |
| Freq 2, R − 0 | 1.000 | 0.9994 | −− | −− | −− | −− | |
| Freq 2, R − 1 | 1.000 | 1.004 | −− | −− | −− | −− | |
| Freq 2, R − 2 | 1.000 | 1.001 | −− | −− | −− | −− | |
| Freq 2, R − 3 | 1.000 | 1.010 | −− | −− | −− | −− | |
| Freq 2, R − 4 | 1.000 | 1.013 | −− | −− | −− | −− | |
| Freq 2, X − 0 | 0 | 0.006385 | −− | −− | −− | −− | |
| Freq 2, X − 1 | 0 | 0.001489 | −− | −− | −− | −− | |
| Freq 2, X − 2 | 0 | 0.005434 | −− | −− | −− | −− | |
| Freq 2, X − 3 | 0 | 0.006817 | −− | −− | −− | −− | |
| Freq 2, X − 4 | 0 | 0.008019 | −− | −− | −− | −− | |

ThruBit String Master Calibration − TBD Caliper Master Calibration
Master: 16−Jan−2019 7:39

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Caliper 12in Ring | 1949.8 | 1837.4 | −− | −− | −− | −− | IN |
| Caliper 9in Ring | 2096.7 | 1997.7 | −− | −− | −− | −− | IN |
| Caliper 6in Ring | 2285.7 | 2152.0 | −− | −− | −− | −− | IN |

ThruBit String Master Calibration − TBD Density Master Calibration
Master: 16−Jan−2019 7:39

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Aluminium Density | 2.607 | 2.607 | −− | −− | −− | −− | G/C3 |
| Magnesium Density | 1.752 | 1.752 | −− | −− | −− | −− | G/C3 |
| LS1 Background | 143.00 | 119.94 | −− | −− | −− | −− | CPS |
| SS1 Background | 143.00 | 124.83 | −− | −− | −− | −− | CPS |
| LS4 Background | 30.00 | 24.50 | −− | −− | −− | −− | CPS |
| SS1 Aluminium | 7900.00 | 6700.16 | −− | −− | −− | −− | CPS |
| LS1 Aluminium | 1220.0 | 1012.1 | −− | −− | −− | −− | CPS |
| SS1 Magnesium | 13160.0 | 10838.9 | −− | −− | −− | −− | CPS |
| LS4 Aluminium | 830.00 | 728.48 | −− | −− | −− | −− | CPS |
| SS Slope | 1.645 | 1.730 | −− | −− | −− | −− | |
| LS1 Block + Sleeve | 50000 | 4310.0 | −− | −− | −− | −− | CPS |
| LS Slope | 0.4150 | 0.4245 | −− | −− | −− | −− | |
| LS4 Block + Sleeve | 50000 | 1789.9 | −− | −− | −− | −− | CPS |
| Pef K Factor | 4.840 | 11.73 | −− | −− | −− | −− | |
| LS1 Magnesium | 8260.00 | 6706.23 | −− | −− | −− | −− | CPS |
| Pef B Factor | −0.5550 | −0.3838 | −− | −− | −− | −− | |

ThruBit String Master Calibration − TBD Density Master Calibration. Ti Window, Schlumberger blocks
Master: 16−Jan−2019 7:39

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| SS1 Background | 143.00 | 124.83 | −− | −− | −− | −− | CPS |
| SS2 Background | 38.0000 | 32.8739 | −− | −− | −− | −− | CPS |
| SS3 Background | 23.0000 | 20.0227 | −− | −− | −− | −− | CPS |
| SS4 Background | 31.0000 | 27.2461 | −− | −− | −− | −− | CPS |
| LS1 Background | 143.00 | 119.94 | −− | −− | −− | −− | CPS |
| LS2 Background | 37.0000 | 30.4747 | −− | −− | −− | −− | CPS |
| LS3 Background | 22.0000 | 18.7986 | −− | −− | −− | −− | CPS |
| LS4 Background | 30.00 | 24.50 | −− | −− | −− | −− | CPS |
| SS1 Aluminium | 7900.00 | 6700.16 | −− | −− | −− | −− | CPS |
| SS2 Aluminium | 4050.00 | 3395.31 | −− | −− | −− | −− | CPS |
| SS3 Aluminium | 3420.00 | 2833.84 | −− | −− | −− | −− | CPS |
| SS4 Aluminium | 3360.0000 | 2778.5754 | −− | −− | −− | −− | CPS |
| LS1 Aluminium | 1220.0 | 1012.1 | −− | −− | −− | −− | CPS |
| LS2 Aluminium | 1140.00 | 954.650 | −− | −− | −− | −− | CPS |
| LS3 Aluminium | 1080.00 | 922.917 | −− | −− | −− | −− | CPS |
| LS4 Aluminium | 830.00 | 728.48 | −− | −− | −− | −− | CPS |
| Magnesium RHOSS | 1.6700 | 1.6811 | −− | −− | −− | −− | |
| Magnesium RHOLS | 1.6880 | 1.6916 | −− | −− | −− | −− | |
| Magnesium RHOB | 1.7040 | 1.7006 | −− | −− | −− | −− | |
| Magnesium PEF | 2.5210 | 2.5149 | −− | −− | −− | −− | |
| Magnesium + Sleeve RHOSS | 2.1520 | 2.1464 | −− | −− | −− | −− | |
| Magnesium + Sleeve RHOLS | 1.8550 | 1.8595 | −− | −− | −− | −− | |
| Magnesium + Sleeve RHOB | 1.6060 | 1.6213 | −− | −− | −− | −− | |
| Magnesium + Sleeve PEF | 6.8000 | 7.6096 | −− | −− | −− | −− | |

ThruBit String Master Calibration − Thermal Neutron Master Calibration
Master: 15−Dec−2018 3:23

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| TNF, Background | 1.0 | 0.25 | −− | −− | −− | −− | CPS |
| TNN, Background | 1.0 | 0.14 | −− | −− | −− | −− | CPS |
| TNF, Tank | 27990 | 34540 | −− | −− | −− | −− | CPS |
| TNN, Tank | 69600 | 102850 | −− | −− | −− | −− | CPS |
| TNF, Tank + Al Sleeve | 1750.0 | 2024.7 | −− | −− | −− | −− | CPS |
| TNN, Tank + Al Sleeve | 18350.0 | 22640.2 | −− | −− | −− | −− | CPS |
| Tank + Al Sleeve Ratio | 11.128 | 11.182 | −− | −− | −− | −− | |
| Tank + Al Sleeve Porosity | 15.19 | 15.19 | −− | −− | −− | −− | PU |
| Tank, Ratio | 2.6300 | 2.9776 | −− | −− | −− | −− | |
| Tank, Temperature | 70.0 | 75.0 | −− | −− | −− | −− | DEGF |

ThruBit String Master Calibration − TMG Accelerometer Calibration
Master: 12−Jan−2019 8:12

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Minimum Ax, m/s2 | −9.810 | −10.30 | −− | −− | −− | −− | |
| Maximum Ax, m/s2 | 9.810 | 9.709 | −− | −− | −− | −− | |
| Minimum Ay, m/s2 | −9.810 | −10.10 | −− | −− | −− | −− | |
| Maximum Ay, m/s2 | 9.810 | 9.905 | −− | −− | −− | −− | |
| Minimum Az, m/s2 | 0 | 0.1044 | −− | −− | −− | −− | |
| Maximum Az, m/s2 | 9.810 | 9.865 | −− | −− | −− | −− | |
| RB Offset, degrees | 0 | −9.773 | −− | −− | −− | −− | |

ThruBit String Master Calibration − TMG Gamma−Ray Calibration
Master: 12−Jan−2019 15:06

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| GR Background | 30.00 | 46.83 | −− | −− | −− | −− | GAPI |
| GR Jig−Background | 160.0 | 160.5 | −− | −− | −− | −− | GAPI |

ThruBit String / Equipment Identification

Primary Equipment:

| | |
|---|---|
| Induction Resistivity | TBI − A |
| Dipole Sonic | TBDS − B |
| Density | TBD − A |
| Gamma−Ray Logging Source | GGLS − FZ |
| Thermal Neutron | TBN − A |
| Neutron Logging Source | NNLS − EWA |
| Telemetry Memory GR | TMG − A |
| Telemetry | WCIB − |

Auxiliary Equipment:

ThruBit String Master Calibration

TBI Master Calibration Sonde Errors

| Freq 2, A1, R | Value | Nominal | Freq 2, A1, X | Value | Nominal |
|---|---|---|---|---|---|
| | −250.635 | −249.000 | | 50.6610 | 150.000 |
| −336.000 (Minimum) −186.000 (Maximum) | | | −375.000 (Minimum) 675.000 (Maximum) | | |
| **Freq 2, A2, R** | **Value** | **Nominal** | **Freq 2, A2, X** | **Value** | **Nominal** |
| | −90.3318 | −98.0000 | | −36.4857 | 160.000 |
| −138.000 (Minimum) −76.0000 (Maximum) | | | −100.000 (Minimum) 425.000 (Maximum) | | |
| **Freq 2, A3, R** | **Value** | **Nominal** | **Freq 2, A3, X** | **Value** | **Nominal** |
| | −22.6071 | −23.0000 | | −88.8562 | −20.0000 |
| −31.0000 (Minimum) −13.0000 (Maximum) | | | −325.000 (Minimum) 250.000 (Maximum) | | |
| **Freq 2, A4, R** | **Value** | **Nominal** | **Freq 2, A4, X** | **Value** | **Nominal** |
| | −21.8101 | −19.0000 | | 40.2863 | 100.000 |
| −28.0000 **(Minimum)** −7.00000 **(Maximum)** | | | −75.0000 **(Minimum)** 275.000 **(Maximum)** | | |
| **Freq 2, A5, R** | **Value** | **Nominal** | **Freq 2, A5, X** | **Value** | **Nominal** |
| | −20.3950 | −20.0000 | | −50.6527 | −25.0000 |
| −27.0000 (Minimum) −10.0000 (Maximum) | | | −125.000 (Minimum) 100.000 (Maximum) | | |

Master: 10−Nov−2018 5:11

ThruBit String Master Calibration

TBI Master Calibration COMPLEX GAINS

| Freq 2, R | Value | Nominal | Freq 2, X | Value | Nominal |
|---|---|---|---|---|---|
| | 0.9994 | 1.000 | | 0.006385 | 0 |
| | 1.004 | 1.000 | | 0.001489 | 0 |
| | 1.001 | 1.000 | | 0.005434 | 0 |
| | 1.010 | 1.000 | | 0.006817 | 0 |
| | 1.013 | 1.000 | | 0.008019 | 0 |
| 0.9500 (Minimum) 1.050 (Maximum) | | | −0.05000 (Minimum) 0.05000 (Maximum) | | |

Master: 10−Nov−2018 5:11

ThruBit String Master Calibration

TBD Caliper Master Calibration

| Caliper 12in Ring IN | Value | Nominal | Caliper 9in Ring IN | Value | Nominal | Caliper 6in Ring IN | Value | Nominal |
|---|---|---|---|---|---|---|---|---|
| | 1837.4 | 1949.8 | | 1997.7 | 2096.7 | | 2152.0 | 2285.7 |
| 1799.8 (Minimum) 2099.8 (Maximum) | | | 1946.7 (Minimum) 2246.7 (Maximum) | | | 2135.7 (Minimum) 2435.7 (Maximum) | | |

Master: 16−Jan−2019 7:39

ThruBit String Master Calibration

TBD Density Master Calibration. Ti Window, Schlumberger blocks

| LS1 Background CPS | Value | Nominal | SS1 Background CPS | Value | Nominal |
|---|---|---|---|---|---|
| | 119.94 | 143.00 | | 124.83 | 143.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 100.00 (Minimum) | 186.00 (Nominal) | 186.00 (Maximum) | | 100.00 (Minimum) | 186.00 (Nominal) | 186.00 (Maximum) | |
| LS2 Background CPS | | Value | Nominal | SS2 Background CPS | | Value | Nominal |
| | | 30.4747 | 37.0000 | | | 32.8739 | 38.0000 |
| 26.0000 (Minimum) | 48.0000 (Nominal) | 48.0000 (Maximum) | | 27.0000 (Minimum) | 50.0000 (Nominal) | 50.0000 (Maximum) | |
| LS3 Background CPS | | Value | Nominal | SS3 Background CPS | | Value | Nominal |
| | | 18.7986 | 22.0000 | | | 20.0227 | 23.0000 |
| 15.0000 (Minimum) | 29.0000 (Nominal) | 29.0000 (Maximum) | | 16.0000 (Minimum) | 30.0000 (Nominal) | 30.0000 (Maximum) | |
| LS4 Background CPS | | Value | Nominal | SS4 Background CPS | | Value | Nominal |
| | | 24.50 | 30.00 | | | 27.2461 | 31.0000 |
| 20.00 (Minimum) | 40.00 (Nominal) | 40.00 (Maximum) | | 22.0000 (Minimum) | 40.0000 (Nominal) | 40.0000 (Maximum) | |
| LS1 Aluminium CPS | | Value | Nominal | SS1 Aluminium CPS | | Value | Nominal |
| | | 1012.1 | 1220.0 | | | 6700.16 | 7900.00 |
| 850.00 (Minimum) | 1590.0 (Nominal) | 1590.0 (Maximum) | | 5530.00 (Minimum) | 10270.0 (Nominal) | 10270.0 (Maximum) | |
| LS2 Aluminium CPS | | Value | Nominal | SS2 Aluminium CPS | | Value | Nominal |
| | | 954.650 | 1140.00 | | | 3395.31 | 4050.00 |
| 800.000 (Minimum) | 1480.00 (Nominal) | 1480.00 (Maximum) | | 2840.00 (Minimum) | 5270.00 (Nominal) | 5270.00 (Maximum) | |
| LS3 Aluminium CPS | | Value | Nominal | SS3 Aluminium CPS | | Value | Nominal |
| | | 922.917 | 1080.00 | | | 2833.84 | 3420.00 |
| 760.000 (Minimum) | 1400.00 (Nominal) | 1400.00 (Maximum) | | 2400.00 (Minimum) | 4450.00 (Nominal) | 4450.00 (Maximum) | |
| LS4 Aluminium CPS | | Value | Nominal | SS4 Aluminium CPS | | Value | Nominal |
| | | 728.48 | 830.00 | | | 2778.5754 | 3360.0000 |
| 580.00 (Minimum) | 1080.0 (Nominal) | 1080.0 (Maximum) | | 2350.0000 (Minimum) | 3700.0000 (Nominal) | 3700.0000 (Maximum) | |
| Magnesium RHOLS | | Value | Nominal | Magnesium RHOSS | | Value | Nominal |
| | | 1.6916 | 1.6880 | | | 1.6811 | 1.6700 |
| 1.6630 (Minimum) | 1.7130 (Nominal) | 1.7130 (Maximum) | | 1.6350 (Minimum) | 1.7050 (Nominal) | 1.7050 (Maximum) | |
| Magnesium PEF | | Value | Nominal | Magnesium RHOB | | Value | Nominal |
| | | 2.5149 | 2.5210 | | | 1.7006 | 1.7040 |
| 2.3700 (Minimum) | 2.6700 (Nominal) | 2.6700 (Maximum) | | 1.6870 (Minimum) | 1.7210 (Nominal) | 1.7210 (Maximum) | |
| Magnesium + Sleeve RHOLS | | Value | Nominal | Magnesium + Sleeve RHOSS | | Value | Nominal |
| | | 1.8595 | 1.8550 | | | 2.1464 | 2.1520 |
| 1.7950 (Minimum) | 1.9150 (Nominal) | 1.9150 (Maximum) | | 2.0920 (Minimum) | 2.2120 (Nominal) | 2.2120 (Maximum) | |
| Magnesium + Sleeve PEF | | Value | Nominal | Magnesium + Sleeve RHOB | | Value | Nominal |
| | | 7.6096 | 6.8000 | | | 1.6213 | 1.6060 |
| 5.1000 (Minimum) | 8.5000 (Nominal) | 8.5000 (Maximum) | | 1.5780 (Minimum) | 1.6340 (Nominal) | 1.6340 (Maximum) | |
| Master: 16−Jan−2019 7:39 | | | | | | | |

| ThruBit String Master Calibration | | | | | | | |
|---|---|---|---|---|---|---|---|
| Thermal Neutron Master Calibration | | | | | | | |
| TNF, Background CPS | | Value | Nominal | TNN, Background CPS | | Value | Nominal |
| | | 0.25 | 1.0 | | | 0.14 | 1.0 |
| 0 (Minimum) | 2.0 (Nominal) | 2.0 (Maximum) | | 0 (Minimum) | 2.0 (Nominal) | 2.0 (Maximum) | |
| TNF, Tank CPS | | Value | Nominal | TNN, Tank CPS | | Value | Nominal |
| | | 34540 | 27990 | | | 102850 | 69600 |
| 9330 (Minimum) | 56000 (Nominal) | 56000 (Maximum) | | 23200 (Minimum) | 139200 (Nominal) | 139200 (Maximum) | |
| TNF, Tank + Al Sleeve CPS | | Value | Nominal | TNN, Tank + Al Sleeve CPS | | Value | Nominal |
| | | 2024.7 | 1750.0 | | | 22640.2 | 18350.0 |
| 580.00 (Minimum) | 3500.0 (Nominal) | 3500.0 (Maximum) | | 6100.00 (Minimum) | 36700.0 (Nominal) | 36700.0 (Maximum) | |
| Tank + Al Sleeve Ratio | | Value | Nominal | Tank + Al Sleeve Porosity PU | | Value | Nominal |
| | | 11.182 | 11.128 | | | 15.19 | 15.19 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 10.528 (Minimum) | | 11.728 (Maximum) | | 14.69 (Minimum) | | 15.69 (Maximum) | |
| Tank, Ratio | | Value | Nominal | Tank, Temperature DEGF | | Value | Nominal |
| | | 2.9776 | 2.6300 | | | 75.0 | 70.0 |
| 2.0300 (Minimum) | | 3.2300 (Maximum) | | 20.0 (Minimum) | | 120 (Maximum) | |

Master: 15−Dec−2018 3:23

ThruBit String Master Calibration

TMG Accelerometer Calibration

| Minimum Ax, m/s2 | | Value | Nominal | Maximum Ax, m/s2 | | Value | Nominal |
|---|---|---|---|---|---|---|---|
| | | −10.30 | −9.810 | | | 9.709 | 9.810 |
| −10.81 (Minimum) | | −8.810 (Maximum) | | 8.810 (Minimum) | | 10.81 (Maximum) | |
| Minimum Ay, m/s2 | | Value | Nominal | Maximum Ay, m/s2 | | Value | Nominal |
| | | −10.10 | −9.810 | | | 9.905 | 9.810 |
| −10.81 (Minimum) | | −8.810 (Maximum) | | 8.810 (Minimum) | | 10.81 (Maximum) | |
| Minimum Az, m/s2 | | Value | Nominal | Maximum Az, m/s2 | | Value | Nominal |
| | | 0.1044 | 0 | | | 9.865 | 9.810 |
| −1.000 (Minimum) | | 1.000 (Maximum) | | 8.810 (Minimum) | | 10.81 (Maximum) | |
| RB Offset, degrees | | Value | Nominal | | | | |
| | | −9.773 | 0 | | | | |
| −360.0 (Minimum) | | 360.0 (Maximum) | | | | | |

Master: 12−Jan−2019 8:12

ThruBit String Master Calibration

TMG Gamma−Ray Calibration

| GR Background GAPI | | Value | Nominal | GR Jig−Background GAPI | | Value | Nominal |
|---|---|---|---|---|---|---|---|
| | | 46.83 | 30.00 | | | 160.5 | 160.0 |
| 0 (Minimum) | | 120.0 (Maximum) | | 128.0 (Minimum) | | 192.0 (Maximum) | |

Master: 12−Jan−2019 15:06

Company: **Caerus Piceance LLC**

Well: **NPR 11C−9−596**
Field: **Wildcat**
County: **Garfield**
State: **Colorado**

Schlumberger

Triple Combo