

# HALLIBURTON

## MICROLOG LOG

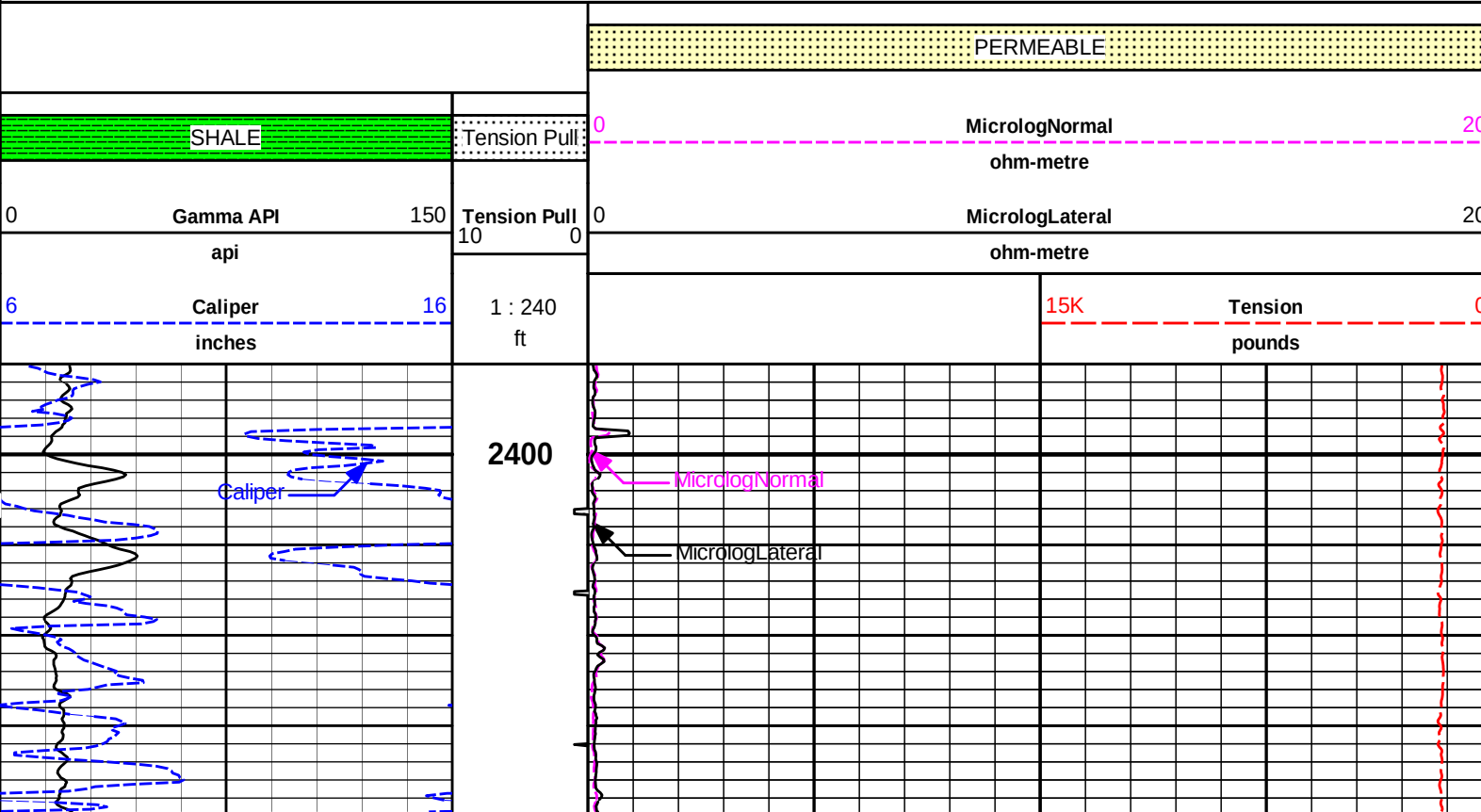
|                          |  |                       |  |                 |  |
|--------------------------|--|-----------------------|--|-----------------|--|
| COMPANY                  |  | HARTMAN OIL CO., INC. |  |                 |  |
| WELL                     |  | ROSE #3-1             |  |                 |  |
| FIELD/BLOCK              |  | AMERICAN BEAUTY       |  |                 |  |
| COUNTY                   |  | WICHITA COUNTY        |  |                 |  |
| STATE                    |  | KANSAS                |  |                 |  |
| Permanent Datum          |  | Sect. 1               |  | Twp. 16S        |  |
| Log measured from        |  | KB                    |  | Rge. 35W        |  |
| Drilling measured from   |  | KB                    |  | Elev. 3110.0 ft |  |
| Date                     |  | 03-Aug-14             |  | ONE             |  |
| Run No.                  |  | ONE                   |  |                 |  |
| Depth - Driller          |  | 4800.00 ft            |  |                 |  |
| Depth - Logger           |  | 4800.0 ft             |  |                 |  |
| Bottom - Logged Interval |  | 4756.0 ft             |  |                 |  |
| Top - Logged Interval    |  | 2400.0 ft             |  |                 |  |
| Casing - Driller         |  | 8.625 in              |  | @ 356.0 ft      |  |
| Casing - Logger          |  | 348.0 ft              |  | @               |  |
| Bit Size                 |  | 7.875 in              |  | @               |  |
| Type Fluid in Hole       |  | Water Based Mud       |  |                 |  |
| Density                  |  | 10.4 ppg              |  | 55.00 s/qt      |  |
| PH                       |  | 9.00 pH               |  | 12.0 cp/m       |  |
| Source of Sample         |  | FLOWLINE              |  |                 |  |
| Rm @ Meas. Temperature   |  | 0.30 ohmm             |  | @ 85.00 degF    |  |
| Rmf @ Meas. Temperature  |  | 0.20 ohmm             |  | @ 80.00 degF    |  |
| Rmc @ Meas. Temperature  |  | 0.350 ohmm            |  | @ 80.00 degF    |  |
| Source Rmf               |  | MEASURED              |  | MEASURED        |  |
| Rm @ BHT                 |  | 0.20 ohmm             |  | @ 128.0 degF    |  |
| Time Since Circulation   |  | 5.0 hr                |  |                 |  |
| Time on Bottom           |  | 03-Aug-14 09:56       |  |                 |  |
| Max. Rec. Temperature    |  | 128.0 degF            |  | @ 4800.0 ft     |  |
| Equipment                |  | 15049592              |  | ELRENO          |  |
| Recorded By              |  | CHRIS MARLOWE         |  |                 |  |
| Witnessed By             |  | KITT NOZH             |  |                 |  |

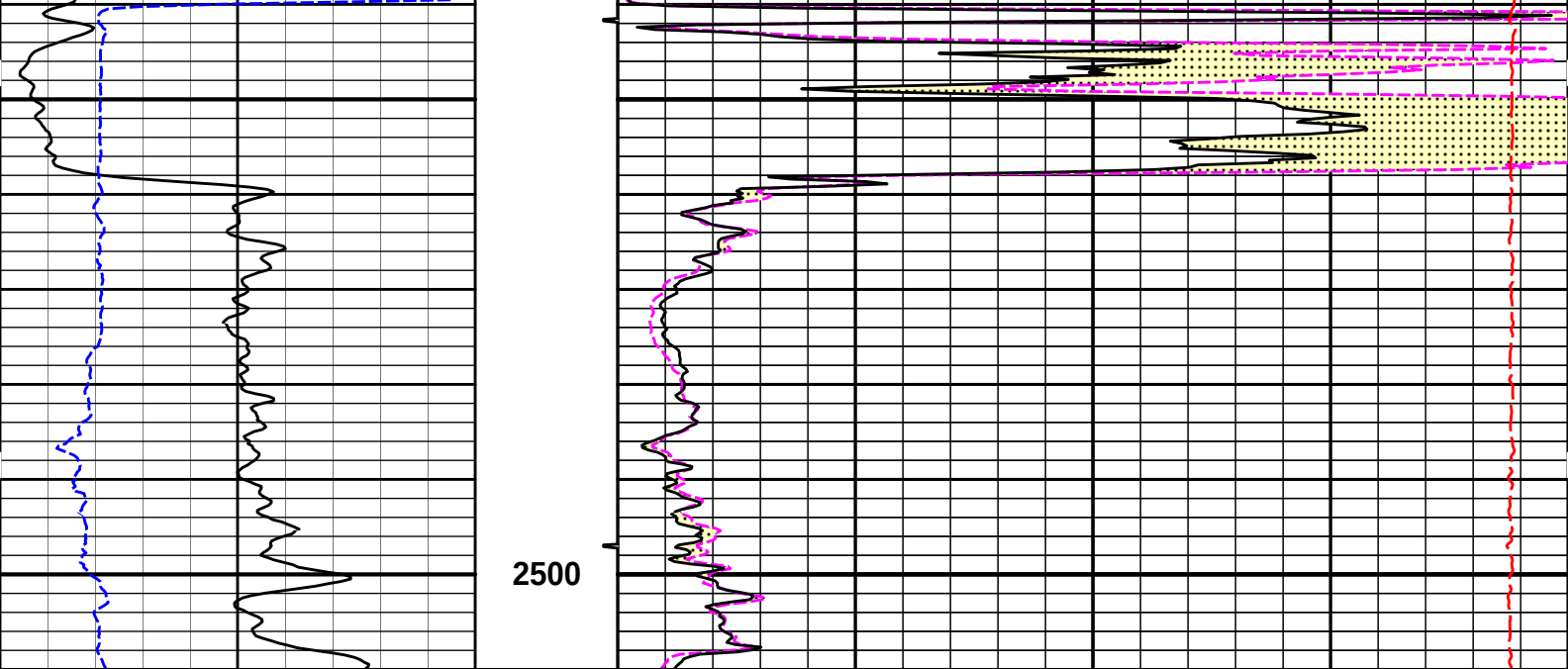
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|                                         |            |              |          |                               |  |                            |                 |                                         |                 |       |  |
|-----------------------------------------|------------|--------------|----------|-------------------------------|--|----------------------------|-----------------|-----------------------------------------|-----------------|-------|--|
| Service Ticket No.: 901558897           |            |              |          | API Serial No.: 15-203-20,275 |  |                            |                 | PGM Version: WL INSITE R4.2.0 (Build 2) |                 |       |  |
| CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE |            |              |          |                               |  | RESISTIVITY SCALE CHANGES  |                 |                                         |                 |       |  |
| Date                                    | Sample No. |              |          |                               |  | Type Log                   | Depth           | Scale Up Hole                           | Scale Down Hole |       |  |
| Depth-Driller                           |            |              |          |                               |  |                            |                 |                                         |                 |       |  |
| Type Fluid in Hole                      |            |              |          |                               |  |                            |                 |                                         |                 |       |  |
| Density                                 | Viscosity  |              |          |                               |  |                            |                 |                                         |                 |       |  |
| Ph                                      | Fluid Loss |              |          |                               |  |                            |                 |                                         |                 |       |  |
| Source of Sample                        |            |              |          |                               |  | RESISTIVITY EQUIPMENT DATA |                 |                                         |                 |       |  |
| Rm @ Meas. Temp                         |            | @            |          | @                             |  | Run No.                    | Tool Type & No. | Pad Type                                | Tool Pos.       | Other |  |
| Rmf @ Meas. Temp.                       |            | @            |          | @                             |  | ONE                        | MICROLOG        | RUBBER                                  | ADJ             | NA    |  |
| Rmc @ Meas. Temp.                       |            | @            |          | @                             |  |                            |                 |                                         |                 |       |  |
| Source Rmf                              | Rmc        |              |          |                               |  |                            |                 |                                         |                 |       |  |
| Rm @ BHT                                |            | @            |          | @                             |  |                            |                 |                                         |                 |       |  |
| Rmf @ BHT                               |            | @            |          | @                             |  |                            |                 |                                         |                 |       |  |
| Rmc @ BHT                               |            | @            |          | @                             |  |                            |                 |                                         |                 |       |  |
| EQUIPMENT DATA                          |            |              |          |                               |  |                            |                 |                                         |                 |       |  |
| GAMMA                                   |            |              | ACOUSTIC |                               |  | DENSITY                    |                 |                                         | NEUTRON         |       |  |
| Run No.                                 | ONE        | Run No.      |          | Run No.                       |  | Run No.                    |                 | Run No.                                 |                 |       |  |
| Serial No.                              | 11013114   | Serial No.   |          | Serial No.                    |  | Serial No.                 |                 | Serial No.                              |                 |       |  |
| Model No.                               | GTET       | Model No.    |          | Model No.                     |  | Model No.                  |                 | Model No.                               |                 |       |  |
| Diameter                                | 3.625"     | No. of Cent. |          | Diameter                      |  | Diameter                   |                 | Diameter                                |                 |       |  |
| Detector Model No.                      | T-102      | Spacing      |          | Log Type                      |  | Log Type                   |                 | Log Type                                |                 |       |  |
| Type                                    | SCINT      |              |          | Source Type                   |  | Source Type                |                 | Source Type                             |                 |       |  |
| Length                                  | 8"         | LSA [Y/N]    |          | Serial No.                    |  | Serial No.                 |                 | Serial No.                              |                 |       |  |
| Distance to Source                      | 10'        | FWDA [Y/N]   | Y        | Strength                      |  | Strength                   |                 | Strength                                |                 |       |  |
| LOGGING DATA                            |            |              |          |                               |  |                            |                 |                                         |                 |       |  |

| GENERAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |      |        | GAMMA |     | ACOUSTIC |   |        | DENSITY |   |        | NEUTRON |   |        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------|--------|-------|-----|----------|---|--------|---------|---|--------|---------|---|--------|
| Run                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Depth |      | Speed  | Scale |     | Scale    |   | Matrix | Scale   |   | Matrix | Scale   |   | Matrix |
| No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | From  | To   | ft/min | L     | R   | L        | R |        | L       | R |        | L       | R |        |
| ONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | TD    | 2400 | REC    | 0     | 150 |          |   |        |         |   |        |         |   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
| DIRECTIONAL INFORMATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
| Maximum Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |      |        |       |     |          |   | @      | KOP     |   |        |         | @ |        |
| Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
| CHLORIDES REPORTED AT 12000 PPM                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
| TODAY'S CREW: J. WOOD, J. SUMNER                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
| THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES: PAULS VALLEY, OK                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
| HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF. |       |      |        |       |     |          |   |        |         |   |        |         |   |        |
| HALLIBURTON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |      |        |       |     |          |   |        |         |   |        |         |   |        |

|                        |                                                                                                                                                                                                |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HALLIBURTON</b>     | Plot Time: 03-Aug-14 15:41:30<br>Plot Range: 2390 ft to 2510 ft<br>Data: ROSE_3_1\Well Based\MICROLOG_MAIN_UPPER\<br>Plot File: \\LOCAL-\\ROSE_3_1\0001 QUAD_BSAT\MICRO\Microlog_IQ_5_main_lib |
| <b>5 INCH MAIN LOG</b> |                                                                                                                                                                                                |





|       |           |         |              |               |                 |  |           |   |
|-------|-----------|---------|--------------|---------------|-----------------|--|-----------|---|
| 6     |           | Caliper | 16           | 1 : 240<br>ft | 15K             |  | Tension   | 0 |
|       |           | inches  |              |               |                 |  | pounds    |   |
| 0     | Gamma API | 150     | Tension Pull | 0             | MicrologLateral |  | 20        |   |
|       |           | api     | 10           |               |                 |  | ohm-metre |   |
| SHALE |           |         | Tension Pull | 0             | MicrologNormal  |  | 20        |   |
|       |           |         |              |               |                 |  | ohm-metre |   |
|       |           |         |              |               | PERMEABLE       |  |           |   |

HALLIBURTON

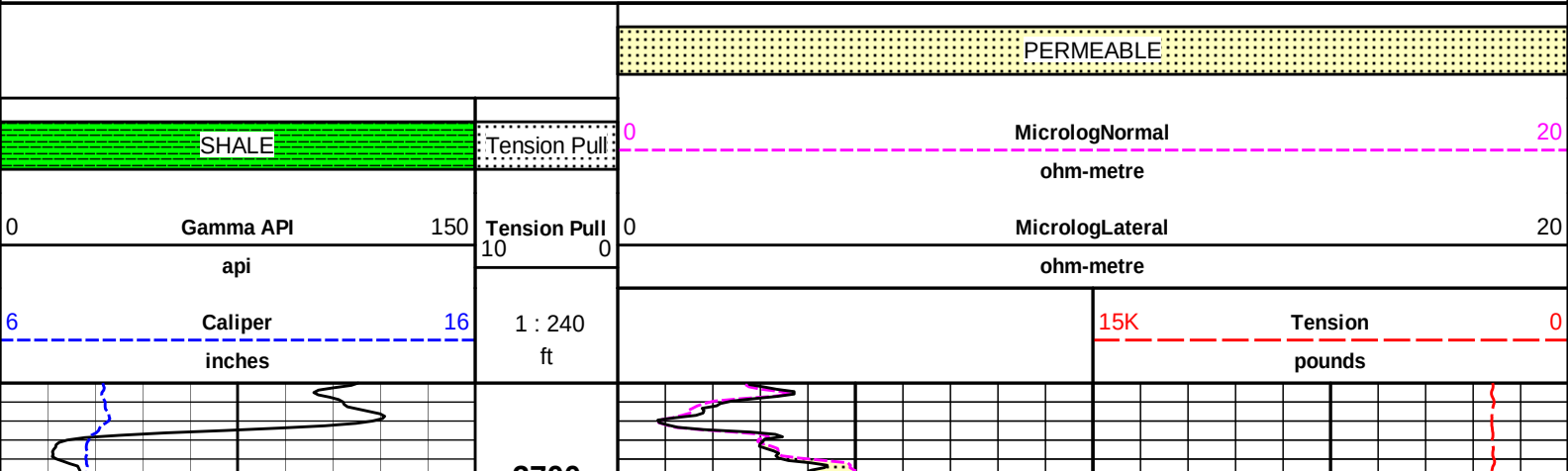
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Plot Range: 2390 ft to 2510 ft  
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Plot File: \\LOCAL-ROSE\_3\_1\0001 QUAD\_BSAT\MICRO\Microlog\_IQ\_5\_main\_lib

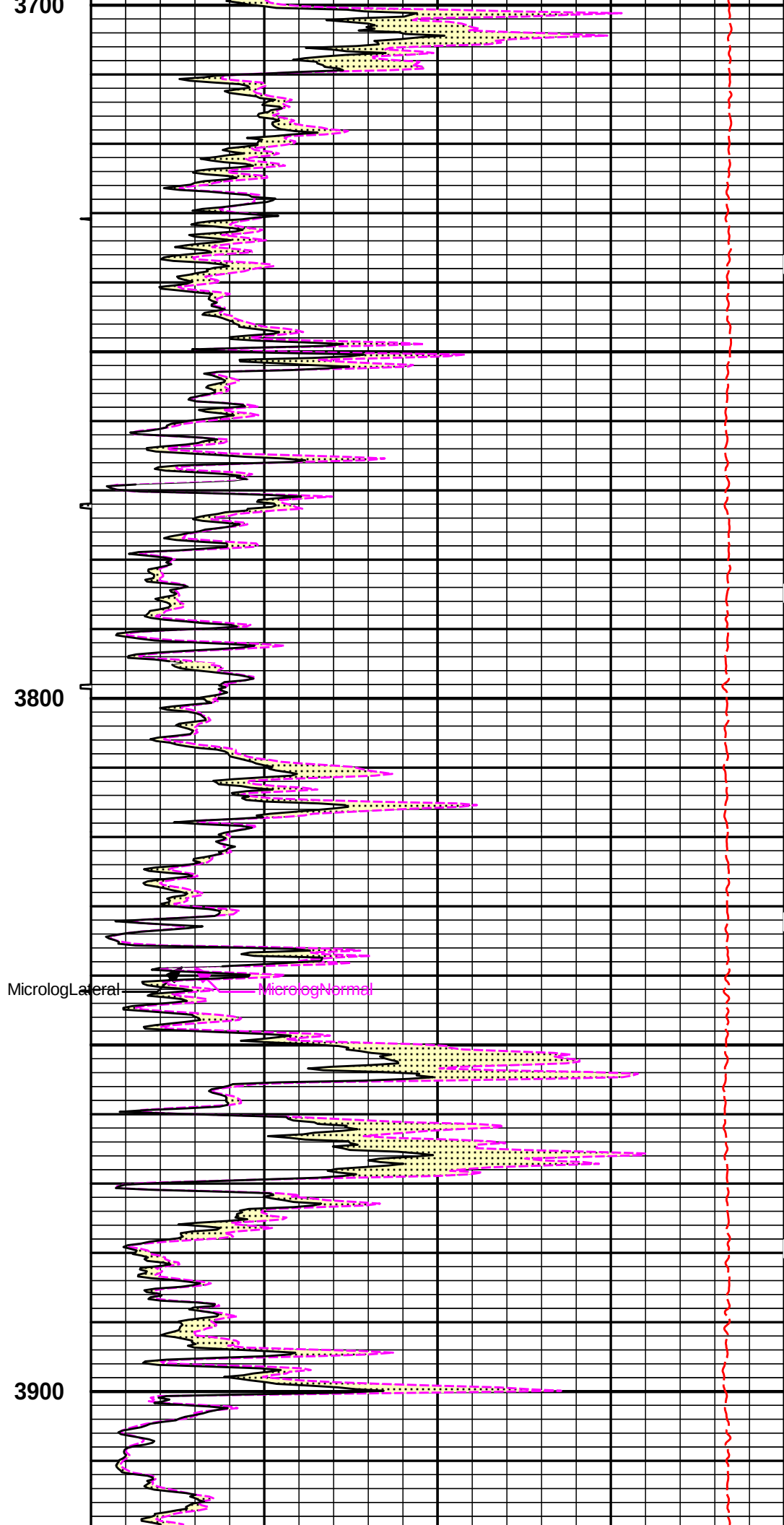
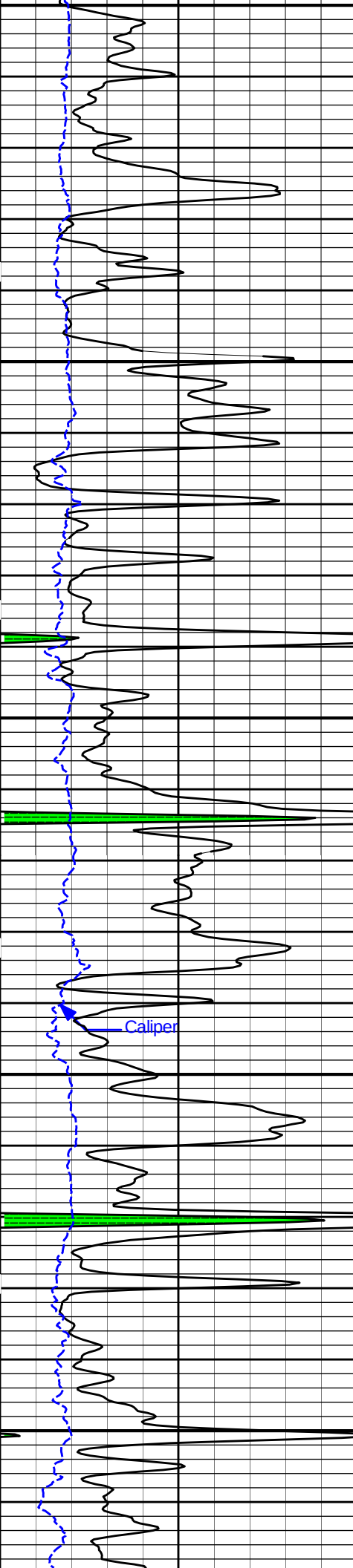
5 INCH MAIN LOG

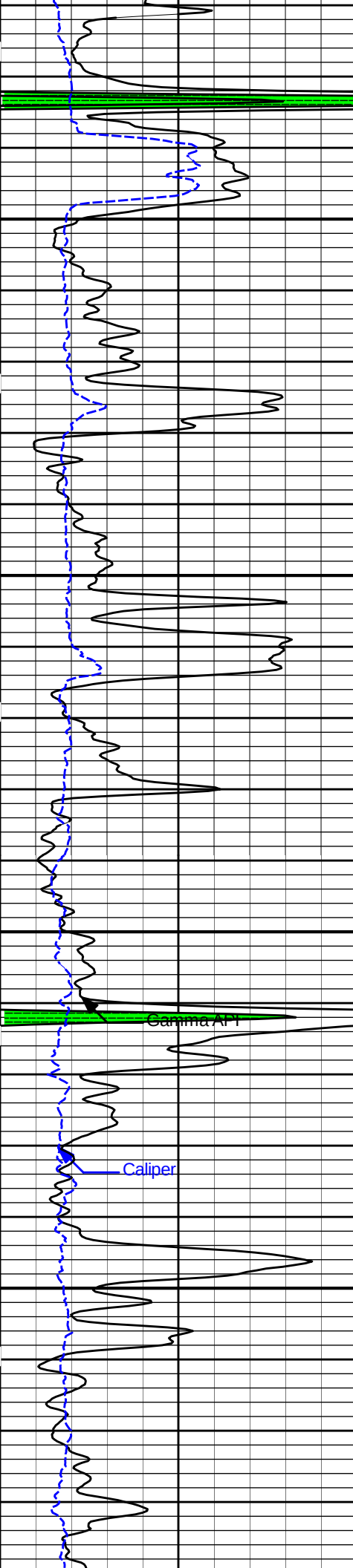
HALLIBURTON

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5 INCH MAIN LOG





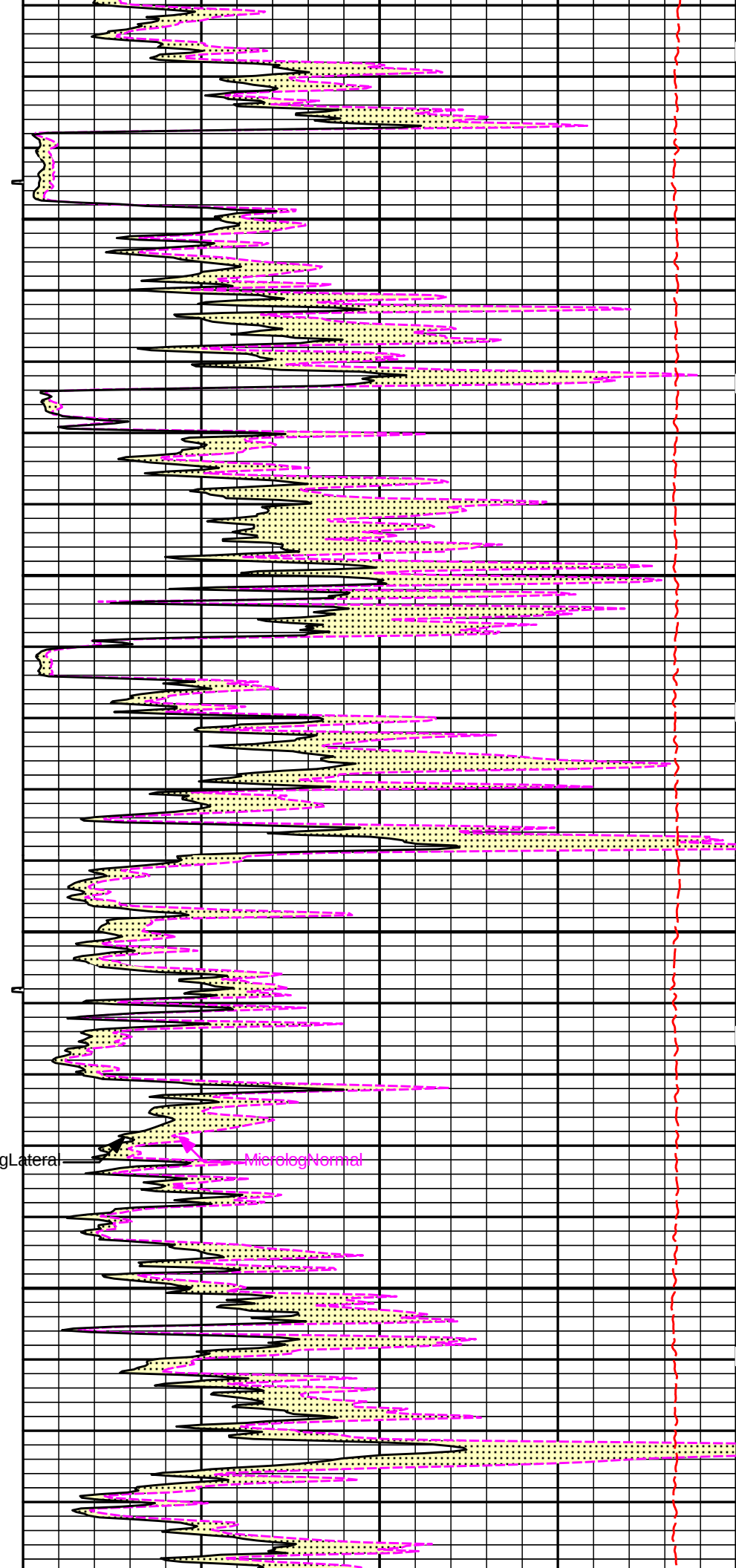


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Gamma API

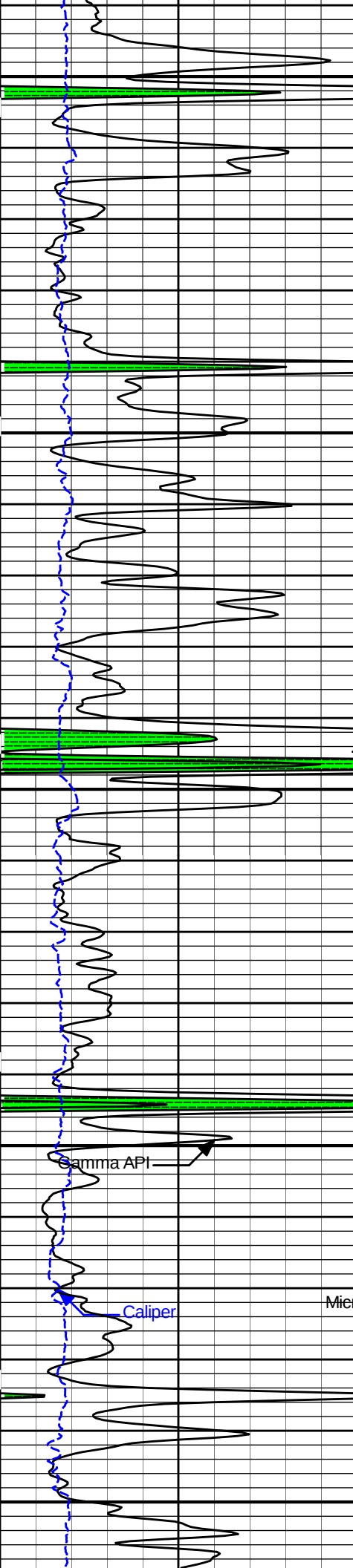
Caliper

4100



Microlog Lateral

Microlog Normal



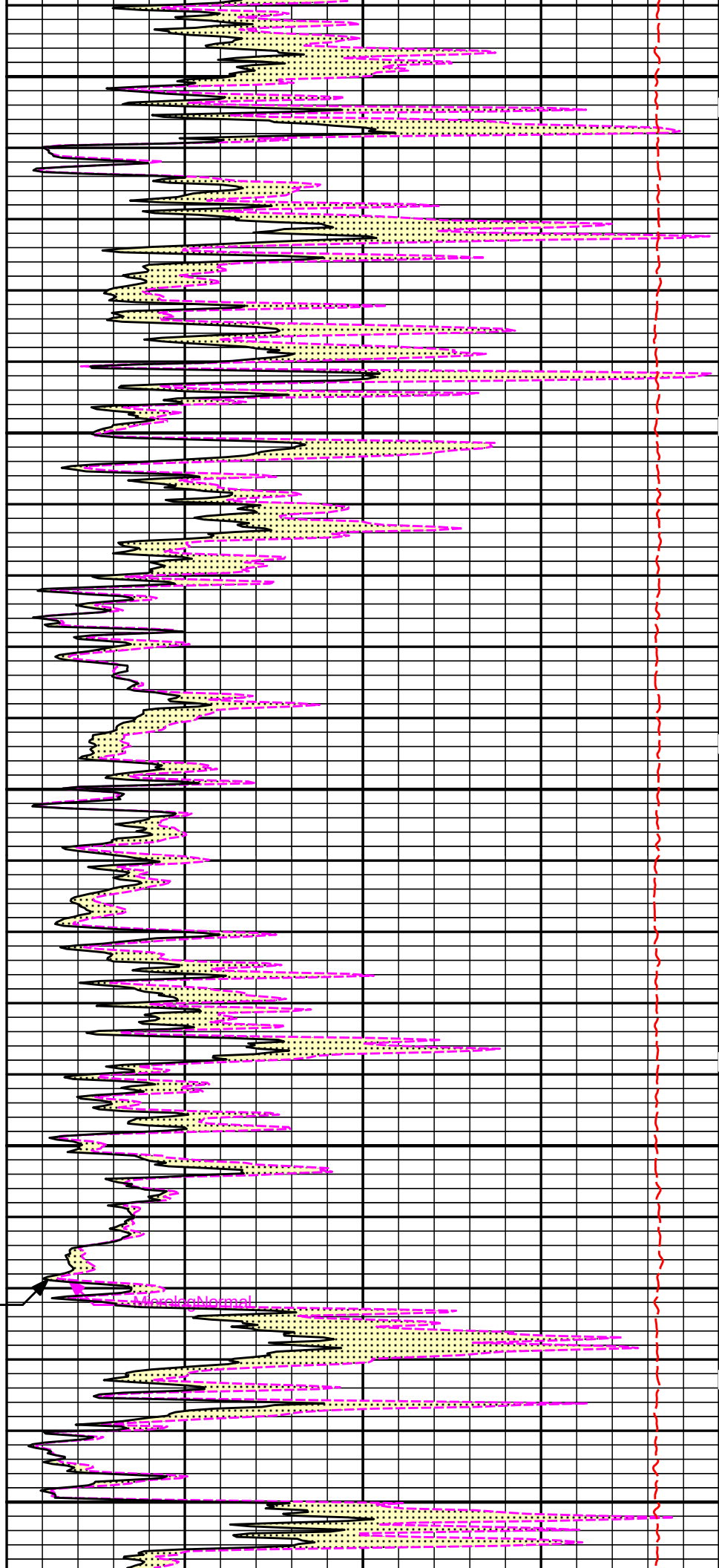
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4300

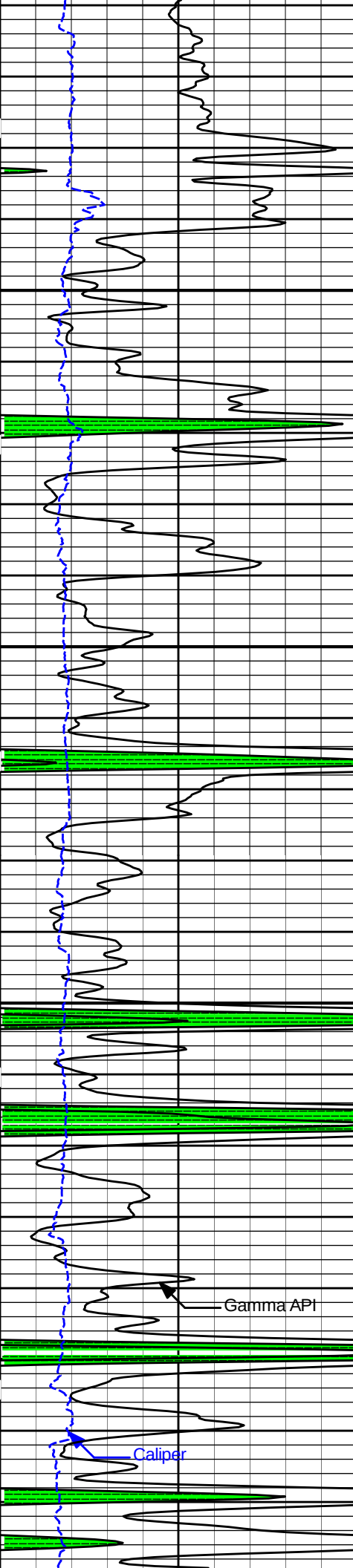
Gamma API

Caliper

MicrologLateral



MicrologNormal



4400

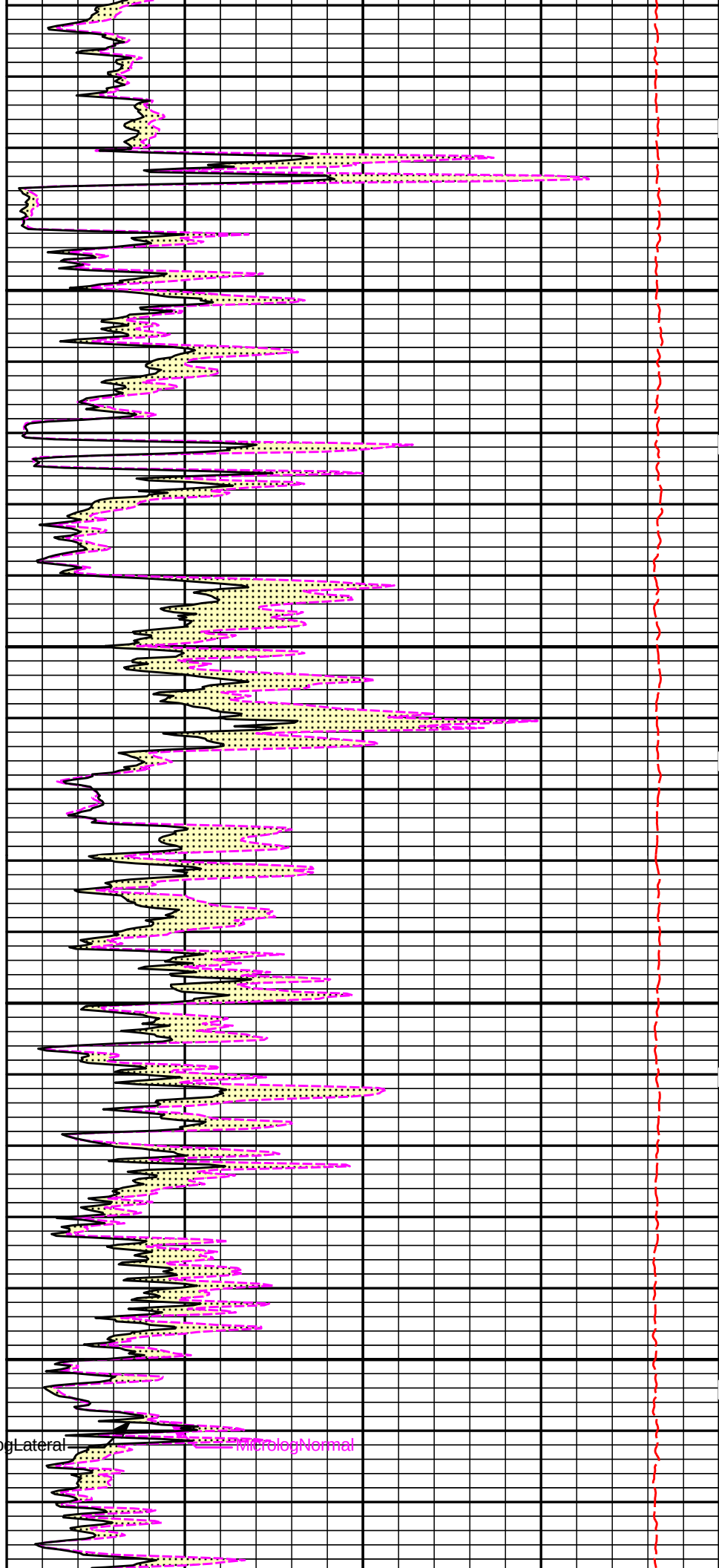
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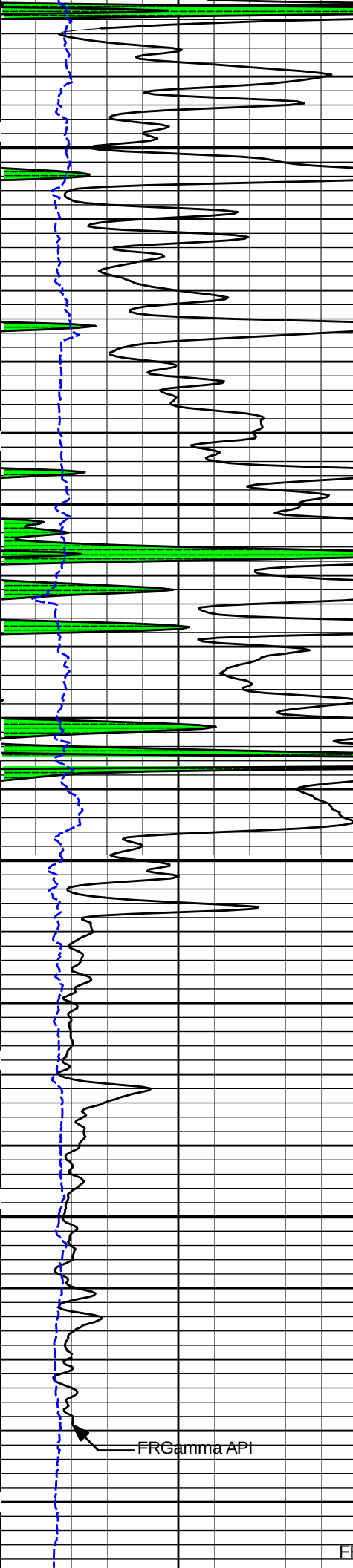
Gamma API

Caliper

MicrologLateral

MicrologNormal





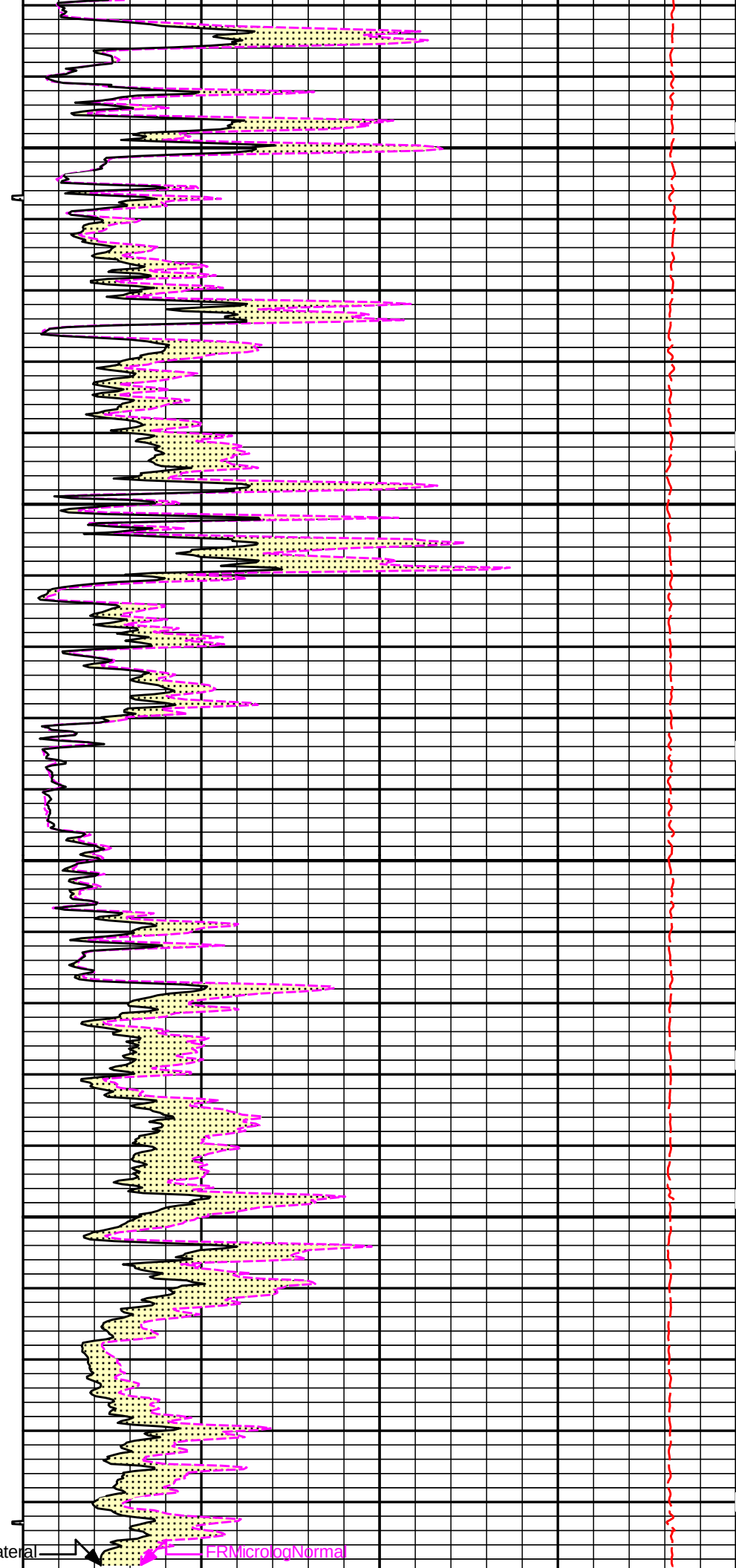
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4700

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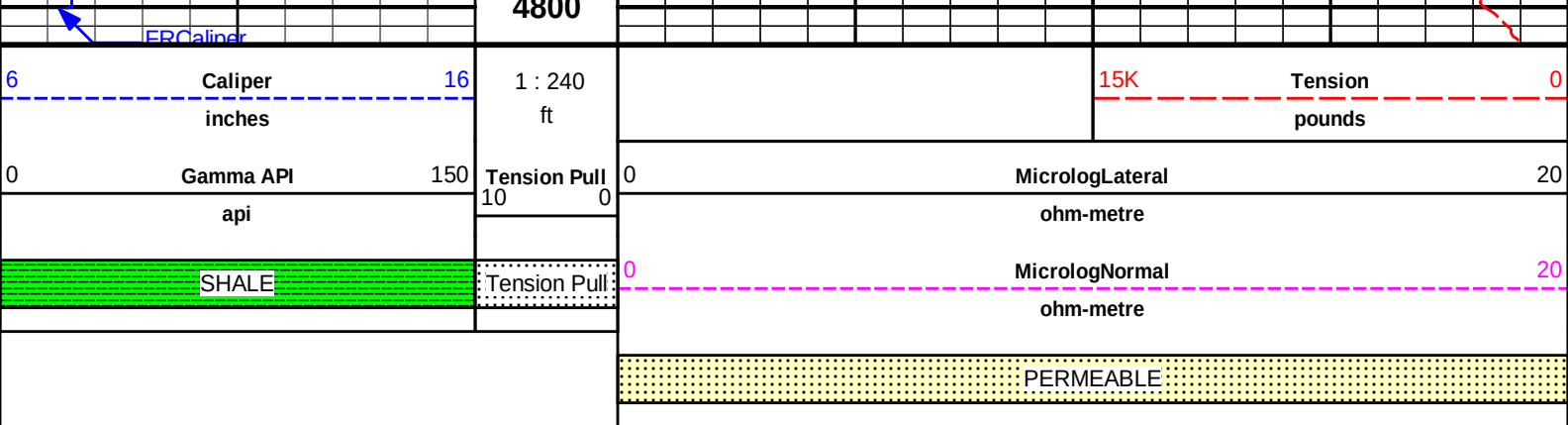
FRMicrologLateral

4820



FRMicrologNormal





HALLIBURTON

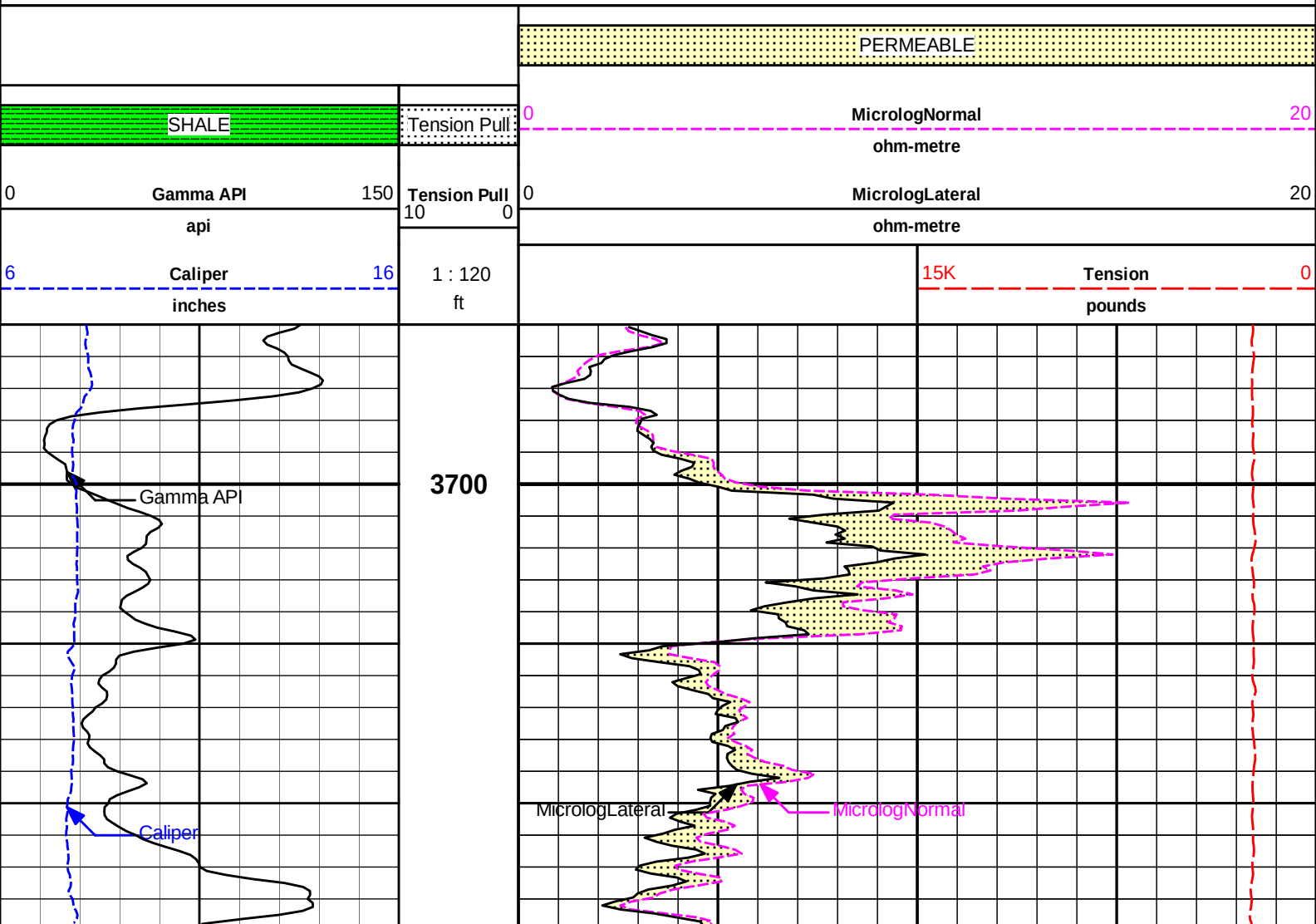
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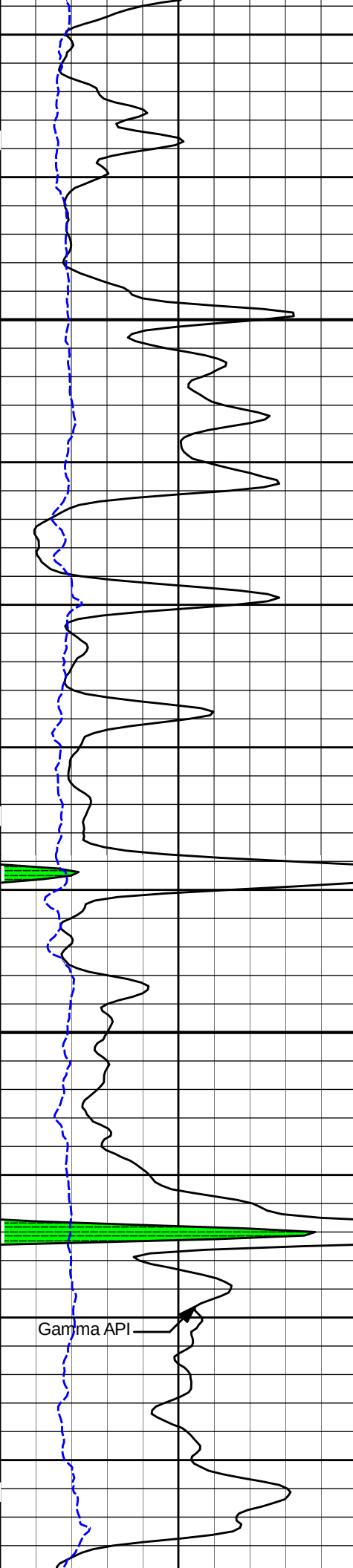
## 5 INCH MAIN LOG

HALLIBURTON

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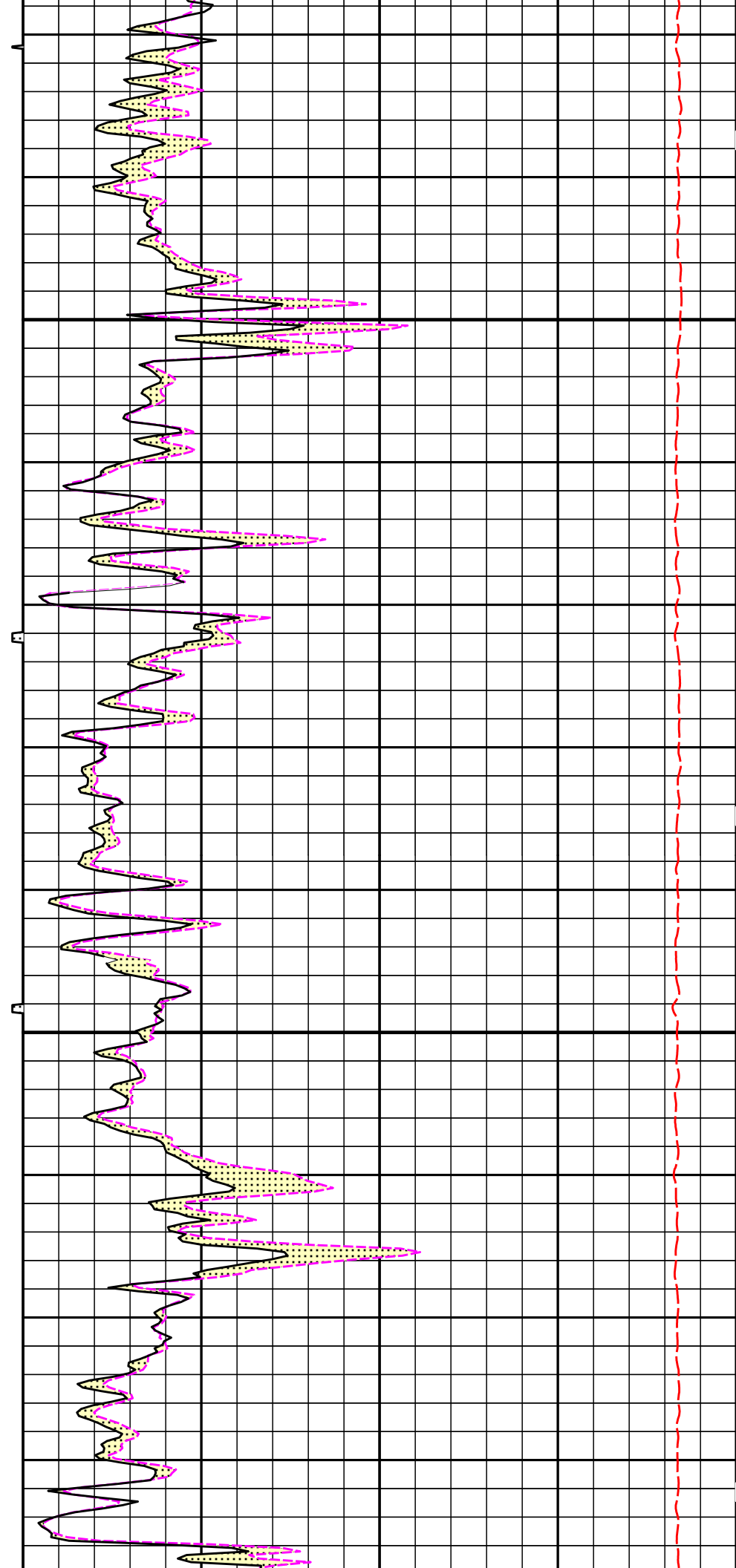
## MAIN SECTION 10" PER 100'

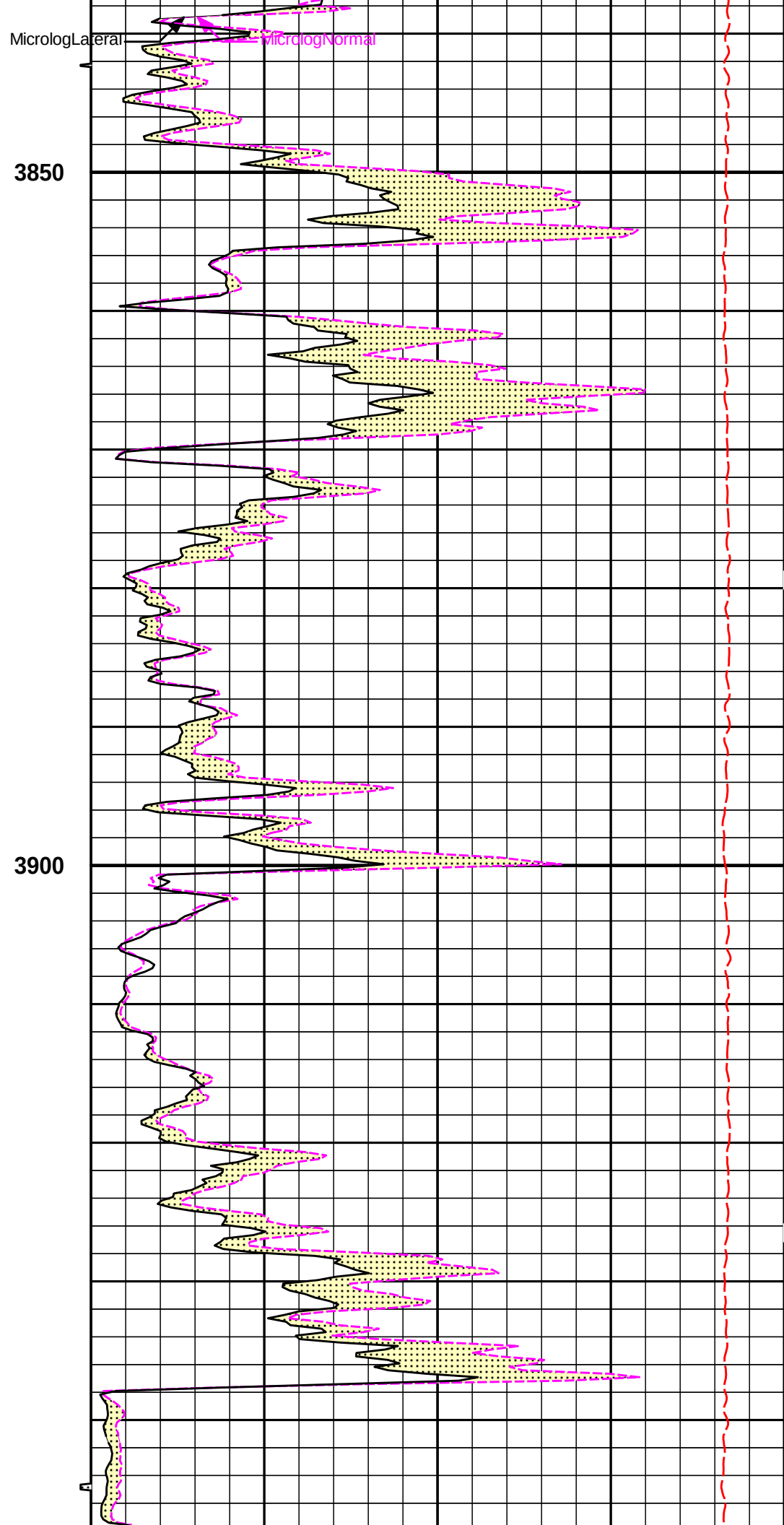
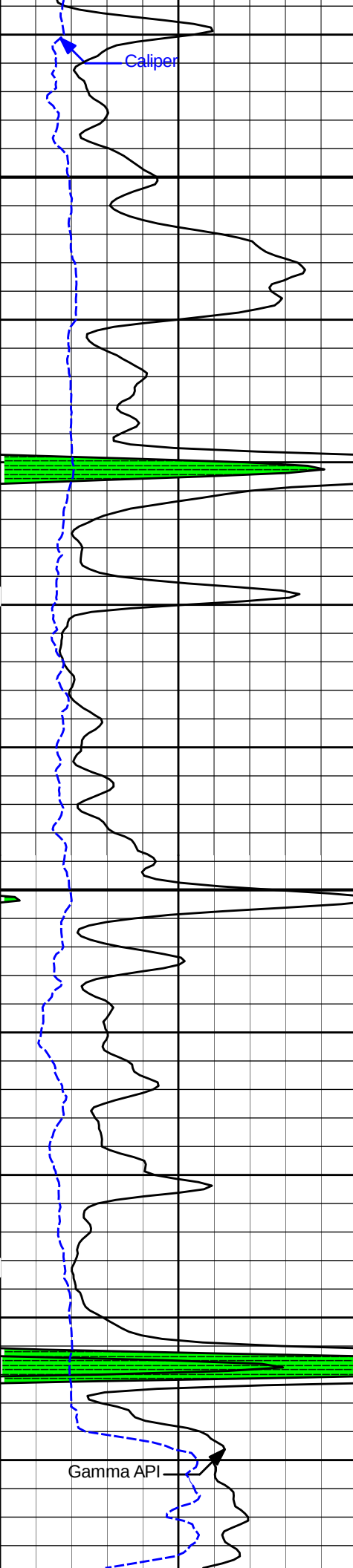


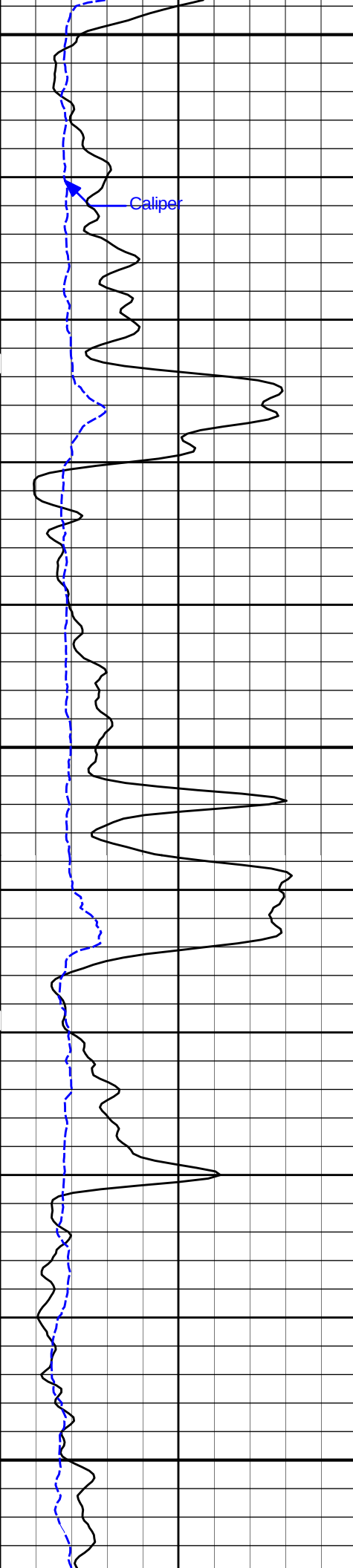


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3800







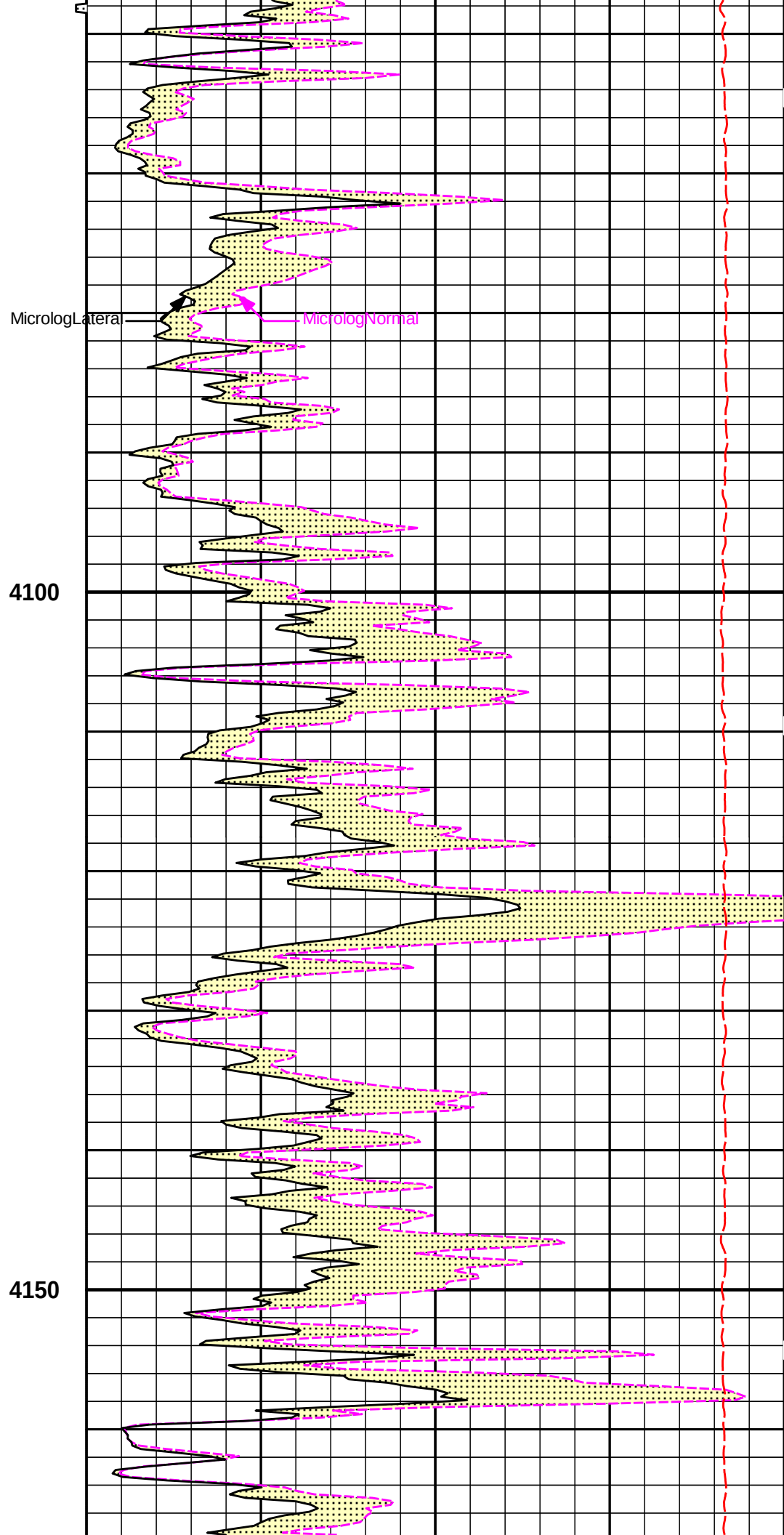
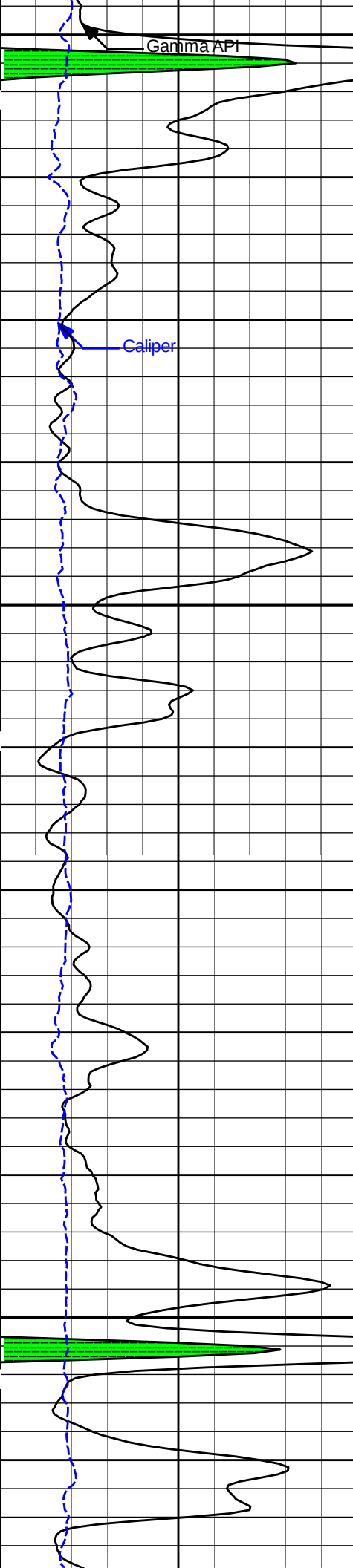
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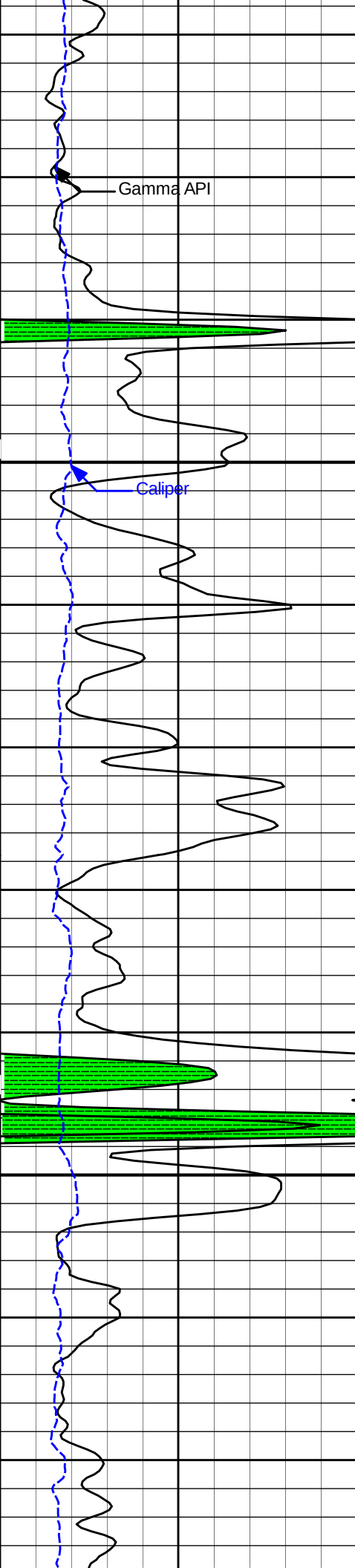
Microlog lateral

Microlog Normal

4000

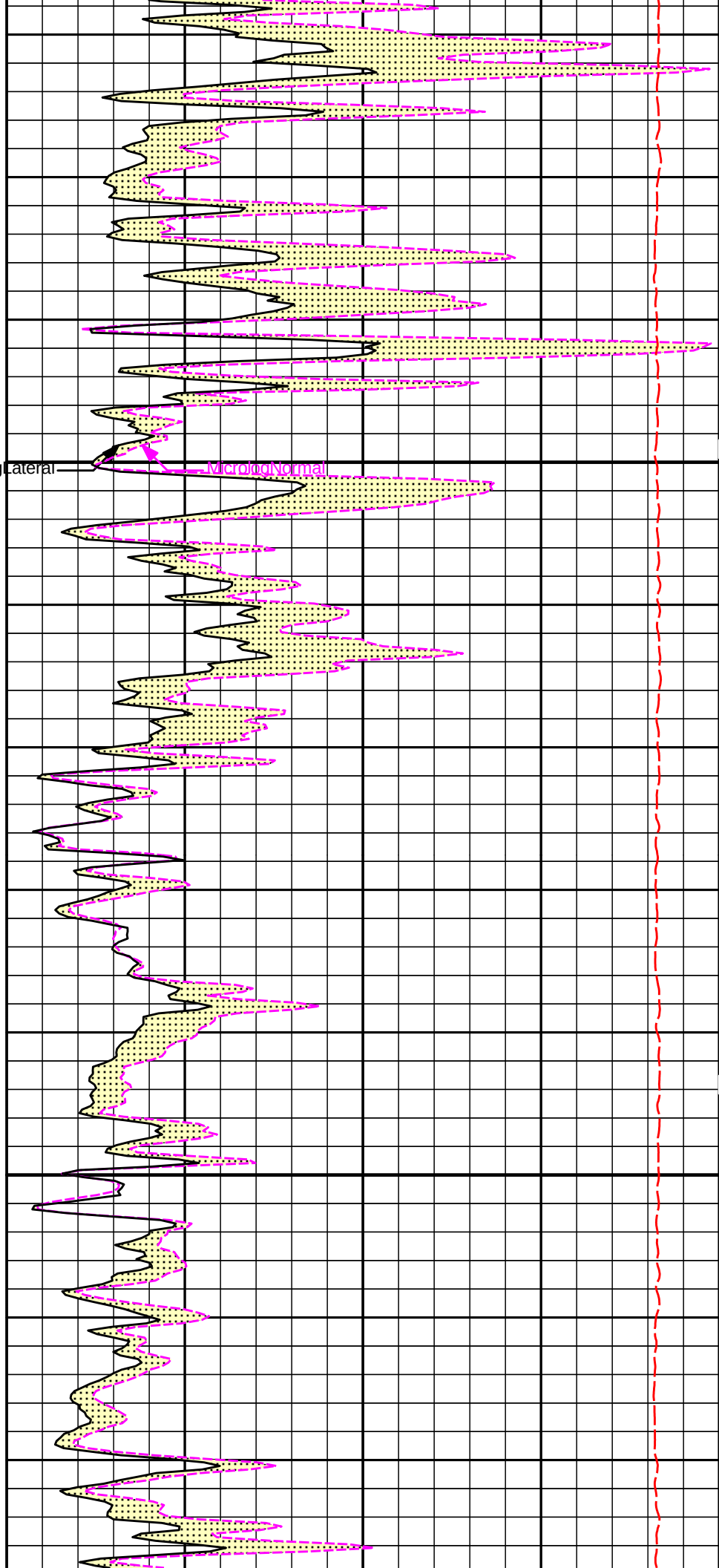
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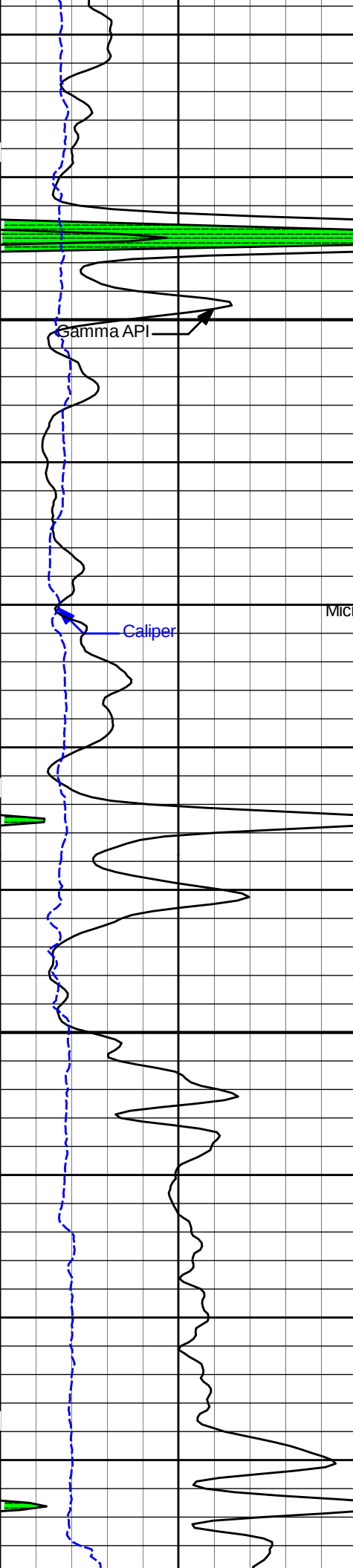




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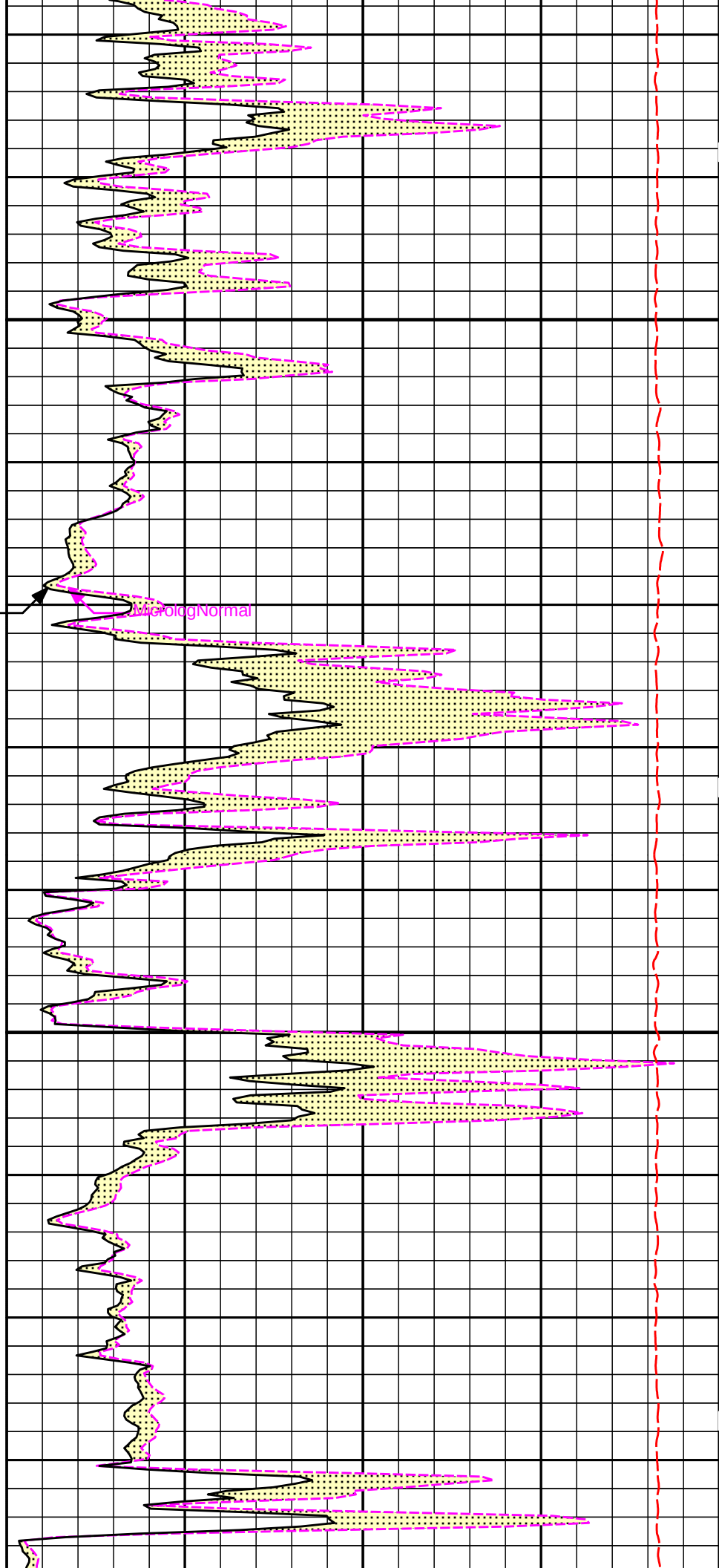
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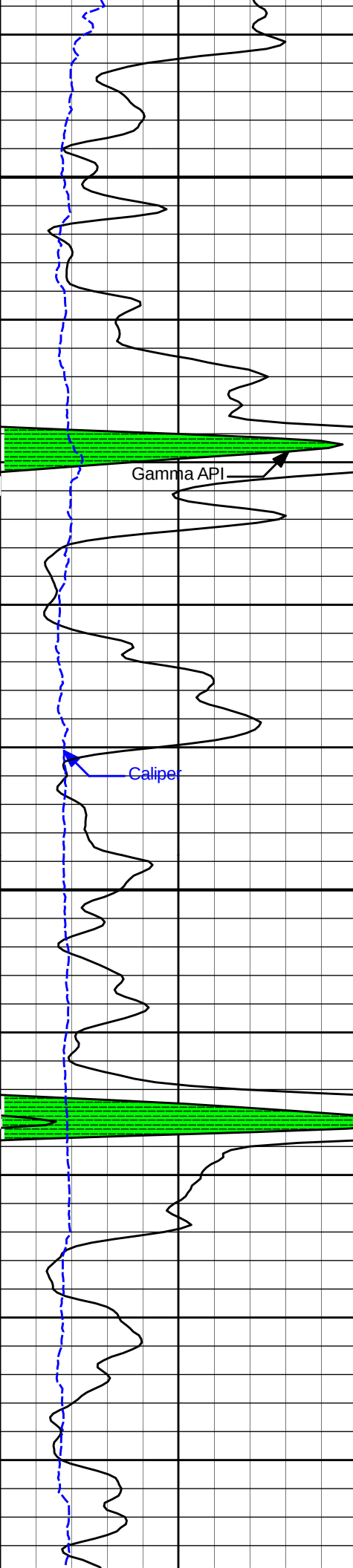




4300

4350

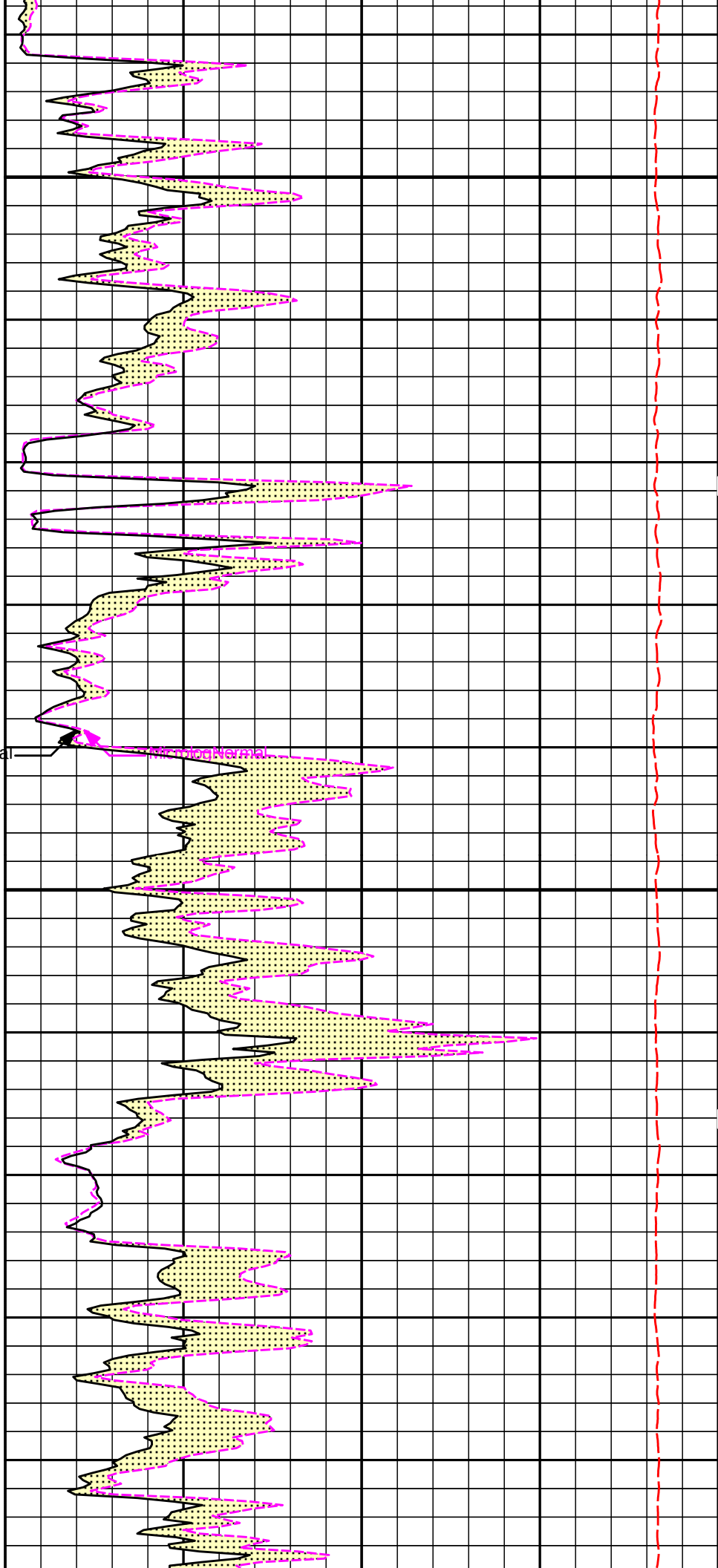




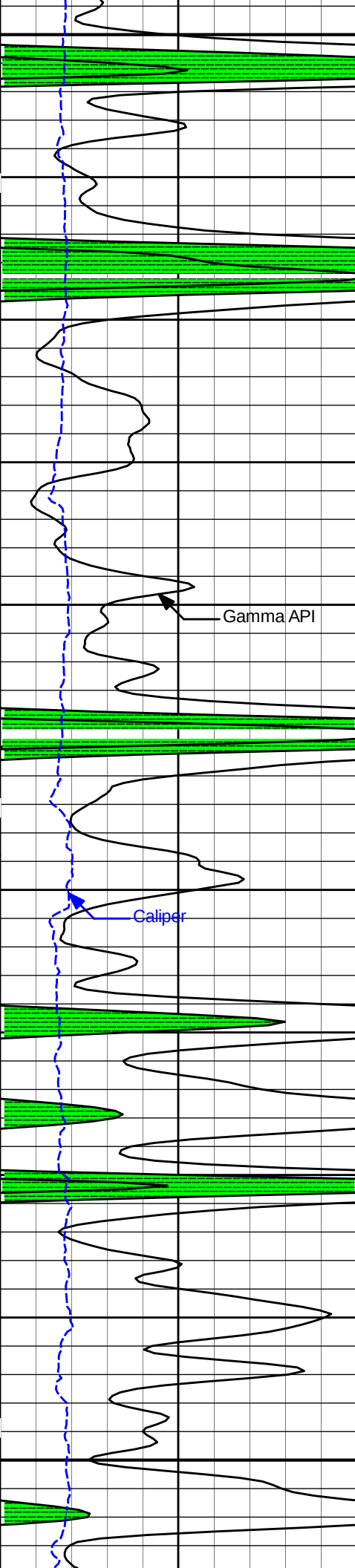
4400

MicrologLateral

4450







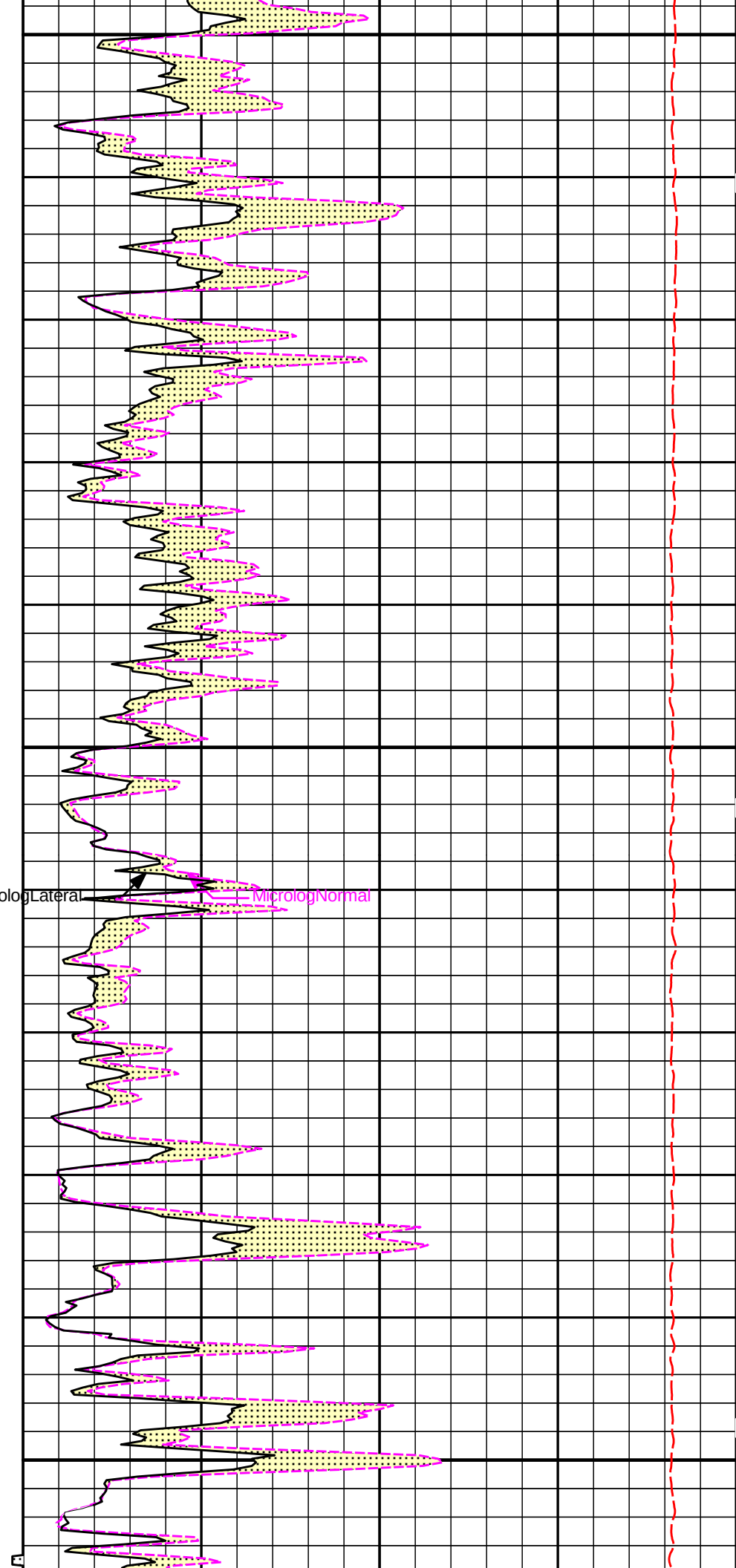
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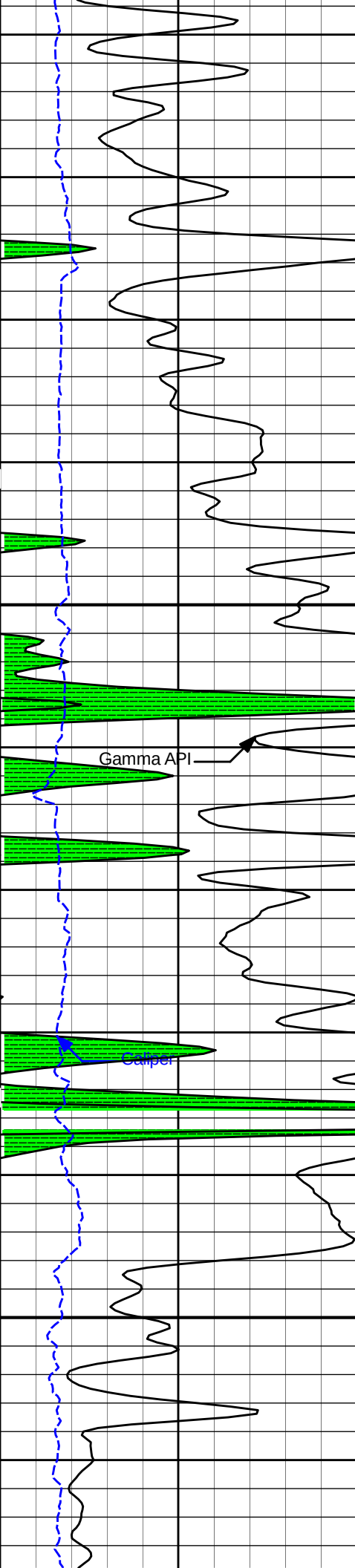
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4600

MicrologLateral

MicrologNormal

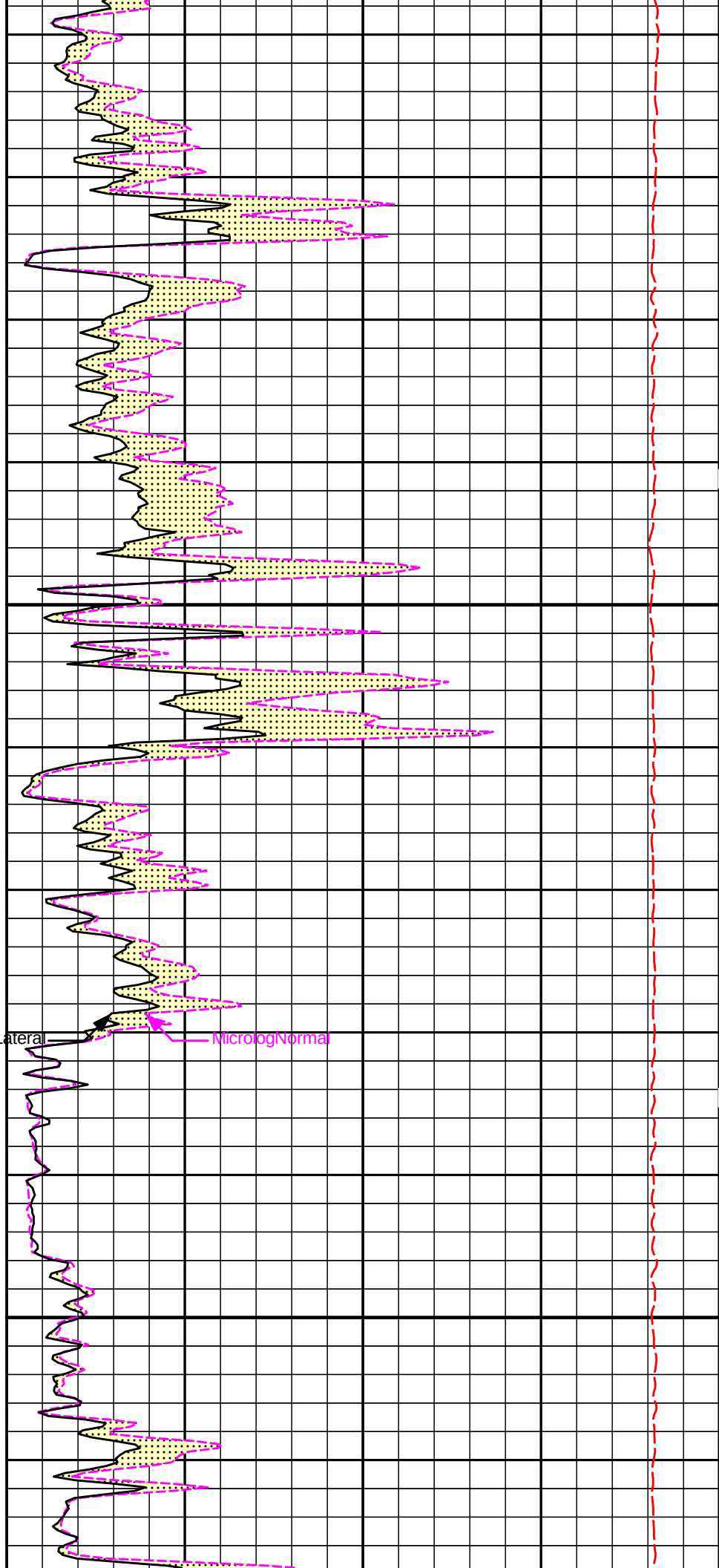


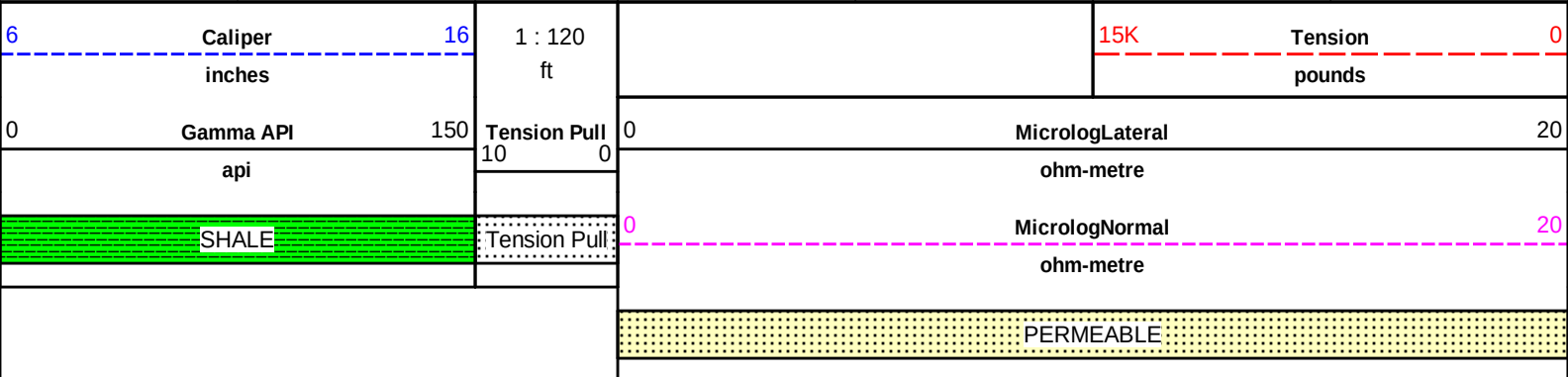
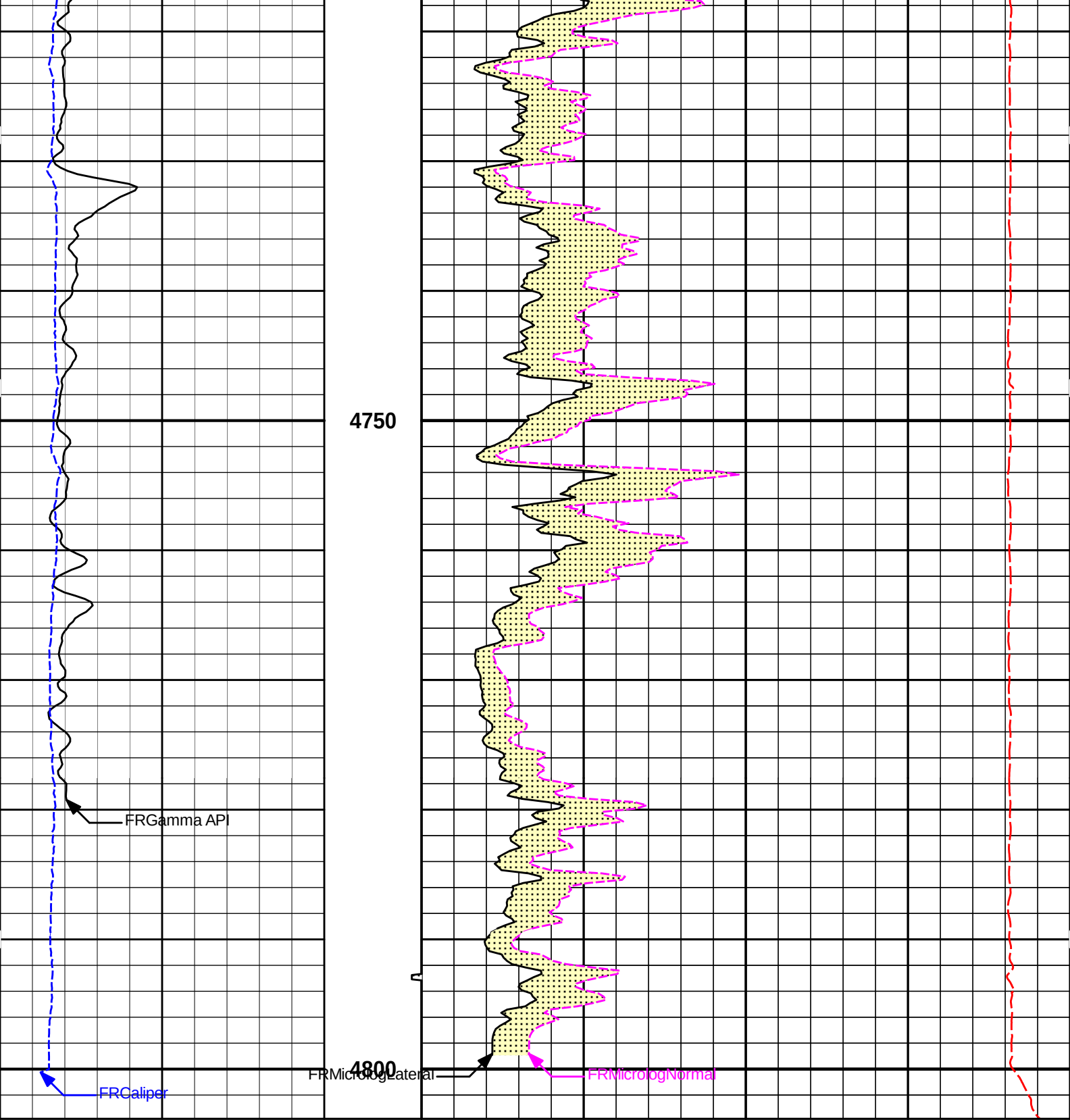


4650

MicrologLateral

4700



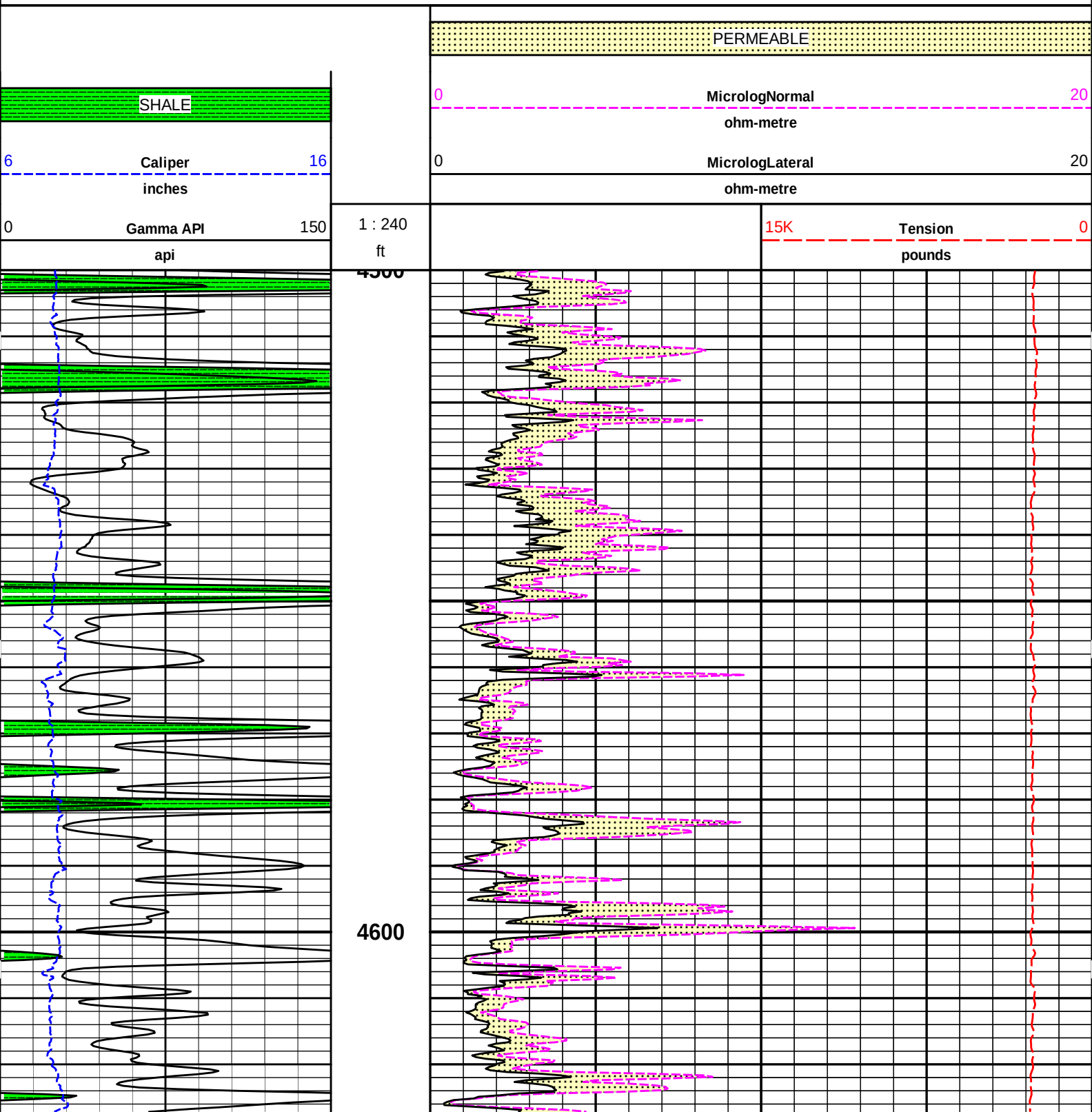


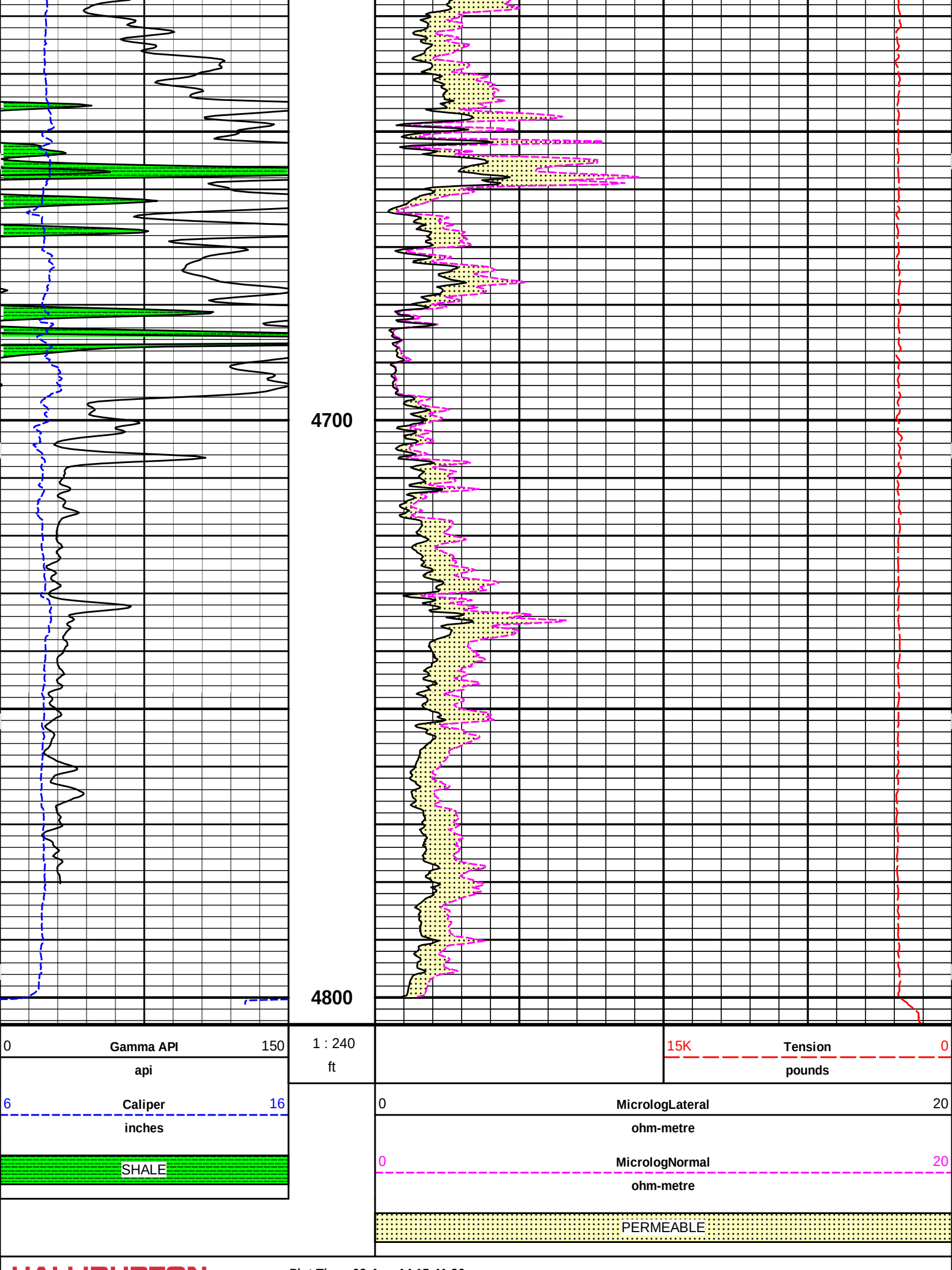
# MAIN SECTION 10" PER 100'

HALLIBURTON

Plot Time: 03-Aug-14 15:41:35  
Plot Range: 4500 ft to 4804.58 ft  
Data: ROSE\_3\_1\Well Based\MICRO\_REPEAT\  
Plot File: \\-LOCAL-ROSE\_3\_1\0001 QUAD\_BSAT\MICRO\Microlog\_IQ\_5\_rep\_lib

## REPEAT SECTION





## REPEAT SECTION

HALLIBURTON

## PARAMETERS REPORT

| Depth<br>(ft) | Tool Name          | Mnemonic | Description                                           | Value      | Units |
|---------------|--------------------|----------|-------------------------------------------------------|------------|-------|
| TOP           |                    |          |                                                       |            |       |
|               | SHARED             | BS       | Bit Size                                              | 7.875      | in    |
|               | SHARED             | UBS      | Use Bit Size instead of Caliper for all applications. | No         |       |
|               | SHARED             | MDBS     | Mud Base                                              | Water      |       |
|               | SHARED             | MDWT     | Borehole Fluid Weight                                 | 10.400     | ppg   |
|               | SHARED             | WAGT     | Weighting Agent                                       | Barite     |       |
|               | SHARED             | BSAL     | Borehole salinity                                     | 0.00       | ppm   |
|               | SHARED             | FSAL     | Formation Salinity NaCl                               | 0.00       | ppm   |
|               | SHARED             | KPCT     | Percent K in Mud by Weight?                           | 0.00       | %     |
|               | SHARED             | RMUD     | Mud Resistivity                                       | 0.300      | ohmm  |
|               | SHARED             | TRM      | Temperature of Mud                                    | 85.0       | degF  |
|               | SHARED             | CSD      | Logging Interval is Cased?                            | No         |       |
|               | SHARED             | ICOD     | AHV Casing OD                                         | 5.500      | in    |
|               | SHARED             | ST       | Surface Temperature                                   | 75.0       | degF  |
|               | SHARED             | TD       | Total Well Depth                                      | 4800.00    | ft    |
|               | SHARED             | BHT      | Bottom Hole Temperature                               | 130.0      | degF  |
|               | SHARED             | SVTM     | Navigation and Survey Master Tool                     | NONE       |       |
|               | SHARED             | AZTM     | High Res Z Accelerometer Master Tool                  | GTET       |       |
|               | SHARED             | TEMM     | Temperature Master Tool                               | NONE       |       |
|               | Rwa /<br>CrossPlot | XPOK     | Process Crossplot?                                    | Yes        |       |
|               | Rwa /<br>CrossPlot | FCHO     | Select Source of F                                    | Automatic  |       |
|               | Rwa /<br>CrossPlot | AFAC     | Archie A factor                                       | 0.6200     |       |
|               | Rwa /<br>CrossPlot | MFAC     | Archie M factor                                       | 2.1500     |       |
|               | Rwa /<br>CrossPlot | RMFR     | Rmf Reference                                         | 0.10       | ohmm  |
|               | Rwa /<br>CrossPlot | TMFR     | Rmf Ref Temp                                          | 75.00      | degF  |
|               | Rwa /<br>CrossPlot | RWA      | Resistivity of Formation Water                        | 0.05       | ohmm  |
|               | Rwa /<br>CrossPlot | ADP      | Use Air Porosity to calculate CrossplotPhi            | No         |       |
|               | Rwa /<br>CrossPlot | BHSM     | Borehole Size Source Tool                             | SDLT       |       |
|               | GTET               | GROK     | Process Gamma Ray?                                    | Yes        |       |
|               | GTET               | GRSO     | Gamma Tool Standoff                                   | 0.000      | in    |
|               | GTET               | GEOK     | Process Gamma Ray EVR?                                | Yes        |       |
|               | GTET               | TPOS     | Tool Position for Gamma Ray Tools.                    | Eccentered |       |
|               | GTET               | BHSM     | Borehole Size Source Tool                             | SDLT       |       |
|               | DSNT               | DNOK     | Process DSN?                                          | Yes        |       |
|               | DSNT               | DEOK     | Process DSN EVR?                                      | Yes        |       |
|               | DSNT               | NLIT     | Neutron Lithology                                     | Limestone  |       |
|               | DSNT               | DNSO     | DSN Standoff - 0.25 in (6.35 mm) Recommended          | 0.250      | in    |

|                                                               |      |                                   |                |                          |
|---------------------------------------------------------------|------|-----------------------------------|----------------|--------------------------|
| DSNT                                                          | DNTP | Temperature Correction Type       | None           |                          |
| DSNT                                                          | DPRS | DSN Pressure Correction Type      | None           |                          |
| DSNT                                                          | SHCO | View More Correction Options      | No             |                          |
| DSNT                                                          | UTVD | Use TVD for Gradient Corrections? | No             |                          |
| DSNT                                                          | LHWT | Logging Horizontal Water Tank?    | No             |                          |
| DSNT                                                          | BHSM | Borehole Size Source Tool         | SDLT           |                          |
| SDLT                                                          | CLOK | Process Caliper Outputs?          | Yes            |                          |
| SDLT Pad                                                      | DNOK | Process Density?                  | Yes            |                          |
| SDLT Pad                                                      | DNOK | Process Density EVR?              | Yes            |                          |
| SDLT Pad                                                      | CB   | Logging Calibration Blocks?       | No             |                          |
| SDLT Pad                                                      | SPVT | SDLT Pad Temperature Valid?       | Yes            |                          |
| SDLT Pad                                                      | DTWN | Disable temperature warning       | No             |                          |
| SDLT Pad                                                      | DMA  | Formation Density Matrix          | 2.710          | g/cc                     |
| SDLT Pad                                                      | DFL  | Formation Density Fluid           | 1.000          | g/cc                     |
| SDLT Pad                                                      | BHSM | Borehole Size Source Tool         | SDLT           |                          |
| Microlog Pad                                                  | MLOK | Process MicroLog Outputs?         | Yes            |                          |
| BSAT                                                          | MBOK | Compute BCAS Results?             | Yes            |                          |
| BSAT                                                          | FLLO | Frequency Filter Low Pass Value?  | 5000           | Hz                       |
| BSAT                                                          | FLHI | Frequency Filter High Pass Value? | 27000          | Hz                       |
| BSAT                                                          | DTFL | Delta -T Fluid                    | 189.00         | uspf                     |
| BSAT                                                          | DTMT | Delta -T Matrix Type              | Limestone 47.5 |                          |
| BSAT                                                          | DTSH | Delta -T Shale                    | 100.00         | uspf                     |
| BSAT                                                          | SPEQ | Acoustic Porosity Equation        | Wylie          |                          |
| ACRt Sonde                                                    | RTOK | Process ACRt?                     | Yes            |                          |
| ACRt Sonde                                                    | MNSO | Minimum Tool Standoff             | 1.50           | in                       |
| ACRt Sonde                                                    | TCS1 | Temperature Correction Source     | FP Lwr & FP Up |                          |
| ACRt Sonde                                                    | TPOS | Tool Position                     | Free Hanging   |                          |
| ACRt Sonde                                                    | RMOP | Rmud Source                       | Mud Cell       |                          |
| ACRt Sonde                                                    | RMIN | Minimum Resistivity for MAP       | 0.20           | ohmm                     |
| ACRt Sonde                                                    | RMIN | Maximum Resistivity for MAP       | 200.00         | ohmm                     |
| ACRt Sonde                                                    | THQY | Threshold Quality                 | 0.50           |                          |
| ACRt Sonde                                                    | MRFX | Fixed mud resistivity             | 2000           | ohmm                     |
| ACRt Sonde                                                    | BHSM | Borehole Size Source Tool         | SDLT           |                          |
| BOTTOM_____                                                   |      |                                   |                |                          |
| Data: ROSE_3_110001 QUAD_BSAT1003 03-Aug-14 09:56 Up @4803.8f |      |                                   |                | Date: 03-Aug-14 11:56:04 |

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:

GTET - 11013114

Engineer:

CHRIS MARLOWE

Software Version:

WL INSITE R4.2.0 (Build 2)

Reference Calibration Date:

17-Mar-14 06:39:24

Calibration Date:

03-Aug-14 08:05:20

Calibration Version:

1

Calibrator Source S/N: 150

Calibrator API Reference:264.00 api

Equivalent Calibrator API Reference:268.6 api

| Measurement             | Measured | Calibrated | Units |
|-------------------------|----------|------------|-------|
| Background              | 45.6     | 44.4       | api   |
| Background + Calibrator | 321.9    | 313.0      | api   |
| Calibrator              | 276.2    | 268.6      | api   |

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

|                                               |  |                                                |            |           |  |
|-----------------------------------------------|--|------------------------------------------------|------------|-----------|--|
| Tool Name: GTET - 11013114                    |  | Reference Calibration Date: 03-Aug-14 08:05:20 |            |           |  |
| Engineer: CHRIS MARLOWE                       |  | Calibration Date: 03-Aug-14 08:08:41           |            |           |  |
| Software Version: WL INSITE R4.2.0 (Build 2)  |  | Calibration Version: 1                         |            |           |  |
| Calibrator Source S/N: 150                    |  |                                                |            |           |  |
| Calibrator API Reference:264.00 api           |  |                                                |            |           |  |
| Equivalent Calibrator API Reference:268.6 api |  |                                                |            |           |  |
| Field Verification                            |  | Shop                                           | Field      | Units     |  |
| Background                                    |  | 44.4                                           | 44.3       | api       |  |
| Background + Calibrator                       |  | 313.0                                          | 309.6      | api       |  |
| Calibrator                                    |  | 268.6                                          | 265.3      | api       |  |
| Shop                                          |  | Field                                          | Difference | Tolerance |  |
| 268.6                                         |  | 265.3                                          | 3.3        | +/- 9.00  |  |

|                                              |  |                                                |  |  |  |
|----------------------------------------------|--|------------------------------------------------|--|--|--|
| MICRO LOG SHOP CALIBRATION                   |  |                                                |  |  |  |
| Tool Name: Microlog Pad - 10960494           |  | Reference Calibration Date: 01-Jan-70 00:00:00 |  |  |  |
| Engineer: Jeremy Cothren                     |  | Calibration Date: 13-Jul-14 15:00:36           |  |  |  |
| Software Version: WL INSITE R4.2.0 (Build 2) |  | Calibration Version: 1                         |  |  |  |
| Host Tool Name: DSNT - 11019641_PLEASE       |  |                                                |  |  |  |

|                      |                                 |                             |            |                              |            |       |
|----------------------|---------------------------------|-----------------------------|------------|------------------------------|------------|-------|
|                      | CALIBRATION COEFFICIENT SUMMARY |                             |            |                              |            |       |
|                      | Measurement                     | Micro Log Normal            |            | Micro Log Lateral            |            | Units |
|                      |                                 | Measured                    | Calibrated | Measured                     | Calibrated |       |
|                      | Tool Zero                       | -0.09                       | -0.09      | 0.01                         | 0.01       | ohmm  |
|                      | Calibration Point #1            | 0.00                        | 0.00       | 0.00                         | 0.00       | ohmm  |
| Calibration Point #2 | 20.00                           | 20.00                       | 20.00      | 20.00                        | ohmm       |       |
| Internal Reference   | 20.31                           | 20.31                       | 23.82      | 23.82                        | ohmm       |       |
|                      | Measurement                     | Micro Log Normal Tool Value |            | Micro Log Lateral Tool Value |            | Units |
|                      | Tool Zero                       | -0.35                       |            | 0.89                         |            | V     |
|                      | Calibration Point #1            | 24.45                       |            | -0.58                        |            | V     |
|                      | Calibration Point #2            | 5246.54                     |            | 5853.88                      |            | V     |
|                      | Internal Reference              | 5327.49                     |            | 6971.91                      |            | V     |

|                                              |  |                                                |  |  |  |
|----------------------------------------------|--|------------------------------------------------|--|--|--|
| MICRO LOG FIELD CHECK                        |  |                                                |  |  |  |
| Tool Name: Microlog Pad - 10960494           |  | Reference Calibration Date: 13-Jul-14 15:00:36 |  |  |  |
| Engineer: CHRIS MARLOWE                      |  | Calibration Date: 03-Aug-14 08:05:39           |  |  |  |
| Software Version: WL INSITE R4.2.0 (Build 2) |  | Calibration Version: 1                         |  |  |  |

|                  |                    |                  |            |                   |           |       |
|------------------|--------------------|------------------|------------|-------------------|-----------|-------|
|                  | Measurement        | Micro Log Normal |            | Micro Log Lateral |           | Units |
|                  |                    | Shop             | Field      | Shop              | Field     |       |
|                  | Tool Zero          | -0.09            | -0.09      | 0.01              | 0.00      | ohmm  |
|                  | Internal Reference | 20.31            | 20.56      | 23.82             | 24.15     | ohmm  |
|                  | Summary            |                  |            |                   |           |       |
| Signal           | Shop               | Field            | Difference |                   | Tolerance |       |
| Microlog Normal  | 20.31              | 20.56            | -0.25      |                   | +/- 0.80  |       |
| Microlog Lateral | 23.82              | 24.15            | -0.33      |                   | +/- 0.80  |       |

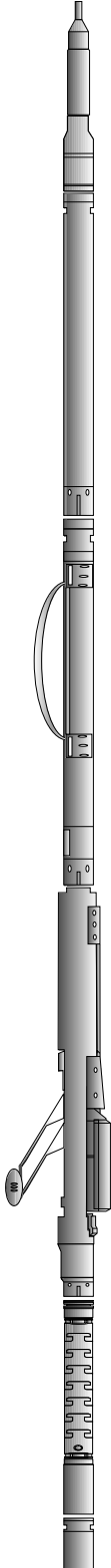
|                     |      |       |      |            |           |       |
|---------------------|------|-------|------|------------|-----------|-------|
| CALIBRATION SUMMARY |      |       |      |            |           |       |
| Sensor              | Shop | Field | Post | Difference | Tolerance | Units |



|                                                               |       |       |       |       |                          |      |
|---------------------------------------------------------------|-------|-------|-------|-------|--------------------------|------|
| Gamma Ray Calibrator                                          | 268.6 | 265.3 | ----- | 3.3   | +/- 9.00                 | api  |
| Microlog Pad-10960494                                         |       |       |       |       |                          |      |
| MicroLog Normal                                               | 20.31 | 20.56 | ----- | -0.25 | +/-0.80                  | ohmm |
| MicroLog Lateral                                              | 23.82 | 24.15 | ----- | -0.33 | +/-0.80                  | ohmm |
| Data: ROSE_3_1\0001 QUAD_BSAT\003 03-Aug-14 09:56 Up @4803.8f |       |       |       |       | Date: 03-Aug-14 11:56:26 |      |

HALLIBURTON

## TOOL STRING DIAGRAM REPORT

| Description                        | Overbody Description                                                | O.D.                                           | Diagram                                                                            | Sensors @ Delays                                                | Length   | Accumulated Length |
|------------------------------------|---------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------|--------------------|
| CH_HOS-590_RED<br>37.50 lbs        |                                                                     | Ø 2.750 in →                                   |  | ← Temperature @ 73.25 ft                                        | 3.03 ft  | 74.27 ft           |
| XOHD-12345678<br>20.00 lbs         |                                                                     | Ø 2.750 in →<br>Ø 3.625 in →                   |                                                                                    |                                                                 | 0.95 ft  | 71.25 ft           |
|                                    |                                                                     |                                                |                                                                                    |                                                                 |          | 70.30 ft           |
| GTET-11013114<br>165.00 lbs        |                                                                     | Ø 3.625 in →                                   |                                                                                    | ← GammaRay @ 64.23 ft                                           | 8.52 ft  |                    |
|                                    |                                                                     |                                                |                                                                                    |                                                                 |          | 61.78 ft           |
| DSNT-11019641_PLEASE<br>174.00 lbs | DSN Decentralizer-10993115<br>6.60 lbs                              | Ø 5.000 in* →<br>Ø 3.625 in →                  |                                                                                    | ← DSN Far @ 54.84 ft<br>← DSN Near @ 54.09 ft                   | 9.69 ft  |                    |
|                                    |                                                                     |                                                |                                                                                    |                                                                 |          | 52.09 ft           |
| SDLT-10960494<br>360.00 lbs        | SDLT Pad-10844774<br>65.00 lbs<br>Microlog Pad-10960494<br>8.00 lbs | Ø 4.500 in →<br>Ø 4.750 in* →<br>Ø 4.750 in* → |                                                                                    | Microlog @ 44.28 ft<br>SDL Caliper @ 44.09 ft<br>SDL @ 44.08 ft | 10.81 ft |                    |
|                                    |                                                                     |                                                |                                                                                    |                                                                 |          | 41.28 ft           |
| IQ Flex-00000001<br>140.00 lbs     |                                                                     | Ø 3.625 in →                                   |                                                                                    |                                                                 | 5.67 ft  |                    |
|                                    |                                                                     |                                                |                                                                                    |                                                                 |          | 35.61 ft           |



|         |                       |       |        |
|---------|-----------------------|-------|--------|
| COMPANY | HARTMAN OIL CO., INC. |       |        |
| WELL    | ROSE #3-1             |       |        |
| FIELD   | AMERICAN BEAUTY       |       |        |
| COUNTY  | WICHITA COUNTY        | STATE | KANSAS |

**HALLIBURTON**

MICROLOG  
LOG