

# HALLIBURTON

## MICRO LOG

|                                                                |                                                                                                                                                                                  |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| COMPANY<br>WELL<br>FIELD/BLOCK<br>COUNTY<br>STATE              | <b>OXY USA</b><br><b>DRUSSEL E-1</b><br><b>HUGOTON GAS AREA</b><br><b>FINNEY</b><br><b>KANSAS</b>                                                                                |
| COMPANY<br>WELL<br>FIELD/BLOCK<br>COUNTY                       | <b>OXY USA</b><br><b>DRUSSEL E-1</b><br><b>HUGOTON GAS AREA</b><br><b>FINNEY</b>                                                                                                 |
| STATE<br>Sect. 36<br>Twp. 25S<br>Rge. 33W                      | <b>STATE KANSAS</b>                                                                                                                                                              |
| Permanent Datum<br>Log measured from<br>Drilling measured from | API No. 15055222130000<br>Location 690' FSL 1300' FWL<br>LAT: 37.831511° N LONG: 100.890960° W<br>X 1307808.42 Y 433034.0<br>Elev. 2896.0 ft<br>D.F. 2907.0 ft<br>G.L. 2896.0 ft |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date<br>Run No.<br>Depth - Driller<br>Depth - Logger<br>Bottom - Logged Interval<br>Top - Logged Interval<br>Casing - Driller<br>Casing - Logger<br>Bit Size<br>Type Fluid in Hole<br>Density<br>PH<br>Source of Sample<br>Rm @ Meas. Temperature<br>Rmf @ Meas. Temperature<br>Rmc @ Meas. Temperature<br>Source Rmf<br>Rm @ BHT<br>Time Since Circulation<br>Time on Bottom<br>Max. Rec. Temperature<br>Equipment<br>Recorded By<br>Witnessed By | 06-May-13<br>ONE<br>5361.00 ft<br>5365.0 ft<br>5321.0 ft<br>3900.0 ft<br>8.625 in @ 1944.0 ft<br>1944.0 ft<br>7.875 in @<br>WATER BASED<br>8.6 ppg<br>10.30 pH<br>FLOWMINE<br>1.800 ohmm @ 75.00 degF<br>1.50 ohmm @ 75.00 degF<br>2.100 ohmm @ 75.00 degF<br>MEASURED<br>1.04 ohmm @ 135.0 degF<br>8.0 hr<br>06-May-13 01:57<br>135.0 degF @ 5365.0 ft<br>10782954<br>THOMAS HYDE<br>A. SERNA<br>T. HEDRICK |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Fold here

Service Ticket No.: 900370204      API Serial No.: 15055222130000      PGM Version: WL INSITE R3.8.4 (Build 5)

| 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                        | MICRO           | RUBBER        | ADJ.            | N/A   |
| Rmc @ Meas. Temp.                       |            | @ |  | @ |                            | 10673803        |               |                 |       |
| Source Rmf                              | Rmc        |   |  |   |                            |                 |               |                 |       |
| Rm @ BHT                                |            | @ |  | @ |                            |                 |               |                 |       |
| Rmf @ BHT                               |            | @ |  | @ |                            |                 |               |                 |       |
| Rmc @ BHT                               |            | @ |  | @ |                            |                 |               |                 |       |

| EQUIPMENT DATA     |          |              |  |             |  |             |  |
|--------------------|----------|--------------|--|-------------|--|-------------|--|
| GAMMA              |          | ACOUSTIC     |  | DENSITY     |  | NEUTRON     |  |
| Run No.            | ONE      | Run No.      |  | Run No.     |  | Run No.     |  |
| Serial No.         | 10811258 | Serial No.   |  | Serial No.  |  | Serial No.  |  |
| Model No.          | GTET     | Model No.    |  | Model No.   |  | Model No.   |  |
| Diameter           | 3.625"   | No. of Cent. |  | Diameter    |  | Diameter    |  |
| Detector Model No. | T-102    | Spacing      |  | Log Type    |  | Log Type    |  |
| Type               | SCINT    |              |  | Source Type |  | Source Type |  |
| Length             | 8"       | LSA [Y/N]    |  | Serial No.  |  | Serial No.  |  |
| Distance to Source | 10'      | FWDA [Y/N]   |  | Strength    |  | Strength    |  |

LOGGING DATA

| GENERAL |       |      | GAMMA  |       | ACOUSTIC |       | DENSITY |        |       | NEUTRON |        |       |   |        |
|---------|-------|------|--------|-------|----------|-------|---------|--------|-------|---------|--------|-------|---|--------|
| Run No. | Depth |      | Speed  | Scale |          | Scale |         | Matrix | Scale |         | Matrix | Scale |   | Matrix |
|         | From  | To   | ft/min | L     | R        | L     | R       |        | L     | R       |        | L     | R |        |
| ONE     | 5365  | 3900 | REC    | 0     | 150      |       |         |        |       |         |        |       |   |        |

DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING

CHLORIDES REPORTED AT 600 MG/L

LCM REPORTED AT 2 PPB

TODAY'S CREW V. JAIME J, ALRIGHT

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KANSAS 620-624-8123

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



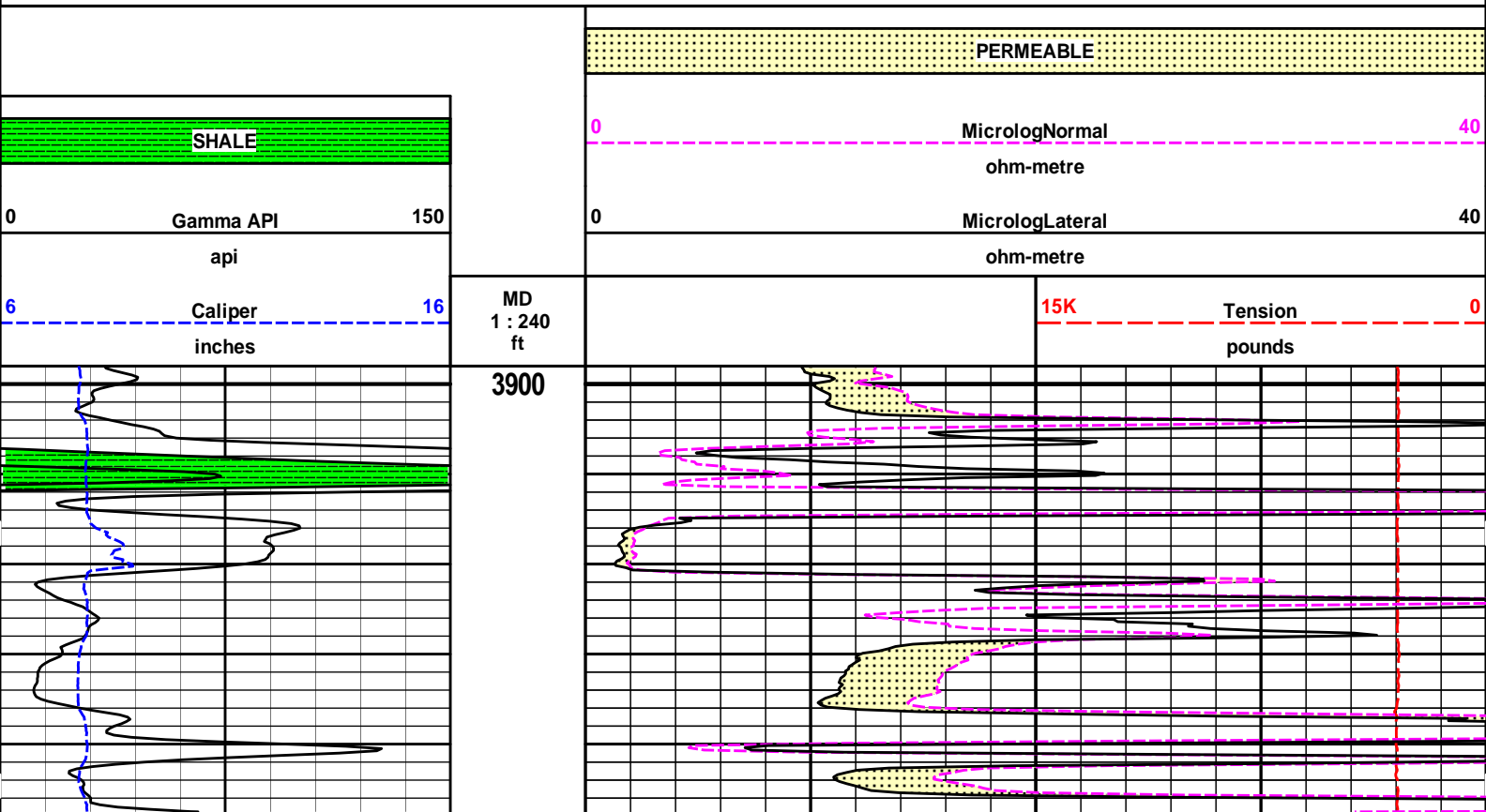
Plot Time: 06-May-13 10:23:00

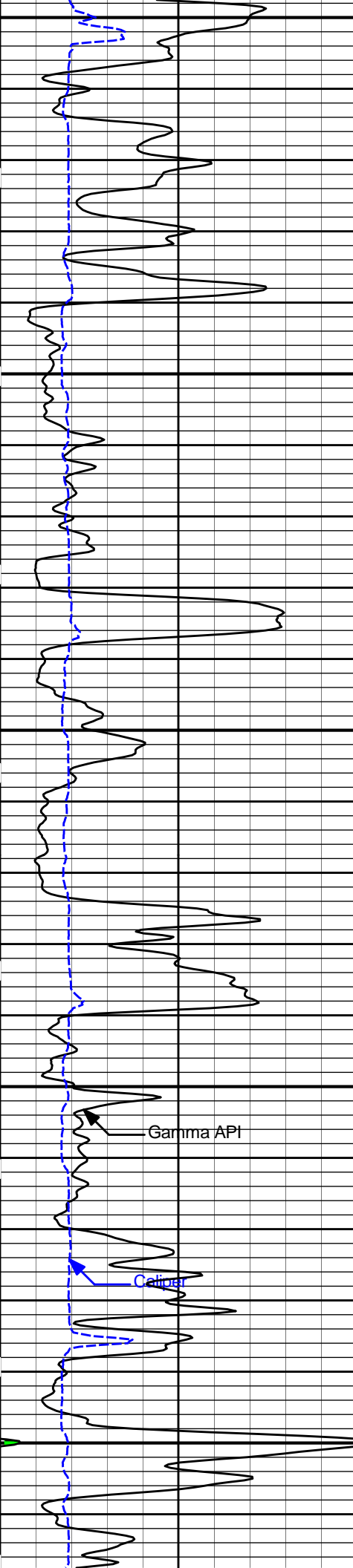
Plot Range: 3898 ft to 5368.33 ft

Data: DRUSSEL\_E1\Well Based\DAQ-0001-003\

Plot File: \\LOCAL-DRUSSEL\_E1\0001 SP-GTET-DSN-SDL-ACRT-CHMICROMicrolog\_IQ\_5\_main\_lib

## 5 INCH MAIN LOG



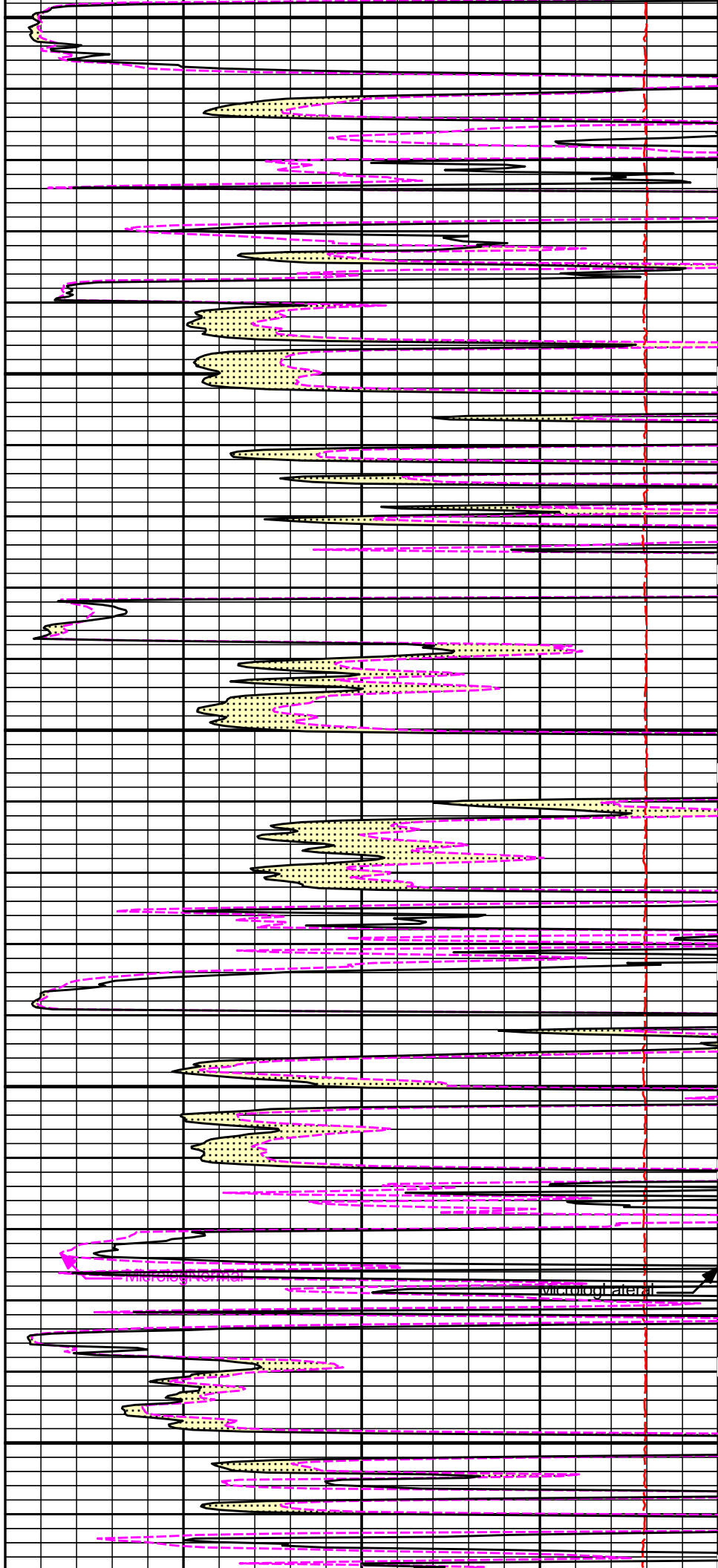


4000

4100

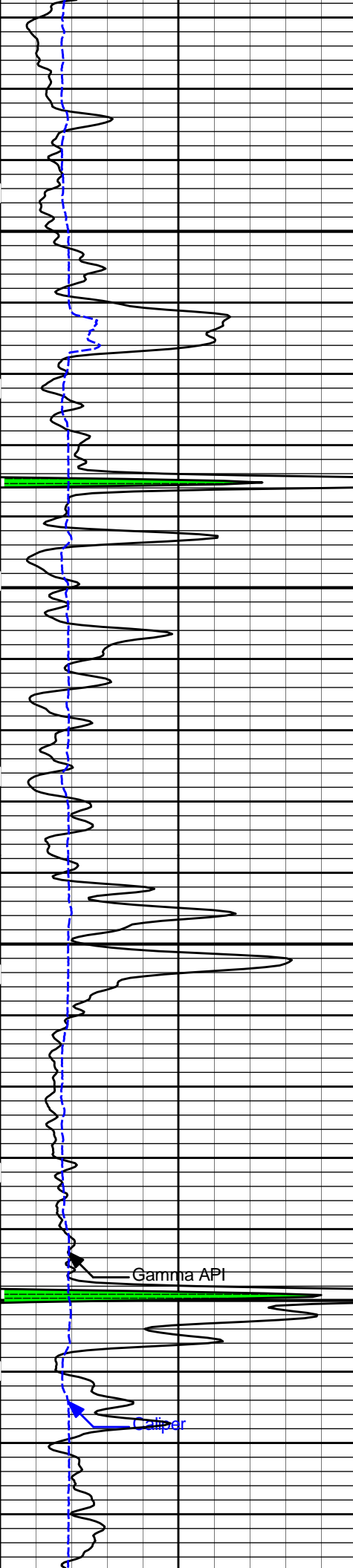
Gamma API

Caliper



Microlog Lateral

Microlog

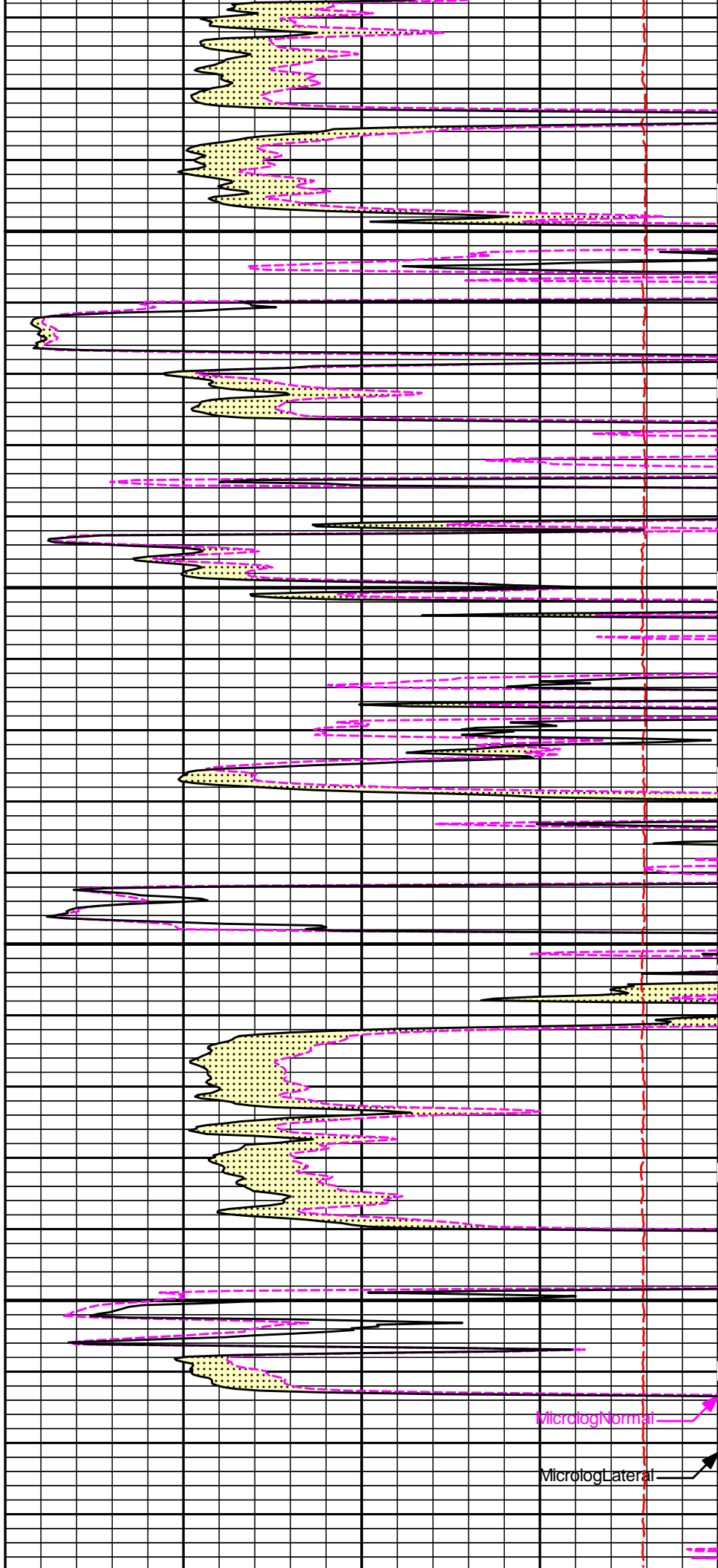


4200

4300

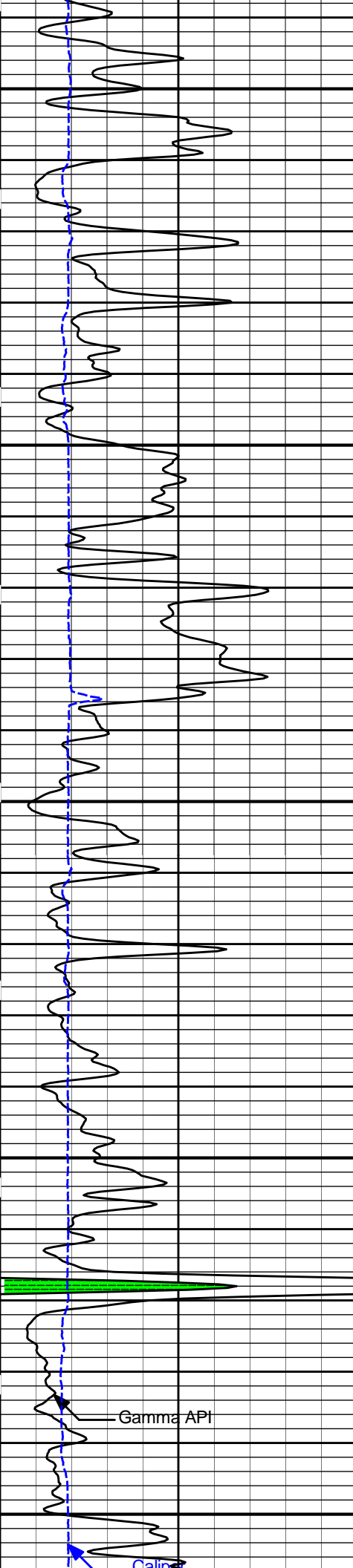
Gamma API

Caliper



MicrologNormal

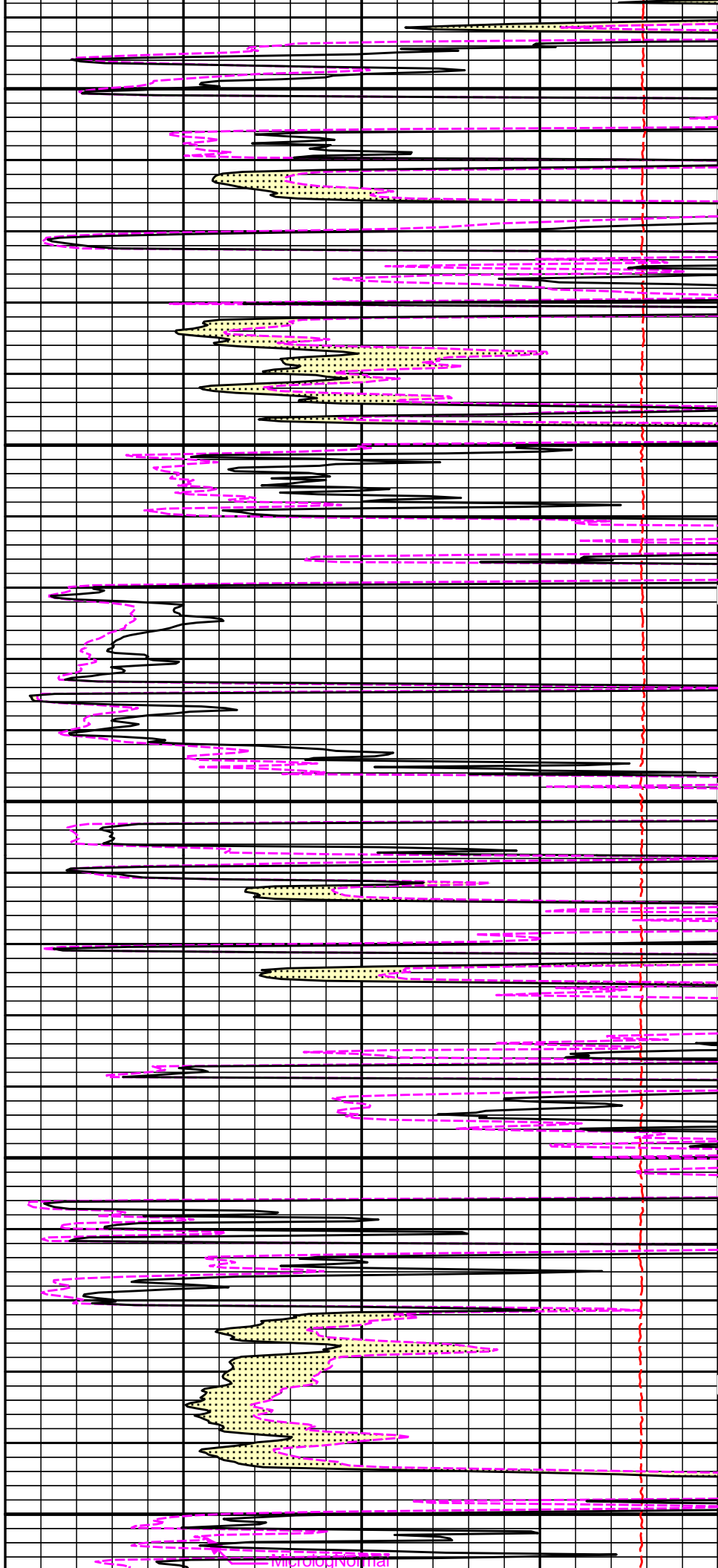
MicrologLateral



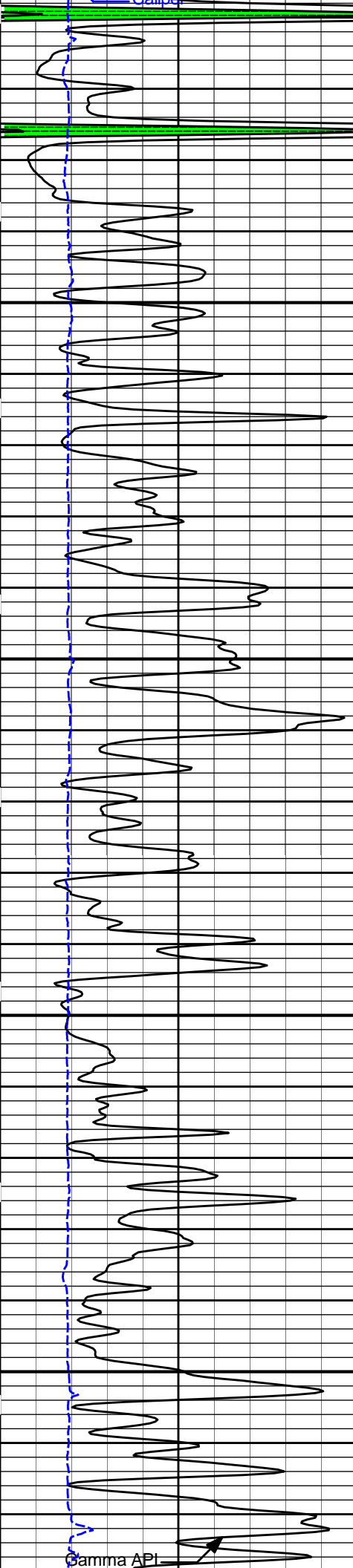
4400

4500

4600

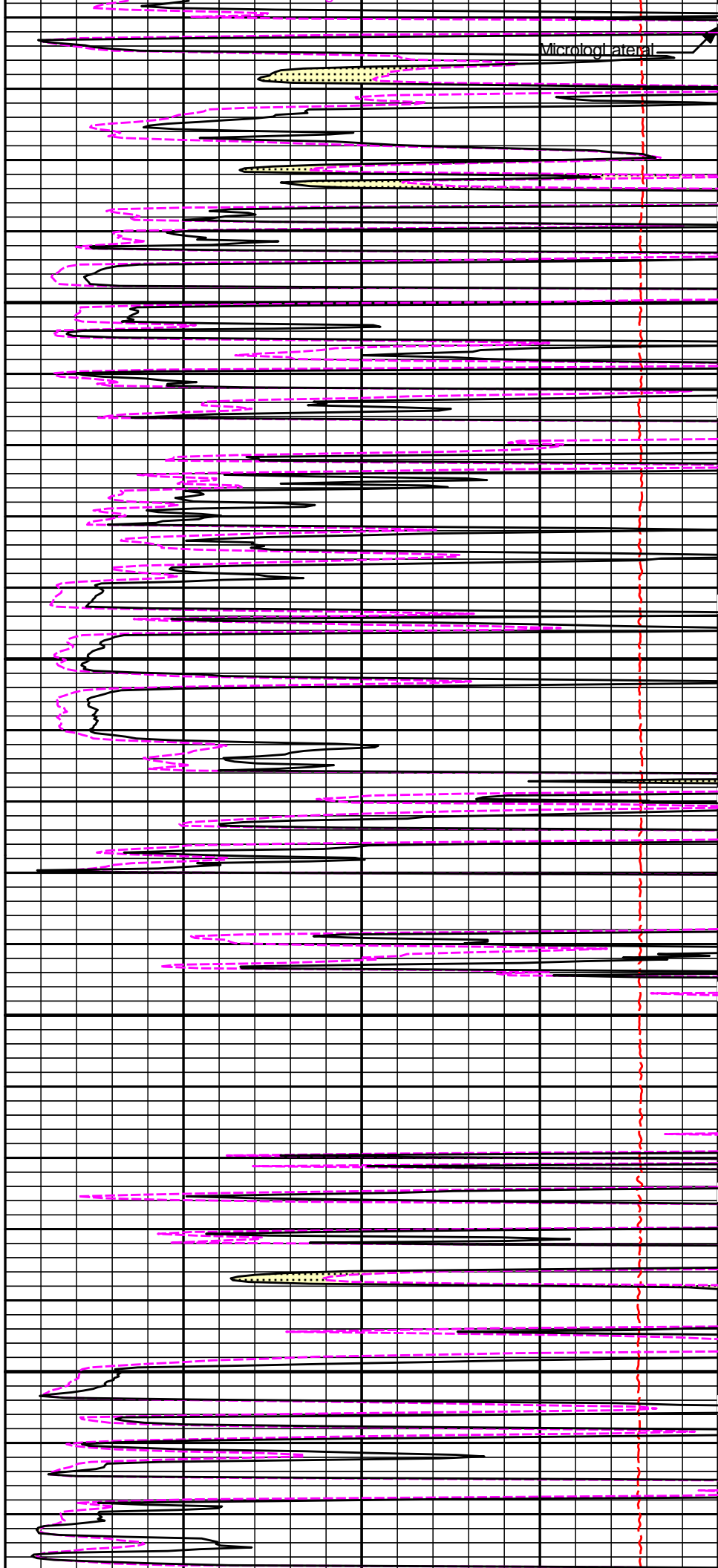


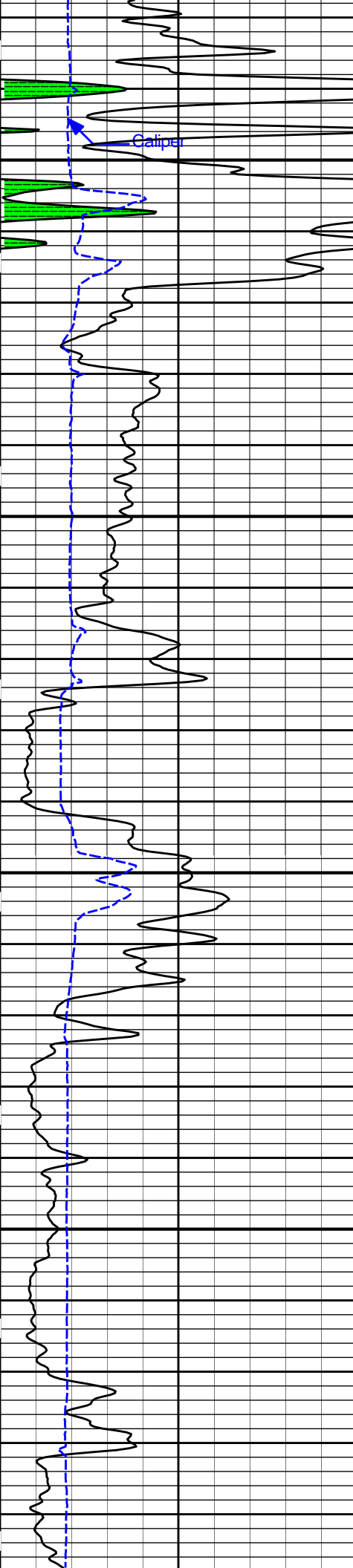
ImprobNormal



4700

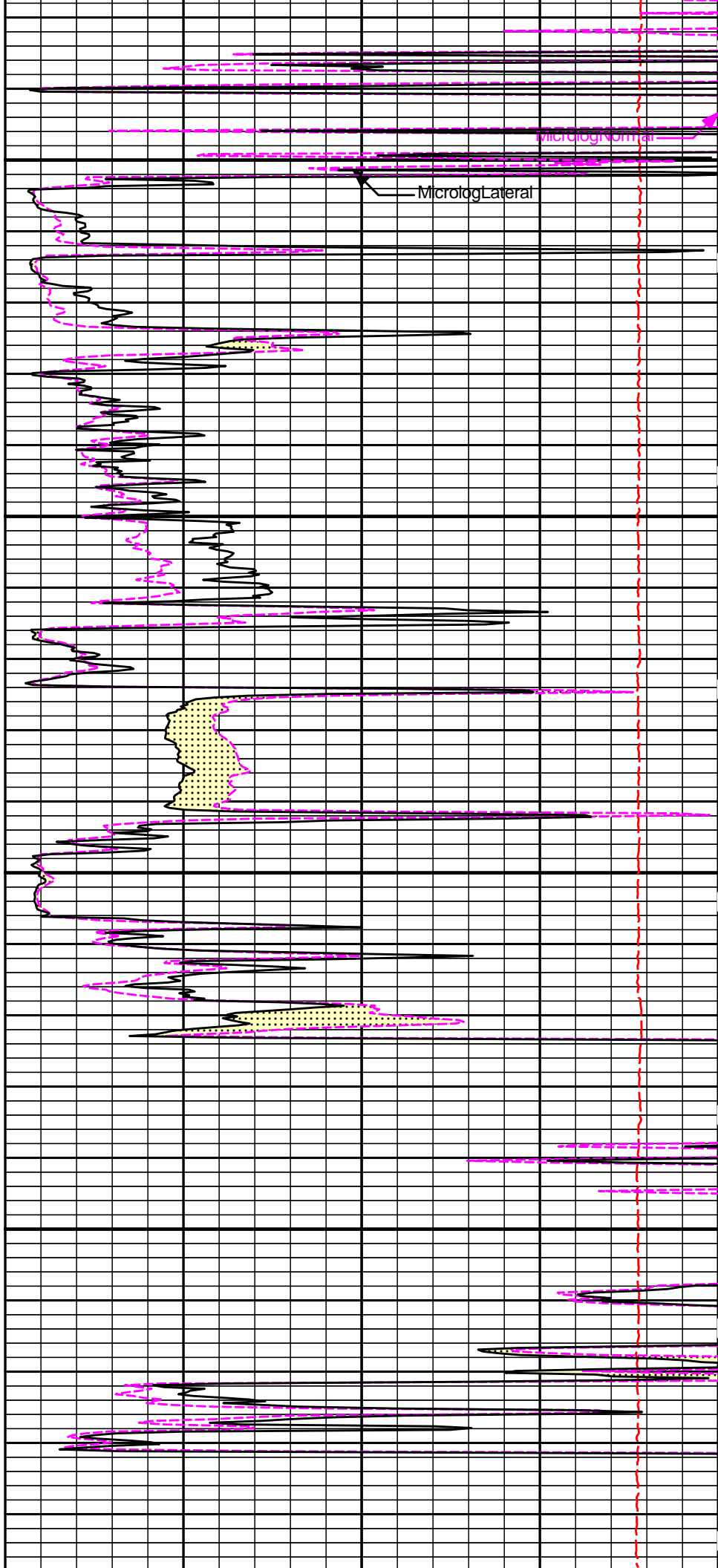
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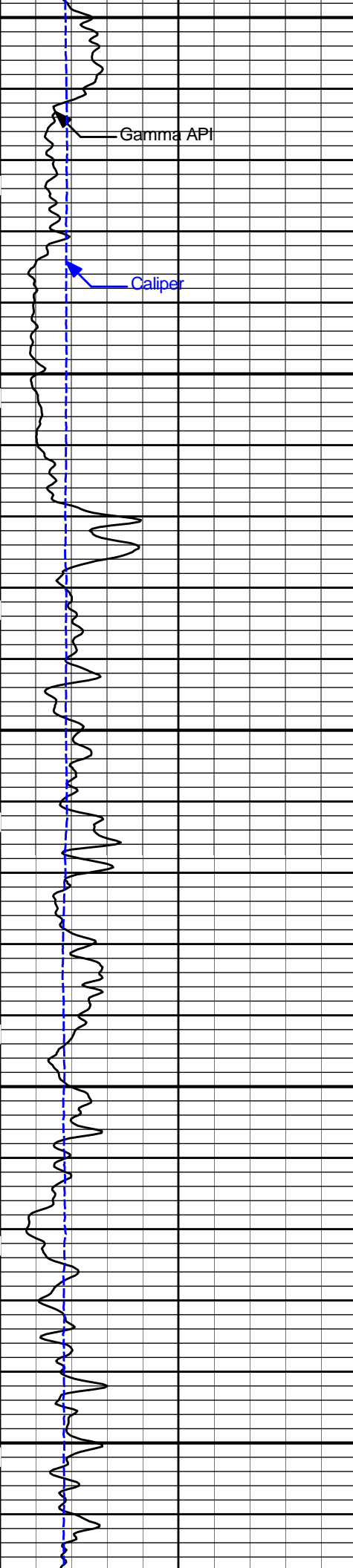




4900

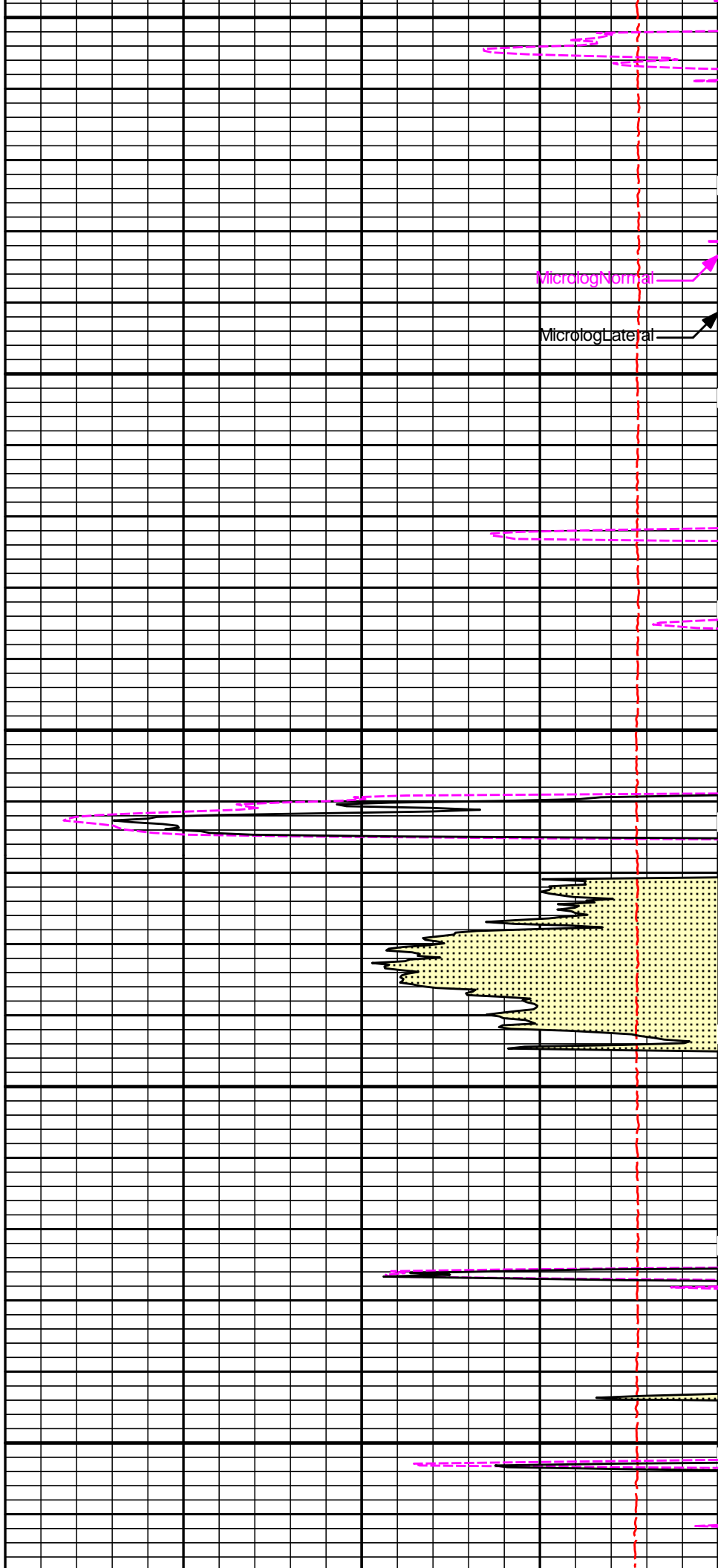
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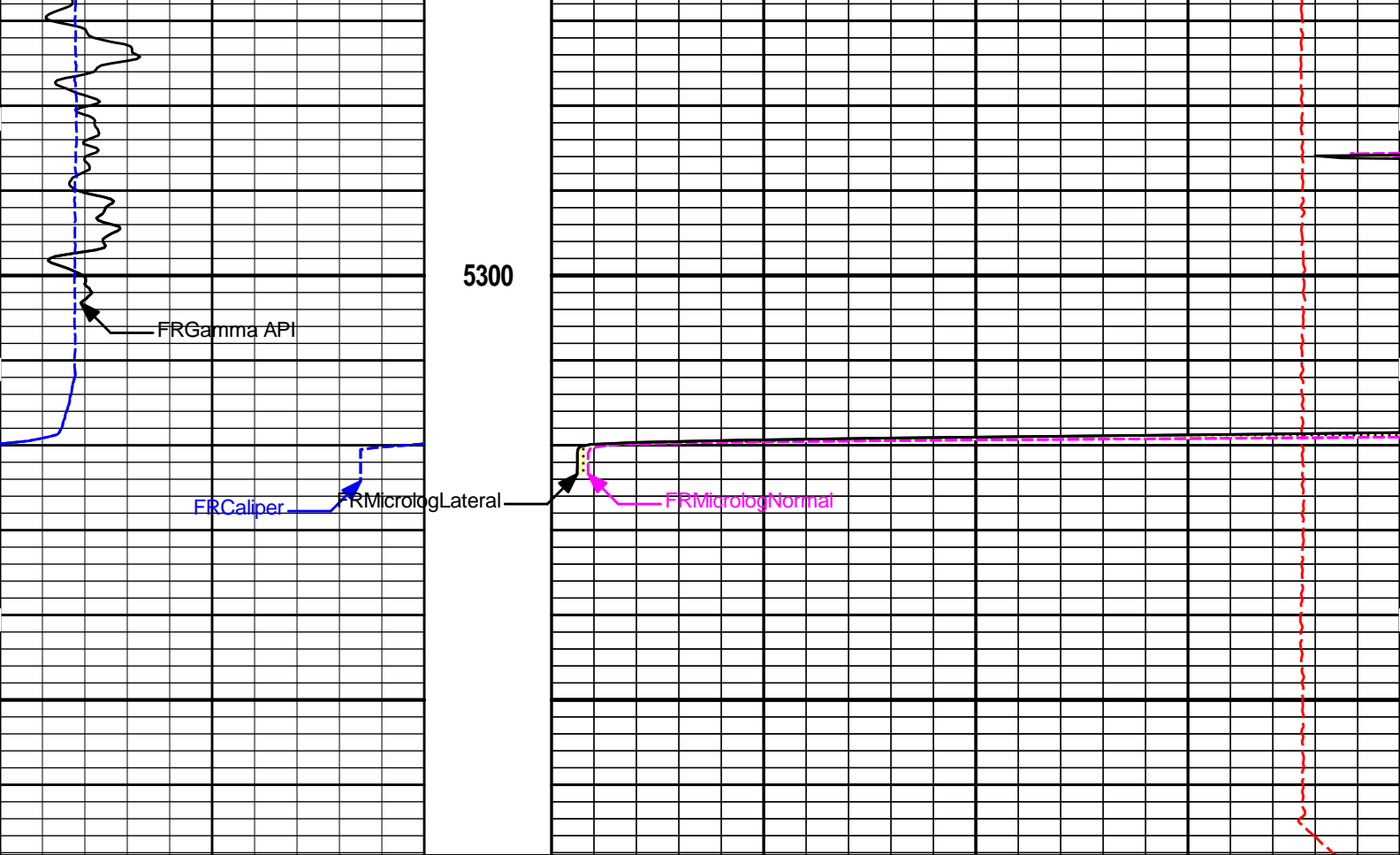


5100

5200







|   |           |     |         |     |                 |    |
|---|-----------|-----|---------|-----|-----------------|----|
| 6 | Caliper   | 16  | MD      | 15K | Tension         | 0  |
|   | inches    |     | 1 : 240 |     | pounds          |    |
|   |           |     | ft      |     |                 |    |
| 0 | Gamma API | 150 |         | 0   | MicrologLateral | 40 |
|   | api       |     |         |     | ohm-metre       |    |
|   | SHALE     |     |         | 0   | MicrologNormal  | 40 |
|   |           |     |         |     | ohm-metre       |    |
|   |           |     |         |     | PERMEABLE       |    |

**HALLIBURTON**

Plot Time: 06-May-13 10:23:18  
 Plot Range: 3898 ft to 5368.33 ft  
 Data: DRUSSEL\_E1\Well Based\DAQ-0001-003\  
 Plot File: \\-LOCAL-DRUSSEL\_E1\0001 SP-GTET-DSN-SDL-ACRT-CHMICRO\Microlog\_IQ\_5\_main\_lib

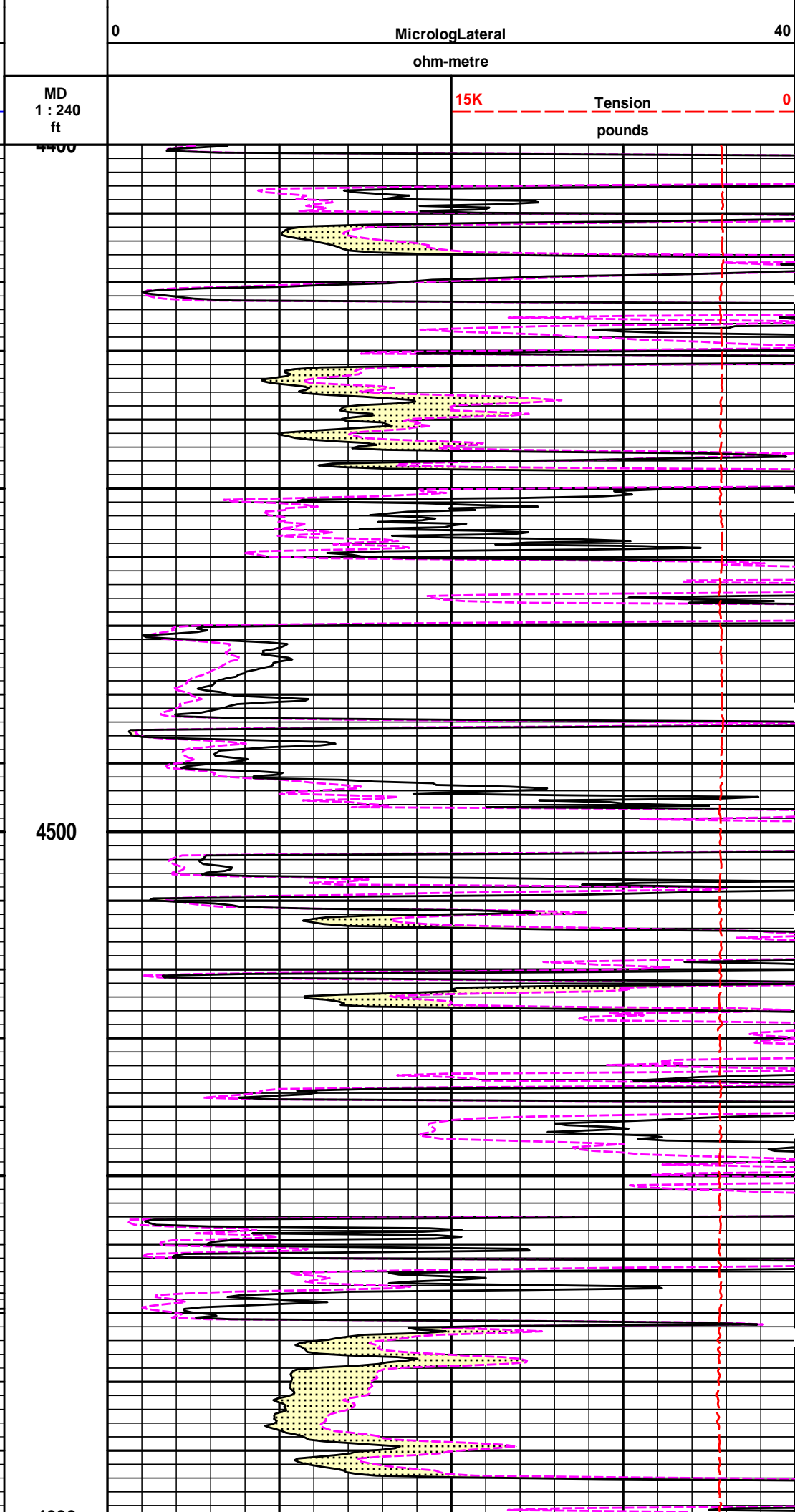
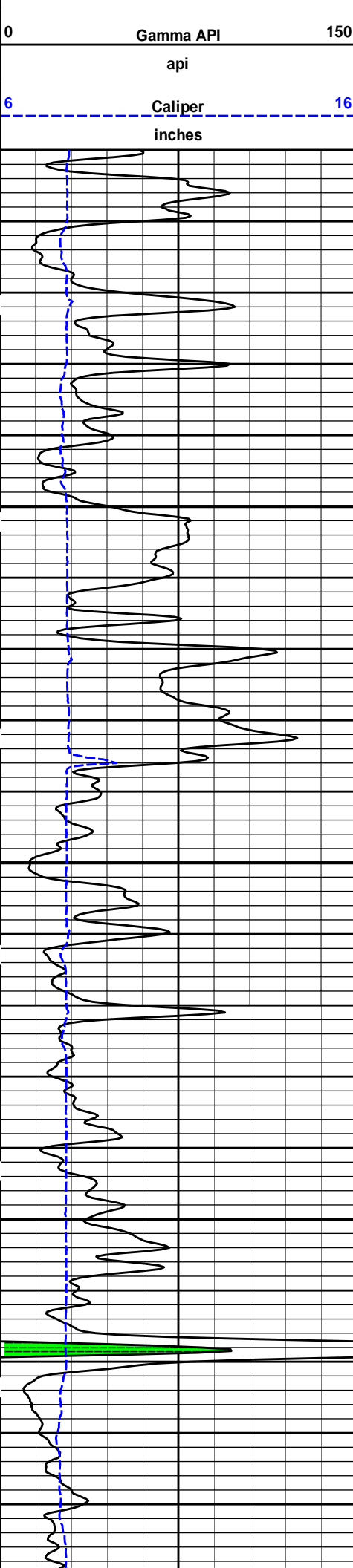
## 5 INCH MAIN LOG

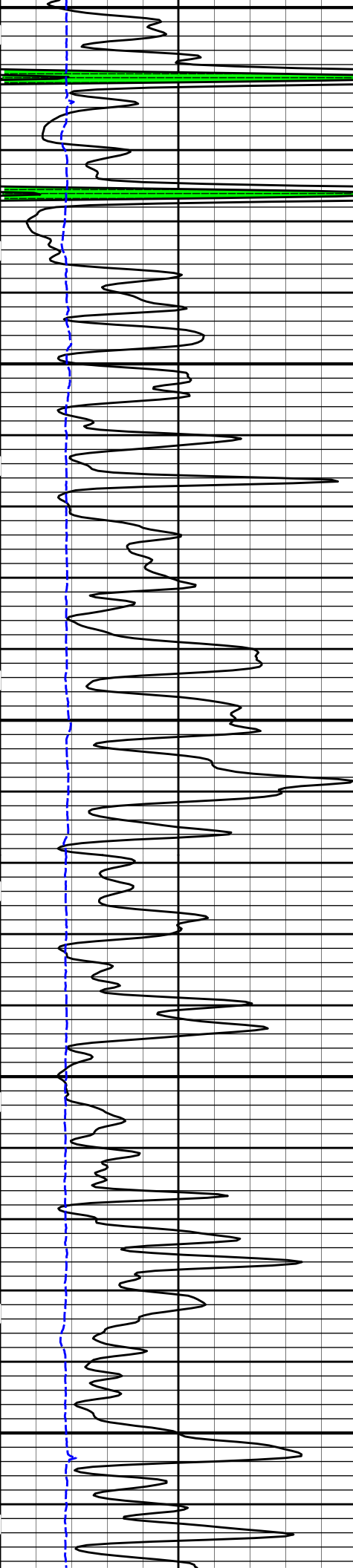
**HALLIBURTON**

Plot Time: 06-May-13 10:23:19  
 Plot Range: 4400 ft to 5368.83 ft  
 Data: DRUSSEL\_E1\Well Based\DAQ-0001-002\  
 Plot File: \\-LOCAL-DRUSSEL\_E1\0001 SP-GTET-DSN-SDL-ACRT-CHMICRO\Microlog\_IQ\_5\_rep\_lib

## REPEAT SECTION

|  |       |  |  |   |                |    |
|--|-------|--|--|---|----------------|----|
|  |       |  |  |   | PERMEABLE      |    |
|  |       |  |  | 0 | MicrologNormal | 40 |
|  | SHALE |  |  |   | ohm-metre      |    |

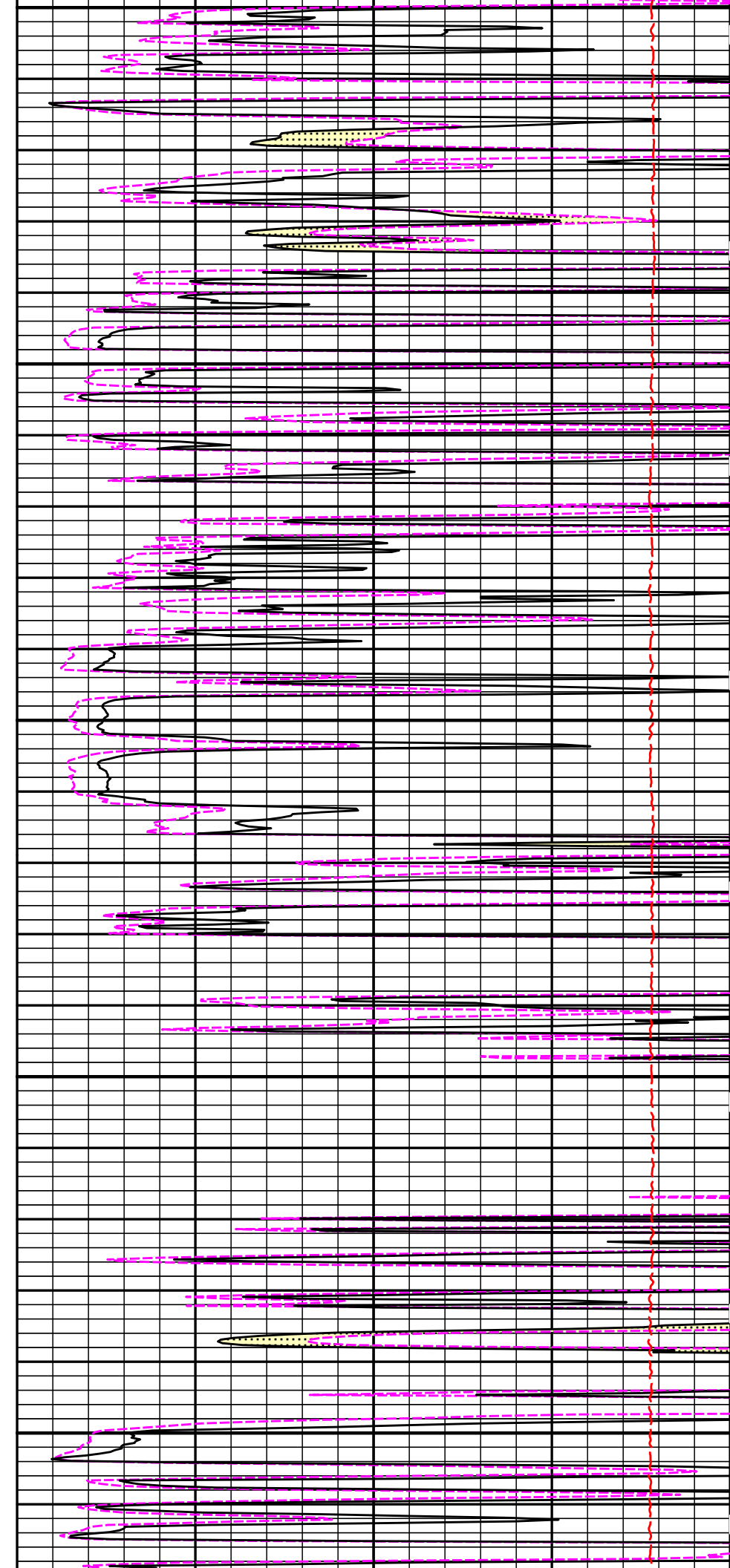


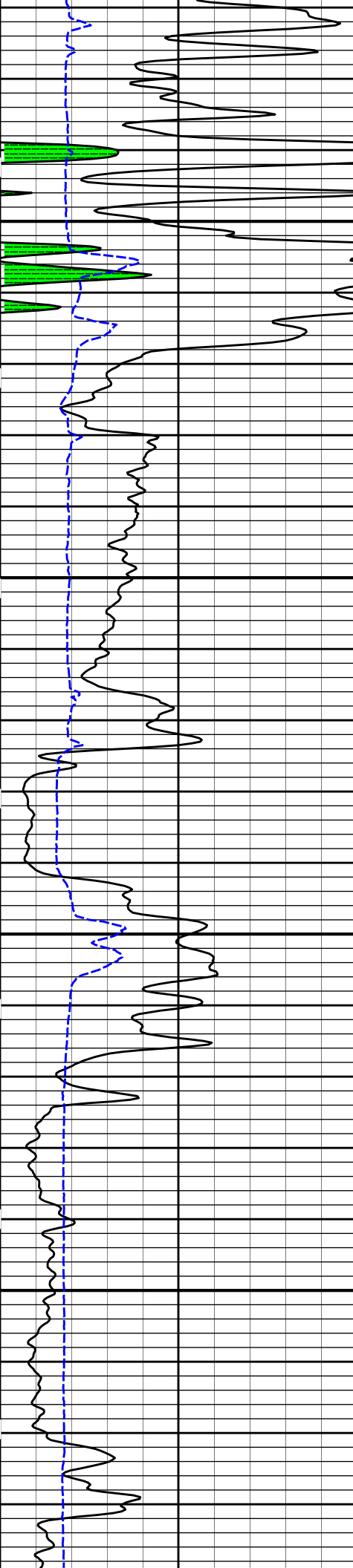


4600

4700

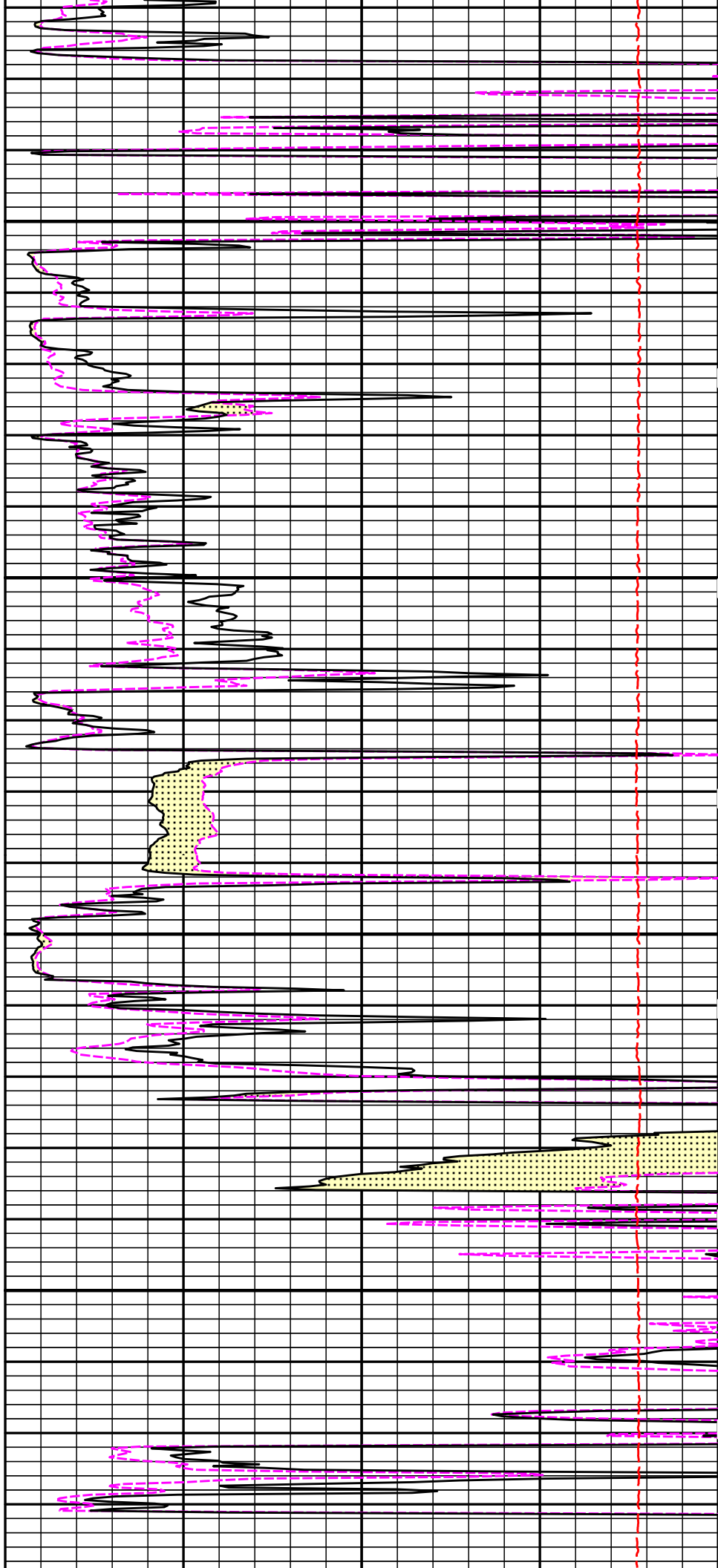
4800

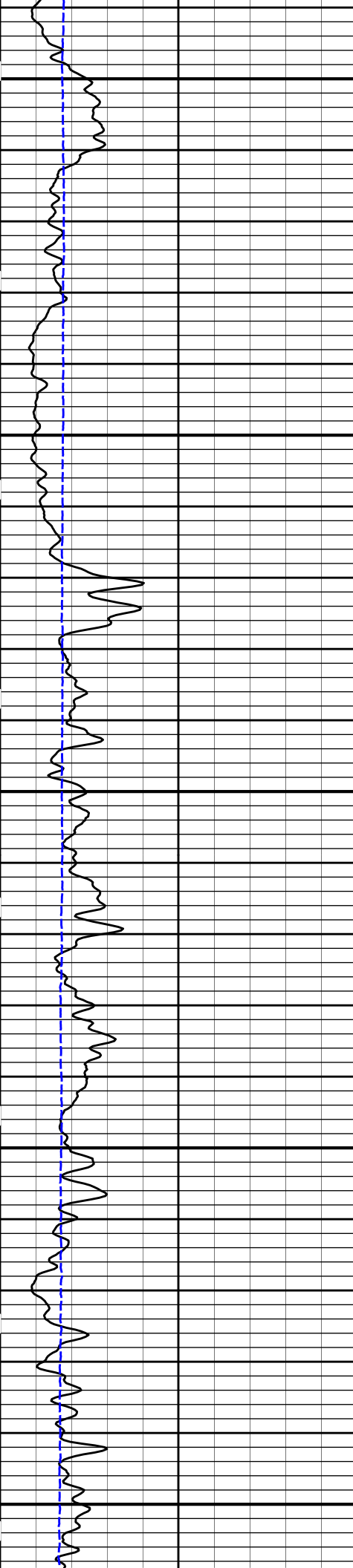




4900

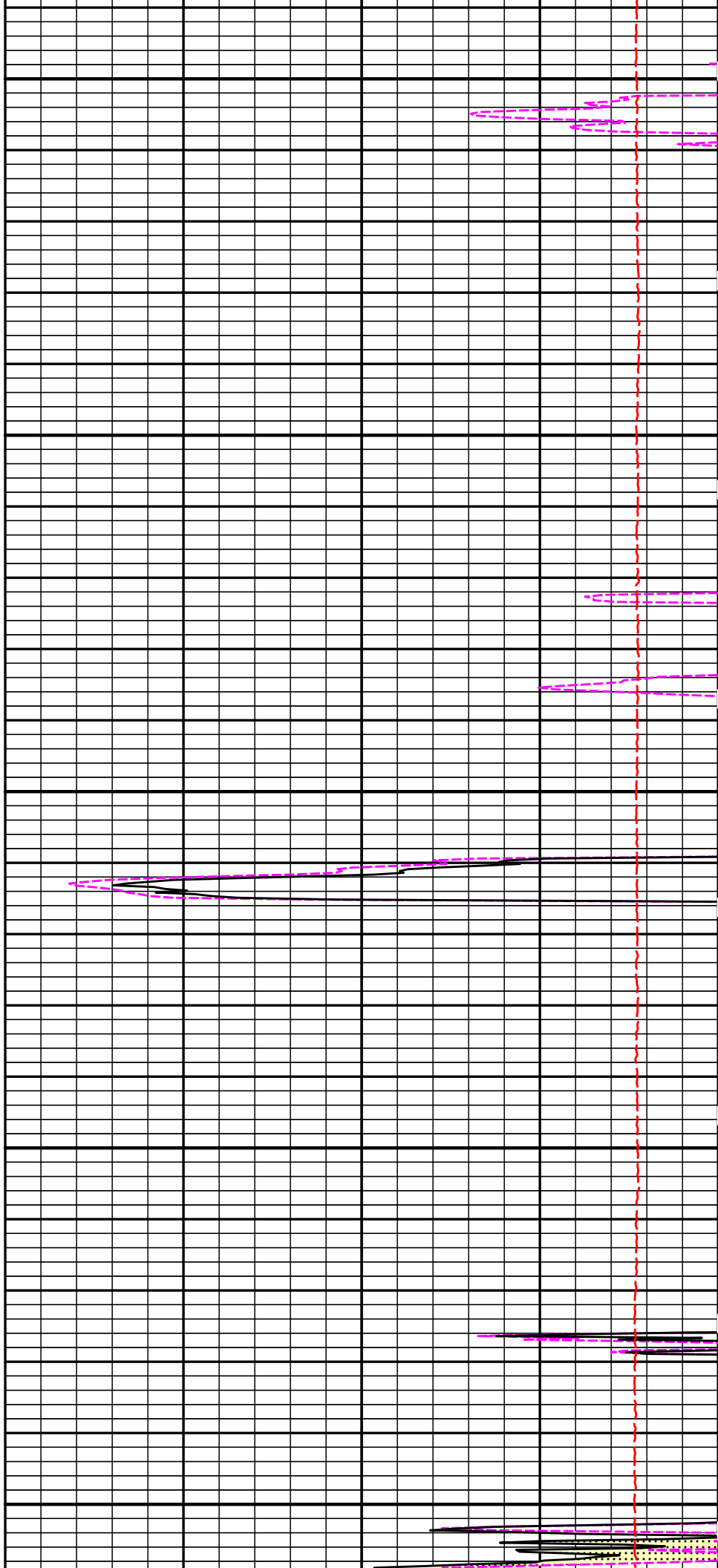
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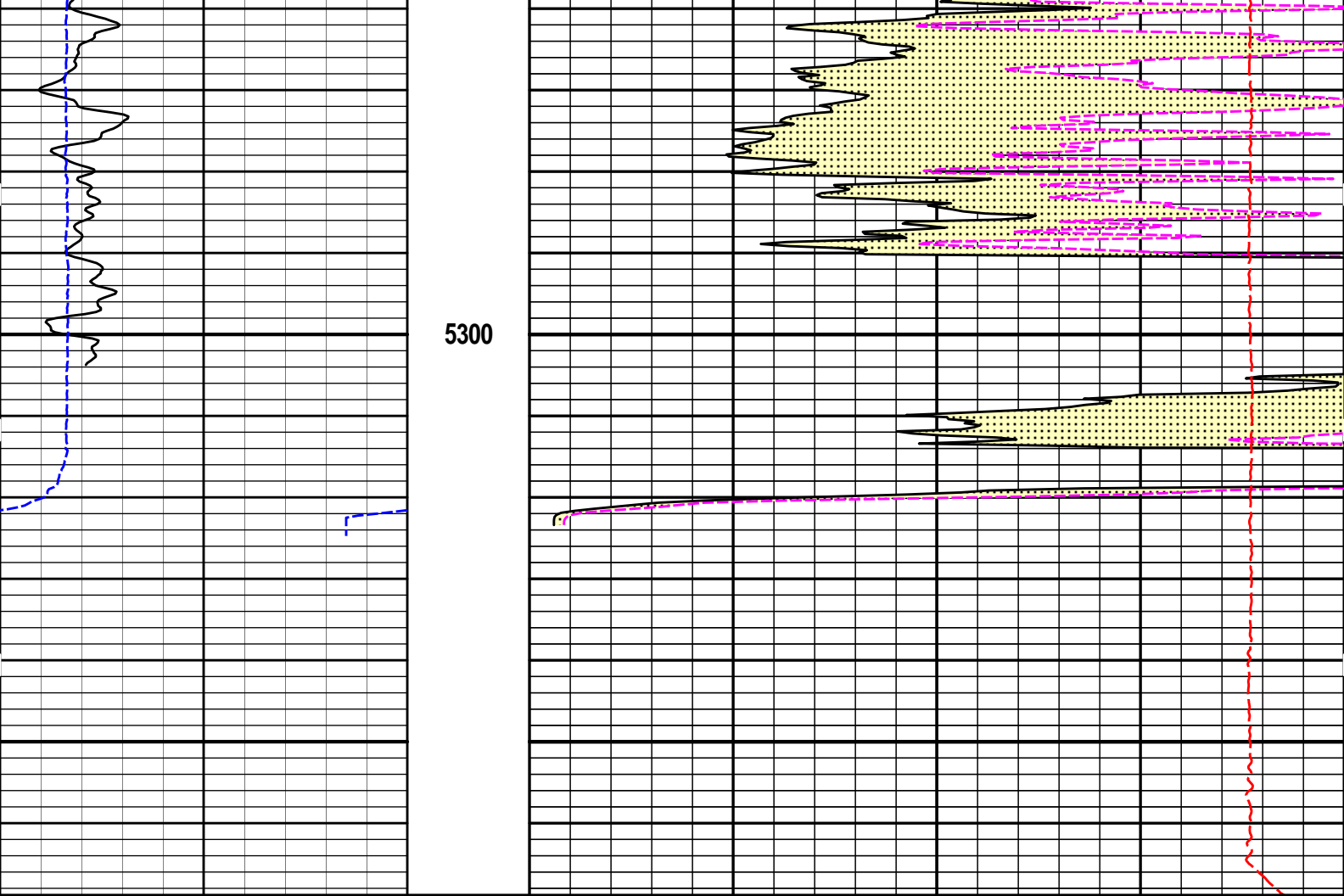




5100

5200





|   |                   |     |                     |     |                              |    |
|---|-------------------|-----|---------------------|-----|------------------------------|----|
| 6 | Caliper<br>inches | 16  | MD<br>1 : 240<br>ft | 15K | Tension<br>pounds            | 0  |
| 0 | Gamma API<br>api  | 150 |                     | 0   | MicrologLateral<br>ohm-metre | 40 |
|   | SHALE             |     |                     | 0   | MicrologNormal<br>ohm-metre  | 40 |
|   |                   |     |                     |     | PERMEABLE                    |    |

**HALLIBURTON**

Plot Time: 06-May-13 10:23:26  
 Plot Range: 4400 ft to 5368.83 ft  
 Data: DRUSSEL\_E1\Well Based\DAQ-0001-002\  
 Plot File: \\-LOCAL-DRUSSEL\_E1\0001 SP-GTET-DSN-SDL-ACRT-CHMICRO\Microlog\_IQ\_5\_rep.lib

**REPEAT SECTION**

**HALLIBURTON**

**TOOL STRING DIAGRAM REPORT**

| Description             | Overbody Description | O.D.       | Diagram | Sensors @ Delays       | Length  | Accumulated Length   |
|-------------------------|----------------------|------------|---------|------------------------|---------|----------------------|
| CH_HOS-954<br>37.50 lbs |                      | ø 2.750 in |         | Temperature @ 76.74 ft | 3.03 ft | 77.77 ft<br>74.74 ft |

XOHD-0000001  
20.00 lbs

Ø 2.750 in  
Ø 3.625 in

0.95 ft  
73.79 ft

SP Sub-12345678  
60.00 lbs

Ø 3.625 in

← SP @ 72.01 ft

3.74 ft  
70.05 ft

GTET-10811258  
165.00 lbs

Ø 3.625 in

← GammaRay @ 63.99 ft

8.52 ft  
61.53 ft

DSN Decentralizer-  
10755066  
6.60 lbs  
DSNT-10735145  
174.00 lbs

Ø 5.000 in\*  
Ø 3.625 in

← DSN Far @ 54.59 ft  
← DSN Near @ 53.84 ft

9.69 ft  
51.84 ft

SDLT-10673803  
360.00 lbs  
SDLT Pad-10673790  
65.00 lbs  
Microlog Pad-10673803  
8.00 lbs

Ø 4.500 in  
Ø 4.750 in\*  
Ø 4.750 in\*

Microlog @ 44.03 ft  
SDL Caliper @ 43.84 ft  
SDL @ 43.83 ft

10.81 ft  
41.03 ft

IQ Flex-954  
140.00 lbs

Ø 3.625 in

5.67 ft  
35.36 ft

Centralizer 25-0000001  
8.00 lbs

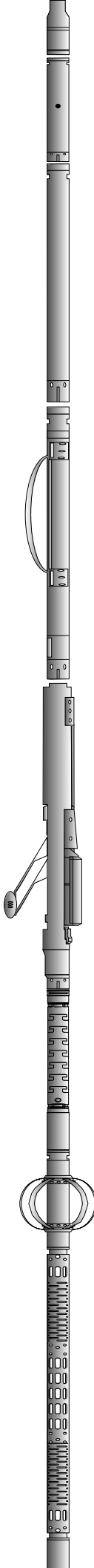
Ø 4.000 in\*

BSAT-10747684  
300.00 lbs

Ø 3.625 in

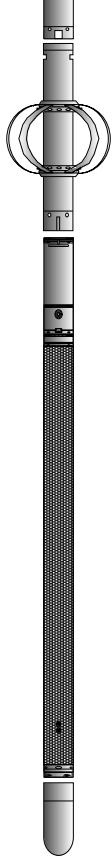
← Sonic Receivers @ 26.84 ft

15.77 ft



ACRt Instrument- Centralizer 25-00000003  
 10929776 8.00 lbs  
 50.00 lbs

Ø 4.000 in\*  
 Ø 3.625 in



19.58 ft  
 5.03 ft  
 14.55 ft  
 14.22 ft  
 0.33 ft  
 0.00 ft

← Mud Resistivity @ 13.19 ft

← ACRt @ 9.21 ft

ACRt Sonde- 10929775  
 200.00 lbs

Ø 3.625 in

Bull Nose-001  
 5.00 lbs

Ø 2.750 in

| Mnemonic | Tool Name                                             | Serial Number | Weight (lbs) | Length (ft) | Accumulated Length (ft) | Max. Log. Speed (fpm) |
|----------|-------------------------------------------------------|---------------|--------------|-------------|-------------------------|-----------------------|
| CH_HOS   | Hostile Cable Head with Load Cell                     | 954           | 37.50        | 3.03        | 74.74                   | 300.00                |
| XOHD     | Hostile to Dits Cross Over                            | 00000001      | 20.00        | 0.95        | 73.79                   | 300.00                |
| SP       | SP Sub                                                | 12345678      | 60.00        | 3.74        | 70.05                   | 300.00                |
| GTET     | Gamma Telemetry Tool                                  | 10811258      | 165.00       | 8.52        | 61.53                   | 60.00                 |
| DSNT     | Dual Spaced Neutron                                   | 10735145      | 174.00       | 9.69        | 51.84                   | 60.00                 |
| DCNT     | DSN Decentralizer                                     | 10755066      | 6.60         | 5.13        | * 55.17                 | 300.00                |
| SDLT     | Spectral Density Tool                                 | 10673803      | 360.00       | 10.81       | 41.03                   | 60.00                 |
| MICP     | Microlog Pad                                          | 10673803      | 8.00         | 1.00        | * 43.53                 | 60.00                 |
| SDLP     | Density Insite Pad                                    | 10673790      | 65.00        | 2.55        | * 43.24                 | 60.00                 |
| IQF      | IQ Flex tool                                          | 954           | 140.00       | 5.67        | 35.36                   | 300.00                |
| BSAT     | Borehole Sonic Array Tool                             | 10747684      | 300.00       | 15.77       | 19.58                   | 60.00                 |
| OBCEN    | Centralizer - 25 in. Overbody                         | 00000001      | 8.00         | 2.08        | * 32.40                 | 300.00                |
| ACRt     | Array Compensated True Resistivity Instrument Section | 10929776      | 50.00        | 5.03        | 14.55                   | 300.00                |
| OBCEN    | Centralizer - 25 in. Overbody                         | 00000003      | 8.00         | 2.08        | * 16.04                 | 300.00                |
| ACRt     | Array Compensated True Resistivity Sonde Section      | 10929775      | 200.00       | 14.22       | 0.33                    | 300.00                |
| BLNS     | Bull Nose                                             | 001           | 5.00         | 0.33        | 0.00                    | 300.00                |

**Total** **1,607.10** **77.77**

\* Not included in Total Length and Length Accumulation.

Data: DRUSSEL\_E1\0001 SP-GTET-DSN-SDL-ACRT-CHIDLE

Date: 06-May-13 01:59:55

**HALLIBURTON**

**CALIBRATION REPORT**

**NATURAL GAMMA RAY TOOL SHOP CALIBRATION**

Tool Name: GTET - 10811258

Reference Calibration Date: 15-Apr-13 13:29:21

Engineer: S. INGERSOLL

Calibration Date: 28-Apr-13 06:43:47

Software Version: WL INSITE R3.8.4 (Build 5)

Calibration Version: 1

Calibrator Source S/N: TB-185

Calibrator API Reference: 228.00 api



| Measurement             | Measured | Calibrated | Units |
|-------------------------|----------|------------|-------|
| Background              | 21.8     | 21.9       | api   |
| Background + Calibrator | 252.7    | 253.9      | api   |
| Calibrator              | 230.9    | 232.0      | api   |

### NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 10811258

Reference Calibration Date: 28-Apr-13 06:43:47

Engineer: THOMAS HYDE

Calibration Date: 06-May-13 01:47:31

Software Version: WL INSITE R3.8.4 (Build 5)

Calibration Version: 1

Calibrator Source S/N: TB-185

Calibrator API Reference:228.00 api

Equivalent Calibrator API Reference:232.0 api

| Field Verification      | Shop  | Field | Units |
|-------------------------|-------|-------|-------|
| Background              | 21.9  | 21.3  | api   |
| Background + Calibrator | 253.9 | 254.4 | api   |
| Calibrator              | 232.0 | 233.1 | api   |

| Shop  | Field | Difference | Tolerance |
|-------|-------|------------|-----------|
| 232.0 | 233.1 | -1.1       | +/- 9.00  |

### MICRO LOG SHOP CALIBRATION

Tool Name: Microlog Pad - 10673803

Reference Calibration Date: 12-Mar-13 13:26:40

Engineer: S. INGERSOLL

Calibration Date: 06-Apr-13 11:24:05

Software Version: WL INSITE R3.8.4 (Build 5)

Calibration Version: 1

Host Tool Name: DSNT - 10735145

### CALIBRATION COEFFICIENT SUMMARY

| Measurement          | Micro Log Normal |            | Micro Log Lateral |            | Units |
|----------------------|------------------|------------|-------------------|------------|-------|
|                      | Measured         | Calibrated | Measured          | Calibrated |       |
| Tool Zero            | -0.06            | -0.08      | -0.00             | -0.00      | ohmm  |
| Calibration Point #1 | 0.02             | 0.00       | -0.00             | 0.00       | ohmm  |
| Calibration Point #2 | 20.07            | 20.00      | 20.05             | 20.00      | ohmm  |
| Internal Reference   | 20.00            | 19.93      | 20.05             | 20.00      | ohmm  |

| Measurement          | Micro Log Normal Tool Value | Micro Log Lateral Tool Value | Units |
|----------------------|-----------------------------|------------------------------|-------|
| Tool Zero            | 0.05                        | 0.85                         | V     |
| Calibration Point #1 | 21.81                       | 1.12                         | V     |
| Calibration Point #2 | 5396.83                     | 7013.68                      | V     |
| Internal Reference   | 5377.17                     | 7013.56                      | V     |

### MICRO LOG FIELD CHECK

Tool Name: Microlog Pad - 10673803

Reference Calibration Date: 06-Apr-13 11:24:05

Engineer: THOMAS HYDE

Calibration Date: 06-May-13 01:49:46

Software Version: WL INSITE R3.8.4 (Build 5)

Calibration Version: 1

| Measurement        | Micro Log Normal |       | Micro Log Lateral |       | Units |
|--------------------|------------------|-------|-------------------|-------|-------|
|                    | Shop             | Field | Shop              | Field |       |
| Tool Zero          | -0.08            | -0.09 | -0.00             | 0.01  | ohmm  |
| Internal Reference | 19.93            | 19.93 | 20.00             | 20.00 | ohmm  |

### Summary

| Signal           | Shop  | Field | Difference | Tolerance |
|------------------|-------|-------|------------|-----------|
| Microlog Normal  | 19.93 | 19.93 | 0.00       | +/- 0.80  |
| Microlog Lateral | 20.00 | 20.00 | 0.00       | +/- 0.80  |

### CALIBRATION SUMMARY

| Sensor                       | Shop  | Field | Post  | Difference | Tolerance | Units |
|------------------------------|-------|-------|-------|------------|-----------|-------|
| <b>GTET-10811258</b>         |       |       |       |            |           |       |
| Gamma Ray Calibrator         | 232.0 | 233.1 | ----- | -1.1       | +/- 9.00  | api   |
| <b>Microlog Pad-10673803</b> |       |       |       |            |           |       |
| MicroLog Normal              | 19.93 | 19.93 | ----- | 0.00       | +/-0.80   | ohmm  |
| MicroLog Lateral             | 20.00 | 20.00 | ----- | 0.00       | +/-0.80   | ohmm  |

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### PARAMETERS REPORT

| Depth (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                                 | 8.600     | ppg   |
|            | SHARED          | WAGT     | Weighting Agent                                       | Natural   |       |
|            | 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                                       | 2.000     | ohmm  |
|            | SHARED          | TRM      | Temperature of Mud                                    | 75.0      | 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                                      | 5361.00   | ft    |
|            | SHARED          | BHT      | Bottom Hole Temperature                               | 200.0     | degF  |
|            | SHARED          | SVTM     | Navigation and Survey Master Tool                     | NONE      |       |
|            | SHARED          | AZTM     | High Res Z Accelerometer Master Tool                  | GTET      |       |
|            | SHARED          | TEMM     | Temperature Master Tool                               | NONE      |       |
|            | SHARED          | BHSM     | Borehole Size Master Tool                             | NONE      |       |
|            | Rwa / CrossPlot | XPOK     | Process Crossplot?                                    | Yes       |       |
|            | Rwa / CrossPlot | FCHO     | Select Source of F                                    | Automatic |       |
|            | Rwa / CrossPlot | AFAC     | Archie A factor                                       | 0.6200    |       |
|            | Rwa / CrossPlot | MFAC     | Archie M factor                                       | 2.1500    |       |
|            | Rwa / CrossPlot | RMFR     | Rmf Reference                                         | 0.10      | ohmm  |
|            | Rwa / CrossPlot | TMFR     | Rmf Ref Temp                                          | 75.00     | degF  |
|            | Rwa / CrossPlot | RWA      | Resistivity of Formation Water                        | 0.05      | ohmm  |
|            | Rwa / CrossPlot | ADP      | Use Air Porosity to calculate CrossplotPhi            | No        |       |
|            | GTET            | GROK     | Process Gamma Ray?                                    | Yes       |       |
|            | GTET            | GRSO     | Gamma Tool Standoff                                   | 0.000     | in    |
|            | GTET            | GEOK     | Process Gamma Ray EVR?                                | No        |       |

|              |      |                                              |                 |      |
|--------------|------|----------------------------------------------|-----------------|------|
| GTET         | GEOR | Process Gamma Ray EVR?                       | No              |      |
| GTET         | TPOS | Tool Position for Gamma Ray Tools.           | Eccentered      |      |
| DSNT         | DNOK | Process DSN?                                 | Yes             |      |
| DSNT         | DEOK | Process DSN EVR?                             | No              |      |
| 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              |      |
| SDLT         | CLOK | Process Caliper Outputs?                     | Yes             |      |
| SDLT Pad     | DNOK | Process Density?                             | Yes             |      |
| SDLT Pad     | DNOK | Process Density EVR?                         | No              |      |
| 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 |
| 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                         | User define     |      |
| BSAT         | DTMA | Delta -T Matrix                              | 47.60           | uspf |
| 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 Upr |      |
| 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 |

BOTTOM

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## INPUTS, DELAYS AND FILTERS TABLE

| Mnemonic           | Input Description     | Delay (ft) | Filter Type | Filter Length (ft) |
|--------------------|-----------------------|------------|-------------|--------------------|
| <b>Depth Panel</b> |                       |            |             |                    |
| TENS               | Tension               | 0.00       | NO          |                    |
| <b>CH_HOS</b>      |                       |            |             |                    |
| DHTN               | DownholeTension       | 0.00       | BLK         | 0.000              |
| <b>SP Sub</b>      |                       |            |             |                    |
| PLTC               | Plot Control Mask     | 72.01      | NO          |                    |
| SP                 | Spontaneous Potential | 72.01      | BLK         | 1.250              |

|                   |                                                         |       |     |               |
|-------------------|---------------------------------------------------------|-------|-----|---------------|
| SPR               | Raw Spontaneous Potential                               | 72.01 | NO  |               |
| SPO               | Spontaneous Potential Offset                            | 72.01 | NO  |               |
| <b>GTET</b>       |                                                         |       |     |               |
| TPUL              | Tension Pull                                            | 63.99 | NO  |               |
| GR                | Natural Gamma Ray API                                   | 63.99 | TRI | 1.750         |
| GRU               | Unfiltered Natural Gamma Ray API                        | 63.99 | NO  |               |
| EGR               | Natural Gamma Ray API with Enhanced Vertical Resolution | 63.99 | W   | 1.416 , 0.750 |
| ACCZ              | Accelerometer Z                                         | 0.00  | BLK | 0.083         |
| DEVI              | Inclination                                             | 0.00  | NO  |               |
| <b>DSNT</b>       |                                                         |       |     |               |
| TPUL              | Tension Pull                                            | 53.74 | NO  |               |
| RNDS              | Near Detector Telemetry Counts                          | 53.84 | BLK | 1.417         |
| RFDS              | Far Detector Telemetry Counts                           | 54.59 | TRI | 0.583         |
| DNTT              | DSN Tool Temperature                                    | 53.84 | NO  |               |
| DSNS              | DSN Tool Status                                         | 53.74 | NO  |               |
| ERND              | Near Detector Telemetry Counts EVR                      | 53.84 | BLK | 0.000         |
| ERFD              | Far Detector Telemetry Counts EVR                       | 54.59 | BLK | 0.000         |
| ENTM              | DSN Tool Temperature EVR                                | 53.84 | NO  |               |
| <b>SDLT</b>       |                                                         |       |     |               |
| TPUL              | Tension Pull                                            | 43.84 | NO  |               |
| PCAL              | Pad Caliper                                             | 43.84 | TRI | 0.250         |
| ACAL              | Arm Caliper                                             | 43.84 | TRI | 0.250         |
| <b>BSAT</b>       |                                                         |       |     |               |
| TPUL              | Tension Pull                                            | 26.84 | NO  |               |
| STAT              | Status                                                  | 26.84 | NO  |               |
| DLYT              | Delay Time                                              | 26.84 | NO  |               |
| SI                | Sample Interval                                         | 26.84 | NO  |               |
| TXRX              | Raw Telemetry 10 Receivers                              | 26.84 | NO  |               |
| FRMC              | Tool Frame Count                                        | 26.84 | NO  |               |
| GMOD              | Gain processing mode                                    | 19.58 | NO  |               |
| <b>ACRt Sonde</b> |                                                         |       |     |               |
| TPUL              | Tension Pull                                            | 2.73  | NO  |               |
| F1R1              | ACRT 12KHz - 80in R value                               | 8.98  | BLK | 0.000         |
| F1X1              | ACRT 12KHz - 80in X value                               | 8.98  | BLK | 0.000         |
| F1R2              | ACRT 12KHz - 50in R value                               | 6.48  | BLK | 0.000         |
| F1X2              | ACRT 12KHz - 50in X value                               | 6.48  | BLK | 0.000         |
| F1R3              | ACRT 12KHz - 29in R value                               | 4.98  | BLK | 0.000         |
| F1X3              | ACRT 12KHz - 29in X value                               | 4.98  | BLK | 0.000         |
| F1R4              | ACRT 12KHz - 17in R value                               | 3.98  | BLK | 0.000         |
| F1X4              | ACRT 12KHz - 17in X value                               | 3.98  | BLK | 0.000         |
| F1R5              | ACRT 12KHz - 10in R value                               | 3.48  | BLK | 0.000         |
| F1X5              | ACRT 12KHz - 10in X value                               | 3.48  | BLK | 0.000         |
| F1R6              | ACRT 12KHz - 6in R value                                | 3.23  | BLK | 0.000         |
| F1X6              | ACRT 12KHz - 6in X value                                | 3.23  | BLK | 0.000         |
| F2R1              | ACRT 36KHz - 80in R value                               | 8.98  | BLK | 0.000         |
| F2X1              | ACRT 36KHz - 80in X value                               | 8.98  | BLK | 0.000         |
| F2R2              | ACRT 36KHz - 50in R value                               | 6.48  | BLK | 0.000         |
| F2X2              | ACRT 36KHz - 50in X value                               | 6.48  | BLK | 0.000         |
| F2R3              | ACRT 36KHz - 29in R value                               | 4.98  | BLK | 0.000         |
| F2X3              | ACRT 36KHz - 29in X value                               | 4.98  | BLK | 0.000         |
| F2R4              | ACRT 36KHz - 17in R value                               | 3.98  | BLK | 0.000         |

|                 |                                               |       |     |       |
|-----------------|-----------------------------------------------|-------|-----|-------|
| F2X4            | ACRT 36KHz - 17in X value                     | 3.98  | BLK | 0.000 |
| F2R5            | ACRT 36KHz - 10in R value                     | 3.48  | BLK | 0.000 |
| F2X5            | ACRT 36KHz - 10in X value                     | 3.48  | BLK | 0.000 |
| F2R6            | ACRT 36KHz - 6in R value                      | 3.23  | BLK | 0.000 |
| F2X6            | ACRT 36KHz - 6in X value                      | 3.23  | BLK | 0.000 |
| F3R1            | ACRT 72KHz - 80in R value                     | 8.98  | BLK | 0.000 |
| F3X1            | ACRT 72KHz - 80in X value                     | 8.98  | BLK | 0.000 |
| F3R2            | ACRT 72KHz - 50in R value                     | 6.48  | BLK | 0.000 |
| F3X2            | ACRT 72KHz - 50in X value                     | 6.48  | BLK | 0.000 |
| F3R3            | ACRT 72KHz - 29in R value                     | 4.98  | BLK | 0.000 |
| F3X3            | ACRT 72KHz - 29in X value                     | 4.98  | BLK | 0.000 |
| F3R4            | ACRT 72KHz - 17in R value                     | 3.98  | BLK | 0.000 |
| F3X4            | ACRT 72KHz - 17in X value                     | 3.98  | BLK | 0.000 |
| F3R5            | ACRT 72KHz - 10in R value                     | 3.48  | BLK | 0.000 |
| F3X5            | ACRT 72KHz - 10in X value                     | 3.48  | BLK | 0.000 |
| F3R6            | ACRT 72KHz - 6in R value                      | 3.23  | BLK | 0.000 |
| F3X6            | ACRT 72KHz - 6in X value                      | 3.23  | BLK | 0.000 |
| RMUD            | Mud Resistivity                               | 12.52 | BLK | 0.000 |
| F1RT            | Transmitter Current Raw 12K X Receiver        | 2.73  | BLK | 0.000 |
| F1XT            | Transmitter Reference 12 KHz Imaginary Signal | 2.73  | BLK | 0.000 |
| F2RT            | Transmitter Reference 36 KHz Real Signal      | 2.73  | BLK | 0.000 |
| F2XT            | Transmitter Reference 36 KHz Imaginary Signal | 2.73  | BLK | 0.000 |
| F3RT            | Transmitter Reference 72 KHz Real Signal      | 2.73  | BLK | 0.000 |
| F3XT            | Transmitter Reference 72 KHz Imaginary Signal | 2.73  | BLK | 0.000 |
| TFPU            | Upper Feedpipe Temperature Calculated         | 2.73  | BLK | 0.000 |
| TFPL            | Lower Feedpipe Temperature Calculated         | 2.73  | BLK | 0.000 |
| ITMP            | Instrument Temperature                        | 2.73  | BLK | 0.000 |
| TCVA            | Temperature Correction Values Loop Off        | 2.73  | NO  |       |
| TIDV            | Instrument Temperature Derivative             | 2.73  | NO  |       |
| TUDV            | Upper Temperature Derivative                  | 2.73  | NO  |       |
| TLDV            | Lower Temperature Derivative                  | 2.73  | NO  |       |
| TRBD            | Receiver Board Temperature                    | 2.73  | NO  |       |
| <b>SDLT Pad</b> |                                               |       |     |       |
| TPUL            | Tension Pull                                  | 43.83 | NO  |       |
| NAB             | Near Above                                    | 43.66 | BLK | 0.920 |
| NHI             | Near Cesium High                              | 43.66 | BLK | 0.920 |
| NLO             | Near Cesium Low                               | 43.66 | BLK | 0.920 |
| NVA             | Near Valley                                   | 43.66 | BLK | 0.920 |
| NBA             | Near Barite                                   | 43.66 | BLK | 0.920 |
| NDE             | Near Density                                  | 43.66 | BLK | 0.920 |
| NPK             | Near Peak                                     | 43.66 | BLK | 0.920 |
| NLI             | Near Lithology                                | 43.66 | BLK | 0.920 |
| NBAU            | Near Barite Unfiltered                        | 43.66 | BLK | 0.250 |
| NLIU            | Near Lithology Unfiltered                     | 43.66 | BLK | 0.250 |
| FAB             | Far Above                                     | 44.01 | BLK | 0.250 |
| FHI             | Far Cesium High                               | 44.01 | BLK | 0.250 |
| FLO             | Far Cesium Low                                | 44.01 | BLK | 0.250 |
| FVA             | Far Valley                                    | 44.01 | BLK | 0.250 |
| FBA             | Far Barite                                    | 44.01 | BLK | 0.250 |
| FDE             | Far Density                                   | 44.01 | BLK | 0.250 |
| FPK             | Far Peak                                      | 44.01 | BLK | 0.250 |
| FLI             | Far Lithology                                 | 44.01 | BLK | 0.250 |
| PTMP            | Pad Temperature                               | 43.84 | BLK | 0.920 |
| NHV             | Near Detector High Voltage                    | 43.24 | NO  |       |

|      |                           |       |    |
|------|---------------------------|-------|----|
| FHV  | Far Detector High Voltage | 43.24 | NO |
| ITMP | Instrument Temperature    | 43.24 | NO |
| DDHV | Detector High Voltage     | 43.24 | NO |

**Microlog Pad**

|      |                  |       |     |       |
|------|------------------|-------|-----|-------|
| TPUL | Tension Pull     | 44.03 | NO  |       |
| MINV | Microlog Lateral | 44.03 | BLK | 0.750 |
| MNOR | Microlog Normal  | 44.03 | BLK | 0.750 |

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|         |                  |       |        |
|---------|------------------|-------|--------|
| COMPANY | OXY USA          |       |        |
| WELL    | DRUSSEL E-1      |       |        |
| FIELD   | HUGOTON GAS AREA |       |        |
| COUNTY  | FINNEY           | STATE | KANSAS |

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