

# MICROLOG

|                                                 |               |          |              |
|-------------------------------------------------|---------------|----------|--------------|
| COMPANY                                         | TENGGASCO INC |          |              |
| WELL                                            | HOWARD A #1   |          |              |
| FIELD/BLOCK                                     | UNNAMED       |          |              |
| COUNTY                                          | TREGO         |          |              |
| STATE                                           | KANSAS        |          |              |
| Sect. 17                                        | Twp. 15S      | Rge. 25W |              |
| API No. 15-195-22955-00-00                      |               |          | STATE KANSAS |
| Location (SHL) 1485' FNL & 800' FEL NE-NW-SE-NE |               |          |              |
| Other Services: DSNT/SDLT ACRT                  |               |          |              |

Fold here

|                                         |            |   |              |          |  |                                    |                 |               |  |             |                 |                                         |  |  |  |  |  |
|-----------------------------------------|------------|---|--------------|----------|--|------------------------------------|-----------------|---------------|--|-------------|-----------------|-----------------------------------------|--|--|--|--|--|
| Service Ticket No.: 901520512           |            |   |              |          |  | API Serial No.: 15-195-22955-00-00 |                 |               |  |             |                 | 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                                | ACRT            | N/A           |  | 1.5" S.O    |                 | N/A                                     |  |  |  |  |  |
| Rmc @ Meas. Temp.                       |            | @ |              | @        |  |                                    | I059_S385       |               |  |             |                 |                                         |  |  |  |  |  |
| Source Rmf                              | Rmc        |   |              |          |  | ONE                                | MICRO           | RUBBER        |  | ADJ         |                 | N/A                                     |  |  |  |  |  |
| Rm @ BHT                                |            | @ |              | @        |  |                                    | 10950489        |               |  |             |                 |                                         |  |  |  |  |  |
| Rmf @ BHT                               |            | @ |              | @        |  |                                    |                 |               |  |             |                 |                                         |  |  |  |  |  |
| Rmc @ BHT                               |            | @ |              | @        |  |                                    |                 |               |  |             |                 |                                         |  |  |  |  |  |
| EQUIPMENT DATA                          |            |   |              |          |  |                                    |                 |               |  |             |                 |                                         |  |  |  |  |  |
| GAMMA                                   |            |   |              | ACOUSTIC |  |                                    |                 | DENSITY       |  |             |                 | NEUTRON                                 |  |  |  |  |  |
| Run No.                                 | ONE        |   | Run No.      |          |  |                                    | Run No.         | ONE           |  | Run No.     |                 | ONE                                     |  |  |  |  |  |
| Serial No.                              | 11048627   |   | Serial No.   |          |  |                                    | Serial No.      | 10844781      |  | Serial No.  |                 | 11019643                                |  |  |  |  |  |
| Model No.                               | GTET       |   | Model No.    |          |  |                                    | Model No.       | SDLT-I        |  | Model No.   |                 | DSNT-I                                  |  |  |  |  |  |
| Diameter                                | 3.625"     |   | No. of Cent. |          |  |                                    | Diameter        | 4.5"          |  | Diameter    |                 | 3.625"                                  |  |  |  |  |  |
| Detector Model No.                      | T-102      |   | Spacing      |          |  |                                    | Log Type        | GAM-GAM       |  | Log Type    |                 | NEU-NEU                                 |  |  |  |  |  |
| Type                                    | SCINT      |   |              |          |  |                                    | Source Type     | CS137         |  | Source Type |                 | AM241BE                                 |  |  |  |  |  |
| Length                                  | 8'         |   | LSA [Y/N]    |          |  |                                    | Serial No.      | 5168GW        |  | Serial No.  |                 | DSN-424                                 |  |  |  |  |  |
| Distance to Source                      | 10'        |   | FWDA [Y/N ]  |          |  |                                    | Strength        | 1.5 Ci        |  | Strength    |                 | 15 Ci                                   |  |  |  |  |  |

## 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    | 3400 | REC    | 0     | 150 |          |   |        | 30      | -10 | 2.71   | 30      | -10 | LIME   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |     |        |         |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |     |        |         |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |     |        |         |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |     |        |         |     |        |
| DIRECTIONAL INFORMATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |      |        |       |     |          |   |        |         |     |        |         |     |        |
| Maximum Deviation @                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |      |        |       |     |          |   |        | KOP @   |     |        |         |     |        |
| Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5-INCH CASING                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |      |        |       |     |          |   |        |         |     |        |         |     |        |
| CHLORIDES REPORTED AT 2400 MG/L                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |     |        |         |     |        |
| LCM REPORTED AT 2 LB/BBL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |      |        |       |     |          |   |        |         |     |        |         |     |        |
| GTET-DSNT-SDLT-ACRT RUN IN COMBINATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |       |      |        |       |     |          |   |        |         |     |        |         |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |     |        |         |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |     |        |         |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |     |        |         |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |      |        |       |     |          |   |        |         |     |        |         |     |        |
| TODAY'S CREW:E.ZAPIEN & K.PIDDINGTON                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |      |        |       |     |          |   |        |         |     |        |         |     |        |
| THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KS. 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |      |        |       |     |          |   |        |         |     |        |         |     |        |

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Plot Time: 25-Jul-14 13:53:16

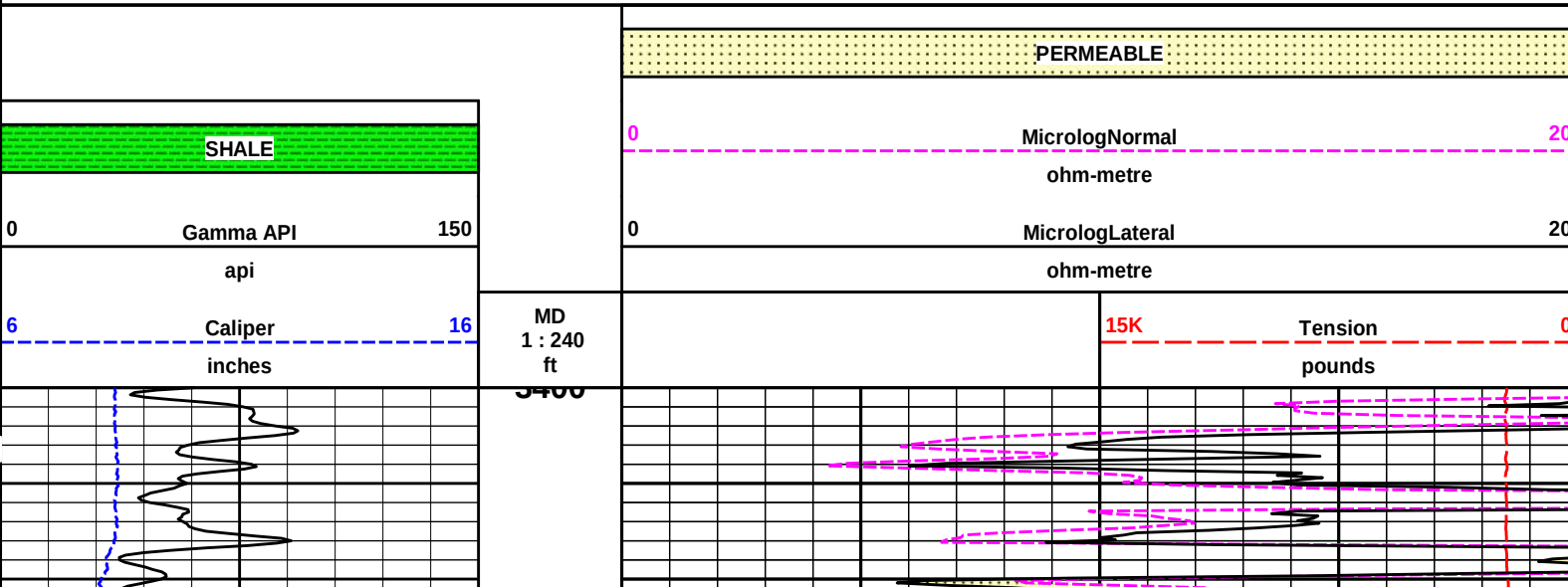
Plot Range: 3400 ft to 4382 ft

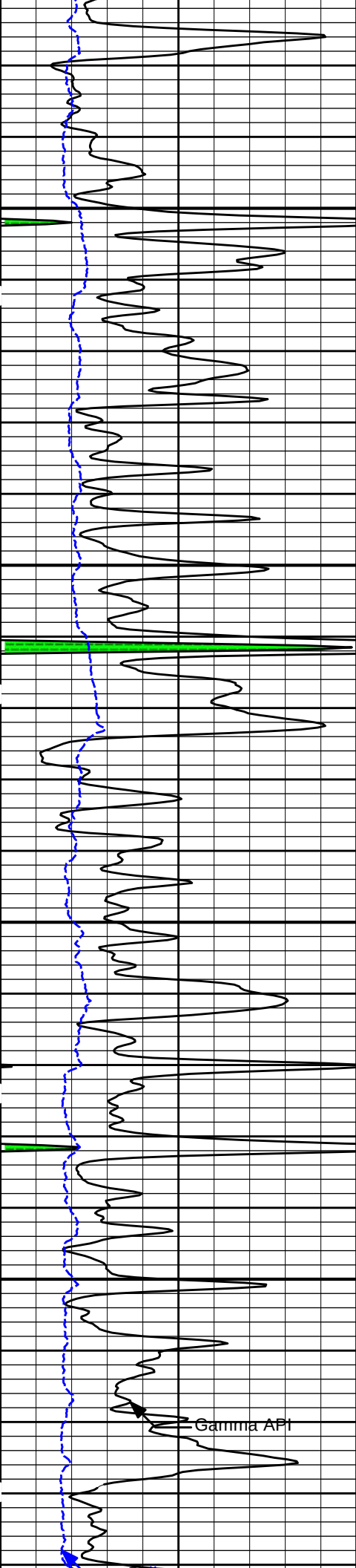
Data: HOWARD A #1\Well Based\DETAILS\

Plot File: \\LOCAL-I\HOWARD A #1\Well Based\MICRO\Microlog\_IQ\_5\_main\_lib

5 INCH MAIN LOG

MEASURED DEPTH  
MAIN LOG 5" PER 100'

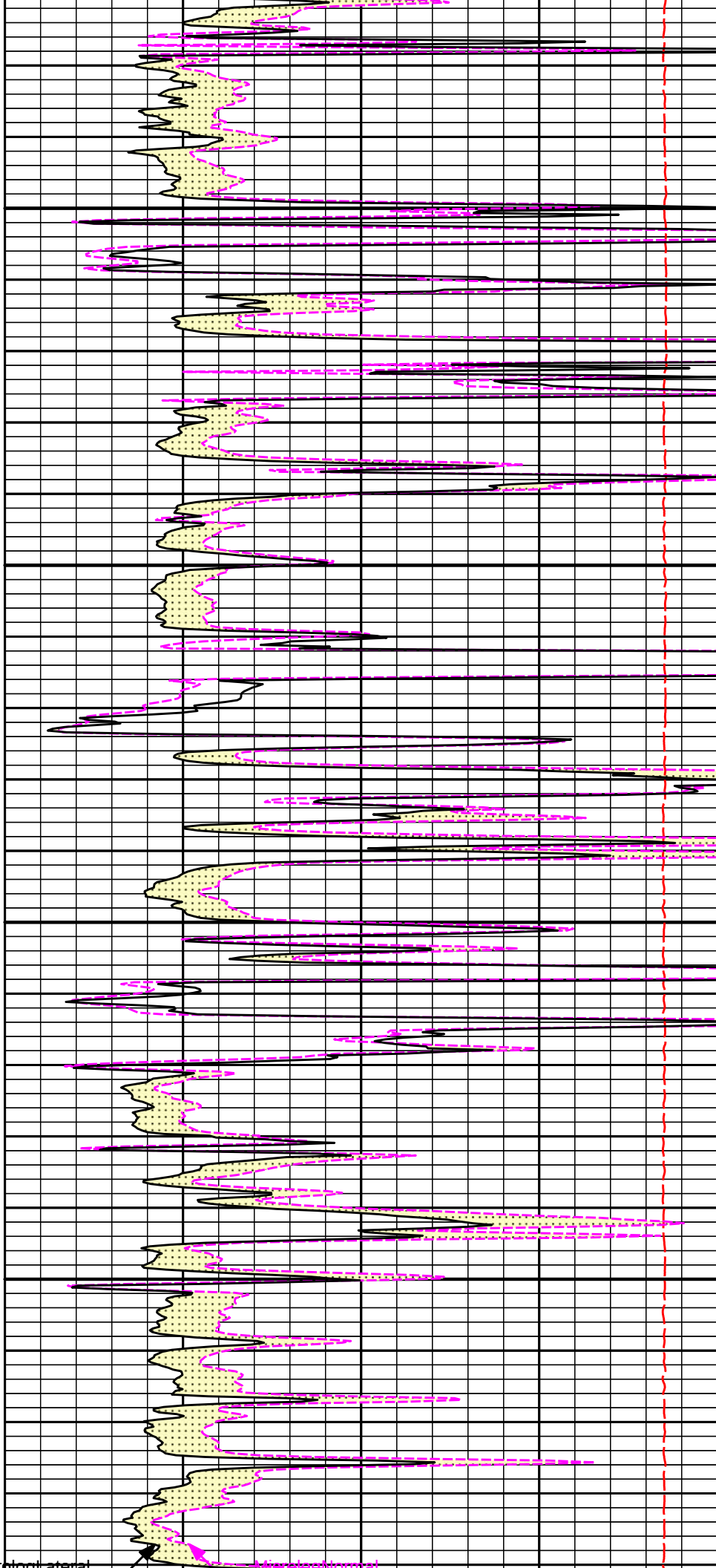




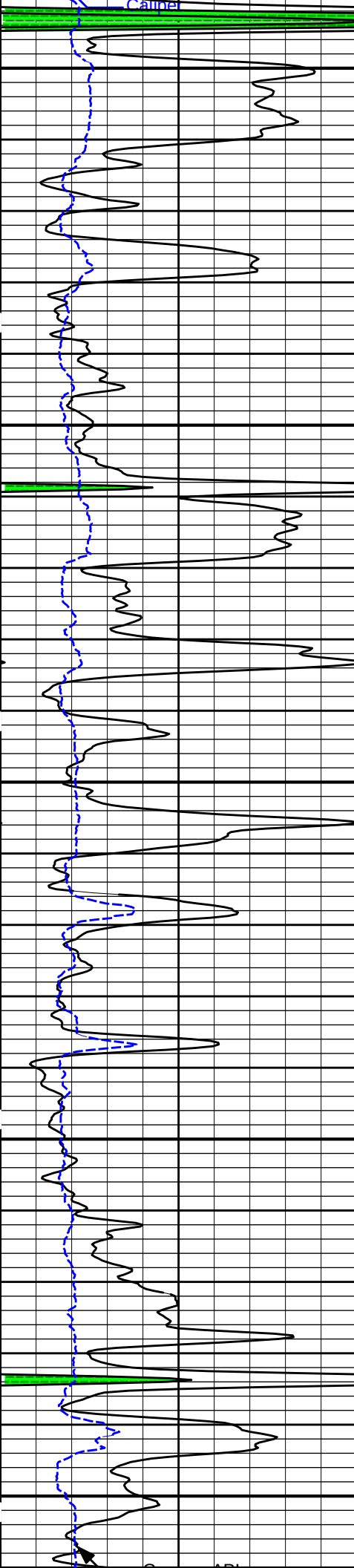
3500

3600

Microlog lateral

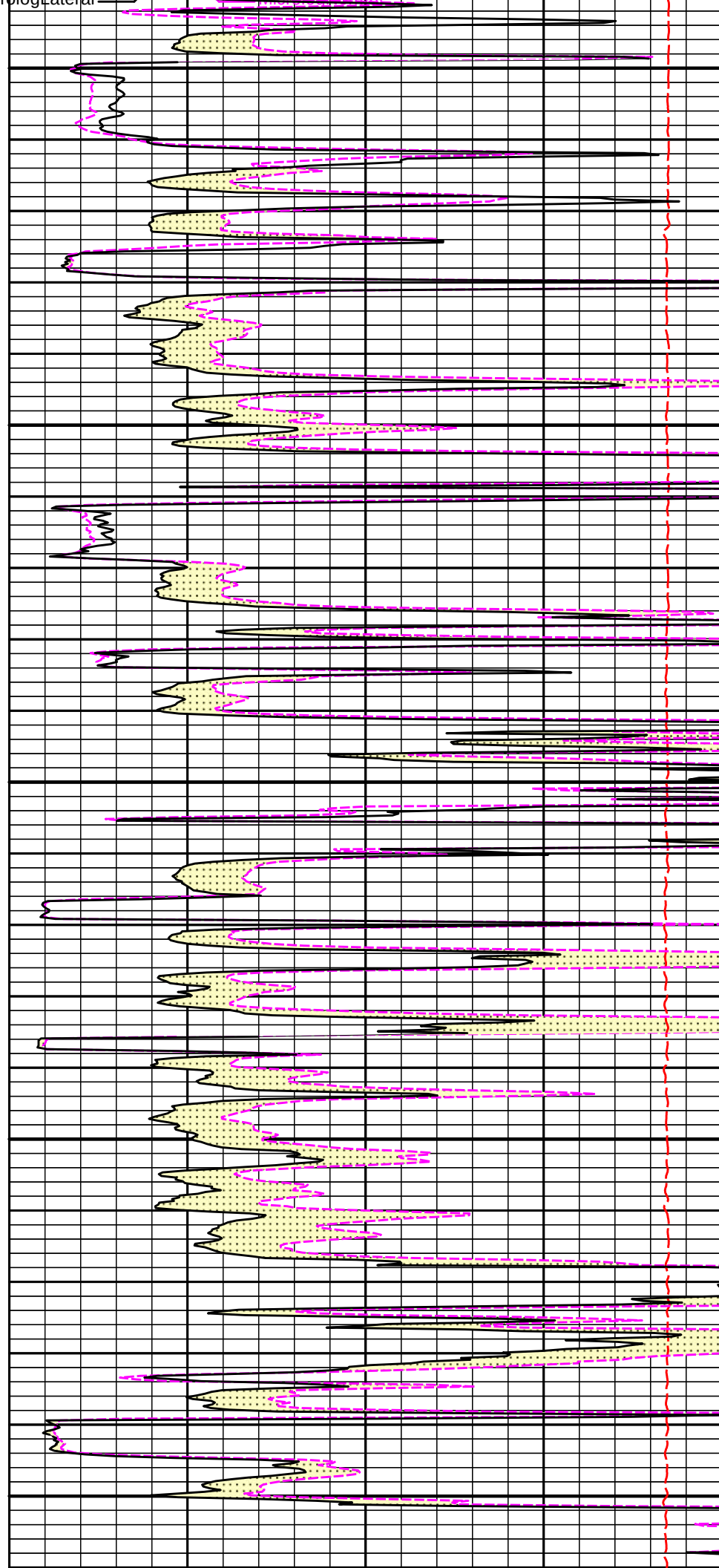


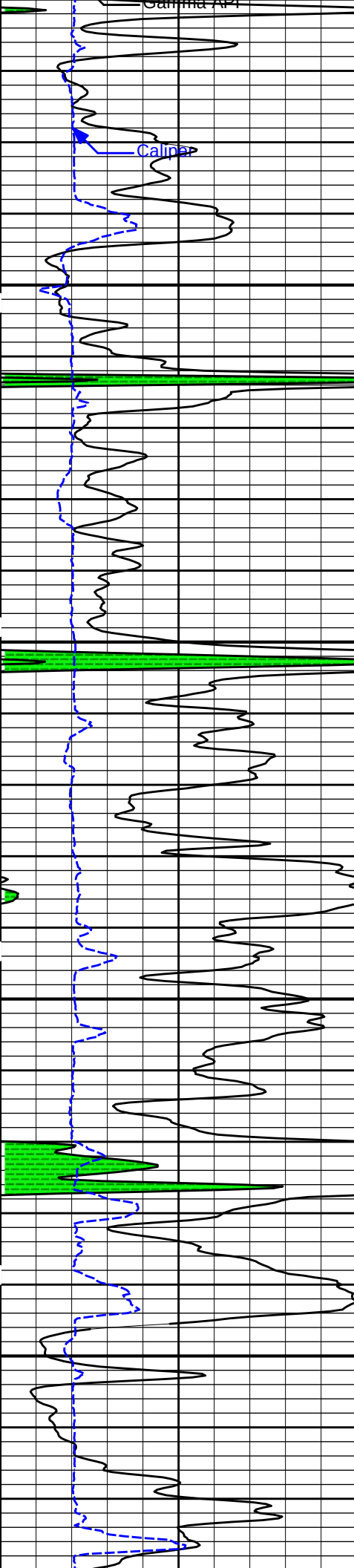
Microlog lateral



3700

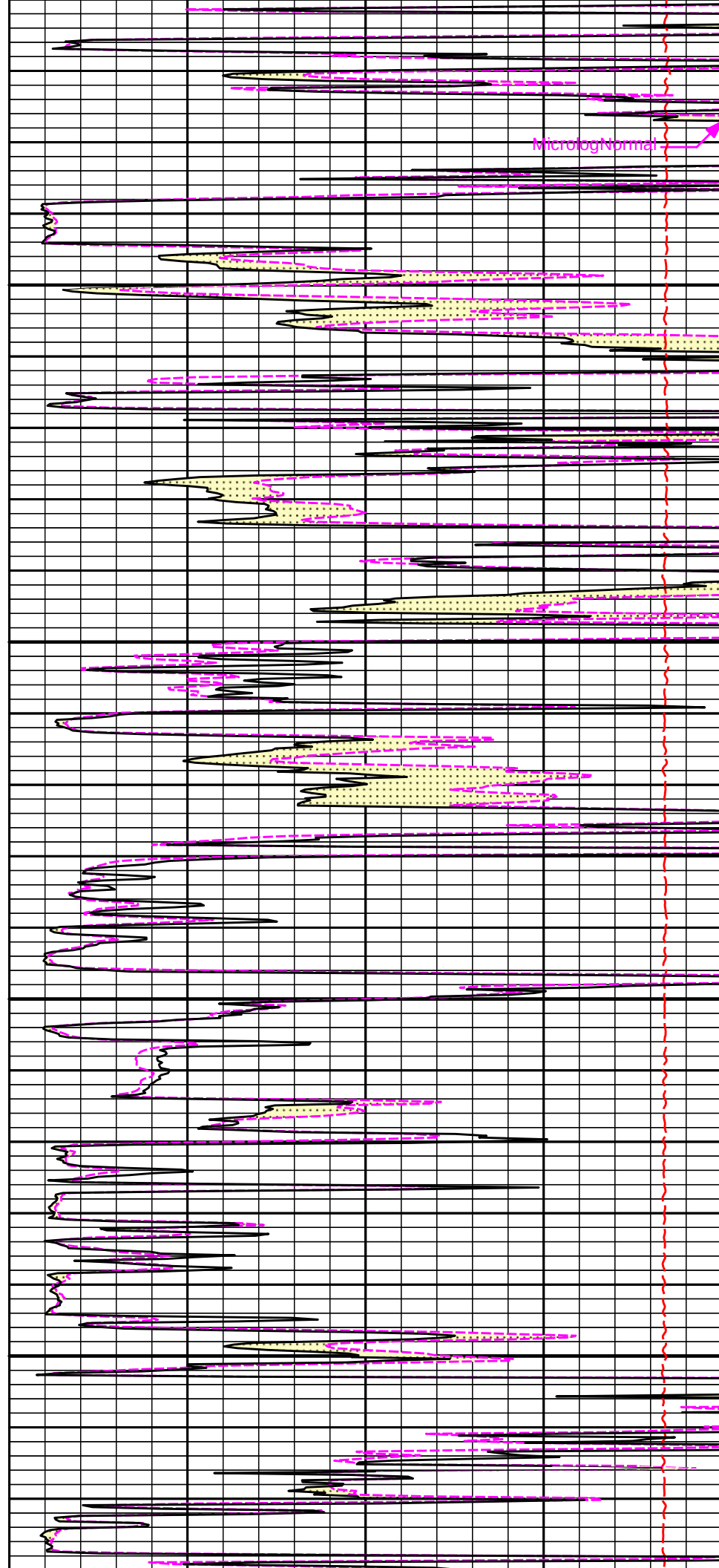
3800

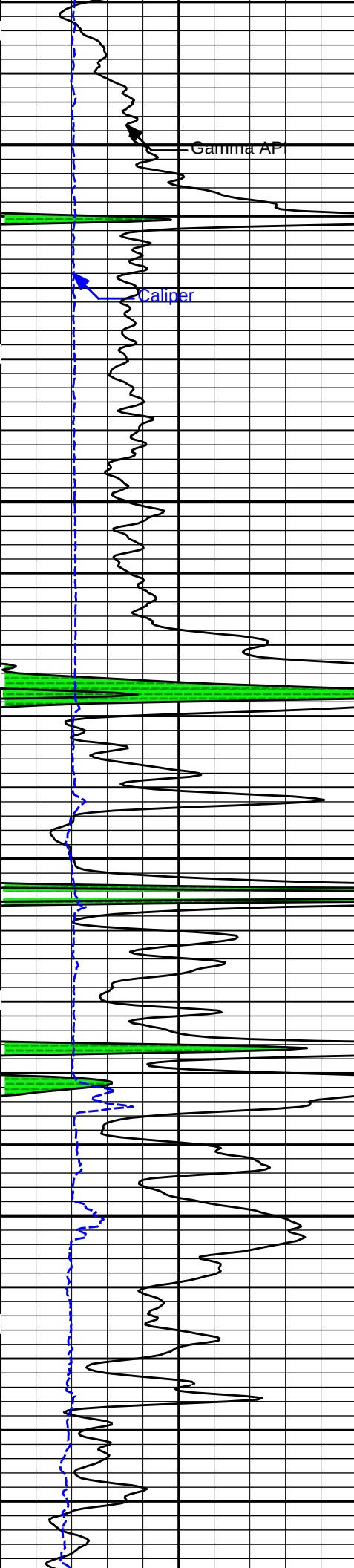




3900

4000

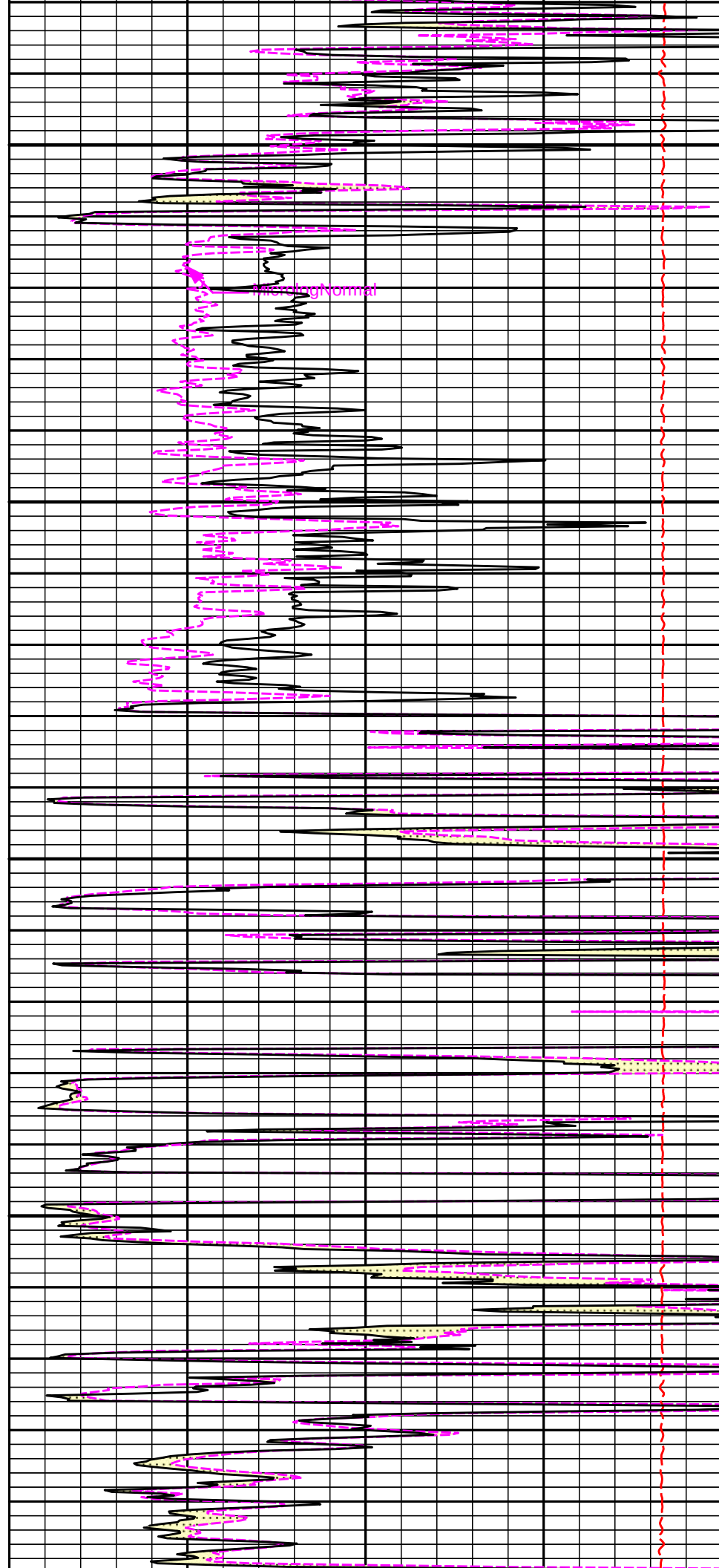




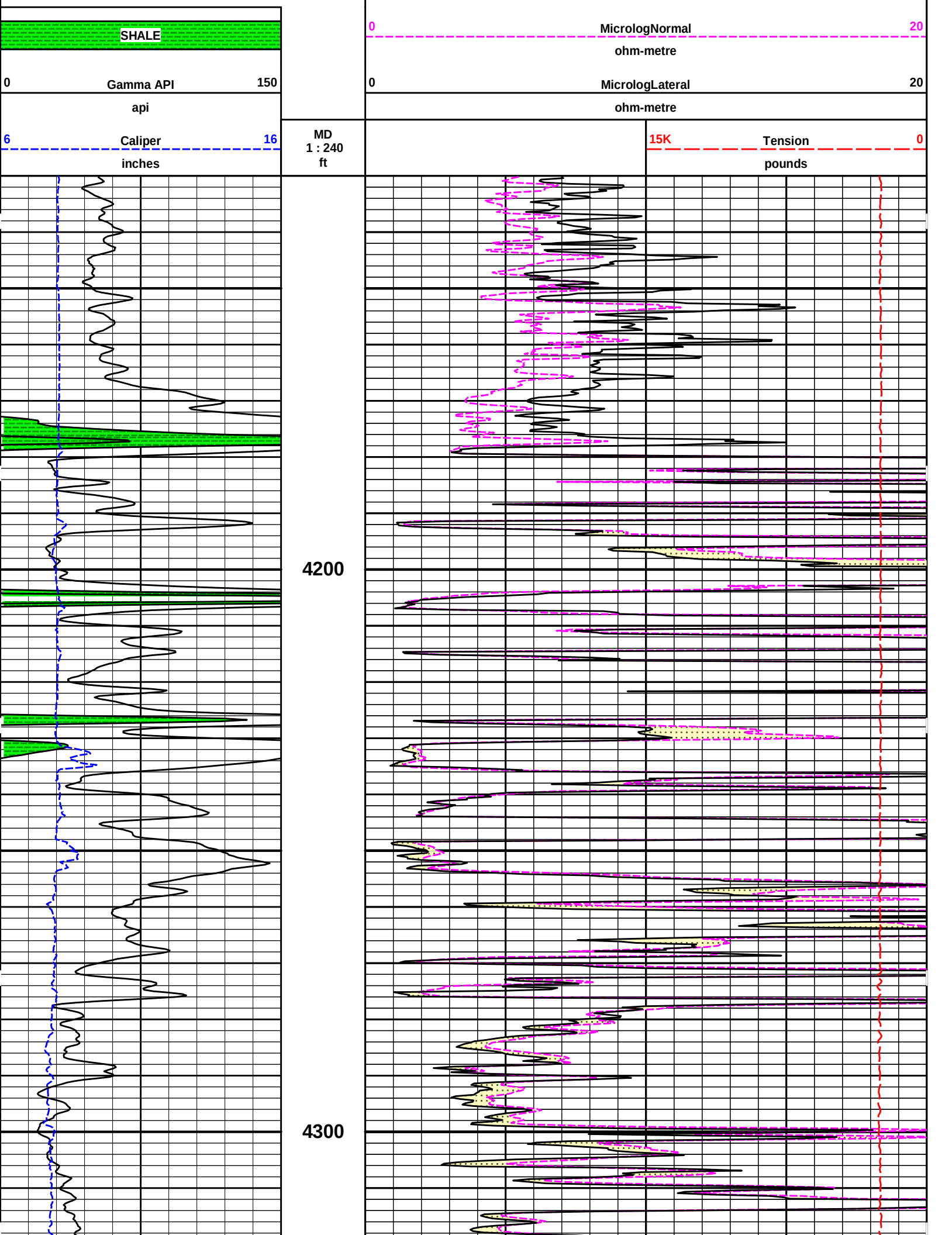
4100

4200

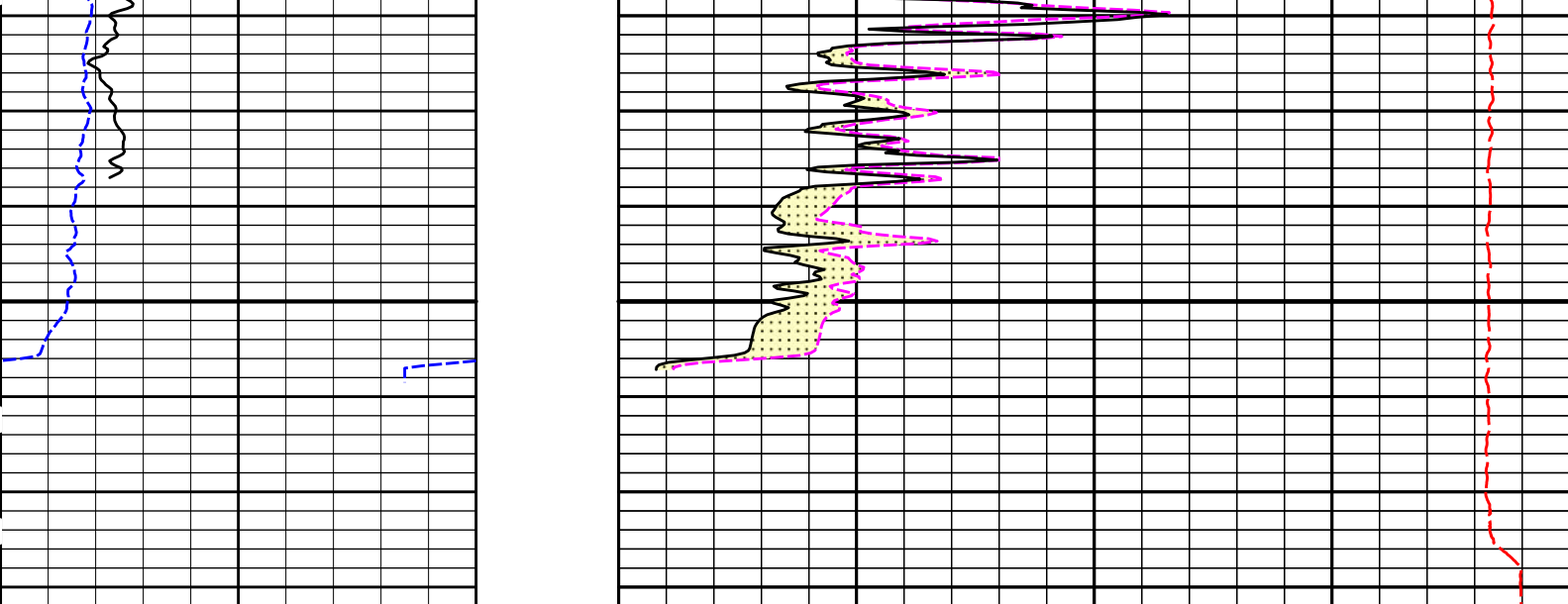
4300











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

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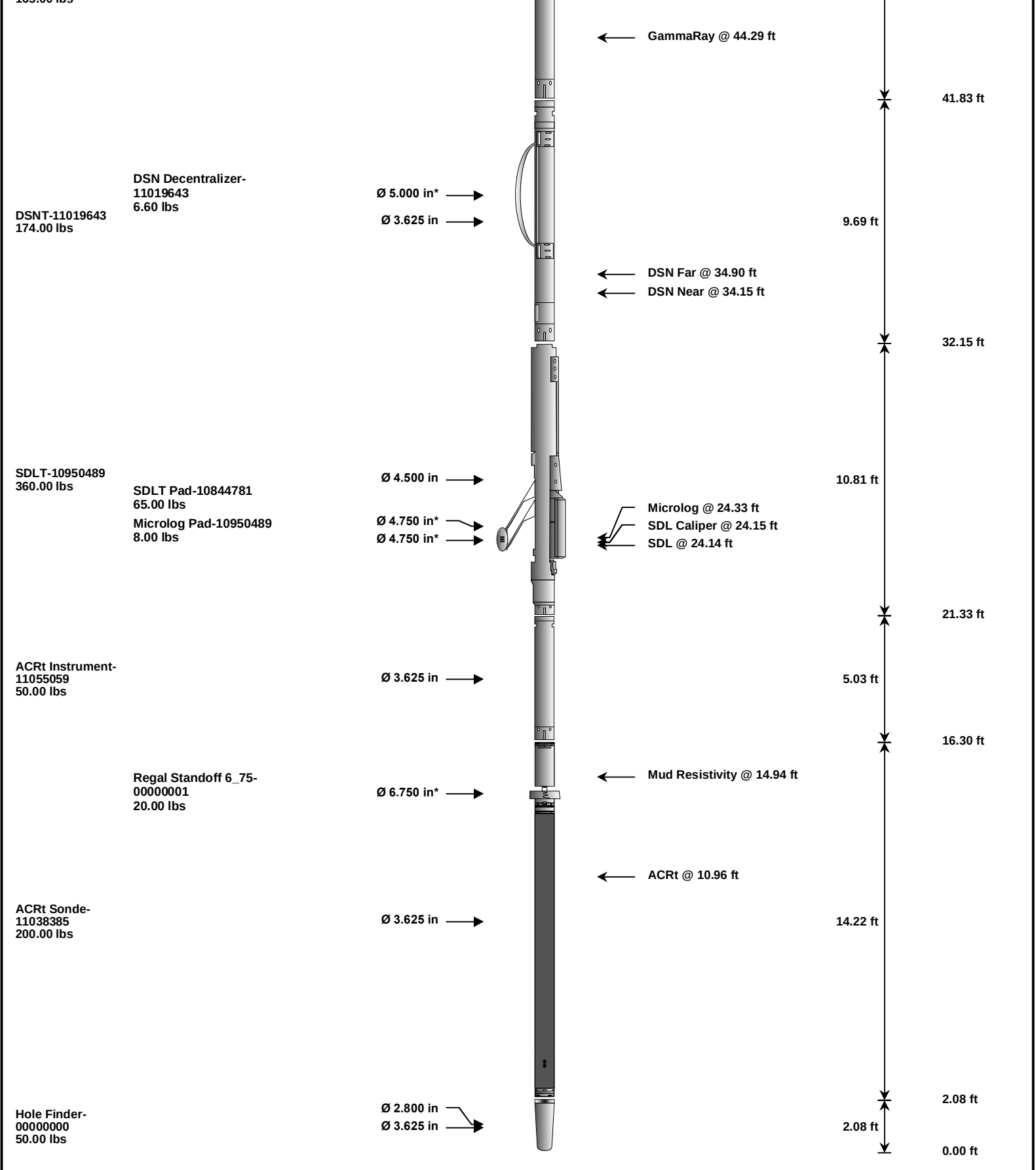
Plot Time: 25-Jul-14 13:53:19  
Plot Range: 4130 ft to 4382 ft  
Data: HOWARD A #1\Well Based\REPEAT\  
Plot File: \\LOCAL-I\HOWARD A #1\Well Based\MICRO\Microlog\_IQ\_5\_rep\_lib

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

| Description                  | Overbody Description | O.D.         | Diagram | Sensors @ Delays                                      | Length  | Accumulated Length |
|------------------------------|----------------------|--------------|---------|-------------------------------------------------------|---------|--------------------|
| RWCH-12156658<br>135.00 lbs  |                      | Ø 3.625 in → |         | ← Load Cell @ 56.66 ft<br>← BH Temperature @ 56.09 ft | 6.25 ft | 60.34 ft           |
| SP Sub-12345678<br>60.00 lbs |                      | Ø 3.625 in → |         | ← SP @ 52.31 ft                                       | 3.74 ft | 54.09 ft           |
| GTET-11048627<br>165.00 lbs  |                      | Ø 3.625 in → |         |                                                       | 8.52 ft | 50.35 ft           |
|                              |                      |              |         |                                                       |         |                    |



| Mnemonic | Tool Name                      | Serial Number | Weight (lbs) | Length (ft) | Accumulated Length (ft) | Max.Log. Speed (fpm) |
|----------|--------------------------------|---------------|--------------|-------------|-------------------------|----------------------|
| RWCH     | Releasable Wireline Cable Head | 12156658      | 135.00       | 6.25        | 54.09                   | 300.00               |
| SP       | SP Sub                         | 12345678      | 60.00        | 3.74        | 50.35                   | 300.00               |
| GTET     | Gamma Telemetry Tool           | 11048627      | 165.00       | 8.52        | 41.83                   | 60.00                |
| DSNT     | Dual Spaced Neutron            | 11019643      | 174.00       | 9.69        | 32.15                   | 60.00                |
| DCNT     | DSN Decentralizer              | 11019643      | 6.60         | 5.13 *      | 35.48                   | 300.00               |
| SDLT     | Spectral Density Tool          | 10950489      | 360.00       | 10.81       | 21.33                   | 60.00                |
| SDLP     | Density Insite Pad             | 10844781      | 65.00        | 2.55 *      | 23.54                   | 60.00                |
| MICP     | Microlog Pad                   | 10950489      | 8.00         | 1.00 *      | 23.83                   | 60.00                |

|                                                          |                                                       |          |          |        |                          |        |
|----------------------------------------------------------|-------------------------------------------------------|----------|----------|--------|--------------------------|--------|
| ACRt                                                     | Array Compensated True Resistivity Instrument Section | 11055059 | 50.00    | 5.03   | 16.30                    | 120.00 |
| ACRt                                                     | Array Compensated True Resistivity Sonde Section      | 11038385 | 200.00   | 14.22  | 2.08                     | 120.00 |
| RSOF                                                     | Regal Standoff 6.75in                                 | 00000001 | 20.00    | 0.52 * | 14.00                    | 300.00 |
| HFND                                                     | Hole Finder                                           | 00000000 | 50.00    | 2.08   | 0.00                     | 300.00 |
|                                                          |                                                       |          |          |        |                          |        |
| Total                                                    |                                                       |          | 1,293.60 | 60.34  |                          |        |
| * Not included in Total Length and Length Accumulation.  |                                                       |          |          |        |                          |        |
| Data: HOWARD A #1\0002 GTET-DSN-SDL-ACRT-BN-TRIPPLE\IDLE |                                                       |          |          |        | Date: 25-Jul-14 12:39:38 |        |



CALIBRATION REPORT

| NATURAL GAMMA RAY TOOL SHOP CALIBRATION |                            |                             |                    |  |  |
|-----------------------------------------|----------------------------|-----------------------------|--------------------|--|--|
| Tool Name:                              | GTET - 11048627            | Reference Calibration Date: | 03-Jul-14 08:43:55 |  |  |
| Engineer:                               | J. BOLLLOM                 | Calibration Date:           | 09-Jul-14 10:31:38 |  |  |
| Software Version:                       | WL INSITE R4.2.0 (Build 2) | Calibration Version:        | 1                  |  |  |

| Calibrator Source S/N: Error                  |          |            |       |
|-----------------------------------------------|----------|------------|-------|
| Calibrator API Reference:265.00 api           |          |            |       |
| Equivalent Calibrator API Reference:269.6 api |          |            |       |
| Measurement                                   | Measured | Calibrated | Units |
| Background                                    | 51.6     | 52.0       | api   |
| Background + Calibrator                       | 319.4    | 321.6      | api   |
| Calibrator                                    | 267.8    | 269.6      | api   |

| NATURAL GAMMA RAY TOOL FIELD CALIBRATION |                            |                             |                    |
|------------------------------------------|----------------------------|-----------------------------|--------------------|
| Tool Name:                               | GTET - 11048627            | Reference Calibration Date: | 09-Jul-14 10:31:38 |
| Engineer:                                | SUHAIL BISHTI              | Calibration Date:           | 25-Jul-14 01:40:15 |
| Software Version:                        | WL INSITE R4.2.0 (Build 2) | Calibration Version:        | 1                  |

| Calibrator Source S/N: Error                  |       |            |           |
|-----------------------------------------------|-------|------------|-----------|
| Calibrator API Reference:265.00 api           |       |            |           |
| Equivalent Calibrator API Reference:269.6 api |       |            |           |
| Field Verification                            | Shop  | Field      | Units     |
| Background                                    | 52.0  | 50.3       | api       |
| Background + Calibrator                       | 321.6 | 322.3      | api       |
| Calibrator                                    | 269.6 | 271.9      | api       |
| Shop                                          | Field | Difference | Tolerance |
| 269.6                                         | 271.9 | -2.3       | +/- 9.00  |

| MICRO LOG SHOP CALIBRATION |                            |                             |                    |
|----------------------------|----------------------------|-----------------------------|--------------------|
| Tool Name:                 | Microlog Pad - 10950489    | Reference Calibration Date: | 11-Jun-14 10:13:48 |
| Engineer:                  | J. BOLLLOM                 | Calibration Date:           | 09-Jul-14 11:36:51 |
| Software Version:          | WL INSITE R4.2.0 (Build 2) | Calibration Version:        | 1                  |
| Host Tool Name:            | DSNT - 11019643            |                             |                    |

| CALIBRATION COEFFICIENT SUMMARY |                  |            |                   |            |       |
|---------------------------------|------------------|------------|-------------------|------------|-------|
| Measurement                     | Micro Log Normal |            | Micro Log Lateral |            | Units |
|                                 | Measured         | Calibrated | Measured          | Calibrated |       |
| Tool Zero                       | -0.07            | -0.07      | -0.01             | -0.01      | ohmm  |
| Calibration Point #1            | 0.01             | 0.00       | 0.00              | 0.00       | ohmm  |
| Calibration Point #2            | 20.02            | 20.00      | 20.01             | 20.00      | ohmm  |

| Internal Reference   | 19.97                       | 19.95 | 20.00                        | 19.99 | ohmm  |
|----------------------|-----------------------------|-------|------------------------------|-------|-------|
| Measurement          | Micro Log Normal Tool Value |       | Micro Log Lateral Tool Value |       | Units |
| Tool Zero            | -0.08                       |       | 0.14                         |       | V     |
| Calibration Point #1 | 19.37                       |       | 3.00                         |       | V     |
| Calibration Point #2 | 5365.42                     |       | 7030.45                      |       | V     |
| Internal Reference   | 5351.53                     |       | 7025.27                      |       | V     |

| MICRO LOG FIELD CHECK |                            |  |  |                             |                    |
|-----------------------|----------------------------|--|--|-----------------------------|--------------------|
| Tool Name:            | Microlog Pad - 10950489    |  |  | Reference Calibration Date: | 09-Jul-14 11:36:51 |
| Engineer:             | SUHAIL BISHTI              |  |  | Calibration Date:           | 25-Jul-14 01:41:41 |
| 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          | -0.07            | -0.07 | -0.01             | -0.01 | ohmm      |
|         | Internal Reference | 19.95            | 19.95 | 19.99             | 19.99 | ohmm      |
| Summary |                    |                  |       |                   |       |           |
|         | Signal             | Shop             | Field | Difference        |       | Tolerance |
|         | Microlog Normal    | 19.95            | 19.95 | 0.00              |       | +/- 0.80  |
|         | Microlog Lateral   | 19.99            | 19.99 | 0.00              |       | +/- 0.80  |

| CALIBRATION SUMMARY                                     |       |       |       |            |                          |       |
|---------------------------------------------------------|-------|-------|-------|------------|--------------------------|-------|
| Sensor                                                  | Shop  | Field | Post  | Difference | Tolerance                | Units |
| GTET-11048627                                           |       |       |       |            |                          |       |
| Gamma Ray Calibrator                                    | 269.6 | 271.9 | ----- | -2.3       | +/- 9.00                 | api   |
| Microlog Pad-10950489                                   |       |       |       |            |                          |       |
| MicroLog Normal                                         | 19.95 | 19.95 | ----- | 0.00       | +/-0.80                  | ohmm  |
| MicroLog Lateral                                        | 19.99 | 19.99 | ----- | 0.00       | +/-0.80                  | ohmm  |
| Data: HOWARD A #110001 GTET-DSN-SDL-ACRT-BN-TRIPPLEIDLE |       |       |       |            | Date: 25-Jul-14 07:35:30 |       |

| <div>HALLIBURTON</div> |  |  |  |  |  |  |
|------------------------|--|--|--|--|--|--|
| 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                                 | 9.200   | 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    | FS       | Formation Fluid Resistivity                           | 1075.00 | ohm-ft |



**HALLIBURTON****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>Rwa / CrossPlot</b> |                                                         |            |             |                    |
| TPUL                   | Tension Pull                                            | 58.59      | NO          |                    |
| BS                     | Bit Size                                                | 58.59      | NO          |                    |
| HDIA                   | Measured Hole Diameter                                  | 0.00       | NO          |                    |
| <b>RWCH</b>            |                                                         |            |             |                    |
| DHTN                   | DownholeTension                                         | 0.00       | BLK         | 0.000              |
| <b>SP Sub</b>          |                                                         |            |             |                    |
| PLTC                   | Plot Control Mask                                       | 50.56      | NO          |                    |
| SP                     | Spontaneous Potential                                   | 50.56      | BLK         | 1.250              |
| SPR                    | Raw Spontaneous Potential                               | 50.56      | NO          |                    |
| SPO                    | Spontaneous Potential Offset                            | 50.56      | NO          |                    |
| <b>GTET</b>            |                                                         |            |             |                    |
| TPUL                   | Tension Pull                                            | 42.54      | NO          |                    |
| GR                     | Natural Gamma Ray API                                   | 42.54      | TRI         | 1.750              |
| GRU                    | Unfiltered Natural Gamma Ray API                        | 42.54      | NO          |                    |
| EGR                    | Natural Gamma Ray API with Enhanced Vertical Resolution | 42.54      | W           | 1.416 , 0.750      |
| HDIA                   | Measured Hole Diameter                                  | 0.00       | NO          |                    |
| ACCZ                   | Accelerometer Z                                         | 0.00       | BLK         | 0.083              |
| DEVI                   | Inclination                                             | 0.00       | NO          |                    |
| <b>DSNT</b>            |                                                         |            |             |                    |
| TPUL                   | Tension Pull                                            | 32.30      | NO          |                    |
| RNDS                   | Near Detector Telemetry Counts                          | 32.40      | BLK         | 1.417              |
| RFDS                   | Far Detector Telemetry Counts                           | 33.15      | TRI         | 0.583              |
| DNTT                   | DSN Tool Temperature                                    | 32.40      | NO          |                    |
| DSNS                   | DSN Tool Status                                         | 32.30      | NO          |                    |
| ERND                   | Near Detector Telemetry Counts EVR                      | 32.40      | BLK         | 0.000              |
| ERFD                   | Far Detector Telemetry Counts EVR                       | 33.15      | BLK         | 0.000              |
| ENTM                   | DSN Tool Temperature EVR                                | 32.40      | NO          |                    |
| HDIA                   | Measured Hole Diameter                                  | 0.00       | NO          |                    |
| <b>SDLT</b>            |                                                         |            |             |                    |
| TPUL                   | Tension Pull                                            | 22.40      | NO          |                    |
| PCAL                   | Pad Caliper                                             | 22.40      | TRI         | 0.250              |
| ACAL                   | Arm Caliper                                             | 22.40      | TRI         | 0.250              |
| <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 Reference 12 KHz Real Signal      | 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  |       |
| HDIA     | Measured Hole Diameter                        | 0.00  | NO  |       |
| SDLT Pad |                                               |       |     |       |
| TPUL     | Tension Pull                                  | 22.39 | NO  |       |
| NAB      | Near Above                                    | 22.21 | BLK | 0.920 |
| NHI      | Near Cesium High                              | 22.21 | BLK | 0.920 |
| NLO      | Near Cesium Low                               | 22.21 | BLK | 0.920 |
| NVA      | Near Valley                                   | 22.21 | BLK | 0.920 |

|                                                                                  |                            |       |                          |       |
|----------------------------------------------------------------------------------|----------------------------|-------|--------------------------|-------|
| NBA                                                                              | Near Barite                | 22.21 | BLK                      | 0.920 |
| NDE                                                                              | Near Density               | 22.21 | BLK                      | 0.920 |
| NPK                                                                              | Near Peak                  | 22.21 | BLK                      | 0.920 |
| NLI                                                                              | Near Lithology             | 22.21 | BLK                      | 0.920 |
| NBAU                                                                             | Near Barite Unfiltered     | 22.21 | BLK                      | 0.250 |
| NLIU                                                                             | Near Lithology Unfiltered  | 22.21 | BLK                      | 0.250 |
| FAB                                                                              | Far Above                  | 22.56 | BLK                      | 0.250 |
| FHI                                                                              | Far Cesium High            | 22.56 | BLK                      | 0.250 |
| FLO                                                                              | Far Cesium Low             | 22.56 | BLK                      | 0.250 |
| FVA                                                                              | Far Valley                 | 22.56 | BLK                      | 0.250 |
| FBA                                                                              | Far Barite                 | 22.56 | BLK                      | 0.250 |
| FDE                                                                              | Far Density                | 22.56 | BLK                      | 0.250 |
| FPK                                                                              | Far Peak                   | 22.56 | BLK                      | 0.250 |
| FLI                                                                              | Far Lithology              | 22.56 | BLK                      | 0.250 |
| PTMP                                                                             | Pad Temperature            | 22.40 | BLK                      | 0.920 |
| NHV                                                                              | Near Detector High Voltage | 21.79 | NO                       |       |
| FHV                                                                              | Far Detector High Voltage  | 21.79 | NO                       |       |
| ITMP                                                                             | Instrument Temperature     | 21.79 | NO                       |       |
| DDHV                                                                             | Detector High Voltage      | 21.79 | NO                       |       |
| HDIA                                                                             | Measured Hole Diameter     | 0.00  | NO                       |       |
| Microlog Pad                                                                     |                            |       |                          |       |
| TPUL                                                                             | Tension Pull               | 22.58 | NO                       |       |
| MINV                                                                             | Microlog Lateral           | 22.58 | BLK                      | 0.750 |
| MNOR                                                                             | Microlog Normal            | 22.58 | BLK                      | 0.750 |
| Data: HOWARD A #1\0001 GTET-DSN-SDL-ACRT-BN-TRIPPLE\001 25-Jul-14 07:30 Dn @0.3f |                            |       | Date: 25-Jul-14 07:31:40 |       |

|             |              |          |        |
|-------------|--------------|----------|--------|
| COMPANY     | TENGASCO INC |          |        |
| WELL        | HOWARD A #1  |          |        |
| FIELD       | UNNAMED      |          |        |
| COUNTY      | TREGO        | STATE    | KANSAS |
| HALLIBURTON |              | MICROLOG |        |