

HALLIBURTON

BOREHOLE SONIC ARRAY LOG

| | |
|------------------------|----------------------------|
| COMPANY | OXY USA INC. |
| WELL | SHELL B-2 |
| FIELD | AMAZON DITCH |
| COUNTY | FINNEY |
| STATE | KANSAS |
| COMPANY | OXY USA INC. |
| WELL | SHELL B-2 |
| FIELD | AMAZON DITCH |
| COUNTY | FINNEY |
| STATE | KANSAS |
| API No. | 15-055-22131 |
| Location | (SHL) 2310' FNL & 330' FWL |
| Other Services: | BSAT DSN/SDL ACRT |
| Secl. | 17 |
| Twp. | 22S |
| Rge. | 34W |
| Permanent Datum | GL |
| Log measured from | KB |
| Drilling measured from | KB |
| Elev. | 2977.2 ft |
| D.F. | 2987.2 ft |
| G.L. | 2977.2 ft |

| | |
|--------------------------|---------------------------|
| Date | 01-Apr-12 |
| Run No. | ONE |
| Depth - Driller | 5065.00 ft |
| Depth - Logger | 5067.0 ft |
| Bottom - Logged Interval | 5057 |
| Top - Logged Interval | 1818 |
| Casing - Driller | 8.625 in @ 1820.0 ft |
| Casing - Logger | 1818.0 ft @ |
| Bit Size | 8.875 in @ |
| Type Fluid in Hole | W/BM @ |
| Density | 9.2 ppg 47.00 s/qt |
| PH | 9.00 pH 8.0 cp/m |
| Source of Sample | MUDPT |
| Rm @ Meas. Temperature | 1.230 ohmm @ 88.00 degF @ |
| Rmf @ Meas. Temperature | 1.04 ohmm @ 85.00 degF @ |
| Rmc @ Meas. Temperature | 1.410 ohmm @ 88.00 degF @ |
| Source Rmf | MEAS @ MEAS @ |
| Rm @ BHT | 0.88 ohmm @ 125.0 degF @ |
| Time Since Circulation | 12.0 hr |
| Time on Bottom | 01-Apr-12 15:06 |
| Max. Rec. Temperature | 125.0 degF @ 5067.0 ft @ |
| Equipment | 10975786 FTSM |
| Recorded By | WHITLOCK |
| Witnessed By | ANDREA HOWSON |
| | INGERSOLL |
| | AUSTIN GARNIER |

Fold here

Service Ticket No.: 9405509 API Serial No.: 15-055-22131 PGM Version: WL INSITE R3.4.2 (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. |
| Rmf @ Meas. Temp. | @ | @ | | ONE | ACRT | N/A | 1.5" S.O. |
| Rmc @ Meas. Temp. | @ | @ | | | I816S708 | | |
| Source Rmf | Rmc | | | | | | |
| Rm @ BHT | @ | @ | | | | | |
| Rmf @ BHT | @ | @ | | | | | |
| Rmc @ BHT | @ | @ | | | | | |
| EQUIPMENT DATA | | | | | | | |
| GAMMA | | ACOUSTIC | | DENSITY | | NEUTRON | |
| Run No. | ONE | Run No. | ONE | Run No. | ONE | Run No. | ONE |
| Serial No. | 10971172 | Serial No. | 11014316 | Serial No. | I378M477P870 | Serial No. | 10951378 |
| Model No. | GTET | Model No. | BSAT | Model No. | SDLT | Model No. | DSNT |
| Diameter | 3.625 | No. of Cent. | 2 | Diameter | 4.5 | Diameter | 3.625 |
| Detector Model No. | GTET | Spacing | .5 | Log Type | GAM-GAM. | Log Type | NEU-NEU |
| Type | SCINT | | | Source Type | CS-137 | Source Type | AM241BE |
| Length | 8" | LSA [Y/N] | YES | Serial No. | 20784B | Serial No. | 373 |
| Distance to Source | N/A | FWDA [Y/N] | YES | Strength | 1.5 CI | Strength | 15 CI |

LOGGING DATA

GENERAL GAMMA ACOUSTIC DENSITY NEUTRON

| Run No. | GENERAL | | Speed ft/min | GAMMA | | ACOUSTIC | | Matrix | DENSITY | | NEUTRON | | | |
|---------|---------|-----|-----------------|-------|-----|----------|-----|--------|---------|-----|---------|----|-----|------|
| | Depth | | | Scale | | Scale | | | Scale | | Matrix | | | |
| | From | To | | L | R | L | R | | L | R | L | R | | |
| ONE | TD | CSG | REC | 0 | 150 | 30 | -10 | 47.6 | 30 | -10 | 2.71 | 30 | -10 | LIME |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

DIRECTIONAL INFORMATION

Maximum Deviation @ KOP @

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING.
 REPEAT PULLED FROM 4200-3600 AT CUSTOMERS REQUEST.

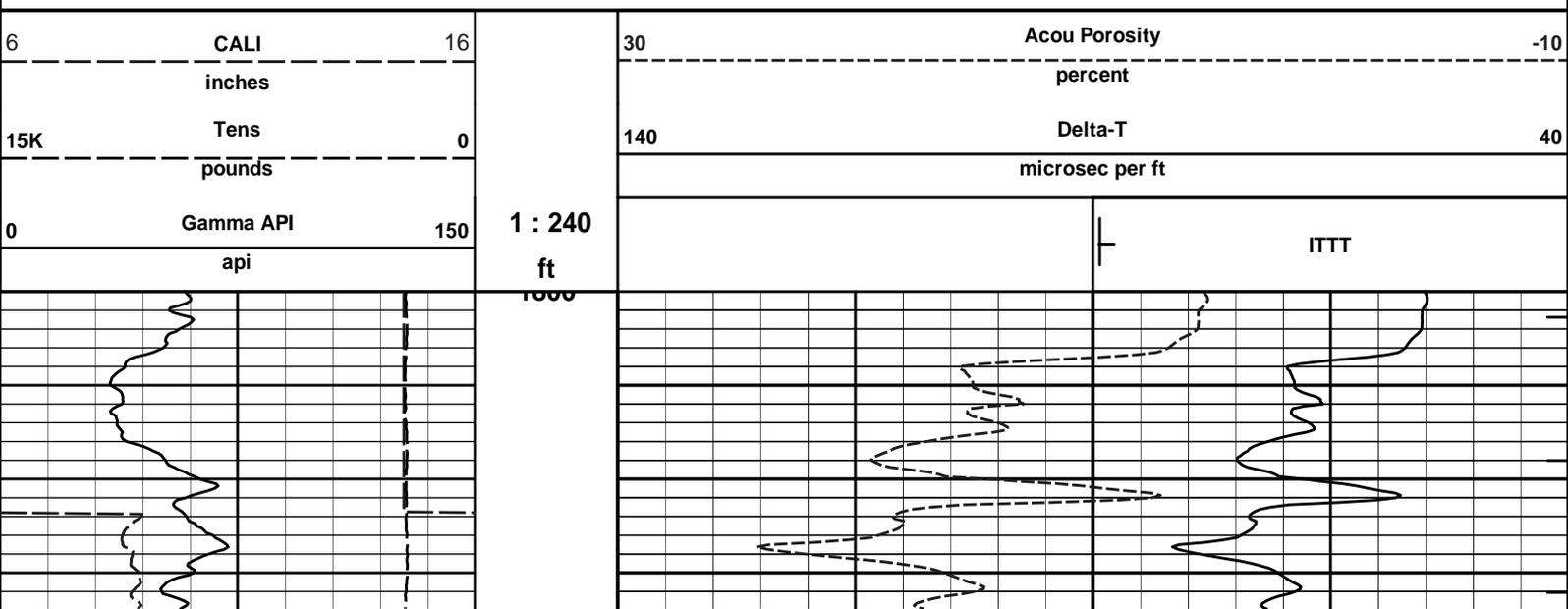
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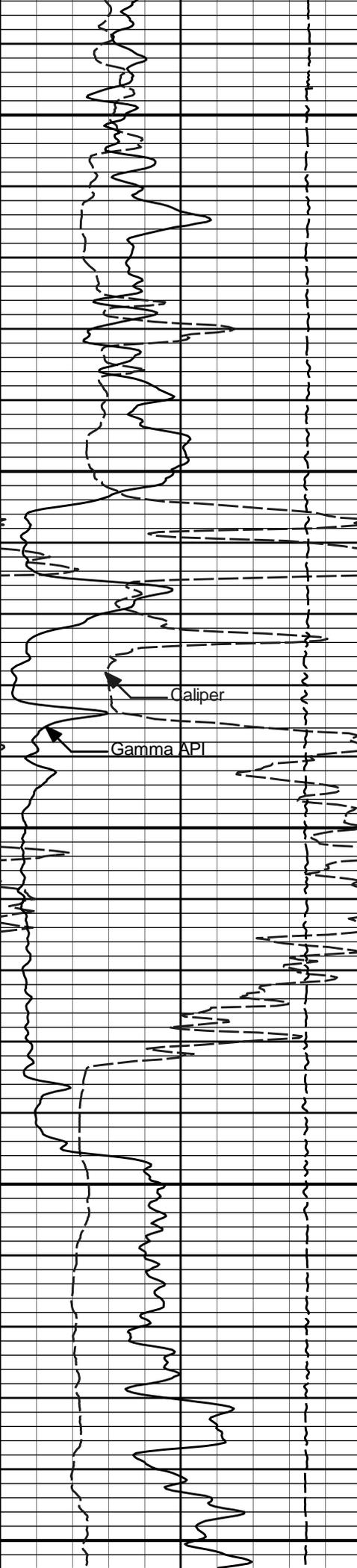
HALLIBURTON

HALLIBURTON Plot Time: 01-Apr-12 17:48:05
 Plot Range: 1800 ft to 5071 ft
 Data: OXY_SHELL_B-2\Well Based\DAQ-0001-004_MAIN
 Plot File: \BSAT\BSAT_5inch

5 INCH MAIN LOG

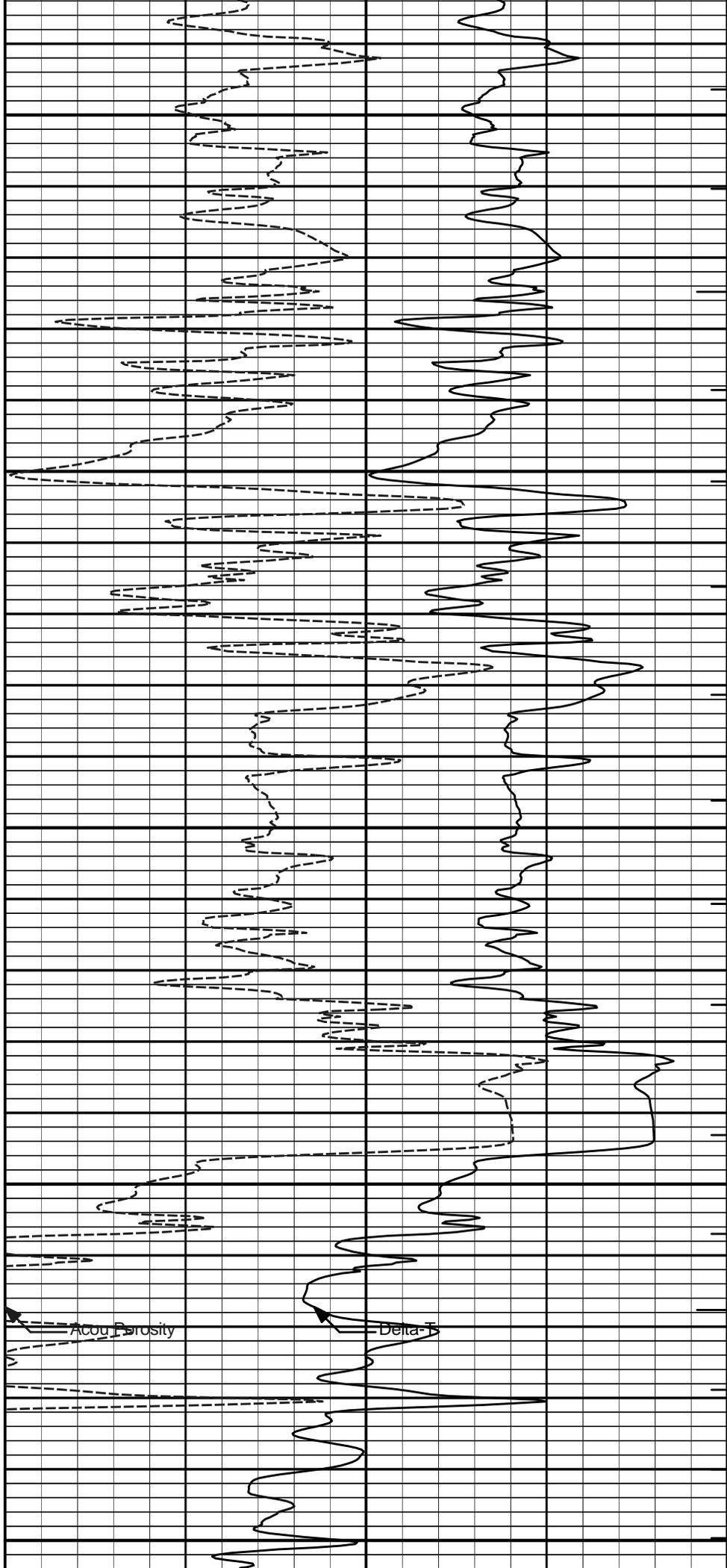
MAIN LOG SECTION





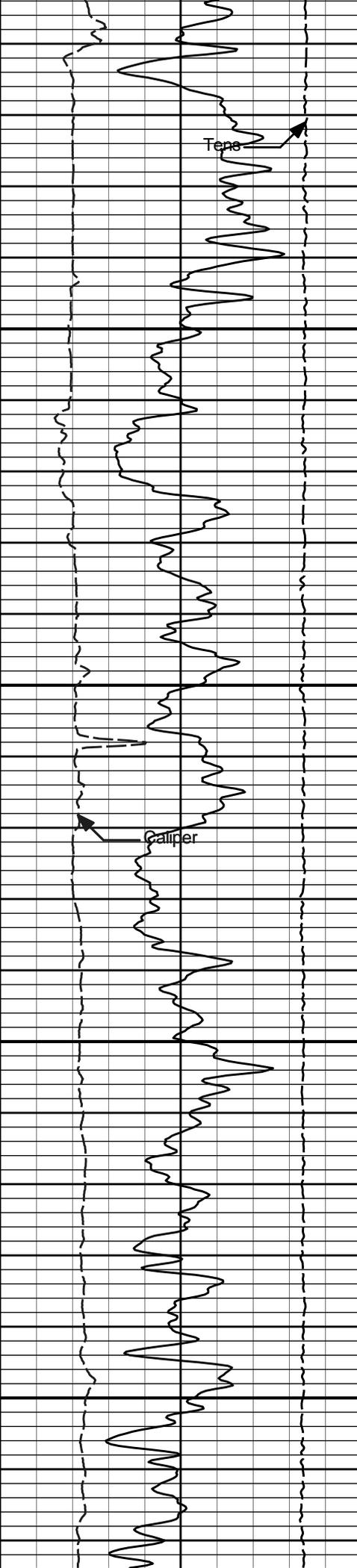
1900

2000



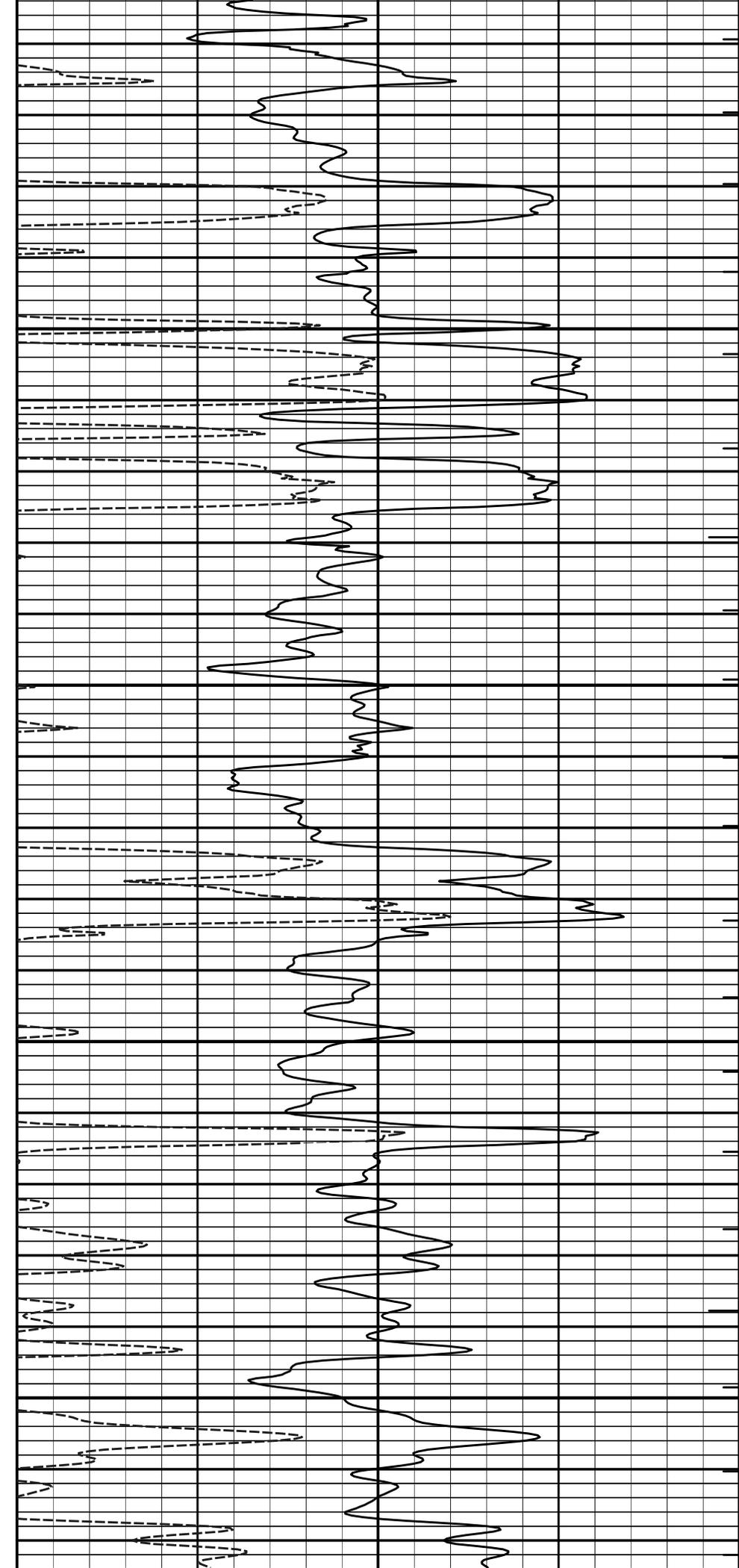
Accu Porosity

Delta-T



2100

2200



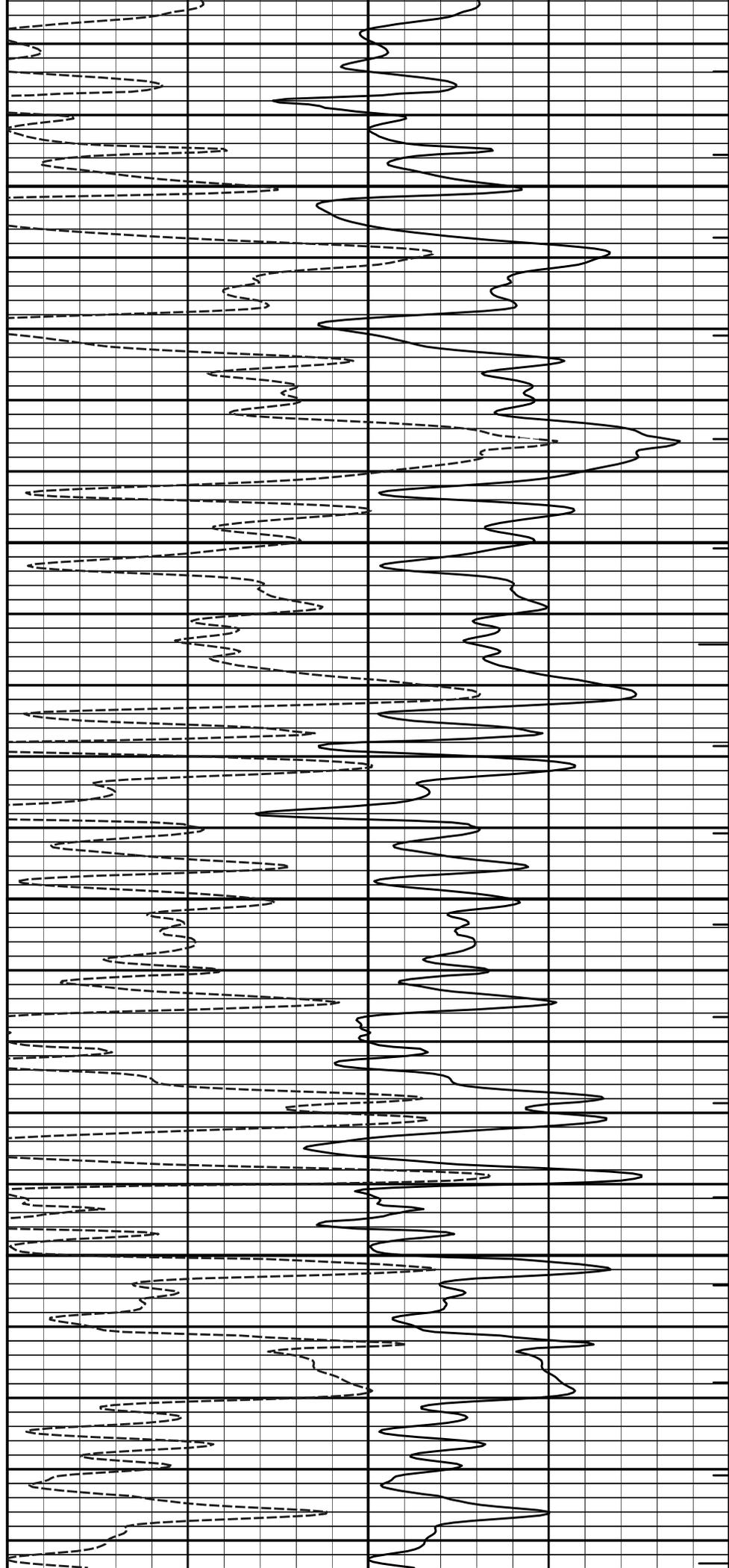


2300

2400

Caliper

Gamma API

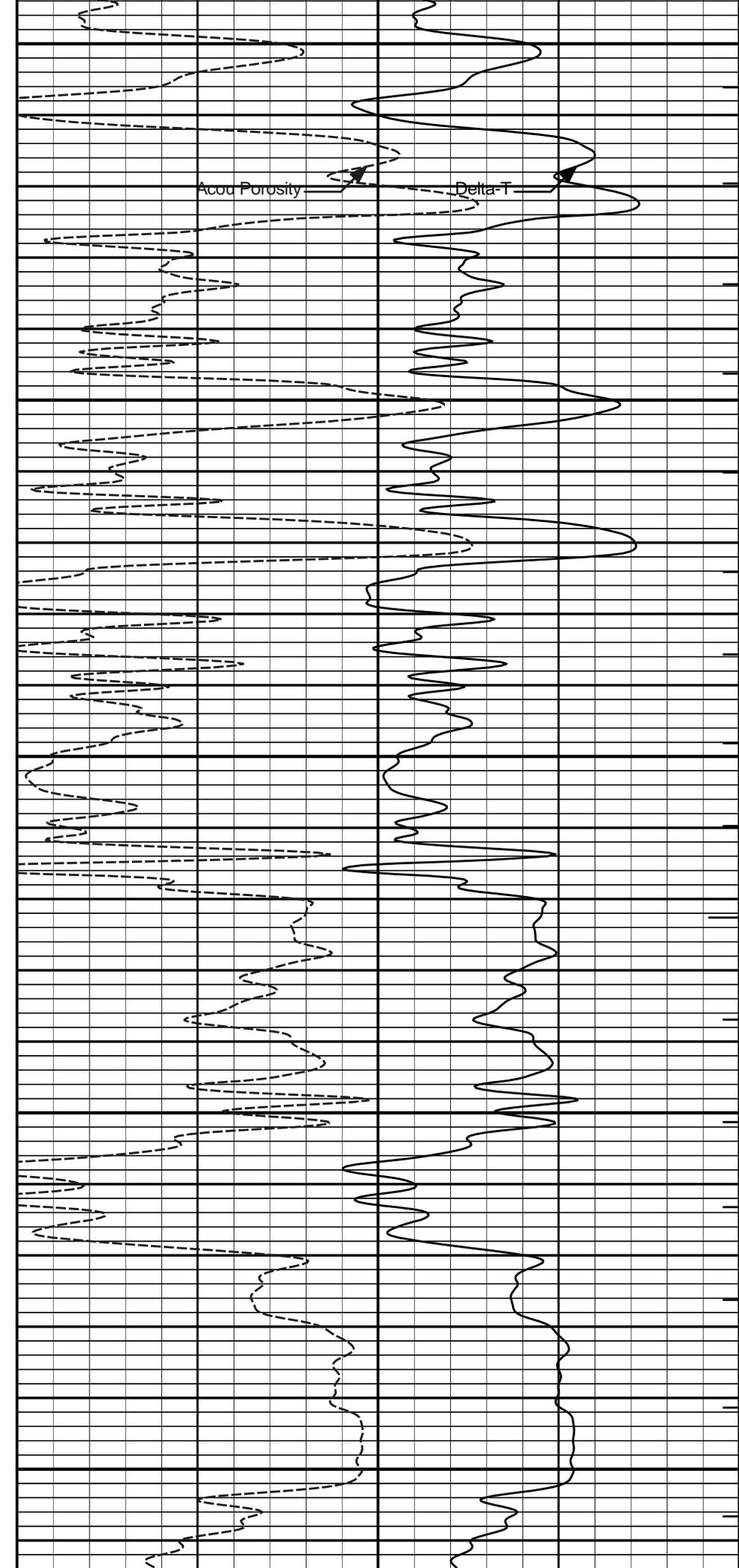




2500

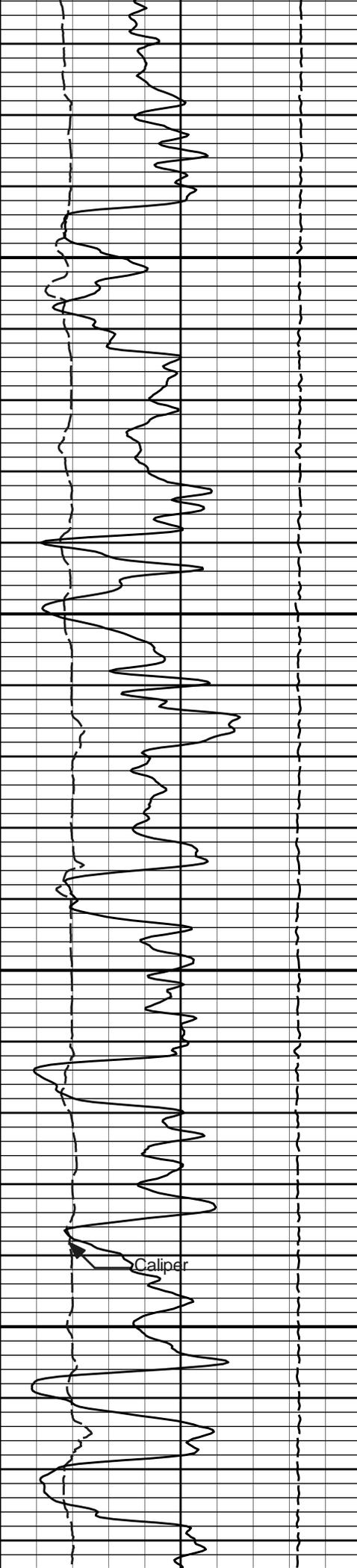
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2700



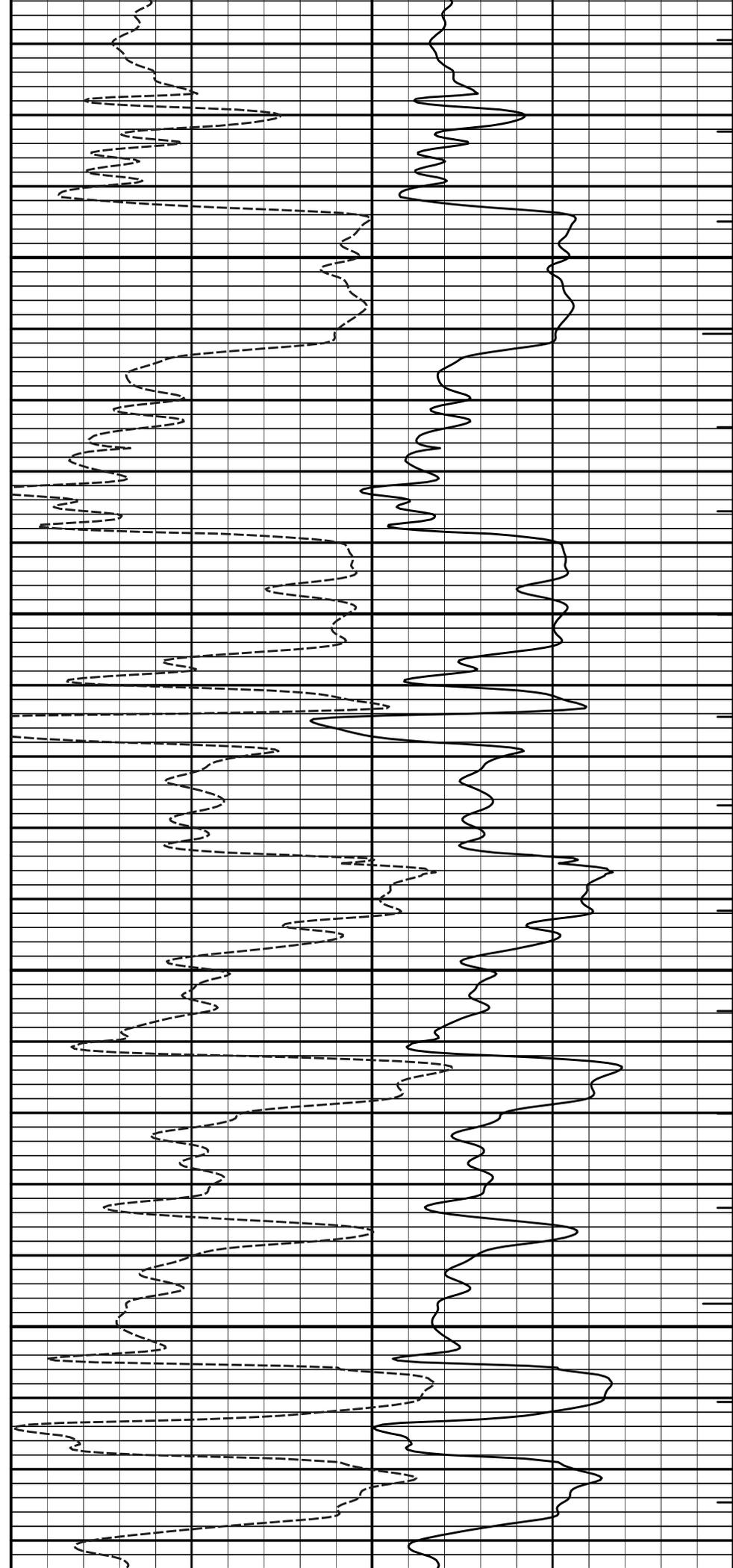
Acou Porosity

Delta-T



2800

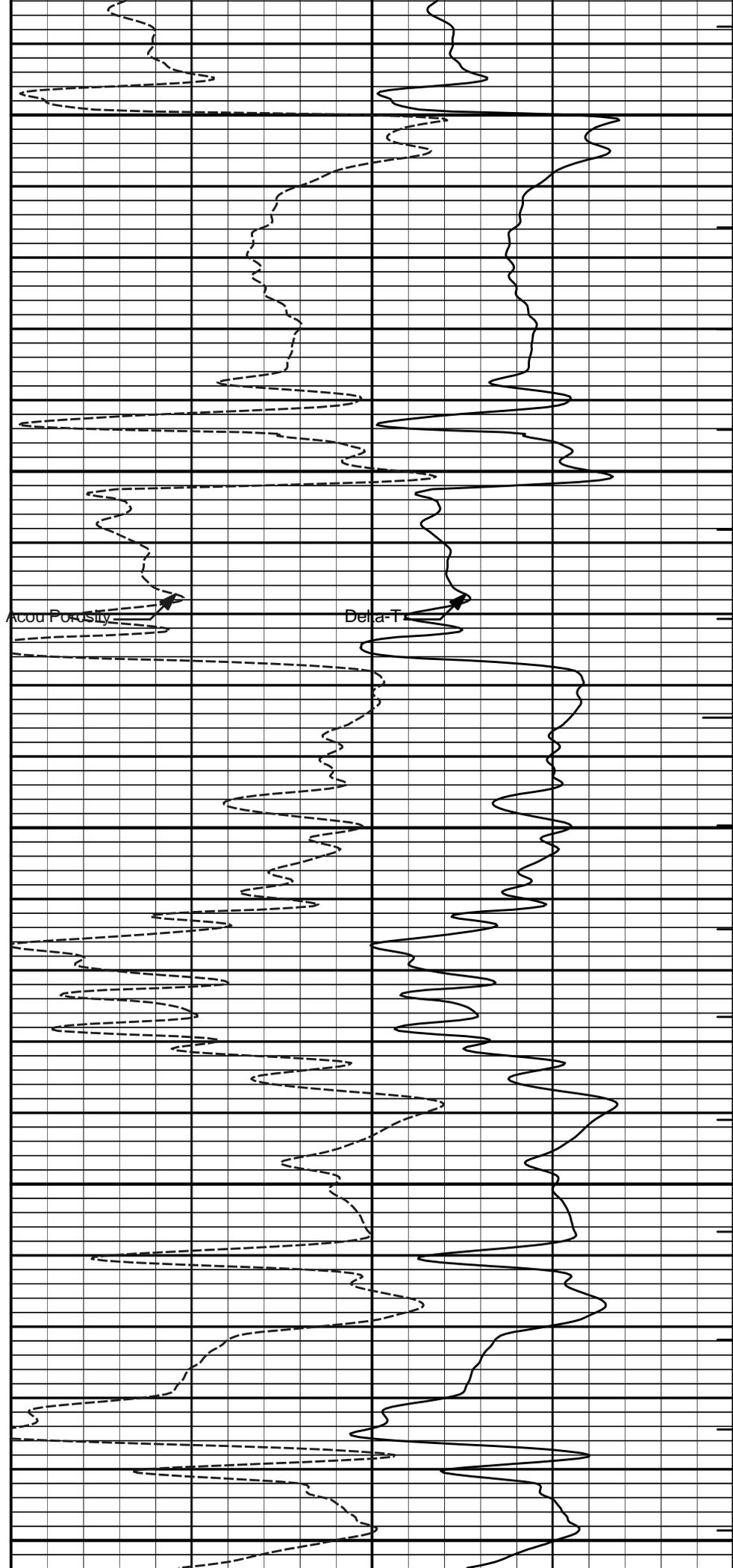
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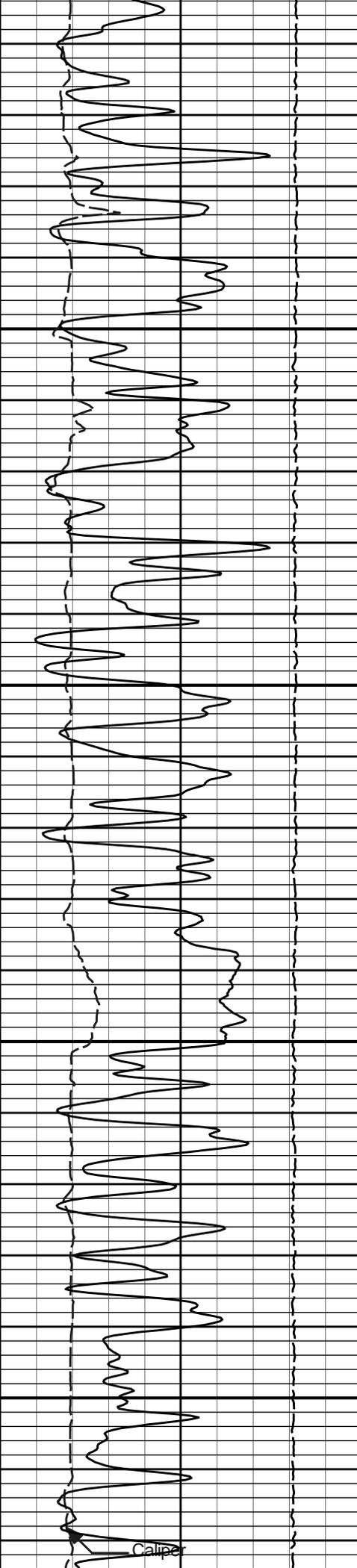




3000

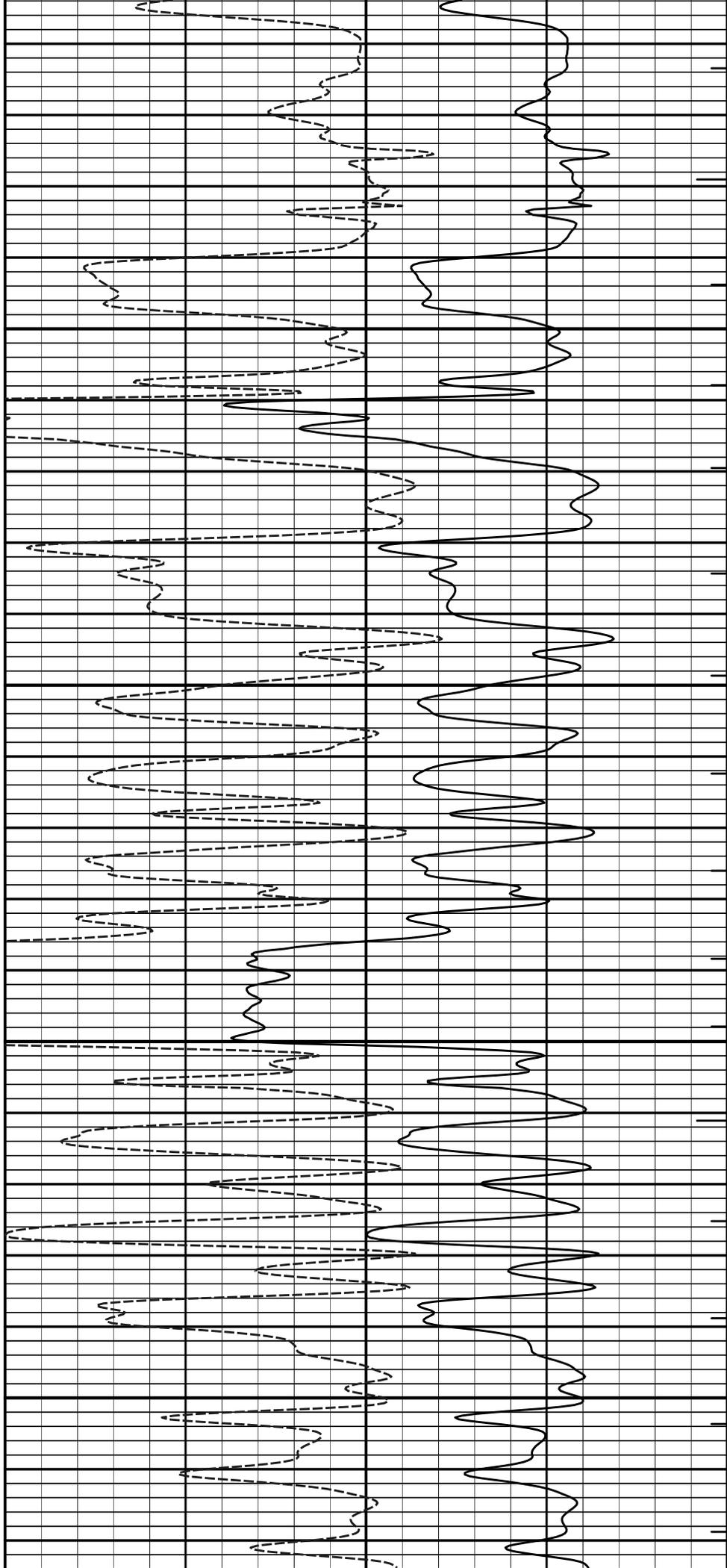
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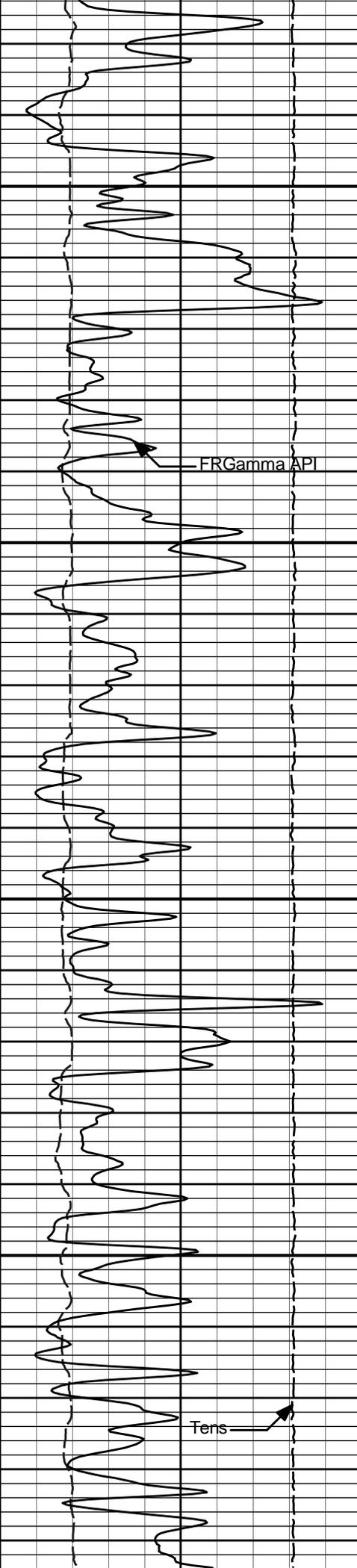




3200

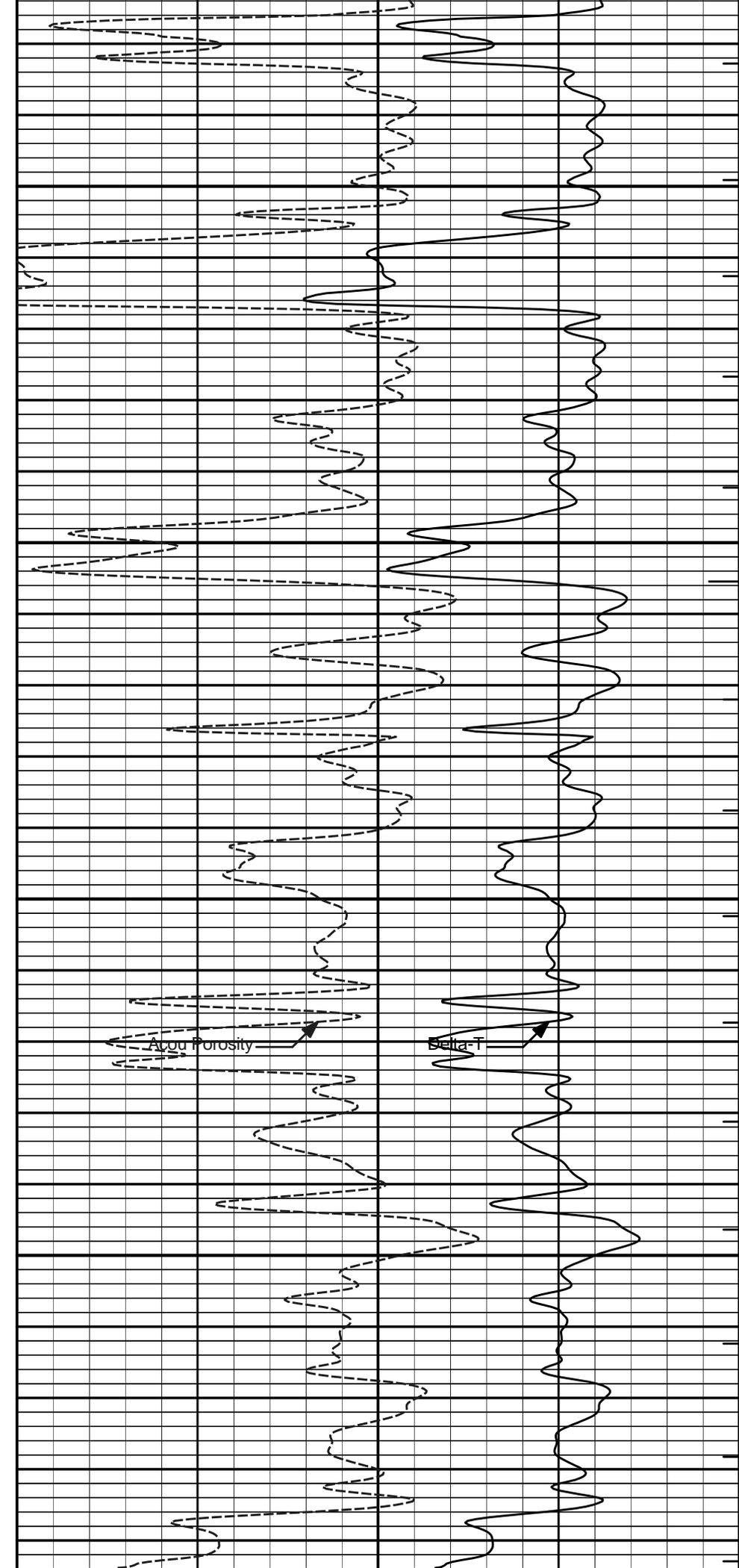
3300





3400

3500

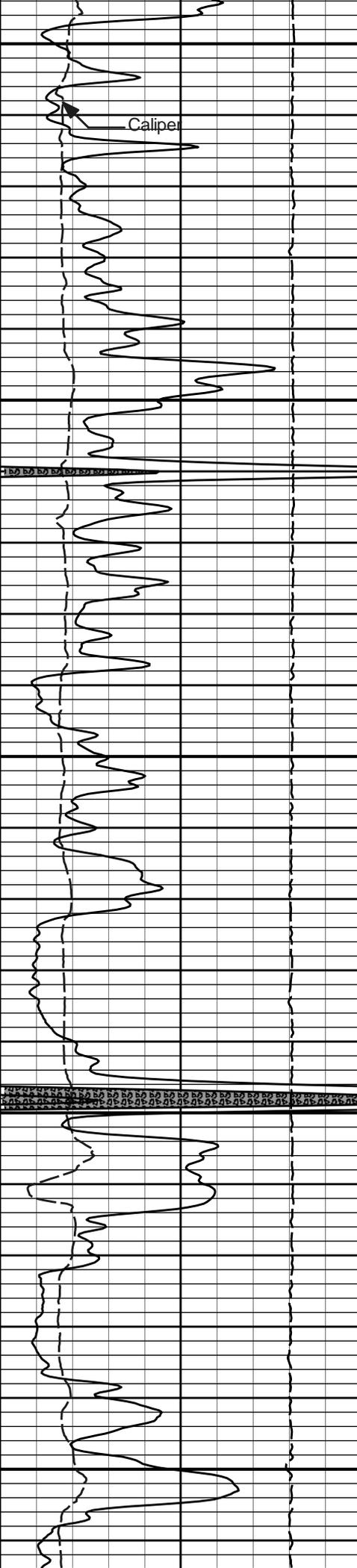


FRGamma API

Tens

Acou Porosity

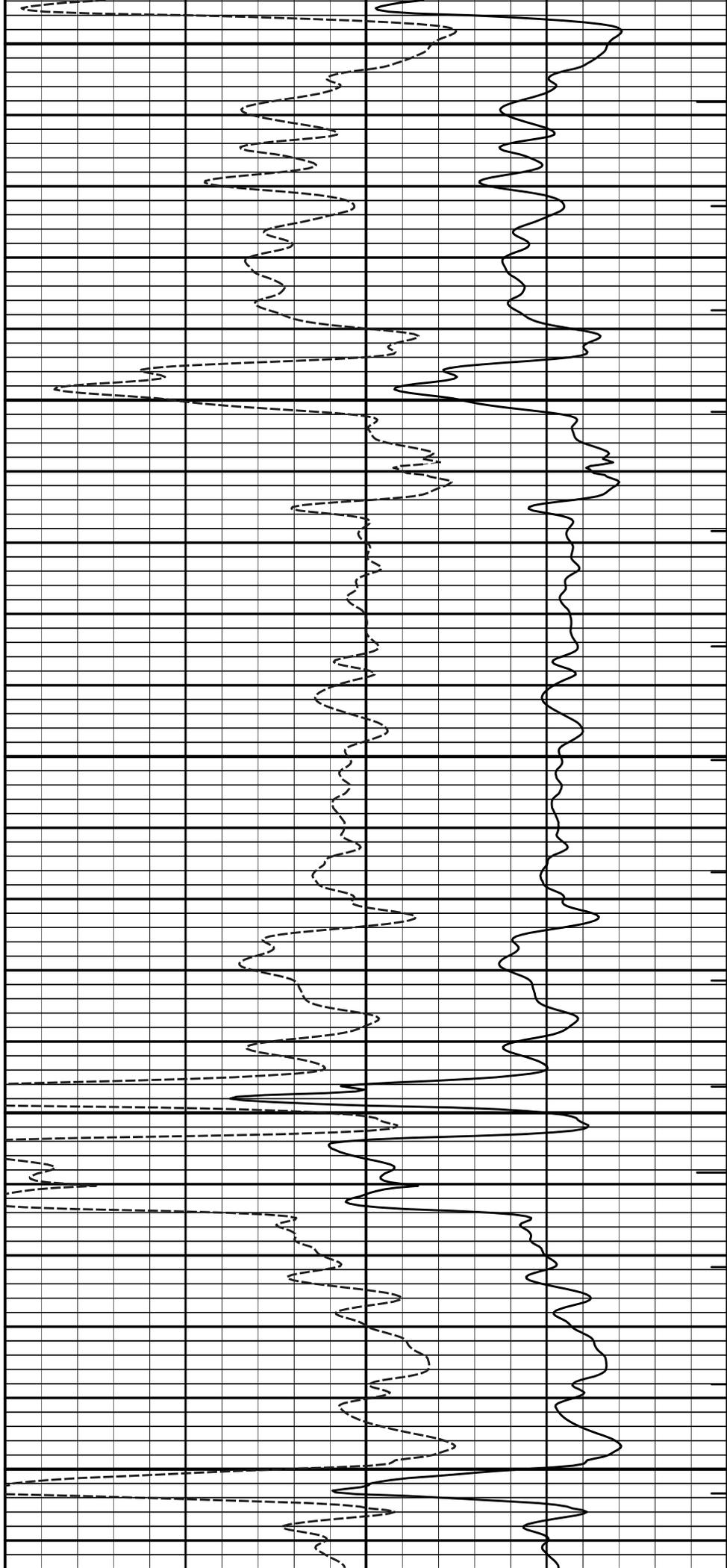
Beta-T

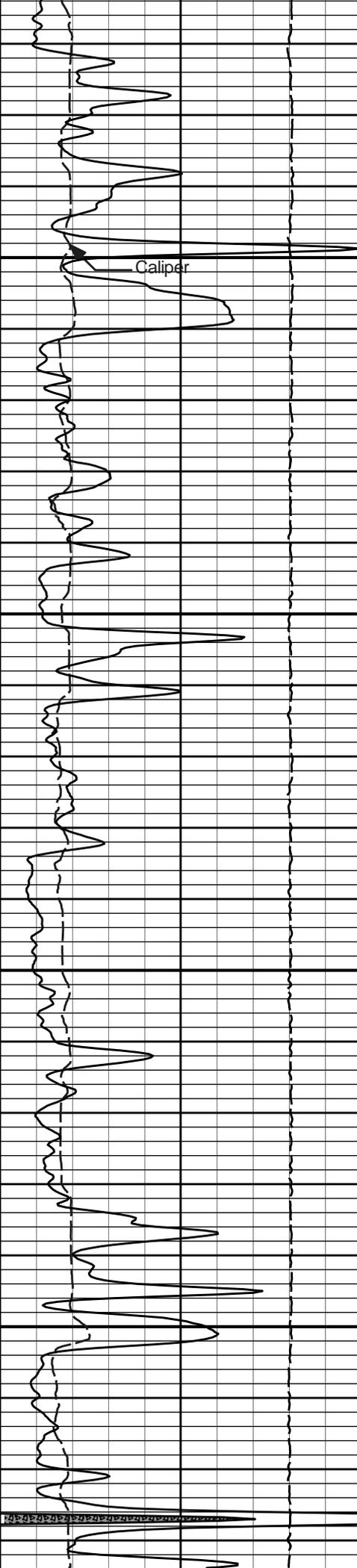


3600

3700

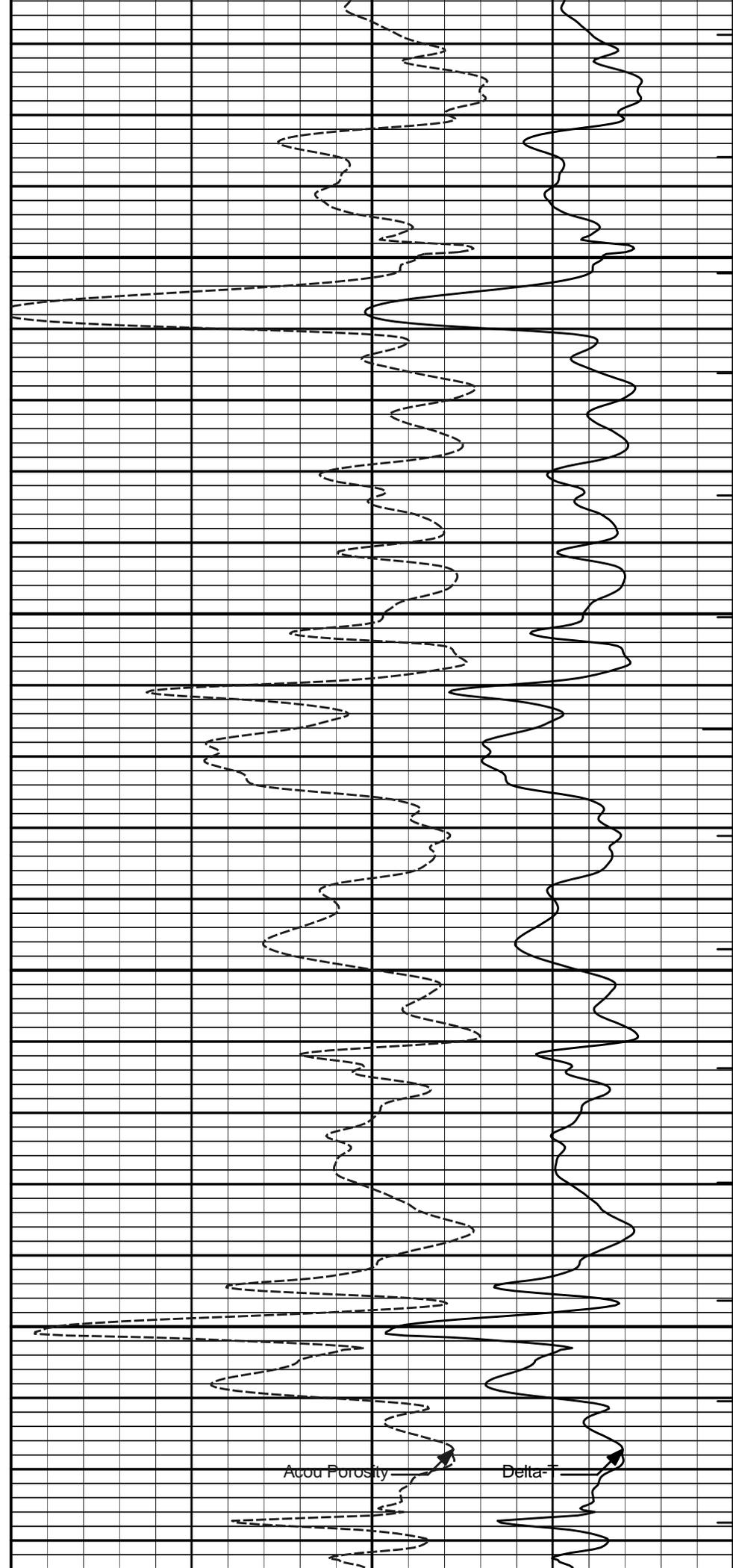
3800





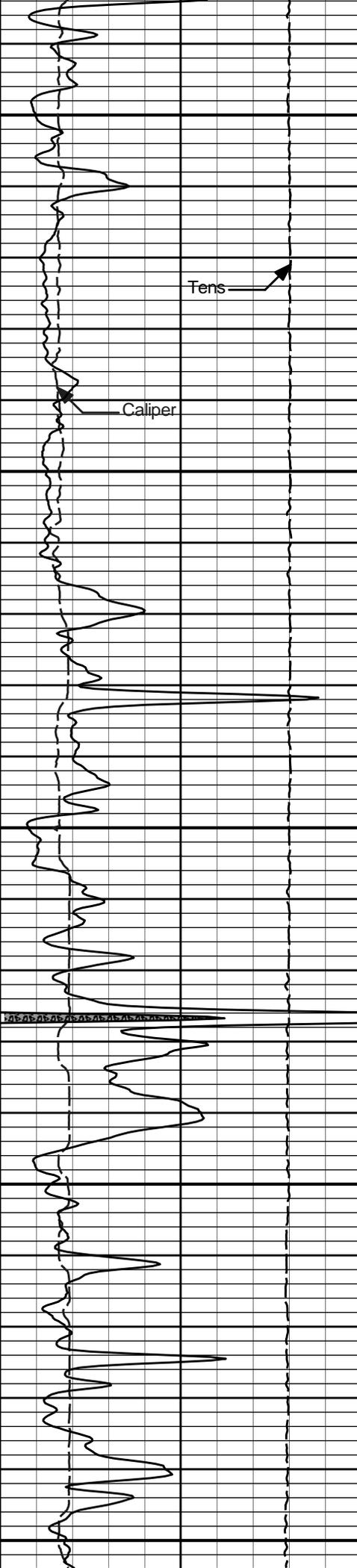
3900

4000



Acou Porosity

Delta

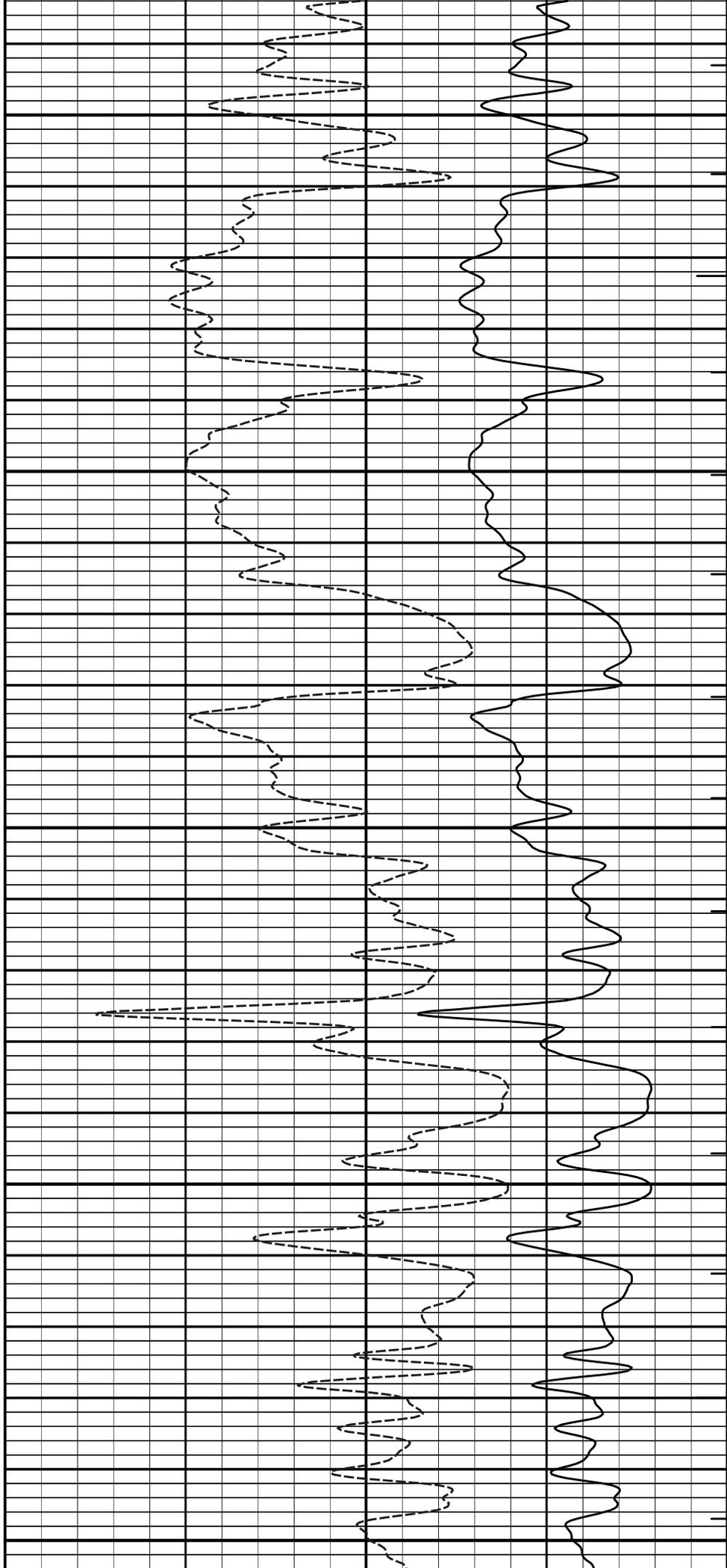


Tens

Caliper

4100

4200

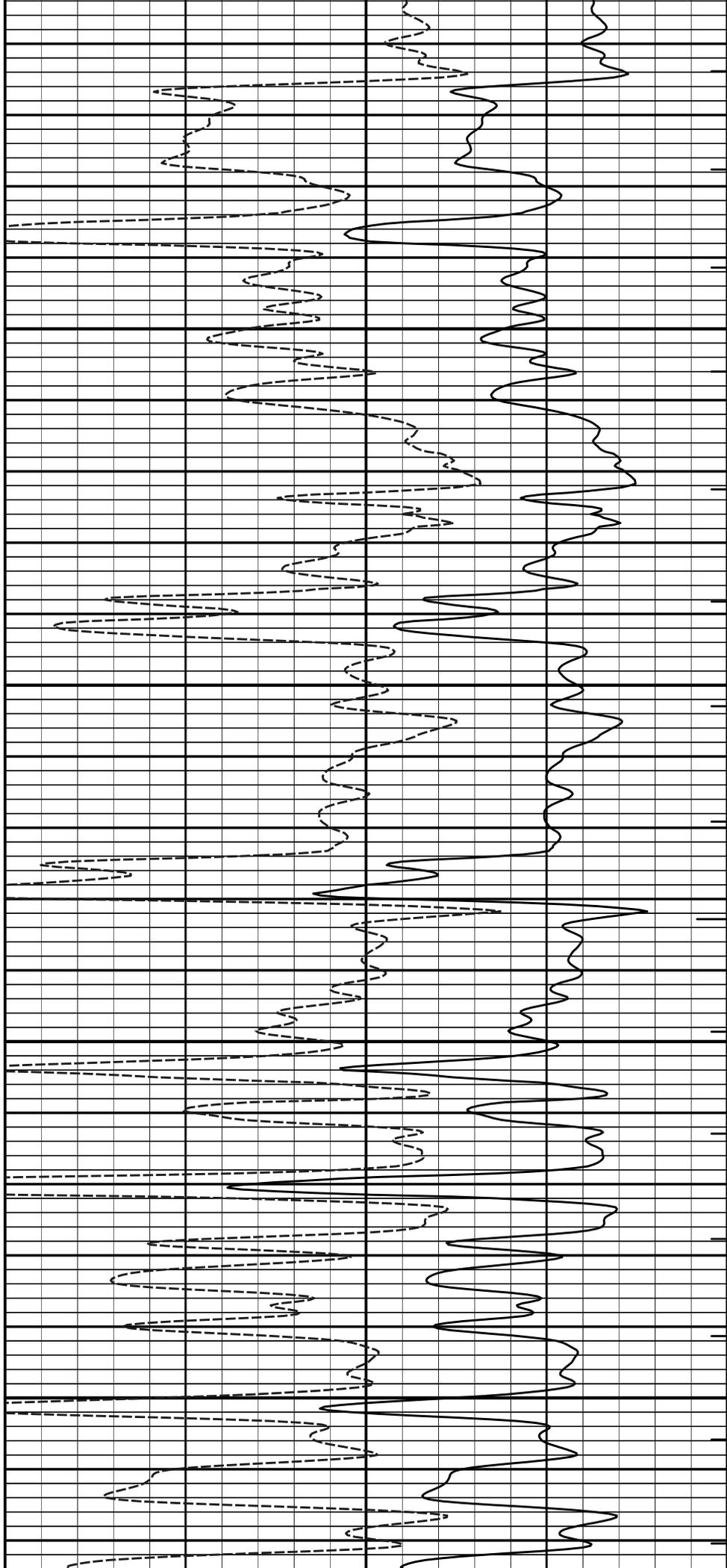


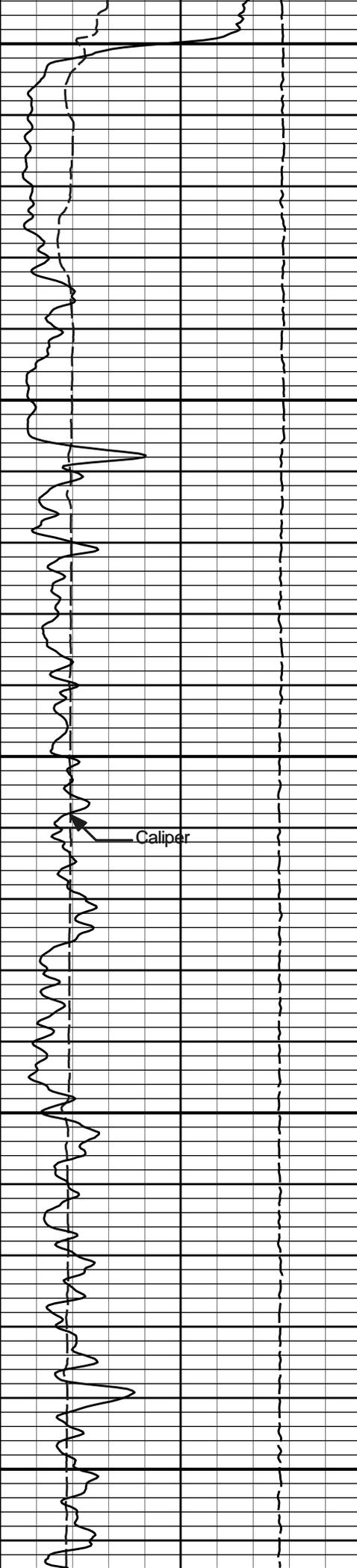


Caliper

4300

4400



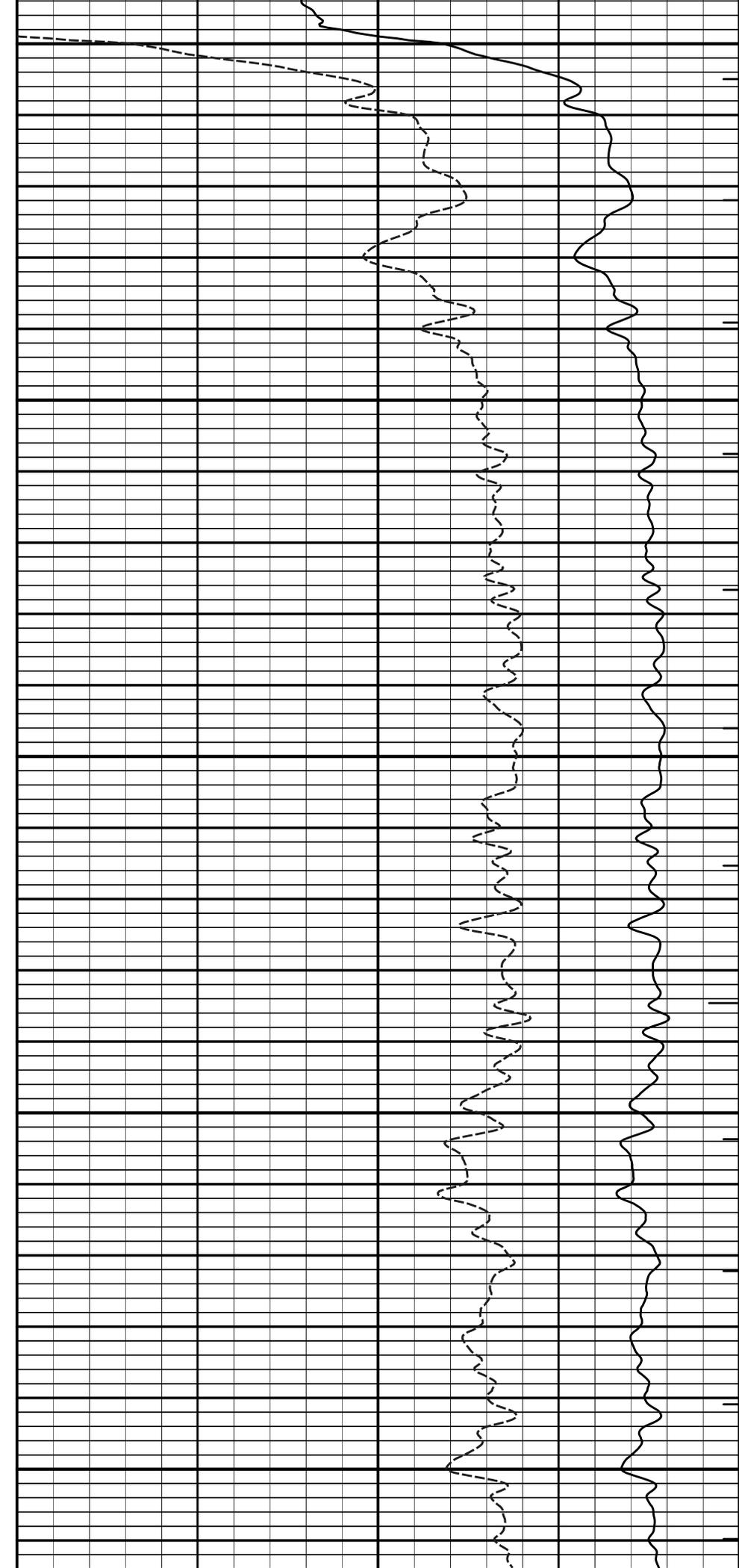


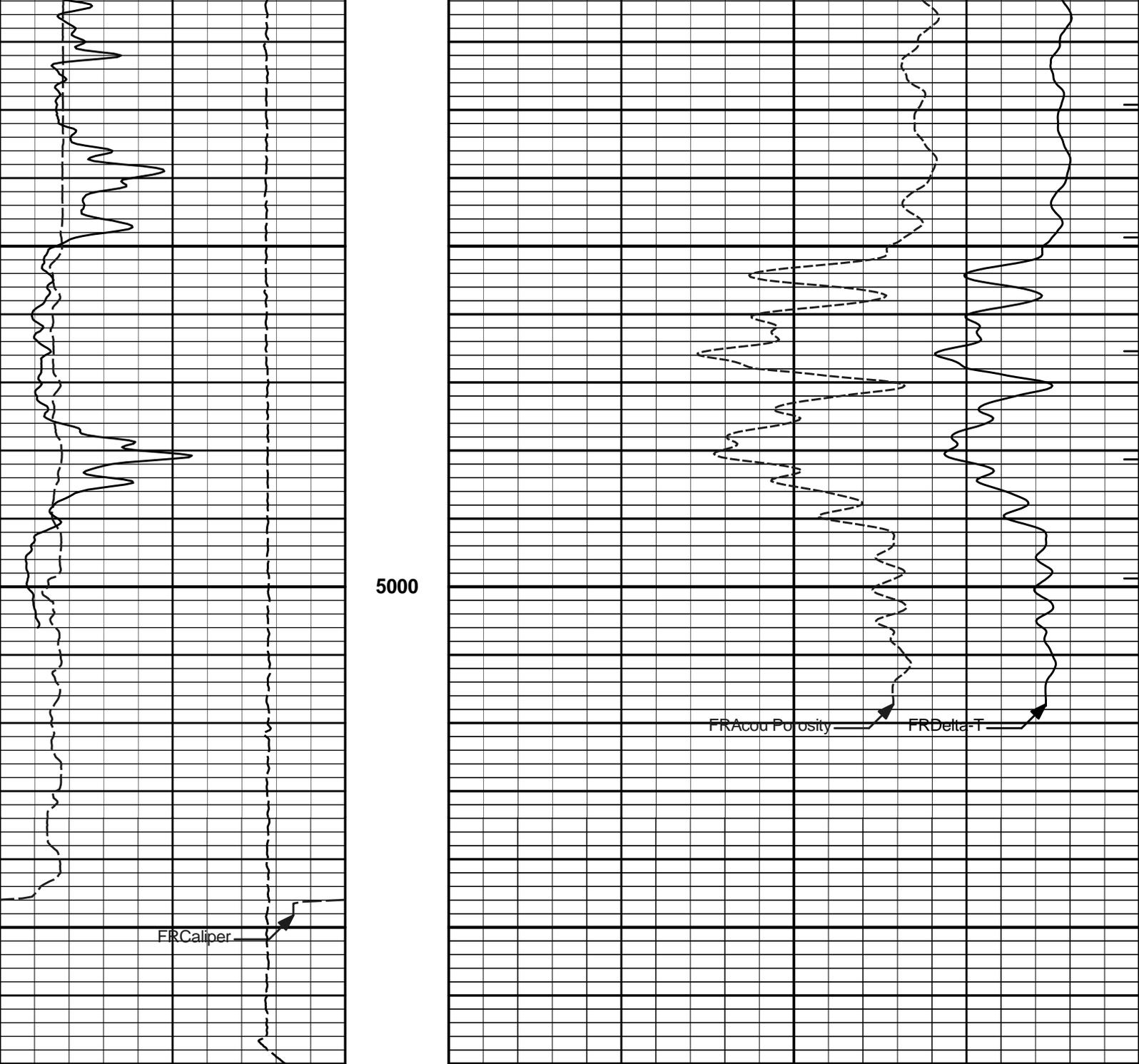
4700

4800

4900

Caliper





| | | | | | |
|-----|-----------|-----|---------------|---------------|---------|
| 0 | Gamma API | 150 | 1 : 240 ft | ITTT | |
| | api | | | | |
| 15K | Tens | 0 | 30 | Delta-T | 40 |
| | pounds | | | Acou Porosity | percent |
| 6 | CALI | 16 | | | |
| | inches | | | | |

HALLIBURTON

Plot Time: 01-Apr-12 17:48:18
 Plot Range: 1800 ft to 5071 ft
 Data: OXY_SHELL_B-2\Well Based\DAQ-0001-004_MAIN
 Plot File: \BSAT\BSAT_5inch

5 INCH MAIN LOG

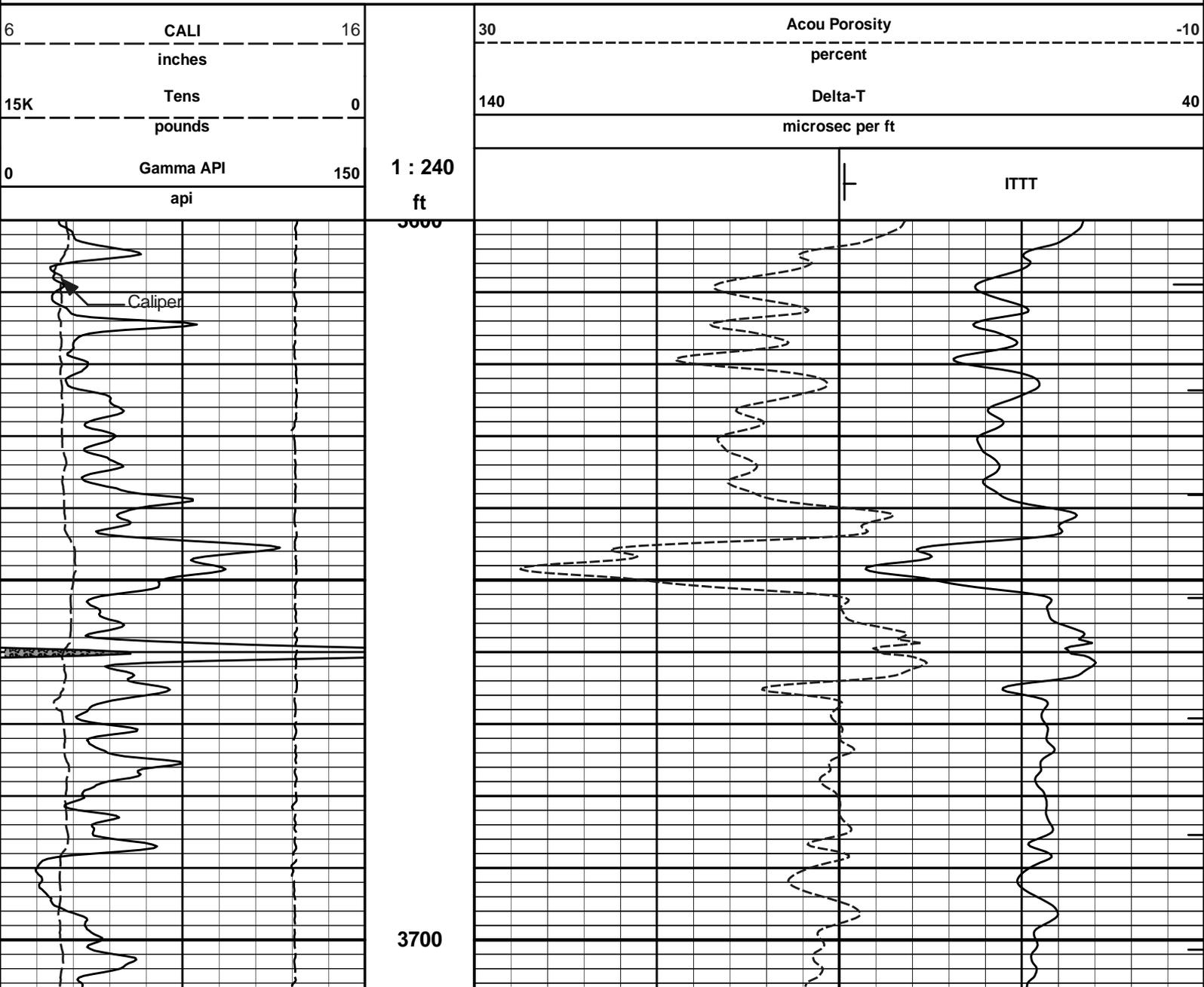
MAIN LOG SECTION

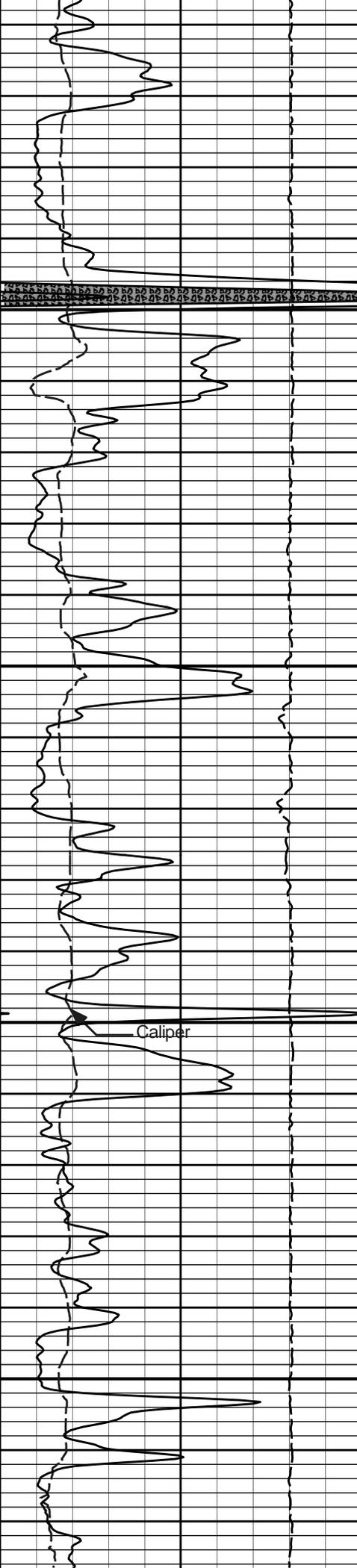
HALLIBURTON

Plot Time: 01-Apr-12 17:48:18
 Plot Range: 3600 ft to 4200 ft
 Data: OXY_SHELL_B-2\Well Based\DAQ-0001-003.01\
 Plot File: \\BSAT\BSAT_5inch

5 INCH REPEAT SECTION

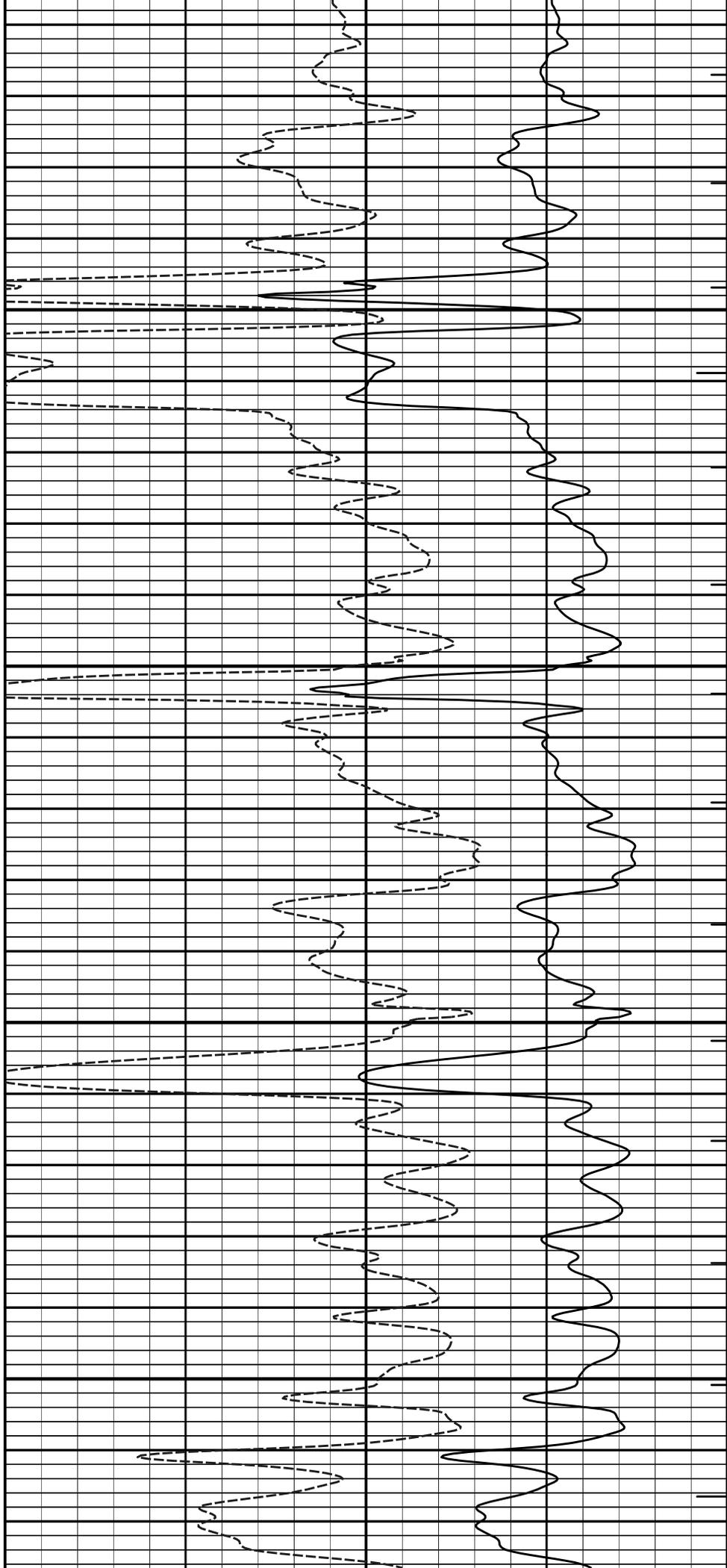
5 INCH REPEAT SECTION





3800

3900





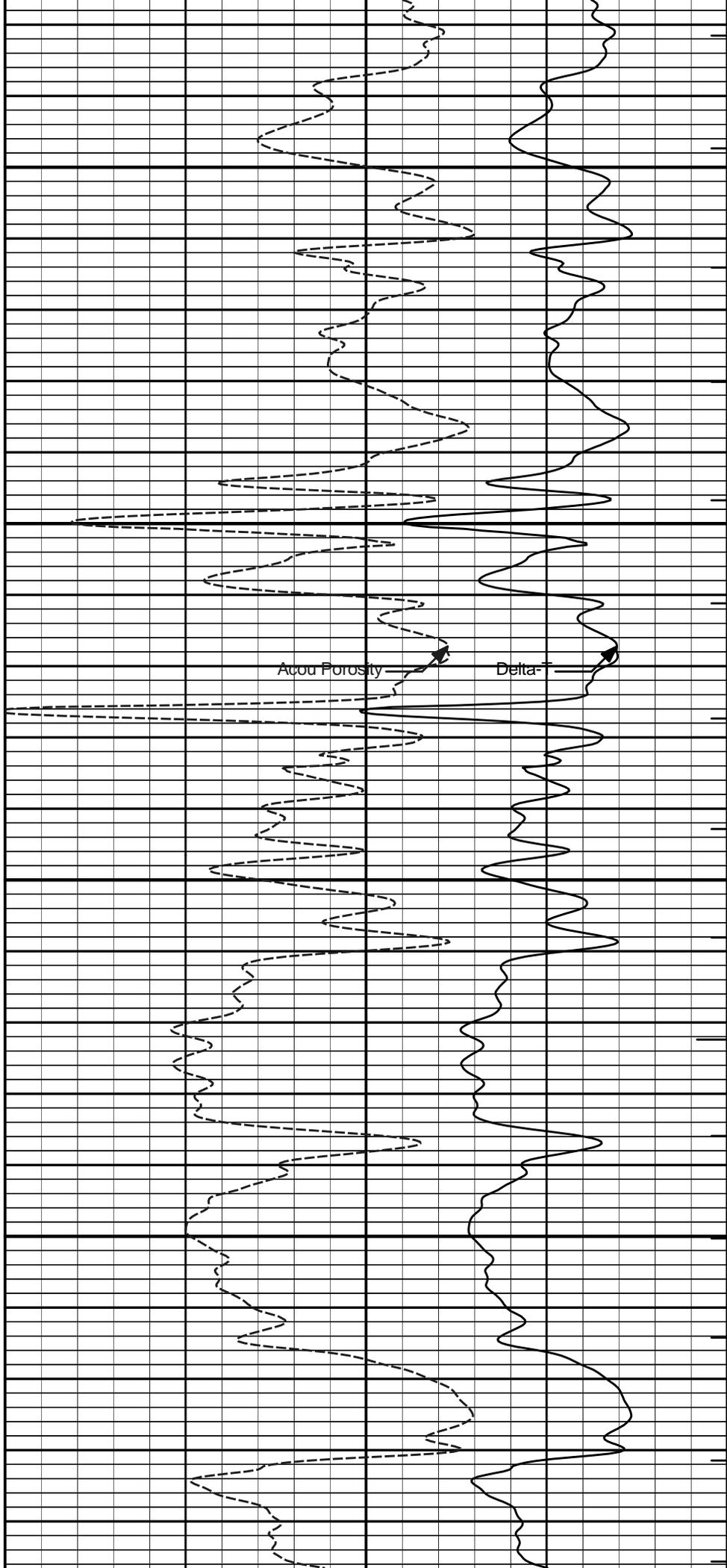
4000

Gamma API

Tens

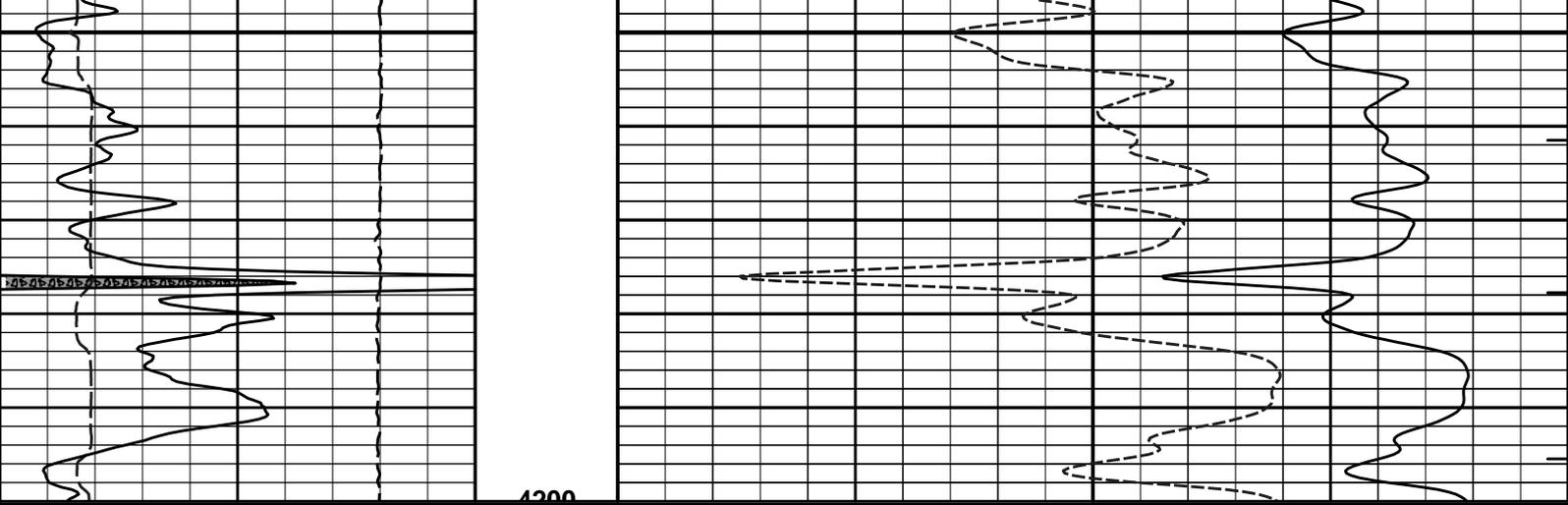
Caliper

4100



Acou Porosity

Delta



| | | | | |
|-----|-----------|-----|---------------|-----------------|
| 0 | Gamma API | 150 | 1 : 240 ft | ITTT |
| | api | | | |
| 15K | Tens | 0 | 140 | Delta-T |
| | pounds | | | microsec per ft |
| 6 | CALI | 16 | 30 | Acou Porosity |
| | inches | | | percent |

HALLIBURTON

Plot Time: 01-Apr-12 17:48:22
 Plot Range: 3600 ft to 4200 ft
 Data: OXY_SHELL_B-2\Well Based\DAQ-0001-003.01\
 Plot File: \BSAT\BSAT_5inch

5 INCH REPEAT SECTION

5 INCH REPEAT SECTION

HALLIBURTON

CALIBRATION REPORT

SURFACE TENSION SHOP CALIBRATION

| | | | |
|-------------------|---------------------------|-----------------------------|--------------------|
| Tool Name: | Depth Panel - 10842695 | Reference Calibration Date: | 28-Dec-07 12:33:23 |
| Engineer: | GUTHMUELLER | Calibration Date: | 07-Jan-08 09:52:53 |
| Software Version: | WL INSITE R2.0 (Build 22) | Calibration Version: | 1 |

SURFACE TENSION LOAD CELL

| Measurement | Load Cell Value | Measurement | Calibrated | Units |
|-------------|-----------------|-------------|------------|-------|
| Low | 10285.21 | -35.81 | 0.00 | lbs |
| High | 17061.79 | 6736.91 | 6770.00 | lbs |

DOWNHOLE TENSION SHOP CALIBRATION

| | | | |
|-------------------|----------------------------|-----------------------------|--------------------|
| Tool Name: | CH_HOS - CH_HOS_I | Reference Calibration Date: | 07-Nov-11 21:53:28 |
| Engineer: | WHITLOCK | Calibration Date: | 10-Feb-12 05:29:34 |
| Software Version: | WL INSITE R3.4.2 (Build 2) | Calibration Version: | 1 |

Logging Source S/N: DSN-373

Tank Serial Number: FTSM HWT

Reference value assigned to Tank: 56.100

Snow Block S/N: 10975786

Calibration Tank Water Temperature: 75 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS

| Measurement | Prev. Value | New Value | Control Limit On New Value |
|-------------|-------------|-----------|----------------------------|
| Gain: | 1.009 | 1.006 | 0.900 - 1.100 |

WATER TANK SUMMARY (Horizontal Water Tank)

| Measurement | Current Reading (Previous Coef.) | Calibrated (New Coef.) | Change | Control Limit On Change |
|-------------------|----------------------------------|------------------------|--------|-------------------------|
| Porosity (decp): | 0.2365 | 0.2358 | 0.0008 | +/- 0.0020 |
| Calibrated Ratio: | 10.58 | 10.56 | 0.025 | +/- 0.050 |

VERIFIER

| Measurement | Value | Control Limit |
|-----------------------------|--------|-------------------|
| Snow-Block Porosity (decp): | 0.0803 | 0.02000 - 0.09000 |

PASS/FAIL SUMMARY

| | |
|-------------------|--------|
| Background Check: | Passed |
| Gain-Range Check: | Passed |
| Snow-Block Check: | Passed |

DUAL SPACED NEUTRON FIELD CALIBRATION

Tool Name: DSNT - 10951378

Reference Calibration Date: 05-Mar-12 12:23:01

Engineer: WHITLOCK

Calibration Date: 30-Mar-12 10:18:20

Software Version: WL INSITE R3.4.2 (Build 2)

Calibration Version: 1

Logging Source S/N: DSN-373

Snow Block S/N: 10975786

NEUTRON FIELD-CHECK SUMMARY

| | Shop | Field | Difference | Control Limit On Change |
|-----------------------------|--------|--------|------------|-------------------------|
| Snow-Block Porosity (decp): | 0.0803 | 0.0811 | 0.0007 | +/- 0.0150 |

PASS/FAIL SUMMARY

| | |
|------------------------|--------|
| Block Change Check: | Passed |
| Snow Block Stat Check: | Passed |
| Temperature Check: | Passed |

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - I378_M477_P870

Reference Calibration Date: 01-Jan-70 00:00:00

Engineer: WHITLOCK

Calibration Date: 30-Mar-12 10:30:06

Software Version: WL INSITE R3.4.2 (Build 2)

Calibration Version: 1

CALIBRATION COEFFICIENTS

| Measurement | Previous Value | New Value | Control Limit On New Value |
|-------------|----------------|-----------|----------------------------|
| Pad Offset | -2823.93 | -2823.93 | -7000.00 - -1000.00 |
| Pad Gain | 0.0003704 | 0.0003704 | 0.000200 - 0.000600 |

| | | | |
|------------|--------------|--------------|----------------------|
| Arm Offset | -2190.19 | -2190.19 | -5000.00 - 3000.00 |
| Arm Gain | 0.0005308 | 0.0005308 | 0.000300 - 0.000700 |
| Arm Power | -0.000005823 | -0.000005823 | -0.000010 - 0.000010 |

The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER

Tool Diameter: 4.50 in

| CALIBRATION RINGS | | | | |
|-------------------|-----------------------------------|-------------------------|--------|----------------------------|
| Measurement | Current Reading (Previous Coeff.) | Calibrated (New Coeff.) | Change | Control Limit On New Value |
| PAD EXTENSION: | | | | |
| Small Ring (in) | 2.00 | 2.00 | 0.00 | +/- 0.20 |
| Medium Ring (in) | 3.75 | 3.75 | 0.00 | +/- 0.20 |
| RING DIAMETER: | | | | |
| Small Ring (in) | 6.50 | 6.50 | 0.00 | +/- 0.20 |
| Medium Ring (in) | 8.25 | 8.25 | 0.00 | +/- 0.20 |
| Large Ring (in) | 15.00 | 15.00 | 0.00 | +/- 0.20 |

PASS/FAIL SUMMARY

| | |
|---------------------------------------|--------|
| Calibration-Coefficients Range Check: | Passed |
| Ring-Measurement Check: | Passed |

PASS/FAIL SUMMARY

| | |
|---------------------------------------|--------|
| Calibration-Coefficients Range Check: | Passed |
|---------------------------------------|--------|

SDLT CALIPER FIELD CALIBRATION

| | |
|---|---|
| Tool Name: SDLT - I378_M477_P870 | Reference Calibration Date: 30-Mar-12 10:30:06 |
| Engineer: WHITLOCK | Calibration Date: 30-Mar-12 10:32:19 |
| Software Version: WL INSITE R3.4.2 (Build 2) | Calibration Version: 1 |

| MEASURED CALIPER VALUES | | | | |
|-------------------------|------|-------|--------|----------------------------|
| Measurement | Shop | Field | Change | Control Limit On New Value |
| Pad Extension | 3.75 | 3.76 | 0.01 | +/- 0.10 |
| Ring Diameter | 8.25 | 8.25 | 0.00 | +/- 0.15 |

PASS/FAIL SUMMARY

| | |
|----------------------|--------|
| Pad Extension Check: | Passed |
| Diameter Check: | Passed |

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

| | |
|---|---|
| Tool Name: ACRT Sonde - I816_S708 | Reference Calibration Date: 21-Sep-11 13:58:42 |
| Engineer: HOFKAMP | Calibration Date: 03-Jan-12 09:45:28 |
| Software Version: WL INSITE R3.4.2 (Build 2) | Calibration Version: 1 |

TYPICAL GAIN RANGE

| Subarray | R12KHz | | | R36KHz | | | R72KHz | | |
|----------|--------|----------|-------|--------|----------|-------|--------|----------|-------|
| | Lower | (mmho/m) | Upper | Lower | (mmho/m) | Upper | Lower | (mmho/m) | Upper |
| A1 (80") | 0.95 | 1.0353 | 1.05 | 0.95 | 1.0124 | 1.05 | 0.95 | 1.0031 | 1.05 |
| A2 (50") | 0.95 | 1.0437 | 1.05 | 0.95 | 1.0210 | 1.05 | 0.95 | 1.0094 | 1.05 |
| A3 (29") | 0.95 | 1.0354 | 1.05 | 0.95 | 1.0124 | 1.05 | 0.95 | 1.0009 | 1.05 |
| A4 (17") | 0.95 | 1.0255 | 1.05 | 0.95 | 1.0019 | 1.05 | 0.95 | 0.9959 | 1.05 |
| A5 (10") | N/A | N/A | N/A | 0.95 | 0.9971 | 1.05 | 0.95 | 0.9892 | 1.05 |
| A6 (6") | N/A | N/A | N/A | 0.95 | 0.9959 | 1.05 | 0.95 | 0.9887 | 1.05 |

TYPICAL SONDE OFFSET RANGE

| Subarray | R12KHz | R36KHz | R72KHz |
|----------|--------|--------|--------|
|----------|--------|--------|--------|

| Subarray | R1ZRN1Z | R30RN1Z | R7ZRN1Z | Lower | (mmho/m) | Upper | Lower | (mmho/m) | Upper | Lower | (mmho/m) | Upper |
|----------|---------|---------|---------|-------|----------|-------|-------|----------|-------|-------|----------|-------|
| A1 (80") | -5 | 0.928 | 2 | -6 | -4.573 | -2 | -8 | -5.812 | -2 | | | |
| A2 (50") | -7 | 0.314 | -1 | -6 | -3.738 | -2 | -7 | -5.333 | -2 | | | |
| A3 (29") | -27 | -12.244 | -9 | -9 | -4.322 | -3 | -7 | -4.343 | -1 | | | |
| A4 (17") | -180 | -99.972 | -60 | -45 | -31.306 | -15 | -39 | -24.956 | -13 | | | |
| A5 (10") | N/A | N/A | N/A | -150 | -99.875 | -50 | -80 | -47.603 | -10 | | | |
| A6 (6") | N/A | N/A | N/A | 175 | 327.313 | 525 | 90 | 166.084 | 270 | | | |

| TRANSMITTER CURRENT GAIN | | | | | R-MUD VERIFICATION | | | |
|--------------------------|-------|--------|-------|----------|--------------------|------------------|---------------|--|
| Signal | Lower | R | Upper | Signal | Lower (ohm-m) | Measured (ohm-m) | Upper (ohm-m) | |
| 12K | 0.6 | 0.8154 | 1.3 | Mud Cell | 0.95 | 1.004 | 1.05 | |
| 36K | 1.0 | 1.1504 | 2.0 | | | | | |
| 72K | 1.0 | 1.3123 | 2.0 | | | | | |

| SPECTRAL DENSITY SHOP CALIBRATION | | | |
|-----------------------------------|----------------------------|-----------------------------|--------------------|
| Tool Name: | SDLT Pad - I378_M477_P870 | Reference Calibration Date: | 07-Feb-12 10:44:34 |
| Engineer: | WHITLOCK | Calibration Date: | 05-Mar-12 10:04:59 |
| Software Version: | WL INSITE R3.4.2 (Build 2) | Calibration Version: | 1 |

Logging Source S/N: 20784B
 Aluminum Block S/N: FTSM AL BLOCK Density: 2.581g/cc Pe: 3.170
 Magnesium Block S/N: FTSM MG BLOCK Density: 1.687g/cc Pe: 2.594

| DENSITY CALIBRATION SUMMARY | | | |
|-----------------------------|----------------|-----------|---------------|
| Measurement | Previous Value | New Value | Control Limit |
| Near Bar Gain | 1.0295 | 1.0402 | 0.90 - 1.10 |
| Near Dens Gain | 1.0210 | 1.0433 | 0.90 - 1.10 |
| Near Peak Gain | 1.0285 | 1.0808 | 0.90 - 1.10 |
| Near Lith Gain | 1.0504 | 1.0861 | 0.90 - 1.10 |
| Far Bar Gain | 1.0096 | 1.0107 | 0.90 - 1.10 |
| Far Dens Gain | 1.0022 | 1.0030 | 0.90 - 1.10 |
| Far Peak Gain | 0.9978 | 0.9996 | 0.90 - 1.10 |
| Far Lith Gain | 0.9872 | 0.9798 | 0.90 - 1.10 |
| Near Bar Offset | -0.0854 | -0.1837 | NONE |
| Near Dens Offset | -0.0149 | -0.2146 | NONE |
| Near Peak Offset | -0.0798 | -0.5189 | NONE |
| Near Lith Offset | -0.2768 | -0.5818 | NONE |
| Far Bar Offset | 0.0320 | 0.0197 | NONE |
| Far Dens Offset | 0.0782 | 0.0658 | NONE |
| Far Peak Offset | 0.0898 | 0.0656 | NONE |
| Far Lith Offset | 0.1440 | 0.1823 | NONE |
| Near Bar Background | 901.39 | 900.68 | 700 - 1450 |
| Near Dens Background | 295.56 | 293.31 | 230 - 480 |
| Near Peak Background | 128.95 | 128.47 | 100 - 210 |
| Near Lith Background | 158.39 | 157.51 | 125 - 260 |
| Far Bar Background | 543.29 | 546.24 | 450 - 900 |
| Far Dens Background | 211.48 | 212.31 | 175 - 345 |
| Far Peak Background | 83.59 | 84.47 | 70 - 140 |
| Far Lith Background | 87.68 | 87.24 | 75 - 145 |

CALIBRATION BLOCK SUMMARY

| Measurement | Current Reading (Previous Coef) | Calibrated (New Coef) | Change | Control Limit On Change |
|------------------|------------------------------------|--------------------------|--------|----------------------------|
| MAGNESIUM | | | | |
| Density (g/cc) | 1.682 | 1.687 | 0.005 | +/- 0.015 |
| Pe | 2.541 | 2.554 | 0.013 | +/- 0.150 |
| ALUMINUM | | | | |
| Density (g/cc) | 2.579 | 2.581 | 0.002 | +/- 0.01500 |
| Pe | 3.069 | 3.127 | 0.058 | +/- 0.150 |

| TOOL SUMMARY | | | | |
|----------------------------|---------------|----------------|--------------|----------------|
| Measurement | Near Detector | | Far Detector | |
| | Value | Control Limits | Value | Control Limits |
| QUALITY | | | | |
| Background | -0.0015 | +/- 0.0110 | -0.0027 | +/- 0.0140 |
| Magnesium Block | -0.0015 | +/- 0.0110 | 0.0002 | +/- 0.0140 |
| Aluminum Block | -0.0007 | +/- 0.0110 | 0.0002 | +/- 0.0140 |
| Resolution | 9.12 | 6.00 - 11.50 | 8.62 | 6.00 - 11.50 |
| Internal Verifier(B+D+P+L) | 1480 | 1200 - 2700 | 930 | 800 - 1700 |

| PASS/FAIL SUMMARY | |
|--------------------------------|--------|
| Background Quality Check: | Passed |
| Background Range Check: | Passed |
| Background Resolution Check: | Passed |
| Background Verification Check: | Passed |
| Magnesium Quality Check: | Passed |
| Aluminum Quality Check: | Passed |
| Gains Check: | Passed |
| Changes in Calibration Blocks: | Passed |

| SPECTRAL DENSITY FIELD CHECK | | | |
|-------------------------------------|-----------------------------------|------------------------------------|---------------------------|
| Tool Name: | SDLT Pad - I378_M477_P870 | Reference Calibration Date: | 05-Mar-12 10:04:59 |
| Engineer: | WHITLOCK | Calibration Date: | 30-Mar-12 10:12:50 |
| Software Version: | WL INSITE R3.4.2 (Build 2) | Calibration Version: | 1 |

Pad Temperature: 72.8 degF

| DENSITY FIELD CALIBRATION SUMMARY | | | | |
|--|----------|----------|--------|-------------------|
| Measurement | Shop | Field | Change | Control Limit +/- |
| Near (B+D+P+L) cps | 1479.967 | 1477.817 | -2.150 | 15.508 |
| Far (B+D+P+L) cps | 930.256 | 927.659 | -2.597 | 16.502 |
| Near Resolution | 9.12 | 9.01 | -0.110 | 0.50 |
| Far Resolution | 8.62 | 8.65 | 0.030 | 1.00 |

| PASS/FAIL SUMMARY | |
|--------------------------|--------|
| Bkg Quality Check: | Passed |
| Bkg Resolution Check: | Passed |
| Bkg Verification Check: | Passed |

| MICRO LOG SHOP CALIBRATION | | | |
|-----------------------------------|--------------------------------------|------------------------------------|---------------------------|
| Tool Name: | Microlog Pad - I378_M477_P870 | Reference Calibration Date: | 15-Dec-11 10:52:18 |
| Engineer: | WHITLOCK | Calibration Date: | 16-Feb-12 13:59:17 |
| Software Version: | WL INSITE R3.4.2 (Build 2) | Calibration Version: | 1 |

CALIBRATION COEFFICIENT SUMMARY

| Measurement | Micro Log Normal | | Micro Log Lateral | | Units |
|----------------------|------------------|------------|-------------------|------------|-------|
| | Measured | Calibrated | Measured | Calibrated | |
| Tool Zero | -0.18 | -0.14 | -0.00 | -0.00 | ohmm |
| Calibration Point #1 | -0.04 | 0.00 | -0.00 | 0.00 | ohmm |
| Calibration Point #2 | 19.96 | 20.00 | 19.99 | 20.00 | ohmm |
| Internal Reference | 19.81 | 19.86 | 19.99 | 20.00 | ohmm |

| Measurement | Micro Log Normal Tool Value | | Micro Log Lateral Tool Value | | Units |
|----------------------|--------------------------------|---------|---------------------------------|---------|-------|
| | Tool Zero | | 0.43 | | |
| Calibration Point #1 | | 37.45 | | 1.94 | V |
| Calibration Point #2 | | 5295.78 | | 6863.62 | V |
| Internal Reference | | 5257.79 | | 6861.95 | V |

MICRO LOG FIELD CHECK

Tool Name: Microlog Pad - I378_M477_P870

Reference Calibration Date: 16-Feb-12 13:59:17

Engineer: WHITLOCK

Calibration Date: 12-Mar-12 09:38:40

Software Version: WL INSITE R3.4.2 (Build 2)

Calibration Version: 1

| Measurement | Micro Log Normal | | Micro Log Lateral | | Units |
|--------------------|------------------|-------|-------------------|-------|-------|
| | Shop | Field | Shop | Field | |
| Tool Zero | -0.14 | -0.14 | -0.00 | -0.00 | ohmm |
| Internal Reference | 19.86 | 19.81 | 20.00 | 19.95 | ohmm |

Summary

| Signal | Shop | Field | Difference | Tolerance |
|------------------|-------|-------|------------|-----------|
| Microlog Normal | 19.86 | 19.81 | 0.05 | +/- 0.80 |
| Microlog Lateral | 20.00 | 19.95 | 0.05 | +/- 0.80 |

CALIBRATION SUMMARY

| Sensor | Shop | Field | Post | Difference | Tolerance | Units |
|------------------------------------|----------|----------|-------|------------|------------|-------|
| Depth Panel-10842695 | | | | | | |
| Tension Zero | 0.00 | ----- | ----- | 0.00 | ----- | lbs |
| Tension Cal | 6770.00 | ----- | ----- | 0.00 | ----- | lbs |
| CH_HOS-CH_HOS_I | | | | | | |
| DH Tension Zero | 0.00 | ----- | ----- | 0.00 | ----- | lbs |
| DH Tension Cal | 1076.00 | ----- | ----- | 0.00 | ----- | lbs |
| GTET-10971172 | | | | | | |
| Gamma Ray Calibrator | 225.9 | 224.3 | ----- | 1.6 | +/- 9.00 | api |
| DSNT-10951378 | | | | | | |
| Snow-Block Porosity | 0.0803 | 0.0811 | ----- | -0.0008 | +/- 0.0150 | decip |
| SDLT-I378_M477_P870 | | | | | | |
| Pad Extension | 3.75 | 3.76 | ----- | -0.01 | +/-0.10 | in |
| Ring Diameter | 8.25 | 8.25 | ----- | 0.000 | +/-0.15 | in |
| ACRt Sonde-I816_S708 | | | | | | |
| Mud Cell | 1.004 | ----- | ----- | 0.000 | ----- | ohm-m |
| SDLT Pad-I378_M477_P870 | | | | | | |
| Near(B+D+P+L) | 1479.967 | 1477.817 | ----- | 2.150 | +/-15.508 | cps |
| Far(B+D+P+L) | 930.256 | 927.659 | ----- | 2.597 | +/-16.502 | cps |
| Microlog Pad-I378_M477_P870 | | | | | | |
| MicroLog Normal | 19.86 | 19.81 | ----- | 0.05 | +/-0.80 | ohmm |
| MicroLog Lateral | 20.00 | 19.95 | ----- | 0.05 | +/-0.80 | ohmm |

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 | Barite | |
| | SHARED | BSAL | Borehole salinity | 0.00 | ppm |
| | SHARED | FSAL | Formation Salinity NaCl | 0.00 | ppm |
| | SHARED | KPCT | Percent K in Mud by Weight? | 0.00 | % |
| | SHARED | RMUD | Mud Resistivity | 1.000 | 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 | 5085.00 | ft |
| | SHARED | BHT | Bottom Hole Temperature | 135.0 | 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 | |
| | GTET | GROK | Process Gamma Ray? | Yes | |
| | GTET | GRSO | Gamma Tool Standoff | 0.000 | in |
| | GTET | GEOK | Process Gamma Ray EVR? | No | |
| | GTET | TPOS | Tool Position for Gamma Ray Tools. | Centered | |
| | BSAT | MBOK | Compute BCAS Results? | Yes | |
| | BSAT | FLLO | Frequency Filter Low Pass Value? | 5000 | Hz |
| | BSAT | FLHI | Frequency Filter High Pass Value? | 15000 | Hz |
| | BSAT | DTFL | Delta -T Fluid | 189.00 | uspf |
| | BSAT | DTMT | Delta -T Matrix Type | Limestone 47.5 | |
| | BSAT | DTSH | Delta -T Shale | 100.00 | uspf |
| | BSAT | SPEQ | Acoustic Porosity Equation | Wylie | |
| | 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 | 0.200 | 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 |
| | SDI T Pad | DFI | Formation Density Fluid | 1.000 | g/cc |

| | | | | |
|--------------|------|-------------------------------|-----------------|------|
| Microlog Pad | MLOK | Process MicroLog Outputs? | Yes | |
| 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 | |

BOTTOM

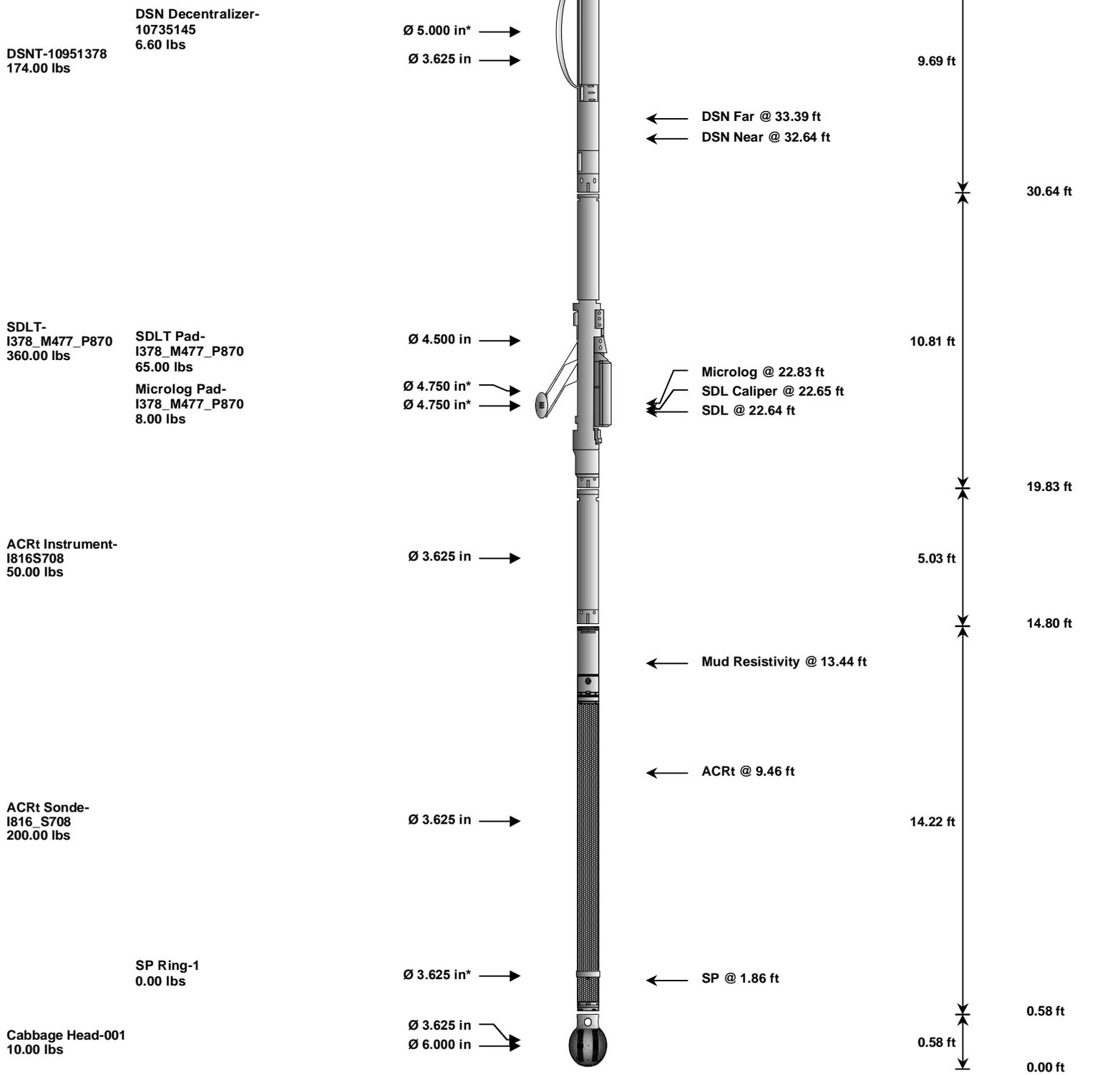
Data: OXY_SHELL_B-210001 GTET-BSAT-FLEX-DSN-SDL-ACRT-CBGIDLE

Date: 01-Apr-12 13:31:46

HALLIBURTON

TOOL STRING DIAGRAM REPORT

| Description | Overbody Description | O.D. | Diagram | Sensors @ Delays | Length | Accumulated Length | |
|-----------------------------|----------------------|--------------|---------|------------------------------|----------|--------------------|----------|
| CH_HOS_I 37.50 lbs | | Ø 2.750 in → | | ← Temperature @ 72.30 ft | 3.25 ft | 73.55 ft | |
| GTET-10971172 165.00 lbs | | Ø 3.625 in → | | ← GammaRay @ 64.23 ft | 8.52 ft | 70.30 ft | |
| BSAT-11014316 300.00 lbs | | Ø 3.625 in → | | ← Sonic Receivers @ 53.26 ft | 15.77 ft | 61.78 ft | |
| | | | | | | 46.00 ft | |
| IQ Flex-001 140.00 lbs | | Ø 3.625 in → | | | | 5.67 ft | 40.33 ft |



| Mnemonic | Tool Name | Serial Number | Weight (lbs) | Length (ft) | Accumulated Length (ft) | Max.Log. Speed (fpm) |
|----------|---|----------------|--------------|-------------|-------------------------|----------------------|
| CH_HOS | Hostile Cable Head with Load Cell | CH_HOS_I | 37.50 | 3.25 | 70.30 | 300.00 |
| GTET | Gamma Telemetry Tool | 10971172 | 165.00 | 8.52 | 61.78 | 60.00 |
| BSAT | Borehole Sonic Array Tool | 11014316 | 300.00 | 15.77 | 46.00 | 60.00 |
| IQF | IQ Flex tool | 001 | 140.00 | 5.67 | 40.33 | 300.00 |
| DSNT | Dual Spaced Neutron | 10951378 | 174.00 | 9.69 | 30.64 | 60.00 |
| DCNT | DSN Decentralizer | 10735145 | 6.60 | 5.13 | 33.97 | 300.00 |
| SDLT | Spectral Density Tool | I378_M477_P870 | 360.00 | 10.81 | 19.83 | 60.00 |
| SDLP | Density Insite Pad | I378_M477_P870 | 65.00 | 2.55 | 22.04 | 60.00 |
| MICP | Microlog Pad | I378_M477_P870 | 8.00 | 1.00 | 22.33 | 60.00 |
| ACRt | Array Compensated True Resistivity Instrument Section | I816S708 | 50.00 | 5.03 | 14.80 | 300.00 |
| ACRt | Array Compensated True Resistivity | I816_S708 | 200.00 | 14.22 | 0.58 | 300.00 |
| SP | SP Ring | 1 | 0.00 | 0.25 | 1.86 | 300.00 |
| CBHD | Cabbage Head | 001 | 10.00 | 0.58 | 0.00 | 300.00 |

Total **1,516.10** **73.55**

* Not included in Total Length and Length Accumulation.

