

115°

3650

116°

3700

116°

3750

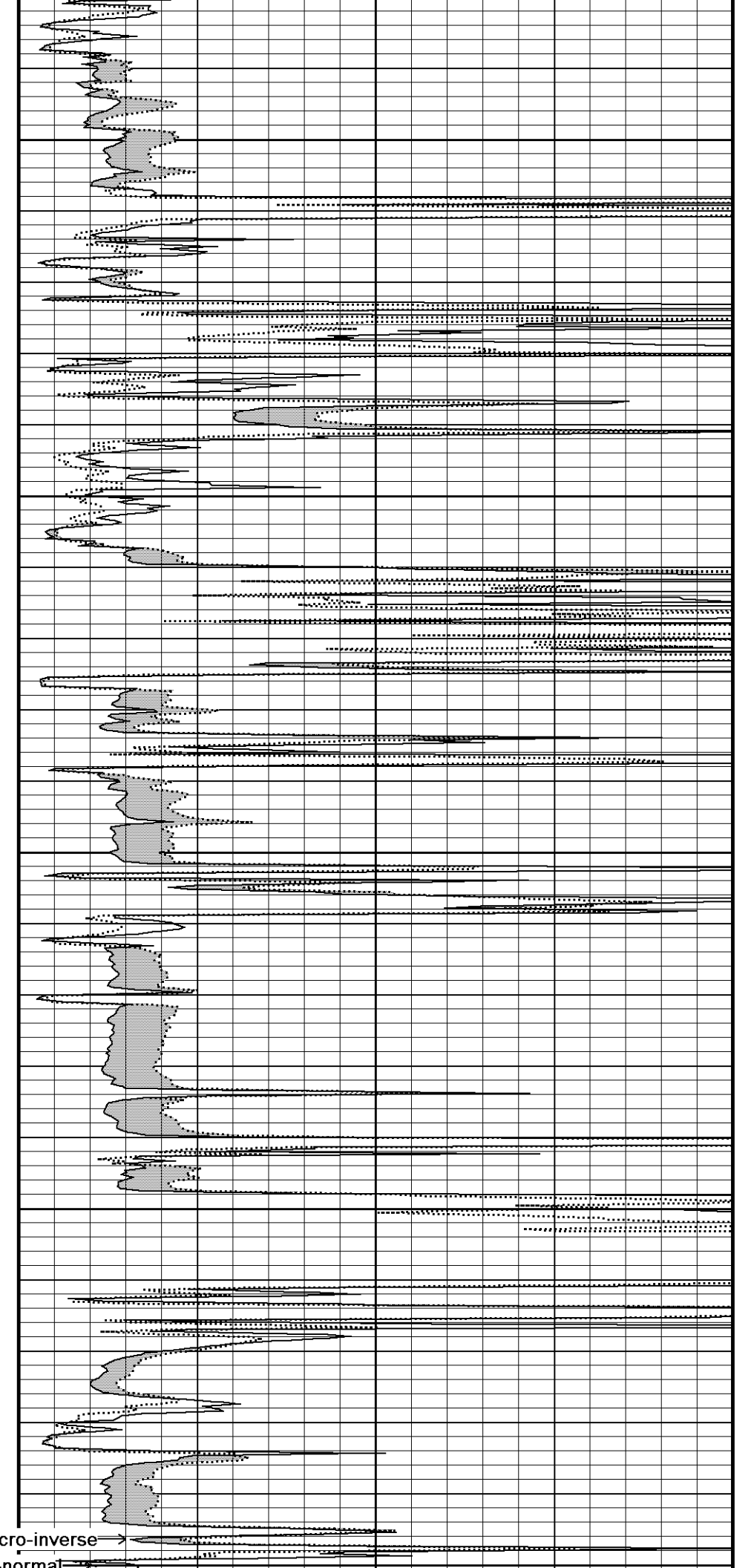
116°

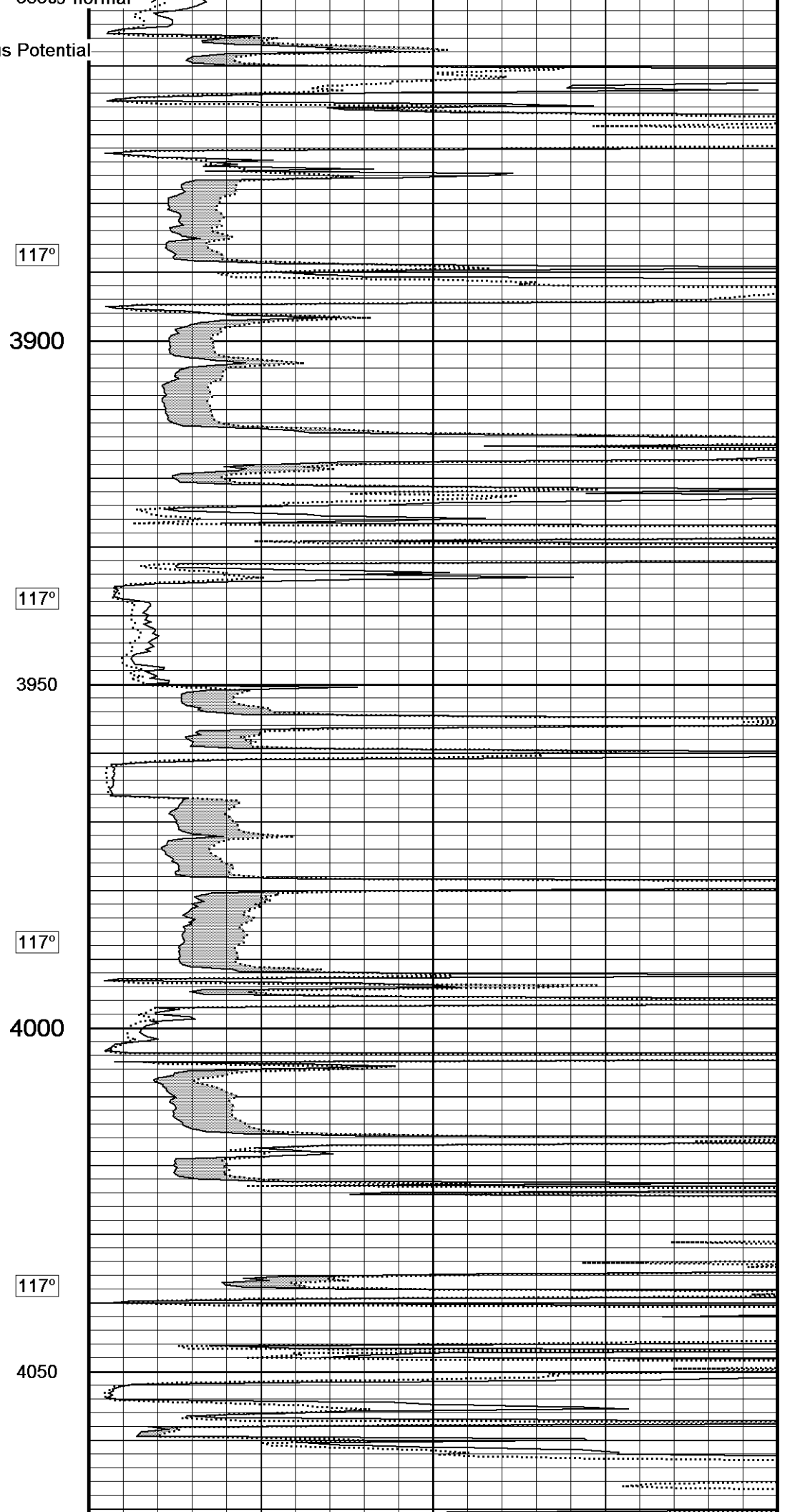
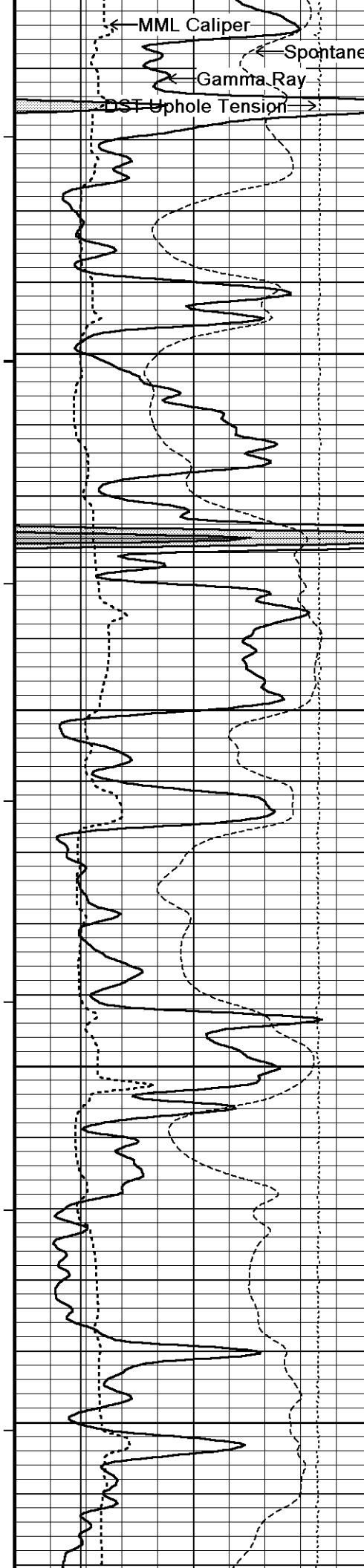
3800

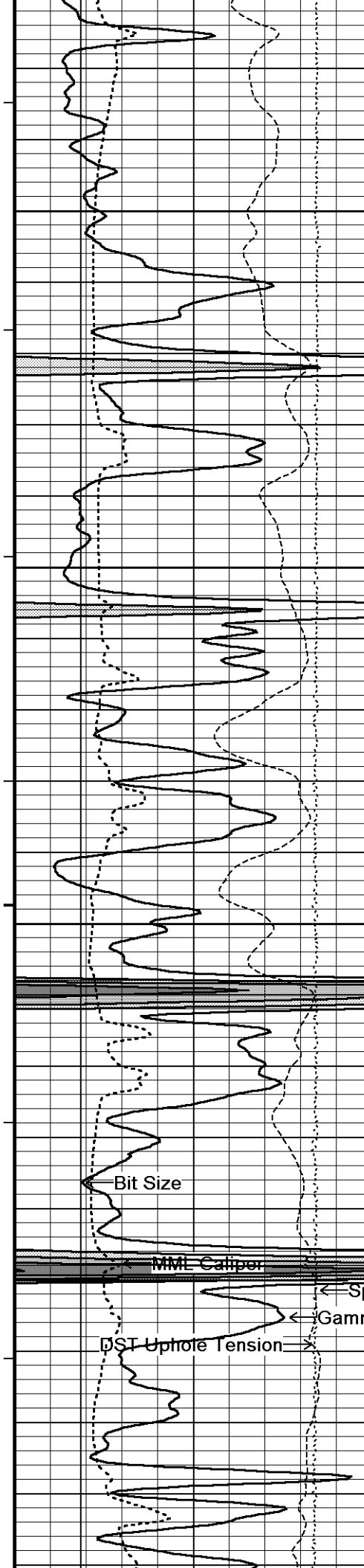
116°

Micro-inverse

3850h-normal







118°

4100

118°

4150

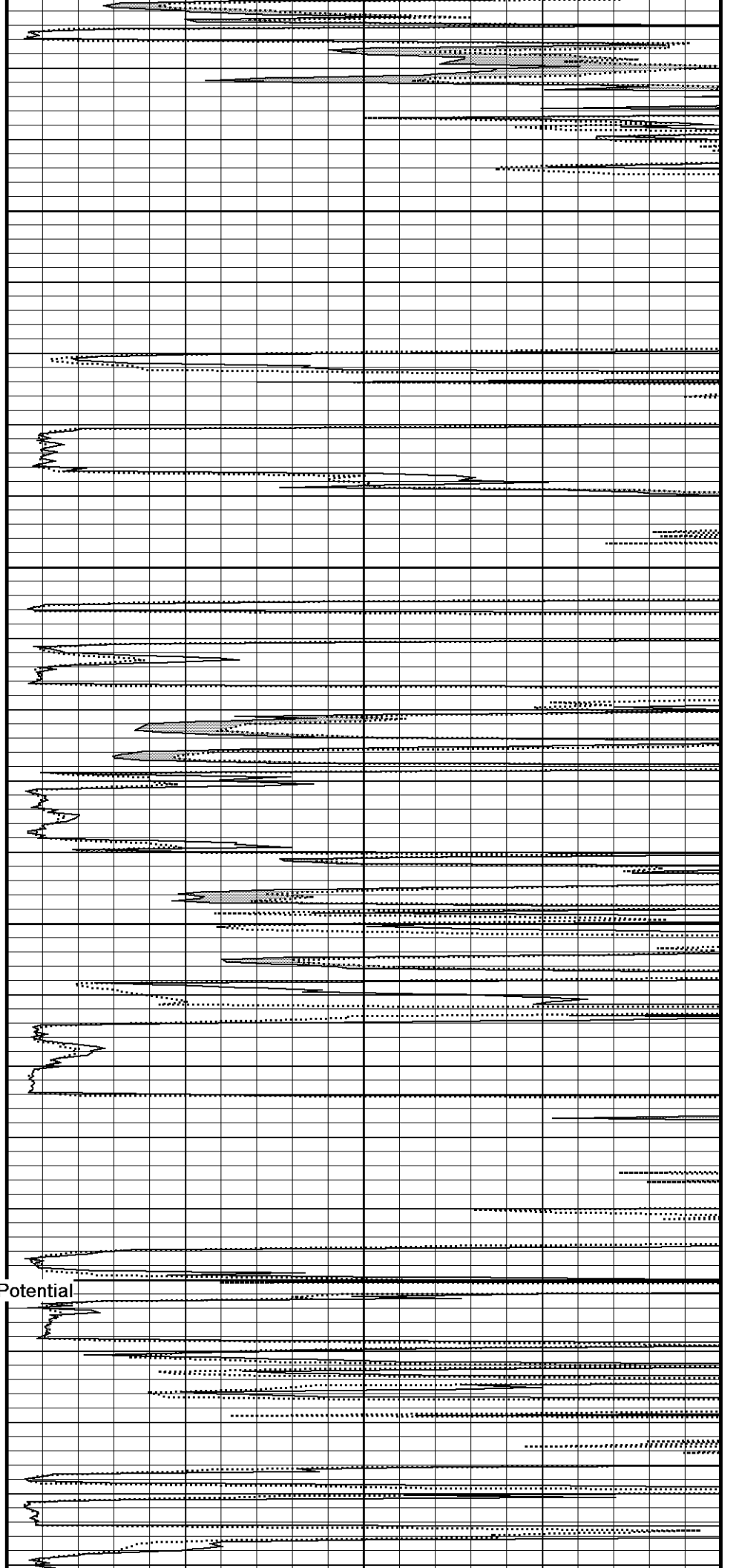
118°

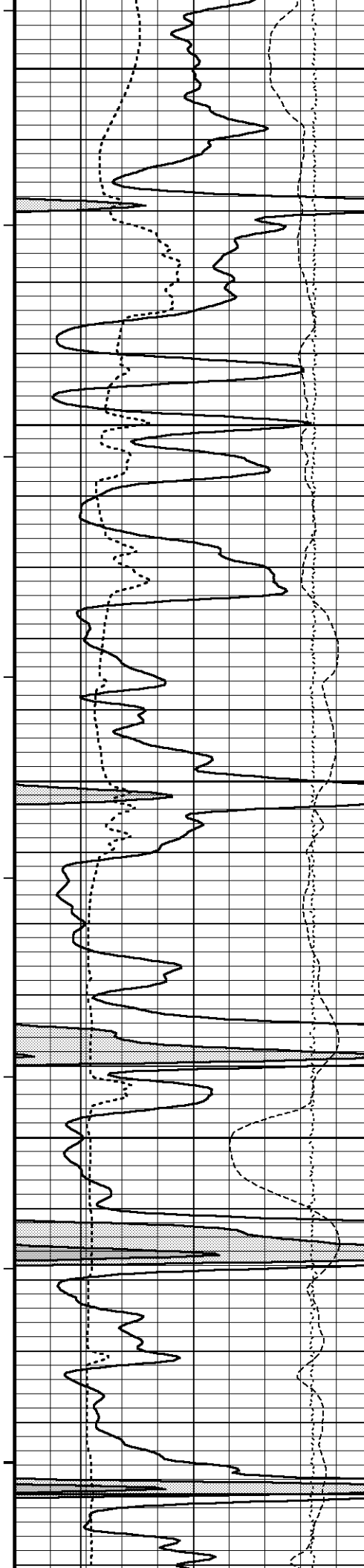
4200

118°

4250

118°





4300

119°

4350

119°

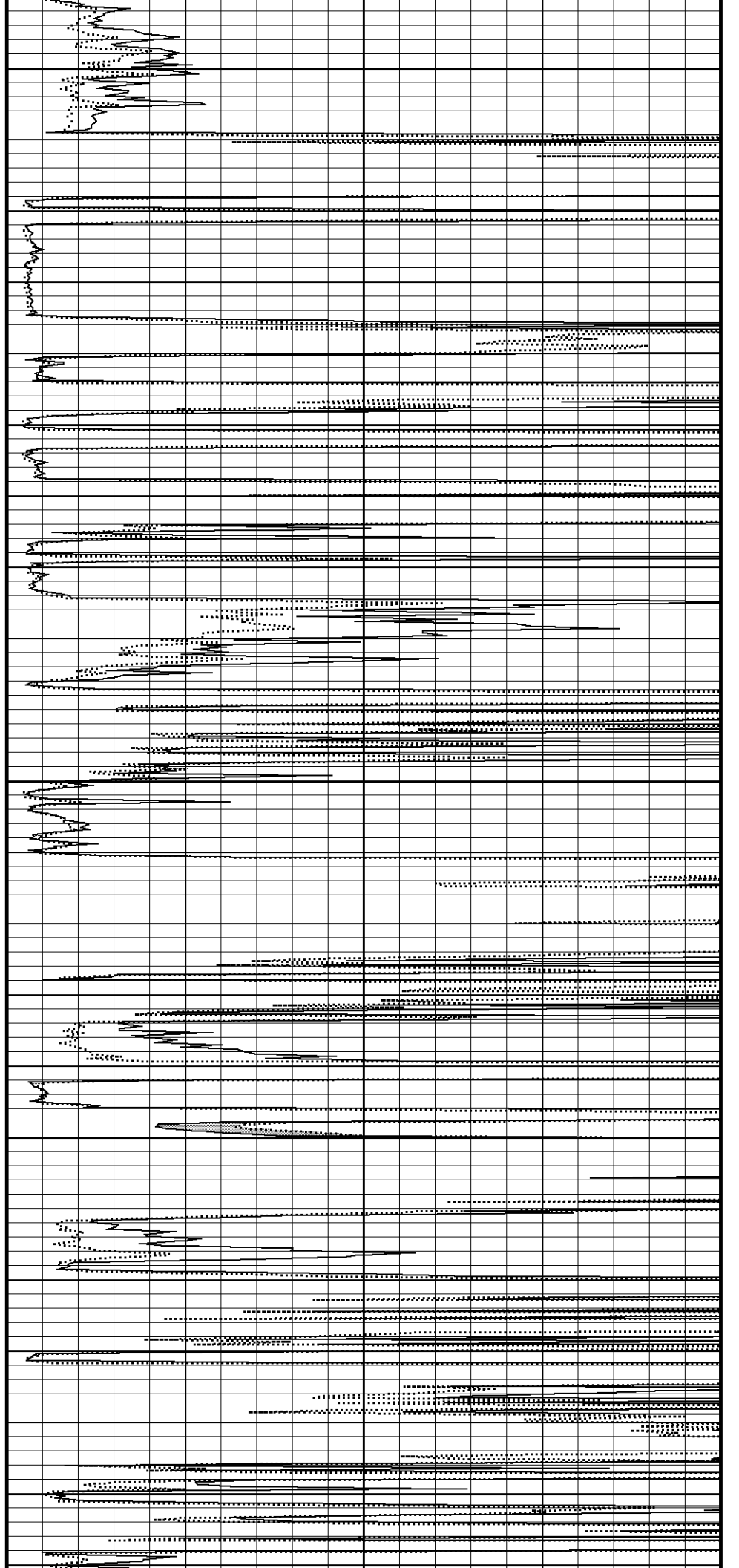
4400

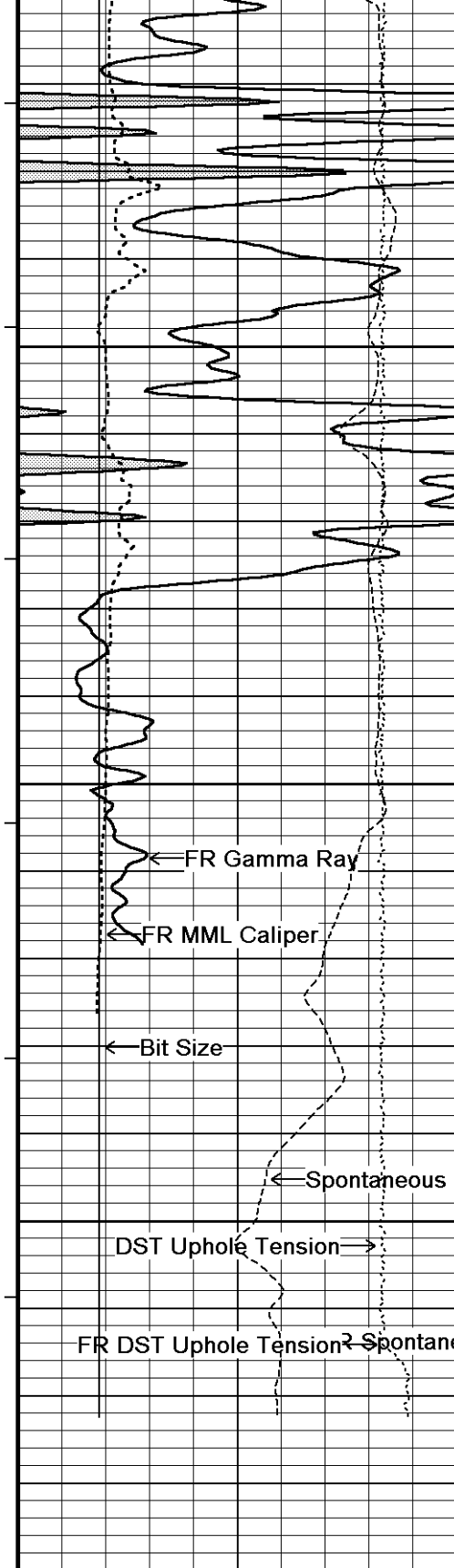
120°

4450

120°

4500





120°

4550

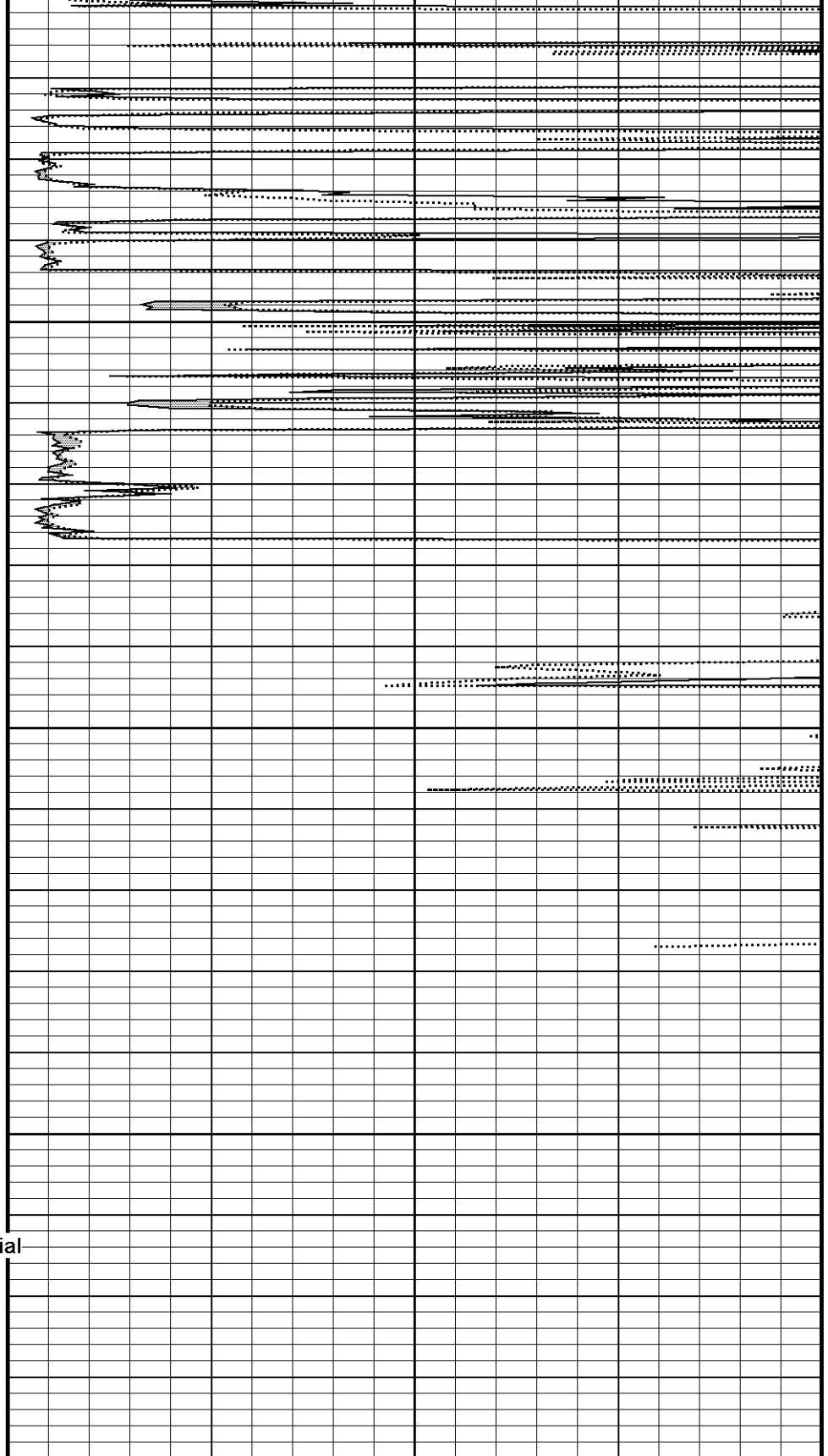
121°

4600

4650

4688

Depth
in
Feet



0 10 20 30 40

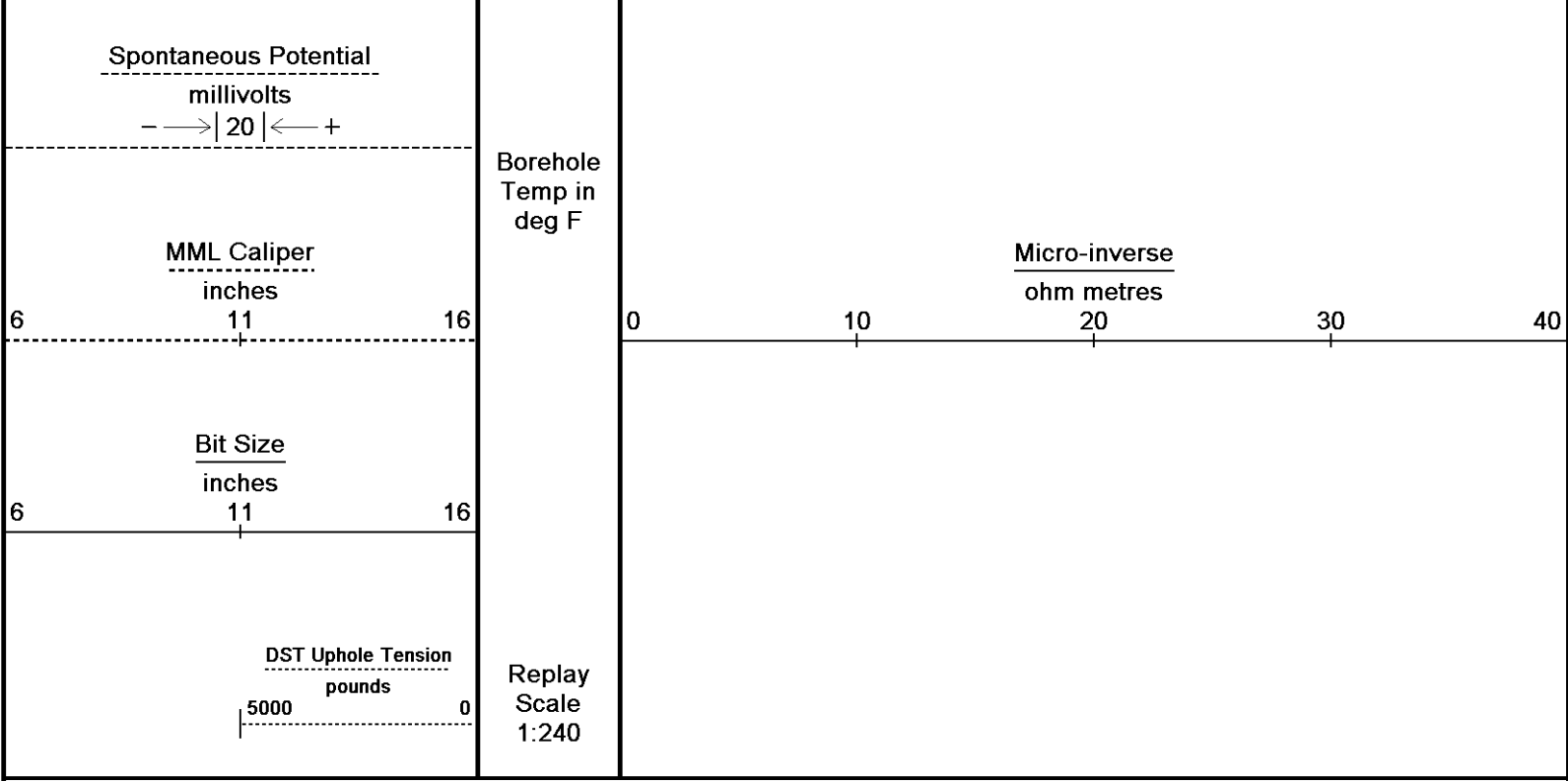
Micro-normal
ohm metres

Timing Marks
every 60.0 sec

Gamma Ray

API
75

0 150

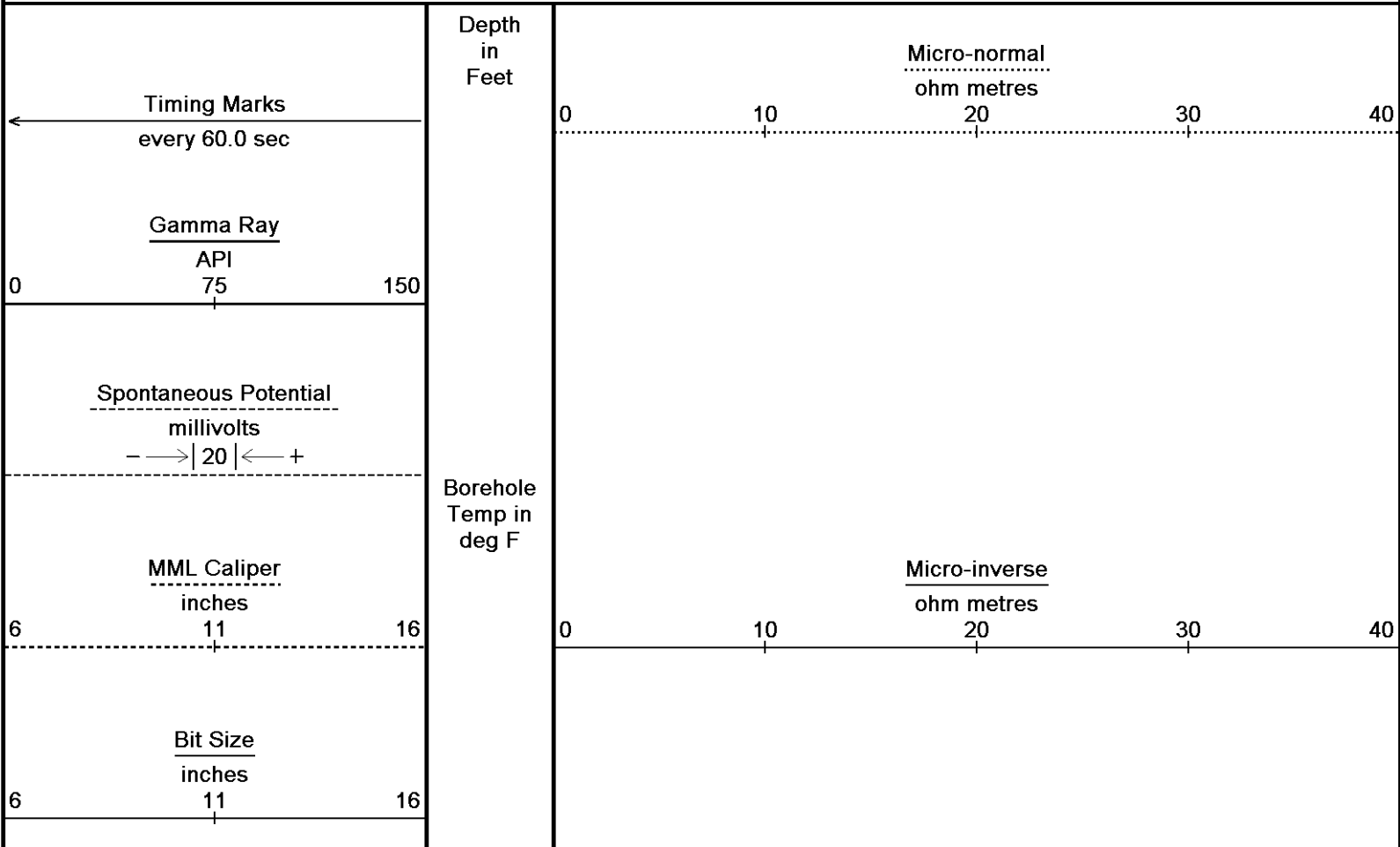


Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 10-JUL-2012 10:59
 Filename: C:\Minimus_11_03_4044\Data\New Folder1\Grand Mesa Beazley-Chambers 1-13_002.dta Recorded on 09-JUL-2012 18:50
 System Versions: Logged with 11.03.4044 Processed with 11.03.4044 Plotted with 11.03.4044

↑ **5 INCH MAIN PASS** ↑

↓ **5 INCH REPEAT PASS** ↓

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 10-JUL-2012 10:59
 Filename: C:\Minimus_11_03_4044\Data\New Folder1\Grand Mesa Beazley-Chambers 1-13_001.dta Recorded on 09-JUL-2012 18:25
 System Versions: Logged with 11.03.4044 Processed with 11.03.4044 Plotted with 11.03.4044



DST Uphole Tension
pounds
5000 0

Replay
Scale
1:240

4358

4400

119°

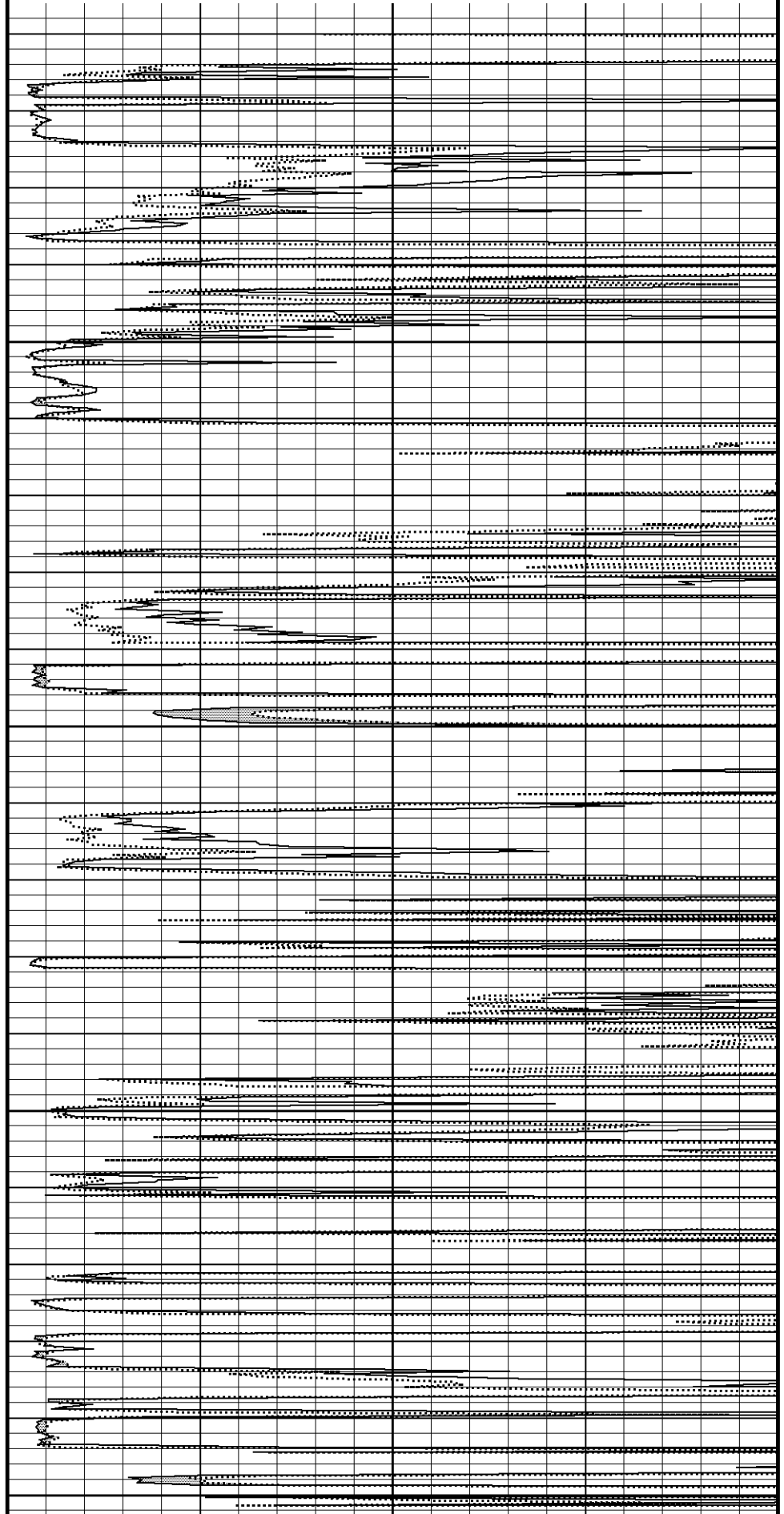
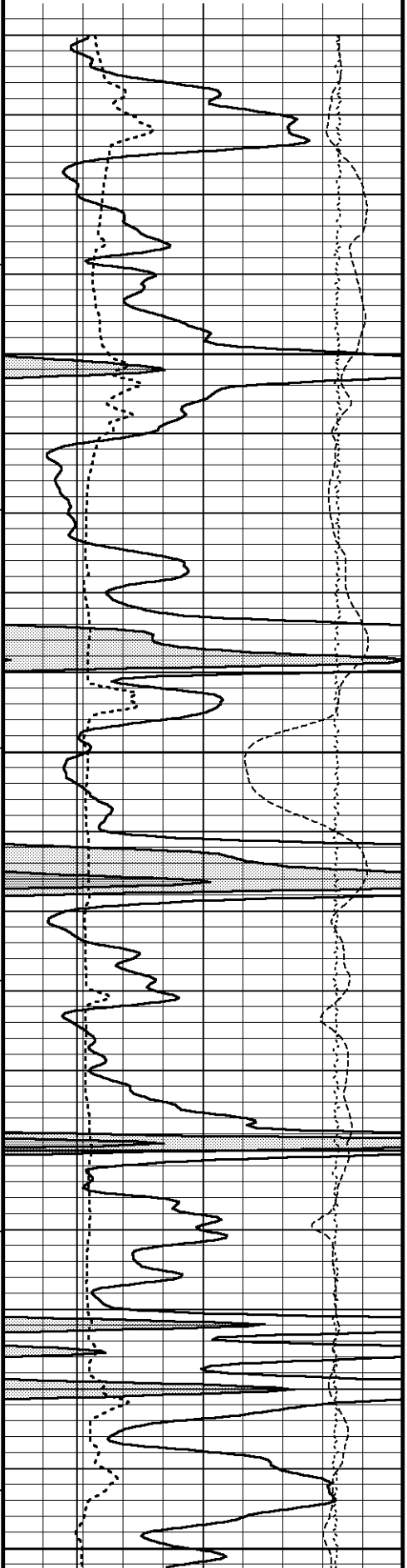
4450

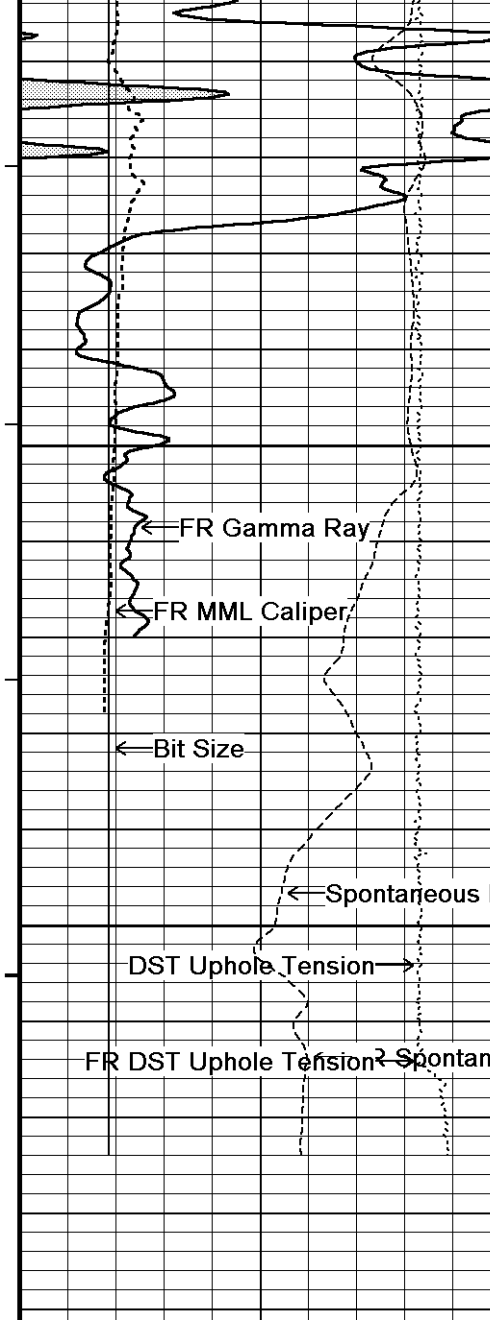
120°

4500

120°

4550





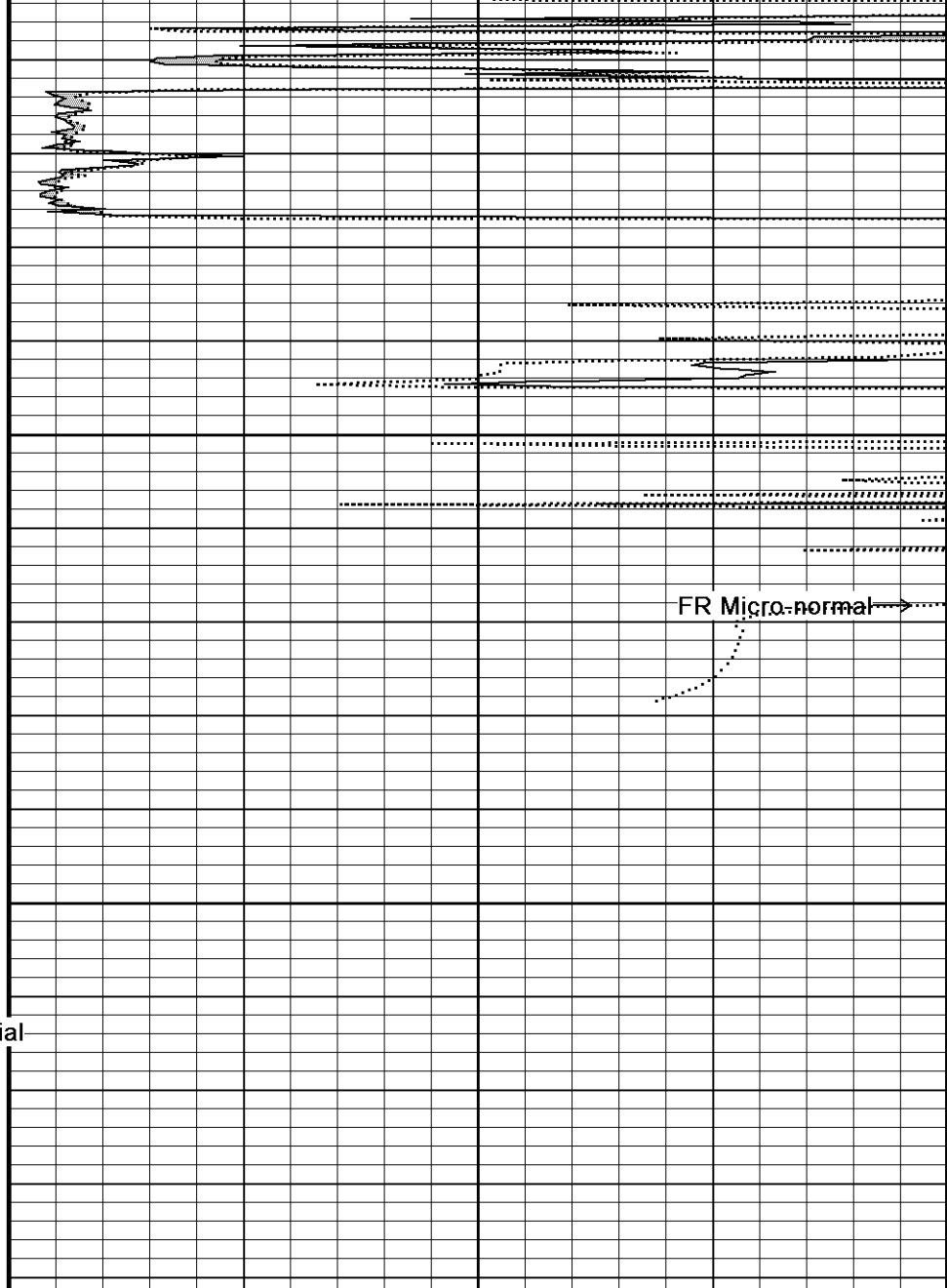
121°

4600

4650

4690
Depth
in
Feet

Borehole
Temp in
deg F



FR Micro-normal

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150

Spontaneous Potential
millivolts
- -> | 20 | <- +

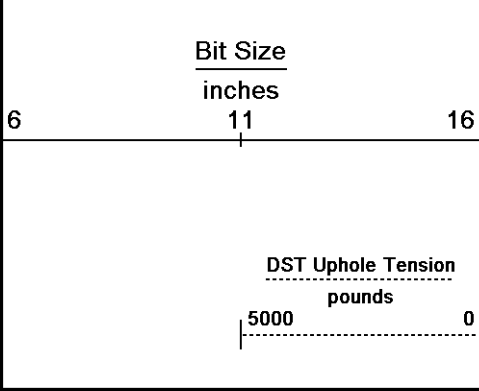
MML Caliper
inches
6 11 16

Micro-normal
ohm metres

0 10 20 30 40

Micro-inverse
ohm metres

0 10 20 30 40



Replay
Scale
1:240

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 10-JUL-2012 10:59
 Filename: C:\Minimus_11_03_4044\Data\New Folder1\Grand Mesa Beazley-Chambers 1-13_001.dta Recorded on 09-JUL-2012 18:25
 System Versions: Logged with 11.03.4044 Processed with 11.03.4044 Plotted with 11.03.4044

↑ 5 INCH REPEAT PASS ↑

BEFORE SURVEY CALIBRATION
 C:\Minimus_11_03_4044\Data\New Folder1\Grand Mesa Beazley-Chambers 1-13_002.dta

General Constants All 000 Last Edited on 09-JUL-2012,17:01

| | | |
|---|------------------------|------------|
| General Parameters | | |
| Mud Resistivity | 1.350 | ohm-metres |
| Mud Resistivity Temperature | 94.000 | degrees F |
| Water Level | 0.000 | feet |
| Density/Neutron Processing | Wet Hole | |
| Hole/Annular Volume and Differential Caliper Parameters | | |
| HVOL Method | Single Caliper | |
| HVOL Caliper 1 | Density Caliper | |
| HVOL Caliper 2 | N/A | |
| Annular Volume Diameter | 5.500 | inches |
| Caliper for Differential Caliper | Density Caliper | |
| Rwa Parameters | | |
| Porosity used | Limestone Density Por. | |
| Resistivity used | Array Ind. One Res Rt | |
| RWA Constant A | 0.610 | |
| RWA Constant M | 2.150 | |

Down-hole Tension Calibration SMS 0 Field Calibration on 08-JUL-2012 04:57

| Reading No | Measured | Calibrated (lbs) |
|------------|----------|------------------|
| 1 | 13893.37 | 0.00 |
| 2 | 13954.26 | 582.00 |

Gamma Calibration MCG-C 84 Field Calibration on 09-JUL-2012 10:47

| | Measured | Calibrated (API) |
|--------------------|----------|------------------|
| Background | 66 | 44 |
| Calibrator (Gross) | 1146 | 769 |
| Calibrator (Net) | 1080 | 725 |

Gamma Constants MCG-C 84 Last Edited on 09-JUL-2012,17:01

| | | |
|-------------------------------|-----------------|-------|
| Gamma Calibrator Number | GR38 | |
| Mud Density | 1.12 | gm/cc |
| Caliper Source for Processing | Density Caliper | |
| Tool Position | Eccentred | |
| Concentration of KCl | 0.00 | kppm |

SP Calibration MCG-C 84 Field Calibration on 06-JUL-2012 09:32

| | Measured | Calibrated (mV) |
|-------------|----------|-----------------|
| Reference 1 | 105.6 | 101.0 |
| Reference 2 | -96.1 | -101.0 |

High Resolution Temperature Calibration MCG-C 84

| | | |
|-------|----------|-------------------|
| | Measured | Calibrated(Deg F) |
| Lower | 50.00 | 50.00 |
| Upper | 75.00 | 75.00 |

High Resolution Temperature Constants MCG-C 84

Last Edited on

Pre-filter Length 11

Micro Normal and Micro Inverse Calibration MML-A 4

Base Calibration on 28-JUN-2012 09:09
Field Check on 09-JUL-2012 10:36

Base Calibration

| | | | |
|---------------|------------|------------|-----------------------|
| | | Measured | Calibrated (ohm-m) |
| Channel | Resistor 1 | Resistor 2 | Resistor 1 Resistor 2 |
| Micro Normal | 12.2 | 60.3 | 5.0 25.0 |
| Micro Inverse | 15.7 | 78.4 | 5.0 25.0 |

| | | |
|---------------|--------------------|---------------------|
| Channel | Base Check (ohm-m) | Field Check (ohm-m) |
| Micro Normal | 62.9 | 62.9 |
| Micro Inverse | 48.2 | 48.2 |

Micro Normal and Micro Inverse Constants MML-A 4

Last Edited on 09-JUL-2012,10:35

Pad Type 8-12 in Soft Rubber Inflatable 006-9011-159
 Micro Normal K Factor 1.0000
 Micro Inverse K Factor 1.0000
 Standoff Offset N/A inches

Caliper Calibration MML-A 4

Base Calibration on 28-JUN-2012 09:05
Field Calibration on 09-JUL-2012 10:35

Base Calibration

| | | |
|------------|----------|----------------------|
| Reading No | Measured | Calibrator Size (in) |
| 1 | 15261 | 5.98 |
| 2 | 18643 | 7.97 |
| 3 | 21962 | 9.86 |
| 4 | 25966 | 11.92 |
| 5 | 0 | 0.00 |
| 6 | N/A | N/A |

Field Calibration

| | |
|-----------------------|---------------------|
| Measured Caliper (in) | Actual Caliper (in) |
| 6.10 | 5.98 |

Neutron Calibration MDN-A.B 65

Base Calibration on 28-JUN-2012 11:51
Field Check on 09-JUL-2012 10:51

Base Calibration

| | | | |
|-------|--------|----------|------------------|
| | | Measured | Calibrated (cps) |
| | Near | Far | Near Far |
| | 3161 | 99 | 3714 110 |
| Ratio | 31.971 | | 33.764 |

Field Calibrator at Base

| | |
|-------|------------------|
| | Calibrated (cps) |
| | 1631 2328 |
| Ratio | 0.700 |

Field Check

| | |
|-------|------------------|
| | Calibrated (cps) |
| | 1624 2346 |
| Ratio | 0.692 |

Neutron Constants MDN-A.B 65

Last Edited on 09-JUL-2012,17:02

Neutron Source Id PN-521
 Neutron Jig Number 5824NE
 Epithermal Neutron No
 Caliper Source for Processing Density Caliper
 Stand-off 0.00 inches
 Mud Density 1.00 gm/cc
 Limestone Sigma 7.10 cu
 Sandstone Sigma 4.26 cu
 Dolomite Sigma 4.70 cu
 Formation Pressure Source Constant Value
 Formation Pressure 0.00 kpsi
 Temperature Source Constant Value

| | | |
|---------------------------------|----------------|-----------|
| Temperature | 68.00 | degrees F |
| Mud Salinity | 0.00 | kppm |
| Formation Fluid Salinity Source | Constant Value | |
| Formation Fluid Salinity | 0.00 | kppm |
| Barite Mud Correction | Not Applied | |

FE Calibration MFE-A.A 55

Base Calibration on 19-JUN-2012 09:07
Field Check on 09-JUL-2012 10:30

Base Calibration

| | Measured | Calibrated (ohm-m) |
|-------------|----------|--------------------|
| Reference 1 | 0.0 | 0.0 |
| Reference 2 | 952.0 | 126.8 |
| Base Check | | 281.3 |
| Field Check | | 281.7 |

FE Constants MFE-A.A 55

Last Edited on 09-JUL-2012,17:02

| | | |
|----------------------------------|--------------------------|--------|
| Running Mode | No Sleeve | |
| MFE K Factor | 0.1268 | |
| Caliper Source for FE correction | Density Caliper | |
| Caliper Value for FE correction | N/A | inches |
| Rm Source for FE correction | Temperature Corr | |
| Temp. for Rm Corr. | MCG External Temperature | |
| Stand-off | 0.5 | inches |

Sonic Constants MSS-C.K 330

Last Edited on 09-JUL-2012,17:02

| | | |
|---------------------------|------------------------|--------------|
| Maximum Boundary Contrast | 100.00 | micro-sec/ft |
| Fluid Transit Time | 189.00 | micro-sec/ft |
| Limestone Transit Time | 47.50 | micro-sec/ft |
| Sandstone Transit Time | 55.50 | micro-sec/ft |
| Dolomite Transit Time | 43.50 | micro-sec/ft |
| Sonic used for Porosities | 3-5' Compensated Sonic | |
| Correction for Sonde Skew | Applied | |
| Cycle Stretch Algorithm | Applied | |
| MN3FT | N/A | micro-sec |
| MX3FT | N/A | micro-sec |
| Hunt-Raymer Constant | 83.13 | micro-sec/ft |

| | |
|------------|-------------|
| Sonde Mode | Compensated |
| Hole Type | Open Hole |

Sonde Parameters

| | Measured | Calibrated |
|-----------------------|----------|------------|
| Offset | N/A | 0.0000 |
| Free Pipe | N/A | N/A |
| Peak Amplitude Source | | N/A |

| Waveform | Start Time (micro-sec) | Width (micro-sec) | Pre Gain | Start Gain | Discriminator (mV) |
|----------|------------------------|-------------------|----------|------------|--------------------|
| 3' | N/A | N/A | N/A | N/A | N/A |
| 4' | N/A | N/A | N/A | N/A | N/A |
| 5' | N/A | N/A | N/A | N/A | N/A |
| 6' | N/A | N/A | N/A | N/A | N/A |

Processed Fixed Gate Parameters

| | | | |
|------------------------------|----------------------|--------------------|-----|
| Waveform Used For Processing | N/A | | |
| Start Time (micro-sec) | End Time (micro-sec) | Discriminator (mV) | N/A |
| N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A |
| N/A | N/A | N/A | N/A |

Full Waveform Parameters

| | |
|------------------------------|-----|
| Use 3' Waveform to derive TR | N/A |
| Use 4' Waveform to derive TR | N/A |
| Use 5' Waveform to derive TR | N/A |
| Use 6' Waveform to derive TR | N/A |

| | | |
|---------------------------------|-----|-----------|
| 3' Waveform Discriminator Level | N/A | mV |
| 4' Waveform Discriminator Level | N/A | mV |
| 5' Waveform Discriminator Level | N/A | mV |
| 6' Waveform Discriminator Level | N/A | mV |
| 3' Waveform Filter | N/A | |
| 4' Waveform Filter | N/A | |
| 5' Waveform Filter | N/A | |
| 6' Waveform Filter | N/A | |
| Semblance Level | N/A | |
| Semblance Window Width | N/A | micro-sec |
| Sonic 1 Despiker | N/A | N/A |
| Sonic 2 Despiker | N/A | N/A |

Induction Calibration MAI-A.A 45

Base Calibration on 12-JAN-2012,13:34
Field Check on 09-JUL-2012 10:29

Base Calibration

| Test Loop Calibration Channel | Measured | | Calibrated (mmho/m) | |
|-------------------------------|----------|-------|---------------------|-------|
| | Low | High | Low | High |
| 1 | 14.4 | 472.6 | 9.3 | 966.2 |
| 2 | 5.7 | 374.0 | 7.6 | 821.4 |
| 3 | 3.4 | 261.2 | 5.2 | 566.0 |
| 4 | 2.5 | 133.9 | 2.6 | 279.2 |

Array Temperature 79.4 Deg F

| Channel | Base Check (mmho/m) | | Field Check (mmho/m) | |
|---------|---------------------|------|----------------------|--------|
| | Low | High | Low | High |
| 1 | 0.0 | 0.0 | 18.5 | 3851.5 |
| 2 | 0.0 | 0.0 | 31.8 | 3629.4 |
| 3 | 0.0 | 0.0 | 28.7 | 3049.5 |
| 4 | 0.0 | 0.0 | 18.4 | 2079.1 |
| Deep | 0.0 | 0.0 | 16.1 | 1911.1 |
| Medium | 0.0 | 0.0 | 42.7 | 4060.8 |
| Shallow | 0.0 | 0.0 | 49.8 | 5483.3 |

Array Temperature 0.0 74.2 Deg F

Induction Constants MAI-A.A 45

Last Edited on 09-JUL-2012,17:02

| | | | |
|-----------------------------------|--------------------------|------------|--------|
| Induction Model | RtAP-WBM | | |
| Caliper for Borehole Corr. | Density Caliper | | |
| Hole Size for Borehole Correction | N/A | inches | |
| Tool Centred | No | | |
| Stand-off Type | Fins | | |
| Stand-off | 0.50 | inches | |
| Number of Fins on Stand-off | 8.0000 | | |
| Stand-off Fin Angle | 45.00 | degrees | |
| Stand-off Fin Width | 0.5000 | inches | |
| Borehole Corr. Rm Source | Temperature Corr | | |
| Temp. for Rm Corr. | MCG External Temperature | | |
| Squasher Start | 0.0020 | mhos/metre | |
| Squasher Offset | N/A | mhos/metre | |
| Borehole Normalisation | | | |
| DRM1 | 0.0000 | DRC1 | 0.0000 |
| DRM2 | 0.0000 | DRC2 | 0.0000 |
| MRM1 | 0.0000 | MRC1 | 0.0000 |
| MRM2 | 0.0000 | MRC2 | 0.0000 |
| SRM1 | 0.0000 | SRC1 | 0.0000 |
| SRM2 | 0.0000 | SRC2 | 0.0000 |

Calibration Site Corrections

| | | |
|-----------|------|-------------|
| Channel 1 | 0.00 | mmhos/metre |
| Channel 2 | 0.00 | mmhos/metre |
| Channel 3 | 0.00 | mmhos/metre |
| Channel 4 | 0.00 | mmhos/metre |

Apparent Porosity and Water Saturation Constants

| | |
|--------------------------|------|
| Archie Constant (A) | 1.00 |
| Cementation Exponent (M) | 2.00 |

| | | |
|--------------------------------------|--------|---------|
| Saturation Exponent (N) | 2.00 | |
| Saturation of Water for Apor | 100.00 | percent |
| Resistivity of Water for Apor and Sw | 0.05 | ohm-m |
| Resistivity of Mud Filtrate for Sw | 0.00 | ohm-m |
| Source for Rt | 0.00 | |
| Source for Rxo | 0.00 | |

High Resolution Temperature Calibration MAI-A.A 45

Field Calibration on 28-JUN-2012,09:51

| | Measured | Calibrated(Deg F) |
|-------|----------|-------------------|
| Lower | 50.00 | 50.00 |
| Upper | 100.00 | 100.00 |

High Resolution Temperature Constants MAI-A.A 45

Last Edited on 12-JAN-2012,11:13

Pre-filter Length 11

Caliper Calibration MPD-B 31

Base Calibration on 17-JUN-2012 20:26

Field Calibration on 09-JUL-2012 10:42

| Base Calibration | | |
|------------------|----------|----------------------|
| Reading No | Measured | Calibrator Size (in) |
| 1 | 17360 | 3.99 |
| 2 | 25891 | 5.98 |
| 3 | 34800 | 7.97 |
| 4 | 43168 | 9.86 |
| 5 | 52528 | 11.92 |
| 6 | N/A | N/A |

| Field Calibration | | |
|-------------------|-----------------------|---------------------|
| | Measured Caliper (in) | Actual Caliper (in) |
| | 6.04 | 5.98 |

Photo Density Calibration MPD-B 31

Base Calibration on 17-JUN-2012 20:49

Field Check on 09-JUL-2012 10:40

| Density Calibration | | | | |
|---------------------|----------|-------|------------------|-------|
| Base Calibration | | | | |
| | Measured | | Calibrated (sdu) | |
| | Near | Far | Near | Far |
| Reference 1 | 48464 | 24458 | 59556 | 30836 |
| Reference 2 | 19785 | 1991 | 24941 | 2541 |

| Field Check at Base | | |
|---------------------|-------|-------|
| | Near | Far |
| | 695.5 | 853.6 |

| Field Check | | |
|-------------|-------|-------|
| | Near | Far |
| | 691.7 | 853.1 |

| PE Calibration | | | | |
|------------------|-------|----------|-------|------------|
| Base Calibration | | | | |
| | WS | Measured | | Calibrated |
| | | WH | Ratio | Ratio |
| Background | 128 | 610 | | |
| Reference 1 | 19401 | 48326 | 0.404 | 0.371 |
| Reference 2 | 5740 | 19688 | 0.294 | 0.272 |

| Field Check at Base | | |
|---------------------|-------|-------|
| | WS | WH |
| | 128.0 | 610.0 |

| Field Check | | |
|-------------|-------|-------|
| | WS | WH |
| | 126.9 | 605.7 |

Density Constants MPD-B 31

Last Edited on 09-JUL-2012,17:02

| | | |
|-------------------------------|-----------------|-------|
| Density Source Id | 254 | |
| Nylon Calibrator Number | DNCE695 | |
| Aluminium Calibrator Number | DACD698 | |
| Density Shoe Profile | 8 inch | |
| Caliper Source for Processing | Density Caliper | |
| PE Correction to Density | Not Applied | |
| Mud Density | 1.12 | gm/cc |
| Mud Density Z/A Multiplier | 1.11 | |
| Mud Filtrate Density | 1.00 | gm/cc |
| Dry Hole Mud Filtrate Density | 1.00 | gm/cc |
| DNCT | 0.00 | gm/cc |

| Density Z/A Correction | Hybrid | gm/cc |
|------------------------|------------|-------|
| Matrix Density (gm/cc) | Depth (ft) | |
| 2.71 | 0.00 | |
| 0.00 | 0.00 | |
| 0.00 | 0.00 | |
| 0.00 | 0.00 | |
| 0.00 | 0.00 | |
| 0.00 | 0.00 | |
| 0.00 | 0.00 | |
| 0.00 | 0.00 | |
| 0.00 | 0.00 | |

DOWNHOLE EQUIPMENT

C:\Minimus_11_03_4044\Data\New Folder1\Grand Mesa Beazley-Chambers 1-13_002.dta

Compact Comms Gamma
MCG-C 84 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Comms Gamma
MCG-C 84 LG: 8.70 ft WT: 63.9 lb OD: 2.24 in

Compact Micro-log
MML-A 4 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Micro-log
MML-A 4 LG: 7.97 ft WT: 81.6 lb OD: 2.24 in

Compact Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Neutron
MDN-A.B 65 LG: 5.04 ft WT: 50.7 lb OD: 2.24 in

Compact Density/Caliper
MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

Compact Density/Caliper
MPD-B 31 LG: 9.59 ft WT: 90.4 lb OD: 2.45 in

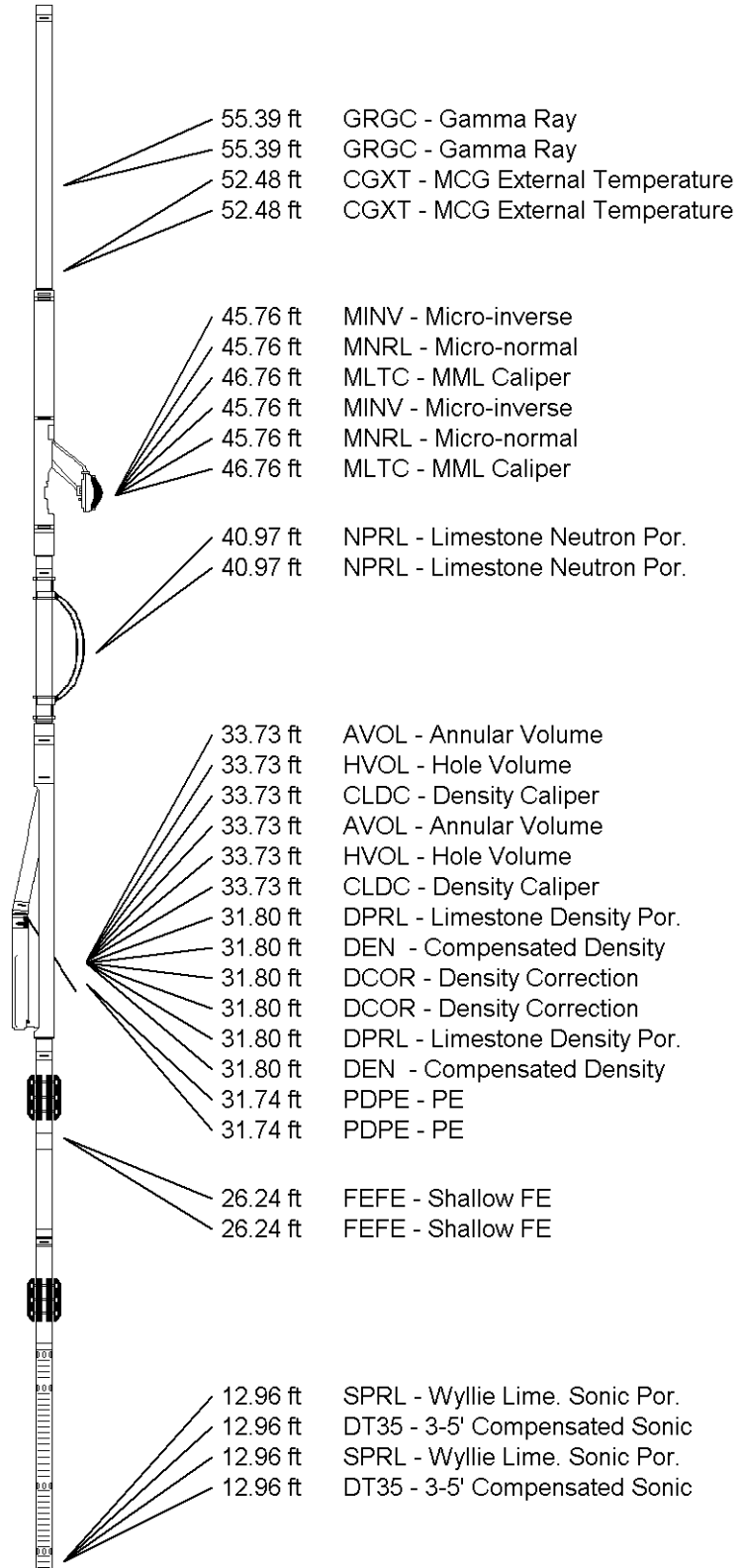
Compact Focussed Electric
MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Focussed Electric
MFE-A.A 55 LG: 6.05 ft WT: 48.5 lb OD: 2.24 in

Compact Sonic
MSS-C.K 330 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Sonic
MSS-C.K 330 LG: 12.52 ft WT: 72.8 lb OD: 2.24 in

Compact Induction
MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in



55.39 ft GRGC - Gamma Ray
55.39 ft GRGC - Gamma Ray
52.48 ft CGXT - MCG External Temperature
52.48 ft CGXT - MCG External Temperature

45.76 ft MINV - Micro-inverse
45.76 ft MNRL - Micro-normal
46.76 ft MLTC - MML Caliper
45.76 ft MINV - Micro-inverse
45.76 ft MNRL - Micro-normal
46.76 ft MLTC - MML Caliper

40.97 ft NPRL - Limestone Neutron Por.
40.97 ft NPRL - Limestone Neutron Por.

33.73 ft AVOL - Annular Volume
33.73 ft HVOL - Hole Volume
33.73 ft CLDC - Density Caliper
33.73 ft AVOL - Annular Volume
33.73 ft HVOL - Hole Volume
33.73 ft CLDC - Density Caliper
31.80 ft DPRL - Limestone Density Por.
31.80 ft DEN - Compensated Density
31.80 ft DCOR - Density Correction
31.80 ft DCOR - Density Correction
31.80 ft DPRL - Limestone Density Por.
31.80 ft DEN - Compensated Density
31.74 ft PDPE - PE
31.74 ft PDPE - PE

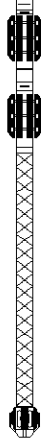
26.24 ft FEFE - Shallow FE
26.24 ft FEFE - Shallow FE

12.96 ft SPRL - Wyllie Lime. Sonic Por.
12.96 ft DT35 - 3-5' Compensated Sonic
12.96 ft SPRL - Wyllie Lime. Sonic Por.
12.96 ft DT35 - 3-5' Compensated Sonic

Compact Induction
 MAI-A.A 45 LG: 10.81 ft WT: 48.5 lb OD: 2.24 in

Total Length: 60.68 ft Weight: 456.4 lb

Total Length: 60.68 ft Weight: 456.4 lb



- 3.34 ft R400 - Array Ind. One Res 40
 - 3.34 ft R400 - Array Ind. One Res 40
 - 3.34 ft R600 - Array Ind. One Res 60
 - 3.34 ft RTAO - Array Ind. One Res Rt
 - 3.34 ft R600 - Array Ind. One Res 60
 - 3.34 ft RTAO - Array Ind. One Res Rt
 - 0.23 ft SPCG - Spontaneous Potential
 - 0.23 ft SPCG - Spontaneous Potential
 - Tool Zero (0.13ft from bottom)
 - Tool Zero (0.13ft from bottom)
 - 0.13 ft SMTU - DST Uphole Tension
 - 0.13 ft SMTU - DST Uphole Tension
- All measurements relative to tool zero.
 All measurements relative to tool zero.

| | |
|------------------------|------------------------------|
| COMPANY | GRAND MESA OPERATING |
| WELL | BEAZLEY-CHAMBERS 1-13 |
| FIELD | WILDCAT |
| PROVINCE/COUNTY | GOVE |
| COUNTRY/STATE | U.S.A. / KANSAS |

| | | | | | |
|-------------------------|---------|------|---------------|---------|------|
| Elevation Kelly Bushing | 2904.00 | feet | First Reading | 4618.00 | feet |
| Elevation Drill Floor | 2902.00 | feet | Depth Driller | 4663.00 | feet |
| Elevation Ground Level | 2899.00 | feet | Depth Logger | 4664.00 | feet |



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