



**Weatherford**<sup>®</sup>

**MICRO-RESISTIVITY LOG**

COMPANY **SHAKESPEARE OIL CO., INC.**

WELL **SCHOWALTER #8-12**

FIELD **BECKLEY NORTH**

PROVINCE/COUNTY **SCOTT**

COUNTRY/STATE **U.S.A. / KANSAS**

LOCATION **SE NW SE SE 985' FSL & 940' FEL**

SEC 12 TWP 18S RGE 32W Other Services

Latitude 38.500277 MDN/MPD

Longitude -100.800000 MAI/MFE

API Number 15-171-21253

Permanent Datum GL, Elevation 2962 feet

Log Measured From KB Elevations: KB 2972.00

Drilling Measured From KB DF 2970.00

Date 26-JUN-2019 GL 2962.00

Run Number ONE

Service Order 17937-248748599

Depth Driller 4650.00 feet

Depth Logger 4649.00 feet

First Reading 4614.00 feet

Last Reading 3600.00 feet

Casing Driller 265.00 feet

Casing Logger 265.00 feet

Bit Size 7.875 inches

Hole Fluid Type WATER-BASED

Density / Viscosity 9.10 lb/USg 46.00 sec/qt

PH / Fluid Loss 10.00 8.80 ml/30Min

Sample Source FLOWLINE

Rm @ Measured Temp 0.98 @ 96.0 ohm-m

Rmf @ Measured Temp 0.78 @ 96.0 ohm-m

Rmc @ Measured Temp 1.18 @ 96.0 ohm-m

Source Rmf / Rmc CALC CALC

Rm @ BHT 0.78 @122.0 ohm-m

Time Since Circulation 4 HOURS

Max Recorded Temp 122.00 deg F

Equipment / Base 13057 ELRENO

Recorded By MATT MCGLOTHLIN

Witnessed By VERN SCHARG

**BOREHOLE RECORD**

Last Edited: 26-JUN-2019 21:10

Bit Size inches	Depth From feet	Depth To feet
7.875	265.00	4650.00

**CASING RECORD**

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	265.00	24.00

**REMARKS**

- LOGGING SOFTWARE: 18.01.6830

- TOOLSTRING:  
MCB, SHA, MCG, MML, MDN, MPD, SKJ, MFE, MAI LOGGED IN COMBINATION.

- HARDWARE USED:  
MAI: TOW 0.5 INCH STANDOFFS.  
MFE: ONE 0.5 INCH STANDOFF.  
MDN: DUAL BOWSPRING.  
MPD: 8 INCH PROFILE PLATE.

2.71 G/CC DENSITY MATRIX USED TO CALCULATE POROSITY.

- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.  
NEUTRON / DENSITY / MICROLOG = TD - 3600'.  
GAMMA RAY / INDUCTION / SP / CALIPER = TD - SURFACE CASING.

- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING = 1820 CU FT

- ANNULAR HOLE VOLUME FROM TD TO SURFACE CASING = 1340 CU.FT.

- OPERATORS: J. KLINE, C. BAKER.

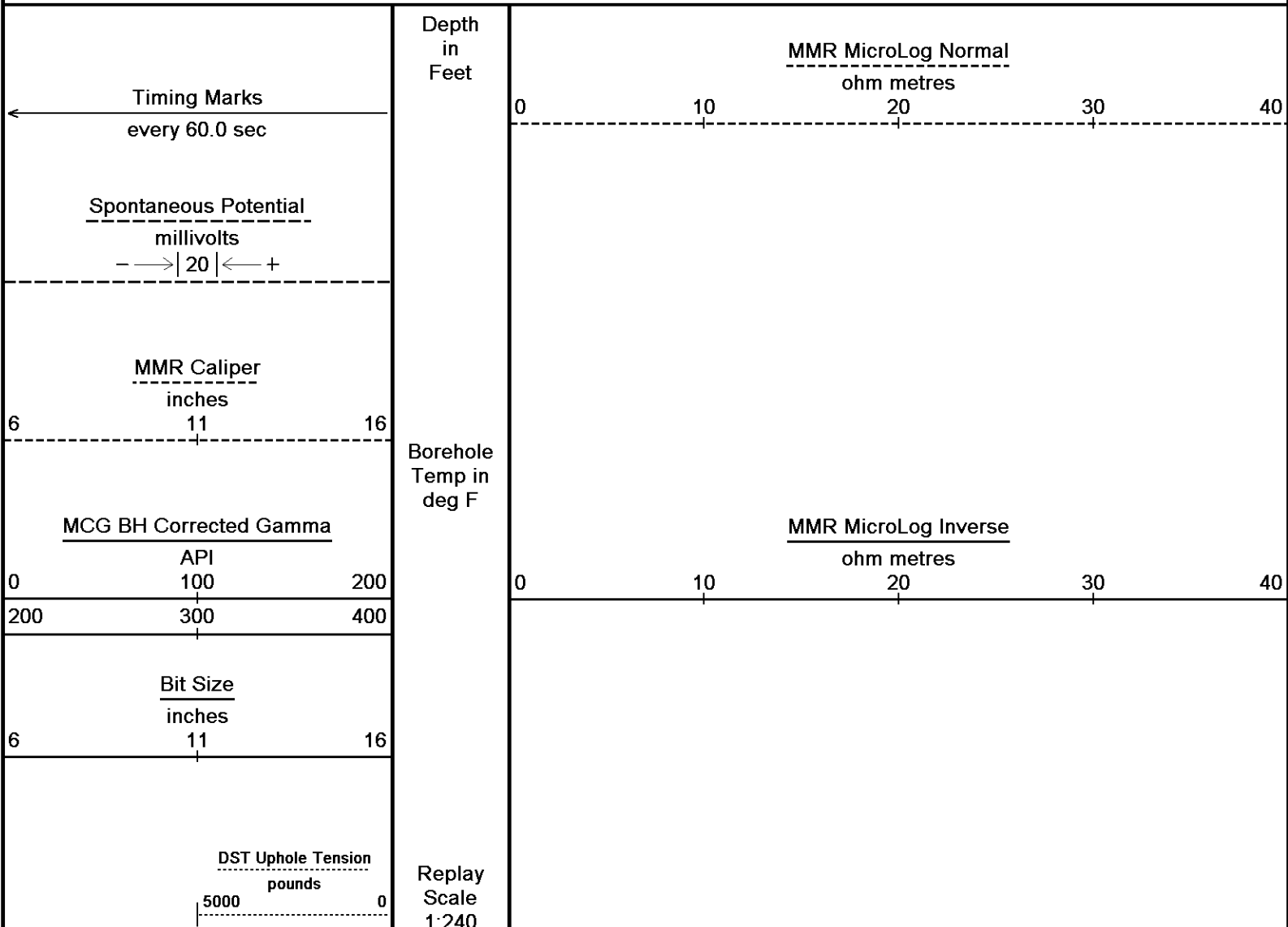
- MUD PROPERTIES:  
 CHLORIDES: 4400 PPM.  
 LCM: 1.5 #/BBL.

\*NEUTRON TOOL WILL BE CALIBRATED AFTER JOB AND READINGS WILL BE NORMALIZED TO NEW CALIBRATION.\*

In interpreting, communicating or providing information and/or making recommendations, either written or oral, as to logs or test or other data, type or amount of material, or Work or other service to be furnished, or manner of performance, or in predicting results to be obtained, the Contractor will give the Company the benefit of the Contractor's best judgment based on its experience and will perform all such Work in a good and workmanlike manner. Any interpretation of test or other data, and any recommendation or reservoir description based upon such interpretations, are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and assumptions are not infallible, and with respect to which professional engineers and analysts may differ. ACCORDINGLY ANY INTERPRETATION OR RECOMMENDATION RESULTING FROM THE SERVICES WILL BE AT THE SOLE RISK OF THE COMPANY, AND THE CONTRACTOR CANNOT AND DOES NOT WARRANT THE ACCURACY, CORRECTNESS OR COMPLETENESS OF ANY SUCH INTERPRETATION OR RECOMMENDATION, WHICH INTERPRETATIONS AND RECOMMENDATIONS SHOULD NOT, THEREFORE, UNDER ANY CIRCUMSTANCES BE RELIED UPON AS THE SOLE OR MAIN BASIS FOR ANY DRILLING, COMPLETION, WELL TREATMENT, PRODUCTION OR FINANCIAL DECISION, OR ANY PROCEDURE INVOLVING ANY RISK TO THE SAFETY OF ANY DRILLING ACTIVITY, DRILLING RIG OR ITS CREW OR ANY OTHER INDIVIDUAL. THE COMPANY HAS FULL RESPONSIBILITY FOR ALL DECISIONS CONCERNING THE SERVICES.

**5 INCH MAIN PASS 1:240**

Depth Based Data - Maximum Sampling Increment 10.0cm Plotted on 27-JUN-2019 07:32  
 Filename: C:\Users\DHELPI~1\AppData\Local\Temp\Weatherford PreView0\MAIN PASS 001.dta Recorded on 26-JUN-2019 22:04  
 System Versions: Logged with 18.01.6830 Processed with 18.01.6830 Plotted with 14.04.4365



3600

116°

3650

116°

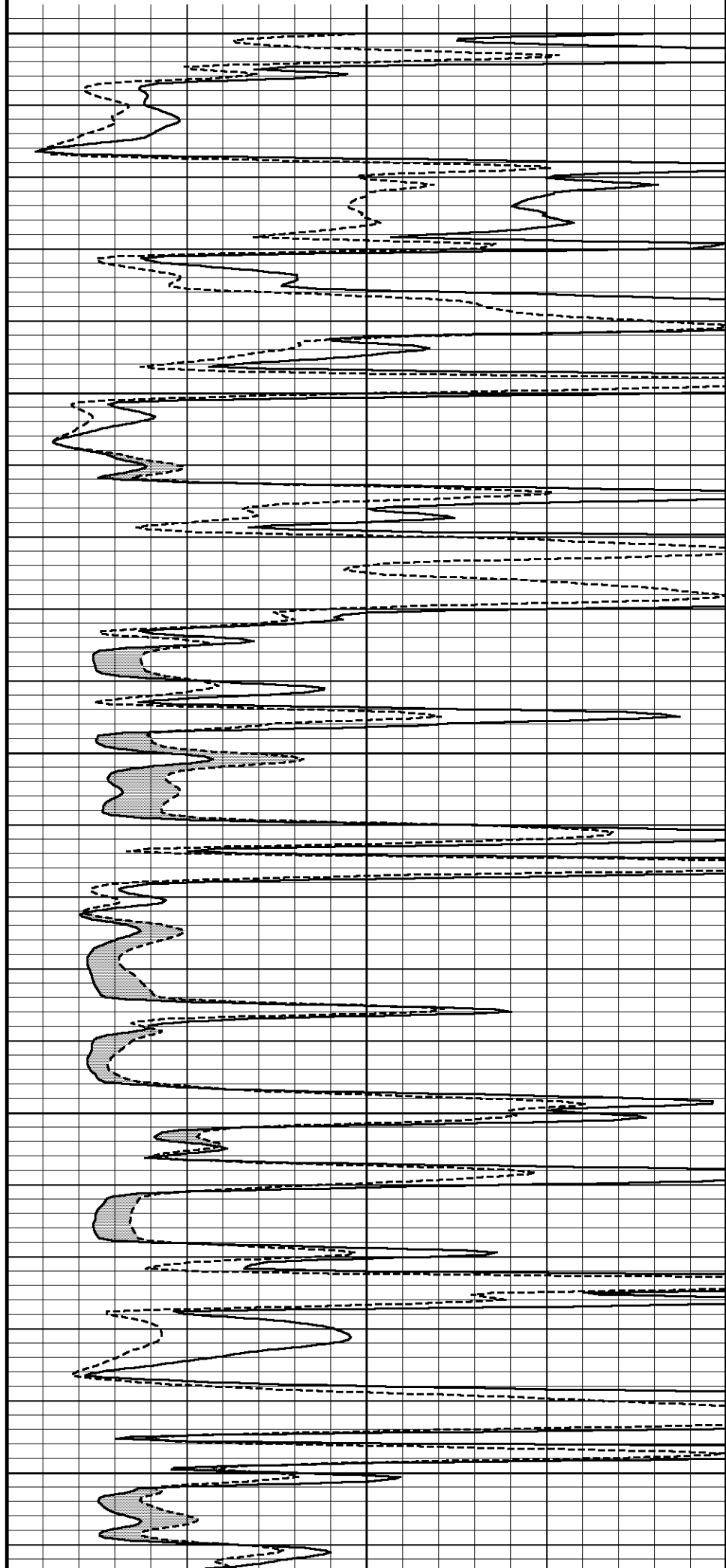
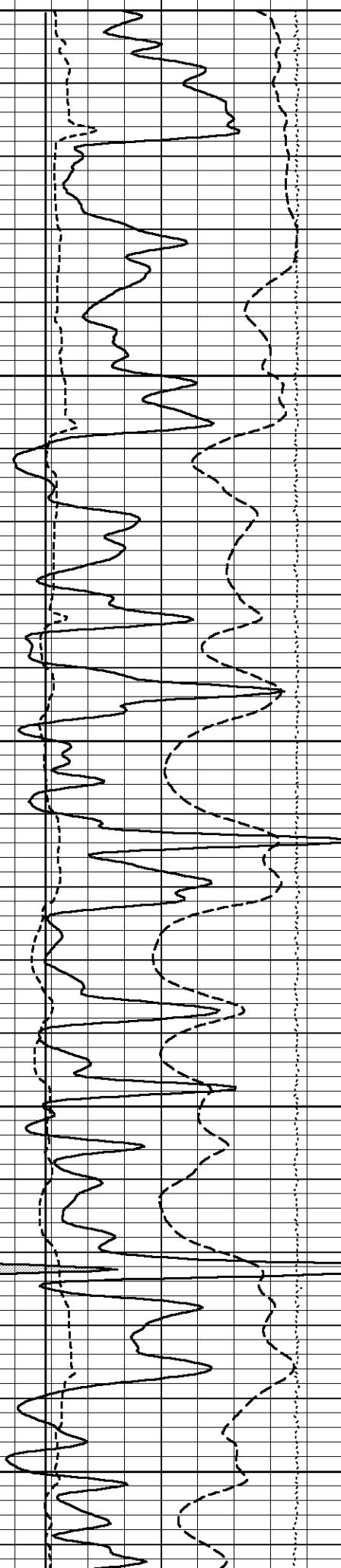
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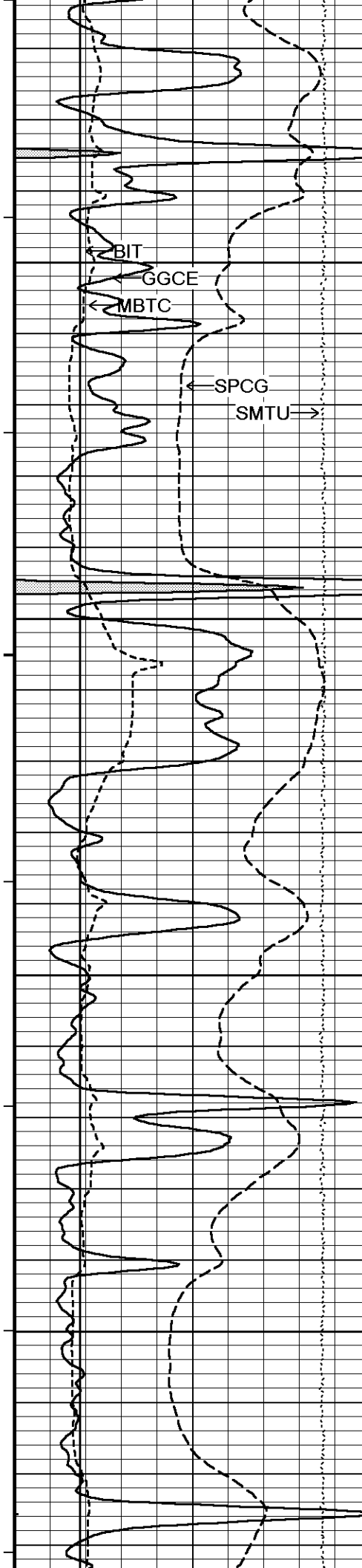
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3750

117°

3800





117°

3850

118°

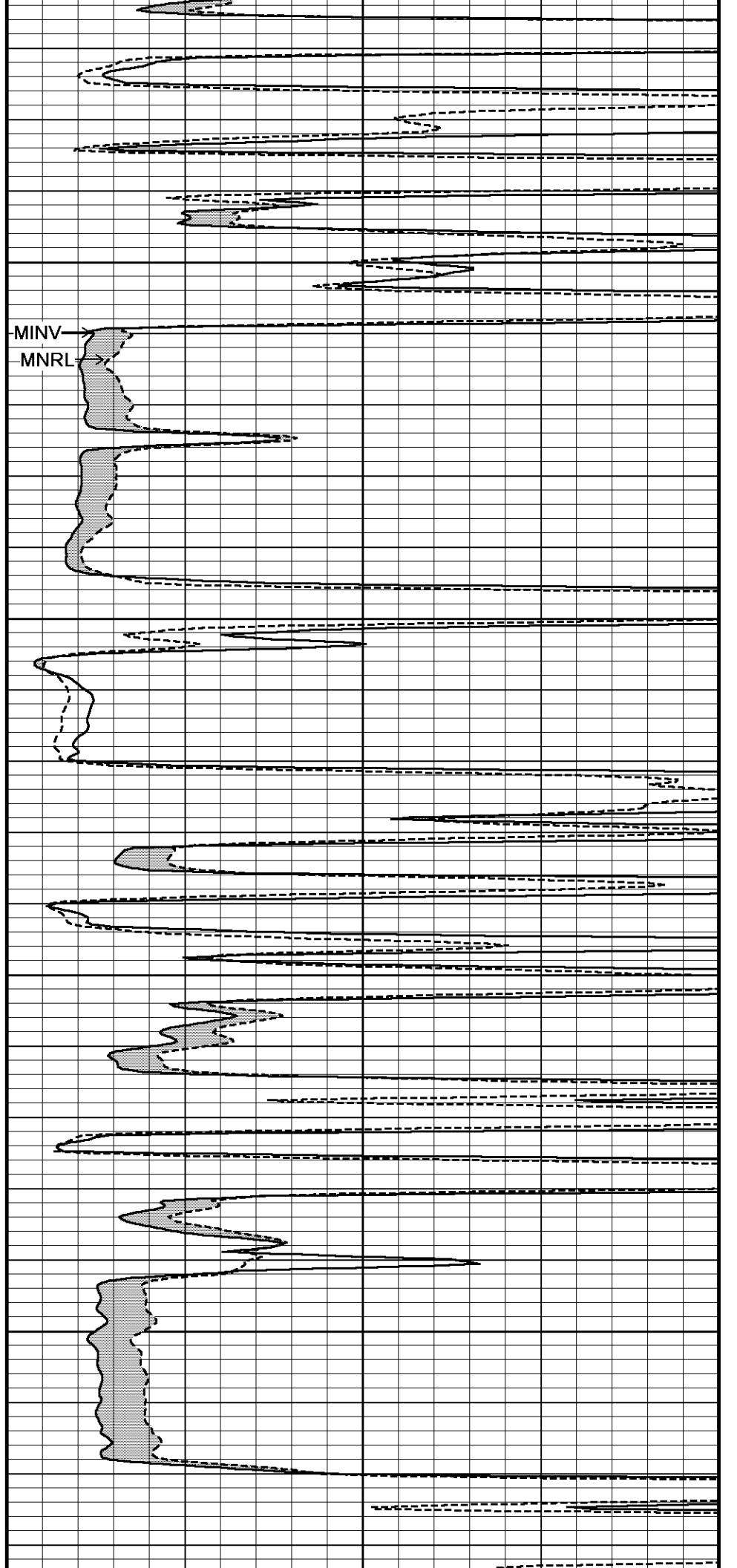
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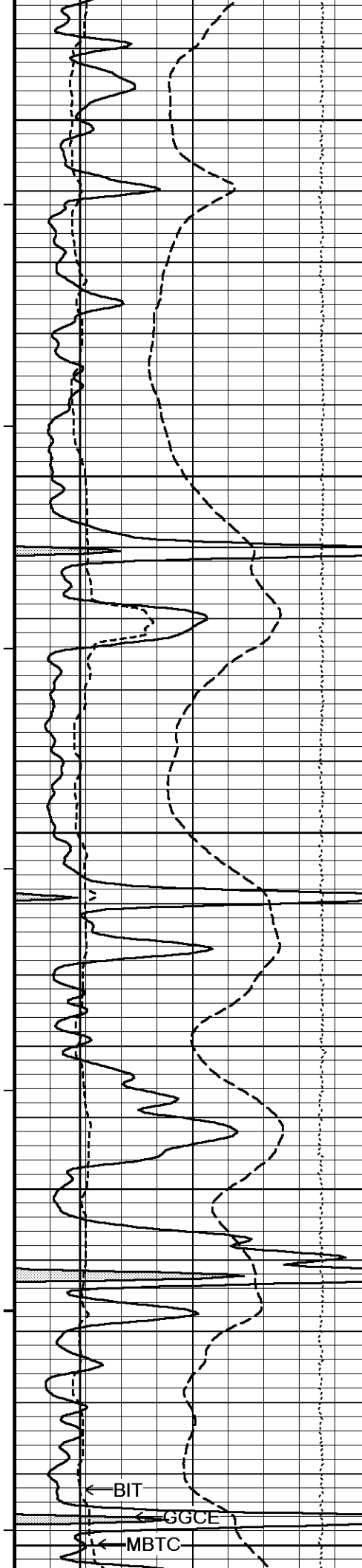
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3950

118°

4000





118°

4050

119°

4100

119°

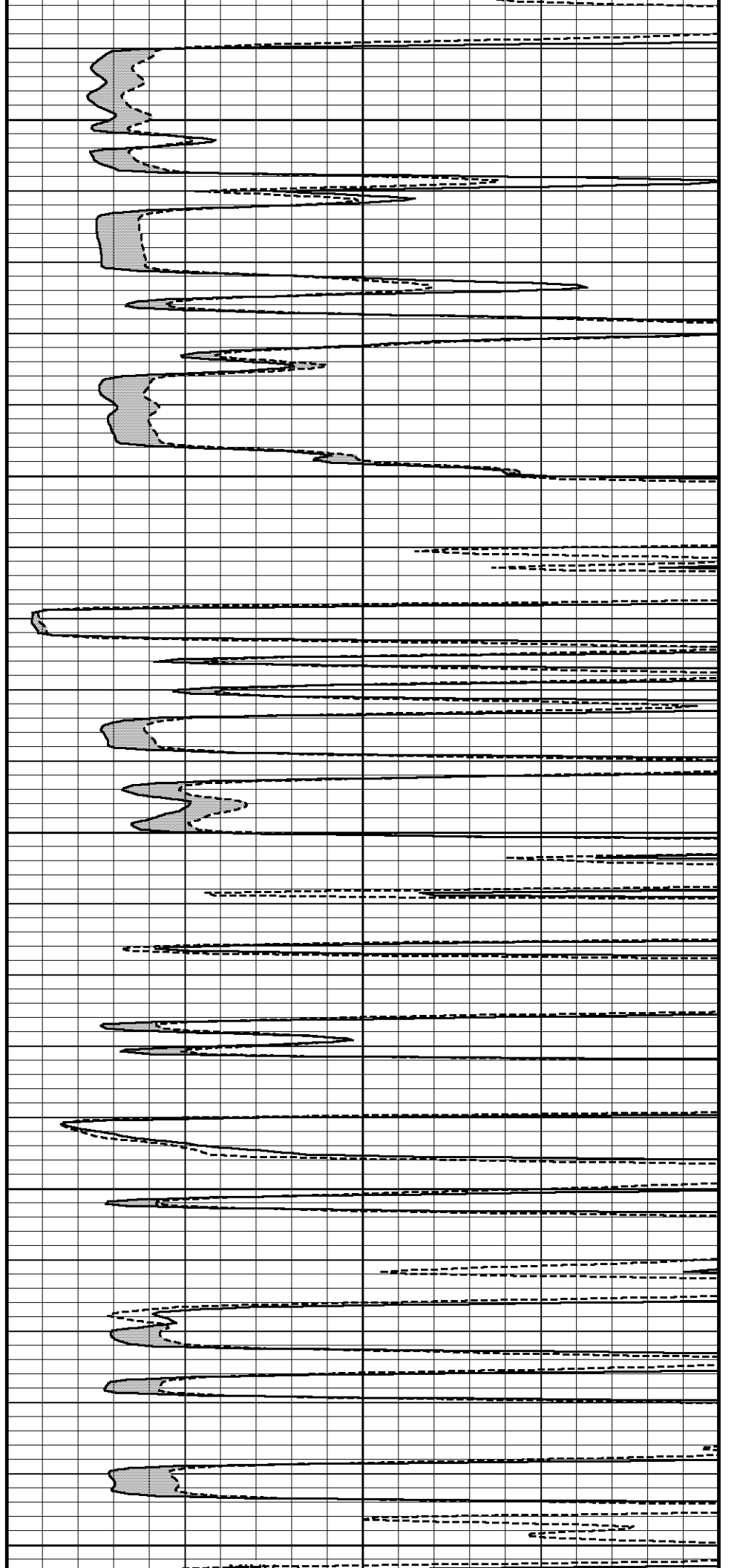
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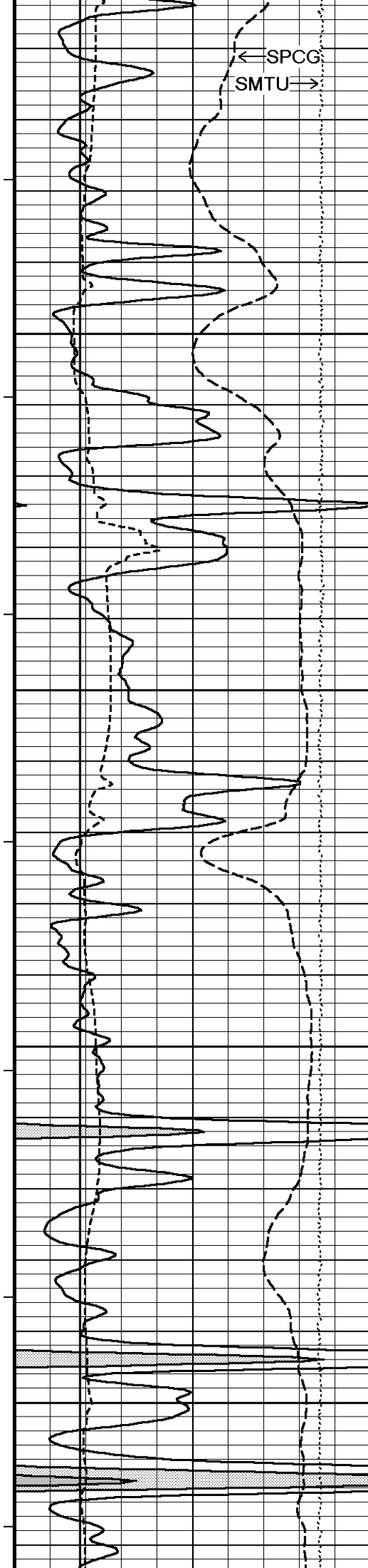
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4200

120°

4250





← SPCG  
SMTU →

120°

4300

121°

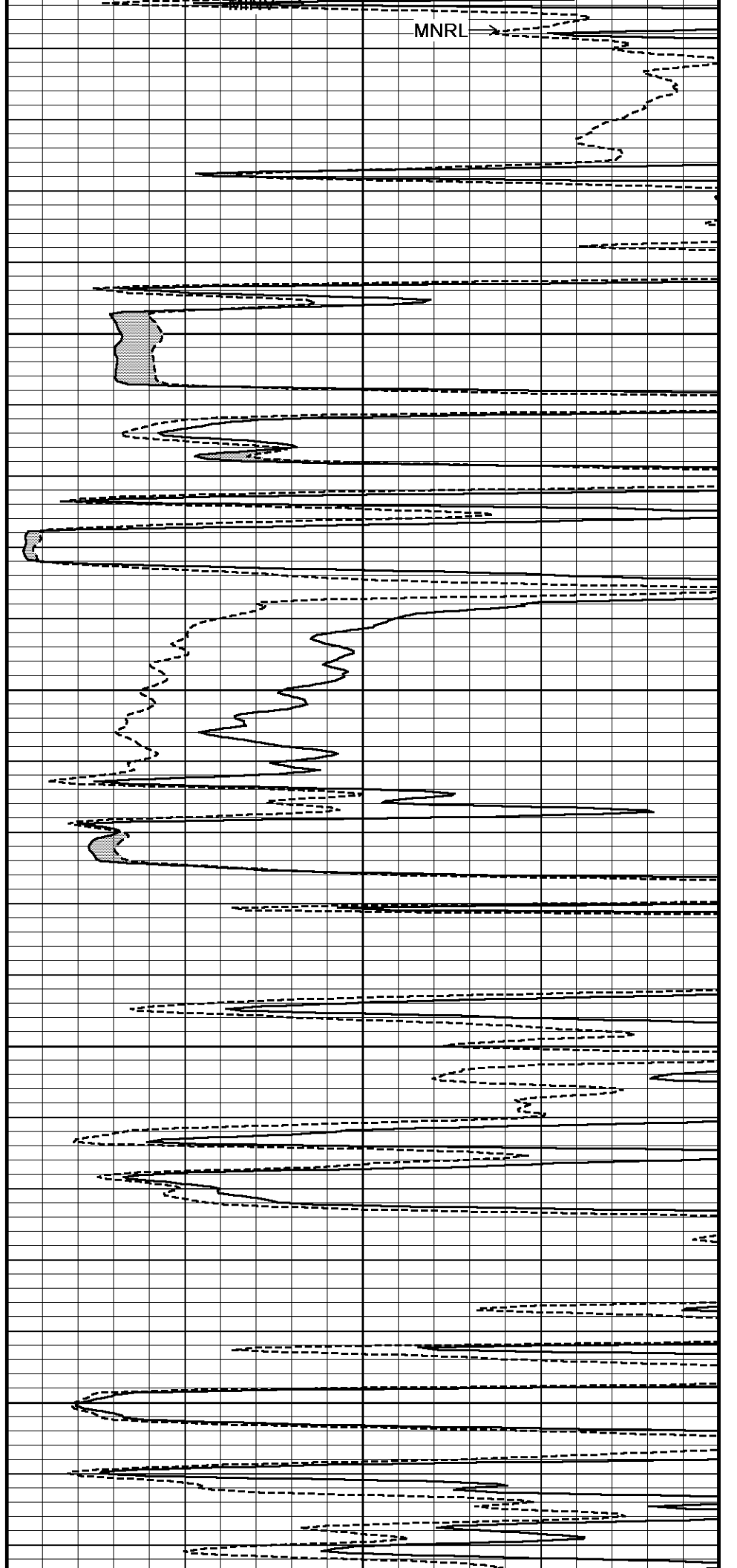
4350

121°

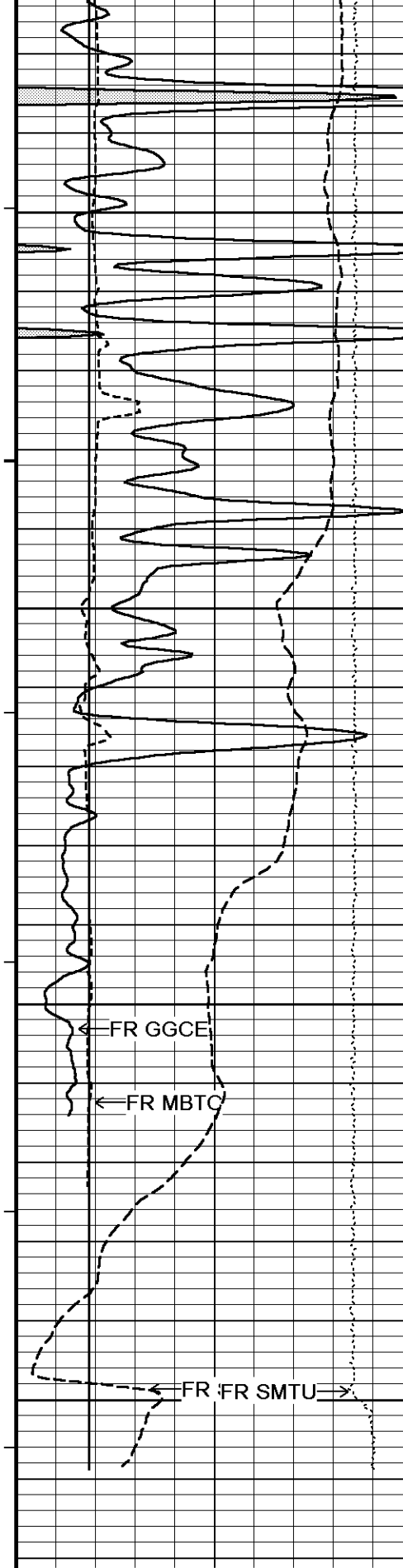
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121°

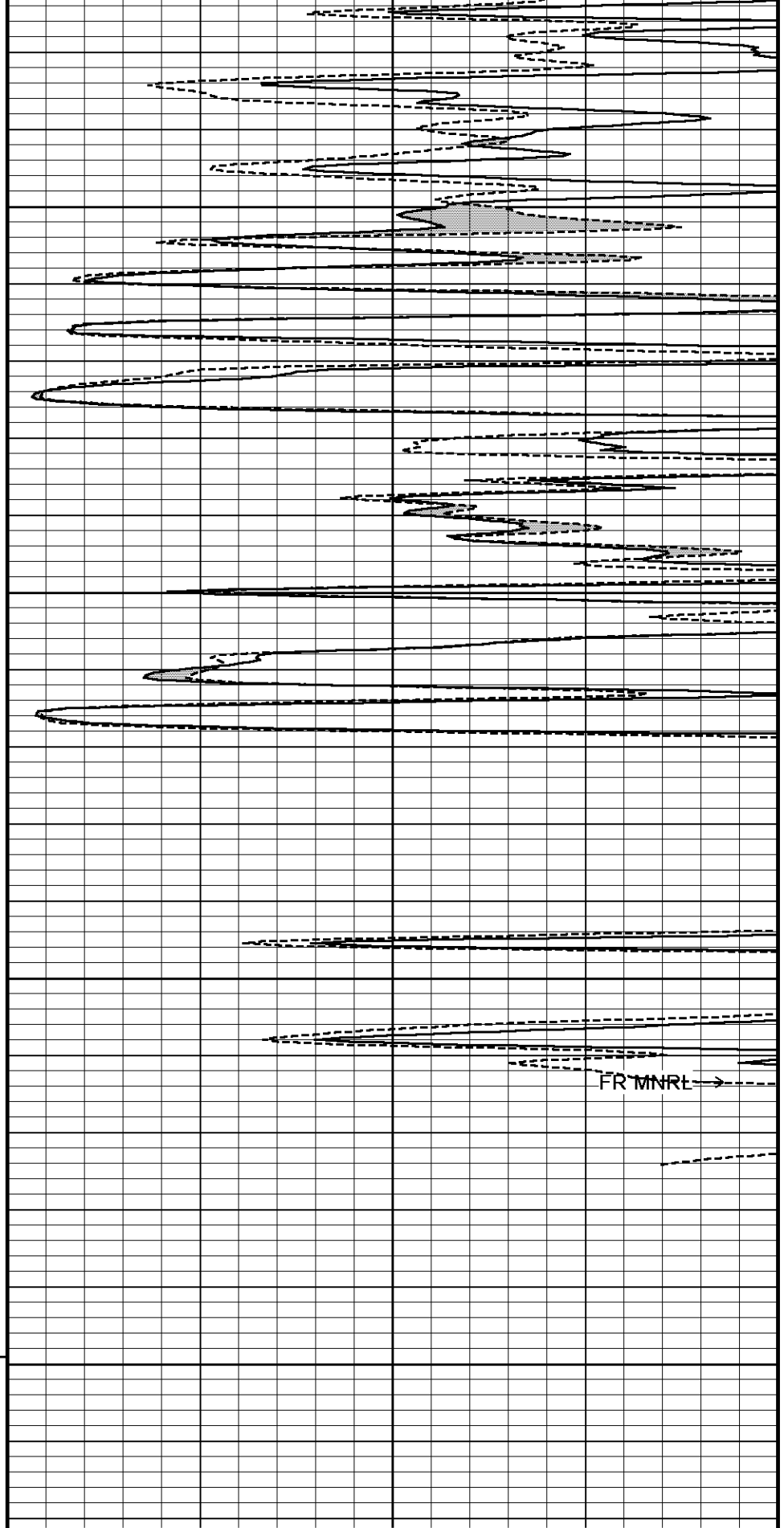
4450



MNRL →



122°  
4500  
123°  
4550  
122°  
4600  
TD  
4650

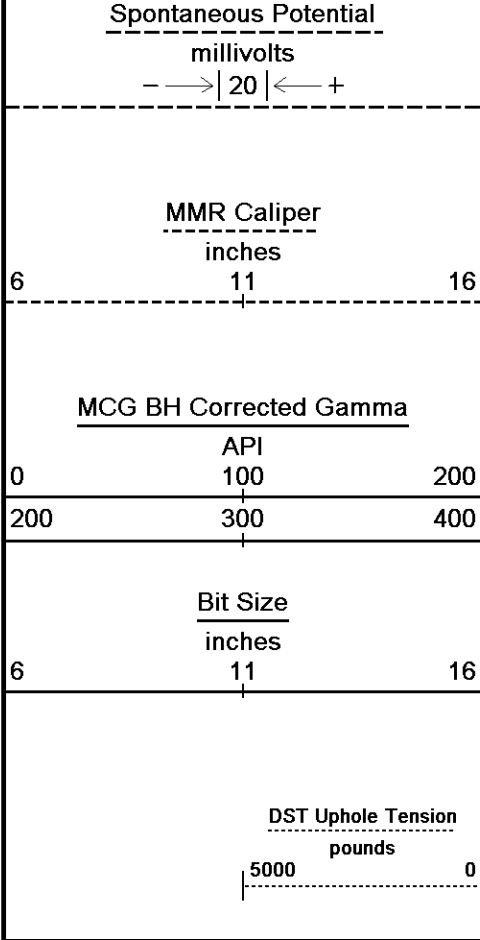


Depth  
in  
Feet

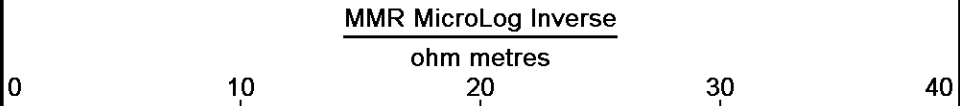
MMR MicroLog Normal  
ohm metres

0 10 20 30 40

Timing Marks  
every 60.0 sec



Borehole  
Temp in  
deg F



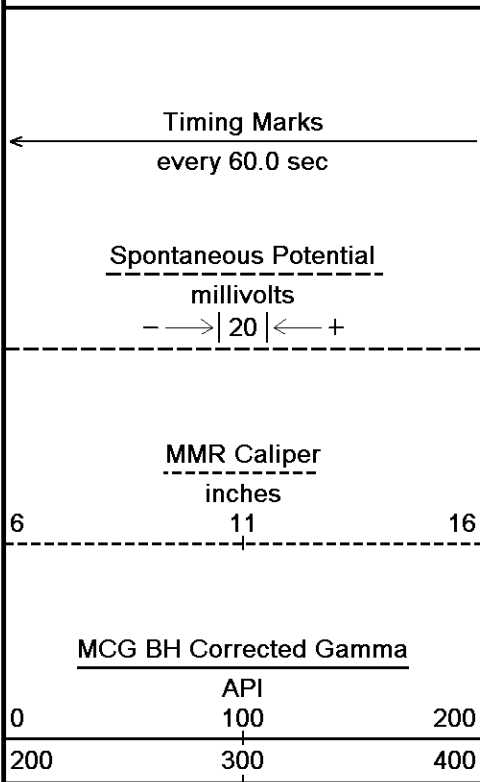
Replay  
Scale  
1:240

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↑ **5 INCH MAIN PASS 1:240** ↑

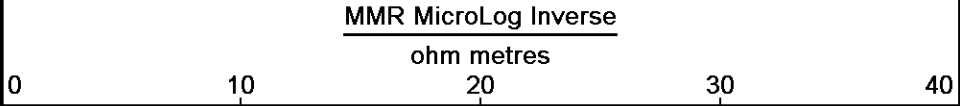
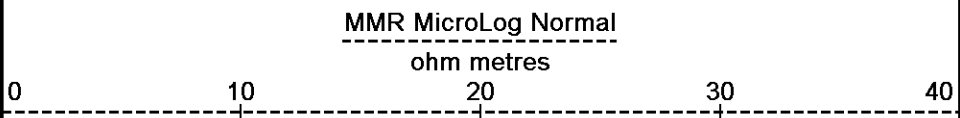
↓ **5 INCH REPEAT PASS 1:240** ↓

Depth Based Data - Maximum Sampling Increment 10.0cm  
 Plotted on 27-JUN-2019 07:32  
 Filename: C:\Users\DHELPI~1\AppData\Local\Temp\Weatherford PreView0\REPEAT PASS 001.dta  
 Recorded on 26-JUN-2019 21:48  
 System Versions: Logged with 18.01.6830 Processed with 18.01.6830 Plotted with 14.04.4365



Depth  
in  
Feet

Borehole  
Temp in  
deg F





Bit Size  
inches

6 11 16

DST Uphole Tension  
pounds

5000 0

Replay  
Scale  
1:240

4350

120°

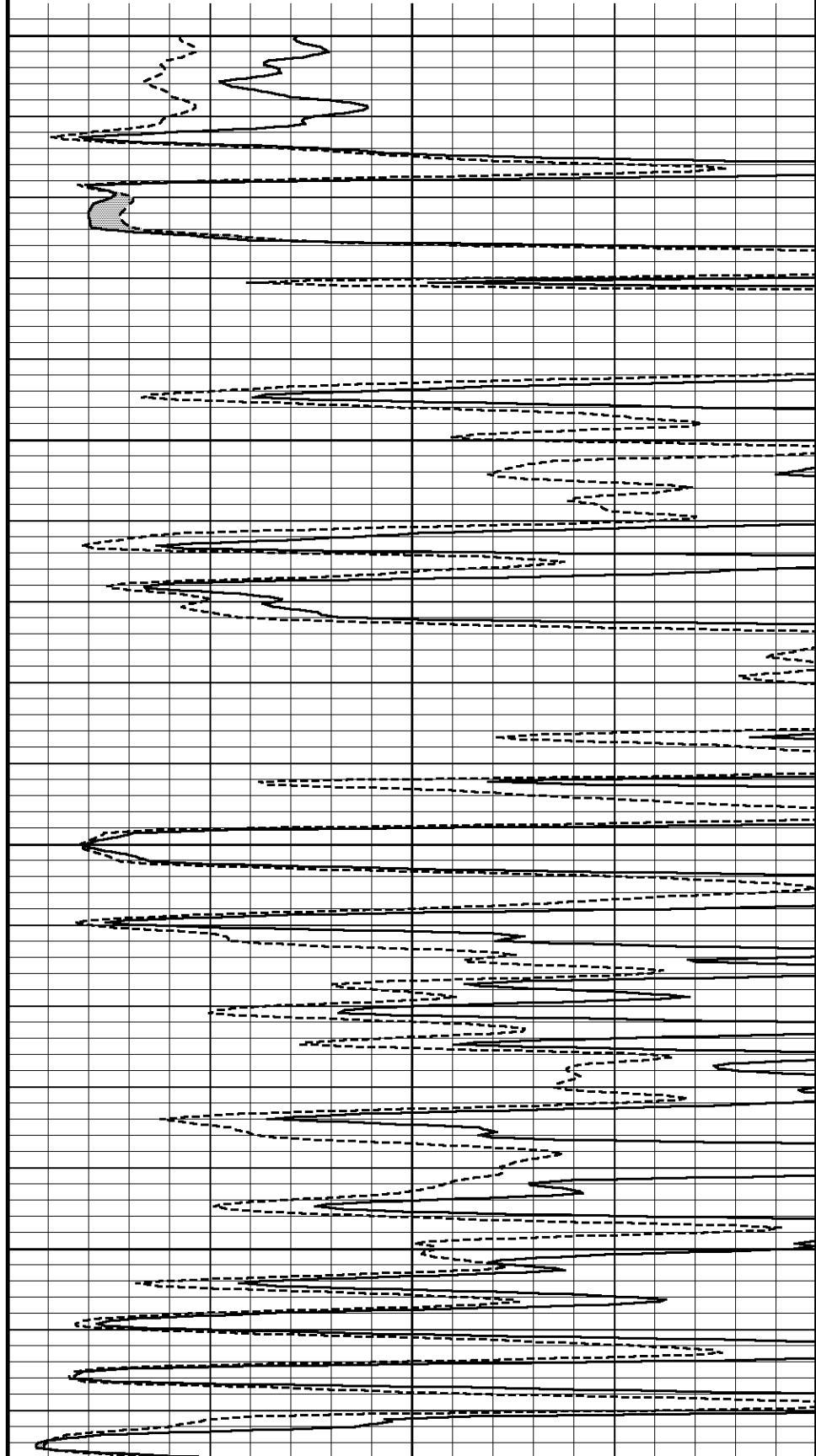
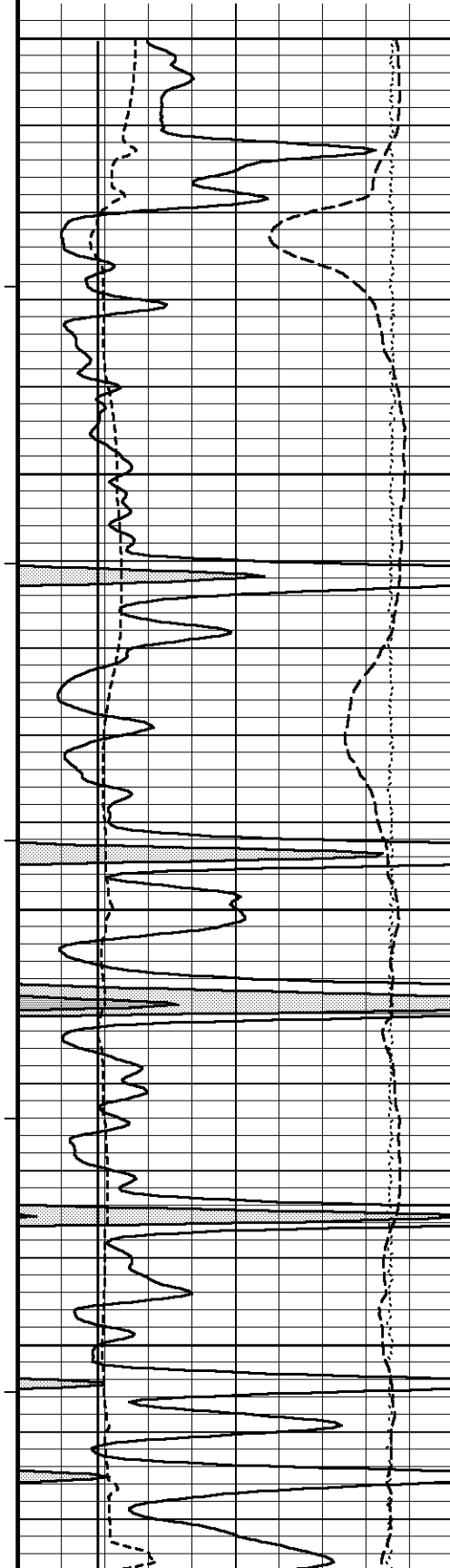
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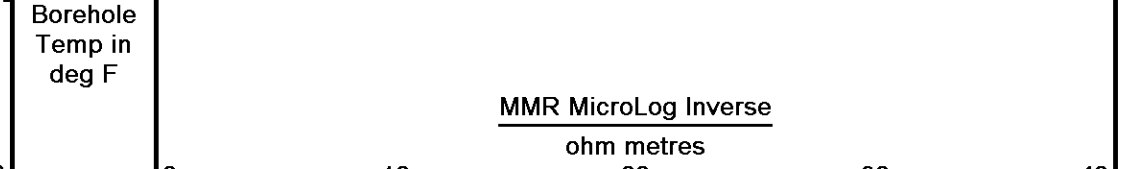
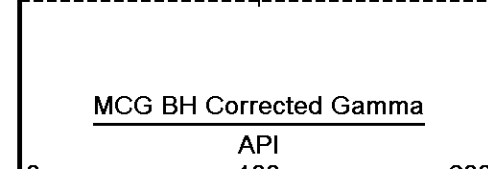
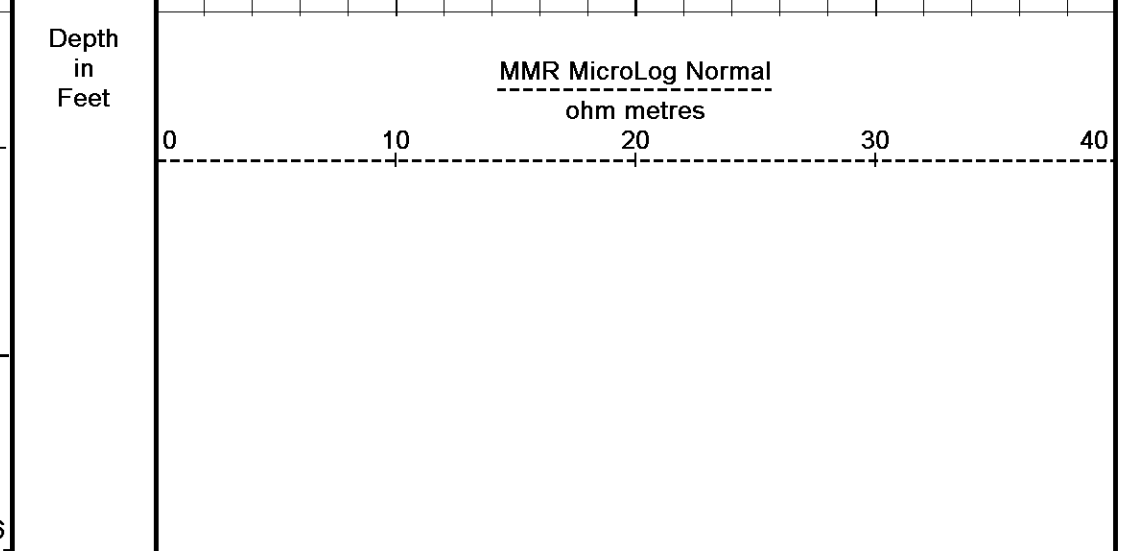
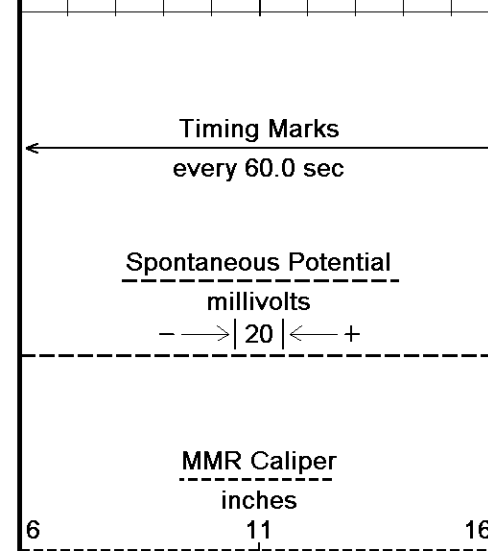
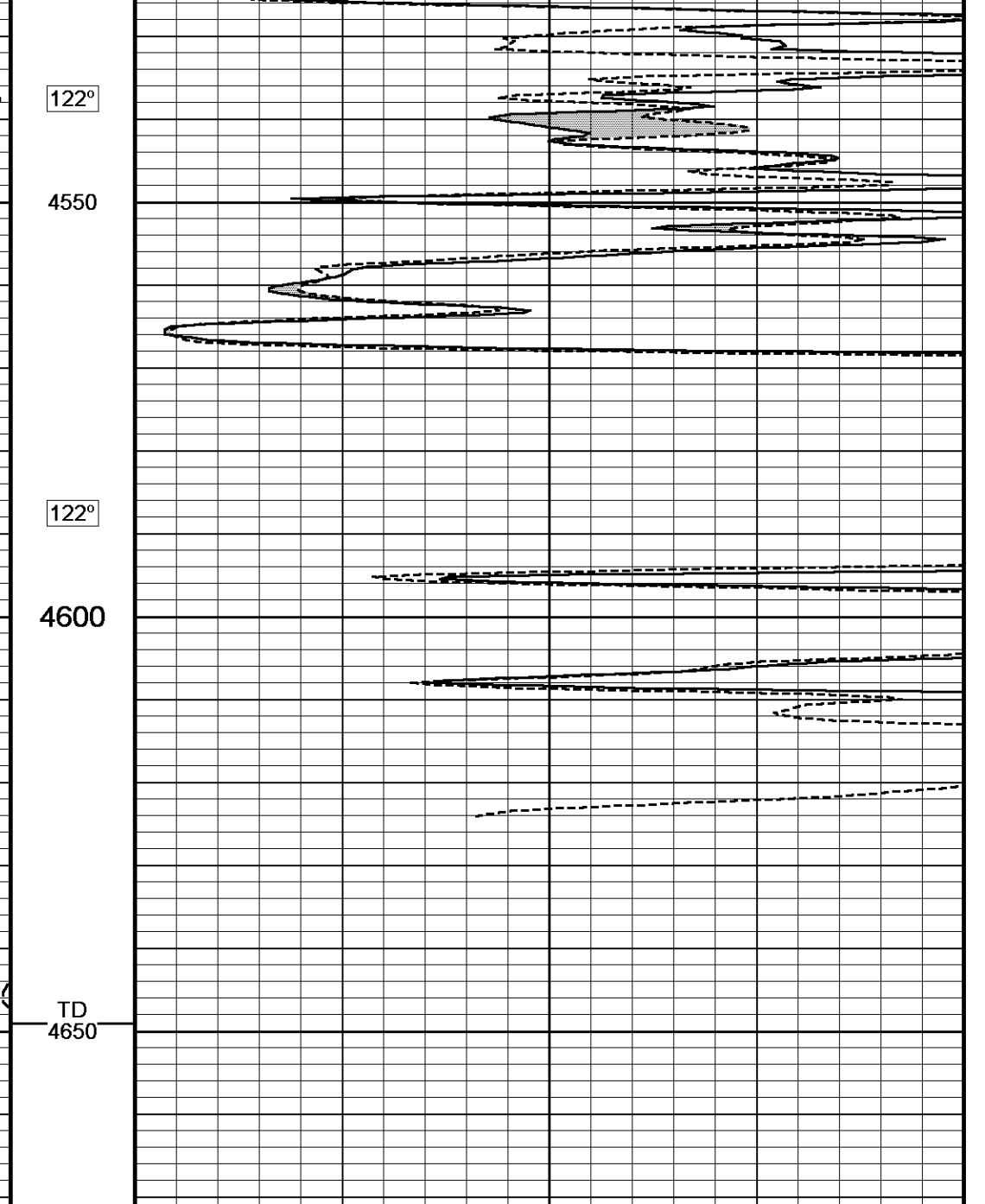
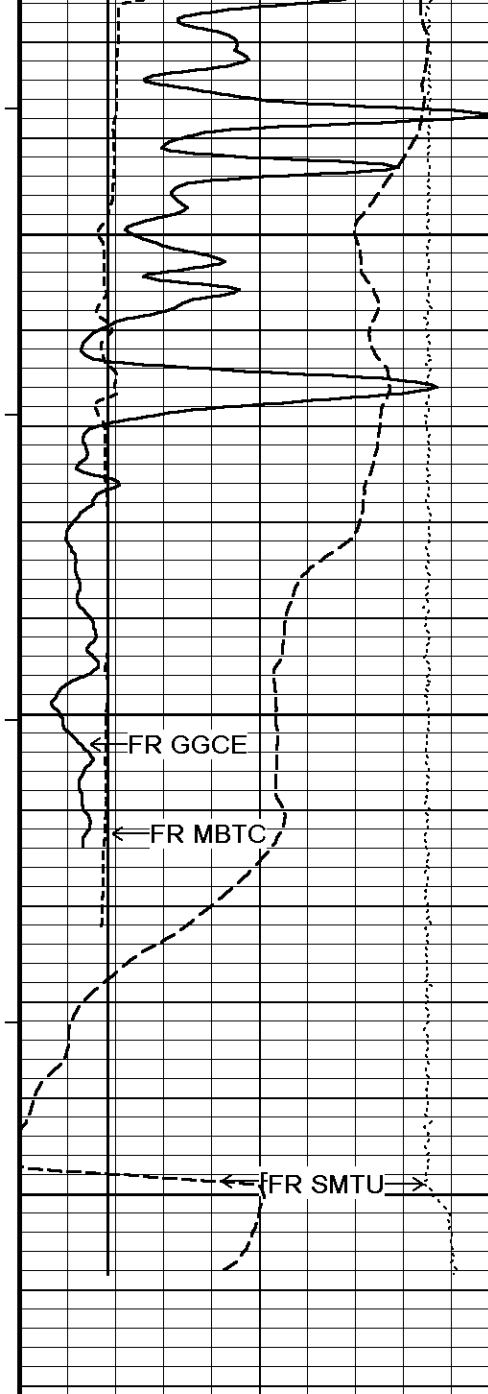
121°

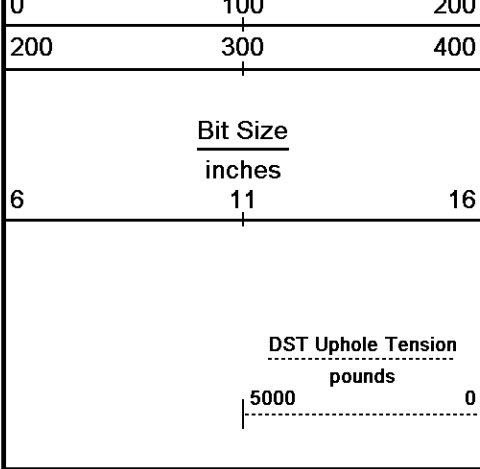
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121°

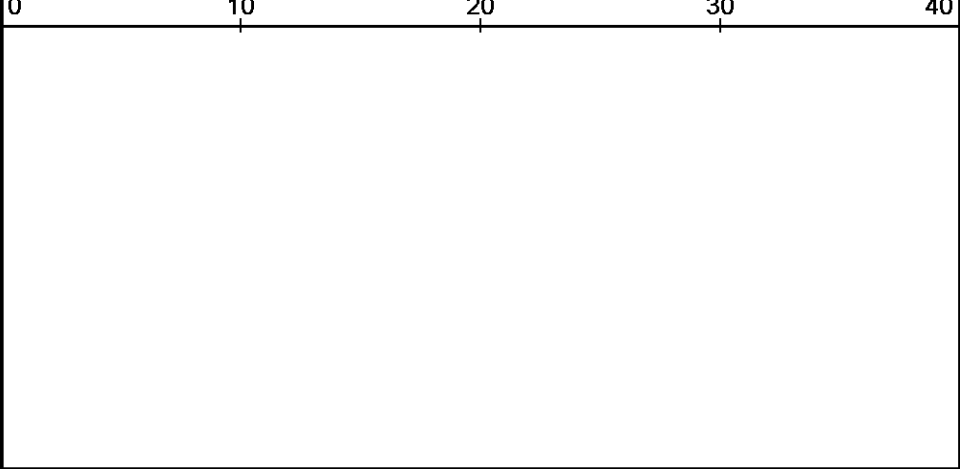
4500







Replay  
Scale  
1:240



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↑ 5 INCH REPEAT PASS 1:240 ↑