



Weatherford

**COMPENSATED SONIC
WITH INTEGRATED TRANSIT TIME**

COMPANY

SHAKESPEARE OIL CO., INC.

WELL

SCHOWALTER #1-7

FIELD

WILDCAT

PROVINCE/COUNTY

SCOTT

COUNTRY/STATE

U.S.A. / KANSAS

LOCATION

480' FNL & 2220' FWL

SEC 7 TWP 16S RGE 32W

Other Services

Latitude

MAI/MFE

Longitude

MML

MPD/MDN

API Number 15-171-21205

Permanent Datum GL, Elevation 3009 feet

Log Measured From KB, 11.00 feet above Permanent Datum

Drilling Measured From KB

Elevations: feet
KB 3020.00
DF 3018.00
GL 3009.00

Date 09-JUL-2017

Run Number ONE

Service Order 4558-186803695

Depth Driller 4750.00 feet

Depth Logger 4757.00 feet

First Reading 4744.00 feet

Last Reading 267.00 feet

Casing Driller 265.00 feet

Casing Logger 267.00 feet

Bit Size 7.875 inches

Hole Fluid Type CHEMICAL

Density / Viscosity 9.30 lb/USg 54.00 CP

PH / Fluid Loss 10.50 8.80 ml/30Min

Sample Source FLOWLINE

Rm @ Measured Temp 0.95 @ 75.0 ohm-m

Rmf @ Measured Temp 0.76 @ 75.0 ohm-m

Rmc @ Measured Temp 1.14 @ 75.0 ohm-m

Source Rmf / Rmc CALC CALC

Rm @ BHT 0.59 @ 120.0 ohm-m

Time Since Circulation

5 HOURS

Max Recorded Temp 120.00 deg F

Equipment / Base 14249 LIB

Recorded By ADAM SILL

Witnessed By TIM PRIEST

BOREHOLE RECORD

Last Edited: 09-JUL-2017 16:19

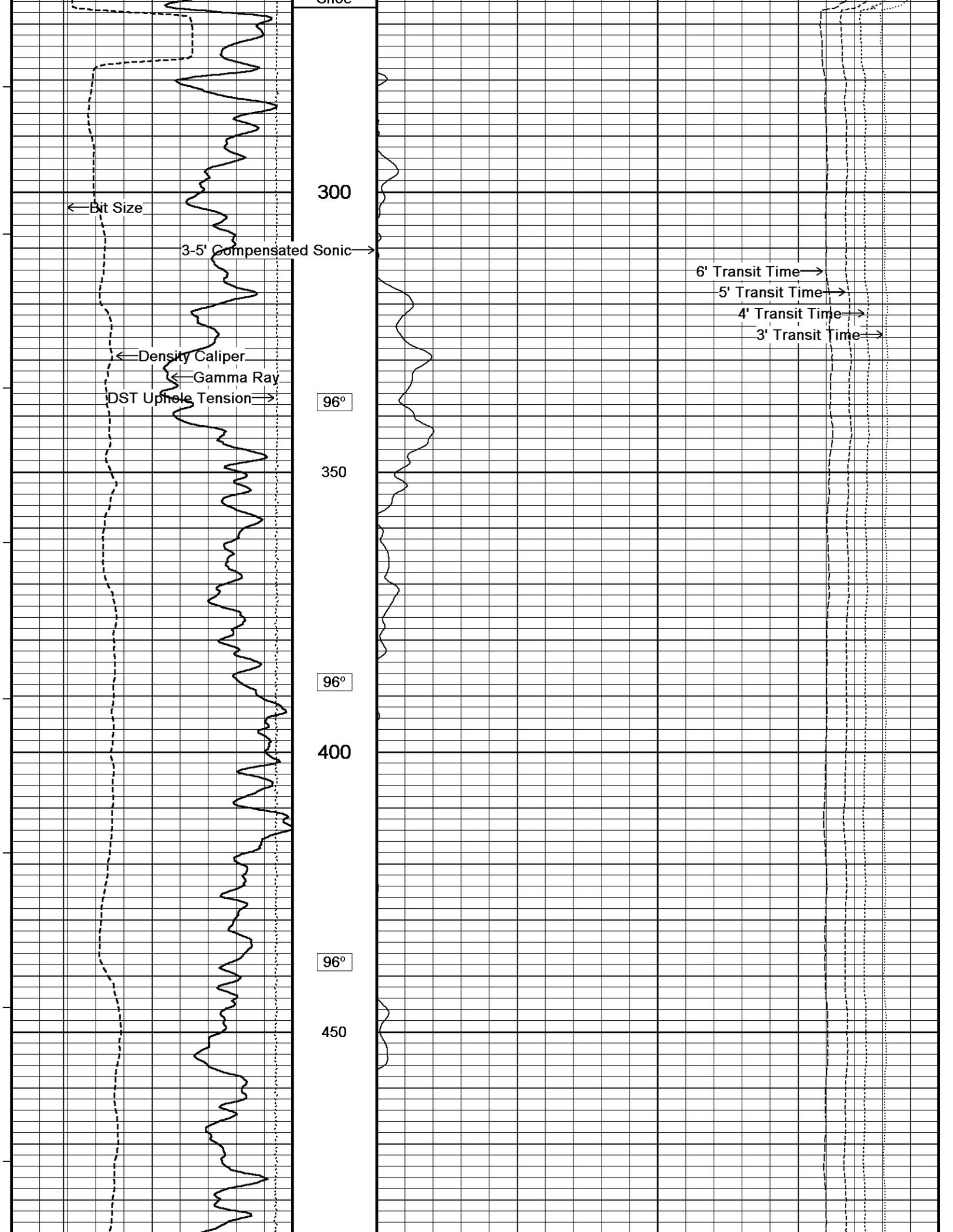
| Bit Size inches | Depth From feet | Depth To feet |
|--------------------|--------------------|------------------|
| 7.875 | 253.00 | 4750.00 |

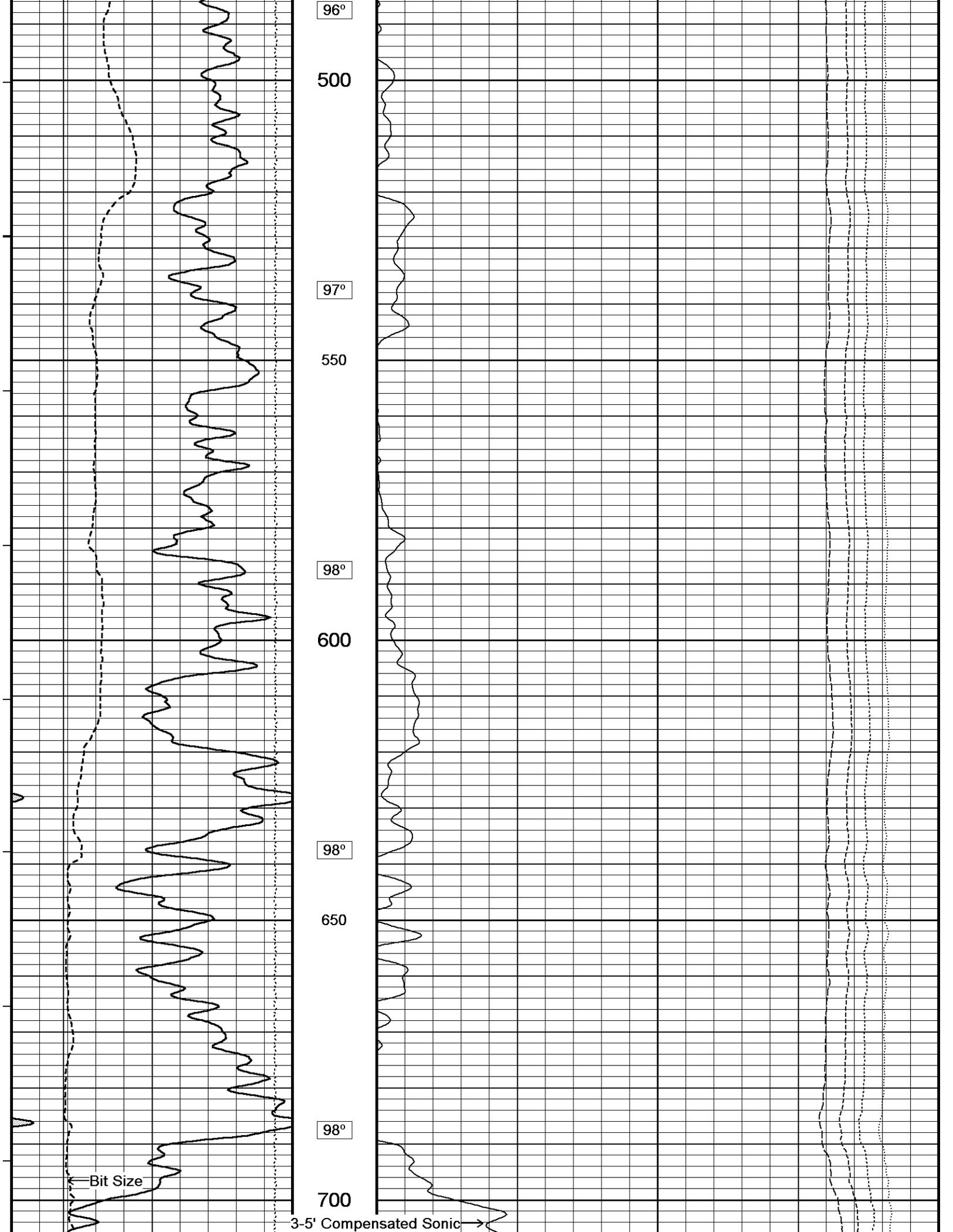
CASING RECORD

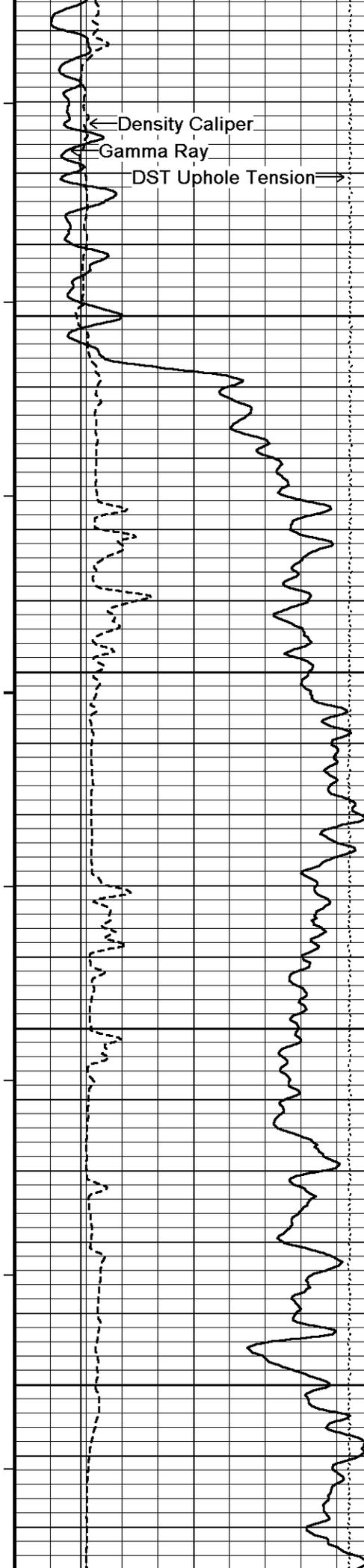
| Type | Size inches | Depth From feet | Shoe Depth feet | Weight pounds/ft |
|---------|----------------|--------------------|--------------------|---------------------|
| SURFACE | 8.625 | 0.00 | 253.00 | 24.00 |

REMARKS

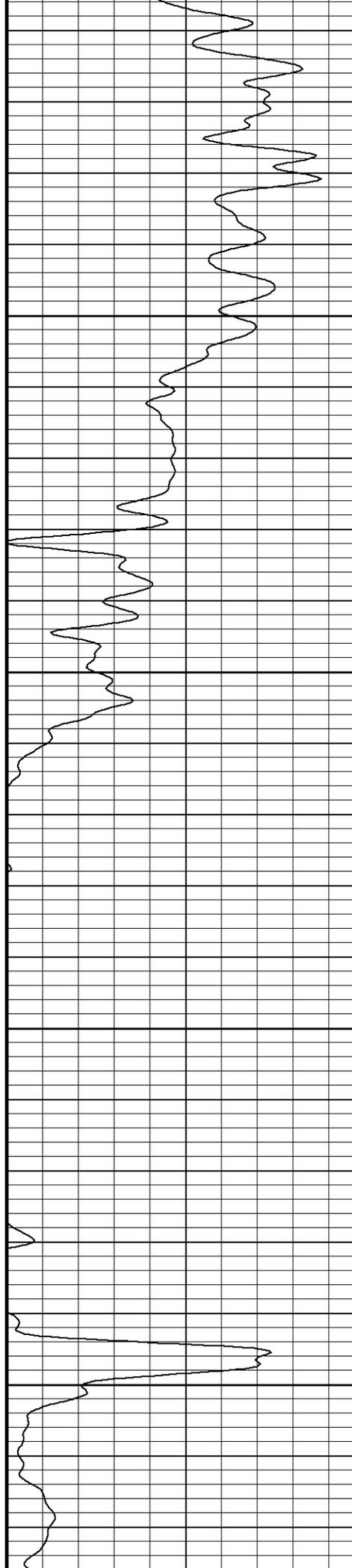
- SOFTWARE ISSUE: 17.01.7206.
- RUN ONE: MCG, MML, MDN, MPD, MFE, MSS, MAI RUN IN COMBINATION.
 - HARDWARE: DUAL BOWSPRING USED ON MDN.
 - 0.5 INCH STANDOFF USED ON MFE.
 - TWO 0.5 INCH STANDOFFS USED ON MSS.
 - 0.5 INCH STANDOFF USED ON MAI.
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY.
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY.
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST.
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 1703 CU.FT.
- ANNULAR HOLE VOLUME WITH 4.5 INCH PRODUCTION CASING FROM TD TO 3800 FEET: 219 CU.FT.



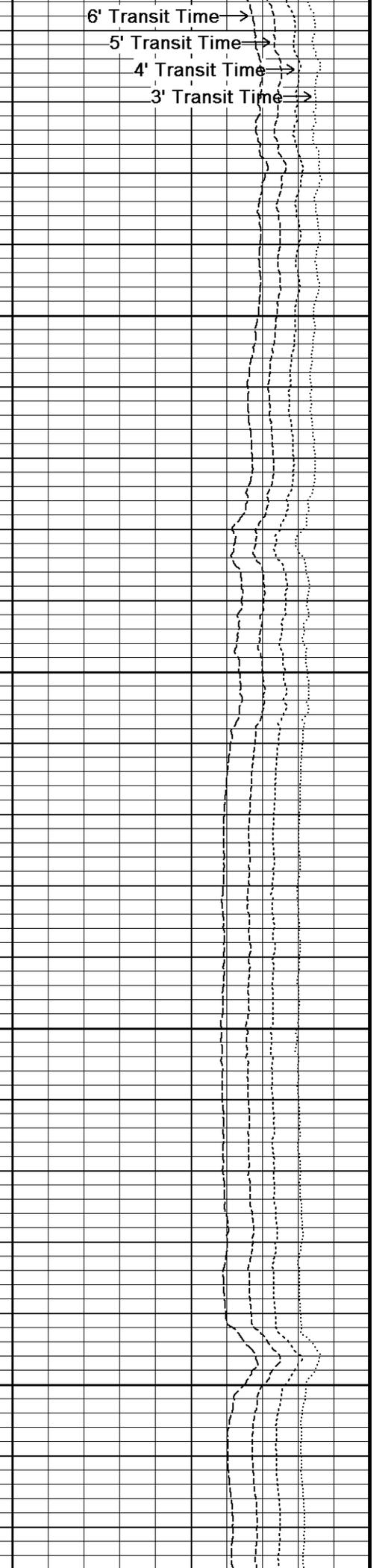


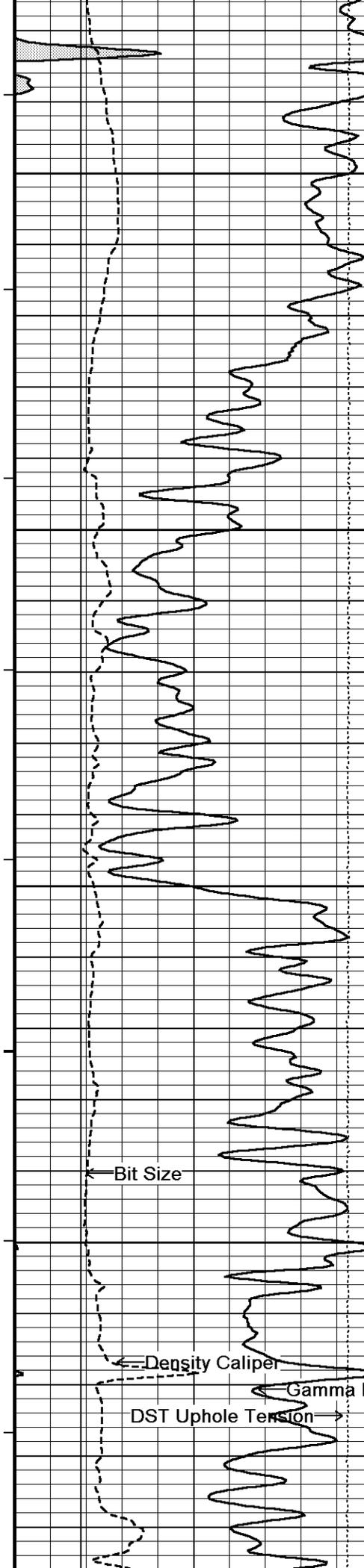


98°
750
98°
800
99°
850
99°
900

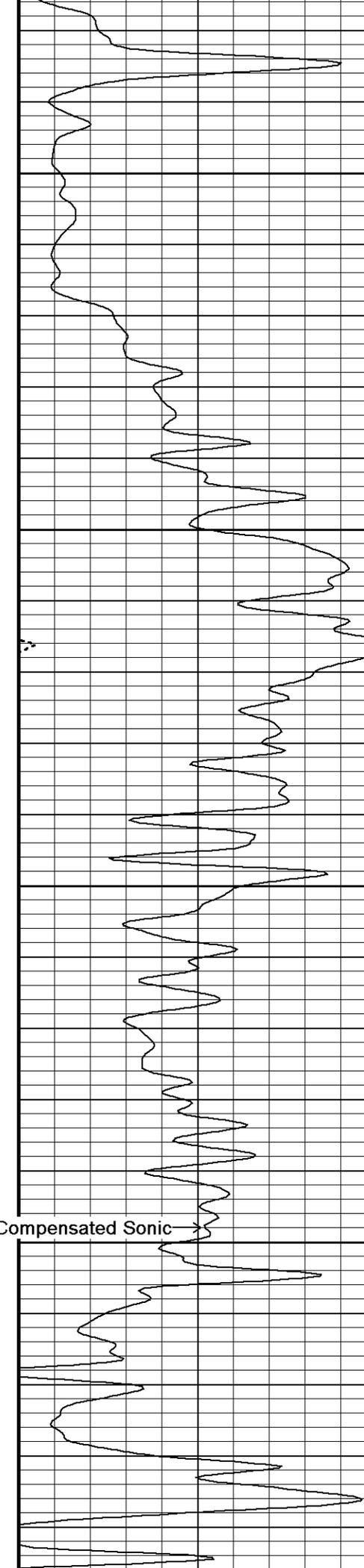


6' Transit Time →
5' Transit Time →
4' Transit Time →
3' Transit Time →

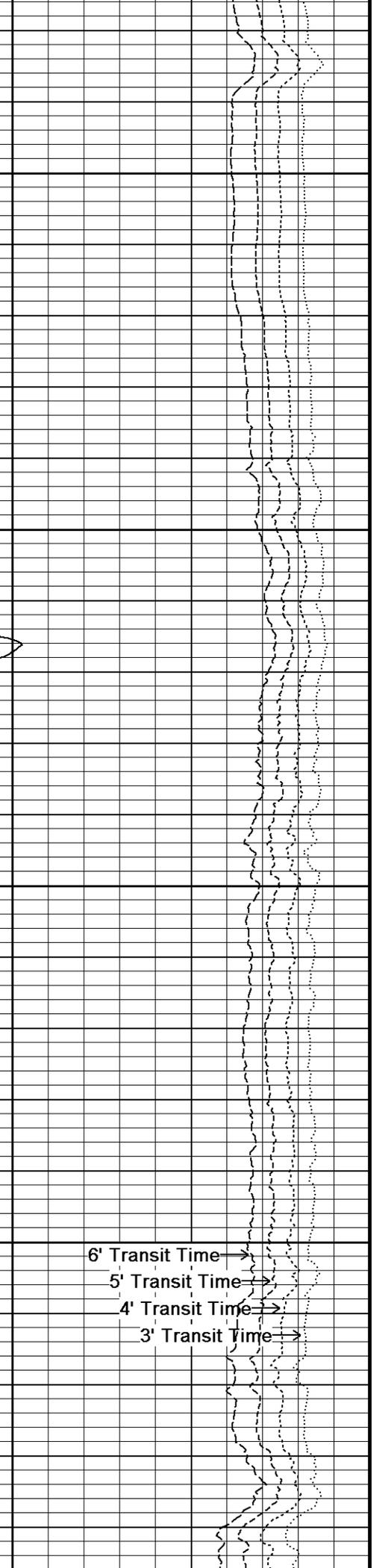


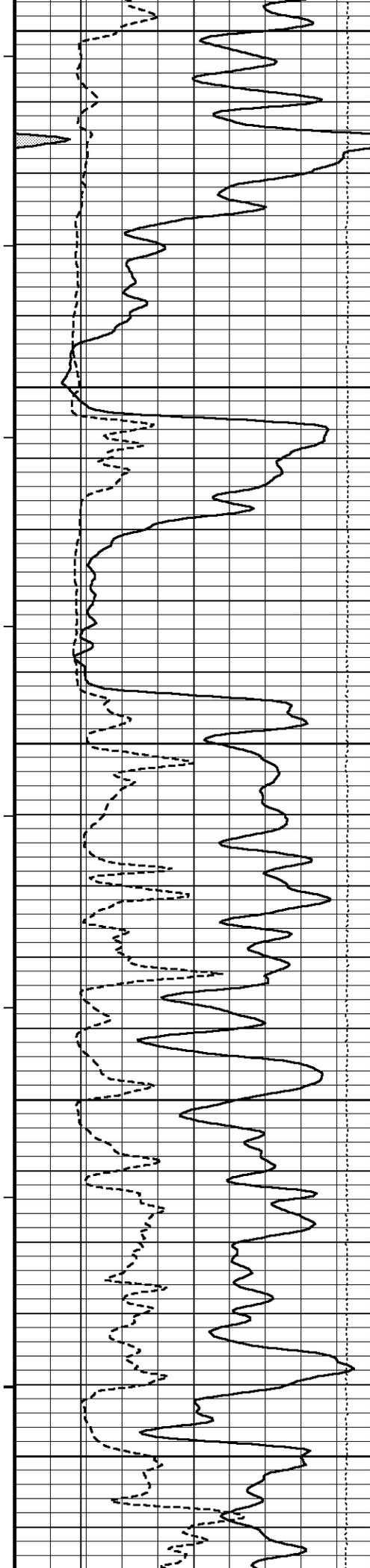


99°
 950
 100°
 1000
 100°
 1050
 101°
 1100
 101°



6' Transit Time →
 5' Transit Time →
 4' Transit Time →
 3' Transit Time →





1150

101°

1200

101°

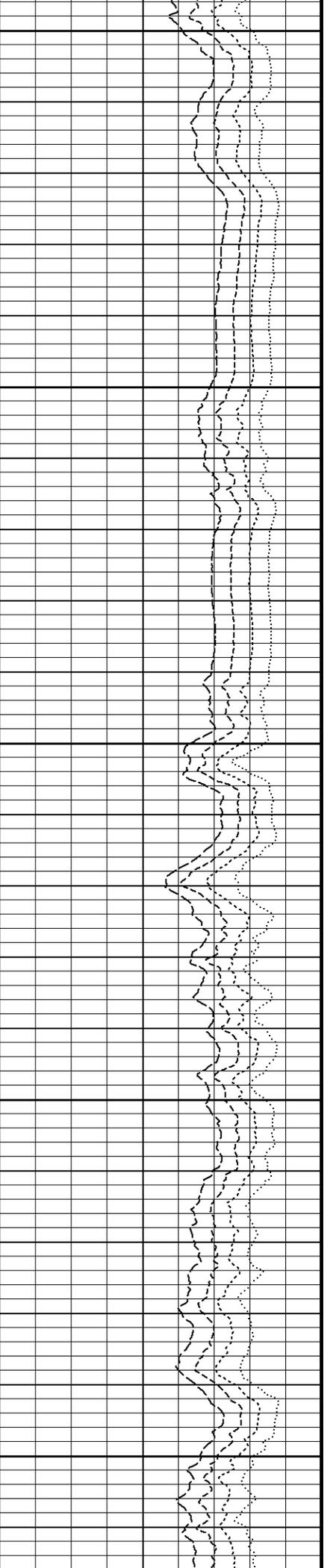
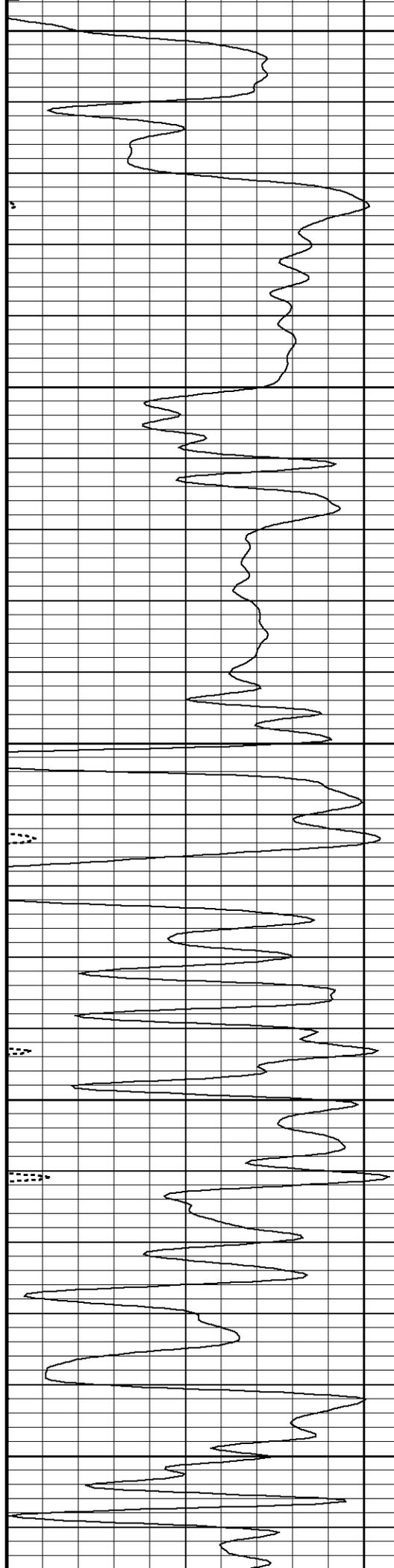
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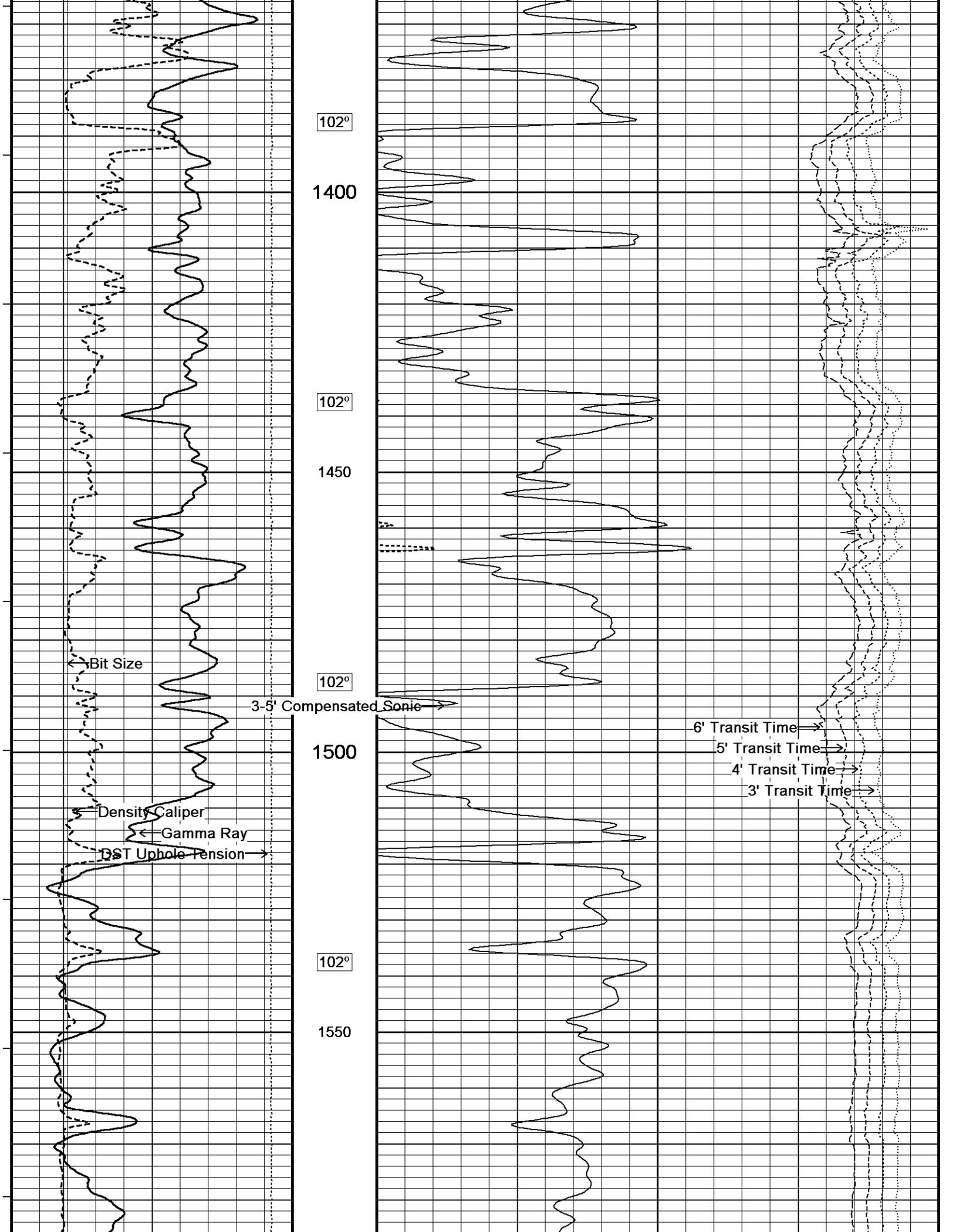
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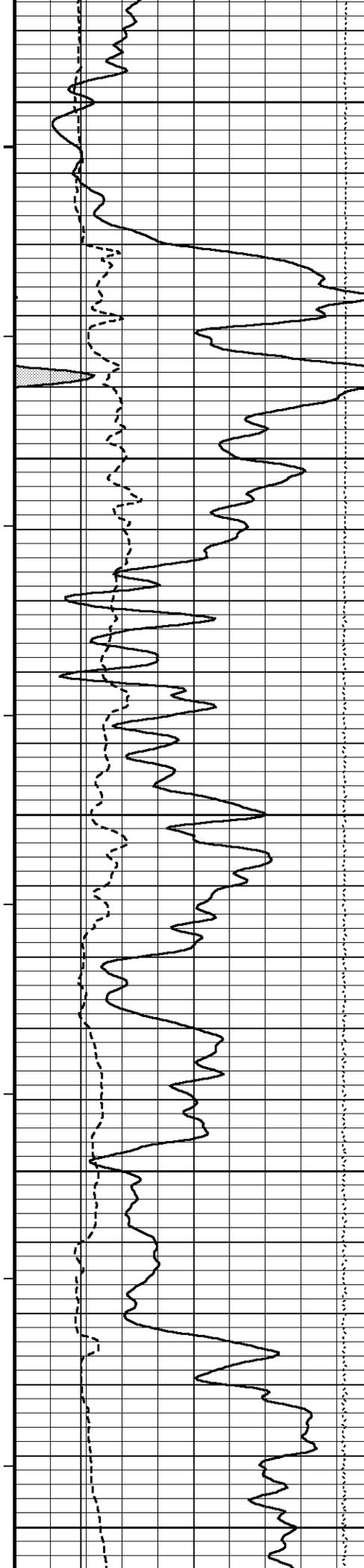
1300

102°

1350







102°

1600

103°

1650

104°

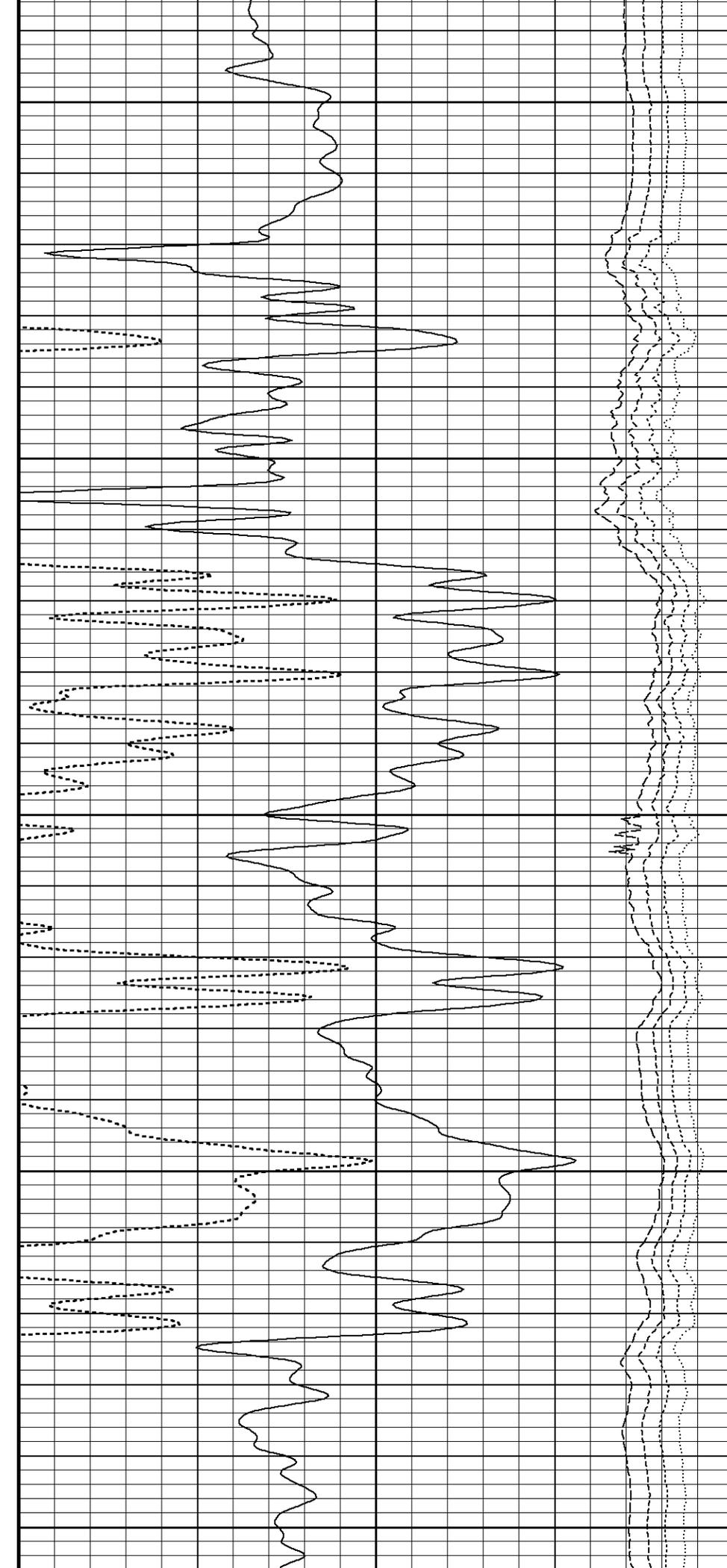
1700

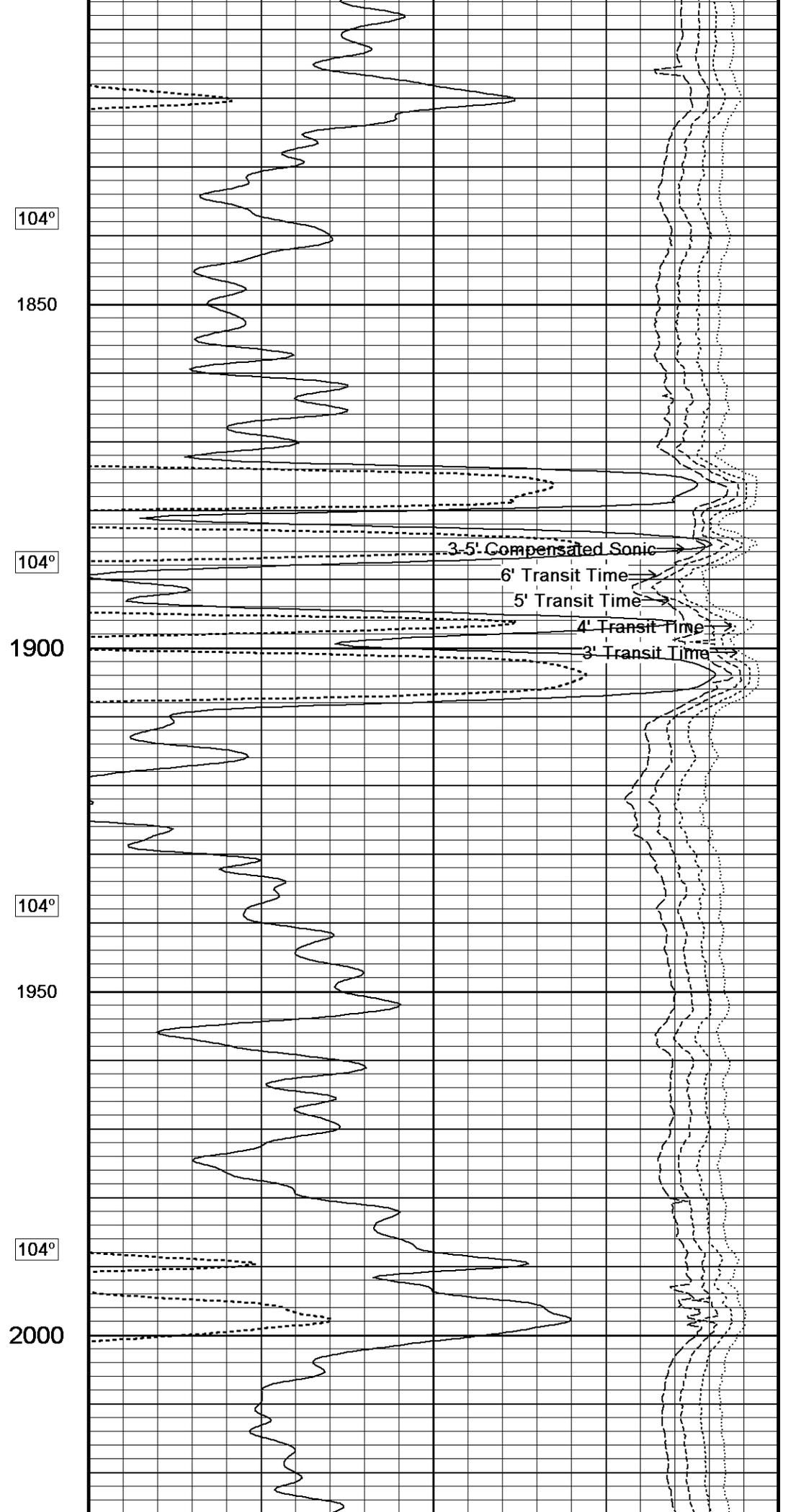
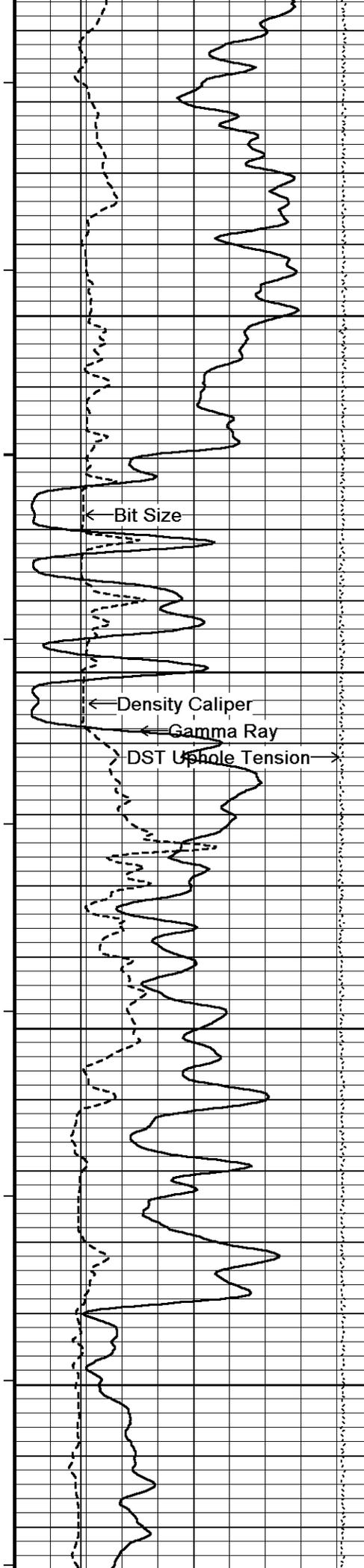
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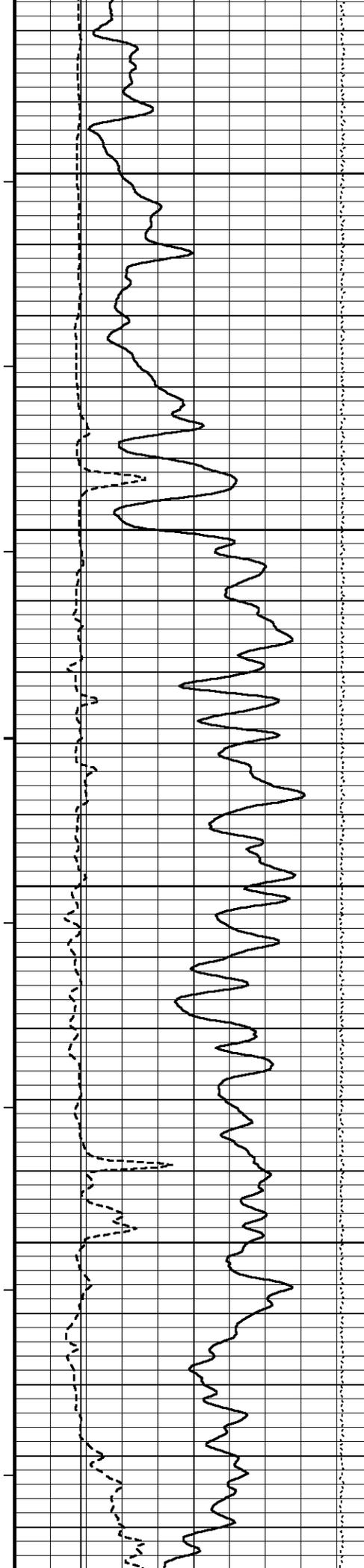
1750

104°

1800







105°

2050

105°

2100

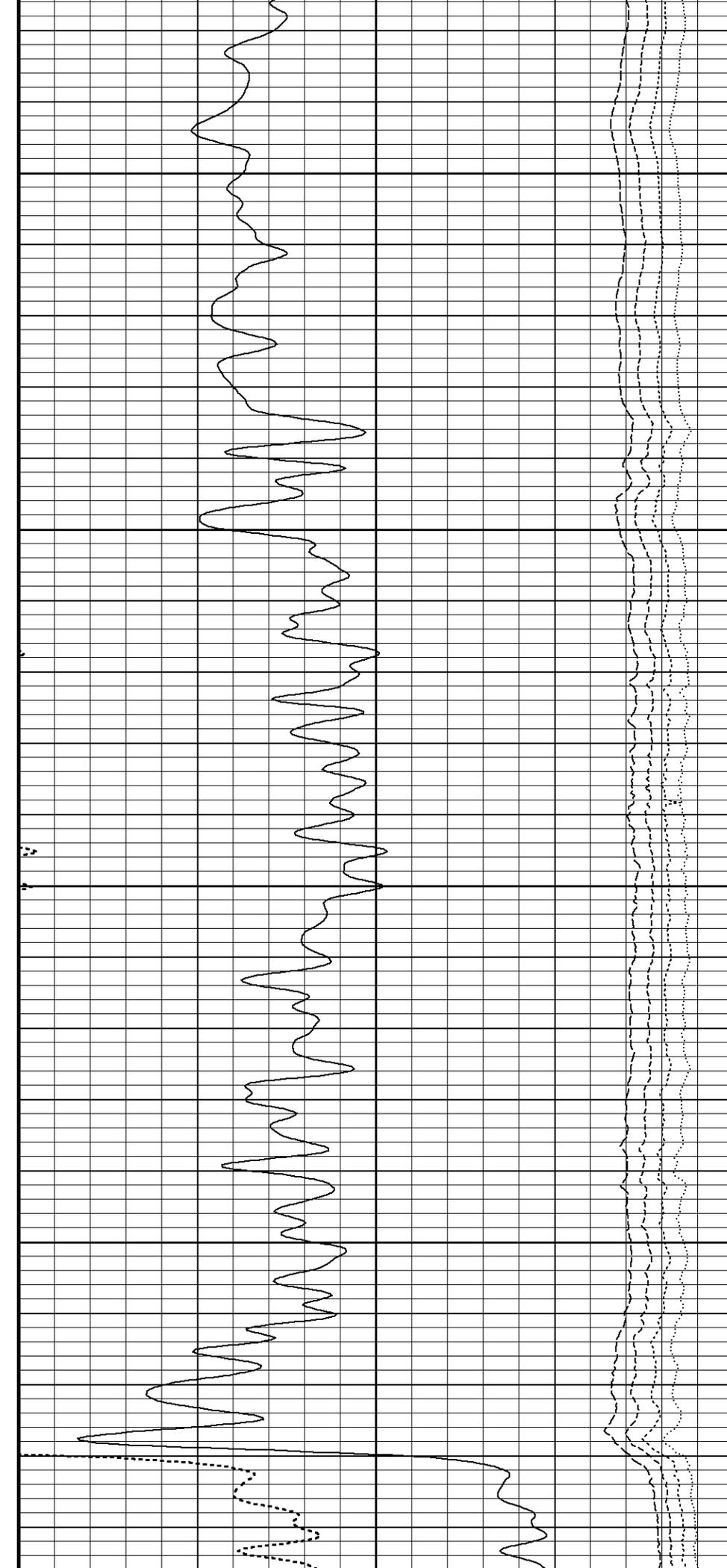
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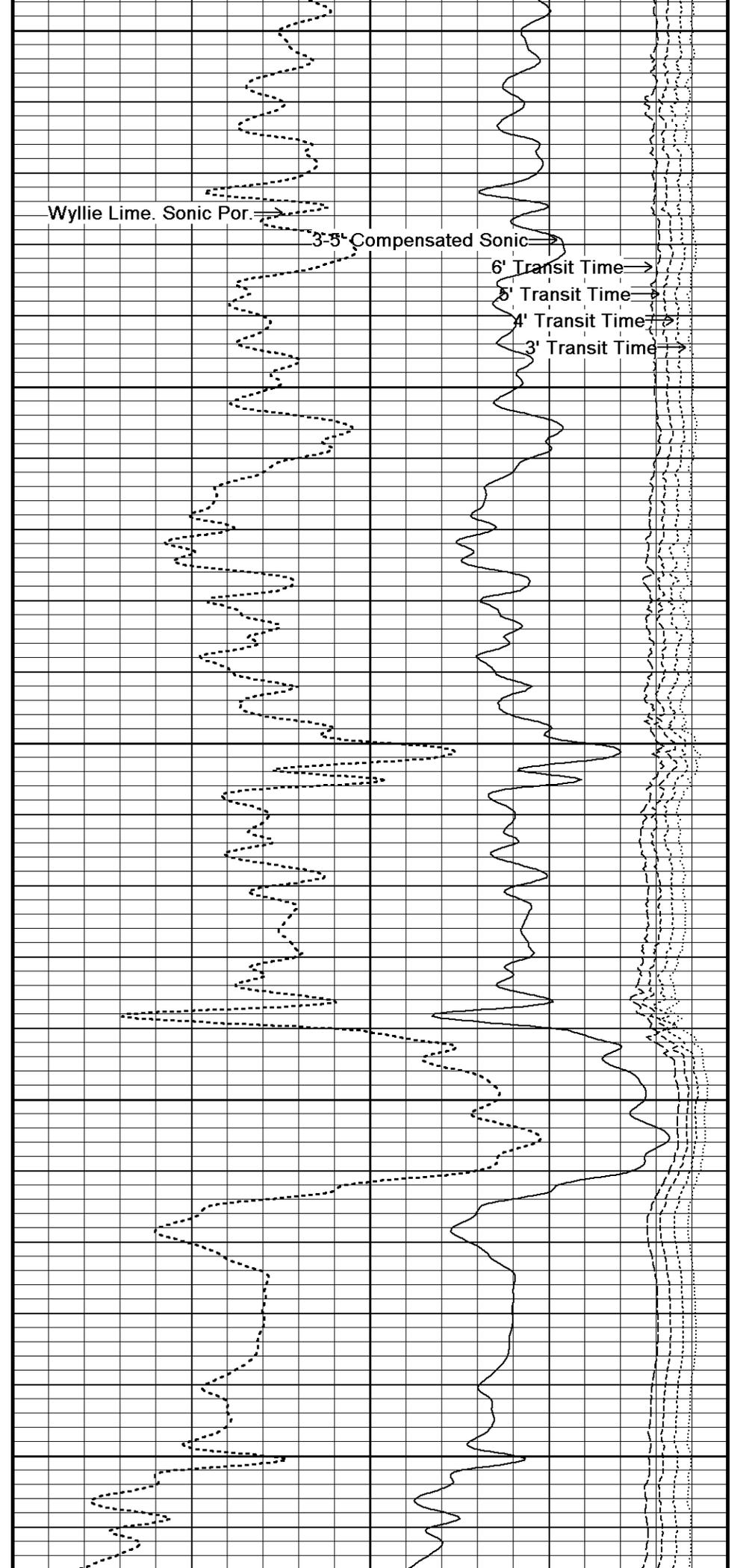
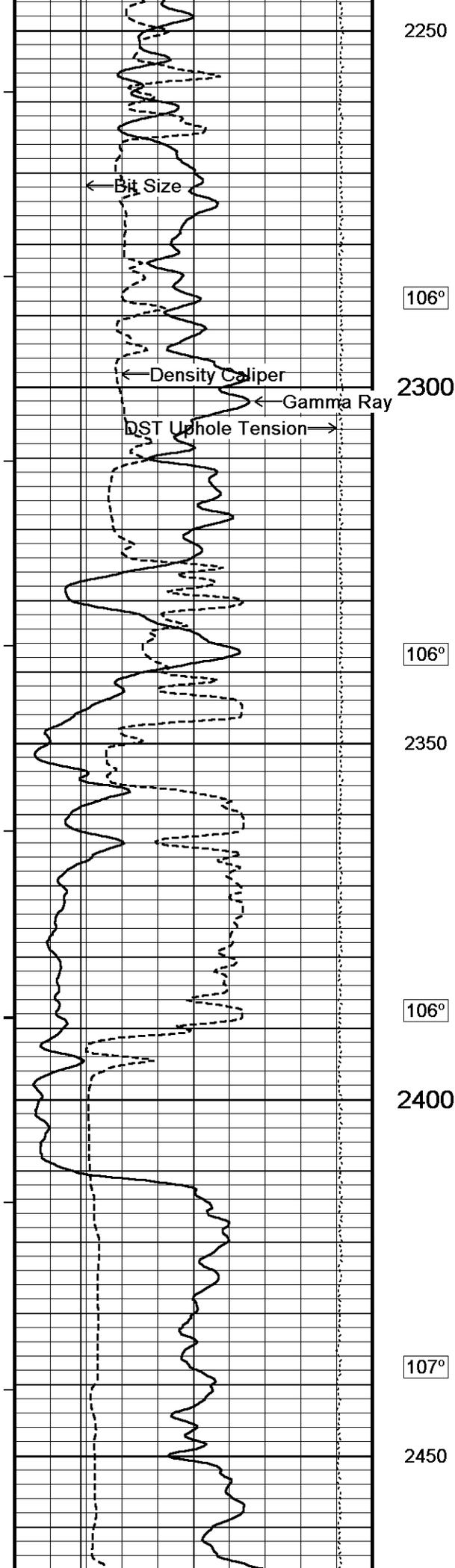
2150

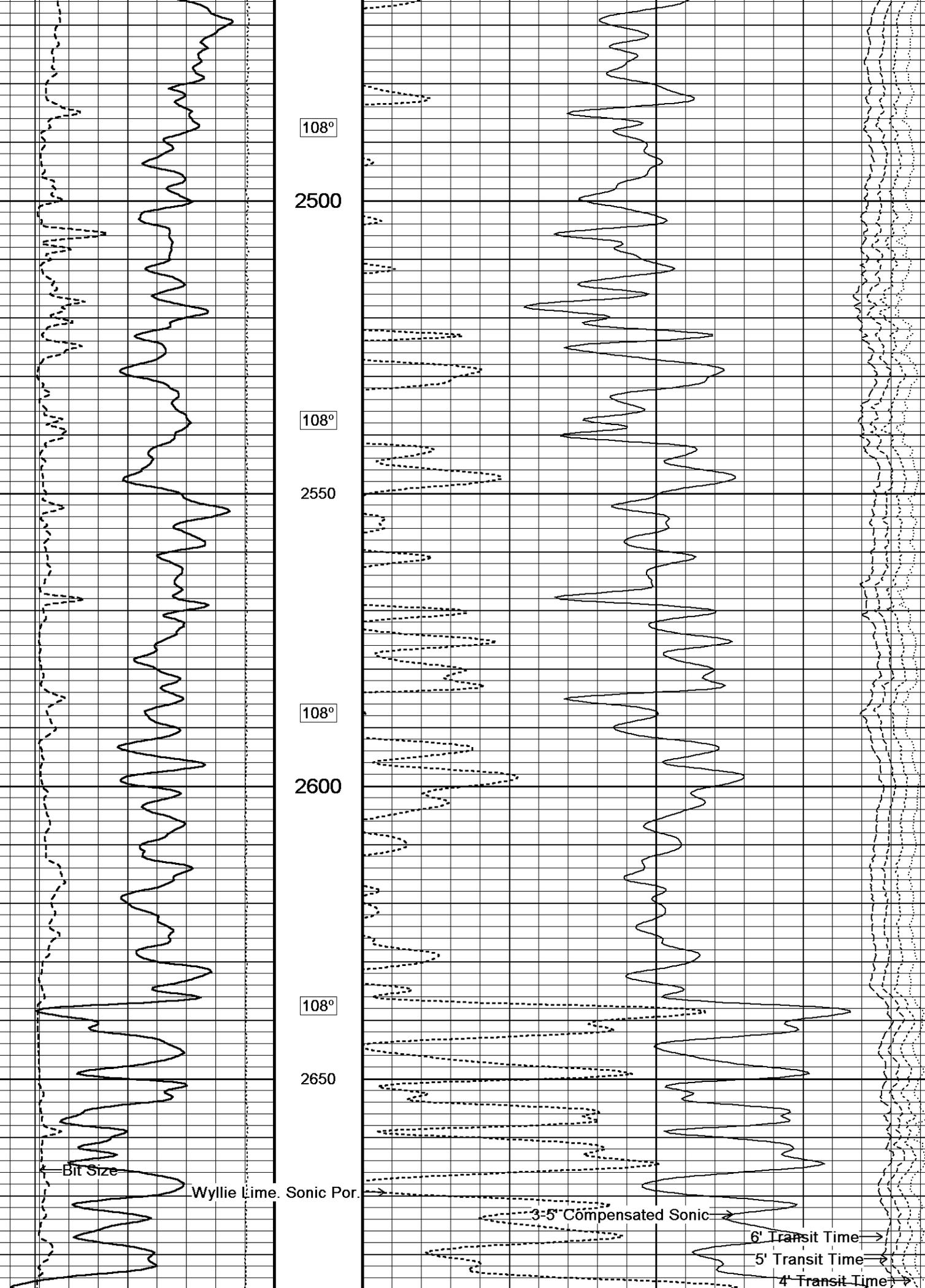
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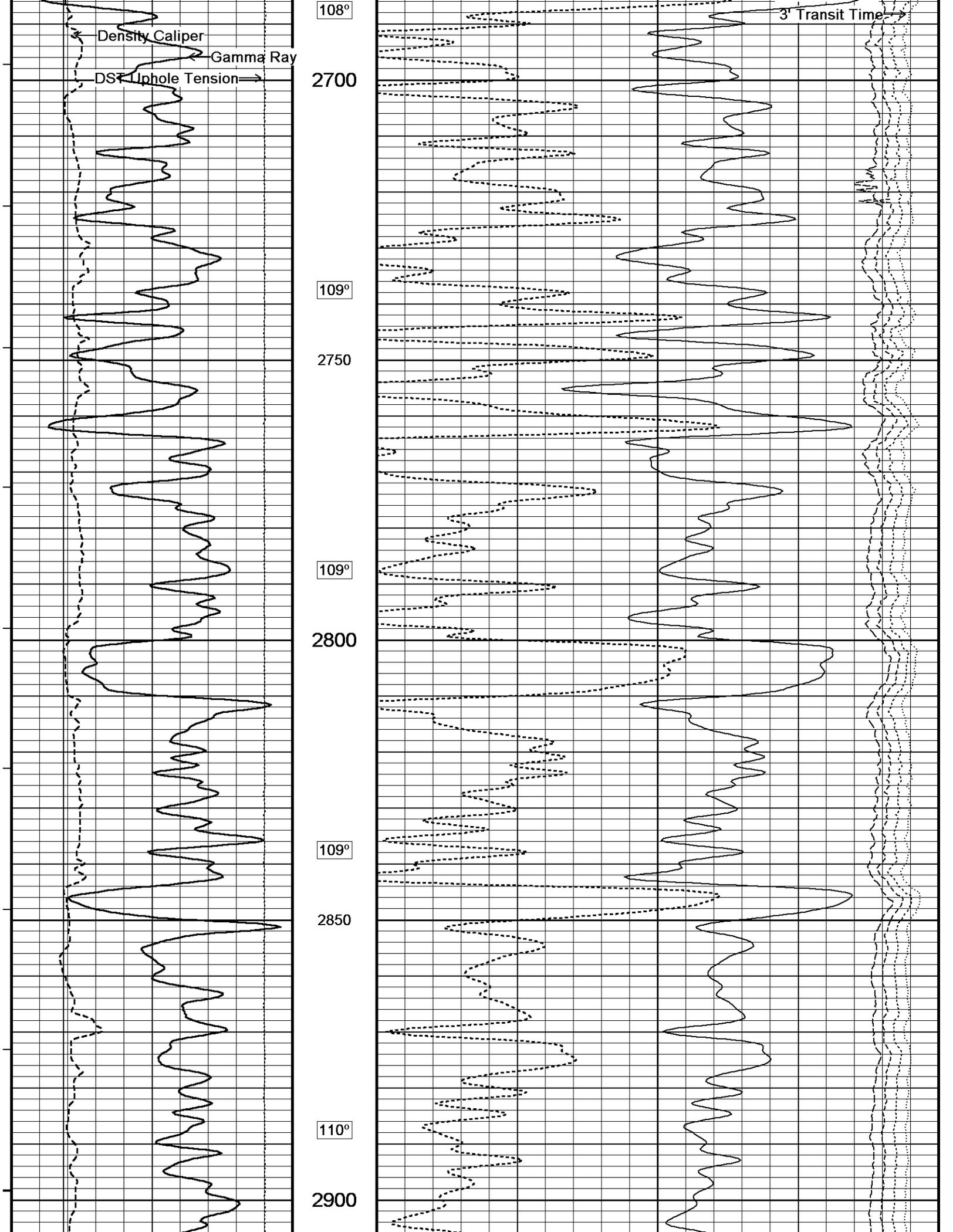
2200

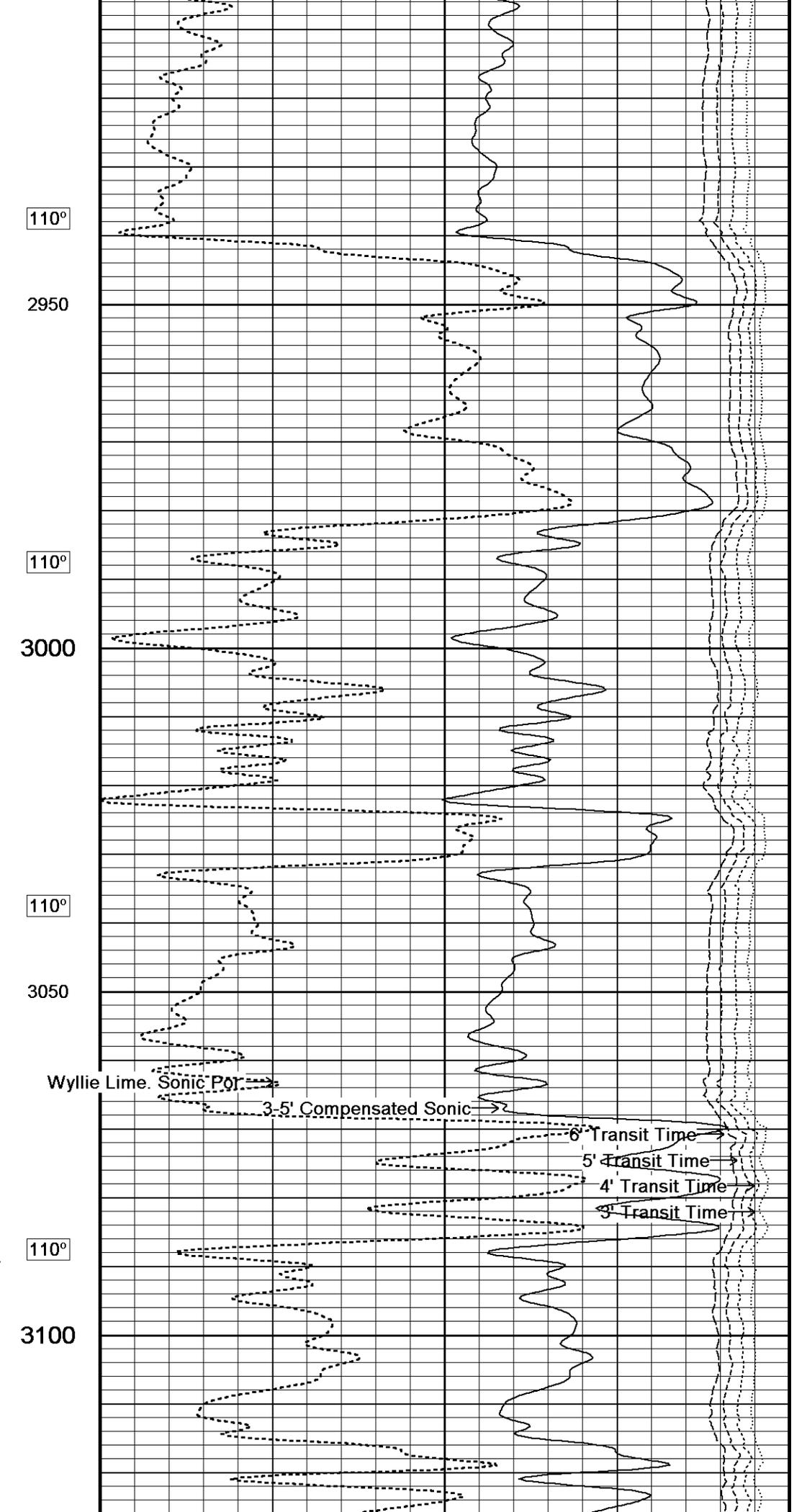
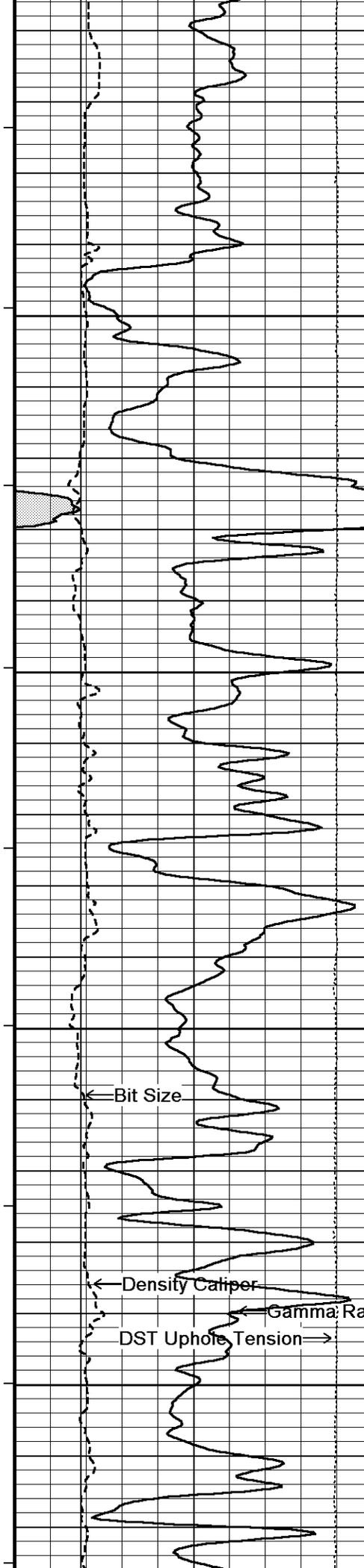
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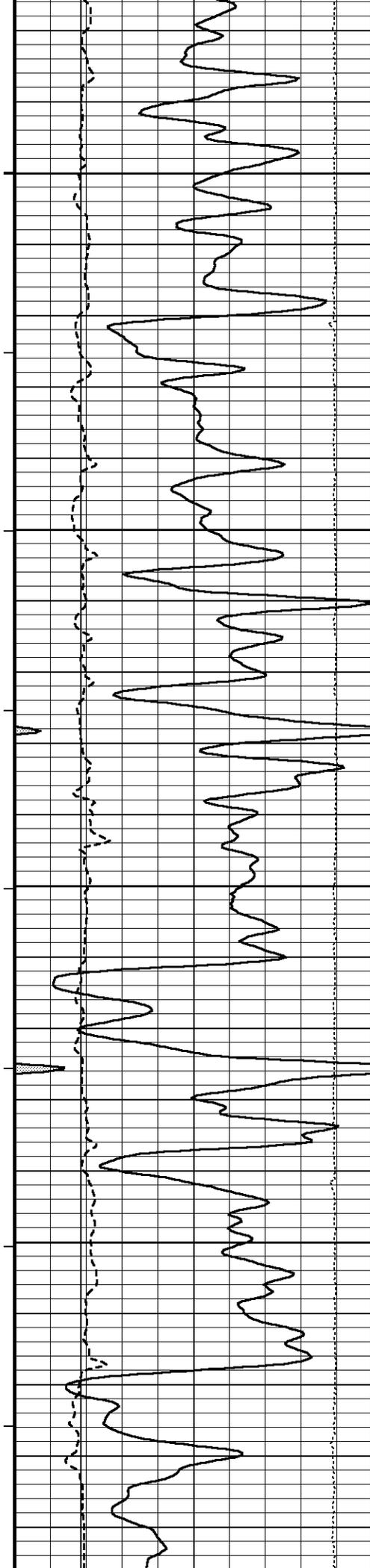












111°

3150

111°

3200

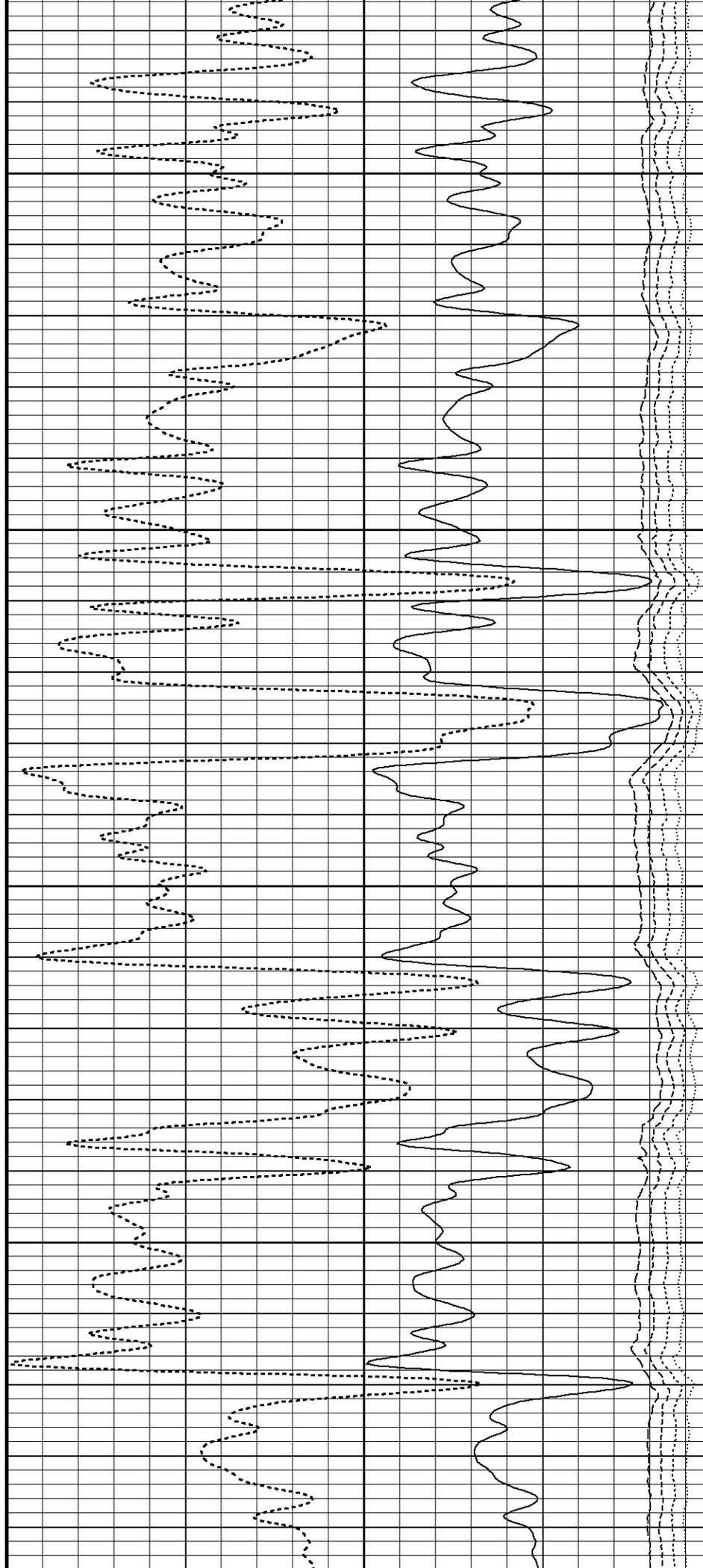
111°

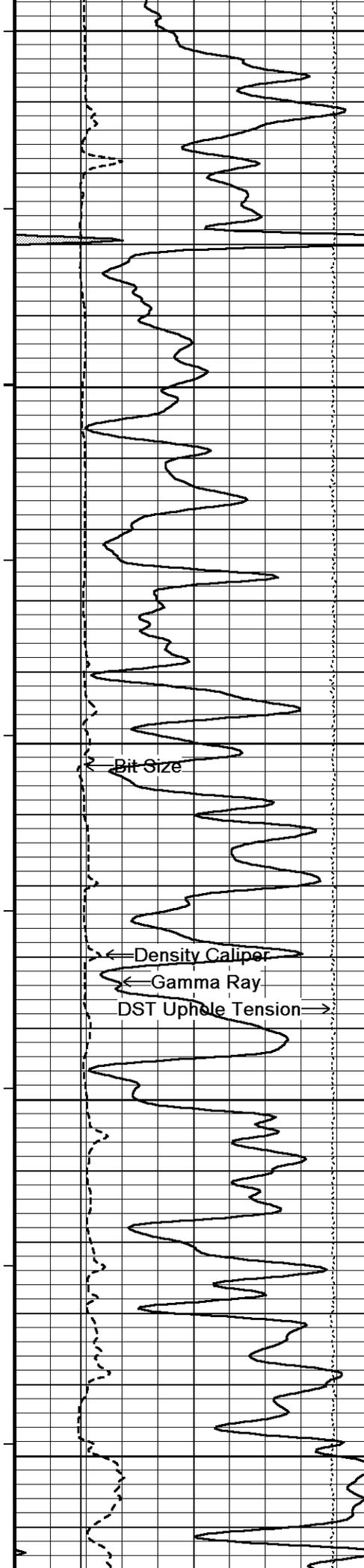
3250

112°

3300

112°





3350

112°

3400

113°

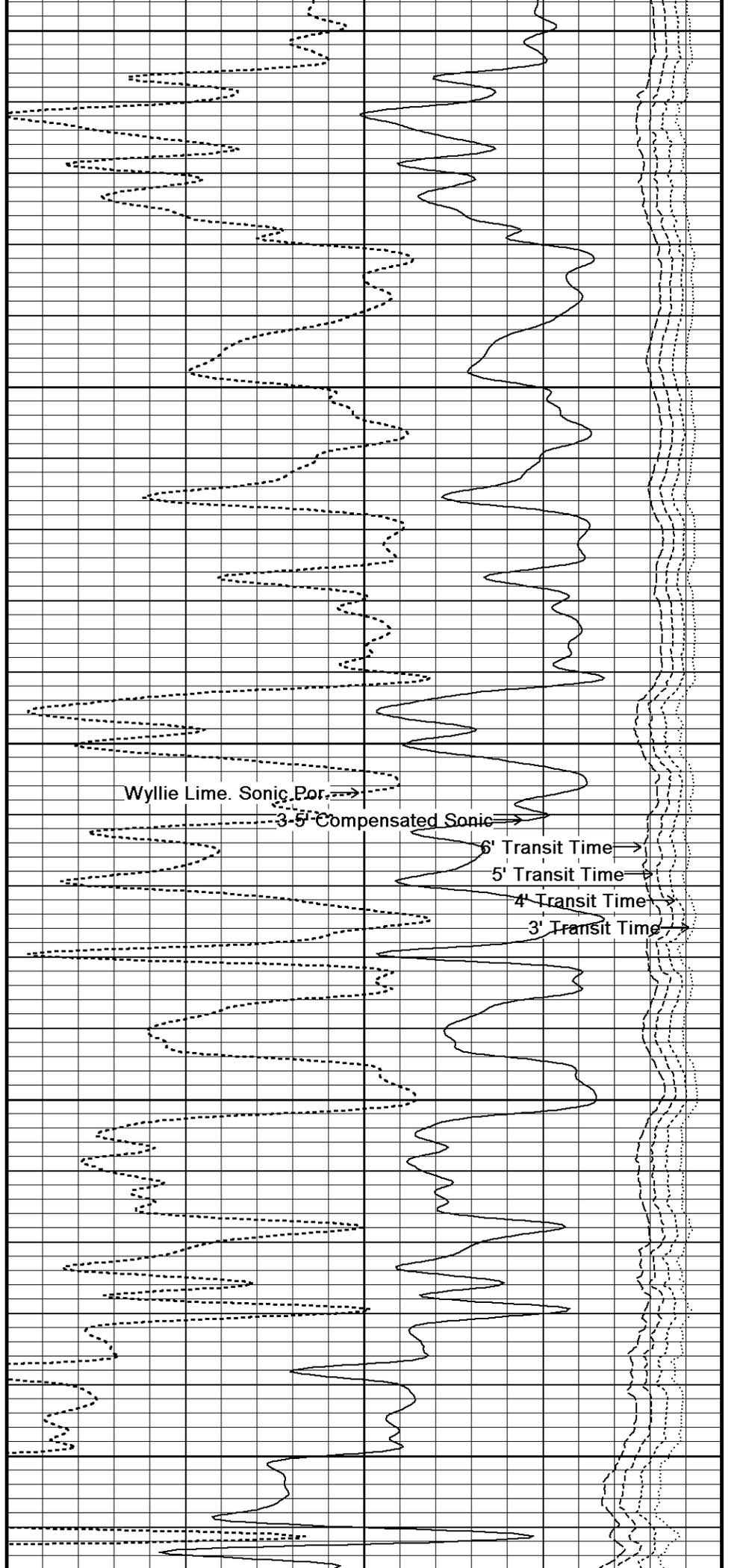
3450

113°

3500

113°

3550



Wyllie Lime. Sonic Por. →

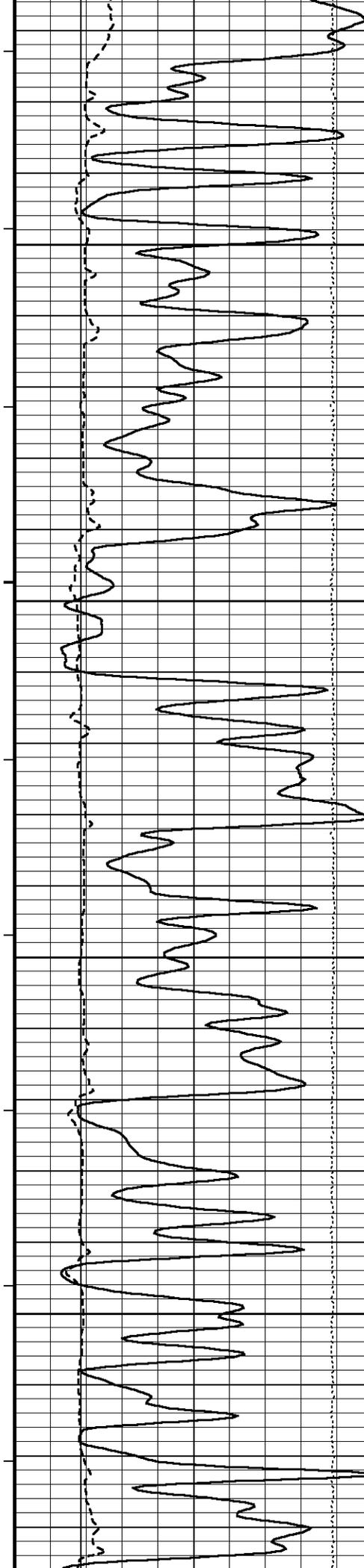
3-5' Compensated Sonic →

6' Transit Time →

5' Transit Time →

4' Transit Time →

3' Transit Time →



114°

3600

114°

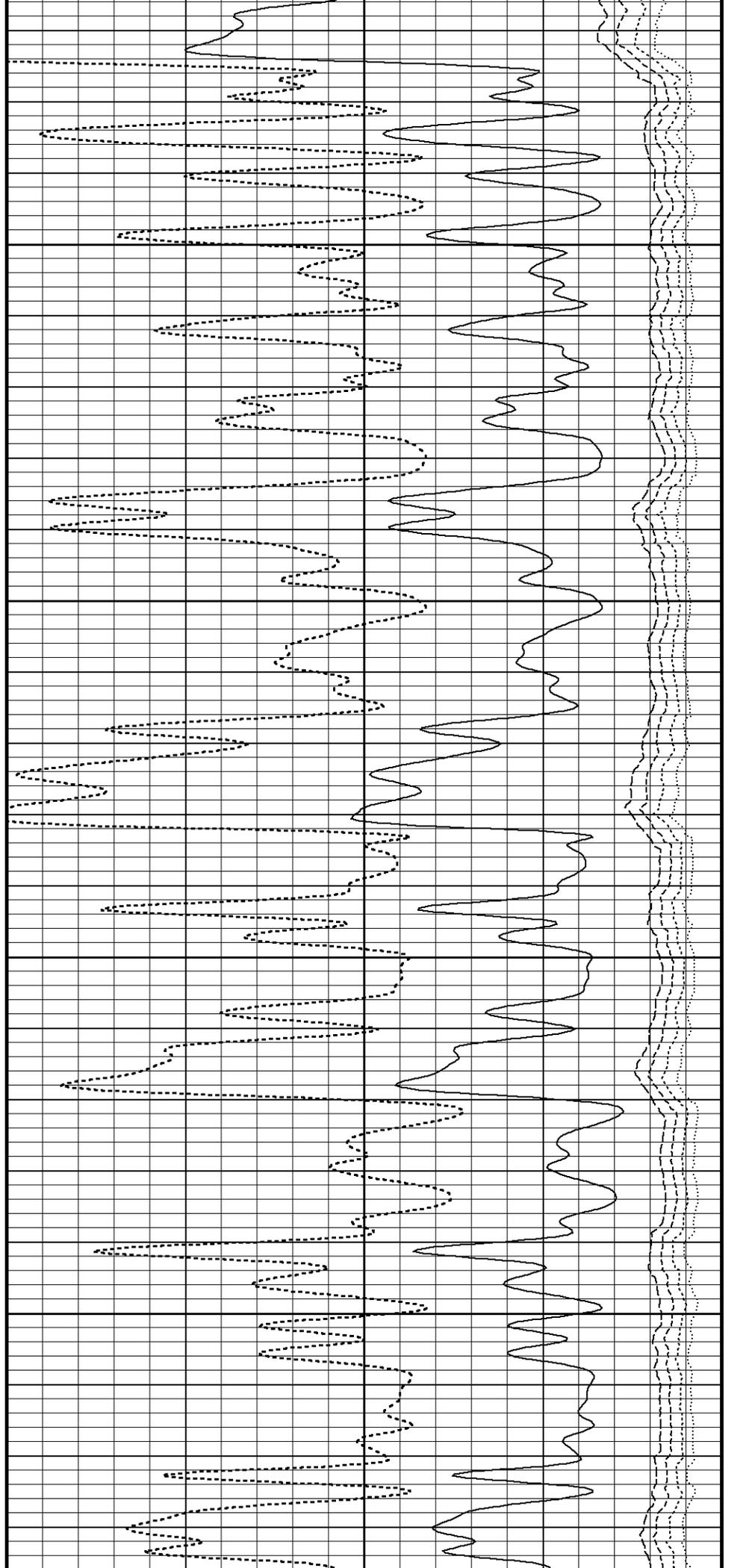
3650

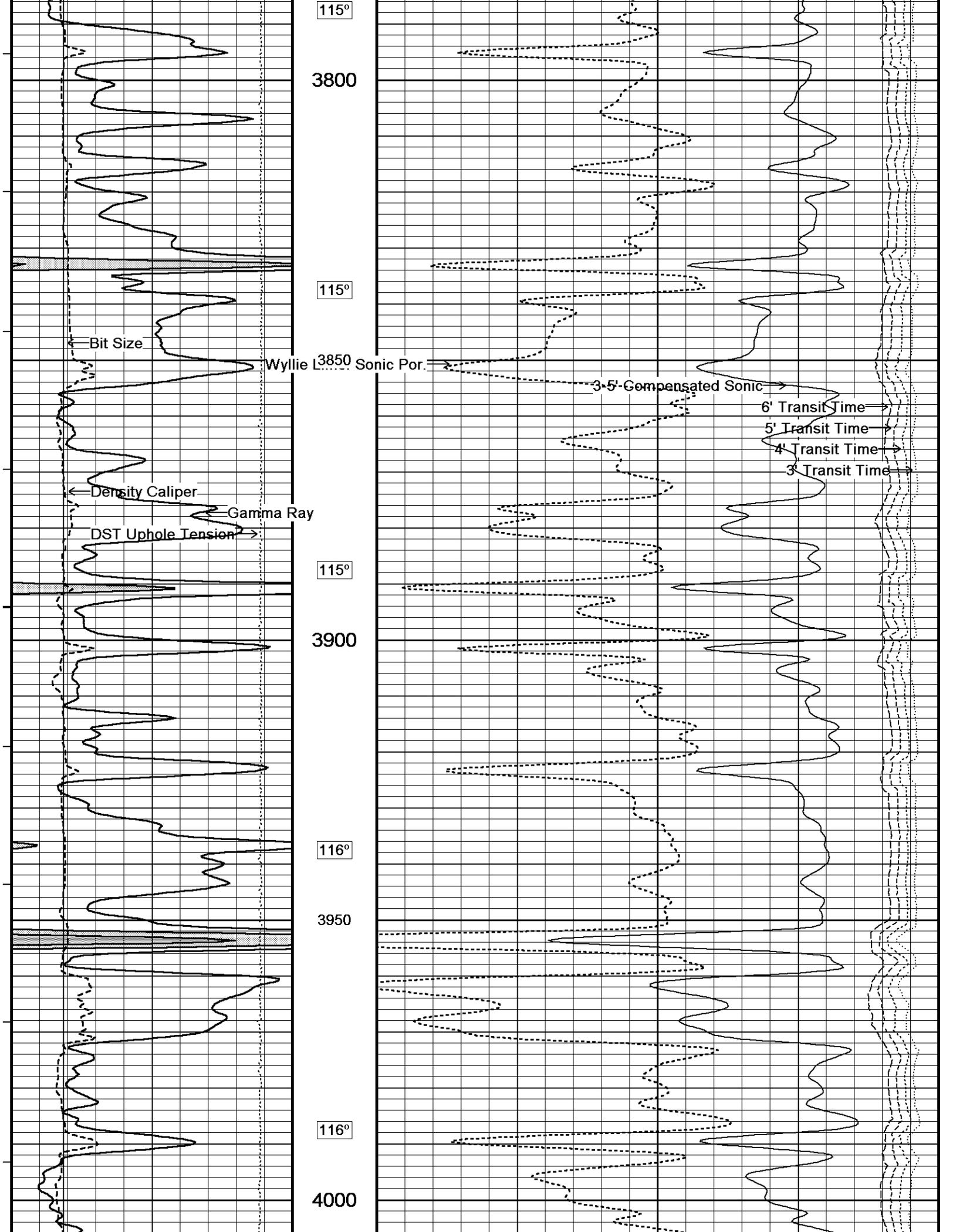
114°

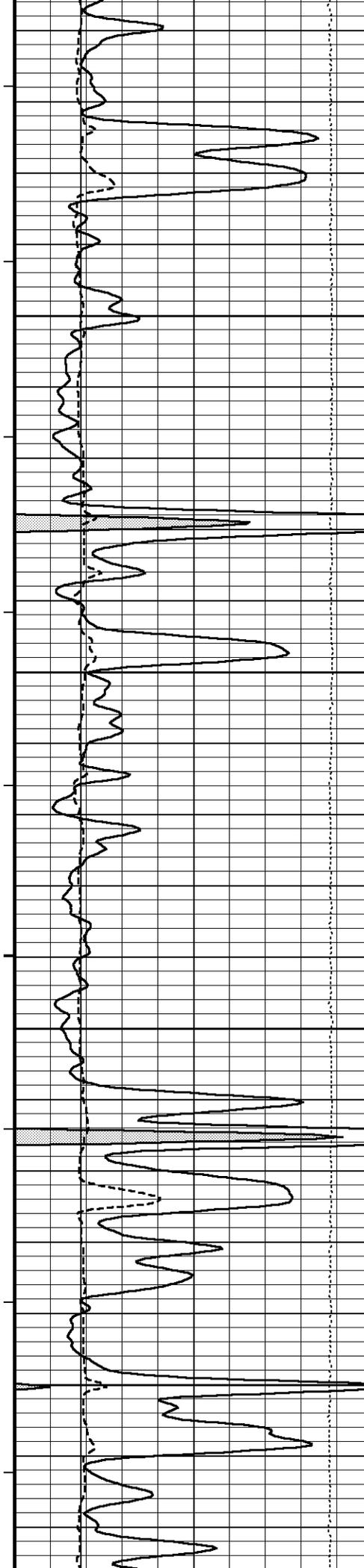
3700

114°

3750







116°

4050

116°

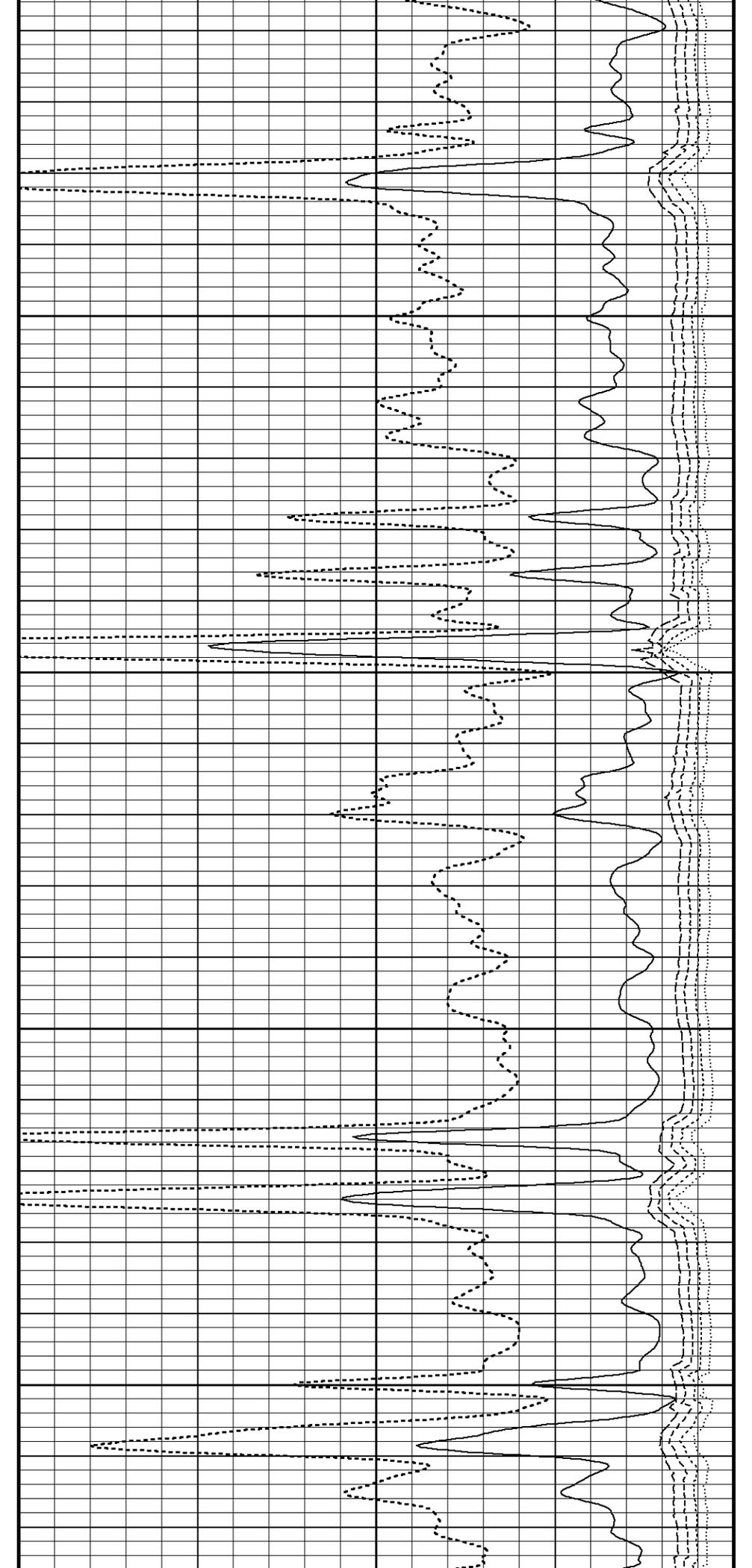
4100

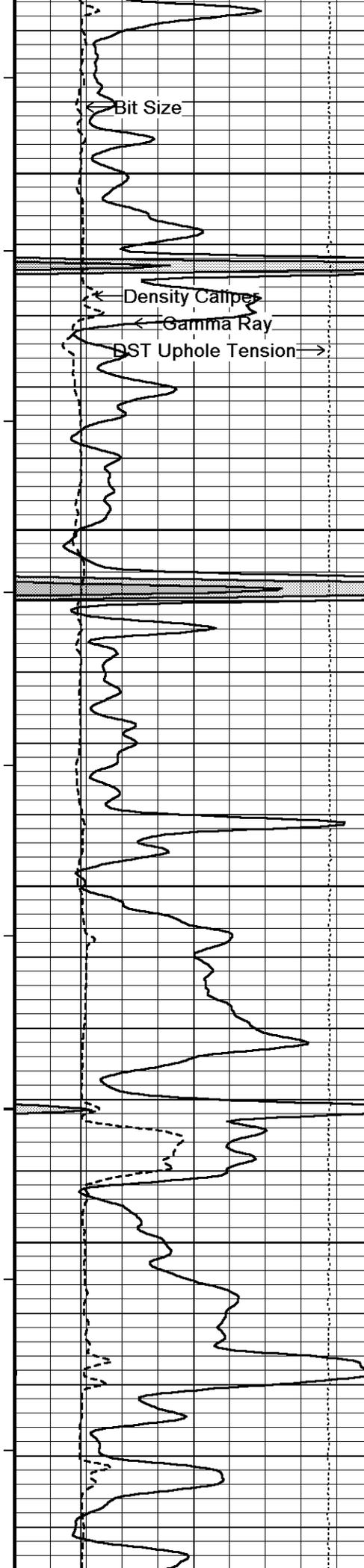
117°

4150

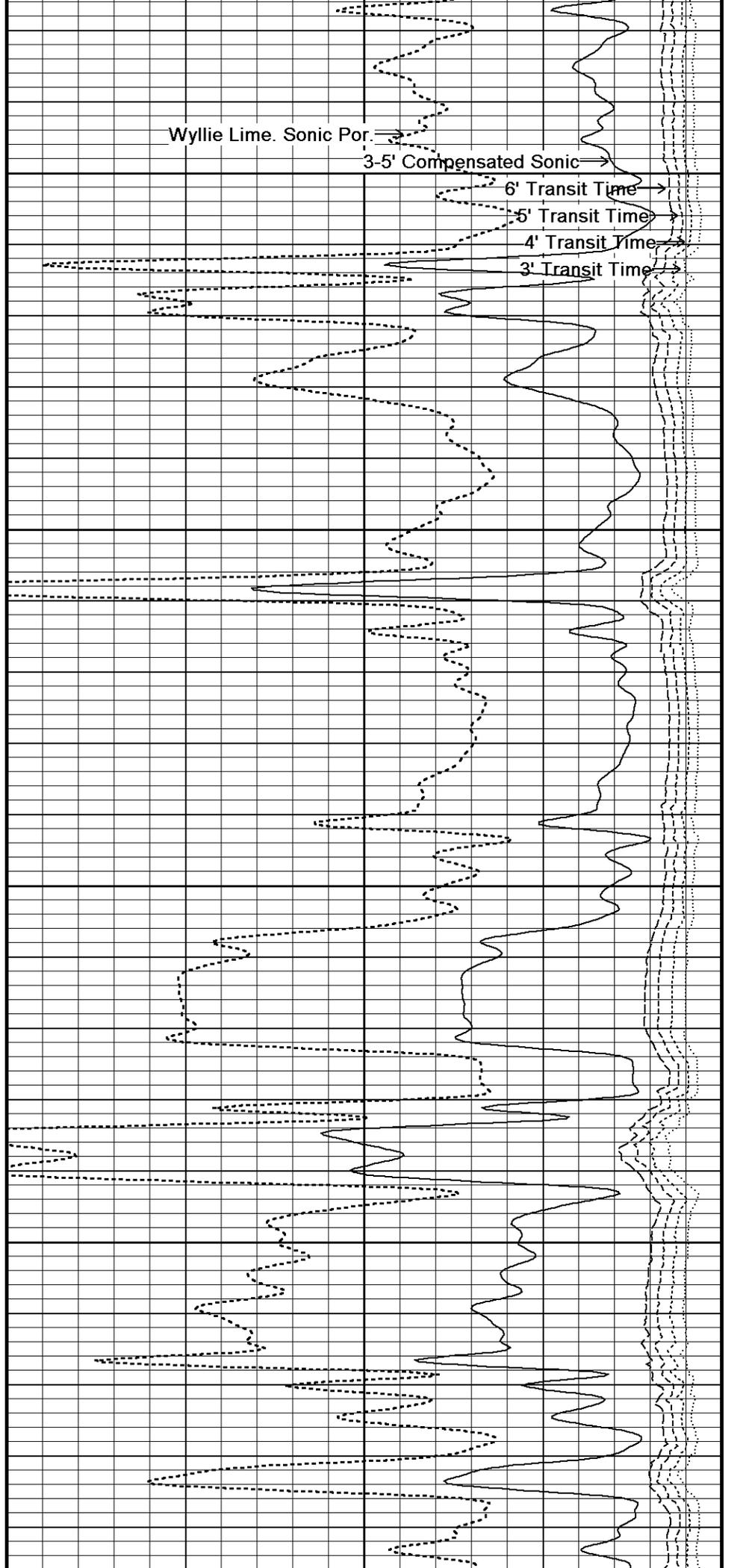
117°

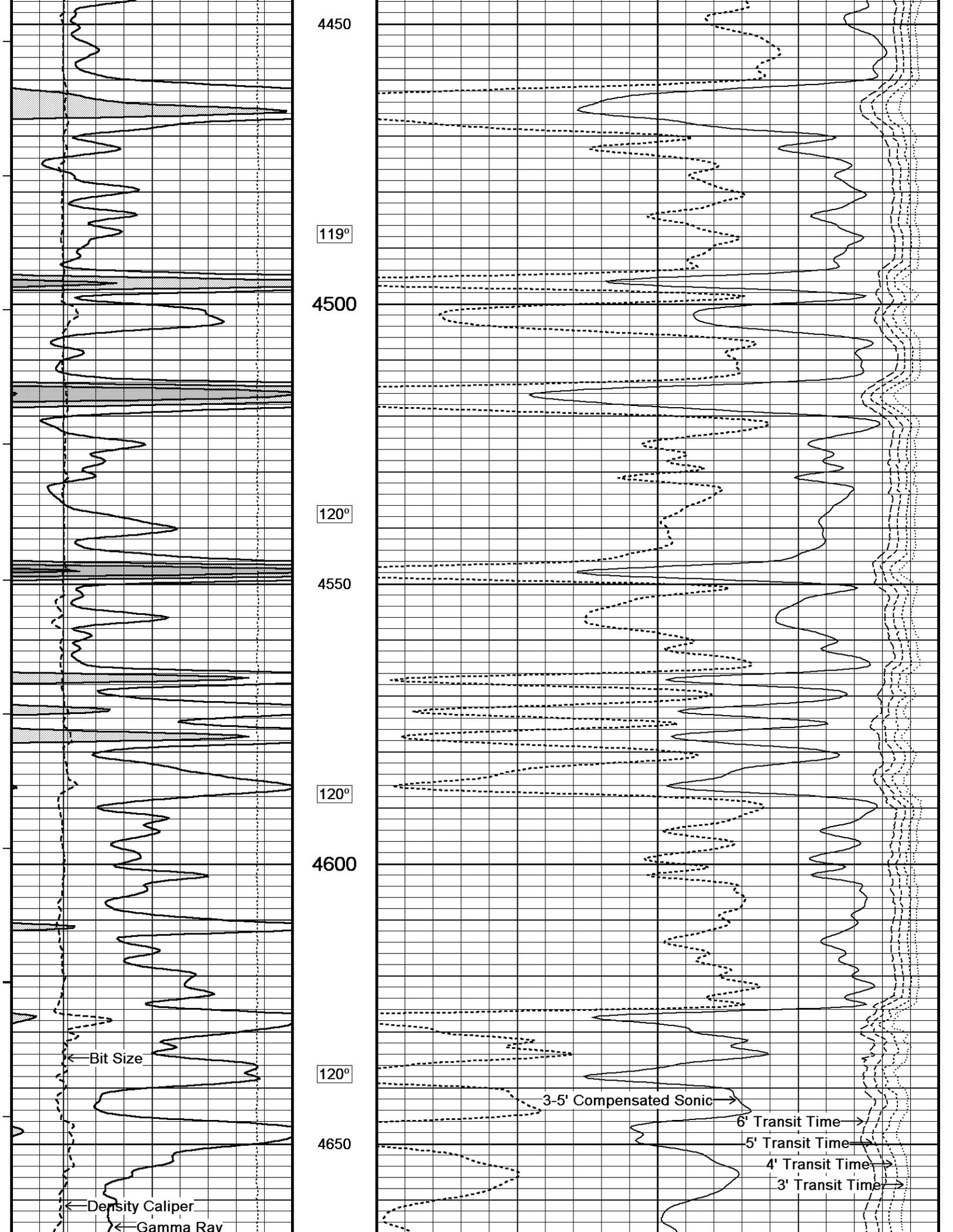
4200

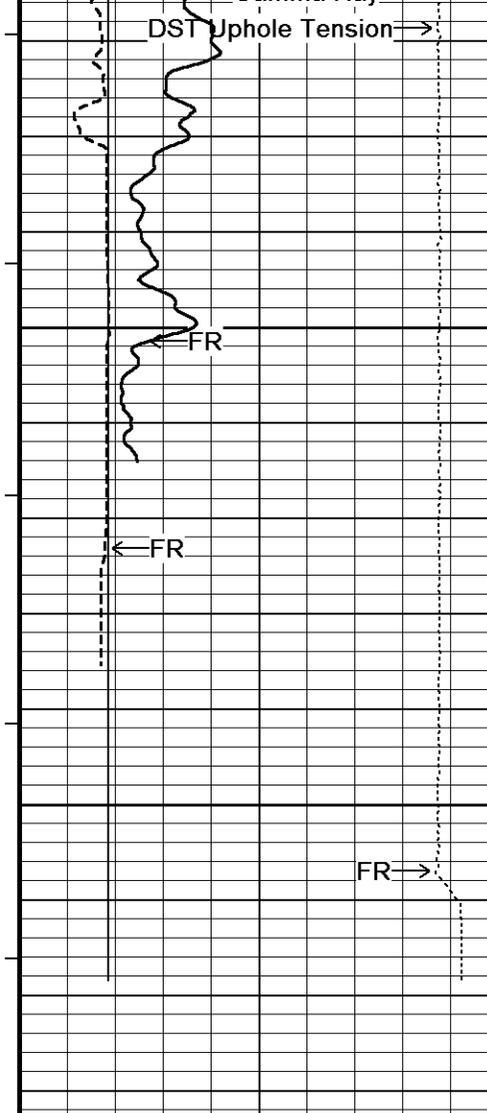




117°
4250
118°
4300
118°
4350
118°
4400
119°





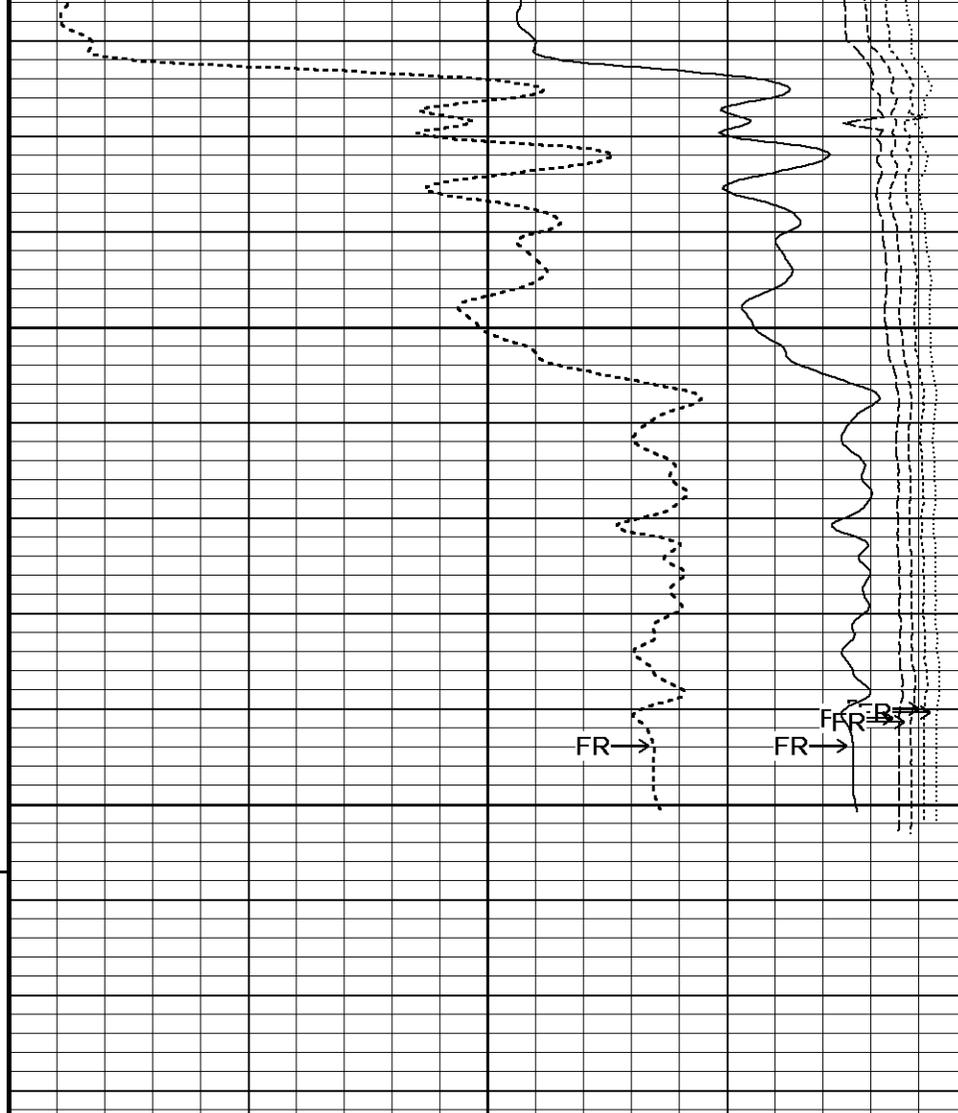


120°

4700

4750

TD



← Timing Marks every 60.0 sec

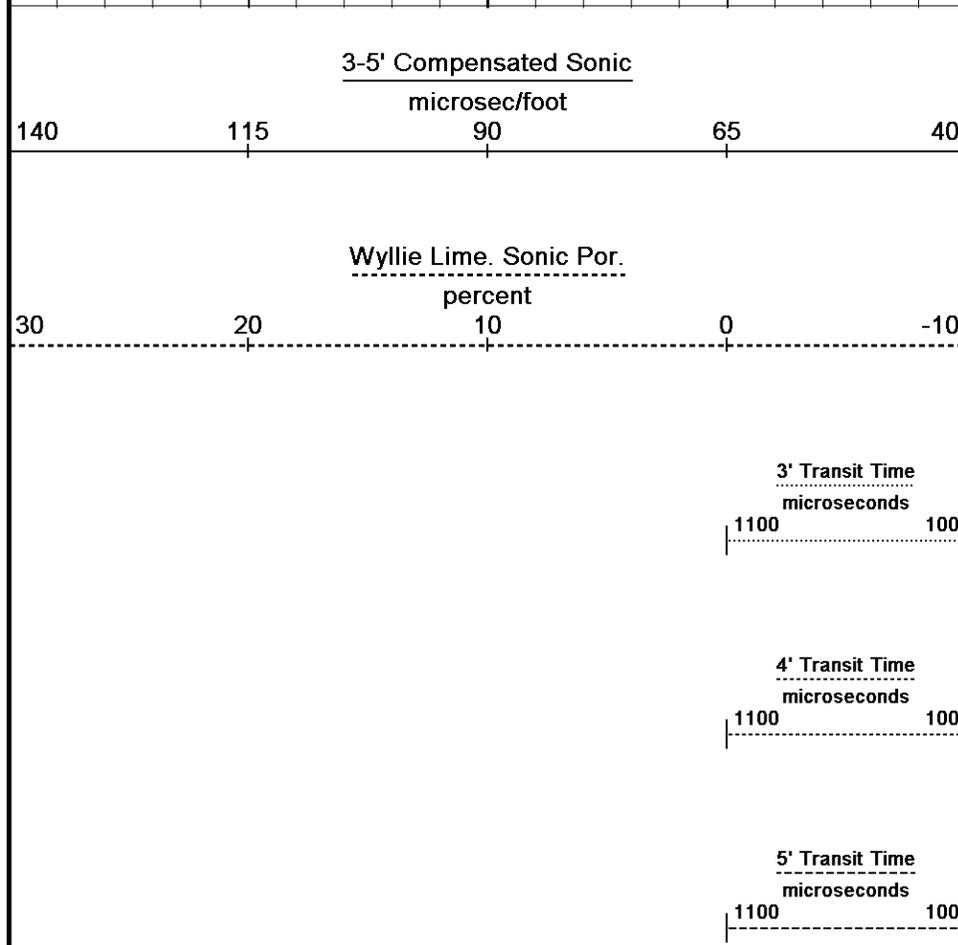
| Gamma Ray | | |
|-----------|-----|-----|
| API | | |
| 0 | 75 | 150 |
| 150 | 225 | 300 |

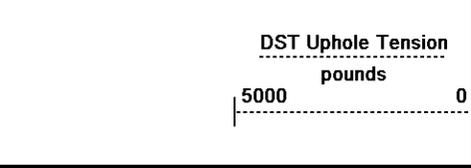
| Density Caliper | | |
|-----------------|----|----|
| inches | | |
| 6 | 11 | 16 |

| Bit Size | | |
|----------|----|----|
| inches | | |
| 6 | 11 | 16 |

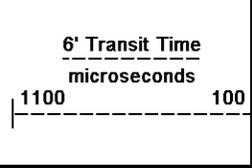
Depth in Feet

Borehole Temp in deg F





Replay
Scale
1:240

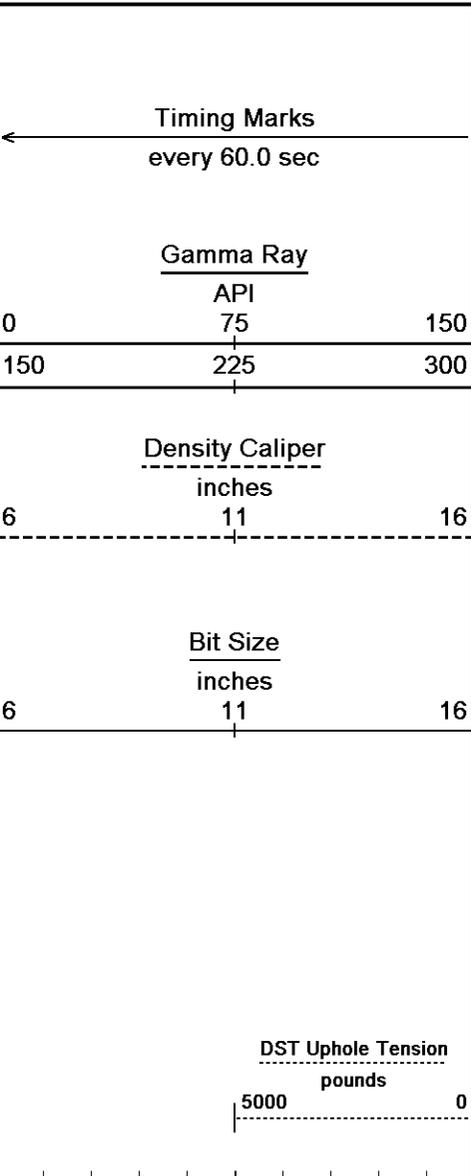


Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 09-JUL-2017 22:00
 Filename: C:\Minimus 17.01.7206\Logs\Shakespeare Schowal...\Shakespeare Schowalter #1-7_002.dta
 Recorded on 09-JUL-2017 18:52
 System Versions: Logged with 17.01.7206 Plotted with 17.01.7206

↑ 5 INCH MAIN ↑

↓ REPEAT SECTION ↓

Depth Based Data - Maximum Sampling Increment 10.0cm
 Plotted on 09-JUL-2017 22:00
 Filename: C:\Minimus 17.01.7206\Logs\Shakespeare Schowal...\Shakespeare Schowalter #1-7_001.dta
 Recorded on 09-JUL-2017 18:18
 System Versions: Logged with 17.01.7206 Plotted with 17.01.7206

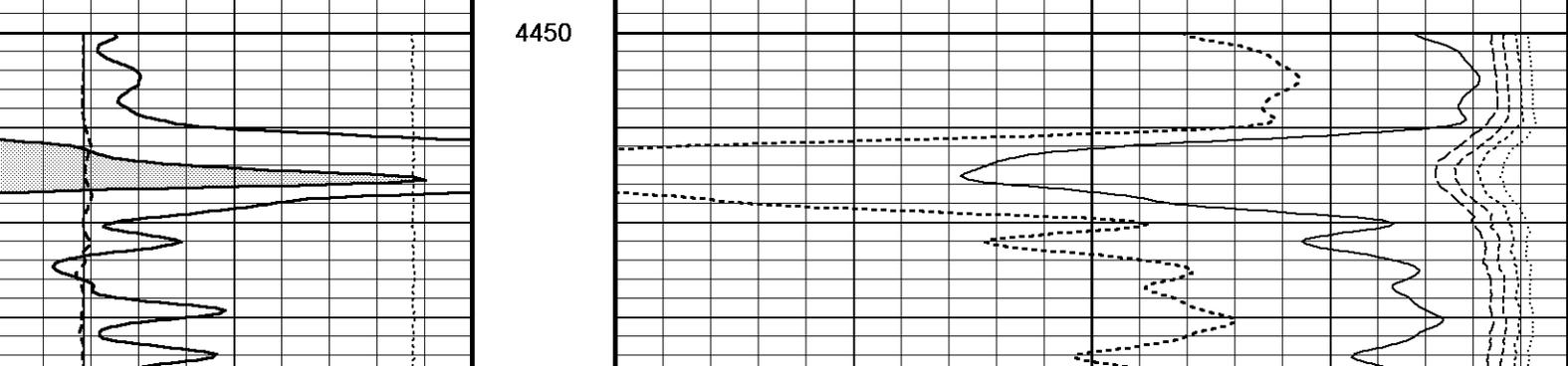
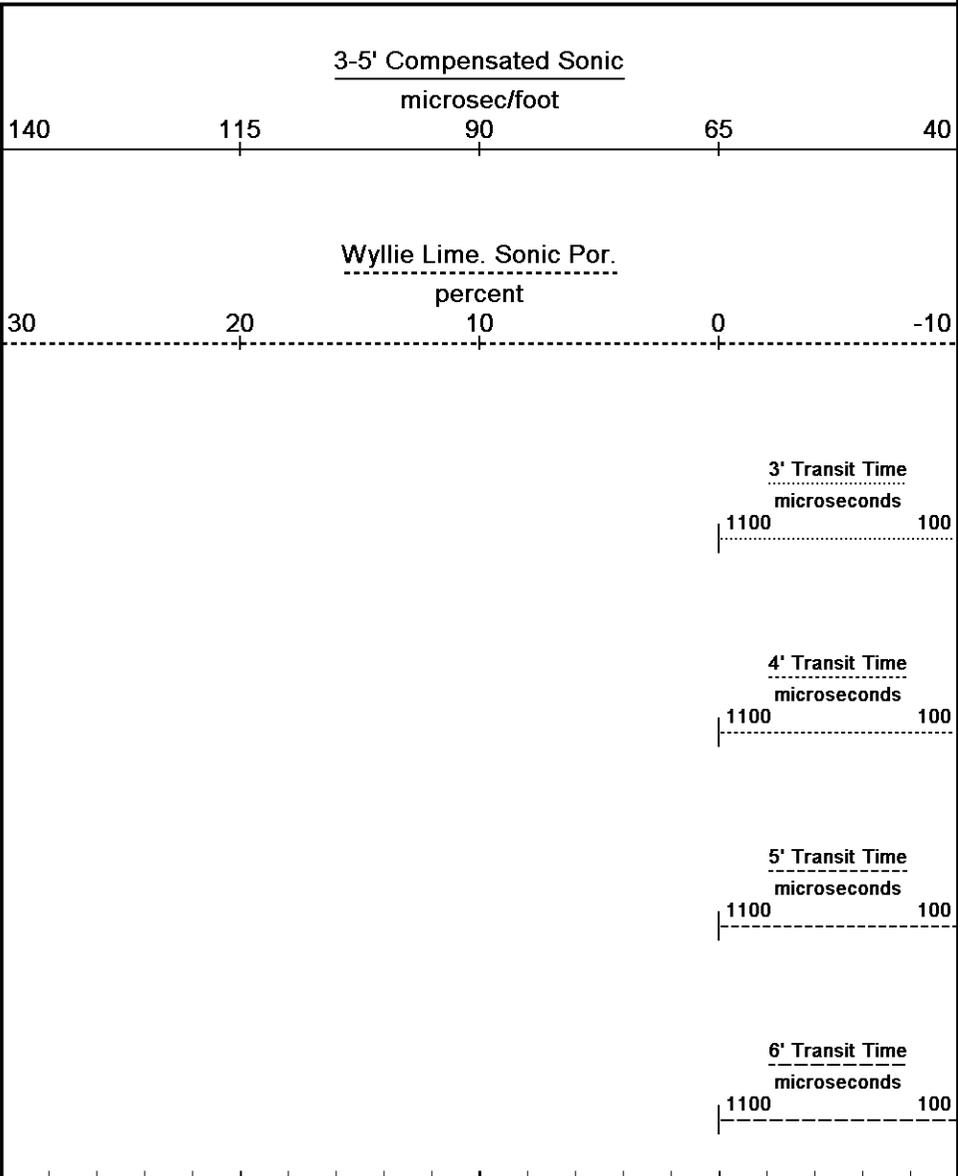


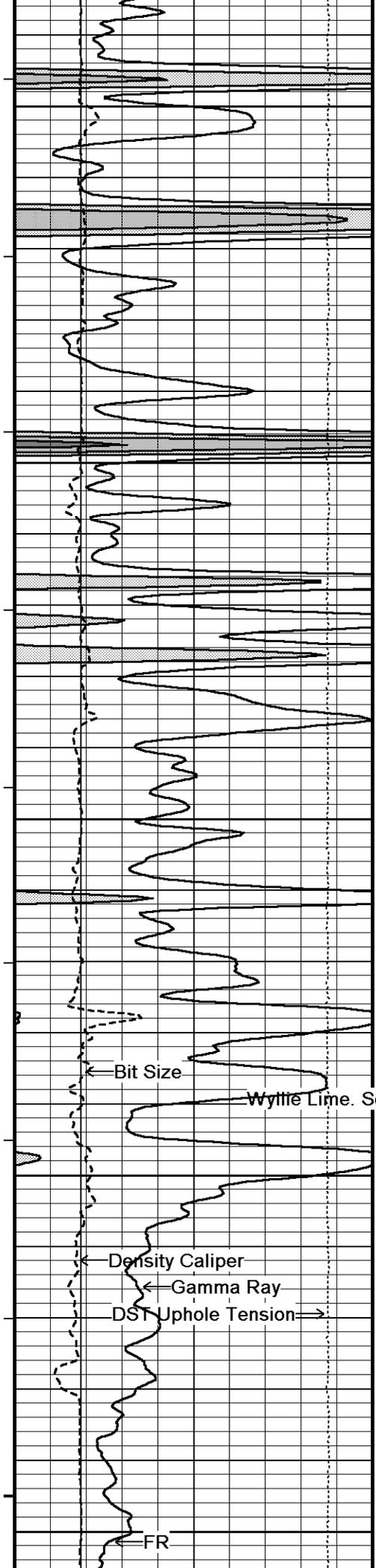
Depth
in
Feet

Borehole
Temp in
deg F

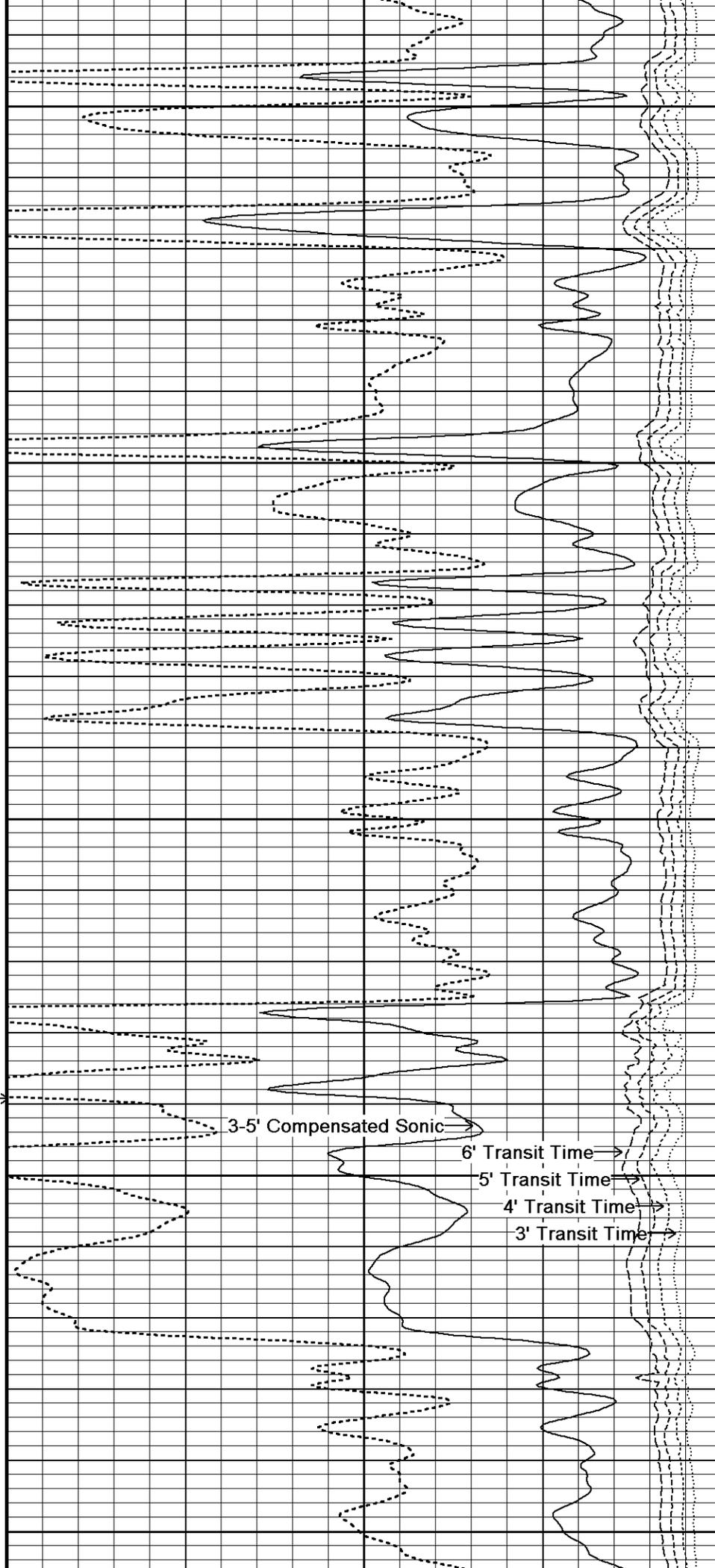
Replay
Scale
1:240

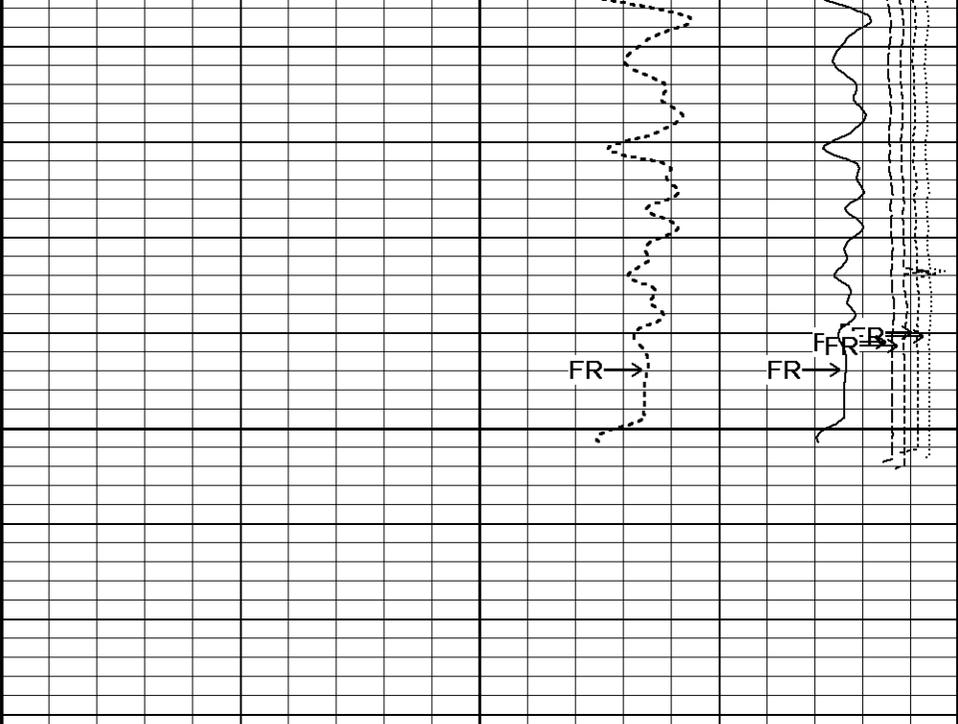
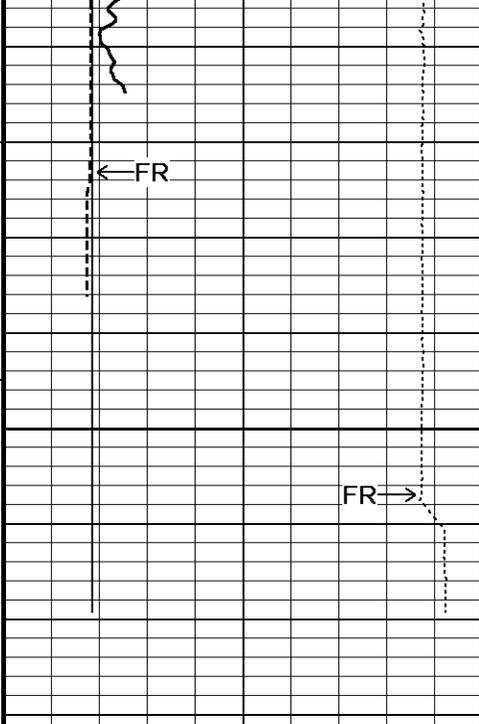
4450





118°
4500
119°
4550
119°
4600
120°
4650
120°
4700





4750
TD

← Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Density Caliper
inches
6 11 16

Bit Size
inches
6 11 16

DST Uphole Tension
pounds
5000 0

Depth
in
Feet

3-5' Compensated Sonic
microsec/foot
140 115 90 65 40

Wyllie Lime. Sonic Por.
percent
30 20 10 0 -10

Borehole
Temp in
deg F

3' Transit Time
microseconds
1100 100

4' Transit Time
microseconds
1100 100

5' Transit Time
microseconds
1100 100

6' Transit Time
microseconds
1100 100

Replay
Scale
1:240

BEFORE SURVEY CALIBRATION

C:\Minimus 17.01.7206\Logs\Shakespeare Schowalter #1-7\Shakespeare Schowalter #1-7_001.dta

General Constants All 000

Last Edited on 09-JUL-2017,17:48

General Parameters

| | | |
|-----------------------------|----------|------------|
| Mud Resistivity | 0.950 | ohm-metres |
| Mud Resistivity Temperature | 75.000 | degrees F |
| Water Level | 0.000 | feet |
| Borehole Fluid 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 | 4.500 | inches |
| Caliper for Differential Caliper | Density Caliper | |

Rwa Parameters

| | | |
|---------------------|------------------------|--|
| Porosity used | Base Density Porosity | |
| Resistivity used | Array Ind. Four Res Rt | |
| RWA Constant A | 0.620 | |
| RWA Constant M | 2.150 | |
| SW/APOR Tool Source | 0.000 | |

Gamma Calibration MCG-C 84

Field Calibration on 09-JUL-2017 11:34

| | Measured | Calibrated (API) |
|--------------------|----------|------------------|
| Background | 82 | 57 |
| Calibrator (Gross) | 732 | 513 |
| Calibrator (Net) | 650 | 456 |

Gamma Calibration Tolerances MCG-C 84

Ratio 1.426  Counts/API

Gamma Constants MCG-C 84

Last Edited on 09-JUL-2017,16:21

| | | |
|---------------------------------|-----------------|-------|
| Gamma Calibrator Number | MCGGRCC141 | |
| GRC-M Calibrator Jig in Use? | NO | |
| Inactive Background Jig in Use? | NO | |
| Mud Density | 1.12 | gm/cc |
| Caliper Source for Processing | Density Caliper | |
| Tool Position | Eccentred | |
| Potassium Equivalence | Chloride | |
| K Mud Concentration | 0.00 | % |

SP Calibration MCG-C 84

Field Calibration on 07-JUL-2017,19:38

| | Measured | Calibrated (mV) |
|-------------|----------|-----------------|
| Reference 1 | 104.4 | 100.1 |
| Reference 2 | -95.8 | -100.1 |

High Resolution Temperature Calibration MCG-C 84

Field Calibration on 24-JUN-2017,20:21

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

High Resolution Temperature Constants MCG-C 84

Last Edited on 09-SEP-2014,02:23

Pre-filter Length 11

Micro Normal and Micro Inverse Calibration MML-A 7

Base Calibration on 22-JUN-2017 09:29

Field Check on 09-JUL-2017 17:32

Base Calibration

| Channel | Measured | | Calibrated (ohm-m) | |
|---------------|------------|------------|--------------------|------------|
| | Resistor 1 | Resistor 2 | Resistor 1 | Resistor 2 |
| Micro Normal | 10.0 | 49.7 | 5.1 | 25.6 |
| Micro Inverse | 10.0 | 50.1 | 3.4 | 16.9 |

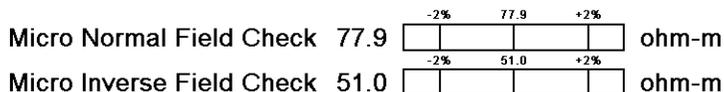
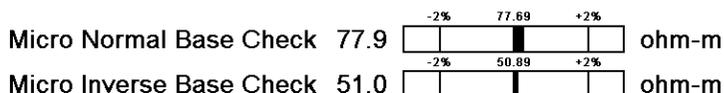
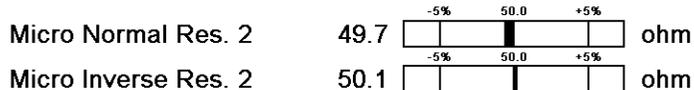
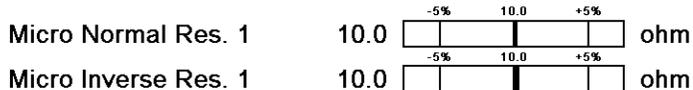
| | | |
|---------|--------------------|---------------------|
| Channel | Base Check (ohm-m) | Field Check (ohm-m) |
|---------|--------------------|---------------------|

Micro Normal
Micro Inverse

77.9
51.0

77.9
51.0

Micro Normal & Micro Inverse Calibration Tolerance MML-A 7



Micro Normal and Micro Inverse Constants MML-A 7

Last Edited on 09-JUL-2017,17:31

Pad Type 8-12 in Soft Rubber Inflatable 006-9011-159
 Micro Normal K Factor 0.5110
 Micro Inverse K Factor 0.3380
 Standoff Offset N/A inches

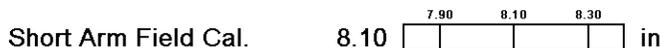
Caliper Calibration MML-A 7

Base Calibration on 22-JUN-2017 09:39
Field Calibration on 09-JUL-2017 17:31

| Base Calibration Reading No | Measured | Calibrator Size (in) |
|-----------------------------|----------|----------------------|
| 1 | 13752 | 5.98 |
| 2 | 16863 | 7.97 |
| 3 | 19899 | 9.86 |
| 4 | 23808 | 11.92 |
| 5 | 0 | 0.00 |
| 6 | N/A | N/A |

| Field Calibration Measured Caliper (in) | Actual Caliper (in) |
|---|---------------------|
| 8.10 | 8.10 |

Caliper Calibration Tolerances MML-A 7



Neutron Calibration MDN-A.B 114

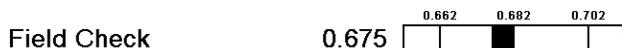
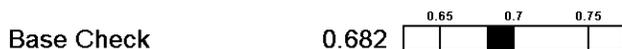
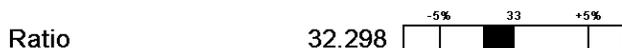
Base Calibration on 22-JUN-2017 14:55
Field Check on 09-JUL-2017 11:38

| Base Calibration | Measured | | Calibrated (cps) | |
|------------------|----------|-----|------------------|-----|
| | Near | Far | Near | Far |
| | 3156 | 98 | 3714 | 110 |
| Ratio | 32.298 | | 33.764 | |

| Field Calibrator at Base | Calibrated (cps) |
|--------------------------|------------------|
| | 2073 3042 |
| Ratio | 0.682 |

| Field Check | Calibrated (cps) |
|-------------|------------------|
| | 2053 3040 |
| Ratio | 0.675 |

Neutron Calibration Tolerances MDN-A.B 114



Neutron Constants MDN-A.B 114

Last Edited on 09-JUL-2017,16:21

Neutron Source Id P0204NN
 Neutron Jig Number NJ5736
 Air Leak Resistance Modified Date

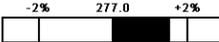
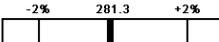
| | | |
|---------------------------------|-----------------|-----------|
| Air Hole Processing | Modified Ratio | |
| Caliper Source for Processing | Density Caliper | |
| Stand-off | 0.00 | inches |
| Mud Density | 1.00 | gm/cc |
| Limestone Sigma | 7.10 | cu |
| Sandstone Sigma | 4.26 | cu |
| Dolomite Sigma | 4.70 | cu |
| Formation Pressure Source | None | |
| Formation Pressure | N/A | kpsi |
| Temperature Source | Constant Value | |
| Temperature | 68.00 | degrees F |
| Mud Salinity | 0.00 | kppm |
| Salinity Correction | Not Applied | |
| Formation Fluid Salinity Source | None | |
| Formation Fluid Salinity | N/A | kppm |
| Barite Mud Correction | Not Applied | |

FE Calibration MFE-A.A 135

Base Calibration on 22-JUN-2017 11:49
Field Check on 09-JUL-2017 17:10

| | | | |
|------------------|----------|--------------------|--|
| Base Calibration | | | |
| | Measured | Calibrated (ohm-m) | |
| Reference 1 | 0.0 | 0.0 | |
| Reference 2 | 963.2 | 126.8 | |
| Base Check | | 281.3 | |
| Field Check | | 280.8 | |

FE Calibration Tolerances MFE-A.A 135

| | | | |
|-------------|-------|---|-------|
| Reference 2 | 963.2 |  | ohm |
| Base Check | 281.3 |  | ohm-m |
| Field Check | 280.8 |  | ohm-m |

FE Constants MFE-A.A 135

Last Edited on 09-JUL-2017,17:09

| | |
|-------------------------------|-------------------------------------|
| Running Mode | No Sleeve |
| MFE K Factor | 0.1268 |
| Borehole Correction Constants | |
| Sonde Position | 0.5 inches |
| Hole Size Source | Density Caliper |
| Hole Size Constant Value | N/A inches |
| Rm Source | Global Value: Temperature Corrected |
| Temp. for Rm Corr. | MCG External Temperature |

Sonic Constants MSS-A.A 55

Last Edited on 09-JUL-2017,16:20

| | | |
|---------------------------|------------------------|--------------|
| 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 | Discriminator (mV) | 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 |
| Waveform Discriminator Filter | N/A |
| Semblance Window Width | N/A micro-sec |
| Sonic Despiker | N/A |

Induction Calibration MAI-A.A 111

Base Calibration on 22-JUN-2017 10:55
Field Check on 09-JUL-2017 17:29

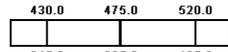
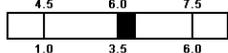
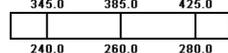
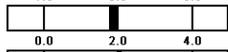
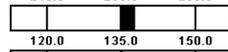
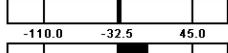
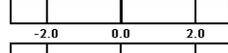
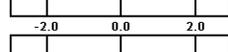
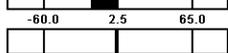
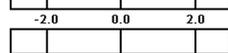
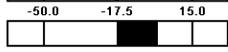
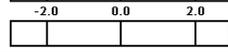
Base Calibration

| Test Loop Calibration Channel | Measured | | Calibrated (mmho/m) | |
|-------------------------------|----------|-------|---------------------|-------|
| | Low | High | Low | High |
| 1 | 17.6 | 473.6 | 9.3 | 966.2 |
| 2 | 6.4 | 385.9 | 7.6 | 821.4 |
| 3 | 3.2 | 264.0 | 5.2 | 566.0 |
| 4 | 2.1 | 135.5 | 2.6 | 279.2 |
| Array Temperature | 23.0 | | Deg F | |

Test Loop Calibration Verified

| Channel | Base Check (mmho/m) | | Field Check (mmho/m) | |
|-------------------|---------------------|--------|----------------------|--------|
| | Low | High | Low | High |
| 1 | 13.7 | 3869.0 | 16.8 | 3871.0 |
| 2 | 30.1 | 3523.0 | 32.5 | 3524.3 |
| 3 | 29.2 | 3017.0 | 31.3 | 3017.8 |
| 4 | 19.2 | 2055.4 | 20.5 | 2056.0 |
| Deep | 17.8 | 1959.3 | 19.2 | 1959.9 |
| Medium | 43.1 | 3970.5 | 45.7 | 3971.4 |
| Shallow | 44.9 | 5225.2 | 48.4 | 5227.1 |
| Array Temperature | 95.2 | | 104.7 Deg F | |

Induction Calibration Tolerances MAI-A.A 111

| | | | | | | | |
|--------------------|------|---|--------|---------------------|-------|---|--------|
| Low Conductivity 1 | 17.6 |  | mmho/m | High Conductivity 1 | 473.6 |  | mmho/m |
| Low Conductivity 2 | 6.4 |  | mmho/m | High Conductivity 2 | 385.9 |  | mmho/m |
| Low Conductivity 3 | 3.2 |  | mmho/m | High Conductivity 3 | 264.0 |  | mmho/m |
| Low Conductivity 4 | 2.1 |  | mmho/m | High Conductivity 4 | 135.5 |  | mmho/m |
| Background Vx 1 | 0.0 |  | mmho/m | Phase Check Loop 1 | 0.0 |  | % |
| Background Vx 2 | 0.0 |  | mmho/m | Phase Check Loop 2 | 0.0 |  | % |
| Background Vx 3 | 0.0 |  | mmho/m | Phase Check Loop 3 | 0.0 |  | % |
| Background Vx 4 | 0.0 |  | mmho/m | Phase Check Loop 4 | 0.0 |  | % |

| | | | |
|--|-------------------------------------|-----------------|-------------|
| Induction Model | | RtAP-WBM | |
| Borehole Correction Constants | | | |
| Tool Centred | | No | |
| Hole Size Source | | Density Caliper | |
| Hole Size Constant Value | | N/A | inches |
| 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 |
| Rm Source | Global Value: Temperature Corrected | | |
| 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 |
| Symmetrised Receiver Gains | | | |
| Receiver 1 | | 1.00 | |
| Receiver 2 | | 1.00 | |
| Receiver 3 | | 1.00 | |
| Receiver 4 | | 1.00 | |
| 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 111

Field Calibration on 22-JUN-2017,10:28

| | Measured | Calibrated(Deg F) |
|-------|----------|-------------------|
| Lower | 10.00 | 10.00 |
| Upper | 100.00 | 100.00 |

High Resolution Temperature Constants MAI-A.A 111

Last Edited on 26-JUN-2014,15:06

| | |
|-------------------|----|
| Pre-filter Length | 11 |
|-------------------|----|

Photo Density Calibration MPD-C.A 216

Base Calibration on 22-JUN-2017 10:47
Field Check on 09-JUL-2017 17:14

| Density Calibration | Measured | | Calibrated (sdu) | |
|---------------------|----------|--------|------------------|-------|
| | Near | Far | Near | Far |
| Base Calibration | | | | |
| Background | 1034 | 1215 | | |
| Reference 1 | 51875 | 24845 | 59556 | 30836 |
| Reference 2 | 20527 | 2316 | 24941 | 2541 |
| Field Check at Base | | | | |
| | 1033.8 | 1215.4 | | |

Field Check

1030.0 1222.2

PE Calibration

| Base Calibration | WS | WH | Ratio | Calibrated Ratio |
|------------------|-------|-------|-------|------------------|
| Background | 189 | 925 | | |
| Reference 1 | 21486 | 51702 | 0.419 | 0.371 |
| Reference 2 | 5928 | 20410 | 0.295 | 0.272 |

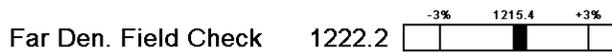
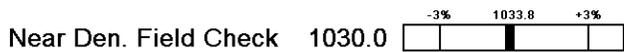
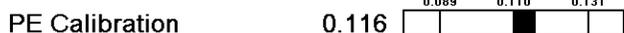
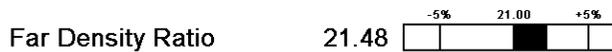
Field Check at Base

189.2 924.8

Field Check

186.2 922.6

Photo Density Calibration Tolerances MPD-C.A 216



Density Constants MPD-C.A 216

Last Edited on 09-JUL-2017,17:15

| | |
|---------------------------------------|-----------------|
| Density Source Id | P50557B |
| 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 Type | |
| Mud Filtrate Density | 1.00 gm/cc |
| Dry Hole Mud Filtrate Density | 1.00 gm/cc |
| DNCT | 0.00 gm/cc |
| CRCT | 0.00 gm/cc |
| Density Z/A Correction | Hybrid |
| Precision Enhanced Density Processing | Not Applied |
| 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 |

Caliper Calibration MPD-C.A 216

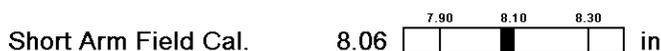
Base Calibration on 22-JUN-2017 11:00
Field Calibration on 09-JUL-2017 17:26

| Base Calibration | Measured | Calibrator Size (in) |
|------------------|----------|----------------------|
| Reading No | | |
| 1 | 18416 | 3.99 |
| 2 | 28544 | 5.98 |
| 3 | 38624 | 7.97 |
| 4 | 48448 | 9.86 |
| 5 | 59555 | 11.92 |
| 6 | N/A | N/A |

Field Calibration

Measured Caliper (in) 8.06 Actual Caliper (in) 8.10

Caliper Calibration Tolerances MPD-C.A 216



DOWNHOLE EQUIPMENT

C:\Minimus 17.01.7206\Logs\Shakespeare Schowalter #1-7\Shakespeare Schowalter #1-7_001.dta

Mono-Cablehead
MCH-AA 0 LG: 1.02 ft WT: 2.2 lb OD: 1.417 in

11C-SLB 10-way Compact Tool Adaptor
MTA-B 1 LG: 0.78 ft WT: 19.8 lb OD: 3.540 in

Compact Comms Gamma
MCG-C 84 LG: 8.70 ft WT: 63.9 lb OD: 2.240 in

Compact Micro-log
MML-A 7 LG: 7.97 ft WT: 81.6 lb OD: 2.244 in

Compact Neutron
MDN-A.B 114 LG: 5.04 ft WT: 50.7 lb OD: 2.240 in

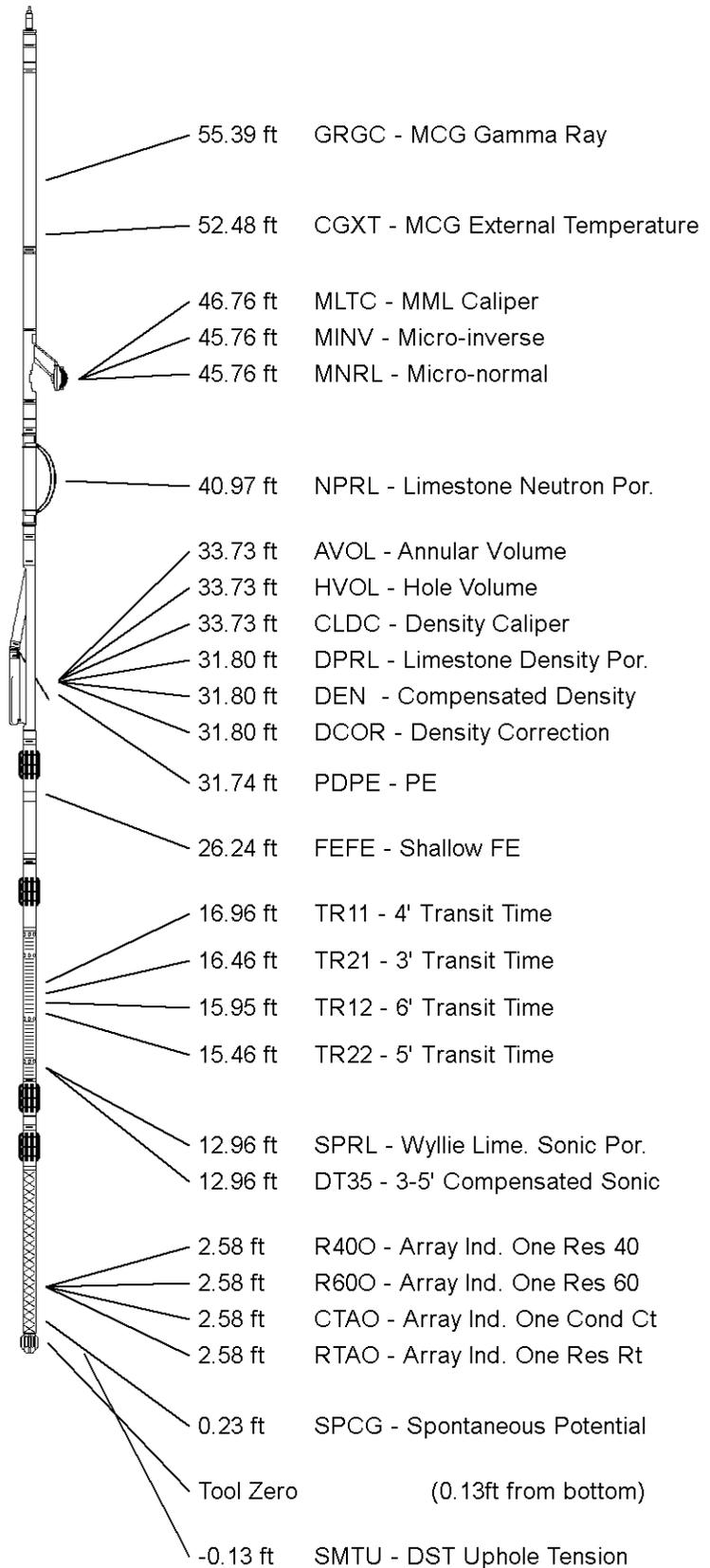
Compact Density/Caliper
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

Compact Focussed Electric
MFE-A.A 135 LG: 6.05 ft WT: 48.5 lb OD: 2.240 in

Compact Sonic
MSS-A.A 55 LG: 12.52 ft WT: 72.8 lb OD: 2.244 in

Compact Induction
MAI-A.A 111 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 62.47 ft Weight: 478.4 lb



All measurements relative to tool zero.

| | |
|------------------------|----------------------------------|
| COMPANY | SHAKESPEARE OIL CO., INC. |
| WELL | SCHOWALTER #1-7 |
| FIELD | WILDCAT |
| PROVINCE/COUNTY | SCOTT |

PROVINCE/COUNTY SCOTT
COUNTRY/STATE U.S.A. / KANSAS

| | | | | | |
|-------------------------|------|------|---------------|---------|------|
| Elevation Kelly Bushing | 3020 | feet | First Reading | 4744.00 | feet |
| Elevation Drill Floor | 3018 | feet | Depth Driller | 4750.00 | feet |
| Elevation Ground Level | 3009 | feet | Depth Logger | 4757.00 | feet |



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