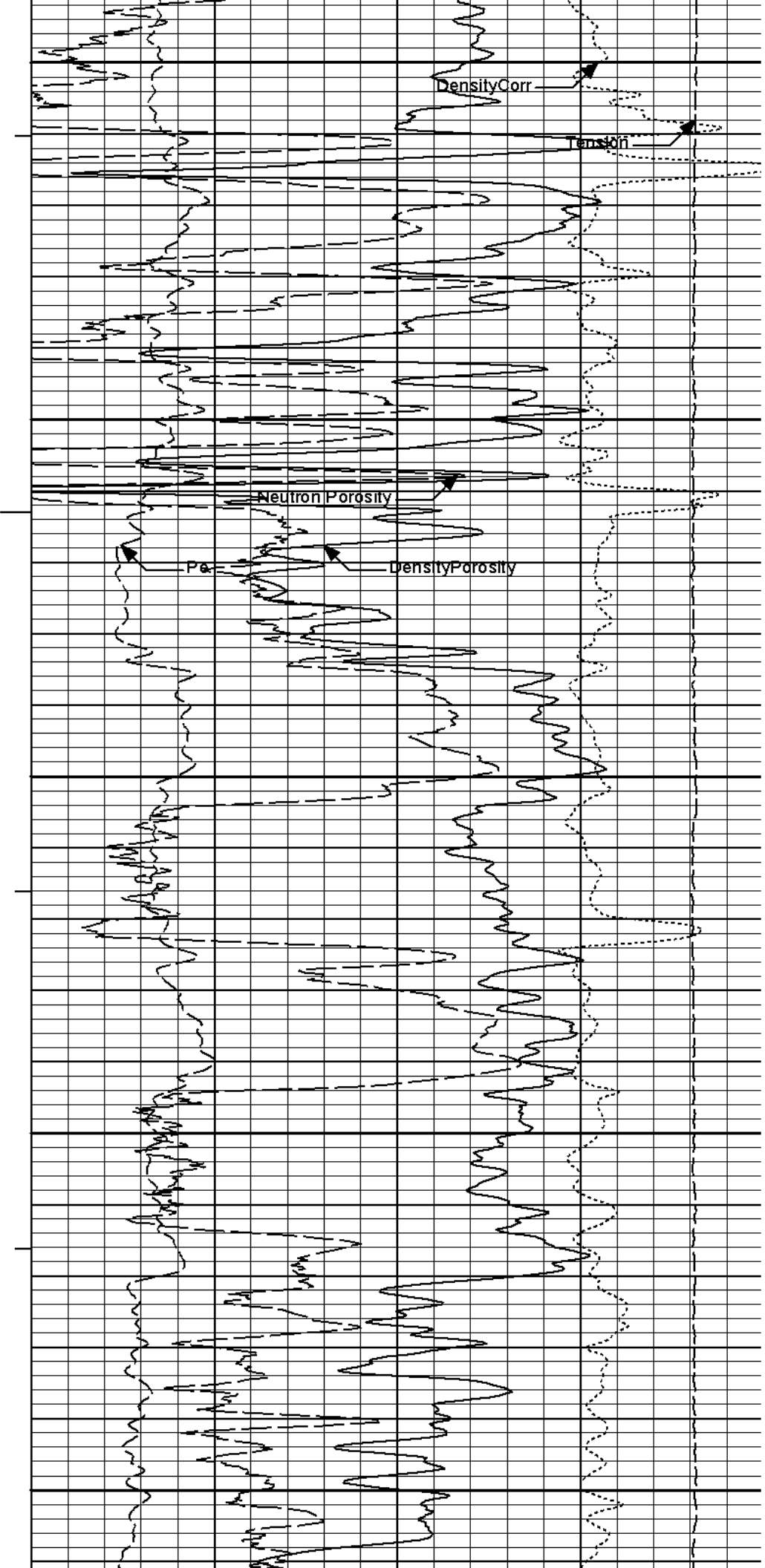
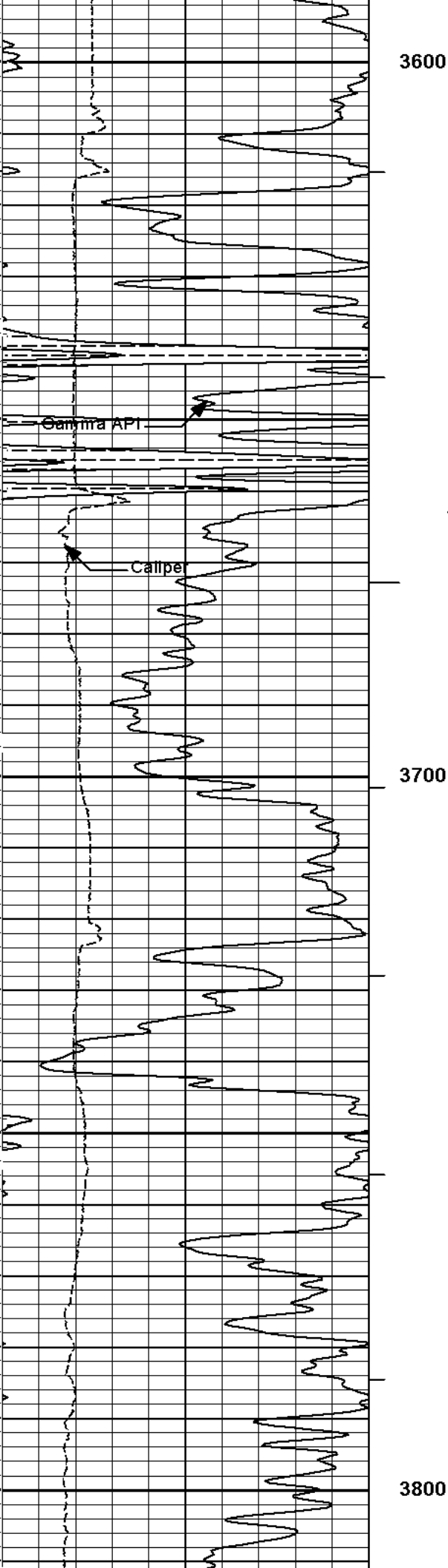


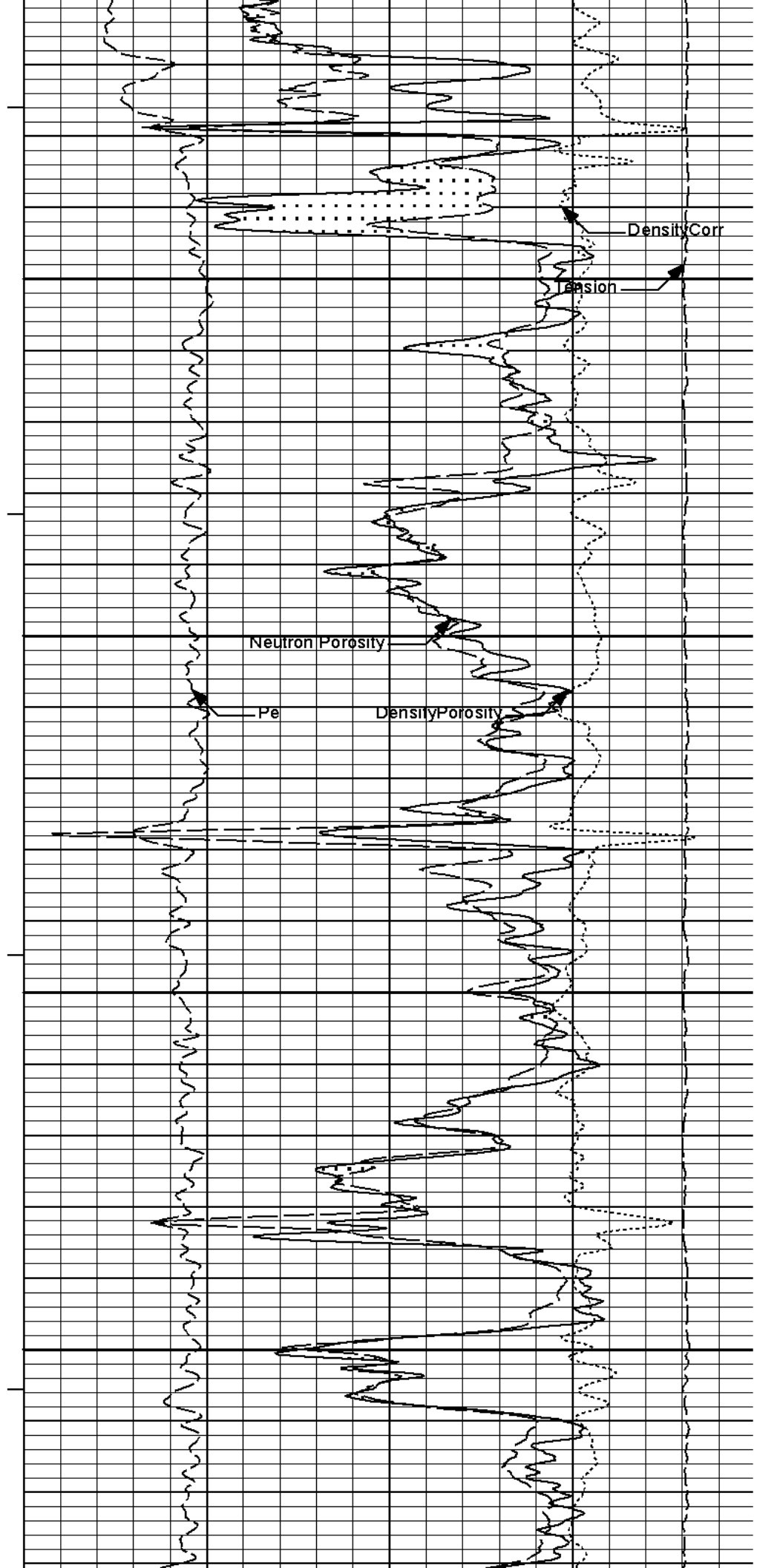
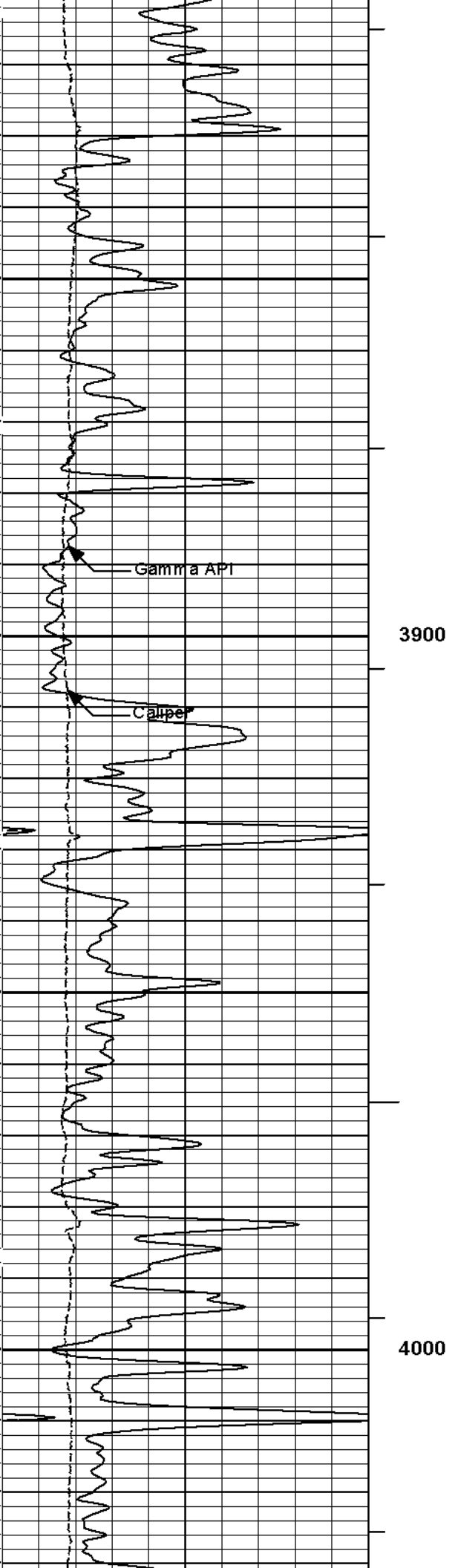
**SPECTRAL DENSITY  
DUAL SPACED NEUTRON  
LOG**

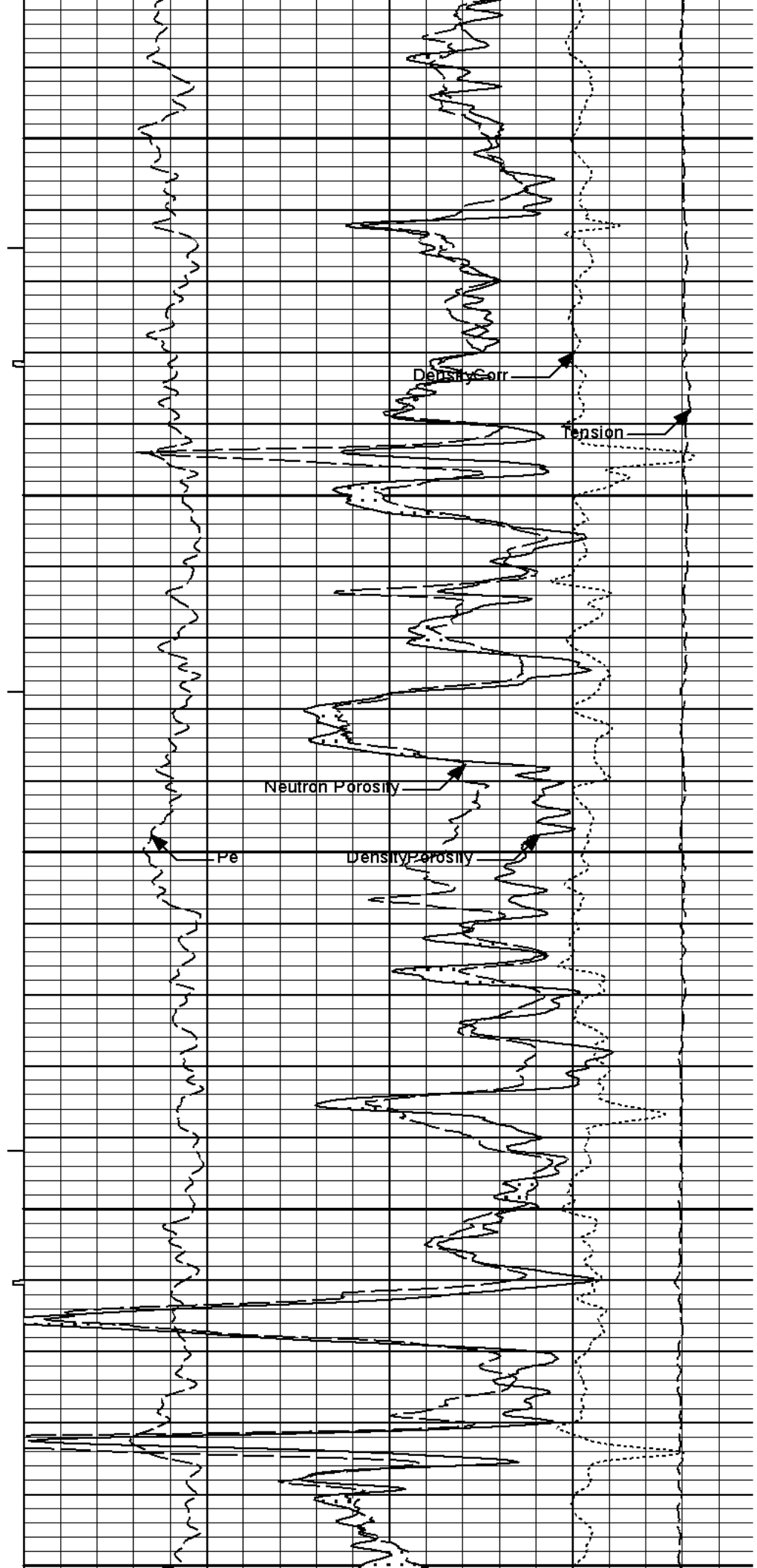
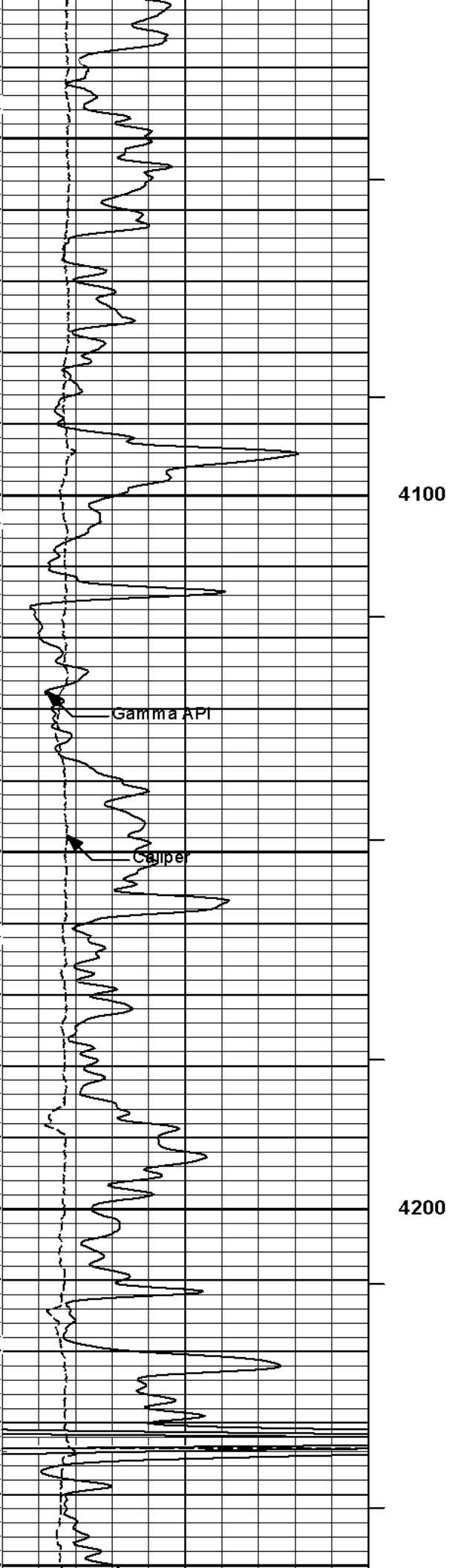
Fold here

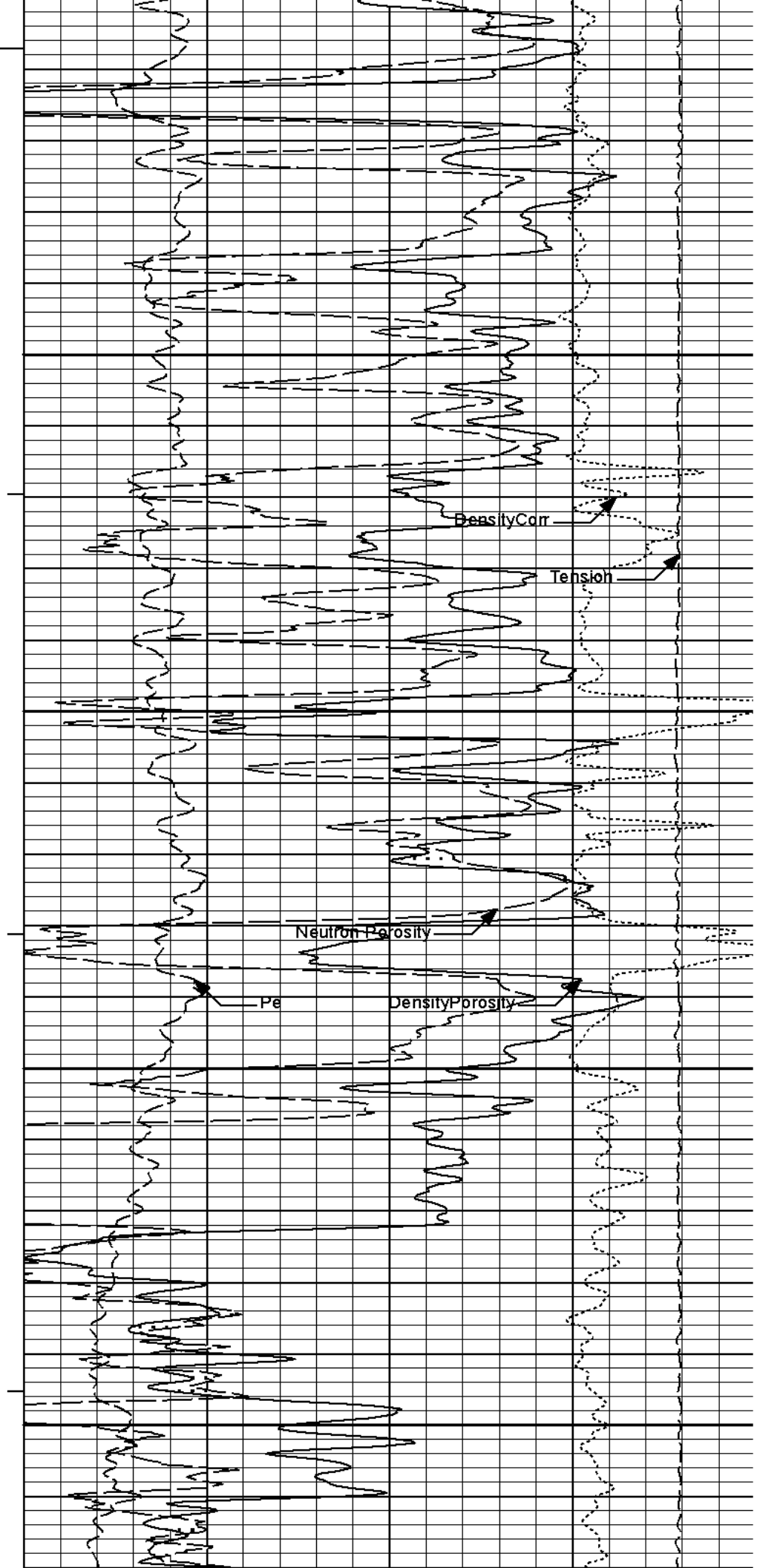
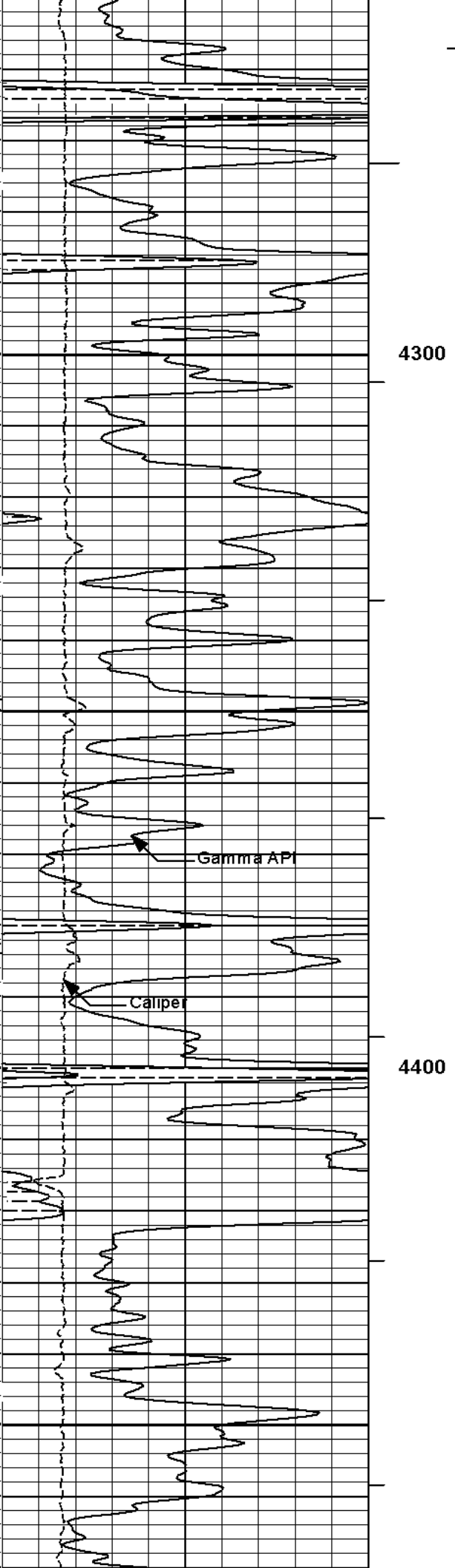
LOGGING DATA

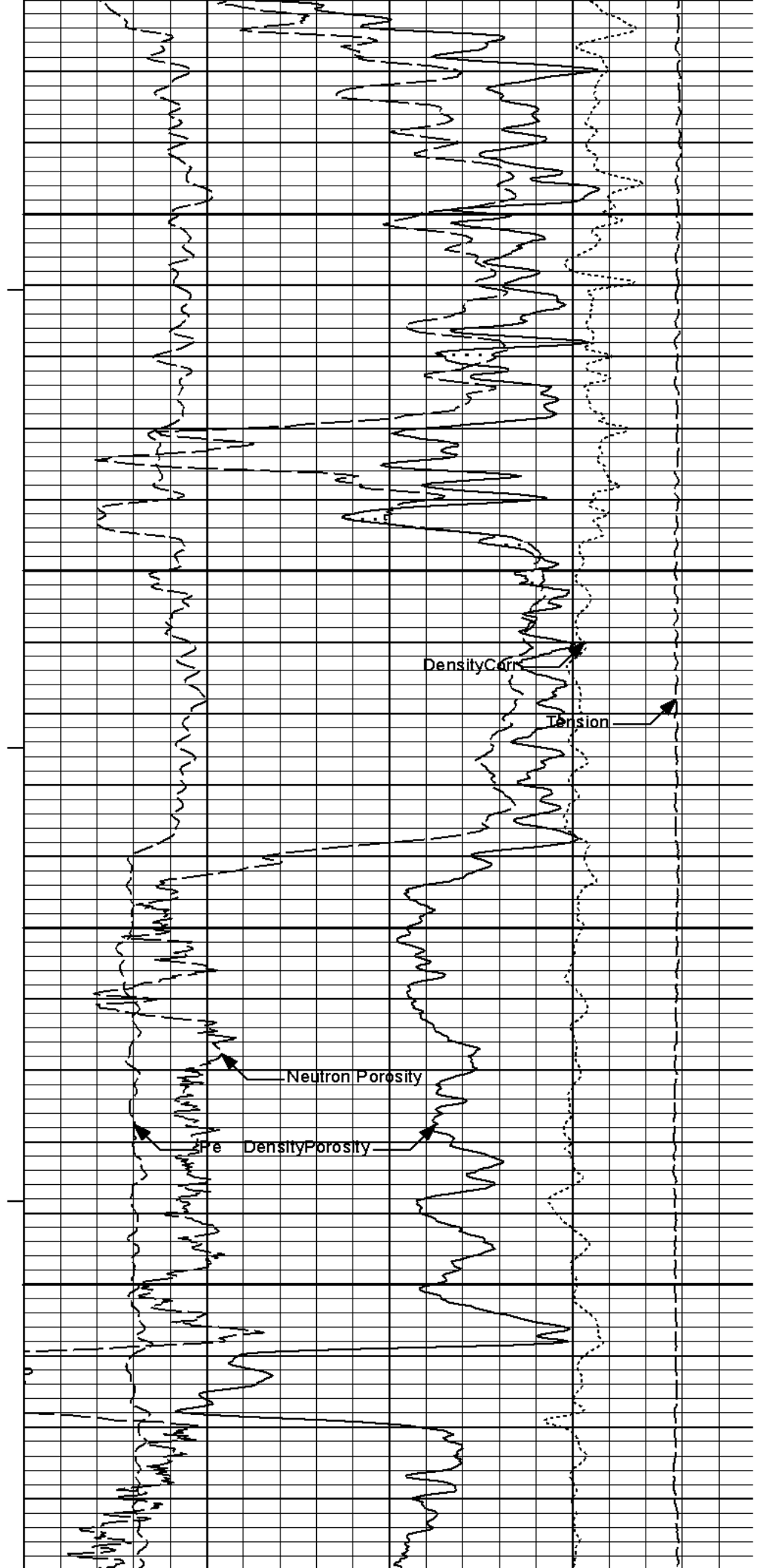
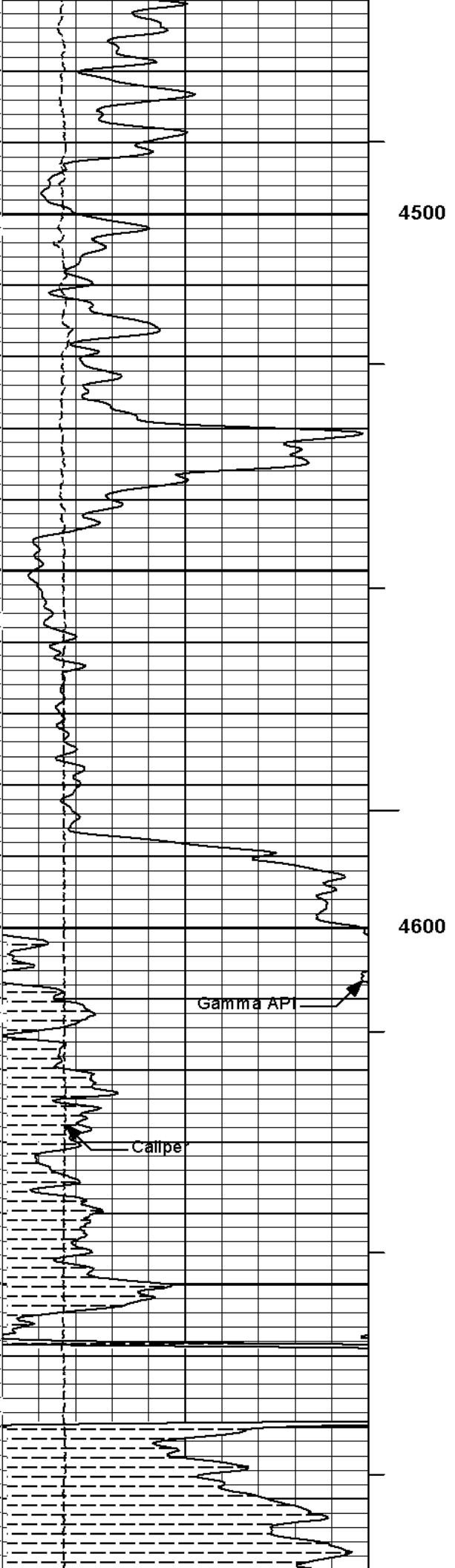
| GENERAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |     | GAMMA  |       | ACOUSTIC |       | DENSITY |        | NEUTRON |     |        |       |     |        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|--------|-------|----------|-------|---------|--------|---------|-----|--------|-------|-----|--------|
| Run                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Depth |     | Speed  | Scale |          | Scale |         | Matrix | Scale   |     | Matrix | Scale |     | Matrix |
| No.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | From  | To  | ft/min | L     | R        | L     | R       |        | L       | R   |        | L     | R   |        |
| ONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | TD    | CSG | REC    | 0     | 150      |       |         |        | 30      | -10 | 2.71   | 30    | -10 | LIME   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
| DIRECTIONAL INFORMATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
| Maximum Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |     |        |       |          |       |         | @      | KOP     |     |        |       | @   |        |
| Remarks: AHV CALCULATED FOR 5.5 INCH CASING                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
| CHLORIDES 7500 MG/L: LCM 3 #BBL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
| TODAY'S CREW: V.JAIME, B.TERRELL                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
| THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KANSAS: 620 624 8123                                                                                                                                                                                                                                                                                                                                                                                                                               |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
| <p>HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.</p> |       |     |        |       |          |       |         |        |         |     |        |       |     |        |
| HALLIBURTON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |     |        |       |          |       |         |        |         |     |        |       |     |        |

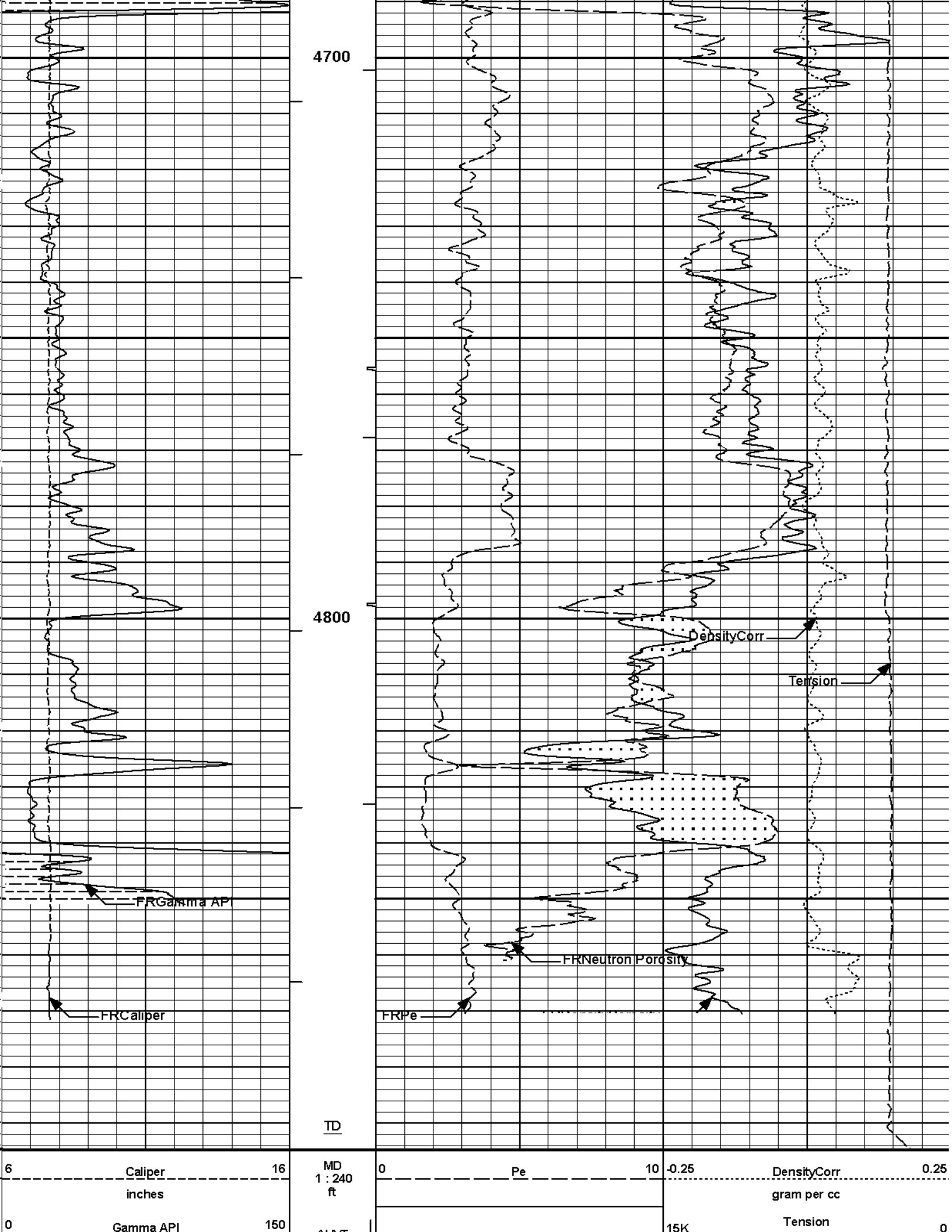












|       |                      |    |                      |
|-------|----------------------|----|----------------------|
| api   | AHVT                 |    | pounds               |
| SHALE | BHVT                 | 30 | DensityPorosity -10  |
|       |                      |    | %                    |
|       | Tension Pull<br>10 0 | 30 | Neutron Porosity -10 |
|       |                      |    | %                    |
|       | Tension Pull         |    | CROSSOVER            |

HALLIBURTON

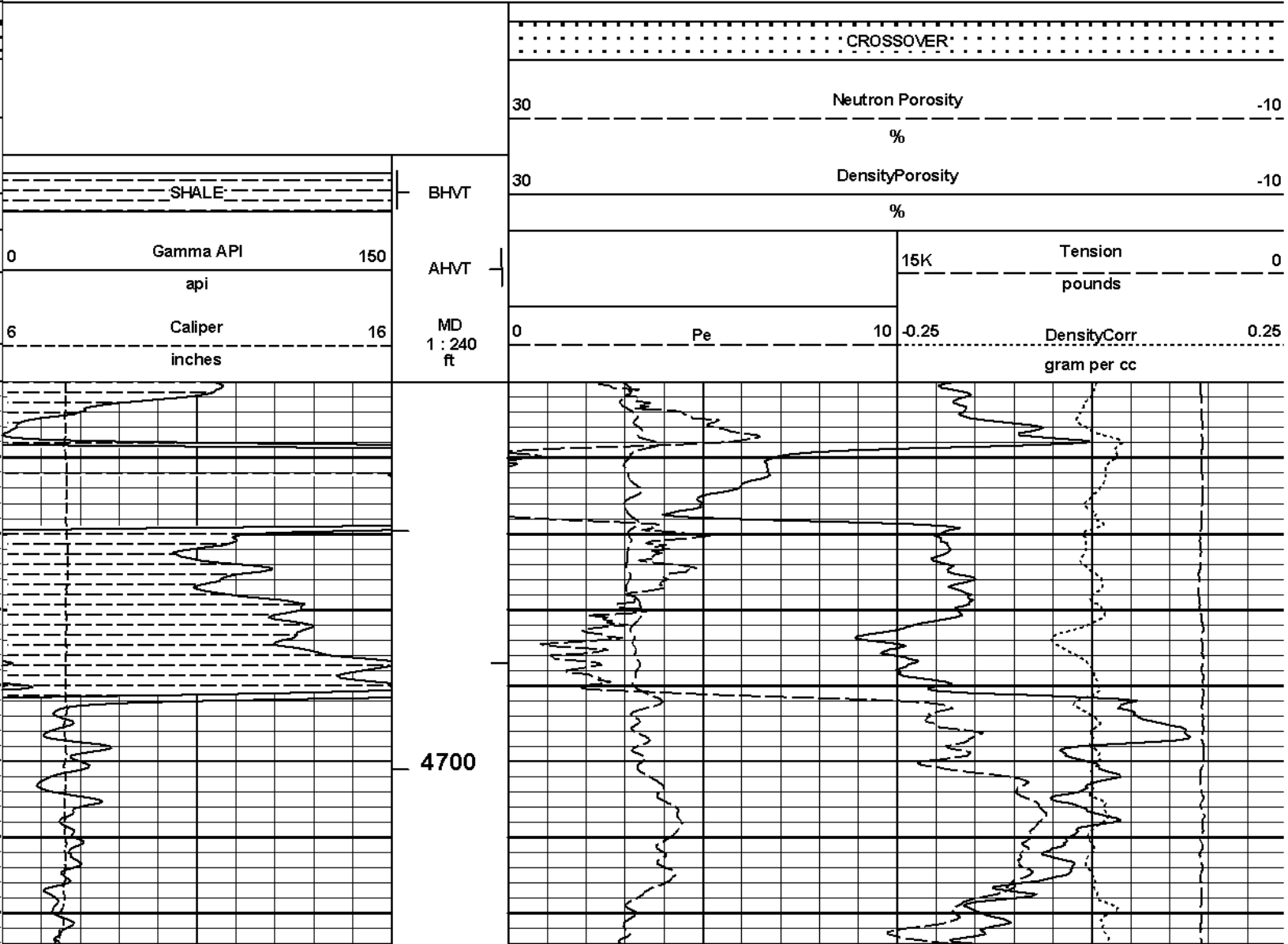
Plot Time: 26-Oct-11 08:37:27  
Plot Range: 3550 ft to 4894.58 ft  
Data: PYLE\_4\_3\Well Based\DAQ-0001-003\  
Plot File: \\PORO\PorosityMAIN\_LIB

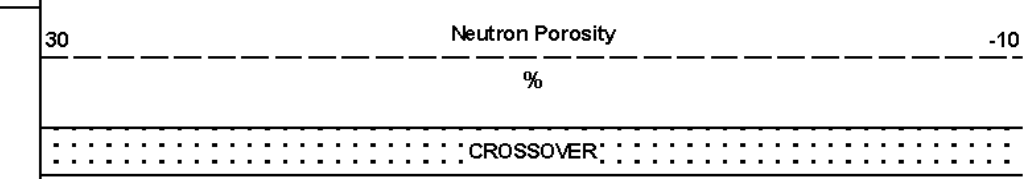
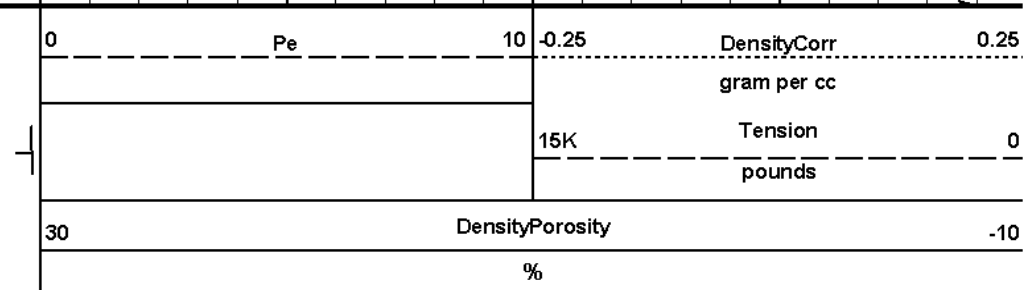
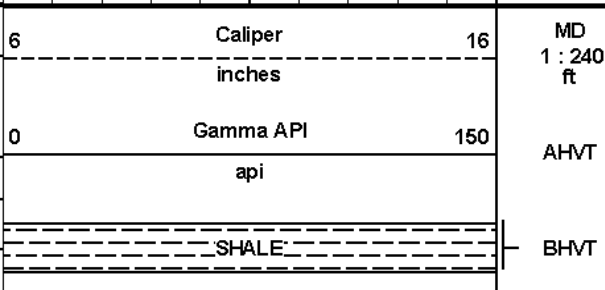
5 INCH MAIN LOG

HALLIBURTON

Plot Time: 26-Oct-11 08:37:28  
Plot Range: 4650 ft to 4895.58 ft  
Data: PYLE\_4\_3\Well Based\DAQ-0001-002\  
Plot File: \\PORO\PorosityREP\_LIB

REPEAT SECTION



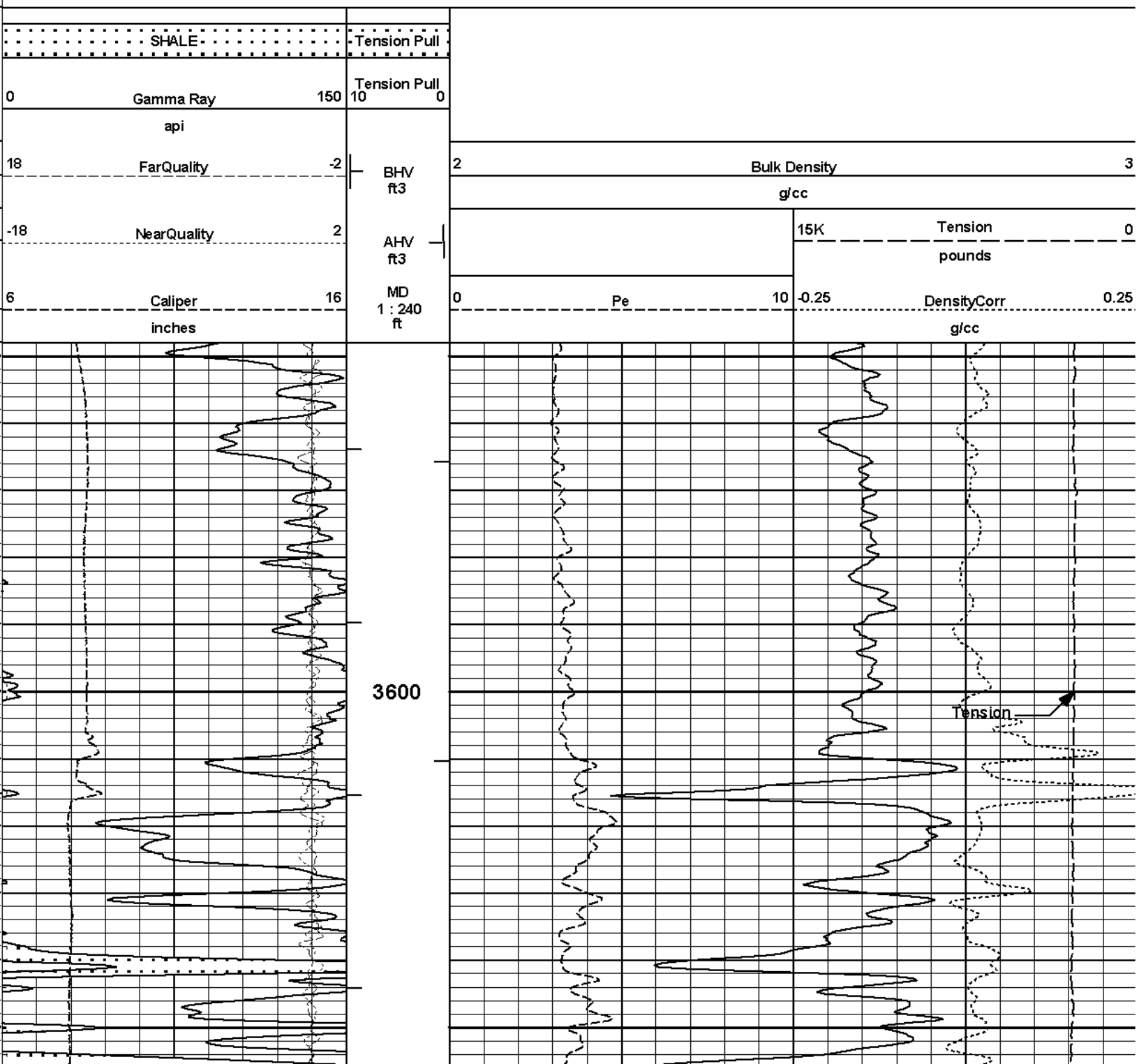


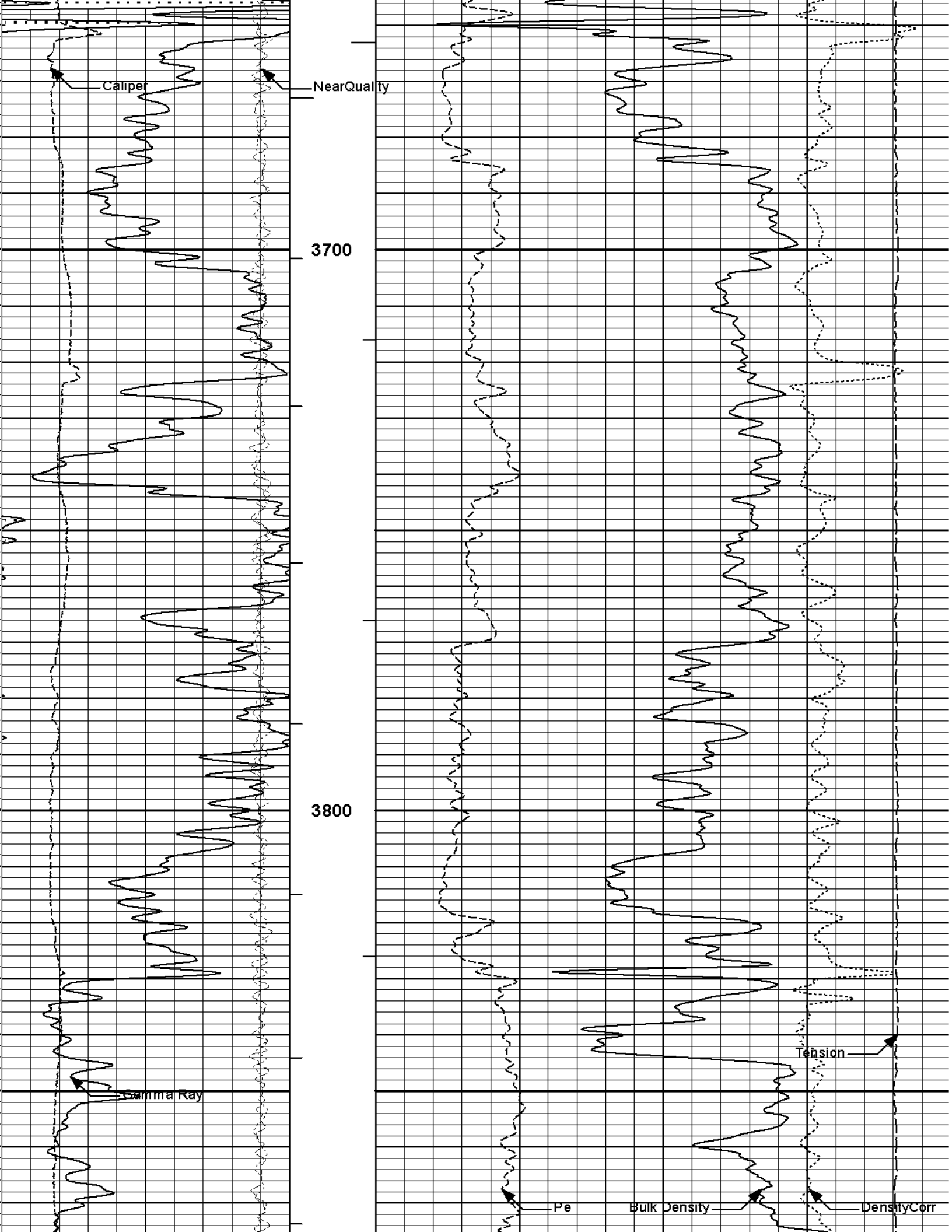
Plot Time: 26-Oct-11 08:37:29  
Plot Range: 4650 ft to 4895.58 ft  
Data: PYLE\_4\_3\Well Based\DAQ-0001-0021  
Plot File: \\POROIPoro\_IQ\_5\_REP\_LIB

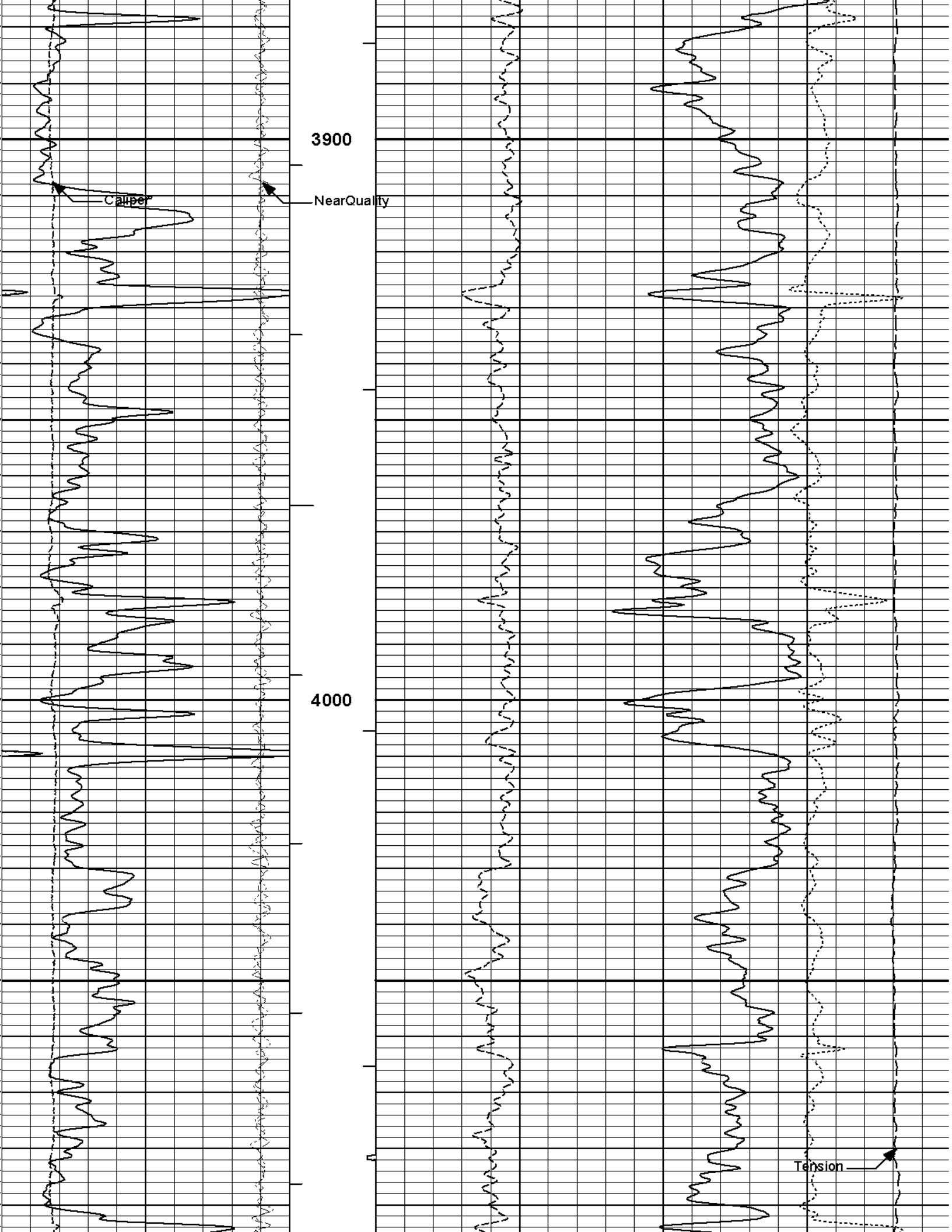
**HALLIBURTON**

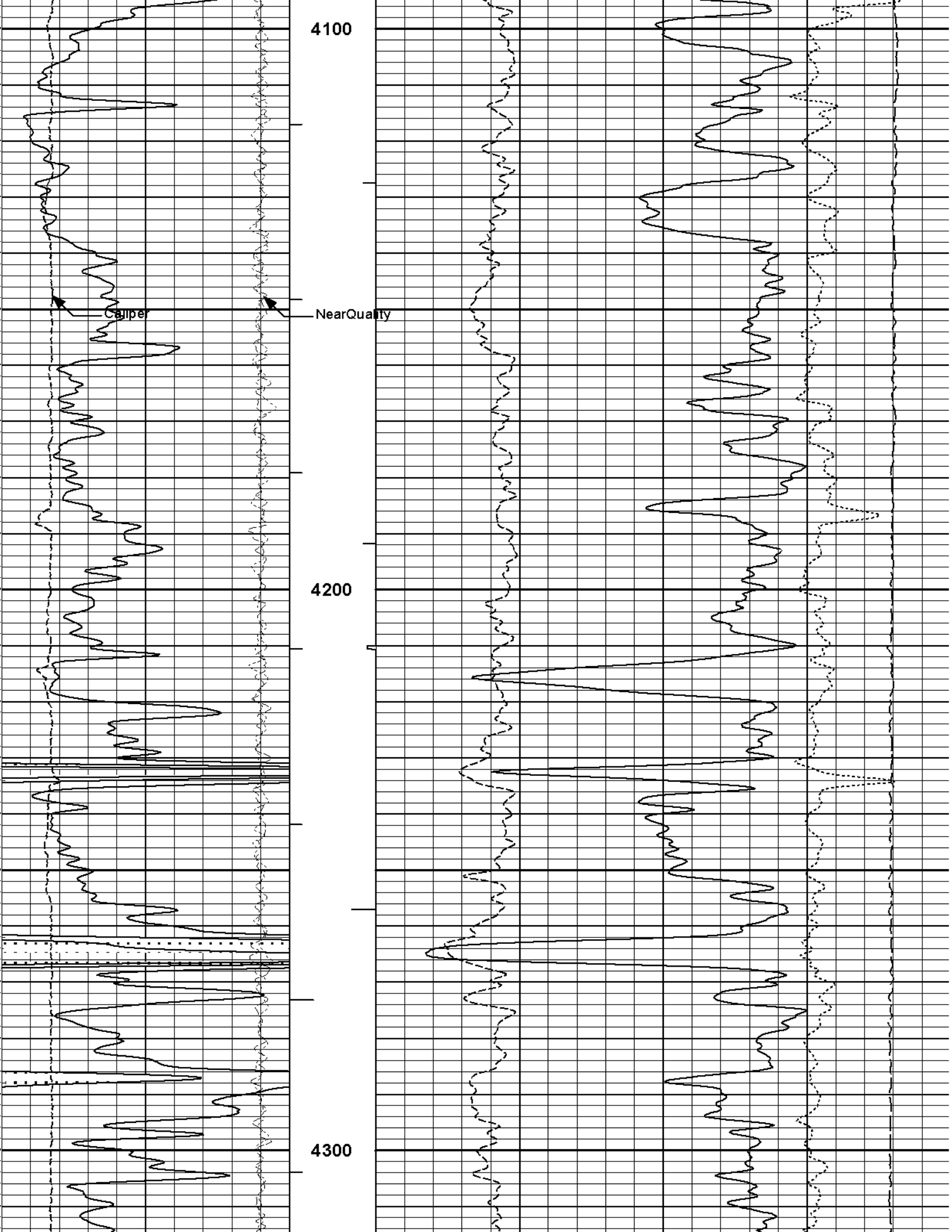
Plot Time: 26-Oct-11 08:37:30  
Plot Range: 3548 ft to 4894.58 ft  
Data: PYLE\_4\_3IWWell Based\DAQ-0001-0031  
Plot File: \\LOCAL-IPYLE\_4\_3I\0001 SP-GTET-DSN-SDL-ACRT-BN\POROI\BULKD\_5\_MAIN.LIB

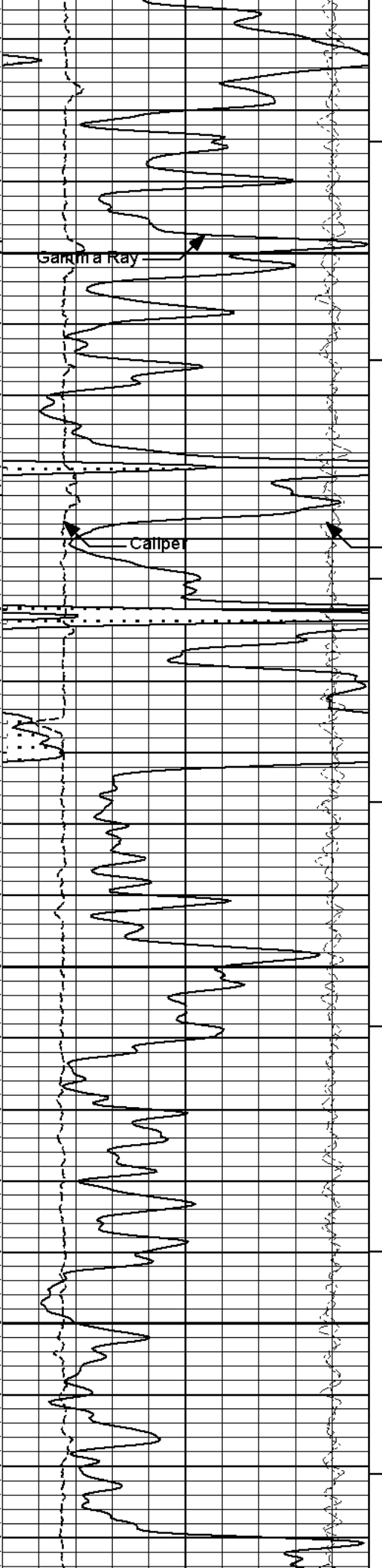
## 5 INCH MAIN LOG





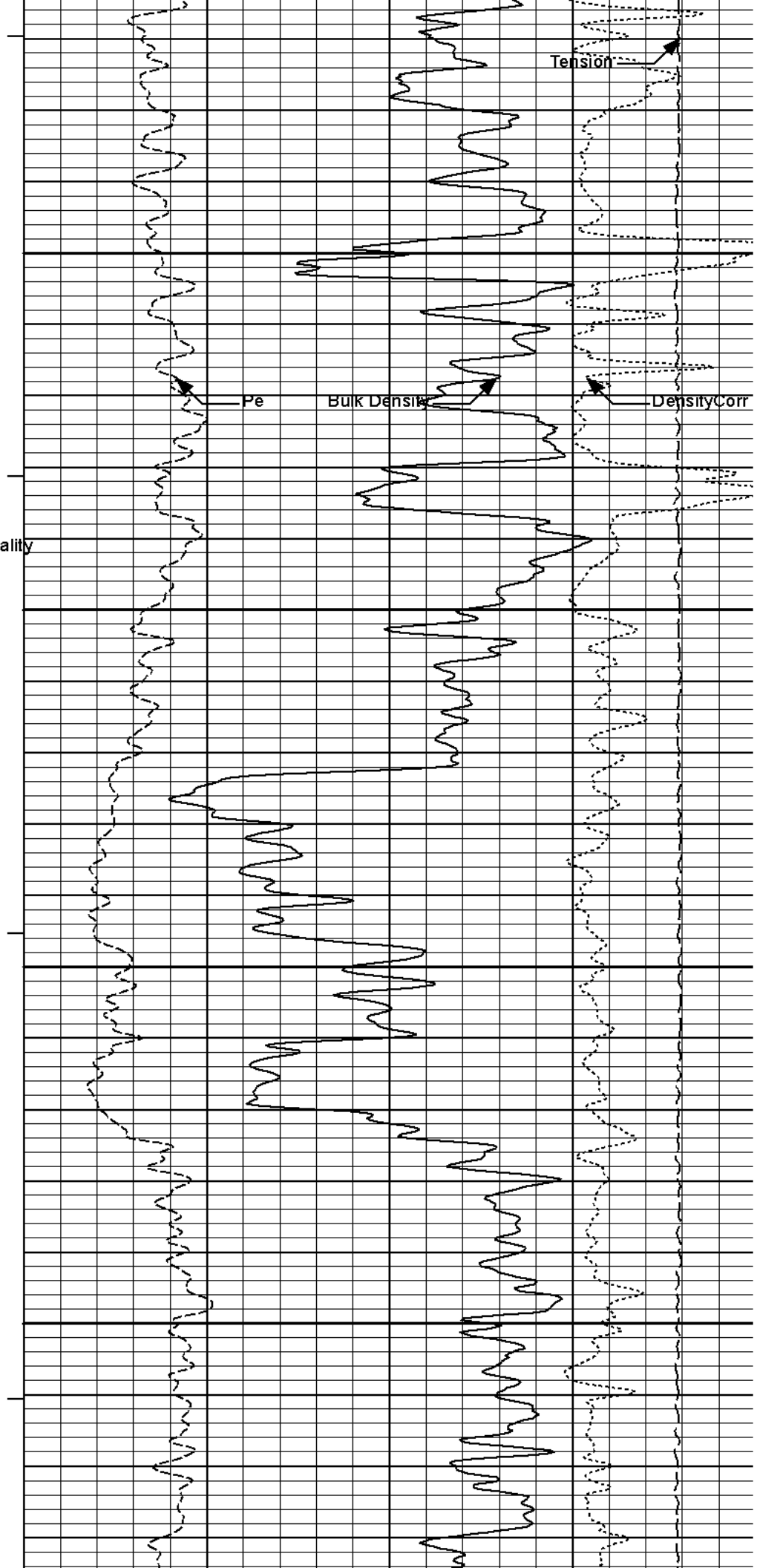


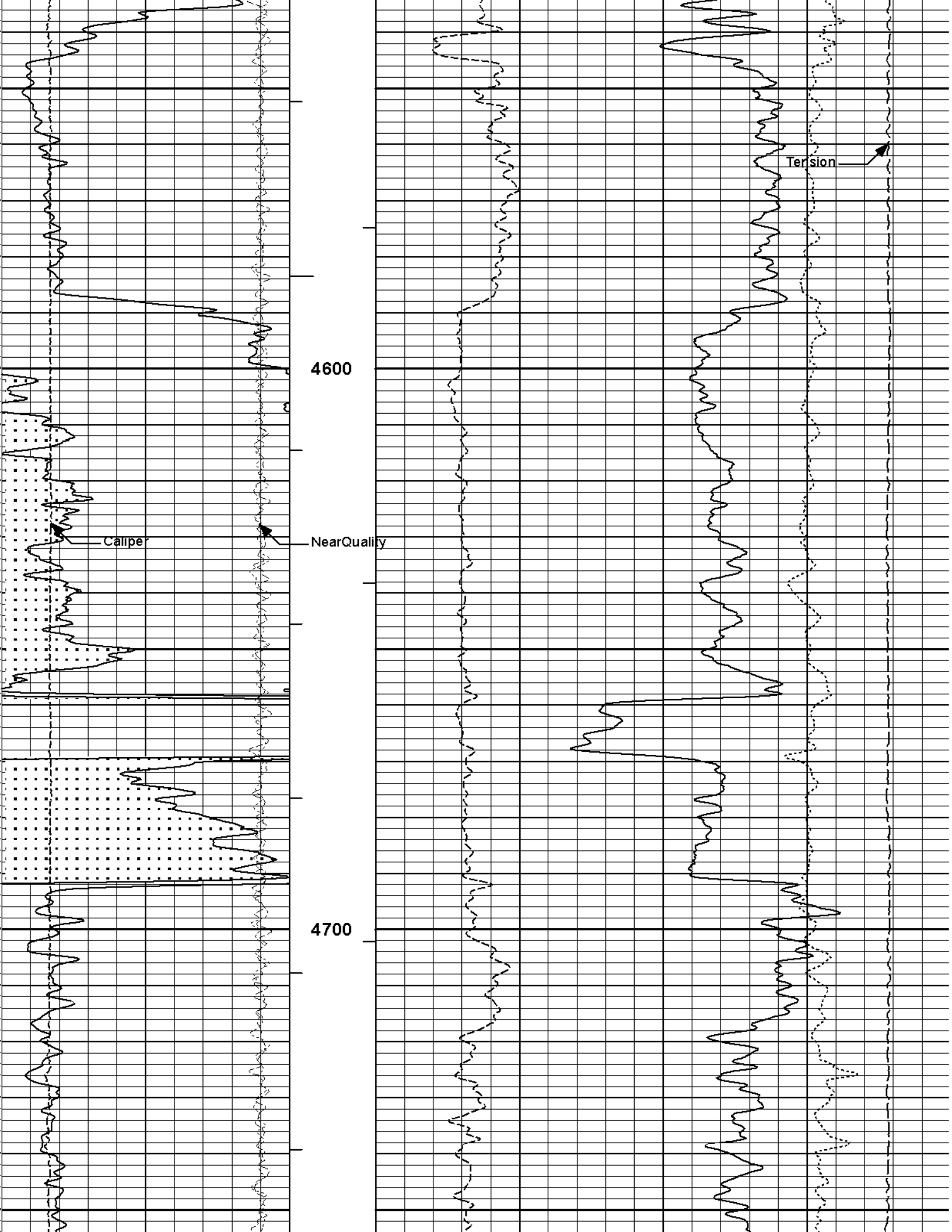


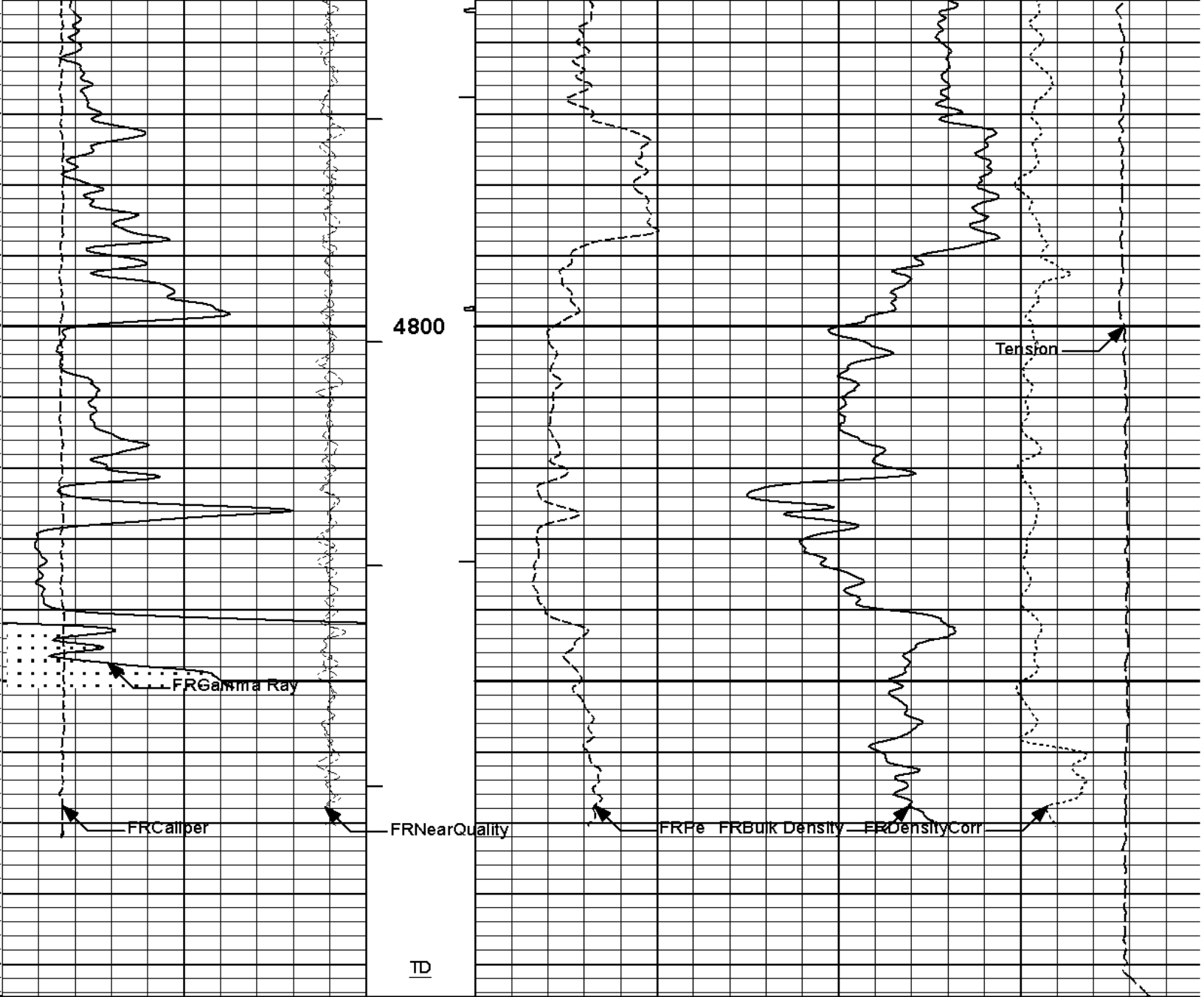


4400

4500







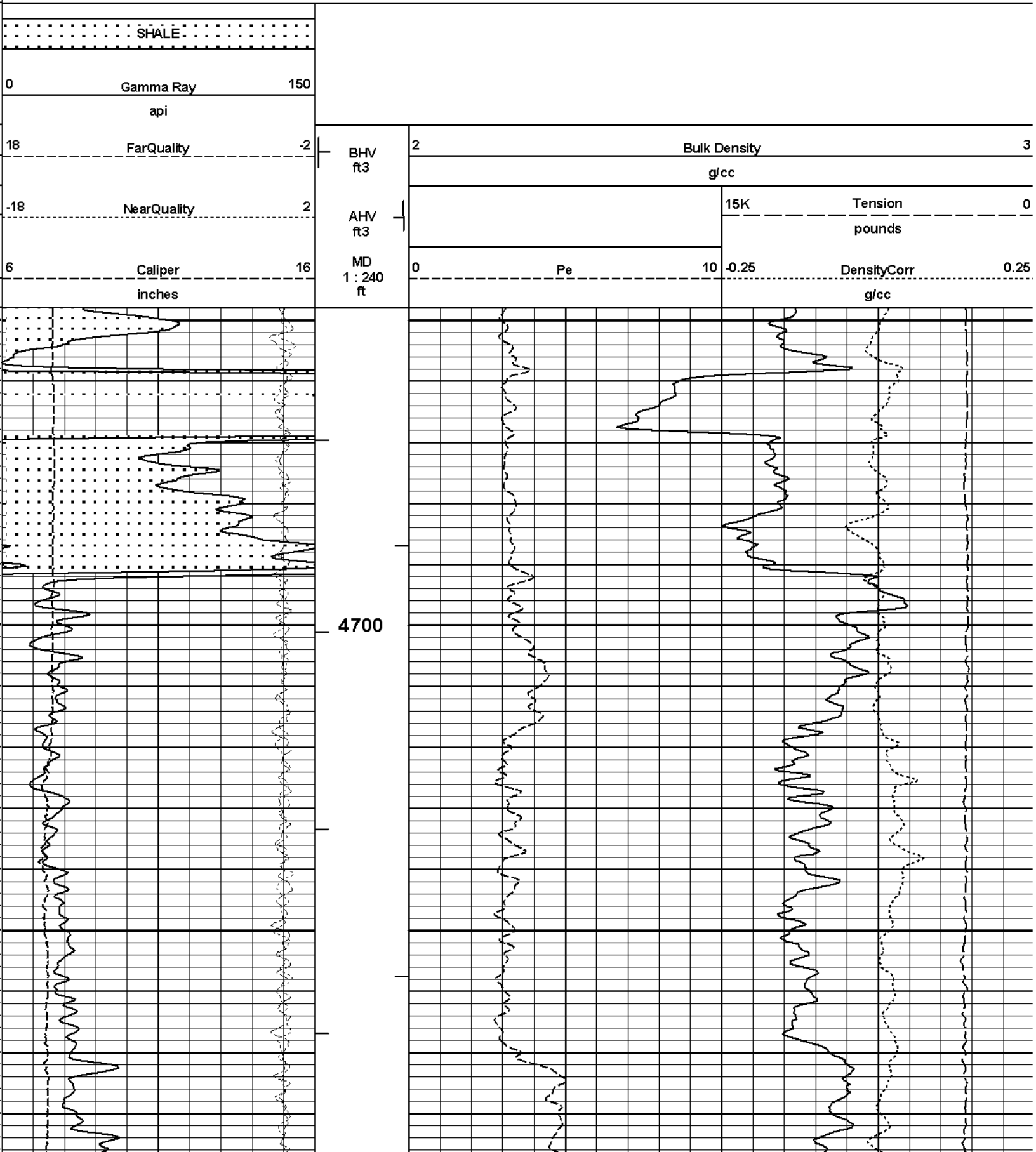
|     |             |     |              |   |              |    |       |             |      |
|-----|-------------|-----|--------------|---|--------------|----|-------|-------------|------|
| 6   | Caliper     | 16  | MD           | 0 | Pe           | 10 | -0.25 | DensityCorr | 0.25 |
|     | inches      |     | 1 : 240      |   |              |    |       | g/cc        |      |
| -18 | NearQuality | 2   | AHV          |   |              |    | 15K   | Tension     | 0    |
|     |             |     | ft3          |   |              |    |       | pounds      |      |
| 18  | FarQuality  | -2  | BHV          | 2 | Bulk Density |    |       |             | 3    |
|     |             |     | ft3          |   | g/cc         |    |       |             |      |
| 0   | Gamma Ray   | 150 | Tension Pull |   |              |    |       |             |      |
|     | api         |     | 10           |   |              |    |       |             |      |
|     | SHALE       |     | Tension Pull |   |              |    |       |             |      |

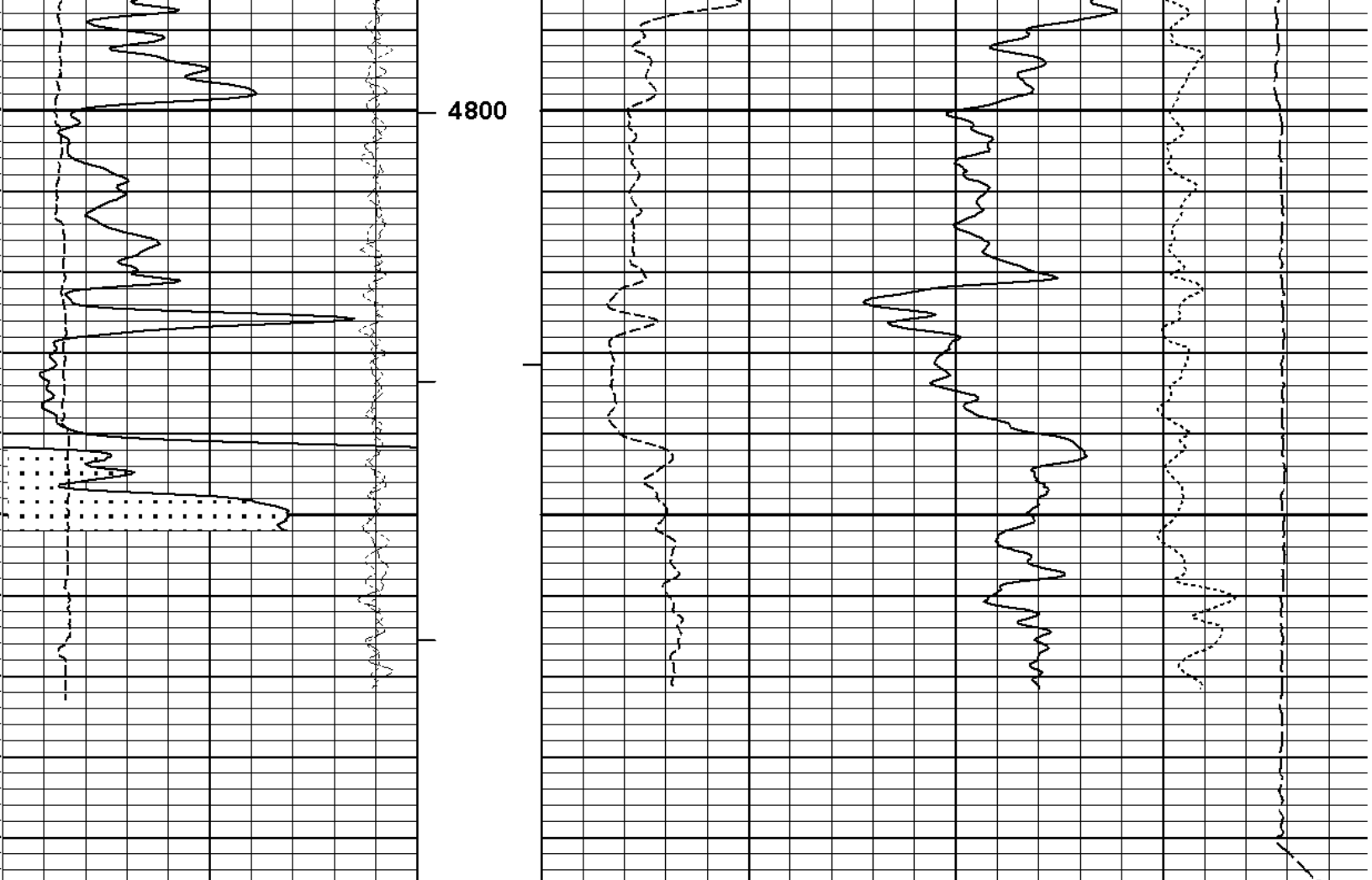
**HALLIBURTON**

Plot Time: 26-Oct-11 08:37:32  
 Plot Range: 3548 ft to 4894.58 ft  
 Data: PYLE\_4\_3\Well Based\DAQ-0001-0031  
 Plot File: \\LOCAL-1\PYLE\_4\_3\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\BULKD\_5\_MAIN\_LIB

# 5 INCH MAIN LOG

REPEAT SECTION





|     |             |     |         |   |              |    |       |             |      |
|-----|-------------|-----|---------|---|--------------|----|-------|-------------|------|
| 6   | Caliper     | 16  | MD      | 0 | Pe           | 10 | -0.25 | DensityCorr | 0.25 |
|     | inches      |     | 1 : 240 |   |              |    |       | g/cc        |      |
| -18 | NearQuality | 2   | AHV     |   |              |    | 15K   | Tension     | 0    |
|     |             |     | ft3     |   |              |    |       | pounds      |      |
| 18  | FarQuality  | -2  | BHV     | 2 | Bulk Density |    |       |             |      |
|     |             |     | ft3     |   | g/cc         |    |       |             |      |
| 0   | Gamma Ray   | 150 |         |   |              |    |       |             |      |
|     | api         |     |         |   |              |    |       |             |      |
|     | SHALE       |     |         |   |              |    |       |             |      |

HALLIBURTON

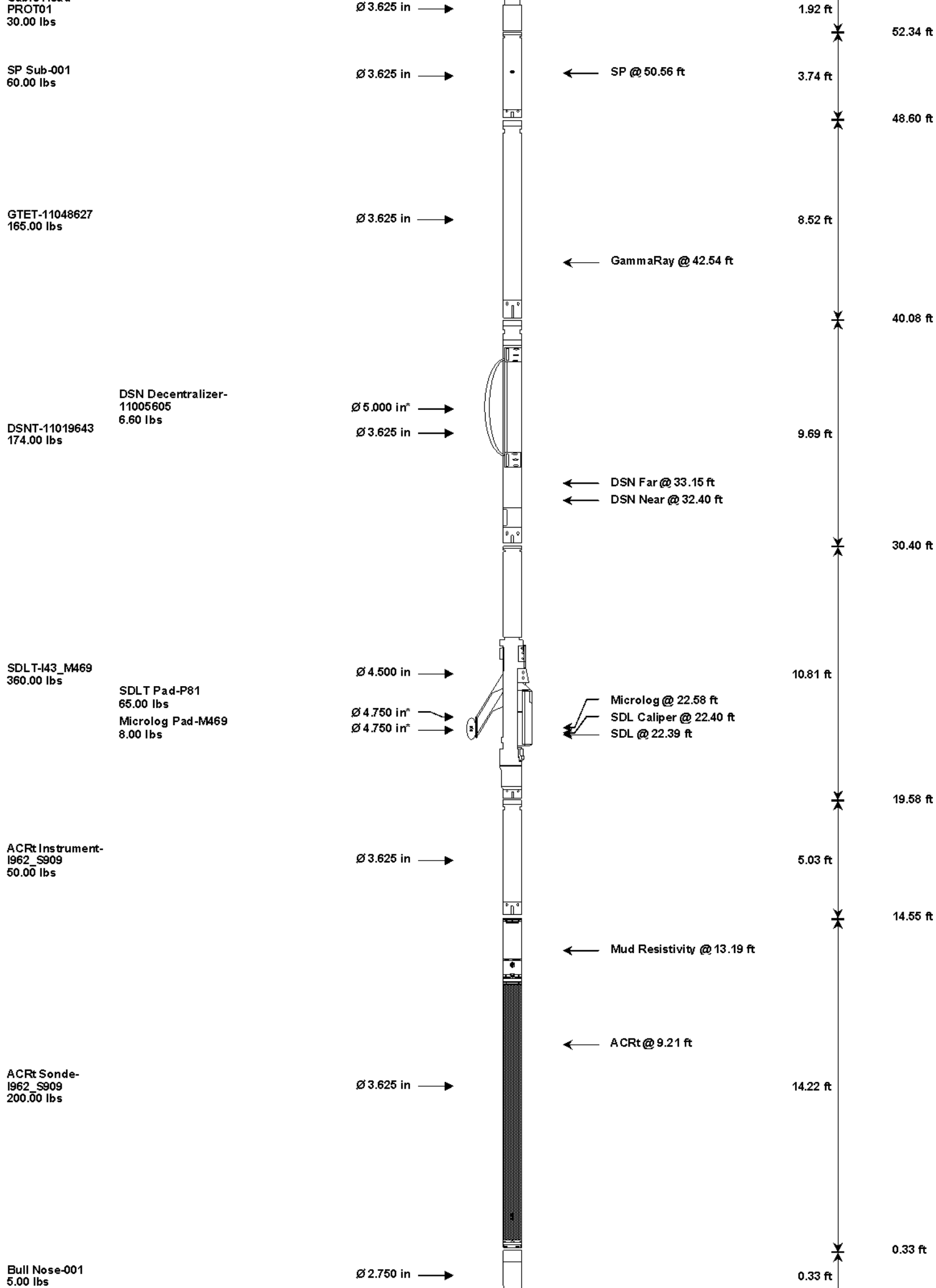
Plot Time: 26-Oct-11 08:37:33  
Plot Range: 4648 ft to 4895.58 ft  
Data: PYLE\_4\_3\Well Based\DAQ-0001-002\  
Plot File: \\LOCAL-IPYLE\_4\_3\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\BULKD\_5\_REP\_LIB

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

| Description | Overbody Description | O.D. | Diagram | Sensors @ Delays | Length | Accumulated Length |
|-------------|----------------------|------|---------|------------------|--------|--------------------|
| Cable Head- |                      |      |         |                  |        | 54.26 ft           |



| Mnemonic                                        | Tool Name                                             | Serial Number | Weight (lbs) | Length (ft) | Accumulated Length (ft)  | Max.Log. Speed (fpm)                                    |
|-------------------------------------------------|-------------------------------------------------------|---------------|--------------|-------------|--------------------------|---------------------------------------------------------|
| CH                                              | Standard OH Cable Head                                | PROT01        | 30.00        | 1.92        | 52.34                    | 300.00                                                  |
| SP                                              | SP Sub                                                | 001           | 60.00        | 3.74        | 48.60                    | 300.00                                                  |
| GTET                                            | Gamma Telemetry Tool                                  | 11048627      | 165.00       | 8.52        | 40.08                    | 60.00                                                   |
| DSNT                                            | Dual Spaced Neutron                                   | 11019643      | 174.00       | 9.69        | 30.40                    | 60.00                                                   |
| DCNT                                            | DSN Decentralizer                                     | 11005605      | 6.60         | 5.13        | *                        | 33.73                                                   |
| SDLT                                            | Spectral Density Tool                                 | I43_M469      | 360.00       | 10.81       | 19.58                    | 60.00                                                   |
| MICP                                            | Microlog Pad                                          | M469          | 8.00         | 1.00        | *                        | 22.08                                                   |
| SDLP                                            | Density Insite Pad                                    | P81           | 65.00        | 2.55        | *                        | 21.79                                                   |
| ACRt                                            | Array Compensated True Resistivity Instrument Section | I962_S909     | 50.00        | 5.03        | 14.55                    | 300.00                                                  |
| ACRt                                            | Array Compensated True Resistivity                    | I962_S909     | 200.00       | 14.22       | 0.33                     | 300.00                                                  |
| BLNS                                            | Bull Nose                                             | 001           | 5.00         | 0.33        | 0.00                     | 300.00                                                  |
| Total                                           |                                                       |               | 1,123.60     | 54.26       |                          |                                                         |
|                                                 |                                                       |               |              |             |                          | * Not included in Total Length and Length Accumulation. |
| Data: PYLE_4_3I0001 SP-GTET-DSN-SDL-ACRT-BNIDLE |                                                       |               |              |             | Date: 26-Oct-11 05:11:18 |                                                         |

HALLIBURTON

PARAMETERS REPORT

| Depth ((ft)) | Tool Name       | Mnemonic | Description                                           | Value     | Units |
|--------------|-----------------|----------|-------------------------------------------------------|-----------|-------|
| TOP          |                 |          |                                                       |           |       |
|              | DSNT            | DNOK     | Process DSN?                                          | No        |       |
|              | Microlog Pad    | MLOK     | Process MicroLog Outputs?                             | No        |       |
|              | SDLT Pad        | DNOK     | Process Density?                                      | No        |       |
| 3490.00      |                 |          |                                                       |           |       |
|              | 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                                 | 9.000     | ppg   |
|              | SHARED          | WAGT     | Weighting Agent                                       | Natural   |       |
|              | SHARED          | BSAL     | Borehole salinity                                     | 0.00      | ppm   |
|              | SHARED          | FSAL     | Formation Salinity NaCl                               | 0.00      | ppm   |
|              | SHARED          | KPCT     | Percent K in Mud by Weight?                           | 0.00      | %     |
|              | SHARED          | RMUD     | Mud Resistivity                                       | 0.466     | 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                                      | 4900.00   | ft    |
|              | SHARED          | BHT      | Bottom Hole Temperature                               | 100.0     | 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      |       |
|              | Rwa / CrossPlot | XPOK     | Process Crossplot?                                    | Yes       |       |
|              | Rwa / CrossPlot | FCHO     | Select Source of F                                    | Automatic |       |
|              | Rwa / CrossPlot | AFAC     | Archie A factor                                       | 0.6200    |       |
|              | Rwa / CrossPlot | MFAC     | Archie M factor                                       | 2.1500    |       |
|              | Rwa /           | RMFR     | Rmf Reference                                         | 0.10      | ohmm  |

|                 |      |                                              |                |      |
|-----------------|------|----------------------------------------------|----------------|------|
| CrossPlot       | RWA  | Rmf Ref Temp                                 | 75.00          | degF |
| CrossPlot       | TMFR |                                              |                |      |
| Rwa / CrossPlot | RWA  | Resistivity of Formation Water               | 0.05           | ohmm |
| Rwa / CrossPlot | ADP  | Use Air Porosity to calculate CrossplotPhi   | No             |      |
| 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.           | Eccentered     |      |
| 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 | 0.250          | 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            |      |
| Microlog Pad    | MLOK | Process MicroLog 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 |
| SDLT Pad        | DFL  | Formation Density Fluid                      | 1.000          | g/cc |
| ACRt Sonde      | RTOK | Process ACRT?                                | Yes            |      |
| ACRt Sonde      | MNSO | Minimum Tool Standoff                        | 1.50           | in   |
| ACRt Sonde      | TCS1 | Temperature Correction Source                | FP Lwr & FP Up |      |
| 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: PYLE\_4\_3\0001 SP-GTET-DSN-SDL-ACRT-BM002 26-Oct-11 08:02 Up @4895.8f

Date: 26-Oct-11 08:05:18

# HALLIBURTON

## CALIBRATION REPORT

### NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11048627

Reference Calibration Date: 01-Aug-11 13:25:16

Engineer: J. BOSH

Calibration Date: 11-Sep-11 04:08:24

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

Calibration Version: 1

Calibrator Source S/N: TB146

Calibrator API Reference:265.00 api

Equivalent Calibrator API Reference:269.6 api

| Measurement             | Measured | Calibrated | Units |
|-------------------------|----------|------------|-------|
| Background              | 39.7     | 40.7       | api   |
| Background + Calibrator | 302.5    | 310.4      | api   |

Calibrator

262.8

269.6

api

**NATURAL GAMMA RAY TOOL FIELD CALIBRATION****Tool Name:** GTET - 11048627**Reference Calibration Date:** 11-Sep-11 04:08:24**Engineer:** C.PARKER**Calibration Date:** 22-Oct-11 14:41:54**Software Version:** WL INSITE R3.4.2 (Build 2)**Calibration Version:** 1

Calibrator Source S/N: TB146

Calibrator API Reference:265.00 api

Equivalent Calibrator API Reference:269.6 api

| Field Verification      | Shop  | Field | Units |
|-------------------------|-------|-------|-------|
| Background              | 40.7  | 56.2  | api   |
| Background + Calibrator | 310.4 | 319.9 | api   |
| Calibrator              | 269.6 | 263.7 | api   |

| Shop  | Field | Difference | Tolerance |
|-------|-------|------------|-----------|
| 269.6 | 263.7 | 5.9        | +/- 9.00  |

**NATURAL GAMMA RAY TOOL POST CALIBRATION****Tool Name:** GTET - 11048627**Reference Calibration Date:** 22-Oct-11 14:41:54**Engineer:** C.PARKER**Calibration Date:** 24-Oct-11 13:45:21**Software Version:** WL INSITE R3.4.2 (Build 2)**Calibration Version:** 1

Calibrator Source S/N: TB146

Calibrator API Reference:265.00 api

Calibrator API Reference:269.6 api

| Post Verification       | Field | Post  | Units |
|-------------------------|-------|-------|-------|
| Background              | 56.2  | 59.7  | api   |
| Background + Calibrator | 319.9 | 325.7 | api   |
| Calibrator              | 263.7 | 266.0 | api   |

| Shop  | Field | Post  | Difference | Tolerance |
|-------|-------|-------|------------|-----------|
| 269.6 | 263.7 | 266.0 | -2.3       | +/- 9.00  |

**DUAL SPACED NEUTRON SHOP CALIBRATION****Tool Name:** DSNT - 11019643**Reference Calibration Date:** 12-Oct-11 11:32:40**Engineer:** C.PARKER**Calibration Date:** 12-Oct-11 11:46:43**Software Version:** WL INSITE R3.4.2 (Build 2)**Calibration Version:** 1

Logging Source S/N: 696

Tank Serial Number: LIBERAL\_NEUTRON

Reference value assigned to Tank: 51.680

Snow Block S/N: 696

Calibration Tank Water Temperature: 72 degF

Min. Tool Housing Outside Diameter: 3.625 in

**CALIBRATION CONSTANTS**

| Measurement | Prev. Value | New Value | Control Limit On New Value |
|-------------|-------------|-----------|----------------------------|
| Gain:       | 0.955       | 0.959     | 0.900 - 1.100              |

**WATER TANK SUMMARY (Horizontal Water Tank)**

| Measurement       | Current Reading (Previous Coef.) | Calibrated (New Coef.) | Change | Control Limit On Change |
|-------------------|----------------------------------|------------------------|--------|-------------------------|
| Porosity (decip): | 0.2097                           | 0.2110                 | 0.0012 | +/- 0.0020              |
| Calibrated Ratio: | 9.69                             | 9.73                   | 0.041  | +/- 0.050               |

## VERIFIER

| Measurement                 | Value  | Control Limit     |
|-----------------------------|--------|-------------------|
| Snow-Block Porosity (decg): | 0.0762 | 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 - 11019643            | Reference Calibration Date: | 12-Oct-11 11:46:43 |
| Engineer:         | C.PARKER                   | Calibration Date:           | 22-Oct-11 14:48:10 |
| Software Version: | WL INSITE R3.4.2 (Build 2) | Calibration Version:        | 1                  |

Logging Source S/N: 696

Snow Block S/N: 696

## NEUTRON FIELD-CHECK SUMMARY

|                             | Shop   | Field  | Difference | Control Limit<br>On Change |
|-----------------------------|--------|--------|------------|----------------------------|
| Snow-Block Porosity (decg): | 0.0762 | 0.0830 | 0.0068     | +/- 0.0150                 |

## PASS/FAIL SUMMARY

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

## DENSITY CALIPER SHOP CALIBRATION

|                   |                            |                             |                    |
|-------------------|----------------------------|-----------------------------|--------------------|
| Tool Name:        | SDLT - I43_M469            | Reference Calibration Date: | 12-Oct-11 12:40:39 |
| Engineer:         | C.PARKER                   | Calibration Date:           | 12-Oct-11 12:48:18 |
| Software Version: | WL INSITE R3.4.2 (Build 2) | Calibration Version:        | 1                  |

## CALIBRATION COEFFICIENTS

| Measurement | Previous Value | New Value   | Control Limit On<br>New Value |
|-------------|----------------|-------------|-------------------------------|
| Pad Offset  | -1167.52       | -2350.17    | -7000.00 - -1000.00           |
| Pad Gain    | 0.0003366      | 0.0003823   | 0.000200 - 0.000600           |
| Arm Offset  | -994.99        | 758.83      | -5000.00 - 3000.00            |
| Arm Gain    | 0.0005082      | 0.0004097   | 0.000300 - 0.000700           |
| Arm Power   | -0.000004752   | 0.000002408 | -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<br>(Previous Coeff.) | Calibrated<br>(New Coeff.) | Change | Control Limit On<br>New Value |
|------------------|--------------------------------------|----------------------------|--------|-------------------------------|
| PAD EXTENSION:   |                                      |                            |        |                               |
| Small Ring (in)  | 2.16                                 | 2.00                       | -0.16  | +/- 0.20                      |
| Medium Ring (in) | 3.70                                 | 3.75                       | 0.05   | +/- 0.20                      |
| RING DIAMETER:   |                                      |                            |        |                               |
| Small Ring (in)  | 6.49                                 | 6.50                       | 0.01   | +/- 0.20                      |
| Medium Ring (in) | 8.45                                 | 8.25                       | -0.20  | +/- 0.20                      |
| Large Ring (in)  | 15.09                                | 15.00                      | -0.09  | +/- 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 - I43\_M469**Reference Calibration Date: **12-Oct-11 12:48:18**Engineer: **C.PARKER**Calibration Date: **22-Oct-11 14:54:48**Software Version: **WL INSITE R3.4.2 (Build 2)**Calibration Version: **1****MEASURED CALIPER VALUES**

| Measurement   | Shop | Field | Change | Control Limit On<br>New Value |
|---------------|------|-------|--------|-------------------------------|
| Pad Extension | 3.75 | 3.69  | -0.06  | +/- 0.10                      |
| Ring Diameter | 8.25 | 8.10  | -0.15  | +/- 0.15                      |

**PASS/FAIL SUMMARY**

Pad Extension Check:

Passed

Diameter Check:

Passed

**SPECTRAL DENSITY SHOP CALIBRATION**Tool Name: **SDLT Pad - P81**Reference Calibration Date: **01-Jan-70 00:00:00**Engineer: **C.PARKER**Calibration Date: **12-Oct-11 12:13:52**Software Version: **WL INSITE R3.4.2 (Build 2)**Calibration Version: **1**

Logging Source S/N: 5168GW

Aluminum Block S/N: LIBERAL

Density: 2.598g/cc

Pe: 3.170

Magnesium Block S/N: LIBERAL

Density: 1.684g/cc

Pe: 2.598

**DENSITY CALIBRATION SUMMARY**

| Measurement          | Previous Value | New Value | Control Limit |
|----------------------|----------------|-----------|---------------|
| Near Bar Gain        | 1.0662         | 1.0662    | 0.90 - 1.10   |
| Near Dens Gain       | 1.0401         | 1.0401    | 0.90 - 1.10   |
| Near Peak Gain       | 1.0166         | 1.0166    | 0.90 - 1.10   |
| Near Lith Gain       | 0.9869         | 0.9869    | 0.90 - 1.10   |
| Far Bar Gain         | 1.0242         | 1.0242    | 0.90 - 1.10   |
| Far Dens Gain        | 1.0078         | 1.0078    | 0.90 - 1.10   |
| Far Peak Gain        | 1.0023         | 1.0023    | 0.90 - 1.10   |
| Far Lith Gain        | 0.9807         | 0.9807    | 0.90 - 1.10   |
| Near Bar Offset      | -0.4401        | -0.4401   | NONE          |
| Near Dens Offset     | -0.2046        | -0.2046   | NONE          |
| Near Peak Offset     | 0.0147         | 0.0147    | NONE          |
| Near Lith Offset     | 0.2634         | 0.2634    | NONE          |
| Far Bar Offset       | -0.1236        | -0.1236   | NONE          |
| Far Dens Offset      | 0.0133         | 0.0133    | NONE          |
| Far Peak Offset      | 0.0381         | 0.0381    | NONE          |
| Far Lith Offset      | 0.1930         | 0.1930    | NONE          |
| Near Bar Background  | 834.14         | 834.14    | 700 - 1450    |
| Near Dens Background | 272.61         | 272.61    | 230 - 480     |
| Near Peak Background | 118.52         | 118.52    | 100 - 210     |
| Near Lith Background | 147.55         | 147.55    | 125 - 260     |
| Far Bar Background   | 540.42         | 540.42    | 450 - 900     |
| Far Dens Background  | 214.68         | 214.68    | 175 - 345     |

|                     |       |       |          |
|---------------------|-------|-------|----------|
| Far Peak Background | 85.61 | 85.61 | 70 - 140 |
| Far Lith Background | 88.46 | 88.46 | 75 - 145 |

### CALIBRATION BLOCK SUMMARY

| Measurement      | Current Reading<br>(Previous Coef) | Calibrated<br>(New Coef) | Change | Control Limit<br>On Change |
|------------------|------------------------------------|--------------------------|--------|----------------------------|
| <b>MAGNESIUM</b> |                                    |                          |        |                            |
| Density (g/cc)   | 1.684                              | 1.684                    | 0.000  | +/- 0.015                  |
| Pe               | 2.557                              | 2.557                    | 0.000  | +/- 0.150                  |
| <b>ALUMINUM</b>  |                                    |                          |        |                            |
| Density (g/cc)   | 2.598                              | 2.598                    | 0.000  | +/- 0.01500                |
| Pe               | 3.126                              | 3.126                    | 0.000  | +/- 0.150                  |

### TOOL SUMMARY

| Measurement                | Near Detector |                | Far Detector |                |
|----------------------------|---------------|----------------|--------------|----------------|
|                            | Value         | Control Limits | Value        | Control Limits |
| <b>QUALITY</b>             |               |                |              |                |
| Background                 | -0.0019       | +/- 0.0110     | -0.0013      | +/- 0.0140     |
| Magnesium Block            | -0.0016       | +/- 0.0110     | -0.0003      | +/- 0.0140     |
| Aluminum Block             | -0.0009       | +/- 0.0110     | -0.0002      | +/- 0.0140     |
| Resolution                 | 9.46          | 6.00 - 11.50   | 9.07         | 6.00 - 11.50   |
| Internal Verifier(B+D+P+L) | 1373          | 1200 - 2700    | 929          | 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

|                                                     |                                                       |
|-----------------------------------------------------|-------------------------------------------------------|
| <b>Tool Name:</b> SDLT Pad - P81                    | <b>Reference Calibration Date:</b> 12-Oct-11 12:13:52 |
| <b>Engineer:</b> C.PARKER                           | <b>Calibration Date:</b> 22-Oct-11 14:40:45           |
| <b>Software Version:</b> WL INSITE R3.4.2 (Build 2) | <b>Calibration Version:</b> 1                         |

Pad Temperature: 71.0 degF

### DENSITY FIELD CALIBRATION SUMMARY

| Measurement        | Shop     | Field    | Change | Control Limit +/- |
|--------------------|----------|----------|--------|-------------------|
| Near (B+D+P+L) cps | 1372.818 | 1372.950 | 0.132  | 14.973            |
| Far (B+D+P+L) cps  | 929.168  | 930.923  | 1.755  | 16.496            |
| Near Resolution    | 9.46     | 9.35     | -0.110 | 0.50              |
| Far Resolution     | 9.07     | 9.12     | 0.050  | 1.00              |

### PASS/FAIL SUMMARY

|                         |        |
|-------------------------|--------|
| Bkg Quality Check:      | Passed |
| Bkg Resolution Check:   | Passed |
| Bkg Verification Check: | Passed |

### CALIBRATION SUMMARY

| Sensor                                          | Shop     | Field    | Post  | Difference | Tolerance  | Units |
|-------------------------------------------------|----------|----------|-------|------------|------------|-------|
| <b>GTET-11048627</b>                            |          |          |       |            |            |       |
| Gamma Ray Calibrator                            | 269.6    | 263.7    | 266.0 | -2.3       | +/- 9.00   | api   |
| <b>DSNT-11019643</b>                            |          |          |       |            |            |       |
| Snow-Block Porosity                             | 0.0762   | 0.0830   | ----- | -0.0068    | +/- 0.0150 | decP  |
| <b>SDLT-I43_M469</b>                            |          |          |       |            |            |       |
| Pad Extension                                   | 3.75     | 3.69     | ----- | 0.06       | +/-0.10    | in    |
| Ring Diameter                                   | 8.25     | 8.10     | ----- | 0.150      | +/-0.15    | in    |
| <b>SDLT Pad-P81</b>                             |          |          |       |            |            |       |
| Near(B+D+P+L)                                   | 1372.818 | 1372.950 | ----- | -0.132     | +/-14.973  | cps   |
| Far(B+D+P+L)                                    | 929.168  | 930.923  | ----- | -1.755     | +/-16.496  | cps   |
| Data: PYLE_4_3\0001 SP-GTET-DSN-SDL-ACRT-BMIDLE |          |          |       |            |            |       |
| Date: 26-Oct-11 05:13:19                        |          |          |       |            |            |       |

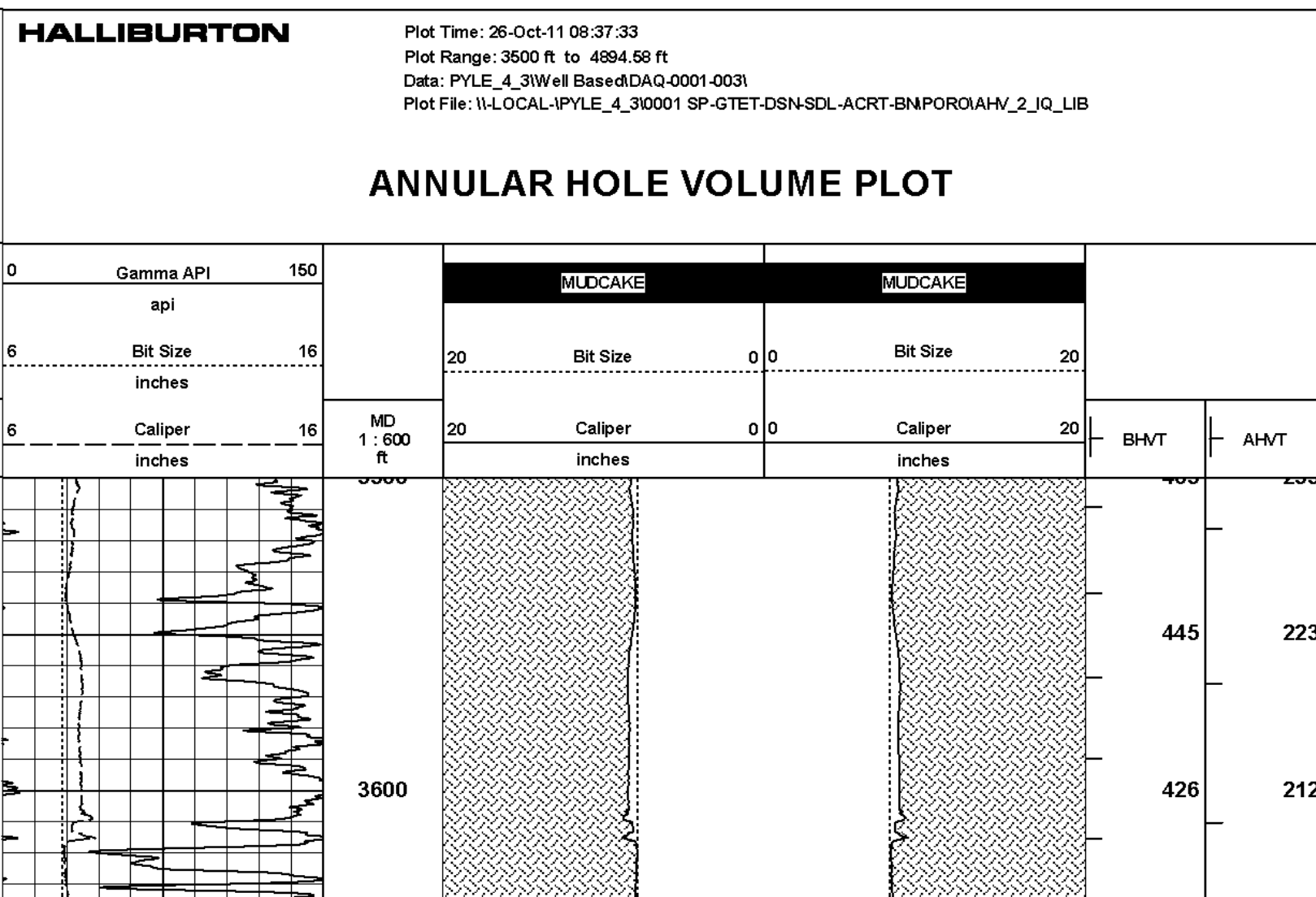
HALLIBURTON

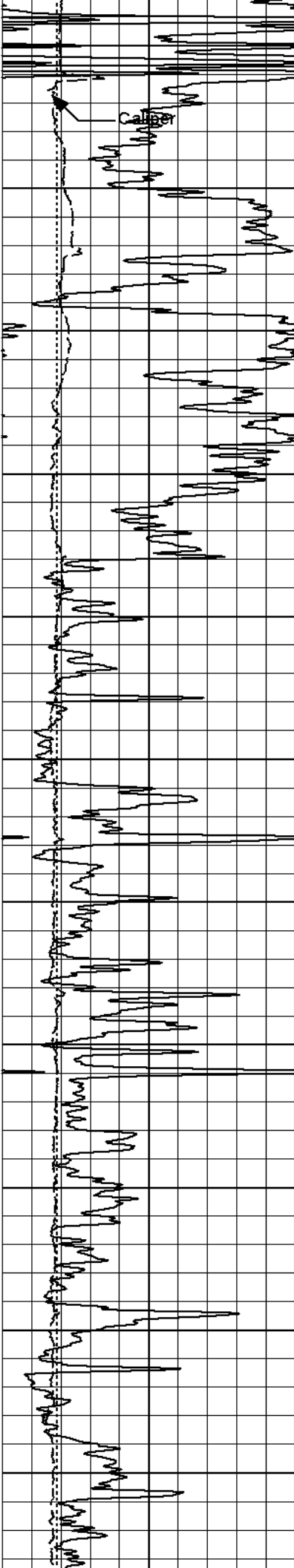
INPUTS, DELAYS AND FILTERS TABLE

| Mnemonic    | Input Description                                       | Delay (ft) | Filter Type | Filter Length (ft) |
|-------------|---------------------------------------------------------|------------|-------------|--------------------|
| Depth Panel |                                                         |            |             |                    |
| TENS        | Tension                                                 | 0.00       | NO          |                    |
| SP Sub      |                                                         |            |             |                    |
| PLTC        | Plot Control Mask                                       | 50.56      | NO          |                    |
| SP          | Spontaneous Potential                                   | 50.56      | BLK         | 1.250              |
| SPR         | Raw Spontaneous Potential                               | 50.56      | NO          |                    |
| SPO         | Spontaneous Potential Offset                            | 50.56      | NO          |                    |
| GTET        |                                                         |            |             |                    |
| TPUL        | Tension Pull                                            | 42.54      | NO          |                    |
| GR          | Natural Gamma Ray API                                   | 42.54      | TRI         | 1.750              |
| GRU         | Unfiltered Natural Gamma Ray API                        | 42.54      | NO          |                    |
| EGR         | Natural Gamma Ray API with Enhanced Vertical Resolution | 42.54      | W           | 1.416 , 0.750      |
| ACCZ        | Accelerometer Z                                         | 0.00       | BLK         | 0.083              |
| DEVI        | Inclination                                             | 0.00       | NO          |                    |
| DSNT        |                                                         |            |             |                    |
| TPUL        | Tension Pull                                            | 32.30      | NO          |                    |
| RNDS        | Near Detector Telemetry Counts                          | 32.40      | BLK         | 1.417              |
| RFDS        | Far Detector Telemetry Counts                           | 33.15      | TRI         | 0.583              |
| DNTT        | DSN Tool Temperature                                    | 32.40      | NO          |                    |
| DSNS        | DSN Tool Status                                         | 32.30      | NO          |                    |
| ERND        | Near Detector Telemetry Counts EVR                      | 32.40      | BLK         | 0.000              |
| ERFD        | Far Detector Telemetry Counts EVR                       | 33.15      | BLK         | 0.000              |
| ENTM        | DSN Tool Temperature EVR                                | 32.40      | NO          |                    |
| SDLT        |                                                         |            |             |                    |
| TPUL        | Tension Pull                                            | 22.40      | NO          |                    |
| PCAL        | Pad Caliper                                             | 22.40      | TRI         | 0.250              |
| ACAL        | Arm Caliper                                             | 22.40      | TRI         | 0.250              |
| ACRt Sonde  |                                                         |            |             |                    |
| TPUL        | Tension Pull                                            | 2.73       | NO          |                    |
| F1R1        | ACRT 12KHz - 80in R value                               | 8.98       | BLK         | 0.000              |
| F1X1        | ACRT 12KHz - 80in X value                               | 8.98       | BLK         | 0.000              |

|              |                                               |       |     |       |
|--------------|-----------------------------------------------|-------|-----|-------|
| F1R2         | ACRT 12KHz - 50in R value                     | 6.48  | BLK | 0.000 |
| F1X2         | ACRT 12KHz - 50in X value                     | 6.48  | BLK | 0.000 |
| F1R3         | ACRT 12KHz - 29in R value                     | 4.98  | BLK | 0.000 |
| F1X3         | ACRT 12KHz - 29in X value                     | 4.98  | BLK | 0.000 |
| F1R4         | ACRT 12KHz - 17in R value                     | 3.98  | BLK | 0.000 |
| F1X4         | ACRT 12KHz - 17in X value                     | 3.98  | BLK | 0.000 |
| F1R5         | ACRT 12KHz - 10in R value                     | 3.48  | BLK | 0.000 |
| F1X5         | ACRT 12KHz - 10in X value                     | 3.48  | BLK | 0.000 |
| F1R6         | ACRT 12KHz - 6in R value                      | 3.23  | BLK | 0.000 |
| F1X6         | ACRT 12KHz - 6in X value                      | 3.23  | BLK | 0.000 |
| F2R1         | ACRT 36KHz - 80in R value                     | 8.98  | BLK | 0.000 |
| F2X1         | ACRT 36KHz - 80in X value                     | 8.98  | BLK | 0.000 |
| F2R2         | ACRT 36KHz - 50in R value                     | 6.48  | BLK | 0.000 |
| F2X2         | ACRT 36KHz - 50in X value                     | 6.48  | BLK | 0.000 |
| F2R3         | ACRT 36KHz - 29in R value                     | 4.98  | BLK | 0.000 |
| F2X3         | ACRT 36KHz - 29in X value                     | 4.98  | BLK | 0.000 |
| F2R4         | ACRT 36KHz - 17in R value                     | 3.98  | BLK | 0.000 |
| F2X4         | ACRT 36KHz - 17in X value                     | 3.98  | BLK | 0.000 |
| F2R5         | ACRT 36KHz - 10in R value                     | 3.48  | BLK | 0.000 |
| F2X5         | ACRT 36KHz - 10in X value                     | 3.48  | BLK | 0.000 |
| F2R6         | ACRT 36KHz - 6in R value                      | 3.23  | BLK | 0.000 |
| F2X6         | ACRT 36KHz - 6in X value                      | 3.23  | BLK | 0.000 |
| F3R1         | ACRT 72KHz - 80in R value                     | 8.98  | BLK | 0.000 |
| F3X1         | ACRT 72KHz - 80in X value                     | 8.98  | BLK | 0.000 |
| F3R2         | ACRT 72KHz - 50in R value                     | 6.48  | BLK | 0.000 |
| F3X2         | ACRT 72KHz - 50in X value                     | 6.48  | BLK | 0.000 |
| F3R3         | ACRT 72KHz - 29in R value                     | 4.98  | BLK | 0.000 |
| F3X3         | ACRT 72KHz - 29in X value                     | 4.98  | BLK | 0.000 |
| F3R4         | ACRT 72KHz - 17in R value                     | 3.98  | BLK | 0.000 |
| F3X4         | ACRT 72KHz - 17in X value                     | 3.98  | BLK | 0.000 |
| F3R5         | ACRT 72KHz - 10in R value                     | 3.48  | BLK | 0.000 |
| F3X5         | ACRT 72KHz - 10in X value                     | 3.48  | BLK | 0.000 |
| F3R6         | ACRT 72KHz - 6in R value                      | 3.23  | BLK | 0.000 |
| F3X6         | ACRT 72KHz - 6in X value                      | 3.23  | BLK | 0.000 |
| RMUD         | Mud Resistivity                               | 12.52 | BLK | 0.000 |
| F1RT         | Transmitter Reference 12 KHz Real Signal      | 2.73  | BLK | 0.000 |
| F1XT         | Transmitter Reference 12 KHz Imaginary Signal | 2.73  | BLK | 0.000 |
| F2RT         | Transmitter Reference 36 KHz Real Signal      | 2.73  | BLK | 0.000 |
| F2XT         | Transmitter Reference 36 KHz Imaginary Signal | 2.73  | BLK | 0.000 |
| F3RT         | Transmitter Reference 72 KHz Real Signal      | 2.73  | BLK | 0.000 |
| F3XT         | Transmitter Reference 72 KHz Imaginary Signal | 2.73  | BLK | 0.000 |
| TFPU         | Upper Feedpipe Temperature Calculated         | 2.73  | BLK | 0.000 |
| TFPL         | Lower Feedpipe Temperature Calculated         | 2.73  | BLK | 0.000 |
| ITMP         | Instrument Temperature                        | 2.73  | BLK | 0.000 |
| TCVA         | Temperature Correction Values Loop Off        | 2.73  | NO  |       |
| TIDV         | Instrument Temperature Derivative             | 2.73  | NO  |       |
| TUDV         | Upper Temperature Derivative                  | 2.73  | NO  |       |
| TLDV         | Lower Temperature Derivative                  | 2.73  | NO  |       |
| TRBD         | Receiver Board Temperature                    | 2.73  | NO  |       |
| Microlog Pad |                                               |       |     |       |
| TPUL         | Tension Pull                                  | 22.58 | NO  |       |
| MINV         | Microlog Lateral                              | 22.58 | BLK | 0.750 |
| MNOR         | Microlog Normal                               | 22.58 | BLK | 0.750 |
| SDLT Pad     |                                               |       |     |       |

|                                                  |                            |                          |     |       |
|--------------------------------------------------|----------------------------|--------------------------|-----|-------|
| TPUL                                             | Tension Pull               | 22.39                    | NO  |       |
| NAB                                              | Near Above                 | 22.21                    | BLK | 0.920 |
| NHI                                              | Near Cesium High           | 22.21                    | BLK | 0.920 |
| NLO                                              | Near Cesium Low            | 22.21                    | BLK | 0.920 |
| NVA                                              | Near Valley                | 22.21                    | BLK | 0.920 |
| NBA                                              | Near Barite                | 22.21                    | BLK | 0.920 |
| NDE                                              | Near Density               | 22.21                    | BLK | 0.920 |
| NPK                                              | Near Peak                  | 22.21                    | BLK | 0.920 |
| NLI                                              | Near Lithology             | 22.21                    | BLK | 0.920 |
| NBAU                                             | Near Barite Unfiltered     | 22.21                    | BLK | 0.250 |
| NLIU                                             | Near Lithology Unfiltered  | 22.21                    | BLK | 0.250 |
| FAB                                              | Far Above                  | 22.56                    | BLK | 0.250 |
| FHI                                              | Far Cesium High            | 22.56                    | BLK | 0.250 |
| FLO                                              | Far Cesium Low             | 22.56                    | BLK | 0.250 |
| FVA                                              | Far Valley                 | 22.56                    | BLK | 0.250 |
| FBA                                              | Far Barite                 | 22.56                    | BLK | 0.250 |
| FDE                                              | Far Density                | 22.56                    | BLK | 0.250 |
| FPK                                              | Far Peak                   | 22.56                    | BLK | 0.250 |
| FLI                                              | Far Lithology              | 22.56                    | BLK | 0.250 |
| PTMP                                             | Pad Temperature            | 22.40                    | BLK | 0.920 |
| NHV                                              | Near Detector High Voltage | 21.79                    | NO  |       |
| FHV                                              | Far Detector High Voltage  | 21.79                    | NO  |       |
| ITMP                                             | Instrument Temperature     | 21.79                    | NO  |       |
| DDHV                                             | Detector High Voltage      | 21.79                    | NO  |       |
| Data: PYLE_4_3\0001 SP-GTET-DSN-SDL-ACRT-BN\IDLE |                            | Date: 26-Oct-11 05:13:32 |     |       |





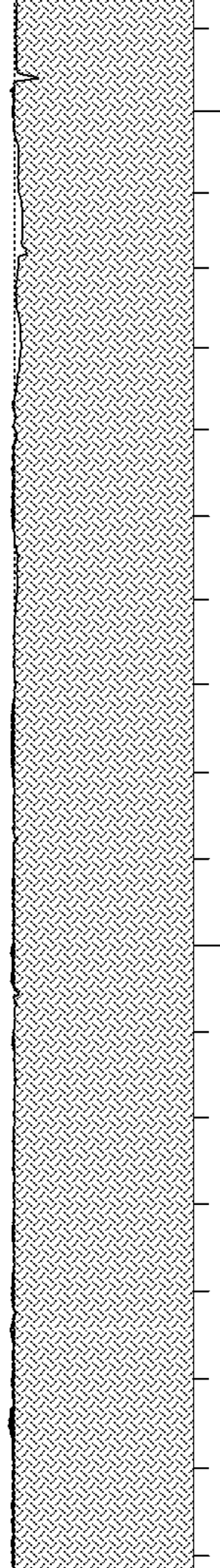
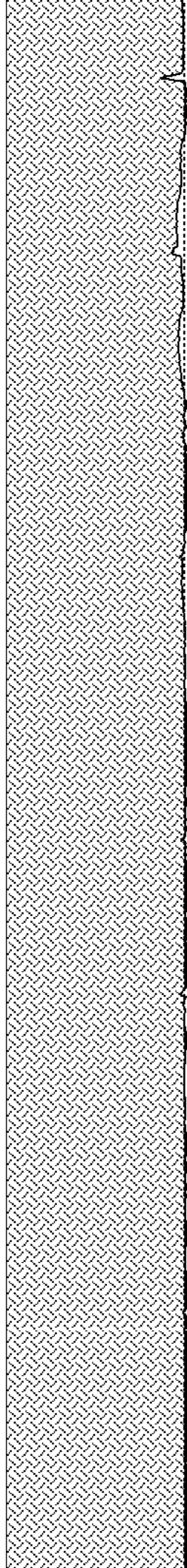
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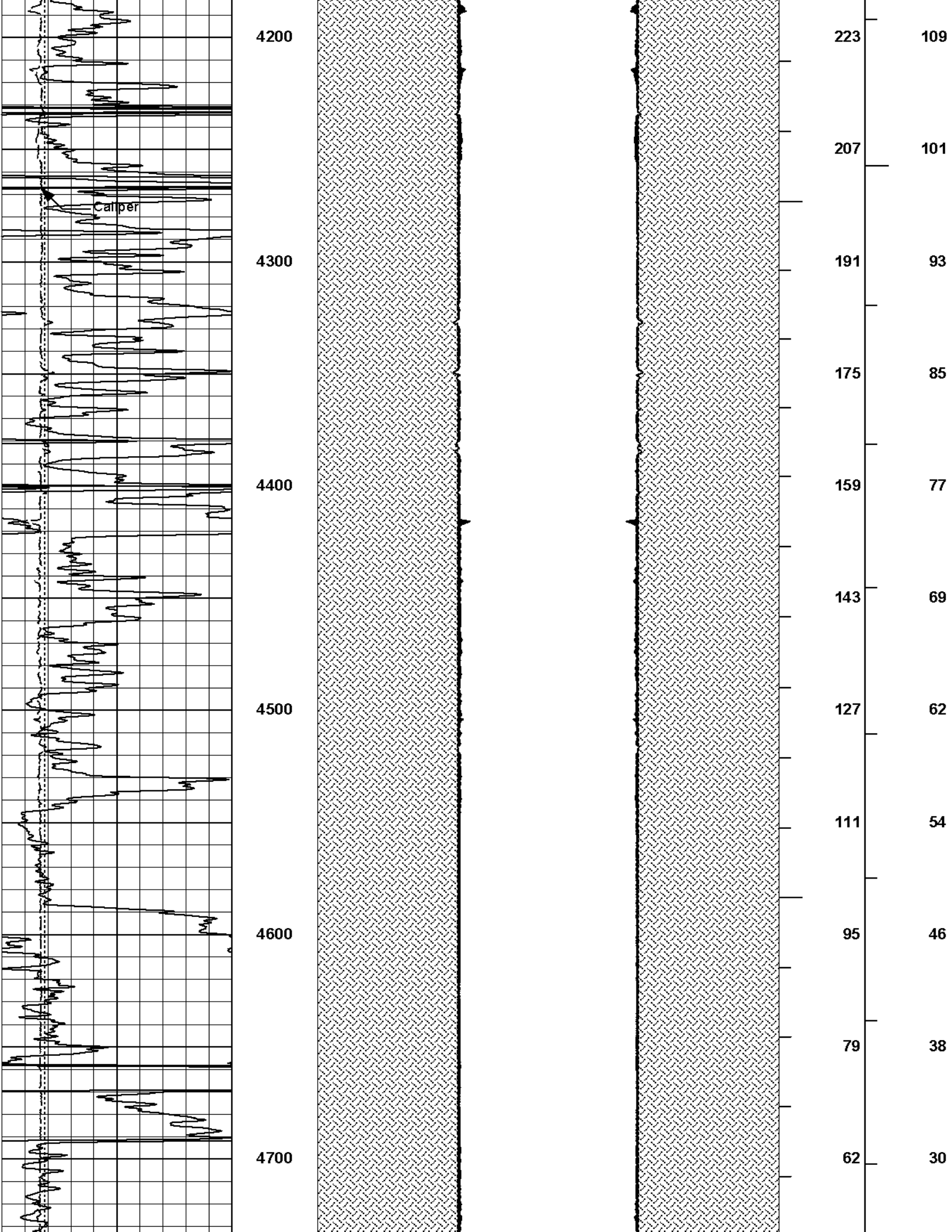
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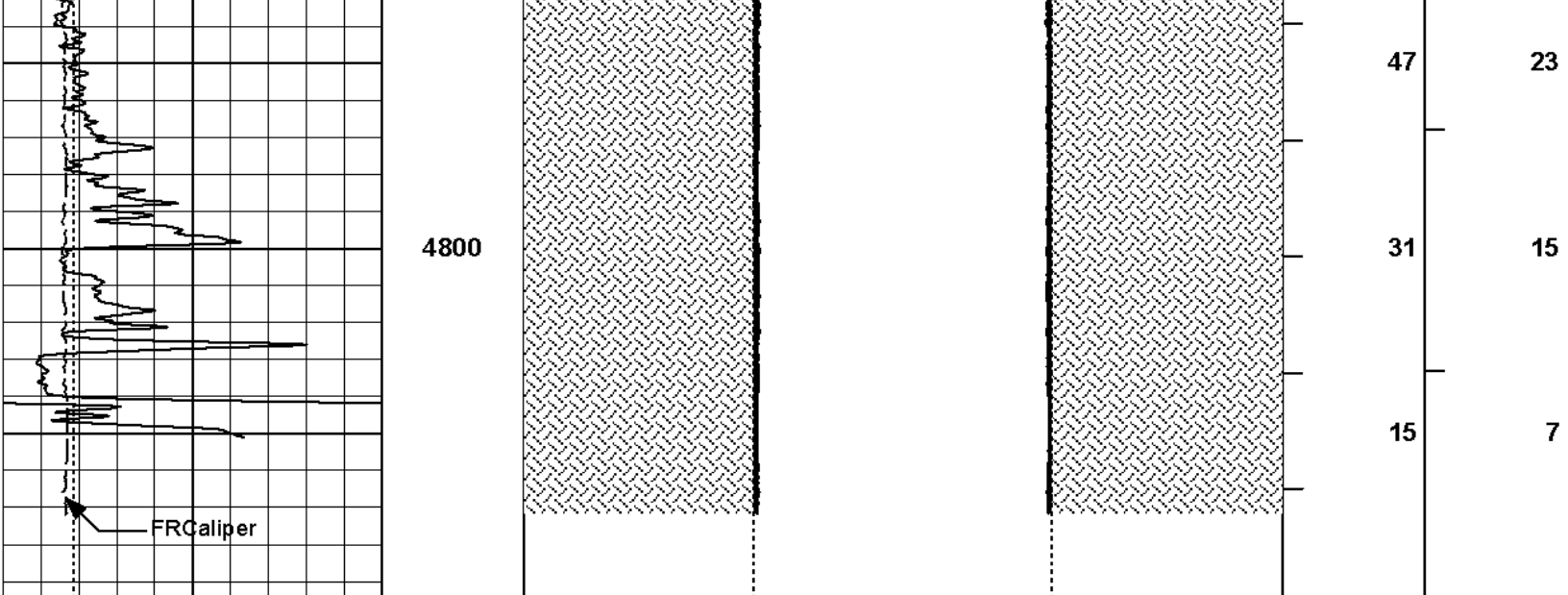
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124

117





|   |           |     |    |          |     |    |          |    |      |      |
|---|-----------|-----|----|----------|-----|----|----------|----|------|------|
| 6 | Caliper   | 16  | 20 | Caliper  | 0 0 | 20 | Caliper  | 20 | BHVT | AHVT |
| 6 | inches    |     | 20 | inches   |     | 20 | inches   |    |      |      |
| 6 | Bit Size  | 16  | 20 | Bit Size | 0 0 | 20 | Bit Size | 20 |      |      |
| 6 | inches    |     |    |          |     |    |          |    |      |      |
| 0 | Gamma API | 150 |    |          |     |    |          |    |      |      |
| 0 | api       |     |    |          |     |    |          |    |      |      |

**HALLIBURTON**

Plot Time: 26-Oct-11 08:37:34  
Plot Range: 3500 ft to 4894.58 ft  
Data: PYLE\_4\_3\Well Based\DAQ-0001-0031  
Plot File: \\LOCAL-1\PYLE\_4\_3\0001 SP-GTET-DSN-SDL-ACRT-BN\PORO\AHV\_2\_IQ\_LIB

**ANNULAR HOLE VOLUME PLOT**

|                    |                |                                                         |        |
|--------------------|----------------|---------------------------------------------------------|--------|
| COMPANY            | VAL ENERGY INC |                                                         |        |
| WELL               | PYLE 4-3       |                                                         |        |
| FIELD              | UNKNOWN        |                                                         |        |
| COUNTY             | BARBER         | STATE                                                   | KANSAS |
| <b>HALLIBURTON</b> |                | <b>SPECTRAL DENSITY<br/>DUAL SPACED NEUTRON<br/>LOG</b> |        |