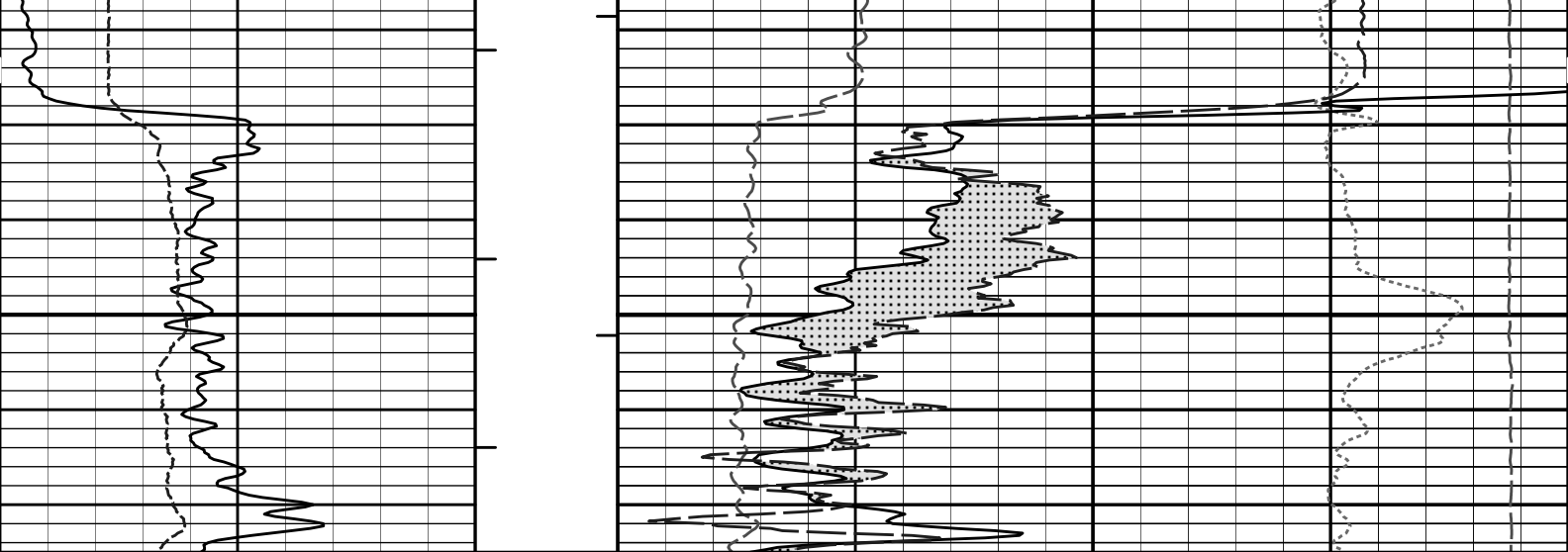


|                          |  |                         |  |
|--------------------------|--|-------------------------|--|
| COMPANY                  |  | HARTMAN OIL CO.         |  |
| WELL                     |  | DOWELL 1-33             |  |
| FIELD                    |  | WILDCAT                 |  |
| COUNTY                   |  | GOVE                    |  |
| STATE                    |  | KANSAS                  |  |
| Permanent Datum          |  | GL                      |  |
| Log measured from        |  | KB                      |  |
| Drilling measured from   |  | KB                      |  |
| Date                     |  | 13-Aug-12               |  |
| Run No.                  |  | ONE                     |  |
| Depth - Driller          |  | 4400.00 ft              |  |
| Depth - Logger           |  | 4390.0 ft               |  |
| Bottom - Logged Interval |  | 4368.0 ft               |  |
| Top - Logged Interval    |  | 1975.0 ft               |  |
| Casing - Driller         |  | 8.625 in @ 317.0 ft     |  |
| Casing - Logger          |  | 372.0 ft                |  |
| Bit Size                 |  | 7.875 in                |  |
| Type Fluid in Hole       |  | WATER BASED MUD         |  |
| Density                  |  | 9.2 ppg                 |  |
| Viscosity                |  | 55.00 s/qt              |  |
| PH                       |  | 10.00 pH                |  |
| Fluid Loss               |  | 8.0 cpm                 |  |
| Source of Sample         |  | FLOWLINE                |  |
| Rm @ Meas. Temperature   |  | 0.760 ohmm @ 91.00 degF |  |
| Rmf @ Meas. Temperature  |  | 0.82 ohmm @ 77.00 degF  |  |
| Rmc @ Meas. Temperature  |  | 0.950 ohmm @ 77.00 degF |  |
| Source Rmf               |  | MEASURED                |  |
| Rm @ BHT                 |  | 0.63 ohmm @ 126.0 degF  |  |
| Time Since Circulation   |  | 3.5 hr                  |  |
| Time on Bottom           |  | 13-Aug-12 20:27         |  |
| Max. Rec. Temperature    |  | 126.0 degF @ 4390.0 ft  |  |
| Equipment                |  | 10782954 LIBERAL        |  |
| Recorded By              |  | C. HAVERKAMP            |  |
| Witnessed By             |  | K. NOAH                 |  |

|                                         |  |            |  |                              |  |          |  |                                         |  |                 |  |
|-----------------------------------------|--|------------|--|------------------------------|--|----------|--|-----------------------------------------|--|-----------------|--|
| Service Ticket No.: 9734629             |  |            |  | API Serial No.: 15-063-22026 |  |          |  | PGM Version: WL INSITE R3.6.0 (Build 3) |  |                 |  |
| CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE |  |            |  | RESISTIVITY SCALE CHANGES    |  |          |  |                                         |  |                 |  |
| Date                                    |  | Sample No. |  | Type Log                     |  | Depth    |  | Scale Up Hole                           |  | Scale Down Hole |  |
| Depth-Driller                           |  |            |  |                              |  |          |  |                                         |  |                 |  |
| Type Fluid in Hole                      |  |            |  |                              |  |          |  |                                         |  |                 |  |
| Density                                 |  | Viscosity  |  |                              |  |          |  |                                         |  |                 |  |
| Ph                                      |  | Fluid Loss |  |                              |  |          |  |                                         |  |                 |  |
| Source of Sample                        |  |            |  | RESISTIVITY EQUIPMENT DATA   |  |          |  |                                         |  |                 |  |
| Rm @ Meas. Temp                         |  | @          |  | @                            |  | Run No.  |  | Tool Type & No.                         |  | Pad Type        |  |
| Rmf @ Meas. Temp.                       |  | @          |  | @                            |  |          |  |                                         |  |                 |  |
| Rmc @ Meas. Temp.                       |  | @          |  | @                            |  |          |  |                                         |  |                 |  |
| Source Rmf                              |  | Rmc        |  |                              |  |          |  |                                         |  |                 |  |
| Rm @ BHT                                |  | @          |  | @                            |  |          |  |                                         |  |                 |  |
| Rmf @ BHT                               |  | @          |  | @                            |  |          |  |                                         |  |                 |  |
| Rmc @ BHT                               |  | @          |  | @                            |  |          |  |                                         |  |                 |  |
| EQUIPMENT DATA                          |  |            |  |                              |  |          |  |                                         |  |                 |  |
| GAMMA                                   |  | ACOUSTIC   |  | DENSITY                      |  | NEUTRON  |  |                                         |  |                 |  |
| Run No.                                 |  | ONE        |  | Run No.                      |  | ONE      |  | Run No.                                 |  | ONE             |  |
| Serial No.                              |  | 10811258   |  | Serial No.                   |  | 90       |  | Serial No.                              |  | 10735145        |  |
| Model No.                               |  | GTET       |  | Model No.                    |  | SDLT     |  | Model No.                               |  | DSNT            |  |
| Diameter                                |  | 3.625      |  | No. of Cent.                 |  | 4.5      |  | Diameter                                |  | 3.625           |  |
| Detector Model No.                      |  | T-102      |  | Spacing                      |  | GAM-GAM  |  | Log Type                                |  | NEU-NEU         |  |
| Type                                    |  | SCINT      |  |                              |  | CS137    |  | Source Type                             |  | AM241BE         |  |
| Length                                  |  | 8"         |  | LSA [Y/N]                    |  | 5073GW   |  | Serial No.                              |  | DSN-436         |  |
| Distance to Source                      |  | 10'        |  | FWDA [Y/N ]                  |  | Strength |  | 1.5 CI                                  |  | Strength        |  |

| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 4390' | 1975' | REC    | 0     | 150      |       |         |        | 30      | -10 | 2.71   | 30    | -10 | LIME   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
| DIRECTIONAL INFORMATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
| Maximum Deviation @                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |       |        |       |          |       |         | KOP @  |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
| Remarks: SP-GTET-DSNT-SDLT-ACRT RAN IN COMBINATION.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
| ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
| CHLORIDES REPORTED AT 2300 PPM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
| LCM REPORTED AT 3 LB/BBL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
| POST TOOL SURVEYS NOT PERFORMED PER CUSTOMER REQUEST.                                                                                                                                                                                                                                                                                                                                                                                                                                                          |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
| YOUR CREW: A. VAQUERA, B. TERRELL                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |       |        |       |          |       |         |        |         |     |        |       |     |        |
| THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES. LIBERAL, KS 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |       |        |       |          |       |         |        |         |     |        |       |     |        |



|   |           |     |              |    |    |    |       |                  |      |
|---|-----------|-----|--------------|----|----|----|-------|------------------|------|
| 6 | Caliper   | 16  | 1 : 240      | 0  | Pe | 10 | -0.25 | DensityCorr      | 0.25 |
|   | inches    |     | ft           |    |    |    |       | gram per cc      |      |
| 0 | Gamma API | 150 | AHVT         |    |    |    | 15K   | Tension          | 0    |
|   | api       |     |              |    |    |    |       | pounds           |      |
|   | SHALE     |     | BHVT         | 30 |    |    |       | DensityPorosity  | -10  |
|   |           |     |              |    |    |    |       | %                |      |
|   |           |     | Tension Pull | 30 |    |    |       | Neutron Porosity | -10  |
|   |           |     | 10           | 0  |    |    |       | %                |      |
|   |           |     |              |    |    |    |       |                  |      |
|   |           |     | Tension Pull |    |    |    |       | CROSSOVER        |      |

HALLIBURTON

Plot Time: 13-Aug-12 22:42:58  
Plot Range: 1975 ft to 2075 ft  
Data: DOWELL\_1\_33\Well Based\IR1\_DETAIL\  
Plot File: \\PORO\Porosity\_Q\_5\_MAIN\_LIB

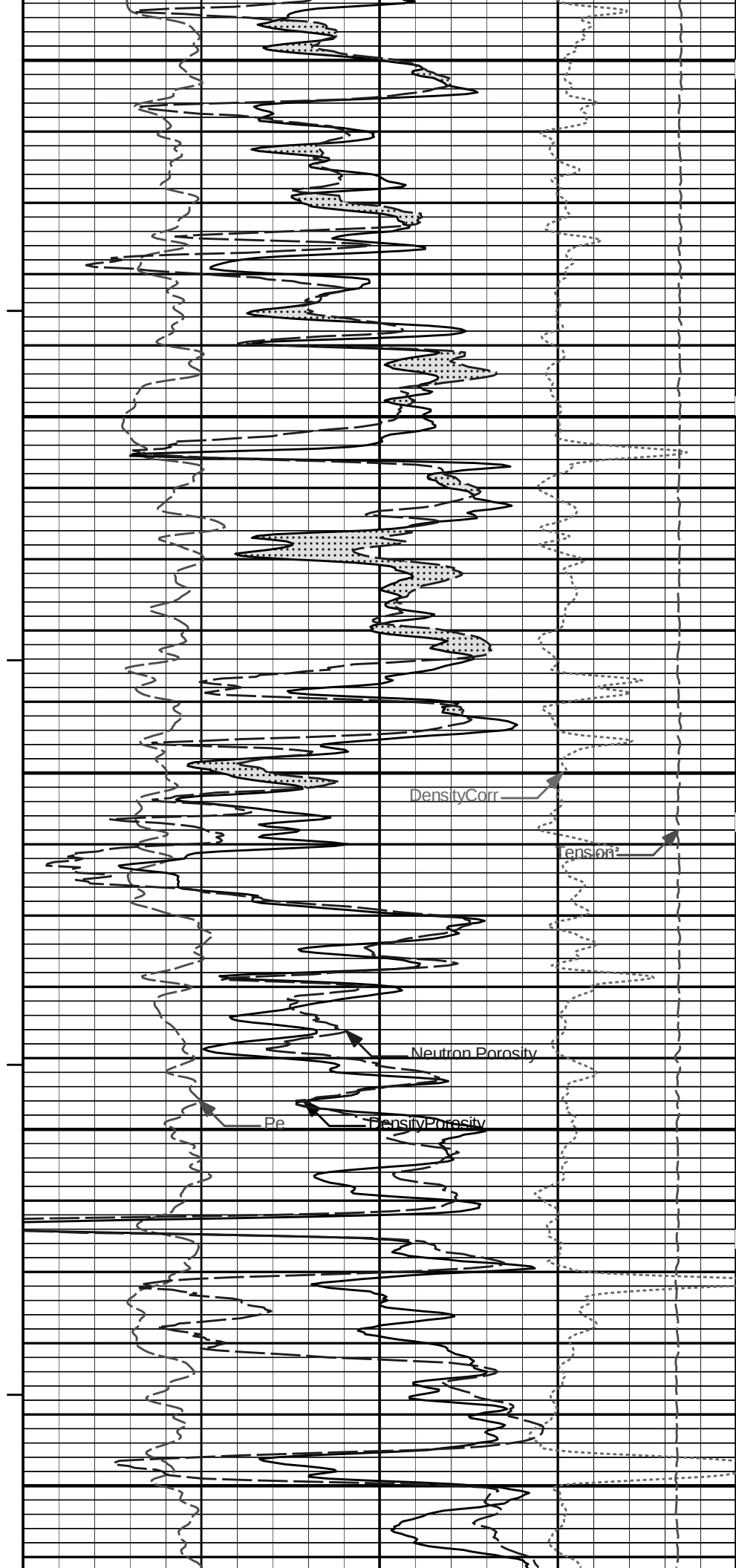
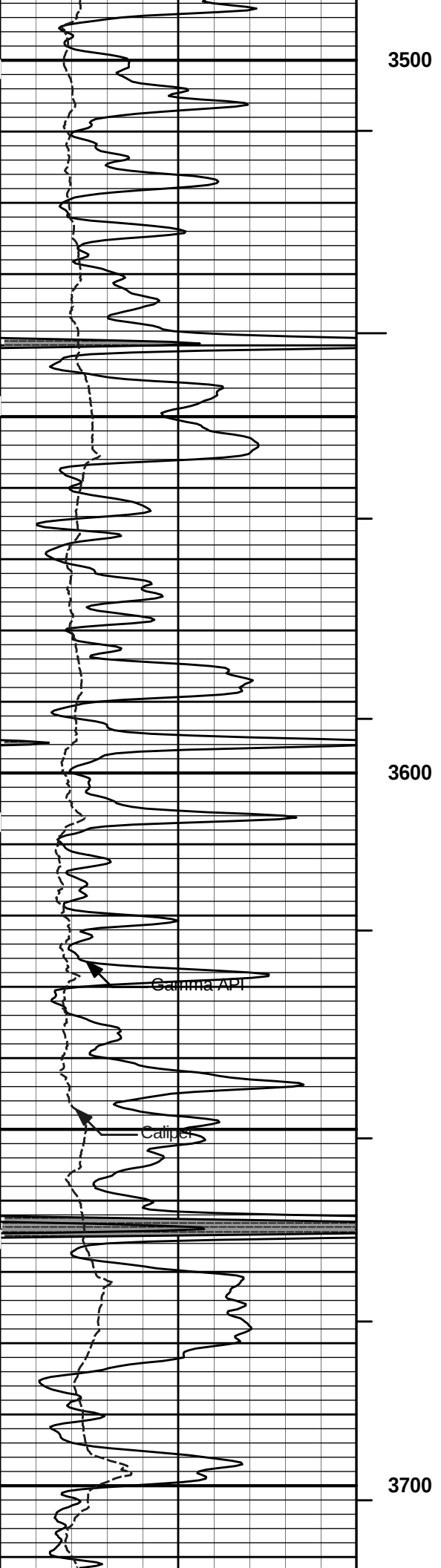
5 INCH MAIN LOG

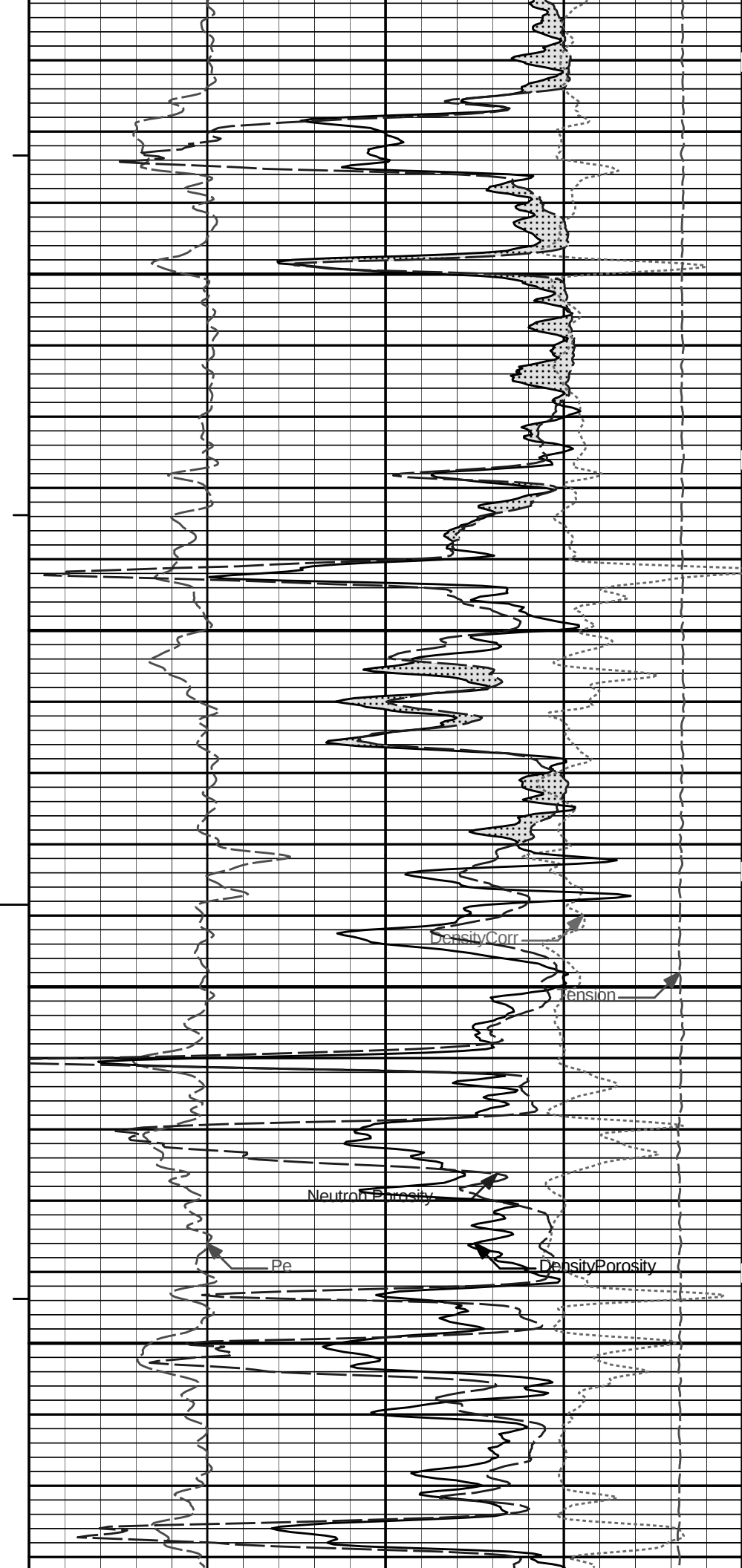
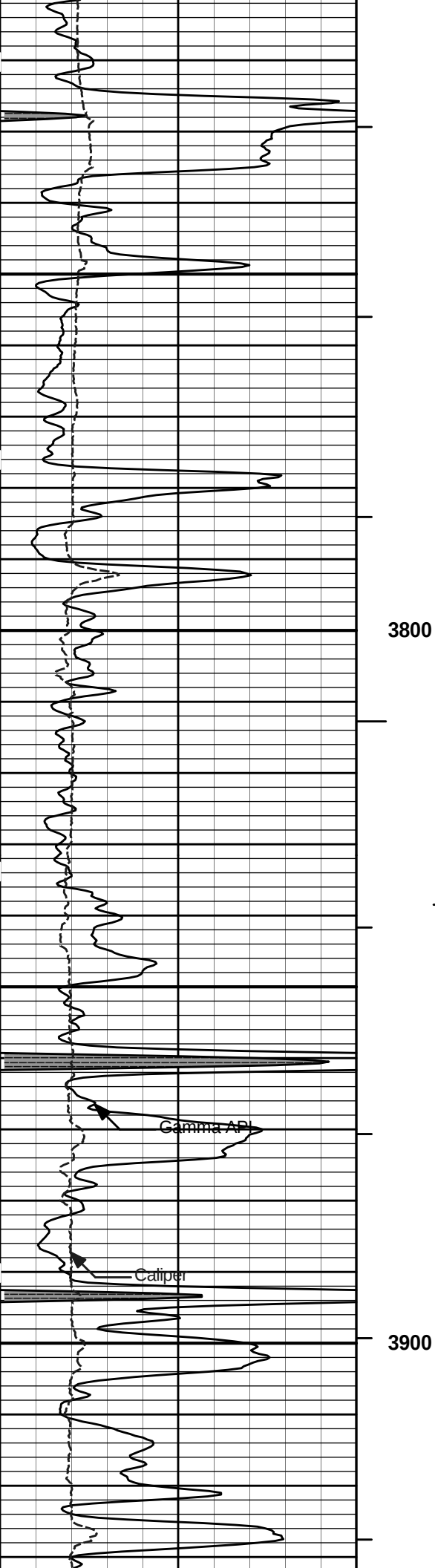
HALLIBURTON

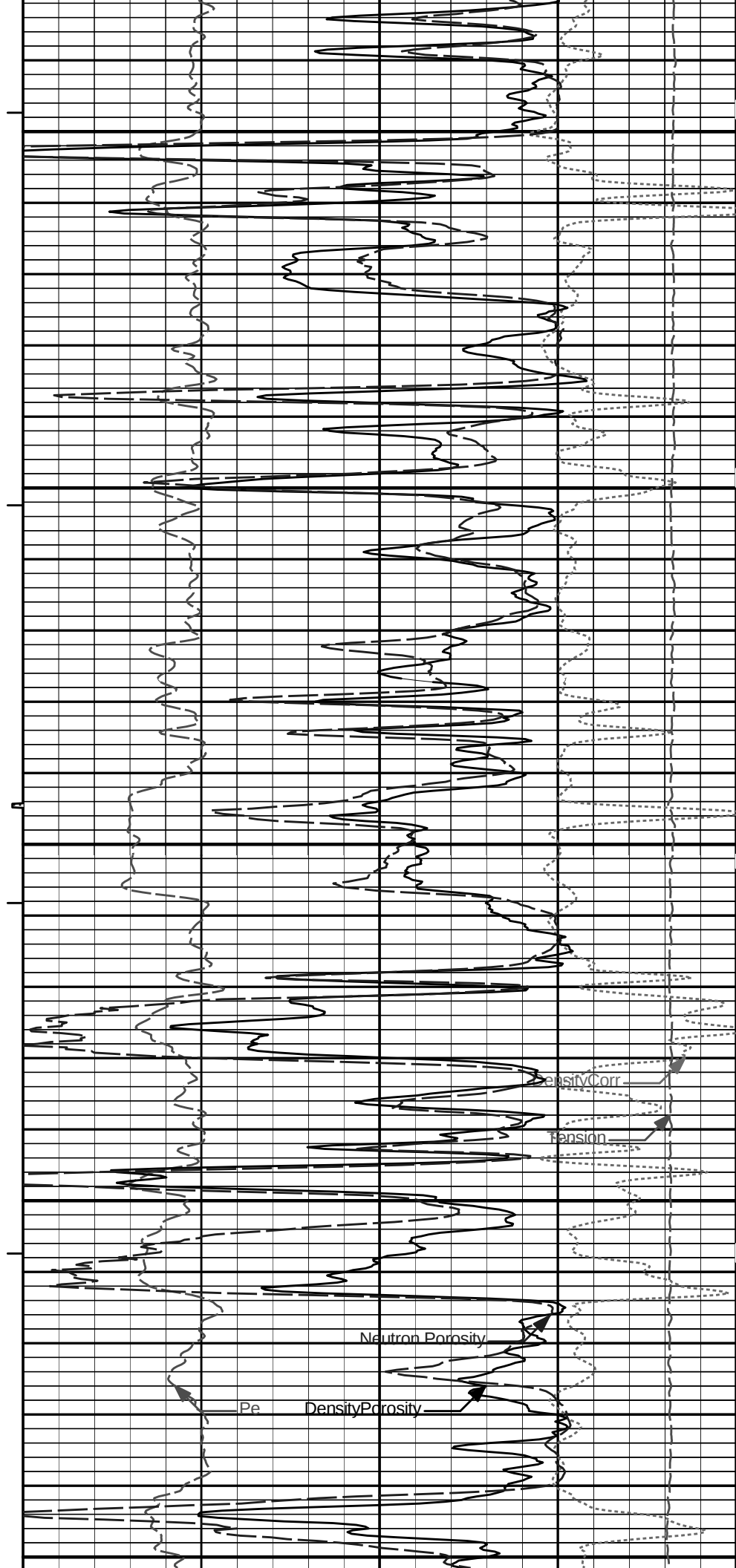
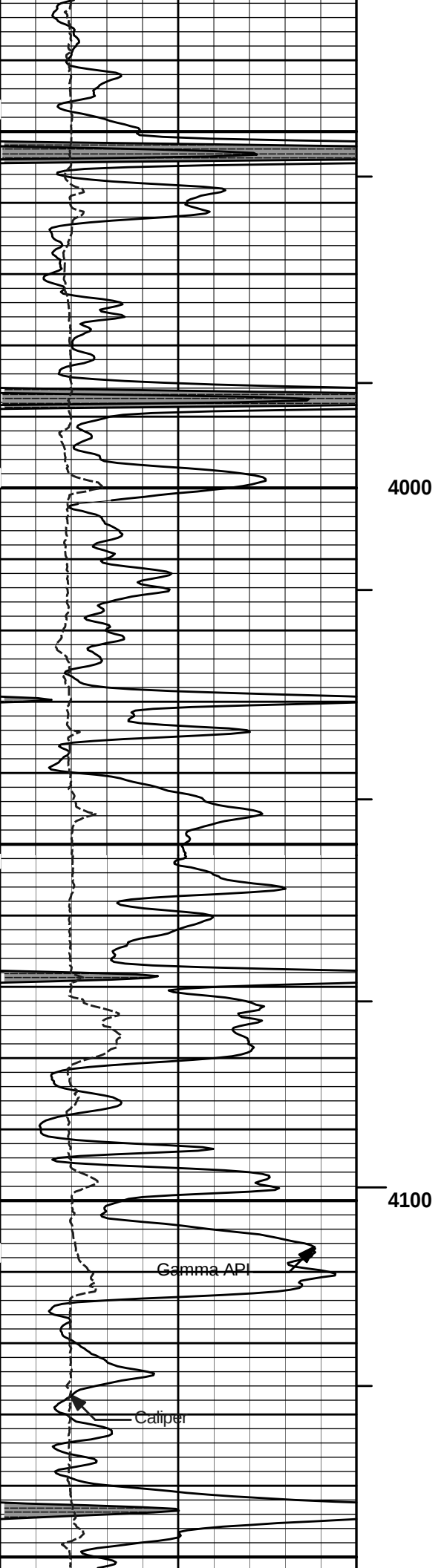
Plot Time: 13-Aug-12 22:42:58  
Plot Range: 3490 ft to 4390 ft  
Data: DOWELL\_1\_33\Well Based\IR1\_DETAIL\  
Plot File: \\PORO\Porosity\_Q\_5\_MAIN\_LIB

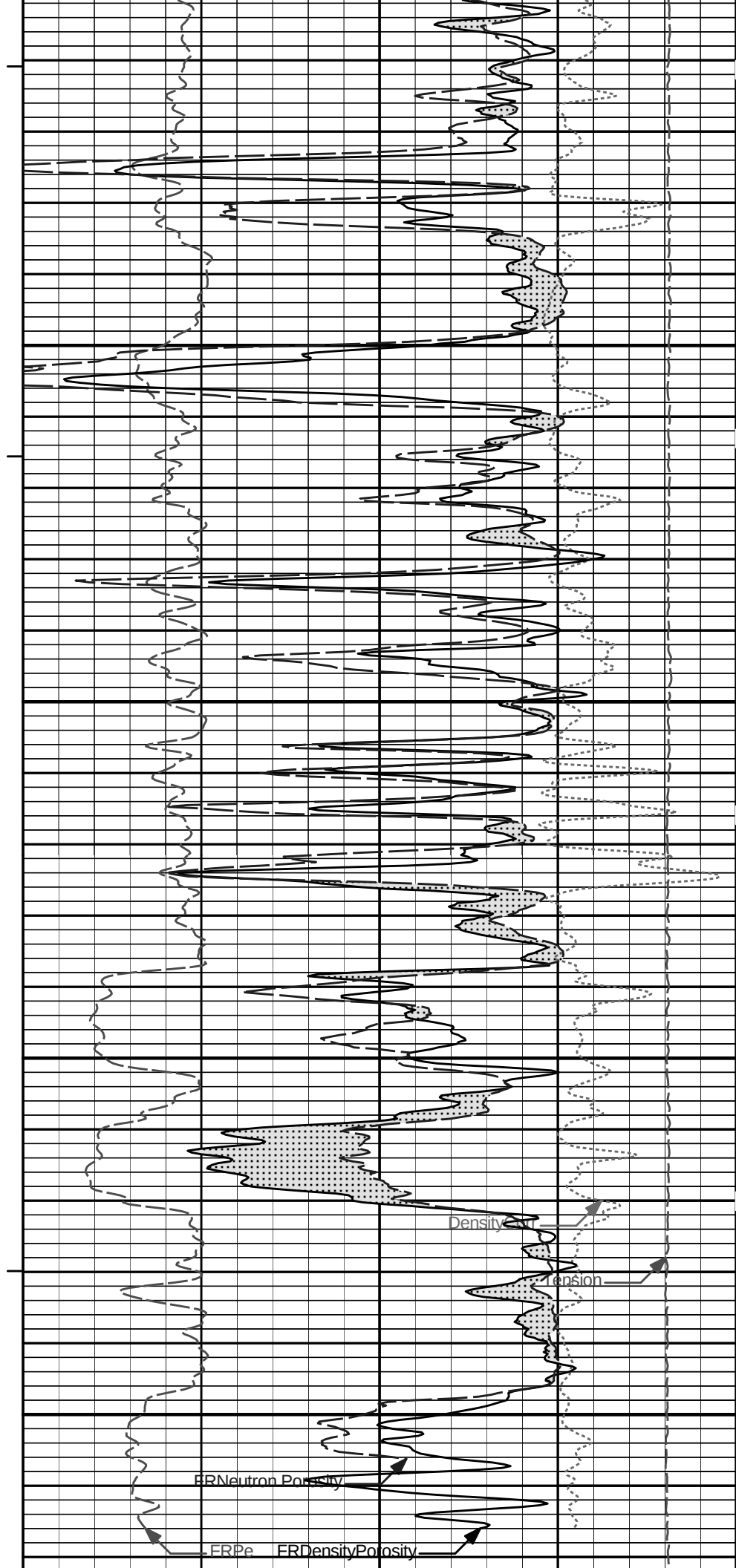
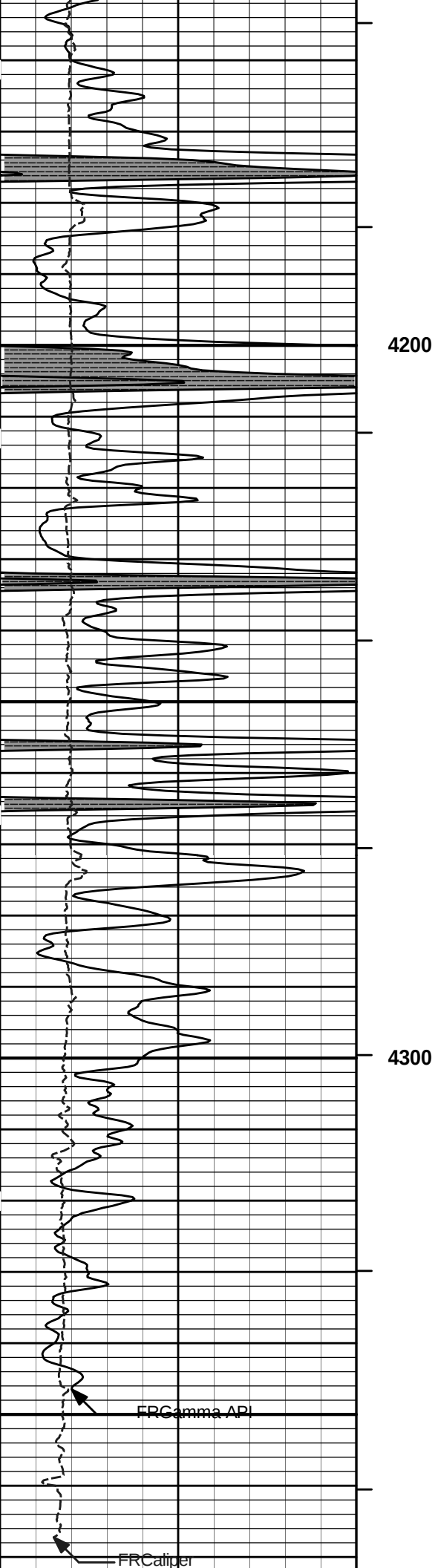
5 INCH MAIN LOG

|   |           |     |              |    |    |    |       |                  |      |
|---|-----------|-----|--------------|----|----|----|-------|------------------|------|
|   |           |     | Tension Pull |    |    |    |       | CROSSOVER        |      |
|   |           |     | Tension Pull | 30 |    |    |       | Neutron Porosity | -10  |
|   |           |     | 10           | 0  |    |    |       | %                |      |
|   |           |     |              |    |    |    |       |                  |      |
|   |           |     | BHVT         | 30 |    |    |       | DensityPorosity  | -10  |
|   |           |     |              |    |    |    |       | %                |      |
|   |           |     |              |    |    |    |       |                  |      |
| 0 | Gamma API | 150 | AHVT         |    |    |    | 15K   | Tension          | 0    |
|   | api       |     |              |    |    |    |       | pounds           |      |
| 6 | Caliper   | 16  | 1 : 240      | 0  | Pe | 10 | -0.25 | DensityCorr      | 0.25 |
|   | inches    |     | ft           |    |    |    |       | gram per cc      |      |

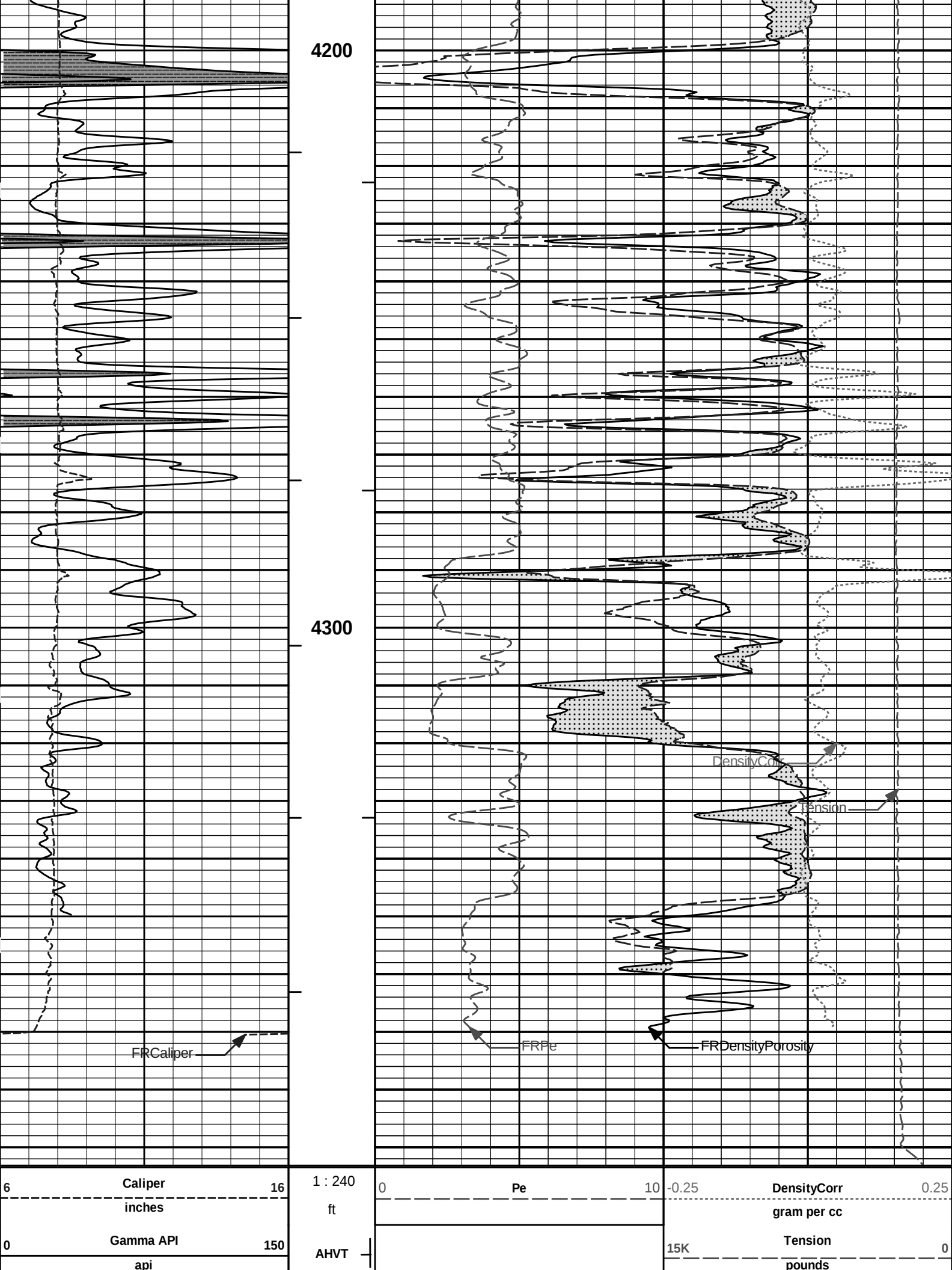












|                  |      |           |                  |     |
|------------------|------|-----------|------------------|-----|
| <div>SHALE</div> | BHVT | 30        | DensityPorosity  | -10 |
|                  |      |           | %                |     |
|                  |      | 30        | Neutron Porosity | -10 |
|                  |      |           | %                |     |
|                  |      | CROSSOVER |                  |     |

HALLIBURTON

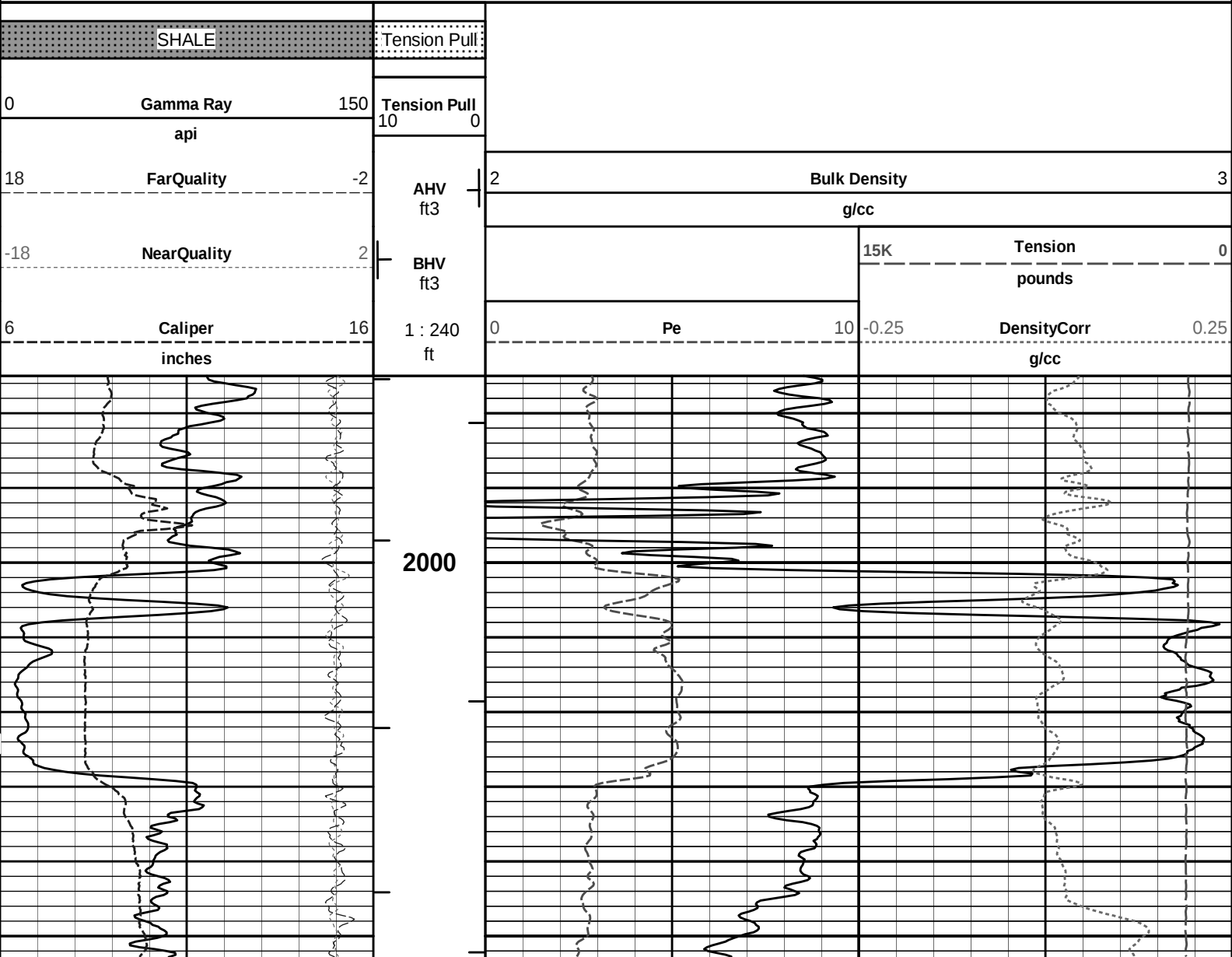
Plot Time: 13-Aug-12 22:43:17  
Plot Range: 4150 ft to 4393.17 ft  
Data: DOWELL\_1\_33\Well Based\IR1\_REPEAT\  
Plot File: \\PORO\Poro\_IQ\_5\_REP\_LIB

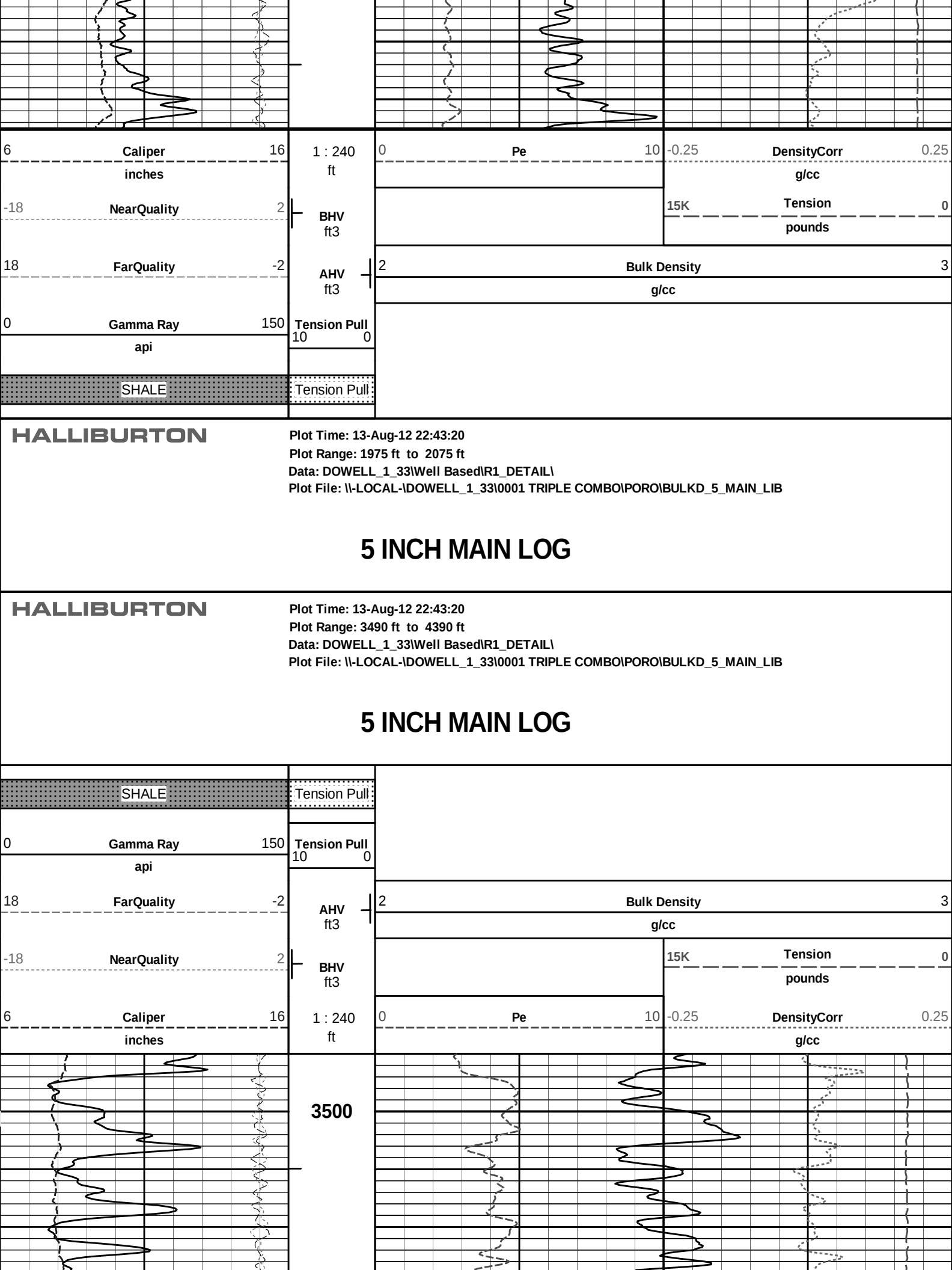
REPEAT SECTION

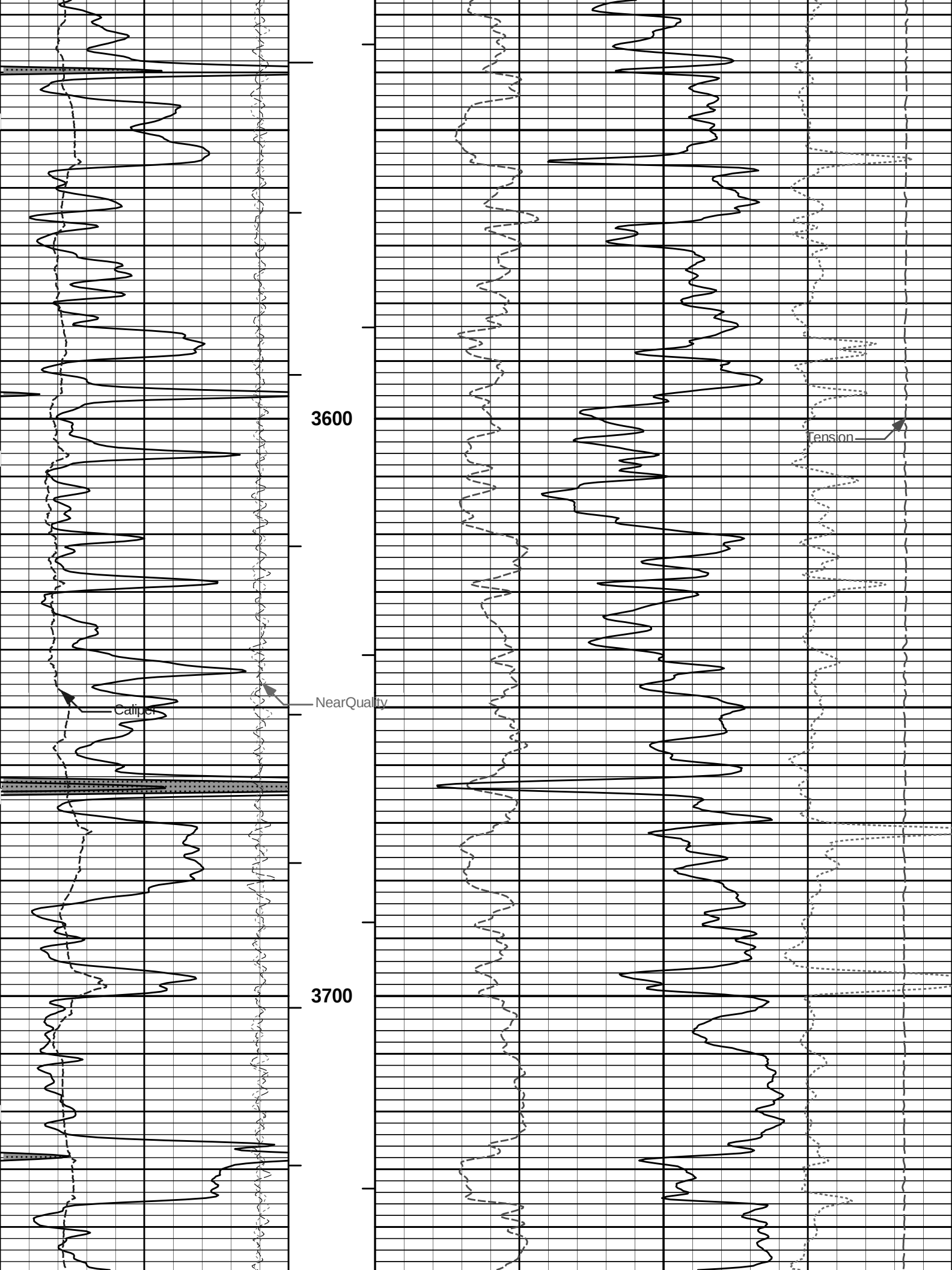
HALLIBURTON

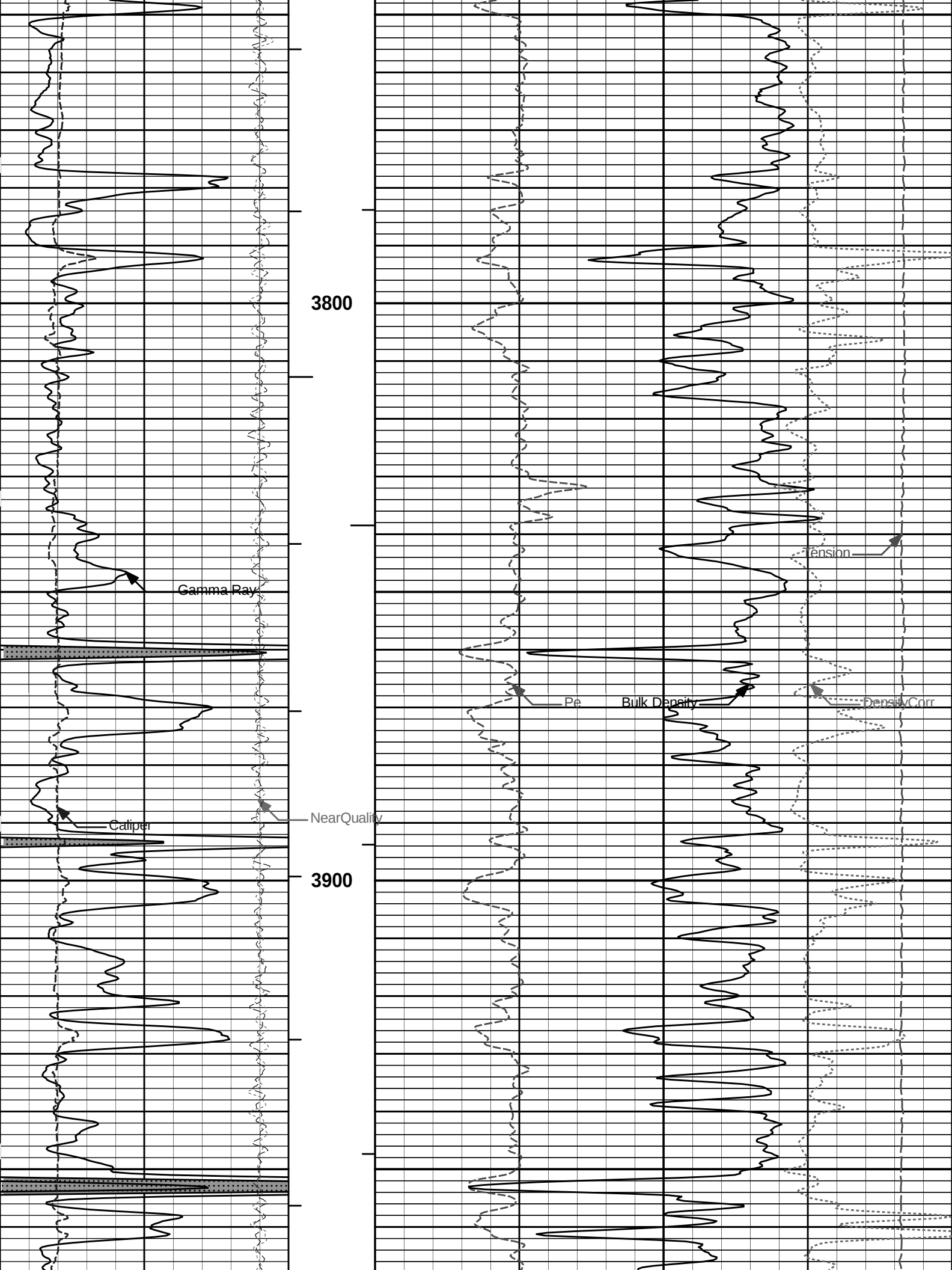
Plot Time: 13-Aug-12 22:43:18  
Plot Range: 1975 ft to 2075 ft  
Data: DOWELL\_1\_33\Well Based\IR1\_DETAIL\  
Plot File: \\LOCAL-IDOWELL\_1\_33\0001 TRIPLE COMBO\PORO\BULKD\_5\_MAIN\_LIB

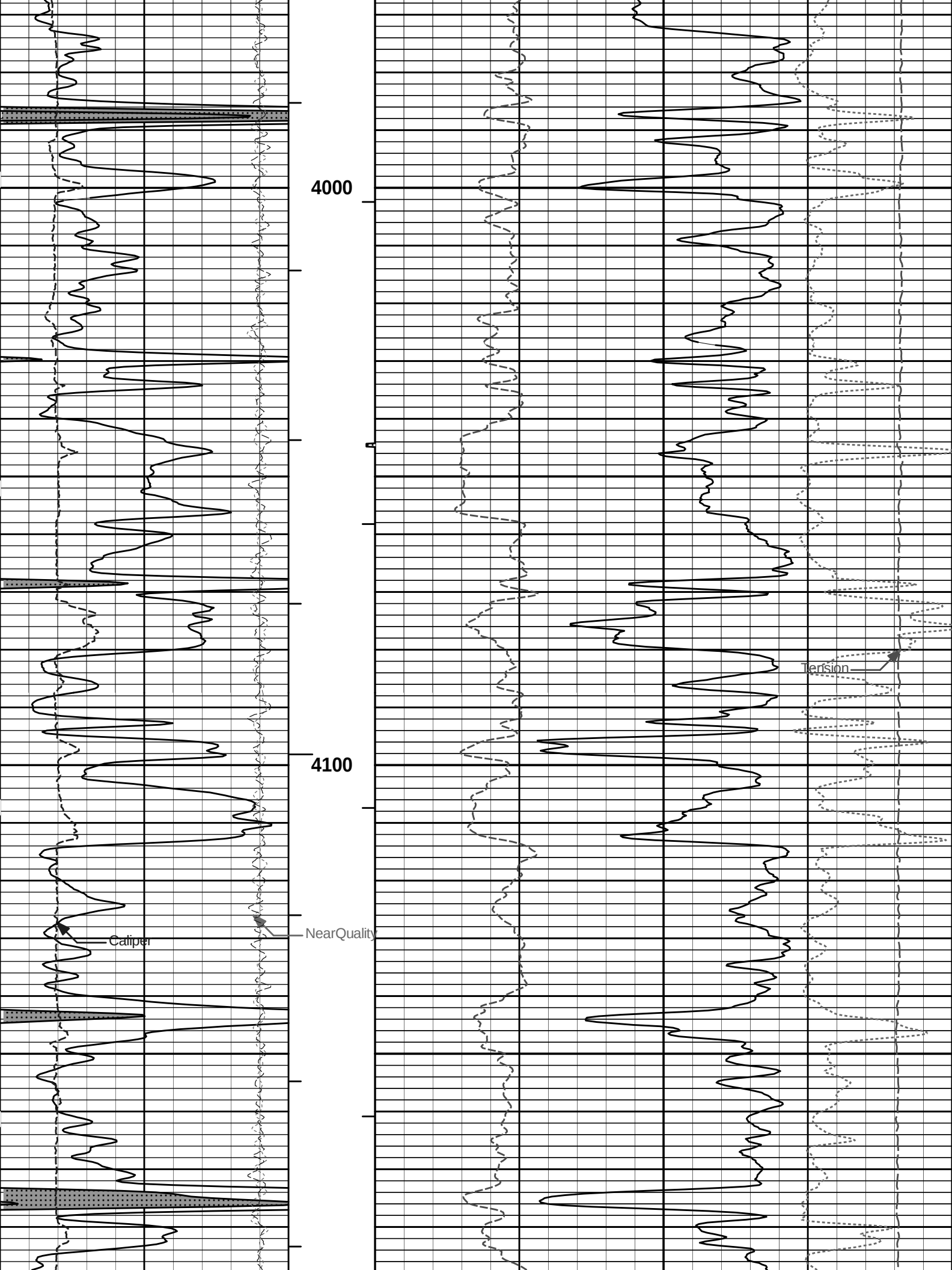
5 INCH MAIN LOG

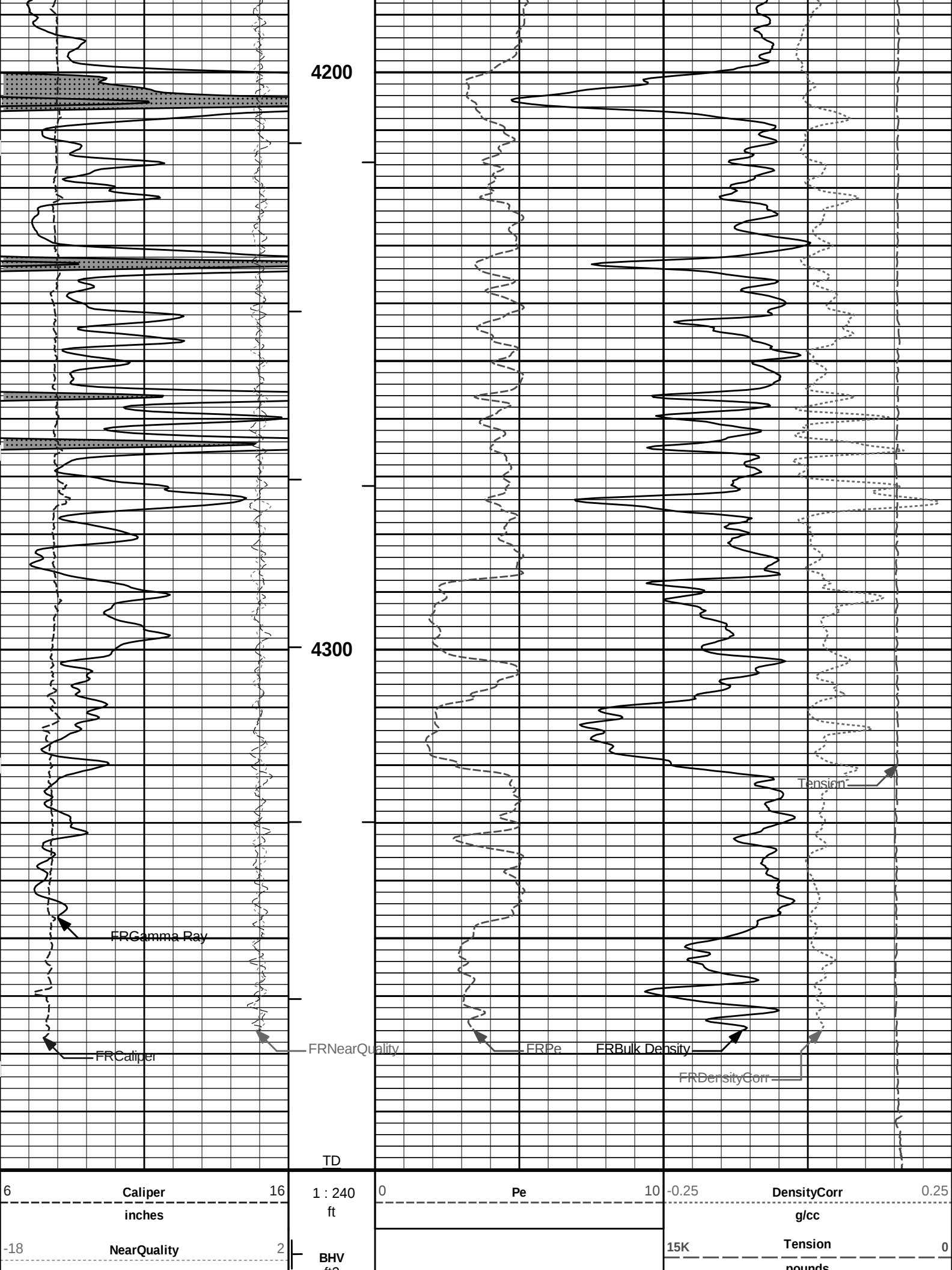












|    |            |     |              |    |              |   |        |
|----|------------|-----|--------------|----|--------------|---|--------|
| 18 | FarQuality | -2  | ft3          | 2  | Bulk Density | 3 | pounds |
| 0  | Gamma Ray  | 150 | api          | 10 | g/cc         | 0 |        |
|    | SHALE      |     | Tension Pull |    |              |   |        |

HALLIBURTON

Plot Time: 13-Aug-12 22:43:22  
Plot Range: 3490 ft to 4390 ft  
Data: DOWELL\_1\_33\Well Based\IR1\_DETAIL\  
Plot File: \\-LOCAL-IDOWELL\_1\_33\0001 TRIPLE COMBO\PORO\BULKD\_5\_MAIN\_LIB

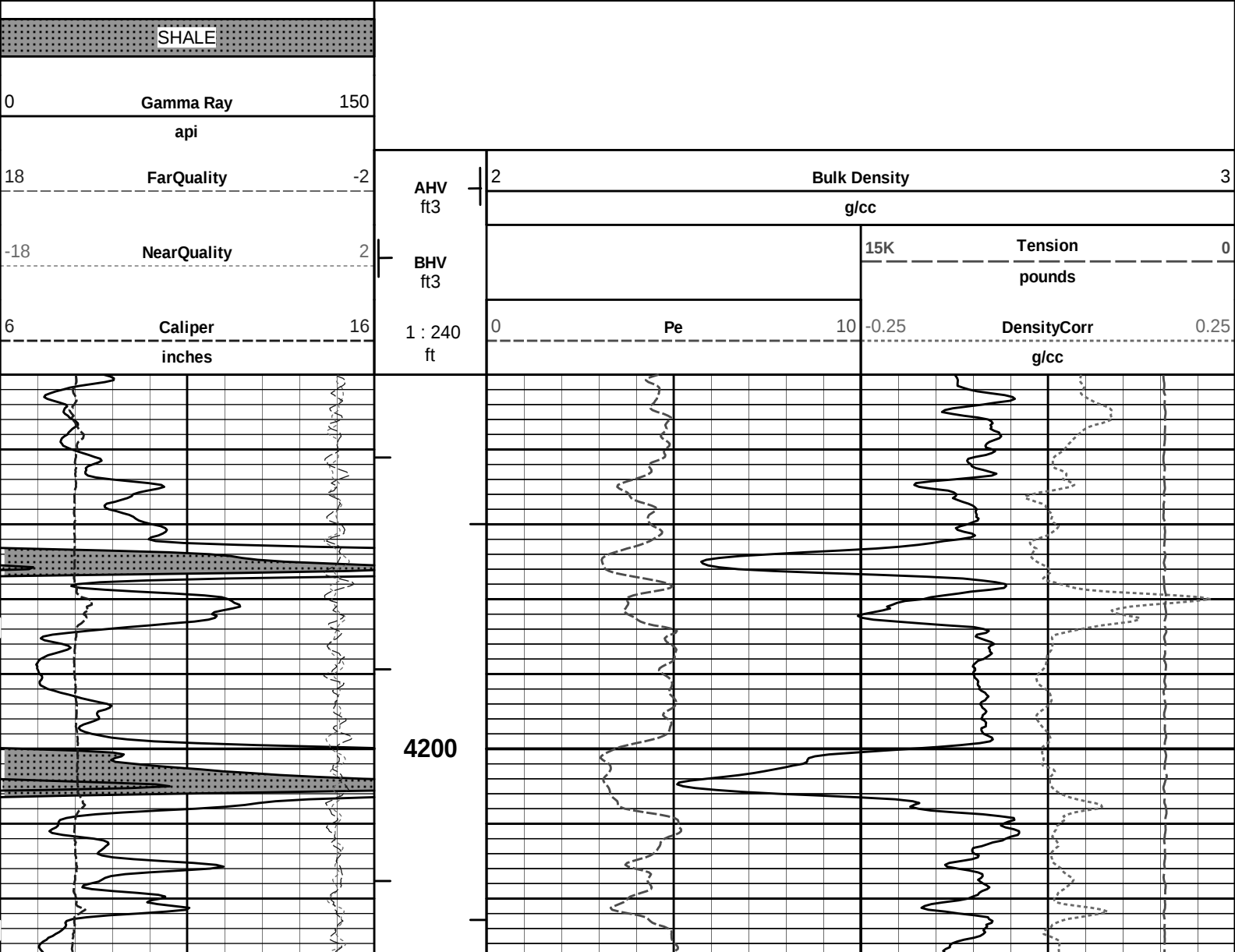
5 INCH MAIN LOG

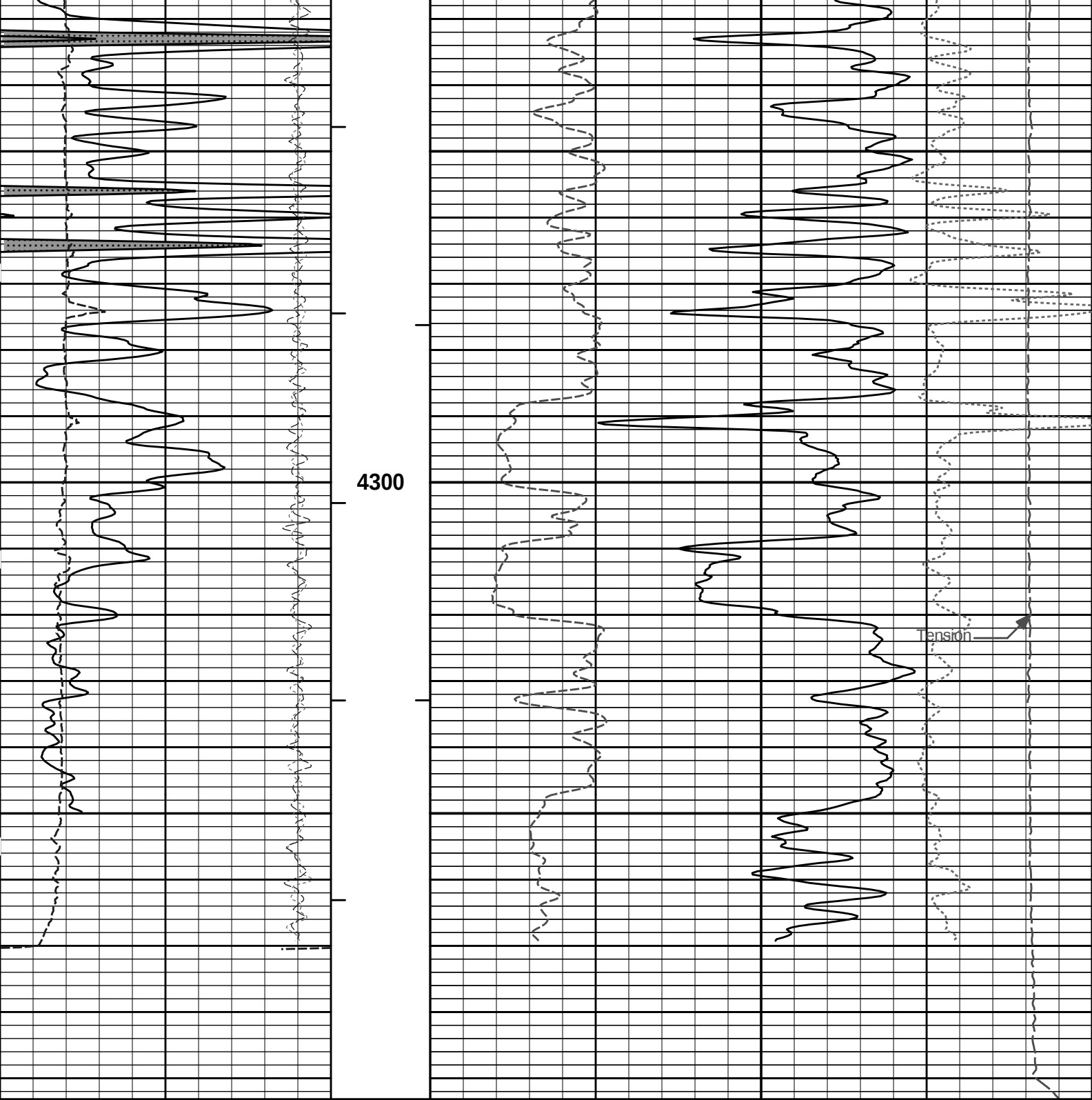
|    |            |     |              |    |              |   |        |
|----|------------|-----|--------------|----|--------------|---|--------|
| 18 | FarQuality | -2  | ft3          | 2  | Bulk Density | 3 | pounds |
| 0  | Gamma Ray  | 150 | api          | 10 | g/cc         | 0 |        |
|    | SHALE      |     | Tension Pull |    |              |   |        |

HALLIBURTON

Plot Time: 13-Aug-12 22:43:22  
Plot Range: 4150 ft to 4393.17 ft  
Data: DOWELL\_1\_33\Well Based\IR1\_REPEAT\  
Plot File: \\-LOCAL-IDOWELL\_1\_33\0001 TRIPLE COMBO\PORO\BULKD\_5\_REP\_LIB

REPEAT SECTION





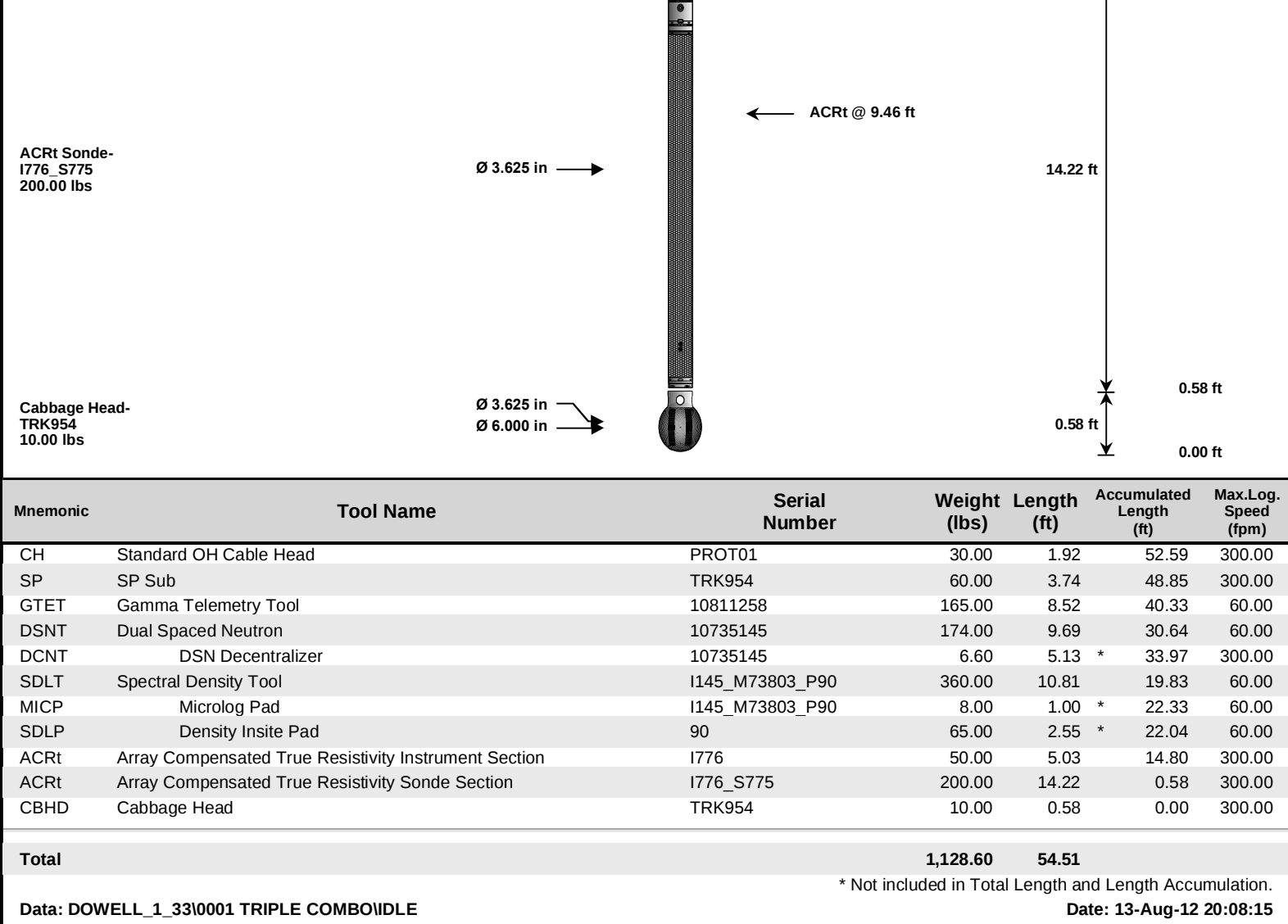
|     |             |     |               |            |              |    |       |             |      |   |
|-----|-------------|-----|---------------|------------|--------------|----|-------|-------------|------|---|
| 6   | Caliper     | 16  | 1 : 240<br>ft | 0          | Pe           | 10 | -0.25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

# REPEAT SECTION

HALLIBURTON

## TOOL STRING DIAGRAM REPORT

| Description                            | Overbody Description                                                     | O.D.                                           | Diagram | Sensors @ Delays                                                | Length   | Accumulated Length |
|----------------------------------------|--------------------------------------------------------------------------|------------------------------------------------|---------|-----------------------------------------------------------------|----------|--------------------|
| Cable Head-<br>PROT01<br>30.00 lbs     |                                                                          | Ø 3.625 in →                                   |         |                                                                 | 1.92 ft  | 54.51 ft           |
|                                        |                                                                          |                                                |         |                                                                 |          | 52.59 ft           |
| SP Sub-TRK954<br>60.00 lbs             |                                                                          | Ø 3.625 in →                                   |         | ← SP @ 50.81 ft                                                 | 3.74 ft  | 48.85 ft           |
|                                        |                                                                          |                                                |         |                                                                 |          |                    |
| GTET-10811258<br>165.00 lbs            |                                                                          | Ø 3.625 in →                                   |         | ← GammaRay @ 42.79 ft                                           | 8.52 ft  | 40.33 ft           |
|                                        |                                                                          |                                                |         |                                                                 |          |                    |
| DSNT-10735145<br>174.00 lbs            | DSN Decentralizer-<br>10735145<br>6.60 lbs                               | Ø 5.000 in* →<br>Ø 3.625 in →                  |         | ← DSN Far @ 33.39 ft<br>← DSN Near @ 32.64 ft                   | 9.69 ft  | 30.64 ft           |
|                                        |                                                                          |                                                |         |                                                                 |          |                    |
| SDLT-<br>1145_M73803_P90<br>360.00 lbs | SDLT Pad-90<br>65.00 lbs<br>Microlog Pad-<br>1145_M73803_P90<br>8.00 lbs | Ø 4.500 in →<br>Ø 4.750 in* →<br>Ø 4.750 in* → |         | Microlog @ 22.83 ft<br>SDL Caliper @ 22.65 ft<br>SDL @ 22.64 ft | 10.81 ft | 19.83 ft           |
|                                        |                                                                          |                                                |         |                                                                 |          |                    |
| ACRT Instrument-<br>1776<br>50.00 lbs  |                                                                          | Ø 3.625 in →                                   |         | ← Mud Resistivity @ 13.44 ft                                    | 5.03 ft  | 14.80 ft           |
|                                        |                                                                          |                                                |         |                                                                 |          |                    |



|                                               |                            |                             |                    |
|-----------------------------------------------|----------------------------|-----------------------------|--------------------|
| HALLIBURTON                                   |                            |                             |                    |
| CALIBRATION REPORT                            |                            |                             |                    |
| NATURAL GAMMA RAY TOOL SHOP CALIBRATION       |                            |                             |                    |
| Tool Name:                                    | GTET - 10811258            | Reference Calibration Date: | 29-Jun-12 10:47:38 |
| Engineer:                                     | C. HAVERKAMP               | Calibration Date:           | 11-Aug-12 06:02:48 |
| Software Version:                             | WL INSITE R3.6.0 (Build 3) | Calibration Version:        | 1                  |
| Calibrator Source S/N: TB-185                 |                            |                             |                    |
| Calibrator API Reference:228.00 api           |                            |                             |                    |
| Equivalent Calibrator API Reference:232.0 api |                            |                             |                    |
|                                               | Measurement                | Measured                    | Calibrated         |
|                                               | Background                 | 33.3                        | 33.0               |
|                                               | Background + Calibrator    | 267.7                       | 265.0              |
|                                               | Calibrator                 | 234.4                       | 232.0              |
| NATURAL GAMMA RAY TOOL FIELD CALIBRATION      |                            |                             |                    |
| Tool Name:                                    | GTET - 10811258            | Reference Calibration Date: | 11-Aug-12 06:02:48 |
| Engineer:                                     | C. HAVERKAMP               | Calibration Date:           | 13-Aug-12 10:02:27 |
| Software Version:                             | WL INSITE R3.6.0 (Build 3) | Calibration Version:        | 1                  |
| Calibrator Source S/N: TB-185                 |                            |                             |                    |
| Calibrator API Reference:228.00 api           |                            |                             |                    |

| Field Verification      | Shop  | Field | Units |
|-------------------------|-------|-------|-------|
| Background              | 33.0  | 45.4  | api   |
| Background + Calibrator | 265.0 | 275.6 | api   |
| Calibrator              | 232.0 | 230.2 | api   |

| Shop  | Field | Difference | Tolerance |
|-------|-------|------------|-----------|
| 232.0 | 230.2 | 1.8        | +/- 9.00  |

**DUAL SPACED NEUTRON SHOP CALIBRATION**

|                   |                            |                             |                    |
|-------------------|----------------------------|-----------------------------|--------------------|
| Tool Name:        | DSNT - 10735145            | Reference Calibration Date: | 01-Jan-70 00:00:00 |
| Engineer:         | C. HAVERKAMP               | Calibration Date:           | 05-Aug-12 11:14:28 |
| Software Version: | WL INSITE R3.6.0 (Build 3) | Calibration Version:        | 1                  |

Logging Source S/N: DSN-436

Tank Serial Number: 105060

Reference value assigned to Tank: 51.680

Snow Block S/N: TRK\_954

Calibration Tank Water Temperature: 78 degF

Min. Tool Housing Outside Diameter: 3.620 in

**CALIBRATION CONSTANTS**

| Measurement | Prev. Value | New Value | Control Limit On New Value |
|-------------|-------------|-----------|----------------------------|
| Gain:       | 0.939       | 0.939     | 0.900 - 1.100              |

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

| Measurement       | Current Reading (Previous Coef.) | Calibrated (New Coef.) | Change | Control Limit On Change |
|-------------------|----------------------------------|------------------------|--------|-------------------------|
| Porosity (decp):  | 0.2107                           | 0.2107                 | 0.0000 | +/- 0.0020              |
| Calibrated Ratio: | 9.72                             | 9.72                   | 0.000  | +/- 0.050               |

**VERIFIER**

| Measurement                 | Value  | Control Limit     |
|-----------------------------|--------|-------------------|
| Snow-Block Porosity (decp): | 0.0597 | 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 - 10735145            | Reference Calibration Date: | 05-Aug-12 11:14:28 |
| Engineer:         | C. HAVERKAMP               | Calibration Date:           | 13-Aug-12 11:48:11 |
| Software Version: | WL INSITE R3.6.0 (Build 3) | Calibration Version:        | 1                  |

Logging Source S/N: DSN-436

Snow Block S/N: TRK\_954

**NEUTRON FIELD-CHECK SUMMARY**

|                             | Shop   | Field  | Difference | Control Limit On Change |
|-----------------------------|--------|--------|------------|-------------------------|
| Snow-Block Porosity (decp): | 0.0597 | 0.0735 | 0.0138     | +/- 0.0150              |

**PASS/FAIL SUMMARY**

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

### DENSITY CALIPER SHOP CALIBRATION

|                   |                            |                             |                    |
|-------------------|----------------------------|-----------------------------|--------------------|
| Tool Name:        | SDLT - I145_M73803_P90     | Reference Calibration Date: | 24-Jul-12 19:54:45 |
| Engineer:         | THOMAS HYDE                | Calibration Date:           | 24-Jul-12 19:59:46 |
| Software Version: | WL INSITE R3.6.0 (Build 3) | Calibration Version:        | 1                  |
| Host Tool Name:   | DSNT - 10735145            |                             |                    |

| CALIBRATION COEFFICIENTS |                |              |                            |
|--------------------------|----------------|--------------|----------------------------|
| Measurement              | Previous Value | New Value    | Control Limit On New Value |
| Pad Offset               | -2668.67       | -2670.41     | -7000.00 - -1000.00        |
| Pad Gain                 | 0.0003985      | 0.0003943    | 0.000200 - 0.000600        |
| Arm Offset               | -1928.79       | -1917.49     | -5000.00 - 3000.00         |
| Arm Gain                 | 0.0005213      | 0.0005393    | 0.000300 - 0.000700        |
| Arm Power                | -0.000005267   | -0.000006568 | -0.000010000 - 0.000010000 |

The ring diameter is computed from:  $\text{DIAMETER} = \text{PAD EXTENSION} + \text{ARM EXTENSION} + \text{TOOL DIAMETER}$

Tool Diameter: 4.50 in

| CALIBRATION RINGS |                                   |                         |        |                            |
|-------------------|-----------------------------------|-------------------------|--------|----------------------------|
| Measurement       | Current Reading (Previous Coeff.) | Calibrated (New Coeff.) | Change | Control Limit On New Value |
| PAD EXTENSION:    |                                   |                         |        |                            |
| Small Ring (in)   | 2.02                              | 2.00                    | -0.02  | +/- 0.20                   |
| Medium Ring (in)  | 3.79                              | 3.75                    | -0.04  | +/- 0.20                   |
| RING DIAMETER:    |                                   |                         |        |                            |
| Small Ring (in)   | 6.44                              | 6.50                    | 0.06   | +/- 0.20                   |
| Medium Ring (in)  | 8.16                              | 8.25                    | 0.09   | +/- 0.20                   |
| Large Ring (in)   | 15.00                             | 15.00                   | 0.00   | +/- 0.20                   |

| PASS/FAIL SUMMARY                     |        |
|---------------------------------------|--------|
| Calibration-Coefficients Range Check: | Passed |
| Ring-Measurement Check:               | Passed |
| PASS/FAIL SUMMARY                     |        |
| Calibration-Coefficients Range Check: | Passed |

### SPECTRAL DENSITY SHOP CALIBRATION

|                   |                            |                             |                    |
|-------------------|----------------------------|-----------------------------|--------------------|
| Tool Name:        | SDLT Pad - 90              | Reference Calibration Date: | 29-Jun-12 09:04:02 |
| Engineer:         | C. HAVERKAMP               | Calibration Date:           | 05-Aug-12 10:20:20 |
| Software Version: | WL INSITE R3.6.0 (Build 3) | Calibration Version:        | 1                  |

Logging Source S/N: 5073GW

Aluminum Block S/N: 63061

Density: 2.591g/cc

Pe: 3.170

Magnesium Block S/N: 63393

Density: 1.690g/cc

Pe: 2.594

| DENSITY CALIBRATION SUMMARY |                |           |               |
|-----------------------------|----------------|-----------|---------------|
| Measurement                 | Previous Value | New Value | Control Limit |
| Near Bar Gain               | 1.0464         | 1.0182    | 0.90 - 1.10   |
| Near Dens Gain              | 1.0230         | 1.0048    | 0.90 - 1.10   |
| Near Peak Gain              | 1.0156         | 1.0048    | 0.90 - 1.10   |
| Near Lith Gain              | 0.9939         | 0.9937    | 0.90 - 1.10   |
| Far Bar Gain                | 0.9998         | 0.9948    | 0.90 - 1.10   |
| Far Dens Gain               | 0.9867         | 0.9834    | 0.90 - 1.10   |
| Far Peak Gain               | 0.9795         | 0.9799    | 0.90 - 1.10   |

|                      |         |        |             |
|----------------------|---------|--------|-------------|
| Far Peak Gain        | 0.9785  | 0.9780 | 0.90 - 1.10 |
| Far Lith Gain        | 0.9526  | 0.9506 | 0.90 - 1.10 |
| Near Bar Offset      | -0.1830 | 0.0689 | NONE        |
| Near Dens Offset     | 0.0256  | 0.1796 | NONE        |
| Near Peak Offset     | 0.1012  | 0.1814 | NONE        |
| Near Lith Offset     | 0.2570  | 0.2515 | NONE        |
| Far Bar Offset       | 0.1499  | 0.1927 | NONE        |
| Far Dens Offset      | 0.2476  | 0.2746 | NONE        |
| Far Peak Offset      | 0.2849  | 0.2837 | NONE        |
| Far Lith Offset      | 0.4216  | 0.4332 | NONE        |
| Near Bar Background  | 877.55  | 877.46 | 700 - 1450  |
| Near Dens Background | 292.38  | 292.57 | 230 - 480   |
| Near Peak Background | 128.10  | 127.54 | 100 - 210   |
| Near Lith Background | 157.52  | 157.90 | 125 - 260   |
| Far Bar Background   | 591.36  | 591.60 | 450 - 900   |
| Far Dens Background  | 231.62  | 230.53 | 175 - 345   |
| Far Peak Background  | 92.15   | 91.54  | 70 - 140    |
| Far Lith Background  | 96.30   | 95.33  | 75 - 145    |

| CALIBRATION BLOCK SUMMARY |                                    |                          |        |                            |
|---------------------------|------------------------------------|--------------------------|--------|----------------------------|
| Measurement               | Current Reading<br>(Previous Coef) | Calibrated<br>(New Coef) | Change | Control Limit<br>On Change |
| MAGNESIUM                 |                                    |                          |        |                            |
| Density (g/cc)            | 1.694                              | 1.690                    | -0.004 | +/- 0.015                  |
| Pe                        | 2.540                              | 2.557                    | 0.017  | +/- 0.150                  |
| ALUMINUM                  |                                    |                          |        |                            |
| Density (g/cc)            | 2.594                              | 2.591                    | -0.003 | +/- 0.01500                |
| Pe                        | 3.093                              | 3.131                    | 0.038  | +/- 0.150                  |

| TOOL SUMMARY               |               |                |              |                |
|----------------------------|---------------|----------------|--------------|----------------|
| Measurement                | Near Detector |                | Far Detector |                |
|                            | Value         | Control Limits | Value        | Control Limits |
| QUALITY                    |               |                |              |                |
| Background                 | -0.0008       | +/- 0.0110     | -0.0015      | +/- 0.0140     |
| Magnesium Block            | -0.0005       | +/- 0.0110     | -0.0020      | +/- 0.0140     |
| Aluminum Block             | -0.0002       | +/- 0.0110     | -0.0003      | +/- 0.0140     |
| Resolution                 | 8.89          | 6.00 - 11.50   | 8.94         | 6.00 - 11.50   |
| Internal Verifier(B+D+P+L) | 1455          | 1200 - 2700    | 1009         | 800 - 1700     |

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

## SPECTRAL DENSITY FIELD CHECK

Tool Name: SDLT Pad - 90

Reference Calibration Date: 05-Aug-12 10:20:20

Engineer: C. HAVERKAMP

Software Version: WL INSITE R3.6.0 (Build 3)

Calibration Date: 13-Aug-12 11:22:24

Calibration Version: 1

Pad Temperature: 75.2 degF

DENSITY FIELD CALIBRATION SUMMARY

| Measurement        | Shop     | Field    | Change | Control Limit +/- |
|--------------------|----------|----------|--------|-------------------|
| Near (B+D+P+L) cps | 1455.472 | 1453.519 | -1.953 | 15.388            |
| Far (B+D+P+L) cps  | 1009.007 | 1011.099 | 2.092  | 16.979            |
| Near Resolution    | 8.89     | 8.84     | -0.050 | 0.50              |
| Far Resolution     | 8.94     | 9.07     | 0.130  | 1.00              |

PASS/FAIL SUMMARY

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

SDLT CALIPER FIELD CALIBRATION

Tool Name: SDLT - I145\_M73803\_P90

Reference Calibration Date: 24-Jul-12 19:59:46

Engineer: C. HAVERKAMP

Calibration Date: 13-Aug-12 11:26:02

Software Version: WL INSITE R3.6.0 (Build 3)

Calibration Version: 1

MEASURED CALIPER VALUES

| Measurement   | Shop | Field | Change | Control Limit On New Value |
|---------------|------|-------|--------|----------------------------|
| Pad Extension | 3.75 | 3.67  | -0.08  | +/- 0.10                   |
| Ring Diameter | 8.25 | 8.34  | 0.09   | +/- 0.15                   |

PASS/FAIL SUMMARY

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

CALIBRATION SUMMARY

| Sensor               | Shop     | Field    | Post  | Difference | Tolerance  | Units |
|----------------------|----------|----------|-------|------------|------------|-------|
| GTET-10811258        |          |          |       |            |            |       |
| Gamma Ray Calibrator | 232.0    | 230.2    | ----- | 1.8        | +/- 9.00   | api   |
| DSNT-10735145        |          |          |       |            |            |       |
| Snow-Block Porosity  | 0.0597   | 0.0735   | ----- | -0.0138    | +/- 0.0150 | decp  |
| SDLT-I145_M73803_P90 |          |          |       |            |            |       |
| Pad Extension        | 3.75     | 3.67     | ----- | 0.08       | +/-0.10    | in    |
| Ring Diameter        | 8.25     | 8.34     | ----- | -0.09      | +/-0.15    | in    |
| SDLT Pad-90          |          |          |       |            |            |       |
| Near(B+D+P+L)        | 1455.472 | 1453.519 | ----- | 1.953      | +/-15.388  | cps   |
| Far(B+D+P+L)         | 1009.007 | 1011.099 | ----- | -2.092     | +/-16.979  | cps   |

Data: DOWELL\_1\_33\0001 TRIPLE COMBOIDLE

Date: 13-Aug-12 20:06:53

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PARAMETERS REPORT

| Depth (ft) | Tool Name | Mnemonic | Description | Value | Units |
|------------|-----------|----------|-------------|-------|-------|
| TOP        |           |          |             |       |       |
|            | SHARED    | BS       | Bit Size    | 7.875 | in    |

|                 |      |                                                       |                |      |
|-----------------|------|-------------------------------------------------------|----------------|------|
| SHARED          | UBS  | Use Bit Size instead of Caliper for all applications. | No             |      |
| SHARED          | MDBS | Mud Base                                              | Water          |      |
| SHARED          | MDWT | Borehole Fluid Weight                                 | 9.200          | ppg  |
| SHARED          | WAGT | Weighting Agent                                       | Natural        |      |
| SHARED          | BSAL | Borehole salinity                                     | 2300.00        | ppm  |
| SHARED          | FSAL | Formation Salinity NaCl                               | 0.00           | ppm  |
| SHARED          | KPCT | Percent K in Mud by Weight?                           | 0.00           | %    |
| SHARED          | RMUD | Mud Resistivity                                       | 0.760          | ohmm |
| SHARED          | TRM  | Temperature of Mud                                    | 91.0           | 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                                      | 4400.00        | ft   |
| SHARED          | BHT  | Bottom Hole Temperature                               | 120.0          | 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 / CrossPlot | RMFR | Rmf Reference                                         | 0.10           | ohmm |
| Rwa / CrossPlot | TMFR | Rmf Ref Temp                                          | 75.00          | degF |
| 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            |      |
| 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 |
| Microlog Pad    | MLOK | Process MicroLog Outputs?                             | Yes            |      |
| ACRt Sonde      | RTOK | Process ACRt?                                         | Yes            |      |
| ACRt Sonde      | MNSO | Minimum Tool Standoff                                 | 1.50           | in   |
| ACRt Sonde      | TCS1 | Temperature Correction Source                         | FP Lwr & FP 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                     |      |
| ACRt Sonde                              | MRFX | Fixed mud resistivity       | 2000                     | ohmm |
| BOTTOM                                  |      |                             |                          |      |
| Data: DOWELL_1_33\0001 TRIPLE COMBOIDLE |      |                             | Date: 13-Aug-12 20:07:37 |      |

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INPUTS, DELAYS AND FILTERS TABLE

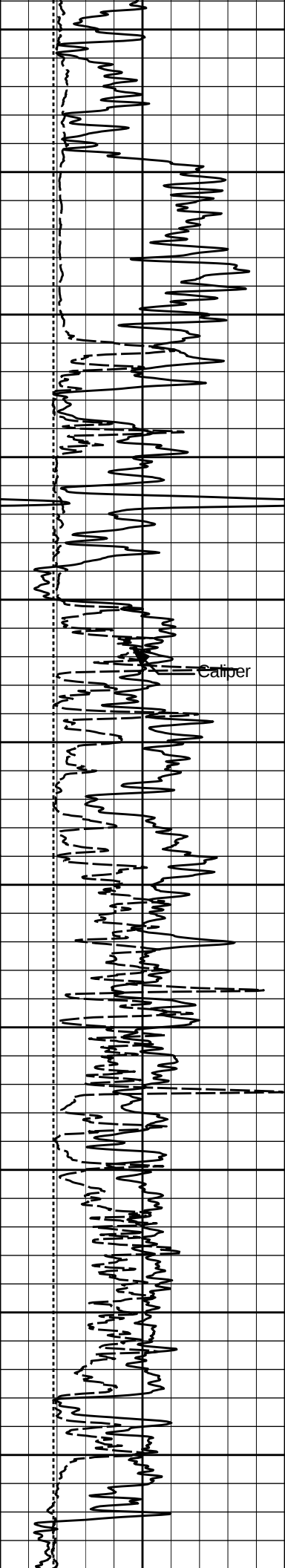
| Mnemonic    |  | Input Description                                       | Delay (ft) | Filter Type | Filter Length (ft) |
|-------------|--|---------------------------------------------------------|------------|-------------|--------------------|
| Depth Panel |  |                                                         |            |             |                    |
| TENS        |  | Tension                                                 | 0.00       | NO          |                    |
| SP Sub      |  |                                                         |            |             |                    |
| PLTC        |  | Plot Control Mask                                       | 50.81      | NO          |                    |
| SP          |  | Spontaneous Potential                                   | 50.81      | BLK         | 1.250              |
| SPR         |  | Raw Spontaneous Potential                               | 50.81      | NO          |                    |
| SPO         |  | Spontaneous Potential Offset                            | 50.81      | NO          |                    |
| GTET        |  |                                                         |            |             |                    |
| TPUL        |  | Tension Pull                                            | 42.79      | NO          |                    |
| GR          |  | Natural Gamma Ray API                                   | 42.79      | TRI         | 1.750              |
| GRU         |  | Unfiltered Natural Gamma Ray API                        | 42.79      | NO          |                    |
| EGR         |  | Natural Gamma Ray API with Enhanced Vertical Resolution | 42.79      | W           | 1.416 , 0.750      |
| ACCZ        |  | Accelerometer Z                                         | 0.00       | BLK         | 0.083              |
| DEVI        |  | Inclination                                             | 0.00       | NO          |                    |
| DSNT        |  |                                                         |            |             |                    |
| TPUL        |  | Tension Pull                                            | 32.54      | NO          |                    |
| RNDS        |  | Near Detector Telemetry Counts                          | 32.64      | BLK         | 1.417              |
| RFDS        |  | Far Detector Telemetry Counts                           | 33.39      | TRI         | 0.583              |
| DNTT        |  | DSN Tool Temperature                                    | 32.64      | NO          |                    |
| DSNS        |  | DSN Tool Status                                         | 32.54      | NO          |                    |
| ERND        |  | Near Detector Telemetry Counts EVR                      | 32.64      | BLK         | 0.000              |
| ERFD        |  | Far Detector Telemetry Counts EVR                       | 33.39      | BLK         | 0.000              |
| ENTM        |  | DSN Tool Temperature EVR                                | 32.64      | NO          |                    |
| SDLT        |  |                                                         |            |             |                    |
| TPUL        |  | Tension Pull                                            | 22.65      | NO          |                    |
| PCAL        |  | Pad Caliper                                             | 22.65      | TRI         | 0.250              |
| ACAL        |  | Arm Caliper                                             | 22.65      | TRI         | 0.250              |
| ACRt Sonde  |  |                                                         |            |             |                    |
| TPUL        |  | Tension Pull                                            | 2.97       | NO          |                    |
| F1R1        |  | ACRT 12KHz - 80in R value                               | 9.22       | BLK         | 0.000              |
| F1X1        |  | ACRT 12KHz - 80in X value                               | 9.22       | BLK         | 0.000              |
| F1R2        |  | ACRT 12KHz - 50in R value                               | 6.72       | BLK         | 0.000              |
| F1X2        |  | ACRT 12KHz - 50in X value                               | 6.72       | BLK         | 0.000              |
| F1R3        |  | ACRT 12KHz - 29in R value                               | 5.22       | BLK         | 0.000              |
| F1X3        |  | ACRT 12KHz - 29in X value                               | 5.22       | BLK         | 0.000              |
| F1R4        |  | ACRT 12KHz - 17in R value                               | 4.22       | BLK         | 0.000              |
| F1X4        |  | ACRT 12KHz - 17in X value                               | 4.22       | BLK         | 0.000              |

|          |                                               |       |     |       |
|----------|-----------------------------------------------|-------|-----|-------|
| 1R4      | ACRT 12KHz - 17in R value                     | 4.22  | BLK | 0.000 |
| F1X4     | ACRT 12KHz - 17in X value                     | 4.22  | BLK | 0.000 |
| F1R5     | ACRT 12KHz - 10in R value                     | 3.72  | BLK | 0.000 |
| F1X5     | ACRT 12KHz - 10in X value                     | 3.72  | BLK | 0.000 |
| F1R6     | ACRT 12KHz - 6in R value                      | 3.47  | BLK | 0.000 |
| F1X6     | ACRT 12KHz - 6in X value                      | 3.47  | BLK | 0.000 |
| F2R1     | ACRT 36KHz - 80in R value                     | 9.22  | BLK | 0.000 |
| F2X1     | ACRT 36KHz - 80in X value                     | 9.22  | BLK | 0.000 |
| F2R2     | ACRT 36KHz - 50in R value                     | 6.72  | BLK | 0.000 |
| F2X2     | ACRT 36KHz - 50in X value                     | 6.72  | BLK | 0.000 |
| F2R3     | ACRT 36KHz - 29in R value                     | 5.22  | BLK | 0.000 |
| F2X3     | ACRT 36KHz - 29in X value                     | 5.22  | BLK | 0.000 |
| F2R4     | ACRT 36KHz - 17in R value                     | 4.22  | BLK | 0.000 |
| F2X4     | ACRT 36KHz - 17in X value                     | 4.22  | BLK | 0.000 |
| F2R5     | ACRT 36KHz - 10in R value                     | 3.72  | BLK | 0.000 |
| F2X5     | ACRT 36KHz - 10in X value                     | 3.72  | BLK | 0.000 |
| F2R6     | ACRT 36KHz - 6in R value                      | 3.47  | BLK | 0.000 |
| F2X6     | ACRT 36KHz - 6in X value                      | 3.47  | BLK | 0.000 |
| F3R1     | ACRT 72KHz - 80in R value                     | 9.22  | BLK | 0.000 |
| F3X1     | ACRT 72KHz - 80in X value                     | 9.22  | BLK | 0.000 |
| F3R2     | ACRT 72KHz - 50in R value                     | 6.72  | BLK | 0.000 |
| F3X2     | ACRT 72KHz - 50in X value                     | 6.72  | BLK | 0.000 |
| F3R3     | ACRT 72KHz - 29in R value                     | 5.22  | BLK | 0.000 |
| F3X3     | ACRT 72KHz - 29in X value                     | 5.22  | BLK | 0.000 |
| F3R4     | ACRT 72KHz - 17in R value                     | 4.22  | BLK | 0.000 |
| F3X4     | ACRT 72KHz - 17in X value                     | 4.22  | BLK | 0.000 |
| F3R5     | ACRT 72KHz - 10in R value                     | 3.72  | BLK | 0.000 |
| F3X5     | ACRT 72KHz - 10in X value                     | 3.72  | BLK | 0.000 |
| F3R6     | ACRT 72KHz - 6in R value                      | 3.47  | BLK | 0.000 |
| F3X6     | ACRT 72KHz - 6in X value                      | 3.47  | BLK | 0.000 |
| RMUD     | Mud Resistivity                               | 12.76 | BLK | 0.000 |
| F1RT     | Transmitter Reference 12 KHz Real Signal      | 2.97  | BLK | 0.000 |
| F1XT     | Transmitter Reference 12 KHz Imaginary Signal | 2.97  | BLK | 0.000 |
| F2RT     | Transmitter Reference 36 KHz Real Signal      | 2.97  | BLK | 0.000 |
| F2XT     | Transmitter Reference 36 KHz Imaginary Signal | 2.97  | BLK | 0.000 |
| F3RT     | Transmitter Reference 72 KHz Real Signal      | 2.97  | BLK | 0.000 |
| F3XT     | Transmitter Reference 72 KHz Imaginary Signal | 2.97  | BLK | 0.000 |
| TFPU     | Upper Feedpipe Temperature Calculated         | 2.97  | BLK | 0.000 |
| TFPL     | Lower Feedpipe Temperature Calculated         | 2.97  | BLK | 0.000 |
| ITMP     | Instrument Temperature                        | 2.97  | BLK | 0.000 |
| TCVA     | Temperature Correction Values Loop Off        | 2.97  | NO  |       |
| TIDV     | Instrument Temperature Derivative             | 2.97  | NO  |       |
| TUDV     | Upper Temperature Derivative                  | 2.97  | NO  |       |
| TLDV     | Lower Temperature Derivative                  | 2.97  | NO  |       |
| TRBD     | Receiver Board Temperature                    | 2.97  | NO  |       |
| SDLT Pad |                                               |       |     |       |
| TPUL     | Tension Pull                                  | 22.64 | NO  |       |
| NAB      | Near Above                                    | 22.46 | BLK | 0.920 |
| NHI      | Near Cesium High                              | 22.46 | BLK | 0.920 |
| NLO      | Near Cesium Low                               | 22.46 | BLK | 0.920 |
| NVA      | Near Valley                                   | 22.46 | BLK | 0.920 |
| NBA      | Near Barite                                   | 22.46 | BLK | 0.920 |
| NDE      | Near Density                                  | 22.46 | BLK | 0.920 |
| NPK      | Near Peak                                     | 22.46 | BLK | 0.920 |
| NLI      | Near Lithology                                | 22.46 | BLK | 0.920 |

|      |                            |       |     |       |
|------|----------------------------|-------|-----|-------|
| NBAU | Near Barite Unfiltered     | 22.46 | BLK | 0.250 |
| NLIU | Near Lithology Unfiltered  | 22.46 | BLK | 0.250 |
| FAB  | Far Above                  | 22.81 | BLK | 0.250 |
| FHI  | Far Cesium High            | 22.81 | BLK | 0.250 |
| FLO  | Far Cesium Low             | 22.81 | BLK | 0.250 |
| FVA  | Far Valley                 | 22.81 | BLK | 0.250 |
| FBA  | Far Barite                 | 22.81 | BLK | 0.250 |
| FDE  | Far Density                | 22.81 | BLK | 0.250 |
| FPK  | Far Peak                   | 22.81 | BLK | 0.250 |
| FLI  | Far Lithology              | 22.81 | BLK | 0.250 |
| PTMP | Pad Temperature            | 22.65 | BLK | 0.920 |
| NHV  | Near Detector High Voltage | 22.04 | NO  |       |
| FHV  | Far Detector High Voltage  | 22.04 | NO  |       |
| ITMP | Instrument Temperature     | 22.04 | NO  |       |
| DDHV | Detector High Voltage      | 22.04 | NO  |       |

**HALLIBURTON**

### ANNULAR HOLE VOLUME PLOT (5.5 INCH)



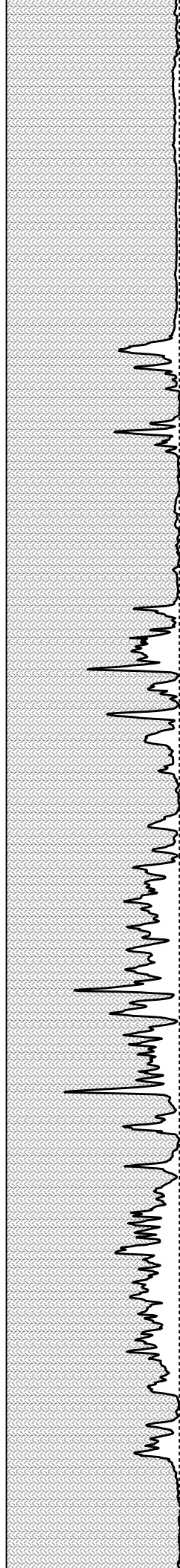
600

700

800

900

1000



1781

1148

1763

1137

1745

1128

1723

1114

1706

1105

1680

1088

1660

1075

1630

1054

1604

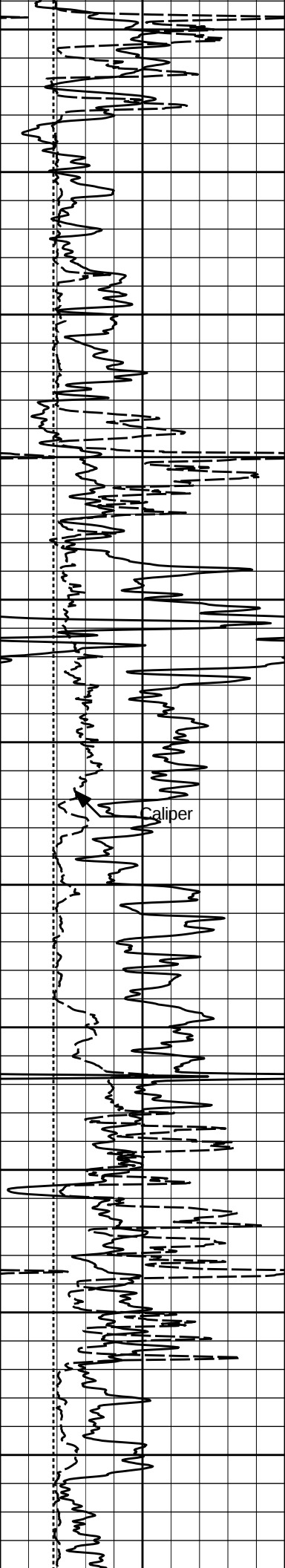
1037

1577

1018

1553

1002



1100

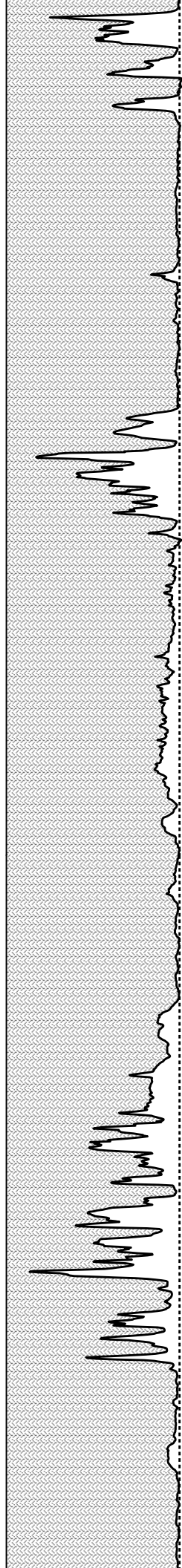
1200

1300

1400

1500

1600



1532

1508

1490

1467

1439

1418

1398

1379

1350

1316

1292

989

973

964

949

929

916

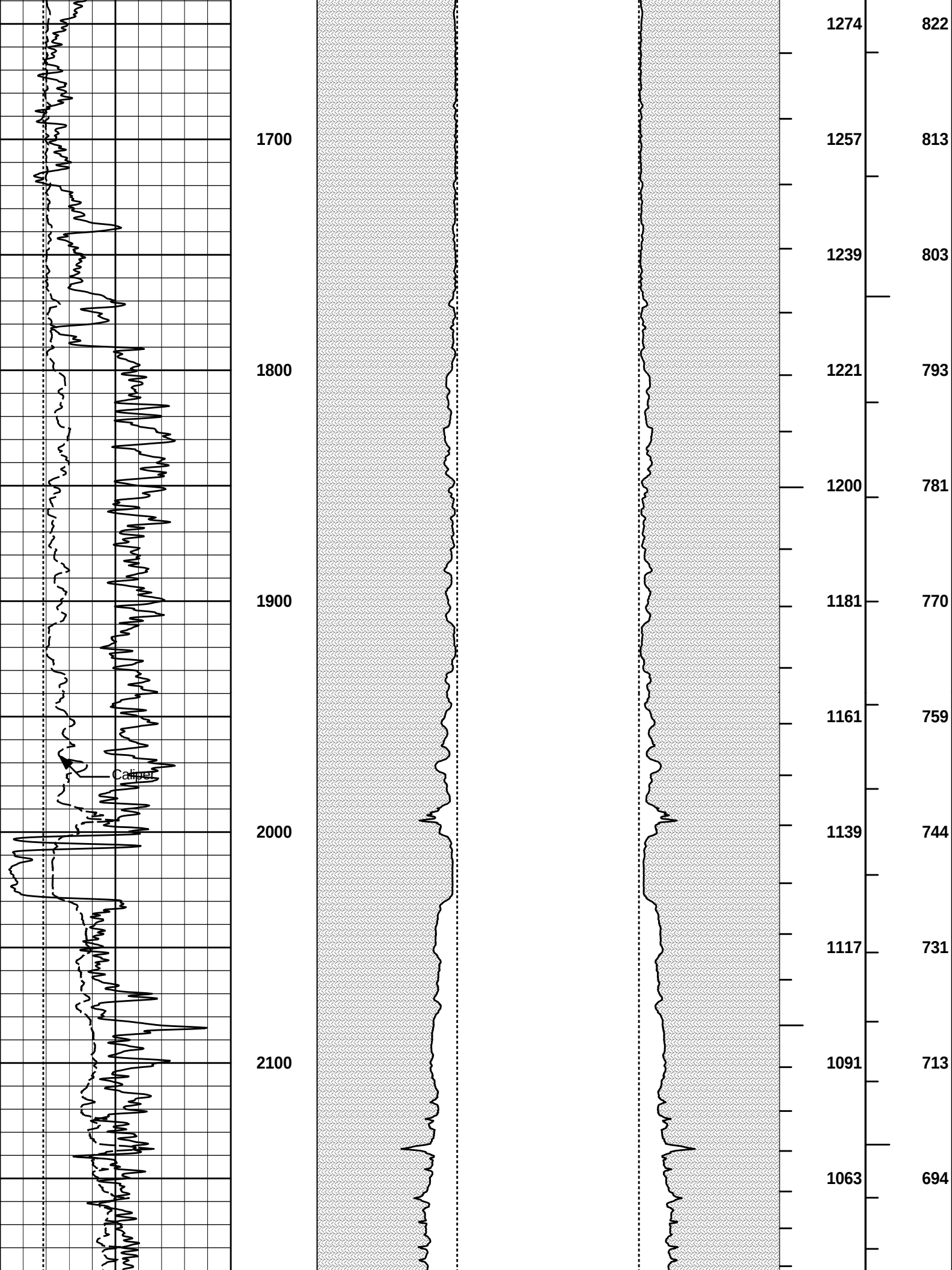
904

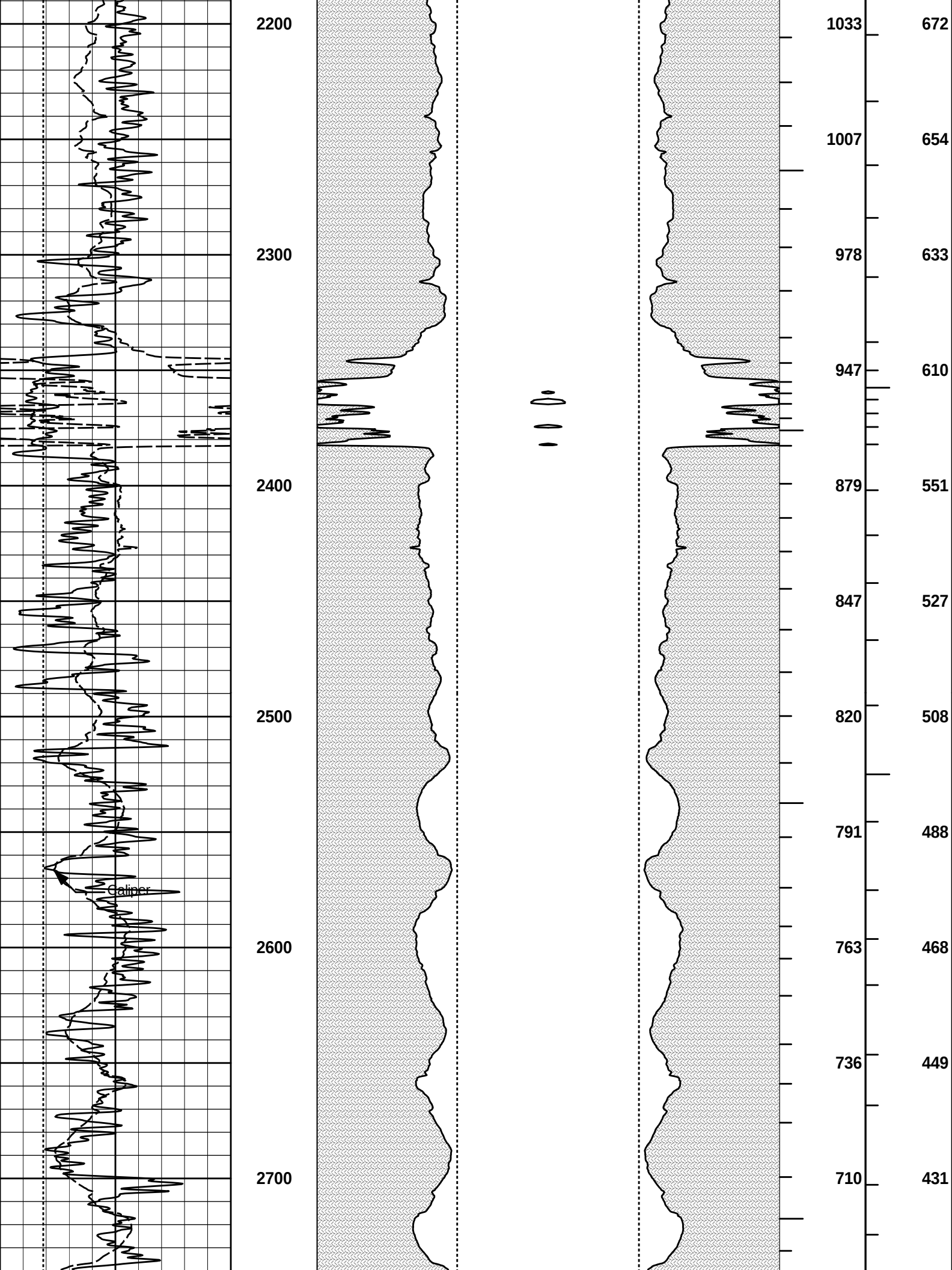
894

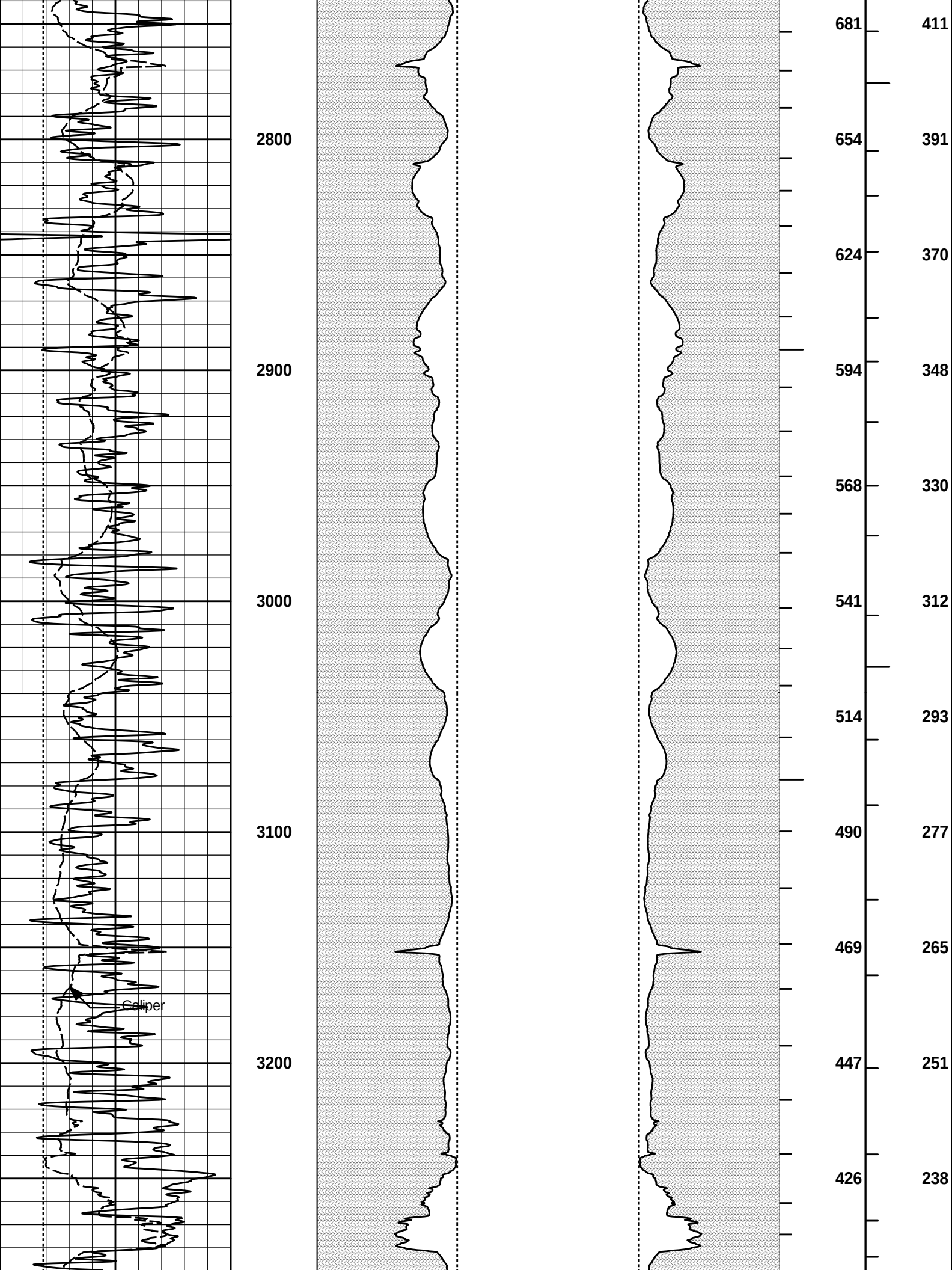
873

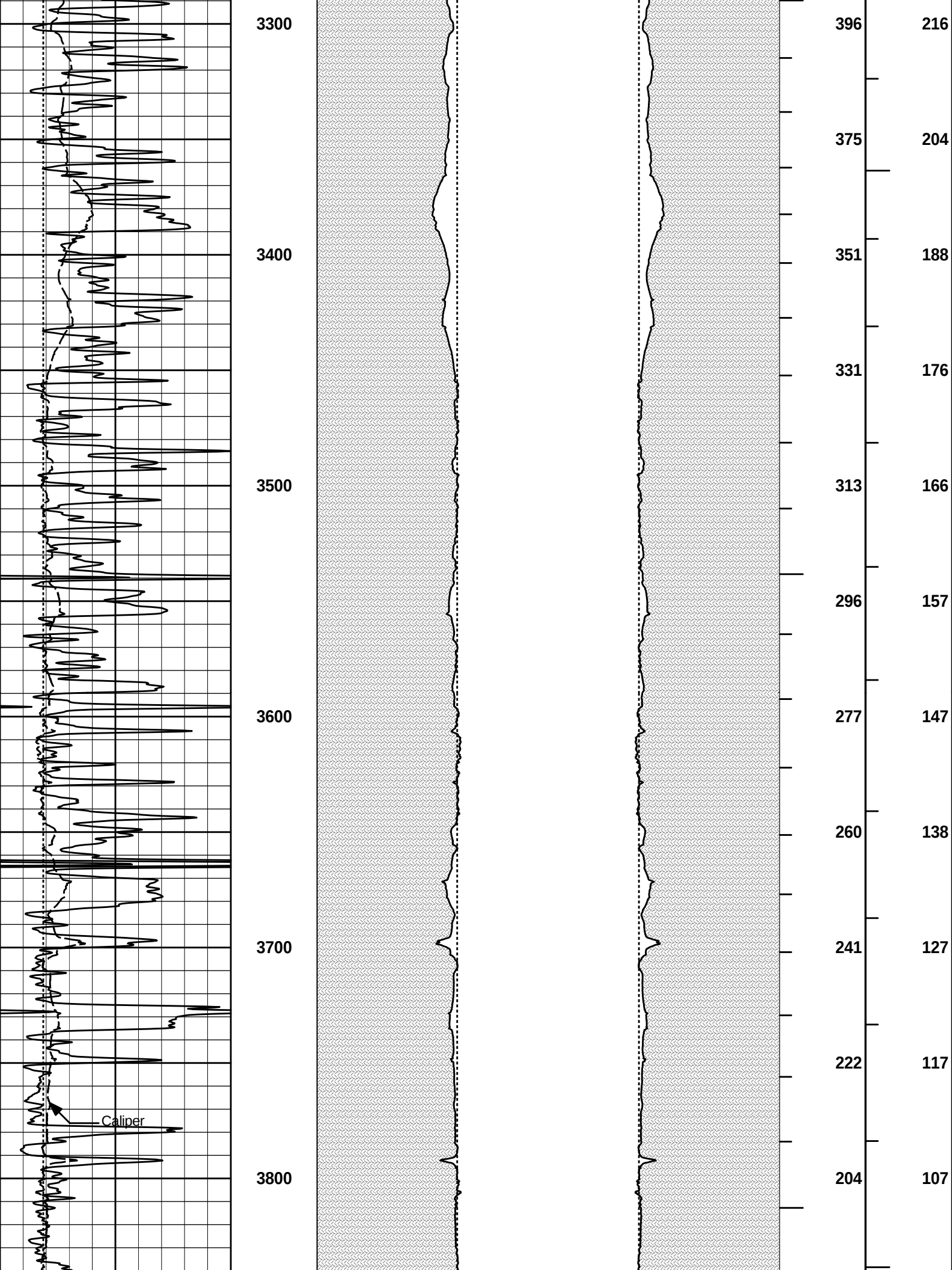
847

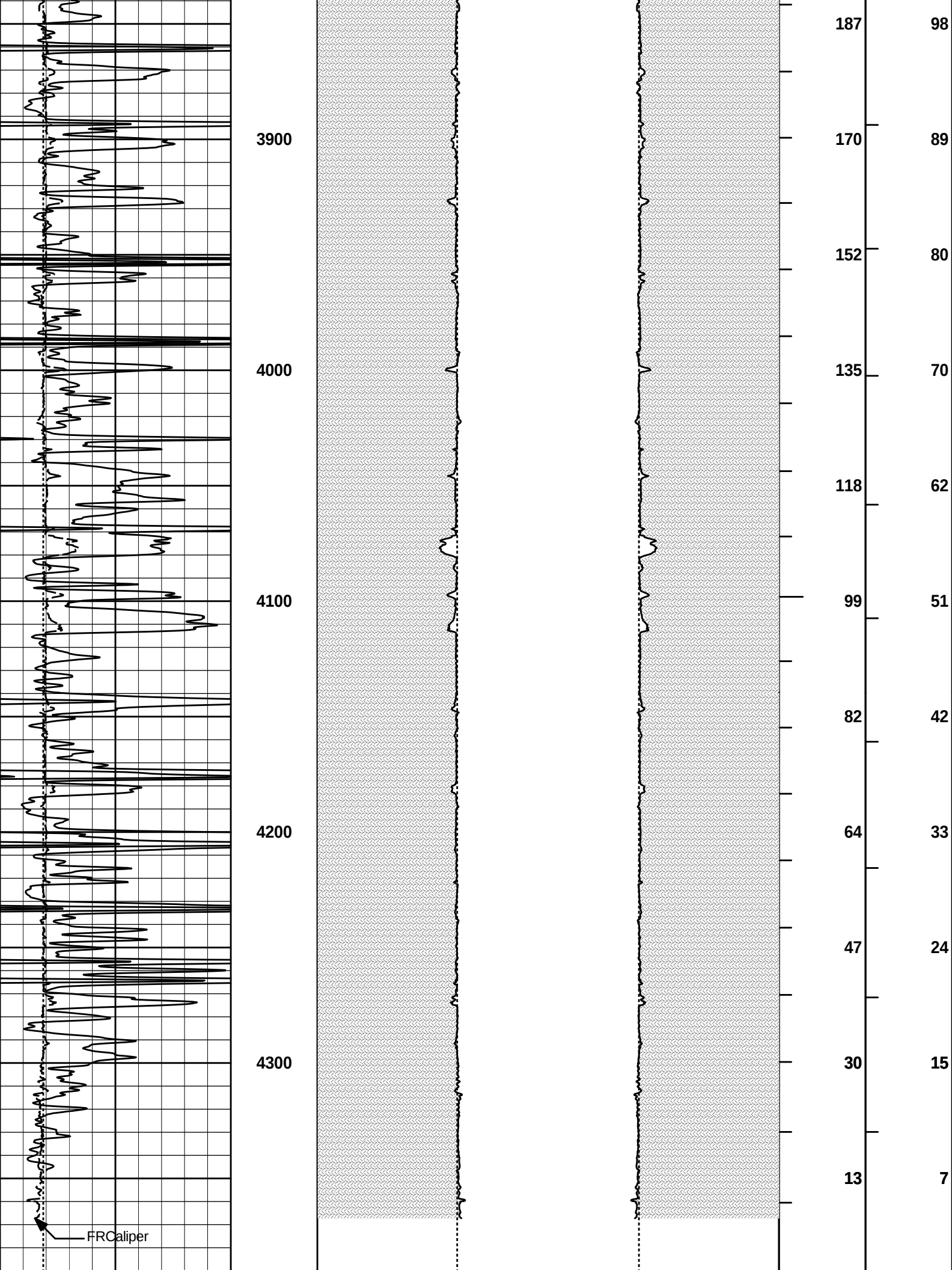
832











|   |           |     |               |    |          |     |         |      |      |
|---|-----------|-----|---------------|----|----------|-----|---------|------|------|
| 6 | Caliper   | 16  | 1 : 600<br>ft | 20 | Caliper  | 0 0 | 20      | BHVT | AHVT |
|   | inches    |     |               |    | inches   |     |         |      |      |
| 6 | BS        | 16  |               | 20 | Bit Size | 0 0 | 20      |      |      |
|   | inches    |     |               |    |          |     |         |      |      |
| 0 | Gamma API | 150 |               |    | MUDCAKE  |     | MUDCAKE |      |      |
|   | api       |     |               |    |          |     |         |      |      |

HALLIBURTON

Plot Time: 13-Aug-12 22:43:42  
Plot Range: 360 ft to 4390 ft  
Data: DOWELL\_1\_33\Well Based\IR1\_CASING\  
Plot File: \\-LOCAL-IDOWELL\_1\_33\0001 TRIPLE COMBO\PORO\AHV\_5\_5\_INCH\_2\_IQ\_LIB

ANNULAR HOLE VOLUME PLOT (5.5 INCH)

|             |                 |       |                                                |  |  |
|-------------|-----------------|-------|------------------------------------------------|--|--|
| COMPANY     | HARTMAN OIL CO. |       |                                                |  |  |
| WELL        | DOWELL 1-33     |       |                                                |  |  |
| FIELD       | WILDCAT         |       |                                                |  |  |
| COUNTY      | GOVE            | STATE | KANSAS                                         |  |  |
| HALLIBURTON |                 |       | SPECTRAL DENSITY<br>DUAL SPACED NEUTRON<br>LOG |  |  |