Released 11/03/2009

**Tucker** WIRELINE SERVICES

CONFIDENTIAL

217-22260

# COMPENSATED NEUTRON PEL DENSITY LOG

RECEIVED NOV 03 2008 Oil & Gas Council

| | |
|---|---|
| File No. : | TUL-52929 |
| Company : | RUNNING FOXES PETROLEUM |
| Well : | STONER # 14-6C-2 |
| Field : | |
| County : | VERNON |
| State : | MISSOURI |
| Country : | U.S.A. |
| Location : | 530' FSL & 1530' FWL |
| | Sect : 6 Twp : 36N Rge : 33W |
| Recorded By : | D. EDGHILL |
| Witnessed By : | J. TAGLIERI |
| Date : | JUN 21 2008 |
| Run No. : | 1 |
| Permanent Datum : | GL |
| Drilling Measured From : | KB |
| Log Measured From: | KB |
| Above Permanent Datum : | 0.00 FT |
| Depth--Driller : | 412.0 FT |
| Depth--Logger : | 410.0 FT |
| Bottom Log Interval : | 409.0 FT |
| Top Log Interval : | 22.0 FT |
| Casing Depth--Driller: | 22.0 FT |
| Casing Depth--Logger : | 22.0 FT |
| Casing Diameter : | 7.000 IN |
| Bit Size | 6.250 IN |
| Unit No. | 122 |
| Location | TULSA |

Elevations :
KB : N/A FT
DF : N/A FT
GL : 886.00 FT

**Additional Services**
PIT

The customer is hereby warned that by providing the log data herein, T. W. S. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. W. S. does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by T. W. S. personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by T. W. S. for its services. Any user of the log data is warned that said user is not entitled to rely on intepretations, conversions or recommendations as aforesaid.

## Run Number 1

| | | | | |
|---|---|---|---|---|
| Depth To Fluid | 0.0 | FT | | |
| Fluid Type In Hole : | NATIVE AIR / WATER | | | |
| Density : | 0.000 | LBS/GAL | | |
| Viscosity : | 0.000 | SEC | | |
| pH : | 0.000 | | | |
| Fluid Loss : | 0.000 | CC | | |
| Salinity : | 0.000 | | | |
| RM Source : | MEASURED | | | |
| RM : | 0.000 | OHMM at | 0 | F |
| RM at BHT : | 0.000 | OHMM at | 76 | F |
| RMF Source : | CALCULATED | | | |
| RMF : | 0.000 | OHMM at | 0 | F |
| RMF at BHT : | 0.000 | OHMM at | 76 | F |
| RMC Source : | CALCULATED | | | |
| RMC : | 0.000 | OHMM at | 0 | F |
| RMC at BHT : | 0.000 | OHMM at | 76 | F |
| Max Recorded Temp. : | | | 76 | F |
| Time Circulation Stopped : | | | | |
| Operating Rig Time, Hrs. : | | | 2.0 | |

- Source Serial Numbers -

| | |
|---|---|
| Gamma | CSV587 |
| Neutron | 71-24-905B |

- Sonde Serial Numbers -

| | |
|---|---|
| GRTB | GRT-BA-103 |
| CNT | CNP-AA-113 |
| LDT | LDP-BA-105 |

Casing Strings

| Size (IN) | Weight (LB/FT) | Bottom (FT) |
|---|---|---|
| 7.000 | 20.00 | 22.00 |

- Comments -

ALL PRESENTATIONS AS PER CUSTOMER REQUEST.

GRT, CNT, LDT RAN IN COMBINATION.
GRT, PIT RAN IN COMBINATION.
CALIPERS ORIENTED ON THE X-Y AXIS.
PHIN IS CALIPER CORRECTED.
2.71 G/CC USED TO CALCULATE POROSITY.
ANNULAR HOLE VOLUME CALCULATED USING 4.50" PRODUCTION CASING.

GRT: GRP.
CNT: PHIN, CLCNIN, PHINLS.
LDT: PORL, LCOR, PECL, CLLDIN, LDEN, PORLLS, PECS.
PIT: ILD, ILM, CIRD, SPU, SFLAEC.

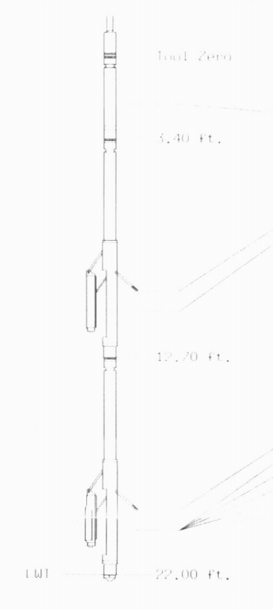
OPERATORS:

J. COLWILL
R. AUSTIN

THANK YOU FOR USING TUCKER WIRELINE SERVICES!

## Tool String Schematic

Total Tool Length 22.00 ft.
Maximum Outside diameter 4.00 in.
Net Weight in Air 513.00 lbs.




Tool: GRTB Length: 3.40 ft. O.D.: 3.60 in.
Sonde ID : GRT BA 103

| Measure Point | Stack Offset | Tool Offset | Bottom Offset |
|---|---|---|---|
| GRP | 2.00 | 2.00 | 20.00 |

Tool: CNT Length: 9.30 ft. O.D.: 4.36 in.
Sonde ID : CNP AA 113
Source ID : 71 24 905B
Pad ID : CNP AA 113

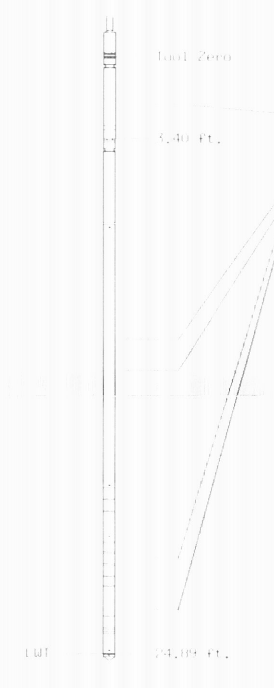
| Measure Point | Stack Offset | Tool Offset | Bottom Offset |
|---|---|---|---|
| CLCN | 9.40 | 6.00 | 12.60 |
| PHIN | 10.24 | 6.84 | 11.76 |

Tool: LDT Length: 9.30 ft. O.D.: 4.00 in.
Sonde ID : LDP BA 105
Source ID : CSV587
Pad ID : LDP BA 105

| Measure Point | Stack Offset | Tool Offset | Bottom Offset |
|---|---|---|---|
| CLLD | 18.70 | 6.00 | 3.30 |
| PEL | 19.94 | 7.24 | 2.06 |
| PES | 19.94 | 7.24 | 2.06 |
| LDEN | 19.94 | 7.24 | 2.06 |
| LCOR | 19.94 | 7.24 | 2.06 |

## Tool String Schematic

Total Tool Length 24.89 ft.
Maximum Outside diameter 3.62 in.
Net Weight in Air 208.00 lbs.




Tool: GRTB Length: 3.40 ft. O.D.: 3.60 in.
Sonde ID : GRT BA 103

| Measure Point | Stack Offset | Tool Offset | Bottom Offset |
|---|---|---|---|
| GRP | 2.00 | 2.00 | 22.89 |

Tool: PIT Length: 21.49 ft. O.D.: 3.62 in.
Sonde ID : PIT AB 18

| Measure Point | Stack Offset | Tool Offset | Bottom Offset |
|---|---|---|---|
| ILD | 12.32 | 8.92 | 12.56 |
| ILM | 13.50 | 10.10 | 11.39 |
| SFLU | 20.89 | 17.49 | 4.00 |
| SP | 24.00 | 20.60 | 0.88 |

| TENSION LBS | |
|---|---|
| 10000 | 0 |

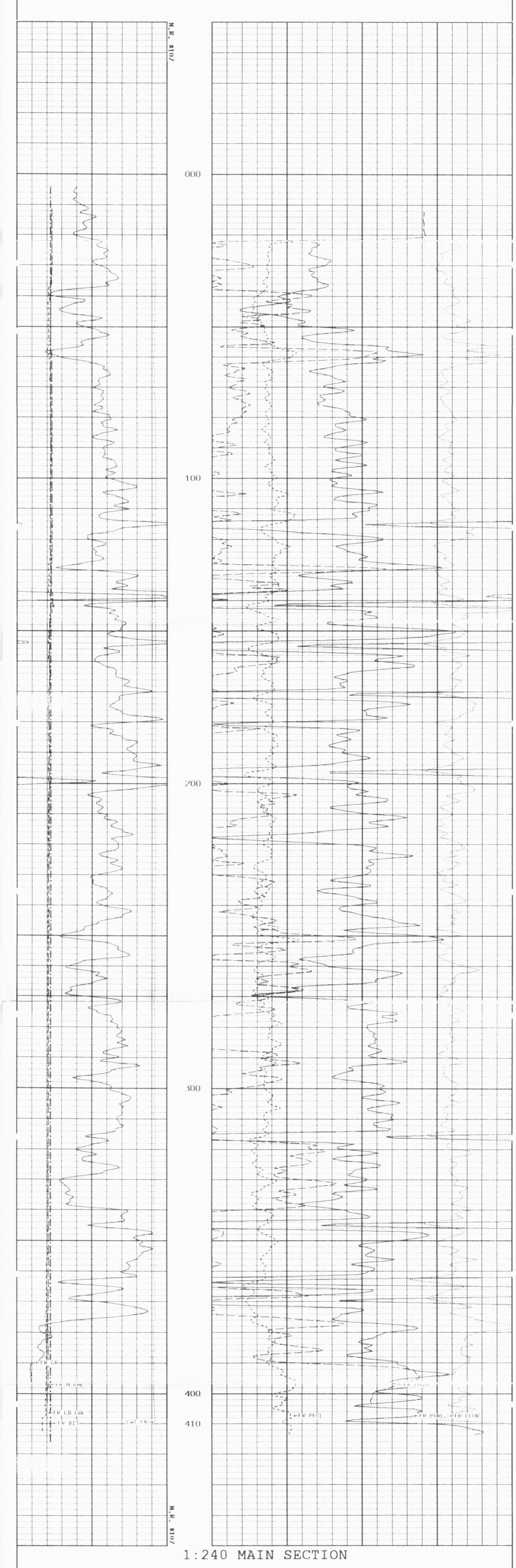
| BIT SIZE INCHES (IN) | |
|---|---|
| 4 | 14 |

| DENSITY (X) CALIPER INCHES (IN) | | PE CROSS SECTION BARNS/ELECTRON | | DENSITY CORRECTION G/CC | |
|---|---|---|---|---|---|
| 14 | 24 | 0 | 10 | 0.25 | 0.25 |
| 4 | 14 | | | | |

| NEUTRON (Y) CALIPER INCHES (IN) | | NEUTRON POROSITY PERCENT (LIMESTONE MATRIX) | |
|---|---|---|---|
| 14 | 24 | 30 | 10 |
| 4 | 14 | | |

| GAMMA RAY API UNITS | | DENSITY POROSITY PERCENT (2.71 g/cc) | |
|---|---|---|---|
| 200 | 400 | 70 | 30 |
| 0 | 200 | 30 | 10 |
| | | 10 | 50 |

## 1:240 MAIN SECTION




## 1:240 MAIN SECTION

| GAMMA RAY API UNITS | | DENSITY POROSITY PERCENT (2.71 g/cc) | |
|---|---|---|---|
| 200 | 400 | 70 | 30 |
| 0 | 200 | 30 | 10 |
| | | 10 | 50 |

| NEUTRON (Y) CALIPER INCHES (IN) | | NEUTRON POROSITY PERCENT (LIMESTONE MATRIX) | |
|---|---|---|---|
| 14 | 24 | 30 | 10 |
| 4 | 14 | | |

| DENSITY (X) CALIPER INCHES (IN) | | PE CROSS SECTION BARNS/ELECTRON | | DENSITY CORRECTION G/CC | |
|---|---|---|---|---|---|
| 14 | 24 | 0 | 10 | 0.25 | 0.25 |
| 4 | 14 | | | | |

| BIT SIZE INCHES (IN) | |
|---|---|
| 4 | 14 |

| TENSION LBS | |
|---|---|
| 10000 | 0 |

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 F

| | |
|---|---|
| Matrix Density | 2.71 G/C3 |
| Fluid Density | 1.00 G/C3 |
| Formation Matrix | Limestone |
| Drill Bit Size | 6.250 IN |
| Production Casing Diameter | 4.500 IN |
| Casing Correction (PHI N) | Disable |

| TENSION LBS | |
|---|---|
| 10000 | 0 |

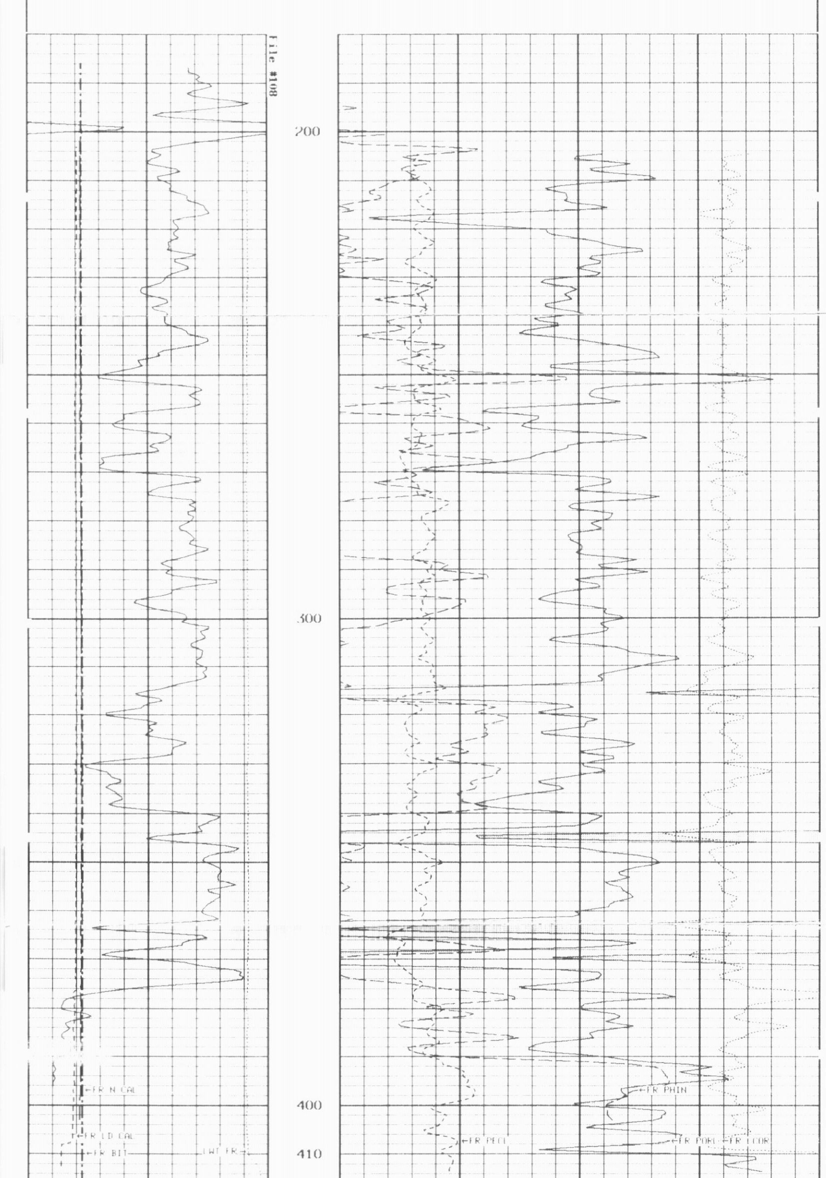
| BIT SIZE INCHES (IN) | |
|---|---|
| 4 | 14 |

| DENSITY (X) CALIPER INCHES (IN) | | PE CROSS SECTION BARNS/ELECTRON | | DENSITY CORRECTION G/CC | |
|---|---|---|---|---|---|
| 14 | 24 | 0 | 10 | 0.25 | 0.25 |
| 4 | 14 | | | | |

| NEUTRON (Y) CALIPER INCHES (IN) | | NEUTRON POROSITY PERCENT (LIMESTONE MATRIX) | |
|---|---|---|---|
| 14 | 24 | 30 | 10 |
| 4 | 14 | | |

| GAMMA RAY API UNITS | | DENSITY POROSITY PERCENT (2.71 g/cc) | |
|---|---|---|---|
| 200 | 400 | 70 | 30 |
| 0 | 200 | 30 | 10 |
| | | 10 | 50 |

## 1:240 REPEAT SECTION




## 1:240 REPEAT SECTION

| DENSITY (X) CALIPER INCHES (IN) | | PE CROSS SECTION BARNS/ELECTRON | | DENSITY CORRECTION G/CC | |
|---|---|---|---|---|---|
| 14 | 24 | 0 | 10 | 0.25 | 0.25 |
| 4 | 14 | | | | |

| BIT SIZE INCHES (IN) | |
|---|---|
| 4 | 14 |

| TENSION LBS | |
|---|---|
| 10000 | 0 |

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 F

| | |
|---|---|
| Matrix Density | 2.71 G/C3 |
| Fluid Density | 1.00 G/C3 |
| Formation Matrix | Limestone |
| Drill Bit Size | 6.250 IN |
| Production Casing Diameter | 4.500 IN |
| Casing Correction (PHI N) | Disable |

| TENSION LBS | |
|---|---|
| 10000 | 0 |

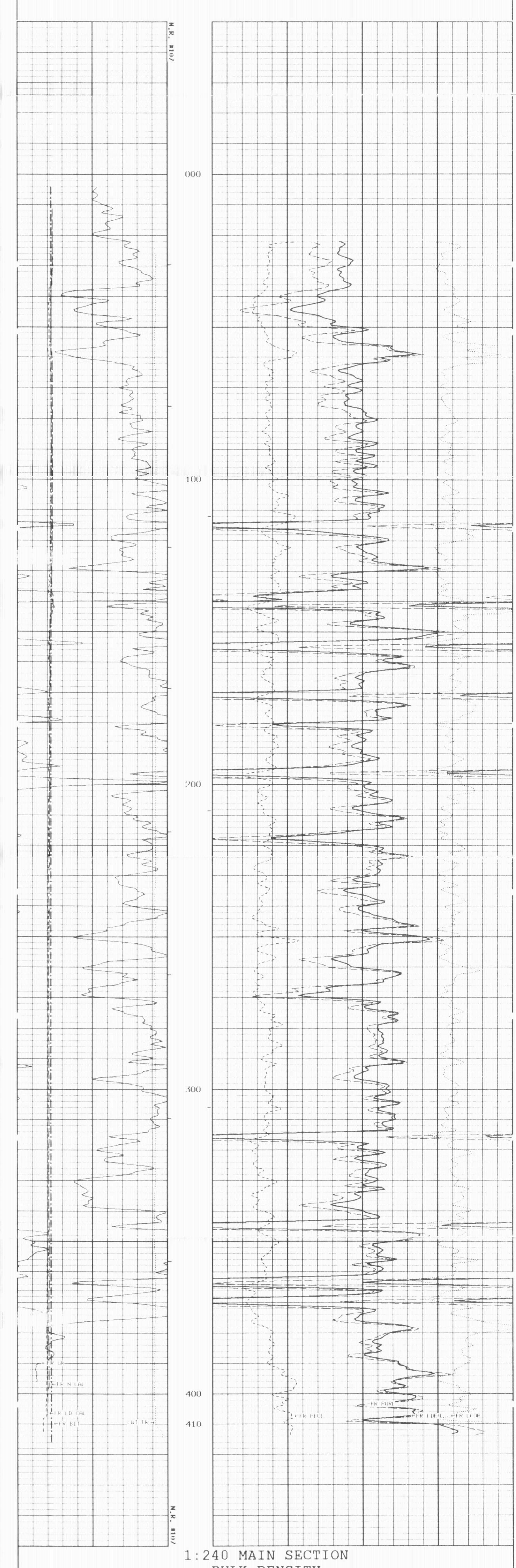
| BIT SIZE INCHES (IN) | |
|---|---|
| 4 | 14 |

| DENSITY (X) CALIPER INCHES (IN) | | PE CROSS SECTION BARNS/ELECTRON | | DENSITY CORRECTION G/CC | |
|---|---|---|---|---|---|
| 14 | 24 | 0 | 10 | 0.25 | 0.25 |
| 4 | 14 | | | | |

| NEUTRON (Y) CALIPER INCHES (IN) | | DENSITY POROSITY PERCENT (2.71 g/cc) | |
|---|---|---|---|
| 14 | 24 | 70 | 30 |
| 4 | 14 | 30 | 10 |
| | | 10 | 50 |

| GAMMA RAY API UNITS | | -BHV AHV- CU.FT | COMPENSATED BULK DENSITY G/CC | |
|---|---|---|---|---|
| 150 | 300 | | 3.0 | 4.0 |
| 0 | 150 | | 2.0 | 3.0 |
| | | | 1.0 | 2.0 |

## 1:240 MAIN SECTION BULK DENSITY




## 1:240 MAIN SECTION BULK DENSITY

| GAMMA RAY API UNITS | | -BHV AHV- CU.FT | COMPENSATED BULK DENSITY G/CC | |
|---|---|---|---|---|
| 150 | 300 | | 3.0 | 4.0 |
| 0 | 150 | | 2.0 | 3.0 |
| | | | 1.0 | 2.0 |

| NEUTRON (Y) CALIPER INCHES (IN) | | DENSITY POROSITY PERCENT (2.71 g/cc) | |
|---|---|---|---|
| 14 | 24 | 70 | 30 |
| 4 | 14 | 30 | 10 |
| | | 10 | 50 |

| DENSITY (X) CALIPER INCHES (IN) | | PE CROSS SECTION BARNS/ELECTRON | | DENSITY CORRECTION G/CC | |
|---|---|---|---|---|---|
| 14 | 24 | 0 | 10 | 0.25 | 0.25 |
| 4 | 14 | | | | |

| BIT SIZE INCHES (IN) | |
|---|---|
| 4 | 14 |

| TENSION LBS | |
|---|---|
| 10000 | 0 |

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 F

| | |
|---|---|
| Matrix Density | 2.71 G/C3 |
| Fluid Density | 1.00 G/C3 |
| Formation Matrix | Limestone |
| Drill Bit Size | 6.250 IN |
| Production Casing Diameter | 4.500 IN |
| Casing Correction (PHI N) | Disable |

* Calibration Summary *

Shop Calibration
GRTB

Performed : 19 May 2008 Time : 10:16
Sensor Suite : GR GRS ID : GRT BA 103

| | Background | Measured Jig | Units | Calibrated Jig | Units |
|---|---|---|---|---|---|
| GR | 51 | 341 | CPS | 175 | GRAPI |

Shop Calibration
CNT

Performed : 19 May 2008 Time : 15:49
Sensor Suite : BHC NEUT ID : CNP AA 113
Source ID : 71 24 905B

| | Tank Measured | Tank Calibrated | Verification Jig | Units |
|---|---|---|---|---|
| N/F | 3.6003 | 3.6006 | 3.7142 | |
| Porosity | 20.5 | 20.5 | 20.9 | % |

Performed : 00 XXX 0000 Time : 00:00
Sensor Suite : CALI BLN ID : CNP AA 113

| | Jig Ring#1 | Measured Ring#2 | Jig Ring#1 | Calibrated Ring#2 | Units |
|---|---|---|---|---|---|
| CL # 1 | 7.0 | 13.1 | 6.0 | 12.0 | IN. |

Shop Calibration
LDT

Performed : 07 May 2008 Time : 11:26
Sensor Suite : BHC PEB ID : LDP BA 105
Source ID : CSV587

Short Space

| | BKGD | Al | Mg | Al+Fe | Units |
|---|---|---|---|---|---|
| LSW1 | 55 | 281 | 1430 | 476 | CPS |
| LSW2 | 70 | 1398 | 2486 | 927 | CPS |
| LSW3 | 260 | 2700 | 4964 | 2258 | CPS |
| LSW4 | 331 | 1053 | 2050 | 1634 | CPS |
| LSW5 | 26 | 32 | 34 | 31 | CPS |
| LSW6 | 69 | 71 | 71 | 71 | CPS |
| LSW7 | 70 | 71 | 76 | 70 | CPS |
| LSW8 | 3 | 3 | 3 | 3 | CPS |
| QS | 0.007 | 0.000 | 0.007 | 0.007 | |
| PES | | | 2.961 | 6.761 | |
| SSDN | | 2.581 | 1.679 | | G/CC |

Long Space

| | BKGD | Al | Mg | Al+Fe | Units |
|---|---|---|---|---|---|
| LLW1 | 53 | 281 | 1281 | 170 | CPS |
| LLW2 | 65 | 559 | 2530 | 391 | CPS |
| LLW3 | 240 | 988 | 3835 | 864 | CPS |
| LLW4 | 313 | 569 | 1423 | 530 | CPS |
| LLW5 | 29 | 30 | 32 | 30 | CPS |
| LLW6 | 63 | 63 | 63 | 65 | CPS |
| LLW7 | 63 | 63 | 61 | 64 | CPS |
| LLW8 | 4 | 4 | 5 | 4 | CPS |
| QL | 0.000 | 0.000 | 0.016 | 0.008 | |
| PEL | | | 2.850 | 6.594 | |
| LSDN | | 2.581 | 1.679 | | G/CC |

Performed : 04 FEB 2008 Time : 11:09
Sensor Suite : CALI PEB ID : LDP BA 105

| | Jig Ring#1 | Measured Ring#2 | Jig Ring#1 | Calibrated Ring#2 | Units |
|---|---|---|---|---|---|
| CL # 1 | 11.6 | 17.6 | 6.0 | 12.0 | IN. |