**NABORS**

**COMPLETION & PRODUCTION SERVICES CO.**

# GAMMA RAY CCL
# CEMENT BOND VDL

Company NOBLE ENERGY INC.
Well TWO RANCH E 01
Field WATTENBERG
County WELD
State COLORADO

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**Well** TWO RANCH E 01
**Field** WATTENBERG
**County** WELD **State** COLORADO

**Location:** API #: 0512311869

SW/SW

SEC 10 TWP 2N RGE 64W

Other Services

| | | | |
|---|---|---|---|
| Permanent Datum | GL | Elevation | 4963 |
| Log Measured From | KB | | |
| Drilling Measured From | KB | | |

Elevation
K.B. 4974
D.F.
G.L. 4963

| | | | |
|---|---|---|---|
| Date | APRIL 5, 2014 | | |
| Run Number | ONE | | |
| Depth Driller | 7700 | | |
| Depth Logger | 7536 | | |
| Bottom Logged Interval | 7536 | | |
| Top Log Interval | 5000 | | |
| Open Hole Size | | | |
| Type Fluid | WATER | | |
| Density / Viscosity | N/A | | |
| Max. Recorded Temp. | 262°F | | |
| Estimated Cement Top | 7166 | | |
| Time Well Ready | LEED RIG | | |
| Time Logger on Bottom | 2-3/4 PROBE | | |
| Equipment Number | 4838 | | |
| Location | 45 | | |
| Recorded By | GREG NOLAN | | |
| Witnessed By | ALLEN MILLER | | |

| Borehole Record | | | | Tubing Record | | | |
|---|---|---|---|---|---|---|---|
| Run Number | Bit | From | To | Size | Weight | From | To |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| Casing Record | Size | Wgt/Ft | Top | Bottom |
|---|---|---|---|---|
| Surface String | 8-5/8 | 24# J-55 | SURFACE | 728 |
| Prot. String | | | | |
| Production String | 4-1/2 | 11.6# J-55 | SURFACE | 7695 |
| Liner | | | | |

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

THANK YOU FOR CHOOSING NCPS!!!!
LOG CORRELATED TO GREAT GUNS CBL DATED 11-01-84

| | |
|---|---|
| Database File: | cbl noble two e ranches 1.db |
| Dataset Pathname: | pass3 |
| Presentation Format: | noble en |
| Dataset Creation: | Sat Apr 05 08:05:50 2014 by Log SCH 120430 |
| Charted by: | Depth in Feet scaled 1:240 |

50 CCL -5.5

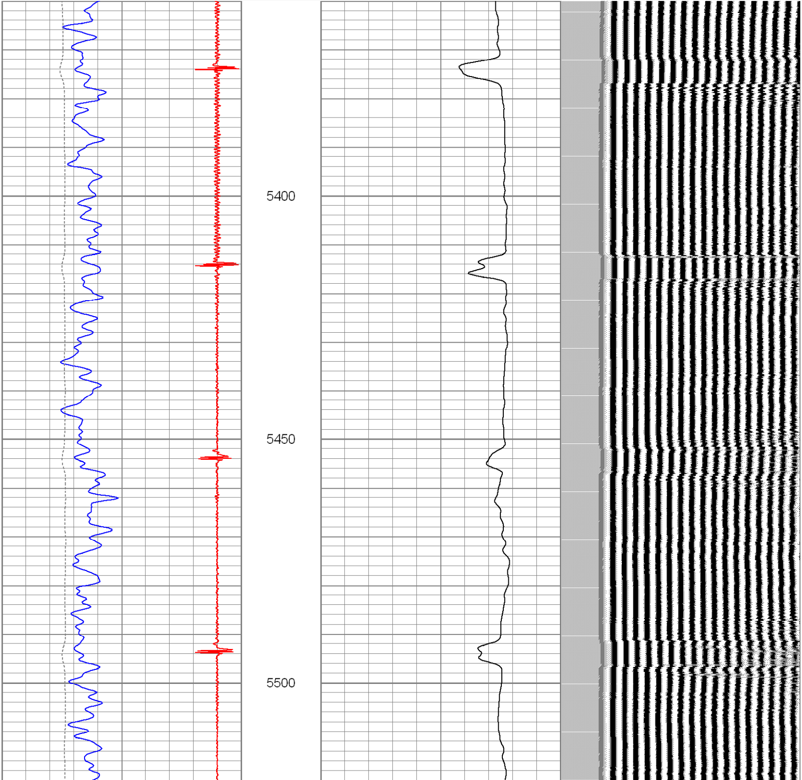
0 Gamma Ray (GAPI) 150

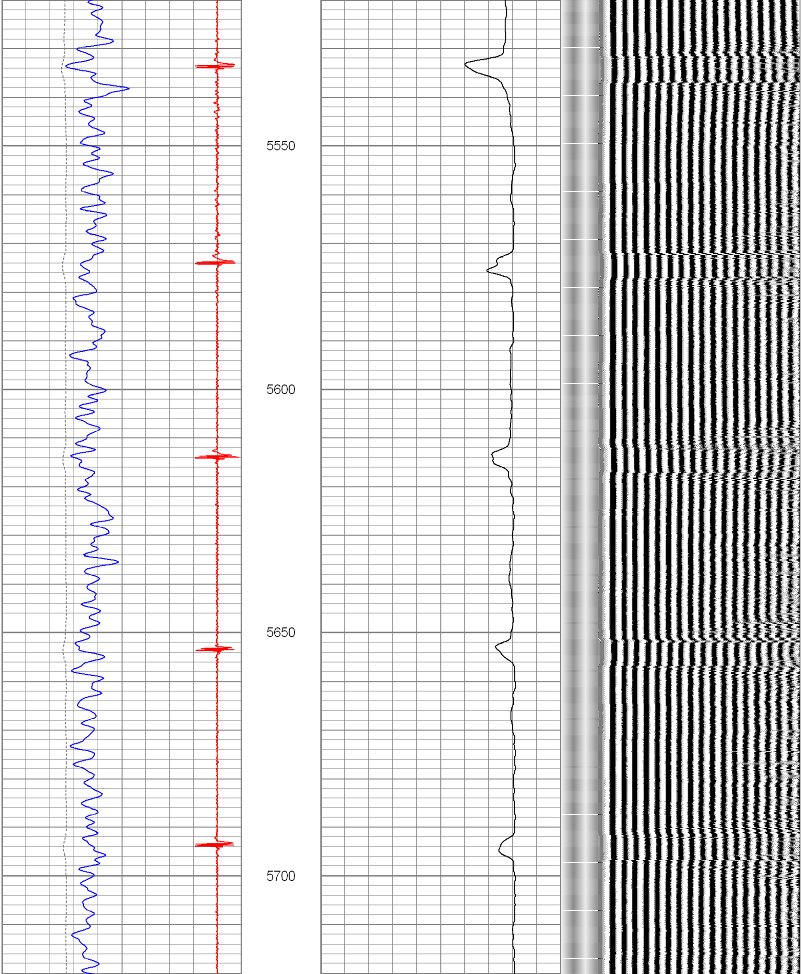
400 TT3 (usec) 0

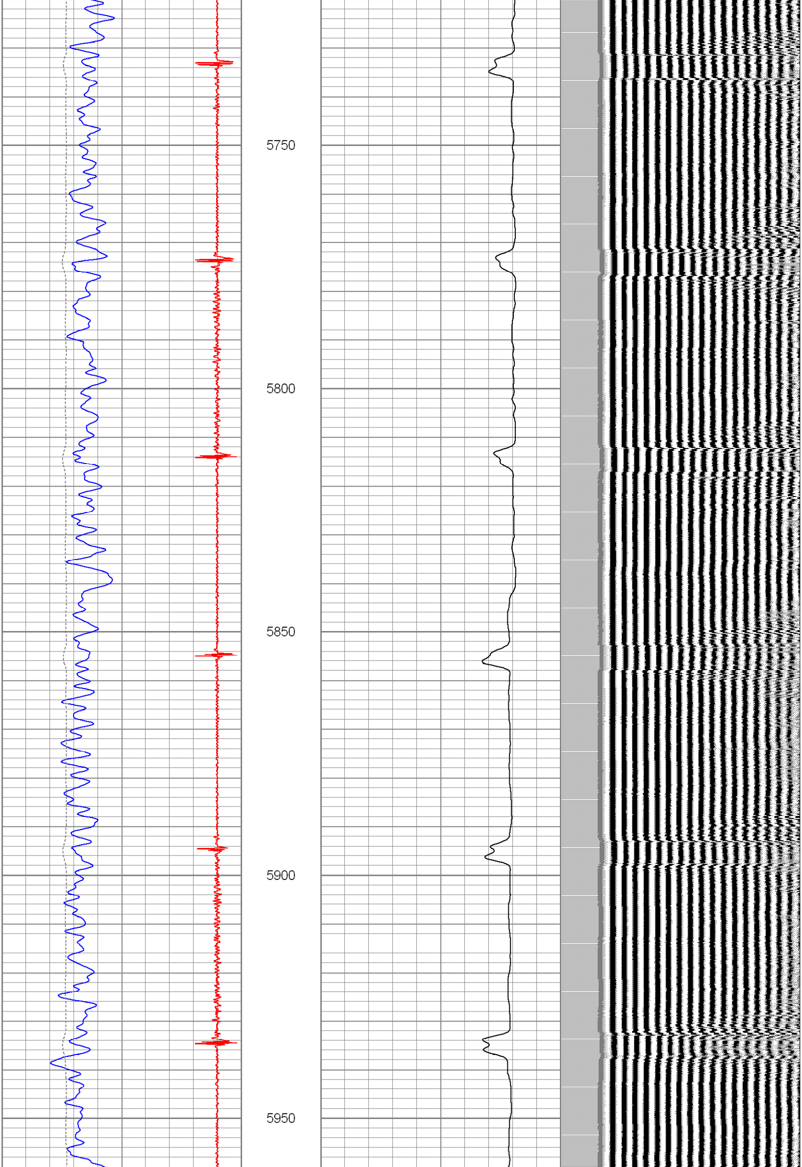
0 Amplified Amplitude (mV) 30

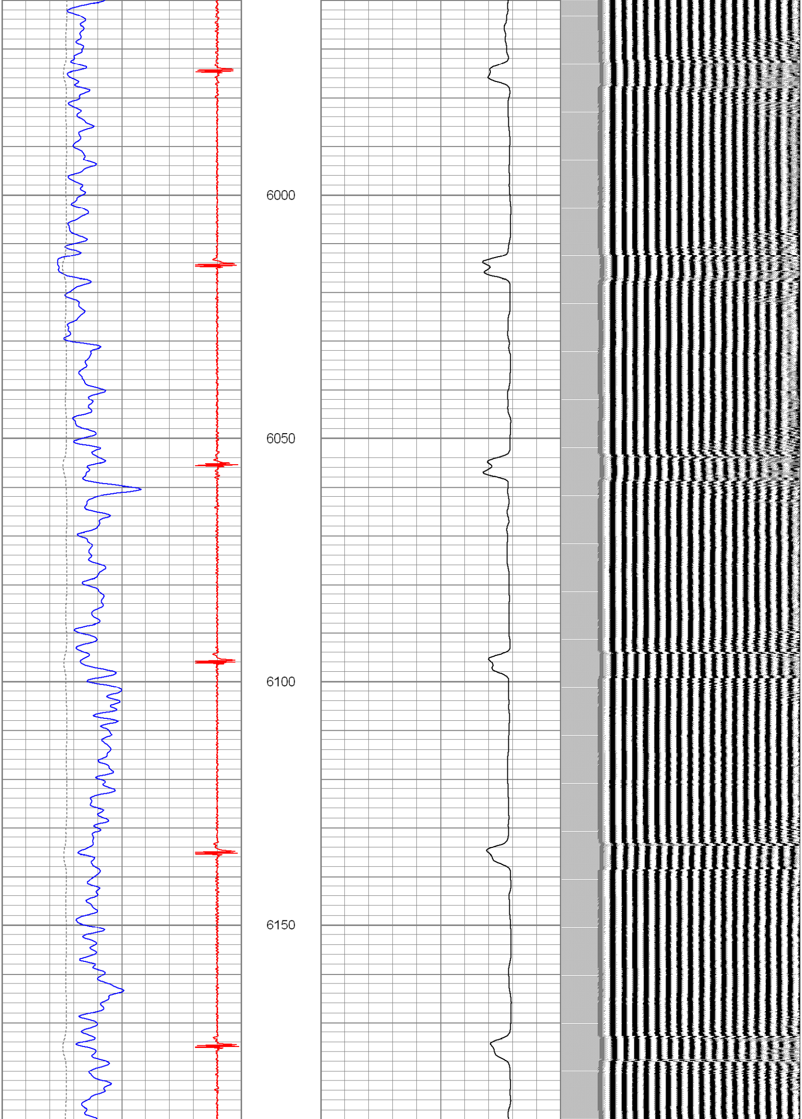
0 Amplitude (mV) 100

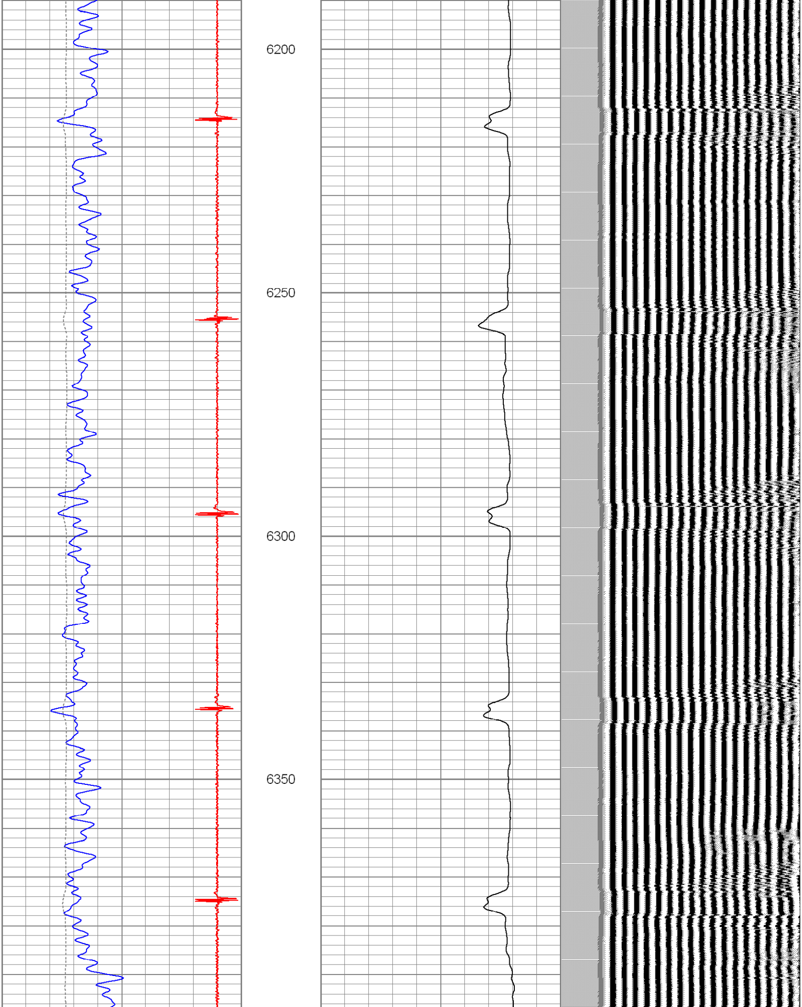
200 Variable Density 1200

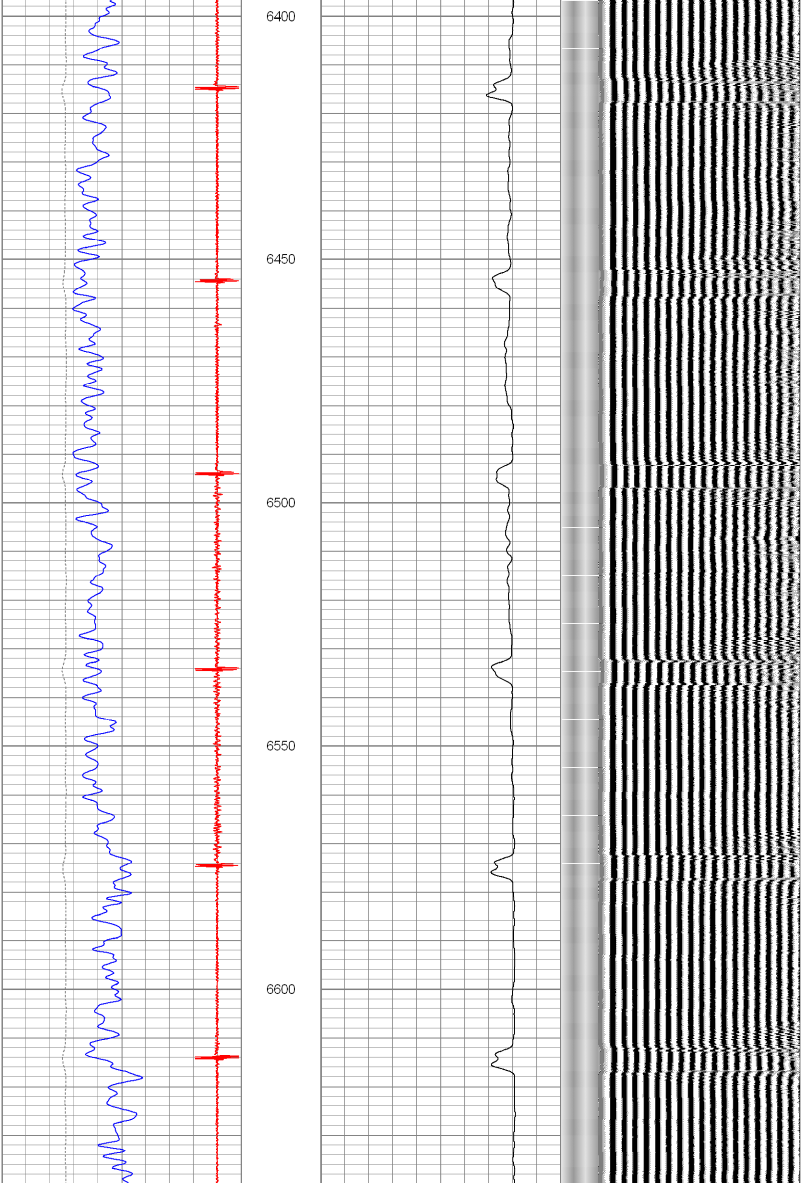


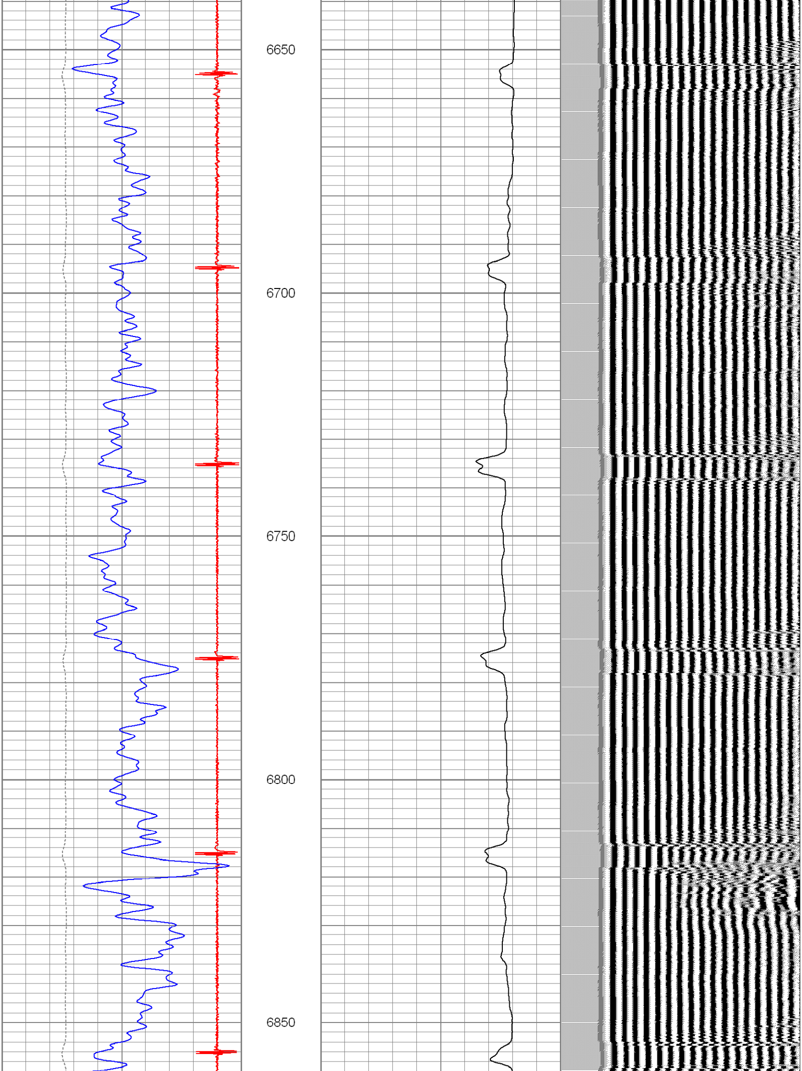


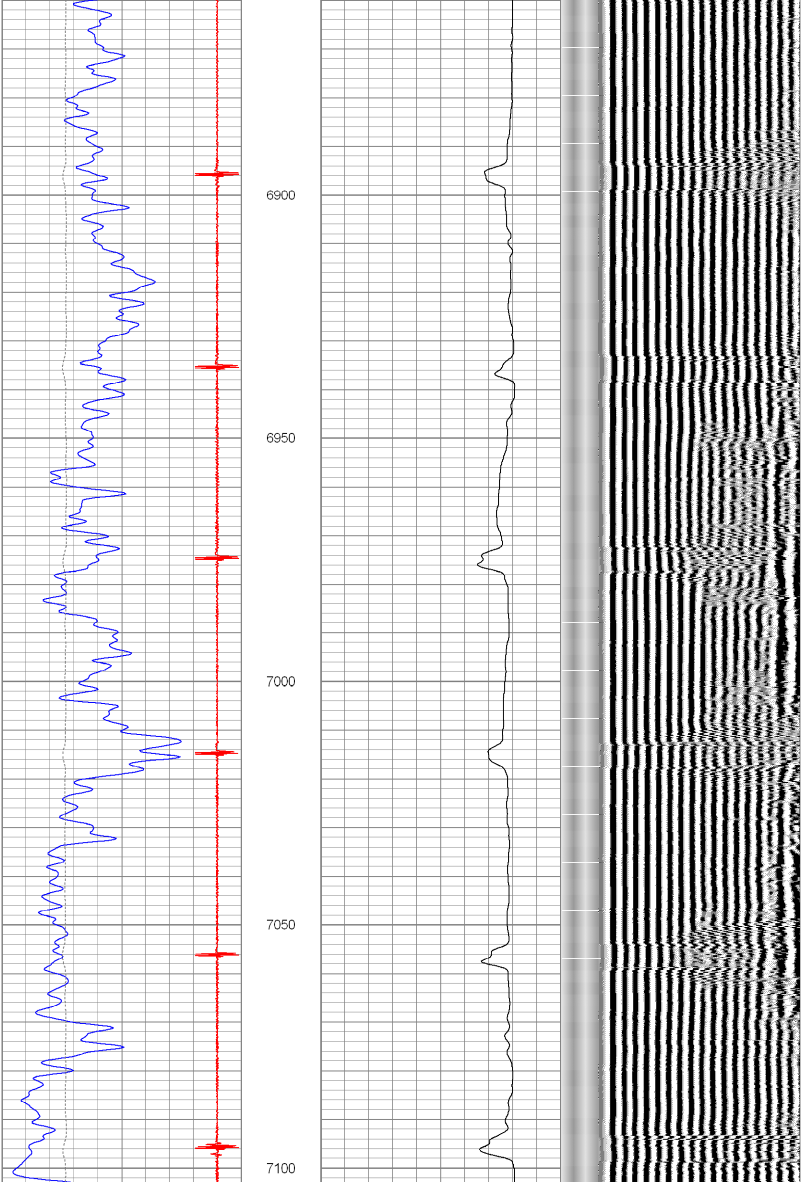


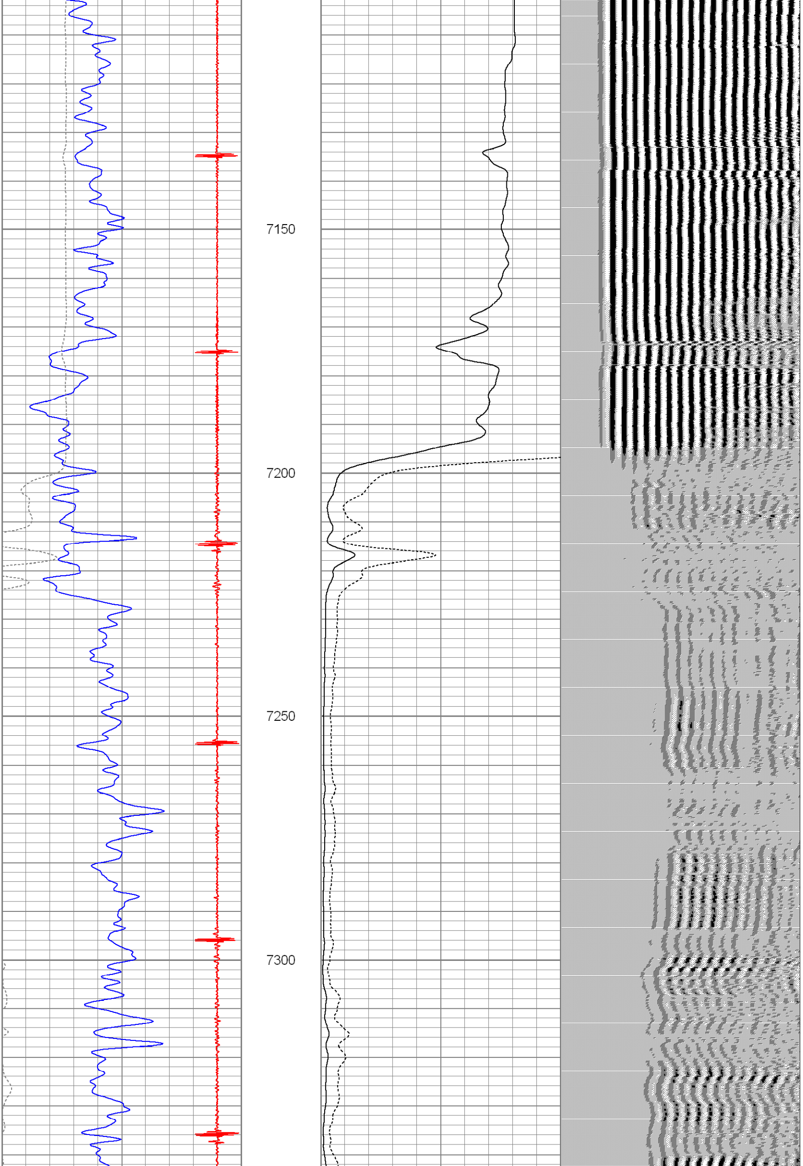


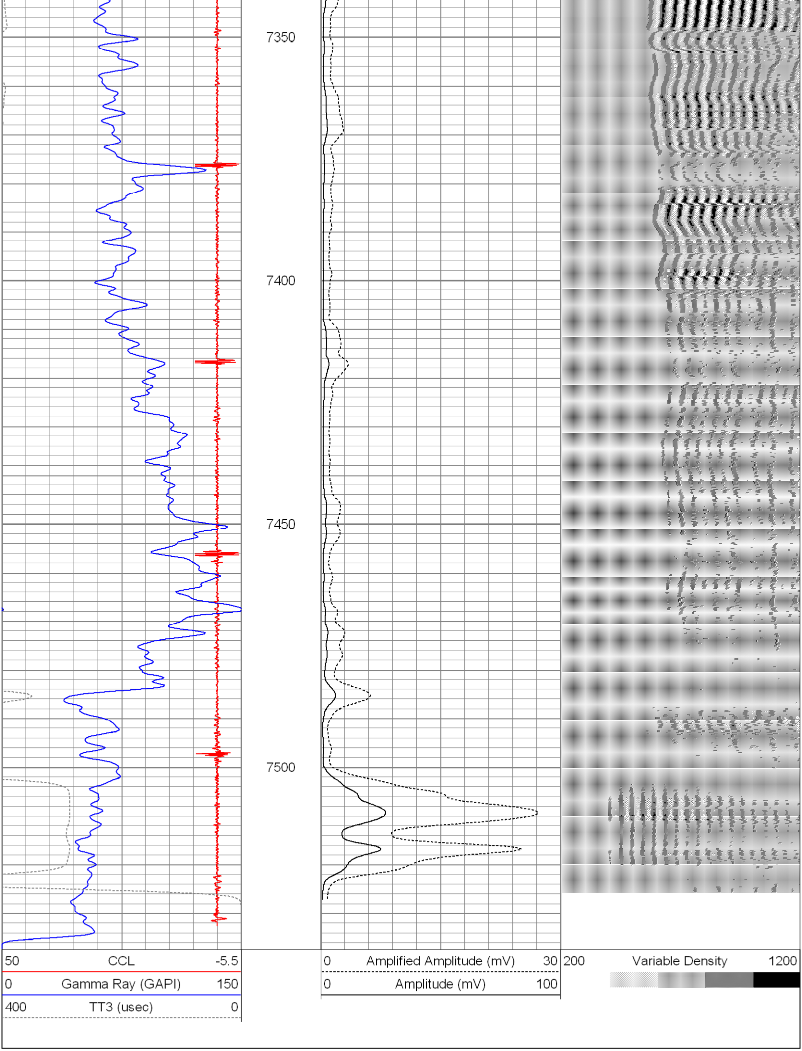












## Calibration Report

| | |
|---|---|
| Database File: | cbl noble two e ranches 1.db |
| Dataset Pathname: | pass3 |
| Dataset Creation: | Sat Apr 05 08:05:50 2014 by Log SCH 120430 |

## Gamma Ray Calibration Report

Type / Serial: Probe275dig / 110785

### SHOP CALIBRATION

Fri Nov 08 09:38:30 2013

| | Counts/Sec. | Gain | Offset | Jig | Units |
|---|---|---|---|---|---|
| Background | 0.0 | | | | cps |
| Calibrator | 1.0 | | | | cps |
| | | 0.4400 | | | GAPI/cps |

### PRIMARY VERIFICATION

| | Counts/Sec. | Gain | Offset | Jig | Units |
|---|---|---|---|---|---|
| Background | 0.0 | | | | cps |
| Calibrator | 0.0 | | | | cps |
| Difference | | | | 0.0 | GAPI |

### BEFORE SURVEY VERIFICATION

| | Counts/Sec. | Gain | Offset | Jig | Units |
|---|---|---|---|---|---|
| Background | 0.0 | | | | cps |
| Calibrator | 0.0 | | | | cps |
| Difference | | | | 0.0 | GAPI |

### AFTER SURVEY VERIFICATION

| | Counts/Sec. | Gain | Offset | Jig | Units |
|---|---|---|---|---|---|
| Background | 0.0 | | | | cps |
| Calibrator | 0.0 | | | | cps |
| Difference | | | | 0.0 | GAPI |

## Cement Bond Log Calibration Report

| | | |
|---|---|---|
| Serial Number: | 110802 | |
| Tool Model: | Probe275Digital | |
| Performed: | Sat Apr 05 07:59:07 2014 | |
| Depth: | 6218.48 | ft |
| Casing Diameter: | 4.5 | in |

| | 3' Spacing | 5' Spacing | |
|---|---|---|---|
| Signal Zero: | 0.7 | 0 | mV |
| Calibrated Amplitude: | 81.1961 | 81.1961 | mV |
| Reading at Signal Zero: | -0.00593262 | -0.00593262 | V |
| Reading in Free Pipe: | 2.48284 | 2.34036 | V |
| Gain: | 32.3437 | 34.6062 | |
| Offset: | 0.891883 | 0.205305 | |