# GAMMA RAY CCL CEMENT BOND VDL

| | |
|---|---|
| Company | NOBLE ENERGY INC. |
| Well | FOSS 06-34 |
| Field | WATTENBERG |
| County | WELD |
| State | COLORADO |

Company NOBLE ENERGY INC.
Well FOSS 06-34
Field WATTENBERG
County WELD State COLORADO

Location: API #: 0512324292
500' FSL & 2076' FWL
SE/SW
SEC 6 TWP 6N RGE 63W

Other Services

| | | | |
|---|---|---|---|
| Permanent Datum | GL | Elevation 4700 | Elevation<br>K.B. 4713<br>D.F. 4712<br>G.L. 4700 |
| Log Measured From | KB | | |
| Drilling Measured From | KB | | |

| | |
|---|---|
| Date | FEBRUARY 9, 2012 |
| Run Number | ONE |
| Depth Driller | 7068 |
| Depth Logger | 6990 |
| Bottom Logged Interval | 6989 |
| Top Log Interval | 1810 |
| Open Hole Size | 7-7/8 |
| Type Fluid | WATER |
| Density / Viscosity | N/A |
| Max. Recorded Temp. | 237 DEG. F |
| Estimated Cement Top | 2233 |
| Time Well Ready | PORTABLE MAST |
| Time Logger on Bottom | 2-3/4 PROBE 101024 |
| Equipment Number | 3342 |
| Location | 45 |
| Recorded By | GREG NOLAN |
| Witnessed By | JOE BRNAK |

| 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 | 13 | 523 |
| Prot. String | | | | |
| Production String | 4-1/2 | 11.6# M-80 | 13 | 7046.9 |
| 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 SUPERIOR WELL SERVICES!!!!!
LOG CORRELATED TO PSI COMP. DENSIY/NEUTRON MICROLOG DATED FEBRUARY 3, 2012
WCR 74 & WCR 63, N.4 TO FENCELINE, W.4 TO FOSS 06-31, S.2, NW INTO

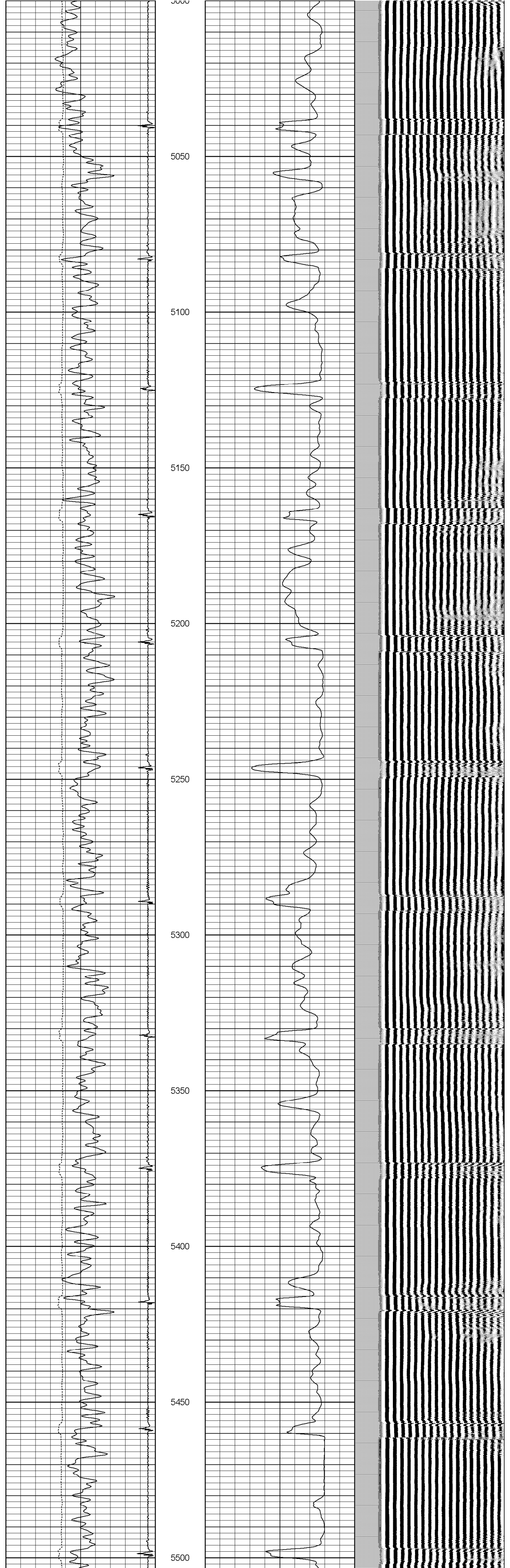
Database File: cbl noble foss 06-34.db
Dataset Pathname: pass3
Presentation Format: nuexbond
Dataset Creation: Thu Feb 09 10:58:49 2012 by Log Std Casedhole 10081
Charted by: Depth in Feet scaled 1:240

30 Gamma Ray (GAPI) 130
30 CCL -1.5
400 TT3 (usec) 100
0 Amplified Amplitude (mV) 30
0 Amplitude (mV) 100
200 VDL 1200

30 Gamma Ray (GAPI) 130
30 CCL -1.5
400 TT3 (usec) 100
0 Amplified Amplitude (mV) 30
0 Amplitude (mV) 100
200 VDL 1200

Database File: cbl noble foss 06-34.db
Dataset Pathname: pass2
Presentation Format: nuexbond
Dataset Creation: Thu Feb 09 10:42:14 2012 by Log Std Casedhole 10081
Charted by: Depth in Feet scaled 1:240

0 Gamma Ray (GAPI) 200
30 CCL -1.5
400 TT3 (usec) 100
0 Amplified Amplitude (mV) 30
0 Amplitude (mV) 100
200 VDL 1200



## Calibration Report

Database File: cbl noble foss 06-34.db
Dataset Pathname: pass2
Dataset Creation: Thu Feb 09 10:42:14 2012 by Log Std Casedhole 10081

### Gamma Ray Calibration Report

Type / Serial: Probe275dig / 101011

SHOP CALIBRATION Thu Feb 09 10:38:41 2012

| | Counts/Sec. | Gain | Offset | Jig | Units |
|---|---|---|---|---|---|
| Background | 0.0 | | | | cps |
| Calibrator | 1.0 | | | | cps |
| | | 0.8000 | | | GAPI/cps |

PRIMARY VERIFICATION

| | | | |
|---|---|---|---|
| Background | 0.0 | | cps |
| Calibrator | 0.0 | | cps |
| Difference | | 0.0 | GAPI |

BEFORE SURVEY VERIFICATION

| | | | |
|---|---|---|---|
| Background | 0.0 | | cps |
| Calibrator | 0.0 | | cps |
| Difference | | 0.0 | GAPI |

AFTER SURVEY VERIFICATION

| | | | |
|---|---|---|---|
| Background | 0.0 | | cps |
| Calibrator | 0.0 | | cps |
| Difference | | 0.0 | GAPI |

### Segmented Cement Bond Log Calibration Report

Serial Number: 101024
Tool Model: Probe

Calibration Casing Diameter: 4.500 in
Calibration Depth: 621.650 ft

Master Calibration, performed Thu Feb 09 10:18:19 2012:

| | Raw (v) | | Calibrated (mv) | | Results | |
|---|---|---|---|---|---|---|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| 3' | 0.009 | 2.493 | 0.800 | 81.196 | 32.370 | 0.498 |
| CAL | 0.009 | 1.660 | | | | |
| 5' | 0.009 | 2.455 | 0.800 | 81.196 | 32.876 | 0.491 |
| SUM | | | | | | |
| S1 | 0.009 | 2.499 | 0.000 | 81.196 | 32.618 | -0.310 |
| S2 | 0.009 | 2.499 | 0.000 | 81.196 | 32.618 | -0.310 |
| S3 | 0.009 | 2.499 | 0.000 | 81.196 | 32.618 | -0.309 |
| S4 | 0.009 | 2.447 | 0.000 | 81.196 | 33.314 | -0.309 |
| S5 | 0.009 | 2.286 | 0.000 | 81.196 | 35.664 | -0.333 |
| S6 | 0.009 | 2.258 | 0.000 | 81.196 | 36.111 | -0.334 |
| S7 | 0.009 | 2.440 | 0.000 | 81.196 | 33.401 | -0.314 |
| S8 | 0.009 | 2.499 | 0.000 | 81.196 | 32.615 | -0.302 |

Internal Reference Calibration, performed Wed Dec 31 17:00:00 1969:

| | Raw (v) | | Calibrated (v) | | Results | |
|---|---|---|---|---|---|---|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| CAL | 0.000 | 0.000 | 0.009 | 1.660 | 1.000 | 0.000 |

Air Zero Calibration, performed Thu Feb 09 10:17:35 2012:

| | Raw (v) | Calibrated (v) | Results |
|---|---|---|---|
| | Zero | Zero | Offset |
| 3' | 0.000 | 0.000 | 0.000 |
| 5' | 0.000 | 0.000 | 0.000 |
| SUM | | | |
| S1 | 0.000 | 0.000 | 0.000 |
| S2 | 0.000 | 0.000 | 0.000 |
| S3 | 0.000 | 0.000 | 0.000 |
| S4 | 0.000 | 0.000 | 0.000 |
| S5 | 0.000 | 0.000 | 0.000 |
| S6 | 0.000 | 0.000 | 0.000 |
| S7 | 0.000 | 0.000 | 0.000 |
| S8 | 0.000 | 0.000 | 0.000 |