**PIONEER**
Pioneer Energy Services

# GAMMA RAY CCL CEMENT BOND VDL SECTOR MAP

Company EnCana Oil & Gas (USA) Inc.
Well Frederiksen 1C-28H-H368
Field Wattenberg
County Weld
State Colorado
Country USA

Location:
API #: 05-123-37668
2270' FNL & 255' FEL SENE
SEC 28 TWP 3N RGE 68W

Other Services
None

Permanent Datum GL Elevation 4975
Log Measured From KB
Drilling Measured From KB

Elevation
K.B. 4988
D.F. 4988
G.L. 4975

Company EnCana Oil & Gas (USA) Inc.
Well Frederiksen 1C-28H-H368
Field Wattenberg
County Weld
State Colorado CountryUSA

| | |
|---|---|
| Date | June 11, 2014 |
| Run Number | 1 |
| Depth Driller | 11721 |
| Depth Logger | 7384 |
| Bottom Logged Interval | 7383 |
| Top Log Interval | 0 |
| Open Hole Size | 8-3/4" |
| Type Fluid | Drilling Mud |
| Density / Viscosity | 12.6 / 40 |
| Max. Recorded Temp. | NA |
| Estimated Cement Top | 780 |
| Time Well Ready | 1200 |
| Time Logger on Bottom | 1300 |
| Equipment Number | 49 |
| Location | Ft. Morgan, CO |
| Recorded By | Clint Christensen |
| Witnessed By | Bill LaForce |

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

| Casing Record | Size | Wgt/Ft | Top | Bottom |
|---|---|---|---|---|
| Surface String | | | | |
| Prot. String | | | | |
| Production String | 7" | 26 lbs | 0 | 7716' |
| Liner | | | | |

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not 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.

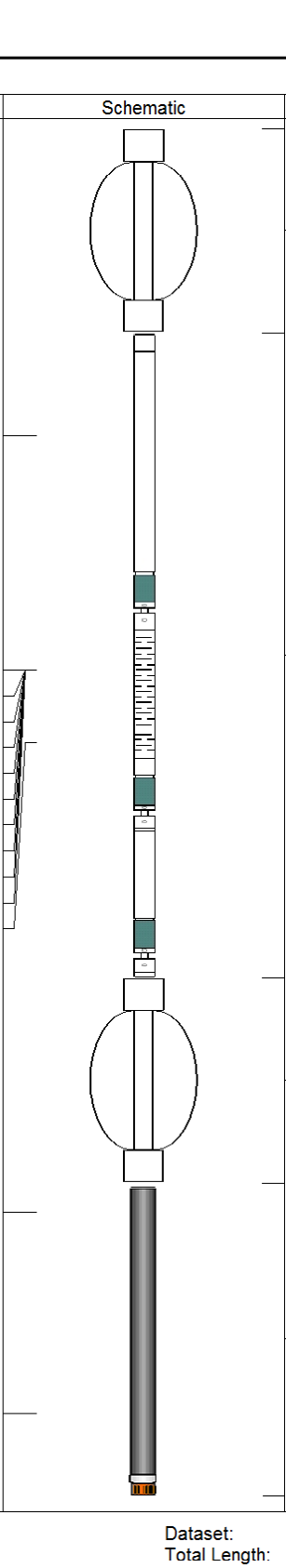
## Comments

Depth Correlated to 7" Tally

Ensign Rig 135

Thank You for using Pioneer Energy Services

SO# 2-013577



| Sensor | Offset (ft) | Description | Len (ft) | OD (in) | Wt (lb) |
|---|---|---|---|---|---|
| | | CENT #2 -A (1) | 2.83 | 2.75 | 20.00 |
| IntTemp | 14.66 | | | | |
| WVF3FT<br>WVFCAL<br>WVFS1<br>WVFS2<br>WVFS3<br>WVFS4<br>WVFS5<br>WVFS6<br>WVFS7<br>WVFS8<br>WVF5FT | 11.41<br>11.41<br>11.41<br>11.41<br>11.41<br>11.41<br>11.41<br>11.41<br>11.41<br>11.41<br>10.41 | RBT-Probe (Base)<br>Probe Radii Bond Tool with Digital Telemetry | 8.92 | 2.75 | 90.00 |
| | | CENT-A (1) | 2.83 | 2.75 | 20.00 |
| CCL | 3.92 | | | | |
| | | GR-probe 2.75 (111205)<br>proble Digital CCL Gamma | 4.33 | 2.75 | 100.00 |
| GR | 1.13 | | | | |

Dataset: 13577.db: field/well/run1/Final
Total Length: 18.91 ft
Total Weight: 230.00 lb
O.D. 2.75 in

Database File: 13577.db
Dataset Pathname: Final
Presentation Format: scbl02
Dataset Creation: Wed Jun 11 14:27:23 2014
Charted by: Depth in Feet scaled 1:240

| | | | | |
|---|---|---|---|---|
| -9 CCL 1 | 0 AMP (mV) 100 | 0 AMPAVG 150 | 200 VDL 1200 | 1 SECTOR MAP 8 |
| 0 GR (GAPI) 200 | 0 AMPx5 (mV) 20 | 0 AMPMAX 150 | | 10 60 |
| | | 0 AMPMIN 150 | | |

Calibration Report

Database File: 13577.db
Dataset Pathname: Final
Dataset Creation: Wed Jun 11 14:27:23 2014

Gamma Ray Calibration Report

| | | |
|---|---|---|
| Serial Number: | 111205 | |
| Tool Model: | probe 2.75 | |
| Performed: | Wed Jun 11 10:38:21 2014 | |
| Calibrator Value: | 1.0 | GAPI |
| Background Reading: | 0.0 | cps |
| Calibrator Reading: | 1.0 | cps |
| Sensitivity: | 1.0000 | GAPI/cps |

Segmented Cement Bond Log Calibration Report

| | | |
|---|---|---|
| Serial Number: | Base | |
| Tool Model: | Probe | |
| Calibration Casing Diameter: | 7.000 | in |
| Calibration Depth: | 260.156 | ft |

Master Calibration, performed Wed Jun 11 12:39:25 2014:

| | Raw (v) | | Calibrated (mv) | | Results | |
|---|---|---|---|---|---|---|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| 3' | 0.012 | 0.861 | 0.000 | 62.200 | 56.347 | -0.312 |
| CAL | 0.012 | 1.015 | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 | 0.012 | 0.934 | 0.000 | 62.200 | 57.028 | -0.467 |
| SUM | | | | | | |
| S1 | 0.005 | 0.969 | 0.000 | 100.000 | 66.337 | -0.800 |
| S2 | 0.012 | 0.953 | 0.000 | 100.000 | 66.306 | -0.682 |
| S3 | 0.012 | 0.843 | 0.000 | 100.000 | 69.829 | -0.933 |
| S4 | 0.012 | 0.764 | 0.000 | 100.000 | 70.545 | -0.979 |
| S5 | 0.012 | 0.747 | 0.000 | 100.000 | 70.811 | -0.492 |
| S6 | 0.012 | 0.760 | 0.000 | 100.000 | 70.399 | -0.617 |
| S7 | 0.012 | 0.821 | 0.000 | 100.000 | 68.568 | -0.816 |
| S8 | 0.012 | 0.887 | 0.000 | 100.000 | 69.159 | -0.755 |

Internal Reference Calibration, performed Tue Nov 21 12:42:07 2006:

| | Raw (v) | | Calibrated (v) | | Results | |
|---|---|---|---|---|---|---|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| CAL | 0.000 | 0.000 | 0.012 | 1.015 | 1.000 | 0.000 |

Air Zero Calibration, performed Thu Apr 24 09:23:40 2008:

| | 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 |