|  |  |
|---|---|
| Company | NIGHTHAWK PRODUCTION, LLC. |
| Well | BIG SKY 5-11 |
| Field | ARIKAREE CREEK |
| County | LINCOLN |
| State | COLORADO |

# PEAK WIRELINE SERVICES, INC.

# RADIAL CEMENT BOND LOG

Company NIGHTHAWK PRODUCTION, LLC.
Well BIG SKY 5-11
Field ARIKAREE CREEK
County LINCOLN State COLORADO

Location: 1922' FNL & 621' FWL
SW NW
SEC 11 TWP 6S RGE 54W

Other Services

Permanent Datum GROUND LEVEL Elevation 5217
Log Measured From KELLY BUSHING 17' AGL
Drilling Measured From KELLY BUSHING

Elevation
K.B. 5234
D.F. 5233
G.L. 5217

|  |  |
|---|---|
| Date | 2-19-2014 |
| Run Number | ONE |
| Depth Driller | 8284 |
| Depth Logger | 8237 |
| Bottom Logged Interval | 8232 |
| Top Log Interval | 2750 |
| Casing Size | 5 1/2" |
| Type Fluid | WATER |
| Density / Viscosity |  |
| Max. Recorded Temp. |  |
| Estimated Cement Top |  |
| Time Well Ready |  |
| Time Logger on Bottom |  |
| Equipment Number | TR-7 |
| Location | CHEYENNE WELLS, CO |
| Recorded By | HENDERSON |
| Witnessed By | LARRY HARTNETT |

| Borehole Record |  |  |  | Tubing Record |  |  |  |
|---|---|---|---|---|---|---|---|
| Run Number | Bit | From | To | Size | Weight | From | To |
| ONE | 12 1/4" | 0 | 351 |  |  |  |  |
| TWO | 7 7/8" | 351 | 8284 |  |  |  |  |

| Casing Record | Size | Wgt/Ft | Top | Bottom |
|---|---|---|---|---|
| Surface String | 8 5/8" | 24# | 0 | 351 |
| Prot. String |  |  |  |  |
| Production String | 5 1/2" | 17# | 0 | 8282 |
| Liner |  |  |  |  |

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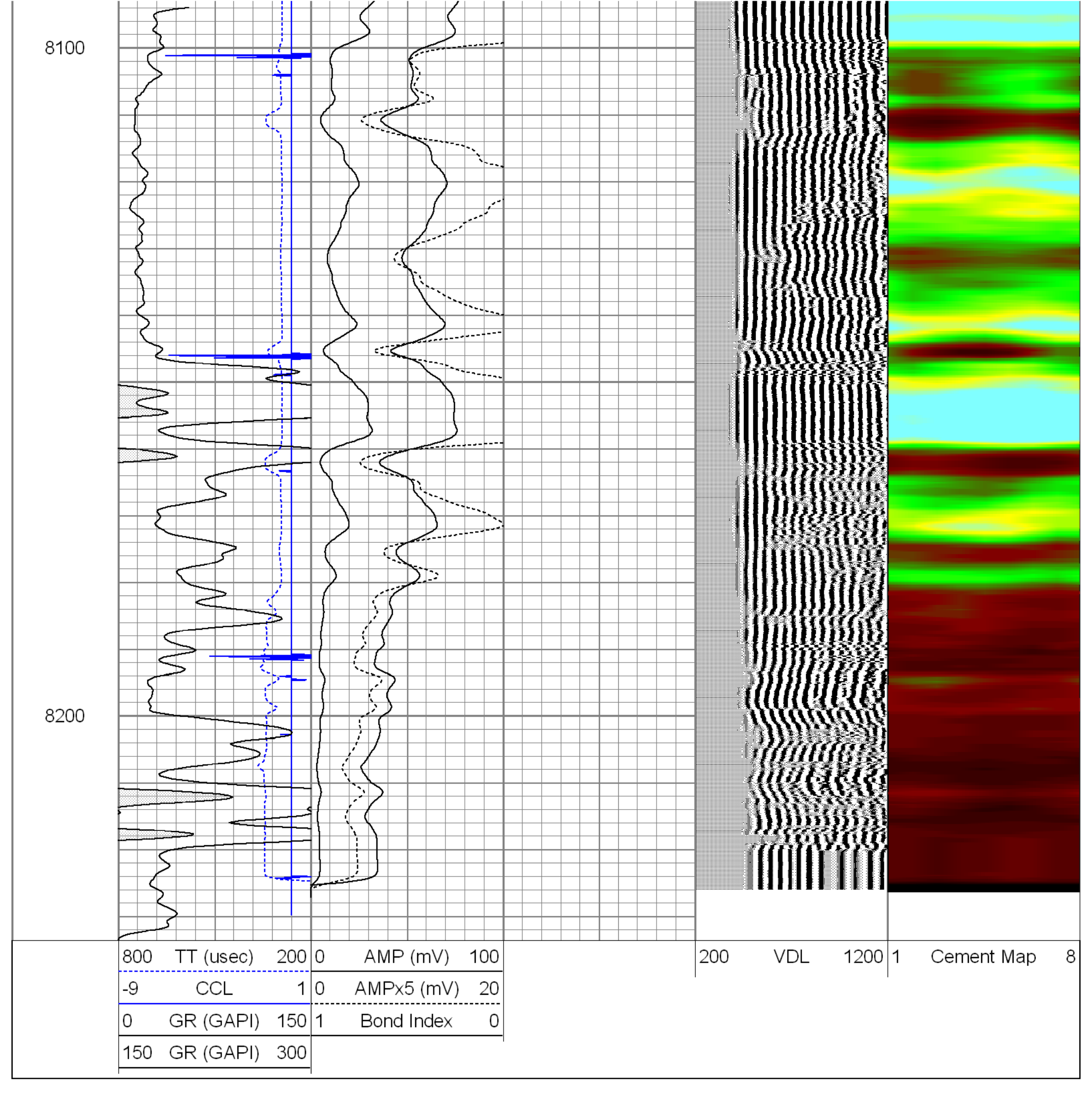
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, 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

|  |  |
|---|---|
| Database File: | bigsky.db |
| Dataset Pathname: | 5-11/run1/pass2 |
| Presentation Format: | scbl02 |
| Dataset Creation: | Wed Feb 19 07:29:48 2014 by Log Std Casedhole 07081 |
| Charted by: | Depth in Feet scaled 1:240 |

Database File: bigsky.db
Dataset Pathname: 5-11/run1/pass1.1
Presentation Format: scbl02
Dataset Creation: Wed Feb 19 07:29:21 2014 by Calc Std Casedhole 07081
Charted by: Depth in Feet scaled 1:240



## Calibration Report

Database File: bigsky.db
Dataset Pathname: 5-11/run1/pass1.1
Dataset Creation: Wed Feb 19 07:29:21 2014 by Calc Std Casedhole 07081

### Gamma Ray Calibration Report

| | | |
|---|---|---|
| Serial Number: | 061120GR | |
| Tool Model: | PROBE | |
| Performed: | Wed Feb 19 07:27:35 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: | 4.5040904 | |
| Tool Model: | Probe | |
| Calibration Casing Diameter: | 5.500 | in |
| Calibration Depth: | 730.342 | ft |

Master Calibration, performed Wed Feb 19 07:04:44 2014:

| | Raw (v) | | Calibrated (mv) | | Results | |
|---|---|---|---|---|---|---|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| 3' | 0.002 | 1.732 | 0.000 | 71.921 | 41.579 | -0.100 |
| CAL | 2.126 | 2.118 | | | | |
| 5' | 0.005 | 1.822 | 0.000 | 71.921 | 39.574 | -0.200 |
| SUM | | | | | | |
| S1 | 0.001 | 1.748 | 0.000 | 100.000 | 57.235 | -0.029 |
| S2 | 0.002 | 1.772 | 0.000 | 100.000 | 56.512 | -0.141 |
| S3 | 0.004 | 1.781 | 0.000 | 100.000 | 56.282 | -0.223 |
| S4 | 0.003 | 1.786 | 0.000 | 100.000 | 56.078 | -0.157 |
| S5 | 0.003 | 1.763 | 0.000 | 100.000 | 56.818 | -0.153 |
| S6 | 0.004 | 1.703 | 0.000 | 100.000 | 58.871 | -0.229 |
| S7 | 0.003 | 1.661 | 0.000 | 100.000 | 60.321 | -0.165 |
| S8 | 0.004 | 1.697 | 0.000 | 100.000 | 59.036 | -0.208 |

Internal Reference Calibration, performed Wed Dec 31 18:00:00 1969:

| | Raw (v) | | Calibrated (v) | | Results | |
|---|---|---|---|---|---|---|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| CAL | 0.000 | 0.000 | 2.126 | 2.118 | 1.000 | 0.000 |

Air Zero Calibration, performed Wed Feb 19 06:58:59 2014:

| | 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 |