Company URSA OPERATING COMPANY
Well Monument Ridge B 33D-08-07-95
Field Parachute
County Garfield State CO

**HALLIBURTON**

# RESERVOIR MONITOR LOG
# GR-CCL

| | |
|---|---|
| Company | URSA OPERATING COMPANY |
| Well | Monument Ridge B 33D-08-07-95 |
| Field | Parachute |
| County | Garfield |
| State | CO |

API No.: 05-045-22905-0000 Serv #: 903138010
Location: SHL: 945' FSL & 166' FEL
Other Services JB/CBL-M

Sec:8 Twp:7S Rge: 95 W

| | | | | |
|---|---|---|---|---|
| Permanent Datum | Ground Level | Elevation 5701.8' | Elevation | |
| Log Measured From | KB , 17 Ft. above perm. datum | | K.B. | 5718.8' |
| Drilling Measured From | KB | | D.F.<br>G.L. | 5718.8<br>5701.8' |

| | | | |
|---|---|---|---|
| Date @ Time Logged | 26-FEB-2016 | Type Fluid in Hole | Water |
| Run No. | One | Density of Fluid | 8.4 PPG |
| Depth - Driller | 7507' | Fluid Level | Full |
| Depth - Logger | 7310' | Cement Top Est. Logged | n/a |
| Bottom - Logged Interval | 7300' | Equipment / Location | RS / 10971690 |
| Top - Log Interval | 3550' | Recorded by | Pedro Gonzalez Baqueiro |
| Max. Recorded Temp. | n/a | Witnessed by | Luke Grieger |

| CEMENTING DATA | Surface String | Protection String | Production String | Liner |
|---|---|---|---|---|
| Date / Time Cemented | | | | |
| Primary / Squeeze | | | | |
| Expected Compressive Strength | psi@ hrs | psi@ hrs | psi@ hrs | psi@ hrs |
| Cement Volume | | | | |
| Cement Type / Weight | / | / | / | / |
| Formulation | | | | |
| Mud Type / Mud Wgt. | / | / | / | / |

| Borehole Record | | | | Casing & Tubing Record | | | |
|---|---|---|---|---|---|---|---|
| Run Number | Bit | From | To | Size | Weight | From | To |
| One | 24 | surface | 60' | 16" | 75# | surface | 60' |
| Two | 12.25" | surface | 1700' | 8.625" | 32# | surface | 1700' |
| Three | 7.875" | surface | 7050.8' | 4.5" | 11.6# | surface | 7050.8' |

<<< Fold Here >>>

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

Comments

HES Cement Bond Log First Run in to the hole
Log correlated by KB 17'
Log Interval Percustomer Request
Log Ran in combo with CBL-M tool

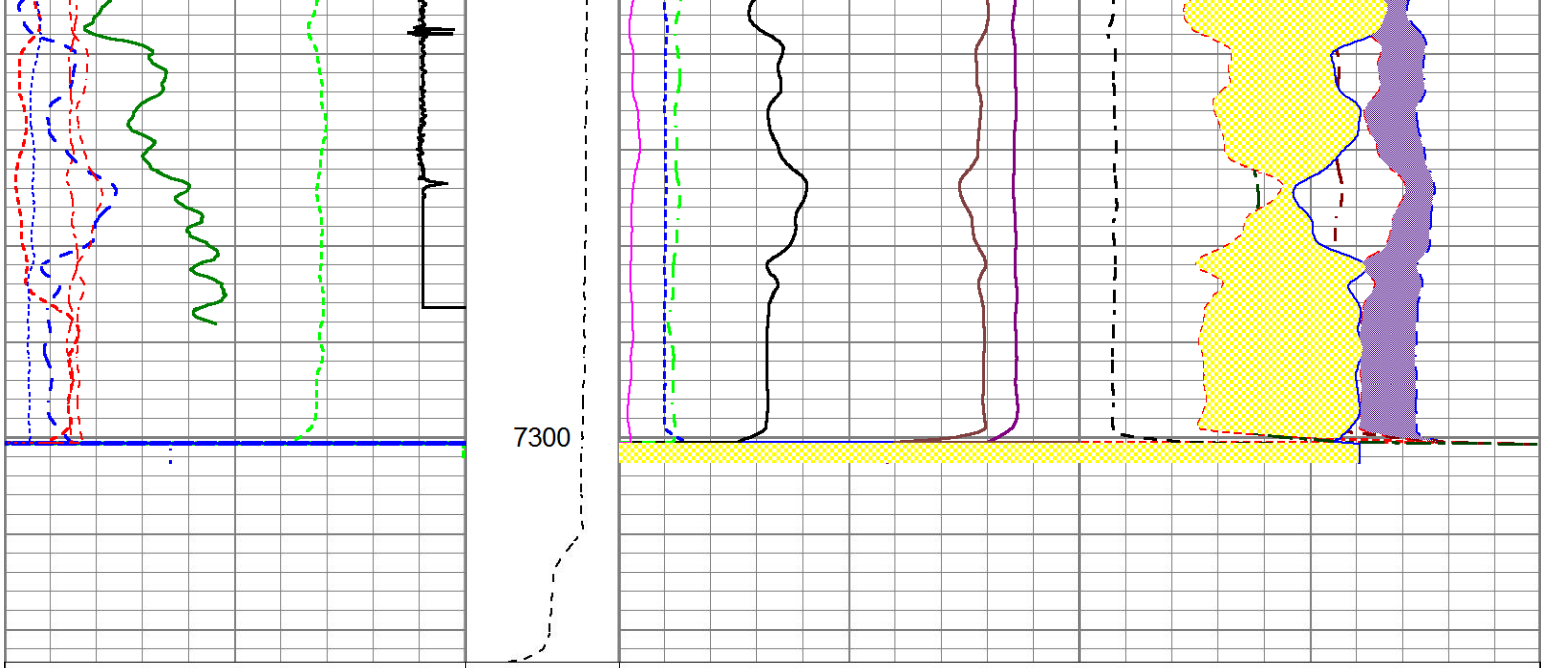
**THANK YOU FOR CHOOSING HALLIBURTON ENERGY ROCKSPRING WY**

**HALLIBURTON**

## MAIN PASS

5"=100'

| | |
|---|---|
| Database File | monu ridg 33d-08-7-95.db |
| Dataset Pathname | main |
| Presentation Format | RMTE_M~1 |
| Dataset Creation | Fri Feb 26 08:05:20 2016 |
| Charted by | Depth in Feet scaled 1:240 |



| | | |
|---|---|---|
| 200 Near Bore Si (SGBN) 0 | TENSION | 0 RATIO (RNF) 1.1 |
| 0 OAI 100 | 0 (lb 2300 | 60 SGIN 0 |
| 10 FAR FIT ERR (SGFF) 40 | | 0 RIN 9 60000 Near Counts (NCAP) 0 |
| 0 GR (GAPI) 150 | | 0 RICF 6 60000 Far Counts (FCAP) 0 |
| 0 NEAR FIT ERR (SGFN) 100 | | 0 H YIELD (YH2) 1 100000 FAR INTEL CT (FSIN) 0 |
| -5500 CCL 550 | | 0 H YIELD (YH1) 1 10000(NEAR INTEL CT (NSIN) 0 |
| 0 IN FIT ERR (CFTR1) NEAR 1 | | 0.9 PHIT ( ) -0.1 ET INL NEAR (NNII |
| 0 IN FIT ERR CFTR2) FAR 1 | | INOX2 50000 -1000 |
| | | -1500 1500 |

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MAIN PASS

5"=100'

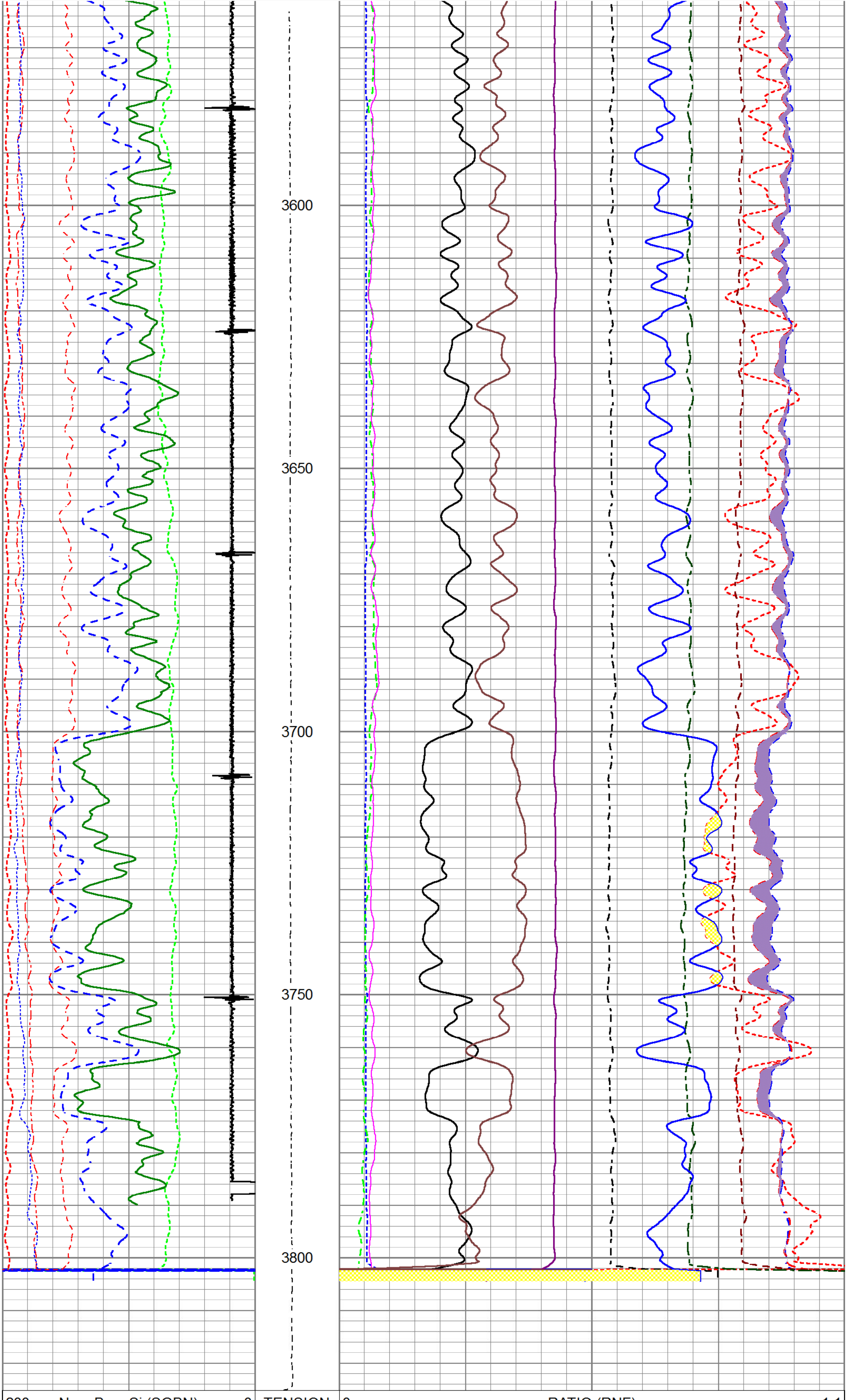
**HALLIBURTON**

REPEAT PASS

5"=100'

Database File monu ridg 33d-08-7-95.db
Dataset Pathname repeat1
Presentation Format RMTE_M~1
Dataset Creation Fri Feb 26 07:33:41 2016
Charted by Depth in Feet scaled 1:240

| | | |
|---|---|---|
| 200 Near Bore Si (SGBN) 0 | TENSION | 0 RATIO (RNF) 1.1 |
| 0 OAI 100 | 0 (lb 2300 | 60 SGIN 0 |
| 10 FAR FIT ERR (SGFF) 40 | | 0 RIN 9 60000 Near Counts (NCAP) 0 |
| 0 GR (GAPI) 150 | | 0 RICF 6 60000 Far Counts (FCAP) 0 |
| 0 NEAR FIT ERR (SGFN) 100 | | 0 H YIELD (YH2) 1 100000 FAR INTEL CT (FSIN) 0 |
| -5500 CCL 550 | | 0 H YIELD (YH1) 1 10000(NEAR INTEL CT (NSIN) 0 |
| 0 IN FIT ERR (CFTR1) NEAR 1 | | 0.9 PHIT ( ) -0.1 ET INL NEAR (NNII |
| 0 IN FIT ERR CFTR2) FAR 1 | | INOX2 50000 -1000 |
| | | -1500 1500 |



| | | |
|---|---|---|
| 200 Near Bore Si (SGBN) 0 | TENSION | 0 RATIO (RNF) 1.1 |
| 0 OAI 100 | 0 (lb 2300 | 60 SGIN 0 |
| 10 FAR FIT ERR (SGFF) 40 | | 0 RIN 9 60000 Near Counts (NCAP) 0 |
| 0 GR (GAPI) 150 | | 0 RICF 6 60000 Far Counts (FCAP) 0 |
| 0 NEAR FIT ERR (SGFN) 100 | | 0 H YIELD (YH2) 1 100000 FAR INTEL CT (FSIN) 0 |
| -5500 CCL 550 | | 0 H YIELD (YH1) 1 10000(NEAR INTEL CT (NSIN) 0 |
| 0 IN FIT ERR (CFTR1) NEAR 1 | | 0.9 PHIT ( ) -0.1 ET INL NEAR (NNII |
| 0 IN FIT ERR CFTR2) FAR 1 | | INOX2 50000 -1000 |
| | | -1500 1500 |

**HALLIBURTON**

REPEAT PASS

5"=100'

## Calibration Report

Database File monu ridg 33d-08-7-95.db
Dataset Pathname main
Dataset Creation Fri Feb 26 08:05:20 2016

### Cement Bond Log Shop Calibration Report

Serial-Model: 11836468-A

Calibration Performed: Fri Feb 26 02:37:39 2016

#### Free Pipe Calibration

| | Measured | Units |
|---|---|---|
| TT | 245.0 | usec |
| Amplitude | 619.5 | mV |
| Log Base Line | 19.3 | mV |

Calibration References and Gain

| Name | Value | Units |
|---|---|---|
| Pipe O.D. | 4.500 | in |
| Pipe Weight | 11.6 | lb/ft |
| Pipe Ref. Amp. | 81.2 | mV |
| Amp. Gain | 0.132 | |

### Reservoir Monitor Tool I Calibration Report

Serial-Model: 12270693-A

Shop Calibration Performed: Fri Feb 12 14:31:42 2016

Carbon/Oxygen Mode

Stabilization

| Result | Logged | Expected Value | Diff. | Tol. | Units |
|---|---|---|---|---|---|
| GENV | 93.00 | 80.00 | 13.00 | +/-15.00 | V |
| ITCR2 | 3235 | 3250 | -15 | +/-250 | cps |

Near Detector

| | Channel | Expected Value | Amplitude | FWHM | Tol. |
|---|---|---|---|---|---|
| H | 60 | 60 +/-2 | 0.0267 | 5.38 | <6.00 |
| Fe | 206 | 206 +/-2 | 0.0959 | ----- | ----- |
| NGAIN = 0.997 | NZOFF = 0.2 | | | | |

Far Detector

| | Channel | Expected Value | Amplitude | FWHM | Tol. |
|---|---|---|---|---|---|
| H | 60 | 60 +/-2 | 0.0342 | 6.01 | <6.50 |
| Fe | 209 | 208 +/-2 | 0.0911 | ----- | ----- |
| FGAIN = 0.991 | FZOFF = 0.6 | | | | |
| Flask Temperature | 55.3 degF | | | | |

| Result | Logged | Expected Value | Diff. | Tol. | Units |
|---|---|---|---|---|---|
| COIR2 | 0.45 | 0.45 | -0.00 | +/-0.02 | |
| LIRI2 | 1.36 | 1.36 | 0.00 | +/-0.05 | |
| TCCR2 | 5189 | 5000 | 189 | +/-1000 | cps |
| ITCR2 | 3213 | 3200 | 13 | +/-250 | cps |

Sigma Mode

Stabilization

| Result | Logged | Expected Value | Diff. | Tol. | Units |
|---|---|---|---|---|---|
| GENV | 93.00 | 80.00 | 13.00 | +/-15.00 | V |
| FCAP | 9709 | 10000 | -291 | +/-500 | cps |

Horizontal Water Tank

| Result | Logged | Expected Value | Diff. | Tol. | Units |
|---|---|---|---|---|---|
| N/F Normalizer | 1.00 | 0.95 | 0.05 | | |
| N/F Inel Norm | 0.65 | 0.61 | 0.04 | | |
| RNF | 1.00 | 1.07 | -0.07 | +/-0.12 | |
| RINC | 1.54 | 1.64 | -0.10 | +/-0.18 | |
| SGFN | 24.10 | 24.00 | 0.10 | +/-0.50 | cu |
| SGFF | 22.94 | 22.85 | 0.09 | +/-0.50 | cu |
| FSIN | 23109 | 24000 | -891 | +/-2000 | cps |
| FCAP | 9760 | 10000 | -240 | +/-1000 | cps |
| NFTR | 0.80 | | | <5.00 | |
| FFTR | 0.87 | | | <5.00 | |
| NBKG | 180 | | | <500 | cps |
| FBKG | 96 | | | <500 | cps |
| RTN | 0.39 | 0.40 | -0.01 | +/-0.10 | usec |
| RTF | 0.41 | 0.40 | 0.01 | +/-0.10 | usec |

### Calibration Software Modules

HRMTI Module 2015.5.4.0
RMTI Module 2015.5.15.1

### Log Data Acquisition Software Modules

HRMTI Module 2015.5.4.0
RMTI Module 2015.5.15.1

### Gamma Ray Calibration Report

Type / Serial: 002 / 11527445

SHOP CALIBRATION Fri Feb 12 13:43:57 2016

| | Counts/Sec. | Gain | Offset | Jig | Units |
|---|---|---|---|---|---|
| Background | 24.6 | | | | cps |
| Calibrator | 314.1 | | | | cps |
| | | 1.4958 | | | GAPI/cps |

PRIMARY VERIFICATION

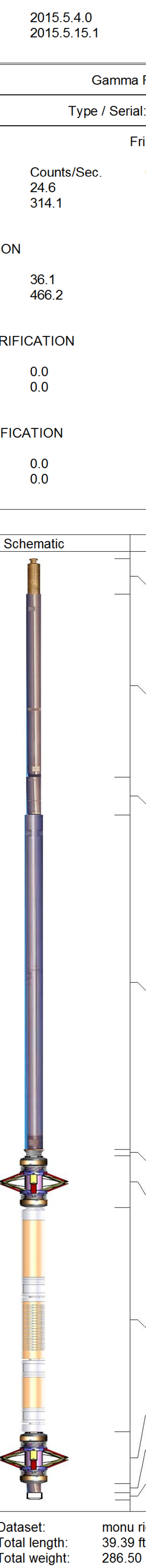
| | | | Units |
|---|---|---|---|
| Background | 36.1 | | cps |
| Calibrator | 466.2 | | cps |
| Difference | | 430.1 | GAPI |

BEFORE SURVEY VERIFICATION

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

AFTER SURVEY VERIFICATION

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

| Sensor | Offset (ft) | Schematic | Description | Length (ft) | O.D. (in) | Weight (lb) |
|---|---|---|---|---|---|---|
| | |  | STNDCH-STND_CH<br>1.4375 IN CABLE HEAD | 1.50 | 1.44 | 1.00 |
| CCL | 35.82 | | | | | |
| GR | 33.56 | | TTTCU-002 (11527445)<br>Through Tubing Telemetry Cartridge - Ultrawire | 7.65 | 1.69 | 30.00 |
| | | | XHU-003 (11983708)<br>Crossover Halliburton 1553 to Ultrawire | 1.58 | 1.69 | 7.00 |
| RmtTFGT | 22.91 | | | | | |
| RmtTNGT | 22.41 | | RMTI-A (12270693)<br>Halliburton RMTI Tool | 14.00 | 2.13 | 77.00 |
| RmtFP5V | 14.66 | | X-OVER-GoxSondex<br>Go Box x Sondex Pin CrossOver | 0.27 | 1.69 | 1.00 |
| RmtNFwvMcsP | 14.66 | | | | | |
| RmtCommFWa | 14.66 | | CENT-CASTM-CENT<br>CAST M INLINE CENTRALIZER | 2.16 | 3.13 | 25.00 |
| Temp | 9.57 | | | | | |
| TT3FT | 7.32 | | HCBLM-A (11836468)<br>Halliburton HCBLM Tool | 9.38 | 2.75 | 116.00 |
| AMP3FT | 7.32 | | | | | |
| WVF5FT | 6.36 | | | | | |
| WVF3FT | 2.84 | | CENT-CASTM-CENT<br>CAST M INLINE CENTRALIZER | 2.16 | 3.13 | 25.00 |
| | | | AUH-001 (11072111)<br>Adaptor Ultrawire/Halliburton | 0.38 | 1.69 | 3.00 |
| LLMTEN | 0.00 | | BUL-001 (000001)<br>Bullnose | 0.30 | 1.69 | 1.50 |

Dataset: monu ridg 33d-08-7-95.db: field/well/run1/main
Total length: 39.39 ft
Total weight: 286.50 lb
O.D.: 3.13 in

| | |
|---|---|
| Company | URSA OPERATING COMPANY |
| Well | Monument Ridge B 33D-08-07-95 |
| Field | Parachute |
| County | Garfield State CO |

**HALLIBURTON**

RESERVOIR MONITOR LOG
GR-CCL