**HALLIBURTON**

# CEMENT BOND LOG
## GR-CCL

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

| | |
|---|---|
| Company | URSA OPERATING COMPANY |
| Well | Monument Ridge B 33A-08-07-95 |
| Field | Parachute |
| County | Garfield |
| State | CO |
| API No.: | 05-045-22901000 |
| Serv #: | 903058001 |
| Location: | SHL: 1025' FSL & 166' FEL |
| Other Services | JB/RMTi |
| 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. 5718.8'<br>G.L. 5701.8' |

| | | | |
|---|---|---|---|
| Date @ Time Logged | 22-Jan-2016 | Type Fluid in Hole | Water |
| Run No. | One | Density of Fluid | 8.4 PPG |
| Depth - Driller | 7686.2' | Fluid Level | Full |
| Depth - Logger | 7445' | Cement Top Est. Logged | n/a |
| Bottom - Logged Interval | 7438' | Equipment / Location | RS / 11808537 |
| Top - Log Interval | 1800' | Recorded by | Pedro Gonzalez Baqueiro |
| Max. Recorded Temp. | n/a | Witnessed by | Oscar Molinar |

| 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 | 1848.8 | 8.625" | 32# | surface | 1848.8 |
| Three | 7.875" | surface | 7686.2' | 4.5" | 11.6# | surface | 7686.2' |

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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 RMTi tool

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

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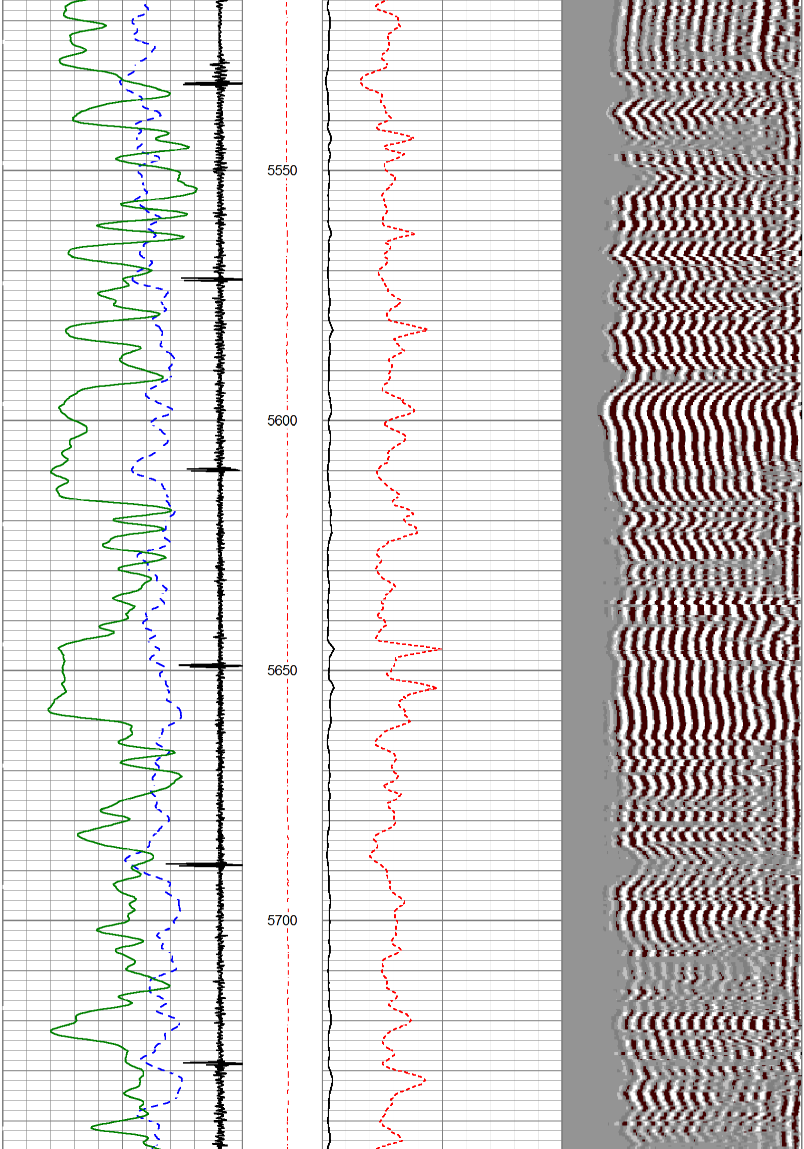
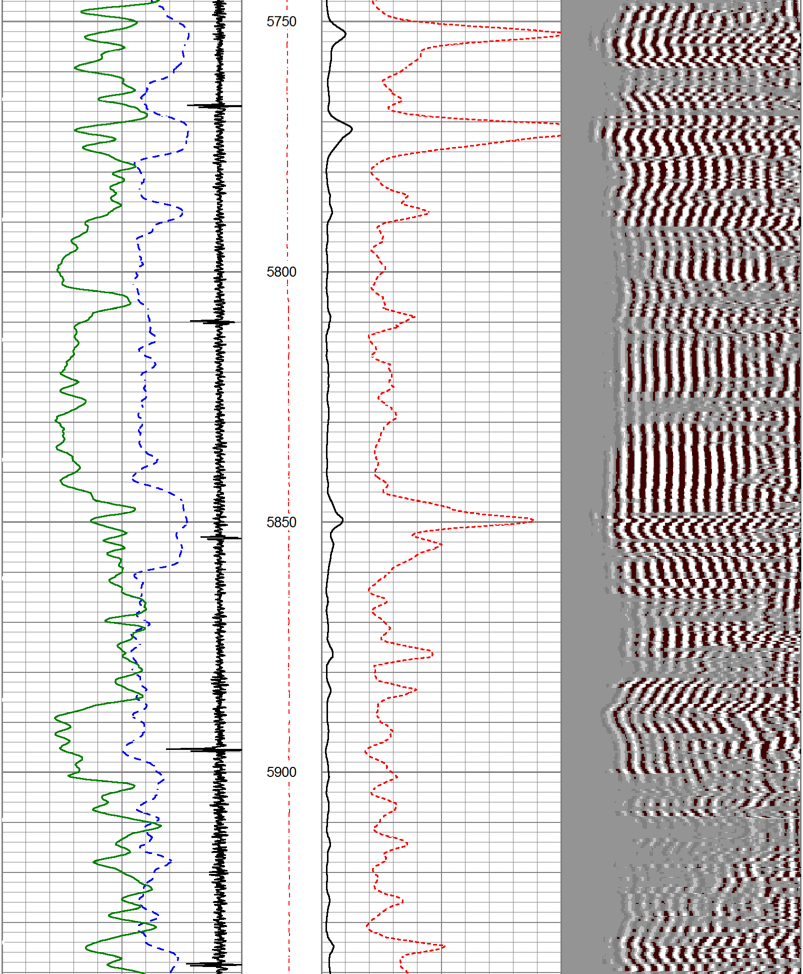
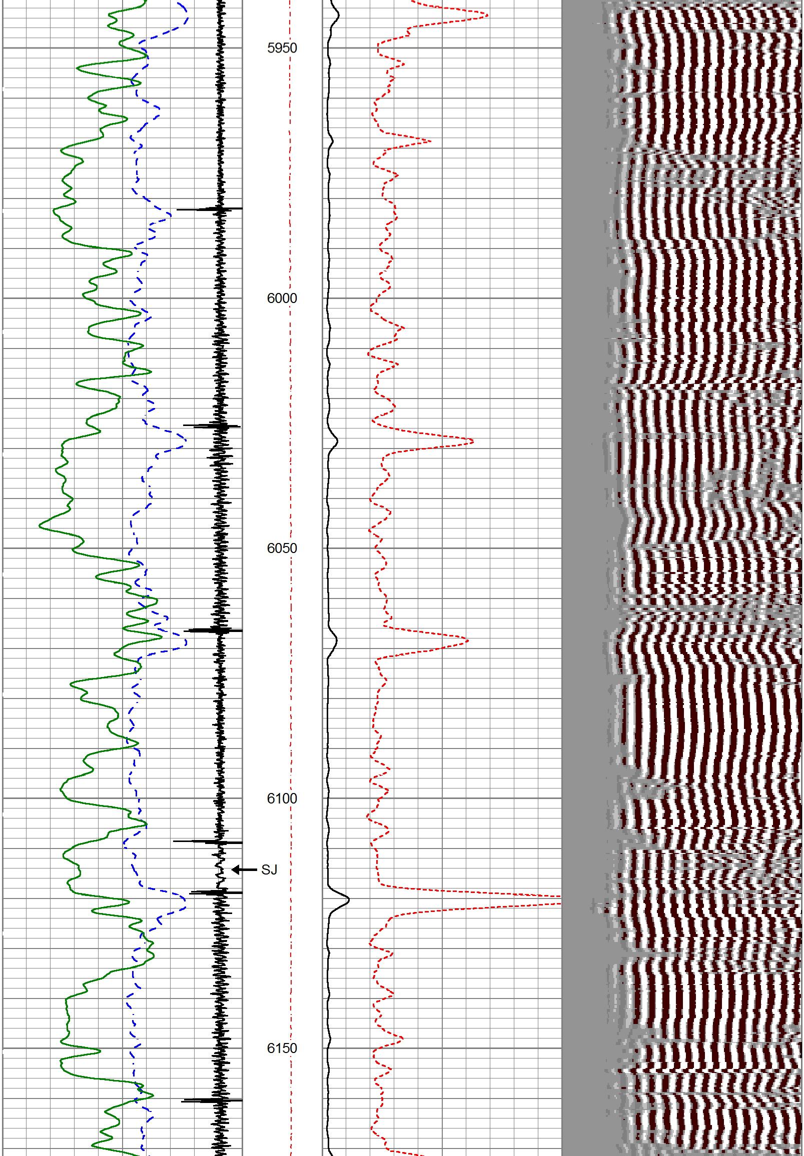
## MAIN PASS

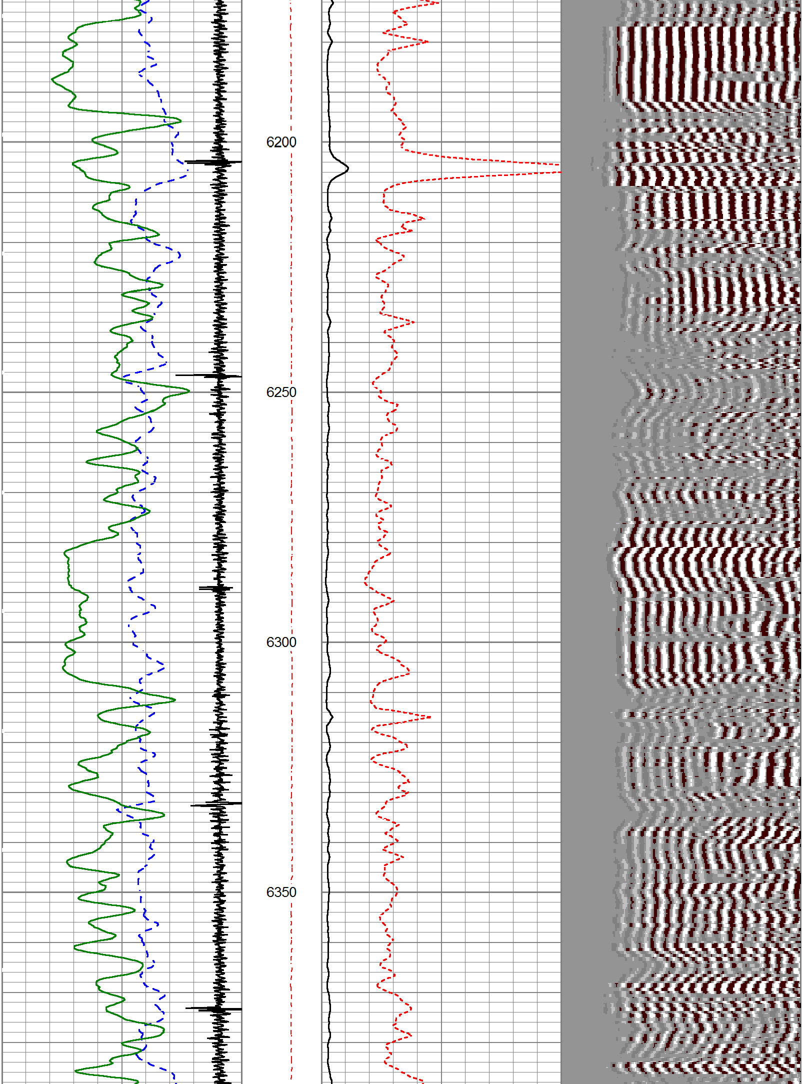
5"=100'

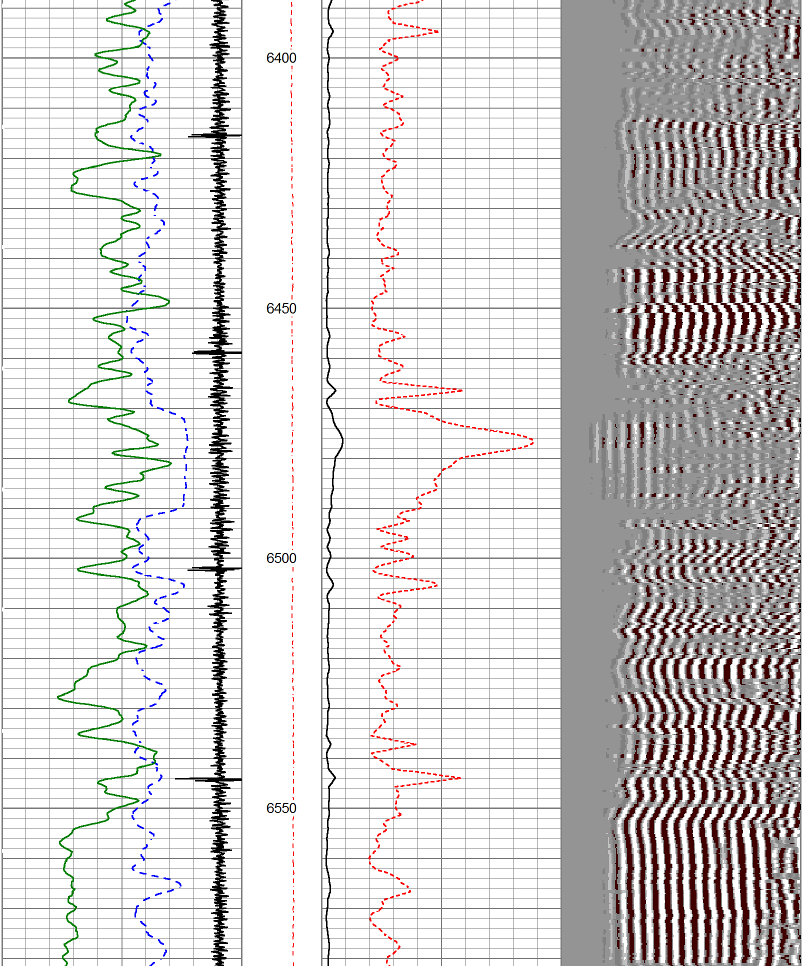
| | |
|---|---|
| Database File | monument ridge 33a-08-07-95.db |
| Dataset Pathname | MAIN |
| Presentation Format | cbl_main |
| Dataset Creation | Fri Jan 22 04:20:56 2016 |
| Charted by | Depth in Feet scaled 1:240 |

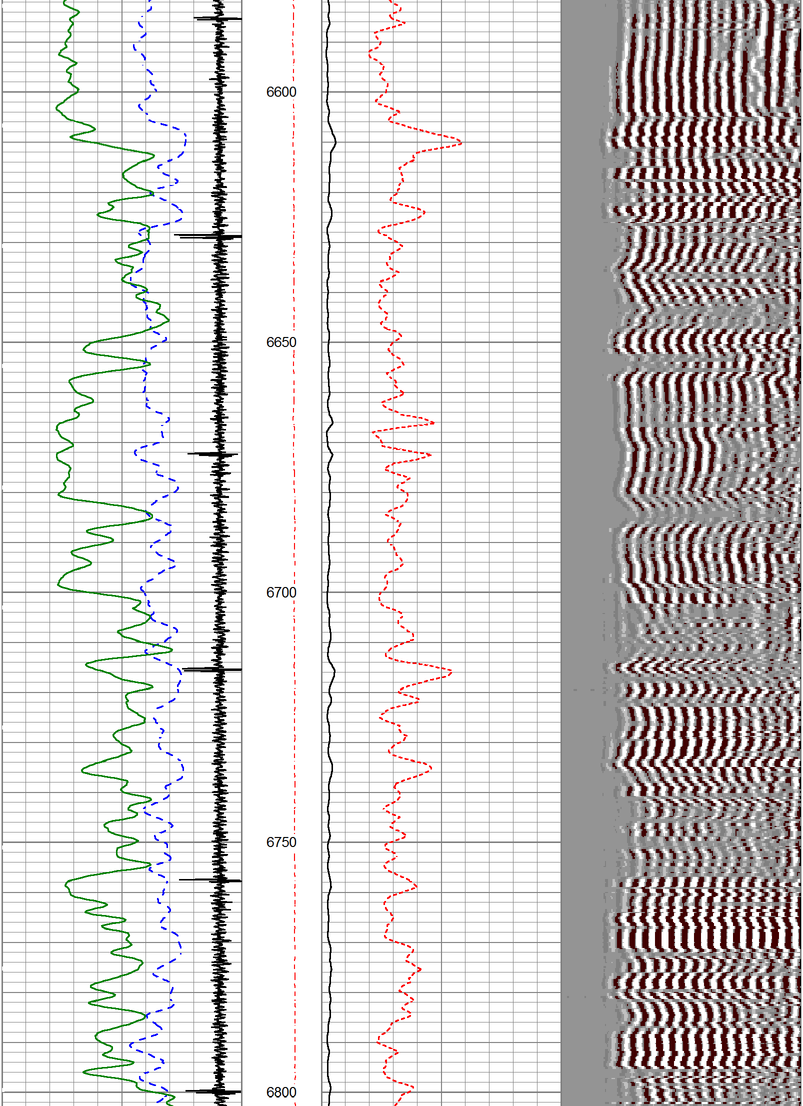


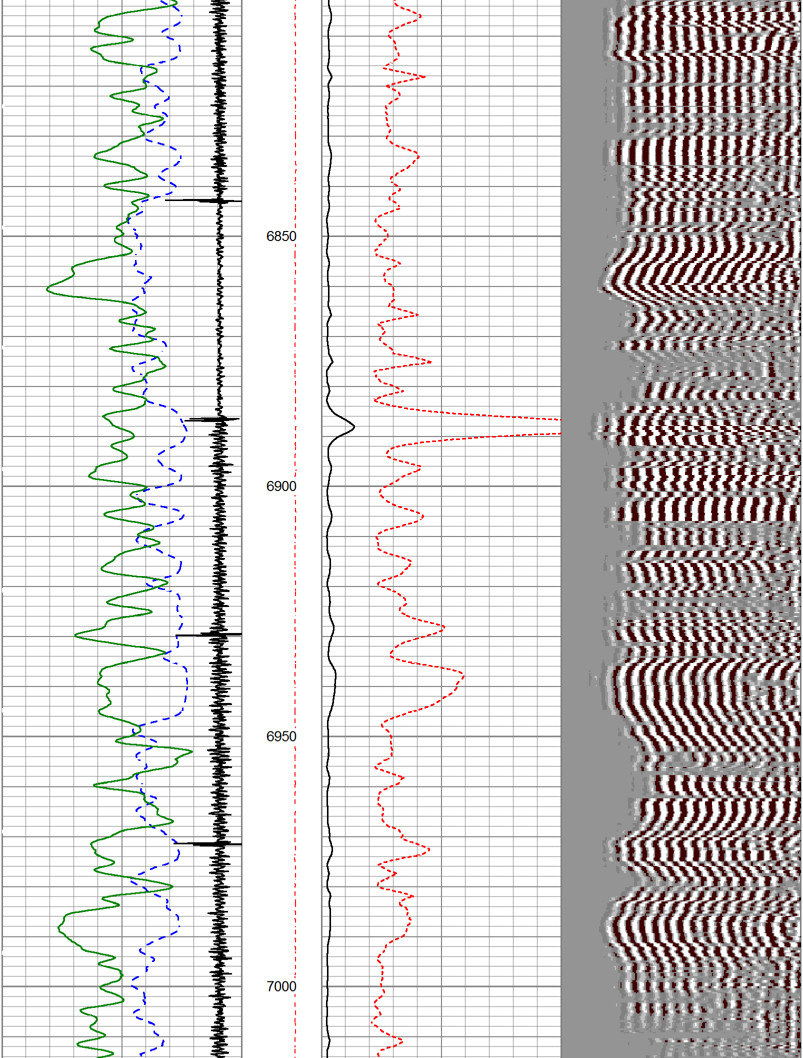


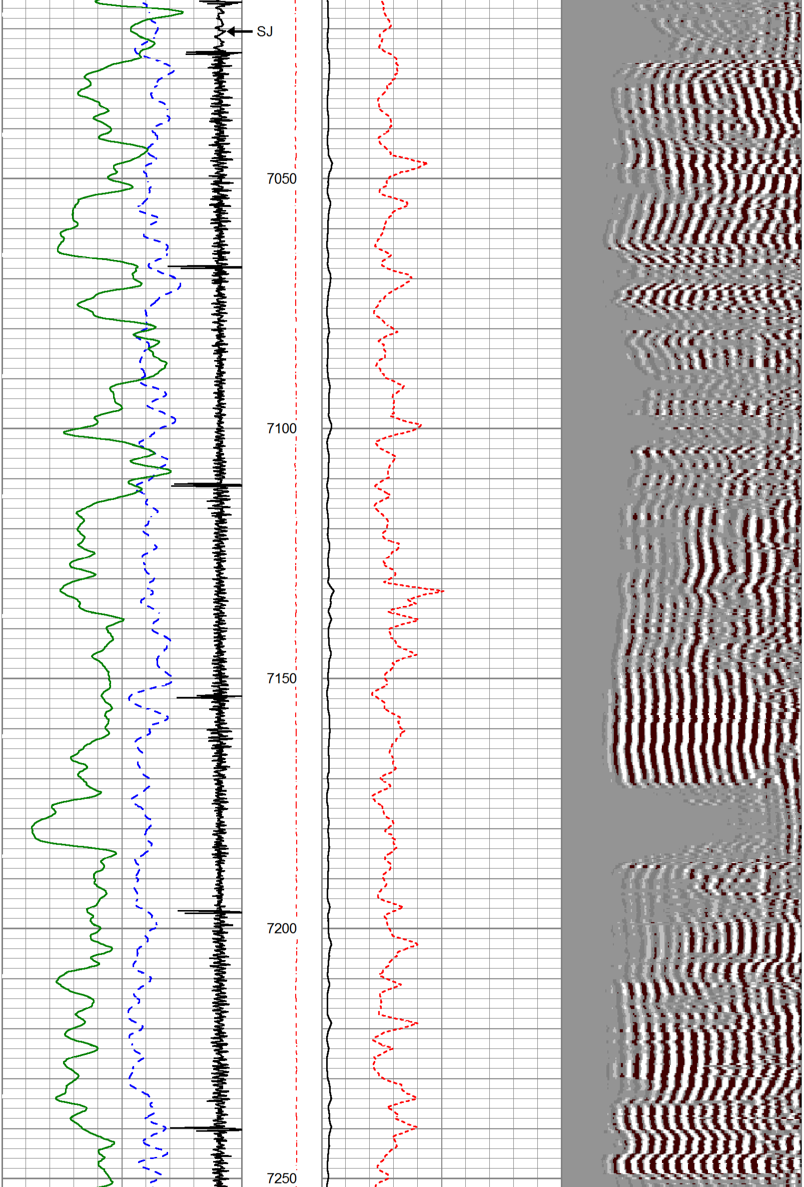


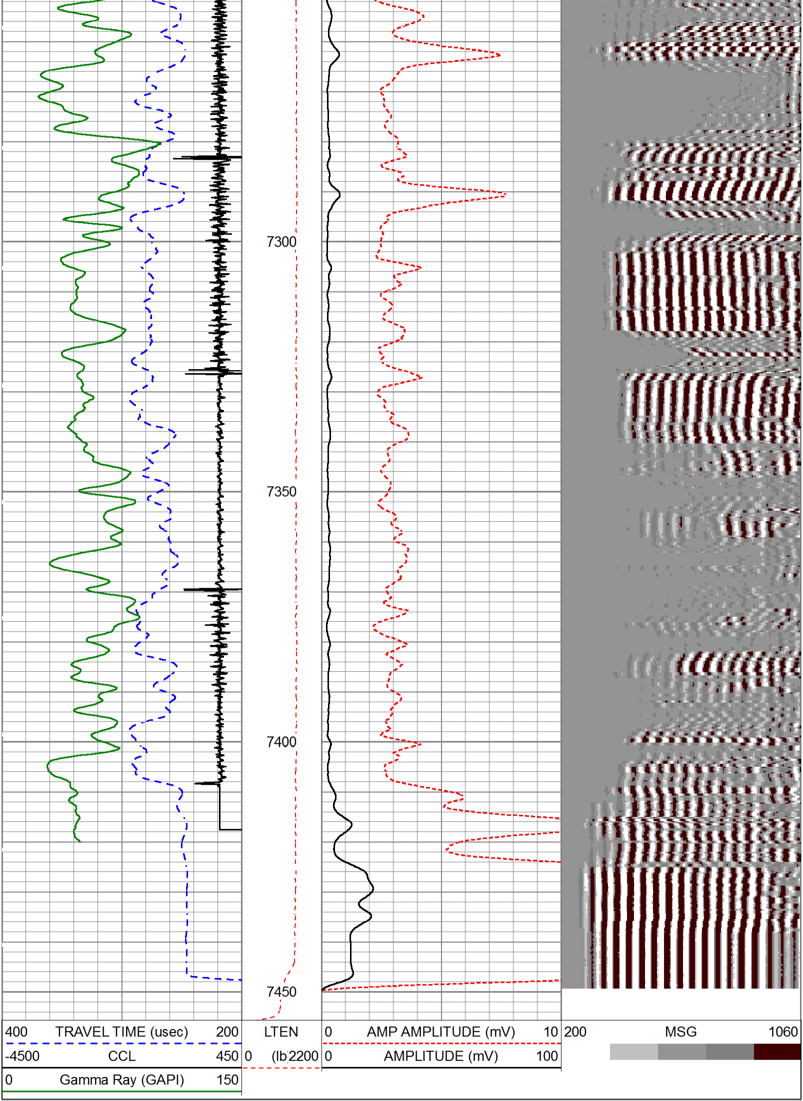












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# MAIN PASS

5"=100'

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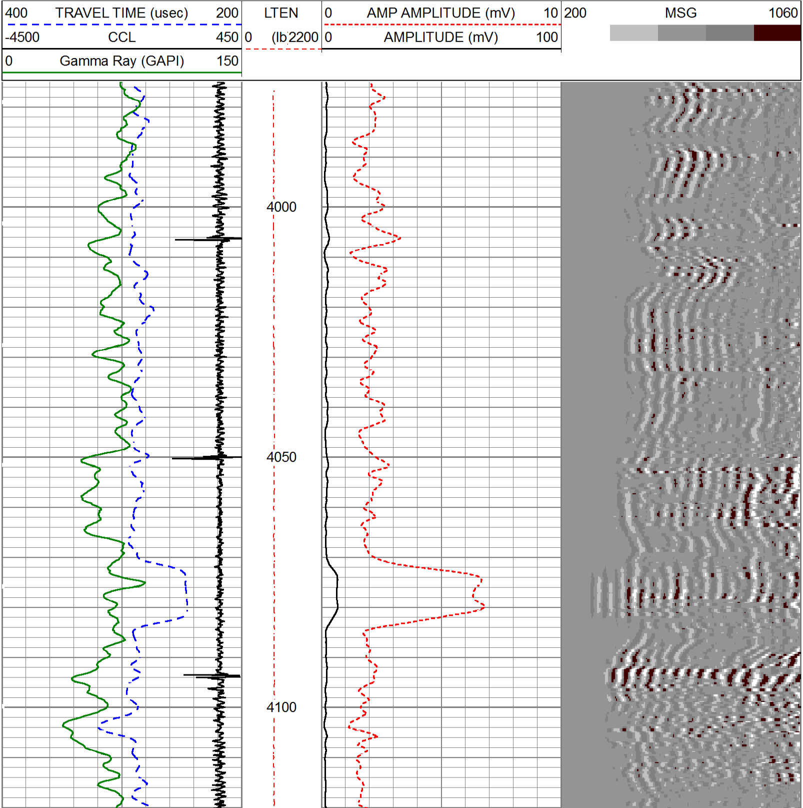
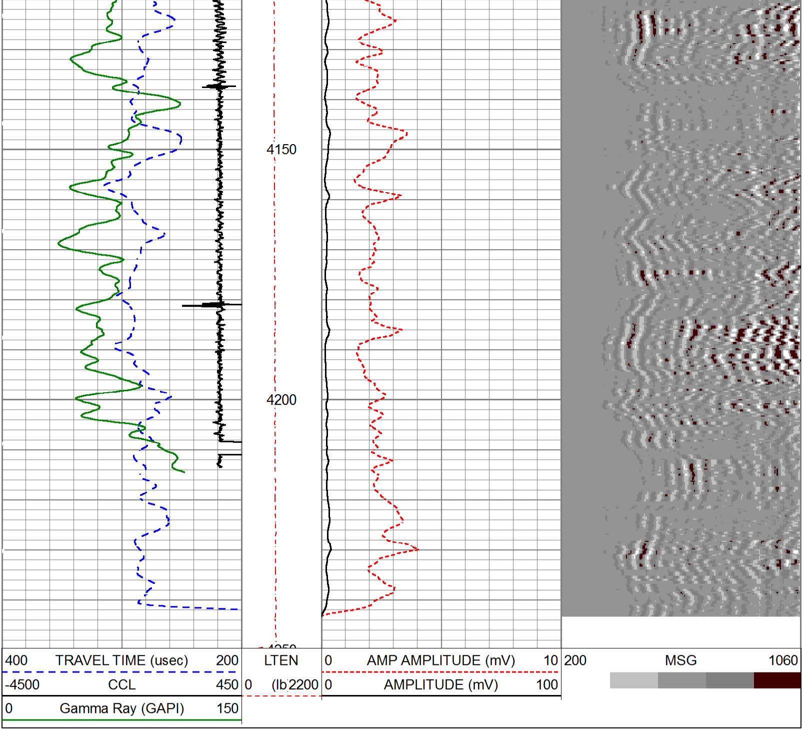
# REPEAT PASS

5"=100'

| | |
|---|---|
| Database File | monument ridge 33a-08-07-95.db |
| Dataset Pathname | REPEAT |
| Presentation Format | cbl_main |
| Dataset Creation | Fri Jan 22 03:49:21 2016 |
| Charted by | Depth in Feet scaled 1:240 |





**HALLIBURTON**

# REPEAT PASS

5"=100'

## Calibration Report

| | |
|---|---|
| Database File | monument ridge 33a-08-07-95.db |
| Dataset Pathname | MAIN |
| Dataset Creation | Fri Jan 22 04:20:56 2016 |

## Cement Bond Log Shop Calibration Report

| | |
|---|---|
| Serial-Model: | 11836468-A |
| Calibration Performed: | Fri Jan 22 03:30:52 2016 |

## Free Pipe Calibration

| | Measured | Units |
|---|---|---|
| TT | 243.1 | usec |
| Amplitude | 692.8 | mV |
| Log Base Line | 19.9 | 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 | 0.118 | |

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## Reservoir Monitor Tool I Calibration Report

| | |
|---|---|
| Serial-Model: | 12270693-A |
| Shop Calibration Performed: | Sun Jan 10 18:03:51 2016 |

## Carbon/Oxygen Mode

### Stabilization

| Result | Logged | Expected Value | Diff. | Tol. | Units |
|---|---|---|---|---|---|
| GENV | 92.00 | 80.00 | 12.00 | +/-15.00 | V |
| ITCR2 | 3435 | 3250 | 185 | +/-250 | cps |

### Near Detector

| | Channel | Expected Value | Amplitude | FWHM | Tol. |
|---|---|---|---|---|---|
| H | 60 | 60 +/-2 | 0.0268 | 5.37 | <6.00 |
| Fe | 207 | 206 +/-2 | 0.0948 | ----- | ----- |
| NGAIN = 0.996 | NZOFF = 0.3 | | | | |

### Far Detector

| | Channel | Expected Value | Amplitude | FWHM | Tol. |
|---|---|---|---|---|---|
| H | 60 | 60 +/-2 | 0.0341 | 6.02 | <6.50 |
| Fe | 209 | 208 +/-2 | 0.0916 | ----- | ----- |
| 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 | 1.37 | 1.36 | 0.01 | +/-0.05 | |
| TCCR2 | 5506 | 5000 | 506 | +/-1000 | cps |
| ITCR2 | 3432 | 3200 | 232 | +/-250 | cps |

## Sigma Mode

### Stabilization

| Result | Logged | Expected Value | Diff. | Tol. | Units |
|---|---|---|---|---|---|
| GENV | 91.00 | 80.00 | 11.00 | +/-15.00 | V |
| FCAP | 10099 | 10000 | 99 | +/-500 | cps |

### Horizontal Water Tank

| Result | Logged | Expected Value | Diff. | Tol. | Units |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| N/F Normalizer | 1.01 | 0.95 | 0.06 | | |
| N/F Inel Norm | 0.65 | 0.61 | 0.04 | | |
| RNF | 0.99 | 1.07 | -0.08 | +/-0.12 | |
| RINC | 1.54 | 1.64 | -0.10 | +/-0.18 | |
| SGFN | 24.11 | 24.00 | 0.11 | +/-0.50 | cu |
| SGFF | 22.94 | 22.85 | 0.09 | +/-0.50 | cu |
| FSIN | 23744 | 24000 | -256 | +/-2000 | cps |
| FCAP | 10025 | 10000 | 25 | +/-1000 | cps |
| NFTR | 0.81 | | | <5.00 | |
| FFTR | 0.89 | | | <5.00 | |
| NBKG | 214 | | | <500 | cps |
| FBKG | 108 | | | <500 | cps |
| RTN | 0.40 | 0.40 | -0.00 | +/-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 / 11159411

SHOP CALIBRATION Tue Dec 15 21:01:01 2015

| | Counts/Sec. | Gain | Offset | Jig | Units |
|---|---|---|---|---|---|
| Background | 28.7 | | | | cps |
| Calibrator | 323.0 | | | | cps |
| | | 1.3864 | | | GAPI/cps |

PRIMARY VERIFICATION

| | | | | | |
|---|---|---|---|---|---|
| Background | 40.3 | | | | cps |
| Calibrator | 454.6 | | | | cps |
| Difference | | | | 414.4 | GAPI |

BEFORE SURVEY VERIFICATION

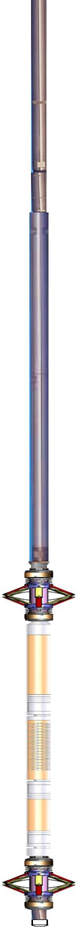
| | | | | | |
|---|---|---|---|---|---|
| Background | 0.0 | | | | cps |
| Calibrator | 0.0 | | | | cps |
| Difference | | | | 0.0 | GAPI |

AFTER SURVEY VERIFICATION

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

| 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 |
| RmtTFGT | 22.91 |
| RmtTNGT | 22.41 |
| RmtFP5V | 14.66 |
| RmtNFwvMcsPl | 14.66 |
| RmtCommFWa | 14.66 |
| Temp | 9.57 |
| TT3FT | 7.32 |
| AMP3FT | 7.32 |
| WVF5FT | 6.36 |
| WVF3FT | 2.84 |
| LLMTEN | 0.00 |



|  |  |  |  |
|---|---|---|---|
| TTTCU-002 (11159411)<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 |
| RMTI-A (12270693)<br>Halliburton RMTI Tool | 14.00 | 2.13 | 77.00 |
| X-OVER-GoxSondex<br>Go Box x Sondex Pin CrossOver | 0.27 | 1.69 | 1.00 |
| CENT-CASTM-CENT<br>CAST M INLINE CENTRALIZER | 2.16 | 3.13 | 25.00 |
| HCBLM-A (11836468)<br>Halliburton HCBLM Tool | 9.38 | 2.75 | 116.00 |
| 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 |
| BUL-001 (000001)<br>Bullnose | 0.30 | 1.69 | 1.50 |

|  |  |
|---|---|
| Dataset: | monument ridge 33a-08-07-95.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 33A-08-07-95 |  |  |
| Field | Parachute |  |  |
| County | Garfield | State | CO |

HALLIBURTON

CEMENT BOND LOG
GR-CCL