RELIANCE OILFIELD SERVICES

# Radial Cement Bond
# Gamma Ray
# Casing Collar Log

|  |  |
|---|---|
| Company | TEP Rocky Mountain LLC |
| Well | Chevron GM 432-19 |
| Field | Grand Valley |
| County | Garfield |
| State | Colorado |

Company TEP Rocky Mountain LLC

Well Chevron GM 432-19

Field Grand Valley

County Garfield State Colorado

Location: API # : 05-045-24355

SEC 20 TWP 6S RGE 96W

Other Services

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| | | Elevation | | Elevation |
|---|---|---|---|---|
| Permanent Datum | Ground Level | 5752.1' | K.B. | 5776.1' |
| Log Measured From | Kelly Bushing | 24 FT | D.F. | --- |
| Drilling Measured From | Kelly Bushing | | G.L. | 5752.1' |

|  |  |
|---|---|
| Date | 01-FEB-2021 |
| Run Number | One |
| Depth Driller | 7706 FT |
| Depth Logger | 7656 FT |
| Bottom Logged Interval | 7644 FT |
| Top Log Interval | Surface |
| Open Hole Size | 8.750" |
| Type Fluid | Water |
| Density / Viscosity | 8.34 lb/gal |
| Max. Recorded Temp. | 229°F |
| Estimated Cement Top | See Log |
| Time Well Ready | ROA |
| Time Logger on Bottom | 13:00 |
| Equipment Number | HD-0331 |
| Location | Grand Junction, CO |
| Recorded By | Z. Fisher |
| Witnessed By | --- |

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

| Casing Record | Size (in) | Wgt (lbs/Ft) | Grade | Top | Bottom |
|---|---|---|---|---|---|
| Surface Casing | 9 5/8 | 36 | J-55 | Surface | 1029 FT |
| Intermediate #1 | 4 1/2 | 11.6 | P-110 | Surface | 7665 FT |
| Intermediate #2 | | | | | |
| 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

Log ran as per customer request
Depth referenced to Kelly Bushing at 24 FT
Marker Joint logged from 4562 - 4584 FT
Recorded with 0 PSI Surface Induced Pressure

Thank you for choosing Reliance Oilfield Services, LLC!

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## Main Pass

Recorded With 0 PSI Surface Induced Pressure

|  |  |
|---|---|
| Database File | tep\tep_chevron gm 432-19_rbl_02-01-21\tep_chevron gm 432-19_rbl_02-01-21.db |
| Dataset Pathname | main.4 |
| Presentation Format | ros_radii_tep |
| Dataset Creation | Fri Feb 05 09:13:59 2021 |
| Charted by | Depth in Feet scaled 1:240 |

| Track 1 | | Track 3 | Track 4 | Track 5 | Track 6 |
|---|---|---|---|---|---|
| Gamma Ray<br>0 (GAPI) 200 | | 3' Amplitude<br>0 (mV) 100 | 5' Variable Density Log<br>200 (usec) 1200 | Sector Map | Average Amplitude<br>0 150 |
| Casing Collar Locator | | 3' Amplitude x 5<br>0 (mV) 20 | | | Mimimum Amplitude<br>0 150 |
| Line Speed<br>-150 (ft/min) 150 | | 3' Travel Time<br>300 (usec) 200 | | | Maximum Amplitude<br>0 150 |
| Line Tension<br>0 (lb) 2000 | | | | | |
| Differential Temperature<br>-2 (degF) 2 | | | | | |
| Temperature<br>0 (degF) 20 | | | | | |

142.7
3800
144.5
3900
146.5
4000
148.8
4100
150.7
4200
152.9
4300
155.0
4400
157.2
4500
Marker Joint
158.9
4600
161.4
4700
163.2
4800
164.7
4900
166.1
5000
168.4
5100
170.4
5200
172.1
5300
174.4
5400
176.4
5500
178.2
5600
180.2
5700
182.1
5800
184.1
5900
186.1
6000
187.9
6100
190.0
6200
191.5
6300
194.0
6400
195.9
6500
197.9
6600
200.1
6700
202.4
6800
204.7
6900
206.7
7000
208.9
7100
211.5
7200
213.4
7300
218.6
7400
224.9
7500
LSPD
CCL
GR
t (°F)
229.0
7600
t (°F)
LTEN
dt(°F)
3' Amp
3' Ampx5
3' TT
Sectors
Gamma Ray
0 (GAPI) 200
Casing Collar Locator
Line Speed
-150 (ft/min) 150
Line Tension
0 (lb) 2000
Differential Temperature
-2 (degF) 2
Temperature
3' Amplitude
0 (mV) 100
3' Amplitude x 5
0 (mV) 20
3' Travel Time
300 (usec) 200
5' Variable Density Log
200 (usec) 1200
Sector Map
Average Amplitude
0 150
Mimimum Amplitude
0 150
Maximum Amplitude
0 150

0 (degF) 20

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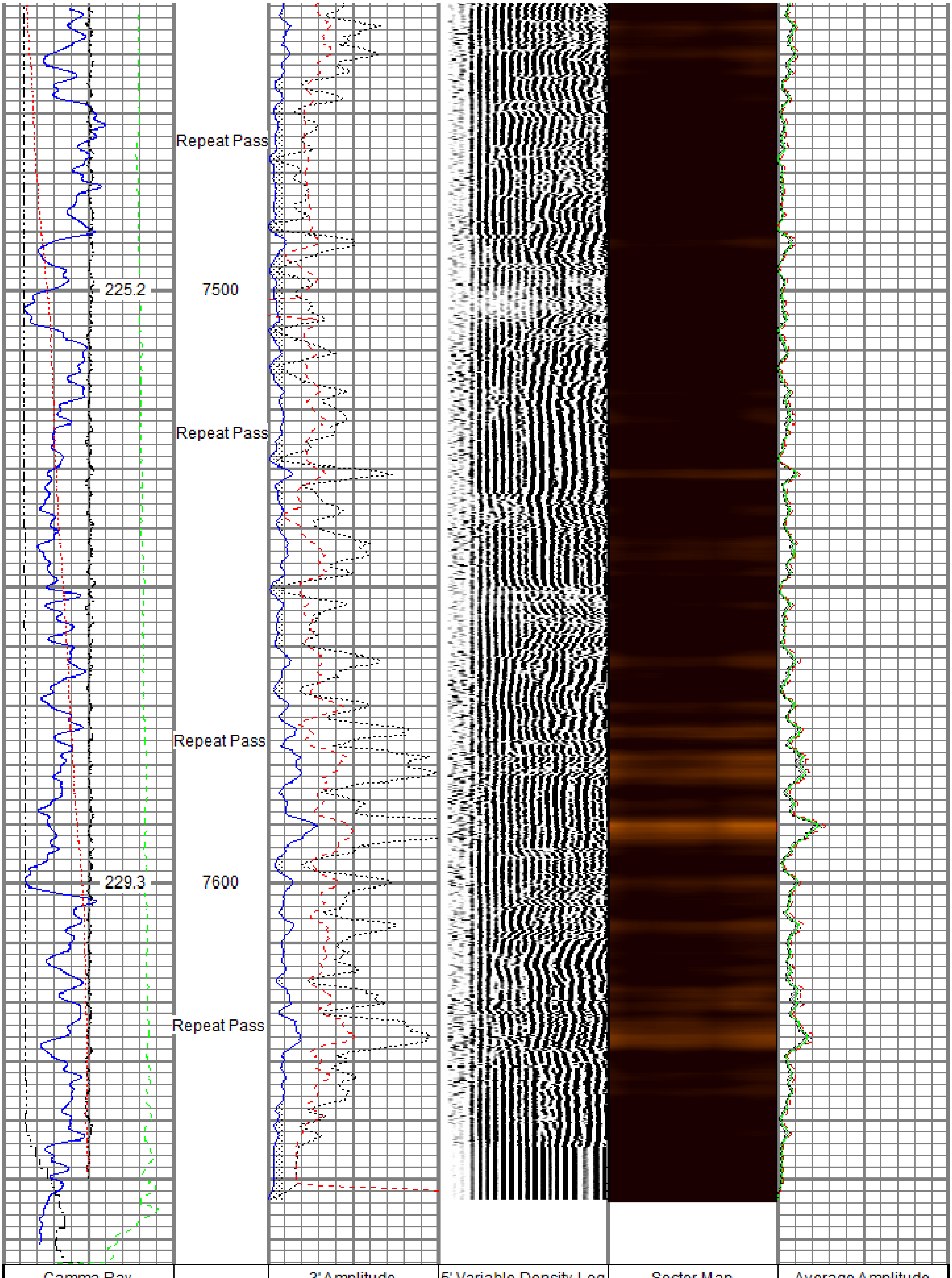
## Repeat Pass

Recorded With 0 PSI Surface Induced Pressure

| | |
|---|---|
| Database File | tep\tep_chevron gm 432-19_rbl_02-01-21\tep_chevron gm 432-19_rbl_02-01-21.db |
| Dataset Pathname | repeat.2 |
| Presentation Format | ros_radii_tep |
| Dataset Creation | Fri Feb 05 09:18:33 2021 |
| Charted by | Depth in Feet scaled 1:240 |

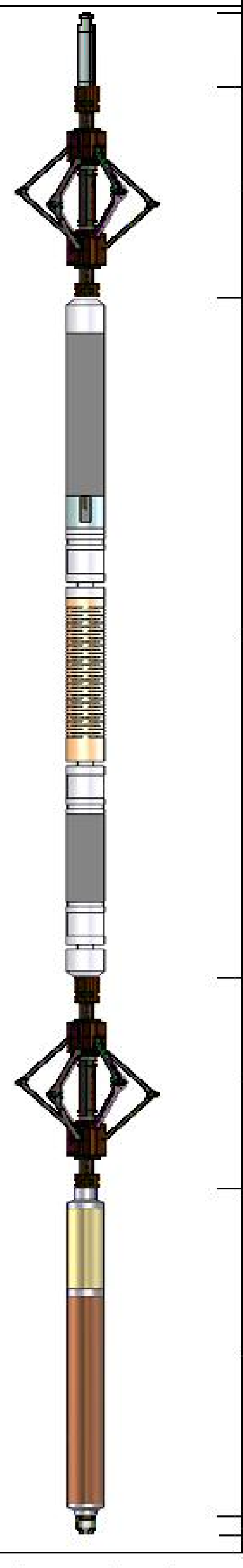
Gamma Ray: 0 (GAPI) 200
Line Speed: -150 (ft/min) 150
Line Tension: 0 (lb) 2000
Differential Temperature: -2 (degF) 2
Temperature: 0 (degF) 20
3' Amplitude: 0 (mV) 100
3' Amplitude x 5: 0 (mV) 20
3' Travel Time: 300 (usec) 200
5' Variable Density Log: 200 (usec) 1200
Sector Map
Average Amplitude: 0 150
Mimimum Amplitude: 0 150
Maximum Amplitude: 0 150



Gamma Ray: 0 (GAPI) 200
Line Speed: -150 (ft/min) 150
Line Tension: 0 (lb) 2000
Differential Temperature: -2 (degF) 2
Temperature: 0 (degF) 20
3' Amplitude: 0 (mV) 100
3' Amplitude x 5: 0 (mV) 20
3' Travel Time: 300 (usec) 200
5' Variable Density Log: 200 (usec) 1200
Sector Map
Average Amplitude: 0 150
Mimimum Amplitude: 0 150
Maximum Amplitude: 0 150

| Sensor | Offset (ft) |
|---|---|
| TEMP | 14.19 |
| WVFS8 | 11.96 |
| WVFS7 | 11.96 |
| WVFS6 | 11.96 |
| WVFS5 | 11.96 |
| WVFS4 | 11.96 |
| WVFS3 | 11.96 |
| WVFS2 | 11.96 |
| WVFS1 | 11.96 |
| WVFCAL | 11.96 |
| WVF3FT | 11.96 |
| WVF5FT | 10.96 |
| CCL | 3.88 |
| GR | 1.14 |

Schematic



| Description | Length (ft) | O.D. (in) | Weight (lb) |
|---|---|---|---|
| Titan CHD-14375 GO<br>Titan 1-7/16" Assembled Electric Cable Head with 1" Fishing Neck | 1.03 | 1.44 | 3.60 |
| BTA-MUD<br>BTA 2-3/4" Roller 6 Arm Centralizer with Reversible Ends | 2.92 | 2.72 | 25.00 |
| Probe Radii-2750 RBT (ROFS-RBT-0002)<br>Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub | 9.39 | 2.75 | 105.00 |
| BTA-MUD<br>BTA 2-3/4" Roller 6 Arm Centralizer with Reversible Ends | 2.92 | 2.72 | 25.00 |
| Probe GR-CCL ANL-2750 A (FW1305-083)<br>Probe 2.75" Analog 4 Channel Pulse Gamma Ray/CCL Combined | 4.54 | 2.75 | 55.00 |
| GO BN-14375<br>GO 1-7/16" Bull Nose with Go Box Top | 0.25 | 1.44 | 1.00 |

| | |
|---|---|
| Dataset: | tep_chevron gm 432-19_rbl_02-01-21.db: field/well/run1/main.4 |
| Total length: | 21.05 ft |
| Total weight: | 214.60 lb |
| O.D.: | 2.75 in |

## Calibration Report

| | |
|---|---|
| Database File | c:\programdata\warrior\data\tep\tep_chevron gm 432-19_rbl_02-01-21\tep_chevron gm 432-19_rbl_02-01-2 |
| Dataset Pathname | main.4 |
| Dataset Creation | Fri Feb 05 09:13:59 2021 |

### Gamma Ray Calibration Report

| | | |
|---|---|---|
| Serial Number: | FW1305-083 | |
| Tool Model: | 2750 A | |
| Performed: | Sun Nov 12 05:37:57 2017 | |
| Calibrator Value: | 637.0 | GAPI |
| Background Reading: | 95.7 | cps |
| Calibrator Reading: | 982.0 | cps |
| Sensitivity: | 0.7188 | GAPI/cps |

### Segmented Cement Bond Log Calibration Report

| | | |
|---|---|---|
| Serial Number: | ROFS-RBT-0002 | |
| Tool Model: | 2750 RBT | |
| Calibration Casing Diameter: | 4.500 | in |
| Calibration Depth: | 31.479 | ft |

Master Calibration, performed (Derived):

| | Raw (v) | | Calibrated (mv) | | Results | |
|---|---|---|---|---|---|---|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| 3' | 0.004 | 0.642 | 0.800 | 81.196 | 125.994 | 0.341 |
| CAL | 0.003 | 0.764 | | | | |
| 5' | 0.007 | 0.674 | 0.800 | 81.196 | 120.488 | 0.005 |
| SUM | | | | | | |
| S1 | 0.003 | 0.581 | 0.000 | 100.000 | 173.049 | -0.525 |
| S2 | 0.010 | 0.618 | 0.000 | 100.000 | 164.350 | -1.601 |
| S3 | 0.008 | 0.656 | 0.000 | 100.000 | 154.266 | -1.266 |
| S4 | 0.006 | 0.692 | 0.000 | 100.000 | 145.735 | -0.905 |
| S5 | 0.006 | 0.683 | 0.000 | 100.000 | 147.612 | -0.892 |
| S6 | 0.005 | 0.654 | 0.000 | 100.000 | 154.020 | -0.737 |
| S7 | 0.004 | 0.612 | 0.000 | 100.000 | 164.629 | -0.740 |
| S8 | 0.007 | 0.606 | 0.000 | 100.000 | 166.820 | -1.170 |

Internal Reference Calibration, performed (Not Performed):

| | Raw (v) | | Calibrated (v) | | Results | |
|---|---|---|---|---|---|---|
| | Zero | Cal | Zero | Cal | Gain | Offset |
| CAL | 0.000 | 0.000 | 0.003 | 0.764 | 1.000 | 0.000 |

Air Zero Calibration, performed Mon Feb 1 11:12:18 2021:

| | 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 |

### Temperature Calibration Report

| | | |
|---|---|---|
| Serial Number: | ROFS-RBT-0002 | |
| Tool Model: | 2750 RBT | |
| Performed: | Wed Oct 14 10:20:48 2020 | |
| | Reference | Reading |
| Low Reference: | 100.00 degF | 109.31 degF |
| High Reference: | 235.00 degF | 267.00 degF |
| Gain: | 0.86 | |
| Offset: | 6.43 | |
| Delta Spacing | 1 | |

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| | |
|---|---|
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| Well | Chevron GM 432-19 |
| Field | Grand Valley |
| County | Garfield |
| State | Colorado |