

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS-EBUS**

Date: Sunday, January 19, 2020

### **GP CODY FED 20E-15-4 Surface**

Job Date: Sunday, January 05, 2020

Sincerely,

**SAM CARPENTER**

## Legal Notice

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### Disclaimer:

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Table of Contents

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1.0    Cementing Job Summary ..... 4

    1.1    Executive Summary .....4

2.0    Real-Time Job Summary ..... 7

    2.1    Job Event Log .....7

3.0    Attachments..... 9

    3.1    EXTRACTION GP CODY FED 20E-15-4 SURFACE.png.....9

## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **GP Cody Fed 20E-15-4** cement **surface** casing job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

**Approximately 40 bbls of cement were returned to surface.**

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

**Halliburton Fort Lupton**

*The Road to Excellence Starts with Safety*

|  |                   |                            |                         |   |                                   |                                  |                               |                       |                      |                      |                            |
|--|-------------------|----------------------------|-------------------------|---|-----------------------------------|----------------------------------|-------------------------------|-----------------------|----------------------|----------------------|----------------------------|
| <b>Sold To #:</b> 369404                                 |                   | <b>Ship To #:</b> 3987170  |                         | <b>Quote #:</b>                         |                                   | <b>Sales Order #:</b> 0906193451 |                               |                       |                      |                      |                            |
| <b>Customer:</b> EXTRACTION OIL & GAS -                  |                   |                            |                         | <b>Customer Rep:</b>                    |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Well Name:</b> GP CODY FED                            |                   |                            | <b>Well #:</b> 20E-15-4 |   | <b>API/UWI #:</b> 05-123-50283-00 |                                  |                               |                       |                      |                      |                            |
| <b>Field:</b> WATTENBERG                                 |                   | <b>City (SAP):</b> GREELEY |                         | <b>County/Parish:</b> WELD              |                                   | <b>State:</b> COLORADO           |                               |                       |                      |                      |                            |
| <b>Legal Description:</b> NE NE-20-5N-65W-706FNL-1305FEL |                   |                            |                         |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Contractor:</b>                                       |                   |                            |                         | <b>Rig/Platform Name/Num:</b> CARTEL 15 |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Job BOM:</b> 7521 7521                                |                   |                            |                         |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Well Type:</b> HORIZONTAL OIL                         |                   |                            |                         |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Sales Person:</b> HALAMERICA/H171328                  |                   |                            |                         | <b>Srv Supervisor:</b> Lance Carpenter  |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Job</b>   |                   |                            |                         |   |                                   |                                  |                               |                       |                      |                      |                            |
|  |                   |                            |                         |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Formation Name</b>                                    |                   |                            |                         |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Formation Depth (MD)</b>                              |                   | <b>Top</b>                 |                         | <b>Bottom</b>                           |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Form Type</b>   |                   |                            |                         | <b>BHST</b>                             |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Job depth MD</b>                                      |                   | 1598                       |                         | <b>Job Depth TVD</b>                    | 1598                              |                                  |                               |                       |                      |                      |                            |
| <b>Water Depth</b>                                       |                   |                            |                         | <b>Wk Ht Above Floor</b>                | 4                                 |                                  |                               |                       |                      |                      |                            |
| <b>Perforation Depth (MD)</b>                            |                   | <b>From</b>                |                         | <b>To</b>                               |                                   |                                  |                               |                       |                      |                      |                            |
|  |                   |                            |                         |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Well Data</b>   |                   |                            |                         |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Description</b>                                       | <b>New / Used</b> | <b>Size in</b>             | <b>ID in</b>            | <b>Weight lbm/ft</b>                    | <b>Thread</b>                     | <b>Grade</b>                     | <b>Top MD ft</b>              | <b>Bottom MD ft</b>   | <b>Top TVD ft</b>    | <b>Bottom TVD ft</b> |                            |
| Open hole  |                   | 13.5                       |                         |   |                                   |                                  | 0                             | 1598                  | 0                    | 1598                 |                            |
| Casing   |                   | 9.625                      |                         | 36                                      |                                   |                                  | 0                             | 1598                  | 0                    | 1598                 |                            |
|  |                   |                            |                         |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Tools and Accessories</b>                             |                   |                            |                         |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Type</b>  | <b>Size in</b>    | <b>Qty</b>                 | <b>Make</b>             | <b>Depth ft</b>                         |                                   | <b>Type</b>                      | <b>Size in</b>                | <b>Qty</b>            | <b>Make</b>          |                      |                            |
| Guide Shoe   | 9.625             |                            |                         | 1598                                    |                                   | Top Plug                         | 9.625                         | 1                     | HES                  |                      |                            |
| Float Shoe   | 9.625             |                            |                         |   |                                   | Bottom Plug                      | 9.625                         |                       | HES                  |                      |                            |
| Float Collar   | 9.625             |                            |                         | 1554                                    |                                   | SSR plug set                     | 9.625                         |                       | HES                  |                      |                            |
| Insert Float   | 9.625             |                            |                         |   |                                   | Plug Container                   | 9.625                         |                       | HES                  |                      |                            |
| Stage Tool   | 9.625             |                            |                         |   |                                   | Centralizers                     | 9.625                         |                       | HES                  |                      |                            |
|  |                   |                            |                         |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Fluid Data</b>  |                   |                            |                         |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Stage/Plug #: 1</b>                                   |                   |                            |                         |   |                                   |                                  |                               |                       |                      |                      |                            |
| <b>Fluid #</b>   | <b>Stage Type</b> | <b>Fluid Name</b>          |                         |   | <b>Qty</b>                        | <b>Qty UoM</b>                   | <b>Mixing Density lbm/gal</b> | <b>Yield ft3/sack</b> | <b>Mix Fluid Gal</b> | <b>Rate bbl/min</b>  | <b>Total Mix Fluid Gal</b> |
| 1  | Red Dye Spacer    | Red Dye Spacer             |                         |   | 10                                | bbl                              | 8.33                          |                       |                      |                      |                            |

| Fluid #  | Stage Type | Fluid Name          | Qty | Qty UoM | Mixing Density<br>lbm/gal | Yield<br>ft3/sack | Mix Fluid<br>Gal | Rate<br>bbl/min | Total Mix<br>Fluid<br>Gal |
|----------|------------|---------------------|-----|---------|---------------------------|-------------------|------------------|-----------------|---------------------------|
| 2        | SwiftCem   | SWIFTCM (TM) SYSTEM | 590 | sack    | 13.5                      | 1.74              |                  | 5               | 9.17                      |
| 9.17 Gal |            | FRESH WATER         |     |         |                           |                   |                  |                 |                           |

| Fluid # | Stage Type  | Fluid Name  | Qty | Qty UoM | Mixing Density<br>lbm/gal | Yield<br>ft3/sack | Mix Fluid<br>Gal | Rate<br>bbl/min | Total Mix<br>Fluid<br>Gal |
|---------|-------------|-------------|-----|---------|---------------------------|-------------------|------------------|-----------------|---------------------------|
| 3       | Fresh Water | Fresh Water | 120 | bbl     | 8.33                      |                   |                  |                 |                           |

| Cement Left In Pipe | Amount   | 44 ft               | Reason           | Shoe Joint             |          |
|---------------------|----------|---------------------|------------------|------------------------|----------|
| Mix Water:          | pH 7     | Mix Water Chloride: | 500 ppm          | Mix Water Temperature: | 57 °F    |
| Cement Temperature: | ## °F °C | Plug Displaced by:  | 8.4 lb/gal Water | Disp. Temperature:     | ## °F °C |
| Plug Bumped?        | Yes      | Bump Pressure:      | 580 psi          | Floats Held?           | Yes      |
| Cement Returns:     | 40 bbl   | Returns Density:    | ## lb/gal kg/m3  | Returns Temperature:   | ## °F °C |

**Comment**

JOB WENT WELL. NO ACCIDENT, INJURY OR SPILL. SLURRY WEIGHT VERIFIED BY PRESSURIZED MUD BALANCE AND VOLUME VERIFIED BY MIX WATER. PUMPED 10 BBL WATER SPACER WITH RED DYE THEN 183 BBL SWIFTCM. DROPPED TOP PLUG. DISPLACED WITH WATER WASHING UP ON TOP OF THE PLUG. 40 BBL CEMENT TO SURFACE. BUMPED PLUG 3.5 BPM AT 580 PSI. TOOK TO 1182 PSI. FLOATS HELD WITH ½ BBL BACK.

TOP OF CEMENT – SURFACE WITH 40 BBL BACK

SPACER – ALL 10 BBL BACK

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

| Type  | Seq. No. | Activity         | Graph Label      | Date     | Time     | Source | PS Pump Press<br>(psi) | DH Density<br>(ppg) | Comb Pump Rate<br>(bbl/min) | Pump Stg Tot<br>(bbl) | Comments  |
|-------|----------|------------------|------------------|----------|----------|--------|------------------------|---------------------|-----------------------------|-----------------------|---|
| Event | 1        | Comment          | Comment          | 1/5/2020 | 08:30:00 | USER   |                        |                     |                             |                       | CREW STAYED FROM PREVIOUS JOB. RIG TD'S WELL  |
| Event | 2        | Safety Meeting   | Safety Meeting   | 1/5/2020 | 15:00:00 | USER   | 0.00                   | 0.04                | 0.00                        | 2.40                  | CREW HAS PRE JOB SAFETY MEETING DISCUSSING ROLES, RED ZONES, STOP WORK, MUSTER AREAS, LINE OF FIRE, TUGGER OPERATIONS, RIG OPERATIONS, CONTINGENCIES, COMMUNICATION, PINCH POINTS, HAND PLACEMENT, SLIPS TRIPS FALLS AND THE JOB PROCEEDURE |
| Event | 3        | Comment          | Start Job        | 1/5/2020 | 15:07:14 | COM4   | -1.00                  | 8.40                | 0.00                        | 8.40                  | START FLEX ON PUMP  |
| Event | 4        | Casing on Bottom | Casing on Bottom | 1/5/2020 | 15:30:00 | USER   | 0.00                   | 8.38                | 0.00                        | 8.40                  | CASING ON BOTTOM. RIG CREW RIGS DOWN CASING EQUIPMENT AND RIGS UP HES LINES   |
| Event | 5        | Test Lines       | Test Lines       | 1/5/2020 | 15:49:30 | COM4   | 3225.00                | 8.46                | 0.00                        | 11.50                 | FILL LINES WITH 3 BBL WATER. PRESSURE TEST HES LINES TO 3000 PSI AND HOLD FOR A FEW MINUTES. TEST GOOD  |
| Event | 6        | Pump Spacer 1    | Pump Spacer 1    | 1/5/2020 | 15:51:27 | COM4   | 43.00                  | 8.39                | 0.00                        | 0.00                  | PUMP 10 BBL RED DYE SPACER  |

|       |    |                   |                   |          |          |      |         |       |      |        |   |
|-------|----|-------------------|-------------------|----------|----------|------|---------|-------|------|--------|---|
| Event | 7  | Pump Cement       | Pump Cement       | 1/5/2020 | 15:54:59 | COM4 | 118.00  | 8.42  | 3.20 | 0.00   | PUMP 183 BBL SWIFTCCEM<br>13.5# 1.74 YIELD 9.17 GAL<br>590 SACKS  |
| Event | 8  | Shutdown          | Shutdown          | 1/5/2020 | 16:24:00 | USER | 125.00  | 13.55 | 1.40 | 219.00 | SHUTDOWN  |
| Event | 9  | Drop Top Plug     | Drop Top Plug     | 1/5/2020 | 16:26:20 | COM4 | -36.00  | 19.36 | 0.00 | 219.00 | DROP TOP PLUG   |
| Event | 10 | Pump Displacement | Pump Displacement | 1/5/2020 | 16:27:32 | COM4 | -29.00  | 19.29 | 0.00 | 219.00 | PUMP 120 BBL WATER<br>DISPLACEMENT WASHING<br>UP ON TOP OF THE PLUG<br>WITH THE FIRST 10 BBL  |
| Event | 11 | Bump Plug         | Bump Plug         | 1/5/2020 | 16:46:41 | COM4 | 1016.00 | 8.38  | 0.00 | 124.60 | BUMP PLUG AT 3.5 BPM AT<br>580 PSI. TOOK TO 1182 PSI<br>AND HELD FOR A FEW<br>MINUTES   |
| Event | 12 | Comment           | Comment           | 1/5/2020 | 16:47:56 | USER | 463.00  | 8.38  | 0.00 | 124.70 | FLOATS HELD WITH 1/2 BBL<br>BACK  |
| Event | 13 | End Job           | End Job           | 1/5/2020 | 16:52:37 | COM4 | -3.00   | 8.32  | 4.20 | 125.40 | END JOB   |
| Event | 14 | Safety Meeting    | Safety Meeting    | 1/5/2020 | 17:00:00 | USER |         |       |      |        | CREW HAS PRE RIG DOWN<br>SAFETY MEETING<br>DISCUSSING<br>COMMUNICATION, RED<br>ZONES, RIG OPERATIONS,<br>SLIP TRIPS FALLS, LINE OF<br>FIRE, PINCH POINTS, TEAM<br>LIFTING, HAND PLACEMENT   |
| Event | 15 | Depart Location   | Depart Location   | 1/5/2020 | 19:00:00 | USER |         |       |      |        | CREW IS RIGGED DOWN<br>AND READY TO DEPART.<br>CREW HAS JOURNEY<br>MANAGEMENT SAFETY<br>MEETING DISCUSSING<br>ROUTE, CONVOY ORDER,<br>FOLLOWING DISTANCE,<br>WALK AROUNDS, STOPS,<br>HOURS OF SERVICE,<br>COMMUNICATION AND<br>DEPART FROM LOCATION |

## 3.0 Attachments

### 3.1 EXTRACTION GP CODY FED 20E-15-4 SURFACE.png

