

# HALLIBURTON

iCem<sup>®</sup> Service

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

Date: Friday, December 29, 2017

### **Jesser 3E-10-5N PRODUCTION**

Job Date: Saturday, December 09, 2017

Sincerely,

**Julia Nichols**

## Legal Notice

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## 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 **JESSER 3E-10-5N** cement **PRODUCTION** 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 60 barrels 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]**

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*Cementing Job Summary*

*The Road to Excellence Starts with Safety*

|  |                      |                                      |                           |
|--|----------------------|--------------------------------------|---------------------------|
| Sold To #: 389404                                | Ship To #: 3830608   | Quote #:                             | Sales Order #: 0904490556 |
| Customer: EXTRACTION OIL & GAS                   |                      | Customer Rep: Larry Siegel           |                           |
| Well Name: JESSER                                | Well #: 3E-10-5N     | API/UWI #: 05-123-45660-00           |                           |
| Field: WATTENBERG                                | City (SAP): BERTHOUD | County/Parish: WELD                  | State: COLORADO           |
| Legal Description: NW SW-3-4N-68W-2314FSL-436FWL |                      |                                      |                           |
| Contractor:                                      |                      | Rig/Platform Name/Num: Patterson 901 |                           |
| Job BOM: 7523 7523                               |                      |                                      |                           |
| Well Type: HORIZONTAL OIL                        |                      |                                      |                           |
| Sales Person: HALAMERICA\HX38199                 |                      | Srvc Supervisor: Nicholas Roles      |                           |
| <b>Job</b>                                       |                      |                                      |                           |

|                        |         |                   |  |
|------------------------|---------|-------------------|--|
| <b>Formation Name</b>  |         |                   |  |
| Formation Depth (MD)   | Top     | Bottom            |  |
| Form Type              |         | BHST              |  |
| Job depth MD           | 11926ft | Job Depth TVD     |  |
| Water Depth            |         | Wk Ht Above Floor |  |
| Perforation Depth (MD) | From    | To                |  |

| Well Data         |            |         |       |               |        |       |           |              |            |               |
|-------------------|------------|---------|-------|---------------|--------|-------|-----------|--------------|------------|---------------|
| Description       | New / Used | Size in | ID in | Weight lbm/ft | Thread | Grade | Top MD ft | Bottom MD ft | Top TVD ft | Bottom TVD ft |
| Casing            | 0          | 9.625   | 8.921 | 36            |        | J-55  | 0         | 1599         | 0          | 1599          |
| Casing            | 0          | 5.5     | 4.778 | 20            |        | P-110 | 0         | 11926        | 0          | 7050          |
| Open Hole Section |            |         | 8.5   |               |        |       | 1599      | 11930        | 1599       | 7050          |

| Tools and Accessories |         |     |      |          |                |         |     |      |  |
|-----------------------|---------|-----|------|----------|----------------|---------|-----|------|--|
| Type                  | Size in | Qty | Make | Depth ft | Type           | Size in | Qty | Make |  |
| Guide Shoe            | 5.5     |     |      |          | Top Plug       | 5.5     |     | HES  |  |
| Float Shoe            | 5.5     |     |      | 11926    | Bottom Plug    | 5.5     |     | HES  |  |
| Float Collar          | 5.5     |     |      |          | SSR plug set   | 5.5     |     | HES  |  |
| Insert Float          | 5.5     |     |      |          | Plug Container | 5.5     | 1   | HES  |  |
| Stage Tool            | 5.5     |     |      |          | Centralizers   | 5.5     |     | HES  |  |

| Fluid Data      |                              |  |     |         |                        |                             |               |              |                     |  |
|-----------------|------------------------------|--|-----|---------|------------------------|-----------------------------|---------------|--------------|---------------------|--|
| Stage/Plug #: 1 |                              |  |     |         |                        |                             |               |              |                     |  |
| Fluid #         | Stage Type                   | Fluid Name                                       | Qty | Qty UoM | Mixing Density lbm/gal | Yield ft <sup>3</sup> /sack | Mix Fluid Gal | Rate bbl/min | Total Mix Fluid Gal |  |
| 1               | 11.5 lb/gal Tuned Spacer III | Tuned Spacer III                                 | 50  | bbl     | 11.5                   | 3.73                        |               | 5            |                     |  |
|                 | 149.34 lbm/bbl               | BARITE, BULK (100003681)                         |     |         |                        |                             |               |              |                     |  |
|                 | 35 gal/bbl                   | FRESH WATER                                      |     |         |                        |                             |               |              |                     |  |
|                 | 0.50 gal/bbl                 | MUSOL A, 330 GAL TOTE - (790828)                 |     |         |                        |                             |               |              |                     |  |
|                 | 0.50 gal/bbl                 | DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665) |     |         |                        |                             |               |              |                     |  |

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*Cementing Job Summary*

| Fluid #                                       | Stage Type   | Fluid Name            | Qty  | Qty UoM | Mixing Density<br>lbm/gal | Yield<br>ft <sup>3</sup> /sack | Mix Fluid<br>Gal | Rate<br>bbl/mi<br>n | Total Mix<br>Fluid<br>Gal |  |
|---|--------------|-----------------------|------|---------|---------------------------|--------------------------------|------------------|---------------------|---------------------------|--|
| 2   | ElastiCem    | ELASTICEM (TM) SYSTEM | 2000 | sack    | 13.2                      | 1.57                           |                  | 8                   | 7.53                      |  |
| 0.40 %  |              | SCR-100 (100003749)   |      |         |                           |                                |                  |                     |                           |  |
| 7.50 Gal                                      |              | FRESH WATER           |      |         |                           |                                |                  |                     |                           |  |
| Fluid #                                       | Stage Type   | Fluid Name            | Qty  | Qty UoM | Mixing Density<br>lbm/gal | Yield<br>ft <sup>3</sup> /sack | Mix Fluid<br>Gal | Rate<br>bbl/mi<br>n | Total Mix<br>Fluid<br>Gal |  |
| 3   | Displacement | Displacement          | 285  | bbl     | 8.34                      |                                |                  | 10                  |                           |  |
| <b>Cement Left In Pipe</b>                    |              | <b>Amount</b>         | 0 ft |         | <b>Reason</b>             |                                |                  | <b>Wet Shoe</b>     |                           |  |
| <b>Comment</b> Got 60bbbls Cement to surface. |              |                       |      |         |                           |                                |                  |                     |                           |  |

## 2.0 Real-Time Job Summary

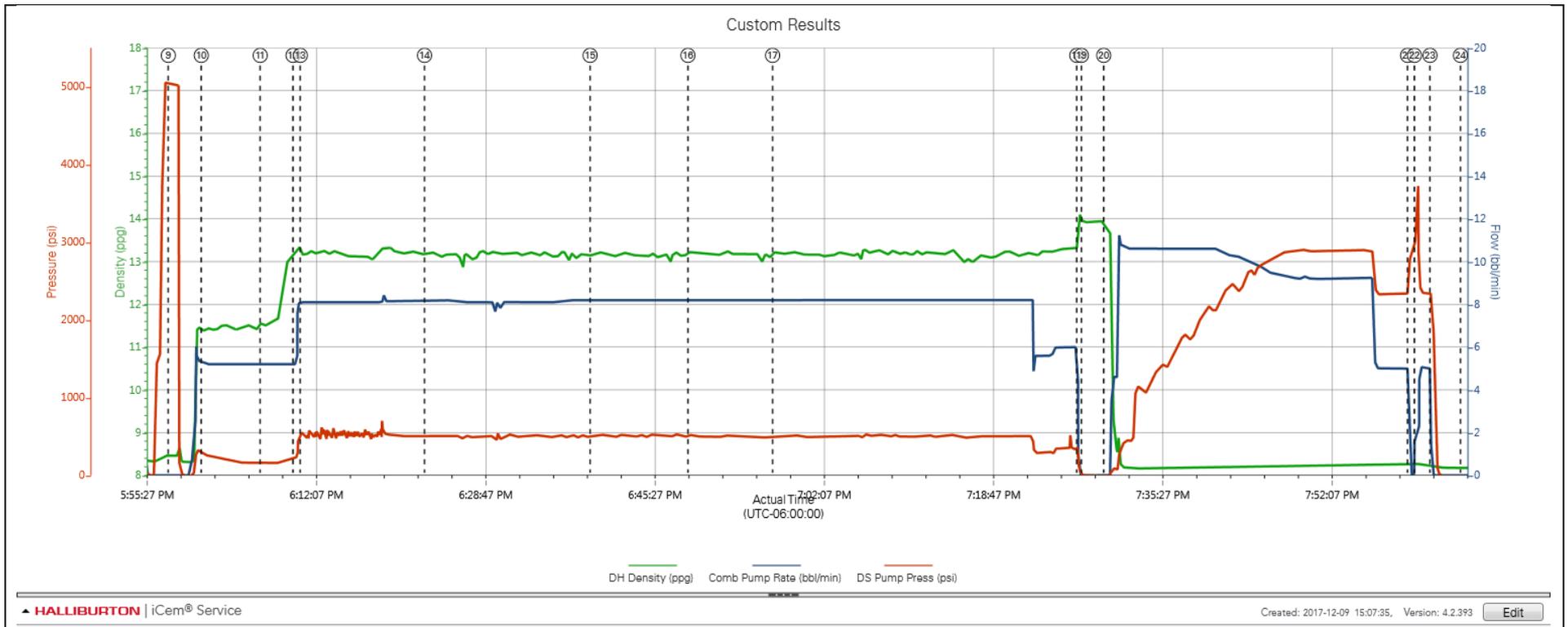
### 2.1 Job Event Log

| Type  | Seq. No. | Activity   | Graph Label                                      | Date      | Time     | Source | DH Density<br><i>(ppg)</i> | Comb Pump Rate<br><i>(bbl/min)</i> | DS Pump Press<br><i>(psi)</i> | Comments  |
|-------|----------|--|--|-----------|----------|--------|----------------------------|------------------------------------|-------------------------------|---|
| Event | 1        | Call Out   | Call Out   | 12/9/2017 | 09:00:00 | USER   |                            |                                    |                               | Called out by Service Coordinator for O/L at 1400   |
| Event | 2        | Depart Location Safety Meeting                   | Depart Location Safety Meeting                   | 12/9/2017 | 12:15:00 | USER   |                            |                                    |                               | Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.  |
| Event | 3        | Depart Location for Service Center or Other Site | Depart Location for Service Center or Other Site | 12/9/2017 | 12:30:00 | USER   |                            |                                    |                               | Journey Management prior to departure   |
| Event | 4        | Arrive at Location from Other Job or Site        | Arrive at Location from Other Job or Site        | 12/9/2017 | 13:00:00 | USER   |                            |                                    |                               | Upon arrival met with company man to discuss job details and calculations, performed hazard hunt and site assessment.   |
| Event | 5        | Pre-Rig Up Safety Meeting                        | Pre-Rig Up Safety Meeting                        | 12/9/2017 | 13:15:00 | USER   |                            |                                    |                               | Discussed rigging up hazards and procedure according to HMS.  |
| Event | 6        | Other  | Other  | 12/9/2017 | 13:30:00 | USER   |                            |                                    |                               | Water test- PH-6, Chlor-0, Temp-60. Cement temp-65.   |
| Event | 7        | Pre-Job Safety Meeting                           | Pre-Job Safety Meeting                           | 12/9/2017 | 16:30:00 | USER   | 8.34                       | 0.00                               | -29.00                        | Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.  |
| Event | 8        | Start Job  | Start Job  | 12/9/2017 | 17:47:16 | COM4   | 8.34                       | 0.00                               | -34.00                        | TD-11930', TP-11926' 5.5" 20#, FC-11921', TVD-7050', SURF-1599' 9.625" 36#, MUD 8.2#  |
| Event | 9        | Test Lines                                       | Test Lines                                       | 12/9/2017 | 17:57:46 | COM4   | 8.46                       | 0.00                               | 5032.00                       | Pumped 5bbbls fresh water to fill lines at 2bpm 110psi, shut manifold, and performed 500psi k/o function test, followed with 5th gear stall at 1480psi, proceeded to bring pressure to 4500psi, pressure stabilized and held with no leaks. |
| Event | 10       | Pump Spacer                                      | Pump Spacer                                      | 12/9/2017 | 18:01:01 | USER   | 11.38                      | 5.20                               | 279.00                        | Pumped 50bbbls of 11.5# 3.73y 23.4g/s Tuned Spacer III with 25g Musol A, 25g Dual Spacer B and 10g D-air at 5bpm 210psi.  |
| Event | 11       | Check Weight                                     | Check weight                                     | 12/9/2017 | 18:06:49 | COM4   | 11.54                      | 5.20                               | 158.00                        | Weight verified with pressurized mud scales.  |
| Event | 12       | Pump Cement                                      | Pump Cement                                      | 12/9/2017 | 18:10:03 | COM4   | 13.21                      | 5.20                               | 225.00                        | Pumped 2000sks or 559bbbls of 13.2# 1.57y 7.53g/s Elasticem at 8bpm 537psi.   |
| Event | 13       | Check Weight                                     | Check weight                                     | 12/9/2017 | 18:10:46 | COM4   | 13.16                      | 8.10                               | 531.00                        | Weight verified with pressurized mud scales.  |

|       |    |  |  |           |          |      |       |      |         |  |
|-------|----|--|--|-----------|----------|------|-------|------|---------|--|
| Event | 14 | Check Weight                                     | Check weight                                     | 12/9/2017 | 18:23:00 | COM4 | 13.20 | 8.20 | 517.00  | Weight verified with pressurized mud scales.   |
| Event | 15 | Check Weight                                     | Check weight                                     | 12/9/2017 | 18:39:18 | COM4 | 13.16 | 8.10 | 515.00  | Weight verified with pressurized mud scales.   |
| Event | 16 | Check Weight                                     | Check weight                                     | 12/9/2017 | 18:48:56 | COM4 | 13.23 | 8.20 | 510.00  | Weight verified with pressurized mud scales.   |
| Event | 17 | Check Weight                                     | Check weight                                     | 12/9/2017 | 18:57:16 | COM4 | 13.23 | 8.20 | 508.00  | Weight verified with pressurized mud scales.   |
| Event | 18 | Shutdown   | Shutdown   | 12/9/2017 | 19:27:13 | COM4 | 14.10 | 0.00 | 89.00   | No wash up. Extra bbl on wet shoe to account for clean shoe.   |
| Event | 19 | Drop Top Plug                                    | Drop Top Plug                                    | 12/9/2017 | 19:27:40 | COM4 | 13.93 | 0.00 | -7.00   | Dropped by KLX tool hand, witnessed by company man and HES supervisor.   |
| Event | 20 | Pump Displacement                                | Pump Displacement                                | 12/9/2017 | 19:29:52 | COM4 | 13.78 | 0.00 | -12.00  | Pumped 265bbls fresh water at 10bpm  |
| Event | 21 | Bump Plug  | Bump Plug  | 12/9/2017 | 19:59:47 | COM4 |       |      |         | Slowed down at 250bbls away to 5bpm, final circulating pressure-2330psi. Bump pressure-2910psi.                      |
| Event | 22 | Pressure Up Well                                 | Pressure Up Well                                 | 12/9/2017 | 20:00:28 | USER | 8.26  | 2.10 | 3409.00 | Pumped fresh water to burst at 3715psi, continued to pump 6bbls fresh water at 5bpm 2345psi for wet shoe.            |
| Event | 23 | Check Floats                                     | Check Floats                                     | 12/9/2017 | 20:02:00 | USER | 8.23  | 0.00 | 2010.00 | Released pressure and got 2bbls back. Floats held.   |
| Event | 24 | End Job  | End Job  | 12/9/2017 | 20:05:00 | USER | 8.17  | 0.00 | -20.00  | Got 60bbls Cement to surface.  |
| Event | 25 | Pre-Rig Down Safety Meeting                      | Pre-Rig Down Safety Meeting                      | 12/9/2017 | 20:15:00 | USER | -0.32 | 0.00 | -23.00  | Discussed rigging down hazards and procedure according to HMS.   |
| Event | 26 | Depart Location Safety Meeting                   | Depart Location Safety Meeting                   | 12/9/2017 | 21:45:00 | USER |       |      |         | Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive. |
| Event | 27 | Depart Location for Service Center or Other Site | Depart Location for Service Center or Other Site | 12/9/2017 | 22:00:00 | USER |       |      |         | Pre journey management prior to departure.   |

3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

