



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 6/16/2014
 Invoice #: 12068
 API#: 05-123-38005
 Foreman: JASON

Customer: ENCANA
 Well Name: JILLSON EAST RINN 3J-22H-N268

County: Weld County
 State: Colorado
 Sec: 22
 Twp: 2N
 Range: 68W
 Consultant: CURT
 Rig Name & Number: H&P 278
 Distance To Location: 25
 Units On Location: 4027-3106, 4007-3210
 Time Requested: 1500
 Time Arrived On Location: 1430
 Time Left Location: 2130

| WELL DATA | Cement Data |
|----------------------------------|--------------------------------|
| Casing Size OD (in) : 9.625 | Cement Name: BFN III |
| Casing Weight (lb) : 40.00 | Cement Density (lb/gal) : 15.2 |
| Casing Depth (ft) : 840 | Cement Yield (cuft) : 1.27 |
| Total Depth (ft) : 893 | Gallons Per Sack: 5.89 |
| Open Hole Diameter (in.) : 12.25 | % Excess: 50% |
| Conductor Length (ft) : 82 | Displacement Fluid lb/gal: 8.3 |
| Conductor ID : 15.25 | BBL to Pit: 31.0 |
| Shoe Joint Length (ft) : 44 | Fluid Ahead (bbls): 30.0 |
| Landing Joint (ft) : 29 | H2O Wash Up (bbls): 20.0 |
| Max Rate: 7 | Spacer Ahead Makeup |
| Max Pressure: 2500 | 30 BBL H2O+KCL+DYE IN 2ND 10 |

| Calculated Results | Pressure of cement in annulus |
|--|---|
| cuft of Shoe 18.78 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft) | Displacement: 62.57 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint) |
| cuft of Conductor 62.58 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft) | Hydrostatic Pressure: 663.36 PSI |
| cuft of Casing 356.14 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length) | Pressure of the fluids inside casing |
| Total Slurry Volume 437.50 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing) | Displacement: 343.22 psi Shoe Joint: 34.84 psi Total: 378.06 psi |
| bbls of Slurry 77.8 116.88 bbls (Total Slurry Volume) X (.1781) X (% Excess Cement) | Differential Pressure: 285.30 psi |
| Sacks Needed 344 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement) | Collapse PSI: 2570.00 psi Burst PSI: 3950.00 psi |
| Mix Water 48.31 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42 | Total Water Needed: 160.88 bbls |

X *Jason*
 Authorization To Proceed

Customers hereby acknowledges and specifically agrees to the terms and condition on this work order, including, without limitation, the provisions on this work order.



**Bison Oil Well Cementing
Single Cement Surface Pipe**

Customer
Well Name

ENCANA
JILLSON EAST RINN 3J-22H-N268

INVOICE #
LOCATION
FOREMAN
Date

12068
Weld County
JASON
6/16/2014

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DESCRIPTION OF JOB EVENTS

| | | Displace 1 | | | Displace 2 | | | Displace 3 | | | Displace 4 | | | Displace 5 | | |
|----------------|------------------|------------|------|-----|------------|------|-----|------------|------|-----|------------|------|-----|------------|------|-----|
| | | BBLS | Time | PSI | BBLS | Time | PSI | BBLS | Time | PSI | BBLS | Time | PSI | BBLS | Time | PSI |
| Safety Meeting | 1845 | | | | | | | | | | | | | | | |
| MIRU | 1500 | | | | | | | | | | | | | | | |
| CIRCULATE | | 0 | 1954 | 0 | 0 | | | 0 | | | 0 | | | 0 | | |
| Drop Plug | | 10 | 1957 | 70 | 10 | | | 10 | | | 10 | | | 10 | | |
| | 1954 | 20 | 2001 | 120 | 20 | | | 20 | | | 20 | | | 20 | | |
| | | 30 | 2004 | 370 | 30 | | | 30 | | | 30 | | | 30 | | |
| | | 40 | 2006 | 420 | 40 | | | 40 | | | 40 | | | 40 | | |
| | M & P | 50 | 2008 | 470 | 50 | | | 50 | | | 50 | | | 50 | | |
| | Time Sacks | 60 | 2010 | 350 | 60 | | | 60 | | | 60 | | | 60 | | |
| | 1916-1950 | 70 | 2011 | 390 | 70 | | | 70 | | | 70 | | | 70 | | |
| | | 80 | BUMP | 860 | 80 | | | 80 | | | 80 | | | 80 | | |
| | | 90 | | | 90 | | | 90 | | | 90 | | | 90 | | |
| | | 100 | | | 100 | | | 100 | | | 100 | | | 100 | | |
| | | 110 | | | 110 | | | 110 | | | 110 | | | 110 | | |
| % Excess | 50 0% | 120 | | | 120 | | | 120 | | | 120 | | | 120 | | |
| Mixed bbls | 48.3 | 130 | | | 130 | | | 130 | | | 130 | | | 130 | | |
| Total Sacks | 344 | 140 | | | 140 | | | 140 | | | 140 | | | 140 | | |
| bbl Returns | 31 | 150 | | | 150 | | | 150 | | | 150 | | | 150 | | |
| Water Temp | 69 | | | | | | | | | | | | | | | |

Notes:

The day

PUMPED 30 BBL H2O AHEAD, SECOND 10 WITH DYE, MIX AND PUMP 344 SKS AT 15.2, 77.8 BBLS OF SLURRY, AFTER BUMPING PLUG PRESSURE TESTED CASING AT 1500 PSI FOR 15 MINUTES, RELEASE PRESSURE AND GOT .5 BBL BACK

X Jason Jussim
Work Performed

X Rig Supervisor
Title

X 6-16-14
Date