



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/1/2017  
 Invoice #: 900092  
 API#: 05-123-44298  
 Foreman: Corey B.

Customer: Bill Barrett Corp.

Well Name: Kunesmiller 5-61-22/0801B2

County: Weld  
 State: Colorado  
 Sec: 5N  
 Twp: 61W  
 Range: 21

Consultant:  
 Rig Name & Number: White Mountain 344  
 Distance To Location:  
 Units On Location: 4027/3103-4031/4201  
 Time Requested: 1900  
 Time Arrived On Location: 1800  
 Time Left Location:

| WELL DATA                        | Cement Data                    |
|----------------------------------|--------------------------------|
| Casing Size OD (in) : 9.625      | Cement Name: BFN III           |
| Casing Weight (lb) : 36.00       | Cement Density (lb/gal) : 14.2 |
| Casing Depth (ft.) : 813         | Cement Yield (cuft) : 1.48     |
| Total Depth (ft) : 811           | Gallons Per Sack: 7.40         |
| Open Hole Diameter (in.) : 13.50 | % Excess: 30%                  |
| Conductor Length (ft) : 0        | Displacement Fluid lb/gal: 8.3 |
| Conductor ID : 19.166            | BBL to Pit:                    |
| Shoe Joint Length (ft) : 44      | Fluid Ahead (bbls): 20.0       |
| Landing Joint (ft) : 0           | H2O Wash Up (bbls): 20.0       |
| Max Rate: 6                      | Spacer Ahead Makeup            |
| Max Pressure: 1000               | 20 bbl with die in 1st 10      |

| Calculated Results   | Displacement: 59.49 bbls   |
|--|--|
| <b>cuft of Shoe</b> 18.88 cuft<br>(Casing ID Squared) X (.005454) X (Shoe Joint ft)  | (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint) |
| <b>cuft of Conductor</b> 0.00 cuft<br>(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)   | Pressure of cement in annulus  |
| <b>cuft of Casing</b> 516.54 cuft<br>(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length) | Hydrostatic Pressure: 599.75 PSI   |
| <b>Total Slurry Volume</b> 535.42 cuft<br>(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)                                | Pressure of the fluids inside casing   |
| <b>bbls of Slurry</b> 95.36 bbls<br>(Total Slurry Volume) X (.1781)  | Displacement: 331.79 psi   |
| <b>Sacks Needed</b> 362 sk<br>(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)   | Shoe Joint: 32.09 psi  |
| <b>Mix Water</b> 63.74 bbls<br>(Sacks Needed) X (Gallons Per Sack) ÷ 42  | Total 363.88 psi   |
|  | Differential Pressure: 235.87 psi  |
|  | Collapse PSI: 2020.00 psi  |
|  | Burst PSI: 3520.00 psi   |
|  | Total Water Needed: 163.23 bbls  |

X   
 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

Bill Barrett Corp.  
Kunesmiller 5-61-22/0801B2

INVOICE #  
LOCATION  
FOREMAN  
Date

900092  
Weld  
Corey B.  
5/1/2017

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**DESCRIPTION OF JOB EVENTS**

| Amount Pumped    | Time/Date | Event                       | Description                            | Rate | BBLs | Pressure |
|------------------|-----------|-----------------------------|--|------|------|----------|
| % Excess 30%     |           |                             |  |      |      |          |
| Mixed bbls 63.74 | 1800      | Arrive on location          | Running Casing                         |      |      |          |
| Total Sacks 362  | 1805      | Bison Safety Meeting        |  |      |      |          |
| bbl Returns 23   | 1815      | Rig up                      |  |      |      |          |
| Water Temp 57    |           |                             |  |      |      |          |
|                  | 1945      | Safety Meeting for Job      | Bison and Rig Crew                     |      |      |          |
| Notes:           | 2008      | Start Job                   |  |      |      |          |
|                  | 2012      | Test Lines                  |  |      |      |          |
|                  | 2015      | Spacer                      | Water with die in 1st ten              | 4.5  | 20   | 30       |
|                  | 2020      | Cement                      | 14.2ppg                                | 5    | 95   | 50       |
|                  | 2038      | ShutDown                    |  |      |      |          |
|                  | 2040      | Drop Plug                   | Preloaded in Plug Container            |      |      |          |
|                  | 2042      | Start Displacement          |  | 4.5  | 40   | 150      |
|                  | 2057      | Bump Plug                   | 400 over Final lift pressure (690 PSI) | 2    | 59   | 190      |
|                  | 2100      | Check Floats                | with 1/2 bbl back                      |      |      |          |
|                  | 2102      | End Job                     |  |      |      |          |
|                  | 2105      | Rig Down                    |  |      |      |          |
|                  | 2130      | Leave Location              |  |      |      |          |
|                  |           | 23 bbl of cement to surface |  |      |      |          |

X

*Corey B.*

Work Performed

X

*Co. man*

Title

X

*5/1/17*

Date