



# BISON

Bison Oil Well Cementing Inc.  
1547 Gaylord Street  
Denver, CO 80206  
303-296-3010

## Invoice

| Date     | Invoice # |
|----------|-----------|
| 5/8/2014 | 12220     |

| Bill To   |
|---|
| Noble Energy Inc.<br>Attn: Accounting<br>1625 Broadway Ste 2000<br>Denver, CO 80202 |

| Location             | Well Name & No.          | Terms  | Job Type     |      |        |
|----------------------|--------------------------|--------|--------------|------|--------|
| Weld CO              | STORIS E24-73HN          | Net 30 | Surface Pipe |      |        |
| Item                 | Description              | Qty    | U/M          | Rate | Amount |
| Pump surface         | PUMP Charge-surface pipe | 1      |              |      |        |
| Discount 15%         | Discount 15%             |        |              |      |        |
| MILEAGE              | Mileage charge           | 360    |              |      |        |
| Discount 15%         | Discount 15%             |        |              |      |        |
| Data Acquisition ... | Data Acquisition Charge  | 1      |              |      |        |
| Discount 15%         | Discount 15%             |        |              |      |        |
|                      | Subtotal of Services     |        |              |      |        |
| BFN III Summer ...   | BFN III Blend            | 401    | Sack         |      |        |
| Discount 15%         | Discount 15%             |        |              |      |        |
| Dye - 4880           | Dye (Hot Pink 4880)      | 16     | oz           |      |        |
| Discount 15%         | Discount 15%             |        |              |      |        |
|                      | Subtotal of Materials    |        |              |      |        |

Please Remit Payment To:

Bison Oil Well Cementing, Inc.  
P.O. Box 29671  
Thornton, CO 80229

| Subtotal  |
|-----------|
| Sales Tax |
| Total     |
| Balance   |



# Bison Oil Well Cementing Single Cement Surface Pipe


Date: 5/8/2014  
Invoice #: 12220  
API#: 05-123-38153  
Foreman: Calvin Reimers

Customer: Noble  
Well Name: Storis E 24-73HN

County: Weld  
State: Colorado  
Sec: 24  
Twp: 6N  
Range: 65W

Consultant: Martin / Paul  
Rig Name & Number: H&P 315  
Distance To Location: 19 Miles  
Units On Location: 3104/3210  
Time Requested: 1100pm  
Time Arrived On Location: 800pm  
Time Left Location: 130am

| WELL DATA                        | Cement Data                    |
|----------------------------------|--------------------------------|
| Casing Size OD (in) : 9.625      | Cement Name: BFN III           |
| Casing Weight (lb) : 36.00       | Cement Density (lb/gal) : 15.2 |
| Casing Depth (ft) : 759          | Cement Yield (cuft) : 1.27     |
| Total Depth (ft) : 790           | Gallons Per Sack: 5.89         |
| Open Hole Diameter (in.) : 13.75 | % Excess: 16%                  |
| Conductor Length (ft) : 100      | Displacement Fluid lb/gal: 8.3 |
| Conductor ID : 16                | BBL to Pit: 10.0               |
| Shoe Joint Length (ft) : 41      | Fluid Ahead (bbls): 60.0       |
| Landing Joint (ft) : 30          | H2O Wash Up (bbls): 20.0       |
| Max Rate: 7                      | Spacer Ahead Makeup            |
| Max Pressure: 2500               | 60bbls H2O+Dye in 2nd 10bbls   |

|  |        |  |                                      |             |
|--|--------|--|--------------------------------------|-------------|
| Casing ID  | 8.921  | Casing Grade   | J-55 only used                       |             |
| <b>Calculated Results</b>  |        | Displacement: 57.85 bbls<br>(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint) |                                      |             |
| cuft of Shoe   | 17.84  | cuft   | Pressure of cement in annulus        |             |
| (Casing ID Squared) X (.005454) X (Shoe Joint ft)  |        | Hydrostatic Pressure:  | 599.58 PSI                           |             |
| cuft of Conductor  | 89.10  | cuft   | Pressure of the fluids inside casing |             |
| (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)  |        | Displacement:  | 309.69 psi                           |             |
| cuft of Casing   | 402.22 | cuft   | Shoe Joint:                          | 32.46 psi   |
| (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )   |        | Total:   | 342.15 psi                           |             |
| Total Slurry Volume  | 509.16 | cuft   | Differential Pressure:               | 257.43 psi  |
| (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  |        | Collapse PSI:  | 2020.00 psi                          |             |
| bbls of Slurry   | 90.68  | bbls   | Burst PSI:                           | 3520.00 psi |
| (Total Slurry Volume) X (.1781)  |        | Total Water Needed:  | 194.08 bbls                          |             |
| Sacks Needed   | 401    | sk   |                                      |             |
| (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)   |        |  |                                      |             |
| Mix Water  | 56.22  | bbls   |                                      |             |
| (Sacks Needed) X (Gallons Per Sack) ÷ 42   |        |  |                                      |             |
| <br>X _____ (Paul Dein)<br>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. |        |  |                                      |             |



| INVOICE # | LOCATION | FOREMAN | Date |
|-----------|----------|---------|------|
|-----------|----------|---------|------|

|                |
|----------------|
| 12220          |
| Weld           |
| Calvin Reimers |
| 5/8/2014       |

Customer  
Well Name

|                  |
|------------------|
| Noble            |
| Storis E 24-73HN |

Treatment Report Page 2

## DESCRIPTION OF JOB EVENTS

[illegible]

Notes:

## The day

1/2 bbl back on bleed off

(Paul Davis)

55

1

x |

5/8/14

**Work Preformed**