



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/17/2014  
Invoice #: 12197  
API#:   
Foreman: Kirk Kallhoff

Customer: Noble  
Well Name: storis e24-731hc

County: weld  
State: Colorado  
Sec: 24  
Twp: 6n  
Range: 65w  
Consultant: martin  
Rig Name & Number: h&p315  
Distance To Location: 25  
Units On Location: 3106-3212  
Time Requested: 200 pm  
Time Arrived On Location: 1245 pm  
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) : 15.2 |
| Casing Depth (ft) : 774          | Cement Yield (cuft) : 1.27     |
| Total Depth (ft) : 4480.810      | Gallons Per Sack: 5.89         |
| Open Hole Diameter (in.) : 13.75 | % Excess: 30%                  |
| Conductor Length (ft) : 100      | Displacement Fluid lb/gal: 8.3 |
| Conductor ID : 16                | BBL to Pit:                    |
| Shoe Joint Length (ft) : 42      | Fluid Ahead (bbls): 60.0       |
| Landing Joint (ft) : 30          | H2O Wash Up (bbls): 20.0       |
| Max Rate:                        | Spacer Ahead Makeup            |
| Max Pressure:                    |                                |

|   |       |  |                |
|---|-------|--|----------------|
| Casing ID   | 8.921 | Casing Grade   | J-55 only used |
| <b>Calculated Results</b>   |       | <b>Displacement: 58.91 bbls</b>  |                |
| cuft of Shoe 18.23 cuft   |       | (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint) |                |
| (Casing ID Squared) X (.005454) X (Shoe Joint ft)   |       | <b>Pressure of cement in annulus</b>   |                |
| cuft of Conductor 89.10 cuft  |       | Hydrostatic Pressure: 611.15 PSI   |                |
| (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)    |       | <b>Pressure of the fluids inside casing</b>                                    |                |
| cuft of Casing 460.78 cuft  |       | Displacement: 315.62 psi   |                |
| (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length) |       | Shoe Joint: 33.16 psi  |                |
| Total Slurry Volume 568.11 cuft   |       | Total 348.79 psi   |                |
| (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)                                     |       | Differential Pressure: 262.36 psi  |                |
| bbls of Slurry 101.18 bbls  |       | Collapse PSI: 2020.00 psi  |                |
| (Total Slurry Volume) X (.1781)   |       | Burst PSI: 3520.00 psi   |                |
| Sacks Needed 447 sk   |       | Total Water Needed: 201.64 bbls  |                |
| (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)                                  |       |  |                |
| Mix Water 62.73 bbls  |       |  |                |
| (Sacks Needed) X (Gallons Per Sack) ÷ 42  |       |  |                |

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

Noble  
storis e24-731hc

INVOICE #  
LOCATION  
FOREMAN  
Date

12197  
weld  
Kirk Kallhoff  
5/17/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

| Safety Meeting<br>MIRU<br>CIRCULATE<br>Drop Plug<br>451 pm<br>M & P<br>Time<br>411 pm<br>449 pm stop<br>% Excess<br>Mixed bbls<br>Total Sacks<br>bbl Returns<br>Water Temp | 328pm<br>255pm<br>359pm<br>10%<br>55.9<br>399<br>12 | 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 |
|  |   | 0          | 451pm | 10  | 0          |      |     | 0          |      |     | 0          |      |     | 0          |      |     |
|  |   | 10         | 453pm | 60  | 10         |      |     | 10         |      |     | 10         |      |     | 10         |      |     |
|  |   | 20         | 455pm | 100 | 20         |      |     | 20         |      |     | 20         |      |     | 20         |      |     |
|  |   | 30         | 457pm | 170 | 30         |      |     | 30         |      |     | 30         |      |     | 30         |      |     |
|  |   | 40         | 459pm | 250 | 40         |      |     | 40         |      |     | 40         |      |     | 40         |      |     |
|  |   | 50         | 501pm | 300 | 50         |      |     | 50         |      |     | 50         |      |     | 50         |      |     |
|  |   | 60         |       |     | 60         |      |     | 60         |      |     | 60         |      |     | 60         |      |     |
|  |   | 70         |       |     | 70         |      |     | 70         |      |     | 70         |      |     | 70         |      |     |
|  |   | 80         |       |     | 80         |      |     | 80         |      |     | 80         |      |     | 80         |      |     |
|  |   | 90         |       |     | 90         |      |     | 90         |      |     | 90         |      |     | 90         |      |     |
|  |   | 100        |       |     | 100        |      |     | 100        |      |     | 100        |      |     | 100        |      |     |
|  |   | 110        |       |     | 110        |      |     | 110        |      |     | 110        |      |     | 110        |      |     |
|  |   | 120        |       |     | 120        |      |     | 120        |      |     | 120        |      |     | 120        |      |     |
|  |   | 130        |       |     | 130        |      |     | 130        |      |     | 130        |      |     | 130        |      |     |
|  |   | 140        |       |     | 140        |      |     | 140        |      |     | 140        |      |     | 140        |      |     |
|  |   | 150        |       |     | 150        |      |     | 150        |      |     | 150        |      |     | 150        |      |     |

Notes:

bumped plug at 506 pm 430 psi 88.6 bbls slurry

casing test 1000 psi for 15 min

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X WSS

X 5-17-14  
Date