



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 6/6/2014  
 Invoice # 12036  
 API# \_\_\_\_\_  
 Foreman: Kirk Kallhoff

Customer: Encana  
 Well Name: zisch 3b-6h

County: weld  
 State: Colorado  
 Sec: 6  
 Twp: 3n  
 Range: 68w

Consultant: kirby  
 Rig Name & Number: ensign 124  
 Distance To Location: 30  
 Units On Location: 3103-3205  
 Time Requested: 200 am  
 Time Arrived On Location: 1215 am  
 Time Left Location: 4:45 am

| WELL DATA                               | Cement Data                           |
|---|---------------------------------------|
| Casing Size OD (in) : <u>9.625</u>      | Cement Name: <u>BFN III</u>           |
| Casing Weight (lb) : <u>40.00</u>       | Cement Density (lb/gal) : <u>15.2</u> |
| Casing Depth (ft.) : <u>822 842</u>     | Cement Yield (cuft) : <u>1.27</u>     |
| Total Depth (ft) : <u>857</u>           | Gallons Per Sack: <u>5.89</u>         |
| Open Hole Diameter (in.) : <u>12.25</u> | % Excess: <u>50%</u>                  |
| Conductor Length (ft) : <u>100</u>      | Displacement Fluid lb/gal: <u>8.3</u> |
| Conductor ID : <u>16</u>                | BBL to Pit: _____                     |
| Shoe Joint Length (ft) : <u>45</u>      | Fluid Ahead (bbls): <u>30.0</u>       |
| Landing Joint (ft) : <u>20</u>          | H2O Wash Up (bbls): <u>20.0</u>       |
| Max Rate: _____                         | Spacer Ahead Makeup _____             |
| Max Pressure: _____                     |                                       |

| Calculated Results   | Pressure of cement in annulus   |
|--|---|
| <b>cuft of Shoe</b> <u>19.16</u> <b>cuft</b><br>(Casing ID Squared) X (.005454) X (Shoe Joint ft)  | <b>Displacement:</b> <u>60.43</u> <b>bbls</b><br>(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint) |
| <b>cuft of Conductor</b> <u>89.10</u> <b>cuft</b><br>(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)  | <b>Hydrostatic Pressure:</b> <u>649.05</u> <b>PSI</b>   |
| <b>cuft of Casing</b> <u>339.17</u> <b>cuft</b><br>(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length) | <b>Pressure of the fluids inside casing</b>   |
| <b>Total Slurry Volume</b> <u>447.43</u> <b>cuft</b><br>(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)                                | <b>Displacement:</b> <u>335.03</u> <b>psi</b>   |
| <b>bbls of Slurry</b> <u>79.69</u> <b>bbls</b><br>(Total Slurry Volume) X (.1781)  | <b>Shoe Joint:</b> <u>35.53</u> <b>psi</b>  |
| <b>Sacks Needed</b> <u>352</u> <b>sk</b><br>(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)   | <b>Total</b> <u>370.56</u> <b>psi</b>   |
| <b>Mix Water</b> <u>49.41</u> <b>bbls</b><br>(Sacks Needed) X (Gallons Per Sack) ÷ 42  | <b>Differential Pressure:</b> <u>278.49</u> <b>psi</b>  |
|  | <b>Collapse PSI:</b> <u>2570.00</u> <b>psi</b>  |
|  | <b>Burst PSI:</b> <u>3950.00</u> <b>psi</b>   |
|  | <b>Total Water Needed:</b> <u>159.84</u> <b>bbls</b>  |

Kirby Buellett  
 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  
zisch 3b-6h

INVOICE #  
LOCATION  
FOREMAN  
Date

12036  
weld  
Kirk Kallhoff  
6/6/2014

Treatment Report Page 2

**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 | 228am |            |        |     |            |      |     |            |      |     |            |      |     |            |      |     |
| MIRU           | 145am |            |        |     |            |      |     |            |      |     |            |      |     |            |      |     |
| CIRCULATE      | 257am | 0          | 324am  | 10  | 0          |      |     | 0          |      |     | 0          |      |     | 0          |      |     |
| Drop Plug      |       | 10         | 326am  | 60  | 10         |      |     | 10         |      |     | 10         |      |     | 10         |      |     |
| 324 am         |       | 20         | 328am  | 180 | 20         |      |     | 20         |      |     | 20         |      |     | 20         |      |     |
|                |       | 30         | 330 am | 270 | 30         |      |     | 30         |      |     | 30         |      |     | 30         |      |     |
|                |       | 40         | 333am  | 340 | 40         |      |     | 40         |      |     | 40         |      |     | 40         |      |     |
| M & P          |       | 50         | 335am  | 350 | 50         |      |     | 50         |      |     | 50         |      |     | 50         |      |     |
| Time           | Sacks | 60         | 341am  | 360 | 60         |      |     | 60         |      |     | 60         |      |     | 60         |      |     |
| 304 am         | 352   | 70         |        |     | 70         |      |     | 70         |      |     | 70         |      |     | 70         |      |     |
| 321 am         |       | 80         |        |     | 80         |      |     | 80         |      |     | 80         |      |     | 80         |      |     |
|                |       | 90         |        |     | 90         |      |     | 90         |      |     | 90         |      |     | 90         |      |     |
|                |       | 100        |        |     | 100        |      |     | 100        |      |     | 100        |      |     | 100        |      |     |
|                |       | 110        |        |     | 110        |      |     | 110        |      |     | 110        |      |     | 110        |      |     |
| % Excess       | 0%    | 120        |        |     | 120        |      |     | 120        |      |     | 120        |      |     | 120        |      |     |
| Mixed bbls     | 49.4  | 130        |        |     | 130        |      |     | 130        |      |     | 130        |      |     | 130        |      |     |
| Total Sacks    | 352   | 140        |        |     | 140        |      |     | 140        |      |     | 140        |      |     | 140        |      |     |
| bbl Returns    | 32    | 150        |        |     | 150        |      |     | 150        |      |     | 150        |      |     | 150        |      |     |
| Water Temp     |       |            |        |     |            |      |     |            |      |     |            |      |     |            |      |     |

Notes:

bumped plug at 341 am 520 psi 79.6 bbls slurry

casing test 1500 psi for 15 min

x Kuby Bennett  
Work Preformed

x Drilling Supervisor  
Title

x 6-6-14  
Date