

# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/24/2014  
 Invoice # 12070  
 API# 05-123-38940  
 Foreman: Calvin Reimers

Customer: Encana  
 Well Name: McConahay 4D-34H

County: Weld  
 State: Colorado  
 Sec: 34  
 Twp: 2N  
 Range: 66W

Consultant: Rich / Mike  
 Rig Name & Number: Ensign 124  
 Distance To Location: 24 Miles  
 Units On Location: 3103/3203  
 Time Requested: 400am  
 Time Arrived On Location: 230am  
 Time Left Location: 1:45pm

## WELL DATA

Casing Size OD (in) :	<u>9.625</u>
Casing Weight (lb) :	<u>40.00</u>
Casing Depth (ft.) :	<u>1,105</u>
Total Depth (ft) :	<u>1135</u>
Open Hole Diameter (in.) :	<u>12.25</u>
Conductor Length (ft) :	<u>84</u>
Conductor ID :	<u>16</u>
Shoe Joint Length (ft) :	<u>45</u>
Landing Joint (ft) :	<u>23</u>
Max Rate:	<u>7</u>
Max Pressure:	<u>2500</u>

## Cement Data

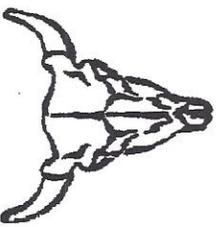
Cement Name:	<u>BFN III</u>
Cement Density (lb/gal) :	<u>15.2</u>
Cement Yield (cuft) :	<u>1.27</u>
Gallons Per Sack:	<u>5.89</u>
% Excess:	<u>45%</u>
Displacement Fluid lb/gal:	<u>8.3</u>
BBL to Pit:	<u>30</u>
Fluid Ahead (bbls):	<u>30.0</u>
H2O Wash Up (bbls):	<u>20.0</u>
Spacer Ahead Makeup	<u>10bbls H2O+KCL+Dye in 2nd 10bbls</u>

Casing ID	<u>8.835</u>
Casing Grade	<u>J-55 only used</u>
<b>Calculated Results</b>	
<b>cuft of Shoe</b>	<u>19.19 cuft</u>
(Casing ID Squared) X (.005454) X (Shoe Joint ft)	
<b>cuft of Conductor</b>	<u>74.84 cuft</u>
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	
<b>cuft of Casing</b>	<u>319.73 cuft</u>
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	
<b>Total Slurry Volume</b>	<u>413.76 cuft</u>
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	
<b>bbls of Slurry</b>	<u>106.85 bbls</u>
(Total Slurry Volume) X (.1781) X (% Excess Cement)	
<b>Sacks Needed</b>	<u>472 sk</u>
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	
<b>Mix Water</b>	<u>66.25 bbls</u>
(Sacks Needed) X (Gallons Per Sack) ÷ 42	

<b>Displacement:</b>	<u>82.09 bbls</u>
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
<b>Pressure of cement in annulus</b>	
<b>Hydrostatic Pressure:</b>	<u>872.44 PSI</u>
<b>Pressure of the fluids inside casing</b>	
<b>Displacement:</b>	<u>456.98 psi</u>
<b>Shoe Joint:</b>	<u>35.60 psi</u>
<b>Total</b>	<u>492.57 psi</u>
<b>Differential Pressure:</b>	<u>379.86 psi</u>
<b>Collapse PSI:</b>	<u>#N/A psi</u>
<b>Burst PSI:</b>	<u>#N/A psi</u>
<b>Total Water Needed:</b>	<u>198.34 bbls</u>

X [Signature]  
 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**

INVOICE #  
LOCATION  
FOREMAN  
Date

12070  
Weld  
Calvin Reimers  
2/24/2014

Customer  
Well Name

Encana  
McConahay 4D-34H

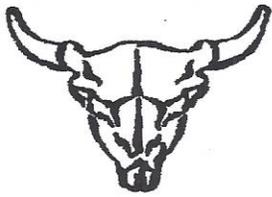
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**DESCRIPTION OF JOB EVENTS**

	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	1054am														
MIRU	945am														
CIRCULATE	1123am														
Drop Plug															
	1217pm														
M & P															
Time		Sacks													
1133am		472													
1213pm															
% Excess		45%													
Mixed bbls		66.25													
Total Sacks		472													
bbl Returns		30													
Water Temp		59													

Notes:  
The day  
Float Held  
1/2 bbl back on bleed off  
Casing PSI Test 1237pm 1510psi to 1252pm 1480psi

X Michal Roman Title Coman Date 2-23-14  
Work Performed



# Bison Oil Well Cementing Single Cement Surface Pipe

## Cementing Customer Satisfaction Survey

Service Date	2/24/2014
Well Name	McConahay 4D-34H
County	Weld
State	Colorado
SEC	34
TWP	2N
RNG	66W

Invoice Number	12070
API #	05-123-38940
Job Type	Single Cement Surface Pipe
Company Name	Encana

Customer Representative: Rich / Mike

Supervisor Name: Calvin Reimers

Employee Name (Including Supervisor)
Calvin Reimers
Pablo S
Jeff K
Keith P

Exposure Hours (Per Employee)
11.25
11.25
11.25
11.25
45

Total Exposure Hours

Did we encounter any problems on this job?  Yes  No

### To Be Completed By Customer

Rating/Description  
 5 - Superior Performance (Established new quality/performance standards)  
 4 - Exceeded Expectation (Provided more than what was required/expected)  
 3 - Met Expectations (Did what was expected)  
 2 - Below Expectations (Job problems/failures occurred - \*Recovery made)  
 1 - Poor Performance (Job problems/failures occurred - \*Some recovery made)  
 \*Recovery: resolved issue(s) on jobsite in a timely and professional manner

RATING	CATEGORY	CUSTOMER SATISFACTION RATING
_____	Personnel -	Did our personnel perform to your satisfaction?
_____	Equipment -	Did our equipment perform to your satisfaction?
_____	Job Design -	Did we perform the job to the agreed upon design?
_____	Product/Material -	Did our products and materials perform as you expected?
_____	Health & Safety -	Did we perform in a safe and careful manner (Pre/post mtgs, PPE, TSMR, etc..)?
_____	Environmental -	Did we perform in an environmentally sound manner (spills, leaks, cleanup, etc..)?
_____	Timeliness -	Was job performed as scheduled (On time to site, accessible to customers, completed when expected)?
_____	Condition/Appearance -	Did the equipment condition and appearance meet your expectations?
_____	Communication -	How well did our personnel communicate during mobilization, rig up and job execution?

Please Circle: Yes No Did an accident or injury occur? Yes No Did an injury requiring medical treatment occur? Yes No Did a first-aid injury occur? Yes No Did a vehicle accident occur? Yes No Was a post-job safety meeting held?	Please Circle: Yes No Was a pre-job safety meeting held? Yes No Was a job safety analysis completed? Yes No Were emergency services discussed? Yes No Did environmental incident occur? Yes No Did any near misses occur?
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Additional Comments:

THE INFORMATION HEREIN IS CORRECT -

X *Michael Row*  
Customer Representative's Signature

DATE: 2-24-14

Any additional Customer Comments or HSE concerns should be described on the back of this form

# M/D TOTCO 2000 SERIES

