



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 12/10/2014  
Invoice #: 65038  
API#: 40264  
Foreman: Lee Sharp

Customer: EnCana Oil & Gas (USA) Inc.  
Well Name: Ruhl 1B-32H-B264

County: Weld  
State: Colorado  
Sec: 32  
Twp: 2N  
Range: 64W

Consultant: Randy  
Rig Name & Number: H&P 278  
Distance To Location: 24  
Units On Location: 4031-3106/  
Time Requested: 8:30  
Time Arrived On Location: 7:40  
Time Left Location:

## WELL DATA

Casing Size OD (in.): 9.625  
Casing Weight (lb): 40.00  
Casing Depth (ft.): 1,217  
Total Depth (ft.): 1223  
Open Hole Diameter (in.): 12.25  
Conductor Length (ft.): 100  
Conductor ID: 15.75  
Shoe Joint Length (ft.): 46  
Landing Joint (ft.): 0

Max Rate:  
Max Pressure:

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal): 15.2  
Cement Yield (cuft): 1.27  
Gallons Per Sack: 5.89  
% Excess: 25%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 0.0  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

Casing ID

8.835

Casing Grade

J-55 only used

## Calculated Results

cuft of Shoe 19.71 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)  
cuft of Conductor 84.77 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X  
(Conductor Length ft)  
cuft of Casing 437.21 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing  
Depth - Conductor Length)  
Total Slurry Volume 541.69 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
bbls of Slurry 96.48 bbls  
(Total Slurry Volume) X (.1781)  
Sacks Needed 427 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
Mix Water 59.82 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 88.76 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe  
Joint)

## Pressure of cement in annulus

Hydrostatic Pressure: 960.82 PSI

## Pressure of the fluids inside casing

Displacement: 504.71 psi

Shoe Joint: 36.56 psi

Total 541.27 psi

Differential Pressure: 419.54 psi

Collapse PSI: 2570.00 psi

Burst PSI: 3950.00 psi

Total Water Needed 198.57 bbls

X Randy Burke  
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 Oil & Gas (USA) Inc.  
Ruhl 1B-32H-B264

INVOICE #  
LOCATION  
FOREMAN  
Date

65038  
Weld  
Lee Sharp  
12/10/2014

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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	14:45															
MIRU	14:25															
CIRCULATE	15:23	0	16:05		0			0			0			0		
Drop Plug		10	16:07	20	10			10			10			10		
16:05		20	16:09	20	20			20			20			20		
		30	16:12	70	30			30			30			30		
		40	16:14	180	40			40			40			40		
		50	16:16	260	50			50			50			50		
M & P		60	16:18	380	60			60			60			60		
Time	Sacks	70	16:20	370	70			70			70			70		
15:30-16:05	427	80	16:22	420	80			80			80			80		
		90	Land	860	90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
% Excess	25%	130			130			130			130			130		
Mixed bbls	60	140			140			140			140			140		
Total Sacks	428	150			150			150			150			150		
bbl Returns	20															
Water Temp	60															

Notes:

The day

Densometer did not work for entire job had to scale job

over filled displacement tanks twice during job

could not complete casing test because o-ring in head failed

Company man was made aware of all above listed issues.

Plug landed on caluculated final lift 320 land 860psi

X

Work Performed

*Randy Bube*

X

Title

X

Date