Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 6/11/2014
Invoice # 25008
API# 05-123-39215-000
Foreman: Calvin Reimers

Customer: EnCana Oil & Gas (USA) Inc.
Well Name: Mumby State 4H-36H-P266

County: Weld
State: Colorado
Sec: 36
Twp: 2N
Range: 66W

Consultant:
Rig Name & Number: H&P 522
Distance To Location: 22 Miles
Units On Location: 4023-3104/4024-3203
Time Requested: 600am
Time Arrived On Location: 420am
Time Left Location: 10:00 AM

WELL DATA

Casing Size OD (in) :	9.625
Casing Weight (lb) :	40.00
Casing Depth (ft.) :	1,096
Total Depth (ft) :	1143
Open Hole Diameter (in.) :	12.25
Conductor Length (ft) :	82
Conductor ID :	16
Shoe Joint Length (ft) :	45
Landing Joint (ft) :	38
Max Rate:	7
Max Pressure:	2500

Cement Data

Cement Name:	BFN III
Cement Density (lb/gal) :	15.2
Cement Yield (cuft) :	1.27
Gallons Per Sack:	5.89
% Excess:	50%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	10
Fluid Ahead (bbls):	30.0
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup
30bbls H2O+KCL+Dye in 2nd 10bbls

Casing ID 8.835 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 19.16 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 73.06 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 476.58 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 568.79 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 101.30 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 448 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 62.81 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 82.57 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 865.79 PSI

Pressure of the fluids inside casing

Displacement:	453.38 psi
Shoe Joint:	35.53 psi
Total	488.91 psi
Differential Pressure:	376.87 psi
Collapse PSI:	2570.00 psi
Burst PSI:	3950.00 psi
Total Water Needed:	195.38 bbls

X Kevin Bergan
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.

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INVOICE #	25008
LOCATION	Weld
FOREMAN	Calvin Reimers
Date	6/11/2014

Customer	EnCana Oil & Gas (USA) Inc.
Well Name	Mumby State 4H-36H-P266

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DESCRIPTION OF JOB EVENTS

		Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
Safety Meeting	656am	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
MIRU	530am	0	805am	80	0			0			0			0		
CIRCULATE	725am	10	808am	120	10			10			10			10		
Drop Plug		20	810am	190	20			20			20			20		
804am		30	811am	370	30			30			30			30		
		40	813am	600	40			40			40			40		
M & P		50	815am	500	50			50			50			50		
Time	**Sacks**	60	816am	490	60			60			60			60		
731am	448	70	818am	520	70			70			70			70		
801am		80	820am	530	80			80			80			80		
		90	822am	470	90			90			90			90		
		100	Bump	870	100			100			100			100		
		110			110			110			110			110		
% Excess	50%	120			120			120			120			120		
Mixed bbls	62.81	130			130			130			130			130		
Total Sacks	448	140			140			140			140			140		
bbl Returns	10	150			150			150			150			150		
Water Temp	66.2															

Notes:

The day

1/2 bbl Back on Bleed off

Casing PSI Test 824am 1530psi to 849am 1470psi

X Kevin Bergman
Work Preformed

X
Title

X 6-11-14
Date