



**Bison Oil Well Cementing
Single Cement Surface Pipe**

Date: 8/25/2014

Invoice # 45025

API# 05-123-39738

Foreman: JASON KELEHER

Customer: EnCana Oil & Gas (USA) Inc.

Well Name: DALE 4A-20H-0264

County: Weld
State: Colorado

Sec: 20
Twp: 2N
Range: 64W

Consultant: RANDY
Rig Name & Number: H&P 278
Distance To Location: 22
Units On Location: 4031-3106/ 4017-3211
Time Requested: 600
Time Arrived On Location: 430
Time Left Location: 1000

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>1,056</u>	Cement Yield (cuft) : <u>1.27</u>
Total Depth (ft) : <u>1097</u>	Gallons Per Sack: <u>5.89</u>
Open Hole Diameter (in.) : <u>12.25</u>	% Excess: <u>18%</u>
Conductor Length (ft) : <u>140</u>	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : <u>15.25</u>	BBL to Pit: <u>24.0</u>
Shoe Joint Length (ft) : <u>46</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>29</u>	H2O Wash Up (bbls): <u>20.0</u>
Max Rate: <u>7</u>	Spacer Ahead Makeup
Max Pressure: <u>2500</u>	30BBL H2O W/KCL, Dye in 2nd 10

Casing ID

8.835

Casing Grade

J-55 only used

Calculated Results	Pressure of cement in annulus
Displacement: <u>78.75</u> bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	Hydrostatic Pressure: <u>833.53</u> PSI
cuft of Shoe <u>19.66</u> cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of the fluids inside casing
cuft of Conductor <u>106.84</u> cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Displacement: <u>435.25</u> psi
cuft of Casing <u>336.94</u> cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Shoe Joint: <u>36.47</u> psi
Total Slurry Volume <u>463.44</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Total <u>471.72</u> psi
bbls of Slurry <u>82.54</u> bbls (Total Slurry Volume) X (.1781)	Differential Pressure: <u>361.80</u> psi
Sacks Needed <u>365</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Collapse PSI: <u>2570.00</u> psi
Mix Water <u>51.17</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Burst PSI: <u>3950.00</u> psi
	Total Water Needed: <u>179.93</u> 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.



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Single Cement Surface Pipe**

Customer
Well Name

EnCana Oil & Gas (USA) Inc.
DALE 4A-20H-0264

INVOICE #
LOCATION
FOREMAN
Date

45025
Weld
JASON KELEHER
8/25/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

		Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
Safety Meeting	730	BBLs	Time	PSI												
MIRU	630															
CIRCULATE	759	0	824	0	0			0			0			0		
Drop Plug		10	826	20	10			10			10			10		
824		20	829	0	20			20			20			20		
		30	832	60	30			30			30			30		
		40	835	120	40			40			40			40		
M & P		50	837	470	50			50			50			50		
Time	Sacks	60	839	500	60			60			60			60		
0807-0822	365	70	841	460	70			70			70			70		
		80	844	420	80			80			80			80		
		90	BUMP	950	90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	17%	120			120			120			120			120		
Mixed bbls	51.15	130			130			130			130			130		
Total Sacks	365	140			140			140			140			140		
bbl Returns	24	150			150			150			150			150		
Water Temp	68															

Notes:

The day

PRESSURE TESTED TO 2000 PSI AT 0754, PUMPED 30 BBL WATER 2ND 10 HAVING DYE AT 0759, MIXED AND PUMPED 365 SKS AT 15.2, 82.5 BBL AT 0807

SHUT DOWN AT 0822, DROPPED PLUG AT 0824, STARTED DISPLACEMENT AT 0824, PUMPED 78.7 BBL LANDING AT 420 PSI AND PRESSURED UP TO 950

PSI AT 0844, RELEASED PRESSURE AFTER HOLDING FOR 4 MINUTES AND CHECK FLOATS GOT .5 BBL BACK, REPRESSURED WELL AT 0851 TO 1500 PSI FOR

15 MINUTES AND RELEASED

X Randy Burke
Work Performed

X _____
Title

X _____
Date