



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/18/2014
 Invoice # 55002
 API# _____
 Foreman: monte

Customer: EnCana Oil & Gas (USA) Inc.
 Well Name: jilian-east rinn 3f-22h-m1268

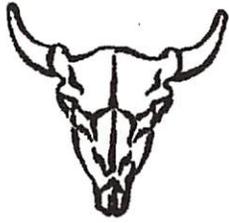
County: Weld Consultant: rich
 State: Colorado Rig Name & Number: ensign 124
 Distance To Location: 26.7
 Sec: 22 Units On Location: 4028-3102 4020-3212
 Twp: 2n Time Requested: 4:30AM
 Range: 68w Time Arrived On Location: 3:00AM
 Time Left Location: _____

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>814</u>	Cement Yield (cuft) :	<u>1.27</u>
Total Depth (ft) :	<u>870</u>	Gallons Per Sack:	<u>5.89</u>
Open Hole Diameter (in.) :	<u>12.25</u>	% Excess:	<u>50%</u>
Conductor Length (ft) :	<u>93</u>	Displacement Fluid lb/gal:	<u>8.3</u>
Conductor ID :	<u>15.6</u>	BBL to Pit:	
Shoe Joint Length (ft) :	<u>44</u>	Fluid Ahead (bbls):	<u>30.0</u>
Landing Joint (ft) :	<u>17</u>	H2O Wash Up (bbls):	<u>20.0</u>
Max Rate:	<u>5</u>	Spacer Ahead Makeup	
Max Pressure:	<u>2000</u>	10 fresh 10 dye 10 fresh	

Calculated Results		Displacement: 59.67 bbls	
cuft of Shoe	18.73 cuft	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		Pressure of cement in annulus	
cuft of Conductor	76.45 cuft	Hydrostatic Pressure: 642.73 PSI	
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Pressure of the fluids inside casing	
cuft of Casing	338.70 cuft	Displacement: 332.01 psi	
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Shoe Joint: 34.74 psi	
Total Slurry Volume	433.88 cuft	Total 366.75 psi	
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Differential Pressure: 275.98 psi	
bbls of Slurry	77.27 bbls	Collapse PSI: 2570.00 psi	
(Total Slurry Volume) X (.1781)		Burst PSI: 3950.00 psi	
Sacks Needed	342 sk	Total Water Needed: 157.59 bbls	
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water	47.91 bbls		
(Sacks Needed) X (Gallons Per Sack) ÷ 42			

X 
 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

Eucaly
Noble Energy Inc.
jilian-east rinn 3f-22h-m1268

INVOICE #
LOCATION
FOREMAN
Date

55002
Weld
monte
7/18/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

		Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
		BBLS	Time	PSI												
Safety Meeting	5:15															
MIRU	3:45															
CIRCULATE	5:43	0	6:08	0	0			0			0			0		
Drop Plug		10	6:11	20	10			10			10			10		
6:08		20	6:13	170	20			20			20			20		
		30	6:15	210	30			30			30			30		
		40	6:18	320	40			40			40			40		
M & P		50	6:20	350	50			50			50			50		
Time	Sacks	60	6:24	600	60			60			60			60		
5:47-6:06	342	70			70			70			70			70		
		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	50%	120			120			120			120			120		
Mixed bbls	47.91	130			130			130			130			130		
Total Sacks	342	140			140			140			140			140		
bbl Returns	26	150			150			150			150			150		
Water Temp	64.9															

Notes:

Safety Meeting, miru, pressure test per company manm circulate 30 bbls ahead with dye in 2nd 10, mix and pump 342 sks cement at 50% excess, drop plug and displ
bumped at 6:24 am, at 600 psi, 26 bbls to pit raise pressure to 1500 psi, hold 15 min

X *[Signature]*
Work Performed

X _____
Title

X _____
Date