Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 3/19/2015
Invoice # 80157
API# 05123927400 AFE 05123927400
Foreman: Lee Sharp

Customer: EnCana Oil & Gas (USA) Inc.
Well Name: Sprague 3F-9H

County: Weld
State: Colorado
Sec:
Twp:
Range:

Consultant:
Rig Name & Number: Paterson 272
Distance To Location: 26
Units On Location: 4027-3106 /4020- 3203
Time Requested: 5:00
Time Arrived On Location: 4:10
Time Left Location:

10
8,921

WELL DATA

Casing Size OD (in) :	9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	854
Total Depth (ft) :	870
Open Hole Diameter (in.) :	12.25
Conductor Length (ft) :	115
Conductor ID :	15.25
Shoe Joint Length (ft) :	44
Landing Joint (ft) :	0
Max Rate:	6
Max Pressure:	1200

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:	294
Fluid Ahead (bbls):	30.0
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup: 10+10D+10

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 19.14 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 87.76 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 347.14 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 454.04 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 80.86 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 358 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 50.14 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 62.61 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus
Hydrostatic Pressure: 674.29 PSI

Pressure of the fluids inside casing
Displacement: 349.20 psi
Shoe Joint: 34.82 psi
Total 384.02 psi

Differential Pressure: 290.27 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed: 162.75 bbls

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.

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LOCATION	Weld
FOREMAN	Lee Sharp
Date	3/19/2015

Customer	EnCana Oil & Gas (USA) Inc.
Well Name	Sprague 3F-9H

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DESCRIPTION OF JOB EVENTS

Safety Meeting	7:10
MIRU	5:40
CIRCULATE	7:25
Drop Plug	
7:51	
M & P	

Time	Sacks
7:31-7:46	358
% Excess	50%
Mixed bbls	50.14
Total Sacks	358
bbl Returns	29
Water Temp	100

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
0	7:51		0			0			0			0		
10	7:53	100	10			10			10			10		
20	7:56	140	20			20			20			20		
30	7:58	200	30			30			30			30		
40	8:00	300	40			40			40			40		
50	8:03	340	50			50			50			50		
60	8:05	350	60			60			60			60		
70	8:07	Land	70			70			70			70		
80			80			80			80			80		
90			90			90			90			90		
100			100			100			100			100		
110			110			110			110			110		
120			120			120			120			120		
130			130			130			130			130		
140			140			140			140			140		
150			150			150			150			150		

Notes:

The day

Job Completed with no issues

plug land on calculated

Casing test begin at 8:08 1020psi ended at 8:14 1020psi

Floats checked and held with 1/2 bbl return

X _____ Work Preformed

X _____ Title

X _____ Date