Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 5/4/2014
Invoice # 12144
API#
Foreman: Lee Sharp

Customer: Encana
Well Name: Bohrer 2E-19H E-368

County: Adams
State: Colorado
Sec: 9
Twp: 3N
Range: 68W

Consultant:
Rig Name & Number: Paterson 326
Distance To Location:
Units On Location: 4027-3106;4018-3203
Time Requested: 3:30 AM
Time Arrived On Location: 2:20 AM
Time Left Location:

WELL DATA

Casing Size OD (in) :	9.625
Casing Weight (lb) :	40.00
Casing Depth (ft.) :	871
Total Depth (ft) :	885
Open Hole Diameter (in.) :	12.25
Conductor Length (ft) :	115
Conductor ID :	16
Shoe Joint Length (ft) :	43
Landing Joint (ft) :	35
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:	124%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	59.0
Fluid Ahead (bbls):	30.0
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup
30=10F+ 10D+ 10F

Casing ID 8.835 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 18.26 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 102.46 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 236.76 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 357.49 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 142.36 bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 629 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 88.27 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 65.44 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 687.74 PSI

Pressure of the fluids inside casing

Displacement: 357.06 psi
Shoe Joint: 33.87 psi
Total 390.93 psi

Differential Pressure: 296.81 psi

Collapse PSI: #N/A psi
Burst PSI: #N/A psi

Total Water Needed: 203.71 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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INVOICE #	12144
LOCATION	Adams
FOREMAN	Lee Sharp
Date	5/4/2014

Customer	Encana
Well Name	Bohrer 2E-19H E-368

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DESCRIPTION OF JOB EVENTS

Safety Meeting	4:11
MIRU	3:50
CIRCULATE	4:42
Drop Plug	
5:52	
M & P	

Time	Sacks
5:00	628

% Excess	123%
Mixed bbls	88
Total Sacks	628
bbl Returns	59
Water Temp	50

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	5:50		0			0			0			0		
10	5:54	200	10			10			10			10		
20	5:58	360	20			20			20			20		
30	6:00	400	30			30			30			30		
40	6:02	430	40			40			40			40		
50	6:03	460	50			50			50			50		
60	6:06	360	60			60			60			60		
70	6:08	1000	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:

JOB WENT WELL PLUG DOWN AT 6:08 LANDED @ 100PSI PLUG DOWN WITH 62.5BBL DISPLACEMENT

X _____ Work Preformed

X _____ Title

X _____ Date