Bison Oil Well Cementing
Single Cement Surface Pipe

Invoice # 12755
API#
Foreman: Kirk Kallhoff

Customer: encana
Well Name: state 3a-16h

County: Weld County
State: Colorado

Sec: 16
Twp: 3N
Range: 68W

Consultant: charlie
Rig Name & Number: h&p 278
Distance To Location:
Units On Location: 3103-3211
Time Requested: 1230 pm
Time Arrived On Location: 1145am
Time Left Location: 3:30pm

WELL DATA

Casing Size OD (in) :	9.6250
Casing Weight (lb) :	40
Casing Depth (ft.) :	848
Total Depth (ft) :	890
Open Hole Diameter (in.) :	12.25
Conductor Length (ft) :	100
Conductor ID :	15.5
Shoe Joint Length (ft) :	41
Landing Joint (ft) :	28
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:	30%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	
Fluid Ahead (bbls):	
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup

Casing ID 8.835 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 17.45 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 80.51 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 234.26 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 332.22 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 76.92 bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 340 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 47.69 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 63.31 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 669.58 PSI

Pressure of the fluids inside casing

Displacement: 347.96 psi
Shoe Joint: 32.37 psi
Total 380.34 psi

Differential Pressure: 289.24 psi

Collapse PSI: 2570.00 psi
Burst PSI: 3950.00 psi

Total Water Needed: 67.69 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.

Bison Oil Well Cementing
Single Cement Surface Pipe

INVOICE #	12755
LOCATION	Weld County
FOREMAN	Kirk Kallhoff

Customer	encana
Well Name	state 3a-16h

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting	133
MIRU	1245
CIRCULATE	206
Drop Plug	
230 pm	
M & P	

Time	Sacks
211pm	340
227 stop	

% Excess	30%
Mixed bbls	47.6
Total Sacks	339
bbl Returns	25

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	230	10	0			0			0			0		
10	232	70	10			10			10			10		
20	234	220	20			20			20			20		
30	236	300	30			30			30			30		
40	238	360	40			40			40			40		
50	240	410	50			50			50			50		
60	244	430	60			60			60			60		
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		
120			120			120			120			120		
130			130			130			130			130		
140			140			140			140			140		
150			150			150			150			150		

Notes:

bumped plug at 244 pm 580 psi

X _____
Work Preformed

X _____
Title

X _____
Date