



Bison Oil Well Cementing  
Single Cement Surface Pipe

Date: 3/18/2014  
Invoice # 12129  
API# 05-123-380730  
Foreman: LEE SHARP

Customer: ENCANA  
Well Name: EDITH ANN-DUCKWORTH 4A-21H-0268

County: Weld County  
State: Colorado  
Sec: 21  
Twp: 2N  
Range: 68W

Consultant: LENARD CLARK  
Rig Name & Number: PATTERSON 272  
Distance To Location: 32  
Units On Location: 4027-3106; 4018-3204  
Time Requested: 11:00 AM  
Time Arrived On Location: 10:55 AM  
Time Left Location:

WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 40.00  
Casing Depth (ft.) : 902  
Total Depth (ft) : 913  
Open Hole Diameter (in.) : 12.25  
Conductor Length (ft) : 83  
Conductor ID : 15.5  
Shoe Joint Length (ft) : 44  
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: 41%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit:  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 20.0  
  
Spacer Ahead Makeup  
30KCLBBL 10+10DIE+10

Casing ID	8.835	Casing Grade	J-55 only used
<b>Calculated Results</b>		<b>Displacement: 67.71 bbls</b>	
<b>cuft of Shoe 18.86 cuft</b> (Casing ID Squared) X ( .005454) X (Shoe Joint ft)		(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
<b>cuft of Conductor 66.82 cuft</b> (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		<b>Pressure of cement in annulus</b>	
<b>cuft of Casing 256.49 cuft</b> (Open Hole Squared)-(Casing Size Squared) X ( .005454) X (Casing Depth - Conductor Length )		<b>Hydrostatic Pressure: 712.22 PSI</b>	
<b>Total Slurry Volume 342.17 cuft</b> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		<b>Pressure of the fluids inside casing</b>	
<b>bbls of Slurry 85.62 bbls</b> (Total Slurry Volume) X (.1781) X (% Excess Cement)		<b>Displacement: 369.82 psi</b>	
<b>Sacks Needed 379 sk</b> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		<b>Shoe Joint: 34.98 psi</b>	
<b>Mix Water 53.09 bbls</b> (Sacks Needed) X (Gallons Per Sack) ÷ 42		<b>Total 404.80 psi</b>	
		<b>Differential Pressure: 307.42 psi</b>	
		<b>Collapse PSI: #N/A psi</b>	
		<b>Burst PSI: #N/A psi</b>	
		<b>Total Water Needed: 170.80 bbls</b>	
<div>X Authorization To Proceed</div>			
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

ENCANA  
DITH ANN-DUCKWORTH 4A-21H-026

INVOICE #  
LOCATION  
FOREMAN  
Date

12129  
Weld County  
LEE SHARP  
3/18/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting	13:20	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
MIRU	12:20	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
CIRCULATE	14:07	0	14:40		0			0			0			0		
Drop Plug		10	14:44	150	10			10			10			10		
14:40		20	14:46	210	20			20			20			20		
		30	14:48	280	30			30			30			30		
		40	14:50	350	40			40			40			40		
M & P		50	14:52	410	50			50			50			50		
Time	Sacks	60	14:54	430	60			60			60			60		
14:11	379	70	14:56	730	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	41%	120			120			120			120			120		
Mixed bbls	53.25	130			130			130			130			130		
Total Sacks	380	140			140			140			140			140		
bbl Returns	21	150			150			150			150			150		
Water Temp	72															

Notes:

The day COMPANY MAN LENORD CLARK PROVIDED ALL NUMBERS FOR JOB. I WAS INSTRUCTED TO USE HIS NUMBERS NOT BISON JIM WAS MADE

AWARE @12:35

JOB WENT WELL NO ISSUES.

X  
Work Preformed

X  
Title

X  
Date