



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/6/2014
Invoice # 12219
API# 05-123-38443
Foreman: Calvin Reimers

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

County: Weld
State: Colorado
Sec: 19
Twp: 3N
Range: 68W

Consultant: Robert
Rig Name & Number: Patterson 326
Distance To Location: 22 Miles
Units On Location: 3104/3204
Time Requested: 300am
Time Arrived On Location: 140am
Time Left Location: 6:45 AM

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 40.00
Casing Depth (ft) : 840
Total Depth (ft) : 886
Open Hole Diameter (in.) : 12.25
Conductor Length (ft) : 84
Conductor ID : 15.6
Shoe Joint Length (ft) : 46
Landing Joint (ft) : 35

Max Rate: 7
Max Pressure: 2500

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: 29
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
10bbls H2O+KCL+Dye in 2nd 10bbls

Casing ID

8.835

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.56 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 69.05 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 355.10 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 443.71 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 79.02 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 349 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 49.00 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 62.85 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 663.19 PSI

Pressure of the fluids inside casing

Displacement: 342.34 psi

Shoe Joint: 36.28 psi

Total 378.62 psi

Differential Pressure: 284.57 psi

Collapse PSI: 2570.00 psi

Burst PSI: 3950.00 psi

Total Water Needed: 161.85 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**

Customer
Well Name

Encana
Bohrer 2A-19H E-368

INVOICE #
LOCATION
FOREMAN
Date

12219
Weld
Calvin Reimers
5/6/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting MIRU CIRCULATE Drop Plug 542am M & P Time Sacks 521am 538am % Excess Mixed bbls Total Sacks bbl Returns Water Temp	456am 400am 515am 542am M & P Time Sacks 521am 538am % Excess Mixed bbls Total Sacks bbl Returns Water Temp	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	543am	100	0			0			0			0		
		10	545am	150	10			10			10			10		
		20	547am	240	20			20			20			20		
		30	549am	320	30			30			30			30		
		40	550am	380	40			40			40			40		
		50	552am	420	50			50			50			50		
		60	554am	380	60			60			60			60		
		70	557am	330	70			70			70			70		
		80	Bump	930	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

1/2 bbl back on bleed off

X

Work Preformed

X

Title

X

Date