



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/5/2014
Invoice #: 12191
API#
Foreman: kirk

Customer: encana
Well Name: bohrer 2b-19h

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

Consultant: norman
Rig Name & Number: patterson 326
Distance To Location: 50
Units On Location: 3103-3211
Time Requested: 530 pm
Time Arrived On Location: 430 pm
Time Left Location:

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 40.00
Casing Depth (ft) : 832
Total Depth (ft) : 880
Open Hole Diameter (in.) : 12.25
Conductor Length (ft) : 112
Conductor ID : 16
Shoe Joint Length (ft) : 45
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: 50%
Displacement Fluid lb/gal: 8.3
BBL to Pit:
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

Casing ID

8.835

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.16 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 99.79 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 338.23 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 457.18 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 81.42 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 360 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 50.48 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 62.33 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 656.95 PSI

Pressure of the fluids inside casing

Displacement: 339.34 psi

Shoe Joint: 35.53 psi

Total 374.87 psi

Differential Pressure: 282.08 psi

Collapse PSI: 2570.00 psi

Burst PSI: 3950.00 psi

Total Water Needed: 162.81 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 2b-19h

INVOICE #
LOCATION
FOREMAN
Date

12191
weld
kirk
5/5/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

		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
Safety Meeting	523 pm															
MIRU	445 pm															
CIRCULATE	534 pm	0	601pm	10	0			0			0			0		
Drop Plug		10	603pm	70	10			10			10			10		
601 pm		20	605pm	170	20			20			20			20		
		30	607pm	270	30			30			30			30		
		40	609pm	350	40			40			40			40		
M & P		50	611pm	400	50			50			50			50		
Time	Sacks	60	614pm	380	60			60			60			60		
541 pm	360	70			70			70			70			70		
558 pm stop		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	0%	120			120			120			120			120		
Mixed bbls	50.5	130			130			130			130			130		
Total Sacks	360	140			140			140			140			140		
bbl Returns	27	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 617 pm 990 psi 81.4 bbls slurry

X Robert Tuzich
Work Preformed

X Coman
Title

X 5-5-14
Date