



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 6/16/2014

Invoice # 12043

API#

Foreman: Kirk Kallhoff

Customer: encana

Well Name: mumby state 4a-36h-p266

County: weld

State: Colorado

Sec: 36

Twp: 2n

Range: 66w

Consultant: kevin

Rig Name & Number: h&p522

Distance To Location: 20

Units On Location: 3103-3211

Time Requested: 1000 am

Time Arrived On Location: 930 am

Time Left Location: 4:00 pm

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 40.00
Casing Depth (ft) : 1,082
Total Depth (ft) : 1137
Open Hole Diameter (in.) : 12.25
Conductor Length (ft) : 100
Conductor ID : 16
Shoe Joint Length (ft) : 45
Landing Joint (ft) : 33

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

cuft of Conductor 89.10 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 461.31 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 569.35 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 101.40 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 448 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 62.87 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 81.17 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 854.35 PSI

Pressure of the fluids inside casing

Displacement: 447.35 psi

Shoe Joint: 35.14 psi

Total 482.49 psi

Differential Pressure: 371.86 psi

Collapse PSI: 2570.00 psi

Burst PSI: 3950.00 psi

Total Water Needed: 194.04 bbls

X *Kevin Beyers*
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
mumby state 4a-36h-p266

INVOICE #
LOCATION
FOREMAN
Date

12043
weld
Kirk Kallhoff
6/16/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting MIRU CIRCULATE Drop Plug 259 pm M & P Time Sacks 235 pm 256 pm stop % Excess Mixed bbls Total Sacks bbl Returns Water Temp	207pm 1245pm 228pm	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	259pm	10	0			0			0			0		
		10	302pm	40	10			10			10			10		
		20	304pm	400	20			20			20			20		
		30	306pm	400	30			30			30			30		
		40	308pm	420	40			40			40			40		
		50	310pm	450	50			50			50			50		
		60	312pm	590	60			60			60			60		
		70	315pm	620	70			70			70			70		
		80	319pm	510	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 320 pm 660 psi 101.4 bbls slurry

casing test 1500 psi for 15 min

X Kew Bergeron
Work Performed

X _____
Title

X 6-16-14
Date