

Bison Oil Well Cementing Single Cement Surface Pipe

Date: 10/11/2014
Invoice # 72000
API# 05-123-36890
Foreman: AARON CARRASCO

Customer: ENCANA OIL&GAS USA

Well Name: BILLINGS -3D-18H

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

Consultant: MIKE
Rig Name & Number: PATERSON RIG 326
Distance To Location: 22.7 MILES
Units On Location: 3101-4029
Time Requested: 3:30AM
Time Arrived On Location: 2:45AM
Time Left Location:

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 40.00
Casing Depth (ft.) : 875
Total Depth (ft) : 890
Open Hole Diameter (in.) : 12.25
Conductor Length (ft) : 155
Conductor ID : 16
Shoe Joint Length (ft) : 48
Landing Joint (ft) : 34

Max Rate: 4 BBLS/MIN
Max Pressure: 1800

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
10-FRESH-10DYE-10FRESH

Casing ID

8.835

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 20.43 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 138.10 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 496.77 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 88.47 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 391 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 54.85 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 65.29 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 690.90 PSI

Pressure of the fluids inside casing

Displacement: 356.59 psi

Shoe Joint: 37.90 psi

Total 394.49 psi

Differential Pressure: 296.41 psi

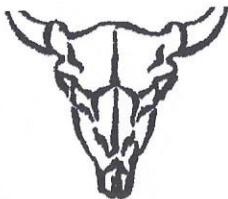
Collapse PSI: 2570.00 psi

Burst PSI: 3950.00 psi

Total Water Needed: 170.14 bbls

X *Muelh Rosen*
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.



Displacement Cementing
Single Cement Surface Pipe

Customer
Well Name

ENCANA OIL&GAS USA
BILLINGS -3D-18H

INVOICE #
LOCATION
FOREMAN
Date

72000
Weld
AARON CARRASCO
10/11/2014

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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	3:48AM															
MIRU	2:50AM															
CIRCULATE	3:57AM	0	4:39AM	60	0			0			0			0		
Drop Plug		10	4:42AM	110	10			10			10			10		
5AM		20	4:44AM	130	20			20			20			20		
		30	4:48AM	220	30			30			30			30		
		40	4:51AM	290	40			40			40			40		
		50	4:54AM	330	50			50			50			50		
M & P		60	4:57AM	350	60			60			60			60		
Time	Sacks	70	5AM@65	1500	70			70			70			70		
START 4:07AM	391	80			80			80			80			80		
FINISH 4:35AM		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	50%	120			120			120			120			120		
Mixed bbls	54.8	130			130			130			130			130		
Total Sacks	391	140			140			140			140			140		
bbl Returns	20	150			150			150			150			150		
Water Temp	61															

Notes:

BUMPED PLUG @5AM

CASING TEST @ 1500 PSI FOR 15 MINS 88.4 BBLS SLURRY

X

Work Preformed

X

Title

X

Date