



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/19/2014

Invoice # 45004

API# 05-123-38131

Foreman: JASON

Customer: EnCana Oil & Gas (USA) Inc.

Well Name: GRANT HURT 1F-14H

County: Weld

State: Colorado

Sec: 14

Twp: 2N

Range: 68W

Consultant:

Rig Name & Number: PATTERSON 326

Distance To Location: 23

Units On Location: 4033-3106/ 4007-3210

Time Requested: 1330

Time Arrived On Location: 1245

Time Left Location: 1630

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 40.00
Casing Depth (ft) : 841
Total Depth (ft) : 890
Open Hole Diameter (in.) : 12.25
Conductor Length (ft) : 85
Conductor ID : 15.25
Shoe Joint Length (ft) : 47
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: 17.0
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
30 BBL H2O, 2ND 10 WITH DYE

Casing ID

8.835

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 20.02 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 64.87 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 355.23 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 440.12 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 78.39 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 347 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 48.60 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 62.87 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 664.20 PSI

Pressure of the fluids inside casing

Displacement: 342.43 psi

Shoe Joint: 37.13 psi

Total 379.56 psi

Differential Pressure: 284.65 psi

Collapse PSI: 2570.00 psi

Burst PSI: 3950.00 psi

Total Water Needed: 161.47 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 Oil & Gas (USA) Inc.
GRANT HURT 1F-14H

INVOICE #
LOCATION
FOREMAN
Date

45004
Weld
JASON
7/19/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting MIRU CIRCULATE Drop Plug 1441 M & P Time 1407-1437 % Excess Mixed bbls Total Sacks bbl Returns Water Temp	1340 1300 1357 1441 M & P Time 1407-1437 50% 48.6 347 17 68	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	1441	0	0			0			0			0		
		10	1446	50	10			10			10			10		
		20	1449	150	20			20			20			20		
		30	1451	290	30			30			30			30		
		40	1454	400	40			40			40			40		
		50	1456	400	50			50			50			50		
		60	1459	490	60			60			60			60		
		70	1501	470	70			70			70			70		
		80	BUMP	1010	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

PRESSURE TESTED TO 1500 PSI @ 1353, PUMPED 30 BBL WATER WITH DYE IN 2ND 10 @ 1357, MIX AND PUMPED 347 SKS AT 15.2, 78.3 BBLS AT 1407,
PLUG LANDED AT 40 PSI AT 1501 AND PRESSURED UP TO 1010 PSI AND HELD FOR 10 MINUTES @ 1525, RELEASED PRESSURE AND GOT .5 BBL BACK,

X
Work Preformed

X
Title

X
Date