



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/25/2014
Invoice # 45025
API# 05-123-39738
Foreman: JASON KELEHER

Customer: EnCana Oil & Gas (USA) Inc.
Well Name: DALE 4A-20H-0264

County: Weld
State: Colorado
Sec: 20
Twp: 2N
Range: 64W

Consultant: RANDY
Rig Name & Number: H&P 278
Distance To Location: 22
Units On Location: 4031-3106/ 4017-3211
Time Requested: 600
Time Arrived On Location: 430
Time Left Location: 1000

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 40.00	Cement Density (lb/gal) : 15.2
Casing Depth (ft.) : 1,056	Cement Yield (cuft) : 1.27
Total Depth (ft) : 1097	Gallons Per Sack: 5.89
Open Hole Diameter (in.) : 12.25	% Excess: 18%
Conductor Length (ft) : 140	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.25	BBL to Pit: 24.0
Shoe Joint Length (ft) : 46	Fluid Ahead (bbbls): 30.0
Landing Joint (ft) : 29	H2O Wash Up (bbbls): 20.0
Max Rate: 7	Spacer Ahead Makeup
Max Pressure: 2500	30BBL H2O W/KCL, Dye in 2nd 10

Casing ID 8.835	Casing Grade J-55 only used
Calculated Results	Displacement: 78.75 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Shoe 19.66 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of cement in annulus
cuft of Conductor 106.84 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 833.53 PSI
cuft of Casing 336.94 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 463.44 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 435.25 psi
bbbls of Slurry 82.54 bbbls (Total Slurry Volume) X (.1781)	Shoe Joint: 36.47 psi
Sacks Needed 365 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 471.72 psi
Mix Water 51.17 bbbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 361.80 psi
	Collapse PSI: 2570.00 psi
	Burst PSI: 3950.00 psi
	Total Water Needed: 179.93 bbbls

X Randy Bunker
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.



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Single Cement Surface Pipe**

Customer
Well Name

EnCana Oil & Gas (USA) Inc.
DALE 4A-20H-0264

INVOICE #
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FOREMAN
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45025
Weld
JASON KELEHER
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Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting MIRU CIRCULATE Drop Plug 824 M & P Time 0807-0822 % Excess Mixed bbls Total Sacks bbl Returns Water Temp	730	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	630	BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI
	759	0	824	0	0			0			0			0		
		10	826	20	10			10			10			10		
		20	829	0	20			20			20			20		
		30	832	60	30			30			30			30		
		40	835	120	40			40			40			40		
		50	837	470	50			50			50			50		
		60	839	500	60			60			60			60		
	365	70	841	460	70			70			70			70		
		80	844	420	80			80			80			80		
		90	BUMP	950	90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
	17%	120			120			120			120			120		
	51.15	130			130			130			130			130		
	365	140			140			140			140			140		
	24	150			150			150			150			150		
	68															

Notes:

The day

PRESSURE TESTED TO 2000 PSI AT 0754, PUMPED 30 BBL WATER 2ND 10 HAVING DYE AT 0759, MIXED AND PUMPED 365 SKS AT 15.2, 82.5 BBL AT 0807

SHUT DOWN AT 0822, DROPPED PLUG AT 0824, STARTED DISPLACEMENT AT 0824, PUMPED 78.7 BBL LANDING AT 420 PSI AND PRESSURED UP TO 950

PSI AT 0844, RELEASED PRESSURE AFTER HOLDING FOR 4 MINUTES AND CHECK FLOATS GOT .5 BBL BACK, REPRESSURED WELL AT 0851 TO 1500 PSI FOR

15 MINUTES AND RELEASED

X Randy Burke
Work Preformed

X _____
Title

X _____
Date