



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/10/2014

Invoice # 12172

API#

Foreman: Kirk Kallhoff

Customer: Anadarko

Well Name: dolph 4c-1hz

County: weld  
State: Colorado

Sec: 1  
Twp: 2n  
Range: 66w

Consultant: allen

Rig Name & Number: major 42

Distance To Location: 20

Units On Location: 3103-3211

Time Requested: 930 am

Time Arrived On Location: 900 am

Time Left Location: 2:00 pm

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 36.00	Cement Density (lb/gal) : 14.2
Casing Depth (ft.) : 1,230	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1248	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 22%
Conductor Length (ft) :	Displacement Fluid lb/gal: 8.3
Conductor ID :	BBL to Pit:
Shoe Joint Length (ft) : 43	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 8	H2O Wash Up (bbls): 20.0
Max Rate:	Spacer Ahead Makeup
Max Pressure:	

Casing ID	8.921	Casing Grade	J-55 only used
<b>Calculated Results</b>	<b>Displacement: 92.38 bbls</b> (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)		
cuft of Shoe 18.66 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	<b>Pressure of cement in annulus</b> Hydrostatic Pressure: 907.37 PSI		
cuft of Conductor 0.00 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	<b>Pressure of the fluids inside casing</b> Displacement: 511.81 psi Shoe Joint: 31.72 psi Total 543.53 psi		
cuft of Casing 733.39 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	Differential Pressure: 363.84 psi		
Total Slurry Volume 752.05 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Collapse PSI: 2020.00 psi Burst PSI: 3520.00 psi		
bbls of Slurry 133.94 bbls (Total Slurry Volume) X (.1781)	<b>Total Water Needed: 232.27 bbls</b>		
Sacks Needed 505 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water 89.89 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42			

*[Signature]*  
 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**

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INVOICE #: 12172  
LOCATION: weld  
FOREMAN: Kirk Kallhoff  
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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	1156am															
MIRU	1030am															
CIRCULATE	1231pm	0	111pm	10	0			0			0			0		
Drop Plug		10	114pm	10	10			10			10			10		
111 pm		20	117pm	30	20			20			20			20		
		30	120pm	70	30			30			30			30		
		40	123pm	160	40			40			40			40		
M & P		50	125pm	240	50			50			50			50		
Time	Sacks	60	128pm	290	60			60			60			60		
1238 pm	505	70	130pm	360	70			70			70			70		
108 pm stop		80	133pm	450	80			80			80			80		
		90	136pm	430	90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	0%	120			120			120			120			120		
Mixed bbls	89.9	130			130			130			130			130		
Total Sacks	505	140			140			140			140			140		
bbl Returns	17	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 138 pm 1000 psi 133.9 bbls slurry

X Almu Sever  
Work Performed

X consultant  
Title

X 7-10-14  
Date

# M/D TOTCO 2000 SERIES

— PSI — Barrels / Minute — Barrels — Lbs / Gallon — Stage Volume

