



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/26/2014
 Invoice # 25056
 API# 05-123-39595
 Foreman: Calvin Reimers

Customer: Anadarko Petroleum Corporation

Well Name: Steward 13N-6HZ

County: Weld Consultant: Randy
 State: Colorado Rig Name & Number: Major 29
 Distance To Location: 22 Miles
 Sec: 6 Units On Location: 4023-3104/4024-3203
 Twp: 1N Time Requested: 200am
 Range: 65W Time Arrived On Location: 1150pm
 Time Left Location: 8:00am

WELL DATA	Cement Data
Casing Size OD (in) : <u>9.625</u>	Cement Name: <u>BFN III</u>
Casing Weight (lb) : <u>36.00</u>	Cement Density (lb/gal) : <u>14.2</u>
Casing Depth (ft.) : <u>1,607</u>	Cement Yield (cuft) : <u>1.49</u>
Total Depth (ft) : <u>1623</u>	Gallons Per Sack: <u>7.48</u>
Open Hole Diameter (in.) : <u>13.50</u>	% Excess: <u>31%</u>
Conductor Length (ft) : _____	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : _____	BBL to Pit: <u>12</u>
Shoe Joint Length (ft) : <u>42</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>8</u>	H2O Wash Up (bbls): <u>20.0</u>
Max Rate: <u>7</u>	Spacer Ahead Makeup
Max Pressure: <u>2500</u>	<u>30bbls H2O+Dye in 2nd 10bbls</u>

Calculated Results	Displacement: <u>121.58 bbls</u>
cuft of Shoe <u>18.22</u> cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor <u>0.00</u> cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Pressure of cement in annulus
cuft of Casing <u>1024.74</u> cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Hydrostatic Pressure: <u>1185.17 PSI</u>
Total Slurry Volume <u>1042.96</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Pressure of the fluids inside casing
bbls of Slurry <u>185.75</u> bbls (Total Slurry Volume) X (.1781)	Displacement: <u>674.63 psi</u>
Sacks Needed <u>700</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Shoe Joint: <u>30.96 psi</u>
Mix Water <u>124.66</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total <u>705.59 psi</u>
	Differential Pressure: <u>479.58 psi</u>
	Collapse PSI: <u>2020.00 psi</u>
	Burst PSI: <u>3520.00 psi</u>
	Total Water Needed: <u>296.24 bbls</u>

X Randy Case
 Authorization To Proceed



**Bison Oil Well Cementing
Single Cement Surface Pipe**

Customer
Well Name

Anadarko Petroleum Corporation
Steward 13N-6HZ

INVOICE #
LOCATION
FOREMAN
Date

25056
Weld
Calvin Reimers
9/26/2014

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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	530am															
MIRU	440am															
CIRCULATE	603am	0	647am	50	0			0			0			0		
Drop Plug		10	650am	10	10			10			10			10		
646am		20	654am	20	20			20			20			20		
		30	658am	20	30			30			30			30		
		40	700am	130	40			40			40			40		
M & P		50	701am	180	50			50			50			50		
Time	Sacks	60	703am	240	60			60			60			60		
609am	700	70	704am	290	70			70			70			70		
644am		80	706am	350	80			80			80			80		
		90	707am	410	90			90			90			90		
		100	709am	450	100			100			100			100		
		110	711am	500	110			110			110			110		
% Excess	31%	120	712am	500	120			120			120			120		
Mixed bbls	124.66	130	713am	500	130			130			130			130		
Total Sacks	700	140	Bump	1530	140	715am		140			140			140		
bbl Returns	12	150	Bump	1010	150	717am		150			150			150		
Water Temp	63.8															

Notes:

The day

1/2 bbl back on bleed off

X Randy Case
Work Performed

X APC Consultant
Title

X 09/26/2014
Date

SERIES 2000

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

