



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 10/4/2014  
 Invoice #: 25061  
 API#: 05-123-40170  
 Foreman: Calvin Reimers

**Customer:** Anadarko Petroleum Corporation

**Well Name:** Summit 14C-32HZ

County: Weld  
 State: Colorado  
 Sec: 29  
 Twp: 2N  
 Range: 65W

Consultant: Allen  
 Rig Name & Number: Major 42  
 Distance To Location: 18 Miles  
 Units On Location: 4023-3104/4018-3204  
 Time Requested: 1230pm  
 Time Arrived On Location: 1105am  
 Time Left Location:

## WELL DATA

Casing Size OD (in) : 9.625  
 Casing Weight (lb) : 36.00  
 Casing Depth (ft.) : 1,088  
 Total Depth (ft) : 1106  
 Open Hole Diameter (in.) : 13.50  
 Conductor Length (ft) :  
 Conductor ID :  
 Shoe Joint Length (ft) : 42  
 Landing Joint (ft) : 8  
 Max Rate: 7  
 Max Pressure: 2500

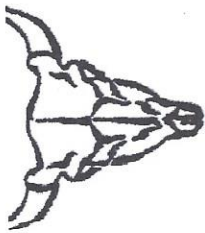
## Cement Data

Cement Name: BFN III  
 Cement Density (lb/gal) : 14.2  
 Cement Yield (cuft) : 1.49  
 Gallons Per Sack: 7.48  
 % Excess: 26%  
 Displacement Fluid lb/gal: 8.3  
 BBL to Pit:  
 Fluid Ahead (bbls): 30.0  
 H2O Wash Up (bbls): 20.0  
 Spacer Ahead Makeup  
 30bbls H2O+Dye in 2nd 10bbls

Casing ID	8.921	Casing Grade	J-55 only used
<b>Calculated Results</b>		<b>Displacement:</b>	<b>81.53 bbls</b>
<b>cuft of Shoe</b>	<b>18.05 cuft</b>	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		<b>Pressure of cement in annulus</b>	
<b>cuft of Conductor</b>	<b>0.00 cuft</b>	<b>Hydrostatic Pressure:</b>	<b>802.79 PSI</b>
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		<b>Pressure of the fluids inside casing</b>	
<b>cuft of Casing</b>	<b>668.81 cuft</b>	<b>Displacement:</b>	<b>451.30 psi</b>
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )		<b>Shoe Joint:</b>	<b>30.68 psi</b>
<b>Total Slurry Volume</b>	<b>686.86 cuft</b>	<b>Total</b>	<b>481.98 psi</b>
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		<b>Differential Pressure:</b>	<b>320.82 psi</b>
<b>bbls of Slurry</b>	<b>122.33 bbls</b>	<b>Collapse PSI: 2020.00 psi</b>	
(Total Slurry Volume) X (.1791)		<b>Burst PSI: 3520.00 psi</b>	
<b>Sacks Needed</b>	<b>461 sk</b>	<b>Total Water Needed: 213.63 bbls</b>	
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
<b>Mix Water</b>	<b>82.10 bbls</b>		
(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**

INVOICE # 25061  
 LOCATION Weld  
 FOREMAN Calvin Reimers  
 Date 10/4/2014

Customer Anadarko Petroleum Corporation  
 Well Name Summit 14C-32HZ

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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	142pm														
MIRU	220pm														
CIRCULATE	313pm														
Drop Plug															
	337pm														
M & P															
Time															
		Sacks													
319pm		461													
335pm															
% Excess			26%												
Mixed bbbs			82.1												
Total Sacks			461												
bbbl>Returns			26												
Water Temp			66.2												

Notes:

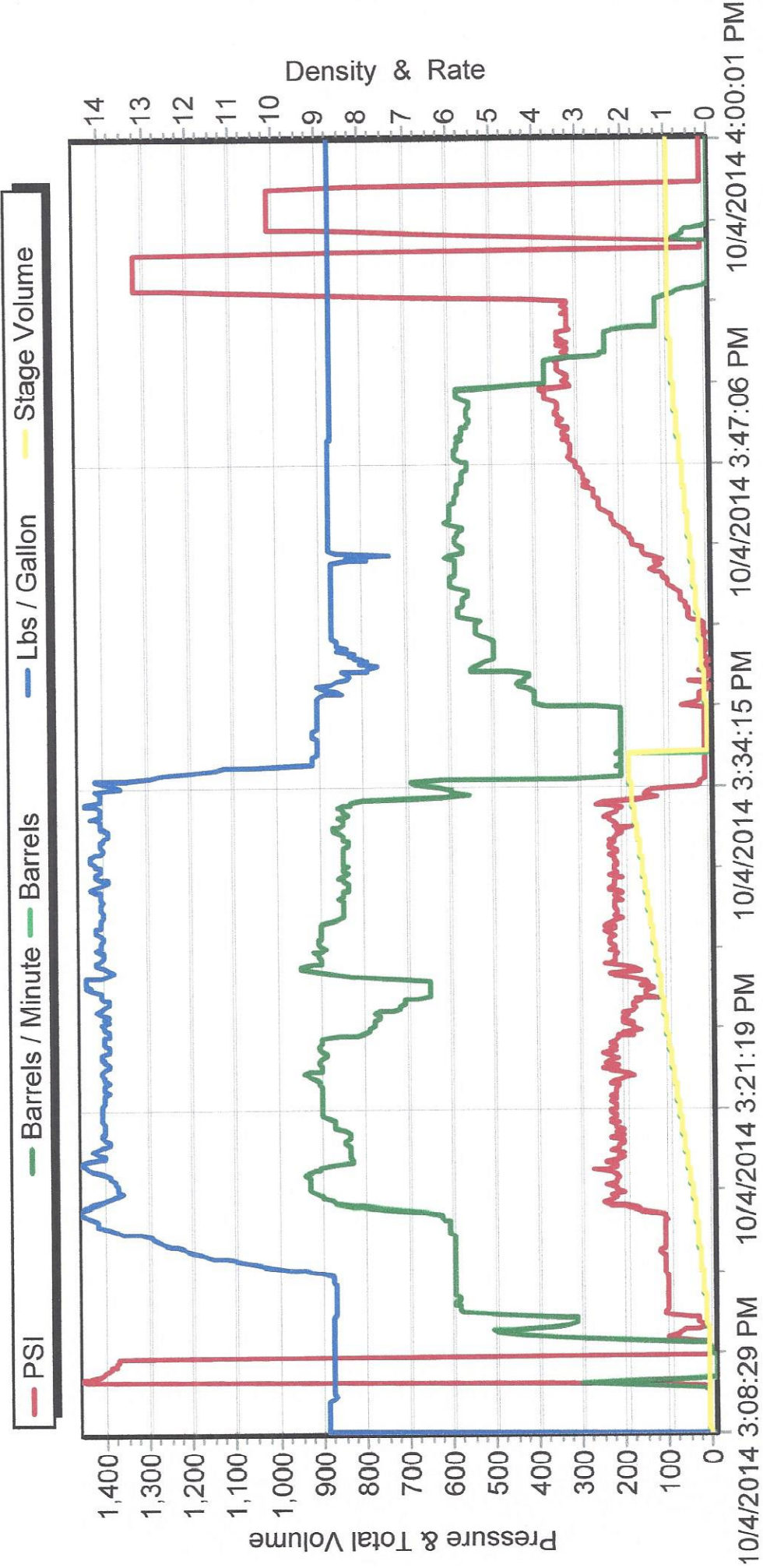
The day

1/2 bbl back on bleed off

X *Alan Seard 10-4-12* X

Work Performed Title Date

# SERIES 2000



## Release and Indemnification

Customer acknowledges and assumes the risks associated with oil well drilling, cementing and acidizing, including, without limitation, destabilization, loss of production, contamination, fracturing and loss of well control. Customer agrees to release Bison Oil Well Cementing, Inc., Bison Energy Services, Inc., its agents, employees and assigns, from any and all liability for any and all damages whatsoever to property of any kind owned by, in the possession of, or leased by customer and those persons or entities customer has the ability to bind by contract. Customer also agrees to indemnify and hold harmless Bison Oil Well Cementing, Inc., Bison Energy Services, Inc., its agents, employees and assigns, from and against any and all liability, claims, costs, expenses, attorneys fees and damages whatsoever for claims, costs, expenses, attorneys fees and damages whatsoever for personal injury, illness, death, property damage and loss resulting from: loss or reduction of production, destabilization loss of oil well control, failure of or contamination by acid stimulation, hydraulic fracturing, cementing, pumping services, incompatible fluid or other processes to stimulate, complete or end production, and/or any other condition. Customer's release, indemnity and hold harmless obligation shall apply even if the liability and claims are caused by the sole, concurrent, active or passive negligence, fault, or strict liability of Bison Oil Well Cementing, Inc. and/or Bison Energy Services, Inc. or any defect in the data, products, supplies, materials or equipment furnished by Bison Oil Well Cementing, Inc. whether in the design, manufacturing, maintenance, or marketing thereof or from failure to warn of such defect. In the event that any portion of this release and indemnity is found by a court of competent jurisdiction to be inoperative or unenforceable, the remaining portions and provisions shall apply, and customer agrees that the contract price herein shall be the limit of Bison Oil Well Cementing, Inc.'s liability, if any.