



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/7/2015  
 Invoice # 80105  
 API# 05-123-40958  
 Foreman: JASON KELEHER

**Customer:** Anadarko Petroleum Corporation

**Well Name:** CREAM STATE 2N-21HZ

County: Weld  
 State: Colorado  
 Sec: 28  
 Twp: 3N  
 Range: 65W

Consultant: VIVIAN  
 Rig Name & Number: ADVANCED 10  
 Distance To Location: 12  
 Units On Location: 4031-3107, 4022-3213  
 Time Requested: 900  
 Time Arrived On Location: 800  
 Time Left Location: 1500

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>1,214</u>	Cement Yield (cuft) :	<u>1.49</u>
Total Depth (ft) :	<u>1230</u>	Gallons Per Sack:	<u>7.48</u>
Open Hole Diameter (in.) :	<u>13.50</u>	% Excess:	<u>20%</u>
Conductor Length (ft) :	<u>45</u>	Displacement Fluid lb/gal:	<u>8.3</u>
Conductor ID :	<u>15.25</u>	BBL to Pit:	<u>11.0</u>
Shoe Joint Length (ft) :	<u>41</u>	Fluid Ahead (bbls):	<u>30.0</u>
Landing Joint (ft) :	<u>5</u>	H2O Wash Up (bbls):	<u>20.0</u>
Max Rate:	<u>6</u>	Spacer Ahead Makeup	
Max Pressure:	<u>1500</u>	<u>30 BBL WATER W/ DYE IN 2ND 10</u>	

Calculated Results		Pressure of cement in annulus	
<b>cuft of Shoe</b>	<b>17.68 cuft</b>	<b>Displacement:</b>	<b>91.13 bbls</b>
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
<b>cuft of Conductor</b>	<b>34.34 cuft</b>	<b>Hydrostatic Pressure:</b>	<b>895.93 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>685.88 cuft</b>	<b>Displacement:</b>	<b>506.10 psi</b>
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		<b>Shoe Joint:</b>	<b>30.05 psi</b>
<b>Total Slurry Volume</b>	<b>737.90 cuft</b>	<b>Total</b>	<b>536.15 psi</b>
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		<b>Differential Pressure:</b>	<b>359.78 psi</b>
<b>bbls of Slurry</b>	<b>131.42 bbls</b>	<b>Collapse PSI:</b>	<b>2020.00 psi</b>
(Total Slurry Volume) X (.1781)		<b>Burst PSI:</b>	<b>3520.00 psi</b>
<b>Sacks Needed</b>	<b>495 sk</b>	<b>Total Water Needed:</b>	<b>229.33 bbls</b>
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
<b>Mix Water</b>	<b>88.20 bbls</b>		
(Sacks Needed) X (Gallons Per Sack) ÷ 42			

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

Anadarko Petroleum Corporation  
CREAM STATE 2N-21HZ

INVOICE #  
LOCATION  
FOREMAN  
Date

80105
Weld
JASON KELEHER
3/7/2015

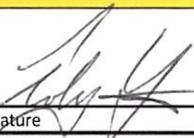
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**DESCRIPTION OF JOB EVENTS**

		Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
		BBLs	Time	PSI												
Safety Meeting	1215															
MIRU	800															
CIRCULATE	1243	0	1318	0	0			0			0			0		
Drop Plug		10	1320	20	10			10			10			10		
1318		20	1323	20	20			20			20			20		
		30	1327	70	30			30			30			30		
		40	1329	180	40			40			40			40		
M & P		50	1331	250	50			50			50			50		
Time	Sacks	60	1333	300	60			60			60			60		
1250-1315	495	70	1335	320	70			70			70			70		
		80	1338	380	80			80			80			80		
		90	1340	410	90			90			90			90		
		100	BUMP	440	100			100			100			100		
		110			110			110			110			110		
% Excess	20%	120			120			120			120			120		
Mixed bbls	88.2	130			130			130			130			130		
Total Sacks	495	140			140			140			140			140		
bbl Returns	11	150			150			150			150			150		
Water Temp	43															

Notes:

PERFORMED PRESSURE TEST TO 1500 PSI AT 1241, PUMPED 30 BBL WATER WITH DYE IN 2ND 10 AT 1243, MIXED AND PUMPED 495 SKS AT 14.2, 131.4 BBL AT 1250, SHUT DOWN AT 1315, STARTED DISPLACEMENT AT 1318, PLUG LANDED AT 440 PSI AT 1341 AND PRESSURED UP TO 1000, HELD FOR 5 MINUTES AND RELEASED TO CHECK FLOATS, GOT .5 BBL WATER BACK, FLOATS HELD.

X   
Signature

X \_\_\_\_\_  
Title

X \_\_\_\_\_  
Date

# CREAM STATE 2N-21HZ SURFACE

