



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/28/2017  
 Invoice # 666206  
 API# 05-123-45530  
 Foreman: Nick Vigil

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** Meguire 1

County: Weld Consultant: Will  
 State: Colorado Rig Name & Number: Precision 461  
 Distance To Location: 23 Miles  
 Sec: 21 Units On Location: 4023/4024/4039  
 Twp: 2N Time Requested: 8:00  
 Range: 65W Time Arrived On Location: 7:10  
 Time Left Location: \_\_\_\_\_

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>2,052</u>	Cement Yield (cuft) : <u>1.49</u>
Total Depth (ft) : <u>2062</u>	Gallons Per Sack: <u>7.48</u>
Open Hole Diameter (in.) : <u>13.50</u>	% Excess: <u>20%</u>
Conductor Length (ft) : <u>80</u>	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : <u>15.25</u>	BBL to Pit:
Shoe Joint Length (ft) : <u>44</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>10</u>	H2O Wash Up (bbls): <u>20.0</u>
Max Rate: <u>8</u>	Spacer Ahead Makeup
Max Pressure: <u>2000</u>	Dye in second 10 bbl

Calculated Results	Displacement: <u>156.01 bbls</u>
<b>cuft of Shoe</b> <u>19.10</u> <b>cuft</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> <u>61.05</u> <b>cuft</b> (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	<b>Pressure of cement in annulus</b>
<b>cuft of Casing</b> <u>1156.53</u> <b>cuft</b> (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	<b>Hydrostatic Pressure: <u>1513.76 PSI</u></b>
<b>Total Slurry Volume</b> <u>1236.68</u> <b>cuft</b> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Pressure of the fluids inside casing</b>
<b>bbls of Slurry</b> <u>220.25</u> <b>bbls</b> (Total Slurry Volume) X (.1781)	<b>Displacement: <u>865.81 psi</u></b>
<b>Sacks Needed</b> <u>830</u> <b>sk</b> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Shoe Joint: <u>32.46 psi</u></b>
<b>Mix Water</b> <u>147.82</u> <b>bbls</b> (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Total <u>898.27 psi</u></b>
	<b>Differential Pressure: <u>615.49 psi</u></b>
	<b>Collapse PSI: <u>2020.00 psi</u></b>
	<b>Burst PSI: <u>3520.00 psi</u></b>
	<b>Total Water Needed: <u>353.82 bbls</u></b>

x Will Turner  
 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 nadarko Petroleum Corporatio  
Well Name Meguire 1

INVOICE #  
LOCATION  
FOREMAN  
Date

666206  
Weld  
Nick Vigil  
9/28/2017

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**DESCRIPTION OF JOB EVENTS**

Amount Pumped	Time/Date	Event	Description	Rate	BBLs	Pressure
% Excess <b>20%</b>	7:10	Arrive On Location	Rig was landing casing.			
Mixed bbls 220.2	7:15	Well Site Assesment	Hazard hunt, Rig up safety meeting			
Total Sacks <b>830</b>	9:00	Rig Up Equipment				
bbl Returned 36	9:40	JSA	Held Safety meeting with all personel involved in job.			
Water Temp 60	9:57	Pressure Test Lines	Pressure tested lines to 2000 psi.			
	10:00	Spacer Ahead	Fresh water with dye in second 10 bbl.	7	30	180
Notes:	10:04	Pump Cement	14.2 ppg Cement	7.6	220.2	240
	10:44	Shut Down				
	10:45	Drop Plug	Plug was pre loaded.			
	10:46	Pump Displacement	Fresh water	7.6	80	410
	11:10	Bump Plug	Bumped plug 410 psi over final lift. (1060 psi)	2.5	156	650
	11:11	Check Floats	Floats held Flowed back .5 bbl.			
	11:15	Casing Test	Pressured up casing to 2000psi and held for 15 minutes.			
	11:30	End Job	Rig down safety meeting.			
	11:35	Rig Down Equipment				
	12:00	Leave Location				

X   
Work Performed

X   
Title Company Rep

X 9-28-17   
Date

# Meguire #1

