



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/20/2014  
 Invoice # 65003  
 API# 05-123-3809300  
 Foreman: Lee Sharp

**Customer:** Peterson Energy Management  
**Well Name:** Grant Hurt 1E-14H-G268

County: Weld Consultant: MIKE Q  
 State: Colorado Rig Name & Number: PATERSON 326  
 Distance To Location: 21  
 Sec: 14 Units On Location: 4023-3104 & 4017-3211  
 Twp: 2N Time Requested: 9:30  
 Range: 68W Time Arrived On Location: 10:30  
 Time Left Location: 0:50

WELL DATA	Cement Data
Casing Size OD (in) : <u>9.625</u>	Cement Name: <u>BFN III</u>
Casing Weight (lb) : <u>40.00</u>	Cement Density (lb/gal) : <u>15.2</u>
Casing Depth (ft.) : <u>825</u>	Cement Yield (cuft) : <u>1.27</u>
Total Depth (ft) : <u>880</u>	Gallons Per Sack: <u>5.89</u>
Open Hole Diameter (in.) : <u>12.25</u>	% Excess: <u>50%</u>
Conductor Length (ft) : <u>80</u>	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : <u>15.25</u>	BBL to Pit: <u>0.0</u>
Shoe Joint Length (ft) : <u>43</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>35</u>	H2O Wash Up (bbls): <u>20.0</u>
Max Rate: <u></u>	Spacer Ahead Makeup
Max Pressure: <u></u>	<u>10F-10D-10F</u>

Calculated Results	Pressure of cement in annulus
<b>cuft of Shoe</b> <u>18.31</u> <b>cuft</b> (Casing ID Squared) X (.005454) X (Shoe Joint ft)	<b>Displacement:</b> <u>61.95</u> <b>bbls</b> (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>Hydrostatic Pressure:</b> <u>651.42</u> <b>PSI</b>
<b>cuft of Casing</b> <u>349.98</u> <b>cuft</b> (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	<b>Pressure of the fluids inside casing</b>
<b>Total Slurry Volume</b> <u>429.34</u> <b>cuft</b> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Displacement:</b> <u>337.18</u> <b>psi</b>
<b>bbls of Slurry</b> <u>76.47</u> <b>bbls</b> (Total Slurry Volume) X (.1781)	<b>Shoe Joint:</b> <u>33.96</u> <b>psi</b>
<b>Sacks Needed</b> <u>338</u> <b>sk</b> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Total</b> <u>371.14</u> <b>psi</b>
<b>Mix Water</b> <u>47.41</u> <b>bbls</b> (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Differential Pressure:</b> <u>280.28</u> <b>psi</b>
	<b>Collapse PSI:</b> <u>2570.00</u> <b>psi</b>
	<b>Burst PSI:</b> <u>3950.00</u> <b>psi</b>
	<b>Total Water Needed:</b> <u>159.36</u> <b>bbls</b>

X Lee Sharp  
 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

Peterson Energy Management  
Grant Hurt 1E-14H-G268

INVOICE #  
LOCATION  
FOREMAN  
Date

65003  
Weld  
Lee Sharp  
7/20/2014

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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	23:00															
MIRU	22:25															
CIRCULATE	23:15	0	23:42	0	0			0			0			0		
Drop Plug		10	23:44	64	10			10			10			10		
23:40		20	23:50	90	20			20			20			20		
		30	23:52	220	30			30			30			30		
		40	23:54	360	40			40			40			40		
M & P		50	23:56	390	50			50			50			50		
Time	Sacks	60	23:58	330	60			60			60			60		
11:22	338	70	0:01	700	70			70			70			70		
		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	52%	120			120			120			120			120		
Mixed bbls	48	130			130			130			130			130		
Total Sacks	342	140			140			140			140			140		
bbl Returns	16	150			150			150			150			150		
Water Temp	60															

Notes:

JOB WENT WELL

X sha hp  
Work Performed

X Co Rep  
Title

X 7-20-14  
Date