



# Bison Oil Well Cementing Tail & Lead

Customer: Noble Energy Inc.  
Well Name: Guttersen D25-762

Date: 9/8/2019  
Invoice # 900405  
API# 05-123-48631  
Foreman: Corey Barras

County: Weld  
State: Colorado  
Sec: 25  
Twp: 3N  
Range: 64W

Consultant: Gary  
Rig Name & Number: H&P 321  
Distance To Location: 27  
Units On Location: 4028/3203-4032/3203  
Time Requested: 100  
Time Arrived On Location: 1200  
Time Left Location:

WELL DATA	Cement Data
<p>Casing Size (in) : <u>9.625</u> Casing Weight (lb) : <u>36</u> Casing Depth (ft.) : <u>1,895</u> Total Depth (ft) : <u>1936</u> Open Hole Diameter (in) : <u>13.50</u> Conductor Length (ft) : <u>80</u> Conductor ID : <u>15.25</u> Shoe Joint Length (ft) : <u>44</u> Landing Joint (ft) : <u>0</u></p> <p>Sacks of Tail Requested <u>100</u> HOC Tail (ft): <u>0</u></p> <p>One or the other, cannot have quantity in both</p> <p>Max Rate: <u>8</u> Max Pressure: <u>1500</u></p>	<p><b>Lead</b> Cement Name: Cement Density (lb/gal) : <u>13.5</u> Cement Yield (cuft) : <u>1.7</u> Gallons Per Sack <u>9.00</u> % Excess <u>10%</u></p> <p><b>Tail</b> Cement Name: Cement Density (lb/gal) : <u>15.2</u> Cement Yield (cuft) : <u>1.27</u> Gallons Per Sack: <u>5.89</u> % Excess: <u>0%</u></p> <p><b>Fluid Ahead (bbls)</b> <u>30.0</u> <b>H2O Wash Up (bbls)</b> <u>20.0</u></p> <p><b>Spacer Ahead Makeup</b> <u>30BBL WATER DYE IN 2ND 10</u></p>

Casing ID	8.921	Casing Grade	J-55 only used
<b>Lead Calculated Results</b>		<b>Tail Calculated Results</b>	
HOC of Lead <u>1594.22 ft</u>		Tail Cement Volume In Ann <u>127.00 cuft</u>	
Casing Depth - HOC Tail		(HOC Tail) X (OH Ann)	
Volume of Lead Cement <u>779.14 cuft</u>		Total Volume of Tail Cement <u>107.90 Cuft</u>	
HOC of Lead X Open Hole Ann		(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
Volume of Conductor <u>61.05 cuft</u>		bbls of Tail Cement <u>22.62 bbls</u>	
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)		(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)	
Total Volume of Lead Cement <u>840.19 cuft</u>		HOC Tail <u>220.78 ft</u>	
(cuft of Lead Cement) + (Cuft of Conductor)		(Tail Cement Volume) ÷ (OH Ann)	
bbls of Lead Cement <u>164.60 bbls</u>		Sacks of Tail Cement <u>100.00 sk</u>	
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)		(Total Volume of Tail Cement) ÷ (Cement Yield)	
Sacks of Lead Cement <u>543.65 sk</u>		bbls of Tail Mix Water <u>14.02 bbls</u>	
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
bbls of Lead Mix Water <u>116.50 bbls</u>		Pressure of cement in annulus	
(Sacks Needed) X (Gallons Per Sack) ÷ 42		Hydrostatic Pressure <u>585.23 PSI</u>	
Displacement <u>143.08 bbls</u>			
(Casing ID Squared) X (.0009714) X (Casing Depth) - (Shoe Length)		Collapse PSI: <u>2020.00 psi</u>	
Total Water Needed: <u>323.60 bbls</u>		Burst PSI: <u>3520.00 psi</u>	

X [Signature]  
Authorization To Proceed

## Bison Oil Well Cementing Two Cement Surface Pipe

9/8/2019

900405

Weld

Corev Barras

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Energy Inc.

Guttersen D25-762

### DESCRIPTION OF JOB EVENTS

[illegible]

*De la R.*

Coman

61-8-6

### Work Preformed

Title

Date \_\_\_\_\_



# Guttersen D25-762

