



Bison Oil Well Cementing Tail & Lead

Customer: Crestone Peak Resources
Well Name: Davis 1R-9H-G266

Date: 5/14/2018
Invoice # 900295
API# 05-123-46505
Foreman: Corey Barras

County: Weld
State: Colorado
Sec: 4
Twp: 1N
Range: 65W

Consultant: Jerry Thorstad
Rig Name & Number: Ensign 135
Distance To Location: 26 Miles
Units On Location: 4027-3103/4041-3205/4039-3214
Time Requested: 1330
Time Arrived On Location: 1230
Time Left Location: 1645

WELL DATA	Cement Data
<p>Casing Size (in) : <u>9.625</u></p> <p>Casing Weight (lb) : <u>40</u></p> <p>Casing Depth (ft.) : <u>2,186</u></p> <p>Total Depth (ft) : <u>2206</u></p> <p>Open Hole Diameter (in) : <u>13.50</u></p> <p>Conductor Length (ft) : <u>98</u></p> <p>Conductor ID : <u>15.5</u></p> <p>Shoe Joint Length (ft) : <u>84</u></p> <p>Landing Joint (ft) : <u>10</u></p> <p>Sacks of Tail Requested <u>190</u></p> <p>HOC Tail (ft): <u>0</u></p> <div style="border: 1px solid black; padding: 2px; margin-top: 5px;"> One or the other, cannot have quantity in both </div> <p>Max Rate:</p> <p>Max Pressure:</p>	<p>Lead</p> <p>Cement Name:</p> <p>Cement Density (lb/gal) : <u>13.5</u></p> <p>Cement Yield (cuft) : <u>1.68</u></p> <p>Gallons Per Sack <u>8.90</u></p> <p>% Excess <u>25%</u></p> <p>Tail</p> <p>Cement Name:</p> <p>Cement Density (lb/gal) : <u>15.2</u></p> <p>Cement Yield (cuft) : <u>1.27</u></p> <p>Gallons Per Sack: <u>5.89</u></p> <p>% Excess: <u>0%</u></p> <p>Fluid Ahead (bbls) <u>60.0</u></p> <p>H2O Wash Up (bbls) <u>20.0</u></p> <p>Spacer Ahead Makeup</p> <p><u>60 BBL with Die in 3rd 10</u></p>

Casing ID	8.835	Casing Grade	J-55 only used
Lead Calculated Results		Tail Calculated Results	
HOC of Lead <u>1657.44 ft</u>		Tail Cement Volume In Ann <u>241.30 cuft</u>	
Casing Depth - HOC Tail		(HOC Tail) X (OH Ann)	
Volume of Lead Cement <u>810.04 cuft</u>		Total Volume of Tail Cement <u>205.54 Cuft</u>	
HOC of Lead X Open Hole Ann		(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
Volume of Conductor <u>78.90 cuft</u>		bbls of Tail Cement <u>42.98 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>888.94 cuft</u>		HOC Tail <u>420.56 ft</u>	
(cuft of Lead Cement) + (Cuft of Conductor)		(Tail Cement Volume) ÷ (OH Ann)	
bbls of Lead Cement <u>197.90 bbls</u>		Sacks of Tail Cement <u>190.00 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>661.41 sk</u>		bbls of Tail Mix Water <u>26.65 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>140.16 bbls</u>		Pressure of cement in annulus	
(Sacks Needed) X (Gallons Per Sack) ÷ 42		Hydrostatic Pressure <u>585.23 PSI</u>	
Displacement <u>160.09 bbls</u>		Collapse PSI: <u>2570.00 psi</u>	
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)		Burst PSI: <u>3950.00 psi</u>	
Total Water Needed: <u>406.89 bbls</u>			

X

Authorization To Proceed



Bison Oil Well Cementing
Two Cement Surface Pipe

Customer
Well Name

Crestone Peak Resources
Davis 1R-9H-G266

Date
INVOICE #
LOCATION
FOREMAN

5/14/2018
900295
Weld
Corey Barras

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
Lead mixed bbls	140.16	1230	Arrive on Location				
	25%	1245	Rig Up				
	661	1345	Safety Meeting	Bison and Rig Crew			
		1420	Start Job				
Tail mixed bbls	26.6	1422	Test Lines	1500 IPSI	1.5	2	1500
Tail % Excess	0%	1424	Pump Spacer	Water	7	60	160
Tail Sacks	190						
		1435	Lead Cement	13.5 PPG	7	197	160
Total Sacks	851	1507	Tail Cement	15.2 PPG	5	43	130
Water Temp	52						
bbl Returns	35	1517	Shut Down				
		1519	Drop Plug	Preloaded in Plug Container			
Notes:							
		1521	Pump Dispacement	Water	7	90	340
		1548	Bump Plug	500 PSI over Final Lift (1370 PSI)	2	160	630
		1553	Check Floats	With 1.5 bbl Back to surface			
		1600	Rig Downm				
		1635	Leave Location				

X
Work Preformed

X
Title

X
Date