



Bison Oil Well Cementing Tail & Lead

Customer: Crestone Peak Resources
Well Name: Davis 11-9H-G266

Date: 5/26/2018
Invoice # 900304
API# 05-123-46746
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: 4027-3103/4035-3213/ 3/4024-3201
Time Requested: 1200
Time Arrived On Location: 1145
Time Left Location: 1730

WELL DATA	Cement Data
<p>Casing Size (in) : 9.625 Casing Weight (lb) : 40 Casing Depth (ft.) : 2,184 Total Depth (ft) : 2200 Open Hole Diameter (in) : 13.50 Conductor Length (ft) : 98 Conductor ID : 15.5 Shoe Joint Length (ft) : 84 Landing Joint (ft) : 6</p> <p>Sacks of Tail Requested 190 HOC Tail (ft): 0</p> <p>One or the other, cannot have quantity in both</p> <p>Max Rate: Max Pressure:</p>	<p>Lead Cement Name: Cement Density (lb/gal) : 13.5 Cement Yield (cuft) : 1.68 Gallons Per Sack 8.90 % Excess 20%</p> <p>Tail Cement Name: Cement Density (lb/gal) : 15.2 Cement Yield (cuft) : 1.27 Gallons Per Sack: 5.89 % Excess: 0%</p> <p>Fluid Ahead (bbls) 60.0 H2O Wash Up (bbls) 20.0</p> <p>Spacer Ahead Makeup 60 BBL with Die in 2nd 10</p>

Casing ID	8.835	Casing Grade	J-55 only used
Lead Calculated Results		Tail Calculated Results	
HOC of Lead 1659.44 ft		Tail Cement Volume In Ann 241.30 cuft	
Casing Depth - HOC Tail		(HOC Tail) X (OH Ann)	
Volume of Lead Cement 811.02 cuft		Total Volume of Tail Cement 205.54 Cuft	
HOC of Lead X Open Hole Ann		(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
Volume of Conductor 78.90 cuft		bbls of Tail Cement 42.98 bbls	
(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 889.91 cuft		HOC Tail 420.56 ft	
(cuft of Lead Cement) + (Cuft of Conductor)		(Tail Cement Volume) ÷ (OH Ann)	
bbls of Lead Cement 190.19 bbls		Sacks of Tail Cement 190.00 sk	
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)		(Total Volume of Tail Cement) ÷ (Cement Yield)	
Sacks of Lead Cement 635.65 sk		bbls of Tail Mix Water 26.65 bbls	
(Total Slurry Volume) ÷ (Cement Yield) X (%) Excess Cement)		(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
bbls of Lead Mix Water 134.70 bbls		Pressure of cement in annulus	
(Sacks Needed) X (Gallons Per Sack) ÷ 42		Hydrostatic Pressure 585.23 PSI	
Displacement 159.63 bbls		Collapse PSI: 2570.00 psi	
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)		Burst PSI: 3950.00 psi	
Total Water Needed: 400.98 bbls			

X

Authorization To Proceed



Bison Oil Well Cementing
Two Cement Surface Pipe

Customer Crestone Peak Resources
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Date 5/26/2018
INVOICE # 900304
LOCATION Weld
FOREMAN Corey Barras

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DESCRIPTION OF JOB EVENTS

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
Lead mixed bbls	134.7	1145	Arrive on Location				
Lead % Excess	20%	1445	Rig Up				
Lead Sacks	636	1530	Safety Meeting	Bison and Rig Crew			
		1505	Start Job				
Tail mixed bbls	26.6	1506	Test Lines	1500 IPSI	1.5	2	1500
Tail % Excess	0%	1508	Pump Spacer	Water	6	60	180
Tail Sacks	190						
		1515	Lead Cement	13.5 PPG	7	190	160
Total Sacks	825	1545	Tail Cement	15.2 PPG	5	43	110
Water Temp	60						
bbl Returns	19	1600	Shut Down				
		1602	Drop Plug	Preloaded in Plug Container			
Notes:							
		1604	Pump Displacement	Water	7	90	340
		1630	Bump Plug	500 PSI over Final Lift (1160 PSI)	2	159	640
		1635	Check Floats	With 1 bbl Back to surface			
		1645	Rig Down				
		1730	Leave Location				

X
Work Preformed

X
Title

X
Date