



Bison Oil Well Cementing Tail & Lead

Date: 5/26/2018
 Invoice #: 900304
 API#: 05-123-46746
 Foreman: Corey Barras

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

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	
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
Sacks of Tail Requested	190
HOC Tail (ft):	0
One or the other, cannot have quantity in both	
Max Rate:	
Max Pressure:	

Cement Data	
Lead	
Cement Name:	
Cement Density (lb/gal) :	13.5
Cement Yield (cuft) :	1.68
Gallons Per Sack	8.90
% Excess	20%
Tail	
Cement Name:	
Cement Density (lb/gal) :	15.2
Cement Yield (cuft) :	1.27
Gallons Per Sack:	5.89
% Excess:	0%
Fluid Ahead (bbls)	60.0
H2O Wash Up (bbls)	20.0
Spacer Ahead Makeup	
60 BBL with Die in 2nd 10	

Casing ID 8.835 Casing Grade J-55 only used

Lead Calculated Results	
HOC of Lead	1659.44 ft
Casing Depth - HOC Tail	
Volume of Lead Cement	811.02 cuft
HOC of Lead X Open Hole Ann	
Volume of Conductor	78.90 cuft
(Conductor ID Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	
Total Volume of Lead Cement	889.91 cuft
(cuft of Lead Cement) + (Cuft of Conductor)	
bbls of Lead Cement	190.19 bbls
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	
Sacks of Lead Cement	635.65 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	
bbls of Lead Mix Water	134.70 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42	
Displacement	159.63 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	
Total Water Needed:	400.98 bbls

Tail Calculated Results	
Tail Cement Volume In Ann	241.30 cuft
(HOC Tail) X (OH Ann)	
Total Volume of Tail Cement	205.54 Cuft
(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
bbls of Tail Cement	42.98 bbls
(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)	
HOC Tail	420.56 ft
(Tail Cement Volume) ÷ (OH Ann)	
Sacks of Tail Cement	190.00 sk
(Total Volume of Tail Cement) ÷ (Cement Yield)	
bbls of Tail Mix Water	26.65 bbls
(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
Pressure of cement in annulus	
Hydrostatic Pressure	585.23 PSI
Collapse PSI:	2570.00 psi
Burst PSI:	3950.00 psi

X
 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
Two Cement Surface Pipe**

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

Date 5/26/2018
INVOICE # 900304
LOCATION Weld
FOREMAN Corey Barras

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	2	1500
Tail % Excess	0%	1508	Pump Spacer	Water	60	180
Tail Sacks	190					
		1515	Lead Cement	13.5 PPG	190	160
Total Sacks	825	1545	Tail Cement	15.2 PPG	43	110
Water Temp	60					
bbl Returns	19	1600	Shut Down			
		1602	Drop Plug	Preloaded in Plug Container		
Notes:						
		1604	Pump Displacement	Water	90	340
		1630	Bump Plug	500 PSI over Final Lift (1160 PSI)	159	640
		1635	Check Floats	With 1 bbl Back to surface		
		1645	Rig Down			
		1730	Leave Location			

X _____
Work Preformed

X _____
Title

X _____
Date