Bison Oil Well Cementing
Tail & Lead

Date:	11/26/2018
Invoice #	200367
API#	
Foreman:	Kirk Kallhoff

Customer: Crestone Peak Resources
Well Name: herren 1f-33h-h367

		Consultant:	buddy
County:	Weld	**Rig Name & Number:**	ensign 153
State:	Colorado	**Distance To Location:**	24
		Units On Location:	4028/4027/4030
Sec:	19	**Time Requested:**	1000 am
Twp:	6n	**Time Arrived On Location:**	900 am
Range:	63w	**Time Left Location:**	1:15 pm

WELL DATA

Casing Size (in) :	9.625
Casing Weight (lb) :	40
Casing Depth (ft.) :	1,973
Total Depth (ft) :	1988
Open Hole Diameter (in) :	13.50
Conductor Length (ft) :	80
Conductor ID :	15.6
Shoe Joint Length (ft) :	41
Landing Joint (ft) :	25
Sacks of Tail Requested	405
HOC Tail (ft):	0

One or the other, cannot have quantity in both

Max Rate:

Max Pressure:

Cement Data

Lead

Cement Name:	blended
Cement Density (lb/gal) :	13.5
Cement Yield (cuft) :	1.7
Gallons Per Sack	9.00
% Excess	30%

Tail

Cement Name:	neat
Cement Density (lb/gal) :	15.2
Cement Yield (cuft) :	1.27
Gallons Per Sack:	5.89
% Excess:	0%
Fluid Ahead (bbls)	60.0
H20 Wash Up (bbls)	20.0

Spacer Ahead Makeup

60 BBL with Die in last 10

Casing ID	8.835	Casing Grade	J-55 only used

Lead Calculated Results

HOC of Lead	821.29 ft
Casing Depth - HOC Tail	
Volume of Lead Cement	401.39 cuft
HOC of Lead X Open Hole Ann	
Volume of Conductor	65.76 cuft
(Conductor ID Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	
Total Volume of Lead Cement	467.15 cuft
(cuft of Lead Cement) + (Cuft of Conductor)	
bbls of Lead Cement	108.16 bbls
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	
Sacks of Lead Cement	357.23 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	
bbls of Lead Mix Water	76.55 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42	
Displacement	146.07 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	
Total Water Needed:	359.41 bbls

Tail Calculated Results

Tail Cement Volume In Ann	514.35 cuft
(HOC Tail) X (OH Ann)	
Total Volume of Tail Cement	496.90 Cuft
(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
bbls of Tail Cement	91.61 bbls
(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)	
HOC Tail	1016.71 ft
(Tail Cement Volume) ÷ (OH Ann)	
Sacks of Tail Cement	405.00 sk
(Total Volume of Tail Cement) ÷ (Cement Yield)	
bbls of Tail Mix Water	56.80 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 _Bud Burke_

Authorization To Proceed

Bison Oil Well Cementing
Two Cement Surface Pipe

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LOCATION	Weld
FOREMAN	Kirk Kallhoff

Customer	Crestone Peak Resources
Well Name	herren 1f-33h-h367

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DESCRIPTION OF JOB EVENTS

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
Lead mixed bbls	76.5	900 am	Arrive on Location				
Lead % Excess	30%	1000 am	Rig Up				
Lead Sacks	357	1040 am	Safety Meeting	Bison and Rig Crew			
		1103 am	Test Lines		1	0.5	1500
		1105 am	spacer ahead	60 bbls h2o dye in last 10	6	60	150
Tail mixed bbls	56.8	1115 am	mix&pump lead cement	357 sks 13.5 lbs 108 bbls slurry	6	108	250
Tail % Excess	0%	1136 am	mix&pump tail cement	405 sks 15.2 lbs 91.6 bbls slurry	6	91.6	300
Tail Sacks	405	1154 am	shut down				0
		1157 am	drop plug				
Total Sacks	762	1157 am	displace	146 bbls h2o	6	146	250
Water Temp	65	1225 pm	bump plug	630 psi lift psi	2	146	1120
bbl Returns	9	1230 pm	release psi				
		1245 pm	rig down				
Notes:		115 pm	leave location				

X _____
Work Preformed

X _____
Title

X _____
Date