



Bison Oil Well Cementing Tail & Lead

Customer: Crestone Peak Resources
Well Name: Sam 3F-25H M166

Date: 5/26/2018
Invoice #: 666320
API#: 05-123-
Supervisor: Nick Vigil

County: Weld
State: Colorado
Sec: 4
Twp: 1N
Range: 65W
Consultant: Clarence
Rig Name & Number: Ensign 122
Distance To Location: 40 Miles
Units On Location: 3
Time Requested: 1:00
Time Arrived On Location: 0:00
Time Left Location:

WELL DATA	Cement Data
<p>Casing Size (in) : 9.625 Casing Weight (lb) : 40 Casing Depth (ft.) : 2,411 Total Depth (ft) : 2425 Open Hole Diameter (in) : 13.50 Conductor Length (ft) : 111 Conductor ID : 15.25 Shoe Joint Length (ft) : 81 Landing Joint (ft) :</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: 8 Max Pressure: 2500</p>	<p>Lead Cement Name: Cement Density (lb/gal) : 13.5 Cement Yield (cuft) : 1.7 Gallons Per Sack 9.00 % Excess 25%</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 Dye in 2nd 10 bbl.</p>

Casing ID 8.835	Casing Grade J-55 only used
Lead Calculated Results	Tail Calculated Results
HOC of Lead 1876.83 ft	Tail Cement Volume In Ann 241.30 cuft
Casing Depth - HOC Tail	(HOC Tail) X (OH Ann)
Volume of Lead Cement 917.26 cuft	Total Volume of Tail Cement 206.82 Cuft
HOC of Lead X Open Hole Ann	(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
Volume of Conductor 84.71 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 1001.97 cuft	HOC Tail 423.17 ft
(cuft of Lead Cement) + (Cuft of Conductor)	(Tail Cement Volume) ÷ (OH Ann)
bbls of Lead Cement 223.06 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 736.74 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 157.87 bbls	Pressure of cement in annulus
(Sacks Needed) X (Gallons Per Sack) ÷ 42	Hydrostatic Pressure 585.23 PSI
Displacement 176.61 bbls	
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	
Total Water Needed: 441.13 bbls	Collapse PSI: 2570.00 psi
	Burst PSI: 3950.00 psi

X
Authorization To Proceed

Date _____