



Bison Oil Well Cementing Tail & Lead

Customer: Crestone Peak Resources
Well Name: DAVIS 1E-9H-G266

Date: 5/31/2018
Invoice # 300144
API# 05-123-46510
Foreman: JASON KELEHER

County: Weld
State: Colorado
Sec: 9
Twp: 2N
Range: 66W

Consultant: BUDDY
Rig Name & Number: Ensign 153
Distance To Location: 26
Units On Location: 3
Time Requested: 700
Time Arrived On Location: 600
Time Left Location: 1200

WELL DATA	Cement Data
<p>Casing Size (in) : 9.625</p> <p>Casing Weight (lb) : 40</p> <p>Casing Depth (ft.) : 2,186</p> <p>Total Depth (ft) : 2205</p> <p>Open Hole Diameter (in) : 13.50</p> <p>Conductor Length (ft) : 98</p> <p>Conductor ID : 15.25</p> <p>Shoe Joint Length (ft) : 86</p> <p>Landing Joint (ft) : 6</p> <p>Sacks of Tail Requested 190</p> <p>HOC Tail (ft):</p> <p>One or the other, cannot have quantity in both</p> <p>Max Rate: 8</p> <p>Max Pressure: 2000</p>	<p>Lead N-Gel-12</p> <p>Cement Name:</p> <p>Cement Density (lb/gal) : 13.5</p> <p>Cement Yield (cuft) : 1.7</p> <p>Gallons Per Sack 9.00</p> <p>% Excess 20%</p> <p>Tail Type III</p> <p>Cement Name:</p> <p>Cement Density (lb/gal) : 15.2</p> <p>Cement Yield (cuft) : 1.27</p> <p>Gallons Per Sack: 5.89</p> <p>% Excess:</p> <p>Fluid Ahead (bbls) 60.0</p> <p>H2O Wash Up (bbls) 10.0</p> <p>Spacer Ahead Makeup</p> <p>60 BBL WATER DYE IN 2ND 10</p>

Lead Calculated Results	Tail Calculated Results
HOC of Lead 1767.61 ft	Tail Cement Volume In Ann 204.38 cuft
Casing Depth - HOC Tail	(HOC Tail) X (OH Ann)
Volume of Lead Cement 979.13 cuft	Total Volume of Tail Cement 241.30 Cuft
HOC of Lead X Open Hole Ann	(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
Volume of Conductor 74.67 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 1053.44 cuft	HOC Tail 418.39 ft
(cuft of Lead Cement) + (Cuft of Conductor)	(Tail Cement Volume) ÷ (OH Ann)
bbls of Lead Cement 187.70 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 620.00 sk	bbls of Tail Mix Water 26.64 bbls
(Total Slurry Volume) ÷ (Cement Yield) X (%) Excess Cement)	(Sacks of Tail Cement X Gallons Per Sack) ÷ 42
bbls of Lead Mix Water 132.86 bbls	Pressure of cement in annulus
(Sacks Needed) X (Gallons Per Sack) ÷ 42	Hydrostatic Pressure 590.00 PSI
Displacement 159.60 bbls	
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	
Total Water Needed: 390.00 bbls	
	Collapse PSI: 2570.00 psi
	Burst PSI: 3950.00 psi

X

Authorization To Proceed



Bison Oil Well Cementing
Two Cement Surface Pipe

Customer Crestone Peak Resources
Well Name DAVIS 1E-9H-G266

Date 5/31/2018
INVOICE # 300144
LOCATION Weld
FOREMAN JASON KELEHER

DESCRIPTION OF JOB EVENTS

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
Lead mixed bbls	132.8	600	ARRIVE ON LOCATION	ASSESS LOCATION			
Lead % Excess	20%	630	MIRU	SPOT EQUIPMENT AND RIG UP			
Lead Sacks	620	810	PRE JOB SAFETY MEETING				
		844	PRESSURE TEST	PRESSURE TEST TO 1500 PSI			
		846	FRESH WATER SPACER	60 BBL WATER DYE IN 2ND 10	5.5	60	160
Tail mixed bbls	26.6	903	LEAD CEMENT	620 SKS MIXED 13.5 PPG	3.8	187.7	300
Tail % Excess	0%	952	TAIL CEMENT	190 SKS MIXED AT 15.2 PPG	4.5	42.9	240
Tail Sacks	190	1006	SHUT DOWN				
		1010	DROP PLUG				
Total Sacks	810	1010	DISPLACEMENT	SLOW RATE TO 2BPM LAST 10BBL	3	159.6	650
Water Temp	60	1033	BUMP PLUG				1812
bbl Returns	20	1039	CHECK FLOATS	FLOATS HELD 1 BBL BACK TO TRUCK			
		1100	RIG DOWN				
Notes:		1200	LEAVE LOCATION				
TRANSMISSION CABLE							
ON PUMP BROKE. UNABLE							
TO ACHIEVE RATE NEEDED							
FOR DISPLACEMENT. HAD							
RIG DISPLACE.							

X
CUSTOMER SIGNATURE

X
Title

X
Date