Bison Oil Well Cementing
Tail & Lead

Date: 5/3/2018
Invoice # 900288
API# 05-123-46566
Foreman: Corey Barras

Customer: Crestone Peak Resources
Well Name: Ruegge 3G-4H-N165

Consultant: Matt Rosales
County: Weld
Rig Name & Number: Ensign 122
State: Colorado
Distance To Location: 36 Miles
Units On Location: 4027-3103/4041-3205/4039-3214
Sec: 4
Time Requested: 2230
Twp: 1N
Time Arrived On Location: 2140
Range: 65W
Time Left Location: 330

WELL DATA

Casing Size (in) :	_9.625
Casing Weight (lb) :	40
Casing Depth (ft.) :	2,442
Total Depth (ft) :	2460
Open Hole Diameter (in) :	13.50
Conductor Length (ft) :	98
Conductor ID :	15.6
Shoe Joint Length (ft) :	74
Landing Joint (ft) :	10

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	15%

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
H20 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	1904.73	ft
Casing Depth - HOC Tail		
Volume of Lead Cement	930.90	cuft
HOC of Lead X Open Hole Ann		
Volume of Conductor	80.56	cuft
(Conductor ID Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		
Total Volume of Lead Cement	1011.46	cuft
(cuft of Lead Cement) + (Cuft of Conductor)		
bbls of Lead Cement	207.16	bbls
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)		
Sacks of Lead Cement	692.37	sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		
bbls of Lead Mix Water	146.72	bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42		
Displacement	180.25	bbls
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)		
Total Water Needed:	433.61	bbls

Tail Calculated Results

Tail Cement Volume In Ann	241.30	cuft
(HOC Tail) X (OH Ann)		
Total Volume of Tail Cement	209.80	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	429.27	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

Bison Oil Well Cementing
Two Cement Surface Pipe

Customer	Crestone Peak Resources
Well Name	Ruegge 3G-4H-N165

Date	5/3/2018
INVOICE #	900288
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	146.72	2140	Arrive on Location				
Lead % Excess	15%	1200	Rig Up				
Lead Sacks	692	1245	Safety Meeting	Bison and Rig Crew			
		118	Start Job				
Tail mixed bbls	26.6	119	Test Lines	1500 lPSI	1.5	2	1500
Tail % Excess	0%	122	Pump Spacer	Water	7	60	110
Tail Sacks	190						
		130	Lead Cement	13.5 PPG	7	207	80
Total Sacks	882	205	Tail Cement	15.2 PPG	5	43	70
Water Temp	52						
bbl Returns	11	215	Shut Down				
		217	Drop Plug	Preloaded in Plug Container			
Notes:							
		220	Pump Dispacement	Water	7	180	230
		247	Bump Plug	500 PSI over Final Lift (1170 PSI)	2	180	670
				With 1 bbl Back to surface			
		300	Rig Dowm				
		330	Leave Location				

X
Work Preformed

X
Title

X
Date