



**Bison Oil Well Cementing
Single Cement Surface Pipe**

Date: 5/16/2017
 Invoice #: 666135
 API#: 05-123-44711
 Supervisor: Nick Vigil

Customer: Fifth Creek Energy
 Well Name: Critter Creek 278-1527H

County: Weld Consultant: Dwayne Bell
 State: Colorado Rig Name & Number: Cartel 1
 Distance To Location: 65 Miles
 Sec: 15 Units On Location: 4023,4030
 Twp: 11N Time Requested: 13:00
 Range: 63W Time Arrived On Location: 12:30
 Time Left Location: _____

WELL DATA		Cement Data	
Casing Size OD (in) :	9.825	Cement Name:	BFN III
Casing Weight (lb) :	38.00	Cement Density (lb/gal) :	14.2
Casing Depth (ft.) :	1,518	Cement Yield (cuft) :	1.49
Total Depth (ft) :	1530	Gallons Per Sack:	7.40
Open Hole Diameter (in.) :	13.50	% Excess:	15%
Conductor Length (ft) :	45	Displacement Fluid (bbl/gal):	8.3
Conductor ID :	15.25	BBL to Pit:	0.0
Shoe Joint Length (ft) :	44	Fluid Ahead (bbls):	30.0
Landing Joint (ft) :	11	H2O Wash Up (bbls):	20.0
Max Rate:	8	Spacer Ahead Makeup	
Max Pressure:	2000	Dyes in second 10 bbl	

Casing ID	8.921	Casing Grade	J-55 only used
Calculated Results		Displacement: 114.80 bbls	
cuft of Shoe	19.10 cuft	<small>(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)</small>	
<small>(Casing ID Squared) X (.005454) X (Shoe Joint ft)</small>		Pressure of cement in annulus	
cuft of Conductor	34.34 cuft	Hydrostatic Pressure: 1119.83 PSI	
<small>(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)</small>		Pressure of the fluids inside casing	
cuft of Casing	827.88 cuft	Displacement: 635.56 psi	
<small>(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)</small>		Shoe Joint: 32.46 psi	
Total Slurry Volume	881.32 cuft	Total 668.02 psi	
<small>(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)</small>		Differential Pressure: 451.81 psi	
bbls of Slurry	156.96 bbls	Collapse PSI: 2020.00 psi	
<small>(Total Slurry Volume) X (.1781)</small>		Burst PSI: 3520.00 psi	
Sacks Needed	591 sk	Total Water Needed: 269.02 bbls	
<small>(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)</small>			
Mix Water	104.22 bbls		
<small>(Sacks Needed) X (Gallons Per Sack) ÷ 42</small>			

X Craig Jones
 Authorization To Proceed

Customers hereby acknowledge and specifically agree to the terms and condition on this work order, including, without limitation, the provisions on this work order.



Bison Oil Well Cementing Single Cement Surface Pipe

Cementing Customer Satisfaction Survey

Service Date	5/16/2017
Well Name	Critter Creek 278-1527H
County	Weld
State	Colorado
SEC	15
TWP	11N
RNG	63W

Invoice Number	666135
API #	05-123-44711
Job Type	Single Cement Surface Pipe
Company Name	Fifth Creek Energy

Customer Representative: Dwayne Bell

Supervisor Name: Nick Vogl

Employee Name (Including Supervisor)	Exposure Hours (Per Employee)
Nick	4.25
Alan	4.25
Aaron	4.25
Abraham	4.25
Jose	4.25
Total Exposure Hours	21.25

Did we encounter any problems on this job? Yes No

To Be Completed By Customer

Rating/Description

- 5 - Superior Performance (Established new quality/performance standards)
 - 4 - Exceeded Expectation (Provided more than what was required/expected)
 - 3 - Met Expectations (Did what was expected)
 - 2 - Below Expectations (Job problems/failures occurred - *recovery made)
 - 1 - Poor Performance (Job problems/failures occurred - *Some recovery made)
- *Recovery: resolved issue(s) on jobsite in a timely and professional manner

RATING	CATEGORY	CUSTOMER SATISFACTION RATING
_____	Personnel -	Did our personnel perform to your satisfaction?
_____	Equipment -	Did our equipment perform to your satisfaction?
_____	Job Design -	Did we perform the job to the agreed upon design?
_____	Product/Material -	Did our products and materials perform as you expected?
_____	Health & Safety -	Did we perform in a safe and careful manner (Pre/post mtgs, PPE, TSMR, etc...)?
_____	Environmental -	Did we perform in an environmentally sound manner (spills, leaks, cleanup, etc...)?
_____	Timeliness -	Was job performed as scheduled (On time to site, accessible to customers, completed when expected)?
_____	Condition/Appearance -	Did the equipment condition and appearance meet your expectations?
_____	Communication -	How well did our personnel communicate during mobilization, rig up and job execution?

Please Circle:

- Yes No Did an accident or injury occur?
- Yes No Did an injury requiring medical treatment occur?
- Yes No Did a first-aid injury occur?
- Yes No Did a vehicle accident occur?
- Yes No Was a post-job safety meeting held?

Please Circle:

- Yes No Was a pre-job safety meeting held?
- Yes No Was a job safety analysis completed?
- Yes No Were emergency services discussed?
- Yes No Did environmental incident occur?
- Yes No Did any near misses occur?

Additional Comments:

THE INFORMATION HEREIN IS CORRECT -

X Craig Jones
Customer Representative's Signature

DATE: _____

Any additional Customer Comments or HSE concerns should be described on the back of this form

Critter Creek 278-1527H

— PSI — Barrels / Minute — Lbs / Gallon

