

**Bison Oil Well Cementing
Tail & Lead**

Date: 4/1/2014
 Invoice #: 12313
 API#: 445564
 Foreman: monte

Customer: bill barrett
 Well Name: co state 15-66-36 1609 ch

County: weld
 State: Colorado
 Sec: 36
 Twp: 15n
 Range: 66w

Consultant: casey
 Rig Name & Number: major
 Distance To Location: 37.2
 Units On Location: 3
 Time Requested: 8:00pm
 Time Arrived On Location: 7:00pm
 Time Left Location:

WELL DATA	
Casing Size (in) :	9.625
Casing Weight (lb) :	36
Casing Depth (ft.) :	1,481
Total Depth (ft) :	1500
Open Hole Diameter (in) :	13.50
Conductor Length (ft) :	
Conductor ID :	15.5
Shoe Joint Length (ft) :	41
Landing Joint (ft) :	8
Sacks of Tail Requested	100
HOC Tail (ft):	0
One or the other, cannot have quantity in both	
Max Rate:	
Max Pressure:	

Cement Data	
Lead	
Cement Name:	bfm 111 3%bcc-1 .25%bfla-1
Cement Density (lb/gal) :	13.1
Cement Yield (cuft) :	1.69
Gallons Per Sack	6.64
% Excess	30%
Tail	
Cement Name:	
Cement Density (lb/gal) :	15.2
Cement Yield (cuft) :	1.27
Gallons Per Sack:	5.89
% Excess:	0%
Fluid Ahead (bbls)	30.0
H2O Wash Up (bbls)	20.0
Spacer Ahead Makeup	
10 fresh 10 dye 10 fresh	

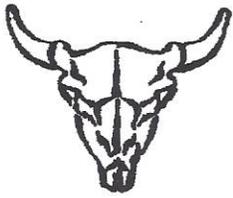
Casing ID 8.921 Casing Grade J-55 only used

Lead Calculated Results	
HOC of Lead	1249.56 ft
Casing Depth - HOC Tail	
Volume of Lead Cement	610.69 cuft
HOC of Lead X Open Hole Ann	
Volume of Conductor	0.00 cuft
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	
Total Volume of Lead Cement	610.69 cuft
(cuft of Lead Cement) + (Cuft of Conductor)	
bbls of Lead Cement	141.39 bbls
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	
Sacks of Lead Cement	469.77 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	
bbls of Lead Mix Water	74.27 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42	
Displacement	111.93 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	
Total Water Needed:	124.27 bbls

Tail Calculated Results	
Tail Cement Volume In Ann	127.00 cuft
(HOC Tail) X (OH Ann)	
Total Volume of Tail Cement	109.20 Cuft
(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
bbls of Tail Cement	22.62 bbls
(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)	
HOC Tail	
(Tail Cement Volume) ÷ (OH Ann)	
Sacks of Tail Cement	100.00 sk
(Total Volume of Tail Cement) ÷ (Cement Yield)	
bbls of Tail Mix Water	14.02 bbls
(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
Pressure of cement in annulus	
Hydrostatic Pressure	1007.82 PSI
Collapse PSI:	2020.00 psi
Burst PSI:	3520.00 psi

X Casey
 Authorization To Proceed

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



Bison Oil Well Cementing Tail & Lead

Cementing Customer Satisfaction Survey

Service Date	4/1/2014
Well Name	co state 15-66-36 1609 ch
County	weld
State	Colorado
SEC	36
TWP	15n
RNG	66w

Invoice Number	12313
API #	445564
Job Type	
Company Name	bill barrett

Customer Representative casey

Supervisor Name monte

Employee Name (Including Supervisor)
kirk
jeff
kurt
eric

Exposure Hours (Per Employee)
4,5
4,5
4,5
4,5
13.5

Total Exposure Hours

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
5	Personnel -
5	Equipment -
5	Job Design -
5	Product/Material -
5	Health & Safety -
5	Environmental -
5	Timeliness -
5	Condition/Appearance -
5	Communication -

CUSTOMER SATISFACTION RATING

- Did our personnel perform to your satisfaction?
- Did our equipment perform to your satisfaction?
- Did we perform the job to the agreed upon design?
- Did our products and materials perform as you expected?
- Did we perform in a safe and careful manner (Pre/post mtgs, PPE, TSMR, etc..)?
- Did we perform in an environmentally sound manner (spills, leaks, cleanup, etc..)?
- Was job performed as scheduled (On time to site, accessible to customers, completed when expected)?
- Did the equipment condition and appearance meet your expectations?
- How well did our personnel communicate during mobilization, rig up and job execution?

Please Circle:

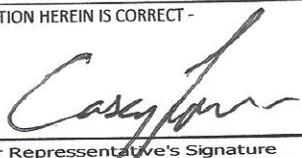
- Yes No Did an accident or injury occur?
- Yes No Did an injury requiring medical treatment occur?
- Yes No Did a first-aid injury occur?
- Yes No Did a vehicle accident occur?
- Yes No Was a post-job safety meeting held?

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 -

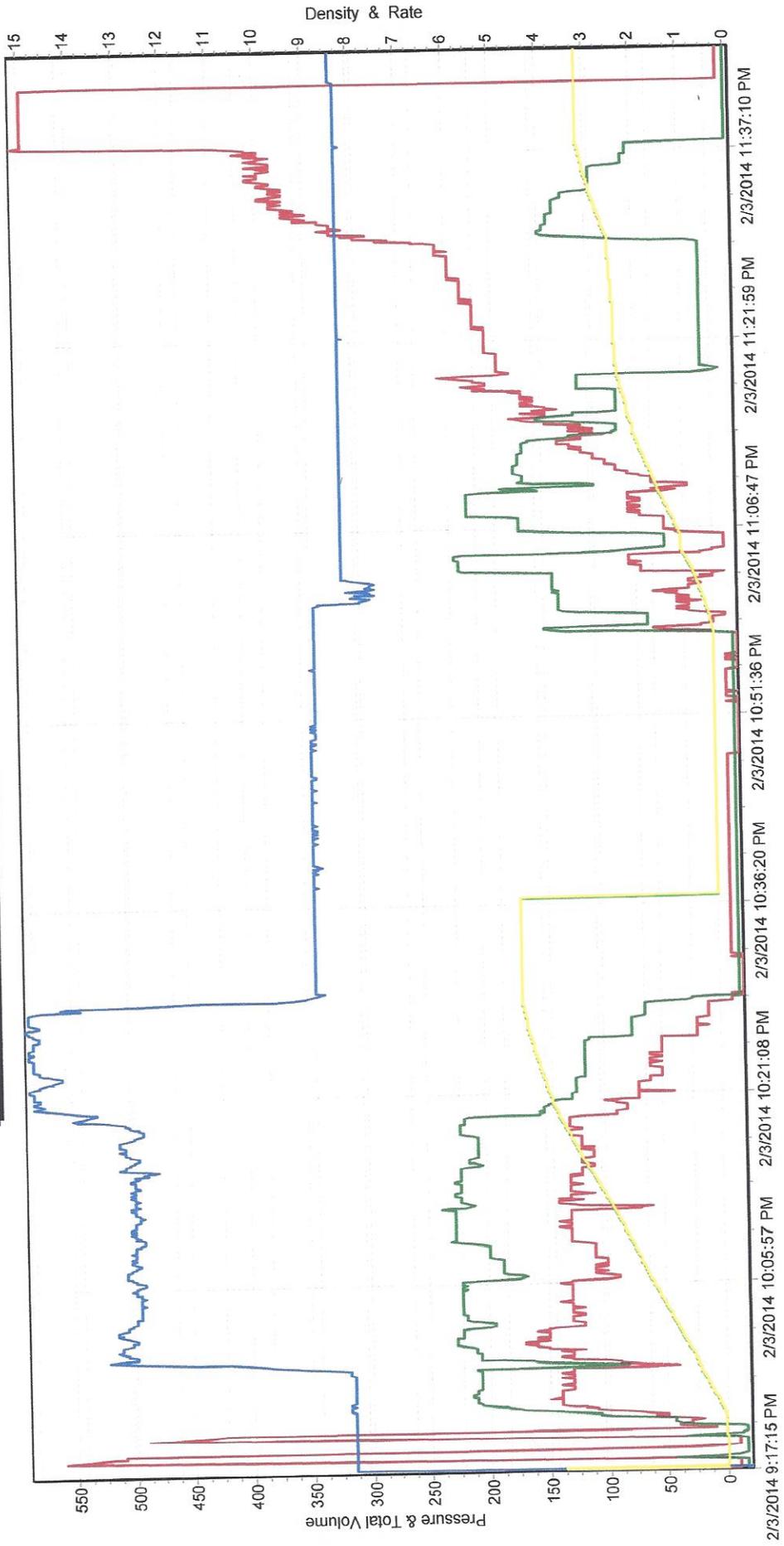
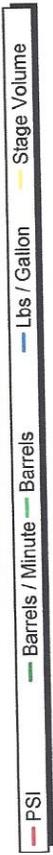
X 

Customer Representative's Signature

DATE: _____

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

M/D TOTCO 2000 SERIES





BISON

BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET

ASK:	SURFACE CASING CEMENTING		CEMENTER/SUPERVISOR:	monte bedeaux	PAGE 1	OF 3
NAME:	co state 15-66-36-1609ch	RIG #	major	LOCATION:	128-picicidilly	DATE: 2-3-14
ATOR:	bill barrett	CONSULTANT:	casey			INVOICE # 12313

REQUIRED:	<input checked="" type="checkbox"/> Hard Hat <input checked="" type="checkbox"/> Safety Glasses <input checked="" type="checkbox"/> Steel Toe Boots <input checked="" type="checkbox"/> Impact Gloves	<input checked="" type="checkbox"/> FR Coveralls <input checked="" type="checkbox"/> Reflective Vest	<input type="checkbox"/> Goggles <input type="checkbox"/> Air Purifying Respirator <input type="checkbox"/> Supplied Air Respirator <input type="checkbox"/> Chemical Resistant Gloves <input type="checkbox"/> Personal H2S Monitor <input type="checkbox"/> Chemical Resistant Clothing <input type="checkbox"/> Personal Methane Monitor
-----------	--	---	---

RECOMMENDED ACTION OR PROCEDURE	REVIEWED BY
---------------------------------	-------------

NEW JSA	Misunderstanding	Clarify job and associated hazards and safety concerns	mb
---------	------------------	--	----

duct pre job safety meeting	Misunderstanding	<ul style="list-style-type: none"> -Hold safety meeting with all personnel on location, ensure everyone pays attention to ensure they understand their role and responsibility during the job -Review treatment report with consultant and attain signature for authorization to proceed -Identify and address short service employees (SSE) who are on location 	mb
-----------------------------	------------------	---	----

ve trucks in and rig up equipment	Other traffic on location, overhead lines, pinch points, heavy lifting, slips/falls	<ul style="list-style-type: none"> -Coordinate with well site supervisor for directions on where and when to park the equipment -All Bison crew members walk the location prior to driving in to access specific hazards -Utilize spotters when trucks are in motion -Establish buffer zone around equipment utilizing cones and caution tape -Cementer follows up to ensure connections are secure -Lift with your legs and use teamwork when rigging up -Utilize reflective vests and wands to increase visibility at night -Deploy spill berms and buckets 	mb
-----------------------------------	---	---	----

e cement head and hoses to rig floor	Overhead work, improper hookup/load not properly secured, poor communication between ground personnel and crane/tugger operator	<ul style="list-style-type: none"> -Inspect slings, chains and hooks prior to lift -Ensure line of sight with crane/tugger operator is maintained throughout the lift and hand signals are understood -Ensure no personnel are under suspended equipment -Utilize a tag line to control the load -Only Bison personnel install the cement head and hoses -Maintain line of sight and communication with crane/tugger operator -Remove non-essential personnel from rig floor, wait until other activity is done -Rig crew does not install chains until head and hoses are installed -Ensure a clear path when swinging a hammer -Ensure all fittings and hoses have proper pressure rating for the job and fall within the parameters of the <i>Bison Oilwell Iron Inspection Program</i> 	mb
--------------------------------------	---	--	----

ect Cement head/swage/pin, chickens and es.	Working in a congested area, pinch points, swinging hammers, slippery rig floor	<ul style="list-style-type: none"> -Ensure rig floor is clear and personnel are away from hoses prior to test -Establish buffer area around high pressure hoses -Lines are checked from a distance and using pressure gauges -Cementer ensures pressure gauges are functioning properly 	mb
---	---	---	----

ssure test lines	Test to: PSI- 500 Maximum pressure allowed for job: PSI- 1500	Equipment failing under high pressures	Pressure relief valve set to: PSI- 2500 Max. pump pressure: PSI- 3500	mb
------------------	--	--	--	----

np Spacer (dye marker)/Mix and Pump tent	Serious injury from high pressure line failure or catastrophic equipment failure. Casing hydraulizing from hole, causing injury. Burns or skin irritation from splashing cement, uncontrolled spills	<ul style="list-style-type: none"> -Pressure test prior to job, utilize heavy duty hose hobbles and pressure relief valve -Keep rig floor and buffer area clear while pumping -Utilize proper PPE -Have access to water to rinse affected skin -Deploy spill berms and buckets 	mb
--	--	---	----

BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET



BISON

p plug	Slips, trips, falls. Miscommunication between pump operator and cementer, pressure against a closed stop	<ul style="list-style-type: none"> -Utilize 3 points of contact while descending/climbing ladder and stairs -Have visual contact between cementer and pump operator before pump is engaged 	mb
placement	Unexpected pressure associated with resuming of pumping, casing hydraulicing from hole, serious injury from high pressure line failure or catastrophic equipment failure.	<ul style="list-style-type: none"> -Ensure rig floor remains clear and non-essential personnel stay clear from buffer area -Pump operator monitors pump pressure constantly -Utilize proper PPE 	mb
pump plug-Test float and release pressure	Pressure jumps before expected (calculated) displacement. Pressure jumps rapidly and higher than expected.	<ul style="list-style-type: none"> -Pump operator slows rate to 2BPM when 5 bbls from calculated displacement and down to 1 bpm within 2 bbls of calculated displacement -Pump operator monitors pressure constantly -Pressure relief valve installed on pump 	mb
pressure test casing (required)	Test to: PSI- na FOR:MIN-na	<ul style="list-style-type: none"> -Ensure rig floor remains clear and non-essential personnel stay clear from the buffer area 	mb
lash up / rig down	Splashing cement slurry, heavy lifting, pinch points, unsecured hoses	<ul style="list-style-type: none"> -Utilize stakes or portable tank manifold to secure hoses -Use proper lifting technique (2 man lift, lift with legs, plan your route) 	mb
part location	Other traffic and personnel and location, overhead lines	<ul style="list-style-type: none"> -All Bison crew member walk the planned exit route to access possible obstacles and hazards -Utilize spotters while backing 	mb
<p>General Precautions/Stop Work</p> <ul style="list-style-type: none"> -If you see a leaking connection, notify the cementer. Do not attempt to hammer up a leaking connection as there may be pressure on the lines. -Any person on location, regardless of their position or experience level has the authority and responsibility to stop the job if they witness an unsafe act or condition. 			
<p>OTHER HAZARDS SPECIFIC TO LOCATION OR COMMENT NOT ADDRESSED ABOVE:</p>			
<p>NATED EMERGENCY MUSTER AREA: rd COUNT--</p>		<p>NEAREST EMERGENCY MEDICAL FACILITY (OTHER THAN 911): lbrighton</p>	

