

Bison Oil Well Cementing Tail & Lead

Date: 4/1/2014
 Invoice #: 12310
 API#: 445564
 Foreman: monte

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

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: 6:am
 Time Arrived On Location: 8:00
 Time Left Location:

WELL DATA

Casing Size (in) : 9.625
 Casing Weight (lb) : 36
 Casing Depth (ft.) : 1,518
 Total Depth (ft) : 1530
 Open Hole Diameter (in) : 13.50
 Conductor Length (ft) :
 Conductor ID : 15.5
 Shoe Joint Length (ft) : 43
 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: bfn 111 3%bcc-1 .25%bfla-1
 Cement Density (lb/gal) : 13.1
 Cement Yield (cuft) : 1.69
 Gallons Per Sack : 6.64
 % Excess : 20%

Tail

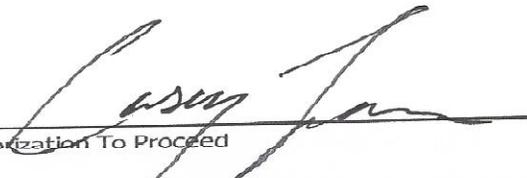
Cement Name:
 Cement Density (lb/gal) : 15.2
 Cement Yield (cuft) : 1.27
 Gallons Per Sack : 5.89
 % Excess: 0%

Fluid Ahead (bbls) : 30.0
 H2O Wash Up (bbls) : 20.0

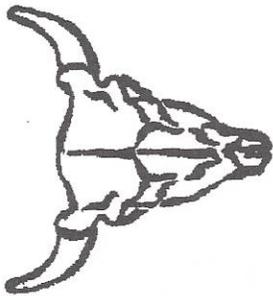
Spacer Ahead Makeup

10 fresh 10 dye 10 fresh

Casing ID	8.921	Casing Grade	J-55 only used
Lead Calculated Results		Tail Calculated Results	
HOC of Lead	1288.33 ft	Tail Cement Volume In Ann (HOC Tail) X (OH Ann)	127.00 cuft
Casing Depth - HOC Tail		Total Volume of Tail Cement (HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	108.34 Cuft
Volume of Lead Cement	629.65 cuft	bbls of Tail Cement (HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)	22.62 bbls
HOC of Lead X Open Hole Ann		HOC Tail (Tail Cement Volume) ÷ (OH Ann)	221.67 ft
Volume of Conductor	0.00 cuft	Sacks of Tail Cement (Total Volume of Tail Cement) ÷ (Cement Yield)	100.00 sk
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)		bbls of Tail Mix Water (Sacks of Tail Cement X Gallons Per Sack) ÷ 42	14.02 bbls
Total Volume of Lead Cement (cuft of Lead Cement) + (Cuft of Conductor)	629.65 cuft	Pressure of cement in annulus	
bbls of Lead Cement (Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	134.57 bbls	Hydrostatic Pressure	1033.00 PSI
Sacks of Lead Cement (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	347.09 sk	Collapse PSI:	2020.00 psi
bbls of Lead Mix Water (Sacks Needed) X (Gallons Per Sack) ÷ 42	70.68 bbls	Burst PSI:	3520.00 psi
Displacement (Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	114.64 bbls		
Total Water Needed:	120.68 bbls		

X 
 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
Two Cement Surface Pipe**

Customer
Well Name

bill barrett
co state 15-66-36 1609bh

Date
INVOICE #
LOCATION
FOREMAN

41730
12310
weld
monte

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

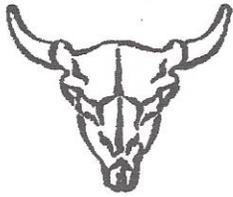
	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
Safety Meeting	0	3:28	10	0			0			0			0		
MIRU	10	3:32	10	10			10			10			10		
CIRCULATE	20	3:35	80	20			20			20			20		
Drop Plug	30	3:37	120	30			30			30			30		
	40	3:39	140	40			40			40			40		
	50	3:41	160	50			50			50			50		
M & P	60	3:43	220	60			60			60			60		
Time	70	3:45	280	70			70			70			70		
2:54-3:20	80	3:47	440	80			80			80			80		
	90	3:48	470	90			90			90			90		
	100	3:50	510	100			100			100			100		
	110	3:51	1650	110			110			110			110		
	120			120			120			120			120		
Lead mixed bbbs	130			130			130			130			130		
Lead % Excess	140			140			140			140			140		
Lead Sacks	150			150			150			150			150		

Notes:

safety meeting, miru, pressure test per company man, circulate 30 bbbs ahead with dye in 2nd 10. mix and pump 447 sks lead cement at 13,1
 mix and pump 100 sks tail cement at 15.2, 1.27 yield, 5.89 h2o
 displace 114.31 bbbs h2o, bump plug at 3:51pm pm at 1680 psi, hold 5 min, release pressure
 wash up rig down
 #VALUE!

Tail mixed bbbs	14.02
Tail % Excess	0%
Tail Sacks	100
Total Sacks	547
bbbl Returns	

X *Cory Jan* Title
 X *Cozma* Title
 X *2-1-14* Date



Bison Oil Well Cementing Tail & Lead

Cementing Customer Satisfaction Survey

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

Invoice Number	12310
API #	445564
Job Type	
Company Name	bill barrett

Customer Representative casey

Supervisor Name monte

Employee Name (Including Supervisor)
lee
jeff
kurt

Exposure Hours (Per Employee)
9
9
9
27

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
 Yes No
 Yes No
 Yes No
 Yes No

- Did an accident or injury occur?
- Did an injury requiring medical treatment occur?
- Did a first-aid injury occur?
- Did a vehicle accident occur?
- Was a post-job safety meeting held?

Please Circle:

Yes No
 Yes No
 Yes No
 Yes No

- Was a pre-job safety meeting held?
- Was a job safety analysis completed?
- Were emergency services discussed?
- Did environmental incident occur?
- Did any near misses occur?

Additional Comments:

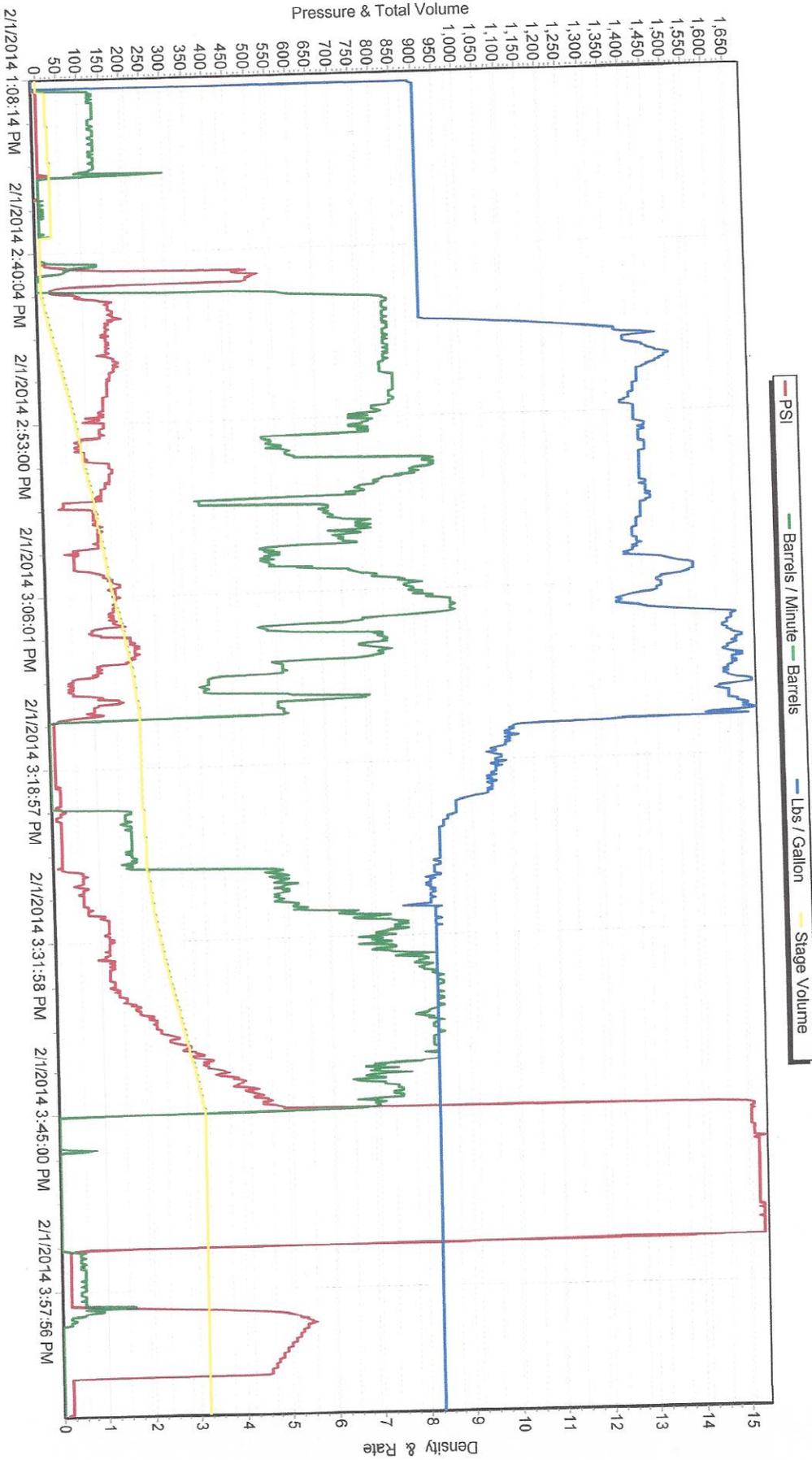
THE INFORMATION HEREIN IS CORRECT -

Casey
Customer Representative's Signature

DATE: 2-1-14

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

M/D TOTCO 2000 SERIES



BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET



BISON

ASK: SURFACE CASING CEMENTING CEMENTER/SUPERVISOR: monte bedeaux

NAME: co state 15-66-36-1609bh RIG # major LOCATION: 128-pickadeilly DATE: 2-1-14

ATOR: bill barrett CONSULTANT: casey INVOICE # 12310

EQUIRED: Hard Hat Safety Glasses Steel Toe Boots Impact Gloves
 Reflective Vest Goggles Faceshield Air Purifying Respirator Supplied Air Respirator
 Chemical Resistant Gloves Personal H2S Monitor Chemical Resistant Clothing Personal Methane Monitor

ADDITIONAL PPE (based on job specific hazards) Coveralls

JOB STEPS **POTENTIAL HAZARDS** **RECOMMENDED ACTION OR PROCEDURE** **REVIEWED BY**

iew JSA Misunderstanding Clarify job and associated hazards and safety concerns *ms*

duct pre job safety meeting Misunderstanding
 Other traffic on location, overhead lines, pinch points, heavy lifting, slips/falls
 -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
 -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
 -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

ce cement head and hoses to rig floor Overhead work, improper hookup/load not properly secured, poor communication between ground personnel and crane/tugger operator
 Working in a congested area, pinch points, swinging hammers, slippery rig floor
 -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 *Bison Oilwell Iron Inspection Program*
 -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

ect Cement head/swage/pin, chickens and es.
 Pressure relief valve set to: PSL- 2500
 Max. pump pressure: PSL- 7500

ssure test lines Test to: PSL- 1000
 Maximum pressure allowed for job: PSL- 1500

op Spacer (dye marker)/Mix and Pump tent
 Serious injury from high pressure line failure or catastrophic equipment failure. Casing hydrating from hole, causing injury. Burns or skin irritation from splashing cement, uncontrolled spills
 -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



BISON

BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET

p plug	Slips, trips, falls. Miscommunication between pump operator and center, pressure against a closed stop	-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.	-Ensure rig floor remains clear and non-essential personnel stay clear from buffer area -Pump operator monitors pump pressure constantly -Utilize proper PPE	
imp plug-Test float and release pressure	Pressure jumps before expected (calculated) displacement. Pressure jumps rapidly and higher than expected.	-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 -Ensure rig floor remains clear and non-essential personnel stay clear from the buffer area	
pressure test casing (required)	Test to: PSI- FOR:MIN- Serious injury from high pressure line or catastrophic equipment failure	-Utilize stakes or portable tank manifold to secure hoses -Use proper lifting technique (2 man lift, lift with legs, plan your route)	
lash up / rig down	Splashing cement slurry, heavy lifting, pinch points, unsecured hoses Other traffic and personnel and location, overhead lines	-All Bison crew member walk the planned exit route to access possible obstacles and hazards -Utilize spotters while backing	
<p>General Precautions/Stop Work</p> <p>- 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.</p> <p>-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>			
<p>OTHER HAZARDS SPECIFIC TO LOCATION OR COMMENT NOT ADDRESSED ABOVE:</p>			
<p>NATED EMERGENCY MUSTER AREA:</p> <p>rd</p> <p>COUNT-- 14</p>		<p>NEAREST EMERGENCY MEDICAL FACILITY (OTHER THAN 91.1): brighton</p>	



BISON
Oil Well Cementing Inc.

PRE TRIP CEMENT CALL OUT SHEET

INVOICE # 10310

DATE/TIME 2-1-14

WELL NAME Co State 15-66-36-1609 BH

OPERATOR _____

CUSTOMER Bill Barrett

LOCATION/RIG major

DELIVERED TO _____

PRE CHECK CALL OUT

CHECK ITEMS	Supervisor Initials	Other Initials	BULK TRUCK DRIVER	Supervisor Initials	Other Initials
DRY SAMPLE #	MB	gc	VACUUM BREAKER PORT CLEANED & INSPECTED & SPARE ON TRUCK	MB	
REQUIRED CEMENT CONNECTIONS	MB	gc	WATER JET AT MIX HEAD REMOVED, INSPECTED & CLEANED	MB	
TYPE OF CEMENT	BFN	c	CEMENTING HEAD INSPECTED & CLEANED	MB	
# OF LBS/SACKS	541		MIX TUB INSPECTED & CLEANED	MB	
FLOAT EQUIPMENT	cat Rig		CENTRIFUGALS GREASED, TIGHTENED & INSPECTED	MB	
BEGINNING FUEL	541	✓	DECK MOTORS STARTED	MB	
STARTING MILEAGE	3392	✓	VERIFY ALL AIR VALVES ARE FUNCTIONAL	MB	
PERSONAL PROTECTIVE EQUIPMENT	MB	gc	VERIFY ALL VALVES ARE FUNCTIONAL ON BULK TRUCK	MB	gc
DRIVING DIRECTIONS	MB	gc	VERIFY BERMS ARE ON BULK TRUCK	MB	gc
DRIVERS LOGS UPDATED PRIOR TO LEAVING YARD	MB	gc	VERIFY SPARE CEMENT HEAD IS ON BULK TRUCK	MB	gc
TRUCK PRE TRIP COMPLETED	MB	gc	VERIFY 1" TUBING IS ON BULK TRUCK AND ADEQUATELY SECURED	MB	gc
ROCK CATCHERS REMOVED & CLEANED	MB		CHECK FOR ADEQUATE SUPPLY OF KCL, DYE AND DEFOAMER	MB	
VACUUM BREAKER REMOVED & CLEANED	MB		TOP OFF FUEL IN TRUCKS POST TRIP		✓
VERIFY CORRECT POP OFF PIN IN PLACE	MB		VERIFY PARKING METER GAUGE IS ON TRUCK		
VERIFY PRESSURE TRANSDUCERS ARE CLEAN OF CEMENT	MB		DRAIN AIR TANKS		
CLEAN TRUCKS	MB	gc			
TIGHTEN PACKING NUTS ON PLUNGERS	MB				

CEMENT HEAD CHECK LIST

	Supervisor Initials	Other Initials
THREADS	MB	
VALVES	MB	
PIN	MB	

COMMENTS: _____