BISON OIL WELL CEMENTING, INC.

1738 Wynkoop St., Ste. 102
Denver, Colorado 80202
Phone: 303-296-3010
Fax: 303-298-8143
E-mail: bisonoil1@qwestoffice.net

SERVICE INVOICE

№ 12314

WELL NO. AND FARM	COUNTY	STATE	DATE
Co State 15-66-36-1724BH	Adams	CO	2-7-14

CHARGE TO	WELL LOCATION	CONTRACTOR
Bill Barrett	SEC. 36 TWP. 1S RANGE 66W	major Casey

DELIVERED TO	LOCATION 1	CODE
Piccadilly #128	Shop	

SHIPPED VIA	LOCATION 2	CODE
4017-31203 4078-3102	Piccadilly #128	

TYPE AND PURPOSE OF JOB	LOCATION 3	CODE
Surface	Shop	

	WELL TYPE	CODE
	Gas	

PRICE REFERENCE	DESCRIPTION	UNITS QTY.	UNITS MEAS.	UNIT PRICE	AMOUNT
	Pump charge	1	ea		
	BFN III 30% Bccy .25lb BFIA-1	563	SKS		
	Red Dye	16	oz		
	millage 150 Per mile 60mile min Roond trip	1	ea		
	millage 400 Per mile 60mile min Roond trip	2	ea		
	BFlyy	3	qt		
	Data Acc	1	ea		
	Sugar	50	lb		

Total Weight | Loaded Miles | Ton Miles

If this account is not paid within 30 days of invoice date a FINANCE CHARGE will be made. Computed at a single monthly rate of 1½% which is equal to an ANNUAL PERCENTAGE RATE OF 18%.

TAX REFERENCES

"TAXES WILL BE ADDED AT CORPORATE OFFICE"

Customer or His Agent

Monte Belasy
Bison Oil Well Cementing, Inc. Representative

Customers hereby acknowledges and specifically agrees to the terms and conditions on this work order, including, without limitation, the provisions on the reverse side hereof which include the release and indemnity.

Bison Oil Well Cementing
Tail & Lead

Date: 4/7/2014
Invoice # 12314
API# 445564
Foreman: monte

Customer: bill barrett
Well Name: co state 15-66-36 1724bh

Consultant: casey
Rig Name & Number: major
Distance To Location: 37.2
Units On Location: 3102-4028 3203-4017
Time Requested: 1:30am
Time Arrived On Location: 12:00
Time Left Location:

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

WELL DATA

Casing Size (in) :	9.625
Casing Weight (lb) :	36
Casing Depth (ft.) :	1,511
Total Depth (ft) :	1520
Open Hole Diameter (in) :	13.50
Conductor Length (ft) :	
Conductor ID :	15.5
Shoe Joint Length (ft) :	44
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	25%

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
H20 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 Casing Depth - HOC Tail	1281.86 ft
Volume of Lead Cement HOC of Lead X Open Hole Ann	626.49 cuft
Volume of Conductor (Conductor ID Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	0.00 cuft
Total Volume of Lead Cement (cuft of Lead Cement) + (Cuft of Conductor)	626.49 cuft
bbls of Lead Cement (Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	139.47 bbls
Sacks of Lead Cement (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	463.38 sk
bbls of Lead Mix Water (Sacks Needed) X (Gallons Per Sack) ÷ 42	73.26 bbls
Displacement (Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	114.05 bbls
Total Water Needed:	123.26 bbls

Tail Calculated Results

Tail Cement Volume In Ann (HOC Tail) X (OH Ann)	127.00 cuft
Total Volume of Tail Cement (HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	108.08 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 Tail (Tail Cement Volume) ÷ (OH Ann)	221.14 ft
Sacks of Tail Cement (Total Volume of Tail Cement) ÷ (Cement Yield)	100.00 sk
bbls of Tail Mix Water (Sacks of Tail Cement X Gallons Per Sack) ÷ 42	14.02 bbls
Pressure of cement in annulus	
Hydrostatic Pressure	1028.24 PSI
Collapse PSI:	2020.00 psi
Burst PSI:	3520.00 psi

X Casey Jones
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	4/7/2014
Well Name	co state 15-66-36 1724bh
County	weld
State	Colorado
SEC	36
TWP	15n
RNG	66w

Invoice Number	12314
API #	445564
Job Type	
Company Name	bill barrett

Customer Representative: casey

Supervisor Name: monte

Employee Name (Including Supervisor)	Exposure Hours (Per Employee)
kurt	12.5
jeff	12.5
zack	12.5
calvin	12.5
puablo	12.5
Total Exposure Hours	62.5

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
5	Personnel -	Did our personnel perform to your satisfaction?
5	Equipment -	Did our equipment perform to your satisfaction?
5	Job Design -	Did we perform the job to the agreed upon design?
5	Product/Material -	Did our products and materials perform as you expected?
5	Health & Safety -	Did we perform in a safe and careful manner (Pre/post mtgs, PPE, TSMR, etc..)?
5	Environmental -	Did we perform in an environmentally sound manner (spills, leaks, cleanup, etc..)?
5	Timeliness -	Was job performed as scheduled (On time to site, accessible to customers, completed when expected)?
5	Condition/Appearance -	Did the equipment condition and appearance meet your expectations?
5	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 Casey Lan
Customer Representative's Signature

DATE: 4/7/14

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

Bison Oil Well Cementing
Tail & Lead

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Casing Depth - HOC Tail	
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HOC of Lead X Open Hole Ann	
Volume of Conductor	0.00 cuft
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Total Volume of Lead Cement	626.49 cuft
(cuft of Lead Cement) + (Cuft of Conductor)	
bbls of Lead Cement	139.47 bbls
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	
Sacks of Lead Cement	463.38 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	
bbls of Lead Mix Water	73.26 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42	
Displacement	114.05 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	
Total Water Needed:	123.26 bbls

Tail Calculated Results

Tail Cement Volume In Ann	127.00 cuft
(HOC Tail) X (OH Ann)	
Total Volume of Tail Cement	108.08 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	221.14 ft
(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	1028.24 PSI
Collapse PSI:	2020.00 psi
Burst PSI:	3520.00 psi

X Casey Jan.
Authorization To Proceed

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Bison Oil Well Cementing
Two Cement Surface Pipe

Customer	bill barrett
Well Name	co state 15-66-36 1724bh

Date	41736
INVOICE #	12314
LOCATION	weld
FOREMAN	monte

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting	6:15am
MIRU	5:00
CIRCULATE	11:10
Drop Plug	
10:38	
M & P	

Time	Sacks
11:12-11:51	563

Lead mixed bbls	73.26
Lead % Excess	25%
Lead Sacks	463
Tail mixed bbls	14.02
Tail % Excess	0%
Tail Sacks	100
Total Sacks	563
bbl Returns	52

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
0	11:55	10	0			0			0			0		
10	11:57	90	10			10			10			10		
20	12:00	100	20			20			20			20		
30	12:02	100	30			30			30			30		
40	12:04	210	40			40			40			40		
50	12:06	280	50			50			50			50		
60	12:08	340	60			60			60			60		
70	12:10	350	70			70			70			70		
80	12:13	420	80			80			80			80		
90	12:15	340	90			90			90			90		
100	12:18	490	100			100			100			100		
110	12:40	540	110			110			110			110		
120	12:47	600	120			120			120			120		
130			130			130			130			130		
140			140			140			140			140		
150			150			150			150			150		

Notes:

safty meeting, miru, pressure test per company man, circulate 30 bbls ahead with dye in 2nd 10. mix and pump 463 sks lead cement at 13,1
mix and pump 100 sks tail cement at 15.2, 1.27 yield, 5.89 h2o
displace 114.04 bbls h2o, bump plug at 12:47 pm at 600 psi, hold 5 min, release pressure
wash up rig down
#VALUE!

X Casey Tan
Work Preformed

X
Title

co man

X 3/7/14
Date

BISON

BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET

ASK: SURFACE CASING CEMENTING	CEMENTER/SUPERVISOR: monte bedeaux	PAGE 1	OF 3
NAME: co state 15-66-36-1724bh	RIG # major / LOCATION: 128-piccidilly	DATE: 2-7-14	
ATOR: bill barrett	CONSULTANT: casey	INVOICE # 12314	

EQUIRED: ☑ Hard Hat ☑ Safety Glasses ☑ Steel Toe Boots ☑ Impact Gloves ☑ FR Coveralls ☑ Reflective Vest ADDITIONAL PPE (based on job specific hazards) ☐ Goggles ☐ Faceshield ☐ Chemical Resistant Gloves ☐ Chemical Resistant Clothing ☐ Air Purifying Respirator ☐ Supplied Air Respirator ☐ Personal H2S Monitor ☐ Personal Methane Monitor

JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION OR PROCEDURE	REVIEWED BY
iew JSA	Misunderstanding	Clarify job and associated hazards and safety concerns	mb
ıduct pre job safety meeting	Misunderstanding	-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	-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	-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	mb
ınect Cement head/swage/pin, chicksens and es.	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*	Mb
ssure test lines — Test to: PSI- 500; Maximum pressure allowed for job: PSI- 1500	Equipment failing under high pressures	-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 Pressure relief valve set to: PSI- 2500 Max. pump pressure: PSI- 3500	mb
np Spacer (dye marker)/Mix and Pump ıent	Serious injury from high pressure line failure or catastrophic equipment failure. Casing hydraulicing 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	mb

BISON

BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET

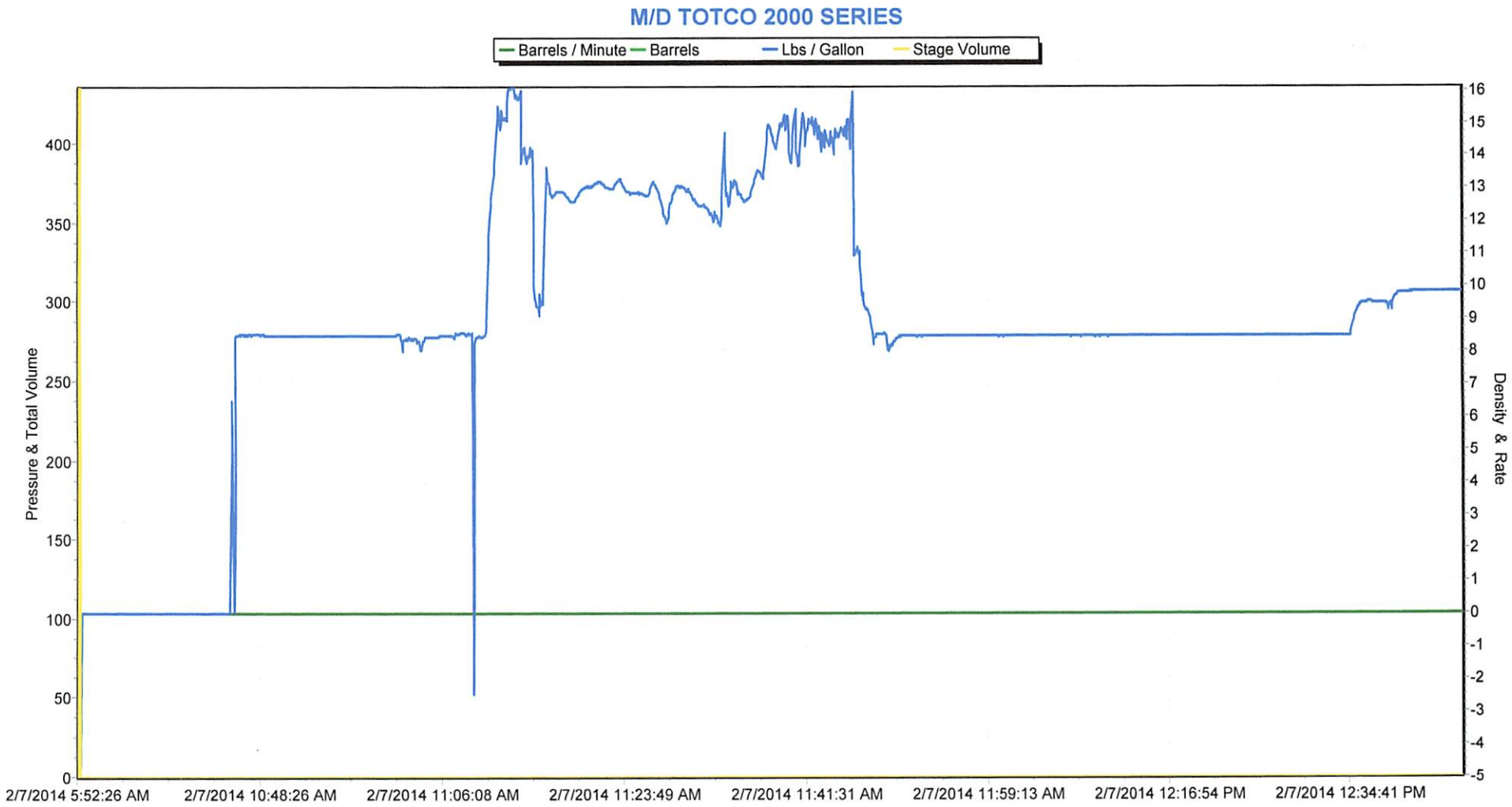
p plug		Slips, trips, falls. Miscommunication between pump operator and cementer, pressure against a closed stop	-Utilize 3 points of contact while descending/climbing ladder and stairs -Have visual contact between cementer and pump operator before pump is engaged	mb
ɔlacement		Unexpected pressure associated 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	mb
ımp plug-Test float and release pressure		Pressure jumps before expected (calculated) dis-placement. 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	mb
ɜssure test casing required)	Test to: PSI- na FOR:MIN- na	Serious injury from high pressure line or catastrophic equipment failure	-Ensure rig floor remains clear and non-essential personnel stay clear from the buffer area	mb
ash up / rig down		Splashing cement slurry, heavy lifting, pinch points, unsecured hoses	-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	-All Bison crew member walk the planned exit route to access possible obstacles and hazards -Utilize spotters while backing	mb
ɜneral Precautions/Stop Work		- 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.		mb
⁻HER HAZARDS SPECIFIC TO LOCATION OR .ONMENT NOT ADDRESSED ABOVE:				mb

NATED EMERGENCY MUSTER AREA: rd COUNT--	NEAREST EMERGENCY MEDICAL FACILITY (OTHER THAN 911): brighton

BISON

BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET

Signature and Company	
Monte Bedary Bison	
Bison	
Bob Danely	
Cody Cunilo NOV FC	
Matt McDonald NOV	
Casey Jan BJC	
Russell Woodworth Major Drilling	
Sean Silva Major Drilling	
Mark Anderson Major	


M/D TOTCO 2000 SERIES
Barrels / Minute
Barrels
Lbs / Gallon
Stage Volume
Pressure & Total Volume
Density & Rate
0
50
100
150
200
250
300
350
400
-5
-4
-3
-2
-1
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
2/7/2014 5:52:26 AM
2/7/2014 10:48:26 AM
2/7/2014 11:06:08 AM
2/7/2014 11:23:49 AM
2/7/2014 11:41:31 AM
2/7/2014 11:59:13 AM
2/7/2014 12:16:54 PM
2/7/2014 12:34:41 PM

BISON
Oil Well Cementing Inc.

PRE TRIP CEMENT CALL OUT SHEET

INVOICE # 1234 DATE/TIME 2-7-14

WELL NAME Co State 15-66-36-1724 BH OPERATOR Casey

CUSTOMER Bill Barrett

LOCATION/RIG major

DELIVERED TO Piccadilly + 128

PRE CHECK CALL OUT

CHECK ITEMS	Supervisor Initials	Other Initials	BULK TRUCK DRIVER	Supervisor Initials	Other Initials
DRY SAMPLE #	NA		VACUUM BREAKER PORT CLEANED & INSPECTED & SPARE ON TRUCK	MB	ZH
REQUIRED CEMENT CONNECTIONS	MB	ZH	WATER JET AT MIX HEAD REMOVED, INSPECTED & CLEANED	MB	ZH
TYPE OF CEMENT	BFN III		CEMENTING HEAD INSPECTED & CLEANED	MB	ZH
# OF LBS/SACKS	CH		MIX TUB INSPECTED & CLEANED	MB	ZH
FLOAT EQUIPMENT	at Rig		CENTRIFUGALS GREASED, TIGHTENED & INSPECTED	MB	ZH
BEGINNING FUEL	CH		DECK MOTORS STARTED	MB	ZH
STARTING MILEAGE	44817		VERIFY ALL AIR VALVES ARE FUNCTIONAL	MB	ZH
PERSONAL PROTECTIVE EQUIPMENT	MB	ZH	VERIFY ALL VALVES ARE FUNCTIONAL ON BULK TRUCK	MB	ZH
DRIVING DIRECTIONS	MB	ZH	VERIFY BERMS ARE ON BULK TRUCK	MB	ZH
DRIVERS LOGS UPDATED PRIOR TO LEAVING YARD	MB	ZH	VERIFY SPARE CEMENT HEAD IS ON BULK TRUCK	MB	ZH
TRUCK PRE TRIP COMPLETED	MB	ZH	VERIFY 1" TUBING IS ON BULK TRUCK AND ADEQUATELY SECURED	MB	ZH
ROCK CATCHERS REMOVED & CLEANED	MB	ZH	CHECK FOR ADEQUATE SUPPLY OF KCL, DYE AND DEFOAMER	MB	ZH
VACUUM BREAKER REMOVED & CLEANED	MB	ZH	TOP OFF FUEL IN TRUCKS POST TRIP		
VERIFY CORRECT POP OFF PIN IN PLACE	MB	ZH	VERIFY PARKING METER GAUGE IS ON TRUCK		
VERIFY PRESSURE TRANSDUCERS ARE CLEAN OF CEMENT	MB	ZH	DRAIN AIR TANKS		ZH
CLEAN TRUCKS	MB	ZH			
TIGHTEN PACKING NUTS ON PLUNGERS	MB	ZH			

CEMENT HEAD CHECK LIST

	Supervisor Initials	Other Initials
THREADS	MB	
VALVES	MB	
PIN	MB	

COMMENTS: