BISON OIL WELL CEMENTING, INC.

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Denver, Colorado 80202
Phone: 303-296-3010
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E-mail: bisonoil1@qwestoffice.net

SERVICE INVOICE

№ 12564

WELL NO. AND FARM	COUNTY	STATE	DATE
Helton 5-63-27-3340 CDH	Weld	CO	12-12-13

CHARGE TO	WELL LOCATION	CONTRACTOR
Bill Barrett	SEC. 27 TWP. 5N RANGE 63W	Major 43

DELIVERED TO	LOCATION 1	CODE
341-63	Shop	

SHIPPED VIA	LOCATION 2	CODE
3163-3211	341-63	

TYPE AND PURPOSE OF JOB	LOCATION 3	CODE
Surface Pipe	Shop	

	WELL TYPE	CODE
	Gas	

PRICE REFERENCE	DESCRIPTION	UNITS QTY.	UNITS MEAS.	UNIT PRICE	AMOUNT
	Pump charge	1	each	1400.00	1400 00
	BFN III 3% BWOW, 25lbs per sk BFLK	410	SKS	22.75	9327 50
	mileage 4.00 per mile 60 mile min Round trip	2	each	240.00	480 00
	mileage 1.50 per mile 60 mile min Round Trip	1	each	90.00	90 00
	BCLK-1	6	QTS	7.50	45 00
	Red Dye	10	OZ	15.00	150 00
	Data Acc	1	each	225.00	225 00

CC# 30.130
AFE# 18430D

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

SUB TOTAL	11717 50
TAX	
TOTAL	

"TAXES WILL BE ADDED AT CORPORATE OFFICE"

SUBJECT TO CORRECTION

Casey Jan
Customer or His Agent

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
Single Cement Surface Pipe

Date: 12/12/2013
Invoice # 12512564
API#
Foreman: Kirk

Customer: bill barrett
Well Name: helton 5-63-27-3340 cdh

County: weld
State: Colorado

Sec: 27
Twp: 5n
Range: 63w

Consultant: casey
Rig Name & Number: major 43
Distance To Location:
Units On Location: 3103-3211
Time Requested: 100 am
Time Arrived On Location: 915 am
Time Left Location: 12'30pm

WELL DATA

Casing Size OD (in) :	9.6250
Casing Weight (lb) :	36
Casing Depth (ft.) :	780
Total Depth (ft) :	788
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	
Conductor ID :	
Shoe Joint Length (ft) :	44
Landing Joint (ft) :	8
Max Rate:	
Max Pressure:	

Cement Data

Cement Name:	BFN III
Cement Density (lb/gal) :	15.2
Cement Yield (cuft) :	1.27
Gallons Per Sack:	5.89
% Excess:	30%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	
Fluid Ahead (bbls):	
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 18.97 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 0.00 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 381.21 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 400.18 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 92.65 bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 410 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 57.45 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 57.54 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 615.89 PSI

Pressure of the fluids inside casing

Displacement: 317.48 psi
Shoe Joint: 34.51 psi
Total 351.98 psi

Differential Pressure: 263.90 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed: 77.45 bbls

X Casey Jam
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
Single Cement Surface Pipe

Customer	bill barrett
Well Name	helton 5-63-27-3340 cdh

INVOICE #	12512564
LOCATION	weld
FOREMAN	Kirk
Date	12/12/2013

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting	1035am
MIRU	950am
CIRCULATE	1048am
Drop Plug	
1120 am	
M & P	

Time	Sacks
1059 am	410
1117 am stop	

% Excess	30%
Mixed bbls	57.5
Total Sacks	410
bbl Returns	8

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	1120	20	0			0			0			0		
10	1122	60	10			10			10			10		
20	1124	110	20			20			20			20		
30	1126	190	30			30			30			30		
40	1128	260	40			40			40			40		
50	1130	270	50			50			50			50		
60			60			60			60			60		
70			70			70			70			70		
80			80			80			80			80		
90			90			90			90			90		
100			100			100			100			100		
110			110			110			110			110		
120			120			120			120			120		
130			130			130			130			130		
140			140			140			140			140		
150			150			150			150			150		

Notes:

bumped plug at 1134 am 440 psi 460 psi

X Casey Jo
Work Preformed

X Co-man
Title

X 12-12-13
Date

Bison Oil Well Cementing
Single Cement Surface Pipe

Cementing Customer Satisfaction Survey

Service Date	12/12/2013
Well Name	helton 5-63-27-3340 cdh
County	weld
State	Colorado
SEC	27
TWP	5n
RNG	63w

Invoice Number	20511
API #	0
Job Type	Single Cement Surface Pipe
Company Name	bill barrett

Customer Representative: casey

Supervisor Name: kirk

Employee Name (Including Supervisor)	Exposure Hours (Per Employee)
chris	3.25
eric	3.25
buck	3.25
zack	
Total Exposure Hours	9.75

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?

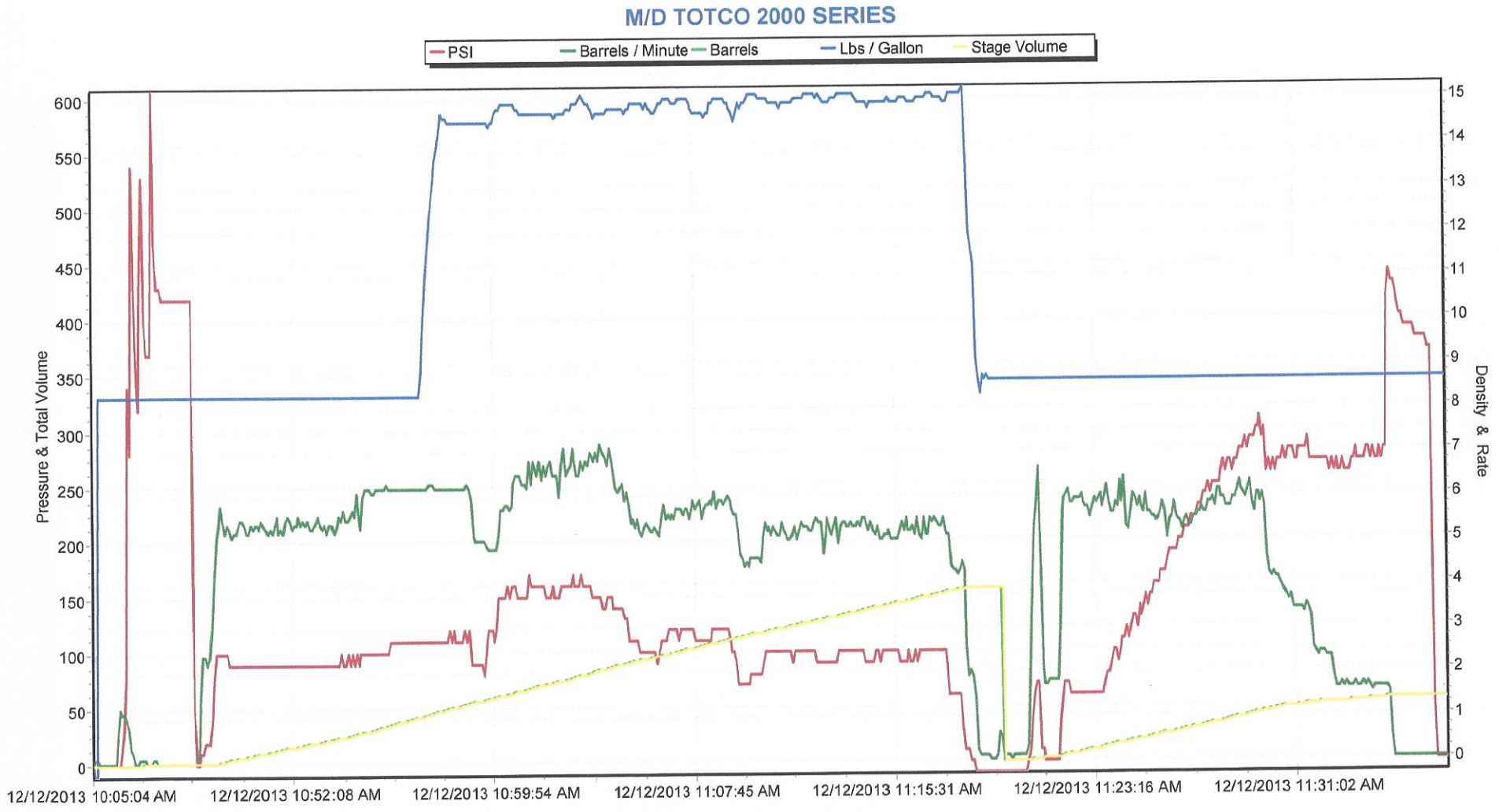
Additional comments:

THE INFORMATION HEREIN IS CORRECT -

X Casey Jones
Customer Representative's Signature

DATE: 12-12-13

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


M/D TOTCO 2000 SERIES
PSI
Barrels / Minute
Barrels
Lbs / Gallon
Stage Volume
Pressure & Total Volume
Density & Rate
600
550
500
450
400
350
300
250
200
150
100
50
0
15
14
13
12
11
10
9
8
7
6
5
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2
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12/12/2013 10:05:04 AM
12/12/2013 10:52:08 AM
12/12/2013 10:59:54 AM
12/12/2013 11:07:45 AM
12/12/2013 11:15:31 AM
12/12/2013 11:23:16 AM
12/12/2013 11:31:02 AM

BISON

BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET

ASK: SURFACE CASING CEMENTING	CEMENTER/SUPERVISOR: Kirk Kallhoff	PAGE 1	OF 3
NAME: helton 5-63-27-3340 cdh	RIG #major 43 / LOCATION:394-63	DATE: 12-12-13	
ATOR: bill barrett	CONSULTANT: casey	INVOICE # 12564	

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	kk
duct 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	kk
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	kk
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	kk
nect 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*	kk
ssure test lines — Test to: PSI- 500; Maximum pressure allowed for job: PSI- 2500	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- 2000 Max. pump pressure: PSI- 3000	kk
np Spacer (dye marker)/Mix and Pump ent	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	kk

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	kk
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	kk
mp plug-Test float and release pressure		Pressure jumps before expected (calculated) displacement. Pressure jumps rapidly and higher than expected.	-Pump operator slows rate to 2 BPM 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	kk
essure test casing required)	Test to: PSI- FOR: MIN-	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	kk
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)	kk
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	kk
neral 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.		
THER HAZARDS SPECIFIC TO LOCATION OR ONMENT NOT ADDRESSED ABOVE:				

NATED EMERGENCY MUSTER AREA: access rd

COUNT-- 13

NEAREST EMERGENCY MEDICAL FACILITY (OTHER THAN 911):
greeley

BISON

BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET

Signature and Company	
Bison	
MAJOR Drilling	
MAJOR Drilling	
NOV FC	
NOV	
Eric P. Remini Bison	
Bison	
Bison	
Bison	
NOV	
BBC.	
Russell Woodworth Major	
Mark Anderson Major	

BISON
Oil Well Cementing Inc.

PRE TRIP CEMENT CALL OUT SHEET

INVOICE # 12564 DATE/TIME 12-12-13

WELL NAME Helton 5-63-27-3346 CDN OPERATOR Casey

CUSTOMER Bill Barrett

LOCATION/RIG Major 43

DELIVERED TO 354-63

PRE CHECK CALL OUT 3705 - 3211

CHECK ITEMS	Supervisor Initials	Other Initials	BULK TRUCK DRIVER	Supervisor Initials	Other Initials
DRY SAMPLE #	KK		VACUUM BREAKER PORT CLEANED & INSPECTED & SPARE ON TRUCK	✓	
REQUIRED CEMENT CONNECTIONS	KK		WATER JET AT MIX HEAD REMOVED, INSPECTED & CLEANED	✓	
TYPE OF CEMENT BFMII 30/0	KK		CEMENTING HEAD INSPECTED & CLEANED	✓	
# OF LBS/SACKS Full	KK		MIX TUB INSPECTED & CLEANED	✓	
FLOAT EQUIPMENT			CENTRIFUGALS GREASED, TIGHTENED & INSPECTED	✓	
BEGINNING FUEL Full	KK		DECK MOTORS STARTED	✓	
STARTING MILEAGE			VERIFY ALL AIR VALVES ARE FUNCTIONAL	✓	
PERSONAL PROTECTIVE EQUIPMENT	✓		VERIFY ALL VALVES ARE FUNCTIONAL ON BULK TRUCK	✓	
DRIVING DIRECTIONS	✓		VERIFY BERMS ARE ON BULK TRUCK	✓	
DRIVERS LOGS UPDATED PRIOR TO LEAVING YARD	✓		VERIFY SPARE CEMENT HEAD IS ON BULK TRUCK	✓	
TRUCK PRE TRIP COMPLETED	✓		VERIFY 1" TUBING IS ON BULK TRUCK AND ADEQUATELY SECURED	✓	
ROCK CATCHERS REMOVED & CLEANED	✓		CHECK FOR ADEQUATE SUPPLY OF KCL, DYE AND DEFOAMER	✓	
VACUUM BREAKER REMOVED & CLEANED	✓		TOP OFF FUEL IN TRUCKS POST TRIP		
VERIFY CORRECT POP OFF PIN IN PLACE	✓		VERIFY PARKING METER GAUGE IS ON TRUCK	✓	
VERIFY PRESSURE TRANSDUCERS ARE CLEAN OF CEMENT	✓		DRAIN AIR TANKS		
CLEAN TRUCKS	✓				
TIGHTEN PACKING NUTS ON PLUNGERS	✓				

CEMENT HEAD CHECK LIST

	Supervisor Initials	Other Initials
THREADS	KK	
VALVES	KK	
PIN	KK	

COMMENTS: