



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/1/2014
Invoice #: 12309
API#: 445564
Foreman: MONTE

Customer: encana
Well Name: volg mccoy 2g-sh-f267

County: weld
State: colorado
Sec: 5
Twp: 2n
Range: 67w

Consultant: quiz
Rig Name & Number: h & p 278
Distance To Location: 24.2
Units On Location: 3106-2302
Time Requested: 12:30am
Time Arrived On Location: 12:40
Time Left Location: 600

WELL DATA

Casing Size OD (in) : 9.6250
Casing Weight (lb) : 40
Casing Depth (ft.) : 824
Total Depth (ft) : 867
Open Hole Diameter (in.) : 12.25
Conductor Length (ft) : 108
Conductor ID : 15.5
Shoe Joint Length (ft) : 44
Landing Joint (ft) : 29

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: 25%
Displacement Fluid lb/gal:
BBL to Pit:
Fluid Ahead (bbls):
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
10 fresh 10 dye 10 fresh

Casing ID

8.835

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 18.73 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 86.95 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 224.08 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 329.76 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 73.41 bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 325 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 45.52 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 61.27 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 650.24 PSI

Pressure of the fluids inside casing

Displacement: #N/A psi

Shoe Joint: 34.74 psi

Total #N/A psi

Differential Pressure: #N/A psi

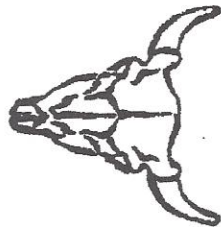
Collapse PSI: 2570.00 psi

Burst PSI: 3950.00 psi

Total Water Needed: 65:52 bbls

X Jim J. [Signature]
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
Well Name

encana
volg mcco 2g-sh-1267

INVOICE #
LOCATION
FOREMAN
Date

12309
weld
MONTE
2/1/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	3:20am 2:24 4:17	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																
MIRU																
CIRCULATE		0	4:57	0	0			0			0			0		
Drop Plug		10	5:00	90	10			10			10			10		
		20	5:02	180	20			20			20			20		
		30	5:04	300	30			30			30			30		
		40	5:06	340	40			40			40			40		
		50	5:08	410	50			50			50			50		
M & P		60	5:10	480	60			60			60			60		
		70	5:12	550	70			70			70			70		
Time	Sacks	60			80			80			80			80		
4:24-4:53	325	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		
% Excess	25%	130			140			140			140			140		
Mixed bbls	45.6	140			150			150			150			150		
Total Sacks	325	150														
bbl Returns		23														

Notes:

safety meeting, miru, pressure test per company man, circulate 30 bbls ahead with dye in 2nd 10. mix and pump 325 sks at 25 % excess

drop plug and displace 61272 bbls h2o, 23 back

50.46

X Jim J. Montgomery
Work Performed

X Rig Supervisor
Title

X 2-1-14
Date



Bison Oil Well Cementing Single Cement Surface Pipe

Cementing Customer Satisfaction Survey

Service Date	2/1/2014
Well Name	volg mccooy 2g-sh-f267
County	weld
State	colorado
SEC	5
TWP	2n
RNG	67w

Invoice Number	20511
API #	445564
Job Type	Single Cement Surface Pipe
Company Name	encana

Customer Representative quiz

Supervisor Name monte

Employee Name (Including Supervisor)
lee
jeff
kurt

Exposure Hours (Per Employee)

6.5
6.5
6.5
19.5

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
3	Personnel -
3	Equipment -
3	Job Design -
3	Product/Material -
3	Health & Safety -
3	Environmental -
3	Timeliness -
3	Condition/Appearance -
3	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 | <input checked="" type="radio"/> No | Did an accident or injury occur? |
| Yes | <input checked="" type="radio"/> No | Did an injury requiring medical treatment occur? |
| Yes | <input checked="" type="radio"/> No | Did a first-aid injury occur? |
| Yes | <input checked="" type="radio"/> No | Did a vehicle accident occur? |
| <input checked="" type="radio"/> Yes | No | Was a post-job safety meeting held? |

Please Circle:

- | | | |
|--------------------------------------|-------------------------------------|--------------------------------------|
| <input checked="" type="radio"/> Yes | No | Was a pre-job safety meeting held? |
| <input checked="" type="radio"/> Yes | No | Was a job safety analysis completed? |
| <input checked="" type="radio"/> Yes | No | Were emergency services discussed? |
| Yes | <input checked="" type="radio"/> No | Did environmental incident occur? |
| Yes | <input checked="" type="radio"/> No | Did any near misses occur? |

Additional Comments:

THE INFORMATION HEREIN IS CORRECT -

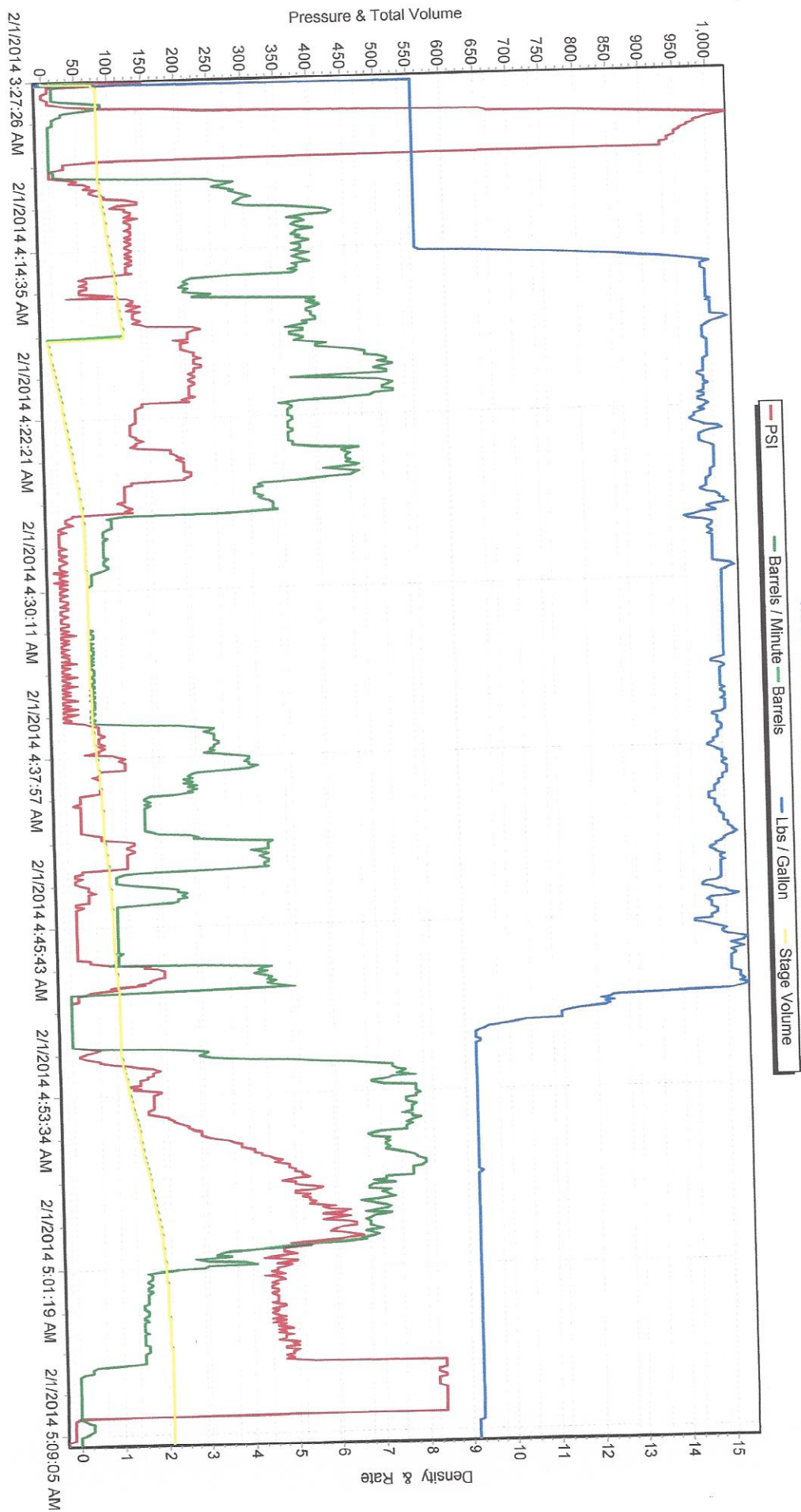
X Jim McCool
Customer Representative's Signature

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

ASK: SURFACE CASING CEMENTING		CEMENTER/SUPERVISOR: monte bedeaux		PAGE 1	OF 3
NAME: volg mccooy 2g-5h-f267		RIG # h & p 278	LOCATION: frontier rd	DATE: 2-1-14	
CONSULTANT: quiz				INVOICE # 12309	
ATTOR: encana EQUIRED: <input checked="" type="checkbox"/> Hard Hat <input checked="" type="checkbox"/> FR Coveralls ADDITIONAL PPE (based on job specific hazards) <input type="checkbox"/> Goggles <input type="checkbox"/> Air Purifying Respirator <input checked="" type="checkbox"/> Safety Glasses <input type="checkbox"/> Reflective Vest <input type="checkbox"/> Faceshield <input type="checkbox"/> Supplied Air Respirator <input checked="" type="checkbox"/> Steel Toe Boots <input type="checkbox"/> Chemical Resistant Gloves <input type="checkbox"/> Personal H2S Monitor <input type="checkbox"/> Chemical Resistant Clothing <input type="checkbox"/> Personal Methane Monitor <input checked="" type="checkbox"/> Impact Gloves					
JOB STEPS	POTENTIAL HAZARDS	RECOMMENDED ACTION OR PROCEDURE	REVIEWED BY		
view JSA	Misunderstanding	Clarify job and associated hazards and safety concerns	ms		
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 -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 -Cementier 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			
ve trucks in and rig up equipment	Other traffic on location, overhead lines, pinch points, heavy lifting, slips/falls	-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>			
cement head and hoses to rig floor	Overhead work, improper hookup/load not properly secured, poor communication between ground personnel and crane/tugger operator	-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 -Cementier ensures pressure gauges are functioning properly			
nect Cement head/swage/pin, chickens and es.	Working in a congested area, pinch points, swinging hammers, slippery rig floor	-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 -Cementier ensures pressure gauges are functioning properly			
ssure test lines	Equipment failing under high pressures	-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			
Test to:	PSI- 1000	Pressure relief valve set to:	PSI- 2500		
Maximum pressure allowed	PSI- 1500	Max pump pressure:	PSI- 7500		
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				

**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	ms
placement	Unexpected pressure associated with resuming of pumping, casing hydraulic 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	
pressure test casing required)	Test to: PSI- FOR:MIN-	Serious injury from high pressure line or catastrophic equipment failure	
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)	
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	
<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>			
OTHER HAZARDS SPECIFIC TO LOCATION OR COMMENT NOT ADDRESSED ABOVE:			
NATED EMERGENCY MUSTER AREA: rd COUNT-- 14		NEAREST EMERGENCY MEDICAL FACILITY (OTHER THAN 911): Longmont	



Signature and Company	
Monte Barclay	Bison
Jeff Kugler	Bison
Jim (unclear)	EWING
Art (unclear)	Bison
Don Stapp	HIP
Tim Collier	
(unclear)	
Rich (unclear)	HIP
John (unclear)	
Rob Fountain	H&P
Lee (unclear)	DRF



BISON
Oil Well Cementing Inc.

PRE TRIP CEMENT CALL OUT SHEET

INVOICE # 12309

DATE/TIME 2-1-14

WELL NAME Vol 1 McCoy 26-SH-F267

OPERATOR Quiz

CUSTOMER Encana

LOCATION/RIG H+P 238

DELIVERED TO Frontier Rd

PRE CHECK CALL OUT

CHECK ITEMS	Supervisor Initials	Other Initials	BULK TRUCK DRIVER	Supervisor Initials	Other Initials
DRY SAMPLE #	mb	RL	VACUUM BREAKER PORT CLEANED & INSPECTED & SPARE ON TRUCK	mb	
REQUIRED CEMENT CONNECTIONS	mb	RL	WATER JET AT MIX HEAD REMOVED, INSPECTED & CLEANED	mb	
TYPE OF CEMENT	DBNCF		CEMENTING HEAD INSPECTED & CLEANED	mb	
# OF LBS/SACKS	full		MIX TUB INSPECTED & CLEANED	mb	
FLOAT EQUIPMENT	at Rig		CENTRIFUGALS GREASED, TIGHTENED & INSPECTED	mb	
BEGINNING FUEL	full	C	DECK MOTORS STARTED	mb	
STARTING MILEAGE	33451		VERIFY ALL AIR VALVES ARE FUNCTIONAL	mb	
PERSONAL PROTECTIVE EQUIPMENT	mb	RL	VERIFY ALL VALVES ARE FUNCTIONAL ON BULK TRUCK	mb	RL
DRIVING DIRECTIONS	mb	RL	VERIFY BERMS ARE ON BULK TRUCK	mb	RL
DRIVERS LOGS UPDATED PRIOR TO LEAVING YARD	mb	RL	VERIFY SPARE CEMENT HEAD IS ON BULK TRUCK	mb	RL
TRUCK PRE TRIP COMPLETED	mb	RL	VERIFY 1" TUBING IS ON BULK TRUCK AND ADEQUATELY SECURED	mb	RL
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	mb	
VERIFY CORRECT POP OFF PIN IN PLACE	mb		VERIFY PARKING METER GAUGE IS ON TRUCK	mb	
VERIFY PRESSURE TRANSDUCERS ARE CLEAN OF CEMENT	mb		DRAIN AIR TANKS	mb	
CLEAN TRUCKS	mb	RL		r	
TIGHTEN PACKING NUTS ON PLUNGERS					

CEMENT HEAD CHECK LIST

	Supervisor Initials	Other Initials
THREADS	mb	
VALVES	mb	
PIN	mb	

COMMENTS: