

# Bison Oil Well Cementing Single Cement Surface Pipe

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

Customer: encana  
 Well Name: volg mccooy 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: 6:00

## 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**

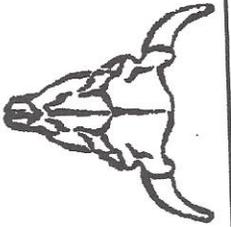
**Collapse PSI:** 2570.00 **psi**

**Burst PSI:** 3950.00 **psi**

**Total Water Needed:** 65:52 **bbls**

X Jim McCumber  
 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 mccozy 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
Safety Meeting		0	4:57	0			0			0		
MIRU		10	5:00	10			10			10		
CIRCULATE		20	5:02	20			20			20		
Drop Plug		30	5:04	30			30			30		
		40	5:06	40			40			40		
		50	5:08	50			50			50		
M & P		60	5:10	60			60			60		
		70	5:12	70			70			70		
Time	Sacks	80		80			80			80		
4:24-4:53	325	90		90			90			90		
		100		100			100			100		
		110		110			110			110		
		120		120			120			120		
% Excess	25%	130		130			130			130		
Mixed bbbs	45.6	140		140			140			140		
Total Sacks	325	150		150			150			150		
bbl Returns												

Notes:

saftey meeting, miru, pressure test per company man, circulate 30 bbs ahead with dye in 2nd 10. mix and pump 325 sks at 25 % excess  
 drop plug and displace 61272 bbs h2o, 23 back

50.46

X Rig Supervisod  
 Title

X 2-1-14  
 Date

Work Performed



# 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	
Total Exposure Hours	
19.5	

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
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  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:

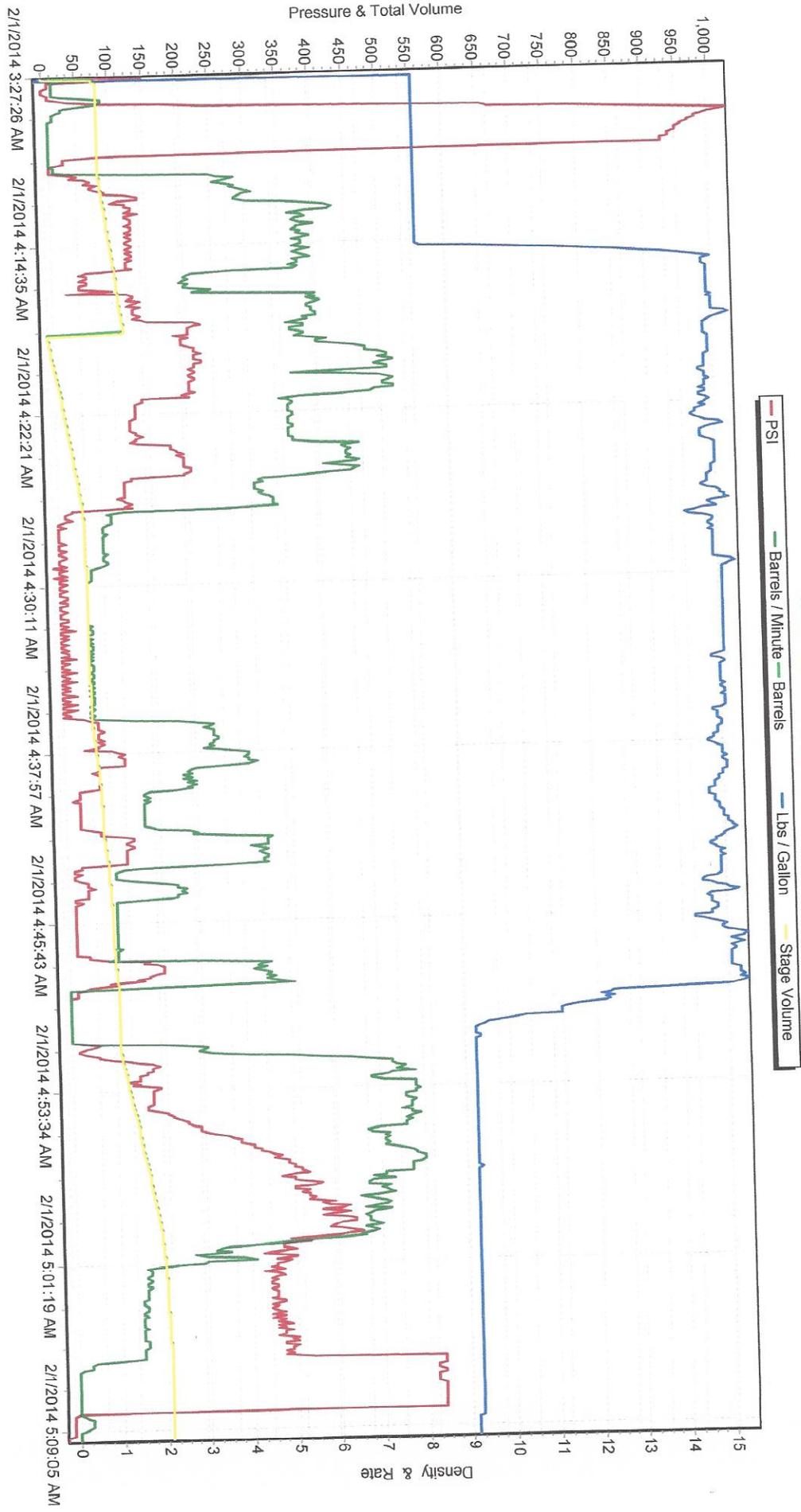
THE INFORMATION HEREIN IS CORRECT -

X Quiz  
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**

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	INVOICE # 12309
ATOR: encana		CONSULTANT: quiz			
EQUIPED: <input checked="" type="checkbox"/> Hard Hat <input checked="" type="checkbox"/> FR Coveralls <input checked="" type="checkbox"/> Safety Glasses <input type="checkbox"/> Reflective Vest <input checked="" type="checkbox"/> Steel Toe Boots <input type="checkbox"/> Air Purifying Respirator <input checked="" type="checkbox"/> Impact Gloves <input type="checkbox"/> Supplied Air Respirator		RECOMMENDED ACTION OR PROCEDURE		REVIEWED BY	
JOB STEPS		POTENTIAL HAZARDS			
view JSA	Misunderstanding	Clarify job and associated hazards and safety concerns			
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 -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			
ve trucks in and rig up equipment	Other traffic on location, overhead lines, pinch points, heavy lifting, slips/falls				
cement head and hoses to rig floor	Overhead work, improper hookup/load not properly secured, poor communication between ground personnel and crane/tugger operator	-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>			
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 -Cementer ensures pressure gauges are functioning properly	Pressure relief valve set to: PSI- 2500 Max pump pressure: PSI- 7500		
sure test lines	Test to: PSI- 1000 Maximum pressure allowed for job: PSI- 1500				
np Spacer (dye marker)/Mix and Pump tent	Equipment falling 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			
	Serious injury from high pressure line failure or catastrophic equipment failure. Casing hydraulics from hole, causing injury. Burns or skin irritation from splashing cement, uncontrolled spills				

BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET



**BISON**

p plug placement	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	
pmp 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-	-Utilize stakes or portable tank manifold to secure hoses -Use proper lifting technique (2 man lift, lift with legs, plan your route)	
ash up / rig down	Splashing cement slurry, heavy lifting, pinch points, unsecured hoses	-All Bison crew member walk the planned exit route to access possible obstacles and hazards -Utilize spotters while backing	
part location	Other traffic and personnel and location, overhead lines		
General 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.		
OTHER HAZARDS SPECIFIC TO LOCATION OR COMMENT NOT ADDRESSED ABOVE:		NEAREST EMERGENCY MEDICAL FACILITY (OTHER THAN 911): Longmont	
NATED EMERGENCY MUSTER AREA: rd COUNT-- 14			



Signature and Company	
Monte Berkeley Bison	 H&P
Jeff Rynge Bison	
 H&P	
Jim Manning ECCAD	
Art Apple Bison	
Don Stoppel H&P	
Tim Collier 	
	
Andy Zylber H&P	
John Rindoff H&P	
Rob Fountain H&P	
John Brown DPF	



**BISON**  
Oil Well Cementing Inc.

**PRE TRIP CEMENT CALL OUT SHEET**

INVOICE # 12309

DATE/TIME 2-1-14

WELL NAME Vol & 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	JK	VACUUM BREAKER PORT CLEANED & INSPECTED & SPARE ON TRUCK	MB	
REQUIRED CEMENT CONNECTIONS	MB	JK	WATER JET AT MIX HEAD REMOVED, INSPECTED & CLEANED	MB	
TYPE OF CEMENT	BBNCF		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	JK	VERIFY ALL VALVES ARE FUNCTIONAL ON BULK TRUCK	MB	JK
DRIVING DIRECTIONS	MB	JK	VERIFY BERMS ARE ON BULK TRUCK	MB	JK
DRIVERS LOGS UPDATED PRIOR TO LEAVING YARD	MB	JK	VERIFY SPARE CEMENT HEAD IS ON BULK TRUCK	MB	JK
TRUCK PRE TRIP COMPLETED	MB	JK	VERIFY 1" TUBING IS ON BULK TRUCK AND ADEQUATELY SECURED	MB	JK
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	JK		P	
TIGHTEN PACKING NUTS ON PLUNGERS					

**CEMENT HEAD CHECK LIST**

	Supervisor Initials	Other Initials
THREADS	MB	
VALVES	MB	
PIN	MB	

COMMENTS: