Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 1/27/2014
Invoice # 12306
API# 445564
Foreman: MONTE

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

County: weld
State: colorado

Sec: 5
Twp: 2n
Range: 67w

Consultant: chris
Rig Name & Number: h & p 278
Distance To Location: 24.2
Units On Location: 3106-2311
Time Requested: 2:00pm
Time Arrived On Location: 1:45pm
Time Left Location:

WELL DATA

Casing Size OD (in) :	9.6250
Casing Weight (lb) :	40
Casing Depth (ft.) :	857
Total Depth (ft) :	868
Open Hole Diameter (in.) :	12.25
Conductor Length (ft) :	108
Conductor ID :	15.5
Shoe Joint Length (ft) :	44
Landing Joint (ft) :	5
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:	40%
Displacement Fluid lb/gal:	
BBL to Pit:	
Fluid Ahead (bbls):	
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup: 20 fresh 10 dye

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

Total Slurry Volume 340.25 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 84.84 bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 375 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 52.60 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 62.02 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus
Hydrostatic Pressure: 676.69 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: 72.60 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
Single Cement Surface Pipe

INVOICE #	12306
LOCATION	weld
FOREMAN	MONTE
Date	1/27/2014

Customer	encana
Well Name	volg mccoy 2e-sh-f267

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting	8:15pm
MIRU	9:15
CIRCULATE	10:20
Drop Plug	
10:57	
M & P	

Time	Sacks
10:30-10:55	375

% Excess	40%
Mixed bbls	52.6
Total Sacks	375
bbl Returns	31

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	10:30	0	0			0			0			0		
10	11:03	110	10			10			10			10		
20	11:05	190	20			20			20			20		
30	11:07	250	30			30			30			30		
40	11:09	250	40			40			40			40		
50	11:11	260	50			50			50			50		
60	11:14	340	60			60			60			60		
6~~70~~	11:15	390	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:

safty meeting, miru, pressure test per company man, circulate 30 bbls ahead with dye in last 10. mix and pump 375 sks at 40 % excess

drop plug and displace 62.02 bbls h2o,

bump plug at11:14 pm at 390 psi 31 bbls back

X Jim Jurasek
Work Preformed

X Drilling Supervisor
Title

X 1-27-13
Date

Bison Oil Well Cementing
Single Cement Surface Pipe

Cementing Customer Satisfaction Survey

Service Date	1/27/2014
Well Name	volg mccoy 2e-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: chris

Supervisor Name: monte

Employee Name (Including Supervisor)	Exposure Hours (Per Employee)
lee	10.5
jeff	10.5
kurt	
tim	10.5
Total Exposure Hours	31.5

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
3	Personnel -	Did our personnel perform to your satisfaction?
3	Equipment -	Did our equipment perform to your satisfaction?
3	Job Design -	Did we perform the job to the agreed upon design?
3	Product/Material -	Did our products and materials perform as you expected?
3	Health & Safety -	Did we perform in a safe and careful manner (Pre/post mtgs, PPE, TSMR, etc..)?
3	Environmental -	Did we perform in an environmentally sound manner (spills, leaks, cleanup, etc..)?
3	Timeliness -	Was job performed as scheduled (On time to site, accessible to customers, completed when expected)?
3	Condition/Appearance -	Did the equipment condition and appearance meet your expectations?
3	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:
Good Job!
Thx

THE INFORMATION HEREIN IS CORRECT -

X Jim Jeffery
Customer Representative's Signature

DATE: 1-27-13

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

BISON

BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET

ASK: SURFACE CASING CEMENTING	CEMENTER/SUPERVISOR: monte bedeaux	PAGE 1	OF 3
NAME: Volg McCoy 2e-sh-f267	RIG # h & p 278 / LOCATION: frontier rd	DATE: 1-27-14	
ATOR: encana	CONSULTANT: chris	INVOICE # 12306	

EQUIRED: ☒ Hard Hat ☒ Safety Glasses ☒ Steel Toe Boots ☒ Impact Gloves ☒ FR Coveralls ADDITIONAL PPE (based on job specific hazards) ☐ Reflective Vest ☐ 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	REVIEW ED 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	
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	
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	
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*	
ssure test lines — Test to: PSI- 1000; 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- 7500	
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	

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
olacement		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) 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	
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	
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	
eneral 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:
rd
COUNT--

NEAREST EMERGENCY MEDICAL FACILITY (OTHER THAN 911): brighton

BISON

BISON OILWELL CEMENTING JOB SAFETY ANALYSIS WORKSHEET

Signature and Company	
monte Bedeaux Bison	
Tom Vaughn BISON	
"	
Jeff Ryan Bison	
Johny Riblett	
ROBERT [illegible] PRECISION DF	
[illegible] H&P	
KEN CARVER RDF	
[illegible] wise	
[illegible] wise	
[illegible]	
[illegible]	
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BISON
Oil Well Cementing Inc.

PRE TRIP CEMENT CALL OUT SHEET

INVOICE # 12306 DATE/TIME 1-27-14

WELL NAME Volg McCoy 2E-5H-F267 OPERATOR Chris

CUSTOMER Encana

LOCATION/RIG H&P 278

DELIVERED TO Frontier Rd

PRE CHECK CALL OUT

CHECK ITEMS	Supervisor Initials	Other Initials	BULK TRUCK DRIVER	Supervisor Initials	Other Initials
DRY SAMPLE #	MB		VACUUM BREAKER PORT CLEANED & INSPECTED & SPARE ON TRUCK	MB	
REQUIRED CEMENT CONNECTIONS	MB		WATER JET AT MIX HEAD REMOVED, INSPECTED & CLEANED	MB	
TYPE OF CEMENT	BFNIII		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	"	DECK MOTORS STARTED	MB	
STATING MILAGE	2571	"	VERIFY ALL AIR VALVES ARE FUNCTIONAL	MB	
PERSONAL PROTECTIVE EQUIPMENT	MB		VERIFY ALL VALVES ARE FUNCTIONAL ON BULK TRUCK	MB	
DRIVING DIRECTIONS	MB		VERIFY BERMS ARE ON BULK TRUCK	MB	
DRIVERS LOGS UPDATED PRIOR TO LEAVING YARD	MB		VERIFY SPARE CEMENT HEAD IS ON BULK TRUCK	MB	
TRUCK PRE TRIP COMPLETED	MB		VERIFY 1" TUBING IS ON BULK TRUCK	MB	
ROCK CATCHERS REMOVED & CLEANED	MB		VERIFY 1" IS ADEQUATELY SECURED ON BULK TRUCK	MB	
VACUUM BREAKER REMOVED & CLEANED	MB		CHECK FOR ADEQUATE SUPPLY OF KCL, DYE AND DEFOAMER	MB	
VERIFY CORRECT POP OFF PIN IN PLACE	MB		TOP OFF FUEL IN TRUCKS POST TRIP		"
VERIFY PRESSURE TRANSDUCERS ARE CLEAN OF CEMENT	MB		VERIFY PARKING METER GAUGE IS ON TRUCK	MB	"
CLEAN TRUCKS	MB		DRAIN AIR TANKS		"
TIGHTEN PACKING NUTS ON PLUNGERS	MB				

CEMENT HEAD CHECK LIST

	Supervisor Initials	Other Initials
THREADS	MB	
VALVES	MB	
PIN	MB	

COMMENTS: