

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SEP 10 2014

FORM APPROVED  
OMB No. 1004-0137  
Expires: July 31, 2010

**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.*

5. Lease Serial No.  
NM-55836

6. If Indian, Allottee or Tribe Name  
N/A

**SUBMIT IN TRIPLICATE** – Other instructions on page 2.

1. Type of Well

Oil Well     Gas Well     Other

7. If Unit of CA/Agreement, Name and/or No.  
N/A

2. Name of Operator  
Encana Oil & Gas (USA) Inc.

8. Well Name and No.  
Lybrook H04-2208 01H

3a. Address  
370 17th Street, Suite 1700  
Denver, CO 80202

3b. Phone No. (include area code)  
720-876-5867

9. API Well No.  
30-045-35328

10. Field and Pool or Exploratory Area  
Lybrook Gallup

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
SHL: 1980' FNL and 330' FEL Sec 4, T22N, R8W  
BHL: 1980' FNL and 330' FWL Sec 5, T22N, R8W

11. Country or Parish, State  
San Juan, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other _____
	<input checked="" type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Encana Oil & Gas (USA) Inc. (Encana) submitted a sundry on September 2, 2014 to modify the drilling plan for the Lybrook H04-2208 01H well to cement the 4 1/2" production liner, instead of running open hole swell packers. The 10-Point Drilling Plan and Wellbore Diagram attached to that sundry showed the liner hanger set 50' into the 7" casing. Since submitting the sundry, it was determined that the liner hanger should be set 100' into the 7" casing resulting in a 100' overlap. Attached is an updated 10-Point Drilling Plan and Wellbore Diagram reflecting this change.

RCVD SEP 15 '14  
OIL CONS. DIV.

DIST. 3

**BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS**

**CONDITIONS OF APPROVAL**

Adhere to previously issued stipulations

14. I hereby certify that the foregoing is true and correct.

Name (Printed/Typed)  
Katie Wegner

Title Regulatory Analyst

Signature



Date 09/09/2014

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by

*William Tambekou*

Title

*Petroleum Engineer*

Date

*9/11/2014*

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

*FFO*

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

LOC: Lybrook H04-2208 01H County: San Juan WELL: Lybrook H04-2208 01H		Encana Natural Gas WELL SUMMARY				ENG: Drew Tschach 9/9/14 RIG: Aztec 1099 GLE: 6851 RKBE: 6864		
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH		HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
			TVD	MD				
			60	60'		16" 42.09# 100sx Type I Neat 16.0ppg cmt	Fresh wtr 8.3-9.2	
Multi-Well pad take survey every stand and run anti-collision report prior to spud	None	San Jose Fn.  Nacimiento Fn. 9 5/8" Csg	0  0 500	   500.00	26  12 1/4	9 5/8" 36ppf J55 STC  TOC Surface with 100% OH Excess: 276 sks Type III Cement + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.2% bwoc FL-52A + 58.9% Fresh Water.	Fresh wtr  8.3-10	Vertical  <1°
Survey Every 60'-120', updating anticollision report after surveys. Stop operations and contact drilling engineer if separation factor approaches 1.5  Surveys every 30' through the curve	No OH logs  Mud logger onsite	Ojo Alamo Ss. Kirtland Shale  Fruitland Coal  Pictured Cliffs Ss. Lewis Shale  Cliffhouse Ss. Menefee Fn.  Point Lookout Ss. Mancos Shale  KOP  Mancos Silt  Gallup Fn.  7" Csg	429 566  768  1,119 1,261  1,862 2,586  3,485 3,674  4,184  4,180  4,473  4,653	           4,184     4,734'	8 3/4	7" 26ppf J55 LTC  TOC @ surface (100% OH excess - 70% Lead 30% Tail) Stage 1 Total: 697sks  Stage 1 Lead: 378 sks Premium Lite FM + 3% CaCl2 + 0.25/sk Cello Flake + 5#/sk LCM-1 + 8% Bentonite + 0.4% FL-52A + 0.4% Sodium Metasilicate. Mixed at 12.1 ppg. Yield 2.13 cuf/sk.  Stage 1 Tail: 319 sks Type III Cement + 1% CaCl2 + 0.25#/sk Cello Flake + 0.2% FL-52A. Mixed at 14.6 ppg. Yield 1.38 cuf/sk.	Fresh Wtr  8.3-10	Vertical  <1°
Surveys every stand to TD unless directed otherwise by Geologist  MWD Gamma Directional	No OH Logs	Horizontal Target TD  Base Gallup	4,760 4,736  4,814	  9,113	6 1/8	100' overlap at liner top  4379' Drilled Lateral  4 1/2" 11.6ppf SB80 LTC  TOC @ hanger (50% OH excess) Stage 1 Total: 277sks  Stage 1 Blend: 277 sks Premium Lite High Strength FM + 0.7% bwoc R-3 + 3% bwow Potassium Chloride + 0.25lbs/sack Cello Flake + 0.5% bwoc CD-32 + 1.15% bwoc FL- 52A + 60 lbs/sack Calcium Carbonate + 124.4% Fresh Water. Yield 2.63 cuf/sk.	WBM 8.3-10	Horiz Inc/TVD deg/90.3°ft  TD = 9113.4 MD

**NOTES:**

- 1) Drill with 26" bit to 60', set 16" 94# conductor pipe
- 2) Drill surface to 500', R&C 9 5/8" casing
- 3) N/U BOP and surface equipment
- 4) Drill to KOP of 4184', 8 3/4 inch holesize
- 5) Start curve at 10deg/100' build rate
- 6) Drill to csg point of 4734' MD
- 7) R&C 7" csg, circ cmt to surface
- 8) Land at ~90 deg, drill lateral to 9113' run 4 1/2 inch cemented liner

Lybrook H04-2208 01H

SHL: SE/4 NE/4 Sec 4 T22N R8W 1,980' FNL, 330' FEL

BHL: SW/4 NW/4 Sec 4 T22N R8W 1,980' FNL, 330' FWL

San Juan, New Mexico

**Encana Oil & Gas (USA) Inc.  
Drilling Plan**

**1. ESTIMATED TOPS OF GEOLOGICAL MARKERS (TVD)**

The estimated tops of important geologic markers are as follows:

<b>Formation</b>	<b>Depth (TVD) units = feet</b>
Ojo Alamo Ss.	429
Kirtland Shale	566
Fruitland Coal	768
Pictured Cliffs Ss.	1,119
Lewis Shale	1,261
Cliffhouse Ss.	1,862
Menefee Fn.	2,586
Point Lookout Ss.	3,485
Mancos Shale	3,674
Mancos Silt	4,180
Gallup Fn.	4,473
Horizontal Target	4,760
Base Gallup	4,814

The referenced surface elevation is 0', KB 4760'

**2. ESTIMATED DEPTH OF POTENTIAL WATER, OIL, GAS,  
& OTHER MINERAL BEARING FORMATIONS**

<b>Substance</b>	<b>Formation</b>	<b>Depth (TVD) units = feet</b>
Water/Gas	Fruitland Coal	768
Oil/Gas	Pictured Cliffs Ss.	1,119
Oil/Gas	Cliffhouse Ss.	1,862
Gas	Menefee Fn.	2,586
Oil/Gas	Point Lookout Ss.	3,485
Oil/Gas	Mancos Shale	3,674
Oil/Gas	Mancos Silt	4,180
Oil/Gas	Gallup Fn.	4,473

All shows of fresh water and minerals will be reported and protected.

**Lybrook H04-2208 01H**

**SHL: SE/4 NE/4 Sec 4 T22N R8W 1,980' FNL, 330' FEL**

**BHL: SW/4 NW/4 Sec 4 T22N R8W 1,980' FNL, 330' FWL**

**San Juan, New Mexico**

**3. PRESSURE CONTROL**

- a) Pressure control equipment and configuration will be designed to meet 2M standards.
- b) Working pressure on rams and BOPE will be 3,000 psi.
- c) Function test and visual inspection of the BOP will be conducted daily and noted in the IADC Daily Drilling Report.
- d) The Annular BOP will be pressure tested to a minimum of 50 percent of its rated working pressure.
- e) Blind and Pipe Rams/BOP will be tested against a test plug to 100 percent of rated working pressure.
- f) Pressure tests are required before drilling out from under all casing strings set and cemented in place.
- g) BOP controls must be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned.
- h) BOP testing procedures and testing frequency will conform to Onshore Order No. 2.
- i) BOP remote controls shall be located on the rig floor at a location readily accessible to the driller. Master controls shall be on the ground at the accumulator and shall have the capability to function all preventers.
- j) The kill line shall be 2-inch minimum and contain two kill line valves, one of which shall be a check valve.
- k) The choke line shall be a 2-inch minimum and contain two choke line valves (2-inch minimum).
- l) The choke and manifold shall contain two adjustable chokes.
- m) Hand wheels shall be installed on all ram preventers.
- n) Safety valves and wrenches (with subs for drill string connections) shall be available on the rig floor at all times.
- o) Inside BOP or float sub shall also be available on the rig floor at all times.

Proposed BOP and choke manifold arrangements are attached.

**4. CASING & CEMENTING PROGRAM**

The proposed casing and cementing program has been designed to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use. The casing setting depth shall be calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during normal drilling operations. All indications of useable water shall be reported.

- a) The proposed casing design is as follows:

Casing	Depth (MD)	Hole Size	Csg Size	Weight	Grade
Conductor	0'-60'	26"	16"	42.09#	
Surface	0'-500'	12 1/4"	9 5/8"	36#	J55, STC New
Intermediate	0'-4734'	8 3/4"	7"	26#	J55, LTC New
Production Liner	4634'-9113'	6 1/8"	4 1/2"	11.6#	B80*, LTC New

Casing String				Casing Strength Properties			Minimum Design Factors		
Size	Weight (ppf)	Grade	Connection	Collapse (psi)	Burst (psi)	Tensile (1000lbs)	Collapse	Burst	Tension
9 5/8"	36	J55	STC	2020	3520	394	1.125	1.1	1.5
7"	26	J55	LTC	4320	4980	367	1.125	1.1	1.5
4.5"	11.6	B80	LTC	6350	7780	201	1.125	1.1	1.5

\*B80 pipe specifications are attached

Casing design is subject to revision based on geologic conditions encountered

**Lybrook H04-2208 01H**

**SHL: SE/4 NE/4 Sec 4 T22N R8W 1,980' FNL, 330' FEL**

**BHL: SW/4 NW/4 Sec 4 T22N R8W 1,980' FNL, 330' FWL**

**San Juan, New Mexico**

All casing strings below the conductor shall be pressure tested to 0.22 psi per foot of casing string length or 1,500 psi, whichever is greater, but not to exceed 70 percent of the minimum internal yield. If pressure declines more than 10 percent in 30 minutes, corrective action shall be taken.

b) The proposed cementing program is as follows

Casing	Depth (MD)	Cement Volume (sacks)	Cement Type & Yield	Design	Centralizers
Conductor	0'-60'	100 sks	Type I Neat 16 ppg	Surface	None
Surface	0'-500'	276 sks	Type III Cement + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.2% bwoc FL-52A + 58.9% Fresh Water	Surface	1 per joint on bottom 3 joints
Intermediate	0'-4734'	100% open hole excess Stage 1 Lead: 378 sks Stage 1 Tail: 319 sks	Lead: PremLite + 3% CaCl + 0.25lb/sk CelloFlake + 5lb/sk LCM, 12.1ppg 2.13cuft/sk Tail: Type III Cmt + 1% CaCl + 0.25lb/sk Cello Flake 14.5ppg 1.38cuft/sk	Surface	1 every 3 joints through water bearing zones
Production Liner	4634'-9113'	50% OH excess Stage 1 Blend Total: 277sks	Blend: Premium Lite High Strength FM + 0.7% bwoc R-3 + 3% bwow Potassium Chloride + 0.25lbs/sack Cello Flake + 0.5% bwoc CD-32 + 1.15% bwoc FL-52A + 60 lbs/sack Calcium Carbonate + 124.4% Fresh Water. Yield 2.62 cuft/sk	Liner Hanger	N/A

Actual volumes will be calculated and determined by conditions onsite. All cement slurries will meet or exceed minimum BLM and New Mexico Oil Conservation Division requirements. Slurries used will be the slurries listed above or equivalent slurries depending on service provider selected. Cement yields may change depending on slurries selected

All waiting on cement times shall be a minimum of 8 hours or adequate to achieve minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

**5. WELL PLAN & DIRECTIONAL DRILLING PROGRAM**

The proposed horizontal well will have a kick off point of 4184'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	4736'/9113'	Gallup

**Lybrook H04-2208 01H**

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**San Juan, New Mexico**

**6. DRILLING FLUIDS PROGRAM**

a) Surface through Intermediate Casing Point:

Hole Size (in)	Depth (TVD/MD)	Mud Type	Density (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
30"	0-60'/60'	Fresh Water	8.3-9.2	38-100	4-28
12 1/4"	0'-500'/500'	Fresh Water	8.3-10	60-70	NC
8 3/4"	500'/500'-4653'/4734'	Fresh Water LSND	8.3-10	40-50	8-10

b) Intermediate Casing Point to TD:

Hole Size (in)	Depth (TVD/MD)	Mud Type	Density (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
6 1/8"	4653'/4734'- 4736'/9113'	Fresh Water LSND	8.3-10	15-25	<15

c) There will be sufficient mud on location to control a blowout should one occur. Mud flow and volume will be monitored both visually and with electronic pit volume totalizers. Mud tests shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

d) A closed-loop system will be used to recover drilling fluid and dry cuttings in both phases of the well and on all hole intervals. Above-ground tanks will be utilized to hold cuttings and fluids for rig operations. A frac tank will be on location to store fresh water. Waste will be disposed of properly at an EPA-approved hazardous waste facility. Fresh water cuttings will be disposed of at Basin Disposal, Inc. and/or Industrial Ecosystems, Inc. The location will be lined in accordance with the Surface Use Plan of Operations.

**7. TESTING, CORING, & LOGGING**

- a) Drill Stem Testing - None anticipated.
- b) Coring - None anticipated.
- c) Mudd Logging - Mud loggers will be on location from kick off point to TD.
- d) Logging - See below

Cased Hole:

CBL/CCL/GR/VDL will be run as needed for perforating control

**8. ABNORMAL PRESSURES & HYDROGEN SULFIDE**

The anticipated bottom hole pressure is +/- 2228 psi based on a 9.0 ppg at 4760' TVD of the horizontal lateral target. No abnormal pressure or temperatures are anticipated.

No hydrogen sulfide gas is anticipated, however, if H<sub>2</sub>S is encountered, the guidelines in Onshore Order No. 6 will be followed.

**9. ANTICIPATED START DATE AND DURATION OF OPERATIONS**

Drilling is estimated to commence on October 9, 2014. It is anticipated that completion operations will begin within 30 days after the well has been drilled depending on fracture treatment schedules with various pumping service companies.

It is anticipated that the drilling of this well will take approximately 20 days.