

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

JAN 27 2017

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

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.

Farmington Field Office
Bureau of Land Management

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

Encana Oil & Gas (USA) Inc.

3a. Address

370 17th Street, Suite 1700
Denver, CO 80202

3b. Phone No. (include area code)

(720) 876-3533

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

SHL: 1462' FSL and 776' FWL Section 34, T23N, R7W
BHL: 1810' FSL and 1700' FWL Section 28, T23N, R7W

5. Lease Serial No.
NMNM 6682

6. If Indian, Allottee or Tribe Name

N/A

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

NMNM 135229X

8. Well Name and No.
North Alamo Unit 308H

9. API Well No.
30-043-21296

10. Field and Pool or Exploratory Area
Alamito Mancos N (OIL)

11. Country or Parish, State
Sandoval County, 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"/> Hydraulic Fracturing	<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 recompletable 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 recompletable 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) is requesting authorization to modify Encana's Drilling Plan and Wellbore Diagram to reflect the following changes:

1. Eliminate the 16" conductor pipe, as this will no longer be necessary
2. Update the surface casing depth from 500' to 320'
3. Update cement details to reflect the above changes
4. Add the following sentence to "Section 4: Casing & Cementing Program": "A higher grade of casing may be run at the Operator's discretion, but a lower grade will not be substituted without prior approval of the BLM."
5. Correct surface casing grade typo from "J55" to "H40." Please note, this was simply a typo and the casing strengths have not changed from previous submissions.

An updated Drilling Plan and Wellbore Diagram are attached.

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

OIL CONS. DIV DIST. 3

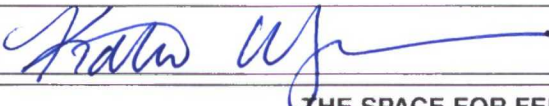
FEB 02 2017

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Katie Wegner

Title Senior Regulatory Analyst

Signature

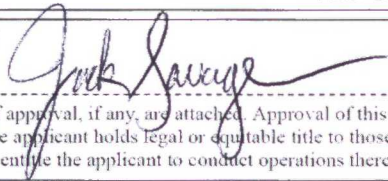


Date

01/26/2017

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by



Title PE

Date

1/30/17

Office FFO

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.

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)

ADHERE TO PREVIOUS NMOCD
NMOCD **CONDITIONS OF APPROVAL**

North Alamito Unit 308H
SHL: NWSW Sec 34 T23N R7W
1462 FSL 776 FWL
BHL: NESW Sec 28 T23N R7W
1810 FSL 1700 FWL
Sandoval, 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:

Formation	Depth (TVD) units = feet
Ojo Alamo	976
Kirtland Shale	1,161
Fruitland Coal	1,381
Pictured Cliffs Ss.	1,503
Lewis Shale	1,626
Cliffhouse Ss.	2,323
Menefee Fn.	3,037
Point Lookout Ss.	3,885
Mancos Shale	4,092
Mancos Silt	4,645
Gallup Fn.	4,905

The referenced surface elevation is 6895', KB 6911'

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

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1,381
Water/Gas	Pictured Cliffs Ss.	1,503
Water/Gas	Cliffhouse Ss.	2,323
Water/Gas	Menefee Fn.	3,037
Water/Gas	Point Lookout Ss.	3,885
Oil/Gas	Mancos Shale	4,092
Oil/Gas	Mancos Silt	4,645
Oil/Gas	Gallup Fn.	4,905

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

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.

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- 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
- 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 higher grade of casing may be run at the Operator's discretion, but a lower grade will not be substituted without prior approval of the BLM.

- a) The proposed casing design is as follows:

Casing	Depth (MD)	Hole Size	Csg Size	Weight	Grade
Surface	0'-320'	12 1/4"	9 5/8"	32.3	H40, STC New
Intermediate	0'-5550'	8 3/4"	7"	26	J55, LTC New
Production Liner	5350'-12545'	6 1/8"	4 1/2"	11.6	B80*, BTC 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"	32.3	H40	STC	1370	2270	365	1.0	1.1	1.5
7"	26	J55	LTC	4330	4980	367	1.0	1.1	1.5
4.5"	11.6	B80	BTC	6350	7780	267	1.0	1.1	1.5

*B80 pipe specifications are attached

Casing design is subject to revision based on geologic conditions encountered

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.

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b) The proposed cementing program is as follows

Casing	Depth (MD)	Cement Volume (sacks)	Cement Type & Yield	Designed TOC	Centralizers
Surface	0'-320'	116 sks	Type 1-2 construction cement w/ 20% fly ash Weight 14.5ppg	Surface	1 per joint on bottom 3 joints
Intermediate	0'-5550'	100% open hole excess Stage 1 Lead: 636 sks Stage 1 Tail: 292 sks	<p>Lead: Extended Class G w/ 6% BWOC bentonite + 5 lb/sk Kol-Seal + 0.125 lb/sk Poly-flake + 0.3% BWOC HR-5 Weight: 12.1ppg Yield: 2.038 ft³/sk</p> <p>Tail: Extended Class G w/ 1% BWOC bentonite + 0.3% BWOC Halad-567 + 0.2% BWOC Versaset + 0.05% SA-1015 Weight: 14.6ppg Yield: 1.059 ft³/sk</p>	Surface	1 every 3 joints through water bearing zones
Production Liner	5350'-12545'	30% open hole excess Cement Vol: 680 sks	Extended Class G w/ 2.5 lb/sk Kol-seal + 0.7% BWOC Halad-567 + 0.20% BWOC Halad-9 + 0.05% SA-1015 Weight: 13.5ppg Yield: 1.302 ft ³ /sk	Top of Liner	N/A

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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 4414'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5162'/12545'	Gallup

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)
12 1/4"	0'-320'/320'	Fresh Water	0	60-70	NC
8 3/4"	320'/320'-5132'/5550'	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"	5132'/5550'- 5162'/12545'	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) Mud Logging - Mancos Top to TD
- d) Logging - See below

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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 +/- 2421 psi based on a 9.0 ppg at 5174' TVD of the horizontal lateral target. No abnormal pressure or temperatures are anticipated.

No hydrogen sulfide gas is anticipated, however, if H₂S 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 March 1st, 2017. 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 10 days.

LOC: 1462' FSL, 776' FWL Sec 34 23N 07W			Encana Natural Gas						CNO: L. Hubbard RIG: Unassigned GLE: 6895 RKBE: 6911		1-25-17
County: San Juan WELL: NAU 308H			WELL SUMMARY								
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH				HOLE SIZE	CASING SPECS	MWD MUD TYPE	DEVIATION INFORMATION	
			TVD	MD							
Run survey tool at TD and update anticollision scan	None	Nacimiento 9 5/8" Csg	0 320	320			12 1/4	9 5/8" 32.3ppf H40 STC TOC to Surface 14.5ppg type 1-2 cement w/ 20% fly ash	Fresh wtr 8.3-9.2	Vertical <1°	
Survey Every 60'-120', updating anticollision report after surveys. Stop operations and contact drilling engineer if separation factor approaches 1.5	No OH logs	Ojo Alamo Kirtland Shale Fruitland Coal Pictured Cliffs Ss. Lewis Shale Cliffhouse Ss. Menefee Fn Point Lookout Ss. Mancos Shale	976 1,161 1,381 1,503 1,626 2,323 3,037 3,885 4,092				8 3/4	7" 26ppf J55 LTC TOC @ surface (100% OH excess) Stage 1 Total: 929sks	Fresh Wtr 8.3-10	Directional 18.8°	
Surveys every 30' through the curve	MWD GR Mud Log	KOP Mancos Silt Gallup Fn. 7" Csg	4,414 4,645 4,905 5,132	4,594 5,550'							
Surveys every stand to TD unless directed otherwise by Geologist	No OH Logs	Horizontal Target TD Base Gallup	5,174 5,162 5,256	12,545			6 1/8	200' overlap at liner top 6995' Drilled Lateral TOC @ Top of Liner (30% open hole excess)		Horz Inc/TVD 90.1deg/5174' TD = 12544.7' MD	
MWD Gamma Directional									WBM 8.3-10		