

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONFIDENTIAL

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2014

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.
NMNM 100807

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.

Pending

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

8. Well Name and No.
Pinion Unit D14-2410 01H

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

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

9. API Well No.
30-045-35493

10. Field and Pool or Exploratory Area
Basin Mancos

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SHL: 1321' FNL and 449' FWL Section 14, T24N, R10W
BHL: 920' FNL and 330' FWL Section 15, T24N, R10W

11. County or Parish, State
San Juan County, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☒ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ 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 recompleat 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 recompleat 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) wishes to modify the drilling plan for the Pinion Unit D14-2410 01H well to cement the 4-1/2" production liner, instead of running open hole swell packers, as previously planned. Attached is an updated Directional Drilling Plan, 10-Point Drilling Plan and Wellbore Diagram that reflect this change. Please note, the 7" ICP was also moved from approximately 72 degrees to approximately 55 degrees.

CONDITIONS OF APPROVAL

Adhere to previously issued stipulations

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

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

Cristi Bauer

Title Operations Technician

Signature

Cristi Bauer

Date 09/18/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

William Tambekar

Title

Petroleum Engineer

Date

9/22/2014

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)

NMOC
OPERATOR
AV

LOC: 1321'FNL & 449'FWL Sec 14 24N10W County: San Juan WELL: Pinon Unit D-14-2410 01H			Encana Natural Gas WELL SUMMARY				ENG: Sydney Kuyke RIG: Aztec 920 OLE: 6876.4 RKBE: 6890.9		9/18/14	
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH TVDMD			HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION	
			60	60'		26	16" 42.08# 100sx Type I Neat 16.0ppg cmt	Fresh wtr 8.3-8.2		
Multi-Well pad take survey every stand and run anti- collision report prior to spud	None	San Jose Fn.	0			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°	
		Nacimiento Fn. 9 5/8" Csg	surface 500	500.00						
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	Ojo Alamo Ss. Kirtland Shale	717 873			8 3/4	7" 26ppf J55 LTC TOC @ surface (100% OH excess - 70% Lead 30% Tail) Stage 1 Total: 1249sks Stage 1 Lead: 710 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 cuft/sk. Stage 1 Tail: 539 sks Type III Cement + 1% CaCl2 + 0.25#/sk Cello Flake + 0.2% FL-52A. Mixed at 14.6 ppg. Yield 1.38 cuft/sk.	Fresh Wtr 8.3-10	Vertical <1°	
		Fruitland Coal	1,173							
		Pictured Cliffs Ss. Lewis Shale	1,587 1,682							
		Cliffhouse Ss. Manolea Fn.	2,354 3,102							
		Point Lookout Ss. Mancoos Shale	4,046 4,224							
		KOP	3,500	3,500						
		Mancoos Silt	4,801							
Gallup Fn.	5,078									
7" Csg	5,215	5,353								
Surveys every stand to TD unless directed otherwise by Geologist.	No OH Logs	Horizontal Target TD	5,310 5,256	12,175		6 1/8	100' overlap at liner top 6822' Drilled Lateral		Horz Inc/TVD: 90.8deg/5309.9R TD = 12174.6 MD	
		Base Gallup	5,390					4 1/2" 11.6ppf SB80 LTC TOC @ hanger (50% OH excess) Stage 1 Total: 279sks Stage 1 Blend: 279 sks Premium Lite High Strength FM + 0.7% bwoc R-3 + 3% bwoc 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 2.83 cuft/sk.	WBM 8.3-10	
MWD Gamma Directional										

NOTES:

- 1) Drill with 26" bit to 60', set 16" 42.09ppf 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 3500', 8 3/4 inch holesize
- 5) Start curve at 10deg/100' build rate
- 6) Drill to csg point of 5353' MD
- 7) R&C 7" csg, circ cmt to surface
- 8) Land at ~90 deg, drill lateral to 12175' run 4 1/2 inch cemented liner

Pinon Unit D-14-2410 01H
 SHL: 1321'FNL & 449'FWL Sec 14 24N10W
 BHL: 920'FNL & 1581'FEL Sec 16 24N10W
 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:

Formation	Depth (TVD) units = feet
San Jose Fn.	n/a
Nacimiento Fn.	surface
Ojo Alamo Ss.	717
Kirtland Shale	873
Fruitland Coal	1,173
Pictured Cliffs Ss.	1,567
Lewis Shale	1,682
Cliffhouse Ss.	2,354
Menefee Fn.	3,102
Point Lookout Ss.	4,046
Mancos Shale	4,224
Mancos Silt	4,801
Gallup Fn.	5,078
Base Gallup	5,390

The referenced surface elevation is 6876', KB 6891'

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

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1,173
Oil/Gas	Pictured Cliffs Ss.	1,567
Oil/Gas	Cliffhouse Ss.	2,354
Gas	Menefee Fn.	3,102
Oil/Gas	Point Lookout Ss.	4,046
Oil/Gas	Mancos Shale	4,224
Oil/Gas	Mancos Silt	4,801
Oil/Gas	Gallup Fn.	5,078

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

Pinon Unit D-14-2410 01H
SHL: 1321'FNL & 449'FWL Sec 14 24N10W
BHL: 920'FNL & 1581'FEL Sec 16 24N10W
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'-600'	12 1/4"	9 5/8"	36#	J55, STC New
Intermediate	0'-5273'	8 3/4"	7"	26#	J55, LTC New
Production Liner	5173'-11900'	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

Pinon Unit D-14-2410 01H**SHL: 1321'FNL & 449'FWL Sec 14 24N10W****BHL: 920'FNL & 1581'FEL Sec 16 24N10W****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'-600'	228 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'-5273'	100% open hole excess Stage 1 Lead: 482 sks Stage 1 Tail: 370 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	5173'-11900'	50% OH excess Stage 1 Blend Total: 381sks	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.	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 well will be drilled in two phases. A pilot hole will be drilled in the first phase, followed by kicking off a horizontal lateral in the existing wellbore in the second phase. The intent of drilling a pilot hole is to obtain open hole log data. The intent of the second phase of the well is to plug back the pilot hole with cement to the kick off point. After plugging back, the plan is to drill a horizontal lateral from the kick off point in the existing wellbore to the proposed bottom hole location.

Description	Proposed Depth (TVD/MD)	Formation
Vertical Pilot Hole	5549'/5549'	Gallup
Horizontal Lateral TD	5215'/11900'	Gallup

Proposed Plug Back Procedure: KOP 4457'

- a. Spot 500' kick plug from 4157' - 4657'
 - 209 sks of Clas A cement with salt (1.3 cuft/sk yield)
 - Spot tuned spacer

Pinon Unit D-14-2410 01H
SHL: 1321'FNL & 449'FWL Sec 14 24N10W
BHL: 920'FNL & 1581'FEL Sec 16 24N10W
San Juan, New Mexico

6. DRILLING FLUIDS PROGRAM

a) Surface through Pilot Hole TD:

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'-600'/600'	Fresh Water	8.3-10	60-70	NC
8 3/4"	600'/600'-5549'/5549'	Fresh Water LSND	8.3-10	40-50	8-10

b) KOP through Intermediate Casing Point:

Hole Size (in)	Depth (TVD/MD)	Mud Type	Density (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
8 3/4"	4457'/4457'- 5134'/5273'	Fresh Water LSND	9.5-8.8	40-50	8-10

c) Intermediate Casing Point to TD:

Hole Size (in)	Depth (TVD/MD)	Mud Type	Density (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
6 1/8"	5134'/5273'- 5215'/11900'	Fresh Water LSND	8.3-10	15-25	<15

- d) 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.
- e) 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 +/- 2485 psi based on a 9.0 ppg at 5310' 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

9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

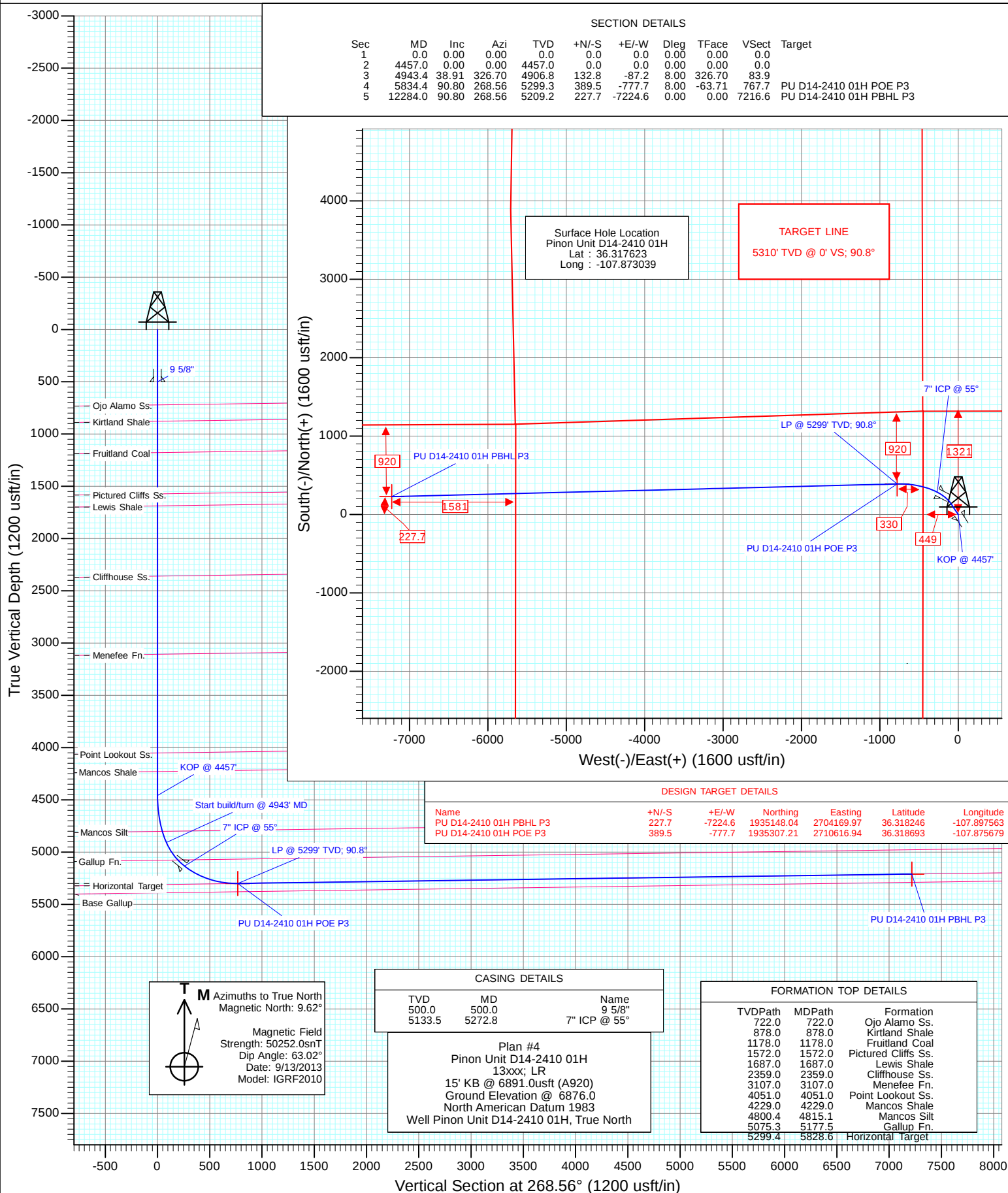
Drilling is estimated to commence on October 16, 2014. It is anticipated that completion operations will begin within

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

LOC: 1321'FNL & 449'FWL Sec 14 24N10W County: San Juan WELL: Pinon Unit D-14-2410 01H			Encana Natural Gas WELL SUMMARY				ENG: Sydney Kuyke 10/9/14 RIG: Aztec 950 GLE: 6876.4 RKBE: 6890.9		
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH			HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
			TVD	MD					
			60 0	60'		26	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	surface 600	600.00		12 1/4	9 5/8" 36ppf J55 STC TOC Surface with 100% OH Excess: 228 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	717 873	4,457 4,457		8 3/4	7" 26ppf J55 LTC TOC @ surface (100% OH excess - 70% Lead 30% Tail) Stage 1 Total: 853sks Stage 1 Lead: 482 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 cuft/sk. Stage 1 Tail: 370 sks Type III Cement + 1% CaCl2 + 0.25#/sk Cello Flake + 0.2% FL-52A. Mixed at 14.6 ppg. Yield 1.38 cuft/sk.	Fresh Wtr 8.3-10	Vertical <1°
		Fruitland Coal	1,173						
		Pictured Cliffs Ss. Lewis Shale	1,567 1,682						
		Cliffhouse Ss. Menefee Fn.	2,354 3,102						
		Point Lookout Ss. Mancos Shale	4,046 4,224						
		KOP	4,457						
Mancos Silt	4,801								
Gallup Fn.	5,078	5,273'	5,134	5,273'		6 1/8	100' overlap at liner top 6627" Drilled Lateral	WBM 8.3-10	Horz Inc/TVD 90.8deg/5309.9ft TD = 11900 MD
7" Csg	5,134								
Surveys every stand to TD unless directed otherwise by Geologist MWD Gamma Directional	No OH Logs	Horizontal Target TD	5,310 5,215	11,900		4 1/2" 11.6ppf SB80 LTC TOC @ hanger (50% OH excess) Stage 1 Total: 381sks Stage 1 Blend: 381 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 cuft/sk.			
		Base Gallup	5,390						
		Pilot Hole TD	5,549						5549

NOTES:

- 1) Drill with 26" bit to 60', set 16" 42.09ppf 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 4457', 8 3/4 inch holesize
- 5) Start curve at 10deg/100' build rate
- 6) Drill to csg point of 5273' MD
- 7) R&C 7" csg, circ cmt to surface
- 8) Land at ~90 deg, drill lateral to 11900' run 4 1/2 inch cemented liner



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Pinon Unit D14-2410 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	15' KB @ 6891.0usft (A920)
Project:	San Juan County, NM	MD Reference:	15' KB @ 6891.0usft (A920)
Site:	S14-T24N-R10W	North Reference:	True
Well:	Pinon Unit D14-2410 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

Project	San Juan County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site		S14-T24N-R10W			
Site Position:		Northing:	1,934,890.44 usft	Latitude:	36.317549
From:	Lat/Long	Easting:	2,711,381.53 usft	Longitude:	-107.873083
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.02 °

Well	Pinon Unit D14-2410 01H					
Well Position	+N/-S	0.0 usft	Northing:	1,934,917.37 usft	Latitude:	36.317623
	+E/-W	0.0 usft	Easting:	2,711,394.51 usft	Longitude:	-107.873039
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	6,876.0 usft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/13/2013	9.62	63.02	50,252

Design	Plan #4				
Audit Notes:					
Version:	Phase:	PLAN		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	268.56	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,457.0	0.00	0.00	4,457.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,943.4	38.91	326.70	4,906.8	132.8	-87.2	8.00	8.00	0.00	326.70	
5,834.4	90.80	268.56	5,299.3	389.5	-777.7	8.00	5.82	-6.52	-63.71	PU D14-2410 01H PC
12,284.0	90.80	268.56	5,209.2	227.7	-7,224.6	0.00	0.00	0.00	0.00	PU D14-2410 01H PE

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Pinon Unit D14-2410 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	15' KB @ 6891.0usft (A920)
Project:	San Juan County, NM	MD Reference:	15' KB @ 6891.0usft (A920)
Site:	S14-T24N-R10W	North Reference:	True
Well:	Pinon Unit D14-2410 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	9 5/8"
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
722.0	0.00	0.00	722.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo Ss.
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
878.0	0.00	0.00	878.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,178.0	0.00	0.00	1,178.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,572.0	0.00	0.00	1,572.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,687.0	0.00	0.00	1,687.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	
2,359.0	0.00	0.00	2,359.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss.
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	
3,107.0	0.00	0.00	3,107.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn.
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	
4,051.0	0.00	0.00	4,051.0	0.0	0.0	0.0	0.00	0.00	Point Lookout Ss.
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	
4,229.0	0.00	0.00	4,229.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Pinon Unit D14-2410 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	15' KB @ 6891.0usft (A920)
Project:	San Juan County, NM	MD Reference:	15' KB @ 6891.0usft (A920)
Site:	S14-T24N-R10W	North Reference:	True
Well:	Pinon Unit D14-2410 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	
4,457.0	0.00	0.00	4,457.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4457'
4,500.0	3.44	326.70	4,500.0	1.1	-0.7	0.7	8.00	8.00	
4,600.0	11.44	326.70	4,599.1	11.9	-7.8	7.5	8.00	8.00	
4,700.0	19.44	326.70	4,695.4	34.1	-22.4	21.6	8.00	8.00	
4,800.0	27.44	326.70	4,787.0	67.3	-44.2	42.5	8.00	8.00	
4,815.1	28.65	326.70	4,800.4	73.3	-48.1	46.3	8.00	8.00	Mancos Silt
4,900.0	35.44	326.70	4,872.3	110.9	-72.9	70.0	8.00	8.00	
4,943.4	38.91	326.70	4,906.8	132.8	-87.2	83.9	8.00	8.00	Start build/turn @ 4943' MD
5,000.0	41.09	320.51	4,950.2	162.0	-108.9	104.7	8.00	3.84	
5,100.0	45.63	310.91	5,023.0	210.9	-156.8	151.5	8.00	4.55	
5,177.5	49.64	304.49	5,075.3	245.8	-202.2	195.9	8.00	5.17	Gallup Fn.
5,200.0	50.87	302.78	5,089.6	255.4	-216.6	210.1	8.00	5.45	
5,272.8	54.99	297.62	5,133.5	284.5	-266.8	259.5	8.00	5.66	7" ICP @ 55°
5,300.0	56.58	295.83	5,148.8	294.6	-286.9	279.4	8.00	5.86	
5,400.0	62.64	289.76	5,199.4	327.9	-366.3	358.0	8.00	6.06	
5,500.0	68.93	284.33	5,240.4	354.5	-453.5	444.4	8.00	6.29	
5,600.0	75.38	279.35	5,271.1	373.9	-546.6	537.0	8.00	6.45	
5,700.0	81.92	274.66	5,290.8	385.8	-643.8	633.9	8.00	6.55	
5,800.0	88.52	270.11	5,299.1	389.9	-743.3	733.3	8.00	6.60	
5,828.6	90.41	268.83	5,299.4	389.7	-771.9	761.8	8.00	6.61	Horizontal Target
5,834.4	90.80	268.56	5,299.3	389.5	-777.7	767.7	8.00	6.61	LP @ 5299' TVD; 90.8°
5,900.0	90.80	268.56	5,298.4	387.9	-843.3	833.2	0.00	0.00	
6,000.0	90.80	268.56	5,297.0	385.4	-943.2	933.2	0.00	0.00	
6,100.0	90.80	268.56	5,295.6	382.9	-1,043.2	1,033.2	0.00	0.00	
6,200.0	90.80	268.56	5,294.2	380.3	-1,143.1	1,133.2	0.00	0.00	
6,300.0	90.80	268.56	5,292.8	377.8	-1,243.1	1,233.2	0.00	0.00	
6,400.0	90.80	268.56	5,291.4	375.3	-1,343.1	1,333.2	0.00	0.00	
6,500.0	90.80	268.56	5,290.0	372.8	-1,443.0	1,433.2	0.00	0.00	
6,600.0	90.80	268.56	5,288.6	370.3	-1,543.0	1,533.2	0.00	0.00	
6,700.0	90.80	268.56	5,287.2	367.8	-1,642.9	1,633.2	0.00	0.00	
6,800.0	90.80	268.56	5,285.8	365.3	-1,742.9	1,733.2	0.00	0.00	
6,900.0	90.80	268.56	5,284.4	362.8	-1,842.8	1,833.1	0.00	0.00	
7,000.0	90.80	268.56	5,283.0	360.3	-1,942.8	1,933.1	0.00	0.00	
7,100.0	90.80	268.56	5,281.6	357.8	-2,042.8	2,033.1	0.00	0.00	
7,200.0	90.80	268.56	5,280.2	355.3	-2,142.7	2,133.1	0.00	0.00	
7,300.0	90.80	268.56	5,278.8	352.7	-2,242.7	2,233.1	0.00	0.00	
7,400.0	90.80	268.56	5,277.4	350.2	-2,342.6	2,333.1	0.00	0.00	
7,500.0	90.80	268.56	5,276.0	347.7	-2,442.6	2,433.1	0.00	0.00	
7,600.0	90.80	268.56	5,274.6	345.2	-2,542.6	2,533.1	0.00	0.00	
7,700.0	90.80	268.56	5,273.2	342.7	-2,642.5	2,633.1	0.00	0.00	
7,800.0	90.80	268.56	5,271.8	340.2	-2,742.5	2,733.1	0.00	0.00	
7,900.0	90.80	268.56	5,270.4	337.7	-2,842.4	2,833.1	0.00	0.00	
8,000.0	90.80	268.56	5,269.0	335.2	-2,942.4	2,933.0	0.00	0.00	
8,100.0	90.80	268.56	5,267.7	332.7	-3,042.4	3,033.0	0.00	0.00	
8,200.0	90.80	268.56	5,266.3	330.2	-3,142.3	3,133.0	0.00	0.00	
8,300.0	90.80	268.56	5,264.9	327.7	-3,242.3	3,233.0	0.00	0.00	
8,400.0	90.80	268.56	5,263.5	325.2	-3,342.2	3,333.0	0.00	0.00	
8,500.0	90.80	268.56	5,262.1	322.6	-3,442.2	3,433.0	0.00	0.00	
8,600.0	90.80	268.56	5,260.7	320.1	-3,542.1	3,533.0	0.00	0.00	
8,700.0	90.80	268.56	5,259.3	317.6	-3,642.1	3,633.0	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Pinon Unit D14-2410 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	15' KB @ 6891.0usft (A920)
Project:	San Juan County, NM	MD Reference:	15' KB @ 6891.0usft (A920)
Site:	S14-T24N-R10W	North Reference:	True
Well:	Pinon Unit D14-2410 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
8,800.0	90.80	268.56	5,257.9	315.1	-3,742.1	3,733.0	0.00	0.00	
8,900.0	90.80	268.56	5,256.5	312.6	-3,842.0	3,833.0	0.00	0.00	
9,000.0	90.80	268.56	5,255.1	310.1	-3,942.0	3,932.9	0.00	0.00	
9,100.0	90.80	268.56	5,253.7	307.6	-4,041.9	4,032.9	0.00	0.00	
9,200.0	90.80	268.56	5,252.3	305.1	-4,141.9	4,132.9	0.00	0.00	
9,300.0	90.80	268.56	5,250.9	302.6	-4,241.9	4,232.9	0.00	0.00	
9,400.0	90.80	268.56	5,249.5	300.1	-4,341.8	4,332.9	0.00	0.00	
9,500.0	90.80	268.56	5,248.1	297.6	-4,441.8	4,432.9	0.00	0.00	
9,600.0	90.80	268.56	5,246.7	295.0	-4,541.7	4,532.9	0.00	0.00	
9,700.0	90.80	268.56	5,245.3	292.5	-4,641.7	4,632.9	0.00	0.00	
9,800.0	90.80	268.56	5,243.9	290.0	-4,741.7	4,732.9	0.00	0.00	
9,900.0	90.80	268.56	5,242.5	287.5	-4,841.6	4,832.9	0.00	0.00	
10,000.0	90.80	268.56	5,241.1	285.0	-4,941.6	4,932.8	0.00	0.00	
10,100.0	90.80	268.56	5,239.7	282.5	-5,041.5	5,032.8	0.00	0.00	
10,200.0	90.80	268.56	5,238.3	280.0	-5,141.5	5,132.8	0.00	0.00	
10,300.0	90.80	268.56	5,236.9	277.5	-5,241.4	5,232.8	0.00	0.00	
10,400.0	90.80	268.56	5,235.5	275.0	-5,341.4	5,332.8	0.00	0.00	
10,500.0	90.80	268.56	5,234.1	272.5	-5,441.4	5,432.8	0.00	0.00	
10,600.0	90.80	268.56	5,232.7	270.0	-5,541.3	5,532.8	0.00	0.00	
10,700.0	90.80	268.56	5,231.3	267.4	-5,641.3	5,632.8	0.00	0.00	
10,800.0	90.80	268.56	5,229.9	264.9	-5,741.2	5,732.8	0.00	0.00	
10,900.0	90.80	268.56	5,228.5	262.4	-5,841.2	5,832.8	0.00	0.00	
11,000.0	90.80	268.56	5,227.1	259.9	-5,941.2	5,932.7	0.00	0.00	
11,100.0	90.80	268.56	5,225.7	257.4	-6,041.1	6,032.7	0.00	0.00	
11,200.0	90.80	268.56	5,224.3	254.9	-6,141.1	6,132.7	0.00	0.00	
11,300.0	90.80	268.56	5,222.9	252.4	-6,241.0	6,232.7	0.00	0.00	
11,400.0	90.80	268.56	5,221.5	249.9	-6,341.0	6,332.7	0.00	0.00	
11,500.0	90.80	268.56	5,220.2	247.4	-6,441.0	6,432.7	0.00	0.00	
11,600.0	90.80	268.56	5,218.8	244.9	-6,540.9	6,532.7	0.00	0.00	
11,700.0	90.80	268.56	5,217.4	242.4	-6,640.9	6,632.7	0.00	0.00	
11,800.0	90.80	268.56	5,216.0	239.8	-6,740.8	6,732.7	0.00	0.00	
11,900.0	90.80	268.56	5,214.6	237.3	-6,840.8	6,832.7	0.00	0.00	
12,000.0	90.80	268.56	5,213.2	234.8	-6,940.7	6,932.7	0.00	0.00	
12,100.0	90.80	268.56	5,211.8	232.3	-7,040.7	7,032.6	0.00	0.00	
12,200.0	90.80	268.56	5,210.4	229.8	-7,140.7	7,132.6	0.00	0.00	
12,284.0	90.80	268.56	5,209.2	227.7	-7,224.6	7,216.6	0.00	0.00	TD at 12284.0

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Pinon Unit D14-2410 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	15' KB @ 6891.0usft (A920)
Project:	San Juan County, NM	MD Reference:	15' KB @ 6891.0usft (A920)
Site:	S14-T24N-R10W	North Reference:	True
Well:	Pinon Unit D14-2410 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
Good Times D14-2410 C	0.00	0.00	5,309.9	389.5	-777.7	1,935,307.21	2,710,616.94	36.318693	-107.875679
- plan misses target center by 10.6usft at 5834.3usft MD (5299.3 TVD, 389.5 N, -777.6 E)									
- Point									
PU D14-2410 01H POE	0.00	0.00	5,323.9	389.5	-777.7	1,935,307.21	2,710,616.94	36.318693	-107.875679
- plan misses target center by 24.6usft at 5834.2usft MD (5299.3 TVD, 389.5 N, -777.5 E)									
- Point									
PU D14-2410 01H PBHL	0.00	0.00	5,209.2	227.7	-7,224.6	1,935,148.04	2,704,169.97	36.318246	-107.897563
- plan hits target center									
- Point									
Good Times D14-2410 C	0.00	0.00	5,262.5	244.4	-5,314.8	1,935,163.95	2,706,079.83	36.318293	-107.891080
- plan misses target center by 41.0usft at 10373.8usft MD (5235.9 TVD, 275.6 N, -5315.2 E)									
- Point									
PU D14-2410 01H PBHL	0.00	0.00	5,256.4	227.7	-7,224.6	1,935,148.04	2,704,169.97	36.318246	-107.897563
- plan misses target center by 47.2usft at 12283.3usft MD (5209.2 TVD, 227.7 N, -7224.0 E)									
- Point									
PU D14-2410 01H POE	0.00	0.00	5,299.3	389.5	-777.7	1,935,307.21	2,710,616.94	36.318693	-107.875679
- plan hits target center									
- Point									
	500.0	500.0	9 5/8"					0	0
	5,272.8	5,133.5	7" ICP @ 55°					0	0

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(usft)	(usft)			(°)	(°)
722.0	722.0	Ojo Alamo Ss.		-0.80	268.56
878.0	878.0	Kirtland Shale		-0.80	268.56
1,178.0	1,178.0	Fruitland Coal		-0.80	268.56
1,572.0	1,572.0	Pictured Cliffs Ss.		-0.80	268.56
1,687.0	1,687.0	Lewis Shale		-0.80	268.56
2,359.0	2,359.0	Cliffhouse Ss.		-0.80	268.56
3,107.0	3,107.0	Menefee Fn.		-0.80	268.56
4,051.0	4,051.0	Point Lookout Ss.		-0.80	268.56
4,229.0	4,229.0	Mancos Shale		-0.80	268.56
4,815.1	4,801.0	Mancos Silt		-0.80	268.56
5,177.5	5,078.0	Gallup Fn.		-0.80	268.56
5,828.6	5,310.0	Horizontal Target		-0.80	268.56

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		
(usft)	(usft)	+N/-S	+E/-W	Comment
(usft)	(usft)	(usft)	(usft)	
4,457.0	4,457.0	0.0	0.0	KOP @ 4457'
4,943.4	4,906.8	132.8	-87.2	Start build/turn @ 4943' MD
5,834.4	5,299.3	389.5	-777.7	LP @ 5299' TVD; 90.8°
12,284.0	5,209.2	227.7	-7,224.6	TD at 12284.0