

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary-Designate

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey, Division Director
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions
listed below are made in accordance with OCD Rule 19.15.7.11
and are in addition to the actions approved by BLM on the
following 3160-4 or 3160-5 form.

Operator Signature Date: January 9, 2014

Application Type:

☐ P&A ☒ Drilling/Casing Change ☐ Recomplete/DHC
☒ Location Change ☒ Other: _Geo tops_

Well information:

API WELL #	Well Name	Well #	Operator Name	Type	Stat	County	Surf. Owner	UL	Sec	Twp	N/S	Rng	W/E
30-043-21177-00-00	LYBROOK P28 2306	002H	ENCANA OIL & GAS (USA) INC.	O	N	Sandoval	F	P	28	23	N	6	W

Conditions of Approval:

Notify NMOCD 24hrs prior to beginning operations

Hold C-104 for directional survey & "As Drilled" Plat

NMOCD Approved by Signature

2-21-14
Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONFIDENTIAL

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.
NMNM 112953 NMNM 109386

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

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)
720-876-3437

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SHL: 348' FSL and 1252' FEL Sec 28, T23N, R6W
BHL: 2373' FNL and 400' FEL Sec 4, T22N, R6W

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

8. Well Name and No.
Lybrook P28-2306 02H

9. API Well No.
PENDING 30-043-21177

10. Field and Pool or Exploratory Area
Lybrook Gallup

11. Country or Parish, State
Sandoval, New Mexico

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. would like to change the BHL on the Lybrook P28-2306 02H well from 2330' FNL and 450' FEL Sec 4, T22N, R6W to 2373' FNL and 400' FEL Sec 4, T22N, R6W. This will also slightly change the TD, kick off point, intermediate casing point and cementing program for the well. Please see attached C-102, directional plan, 10 point drilling plan and wellbore diagram for details.

RCVD FEB 21 '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)
Amanda Cavoto

Title Engineering Technologist

Signature

Date

1/9/14

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Petroleum Engineer

Date

02/13/2014

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.

NMOCDAV

District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

OIL CONSERVATION DIVISION
1220 South St. Francis Drive
Santa Fe, NM 87505

Submit one copy to
Appropriate District Office

RECEIVED
IMPROVED REPORT

JAN 10 2014

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number		*Pool Code 42289	*Pool Name LYBROOK GALLUP	Bureau of Land Management
*Property Code	*Property Name LYBROOK P28-2306			*Well Number 02H
*OGRID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.			*Elevation 7211'

10 Surface Location

U. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	28	23N	6W		348	SOUTH	1252	EAST	SANDOVAL

¹¹ Bottom Hole Location If Different From Surface

U. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	4	22N	6W		2373	NORTH	400	EAST	SANDOVAL

Dedicated Acres	E/2 E/2 - Section 33
240.83 Acres	E/2 NE/4 - Section 4

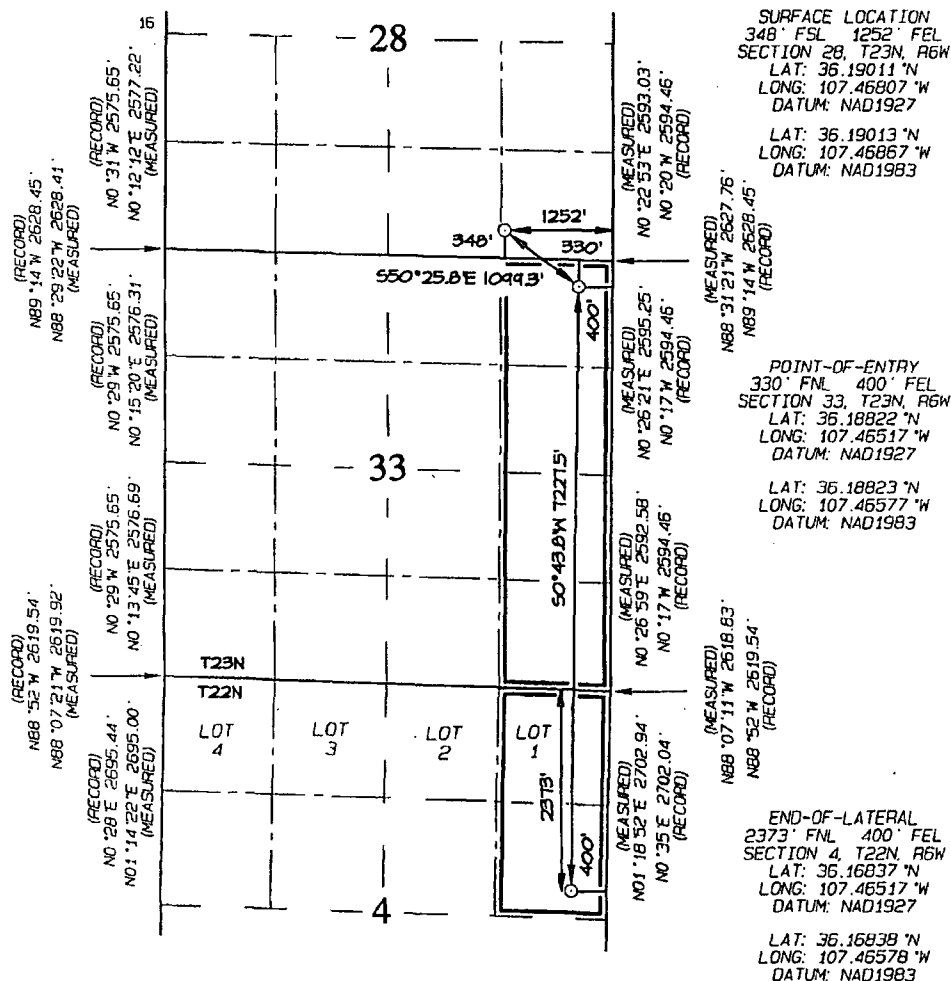
¹³ Joint or Infill

¹⁴ Consolidation Code

15	Order No.
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RCVD FEB 21 '14
BY CHAS BULL

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



1000

17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral interest and that this is not an unleased pooling agreement or a compulsory pooling order heretofore entered by the Division.

Signature Holly Sku Date 12/12/13

Holly Hill
Printed Name

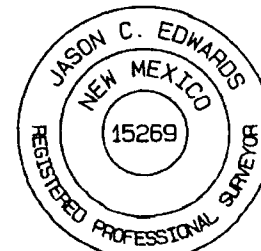
E-mail Address billy.hill@encana.com

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: DECEMBER 11, 2013
Survey Date: OCTOBER 2, 2012

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

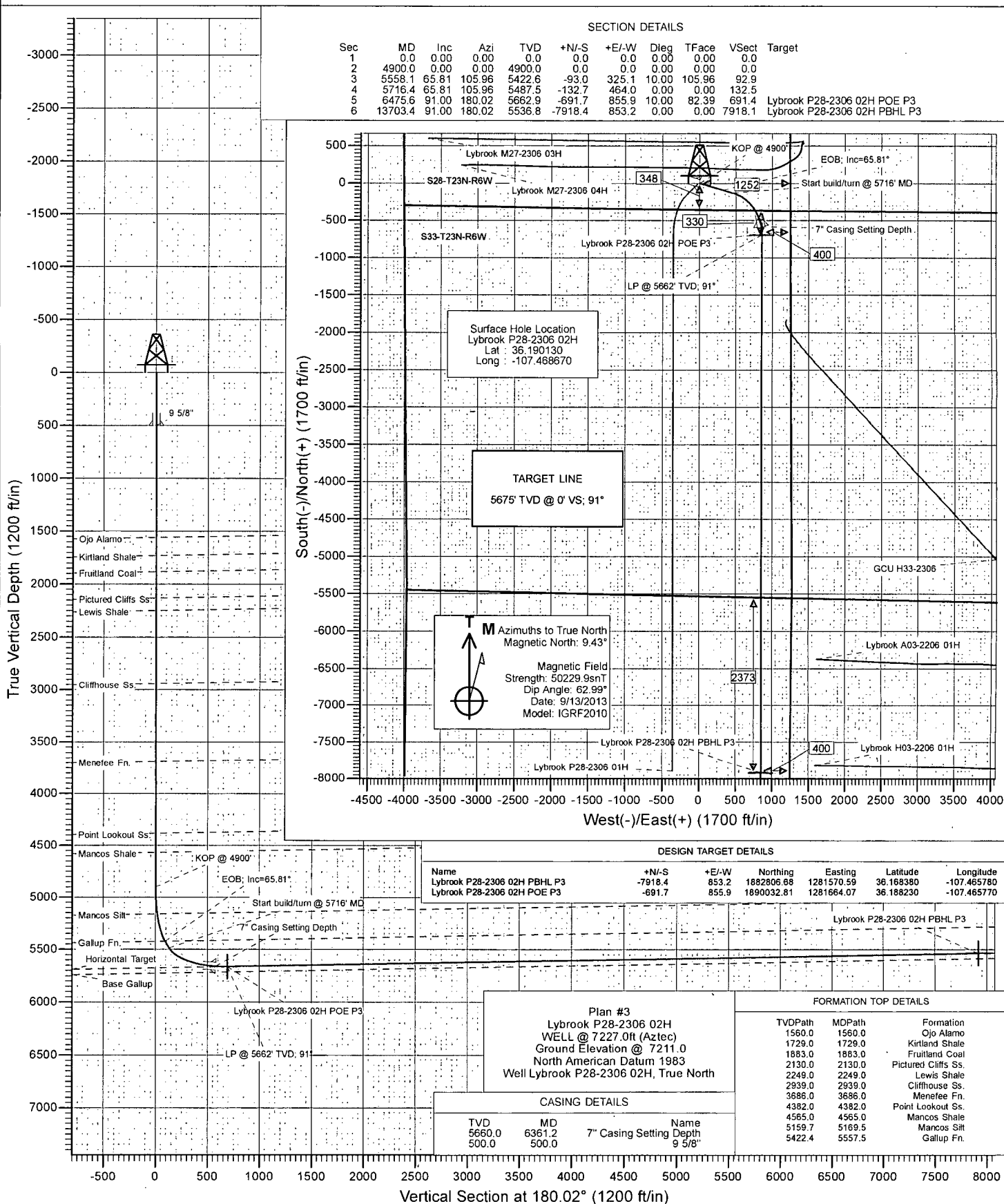


Project: Sandoval County, NM
 Site: Lybrook
 Well: Lybrook P28-2306 02H
 Wellbore: HZ
 Design: Plan #3



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.00	0.00	0.00	0.0	
2	4900.0	0.00	0.00	4900.0	0.0	0.00	0.00	0.00	0.0	
3	5558.1	65.81	105.96	5422.6	-93.0	325.1	10.00	105.96	92.9	
4	5716.4	65.81	105.96	5487.5	-132.7	464.0	0.00	0.00	132.5	
5	6475.6	91.00	180.02	5662.9	-691.7	855.9	10.00	82.39	691.4	Lybrook P28-2306 02H POE P3
6	13703.4	91.00	180.02	5536.8	-7918.4	853.2	0.00	0.00	7918.1	Lybrook P28-2306 02H PBHL P3



DESIGN TARGET DETAILS					
Name	+N/-S	+E/-W	Northing	Easting	Latitude
Lybrook P28-2306 02H PBHL P3	-7918.4	853.2	1882806.88	1281570.59	36.188380
Lybrook P28-2306 02H POE P3	-691.7	855.9	1890032.81	1281664.07	-107.465770

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1560.0	1560.0	Ojo Alamo
1729.0	1729.0	Kirtland Shale
1883.0	1883.0	Fruitland Coal
2130.0	2130.0	Pictured Cliffs Ss
2249.0	2249.0	Lewis Shale
2939.0	2939.0	Cliffhouse Ss
3686.0	3686.0	Menefee Fn.
4382.0	4382.0	Point Lookout Ss
4565.0	4565.0	Mancos Shale
5159.7	5169.5	Mancos Silt
5422.4	5557.5	Gallup Fn.

CASING DETAILS			
TVD	MD	7\" Casing Setting Depth	Name
5660.0	6361.2	9 5/8\"	
500.0	500.0		

Plan #3
 Lybrook P28-2306 02H
 WELL @ 7227.0ft (Aztec)
 Ground Elevation @ 7211.0
 North American Datum 1983
 Well Lybrook P28-2306 02H, True North

Vertical Section at 180.02° (1200 ft/in)

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook P28-2306 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7227.0ft (Aztec)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7227.0ft (Aztec)
Site:	Lybrook	North Reference:	True
Well:	Lybrook P28-2306 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

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

Site	Lybrook				
Site Position:		Northing:	1,882,676.45 ft	Latitude:	36.168210
From:	Lat/Long	Easting:	1,287,068.90 ft	Longitude:	-107.447150
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-0.71 °

Well	Lybrook P28-2306 02H					
Well Position	+N/-S	0.0 ft	Northing:	1,890,735.22 ft	Latitude:	36.190130
	+E/-W	0.0 ft	Easting:	1,280,816.97 ft	Longitude:	-107.468670
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,211.0 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/13/2013	9.43	62.99	50,230

Design	Plan #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	180.02

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,558.1	65.81	105.96	5,422.6	-93.0	325.1	10.00	10.00	0.00	105.96	
5,716.4	65.81	105.96	5,487.5	-132.7	464.0	0.00	0.00	0.00	0.00	
6,475.6	91.00	180.02	5,662.9	-691.7	855.9	10.00	3.32	9.76	82.39	Lybrook P28-2306 02
13,703.4	91.00	180.02	5,536.8	-7,918.4	853.2	0.00	0.00	0.00	0.00	Lybrook P28-2306 02

$$PBHL \left\{ \begin{aligned} Y-P &= [2702.94 - (348 + 7890.77 - 7918.4)]_{ft} = 2382.57 \approx 2383 ft/N \quad (Sec. 4, T: 22N, R: 6W) \\ X-P &= (1252 - 853.2)_{ft} = 398.8 \approx 399 ft/E \quad (Sec. 4, T: 22N, R: 6W) \end{aligned} \right.$$

William Tambekou
02/13/2014

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook P28-2306 02H
Wellbore: HZ
Design: Plan #3

Local Co-ordinate Reference: Well Lybrook P28-2306 02H
TVD Reference: WELL @ 7227.0ft (Aztec)
MD Reference: WELL @ 7227.0ft (Aztec)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	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	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
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	
1,200.0	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	
1,560.0	0.00	0.00	1,560.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,729.0	0.00	0.00	1,729.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,883.0	0.00	0.00	1,883.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
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	
2,130.0	0.00	0.00	2,130.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
2,249.0	0.00	0.00	2,249.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	
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	
2,939.0	0.00	0.00	2,939.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss.
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	
3,200.0	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	
3,686.0	0.00	0.00	3,686.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn.
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	
4,100.0	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	
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	
4,382.0	0.00	0.00	4,382.0	0.0	0.0	0.0	0.00	0.00	Point Lookout Ss.

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook P28-2306 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7227.0ft (Aztec)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7227.0ft (Aztec)
Site:	Lybrook	North Reference:	True
Well:	Lybrook P28-2306 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	
4,565.0	0.00	0.00	4,565.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4900'
5,000.0	10.00	105.96	4,999.5	-2.4	8.4	2.4	10.00	10.00	
5,100.0	20.00	105.96	5,096.0	-9.5	33.2	9.5	10.00	10.00	
5,169.5	26.95	105.96	5,159.7	-17.1	59.8	17.1	10.00	10.00	Mancos Silt
5,200.0	30.00	105.96	5,186.5	-21.1	73.8	21.1	10.00	10.00	
5,300.0	40.00	105.96	5,268.3	-36.9	128.9	36.8	10.00	10.00	
5,400.0	50.00	105.96	5,338.9	-56.3	196.8	56.2	10.00	10.00	
5,500.0	60.00	105.96	5,396.2	-78.8	275.4	78.7	10.00	10.00	
5,557.5	65.75	105.96	5,422.4	-92.8	324.6	92.7	10.00	10.00	Gallup Fn.
5,558.1	65.81	105.96	5,422.6	-93.0	325.1	92.9	10.00	10.00	EOB; Inc=65.81°
5,600.0	65.81	105.96	5,439.8	-103.5	361.9	103.4	0.00	0.00	
5,700.0	65.81	105.96	5,480.8	-128.6	449.6	128.4	0.00	0.00	
5,716.4	65.81	105.96	5,487.5	-132.7	464.0	132.5	0.00	0.00	Start build/turn @ 5716' MD
5,800.0	67.18	114.95	5,520.9	-159.5	535.7	159.3	10.00	1.64	
5,900.0	69.46	125.43	5,558.0	-206.2	615.8	205.9	10.00	2.28	
6,000.0	72.35	135.57	5,590.7	-267.5	687.5	267.2	10.00	2.89	
6,100.0	75.74	145.36	5,618.3	-341.6	748.6	341.3	10.00	3.39	
6,200.0	79.51	154.84	5,639.8	-426.1	797.2	425.9	10.00	3.78	
6,300.0	83.56	164.08	5,654.5	-518.7	831.8	518.4	10.00	4.05	
6,361.2	86.13	169.66	5,660.0	-578.0	845.6	577.7	10.00	4.19	7" Casing Setting Depth
6,400.0	87.77	173.18	5,662.1	-616.3	851.4	616.0	10.00	4.24	
6,475.6	91.00	180.02	5,662.9	-691.7	855.9	691.4	10.00	4.27	LP @ 5662' TVD; 91°
6,500.0	91.00	180.02	5,662.5	-716.1	855.8	715.8	0.00	0.00	
6,600.0	91.00	180.02	5,660.7	-816.1	855.8	815.8	0.00	0.00	
6,700.0	91.00	180.02	5,659.0	-916.1	855.8	915.8	0.00	0.00	
6,800.0	91.00	180.02	5,657.2	-1,016.1	855.7	1,015.8	0.00	0.00	
6,900.0	91.00	180.02	5,655.5	-1,116.0	855.7	1,115.7	0.00	0.00	
7,000.0	91.00	180.02	5,653.7	-1,216.0	855.7	1,215.7	0.00	0.00	
7,100.0	91.00	180.02	5,652.0	-1,316.0	855.6	1,315.7	0.00	0.00	
7,200.0	91.00	180.02	5,650.3	-1,416.0	855.6	1,415.7	0.00	0.00	
7,300.0	91.00	180.02	5,648.5	-1,516.0	855.5	1,515.7	0.00	0.00	
7,400.0	91.00	180.02	5,646.8	-1,616.0	855.5	1,615.7	0.00	0.00	
7,500.0	91.00	180.02	5,645.0	-1,715.9	855.5	1,715.6	0.00	0.00	
7,600.0	91.00	180.02	5,643.3	-1,815.9	855.4	1,815.6	0.00	0.00	
7,700.0	91.00	180.02	5,641.5	-1,915.9	855.4	1,915.6	0.00	0.00	
7,800.0	91.00	180.02	5,639.8	-2,015.9	855.4	2,015.6	0.00	0.00	
7,900.0	91.00	180.02	5,638.0	-2,115.9	855.3	2,115.6	0.00	0.00	
8,000.0	91.00	180.02	5,636.3	-2,215.9	855.3	2,215.6	0.00	0.00	
8,100.0	91.00	180.02	5,634.6	-2,315.9	855.2	2,315.6	0.00	0.00	
8,200.0	91.00	180.02	5,632.8	-2,415.8	855.2	2,415.5	0.00	0.00	
8,300.0	91.00	180.02	5,631.1	-2,515.8	855.2	2,515.5	0.00	0.00	
8,400.0	91.00	180.02	5,629.3	-2,615.8	855.1	2,615.5	0.00	0.00	
8,500.0	91.00	180.02	5,627.6	-2,715.8	855.1	2,715.5	0.00	0.00	
8,600.0	91.00	180.02	5,625.8	-2,815.8	855.1	2,815.5	0.00	0.00	
8,700.0	91.00	180.02	5,624.1	-2,915.8	855.0	2,915.5	0.00	0.00	
8,800.0	91.00	180.02	5,622.3	-3,015.7	855.0	3,015.4	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook P28-2306 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7227.0ft (Aztec)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7227.0ft (Aztec)
Site:	Lybrook	North Reference:	True
Well:	Lybrook P28-2306 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
8,900.0	91.00	180.02	5,620.6	-3,115.7	854.9	3,115.4	0.00	0.00	
9,000.0	91.00	180.02	5,618.9	-3,215.7	854.9	3,215.4	0.00	0.00	
9,100.0	91.00	180.02	5,617.1	-3,315.7	854.9	3,315.4	0.00	0.00	
9,200.0	91.00	180.02	5,615.4	-3,415.7	854.8	3,415.4	0.00	0.00	
9,300.0	91.00	180.02	5,613.6	-3,515.7	854.8	3,515.4	0.00	0.00	
9,400.0	91.00	180.02	5,611.9	-3,615.7	854.8	3,615.4	0.00	0.00	
9,500.0	91.00	180.02	5,610.1	-3,715.6	854.7	3,715.3	0.00	0.00	
9,600.0	91.00	180.02	5,608.4	-3,815.6	854.7	3,815.3	0.00	0.00	
9,700.0	91.00	180.02	5,606.6	-3,915.6	854.6	3,915.3	0.00	0.00	
9,800.0	91.00	180.02	5,604.9	-4,015.6	854.6	4,015.3	0.00	0.00	
9,900.0	91.00	180.02	5,603.1	-4,115.6	854.6	4,115.3	0.00	0.00	
10,000.0	91.00	180.02	5,601.4	-4,215.6	854.5	4,215.3	0.00	0.00	
10,100.0	91.00	180.02	5,599.7	-4,315.6	854.5	4,315.3	0.00	0.00	
10,200.0	91.00	180.02	5,597.9	-4,415.5	854.5	4,415.2	0.00	0.00	
10,300.0	91.00	180.02	5,596.2	-4,515.5	854.4	4,515.2	0.00	0.00	
10,400.0	91.00	180.02	5,594.4	-4,615.5	854.4	4,615.2	0.00	0.00	
10,500.0	91.00	180.02	5,592.7	-4,715.5	854.3	4,715.2	0.00	0.00	
10,600.0	91.00	180.02	5,590.9	-4,815.5	854.3	4,815.2	0.00	0.00	
10,700.0	91.00	180.02	5,589.2	-4,915.5	854.3	4,915.2	0.00	0.00	
10,800.0	91.00	180.02	5,587.4	-5,015.4	854.2	5,015.1	0.00	0.00	
10,900.0	91.00	180.02	5,585.7	-5,115.4	854.2	5,115.1	0.00	0.00	
11,000.0	91.00	180.02	5,584.0	-5,215.4	854.2	5,215.1	0.00	0.00	
11,100.0	91.00	180.02	5,582.2	-5,315.4	854.1	5,315.1	0.00	0.00	
11,200.0	91.00	180.02	5,580.5	-5,415.4	854.1	5,415.1	0.00	0.00	
11,300.0	91.00	180.02	5,578.7	-5,515.4	854.0	5,515.1	0.00	0.00	
11,400.0	91.00	180.02	5,577.0	-5,615.4	854.0	5,615.1	0.00	0.00	
11,500.0	91.00	180.02	5,575.2	-5,715.3	854.0	5,715.0	0.00	0.00	
11,600.0	91.00	180.02	5,573.5	-5,815.3	853.9	5,815.0	0.00	0.00	
11,700.0	91.00	180.02	5,571.7	-5,915.3	853.9	5,915.0	0.00	0.00	
11,800.0	91.00	180.02	5,570.0	-6,015.3	853.9	6,015.0	0.00	0.00	
11,900.0	91.00	180.02	5,568.2	-6,115.3	853.8	6,115.0	0.00	0.00	
12,000.0	91.00	180.02	5,566.5	-6,215.3	853.8	6,215.0	0.00	0.00	
12,100.0	91.00	180.02	5,564.8	-6,315.2	853.8	6,314.9	0.00	0.00	
12,200.0	91.00	180.02	5,563.0	-6,415.2	853.7	6,414.9	0.00	0.00	
12,300.0	91.00	180.02	5,561.3	-6,515.2	853.7	6,514.9	0.00	0.00	
12,400.0	91.00	180.02	5,559.5	-6,615.2	853.6	6,614.9	0.00	0.00	
12,500.0	91.00	180.02	5,557.8	-6,715.2	853.6	6,714.9	0.00	0.00	
12,600.0	91.00	180.02	5,556.0	-6,815.2	853.6	6,814.9	0.00	0.00	
12,700.0	91.00	180.02	5,554.3	-6,915.2	853.5	6,914.9	0.00	0.00	
12,800.0	91.00	180.02	5,552.5	-7,015.1	853.5	7,014.8	0.00	0.00	
12,900.0	91.00	180.02	5,550.8	-7,115.1	853.5	7,114.8	0.00	0.00	
13,000.0	91.00	180.02	5,549.1	-7,215.1	853.4	7,214.8	0.00	0.00	
13,100.0	91.00	180.02	5,547.3	-7,315.1	853.4	7,314.8	0.00	0.00	
13,200.0	91.00	180.02	5,545.6	-7,415.1	853.3	7,414.8	0.00	0.00	
13,300.0	91.00	180.02	5,543.8	-7,515.1	853.3	7,514.8	0.00	0.00	
13,400.0	91.00	180.02	5,542.1	-7,615.0	853.3	7,614.7	0.00	0.00	
13,500.0	91.00	180.02	5,540.3	-7,715.0	853.2	7,714.7	0.00	0.00	
13,600.0	91.00	180.02	5,538.6	-7,815.0	853.2	7,814.7	0.00	0.00	
13,700.0	91.00	180.02	5,536.8	-7,915.0	853.2	7,914.7	0.00	0.00	
13,703.4	91.00	180.02	5,536.8	-7,918.4	853.2	7,918.1	0.00	0.00	TD at 13703.4

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook P28-2306 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7227.0ft (Aztec)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7227.0ft (Aztec)
Site:	Lybrook	North Reference:	True
Well:	Lybrook P28-2306 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #3		

Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Lybrook P28-2306 02H F - plan misses target center by 110.9ft at 13658.0ft MD (5537.6 TVD, -7873.0 N, 853.2 E) - Point	0.00	0.00	5,636.5	-7,874.8	803.0	1,882,851.00	1,281,520.96	36.168500	-107.465950
Lybrook P28-2306 02H F - plan misses target center by 50.3ft at 6472.6ft MD (5662.9 TVD, -688.7 N, 855.8 E) - Point	0.00	0.00	5,661.6	-691.7	805.7	1,890,033.43	1,281,613.90	36.188230	-107.465940
Lybrook P28-2306 02H F - plan hits target center - Point	0.00	0.00	5,662.9	-691.7	855.9	1,890,032.81	1,281,664.07	36.188230	-107.465770
Lybrook P28-2306 02H F - plan hits target center - Point	0.00	0.00	5,536.8	-7,918.4	853.2	1,882,806.68	1,281,570.59	36.168380	-107.465780

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
6,361.2	5,660.0	7" Casing Setting Depth	0.000	0.000	
500.0	500.0	9 5/8"	0.000	0.000	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,560.0	1,560.0	Ojo Alamo		-1.00	180.02	
1,729.0	1,729.0	Kirtland Shale		-1.00	180.02	
1,883.0	1,883.0	Fruitland Coal		-1.00	180.02	
2,130.0	2,130.0	Pictured Cliffs Ss.		-1.00	180.02	
2,249.0	2,249.0	Lewis Shale		-1.00	180.02	
2,939.0	2,939.0	Cliffhouse Ss.		-1.00	180.02	
3,686.0	3,686.0	Menefee Fn.		-1.00	180.02	
4,382.0	4,382.0	Point Lookout Ss.		-1.00	180.02	
4,565.0	4,565.0	Mancos Shale		-1.00	180.02	
5,169.5	5,160.0	Mancos Silt		-1.00	180.02	
5,557.5	5,424.0	Gallup Fn.		-1.00	180.02	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
4,900.0	4,900.0	0.0	0.0	KOP @ 4900'	
5,558.1	5,422.6	-93.0	325.1	EOB; Inc=65.81°	
5,716.4	5,487.5	-132.7	464.0	Start build/turn @ 5716' MD	
6,475.6	5,662.9	-691.7	855.9	LP @ 5662' TVD; 91°	
13,703.4	5,536.8	-7,918.4	853.2	TD at 13703.4	

EnCana Oil & Gas (USA) Inc

Sandoval County, NM

Lybrook

Lybrook P28-2306 02H

HZ

Plan #3

Anticollision Report

08 January, 2014

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook P28-2306 02H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7227.0ft (Aztec)
Reference Site:	Lybrook	MD Reference:	WELL @ 7227.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook P28-2306 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Reference	Plan #3
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.0ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,290.8ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	Systematic Ellipse
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program		Date 1/8/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	13,702.9	Plan #3 (HZ)	Geolink MWD	Geolink MWD

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
GCU						
GCU H33-2306 - Hz - Plan #1	7,780.3	5,433.3	433.2	389.1	9.825	CC
GCU H33-2306 - Hz - Plan #1	7,800.0	5,439.9	433.6	388.9	9.711	ES
GCU H33-2306 - Hz - Plan #1	7,900.0	5,475.9	446.4	398.9	9.398	SF
Lybrook						
Lybrook A03-2206 01H - Hz - FINAL	12,154.4	9,565.0	764.6	635.2	5.906	CC, ES
Lybrook A03-2206 01H - Hz - FINAL	12,200.0	9,565.0	766.0	635.7	5.880	SF
Lybrook H03-2206 01H - HZ - FINAL	13,598.5	9,870.0	740.7	585.5	4.772	CC
Lybrook H03-2206 01H - HZ - FINAL	13,600.0	9,870.0	740.7	585.4	4.771	ES
Lybrook H03-2206 01H - HZ - FINAL	13,700.0	9,870.0	747.6	590.6	4.762	SF
Lybrook M27-2306 03H - Hz - Plan #1	5,200.0	6,359.6	591.6	548.9	13.848	SF
Lybrook M27-2306 03H - Hz - Plan #1	5,254.4	6,331.1	589.0	546.8	13.941	CC, ES
Lybrook M27-2306 04H - Hz - FINAL	5,700.0	6,370.5	370.5	336.1	10.776	SF
Lybrook M27-2306 04H - Hz - FINAL	5,724.4	6,349.3	370.0	335.7	10.794	CC, ES
Lybrook P28-2306 01H - Hz - Plan #2	4,900.0	4,900.0	32.9	15.9	1.930	CC, ES, SF

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook P28-2306 02H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7227.0ft (Aztec)
Reference Site:	Lybrook	MD Reference:	WELL @ 7227.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook P28-2306 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:		0.0 ft
GCU - GCU H33-2306 - Hz - Plan #1													Offset Well Error:		0.0 ft
Survey Program: 0-Geolink MWD															
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
6,500.0	5,662.5	5,200.0	5,193.7	25.6	9.1	-39.95	-1,891.0	1,185.6	1,288.9	1,268.1	20.75	62.109			
6,600.0	5,660.7	5,200.0	5,193.7	26.5	9.1	-39.95	-1,891.0	1,185.6	1,197.8	1,176.2	21.62	55.413			
6,700.0	5,659.0	5,216.8	5,209.6	27.5	9.2	-41.30	-1,896.4	1,187.7	1,108.0	1,085.1	22.92	48.343			
6,800.0	5,657.2	5,228.8	5,220.7	28.6	9.2	-42.30	-1,900.5	1,189.4	1,019.7	995.6	24.19	42.153			
6,900.0	5,655.5	5,250.0	5,240.2	29.7	9.3	-44.16	-1,908.1	1,192.8	933.5	907.7	25.81	36.175			
7,000.0	5,653.7	5,250.0	5,240.2	30.9	9.3	-44.16	-1,908.1	1,192.8	849.6	822.7	26.87	31.624			
7,100.0	5,652.0	5,271.9	5,260.0	32.2	9.3	-46.20	-1,916.4	1,196.8	768.8	740.2	28.69	26.800			
7,200.0	5,650.3	5,300.0	5,285.0	33.5	9.4	-48.97	-1,927.9	1,202.9	692.5	661.6	30.86	22.442			
7,300.0	5,648.5	5,300.0	5,285.0	34.8	9.4	-48.97	-1,927.9	1,202.9	621.4	589.3	32.06	19.382			
7,400.0	5,646.8	5,329.3	5,310.3	36.2	9.5	-52.03	-1,940.7	1,210.1	557.7	523.2	34.48	16.173			
7,500.0	5,645.0	5,350.0	5,327.7	37.6	9.6	-54.28	-1,950.3	1,215.8	504.1	467.4	36.65	13.754			
7,600.0	5,643.3	5,378.7	5,351.2	39.1	9.7	-57.47	-1,964.2	1,224.5	463.5	424.3	39.23	11.815			
7,700.0	5,641.5	5,400.0	5,368.1	40.5	9.8	-59.87	-1,975.1	1,231.5	439.4	397.9	41.55	10.576			
7,780.3	5,640.1	5,433.3	5,393.6	41.7	10.0	-63.60	-1,993.0	1,243.4	433.2	389.1	44.09	9.825 CC			
7,800.0	5,639.8	5,439.9	5,398.5	42.0	10.0	-64.35	-1,996.6	1,245.9	433.6	388.9	44.64	9.711 ES			
7,900.0	5,638.0	5,475.9	5,424.3	43.5	10.3	-68.26	-2,017.1	1,260.3	446.4	398.9	47.50	9.398 SF			
8,000.0	5,636.3	5,515.8	5,451.1	45.1	10.6	-72.37	-2,041.1	1,277.7	475.6	425.2	50.35	9.446			
8,100.0	5,634.6	5,560.0	5,478.3	46.6	10.9	-76.49	-2,068.9	1,298.7	517.7	464.6	53.12	9.746			
8,200.0	5,632.8	5,608.6	5,505.1	48.2	11.4	-80.40	-2,100.9	1,323.6	569.2	513.5	55.76	10.208			
8,300.0	5,631.1	5,661.4	5,530.2	49.8	12.0	-83.86	-2,137.0	1,352.7	627.1	568.9	58.26	10.764			
8,400.0	5,629.3	5,718.0	5,552.3	51.4	12.7	-86.69	-2,177.0	1,386.1	689.2	628.6	60.66	11.362			
8,500.0	5,627.6	5,777.6	5,570.0	53.0	13.5	-88.77	-2,220.1	1,423.2	754.0	691.0	63.02	11.965			
8,600.0	5,625.8	5,839.1	5,582.0	54.6	14.4	-90.05	-2,265.2	1,463.3	820.5	755.1	65.38	12.549			
8,700.0	5,624.1	5,900.0	5,587.5	56.2	15.4	-90.61	-2,309.9	1,504.2	888.2	820.4	67.77	13.106			
8,800.0	5,622.3	5,969.8	5,587.8	57.8	16.6	-90.66	-2,360.8	1,552.0	956.6	886.3	70.31	13.606			
8,900.0	5,620.6	6,042.7	5,587.5	59.5	17.9	-90.67	-2,413.8	1,601.8	1,025.2	952.2	72.92	14.058			
9,000.0	5,618.9	6,115.5	5,587.3	61.1	19.2	-90.67	-2,466.9	1,651.7	1,093.7	1,018.1	75.56	14.475			
9,100.0	5,617.1	6,188.3	5,587.0	62.8	20.5	-90.68	-2,520.0	1,701.6	1,162.2	1,084.0	78.22	14.858			
9,200.0	5,615.4	6,261.2	5,586.8	64.4	21.9	-90.68	-2,573.1	1,751.5	1,230.7	1,149.8	80.91	15.211			

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook P28-2306 02H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7227.0ft (Aztec)
Reference Site:	Lybrook	MD Reference:	WELL @ 7227.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook P28-2306 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design Lybrook - Lybrook A03-2206 01H - Hz - FINAL													Offset Site Error:
Survey Program: 510-MWD, 4726-MWD													0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
11,200.0	5,580.5	9,565.0	5,334.7	98.3	110.0	-89.99	-6,369.9	1,618.4	1,222.9	1,110.1	112.84	10.838	
11,300.0	5,578.7	9,565.0	5,334.7	100.1	110.0	-89.99	-6,369.9	1,618.4	1,146.6	1,032.0	114.58	10.007	
11,400.0	5,577.0	9,565.0	5,334.7	101.8	110.0	-89.99	-6,369.9	1,618.4	1,074.1	957.8	116.32	9.234	
11,500.0	5,575.2	9,565.0	5,334.7	103.5	110.0	-89.99	-6,369.9	1,618.4	1,006.4	888.3	118.06	8.524	
11,600.0	5,573.5	9,565.0	5,334.7	105.2	110.0	-89.99	-6,369.9	1,618.4	944.4	824.6	119.81	7.883	
11,700.0	5,571.7	9,565.0	5,334.7	106.9	110.0	-89.99	-6,369.9	1,618.4	889.4	767.9	121.55	7.317	
11,800.0	5,570.0	9,565.0	5,334.7	108.7	110.0	-89.99	-6,369.9	1,618.4	842.8	719.5	123.29	6.835	
11,900.0	5,568.2	9,565.0	5,334.7	110.4	110.0	-89.99	-6,369.9	1,618.4	805.8	680.8	125.04	6.445	
12,000.0	5,566.5	9,565.0	5,334.7	112.1	110.0	-89.99	-6,369.9	1,618.4	780.1	653.3	126.78	6.153	
12,100.0	5,564.8	9,565.0	5,334.7	113.8	110.0	-89.99	-6,369.9	1,618.4	766.6	638.0	128.53	5.964	
12,154.4	5,563.8	9,565.0	5,334.7	114.8	110.0	-89.99	-6,369.9	1,618.4	764.6	635.2	129.47	5.906 CC, ES	
12,200.0	5,563.0	9,565.0	5,334.7	115.6	110.0	-89.99	-6,369.9	1,618.4	766.0	635.7	130.27	5.880 SF	
12,300.0	5,561.3	9,565.0	5,334.7	117.3	110.0	-89.99	-6,369.9	1,618.4	778.4	646.4	132.02	5.896	
12,400.0	5,559.5	9,565.0	5,334.7	119.0	110.0	-89.99	-6,369.9	1,618.4	803.1	669.4	133.76	6.004	
12,500.0	5,557.8	9,565.0	5,334.7	120.8	110.0	-89.99	-6,369.9	1,618.4	839.1	703.6	135.51	6.193	
12,600.0	5,556.0	9,565.0	5,334.7	122.5	110.0	-89.99	-6,369.9	1,618.4	885.0	747.8	137.25	6.448	
12,700.0	5,554.3	9,565.0	5,334.7	124.2	110.0	-89.99	-6,369.9	1,618.4	939.4	800.4	139.00	6.758	
12,800.0	5,552.5	9,565.0	5,334.7	126.0	110.0	-89.99	-6,369.9	1,618.4	1,000.8	860.0	140.74	7.110	
12,900.0	5,550.8	9,565.0	5,334.7	127.7	110.0	-89.99	-6,369.9	1,618.4	1,068.0	925.5	142.49	7.495	
13,000.0	5,549.1	9,565.0	5,334.7	129.4	110.0	-89.99	-6,369.9	1,618.4	1,140.1	995.8	144.24	7.904	
13,100.0	5,547.3	9,565.0	5,334.7	131.2	110.0	-89.99	-6,369.9	1,618.4	1,216.1	1,070.1	145.98	8.330	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook P28-2306 02H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7227.0ft (Aztec)
Reference Site:	Lybrook	MD Reference:	WELL @ 7227.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook P28-2306 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design Lybrook - Lybrook H03-2206 01H - HZ - FINAL													Offset Site Error: 0.0 ft	
Survey Program: 556-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
12,600.0	5,556.0	9,870.0	5,397.0	122.5	117.3	-91.58	-7,814.1	1,593.6	1,243.2	1,105.4	137.77	9.024		
12,700.0	5,554.3	9,870.0	5,397.0	124.2	117.3	-91.58	-7,814.1	1,593.6	1,164.4	1,024.9	139.51	8.346		
12,800.0	5,552.5	9,870.0	5,397.0	126.0	117.3	-91.58	-7,814.1	1,593.6	1,089.1	947.9	141.26	7.710		
12,900.0	5,550.8	9,870.0	5,397.0	127.7	117.3	-91.58	-7,814.1	1,593.6	1,018.1	875.1	143.00	7.119		
13,000.0	5,549.1	9,870.0	5,397.0	129.4	117.3	-91.58	-7,814.1	1,593.6	952.2	807.5	144.75	6.579		
13,100.0	5,547.3	9,870.0	5,397.0	131.2	117.3	-91.58	-7,814.1	1,593.6	892.8	746.3	146.50	6.094		
13,200.0	5,545.6	9,870.0	5,397.0	132.9	117.3	-91.58	-7,814.1	1,593.6	841.1	692.8	148.24	5.674		
13,300.0	5,543.8	9,870.0	5,397.0	134.6	117.3	-91.58	-7,814.1	1,593.6	798.6	648.6	149.99	5.324		
13,400.0	5,542.1	9,870.0	5,397.0	136.4	117.3	-91.58	-7,814.1	1,593.6	766.8	615.1	151.73	5.054		
13,500.0	5,540.3	9,870.0	5,397.0	138.1	117.3	-91.58	-7,814.1	1,593.6	747.2	593.7	153.48	4.868		
13,598.5	5,538.6	9,870.0	5,397.0	139.8	117.3	-91.58	-7,814.1	1,593.6	740.7	585.5	155.20	4.772 CC		
13,600.0	5,538.6	9,870.0	5,397.0	139.8	117.3	-91.58	-7,814.1	1,593.6	740.7	585.4	155.23	4.771 ES		
13,700.0	5,536.8	9,870.0	5,397.0	141.6	117.3	-91.58	-7,814.1	1,593.6	747.6	590.6	156.98	4.762 SF		
13,703.4	5,536.8	9,870.0	5,397.0	141.6	117.3	-91.58	-7,814.1	1,593.6	748.1	591.0	157.04	4.764		

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Reference Site: Lybrook
Site Error: 0.0ft
Reference Well: Lybrook P28-2306 02H
Well Error: 0.0ft
Reference Wellbore: HZ
Reference Design: Plan #3

Local Co-ordinate Reference: Well Lybrook P28-2306 02H
TVD Reference: WELL @ 7227.0ft (Aztec)
MD Reference: WELL @ 7227.0ft (Aztec)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: USA EDM 5000 Multi Users DB
Offset TVD Reference: Offset Datum

Offset Design Lybrook - Lybrook M27-2306 03H - Hz - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
4,200.0	4,200.0	6,437.2	5,258.0	7.3	36.0	0.36	551.2	3.5	1,266.3	1,244.7	21.59	58.662	
4,300.0	4,300.0	6,436.8	5,258.1	7.5	36.0	0.40	551.2	3.8	1,177.1	1,155.3	21.75	54.130	
4,400.0	4,400.0	6,436.5	5,258.1	7.7	36.0	0.43	551.2	4.2	1,089.7	1,067.8	21.90	49.748	
4,500.0	4,500.0	6,436.1	5,258.1	7.8	36.0	0.47	551.2	4.5	1,004.7	982.7	22.06	45.537	
4,600.0	4,600.0	6,435.8	5,258.1	8.0	36.0	0.51	551.2	4.9	922.8	900.5	22.22	41.522	
4,700.0	4,700.0	6,435.4	5,258.1	8.2	36.0	0.54	551.2	5.2	844.7	822.3	22.38	37.737	
4,800.0	4,800.0	6,435.1	5,258.1	8.3	36.0	0.58	551.2	5.6	771.7	749.1	22.54	34.232	
4,900.0	4,900.0	6,434.7	5,258.1	8.5	35.9	0.61	551.2	5.9	705.3	682.6	22.70	31.068	
5,000.0	4,999.5	6,426.0	5,258.1	8.7	35.7	-110.82	551.0	14.7	649.9	605.6	44.27	14.680	
5,100.0	5,096.0	6,400.7	5,258.2	8.9	35.1	-112.35	550.7	39.9	611.1	567.6	43.58	14.023	
5,200.0	5,186.5	6,359.6	5,258.3	9.2	34.1	-110.58	550.1	81.0	591.6	548.9	42.72	13.848 SF	
5,254.4	5,232.2	6,331.1	5,258.4	9.4	33.5	-108.47	549.8	109.5	589.0	546.8	42.25	13.941 CC, ES	
5,300.0	5,268.3	6,304.1	5,258.5	9.7	32.8	-106.19	549.4	136.5	590.7	548.9	41.80	14.132	
5,400.0	5,338.9	6,235.7	5,258.8	10.4	31.2	-100.03	548.5	204.9	604.8	563.9	40.85	14.804	
5,500.0	5,396.2	6,156.5	5,259.0	11.5	29.3	-93.23	547.4	284.1	628.6	588.7	39.90	15.757	
5,600.0	5,439.8	6,069.6	5,259.3	12.9	27.3	-88.15	546.2	371.0	657.2	618.1	39.07	16.823	
5,700.0	5,480.8	5,981.4	5,259.6	14.4	25.2	-85.18	545.0	459.2	687.9	649.4	38.45	17.891	
5,800.0	5,520.9	5,894.8	5,259.9	16.1	23.2	-85.24	543.9	545.8	725.8	688.8	36.98	19.627	
5,900.0	5,558.0	5,813.9	5,260.2	17.8	21.4	-85.11	542.8	626.7	779.5	744.4	35.06	22.233	
6,000.0	5,590.7	5,741.2	5,260.5	19.5	19.8	-83.66	541.8	699.3	846.6	813.6	32.99	25.664	
6,100.0	5,618.3	5,679.1	5,260.7	21.0	18.4	-80.03	540.9	761.5	924.6	893.8	30.83	29.995	
6,200.0	5,639.8	5,629.3	5,260.9	22.4	17.4	-72.47	540.3	811.2	1,011.1	982.7	28.39	35.610	
6,300.0	5,654.5	5,593.4	5,261.0	23.6	16.6	-57.30	539.8	847.2	1,103.4	1,078.7	24.74	44.594	
6,400.0	5,662.1	5,580.1	5,260.9	24.6	16.3	-28.06	539.6	860.4	1,199.2	1,181.4	17.77	67.467	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Reference Site: Lybrook
Site Error: 0.0ft
Reference Well: Lybrook P28-2306 02H
Well Error: 0.0ft
Reference Wellbore: HZ
Reference Design: Plan #3

Local Co-ordinate Reference: Well Lybrook P28-2306 02H
TVD Reference: WELL @ 7227.0ft (Aztec)
MD Reference: WELL @ 7227.0ft (Aztec)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: USA EDM 5000 Multi Users DB
Offset TVD Reference: Offset Datum

Offset Design Lybrook - Lybrook M27-2306 04H - Hz - FINAL													Offset Site Error: 0.0 ft	
Survey Program: 138-Geolink MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
4,500.0	4,500.0	6,822.0	5,601.0	7.8	35.7	4.85	205.7	17.4	1,198.0	1,178.2	19.74	60.673		
4,600.0	4,600.0	6,822.6	5,601.0	8.0	35.7	4.67	205.7	16.8	1,099.6	1,079.7	19.93	55.181		
4,700.0	4,700.0	6,824.2	5,601.1	8.2	35.8	4.24	205.7	15.3	1,001.5	981.4	20.12	49.767		
4,800.0	4,800.0	6,825.7	5,601.1	8.3	35.8	3.82	205.7	13.7	903.9	883.6	20.33	44.467		
4,900.0	4,900.0	6,827.2	5,601.1	8.5	35.8	3.40	205.7	12.2	806.9	786.3	20.54	39.291		
5,000.0	4,999.5	6,819.8	5,601.0	8.7	35.7	-128.88	205.7	19.7	711.7	668.3	43.36	16.416		
5,100.0	5,096.0	6,796.0	5,600.7	8.9	35.1	-139.59	205.3	43.5	622.1	581.6	40.49	15.366		
5,200.0	5,186.5	6,755.0	5,600.4	9.2	34.1	-143.00	204.2	84.4	542.1	504.1	37.98	14.274		
5,300.0	5,268.3	6,697.4	5,600.0	9.7	32.8	-142.56	202.0	142.0	475.3	439.4	35.92	13.234		
5,400.0	5,338.9	6,625.9	5,598.9	10.4	31.2	-139.65	199.3	213.4	424.9	390.6	34.30	12.386		
5,500.0	5,396.2	6,546.8	5,597.2	11.5	29.4	-135.34	196.1	292.4	392.8	359.6	33.19	11.833		
5,600.0	5,439.8	6,458.5	5,596.5	12.9	27.4	-129.85	191.4	380.6	378.0	344.7	33.26	11.363		
5,700.0	5,480.8	6,370.5	5,594.9	14.4	25.5	-123.49	187.1	468.4	370.5	336.1	34.38	10.776 SF		
5,724.4	5,490.8	6,349.3	5,594.4	14.8	25.0	-122.79	186.1	489.7	370.0	335.7	34.28	10.794 CC, ES		
5,800.0	5,520.9	6,288.8	5,593.1	16.1	23.7	-120.98	183.6	550.1	375.1	341.4	33.75	11.116		
5,900.0	5,558.0	6,214.1	5,592.5	17.8	22.2	-119.64	181.6	624.8	404.1	371.9	32.26	12.527		
6,000.0	5,590.7	6,148.5	5,592.0	19.5	20.8	-118.71	180.6	690.4	455.3	424.6	30.61	14.871		
6,100.0	5,618.3	6,087.5	5,591.0	21.0	19.6	-117.47	180.6	751.3	524.7	495.5	29.24	17.947		
6,200.0	5,639.8	6,029.0	5,589.2	22.4	18.5	-115.23	180.0	809.8	607.0	578.4	28.55	21.263		
6,300.0	5,654.5	5,986.9	5,587.2	23.6	17.7	-112.25	179.0	851.9	698.0	669.4	28.58	24.424		
6,400.0	5,662.1	5,963.4	5,585.9	24.6	17.3	-105.77	178.3	875.3	795.0	765.7	29.26	27.165		
6,500.0	5,662.5	5,955.3	5,585.5	25.6	17.1	-63.40	178.1	883.4	894.6	866.5	28.12	31.818		
6,600.0	5,660.7	5,951.9	5,585.3	26.5	17.1	-65.72	177.9	886.8	894.5	864.8	29.75	33.429		
6,700.0	5,659.0	5,948.4	5,585.1	27.5	17.0	-67.66	177.8	890.2	1,094.5	1,063.1	31.39	34.867		
6,800.0	5,657.2	5,947.0	5,585.0	28.6	17.0	-68.37	177.8	891.7	1,194.4	1,161.5	32.87	36.333		

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Reference Site: Lybrook
Site Error: 0.0ft
Reference Well: Lybrook P28-2306 02H
Well Error: 0.0ft
Reference Wellbore: HZ
Reference Design: Plan #3

Local Co-ordinate Reference: Well Lybrook P28-2306 02H
TVD Reference: WELL @ 7227.0ft (Aztec)
MD Reference: WELL @ 7227.0ft (Aztec)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: USA EDM 5000 Multi Users DB
Offset TVD Reference: Offset Datum

Offset Design Lybrook - Lybrook P28-2306 01H - Hz - Plan #2														Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-116.26	-14.6	-29.5	32.9						
100.0	100.0	100.0	100.0	0.1	0.1	-116.26	-14.6	-29.5	32.9	32.6	0.29	112.235			
200.0	200.0	200.0	200.0	0.3	0.3	-116.26	-14.6	-29.5	32.9	32.3	0.64	51.238			
300.0	300.0	300.0	300.0	0.5	0.5	-116.26	-14.6	-29.5	32.9	31.9	0.99	33.196			
400.0	400.0	400.0	400.0	0.7	0.7	-116.26	-14.6	-29.5	32.9	31.6	1.34	24.551			
500.0	500.0	500.0	500.0	0.8	0.8	-116.26	-14.6	-29.5	32.9	31.2	1.69	19.479			
600.0	600.0	600.0	600.0	1.0	1.0	-116.26	-14.6	-29.5	32.9	30.9	2.04	16.143			
700.0	700.0	700.0	700.0	1.2	1.2	-116.26	-14.6	-29.5	32.9	30.5	2.39	13.783			
800.0	800.0	800.0	800.0	1.4	1.4	-116.26	-14.6	-29.5	32.9	30.2	2.74	12.025			
900.0	900.0	900.0	900.0	1.5	1.5	-116.26	-14.6	-29.5	32.9	29.8	3.09	10.665			
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	-116.26	-14.6	-29.5	32.9	29.5	3.43	9.581			
1,100.0	1,100.0	1,100.0	1,100.0	1.9	1.9	-116.26	-14.6	-29.5	32.9	29.1	3.78	8.697			
1,200.0	1,200.0	1,200.0	1,200.0	2.1	2.1	-116.26	-14.6	-29.5	32.9	28.8	4.13	7.963			
1,300.0	1,300.0	1,300.0	1,300.0	2.2	2.2	-116.26	-14.6	-29.5	32.9	28.4	4.48	7.342			
1,400.0	1,400.0	1,400.0	1,400.0	2.4	2.4	-116.26	-14.6	-29.5	32.9	28.1	4.83	6.812			
1,500.0	1,500.0	1,500.0	1,500.0	2.6	2.6	-116.26	-14.6	-29.5	32.9	27.7	5.18	6.353			
1,600.0	1,600.0	1,600.0	1,600.0	2.8	2.8	-116.26	-14.6	-29.5	32.9	27.4	5.53	5.952			
1,700.0	1,700.0	1,700.0	1,700.0	2.9	2.9	-116.26	-14.6	-29.5	32.9	27.0	5.88	5.598			
1,800.0	1,800.0	1,800.0	1,800.0	3.1	3.1	-116.26	-14.6	-29.5	32.9	26.7	6.23	5.285			
1,900.0	1,900.0	1,900.0	1,900.0	3.3	3.3	-116.26	-14.6	-29.5	32.9	26.3	6.58	5.004			
2,000.0	2,000.0	2,000.0	2,000.0	3.5	3.5	-116.26	-14.6	-29.5	32.9	26.0	6.93	4.752			
2,100.0	2,100.0	2,100.0	2,100.0	3.6	3.6	-116.26	-14.6	-29.5	32.9	25.6	7.27	4.524			
2,200.0	2,200.0	2,200.0	2,200.0	3.8	3.8	-116.26	-14.6	-29.5	32.9	25.3	7.62	4.317			
2,300.0	2,300.0	2,300.0	2,300.0	4.0	4.0	-116.26	-14.6	-29.5	32.9	24.9	7.97	4.128			
2,400.0	2,400.0	2,400.0	2,400.0	4.2	4.2	-116.26	-14.6	-29.5	32.9	24.6	8.32	3.955			
2,500.0	2,500.0	2,500.0	2,500.0	4.3	4.3	-116.26	-14.6	-29.5	32.9	24.2	8.67	3.795			
2,600.0	2,600.0	2,600.0	2,600.0	4.5	4.5	-116.26	-14.6	-29.5	32.9	23.9	9.02	3.649			
2,700.0	2,700.0	2,700.0	2,700.0	4.7	4.7	-116.26	-14.6	-29.5	32.9	23.5	9.37	3.513			
2,800.0	2,800.0	2,800.0	2,800.0	4.9	4.9	-116.26	-14.6	-29.5	32.9	23.2	9.72	3.386			
2,900.0	2,900.0	2,900.0	2,900.0	5.0	5.0	-116.26	-14.6	-29.5	32.9	22.8	10.07	3.269			
3,000.0	3,000.0	3,000.0	3,000.0	5.2	5.2	-116.26	-14.6	-29.5	32.9	22.5	10.42	3.159			
3,100.0	3,100.0	3,100.0	3,100.0	5.4	5.4	-116.26	-14.6	-29.5	32.9	22.1	10.77	3.057			
3,200.0	3,200.0	3,200.0	3,200.0	5.6	5.6	-116.26	-14.6	-29.5	32.9	21.8	11.11	2.961			
3,300.0	3,300.0	3,300.0	3,300.0	5.7	5.7	-116.26	-14.6	-29.5	32.9	21.4	11.46	2.871			
3,400.0	3,400.0	3,400.0	3,400.0	5.9	5.9	-116.26	-14.6	-29.5	32.9	21.1	11.81	2.786			
3,500.0	3,500.0	3,500.0	3,500.0	6.1	6.1	-116.26	-14.6	-29.5	32.9	20.7	12.16	2.706			
3,600.0	3,600.0	3,600.0	3,600.0	6.3	6.3	-116.26	-14.6	-29.5	32.9	20.4	12.51	2.631			
3,700.0	3,700.0	3,700.0	3,700.0	6.4	6.4	-116.26	-14.6	-29.5	32.9	20.0	12.86	2.559			
3,800.0	3,800.0	3,800.0	3,800.0	6.6	6.6	-116.26	-14.6	-29.5	32.9	19.7	13.21	2.491			
3,900.0	3,900.0	3,900.0	3,900.0	6.8	6.8	-116.26	-14.6	-29.5	32.9	19.4	13.56	2.427			
4,000.0	4,000.0	4,000.0	4,000.0	7.0	7.0	-116.26	-14.6	-29.5	32.9	19.0	13.91	2.366			
4,100.0	4,100.0	4,100.0	4,100.0	7.1	7.1	-116.26	-14.6	-29.5	32.9	18.7	14.26	2.308			
4,200.0	4,200.0	4,200.0	4,200.0	7.3	7.3	-116.26	-14.6	-29.5	32.9	18.3	14.60	2.253			
4,300.0	4,300.0	4,300.0	4,300.0	7.5	7.5	-116.26	-14.6	-29.5	32.9	18.0	14.95	2.201			
4,400.0	4,400.0	4,400.0	4,400.0	7.7	7.7	-116.26	-14.6	-29.5	32.9	17.6	15.30	2.150			
4,500.0	4,500.0	4,500.0	4,500.0	7.8	7.8	-116.26	-14.6	-29.5	32.9	17.3	15.65	2.103			
4,600.0	4,600.0	4,600.0	4,600.0	8.0	8.0	-116.26	-14.6	-29.5	32.9	16.9	16.00	2.057			
4,700.0	4,700.0	4,700.0	4,700.0	8.2	8.2	-116.26	-14.6	-29.5	32.9	16.6	16.35	2.013			
4,800.0	4,800.0	4,800.0	4,800.0	8.3	8.3	-116.26	-14.6	-29.5	32.9	16.2	16.70	1.971			
4,900.0	4,900.0	4,900.0	4,900.0	8.5	8.5	-116.26	-14.6	-29.5	32.9	15.9	17.05	1.930 CC, ES, SF			
5,000.0	4,999.5	4,999.5	4,999.5	8.7	8.7	145.83	-14.6	-29.5	39.8	22.5	17.28	2.303			
5,100.0	5,096.0	5,087.7	5,087.4	8.9	8.9	153.39	-19.2	-34.4	68.8	51.7	17.18	4.007			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook P28-2306 02H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7227.0ft (Aztec)
Reference Site:	Lybrook	MD Reference:	WELL @ 7227.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook P28-2306 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design Lybrook - Lybrook P28-2306 01H - Hz - Plan #2														Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
5,200.0	5,188.5	5,161.6	5,159.5	9.2	9.0	153.68	-30.1	-46.0	123.1	106.3	16.83	7.315			
5,300.0	5,268.3	5,217.4	5,212.2	9.7	9.1	150.55	-42.6	-59.1	196.3	179.8	16.44	11.938			
5,400.0	5,338.9	5,250.0	5,242.1	10.4	9.2	143.02	-51.4	-68.5	282.4	265.9	16.54	17.082			
5,500.0	5,396.2	5,278.3	5,267.5	11.5	9.3	127.57	-60.1	-77.7	376.3	358.0	18.30	20.565			
5,600.0	5,439.8	5,289.1	5,277.0	12.9	9.3	110.14	-63.6	-81.4	473.9	452.8	21.19	22.368			
5,700.0	5,480.8	5,300.0	5,286.5	14.4	9.4	114.63	-67.3	-85.3	572.4	550.2	22.21	25.777			
5,800.0	5,520.9	5,300.0	5,286.5	16.1	9.4	95.57	-67.3	-85.3	670.2	645.0	25.12	26.676			
5,900.0	5,558.0	5,315.0	5,299.4	17.8	9.4	87.55	-72.6	-90.9	764.3	737.7	26.63	28.702			
6,000.0	5,590.7	5,326.9	5,309.5	19.5	9.5	81.91	-76.9	-95.5	853.5	825.9	27.60	30.930			
6,100.0	5,618.3	5,350.0	5,328.6	21.0	9.6	78.89	-85.7	-104.8	936.8	908.7	28.14	33.293			
6,200.0	5,639.8	5,350.0	5,328.6	22.4	9.6	74.99	-85.7	-104.8	1,013.0	985.0	28.07	36.085			
6,300.0	5,654.5	5,375.1	5,348.9	23.6	9.7	73.93	-95.9	-115.6	1,081.5	1,053.8	27.75	38.969			
6,400.0	5,662.1	5,400.0	5,368.3	24.6	9.8	73.52	-106.6	-126.9	1,141.6	1,114.5	27.08	42.157			
6,500.0	5,662.5	5,420.4	5,383.7	25.6	9.9	73.76	-115.8	-136.7	1,193.0	1,166.2	26.75	44.596			
6,600.0	5,660.7	5,456.0	5,400.0	26.5	19.3	89.59	-815.4	-354.2	1,210.0	1,172.2	37.86	31.963			
6,700.0	5,659.0	5,456.0	5,400.0	27.5	20.7	89.59	-915.4	-354.2	1,210.0	1,169.3	40.79	29.663			
6,800.0	5,657.2	5,456.0	5,400.0	28.6	22.2	89.59	-1,015.4	-354.3	1,210.1	1,166.2	43.81	27.619			
6,900.0	5,655.5	5,456.0	5,400.0	29.7	23.7	89.59	-1,115.4	-354.3	1,210.1	1,163.2	46.90	25.802			
7,000.0	5,653.7	5,456.0	5,400.0	30.9	25.3	89.59	-1,215.4	-354.4	1,210.1	1,160.0	50.04	24.182			
7,100.0	5,652.0	5,456.0	5,400.0	32.2	26.8	89.59	-1,315.4	-354.4	1,210.1	1,156.8	53.23	22.733			
7,200.0	5,650.3	5,456.0	5,400.0	33.5	28.4	89.59	-1,415.3	-354.5	1,210.1	1,153.6	56.45	21.435			
7,300.0	5,648.5	5,456.0	5,400.0	34.8	30.0	89.59	-1,515.3	-354.5	1,210.1	1,150.4	59.71	20.265			
7,400.0	5,646.8	5,456.0	5,400.0	36.2	31.6	89.59	-1,615.3	-354.5	1,210.1	1,147.1	63.00	19.209			
7,500.0	5,645.0	5,456.0	5,400.0	37.6	33.3	89.59	-1,715.3	-354.6	1,210.1	1,143.8	66.30	18.251			
7,600.0	5,643.3	5,456.0	5,400.0	39.1	34.9	89.59	-1,815.3	-354.6	1,210.1	1,140.5	69.63	17.379			
7,700.0	5,641.5	5,456.0	5,400.0	40.5	36.6	89.59	-1,915.3	-354.7	1,210.1	1,137.1	72.97	16.583			
7,800.0	5,639.8	5,456.0	5,400.0	42.0	38.2	89.59	-2,015.2	-354.7	1,210.1	1,133.8	76.33	15.853			
7,900.0	5,638.0	5,456.0	5,400.0	43.5	39.9	89.59	-2,115.2	-354.7	1,210.1	1,130.4	79.70	15.183			
8,000.0	5,636.3	5,456.0	5,400.0	45.1	41.6	89.59	-2,215.2	-354.8	1,210.1	1,127.0	83.09	14.565			
8,100.0	5,634.6	5,456.0	5,400.0	46.6	43.3	89.59	-2,315.2	-354.8	1,210.1	1,123.6	86.48	13.993			
8,200.0	5,632.8	5,456.0	5,400.0	48.2	45.0	89.59	-2,415.2	-354.9	1,210.1	1,120.2	89.88	13.464			
8,300.0	5,631.1	5,456.0	5,400.0	49.8	46.7	89.59	-2,515.2	-354.9	1,210.1	1,116.8	93.29	12.972			
8,400.0	5,629.3	5,456.0	5,400.0	51.4	48.4	89.59	-2,615.2	-355.0	1,210.1	1,113.4	96.70	12.514			
8,500.0	5,627.6	5,456.0	5,400.0	53.0	50.1	89.59	-2,715.1	-355.0	1,210.1	1,110.0	100.13	12.086			
8,600.0	5,625.8	5,456.0	5,400.0	54.6	51.8	89.59	-2,815.1	-355.0	1,210.1	1,106.6	103.55	11.686			
8,700.0	5,624.1	5,456.0	5,400.0	56.2	53.5	89.59	-2,915.1	-355.1	1,210.1	1,103.1	106.99	11.311			
8,800.0	5,622.3	5,456.0	5,400.0	57.8	55.2	89.59	-3,015.1	-355.1	1,210.1	1,099.7	110.43	10.959			
8,900.0	5,620.6	5,456.0	5,400.0	59.5	56.9	89.59	-3,115.1	-355.2	1,210.1	1,096.3	113.87	10.628			
9,000.0	5,618.9	5,456.0	5,400.0	61.1	58.6	89.59	-3,215.1	-355.2	1,210.1	1,092.8	117.31	10.315			
9,100.0	5,617.1	5,456.0	5,400.0	62.8	60.4	89.59	-3,315.0	-355.2	1,210.2	1,089.4	120.76	10.021			
9,200.0	5,615.4	5,456.0	5,400.0	64.4	62.1	89.59	-3,415.0	-355.3	1,210.2	1,085.9	124.22	9.742			
9,300.0	5,613.6	5,456.0	5,400.0	66.1	63.8	89.59	-3,515.0	-355.3	1,210.2	1,082.5	127.67	9.479			
9,400.0	5,611.9	5,456.0	5,400.0	67.8	65.5	89.59	-3,615.0	-355.4	1,210.2	1,079.0	131.13	9.229			
9,500.0	5,610.1	5,456.0	5,400.0	69.4	67.3	89.59	-3,715.0	-355.4	1,210.2	1,075.6	134.59	8.991			
9,600.0	5,608.4	5,456.0	5,400.0	71.1	69.0	89.59	-3,815.0	-355.5	1,210.2	1,072.1	138.06	8.766			
9,700.0	5,606.6	5,456.0	5,400.0	72.8	70.7	89.59	-3,915.0	-355.5	1,210.2	1,068.7	141.52	8.551			
9,800.0	5,604.9	5,456.0	5,400.0	74.5	72.5	89.59	-4,014.9	-355.5	1,210.2	1,065.2	144.99	8.347			
9,900.0	5,603.1	5,456.0	5,400.0	76.2	74.2	89.59	-4,114.9	-355.6	1,210.2	1,061.7	148.46	8.152			
10,000.0	5,601.4	5,456.0	5,400.0	77.9	75.9	89.59	-4,214.9	-355.6	1,210.2	1,058.3	151.93	7.965			
10,100.0	5,599.7	5,456.0	5,400.0	79.6	77.7	89.59	-4,314.9	-355.7	1,210.2	1,054.8	155.40	7.788			
10,200.0	5,597.9	5,456.0	5,400.0	81.3	79.4	89.59	-4,414.9	-355.7	1,210.2	1,051.3	158.88	7.617			
10,300.0	5,596.2	5,456.0	5,400.0	83.0	81.1	89.59	-4,514.9	-355.7	1,210.2	1,047.9	162.35	7.454			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Reference Site: Lybrook
Site Error: 0.0ft
Reference Well: Lybrook P28-2306 02H
Well Error: 0.0ft
Reference Wellbore: HZ
Reference Design: Plan #3

Local Co-ordinate Reference: Well Lybrook P28-2306 02H
TVD Reference: WELL @ 7227.0ft (Aztec)
MD Reference: WELL @ 7227.0ft (Aztec)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: USA EDM 5000 Multi Users DB
Offset TVD Reference: Offset Datum

Offset Design Lybrook - Lybrook P28-2306 01H - Hz - Plan #2														Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor			
10,400.0	5,594.4	10,056.0	5,585.7	84.7	82.9	89.59	-4,614.8	-355.8	1,210.2	1,044.4	165.83	7.298			
10,500.0	5,592.7	10,156.0	5,584.0	86.4	84.6	89.59	-4,714.8	-355.8	1,210.2	1,040.9	169.31	7.148			
10,600.0	5,590.9	10,256.0	5,582.2	88.1	86.3	89.59	-4,814.8	-355.9	1,210.2	1,037.4	172.79	7.004			
10,700.0	5,589.2	10,356.0	5,580.5	89.8	88.1	89.59	-4,914.8	-355.9	1,210.2	1,034.0	176.27	6.866			
10,800.0	5,587.4	10,456.0	5,578.7	91.5	89.8	89.59	-5,014.8	-356.0	1,210.2	1,030.5	179.75	6.733			
10,900.0	5,585.7	10,556.0	5,577.0	93.2	91.5	89.59	-5,114.8	-356.0	1,210.2	1,027.0	183.23	6.605			
11,000.0	5,584.0	10,656.0	5,575.2	94.9	93.3	89.59	-5,214.8	-356.0	1,210.2	1,023.5	186.72	6.482			
11,100.0	5,582.2	10,756.0	5,573.5	96.6	95.0	89.59	-5,314.7	-356.1	1,210.2	1,020.0	190.20	6.363			
11,200.0	5,580.5	10,856.0	5,571.7	98.3	96.8	89.59	-5,414.7	-356.1	1,210.2	1,016.6	193.69	6.248			
11,300.0	5,578.7	10,956.0	5,570.0	100.1	98.5	89.59	-5,514.7	-356.2	1,210.2	1,013.1	197.17	6.138			
11,400.0	5,577.0	11,056.0	5,568.2	101.8	100.3	89.59	-5,614.7	-356.2	1,210.2	1,009.6	200.66	6.031			
11,500.0	5,575.2	11,156.0	5,566.5	103.5	102.0	89.59	-5,714.7	-356.2	1,210.3	1,006.1	204.15	5.928			
11,600.0	5,573.5	11,256.0	5,564.8	105.2	103.7	89.59	-5,814.7	-356.3	1,210.3	1,002.6	207.63	5.829			
11,700.0	5,571.7	11,356.0	5,563.0	106.9	105.5	89.59	-5,914.7	-356.3	1,210.3	999.1	211.12	5.733			
11,800.0	5,570.0	11,456.0	5,561.3	108.7	107.2	89.59	-6,014.6	-356.4	1,210.3	995.7	214.61	5.639			
11,900.0	5,568.2	11,556.0	5,559.5	110.4	109.0	89.59	-6,114.6	-356.4	1,210.3	992.2	218.10	5.549			
12,000.0	5,566.5	11,656.0	5,557.8	112.1	110.7	89.59	-6,214.6	-356.5	1,210.3	988.7	221.59	5.462			
12,100.0	5,564.8	11,756.0	5,556.0	113.8	112.5	89.59	-6,314.6	-356.5	1,210.3	985.2	225.08	5.377			
12,200.0	5,563.0	11,856.0	5,554.3	115.6	114.2	89.59	-6,414.6	-356.5	1,210.3	981.7	228.58	5.295			
12,300.0	5,561.3	11,956.0	5,552.5	117.3	115.9	89.59	-6,514.6	-356.6	1,210.3	978.2	232.07	5.215			
12,400.0	5,559.5	12,056.0	5,550.8	119.0	117.7	89.59	-6,614.5	-356.6	1,210.3	974.7	235.56	5.138			
12,500.0	5,557.8	12,156.0	5,549.0	120.8	119.4	89.59	-6,714.5	-356.7	1,210.3	971.2	239.05	5.063			
12,600.0	5,556.0	12,256.0	5,547.3	122.5	121.2	89.59	-6,814.5	-356.7	1,210.3	967.8	242.55	4.990			
12,700.0	5,554.3	12,356.0	5,545.6	124.2	122.9	89.59	-6,914.5	-356.7	1,210.3	964.3	246.04	4.919			
12,800.0	5,552.5	12,456.0	5,543.8	126.0	124.7	89.59	-7,014.5	-356.8	1,210.3	960.8	249.53	4.850			
12,900.0	5,550.8	12,556.0	5,542.1	127.7	126.4	89.59	-7,114.5	-356.8	1,210.3	957.3	253.03	4.783			
13,000.0	5,549.1	12,656.0	5,540.3	129.4	128.2	89.59	-7,214.5	-356.9	1,210.3	953.8	256.52	4.718			
13,100.0	5,547.3	12,756.0	5,538.6	131.2	129.9	89.59	-7,314.4	-356.9	1,210.3	950.3	260.02	4.655			
13,200.0	5,545.6	12,856.0	5,536.8	132.9	131.7	89.59	-7,414.4	-357.0	1,210.3	946.8	263.51	4.593			
13,300.0	5,543.8	12,956.0	5,535.1	134.6	133.4	89.59	-7,514.4	-357.0	1,210.3	943.3	267.01	4.533			
13,400.0	5,542.1	13,056.0	5,533.3	136.4	135.2	89.59	-7,614.4	-357.0	1,210.3	939.8	270.51	4.474			
13,500.0	5,540.3	13,156.0	5,531.6	138.1	136.9	89.59	-7,714.4	-357.1	1,210.3	936.3	274.00	4.417			
13,600.0	5,538.6	13,256.0	5,529.9	139.8	138.7	89.59	-7,814.4	-357.1	1,210.3	932.8	277.50	4.362			
13,651.9	5,537.7	13,307.9	5,528.9	140.7	139.6	89.59	-7,866.2	-357.1	1,210.3	931.0	279.31	4.333			
13,700.0	5,536.8	13,334.7	5,528.5	141.6	140.0	89.59	-7,893.0	-357.2	1,210.5	929.9	280.62	4.314			
13,703.4	5,536.8	13,334.7	5,528.5	141.6	140.0	89.59	-7,893.0	-357.2	1,210.6	929.9	280.68	4.313			

Anticollision Report

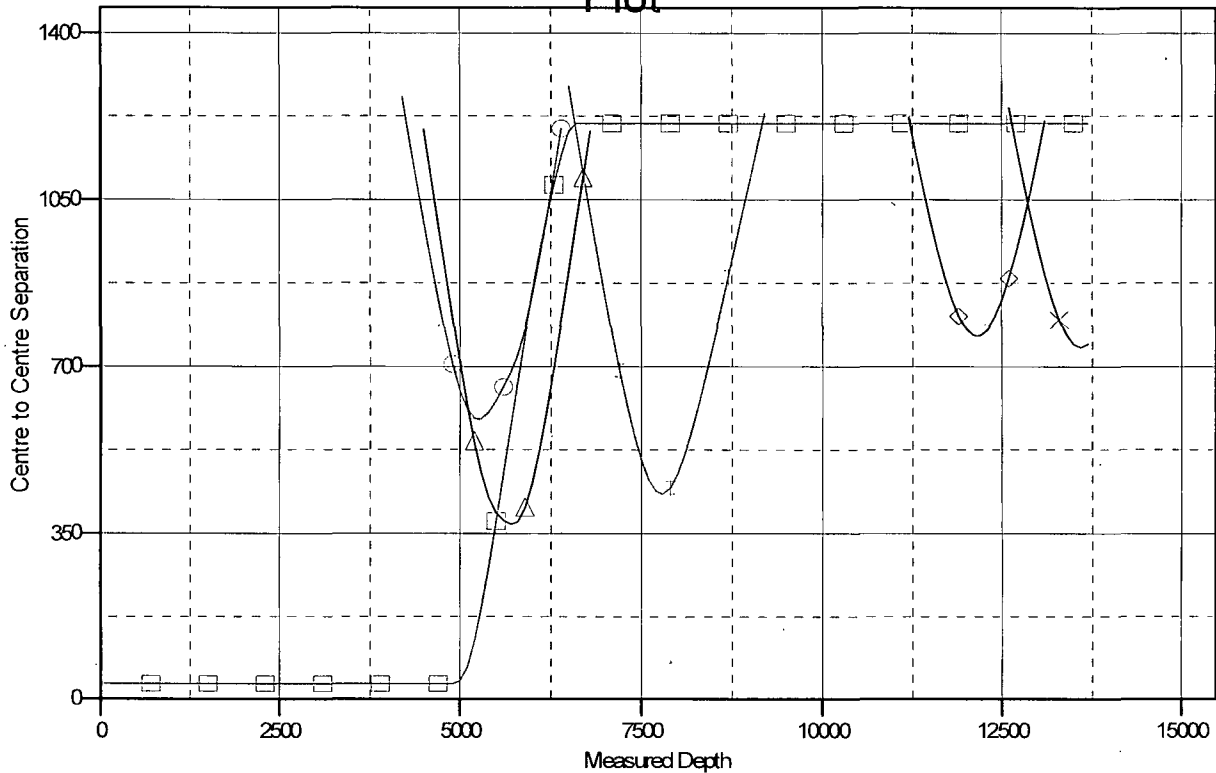
Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Reference Site: Lybrook
Site Error: 0.0ft
Reference Well: Lybrook P28-2306 02H
Well Error: 0.0ft
Reference Wellbore: HZ
Reference Design: Plan #3

Local Co-ordinate Reference: Well Lybrook P28-2306 02H
TVD Reference: WELL @ 7227.0ft (Aztec)
MD Reference: WELL @ 7227.0ft (Aztec)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: USA EDM 5000 Multi Users DB
Offset TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 7227.0ft (Aztec)
 Offset Depths are relative to Offset Datum
 Central Meridian is -106.250000 °

Coordinates are relative to: Lybrook P28-2306 02H
 Coordinate System is US State Plane 1983, New Mexico Central Zone
 Grid Convergence at Surface is: -0.72°

Ladder Plot



LEGEND

-+ GCUH33-2306, Hz, Plan #1 V0 -x Lybrook H03-2206 01H, Hz, FINAL V0 -△ Lybrook M27-2306 04H, Hz, FINAL V0
 -◇ Lybrook A03-2206 01H, Hz, FINAL V0 -○ Lybrook M27-2306 03H, Hz, Plan #1 V0 -□ Lybrook P28-2306 01H, Hz, Plan #2 V0

Lybrook P28-2306 02H
SHL: SESE Section 28, T23N, R6W
348 FSL and 1252 FEL
BHL: SENE Section 4, T22N, R6W
2373 FNL and 400 FEL
Sandoval, New Mexico
Lease Number: NMNM 112953 & NMNM 109386

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 Ss.	1560
Kirtland Shale	1729
Fruitland Coal	1883
Pictured Cliffs Ss.	2130
Lewis Shale	2249
Cliffhouse Ss.	2939
Menefee Fn.	3686
Point Lookout Ss.	4382
Mancos Shale	4565
Mancos Silt	5160
Gallup Fn.	5424

The referenced surface elevation is 7,211', KB 7,227'

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

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1883
Oil/Gas	Pictured Cliffs Ss.	2130
Oil/Gas	Cliffhouse Ss.	2939
Gas	Menefee Fn.	3686
Oil/Gas	Point Lookout Ss.	4382
Oil/Gas	Mancos Shale	4565
Oil/Gas	Mancos Silt	5160
Oil/Gas	Gallup Fn.	5424

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.

Lybrook P28-2306 02H

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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 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	Hole Size	Csg Size	Weight	Grade
Conductor	0-60'	30"	20"	94#	H40, STC New
Surface	0'-500'	12 1/4"	9 5/8"	36#	J55, STC New
Intermediate	0'-6361'MD	8 3/4"	7"	26#	J55, LTC New
Production Liner	6161'-13703'MD	6 1/8"	4 1/2"	11.6#	B80*, LTC New

Casing String				Casing Strength Properties			Minimum Design Factors		
Size	Weight (lb/ft)	Grade	Connection	Collapse (psi)	Burst (psi)	Tensile (1000lb)	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 1/2"	11.6	B80	LTC	6350	7780	201	1.125	1.1	1.5

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:

Top plugs shall be used to reduce contamination of cement by displacement fluid. A bottom plug or other acceptable technique, such as a pre-flush fluid, inner string cement method, etc. shall be utilized to help isolate the cement from contamination by the mud fluid being displaced ahead of the cement slurry.

Casing	Depth	Cement Volume (sacks)	Cement Type&Yield	Designed TOC	Centralizers
Conductor	60'	100sk	Type I Neat 16.0 ppg	Surface	None
Surface	500'	178sk	Type III Cement + 1% CaCl + 0.25lb/sk Cello Flake + 0.2% FL, 14.6ppg, 1.38cuf/sk	Surface	1 per joint on bottom 3 joints
Intermediate	6361'MD	30% open hole excess Stage 1 Lead: 226sks Stage 1 Tail: 156sks Stage 2 Lead: 169sks	Lead (Stages 1 and 2): PremLite + 3% CaCl + 0.25lb/sk CelloFlake + 5lb/sk LCM, 12.1ppg 2.13cuf/sk Tail (Stage 1): Type III Cmt + 1% CaCl + 0.25lb/sk Cello Flake 14.5ppg 1.38cuf/sk	Surface	1 per joint for bottom 3 joints, 1 every 3 joints for remaining joints
Production Liner*	6161'-13703'	None – External casing packers	N/A	N/A	N/A

*Production liner clarification: Utilizing external swell casing packer system for zonal isolation will not use cement in the production liner.

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 a 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 4900'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5537'/13703'	Gallup

Lybrook P28-2306 02H

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6. DRILLING FLUIDS PROGRAM

a) Surface through Intermediate Casing Point:

Hole Size (in)	Depth (ft)	Mud Type	Density (lb/gal)	Viscosity (sec/qt)	Fluid Loss (cc)
30"	0-60' TVD	Fresh Water	8.3-9.2	38-100	4-28
12 1/4"	0-500' TVD	Fresh Water	8.4-8.6	60-70	NC
8 3/4"	500'TVD- 5660'TVD/6361'MD	Fresh Water LSND	8.5-8.8	40-50	8-10

b) Intermediate Casing Point to TD:

Hole Size (in)	MD (ft)	Mud Type	Density (lb/gal)	Viscosity (sec/qt)	Fluid Loss (cc)
6 1/8"	6361'-13703'	Synthetic Oil Based Mud	8.6-9.0	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, including fresh water and oil-based operations. 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 and LOGGING

- a) Drill Stem Testing – None anticipated
- b) Coring – None anticipated.
- c) Mud 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 +/- 2650 psi based on a 9.0 ppg at 5663' TVD of the landing point of the horizontal lateral. 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.

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**SHL: SESE Section 28, T23N, R6W
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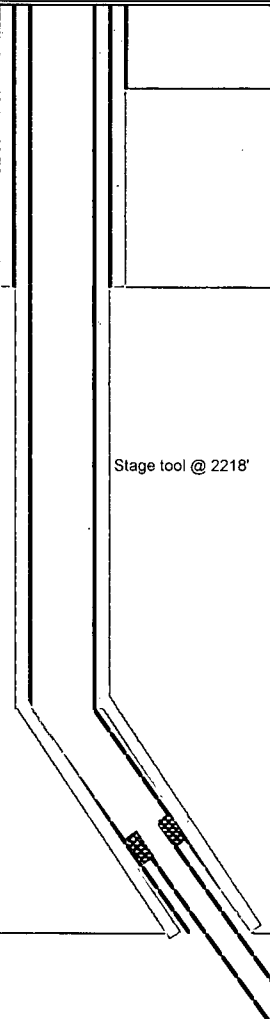
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9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on May 21, 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.

LOC: Sec 28-T23N-R6W County: Sandoval WELL: Lybrook P28-2306 02H			Encana Natural Gas WELL SUMMARY						ENG: 1/9/14 RIG: GLE: 7211 RKBE: 7227	
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH			HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION	
			TVD	MD						
			60	60'		30	20" 94# 100sx Type I Neat 16.0ppg cmt	Fresh wtr 8.3-9.2		
Surveys After csg is run	None		500	500		12 1/4	9 5/8" 36ppf J55 STC TOC @ surface 178 sks Type III Cmt	Fresh wtr 8.4-8.6	Vertical <1°	
Surveys every 500'	No OH logs	Ojo Alamo Kirtland Fruitland Coal Pictured Cliffs Ss Lewis Shale Cliffhouse Ss Menefee Fn	1560 1729 1883 2130 2249 2939 3686			8 3/4	7" 26ppf J55 LTC TOC @ surface 30% OH excess: 551sksTotal. Stage 1 Lead: 226sks Stage 1 Tail: 156sks. Stage 2 Lead: 169sks	Fresh Wtr 8.5-8.8	Vertical <1°	
	Mud logger onsite	Point Lookout Ss Mancos Sh KICK OFF PT Mancos Silt Gallup Top	4382 4565 4900 5160 5424						KOP 0 10 deg/100'	
		7" csg setting	5660	6361						
		horz target	5663	6476		6 1/8	200' overlap at liner top		.25deg updip 5537'TVD TD = 13703' MD	
		Base Gallup	5725				7227' Lateral	8.6-9.0 OBM		
Surveys every 500' Gyro at CP MWD Gamma Directional	No OH Logs					4 1/2" 11.6ppf SB80 LTC Running external swellable csg packers for isolation of prod string Plan on setting top packer within 100' of intermediate casing shoe	Switch to OBM 8.6-9.0			

NOTES:

- 1) Drill with 30" bit to 60', set 20" 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 4900', 8 3/4" hole size,
- 5) PU directional tools and start curve at 10deg/100' build rate
- 6) Drill to casing point of 6361' MD
- 7) R&C 7" casing, circ cmt to surface, switch to OBM
- 8) Land at 90deg, drill 7227' lateral to 13703', run 4 1/2" liner with external swellable csg packers