

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: ch geo tops_____

Well information:

API WELL #	Well Name	Well #	Operator Name	Type	Stat	County	Surf. Owner	UL	Sec	Twp	N/S	Rng	W/E
30-043-21176-00-00	LYBROOK P28 2306	001H	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

Hold C-104 for NSL

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.

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM 112953 NMNM 109386
2. Name of Operator Encana Oil & Gas (USA) Inc.		6. If Indian, Allottee or Tribe Name N/A
3a. Address 370 17th Street, Suite 1700 Denver, CO 80202	3b. Phone No. (include area code) 720-876-3437	7. If Unit of CA/Agreement, Name and/or No. N/A
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) SHL: 336' FSL and 1280' FEL Sec 28, T23N, R6W BHL: 2372' FNL and 1610' FEL Sec 4, T22N, R6W		8. Well Name and No. Lybrook P28-2306 01H
		9. API Well No. ENDING 30-043-2176
		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 recompletable horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletable in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Encana Oil & Gas (USA) Inc. (Encana) would like to change the BHL on the Lybrook P28-2306 01H well from 2330' FNL and 2060' FEL Sec 4, T22N, R6W to 2372' FNL and 1610' FEL Sec 4, T22N, R6W. This would change the TD of the well from 13601'MD to 13335'MD.

Encana would also like to change the intermediate casing setting depth from 6340'MD to 6021'MD.

These changes will also slightly change the kick off 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 <i>Amanda Cavoto</i>	Date 1/9/14

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by <i>William Tambekou</i>	Title <i>Petroleum Engineer</i>	Date <i>02/13/2014</i>
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 <i>FFO</i>

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)

NMOCDA

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number	*Pool Code 42289	*Pool Name LYBROOK GALLUP
*Property Code	*Property Name LYBROOK P28-2306	*Well Number 01H
*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		336	SOUTH	1280	EAST	SANDOVAL

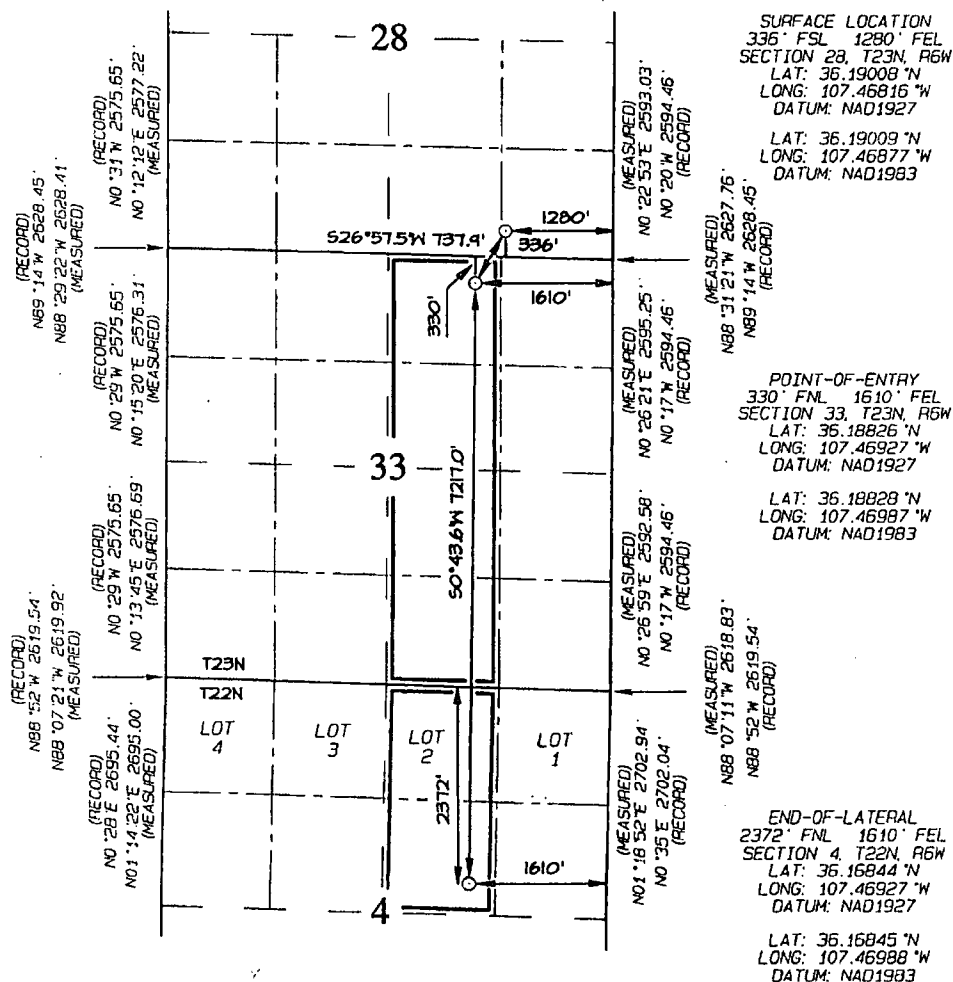
¹¹ Bottom Hole Location If Different From Surface

U. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	4	22N	6W		2372	NORTH	1610	EAST	SANDOVAL

12 Dedicated Acres 240.81 Acres	W/2 E/2 - Section 33 W/2 NE/4 - Section 4	13 Joint or Infill	14 Consolidation Code	15 Order No.	RCVD FEB 21 '14 OIL CONS DIV
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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 or working interest, and that no pooling agreement or a compulsory pooling order heretofore entered by the Division.

Signature Hollzner Date 12/12/18

Signature Holly Hill Date _____
Printed Name _____

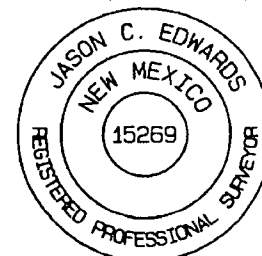
E-mail Address holly.hill@percann.com

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

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 01H
 Wellbore: Hz
 Design: Plan #2

Local Co-ordinate Reference: Well Lybrook P28-2306 01H
 TVD Reference: WELL @ 7227.0ft (Aztec)
 MD Reference: WELL @ 7227.0ft (Aztec)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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

System Datum: Mean Sea Level

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 01H

Well Position: +N/-S 0.0 ft Northing: 1,890,721.03 ft Latitude: 36.190090
 +E/-W 0.0 ft Easting: 1,280,787.28 ft Longitude: -107.468770
 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	8/30/2013	9.43	62.99	50,234

Design: Plan #2

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	180.00

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	
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,475.7	47.57	226.62	5,422.9	-128.0	-135.5	10.00	10.00	0.00	226.62	
6,114.1	91.00	180.02	5,654.5	-659.0	-324.6	9.45	6.80	-7.30	-56.74	Lybrook P28-2306 01
13,334.7	91.00	180.02	5,528.5	-7,878.4	-327.6	0.00	0.00	0.00	0.00	Lybrook P28-2306 01

$$PBHL \left\{ \begin{array}{l} Y \rightarrow [2702.94 - (336 + 7890.77 - 7878.4)]_{ft} = 2354.57 \approx 2355 ft/N \quad (Sec: 4, T: 22N, R: 6W) \\ X \rightarrow (1280 + 327.6)_{ft} = 1607.6 \approx 1608 ft/E \quad (Sec: 4, T: 22N, R: 6W) \end{array} \right.$$

William Tambekou
 02/13/2014

Planning Report

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 Project: Sandoval County, NM
 Site: Lybrook
 Well: Lybrook P28-2306 01H
 Wellbore: Hz
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Local Co-ordinate Reference: Well Lybrook P28-2306 01H
 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

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 Wellbore: Hz
 Design: Plan #2

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 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
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	
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	KOP @ 5000'
5,100.0	10.00	226.62	5,099.5	-6.0	-6.3	6.0	10.00	10.00	
5,160.8	16.08	226.62	5,158.7	-15.4	-16.3	15.4	10.00	10.00	Mancos Silt
5,200.0	20.00	226.62	5,196.0	-23.7	-25.1	23.7	10.00	10.00	
5,300.0	30.00	226.62	5,286.5	-52.7	-55.8	52.7	10.00	10.00	
5,400.0	40.00	226.62	5,368.3	-92.1	-97.4	92.1	10.00	10.00	
5,468.2	46.82	226.62	5,417.8	-124.3	-131.5	124.3	10.00	10.00	Gallup Fn.
5,475.7	47.57	226.62	5,422.9	-128.0	-135.5	128.0	10.00	10.00	Start build/turn @ 5475' MD
5,500.0	48.86	224.07	5,439.1	-140.8	-148.4	140.8	9.45	5.30	
5,600.0	54.68	214.58	5,501.0	-201.5	-197.8	201.5	9.45	5.82	
5,700.0	61.13	206.43	5,554.2	-274.5	-240.5	274.5	9.45	6.46	
5,800.0	68.02	199.26	5,597.2	-357.7	-275.4	357.7	9.45	6.89	
5,900.0	75.19	192.78	5,628.7	-448.8	-301.5	448.8	9.45	7.17	
6,000.0	82.53	186.71	5,648.0	-545.4	-318.0	545.4	9.45	7.34	
6,020.9	84.08	185.48	5,650.5	-566.0	-320.2	566.0	9.45	7.40	7" Casing Setting Depth
6,100.0	89.95	180.85	5,654.6	-644.8	-324.5	644.8	9.45	7.42	
6,114.1	91.00	180.02	5,654.5	-659.0	-324.6	659.0	9.45	7.43	LP @ 5654' TVD; 91°
6,200.0	91.00	180.02	5,653.0	-744.8	-324.7	744.8	0.00	0.00	
6,300.0	91.00	180.02	5,651.2	-844.8	-324.7	844.8	0.00	0.00	
6,400.0	91.00	180.02	5,649.5	-944.8	-324.8	944.8	0.00	0.00	
6,500.0	91.00	180.02	5,647.8	-1,044.8	-324.8	1,044.8	0.00	0.00	
6,600.0	91.00	180.02	5,646.0	-1,144.8	-324.8	1,144.8	0.00	0.00	
6,700.0	91.00	180.02	5,644.3	-1,244.7	-324.9	1,244.7	0.00	0.00	
6,800.0	91.00	180.02	5,642.5	-1,344.7	-324.9	1,344.7	0.00	0.00	
6,900.0	91.00	180.02	5,640.8	-1,444.7	-325.0	1,444.7	0.00	0.00	
7,000.0	91.00	180.02	5,639.0	-1,544.7	-325.0	1,544.7	0.00	0.00	
7,100.0	91.00	180.02	5,637.3	-1,644.7	-325.0	1,644.7	0.00	0.00	
7,200.0	91.00	180.02	5,635.5	-1,744.7	-325.1	1,744.7	0.00	0.00	
7,300.0	91.00	180.02	5,633.8	-1,844.7	-325.1	1,844.7	0.00	0.00	
7,400.0	91.00	180.02	5,632.0	-1,944.6	-325.2	1,944.6	0.00	0.00	
7,500.0	91.00	180.02	5,630.3	-2,044.6	-325.2	2,044.6	0.00	0.00	
7,600.0	91.00	180.02	5,628.6	-2,144.6	-325.3	2,144.6	0.00	0.00	
7,700.0	91.00	180.02	5,626.8	-2,244.6	-325.3	2,244.6	0.00	0.00	
7,800.0	91.00	180.02	5,625.1	-2,344.6	-325.3	2,344.6	0.00	0.00	
7,900.0	91.00	180.02	5,623.3	-2,444.6	-325.4	2,444.6	0.00	0.00	
8,000.0	91.00	180.02	5,621.6	-2,544.6	-325.4	2,544.6	0.00	0.00	
8,100.0	91.00	180.02	5,619.8	-2,644.5	-325.5	2,644.5	0.00	0.00	
8,200.0	91.00	180.02	5,618.1	-2,744.5	-325.5	2,744.5	0.00	0.00	
8,300.0	91.00	180.02	5,616.3	-2,844.5	-325.5	2,844.5	0.00	0.00	
8,400.0	91.00	180.02	5,614.6	-2,944.5	-325.6	2,944.5	0.00	0.00	
8,500.0	91.00	180.02	5,612.9	-3,044.5	-325.6	3,044.5	0.00	0.00	
8,600.0	91.00	180.02	5,611.1	-3,144.5	-325.7	3,144.5	0.00	0.00	
8,700.0	91.00	180.02	5,609.4	-3,244.4	-325.7	3,244.4	0.00	0.00	
8,800.0	91.00	180.02	5,607.6	-3,344.4	-325.8	3,344.4	0.00	0.00	
8,900.0	91.00	180.02	5,605.9	-3,444.4	-325.8	3,444.4	0.00	0.00	

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 01H
 Wellbore: Hz
 Design: Plan #2

Local Co-ordinate Reference: Well Lybrook P28-2306 01H
 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
9,000.0	91.00	180.02	5,604.1	-3,544.4	-325.8	3,544.4	0.00	0.00	
9,100.0	91.00	180.02	5,602.4	-3,644.4	-325.9	3,644.4	0.00	0.00	
9,200.0	91.00	180.02	5,600.6	-3,744.4	-325.9	3,744.4	0.00	0.00	
9,300.0	91.00	180.02	5,598.9	-3,844.4	-326.0	3,844.4	0.00	0.00	
9,400.0	91.00	180.02	5,597.1	-3,944.3	-326.0	3,944.3	0.00	0.00	
9,500.0	91.00	180.02	5,595.4	-4,044.3	-326.0	4,044.3	0.00	0.00	
9,600.0	91.00	180.02	5,593.7	-4,144.3	-326.1	4,144.3	0.00	0.00	
9,700.0	91.00	180.02	5,591.9	-4,244.3	-326.1	4,244.3	0.00	0.00	
9,800.0	91.00	180.02	5,590.2	-4,344.3	-326.2	4,344.3	0.00	0.00	
9,900.0	91.00	180.02	5,588.4	-4,444.3	-326.2	4,444.3	0.00	0.00	
10,000.0	91.00	180.02	5,586.7	-4,544.2	-326.2	4,544.2	0.00	0.00	
10,100.0	91.00	180.02	5,584.9	-4,644.2	-326.3	4,644.2	0.00	0.00	
10,200.0	91.00	180.02	5,583.2	-4,744.2	-326.3	4,744.2	0.00	0.00	
10,300.0	91.00	180.02	5,581.4	-4,844.2	-326.4	4,844.2	0.00	0.00	
10,400.0	91.00	180.02	5,579.7	-4,944.2	-326.4	4,944.2	0.00	0.00	
10,500.0	91.00	180.02	5,577.9	-5,044.2	-326.5	5,044.2	0.00	0.00	
10,600.0	91.00	180.02	5,576.2	-5,144.2	-326.5	5,144.2	0.00	0.00	
10,700.0	91.00	180.02	5,574.5	-5,244.1	-326.5	5,244.1	0.00	0.00	
10,800.0	91.00	180.02	5,572.7	-5,344.1	-326.6	5,344.1	0.00	0.00	
10,900.0	91.00	180.02	5,571.0	-5,444.1	-326.6	5,444.1	0.00	0.00	
11,000.0	91.00	180.02	5,569.2	-5,544.1	-326.7	5,544.1	0.00	0.00	
11,100.0	91.00	180.02	5,567.5	-5,644.1	-326.7	5,644.1	0.00	0.00	
11,200.0	91.00	180.02	5,565.7	-5,744.1	-326.7	5,744.1	0.00	0.00	
11,300.0	91.00	180.02	5,564.0	-5,844.0	-326.8	5,844.0	0.00	0.00	
11,400.0	91.00	180.02	5,562.2	-5,944.0	-326.8	5,944.0	0.00	0.00	
11,500.0	91.00	180.02	5,560.5	-6,044.0	-326.9	6,044.0	0.00	0.00	
11,600.0	91.00	180.02	5,558.8	-6,144.0	-326.9	6,144.0	0.00	0.00	
11,700.0	91.00	180.02	5,557.0	-6,244.0	-327.0	6,244.0	0.00	0.00	
11,800.0	91.00	180.02	5,555.3	-6,344.0	-327.0	6,344.0	0.00	0.00	
11,900.0	91.00	180.02	5,553.5	-6,444.0	-327.0	6,444.0	0.00	0.00	
12,000.0	91.00	180.02	5,551.8	-6,543.9	-327.1	6,543.9	0.00	0.00	
12,100.0	91.00	180.02	5,550.0	-6,643.9	-327.1	6,643.9	0.00	0.00	
12,200.0	91.00	180.02	5,548.3	-6,743.9	-327.2	6,743.9	0.00	0.00	
12,300.0	91.00	180.02	5,546.5	-6,843.9	-327.2	6,843.9	0.00	0.00	
12,400.0	91.00	180.02	5,544.8	-6,943.9	-327.2	6,943.9	0.00	0.00	
12,500.0	91.00	180.02	5,543.0	-7,043.9	-327.3	7,043.9	0.00	0.00	
12,600.0	91.00	180.02	5,541.3	-7,143.9	-327.3	7,143.9	0.00	0.00	
12,700.0	91.00	180.02	5,539.6	-7,243.8	-327.4	7,243.8	0.00	0.00	
12,800.0	91.00	180.02	5,537.8	-7,343.8	-327.4	7,343.8	0.00	0.00	
12,900.0	91.00	180.02	5,536.1	-7,443.8	-327.5	7,443.8	0.00	0.00	
13,000.0	91.00	180.02	5,534.3	-7,543.8	-327.5	7,543.8	0.00	0.00	
13,100.0	91.00	180.02	5,532.6	-7,643.8	-327.5	7,643.8	0.00	0.00	
13,200.0	91.00	180.02	5,530.8	-7,743.8	-327.6	7,743.8	0.00	0.00	
13,300.0	91.00	180.02	5,529.1	-7,843.7	-327.6	7,843.7	0.00	0.00	
13,334.7	91.00	180.02	5,528.5	-7,878.4	-327.6	7,878.4	0.00	0.00	TD at 13334.7

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 01H
 Wellbore: Hz
 Design: Plan #2

Local Co-ordinate Reference: Well Lybrook P28-2306 01H
 TVD Reference: WELL @ 7227.0ft (Aztec)
 MD Reference: WELL @ 7227.0ft (Aztec)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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 01H f - plan misses target center by 451.6ft at 6113.9ft MD (5654.5 TVD, -658.8 N, -324.6 E) - Point	0.00	0.00	5,651.7	-655.3	-776.2	1,890,075.51	1,280,002.94	36.188290	-107.471400
Lybrook P28-2306 01H f - plan hits target center - Point	0.00	0.00	5,528.5	-7,878.4	-327.6	1,882,847.35	1,280,360.70	36.168450	-107.469880
Lybrook P28-2306 01H f - plan misses target center by 459.1ft at 13282.2ft MD (5529.4 TVD, -7825.9 N, -327.6 E) - Point	0.00	0.00	5,626.7	-7,827.4	-776.3	1,882,903.96	1,279,912.68	36.168590	-107.471400
Lybrook P28-2306 01H f - plan hits target center - Point	0.00	0.00	5,654.5	-659.0	-324.6	1,890,066.19	1,280,454.39	36.188280	-107.469870

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
500.0	500.0	9 5/8"	0.000	0.000
6,020.9	5,650.5	7" Casing Setting Depth	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	180.00
1,729.0	1,729.0	Kirtland Shale		-1.00	180.00
1,883.0	1,883.0	Fruitland Coal		-1.00	180.00
2,130.0	2,130.0	Pictured Cliffs Ss.		-1.00	180.00
2,249.0	2,249.0	Lewis Shale		-1.00	180.00
2,939.0	2,939.0	Cliffhouse Ss.		-1.00	180.00
3,686.0	3,686.0	Menefee Fn.		-1.00	180.00
4,382.0	4,382.0	Point Lookout Ss.		-1.00	180.00
4,565.0	4,565.0	Mancos Shale		-1.00	180.00
5,160.8	5,159.0	Mancos Silt		-1.00	180.00
5,468.2	5,420.0	Gallup Fn.		-1.00	180.00

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
5,000.0	5,000.0	0.0	0.0	KOP @ 5000'
5,475.7	5,422.9	-128.0	-135.5	Start build/turn @ 5475' MD
6,114.1	5,654.5	-659.0	-324.6	LP @ 5654' TVD; 91°
13,334.7	5,528.5	-7,878.4	-327.6	TD at 13334.7

EnCana Oil & Gas (USA) Inc

Sandoval County, NM

Lybrook

Lybrook P28-2306 01H

H₂

Plan #2

Anticollision Report

08 January, 2014

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook P28-2306 01H
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 01H	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 #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2
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	13,334.7	Plan #2 (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						
Lybrook						
Lybrook M27-2306 03H - Hz - Plan #1	5,196.9	6,487.1	607.5	562.5	13.488	CC, ES, SF
Lybrook M27-2306 04H - Hz - FINAL	5,474.4	7,010.2	432.5	391.1	10.461	CC, ES, SF
Lybrook P28-2306 02H - HZ - Plan #3	4,900.0	4,900.0	32.9	15.9	1.930	CC, ES, SF

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
 Project: Sandoval County, NM
 Reference Site: Lybrook
 Site Error: 0.0ft
 Reference Well: Lybrook P28-2306 01H
 Well Error: 0.0ft
 Reference Wellbore: Hz
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Lybrook P28-2306 01H
 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			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
4,200.0	4,200.0	6,466.5	5,257.9	7.3	36.7	0.37	566.1	3.7	1,272.8	1,238.8	34.01	37.426	
4,300.0	4,300.0	6,466.1	5,257.9	7.5	36.7	0.41	566.1	4.0	1,184.1	1,149.9	34.19	34.631	
4,400.0	4,400.0	6,465.8	5,257.9	7.7	36.7	0.44	566.1	4.4	1,097.3	1,062.9	34.37	31.922	
4,500.0	4,500.0	6,465.4	5,258.0	7.8	36.7	0.48	566.1	4.7	1,012.9	978.4	34.56	29.312	
4,600.0	4,600.0	6,465.1	5,258.0	8.0	36.7	0.51	566.1	5.1	931.7	897.0	34.74	26.819	
4,700.0	4,700.0	6,464.7	5,258.0	8.2	36.7	0.55	566.1	5.4	854.4	819.5	34.92	24.466	
4,800.0	4,800.0	6,464.4	5,258.0	8.3	36.7	0.58	566.1	5.8	782.4	747.2	35.11	22.285	
4,900.0	4,900.0	6,464.0	5,258.0	8.5	36.6	0.62	566.1	6.1	717.0	681.7	35.29	20.317	
5,000.0	5,000.0	6,463.7	5,258.0	8.7	36.6	0.65	566.1	6.5	660.4	624.9	35.47	18.616	
5,100.0	5,099.5	6,469.6	5,257.9	8.9	36.8	136.53	566.2	0.6	620.7	575.4	45.29	13.704	
5,196.9	5,193.1	6,487.1	5,257.9	9.1	37.2	135.83	566.4	-16.9	607.5	562.5	45.04	13.488	CC, ES, SF
5,200.0	5,196.0	6,487.8	5,257.9	9.1	37.2	135.76	566.4	-17.6	607.5	562.5	45.03	13.492	
5,300.0	5,286.5	6,517.8	5,257.8	9.4	37.9	131.99	566.8	-47.6	621.9	577.2	44.69	13.917	
5,400.0	5,368.3	6,558.6	5,257.6	9.8	38.9	125.19	567.4	-88.4	660.1	615.7	44.42	14.862	
5,500.0	5,439.1	6,608.6	5,257.5	10.4	40.1	118.57	568.1	-138.4	715.9	671.9	43.92	16.301	
5,600.0	5,501.0	6,657.0	5,257.3	11.3	41.3	119.10	568.7	-186.8	787.1	745.7	41.42	19.002	
5,700.0	5,554.2	6,698.6	5,257.1	12.3	42.3	116.15	569.3	-228.4	870.8	832.9	37.90	22.975	
5,800.0	5,597.2	6,732.2	5,257.0	13.4	43.1	107.05	569.7	-262.0	962.8	929.2	33.51	28.727	
5,900.0	5,628.7	6,756.9	5,256.9	14.7	43.7	83.14	570.1	-286.7	1,059.4	1,031.1	28.24	37.517	
6,000.0	5,648.0	6,772.0	5,256.9	15.9	44.1	35.17	570.3	-301.8	1,157.8	1,136.5	21.28	54.398	
6,100.0	5,654.6	6,777.2	5,256.9	17.2	44.2	0.08	570.3	-307.0	1,255.7	1,239.5	16.13	77.845	

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
 Project: Sandoval County, NM
 Reference Site: Lybrook
 Site Error: 0.0ft
 Reference Well: Lybrook P28-2306 01H
 Well Error: 0.0ft
 Reference Wellbore: Hz
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Lybrook P28-2306 01H
 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	6,854.2	5,601.5	7.8	36.5	3.82	220.4	14.7	1,200.9	1,161.9	39.05	30.756	
4,600.0	4,600.0	6,855.6	5,601.5	8.0	36.5	3.46	220.4	13.3	1,102.8	1,063.7	39.14	28.177	
4,700.0	4,700.0	6,857.0	5,601.5	8.2	36.5	3.12	220.4	12.0	1,005.0	965.8	39.23	25.620	
4,800.0	4,800.0	6,858.3	5,601.5	8.3	36.6	2.77	220.4	10.7	907.7	868.4	39.32	23.087	
4,900.0	4,900.0	6,859.6	5,601.5	8.5	36.6	2.43	220.4	9.3	811.1	771.7	39.41	20.582	
5,000.0	5,000.0	6,860.9	5,601.5	8.7	36.6	2.09	220.4	8.0	715.4	675.9	39.50	18.112	
5,100.0	5,099.5	6,869.1	5,601.6	8.9	36.8	148.20	220.4	-0.1	623.7	581.2	42.48	14.682	
5,200.0	5,196.0	6,891.6	5,601.9	9.1	37.3	151.61	220.3	-22.7	542.9	501.5	41.35	13.130	
5,300.0	5,286.5	6,928.9	5,601.8	9.4	38.2	150.59	220.2	-59.9	479.6	438.6	41.04	11.687	
5,400.0	5,368.3	6,973.6	5,600.9	9.8	39.3	147.25	220.3	-104.7	441.3	400.3	41.06	10.749	
5,474.4	5,422.4	7,010.2	5,599.7	10.3	40.1	144.69	220.5	-141.2	432.5	391.1	41.34	10.461	CC, ES, SF
5,500.0	5,439.1	7,022.2	5,599.3	10.4	40.4	143.84	220.6	-153.2	433.4	392.1	41.33	10.486	
5,600.0	5,501.0	7,063.6	5,598.4	11.3	41.4	145.58	221.0	-194.6	457.9	417.8	40.10	11.418	
5,700.0	5,554.2	7,104.8	5,598.1	12.3	42.4	146.17	221.6	-235.8	511.1	473.4	37.69	13.561	
5,800.0	5,597.2	7,139.9	5,597.8	13.4	43.2	146.20	221.9	-270.9	585.0	551.0	34.09	17.162	
5,900.0	5,628.7	7,164.2	5,597.6	14.7	43.8	146.38	222.1	-295.1	672.7	643.2	29.48	22.819	
6,000.0	5,648.0	7,178.9	5,597.4	15.9	44.2	147.33	222.3	-309.9	768.2	743.9	24.38	31.517	
6,100.0	5,654.6	7,184.1	5,597.4	17.2	44.3	171.58	222.4	-315.0	867.5	850.8	16.71	51.907	
6,200.0	5,653.0	7,183.1	5,597.4	18.5	44.3	-122.85	222.3	-314.1	967.5	938.6	28.95	33.420	
6,300.0	5,651.2	7,182.1	5,597.4	19.9	44.2	-120.30	222.3	-313.1	1,067.5	1,036.9	30.59	34.895	
6,400.0	5,649.5	7,181.1	5,597.4	21.4	44.2	-118.27	222.3	-312.1	1,167.5	1,135.2	32.25	36.201	
6,500.0	5,647.8	7,180.2	5,597.4	22.9	44.2	-116.49	222.3	-311.1	1,267.5	1,233.6	33.92	37.366	

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
 Project: Sandoval County, NM
 Reference Site: Lybrook
 Site Error: 0.0ft
 Reference Well: Lybrook P28-2306 01H
 Well Error: 0.0ft
 Reference Wellbore: Hz
 Reference Design: Plan #2

Local Co-ordinate Reference: Well Lybrook P28-2306 01H
 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 02H - HZ - Plan #3													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference	Vertical	Measured	Vertical	Semi Major Axis		Highside	Offset Wellbore Centre		Distance		Total	Separation	Warning	
Measured Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	Reference (ft)	Offset (ft)	Toolface (°)	+N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	63.74	14.6	29.5	32.9					
100.0	100.0	100.0	100.0	0.1	0.1	63.74	14.6	29.5	32.9	32.6	0.29	112.235		
200.0	200.0	200.0	200.0	0.3	0.3	63.74	14.6	29.5	32.9	32.3	0.64	51.238		
300.0	300.0	300.0	300.0	0.5	0.5	63.74	14.6	29.5	32.9	31.9	0.99	33.196		
400.0	400.0	400.0	400.0	0.7	0.7	63.74	14.6	29.5	32.9	31.6	1.34	24.551		
500.0	500.0	500.0	500.0	0.8	0.8	63.74	14.6	29.5	32.9	31.2	1.69	19.479		
600.0	600.0	600.0	600.0	1.0	1.0	63.74	14.6	29.5	32.9	30.9	2.04	16.143		
700.0	700.0	700.0	700.0	1.2	1.2	63.74	14.6	29.5	32.9	30.5	2.39	13.783		
800.0	800.0	800.0	800.0	1.4	1.4	63.74	14.6	29.5	32.9	30.2	2.74	12.025		
900.0	900.0	900.0	900.0	1.5	1.5	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	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	63.74	14.6	29.5	32.9	15.9	17.05	1.930 CC, ES, SF		
5,000.0	5,000.0	4,995.0	4,994.6	8.7	8.7	71.51	12.4	37.1	39.5	22.1	17.39	2.269		
5,100.0	5,099.5	5,083.4	5,080.3	8.9	8.9	-145.66	6.6	57.5	67.8	50.2	17.60	3.854		

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 01H
Well Error: 0.0ft
Reference Wellbore: Hz
Reference Design: Plan #2

Local Co-ordinate Reference: Well Lybrook P28-2306 01H
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 02H - HZ - Plan #3													Offset Site Error: 0.0 ft	
Survey Program: 0-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		
5,200.0	5,196.0	5,157.0	5,148.5	9.1	9.1	-141.30	-1.0	84.0	121.2	103.6	17.60	6.884		
5,300.0	5,286.5	5,212.7	5,197.4	9.4	9.2	-136.59	-8.3	109.5	193.0	175.4	17.53	11.008		
5,400.0	5,368.3	5,250.0	5,228.6	9.8	9.4	-128.10	-13.9	129.1	277.4	259.6	17.78	15.600		
5,500.0	5,439.1	5,275.5	5,249.2	10.4	9.5	-111.33	-18.1	143.6	369.3	350.2	19.04	19.391		
5,600.0	5,501.0	5,300.0	5,268.3	11.3	9.7	-93.68	-22.3	158.4	461.7	441.2	20.47	22.553		
5,700.0	5,554.2	5,300.0	5,268.3	12.3	9.7	-77.21	-22.3	158.4	551.8	530.6	21.25	25.967		
5,800.0	5,597.2	5,323.9	5,286.3	13.4	9.8	-69.77	-26.6	173.5	638.6	616.8	21.80	29.290		
5,900.0	5,628.7	5,336.5	5,295.5	14.7	9.9	-63.32	-29.0	181.8	721.7	699.6	22.05	32.729		
6,000.0	5,648.0	5,350.0	5,305.1	15.9	10.0	-59.15	-31.6	190.9	800.3	778.1	22.23	36.003		
6,100.0	5,654.6	5,350.0	5,305.1	17.2	10.0	-55.42	-31.6	190.9	874.0	851.8	22.16	39.448		
6,200.0	5,653.0	5,369.0	5,318.3	18.5	10.1	-56.70	-35.3	204.0	946.0	922.4	23.52	40.213		
6,300.0	5,651.2	5,379.6	5,325.6	19.9	10.2	-57.63	-37.5	211.5	1,022.4	997.5	24.97	40.944		
6,400.0	5,649.5	5,400.0	5,338.9	21.4	10.4	-59.35	-41.7	226.3	1,102.6	1,075.9	26.67	41.342		
6,500.0	5,647.8	5,400.0	5,338.9	22.9	10.4	-59.35	-41.7	226.3	1,185.4	1,157.4	28.01	42.328		
6,600.0	5,646.0	6,943.9	5,654.7	24.4	30.3	-90.41	-1,145.4	885.2	1,210.1	1,161.8	48.27	25.067		
6,700.0	5,644.3	7,043.9	5,653.0	25.9	31.5	-90.41	-1,245.4	885.2	1,210.1	1,158.6	51.44	23.526		
6,800.0	5,642.5	7,143.9	5,651.2	27.5	32.8	-90.41	-1,345.3	885.1	1,210.1	1,155.4	54.64	22.146		
6,900.0	5,640.8	7,243.9	5,649.5	29.1	34.1	-90.41	-1,445.3	885.1	1,210.1	1,152.2	57.88	20.906		
7,000.0	5,639.0	7,343.9	5,647.7	30.7	35.4	-90.41	-1,545.3	885.0	1,210.1	1,148.9	61.15	19.788		
7,100.0	5,637.3	7,443.9	5,646.0	32.4	36.8	-90.41	-1,645.3	885.0	1,210.1	1,145.6	64.45	18.777		
7,200.0	5,635.5	7,543.9	5,644.3	34.0	38.2	-90.41	-1,745.3	885.0	1,210.1	1,142.3	67.76	17.858		
7,300.0	5,633.8	7,643.9	5,642.5	35.6	39.7	-90.41	-1,845.3	884.9	1,210.1	1,139.0	71.10	17.020		
7,400.0	5,632.0	7,743.9	5,640.8	37.3	41.2	-90.41	-1,945.2	884.9	1,210.1	1,135.6	74.45	16.254		
7,500.0	5,630.3	7,843.9	5,639.0	39.0	42.7	-90.41	-2,045.2	884.9	1,210.1	1,132.3	77.81	15.552		
7,600.0	5,628.6	7,943.9	5,637.3	40.7	44.2	-90.41	-2,145.2	884.8	1,210.1	1,128.9	81.19	14.905		
7,700.0	5,626.8	8,043.9	5,635.5	42.3	45.8	-90.41	-2,245.2	884.8	1,210.1	1,125.5	84.57	14.308		
7,800.0	5,625.1	8,143.9	5,633.8	44.0	47.3	-90.41	-2,345.2	884.7	1,210.1	1,122.1	87.97	13.756		
7,900.0	5,623.3	8,243.9	5,632.0	45.7	48.9	-90.41	-2,445.2	884.7	1,210.1	1,118.7	91.38	13.243		
8,000.0	5,621.6	8,343.9	5,630.3	47.4	50.5	-90.41	-2,545.2	884.7	1,210.1	1,115.3	94.79	12.767		
8,100.0	5,619.8	8,443.9	5,628.6	49.1	52.1	-90.41	-2,645.1	884.6	1,210.1	1,111.9	98.21	12.322		
8,200.0	5,618.1	8,543.9	5,626.8	50.8	53.7	-90.41	-2,745.1	884.6	1,210.1	1,108.5	101.63	11.907		
8,300.0	5,616.3	8,643.9	5,625.1	52.5	55.3	-90.41	-2,845.1	884.6	1,210.1	1,105.1	105.06	11.518		
8,400.0	5,614.6	8,743.9	5,623.3	54.3	56.9	-90.41	-2,945.1	884.5	1,210.1	1,101.6	108.50	11.154		
8,500.0	5,612.9	8,843.9	5,621.6	56.0	58.6	-90.41	-3,045.1	884.5	1,210.1	1,098.2	111.94	10.811		
8,600.0	5,611.1	8,943.9	5,619.8	57.7	60.2	-90.41	-3,145.1	884.4	1,210.1	1,094.8	115.38	10.488		
8,700.0	5,609.4	9,043.9	5,618.1	59.4	61.9	-90.41	-3,245.0	884.4	1,210.1	1,091.3	118.83	10.184		
8,800.0	5,607.6	9,143.9	5,616.3	61.1	63.5	-90.41	-3,345.0	884.4	1,210.2	1,087.9	122.28	9.897		
8,900.0	5,605.9	9,243.9	5,614.6	62.8	65.2	-90.41	-3,445.0	884.3	1,210.2	1,084.4	125.73	9.625		
9,000.0	5,604.1	9,343.9	5,612.9	64.6	66.8	-90.41	-3,545.0	884.3	1,210.2	1,081.0	129.19	9.367		
9,100.0	5,602.4	9,443.9	5,611.1	66.3	68.5	-90.41	-3,645.0	884.3	1,210.2	1,077.5	132.65	9.123		
9,200.0	5,600.6	9,543.9	5,609.4	68.0	70.2	-90.41	-3,745.0	884.2	1,210.2	1,074.1	136.11	8.891		
9,300.0	5,598.9	9,643.9	5,607.6	69.8	71.9	-90.41	-3,845.0	884.2	1,210.2	1,070.6	139.58	8.670		
9,400.0	5,597.1	9,743.9	5,605.9	71.5	73.5	-90.41	-3,944.9	884.1	1,210.2	1,067.1	143.04	8.460		
9,500.0	5,595.4	9,843.9	5,604.1	73.2	75.2	-90.41	-4,044.9	884.1	1,210.2	1,063.7	146.51	8.260		
9,600.0	5,593.7	9,943.9	5,602.4	74.9	76.9	-90.41	-4,144.9	884.1	1,210.2	1,060.2	149.98	8.069		
9,700.0	5,591.9	10,043.9	5,600.6	76.7	78.6	-90.41	-4,244.9	884.0	1,210.2	1,056.7	153.45	7.886		
9,800.0	5,590.2	10,143.9	5,598.9	78.4	80.3	-90.41	-4,344.9	884.0	1,210.2	1,053.3	156.93	7.712		
9,900.0	5,588.4	10,243.9	5,597.1	80.1	82.0	-90.41	-4,444.9	884.0	1,210.2	1,049.8	160.40	7.545		
10,000.0	5,586.7	10,343.9	5,595.4	81.9	83.7	-90.41	-4,544.9	883.9	1,210.2	1,046.3	163.88	7.385		
10,100.0	5,584.9	10,443.9	5,593.7	83.6	85.4	-90.41	-4,644.8	883.9	1,210.2	1,042.9	167.36	7.231		
10,200.0	5,583.2	10,543.9	5,591.9	85.4	87.1	-90.41	-4,744.8	883.8	1,210.2	1,039.4	170.84	7.084		
10,300.0	5,581.4	10,643.9	5,590.2	87.1	88.8	-90.41	-4,844.8	883.8	1,210.2	1,035.9	174.32	6.943		

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 01H
Well Error: 0.0ft
Reference Wellbore: Hz
Reference Design: Plan #2

Local Co-ordinate Reference: Well Lybrook P28-2306 01H
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 02H - HZ - Plan #3														Offset Site Error:	0.0 ft
Survey Program: O-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)					
10,400.0	5,579.7	10,743.9	5,588.4	88.8	90.5	-90.41	-4,944.8	883.8	1,210.2	1,032.4	177.80	6.807			
10,500.0	5,577.9	10,843.9	5,586.7	90.6	92.2	-90.41	-5,044.8	883.7	1,210.2	1,028.9	181.28	6.676			
10,600.0	5,576.2	10,943.9	5,584.9	92.3	94.0	-90.41	-5,144.8	883.7	1,210.2	1,025.5	184.76	6.550			
10,700.0	5,574.5	11,043.9	5,583.2	94.1	95.7	-90.41	-5,244.7	883.7	1,210.2	1,022.0	188.25	6.429			
10,800.0	5,572.7	11,143.9	5,581.4	95.8	97.4	-90.41	-5,344.7	883.6	1,210.2	1,018.5	191.73	6.312			
10,900.0	5,571.0	11,243.9	5,579.7	97.5	99.1	-90.41	-5,444.7	883.6	1,210.2	1,015.0	195.22	6.200			
11,000.0	5,569.2	11,343.9	5,578.0	99.3	100.8	-90.41	-5,544.7	883.6	1,210.2	1,011.5	198.70	6.091			
11,100.0	5,567.5	11,443.9	5,576.2	101.0	102.5	-90.41	-5,644.7	883.5	1,210.3	1,008.1	202.19	5.986			
11,200.0	5,565.7	11,543.9	5,574.5	102.8	104.3	-90.41	-5,744.7	883.5	1,210.3	1,004.6	205.68	5.884			
11,300.0	5,564.0	11,643.9	5,572.7	104.5	106.0	-90.41	-5,844.7	883.4	1,210.3	1,001.1	209.17	5.786			
11,400.0	5,562.2	11,743.9	5,571.0	106.2	107.7	-90.41	-5,944.6	883.4	1,210.3	997.6	212.66	5.691			
11,500.0	5,560.5	11,843.9	5,569.2	108.0	109.4	-90.41	-6,044.6	883.4	1,210.3	994.1	216.14	5.599			
11,600.0	5,558.8	11,943.9	5,567.5	109.7	111.2	-90.41	-6,144.6	883.3	1,210.3	990.6	219.64	5.510			
11,700.0	5,557.0	12,043.9	5,565.7	111.5	112.9	-90.41	-6,244.6	883.3	1,210.3	987.2	223.13	5.424			
11,800.0	5,555.3	12,143.9	5,564.0	113.2	114.6	-90.41	-6,344.6	883.3	1,210.3	983.7	226.62	5.341			
11,900.0	5,553.5	12,243.9	5,562.2	115.0	116.3	-90.41	-6,444.6	883.2	1,210.3	980.2	230.11	5.260			
12,000.0	5,551.8	12,343.9	5,560.5	116.7	118.1	-90.41	-6,544.5	883.2	1,210.3	976.7	233.60	5.181			
12,100.0	5,550.0	12,443.9	5,558.8	118.5	119.8	-90.41	-6,644.5	883.1	1,210.3	973.2	237.09	5.105			
12,200.0	5,548.3	12,543.9	5,557.0	120.2	121.5	-90.41	-6,744.5	883.1	1,210.3	969.7	240.59	5.031			
12,300.0	5,546.5	12,643.9	5,555.3	122.0	123.3	-90.41	-6,844.5	883.1	1,210.3	966.2	244.08	4.959			
12,400.0	5,544.8	12,743.9	5,553.5	123.7	125.0	-90.41	-6,944.5	883.0	1,210.3	962.7	247.57	4.889			
12,500.0	5,543.0	12,843.9	5,551.8	125.4	126.7	-90.41	-7,044.5	883.0	1,210.3	959.2	251.07	4.821			
12,600.0	5,541.3	12,943.9	5,550.0	127.2	128.4	-90.41	-7,144.5	883.0	1,210.3	955.8	254.56	4.754			
12,700.0	5,539.6	13,043.9	5,548.3	128.9	130.2	-90.41	-7,244.4	882.9	1,210.3	952.3	258.06	4.690			
12,800.0	5,537.8	13,143.9	5,546.5	130.7	131.9	-90.41	-7,344.4	882.9	1,210.3	948.8	261.55	4.627			
12,900.0	5,536.1	13,243.9	5,544.8	132.4	133.7	-90.41	-7,444.4	882.8	1,210.3	945.3	265.05	4.566			
13,000.0	5,534.3	13,343.9	5,543.1	134.2	135.4	-90.41	-7,544.4	882.8	1,210.3	941.8	268.55	4.507			
13,100.0	5,532.6	13,443.9	5,541.3	135.9	137.1	-90.41	-7,644.4	882.8	1,210.3	938.3	272.04	4.449			
13,200.0	5,530.8	13,543.9	5,539.6	137.7	138.9	-90.41	-7,744.4	882.7	1,210.3	934.8	275.54	4.393			
13,300.0	5,529.1	13,643.9	5,537.8	139.4	140.6	-90.41	-7,844.3	882.7	1,210.3	931.3	279.04	4.338			
13,334.7	5,528.5	13,678.6	5,537.2	140.0	141.2	-90.41	-7,879.0	882.7	1,210.3	930.1	280.25	4.319			

Anticollision Report

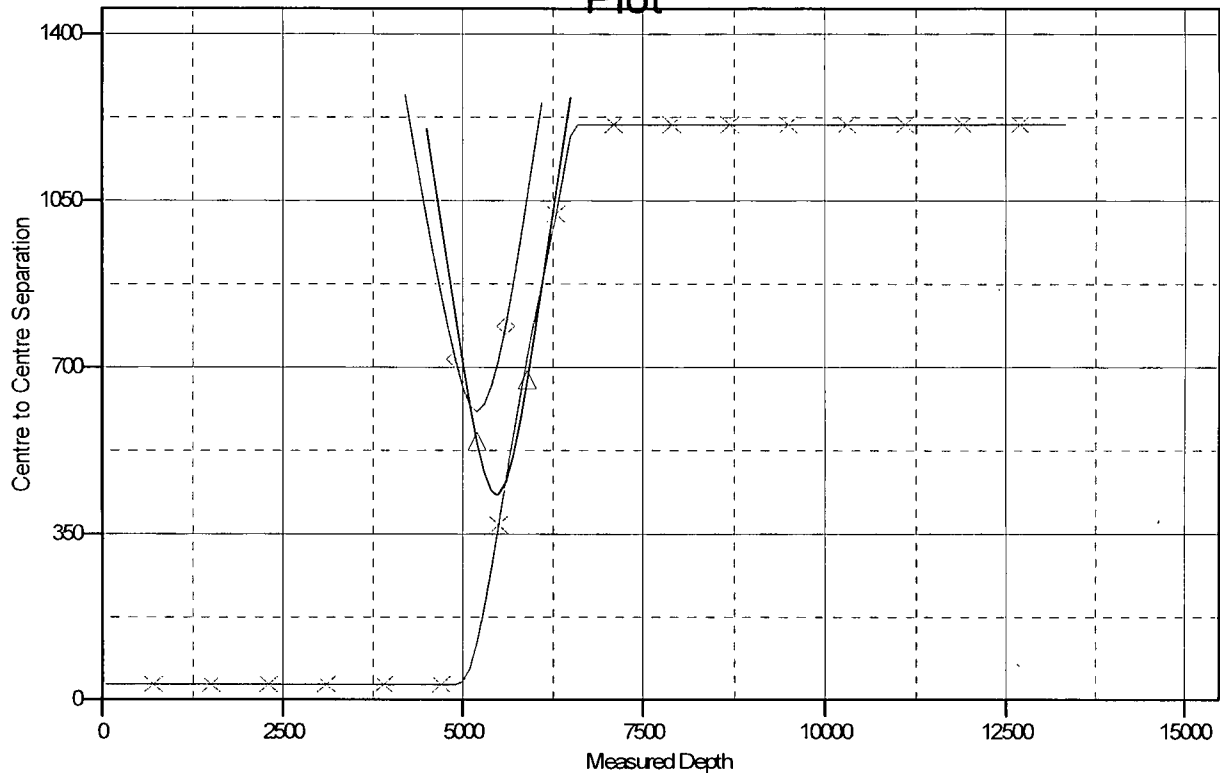
Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Reference Site: Lybrook
Site Error: 0.0ft
Reference Well: Lybrook P28-2306 01H
Well Error: 0.0ft
Reference Wellbore: Hz
Reference Design: Plan #2

Local Co-ordinate Reference: Well Lybrook P28-2306 01H
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 01H
 Coordinate System is US State Plane 1983, New Mexico Central Zone
 Grid Convergence at Surface is: -0.72°

Ladder Plot



LEGEND

▲ LybrookM27-2306 04H, Hz, FINAL V0 ◆ LybrookM27-2306 03H, Hz, Plan #1 V0 ✕ Lybrook P28-2306 02H, HZ, Plan #3 V0

Lybrook P28-2306 01H
SHL: SESE Section 28, T23N, R6W
336 FSL and 1280 FEL
BHL: SWNE Section 4, T22N, R6W
2372 FNL and 1610 FEL
Sandoval County, 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	5159
Gallup Fn.	5420

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	5159
Oil/Gas	Gallup Fn.	5420

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

3. PRESSURE CONTROL

- a) Pressure control equipment and configuration will be designed to meet 2M standards.
- b) Working pressure on rams and BOPE will be 3,000 psi.
- c) Function test and visual inspection of the BOP will be conducted daily and noted in the IADC Daily Drilling Report.
- d) The Annular BOP will be pressure tested to a minimum of 50 percent of its rated working pressure.
- e) Blind and Pipe Rams/BOP will be tested against a test plug to 100 percent of rated working pressure.
- f) Pressure tests are required before drilling out from under all casing strings set and cemented in place.

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- g) BOP controls must be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned.
- h) BOP testing procedures and testing frequency will conform to Onshore Order No. 2.
- i) BOP remote controls shall be located on the rig floor at a location readily accessible to the driller. Master controls shall be on the ground at the accumulator and shall have the capability to function all preventers.
- j) The kill line shall be 2-inch minimum and contain two kill line valves, one of which shall be a check valve.
- k) The choke line shall be a 2-inch minimum and contain two choke line valves (2-inch minimum).
- l) The choke and manifold shall contain two adjustable chokes.
- m) Hand wheels shall be installed on all ram preventers.
- n) Safety valves and wrenches (with subs for drill string connections) shall be available on the rig floor at all 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'-6021'MD	8 3/4"	7"	26#	J55, LTC New
Production Liner	5821'-13335'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	6021'MD	30% open hole excess Stage 1 Lead: 247sks Stage 1 Tail: 169sks Stage 2 Lead: 193sks	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*	5821'-13335'	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 5000'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5529'/13335'	Gallup

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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- 5651'TVD/6021'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"	6021'-13335'	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 +/- 2647 psi based on a 9.0 ppg at 5655' 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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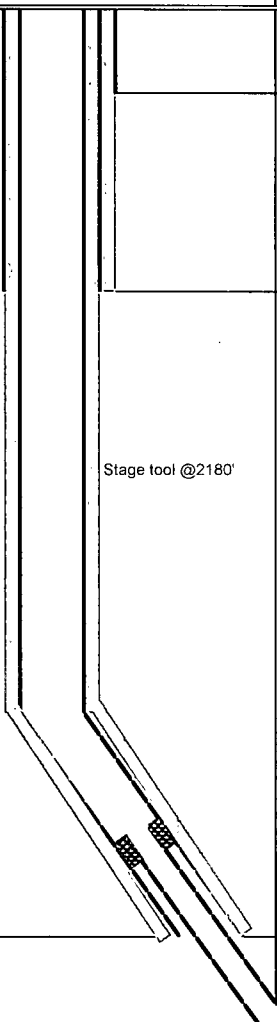
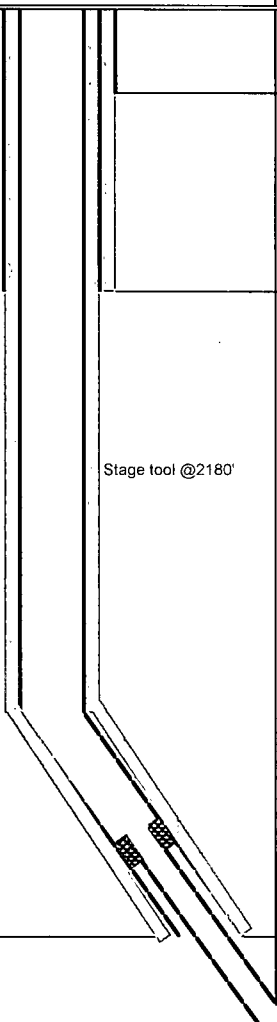
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9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on May 7, 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 01H			Encana Natural Gas WELL SUMMARY					ENG: 1/8/14 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 16.0 ppg cmt	Fresh wtr 8.3-9.2	
Surveys After csg is run	None					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 Point Lookout Ss Mancos Sh	1560 1729 1883 2130 2249 2939 3686 4382 4565			8 3/4	7" 26ppf J55 LTC TOC @ surface 30% OH excess: 609 sksTotal. Stage 1 Lead: 247sks Stage 1 Tail: 169sks. Stage 2 Lead: 193sks	Fresh Wtr 8.5-8.8	Vertical <1°
	Mud logger onsite	KICK OFF PT Mancos Silt Gallup Top 7" csg setting	5000 5159 5420 5651	6021					
Surveys every 500' Gyro at CP MWD Gamma Directional	No OH Logs	horz target	5655	6114		6 1/8	200' overlap at liner top		.25deg updip 5529'TVD TD = 13335' MD
		Base Gallup	5717				7221' Lateral	8.6-9.0 OBM	Switch to OBM 8.6-9.0
							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		

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 5000', 8 3/4" hole size,
- 5) PU directional tools and start curve at 10deg/100' build rate
- 6) Drill to casing point of 6021' MD
- 7) R&C 7" casing, circ cmt to surface, switch to OBM
- 8) Land at 90deg, drill 7221' lateral to 13335', run 4 1/2" liner with external swellable csg packers