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 9th, 2014

Application Type:

☐ P&A ☒ Drilling/Casing Change ☐ Recomplete/DHC

☒ Location Change ☒ Other: New TD

Well information: 30-043-21178, Lybrook M28-2306 01H, Encana, M28, 23N, 3W

Conditions of Approval:

Notify NMOCD 24hrs prior to beginning operations
Hold C104 for as drilled plat and directional survey

FEB 25 2014

NMOCD Approved by Signature Date

CONFIDENTIAL

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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*

RECEIVED
JAN 10 2014
Farmington Field Office
Bureau of Land Management

1. Type of Well ☑ Oil Well ☐ Gas Well ☐ Other	5. Lease Serial No. NMNM 112953
	6. If Indian, Allottee or Tribe Name N/A
	7. If Unit of CA/Agreement, Name and/or No. N/A
	8. Well Name and No. Lybrook M28-2306 01H
2. Name of Operator Encana Oil & Gas (USA) Inc.	9. API Well No. PENDING 30-043-21178
3a. Address 370 17th Street, Suite 1700 Denver, CO 80202 3b. Phone No. *(include area code)* 720-876-3437	10. Field and Pool or Exploratory Area Lybrook Gallup
4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)* SHL: 354' FSL and 1265' FWL Sec 28, T23N, R6W BHL: 330'FSL and 400'FWL Sec 33, T23N, R6W	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
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other _____
	☑ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	_____
☐ Final Abandonment Notice	☐ 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 recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Encana Oil & Gas (USA) Inc. (Encana) would like to move the BHL for the Lybrook M28-2306 01H well from 330'FSL and 550'FWL Sec 33, T23N, R6W to 330'FSL and 400'FWL Sec 33, T23N, R6W. This will change the TD of the well from 10880'MD to 11030'MD and will change the kick off point from 4973' to 4992'.

Encana would also like to change the intermediate casing setting depth from 6289'MD to 6440'MD. This will slightly change the cementing program for the well.

Please see attached C-102, directional plan, 10 point drilling plan and wellbore diagram for details.

RCVD FEB 3'14
OIL CONS. DIV.
DIST. 3

CONDITIONS OF APPROVAL
Adhere to previously issued stipulations.

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

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)* Amanda Cavoto	Title Engineering Technologist
Signature Amanda Cavoto	Date 1/9/14

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by Troy Salyers	Title Petroleum Engineer	Date 1/27/2014
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office FFO	

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

(Instructions on page 2)

NMOCD PV

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

☐ AMENDED REPORT

RECEIVED
JAN 10 2014
Bureau of Land Management

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-043-21178	42289	LYBROOK GALLUP

4 Property Code	5 Property Name	6 Well Number
40416	LYBROOK M28-2306	01H

7 OGRID No.	8 Operator Name	9 Elevation
282327	ENCANA OIL & GAS (USA) INC.	7220'

10 Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	28	23N	6W		354	SOUTH	1265	WEST	SANDOVAL

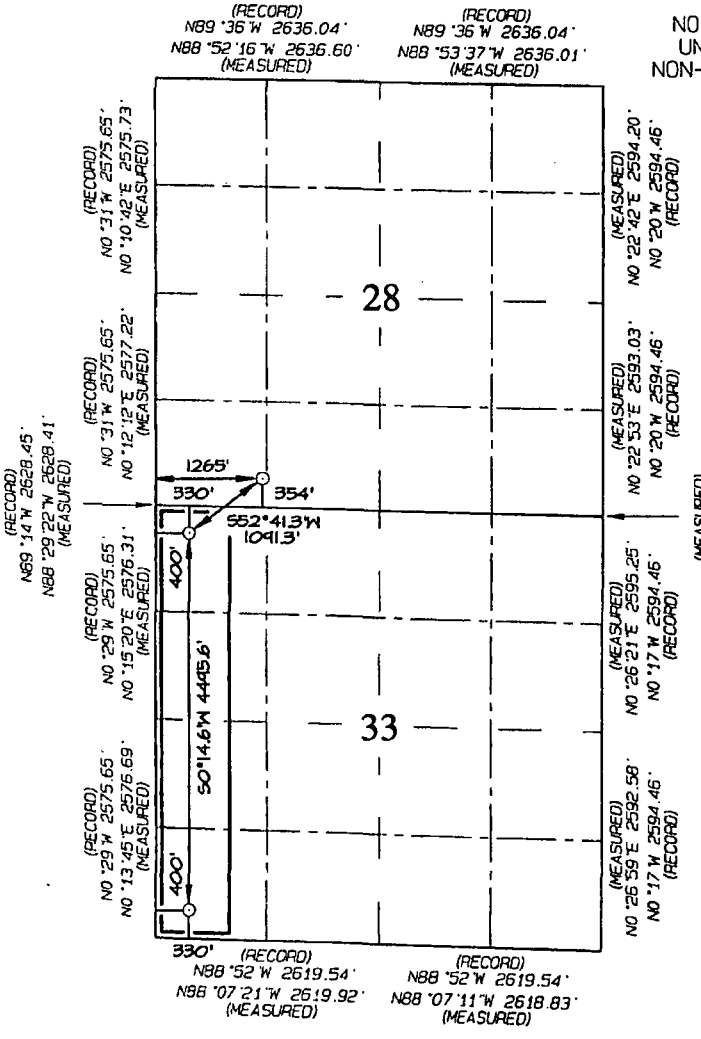
11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	33	23N	6W		330	SOUTH	400	WEST	SANDOVAL

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
106.67 Acres WEST 1/3 OF W/2 - Section 33			

RCVD FEB 3 '14
OIL CONS. DIV.
DIST. 3

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



SURFACE LOCATION
354' FSL 1265' FWL
SECTION 28, T23N, R6W
LAT: 36.19023 °N
LONG: 107.47735 °W
DATUM: NAD1927

LAT: 36.19024 °N
LONG: 107.47796 °W
DATUM: NAD1983

POINT-OF-ENTRY
330' FNL 400' FWL
SECTION 33, T23N, R6W
LAT: 36.18838 °N
LONG: 107.48026 °W
DATUM: NAD1927

LAT: 36.18840 °N
LONG: 107.48087 °W
DATUM: NAD1983

END-OF-LATERAL
330' FSL 400' FWL
SECTION 33, T23N, R6W
LAT: 36.17603 °N
LONG: 107.48014 °W
DATUM: NAD1927

LAT: 36.17605 °N
LONG: 107.48074 °W
DATUM: NAD1983

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, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date 12/12/13

Holly Hill
Printed Name

holly.hill@encana.com
E-mail Address

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: SEPTEMBER 5, 2012

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

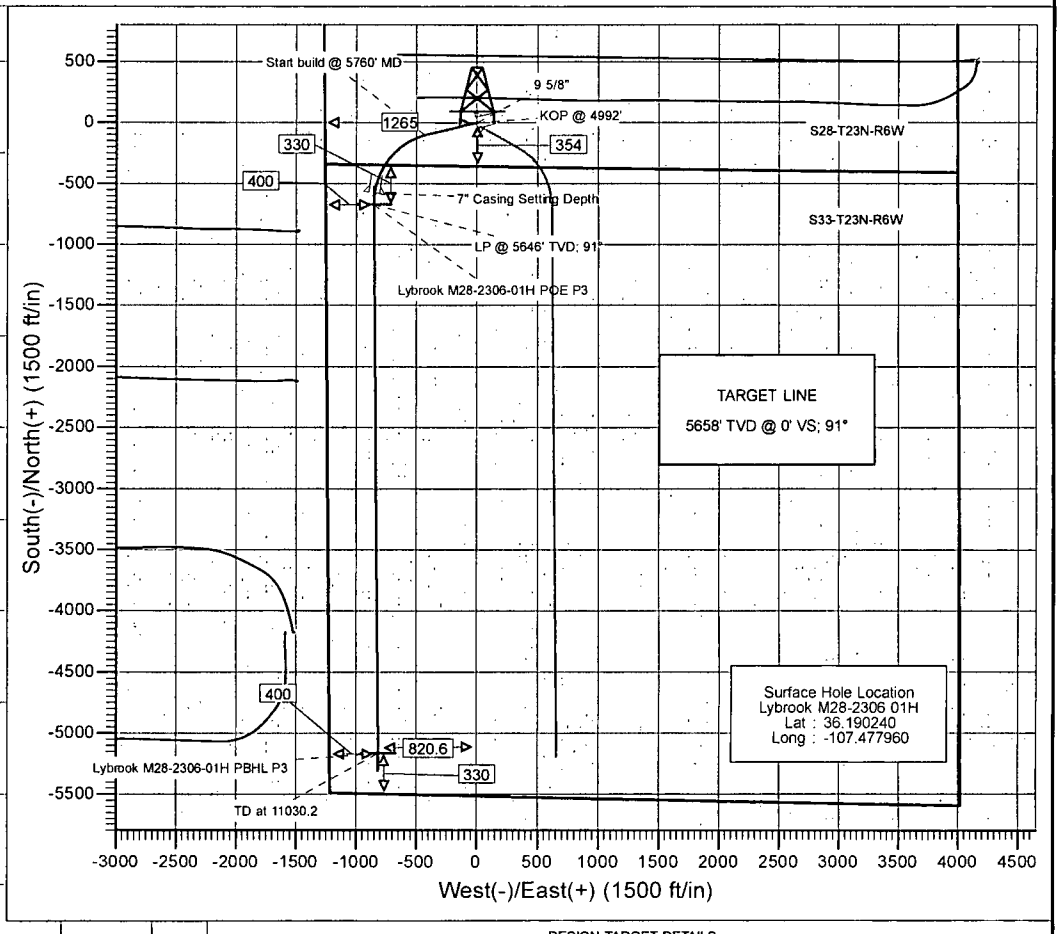
encana natural gas

Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook M28-2306 01H
Wellbore: Hz
Design: Plan #3

CATHEDRAL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4992.0	0.00	0.00	4992.0	0.0	0.0	0.00	0.00	0.0	
3	5760.1	76.81	256.21	5549.9	-105.4	-429.5	10.00	256.21	101.8	
4	6533.1	91.00	179.51	5646.4	-669.9	-858.8	10.00	-85.91	662.5	Lybrook M28-2306-01H POE P3
5	11030.2	91.00	179.51	5567.9	-5166.1	-820.6	0.00	0.00	5158.9	Lybrook M28-2306-01H PBHL P3



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Lybrook M28-2306-01H PBHL P3	-5166.1	-820.6	1885654.51	1277190.20	36.176050	-107.480740
Lybrook M28-2306-01H POE P3	-669.9	-858.8	1890150.88	1277208.86	36.188400	-107.480870

CASING DETAILS

TVD	MD	Name
500.0	500.0	9 5/8"
5646.2	6440.0	7" Casing Setting Depth

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1550.0	1550.0	Ojo Alamo
1731.0	1731.0	Kirtland Shale
1880.0	1880.0	Fruitland Coal
2130.0	2130.0	Pictured Cliffs Ss.
2244.0	2244.0	Lewis Shale
2932.0	2932.0	Cliffhouse Ss.
3690.0	3690.0	Menefee Fn.
4390.0	4390.0	Point Lookout Ss.
4568.0	4568.0	Mancos Shale
5151.9	5154.1	Mancos Silt
5410.3	5460.9	Gallup Fn.

Azimuths to True North
Magnetic North: 9.44°

Magnetic Field
Strength: 50233.5snT
Dip Angle: 62.99°
Date: 8/26/2013
Model: IGRF2010

Plan #3
Lybrook M28-2306 01H
13xxx; LR
WELL @ 7236.0ft (Aztec)
Ground Elevation @ 7220.0
North American Datum 1983
Well Lybrook M28-2306 01H, True North

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Lybrook M28-2306 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 7236.0ft (Aztec)
Project:	Sandoval County, NM	**MD Reference:**	WELL @ 7236.0ft (Aztec)
Site:	Lybrook	**North Reference:**	True
Well:	Lybrook M28-2306 01H	**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 M28-2306 01H					
Well Position	**+N/-S**	0.0 ft	**Northing:**	1,890,809.83 ft	**Latitude:**	36.190240
	+E/-W	0.0 ft	**Easting:**	1,278,076.07 ft	**Longitude:**	-107.477960
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	7,220.0 ft

Wellbore	Hz				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	8/26/2013	9.44	62.99	50,234

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	179.51	

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	
4,992.0	0.00	0.00	4,992.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,760.1	76.81	256.21	5,549.9	-105.4	-429.5	10.00	10.00	0.00	256.21	
6,533.1	91.00	179.51	5,646.4	-669.9	-858.8	10.00	1.84	-9.92	-85.91	Lybrook M28-2306-01
11,030.2	91.00	179.51	5,567.9	-5,166.1	-820.6	0.00	0.00	0.00	0.00	Lybrook M28-2306-01

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Lybrook M28-2306 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 7236.0ft (Aztec)
Project:	Sandoval County, NM	**MD Reference:**	WELL @ 7236.0ft (Aztec)
Site:	Lybrook	**North Reference:**	True
Well:	Lybrook M28-2306 01H	**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
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	
1,550.0	0.00	0.00	1,550.0	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	
1,731.0	0.00	0.00	1,731.0	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	
1,880.0	0.00	0.00	1,880.0	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	
2,244.0	0.00	0.00	2,244.0	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	
2,932.0	0.00	0.00	2,932.0	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	
3,690.0	0.00	0.00	3,690.0	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	
4,390.0	0.00	0.00	4,390.0	0.0	0.0	0.0	0.00	0.00	Point Lookout Ss.

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Lybrook M28-2306 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 7236.0ft (Aztec)
Project:	Sandoval County, NM	**MD Reference:**	WELL @ 7236.0ft (Aztec)
Site:	Lybrook	**North Reference:**	True
Well:	Lybrook M28-2306 01H	**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	
4,568.0	0.00	0.00	4,568.0	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	
4,992.0	0.00	0.00	4,992.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4992'
5,000.0	0.80	256.21	5,000.0	0.0	-0.1	0.0	10.00	10.00	
5,100.0	10.80	256.21	5,099.4	-2.4	-9.9	2.3	10.00	10.00	
5,154.1	16.21	256.21	5,151.9	-5.4	-22.1	5.2	10.00	10.00	Mancos Silt
5,200.0	20.80	256.21	5,195.5	-8.9	-36.3	8.6	10.00	10.00	
5,300.0	30.80	256.21	5,285.4	-19.3	-78.5	18.6	10.00	10.00	
5,400.0	40.80	256.21	5,366.4	-33.2	-135.2	32.0	10.00	10.00	
5,460.9	46.89	256.21	5,410.3	-43.2	-176.1	41.7	10.00	10.00	Gallup Fn.
5,500.0	50.80	256.21	5,436.0	-50.3	-204.7	48.5	10.00	10.00	
5,600.0	60.80	256.21	5,492.2	-70.0	-285.0	67.5	10.00	10.00	
5,700.0	70.80	256.21	5,533.1	-91.7	-373.4	88.5	10.00	10.00	
5,760.1	76.81	256.21	5,549.9	-105.4	-429.5	101.8	10.00	10.00	Start build @ 5760' MD
5,800.0	77.13	252.13	5,558.9	-116.0	-466.9	112.0	10.00	0.79	
5,900.0	78.19	241.95	5,580.3	-154.1	-556.7	149.3	10.00	1.06	
6,000.0	79.61	231.86	5,599.6	-207.6	-638.7	202.2	10.00	1.42	
6,100.0	81.35	221.88	5,616.1	-275.0	-710.6	268.9	10.00	1.73	
6,200.0	83.34	211.99	5,629.5	-354.1	-770.1	347.5	10.00	1.99	
6,300.0	85.52	202.19	5,639.2	-442.6	-815.3	435.6	10.00	2.18	
6,400.0	87.84	192.44	5,645.0	-537.8	-845.0	530.5	10.00	2.31	
6,440.0	88.78	188.55	5,646.2	-577.1	-852.3	569.8	10.00	2.37	7" Casing Setting Depth
6,500.0	90.21	182.73	5,646.8	-636.8	-858.2	629.4	10.00	2.38	
6,533.1	91.00	179.51	5,646.4	-669.9	-858.8	662.5	10.00	2.38	LP @ 5646' TVD; 91°
6,600.0	91.00	179.51	5,645.2	-736.8	-858.2	729.4	0.00	0.00	
6,700.0	91.00	179.51	5,643.5	-836.7	-857.4	829.4	0.00	0.00	
6,800.0	91.00	179.51	5,641.7	-936.7	-856.5	929.4	0.00	0.00	
6,900.0	91.00	179.51	5,640.0	-1,036.7	-855.7	1,029.3	0.00	0.00	
7,000.0	91.00	179.51	5,638.3	-1,136.7	-854.8	1,129.3	0.00	0.00	
7,100.0	91.00	179.51	5,636.5	-1,236.7	-854.0	1,229.3	0.00	0.00	
7,200.0	91.00	179.51	5,634.8	-1,336.6	-853.1	1,329.3	0.00	0.00	
7,300.0	91.00	179.51	5,633.0	-1,436.6	-852.3	1,429.3	0.00	0.00	
7,400.0	91.00	179.51	5,631.3	-1,536.6	-851.4	1,529.3	0.00	0.00	
7,500.0	91.00	179.51	5,629.5	-1,636.6	-850.6	1,629.2	0.00	0.00	
7,600.0	91.00	179.51	5,627.8	-1,736.6	-849.7	1,729.2	0.00	0.00	
7,700.0	91.00	179.51	5,626.0	-1,836.5	-848.9	1,829.2	0.00	0.00	
7,800.0	91.00	179.51	5,624.3	-1,936.5	-848.0	1,929.2	0.00	0.00	
7,900.0	91.00	179.51	5,622.5	-2,036.5	-847.2	2,029.2	0.00	0.00	
8,000.0	91.00	179.51	5,620.8	-2,136.5	-846.3	2,129.2	0.00	0.00	
8,100.0	91.00	179.51	5,619.0	-2,236.5	-845.5	2,229.2	0.00	0.00	
8,200.0	91.00	179.51	5,617.3	-2,336.4	-844.6	2,329.1	0.00	0.00	
8,300.0	91.00	179.51	5,615.6	-2,436.4	-843.8	2,429.1	0.00	0.00	
8,400.0	91.00	179.51	5,613.8	-2,536.4	-842.9	2,529.1	0.00	0.00	
8,500.0	91.00	179.51	5,612.1	-2,636.4	-842.1	2,629.1	0.00	0.00	
8,600.0	91.00	179.51	5,610.3	-2,736.4	-841.2	2,729.1	0.00	0.00	
8,700.0	91.00	179.51	5,608.6	-2,836.4	-840.4	2,829.1	0.00	0.00	
8,800.0	91.00	179.51	5,606.8	-2,936.3	-839.5	2,929.0	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Lybrook M28-2306 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 7236.0ft (Aztec)
Project:	Sandoval County, NM	**MD Reference:**	WELL @ 7236.0ft (Aztec)
Site:	Lybrook	**North Reference:**	True
Well:	Lybrook M28-2306 01H	**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	179.51	5,605.1	-3,036.3	-838.7	3,029.0	0.00	0.00	
9,000.0	91.00	179.51	5,603.3	-3,136.3	-837.8	3,129.0	0.00	0.00	
9,100.0	91.00	179.51	5,601.6	-3,236.3	-837.0	3,229.0	0.00	0.00	
9,200.0	91.00	179.51	5,599.8	-3,336.3	-836.1	3,329.0	0.00	0.00	
9,300.0	91.00	179.51	5,598.1	-3,436.2	-835.3	3,429.0	0.00	0.00	
9,400.0	91.00	179.51	5,596.4	-3,536.2	-834.4	3,529.0	0.00	0.00	
9,500.0	91.00	179.51	5,594.6	-3,636.2	-833.6	3,628.9	0.00	0.00	
9,600.0	91.00	179.51	5,592.9	-3,736.2	-832.7	3,728.9	0.00	0.00	
9,700.0	91.00	179.51	5,591.1	-3,836.2	-831.9	3,828.9	0.00	0.00	
9,800.0	91.00	179.51	5,589.4	-3,936.1	-831.0	3,928.9	0.00	0.00	
9,900.0	91.00	179.51	5,587.6	-4,036.1	-830.2	4,028.9	0.00	0.00	
10,000.0	91.00	179.51	5,585.9	-4,136.1	-829.3	4,128.9	0.00	0.00	
10,100.0	91.00	179.51	5,584.1	-4,236.1	-828.5	4,228.9	0.00	0.00	
10,200.0	91.00	179.51	5,582.4	-4,336.1	-827.6	4,328.8	0.00	0.00	
10,300.0	91.00	179.51	5,580.6	-4,436.1	-826.8	4,428.8	0.00	0.00	
10,400.0	91.00	179.51	5,578.9	-4,536.0	-825.9	4,528.8	0.00	0.00	
10,500.0	91.00	179.51	5,577.2	-4,636.0	-825.1	4,628.8	0.00	0.00	
10,600.0	91.00	179.51	5,575.4	-4,736.0	-824.2	4,728.8	0.00	0.00	
10,700.0	91.00	179.51	5,573.7	-4,836.0	-823.4	4,828.8	0.00	0.00	
10,800.0	91.00	179.51	5,571.9	-4,936.0	-822.5	4,928.7	0.00	0.00	
10,900.0	91.00	179.51	5,570.2	-5,035.9	-821.7	5,028.7	0.00	0.00	
11,000.0	91.00	179.51	5,568.4	-5,135.9	-820.8	5,128.7	0.00	0.00	
11,030.2	91.00	179.51	5,567.9	-5,166.1	-820.6	5,158.9	0.00	0.00	TD at 11030.2

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 M28-2306-01H - plan hits target center - Point	0.00	0.00	5,567.9	-5,166.1	-820.6	1,885,654.51	1,277,190.20	36.176050	-107.480740
Lybrook M28-2306-01H - plan hits target center - Point	0.00	0.00	5,646.4	-669.9	-858.8	1,890,150.88	1,277,208.86	36.188400	-107.480870
Lybrook M28-2306-01H - plan misses target center by 179.2ft at 11030.2ft MD (5567.9 TVD, -5166.1 N, -820.6 E) - Point	0.00	0.00	5,665.0	-5,169.8	-670.0	1,885,648.96	1,277,340.68	36.176040	-107.480230
Lybrook M28-2306-01H - plan misses target center by 166.9ft at 11030.2ft MD (5567.9 TVD, -5166.1 N, -820.6 E) - Point	0.00	0.00	5,640.0	-5,169.8	-670.0	1,885,648.96	1,277,340.68	36.176040	-107.480230
Lybrook M28-2306-01H - plan misses target center by 150.8ft at 6537.9ft MD (5646.3 TVD, -674.6 N, -858.8 E) - Point	0.00	0.00	5,655.7	-673.5	-708.3	1,890,145.33	1,277,359.31	36.188390	-107.480360
Lybrook M28-2306-01H - plan misses target center by 154.3ft at 6537.4ft MD (5646.3 TVD, -674.2 N, -858.8 E) - Point	0.00	0.00	5,680.7	-673.5	-708.3	1,890,145.33	1,277,359.31	36.188390	-107.480360

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Lybrook M28-2306 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 7236.0ft (Aztec)
Project:	Sandoval County, NM	**MD Reference:**	WELL @ 7236.0ft (Aztec)
Site:	Lybrook	**North Reference:**	True
Well:	Lybrook M28-2306 01H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
6,440.0	5,646.2	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 (°)
1,550.0	1,550.0	Ojo Alamo		-1.00	179.51
1,731.0	1,731.0	Kirtland Shale		-1.00	179.51
1,880.0	1,880.0	Fruitland Coal		-1.00	179.51
2,130.0	2,130.0	Pictured Cliffs Ss.		-1.00	179.51
2,244.0	2,244.0	Lewis Shale		-1.00	179.51
2,932.0	2,932.0	Cliffhouse Ss.		-1.00	179.51
3,690.0	3,690.0	Menefee Fn.		-1.00	179.51
4,390.0	4,390.0	Point Lookout Ss.		-1.00	179.51
4,568.0	4,568.0	Mancos Shale		-1.00	179.51
5,154.1	5,152.0	Mancos Silt		-1.00	179.51
5,460.9	5,411.0	Gallup Fn.		-1.00	179.51

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
4,992.0	4,992.0	0.0	0.0	KOP @ 4992'
5,760.1	5,549.9	-105.4	-429.5	Start build @ 5760' MD
6,533.1	5,646.4	-669.9	-858.8	LP @ 5646' TVD; 91°
11,030.2	5,567.9	-5,166.1	-820.6	TD at 11030.2

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Lybrook M28-2306 01H
Project:	Sandoval County, NM	**TVD Reference:**	WELL @ 7236.0ft (Aztec)
Reference Site:	Lybrook	**MD Reference:**	WELL @ 7236.0ft (Aztec)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Lybrook M28-2306 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 #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	**Error Model:**	Systematic Ellipse
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,219.4ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 1/2/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,030.2	Plan #3 (Hz)	Geolink MWD	Geolink MWD

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Lybrook						
Lybrook A32-2306 01H - Hz - FINAL	6,757.3	5,238.0	803.3	776.2	29.627	CC, ES
Lybrook A32-2306 01H - Hz - FINAL	7,100.0	5,238.0	873.4	841.8	27.673	SF
Lybrook H32-2306 01H - Hz - Hz	7,977.3	5,236.0	806.4	761.7	18.012	CC
Lybrook H32-2306 01H - Hz - Hz	8,000.0	5,236.0	806.8	761.6	17.884	ES
Lybrook H32-2306 01H - Hz - Hz	8,200.0	5,236.0	836.6	788.5	17.394	SF
Lybrook I32-2306 01H - HZ - FINAL	9,823.8	5,266.0	791.7	714.2	10.226	CC, ES
Lybrook I32-2306 01H - HZ - FINAL	9,900.0	5,243.3	794.7	716.7	10.188	SF
Lybrook I32-2306 02H - HZ - FINAL	10,457.6	5,398.0	793.6	702.3	8.691	CC
Lybrook I32-2306 02H - HZ - FINAL	10,500.0	5,413.8	794.3	701.9	8.594	ES
Lybrook I32-2306 02H - HZ - FINAL	10,700.0	5,492.0	818.3	720.6	8.375	SF
Lybrook M27-2306 03H - Hz - Plan #1	5,274.3	9,241.4	570.3	457.3	5.048	CC, ES
Lybrook M27-2306 03H - Hz - Plan #1	5,300.0	9,253.5	570.9	457.6	5.039	SF
Lybrook M27-2306 04H - Hz - FINAL	5,664.6	9,928.7	325.3	215.1	2.951	CC
Lybrook M27-2306 04H - Hz - FINAL	5,700.0	9,963.0	326.1	213.1	2.886	ES
Lybrook M27-2306 04H - Hz - FINAL	5,800.0	10,060.5	335.9	217.4	2.834	SF
Lybrook M28-2306 02H - Hz - Plan #2	4,900.0	4,900.0	29.7	12.7	1.744	CC
Lybrook M28-2306 02H - Hz - Plan #2	5,000.0	5,000.0	29.8	12.4	1.712	ES, SF

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Lybrook M28-2306 01H
Project:	Sandoval County, NM	**TVD Reference:**	WELL @ 7236.0ft (Aztec)
Reference Site:	Lybrook	**MD Reference:**	WELL @ 7236.0ft (Aztec)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Lybrook M28-2306 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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design Lybrook - Lybrook A32-2306 01H - Hz - FINAL — **Offset Site Error:** 0.0 ft

Survey Program: 554-MWD — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
6,000.0	5,599.6	5,175.0	5,167.2	18.5	9.1	0.85	-892.2	-1,525.3	1,193.6	1,181.2	12.46	95.776	
6,100.0	5,616.1	5,194.6	5,184.9	20.2	9.1	19.77	-892.3	-1,533.7	1,108.0	1,093.2	14.78	74.964	
6,200.0	5,629.5	5,206.0	5,195.1	21.7	9.2	35.62	-892.5	-1,538.8	1,025.9	1,006.9	19.06	53.836	
6,300.0	5,639.2	5,225.2	5,212.1	23.0	9.2	47.85	-892.8	-1,547.8	951.3	928.8	22.46	42.358	
6,400.0	5,645.0	5,238.0	5,223.2	24.2	9.3	55.68	-893.0	-1,554.0	889.0	864.8	24.17	36.788	
6,500.0	5,646.8	5,238.0	5,223.2	25.1	9.3	59.49	-893.0	-1,554.0	844.2	819.7	24.51	34.447	
6,600.0	5,645.2	5,238.0	5,223.2	26.0	9.3	60.19	-893.0	-1,554.0	818.6	793.4	25.22	32.462	
6,700.0	5,643.5	5,238.0	5,223.2	26.9	9.3	60.19	-893.0	-1,554.0	805.4	779.0	26.41	30.499	
6,757.3	5,642.5	5,238.0	5,223.2	27.5	9.3	60.19	-893.0	-1,554.0	803.3	776.2	27.11	29.627	CC, ES
6,800.0	5,641.7	5,238.0	5,223.2	27.9	9.3	60.19	-893.0	-1,554.0	804.5	776.8	27.64	29.102	
6,900.0	5,640.0	5,238.0	5,223.2	29.0	9.3	60.19	-893.0	-1,554.0	815.9	787.0	28.92	28.214	
7,000.0	5,638.3	5,238.0	5,223.2	30.1	9.3	60.19	-893.0	-1,554.0	839.2	809.0	30.23	27.764	
7,100.0	5,636.5	5,238.0	5,223.2	31.3	9.3	60.19	-893.0	-1,554.0	873.4	841.8	31.56	27.673	SF
7,200.0	5,634.8	5,238.0	5,223.2	32.6	9.3	60.19	-893.0	-1,554.0	917.3	884.3	32.92	27.865	
7,300.0	5,633.0	5,238.0	5,223.2	33.9	9.3	60.19	-893.0	-1,554.0	969.5	935.2	34.29	28.271	
7,400.0	5,631.3	5,238.0	5,223.2	35.2	9.3	60.19	-893.0	-1,554.0	1,028.8	993.1	35.68	28.832	
7,500.0	5,629.5	5,238.0	5,223.2	36.6	9.3	60.19	-893.0	-1,554.0	1,094.1	1,057.0	37.09	29.499	
7,600.0	5,627.8	5,238.0	5,223.2	38.0	9.3	60.19	-893.0	-1,554.0	1,164.3	1,125.8	38.50	30.237	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Lybrook M28-2306 01H
Project:	Sandoval County, NM	**TVD Reference:**	WELL @ 7236.0ft (Aztec)
Reference Site:	Lybrook	**MD Reference:**	WELL @ 7236.0ft (Aztec)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Lybrook M28-2306 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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design Lybrook - Lybrook H32-2306 01H - Hz - Hz

Offset Site Error: 0.0 ft

Survey Program: 561-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
7,100.0	5,636.5	5,236.0	5,224.1	31.3	9.2	62.68	-2,113.5	-1,563.0	1,191.7	1,159.6	32.10	37.125	
7,200.0	5,634.8	5,236.0	5,224.1	32.6	9.2	62.68	-2,113.5	-1,563.0	1,120.1	1,086.6	33.49	33.447	
7,300.0	5,633.0	5,236.0	5,224.1	33.9	9.2	62.68	-2,113.5	-1,563.0	1,053.2	1,018.3	34.90	30.178	
7,400.0	5,631.3	5,236.0	5,224.1	35.2	9.2	62.68	-2,113.5	-1,563.0	991.8	955.5	36.32	27.304	
7,500.0	5,629.5	5,236.0	5,224.1	36.6	9.2	62.68	-2,113.5	-1,563.0	937.1	899.4	37.76	24.816	
7,600.0	5,627.8	5,236.0	5,224.1	38.0	9.2	62.68	-2,113.5	-1,563.0	890.4	851.1	39.21	22.705	
7,700.0	5,626.0	5,236.0	5,224.1	39.4	9.2	62.68	-2,113.5	-1,563.0	852.8	812.1	40.68	20.966	
7,800.0	5,624.3	5,236.0	5,224.1	40.9	9.2	62.68	-2,113.5	-1,563.0	825.7	783.6	42.15	19.591	
7,900.0	5,622.5	5,236.0	5,224.1	42.4	9.2	62.68	-2,113.5	-1,563.0	810.1	766.5	43.62	18.571	
7,977.3	5,621.2	5,236.0	5,224.1	43.6	9.2	62.68	-2,113.5	-1,563.0	806.4	761.7	44.77	18.012	CC
8,000.0	5,620.8	5,236.0	5,224.1	43.9	9.2	62.68	-2,113.5	-1,563.0	806.8	761.6	45.11	17.884	ES
8,100.0	5,619.0	5,236.0	5,224.1	45.4	9.2	62.68	-2,113.5	-1,563.0	815.7	769.1	46.60	17.504	
8,200.0	5,617.3	5,236.0	5,224.1	47.0	9.2	62.68	-2,113.5	-1,563.0	836.6	788.5	48.10	17.394	SF
8,300.0	5,615.6	5,236.0	5,224.1	48.6	9.2	62.68	-2,113.5	-1,563.0	868.6	819.0	49.60	17.512	
8,400.0	5,613.8	5,236.0	5,224.1	50.1	9.2	62.68	-2,113.5	-1,563.0	910.5	859.4	51.10	17.816	
8,500.0	5,612.1	5,236.0	5,224.1	51.7	9.2	62.68	-2,113.5	-1,563.0	961.0	908.4	52.61	18.265	
8,600.0	5,610.3	5,236.0	5,224.1	53.3	9.2	62.68	-2,113.5	-1,563.0	1,018.8	964.7	54.13	18.824	
8,700.0	5,608.6	5,236.0	5,224.1	54.9	9.2	62.68	-2,113.5	-1,563.0	1,082.8	1,027.2	55.64	19.461	
8,800.0	5,606.8	5,236.0	5,224.1	56.6	9.2	62.68	-2,113.5	-1,563.0	1,152.0	1,094.8	57.16	20.154	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Lybrook M28-2306 01H
Project:	Sandoval County, NM	**TVD Reference:**	WELL @ 7236.0ft (Aztec)
Reference Site:	Lybrook	**MD Reference:**	WELL @ 7236.0ft (Aztec)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Lybrook M28-2306 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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design Lybrook - Lybrook I32-2306 01H - HZ - FINAL — **Offset Site Error:** 0.0 ft

Survey Program: 566-MWD — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
8,800.0	5,606.8	5,581.0	5,356.3	56.6	13.3	82.52	-3,728.3	-1,706.9	1,181.6	1,115.1	66.47	17.776	
8,900.0	5,605.1	5,550.0	5,343.8	58.2	12.9	81.55	-3,748.6	-1,687.2	1,116.6	1,048.9	67.74	16.483	
9,000.0	5,603.3	5,539.3	5,339.3	59.8	12.8	81.20	-3,756.1	-1,680.9	1,055.9	986.7	69.28	15.241	
9,100.0	5,601.6	5,518.0	5,330.4	61.5	12.5	80.50	-3,771.1	-1,668.7	1,000.1	929.4	70.65	14.155	
9,200.0	5,599.8	5,487.0	5,316.9	63.1	12.2	79.43	-3,793.7	-1,652.3	949.4	877.6	71.84	13.215	
9,300.0	5,598.1	5,455.0	5,302.3	64.8	11.8	78.26	-3,817.8	-1,637.2	904.9	831.9	72.97	12.400	
9,400.0	5,596.4	5,424.0	5,287.5	66.5	11.5	77.09	-3,841.8	-1,624.4	867.4	793.3	74.08	11.708	
9,500.0	5,594.6	5,392.0	5,271.5	68.1	11.1	75.83	-3,866.9	-1,612.6	837.0	761.9	75.12	11.142	
9,600.0	5,592.9	5,356.2	5,252.3	69.8	10.8	74.32	-3,894.7	-1,600.6	814.0	738.0	76.02	10.708	
9,700.0	5,591.1	5,311.3	5,226.3	71.5	10.4	72.30	-3,928.5	-1,586.9	798.4	721.8	76.60	10.423	
9,800.0	5,589.4	5,278.1	5,205.5	73.2	10.1	70.70	-3,952.9	-1,578.1	791.8	714.5	77.37	10.234	
9,823.8	5,589.0	5,266.0	5,197.6	73.6	10.0	70.10	-3,961.6	-1,575.2	791.7	714.2	77.42	10.226	CC, ES
9,900.0	5,587.6	5,243.3	5,182.3	74.8	9.9	68.97	-3,977.7	-1,570.3	794.7	716.7	78.00	10.188	SF
10,000.0	5,585.9	5,203.0	5,154.0	76.5	9.6	66.91	-4,005.3	-1,562.6	806.8	728.4	78.35	10.297	
10,100.0	5,584.1	5,171.0	5,130.4	78.2	9.5	65.23	-4,026.2	-1,557.2	827.7	748.9	78.86	10.496	
10,200.0	5,582.4	5,129.7	5,098.8	79.9	9.3	63.04	-4,052.0	-1,550.8	857.0	778.1	78.92	10.858	
10,300.0	5,580.6	5,092.5	5,069.4	81.6	9.1	61.06	-4,074.1	-1,545.3	893.7	814.7	79.01	11.312	
10,400.0	5,578.9	5,065.4	5,047.2	83.3	9.0	59.60	-4,089.2	-1,541.4	937.7	858.3	79.40	11.811	
10,500.0	5,577.2	5,045.0	5,030.1	85.0	8.9	58.50	-4,099.9	-1,538.6	988.6	908.6	80.00	12.358	
10,600.0	5,575.4	5,025.0	5,012.9	86.7	8.9	57.43	-4,109.8	-1,536.2	1,045.5	964.9	80.57	12.977	
10,700.0	5,573.7	5,014.0	5,003.3	88.4	8.8	56.83	-4,114.9	-1,534.9	1,107.8	1,026.3	81.51	13.591	
10,800.0	5,571.9	4,982.0	4,974.7	90.1	8.7	55.13	-4,129.0	-1,531.6	1,174.6	1,093.2	81.40	14.430	

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Lybrook M28-2306 01H
Project:	Sandoval County, NM	**TVD Reference:**	WELL @ 7236.0ft (Aztec)
Reference Site:	Lybrook	**MD Reference:**	WELL @ 7236.0ft (Aztec)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Lybrook M28-2306 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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design Lybrook - Lybrook I32-2306 02H - HZ - FINAL — **Offset Site Error:** 0.0 ft

Survey Program: 560-MWD — **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
9,400.0	5,596.4	5,020.0	4,993.1	66.5	9.1	58.32	-4,313.3	-1,587.6	1,184.8	1,121.0	63.76	18.582	
9,500.0	5,594.6	5,051.0	5,019.4	68.1	9.2	59.81	-4,329.6	-1,587.7	1,120.6	1,054.4	66.25	16.916	
9,600.0	5,592.9	5,067.6	5,033.1	69.8	9.3	60.60	-4,339.1	-1,587.7	1,061.2	992.9	68.29	15.540	
9,700.0	5,591.1	5,092.4	5,052.6	71.5	9.4	61.75	-4,354.3	-1,587.7	1,006.9	936.4	70.59	14.264	
9,800.0	5,589.4	5,131.1	5,081.7	73.2	9.6	63.49	-4,379.8	-1,587.0	958.1	884.8	73.34	13.063	
9,900.0	5,587.6	5,177.0	5,114.2	74.8	9.9	65.48	-4,412.2	-1,585.5	914.5	838.2	76.29	11.987	
10,000.0	5,585.9	5,209.0	5,135.4	76.5	10.2	66.83	-4,436.1	-1,584.5	876.8	798.0	78.81	11.125	
10,100.0	5,584.1	5,249.3	5,160.2	78.2	10.5	68.45	-4,467.8	-1,583.5	845.9	764.3	81.57	10.370	
10,200.0	5,582.4	5,303.0	5,189.2	79.9	11.0	70.42	-4,513.0	-1,582.7	821.9	737.3	84.62	9.713	
10,300.0	5,580.6	5,335.0	5,205.1	81.6	11.3	71.53	-4,540.8	-1,582.7	804.5	717.4	87.09	9.238	
10,400.0	5,578.9	5,378.3	5,225.7	83.3	11.8	73.05	-4,578.8	-1,585.2	795.2	705.3	89.86	8.849	
10,457.6	5,577.9	5,398.0	5,234.7	84.3	12.0	73.74	-4,596.2	-1,587.3	793.6	702.3	91.32	8.691	CC
10,500.0	5,577.2	5,413.8	5,241.8	85.0	12.2	74.30	-4,610.2	-1,589.5	794.3	701.9	92.43	8.594	ES
10,600.0	5,575.4	5,451.6	5,258.0	86.7	12.6	75.60	-4,643.5	-1,596.5	802.3	707.2	95.04	8.441	
10,700.0	5,573.7	5,492.0	5,274.5	88.4	13.1	76.96	-4,679.1	-1,606.4	818.3	720.6	97.70	8.375	SF
10,800.0	5,571.9	5,524.0	5,287.0	90.1	13.5	78.02	-4,706.7	-1,616.6	842.6	742.4	100.14	8.414	
10,900.0	5,570.2	5,555.0	5,298.5	91.8	13.8	79.02	-4,732.9	-1,628.5	875.0	772.4	102.53	8.534	
11,000.0	5,568.4	5,587.0	5,309.7	93.5	14.2	80.00	-4,759.4	-1,642.4	914.2	809.3	104.92	8.713	
11,030.7	5,567.9	5,587.0	5,309.7	94.1	14.2	80.00	-4,759.4	-1,642.4	927.4	822.0	105.44	8.795	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Lybrook M28-2306 01H
Project:	Sandoval County, NM	**TVD Reference:**	WELL @ 7236.0ft (Aztec)
Reference Site:	Lybrook	**MD Reference:**	WELL @ 7236.0ft (Aztec)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Lybrook M28-2306 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 #3	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
4,300.0	4,300.0	9,178.7	5,248.5	7.5	103.1	0.39	548.0	3.7	1,175.1	1,139.2	35.91	32.722	
4,400.0	4,400.0	9,178.4	5,248.5	7.7	103.1	0.43	548.0	4.1	1,087.7	1,051.5	36.14	30.097	
4,500.0	4,500.0	9,178.1	5,248.5	7.8	103.1	0.46	548.0	4.4	1,002.5	966.2	36.36	27.569	
4,600.0	4,600.0	9,177.7	5,248.5	8.0	103.1	0.50	548.0	4.8	920.4	883.8	36.59	25.154	
4,700.0	4,700.0	9,177.4	5,248.5	8.2	103.1	0.54	548.0	5.1	842.2	805.4	36.82	22.875	
4,800.0	4,800.0	9,177.0	5,248.5	8.3	103.1	0.57	548.0	5.5	769.0	732.0	37.04	20.760	
4,900.0	4,900.0	9,176.7	5,248.5	8.5	103.0	0.61	548.0	5.8	702.5	665.2	37.27	18.848	
5,000.0	5,000.0	9,176.4	5,248.5	8.7	103.0	104.92	548.0	6.1	644.7	533.0	111.73	5.770	
5,100.0	5,099.4	9,185.8	5,248.5	8.9	103.3	108.67	548.1	-3.3	600.7	489.0	111.70	5.378	
5,200.0	5,195.5	9,211.8	5,248.4	9.1	103.9	108.60	548.5	-29.3	575.7	463.6	112.14	5.134	
5,274.3	5,263.0	9,241.4	5,248.3	9.3	104.6	106.40	548.9	-58.9	570.3	457.3	112.97	5.048	CC, ES
5,300.0	5,285.4	9,253.5	5,248.2	9.4	104.9	105.27	549.0	-71.0	570.9	457.6	113.31	5.039	SF
5,400.0	5,366.4	9,309.8	5,248.0	9.9	106.3	99.37	549.8	-127.3	583.7	468.9	114.75	5.087	
5,500.0	5,436.0	9,378.8	5,247.8	10.6	108.0	92.01	550.7	-196.3	608.9	493.0	115.89	5.254	
5,600.0	5,492.2	9,458.6	5,247.5	11.7	110.0	84.53	551.8	-276.1	640.5	523.9	116.65	5.491	
5,700.0	5,533.1	9,546.6	5,247.2	13.1	112.2	78.18	553.0	-364.1	673.5	555.9	117.67	5.724	
5,800.0	5,558.9	9,639.6	5,246.9	14.9	114.5	75.22	554.2	-457.1	705.8	588.1	117.71	5.996	
5,900.0	5,580.3	9,728.8	5,246.6	16.7	116.7	74.92	555.4	-546.3	750.0	637.6	112.39	6.673	
6,000.0	5,599.6	9,810.1	5,246.3	18.5	118.7	73.91	556.5	-627.6	808.0	704.8	103.21	7.828	
6,100.0	5,616.1	9,881.0	5,246.0	20.2	120.4	71.63	557.5	-698.5	878.1	787.8	90.24	9.731	
6,200.0	5,629.5	9,939.4	5,245.8	21.7	121.9	67.03	558.2	-756.8	958.2	884.6	73.67	13.007	
6,300.0	5,639.2	9,983.4	5,245.7	23.0	122.9	57.90	558.8	-800.8	1,046.2	992.1	54.19	19.308	
6,400.0	5,645.0	10,011.7	5,245.6	24.2	123.6	39.54	559.2	-829.2	1,139.7	1,104.6	35.09	32.477	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Lybrook M28-2306 01H
Project:	Sandoval County, NM	**TVD Reference:**	WELL @ 7236.0ft (Aztec)
Reference Site:	Lybrook	**MD Reference:**	WELL @ 7236.0ft (Aztec)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Lybrook M28-2306 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 #3	**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 Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
4,500.0	4,500.0	9,576.5	5,582.3	7.8	102.6	1.50	202.3	5.3	1,187.7	1,144.8	42.88	27.697	
4,600.0	4,600.0	9,576.5	5,582.3	8.0	102.6	1.50	202.3	5.3	1,089.3	1,046.2	43.05	25.303	
4,700.0	4,700.0	9,576.5	5,582.3	8.2	102.6	1.50	202.3	5.3	991.2	948.0	43.22	22.934	
4,800.0	4,800.0	9,576.5	5,582.3	8.3	102.6	1.49	202.3	5.3	893.5	850.1	43.39	20.595	
4,900.0	4,900.0	9,576.6	5,582.3	8.5	102.6	1.49	202.3	5.3	796.4	752.9	43.55	18.286	
5,000.0	5,000.0	9,576.6	5,582.3	8.7	102.6	107.80	202.3	5.2	700.2	589.6	110.59	6.331	
5,100.0	5,099.4	9,585.0	5,582.3	8.9	102.8	129.26	202.5	-3.1	606.6	507.1	99.57	6.093	
5,200.0	5,195.5	9,611.7	5,582.5	9.1	103.4	137.34	203.0	-29.9	520.2	428.2	92.00	5.654	
5,300.0	5,285.4	9,657.2	5,582.6	9.4	104.6	138.67	203.8	-75.4	445.1	354.7	90.39	4.924	
5,400.0	5,366.4	9,717.9	5,582.3	9.9	106.0	136.20	204.4	-136.1	385.8	292.9	92.91	4.152	
5,500.0	5,436.0	9,783.0	5,582.4	10.6	107.7	131.99	204.9	-201.2	346.5	249.2	97.31	3.561	
5,600.0	5,492.2	9,867.3	5,583.3	11.7	109.7	125.16	205.0	-285.4	328.2	223.4	104.81	3.131	
5,664.6	5,520.4	9,928.7	5,583.5	12.6	111.2	120.25	204.2	-346.8	325.3	215.1	110.21	2.951	CC
5,700.0	5,533.1	9,963.0	5,583.6	13.1	112.1	117.70	203.4	-381.2	326.1	213.1	112.97	2.886	ES
5,800.0	5,558.9	10,060.5	5,582.9	14.9	114.5	112.84	200.4	-478.6	335.9	217.4	118.50	2.834	SF
5,900.0	5,580.3	10,065.0	5,582.8	16.7	114.6	116.07	200.2	-483.1	373.0	260.2	112.85	3.306	
6,000.0	5,599.6	10,065.0	5,582.8	18.5	114.6	121.48	200.2	-483.1	442.3	340.2	102.12	4.331	
6,100.0	5,616.1	10,065.0	5,582.8	20.2	114.6	131.36	200.2	-483.1	529.7	445.1	84.54	6.266	
6,200.0	5,629.5	10,065.0	5,582.8	21.7	114.6	156.06	200.2	-483.1	625.6	575.6	49.92	12.531	
6,300.0	5,639.2	10,065.0	5,582.8	23.0	114.6	-143.53	200.2	-483.1	724.3	683.8	40.52	17.874	
6,400.0	5,645.0	10,065.0	5,582.8	24.2	114.6	-106.06	200.2	-483.1	822.4	772.4	49.97	16.458	
6,500.0	5,646.8	10,065.0	5,582.8	25.1	114.6	-93.58	200.2	-483.1	917.5	880.2	37.34	24.570	
6,600.0	5,645.2	10,065.0	5,582.8	26.0	114.6	-91.39	200.2	-483.1	1,009.6	974.3	35.34	28.567	
6,700.0	5,643.5	10,065.0	5,582.8	26.9	114.6	-91.39	200.2	-483.1	1,102.8	1,066.0	36.73	30.020	
6,800.0	5,641.7	10,065.0	5,582.8	27.9	114.6	-91.39	200.2	-483.1	1,197.0	1,158.9	38.18	31.352	

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Lybrook M28-2306 01H
Project:	Sandoval County, NM	**TVD Reference:**	WELL @ 7236.0ft (Aztec)
Reference Site:	Lybrook	**MD Reference:**	WELL @ 7236.0ft (Aztec)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Lybrook M28-2306 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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design Lybrook - Lybrook M28-2306 02H - Hz - Plan #2 — Offset Site Error: 0.0 ft

Survey Program: 0-Geolink MWD — Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	97.03	-3.6	29.5	29.7				
100.0	100.0	100.0	100.0	0.1	0.1	97.03	-3.6	29.5	29.7	29.4	0.29	101.411	
200.0	200.0	200.0	200.0	0.3	0.3	97.03	-3.6	29.5	29.7	29.1	0.64	46.296	
300.0	300.0	300.0	300.0	0.5	0.5	97.03	-3.6	29.5	29.7	28.7	0.99	29.995	
400.0	400.0	400.0	400.0	0.7	0.7	97.03	-3.6	29.5	29.7	28.4	1.34	22.184	
500.0	500.0	500.0	500.0	0.8	0.8	97.03	-3.6	29.5	29.7	28.0	1.69	17.600	
600.0	600.0	600.0	600.0	1.0	1.0	97.03	-3.6	29.5	29.7	27.7	2.04	14.587	
700.0	700.0	700.0	700.0	1.2	1.2	97.03	-3.6	29.5	29.7	27.3	2.39	12.454	
800.0	800.0	800.0	800.0	1.4	1.4	97.03	-3.6	29.5	29.7	27.0	2.74	10.865	
900.0	900.0	900.0	900.0	1.5	1.5	97.03	-3.6	29.5	29.7	26.6	3.09	9.636	
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	97.03	-3.6	29.5	29.7	26.3	3.43	8.657	
1,100.0	1,100.0	1,100.0	1,100.0	1.9	1.9	97.03	-3.6	29.5	29.7	26.0	3.78	7.858	
1,200.0	1,200.0	1,200.0	1,200.0	2.1	2.1	97.03	-3.6	29.5	29.7	25.6	4.13	7.195	
1,300.0	1,300.0	1,300.0	1,300.0	2.2	2.2	97.03	-3.6	29.5	29.7	25.3	4.48	6.634	
1,400.0	1,400.0	1,400.0	1,400.0	2.4	2.4	97.03	-3.6	29.5	29.7	24.9	4.83	6.155	
1,500.0	1,500.0	1,500.0	1,500.0	2.6	2.6	97.03	-3.6	29.5	29.7	24.6	5.18	5.740	
1,600.0	1,600.0	1,600.0	1,600.0	2.8	2.8	97.03	-3.6	29.5	29.7	24.2	5.53	5.378	
1,700.0	1,700.0	1,700.0	1,700.0	2.9	2.9	97.03	-3.6	29.5	29.7	23.9	5.88	5.059	
1,800.0	1,800.0	1,800.0	1,800.0	3.1	3.1	97.03	-3.6	29.5	29.7	23.5	6.23	4.775	
1,900.0	1,900.0	1,900.0	1,900.0	3.3	3.3	97.03	-3.6	29.5	29.7	23.2	6.58	4.522	
2,000.0	2,000.0	2,000.0	2,000.0	3.5	3.5	97.03	-3.6	29.5	29.7	22.8	6.93	4.294	
2,100.0	2,100.0	2,100.0	2,100.0	3.6	3.6	97.03	-3.6	29.5	29.7	22.5	7.27	4.088	
2,200.0	2,200.0	2,200.0	2,200.0	3.8	3.8	97.03	-3.6	29.5	29.7	22.1	7.62	3.900	
2,300.0	2,300.0	2,300.0	2,300.0	4.0	4.0	97.03	-3.6	29.5	29.7	21.8	7.97	3.730	
2,400.0	2,400.0	2,400.0	2,400.0	4.2	4.2	97.03	-3.6	29.5	29.7	21.4	8.32	3.573	
2,500.0	2,500.0	2,500.0	2,500.0	4.3	4.3	97.03	-3.6	29.5	29.7	21.1	8.67	3.429	
2,600.0	2,600.0	2,600.0	2,600.0	4.5	4.5	97.03	-3.6	29.5	29.7	20.7	9.02	3.297	
2,700.0	2,700.0	2,700.0	2,700.0	4.7	4.7	97.03	-3.6	29.5	29.7	20.4	9.37	3.174	
2,800.0	2,800.0	2,800.0	2,800.0	4.9	4.9	97.03	-3.6	29.5	29.7	20.0	9.72	3.060	
2,900.0	2,900.0	2,900.0	2,900.0	5.0	5.0	97.03	-3.6	29.5	29.7	19.7	10.07	2.954	
3,000.0	3,000.0	3,000.0	3,000.0	5.2	5.2	97.03	-3.6	29.5	29.7	19.3	10.42	2.855	
3,100.0	3,100.0	3,100.0	3,100.0	5.4	5.4	97.03	-3.6	29.5	29.7	19.0	10.77	2.762	
3,200.0	3,200.0	3,200.0	3,200.0	5.6	5.6	97.03	-3.6	29.5	29.7	18.6	11.11	2.675	
3,300.0	3,300.0	3,300.0	3,300.0	5.7	5.7	97.03	-3.6	29.5	29.7	18.3	11.46	2.594	
3,400.0	3,400.0	3,400.0	3,400.0	5.9	5.9	97.03	-3.6	29.5	29.7	17.9	11.81	2.517	
3,500.0	3,500.0	3,500.0	3,500.0	6.1	6.1	97.03	-3.6	29.5	29.7	17.6	12.16	2.445	
3,600.0	3,600.0	3,600.0	3,600.0	6.3	6.3	97.03	-3.6	29.5	29.7	17.2	12.51	2.377	
3,700.0	3,700.0	3,700.0	3,700.0	6.4	6.4	97.03	-3.6	29.5	29.7	16.9	12.86	2.312	
3,800.0	3,800.0	3,800.0	3,800.0	6.6	6.6	97.03	-3.6	29.5	29.7	16.5	13.21	2.251	
3,900.0	3,900.0	3,900.0	3,900.0	6.8	6.8	97.03	-3.6	29.5	29.7	16.2	13.56	2.193	
4,000.0	4,000.0	4,000.0	4,000.0	7.0	7.0	97.03	-3.6	29.5	29.7	15.8	13.91	2.138	
4,100.0	4,100.0	4,100.0	4,100.0	7.1	7.1	97.03	-3.6	29.5	29.7	15.5	14.26	2.086	
4,200.0	4,200.0	4,200.0	4,200.0	7.3	7.3	97.03	-3.6	29.5	29.7	15.1	14.60	2.036	
4,300.0	4,300.0	4,300.0	4,300.0	7.5	7.5	97.03	-3.6	29.5	29.7	14.8	14.95	1.988	
4,400.0	4,400.0	4,400.0	4,400.0	7.7	7.7	97.03	-3.6	29.5	29.7	14.4	15.30	1.943	
4,500.0	4,500.0	4,500.0	4,500.0	7.8	7.8	97.03	-3.6	29.5	29.7	14.1	15.65	1.900	
4,600.0	4,600.0	4,600.0	4,600.0	8.0	8.0	97.03	-3.6	29.5	29.7	13.7	16.00	1.858	
4,700.0	4,700.0	4,700.0	4,700.0	8.2	8.2	97.03	-3.6	29.5	29.7	13.4	16.35	1.819	
4,800.0	4,800.0	4,800.0	4,800.0	8.3	8.3	97.03	-3.6	29.5	29.7	13.0	16.70	1.781	
4,900.0	4,900.0	4,900.0	4,900.0	8.5	8.5	97.03	-3.6	29.5	29.7	12.7	17.05	1.744	CC
4,963.8	4,963.8	4,963.8	4,963.8	8.6	8.6	-159.37	-3.6	29.5	30.0	12.7	17.27	1.737	
5,000.0	5,000.0	5,000.0	5,000.0	8.7	8.7	-159.21	-3.6	29.5	29.8	12.4	17.40	1.712	ES, SF

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Lybrook M28-2306 01H
Project:	Sandoval County, NM	**TVD Reference:**	WELL @ 7236.0ft (Aztec)
Reference Site:	Lybrook	**MD Reference:**	WELL @ 7236.0ft (Aztec)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Lybrook M28-2306 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 #3	**Offset TVD Reference:**	Offset Datum

Offset Design Lybrook - Lybrook M28-2306 02H - Hz - Plan #2

Offset Site Error: 0.0 ft

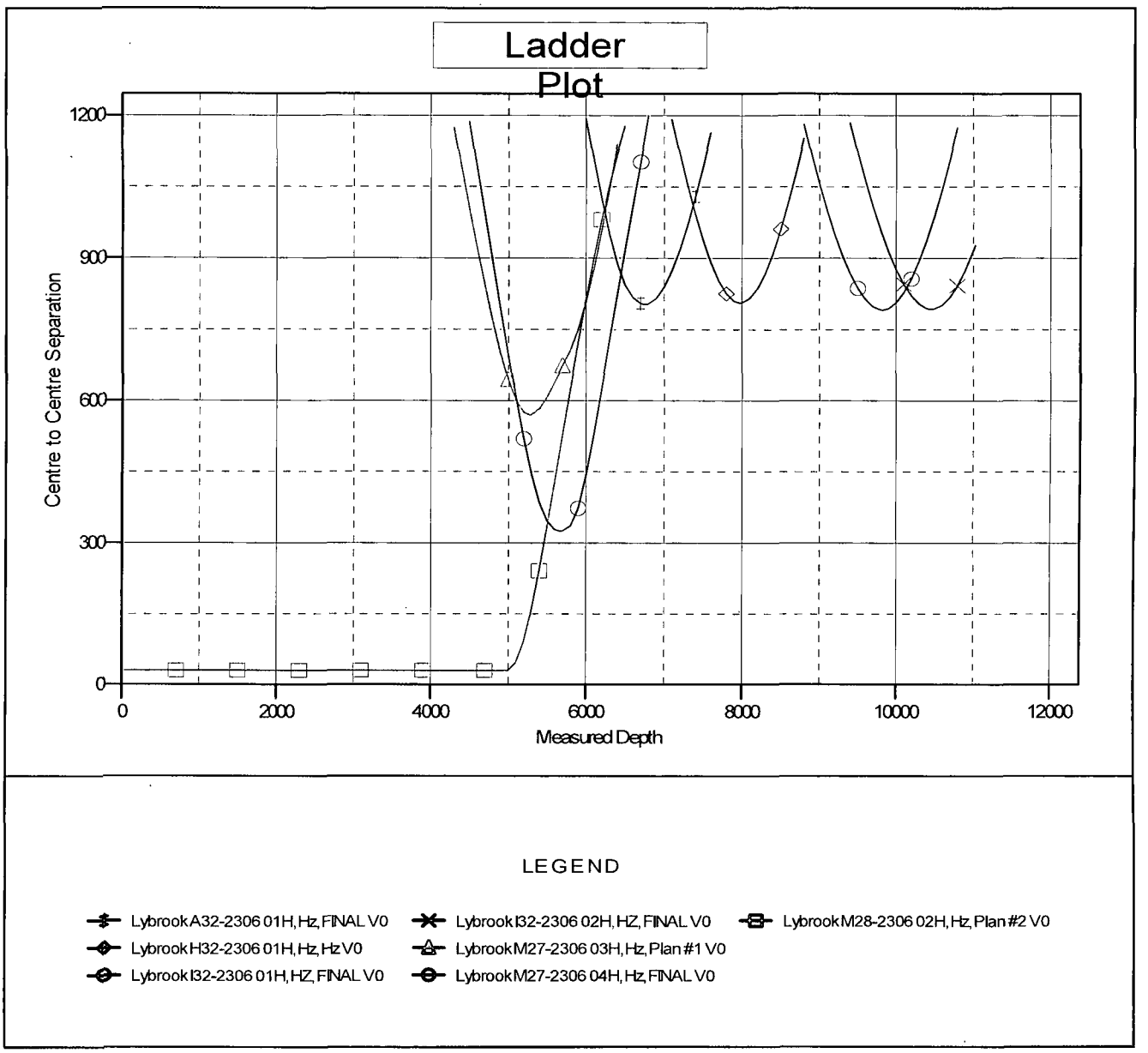
Survey Program: 0-Geolink MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,099.4	5,093.1	5,092.7	8.9	8.9	-159.12	-7.4	35.7	46.3	28.8	17.55	2.638	
5,200.0	5,195.5	5,173.6	5,171.0	9.1	9.0	-157.57	-16.8	51.4	91.3	73.9	17.40	5.249	
5,300.0	5,285.4	5,235.2	5,228.8	9.4	9.2	-154.87	-27.7	69.6	158.8	141.8	17.01	9.334	
5,400.0	5,366.4	5,277.4	5,266.9	9.9	9.3	-149.69	-37.1	85.1	241.8	225.2	16.65	14.520	
5,500.0	5,436.0	5,300.0	5,286.7	10.6	9.4	-137.23	-42.7	94.5	334.5	317.2	17.23	19.410	
5,600.0	5,492.2	5,314.3	5,299.1	11.7	9.4	-103.77	-46.4	100.7	431.9	411.3	20.65	20.917	
5,700.0	5,533.1	5,315.1	5,299.8	13.1	9.4	-46.76	-46.6	101.1	530.7	512.1	18.60	28.536	
5,800.0	5,558.9	5,300.0	5,286.7	14.9	9.4	-35.95	-42.7	94.5	628.1	610.6	17.44	36.010	
5,900.0	5,580.3	5,300.0	5,286.7	16.7	9.4	-52.58	-42.7	94.5	722.9	700.8	22.07	32.759	
6,000.0	5,599.6	5,300.0	5,286.7	18.5	9.4	-60.15	-42.7	94.5	814.0	789.4	24.60	33.085	
6,100.0	5,616.1	5,300.0	5,286.7	20.2	9.4	-63.78	-42.7	94.5	900.3	874.3	26.03	34.583	
6,200.0	5,629.5	5,300.0	5,286.7	21.7	9.4	-65.69	-42.7	94.5	980.8	954.0	26.72	36.711	
6,300.0	5,639.2	5,300.0	5,286.7	23.0	9.4	-66.85	-42.7	94.5	1,054.5	1,027.7	26.79	39.367	
6,400.0	5,645.0	5,317.5	5,301.8	24.2	9.4	-68.83	-47.2	102.1	1,120.5	1,093.9	26.52	42.245	
6,500.0	5,646.8	5,328.1	5,310.8	25.1	9.5	-70.13	-50.2	106.9	1,178.3	1,152.6	25.75	45.760	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Lybrook M28-2306 01H
Project:	Sandoval County, NM	**TVD Reference:**	WELL @ 7236.0ft (Aztec)
Reference Site:	Lybrook	**MD Reference:**	WELL @ 7236.0ft (Aztec)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Lybrook M28-2306 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 #3	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 7236.0ft (Aztec)	Coordinates are relative to: Lybrook M28-2306 01H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Central Zone
Central Meridian is -106.250000 °	Grid Convergence at Surface is: -0.73°



Lybrook M28-2306 01H
SHL: SWSW Section 28, T23N, R6W
354 FSL and 1265 FWL
BHL: SWSW Section 33, T23N, R6W
330 FSL and 400 FWL
Sandoval, New Mexico
Lease Number: NMNM 112953

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.	1550
Kirtland Shale	1731
Fruitland Coal	1880
Pictured Cliffs Ss.	2130
Lewis Shale	2244
Cliffhouse Ss.	2932
Menefee Fn.	3690
Point Lookout Ss.	4390
Mancos Shale	4568
Mancos Silt	5152
Gallup Fn.	5411

The referenced surface elevation is 7220', KB 7236'

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

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1880
Oil/Gas	Pictured Cliffs Ss.	2130
Oil/Gas	Cliffhouse Ss.	2932
Gas	Menefee Fn.	3690
Oil/Gas	Point Lookout Ss.	4390
Oil/Gas	Mancos Shale	4568
Oil/Gas	Mancos Silt	5152
Oil/Gas	Gallup Fn.	5411

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.

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'-6440'MD	8 3/4"	7"	26#	J55, LTC New
Production Liner	6240'-11030'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.

Lybrook M28-2306 01H
SHL: SWSW Section 28, T23N, R6W
354 FSL and 1265 FWL
BHL: SWSW Section 33, T23N, R6W
330 FSL and 400 FWL
Sandoval, New Mexico
Lease Number: NMNM 112953

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 14.8 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	6440'MD	30% open hole excess Stage 1 Lead: 274sks Stage 1 Tail: 187sks Stage 2 Lead: 193sks	**Lead** (Stages 1 and 2): PremLite + 3% CaCl + 0.25lb/sk CelloFlake + 5lb/sk LCM, 12.1ppg 2.13cuft/sk **Tail** (Stage 1): Type III Cmt + 1% CaCl + 0.25lb/sk Cello Flake 14.5ppg 1.38cuft/sk	Surface	1 per joint for bottom 3 joints, 1 every 3 joints for remaining joints
Production Liner*	6240'-11030'	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 4992'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5568'/11030'	Gallup

Lybrook M28-2306 01H
SHL: SWSW Section 28, T23N, R6W
354 FSL and 1265 FWL
BHL: SWSW Section 33, T23N, R6W
330 FSL and 400 FWL
Sandoval, New Mexico
Lease Number: NMNM 112953

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-5646'TVD/6440'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"	6440'-11030'	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 +/- 2642 psi based on a 9.0 ppg at 5646' TVD of the landing point of the horizontal lateral. No abnormal pressure or temperatures are anticipated.

No hydrogen sulfide gas is anticipated, however, if H_2S is encountered, the guidelines in Onshore Order No. 6 will be followed.

Lybrook M28-2306 01H
SHL: SWSW Section 28, T23N, R6W
354 FSL and 1265 FWL
BHL: SWSW Section 33, T23N, R6W
330 FSL and 400 FWL
Sandoval, New Mexico
Lease Number: NMNM 112953

9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on May 28, 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 M28-2306 01H**

Encana Natural Gas

WELL SUMMARY

encana

ENG: **1/9/14**
RIG:
GLE: **7220**
RKBE: **7236**

MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH TVD	DEPTH MD		HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
			60	60'		**30**	**20" 94#** 100sx Type I Neat 14.8ppg 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 Mud logger onsite	Ojo Alamo Kirtland Fruitland Coal Pictured Cliffs Ss Lewis Shale Cliffhouse Ss Menefee Fn Point Lookout Ss Mancos Sh **KICK OFF PT** Mancos Silt Gallup Top **7" csg setting**	1550 1731 1880 2130 2244 2932 3690 4390 4568 **4992** 5152 5411 **5646**	**6440**	Stage tool @2180'	**8 3/4**	**7" 26ppf J55 LTC** TOC @ surface 30% OH excess: 654 sksTotal. Stage 1 Lead: 274sks Stage 1 Tail: 187sks. Stage 2 Lead: 193sks	**Fresh Wtr** 8.5-8.8	Vertical <1° KOP 0 10 deg/100'
Surveys every 500' Gyro at CP MWD Gamma Directional	No OH Logs	**horz target** Base Gallup	**5646** 5713	**6533**		**6 1/8**	200' overlap at liner top 4497' Lateral **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	8.6-9.0 OBM Switch to OBM 8.6-9.0	.25deg updip 5568'TVD TD = 11030' MD

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 4992', 8 3/4" hole size,
5) PU directional tools and start curve at 10deg/100' build rate
6) Drill to casing point of 6440' MD
7) R&C 7" casing, circ cmt to surface, switch to OBM
8) Land at 90deg, drill 4497' lateral to 11030', run 4 1/2" liner with external swellable csg packers