

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 3160-3 APD form.

Operator Signature Date: 3-20-14

Well information;

Operator Encana, Well Name and Number Lybrook 030-2307 #1H

API# 30043-21211, Section 30 Township 23NS, Range 7EW

Conditions of Approval:

(See the below checked and handwritten conditions)

- ☒ Notify Aztec OCD 24hrs prior to casing & cement.
- ☒ Hold C-104 for directional survey & "As Drilled" Plat
- ☒ Hold C-104 for NSL, NSP, DHC
- ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- ☐ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
 - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
 - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
 - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
- ☐ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ☒ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.

Charlie Herrin
NMOCD Approved by Signature

5-15-14
Date

CONFIDENTIAL

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

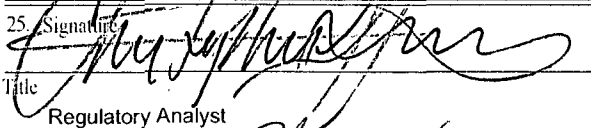
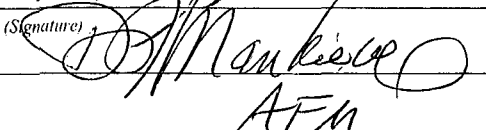
APPLICATION FOR PERMIT TO DRILL OR REENTER

MAR 21 2014

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NM 36943, NM 6681	
1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name N/A	
2. Name of Operator Encana Oil & Gas (USA) Inc.		7. If Unit or CA Agreement, Name and No. Farmingington Field (Drilling)	
3a. Address 370 17th Street, Suite 1700 Denver, CO 80202		8. Lease Name and Well No. Lybrook O30-2307 01H	
3b. Phone No. (include area code) (720) 876-3448		9. API Well No. 30-043-21211	
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface 0 417' FSL and 1360' FEL in Section 30, T23N, R7W At proposed prod. zone 0 330' FSL 2221' FEL in Section 31, T23N, R7W		10. Field and Pool, or Exploratory Basin Mancos/ Alamito-Gallup	
11. Sec., T. R. M. or Blk. and Survey or Area Section 30, T23N, R7W NMPM		12. County or Parish Sandoval	
13. State NM		14. Distance in miles and direction from nearest town or post office* +/- 43.9 miles south of intersection of US Hwy 550 and US Hwy 64 in Bloomfield, NM	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) BHL is 330' from south lease line		16. No. of acres in lease NM 36943 - 642.64 acres NM 6681 - 642.56 acres	
17. Spacing Unit dedicated to this well 160 acres		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. Lybrook O30-2307 04H is +/- 30' west	
19. Proposed Depth 5096'TVD/10434'MD		20. BLM/BIA Bond No. on file COB-000235	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7023', KB 7039'		22. Approximate date work will start* 09/11/2014	
23. Estimated duration 20 days		24. Attachments	

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature 	Name (Printed/Typed) Christopher Simmons	Date 3-20-14
Title Regulatory Analyst		
Approved by (Signature) 	Name (Printed/Typed) AFM	Date 3/29/14
Title AFM	Office FFU	

Application approval 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.
Conditions of approval, if any, are attached.

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 and to conceal or cover up in violation of law or equity any such statements or representations.

ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

(GRILLING OPERATIONS
AUTHORIZED ARE SUBJECT TO
COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS"

(Instructions on page 2)
This action is subject to technical
and procedural review pursuant to
43 CFR 3165.3 and appeal
pursuant to 43 CFR 3165.4



H₂S POTENTIAL EXIST

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

OIL CONS. DIV DIST. 3

☐ AMENDED REPORT
RECEIVED

MAR 21 2014

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-043-21211		² Pool Code 97232 / 1039	³ Pool Name BASIN MANCOS / ALAMITO		Farmingford Field Office Bureau of Land Management
⁴ Property Code 313257	⁵ Property Name LYBROOK 030-2307			⁶ Well Number 01H	
⁷ OSRID No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.			⁹ Elevation 7023'	

10 Surface Location

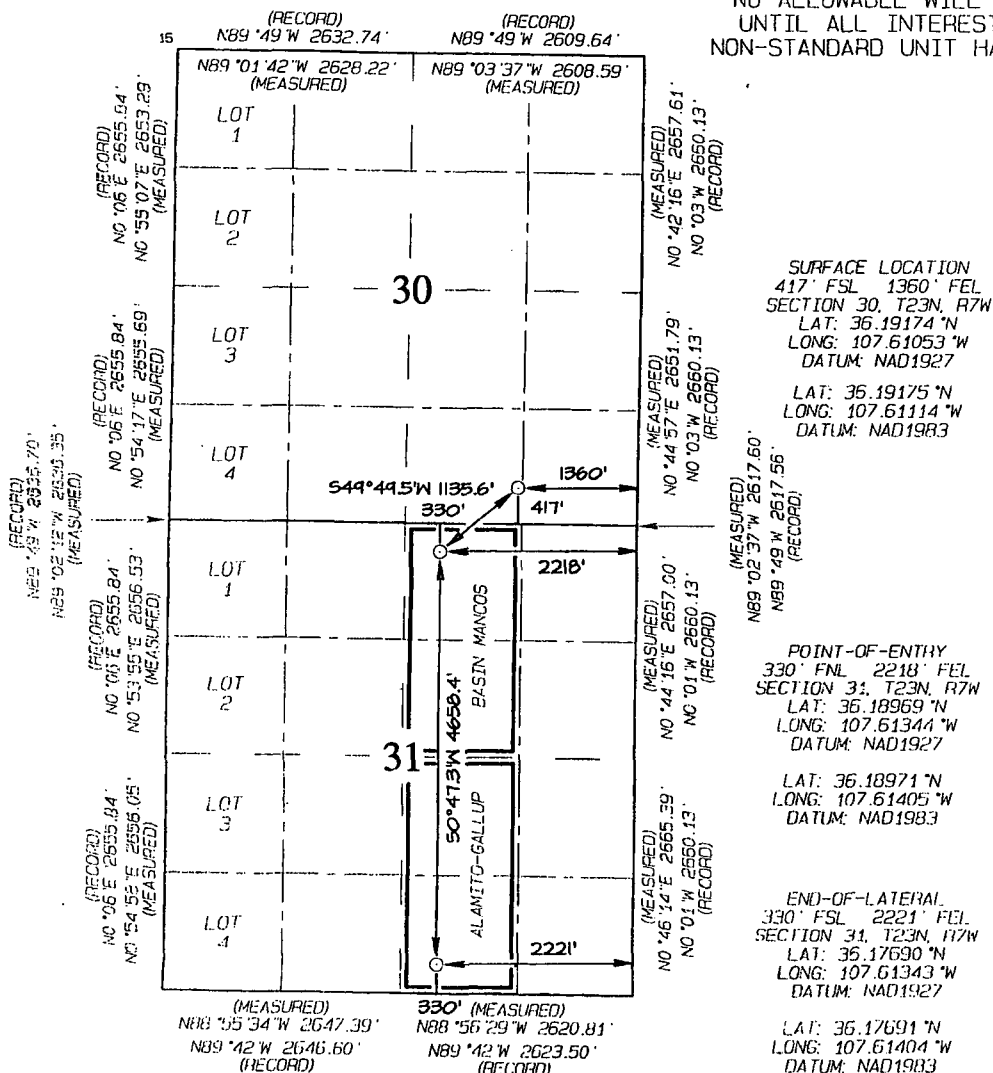
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	30	23N	7W		417	SOUTH	1360	EAST	SANDOVAL

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
0	31	23N	7W		330	SOUTH	2221	EAST	SANDOVAL

12 Dedicated Acres	160.00 Acres W/2 E/2 - Section 31	13 Joint or Infill	14 Consolidation Code	15 Order No.
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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



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: Holly Hill Date: 3/18/14

Printed Name
Holly.Hill@encana.com

E-mail Address

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the wall 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: FEBRUARY 10, 2014
Survey Date: NOVEMBER 13, 2013

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number: 15269

Lybrook O30-2307 01H
 SHL: SWSE Sec 30 T23N R7W
 417' FSL, 1360' FEL
 BHL: SWSE Sec 31 T23N R7W
 330' FSL, 2221' FEL
 Sandoval, New Mexico

Encana Oil & Gas (USA) Inc. Drilling Plan

1. ESTIMATED TOPS OF GEOLOGICAL MARKERS (TVD)

The estimated tops of important geologic markers are as follows:

Formation	Depth (TVD) units = feet
Ojo Alamo Ss.	987
Kirtland Shale	1,182
Fruitland Coal	1,448
Pictured Cliffs Ss.	1,572
Lewis Shale	1,688
Cliffhouse Ss.	2,341
Menefee Fn.	3,131
Point Lookout Ss.	3,956
Mancos Shale	4,138
Mancos Silt	4,660
Gallup Fn.	4,918

The referenced surface elevation is 7023', KB 7039'

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

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1,448
Oil/Gas	Pictured Cliffs Ss.	1,572
Oil/Gas	Cliffhouse Ss.	2,341
Gas	Menefee Fn.	3,131
Oil/Gas	Point Lookout Ss.	3,956
Oil/Gas	Mancos Shale	4,138
Oil/Gas	Mancos Silt	4,660
Oil/Gas	Gallup Fn.	4,918

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

3. PRESSURE CONTROL

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

Lybrook O30-2307 01H

SHL: SWSE Sec 30 T23N R7W

417' FSL, 1360' FEL

BHL: SWSE Sec 31 T23N R7W

330' FSL, 2221' FEL

Sandoval, New Mexico

- g) BOP controls must be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned.
- h) BOP testing procedures and testing frequency will conform to Onshore Order No. 2.
- i) BOP remote controls shall be located on the rig floor at a location readily accessible to the driller. Master controls shall be on the ground at the accumulator and shall have the capability to function all preventers.
- j) The kill line shall be 2-inch minimum and contain two kill line valves, one of which shall be a check valve.
- k) The choke line shall be a 2-inch minimum and contain two choke line valves (2-inch minimum).
- l) The choke and manifold shall contain two adjustable chokes.
- m) Hand wheels shall be installed on all ram preventers.
- n) Safety valves and wrenches (with subs for drill string connections) shall be available on the rig floor at all
- o) Inside BOP or float sub shall also be available on the rig floor at all times.

Proposed BOP and choke manifold arrangements are attached.

4. CASING & CEMENTING PROGRAM

The proposed casing and cementing program has been designed to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use. The casing setting depth shall be calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during normal drilling operations. All indications of useable water shall be reported.

- a) The proposed casing design is as follows:

Casing	Depth (MD)	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'-5680'	8 3/4"	7"	26#	J55, LTC New
Production Liner	5480'-10434'	6 1/8"	4 1/2"	11.6#	B80*, LTC New

Casing String				Casing Strength Properties			Minimum Design Factors		
Size	Weight (ppf)	Grade	Connection	Collapse (psi)	Burst (psi)	Tensile (1000lbs)	Collapse	Burst	Tension
9 5/8"	36	J55	STC	2020	3520	394	1.125	1.1	1.5
7"	26	J55	LTC	4320	4980	367	1.125	1.1	1.5
4.5"	11.6	B80	LTC	6350	7780	201	1.125	1.1	1.5

*B80 pipe specifications are attached

Casing design is subject to revision based on geologic conditions encountered

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 O30-2307 01H
 SHL: SWSE Sec 30 T23N R7W
 417' FSL, 1360' FEL
 BHL: SWSE Sec 31 T23N R7W
 330' FSL, 2221' FEL
 Sandoval, New Mexico

b) The proposed cementing program is as follows

Casing	Depth (MD)	Cement Volume (sacks)	Cement Type & Yield	Designed TOC	Centralizers
Conductor	0'-60'	100 sks	Type I Neat 16 ppg	Surface	None
Surface	0'-500'	201 sks	Type III Cement + 1% CaCl + 0.25lb/sk Cello Flake + 0.2% FL, 16ppg, 1.38cuf/sk	Surface	1 per joint on bottom 3 joints
Intermediate	0'-5680'	30% open hole excess Stage 1 Lead: 309 sks Stage 1 Tail: 382 sks Stage 2 Lead: 153 sks	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 every 3 joints through water bearing zones
Production Liner	5480'-10434'	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 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 3450'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5096'/10434'	Gallup

6. DRILLING FLUIDS PROGRAM

a) Surface through Intermediate Casing Point:

Hole Size (in)	Depth (TVD/MD)	Mud Type	Density (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
30"	0-60'/60'	Fresh Water	8.3-9.2	38-100	4-28
12 1/4"	0'-500'/500'	Fresh Water	8.4-8.6	60-70	NC
8 3/4"	500'/500'-5165'/5680	Fresh Water LSND	9.5-8.8	40-50	8-10

Lybrook O30-2307 01H

SHL: SWSE Sec 30 T23N R7W

417' FSL, 1360' FEL

BHL: SWSE Sec 31 T23N R7W

330' FSL, 2221' FEL

Sandoval, New Mexico

b) Intermediate Casing Point to TD:

Hole Size (in)	Depth (TVD/MD)	Mud Type	Density (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
6 1/8"	5165'/5680'- 5096'/10434'	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, & LOGGING

- a) Drill Stem Testing - None anticipated.
- b) Coring - None anticipated.
- c) Mudd Logging - Mud loggers will be on location from kick off point to TD.
- d) Logging - See below

Cased Hole:

CBL/CCL/GR/VDL will be run as needed for perforating control

8. ABNORMAL PRESSURES & HYDROGEN SULFIDE

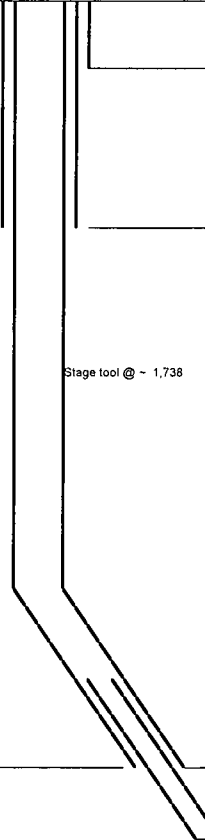
The anticipated bottom hole pressure is +/- 2425 psi based on a 9.0 ppg at 5181' TVD of the horizontal lateral target. No abnormal pressure or temperatures are anticipated.

No hydrogen sulfide gas is anticipated, however, if H₂S is encountered, the guidelines in Onshore Order No. 6 will be followed.

9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on January 1, 2015. 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: NW/4 NE/4 Sec 31 T23N R7W, 330'				Encana Natural Gas				ENG: S Kuykendall 3/17/14			
County: Sandoval				WELL SUMMARY				RIG: Aztec 950			
WELL: Lybrook O30-2307 01H								GLE: 7023			
								RKBE: 7039			
MWD	OPEN HOLE		DEPTH				HOLE	CASING	MW	DEVIATION	
LWD	LOGGING	FORM	TVD	MD							SIZE
			60	60'		30	20" 94# 100sx Type I Neat 16.0ppg cmt	Fresh wtr 8.3-9.2			
Multi-Well pad - take survey every stand and run anti- collision report prior to spud	None					12 1/4	9 5/8" 36ppf J55 STC	Fresh wtr	Vertical <1°		
		Nacimiento 9 5/8" Csg	0 500	500.00			TOC Surface - 201 sks of Type III Cement	8.4-8.6			
Survey Every 60'-120', updating anticollision report after surveys. Stop operations and contact drilling engineer if separation factor approaches 1.5	No OH logs	Ojo Alamo Ss. Kirtland Shale	987 1,182	Stage tool @ ~ 1,738		8 3/4	7" 26ppf J55 LTC	Fresh Wtr	Vertical <1°		
		Fruitland Coal	1,448				TOC @ surface 30% OH excess: 691 sksTotal.	8.5-8.8			
		Pictured Cliffs Ss. Lewis Shale	1,572 1,688								
		Cliffhouse Ss. Menelee Fn.	2,341 3,131								
		Point Lookout Ss. Mancos Shale	3,956 4,138								
Surveys every 30' through the curve	Mud logger onsite	KOP	3,450				153 Stage 1 Tail: 382 sks Type III Cement + 1% CaCl2 + 0.25#/sk Cello Flake + 0.2% FL-52A, Mixed at 14.6 ppg. Yield 1.38 cuft/sk.				
		Mancos Silt	4,660				Stage 2: 168 sks Premium Lite FM + 3% CaCl2 + 0.25/sk Cello Flake + 5#/sk LCM-1 + 8% Bentonite + 0.4% FL-52A + 0.4% Sodium Metasilicate. Mixed at 12.1 ppg. Yield 2.13 cuft/sk.				
		Gallup Fn.	4,918								
Surveys every stand to TD unless directed otherwise by Geologist	No OH Logs	Horizontal Target TD	5,181 5,096			6 1/8	200' overlap at liner top	Horizontal Inclination Horizontal TVD	Horz Inc/TVD /90.9 deg		
		Base Gallup	5,255			4754' Drilled Lateral	8.6-9.0 OBM	TD = 10,433.7 MD			
		MWD Gamma Directional					4 1/2" 11.6ppf SB80 LTC	Switch to OBM 8.6-9.0			
							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 3450', 8 3/4 inch holesize
- 5) PU directional tools and start curve at 10deg/100' build rate
- 6) Drill to csg point of 5680' MD
- 7) R&C 7" csg, circ cmt to surface, switch to OBM
- 8) Land at 90 deg, drill lateral to 10434' run 4 1/2 inch liner with external swellable csg packers

encana

SANDOVAL COUNTY,
NEW MEXICO

- ⊗ Abandoned
 - ⊗ Abandoned Gas
 - ⊗ Abandoned Oil
 - ⊗ Dry Hole
 - ⊗ GAS
 - ⊗ Injection
 - Basin Mancos Gas Pool
 - OIL
- 1 inch = 2,000 feet

KENC OIL GAS INC 22
19

**LYBROOK
GALLUP
POOL**
20

Lybrook O20-2307 01H
Lybrook O20-2307 02H

KITE ACA FEDERAL 1

HENRY AGC FEDERAL 1

Lybrook G30-2307 01H
Lybrook G30-2307 02H
Lybrook G30-2307 03H
Lybrook G30-2307 04H

29

Lybrook L29-2307 01H
Lybrook L29-2307 02H
Lybrook L29-2307 03H
Lybrook L29-2307 04H

23N
7W

23N
8W

Lybrook O30-2307 01H

Lybrook G30-2307 02H
Lybrook O30-2307 03H

Lybrook G31-2307 01H
Lybrook G31-2307 03H

LITTLE B 2
LITTLE B 1

36

31

Lybrook J31-2307 01H
Lybrook J31-2307 02H

ALAMITO
UNIT 3

ALAMITO
UNIT 4

32

STATE K 1

FULTON 1

ALAMITO UNIT 2

ALAMITO 1
ALAMITO 1

Lybrook P31-2307 01H
Lybrook P31-2307 02H
Lybrook P31-2307 03H
Lybrook P31-2307 04H

FULTON 1

FEDERAL C 3

SOUTH SEAS 1

FEDERAL 1-5

**ALAMITO
GALLUP
POOL**

GALLO WASH 5
1

22N
8W

6

SOUTH SEAS 2

FEDERAL 6-22-7 1

5

22N
7W

0 0.125 0.25 0.5 Miles

Directions from the Intersection of US Hwy 550 & US Hwy 64
in Bloomfield, NM to Encana Oil & Gas (USA) Inc. Lybrook O30-2307 01H
417' FSL & 1360' FEL, Section 30, T23N, R7W, N.M.P.M., Sandoval County, NM

Latitude: 36.19175°N Longitude: 107.61114°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 38.7 miles to Mile Marker 112.7;

Go right (Southerly) on County Road #7900 for 4.9 miles to fork in road;

Go straight (South-easterly) remaining on County Road #7900 for 0.2 miles to fork in road;

Go left (North-easterly) exiting County Road #7900 for 2.8 miles to three-way intersection;

Go left (North-easterly) for 0.2 miles to new access on right-hand side of existing roadway;

Go right (North-easterly) for 4149' along Encana Lybrook J31-2307 01H proposed access to new access on left-hand-side;

Go left which is straight (North-easterly) for 850' along Encana Lybrook G31-2307 01H proposed access to new access on right-hand side;

Go right which is straight (North-easterly) along Encana Lybrook O30-2307 01H proposed access which continues for an additional 5097' to staked Encana Lybrook O30-2307 01H location.



Boomerang Tube LLC

CASING (OR) TUBING DESCRIPTION AND PERFORMANCE PROPERTIES

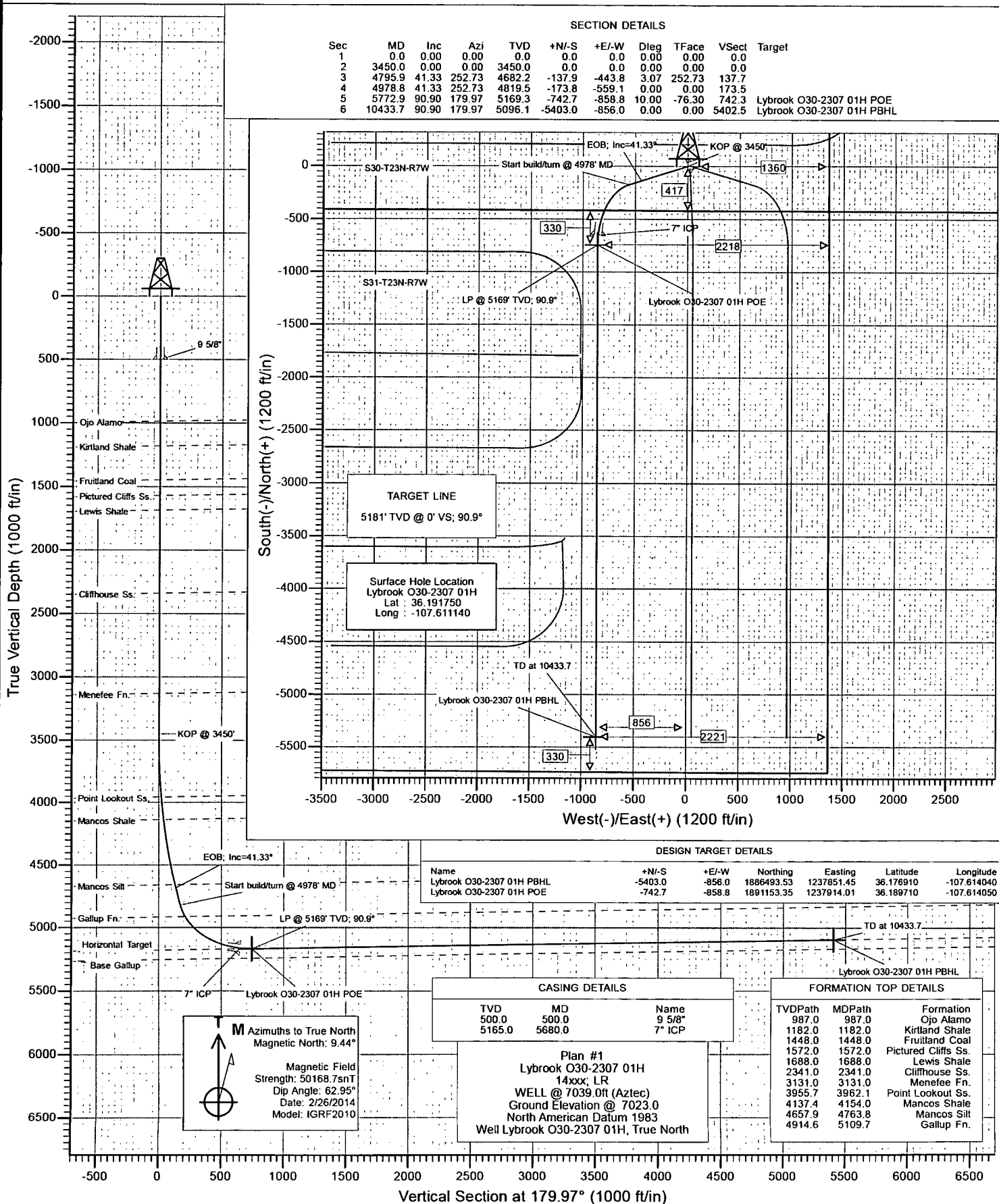
Pipe Outside Diameter (ins)	_____	4.500
Pipe Wall Thickness (ins)	_____	0.250
Nominal Weight Per Foot (lbs)	_____	11.60
Thread Name	_____	Long Thread CSG
Grade Name	_____	SB-80
Pipe Minimum Yield (psi)	_____	80,000
Pipe Minimum Ultimate (psi)	_____	90,000
Coupling Minimum Yield (psi)	_____	80,000
Coupling Minimum Ultimate (psi)	_____	100,000
Coupling or Joint Outside Diameter (ins)	_____	5.000
Drift Diameter (ins)	_____	3.875
Plain End Weight per Foot (lbs)	_____	11.36
Joint Strength (lbs)	_____	201,000
Internal Yield (psi)	_____	7,780
Collapse Rating (psi)	_____	6,350

MAXIMUM DEPTH/LENGTH BASED ON MUD WTS & SAFETY FACTORS

Drilling Mud Weight (ppg)	_____	9.625
Tension Safety Factor	_____	1.80
Maximum Tension Length (ft)	_____	9,630
Internal Yield Safety Factor	_____	1.10
Maximum Depth for Internal Yield (ft)	_____	14,150
Collapse Safety Factor	_____	1.125
Maximum Collapse Depth (ft)	_____	11,290

API RELATED VALUES and INTERMEDIATE CALCULATION RESULTS

Coupling Thread Fracture Strength	_____	464,000
Pipe Thread Fracture Strength (lbs)	_____	201,000
Pipe Body Plain End Yield (lbs)	_____	267,000
Round Thread Pull-Out (lbs)	_____	219,000
Minimum Make-up Torque (ft-lbs)	_____	1,640
Nominal Make-up Torque (ft-lbs)	_____	2,190
Maximum Make-up Torque (ft-lbs)	_____	2,740
Coupling Internal Yield (psi)	_____	10,660
Pipe Body Internal Yield (psi)	_____	7,780
Leak @ E1 or E7 plane (psi)	_____	17,920
Pipe Hydrostatic Test Pressure @ 80 % SMYS	_____	7,100



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook O30-2307 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7039.0ft (Aztec)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7039.0ft (Aztec)
Site:	S30-T23N-R7W	North Reference:	True
Well:	Lybrook O30-2307 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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	S30-T23N-R7W				
Site Position:		Northing:	1,891,883.94 ft	Latitude:	36.191750
From:	Lat/Long	Easting:	1,238,783.16 ft	Longitude:	-107.611140
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-0.80 °

Well	Lybrook O30-2307 01H					
Well Position	+N/-S	0.0 ft	Northing:	1,891,883.94 ft	Latitude:	36.191750
	+E/-W	0.0 ft	Easting:	1,238,783.16 ft	Longitude:	-107.611140
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,023.0 ft	

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/26/2014	9.44	62.95	50,169

Design	Plan #1			
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	179.97

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	
3,450.0	0.00	0.00	3,450.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,795.9	41.33	252.73	4,682.2	-137.9	-443.8	3.07	3.07	0.00	252.73	
4,978.8	41.33	252.73	4,819.5	-173.8	-559.1	0.00	0.00	0.00	0.00	
5,772.9	90.90	179.97	5,169.3	-742.7	-858.8	10.00	6.24	-9.16	-76.30	Lybrook O30-2307 01
10,433.7	90.90	179.97	5,096.1	-5,403.0	-856.0	0.00	0.00	0.00	0.00	Lybrook O30-2307 01

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook O30-2307 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7039.0ft (Aztec)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7039.0ft (Aztec)
Site:	S30-T23N-R7W	North Reference:	True
Well:	Lybrook O30-2307 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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	
987.0	0.00	0.00	987.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo
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	
1,182.0	0.00	0.00	1,182.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
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	
1,448.0	0.00	0.00	1,448.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,572.0	0.00	0.00	1,572.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,688.0	0.00	0.00	1,688.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	
2,341.0	0.00	0.00	2,341.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss.
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	
3,131.0	0.00	0.00	3,131.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn.
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	
3,450.0	0.00	0.00	3,450.0	0.0	0.0	0.0	0.00	0.00	KOP @ 3450'
3,500.0	1.54	252.73	3,500.0	-0.2	-0.6	0.2	3.07	3.07	
3,600.0	4.61	252.73	3,599.8	-1.8	-5.8	1.8	3.07	3.07	
3,700.0	7.68	252.73	3,699.3	-5.0	-16.0	5.0	3.07	3.07	
3,800.0	10.75	252.73	3,798.0	-9.7	-31.3	9.7	3.07	3.07	
3,900.0	13.82	252.73	3,895.7	-16.0	-51.6	16.0	3.07	3.07	
3,962.1	15.72	252.73	3,955.7	-20.7	-66.7	20.7	3.07	3.07	Point Lookout Ss.
4,000.0	16.89	252.73	3,992.1	-23.9	-76.8	23.8	3.07	3.07	
4,100.0	19.96	252.73	4,086.9	-33.3	-107.0	33.2	3.07	3.07	
4,154.0	21.62	252.73	4,137.4	-38.9	-125.3	38.9	3.07	3.07	Mancos Shale

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook O30-2307 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7039.0ft (Aztec)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7039.0ft (Aztec)
Site:	S30-T23N-R7W	North Reference:	True
Well:	Lybrook O30-2307 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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
4,200.0	23.03	252.73	4,180.0	-44.1	-142.0	44.1	3.07	3.07	
4,300.0	26.10	252.73	4,270.9	-56.5	-181.7	56.4	3.07	3.07	
4,400.0	29.17	252.73	4,359.5	-70.2	-226.0	70.1	3.07	3.07	
4,500.0	32.24	252.73	4,445.5	-85.4	-274.7	85.3	3.07	3.07	
4,600.0	35.31	252.73	4,528.6	-101.9	-327.8	101.7	3.07	3.07	
4,700.0	38.38	252.73	4,608.6	-119.7	-385.1	119.5	3.07	3.07	
4,763.8	40.34	252.73	4,657.9	-131.7	-423.8	131.5	3.07	3.07	Mancos Silt
4,795.9	41.33	252.73	4,682.2	-137.9	-443.8	137.7	3.07	3.07	EOB; Inc=41.33°
4,800.0	41.33	252.73	4,685.3	-138.7	-446.4	138.5	0.00	0.00	
4,900.0	41.33	252.73	4,760.4	-158.3	-509.4	158.1	0.00	0.00	
4,978.8	41.33	252.73	4,819.5	-173.8	-559.1	173.5	0.00	0.00	Start build/turn @ 4978' MD
5,000.0	41.87	249.64	4,835.4	-178.3	-572.4	178.0	10.00	2.56	
5,100.0	45.47	236.10	4,907.9	-209.9	-633.5	209.6	10.00	3.59	
5,109.7	45.89	234.89	4,914.6	-213.8	-639.2	213.5	10.00	4.42	Gallup Fn.
5,200.0	50.45	224.41	4,975.0	-257.4	-690.2	257.1	10.00	5.05	
5,300.0	56.44	214.42	5,034.6	-319.5	-740.8	319.1	10.00	5.99	
5,400.0	63.12	205.80	5,085.0	-394.2	-783.9	393.8	10.00	6.68	
5,500.0	70.27	198.18	5,124.5	-479.3	-818.1	478.9	10.00	7.15	
5,600.0	77.71	191.22	5,152.1	-572.2	-842.3	571.7	10.00	7.44	
5,680.0	83.79	185.94	5,165.0	-650.2	-854.1	649.7	10.00	7.60	7" ICP
5,700.0	85.32	184.65	5,166.9	-670.0	-855.9	669.6	10.00	7.65	
5,772.9	90.90	179.97	5,169.3	-742.7	-858.8	742.3	10.00	7.67	LP @ 5169' TVD; 90.9°
5,800.0	90.90	179.97	5,168.9	-769.9	-858.8	769.4	0.00	0.00	
5,900.0	90.90	179.97	5,167.3	-869.8	-858.7	869.4	0.00	0.00	
6,000.0	90.90	179.97	5,165.7	-969.8	-858.7	969.4	0.00	0.00	
6,100.0	90.90	179.97	5,164.2	-1,069.8	-858.6	1,069.4	0.00	0.00	
6,200.0	90.90	179.97	5,162.6	-1,169.8	-858.6	1,169.4	0.00	0.00	
6,300.0	90.90	179.97	5,161.0	-1,269.8	-858.5	1,269.3	0.00	0.00	
6,400.0	90.90	179.97	5,159.5	-1,369.8	-858.4	1,369.3	0.00	0.00	
6,500.0	90.90	179.97	5,157.9	-1,469.8	-858.4	1,469.3	0.00	0.00	
6,600.0	90.90	179.97	5,156.3	-1,569.8	-858.3	1,569.3	0.00	0.00	
6,700.0	90.90	179.97	5,154.7	-1,669.7	-858.3	1,669.3	0.00	0.00	
6,800.0	90.90	179.97	5,153.2	-1,769.7	-858.2	1,769.3	0.00	0.00	
6,900.0	90.90	179.97	5,151.6	-1,869.7	-858.1	1,869.3	0.00	0.00	
7,000.0	90.90	179.97	5,150.0	-1,969.7	-858.1	1,969.3	0.00	0.00	
7,100.0	90.90	179.97	5,148.5	-2,069.7	-858.0	2,069.2	0.00	0.00	
7,200.0	90.90	179.97	5,146.9	-2,169.7	-858.0	2,169.2	0.00	0.00	
7,300.0	90.90	179.97	5,145.3	-2,269.7	-857.9	2,269.2	0.00	0.00	
7,400.0	90.90	179.97	5,143.7	-2,369.7	-857.8	2,369.2	0.00	0.00	
7,500.0	90.90	179.97	5,142.2	-2,469.6	-857.8	2,469.2	0.00	0.00	
7,600.0	90.90	179.97	5,140.6	-2,569.6	-857.7	2,569.2	0.00	0.00	
7,700.0	90.90	179.97	5,139.0	-2,669.6	-857.7	2,669.2	0.00	0.00	
7,800.0	90.90	179.97	5,137.5	-2,769.6	-857.6	2,769.2	0.00	0.00	
7,900.0	90.90	179.97	5,135.9	-2,869.6	-857.5	2,869.2	0.00	0.00	
8,000.0	90.90	179.97	5,134.3	-2,969.6	-857.5	2,969.1	0.00	0.00	
8,100.0	90.90	179.97	5,132.8	-3,069.6	-857.4	3,069.1	0.00	0.00	
8,200.0	90.90	179.97	5,131.2	-3,169.6	-857.3	3,169.1	0.00	0.00	
8,300.0	90.90	179.97	5,129.6	-3,269.6	-857.3	3,269.1	0.00	0.00	
8,400.0	90.90	179.97	5,128.0	-3,369.5	-857.2	3,369.1	0.00	0.00	
8,500.0	90.90	179.97	5,126.5	-3,469.5	-857.2	3,469.1	0.00	0.00	
8,600.0	90.90	179.97	5,124.9	-3,569.5	-857.1	3,569.1	0.00	0.00	
8,700.0	90.90	179.97	5,123.3	-3,669.5	-857.0	3,669.1	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook O30-2307 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7039.0ft (Aztec)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7039.0ft (Aztec)
Site:	S30-T23N-R7W	North Reference:	True
Well:	Lybrook O30-2307 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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
8,800.0	90.90	179.97	5,121.8	-3,769.5	-857.0	3,769.0	0.00	0.00	
8,900.0	90.90	179.97	5,120.2	-3,869.5	-856.9	3,869.0	0.00	0.00	
9,000.0	90.90	179.97	5,118.6	-3,969.5	-856.9	3,969.0	0.00	0.00	
9,100.0	90.90	179.97	5,117.0	-4,069.5	-856.8	4,069.0	0.00	0.00	
9,200.0	90.90	179.97	5,115.5	-4,169.4	-856.7	4,169.0	0.00	0.00	
9,300.0	90.90	179.97	5,113.9	-4,269.4	-856.7	4,269.0	0.00	0.00	
9,400.0	90.90	179.97	5,112.3	-4,369.4	-856.6	4,369.0	0.00	0.00	
9,500.0	90.90	179.97	5,110.8	-4,469.4	-856.6	4,469.0	0.00	0.00	
9,600.0	90.90	179.97	5,109.2	-4,569.4	-856.5	4,568.9	0.00	0.00	
9,700.0	90.90	179.97	5,107.6	-4,669.4	-856.4	4,668.9	0.00	0.00	
9,800.0	90.90	179.97	5,106.1	-4,769.4	-856.4	4,768.9	0.00	0.00	
9,900.0	90.90	179.97	5,104.5	-4,869.4	-856.3	4,868.9	0.00	0.00	
10,000.0	90.90	179.97	5,102.9	-4,969.3	-856.3	4,968.9	0.00	0.00	
10,100.0	90.90	179.97	5,101.3	-5,069.3	-856.2	5,068.9	0.00	0.00	
10,200.0	90.90	179.97	5,099.8	-5,169.3	-856.1	5,168.9	0.00	0.00	
10,300.0	90.90	179.97	5,098.2	-5,269.3	-856.1	5,268.9	0.00	0.00	
10,400.0	90.90	179.97	5,096.6	-5,369.3	-856.0	5,368.8	0.00	0.00	
10,433.7	90.90	179.97	5,096.1	-5,403.0	-856.0	5,402.5	0.00	0.00	TD at 10433.7

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Lybrook O30-2307 01H I	0.00	0.00	5,096.1	-5,403.0	-856.0	1,886,493.53	1,237,851.45	36.176910	-107.614040
- plan hits target center									
- Point									
Lybrook O30-2307 01H I	0.00	0.00	5,169.3	-742.7	-858.8	1,891,153.35	1,237,914.01	36.189710	-107.614050
- plan hits target center									
- Point									

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
5,680.0	5,165.0	7" ICP	0.000	0.000

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook O30-2307 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7039.0ft (Aztec)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7039.0ft (Aztec)
Site:	S30-T23N-R7W	North Reference:	True
Well:	Lybrook O30-2307 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
987.0	987.0	Ojo Alamo		-0.90	179.97	
1,182.0	1,182.0	Kirtland Shale		-0.90	179.97	
1,448.0	1,448.0	Fruitland Coal		-0.90	179.97	
1,572.0	1,572.0	Pictured Cliffs Ss.		-0.90	179.97	
1,688.0	1,688.0	Lewis Shale		-0.90	179.97	
2,341.0	2,341.0	Cliffhouse Ss.		-0.90	179.97	
3,131.0	3,131.0	Menefee Fn.		-0.90	179.97	
3,962.1	3,956.0	Point Lookout Ss.		-0.90	179.97	
4,154.0	4,138.0	Mancos Shale		-0.90	179.97	
4,763.8	4,660.0	Mancos Silt		-0.90	179.97	
5,109.7	4,918.0	Gallup Fn.		-0.90	179.97	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
3,450.0	3,450.0	0.0	0.0	KOP @ 3450'	
4,795.9	4,682.2	-137.9	-443.8	EOB; Inc=41.33°	
4,978.8	4,819.5	-173.8	-559.1	Start build/turn @ 4978' MD	
5,772.9	5,169.3	-742.7	-858.8	LP @ 5169' TVD; 90.9°	
10,433.7	5,096.1	-5,403.0	-856.0	TD at 10433.7	

EnCana Oil & Gas (USA) Inc

Sandoval County, NM

S30-T23N-R7W

Lybrook O30-2307 01H

Hz

Plan #1

Anticollision Report

26 February, 2014

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook O30-2307 01H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7039.0ft (Aztec)
Reference Site:	S30-T23N-R7W	MD Reference:	WELL @ 7039.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook O30-2307 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 #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference
Interpolation Method:	MD Interval 100.0ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,243.4ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	Systematic Ellipse
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program		Date 2/26/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	10,433.7	Plan #1 (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						
S29-T23N-R7W						
Lybrook L29-2307 03H - Hz - Plan #2	5,137.6	7,530.1	519.4	450.6	7.550	CC, ES, SF
S30-T23N-R7W						
Lybrook O30-2307 02H - Hz - Plan #1	3,400.0	3,400.0	28.1	16.3	2.381	CC
Lybrook O30-2307 02H - Hz - Plan #1	3,500.0	3,500.0	28.4	16.2	2.333	ES, SF
Lybrook O30-2307 03H - Hz - Plan #1	3,400.0	3,400.0	41.5	29.7	3.511	CC
Lybrook O30-2307 03H - Hz - Plan #1	3,427.8	3,427.8	41.6	29.7	3.491	ES, SF
S31-T23N-R7W						
Lybrook G31-2307 01H - Hz - Plan #1	6,200.0	5,334.2	216.7	183.2	6.465	SF
Lybrook G31-2307 01H - Hz - Plan #1	6,283.3	5,275.4	211.3	179.0	6.553	CC, ES
Lybrook G31-2307 02H - Hz - Plan #1	6,824.1	4,921.7	376.7	341.1	10.583	CC, ES
Lybrook G31-2307 02H - Hz - Plan #1	6,900.0	4,921.0	384.3	347.7	10.512	SF
Lybrook G31-2307 03H - Hz - Plan #1	7,365.6	5,208.8	249.4	204.7	5.580	CC
Lybrook G31-2307 03H - Hz - Plan #1	7,400.0	5,229.8	250.5	203.7	5.353	ES
Lybrook G31-2307 03H - Hz - Plan #1	7,500.0	5,287.2	267.2	214.7	5.084	SF
Lybrook J31-2307 01H - Hz - Plan #1	8,603.8	4,833.9	480.7	418.2	7.692	CC, ES
Lybrook J31-2307 01H - Hz - Plan #1	8,700.0	4,850.0	490.4	425.3	7.529	SF
Lybrook J31-2307 02H - Hz - Plan #1	9,079.8	5,200.0	346.4	266.5	4.335	CC
Lybrook J31-2307 02H - Hz - Plan #1	9,100.0	5,200.0	346.7	266.5	4.321	ES
Lybrook J31-2307 02H - Hz - Plan #1	9,200.0	5,268.4	354.7	270.2	4.201	SF

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook O30-2307 01H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7039.0ft (Aztec)
Reference Site:	S30-T23N-R7W	MD Reference:	WELL @ 7039.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook O30-2307 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 #1	Offset TVD Reference:	Offset Datum

Offset Design													S29-T23N-R7W - Lybrook L29-2307 03H - Hz - Plan #2		Offset Site Error: 0.0 ft	
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 ft			
Reference		Offset		Semi Major Axis			Distance							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				
4,100.0	4,086.9	6,991.3	5,074.4	7.5	56.1	152.72	204.0	-118.2	1,165.9	1,133.5	32.41	35.974				
4,200.0	4,180.0	7,025.2	5,074.0	7.9	56.9	152.89	204.1	-152.2	1,077.1	1,044.0	33.04	32.601				
4,300.0	4,270.9	7,063.9	5,073.6	8.4	57.7	152.46	204.2	-190.9	991.6	957.4	34.22	28.978				
4,400.0	4,359.5	7,107.2	5,073.1	9.0	58.7	151.49	204.3	-234.2	910.1	874.2	35.94	25.320				
4,500.0	4,445.5	7,155.0	5,072.6	9.8	59.8	150.02	204.5	-282.0	833.3	795.0	38.24	21.790				
4,600.0	4,528.6	7,207.2	5,072.1	10.6	61.0	148.06	204.6	-334.2	761.9	720.8	41.16	18.511				
4,700.0	4,608.6	7,263.6	5,071.5	11.6	62.3	145.57	204.8	-390.5	697.1	652.3	44.77	15.570				
4,800.0	4,685.3	7,324.0	5,070.9	12.7	63.7	142.51	205.0	-450.9	639.8	590.6	49.17	13.012				
4,900.0	4,760.4	7,386.2	5,070.2	13.8	65.1	137.85	205.2	-513.1	589.4	534.1	55.27	10.663				
5,000.0	4,835.4	7,448.3	5,069.6	15.0	66.6	134.66	205.4	-575.3	545.8	483.8	62.08	8.793				
5,100.0	4,907.9	7,508.5	5,068.9	16.3	68.0	138.13	205.6	-635.4	521.5	453.8	67.70	7.703				
5,137.6	4,933.8	7,530.1	5,068.7	16.7	68.5	139.29	205.7	-657.0	519.4	450.6	68.79	7.550 CC, ES, SF				
5,200.0	4,975.0	7,564.3	5,068.4	17.5	69.3	140.98	205.8	-691.3	525.2	455.7	69.45	7.562				
5,300.0	5,034.6	7,614.2	5,067.8	18.8	70.4	143.08	206.0	-741.1	557.8	490.3	67.56	8.257				
5,400.0	5,085.0	7,656.5	5,067.4	20.1	71.4	144.53	206.1	-783.4	615.6	553.2	62.42	9.863				
5,500.0	5,124.5	7,690.0	5,067.0	21.3	72.2	145.62	206.2	-816.9	692.3	637.8	54.45	12.713				
5,600.0	5,152.1	7,713.6	5,066.8	22.4	72.8	146.91	206.3	-840.5	781.5	737.4	44.09	17.726				
5,700.0	5,166.9	7,726.7	5,066.7	23.5	73.1	151.17	206.3	-853.6	878.0	846.9	31.06	28.264				
5,800.0	5,168.9	7,729.3	5,066.6	24.5	73.1	-175.00	206.3	-856.2	977.6	958.1	19.44	50.279				
5,900.0	5,167.3	7,728.9	5,066.6	25.6	73.1	-174.43	206.3	-855.8	1,077.5	1,057.6	19.86	54.259				
6,000.0	5,165.7	7,728.6	5,066.6	26.7	73.1	-173.86	206.3	-855.5	1,177.4	1,157.2	20.29	58.034				

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook O30-2307 01H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7039.0ft (Aztec)
Reference Site:	S30-T23N-R7W	MD Reference:	WELL @ 7039.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook O30-2307 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 #1	Offset TVD Reference:	Offset Datum

Offset Design S30-T23N-R7W - Lybrook O30-2307 02H - Hz - Plan #1														Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	140.97	-21.8	17.7	28.1						
100.0	100.0	100.0	100.0	0.1	0.1	140.97	-21.8	17.7	28.1	27.8	0.29	95.903			
200.0	200.0	200.0	200.0	0.3	0.3	140.97	-21.8	17.7	28.1	27.5	0.64	43.782			
300.0	300.0	300.0	300.0	0.5	0.5	140.97	-21.8	17.7	28.1	27.1	0.99	28.366			
400.0	400.0	400.0	400.0	0.7	0.7	140.97	-21.8	17.7	28.1	26.8	1.34	20.979			
500.0	500.0	500.0	500.0	0.8	0.8	140.97	-21.8	17.7	28.1	26.4	1.69	16.644			
600.0	600.0	600.0	600.0	1.0	1.0	140.97	-21.8	17.7	28.1	26.1	2.04	13.794			
700.0	700.0	700.0	700.0	1.2	1.2	140.97	-21.8	17.7	28.1	25.7	2.39	11.778			
800.0	800.0	800.0	800.0	1.4	1.4	140.97	-21.8	17.7	28.1	25.4	2.74	10.275			
900.0	900.0	900.0	900.0	1.5	1.5	140.97	-21.8	17.7	28.1	25.0	3.09	9.113			
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	140.97	-21.8	17.7	28.1	24.7	3.43	8.187			
1,100.0	1,100.0	1,100.0	1,100.0	1.9	1.9	140.97	-21.8	17.7	28.1	24.3	3.78	7.432			
1,200.0	1,200.0	1,200.0	1,200.0	2.1	2.1	140.97	-21.8	17.7	28.1	24.0	4.13	6.804			
1,300.0	1,300.0	1,300.0	1,300.0	2.2	2.2	140.97	-21.8	17.7	28.1	23.6	4.48	6.274			
1,400.0	1,400.0	1,400.0	1,400.0	2.4	2.4	140.97	-21.8	17.7	28.1	23.3	4.83	5.821			
1,500.0	1,500.0	1,500.0	1,500.0	2.6	2.6	140.97	-21.8	17.7	28.1	22.9	5.18	5.428			
1,600.0	1,600.0	1,600.0	1,600.0	2.8	2.8	140.97	-21.8	17.7	28.1	22.6	5.53	5.086			
1,700.0	1,700.0	1,700.0	1,700.0	2.9	2.9	140.97	-21.8	17.7	28.1	22.2	5.88	4.784			
1,800.0	1,800.0	1,800.0	1,800.0	3.1	3.1	140.97	-21.8	17.7	28.1	21.9	6.23	4.516			
1,900.0	1,900.0	1,900.0	1,900.0	3.3	3.3	140.97	-21.8	17.7	28.1	21.5	6.58	4.276			
2,000.0	2,000.0	2,000.0	2,000.0	3.5	3.5	140.97	-21.8	17.7	28.1	21.2	6.93	4.060			
2,100.0	2,100.0	2,100.0	2,100.0	3.6	3.6	140.97	-21.8	17.7	28.1	20.8	7.27	3.866			
2,200.0	2,200.0	2,200.0	2,200.0	3.8	3.8	140.97	-21.8	17.7	28.1	20.5	7.62	3.689			
2,300.0	2,300.0	2,300.0	2,300.0	4.0	4.0	140.97	-21.8	17.7	28.1	20.1	7.97	3.527			
2,400.0	2,400.0	2,400.0	2,400.0	4.2	4.2	140.97	-21.8	17.7	28.1	19.8	8.32	3.379			
2,500.0	2,500.0	2,500.0	2,500.0	4.3	4.3	140.97	-21.8	17.7	28.1	19.4	8.67	3.243			
2,600.0	2,600.0	2,600.0	2,600.0	4.5	4.5	140.97	-21.8	17.7	28.1	19.1	9.02	3.118			
2,700.0	2,700.0	2,700.0	2,700.0	4.7	4.7	140.97	-21.8	17.7	28.1	18.8	9.37	3.001			
2,800.0	2,800.0	2,800.0	2,800.0	4.9	4.9	140.97	-21.8	17.7	28.1	18.4	9.72	2.894			
2,900.0	2,900.0	2,900.0	2,900.0	5.0	5.0	140.97	-21.8	17.7	28.1	18.1	10.07	2.793			
3,000.0	3,000.0	3,000.0	3,000.0	5.2	5.2	140.97	-21.8	17.7	28.1	17.7	10.42	2.700			
3,100.0	3,100.0	3,100.0	3,100.0	5.4	5.4	140.97	-21.8	17.7	28.1	17.4	10.77	2.612			
3,200.0	3,200.0	3,200.0	3,200.0	5.6	5.6	140.97	-21.8	17.7	28.1	17.0	11.11	2.530			
3,300.0	3,300.0	3,300.0	3,300.0	5.7	5.7	140.97	-21.8	17.7	28.1	16.7	11.46	2.453			
3,400.0	3,400.0	3,400.0	3,400.0	5.9	5.9	140.97	-21.8	17.7	28.1	16.3	11.81	2.381 CC			
3,429.5	3,429.5	3,429.5	3,429.5	6.0	6.0	-111.98	-21.8	17.7	28.2	16.2	11.92	2.364			
3,500.0	3,500.0	3,500.0	3,500.0	6.1	6.1	-113.01	-21.8	17.7	28.4	16.2	12.16	2.333 ES, SF			
3,600.0	3,599.8	3,599.8	3,599.8	6.3	6.3	-122.12	-21.8	17.7	30.9	18.4	12.50	2.468			
3,700.0	3,699.3	3,699.3	3,699.3	6.4	6.4	-135.85	-21.8	17.7	37.7	24.8	12.83	2.937			
3,800.0	3,798.0	3,798.0	3,798.0	6.6	6.6	-148.37	-21.8	17.7	50.4	37.3	13.11	3.848			
3,900.0	3,895.7	3,895.7	3,895.7	6.9	6.8	-157.34	-21.8	17.7	69.5	56.2	13.35	5.206			
4,000.0	3,992.1	3,992.1	3,992.1	7.2	6.9	-163.29	-21.8	17.7	94.6	81.0	13.57	6.971			
4,100.0	4,086.9	4,086.9	4,086.9	7.5	7.1	-167.22	-21.8	17.7	125.3	111.5	13.75	9.108			
4,200.0	4,180.0	4,180.0	4,180.0	7.9	7.3	-169.89	-21.8	17.7	161.3	147.4	13.91	11.596			
4,300.0	4,270.9	4,270.9	4,270.9	8.4	7.4	-171.76	-21.8	17.7	202.4	188.4	14.03	14.421			
4,400.0	4,359.5	4,359.5	4,359.5	9.0	7.6	-173.10	-21.8	17.7	248.5	234.3	14.13	17.579			
4,500.0	4,445.5	4,445.5	4,445.5	9.8	7.7	-174.09	-21.8	17.7	299.3	285.1	14.21	21.069			
4,600.0	4,528.6	4,528.6	4,528.6	10.6	7.9	-174.83	-21.8	17.7	354.7	340.4	14.25	24.891			
4,700.0	4,608.6	4,609.0	4,609.0	11.6	8.0	-175.40	-21.9	17.7	414.5	400.2	14.27	29.050			
4,800.0	4,685.3	4,700.0	4,699.5	12.7	8.2	-174.77	-29.6	18.1	477.3	463.0	14.33	33.318			
4,900.0	4,760.4	4,790.5	4,787.3	13.8	8.4	-172.59	-51.3	19.2	540.0	525.2	14.78	36.544			
5,000.0	4,835.4	4,878.2	4,868.1	15.0	8.6	-165.47	-85.3	20.9	601.4	585.9	15.52	38.764			

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 O30-2307 01H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7039.0ft (Aztec)
Reference Site:	S30-T23N-R7W	MD Reference:	WELL @ 7039.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook O30-2307 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 #1	Offset TVD Reference:	Offset Datum

Offset Design S30-T23N-R7W - Lybrook O30-2307 02H - Hz - Plan #1														Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)							
5,100.0	4,907.9	4,964.7	4,941.7	16.3	8.9	-145.52	-130.5	23.1	662.2	644.7	17.56	37.715			
5,200.0	4,975.0	5,053.0	5,008.9	17.5	9.4	-129.18	-187.5	25.9	720.3	700.0	20.30	35.489			
5,300.0	5,034.6	5,144.2	5,068.4	18.8	10.0	-116.39	-256.5	29.4	773.5	750.4	23.12	33.461			
5,400.0	5,085.0	5,238.9	5,117.7	20.1	10.9	-106.70	-337.1	33.4	819.9	794.2	25.74	31.859			
5,500.0	5,124.5	5,336.8	5,154.1	21.3	11.9	-99.57	-427.8	37.9	858.0	829.9	28.09	30.548			
5,600.0	5,152.1	5,436.9	5,174.7	22.4	13.2	-94.55	-525.5	42.7	886.6	856.4	30.17	29.389			
5,700.0	5,166.9	5,547.2	5,178.3	23.5	14.8	-91.29	-635.4	48.0	904.6	872.5	32.09	28.190			
5,800.0	5,168.9	5,681.2	5,176.2	24.5	16.7	-90.46	-769.4	50.2	909.0	874.5	34.50	26.345			
5,900.0	5,167.3	5,781.2	5,174.7	25.6	18.3	-90.46	-869.4	50.3	909.0	871.5	37.53	24.222			
6,000.0	5,165.7	5,881.2	5,173.1	26.7	19.8	-90.46	-969.4	50.3	909.0	868.4	40.63	22.375			
6,100.0	5,164.2	5,981.2	5,171.5	27.9	21.4	-90.46	-1,069.4	50.4	909.0	865.2	43.79	20.760			
6,200.0	5,162.6	6,081.2	5,170.0	29.2	23.0	-90.46	-1,169.3	50.4	909.0	862.0	47.00	19.342			
6,300.0	5,161.0	6,181.2	5,168.4	30.5	24.7	-90.46	-1,269.3	50.5	909.0	858.8	50.25	18.091			
6,400.0	5,159.5	6,281.2	5,166.8	31.8	26.3	-90.46	-1,369.3	50.6	909.0	855.5	53.53	16.982			
6,500.0	5,157.9	6,381.2	5,165.2	33.2	28.0	-90.46	-1,469.3	50.6	909.0	852.2	56.84	15.993			
6,600.0	5,156.3	6,481.2	5,163.7	34.7	29.7	-90.46	-1,569.3	50.7	909.0	848.9	60.17	15.108			
6,700.0	5,154.7	6,581.2	5,162.1	36.1	31.4	-90.46	-1,669.3	50.8	909.0	845.5	63.52	14.311			
6,800.0	5,153.2	6,681.2	5,160.5	37.6	33.0	-90.46	-1,769.3	50.8	909.1	842.2	66.89	13.591			
6,900.0	5,151.6	6,781.2	5,159.0	39.1	34.7	-90.46	-1,869.3	50.9	909.1	838.8	70.27	12.937			
7,000.0	5,150.0	6,881.2	5,157.4	40.6	36.4	-90.46	-1,969.2	51.0	909.1	835.4	73.66	12.341			
7,100.0	5,148.5	6,981.2	5,155.8	42.2	38.2	-90.46	-2,069.2	51.0	909.1	832.0	77.06	11.796			
7,200.0	5,146.9	7,081.2	5,154.3	43.7	39.9	-90.46	-2,169.2	51.1	909.1	828.6	80.47	11.296			
7,300.0	5,145.3	7,181.2	5,152.7	45.3	41.6	-90.46	-2,269.2	51.1	909.1	825.2	83.89	10.836			
7,400.0	5,143.7	7,281.2	5,151.1	46.9	43.3	-90.46	-2,369.2	51.2	909.1	821.8	87.32	10.411			
7,500.0	5,142.2	7,381.2	5,149.5	48.5	45.0	-90.46	-2,469.2	51.3	909.1	818.3	90.75	10.017			
7,600.0	5,140.6	7,481.2	5,148.0	50.1	46.7	-90.46	-2,569.2	51.3	909.1	814.9	94.19	9.651			
7,700.0	5,139.0	7,581.2	5,146.4	51.7	48.5	-90.46	-2,669.2	51.4	909.1	811.4	97.63	9.311			
7,800.0	5,137.5	7,681.2	5,144.8	53.4	50.2	-90.46	-2,769.1	51.5	909.1	808.0	101.08	8.994			
7,900.0	5,135.9	7,781.2	5,143.3	55.0	51.9	-90.46	-2,869.1	51.5	909.1	804.6	104.53	8.697			
8,000.0	5,134.3	7,881.2	5,141.7	56.6	53.7	-90.46	-2,969.1	51.6	909.1	801.1	107.99	8.418			
8,100.0	5,132.8	7,981.2	5,140.1	58.3	55.4	-90.46	-3,069.1	51.7	909.1	797.6	111.45	8.157			
8,200.0	5,131.2	8,081.2	5,138.5	59.9	57.1	-90.46	-3,169.1	51.7	909.1	794.2	114.91	7.912			
8,300.0	5,129.6	8,181.2	5,137.0	61.6	58.9	-90.46	-3,269.1	51.8	909.1	790.7	118.37	7.680			
8,400.0	5,128.0	8,281.2	5,135.4	63.3	60.6	-90.46	-3,369.1	51.8	909.1	787.3	121.84	7.462			
8,500.0	5,126.5	8,381.2	5,133.8	65.0	62.3	-90.46	-3,469.1	51.9	909.1	783.8	125.31	7.255			
8,600.0	5,124.9	8,481.2	5,132.3	66.6	64.1	-90.46	-3,569.0	52.0	909.1	780.3	128.78	7.059			
8,700.0	5,123.3	8,581.2	5,130.7	68.3	65.8	-90.46	-3,669.0	52.0	909.1	776.9	132.25	6.874			
8,800.0	5,121.8	8,681.2	5,129.1	70.0	67.5	-90.46	-3,769.0	52.1	909.1	773.4	135.73	6.698			
8,900.0	5,120.2	8,781.2	5,127.6	71.7	69.3	-90.46	-3,869.0	52.2	909.1	769.9	139.20	6.531			
9,000.0	5,118.6	8,881.2	5,126.0	73.4	71.0	-90.46	-3,969.0	52.2	909.1	766.4	142.68	6.372			
9,100.0	5,117.0	8,981.2	5,124.4	75.1	72.8	-90.46	-4,069.0	52.3	909.1	763.0	146.16	6.220			
9,200.0	5,115.5	9,081.2	5,122.8	76.8	74.5	-90.46	-4,169.0	52.4	909.1	759.5	149.64	6.075			
9,300.0	5,113.9	9,181.2	5,121.3	78.5	76.3	-90.46	-4,269.0	52.4	909.1	756.0	153.12	5.937			
9,400.0	5,112.3	9,281.2	5,119.7	80.2	78.0	-90.46	-4,368.9	52.5	909.1	752.5	156.60	5.805			
9,500.0	5,110.8	9,381.2	5,118.1	81.9	79.7	-90.46	-4,468.9	52.6	909.1	749.0	160.09	5.679			
9,600.0	5,109.2	9,481.2	5,116.6	83.6	81.5	-90.46	-4,568.9	52.6	909.1	745.6	163.57	5.558			
9,700.0	5,107.6	9,581.2	5,115.0	85.3	83.2	-90.46	-4,668.9	52.7	909.1	742.1	167.06	5.442			
9,800.0	5,106.1	9,681.2	5,113.4	87.0	85.0	-90.46	-4,768.9	52.7	909.1	738.6	170.55	5.331			
9,900.0	5,104.5	9,781.2	5,111.8	88.7	86.7	-90.46	-4,868.9	52.8	909.2	735.1	174.03	5.224			
10,000.0	5,102.9	9,881.2	5,110.3	90.4	88.5	-90.46	-4,968.9	52.9	909.2	731.6	177.52	5.121			
10,100.0	5,101.3	9,981.2	5,108.7	92.2	90.2	-90.46	-5,068.9	52.9	909.2	728.1	181.01	5.023			
10,200.0	5,099.8	10,081.2	5,107.1	93.9	92.0	-90.46	-5,168.9	53.0	909.2	724.7	184.50	4.928			

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook O30-2307 01H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7039.0ft (Aztec)
Reference Site:	S30-T23N-R7W	MD Reference:	WELL @ 7039.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook O30-2307 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 #1	Offset TVD Reference:	Offset Datum

Offset Design : S30-T23N-R7W - Lybrook O30-2307 02H - Hz - Plan #1													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		
10,300.0	5,098.2	10,181.2	5,105.6	95.6	93.7	-90.46	-5,268.8	53.1	909.2	721.2	187.99	4.836		
10,400.0	5,096.6	10,281.2	5,104.0	97.3	95.4	-90.46	-5,368.8	53.1	909.2	717.7	191.48	4.748		
10,433.7	5,096.1	10,314.9	5,103.5	97.9	96.0	-90.46	-5,402.5	53.1	909.2	716.5	192.66	4.719		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook O30-2307 01H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7039.0ft (Aztec)
Reference Site:	S30-T23N-R7W	MD Reference:	WELL @ 7039.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook O30-2307 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 #1	Offset TVD Reference:	Offset Datum

Offset Design S30-T23N-R7W - Lybrook O30-2307 03H - Hz - Plan #1														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			
0.0	0.0	0.0	0.0	0.0	0.0	95.04	-3.6	41.3	41.5						
100.0	100.0	100.0	100.0	0.1	0.1	95.04	-3.6	41.3	41.5	41.2	0.29	141.455			
200.0	200.0	200.0	200.0	0.3	0.3	95.04	-3.6	41.3	41.5	40.8	0.64	64.577			
300.0	300.0	300.0	300.0	0.5	0.5	95.04	-3.6	41.3	41.5	40.5	0.99	41.839			
400.0	400.0	400.0	400.0	0.7	0.7	95.04	-3.6	41.3	41.5	40.1	1.34	30.943			
500.0	500.0	500.0	500.0	0.8	0.8	95.04	-3.6	41.3	41.5	39.8	1.69	24.550			
600.0	600.0	600.0	600.0	1.0	1.0	95.04	-3.6	41.3	41.5	39.4	2.04	20.346			
700.0	700.0	700.0	700.0	1.2	1.2	95.04	-3.6	41.3	41.5	39.1	2.39	17.372			
800.0	800.0	800.0	800.0	1.4	1.4	95.04	-3.6	41.3	41.5	38.7	2.74	15.156			
900.0	900.0	900.0	900.0	1.5	1.5	95.04	-3.6	41.3	41.5	38.4	3.09	13.441			
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	95.04	-3.6	41.3	41.5	38.0	3.43	12.075			
1,100.0	1,100.0	1,100.0	1,100.0	1.9	1.9	95.04	-3.6	41.3	41.5	37.7	3.78	10.961			
1,200.0	1,200.0	1,200.0	1,200.0	2.1	2.1	95.04	-3.6	41.3	41.5	37.3	4.13	10.036			
1,300.0	1,300.0	1,300.0	1,300.0	2.2	2.2	95.04	-3.6	41.3	41.5	37.0	4.48	9.254			
1,400.0	1,400.0	1,400.0	1,400.0	2.4	2.4	95.04	-3.6	41.3	41.5	36.6	4.83	8.585			
1,500.0	1,500.0	1,500.0	1,500.0	2.6	2.6	95.04	-3.6	41.3	41.5	36.3	5.18	8.007			
1,600.0	1,600.0	1,600.0	1,600.0	2.8	2.8	95.04	-3.6	41.3	41.5	35.9	5.53	7.501			
1,700.0	1,700.0	1,700.0	1,700.0	2.9	2.9	95.04	-3.6	41.3	41.5	35.6	5.88	7.056			
1,800.0	1,800.0	1,800.0	1,800.0	3.1	3.1	95.04	-3.6	41.3	41.5	35.2	6.23	6.660			
1,900.0	1,900.0	1,900.0	1,900.0	3.3	3.3	95.04	-3.6	41.3	41.5	34.9	6.58	6.307			
2,000.0	2,000.0	2,000.0	2,000.0	3.5	3.5	95.04	-3.6	41.3	41.5	34.6	6.93	5.989			
2,100.0	2,100.0	2,100.0	2,100.0	3.6	3.6	95.04	-3.6	41.3	41.5	34.2	7.27	5.702			
2,200.0	2,200.0	2,200.0	2,200.0	3.8	3.8	95.04	-3.6	41.3	41.5	33.9	7.62	5.441			
2,300.0	2,300.0	2,300.0	2,300.0	4.0	4.0	95.04	-3.6	41.3	41.5	33.5	7.97	5.202			
2,400.0	2,400.0	2,400.0	2,400.0	4.2	4.2	95.04	-3.6	41.3	41.5	33.2	8.32	4.984			
2,500.0	2,500.0	2,500.0	2,500.0	4.3	4.3	95.04	-3.6	41.3	41.5	32.8	8.67	4.784			
2,600.0	2,600.0	2,600.0	2,600.0	4.5	4.5	95.04	-3.6	41.3	41.5	32.5	9.02	4.598			
2,700.0	2,700.0	2,700.0	2,700.0	4.7	4.7	95.04	-3.6	41.3	41.5	32.1	9.37	4.427			
2,800.0	2,800.0	2,800.0	2,800.0	4.9	4.9	95.04	-3.6	41.3	41.5	31.8	9.72	4.268			
2,900.0	2,900.0	2,900.0	2,900.0	5.0	5.0	95.04	-3.6	41.3	41.5	31.4	10.07	4.120			
3,000.0	3,000.0	3,000.0	3,000.0	5.2	5.2	95.04	-3.6	41.3	41.5	31.1	10.42	3.982			
3,100.0	3,100.0	3,100.0	3,100.0	5.4	5.4	95.04	-3.6	41.3	41.5	30.7	10.77	3.853			
3,200.0	3,200.0	3,200.0	3,200.0	5.6	5.6	95.04	-3.6	41.3	41.5	30.4	11.11	3.732			
3,300.0	3,300.0	3,300.0	3,300.0	5.7	5.7	95.04	-3.6	41.3	41.5	30.0	11.46	3.618			
3,400.0	3,400.0	3,400.0	3,400.0	5.9	5.9	95.04	-3.6	41.3	41.5	29.7	11.81	3.511 CC			
3,427.8	3,427.8	3,427.8	3,427.8	6.0	6.0	-157.75	-3.6	41.3	41.6	29.7	11.91	3.491 ES, SF			
3,500.0	3,500.0	3,498.9	3,498.9	6.1	6.1	-157.85	-3.8	41.9	42.7	30.6	12.16	3.516			
3,600.0	3,599.8	3,595.9	3,595.8	6.3	6.3	-158.75	-5.3	46.8	52.8	40.3	12.48	4.233			
3,700.0	3,699.3	3,690.8	3,690.1	6.4	6.4	-159.77	-8.1	56.2	72.9	60.1	12.78	5.702			
3,800.0	3,798.0	3,782.1	3,780.4	6.6	6.6	-160.46	-12.1	69.7	102.5	89.4	13.05	7.855			
3,900.0	3,895.7	3,868.8	3,865.3	6.9	6.8	-160.81	-17.0	86.3	141.2	127.9	13.29	10.628			
4,000.0	3,992.1	3,950.0	3,944.0	7.2	7.0	-160.91	-22.7	105.4	188.5	175.0	13.50	13.961			
4,100.0	4,086.9	4,025.1	4,016.0	7.5	7.2	-160.79	-28.8	125.9	243.5	229.9	13.69	17.795			
4,200.0	4,180.0	4,100.0	4,086.8	7.9	7.5	-160.55	-35.7	149.1	305.8	291.9	13.86	22.065			
4,300.0	4,270.9	4,155.7	4,138.8	8.4	7.7	-160.03	-41.3	168.2	374.3	360.3	14.00	26.735			
4,400.0	4,359.5	4,211.0	4,189.9	9.0	8.0	-159.38	-47.4	188.5	448.5	434.3	14.14	31.706			
4,500.0	4,445.5	4,259.9	4,234.5	9.8	8.2	-158.51	-53.1	207.7	527.6	513.3	14.30	36.889			
4,600.0	4,528.6	4,300.0	4,270.7	10.6	8.4	-157.32	-58.0	224.4	611.0	596.5	14.50	42.152			
4,700.0	4,608.6	4,339.2	4,305.7	11.6	8.7	-155.85	-63.0	241.3	698.1	683.3	14.77	47.264			
4,800.0	4,685.3	4,370.3	4,333.2	12.7	8.9	-153.98	-67.2	255.2	788.2	773.1	15.18	51.943			
4,900.0	4,760.4	4,400.0	4,359.2	13.8	9.0	-154.69	-71.3	269.0	880.0	864.4	15.60	56.428			
5,000.0	4,835.4	4,424.1	4,380.1	15.0	9.2	-147.93	-74.6	280.4	972.3	955.5	16.78	57.956			

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 O30-2307 01H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7039.0ft (Aztec)
Reference Site:	S30-T23N-R7W	MD Reference:	WELL @ 7039.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook O30-2307 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 #1	Offset TVD Reference:	Offset Datum

Offset Design S30-T23N-R7W - Lybrook O30-2307 03H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,100.0	4,907.9	4,448.9	4,401.5	16.3	9.4	-119.41	-78.2	292.4	1,063.5	1,042.6	20.90	50.887		
5,200.0	4,975.0	4,472.3	4,421.5	17.5	9.6	-99.30	-81.7	304.0	1,151.3	1,127.6	23.69	48.606		
5,300.0	5,034.6	4,500.0	4,445.1	18.8	9.8	-85.85	-85.8	318.1	1,234.2	1,209.2	25.05	49.266		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook O30-2307 01H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7039.0ft (Aztec)
Reference Site:	S30-T23N-R7W	MD Reference:	WELL @ 7039.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook O30-2307 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 #1	Offset TVD Reference:	Offset Datum

Offset Design S31-T23N-R7W - Lybrook G31-2307 01H - Hz - Plan #1														Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
4,800.0	4,685.3	5,600.0	5,086.4	12.7	17.7	-53.88	-979.7	-1,176.8	1,193.7	1,172.0	21.75	54.882			
4,900.0	4,760.4	5,600.0	5,086.4	13.8	17.7	-53.88	-979.7	-1,176.8	1,116.0	1,093.3	22.66	49.257			
5,000.0	4,835.4	5,629.3	5,092.1	15.0	18.1	-48.94	-960.1	-1,197.7	1,040.7	1,017.2	23.51	44.276			
5,100.0	4,907.9	5,650.0	5,096.0	16.3	18.4	-31.44	-946.7	-1,213.1	962.1	939.7	22.45	42.849			
5,200.0	4,975.0	5,650.0	5,096.0	17.5	18.4	-14.14	-946.7	-1,213.1	878.0	857.5	20.53	42.757			
5,300.0	5,034.6	5,650.0	5,096.0	18.8	18.4	5.57	-946.7	-1,213.1	790.3	771.4	18.83	41.979			
5,400.0	5,085.0	5,650.0	5,096.0	20.1	18.4	28.00	-946.7	-1,213.1	700.8	679.9	20.82	33.657			
5,500.0	5,124.5	5,650.0	5,096.0	21.3	18.4	50.08	-946.7	-1,213.1	612.0	585.1	26.97	22.696			
5,600.0	5,152.1	5,629.2	5,092.1	22.4	18.1	65.06	-960.1	-1,197.7	527.1	495.8	31.25	16.865			
5,700.0	5,166.9	5,600.0	5,086.4	23.5	17.7	74.87	-979.7	-1,176.8	449.1	415.6	33.46	13.420			
5,800.0	5,168.9	5,560.5	5,078.2	24.5	17.1	78.57	-1,007.8	-1,150.4	381.5	347.3	34.24	11.144			
5,900.0	5,167.3	5,513.3	5,067.6	25.6	16.4	75.30	-1,043.6	-1,121.4	323.0	288.2	34.77	9.289			
6,000.0	5,165.7	5,459.9	5,054.9	26.7	15.7	70.91	-1,086.7	-1,092.5	274.2	239.3	34.94	7.847			
6,100.0	5,164.2	5,400.0	5,039.8	27.9	14.9	65.25	-1,137.8	-1,065.3	237.9	203.4	34.56	6.883			
6,200.0	5,162.6	5,334.2	5,022.3	29.2	14.0	58.60	-1,196.7	-1,041.9	216.7	183.2	33.52	6.465 SF			
6,283.3	5,161.3	5,275.4	5,006.0	30.3	13.2	52.94	-1,251.2	-1,027.1	211.3	179.0	32.24	6.553 CC, ES			
6,300.0	5,161.0	5,263.3	5,002.5	30.5	13.1	51.86	-1,262.6	-1,024.8	211.5	179.5	31.97	6.616			
6,400.0	5,159.5	5,189.0	4,981.3	31.8	12.1	46.30	-1,333.2	-1,016.1	220.8	190.3	30.47	7.246			
6,500.0	5,157.9	5,115.0	4,958.6	33.2	11.2	42.38	-1,403.6	-1,015.6	241.7	212.3	29.43	8.213			
6,600.0	5,156.3	5,050.0	4,932.2	34.7	10.5	38.55	-1,462.9	-1,016.0	273.4	245.0	28.40	9.629			
6,700.0	5,154.7	4,986.5	4,899.9	36.1	9.9	34.60	-1,517.6	-1,016.4	315.6	288.4	27.22	11.594			
6,800.0	5,153.2	4,933.1	4,868.3	37.6	9.5	31.34	-1,560.6	-1,016.7	367.2	340.9	26.31	13.958			
6,900.0	5,151.6	4,886.4	4,837.5	39.1	9.2	28.66	-1,595.6	-1,017.0	426.8	401.2	25.61	16.665			
7,000.0	5,150.0	4,850.0	4,811.6	40.6	8.9	26.70	-1,621.2	-1,017.2	493.1	467.9	25.24	19.534			
7,100.0	5,148.5	4,800.0	4,773.4	42.2	8.7	24.23	-1,653.4	-1,017.4	564.9	540.4	24.49	23.068			
7,200.0	5,146.9	4,780.0	4,757.4	43.7	8.6	23.31	-1,665.4	-1,017.5	640.7	616.1	24.62	26.025			
7,300.0	5,145.3	4,750.0	4,732.5	45.3	8.5	22.02	-1,682.3	-1,017.6	720.1	695.7	24.46	29.447			
7,400.0	5,143.7	4,729.6	4,715.2	46.9	8.4	21.19	-1,692.9	-1,017.7	802.4	777.9	24.56	32.679			
7,500.0	5,142.2	4,700.0	4,689.3	48.5	8.3	20.06	-1,707.4	-1,017.8	887.2	862.8	24.41	36.350			
7,600.0	5,140.6	4,700.0	4,689.3	50.1	8.3	20.06	-1,707.4	-1,017.8	973.8	948.8	25.01	38.933			
7,700.0	5,139.0	4,674.1	4,666.1	51.7	8.2	19.14	-1,718.9	-1,017.8	1,061.8	1,036.9	24.94	42.570			
7,800.0	5,137.5	4,650.0	4,644.1	53.4	8.1	18.34	-1,728.7	-1,017.9	1,151.4	1,126.5	24.92	46.202			
7,900.0	5,135.9	4,650.0	4,644.1	55.0	8.1	18.34	-1,728.7	-1,017.9	1,242.0	1,216.5	25.48	48.734			

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook O30-2307 01H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7039.0ft (Aztec)
Reference Site:	S30-T23N-R7W	MD Reference:	WELL @ 7039.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook O30-2307 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 #1	Offset TVD Reference:	Offset Datum

Offset Design S31-T23N-R7W - Lybrook G31-2307 02H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,700.0	5,166.9	4,930.7	4,902.7	23.5	9.0	33.18	-1,790.3	-1,162.6	1,185.3	1,168.2	17.11	69.262		
5,800.0	5,168.9	4,932.4	4,904.0	24.5	9.0	54.14	-1,790.3	-1,163.7	1,091.1	1,068.1	23.00	47.439		
5,900.0	5,167.3	4,931.4	4,903.2	25.6	9.0	53.99	-1,790.3	-1,163.1	997.8	973.7	24.15	41.312		
6,000.0	5,165.7	4,930.4	4,902.4	26.7	9.0	53.83	-1,790.3	-1,162.4	906.0	880.7	25.34	35.759		
6,100.0	5,164.2	4,929.3	4,901.6	27.9	9.0	53.67	-1,790.3	-1,161.8	816.1	789.6	26.54	30.748		
6,200.0	5,162.6	4,928.3	4,900.7	29.2	9.0	53.51	-1,790.4	-1,161.1	728.9	701.1	27.77	26.251		
6,300.0	5,161.0	4,927.2	4,899.9	30.5	9.0	53.35	-1,790.4	-1,160.5	645.4	616.4	29.00	22.252		
6,400.0	5,159.5	4,926.2	4,899.1	31.8	9.0	53.19	-1,790.4	-1,159.8	567.2	536.9	30.25	18.750		
6,500.0	5,157.9	4,925.1	4,898.3	33.2	9.0	53.04	-1,790.4	-1,159.2	496.9	465.4	31.50	15.772		
6,600.0	5,156.3	4,924.1	4,897.5	34.7	9.0	52.88	-1,790.4	-1,158.6	438.3	405.5	32.76	13.377		
6,700.0	5,154.7	4,923.0	4,896.6	36.1	8.9	52.72	-1,790.4	-1,157.9	396.6	362.6	34.03	11.656		
6,800.0	5,153.2	4,922.0	4,895.8	37.6	8.9	52.56	-1,790.4	-1,157.3	377.5	342.2	35.29	10.696		
6,824.1	5,152.8	4,921.7	4,895.6	37.9	8.9	52.52	-1,790.4	-1,157.1	376.7	341.1	35.60	10.583 CC, ES		
6,900.0	5,151.6	4,921.0	4,895.0	39.1	8.9	52.40	-1,790.4	-1,156.6	384.3	347.7	36.56	10.512 SF		
7,000.0	5,150.0	4,919.9	4,894.1	40.6	8.9	52.24	-1,790.4	-1,156.0	415.8	377.9	37.82	10.992		
7,100.0	5,148.5	4,918.9	4,893.3	42.2	8.9	52.08	-1,790.4	-1,155.4	466.9	427.9	39.09	11.945		
7,200.0	5,146.9	4,917.8	4,892.5	43.7	8.9	51.92	-1,790.4	-1,154.7	532.2	491.8	40.35	13.188		
7,300.0	5,145.3	4,916.8	4,891.6	45.3	8.9	51.76	-1,790.4	-1,154.1	606.9	565.3	41.62	14.584		
7,400.0	5,143.7	4,915.7	4,890.8	46.9	8.9	51.60	-1,790.4	-1,153.5	688.1	645.3	42.87	16.050		
7,500.0	5,142.2	4,914.7	4,889.9	48.5	8.9	51.44	-1,790.4	-1,152.8	773.8	729.6	44.13	17.533		
7,600.0	5,140.6	4,913.6	4,889.1	50.1	8.9	51.28	-1,790.4	-1,152.2	862.5	817.1	45.38	19.004		
7,700.0	5,139.0	4,912.5	4,888.2	51.7	8.9	51.12	-1,790.4	-1,151.6	953.4	906.8	46.63	20.445		
7,800.0	5,137.5	4,911.5	4,887.4	53.4	8.9	50.96	-1,790.4	-1,151.0	1,046.0	998.2	47.88	21.848		
7,900.0	5,135.9	4,910.4	4,886.6	55.0	8.9	50.80	-1,790.4	-1,150.3	1,139.9	1,090.8	49.12	23.206		
8,000.0	5,134.3	4,900.0	4,878.1	56.6	8.8	49.22	-1,790.5	-1,144.2	1,234.8	1,185.3	49.45	24.967		

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 O30-2307 01H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7039.0ft (Aztec)
Reference Site:	S30-T23N-R7W	MD Reference:	WELL @ 7039.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook O30-2307 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 #1	Offset TVD Reference:	Offset Datum

Offset Design S31-T23N-R7W - Lybrook G31-2307 03H - Hz - Plan #1													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)				
5,800.0	5,168.9	4,600.0	4,591.7	24.5	8.1	16.62	-1,868.9	-1,016.9	1,238.8	1,225.0	13.75	90.069		
5,900.0	5,167.3	4,622.1	4,611.4	25.6	8.2	17.21	-1,878.8	-1,016.7	1,149.6	1,135.2	14.38	79.967		
6,000.0	5,165.7	4,650.0	4,635.8	26.7	8.2	17.99	-1,892.4	-1,016.4	1,062.0	1,046.9	15.09	70.368		
6,100.0	5,164.2	4,650.0	4,635.8	27.9	8.2	17.99	-1,892.4	-1,016.4	975.6	960.0	15.59	62.576		
6,200.0	5,162.6	4,675.8	4,657.7	29.2	8.3	18.75	-1,905.9	-1,016.1	891.1	874.7	16.37	54.422		
6,300.0	5,161.0	4,700.0	4,677.7	30.5	8.4	19.50	-1,919.6	-1,015.7	808.8	791.6	17.20	47.029		
6,400.0	5,159.5	4,723.4	4,696.5	31.8	8.6	20.27	-1,933.6	-1,015.4	729.1	711.1	18.08	40.335		
6,500.0	5,157.9	4,750.0	4,717.1	33.2	8.7	21.17	-1,950.3	-1,015.0	652.6	633.5	19.07	34.225		
6,600.0	5,156.3	4,784.5	4,742.7	34.7	8.9	22.41	-1,973.5	-1,014.5	579.8	559.5	20.29	28.581		
6,700.0	5,154.7	4,821.5	4,768.5	36.1	9.1	23.81	-2,000.0	-1,013.9	511.5	489.9	21.67	23.604		
6,800.0	5,153.2	4,863.6	4,795.7	37.6	9.4	25.49	-2,032.2	-1,013.1	448.8	425.5	23.31	19.255		
6,900.0	5,151.6	4,911.4	4,823.6	39.1	9.8	27.45	-2,070.9	-1,012.2	392.7	367.5	25.25	15.552		
7,000.0	5,150.0	4,965.3	4,851.1	40.6	10.3	29.69	-2,117.2	-1,011.1	344.4	316.9	27.53	12.512		
7,100.0	5,148.5	5,030.7	4,879.7	42.2	11.0	32.67	-2,176.0	-1,011.2	304.5	274.1	30.48	9.992		
7,200.0	5,146.9	5,100.0	4,909.3	43.7	11.8	37.67	-2,238.1	-1,018.9	273.0	238.1	34.90	7.821		
7,300.0	5,145.3	5,167.2	4,937.4	45.3	12.6	44.50	-2,297.2	-1,034.2	253.4	212.8	40.63	6.237		
7,365.6	5,144.3	5,208.8	4,954.3	46.3	13.1	49.50	-2,332.8	-1,047.5	249.4	204.7	44.69	5.580 CC		
7,400.0	5,143.7	5,229.8	4,962.7	46.9	13.4	52.16	-2,350.5	-1,055.2	250.5	203.7	46.81	5.353 ES		
7,500.0	5,142.2	5,287.2	4,984.8	48.5	14.1	59.59	-2,397.2	-1,080.1	267.2	214.7	52.56	5.084 SF		
7,600.0	5,140.6	5,339.0	5,003.8	50.1	14.8	66.00	-2,437.2	-1,106.8	302.4	245.0	57.41	5.267		
7,700.0	5,139.0	5,385.3	5,019.8	51.7	15.4	71.14	-2,471.1	-1,134.0	352.3	291.0	61.35	5.743		
7,800.0	5,137.5	5,426.3	5,033.1	53.4	15.9	75.10	-2,499.4	-1,160.6	413.2	348.6	64.61	6.395		
7,900.0	5,135.9	5,462.7	5,044.2	55.0	16.4	78.10	-2,522.9	-1,186.0	481.8	414.4	67.40	7.149		
8,000.0	5,134.3	5,500.0	5,054.8	56.6	16.9	80.72	-2,545.5	-1,213.7	556.2	486.2	69.99	7.947		
8,100.0	5,132.8	5,523.2	5,061.0	58.3	17.3	82.12	-2,558.8	-1,231.7	634.8	562.6	72.15	8.798		
8,200.0	5,131.2	5,550.0	5,067.7	59.9	17.6	83.54	-2,573.2	-1,253.2	716.7	642.3	74.32	9.643		
8,300.0	5,129.6	5,570.9	5,072.7	61.6	17.9	84.51	-2,583.9	-1,270.6	801.1	724.8	76.34	10.495		
8,400.0	5,128.0	5,600.0	5,079.1	63.3	18.3	85.69	-2,597.7	-1,295.3	887.7	809.3	78.43	11.319		
8,500.0	5,126.5	5,600.0	5,079.1	65.0	18.3	85.69	-2,597.7	-1,295.3	975.9	895.8	80.15	12.175		
8,600.0	5,124.9	5,625.2	5,084.3	66.6	18.7	86.55	-2,608.8	-1,317.3	1,065.4	983.2	82.14	12.969		
8,700.0	5,123.3	5,650.0	5,088.9	68.3	19.0	87.28	-2,618.8	-1,339.6	1,156.2	1,072.1	84.11	13.746		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook O30-2307 01H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7039.0ft (Aztec)
Reference Site:	S30-T23N-R7W	MD Reference:	WELL @ 7039.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook O30-2307 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 #1	Offset TVD Reference:	Offset Datum

Offset Design S31-T23N-R7W - Lybrook J31-2307 01H - Hz - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)				
7,500.0	5,142.2	4,761.4	4,749.7	48.5	8.4	48.31	-3,560.0	-1,223.4	1,200.2	1,158.0	42.24	28.412		
7,600.0	5,140.6	4,768.5	4,756.0	50.1	8.4	49.10	-3,560.9	-1,226.5	1,109.7	1,065.7	43.97	25.234		
7,700.0	5,139.0	4,775.4	4,762.1	51.7	8.5	49.88	-3,561.9	-1,229.6	1,020.8	975.1	45.73	22.321		
7,800.0	5,137.5	4,782.2	4,768.1	53.4	8.5	50.66	-3,562.8	-1,232.8	934.1	886.6	47.51	19.660		
7,900.0	5,135.9	4,789.0	4,773.9	55.0	8.5	51.44	-3,563.7	-1,236.0	850.2	800.9	49.32	17.240		
8,000.0	5,134.3	4,800.0	4,783.5	56.6	8.6	52.72	-3,565.1	-1,241.4	770.1	718.7	51.45	14.968		
8,100.0	5,132.8	4,800.0	4,783.5	58.3	8.6	52.72	-3,565.1	-1,241.4	695.1	642.2	52.82	13.158		
8,200.0	5,131.2	4,800.0	4,783.5	59.9	8.6	52.72	-3,565.1	-1,241.4	627.0	572.8	54.20	11.568		
8,300.0	5,129.6	4,815.0	4,796.3	61.6	8.6	54.49	-3,567.0	-1,249.0	568.1	511.4	56.72	10.016		
8,400.0	5,128.0	4,821.3	4,801.6	63.3	8.6	55.24	-3,567.8	-1,252.3	521.9	463.2	58.61	8.904		
8,500.0	5,126.5	4,827.6	4,806.8	65.0	8.7	55.97	-3,568.6	-1,255.6	491.7	431.2	60.51	8.126		
8,600.0	5,124.9	4,833.7	4,811.9	66.6	8.7	56.69	-3,569.4	-1,258.9	480.7	418.3	62.42	7.701		
8,603.8	5,124.8	4,833.9	4,812.1	66.7	8.7	56.72	-3,569.4	-1,259.0	480.7	418.2	62.49	7.692 CC, ES		
8,700.0	5,123.3	4,850.0	4,825.3	68.3	8.8	58.63	-3,571.4	-1,268.0	490.4	425.3	65.13	7.529 SF		
8,800.0	5,121.8	4,850.0	4,825.3	70.0	8.8	58.63	-3,571.4	-1,268.0	519.0	452.4	66.61	7.791		
8,900.0	5,120.2	4,850.0	4,825.3	71.7	8.8	58.63	-3,571.4	-1,268.0	564.1	496.0	68.09	8.285		
9,000.0	5,118.6	4,850.0	4,825.3	73.4	8.8	58.63	-3,571.4	-1,268.0	622.2	552.6	69.58	8.942		
9,100.0	5,117.0	4,862.9	4,835.8	75.1	8.8	60.15	-3,573.0	-1,275.4	689.7	617.6	72.10	9.566		
9,200.0	5,115.5	4,868.5	4,840.2	76.8	8.9	60.81	-3,573.6	-1,278.7	764.4	690.3	74.06	10.321		
9,300.0	5,113.9	4,874.1	4,844.6	78.5	8.9	61.45	-3,574.3	-1,282.0	844.2	768.2	76.01	11.106		
9,400.0	5,112.3	4,879.5	4,848.9	80.2	8.9	62.08	-3,574.9	-1,285.3	927.9	849.9	77.97	11.901		
9,500.0	5,110.8	4,884.8	4,853.0	81.9	9.0	62.70	-3,575.6	-1,288.6	1,014.5	934.6	79.93	12.693		
9,600.0	5,109.2	4,900.0	4,864.7	83.6	9.1	64.43	-3,577.3	-1,298.1	1,103.4	1,020.8	82.63	13.354		
9,700.0	5,107.6	4,900.0	4,864.7	85.3	9.1	64.43	-3,577.3	-1,298.1	1,193.9	1,109.7	84.20	14.179		

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook O30-2307 01H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7039.0ft (Aztec)
Reference Site:	S30-T23N-R7W	MD Reference:	WELL @ 7039.0ft (Aztec)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lybrook O30-2307 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 #1	Offset TVD Reference:	Offset Datum

Offset Design S31-T23N-R7W - Lybrook J31-2307 02H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference	Offset		Semi Major Axis		Distance		Total		Separation		Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
7,600.0	5,140.6	4,600.0	4,592.9	50.1	8.1	34.18	-3,589.2	-1,184.9	1,181.2	1,146.7	34.50	34.233		
7,700.0	5,139.0	4,628.9	4,619.0	51.7	8.2	35.66	-3,601.7	-1,184.5	1,094.3	1,057.7	36.54	29.944		
7,800.0	5,137.5	4,650.0	4,637.5	53.4	8.2	36.78	-3,611.6	-1,184.2	1,009.4	971.1	38.38	26.300		
7,900.0	5,135.9	4,650.0	4,637.5	55.0	8.2	36.78	-3,611.6	-1,184.2	926.9	887.5	39.42	23.516		
8,000.0	5,134.3	4,685.4	4,667.9	56.6	8.4	38.74	-3,629.8	-1,183.6	846.5	804.5	42.00	20.154		
8,100.0	5,132.8	4,700.0	4,680.1	58.3	8.4	39.58	-3,637.8	-1,183.4	769.5	725.8	43.75	17.587		
8,200.0	5,131.2	4,736.7	4,709.7	59.9	8.6	41.76	-3,659.4	-1,182.7	696.1	649.4	46.64	14.923		
8,300.0	5,129.6	4,767.9	4,733.9	61.6	8.7	43.68	-3,679.2	-1,182.0	627.3	577.9	49.39	12.701		
8,400.0	5,128.0	4,800.0	4,757.5	63.3	8.9	45.71	-3,700.9	-1,181.3	564.2	511.9	52.28	10.790		
8,500.0	5,126.5	4,850.0	4,791.8	65.0	9.2	48.95	-3,737.3	-1,180.2	507.6	451.4	56.23	9.027		
8,600.0	5,124.9	4,900.0	4,822.7	66.6	9.6	52.18	-3,776.5	-1,178.9	458.8	398.6	60.24	7.617		
8,700.0	5,123.3	4,950.0	4,850.2	68.3	10.1	55.33	-3,818.2	-1,177.6	418.5	354.2	64.21	6.517		
8,800.0	5,121.8	5,009.0	4,877.8	70.0	10.7	58.77	-3,870.3	-1,175.9	387.2	318.7	68.48	5.654		
8,900.0	5,120.2	5,077.9	4,903.0	71.7	11.5	62.19	-3,934.4	-1,173.9	364.7	291.8	72.83	5.007		
9,000.0	5,118.6	5,150.0	4,921.8	73.4	12.4	65.00	-4,003.9	-1,172.6	350.3	273.5	76.84	4.559		
9,079.8	5,117.4	5,200.0	4,933.9	74.7	13.0	67.16	-4,052.3	-1,176.0	346.4	266.5	79.91	4.335 CC		
9,100.0	5,117.0	5,200.0	4,933.9	75.1	13.0	67.16	-4,052.3	-1,176.0	346.7	266.5	80.23	4.321 ES		
9,200.0	5,115.5	5,268.4	4,950.1	76.8	14.0	70.51	-4,117.7	-1,187.8	354.7	270.2	84.42	4.201 SF		
9,300.0	5,113.9	5,325.8	4,963.4	78.5	14.7	73.46	-4,171.2	-1,203.7	374.7	286.5	88.15	4.251		
9,400.0	5,112.3	5,379.5	4,975.4	80.2	15.5	76.17	-4,219.6	-1,223.6	406.0	314.4	91.60	4.433		
9,500.0	5,110.8	5,429.0	4,985.9	81.9	16.2	78.51	-4,262.5	-1,246.0	447.5	352.7	94.74	4.723		
9,600.0	5,109.2	5,474.2	4,995.1	83.6	16.8	80.47	-4,299.8	-1,269.6	497.6	400.0	97.60	5.098		
9,700.0	5,107.6	5,515.0	5,002.9	85.3	17.4	82.05	-4,331.9	-1,293.6	555.1	454.8	100.23	5.538		
9,800.0	5,106.1	5,550.0	5,009.3	87.0	17.9	83.27	-4,358.1	-1,315.9	618.6	515.9	102.64	6.027		
9,900.0	5,104.5	5,584.8	5,015.3	88.7	18.4	84.34	-4,382.7	-1,339.8	687.1	582.2	104.98	6.545		
10,000.0	5,102.9	5,614.5	5,020.1	90.4	18.8	85.16	-4,402.6	-1,361.2	759.9	652.7	107.18	7.089		
10,100.0	5,101.3	5,650.0	5,025.4	92.2	19.3	86.02	-4,424.9	-1,388.3	836.1	726.7	109.43	7.641		
10,200.0	5,099.8	5,650.0	5,025.4	93.9	19.3	86.02	-4,424.9	-1,388.3	915.4	804.2	111.17	8.235		
10,300.0	5,098.2	5,700.0	5,032.3	95.6	20.0	87.03	-4,453.5	-1,428.7	996.9	883.3	113.52	8.781		
10,400.0	5,096.6	5,700.0	5,032.3	97.3	20.0	87.03	-4,453.5	-1,428.7	1,080.2	965.0	115.26	9.372		
10,433.7	5,096.1	5,700.0	5,032.3	97.9	20.0	87.03	-4,453.5	-1,428.7	1,108.9	993.0	115.85	9.572		

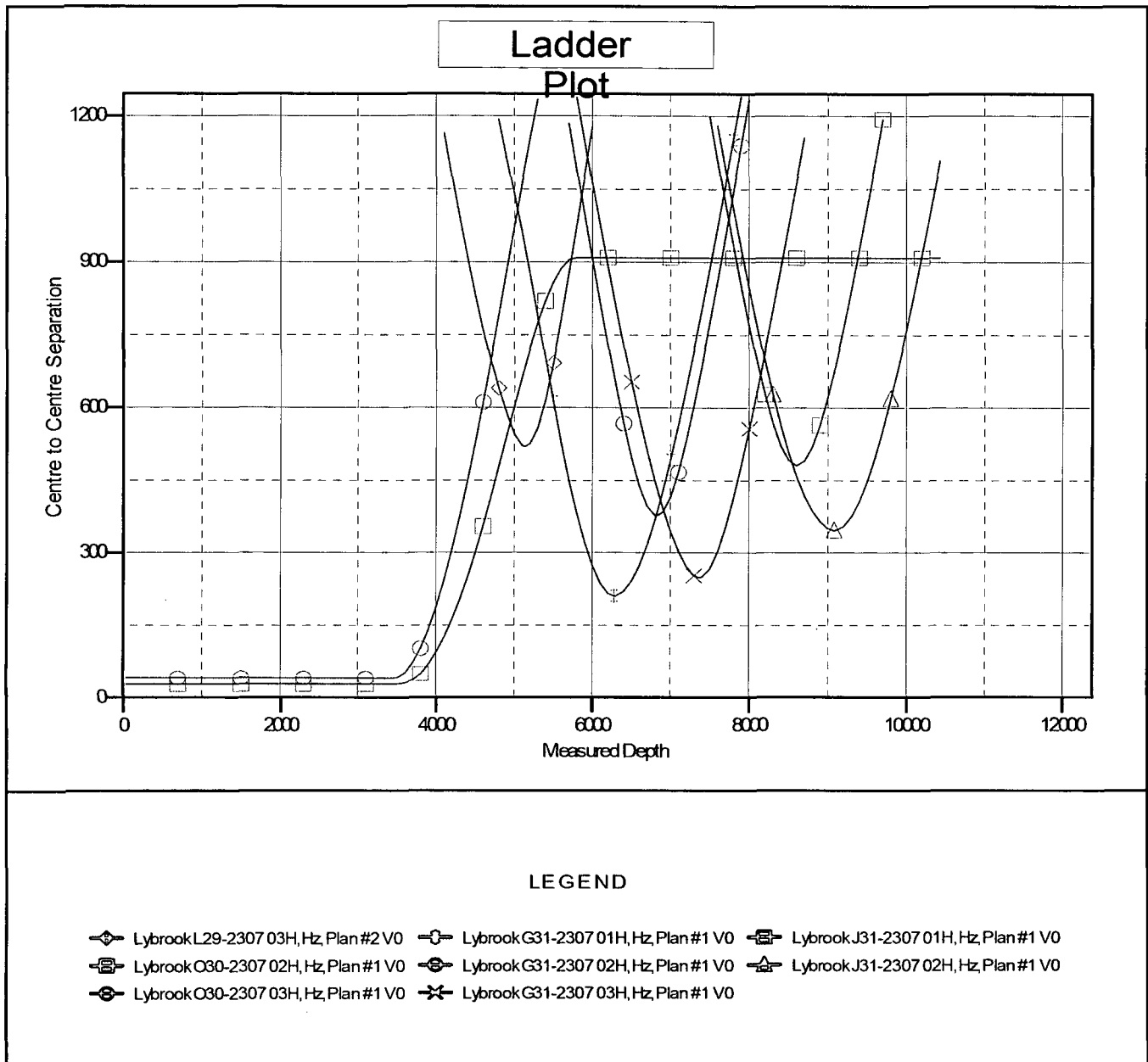
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Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 7039.0ft (Aztec)
Offset Depths are relative to Offset Datum
Central Meridian is -106.250000 °

Coordinates are relative to: Lybrook O30-2307 01H
Coordinate System is US State Plane 1983, New Mexico Central Zone
Grid Convergence at Surface is: -0.80°



WELLHEAD BLOWOUT CONTROL SYSTEM

encana

Well Name and Number:
Lybrook O30-2307 01H

