

RECEIVED

AUG 07 2012

Form 3160-3
(August 2007)

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNITED STATES Farmington Field Office
DEPARTMENT OF THE INTERIOR of Land Management
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NM 28748	
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. N/A	
3a. Address 370 17th Street, Suite 1700 Denver, CO 80202		8. Lease Name and Well No. Lybrook H26-2307 02H	
3b. Phone No. (include area code) 720-876-3989		9. API Well No. 30-043-21133	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 2242' FNL and 357' FEL Section 26, T23N, R7W At proposed prod. zone 1880' FNL and 330' FWL Section 26, T23N, R7W		10. Field and Pool, or Exploratory Lybrook Gallup	
11. Sec., T. R. M. or Blk and Survey or Area Section 26, T23N, R7W NMPM		12. County or Parish Sandoval	
13. State NM		14. Distance in miles and direction from nearest town or post office* 51.0 miles southeast of 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 west lease line		16. No. of acres in lease 640 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. SHL is +/- 869' north of Kinsale 2	
19. Proposed Depth 5216' TVD/9627'		20. BLM/BIA Bond No. on file COB-000235	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 7233' GL, 7246' KB This location is subject to technical and professional review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4		22. Approximate date work will start* 10/31/2012	
23. Estimated duration 25 days		24. Attachments DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".	

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

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

25. Signature <i>Brenda R. Linster</i>	Name (Printed/Typed) Brenda R. Linster	Date 08.06.12
Title Regulatory Advisor		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed) AFM	Date 9/26/12
Title AFM	Office FFO	

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 as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

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

NMOCD A

CONFIDENTIAL

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

OCT 16 2012 ea

Hold C104

for Directional Survey
and "As Drilled" plat

Hold C104
for Directional Survey
and "As Drilled" plat

RCVD OCT 9 '12
OIL CONS. DIV.
DIST. 3

RECEIVED

AUG 07 2012

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
Farmington Field Office
Bureau of Land Management
Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-043-21133	*Pool Code 42289	*Pool Name LYBROOK GALLUP
*Property Code 39120	*Property Name LYBROOK H26-2307	*Well Number 02H
*GRID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.	*Elevation 7233'

10 Surface Location

U. or lot no.	Section	Township	Range	Lot 10n	Feet from the	North/South line	Feet from the	East/West line	County
H	26	23N	7W		2242	NORTH	357	EAST	SANDOVAL

11 Bottom Hole Location If Different From Surface

U. or lot no.	Section	Township	Range	Lot 10n	Feet from the	North/South line	Feet from the	East/West line	County
E	26	23N	7W		1880	NORTH	330	WEST	SANDOVAL

*Dedicated Acres 160.0 Acres (S/2 N/2) Section 26	*Joint or Infill	*Consolidation Code	*Order No.
---	------------------	---------------------	------------

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

N88°55'W 2613.27' (RECORD) N88°55'W 2613.27' (RECORD)
N88°09'35"W 2615.30' (MEASURED) N88°12'03"W 2601.33' (MEASURED)

16

NO°40'W 2605.67' (RECORD)
NO°05'51"E 2605.74' (MEASURED)

1880'

2242'

NO°48'W 2589.84' (RECORD)
NO°09'13"W 2590.19' (MEASURED)

330'

900'

357'

N88°10.9'W 3994.3'

N55°06.4'W 662.7'

26

END OF LATERAL
LAT: 36.19934°N
LONG: 107.55174°W
DATUM: NAD1927

POINT-OF-ENTRY
LAT: 36.19914°N
LONG: 107.53821°W
DATUM: NAD1927

SURFACE LOCATION
LAT: 36.19812°N
LONG: 107.53635°W
DATUM: NAD1927

LAT: 36.19935°N
LONG: 107.55235°W
DATUM: NAD1983

LAT: 36.19915°N
LONG: 107.53882°W
DATUM: NAD1983

LAT: 36.19813°N
LONG: 107.53696°W
DATUM: NAD1983

NO°40'W 2605.67' (RECORD)
NO°07'20"E 2601.11' (MEASURED)

NO°48'W 2589.84' (RECORD)
NO°09'17"W 2590.24' (MEASURED)

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 the 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
Brenda R. Linster

Date
08/06/12

Printed Name
brenda.linster@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 of Survey: JULY 26, 2012

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
REGISTERED PROFESSIONAL SURVEYOR
15269

JASON C. EDWARDS
Certificate Number 15269

Directions from the Intersection of US Hwy 550 & US Hwy 64
in Bloomfield, NM to Eucasa Oil & Gas (USA) Inc. Lybrook H26-2307 01H
2257' FNL & 357' FEL, Section 26, T23N, R7W, N.M.P.M., Sandoval County, NM

Latitude: 36.19809°N Longitude: 107.53696°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 48.2 miles to Mile Marker 103.1;

Go right (South-easterly) for 2.7 miles to fork in road;

Go right (North-westerly) 0.1 miles to new access on left-hand side of existing roadway which continues for 25.0' to staked location.

Please note that
the Lybrook
H26-2307 02H will
be drilled from the
Lybrook H26-2307
01H well pad.

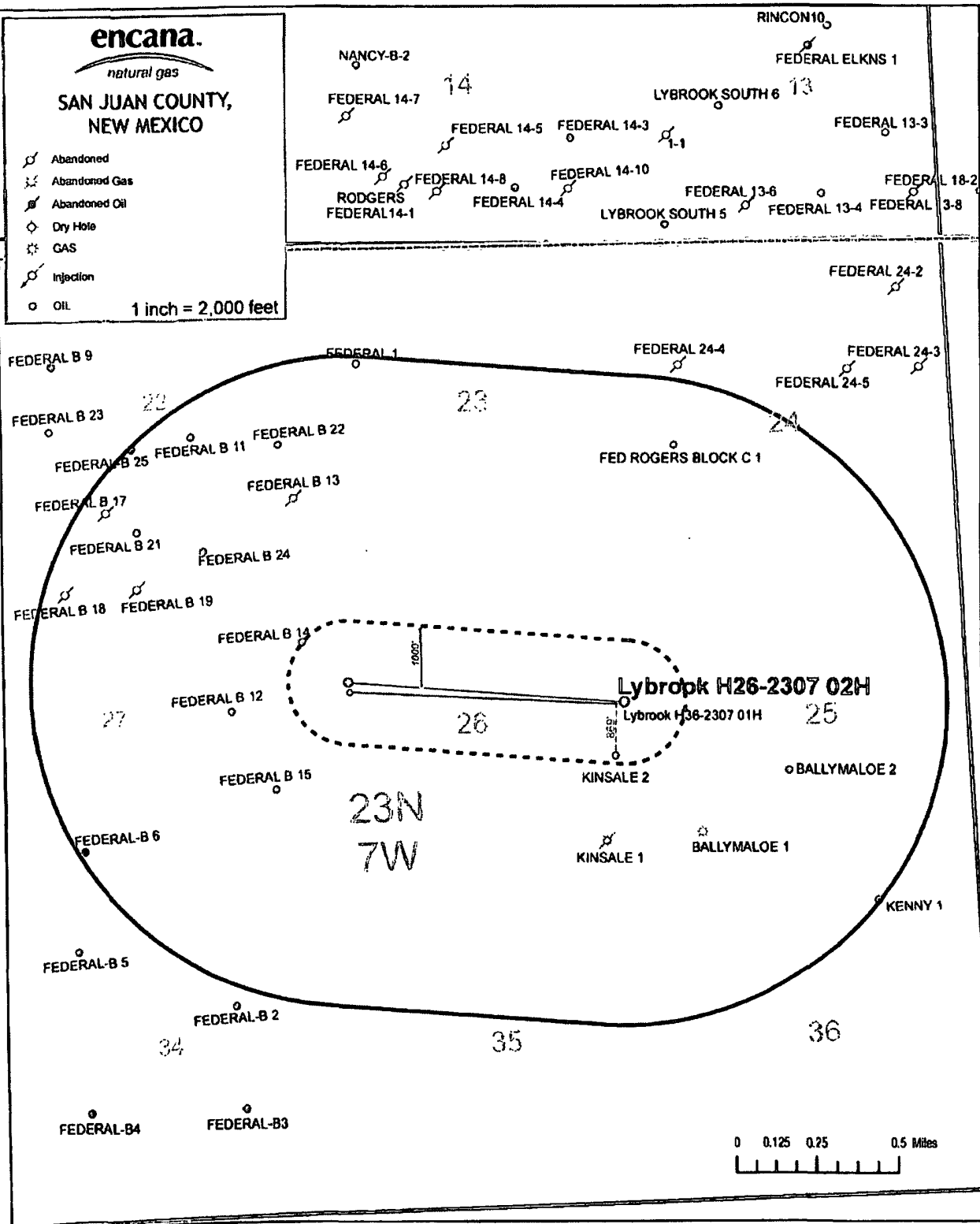
encana.

natural gas

**SAN JUAN COUNTY,
NEW MEXICO**

-  Abandoned
-  Abandoned Gas
-  Abandoned Oil
-  Dry Hole
-  GAS
-  Injection
-  OIL

1 inch = 2,000 feet



Lybrook H26-2307 02H
SHL: SENE Section 26, T23N, R7W
2242 FNL and 357 FEL
BHL: SWNW Section 26, T23N, R7W
1880 FNL and 330 FWL
Sandoval County, New Mexico
Lease Number: NM 28748

**Encana Oil & Gas (USA) Inc.
Drilling Plan**

1. ESTIMATED TOPS OF GEOLOGICAL MARKERS (TVD)

The estimated tops of important geologic markers are as follows:

<u>Formation</u>	<u>Depth (TVD)</u>
Ojo Alamo Ss.	1419'
Kirtland	1602'
Fruitland Coal	1842'
Pictured Cliffs	2076'
Lewis	2227'
Cliffhouse	2913'
Menefee	3657'
Point Lookout	4360'
Mancos Shale	4567'
Mancos Silt	5098'
Gallup	5357'

The referenced surface elevation is 7233', KB 7246'

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

<u>Substance</u>	<u>Formation</u>	<u>Depth (TVD)</u>
Gas	Fruitland Coal	1842'
Gas	Pictured Cliffs	2076'
Gas	Cliffhouse	2913'
Gas	Point Lookout	4360'
Oil/Gas	Mancos	4567'

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 either 70 percent of the casings internal yield pressure or 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.

Lybrook H26-2307 02H
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Sandoval County, New Mexico
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- 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'-5544'	8 1/2"	7"	26#	J55, LTC New
Production Liner	5344'-9627'	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

*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.

- 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.

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Casing	Depth	Cement Volume (sacks)	Cement Type&Yield	Designed TOC	Centralizers
Conductor	60'	100sk	Redi-mix Construction Grade Cement	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	5544'	30% open hole excess Lead: 155sk Tail: 429sk	Lead: PremLite + 3% CaCl + 0.25lb/sk CelloFlake + 5lb/sk LCM, 12.1ppg 2.13cuf/sk Tail: Type III Cmt + 1% CaCl + 0.25lb/sk Cello Flake 14.5ppg 1.38cuf/sk	Surface	1 per joint for bottom 3 joints, 1 every 3 joints for remaining joints
Production Liner*	5344'-9627'	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 4664'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5216'/9627'	Gallup

Lybrook H26-2307 02H

SHL: SENE Section 26, T23N, R7W
2242 FNL and 357 FEL

BHL: SWNW Section 26, T23N, R7W
1880 FNL and 330 FWL

Sandoval County, New Mexico

Lease Number: NM 28748

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 1/2"	500'TVD- 5233'TVD/5544'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"	5544'-9627'	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 +/- 2450 psi based on a 9.0 ppg at 5236' TVD of the landing point of the horizontal lateral. No abnormal pressure or temperatures are anticipated.

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

Lybrook H26-2307 02H

**SHL: SENE Section 26, T23N, R7W
2242 FNL and 357 FEL**

**BHL: SWNW Section 26, T23N, R7W
1880 FNL and 330 FWL**

Sandoval County, New Mexico

Lease Number: NM 28748

9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on January 31, 2013. It is anticipated that drilling of this well will take approximately 25 days and completion operations will begin within 30 days after the well has been drilled depending on fracture treatment schedules with various pumping service companies.

LOC: Sec 26-T23N-R7W County: Sandoval WELL: Lybrook H26-2307 02H			Encana Natural Gas WELL SUMMARY			encana natural gas		ENG: J. Fox/ A. 8/2/12 RIG: GLE: 7233 RKBE: 7247	
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH			HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
			TVD	MD					
			60	60'		30	20" 94# 100sx Type I Neat 48.8ppg cmt	Fresh wtr 8 3-9 2	
Surveys After csg is run	None	Nacimiento	45			12 1/4	9 5/8" 36ppf J55 STC TOC @ surface 178 sks Type III Cmt	Fresh wtr 8 4-8 6	Vertical <1°
Surveys every 500'	No OH logs	Ojo Alamo	1419	500		8 1/2	7" 26ppf J55 LTC TOC @ surface 30% OH excess: 584sks Lead 155 sks Tail 429sks	Fresh Wtr 8.5-8.8	Vertical <1°
		Kirtland	1,602						
		Fruitland Coal	1842						
		Pictured Cliffs Ss Lewis Shale	2076 2227						
	Mud logger onsite	Cliffhouse Ss	2913						
		Menefee Fm	3857						
		Point Lookout Ss	4360						
		Mancos Sh	4567						
		KICK OFF PT	4664						
		Mancos Silt	5098						
			5237	5544					KOP 4664 10 deg/100'
Surveys every 500' Gyro at CP MWD Gamma Directional	No OH Logs	horz target	5236	5867		6 1/8	200' overlap at liner top		.25deg updip 5216'TVD TD = 9627' MD
		Gallup	5357				3760' Lateral	8.6-9.0 OBM	
						4 1/2" 11.6ppf SB80 LTC Running external swellable csg packers for isolation of prod string	Switch to OBM 8 6-9 0		

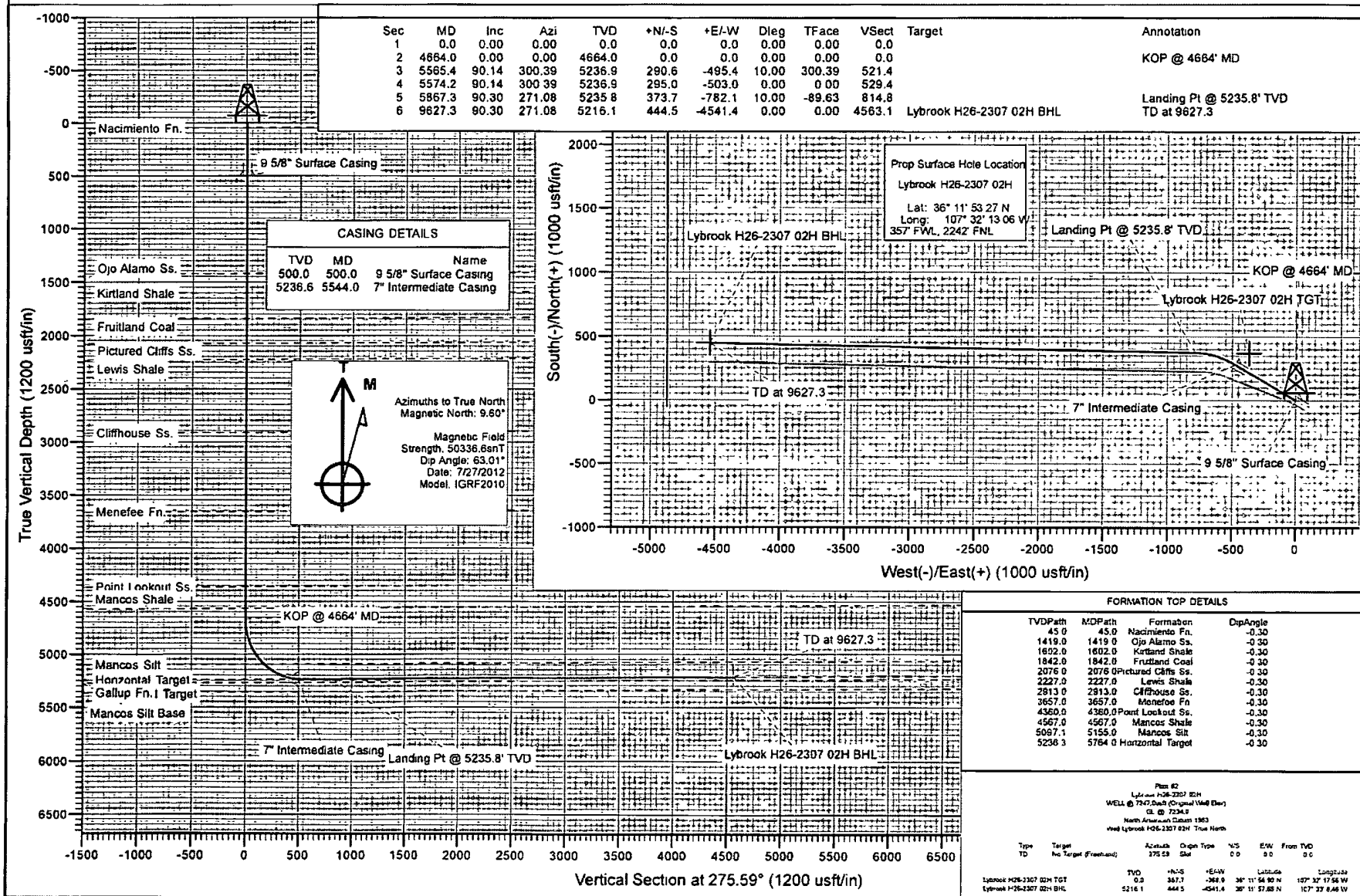
NOTES:

- 1) Drill with 30" bit to 60', set 20" 94# conductor pipe
- 2) Drill surface to 500', R&C 9 5/8" casing
- 3) N/U BOP and surface equipment
- 4) Drill to KOP of 4664', 8 1/2" hole size,
- 5) PU directional tools and start curve at 10deg/100' build rate
- 6) Drill to casing point of 5544' MD (88deg)
- 7) R&C 7" casing, circ cmt to surface, switch to OBM
- 8) Land at 90deg, drill 3760' lateral to 9627', run 4 1/2" liner with external swellable csg packers

encana™

natural gas

Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook H26-2307 02H
Wellbore: HZ
Design: Plan #2



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook H26-2307 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7247.0usft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7247 0usft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook H26-2307 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

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:	1,882,672.69 usft	Latitude:	36° 10' 5.56 N
From:	Lat/Long	Easting:	1,287,068.33 usft	Longitude:	107° 26' 49.74 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	-0.71 °

Well	Lybrook H26-2307 02H					
Well Position	+N-S	0.0 usft	Northing:	1,893,903.99 usft	Latitude:	36° 11' 53.27 N
	+E-W	0.0 usft	Easting:	1,260,701.19 usft	Longitude:	107° 32' 13.06 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	7,234.0 usft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/27/2012	9.60	63.01	50,337

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	275.59

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,664.0	0.00	0.00	4,664.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,565.4	90.14	300.39	5,236.9	290.6	-495.4	10.00	10.00	0.00	300.39	
5,574.2	90.14	300.39	5,236.9	295.0	-503.0	0.00	0.00	0.00	0.00	
5,867.3	90.30	271.08	5,235.8	373.7	-782.1	10.00	0.06	-10.00	-89.63	
9,627.3	90.30	271.08	5,216.1	444.5	-4,541.4	0.00	0.00	0.00	0.00	Lybrook H26-2307 02

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook H26-2307 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7247.0usft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7247.0usft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook H26-2307 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
45.0	0.00	0.00	45.0	0.0	0.0	0.0	0.00	0.00	Nacimiento Fn.
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" Surface Casing
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	
1,419.0	0.00	0.00	1,419.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo Ss
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,602.0	0.00	0.00	1,602.0	0.0	0.0	0.0	0.00	0.00	Kirtland 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	
1,842.0	0.00	0.00	1,842.0	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	
2,076.0	0.00	0.00	2,076.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
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	
2,227.0	0.00	0.00	2,227.0	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	
2,913.0	0.00	0.00	2,913.0	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	
3,657.0	0.00	0.00	3,657.0	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	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook H26-2307 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7247.0usft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7247.0usft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook H26-2307 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
4,360.0	0.00	0 00	4,360.0	0 0	0.0	0 0	0.00	0 00	Point Lookout Ss
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	
4,567.0	0.00	0 00	4,567.0	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	
4,664.0	0.00	0.00	4,664.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4664' MD
4,700.0	3.60	300.39	4,700.0	0.6	-1.0	1.0	10.00	10.00	
4,800.0	13.60	300.39	4,798.7	8.1	-13.9	14.6	10.00	10.00	
4,900.0	23.60	300.39	4,893.4	24.2	-41.3	43.5	10.00	10.00	
5,000.0	33.60	300.39	4,981.1	48.4	-82.6	86.9	10.00	10.00	
5,100.0	43.60	300.39	5,059.1	80.0	-136.3	143.5	10.00	10.00	
5,155.0	49.10	300.39	5,097.1	100.1	-170.6	179.6	10.00	10.00	Mancos Silt
5,200.0	53.60	300.39	5,125.2	117.9	-200.9	211.5	10.00	10.00	
5,300.0	63.60	300.39	5,177.2	161.0	-274.5	288.8	10.00	10.00	
5,400.0	73.60	300.39	5,213.6	208.0	-354.7	373.3	10.00	10.00	
5,500.0	83.60	300.39	5,233.4	257.6	-439.1	482.1	10.00	10.00	
5,544.0	88.00	300.39	5,236.6	279.7	-477.0	501.9	10.00	10.00	7" Intermediate Casing
5,565.4	90.14	300.39	5,236.9	290.6	-495.4	521.4	10.01	10.01	
5,574.2	90.14	300.39	5,236.9	295.0	-503.0	529.4	0.00	0.00	
5,600.0	90.15	297.81	5,236.9	307.6	-525.6	553.0	10.00	0.06	
5,700.0	90.21	287.81	5,236.5	346.3	-617.6	648.4	10.00	0.06	
5,764.0	90.25	281.42	5,236.3	362.4	-679.5	711.6	10.00	0.05	Horizontal Target
5,800.0	90.27	277.81	5,236.1	368.4	-715.0	747.5	10.00	0.05	
5,867.3	90.30	271.08	5,235.8	373.7	-782.1	814.7	10.00	0.05	Landing Pt @ 5235.8' TVD
5,900.0	90.30	271.08	5,235.6	374.3	-814.7	847.3	0.01	0.00	
6,000.0	90.30	271.08	5,235.1	376.2	-914.7	947.0	0.00	0.00	
6,100.0	90.30	271.08	5,234.6	378.0	-1,014.7	1,046.7	0.00	0.00	
6,200.0	90.30	271.08	5,234.0	379.9	-1,114.7	1,146.4	0.00	0.00	
6,300.0	90.30	271.08	5,233.5	381.8	-1,214.7	1,246.1	0.00	0.00	
6,400.0	90.30	271.08	5,233.0	383.7	-1,314.7	1,345.8	0.00	0.00	
6,500.0	90.30	271.08	5,232.5	385.6	-1,414.6	1,445.5	0.00	0.00	
6,600.0	90.30	271.08	5,231.9	387.5	-1,514.6	1,545.2	0.00	0.00	
6,700.0	90.30	271.08	5,231.4	389.4	-1,614.6	1,644.8	0.00	0.00	
6,800.0	90.30	271.08	5,230.9	391.2	-1,714.6	1,744.5	0.00	0.00	
6,900.0	90.30	271.08	5,230.4	393.1	-1,814.6	1,844.2	0.00	0.00	
7,000.0	90.30	271.08	5,229.8	395.0	-1,914.5	1,943.9	0.00	0.00	
7,100.0	90.30	271.08	5,229.3	396.9	-2,014.5	2,043.6	0.00	0.00	
7,200.0	90.30	271.08	5,228.8	398.8	-2,114.5	2,143.3	0.00	0.00	
7,300.0	90.30	271.08	5,228.3	400.7	-2,214.5	2,243.0	0.00	0.00	
7,400.0	90.30	271.08	5,227.8	402.5	-2,314.5	2,342.7	0.00	0.00	
7,500.0	90.30	271.08	5,227.2	404.4	-2,414.4	2,442.4	0.00	0.00	
7,600.0	90.30	271.08	5,226.7	406.3	-2,514.4	2,542.0	0.00	0.00	
7,700.0	90.30	271.08	5,226.2	408.2	-2,614.4	2,641.7	0.00	0.00	
7,800.0	90.30	271.08	5,225.7	410.1	-2,714.4	2,741.4	0.00	0.00	
7,900.0	90.30	271.08	5,225.1	412.0	-2,814.4	2,841.1	0.00	0.00	
8,000.0	90.30	271.08	5,224.6	413.9	-2,914.3	2,940.8	0.00	0.00	
8,100.0	90.30	271.08	5,224.1	415.7	-3,014.3	3,040.5	0.00	0.00	
8,200.0	90.30	271.08	5,223.6	417.6	-3,114.3	3,140.2	0.00	0.00	
8,300.0	90.30	271.08	5,223.0	419.5	-3,214.3	3,239.9	0.00	0.00	
8,400.0	90.30	271.08	5,222.5	421.4	-3,314.3	3,339.6	0.00	0.00	
8,500.0	90.30	271.08	5,222.0	423.3	-3,414.2	3,439.2	0.00	0.00	
8,600.0	90.30	271.08	5,221.5	425.2	-3,514.2	3,538.9	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook H26-2307 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7247 0usft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7247.0usft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook H26-2307 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
8,700.0	90.30	271.08	5,220.9	427.0	-3,614.2	3,638.6	0.00	0.00	
8,800.0	90.30	271.08	5,220.4	428.9	-3,714.2	3,738.3	0.00	0.00	
8,900.0	90.30	271.08	5,219.9	430.8	-3,814.2	3,838.0	0.00	0.00	
9,000.0	90.30	271.08	5,219.4	432.7	-3,914.2	3,937.7	0.00	0.00	
9,100.0	90.30	271.08	5,218.9	434.6	-4,014.1	4,037.4	0.00	0.00	
9,200.0	90.30	271.08	5,218.3	436.5	-4,114.1	4,137.1	0.00	0.00	
9,300.0	90.30	271.08	5,217.8	438.4	-4,214.1	4,236.8	0.00	0.00	
9,400.0	90.30	271.08	5,217.3	440.2	-4,314.1	4,336.4	0.00	0.00	
9,500.0	90.30	271.08	5,216.8	442.1	-4,414.1	4,436.1	0.00	0.00	
9,600.0	90.30	271.08	5,216.2	444.0	-4,514.0	4,535.8	0.00	0.00	
9,627.3	90.30	271.08	5,216.1	444.5	-4,541.3	4,563.1	0.00	0.00	TD at 9627.3

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Lybrook H26-2307 02H	0.00	0.00	0.0	367.7	-368.9	1,894,276.57	1,260,337.24	36° 11' 56.90 N	107° 32' 17.56 W
- plan misses target center by 520.8usft at 0.0usft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Point									
Lybrook H26-2307 02H I	0.00	0.00	5,216.1	444.5	-4,541.4	1,894,408.73	1,256,166.12	36° 11' 57.66 N	107° 33' 8.46 W
- plan hits target center									
- Polygon									
Point 1			5,216.1	-500.0	-330.0	1,893,913.15	1,255,829.51		
Point 2			5,216.1	1,800.0	-330.0	1,896,212.95	1,255,860.03		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
5,544.0	5,236.6	7" Intermediate Casing	0	0	
500.0	500.0	9 5/8" Surface Casing	0	0	

Cathedral Energy Services
Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook H26-2307 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 7247.0usft (Original Well Elev)
Project:	Sandoval County, NM	MD Reference:	WELL @ 7247.0usft (Original Well Elev)
Site:	Lybrook	North Reference:	True
Well:	Lybrook H26-2307 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
45.0	45.0	Nacimiento Fn.		-0.30	275.59	
1,419.0	1,419.0	Ojo Alamo Ss		-0.30	275.59	
1,602.0	1,602.0	Kirtland Shale		-0.30	275.59	
1,842.0	1,842.0	Fruitland Coal		-0.30	275.59	
2,076.0	2,076.0	Pictured Cliffs Ss		-0.30	275.59	
2,227.0	2,227.0	Lewis Shale		-0.30	275.59	
2,913.0	2,913.0	Cliffhouse Ss.		-0.30	275.59	
3,657.0	3,657.0	Menefee Fn.		-0.30	275.59	
4,360.0	4,360.0	Point Lookout Ss.		-0.30	275.59	
4,567.0	4,567.0	Mancos Shale		-0.30	275.59	
5,155.0	5,098.0	Mancos Silt		-0.30	275.59	
5,764.0	5,240.0	Horizontal Target		-0.30	275.59	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,664.0	4,664.0	0.0	0.0	KOP @ 4664' MD
5,867.3	5,235.8	373.7	-782.1	Landing Pt @ 5235.8' TVD
9,627.3	5,216.1	444.5	-4,541.3	TD at 9627.3

Cathedral Energy Services
Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook H26-2307 02H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7247.0usft (Original Well Elev)
Reference Site:	Lybrook	MD Reference:	WELL @ 7247.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Lybrook H26-2307 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference
Interpolation Method:	MD Interval 100.0usft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,162.7usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	Systematic Ellipse
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program	Date	7/27/2012
From (usft)	To (usft)	Survey (Wellbore)
0.0	9,627.3	Plan #2 (HZ)
		Tool Name
		MWD
		Description
		Geolink MWD

Summary						
	Reference	Offset	Distance			
Site Name	Measured	Measured	Between	Between	Separation	Warning
Offset Well - Wellbore - Design	Depth	Depth	Centres	Ellipses	Factor	
	(usft)	(usft)	(usft)	(usft)		
Lybrook						
Lybrook H26-2307 01H - HZ - Plan #2	4,600.0	4,600.0	29.1	13.1	1.819	CC, ES
Lybrook H26-2307 01H - HZ - Plan #2	4,700.0	4,700.0	29.7	13.4	1.817	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook H26-2307 02H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7247.0usft (Original Well Elev)
Reference Site:	Lybrook	MD Reference:	WELL @ 7247.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Lybrook H26-2307 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Lybrook - Lybrook H26-2307 01H - HZ - Plan #2													Offset Site Error: 0.0 usft	
Survey Program: 0-MWD													Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.2	0.2	180.00	-29.1	0.0	29.1	28.8	0.30	95.907		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-29.1	0.0	29.1	28.5	0.65	44.620		
300.0	300.0	300.0	300.0	0.5	0.5	180.00	-29.1	0.0	29.1	28.1	1.00	29.973		
400.0	400.0	400.0	400.0	0.7	0.7	180.00	-29.1	0.0	29.1	27.8	1.35	21.561		
500.0	500.0	500.0	500.0	0.8	0.8	180.00	-29.1	0.0	29.1	27.4	1.70	17.133		
600.0	600.0	600.0	600.0	1.0	1.0	180.00	-29.1	0.0	29.1	27.1	2.05	14.215		
700.0	700.0	700.0	700.0	1.2	1.2	180.00	-29.1	0.0	29.1	26.7	2.40	12.145		
800.0	800.0	800.0	800.0	1.4	1.4	180.00	-29.1	0.0	29.1	26.4	2.75	10.602		
900.0	900.0	900.0	900.0	1.5	1.5	180.00	-29.1	0.0	29.1	26.0	3.10	9.407		
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	180.00	-29.1	0.0	29.1	25.7	3.45	8.454		
1,100.0	1,100.0	1,100.0	1,100.0	1.9	1.9	180.00	-29.1	0.0	29.1	25.3	3.79	7.676		
1,200.0	1,200.0	1,200.0	1,200.0	2.1	2.1	180.00	-29.1	0.0	29.1	25.0	4.14	7.029		
1,300.0	1,300.0	1,300.0	1,300.0	2.2	2.2	180.00	-29.1	0.0	29.1	24.6	4.49	6.483		
1,400.0	1,400.0	1,400.0	1,400.0	2.4	2.4	180.00	-29.1	0.0	29.1	24.3	4.84	6.016		
1,500.0	1,500.0	1,500.0	1,500.0	2.6	2.6	180.00	-29.1	0.0	29.1	23.9	5.19	5.611		
1,600.0	1,600.0	1,600.0	1,600.0	2.8	2.8	180.00	-29.1	0.0	29.1	23.6	5.54	5.258		
1,700.0	1,700.0	1,700.0	1,700.0	2.9	2.9	180.00	-29.1	0.0	29.1	23.2	5.89	4.946		
1,800.0	1,800.0	1,800.0	1,800.0	3.1	3.1	180.00	-29.1	0.0	29.1	22.9	6.24	4.659		
1,900.0	1,900.0	1,900.0	1,900.0	3.3	3.3	180.00	-29.1	0.0	29.1	22.5	6.59	4.422		
2,000.0	2,000.0	2,000.0	2,000.0	3.5	3.5	180.00	-29.1	0.0	29.1	22.2	6.94	4.199		
2,100.0	2,100.0	2,100.0	2,100.0	3.6	3.6	180.00	-29.1	0.0	29.1	21.8	7.29	3.998		
2,200.0	2,200.0	2,200.0	2,200.0	3.8	3.8	180.00	-29.1	0.0	29.1	21.5	7.63	3.815		
2,300.0	2,300.0	2,300.0	2,300.0	4.0	4.0	180.00	-29.1	0.0	29.1	21.1	7.98	3.648		
2,400.0	2,400.0	2,400.0	2,400.0	4.2	4.2	180.00	-29.1	0.0	29.1	20.8	8.33	3.496		
2,500.0	2,500.0	2,500.0	2,500.0	4.3	4.3	180.00	-29.1	0.0	29.1	20.4	8.68	3.355		
2,600.0	2,600.0	2,600.0	2,600.0	4.5	4.5	180.00	-29.1	0.0	29.1	20.1	9.03	3.225		
2,700.0	2,700.0	2,700.0	2,700.0	4.7	4.7	180.00	-29.1	0.0	29.1	19.7	9.38	3.105		
2,800.0	2,800.0	2,800.0	2,800.0	4.9	4.9	180.00	-29.1	0.0	29.1	19.4	9.73	2.994		
2,900.0	2,900.0	2,900.0	2,900.0	5.0	5.0	180.00	-29.1	0.0	29.1	19.0	10.08	2.890		
3,000.0	3,000.0	3,000.0	3,000.0	5.2	5.2	180.00	-29.1	0.0	29.1	18.7	10.43	2.793		
3,100.0	3,100.0	3,100.0	3,100.0	5.4	5.4	180.00	-29.1	0.0	29.1	18.4	10.78	2.703		
3,200.0	3,200.0	3,200.0	3,200.0	5.6	5.6	180.00	-29.1	0.0	29.1	18.0	11.12	2.618		
3,300.0	3,300.0	3,300.0	3,300.0	5.7	5.7	180.00	-29.1	0.0	29.1	17.7	11.47	2.538		
3,400.0	3,400.0	3,400.0	3,400.0	5.9	5.9	180.00	-29.1	0.0	29.1	17.3	11.82	2.464		
3,500.0	3,500.0	3,500.0	3,500.0	6.1	6.1	180.00	-29.1	0.0	29.1	17.0	12.17	2.383		
3,600.0	3,600.0	3,600.0	3,600.0	6.3	6.3	180.00	-29.1	0.0	29.1	16.6	12.52	2.326		
3,700.0	3,700.0	3,700.0	3,700.0	6.4	6.4	180.00	-29.1	0.0	29.1	16.3	12.87	2.283		
3,800.0	3,800.0	3,800.0	3,800.0	6.6	6.6	180.00	-29.1	0.0	29.1	15.9	13.22	2.203		
3,900.0	3,900.0	3,900.0	3,900.0	6.8	6.8	180.00	-29.1	0.0	29.1	15.6	13.57	2.147		
4,000.0	4,000.0	4,000.0	4,000.0	7.0	7.0	180.00	-29.1	0.0	29.1	15.2	13.92	2.093		
4,100.0	4,100.0	4,100.0	4,100.0	7.1	7.1	180.00	-29.1	0.0	29.1	14.9	14.27	2.042		
4,200.0	4,200.0	4,200.0	4,200.0	7.3	7.3	180.00	-29.1	0.0	29.1	14.5	14.62	1.993		
4,300.0	4,300.0	4,300.0	4,300.0	7.5	7.5	180.00	-29.1	0.0	29.1	14.2	14.96	1.946		
4,400.0	4,400.0	4,400.0	4,400.0	7.7	7.7	180.00	-29.1	0.0	29.1	13.8	15.31	1.902		
4,500.0	4,500.0	4,500.0	4,500.0	7.8	7.8	180.00	-29.1	0.0	29.1	13.5	15.66	1.860		
4,600.0	4,600.0	4,600.0	4,600.0	8.0	8.0	180.00	-29.1	0.0	29.1	13.1	16.01	1.819 CC, ES		
4,643.1	4,643.1	4,643.1	4,643.1	8.1	8.1	-121.38	-29.1	0.0	29.4	13.3	16.16	1.821		
4,700.0	4,700.0	4,700.0	4,700.0	8.2	8.2	-122.22	-29.1	0.0	29.7	13.4	16.35	1.817 SF		
4,800.0	4,798.7	4,798.7	4,798.7	8.4	8.4	-140.00	-29.1	0.0	39.7	23.2	16.53	2.405		
4,900.0	4,893.4	4,893.4	4,893.4	8.6	8.5	-156.37	-29.1	0.0	67.5	51.2	16.29	4.145		
5,000.0	4,981.1	4,981.1	4,981.1	8.9	8.7	-164.73	-29.1	0.0	113.3	97.6	15.70	7.217		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook H26-2307 02H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7247.0usft (Original Well Elev)
Reference Site:	Lybrook	MD Reference:	WELL @ 7247.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Lybrook H26-2307 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Lybrook - Lybrook H26-2307 01H - HZ - Plan #2														Offset Site Error:	0.0 usft
Survey Program: 0-MWD														Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)				Between Centres (usft)	Between Ellipses (usft)		
5,100.0	5,050.1	5,073.4	5,073.4	8.5	8.8	-169.20	-28.3	-2.0	173.1	158.3	14.88	11.635			
5,200.0	5,125.2	5,193.4	5,190.9	10.3	9.1	-171.12	-20.0	-23.1	234.4	220.4	14.01	16.737			
5,300.0	5,177.2	5,341.1	5,325.2	11.5	9.5	-171.03	2.2	-79.6	291.7	278.4	13.27	21.985			
5,400.0	5,213.6	5,529.5	5,486.4	13.0	10.8	-169.31	47.4	-194.4	339.7	326.7	13.02	26.100			
5,500.0	5,233.4	5,765.8	5,575.2	14.7	13.7	-165.72	123.5	-387.8	370.8	356.8	13.93	26.614			
5,600.0	5,238.9	5,959.4	5,598.8	16.6	17.3	-161.54	193.2	-566.3	379.9	363.7	16.23	23.413			
5,700.0	5,238.5	6,040.6	5,596.5	18.7	18.9	-159.56	214.1	-844.6	384.4	368.3	18.17	21.163			
5,800.0	5,236.1	6,120.7	5,596.1	20.7	20.6	-158.11	223.7	-724.1	388.1	368.2	19.96	19.444			
5,900.0	5,235.8	6,216.0	5,595.6	22.8	22.6	-157.57	225.7	-819.4	389.5	368.0	21.52	18.101			
6,000.0	5,235.1	6,316.0	5,595.1	25.0	24.8	-157.57	227.6	-919.4	389.5	368.3	23.16	16.816			
6,100.0	5,234.6	6,416.0	5,594.6	27.1	27.1	-157.57	229.5	-1,019.4	389.5	364.7	24.85	15.676			
6,200.0	5,234.0	6,516.0	5,594.1	29.4	29.4	-157.57	231.3	-1,119.4	389.5	363.0	26.56	14.683			
6,300.0	5,233.5	6,616.0	5,593.5	31.7	31.7	-157.56	233.2	-1,219.3	389.5	361.2	28.31	13.760			
6,400.0	5,233.0	6,716.0	5,593.0	34.0	34.0	-157.56	235.1	-1,319.3	389.5	359.5	30.06	12.952			
6,500.0	5,232.5	6,816.0	5,592.5	36.3	36.3	-157.56	236.0	-1,419.3	389.5	357.7	31.86	12.226			
6,600.0	5,231.9	6,916.0	5,592.0	38.6	38.7	-157.56	238.8	-1,519.3	389.5	355.9	33.66	11.572			
6,700.0	5,231.4	7,016.0	5,591.5	41.0	41.1	-157.55	240.7	-1,619.3	389.6	354.1	35.48	10.961			
6,800.0	5,230.9	7,116.0	5,590.9	43.4	43.5	-157.55	242.5	-1,719.3	389.6	352.3	37.30	10.443			
6,900.0	5,230.4	7,216.0	5,590.4	45.7	45.9	-157.55	244.4	-1,819.2	389.6	350.4	39.14	9.954			
7,000.0	5,229.8	7,316.0	5,589.9	48.1	48.3	-157.55	246.3	-1,919.2	389.6	348.6	40.98	9.508			
7,100.0	5,229.3	7,416.0	5,589.4	50.5	50.7	-167.54	248.1	-2,019.2	389.6	346.7	42.83	9.085			
7,200.0	5,228.8	7,516.0	5,588.8	52.9	53.1	-157.54	250.0	-2,119.2	389.6	344.9	44.69	8.717			
7,300.0	5,228.3	7,616.0	5,588.3	55.3	55.5	-157.54	251.9	-2,219.2	389.6	343.0	46.56	8.368			
7,400.0	5,227.8	7,716.0	5,587.8	57.8	58.0	-157.54	253.8	-2,319.1	389.6	341.2	48.43	8.045			
7,500.0	5,227.2	7,816.0	5,587.3	60.2	60.4	-157.54	255.6	-2,419.1	389.6	339.3	50.30	7.745			
7,600.0	5,226.7	7,916.0	5,586.7	62.6	62.8	-157.53	257.5	-2,519.1	389.6	337.4	52.18	7.468			
7,700.0	5,226.2	8,016.0	5,586.2	65.0	65.3	-157.53	259.4	-2,619.1	389.6	335.6	54.07	7.208			
7,800.0	5,225.7	8,116.0	5,585.7	67.5	67.7	-157.53	261.2	-2,719.1	389.6	333.7	55.95	6.963			
7,900.0	5,225.1	8,216.0	5,585.2	69.9	70.1	-157.53	263.1	-2,819.0	389.6	331.8	57.84	6.736			
8,000.0	5,224.6	8,316.0	5,584.6	72.3	72.6	-157.52	265.0	-2,919.0	389.6	329.9	59.74	6.523			
8,100.0	5,224.1	8,416.0	5,584.1	74.8	75.0	-157.52	266.8	-3,019.0	389.6	328.0	61.63	6.322			
8,200.0	5,223.6	8,516.0	5,583.6	77.2	77.5	-157.52	268.7	-3,119.0	389.7	326.1	63.53	6.133			
8,300.0	5,223.0	8,616.0	5,583.1	79.7	79.9	-157.52	270.6	-3,219.0	389.7	324.2	65.43	5.955			
8,400.0	5,222.5	8,716.0	5,582.6	82.1	82.4	-157.51	272.4	-3,319.0	389.7	322.3	67.33	5.787			
8,500.0	5,222.0	8,816.0	5,582.0	84.6	84.8	-157.51	274.3	-3,418.9	389.7	320.4	69.24	5.628			
8,600.0	5,221.5	8,916.0	5,581.5	87.0	87.3	-157.51	276.2	-3,518.9	389.7	318.5	71.14	5.477			
8,700.0	5,220.9	9,016.0	5,581.0	89.5	89.7	-157.51	278.0	-3,618.9	389.7	316.6	73.05	5.334			
8,800.0	5,220.4	9,116.0	5,580.5	91.9	92.2	-157.50	279.9	-3,718.9	389.7	314.7	74.96	5.199			
8,900.0	5,219.8	9,216.0	5,579.9	94.4	94.7	-157.50	281.8	-3,818.9	389.7	312.8	76.87	5.068			
9,000.0	5,219.4	9,316.0	5,579.4	96.8	97.1	-157.50	283.6	-3,918.8	389.7	310.9	78.78	4.946			
9,100.0	5,218.9	9,416.0	5,578.9	99.3	99.6	-157.50	285.5	-4,018.8	389.7	309.0	80.70	4.829			
9,200.0	5,218.3	9,516.0	5,578.4	101.7	102.0	-157.49	287.4	-4,118.8	389.7	307.1	82.61	4.717			
9,300.0	5,217.8	9,616.0	5,577.8	104.2	104.5	-157.49	289.2	-4,218.8	389.7	305.2	84.53	4.610			
9,400.0	5,217.3	9,716.0	5,577.3	106.7	107.0	-157.49	291.1	-4,318.8	389.7	303.3	86.45	4.508			
9,500.0	5,216.8	9,816.0	5,576.8	109.1	109.4	-157.48	293.0	-4,418.7	389.7	301.4	88.37	4.410			
9,600.0	5,216.2	9,916.0	5,576.3	111.6	111.9	-157.48	294.8	-4,518.7	389.7	299.5	90.29	4.317			
9,810.7	5,216.2	9,926.7	5,576.2	111.8	112.1	-157.49	295.0	-4,529.4	389.7	299.3	90.49	4.307			
9,827.3	5,216.1	9,938.7	5,576.1	112.3	112.4	-157.48	295.3	-4,541.4	389.8	299.0	90.77	4.294			

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

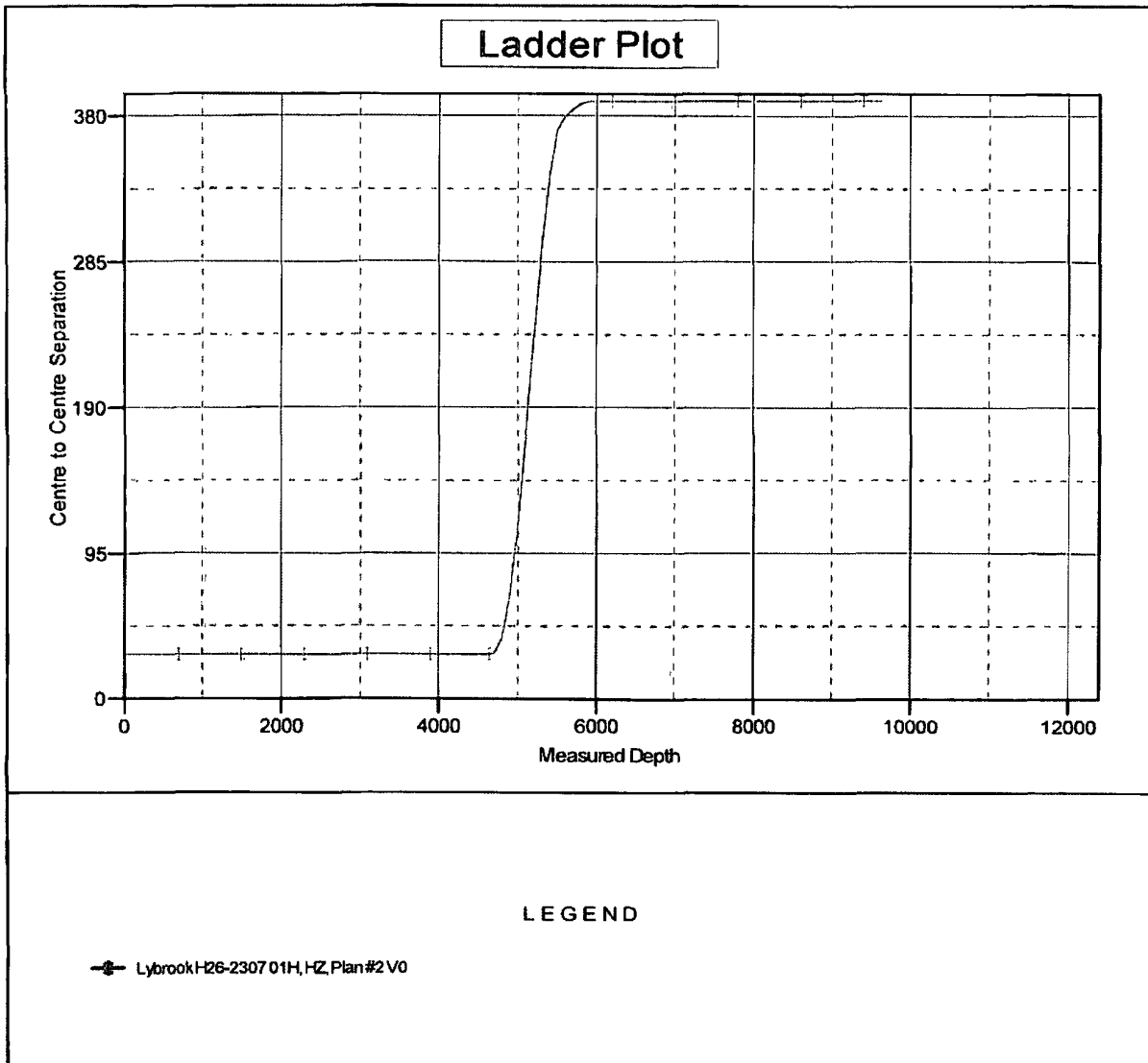
Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook H26-2307 02H
Project:	Sandoval County, NM	TVD Reference:	WELL @ 7247.0usft (Original Well Elev)
Reference Site:	Lybrook	MD Reference:	WELL @ 7247.0usft (Original Well Elev)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Lybrook H26-2307 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 7247.0usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 106° 15' 0.00 W°

Coordinates are relative to: Lybrook H26-2307 02H
Coordinate System is US State Plane 1983, New Mexico Central Zone
Grid Convergence at Surface is, -0.76°



WELLHEAD BLOWOUT CONTROL SYSTEM



Well name and number:

Lybrook H26-2307 02H

