

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., 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 Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico

Form C-101
Revised July 18, 2013

Energy Minerals and Natural Resources

Oil Conservation Division

☒ AMENDED REPORT

1220 South St. Francis Dr.

Santa Fe, NM 87505

RCVD FEB 19 '14
OIL CONS. DIV.

DIST. 3

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address ENCANA OIL AND GAS (USA) INC. 370 17 TH STREET, SUITE 1700 DENVER, CO 80202		² OGRID Number 282327
		³ API Number 30-043-21195
⁴ Property Code 40405	⁵ Property Name Lybrook E33-2307	⁶ Well No. 01H

⁷ Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
SHL: E	33	23N	7W		1,741	NORTH	549	WEST	SANDOVAL

⁸ Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
BHL: D	32	23N	7W		400	NORTH	330	WEST	SANDOVAL

⁹ Pool Information

Pool Name	Pool Code
BASIN MANCOS GAS POOL	97232

Additional Well Information

¹¹ Work Type N	¹² Well Type G	¹³ Cable/Rotary R	¹⁴ Lease Type S	¹⁵ Ground Level Elevation 6,853'
¹⁶ Multiple N/A	¹⁷ Proposed Depth 5,012' TVD/10,746' MD	¹⁸ Formation GALLUP	¹⁹ Contractor AZTEC	²⁰ Spud Date 10/30/2014
Depth to Ground water UNKNOWN		Distance from nearest fresh water well GREATER THAN 5,280'		Distance to nearest surface water ~6,000'

☒ We will be using a closed-loop system in lieu of lined pits

²¹ Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/lb	Setting Depth	Sacks of Cement	Estimated TOC
CONDUCTOR	30"	20"	94#	60'	100	SURFACE
SURFACE	12 1/4"	9 5/8"	36#	500'	178	SURFACE
INTERMEDIATE	8 3/4"	7"	26#	5,066' TVD/6,078' MD	625 (30% EXCESS)	SURFACE
PROD. LINER	6 1/8"	4 1/2"	11.6#	5,878' - 10,746' MD	N/A	N/A

Casing/Cement Program: Additional Comments

HORIZONTAL LATERAL IN THE GALLUP FORMATION. NO CEMENT IN THE PRODUCTION LINER. WILL RUN EXTERNAL SWELL CASING PACKER SYSTEM. WILL USE OIL-BASED MUD SYSTEM FROM INTERMEDIATE CASING POINT TO TD OF HORIZONTAL LATERAL

²² Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
ANNULAR	3,000	1,500	TBD
SINGLE RAM	3,000	3,000	TBD
ROTATING HEAD	3,000	1,500	TBD

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief. **NO DRILLING PIT WILL BE USED.**
I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☐, if applicable.

Signature:

Printed name: Jessica Gregg

Hold C104

Title: Regulatory Analyst

for Directional Survey
and "As Drilled" plat

E-mail Address: jessica.gregg@encana.com

Date: 2/13/2014

Phone: 720-838-5458

OIL CONSERVATION DIVISION

Approved By:

Charles Harris 2-26-2014

Title:

SUPERVISOR DISTRICT #3

Approved Date:

FEB 26 2014

Expiration Date:

2/26/16

Conditions of Approval Attached

HOLD C104

NFL ASP

FEB 26 2014 ca

AV

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Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

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 30-043-21195		*Pool Code 97232	*Pool Name BASIN MANCOS GAS
*Property Code	*Property Name LYBROOK E33-2307		*Well Number 01H
*GRID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.		*Elevation 6853'

¹⁰ Surface Location

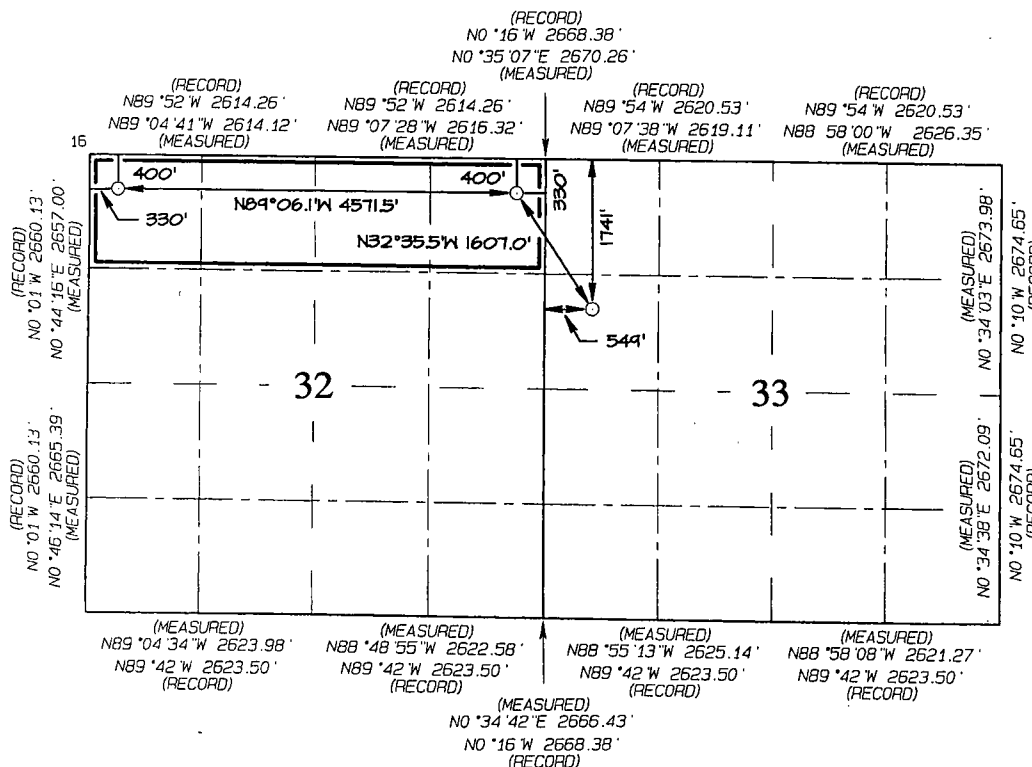
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	33	23N	7W		1741	NORTH	549	WEST	SANDOVAL

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	32	23N	7W		400	NORTH	330	WEST	SANDOVAL

¹² Dedicated Acres 160.00 Acres N/2 N/2 - Section 32	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



END-OF-LATERAL
400' FNL 330' FWL
SECTION 32, T23N, R7W
LAT: 36.18948°N
LONG: 107.60480°W
DATUM: NAD1927

LAT: 36.18950°N
LONG: 107.60541°W
DATUM: NAD1983

POINT-OF-ENTRY
400' FNL 330' FEL
SECTION 32, T23N, R7W
LAT: 36.18946°N
LONG: 107.58931°W
DATUM: NAD1927

LAT: 36.18947°N
LONG: 107.58992°W
DATUM: NAD1983

SURFACE LOCATION
1741' FNL 549' FWL
SECTION 33, T23N, R7W
LAT: 36.18577°N
LONG: 107.58632°W
DATUM: NAD1927

LAT: 36.18579°N
LONG: 107.58693°W
DATUM: NAD1983

¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Holly Hill Date 2/11/14
Printed Name
Holly Hill
E-mail Address
holly.hill@encana.com

¹⁸ SURVEYOR CERTIFICATION

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

Date of Survey: AUGUST 2, 2013

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

Directions from the Intersection of US Hwy 550 & US Hwy 64
in Bloomfield, NM to Encana Oil & Gas (USA) Inc. Lybrook E33-2307 01H
1741' FNL & 549' FWL, Section 33, T23N, R7W, N.M.P.M., Sandoval County, NM

Latitude: 36.18579°N Longitude: 107.58693°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 straight (Easterly) for 0.2 miles to fork in road at gate;

Go straight (Easterly) for 1.0 miles to fork in road;

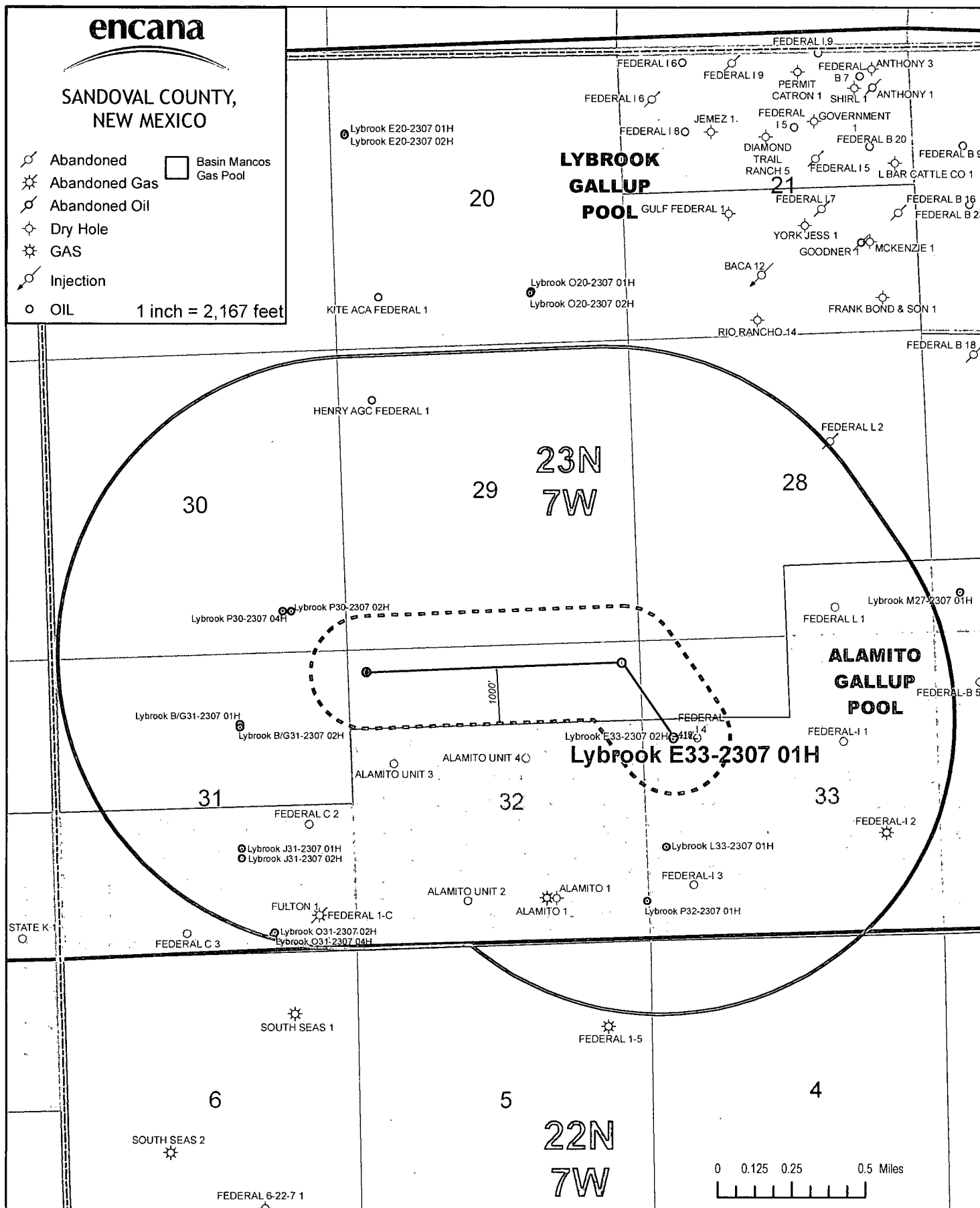
Go right which is straight (Easterly) for 1.4 miles to fork in road;

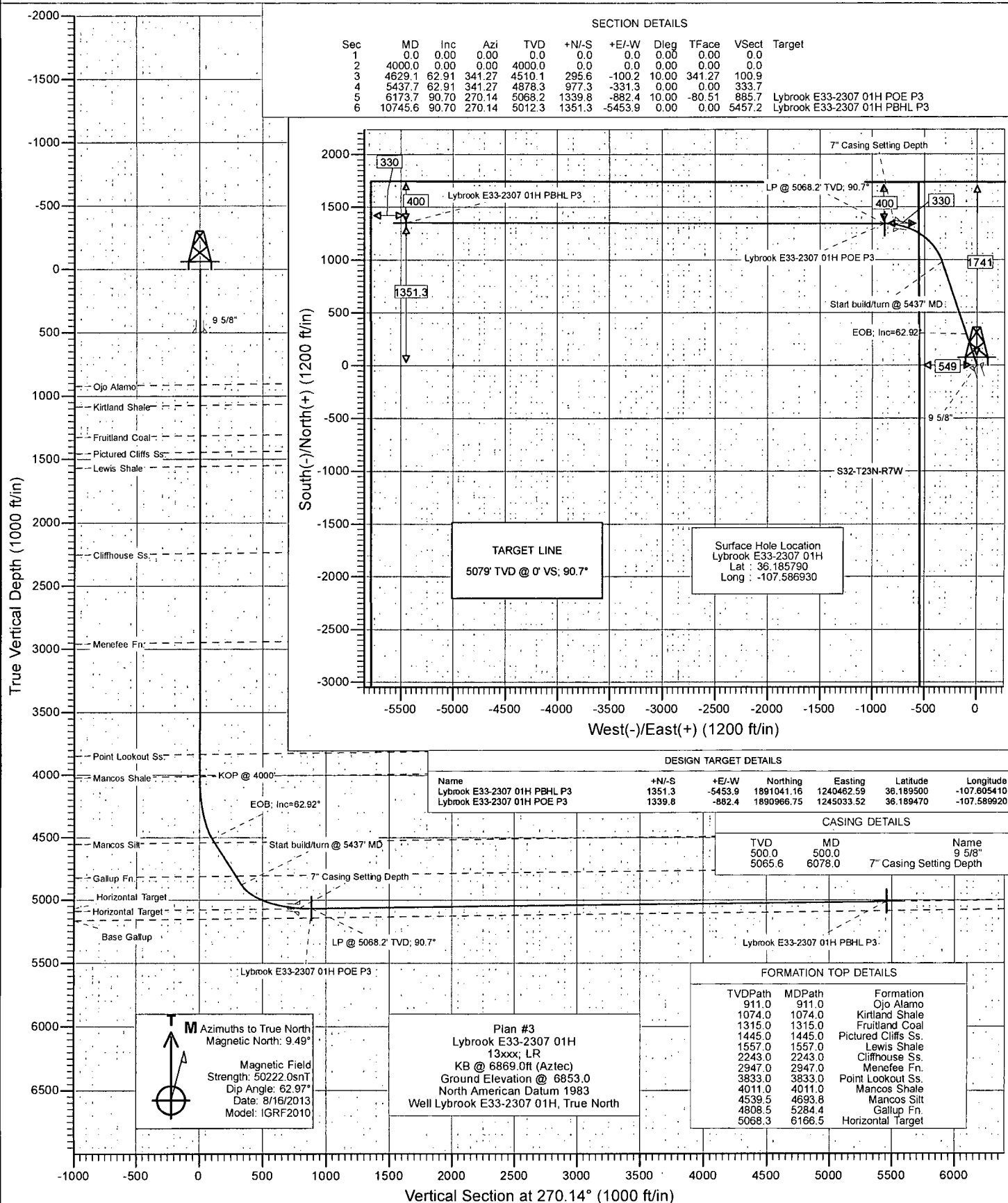
Go left (Northerly) for 0.4 miles to an existing wellpad from which new access on left-hand side continues for 123' to staked Encana Lybrook E33-2307 01H location.

encana

**SANDOVAL COUNTY,
NEW MEXICO**

-  Abandoned
 -  Abandoned Gas
 -  Abandoned Oil
 -  Dry Hole
 -  GAS
 -  Injection
 -  OIL
 -  Basin Mancos Gas Pool
- 1 inch = 2,167 feet





Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook E33-2307 01H
Wellbore: Hz
Design: Plan #3

Local Co-ordinate Reference: Well Lybrook E33-2307 01H
TVD Reference: KB @ 6869.0ft (Aztec)
MD Reference: KB @ 6869.0ft (Aztec)
North Reference: True
Survey Calculation Method: Minimum Curvature

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

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

Well	Lybrook E33-2307 01H		
Well Position	+N/-S	0.0 ft	Northing: 1,889,614.89 ft
	+E/-W	0.0 ft	Easting: 1,245,897.40 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	36.185790
		Longitude:	-107.586930
		Ground Level:	6,853.0 ft

Wellbore	Hz		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	8/16/2013	9.49
			Dip Angle
			(°)
			62.97
			Field Strength
			(nT)
			50,222

Design	Plan #3		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.0	0.0	0.0
			Direction
			(°)
			270.14

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,629.1	62.91	341.27	4,510.1	295.6	-100.2	10.00	10.00	0.00	341.27	
5,437.7	62.91	341.27	4,878.3	977.3	-331.3	0.00	0.00	0.00	0.00	
6,173.7	90.70	270.14	5,068.2	1,339.8	-882.4	10.00	3.78	-9.66	-80.51	Lybrook E33-2307 01
10,745.6	90.70	270.14	5,012.3	1,351.3	-5,453.9	0.00	0.00	0.00	0.00	Lybrook E33-2307 01

Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: Sandoval County, NM
 Site: Lybrook
 Well: Lybrook E33-2307 01H
 Wellbore: Hz
 Design: Plan #3

Local Co-ordinate Reference: Well Lybrook E33-2307 01H
 TVD Reference: KB @ 6869.0ft (Aztec)
 MD Reference: KB @ 6869.0ft (Aztec)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	9 5/8"
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
911.0	0.00	0.00	911.0	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	
1,074.0	0.00	0.00	1,074.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
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	
1,315.0	0.00	0.00	1,315.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,445.0	0.00	0.00	1,445.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,557.0	0.00	0.00	1,557.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,800.0	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	
2,243.0	0.00	0.00	2,243.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss.
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	
2,947.0	0.00	0.00	2,947.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn.
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	
3,700.0	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	
3,833.0	0.00	0.00	3,833.0	0.0	0.0	0.0	0.00	0.00	Point Lookout Ss.
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	KOP @ 4000'
4,011.0	1.10	341.27	4,011.0	0.1	0.0	0.0	10.00	10.00	Mancos Shale
4,100.0	10.00	341.27	4,099.5	8.2	-2.8	2.8	10.00	10.00	
4,200.0	20.00	341.27	4,196.0	32.7	-11.1	11.2	10.00	10.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lybrook E33-2307 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 6869.0ft (Aztec)
Project:	Sandoval County, NM	MD Reference:	KB @ 6869.0ft (Aztec)
Site:	Lybrook	North Reference:	True
Well:	Lybrook E33-2307 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,300.0	30.00	341.27	4,286.5	72.7	-24.6	24.8	10.00	10.00	
4,400.0	40.00	341.27	4,368.3	127.0	-43.0	43.3	10.00	10.00	
4,500.0	50.00	341.27	4,438.9	193.8	-65.7	66.2	10.00	10.00	
4,600.0	60.00	341.27	4,496.2	271.3	-92.0	92.6	10.00	10.00	
4,629.2	62.91	341.27	4,510.1	295.6	-100.2	100.9	10.00	10.00	EOB; Inc=62.92°
4,693.8	62.91	341.27	4,539.5	350.0	-118.7	119.5	0.00	0.00	Mancos Silt
4,700.0	62.91	341.27	4,542.4	355.3	-120.4	121.3	0.00	0.00	
4,800.0	62.91	341.27	4,587.9	439.6	-149.0	150.1	0.00	0.00	
4,900.0	62.91	341.27	4,633.4	523.9	-177.6	178.9	0.00	0.00	
5,000.0	62.91	341.27	4,679.0	608.3	-206.2	207.7	0.00	0.00	
5,100.0	62.91	341.27	4,724.5	692.6	-234.8	236.5	0.00	0.00	
5,200.0	62.91	341.27	4,770.0	776.9	-263.4	265.3	0.00	0.00	
5,284.4	62.91	341.27	4,808.5	848.0	-287.5	289.6	0.00	0.00	Gallup Fn.
5,300.0	62.91	341.27	4,815.6	861.2	-292.0	294.1	0.00	0.00	
5,400.0	62.91	341.27	4,861.1	945.5	-320.5	322.9	0.00	0.00	
5,437.7	62.91	341.27	4,878.3	977.3	-331.3	333.7	0.00	0.00	Start build/turn @ 5437' MD
5,500.0	64.11	334.44	4,906.1	1,028.9	-352.3	354.8	10.00	1.91	
5,600.0	66.66	323.80	4,947.8	1,106.7	-399.0	401.7	10.00	2.56	
5,700.0	69.90	313.62	4,984.9	1,176.4	-460.2	463.1	10.00	3.24	
5,800.0	73.71	303.88	5,016.2	1,235.7	-534.3	537.3	10.00	3.80	
5,900.0	77.94	294.53	5,040.7	1,282.8	-618.8	621.9	10.00	4.23	
6,000.0	82.47	285.48	5,057.8	1,316.4	-711.3	714.5	10.00	4.53	
6,078.0	86.13	278.56	5,065.6	1,332.6	-787.1	790.4	10.00	4.70	7" Casing Setting Depth
6,100.0	87.18	276.62	5,066.8	1,335.5	-808.9	812.2	10.00	4.76	
6,166.5	90.36	270.77	5,068.3	1,339.8	-875.2	878.5	10.00	4.78	Horizontal Target
6,173.7	90.70	270.14	5,068.2	1,339.8	-882.4	885.7	9.98	4.77	LP @ 5068.2' TVD; 90.7° - Lybrook E33-2307 0
6,173.8	90.70	270.14	5,068.2	1,339.8	-882.5	885.8	0.00	0.00	Lybrook E33-2307 01H POE
6,200.0	90.70	270.14	5,067.9	1,339.9	-908.7	912.0	0.01	0.00	
6,300.0	90.70	270.14	5,066.7	1,340.1	-1,008.7	1,012.0	0.00	0.00	
6,400.0	90.70	270.14	5,065.4	1,340.4	-1,108.7	1,112.0	0.00	0.00	
6,500.0	90.70	270.14	5,064.2	1,340.6	-1,208.7	1,212.0	0.00	0.00	
6,600.0	90.70	270.14	5,063.0	1,340.9	-1,308.7	1,312.0	0.00	0.00	
6,700.0	90.70	270.14	5,061.8	1,341.1	-1,408.7	1,412.0	0.00	0.00	
6,800.0	90.70	270.14	5,060.5	1,341.4	-1,508.7	1,511.9	0.00	0.00	
6,900.0	90.70	270.14	5,059.3	1,341.6	-1,608.7	1,611.9	0.00	0.00	
7,000.0	90.70	270.14	5,058.1	1,341.9	-1,708.7	1,711.9	0.00	0.00	
7,100.0	90.70	270.14	5,056.9	1,342.1	-1,808.6	1,811.9	0.00	0.00	
7,200.0	90.70	270.14	5,055.7	1,342.4	-1,908.6	1,911.9	0.00	0.00	
7,300.0	90.70	270.14	5,054.4	1,342.6	-2,008.6	2,011.9	0.00	0.00	
7,400.0	90.70	270.14	5,053.2	1,342.9	-2,108.6	2,111.9	0.00	0.00	
7,500.0	90.70	270.14	5,052.0	1,343.1	-2,208.6	2,211.9	0.00	0.00	
7,600.0	90.70	270.14	5,050.8	1,343.4	-2,308.6	2,311.9	0.00	0.00	
7,700.0	90.70	270.14	5,049.5	1,343.6	-2,408.6	2,411.9	0.00	0.00	
7,800.0	90.70	270.14	5,048.3	1,343.9	-2,508.6	2,511.9	0.00	0.00	
7,900.0	90.70	270.14	5,047.1	1,344.1	-2,608.6	2,611.9	0.00	0.00	
8,000.0	90.70	270.14	5,045.9	1,344.4	-2,708.6	2,711.9	0.00	0.00	
8,100.0	90.70	270.14	5,044.6	1,344.6	-2,808.6	2,811.8	0.00	0.00	
8,200.0	90.70	270.14	5,043.4	1,344.9	-2,908.6	2,911.8	0.00	0.00	
8,300.0	90.70	270.14	5,042.2	1,345.1	-3,008.6	3,011.8	0.00	0.00	
8,400.0	90.70	270.14	5,041.0	1,345.4	-3,108.5	3,111.8	0.00	0.00	
8,500.0	90.70	270.14	5,039.8	1,345.6	-3,208.5	3,211.8	0.00	0.00	
8,600.0	90.70	270.14	5,038.5	1,345.9	-3,308.5	3,311.8	0.00	0.00	

Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: Sandoval County, NM
 Site: Lybrook
 Well: Lybrook E33-2307 01H
 Wellbore: Hz
 Design: Plan #3

Local Co-ordinate Reference: Well Lybrook E33-2307 01H
 TVD Reference: KB @ 6869.0ft (Aztec)
 MD Reference: KB @ 6869.0ft (Aztec)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
8,700.0	90.70	270.14	5,037.3	1,346.1	-3,408.5	3,411.8	0.00	0.00	
8,800.0	90.70	270.14	5,036.1	1,346.4	-3,508.5	3,511.8	0.00	0.00	
8,900.0	90.70	270.14	5,034.9	1,346.6	-3,608.5	3,611.8	0.00	0.00	
9,000.0	90.70	270.14	5,033.6	1,346.9	-3,708.5	3,711.8	0.00	0.00	
9,100.0	90.70	270.14	5,032.4	1,347.1	-3,808.5	3,811.8	0.00	0.00	
9,200.0	90.70	270.14	5,031.2	1,347.4	-3,908.5	3,911.8	0.00	0.00	
9,300.0	90.70	270.14	5,030.0	1,347.6	-4,008.5	4,011.8	0.00	0.00	
9,400.0	90.70	270.14	5,028.8	1,347.9	-4,108.5	4,111.7	0.00	0.00	
9,500.0	90.70	270.14	5,027.5	1,348.1	-4,208.5	4,211.7	0.00	0.00	
9,600.0	90.70	270.14	5,026.3	1,348.4	-4,308.5	4,311.7	0.00	0.00	
9,700.0	90.70	270.14	5,025.1	1,348.6	-4,408.4	4,411.7	0.00	0.00	
9,800.0	90.70	270.14	5,023.9	1,348.9	-4,508.4	4,511.7	0.00	0.00	
9,900.0	90.70	270.14	5,022.6	1,349.1	-4,608.4	4,611.7	0.00	0.00	
10,000.0	90.70	270.14	5,021.4	1,349.4	-4,708.4	4,711.7	0.00	0.00	
10,100.0	90.70	270.14	5,020.2	1,349.6	-4,808.4	4,811.7	0.00	0.00	
10,200.0	90.70	270.14	5,019.0	1,349.9	-4,908.4	4,911.7	0.00	0.00	
10,300.0	90.70	270.14	5,017.7	1,350.1	-5,008.4	5,011.7	0.00	0.00	
10,400.0	90.70	270.14	5,016.5	1,350.4	-5,108.4	5,111.7	0.00	0.00	
10,500.0	90.70	270.14	5,015.3	1,350.6	-5,208.4	5,211.7	0.00	0.00	
10,600.0	90.70	270.14	5,014.1	1,350.9	-5,308.4	5,311.7	0.00	0.00	
10,700.0	90.70	270.14	5,012.9	1,351.1	-5,408.4	5,411.7	0.00	0.00	
10,745.2	90.70	270.14	5,012.3	1,351.3	-5,453.5	5,456.8	0.00	0.00	Lybrook E33-2307 01H PBHL
10,745.6	90.70	270.14	5,012.3	1,351.3	-5,453.9	5,457.2	0.00	0.00	TD at 10745.6 - Lybrook E33-2307 01H PBHL F

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Lybrook E33-2307 01H f - plan hits target center - Point	0.00	0.00	5,012.3	1,351.3	-5,453.9	1,891,041.16	1,240,462.59	36.189500	-107.605410
Lybrook E33-2307 01H f - plan misses target center by 33.6ft at 10745.2ft MD (5012.3 TVD, 1351.3 N, -5453.5 E) - Point	0.00	0.00	5,045.9	1,351.3	-5,453.9	1,891,041.16	1,240,462.59	36.189500	-107.605410
Lybrook E33-2307 01H f - plan misses target center by 6.3ft at 6173.8ft MD (5068.2 TVD, 1339.8 N, -882.5 E) - Point	0.00	0.00	5,061.9	1,339.8	-882.4	1,890,966.75	1,245,033.52	36.189470	-107.589920
Lybrook E33-2307 01H f - plan hits target center - Point	0.00	0.00	5,068.2	1,339.8	-882.4	1,890,966.75	1,245,033.52	36.189470	-107.589920

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
6,078.0	5,065.6	7" Casing Setting Depth	0.000	0.000
500.0	500.0	9 5/8"	0.000	0.000

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook E33-2307 01H
Wellbore: Hz
Design: Plan #3

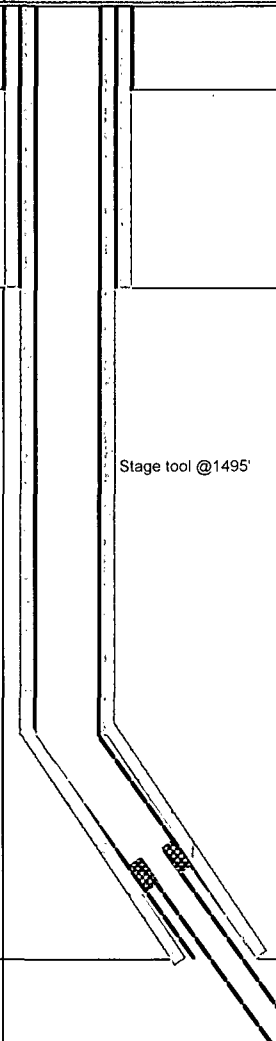
Local Co-ordinate Reference: Well Lybrook E33-2307 01H
TVD Reference: KB @ 6869.0ft (Aztec)
MD Reference: KB @ 6869.0ft (Aztec)
North Reference: True
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
911.0	911.0	Ojo Alamo		-0.70	270.14
1,074.0	1,074.0	Kirtland Shale		-0.70	270.14
1,315.0	1,315.0	Fruitland Coal		-0.70	270.14
1,445.0	1,445.0	Pictured Cliffs Ss.		-0.70	270.14
1,557.0	1,557.0	Lewis Shale		-0.70	270.14
2,243.0	2,243.0	Cliffhouse Ss.		-0.70	270.14
2,947.0	2,947.0	Menefee Fn.		-0.70	270.14
3,833.0	3,833.0	Point Lookout Ss.		-0.70	270.14
4,011.0	4,011.0	Mancos Shale		-0.70	270.14
4,693.8	4,541.0	Mancos Silt		-0.70	270.14
5,284.4	4,812.0	Gallup Fn.		-0.70	270.14
6,166.5	5,079.0	Horizontal Target		-0.70	270.14

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
4,000.0	4,000.0	0.0	0.0	KOP @ 4000'
4,629.2	4,510.1	295.6	-100.2	EOB; Inc=62.92°
5,437.7	4,878.3	977.3	-331.3	Start build/turn @ 5437' MD
6,173.7	5,068.2	1,339.8	-882.4	LP @ 5068.2' TVD; 90.7°
10,745.6	5,012.3	1,351.3	-5,453.9	TD at 10745.6

LOC: Sec 33-T23N-R7W County: Sandoval WELL: Lybrook E33-2307 01H			Encana Natural Gas WELL SUMMARY					ENG: 1/15/14 RIG: GLE: 6853 RKBE: 6869	
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 16ppg cmt	Fresh wtr 8.3-9.2	
Surveys After csg is run	None					12 1/4	9 5/8" 36ppf J55 STC TOC @ surface 178 sks Type III Cmt	Fresh wtr 8.4-8.6	Vertical <1°
Surveys every 500'	No OH logs	Ojo Alamo Kirtland Fruitland Coal Pictured Cliffs Ss Lewis Shale Cliffhouse Ss Menefee Fn Point Lookout Ss KICK OFF PT Mancos Sh Mancos Silt Gallup Top 7" csg	911 1074 1315 1445 1557 2243 2947 3833 4000 4011 4541 4812 5066	6078		8 3/4	Stage tool @1495' TOC @ surface 30% OH excess: 625sksTotal. Stage 1 Lead: 294sks Stage 1 Tail: 201sks. Stage 2 Lead: 130sks	Fresh Wtr 8.5-8.8	Vertical <1° KOP 4000 10 deg/100'
Surveys every 500' Gyro at CP MWD Gamma Directional	No OH Logs	horz target Base Gallup	5068 5153	6174		6 1/8	200' overlap at liner top 4572' Lateral	8.6-9.0 OBM Switch to OBM 8.6-9.0	.25deg updip 5012'TVD TD = 10746' MD

NOTES:

- 1) Drill with 30" bit to 60', set 20" 94# conductor pipe
- 2) Drill surface to 500', R&C 9 5/8" casing
- 3) N/U BOP and surface equipment
- 4) Drill to KOP of 4000', 8 3/4" hole size,
- 5) PU directional tools and start curve at 10deg/100' build rate
- 6) Drill to casing point of 6078' MD
- 7) R&C 7" casing, circ cmt to surface, switch to OBM
- 8) Land at 90deg, drill 4572' lateral to 10746', run 4 1/2" liner with external swellable csg packers