

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

1220 South St. Francis Dr.

Santa Fe, NM 87505

☒ AMENDED REPORT

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
⁴ Property Code 40415		³ Permit Number 30-043-21197
⁵ Property Name Lybrook L33-2307		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: L	33	23N	7W		1,577	SOUTH	352	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: L	32	23N	7W		2,250	SOUTH	330	WEST	SANDOVAL

⁹ Pool Information

Pool Name	Pool Code
ALAMITO-GALLUP	1039

Additional Well Information

¹¹ Work Type N	¹² Well Type O	¹³ Cable/Rotary R	¹⁴ Lease Type S	¹⁵ Ground Level Elevation 6,867'
¹⁶ Multiple N/A	¹⁷ Proposed Depth 4,993' TVD/10,249' MD	¹⁸ Formation GALLUP	¹⁹ Contractor AZTEC	²⁰ Spud Date 11/27/2014
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/ft	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#	5,045' TVD/5,575' MD	527 (30% EXCESS)	SURFACE
PROD. LINER	6 1/8"	4 1/2"	11.6#	5,375' - 10,249' 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

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: *Jessica Gregg*
Printed name: Jessica Gregg

Title: Regulatory Analyst
E-mail Address: jessica.gregg@encana.com
Date: 2/13/2014

Hold C104
for Directional Survey
and "As Drilled" plat

Phone: 720-838-5458

OIL CONSERVATION DIVISION	
Approved By: <i>Charles Herin</i> 2-26-2014	
Title: SUPERVISOR DISTRICT #3	
Approved Date: FEB 26 2014	Expiration Date: 2/26/16
Conditions of Approval Attached	

FEB 26 2014 ca

AV

NOTIFY AZTEC OCD 24 HRS.
PRIOR TO CASING & CEMENT

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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 30-043-21197		*Pool Code 1039	*Pool Name ALAMITO - GALLUP
*Property Code 40415	*Property Name LYBROOK L33-2307		*Well Number 01H
*GRID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.		*Elevation 6867'

¹⁰ Surface Location

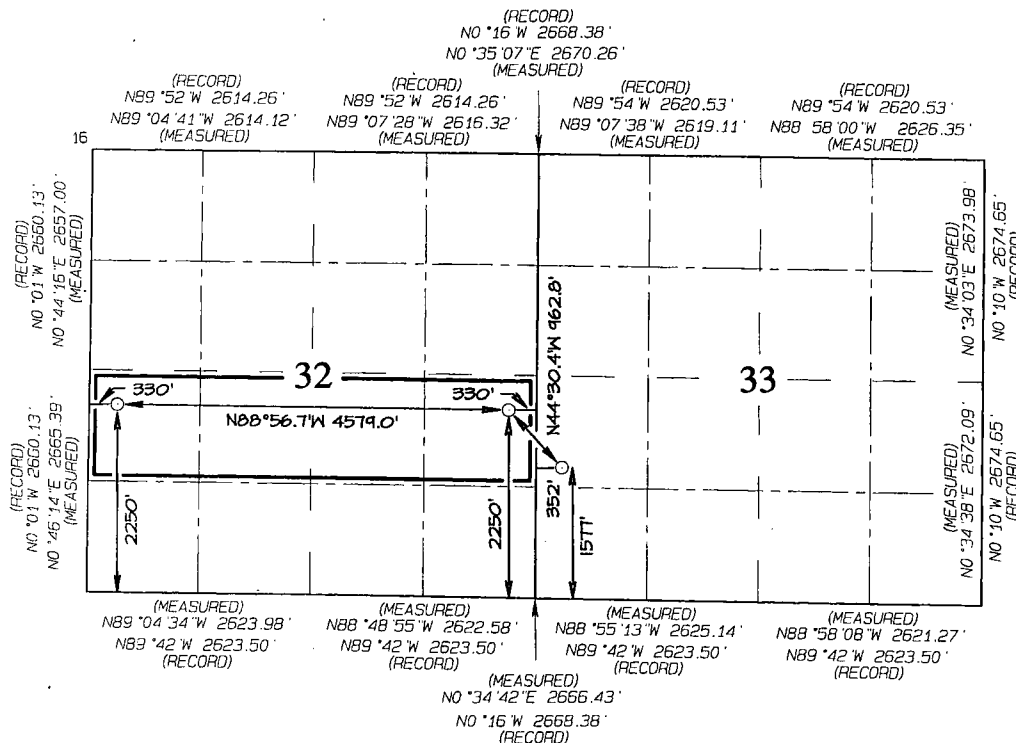
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	33	23N	7W		1577	SOUTH	352	WEST	SANDOVAL

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
L	32	23N	7W		2250	SOUTH	330	WEST	SANDOVAL

¹² Dedicated Acres 160.00 Acres N/2 S/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
2250' FSL 330' FWL
SECTION 32, T23N, R7W
LAT: 36.18214°N
LONG: 107.60479°W
DATUM: NAD1927

LAT: 36.18216°N
LONG: 107.60540°W
DATUM: NAD1983

POINT-OF-ENTRY
2250' FSL 330' FEL
SECTION 32, T23N, R7W
LAT: 36.18209°N
LONG: 107.58928°W
DATUM: NAD1927

LAT: 36.18210°N
LONG: 107.58989°W
DATUM: NAD1983

SURFACE LOCATION
1577' FSL 352' FWL
SECTION 33, T23N, R7W
LAT: 36.18022°N
LONG: 107.58696°W
DATUM: NAD1927

LAT: 36.18024°N
LONG: 107.58757°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.

Holly Hill 1/15/14
Signature Date
Holly Hill
Printed Name
Holly.Hill@encana.com
E-mail Address

¹⁸ SURVEYOR CERTIFICATION
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Survey Date: OCTOBER 10, 2013
Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
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 Encana Oil & Gas (USA) Inc. Lybrook L33-2307 01H

1577' FSL & 352' FWL, Section 33, T23N, R7W, N.M.P.M., Sandoval County, NM

Latitude: 36.18024°N Longitude: 107.58757°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;

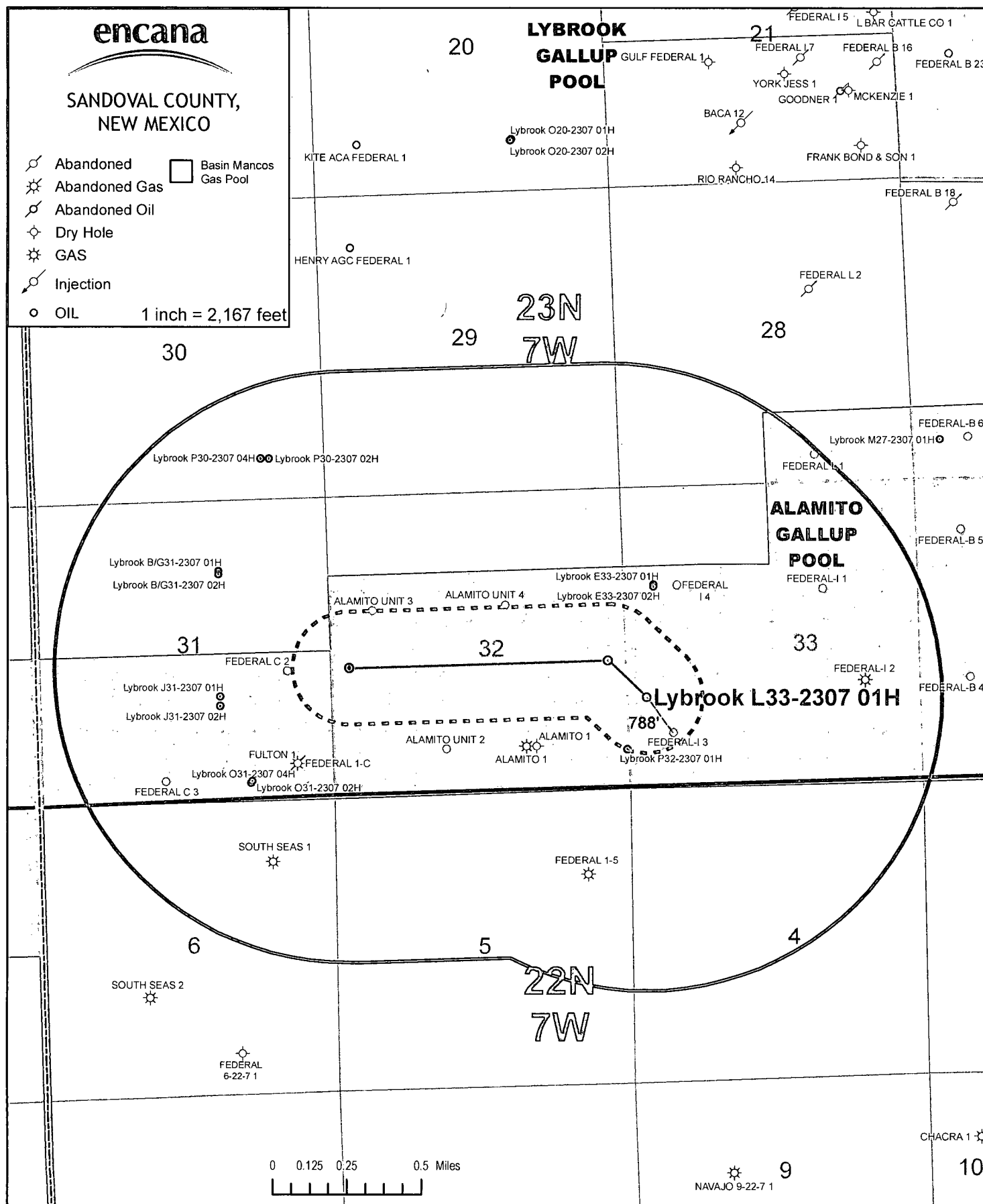
Go straight (Easterly) for 1.0 miles to fork in road;

Go right which is straight (Easterly) for 1.2 miles to new access on left-hand side of existing roadway which continues for 117' to staked Encana Lybrook L33-2307 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



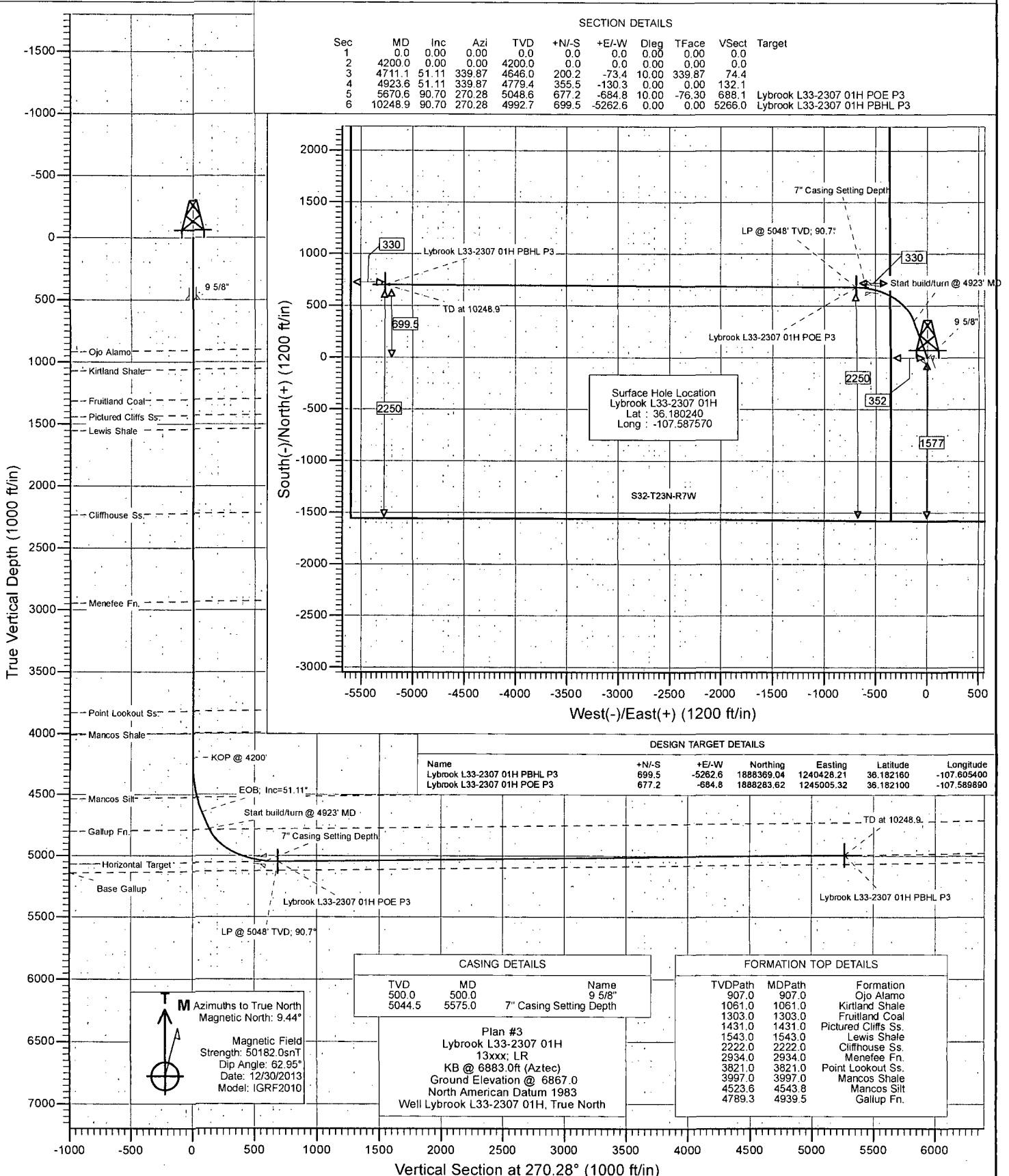


Project: Sandoval County, NM
 Site: Lybrook
 Well: Lybrook L33-2307 01H
 Wellbore: Hz
 Design: Plan #3



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4200.0	0.00	0.00	4200.0	0.0	0.0	0.00	0.00	0.0	
3	4711.1	51.11	339.87	4646.0	200.2	-73.4	10.00	339.87	74.4	
4	4923.6	51.11	339.87	4779.4	355.5	-130.3	0.00	0.00	132.1	
5	5670.6	90.70	270.28	5048.6	677.2	-684.8	10.00	-76.30	688.1	Lybrook L33-2307 01H POE P3
6	10248.9	90.70	270.28	4992.7	699.5	-5262.6	0.00	0.00	5266.0	Lybrook L33-2307 01H PBHL P3



Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook L33-2307 01H
Wellbore: Hz
Design: Plan #3

Local Co-ordinate Reference: Well Lybrook L33-2307 01H
TVD Reference: KB @ 6883.0ft (Aztec)
MD Reference: KB @ 6883.0ft (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	Latitude:	36.168210
From:	Lat/Long	Easting:	1,287,068.90 ft	Longitude:	-107.447150
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-0.71 °

Well	Lybrook L33-2307 01H					
Well Position	+N/-S	0.0 ft	Northing:	1,887,597.05 ft	Latitude:	36.180240
	+E/-W	0.0 ft	Easting:	1,245,680.68 ft	Longitude:	-107.587570
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,867.0 ft	

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/30/2013	9.44	62.95	50,182

Design	Plan #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	270.28

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	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,711.1	51.11	339.87	4,646.0	200.2	-73.4	10.00	10.00	0.00	339.87	
4,923.6	51.11	339.87	4,779.4	355.5	-130.3	0.00	0.00	0.00	0.00	
5,670.6	90.70	270.28	5,048.6	677.2	-684.8	10.00	5.30	-9.31	-76.30	Lybrook L33-2307 01H
10,248.9	90.70	270.28	4,992.7	699.5	-5,262.6	0.00	0.00	0.00	0.00	Lybrook L33-2307 01H

Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: Sandoval County, NM
 Site: Lybrook
 Well: Lybrook L33-2307 01H
 Wellbore: Hz
 Design: Plan #3

Local Co-ordinate Reference: Well Lybrook L33-2307 01H
 TVD Reference: KB @ 6883.0ft (Aztec)
 MD Reference: KB @ 6883.0ft (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	
907.0	0.00	0.00	907.0	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	
1,061.0	0.00	0.00	1,061.0	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	
1,303.0	0.00	0.00	1,303.0	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	
1,431.0	0.00	0.00	1,431.0	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	
1,543.0	0.00	0.00	1,543.0	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	
2,222.0	0.00	0.00	2,222.0	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	
2,934.0	0.00	0.00	2,934.0	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	
3,821.0	0.00	0.00	3,821.0	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	
3,997.0	0.00	0.00	3,997.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale
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	KOP @ 4200'

Planning Report

Database: USA EDM 5000 Multi Users DB
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 Project: Sandoval County, NM
 Site: Lybrook
 Well: Lybrook L33-2307 01H
 Wellbore: Hz
 Design: Plan #3

Local Co-ordinate Reference: Well Lybrook L33-2307-01H
 TVD Reference: KB @ 6883.0ft (Aztec)
 MD Reference: KB @ 6883.0ft (Aztec)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,300.0	10.00	339.87	4,299.5	8.2	-3.0	3.0	10.00	10.00	
4,400.0	20.00	339.87	4,396.0	32.4	-11.9	12.1	10.00	10.00	
4,500.0	30.00	339.87	4,486.5	72.1	-26.4	26.8	10.00	10.00	
4,543.8	34.38	339.87	4,523.6	94.0	-34.5	34.9	10.00	10.00	Mancos Silt
4,600.0	40.00	339.87	4,568.3	125.9	-46.1	46.8	10.00	10.00	
4,700.0	50.00	339.87	4,638.9	192.2	-70.4	71.4	10.00	10.00	
4,711.1	51.11	339.87	4,646.0	200.2	-73.4	74.4	10.00	10.00	EOB; Inc=51.11°
4,800.0	51.11	339.87	4,701.8	265.2	-97.2	98.5	0.00	0.00	
4,900.0	51.11	339.87	4,764.6	338.3	-124.0	125.7	0.00	0.00	
4,923.6	51.11	339.87	4,779.4	355.5	-130.3	132.1	0.00	0.00	Start build/turn @ 4923' MD
4,939.5	51.50	337.89	4,789.3	367.1	-134.8	136.6	10.00	2.47	Gallup Fn.
5,000.0	53.29	330.59	4,826.3	410.2	-155.6	157.6	10.00	2.96	
5,100.0	57.15	319.35	4,883.4	477.1	-202.8	205.1	10.00	3.86	
5,200.0	61.92	309.15	4,934.2	537.0	-264.5	267.2	10.00	4.77	
5,300.0	67.38	299.87	4,977.1	588.0	-339.0	341.8	10.00	5.46	
5,400.0	73.33	291.33	5,010.7	628.5	-423.8	426.9	10.00	5.95	
5,500.0	79.61	283.32	5,034.1	657.3	-516.5	519.7	10.00	6.28	
5,575.0	84.45	277.53	5,044.5	670.7	-589.5	592.8	10.00	6.45	7" Casing Setting Depth
5,600.0	86.08	275.63	5,046.6	673.6	-614.3	617.6	10.00	6.51	
5,670.6	90.70	270.28	5,048.6	677.2	-684.8	688.1	10.00	6.54	LP @ 5048' TVD; 90.7° - Lybrook L33-2307 01H
5,700.0	90.70	270.28	5,048.2	677.3	-714.1	717.4	0.00	0.00	
5,800.0	90.70	270.28	5,047.0	677.8	-814.1	817.4	0.00	0.00	
5,900.0	90.70	270.28	5,045.8	678.3	-914.1	917.4	0.00	0.00	
6,000.0	90.70	270.28	5,044.6	678.8	-1,014.1	1,017.4	0.00	0.00	
6,100.0	90.70	270.28	5,043.3	679.3	-1,114.1	1,117.4	0.00	0.00	
6,200.0	90.70	270.28	5,042.1	679.8	-1,214.1	1,217.4	0.00	0.00	
6,300.0	90.70	270.28	5,040.9	680.3	-1,314.1	1,317.4	0.00	0.00	
6,400.0	90.70	270.28	5,039.7	680.7	-1,414.1	1,417.4	0.00	0.00	
6,500.0	90.70	270.28	5,038.5	681.2	-1,514.1	1,517.4	0.00	0.00	
6,600.0	90.70	270.28	5,037.2	681.7	-1,614.0	1,617.4	0.00	0.00	
6,700.0	90.70	270.28	5,036.0	682.2	-1,714.0	1,717.3	0.00	0.00	
6,800.0	90.70	270.28	5,034.8	682.7	-1,814.0	1,817.3	0.00	0.00	
6,900.0	90.70	270.28	5,033.6	683.2	-1,914.0	1,917.3	0.00	0.00	
7,000.0	90.70	270.28	5,032.3	683.7	-2,014.0	2,017.3	0.00	0.00	
7,100.0	90.70	270.28	5,031.1	684.2	-2,114.0	2,117.3	0.00	0.00	
7,200.0	90.70	270.28	5,029.9	684.6	-2,214.0	2,217.3	0.00	0.00	
7,300.0	90.70	270.28	5,028.7	685.1	-2,314.0	2,317.3	0.00	0.00	
7,400.0	90.70	270.28	5,027.5	685.6	-2,414.0	2,417.3	0.00	0.00	
7,500.0	90.70	270.28	5,026.2	686.1	-2,514.0	2,517.3	0.00	0.00	
7,600.0	90.70	270.28	5,025.0	686.6	-2,614.0	2,617.3	0.00	0.00	
7,700.0	90.70	270.28	5,023.8	687.1	-2,713.9	2,717.3	0.00	0.00	
7,800.0	90.70	270.28	5,022.6	687.6	-2,813.9	2,817.3	0.00	0.00	
7,900.0	90.70	270.28	5,021.4	688.1	-2,913.9	2,917.3	0.00	0.00	
8,000.0	90.70	270.28	5,020.1	688.5	-3,013.9	3,017.2	0.00	0.00	
8,100.0	90.70	270.28	5,018.9	689.0	-3,113.9	3,117.2	0.00	0.00	
8,200.0	90.70	270.28	5,017.7	689.5	-3,213.9	3,217.2	0.00	0.00	
8,300.0	90.70	270.28	5,016.5	690.0	-3,313.9	3,317.2	0.00	0.00	
8,400.0	90.70	270.28	5,015.2	690.5	-3,413.9	3,417.2	0.00	0.00	
8,500.0	90.70	270.28	5,014.0	691.0	-3,513.9	3,517.2	0.00	0.00	
8,600.0	90.70	270.28	5,012.8	691.5	-3,613.9	3,617.2	0.00	0.00	
8,700.0	90.70	270.28	5,011.6	692.0	-3,713.9	3,717.2	0.00	0.00	
8,800.0	90.70	270.28	5,010.4	692.4	-3,813.9	3,817.2	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 L33-2307 01H
Wellbore: Hz
Design: Plan #3

Local Co-ordinate Reference: Well Lybrook L33-2307 01H
TVD Reference: KB @ 6883.0ft (Aztec)
MD Reference: KB @ 6883.0ft (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
8,900.0	90.70	270.28	5,009.1	692.9	-3,913.8	3,917.2	0.00	0.00	
9,000.0	90.70	270.28	5,007.9	693.4	-4,013.8	4,017.2	0.00	0.00	
9,100.0	90.70	270.28	5,006.7	693.9	-4,113.8	4,117.2	0.00	0.00	
9,200.0	90.70	270.28	5,005.5	694.4	-4,213.8	4,217.2	0.00	0.00	
9,300.0	90.70	270.28	5,004.3	694.9	-4,313.8	4,317.2	0.00	0.00	
9,400.0	90.70	270.28	5,003.0	695.4	-4,413.8	4,417.1	0.00	0.00	
9,500.0	90.70	270.28	5,001.8	695.9	-4,513.8	4,517.1	0.00	0.00	
9,600.0	90.70	270.28	5,000.6	696.3	-4,613.8	4,617.1	0.00	0.00	
9,700.0	90.70	270.28	4,999.4	696.8	-4,713.8	4,717.1	0.00	0.00	
9,800.0	90.70	270.28	4,998.1	697.3	-4,813.8	4,817.1	0.00	0.00	
9,900.0	90.70	270.28	4,996.9	697.8	-4,913.8	4,917.1	0.00	0.00	
10,000.0	90.70	270.28	4,995.7	698.3	-5,013.7	5,017.1	0.00	0.00	
10,100.0	90.70	270.28	4,994.5	698.8	-5,113.7	5,117.1	0.00	0.00	
10,200.0	90.70	270.28	4,993.3	699.3	-5,213.7	5,217.1	0.00	0.00	
10,248.9	90.70	270.28	4,992.7	699.5	-5,262.6	5,266.0	0.00	0.00	TD at 10248.9 - Lybrook L33-2307 01H PBHL F

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Lybrook L33-2307 01H F - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	5,048.6	677.2	-684.8	1,888,283.62	1,245,005.32	36.182100	-107.589890
Lybrook L33-2307 01H F - plan hits target center - Point	0.00	0.00	4,992.7	699.5	-5,262.6	1,888,369.04	1,240,428.21	36.182160	-107.605400

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
5,575.0	5,044.5	7" Casing Setting Depth	0.000	0.000
500.0	500.0	9 5/8"	9.625	9.625

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook L33-2307 01H
Wellbore: Hz
Design: Plan #3

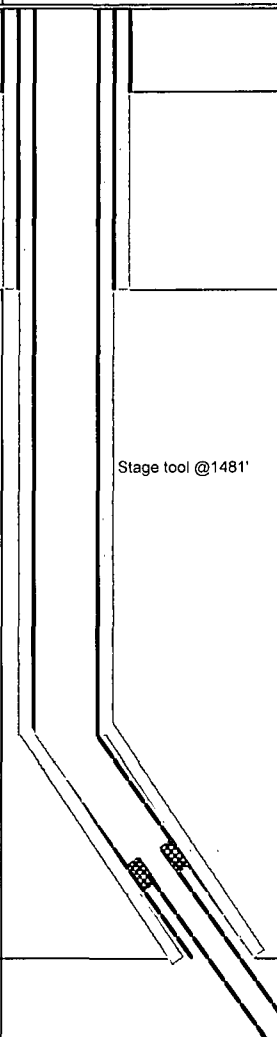
Local Co-ordinate Reference: Well Lybrook L33-2307 01H
TVD Reference: KB @ 6883.0ft (Aztec)
MD Reference: KB @ 6883.0ft (Aztec)
North Reference: True
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
907.0	907.0	Ojo Alamo		-0.70	270.28
1,061.0	1,061.0	Kirtland Shale		-0.70	270.28
1,303.0	1,303.0	Fruitland Coal		-0.70	270.28
1,431.0	1,431.0	Pictured Cliffs Ss.		-0.70	270.28
1,543.0	1,543.0	Lewis Shale		-0.70	270.28
2,222.0	2,222.0	Cliffhouse Ss.		-0.70	270.28
2,934.0	2,934.0	Menefee Fn.		-0.70	270.28
3,821.0	3,821.0	Point Lookout Ss.		-0.70	270.28
3,997.0	3,997.0	Mancos Shale		-0.70	270.28
4,543.8	4,524.0	Mancos Silt		-0.70	270.28
4,939.5	4,791.0	Gallup Fn.		-0.70	270.28

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
4,200.0	4,200.0	0.0	0.0	KOP @ 4200'
4,711.1	4,646.0	200.2	-73.4	EOB, Inc=51.11°
4,923.6	4,779.4	355.5	-130.3	Start build/turn @ 4923' MD
5,670.6	5,048.6	677.2	-684.8	LP @ 5048' TVD; 90.7°
10,248.9	4,992.7	699.5	-5,262.6	TD at 10248.9

LOC: Sec 33-T23N-R7W County: Sandoval WELL: Lybrook L33-2307 01H			Encana Natural Gas WELL SUMMARY					ENG: 1/16/14 RIG: GLE: 6867 RKBE: 6883	
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					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	907 1061 1303 1431 1543 2222 2934	500 500		8 3/4	7" 26ppf J55 LTC TOC @ surface 30% OH excess: 572sksTotal. Stage 1 Lead: 263sks Stage 1 Tail: 180sks. Stage 2 Lead: 129sks	Fresh Wtr 8.5-8.8	Vertical <1°
	Mud logger onsite	Point Lookout Ss Mancos Sh KICK OFF PT Mancos Silt Gallup Top 7" csg	3821 3997 4200 4524 4791 5045	5575					
Surveys every 500' Gyro at CP MWD Gamma Directional	No OH Logs	horz target Base Gallup	5049 5131	5671		6 1/8	200' overlap at liner top 4578' Lateral	8.6-9.0 OBM Switch to OBM 8.6-9.0	.25deg updip 4993'TVD TD = 10249' 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 4200' , 8 3/4" hole size,
- 5) PU directional tools and start curve at 10deg/100' build rate
- 6) Drill to casing point of 5575' MD
- 7) R&C 7" casing, circ cmt to surface, switch to OBM
- 8) Land at 90deg, drill 4578' lateral to 10249', run 4 1/2" liner with external swellable csg packers