

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

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

CONFIDENTIAL

☐ AMENDED REPORT

☒ As-Drilled

OIL CONS. DIV DIST. 3

OCT 21 2014

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-043-21195	² Pool Code 97232	³ Pool Name Basin Mancos
⁴ Property Code 40405	⁵ Property Name LYBROOK E33-2307	⁶ Well Number 01H
⁷ OGRI No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.	⁹ Elevation 6853'

¹⁰ Surface Location

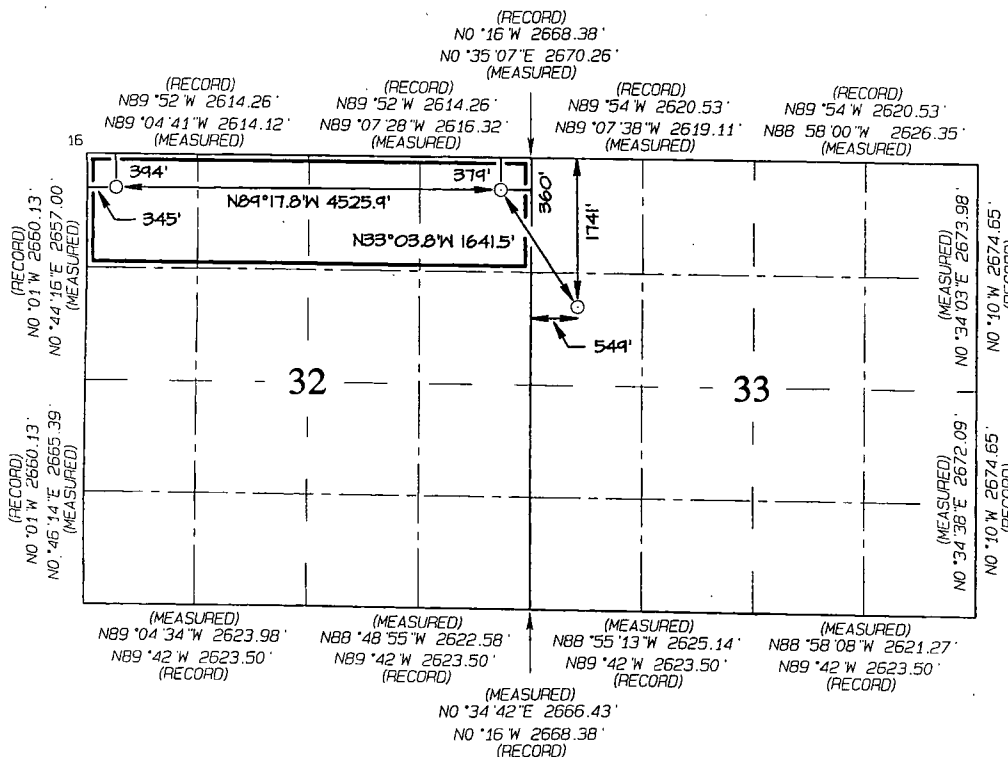
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	33	23N	7W		1741	NORTH	549	WEST	SANDOVAL

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		394	NORTH	345	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
394' FNL 345' FWL
SECTION 32, T23N, R7W
LAT: 36.18950°N
LONG: 107.60475°W
DATUM: NAD1927

LAT: 36.18951°N
LONG: 107.60536°W
DATUM: NAD1983

POINT-OF-ENTRY
379' FNL 360' FEL
SECTION 32, T23N, R7W
LAT: 36.18952°N
LONG: 107.58942°W
DATUM: NAD1927

LAT: 36.18953°N
LONG: 107.59002°W
DATUM: NAD1983

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

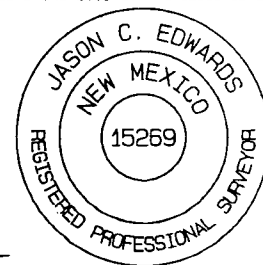
LAT: 36.18579°N
LONG: 107.58693°W
DATUM: NAD1983

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: *Jessica Gregg* Date: 10/20/14
Printed Name: Jessica Gregg
E-mail Address: Jessica.Gregg@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 Revised: OCTOBER 20, 2014
Date of Survey: AUGUST 2, 2013
Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269

AV

14

DEVIATION SURVEYS
Lybrook E33-2307 01H
30-043-21195

CONFIDENTIAL

MD (Feet)	Inclination (Degree)
790'	0.50
1106'	1.00
1422'	0.60
1738'	0.60
2054'	0.10
2370'	1.10
2716'	8.30

OIL CONS. DIV DIST. 3

OCT 21 2014

OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Cristi Bauer

Cristi Bauer, Operations Technician

10/20/14

Date

ACKNOWLEDGMENT

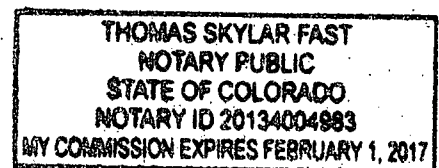
State of Colorado
City and County of Denver

This instrument was acknowledged before me on this 20th day of October, 2014 by Cristi Bauer as Attorney in Fact of Encana Oil & Gas (USA) Inc., on behalf of said corporation.

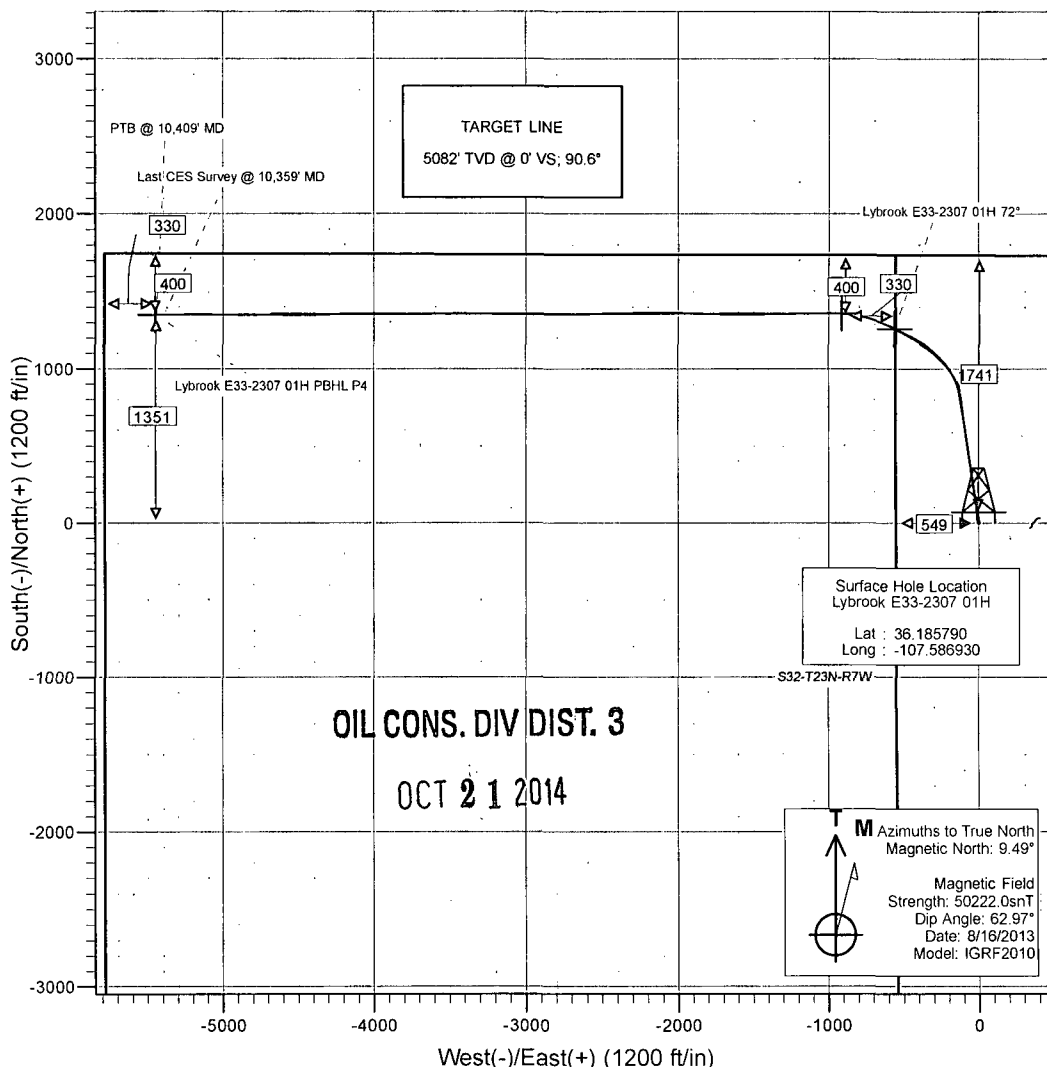
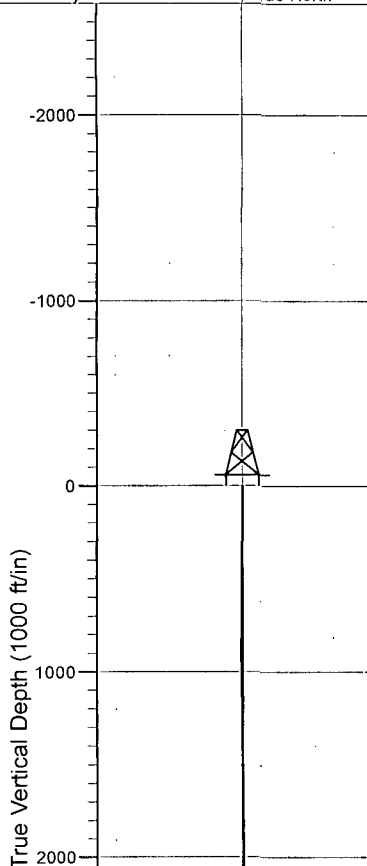
In witness whereof, I hereunto set my hand and official seal.

Notary Public: *Thomas Skylar Fast*

My Commission Expires: 2/1/2017

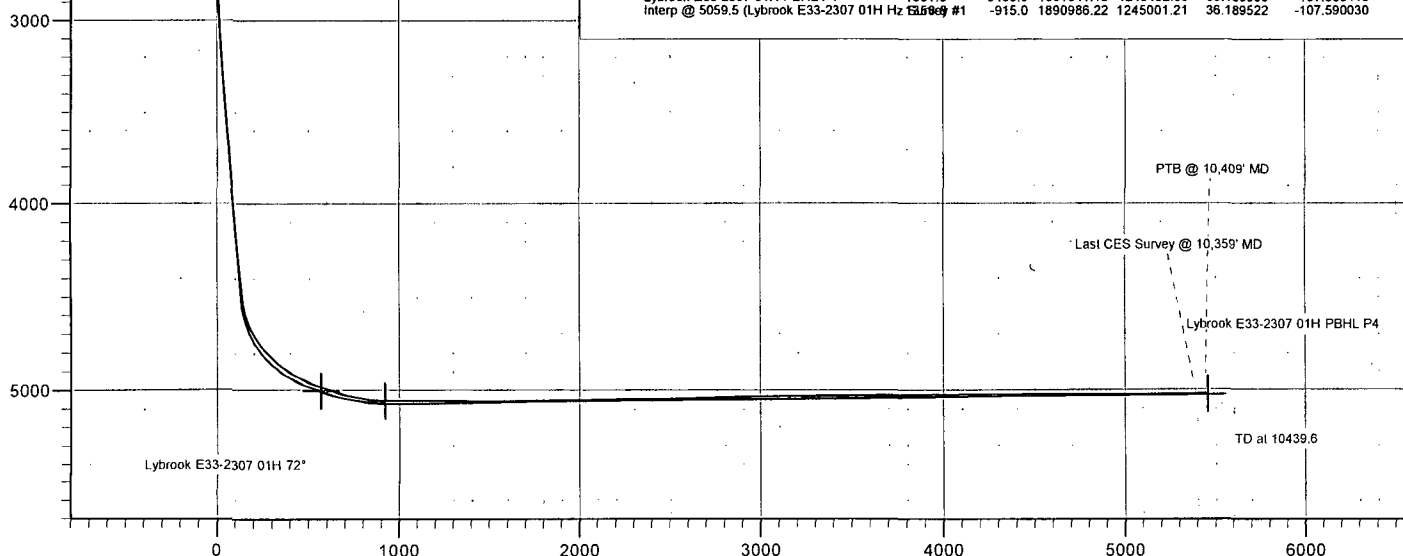


FINAL
Lybrook E33-2307 01H
13xxx; LR
KB @ 6869.0ft (Aztec)
Ground Elevation @ 6853.0
North American Datum 1983
Well Lybrook E33-2307 01H, True North



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Lybrook E33-2307 01H 72°	1258.6	-561.9	1890881.09	1245352.92	36.189247	-107.586834
Lybrook E33-2307 01H PBHL P4	1351.3	-5453.9	1891041.16	1240482.59	36.189500	-107.605410
Interp @ 5059.5 (Lybrook E33-2307 01H Hz 13xxx) #1	-915.0	1890986.22	1245001.21	36.189522	-107.590030	



Vertical Section at 270.14° (1000 ft/in)

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S33-T23N-R7W
Well: Lybrook E33-2307 01H
Wellbore: Hz
Design: SURVEYS

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
Database: USA EDM 5000 Multi Users DB

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	S33-T23N-R7W			
Site Position:		Northing:	1,889,614.89 ft	Latitude: 36.185790
From:	Lat/Long	Easting:	1,245,897.40 ft	Longitude: -107.586930
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence: -0.79 °

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
			Ground Level:	6,853.0 ft

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

Design	SURVEYS			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	270.14

Survey Program	Date 9/1/2014			
From	To	Survey (Wellbore)	Tool Name	Description
(ft)	(ft)			
600.0	10,409.0	Survey #1 (Hz)	Geolink MWD	Geolink MWD

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Formations /
Depth	(°)	(°)	Depth	(ft)	(ft)	Section	Rate	Rate	Comments
(ft)			(ft)			(ft)	(°/100ft)	(°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.80	77.10	600.0	0.9	4.1	-4.1	0.13	0.13	
664.0	0.50	88.50	664.0	1.0	4.8	-4.8	0.51	-0.47	
727.0	0.40	99.40	727.0	1.0	5.3	-5.3	0.21	-0.16	
790.0	0.50	121.30	790.0	0.8	5.7	-5.7	0.31	0.16	
854.0	0.50	111.20	854.0	0.6	6.2	-6.2	0.14	0.00	
917.0	0.30	252.00	917.0	0.4	6.3	-6.3	1.20	-0.32	
980.0	0.70	262.40	980.0	0.3	5.8	-5.8	0.65	0.63	
1,043.0	0.70	246.70	1,043.0	0.1	5.1	-5.1	0.30	0.00	
1,106.0	1.00	244.90	1,106.0	-0.3	4.2	-4.2	0.48	0.48	
1,169.0	0.60	259.10	1,168.9	-0.5	3.4	-3.4	0.70	-0.63	
1,233.0	0.70	282.80	1,232.9	-0.5	2.7	-2.7	0.44	0.16	
1,296.0	0.60	301.70	1,295.9	-0.3	2.0	-2.0	0.37	-0.16	

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S33-T23N-R7W
Well: Lybrook E33-2307 01H
Wellbore: Hz
Design: SURVEYS

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
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
1,359.0	0.40	272.70	1,358.9	-0.1	1.5	-1.5	0.50	-0.32	
1,422.0	0.60	294.30	1,421.9	0.1	1.0	-1.0	0.43	0.32	
1,485.0	0.70	293.40	1,484.9	0.4	0.4	-0.4	0.16	0.16	
1,549.0	0.60	293.90	1,548.9	0.6	-0.3	0.3	0.16	-0.16	
1,612.0	0.50	289.40	1,611.9	0.9	-0.9	0.9	0.17	-0.16	
1,675.0	0.60	282.50	1,674.9	1.0	-1.5	1.5	0.19	0.16	
1,738.0	0.60	294.10	1,737.9	1.2	-2.1	2.1	0.19	0.00	
1,801.0	0.80	267.90	1,800.9	1.4	-2.8	2.8	0.59	0.32	
1,865.0	0.40	261.10	1,864.9	1.3	-3.5	3.5	0.63	-0.62	
1,928.0	0.20	255.90	1,927.9	1.2	-3.8	3.8	0.32	-0.32	
1,991.0	0.30	253.10	1,990.9	1.2	-4.1	4.1	0.16	0.16	
2,054.0	0.10	245.00	2,053.9	1.1	-4.3	4.3	0.32	-0.32	
2,118.0	0.20	232.00	2,117.9	1.0	-4.4	4.4	0.16	0.16	
2,181.0	0.50	240.30	2,180.9	0.8	-4.7	4.7	0.48	0.48	
2,244.0	0.50	240.30	2,243.9	0.5	-5.2	5.2	0.00	0.00	
2,307.0	0.40	229.40	2,306.9	0.3	-5.6	5.6	0.21	-0.16	
2,370.0	1.10	309.20	2,369.9	0.5	-6.3	6.3	1.75	1.11	
2,434.0	2.30	335.40	2,433.9	2.0	-7.3	7.3	2.19	1.87	
2,497.0	4.00	352.30	2,496.8	5.4	-8.1	8.1	3.05	2.70	
2,591.0	5.40	353.60	2,590.5	13.0	-9.0	9.1	1.49	1.49	
2,654.0	6.50	1.90	2,653.1	19.5	-9.2	9.3	2.21	1.75	
2,716.0	8.30	3.00	2,714.6	27.5	-8.9	9.0	2.91	2.90	
2,777.0	10.30	1.70	2,774.8	37.4	-8.5	8.6	3.30	3.28	
2,839.0	12.00	357.00	2,835.6	49.3	-8.7	8.8	3.11	2.74	
2,900.0	13.10	352.30	2,895.2	62.5	-9.9	10.1	2.46	1.80	
2,962.0	14.60	351.60	2,955.4	77.2	-12.0	12.2	2.43	2.42	
3,024.0	15.90	351.40	3,015.2	93.3	-14.4	14.7	2.10	2.10	
3,085.0	17.80	352.00	3,073.6	110.8	-17.0	17.2	3.13	3.11	
3,147.0	19.90	351.60	3,132.2	130.7	-19.8	20.2	3.39	3.39	
3,208.0	21.40	352.70	3,189.3	152.0	-22.8	23.1	2.54	2.46	
3,270.0	23.10	352.70	3,246.7	175.3	-25.7	26.2	2.74	2.74	
3,331.0	25.30	351.40	3,302.3	200.0	-29.2	29.7	3.71	3.61	
3,393.0	27.10	350.50	3,358.0	227.0	-33.5	34.1	2.97	2.90	
3,454.0	28.40	350.70	3,411.9	255.1	-38.2	38.8	2.14	2.13	
3,516.0	28.20	349.80	3,466.5	284.0	-43.1	43.8	0.76	-0.32	
3,577.0	28.30	352.10	3,520.3	312.5	-47.7	48.4	1.79	0.16	
3,639.0	27.20	351.80	3,575.1	341.1	-51.7	52.6	1.79	-1.77	
3,701.0	27.80	352.70	3,630.1	369.5	-55.6	56.5	1.18	0.97	
3,762.0	28.20	352.30	3,684.0	397.9	-59.3	60.3	0.72	0.66	
3,823.0	29.20	352.40	3,737.5	426.9	-63.2	64.3	1.64	1.64	
3,885.0	27.90	351.40	3,791.9	456.3	-67.4	68.5	2.23	-2.10	
3,946.0	28.70	350.60	3,845.7	484.8	-71.9	73.1	1.45	1.31	
4,008.0	29.90	349.80	3,899.7	514.7	-77.1	78.3	2.04	1.94	
4,069.0	29.80	350.70	3,952.6	544.6	-82.2	83.6	0.75	-0.16	
4,133.0	29.30	350.60	4,008.3	575.8	-87.4	88.8	0.79	-0.78	
4,196.0	28.30	350.90	4,063.5	605.7	-92.2	93.7	1.60	-1.59	
4,259.0	28.30	352.20	4,119.0	635.3	-96.6	98.2	0.98	0.00	
4,322.0	28.00	352.20	4,174.5	664.7	-100.7	102.3	0.48	-0.48	
4,386.0	27.00	350.30	4,231.3	693.9	-105.1	106.8	2.08	-1.56	
4,449.0	26.80	348.30	4,287.5	721.9	-110.4	112.2	1.47	-0.32	
4,512.0	26.90	349.10	4,343.7	749.8	-116.0	117.8	0.60	0.16	
4,544.0	27.40	349.60	4,372.2	764.2	-118.7	120.6	1.72	1.56	
4,575.0	28.30	349.70	4,399.6	778.4	-121.3	123.2	2.91	2.90	

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S33-T23N-R7W
Well: Lybrook E33-2307 01H
Wellbore: Hz
Design: SURVEYS

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
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
4,607.0	29.50	349.90	4,427.6	793.7	-124.0	126.0	3.76	3.75	
4,639.0	31.20	349.90	4,455.2	809.6	-126.9	128.9	5.31	5.31	
4,670.0	31.90	350.10	4,481.6	825.5	-129.7	131.7	2.28	2.26	
4,702.0	33.30	349.10	4,508.6	842.5	-132.8	134.9	4.69	4.37	
4,733.0	36.00	347.90	4,534.1	859.8	-136.3	138.4	8.98	8.71	
4,765.0	38.10	345.50	4,559.6	878.5	-140.8	142.9	7.97	6.56	
4,797.0	39.20	342.10	4,584.6	897.7	-146.4	148.5	7.47	3.44	
4,828.0	40.20	338.70	4,608.5	916.4	-153.0	155.2	7.71	3.22	
4,860.0	41.40	335.10	4,632.7	935.6	-161.2	163.5	8.25	3.75	
4,891.0	43.10	331.90	4,655.6	954.2	-170.5	172.8	8.84	5.48	
4,923.0	43.90	328.60	4,678.9	973.3	-181.4	183.8	7.53	2.50	
4,955.0	45.40	326.20	4,701.6	992.3	-193.6	196.0	7.05	4.69	
4,986.0	46.70	324.00	4,723.1	1,010.6	-206.3	208.8	6.61	4.19	
5,018.0	48.30	321.90	4,744.8	1,029.4	-220.6	223.1	6.96	5.00	
5,050.0	50.10	319.70	4,765.7	1,048.2	-235.9	238.4	7.66	5.62	
5,081.0	51.60	317.10	4,785.2	1,066.1	-251.8	254.4	8.11	4.84	
5,113.0	52.80	314.30	4,804.9	1,084.2	-269.5	272.1	7.86	3.75	
5,144.0	53.40	310.80	4,823.5	1,101.0	-287.8	290.4	9.23	1.94	
5,176.0	54.90	308.90	4,842.2	1,117.6	-307.7	310.4	6.72	4.69	
5,208.0	56.40	306.30	4,860.3	1,133.7	-328.6	331.4	8.18	4.69	
5,239.0	58.30	304.80	4,877.0	1,148.9	-349.8	352.6	7.36	6.13	
5,271.0	60.20	302.70	4,893.4	1,164.2	-372.7	375.5	8.19	5.94	
5,302.0	61.90	301.60	4,908.4	1,178.6	-395.7	398.5	6.30	5.48	
5,334.0	63.50	300.10	4,923.1	1,193.2	-420.1	423.0	6.51	5.00	
5,366.0	65.20	298.20	4,936.9	1,207.2	-445.3	448.2	7.54	5.31	
5,397.0	67.50	296.40	4,949.3	1,220.2	-470.5	473.5	9.13	7.42	
5,429.0	69.70	296.10	4,961.0	1,233.4	-497.2	500.2	6.93	6.87	
5,460.0	70.30	295.70	4,971.6	1,246.1	-523.4	526.5	2.28	1.94	
5,492.0	71.70	295.60	4,982.0	1,259.2	-550.7	553.8	4.39	4.38	
5,524.0	73.20	294.90	4,991.7	1,272.2	-578.3	581.4	5.13	4.69	
5,555.0	73.80	292.60	5,000.5	1,284.2	-605.5	608.6	7.37	1.94	
5,587.0	74.30	290.90	5,009.3	1,295.6	-634.1	637.2	5.34	1.56	
5,619.0	75.20	289.20	5,017.7	1,306.2	-663.1	666.3	5.85	2.81	
5,650.0	76.50	288.10	5,025.3	1,315.8	-691.5	694.8	5.42	4.19	
5,682.0	77.90	287.00	5,032.4	1,325.2	-721.3	724.5	5.51	4.37	
5,718.0	79.10	284.60	5,039.5	1,334.8	-755.2	758.5	7.33	3.33	
5,775.0	80.30	280.20	5,049.7	1,346.9	-810.0	813.3	7.88	2.11	
5,805.0	83.00	277.90	5,054.1	1,351.5	-839.3	842.6	11.77	9.00	
5,836.0	85.30	276.10	5,057.3	1,355.3	-869.9	873.2	9.40	7.42	
5,867.0	88.00	273.90	5,059.1	1,358.0	-900.7	904.1	11.23	8.71	
5,898.0	88.80	272.20	5,059.9	1,359.6	-931.7	935.0	6.06	2.58	
5,961.0	90.90	269.70	5,060.1	1,360.7	-994.7	998.0	5.18	3.33	
6,024.0	90.30	268.80	5,059.4	1,359.8	-1,057.7	1,061.0	1.72	-0.95	
6,087.0	89.50	269.20	5,059.5	1,358.7	-1,120.7	1,124.0	1.42	-1.27	
6,150.0	90.80	270.20	5,059.4	1,358.4	-1,183.7	1,187.0	2.60	2.06	
6,214.0	89.70	269.70	5,059.1	1,358.4	-1,247.7	1,251.0	1.89	-1.72	
6,277.0	89.90	269.80	5,059.3	1,358.1	-1,310.7	1,314.0	0.35	0.32	
6,340.0	87.50	268.00	5,060.8	1,356.9	-1,373.6	1,376.9	4.76	-3.81	
6,403.0	89.20	268.40	5,062.6	1,354.9	-1,436.6	1,439.9	2.77	2.70	
6,467.0	89.80	270.10	5,063.1	1,354.1	-1,500.5	1,503.8	2.82	0.94	
6,530.0	90.90	270.30	5,062.7	1,354.3	-1,563.5	1,566.8	1.77	1.75	
6,593.0	90.90	270.40	5,061.8	1,354.7	-1,626.5	1,629.8	0.16	0.00	
6,656.0	91.50	270.80	5,060.4	1,355.3	-1,689.5	1,692.8	1.14	0.95	

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S33-T23N-R7W
Well: Lybrook E33-2307 01H
Wellbore: Hz
Design: SURVEYS

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
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
6,719.0	91.30	271.80	5,058.9	1,356.7	-1,752.5	1,755.8	1.62	-0.32	
6,783.0	91.00	272.30	5,057.6	1,359.0	-1,816.4	1,819.7	0.91	-0.47	
6,846.0	91.50	272.20	5,056.2	1,361.5	-1,879.4	1,882.7	0.81	0.79	
6,909.0	90.30	271.80	5,055.2	1,363.7	-1,942.3	1,945.6	2.01	-1.90	
6,972.0	90.50	271.10	5,054.8	1,365.3	-2,005.3	2,008.6	1.16	0.32	
7,035.0	91.20	271.10	5,053.9	1,366.5	-2,068.3	2,071.6	1.11	1.11	
7,099.0	90.60	269.30	5,052.9	1,366.7	-2,132.3	2,135.6	2.96	-0.94	
7,162.0	91.10	268.80	5,051.9	1,365.7	-2,195.2	2,198.6	1.12	0.79	
7,225.0	91.00	268.60	5,050.8	1,364.3	-2,258.2	2,261.5	0.35	-0.16	
7,288.0	89.10	268.30	5,050.7	1,362.6	-2,321.2	2,324.5	3.05	-3.02	
7,351.0	90.40	269.30	5,051.0	1,361.2	-2,384.2	2,387.5	2.60	2.06	
7,415.0	90.80	269.10	5,050.3	1,360.3	-2,448.2	2,451.5	0.70	0.62	
7,478.0	91.40	268.60	5,049.1	1,359.1	-2,511.1	2,514.4	1.24	0.95	
7,541.0	91.20	269.40	5,047.7	1,358.0	-2,574.1	2,577.4	1.31	-0.32	
7,605.0	89.60	268.80	5,047.2	1,357.0	-2,638.1	2,641.4	2.67	-2.50	
7,668.0	91.00	269.40	5,046.9	1,356.0	-2,701.1	2,704.4	2.42	2.22	
7,731.0	91.50	269.10	5,045.5	1,355.2	-2,764.1	2,767.4	0.93	0.79	
7,794.0	91.30	270.60	5,044.0	1,355.0	-2,827.0	2,830.3	2.40	-0.32	
7,858.0	91.80	270.40	5,042.3	1,355.6	-2,891.0	2,894.3	0.84	0.78	
7,921.0	91.60	269.40	5,040.4	1,355.4	-2,954.0	2,957.3	1.62	-0.32	
7,984.0	91.00	270.10	5,039.0	1,355.2	-3,017.0	3,020.3	1.46	-0.95	
8,047.0	89.90	270.40	5,038.5	1,355.4	-3,080.0	3,083.3	1.81	-1.75	
8,110.0	90.60	270.00	5,038.2	1,355.7	-3,143.0	3,146.3	1.28	1.11	
8,174.0	90.40	270.90	5,037.6	1,356.2	-3,207.0	3,210.3	1.44	-0.31	
8,237.0	90.00	271.50	5,037.4	1,357.5	-3,269.9	3,273.2	1.14	-0.63	
8,300.0	90.80	271.40	5,037.0	1,359.1	-3,332.9	3,336.2	1.28	1.27	
8,363.0	90.00	270.30	5,036.5	1,360.0	-3,395.9	3,399.2	2.16	-1.27	
8,426.0	90.80	269.70	5,036.1	1,360.0	-3,458.9	3,462.2	1.59	1.27	
8,490.0	90.30	270.10	5,035.5	1,359.9	-3,522.9	3,526.2	1.00	-0.78	
8,553.0	91.00	270.00	5,034.8	1,360.0	-3,585.9	3,589.2	1.12	1.11	
8,616.0	90.50	269.10	5,033.9	1,359.5	-3,648.9	3,652.2	1.63	-0.79	
8,679.0	91.10	268.80	5,033.1	1,358.3	-3,711.9	3,715.2	1.06	0.95	
8,742.0	90.00	269.90	5,032.5	1,357.6	-3,774.9	3,778.2	2.47	-1.75	
8,806.0	90.70	269.90	5,032.1	1,357.5	-3,838.9	3,842.2	1.09	1.09	
8,869.0	90.20	269.60	5,031.6	1,357.2	-3,901.9	3,905.2	0.93	-0.79	
8,932.0	90.80	269.40	5,031.0	1,356.7	-3,964.9	3,968.2	1.00	0.95	
8,995.0	90.10	270.30	5,030.5	1,356.5	-4,027.9	4,031.2	1.81	-1.11	
9,058.0	90.60	270.00	5,030.1	1,356.7	-4,090.9	4,094.2	0.93	0.79	
9,122.0	91.10	270.00	5,029.2	1,356.7	-4,154.8	4,158.1	0.78	0.78	
9,185.0	90.80	269.10	5,028.2	1,356.2	-4,217.8	4,221.1	1.51	-0.48	
9,248.0	90.70	269.00	5,027.3	1,355.1	-4,280.8	4,284.1	0.22	-0.16	
9,311.0	90.10	267.10	5,026.9	1,353.0	-4,343.8	4,347.1	3.16	-0.95	
9,375.0	90.40	268.90	5,026.6	1,350.7	-4,407.7	4,411.0	2.85	0.47	
9,438.0	90.80	269.30	5,025.9	1,349.8	-4,470.7	4,474.0	0.90	0.63	
9,501.0	91.10	268.30	5,024.9	1,348.4	-4,533.7	4,537.0	1.66	0.48	
9,564.0	90.40	270.50	5,024.1	1,347.8	-4,596.7	4,600.0	3.66	-1.11	
9,628.0	90.40	270.50	5,023.6	1,348.3	-4,660.7	4,664.0	0.00	0.00	
9,691.0	89.00	270.60	5,024.0	1,348.9	-4,723.7	4,727.0	2.23	-2.22	
9,754.0	89.80	270.80	5,024.6	1,349.7	-4,786.7	4,790.0	1.31	1.27	
9,818.0	90.70	270.80	5,024.3	1,350.6	-4,850.7	4,853.9	1.41	1.41	
9,881.0	90.10	270.90	5,023.9	1,351.5	-4,913.7	4,916.9	0.97	-0.95	
9,944.0	91.10	270.60	5,023.2	1,352.4	-4,976.6	4,979.9	1.66	1.59	
10,007.0	89.70	270.80	5,022.8	1,353.1	-5,039.6	5,042.9	2.24	-2.22	

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S33-T23N-R7W
Well: Lybrook E33-2307 01H
Wellbore: Hz
Design: SURVEYS

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
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
10,071.0	90.30	270.50	5,022.8	1,353.9	-5,103.6	5,106.9	1.05	0.94	
10,134.0	91.20	270.00	5,022.0	1,354.1	-5,166.6	5,169.9	1.63	1.43	
10,197.0	90.50	270.00	5,021.0	1,354.1	-5,229.6	5,232.9	1.11	-1.11	
10,260.0	89.30	269.70	5,021.2	1,354.0	-5,292.6	5,295.9	1.96	-1.90	
10,324.0	90.60	269.30	5,021.2	1,353.4	-5,356.6	5,359.9	2.13	2.03	
10,359.0	91.20	269.00	5,020.7	1,352.9	-5,391.6	5,394.9	1.92	1.71	Last CES Survey @ 10,359' MD
10,409.0	91.20	269.00	5,019.6	1,352.0	-5,441.6	5,444.9	0.00	0.00	PTB @ 10,409' MD

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 - survey misses target center by 14.4ft at 10409.0ft MD (5019.6 TVD, 1352.0 N, -5441.6 E) - 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 - survey misses target center by 13.4ft at 10409.0ft MD (5019.6 TVD, 1352.0 N, -5441.6 E) - Point	0.00	0.00	5,024.9	1,351.3	-5,453.9	1,891,041.16	1,240,462.59	36.189500	-107.605410
Lybrook E33-2307 01H f - survey misses target center by 20.9ft at 5508.7ft MD (4987.2 TVD, 1266.1 N, -565.1 E) - Point	0.00	0.00	5,006.4	1,258.6	-561.9	1,890,881.09	1,245,352.92	36.189247	-107.588834
Lybrook E33-2307 01H f - survey misses target center by 29.1ft at 10409.0ft MD (5019.6 TVD, 1352.0 N, -5441.6 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 - survey misses target center by 22.1ft at 5848.0ft MD (5058.1 TVD, 1356.5 N, -881.8 E) - Point	0.00	0.00	5,072.7	1,339.8	-882.4	1,890,966.75	1,245,033.52	36.189470	-107.589920
Lybrook E33-2307 01H f - survey misses target center by 17.1ft at 5847.4ft MD (5058.1 TVD, 1356.4 N, -881.2 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 - survey misses target center by 19.5ft at 5847.7ft MD (5058.1 TVD, 1356.4 N, -881.6 E) - 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
Interp @ 5059.5 (Lybroo - survey hits target center - Point	0.00	0.00	5,059.5	1,358.8	-915.0	1,890,986.22	1,245,001.21	36.189522	-107.590030

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
10,359.0	5,020.7	1,352.9	-5,391.6	Last CES Survey @ 10,359' MD
10,409.0	5,019.6	1,352.0	-5,441.6	PTB @ 10,409' MD

Checked By: _____ Approved By: _____ Date: _____

EnCana Oil & Gas (USA) Inc

Sandoval County, NM

S33-T23N-R7W

Lybrook E33-2307 01H

Hz

Design: FINAL

Survey Report - Geographic

15 October, 2014

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lybrook E33-2307 01H
Project:	Sandoval County, NM	TVD Reference:	KB @ 6869.0ft (Aztec)
Site:	S33-T23N-R7W	MD Reference:	KB @ 6869.0ft (Aztec)
Well:	Lybrook E33-2307 01H	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

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

Site	S33-T23N-R7W				
Site Position:		Northing:	1,889,614.90 ft	Latitude:	36.185790
From:	Lat/Long	Easting:	1,245,897.40 ft	Longitude:	-107.586930
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-0.79 °

Well	Lybrook E33-2307 01H					
Well Position	+N/-S	0.0 ft	Northing:	1,889,614.90 ft	Latitude:	36.185790
	+E/-W	0.0 ft	Easting:	1,245,897.40 ft	Longitude:	-107.586930
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,853.0 ft

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

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	270.14	

Survey Program	Date	9/1/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
600.0	10,409.0	Survey #1 (Hz)	Geolink MWD	Geolink MWD	

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,889,614.90	1,245,897.40	36.185790	-107.586930
600.0	0.80	77.10	600.0	0.9	4.1	1,889,615.77	1,245,901.49	36.185793	-107.586916
664.0	0.50	88.50	664.0	1.0	4.8	1,889,615.87	1,245,902.21	36.185793	-107.586914
727.0	0.40	99.40	727.0	1.0	5.3	1,889,615.84	1,245,902.70	36.185793	-107.586912
790.0	0.50	121.30	790.0	0.8	5.7	1,889,615.65	1,245,903.15	36.185792	-107.586911
854.0	0.50	111.20	854.0	0.6	6.2	1,889,615.40	1,245,903.65	36.185792	-107.586909
917.0	0.30	252.00	917.0	0.4	6.3	1,889,615.25	1,245,903.74	36.185791	-107.586909
980.0	0.70	262.40	980.0	0.3	5.8	1,889,615.15	1,245,903.20	36.185791	-107.586911
1,043.0	0.70	246.70	1,043.0	0.1	5.1	1,889,614.96	1,245,902.47	36.185790	-107.586913
1,106.0	1.00	244.90	1,106.0	-0.3	4.2	1,889,614.58	1,245,901.61	36.185789	-107.586916
1,169.0	0.60	259.10	1,168.9	-0.5	3.4	1,889,614.30	1,245,900.78	36.185789	-107.586919
1,233.0	0.70	282.80	1,232.9	-0.5	2.7	1,889,614.33	1,245,900.07	36.185789	-107.586921

Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S33-T23N-R7W
Well: Lybrook E33-2307 01H
Wellbore: Hz
Design: FINAL

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
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
1,296.0	0.60	301.70	1,295.9	-0.3	2.0	1,889,614.60	1,245,899.42	36.185789	-107.586923
1,359.0	0.40	272.70	1,358.9	-0.1	1.5	1,889,614.79	1,245,898.92	36.185790	-107.586925
1,422.0	0.60	294.30	1,421.9	0.1	1.0	1,889,614.95	1,245,898.41	36.185790	-107.586927
1,485.0	0.70	293.40	1,484.9	0.4	0.4	1,889,615.24	1,245,897.76	36.185791	-107.586929
1,549.0	0.60	293.90	1,548.9	0.6	-0.3	1,889,615.54	1,245,897.10	36.185792	-107.586931
1,612.0	0.50	289.40	1,611.9	0.9	-0.9	1,889,615.78	1,245,896.54	36.185792	-107.586933
1,675.0	0.60	282.50	1,674.9	1.0	-1.5	1,889,615.95	1,245,895.96	36.185793	-107.586935
1,738.0	0.60	294.10	1,737.9	1.2	-2.1	1,889,616.16	1,245,895.34	36.185793	-107.586937
1,801.0	0.80	267.90	1,800.9	1.4	-2.8	1,889,616.29	1,245,894.60	36.185794	-107.586940
1,865.0	0.40	261.10	1,864.9	1.3	-3.5	1,889,616.25	1,245,893.93	36.185794	-107.586942
1,928.0	0.20	255.90	1,927.9	1.2	-3.8	1,889,616.19	1,245,893.61	36.185794	-107.586943
1,991.0	0.30	253.10	1,990.9	1.2	-4.1	1,889,616.12	1,245,893.34	36.185793	-107.586944
2,054.0	0.10	245.00	2,053.9	1.1	-4.3	1,889,616.05	1,245,893.13	36.185793	-107.586945
2,118.0	0.20	232.00	2,117.9	1.0	-4.4	1,889,615.96	1,245,892.99	36.185793	-107.586945
2,181.0	0.50	240.30	2,180.9	0.8	-4.7	1,889,615.76	1,245,892.67	36.185792	-107.586946
2,244.0	0.50	240.30	2,243.9	0.5	-5.2	1,889,615.50	1,245,892.18	36.185792	-107.586948
2,307.0	0.40	229.40	2,306.9	0.3	-5.6	1,889,615.22	1,245,891.77	36.185791	-107.586949
2,370.0	1.10	309.20	2,369.9	0.5	-6.3	1,889,615.47	1,245,891.14	36.185791	-107.586951
2,434.0	2.30	335.40	2,433.9	2.0	-7.3	1,889,617.04	1,245,890.15	36.185796	-107.586955
2,497.0	4.00	352.30	2,496.8	5.4	-8.1	1,889,620.38	1,245,889.38	36.185805	-107.586958
2,591.0	5.40	353.60	2,590.5	13.0	-9.0	1,889,628.04	1,245,888.55	36.185826	-107.586961
2,654.0	6.50	1.90	2,653.1	19.5	-9.2	1,889,634.55	1,245,888.43	36.185844	-107.586962
2,716.0	8.30	3.00	2,714.6	27.5	-8.9	1,889,642.52	1,245,888.89	36.185866	-107.586960
2,777.0	10.30	1.70	2,774.8	37.4	-8.5	1,889,652.36	1,245,889.42	36.185893	-107.586959
2,839.0	12.00	357.00	2,835.6	49.3	-8.7	1,889,664.34	1,245,889.41	36.185926	-107.586960
2,900.0	13.10	352.30	2,895.2	62.5	-9.9	1,889,677.54	1,245,888.33	36.185962	-107.586964
2,962.0	14.60	351.60	2,955.4	77.2	-12.0	1,889,692.26	1,245,886.45	36.186002	-107.586971
3,024.0	15.90	351.40	3,015.2	93.3	-14.4	1,889,708.42	1,245,884.26	36.186046	-107.586979
3,085.0	17.80	352.00	3,073.6	110.8	-17.0	1,889,725.95	1,245,881.96	36.186095	-107.586988
3,147.0	19.90	351.60	3,132.2	130.7	-19.8	1,889,745.82	1,245,879.37	36.186149	-107.586997
3,208.0	21.40	352.70	3,189.3	152.0	-22.8	1,889,767.16	1,245,876.73	36.186207	-107.587007
3,270.0	23.10	352.70	3,246.7	175.3	-25.7	1,889,790.49	1,245,874.07	36.186271	-107.587018
3,331.0	25.30	351.40	3,302.3	200.0	-29.2	1,889,815.29	1,245,870.94	36.186339	-107.587029
3,393.0	27.10	350.50	3,358.0	227.0	-33.5	1,889,842.38	1,245,867.00	36.186414	-107.587044
3,454.0	28.40	350.70	3,411.9	255.1	-38.2	1,889,870.46	1,245,862.75	36.186491	-107.587060
3,516.0	28.20	349.80	3,466.5	284.0	-43.1	1,889,899.50	1,245,858.17	36.186570	-107.587076
3,577.0	28.30	352.10	3,520.3	312.5	-47.7	1,889,928.06	1,245,854.03	36.186649	-107.587092
3,639.0	27.20	351.80	3,575.1	341.1	-51.7	1,889,956.70	1,245,850.38	36.186727	-107.587106
3,701.0	27.80	352.70	3,630.1	369.5	-55.6	1,889,985.12	1,245,846.91	36.186805	-107.587119
3,762.0	28.20	352.30	3,684.0	397.9	-59.3	1,890,013.56	1,245,843.57	36.186883	-107.587131
3,823.0	29.20	352.40	3,737.5	426.9	-63.2	1,890,042.64	1,245,840.07	36.186963	-107.587144
3,885.0	27.90	351.40	3,791.9	456.3	-67.4	1,890,072.03	1,245,836.30	36.187043	-107.587159
3,946.0	28.70	350.60	3,845.7	484.8	-71.9	1,890,100.65	1,245,832.17	36.187122	-107.587174
4,008.0	29.90	349.80	3,899.7	514.7	-77.1	1,890,130.62	1,245,827.42	36.187204	-107.587191
4,069.0	29.80	350.70	3,952.6	544.6	-82.2	1,890,160.61	1,245,822.69	36.187286	-107.587209
4,133.0	29.30	350.60	4,008.3	575.8	-87.4	1,890,191.82	1,245,817.99	36.187372	-107.587226
4,196.0	28.30	350.90	4,063.5	605.7	-92.2	1,890,221.84	1,245,813.52	36.187454	-107.587243
4,259.0	28.30	352.20	4,119.0	635.3	-96.6	1,890,251.44	1,245,809.54	36.187535	-107.587258
4,322.0	28.00	352.20	4,174.5	664.7	-100.7	1,890,280.94	1,245,805.91	36.187616	-107.587271
4,386.0	27.00	350.30	4,231.3	693.9	-105.1	1,890,310.20	1,245,801.83	36.187696	-107.587287
4,449.0	26.80	348.30	4,287.5	721.9	-110.4	1,890,338.28	1,245,796.93	36.187773	-107.587304
4,512.0	26.90	349.10	4,343.7	749.8	-116.0	1,890,366.26	1,245,791.74	36.187850	-107.587323
4,544.0	27.40	349.60	4,372.2	764.2	-118.7	1,890,380.64	1,245,789.24	36.187889	-107.587332
4,575.0	28.30	349.70	4,399.6	778.4	-121.3	1,890,394.92	1,245,786.83	36.187928	-107.587341
4,607.0	29.50	349.90	4,427.6	793.7	-124.0	1,890,410.18	1,245,784.30	36.187970	-107.587351

Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S33-T23N-R7W
Well: Lybrook E33-2307 01H
Wellbore: Hz
Design: FINAL

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
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
4,639.0	31.20	349.90	4,455.2	809.6	-126.9	1,890,426.13	1,245,781.69	36.188014	-107.587360
4,670.0	31.90	350.10	4,481.6	825.5	-129.7	1,890,442.15	1,245,779.09	36.188058	-107.587370
4,702.0	33.30	349.10	4,508.6	842.5	-132.8	1,890,459.14	1,245,776.21	36.188104	-107.587380
4,733.0	36.00	347.90	4,534.1	859.8	-136.3	1,890,476.46	1,245,772.93	36.188152	-107.587392
4,765.0	38.10	345.50	4,559.6	878.5	-140.8	1,890,495.27	1,245,768.74	36.188203	-107.587407
4,797.0	39.20	342.10	4,584.6	897.7	-146.4	1,890,514.53	1,245,763.43	36.188256	-107.587426
4,828.0	40.20	338.70	4,608.5	916.4	-153.0	1,890,533.28	1,245,757.04	36.188307	-107.587449
4,860.0	41.40	335.10	4,632.7	935.6	-161.2	1,890,552.61	1,245,749.09	36.188360	-107.587477
4,891.0	43.10	331.90	4,655.6	954.2	-170.5	1,890,571.38	1,245,740.05	36.188411	-107.587508
4,923.0	43.90	328.60	4,678.9	973.3	-181.4	1,890,590.64	1,245,729.38	36.188464	-107.587545
4,955.0	45.40	326.20	4,701.6	992.3	-193.6	1,890,609.75	1,245,717.52	36.188516	-107.587586
4,986.0	46.70	324.00	4,723.1	1,010.6	-206.3	1,890,628.22	1,245,705.00	36.188566	-107.587629
5,018.0	48.30	321.90	4,744.8	1,029.4	-220.6	1,890,647.24	1,245,691.05	36.188618	-107.587678
5,050.0	50.10	319.70	4,765.7	1,048.2	-235.9	1,890,666.21	1,245,675.99	36.188669	-107.587729
5,081.0	51.60	317.10	4,785.2	1,066.1	-251.8	1,890,684.40	1,245,660.28	36.188718	-107.587784
5,113.0	52.80	314.30	4,804.9	1,084.2	-269.5	1,890,702.73	1,245,642.87	36.188768	-107.587843
5,144.0	53.40	310.80	4,823.5	1,101.0	-287.8	1,890,719.74	1,245,624.84	36.188814	-107.587905
5,176.0	54.90	308.90	4,842.2	1,117.6	-307.7	1,890,736.63	1,245,605.16	36.188860	-107.587973
5,208.0	56.40	306.30	4,860.3	1,133.7	-328.6	1,890,753.03	1,245,584.45	36.188904	-107.588044
5,239.0	58.30	304.80	4,877.0	1,148.9	-349.8	1,890,768.49	1,245,563.43	36.188946	-107.588116
5,271.0	60.20	302.70	4,893.4	1,164.2	-372.7	1,890,784.08	1,245,540.78	36.188988	-107.588193
5,302.0	61.90	301.60	4,908.4	1,178.6	-395.7	1,890,798.83	1,245,518.01	36.189027	-107.588271
5,334.0	63.50	300.10	4,923.1	1,193.2	-420.1	1,890,813.74	1,245,493.80	36.189067	-107.588354
5,366.0	65.20	298.20	4,936.9	1,207.2	-445.3	1,890,828.13	1,245,468.80	36.189106	-107.588439
5,397.0	67.50	296.40	4,949.3	1,220.2	-470.5	1,890,841.50	1,245,443.75	36.189142	-107.588525
5,429.0	69.70	296.10	4,961.0	1,233.4	-497.2	1,890,855.04	1,245,417.22	36.189178	-107.588615
5,460.0	70.30	295.70	4,971.6	1,246.1	-523.4	1,890,868.12	1,245,391.19	36.189213	-107.588704
5,492.0	71.70	295.60	4,982.0	1,259.2	-550.7	1,890,881.59	1,245,364.11	36.189249	-107.588796
5,524.0	73.20	294.90	4,991.7	1,272.2	-578.3	1,890,894.98	1,245,336.70	36.189284	-107.588890
5,555.0	73.80	292.60	5,000.5	1,284.2	-605.5	1,890,907.33	1,245,309.66	36.189317	-107.588982
5,587.0	74.30	290.90	5,009.3	1,295.6	-634.1	1,890,919.12	1,245,281.24	36.189349	-107.589079
5,619.0	75.20	289.20	5,017.7	1,306.2	-663.1	1,890,930.10	1,245,252.39	36.189378	-107.589177
5,650.0	76.50	288.10	5,025.3	1,315.8	-691.5	1,890,940.10	1,245,224.05	36.189404	-107.589273
5,682.0	77.90	287.00	5,032.4	1,325.2	-721.3	1,890,949.92	1,245,194.43	36.189430	-107.589374
5,718.0	79.10	284.60	5,039.5	1,334.8	-755.2	1,890,959.99	1,245,160.62	36.189456	-107.589489
5,775.0	80.30	280.20	5,049.7	1,346.9	-810.0	1,890,972.78	1,245,106.03	36.189489	-107.589675
5,805.0	83.00	277.90	5,054.1	1,351.5	-839.3	1,890,977.85	1,245,076.79	36.189502	-107.589774
5,836.0	85.30	276.10	5,057.3	1,355.3	-869.9	1,890,982.03	1,245,046.24	36.189513	-107.589878
5,867.0	88.00	273.90	5,059.1	1,358.0	-900.7	1,890,985.15	1,245,015.46	36.189520	-107.589982
5,898.0	88.80	272.20	5,059.9	1,359.6	-931.7	1,890,987.22	1,244,984.54	36.189524	-107.590087
5,961.0	90.90	269.70	5,060.1	1,360.7	-994.7	1,890,989.13	1,244,921.57	36.189527	-107.590301
6,024.0	90.30	268.80	5,059.4	1,359.8	-1,057.7	1,890,989.18	1,244,858.57	36.189525	-107.590514
6,087.0	89.50	269.20	5,059.5	1,358.7	-1,120.7	1,890,988.95	1,244,795.57	36.189522	-107.590727
6,150.0	90.80	270.20	5,059.4	1,358.4	-1,183.7	1,890,989.48	1,244,732.58	36.189521	-107.590941
6,214.0	89.70	269.70	5,059.1	1,358.4	-1,247.7	1,890,990.31	1,244,668.58	36.189521	-107.591158
6,277.0	89.90	269.80	5,059.3	1,358.1	-1,310.7	1,890,990.90	1,244,605.59	36.189520	-107.591371
6,340.0	87.50	268.00	5,060.8	1,356.9	-1,373.6	1,890,990.56	1,244,542.61	36.189517	-107.591585
6,403.0	89.20	268.40	5,062.6	1,354.9	-1,436.6	1,890,989.45	1,244,479.65	36.189511	-107.591798
6,467.0	89.80	270.10	5,063.1	1,354.1	-1,500.5	1,890,989.50	1,244,415.65	36.189509	-107.592015
6,530.0	90.90	270.30	5,062.7	1,354.3	-1,563.5	1,890,990.58	1,244,352.66	36.189510	-107.592228
6,593.0	90.90	270.40	5,061.8	1,354.7	-1,626.5	1,890,991.84	1,244,289.68	36.189511	-107.592442
6,656.0	91.50	270.80	5,060.4	1,355.3	-1,689.5	1,890,993.36	1,244,226.72	36.189513	-107.592655
6,719.0	91.30	271.80	5,058.9	1,356.7	-1,752.5	1,890,995.66	1,244,163.78	36.189516	-107.592868
6,783.0	91.00	272.30	5,057.6	1,359.0	-1,816.4	1,890,998.83	1,244,099.87	36.189523	-107.593085
6,846.0	91.50	272.20	5,056.2	1,361.5	-1,879.4	1,891,002.17	1,244,036.97	36.189530	-107.593298

Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S33-T23N-R7W
Well: Lybrook E33-2307 01H
Wellbore: Hz
Design: FINAL

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
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
6,909.0	90.30	271.80	5,055.2	1,363.7	-1,942.3	1,891,005.24	1,243,974.06	36.189536	-107.593512
6,972.0	90.50	271.10	5,054.8	1,365.3	-2,005.3	1,891,007.70	1,243,911.11	36.189540	-107.593725
7,035.0	91.20	271.10	5,053.9	1,366.5	-2,068.3	1,891,009.77	1,243,848.15	36.189543	-107.593938
7,099.0	90.60	269.30	5,052.9	1,366.7	-2,132.3	1,891,010.88	1,243,784.17	36.189544	-107.594155
7,162.0	91.10	268.80	5,051.9	1,365.7	-2,195.2	1,891,010.70	1,243,721.18	36.189541	-107.594369
7,225.0	91.00	268.60	5,050.8	1,364.3	-2,258.2	1,891,010.14	1,243,658.20	36.189537	-107.594582
7,288.0	89.10	268.30	5,050.7	1,362.6	-2,321.2	1,891,009.30	1,243,595.21	36.189532	-107.594795
7,351.0	90.40	269.30	5,051.0	1,361.2	-2,384.2	1,891,008.85	1,243,532.22	36.189529	-107.595009
7,415.0	90.80	269.10	5,050.3	1,360.3	-2,448.2	1,891,008.84	1,243,468.22	36.189526	-107.595226
7,478.0	91.40	268.60	5,049.1	1,359.1	-2,511.1	1,891,008.45	1,243,405.23	36.189523	-107.595439
7,541.0	91.20	269.40	5,047.7	1,358.0	-2,574.1	1,891,008.21	1,243,342.25	36.189520	-107.595652
7,605.0	89.60	268.80	5,047.2	1,357.0	-2,638.1	1,891,008.09	1,243,278.26	36.189517	-107.595869
7,668.0	91.00	269.40	5,046.9	1,356.0	-2,701.1	1,891,007.97	1,243,215.26	36.189514	-107.596083
7,731.0	91.50	269.10	5,045.5	1,355.2	-2,764.1	1,891,008.01	1,243,152.27	36.189512	-107.596296
7,794.0	91.30	270.60	5,044.0	1,355.0	-2,827.0	1,891,008.72	1,243,089.30	36.189511	-107.596509
7,858.0	91.80	270.40	5,042.3	1,355.6	-2,891.0	1,891,010.16	1,243,025.34	36.189513	-107.596726
7,921.0	91.60	269.40	5,040.4	1,355.4	-2,954.0	1,891,010.91	1,242,962.37	36.189513	-107.596939
7,984.0	91.00	270.10	5,039.0	1,355.2	-3,017.0	1,891,011.51	1,242,899.39	36.189512	-107.597153
8,047.0	89.90	270.40	5,038.5	1,355.4	-3,080.0	1,891,012.65	1,242,836.40	36.189513	-107.597366
8,110.0	90.60	270.00	5,038.2	1,355.7	-3,143.0	1,891,013.74	1,242,773.41	36.189513	-107.597580
8,174.0	90.40	270.90	5,037.6	1,356.2	-3,207.0	1,891,015.12	1,242,709.43	36.189515	-107.597797
8,237.0	90.00	271.50	5,037.4	1,357.5	-3,269.9	1,891,017.31	1,242,646.47	36.189518	-107.598010
8,300.0	90.80	271.40	5,037.0	1,359.1	-3,332.9	1,891,019.77	1,242,583.52	36.189522	-107.598223
8,363.0	90.00	270.30	5,036.5	1,360.0	-3,395.9	1,891,021.57	1,242,520.55	36.189525	-107.598437
8,426.0	90.80	269.70	5,036.1	1,360.0	-3,458.9	1,891,022.44	1,242,457.56	36.189525	-107.598650
8,490.0	90.30	270.10	5,035.5	1,359.9	-3,522.9	1,891,023.21	1,242,393.57	36.189525	-107.598867
8,553.0	91.00	270.00	5,034.8	1,360.0	-3,585.9	1,891,024.13	1,242,330.58	36.189525	-107.599081
8,616.0	90.50	269.10	5,033.9	1,359.5	-3,648.9	1,891,024.51	1,242,267.59	36.189523	-107.599294
8,679.0	91.10	268.80	5,033.1	1,358.3	-3,711.9	1,891,024.22	1,242,204.59	36.189520	-107.599507
8,742.0	90.00	269.90	5,032.5	1,357.6	-3,774.9	1,891,024.37	1,242,141.60	36.189518	-107.599721
8,806.0	90.70	269.90	5,032.1	1,357.5	-3,838.9	1,891,025.14	1,242,077.60	36.189518	-107.599938
8,869.0	90.20	269.60	5,031.6	1,357.2	-3,901.9	1,891,025.74	1,242,014.61	36.189517	-107.600151
8,932.0	90.80	269.40	5,031.0	1,356.7	-3,964.9	1,891,026.06	1,241,951.61	36.189516	-107.600365
8,995.0	90.10	270.30	5,030.5	1,356.5	-4,027.9	1,891,026.76	1,241,888.62	36.189515	-107.600578
9,058.0	90.60	270.00	5,030.1	1,356.7	-4,090.9	1,891,027.79	1,241,825.63	36.189516	-107.600792
9,122.0	91.10	270.00	5,029.2	1,356.7	-4,154.8	1,891,028.67	1,241,761.64	36.189516	-107.601008
9,185.0	90.80	269.10	5,028.2	1,356.2	-4,217.8	1,891,029.05	1,241,698.65	36.189514	-107.601222
9,248.0	90.70	269.00	5,027.3	1,355.1	-4,280.8	1,891,028.87	1,241,635.66	36.189511	-107.601435
9,311.0	90.10	267.10	5,026.9	1,353.0	-4,343.8	1,891,027.59	1,241,572.68	36.189505	-107.601649
9,375.0	90.40	268.90	5,026.6	1,350.7	-4,407.7	1,891,026.24	1,241,508.69	36.189499	-107.601865
9,438.0	90.80	269.30	5,025.9	1,349.8	-4,470.7	1,891,026.12	1,241,445.70	36.189496	-107.602079
9,501.0	91.10	268.30	5,024.9	1,348.4	-4,533.7	1,891,025.67	1,241,382.71	36.189493	-107.602292
9,564.0	90.40	270.50	5,024.1	1,347.8	-4,596.7	1,891,025.88	1,241,319.72	36.189491	-107.602506
9,628.0	90.40	270.50	5,023.6	1,348.3	-4,660.7	1,891,027.32	1,241,255.74	36.189492	-107.602722
9,691.0	89.00	270.60	5,024.0	1,348.9	-4,723.7	1,891,028.79	1,241,192.76	36.189494	-107.602936
9,754.0	89.80	270.80	5,024.6	1,349.7	-4,786.7	1,891,030.43	1,241,129.78	36.189496	-107.603149
9,818.0	90.70	270.80	5,024.3	1,350.6	-4,850.7	1,891,032.20	1,241,065.81	36.189499	-107.603366
9,881.0	90.10	270.90	5,023.9	1,351.5	-4,913.7	1,891,034.01	1,241,002.83	36.189501	-107.603580
9,944.0	91.10	270.60	5,023.2	1,352.4	-4,976.6	1,891,035.70	1,240,939.86	36.189503	-107.603793
10,007.0	89.70	270.80	5,022.8	1,353.1	-5,039.6	1,891,037.34	1,240,876.89	36.189505	-107.604006
10,071.0	90.30	270.50	5,022.8	1,353.9	-5,103.6	1,891,038.94	1,240,812.91	36.189507	-107.604223
10,134.0	91.20	270.00	5,022.0	1,354.1	-5,166.6	1,891,040.09	1,240,749.92	36.189508	-107.604437
10,197.0	90.50	270.00	5,021.0	1,354.1	-5,229.6	1,891,040.95	1,240,686.94	36.189508	-107.604650
10,260.0	89.30	269.70	5,021.2	1,354.0	-5,292.6	1,891,041.66	1,240,623.94	36.189508	-107.604864
10,324.0	90.60	269.30	5,021.2	1,353.4	-5,356.6	1,891,041.98	1,240,559.94	36.189506	-107.605080

Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc
 Project: Sandoval County, NM
 Site: S33-T23N-R7W
 Well: Lybrook E33-2307 01H
 Wellbore: Hz
 Design: FINAL

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
 Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
10,359.0	91.20	269.00	5,020.7	1,352.9	-5,391.6	1,891,041.94	1,240,524.95	36.189505	-107.605199
Last CES Survey @ 10,359' MD									
10,409.0	91.20	269.00	5,019.6	1,352.0	-5,441.6	1,891,041.76	1,240,474.96	36.189502	-107.605368
PTB @ 10,409' MD									

Design 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 E33-2307 01H I	0.00	0.00	5,006.4	1,258.6	-561.9	1,890,881.09	1,245,352.92	36.189247	-107.588834
- actual wellpath misses target center by 20.9ft at 5508.7ft MD (4987.2 TVD, 1266.1 N, -565.1 E)									
- Point									
Lybrook E33-2307 01H I	0.00	0.00	5,024.8	1,351.3	-5,453.9	1,891,041.17	1,240,462.59	36.189500	-107.605410
- actual wellpath misses target center by 13.4ft at 10409.0ft MD (5019.6 TVD, 1352.0 N, -5441.6 E)									
- Point									
Interp @ 5059.5 (Lybrook)	0.00	0.00	5,059.5	1,358.8	-915.0	1,890,986.22	1,245,001.21	36.189522	-107.590031
- actual wellpath hits target center									
- Point									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
10,359.0	5,020.7	1,352.9	-5,391.6	Last CES Survey @ 10,359' MD
10,409.0	5,019.6	1,352.0	-5,441.6	PTB @ 10,409' MD

Checked By: _____ Approved By: _____ Date: _____