

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-6720

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) 475-3450 Fax: (505) 475-3452

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
☒ As-Drilled

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-043-21122	² Pool Code 42289	³ Pool Name LYBROOK GALLUP
⁴ Property Code 39999	⁵ Property Name LYBROOK H01-2206	⁶ Well Number 01H
⁷ GRID No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.	⁹ Elevation 6931'

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
H	1	22N	6W		2323	NORTH	497	EAST	SANDOVAL

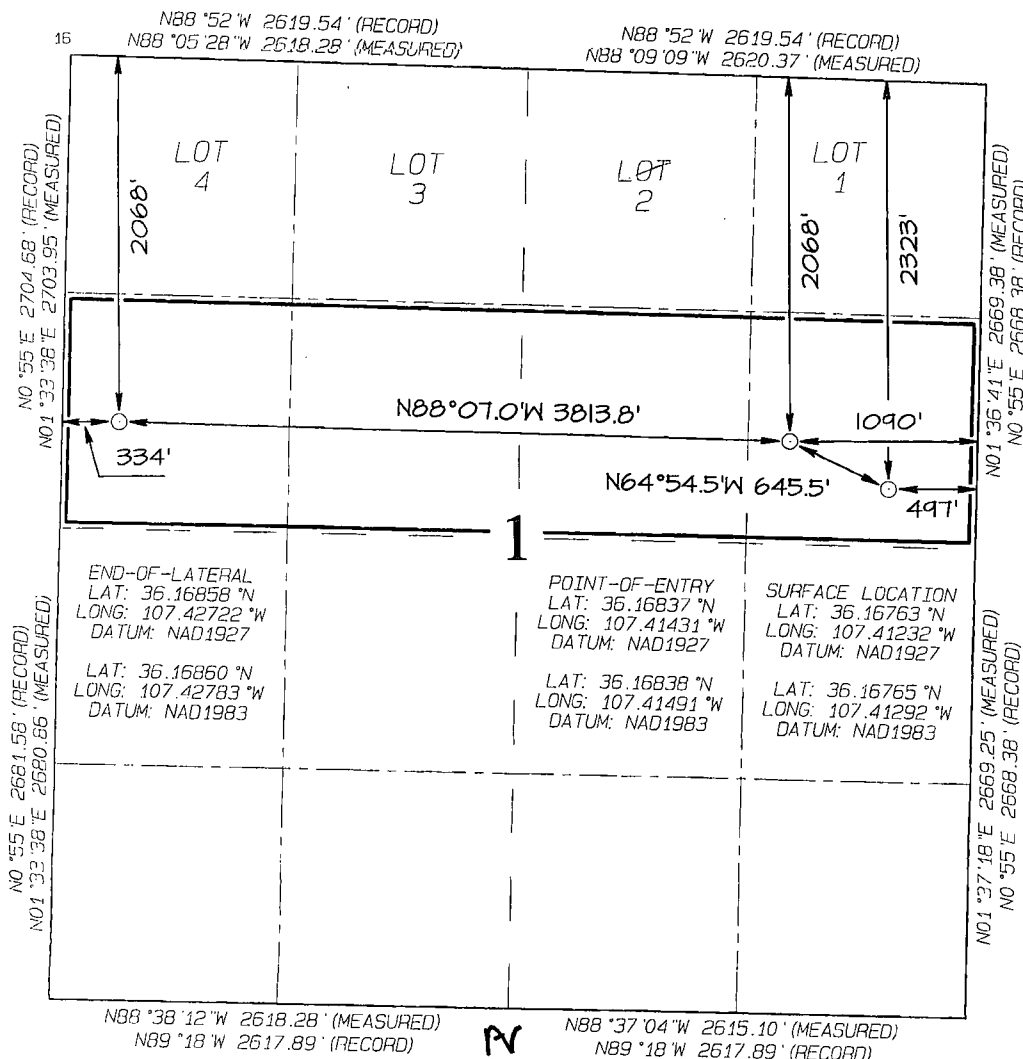
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	1	22N	6W		2068	NORTH	334	WEST	SANDOVAL

¹² Dedicated Acres 160.0 Acres - (S/2 N/2)	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. RCVD MAR 28 '14 OIL CONS. DIV.
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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

DIST. 3



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: Vy Nguyen Date: 03/25/2014
Printed Name: Vy Nguyen
E-mail Address: vy.nguyen@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: MARCH 18, 2014
Date of Survey: AUGUST 24, 2012

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
REGISTERED PROFESSIONAL SURVEYOR
15269

JASON C. EDWARDS
Certificate Number 15269

DEVIATION SURVEYS

MD (Feet)	Inclination (Degree)
751	1.1
1057	1.3
1362	.7
1672	.3
1988	.1
2303	.1
2618	.7
2932	.4
3247	.3
3562	.5
3876	.1
4191	.8
4452	2.2
4609	15.3

CONFIDENTIAL

RCVD MAR 28 '14
OIL CONS. DIV.
DIST. 3

OPERATOR CERTIFICATION

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



Vy Nguyen, Engineering Technologist

03/26/2014

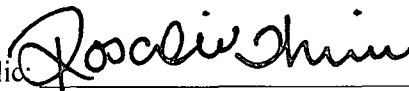
ACKNOWLEDGMENT

State of Colorado
City and County of Denver

This instrument was acknowledged before me on this 26th day of March, 2014 by Vy Nguyen as Attorney in Fact of Encana Oil & Gas (USA) Inc., on behalf of said corporation.

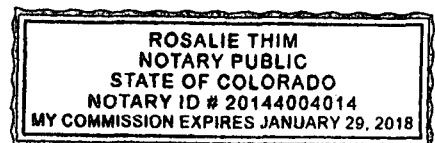
In witness whereof, I hereunto set my hand and official seal.

Notary Public:



My Commission Expires:

1.29.18



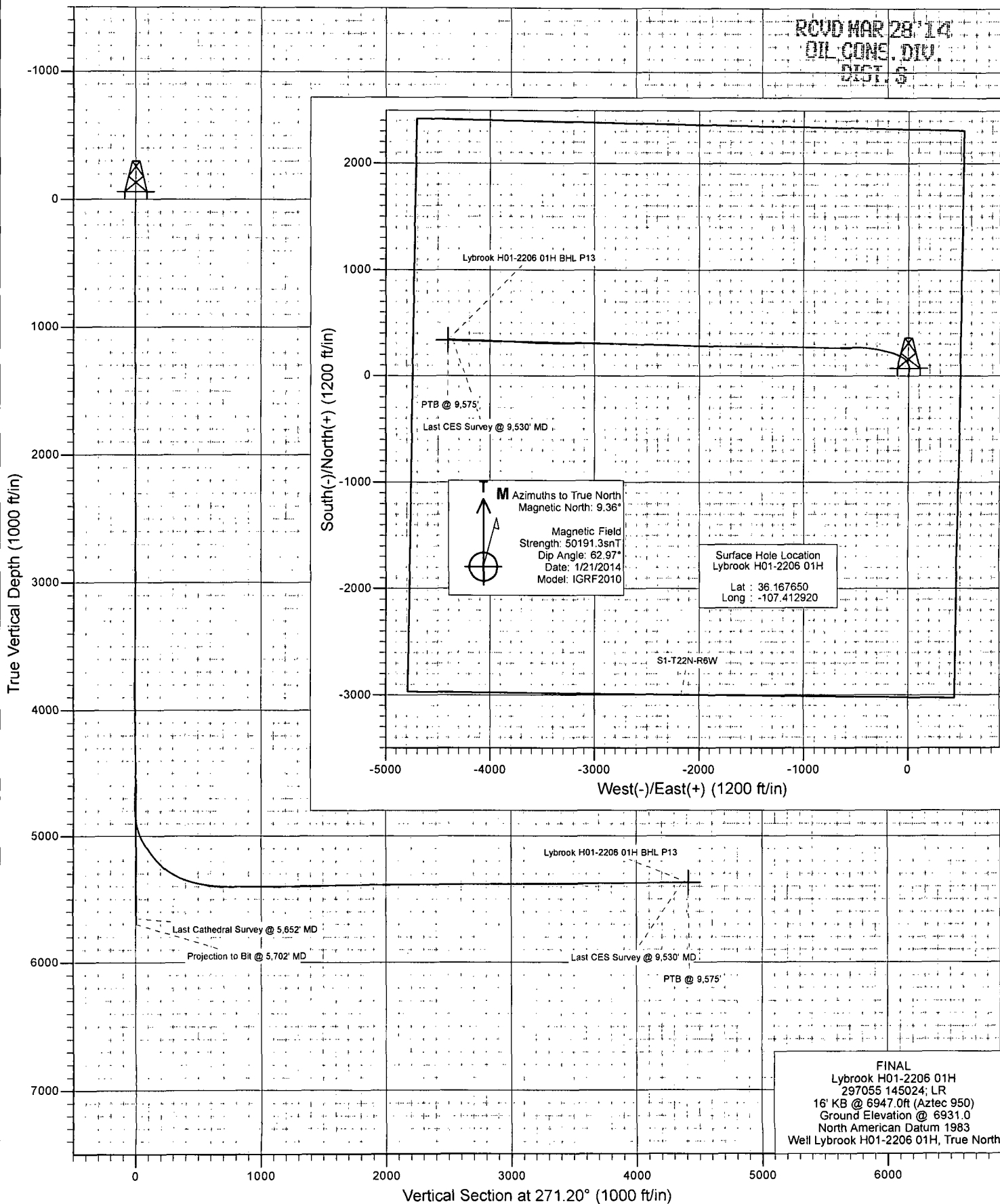


Project: Sandoval County, NM
 Site: Lybrook
 Well: Lybrook H01-2206 01H
 Wellbore: HZ
 Design: FINAL

CONFIDENTIAL

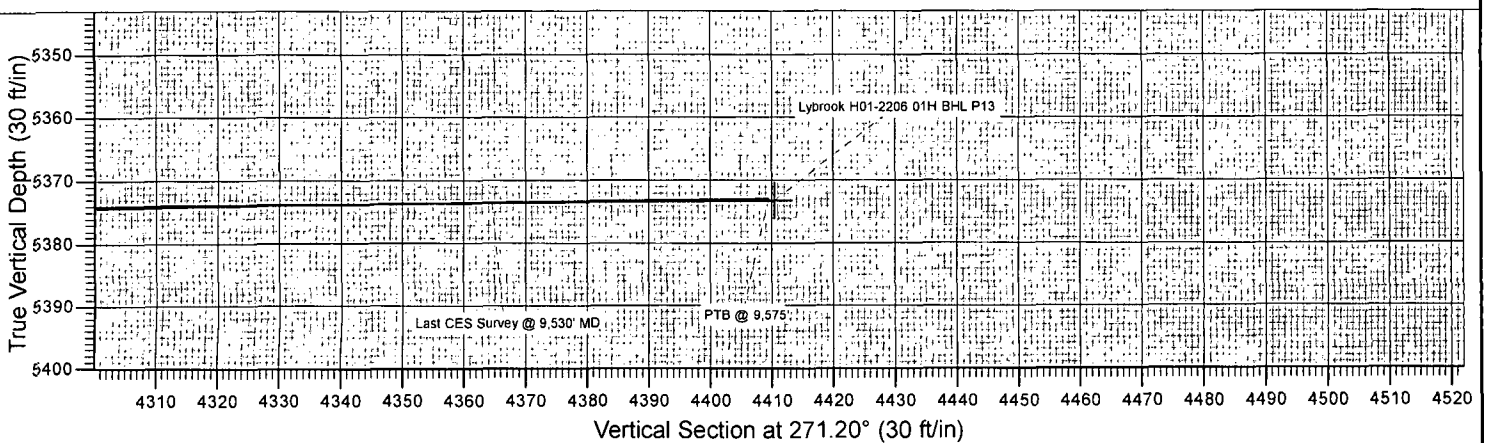
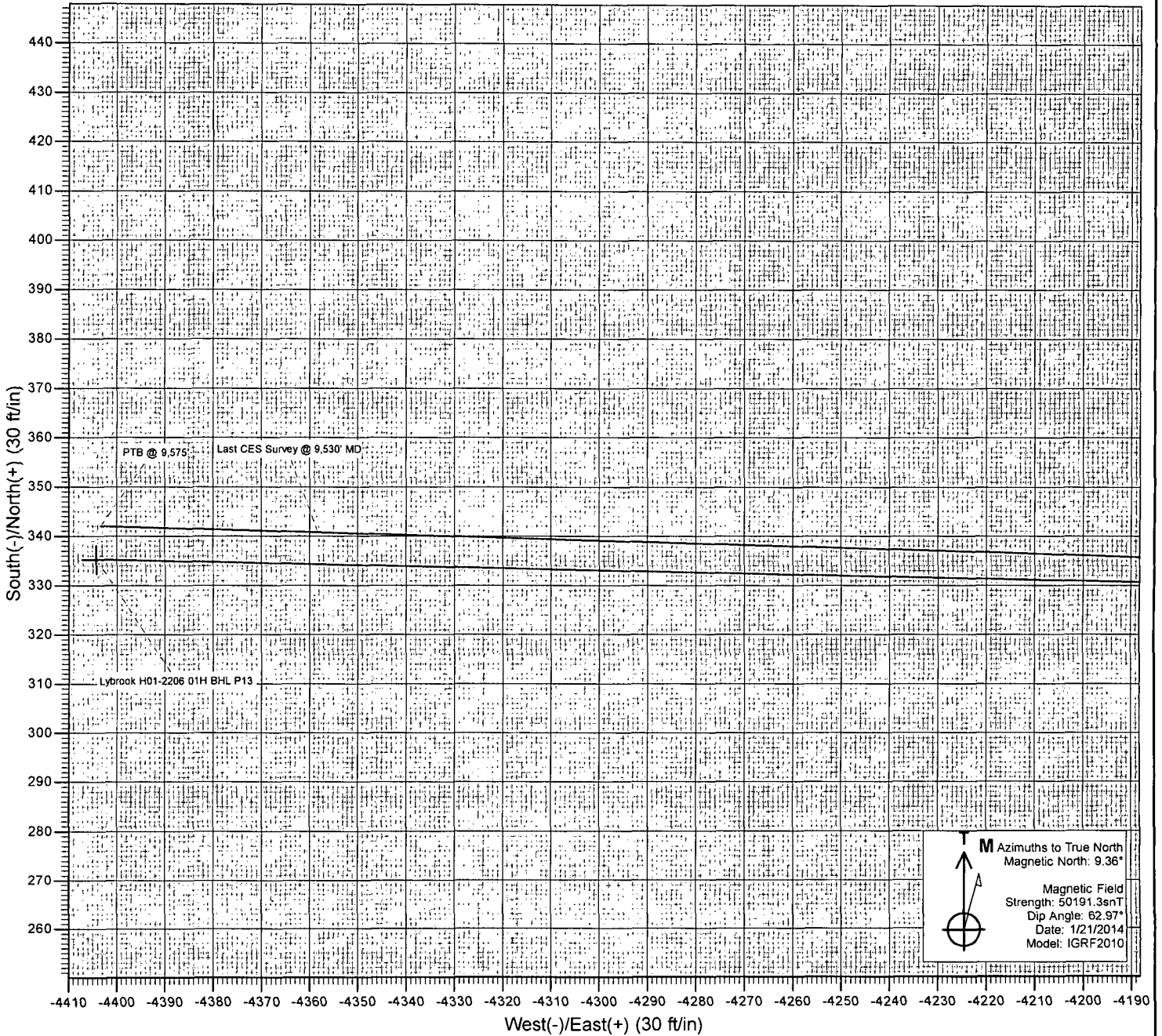


RCVD MAR 28 14
 OIL CONE. DIV.
 DIST. S





Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook H01-2206 01H
Design: FINAL



Cathedral Energy Services

Survey Report

CONFIDENTIAL

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook H01-2206 01H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Lybrook H01-2206 01H
TVD Reference: 16' KB @ 6947.0ft (Aztec 950)
MD Reference: 16' KB @ 6947.0ft (Aztec 950)
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	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 H01-2206 01H					
Well Position	+N/-S	0.0 ft	Northing:	1,882,349.77 ft	Latitude:	36.167650
	+E/-W	0.0 ft	Easting:	1,297,170.23 ft	Longitude:	-107.412920
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,931.0 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/21/2014	9.36	62.97	50,191

Design	FINAL			
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	271.20

Survey Program		Date 2/10/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
564.0	4,380.0	Survey #1 (Pilot Hole)	Geolink MWD	Geolink MWD
4,420.0	9,575.0	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)	(ft)	(ft)	(°/100ft)	(°/100ft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
564.0	1.10	159.60	564.0	-5.1	1.9	-2.0	0.20	0.20		
628.0	1.10	151.60	628.0	-6.2	2.4	-2.5	0.24	0.00		
690.0	1.00	109.20	689.9	-6.9	3.2	-3.3	1.23	-0.16		
751.0	1.10	99.40	750.9	-7.2	4.3	-4.4	0.34	0.16		
812.0	0.50	38.70	811.9	-7.1	5.0	-5.2	1.57	-0.98		
873.0	0.80	350.60	872.9	-6.4	5.1	-5.2	0.98	0.49		
935.0	0.90	349.60	934.9	-5.5	5.0	-5.1	0.16	0.16		
995.0	1.20	344.80	994.9	-4.4	4.7	-4.8	0.52	0.50		
1,057.0	1.30	337.80	1,056.9	-3.2	4.3	-4.3	0.29	0.16		
1,117.0	1.50	346.20	1,116.9	-1.8	3.8	-3.9	0.48	0.33		
1,178.0	1.10	312.90	1,177.9	-0.6	3.2	-3.2	1.37	-0.66		

Cathedral Energy Services

Survey Report

CONFIDENTIAL

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Design: FINAL

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MD Reference: 16' KB @ 6947.0ft (Aztec 950)
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
1,239.0	0.90	268.00	1,238.9	-0.2	2.3	-2.3	1.29	-0.33	
1,301.0	0.90	254.00	1,300.8	-0.4	1.3	-1.3	0.35	0.00	
1,362.0	0.70	214.10	1,361.8	-0.8	0.7	-0.7	0.95	-0.33	
1,423.0	0.70	188.00	1,422.8	-1.5	0.4	-0.4	0.52	0.00	
1,484.0	0.70	199.90	1,483.8	-2.2	0.2	-0.3	0.24	0.00	
1,546.0	0.90	204.70	1,545.8	-3.0	-0.1	0.0	0.34	0.32	
1,609.0	0.10	120.40	1,608.8	-3.5	-0.3	0.2	1.42	-1.27	
1,672.0	0.30	122.60	1,671.8	-3.6	-0.1	0.0	0.32	0.32	
1,736.0	0.20	135.40	1,735.8	-3.8	0.1	-0.2	0.18	-0.16	
1,799.0	0.30	145.10	1,798.8	-4.0	0.3	-0.4	0.17	0.16	
1,862.0	0.40	226.70	1,861.8	-4.3	0.2	-0.3	0.74	0.16	
1,925.0	0.10	235.40	1,924.8	-4.5	0.0	-0.1	0.48	-0.48	
1,988.0	0.10	99.40	1,987.8	-4.5	0.1	-0.1	0.29	0.00	
2,051.0	0.20	127.10	2,050.8	-4.6	0.2	-0.3	0.19	0.16	
2,114.0	0.20	138.20	2,113.8	-4.7	0.4	-0.5	0.06	0.00	
2,177.0	0.30	195.70	2,176.8	-5.0	0.4	-0.5	0.41	0.16	
2,240.0	0.20	142.10	2,239.8	-5.2	0.4	-0.5	0.38	-0.16	
2,303.0	0.10	99.40	2,302.8	-5.3	0.5	-0.6	0.23	-0.16	
2,366.0	0.30	48.70	2,365.8	-5.2	0.7	-0.8	0.40	0.32	
2,429.0	0.40	36.20	2,428.8	-4.9	1.0	-1.1	0.20	0.16	
2,492.0	0.40	38.70	2,491.8	-4.6	1.2	-1.3	0.03	0.00	
2,555.0	0.50	74.20	2,554.8	-4.3	1.6	-1.7	0.46	0.16	
2,618.0	0.70	72.80	2,617.8	-4.1	2.3	-2.3	0.32	0.32	
2,681.0	0.50	74.90	2,680.8	-3.9	2.9	-3.0	0.32	-0.32	
2,744.0	0.40	64.10	2,743.8	-3.8	3.4	-3.4	0.21	-0.16	
2,806.0	0.50	48.60	2,805.8	-3.5	3.8	-3.8	0.25	0.16	
2,869.0	0.30	53.70	2,868.8	-3.2	4.1	-4.2	0.32	-0.32	
2,932.0	0.40	354.20	2,931.8	-2.9	4.2	-4.3	0.57	0.16	
2,995.0	0.40	323.00	2,994.8	-2.5	4.1	-4.1	0.34	0.00	
3,058.0	0.40	318.50	3,057.8	-2.2	3.8	-3.8	0.05	0.00	
3,121.0	0.40	320.10	3,120.8	-1.8	3.5	-3.5	0.02	0.00	
3,184.0	0.40	306.20	3,183.8	-1.5	3.2	-3.2	0.15	0.00	
3,247.0	0.30	348.40	3,246.8	-1.2	3.0	-3.0	0.43	-0.16	
3,310.0	0.10	279.40	3,309.8	-1.1	2.9	-2.9	0.44	-0.32	
3,373.0	0.10	173.20	3,372.8	-1.1	2.8	-2.8	0.25	0.00	
3,436.0	0.30	106.20	3,435.8	-1.2	3.0	-3.0	0.44	0.32	
3,499.0	0.30	116.10	3,498.8	-1.3	3.3	-3.3	0.08	0.00	
3,562.0	0.50	109.60	3,561.8	-1.5	3.7	-3.7	0.33	0.32	
3,625.0	0.50	121.70	3,624.8	-1.7	4.2	-4.2	0.17	0.00	
3,688.0	0.40	123.80	3,687.8	-2.0	4.6	-4.7	0.16	-0.16	
3,751.0	0.20	99.40	3,750.8	-2.2	4.9	-4.9	0.37	-0.32	
3,814.0	0.40	78.50	3,813.8	-2.1	5.2	-5.3	0.36	0.32	
3,876.0	0.10	334.90	3,875.8	-2.0	5.4	-5.5	0.70	-0.48	
3,940.0	0.60	284.60	3,939.8	-1.9	5.1	-5.1	0.85	0.78	
4,002.0	0.60	272.20	4,001.8	-1.8	4.4	-4.5	0.21	0.00	
4,065.0	0.80	259.00	4,064.8	-1.9	3.7	-3.7	0.41	0.32	
4,128.0	0.80	263.70	4,127.8	-2.0	2.8	-2.8	0.10	0.00	
4,191.0	0.80	266.50	4,190.8	-2.1	1.9	-2.0	0.06	0.00	
4,254.0	1.00	268.90	4,253.8	-2.1	0.9	-1.0	0.32	0.32	
4,317.0	1.10	260.80	4,316.7	-2.2	-0.2	0.2	0.28	0.16	
4,380.0	1.10	254.40	4,379.7	-2.5	-1.4	1.3	0.19	0.00	
4,420.0	1.30	284.20	4,419.7	-2.5	-2.2	2.1	1.62	0.50	
4,452.0	2.20	346.80	4,451.7	-1.8	-2.7	2.7	6.17	2.81	

Cathedral Energy Services

Survey Report

CONFIDENTIAL

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook H01-2206 01H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Lybrook H01-2206 01H
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MD Reference: 16' KB @ 6947.0ft (Aztec 950)
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
4,483.0	6.30	5.30	4,482.6	0.5	-2.7	2.7	13.78	13.23	
4,515.0	10.50	10.00	4,514.3	5.1	-2.0	2.1	13.29	13.12	
4,546.0	13.80	11.60	4,544.6	11.5	-0.8	1.0	10.70	10.65	
4,578.0	15.40	10.90	4,575.5	19.4	0.8	-0.4	5.03	5.00	
4,609.0	15.30	9.30	4,605.4	27.5	2.2	-1.7	1.40	-0.32	
4,641.0	14.90	9.60	4,636.3	35.7	3.6	-2.9	1.27	-1.25	
4,672.0	14.40	8.70	4,666.3	43.5	4.9	-3.9	1.77	-1.61	
4,704.0	14.40	4.50	4,697.3	51.4	5.8	-4.7	3.26	0.00	
4,735.0	14.60	357.60	4,727.3	59.1	5.9	-4.7	5.61	0.65	
4,767.0	15.40	356.00	4,758.2	67.4	5.4	-4.0	2.81	2.50	
4,798.0	16.40	355.90	4,788.1	75.9	4.8	-3.3	3.23	3.23	
4,830.0	18.50	352.00	4,818.6	85.4	3.8	-2.0	7.51	6.56	
4,861.0	21.10	346.80	4,847.8	95.7	1.9	0.1	10.12	8.39	
4,892.0	22.90	340.80	4,876.5	106.8	-1.4	3.6	9.28	5.81	
4,924.0	24.00	335.20	4,905.9	118.6	-6.2	8.7	7.76	3.44	
4,955.0	25.80	331.60	4,934.0	130.3	-12.0	14.8	7.59	5.81	
4,987.0	28.20	325.10	4,962.5	142.6	-19.7	22.7	11.88	7.50	
5,018.0	30.00	315.40	4,989.6	154.1	-29.3	32.5	16.27	5.81	
5,050.0	31.40	306.40	5,017.1	164.8	-41.6	45.1	15.00	4.37	
5,081.0	32.20	300.10	5,043.5	173.7	-55.3	58.9	11.01	2.58	
5,113.0	33.40	295.50	5,070.4	181.8	-70.6	74.4	8.64	3.75	
5,145.0	35.90	293.80	5,096.7	189.4	-87.2	91.1	8.38	7.81	
5,176.0	37.70	292.20	5,121.5	196.6	-104.3	108.4	6.58	5.81	
5,207.0	38.00	288.90	5,146.0	203.3	-122.1	126.3	6.60	0.97	
5,239.0	39.60	287.90	5,170.9	209.6	-141.1	145.4	5.37	5.00	
5,270.0	42.00	285.60	5,194.4	215.4	-160.5	165.0	9.13	7.74	
5,302.0	45.10	284.20	5,217.6	221.1	-181.8	186.4	10.15	9.69	
5,333.0	48.30	283.40	5,238.9	226.5	-203.7	208.4	10.49	10.32	
5,365.0	51.50	282.80	5,259.5	232.0	-227.5	232.3	10.10	10.00	
5,396.0	55.40	282.80	5,277.9	237.5	-251.8	256.7	12.58	12.58	
5,427.0	58.20	281.90	5,294.9	243.1	-277.2	282.2	9.35	9.03	
5,459.0	61.20	279.70	5,311.0	248.3	-304.3	309.4	11.10	9.37	
5,490.0	63.90	277.60	5,325.3	252.4	-331.5	336.7	10.58	8.71	
5,522.0	67.20	277.20	5,338.6	256.1	-360.4	365.7	10.38	10.31	
5,553.0	70.60	276.90	5,349.7	259.7	-389.1	394.4	11.00	10.97	
5,585.0	72.70	274.30	5,359.8	262.6	-419.3	424.7	10.13	6.56	
5,617.0	74.90	271.30	5,368.7	264.1	-450.0	455.4	11.33	6.87	
5,648.0	76.90	269.80	5,376.3	264.4	-480.0	485.5	7.98	6.45	
5,670.0	78.60	269.50	5,381.0	264.3	-501.5	507.0	7.84	7.73	
5,709.0	80.70	268.50	5,388.0	263.6	-539.9	545.3	5.95	5.39	
5,740.0	81.30	268.40	5,392.8	262.8	-570.5	575.9	1.96	1.94	
5,771.0	83.50	269.10	5,396.9	262.1	-601.2	606.6	7.44	7.10	
5,801.0	85.40	270.00	5,399.8	261.9	-631.1	636.4	7.00	6.33	
5,832.0	87.00	270.60	5,401.9	262.1	-662.0	667.3	5.51	5.16	
5,863.0	88.40	270.50	5,403.1	262.4	-693.0	698.3	4.53	4.52	
5,926.0	89.80	270.30	5,404.1	262.8	-756.0	761.3	2.24	2.22	
5,989.0	90.90	271.20	5,403.7	263.6	-818.9	824.3	2.26	1.75	
6,052.0	89.80	271.50	5,403.3	265.1	-881.9	887.3	1.81	-1.75	
6,115.0	89.90	271.50	5,403.5	266.8	-944.9	950.3	0.16	0.16	
6,178.0	90.30	271.10	5,403.4	268.2	-1,007.9	1,013.3	0.90	0.63	
6,241.0	89.90	271.00	5,403.3	269.3	-1,070.9	1,076.3	0.65	-0.63	
6,304.0	90.80	271.20	5,402.9	270.5	-1,133.9	1,139.3	1.46	1.43	
6,367.0	91.00	271.00	5,401.9	271.8	-1,196.9	1,202.3	0.45	0.32	

Cathedral Energy Services

Survey Report

CONFIDENTIAL

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook H01-2206 01H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Lybrook H01-2206 01H
TVD Reference: 16' KB @ 6947.0ft (Aztec 950)
MD Reference: 16' KB @ 6947.0ft (Aztec 950)
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
6,430.0	90.30	270.60	5,401.2	272.6	-1,259.8	1,265.3	1.28	-1.11	
6,493.0	91.00	270.40	5,400.5	273.2	-1,322.8	1,328.3	1.16	1.11	
6,556.0	91.10	270.90	5,399.3	273.9	-1,385.8	1,391.3	0.81	0.16	
6,619.0	91.10	270.20	5,398.1	274.5	-1,448.8	1,454.2	1.11	0.00	
6,681.0	90.60	270.30	5,397.2	274.8	-1,510.8	1,516.2	0.82	-0.81	
6,744.0	91.20	270.00	5,396.2	274.9	-1,573.8	1,579.2	1.06	0.95	
6,807.0	90.70	269.70	5,395.2	274.8	-1,636.8	1,642.2	0.93	-0.79	
6,870.0	91.70	269.40	5,393.8	274.3	-1,699.8	1,705.1	1.66	1.59	
6,934.0	91.30	271.10	5,392.2	274.6	-1,763.7	1,769.1	2.73	-0.62	
6,997.0	91.00	271.60	5,390.9	276.0	-1,826.7	1,832.1	0.93	-0.48	
7,060.0	91.50	272.50	5,389.5	278.3	-1,889.7	1,895.1	1.63	0.79	
7,122.0	88.00	270.50	5,389.8	279.9	-1,951.6	1,957.1	6.50	-5.65	
7,185.0	90.90	271.80	5,390.4	281.2	-2,014.6	2,020.0	5.04	4.60	
7,248.0	90.30	271.60	5,389.7	283.1	-2,077.6	2,083.0	1.00	-0.95	
7,311.0	90.30	271.20	5,389.4	284.6	-2,140.5	2,146.0	0.63	0.00	
7,374.0	90.70	270.70	5,388.9	285.6	-2,203.5	2,209.0	1.02	0.63	
7,436.0	90.50	271.50	5,388.2	286.8	-2,265.5	2,271.0	1.33	-0.32	
7,499.0	90.40	271.90	5,387.7	288.7	-2,328.5	2,334.0	0.65	-0.16	
7,562.0	90.20	271.10	5,387.4	290.3	-2,391.5	2,397.0	1.31	-0.32	
7,626.0	90.10	271.40	5,387.2	291.7	-2,455.5	2,461.0	0.49	-0.16	
7,689.0	90.50	270.90	5,386.9	293.0	-2,518.4	2,524.0	1.02	0.63	
7,752.0	90.50	272.20	5,386.3	294.7	-2,581.4	2,587.0	2.06	0.00	
7,814.0	90.30	272.10	5,385.9	297.0	-2,643.4	2,649.0	0.36	-0.32	
7,878.0	89.80	271.80	5,385.8	299.2	-2,707.3	2,713.0	0.91	-0.78	
7,941.0	90.40	271.70	5,385.7	301.1	-2,770.3	2,776.0	0.97	0.95	
8,004.0	89.30	271.00	5,385.9	302.6	-2,833.3	2,839.0	2.07	-1.75	
8,066.0	91.20	271.50	5,385.6	304.0	-2,895.3	2,901.0	3.17	3.06	
8,129.0	88.70	269.70	5,385.7	304.6	-2,958.3	2,964.0	4.89	-3.97	
8,192.0	89.90	270.10	5,386.5	304.5	-3,021.2	3,027.0	2.01	1.90	
8,255.0	90.70	269.80	5,386.1	304.5	-3,084.2	3,089.9	1.36	1.27	
8,318.0	90.20	270.90	5,385.6	304.9	-3,147.2	3,152.9	1.92	-0.79	
8,382.0	89.70	269.30	5,385.7	305.0	-3,211.2	3,216.9	2.62	-0.78	
8,445.0	90.40	269.70	5,385.6	304.4	-3,274.2	3,279.9	1.28	1.11	
8,508.0	90.10	270.10	5,385.4	304.3	-3,337.2	3,342.9	0.79	-0.48	
8,571.0	91.10	270.90	5,384.7	304.9	-3,400.2	3,405.9	2.03	1.59	
8,633.0	89.00	271.00	5,384.6	305.9	-3,462.2	3,467.9	3.39	-3.39	
8,696.0	91.60	271.60	5,384.3	307.3	-3,525.2	3,530.9	4.24	4.13	
8,759.0	92.50	272.20	5,382.1	309.4	-3,588.1	3,593.8	1.72	1.43	
8,822.0	92.30	273.10	5,379.4	312.3	-3,651.0	3,656.7	1.46	-0.32	
8,885.0	90.80	273.10	5,377.7	315.7	-3,713.9	3,719.7	2.38	-2.38	
8,948.0	89.70	272.90	5,377.4	319.0	-3,776.8	3,782.6	1.77	-1.75	
9,011.0	90.50	272.50	5,377.3	322.0	-3,839.7	3,845.6	1.42	1.27	
9,074.0	90.50	273.00	5,376.8	325.0	-3,902.6	3,908.6	0.79	0.00	
9,137.0	90.00	272.70	5,376.5	328.1	-3,965.6	3,971.6	0.93	-0.79	
9,200.0	89.70	271.80	5,376.7	330.6	-4,028.5	4,034.6	1.51	-0.48	
9,263.0	90.40	271.90	5,376.6	332.6	-4,091.5	4,097.5	1.12	1.11	
9,326.0	90.20	271.90	5,376.3	334.7	-4,154.4	4,160.5	0.32	-0.32	
9,390.0	91.20	271.70	5,375.5	336.7	-4,218.4	4,224.5	1.59	1.56	
9,453.0	90.80	271.70	5,374.4	338.6	-4,281.4	4,287.5	0.63	-0.63	
9,530.0	90.60	271.60	5,373.5	340.8	-4,358.3	4,364.5	0.29	-0.26	Last CES Survey @ 9,530' MD
9,575.0	90.60	271.60	5,373.0	342.1	-4,403.3	4,409.5	0.00	0.00	PTB @ 9,575'

Cathedral Energy Services

Survey Report

CONFIDENTIAL

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook H01-2206 01H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Lybrook H01-2206 01H
TVD Reference: 16' KB @ 6947.0ft (Aztec 950)
MD Reference: 16' KB @ 6947.0ft (Aztec 950)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

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 H01-2206 01H - actual wellpath misses target center by 115.6ft at 9567.1ft MD (5373.1 TVD, 341.9 N, -4395.4 E) - Point	0.00	359.30	5,394.5	455.4	-4,392.4	1,882,857.77	1,292,783.55	36.168900	-107.427800
Lybrook H01-2206 01H - actual wellpath misses target center by 8.1ft at 9575.0ft MD (5373.0 TVD, 342.1 N, -4403.3 E) - Point	0.00	359.30	5,377.2	335.3	-4,404.3	1,882,737.78	1,292,770.28	36.168570	-107.427840
Lybrook H01-2206 01H I - actual wellpath misses target center by 6.9ft at 9575.0ft MD (5373.0 TVD, 342.1 N, -4403.3 E) - Point	0.00	0.00	5,373.2	335.3	-4,404.3	1,882,737.78	1,292,770.28	36.168570	-107.427840
Lybrook H01-2206 01H - actual wellpath misses target center by 12.1ft at 5740.6ft MD (5392.9 TVD, 262.8 N, -571.1 E) - Point	0.00	359.30	5,402.0	254.8	-569.7	1,882,611.42	1,296,603.60	36.168350	-107.414850
Lybrook H01-2206 01H - actual wellpath misses target center by 7.2ft at 9575.0ft MD (5373.0 TVD, 342.1 N, -4403.3 E) - Point	0.00	359.30	5,375.2	335.3	-4,404.3	1,882,737.78	1,292,770.28	36.168570	-107.427840
Lybrook H01-2206 01H - actual wellpath misses target center by 10.0ft at 9575.0ft MD (5373.0 TVD, 342.1 N, -4403.3 E) - Point	0.00	359.30	5,380.2	335.3	-4,404.3	1,882,737.78	1,292,770.28	36.168570	-107.427840
Lybrook H01-2206 01H - actual wellpath misses target center by 13.7ft at 5740.9ft MD (5392.9 TVD, 262.8 N, -571.4 E) - Point	0.00	359.30	5,404.0	254.8	-569.7	1,882,611.42	1,296,603.60	36.168350	-107.414850
Lybrook H01-2206 01H - actual wellpath misses target center by 33.0ft at 5770.4ft MD (5396.8 TVD, 262.1 N, -600.6 E) - Point	0.00	359.30	5,427.7	251.2	-596.3	1,882,608.10	1,296,576.99	36.168340	-107.414940
Lybrook H01-2206 01H - actual wellpath misses target center by 22.2ft at 5768.9ft MD (5396.7 TVD, 262.2 N, -599.1 E) - Point	0.00	359.30	5,415.7	251.2	-596.3	1,882,608.10	1,296,576.99	36.168340	-107.414940
Lybrook H01-2206 01H - actual wellpath misses target center by 114.7ft at 9567.1ft MD (5373.1 TVD, 341.9 N, -4395.5 E) - Point	0.00	359.30	5,389.2	455.4	-4,392.4	1,882,857.77	1,292,783.55	36.168900	-107.427800
Lybrook H01-2206 01H - actual wellpath misses target center by 16.1ft at 5741.3ft MD (5393.0 TVD, 262.8 N, -571.7 E) - Point	0.00	359.30	5,406.9	254.8	-569.7	1,882,611.42	1,296,603.60	36.168350	-107.414850

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
9,530.0	5,373.5	340.8	-4,358.3	Last CES Survey @ 9,530' MD
9,575.0	5,373.0	342.1	-4,403.3	PTB @ 9,575'

Checked By: _____ Approved By: _____ Date: _____

CONFIDENTIAL

RCVD MAR 28 '14
OIL CONS. DIV.
DIST. 3

EnCana Oil & Gas (USA) Inc

Sandoval County, NM

Lybrook

Lybrook H01-2206 01H

HZ

Design: FINAL

Survey Report - Geographic

10 February, 2014

Cathedral Energy Services

Survey Report - Geographic

CONFIDENTIAL

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook H01-2206 01H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Lybrook H01-2206 01H
TVD Reference: 16' KB @ 6947.0ft (Aztec 950)
MD Reference: 16' KB @ 6947.0ft (Aztec 950)
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	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 H01-2206 01H		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft
		Latitude:	36.167650
		Longitude:	-107.412920
		Ground Level:	6,931.0 ft

Wellbore	HZ		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	1/21/2014	(°)
			9.36
			Dip Angle
			(°)
			62.97
			Field Strength
			(nT)
			50,191

Design	FINAL		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.0	0.0	0.0
			Direction
			(°)
			271.20

Survey Program	Date 2/10/2014		
From	To	Survey (Wellbore)	Tool Name
(ft)	(ft)		
564.0	4,380.0	Survey #1 (Pilot Hole)	Geolink MWD
4,420.0	9,575.0	Survey #1 (HZ)	Geolink MWD
			Description
			Geolink MWD
			Geolink MWD

Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map	Latitude	Longitude
Depth	(°)	(°)	Depth	(ft)	(ft)	Northing	Easting		
(ft)			(ft)			(ft)	(ft)		
0.0	0.00	0.00	0.0	0.0	0.0	1,882,349.77	1,297,170.22	36.167650	-107.412920
564.0	1.10	159.60	564.0	-5.1	1.9	1,882,344.67	1,297,172.05	36.167636	-107.412914
628.0	1.10	151.60	628.0	-6.2	2.4	1,882,343.55	1,297,172.54	36.167633	-107.412912
690.0	1.00	109.20	689.9	-6.9	3.2	1,882,342.84	1,297,173.33	36.167631	-107.412909
751.0	1.10	99.40	750.9	-7.2	4.3	1,882,342.56	1,297,174.41	36.167630	-107.412906
812.0	0.50	38.70	811.9	-7.1	5.0	1,882,342.66	1,297,175.15	36.167631	-107.412903
873.0	0.80	350.60	872.9	-6.4	5.1	1,882,343.29	1,297,175.26	36.167632	-107.412903
935.0	0.90	349.60	934.9	-5.5	5.0	1,882,344.19	1,297,175.11	36.167635	-107.412904
995.0	1.20	344.80	994.9	-4.4	4.7	1,882,345.27	1,297,174.87	36.167638	-107.412904
1,057.0	1.30	337.80	1,056.9	-3.2	4.3	1,882,346.55	1,297,174.45	36.167641	-107.412906
1,117.0	1.50	346.20	1,116.9	-1.8	3.8	1,882,347.95	1,297,174.02	36.167645	-107.412907

Cathedral Energy Services
Survey Report - Geographic

CONFIDENTIAL

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook H01-2206 01H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Lybrook H01-2206 01H
TVD Reference: 16' KB @ 6947.0ft (Aztec 950)
MD Reference: 16' KB @ 6947.0ft (Aztec 950)
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
1,178.0	1.10	312.90	1,177.9	-0.6	3.2	1,882,349.13	1,297,173.42	36.167648	-107.412909
1,239.0	0.90	268.00	1,238.9	-0.2	2.3	1,882,349.52	1,297,172.51	36.167649	-107.412913
1,301.0	0.90	254.00	1,300.8	-0.4	1.3	1,882,349.38	1,297,171.56	36.167649	-107.412916
1,362.0	0.70	214.10	1,361.8	-0.8	0.7	1,882,348.95	1,297,170.88	36.167648	-107.412918
1,423.0	0.70	188.00	1,422.8	-1.5	0.4	1,882,348.27	1,297,170.61	36.167646	-107.412919
1,484.0	0.70	199.90	1,483.8	-2.2	0.2	1,882,347.56	1,297,170.43	36.167644	-107.412919
1,546.0	0.90	204.70	1,545.8	-3.0	-0.1	1,882,346.76	1,297,170.09	36.167642	-107.412921
1,609.0	0.10	120.40	1,608.8	-3.5	-0.3	1,882,346.29	1,297,169.92	36.167641	-107.412921
1,672.0	0.30	122.60	1,671.8	-3.6	-0.1	1,882,346.17	1,297,170.11	36.167640	-107.412921
1,736.0	0.20	135.40	1,735.8	-3.8	0.1	1,882,346.00	1,297,170.32	36.167640	-107.412920
1,799.0	0.30	145.10	1,798.8	-4.0	0.3	1,882,345.78	1,297,170.49	36.167639	-107.412919
1,862.0	0.40	226.70	1,861.8	-4.3	0.2	1,882,345.49	1,297,170.42	36.167638	-107.412919
1,925.0	0.10	235.40	1,924.8	-4.5	0.0	1,882,345.31	1,297,170.22	36.167638	-107.412920
1,988.0	0.10	99.40	1,987.8	-4.5	0.1	1,882,345.27	1,297,170.22	36.167638	-107.412920
2,051.0	0.20	127.10	2,050.8	-4.6	0.2	1,882,345.20	1,297,170.37	36.167638	-107.412920
2,114.0	0.20	138.20	2,113.8	-4.7	0.4	1,882,345.05	1,297,170.52	36.167637	-107.412919
2,177.0	0.30	195.70	2,176.8	-5.0	0.4	1,882,344.81	1,297,170.55	36.167636	-107.412919
2,240.0	0.20	142.10	2,239.8	-5.2	0.4	1,882,344.56	1,297,170.57	36.167636	-107.412919
2,303.0	0.10	99.40	2,302.8	-5.3	0.5	1,882,344.46	1,297,170.69	36.167636	-107.412918
2,366.0	0.30	48.70	2,365.8	-5.2	0.7	1,882,344.56	1,297,170.87	36.167636	-107.412918
2,429.0	0.40	36.20	2,428.8	-4.9	1.0	1,882,344.84	1,297,171.13	36.167637	-107.412917
2,492.0	0.40	38.70	2,491.8	-4.6	1.2	1,882,345.19	1,297,171.40	36.167638	-107.412916
2,555.0	0.50	74.20	2,554.8	-4.3	1.6	1,882,345.43	1,297,171.80	36.167638	-107.412915
2,618.0	0.70	72.80	2,617.8	-4.1	2.3	1,882,345.61	1,297,172.44	36.167639	-107.412913
2,681.0	0.50	74.90	2,680.8	-3.9	2.9	1,882,345.79	1,297,173.07	36.167639	-107.412910
2,744.0	0.40	64.10	2,743.8	-3.8	3.4	1,882,345.95	1,297,173.54	36.167640	-107.412909
2,806.0	0.50	48.60	2,805.8	-3.5	3.8	1,882,346.22	1,297,173.94	36.167640	-107.412908
2,869.0	0.30	53.70	2,868.8	-3.2	4.1	1,882,346.50	1,297,174.28	36.167641	-107.412906
2,932.0	0.40	354.20	2,931.8	-2.9	4.2	1,882,346.81	1,297,174.40	36.167642	-107.412906
2,995.0	0.40	323.00	2,994.8	-2.5	4.1	1,882,347.21	1,297,174.25	36.167643	-107.412907
3,058.0	0.40	318.50	3,057.8	-2.2	3.8	1,882,347.55	1,297,173.97	36.167644	-107.412907
3,121.0	0.40	320.10	3,120.8	-1.8	3.5	1,882,347.89	1,297,173.69	36.167645	-107.412908
3,184.0	0.40	306.20	3,183.8	-1.5	3.2	1,882,348.19	1,297,173.37	36.167646	-107.412910
3,247.0	0.30	348.40	3,246.8	-1.2	3.0	1,882,348.48	1,297,173.17	36.167647	-107.412910
3,310.0	0.10	279.40	3,309.8	-1.1	2.9	1,882,348.66	1,297,173.08	36.167647	-107.412911
3,373.0	0.10	173.20	3,372.8	-1.1	2.8	1,882,348.61	1,297,173.03	36.167647	-107.412911
3,436.0	0.30	106.20	3,435.8	-1.2	3.0	1,882,348.51	1,297,173.20	36.167647	-107.412910
3,499.0	0.30	116.10	3,498.8	-1.3	3.3	1,882,348.39	1,297,173.50	36.167646	-107.412909
3,562.0	0.50	109.60	3,561.8	-1.5	3.7	1,882,348.22	1,297,173.91	36.167646	-107.412908
3,625.0	0.50	121.70	3,624.8	-1.7	4.2	1,882,347.97	1,297,174.40	36.167645	-107.412906
3,688.0	0.40	123.80	3,687.8	-2.0	4.6	1,882,347.70	1,297,174.81	36.167645	-107.412905
3,751.0	0.20	99.40	3,750.8	-2.2	4.9	1,882,347.56	1,297,175.10	36.167644	-107.412904
3,814.0	0.40	78.50	3,813.8	-2.1	5.2	1,882,347.58	1,297,175.42	36.167644	-107.412903
3,876.0	0.10	334.90	3,875.8	-2.0	5.4	1,882,347.67	1,297,175.62	36.167645	-107.412902
3,940.0	0.60	284.60	3,939.8	-1.9	5.1	1,882,347.81	1,297,175.27	36.167645	-107.412903
4,002.0	0.60	272.20	4,001.8	-1.8	4.4	1,882,347.91	1,297,174.63	36.167645	-107.412905
4,065.0	0.80	259.00	4,064.8	-1.9	3.7	1,882,347.85	1,297,173.87	36.167645	-107.412908
4,128.0	0.80	263.70	4,127.8	-2.0	2.8	1,882,347.73	1,297,173.00	36.167645	-107.412911
4,191.0	0.80	266.50	4,190.8	-2.1	1.9	1,882,347.66	1,297,172.12	36.167644	-107.412914
4,254.0	1.00	268.90	4,253.8	-2.1	0.9	1,882,347.64	1,297,171.13	36.167644	-107.412917
4,317.0	1.10	260.80	4,316.7	-2.2	-0.2	1,882,347.54	1,297,169.99	36.167644	-107.412921
4,380.0	1.10	254.40	4,379.7	-2.5	-1.4	1,882,347.30	1,297,168.80	36.167643	-107.412925
4,420.0	1.30	284.20	4,419.7	-2.5	-2.2	1,882,347.32	1,297,167.99	36.167643	-107.412928
4,452.0	2.20	346.80	4,451.7	-1.8	-2.7	1,882,348.01	1,297,167.51	36.167645	-107.412929
4,483.0	6.30	5.30	4,482.6	0.5	-2.7	1,882,350.28	1,297,167.56	36.167651	-107.412929

Cathedral Energy Services

Survey Report - Geographic

CONFIDENTIAL

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook H01-2206 01H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Lybrook H01-2206 01H
TVD Reference: 16' KB @ 6947.0ft (Aztec 950)
MD Reference: 16' KB @ 6947.0ft (Aztec 950)
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
4,515.0	10.50	10.00	4,514.3	5.1	-2.0	1,882,354.90	1,297,168.28	36.167664	-107.412927
4,546.0	13.80	11.60	4,544.6	11.5	-0.8	1,882,361.29	1,297,169.59	36.167682	-107.412923
4,578.0	15.40	10.90	4,575.5	19.4	0.8	1,882,369.18	1,297,171.26	36.167703	-107.412918
4,609.0	15.30	9.30	4,605.4	27.5	2.2	1,882,377.24	1,297,172.79	36.167726	-107.412913
4,641.0	14.90	9.60	4,636.3	35.7	3.6	1,882,385.45	1,297,174.26	36.167748	-107.412908
4,672.0	14.40	8.70	4,666.3	43.5	4.9	1,882,393.17	1,297,175.60	36.167769	-107.412904
4,704.0	14.40	4.50	4,697.3	51.4	5.8	1,882,401.06	1,297,176.61	36.167791	-107.412901
4,735.0	14.60	357.60	4,727.3	59.1	5.9	1,882,408.80	1,297,176.84	36.167812	-107.412900
4,767.0	15.40	356.00	4,758.2	67.4	5.4	1,882,417.08	1,297,176.48	36.167835	-107.412902
4,798.0	16.40	355.90	4,788.1	75.9	4.8	1,882,425.56	1,297,175.98	36.167858	-107.412904
4,830.0	18.50	352.00	4,818.6	85.4	3.8	1,882,435.10	1,297,175.06	36.167885	-107.412907
4,861.0	21.10	346.80	4,847.8	95.7	1.9	1,882,445.43	1,297,173.23	36.167913	-107.412914
4,892.0	22.90	340.80	4,876.5	106.8	-1.4	1,882,456.60	1,297,170.10	36.167944	-107.412925
4,924.0	24.00	335.20	4,905.9	118.6	-6.2	1,882,468.45	1,297,165.46	36.167976	-107.412941
4,955.0	25.80	331.60	4,934.0	130.3	-12.0	1,882,480.17	1,297,159.75	36.168008	-107.412961
4,987.0	28.20	325.10	4,962.5	142.6	-19.7	1,882,492.60	1,297,152.26	36.168042	-107.412987
5,018.0	30.00	315.40	4,989.6	154.1	-29.3	1,882,504.24	1,297,142.76	36.168073	-107.413020
5,050.0	31.40	306.40	5,017.1	164.8	-41.6	1,882,515.04	1,297,130.55	36.168103	-107.413061
5,081.0	32.20	300.10	5,043.5	173.7	-55.3	1,882,524.14	1,297,117.01	36.168127	-107.413108
5,113.0	33.40	295.50	5,070.4	181.8	-70.6	1,882,532.39	1,297,101.78	36.168149	-107.413160
5,145.0	35.90	293.80	5,096.7	189.4	-87.2	1,882,540.17	1,297,085.34	36.168170	-107.413216
5,176.0	37.70	292.20	5,121.5	196.6	-104.3	1,882,547.62	1,297,068.33	36.168190	-107.413273
5,207.0	38.00	288.90	5,146.0	203.3	-122.1	1,882,554.51	1,297,050.60	36.168208	-107.413334
5,239.0	39.60	287.90	5,170.9	209.6	-141.1	1,882,561.06	1,297,031.66	36.168226	-107.413398
5,270.0	42.00	285.60	5,194.4	215.4	-160.5	1,882,567.12	1,297,012.33	36.168242	-107.413464
5,302.0	45.10	284.20	5,217.6	221.1	-181.8	1,882,573.04	1,296,991.10	36.168257	-107.413536
5,333.0	48.30	283.40	5,238.9	226.5	-203.7	1,882,578.68	1,296,969.25	36.168272	-107.413610
5,365.0	51.50	282.80	5,259.5	232.0	-227.5	1,882,584.51	1,296,945.48	36.168287	-107.413691
5,396.0	55.40	282.80	5,277.9	237.5	-251.8	1,882,590.31	1,296,921.27	36.168303	-107.413773
5,427.0	58.20	281.90	5,294.9	243.1	-277.2	1,882,596.16	1,296,896.00	36.168318	-107.413859
5,459.0	61.20	279.70	5,311.0	248.3	-304.3	1,882,601.65	1,296,868.93	36.168332	-107.413951
5,490.0	63.90	277.60	5,325.3	252.4	-331.5	1,882,606.11	1,296,841.79	36.168343	-107.414043
5,522.0	67.20	277.20	5,338.6	256.1	-360.4	1,882,610.20	1,296,812.95	36.168354	-107.414141
5,553.0	70.60	276.90	5,349.7	259.7	-389.1	1,882,614.10	1,296,784.30	36.168363	-107.414238
5,585.0	72.70	274.30	5,359.8	262.6	-419.3	1,882,617.42	1,296,754.11	36.168372	-107.414341
5,617.0	74.90	271.30	5,368.7	264.1	-450.0	1,882,619.28	1,296,723.45	36.168376	-107.414445
5,648.0	76.90	269.80	5,376.3	264.4	-480.0	1,882,619.93	1,296,693.39	36.168376	-107.414546
5,670.0	78.60	269.50	5,381.0	264.3	-501.5	1,882,620.05	1,296,671.89	36.168376	-107.414619
5,709.0	80.70	268.50	5,388.0	263.6	-539.9	1,882,619.84	1,296,633.54	36.168374	-107.414749
5,740.0	81.30	268.40	5,392.8	262.8	-570.5	1,882,619.38	1,296,602.93	36.168372	-107.414853
5,771.0	83.50	269.10	5,396.9	262.1	-601.2	1,882,619.08	1,296,572.20	36.168370	-107.414957
5,801.0	85.40	270.00	5,399.8	261.9	-631.1	1,882,619.20	1,296,542.34	36.168369	-107.415058
5,832.0	87.00	270.60	5,401.9	262.1	-662.0	1,882,619.74	1,296,511.42	36.168370	-107.415163
5,863.0	88.40	270.50	5,403.1	262.4	-693.0	1,882,620.40	1,296,480.45	36.168371	-107.415268
5,926.0	89.80	270.30	5,404.1	262.8	-756.0	1,882,621.60	1,296,417.47	36.168372	-107.415481
5,989.0	90.90	271.20	5,403.7	263.6	-818.9	1,882,623.18	1,296,354.49	36.168374	-107.415695
6,052.0	89.80	271.50	5,403.3	265.1	-881.9	1,882,625.42	1,296,291.54	36.168378	-107.415908
6,115.0	89.90	271.50	5,403.5	266.8	-944.9	1,882,627.82	1,296,228.58	36.168383	-107.416121
6,178.0	90.30	271.10	5,403.4	268.2	-1,007.9	1,882,630.00	1,296,165.62	36.168387	-107.416335
6,241.0	89.90	271.00	5,403.3	269.3	-1,070.9	1,882,631.91	1,296,102.64	36.168390	-107.416548
6,304.0	90.80	271.20	5,402.9	270.5	-1,133.9	1,882,633.88	1,296,039.67	36.168393	-107.416761
6,367.0	91.00	271.00	5,401.9	271.8	-1,196.9	1,882,635.84	1,295,976.71	36.168396	-107.416975
6,430.0	90.30	270.60	5,401.2	272.6	-1,259.8	1,882,637.47	1,295,913.73	36.168399	-107.417188
6,493.0	91.00	270.40	5,400.5	273.2	-1,322.8	1,882,638.78	1,295,850.75	36.168400	-107.417402
6,556.0	91.10	270.90	5,399.3	273.9	-1,385.8	1,882,640.25	1,295,787.78	36.168402	-107.417615

Cathedral Energy Services

Survey Report - Geographic

CONFIDENTIAL

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook H01-2206 01H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Lybrook H01-2206 01H
TVD Reference: 16' KB @ 6947.0ft (Aztec 950)
MD Reference: 16' KB @ 6947.0ft (Aztec 950)
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
6,619.0	91.10	270.20	5,398.1	274.5	-1,448.8	1,882,641.61	1,295,724.81	36.168404	-107.417828
6,681.0	90.60	270.30	5,397.2	274.8	-1,510.8	1,882,642.62	1,295,662.82	36.168405	-107.418038
6,744.0	91.20	270.00	5,396.2	274.9	-1,573.8	1,882,643.54	1,295,599.84	36.168405	-107.418252
6,807.0	90.70	269.70	5,395.2	274.8	-1,636.8	1,882,644.13	1,295,536.85	36.168405	-107.418465
6,870.0	91.70	269.40	5,393.8	274.3	-1,699.8	1,882,644.39	1,295,473.86	36.168403	-107.418678
6,934.0	91.30	271.10	5,392.2	274.6	-1,763.7	1,882,645.44	1,295,409.90	36.168404	-107.418895
6,997.0	91.00	271.60	5,390.9	276.0	-1,826.7	1,882,647.67	1,295,346.95	36.168408	-107.419108
7,060.0	91.50	272.50	5,389.5	278.3	-1,889.7	1,882,650.68	1,295,284.04	36.168414	-107.419322
7,122.0	88.00	270.50	5,389.8	279.9	-1,951.6	1,882,653.05	1,295,222.09	36.168419	-107.419532
7,185.0	90.90	271.80	5,390.4	281.2	-2,014.6	1,882,655.06	1,295,159.14	36.168422	-107.419745
7,248.0	90.30	271.60	5,389.7	283.1	-2,077.6	1,882,657.69	1,295,096.20	36.168427	-107.419958
7,311.0	90.30	271.20	5,389.4	284.6	-2,140.5	1,882,659.98	1,295,033.24	36.168432	-107.420172
7,374.0	90.70	270.70	5,388.9	285.6	-2,203.5	1,882,661.78	1,294,970.27	36.168434	-107.420385
7,436.0	90.50	271.50	5,388.2	286.8	-2,265.5	1,882,663.71	1,294,908.30	36.168438	-107.420595
7,499.0	90.40	271.90	5,387.7	288.7	-2,328.5	1,882,666.34	1,294,845.36	36.168443	-107.420808
7,562.0	90.20	271.10	5,387.4	290.3	-2,391.5	1,882,668.74	1,294,782.40	36.168447	-107.421022
7,626.0	90.10	271.40	5,387.2	291.7	-2,455.5	1,882,670.90	1,294,718.44	36.168451	-107.421238
7,689.0	90.50	270.90	5,386.9	293.0	-2,518.4	1,882,672.92	1,294,655.47	36.168455	-107.421452
7,752.0	90.50	272.20	5,386.3	294.7	-2,581.4	1,882,675.38	1,294,592.53	36.168459	-107.421665
7,814.0	90.30	272.10	5,385.9	297.0	-2,643.4	1,882,678.45	1,294,530.60	36.168466	-107.421875
7,878.0	89.80	271.80	5,385.8	299.2	-2,707.3	1,882,681.39	1,294,466.67	36.168472	-107.422092
7,941.0	90.40	271.70	5,385.7	301.1	-2,770.3	1,882,684.07	1,294,403.73	36.168477	-107.422305
8,004.0	89.30	271.00	5,385.9	302.6	-2,833.3	1,882,686.31	1,294,340.77	36.168481	-107.422518
8,066.0	91.20	271.50	5,385.6	304.0	-2,895.3	1,882,688.40	1,294,278.81	36.168485	-107.422728
8,129.0	88.70	269.70	5,385.7	304.6	-2,958.3	1,882,689.82	1,294,215.83	36.168486	-107.422942
8,192.0	89.90	270.10	5,386.5	304.5	-3,021.2	1,882,690.46	1,294,152.84	36.168486	-107.423155
8,255.0	90.70	269.80	5,386.1	304.5	-3,084.2	1,882,691.16	1,294,089.85	36.168486	-107.423369
8,318.0	90.20	270.90	5,385.6	304.9	-3,147.2	1,882,692.30	1,294,026.86	36.168487	-107.423582
8,382.0	89.70	269.30	5,385.7	305.0	-3,211.2	1,882,693.18	1,293,962.87	36.168487	-107.423799
8,445.0	90.40	269.70	5,385.6	304.4	-3,274.2	1,882,693.38	1,293,899.87	36.168486	-107.424012
8,508.0	90.10	270.10	5,385.4	304.3	-3,337.2	1,882,694.03	1,293,836.87	36.168485	-107.424226
8,571.0	91.10	270.90	5,384.7	304.9	-3,400.2	1,882,695.33	1,293,773.89	36.168487	-107.424439
8,633.0	89.00	271.00	5,384.6	305.9	-3,462.2	1,882,697.10	1,293,711.92	36.168490	-107.424649
8,696.0	91.60	271.60	5,384.3	307.3	-3,525.2	1,882,699.29	1,293,648.96	36.168494	-107.424862
8,759.0	92.50	272.20	5,382.1	309.4	-3,588.1	1,882,702.13	1,293,586.07	36.168499	-107.425075
8,822.0	92.30	273.10	5,379.4	312.3	-3,651.0	1,882,705.79	1,293,523.23	36.168507	-107.425288
8,885.0	90.80	273.10	5,377.7	315.7	-3,713.9	1,882,709.95	1,293,460.39	36.168517	-107.425501
8,948.0	89.70	272.90	5,377.4	319.0	-3,776.8	1,882,714.00	1,293,397.53	36.168526	-107.425715
9,011.0	90.50	272.50	5,377.3	322.0	-3,839.7	1,882,717.72	1,293,334.64	36.168534	-107.425928
9,074.0	90.50	273.00	5,376.8	325.0	-3,902.6	1,882,721.50	1,293,271.75	36.168542	-107.426141
9,137.0	90.00	272.70	5,376.5	328.1	-3,965.6	1,882,725.38	1,293,208.87	36.168551	-107.426354
9,200.0	89.70	271.80	5,376.7	330.6	-4,028.5	1,882,728.61	1,293,145.96	36.168557	-107.426567
9,263.0	90.40	271.90	5,376.6	332.6	-4,091.5	1,882,731.40	1,293,083.04	36.168563	-107.426781
9,326.0	90.20	271.90	5,376.3	334.7	-4,154.4	1,882,734.24	1,293,020.10	36.168569	-107.426994
9,390.0	91.20	271.70	5,375.5	336.7	-4,218.4	1,882,737.02	1,292,956.17	36.168574	-107.427211
9,453.0	90.80	271.70	5,374.4	338.6	-4,281.4	1,882,739.64	1,292,893.23	36.168579	-107.427424
9,530.0	90.60	271.60	5,373.5	340.8	-4,358.3	1,882,742.78	1,292,816.30	36.168585	-107.427685
Last CES Survey @ 9,530' MD									
9,575.0	90.60	271.60	5,373.0	342.1	-4,403.3	1,882,744.57	1,292,771.34	36.168589	-107.427837
PTB @ 9,575'									

Cathedral Energy Services

Survey Report - Geographic

CONFIDENTIAL

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook H01-2206 01H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Lybrook H01-2206 01H
TVD Reference: 16' KB @ 6947.0ft (Aztec 950)
MD Reference: 16' KB @ 6947.0ft (Aztec 950)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Design Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
Lybrook H01-2206 01H	0.00	359.30	5,375.2	335.3	-4,404.3	1,882,737.78	1,292,770.28	36.168570	-107.427840
- actual wellpath misses target center by 7.2ft at 9575.0ft MD (5373.0 TVD, 342.1 N, -4403.3 E)									
- Point									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
9,530.0	5,373.5	340.8	-4,358.3	Last CES Survey @ 9,530' MD
9,575.0	5,373.0	342.1	-4,403.3	PTB @ 9,575'

Checked By: _____ Approved By: _____ Date: _____