

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

☐ AMENDED REPORT  
☒ As-Drilled

OIL CONS. DIV DIST. 3

WELL LOCATION AND ACREAGE DEDICATION PLAT

OCT 27 2014

|                                         |                                                           |                                          |
|-----------------------------------------|-----------------------------------------------------------|------------------------------------------|
| <sup>1</sup> API Number<br>30-043-21196 | <sup>2</sup> Pool Code<br>1039                            | <sup>3</sup> Pool Name<br>ALAMITO-GALLUP |
| <sup>4</sup> Property Code<br>40405     | <sup>5</sup> Property Name<br>LYBROOK E33-2307            | <sup>6</sup> Well Number<br>02H          |
| <sup>7</sup> OGRID No.<br>282327        | <sup>8</sup> Operator Name<br>ENCANA OIL & GAS (USA) INC. | <sup>9</sup> Elevation<br>6853'          |

<sup>10</sup> 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    |         | 1770          | NORTH            | 545           | WEST           | SANDOVAL |

<sup>11</sup> Bottom Hole Location If Different From Surface

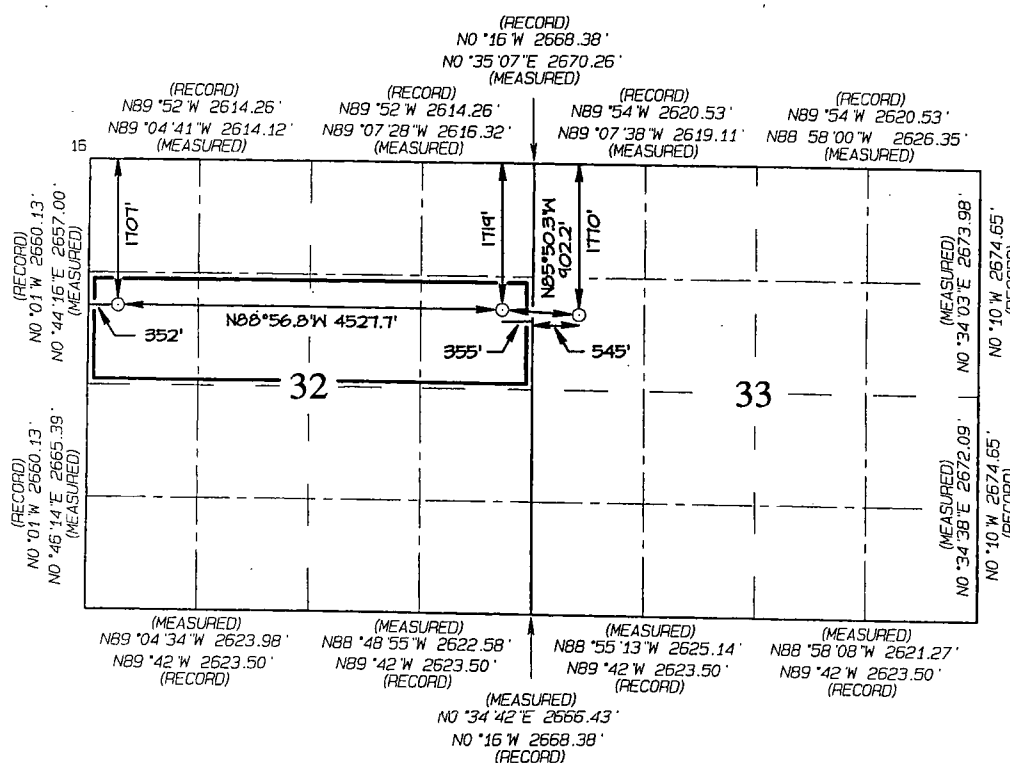
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County   |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|----------|
| E             | 32      | 23N      | 7W    |         | 1707          | NORTH            | 352           | WEST           | SANDOVAL |

|                                                                       |                               |                                  |                         |
|-----------------------------------------------------------------------|-------------------------------|----------------------------------|-------------------------|
| <sup>12</sup> Dedicated Acres<br>160.00 Acres<br>S/2 N/2 - Section 32 | <sup>13</sup> Joint or Infill | <sup>14</sup> Consolidation Code | <sup>15</sup> Order No. |
|-----------------------------------------------------------------------|-------------------------------|----------------------------------|-------------------------|

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

OIL CONS. DIV DIST. 3

OCT 27 2014



<sup>17</sup> 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: 10/21/14

Printed Name: Jessica Gregg

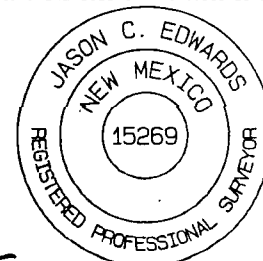
E-mail Address: Jessica.Gregg@encana.com

<sup>18</sup> 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 1, 2014  
Date of Survey: AUGUST 2, 2013

Signature and Seal of Professional Surveyor



JASON C. EDWARDS  
Certificate Number 15269

END-OF-LATERAL  
1707' FNL 352' FWL  
SECTION 32, T23N, R7W  
LAT: 36.185894°N  
LONG: 107.604724°W  
DATUM: NAD1927

LAT: 36.185908°N  
LONG: 107.605332°W  
DATUM: NAD1983

POINT-OF-ENTRY  
1719' FNL 355' FEL  
SECTION 32, T23N, R7W  
LAT: 36.185838°N  
LONG: 107.589384°W  
DATUM: NAD1927

LAT: 36.185852°N  
LONG: 107.589992°W  
DATUM: NAD1983

SURFACE LOCATION  
1770' FNL 545' FWL  
SECTION 33, T23N, R7W  
LAT: 36.185692°N  
LONG: 107.586332°W  
DATUM: NAD1927

LAT: 36.185707°N  
LONG: 107.586940°W  
DATUM: NAD1983

AV

16

DEVIATION SURVEYS  
Lybrook E33-2307 02H  
API: 30-043-21196

CONFIDENTIAL

| MD<br>(Feet) | Inclination<br>(Degree) |
|--------------|-------------------------|
| 260'         | 0.30                    |
| 601'         | 0.60                    |
| 917'         | 0.80                    |
| 1234'        | 1.10                    |
| 1541'        | 1.00                    |
| 1847'        | 0.60                    |
| 2154'        | 0.60                    |
| 2462'        | 0.60                    |
| 2773'        | 0.70                    |
| 3089'        | 0.30                    |
| 3405'        | 0.30                    |
| 3721'        | 0.30                    |
| 4038'        | 0.70                    |
| 4291'        | 0.60                    |
| 4449'        | 15.70                   |

OPERATOR CERTIFICATION

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

*Brenda R Linster*

10/24/14

Brenda R. Linster, Regulatory Lead

Date

ACKNOWLEDGMENT

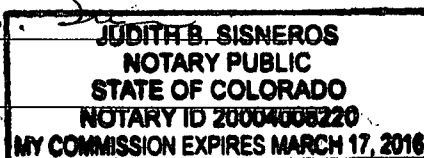
State of Colorado  
City and County of Denver

This instrument was acknowledged before me on this 24 day of October, 2014 by Brenda R. Linster 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: *Judith B. Sisneros*

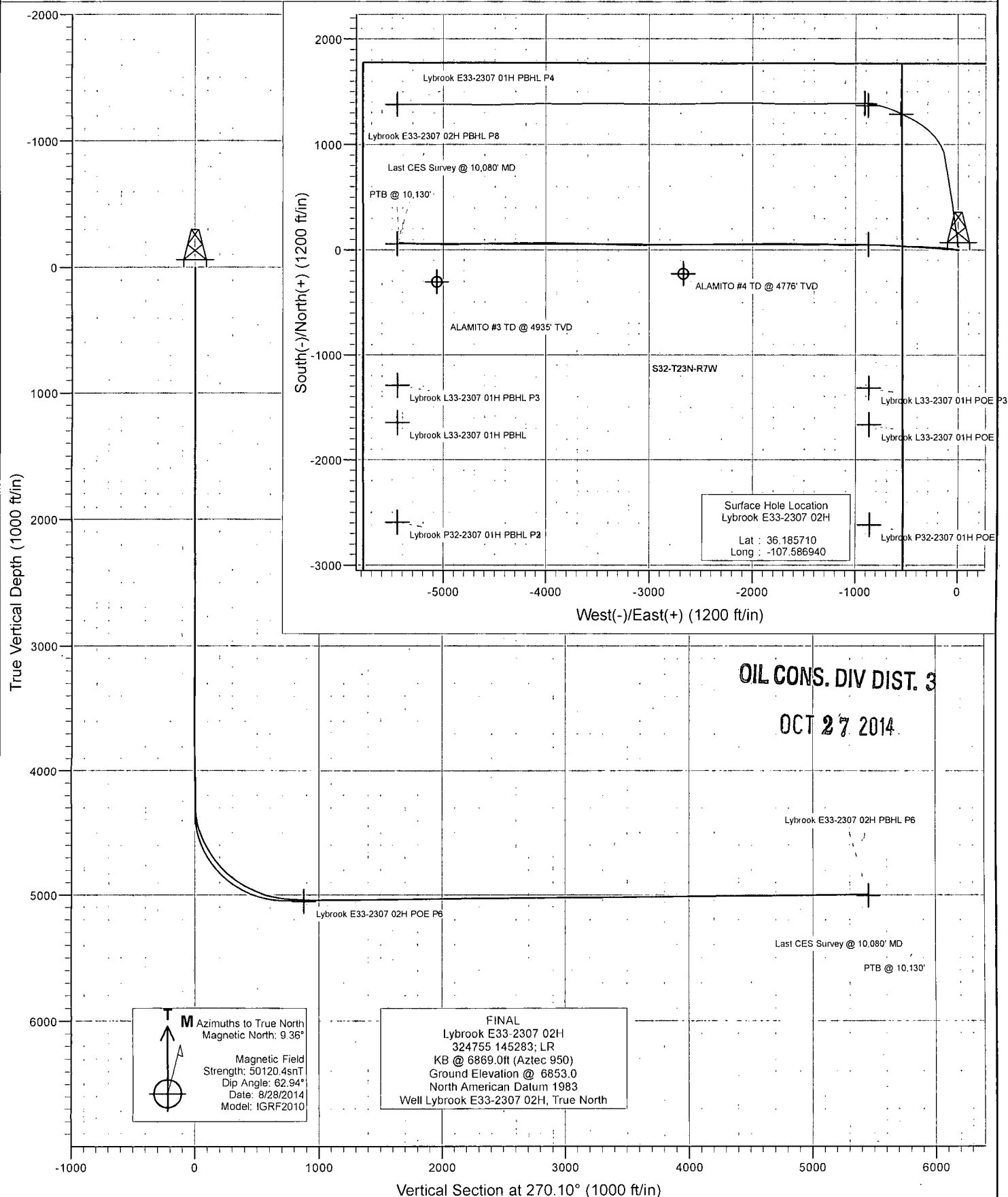
My Commission Expires: \_\_\_\_\_



**encana**

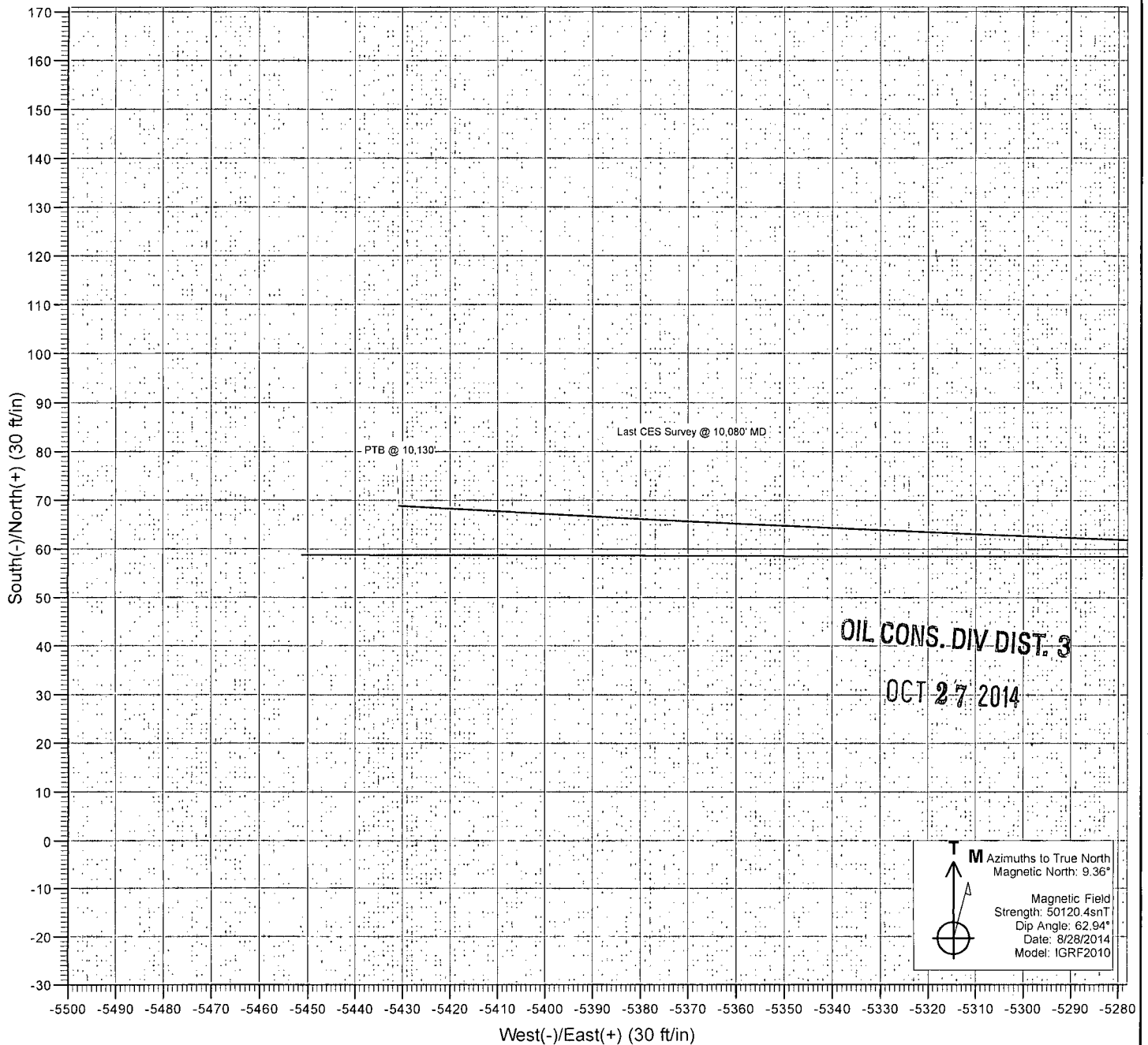
natural gas

Project: Sandoval County, NM  
 Site: S33-T23N-R7W  
 Well: Lybrook E33-2307 02H  
 Wellbore: Hz  
 Design: FINAL

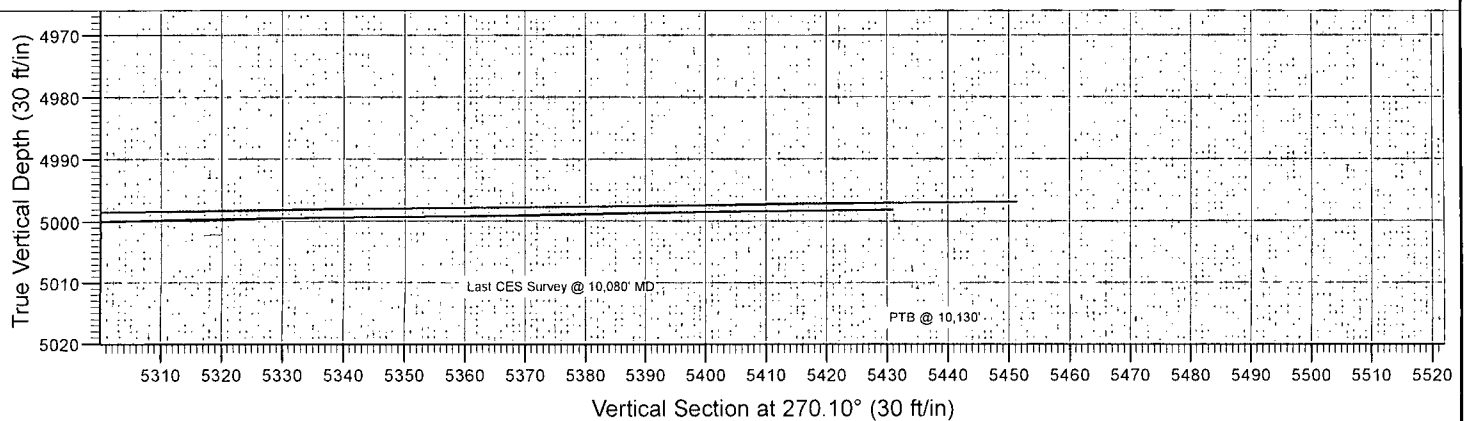




Project: Sandoval County, NM  
Site: S33-T23N-R7W  
Well: Lybrook E33-2307 02H  
Wellbore: Hz  
Design: FINAL



**T** Azimuths to True North  
Magnetic North: 9.36°  
Magnetic Field  
Strength: 50120.4snT  
Dip Angle: 62.94°  
Date: 8/28/2014  
Model: IGRF2010



# Survey Report

Company: EnCana Oil & Gas (USA) Inc  
Project: Sandoval County, NM  
Site: S33-T23N-R7W  
Well: Lybrook E33-2307 02H  
Wellbore: Hz  
Design: FINAL

Local Co-ordinate Reference: Well Lybrook E33-2307 02H  
TVD Reference: KB @ 6869.0ft (Aztec 950)  
MD Reference: KB @ 6869.0ft (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  
Geo Datum: North American Datum 1983  
Map Zone: New Mexico Central Zone  
System Datum: Mean Sea Level

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 02H  
Well Position: +N/-S 0.0 ft Northing: 1,889,585.81 ft Latitude: 36.185710  
+E/-W 0.0 ft Easting: 1,245,894.05 ft Longitude: -107.586940  
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 8/28/2014 9.36 62.94 50,120

Design: FINAL  
Audit Notes:  
Version: 1.0 Phase: ACTUAL Tie On Depth: 0.0  
Vertical Section: Depth From (TVD) +N/-S +E/-W Direction (°)  
0.0 0.0 0.0 270.10

Survey Program: Date 9/13/2014  
From (ft) To (ft) Survey (Wellbore) Tool Name Description  
111.0 10,130.0 Survey #1 (Hz) Geolink MWD Geolink MWD

| 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 |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| 0.0                 | 0.00            | 0.00        | 0.0                 | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 |                       |
| 111.0               | 0.10            | 130.50      | 111.0               | -0.1       | 0.1        | -0.1                  | 0.09                  | 0.09                 |                       |
| 140.0               | 0.30            | 86.30       | 140.0               | -0.1       | 0.2        | -0.2                  | 0.82                  | 0.69                 |                       |
| 199.0               | 0.60            | 128.50      | 199.0               | -0.3       | 0.6        | -0.6                  | 0.73                  | 0.51                 |                       |
| 260.0               | 0.30            | 112.20      | 260.0               | -0.5       | 1.0        | -1.0                  | 0.53                  | -0.49                |                       |
| 324.0               | 0.10            | 200.60      | 324.0               | -0.6       | 1.1        | -1.1                  | 0.49                  | -0.31                |                       |
| 387.0               | 0.10            | 12.10       | 387.0               | -0.6       | 1.1        | -1.1                  | 0.32                  | 0.00                 |                       |
| 447.0               | 0.40            | 244.40      | 447.0               | -0.7       | 0.9        | -0.9                  | 0.78                  | 0.50                 |                       |
| 537.0               | 0.50            | 175.30      | 537.0               | -1.2       | 0.7        | -0.7                  | 0.57                  | 0.11                 |                       |
| 601.0               | 0.60            | 164.90      | 601.0               | -1.8       | 0.8        | -0.8                  | 0.22                  | 0.16                 |                       |
| 664.0               | 0.50            | 173.20      | 664.0               | -2.4       | 0.9        | -0.9                  | 0.20                  | -0.16                |                       |
| 727.0               | 0.40            | 187.10      | 727.0               | -2.9       | 0.9        | -0.9                  | 0.23                  | -0.16                |                       |
| 790.0               | 0.60            | 199.30      | 790.0               | -3.4       | 0.8        | -0.8                  | 0.36                  | 0.32                 |                       |

# Survey Report

Company: EnCana Oil & Gas (USA) Inc  
 Project: Sandoval County, NM  
 Site: S33-T23N-R7W  
 Well: Lybrook E33-2307 02H  
 Wellbore: Hz  
 Design: FINAL

Local Co-ordinate Reference: Well Lybrook E33-2307 02H  
 TVD Reference: KB @ 6869.0ft (Aztec 950)  
 MD Reference: KB @ 6869.0ft (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 |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| 854.0               | 0.60            | 196.70      | 854.0               | -4.0       | 0.6        | -0.6                  | 0.04                  | 0.00                 |                       |
| 917.0               | 0.80            | 199.50      | 917.0               | -4.8       | 0.3        | -0.3                  | 0.32                  | 0.32                 |                       |
| 980.0               | 0.70            | 208.90      | 980.0               | -5.5       | 0.0        | 0.0                   | 0.25                  | -0.16                |                       |
| 1,044.0             | 0.80            | 222.60      | 1,044.0             | -6.2       | -0.5       | 0.5                   | 0.32                  | 0.16                 |                       |
| 1,107.0             | 0.80            | 202.90      | 1,107.0             | -6.9       | -1.0       | 1.0                   | 0.43                  | 0.00                 |                       |
| 1,170.0             | 0.50            | 5.30        | 1,170.0             | -7.1       | -1.1       | 1.1                   | 2.04                  | -0.48                |                       |
| 1,234.0             | 1.10            | 16.90       | 1,233.9             | -6.2       | -0.9       | 0.9                   | 0.97                  | 0.94                 |                       |
| 1,295.0             | 0.70            | 359.60      | 1,294.9             | -5.3       | -0.8       | 0.7                   | 0.79                  | -0.66                |                       |
| 1,356.0             | 0.90            | 9.80        | 1,355.9             | -4.4       | -0.7       | 0.7                   | 0.40                  | 0.33                 |                       |
| 1,418.0             | 1.00            | 12.70       | 1,417.9             | -3.4       | -0.5       | 0.5                   | 0.18                  | 0.16                 |                       |
| 1,479.0             | 1.10            | 12.80       | 1,478.9             | -2.3       | -0.2       | 0.2                   | 0.16                  | 0.16                 |                       |
| 1,541.0             | 1.00            | 12.00       | 1,540.9             | -1.2       | 0.0        | 0.0                   | 0.16                  | -0.16                |                       |
| 1,602.0             | 0.50            | 29.90       | 1,601.9             | -0.5       | 0.3        | -0.3                  | 0.90                  | -0.82                |                       |
| 1,663.0             | 0.40            | 52.90       | 1,662.9             | -0.1       | 0.6        | -0.6                  | 0.34                  | -0.16                |                       |
| 1,724.0             | 0.50            | 60.50       | 1,723.9             | 0.2        | 1.0        | -1.0                  | 0.19                  | 0.16                 |                       |
| 1,785.0             | 0.60            | 37.80       | 1,784.9             | 0.5        | 1.4        | -1.4                  | 0.39                  | 0.16                 |                       |
| 1,847.0             | 0.60            | 15.00       | 1,846.9             | 1.1        | 1.7        | -1.7                  | 0.38                  | 0.00                 |                       |
| 1,908.0             | 0.90            | 21.80       | 1,907.9             | 1.9        | 1.9        | -1.9                  | 0.51                  | 0.49                 |                       |
| 1,970.0             | 0.70            | 13.50       | 1,969.9             | 2.7        | 2.2        | -2.2                  | 0.37                  | -0.32                |                       |
| 2,031.0             | 0.20            | 265.90      | 2,030.9             | 3.0        | 2.2        | -2.2                  | 1.29                  | -0.82                |                       |
| 2,093.0             | 0.50            | 236.10      | 2,092.9             | 2.9        | 1.9        | -1.8                  | 0.55                  | 0.48                 |                       |
| 2,154.0             | 0.60            | 238.20      | 2,153.9             | 2.6        | 1.4        | -1.4                  | 0.17                  | 0.16                 |                       |
| 2,216.0             | 0.60            | 237.30      | 2,215.9             | 2.2        | 0.8        | -0.8                  | 0.02                  | 0.00                 |                       |
| 2,277.0             | 0.70            | 233.20      | 2,276.9             | 1.8        | 0.2        | -0.2                  | 0.18                  | 0.16                 |                       |
| 2,339.0             | 0.70            | 238.20      | 2,338.9             | 1.4        | -0.4       | 0.4                   | 0.10                  | 0.00                 |                       |
| 2,400.0             | 0.70            | 239.30      | 2,399.9             | 1.0        | -1.0       | 1.0                   | 0.02                  | 0.00                 |                       |
| 2,462.0             | 0.60            | 245.40      | 2,461.9             | 0.7        | -1.6       | 1.6                   | 0.20                  | -0.16                |                       |
| 2,523.0             | 0.30            | 184.30      | 2,522.9             | 0.4        | -1.9       | 1.9                   | 0.86                  | -0.49                |                       |
| 2,585.0             | 0.60            | 153.90      | 2,584.9             | -0.1       | -1.8       | 1.8                   | 0.60                  | 0.48                 |                       |
| 2,647.0             | 0.70            | 166.90      | 2,646.8             | -0.7       | -1.6       | 1.6                   | 0.29                  | 0.16                 |                       |
| 2,710.0             | 0.80            | 169.90      | 2,709.8             | -1.5       | -1.4       | 1.4                   | 0.17                  | 0.16                 |                       |
| 2,773.0             | 0.70            | 173.50      | 2,772.8             | -2.3       | -1.3       | 1.3                   | 0.18                  | -0.16                |                       |
| 2,836.0             | 0.80            | 144.30      | 2,835.8             | -3.1       | -1.0       | 1.0                   | 0.62                  | 0.16                 |                       |
| 2,899.0             | 0.80            | 137.40      | 2,898.8             | -3.8       | -0.4       | 0.4                   | 0.15                  | 0.00                 |                       |
| 2,963.0             | 0.30            | 99.40       | 2,962.8             | -4.1       | 0.0        | 0.0                   | 0.93                  | -0.78                |                       |
| 3,026.0             | 0.30            | 41.50       | 3,025.8             | -4.0       | 0.3        | -0.3                  | 0.46                  | 0.00                 |                       |
| 3,089.0             | 0.30            | 15.00       | 3,088.8             | -3.7       | 0.4        | -0.5                  | 0.22                  | 0.00                 |                       |
| 3,152.0             | 0.20            | 128.50      | 3,151.8             | -3.7       | 0.6        | -0.6                  | 0.67                  | -0.16                |                       |
| 3,215.0             | 0.20            | 70.00       | 3,214.8             | -3.7       | 0.8        | -0.8                  | 0.31                  | 0.00                 |                       |
| 3,279.0             | 0.40            | 52.70       | 3,278.8             | -3.5       | 1.0        | -1.1                  | 0.34                  | 0.31                 |                       |
| 3,342.0             | 0.40            | 68.20       | 3,341.8             | -3.3       | 1.4        | -1.4                  | 0.17                  | 0.00                 |                       |
| 3,405.0             | 0.30            | 117.50      | 3,404.8             | -3.3       | 1.8        | -1.8                  | 0.49                  | -0.16                |                       |
| 3,468.0             | 0.10            | 111.20      | 3,467.8             | -3.4       | 2.0        | -2.0                  | 0.32                  | -0.32                |                       |
| 3,532.0             | 0.20            | 52.60       | 3,531.8             | -3.3       | 2.1        | -2.1                  | 0.27                  | 0.16                 |                       |
| 3,595.0             | 0.10            | 199.10      | 3,594.8             | -3.3       | 2.2        | -2.2                  | 0.46                  | -0.16                |                       |
| 3,658.0             | 0.20            | 312.80      | 3,657.8             | -3.3       | 2.1        | -2.1                  | 0.41                  | 0.16                 |                       |
| 3,721.0             | 0.30            | 299.60      | 3,720.8             | -3.1       | 1.9        | -1.9                  | 0.18                  | 0.16                 |                       |
| 3,785.0             | 0.30            | 270.10      | 3,784.8             | -3.1       | 1.5        | -1.6                  | 0.24                  | 0.00                 |                       |
| 3,848.0             | 0.40            | 261.10      | 3,847.8             | -3.1       | 1.2        | -1.2                  | 0.18                  | 0.16                 |                       |
| 3,911.0             | 0.50            | 258.30      | 3,910.8             | -3.2       | 0.7        | -0.7                  | 0.16                  | 0.16                 |                       |
| 3,975.0             | 0.70            | 265.10      | 3,974.8             | -3.3       | 0.0        | 0.0                   | 0.33                  | 0.31                 |                       |
| 4,038.0             | 0.70            | 266.30      | 4,037.8             | -3.3       | -0.7       | 0.7                   | 0.02                  | 0.00                 |                       |
| 4,101.0             | 0.60            | 229.90      | 4,100.8             | -3.6       | -1.4       | 1.4                   | 0.66                  | -0.16                |                       |

# Survey Report

**Company:** EnCana Oil & Gas (USA) Inc  
**Project:** Sandoval County, NM  
**Site:** S33-T23N-R7W  
**Well:** Lybrook E33-2307 02H  
**Wellbore:** Hz  
**Design:** FINAL

**Local Co-ordinate Reference:** Well Lybrook E33-2307 02H  
**TVD Reference:** KB @ 6869.0ft (Aztec 950)  
**MD Reference:** KB @ 6869.0ft (Aztec 950)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** USA EDM 5000 Multi Users DB

## Survey

| Measured<br>Depth<br>(ft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Vertical<br>Section<br>(ft) | Dogleg<br>Rate<br>(°/100ft) | Build<br>Rate<br>(°/100ft) | Formations /<br>Comments |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|-----------------------------|-----------------------------|----------------------------|--------------------------|
| 4,164.0                   | 0.50               | 235.50         | 4,163.8                   | -3.9          | -1.9          | 1.9                         | 0.18                        | -0.16                      |                          |
| 4,227.0                   | 0.40               | 229.30         | 4,226.8                   | -4.2          | -2.3          | 2.3                         | 0.18                        | -0.16                      |                          |
| 4,259.0                   | 0.50               | 227.70         | 4,258.8                   | -4.4          | -2.4          | 2.4                         | 0.31                        | 0.31                       |                          |
| 4,291.0                   | 0.60               | 209.00         | 4,290.8                   | -4.6          | -2.6          | 2.6                         | 0.64                        | 0.31                       |                          |
| 4,322.0                   | 2.20               | 273.50         | 4,321.8                   | -4.7          | -3.3          | 3.3                         | 6.50                        | 5.16                       |                          |
| 4,354.0                   | 6.70               | 286.80         | 4,353.7                   | -4.2          | -5.7          | 5.7                         | 14.33                       | 14.06                      |                          |
| 4,386.0                   | 10.50              | 289.20         | 4,385.3                   | -2.7          | -10.2         | 10.2                        | 11.93                       | 11.87                      |                          |
| 4,417.0                   | 13.10              | 287.70         | 4,415.7                   | -0.7          | -16.3         | 16.3                        | 8.44                        | 8.39                       |                          |
| 4,449.0                   | 15.70              | 286.30         | 4,446.6                   | 1.6           | -23.9         | 23.9                        | 8.20                        | 8.12                       |                          |
| 4,469.0                   | 17.44              | 285.14         | 4,465.8                   | 3.2           | -29.4         | 29.4                        | 8.85                        | 8.70                       |                          |
| 4,480.0                   | 18.40              | 284.60         | 4,476.3                   | 4.1           | -32.6         | 32.6                        | 8.86                        | 8.73                       |                          |
| 4,512.0                   | 20.80              | 283.40         | 4,506.4                   | 6.6           | -43.1         | 43.1                        | 7.60                        | 7.50                       |                          |
| 4,544.0                   | 23.00              | 281.60         | 4,536.1                   | 9.2           | -54.7         | 54.7                        | 7.19                        | 6.87                       |                          |
| 4,575.0                   | 25.20              | 279.80         | 4,564.4                   | 11.6          | -67.1         | 67.2                        | 7.48                        | 7.10                       |                          |
| 4,607.0                   | 26.90              | 277.60         | 4,593.2                   | 13.7          | -81.0         | 81.1                        | 6.11                        | 5.31                       |                          |
| 4,638.0                   | 29.40              | 276.90         | 4,620.5                   | 15.5          | -95.5         | 95.6                        | 8.13                        | 8.06                       |                          |
| 4,670.0                   | 31.20              | 275.60         | 4,648.1                   | 17.3          | -111.6        | 111.6                       | 5.99                        | 5.62                       |                          |
| 4,702.0                   | 33.20              | 274.50         | 4,675.2                   | 18.8          | -128.6        | 128.6                       | 6.51                        | 6.25                       |                          |
| 4,733.0                   | 35.30              | 272.60         | 4,700.8                   | 19.8          | -146.0        | 146.0                       | 7.60                        | 6.77                       |                          |
| 4,765.0                   | 37.90              | 272.50         | 4,726.5                   | 20.7          | -165.0        | 165.1                       | 8.13                        | 8.12                       |                          |
| 4,796.0                   | 40.10              | 272.90         | 4,750.6                   | 21.6          | -184.5        | 184.6                       | 7.14                        | 7.10                       |                          |
| 4,828.0                   | 41.80              | 273.40         | 4,774.8                   | 22.8          | -205.5        | 205.5                       | 5.41                        | 5.31                       |                          |
| 4,860.0                   | 43.60              | 273.40         | 4,798.3                   | 24.0          | -227.1        | 227.2                       | 5.62                        | 5.62                       |                          |
| 4,891.0                   | 45.90              | 272.90         | 4,820.3                   | 25.2          | -248.9        | 249.0                       | 7.51                        | 7.42                       |                          |
| 4,923.0                   | 49.10              | 273.00         | 4,841.9                   | 26.5          | -272.5        | 272.5                       | 10.00                       | 10.00                      |                          |
| 4,955.0                   | 51.70              | 272.60         | 4,862.3                   | 27.7          | -297.1        | 297.2                       | 8.18                        | 8.12                       |                          |
| 4,986.0                   | 53.70              | 272.50         | 4,881.1                   | 28.8          | -321.7        | 321.8                       | 6.46                        | 6.45                       |                          |
| 5,018.0                   | 56.20              | 272.50         | 4,899.5                   | 29.9          | -347.9        | 348.0                       | 7.81                        | 7.81                       |                          |
| 5,049.0                   | 58.60              | 270.80         | 4,916.2                   | 30.6          | -374.0        | 374.1                       | 9.02                        | 7.74                       |                          |
| 5,081.0                   | 61.50              | 270.00         | 4,932.1                   | 30.8          | -401.7        | 401.8                       | 9.32                        | 9.06                       |                          |
| 5,113.0                   | 63.60              | 270.10         | 4,946.9                   | 30.9          | -430.1        | 430.2                       | 6.57                        | 6.56                       |                          |
| 5,144.0                   | 65.40              | 271.50         | 4,960.2                   | 31.3          | -458.1        | 458.2                       | 7.09                        | 5.81                       |                          |
| 5,176.0                   | 67.00              | 272.70         | 4,973.2                   | 32.3          | -487.4        | 487.4                       | 6.06                        | 5.00                       |                          |
| 5,208.0                   | 68.70              | 273.90         | 4,985.2                   | 34.0          | -516.9        | 517.0                       | 6.35                        | 5.31                       |                          |
| 5,239.0                   | 71.20              | 274.50         | 4,995.8                   | 36.2          | -546.0        | 546.0                       | 8.27                        | 8.06                       |                          |
| 5,271.0                   | 74.10              | 274.40         | 5,005.4                   | 38.5          | -576.4        | 576.5                       | 9.07                        | 9.06                       |                          |
| 5,303.0                   | 76.70              | 274.30         | 5,013.5                   | 40.9          | -607.3        | 607.4                       | 8.13                        | 8.12                       |                          |
| 5,334.0                   | 78.90              | 274.00         | 5,020.0                   | 43.1          | -637.5        | 637.6                       | 7.16                        | 7.10                       |                          |
| 5,366.0                   | 81.20              | 272.90         | 5,025.5                   | 45.0          | -669.0        | 669.1                       | 7.94                        | 7.19                       |                          |
| 5,397.0                   | 83.40              | 272.50         | 5,029.7                   | 46.4          | -699.7        | 699.8                       | 7.21                        | 7.10                       |                          |
| 5,429.0                   | 84.60              | 271.70         | 5,033.0                   | 47.6          | -731.5        | 731.6                       | 4.50                        | 3.75                       |                          |
| 5,460.0                   | 85.10              | 271.40         | 5,035.8                   | 48.4          | -762.3        | 762.4                       | 1.88                        | 1.61                       |                          |
| 5,492.0                   | 86.00              | 270.40         | 5,038.3                   | 48.9          | -794.2        | 794.3                       | 4.20                        | 2.81                       |                          |
| 5,505.0                   | 86.51              | 270.10         | 5,039.1                   | 49.0          | -807.2        | 807.3                       | 4.59                        | 3.95                       |                          |
| 5,518.0                   | 87.03              | 269.80         | 5,039.9                   | 49.0          | -820.2        | 820.3                       | 4.58                        | 3.95                       |                          |
| 5,535.0                   | 87.70              | 269.40         | 5,040.7                   | 48.9          | -837.2        | 837.3                       | 4.58                        | 3.95                       |                          |
| 5,581.0                   | 88.80              | 269.00         | 5,042.1                   | 48.2          | -883.1        | 883.2                       | 2.54                        | 2.39                       |                          |
| 5,644.0                   | 89.60              | 269.90         | 5,042.9                   | 47.6          | -946.1        | 946.2                       | 1.91                        | 1.27                       |                          |
| 5,708.0                   | 90.00              | 269.90         | 5,043.2                   | 47.5          | -1,010.1      | 1,010.2                     | 0.62                        | 0.62                       |                          |
| 5,771.0                   | 90.00              | 269.60         | 5,043.2                   | 47.2          | -1,073.1      | 1,073.2                     | 0.48                        | 0.00                       |                          |
| 5,834.0                   | 90.50              | 272.90         | 5,042.9                   | 48.6          | -1,136.1      | 1,136.2                     | 5.30                        | 0.79                       |                          |
| 5,897.0                   | 90.80              | 273.20         | 5,042.2                   | 51.9          | -1,199.0      | 1,199.1                     | 0.67                        | 0.48                       |                          |
| 5,960.0                   | 90.90              | 272.20         | 5,041.2                   | 54.9          | -1,261.9      | 1,262.0                     | 1.60                        | 0.16                       |                          |

# Survey Report

Company: EnCana Oil & Gas (USA) Inc  
Project: Sandoval County, NM  
Site: S33-T23N-R7W  
Well: Lybrook E33-2307 02H  
Wellbore: Hz  
Design: FINAL

Local Co-ordinate Reference: Well Lybrook E33-2307 02H  
TVD Reference: KB @ 6869.0ft (Aztec 950)  
MD Reference: KB @ 6869.0ft (Aztec 950)  
North Reference: True  
Survey Calculation Method: Minimum Curvature  
Database: USA EDM 5000 Multi Users DB

## Survey

| Measured<br>Depth<br>(ft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Vertical<br>Section<br>(ft) | Dogleg<br>Rate<br>(°/100ft) | Build<br>Rate<br>(°/100ft) | Formations /<br>Comments |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|-----------------------------|-----------------------------|----------------------------|--------------------------|
| 6,023.0                   | 90.50              | 270.30         | 5,040.5                   | 56.3          | -1,324.9      | 1,325.0                     | 3.08                        | -0.63                      |                          |
| 6,087.0                   | 90.40              | 270.30         | 5,040.0                   | 56.6          | -1,388.9      | 1,389.0                     | 0.16                        | -0.16                      |                          |
| 6,150.0                   | 90.40              | 270.70         | 5,039.5                   | 57.2          | -1,451.9      | 1,452.0                     | 0.63                        | 0.00                       |                          |
| 6,213.0                   | 90.80              | 271.30         | 5,038.9                   | 58.3          | -1,514.9      | 1,515.0                     | 1.14                        | 0.63                       |                          |
| 6,276.0                   | 90.40              | 270.20         | 5,038.2                   | 59.1          | -1,577.9      | 1,578.0                     | 1.86                        | -0.63                      |                          |
| 6,340.0                   | 90.70              | 271.40         | 5,037.6                   | 60.0          | -1,641.9      | 1,642.0                     | 1.93                        | 0.47                       |                          |
| 6,403.0                   | 91.10              | 270.50         | 5,036.6                   | 61.0          | -1,704.9      | 1,705.0                     | 1.56                        | 0.63                       |                          |
| 6,466.0                   | 90.90              | 270.80         | 5,035.5                   | 61.7          | -1,767.8      | 1,767.9                     | 0.57                        | -0.32                      |                          |
| 6,529.0                   | 90.60              | 269.30         | 5,034.7                   | 61.8          | -1,830.8      | 1,830.9                     | 2.43                        | -0.48                      |                          |
| 6,593.0                   | 90.70              | 269.40         | 5,034.0                   | 61.1          | -1,894.8      | 1,894.9                     | 0.22                        | 0.16                       |                          |
| 6,656.0                   | 90.30              | 269.00         | 5,033.4                   | 60.2          | -1,957.8      | 1,957.9                     | 0.90                        | -0.63                      |                          |
| 6,719.0                   | 90.30              | 268.50         | 5,033.1                   | 58.8          | -2,020.8      | 2,020.9                     | 0.79                        | 0.00                       |                          |
| 6,782.0                   | 90.90              | 269.30         | 5,032.4                   | 57.6          | -2,083.8      | 2,083.9                     | 1.59                        | 0.95                       |                          |
| 6,846.0                   | 91.60              | 269.50         | 5,031.0                   | 56.9          | -2,147.8      | 2,147.9                     | 1.14                        | 1.09                       |                          |
| 6,909.0                   | 92.10              | 269.30         | 5,029.0                   | 56.3          | -2,210.7      | 2,210.8                     | 0.85                        | 0.79                       |                          |
| 6,972.0                   | 91.30              | 269.20         | 5,027.1                   | 55.5          | -2,273.7      | 2,273.8                     | 1.28                        | -1.27                      |                          |
| 7,035.0                   | 90.40              | 269.10         | 5,026.2                   | 54.5          | -2,336.7      | 2,336.8                     | 1.44                        | -1.43                      |                          |
| 7,099.0                   | 89.80              | 269.80         | 5,026.1                   | 53.9          | -2,400.7      | 2,400.8                     | 1.44                        | -0.94                      |                          |
| 7,162.0                   | 90.10              | 269.80         | 5,026.1                   | 53.7          | -2,463.7      | 2,463.8                     | 0.48                        | 0.48                       |                          |
| 7,225.0                   | 89.40              | 270.00         | 5,026.4                   | 53.6          | -2,526.7      | 2,526.8                     | 1.16                        | -1.11                      |                          |
| 7,288.0                   | 90.20              | 269.80         | 5,026.6                   | 53.5          | -2,589.7      | 2,589.8                     | 1.31                        | 1.27                       |                          |
| 7,351.0                   | 90.40              | 269.40         | 5,026.3                   | 53.0          | -2,652.7      | 2,652.8                     | 0.71                        | 0.32                       |                          |
| 7,415.0                   | 90.70              | 269.30         | 5,025.7                   | 52.3          | -2,716.7      | 2,716.8                     | 0.49                        | 0.47                       |                          |
| 7,478.0                   | 91.20              | 269.50         | 5,024.6                   | 51.6          | -2,779.7      | 2,779.7                     | 0.85                        | 0.79                       |                          |
| 7,541.0                   | 90.30              | 269.50         | 5,023.8                   | 51.1          | -2,842.6      | 2,842.7                     | 1.43                        | -1.43                      |                          |
| 7,604.0                   | 90.20              | 269.10         | 5,023.5                   | 50.3          | -2,905.6      | 2,905.7                     | 0.65                        | -0.16                      |                          |
| 7,668.0                   | 90.10              | 268.80         | 5,023.4                   | 49.2          | -2,969.6      | 2,969.7                     | 0.49                        | -0.16                      |                          |
| 7,731.0                   | 89.30              | 269.40         | 5,023.7                   | 48.2          | -3,032.6      | 3,032.7                     | 1.59                        | -1.27                      |                          |
| 7,794.0                   | 90.40              | 270.80         | 5,023.9                   | 48.3          | -3,095.6      | 3,095.7                     | 2.83                        | 1.75                       |                          |
| 7,857.0                   | 90.80              | 271.40         | 5,023.2                   | 49.5          | -3,158.6      | 3,158.7                     | 1.14                        | 0.63                       |                          |
| 7,920.0                   | 90.90              | 271.40         | 5,022.3                   | 51.0          | -3,221.6      | 3,221.7                     | 0.16                        | 0.16                       |                          |
| 7,983.0                   | 90.90              | 271.30         | 5,021.3                   | 52.5          | -3,284.5      | 3,284.6                     | 0.16                        | 0.00                       |                          |
| 8,047.0                   | 91.00              | 271.30         | 5,020.2                   | 54.0          | -3,348.5      | 3,348.6                     | 0.16                        | 0.16                       |                          |
| 8,110.0                   | 90.90              | 271.30         | 5,019.2                   | 55.4          | -3,411.5      | 3,411.6                     | 0.16                        | -0.16                      |                          |
| 8,173.0                   | 90.40              | 271.30         | 5,018.5                   | 56.8          | -3,474.5      | 3,474.6                     | 0.79                        | -0.79                      |                          |
| 8,236.0                   | 90.10              | 270.60         | 5,018.2                   | 57.9          | -3,537.5      | 3,537.6                     | 1.21                        | -0.48                      |                          |
| 8,299.0                   | 90.10              | 271.00         | 5,018.1                   | 58.7          | -3,600.5      | 3,600.6                     | 0.63                        | 0.00                       |                          |
| 8,363.0                   | 90.30              | 271.30         | 5,017.9                   | 60.0          | -3,664.4      | 3,664.5                     | 0.56                        | 0.31                       |                          |
| 8,426.0                   | 91.10              | 271.60         | 5,017.1                   | 61.6          | -3,727.4      | 3,727.5                     | 1.36                        | 1.27                       |                          |
| 8,489.0                   | 91.20              | 271.90         | 5,015.8                   | 63.5          | -3,790.4      | 3,790.5                     | 0.50                        | 0.16                       |                          |
| 8,552.0                   | 91.00              | 271.60         | 5,014.6                   | 65.5          | -3,853.3      | 3,853.4                     | 0.57                        | -0.32                      |                          |
| 8,615.0                   | 91.30              | 271.60         | 5,013.3                   | 67.2          | -3,916.3      | 3,916.4                     | 0.48                        | 0.48                       |                          |
| 8,678.0                   | 90.40              | 270.20         | 5,012.4                   | 68.2          | -3,979.3      | 3,979.4                     | 2.64                        | -1.43                      |                          |
| 8,742.0                   | 89.80              | 270.00         | 5,012.3                   | 68.3          | -4,043.3      | 4,043.4                     | 0.99                        | -0.94                      |                          |
| 8,805.0                   | 89.60              | 269.10         | 5,012.6                   | 67.8          | -4,106.3      | 4,106.4                     | 1.46                        | -0.32                      |                          |
| 8,868.0                   | 90.90              | 268.90         | 5,012.4                   | 66.7          | -4,169.3      | 4,169.4                     | 2.09                        | 2.06                       |                          |
| 8,931.0                   | 91.10              | 269.60         | 5,011.3                   | 65.9          | -4,232.3      | 4,232.4                     | 1.16                        | 0.32                       |                          |
| 8,994.0                   | 90.50              | 269.20         | 5,010.4                   | 65.2          | -4,295.2      | 4,295.4                     | 1.14                        | -0.95                      |                          |
| 9,058.0                   | 90.00              | 268.80         | 5,010.1                   | 64.1          | -4,359.2      | 4,359.3                     | 1.00                        | -0.78                      |                          |
| 9,121.0                   | 90.80              | 269.30         | 5,009.7                   | 63.1          | -4,422.2      | 4,422.3                     | 1.50                        | 1.27                       |                          |
| 9,184.0                   | 90.70              | 269.30         | 5,008.8                   | 62.3          | -4,485.2      | 4,485.3                     | 0.16                        | -0.16                      |                          |
| 9,247.0                   | 90.40              | 269.10         | 5,008.2                   | 61.4          | -4,548.2      | 4,548.3                     | 0.57                        | -0.48                      |                          |
| 9,311.0                   | 90.30              | 268.60         | 5,007.8                   | 60.2          | -4,612.2      | 4,612.3                     | 0.80                        | -0.16                      |                          |



# Survey Report

Company: EnCana Oil & Gas (USA) Inc  
 Project: Sandoval County, NM  
 Site: S33-T23N-R7W  
 Well: Lybrook E33-2307 02H  
 Wellbore: Hz  
 Design: FINAL

Local Co-ordinate Reference: Well Lybrook E33-2307 02H  
 TVD Reference: KB @ 6869.0ft (Aztec 950)  
 MD Reference: KB @ 6869.0ft (Aztec 950)  
 North Reference: True  
 Survey Calculation Method: Minimum Curvature  
 Database: USA EDM 5000 Multi Users DB

## Survey

| Measured<br>Depth<br>(ft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Vertical<br>Section<br>(ft) | Dogleg<br>Rate<br>(°/100ft) | Build<br>Rate<br>(°/100ft) | Formations /<br>Comments     |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|-----------------------------|-----------------------------|----------------------------|------------------------------|
| 9,374.0                   | 91.10              | 269.30         | 5,007.1                   | 59.0          | -4,675.2      | 4,675.3                     | 1.69                        | 1.27                       |                              |
| 9,437.0                   | 90.80              | 269.00         | 5,006.0                   | 58.1          | -4,738.2      | 4,738.3                     | 0.67                        | -0.48                      |                              |
| 9,500.0                   | 90.30              | 267.90         | 5,005.4                   | 56.4          | -4,801.1      | 4,801.2                     | 1.92                        | -0.79                      |                              |
| 9,564.0                   | 90.40              | 268.30         | 5,005.0                   | 54.2          | -4,865.1      | 4,865.2                     | 0.64                        | 0.16                       |                              |
| 9,627.0                   | 90.20              | 270.20         | 5,004.7                   | 53.4          | -4,928.1      | 4,928.2                     | 3.03                        | -0.32                      |                              |
| 9,690.0                   | 91.00              | 270.80         | 5,004.0                   | 54.0          | -4,991.1      | 4,991.2                     | 1.59                        | 1.27                       |                              |
| 9,754.0                   | 90.70              | 270.90         | 5,003.1                   | 54.9          | -5,055.1      | 5,055.2                     | 0.49                        | -0.47                      |                              |
| 9,817.0                   | 90.80              | 271.70         | 5,002.3                   | 56.3          | -5,118.0      | 5,118.1                     | 1.28                        | 0.16                       |                              |
| 9,880.0                   | 90.80              | 272.10         | 5,001.4                   | 58.4          | -5,181.0      | 5,181.1                     | 0.63                        | 0.00                       |                              |
| 9,944.0                   | 90.60              | 272.00         | 5,000.6                   | 60.7          | -5,245.0      | 5,245.1                     | 0.35                        | -0.31                      |                              |
| 10,007.0                  | 90.80              | 272.30         | 4,999.8                   | 63.1          | -5,307.9      | 5,308.0                     | 0.57                        | 0.32                       |                              |
| 10,070.0                  | 90.80              | 272.60         | 4,998.9                   | 65.8          | -5,370.8      | 5,371.0                     | 0.48                        | 0.00                       |                              |
| 10,080.0                  | 90.80              | 273.00         | 4,998.8                   | 66.3          | -5,380.8      | 5,380.9                     | 4.00                        | 0.00                       | Last CES Survey @ 10,080' MD |
| 10,130.0                  | 90.80              | 273.00         | 4,998.1                   | 68.9          | -5,430.8      | 5,430.9                     | 0.00                        | 0.00                       | PTB @ 10,130'                |

## Survey Report

**Company:** EnCana Oil & Gas (USA) Inc  
**Project:** Sandoval County, NM  
**Site:** S33-T23N-R7W  
**Well:** Lybrook E33-2307 02H  
**Wellbore:** Hz  
**Design:** FINAL

**Local Co-ordinate Reference:** Well Lybrook E33-2307 02H  
**TVD Reference:** KB @ 6869.0ft (Aztec 950)  
**MD Reference:** KB @ 6869.0ft (Aztec 950)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** USA EDM 5000 Multi Users DB

### Targets

#### Target Name

| - hit/miss target<br>- Shape                                                                                                          | Dip Angle<br>(°) | Dip Dir.<br>(°) | TVD<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Northing<br>(ft) | Easting<br>(ft) | Latitude  | Longitude   |
|---------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|-------------|---------------|---------------|------------------|-----------------|-----------|-------------|
| Lybrook E33-2307 02H I<br>- actual wellpath misses target center by 24.1ft at 10130.0ft MD (4998.1 TVD, 68.9 N, -5430.8 E)<br>- Point | 0.00             | 0.00            | 5,005.9     | 58.8          | -5,451.2      | 1,889,719.68     | 1,240,444.13    | 36.185870 | -107.605410 |
| Lybrook E33-2307 02H I<br>- actual wellpath misses target center by 15.2ft at 5574.8ft MD (5041.9 TVD, 48.3 N, -877.0 E)<br>- Point   | 0.00             | 0.00            | 5,056.9     | 51.0          | -876.6        | 1,889,648.87     | 1,245,018.27    | 36.185850 | -107.589910 |
| Lybrook E33-2307 02H I<br>- actual wellpath misses target center by 48.6ft at 10130.0ft MD (4998.1 TVD, 68.9 N, -5430.8 E)<br>- Point | 0.00             | 0.00            | 5,041.0     | 58.8          | -5,451.2      | 1,889,719.68     | 1,240,444.13    | 36.185870 | -107.605410 |
| Lybrook E33-2307 02H I<br>- actual wellpath misses target center by 3.9ft at 5574.5ft MD (5041.9 TVD, 48.3 N, -876.6 E)<br>- Point    | 0.00             | 0.00            | 5,044.8     | 51.0          | -876.6        | 1,889,648.87     | 1,245,018.27    | 36.185850 | -107.589910 |
| Lybrook E33-2307 02H I<br>- actual wellpath misses target center by 8.8ft at 5574.6ft MD (5041.9 TVD, 48.3 N, -876.8 E)<br>- Point    | 0.00             | 0.00            | 5,050.3     | 51.0          | -876.6        | 1,889,648.87     | 1,245,018.27    | 36.185850 | -107.589910 |
| Lybrook E33-2307 02H I<br>- actual wellpath misses target center by 22.9ft at 10130.0ft MD (4998.1 TVD, 68.9 N, -5430.8 E)<br>- Point | 0.00             | 0.00            | 4,996.9     | 58.8          | -5,451.2      | 1,889,719.68     | 1,240,444.13    | 36.185870 | -107.605410 |
| Lybrook E33-2307 02H I<br>- actual wellpath misses target center by 12.2ft at 5574.7ft MD (5041.9 TVD, 48.3 N, -876.9 E)<br>- Point   | 0.00             | 0.00            | 5,053.8     | 51.0          | -876.6        | 1,889,648.87     | 1,245,018.27    | 36.185850 | -107.589910 |
| Lybrook E33-2307 02H I<br>- actual wellpath misses target center by 23.2ft at 10130.0ft MD (4998.1 TVD, 68.9 N, -5430.8 E)<br>- Point | 0.00             | 0.00            | 4,994.4     | 58.8          | -5,451.2      | 1,889,719.68     | 1,240,444.13    | 36.185870 | -107.605410 |

### Design Annotations

| Measured<br>Depth<br>(ft) | Vertical<br>Depth<br>(ft) | Local Coordinates |               | Comment                      |
|---------------------------|---------------------------|-------------------|---------------|------------------------------|
|                           |                           | +N/-S<br>(ft)     | +E/-W<br>(ft) |                              |
| 10,080.0                  | 4,998.8                   | 66.3              | -5,380.8      | Last CES Survey @ 10,080' MD |
| 10,130.0                  | 4,998.1                   | 68.9              | -5,430.8      | PTB @ 10,130'                |

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

# **EnCana Oil & Gas (USA) Inc**

**Sandoval County, NM**

**S33-T23N-R7W**

**Lybrook E33-2307 02H**

**Hz**

**Design: FINAL**

## **Survey Report - Geographic**

**13 September, 2014**

# Survey Report - Geographic

|           |                            |                              |                             |
|-----------|----------------------------|------------------------------|-----------------------------|
| Company:  | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Lybrook E33-2307 02H   |
| Project:  | Sandoval County, NM        | TVD Reference:               | KB @ 6869.0ft (Aztec 950)   |
| Site:     | S33-T23N-R7W               | MD Reference:                | KB @ 6869.0ft (Aztec 950)   |
| Well:     | Lybrook E33-2307 02H       | North Reference:             | True                        |
| Wellbore: | Hz                         | Survey Calculation Method:   | Minimum Curvature           |
| Design:   | FINAL                      | 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:    | 1,889,614.90 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 02H |                     |           |                 |            |             |
| Well Position        | +N/-S                | 0.0 ft              | Northing: | 1,889,585.81 ft | Latitude:  | 36.185710   |
|                      | +E/-W                | 0.0 ft              | Easting:  | 1,245,894.05 ft | Longitude: | -107.586940 |
| 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   | 8/28/2014   | 9.36            | 62.94         | 50,120              |

|                   |                       |            |            |               |     |
|-------------------|-----------------------|------------|------------|---------------|-----|
| 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        | 270.10        |     |

|                |          |                   |             |             |
|----------------|----------|-------------------|-------------|-------------|
| Survey Program | Date     | 9/13/2014         |             |             |
| From (ft)      | To (ft)  | Survey (Wellbore) | Tool Name   | Description |
| 111.0          | 10,130.0 | 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        | 1,889,585.81      | 1,245,894.05     | 36.185710 | -107.586940 |
| 111.0               | 0.10            | 130.50      | 111.0               | -0.1       | 0.1        | 1,889,585.75      | 1,245,894.12     | 36.185710 | -107.586940 |
| 140.0               | 0.30            | 86.30       | 140.0               | -0.1       | 0.2        | 1,889,585.74      | 1,245,894.21     | 36.185710 | -107.586940 |
| 199.0               | 0.60            | 128.50      | 199.0               | -0.3       | 0.6        | 1,889,585.55      | 1,245,894.61     | 36.185709 | -107.586938 |
| 260.0               | 0.30            | 112.20      | 260.0               | -0.5       | 1.0        | 1,889,585.28      | 1,245,895.00     | 36.185709 | -107.586937 |
| 324.0               | 0.10            | 200.60      | 324.0               | -0.6       | 1.1        | 1,889,585.17      | 1,245,895.14     | 36.185708 | -107.586937 |
| 387.0               | 0.10            | 12.10       | 387.0               | -0.6       | 1.1        | 1,889,585.17      | 1,245,895.13     | 36.185708 | -107.586937 |
| 447.0               | 0.40            | 244.40      | 447.0               | -0.7       | 0.9        | 1,889,585.13      | 1,245,894.95     | 36.185708 | -107.586937 |
| 537.0               | 0.50            | 175.30      | 537.0               | -1.2       | 0.7        | 1,889,584.61      | 1,245,894.69     | 36.185707 | -107.586938 |
| 601.0               | 0.60            | 164.90      | 601.0               | -1.8       | 0.8        | 1,889,584.00      | 1,245,894.79     | 36.185705 | -107.586938 |
| 664.0               | 0.50            | 173.20      | 664.0               | -2.4       | 0.9        | 1,889,583.41      | 1,245,894.90     | 36.185704 | -107.586937 |
| 727.0               | 0.40            | 187.10      | 727.0               | -2.9       | 0.9        | 1,889,582.92      | 1,245,894.90     | 36.185702 | -107.586937 |

# Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc  
Project: Sandoval County, NM  
Site: S33-T23N-R7W  
Well: Lybrook E33-2307 02H  
Wellbore: Hz  
Design: FINAL

Local Co-ordinate Reference: Well Lybrook E33-2307 02H  
TVD Reference: KB @ 6869.0ft (Aztec 950)  
MD Reference: KB @ 6869.0ft (Aztec 950)  
North Reference: True  
Survey Calculation Method: Minimum Curvature  
Database: USA EDM 5000 Multi Users DB

## Survey

| Measured<br>Depth<br>(ft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Map<br>Northing<br>(ft) | Map<br>Easting<br>(ft) | Latitude  | Longitude   |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|-------------------------|------------------------|-----------|-------------|
| 790.0                     | 0.60               | 199.30         | 790.0                     | -3.4          | 0.8           | 1,889,582.39            | 1,245,894.76           | 36.185701 | -107.586938 |
| 854.0                     | 0.60               | 196.70         | 854.0                     | -4.0          | 0.6           | 1,889,581.76            | 1,245,894.54           | 36.185699 | -107.586938 |
| 917.0                     | 0.80               | 199.50         | 917.0                     | -4.8          | 0.3           | 1,889,581.03            | 1,245,894.29           | 36.185697 | -107.586939 |
| 980.0                     | 0.70               | 208.90         | 980.0                     | -5.5          | 0.0           | 1,889,580.28            | 1,245,893.95           | 36.185695 | -107.586940 |
| 1,044.0                   | 0.80               | 222.60         | 1,044.0                   | -6.2          | -0.5          | 1,889,579.62            | 1,245,893.45           | 36.185693 | -107.586942 |
| 1,107.0                   | 0.80               | 202.90         | 1,107.0                   | -6.9          | -1.0          | 1,889,578.90            | 1,245,892.97           | 36.185691 | -107.586944 |
| 1,170.0                   | 0.50               | 5.30           | 1,170.0                   | -7.1          | -1.1          | 1,889,578.77            | 1,245,892.82           | 36.185691 | -107.586944 |
| 1,234.0                   | 1.10               | 16.90          | 1,233.9                   | -6.2          | -0.9          | 1,889,579.63            | 1,245,893.04           | 36.185693 | -107.586943 |
| 1,295.0                   | 0.70               | 359.60         | 1,294.9                   | -5.3          | -0.8          | 1,889,580.56            | 1,245,893.22           | 36.185696 | -107.586943 |
| 1,356.0                   | 0.90               | 9.80           | 1,355.9                   | -4.4          | -0.7          | 1,889,581.41            | 1,245,893.31           | 36.185698 | -107.586943 |
| 1,418.0                   | 1.00               | 12.70          | 1,417.9                   | -3.4          | -0.5          | 1,889,582.41            | 1,245,893.52           | 36.185701 | -107.586942 |
| 1,479.0                   | 1.10               | 12.80          | 1,478.9                   | -2.3          | -0.2          | 1,889,583.50            | 1,245,893.79           | 36.185704 | -107.586941 |
| 1,541.0                   | 1.00               | 12.00          | 1,540.9                   | -1.2          | 0.0           | 1,889,584.60            | 1,245,894.05           | 36.185707 | -107.586940 |
| 1,602.0                   | 0.50               | 29.90          | 1,601.9                   | -0.5          | 0.3           | 1,889,585.35            | 1,245,894.30           | 36.185709 | -107.586939 |
| 1,663.0                   | 0.40               | 52.90          | 1,662.9                   | -0.1          | 0.6           | 1,889,585.71            | 1,245,894.61           | 36.185710 | -107.586938 |
| 1,724.0                   | 0.50               | 60.50          | 1,723.9                   | 0.2           | 1.0           | 1,889,585.96            | 1,245,895.01           | 36.185711 | -107.586937 |
| 1,785.0                   | 0.60               | 37.80          | 1,784.9                   | 0.5           | 1.4           | 1,889,586.34            | 1,245,895.44           | 36.185712 | -107.586936 |
| 1,847.0                   | 0.60               | 15.00          | 1,846.9                   | 1.1           | 1.7           | 1,889,586.90            | 1,245,895.73           | 36.185713 | -107.586935 |
| 1,908.0                   | 0.90               | 21.80          | 1,907.9                   | 1.9           | 1.9           | 1,889,587.65            | 1,245,896.01           | 36.185715 | -107.586934 |
| 1,970.0                   | 0.70               | 13.50          | 1,969.9                   | 2.7           | 2.2           | 1,889,588.47            | 1,245,896.29           | 36.185717 | -107.586933 |
| 2,031.0                   | 0.20               | 265.90         | 2,030.9                   | 3.0           | 2.2           | 1,889,588.82            | 1,245,896.27           | 36.185718 | -107.586933 |
| 2,093.0                   | 0.50               | 236.10         | 2,092.9                   | 2.9           | 1.9           | 1,889,588.67            | 1,245,895.94           | 36.185718 | -107.586934 |
| 2,154.0                   | 0.60               | 238.20         | 2,153.9                   | 2.6           | 1.4           | 1,889,588.36            | 1,245,895.44           | 36.185717 | -107.586936 |
| 2,216.0                   | 0.60               | 237.30         | 2,215.9                   | 2.2           | 0.8           | 1,889,588.02            | 1,245,894.89           | 36.185716 | -107.586938 |
| 2,277.0                   | 0.70               | 233.20         | 2,276.9                   | 1.8           | 0.2           | 1,889,587.63            | 1,245,894.31           | 36.185715 | -107.586939 |
| 2,339.0                   | 0.70               | 238.20         | 2,338.9                   | 1.4           | -0.4          | 1,889,587.22            | 1,245,893.68           | 36.185714 | -107.586942 |
| 2,400.0                   | 0.70               | 239.30         | 2,399.9                   | 1.0           | -1.0          | 1,889,586.84            | 1,245,893.04           | 36.185713 | -107.586944 |
| 2,462.0                   | 0.60               | 245.40         | 2,461.9                   | 0.7           | -1.6          | 1,889,586.52            | 1,245,892.42           | 36.185712 | -107.586946 |
| 2,523.0                   | 0.30               | 184.30         | 2,522.9                   | 0.4           | -1.9          | 1,889,586.23            | 1,245,892.11           | 36.185711 | -107.586947 |
| 2,585.0                   | 0.60               | 153.90         | 2,584.9                   | -0.1          | -1.8          | 1,889,585.77            | 1,245,892.23           | 36.185710 | -107.586946 |
| 2,647.0                   | 0.70               | 166.90         | 2,646.8                   | -0.7          | -1.6          | 1,889,585.11            | 1,245,892.45           | 36.185708 | -107.586946 |
| 2,710.0                   | 0.80               | 169.90         | 2,709.8                   | -1.5          | -1.4          | 1,889,584.30            | 1,245,892.61           | 36.185706 | -107.586945 |
| 2,773.0                   | 0.70               | 173.50         | 2,772.8                   | -2.3          | -1.3          | 1,889,583.48            | 1,245,892.72           | 36.185704 | -107.586945 |
| 2,836.0                   | 0.80               | 144.30         | 2,835.8                   | -3.1          | -1.0          | 1,889,582.74            | 1,245,893.01           | 36.185702 | -107.586944 |
| 2,899.0                   | 0.80               | 137.40         | 2,898.8                   | -3.8          | -0.4          | 1,889,582.05            | 1,245,893.55           | 36.185700 | -107.586942 |
| 2,963.0                   | 0.30               | 99.40          | 2,962.8                   | -4.1          | 0.0           | 1,889,581.69            | 1,245,894.01           | 36.185699 | -107.586940 |
| 3,026.0                   | 0.30               | 41.50          | 3,025.8                   | -4.0          | 0.3           | 1,889,581.78            | 1,245,894.29           | 36.185699 | -107.586939 |
| 3,089.0                   | 0.30               | 15.00          | 3,088.8                   | -3.7          | 0.4           | 1,889,582.06            | 1,245,894.44           | 36.185700 | -107.586939 |
| 3,152.0                   | 0.20               | 128.50         | 3,151.8                   | -3.7          | 0.6           | 1,889,582.15            | 1,245,894.57           | 36.185700 | -107.586938 |
| 3,215.0                   | 0.20               | 70.00          | 3,214.8                   | -3.7          | 0.8           | 1,889,582.12            | 1,245,894.76           | 36.185700 | -107.586938 |
| 3,279.0                   | 0.40               | 52.70          | 3,278.8                   | -3.5          | 1.0           | 1,889,582.29            | 1,245,895.05           | 36.185700 | -107.586937 |
| 3,342.0                   | 0.40               | 68.20          | 3,341.8                   | -3.3          | 1.4           | 1,889,582.50            | 1,245,895.43           | 36.185701 | -107.586935 |
| 3,405.0                   | 0.30               | 117.50         | 3,404.8                   | -3.3          | 1.8           | 1,889,582.50            | 1,245,895.78           | 36.185701 | -107.586934 |
| 3,468.0                   | 0.10               | 111.20         | 3,467.8                   | -3.4          | 2.0           | 1,889,582.40            | 1,245,895.98           | 36.185701 | -107.586934 |
| 3,532.0                   | 0.20               | 52.60          | 3,531.8                   | -3.3          | 2.1           | 1,889,582.45            | 1,245,896.12           | 36.185701 | -107.586933 |
| 3,595.0                   | 0.10               | 199.10         | 3,594.8                   | -3.3          | 2.2           | 1,889,582.46            | 1,245,896.19           | 36.185701 | -107.586933 |
| 3,658.0                   | 0.20               | 312.80         | 3,657.8                   | -3.3          | 2.1           | 1,889,582.48            | 1,245,896.09           | 36.185701 | -107.586933 |
| 3,721.0                   | 0.30               | 299.60         | 3,720.8                   | -3.1          | 1.9           | 1,889,582.64            | 1,245,895.87           | 36.185701 | -107.586934 |
| 3,785.0                   | 0.30               | 270.10         | 3,784.8                   | -3.1          | 1.5           | 1,889,582.73            | 1,245,895.55           | 36.185702 | -107.586935 |
| 3,848.0                   | 0.40               | 261.10         | 3,847.8                   | -3.1          | 1.2           | 1,889,582.70            | 1,245,895.17           | 36.185702 | -107.586936 |
| 3,911.0                   | 0.50               | 258.30         | 3,910.8                   | -3.2          | 0.7           | 1,889,582.62            | 1,245,894.68           | 36.185701 | -107.586938 |
| 3,975.0                   | 0.70               | 265.10         | 3,974.8                   | -3.3          | 0.0           | 1,889,582.54            | 1,245,894.02           | 36.185701 | -107.586940 |
| 4,038.0                   | 0.70               | 266.30         | 4,037.8                   | -3.3          | -0.7          | 1,889,582.49            | 1,245,893.25           | 36.185701 | -107.586943 |
| 4,101.0                   | 0.60               | 229.90         | 4,100.8                   | -3.6          | -1.4          | 1,889,582.26            | 1,245,892.61           | 36.185700 | -107.586945 |
| 4,164.0                   | 0.50               | 235.50         | 4,163.8                   | -3.9          | -1.9          | 1,889,581.90            | 1,245,892.13           | 36.185699 | -107.586947 |

# Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc  
Project: Sandoval County, NM  
Site: S33-T23N-R7W  
Well: Lybrook E33-2307 02H  
Wellbore: Hz  
Design: FINAL

Local Co-ordinate Reference: Well Lybrook E33-2307 02H  
TVD Reference: KB @ 6869.0ft (Aztec 950)  
MD Reference: KB @ 6869.0ft (Aztec 950)  
North Reference: True  
Survey Calculation Method: Minimum Curvature  
Database: USA EDM 5000 Multi Users DB

## Survey

| Measured<br>Depth<br>(ft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Map<br>Northing<br>(ft) | Map<br>Easting<br>(ft) | Latitude  | Longitude   |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|-------------------------|------------------------|-----------|-------------|
| 4,227.0                   | 0.40               | 229.30         | 4,226.8                   | -4.2          | -2.3          | 1,889,581.61            | 1,245,891.73           | 36.185698 | -107.586948 |
| 4,259.0                   | 0.50               | 227.70         | 4,258.8                   | -4.4          | -2.4          | 1,889,581.44            | 1,245,891.54           | 36.185698 | -107.586949 |
| 4,291.0                   | 0.60               | 209.00         | 4,290.8                   | -4.6          | -2.6          | 1,889,581.21            | 1,245,891.35           | 36.185697 | -107.586949 |
| 4,322.0                   | 2.20               | 273.50         | 4,321.8                   | -4.7          | -3.3          | 1,889,581.11            | 1,245,890.68           | 36.185697 | -107.586951 |
| 4,354.0                   | 6.70               | 286.80         | 4,353.7                   | -4.2          | -5.7          | 1,889,581.72            | 1,245,888.29           | 36.185699 | -107.586960 |
| 4,386.0                   | 10.50              | 289.20         | 4,385.3                   | -2.7          | -10.2         | 1,889,583.28            | 1,245,883.76           | 36.185703 | -107.586975 |
| 4,417.0                   | 13.10              | 287.70         | 4,415.7                   | -0.7          | -16.3         | 1,889,585.36            | 1,245,877.78           | 36.185708 | -107.586995 |
| 4,449.0                   | 15.70              | 286.30         | 4,446.6                   | 1.6           | -23.9         | 1,889,587.78            | 1,245,870.20           | 36.185715 | -107.587021 |
| 4,469.0                   | 17.44              | 285.15         | 4,465.8                   | 3.2           | -29.4         | 1,889,589.40            | 1,245,864.73           | 36.185719 | -107.587040 |
| 4,480.0                   | 18.40              | 284.60         | 4,476.3                   | 4.1           | -32.6         | 1,889,590.31            | 1,245,861.47           | 36.185721 | -107.587051 |
| 4,512.0                   | 20.80              | 283.40         | 4,506.4                   | 6.6           | -43.1         | 1,889,593.05            | 1,245,851.09           | 36.185728 | -107.587086 |
| 4,544.0                   | 23.00              | 281.60         | 4,536.1                   | 9.2           | -54.7         | 1,889,595.78            | 1,245,839.48           | 36.185735 | -107.587126 |
| 4,575.0                   | 25.20              | 279.80         | 4,564.4                   | 11.6          | -67.1         | 1,889,598.30            | 1,245,827.07           | 36.185742 | -107.587168 |
| 4,607.0                   | 26.90              | 277.60         | 4,593.2                   | 13.7          | -81.0         | 1,889,600.60            | 1,245,813.21           | 36.185748 | -107.587215 |
| 4,638.0                   | 29.40              | 276.90         | 4,620.5                   | 15.5          | -95.5         | 1,889,602.65            | 1,245,798.73           | 36.185753 | -107.587264 |
| 4,670.0                   | 31.20              | 275.60         | 4,648.1                   | 17.3          | -111.6        | 1,889,604.62            | 1,245,782.71           | 36.185758 | -107.587318 |
| 4,702.0                   | 33.20              | 274.50         | 4,675.2                   | 18.8          | -128.6        | 1,889,606.35            | 1,245,765.75           | 36.185762 | -107.587376 |
| 4,733.0                   | 35.30              | 272.60         | 4,700.8                   | 19.8          | -146.0        | 1,889,607.66            | 1,245,748.35           | 36.185765 | -107.587435 |
| 4,765.0                   | 37.90              | 272.50         | 4,726.5                   | 20.7          | -165.0        | 1,889,608.77            | 1,245,729.31           | 36.185767 | -107.587499 |
| 4,796.0                   | 40.10              | 272.90         | 4,750.6                   | 21.6          | -184.5        | 1,889,609.96            | 1,245,709.84           | 36.185769 | -107.587565 |
| 4,828.0                   | 41.80              | 273.40         | 4,774.8                   | 22.8          | -205.5        | 1,889,611.40            | 1,245,688.91           | 36.185773 | -107.587636 |
| 4,860.0                   | 43.60              | 273.40         | 4,798.3                   | 24.0          | -227.1        | 1,889,612.99            | 1,245,667.27           | 36.185776 | -107.587710 |
| 4,891.0                   | 45.90              | 272.90         | 4,820.3                   | 25.2          | -248.9        | 1,889,614.49            | 1,245,645.50           | 36.185779 | -107.587784 |
| 4,923.0                   | 49.10              | 273.00         | 4,841.9                   | 26.5          | -272.5        | 1,889,616.03            | 1,245,621.96           | 36.185783 | -107.587863 |
| 4,955.0                   | 51.70              | 272.60         | 4,862.3                   | 27.7          | -297.1        | 1,889,617.57            | 1,245,597.35           | 36.185786 | -107.587947 |
| 4,986.0                   | 53.70              | 272.50         | 4,881.1                   | 28.8          | -321.7        | 1,889,619.00            | 1,245,572.74           | 36.185789 | -107.588030 |
| 5,018.0                   | 56.20              | 272.50         | 4,899.5                   | 29.9          | -347.9        | 1,889,620.51            | 1,245,546.59           | 36.185792 | -107.588119 |
| 5,049.0                   | 58.60              | 270.80         | 4,916.2                   | 30.6          | -374.0        | 1,889,621.61            | 1,245,520.50           | 36.185794 | -107.588207 |
| 5,081.0                   | 61.50              | 270.00         | 4,932.1                   | 30.8          | -401.7        | 1,889,622.19            | 1,245,492.78           | 36.185795 | -107.588301 |
| 5,113.0                   | 63.60              | 270.10         | 4,946.9                   | 30.9          | -430.1        | 1,889,622.60            | 1,245,464.39           | 36.185795 | -107.588398 |
| 5,144.0                   | 65.40              | 271.50         | 4,960.2                   | 31.3          | -458.1        | 1,889,623.38            | 1,245,436.42           | 36.185796 | -107.588492 |
| 5,176.0                   | 67.00              | 272.70         | 4,973.2                   | 32.3          | -487.4        | 1,889,624.86            | 1,245,407.18           | 36.185799 | -107.588592 |
| 5,208.0                   | 68.70              | 273.90         | 4,985.2                   | 34.0          | -516.9        | 1,889,626.97            | 1,245,377.62           | 36.185804 | -107.588692 |
| 5,239.0                   | 71.20              | 274.50         | 4,995.8                   | 36.2          | -546.0        | 1,889,629.51            | 1,245,348.61           | 36.185809 | -107.588790 |
| 5,271.0                   | 74.10              | 274.40         | 5,005.4                   | 38.5          | -576.4        | 1,889,632.30            | 1,245,318.20           | 36.185816 | -107.588893 |
| 5,303.0                   | 76.70              | 274.30         | 5,013.5                   | 40.9          | -607.3        | 1,889,635.07            | 1,245,287.36           | 36.185822 | -107.588998 |
| 5,334.0                   | 78.90              | 274.00         | 5,020.0                   | 43.1          | -637.5        | 1,889,637.68            | 1,245,257.17           | 36.185828 | -107.589100 |
| 5,366.0                   | 81.20              | 272.90         | 5,025.5                   | 45.0          | -669.0        | 1,889,640.01            | 1,245,225.74           | 36.185834 | -107.589207 |
| 5,397.0                   | 83.40              | 272.50         | 5,029.7                   | 46.4          | -699.7        | 1,889,641.88            | 1,245,195.08           | 36.185838 | -107.589311 |
| 5,429.0                   | 84.60              | 271.70         | 5,033.0                   | 47.6          | -731.5        | 1,889,643.48            | 1,245,163.30           | 36.185841 | -107.589419 |
| 5,460.0                   | 85.10              | 271.40         | 5,035.8                   | 48.4          | -762.3        | 1,889,644.74            | 1,245,132.45           | 36.185843 | -107.589523 |
| 5,492.0                   | 86.00              | 270.40         | 5,038.3                   | 48.9          | -794.2        | 1,889,645.68            | 1,245,100.56           | 36.185844 | -107.589631 |
| 5,505.0                   | 86.51              | 270.10         | 5,039.1                   | 49.0          | -807.2        | 1,889,645.92            | 1,245,087.59           | 36.185845 | -107.589675 |
| 5,518.0                   | 87.03              | 269.80         | 5,039.9                   | 49.0          | -820.2        | 1,889,646.08            | 1,245,074.61           | 36.185845 | -107.589719 |
| 5,535.0                   | 87.70              | 269.40         | 5,040.7                   | 48.9          | -837.2        | 1,889,646.20            | 1,245,057.63           | 36.185844 | -107.589777 |
| 5,581.0                   | 88.80              | 269.00         | 5,042.1                   | 48.2          | -883.1        | 1,889,646.19            | 1,245,011.65           | 36.185842 | -107.589933 |
| 5,644.0                   | 89.60              | 269.90         | 5,042.9                   | 47.6          | -946.1        | 1,889,646.45            | 1,244,948.66           | 36.185841 | -107.590146 |
| 5,708.0                   | 90.00              | 269.90         | 5,043.2                   | 47.5          | -1,010.1      | 1,889,647.22            | 1,244,884.66           | 36.185841 | -107.590363 |
| 5,771.0                   | 90.00              | 269.60         | 5,043.2                   | 47.2          | -1,073.1      | 1,889,647.82            | 1,244,821.67           | 36.185840 | -107.590576 |
| 5,834.0                   | 90.50              | 272.90         | 5,042.9                   | 48.6          | -1,136.1      | 1,889,650.06            | 1,244,758.72           | 36.185844 | -107.590790 |
| 5,897.0                   | 90.80              | 273.20         | 5,042.2                   | 51.9          | -1,199.0      | 1,889,654.28            | 1,244,695.86           | 36.185853 | -107.591003 |
| 5,960.0                   | 90.90              | 272.20         | 5,041.2                   | 54.9          | -1,261.9      | 1,889,658.11            | 1,244,632.99           | 36.185861 | -107.591216 |
| 6,023.0                   | 90.50              | 270.30         | 5,040.5                   | 56.3          | -1,324.9      | 1,889,660.35            | 1,244,570.03           | 36.185865 | -107.591429 |
| 6,087.0                   | 90.40              | 270.30         | 5,040.0                   | 56.6          | -1,388.9      | 1,889,661.57            | 1,244,506.05           | 36.185866 | -107.591646 |
| 6,150.0                   | 90.40              | 270.70         | 5,039.5                   | 57.2          | -1,451.9      | 1,889,662.99            | 1,244,443.07           | 36.185867 | -107.591860 |

# Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc  
Project: Sandoval County, NM  
Site: S33-T23N-R7W  
Well: Lybrook E33-2307 02H  
Wellbore: Hz  
Design: FINAL

Local Co-ordinate Reference: Well Lybrook E33-2307 02H  
TVD Reference: KB @ 6869.0ft (Aztec 950)  
MD Reference: KB @ 6869.0ft (Aztec 950)  
North Reference: True  
Survey Calculation Method: Minimum Curvature  
Database: USA EDM 5000 Multi Users DB

## Survey

| Measured<br>Depth<br>(ft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Map<br>Northing<br>(ft) | Map<br>Easting<br>(ft) | Latitude  | Longitude   |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|-------------------------|------------------------|-----------|-------------|
| 6,213.0                   | 90.80              | 271.30         | 5,038.9                   | 58.3          | -1,514.9      | 1,889,664.95            | 1,244,380.10           | 36.185870 | -107.592073 |
| 6,276.0                   | 90.40              | 270.20         | 5,038.2                   | 59.1          | -1,577.9      | 1,889,666.65            | 1,244,317.13           | 36.185872 | -107.592286 |
| 6,340.0                   | 90.70              | 271.40         | 5,037.6                   | 60.0          | -1,641.9      | 1,889,668.42            | 1,244,253.16           | 36.185875 | -107.592503 |
| 6,403.0                   | 91.10              | 270.50         | 5,036.6                   | 61.0          | -1,704.9      | 1,889,670.33            | 1,244,190.19           | 36.185878 | -107.592717 |
| 6,466.0                   | 90.90              | 270.80         | 5,035.5                   | 61.7          | -1,767.8      | 1,889,671.91            | 1,244,127.22           | 36.185880 | -107.592930 |
| 6,529.0                   | 90.60              | 269.30         | 5,034.7                   | 61.8          | -1,830.8      | 1,889,672.84            | 1,244,064.24           | 36.185880 | -107.593144 |
| 6,593.0                   | 90.70              | 269.40         | 5,034.0                   | 61.1          | -1,894.8      | 1,889,672.99            | 1,244,000.24           | 36.185878 | -107.593360 |
| 6,656.0                   | 90.30              | 269.00         | 5,033.4                   | 60.2          | -1,957.8      | 1,889,672.98            | 1,243,937.24           | 36.185875 | -107.593574 |
| 6,719.0                   | 90.30              | 268.50         | 5,033.1                   | 58.8          | -2,020.8      | 1,889,672.48            | 1,243,874.25           | 36.185871 | -107.593787 |
| 6,782.0                   | 90.90              | 269.30         | 5,032.4                   | 57.6          | -2,083.8      | 1,889,672.13            | 1,243,811.25           | 36.185868 | -107.594001 |
| 6,846.0                   | 91.60              | 269.50         | 5,031.0                   | 56.9          | -2,147.8      | 1,889,672.35            | 1,243,747.27           | 36.185866 | -107.594217 |
| 6,909.0                   | 92.10              | 269.30         | 5,029.0                   | 56.3          | -2,210.7      | 1,889,672.55            | 1,243,684.30           | 36.185864 | -107.594431 |
| 6,972.0                   | 91.30              | 269.20         | 5,027.1                   | 55.5          | -2,273.7      | 1,889,672.60            | 1,243,621.33           | 36.185862 | -107.594644 |
| 7,035.0                   | 90.40              | 269.10         | 5,026.2                   | 54.5          | -2,336.7      | 1,889,672.53            | 1,243,558.34           | 36.185860 | -107.594857 |
| 7,099.0                   | 89.80              | 269.80         | 5,026.1                   | 53.9          | -2,400.7      | 1,889,672.80            | 1,243,494.34           | 36.185858 | -107.595074 |
| 7,162.0                   | 90.10              | 269.80         | 5,026.1                   | 53.7          | -2,463.7      | 1,889,673.45            | 1,243,431.34           | 36.185857 | -107.595288 |
| 7,225.0                   | 89.40              | 270.00         | 5,026.4                   | 53.6          | -2,526.7      | 1,889,674.20            | 1,243,368.35           | 36.185857 | -107.595501 |
| 7,288.0                   | 90.20              | 269.80         | 5,026.6                   | 53.5          | -2,589.7      | 1,889,674.96            | 1,243,305.35           | 36.185857 | -107.595715 |
| 7,351.0                   | 90.40              | 269.40         | 5,026.3                   | 53.0          | -2,652.7      | 1,889,675.39            | 1,243,242.36           | 36.185855 | -107.595928 |
| 7,415.0                   | 90.70              | 269.30         | 5,025.7                   | 52.3          | -2,716.7      | 1,889,675.55            | 1,243,178.36           | 36.185853 | -107.596145 |
| 7,478.0                   | 91.20              | 269.50         | 5,024.6                   | 51.6          | -2,779.7      | 1,889,675.75            | 1,243,115.37           | 36.185852 | -107.596358 |
| 7,541.0                   | 90.30              | 269.50         | 5,023.8                   | 51.1          | -2,842.6      | 1,889,676.07            | 1,243,052.38           | 36.185850 | -107.596572 |
| 7,604.0                   | 90.20              | 269.10         | 5,023.5                   | 50.3          | -2,905.6      | 1,889,676.17            | 1,242,989.38           | 36.185848 | -107.596785 |
| 7,668.0                   | 90.10              | 268.80         | 5,023.4                   | 49.2          | -2,969.6      | 1,889,675.88            | 1,242,925.38           | 36.185845 | -107.597002 |
| 7,731.0                   | 89.30              | 269.40         | 5,023.7                   | 48.2          | -3,032.6      | 1,889,675.76            | 1,242,862.38           | 36.185842 | -107.597215 |
| 7,794.0                   | 90.40              | 270.80         | 5,023.9                   | 48.3          | -3,095.6      | 1,889,676.74            | 1,242,799.39           | 36.185842 | -107.597429 |
| 7,857.0                   | 90.80              | 271.40         | 5,023.2                   | 49.5          | -3,158.6      | 1,889,678.81            | 1,242,736.43           | 36.185846 | -107.597642 |
| 7,920.0                   | 90.90              | 271.40         | 5,022.3                   | 51.0          | -3,221.6      | 1,889,681.22            | 1,242,673.48           | 36.185850 | -107.597856 |
| 7,983.0                   | 90.90              | 271.30         | 5,021.3                   | 52.5          | -3,284.5      | 1,889,683.57            | 1,242,610.53           | 36.185854 | -107.598069 |
| 8,047.0                   | 91.00              | 271.30         | 5,020.2                   | 54.0          | -3,348.5      | 1,889,685.91            | 1,242,546.58           | 36.185858 | -107.598286 |
| 8,110.0                   | 90.90              | 271.30         | 5,019.2                   | 55.4          | -3,411.5      | 1,889,688.20            | 1,242,483.63           | 36.185862 | -107.598499 |
| 8,173.0                   | 90.40              | 271.30         | 5,018.5                   | 56.8          | -3,474.5      | 1,889,690.50            | 1,242,420.68           | 36.185866 | -107.598713 |
| 8,236.0                   | 90.10              | 270.60         | 5,018.2                   | 57.9          | -3,537.5      | 1,889,692.41            | 1,242,357.71           | 36.185868 | -107.598926 |
| 8,299.0                   | 90.10              | 271.00         | 5,018.1                   | 58.7          | -3,600.5      | 1,889,694.16            | 1,242,294.73           | 36.185871 | -107.599139 |
| 8,363.0                   | 90.30              | 271.30         | 5,017.8                   | 60.0          | -3,664.4      | 1,889,696.32            | 1,242,230.77           | 36.185874 | -107.599356 |
| 8,426.0                   | 91.10              | 271.60         | 5,017.1                   | 61.6          | -3,727.4      | 1,889,698.79            | 1,242,167.83           | 36.185879 | -107.599570 |
| 8,489.0                   | 91.20              | 271.90         | 5,015.8                   | 63.5          | -3,790.4      | 1,889,701.58            | 1,242,104.90           | 36.185884 | -107.599783 |
| 8,552.0                   | 91.00              | 271.60         | 5,014.6                   | 65.5          | -3,853.3      | 1,889,704.37            | 1,242,041.97           | 36.185889 | -107.599996 |
| 8,615.0                   | 91.30              | 271.60         | 5,013.3                   | 67.2          | -3,916.3      | 1,889,706.99            | 1,241,979.04           | 36.185894 | -107.600210 |
| 8,678.0                   | 90.40              | 270.20         | 5,012.4                   | 68.2          | -3,979.3      | 1,889,708.85            | 1,241,916.08           | 36.185897 | -107.600423 |
| 8,742.0                   | 89.80              | 270.00         | 5,012.3                   | 68.3          | -4,043.3      | 1,889,709.84            | 1,241,852.09           | 36.185897 | -107.600640 |
| 8,805.0                   | 89.60              | 269.10         | 5,012.6                   | 67.8          | -4,106.3      | 1,889,710.22            | 1,241,789.09           | 36.185896 | -107.600853 |
| 8,868.0                   | 90.90              | 268.90         | 5,012.4                   | 66.7          | -4,169.3      | 1,889,709.99            | 1,241,726.09           | 36.185893 | -107.601067 |
| 8,931.0                   | 91.10              | 269.60         | 5,011.3                   | 65.9          | -4,232.3      | 1,889,710.03            | 1,241,663.10           | 36.185890 | -107.601280 |
| 8,994.0                   | 90.50              | 269.20         | 5,010.4                   | 65.2          | -4,295.2      | 1,889,710.24            | 1,241,600.11           | 36.185888 | -107.601493 |
| 9,058.0                   | 90.00              | 268.80         | 5,010.1                   | 64.1          | -4,359.2      | 1,889,710.00            | 1,241,536.11           | 36.185885 | -107.601710 |
| 9,121.0                   | 90.80              | 269.30         | 5,009.7                   | 63.1          | -4,422.2      | 1,889,709.83            | 1,241,473.11           | 36.185882 | -107.601924 |
| 9,184.0                   | 90.70              | 269.30         | 5,008.8                   | 62.3          | -4,485.2      | 1,889,709.93            | 1,241,410.12           | 36.185880 | -107.602137 |
| 9,247.0                   | 90.40              | 269.10         | 5,008.2                   | 61.4          | -4,548.2      | 1,889,709.91            | 1,241,347.12           | 36.185878 | -107.602351 |
| 9,311.0                   | 90.30              | 268.60         | 5,007.8                   | 60.2          | -4,612.2      | 1,889,709.51            | 1,241,283.12           | 36.185874 | -107.602567 |
| 9,374.0                   | 91.10              | 269.30         | 5,007.1                   | 59.0          | -4,675.2      | 1,889,709.22            | 1,241,220.13           | 36.185871 | -107.602781 |
| 9,437.0                   | 90.80              | 269.00         | 5,006.0                   | 58.1          | -4,738.2      | 1,889,709.16            | 1,241,157.14           | 36.185869 | -107.602994 |
| 9,500.0                   | 90.30              | 267.90         | 5,005.4                   | 56.4          | -4,801.1      | 1,889,708.32            | 1,241,094.15           | 36.185864 | -107.603208 |
| 9,564.0                   | 90.40              | 268.30         | 5,005.0                   | 54.2          | -4,865.1      | 1,889,707.08            | 1,241,030.16           | 36.185858 | -107.603424 |
| 9,627.0                   | 90.20              | 270.20         | 5,004.7                   | 53.4          | -4,928.1      | 1,889,707.12            | 1,240,967.16           | 36.185856 | -107.603638 |

# Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc  
 Project: Sandoval County, NM  
 Site: S33-T23N-R7W  
 Well: Lybrook E33-2307 02H  
 Wellbore: Hz  
 Design: FINAL

Local Co-ordinate Reference: Well Lybrook E33-2307 02H  
 TVD Reference: KB @ 6869.0ft (Aztec 950)  
 MD Reference: KB @ 6869.0ft (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   |
|------------------------------|-----------------|-------------|---------------------|------------|------------|-------------------|------------------|-----------|-------------|
| 9,690.0                      | 91.00           | 270.80      | 5,004.0             | 54.0       | -4,991.1   | 1,889,708.54      | 1,240,904.18     | 36.185857 | -107.603851 |
| 9,754.0                      | 90.70           | 270.90      | 5,003.1             | 54.9       | -5,055.1   | 1,889,710.37      | 1,240,840.22     | 36.185860 | -107.604068 |
| 9,817.0                      | 90.80           | 271.70      | 5,002.3             | 56.3       | -5,118.0   | 1,889,712.67      | 1,240,777.27     | 36.185864 | -107.604281 |
| 9,880.0                      | 90.80           | 272.10      | 5,001.4             | 58.4       | -5,181.0   | 1,889,715.63      | 1,240,714.34     | 36.185869 | -107.604495 |
| 9,944.0                      | 90.60           | 272.00      | 5,000.6             | 60.7       | -5,245.0   | 1,889,718.80      | 1,240,650.42     | 36.185876 | -107.604711 |
| 10,007.0                     | 90.80           | 272.30      | 4,999.8             | 63.1       | -5,307.9   | 1,889,722.03      | 1,240,587.51     | 36.185882 | -107.604925 |
| 10,070.0                     | 90.80           | 272.60      | 4,998.9             | 65.8       | -5,370.8   | 1,889,725.59      | 1,240,524.62     | 36.185889 | -107.605138 |
| 10,080.0                     | 90.80           | 273.00      | 4,998.8             | 66.3       | -5,380.8   | 1,889,726.21      | 1,240,514.64     | 36.185891 | -107.605172 |
| Last CES Survey @ 10,080' MD |                 |             |                     |            |            |                   |                  |           |             |
| 10,130.0                     | 90.80           | 273.00      | 4,998.1             | 68.9       | -5,430.8   | 1,889,729.52      | 1,240,464.75     | 36.185898 | -107.605341 |
| PTB @ 10,130'                |                 |             |                     |            |            |                   |                  |           |             |

## 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 02H I                                                                           | 0.00          | 0.00         | 5,005.9  | 58.8       | -5,451.2   | 1,889,719.68  | 1,240,444.13 | 36.185870 | -107.605410 |
| - actual wellpath misses target center by 24.1ft at 10130.0ft MD (4998.1 TVD, 68.9 N, -5430.8 E) |               |              |          |            |            |               |              |           |             |
| - Point                                                                                          |               |              |          |            |            |               |              |           |             |
| Lybrook E33-2307 02H I                                                                           | 0.00          | 0.00         | 5,053.8  | 51.0       | -876.6     | 1,889,648.87  | 1,245,018.27 | 36.185850 | -107.589910 |
| - actual wellpath misses target center by 12.2ft at 5574.7ft MD (5041.9 TVD, 48.3 N, -876.9 E)   |               |              |          |            |            |               |              |           |             |
| - Point                                                                                          |               |              |          |            |            |               |              |           |             |

## Design Annotations

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates |            | Comment                      |
|---------------------|---------------------|-------------------|------------|------------------------------|
|                     |                     | +N/-S (ft)        | +E/-W (ft) |                              |
| 10,080.0            | 4,998.8             | 66.3              | -5,380.8   | Last CES Survey @ 10,080' MD |
| 10,130.0            | 4,998.1             | 68.9              | -5,430.8   | PTB @ 10,130'                |

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_