

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-0720

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
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 Dr.
Santa Fe, NM 87505

☒ AMENDED REPORT
☒ AS-DRILLED

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-043-21276	² Pool Code 98174	³ Pool Name NORTH ALAMITO UNIT HORIZONTAL OIL POOL
⁴ Property Code 317188	⁵ Property Name NORTH ALAMITO UNIT	⁶ Well Number 306H
⁷ OGRID No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.	⁹ Elevation 6892'

OIL CONS. DIV DIST. 3

MAY 03 2017

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	34	23N	7W		1404'	SOUTH	759'	WEST	SANDOVAL

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	33	23N	7W		693'	NORTH	645'	WEST	SANDOVAL

¹² Dedicated Acres PENETRATED SPACING UNIT; ALL SEC. 33 (640 ACRES), W/2 SEC. 34 (320 ACRES)	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-14081 (14,262.78 acres)
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

¹⁶ FND 2 1/2" BC CLO 1947	WELL FLAG LAT. 36.179684° N (NAD83) LONG. 107.568403° W (NAD83) LAT. 36.179700° N (NAD27) LONG. 107.567796° W (NAD27)	ENTRY POINT LAT. 36.179503° N (NAD83) LONG. 107.574421° W (NAD83) LAT. 36.179489° N (NAD27) LONG. 107.573814° W (NAD27)	BOTTOM HOLE LAT. 36.188684° N (NAD83) LONG. 107.586595° W (NAD83) LAT. 36.188700° N (NAD27) LONG. 107.585987° W (NAD27)
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W/4 CORNER SEC 33
LAT. 36.183233° N (NAD83)
LONG. 107.588775° W (NAD83)
LAT. 36.183218° N (NAD27)
LONG. 107.588167° W (NAD27)

SW CORNER SEC 33
LAT. 36.175945° N (NAD83)
LONG. 107.588775° W (NAD83)
LAT. 36.175931° N (NAD27)
LONG. 107.588167° W (NAD27)

NW CORNER SEC 28
LAT. 36.190597° N (NAD83)
LONG. 107.588788° W (NAD83)
LAT. 36.190583° N (NAD27)
LONG. 107.588180° W (NAD27)

NW CORNER SEC 34
LAT. 36.190525° N (NAD83)
LONG. 107.571034° W (NAD83)
LAT. 36.190511° N (NAD27)
LONG. 107.570427° W (NAD27)

¹⁷ OPERATOR CERTIFICATION

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

Holly Hill 4/17/17
Signature Date

Holly Hill

Printed Name

holly.hill@encana.com

E-mail Address

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.

APRIL 11, 2017

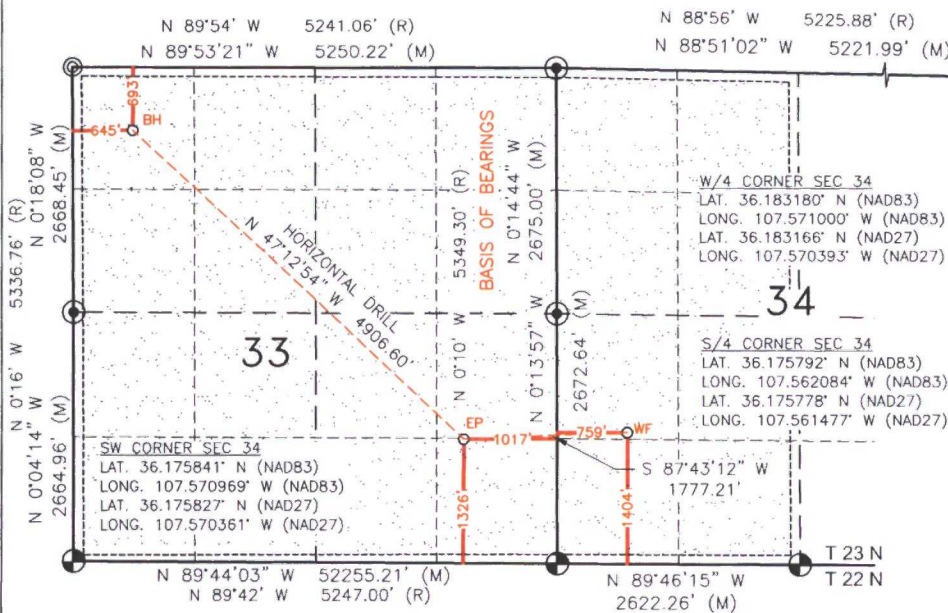
Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number

11393



1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 478-3480 Fax: (505) 478-3482

LAT. 36.188684° N (NAD83)
LONG. 107.586595° W (NAD83)
LAT. 36.188700° N (NAD27)
LONG. 107.585987° W (NAD27)

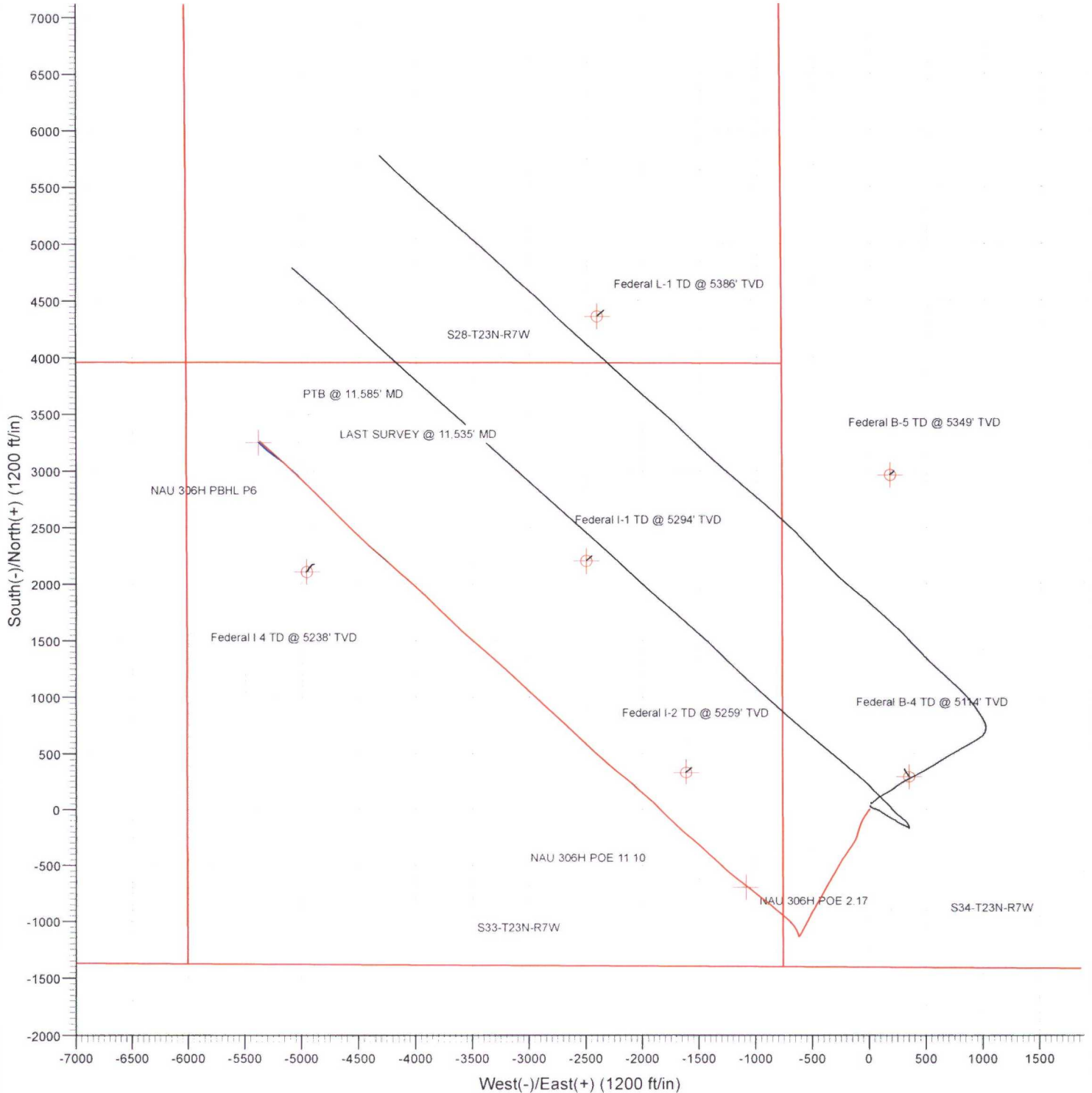
CATHEDRAL



SECTION DETAILS

No plan data is available

FINAL
NORTH ALAMITO UNIT 306H
PLAN 44



WELL DETAILS: NORTH ALAMITO UNIT 306H

+N/-S	+E/-W	Northing	Ground Level: Easting	Latitude	Longitude
0.0	0.0	1887316.46	1251337.68	36.179682	-107.568393



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NORTH ALAMITO UNIT 306H
Project:	Sandoval County, NM	TVD Reference:	14' KB @ 6909.0ft (AZTEC 920)
Site:	S34-T23N-R7W	MD Reference:	14' KB @ 6909.0ft (AZTEC 920)
Well:	NORTH ALAMITO UNIT 306H	North Reference:	True
Wellbore:	OH	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	S34-T23N-R7W				
Site Position:		Northing:	1,887,404.69 ft	Latitude:	36.179925
From:	Lat/Long	Easting:	1,251,356.59 ft	Longitude:	-107.568333
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-0.78 °

Well	NORTH ALAMITO UNIT 306H					
Well Position	+N/-S	0.0 ft	Northing:	1,887,316.46 ft	Latitude:	36.179682
	+E/-W	0.0 ft	Easting:	1,251,337.68 ft	Longitude:	-107.568393
Position Uncertainty		0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level:	6,895.0 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/9/2015	9.10	62.92	49,776

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	312.58	

Survey Program	Date	4/10/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
409.0	11,585.0	Survey #1 (OH)	MWD+HDGM	OWSG MWD + HDGM	

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	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
409.0	0.92	218.82	409.0	-2.6	-2.1	-0.2	0.22	0.22		
469.0	1.45	229.55	469.0	-3.4	-2.9	-0.2	0.95	0.88		
530.0	1.98	220.76	529.9	-4.7	-4.2	-0.1	0.97	0.87		
592.0	2.77	212.14	591.9	-6.8	-5.7	-0.4	1.39	1.27		
652.0	3.91	218.82	651.8	-9.6	-7.8	-0.8	2.00	1.90		
714.0	4.61	221.55	713.6	-13.1	-10.7	-1.0	1.18	1.13		
775.0	5.76	219.35	774.4	-17.3	-14.3	-1.2	1.91	1.89		
837.0	7.38	213.55	836.0	-23.1	-18.5	-2.0	2.82	2.61		
897.0	10.68	213.20	895.2	-30.9	-23.7	-3.5	5.50	5.50		
959.0	13.54	216.98	955.8	-41.5	-31.2	-5.2	4.78	4.61		
1,020.0	14.85	213.64	1,015.0	-53.8	-39.8	-7.1	2.53	2.15		
1,082.0	16.88	208.98	1,074.6	-68.2	-48.6	-10.4	3.86	3.27		

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S34-T23N-R7W
Well: NORTH ALAMITO UNIT 306H
Wellbore: OH
Design: FINAL

Local Co-ordinate Reference: Well NORTH ALAMITO UNIT 306H
TVD Reference: 14' KB @ 6909.0ft (AZTEC 920)
MD Reference: 14' KB @ 6909.0ft (AZTEC 920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
1,143.0	19.12	208.01	1,132.6	-84.8	-57.5	-15.0	3.70	3.67	
1,203.0	22.19	204.15	1,188.7	-103.8	-66.8	-21.1	5.59	5.12	
1,264.0	25.40	201.42	1,244.6	-126.5	-76.3	-29.4	5.56	5.26	
1,325.0	25.80	198.61	1,299.6	-151.3	-85.3	-39.6	2.10	0.66	
1,387.0	25.31	197.38	1,355.5	-176.7	-93.6	-50.7	1.16	-0.79	
1,449.0	25.14	196.94	1,411.6	-202.0	-101.4	-62.0	0.41	-0.27	
1,509.0	23.73	197.47	1,466.2	-225.7	-108.7	-72.7	2.38	-2.35	
1,571.0	23.12	201.42	1,523.1	-248.9	-116.9	-82.3	2.72	-0.98	
1,632.0	23.29	203.53	1,579.2	-271.1	-126.1	-90.6	1.39	0.28	
1,693.0	23.38	208.54	1,635.2	-292.8	-136.7	-97.5	3.26	0.15	
1,754.0	22.72	214.69	1,691.3	-313.1	-149.2	-102.0	4.09	-1.08	
1,815.0	22.10	214.60	1,747.7	-332.3	-162.4	-105.2	1.02	-1.02	
1,877.0	22.10	214.87	1,805.2	-351.4	-175.7	-108.4	0.16	0.00	
1,937.0	22.02	215.22	1,860.8	-369.9	-188.6	-111.4	0.26	-0.13	
1,997.0	23.16	214.69	1,916.2	-388.8	-201.8	-114.4	1.93	1.90	
2,059.0	24.13	214.43	1,973.0	-409.3	-215.9	-117.9	1.57	1.56	
2,121.0	24.57	212.23	2,029.5	-430.6	-230.0	-122.0	1.63	0.71	
2,181.0	24.39	211.88	2,084.1	-451.7	-243.2	-126.6	0.39	-0.30	
2,242.0	23.99	209.51	2,139.7	-473.2	-255.9	-131.7	1.72	-0.66	
2,303.0	23.91	208.19	2,195.5	-494.9	-267.9	-137.6	0.89	-0.13	
2,364.0	23.69	206.25	2,251.3	-516.7	-279.1	-144.1	1.33	-0.36	
2,426.0	23.51	207.40	2,308.1	-538.9	-290.3	-150.8	0.80	-0.29	
2,487.0	24.35	212.06	2,363.8	-560.4	-302.6	-156.3	3.39	1.38	
2,548.0	23.99	211.79	2,419.5	-581.6	-315.8	-160.9	0.62	-0.59	
2,611.0	24.48	210.83	2,476.9	-603.6	-329.3	-166.0	1.00	0.78	
2,674.0	25.53	210.03	2,534.0	-626.6	-342.7	-171.6	1.75	1.67	
2,737.0	25.05	207.13	2,591.0	-650.2	-355.6	-178.1	2.11	-0.76	
2,800.0	23.99	208.89	2,648.3	-673.3	-367.9	-184.7	2.04	-1.68	
2,863.0	23.56	211.09	2,706.0	-695.3	-380.6	-190.2	1.56	-0.68	
2,926.0	23.38	209.07	2,763.8	-717.0	-393.1	-195.7	1.31	-0.29	
2,989.0	23.34	207.57	2,821.6	-739.0	-405.0	-201.8	0.95	-0.06	
3,053.0	22.81	208.45	2,880.5	-761.2	-416.8	-208.1	0.99	-0.83	
3,116.0	22.50	209.95	2,938.6	-782.3	-428.6	-213.7	1.04	-0.49	
3,179.0	22.72	210.30	2,996.8	-803.3	-440.8	-219.0	0.41	0.35	
3,242.0	22.06	209.95	3,055.0	-824.0	-452.8	-224.1	1.07	-1.05	
3,305.0	21.18	209.42	3,113.6	-844.2	-464.3	-229.3	1.43	-1.40	
3,368.0	21.40	209.07	3,172.3	-864.2	-475.5	-234.6	0.40	0.35	
3,431.0	21.71	209.42	3,230.9	-884.4	-486.8	-239.9	0.53	0.49	
3,494.0	20.92	208.89	3,289.6	-904.4	-498.0	-245.2	1.29	-1.25	
3,557.0	20.96	209.24	3,348.4	-924.0	-508.9	-250.5	0.21	0.06	
3,621.0	20.39	207.75	3,408.3	-943.9	-519.7	-256.0	1.21	-0.89	
3,684.0	20.79	206.08	3,467.3	-963.6	-529.7	-262.0	1.13	0.63	
3,747.0	20.61	206.69	3,526.2	-983.6	-539.6	-268.2	0.45	-0.29	
3,810.0	19.34	207.40	3,585.4	-1,002.8	-549.4	-274.0	2.05	-2.02	
3,874.0	18.02	206.43	3,646.0	-1,021.0	-558.7	-279.5	2.12	-2.06	
3,938.0	16.92	208.28	3,707.1	-1,038.1	-567.5	-284.6	1.93	-1.72	
4,001.0	15.12	209.07	3,767.6	-1,053.4	-575.8	-288.7	2.88	-2.86	
4,064.0	14.37	205.90	3,828.6	-1,067.6	-583.2	-292.9	1.75	-1.19	
4,127.0	14.81	207.84	3,889.5	-1,081.7	-590.4	-297.2	1.04	0.70	
4,190.0	14.06	209.59	3,950.5	-1,095.5	-597.9	-301.0	1.38	-1.19	
4,253.0	12.52	207.13	4,011.9	-1,108.2	-604.8	-304.5	2.60	-2.44	
4,316.0	11.25	208.45	4,073.5	-1,119.7	-610.9	-307.8	2.06	-2.02	
4,369.0	8.88	209.42	4,125.7	-1,127.8	-615.3	-310.0	4.48	-4.47	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NORTH ALAMITO UNIT 306H
Project:	Sandoval County, NM	TVD Reference:	14' KB @ 6909.0ft (AZTEC 920)
Site:	S34-T23N-R7W	MD Reference:	14' KB @ 6909.0ft (AZTEC 920)
Well:	NORTH ALAMITO UNIT 306H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
4,432.0	4.31	218.03	4,188.3	-1,133.9	-619.2	-311.3	7.40	-7.25	
4,496.0	1.54	234.56	4,252.2	-1,136.3	-621.4	-311.3	4.48	-4.33	
4,559.0	2.37	297.92	4,315.1	-1,136.2	-623.2	-309.9	3.45	1.32	
4,623.0	2.24	321.47	4,379.1	-1,134.6	-625.2	-307.4	1.48	-0.20	
4,686.0	3.25	339.67	4,442.0	-1,132.0	-626.6	-304.6	2.10	1.60	
4,749.0	7.16	350.31	4,504.7	-1,126.4	-627.8	-299.9	6.37	6.21	
4,813.0	9.76	343.72	4,568.0	-1,117.3	-630.0	-292.1	4.33	4.06	
4,876.0	13.80	345.03	4,629.7	-1,104.9	-633.5	-281.2	6.43	6.41	
4,939.0	18.85	337.56	4,690.2	-1,088.2	-639.3	-265.6	8.67	8.02	
5,003.0	23.91	328.25	4,749.7	-1,067.6	-650.1	-243.7	9.50	7.91	
5,067.0	28.13	323.33	4,807.3	-1,044.5	-665.9	-216.4	7.40	6.59	
5,130.0	32.30	318.14	4,861.7	-1,020.0	-686.0	-185.0	7.80	6.62	
5,193.0	35.99	315.50	4,913.8	-994.3	-710.3	-149.8	6.31	5.86	
5,224.0	38.76	313.83	4,938.5	-981.0	-723.6	-130.9	9.51	8.94	
5,256.0	41.31	311.90	4,963.0	-967.0	-738.7	-110.4	8.86	7.97	
5,288.0	43.86	311.11	4,986.5	-952.7	-754.9	-88.7	8.14	7.97	
5,320.0	46.63	310.49	5,009.0	-937.9	-772.1	-66.0	8.76	8.66	
5,351.0	51.72	310.93	5,029.3	-922.6	-789.9	-42.6	16.45	16.42	
5,383.0	55.24	309.79	5,048.3	-905.9	-809.5	-16.9	11.37	11.00	
5,415.0	60.65	309.09	5,065.3	-888.7	-830.5	10.2	17.01	16.91	
5,446.0	63.81	309.26	5,079.8	-871.4	-851.7	37.6	10.21	10.19	
5,477.0	68.99	309.17	5,092.2	-853.4	-873.7	65.9	16.71	16.71	
5,509.0	72.86	309.26	5,102.6	-834.3	-897.1	96.1	12.10	12.09	
5,541.0	77.74	308.74	5,110.7	-814.8	-921.2	127.0	15.33	15.25	
5,600.0	85.83	307.68	5,119.2	-778.7	-967.0	185.2	13.83	13.71	
5,664.0	87.72	307.42	5,122.8	-739.8	-1,017.7	248.8	2.98	2.95	
5,728.0	90.26	308.38	5,123.9	-700.5	-1,068.2	312.6	4.24	3.97	
5,791.0	92.02	308.91	5,122.6	-661.2	-1,117.4	375.4	2.92	2.79	
5,854.0	90.26	308.47	5,121.4	-621.8	-1,166.5	438.3	2.88	-2.79	
5,918.0	90.97	309.61	5,120.7	-581.5	-1,216.3	502.1	2.10	1.11	
5,981.0	91.41	311.11	5,119.4	-540.7	-1,264.2	565.1	2.48	0.70	
6,044.0	91.80	314.27	5,117.6	-498.0	-1,310.5	628.0	5.05	0.62	
6,107.0	90.84	313.83	5,116.2	-454.2	-1,355.8	691.0	1.68	-1.52	
6,170.0	88.73	312.87	5,116.4	-411.0	-1,401.6	754.0	3.68	-3.35	
6,233.0	88.33	312.43	5,118.0	-368.3	-1,447.9	817.0	0.94	-0.63	
6,297.0	88.90	311.99	5,119.6	-325.3	-1,495.3	880.9	1.12	0.89	
6,361.0	89.39	310.49	5,120.5	-283.1	-1,543.4	944.9	2.47	0.77	
6,424.0	89.96	309.97	5,120.9	-242.4	-1,591.5	1,007.9	1.22	0.90	
6,488.0	90.31	311.64	5,120.7	-200.6	-1,640.0	1,071.8	2.67	0.55	
6,551.0	91.54	313.13	5,119.7	-158.2	-1,686.5	1,134.8	3.07	1.95	
6,614.0	90.88	314.54	5,118.4	-114.5	-1,731.9	1,197.8	2.47	-1.05	
6,676.0	90.00	315.33	5,117.9	-70.7	-1,775.8	1,259.7	1.91	-1.42	
6,740.0	90.70	315.15	5,117.5	-25.3	-1,820.9	1,323.7	1.13	1.09	
6,804.0	91.54	315.42	5,116.3	20.2	-1,865.9	1,387.6	1.38	1.31	
6,867.0	90.40	313.83	5,115.2	64.4	-1,910.7	1,450.5	3.11	-1.81	
6,929.0	88.42	311.28	5,115.8	106.3	-1,956.4	1,512.5	5.21	-3.19	
6,990.0	89.39	311.90	5,117.0	146.8	-2,002.0	1,573.5	1.89	1.59	
7,050.0	90.31	311.20	5,117.2	186.6	-2,046.9	1,633.5	1.93	1.53	
7,112.0	90.53	311.64	5,116.7	227.6	-2,093.4	1,695.5	0.79	0.35	
7,174.0	89.82	311.11	5,116.5	268.6	-2,139.9	1,757.5	1.43	-1.15	
7,234.0	89.87	311.20	5,116.7	308.1	-2,185.1	1,817.4	0.17	0.08	
7,295.0	90.66	311.20	5,116.4	348.3	-2,231.0	1,878.4	1.30	1.30	
7,357.0	91.01	310.32	5,115.5	388.8	-2,278.0	1,940.4	1.53	0.56	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S34-T23N-R7W
Well: NORTH ALAMITO UNIT 306H
Wellbore: OH
Design: FINAL

Local Co-ordinate Reference: Well NORTH ALAMITO UNIT 306H
TVD Reference: 14' KB @ 6909.0ft (AZTEC 920)
MD Reference: 14' KB @ 6909.0ft (AZTEC 920)
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
7,417.0	90.48	310.32	5,114.7	427.6	-2,323.7	2,000.3	0.88	-0.88	
7,479.0	90.44	311.46	5,114.2	468.2	-2,370.6	2,062.3	1.84	-0.06	
7,540.0	89.65	312.51	5,114.2	509.0	-2,415.9	2,123.3	2.15	-1.30	
7,602.0	90.75	312.60	5,114.0	550.9	-2,461.6	2,185.3	1.78	1.77	
7,663.0	91.27	313.39	5,112.9	592.5	-2,506.2	2,246.3	1.55	0.85	
7,724.0	90.22	313.83	5,112.1	634.6	-2,550.4	2,307.3	1.87	-1.72	
7,785.0	90.35	314.18	5,111.8	676.9	-2,594.2	2,368.2	0.61	0.21	
7,847.0	89.12	312.87	5,112.1	719.6	-2,639.2	2,430.2	2.90	-1.98	
7,908.0	88.95	312.51	5,113.1	761.0	-2,684.0	2,491.2	0.65	-0.28	
7,968.0	90.04	312.16	5,113.6	801.4	-2,728.4	2,551.2	1.91	1.82	
8,029.0	91.41	313.04	5,112.9	842.7	-2,773.3	2,612.2	2.67	2.25	
8,090.0	91.06	312.16	5,111.5	884.0	-2,818.2	2,673.2	1.55	-0.57	
8,152.0	90.62	313.13	5,110.6	926.0	-2,863.7	2,735.2	1.72	-0.71	
8,214.0	91.19	313.83	5,109.7	968.6	-2,908.7	2,797.2	1.46	0.92	
8,275.0	90.79	313.13	5,108.6	1,010.6	-2,953.0	2,858.2	1.32	-0.66	
8,336.0	90.97	312.60	5,107.7	1,052.1	-2,997.7	2,919.1	0.92	0.30	
8,397.0	91.63	311.90	5,106.3	1,093.1	-3,042.8	2,980.1	1.58	1.08	
8,458.0	91.45	312.60	5,104.6	1,134.1	-3,088.0	3,041.1	1.18	-0.30	
8,519.0	90.75	313.04	5,103.5	1,175.5	-3,132.7	3,102.1	1.36	-1.15	
8,580.0	88.68	312.60	5,103.8	1,217.0	-3,177.4	3,163.1	3.47	-3.39	
8,642.0	87.98	312.51	5,105.6	1,258.9	-3,223.1	3,225.1	1.14	-1.13	
8,702.0	88.86	312.16	5,107.2	1,299.3	-3,267.4	3,285.0	1.58	1.47	
8,763.0	89.78	311.81	5,108.0	1,340.1	-3,312.8	3,346.0	1.61	1.51	
8,824.0	90.84	311.64	5,107.6	1,380.7	-3,358.3	3,407.0	1.76	1.74	
8,886.0	91.36	310.49	5,106.4	1,421.4	-3,405.0	3,469.0	2.04	0.84	
8,947.0	92.37	310.58	5,104.5	1,461.0	-3,451.4	3,529.9	1.66	1.66	
9,008.0	92.02	310.67	5,102.1	1,500.7	-3,497.6	3,590.8	0.59	-0.57	
9,068.0	91.10	312.08	5,100.5	1,540.4	-3,542.6	3,650.8	2.81	-1.53	
9,129.0	89.47	312.08	5,100.2	1,581.2	-3,587.9	3,711.8	2.67	-2.67	
9,191.0	90.48	314.10	5,100.2	1,623.6	-3,633.2	3,773.8	3.64	1.63	
9,252.0	91.10	314.62	5,099.4	1,666.2	-3,676.8	3,834.8	1.33	1.02	
9,313.0	91.80	314.18	5,097.8	1,708.9	-3,720.4	3,895.7	1.36	1.15	
9,376.0	92.20	313.57	5,095.6	1,752.5	-3,765.7	3,958.6	1.16	0.63	
9,439.0	91.49	315.15	5,093.6	1,796.6	-3,810.8	4,021.6	2.75	-1.13	
9,503.0	90.09	314.71	5,092.7	1,841.8	-3,856.1	4,085.5	2.29	-2.19	
9,565.0	90.18	314.10	5,092.6	1,885.1	-3,900.4	4,147.5	0.99	0.15	
9,629.0	89.91	313.39	5,092.5	1,929.4	-3,946.6	4,211.5	1.19	-0.42	
9,692.0	90.13	312.16	5,092.5	1,972.2	-3,992.8	4,274.5	1.98	0.35	
9,755.0	90.79	311.81	5,092.0	2,014.3	-4,039.7	4,337.5	1.19	1.05	
9,819.0	90.48	310.05	5,091.3	2,056.2	-4,088.0	4,401.4	2.79	-0.48	
9,882.0	90.40	311.55	5,090.8	2,097.4	-4,135.7	4,464.4	2.38	-0.13	
9,945.0	89.52	312.16	5,090.8	2,139.4	-4,182.6	4,527.4	1.70	-1.40	
10,008.0	90.35	312.16	5,090.9	2,181.7	-4,229.3	4,590.4	1.32	1.32	
10,072.0	90.84	311.72	5,090.2	2,224.5	-4,276.9	4,654.4	1.03	0.77	
10,136.0	90.48	309.79	5,089.5	2,266.3	-4,325.4	4,718.3	3.07	-0.56	
10,197.0	91.63	310.84	5,088.4	2,305.7	-4,371.9	4,779.3	2.55	1.89	
10,261.0	91.93	313.13	5,086.4	2,348.5	-4,419.5	4,843.2	3.61	0.47	
10,324.0	93.08	313.13	5,083.6	2,391.6	-4,465.4	4,906.2	1.83	1.83	
10,387.0	92.90	313.48	5,080.4	2,434.7	-4,511.2	4,969.1	0.62	-0.29	
10,450.0	91.45	314.89	5,078.0	2,478.6	-4,556.3	5,032.0	3.21	-2.30	
10,513.0	90.26	314.10	5,077.0	2,522.7	-4,601.2	5,095.0	2.27	-1.89	
10,576.0	88.86	315.77	5,077.5	2,567.2	-4,645.8	5,157.9	3.46	-2.22	
10,640.0	89.25	315.06	5,078.6	2,612.8	-4,690.8	5,221.8	1.27	0.61	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NORTH ALAMITO UNIT 306H
Project:	Sandoval County, NM	TVD Reference:	14' KB @ 6909.0ft (AZTEC 920)
Site:	S34-T23N-R7W	MD Reference:	14' KB @ 6909.0ft (AZTEC 920)
Well:	NORTH ALAMITO UNIT 306H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
10,702.0	89.96	315.15	5,079.0	2,656.7	-4,734.5	5,283.8	1.15	1.15	
10,766.0	90.62	315.15	5,078.7	2,702.1	-4,779.7	5,347.7	1.03	1.03	
10,829.0	91.23	314.10	5,077.7	2,746.3	-4,824.5	5,410.7	1.93	0.97	
10,892.0	90.40	314.45	5,076.8	2,790.3	-4,869.6	5,473.6	1.43	-1.32	
10,954.0	88.77	314.71	5,077.2	2,833.8	-4,913.7	5,535.6	2.66	-2.63	
11,017.0	89.39	314.89	5,078.2	2,878.2	-4,958.4	5,598.5	1.02	0.98	
11,080.0	89.91	314.10	5,078.6	2,922.4	-5,003.4	5,661.5	1.50	0.83	
11,144.0	90.70	313.83	5,078.3	2,966.8	-5,049.4	5,725.5	1.30	1.23	
11,207.0	90.88	312.69	5,077.4	3,010.0	-5,095.3	5,788.5	1.83	0.29	
11,270.0	89.43	312.78	5,077.2	3,052.7	-5,141.6	5,851.5	2.31	-2.30	
11,332.0	89.12	311.46	5,078.0	3,094.3	-5,187.6	5,913.4	2.19	-0.50	
11,396.0	89.56	311.28	5,078.7	3,136.6	-5,235.6	5,977.4	0.74	0.69	
11,459.0	88.99	311.72	5,079.5	3,178.3	-5,282.8	6,040.4	1.14	-0.90	
11,522.0	89.43	311.64	5,080.4	3,220.2	-5,329.8	6,103.4	0.71	0.70	
11,535.0	89.74	311.72	5,080.5	3,228.8	-5,339.5	6,116.4	2.46	2.38	LAST SURVEY @ 11,535' MD
11,585.0	89.74	311.72	5,080.7	3,262.1	-5,376.8	6,166.4	0.00	0.00	PTB @ 11,585' MD

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S34-T23N-R7W
Well: NORTH ALAMITO UNIT 306H
Wellbore: OH
Design: FINAL

Local Co-ordinate Reference: Well NORTH ALAMITO UNIT 306H
TVD Reference: 14' KB @ 6909.0ft (AZTEC 920)
MD Reference: 14' KB @ 6909.0ft (AZTEC 920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Federal B-5 TD @ 5349' - actual wellpath misses target center by 3560.5ft at 7205.3ft MD (5116.6 TVD, 289.2 N, -2163.5 E) - Circle (radius 50.0)	0.00	0.00	5,363.7	2,963.1	174.6	1,890,276.94	1,251,552.50	36.187821	-107.567801
Federal I-2 TD @ 5259' - actual wellpath misses target center by 426.7ft at 6846.0ft MD (5115.4 TVD, 49.8 N, -1895.6 E) - Circle (radius 50.0)	0.00	0.00	5,273.4	333.8	-1,619.1	1,887,672.19	1,249,723.26	36.180599	-107.573879
NAU 306H POE 11.10 - actual wellpath misses target center by 10.9ft at 5748.7ft MD (5123.7 TVD, -687.6 N, -1084.4 E) - Point	0.00	0.00	5,124.4	-696.1	-1,091.2	1,886,635.26	1,250,237.08	36.177770	-107.572090
NAU 306H PBHL 3.21 - actual wellpath misses target center by 53.6ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E) - Point	0.00	0.00	5,132.1	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
NAU 306H PBHL P5 - actual wellpath misses target center by 17.1ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E) - Point	0.00	0.00	5,072.4	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
NAU 306H POE 3.21 - actual wellpath misses target center by 12.9ft at 5748.9ft MD (5123.7 TVD, -687.5 N, -1084.5 E) - Point	0.00	0.00	5,116.9	-696.1	-1,091.2	1,886,635.26	1,250,237.08	36.177770	-107.572090
NAU 306H PBHL 2.17 - actual wellpath misses target center by 36.7ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E) - Point	0.00	0.00	5,114.2	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
NAU 306H PBHL P6 - actual wellpath misses target center by 15.5ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E) - Point	0.00	0.00	5,076.9	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
NAU 306H PBHL 11.10 - actual wellpath misses target center by 36.7ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E) - Point	0.00	0.00	5,114.2	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
Federal B-4 TD @ 5114' - actual wellpath misses target center by 1668.3ft at 5351.0ft MD (5029.3 TVD, -922.6 N, -789.9 E) - Circle (radius 50.0)	0.00	0.00	5,128.2	294.5	346.8	1,887,606.22	1,251,688.45	36.180491	-107.567218
Federal I-1 TD @ 5294' - actual wellpath misses target center by 1204.5ft at 8739.9ft MD (5107.8 TVD, 1324.6 N, -3295.5 E) - Circle (radius 50.0)	0.00	0.00	5,308.5	2,205.8	-2,499.3	1,889,556.05	1,248,868.56	36.185740	-107.576861
Federal I 4 TD @ 5238' - actual wellpath misses target center by 573.6ft at 10477.2ft MD (5077.4 TVD, 2497.7 N, -4575.6 E) - Circle (radius 50.0)	0.00	0.00	5,252.8	2,110.0	-4,960.2	1,889,493.66	1,246,406.62	36.185476	-107.585199
NAU 306H POE 2.17 - actual wellpath misses target center by 10.9ft at 5748.7ft MD (5123.7 TVD, -687.6 N, -1084.4 E) - Point	0.00	0.00	5,124.4	-696.1	-1,091.2	1,886,635.26	1,250,237.08	36.177770	-107.572090
NAU 306H PBHL P4 - actual wellpath misses target center by 19.8ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E) - Point	0.00	0.00	5,093.7	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
Federal L-1 TD @ 5386' - actual wellpath misses target center by 2858.0ft at 10072.0ft MD (5090.2 TVD, 2224.5 N, -4276.9 E) - Circle (radius 50.0)	0.00	0.00	5,400.3	4,363.7	-2,407.2	1,891,712.49	1,248,989.99	36.191667	-107.576550

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S34-T23N-R7W
Well: NORTH ALAMITO UNIT 306H
Wellbore: OH
Design: FINAL

Local Co-ordinate Reference: Well NORTH ALAMITO UNIT 306H
TVD Reference: 14' KB @ 6909.0ft (AZTEC 920)
MD Reference: 14' KB @ 6909.0ft (AZTEC 920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Federal B-5 TD @ 5349' - actual wellpath misses target center by 3560.5ft at 7205.3ft MD (5116.6 TVD, 289.2 N, -2163.5 E) - Circle (radius 50.0)	0.00	0.00	5,363.7	2,963.1	174.6	1,890,276.94	1,251,552.50	36.187821	-107.567801
Federal I-2 TD @ 5259' - actual wellpath misses target center by 426.7ft at 6846.0ft MD (5115.4 TVD, 49.8 N, -1895.6 E) - Circle (radius 50.0)	0.00	0.00	5,273.4	333.8	-1,619.1	1,887,672.19	1,249,723.26	36.180599	-107.573879
NAU 306H POE 11.10 - actual wellpath misses target center by 10.9ft at 5748.7ft MD (5123.7 TVD, -687.6 N, -1084.4 E) - Point	0.00	0.00	5,124.4	-696.1	-1,091.2	1,886,635.26	1,250,237.08	36.177770	-107.572090
NAU 306H PBHL 3.21 - actual wellpath misses target center by 53.6ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E) - Point	0.00	0.00	5,132.1	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
NAU 306H PBHL P5 - actual wellpath misses target center by 17.1ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E) - Point	0.00	0.00	5,072.4	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
NAU 306H POE 3.21 - actual wellpath misses target center by 12.9ft at 5748.9ft MD (5123.7 TVD, -687.5 N, -1084.5 E) - Point	0.00	0.00	5,116.9	-696.1	-1,091.2	1,886,635.26	1,250,237.08	36.177770	-107.572090
NAU 306H PBHL 2.17 - actual wellpath misses target center by 36.7ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E) - Point	0.00	0.00	5,114.2	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
NAU 306H PBHL P6 - actual wellpath misses target center by 15.5ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E) - Point	0.00	0.00	5,076.9	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
NAU 306H PBHL 11.10 - actual wellpath misses target center by 36.7ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E) - Point	0.00	0.00	5,114.2	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
Federal B-4 TD @ 5114' - actual wellpath misses target center by 1668.3ft at 5351.0ft MD (5029.3 TVD, -922.6 N, -789.9 E) - Circle (radius 50.0)	0.00	0.00	5,128.2	294.5	346.8	1,887,606.22	1,251,688.45	36.180491	-107.567218
Federal I-1 TD @ 5294' - actual wellpath misses target center by 1204.5ft at 8739.9ft MD (5107.8 TVD, 1324.6 N, -3295.5 E) - Circle (radius 50.0)	0.00	0.00	5,308.5	2,205.8	-2,499.3	1,889,556.05	1,248,868.56	36.185740	-107.576861
Federal I 4 TD @ 5238' - actual wellpath misses target center by 573.6ft at 10477.2ft MD (5077.4 TVD, 2497.7 N, -4575.6 E) - Circle (radius 50.0)	0.00	0.00	5,252.8	2,110.0	-4,960.2	1,889,493.66	1,246,406.62	36.185476	-107.585199
NAU 306H POE 2.17 - actual wellpath misses target center by 10.9ft at 5748.7ft MD (5123.7 TVD, -687.6 N, -1084.4 E) - Point	0.00	0.00	5,124.4	-696.1	-1,091.2	1,886,635.26	1,250,237.08	36.177770	-107.572090
NAU 306H PBHL P4 - actual wellpath misses target center by 19.8ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E) - Point	0.00	0.00	5,093.7	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
Federal L-1 TD @ 5386' - actual wellpath misses target center by 2858.0ft at 10072.0ft MD (5090.2 TVD, 2224.5 N, -4276.9 E) - Circle (radius 50.0)	0.00	0.00	5,400.3	4,363.7	-2,407.2	1,891,712.49	1,248,989.99	36.191667	-107.576550

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S34-T23N-R7W
Well: NORTH ALAMITO UNIT 306H
Wellbore: OH
Design: FINAL

Local Co-ordinate Reference: Well NORTH ALAMITO UNIT 306H
TVD Reference: 14' KB @ 6909.0ft (AZTEC 920)
MD Reference: 14' KB @ 6909.0ft (AZTEC 920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Federal B-5 TD @ 5349'	0.00	0.00	5,363.7	2,963.1	174.6	1,890,276.94	1,251,552.50	36.187821	-107.567801
- actual wellpath misses target center by 3560.5ft at 7205.3ft MD (5116.6 TVD, 289.2 N, -2163.5 E)									
- Circle (radius 50.0)									
Federal I-2 TD @ 5259'	0.00	0.00	5,273.4	333.8	-1,619.1	1,887,672.19	1,249,723.26	36.180599	-107.573879
- actual wellpath misses target center by 426.7ft at 6846.0ft MD (5115.4 TVD, 49.8 N, -1895.6 E)									
- Circle (radius 50.0)									
NAU 306H POE 11.10	0.00	0.00	5,124.4	-696.1	-1,091.2	1,886,635.26	1,250,237.08	36.177770	-107.572090
- actual wellpath misses target center by 10.9ft at 5748.7ft MD (5123.7 TVD, -687.6 N, -1084.4 E)									
- Point									
NAU 306H PBHL 3.21	0.00	0.00	5,132.1	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
- actual wellpath misses target center by 53.6ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E)									
- Point									
NAU 306H PBHL P5	0.00	0.00	5,072.4	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
- actual wellpath misses target center by 17.1ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E)									
- Point									
NAU 306H POE 3.21	0.00	0.00	5,116.9	-696.1	-1,091.2	1,886,635.26	1,250,237.08	36.177770	-107.572090
- actual wellpath misses target center by 12.9ft at 5748.9ft MD (5123.7 TVD, -687.5 N, -1084.5 E)									
- Point									
NAU 306H PBHL 2.17	0.00	0.00	5,114.2	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
- actual wellpath misses target center by 36.7ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E)									
- Point									
NAU 306H PBHL P6	0.00	0.00	5,076.9	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
- actual wellpath misses target center by 15.5ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E)									
- Point									
NAU 306H PBHL 11.10	0.00	0.00	5,114.2	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
- actual wellpath misses target center by 36.7ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E)									
- Point									
Federal B-4 TD @ 5114'	0.00	0.00	5,128.2	294.5	346.8	1,887,606.22	1,251,688.45	36.180491	-107.567218
- actual wellpath misses target center by 1668.3ft at 5351.0ft MD (5029.3 TVD, -922.6 N, -789.9 E)									
- Circle (radius 50.0)									
Federal I-1 TD @ 5294'	0.00	0.00	5,308.5	2,205.8	-2,499.3	1,889,556.05	1,248,868.56	36.185740	-107.576861
- actual wellpath misses target center by 1204.5ft at 8739.9ft MD (5107.8 TVD, 1324.6 N, -3295.5 E)									
- Circle (radius 50.0)									
Federal I 4 TD @ 5238'	0.00	0.00	5,252.8	2,110.0	-4,960.2	1,889,493.66	1,246,406.62	36.185476	-107.585199
- actual wellpath misses target center by 573.6ft at 10477.2ft MD (5077.4 TVD, 2497.7 N, -4575.6 E)									
- Circle (radius 50.0)									
NAU 306H POE 2.17	0.00	0.00	5,124.4	-696.1	-1,091.2	1,886,635.26	1,250,237.08	36.177770	-107.572090
- actual wellpath misses target center by 10.9ft at 5748.7ft MD (5123.7 TVD, -687.6 N, -1084.4 E)									
- Point									
NAU 306H PBHL P4	0.00	0.00	5,093.7	3,251.4	-5,387.3	1,890,640.71	1,245,995.07	36.188611	-107.586647
- actual wellpath misses target center by 19.8ft at 11585.0ft MD (5080.7 TVD, 3262.1 N, -5376.8 E)									
- Point									
Federal L-1 TD @ 5386'	0.00	0.00	5,400.3	4,363.7	-2,407.2	1,891,712.49	1,248,989.99	36.191667	-107.576550
- actual wellpath misses target center by 2858.0ft at 10072.0ft MD (5090.2 TVD, 2224.5 N, -4276.9 E)									
- Circle (radius 50.0)									
	11,535.0	5,080.5	3,228.8	-5,339.5	LAST SURVEY @ 11,535' MD				
	11,585.0	5,080.7	3,262.1	-5,376.8	PTB @ 11,585' MD				

Checked By: _____ Approved By: _____ Date: _____