

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-8181 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

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 30-043-21297	² Pool Code 98174	³ Pool Name Alamito Mancos N (Oil)
⁴ Property Code 317188	⁵ Property Name NORTH ALAMITO UNIT	⁶ Well Number 307H
⁷ GRID No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.	⁹ Elevation 6892'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot ldn	Feet from the	North/South line	Feet from the	East/West line	County
L	34	23N	7W		1434'	SOUTH	766'	WEST	SANDOVAL

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot ldn	Feet from the	North/South line	Feet from the	East/West line	County
M	28	23N	7W		836'	SOUTH	941'	WEST	SANDOVAL

¹² Dedicated Acres PENETRATED SPACING UNIT; SW/4 SEC. 28 (160 ACRES), N/2 & SE/4 SEC. 33 (480 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

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FND 2 1/2" BC GLO 1947	WELL HEAD LAT. 36.179767° N (NAD83) LONG. 107.568378° W (NAD83) LAT. 36.179753° N (NAD27) LONG. 107.567771° W (NAD27)	POINT OF ENTRY LAT. 36.181508° N (NAD83) LONG. 107.569775° W (NAD83) LAT. 36.181494° N (NAD27) LONG. 107.569168° W (NAD27)	BOTTOM HOLE LAT. 36.192886° N (NAD83) LONG. 107.585604° W (NAD83) LAT. 36.192872° N (NAD27) LONG. 107.584996° W (NAD27)
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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.

MARCH 31, 2017

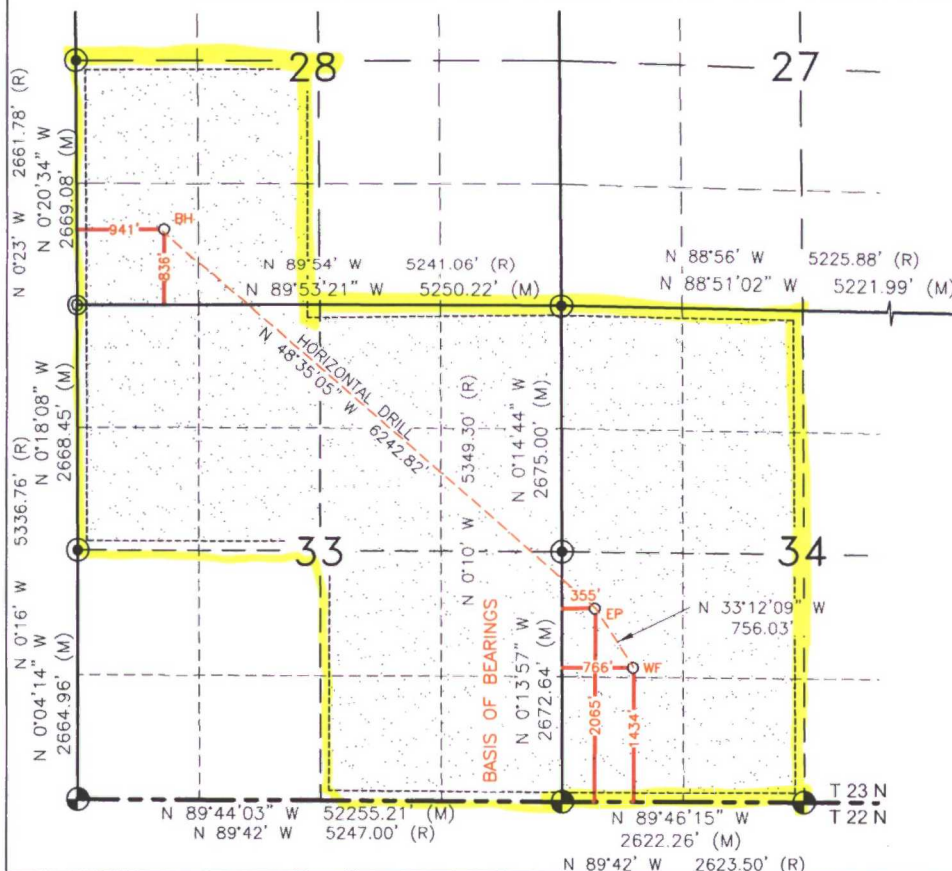
Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number

11393



PV

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OIL CONSERVATION DIVISION

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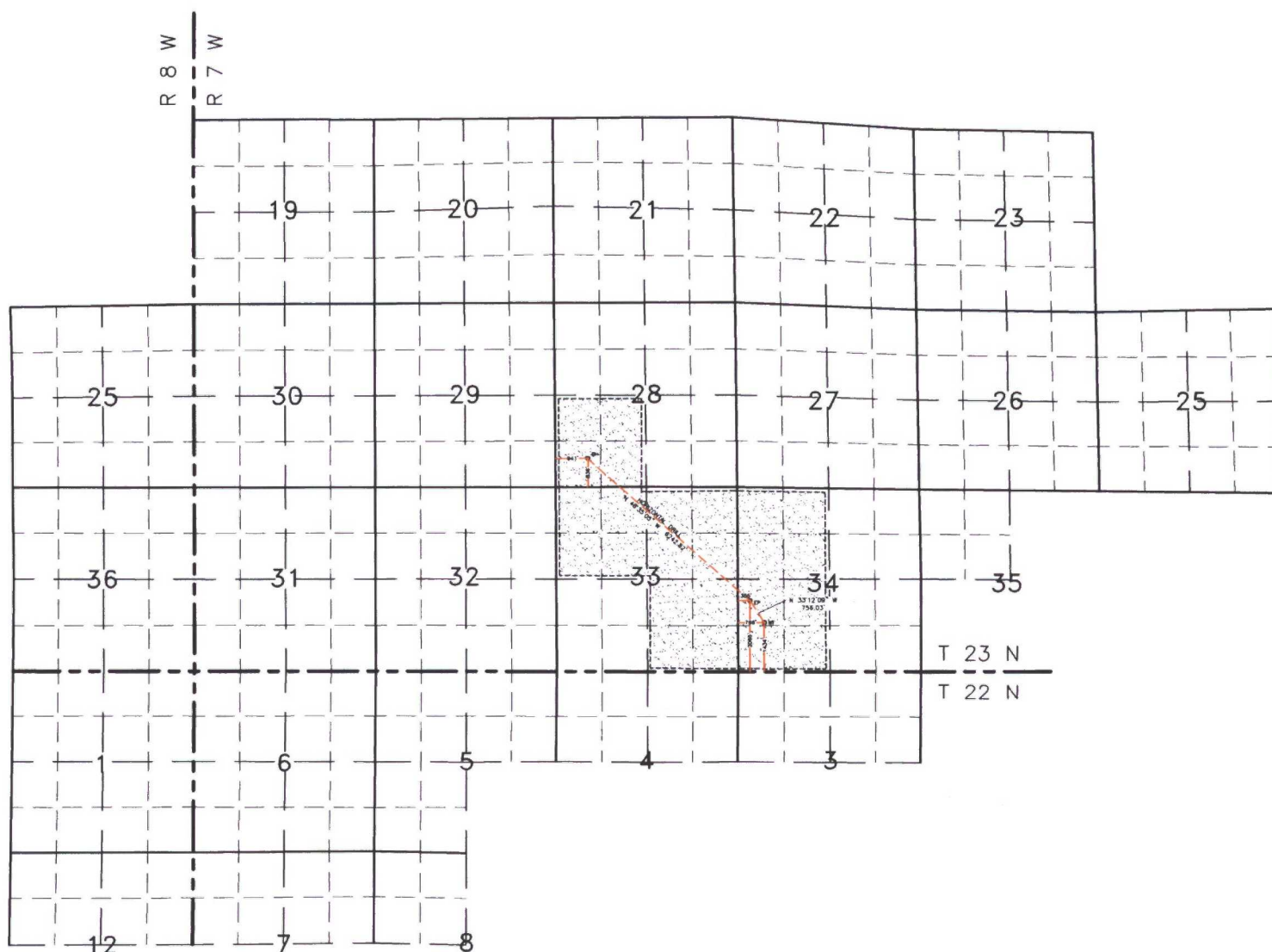
ENCANA OIL & GAS (USA) INC.
NORTH ALAMITO UNIT #307H

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
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☒ AMENDED REPORT
☒ AS-DRILLED

PENETRATED SPACING UNIT: SW/4 SEC. 28 (160 ACRES),
N/2 & SE/4 SEC. 33 (480 ACRES), W/2 SEC. 34 (320 ACRES)
TOTAL 14,262.78 ACRES: T23N R7W SEC's 19-23 (ALL); 25-34 (ALL); 35 (NW/4);
T22N R7W SEC's 3 (N/2); 4 (N/2); 5 (N/2, SW/4); 6 (ALL); 7 (N/2); 8 (NW/4);
T23N R8W SEC's 25 & 36 (ALL); T22N R8W SEC's 1 (ALL) & 12 (N/2) -
UNDIVIDED UNIT

**WELL HEAD**

LAT. 36.179767° N (NAD83)
LONG. 107.568378° W (NAD83)
LAT. 36.179753° N (NAD27)
LONG. 107.567771° W (NAD27)

POINT OF ENTRY

LAT. 36.181508° N (NAD83)
LONG. 107.569775° W (NAD83)
LAT. 36.181494° N (NAD27)
LONG. 107.569168° W (NAD27)

BOTTOM HOLE

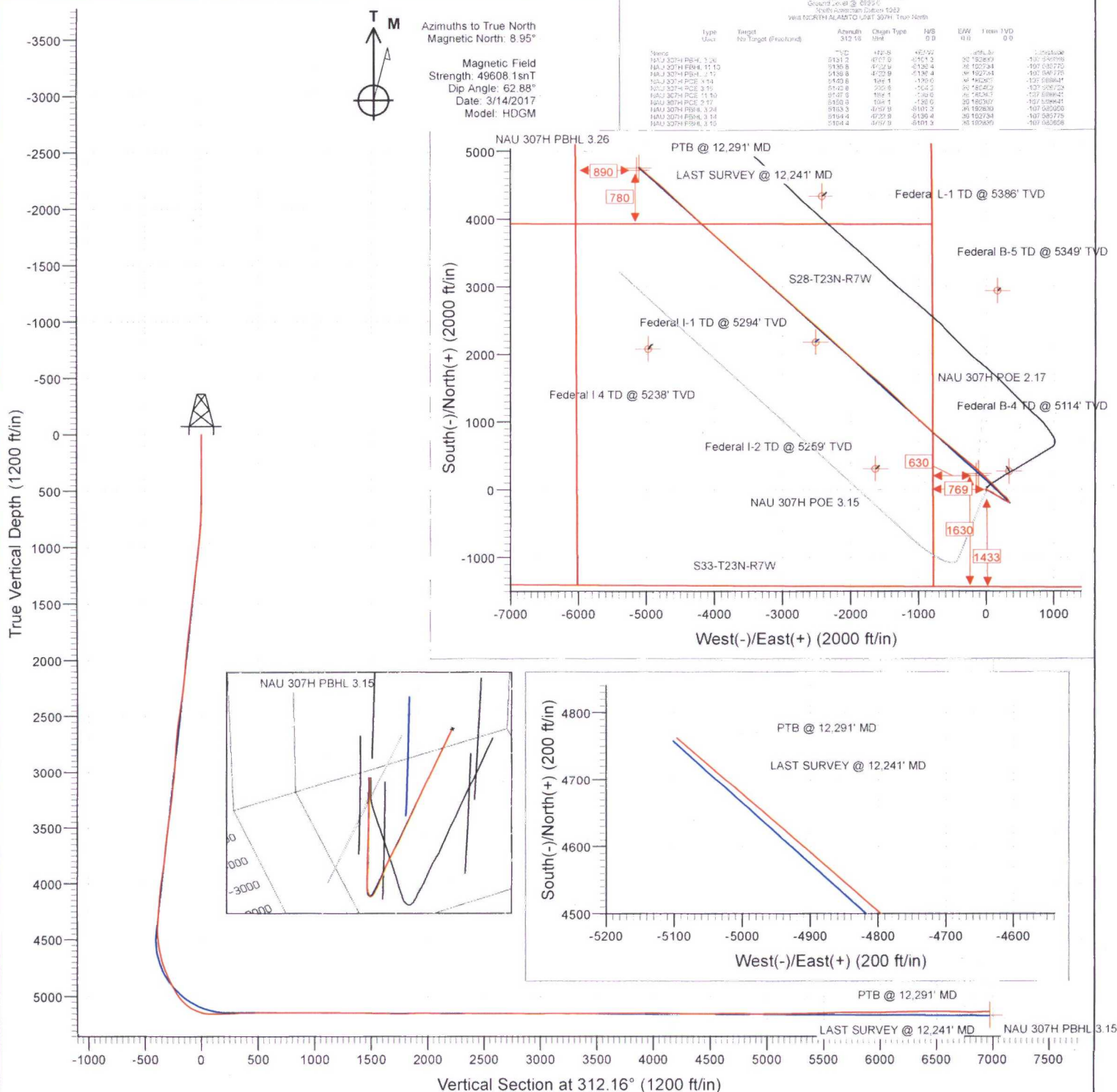
LAT. 36.192886° N (NAD83)
LONG. 107.585604° W (NAD83)
LAT. 36.192872° N (NAD27)
LONG. 107.584996° W (NAD27)



Project: Sandoval County, NM
 Site: S34-T23N-R7W
 Well: NORTH ALAMITO UNIT 307H
 Wellbore: OH
 Design: FINAL

OIL CONS. DIV DIST. 3

MAY 03 2017



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NORTH ALAMITO UNIT 307H
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 307H	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 307H			
Well Position	+N/-S	0.0 ft	Northing:	1,887,345.86 ft
	+E/-W	0.0 ft	Easting:	1,251,344.87 ft
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	3/14/2017	8.95	62.88	49,608

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	312.16

Survey Program	Date	3/30/2017		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
410.0	12,291.0	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	
410.0	0.13	312.70	410.0	0.3	-0.3	0.5	0.03	0.03	
471.0	1.10	194.05	471.0	-0.2	-0.5	0.3	1.91	1.59	
532.0	0.84	165.92	532.0	-1.2	-0.6	-0.4	0.88	-0.43	
593.0	0.88	223.32	593.0	-2.0	-0.8	-0.8	1.36	0.07	
655.0	0.70	181.66	655.0	-2.7	-1.1	-1.0	0.95	-0.29	
715.0	2.77	139.64	714.9	-4.2	-0.2	-2.7	3.83	3.45	
777.0	3.56	146.06	776.9	-6.9	1.9	-6.0	1.39	1.27	
839.0	3.16	125.85	838.7	-9.5	4.3	-9.6	2.00	-0.65	
899.0	4.66	114.33	898.6	-11.5	7.9	-13.5	2.81	2.50	
961.0	6.20	113.54	960.3	-13.9	13.2	-19.1	2.49	2.48	
1,021.0	6.90	103.70	1,019.9	-16.0	19.7	-25.4	2.20	1.17	
1,082.0	6.81	113.40	1,080.5	-18.3	26.6	-32.0	1.90	-0.15	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NORTH ALAMITO UNIT 307H
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 307H	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
1,143.0	8.26	105.01	1,141.0	-20.9	34.1	-39.3	2.98	2.38	
1,204.0	7.08	110.29	1,201.4	-23.3	41.9	-46.7	2.25	-1.93	
1,266.0	8.22	116.97	1,262.9	-26.7	49.4	-54.5	2.33	1.84	
1,327.0	7.43	118.37	1,323.3	-30.5	56.8	-62.6	1.33	-1.30	
1,388.0	5.98	105.45	1,383.9	-33.2	63.3	-69.2	3.42	-2.38	
1,449.0	6.42	103.17	1,444.5	-34.9	69.7	-75.1	0.83	0.72	
1,510.0	7.12	116.35	1,505.1	-37.3	76.4	-81.7	2.79	1.15	
1,571.0	6.99	128.22	1,565.7	-41.3	82.7	-89.0	2.40	-0.21	
1,633.0	7.25	125.67	1,627.2	-45.9	88.9	-96.7	0.66	0.42	
1,694.0	7.03	120.92	1,687.7	-50.1	95.2	-104.2	1.03	-0.36	
1,755.0	6.50	121.71	1,748.3	-53.8	101.3	-111.2	0.88	-0.87	
1,817.0	6.77	130.42	1,809.9	-58.0	107.1	-118.3	1.68	0.44	
1,878.0	6.02	127.51	1,870.5	-62.3	112.4	-125.1	1.34	-1.23	
1,938.0	4.57	130.33	1,930.2	-65.8	116.7	-130.6	2.45	-2.42	
1,999.0	4.48	121.63	1,991.0	-68.6	120.6	-135.4	1.13	-0.15	
2,059.0	6.06	122.07	2,050.8	-71.5	125.3	-140.8	2.63	2.63	
2,121.0	5.14	115.30	2,112.5	-74.4	130.5	-146.7	1.82	-1.48	
2,182.0	5.67	119.60	2,173.2	-77.1	135.6	-152.3	1.09	0.87	
2,242.0	7.12	121.45	2,232.8	-80.5	141.4	-158.8	2.44	2.42	
2,304.0	6.42	124.00	2,294.4	-84.4	147.5	-166.0	1.23	-1.13	
2,365.0	7.65	120.92	2,355.0	-88.4	153.8	-173.4	2.11	2.02	
2,427.0	8.88	125.23	2,416.3	-93.3	161.3	-182.2	2.22	1.98	
2,488.0	8.35	117.67	2,476.6	-98.1	169.1	-191.1	2.05	-0.87	
2,573.0	8.53	122.59	2,560.7	-104.3	179.8	-203.3	0.88	0.21	
2,634.0	6.20	114.07	2,621.2	-108.1	186.7	-210.9	4.21	-3.82	
2,696.0	4.09	118.55	2,682.9	-110.5	191.7	-216.3	3.46	-3.40	
2,757.0	3.78	118.02	2,743.8	-112.5	195.3	-220.3	0.51	-0.51	
2,818.0	4.13	122.86	2,804.7	-114.6	199.0	-224.4	0.79	0.57	
2,878.0	4.53	111.96	2,864.5	-116.7	203.0	-228.8	1.52	0.67	
2,939.0	4.53	112.66	2,925.3	-118.5	207.4	-233.3	0.09	0.00	
3,000.0	4.40	114.16	2,986.1	-120.4	211.8	-237.8	0.29	-0.21	
3,060.0	6.02	133.49	3,045.9	-123.5	216.2	-243.2	3.95	2.70	
3,122.0	6.46	140.17	3,107.5	-128.4	220.8	-249.9	1.37	0.71	
3,182.0	4.92	134.37	3,167.2	-132.8	224.8	-255.8	2.74	-2.57	
3,244.0	6.02	127.34	3,228.9	-136.7	229.3	-261.7	2.07	1.77	
3,305.0	6.55	128.83	3,289.6	-140.8	234.5	-268.3	0.91	0.87	
3,367.0	7.30	127.43	3,351.1	-145.4	240.4	-275.8	1.24	1.21	
3,428.0	7.87	120.22	3,411.6	-149.9	247.1	-283.7	1.82	0.93	
3,488.0	7.34	110.38	3,471.0	-153.3	254.2	-291.3	2.34	-0.88	
3,552.0	7.16	116.18	3,534.5	-156.4	261.6	-298.9	1.18	-0.28	
3,616.0	7.34	118.02	3,598.0	-160.1	268.8	-306.7	0.46	0.28	
3,680.0	7.25	111.61	3,661.5	-163.5	276.2	-314.5	1.28	-0.14	
3,744.0	6.55	113.80	3,725.0	-166.5	283.3	-321.7	1.17	-1.09	
3,807.0	5.36	120.31	3,787.7	-169.4	289.1	-328.0	2.17	-1.89	
3,871.0	6.68	114.07	3,851.3	-172.5	295.1	-334.5	2.30	2.06	
3,934.0	8.44	115.30	3,913.8	-175.9	302.6	-342.4	2.81	2.79	
3,997.0	8.97	114.86	3,976.1	-180.0	311.3	-351.5	0.85	0.84	
4,060.0	6.68	120.92	4,038.5	-183.9	318.9	-359.8	3.86	-3.63	
4,123.0	5.27	112.31	4,101.1	-186.9	324.7	-366.1	2.65	-2.24	
4,187.0	5.49	116.00	4,164.9	-189.4	330.1	-371.8	0.64	0.34	
4,250.0	4.70	124.79	4,227.6	-192.1	335.0	-377.3	1.76	-1.25	
4,313.0	3.91	126.20	4,290.4	-194.9	338.8	-382.0	1.27	-1.25	
4,377.0	3.65	113.10	4,354.3	-197.0	342.5	-386.1	1.41	-0.41	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S34-T23N-R7W
Well: NORTH ALAMITO UNIT 307H
Wellbore: OH
Design: FINAL

Local Co-ordinate Reference: Well NORTH ALAMITO UNIT 307H
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
4,440.0	1.45	64.85	4,417.2	-197.4	345.0	-388.3	4.59	-3.49	
4,472.0	2.64	359.72	4,449.2	-196.5	345.4	-387.9	7.56	3.72	
4,503.0	4.31	333.00	4,480.2	-194.8	344.9	-386.4	7.37	5.39	
4,535.0	7.56	333.79	4,512.0	-191.8	343.4	-383.3	10.16	10.16	
4,568.0	9.62	333.88	4,544.6	-187.4	341.2	-378.7	6.24	6.24	
4,599.0	12.17	340.21	4,575.1	-182.0	339.0	-373.4	9.07	8.23	
4,631.0	13.14	342.50	4,606.3	-175.3	336.7	-367.3	3.41	3.03	
4,663.0	14.11	341.35	4,637.4	-168.2	334.4	-360.7	3.15	3.03	
4,694.0	13.89	333.35	4,667.5	-161.3	331.5	-354.0	6.28	-0.71	
4,726.0	16.61	325.88	4,698.3	-154.0	327.2	-345.9	10.47	8.50	
4,758.0	17.97	317.62	4,728.9	-146.6	321.3	-336.6	8.76	4.25	
4,790.0	20.87	317.10	4,759.1	-138.8	314.1	-326.0	9.08	9.06	
4,821.0	22.72	316.30	4,787.8	-130.4	306.2	-314.5	6.04	5.97	
4,853.0	23.73	311.73	4,817.3	-121.7	297.1	-301.9	6.45	3.16	
4,884.0	25.31	308.39	4,845.5	-113.4	287.3	-289.1	6.78	5.10	
4,916.0	27.33	307.34	4,874.1	-104.7	276.1	-274.9	6.48	6.31	
4,948.0	28.65	308.57	4,902.4	-95.4	264.3	-259.9	4.50	4.12	
4,980.0	29.75	309.89	4,930.3	-85.6	252.2	-244.4	3.98	3.44	
5,012.0	30.37	311.03	4,958.0	-75.2	240.0	-228.3	2.63	1.94	
5,044.0	33.62	314.11	4,985.2	-63.7	227.5	-211.4	11.36	10.16	
5,076.0	37.22	316.92	5,011.2	-50.4	214.5	-192.9	12.35	11.25	
5,108.0	42.54	318.94	5,035.8	-35.2	200.8	-172.5	17.11	16.63	
5,140.0	46.98	318.33	5,058.5	-18.3	185.9	-150.1	13.94	13.87	
5,171.0	52.03	316.04	5,078.6	-1.0	169.9	-126.6	17.23	16.29	
5,203.0	57.31	316.66	5,097.1	17.9	151.9	-100.6	16.58	16.50	
5,234.0	61.96	314.81	5,112.8	37.0	133.2	-73.9	15.86	15.00	
5,266.0	66.89	314.46	5,126.6	57.3	112.7	-45.1	15.44	15.41	
5,297.0	72.20	314.81	5,137.4	77.7	92.0	-16.1	17.16	17.13	
5,329.0	77.21	315.25	5,145.9	99.5	70.2	14.8	15.71	15.66	
5,345.0	80.24	315.43	5,149.0	110.7	59.2	30.4	18.97	18.94	
5,378.0	87.85	316.30	5,152.4	134.2	36.3	63.1	23.21	23.06	
5,410.0	89.87	316.13	5,153.1	157.3	14.2	95.1	6.33	6.31	
5,473.0	91.49	314.28	5,152.3	202.0	-30.2	158.0	3.90	2.57	
5,537.0	92.33	313.67	5,150.2	246.4	-76.2	221.9	1.62	1.31	
5,600.0	92.20	312.35	5,147.7	289.3	-122.3	284.8	2.10	-0.21	
5,663.0	91.76	310.24	5,145.5	330.9	-169.6	347.8	3.42	-0.70	
5,726.0	91.19	309.54	5,143.9	371.3	-217.9	410.7	1.43	-0.90	
5,790.0	91.01	309.62	5,142.7	412.1	-267.2	474.6	0.31	-0.28	
5,854.0	90.10	309.27	5,142.0	452.7	-316.6	538.6	1.52	-1.42	
5,917.0	89.60	309.36	5,142.2	492.6	-365.4	601.5	0.81	-0.79	
5,980.0	90.00	309.45	5,142.4	532.6	-414.0	664.4	0.65	0.63	
6,042.0	89.60	309.98	5,142.6	572.2	-461.7	726.4	1.07	-0.65	
6,105.0	90.04	310.04	5,142.8	612.7	-510.0	789.3	0.70	0.70	
6,168.0	89.78	310.06	5,142.9	653.3	-558.2	852.3	0.41	-0.41	
6,232.0	89.74	310.68	5,143.2	694.7	-607.0	916.2	0.97	-0.06	
6,295.0	89.39	311.65	5,143.7	736.2	-654.4	979.2	1.64	-0.56	
6,358.0	89.82	311.29	5,144.1	777.9	-701.6	1,042.2	0.89	0.68	
6,421.0	90.44	311.21	5,144.0	819.5	-749.0	1,105.2	0.99	0.98	
6,485.0	89.96	310.77	5,143.8	861.4	-797.3	1,169.2	1.02	-0.75	
6,549.0	89.91	312.17	5,143.8	903.8	-845.2	1,233.2	2.19	-0.08	
6,611.0	89.47	312.26	5,144.2	945.5	-891.1	1,295.2	0.72	-0.71	
6,674.0	89.65	312.09	5,144.6	987.8	-937.8	1,358.2	0.39	0.29	
6,738.0	88.81	312.00	5,145.5	1,030.6	-985.4	1,422.2	1.32	-1.31	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S34-T23N-R7W
Well: NORTH ALAMITO UNIT 307H
Wellbore: OH
Design: FINAL

Local Co-ordinate Reference: Well NORTH ALAMITO UNIT 307H
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
6,801.0	89.25	312.17	5,146.6	1,072.9	-1,032.1	1,485.2	0.75	0.70	
6,864.0	89.34	312.96	5,147.4	1,115.5	-1,078.5	1,548.2	1.26	0.14	
6,926.0	89.20	313.84	5,148.1	1,158.1	-1,123.5	1,610.1	1.44	-0.23	
6,989.0	88.77	314.02	5,149.3	1,201.8	-1,168.9	1,673.1	0.74	-0.68	
7,052.0	89.52	313.58	5,150.2	1,245.4	-1,214.4	1,736.1	1.38	1.19	
7,115.0	91.19	315.07	5,149.8	1,289.4	-1,259.4	1,799.0	3.55	2.65	
7,178.0	91.45	314.90	5,148.4	1,333.9	-1,304.0	1,861.9	0.49	0.41	
7,241.0	90.88	314.11	5,147.1	1,378.1	-1,348.9	1,924.9	1.55	-0.90	
7,304.0	89.74	313.05	5,146.7	1,421.5	-1,394.5	1,987.8	2.47	-1.81	
7,367.0	89.12	312.17	5,147.4	1,464.1	-1,440.9	2,050.8	1.71	-0.98	
7,430.0	88.02	311.38	5,148.9	1,506.1	-1,487.9	2,113.8	2.15	-1.75	
7,493.0	89.52	311.47	5,150.3	1,547.8	-1,535.1	2,176.8	2.39	2.38	
7,556.0	90.40	312.09	5,150.3	1,589.7	-1,582.1	2,239.8	1.71	1.40	
7,618.0	90.62	312.44	5,149.8	1,631.4	-1,628.0	2,301.8	0.67	0.35	
7,679.0	89.96	311.12	5,149.5	1,672.1	-1,673.4	2,362.8	2.42	-1.08	
7,740.0	89.74	311.03	5,149.6	1,712.2	-1,719.4	2,423.8	0.39	-0.36	
7,802.0	90.13	311.21	5,149.7	1,752.9	-1,766.1	2,485.8	0.69	0.63	
7,863.0	89.25	311.12	5,150.0	1,793.1	-1,812.1	2,546.7	1.45	-1.44	
7,924.0	89.39	311.03	5,150.8	1,833.2	-1,858.0	2,607.7	0.27	0.23	
7,985.0	89.87	310.85	5,151.1	1,873.1	-1,904.1	2,668.7	0.84	0.79	
8,046.0	89.87	311.82	5,151.3	1,913.4	-1,949.9	2,729.7	1.59	0.00	
8,107.0	89.17	312.61	5,151.8	1,954.4	-1,995.1	2,790.7	1.73	-1.15	
8,119.0	88.68	312.70	5,152.0	1,962.5	-2,003.9	2,802.7	4.15	-4.08	
8,180.0	89.43	312.61	5,153.0	2,003.9	-2,048.8	2,863.7	1.24	1.23	
8,242.0	90.09	312.44	5,153.3	2,045.8	-2,094.5	2,925.7	1.10	1.06	
8,303.0	91.19	312.44	5,152.6	2,086.9	-2,139.5	2,986.7	1.80	1.80	
8,364.0	91.27	313.76	5,151.3	2,128.6	-2,184.0	3,047.7	2.17	0.13	
8,425.0	90.09	313.58	5,150.6	2,170.7	-2,228.1	3,108.6	1.96	-1.93	
8,486.0	88.59	312.09	5,151.3	2,212.2	-2,272.9	3,169.6	3.47	-2.46	
8,547.0	89.87	312.35	5,152.1	2,253.2	-2,318.0	3,230.6	2.14	2.10	
8,608.0	90.57	312.79	5,151.9	2,294.4	-2,362.9	3,291.6	1.36	1.15	
8,670.0	90.40	312.44	5,151.3	2,336.4	-2,408.6	3,353.6	0.63	-0.27	
8,732.0	89.91	311.21	5,151.2	2,377.7	-2,454.8	3,415.6	2.14	-0.79	
8,792.0	90.13	311.03	5,151.1	2,417.2	-2,500.0	3,475.6	0.47	0.37	
8,854.0	91.27	311.29	5,150.4	2,458.0	-2,546.6	3,537.6	1.89	1.84	
8,914.0	90.92	311.82	5,149.2	2,497.8	-2,591.5	3,597.6	1.06	-0.58	
8,975.0	89.74	310.85	5,148.9	2,538.1	-2,637.3	3,658.6	2.50	-1.93	
9,036.0	90.04	311.56	5,149.0	2,578.3	-2,683.2	3,719.6	1.26	0.49	
9,097.0	89.91	310.85	5,149.0	2,618.5	-2,729.1	3,780.5	1.18	-0.21	
9,159.0	90.84	312.09	5,148.6	2,659.5	-2,775.6	3,842.5	2.50	1.50	
9,219.0	90.92	312.52	5,147.7	2,699.9	-2,819.9	3,902.5	0.73	0.13	
9,281.0	90.70	312.52	5,146.8	2,741.8	-2,865.6	3,964.5	0.35	-0.35	
9,342.0	88.68	312.00	5,147.2	2,782.8	-2,910.8	4,025.5	3.42	-3.31	
9,403.0	87.89	312.17	5,149.0	2,823.7	-2,956.0	4,086.5	1.32	-1.30	
9,464.0	87.94	311.21	5,151.2	2,864.2	-3,001.6	4,147.4	1.57	0.08	
9,526.0	88.37	311.73	5,153.2	2,905.3	-3,048.0	4,209.4	1.09	0.69	
9,586.0	89.03	311.91	5,154.6	2,945.3	-3,092.7	4,269.4	1.14	1.10	
9,648.0	89.65	312.09	5,155.3	2,986.7	-3,138.8	4,331.4	1.04	1.00	
9,709.0	90.62	311.56	5,155.1	3,027.4	-3,184.2	4,392.4	1.81	1.59	
9,771.0	91.67	312.17	5,153.9	3,068.8	-3,230.4	4,454.4	1.96	1.69	
9,831.0	91.49	312.61	5,152.2	3,109.2	-3,274.7	4,514.3	0.79	-0.30	
9,892.0	89.39	312.17	5,151.8	3,150.3	-3,319.7	4,575.3	3.52	-3.44	
9,952.0	89.25	311.73	5,152.5	3,190.4	-3,364.3	4,635.3	0.77	-0.23	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S34-T23N-R7W
Well: NORTH ALAMITO UNIT 307H
Wellbore: OH
Design: FINAL

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well NORTH ALAMITO UNIT 307H
14' KB @ 6909.0ft (AZTEC 920)
14' KB @ 6909.0ft (AZTEC 920)
True
Minimum Curvature
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
10,013.0	89.74	312.09	5,153.0	3,231.2	-3,409.7	4,696.3	1.00	0.80	
10,074.0	90.09	312.26	5,153.1	3,272.1	-3,455.0	4,757.3	0.64	0.57	
10,135.0	89.39	311.47	5,153.4	3,312.8	-3,500.4	4,818.3	1.73	-1.15	
10,196.0	89.78	311.38	5,153.8	3,353.2	-3,546.1	4,879.3	0.66	0.64	
10,258.0	90.92	311.21	5,153.5	3,394.1	-3,592.7	4,941.3	1.86	1.84	
10,319.0	90.62	312.88	5,152.6	3,435.0	-3,638.0	5,002.3	2.78	-0.49	
10,380.0	89.82	312.61	5,152.4	3,476.4	-3,682.8	5,063.3	1.38	-1.31	
10,441.0	89.96	312.26	5,152.5	3,517.5	-3,727.8	5,124.3	0.62	0.23	
10,504.0	90.13	311.12	5,152.5	3,559.4	-3,774.9	5,187.3	1.83	0.27	
10,568.0	90.84	312.17	5,151.9	3,602.0	-3,822.7	5,251.3	1.98	1.11	
10,631.0	90.66	311.29	5,151.1	3,643.9	-3,869.7	5,314.3	1.43	-0.29	
10,694.0	91.32	311.56	5,150.0	3,685.6	-3,916.9	5,377.3	1.13	1.05	
10,757.0	92.11	311.73	5,148.1	3,727.4	-3,964.0	5,440.2	1.28	1.25	
10,820.0	91.80	312.09	5,146.0	3,769.5	-4,010.8	5,503.2	0.75	-0.49	
10,883.0	90.57	312.88	5,144.7	3,812.0	-4,057.3	5,566.2	2.32	-1.95	
10,946.0	90.66	312.96	5,144.0	3,854.9	-4,103.4	5,629.2	0.19	0.14	
11,009.0	91.06	312.17	5,143.1	3,897.5	-4,149.8	5,692.2	1.41	0.63	
11,072.0	91.49	312.96	5,141.6	3,940.1	-4,196.2	5,755.2	1.43	0.68	
11,135.0	89.96	313.14	5,140.9	3,983.1	-4,242.2	5,818.1	2.45	-2.43	
11,199.0	89.47	312.61	5,141.2	4,026.7	-4,289.1	5,882.1	1.13	-0.77	
11,263.0	90.48	313.23	5,141.2	4,070.3	-4,336.0	5,946.1	1.85	1.58	
11,326.0	91.58	312.88	5,140.1	4,113.3	-4,382.0	6,009.1	1.83	1.75	
11,389.0	91.62	313.32	5,138.3	4,156.3	-4,428.0	6,072.1	0.70	0.06	
11,452.0	90.66	312.44	5,137.1	4,199.1	-4,474.2	6,135.1	2.07	-1.52	
11,516.0	91.10	313.67	5,136.1	4,242.8	-4,520.9	6,199.0	2.04	0.69	
11,579.0	91.23	313.76	5,134.8	4,286.4	-4,566.4	6,262.0	0.25	0.21	
11,641.0	90.79	313.76	5,133.7	4,329.2	-4,611.2	6,324.0	0.71	-0.71	
11,704.0	89.78	313.14	5,133.4	4,372.6	-4,657.0	6,386.9	1.88	-1.60	
11,767.0	89.56	312.96	5,133.7	4,415.6	-4,703.0	6,449.9	0.45	-0.35	
11,829.0	90.53	312.70	5,133.7	4,457.7	-4,748.5	6,511.9	1.62	1.56	
11,892.0	90.04	311.73	5,133.4	4,500.0	-4,795.1	6,574.9	1.72	-0.78	
11,955.0	89.39	311.12	5,133.7	4,541.7	-4,842.4	6,637.9	1.41	-1.03	
12,018.0	88.37	311.38	5,134.9	4,583.3	-4,889.7	6,700.9	1.67	-1.62	
12,082.0	89.12	310.42	5,136.3	4,625.1	-4,938.1	6,764.9	1.90	1.17	
12,145.0	90.26	311.12	5,136.7	4,666.3	-4,985.8	6,827.9	2.12	1.81	
12,208.0	91.10	311.47	5,135.9	4,707.9	-5,033.1	6,890.8	1.44	1.33	
12,241.0	91.63	310.94	5,135.1	4,729.6	-5,057.9	6,923.8	2.27	1.61	LAST SURVEY @ 12,241' MD
12,291.0	91.63	310.94	5,133.7	4,762.3	-5,095.7	6,973.8	0.00	0.00	PTB @ 12,291' MD

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM
Site: S34-T23N-R7W
Well: NORTH ALAMITO UNIT 307H
Wellbore: OH
Design: FINAL

Local Co-ordinate Reference: Well NORTH ALAMITO UNIT 307H
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
NAU 307H PBHL 3.14 - actual wellpath misses target center by 64.5ft at 12291.0ft MD (5133.7 TVD, 4762.3 N, -5095.7 E) - Point	0.00	0.00	5,164.4	4,722.9	-5,136.4	1,892,138.12	1,246,273.06	36.192734	-107.585775
NAU 307H POE 3.15 - actual wellpath misses target center by 30.6ft at 5548.4ft MD (5149.7 TVD, 254.3 N, -84.5 E) - Point	0.00	0.00	5,140.8	232.6	-104.2	1,887,579.90	1,251,243.85	36.180402	-107.568723
NAU 307H PBHL 11.10 - actual wellpath misses target center by 56.7ft at 12291.0ft MD (5133.7 TVD, 4762.3 N, -5095.7 E) - Point	0.00	0.00	5,135.8	4,722.9	-5,136.4	1,892,138.12	1,246,273.06	36.192734	-107.585775
NAU 307H POE 2.17 - actual wellpath misses target center by 78.3ft at 5549.9ft MD (5149.7 TVD, 255.3 N, -85.6 E) - Point	0.00	0.00	5,150.6	198.1	-139.0	1,887,545.79	1,251,208.55	36.180307	-107.568841
NAU 307H PBHL 3.15 - actual wellpath misses target center by 31.5ft at 12291.0ft MD (5133.7 TVD, 4762.3 N, -5095.7 E) - Point	0.00	0.00	5,164.4	4,757.9	-5,101.3	1,892,172.59	1,246,308.66	36.192830	-107.585656
NAU 307H POE 11.10 - actual wellpath misses target center by 78.3ft at 5550.0ft MD (5149.7 TVD, 255.4 N, -85.7 E) - Point	0.00	0.00	5,147.6	198.1	-139.0	1,887,545.79	1,251,208.55	36.180307	-107.568841
NAU 307H PBHL 3.24 - actual wellpath misses target center by 30.4ft at 12291.0ft MD (5133.7 TVD, 4762.3 N, -5095.7 E) - Point	0.00	0.00	5,163.3	4,757.9	-5,101.3	1,892,172.59	1,246,308.66	36.192830	-107.585656
NAU 307H POE 3.14 - actual wellpath misses target center by 78.8ft at 5550.3ft MD (5149.6 TVD, 255.6 N, -85.9 E) - Point	0.00	0.00	5,140.8	198.1	-139.0	1,887,545.79	1,251,208.55	36.180307	-107.568841
NAU 307H PBHL 2.17 - actual wellpath misses target center by 56.9ft at 12291.0ft MD (5133.7 TVD, 4762.3 N, -5095.7 E) - Point	0.00	0.00	5,138.8	4,722.9	-5,136.4	1,892,138.12	1,246,273.06	36.192734	-107.585775
NAU 307H PBHL 3.26 - actual wellpath misses target center by 7.6ft at 12291.0ft MD (5133.7 TVD, 4762.3 N, -5095.7 E) - Point	0.00	0.00	5,131.2	4,757.9	-5,101.3	1,892,172.59	1,246,308.66	36.192830	-107.585656

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
12,241.0	5,135.1	4,729.6	-5,057.9	LAST SURVEY @ 12,241' MD
12,291.0	5,133.7	4,762.3	-5,095.7	PTB @ 12,291' MD

Checked By: _____ Approved By: _____ Date: _____