



XTO ENERGY, INC.

Lea County, NM

Sec 32, Twn 20S, Rng 33E (True North)

Chistera 32 State 7H

Wellbore #1

Design: Wellbore #1

QES Survey Report

28 October, 2018

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Survey Report



Company: XTO ENERGY, INC.

Project: Lea County, NM

Site: Sec 32, Twn 20S, Rng 33E (True North)

Well: Chistera 32 State 7H

Wellbore: Wellbore #1

Design: Wellbore #1

Local Co-ordinate Reference:

Well Chistera 32 State 7H

TVD Reference:

RKB @ 3638.5usft (Trinidad #445)

MD Reference:

RKB @ 3638.5usft (Trinidad #445)

North Reference:

True

Survey Calculation Method:

Minimum Curvature

Database:

EDM 5000.1 Single User Db

Project Lea County, NM

Map System: US State Plane 1927 (Exact solution)

System Datum:

Mean Sea Level

Geo Datum: NAD 1927 (NADCON CONUS)

Map Zone: New Mexico East 3001

Site Sec 32, Twn 20S, Rng 33E (True North)

Site Position:	Map	Northing:	559,286.62 usft	Latitude:	32° 32' 9.164 N
From:	Map	Easting:	702,019.60 usft	Longitude:	103° 40' 40.120 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.35 °

Well Chistera 32 State 7H

Well Position	+N/-S	0.0 usft	Northing:	559,274.30 usft	Latitude:	32° 32' 9.045 N
	+E/-W	0.0 usft	Easting:	701,970.90 usft	Longitude:	103° 40' 40.689 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,622.0 usft	

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/24/2018	6.89	60.31	47,979.34267276

Design Wellbore #1

Audit Notes:

Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
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Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	185.65

Survey Program Date 10/28/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
135.0	3,191.0	Bloodhound MWD (Wellbore #1)	MWD	OWSG MWD - Standard
3,312.0	15,318.0	QES MWD Surveys (Wellbore #1)	MWD	OWSG MWD - Standard

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
135.0	1.50	308.00	135.0	1.1	-1.4	-0.9	1.11	1.11	0.00
195.0	2.50	298.20	194.9	2.2	-3.2	-1.9	1.76	1.67	-16.33
280.0	4.80	313.00	279.8	5.5	-7.4	-4.7	2.90	2.71	17.41
384.0	5.30	320.70	383.4	12.2	-13.6	-10.8	0.81	0.48	7.40
504.0	5.80	325.40	502.8	21.5	-20.6	-19.3	0.56	0.42	3.92
621.0	5.10	329.50	619.3	30.8	-26.6	-28.0	0.68	-0.60	3.50
745.0	4.40	321.30	742.9	39.3	-32.3	-35.9	0.79	-0.56	-6.61
872.0	3.80	315.50	869.5	46.1	-38.3	-42.1	0.57	-0.47	-4.57
998.0	4.00	314.60	995.2	52.1	-44.4	-47.5	0.17	0.16	-0.71



Survey Report



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Site: Sec 32, Twn 20S, Rng 33E (True North)
Well: Chistera 32 State 7H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Chistera 32 State 7H
TVD Reference: RKB @ 3638.5usft (Trinidad #445)
MD Reference: RKB @ 3638.5usft (Trinidad #445)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,125.0	4.00	315.90	1,121.9	58.4	-50.6	-53.2	0.07	0.00	1.02
1,251.0	5.10	325.50	1,247.5	66.2	-56.9	-60.3	1.06	0.87	7.62
1,390.0	6.50	323.60	1,385.8	77.6	-65.0	-70.8	1.02	1.01	-1.37
1,449.0	6.90	324.70	1,444.4	83.2	-69.1	-76.0	0.71	0.68	1.86
1,575.0	5.40	315.60	1,569.7	93.6	-77.6	-85.5	1.42	-1.19	-7.22
1,701.0	5.90	309.20	1,695.1	101.9	-86.8	-92.9	0.64	0.40	-5.08
1,828.0	5.20	302.80	1,821.5	109.2	-96.6	-99.1	0.73	-0.55	-5.04
1,955.0	7.20	301.30	1,947.7	116.4	-108.3	-105.2	1.58	1.57	-1.18
2,018.0	7.30	299.20	2,010.2	120.4	-115.2	-108.5	0.45	0.16	-3.33
2,081.0	6.60	300.80	2,072.8	124.2	-121.8	-111.7	1.15	-1.11	2.54
2,208.0	5.50	301.10	2,199.1	131.1	-133.2	-117.4	0.87	-0.87	0.24
2,334.0	4.60	306.10	2,324.6	137.2	-142.5	-122.5	0.79	-0.71	3.97
2,460.0	4.10	308.50	2,450.2	143.0	-150.1	-127.5	0.42	-0.40	1.90
2,587.0	3.30	325.50	2,576.9	148.8	-155.7	-132.8	1.06	-0.63	13.39
2,713.0	3.40	336.00	2,702.7	155.2	-159.3	-138.8	0.49	0.08	8.33
2,840.0	3.90	343.80	2,829.5	162.8	-162.0	-146.1	0.55	0.39	6.14
2,903.0	4.80	345.90	2,892.3	167.5	-163.3	-150.6	1.45	1.43	3.33
2,967.0	5.00	343.40	2,956.1	172.7	-164.7	-155.7	0.46	0.31	-3.91
3,093.0	4.70	343.30	3,081.6	182.9	-167.8	-165.5	0.24	-0.24	-0.08
MWD Tie-In @ 3191.0' MD / 3179.3' TVD									
3,191.0	4.20	335.00	3,179.3	190.0	-170.4	-172.3	0.83	-0.51	-8.47
3,312.0	4.10	334.60	3,300.0	197.9	-174.2	-179.8	0.09	-0.08	-0.33
3,375.0	3.60	333.90	3,362.8	201.8	-176.0	-183.5	0.80	-0.79	-1.11
3,439.0	2.60	333.00	3,426.8	204.9	-177.6	-186.4	1.56	-1.56	-1.41
3,501.0	1.80	351.30	3,488.7	207.1	-178.3	-188.5	1.70	-1.29	29.52
3,564.0	1.30	27.50	3,551.7	208.7	-178.2	-190.1	1.70	-0.79	57.46
3,627.0	0.70	71.20	3,614.7	209.4	-177.5	-191.0	1.48	-0.95	69.37
3,690.0	0.70	73.70	3,677.7	209.7	-176.7	-191.3	0.05	0.00	3.97
3,753.0	0.60	64.90	3,740.7	209.9	-176.1	-191.6	0.22	-0.16	-13.97
3,815.0	0.70	66.10	3,802.7	210.2	-175.4	-191.9	0.16	0.16	1.94
3,879.0	0.70	53.50	3,866.7	210.6	-174.8	-192.4	0.24	0.00	-19.69
3,941.0	0.30	209.90	3,928.7	210.7	-174.5	-192.5	1.58	-0.65	252.26
4,005.0	1.10	234.50	3,992.7	210.2	-175.1	-191.9	1.31	1.25	38.44
4,067.0	1.70	236.30	4,054.6	209.3	-176.4	-191.0	0.97	0.97	2.90
4,130.0	2.10	234.20	4,117.6	208.1	-178.1	-189.6	0.64	0.63	-3.33
4,193.0	2.10	235.10	4,180.6	206.8	-180.0	-188.1	0.05	0.00	1.43
4,256.0	2.10	232.80	4,243.5	205.4	-181.8	-186.5	0.13	0.00	-3.65
4,319.0	2.10	231.20	4,306.5	204.0	-183.6	-185.0	0.09	0.00	-2.54
4,382.0	1.90	244.70	4,369.4	202.9	-185.5	-183.6	0.81	-0.32	21.43
4,445.0	1.80	257.20	4,432.4	202.2	-187.4	-182.8	0.66	-0.16	19.84
4,508.0	1.90	259.00	4,495.4	201.8	-189.4	-182.1	0.18	0.16	2.86
4,571.0	1.90	257.90	4,558.3	201.4	-191.4	-181.5	0.06	0.00	-1.75
4,634.0	1.90	261.30	4,621.3	201.0	-193.5	-180.9	0.18	0.00	5.40



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Design: Wellbore #1

Local Co-ordinate Reference: Well Chistera 32 State 7H
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MD Reference: RKB @ 3638.5usft (Trinidad #445)
North Reference: True
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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,698.0	1.90	263.90	4,685.3	200.7	-195.6	-180.5	0.13	0.00	4.06
4,761.0	1.80	263.90	4,748.2	200.5	-197.6	-180.1	0.16	-0.16	0.00
4,824.0	1.70	245.10	4,811.2	200.0	-199.4	-179.4	0.92	-0.16	-29.84
4,887.0	1.70	232.10	4,874.2	199.0	-201.0	-178.3	0.61	0.00	-20.63
4,951.0	1.60	229.30	4,938.1	197.9	-202.5	-177.0	0.20	-0.16	-4.38
5,014.0	1.60	246.50	5,001.1	196.9	-203.9	-175.9	0.76	0.00	27.30
5,077.0	1.80	256.50	5,064.1	196.3	-205.7	-175.1	0.57	0.32	15.87
5,140.0	1.70	256.70	5,127.1	195.9	-207.6	-174.5	0.16	-0.16	0.32
5,203.0	1.60	259.10	5,190.0	195.5	-209.3	-174.0	0.19	-0.16	3.81
5,266.0	1.60	257.20	5,253.0	195.2	-211.1	-173.4	0.08	0.00	-3.02
5,329.0	1.60	259.00	5,316.0	194.8	-212.8	-172.9	0.08	0.00	2.86
5,392.0	1.60	260.50	5,379.0	194.5	-214.5	-172.4	0.07	0.00	2.38
5,455.0	1.50	258.40	5,441.9	194.2	-216.2	-171.9	0.18	-0.16	-3.33
5,519.0	1.50	259.10	5,505.9	193.8	-217.8	-171.5	0.03	0.00	1.09
5,582.0	1.60	259.90	5,568.9	193.5	-219.5	-171.0	0.16	0.16	1.27
5,645.0	1.50	265.00	5,631.9	193.3	-221.2	-170.6	0.27	-0.16	8.10
5,709.0	1.60	266.00	5,695.9	193.2	-222.9	-170.3	0.16	0.16	1.56
5,772.0	1.50	267.80	5,758.8	193.1	-224.6	-170.0	0.18	-0.16	2.86
5,835.0	1.50	266.90	5,821.8	193.0	-226.3	-169.8	0.04	0.00	-1.43
5,898.0	1.40	271.10	5,884.8	193.0	-227.9	-169.6	0.23	-0.16	6.67
5,966.0	1.20	278.00	5,952.8	193.1	-229.4	-169.6	0.37	-0.29	10.15
6,029.0	1.00	279.20	6,015.8	193.3	-230.6	-169.6	0.32	-0.32	1.90
6,092.0	1.10	279.40	6,078.7	193.5	-231.7	-169.7	0.16	0.16	0.32
6,155.0	1.10	270.20	6,141.7	193.6	-232.9	-169.7	0.28	0.00	-14.60
6,218.0	1.20	267.10	6,204.7	193.5	-234.2	-169.5	0.19	0.16	-4.92
6,282.0	1.10	268.50	6,268.7	193.5	-235.5	-169.4	0.16	-0.16	2.19
6,345.0	1.20	269.00	6,331.7	193.4	-236.7	-169.2	0.16	0.16	0.79
6,408.0	1.20	265.70	6,394.7	193.4	-238.1	-169.0	0.11	0.00	-5.24
6,471.0	1.40	259.50	6,457.7	193.2	-239.5	-168.7	0.39	0.32	-9.84
6,535.0	1.40	255.10	6,521.6	192.9	-241.0	-168.2	0.17	0.00	-6.88
6,598.0	1.70	247.00	6,584.6	192.3	-242.6	-167.5	0.59	0.48	-12.86
6,661.0	1.70	247.40	6,647.6	191.6	-244.3	-166.6	0.02	0.00	0.63
6,724.0	1.90	244.00	6,710.6	190.7	-246.1	-165.6	0.36	0.32	-5.40
6,787.0	1.90	243.00	6,773.5	189.8	-248.0	-164.5	0.05	0.00	-1.59
6,851.0	2.10	246.10	6,837.5	188.9	-250.0	-163.3	0.36	0.31	4.84
6,914.0	2.00	249.10	6,900.5	188.0	-252.1	-162.3	0.23	-0.16	4.76
6,977.0	2.00	248.10	6,963.4	187.2	-254.1	-161.3	0.06	0.00	-1.59
7,040.0	2.00	242.30	7,026.4	186.3	-256.1	-160.2	0.32	0.00	-9.21
7,103.0	1.90	241.00	7,089.3	185.3	-258.0	-159.0	0.17	-0.16	-2.06
7,167.0	1.70	238.20	7,153.3	184.2	-259.8	-157.8	0.34	-0.31	-4.38
7,230.0	1.40	230.10	7,216.3	183.3	-261.1	-156.7	0.59	-0.48	-12.86
7,293.0	1.20	228.90	7,279.3	182.3	-262.2	-155.6	0.32	-0.32	-1.90
7,356.0	1.10	234.40	7,342.3	181.5	-263.2	-154.7	0.24	-0.16	8.73

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Survey

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7,420.0	1.30	241.70	7,406.2	180.8	-264.4	-153.9	0.39	0.31	11.41
7,483.0	1.10	241.60	7,469.2	180.2	-265.5	-153.2	0.32	-0.32	-0.16
7,546.0	1.10	244.60	7,532.2	179.7	-266.6	-152.6	0.09	0.00	4.76
7,610.0	1.10	250.70	7,596.2	179.2	-267.7	-152.0	0.18	0.00	9.53
7,673.0	1.10	247.50	7,659.2	178.8	-268.9	-151.4	0.10	0.00	-5.08
7,736.0	1.10	250.40	7,722.2	178.3	-270.0	-150.9	0.09	0.00	4.60
7,799.0	1.10	250.50	7,785.2	177.9	-271.1	-150.4	0.00	0.00	0.16
7,862.0	1.10	248.80	7,848.2	177.5	-272.3	-149.8	0.05	0.00	-2.70
7,925.0	1.00	247.50	7,911.1	177.1	-273.3	-149.3	0.16	-0.16	-2.06
7,989.0	1.10	243.10	7,975.1	176.6	-274.4	-148.7	0.20	0.16	-6.88
8,052.0	1.10	243.70	8,038.1	176.1	-275.5	-148.1	0.02	0.00	0.95
8,165.0	0.90	256.90	8,151.1	175.4	-277.3	-147.2	0.27	-0.18	11.68
8,228.0	0.80	243.00	8,214.1	175.1	-278.2	-146.8	0.36	-0.16	-22.06
8,291.0	1.00	244.40	8,277.1	174.6	-279.1	-146.3	0.32	0.32	2.22
8,354.0	0.80	244.20	8,340.1	174.2	-280.0	-145.8	0.32	-0.32	-0.32
8,418.0	1.00	239.50	8,404.1	173.7	-280.9	-145.2	0.33	0.31	-7.34
8,481.0	1.00	217.00	8,467.1	173.0	-281.7	-144.4	0.62	0.00	-35.71
8,544.0	1.00	199.60	8,530.1	172.0	-282.2	-143.4	0.48	0.00	-27.62
8,607.0	1.50	207.80	8,593.0	170.8	-282.7	-142.1	0.84	0.79	13.02
8,670.0	1.60	216.80	8,656.0	169.4	-283.7	-140.6	0.42	0.16	14.29
8,733.0	1.50	250.00	8,719.0	168.4	-285.0	-139.5	1.41	-0.16	52.70
8,797.0	1.80	261.10	8,783.0	167.9	-286.7	-138.9	0.68	0.47	17.34
8,860.0	1.90	249.50	8,845.9	167.4	-288.7	-138.2	0.61	0.16	-18.41
8,923.0	2.70	231.20	8,908.9	166.1	-290.8	-136.7	1.71	1.27	-29.05
8,986.0	2.10	243.80	8,971.8	164.7	-293.0	-135.0	1.26	-0.95	20.00
9,049.0	1.90	248.40	9,034.8	163.8	-295.0	-133.9	0.41	-0.32	7.30
9,113.0	2.60	236.50	9,098.7	162.6	-297.2	-132.5	1.31	1.09	-18.59
9,176.0	2.50	247.70	9,161.7	161.3	-299.7	-131.0	0.81	-0.16	17.78
9,239.0	1.70	267.40	9,224.6	160.7	-301.9	-130.2	1.69	-1.27	31.27
9,302.0	1.30	274.40	9,287.6	160.7	-303.5	-130.1	0.70	-0.63	11.11
9,365.0	1.10	267.90	9,350.6	160.8	-304.9	-130.0	0.38	-0.32	-10.32
9,428.0	1.10	256.00	9,413.6	160.6	-306.0	-129.7	0.36	0.00	-18.89
9,492.0	1.10	243.70	9,477.6	160.2	-307.2	-129.2	0.37	0.00	-19.22
9,555.0	1.00	238.80	9,540.6	159.6	-308.2	-128.5	0.21	-0.16	-7.78
9,618.0	1.10	233.70	9,603.6	159.0	-309.2	-127.8	0.22	0.16	-8.10
9,681.0	1.10	229.60	9,666.5	158.2	-310.1	-126.9	0.12	0.00	-6.51
9,744.0	1.10	234.50	9,729.5	157.5	-311.1	-126.1	0.15	0.00	7.78
9,828.0	1.10	236.10	9,813.5	156.6	-312.4	-125.0	0.04	0.00	1.90
9,860.0	4.50	241.90	9,845.5	155.8	-313.8	-124.2	10.65	10.63	18.13
9,891.0	9.00	250.00	9,876.3	154.4	-317.1	-122.4	14.80	14.52	26.13
9,922.0	13.10	247.00	9,906.7	152.2	-322.6	-119.7	13.35	13.23	-9.68
9,954.0	16.30	240.00	9,937.6	148.5	-329.8	-115.3	11.42	10.00	-21.88
9,986.0	18.90	238.20	9,968.1	143.6	-338.1	-109.6	8.30	8.13	-5.63
10,018.0	21.40	231.60	9,998.2	137.2	-347.1	-102.4	10.55	7.81	-20.63

Company: XTO ENERGY, INC.

Local Co-ordinate Reference:

Well Chistera 32 State 7H

Project: Lea County, NM

TVD Reference:

RKB @ 3638.5usft (Trinidad #445)

Site: Sec 32, Twn 20S, Rng 33E (True North)

MD Reference:

RKB @ 3638.5usft (Trinidad #445)

Well: Chistera 32 State 7H

North Reference:

True

Wellbore: Wellbore #1

Survey Calculation Method:

Minimum Curvature

Design: Wellbore #1

Database:

EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,049.0	24.60	227.50	10,026.7	129.3	-356.3	-93.6	11.54	10.32	-13.23
10,081.0	27.80	224.30	10,055.4	119.5	-366.4	-82.8	10.93	10.00	-10.00
10,112.0	29.60	216.40	10,082.6	108.1	-376.0	-70.6	13.53	5.81	-25.48
10,144.0	31.50	208.50	10,110.2	94.4	-384.7	-56.1	13.87	5.94	-24.69
10,176.0	33.60	204.10	10,137.2	79.0	-392.3	-40.0	9.89	6.56	-13.75
10,207.0	36.80	204.10	10,162.5	62.7	-399.6	-23.0	10.32	10.32	0.00
10,239.0	40.20	206.20	10,187.5	44.7	-408.1	-4.3	11.38	10.63	6.56
10,270.0	42.40	208.00	10,210.8	26.5	-417.4	14.8	8.06	7.10	5.81
10,302.0	44.60	207.80	10,234.0	7.0	-427.7	35.2	6.89	6.88	-0.63
10,334.0	45.50	206.10	10,256.6	-13.2	-438.0	56.3	4.70	2.81	-5.31
10,365.0	47.80	202.90	10,277.9	-33.7	-447.3	77.6	10.55	7.42	-10.32
10,397.0	50.80	201.00	10,298.8	-56.2	-456.4	100.9	10.40	9.38	-5.94
10,428.0	54.00	198.10	10,317.7	-79.4	-464.6	124.7	12.71	10.32	-9.35
10,460.0	57.40	194.80	10,335.7	-104.7	-472.1	150.7	13.62	10.63	-10.31
10,492.0	60.80	191.50	10,352.2	-131.4	-478.3	177.9	13.83	10.63	-10.31
10,523.0	63.10	188.30	10,366.7	-158.4	-483.0	205.2	11.75	7.42	-10.32
10,555.0	64.70	185.10	10,380.8	-186.9	-486.3	233.9	10.28	5.00	-10.00
10,586.0	66.50	183.20	10,393.6	-215.1	-488.4	262.1	8.05	5.81	-6.13
10,618.0	68.80	182.50	10,405.8	-244.6	-489.8	291.7	7.47	7.19	-2.19
10,650.0	71.70	182.50	10,416.6	-274.7	-491.2	321.7	9.06	9.06	0.00
10,681.0	74.20	182.30	10,425.7	-304.3	-492.4	351.3	8.09	8.06	-0.65
10,713.0	77.30	182.70	10,433.6	-335.3	-493.7	382.3	9.76	9.69	1.25
10,745.0	80.60	182.30	10,439.7	-366.7	-495.1	413.6	10.39	10.31	-1.25
10,776.0	83.40	181.80	10,444.0	-397.4	-496.2	444.3	9.17	9.03	-1.61
10,808.0	85.30	180.40	10,447.2	-429.2	-496.8	476.0	7.36	5.94	-4.38
10,840.0	87.40	178.60	10,449.2	-461.1	-496.5	507.8	8.64	6.56	-5.63
10,871.0	89.60	178.30	10,450.0	-492.1	-495.7	538.5	7.16	7.10	-0.97
10,903.0	89.90	177.80	10,450.2	-524.1	-494.6	570.2	1.82	0.94	-1.56
10,966.0	89.30	177.60	10,450.6	-587.0	-492.1	632.6	1.00	-0.95	-0.32
11,029.0	89.00	177.40	10,451.5	-650.0	-489.3	695.0	0.57	-0.48	-0.32
11,093.0	88.90	179.00	10,452.7	-713.9	-487.3	758.4	2.50	-0.16	2.50
11,156.0	89.30	179.50	10,453.7	-776.9	-486.5	821.0	1.02	0.63	0.79
11,219.0	89.40	179.20	10,454.4	-839.9	-485.8	883.6	0.50	0.16	-0.48
11,282.0	89.70	178.50	10,454.9	-902.9	-484.5	946.2	1.21	0.48	-1.11
11,345.0	89.80	177.90	10,455.2	-965.8	-482.6	1,008.7	0.97	0.16	-0.95
11,408.0	89.20	180.00	10,455.7	-1,028.8	-481.4	1,071.2	3.47	-0.95	3.33
11,471.0	89.00	181.10	10,456.7	-1,091.8	-482.0	1,134.0	1.77	-0.32	1.75
11,534.0	88.90	181.30	10,457.9	-1,154.8	-483.3	1,196.8	0.35	-0.16	0.32
11,597.0	89.50	181.30	10,458.8	-1,217.8	-484.7	1,259.6	0.95	0.95	0.00
11,661.0	89.20	181.30	10,459.5	-1,281.7	-486.2	1,323.4	0.47	-0.47	0.00
11,724.0	88.60	181.10	10,460.7	-1,344.7	-487.5	1,386.2	1.00	-0.95	-0.32
11,787.0	88.10	180.60	10,462.5	-1,407.7	-488.5	1,448.9	1.12	-0.79	-0.79
11,850.0	89.30	180.80	10,463.9	-1,470.7	-489.2	1,511.7	1.93	1.90	0.32



Survey Report



Company: XTO ENERGY, INC.

Project: Lea County, NM

Site: Sec 32, Twn 20S, Rng 33E (True North)

Well: Chistera 32 State 7H

Wellbore: Wellbore #1

Design: Wellbore #1

Local Co-ordinate Reference:

Well Chistera 32 State 7H

TVD Reference:

RKB @ 3638.5usft (Trinidad #445)

MD Reference:

RKB @ 3638.5usft (Trinidad #445)

North Reference:

True

Survey Calculation Method:

Minimum Curvature

Database:

EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,913.0	89.40	180.90	10,464.6	-1,533.7	-490.2	1,574.5	0.22	0.16	0.16
11,976.0	89.20	180.90	10,465.4	-1,596.6	-491.1	1,637.2	0.32	-0.32	0.00
12,039.0	91.30	180.20	10,465.1	-1,659.6	-491.8	1,700.0	3.51	3.33	-1.11
12,102.0	92.50	179.50	10,463.1	-1,722.6	-491.6	1,762.6	2.20	1.90	-1.11
12,165.0	90.30	178.60	10,461.5	-1,785.6	-490.5	1,825.2	3.77	-3.49	-1.43
12,228.0	88.90	178.30	10,462.0	-1,848.5	-488.8	1,887.7	2.27	-2.22	-0.48
12,291.0	90.40	178.80	10,462.3	-1,911.5	-487.2	1,950.2	2.51	2.38	0.79
12,355.0	91.90	179.30	10,461.1	-1,975.5	-486.2	2,013.8	2.47	2.34	0.78
12,417.0	92.20	178.80	10,458.8	-2,037.4	-485.2	2,075.3	0.94	0.48	-0.81
12,510.0	93.70	180.00	10,454.1	-2,130.3	-484.2	2,167.6	2.06	1.61	1.29
12,573.0	91.70	180.20	10,451.1	-2,193.2	-484.3	2,230.3	3.19	-3.17	0.32
12,636.0	91.80	180.00	10,449.2	-2,256.2	-484.4	2,292.9	0.35	0.16	-0.32
12,700.0	90.90	180.40	10,447.7	-2,320.2	-484.6	2,356.6	1.54	-1.41	0.63
12,762.0	90.80	180.00	10,446.7	-2,382.2	-484.8	2,418.3	0.66	-0.16	-0.65
12,826.0	91.30	180.20	10,445.6	-2,446.2	-485.0	2,482.0	0.84	0.78	0.31
12,889.0	91.40	180.80	10,444.1	-2,509.2	-485.5	2,544.8	0.97	0.16	0.95
12,952.0	90.80	181.30	10,442.9	-2,572.1	-486.7	2,607.5	1.24	-0.95	0.79
13,015.0	89.10	181.10	10,442.9	-2,635.1	-488.0	2,670.4	2.72	-2.70	-0.32
13,079.0	89.30	181.40	10,443.8	-2,699.1	-489.4	2,734.2	0.56	0.31	0.47
13,142.0	89.40	181.60	10,444.5	-2,762.1	-491.0	2,797.0	0.35	0.16	0.32
13,205.0	89.30	181.60	10,445.2	-2,825.0	-492.8	2,859.8	0.16	-0.16	0.00
13,268.0	89.60	180.40	10,445.8	-2,888.0	-493.9	2,922.6	1.96	0.48	-1.90
13,331.0	90.00	180.20	10,446.1	-2,951.0	-494.2	2,985.3	0.71	0.63	-0.32
13,394.0	89.90	180.20	10,446.1	-3,014.0	-494.4	3,048.1	0.16	-0.16	0.00
13,457.0	89.50	180.40	10,446.5	-3,077.0	-494.8	3,110.8	0.71	-0.63	0.32
13,520.0	89.00	180.60	10,447.3	-3,140.0	-495.3	3,173.5	0.85	-0.79	0.32
13,584.0	90.80	181.40	10,447.4	-3,204.0	-496.4	3,237.3	3.08	2.81	1.25
13,647.0	91.40	180.00	10,446.2	-3,267.0	-497.2	3,300.1	2.42	0.95	-2.22
13,710.0	90.40	179.00	10,445.2	-3,330.0	-496.6	3,362.7	2.24	-1.59	-1.59
13,773.0	91.90	179.50	10,443.9	-3,393.0	-495.8	3,425.3	2.51	2.38	0.79
13,836.0	90.20	179.30	10,442.8	-3,455.9	-495.2	3,487.9	2.72	-2.70	-0.32
13,900.0	90.80	179.30	10,442.2	-3,519.9	-494.4	3,551.5	0.94	0.94	0.00
13,963.0	89.40	179.50	10,442.1	-3,582.9	-493.7	3,614.1	2.24	-2.22	0.32
14,026.0	89.40	179.90	10,442.8	-3,645.9	-493.4	3,676.8	0.63	0.00	0.63
14,089.0	89.30	179.70	10,443.5	-3,708.9	-493.2	3,739.4	0.35	-0.16	-0.32
14,152.0	88.90	179.70	10,444.5	-3,771.9	-492.8	3,802.1	0.63	-0.63	0.00
14,215.0	88.40	179.90	10,446.0	-3,834.9	-492.6	3,864.8	0.85	-0.79	0.32
14,279.0	89.90	179.20	10,446.9	-3,898.9	-492.1	3,928.4	2.59	2.34	-1.09
14,342.0	90.00	178.80	10,447.0	-3,961.9	-491.0	3,991.0	0.65	0.16	-0.63
14,405.0	90.00	179.00	10,447.0	-4,024.9	-489.8	4,053.5	0.32	0.00	0.32
14,470.0	88.70	178.60	10,447.7	-4,089.8	-488.5	4,118.1	2.09	-2.00	-0.62
14,533.0	89.20	179.90	10,448.8	-4,152.8	-487.6	4,180.6	2.21	0.79	2.06
14,596.0	88.90	180.20	10,449.9	-4,215.8	-487.7	4,243.3	0.67	-0.48	0.48



Survey Report



Company: XTO ENERGY, INC.

Local Co-ordinate Reference:

Well Chistera 32 State 7H

Project: Lea County, NM

TVD Reference:

RKB @ 3638.5usft (Trinidad #445)

Site: Sec 32, Twn 20S, Rng 33E (True North)

MD Reference:

RKB @ 3638.5usft (Trinidad #445)

Well: Chistera 32 State 7H

North Reference:

True

Wellbore: Wellbore #1

Survey Calculation Method:

Minimum Curvature

Design: Wellbore #1

Database:

EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,659.0	90.40	180.90	10,450.3	-4,278.8	-488.3	4,306.1	2.63	2.38	1.11
14,723.0	89.80	180.90	10,450.2	-4,342.8	-489.3	4,369.9	0.94	-0.94	0.00
14,786.0	89.50	181.30	10,450.6	-4,405.8	-490.5	4,432.7	0.79	-0.48	0.63
14,849.0	88.70	180.90	10,451.5	-4,468.8	-491.7	4,495.5	1.42	-1.27	-0.63
14,913.0	88.60	180.20	10,453.0	-4,532.7	-492.3	4,559.2	1.10	-0.16	-1.09
14,976.0	89.20	180.00	10,454.3	-4,595.7	-492.4	4,621.9	1.00	0.95	-0.32
15,039.0	89.10	179.90	10,455.2	-4,658.7	-492.4	4,684.6	0.22	-0.16	-0.16
15,102.0	88.70	179.70	10,456.4	-4,721.7	-492.2	4,747.2	0.71	-0.63	-0.32
15,166.0	90.00	180.00	10,457.1	-4,785.7	-492.0	4,810.9	2.08	2.03	0.47
15,229.0	90.10	180.00	10,457.1	-4,848.7	-492.0	4,873.6	0.16	0.16	0.00
Crossed 100' LTP@ 15235.9' MD / 10457.1' TVD									
15,235.9	90.10	179.95	10,457.1	-4,855.6	-492.0	4,880.4	0.77	0.00	-0.77
15,268.0	90.10	179.70	10,457.0	-4,887.7	-491.9	4,912.4	0.77	0.00	-0.77
Crossed 50' HL@ 15285.9' MD / 10457.0' TVD									
15,285.9	90.10	179.70	10,457.0	-4,905.6	-491.8	4,930.2	0.00	0.00	0.00
TD @ 15318.0' MD / 10455.7' TVD									
15,318.0	90.10	179.70	10,456.9	-4,937.7	-491.6	4,962.1	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,191.0	3,179.3	190.0	-170.4	MWD Tie-in @ 3191.0' MD / 3179.3' TVD
15,235.9	10,457.1	-4,855.6	-492.0	Crossed 100' LTP@ 15235.9' MD / 10457.1' TVD
15,285.9	10,457.0	-4,905.6	-491.8	Crossed 50' HL@ 15285.9' MD / 10457.0' TVD
15,318.0	10,456.9	-4,937.7	-491.6	TD @ 15318.0' MD / 10455.7' TVD