

Extraction Oil & Gas

Weld County, CO (NAD83)

Sec 28-T1N-R68W Coyote Trails

Coyote Trails 33W-15-9C

Wellbore #1

Design: Wellbore #1

Standard Survey Report

19 July, 2019

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Coyote Trails 33W-15-9C
Project:	Weld County, CO (NAD83)	TVD Reference:	KB @ 5302.00usft (Ensign 147)
Site:	Sec 28-T1N-R68W Coyote Trails	MD Reference:	KB @ 5302.00usft (Ensign 147)
Well:	Coyote Trails 33W-15-9C	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.15 Single User Db

Project	Weld County, CO (NAD83),		
Map System:	US State Plane 1983	System Datum:	Ground Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec 28-T1N-R68W Coyote Trails							
Site Position:		Northing:	1,249,743.73	usft	Latitude:	40.017878			
From:	Map	Easting:	3,138,161.85	usft	Longitude:	-105.006704			
Position Uncertainty:		0.00	usft	Slot Radius:	13-3/16	"	Grid Convergence:	0.32	°

Well		Coyote Trails 33W-15-9C				
Well Position	+N/-S	0.00 usft	Northing:	1,249,778.81 usft	Latitude:	40.017978
	+E/-W	0.00 usft	Easting:	3,137,945.84 usft	Longitude:	-105.007474
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,274.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/13/2019	8.09	66.46	51,897.63962777

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	244.57	

Survey Program	Date	7/19/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
146.30	1,588.30	Surface Surveys (Wellbore #1)	MWD	MWD - Standard	
1,675.00	16,387.00	Atlas MWD Surveys (Wellbore #1)	MWD	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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
146.30	0.35	183.68	146.30	-0.45	-0.03	0.22	0.24	0.24	0.00	
233.30	0.40	192.03	233.30	-1.01	-0.11	0.53	0.08	0.06	9.60	
321.30	0.97	183.95	321.29	-2.05	-0.22	1.08	0.66	0.65	-9.18	
408.30	2.33	182.19	408.25	-4.55	-0.34	2.26	1.56	1.56	-2.02	
495.30	3.60	180.34	495.13	-9.05	-0.43	4.27	1.46	1.46	-2.13	
582.30	5.36	176.30	581.87	-15.84	-0.18	6.96	2.05	2.02	-4.64	
670.30	7.25	177.09	669.33	-25.49	0.37	10.61	2.15	2.15	0.90	
757.30	9.76	183.03	755.37	-38.34	0.26	16.23	3.05	2.89	6.83	
844.30	11.56	181.31	840.86	-54.42	-0.33	23.67	2.10	2.07	-1.98	

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Well:	Coyote Trails 33W-15-9C	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.15 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)
932.30	12.66	181.75	926.90	-72.87	-0.83	32.04	1.25	1.25	0.50
1,019.30	13.89	183.15	1,011.58	-92.83	-1.69	41.39	1.46	1.41	1.61
1,106.30	14.99	178.41	1,095.83	-114.50	-1.96	50.94	1.85	1.26	-5.45
1,193.30	16.96	176.47	1,179.47	-138.42	-0.86	60.22	2.35	2.26	-2.23
1,281.30	17.58	178.77	1,263.50	-164.51	0.21	70.46	1.05	0.70	2.61
1,368.30	19.07	177.79	1,346.09	-191.85	1.04	81.45	1.75	1.71	-1.13
1,455.30	21.45	180.43	1,427.70	-221.97	1.47	93.99	2.93	2.74	3.03
1,543.30	23.69	178.23	1,508.96	-255.73	1.90	108.11	2.72	2.55	-2.50
1,588.30	25.14	179.29	1,549.93	-274.33	2.29	115.73	3.37	3.22	2.36
Tie into Surface Surveys									
1,675.00	26.51	178.41	1,627.97	-312.09	3.06	131.26	1.64	1.58	-1.01
First MWD Survey @ 1675' MD									
1,765.00	26.29	179.03	1,708.58	-352.09	3.95	147.63	0.39	-0.24	0.69
1,855.00	30.62	180.35	1,787.69	-394.96	4.15	165.86	4.86	4.81	1.47
1,944.00	30.76	179.73	1,864.23	-440.39	4.12	185.40	0.39	0.16	-0.70
2,034.00	34.29	178.37	1,940.10	-488.76	4.95	205.42	4.01	3.92	-1.51
2,124.00	33.58	177.22	2,014.77	-538.96	6.88	225.24	1.06	-0.79	-1.28
2,214.00	35.26	178.54	2,089.01	-589.80	8.75	245.38	2.04	1.87	1.47
2,304.00	37.03	179.12	2,161.69	-642.87	9.83	267.20	2.00	1.97	0.64
2,394.00	36.59	178.63	2,233.74	-696.78	10.88	289.39	0.59	-0.49	-0.54
2,484.00	35.40	177.75	2,306.56	-749.65	12.55	310.59	1.44	-1.32	-0.98
2,573.00	36.41	179.51	2,378.65	-801.82	13.79	331.88	1.62	1.13	1.98
2,663.00	35.53	179.64	2,451.49	-854.68	14.18	354.23	0.98	-0.98	0.14
2,753.00	37.12	178.90	2,524.00	-907.99	14.87	376.50	1.83	1.77	-0.82
2,842.00	36.59	178.23	2,595.21	-961.35	16.20	398.21	0.75	-0.60	-0.75
2,931.00	35.26	178.01	2,667.28	-1,013.54	17.91	419.08	1.50	-1.49	-0.25
3,020.00	33.58	177.18	2,740.70	-1,063.80	20.01	438.76	1.96	-1.89	-0.93
3,110.00	35.93	176.82	2,814.63	-1,115.03	22.70	458.33	2.62	2.61	-0.40
3,168.54	35.15	176.49	2,862.27	-1,149.00	24.69	471.13	1.37	-1.33	-0.57
Cross @ 3168.54' MD									
3,200.00	34.73	176.30	2,888.06	-1,166.98	25.82	477.82	1.37	-1.33	-0.59
3,290.00	35.75	178.98	2,961.57	-1,218.86	27.95	498.18	2.06	1.13	2.98
3,379.00	37.43	175.15	3,033.04	-1,271.81	30.70	518.44	3.18	1.89	-4.30
3,468.00	36.19	173.74	3,104.29	-1,324.89	35.85	536.58	1.69	-1.39	-1.58
3,558.00	34.34	173.47	3,177.77	-1,376.52	41.63	553.53	2.06	-2.06	-0.30
3,648.00	36.24	171.76	3,251.23	-1,428.08	48.33	569.62	2.38	2.11	-1.90
3,737.00	34.95	171.36	3,323.60	-1,479.32	55.93	584.76	1.47	-1.45	-0.45
3,826.00	37.74	174.18	3,395.28	-1,531.63	62.53	601.27	3.65	3.13	3.17
3,916.00	36.63	173.78	3,466.99	-1,585.73	68.23	619.35	1.26	-1.23	-0.44
4,005.00	38.44	176.03	3,537.56	-1,639.73	73.02	638.21	2.55	2.03	2.53
4,095.00	36.68	175.90	3,608.90	-1,694.45	76.88	658.23	1.96	-1.96	-0.14
4,185.00	34.47	175.81	3,682.10	-1,746.67	80.66	677.24	2.46	-2.46	-0.10
4,275.00	34.38	178.90	3,756.34	-1,797.48	83.01	696.93	1.94	-0.10	3.43

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Design:	Wellbore #1	Database:	EDM 5000.15 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)
4,364.00	35.53	178.28	3,829.29	-1,848.46	84.27	717.69	1.35	1.29	-0.70
4,453.00	35.75	179.20	3,901.62	-1,900.30	85.41	738.92	0.65	0.25	1.03
4,543.00	37.12	180.75	3,974.03	-1,953.75	85.42	761.87	1.83	1.52	1.72
4,632.00	34.87	180.26	4,046.03	-2,006.05	84.96	784.75	2.55	-2.53	-0.55
4,721.00	35.97	179.51	4,118.56	-2,057.63	85.06	806.80	1.33	1.24	-0.84
4,810.00	36.94	178.19	4,190.14	-2,110.50	86.13	828.54	1.40	1.09	-1.48
4,900.00	34.73	176.78	4,263.10	-2,163.13	88.43	849.07	2.62	-2.46	-1.57
4,990.00	36.32	179.73	4,336.35	-2,215.39	89.99	870.10	2.60	1.77	3.28
5,079.00	34.64	180.22	4,408.82	-2,267.04	90.02	892.25	1.91	-1.89	0.55
5,168.00	35.53	180.13	4,481.65	-2,318.20	89.86	914.36	1.00	1.00	-0.10
5,258.00	36.68	180.44	4,554.37	-2,371.23	89.60	937.38	1.29	1.28	0.34
5,348.00	34.34	180.13	4,627.62	-2,423.50	89.33	960.06	2.61	-2.60	-0.34
5,437.00	36.06	180.39	4,700.34	-2,474.80	89.10	982.31	1.94	1.93	0.29
5,526.00	37.34	179.73	4,771.70	-2,527.99	89.05	1,005.19	1.50	1.44	-0.74
5,616.00	34.78	177.88	4,844.45	-2,580.95	90.13	1,026.96	3.09	-2.84	-2.06
5,705.00	36.28	179.60	4,916.88	-2,632.65	91.25	1,048.15	2.03	1.69	1.93
5,795.00	38.93	180.17	4,988.18	-2,687.56	91.35	1,071.64	2.97	2.94	0.63
5,884.00	36.94	178.98	5,058.37	-2,742.27	91.74	1,094.78	2.38	-2.24	-1.34
5,974.00	35.31	178.50	5,131.06	-2,795.32	92.91	1,116.51	1.84	-1.81	-0.53
6,063.00	36.46	177.84	5,203.17	-2,847.46	94.58	1,137.39	1.36	1.29	-0.74
6,153.00	37.87	176.91	5,274.89	-2,901.77	97.07	1,158.46	1.69	1.57	-1.03
6,242.00	35.88	173.47	5,346.09	-2,954.97	101.51	1,177.29	3.22	-2.24	-3.87
6,332.00	37.47	175.85	5,418.27	-3,008.48	106.49	1,195.78	2.37	1.77	2.64
6,422.00	37.52	178.67	5,489.69	-3,063.19	109.11	1,216.90	1.91	0.06	3.13
6,511.00	37.25	178.81	5,560.40	-3,117.21	110.30	1,239.03	0.32	-0.30	0.16
6,601.00	34.78	178.54	5,633.20	-3,170.11	111.52	1,260.65	2.75	-2.74	-0.30
6,691.00	31.77	176.65	5,708.43	-3,219.44	113.56	1,279.99	3.54	-3.34	-2.10
6,780.00	28.37	175.11	5,785.44	-3,263.91	116.73	1,296.22	3.92	-3.82	-1.73
6,870.00	25.59	173.39	5,865.64	-3,304.53	120.79	1,310.00	3.21	-3.09	-1.91
6,960.00	22.93	172.51	5,947.69	-3,341.23	125.32	1,321.67	2.98	-2.96	-0.98
7,049.00	22.89	178.32	6,029.68	-3,375.72	128.08	1,333.99	2.54	-0.04	6.53
7,139.00	20.59	177.93	6,113.27	-3,409.04	129.17	1,347.31	2.56	-2.56	-0.43
7,228.00	20.59	182.11	6,196.59	-3,440.32	129.16	1,360.76	1.65	0.00	4.70
7,318.00	17.94	180.88	6,281.54	-3,470.00	128.36	1,374.22	2.98	-2.94	-1.37
7,408.00	16.79	180.44	6,367.44	-3,496.86	128.05	1,386.04	1.29	-1.28	-0.49
7,497.00	14.14	177.71	6,453.21	-3,520.58	128.39	1,395.92	3.09	-2.98	-3.07
7,587.00	13.30	187.49	6,540.65	-3,541.83	127.48	1,405.87	2.74	-0.93	10.87
7,699.00	12.55	180.35	6,649.82	-3,566.77	125.72	1,418.16	1.57	-0.67	-6.38
7,789.00	10.47	181.50	6,738.01	-3,584.73	125.45	1,426.12	2.33	-2.31	1.28
7,879.00	8.44	180.31	6,826.78	-3,599.51	125.20	1,432.69	2.27	-2.26	-1.32
7,968.00	5.26	187.44	6,915.14	-3,610.09	124.63	1,437.75	3.69	-3.57	8.01
8,057.00	4.42	184.10	7,003.82	-3,617.55	123.86	1,441.65	1.00	-0.94	-3.75
8,147.00	1.81	153.25	7,093.68	-3,622.28	124.25	1,443.33	3.35	-2.90	-34.28
8,237.00	3.36	235.87	7,183.61	-3,625.03	122.71	1,445.90	4.01	1.72	91.80

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8,326.00	13.52	272.23	7,271.57	-3,626.09	110.12	1,457.73	12.35	11.42	40.85
8,415.00	21.39	276.72	7,356.41	-3,623.79	83.56	1,480.72	8.96	8.84	5.04
8,496.09	29.99	269.97	7,429.43	-3,622.06	48.53	1,511.61	11.18	10.60	-8.32
30° Inclination @ 8496.09' MD									
8,504.00	30.84	269.50	7,436.25	-3,622.08	44.53	1,515.24	11.18	10.77	-5.93
8,593.00	39.95	262.84	7,508.76	-3,625.85	-6.76	1,563.18	11.10	10.24	-7.48
8,683.00	45.38	261.04	7,574.91	-3,634.45	-67.12	1,621.38	6.18	6.03	-2.00
8,772.00	49.18	263.99	7,635.29	-3,642.91	-131.93	1,683.54	4.91	4.27	3.31
8,862.00	56.56	268.40	7,689.59	-3,647.53	-203.45	1,750.12	9.08	8.20	4.90
8,953.00	66.81	268.22	7,732.70	-3,649.90	-283.42	1,823.36	11.27	11.26	-0.20
8,982.51	70.00	267.57	7,743.56	-3,650.91	-310.84	1,848.55	10.99	10.80	-2.19
70° Inclination @ 8982.51' MD									
9,043.00	76.54	266.32	7,760.97	-3,654.00	-368.65	1,902.09	10.99	10.81	-2.07
9,132.00	76.76	265.88	7,781.52	-3,659.89	-455.05	1,982.64	0.54	0.25	-0.49
9,222.00	80.91	269.15	7,798.94	-3,663.70	-543.23	2,063.91	5.83	4.61	3.63
9,311.00	90.72	270.86	7,805.43	-3,663.69	-631.88	2,143.97	11.19	11.02	1.92
9,401.00	90.41	270.16	7,804.54	-3,662.89	-721.87	2,224.90	0.85	-0.34	-0.78
9,491.00	90.28	269.81	7,804.00	-3,662.91	-811.87	2,306.18	0.41	-0.14	-0.39
9,581.00	89.70	269.63	7,804.02	-3,663.35	-901.87	2,387.65	0.67	-0.64	-0.20
9,670.00	89.53	269.15	7,804.62	-3,664.30	-990.86	2,468.42	0.57	-0.19	-0.54
9,759.00	89.48	269.10	7,805.38	-3,665.66	-1,079.85	2,549.37	0.08	-0.06	-0.06
9,848.00	89.48	268.44	7,806.19	-3,667.57	-1,168.82	2,630.55	0.74	0.00	-0.74
9,938.00	89.88	270.03	7,806.69	-3,668.77	-1,258.81	2,712.33	1.82	0.44	1.77
10,027.00	89.84	269.41	7,806.91	-3,669.20	-1,347.81	2,792.89	0.70	-0.04	-0.70
10,117.00	89.79	271.57	7,807.20	-3,668.43	-1,437.80	2,873.83	2.40	-0.06	2.40
10,206.00	89.17	271.44	7,808.01	-3,666.10	-1,526.76	2,953.17	0.71	-0.70	-0.15
10,295.00	88.51	271.30	7,809.81	-3,663.97	-1,615.72	3,032.59	0.76	-0.74	-0.16
10,385.00	88.86	271.08	7,811.88	-3,662.10	-1,705.68	3,113.03	0.46	0.39	-0.24
10,475.00	89.17	270.60	7,813.42	-3,660.78	-1,795.65	3,193.72	0.63	0.34	-0.53
10,564.00	89.48	270.47	7,814.47	-3,659.95	-1,884.64	3,273.73	0.38	0.35	-0.15
10,652.00	89.84	270.33	7,815.00	-3,659.33	-1,972.64	3,352.94	0.44	0.41	-0.16
10,742.00	89.79	269.19	7,815.29	-3,659.71	-2,062.64	3,434.37	1.27	-0.06	-1.27
10,830.00	89.66	268.88	7,815.71	-3,661.19	-2,150.62	3,514.47	0.38	-0.15	-0.35
10,920.00	90.59	270.64	7,815.51	-3,661.57	-2,240.62	3,595.91	2.21	1.03	1.96
11,009.00	90.85	270.16	7,814.39	-3,660.95	-2,329.61	3,676.01	0.61	0.29	-0.54
11,099.00	91.12	270.07	7,812.85	-3,660.77	-2,419.59	3,757.20	0.32	0.30	-0.10
11,188.00	90.81	269.54	7,811.35	-3,661.07	-2,508.58	3,837.69	0.69	-0.35	-0.60
11,278.00	90.63	268.88	7,810.22	-3,662.31	-2,598.56	3,919.49	0.76	-0.20	-0.73
11,367.00	89.84	270.51	7,809.85	-3,662.79	-2,687.56	4,000.06	2.04	-0.89	1.83
11,457.00	89.88	270.11	7,810.07	-3,662.30	-2,777.56	4,081.13	0.45	0.04	-0.44
11,546.00	89.31	270.03	7,810.70	-3,662.19	-2,866.55	4,161.45	0.65	-0.64	-0.09
11,632.46	88.96	269.31	7,812.00	-3,662.69	-2,953.00	4,239.74	0.92	-0.40	-0.83
Cross @ 11632.46' MD									
11,636.00	88.95	269.28	7,812.07	-3,662.73	-2,956.54	4,242.95	0.92	-0.40	-0.83

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Coyote Trails 33W-15-9C
Project:	Weld County, CO (NAD83)	TVD Reference:	KB @ 5302.00usft (Ensign 147)
Site:	Sec 28-T1N-R68W Coyote Trails	MD Reference:	KB @ 5302.00usft (Ensign 147)
Well:	Coyote Trails 33W-15-9C	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.15 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)
11,725.00	90.01	270.11	7,812.87	-3,663.21	-3,045.53	4,323.53	1.51	1.19	0.93
11,814.00	89.88	269.50	7,812.96	-3,663.51	-3,134.53	4,404.03	0.70	-0.15	-0.69
11,904.00	89.53	269.06	7,813.42	-3,664.64	-3,224.52	4,485.79	0.62	-0.39	-0.49
11,995.00	89.22	268.35	7,814.42	-3,666.70	-3,315.50	4,568.83	0.85	-0.34	-0.78
12,084.00	89.53	269.50	7,815.39	-3,668.37	-3,404.47	4,649.90	1.34	0.35	1.29
12,174.00	90.10	269.41	7,815.68	-3,669.22	-3,494.47	4,731.54	0.64	0.63	-0.10
12,264.00	90.19	268.48	7,815.45	-3,670.88	-3,584.45	4,813.52	1.04	0.10	-1.03
12,354.00	90.46	271.08	7,814.94	-3,671.22	-3,674.44	4,894.93	2.90	0.30	2.89
12,443.00	90.68	271.08	7,814.05	-3,669.55	-3,763.42	4,974.57	0.25	0.25	0.00
12,532.00	90.90	271.30	7,812.83	-3,667.70	-3,852.39	5,054.13	0.35	0.25	0.25
12,622.00	90.94	270.73	7,811.38	-3,666.10	-3,942.37	5,134.70	0.63	0.04	-0.63
12,712.00	91.21	270.29	7,809.69	-3,665.30	-4,032.35	5,215.62	0.57	0.30	-0.49
12,801.00	90.32	271.30	7,808.50	-3,664.07	-4,121.33	5,295.44	1.51	-1.00	1.13
12,890.00	90.37	271.75	7,807.97	-3,661.70	-4,210.30	5,374.77	0.51	0.06	0.51
12,980.00	88.86	271.22	7,808.57	-3,659.37	-4,300.26	5,455.02	1.78	-1.68	-0.59
13,069.00	89.17	271.04	7,810.10	-3,657.61	-4,389.23	5,534.61	0.40	0.35	-0.20
13,159.00	89.57	270.11	7,811.09	-3,656.71	-4,479.22	5,615.49	1.12	0.44	-1.03
13,248.00	89.93	270.56	7,811.48	-3,656.19	-4,568.22	5,695.64	0.65	0.40	0.51
13,338.00	88.69	270.91	7,812.57	-3,655.04	-4,658.20	5,776.41	1.43	-1.38	0.39
13,427.00	88.91	271.13	7,814.43	-3,653.45	-4,747.17	5,856.08	0.35	0.25	0.25
13,517.00	88.82	270.42	7,816.21	-3,652.23	-4,837.14	5,936.81	0.80	-0.10	-0.79
13,606.00	89.70	270.60	7,817.36	-3,651.44	-4,926.13	6,016.83	1.01	0.99	0.20
13,696.00	89.17	269.59	7,818.25	-3,651.29	-5,016.12	6,098.04	1.27	-0.59	-1.12
13,786.00	88.73	268.26	7,819.90	-3,652.98	-5,106.09	6,180.02	1.56	-0.49	-1.48
13,875.00	90.37	270.64	7,820.60	-3,653.84	-5,195.07	6,260.74	3.25	1.84	2.67
13,965.00	91.25	270.33	7,819.32	-3,653.07	-5,285.06	6,341.68	1.04	0.98	-0.34
14,054.00	91.21	270.29	7,817.41	-3,652.59	-5,374.04	6,421.83	0.06	-0.04	-0.04
14,143.00	90.72	270.11	7,815.92	-3,652.28	-5,463.02	6,502.06	0.59	-0.55	-0.20
14,233.00	90.50	270.20	7,814.96	-3,652.04	-5,553.02	6,583.23	0.26	-0.24	0.10
14,322.00	90.68	269.72	7,814.04	-3,652.10	-5,642.01	6,663.63	0.58	0.20	-0.54
14,412.00	89.48	269.98	7,813.92	-3,652.34	-5,732.01	6,745.01	1.36	-1.33	0.29
14,502.00	89.79	269.85	7,814.49	-3,652.47	-5,822.01	6,826.34	0.37	0.34	-0.14
14,591.00	90.01	269.72	7,814.64	-3,652.80	-5,911.01	6,906.86	0.29	0.25	-0.15
14,681.00	88.42	269.28	7,815.88	-3,653.59	-6,000.99	6,988.46	1.83	-1.77	-0.49
14,771.00	88.16	269.19	7,818.56	-3,654.79	-6,090.95	7,070.21	0.31	-0.29	-0.10
14,860.00	89.79	271.04	7,820.15	-3,654.61	-6,179.92	7,150.49	2.77	1.83	2.08
14,949.00	89.93	270.78	7,820.37	-3,653.20	-6,268.91	7,230.25	0.33	0.16	-0.29
15,038.00	90.10	270.38	7,820.35	-3,652.30	-6,357.91	7,310.24	0.49	0.19	-0.45
15,129.00	89.97	269.72	7,820.29	-3,652.22	-6,448.91	7,392.38	0.74	-0.14	-0.73
15,218.00	89.97	269.85	7,820.34	-3,652.55	-6,537.91	7,472.90	0.15	0.00	0.15
15,308.00	89.57	269.19	7,820.70	-3,653.30	-6,627.90	7,554.50	0.86	-0.44	-0.73
15,397.00	89.70	268.84	7,821.27	-3,654.83	-6,716.89	7,635.52	0.42	0.15	-0.39
15,487.00	90.15	269.94	7,821.39	-3,655.79	-6,806.88	7,717.20	1.32	0.50	1.22

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Coyote Trails 33W-15-9C
Project:	Weld County, CO (NAD83)	TVD Reference:	KB @ 5302.00usft (Ensign 147)
Site:	Sec 28-T1N-R68W Coyote Trails	MD Reference:	KB @ 5302.00usft (Ensign 147)
Well:	Coyote Trails 33W-15-9C	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.15 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)	
15,576.00	90.54	269.81	7,820.85	-3,655.99	-6,895.88	7,797.66	0.46	0.44	-0.15	
15,666.00	91.07	269.06	7,819.59	-3,656.87	-6,985.86	7,879.31	1.02	0.59	-0.83	
15,755.00	91.30	268.57	7,817.75	-3,658.71	-7,074.83	7,960.44	0.61	0.26	-0.55	
15,844.00	89.97	268.88	7,816.76	-3,660.69	-7,163.80	8,041.64	1.53	-1.49	0.35	
15,933.00	90.19	268.57	7,816.63	-3,662.67	-7,252.77	8,122.84	0.43	0.25	-0.35	
16,022.00	89.75	269.10	7,816.68	-3,664.48	-7,341.75	8,203.98	0.77	-0.49	0.60	
16,111.00	90.19	270.64	7,816.73	-3,664.69	-7,430.75	8,284.44	1.80	0.49	1.73	
16,200.00	90.06	269.94	7,816.53	-3,664.24	-7,519.75	8,364.62	0.80	-0.15	-0.79	
16,289.00	91.91	270.16	7,815.00	-3,664.16	-7,608.73	8,444.95	2.09	2.08	0.25	
16,323.00	92.18	269.63	7,813.79	-3,664.22	-7,642.71	8,475.66	1.75	0.79	-1.56	
Last MWD Survey @ 16323' MD										
16,387.00	92.18	269.63	7,811.36	-3,664.63	-7,706.66	8,533.59	0.00	0.00	0.00	
Projection to TD @ 16387' MD 2496.5' FNL/ 510' FWL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Cross @ 3168.54' MD	0.00	0.00	2,862.27	-1,149.00	24.69	1,248,629.97	3,137,976.92	40.014824	-105.007386	
- actual wellpath hits target center										
- Point										
30° Inclination @ 8496.0	0.00	0.00	7,429.43	-3,622.00	48.53	1,246,157.13	3,138,014.49	40.008035	-105.007301	
- actual wellpath misses target center by 0.06usft at 8496.09usft MD (7429.43 TVD, -3622.06 N, 48.53 E)										
- Point										
70° Inclination @ 8982.5	0.00	0.00	7,743.56	-3,650.90	-310.84	1,246,126.24	3,137,655.29	40.007956	-105.008584	
- actual wellpath misses target center by 0.01usft at 8982.51usft MD (7743.56 TVD, -3650.91 N, -310.84 E)										
- Point										
Cross @ 11632.46' MD	0.00	0.00	7,812.00	-3,662.69	-2,953.00	1,246,099.78	3,135,013.23	40.007923	-105.018016	
- actual wellpath hits target center										
- Point										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,588.30	1,549.93	-274.33	2.29	Tie into Surface Surveys	
1,675.00	1,627.97	-312.09	3.06	First MWD Survey @ 1675' MD	
3,168.54	2,862.27	-1,149.00	24.69	Cross @ 3168.54' MD	
8,496.09	7,429.43	-3,622.06	48.53	30° Inclination @ 8496.09' MD	
8,982.51	7,743.56	-3,650.91	-310.84	70° Inclination @ 8982.51' MD	
11,632.46	7,812.00	-3,662.69	-2,953.00	Cross @ 11632.46' MD	
16,323.00	7,813.79	-3,664.22	-7,642.71	Last MWD Survey @ 16323' MD	
16,387.00	7,811.36	-3,664.63	-7,706.66	Projection to TD @ 16387' MD 2496.5' FNL/ 510' FWL	

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Coyote Trails 33W-15-9C
Project:	Weld County, CO (NAD83)	TVD Reference:	KB @ 5302.00usft (Ensign 147)
Site:	Sec 28-T1N-R68W Coyote Trails	MD Reference:	KB @ 5302.00usft (Ensign 147)
Well:	Coyote Trails 33W-15-9C	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.15 Single User Db

Checked By: _____ Approved By: _____ Date: _____