

# **Extraction Oil & Gas**

**Weld County, CO (NAD83)**

**Vetting PAD (Sec 15-T5N-R65W)**

**VT Glenmere C1-16-18**

**Wellbore #1**

**Design: Wellbore #1**

## **Standard Survey Report**

**27 June, 2018**

## Survey Report

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well VT Glenmere C1-16-18
<b>Project:</b>	Weld County, CO (NAD83)	<b>TVD Reference:</b>	KB=29 @ 4678.00ft (Patterson #901)
<b>Site:</b>	Vetting PAD (Sec 15-T5N-R65W)	<b>MD Reference:</b>	KB=29 @ 4678.00ft (Patterson #901)
<b>Well:</b>	VT Glenmere C1-16-18	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1

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

Site		Vetting PAD (Sec 15-T5N-R65W)			
Site Position:		Northing:	1,390,162.31 usft	Latitude:	40.401330
From:	Map	Easting:	3,234,926.48 usft	Longitude:	-104.656460
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.55 °

Well	VT Glenmere C1-16-18					
Well Position	+N/-S	0.00 ft	Northing:	1,390,166.19 usft	Latitude:	40.401340
	+E/-W	0.00 ft	Easting:	3,234,951.51 usft	Longitude:	-104.656370
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,649.00 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	6/26/2018	8.10	66.88	52,249

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	276.16	

<b>Survey Program</b>	<b>Date</b>	6/27/2018			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
85.00	1,516.00	Surface Surveys (Wellbore #1)	MWD	MWD - Standard	
1,569.00	20,710.00	MWD Surveys (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
85.00	0.42	104.83	85.00	-0.08	0.30	-0.31	0.49	0.49	0.00	
168.00	0.49	103.02	168.00	-0.24	0.94	-0.96	0.09	0.08	-2.18	
250.00	0.70	126.24	249.99	-0.61	1.69	-1.74	0.38	0.26	28.32	
333.00	1.19	98.35	332.98	-1.04	2.95	-3.04	0.79	0.59	-33.60	
419.00	0.61	129.65	418.97	-1.46	4.18	-4.32	0.86	-0.67	36.40	
504.00	0.53	126.97	503.97	-1.98	4.85	-5.03	0.10	-0.09	-3.15	
590.00	1.15	137.76	589.96	-2.86	5.74	-6.02	0.74	0.72	12.55	
673.00	0.90	152.15	672.94	-4.06	6.61	-7.01	0.43	-0.30	17.34	
800.00	0.41	205.79	799.94	-5.35	6.88	-7.41	0.58	-0.39	42.24	

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<b>Site:</b>	Vetting PAD (Sec 15-T5N-R65W)	<b>MD Reference:</b>	KB=29 @ 4678.00ft (Patterson #901)
<b>Well:</b>	VT Glenmere C1-16-18	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
884.00	0.57	190.74	883.93	-6.03	6.67	-7.28	0.24	0.19	-17.92
967.00	1.09	222.36	966.92	-7.02	6.06	-6.78	0.81	0.63	38.10
1,052.00	1.61	275.97	1,051.90	-7.49	4.33	-5.11	1.53	0.61	63.07
1,136.00	2.89	289.75	1,135.84	-6.65	1.16	-1.87	1.64	1.52	16.40
1,221.00	4.50	293.14	1,220.66	-4.62	-3.92	3.40	1.91	1.89	3.99
1,305.00	5.33	294.77	1,304.35	-1.69	-10.50	10.25	1.00	0.99	1.94
1,392.00	6.51	289.62	1,390.88	1.66	-18.81	18.88	1.49	1.36	-5.92
1,475.00	7.58	284.05	1,473.26	4.57	-28.55	28.88	1.53	1.29	-6.71
1,516.00	7.98	282.46	1,513.88	5.84	-33.96	34.39	1.11	0.98	-3.88
<b>Tie in to Surface Surveys @ 1516'MD</b>									
1,569.00	8.26	305.08	1,566.36	8.82	-40.66	41.38	6.01	0.53	42.68
<b>First MWD Survey @ 1569'MD</b>									
1,664.00	7.87	278.77	1,660.45	13.74	-52.68	53.85	3.87	-0.41	-27.69
1,760.00	11.62	293.66	1,755.07	18.62	-68.04	69.65	4.68	3.91	15.51
1,855.00	14.49	296.31	1,847.60	27.73	-87.46	89.93	3.09	3.02	2.79
1,951.00	17.41	296.57	1,939.90	39.48	-111.08	114.68	3.04	3.04	0.27
2,046.00	19.62	299.13	2,029.97	53.61	-137.73	142.69	2.48	2.33	2.69
2,142.00	21.43	300.45	2,119.88	70.34	-166.93	173.51	1.95	1.89	1.38
2,237.00	22.93	297.85	2,207.85	87.78	-198.25	206.53	1.89	1.58	-2.74
2,333.00	24.83	298.51	2,295.63	106.14	-232.50	242.56	2.00	1.98	0.69
2,428.00	26.56	296.13	2,381.23	125.02	-269.10	280.97	2.12	1.82	-2.51
2,524.00	28.63	294.02	2,466.31	143.84	-309.38	323.04	2.38	2.16	-2.20
2,579.38	30.00	293.12	2,514.59	154.67	-334.24	348.91	2.60	2.47	-1.63
<b>30°Inclination @ 2579'MD</b>									
2,619.00	30.98	292.52	2,548.74	162.47	-352.77	368.17	2.60	2.48	-1.51
2,714.00	33.58	294.72	2,629.05	182.82	-399.23	416.55	3.00	2.74	2.32
2,810.00	35.09	294.72	2,708.32	205.47	-448.41	467.88	1.57	1.57	0.00
2,905.00	38.98	294.11	2,784.14	229.10	-500.51	522.21	4.11	4.09	-0.64
3,001.00	37.78	293.44	2,859.40	253.13	-555.05	579.02	1.32	-1.25	-0.70
3,096.00	37.69	294.99	2,934.53	276.98	-608.07	634.29	1.00	-0.09	1.63
3,192.00	35.88	292.12	3,011.42	299.97	-660.74	689.13	2.60	-1.89	-2.99
3,261.46	35.78	290.94	3,067.73	314.89	-698.56	728.34	1.00	-0.14	-1.70
<b>Crossing Section 15/16 @ 3261'MD</b>									
3,288.00	35.75	290.49	3,089.26	320.38	-713.07	743.35	1.00	-0.13	-1.70
3,383.00	33.76	289.39	3,167.31	338.86	-763.97	795.94	2.20	-2.09	-1.16
3,478.00	36.63	293.49	3,244.95	358.93	-814.88	848.71	3.91	3.02	4.32
3,574.00	37.25	295.25	3,321.68	382.74	-867.43	903.51	1.28	0.65	1.83
3,669.00	38.49	296.13	3,396.67	408.02	-919.98	958.47	1.42	1.31	0.93
3,765.00	40.39	298.60	3,470.81	436.07	-974.11	1,015.31	2.57	1.98	2.57
3,860.00	37.69	297.32	3,544.60	464.14	-1,026.95	1,070.85	2.97	-2.84	-1.35
3,956.00	40.04	298.34	3,619.34	492.27	-1,080.21	1,126.82	2.54	2.45	1.06
4,051.00	42.02	295.38	3,691.01	520.41	-1,135.84	1,185.16	2.92	2.08	-3.12
4,146.00	42.29	295.96	3,761.43	548.03	-1,193.31	1,245.25	0.50	0.28	0.61
4,242.00	42.42	296.00	3,832.38	576.36	-1,251.45	1,306.10	0.14	0.14	0.04

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<b>Well:</b>	VT Glenmere C1-16-18	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
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### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,337.00	41.98	294.94	3,902.75	603.81	-1,309.06	1,366.32	0.88	-0.46	-1.12
4,529.00	37.43	294.94	4,050.43	655.52	-1,420.25	1,482.42	2.37	-2.37	0.00
4,624.00	37.30	293.80	4,125.94	679.31	-1,472.76	1,537.19	0.74	-0.14	-1.20
4,720.00	34.95	293.22	4,203.47	701.89	-1,524.65	1,591.20	2.47	-2.45	-0.60
4,816.00	36.24	291.86	4,281.53	723.30	-1,576.26	1,644.81	1.58	1.34	-1.42
4,911.00	38.67	291.90	4,356.94	744.82	-1,629.87	1,700.42	2.56	2.56	0.04
5,007.00	38.75	291.46	4,431.85	767.00	-1,685.66	1,758.27	0.30	0.08	-0.46
5,102.00	38.89	290.98	4,505.87	788.56	-1,741.17	1,815.78	0.35	0.15	-0.51
5,197.00	37.56	295.16	4,580.51	811.55	-1,795.24	1,872.00	3.06	-1.40	4.40
5,293.00	34.34	294.24	4,658.22	835.11	-1,846.43	1,925.42	3.40	-3.35	-0.96
5,388.00	35.93	296.26	4,735.91	858.45	-1,895.86	1,977.08	2.07	1.67	2.13
5,484.00	39.90	296.31	4,811.63	884.57	-1,948.74	2,032.45	4.14	4.14	0.05
5,580.00	39.59	294.85	4,885.45	911.07	-2,004.10	2,090.34	1.02	-0.32	-1.52
5,675.00	42.29	294.81	4,957.20	937.21	-2,060.59	2,149.31	2.84	2.84	-0.04
5,770.00	40.43	293.71	5,028.50	963.01	-2,117.81	2,208.97	2.10	-1.96	-1.16
5,866.00	41.27	294.06	5,101.12	988.44	-2,175.23	2,268.78	0.91	0.88	0.36
5,962.00	38.75	291.24	5,174.65	1,012.23	-2,232.15	2,327.94	3.23	-2.63	-2.94
6,083.00	39.59	290.09	5,268.46	1,039.20	-2,303.66	2,401.93	0.92	0.69	-0.95
6,179.00	38.58	292.08	5,342.98	1,060.96	-2,360.13	2,460.41	1.68	-1.05	2.07
6,274.00	40.65	294.33	5,416.16	1,084.84	-2,415.78	2,518.30	2.65	2.18	2.37
6,370.00	41.10	298.38	5,488.76	1,112.73	-2,472.05	2,577.24	2.80	0.47	4.22
6,465.00	38.40	295.43	5,561.80	1,140.25	-2,526.18	2,634.01	3.47	-2.84	-3.11
6,561.00	40.79	297.98	5,635.78	1,167.77	-2,580.81	2,691.28	3.01	2.49	2.66
6,656.00	39.46	296.93	5,708.42	1,196.00	-2,635.13	2,748.32	1.57	-1.40	-1.11
6,752.00	36.63	294.46	5,784.01	1,221.68	-2,688.41	2,804.05	3.35	-2.95	-2.57
6,847.00	38.71	296.26	5,859.21	1,246.56	-2,740.86	2,858.86	2.48	2.19	1.89
6,942.00	36.99	296.09	5,934.22	1,272.28	-2,793.17	2,913.63	1.81	-1.81	-0.18
7,038.00	39.73	298.95	6,009.50	1,299.84	-2,845.97	2,969.08	3.40	2.85	2.98
7,133.00	38.09	298.69	6,083.42	1,328.60	-2,898.24	3,024.15	1.73	-1.73	-0.27
7,229.00	38.84	296.22	6,158.59	1,356.12	-2,951.23	3,079.78	1.78	0.78	-2.57
7,324.00	37.96	293.66	6,233.04	1,381.01	-3,004.72	3,135.63	1.91	-0.93	-2.69
7,420.00	39.90	293.14	6,307.72	1,404.96	-3,060.08	3,193.25	2.05	2.02	-0.54
7,515.00	37.12	291.59	6,382.05	1,427.49	-3,114.77	3,250.03	3.10	-2.93	-1.63
7,610.00	39.37	293.93	6,456.66	1,450.26	-3,168.97	3,306.37	2.82	2.37	2.46
7,706.00	39.73	292.92	6,530.68	1,474.56	-3,225.06	3,364.74	0.77	0.38	-1.05
7,801.00	38.93	291.73	6,604.17	1,497.43	-3,280.75	3,422.57	1.16	-0.84	-1.25
7,896.00	38.67	290.89	6,678.20	1,519.07	-3,336.21	3,480.03	0.62	-0.27	-0.88
7,992.00	41.54	286.57	6,751.64	1,538.85	-3,394.76	3,540.37	4.16	2.99	-4.50
8,087.00	53.38	284.85	6,815.76	1,557.67	-3,462.04	3,609.28	12.53	12.46	-1.81
8,183.00	61.33	286.44	6,867.50	1,579.50	-3,539.80	3,688.94	8.40	8.28	1.66
8,278.00	69.29	280.00	6,907.19	1,599.06	-3,623.74	3,774.49	10.39	8.38	-6.78
8,287.52	70.00	279.59	6,910.50	1,600.58	-3,632.54	3,783.40	8.46	7.42	-4.33
70°Inclination @ 8287'MD									

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Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,374.00	76.45	275.99	6,935.46	1,611.74	-3,714.52	3,866.10	8.46	7.46	-4.16
8,470.00	85.42	269.16	6,950.58	1,615.93	-3,809.07	3,960.56	11.69	9.34	-7.11
8,565.00	89.35	271.28	6,954.92	1,616.29	-3,903.95	4,054.93	4.70	4.14	2.23
8,660.00	89.40	271.37	6,955.95	1,618.49	-3,998.92	4,149.58	0.11	0.05	0.09
8,756.00	90.19	272.47	6,956.30	1,621.71	-4,094.86	4,245.32	1.41	0.82	1.15
8,851.00	90.46	272.64	6,955.76	1,625.94	-4,189.76	4,340.13	0.34	0.28	0.18
8,947.00	90.72	273.13	6,954.77	1,630.77	-4,285.64	4,435.96	0.58	0.27	0.51
9,054.00	90.28	270.31	6,953.84	1,633.98	-4,392.57	4,542.63	2.67	-0.41	-2.64
9,150.00	90.01	269.25	6,953.59	1,633.61	-4,488.57	4,638.03	1.14	-0.28	-1.10
9,245.00	90.10	269.03	6,953.50	1,632.19	-4,583.56	4,732.32	0.25	0.09	-0.23
9,341.00	90.01	269.38	6,953.41	1,630.86	-4,679.55	4,827.61	0.38	-0.09	0.36
9,436.00	90.06	269.87	6,953.35	1,630.24	-4,774.55	4,921.99	0.52	0.05	0.52
9,532.00	90.10	269.96	6,953.22	1,630.09	-4,870.55	5,017.42	0.10	0.04	0.09
9,627.00	90.06	269.87	6,953.08	1,629.95	-4,965.55	5,111.86	0.10	-0.04	-0.09
9,723.00	89.97	269.21	6,953.06	1,629.18	-5,061.54	5,207.21	0.69	-0.09	-0.69
9,818.00	90.19	269.43	6,952.93	1,628.05	-5,156.54	5,301.54	0.33	0.23	0.23
9,914.00	90.63	270.04	6,952.24	1,627.61	-5,252.53	5,396.93	0.78	0.46	0.64
10,010.00	90.63	269.91	6,951.18	1,627.57	-5,348.53	5,492.36	0.14	0.00	-0.14
10,105.00	90.46	269.21	6,950.28	1,626.84	-5,443.52	5,586.73	0.76	-0.18	-0.74
10,200.00	90.77	269.56	6,949.26	1,625.82	-5,538.51	5,681.06	0.49	0.33	0.37
10,296.00	90.23	269.69	6,948.42	1,625.19	-5,634.50	5,776.43	0.58	-0.56	0.14
10,391.00	90.10	269.56	6,948.15	1,624.57	-5,729.50	5,870.81	0.19	-0.14	-0.14
10,486.00	90.15	269.65	6,947.94	1,623.91	-5,824.50	5,965.19	0.11	0.05	0.09
10,581.00	90.10	269.74	6,947.73	1,623.41	-5,919.50	6,059.59	0.11	-0.05	0.09
10,675.06	90.32	271.07	6,947.39	1,624.07	-6,013.55	6,153.17	1.44	0.23	1.42
<b>Crossing Section 16/17 @ 10675'MD</b>									
10,677.00	90.32	271.10	6,947.38	1,624.11	-6,015.49	6,155.10	1.44	0.23	1.42
10,773.00	90.06	271.81	6,947.06	1,626.55	-6,111.46	6,250.78	0.79	-0.27	0.74
10,868.00	90.06	271.23	6,946.97	1,629.07	-6,206.42	6,345.46	0.61	0.00	-0.61
10,963.00	90.06	271.19	6,946.87	1,631.08	-6,301.40	6,440.11	0.04	0.00	-0.04
11,058.00	90.01	271.76	6,946.81	1,633.52	-6,396.37	6,534.79	0.60	-0.05	0.60
11,154.00	90.19	271.15	6,946.64	1,635.96	-6,492.34	6,630.46	0.66	0.19	-0.64
11,249.00	90.06	272.07	6,946.43	1,638.63	-6,587.30	6,725.16	0.98	-0.14	0.97
11,345.00	90.10	271.72	6,946.30	1,641.80	-6,683.25	6,820.90	0.37	0.04	-0.36
11,440.00	90.01	271.10	6,946.21	1,644.14	-6,778.22	6,915.57	0.66	-0.09	-0.65
11,535.00	90.06	271.06	6,946.15	1,645.93	-6,873.20	7,010.20	0.07	0.05	-0.04
11,631.00	90.28	271.98	6,945.86	1,648.48	-6,969.17	7,105.88	0.99	0.23	0.96
11,727.00	90.10	270.53	6,945.55	1,650.58	-7,065.14	7,201.52	1.52	-0.19	-1.51
11,822.00	90.28	271.81	6,945.23	1,652.52	-7,160.12	7,296.16	1.36	0.19	1.35
11,917.00	90.19	271.50	6,944.84	1,655.26	-7,255.08	7,390.87	0.34	-0.09	-0.33
12,012.00	90.10	271.01	6,944.60	1,657.34	-7,350.05	7,485.52	0.52	-0.09	-0.52
12,108.00	90.10	270.71	6,944.43	1,658.78	-7,446.04	7,581.11	0.31	0.00	-0.31
12,203.00	90.15	270.93	6,944.23	1,660.14	-7,541.03	7,675.69	0.24	0.05	0.23
12,299.00	90.28	271.72	6,943.87	1,662.36	-7,637.01	7,771.35	0.83	0.14	0.82

## Survey Report

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well VT Glenmere C1-16-18
<b>Project:</b>	Weld County, CO (NAD83)	<b>TVD Reference:</b>	KB=29 @ 4678.00ft (Patterson #901)
<b>Site:</b>	Vetting PAD (Sec 15-T5N-R65W)	<b>MD Reference:</b>	KB=29 @ 4678.00ft (Patterson #901)
<b>Well:</b>	VT Glenmere C1-16-18	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,395.00	90.10	271.19	6,943.55	1,664.80	-7,732.97	7,867.02	0.58	-0.19	-0.55
12,490.00	90.10	271.10	6,943.38	1,666.70	-7,827.95	7,961.66	0.09	0.00	-0.09
12,585.00	90.32	271.54	6,943.03	1,668.89	-7,922.93	8,056.32	0.52	0.23	0.46
12,681.00	90.32	272.12	6,942.50	1,671.95	-8,018.88	8,152.04	0.60	0.00	0.60
12,776.00	90.15	272.07	6,942.11	1,675.43	-8,113.81	8,246.80	0.19	-0.18	-0.05
12,872.00	90.15	271.01	6,941.86	1,678.01	-8,209.78	8,342.49	1.10	0.00	-1.10
12,968.00	89.97	271.45	6,941.76	1,680.07	-8,305.75	8,438.13	0.50	-0.19	0.46
13,063.00	90.19	271.98	6,941.62	1,682.91	-8,400.71	8,532.85	0.60	0.23	0.56
13,159.00	90.28	271.23	6,941.23	1,685.60	-8,496.67	8,628.54	0.79	0.09	-0.78
13,254.00	90.19	271.94	6,940.84	1,688.23	-8,591.63	8,723.24	0.75	-0.09	0.75
13,350.00	90.01	271.23	6,940.67	1,690.88	-8,687.60	8,818.93	0.76	-0.19	-0.74
13,445.00	89.97	271.10	6,940.69	1,692.81	-8,782.58	8,913.57	0.14	-0.04	-0.14
13,541.00	89.93	270.97	6,940.77	1,694.55	-8,878.56	9,009.18	0.14	-0.04	-0.14
13,637.00	89.97	270.97	6,940.86	1,696.17	-8,974.55	9,104.79	0.04	0.04	0.00
13,733.00	90.10	271.94	6,940.80	1,698.61	-9,070.52	9,200.46	1.02	0.14	1.01
13,828.00	89.97	271.15	6,940.74	1,701.17	-9,165.48	9,295.15	0.84	-0.14	-0.83
13,920.00	90.19	271.90	6,940.61	1,703.62	-9,257.45	9,386.85	0.85	0.24	0.82
14,019.00	90.23	270.97	6,940.25	1,706.10	-9,356.41	9,485.51	0.94	0.04	-0.94
14,115.00	90.06	269.56	6,940.01	1,706.54	-9,452.41	9,581.00	1.48	-0.18	-1.47
14,210.00	90.01	269.87	6,939.95	1,706.07	-9,547.41	9,675.40	0.33	-0.05	0.33
14,305.00	90.23	269.60	6,939.75	1,705.63	-9,642.41	9,769.80	0.37	0.23	-0.28
14,401.00	90.06	268.90	6,939.51	1,704.37	-9,738.40	9,865.10	0.75	-0.18	-0.73
14,496.00	90.10	269.87	6,939.37	1,703.36	-9,833.39	9,959.44	1.02	0.04	1.02
14,592.00	90.15	268.68	6,939.16	1,702.14	-9,929.38	10,054.74	1.24	0.05	-1.24
14,687.00	90.01	269.12	6,939.03	1,700.32	-10,024.36	10,148.98	0.49	-0.15	0.46
14,783.00	90.41	269.30	6,938.68	1,698.99	-10,120.35	10,244.27	0.46	0.42	0.19
14,878.00	89.97	270.26	6,938.36	1,698.63	-10,215.35	10,338.68	1.11	-0.46	1.01
14,974.00	90.06	270.44	6,938.34	1,699.21	-10,311.35	10,434.19	0.21	0.09	0.19
15,069.00	90.10	269.07	6,938.21	1,698.81	-10,406.35	10,528.59	1.44	0.04	-1.44
15,165.00	90.15	269.91	6,938.00	1,697.95	-10,502.34	10,623.94	0.88	0.05	0.88
15,260.00	90.10	269.03	6,937.79	1,697.08	-10,597.34	10,718.29	0.93	-0.05	-0.93
15,356.00	90.15	270.18	6,937.58	1,696.41	-10,693.33	10,813.66	1.20	0.05	1.20
15,451.00	90.06	269.69	6,937.41	1,696.31	-10,788.33	10,908.10	0.52	-0.09	-0.52
15,547.00	90.15	269.87	6,937.23	1,695.94	-10,884.33	11,003.51	0.21	0.09	0.19
15,642.00	90.23	270.00	6,936.92	1,695.83	-10,979.33	11,097.94	0.16	0.08	0.14
15,737.00	89.84	269.07	6,936.86	1,695.06	-11,074.33	11,192.31	1.06	-0.41	-0.98
15,833.00	90.23	270.04	6,936.80	1,694.31	-11,170.32	11,287.67	1.09	0.41	1.01
15,965.91	90.29	268.72	6,936.19	1,692.87	-11,303.22	11,419.64	1.00	0.05	-0.99
<b>Crossing Section 17/18 @ 15965'MD</b>									
16,023.00	90.32	268.15	6,935.89	1,691.31	-11,360.29	11,476.21	1.00	0.05	-0.99
16,119.00	90.15	269.25	6,935.49	1,689.13	-11,456.26	11,571.40	1.16	-0.18	1.15
16,214.00	90.37	269.60	6,935.06	1,688.18	-11,551.25	11,665.74	0.44	0.23	0.37
16,310.00	90.37	269.82	6,934.44	1,687.69	-11,647.25	11,761.13	0.23	0.00	0.23

## Survey Report

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well VT Glenmere C1-16-18
<b>Project:</b>	Weld County, CO (NAD83)	<b>TVD Reference:</b>	KB=29 @ 4678.00ft (Patterson #901)
<b>Site:</b>	Vetting PAD (Sec 15-T5N-R65W)	<b>MD Reference:</b>	KB=29 @ 4678.00ft (Patterson #901)
<b>Well:</b>	VT Glenmere C1-16-18	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
16,405.00	90.10	269.16	6,934.05	1,686.85	-11,742.25	11,855.48	0.75	-0.28	-0.69
16,501.00	90.15	270.44	6,933.84	1,686.51	-11,838.24	11,950.89	1.33	0.05	1.33
16,596.00	90.15	269.96	6,933.59	1,686.85	-11,933.24	12,045.38	0.51	0.00	-0.51
16,692.00	90.23	270.00	6,933.28	1,686.81	-12,029.24	12,140.82	0.09	0.08	0.04
16,787.00	90.19	269.12	6,932.93	1,686.08	-12,124.24	12,235.18	0.93	-0.04	-0.93
16,883.00	90.28	270.22	6,932.53	1,685.53	-12,220.23	12,330.57	1.15	0.09	1.15
16,979.00	90.23	270.00	6,932.11	1,685.71	-12,316.23	12,426.03	0.24	-0.05	-0.23
17,074.00	90.37	269.96	6,931.61	1,685.68	-12,411.23	12,520.48	0.15	0.15	-0.04
17,170.00	90.32	269.21	6,931.03	1,684.99	-12,507.23	12,615.84	0.78	-0.05	-0.78
17,265.00	90.15	270.04	6,930.64	1,684.36	-12,602.22	12,710.22	0.89	-0.18	0.87
17,361.00	89.62	269.96	6,930.83	1,684.36	-12,698.22	12,805.67	0.56	-0.55	-0.08
17,456.00	89.62	270.79	6,931.46	1,684.99	-12,793.22	12,900.18	0.87	0.00	0.87
17,552.00	89.66	271.76	6,932.07	1,687.12	-12,889.19	12,995.83	1.01	0.04	1.01
17,647.00	89.62	271.85	6,932.66	1,690.11	-12,984.14	13,090.55	0.10	-0.04	0.09
17,743.00	89.48	271.23	6,933.42	1,692.69	-13,080.10	13,186.23	0.66	-0.15	-0.65
17,838.00	89.48	271.10	6,934.28	1,694.63	-13,175.08	13,280.87	0.14	0.00	-0.14
17,934.00	89.62	272.07	6,935.03	1,697.28	-13,271.04	13,376.56	1.02	0.15	1.01
18,029.00	89.75	272.07	6,935.56	1,700.71	-13,365.97	13,471.31	0.14	0.14	0.00
18,125.00	89.66	272.07	6,936.05	1,704.18	-13,461.91	13,567.07	0.09	-0.09	0.00
18,221.00	89.62	272.12	6,936.65	1,707.69	-13,557.84	13,662.82	0.07	-0.04	0.05
18,316.00	89.53	271.23	6,937.36	1,710.47	-13,652.80	13,757.53	0.94	-0.09	-0.94
18,412.00	89.57	271.45	6,938.11	1,712.71	-13,748.77	13,853.19	0.23	0.04	0.23
18,508.00	89.53	271.23	6,938.87	1,714.96	-13,844.74	13,948.84	0.23	-0.04	-0.23
18,603.00	89.84	271.63	6,939.39	1,717.33	-13,939.71	14,043.52	0.53	0.33	0.42
18,699.00	89.62	271.45	6,939.84	1,719.91	-14,035.67	14,139.20	0.30	-0.23	-0.19
18,794.00	89.57	271.59	6,940.51	1,722.43	-14,130.64	14,233.89	0.16	-0.05	0.15
18,890.00	89.70	272.07	6,941.12	1,725.49	-14,226.59	14,329.61	0.52	0.14	0.50
18,985.00	89.44	271.01	6,941.84	1,728.04	-14,321.55	14,424.30	1.15	-0.27	-1.12
19,080.00	89.66	271.76	6,942.58	1,730.34	-14,416.52	14,518.97	0.82	0.23	0.79
19,176.00	89.62	271.23	6,943.19	1,732.85	-14,512.48	14,614.64	0.55	-0.04	-0.55
19,271.00	89.57	271.10	6,943.86	1,734.78	-14,607.46	14,709.28	0.15	-0.05	-0.14
19,367.00	89.48	270.84	6,944.65	1,736.40	-14,703.44	14,804.88	0.29	-0.09	-0.27
19,462.00	89.66	271.94	6,945.37	1,738.71	-14,798.41	14,899.55	1.17	0.19	1.16
19,577.00	89.48	271.23	6,946.23	1,741.89	-14,913.36	15,014.18	0.64	-0.16	-0.62
19,653.00	89.70	272.07	6,946.77	1,744.08	-14,989.33	15,089.94	1.14	0.29	1.11
19,748.00	89.57	271.63	6,947.38	1,747.14	-15,084.28	15,184.67	0.48	-0.14	-0.46
19,844.00	89.79	272.29	6,947.92	1,750.43	-15,180.22	15,280.41	0.72	0.23	0.69
19,939.00	89.75	272.25	6,948.30	1,754.19	-15,275.14	15,375.19	0.06	-0.04	-0.04
20,034.00	89.66	271.90	6,948.79	1,757.63	-15,370.08	15,469.94	0.38	-0.09	-0.37
20,129.00	89.62	271.28	6,949.38	1,760.26	-15,465.04	15,564.64	0.65	-0.04	-0.65
20,225.00	89.75	270.62	6,949.91	1,761.86	-15,561.03	15,660.24	0.70	0.14	-0.69
20,321.00	89.57	269.25	6,950.48	1,761.75	-15,657.02	15,755.67	1.44	-0.19	-1.43
20,416.00	89.53	269.38	6,951.23	1,760.61	-15,752.01	15,849.99	0.14	-0.04	0.14

## Survey Report

<b>Company:</b>	Extraction Oil & Gas	<b>Local Co-ordinate Reference:</b>	Well VT Glenmere C1-16-18
<b>Project:</b>	Weld County, CO (NAD83)	<b>TVD Reference:</b>	KB=29 @ 4678.00ft (Patterson #901)
<b>Site:</b>	Vetting PAD (Sec 15-T5N-R65W)	<b>MD Reference:</b>	KB=29 @ 4678.00ft (Patterson #901)
<b>Well:</b>	VT Glenmere C1-16-18	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
20,511.00	89.75	269.91	6,951.82	1,760.02	-15,847.01	15,944.37	0.60	0.23	0.56
20,607.00	89.62	269.30	6,952.35	1,759.36	-15,943.00	16,039.74	0.65	-0.14	-0.64
20,680.00	89.48	269.03	6,952.92	1,758.30	-16,015.99	16,112.20	0.42	-0.19	-0.37
<b>Last MWD Survey @ 20680'MD</b>									
20,710.00	89.48	269.03	6,953.20	1,757.79	-16,045.99	16,141.96	0.00	0.00	0.00
<b>PTB @ TD @ 20710'MD (521'FWL &amp; 148'FNL)</b>									

### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,516.00	1,513.88	5.84	-33.96	Tie in to Surface Surveys @ 1516'MD
1,569.00	1,566.36	8.82	-40.66	First MWD Survey @ 1569'MD
2,579.38	2,514.59	154.67	-334.24	30°Inclination @ 2579'MD
3,261.46	3,067.73	314.89	-698.56	Crossing Section 15/16 @ 3261'MD
8,287.52	6,910.50	1,600.58	-3,632.54	70°Inclination @ 8287'MD
10,675.06	6,947.39	1,624.07	-6,013.55	Crossing Section 16/17 @ 10675'MD
15,965.91	6,936.19	1,692.87	-11,303.22	Crossing Section 17/18 @ 15965'MD
20,680.00	6,952.92	1,758.30	-16,015.99	Last MWD Survey @ 20680'MD
20,710.00	6,953.20	1,757.79	-16,045.99	PTB @ TD @ 20710'MD (521'FWL & 148'FNL)

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