

Extraction Oil & Gas

Weld County, CO (NAD83)

Sec 10-T01S-R68W Interchange Pad

Interchange B N35-20-5C

Wellbore #1

Design: Wellbore #1

Standard Survey Report

17 June, 2019

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-5C
Project:	Weld County, CO (NAD83)	TVD Reference:	KB @ 5241.00usft (Patterson 901)
Site:	Sec 10-T01S-R68W Interchange Pad	MD Reference:	KB @ 5241.00usft (Patterson 901)
Well:	Interchange B N35-20-5C	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 10-T01S-R68W Interchange Pad			
Site Position:		Northing:	1,235,601.28 usft	Latitude:	39.978987
From:	Map	Easting:	3,142,562.59 usft	Longitude:	-104.991281
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.33 °

Well		Interchange B N35-20-5C				
Well Position	+N/-S	0.00 usft	Northing:	1,235,592.70 usft	Latitude:	39.978964
	+E/-W	0.00 usft	Easting:	3,142,527.60 usft	Longitude:	-104.991406
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,213.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/17/2019	8.10	66.44	51,897.16981962

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	7.22	

Survey Program	Date	6/17/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
122.30	1,602.30	Surface Surveys (Wellbore #1)	MWD	MWD - Standard	
1,602.30	18,720.00	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	
122.30	0.18	310.81	122.30	0.13	-0.15	0.11	0.15	0.15	0.00	
209.30	0.35	278.11	209.30	0.25	-0.51	0.19	0.25	0.20	-37.59	
297.30	0.26	246.82	297.30	0.21	-0.96	0.09	0.21	-0.10	-35.56	
384.30	0.57	256.67	384.30	0.03	-1.56	-0.16	0.36	0.36	11.32	
471.30	0.35	315.55	471.29	0.12	-2.17	-0.15	0.56	-0.25	67.68	
559.30	0.79	42.30	559.29	0.76	-1.95	0.51	0.96	0.50	98.58	
646.30	1.10	41.16	646.28	1.84	-1.00	1.70	0.36	0.36	-1.31	
733.30	2.77	25.16	733.23	4.37	0.45	4.39	2.00	1.92	-18.39	
820.30	4.61	33.60	820.04	9.18	3.27	9.52	2.20	2.11	9.70	

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Well:	Interchange B N35-20-5C	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)
908.30	5.76	33.16	907.68	15.83	7.65	16.66	1.31	1.31	-0.50
995.30	7.65	35.00	994.08	24.23	13.36	25.71	2.19	2.17	2.11
1,082.30	9.89	34.57	1,080.06	35.12	20.92	37.47	2.58	2.57	-0.49
1,169.30	11.16	35.18	1,165.59	48.16	30.01	51.55	1.47	1.46	0.70
1,257.30	12.61	35.00	1,251.70	62.99	40.43	67.57	1.65	1.65	-0.20
1,344.30	15.16	35.44	1,336.16	80.04	52.47	86.00	2.93	2.93	0.51
1,431.30	16.30	35.18	1,419.90	99.29	66.10	106.81	1.31	1.31	-0.30
1,518.30	17.89	35.71	1,503.05	120.12	80.94	129.34	1.84	1.83	0.61
1,602.30	20.21	37.47	1,582.44	142.11	97.30	153.22	2.85	2.76	2.10
Tie into Surface Surveys									
1,671.00	21.12	37.54	1,646.72	161.34	112.06	174.15	1.33	1.32	0.10
First MWD Survey @ 1671' MD									
1,767.00	24.13	38.02	1,735.33	190.52	134.69	205.95	3.14	3.14	0.50
1,862.00	26.82	35.69	1,821.08	223.23	159.16	241.48	3.02	2.83	-2.45
1,957.00	25.90	33.48	1,906.21	257.95	183.11	278.93	1.42	-0.97	-2.33
2,053.00	25.32	32.95	1,992.78	292.66	205.84	316.22	0.65	-0.60	-0.55
2,148.00	27.66	34.80	2,077.80	327.82	229.48	354.08	2.61	2.46	1.95
2,244.00	25.41	31.76	2,163.68	363.64	253.04	392.57	2.74	-2.34	-3.17
2,339.00	28.59	36.52	2,248.33	399.25	277.30	430.95	4.04	3.35	5.01
2,434.00	28.59	36.08	2,331.74	435.89	304.22	470.68	0.22	0.00	-0.46
2,530.00	23.16	31.24	2,418.10	470.62	327.55	508.08	6.06	-5.66	-5.04
2,625.00	27.22	35.42	2,504.05	504.32	349.85	544.31	4.66	4.27	4.40
2,720.00	28.33	39.96	2,588.11	539.31	376.92	582.42	2.51	1.17	4.78
2,816.00	31.20	40.49	2,671.44	575.68	407.70	622.38	3.00	2.99	0.55
2,911.00	28.81	39.56	2,753.70	612.05	438.26	662.30	2.56	-2.52	-0.98
3,007.00	30.36	36.66	2,837.19	649.35	467.48	702.98	2.20	1.61	-3.02
3,102.00	26.78	36.30	2,920.61	685.87	494.50	742.61	3.77	-3.77	-0.38
3,198.00	29.34	36.79	3,005.32	722.14	521.39	781.97	2.68	2.67	0.51
3,293.00	25.41	36.44	3,089.66	757.19	547.44	820.02	4.14	-4.14	-0.37
3,389.00	29.56	34.67	3,174.81	793.25	573.16	859.03	4.41	4.32	-1.84
3,484.00	26.65	34.23	3,258.60	830.15	598.48	898.82	3.07	-3.06	-0.46
3,579.00	30.00	33.70	3,342.21	867.53	623.65	939.07	3.54	3.53	-0.56
3,675.00	26.38	31.54	3,426.81	905.69	648.13	980.00	3.92	-3.77	-2.25
3,770.00	29.17	32.60	3,510.86	943.19	671.65	1,020.16	2.98	2.94	1.12
3,865.00	27.18	30.84	3,594.60	981.33	695.25	1,060.96	2.27	-2.09	-1.85
3,960.00	29.92	33.17	3,678.04	1,019.80	719.34	1,102.16	3.11	2.88	2.45
4,056.00	25.81	31.10	3,762.90	1,057.75	743.24	1,142.82	4.40	-4.28	-2.16
4,151.00	27.84	36.04	3,847.68	1,093.40	766.98	1,181.17	3.17	2.14	5.20
4,247.00	30.53	36.88	3,931.48	1,131.04	794.81	1,222.01	2.83	2.80	0.88
4,342.00	27.18	36.66	4,014.68	1,167.76	822.25	1,261.89	3.53	-3.53	-0.23
4,438.00	31.07	38.15	4,098.52	1,204.84	850.66	1,302.25	4.12	4.05	1.55
4,533.00	27.09	38.64	4,181.53	1,241.03	879.32	1,341.75	4.20	-4.19	0.52
4,628.00	30.09	36.70	4,264.94	1,277.03	907.07	1,380.95	3.31	3.16	-2.04

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Survey									
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4,724.00	26.16	34.98	4,349.59	1,313.68	933.59	1,420.65	4.18	-4.09	-1.79
4,819.00	28.50	35.07	4,433.98	1,349.39	958.62	1,459.23	2.46	2.46	0.09
4,914.00	24.22	33.92	4,519.08	1,384.13	982.53	1,496.69	4.54	-4.51	-1.21
5,010.00	27.00	36.08	4,605.65	1,418.09	1,006.36	1,533.38	3.05	2.90	2.25
5,105.00	31.60	36.26	4,688.47	1,455.60	1,033.79	1,574.05	4.84	4.84	0.19
5,201.00	28.77	35.95	4,771.44	1,494.59	1,062.24	1,616.31	2.95	-2.95	-0.32
5,296.00	30.53	34.80	4,854.00	1,532.92	1,089.43	1,657.75	1.95	1.85	-1.21
5,392.00	27.66	32.91	4,937.88	1,571.66	1,115.46	1,699.45	3.14	-2.99	-1.97
5,511.00	31.86	35.16	5,041.17	1,620.55	1,148.57	1,752.12	3.65	3.53	1.89
5,606.00	34.91	35.95	5,120.48	1,663.06	1,178.98	1,798.12	3.24	3.21	0.83
5,701.00	32.08	34.01	5,199.70	1,705.99	1,209.05	1,844.49	3.18	-2.98	-2.04
5,796.00	28.90	31.63	5,281.56	1,746.46	1,235.21	1,887.92	3.58	-3.35	-2.51
5,892.00	24.66	29.25	5,367.24	1,783.70	1,257.17	1,927.63	4.55	-4.42	-2.48
5,987.00	26.34	36.26	5,453.01	1,818.00	1,279.33	1,964.44	3.63	1.77	7.38
6,083.00	31.37	34.94	5,537.06	1,855.68	1,306.25	2,005.21	5.28	5.24	-1.38
6,178.00	29.39	33.79	5,619.01	1,895.33	1,333.38	2,047.95	2.17	-2.08	-1.21
6,273.00	27.40	30.62	5,702.58	1,933.52	1,357.48	2,088.87	2.63	-2.09	-3.34
6,369.00	26.91	38.99	5,788.03	1,969.42	1,382.41	2,127.63	4.01	-0.51	8.72
6,464.00	24.22	35.55	5,873.73	2,002.00	1,407.27	2,163.07	3.23	-2.83	-3.62
6,559.00	26.12	35.91	5,959.71	2,034.79	1,430.87	2,198.57	2.01	2.00	0.38
6,655.00	29.52	40.36	6,044.61	2,069.94	1,458.59	2,236.93	4.15	3.54	4.64
6,750.00	25.85	38.46	6,128.72	2,104.01	1,486.64	2,274.25	3.97	-3.86	-2.00
6,845.00	27.40	41.90	6,213.65	2,136.50	1,514.12	2,309.94	2.30	1.63	3.62
6,941.00	24.08	38.77	6,300.11	2,168.22	1,541.15	2,344.81	3.74	-3.46	-3.26
7,036.00	21.17	36.74	6,387.79	2,197.08	1,563.55	2,376.26	3.17	-3.06	-2.14
7,132.00	17.15	36.26	6,478.46	2,222.40	1,582.30	2,403.73	4.19	-4.19	-0.50
7,227.00	13.79	35.20	6,570.00	2,242.95	1,597.11	2,425.98	3.55	-3.54	-1.12
7,322.00	10.87	34.50	6,662.80	2,259.59	1,608.72	2,443.95	3.08	-3.07	-0.74
7,417.00	9.15	29.74	6,756.35	2,273.53	1,617.54	2,458.89	2.01	-1.81	-5.01
7,513.00	7.78	28.11	6,851.30	2,285.89	1,624.39	2,472.01	1.45	-1.43	-1.70
7,608.00	6.27	27.36	6,945.59	2,296.17	1,629.80	2,482.89	1.59	-1.59	-0.79
7,703.00	4.95	20.79	7,040.13	2,304.61	1,633.64	2,491.75	1.54	-1.39	-6.92
7,798.00	4.11	14.75	7,134.84	2,311.73	1,635.96	2,499.11	1.02	-0.88	-6.36
7,894.00	3.49	9.29	7,230.62	2,317.94	1,637.31	2,505.44	0.75	-0.65	-5.69
7,989.00	2.70	2.67	7,325.49	2,323.03	1,637.88	2,510.56	0.91	-0.83	-6.97
8,085.00	2.56	2.40	7,421.38	2,327.43	1,638.08	2,514.95	0.15	-0.15	-0.28
8,180.00	8.62	354.38	7,515.89	2,336.65	1,637.47	2,524.01	6.42	6.38	-8.44
8,275.00	17.06	4.03	7,608.44	2,357.67	1,637.75	2,544.91	9.14	8.88	10.16
8,370.00	23.73	352.80	7,697.47	2,390.59	1,636.33	2,577.38	8.11	7.02	-11.82
8,466.00	29.30	358.08	7,783.35	2,433.27	1,633.12	2,619.32	6.30	5.80	5.50
8,473.46	30.00	358.38	7,789.83	2,436.96	1,633.01	2,622.96	9.56	9.35	4.04
30° Inclination @ 8473.46' MD									
8,561.00	38.22	1.17	7,862.26	2,485.99	1,632.94	2,671.60	9.56	9.39	3.19
8,657.00	48.79	0.64	7,931.79	2,551.98	1,633.95	2,737.19	11.02	11.01	-0.55

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8,752.00	60.27	0.86	7,986.82	2,629.21	1,634.97	2,813.94	12.09	12.08	0.23	
8,848.00	68.80	0.86	8,028.06	2,715.80	1,636.27	2,900.00	8.89	8.89	0.00	
8,864.43	70.00	1.00	8,033.84	2,731.17	1,636.52	2,915.29	7.35	7.30	0.86	
70° Inclination @ 8864.43' MD										
8,917.91	73.91	1.45	8,050.40	2,782.00	1,637.61	2,965.85	7.35	7.31	0.83	
Cross @ 8917.91' MD										
8,943.00	75.74	1.65	8,056.97	2,806.21	1,638.27	2,989.94	7.35	7.31	0.81	
9,039.00	83.34	2.67	8,074.39	2,900.47	1,641.83	3,083.91	7.99	7.92	1.06	
9,134.00	88.25	2.67	8,081.35	2,995.08	1,646.24	3,178.33	5.17	5.17	0.00	
9,230.00	88.47	2.58	8,084.10	3,090.94	1,650.64	3,273.98	0.25	0.23	-0.09	
9,325.00	89.53	2.45	8,085.76	3,185.84	1,654.81	3,368.64	1.12	1.12	-0.14	
9,420.00	89.09	359.71	8,086.90	3,280.80	1,656.60	3,463.08	2.92	-0.46	-2.88	
9,515.00	88.60	359.89	8,088.82	3,375.78	1,656.27	3,557.26	0.55	-0.52	0.19	
9,611.00	91.03	359.71	8,089.13	3,471.78	1,655.93	3,652.45	2.54	2.53	-0.19	
9,706.00	91.03	359.45	8,087.42	3,566.76	1,655.24	3,746.59	0.27	0.00	-0.27	
9,802.00	90.90	358.88	8,085.80	3,662.73	1,653.84	3,841.63	0.61	-0.14	-0.59	
9,897.00	90.72	0.42	8,084.46	3,757.72	1,653.26	3,935.79	1.63	-0.19	1.62	
9,993.00	91.30	359.71	8,082.77	3,853.70	1,653.37	4,031.02	0.95	0.60	-0.74	
10,088.00	91.43	358.83	8,080.50	3,948.67	1,652.16	4,125.08	0.94	0.14	-0.93	
10,184.00	89.79	359.76	8,079.48	4,044.65	1,650.97	4,220.16	1.96	-1.71	0.97	
10,279.00	90.72	0.24	8,079.06	4,139.65	1,650.97	4,314.40	1.10	0.98	0.51	
10,374.00	89.00	1.12	8,079.29	4,234.64	1,652.10	4,408.78	2.03	-1.81	0.93	
10,470.00	89.70	0.64	8,080.38	4,330.62	1,653.58	4,504.18	0.88	0.73	-0.50	
10,565.00	89.62	359.67	8,080.94	4,425.62	1,653.83	4,598.46	1.02	-0.08	-1.02	
10,661.00	91.52	0.90	8,079.99	4,521.60	1,654.31	4,693.74	2.36	1.98	1.28	
10,756.00	91.47	1.52	8,077.51	4,616.55	1,656.32	4,788.19	0.65	-0.05	0.65	
10,852.00	90.90	2.01	8,075.53	4,712.48	1,659.27	4,883.73	0.78	-0.59	0.51	
10,947.00	88.86	0.02	8,075.72	4,807.46	1,660.95	4,978.16	3.00	-2.15	-2.09	
11,043.00	89.13	0.07	8,077.41	4,903.44	1,661.03	5,073.39	0.29	0.28	0.05	
11,138.00	89.35	359.76	8,078.67	4,998.43	1,660.89	5,167.61	0.40	0.23	-0.33	
11,234.00	89.48	359.10	8,079.65	5,094.42	1,659.93	5,262.72	0.70	0.14	-0.69	
11,329.00	89.35	358.57	8,080.62	5,189.40	1,658.00	5,356.70	0.57	-0.14	-0.56	
11,425.00	90.63	0.73	8,080.64	5,285.39	1,657.42	5,451.85	2.62	1.33	2.25	
11,520.00	90.63	359.85	8,079.59	5,380.38	1,657.90	5,546.15	0.93	0.00	-0.93	
11,615.00	90.06	359.05	8,079.02	5,475.37	1,656.98	5,640.28	1.03	-0.60	-0.84	
11,711.00	91.25	358.26	8,077.92	5,571.34	1,654.73	5,735.20	1.49	1.24	-0.82	
11,806.00	91.03	357.33	8,076.03	5,666.25	1,651.08	5,828.89	1.01	-0.23	-0.98	
11,902.00	91.30	356.94	8,074.08	5,762.11	1,646.28	5,923.39	0.49	0.28	-0.41	
11,997.00	91.74	356.94	8,071.56	5,856.94	1,641.21	6,016.83	0.46	0.46	0.00	
12,093.00	91.52	359.18	8,068.83	5,952.84	1,637.96	6,111.56	2.34	-0.23	2.33	
12,188.00	90.85	1.30	8,066.86	6,047.81	1,638.36	6,205.83	2.34	-0.71	2.23	
12,283.00	91.12	0.33	8,065.23	6,142.79	1,639.71	6,300.22	1.06	0.28	-1.02	
12,379.00	91.21	359.85	8,063.28	6,238.77	1,639.86	6,395.46	0.51	0.09	-0.50	

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-5C
Project:	Weld County, CO (NAD83)	TVD Reference:	KB @ 5241.00usft (Patterson 901)
Site:	Sec 10-T01S-R68W Interchange Pad	MD Reference:	KB @ 5241.00usft (Patterson 901)
Well:	Interchange B N35-20-5C	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)	
12,474.00	90.41	2.58	8,061.93	6,333.73	1,641.88	6,489.92	2.99	-0.84	2.87	
12,569.00	91.12	2.40	8,060.67	6,428.63	1,646.00	6,584.58	0.77	0.75	-0.19	
12,665.00	89.22	1.39	8,060.38	6,524.57	1,649.18	6,680.16	2.24	-1.98	-1.05	
12,760.00	89.70	1.21	8,061.28	6,619.54	1,651.33	6,774.65	0.54	0.51	-0.19	
12,855.00	90.59	1.48	8,061.04	6,714.51	1,653.56	6,869.15	0.98	0.94	0.28	
12,951.00	91.21	1.78	8,059.53	6,810.46	1,656.29	6,964.68	0.72	0.65	0.31	
13,047.00	88.60	1.52	8,059.69	6,906.41	1,659.06	7,060.22	2.73	-2.72	-0.27	
13,141.00	88.91	0.95	8,061.73	7,000.37	1,661.08	7,153.68	0.69	0.33	-0.61	
13,237.00	89.62	0.51	8,062.96	7,096.35	1,662.31	7,249.06	0.87	0.74	-0.46	
13,332.00	90.19	0.33	8,063.12	7,191.35	1,663.00	7,343.39	0.63	0.60	-0.19	
13,428.00	91.30	0.37	8,061.87	7,287.34	1,663.59	7,438.69	1.16	1.16	0.04	
13,523.00	89.04	359.98	8,061.59	7,382.33	1,663.88	7,532.96	2.41	-2.38	-0.41	
13,619.00	89.88	0.07	8,062.49	7,478.33	1,663.92	7,628.20	0.88	0.88	0.09	
13,714.00	90.23	0.15	8,062.40	7,573.32	1,664.10	7,722.47	0.38	0.37	0.08	
13,810.00	91.52	0.46	8,060.94	7,669.31	1,664.61	7,817.76	1.38	1.34	0.32	
13,906.00	88.33	358.96	8,061.06	7,765.29	1,664.13	7,912.92	3.67	-3.32	-1.56	
13,918.21	88.42	358.91	8,061.41	7,777.50	1,663.90	7,924.99	0.82	0.71	-0.41	
Cross @ 13918.21' MD										
14,001.00	89.00	358.57	8,063.28	7,860.25	1,662.08	8,006.86	0.82	0.71	-0.41	
14,097.00	89.70	358.44	8,064.36	7,956.21	1,659.58	8,101.74	0.74	0.73	-0.14	
14,192.00	91.03	358.57	8,063.76	8,051.17	1,657.10	8,195.64	1.41	1.40	0.14	
14,288.00	89.62	359.32	8,063.22	8,147.15	1,655.33	8,290.63	1.66	-1.47	0.78	
14,383.00	89.70	358.57	8,063.78	8,242.13	1,653.58	8,384.64	0.79	0.08	-0.79	
14,479.00	90.01	358.08	8,064.02	8,338.09	1,650.78	8,479.49	0.60	0.32	-0.51	
14,575.00	90.90	359.85	8,063.26	8,434.06	1,649.04	8,574.48	2.06	0.93	1.84	
14,670.00	92.31	359.14	8,060.60	8,529.02	1,648.20	8,668.58	1.66	1.48	-0.75	
14,765.00	91.38	0.11	8,057.54	8,623.97	1,647.58	8,762.69	1.41	-0.98	1.02	
14,861.00	87.76	0.20	8,058.26	8,719.95	1,647.84	8,857.95	3.77	-3.77	0.09	
14,956.00	89.31	359.54	8,060.69	8,814.91	1,647.63	8,952.13	1.77	1.63	-0.69	
15,051.00	91.87	358.96	8,059.71	8,909.89	1,646.38	9,046.20	2.76	2.69	-0.61	
15,146.00	90.32	358.52	8,057.90	9,004.85	1,644.30	9,140.14	1.70	-1.63	-0.46	
15,242.00	90.01	358.44	8,057.62	9,100.81	1,641.75	9,235.02	0.33	-0.32	-0.08	
15,337.00	90.41	359.36	8,057.27	9,195.79	1,639.93	9,329.02	1.06	0.42	0.97	
15,433.00	90.10	359.67	8,056.84	9,291.79	1,639.11	9,424.15	0.46	-0.32	0.32	
15,528.00	89.44	358.96	8,057.22	9,386.78	1,637.98	9,518.25	1.02	-0.69	-0.75	
15,624.00	89.04	358.22	8,058.50	9,482.74	1,635.61	9,613.15	0.88	-0.42	-0.77	
15,719.00	90.85	0.11	8,058.59	9,577.72	1,634.23	9,707.20	2.75	1.91	1.99	
15,814.00	90.06	359.67	8,057.84	9,672.72	1,634.05	9,801.42	0.95	-0.83	-0.46	
15,910.00	90.28	0.86	8,057.55	9,768.72	1,634.49	9,896.71	1.26	0.23	1.24	
16,005.00	90.06	0.20	8,057.27	9,863.71	1,635.37	9,991.06	0.73	-0.23	-0.69	
16,101.00	90.85	0.86	8,056.51	9,959.70	1,636.26	10,086.40	1.07	0.82	0.69	
16,196.00	89.84	359.89	8,055.93	10,054.70	1,636.88	10,180.72	1.47	-1.06	-1.02	
16,291.00	89.75	1.21	8,056.27	10,149.69	1,637.79	10,275.07	1.39	-0.09	1.39	
16,387.00	91.03	1.61	8,055.62	10,245.66	1,640.15	10,370.58	1.40	1.33	0.42	

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-5C
Project:	Weld County, CO (NAD83)	TVD Reference:	KB @ 5241.00usft (Patterson 901)
Site:	Sec 10-T01S-R68W Interchange Pad	MD Reference:	KB @ 5241.00usft (Patterson 901)
Well:	Interchange B N35-20-5C	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)	
16,483.00	90.01	0.60	8,054.75	10,341.63	1,642.01	10,466.02	1.50	-1.06	-1.05	
16,578.00	90.77	0.73	8,054.10	10,436.62	1,643.11	10,560.40	0.81	0.80	0.14	
16,673.00	91.52	0.51	8,052.20	10,531.60	1,644.14	10,654.75	0.82	0.79	-0.23	
16,768.00	90.94	359.85	8,050.16	10,626.57	1,644.43	10,749.01	0.92	-0.61	-0.69	
16,864.00	90.59	359.67	8,048.88	10,722.57	1,644.03	10,844.19	0.41	-0.36	-0.19	
16,960.00	90.32	358.96	8,048.12	10,818.55	1,642.88	10,939.27	0.79	-0.28	-0.74	
17,055.00	90.28	358.96	8,047.62	10,913.54	1,641.16	11,033.28	0.04	-0.04	0.00	
17,150.00	90.59	358.88	8,046.90	11,008.52	1,639.37	11,127.28	0.34	0.33	-0.08	
17,246.00	90.37	0.07	8,046.10	11,104.51	1,638.49	11,222.40	1.26	-0.23	1.24	
17,342.00	90.06	359.05	8,045.74	11,200.50	1,637.75	11,317.54	1.11	-0.32	-1.06	
17,437.00	89.88	358.17	8,045.79	11,295.48	1,635.45	11,411.47	0.95	-0.19	-0.93	
17,533.00	90.01	358.13	8,045.88	11,391.43	1,632.35	11,506.27	0.14	0.14	-0.04	
17,628.00	89.93	358.04	8,045.93	11,486.37	1,629.17	11,600.06	0.13	-0.08	-0.09	
17,723.00	89.44	356.67	8,046.45	11,581.27	1,624.79	11,693.65	1.53	-0.52	-1.44	
17,819.00	88.91	358.57	8,047.83	11,677.17	1,620.80	11,788.29	2.05	-0.55	1.98	
17,914.00	88.60	358.39	8,049.90	11,772.11	1,618.29	11,882.17	0.38	-0.33	-0.19	
18,010.00	89.66	359.32	8,051.36	11,868.08	1,616.37	11,977.13	1.47	1.10	0.97	
18,105.00	90.37	359.98	8,051.33	11,963.08	1,615.79	12,071.30	1.02	0.75	0.69	
18,201.00	91.83	359.41	8,049.49	12,059.06	1,615.28	12,166.45	1.63	1.52	-0.59	
18,296.00	91.52	358.70	8,046.71	12,154.00	1,613.71	12,260.45	0.82	-0.33	-0.75	
18,391.00	91.25	358.35	8,044.41	12,248.94	1,611.27	12,354.33	0.47	-0.28	-0.37	
18,487.00	90.81	357.38	8,042.69	12,344.86	1,607.69	12,449.03	1.11	-0.46	-1.01	
18,582.00	91.25	356.81	8,040.98	12,439.72	1,602.88	12,542.54	0.76	0.46	-0.60	
18,659.00	91.65	356.28	8,039.03	12,516.56	1,598.24	12,618.18	0.86	0.52	-0.69	
Last MWD Survey @ 18659' MD										
18,720.00	91.65	356.28	8,037.28	12,577.40	1,594.28	12,678.04	0.00	0.00	0.00	
Projection to TD @ 18720' MD 510' FNL/ 1550' FEL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
30° Inclination @ 8473.4	0.00	0.00	7,789.83	2,436.95	1,633.00	1,238,038.97	3,144,146.60	39.985654	-104.985579	
- hit/miss target										
- Shape										
- actual wellpath misses target center by 0.01usft at 8473.46usft MD (7789.83 TVD, 2436.95 N, 1633.01 E)										
- Point										
70° Inclination @ 8864.4	0.00	0.00	8,033.84	2,731.17	1,636.52	1,238,333.21	3,144,148.43	39.986462	-104.985566	
- actual wellpath hits target center										
- Point										
Cross @ 8917.91' MD	0.00	0.00	8,050.40	2,782.00	1,637.61	1,238,384.04	3,144,149.23	39.986601	-104.985562	
- actual wellpath hits target center										
- Point										
Cross @ 13918.21' MD	0.00	0.00	8,061.41	7,777.50	1,663.90	1,243,379.61	3,144,146.87	40.000315	-104.985467	
- actual wellpath hits target center										
- Point										

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-5C
Project:	Weld County, CO (NAD83)	TVD Reference:	KB @ 5241.00usft (Patterson 901)
Site:	Sec 10-T01S-R68W Interchange Pad	MD Reference:	KB @ 5241.00usft (Patterson 901)
Well:	Interchange B N35-20-5C	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.15 Single User Db

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,602.30	1,582.44	142.11	97.30	Tie into Surface Surveys
1,671.00	1,646.72	161.34	112.06	First MWD Survey @ 1671' MD
8,473.46	7,789.83	2,436.96	1,633.01	30° Inclination @ 8473.46' MD
8,864.43	8,033.84	2,731.17	1,636.52	70° Inclination @ 8864.43' MD
8,917.91	8,050.40	2,782.00	1,637.61	Cross @ 8917.91' MD
13,918.21	8,061.41	7,777.50	1,663.90	Cross @ 13918.21' MD
18,659.00	8,039.03	12,516.56	1,598.24	Last MWD Survey @ 18659' MD
18,720.00	8,037.28	12,577.40	1,594.28	Projection to TD @ 18720' MD 510' FNL/ 1550' FEL

Checked By: _____ Approved By: _____ Date: _____