

Extraction Oil & Gas

Weld County, CO (NAD83)

Sec 10-T01S-R68W Interchange Pad

Interchange B N35-20-6N

Wellbore #1

Design: Wellbore #1

Standard Survey Report

20 June, 2019

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-6N
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 N35-20-6N	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 N35-20-6N				
Well Position	+N/-S	0.00 usft	Northing:	1,235,597.17 usft	Latitude:	39.978976
	+E/-W	0.00 usft	Easting:	3,142,545.23 usft	Longitude:	-104.991343
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	5/8/2019	8.09	66.44	51,890.66044718

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	8.32	

Survey Program	Date	6/20/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
122.30	1,606.30	Surface Surveys (Wellbore #1)	MWD	MWD - Standard	
1,606.30	18,480.00	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	0.62	213.95	122.30	-0.55	-0.37	-0.60	0.51	0.51	0.00	
209.30	0.48	207.97	209.29	-1.26	-0.80	-1.36	0.17	-0.16	-6.87	
297.30	0.48	250.60	297.29	-1.71	-1.32	-1.88	0.40	0.00	48.44	
384.30	0.22	235.04	384.29	-1.93	-1.80	-2.17	0.32	-0.30	-17.89	
471.30	0.35	33.25	471.29	-1.80	-1.80	-2.04	0.64	0.15	181.85	
559.30	1.49	23.75	559.28	-0.53	-1.19	-0.69	1.30	1.30	-10.80	
646.30	3.47	30.00	646.19	2.79	0.58	2.84	2.29	2.28	7.18	
733.30	4.35	35.88	732.99	7.74	3.83	8.22	1.11	1.01	6.76	
820.30	6.64	38.26	819.58	14.37	8.88	15.50	2.64	2.63	2.74	

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Well:	Interchange B N35-20-6N	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	8.53	37.99	906.81	23.51	16.05	25.58	2.15	2.15	-0.31
995.30	9.54	34.92	992.73	34.50	24.15	37.63	1.29	1.16	-3.53
1,082.30	11.56	42.48	1,078.26	46.84	34.17	51.30	2.81	2.32	8.69
1,169.30	13.05	40.01	1,163.26	60.80	46.37	66.87	1.82	1.71	-2.84
1,257.30	14.59	42.74	1,248.71	76.55	60.28	84.47	1.90	1.75	3.10
1,344.30	16.35	42.83	1,332.55	93.58	76.04	103.60	2.02	2.02	0.10
1,431.30	18.41	41.68	1,415.58	112.82	93.50	125.17	2.40	2.37	-1.32
1,518.30	20.61	41.42	1,497.58	134.57	112.77	149.47	2.53	2.53	-0.30
1,606.30	22.90	39.84	1,579.30	159.33	133.99	177.05	2.69	2.60	-1.80
Tie into Surface Surveys									
1,673.00	23.91	39.69	1,640.51	179.70	150.94	199.65	1.52	1.51	-0.22
First MWD Survey @ 1673' MD									
1,768.00	26.34	38.98	1,726.52	210.90	176.49	234.23	2.58	2.56	-0.75
1,863.00	28.19	40.30	1,810.96	244.40	204.27	271.39	2.05	1.95	1.39
1,959.00	32.04	37.66	1,893.99	281.87	234.50	312.84	4.24	4.01	-2.75
2,054.00	31.24	35.59	1,974.87	321.85	264.24	356.71	1.42	-0.84	-2.18
2,149.00	29.96	34.44	2,056.64	361.45	291.99	399.91	1.48	-1.35	-1.21
2,245.00	30.05	38.36	2,139.78	400.07	320.47	442.25	2.04	0.09	4.08
2,340.00	28.10	36.16	2,222.81	436.79	348.43	482.63	2.34	-2.05	-2.32
2,436.00	29.25	41.85	2,307.05	472.52	377.43	522.18	3.08	1.20	5.93
2,531.00	33.41	43.61	2,388.18	508.77	410.97	562.90	4.48	4.38	1.85
2,626.00	31.64	42.24	2,468.28	546.15	445.76	604.93	2.02	-1.86	-1.44
2,721.00	33.67	41.23	2,548.26	584.41	479.87	647.72	2.21	2.14	-1.06
2,817.00	30.93	39.60	2,629.40	623.44	513.15	691.15	2.99	-2.85	-1.70
2,913.00	34.20	40.66	2,710.30	662.93	546.46	735.05	3.46	3.41	1.10
3,008.00	31.42	38.80	2,790.14	702.49	579.38	778.96	3.11	-2.93	-1.96
3,103.00	28.28	36.38	2,872.53	739.92	608.25	820.17	3.54	-3.31	-2.55
3,199.00	30.31	39.29	2,956.25	776.98	637.09	861.02	2.58	2.11	3.03
3,294.00	33.01	42.02	3,037.11	814.77	669.60	903.11	3.22	2.84	2.87
3,390.00	30.40	41.10	3,118.77	852.51	703.08	945.30	2.76	-2.72	-0.96
3,485.00	32.48	41.01	3,199.82	889.87	735.62	986.98	2.19	2.19	-0.09
3,581.00	29.87	39.82	3,281.95	927.69	767.85	1,029.07	2.79	-2.72	-1.24
3,676.00	31.15	36.82	3,363.80	965.53	797.72	1,070.83	2.09	1.35	-3.16
3,771.00	27.84	34.00	3,446.48	1,003.60	824.86	1,112.43	3.78	-3.48	-2.97
3,866.00	30.45	38.14	3,529.46	1,040.94	852.14	1,153.32	3.47	2.75	4.36
3,962.00	33.19	38.72	3,611.02	1,080.58	883.61	1,197.10	2.87	2.85	0.60
4,057.00	30.62	37.48	3,691.66	1,120.07	914.60	1,240.67	2.79	-2.71	-1.31
4,152.00	32.57	39.77	3,772.58	1,158.93	945.68	1,283.61	2.41	2.05	2.41
4,248.00	29.12	37.92	3,854.99	1,197.23	976.58	1,325.98	3.73	-3.59	-1.93
4,343.00	30.09	40.79	3,937.59	1,233.50	1,006.34	1,366.18	1.81	1.02	3.02
4,439.00	31.99	43.34	4,019.85	1,270.22	1,039.52	1,407.31	2.41	1.98	2.66
4,534.00	32.13	45.33	4,100.36	1,306.28	1,074.76	1,448.10	1.12	0.15	2.09
4,630.00	32.44	46.52	4,181.52	1,341.95	1,111.60	1,488.72	0.74	0.32	1.24

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Survey										
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4,725.00	28.86	45.46	4,263.23	1,375.57	1,146.44	1,527.03	3.81	-3.77	-1.12	
4,820.00	30.98	41.54	4,345.58	1,409.96	1,179.00	1,565.77	3.03	2.23	-4.13	
4,915.00	33.54	40.88	4,425.91	1,448.11	1,212.40	1,608.36	2.72	2.69	-0.69	
5,011.00	30.45	38.50	4,507.32	1,487.21	1,244.91	1,651.75	3.48	-3.22	-2.48	
5,107.00	26.51	35.85	4,591.68	1,523.63	1,272.61	1,691.80	4.31	-4.10	-2.76	
5,202.00	30.62	38.19	4,675.11	1,559.85	1,300.00	1,731.60	4.48	4.33	2.46	
5,297.00	34.38	39.42	4,755.21	1,599.60	1,332.00	1,775.56	4.02	3.96	1.29	
5,393.00	31.60	37.44	4,835.73	1,640.52	1,364.51	1,820.75	3.11	-2.90	-2.06	
5,488.00	33.27	37.17	4,915.91	1,681.04	1,395.39	1,865.32	1.76	1.76	-0.28	
5,584.00	31.15	34.57	4,997.13	1,722.48	1,425.39	1,910.67	2.64	-2.21	-2.71	
5,701.00	33.50	40.26	5,096.02	1,772.06	1,463.44	1,965.23	3.28	2.01	4.86	
5,796.00	32.21	37.13	5,175.83	1,812.25	1,495.67	2,009.67	2.24	-1.36	-3.29	
5,892.00	29.30	35.02	5,258.32	1,851.90	1,524.60	2,053.08	3.23	-3.03	-2.20	
5,987.00	29.92	39.60	5,340.92	1,889.20	1,553.05	2,094.11	2.47	0.65	4.82	
6,083.00	31.64	42.73	5,423.40	1,926.14	1,585.40	2,135.35	2.45	1.79	3.26	
6,178.00	34.25	41.40	5,503.12	1,964.51	1,619.99	2,178.31	2.85	2.75	-1.40	
6,273.00	31.90	39.77	5,582.72	2,003.86	1,653.73	2,222.14	2.64	-2.47	-1.72	
6,369.00	33.85	38.80	5,663.34	2,044.20	1,686.72	2,266.82	2.10	2.03	-1.01	
6,464.00	30.53	36.73	5,743.73	2,084.17	1,717.74	2,310.86	3.68	-3.49	-2.18	
6,559.00	26.65	34.22	5,827.14	2,121.14	1,744.16	2,351.27	4.27	-4.08	-2.64	
6,655.00	22.71	31.89	5,914.35	2,154.69	1,766.07	2,387.64	4.23	-4.10	-2.43	
6,750.00	23.16	35.98	6,001.85	2,185.38	1,786.73	2,421.00	1.74	0.47	4.31	
6,845.00	20.95	34.57	6,089.89	2,214.49	1,807.35	2,452.78	2.39	-2.33	-1.48	
6,941.00	17.94	31.53	6,180.41	2,241.23	1,824.82	2,481.77	3.31	-3.14	-3.17	
7,037.00	15.42	28.01	6,272.36	2,265.10	1,838.55	2,507.38	2.83	-2.63	-3.67	
7,132.00	12.95	25.76	6,364.46	2,285.85	1,849.11	2,529.43	2.66	-2.60	-2.37	
7,227.00	10.47	23.21	6,457.48	2,303.37	1,857.14	2,547.93	2.67	-2.61	-2.68	
7,322.00	8.88	20.96	6,551.12	2,318.15	1,863.16	2,563.43	1.72	-1.67	-2.37	
7,417.00	6.98	17.34	6,645.21	2,330.51	1,867.51	2,576.29	2.07	-2.00	-3.81	
7,513.00	5.83	12.10	6,740.61	2,340.84	1,870.27	2,586.91	1.34	-1.20	-5.46	
7,608.00	4.60	13.38	6,835.21	2,349.27	1,872.16	2,595.52	1.30	-1.29	1.35	
7,703.00	3.84	9.76	6,929.96	2,356.11	1,873.58	2,602.50	0.85	-0.80	-3.81	
7,798.00	3.23	2.66	7,024.78	2,361.92	1,874.24	2,608.34	0.79	-0.64	-7.47	
7,894.00	2.56	359.57	7,120.65	2,366.76	1,874.35	2,613.15	0.72	-0.70	-3.22	
7,989.00	5.57	17.74	7,215.41	2,373.28	1,875.74	2,619.80	3.41	3.17	19.13	
8,085.00	15.38	18.75	7,309.69	2,389.81	1,881.27	2,636.96	10.22	10.22	1.05	
8,180.00	22.05	15.67	7,399.62	2,418.94	1,890.14	2,667.07	7.10	7.02	-3.24	
8,275.00	29.92	12.32	7,484.95	2,459.32	1,900.03	2,708.46	8.42	8.28	-3.53	
8,275.74	30.00	12.25	7,485.59	2,459.69	1,900.11	2,708.82	11.51	10.62	-8.86	
30° Inclination @ 8275.74' MD										
8,370.00	40.21	5.83	7,562.63	2,513.14	1,908.23	2,762.89	11.51	10.83	-6.82	
8,465.00	60.05	1.77	7,623.24	2,585.53	1,912.66	2,835.16	21.13	20.88	-4.27	
8,545.95	70.00	1.81	7,657.38	2,658.78	1,914.95	2,907.97	12.29	12.29	0.05	
70° Inclination @ 8545.95' MD										

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8,561.00	71.85	1.82	7,662.30	2,673.00	1,915.40	2,922.10	12.29	12.29	0.05	
8,657.00	77.11	0.28	7,687.98	2,765.45	1,917.08	3,013.82	5.69	5.48	-1.60	
8,665.77	77.19	0.06	7,689.93	2,774.00	1,917.11	3,022.28	2.64	0.97	-2.51	
Cross @ 8665.77' MD										
8,752.00	78.04	357.90	7,708.42	2,858.20	1,915.60	3,105.38	2.64	0.98	-2.50	
8,848.00	88.07	358.95	7,720.01	2,953.34	1,913.00	3,199.14	10.50	10.45	1.09	
8,943.00	88.60	358.25	7,722.77	3,048.27	1,910.68	3,292.74	0.92	0.56	-0.74	
9,039.00	91.12	359.62	7,723.01	3,144.24	1,908.89	3,387.44	2.99	2.63	1.43	
9,134.00	90.68	359.40	7,721.52	3,239.23	1,908.08	3,481.31	0.52	-0.46	-0.23	
9,230.00	90.99	359.44	7,720.12	3,335.21	1,907.11	3,576.14	0.33	0.32	0.04	
9,325.00	90.63	358.34	7,718.77	3,430.18	1,905.27	3,669.85	1.22	-0.38	-1.16	
9,420.00	91.03	357.81	7,717.40	3,525.12	1,902.08	3,763.32	0.70	0.42	-0.56	
9,516.00	90.77	357.37	7,715.89	3,621.02	1,898.04	3,857.63	0.53	-0.27	-0.46	
9,611.00	91.03	359.57	7,714.40	3,715.97	1,895.50	3,951.21	2.33	0.27	2.32	
9,706.00	90.23	358.95	7,713.35	3,810.95	1,894.28	4,045.02	1.07	-0.84	-0.65	
9,802.00	90.15	358.38	7,713.04	3,906.93	1,892.04	4,139.66	0.60	-0.08	-0.59	
9,897.00	92.05	2.04	7,711.21	4,001.89	1,892.39	4,233.67	4.34	2.00	3.85	
9,993.00	89.57	2.61	7,709.85	4,097.79	1,896.28	4,329.12	2.65	-2.58	0.59	
10,088.00	89.31	2.08	7,710.78	4,192.71	1,900.17	4,423.60	0.62	-0.27	-0.56	
10,184.00	88.91	1.47	7,712.27	4,288.65	1,903.14	4,518.96	0.76	-0.42	-0.64	
10,279.00	88.82	0.85	7,714.16	4,383.61	1,905.07	4,613.20	0.66	-0.09	-0.65	
10,374.00	88.29	0.72	7,716.55	4,478.57	1,906.37	4,707.35	0.57	-0.56	-0.14	
10,470.00	90.63	359.17	7,717.46	4,574.56	1,906.27	4,802.31	2.92	2.44	-1.61	
10,565.00	89.57	357.94	7,717.29	4,669.52	1,903.88	4,895.93	1.71	-1.12	-1.29	
10,661.00	90.41	0.19	7,717.31	4,765.50	1,902.31	4,990.68	2.50	0.88	2.34	
10,756.00	89.62	0.14	7,717.28	4,860.50	1,902.59	5,084.71	0.83	-0.83	-0.05	
10,852.00	90.63	359.35	7,717.07	4,956.50	1,902.16	5,179.64	1.34	1.05	-0.82	
10,947.00	90.32	358.47	7,716.28	5,051.48	1,900.35	5,273.35	0.98	-0.33	-0.93	
11,043.00	90.01	358.03	7,716.01	5,147.43	1,897.42	5,367.87	0.56	-0.32	-0.46	
11,138.00	91.16	358.25	7,715.04	5,242.38	1,894.34	5,461.37	1.23	1.21	0.23	
11,234.00	90.94	357.54	7,713.28	5,338.29	1,890.81	5,555.77	0.77	-0.23	-0.74	
11,329.00	91.38	357.41	7,711.36	5,433.18	1,886.63	5,649.05	0.48	0.46	-0.14	
11,425.00	90.81	0.76	7,709.52	5,529.14	1,885.09	5,743.78	3.54	-0.59	3.49	
11,520.00	91.07	0.10	7,707.96	5,624.12	1,885.81	5,837.86	0.75	0.27	-0.69	
11,615.00	89.93	0.76	7,707.13	5,719.11	1,886.52	5,931.96	1.39	-1.20	0.69	
11,711.00	90.06	0.19	7,707.14	5,815.11	1,887.32	6,027.06	0.61	0.14	-0.59	
11,806.00	90.50	359.79	7,706.68	5,910.11	1,887.30	6,121.05	0.63	0.46	-0.42	
11,902.00	88.07	0.58	7,707.88	6,006.09	1,887.61	6,216.07	2.66	-2.53	0.82	
11,997.00	88.25	0.06	7,710.93	6,101.04	1,888.14	6,310.10	0.58	0.19	-0.55	
12,093.00	87.32	359.88	7,714.64	6,196.97	1,888.09	6,405.01	0.99	-0.97	-0.19	
12,188.00	90.01	0.10	7,716.85	6,291.93	1,888.07	6,498.97	2.84	2.83	0.23	
12,283.00	92.14	359.88	7,715.07	6,386.91	1,888.06	6,592.94	2.25	2.24	-0.23	
12,379.00	91.96	359.57	7,711.63	6,482.85	1,887.60	6,687.80	0.37	-0.19	-0.32	

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-6N
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 N35-20-6N	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	92.18	359.13	7,708.20	6,577.78	1,886.52	6,781.58	0.52	0.23	-0.46
12,569.00	90.32	0.67	7,706.13	6,672.75	1,886.35	6,875.53	2.54	-1.96	1.62
12,665.00	90.41	359.35	7,705.52	6,768.75	1,886.37	6,970.51	1.38	0.09	-1.38
12,760.00	90.37	358.47	7,704.87	6,863.73	1,884.56	7,064.23	0.93	-0.04	-0.93
12,855.00	90.32	358.25	7,704.30	6,958.69	1,881.84	7,157.80	0.24	-0.05	-0.23
12,951.00	89.66	357.06	7,704.32	7,054.60	1,877.92	7,252.14	1.42	-0.69	-1.24
13,047.00	89.97	356.00	7,704.63	7,150.43	1,872.11	7,346.11	1.15	0.32	-1.10
13,141.00	89.93	355.12	7,704.71	7,244.14	1,864.83	7,437.78	0.94	-0.04	-0.94
13,237.00	90.06	357.63	7,704.72	7,339.94	1,858.76	7,531.70	2.62	0.14	2.61
13,332.00	89.66	0.01	7,704.95	7,434.92	1,856.80	7,625.39	2.54	-0.42	2.51
13,428.00	90.15	2.08	7,705.11	7,530.89	1,858.55	7,720.61	2.22	0.51	2.16
13,523.00	89.57	1.11	7,705.34	7,625.86	1,861.20	7,814.95	1.19	-0.61	-1.02
13,619.00	89.44	0.01	7,706.17	7,721.85	1,862.14	7,910.07	1.15	-0.14	-1.15
13,670.16	89.49	359.58	7,706.65	7,773.00	1,861.96	7,960.66	0.84	0.09	-0.83
Cross @ 13670.16' MD									
13,714.00	89.53	359.22	7,707.02	7,816.84	1,861.50	8,003.97	0.84	0.09	-0.83
13,810.00	89.13	1.29	7,708.15	7,912.83	1,861.93	8,099.00	2.20	-0.42	2.16
13,906.00	89.22	0.50	7,709.53	8,008.80	1,863.42	8,194.19	0.83	0.09	-0.82
14,001.00	88.29	359.92	7,711.59	8,103.78	1,863.77	8,288.21	1.15	-0.98	-0.61
14,097.00	91.38	0.58	7,711.87	8,199.77	1,864.19	8,383.25	3.29	3.22	0.69
14,193.00	91.52	0.01	7,709.44	8,295.73	1,864.69	8,478.28	0.61	0.15	-0.59
14,288.00	91.60	359.31	7,706.85	8,390.70	1,864.12	8,572.16	0.74	0.08	-0.74
14,383.00	92.22	358.56	7,703.69	8,485.63	1,862.36	8,665.83	1.02	0.65	-0.79
14,479.00	91.47	357.94	7,700.60	8,581.53	1,859.43	8,760.30	1.01	-0.78	-0.65
14,575.00	92.18	357.37	7,697.54	8,677.40	1,855.50	8,854.60	0.95	0.74	-0.59
14,670.00	90.85	0.63	7,695.03	8,772.34	1,853.85	8,948.29	3.70	-1.40	3.43
14,766.00	91.16	0.06	7,693.34	8,868.32	1,854.42	9,043.35	0.68	0.32	-0.59
14,861.00	91.47	359.44	7,691.16	8,963.29	1,854.01	9,137.26	0.73	0.33	-0.65
14,956.00	90.41	2.00	7,689.60	9,058.26	1,855.20	9,231.41	2.92	-1.12	2.69
15,051.00	90.94	1.03	7,688.48	9,153.22	1,857.71	9,325.73	1.16	0.56	-1.02
15,147.00	91.52	0.19	7,686.42	9,249.19	1,858.74	9,420.84	1.06	0.60	-0.88
15,242.00	89.84	1.95	7,685.30	9,344.16	1,860.51	9,515.06	2.56	-1.77	1.85
15,338.00	89.48	1.25	7,685.87	9,440.12	1,863.19	9,610.40	0.82	-0.38	-0.73
15,434.00	90.01	0.54	7,686.29	9,536.11	1,864.69	9,705.59	0.92	0.55	-0.74
15,529.00	90.23	359.88	7,686.09	9,631.11	1,865.04	9,799.64	0.73	0.23	-0.69
15,624.00	91.83	1.64	7,684.39	9,726.08	1,866.30	9,893.79	2.50	1.68	1.85
15,720.00	91.30	0.98	7,681.76	9,822.02	1,868.49	9,989.04	0.88	-0.55	-0.69
15,815.00	91.52	0.14	7,679.43	9,916.98	1,869.42	10,083.14	0.91	0.23	-0.88
15,910.00	91.83	359.31	7,676.65	10,011.94	1,868.96	10,177.03	0.93	0.33	-0.87
16,006.00	91.56	3.58	7,673.81	10,107.84	1,871.38	10,272.27	4.45	-0.28	4.45
16,101.00	91.47	2.79	7,671.30	10,202.66	1,876.66	10,366.86	0.84	-0.09	-0.83
16,196.00	91.34	1.91	7,668.97	10,297.55	1,880.55	10,461.31	0.94	-0.14	-0.93
16,292.00	91.30	1.25	7,666.76	10,393.49	1,883.20	10,556.62	0.69	-0.04	-0.69
16,388.00	91.25	0.98	7,664.62	10,489.45	1,885.07	10,651.84	0.29	-0.05	-0.28

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-6N
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 N35-20-6N	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	90.63	1.82	7,663.06	10,584.41	1,887.39	10,746.14	1.10	-0.65	0.88	
16,579.00	90.94	1.16	7,661.75	10,680.37	1,889.88	10,841.44	0.76	0.32	-0.69	
16,674.00	90.72	0.85	7,660.37	10,775.34	1,891.55	10,935.66	0.40	-0.23	-0.33	
16,769.00	92.14	359.75	7,658.00	10,870.31	1,892.05	11,029.70	1.89	1.49	-1.16	
16,864.00	92.36	359.17	7,654.27	10,965.23	1,891.15	11,123.49	0.65	0.23	-0.61	
16,960.00	92.80	358.43	7,649.95	11,061.11	1,889.15	11,218.07	0.90	0.46	-0.77	
17,056.00	91.03	359.79	7,646.74	11,157.04	1,887.66	11,312.77	2.32	-1.84	1.42	
17,151.00	90.81	358.87	7,645.21	11,252.02	1,886.55	11,406.59	1.00	-0.23	-0.97	
17,246.00	91.03	358.25	7,643.69	11,346.97	1,884.16	11,500.20	0.69	0.23	-0.65	
17,342.00	91.56	357.81	7,641.52	11,442.89	1,880.86	11,594.63	0.72	0.55	-0.46	
17,437.00	88.42	358.82	7,641.54	11,537.84	1,878.07	11,688.18	3.47	-3.31	1.06	
17,533.00	87.94	358.21	7,644.58	11,633.76	1,875.58	11,782.72	0.81	-0.50	-0.64	
17,628.00	89.75	358.29	7,646.50	11,728.69	1,872.68	11,876.24	1.91	1.91	0.08	
17,724.00	90.85	358.21	7,646.00	11,824.64	1,869.75	11,970.75	1.15	1.15	-0.08	
17,820.00	91.25	357.63	7,644.24	11,920.56	1,866.26	12,065.16	0.73	0.42	-0.60	
17,916.00	91.07	356.88	7,642.29	12,016.43	1,861.67	12,159.35	0.80	-0.19	-0.78	
18,011.00	91.74	356.53	7,639.97	12,111.25	1,856.21	12,252.38	0.80	0.71	-0.37	
18,107.00	91.52	355.83	7,637.23	12,206.99	1,849.82	12,346.19	0.76	-0.23	-0.73	
18,202.00	90.19	358.82	7,635.82	12,301.87	1,845.38	12,439.43	3.44	-1.40	3.15	
18,297.00	89.70	359.35	7,635.91	12,396.85	1,843.87	12,533.19	0.76	-0.52	0.56	
18,393.00	89.13	358.73	7,636.89	12,492.83	1,842.26	12,627.93	0.88	-0.59	-0.65	
Last MWD Survey @ 18393' MD										
18,480.00	89.13	358.73	7,638.21	12,579.80	1,840.33	12,713.70	0.00	0.00	0.00	
Projection to TD @ 18480' MD 502.5' FNL/ 1287' FEL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		
30° Inclination @ 8275.7	0.00	0.00	7,485.59	2,459.69	1,900.11	1,238,067.72	3,144,431.20	39.985728		
- hit/miss target								-104.984562		
- actual wellpath misses target center by 0.01usft at 8275.74usft MD (7485.59 TVD, 2459.69 N, 1900.11 E)										
- Point										
70° Inclination @ 8545.9	0.00	0.00	7,657.38	2,658.78	1,914.95	1,238,266.89	3,144,444.90	39.986275		
- actual wellpath hits target center								-104.984509		
- Point										
Cross @ 8665.77' MD	0.00	0.00	7,689.93	2,774.00	1,917.11	1,238,382.12	3,144,446.39	39.986591		
- actual wellpath hits target center								-104.984502		
- Point										
Cross @ 13670.16' MD	0.00	0.00	7,706.65	7,773.00	1,861.96	1,243,380.72	3,144,362.57	40.000314		
- actual wellpath hits target center								-104.984697		
- Point										

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-6N
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 N35-20-6N	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)	
1,606.30	1,579.30	159.33	133.99	Tie into Surface Surveys
1,673.00	1,640.51	179.70	150.94	First MWD Survey @ 1673' MD
8,275.74	7,485.59	2,459.69	1,900.11	30° Inclination @ 8275.74' MD
8,545.95	7,657.38	2,658.78	1,914.95	70° Inclination @ 8545.95' MD
8,665.77	7,689.93	2,774.00	1,917.11	Cross @ 8665.77' MD
13,670.16	7,706.65	7,773.00	1,861.96	Cross @ 13670.16' MD
18,393.00	7,636.89	12,492.83	1,842.26	Last MWD Survey @ 18393' MD
18,480.00	7,638.21	12,579.80	1,840.33	Projection to TD @ 18480' MD 502.5' FNL/ 1287' FEL

Checked By: _____ Approved By: _____ Date: _____