

Extraction Oil & Gas

Weld County, CO (NAD83)

Sec 10-T01S-R68W Interchange Pad

Interchange B N35-20-2C

Wellbore #1

Design: Wellbore #1

Standard Survey Report

20 May, 2019

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-2C
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 N35-20-2C	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 N35-20-2C				
Well Position	+N/-S	0.00 usft	Northing:	1,235,580.00 usft	Latitude:	39.978930
	+E/-W	0.00 usft	Easting:	3,142,475.27 usft	Longitude:	-104.991593
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,212.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/14/2019	8.10	66.44	51,898.06229156

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	3.90	

Survey Program	Date	5/20/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
122.30	1,606.30	Surface Surveys (Wellbore #1)	MWD	MWD - Standard	
1,606.30	18,618.00	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	0.40	339.46	122.30	0.40	-0.15	0.39	0.33	0.33	0.00	
209.30	0.66	24.55	209.30	1.14	-0.05	1.13	0.54	0.30	51.83	
297.30	0.40	19.71	297.29	1.89	0.27	1.90	0.30	-0.30	-5.50	
384.30	0.66	93.28	384.29	2.15	0.87	2.20	0.77	0.30	84.56	
471.30	0.44	112.61	471.28	1.99	1.68	2.10	0.33	-0.25	22.22	
559.30	0.62	199.89	559.28	1.41	1.83	1.53	0.84	0.20	99.18	
646.30	0.48	206.04	646.28	0.64	1.51	0.74	0.17	-0.16	7.07	
733.30	1.05	183.10	733.27	-0.48	1.30	-0.39	0.73	0.66	-26.37	
820.30	0.92	252.45	820.26	-1.49	0.60	-1.44	1.29	-0.15	79.71	

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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)
908.30	1.19	281.45	908.25	-1.52	-0.97	-1.58	0.67	0.31	32.95
995.30	1.76	305.62	995.22	-0.56	-2.95	-0.76	0.96	0.66	27.78
1,082.30	3.56	340.51	1,082.12	2.76	-4.93	2.42	2.69	2.07	40.10
1,169.30	6.11	5.30	1,168.82	9.92	-5.41	9.53	3.73	2.93	28.49
1,257.30	8.48	18.31	1,256.10	20.75	-2.94	20.50	3.27	2.69	14.78
1,344.30	9.71	20.77	1,342.01	33.70	1.68	33.73	1.48	1.41	2.83
1,431.30	11.03	24.81	1,427.59	48.11	7.78	48.53	1.73	1.52	4.64
1,518.30	11.91	27.36	1,512.85	63.64	15.39	64.54	1.17	1.01	2.93
1,606.30	13.75	22.17	1,598.65	81.39	23.51	82.80	2.47	2.09	-5.90
Tie into Surface Surveys									
1,675.00	14.76	22.77	1,665.24	97.02	29.98	98.84	1.49	1.47	0.87
First MWD Survey @ 1675' MD									
1,770.00	18.47	23.30	1,756.25	122.01	40.62	124.49	3.91	3.91	0.56
1,866.00	20.46	24.49	1,846.76	151.25	53.59	154.54	2.11	2.07	1.24
1,961.00	21.26	23.57	1,935.53	182.15	67.36	186.31	0.91	0.84	-0.97
2,057.00	22.85	25.46	2,024.51	214.93	82.34	220.03	1.81	1.66	1.97
2,152.00	23.46	23.88	2,111.86	248.88	97.92	254.96	0.92	0.64	-1.66
2,247.00	25.36	20.09	2,198.37	285.28	112.57	292.27	2.59	2.00	-3.99
2,343.00	26.78	22.55	2,284.60	324.57	127.93	332.51	1.86	1.48	2.56
2,438.00	23.64	21.28	2,370.54	362.09	143.05	370.98	3.35	-3.31	-1.34
2,533.00	27.80	20.17	2,456.11	400.65	157.61	410.44	4.41	4.38	-1.17
2,629.00	24.26	20.53	2,542.36	440.15	172.25	450.84	3.69	-3.69	0.38
2,724.00	25.45	22.11	2,628.56	477.34	186.78	488.93	1.43	1.25	1.66
2,820.00	26.51	24.93	2,714.86	515.88	203.57	528.52	1.70	1.10	2.94
2,915.00	22.71	24.67	2,801.21	551.78	220.17	565.47	4.00	-4.00	-0.27
3,011.00	23.24	23.26	2,889.60	586.02	235.38	600.67	0.80	0.55	-1.47
3,106.00	23.16	16.83	2,976.93	621.13	248.20	636.56	2.67	-0.08	-6.77
3,201.00	25.94	16.91	3,063.33	658.90	259.65	675.02	2.93	2.93	0.08
3,297.00	27.13	20.35	3,149.23	699.51	273.37	716.48	2.02	1.24	3.58
3,392.00	27.22	20.84	3,233.74	740.13	288.63	758.03	0.25	0.09	0.52
3,488.00	25.94	18.10	3,319.59	780.61	302.97	799.39	1.85	-1.33	-2.85
3,583.00	26.47	22.42	3,404.84	819.93	317.50	839.62	2.08	0.56	4.55
3,679.00	28.06	17.71	3,490.18	861.23	332.53	881.84	2.79	1.66	-4.91
3,774.00	28.10	22.55	3,574.01	903.18	347.91	924.74	2.40	0.04	5.09
3,869.00	27.80	21.36	3,657.93	944.47	364.56	967.07	0.67	-0.32	-1.25
3,964.00	26.87	20.26	3,742.32	985.25	380.06	1,008.80	1.11	-0.98	-1.16
4,059.00	25.50	24.27	3,827.57	1,024.03	395.90	1,048.58	2.35	-1.44	4.22
4,155.00	22.45	23.66	3,915.28	1,059.67	411.76	1,085.21	3.19	-3.18	-0.64
4,250.00	23.82	28.11	4,002.65	1,093.21	428.08	1,119.78	2.34	1.44	4.68
4,346.00	23.82	22.77	4,090.48	1,128.19	444.72	1,155.81	2.25	0.00	-5.56
4,441.00	24.75	22.47	4,177.07	1,164.25	459.74	1,192.81	0.99	0.98	-0.32
4,537.00	25.98	25.55	4,263.82	1,201.80	476.49	1,231.41	1.88	1.28	3.21
4,632.00	26.91	25.90	4,348.88	1,239.91	494.86	1,270.68	0.99	0.98	0.37

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4,728.00	26.56	18.41	4,434.64	1,279.83	511.13	1,311.61	3.53	-0.36	-7.80	
4,822.00	27.66	19.78	4,518.31	1,320.30	525.15	1,352.94	1.35	1.17	1.46	
4,918.00	28.02	18.06	4,603.20	1,362.71	539.68	1,396.24	0.92	0.38	-1.79	
5,013.00	27.93	17.05	4,687.10	1,405.19	553.12	1,439.54	0.51	-0.09	-1.06	
5,109.00	23.86	14.67	4,773.45	1,445.49	564.64	1,480.53	4.37	-4.24	-2.48	
5,204.00	23.11	18.19	4,860.58	1,481.79	575.32	1,517.47	1.67	-0.79	3.71	
5,300.00	24.88	20.92	4,948.28	1,518.56	588.42	1,555.04	2.18	1.84	2.84	
5,395.00	26.60	25.68	5,033.86	1,556.40	604.77	1,593.91	2.83	1.81	5.01	
5,491.00	29.08	23.79	5,118.75	1,597.12	623.50	1,635.81	2.74	2.58	-1.97	
5,586.00	27.09	21.28	5,202.56	1,638.41	640.67	1,678.17	2.44	-2.09	-2.64	
5,681.00	29.47	21.36	5,286.22	1,680.33	657.03	1,721.11	2.51	2.51	0.08	
5,776.00	26.03	16.78	5,370.29	1,722.07	671.57	1,763.74	4.26	-3.62	-4.82	
5,872.00	29.03	16.08	5,455.41	1,764.63	684.10	1,807.05	3.14	3.13	-0.73	
5,967.00	27.71	23.04	5,539.02	1,807.12	699.14	1,850.46	3.75	-1.39	7.33	
6,063.00	25.90	21.98	5,624.70	1,847.10	715.72	1,891.48	1.95	-1.89	-1.10	
6,158.00	23.20	26.43	5,711.11	1,883.11	731.82	1,928.50	3.44	-2.84	4.68	
6,254.00	25.19	25.29	5,798.67	1,918.52	748.96	1,964.99	2.13	2.07	-1.19	
6,349.00	25.41	23.92	5,884.56	1,955.43	765.87	2,002.97	0.66	0.23	-1.44	
6,444.00	22.89	25.42	5,971.24	1,990.75	782.06	2,039.31	2.73	-2.65	1.58	
6,539.00	24.79	23.52	6,058.13	2,025.71	797.94	2,075.26	2.16	2.00	-2.00	
6,635.00	24.83	26.70	6,145.28	2,062.17	815.03	2,112.80	1.39	0.04	3.31	
6,730.00	22.76	27.36	6,232.20	2,096.31	832.44	2,148.05	2.20	-2.18	0.69	
6,825.00	22.05	28.81	6,320.03	2,128.26	849.48	2,181.08	0.95	-0.75	1.53	
6,921.00	23.77	27.53	6,408.45	2,161.21	867.11	2,215.15	1.87	1.79	-1.33	
6,945.00	22.85	28.15	6,430.49	2,169.61	871.54	2,223.83	3.97	-3.83	2.58	
7,040.00	22.98	25.82	6,518.00	2,202.56	888.32	2,257.85	0.96	0.14	-2.45	
7,136.00	24.57	27.67	6,605.85	2,237.11	905.75	2,293.51	1.83	1.66	1.93	
7,231.00	21.03	26.52	6,693.41	2,269.87	922.54	2,327.33	3.76	-3.73	-1.21	
7,326.00	18.25	26.61	6,782.88	2,298.42	936.82	2,356.79	2.93	-2.93	0.09	
7,421.00	15.73	25.20	6,873.72	2,323.38	948.97	2,382.51	2.69	-2.65	-1.48	
7,516.00	13.48	25.42	6,965.65	2,345.03	959.20	2,404.81	2.37	-2.37	0.23	
7,612.00	10.21	20.44	7,059.59	2,363.12	966.98	2,423.38	3.57	-3.41	-5.19	
7,707.00	6.23	21.19	7,153.60	2,375.82	971.79	2,436.38	4.19	-4.19	0.79	
7,802.00	2.39	12.55	7,248.31	2,382.56	974.08	2,443.26	4.09	-4.04	-9.09	
7,898.00	2.25	5.53	7,344.23	2,386.39	974.70	2,447.13	0.33	-0.15	-7.31	
7,993.00	1.99	1.70	7,439.17	2,389.90	974.93	2,450.64	0.31	-0.27	-4.03	
8,089.00	3.80	338.25	7,535.04	2,394.52	973.80	2,455.17	2.22	1.89	-24.43	
8,184.00	11.62	3.86	7,629.13	2,407.01	973.27	2,467.60	8.79	8.23	26.96	
8,279.00	21.08	1.70	7,720.19	2,433.69	974.43	2,494.30	9.98	9.96	-2.27	
8,374.00	28.19	357.25	7,806.49	2,473.24	973.86	2,533.71	7.73	7.48	-4.68	
8,396.08	30.00	356.90	7,825.79	2,483.96	973.31	2,544.37	8.23	8.19	-1.57	
30° Inclination @ 8396.08' MD										
8,470.00	36.06	355.97	7,887.73	2,524.15	970.78	2,584.30	8.23	8.20	-1.26	
8,565.00	46.18	356.45	7,959.21	2,586.41	966.68	2,646.14	10.66	10.65	0.51	

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8,661.00	56.16	356.58	8,019.32	2,660.96	962.15	2,720.21	10.40	10.40	0.14	
8,756.00	66.59	354.78	8,064.78	2,743.99	955.81	2,802.61	11.10	10.98	-1.89	
8,794.97	70.00	355.76	8,079.19	2,780.07	952.83	2,838.40	9.04	8.74	2.50	
70° Inclination @ 8794.97' MD										
8,816.11	71.85	356.27	8,086.10	2,800.00	951.44	2,858.19	9.04	8.75	2.42	
Cross @ 8816.11' MD										
8,852.00	74.99	357.11	8,096.34	2,834.33	949.45	2,892.31	9.04	8.76	2.35	
8,947.00	86.92	0.15	8,111.25	2,927.94	947.25	2,985.56	12.95	12.56	3.20	
9,043.00	91.12	0.82	8,112.89	3,023.90	948.07	3,081.35	4.43	4.38	0.70	
9,138.00	91.83	0.55	8,110.45	3,118.86	949.20	3,176.17	0.80	0.75	-0.28	
9,233.00	92.05	0.95	8,107.23	3,213.80	950.44	3,270.98	0.48	0.23	0.42	
9,329.00	92.84	1.04	8,103.13	3,309.70	952.11	3,366.76	0.83	0.82	0.09	
9,424.00	93.37	1.08	8,097.99	3,404.54	953.87	3,461.51	0.56	0.56	0.04	
9,519.00	93.95	0.90	8,091.92	3,499.34	955.50	3,556.19	0.64	0.61	-0.19	
9,615.00	94.17	359.05	8,085.13	3,595.09	955.46	3,651.72	1.94	0.23	-1.93	
9,710.00	91.03	356.76	8,080.82	3,689.91	951.99	3,746.09	4.09	-3.31	-2.41	
9,806.00	89.62	356.54	8,080.27	3,785.74	946.38	3,841.32	1.49	-1.47	-0.23	
9,901.00	89.88	354.87	8,080.69	3,880.47	939.27	3,935.34	1.78	0.27	-1.76	
9,996.00	88.91	356.14	8,081.69	3,975.17	931.82	4,029.32	1.68	-1.02	1.34	
10,092.00	89.75	359.41	8,082.81	4,071.08	928.10	4,124.75	3.52	0.88	3.41	
10,188.00	90.72	359.63	8,082.42	4,167.07	927.29	4,220.47	1.04	1.01	0.23	
10,283.00	91.25	359.36	8,080.79	4,262.05	926.45	4,315.17	0.63	0.56	-0.28	
10,378.00	88.69	0.02	8,080.84	4,357.04	925.94	4,409.91	2.78	-2.69	0.69	
10,474.00	88.91	359.36	8,082.85	4,453.02	925.42	4,505.63	0.72	0.23	-0.69	
10,569.00	89.40	358.74	8,084.25	4,548.00	923.85	4,600.28	0.83	0.52	-0.65	
10,705.00	89.48	358.35	8,085.58	4,683.95	920.39	4,735.68	0.29	0.06	-0.29	
10,801.00	90.72	1.65	8,085.41	4,779.93	920.39	4,831.44	3.67	1.29	3.44	
10,896.00	90.23	0.37	8,084.62	4,874.91	922.07	4,926.31	1.44	-0.52	-1.35	
10,991.00	91.12	359.71	8,083.50	4,969.90	922.13	5,021.09	1.17	0.94	-0.69	
11,087.00	90.41	0.82	8,082.22	5,065.89	922.58	5,116.89	1.37	-0.74	1.16	
11,182.00	90.54	359.89	8,081.43	5,160.89	923.17	5,211.70	0.99	0.14	-0.98	
11,278.00	90.41	359.63	8,080.64	5,256.88	922.76	5,307.45	0.30	-0.14	-0.27	
11,373.00	90.94	359.36	8,079.52	5,351.87	921.93	5,402.16	0.63	0.56	-0.28	
11,468.00	91.21	0.68	8,077.74	5,446.85	921.96	5,496.92	1.42	0.28	1.39	
11,564.00	91.07	0.55	8,075.83	5,542.83	922.99	5,592.75	0.20	-0.15	-0.14	
11,659.00	90.10	359.63	8,074.86	5,637.82	923.14	5,687.53	1.41	-1.02	-0.97	
11,754.00	90.23	358.57	8,074.58	5,732.81	921.65	5,782.20	1.12	0.14	-1.12	
11,850.00	89.84	358.70	8,074.52	5,828.78	919.36	5,877.79	0.43	-0.41	0.14	
11,945.00	89.31	357.82	8,075.23	5,923.73	916.48	5,972.33	1.08	-0.56	-0.93	
12,041.00	90.99	0.46	8,074.98	6,019.71	915.04	6,067.98	3.26	1.75	2.75	
12,136.00	91.25	359.89	8,073.12	6,114.69	915.33	6,162.76	0.66	0.27	-0.60	
12,231.00	90.72	359.54	8,071.49	6,209.67	914.85	6,257.50	0.67	-0.56	-0.37	
12,327.00	91.16	359.10	8,069.91	6,305.65	913.71	6,353.18	0.65	0.46	-0.46	

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-2C
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 N35-20-2C	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)	
12,423.00	90.99	358.44	8,068.11	6,401.61	911.65	6,448.78	0.71	-0.18	-0.69	
12,518.00	91.07	357.69	8,066.40	6,496.54	908.45	6,543.27	0.79	0.08	-0.79	
12,613.00	90.77	1.61	8,064.88	6,591.51	907.87	6,637.98	4.14	-0.32	4.13	
12,708.00	90.85	1.43	8,063.53	6,686.47	910.39	6,732.89	0.21	0.08	-0.19	
12,803.00	91.25	1.26	8,061.79	6,781.43	912.62	6,827.78	0.46	0.42	-0.18	
12,899.00	91.69	0.73	8,059.33	6,877.38	914.28	6,923.62	0.72	0.46	-0.55	
12,995.00	91.03	0.60	8,057.05	6,973.34	915.40	7,019.44	0.70	-0.69	-0.14	
13,090.00	88.91	1.56	8,057.10	7,068.32	917.19	7,114.32	2.45	-2.23	1.01	
13,185.00	89.66	1.12	8,058.29	7,163.29	919.41	7,209.22	0.92	0.79	-0.46	
13,280.00	89.62	0.64	8,058.88	7,258.27	920.87	7,304.08	0.51	-0.04	-0.51	
13,376.00	91.87	359.93	8,057.64	7,354.26	921.34	7,399.88	2.46	2.34	-0.74	
13,471.00	92.18	359.63	8,054.28	7,449.20	920.98	7,494.57	0.45	0.33	-0.32	
13,567.00	92.71	359.27	8,050.18	7,545.10	920.06	7,590.19	0.67	0.55	-0.38	
13,662.00	89.84	358.70	8,048.07	7,640.06	918.38	7,684.81	3.08	-3.02	-0.60	
13,758.00	89.22	357.20	8,048.86	7,735.99	914.94	7,780.29	1.69	-0.65	-1.56	
13,811.07	89.07	357.69	8,049.65	7,789.00	912.58	7,833.02	0.96	-0.28	0.92	
Cross @ 13811.07' MD										
13,854.00	88.95	358.08	8,050.39	7,831.89	910.99	7,875.70	0.96	-0.28	0.92	
13,949.00	88.51	359.01	8,052.50	7,926.84	908.58	7,970.26	1.08	-0.46	0.98	
14,045.00	88.56	358.92	8,054.95	8,022.79	906.85	8,065.88	0.11	0.05	-0.09	
14,141.00	91.69	358.52	8,054.74	8,118.75	904.70	8,161.47	3.29	3.26	-0.42	
14,236.00	91.25	358.13	8,052.30	8,213.68	901.93	8,255.99	0.62	-0.46	-0.41	
14,332.00	91.03	356.58	8,050.39	8,309.56	897.50	8,351.35	1.63	-0.23	-1.61	
14,427.00	90.90	355.09	8,048.79	8,404.29	890.60	8,445.39	1.57	-0.14	-1.57	
14,523.00	90.41	358.48	8,047.70	8,500.12	885.21	8,540.63	3.57	-0.51	3.53	
14,618.00	89.53	358.61	8,047.75	8,595.09	882.80	8,635.22	0.94	-0.93	0.14	
14,714.00	89.48	0.33	8,048.58	8,691.08	881.91	8,730.92	1.79	-0.05	1.79	
14,809.00	88.60	359.41	8,050.17	8,786.06	881.70	8,825.67	1.34	-0.93	-0.97	
14,905.00	89.93	1.92	8,051.40	8,882.04	882.81	8,921.50	2.96	1.39	2.61	
15,000.00	89.04	2.62	8,052.25	8,976.96	886.58	9,016.46	1.19	-0.94	0.74	
15,095.00	88.91	2.93	8,053.95	9,071.83	891.17	9,111.43	0.35	-0.14	0.33	
15,190.00	88.91	2.40	8,055.76	9,166.71	895.59	9,206.39	0.56	0.00	-0.56	
15,286.00	90.10	0.99	8,056.59	9,262.66	898.43	9,302.31	1.92	1.24	-1.47	
15,381.00	91.16	0.77	8,055.54	9,357.64	899.89	9,397.17	1.14	1.12	-0.23	
15,477.00	90.28	1.04	8,054.34	9,453.62	901.41	9,493.03	0.96	-0.92	0.28	
15,573.00	89.31	359.67	8,054.68	9,549.62	902.00	9,588.84	1.75	-1.01	-1.43	
15,668.00	90.50	0.55	8,054.84	9,644.61	902.18	9,683.63	1.56	1.25	0.93	
15,763.00	91.65	0.20	8,053.06	9,739.59	902.80	9,778.43	1.27	1.21	-0.37	
15,858.00	91.47	0.20	8,050.47	9,834.56	903.14	9,873.20	0.19	-0.19	0.00	
15,954.00	91.74	359.80	8,047.78	9,930.52	903.14	9,968.94	0.50	0.28	-0.42	
16,050.00	87.89	359.23	8,048.09	10,026.50	902.32	10,064.64	4.05	-4.01	-0.59	
16,145.00	88.33	358.61	8,051.22	10,121.43	900.53	10,159.23	0.80	0.46	-0.65	
16,240.00	89.84	0.86	8,052.74	10,216.40	900.09	10,253.96	2.85	1.59	2.37	
16,336.00	90.32	0.86	8,052.61	10,312.39	901.54	10,349.82	0.50	0.50	0.00	

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-2C
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 N35-20-2C	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)	
16,431.00	90.23	359.98	8,052.15	10,407.39	902.23	10,444.65	0.93	-0.09	-0.93	
16,527.00	90.32	359.71	8,051.69	10,503.39	901.97	10,540.41	0.30	0.09	-0.28	
16,622.00	90.77	359.14	8,050.79	10,598.38	901.02	10,635.11	0.76	0.47	-0.60	
16,718.00	91.12	359.18	8,049.20	10,694.35	899.61	10,730.77	0.37	0.36	0.04	
16,813.00	91.69	358.57	8,046.87	10,789.31	897.75	10,825.38	0.88	0.60	-0.64	
16,908.00	91.52	357.73	8,044.21	10,884.22	894.68	10,919.86	0.90	-0.18	-0.88	
17,004.00	87.01	359.49	8,045.45	10,980.15	892.35	11,015.42	5.04	-4.70	1.83	
17,099.00	87.19	358.88	8,050.25	11,075.02	891.00	11,109.97	0.67	0.19	-0.64	
17,195.00	89.04	359.23	8,053.41	11,170.95	889.42	11,205.57	1.96	1.93	0.36	
17,290.00	91.12	0.07	8,053.28	11,265.95	888.84	11,300.31	2.36	2.19	0.88	
17,386.00	91.65	359.54	8,050.96	11,361.92	888.51	11,396.03	0.78	0.55	-0.55	
17,481.00	91.38	358.96	8,048.44	11,456.87	887.27	11,490.69	0.67	-0.28	-0.61	
17,577.00	91.96	358.39	8,045.65	11,552.81	885.05	11,586.25	0.85	0.60	-0.59	
17,672.00	89.97	358.48	8,044.05	11,647.75	882.46	11,680.80	2.10	-2.09	0.09	
17,767.00	89.97	357.07	8,044.10	11,742.68	878.77	11,775.25	1.48	0.00	-1.48	
17,863.00	90.06	356.85	8,044.07	11,838.54	873.68	11,870.55	0.25	0.09	-0.23	
17,958.00	90.32	356.50	8,043.76	11,933.38	868.17	11,964.80	0.46	0.27	-0.37	
18,054.00	90.01	358.04	8,043.48	12,029.27	863.60	12,060.15	1.64	-0.32	1.60	
18,150.00	89.97	1.12	8,043.50	12,125.26	862.89	12,155.87	3.21	-0.04	3.21	
18,245.00	89.48	0.24	8,043.95	12,220.25	864.02	12,250.71	1.06	-0.52	-0.93	
18,340.00	88.47	358.96	8,045.65	12,315.23	863.36	12,345.43	1.72	-1.06	-1.35	
18,436.00	90.23	359.27	8,046.74	12,411.21	861.88	12,441.08	1.86	1.83	0.32	
18,531.00	90.32	358.61	8,046.29	12,506.19	860.12	12,535.73	0.70	0.09	-0.69	
Last MWD Survey @ 18531' MD										
18,618.00	90.32	358.61	8,045.80	12,593.16	858.01	12,622.36	0.00	0.00	0.00	
Projection to TD @ 18618' MD 506' FNL/ 2339' 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 @ 8396.0	0.00	0.00	7,825.79	2,483.96	973.31	1,238,069.50	3,143,434.33	39.985749	-104.988120	
- hit/miss target										
- actual wellpath misses target center by 0.01usft at 8396.08usft MD (7825.79 TVD, 2483.96 N, 973.31 E)										
- Point										
Cross @ 13811.07' MD	0.00	0.00	8,049.65	7,789.00	912.58	1,243,374.10	3,143,343.18	40.000312	-104.988336	
- actual wellpath hits target center										
- Point										
70° Inclination @ 8794.9	0.00	0.00	8,079.19	2,780.07	952.82	1,238,365.48	3,143,412.13	39.986562	-104.988193	
- actual wellpath misses target center by 0.01usft at 8794.97usft MD (8079.19 TVD, 2780.07 N, 952.83 E)										
- Point										
Cross @ 8816.11' MD	0.00	0.00	8,086.10	2,800.00	951.44	1,238,385.41	3,143,410.64	39.986617	-104.988198	
- actual wellpath hits target center										
- Point										

Survey Report

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Interchange B N35-20-2C
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 N35-20-2C	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			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,606.30	1,598.65	81.39	23.51	Tie into Surface Surveys	
1,675.00	1,665.24	97.02	29.98	First MWD Survey @ 1675' MD	
8,396.08	7,825.79	2,483.96	973.31	30° Inclination @ 8396.08' MD	
8,794.97	8,079.19	2,780.07	952.83	70° Inclination @ 8794.97' MD	
8,816.11	8,086.10	2,800.00	951.44	Cross @ 8816.11' MD	
13,811.07	8,049.65	7,789.00	912.58	Cross @ 13811.07' MD	
18,531.00	8,046.29	12,506.19	860.12	Last MWD Survey @ 18531' MD	
18,618.00	8,045.80	12,593.16	858.01	Projection to TD @ 18618' MD 506' FNL/ 2339' FEL	

Checked By: _____	Approved By: _____	Date: _____
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