



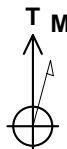
Well: 70 Ranch 10-04-4L
Site: Section 03-T04N-R63W
Project: Weld County, Colorado
Wellbore: Original Hole
Design: plan2

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
70 Ranch 10-04-4L SL 260 FSL 1286 FWL	24.00	-29.27	-3.7914649120.77	1799477.54	40.33468124	-104.42923403	
70 Ranch 10-04-4L BHL 470 FSL 2206 FWL	6537.00	-10377.50	976.4814638779.10	1800524.52	40.30626542	-104.42571796	
70 Ranch 10-04-4L LP 470 FNL 2206 FWL	6537.00	-710.46	904.9914648445.46	1800390.69	40.33281070	-104.42597320	

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	KOP Begin 10°/100' build
3	2115.41	11.54	99.93	2114.63	-2.00	11.41	10.00	3.06	Begin 11.54° tangent
4	6076.33	11.54	99.93	5995.47	-138.69	791.98	0.00	212.28	Begin 10°/100' build/turn
5	6955.71	90.00	179.58	6537.00	-710.46	904.99	10.00	792.12	LP Begin 90° lateral
6	16623.02	90.00	179.58	6537.00	-10377.50	976.48	0.00	10423.34	PBHL/TD 16623.02 MD/6537.00 TVD



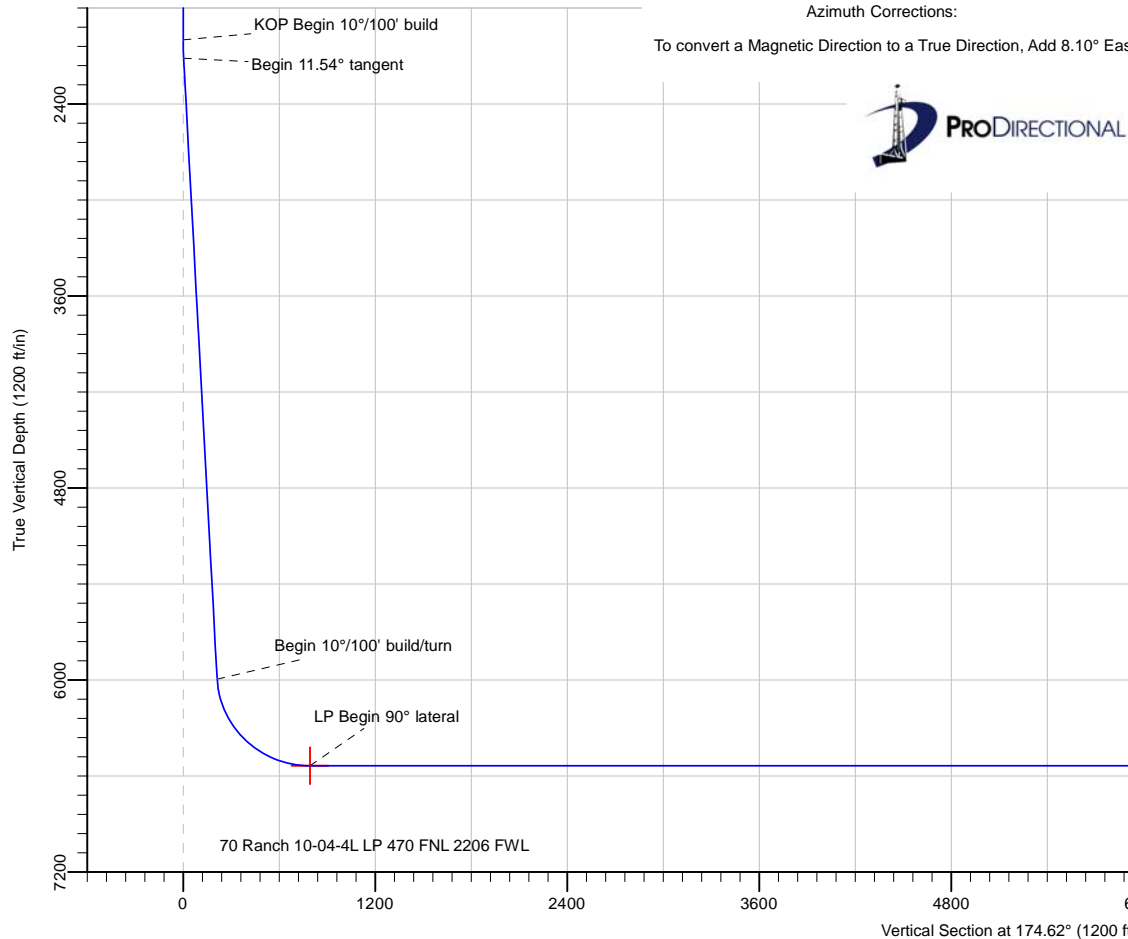
Azimuths to True North
Magnetic North: 8.10°

Magnetic Field
Strength: 52228.3snT
Dip Angle: 66.90°
Date: 5/21/2018
Model: HDGM

70 Ranch 10-04-4L Surf loc: 260 FSL 1286 FWL Section 03-T04N-R63W			
NAD83 Colorado - HARN Universal Transverse Mercator (US Survey Feet) Zone 13N (108 W to 102 W) RKB=4598+24 @ 4622.00ft			
Northing	Easting	Latitude	Longitude
14649150.07	1799481.14	40.33476162	-104.42922044

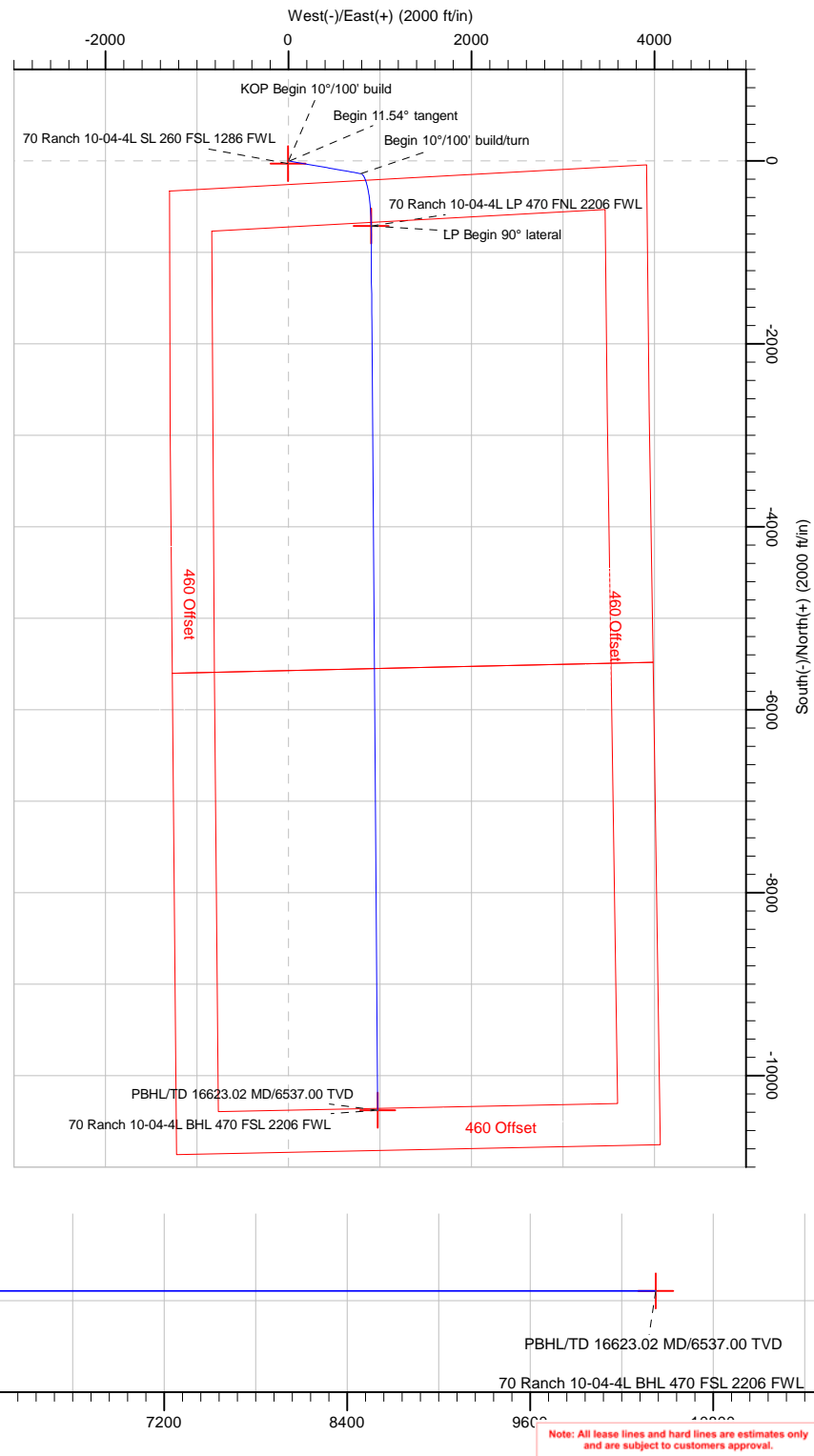
Azimuth Corrections:

To convert a Magnetic Direction to a True Direction, Add 8.10° East



Date: 2:28, May 21 2018

Vertical Section at 174.62° (1200 ft/in)



Note: All lease lines and hard lines are estimates only and are subject to customers approval.

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-04-4L
Company:	Confluence Resources	TVD Reference:	RKB=4598+24 @ 4622.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4598+24 @ 4622.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-04-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

Project	Weld County, Colorado		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD83 Colorado - HARN		
Map Zone:	Zone 13N (108 W to 102 W)		

Site		Section 03-T04N-R63W			
Site Position:		Northing:	14,650,244.32 usft	Latitude:	40.33774036
From:	Map	Easting:	1,800,940.24 usft	Longitude:	-104.42395937
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.37 °

Well	70 Ranch 10-04-4L, Surf loc: 260 FSL 1286 FWL Section 03-T04N-R63W					
Well Position	+N/-S	-1,084.73 ft	Northing:	14,649,150.07 usft	Latitude:	40.33476162
	+E/-W	-1,466.19 ft	Easting:	1,799,481.14 usft	Longitude:	-104.42922044
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,598.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/21/2018	8.10	66.90	52,228.30000000

Design	plan2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	174.62

Plan Survey Tool Program	Date	5/21/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,623.02	plan2 (Original Hole)	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,115.41	11.54	99.93	2,114.63	-2.00	11.41	10.00	10.00	0.00	99.93	
6,076.33	11.54	99.93	5,995.47	-138.69	791.98	0.00	0.00	0.00	0.00	
6,955.71	90.00	179.58	6,537.00	-710.46	904.99	10.00	8.92	9.06	79.85	70 Ranch 10-04-4L LI
16,623.02	90.00	179.58	6,537.00	-10,377.50	976.48	0.00	0.00	0.00	0.00	70 Ranch 10-04-4L BI

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Company:	Confluence Resources	TVD Reference:	RKB=4598+24 @ 4622.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4598+24 @ 4622.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-04-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 10°/100' build									
2,100.00	10.00	99.93	2,099.49	-1.50	8.57	2.30	10.00	10.00	0.00
2,115.41	11.54	99.93	2,114.63	-2.00	11.41	3.06	10.00	10.00	0.00
Begin 11.54° tangent									
2,200.00	11.54	99.93	2,197.51	-4.92	28.08	7.53	0.00	0.00	0.00
2,300.00	11.54	99.93	2,295.49	-8.37	47.79	12.81	0.00	0.00	0.00
2,400.00	11.54	99.93	2,393.47	-11.82	67.49	18.09	0.00	0.00	0.00
2,500.00	11.54	99.93	2,491.45	-15.27	87.20	23.37	0.00	0.00	0.00
2,600.00	11.54	99.93	2,589.42	-18.72	106.91	28.65	0.00	0.00	0.00
2,700.00	11.54	99.93	2,687.40	-22.17	126.61	33.94	0.00	0.00	0.00
2,800.00	11.54	99.93	2,785.38	-25.62	146.32	39.22	0.00	0.00	0.00
2,900.00	11.54	99.93	2,883.36	-29.07	166.03	44.50	0.00	0.00	0.00
3,000.00	11.54	99.93	2,981.34	-32.53	185.73	49.78	0.00	0.00	0.00
3,100.00	11.54	99.93	3,079.32	-35.98	205.44	55.07	0.00	0.00	0.00
3,200.00	11.54	99.93	3,177.29	-39.43	225.15	60.35	0.00	0.00	0.00
3,300.00	11.54	99.93	3,275.27	-42.88	244.86	65.63	0.00	0.00	0.00
3,400.00	11.54	99.93	3,373.25	-46.33	264.56	70.91	0.00	0.00	0.00
3,500.00	11.54	99.93	3,471.23	-49.78	284.27	76.19	0.00	0.00	0.00
3,600.00	11.54	99.93	3,569.21	-53.23	303.98	81.48	0.00	0.00	0.00
3,700.00	11.54	99.93	3,667.18	-56.68	323.68	86.76	0.00	0.00	0.00
3,800.00	11.54	99.93	3,765.16	-60.13	343.39	92.04	0.00	0.00	0.00
3,900.00	11.54	99.93	3,863.14	-63.59	363.10	97.32	0.00	0.00	0.00
4,000.00	11.54	99.93	3,961.12	-67.04	382.80	102.60	0.00	0.00	0.00
4,100.00	11.54	99.93	4,059.10	-70.49	402.51	107.89	0.00	0.00	0.00
4,200.00	11.54	99.93	4,157.08	-73.94	422.22	113.17	0.00	0.00	0.00
4,300.00	11.54	99.93	4,255.05	-77.39	441.92	118.45	0.00	0.00	0.00
4,400.00	11.54	99.93	4,353.03	-80.84	461.63	123.73	0.00	0.00	0.00
4,500.00	11.54	99.93	4,451.01	-84.29	481.34	129.01	0.00	0.00	0.00
4,600.00	11.54	99.93	4,548.99	-87.74	501.04	134.30	0.00	0.00	0.00
4,700.00	11.54	99.93	4,646.97	-91.19	520.75	139.58	0.00	0.00	0.00
4,800.00	11.54	99.93	4,744.94	-94.65	540.46	144.86	0.00	0.00	0.00
4,900.00	11.54	99.93	4,842.92	-98.10	560.16	150.14	0.00	0.00	0.00

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Company:	Confluence Resources	TVD Reference:	RKB=4598+24 @ 4622.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4598+24 @ 4622.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-04-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,000.00	11.54	99.93	4,940.90	-101.55	579.87	155.42	0.00	0.00	0.00
5,100.00	11.54	99.93	5,038.88	-105.00	599.58	160.71	0.00	0.00	0.00
5,200.00	11.54	99.93	5,136.86	-108.45	619.28	165.99	0.00	0.00	0.00
5,300.00	11.54	99.93	5,234.84	-111.90	638.99	171.27	0.00	0.00	0.00
5,400.00	11.54	99.93	5,332.81	-115.35	658.70	176.55	0.00	0.00	0.00
5,500.00	11.54	99.93	5,430.79	-118.80	678.40	181.83	0.00	0.00	0.00
5,600.00	11.54	99.93	5,528.77	-122.25	698.11	187.12	0.00	0.00	0.00
5,700.00	11.54	99.93	5,626.75	-125.70	717.82	192.40	0.00	0.00	0.00
5,800.00	11.54	99.93	5,724.73	-129.16	737.52	197.68	0.00	0.00	0.00
5,900.00	11.54	99.93	5,822.71	-132.61	757.23	202.96	0.00	0.00	0.00
6,000.00	11.54	99.93	5,920.68	-136.06	776.94	208.25	0.00	0.00	0.00
6,076.33	11.54	99.93	5,995.47	-138.69	791.98	212.28	0.00	0.00	0.00
Begin 10°/100' build/turn									
6,100.00	12.18	111.04	6,018.64	-140.00	796.64	214.01	10.00	2.70	46.94
6,200.00	18.29	142.14	6,115.23	-156.21	816.17	231.99	10.00	6.11	31.10
6,300.00	26.79	156.14	6,207.57	-189.30	834.96	266.69	10.00	8.50	13.99
6,400.00	36.03	163.55	6,292.86	-238.24	852.45	317.05	10.00	9.24	7.41
6,500.00	45.56	168.22	6,368.49	-301.56	868.12	381.56	10.00	9.53	4.67
6,600.00	55.23	171.56	6,432.17	-377.32	881.47	458.24	10.00	9.67	3.34
6,700.00	64.96	174.19	6,481.98	-463.24	892.11	544.78	10.00	9.74	2.63
6,800.00	74.74	176.44	6,516.38	-556.69	899.71	638.53	10.00	9.78	2.24
6,900.00	84.54	178.48	6,534.35	-654.84	904.04	736.65	10.00	9.80	2.04
6,955.71	90.00	179.58	6,537.00	-710.46	904.99	792.12	10.00	9.80	1.98
LP Begin 90° lateral									
7,000.00	90.00	179.58	6,537.00	-754.74	905.32	836.24	0.00	0.00	0.00
7,100.00	90.00	179.58	6,537.00	-854.74	906.06	935.86	0.00	0.00	0.00
7,200.00	90.00	179.58	6,537.00	-954.74	906.80	1,035.49	0.00	0.00	0.00
7,300.00	90.00	179.58	6,537.00	-1,054.74	907.53	1,135.12	0.00	0.00	0.00
7,400.00	90.00	179.58	6,537.00	-1,154.73	908.27	1,234.74	0.00	0.00	0.00
7,500.00	90.00	179.58	6,537.00	-1,254.73	909.01	1,334.37	0.00	0.00	0.00
7,600.00	90.00	179.58	6,537.00	-1,354.73	909.75	1,434.00	0.00	0.00	0.00
7,700.00	90.00	179.58	6,537.00	-1,454.72	910.49	1,533.62	0.00	0.00	0.00
7,800.00	90.00	179.58	6,537.00	-1,554.72	911.23	1,633.25	0.00	0.00	0.00
7,900.00	90.00	179.58	6,537.00	-1,654.72	911.97	1,732.88	0.00	0.00	0.00
8,000.00	90.00	179.58	6,537.00	-1,754.72	912.71	1,832.50	0.00	0.00	0.00
8,100.00	90.00	179.58	6,537.00	-1,854.71	913.45	1,932.13	0.00	0.00	0.00
8,200.00	90.00	179.58	6,537.00	-1,954.71	914.19	2,031.76	0.00	0.00	0.00
8,300.00	90.00	179.58	6,537.00	-2,054.71	914.93	2,131.38	0.00	0.00	0.00
8,400.00	90.00	179.58	6,537.00	-2,154.71	915.67	2,231.01	0.00	0.00	0.00
8,500.00	90.00	179.58	6,537.00	-2,254.70	916.41	2,330.64	0.00	0.00	0.00
8,600.00	90.00	179.58	6,537.00	-2,354.70	917.15	2,430.26	0.00	0.00	0.00
8,700.00	90.00	179.58	6,537.00	-2,454.70	917.89	2,529.89	0.00	0.00	0.00
8,800.00	90.00	179.58	6,537.00	-2,554.69	918.63	2,629.52	0.00	0.00	0.00
8,900.00	90.00	179.58	6,537.00	-2,654.69	919.37	2,729.15	0.00	0.00	0.00
9,000.00	90.00	179.58	6,537.00	-2,754.69	920.11	2,828.77	0.00	0.00	0.00
9,100.00	90.00	179.58	6,537.00	-2,854.69	920.85	2,928.40	0.00	0.00	0.00
9,200.00	90.00	179.58	6,537.00	-2,954.68	921.59	3,028.03	0.00	0.00	0.00
9,300.00	90.00	179.58	6,537.00	-3,054.68	922.33	3,127.65	0.00	0.00	0.00
9,400.00	90.00	179.58	6,537.00	-3,154.68	923.07	3,227.28	0.00	0.00	0.00
9,500.00	90.00	179.58	6,537.00	-3,254.68	923.80	3,326.91	0.00	0.00	0.00
9,600.00	90.00	179.58	6,537.00	-3,354.67	924.54	3,426.53	0.00	0.00	0.00
9,700.00	90.00	179.58	6,537.00	-3,454.67	925.28	3,526.16	0.00	0.00	0.00
9,800.00	90.00	179.58	6,537.00	-3,554.67	926.02	3,625.79	0.00	0.00	0.00
9,900.00	90.00	179.58	6,537.00	-3,654.66	926.76	3,725.41	0.00	0.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=4598+24 @ 4622.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-04-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
10,000.00	90.00	179.58	6,537.00	-3,754.66	927.50	3,825.04	0.00	0.00	0.00	
10,100.00	90.00	179.58	6,537.00	-3,854.66	928.24	3,924.67	0.00	0.00	0.00	
10,200.00	90.00	179.58	6,537.00	-3,954.66	928.98	4,024.29	0.00	0.00	0.00	
10,300.00	90.00	179.58	6,537.00	-4,054.65	929.72	4,123.92	0.00	0.00	0.00	
10,400.00	90.00	179.58	6,537.00	-4,154.65	930.46	4,223.55	0.00	0.00	0.00	
10,500.00	90.00	179.58	6,537.00	-4,254.65	931.20	4,323.17	0.00	0.00	0.00	
10,600.00	90.00	179.58	6,537.00	-4,354.64	931.94	4,422.80	0.00	0.00	0.00	
10,700.00	90.00	179.58	6,537.00	-4,454.64	932.68	4,522.43	0.00	0.00	0.00	
10,800.00	90.00	179.58	6,537.00	-4,554.64	933.42	4,622.05	0.00	0.00	0.00	
10,900.00	90.00	179.58	6,537.00	-4,654.64	934.16	4,721.68	0.00	0.00	0.00	
11,000.00	90.00	179.58	6,537.00	-4,754.63	934.90	4,821.31	0.00	0.00	0.00	
11,100.00	90.00	179.58	6,537.00	-4,854.63	935.64	4,920.93	0.00	0.00	0.00	
11,200.00	90.00	179.58	6,537.00	-4,954.63	936.38	5,020.56	0.00	0.00	0.00	
11,300.00	90.00	179.58	6,537.00	-5,054.63	937.12	5,120.19	0.00	0.00	0.00	
11,400.00	90.00	179.58	6,537.00	-5,154.62	937.86	5,219.81	0.00	0.00	0.00	
11,500.00	90.00	179.58	6,537.00	-5,254.62	938.60	5,319.44	0.00	0.00	0.00	
11,600.00	90.00	179.58	6,537.00	-5,354.62	939.34	5,419.07	0.00	0.00	0.00	
11,700.00	90.00	179.58	6,537.00	-5,454.61	940.08	5,518.69	0.00	0.00	0.00	
11,800.00	90.00	179.58	6,537.00	-5,554.61	940.81	5,618.32	0.00	0.00	0.00	
11,900.00	90.00	179.58	6,537.00	-5,654.61	941.55	5,717.95	0.00	0.00	0.00	
12,000.00	90.00	179.58	6,537.00	-5,754.61	942.29	5,817.58	0.00	0.00	0.00	
12,100.00	90.00	179.58	6,537.00	-5,854.60	943.03	5,917.20	0.00	0.00	0.00	
12,200.00	90.00	179.58	6,537.00	-5,954.60	943.77	6,016.83	0.00	0.00	0.00	
12,300.00	90.00	179.58	6,537.00	-6,054.60	944.51	6,116.46	0.00	0.00	0.00	
12,400.00	90.00	179.58	6,537.00	-6,154.60	945.25	6,216.08	0.00	0.00	0.00	
12,500.00	90.00	179.58	6,537.00	-6,254.59	945.99	6,315.71	0.00	0.00	0.00	
12,600.00	90.00	179.58	6,537.00	-6,354.59	946.73	6,415.34	0.00	0.00	0.00	
12,700.00	90.00	179.58	6,537.00	-6,454.59	947.47	6,514.96	0.00	0.00	0.00	
12,800.00	90.00	179.58	6,537.00	-6,554.58	948.21	6,614.59	0.00	0.00	0.00	
12,900.00	90.00	179.58	6,537.00	-6,654.58	948.95	6,714.22	0.00	0.00	0.00	
13,000.00	90.00	179.58	6,537.00	-6,754.58	949.69	6,813.84	0.00	0.00	0.00	
13,100.00	90.00	179.58	6,537.00	-6,854.58	950.43	6,913.47	0.00	0.00	0.00	
13,200.00	90.00	179.58	6,537.00	-6,954.57	951.17	7,013.10	0.00	0.00	0.00	
13,300.00	90.00	179.58	6,537.00	-7,054.57	951.91	7,112.72	0.00	0.00	0.00	
13,400.00	90.00	179.58	6,537.00	-7,154.57	952.65	7,212.35	0.00	0.00	0.00	
13,500.00	90.00	179.58	6,537.00	-7,254.57	953.39	7,311.98	0.00	0.00	0.00	
13,600.00	90.00	179.58	6,537.00	-7,354.56	954.13	7,411.60	0.00	0.00	0.00	
13,700.00	90.00	179.58	6,537.00	-7,454.56	954.87	7,511.23	0.00	0.00	0.00	
13,800.00	90.00	179.58	6,537.00	-7,554.56	955.61	7,610.86	0.00	0.00	0.00	
13,900.00	90.00	179.58	6,537.00	-7,654.55	956.35	7,710.48	0.00	0.00	0.00	
14,000.00	90.00	179.58	6,537.00	-7,754.55	957.08	7,810.11	0.00	0.00	0.00	
14,100.00	90.00	179.58	6,537.00	-7,854.55	957.82	7,909.74	0.00	0.00	0.00	
14,200.00	90.00	179.58	6,537.00	-7,954.55	958.56	8,009.36	0.00	0.00	0.00	
14,300.00	90.00	179.58	6,537.00	-8,054.54	959.30	8,108.99	0.00	0.00	0.00	
14,400.00	90.00	179.58	6,537.00	-8,154.54	960.04	8,208.62	0.00	0.00	0.00	
14,500.00	90.00	179.58	6,537.00	-8,254.54	960.78	8,308.24	0.00	0.00	0.00	
14,600.00	90.00	179.58	6,537.00	-8,354.54	961.52	8,407.87	0.00	0.00	0.00	
14,700.00	90.00	179.58	6,537.00	-8,454.53	962.26	8,507.50	0.00	0.00	0.00	
14,800.00	90.00	179.58	6,537.00	-8,554.53	963.00	8,607.12	0.00	0.00	0.00	
14,900.00	90.00	179.58	6,537.00	-8,654.53	963.74	8,706.75	0.00	0.00	0.00	
15,000.00	90.00	179.58	6,537.00	-8,754.52	964.48	8,806.38	0.00	0.00	0.00	
15,100.00	90.00	179.58	6,537.00	-8,854.52	965.22	8,906.01	0.00	0.00	0.00	
15,200.00	90.00	179.58	6,537.00	-8,954.52	965.96	9,005.63	0.00	0.00	0.00	
15,300.00	90.00	179.58	6,537.00	-9,054.52	966.70	9,105.26	0.00	0.00	0.00	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-04-4L
Company:	Confluence Resources	TVD Reference:	RKB=4598+24 @ 4622.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4598+24 @ 4622.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-04-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
15,400.00	90.00	179.58	6,537.00	-9,154.51	967.44	9,204.89	0.00	0.00	0.00
15,500.00	90.00	179.58	6,537.00	-9,254.51	968.18	9,304.51	0.00	0.00	0.00
15,600.00	90.00	179.58	6,537.00	-9,354.51	968.92	9,404.14	0.00	0.00	0.00
15,700.00	90.00	179.58	6,537.00	-9,454.51	969.66	9,503.77	0.00	0.00	0.00
15,800.00	90.00	179.58	6,537.00	-9,554.50	970.40	9,603.39	0.00	0.00	0.00
15,900.00	90.00	179.58	6,537.00	-9,654.50	971.14	9,703.02	0.00	0.00	0.00
16,000.00	90.00	179.58	6,537.00	-9,754.50	971.88	9,802.65	0.00	0.00	0.00
16,100.00	90.00	179.58	6,537.00	-9,854.49	972.62	9,902.27	0.00	0.00	0.00
16,200.00	90.00	179.58	6,537.00	-9,954.49	973.35	10,001.90	0.00	0.00	0.00
16,300.00	90.00	179.58	6,537.00	-10,054.49	974.09	10,101.53	0.00	0.00	0.00
16,400.00	90.00	179.58	6,537.00	-10,154.49	974.83	10,201.15	0.00	0.00	0.00
16,500.00	90.00	179.58	6,537.00	-10,254.48	975.57	10,300.78	0.00	0.00	0.00
16,600.00	90.00	179.58	6,537.00	-10,354.48	976.31	10,400.41	0.00	0.00	0.00
16,623.02	90.00	179.58	6,537.00	-10,377.50	976.48	10,423.34	0.00	0.00	0.00
PBHL/TD 16623.02 MD/6537.00 TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
70 Ranch 10-04-4L SL 2	0.00	0.37	24.00	-29.27	-3.79	14,649,120.77	1,799,477.54	40.33468123	-104.42923403
- hit/miss target									
- plan misses target center by 29.52ft at 24.00ft MD (24.00 TVD, 0.00 N, 0.00 E)									
- Point									
70 Ranch 10-04-4L LP 4	0.00	0.37	6,537.00	-710.46	904.99	14,648,445.46	1,800,390.69	40.33281069	-104.42597321
- plan hits target center									
- Point									
70 Ranch 10-04-4L BHL	0.00	0.37	6,537.00	-10,377.50	976.48	14,638,779.10	1,800,524.52	40.30626543	-104.42571796
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,000.00	2,000.00	0.00	0.00	KOP Begin 10°/100' build
2,115.41	2,114.63	-2.00	11.41	Begin 11.54° tangent
6,076.33	5,995.47	-138.69	791.98	Begin 10°/100' build/turn
6,955.71	6,537.00	-710.46	904.99	LP Begin 90° lateral
16,623.02	6,537.00	-10,377.50	976.48	PBHL/TD 16623.02 MD/6537.00 TVD

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-04-4L
Company:	Confluence Resources	TVD Reference:	RKB=4598+24 @ 4622.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4598+24 @ 4622.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-04-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

Project	Weld County, Colorado		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD83 Colorado - HARN		
Map Zone:	Zone 13N (108 W to 102 W)		

Site		Section 03-T04N-R63W			
Site Position:		Northing:	14,650,244.32 usft	Latitude:	40.33774036
From:	Map	Easting:	1,800,940.24 usft	Longitude:	-104.42395937
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.37 °

Well	70 Ranch 10-04-4L, Surf loc: 260 FSL 1286 FWL Section 03-T04N-R63W					
Well Position	+N/-S	0.00 ft	Northing:	14,649,150.07 usft	Latitude:	40.33476162
	+E/-W	0.00 ft	Easting:	1,799,481.14 usft	Longitude:	-104.42922044
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,598.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/21/2018	8.10	66.90	52,228.30000000

Design	plan2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	174.62

Plan Survey Tool Program	Date	5/21/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,623.02 plan2 (Original Hole)		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,115.41	11.54	99.93	2,114.63	-2.00	11.41	10.00	10.00	0.00	99.93	
6,076.33	11.54	99.93	5,995.47	-138.69	791.98	0.00	0.00	0.00	0.00	
6,955.71	90.00	179.58	6,537.00	-710.46	904.99	10.00	8.92	9.06	79.85	70 Ranch 10-04-4L LI
16,623.02	90.00	179.58	6,537.00	-10,377.50	976.48	0.00	0.00	0.00	0.00	70 Ranch 10-04-4L BI

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-04-4L
Company:	Confluence Resources	TVD Reference:	RKB=4598+24 @ 4622.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4598+24 @ 4622.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-04-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
100.00	0.00	0.00	100.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
200.00	0.00	0.00	200.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
300.00	0.00	0.00	300.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
400.00	0.00	0.00	400.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
500.00	0.00	0.00	500.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
600.00	0.00	0.00	600.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
700.00	0.00	0.00	700.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
800.00	0.00	0.00	800.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
900.00	0.00	0.00	900.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,649,150.07	1,799,481.14	40.33476162	-104.42922044
KOP Begin 10°/100' build									
2,100.00	10.00	99.93	2,099.49	-1.50	8.57	14,649,148.62	1,799,489.72	40.33475750	-104.42918967
2,115.41	11.54	99.93	2,114.63	-2.00	11.41	14,649,148.14	1,799,492.56	40.33475613	-104.42917950
Begin 11.54° tangent									
2,200.00	11.54	99.93	2,197.51	-4.92	28.08	14,649,145.33	1,799,509.25	40.33474812	-104.42911968
2,300.00	11.54	99.93	2,295.49	-8.37	47.79	14,649,142.01	1,799,528.98	40.33473864	-104.42904897
2,400.00	11.54	99.93	2,393.47	-11.82	67.49	14,649,138.68	1,799,548.71	40.33472916	-104.42897825
2,500.00	11.54	99.93	2,491.45	-15.27	87.20	14,649,135.36	1,799,568.44	40.33471969	-104.42890754
2,600.00	11.54	99.93	2,589.42	-18.72	106.91	14,649,132.04	1,799,588.17	40.33471021	-104.42883683
2,700.00	11.54	99.93	2,687.40	-22.17	126.61	14,649,128.71	1,799,607.89	40.33470073	-104.42876612
2,800.00	11.54	99.93	2,785.38	-25.62	146.32	14,649,125.39	1,799,627.62	40.33469126	-104.42869540
2,900.00	11.54	99.93	2,883.36	-29.07	166.03	14,649,122.06	1,799,647.35	40.33468178	-104.42862469
3,000.00	11.54	99.93	2,981.34	-32.53	185.73	14,649,118.74	1,799,667.08	40.33467230	-104.42855398
3,100.00	11.54	99.93	3,079.32	-35.98	205.44	14,649,115.42	1,799,686.81	40.33466283	-104.42848327
3,200.00	11.54	99.93	3,177.29	-39.43	225.15	14,649,112.09	1,799,706.54	40.33465335	-104.42841255
3,300.00	11.54	99.93	3,275.27	-42.88	244.86	14,649,108.77	1,799,726.27	40.33464387	-104.42834184
3,400.00	11.54	99.93	3,373.25	-46.33	264.56	14,649,105.44	1,799,745.99	40.33463440	-104.42827113
3,500.00	11.54	99.93	3,471.23	-49.78	284.27	14,649,102.12	1,799,765.72	40.33462492	-104.42820041
3,600.00	11.54	99.93	3,569.21	-53.23	303.98	14,649,098.80	1,799,785.45	40.33461544	-104.42812970
3,700.00	11.54	99.93	3,667.18	-56.68	323.68	14,649,095.47	1,799,805.18	40.33460596	-104.42805899
3,800.00	11.54	99.93	3,765.16	-60.13	343.39	14,649,092.15	1,799,824.91	40.33459649	-104.42798828
3,900.00	11.54	99.93	3,863.14	-63.59	363.10	14,649,088.82	1,799,844.64	40.33458701	-104.42791756
4,000.00	11.54	99.93	3,961.12	-67.04	382.80	14,649,085.50	1,799,864.37	40.33457753	-104.42784685
4,100.00	11.54	99.93	4,059.10	-70.49	402.51	14,649,082.18	1,799,884.10	40.33456806	-104.42777614
4,200.00	11.54	99.93	4,157.08	-73.94	422.22	14,649,078.85	1,799,903.82	40.33455858	-104.42770543
4,300.00	11.54	99.93	4,255.05	-77.39	441.92	14,649,075.53	1,799,923.55	40.33454910	-104.42763471
4,400.00	11.54	99.93	4,353.03	-80.84	461.63	14,649,072.21	1,799,943.28	40.33453962	-104.42756400
4,500.00	11.54	99.93	4,451.01	-84.29	481.34	14,649,068.88	1,799,963.01	40.33453015	-104.42749329
4,600.00	11.54	99.93	4,548.99	-87.74	501.04	14,649,065.56	1,799,982.74	40.33452067	-104.42742258
4,700.00	11.54	99.93	4,646.97	-91.19	520.75	14,649,062.23	1,800,002.47	40.33451119	-104.42735186
4,800.00	11.54	99.93	4,744.94	-94.65	540.46	14,649,058.91	1,800,022.20	40.33450171	-104.42728115
4,900.00	11.54	99.93	4,842.92	-98.10	560.16	14,649,055.59	1,800,041.92	40.33449224	-104.42721044
5,000.00	11.54	99.93	4,940.90	-101.55	579.87	14,649,052.26	1,800,061.65	40.33448276	-104.42713973

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-04-4L
Company:	Confluence Resources	TVD Reference:	RKB=4598+24 @ 4622.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4598+24 @ 4622.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-04-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,100.00	11.54	99.93	5,038.88	-105.00	599.58	14,649,048.94	1,800,081.38	40.33447328	-104.42706901
5,200.00	11.54	99.93	5,136.86	-108.45	619.28	14,649,045.61	1,800,101.11	40.33446380	-104.42699830
5,300.00	11.54	99.93	5,234.84	-111.90	638.99	14,649,042.29	1,800,120.84	40.33445432	-104.42692759
5,400.00	11.54	99.93	5,332.81	-115.35	658.70	14,649,038.97	1,800,140.57	40.33444485	-104.42685688
5,500.00	11.54	99.93	5,430.79	-118.80	678.40	14,649,035.64	1,800,160.30	40.33443537	-104.42678617
5,600.00	11.54	99.93	5,528.77	-122.25	698.11	14,649,032.32	1,800,180.02	40.33442589	-104.42671545
5,700.00	11.54	99.93	5,626.75	-125.70	717.82	14,649,028.99	1,800,199.75	40.33441641	-104.42664474
5,800.00	11.54	99.93	5,724.73	-129.16	737.52	14,649,025.67	1,800,219.48	40.33440693	-104.42657403
5,900.00	11.54	99.93	5,822.71	-132.61	757.23	14,649,022.35	1,800,239.21	40.33439746	-104.42650332
6,000.00	11.54	99.93	5,920.68	-136.06	776.94	14,649,019.02	1,800,258.94	40.33438798	-104.42643260
6,076.33	11.54	99.93	5,995.47	-138.69	791.98	14,649,016.49	1,800,274.00	40.33438074	-104.42637863
Begin 10°/100' build/turn									
6,100.00	12.18	111.04	6,018.64	-140.00	796.64	14,649,015.21	1,800,278.67	40.33437716	-104.42636190
6,200.00	18.29	142.14	6,115.23	-156.21	816.17	14,648,999.12	1,800,298.30	40.33433263	-104.42629184
6,300.00	26.79	156.14	6,207.57	-189.30	834.96	14,648,966.16	1,800,317.30	40.33424178	-104.42622441
6,400.00	36.03	163.55	6,292.86	-238.24	852.45	14,648,917.33	1,800,335.11	40.33410738	-104.42616165
6,500.00	45.56	168.22	6,368.49	-301.56	868.12	14,648,854.11	1,800,351.18	40.33393352	-104.42610546
6,600.00	55.23	171.56	6,432.17	-377.32	881.47	14,648,778.44	1,800,365.02	40.33372546	-104.42605756
6,700.00	64.96	174.19	6,481.98	-463.24	892.11	14,648,692.59	1,800,376.21	40.33348955	-104.42601939
6,800.00	74.74	176.44	6,516.38	-556.69	899.71	14,648,599.19	1,800,384.42	40.33323294	-104.42599213
6,900.00	84.54	178.48	6,534.35	-654.84	904.04	14,648,501.07	1,800,389.39	40.33296342	-104.42597659
6,955.71	90.00	179.58	6,537.00	-710.46	904.99	14,648,445.46	1,800,390.69	40.33281069	-104.42597321
LP Begin 90° lateral									
7,000.00	90.00	179.58	6,537.00	-754.74	905.32	14,648,401.18	1,800,391.30	40.33268909	-104.42597204
7,100.00	90.00	179.58	6,537.00	-854.74	906.06	14,648,301.19	1,800,392.69	40.33241450	-104.42596940
7,200.00	90.00	179.58	6,537.00	-954.74	906.80	14,648,201.20	1,800,394.07	40.33213991	-104.42596676
7,300.00	90.00	179.58	6,537.00	-1,054.74	907.53	14,648,101.21	1,800,395.46	40.33186533	-104.42596411
7,400.00	90.00	179.58	6,537.00	-1,154.73	908.27	14,648,001.22	1,800,396.84	40.33159074	-104.42596147
7,500.00	90.00	179.58	6,537.00	-1,254.73	909.01	14,647,901.23	1,800,398.22	40.33131615	-104.42595883
7,600.00	90.00	179.58	6,537.00	-1,354.73	909.75	14,647,801.24	1,800,399.61	40.33104156	-104.42595619
7,700.00	90.00	179.58	6,537.00	-1,454.72	910.49	14,647,701.25	1,800,400.99	40.33076698	-104.42595355
7,800.00	90.00	179.58	6,537.00	-1,554.72	911.23	14,647,601.26	1,800,402.38	40.33049239	-104.42595091
7,900.00	90.00	179.58	6,537.00	-1,654.72	911.97	14,647,501.27	1,800,403.76	40.33021780	-104.42594827
8,000.00	90.00	179.58	6,537.00	-1,754.72	912.71	14,647,401.28	1,800,405.15	40.32994321	-104.42594563
8,100.00	90.00	179.58	6,537.00	-1,854.71	913.45	14,647,301.29	1,800,406.53	40.32966862	-104.42594299
8,200.00	90.00	179.58	6,537.00	-1,954.71	914.19	14,647,201.30	1,800,407.91	40.32939404	-104.42594035
8,300.00	90.00	179.58	6,537.00	-2,054.71	914.93	14,647,101.31	1,800,409.30	40.32911945	-104.42593771
8,400.00	90.00	179.58	6,537.00	-2,154.71	915.67	14,647,001.32	1,800,410.68	40.32884486	-104.42593507
8,500.00	90.00	179.58	6,537.00	-2,254.70	916.41	14,646,901.33	1,800,412.07	40.32857027	-104.42593243
8,600.00	90.00	179.58	6,537.00	-2,354.70	917.15	14,646,801.34	1,800,413.45	40.32829569	-104.42592979
8,700.00	90.00	179.58	6,537.00	-2,454.70	917.89	14,646,701.35	1,800,414.84	40.32802110	-104.42592715
8,800.00	90.00	179.58	6,537.00	-2,554.69	918.63	14,646,601.36	1,800,416.22	40.32774651	-104.42592451
8,900.00	90.00	179.58	6,537.00	-2,654.69	919.37	14,646,501.36	1,800,417.61	40.32747192	-104.42592187
9,000.00	90.00	179.58	6,537.00	-2,754.69	920.11	14,646,401.37	1,800,418.99	40.32719734	-104.42591922
9,100.00	90.00	179.58	6,537.00	-2,854.69	920.85	14,646,301.38	1,800,420.37	40.32692275	-104.42591658
9,200.00	90.00	179.58	6,537.00	-2,954.68	921.59	14,646,201.39	1,800,421.76	40.32664816	-104.42591394
9,300.00	90.00	179.58	6,537.00	-3,054.68	922.33	14,646,101.40	1,800,423.14	40.32637357	-104.42591130
9,400.00	90.00	179.58	6,537.00	-3,154.68	923.07	14,646,001.41	1,800,424.53	40.32609898	-104.42590866
9,500.00	90.00	179.58	6,537.00	-3,254.68	923.80	14,645,901.42	1,800,425.91	40.32582440	-104.42590602
9,600.00	90.00	179.58	6,537.00	-3,354.67	924.54	14,645,801.43	1,800,427.30	40.32554981	-104.42590338
9,700.00	90.00	179.58	6,537.00	-3,454.67	925.28	14,645,701.44	1,800,428.68	40.32527522	-104.42590074
9,800.00	90.00	179.58	6,537.00	-3,554.67	926.02	14,645,601.45	1,800,430.06	40.32500063	-104.42589810
9,900.00	90.00	179.58	6,537.00	-3,654.66	926.76	14,645,501.46	1,800,431.45	40.32472605	-104.42589546
10,000.00	90.00	179.58	6,537.00	-3,754.66	927.50	14,645,401.47	1,800,432.83	40.32445146	-104.42589282

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-04-4L
Company:	Confluence Resources	TVD Reference:	RKB=4598+24 @ 4622.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4598+24 @ 4622.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-04-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,100.00	90.00	179.58	6,537.00	-3,854.66	928.24	14,645,301.48	1,800,434.22	40.32417687	-104.42589018
10,200.00	90.00	179.58	6,537.00	-3,954.66	928.98	14,645,201.49	1,800,435.60	40.32390228	-104.42588754
10,300.00	90.00	179.58	6,537.00	-4,054.65	929.72	14,645,101.50	1,800,436.99	40.32362769	-104.42588490
10,400.00	90.00	179.58	6,537.00	-4,154.65	930.46	14,645,001.51	1,800,438.37	40.32335311	-104.42588226
10,500.00	90.00	179.58	6,537.00	-4,254.65	931.20	14,644,901.52	1,800,439.75	40.32307852	-104.42587962
10,600.00	90.00	179.58	6,537.00	-4,354.64	931.94	14,644,801.53	1,800,441.14	40.32280393	-104.42587698
10,700.00	90.00	179.58	6,537.00	-4,454.64	932.68	14,644,701.54	1,800,442.52	40.32252934	-104.42587434
10,800.00	90.00	179.58	6,537.00	-4,554.64	933.42	14,644,601.55	1,800,443.91	40.32225475	-104.42587170
10,900.00	90.00	179.58	6,537.00	-4,654.64	934.16	14,644,501.56	1,800,445.29	40.32198017	-104.42586906
11,000.00	90.00	179.58	6,537.00	-4,754.63	934.90	14,644,401.57	1,800,446.68	40.32170558	-104.42586642
11,100.00	90.00	179.58	6,537.00	-4,854.63	935.64	14,644,301.58	1,800,448.06	40.32143099	-104.42586378
11,200.00	90.00	179.58	6,537.00	-4,954.63	936.38	14,644,201.59	1,800,449.45	40.32115640	-104.42586114
11,300.00	90.00	179.58	6,537.00	-5,054.63	937.12	14,644,101.60	1,800,450.83	40.32088181	-104.42585850
11,400.00	90.00	179.58	6,537.00	-5,154.62	937.86	14,644,001.61	1,800,452.21	40.32060723	-104.42585585
11,500.00	90.00	179.58	6,537.00	-5,254.62	938.60	14,643,901.62	1,800,453.60	40.32033264	-104.42585321
11,600.00	90.00	179.58	6,537.00	-5,354.62	939.34	14,643,801.63	1,800,454.98	40.32005805	-104.42585057
11,700.00	90.00	179.58	6,537.00	-5,454.61	940.08	14,643,701.64	1,800,456.37	40.31978346	-104.42584793
11,800.00	90.00	179.58	6,537.00	-5,554.61	940.81	14,643,601.65	1,800,457.75	40.31950887	-104.42584529
11,900.00	90.00	179.58	6,537.00	-5,654.61	941.55	14,643,501.66	1,800,459.14	40.31923429	-104.42584265
12,000.00	90.00	179.58	6,537.00	-5,754.61	942.29	14,643,401.67	1,800,460.52	40.31895970	-104.42584001
12,100.00	90.00	179.58	6,537.00	-5,854.60	943.03	14,643,301.68	1,800,461.90	40.31868511	-104.42583737
12,200.00	90.00	179.58	6,537.00	-5,954.60	943.77	14,643,201.69	1,800,463.29	40.31841052	-104.42583473
12,300.00	90.00	179.58	6,537.00	-6,054.60	944.51	14,643,101.70	1,800,464.67	40.31813593	-104.42583209
12,400.00	90.00	179.58	6,537.00	-6,154.60	945.25	14,643,001.71	1,800,466.06	40.31786134	-104.42582945
12,500.00	90.00	179.58	6,537.00	-6,254.59	945.99	14,642,901.72	1,800,467.44	40.31758676	-104.42582681
12,600.00	90.00	179.58	6,537.00	-6,354.59	946.73	14,642,801.73	1,800,468.83	40.31731217	-104.42582417
12,700.00	90.00	179.58	6,537.00	-6,454.59	947.47	14,642,701.74	1,800,470.21	40.31703758	-104.42582153
12,800.00	90.00	179.58	6,537.00	-6,554.58	948.21	14,642,601.75	1,800,471.60	40.31676299	-104.42581889
12,900.00	90.00	179.58	6,537.00	-6,654.58	948.95	14,642,501.76	1,800,472.98	40.31648840	-104.42581625
13,000.00	90.00	179.58	6,537.00	-6,754.58	949.69	14,642,401.77	1,800,474.36	40.31621382	-104.42581361
13,100.00	90.00	179.58	6,537.00	-6,854.58	950.43	14,642,301.78	1,800,475.75	40.31593923	-104.42581097
13,200.00	90.00	179.58	6,537.00	-6,954.57	951.17	14,642,201.79	1,800,477.13	40.31566464	-104.42580833
13,300.00	90.00	179.58	6,537.00	-7,054.57	951.91	14,642,101.80	1,800,478.52	40.31539005	-104.42580569
13,400.00	90.00	179.58	6,537.00	-7,154.57	952.65	14,642,001.81	1,800,479.90	40.31511546	-104.42580305
13,500.00	90.00	179.58	6,537.00	-7,254.57	953.39	14,641,901.81	1,800,481.29	40.31484087	-104.42580041
13,600.00	90.00	179.58	6,537.00	-7,354.56	954.13	14,641,801.82	1,800,482.67	40.31456629	-104.42579777
13,700.00	90.00	179.58	6,537.00	-7,454.56	954.87	14,641,701.83	1,800,484.05	40.31429170	-104.42579513
13,800.00	90.00	179.58	6,537.00	-7,554.56	955.61	14,641,601.84	1,800,485.44	40.31401711	-104.42579249
13,900.00	90.00	179.58	6,537.00	-7,654.55	956.35	14,641,501.85	1,800,486.82	40.31374252	-104.42578985
14,000.00	90.00	179.58	6,537.00	-7,754.55	957.08	14,641,401.86	1,800,488.21	40.31346793	-104.42578721
14,100.00	90.00	179.58	6,537.00	-7,854.55	957.82	14,641,301.87	1,800,489.59	40.31319334	-104.42578457
14,200.00	90.00	179.58	6,537.00	-7,954.55	958.56	14,641,201.88	1,800,490.98	40.31291876	-104.42578193
14,300.00	90.00	179.58	6,537.00	-8,054.54	959.30	14,641,101.89	1,800,492.36	40.31264418	-104.42577929
14,400.00	90.00	179.58	6,537.00	-8,154.54	960.04	14,641,001.90	1,800,493.74	40.31236959	-104.42577665
14,500.00	90.00	179.58	6,537.00	-8,254.54	960.78	14,640,901.91	1,800,495.13	40.31209500	-104.42577401
14,600.00	90.00	179.58	6,537.00	-8,354.54	961.52	14,640,801.92	1,800,496.51	40.31182041	-104.42577137
14,700.00	90.00	179.58	6,537.00	-8,454.53	962.26	14,640,701.93	1,800,497.90	40.31154582	-104.42576873
14,800.00	90.00	179.58	6,537.00	-8,554.53	963.00	14,640,601.94	1,800,499.28	40.31127123	-104.42576609
14,900.00	90.00	179.58	6,537.00	-8,654.53	963.74	14,640,501.95	1,800,500.67	40.31099665	-104.42576345
15,000.00	90.00	179.58	6,537.00	-8,754.52	964.48	14,640,401.96	1,800,502.05	40.31072206	-104.42576081
15,100.00	90.00	179.58	6,537.00	-8,854.52	965.22	14,640,301.97	1,800,503.44	40.31044747	-104.42575817
15,200.00	90.00	179.58	6,537.00	-8,954.52	965.96	14,640,201.98	1,800,504.82	40.31017288	-104.42575553
15,300.00	90.00	179.58	6,537.00	-9,054.52	966.70	14,640,101.99	1,800,506.20	40.30989829	-104.42575289
15,400.00	90.00	179.58	6,537.00	-9,154.51	967.44	14,640,002.00	1,800,507.59	40.30962370	-104.42575025
15,500.00	90.00	179.58	6,537.00	-9,254.51	968.18	14,639,902.01	1,800,508.97	40.30934911	-104.42574761

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-04-4L
Company:	Confluence Resources	TVD Reference:	RKB=4598+24 @ 4622.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4598+24 @ 4622.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-04-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,600.00	90.00	179.58	6,537.00	-9,354.51	968.92	14,639,802.02	1,800,510.36	40.30907453	-104.42574497
15,700.00	90.00	179.58	6,537.00	-9,454.51	969.66	14,639,702.03	1,800,511.74	40.30879994	-104.42574233
15,800.00	90.00	179.58	6,537.00	-9,554.50	970.40	14,639,602.04	1,800,513.13	40.30852535	-104.42573969
15,900.00	90.00	179.58	6,537.00	-9,654.50	971.14	14,639,502.05	1,800,514.51	40.30825076	-104.42573705
16,000.00	90.00	179.58	6,537.00	-9,754.50	971.88	14,639,402.06	1,800,515.89	40.30797617	-104.42573441
16,100.00	90.00	179.58	6,537.00	-9,854.49	972.62	14,639,302.07	1,800,517.28	40.30770158	-104.42573177
16,200.00	90.00	179.58	6,537.00	-9,954.49	973.35	14,639,202.08	1,800,518.66	40.30742699	-104.42572913
16,300.00	90.00	179.58	6,537.00	-10,054.49	974.09	14,639,102.09	1,800,520.05	40.30715241	-104.42572649
16,400.00	90.00	179.58	6,537.00	-10,154.49	974.83	14,639,002.10	1,800,521.43	40.30687782	-104.42572385
16,500.00	90.00	179.58	6,537.00	-10,254.48	975.57	14,638,902.11	1,800,522.82	40.30660323	-104.42572121
16,600.00	90.00	179.58	6,537.00	-10,354.48	976.31	14,638,802.12	1,800,524.20	40.30632864	-104.42571857
16,623.02	90.00	179.58	6,537.00	-10,377.50	976.48	14,638,779.10	1,800,524.52	40.30626543	-104.42571796
PBHL/TD 16623.02 MD/6537.00 TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
70 Ranch 10-04-4L SL 2 - hit/miss target - Shape - plan misses target center by 29.52ft at 24.00ft MD (24.00 TVD, 0.00 N, 0.00 E) - Point	0.00	0.37	24.00	-29.27	-3.79	14,649,120.77	1,799,477.54	40.33468123	-104.42923403
70 Ranch 10-04-4L LP 4 - plan hits target center - Point	0.00	0.37	6,537.00	-710.46	904.99	14,648,445.46	1,800,390.69	40.33281069	-104.42597321
70 Ranch 10-04-4L BHL - plan hits target center - Point	0.00	0.37	6,537.00	-10,377.50	976.48	14,638,779.10	1,800,524.52	40.30626543	-104.42571796

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,000.00	2,000.00	0.00	0.00	KOP Begin 10°/100' build
2,115.41	2,114.63	-2.00	11.41	Begin 11.54° tangent
6,076.33	5,995.47	-138.69	791.98	Begin 10°/100' build/turn
6,955.71	6,537.00	-710.46	904.99	LP Begin 90° lateral
16,623.02	6,537.00	-10,377.50	976.48	PBHL/TD 16623.02 MD/6537.00 TVD