



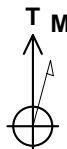
Well: 70 Ranch 10-13-1L
 Site: Section 03-T04N-R63W
 Project: Weld County, Colorado
 Wellbore: Original Hole
 Design: plan1

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
70 Ranch 10-13-1L SL 260 FSL 1311 FWL	24.00	-29.27	-3.7914649122.31	1799502.59	40.33468502	-104.42914411	
70 Ranch 10-13-1L BHL 470 FSL 2206 FWL	6313.00	-10378.88	951.4114638779.10	1800524.52	40.30626542	-104.42571796	
70 Ranch 10-13-1L LP 470 FNL 2206 FWL	6313.00	-711.84	879.9314648445.46	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	2628.04	12.56	100.48	2623.02	-12.47	67.42	2.00	18.57	Begin 12.56° tangent
4	5858.64	12.56	100.48	5776.30	-140.25	758.28	0.00	208.88	Begin 10°/100' build/turn
5	6735.07	90.00	179.58	6313.00	-711.84	879.93	10.00	789.19	LP Begin 90° lateral
6	16402.38	90.00	179.58	6313.00	-10378.88	951.41	0.00	10422.40	PBHL/TD 16402.38 MD/6313.00 TVD



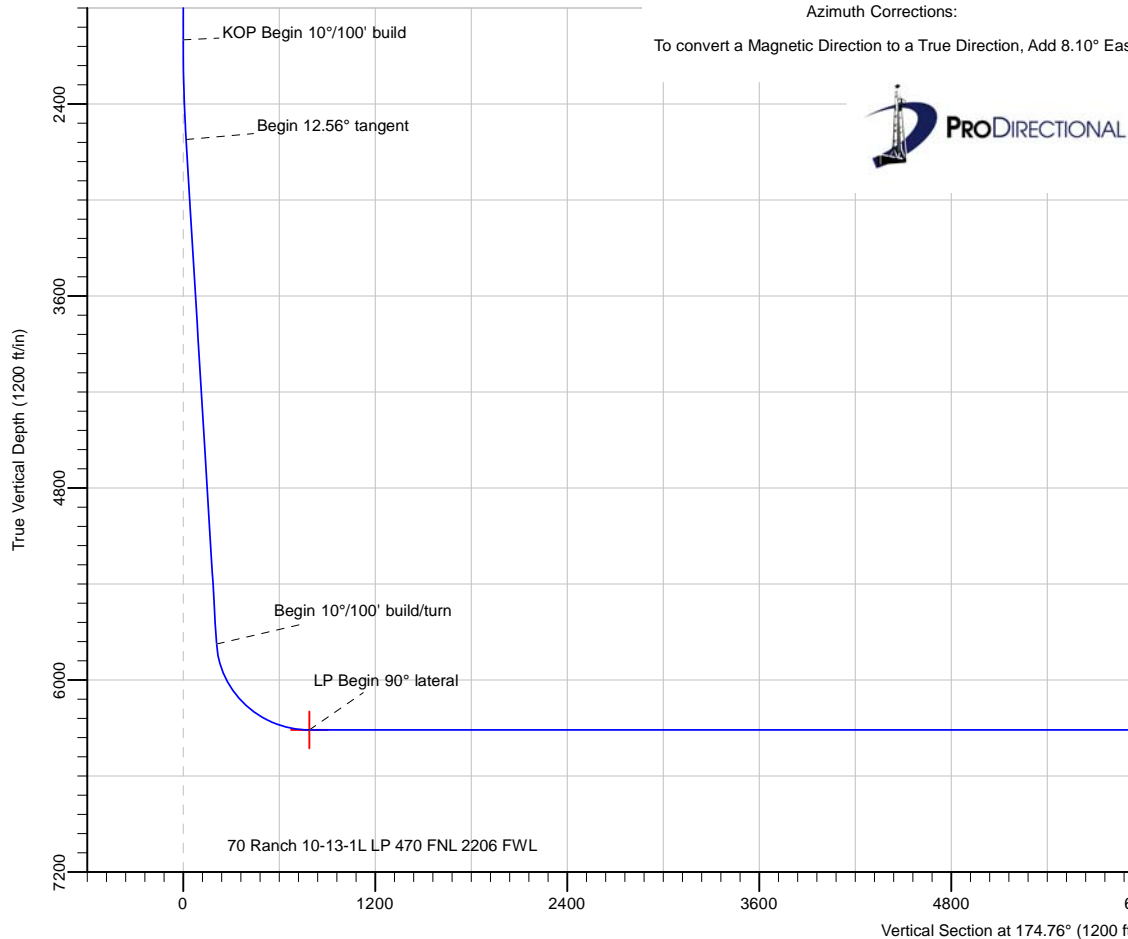
Azimuths to True North
 Magnetic North: 8.10°

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

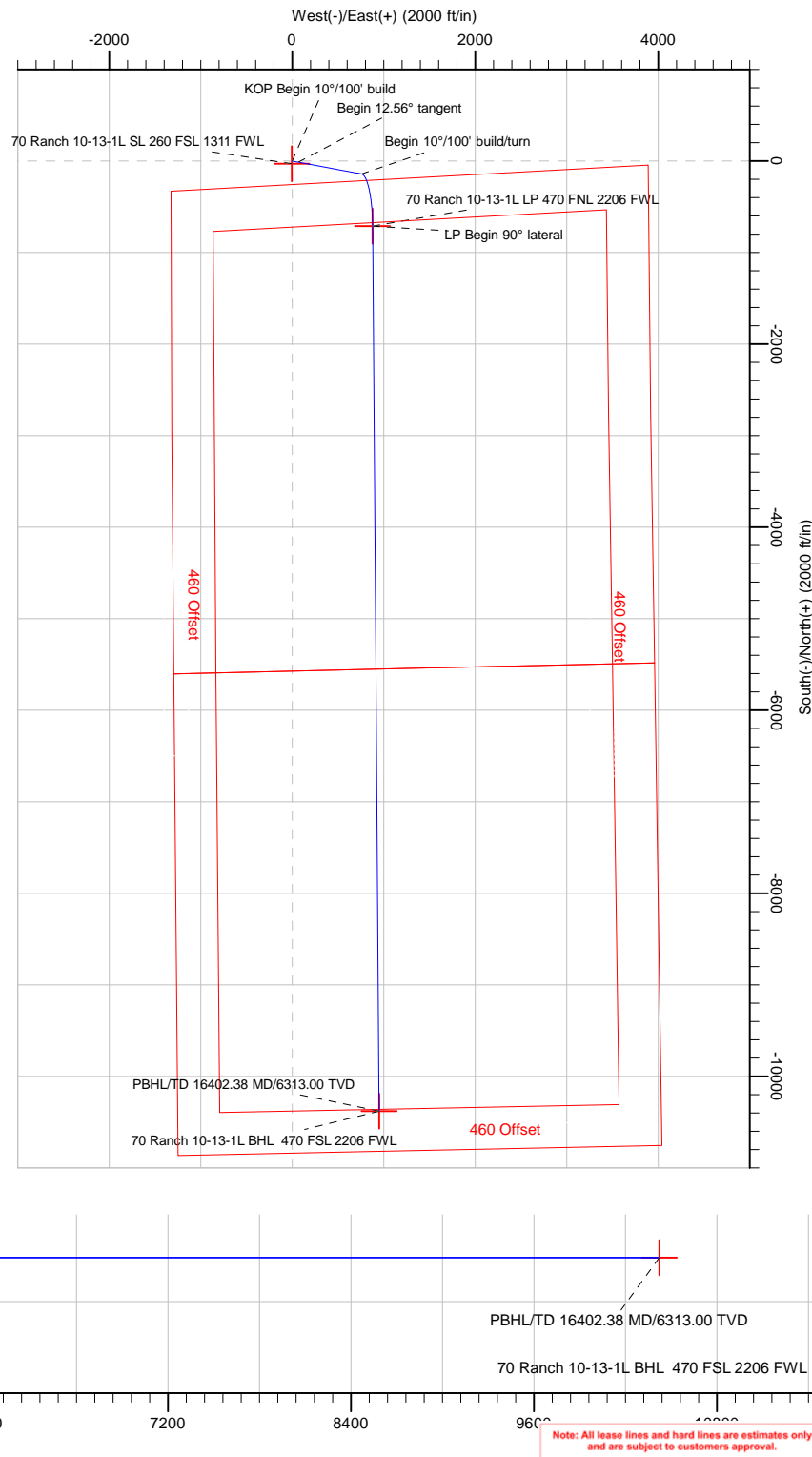
70 Ranch 10-13-1L Surf loc: 260 FSL 1311 FWL Section 03-T04N-R63W			
NAD83 Colorado - HARN Universal Transverse Mercator (US Survey Feet) Zone 13N (108 W to 102 W) RKB=4599+24 @ 4623.00ft			
Northing	Easting	Latitude	Longitude
14649151.61	1799506.19	40.33476541	-104.42913052

Azimuth Corrections:

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



Date: 1:58, May 21 2018



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 10-13-1L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-13-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

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 10-13-1L, Surf loc: 260 FSL 1311 FWL Section 03-T04N-R63W					
Well Position	+N/-S	-1,083.36 ft	Northing:	14,649,151.61 usft	Latitude:	40.33476540
	+E/-W	-1,441.13 ft	Easting:	1,799,506.19 usft	Longitude:	-104.42913052
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,599.00 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	plan1			
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	174.76

Plan Survey Tool Program	Date	5/21/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,402.38	plan1 (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	
2,628.04	12.56	100.48	2,623.02	-12.47	67.42	2.00	2.00	0.00	100.48	
5,858.64	12.56	100.48	5,776.30	-140.25	758.28	0.00	0.00	0.00	0.00	
6,735.07	90.00	179.58	6,313.00	-711.84	879.93	10.00	8.84	9.03	79.35	70 Ranch 10-13-1L LI
16,402.38	90.00	179.58	6,313.00	-10,378.88	951.41	0.00	0.00	0.00	0.00	70 Ranch 10-13-1L BI

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-13-1L
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Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-13-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

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	2.00	100.48	2,099.98	-0.32	1.72	0.47	2.00	2.00	0.00
2,200.00	4.00	100.48	2,199.84	-1.27	6.86	1.89	2.00	2.00	0.00
2,300.00	6.00	100.48	2,299.45	-2.85	15.43	4.25	2.00	2.00	0.00
2,400.00	8.00	100.48	2,398.70	-5.07	27.41	7.55	2.00	2.00	0.00
2,500.00	10.00	100.48	2,497.47	-7.92	42.80	11.79	2.00	2.00	0.00
2,600.00	12.00	100.48	2,595.62	-11.39	61.56	16.96	2.00	2.00	0.00
2,628.04	12.56	100.48	2,623.02	-12.47	67.42	18.57	2.00	2.00	0.00
Begin 12.56° tangent									
2,700.00	12.56	100.48	2,693.26	-15.32	82.81	22.81	0.00	0.00	0.00
2,800.00	12.56	100.48	2,790.87	-19.27	104.20	28.70	0.00	0.00	0.00
2,900.00	12.56	100.48	2,888.47	-23.23	125.58	34.59	0.00	0.00	0.00
3,000.00	12.56	100.48	2,986.08	-27.18	146.97	40.48	0.00	0.00	0.00
3,100.00	12.56	100.48	3,083.69	-31.14	168.35	46.38	0.00	0.00	0.00
3,200.00	12.56	100.48	3,181.29	-35.09	189.73	52.27	0.00	0.00	0.00
3,300.00	12.56	100.48	3,278.90	-39.05	211.12	58.16	0.00	0.00	0.00
3,400.00	12.56	100.48	3,376.51	-43.00	232.50	64.05	0.00	0.00	0.00
3,500.00	12.56	100.48	3,474.11	-46.96	253.89	69.94	0.00	0.00	0.00
3,600.00	12.56	100.48	3,571.72	-50.91	275.27	75.83	0.00	0.00	0.00
3,700.00	12.56	100.48	3,669.33	-54.87	296.66	81.72	0.00	0.00	0.00
3,800.00	12.56	100.48	3,766.93	-58.82	318.04	87.61	0.00	0.00	0.00
3,900.00	12.56	100.48	3,864.54	-62.78	339.43	93.50	0.00	0.00	0.00
4,000.00	12.56	100.48	3,962.15	-66.73	360.81	99.39	0.00	0.00	0.00
4,100.00	12.56	100.48	4,059.75	-70.69	382.20	105.28	0.00	0.00	0.00
4,200.00	12.56	100.48	4,157.36	-74.65	403.58	111.17	0.00	0.00	0.00
4,300.00	12.56	100.48	4,254.97	-78.60	424.97	117.07	0.00	0.00	0.00
4,400.00	12.56	100.48	4,352.57	-82.56	446.35	122.96	0.00	0.00	0.00
4,500.00	12.56	100.48	4,450.18	-86.51	467.74	128.85	0.00	0.00	0.00
4,600.00	12.56	100.48	4,547.78	-90.47	489.12	134.74	0.00	0.00	0.00
4,700.00	12.56	100.48	4,645.39	-94.42	510.51	140.63	0.00	0.00	0.00
4,800.00	12.56	100.48	4,743.00	-98.38	531.89	146.52	0.00	0.00	0.00
4,900.00	12.56	100.48	4,840.60	-102.33	553.27	152.41	0.00	0.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-13-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

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	12.56	100.48	4,938.21	-106.29	574.66	158.30	0.00	0.00	0.00
5,100.00	12.56	100.48	5,035.82	-110.24	596.04	164.19	0.00	0.00	0.00
5,200.00	12.56	100.48	5,133.42	-114.20	617.43	170.08	0.00	0.00	0.00
5,300.00	12.56	100.48	5,231.03	-118.15	638.81	175.97	0.00	0.00	0.00
5,400.00	12.56	100.48	5,328.64	-122.11	660.20	181.87	0.00	0.00	0.00
5,500.00	12.56	100.48	5,426.24	-126.06	681.58	187.76	0.00	0.00	0.00
5,600.00	12.56	100.48	5,523.85	-130.02	702.97	193.65	0.00	0.00	0.00
5,700.00	12.56	100.48	5,621.46	-133.97	724.35	199.54	0.00	0.00	0.00
5,800.00	12.56	100.48	5,719.06	-137.93	745.74	205.43	0.00	0.00	0.00
5,858.64	12.56	100.48	5,776.30	-140.25	758.28	208.88	0.00	0.00	0.00
Begin 10°/100' build/turn									
5,900.00	13.92	117.61	5,816.58	-143.37	767.11	212.80	10.00	3.29	41.43
6,000.00	20.50	143.75	5,912.19	-163.12	788.18	234.39	10.00	6.57	26.14
6,100.00	29.04	156.37	6,002.97	-199.56	808.31	272.52	10.00	8.54	12.61
6,200.00	38.25	163.46	6,086.16	-251.60	826.89	326.03	10.00	9.21	7.10
6,300.00	47.74	168.11	6,159.24	-317.65	843.37	393.31	10.00	9.49	4.65
6,400.00	57.37	171.52	6,219.99	-395.70	857.24	472.30	10.00	9.63	3.41
6,500.00	67.07	174.27	6,266.55	-483.39	868.08	560.61	10.00	9.70	2.74
6,600.00	76.81	176.64	6,297.52	-578.04	875.55	655.56	10.00	9.74	2.37
6,700.00	86.57	178.83	6,311.95	-676.79	879.44	754.25	10.00	9.76	2.19
6,735.07	90.00	179.58	6,313.00	-711.84	879.93	789.19	10.00	9.77	2.14
LP Begin 90° lateral									
6,800.00	90.00	179.58	6,313.00	-776.77	880.41	853.89	0.00	0.00	0.00
6,900.00	90.00	179.58	6,313.00	-876.76	881.15	953.54	0.00	0.00	0.00
7,000.00	90.00	179.58	6,313.00	-976.76	881.89	1,053.19	0.00	0.00	0.00
7,100.00	90.00	179.58	6,313.00	-1,076.76	882.63	1,152.83	0.00	0.00	0.00
7,200.00	90.00	179.58	6,313.00	-1,176.76	883.37	1,252.48	0.00	0.00	0.00
7,300.00	90.00	179.58	6,313.00	-1,276.75	884.11	1,352.13	0.00	0.00	0.00
7,400.00	90.00	179.58	6,313.00	-1,376.75	884.85	1,451.78	0.00	0.00	0.00
7,500.00	90.00	179.58	6,313.00	-1,476.75	885.58	1,551.42	0.00	0.00	0.00
7,600.00	90.00	179.58	6,313.00	-1,576.74	886.32	1,651.07	0.00	0.00	0.00
7,700.00	90.00	179.58	6,313.00	-1,676.74	887.06	1,750.72	0.00	0.00	0.00
7,800.00	90.00	179.58	6,313.00	-1,776.74	887.80	1,850.36	0.00	0.00	0.00
7,900.00	90.00	179.58	6,313.00	-1,876.74	888.54	1,950.01	0.00	0.00	0.00
8,000.00	90.00	179.58	6,313.00	-1,976.73	889.28	2,049.66	0.00	0.00	0.00
8,100.00	90.00	179.58	6,313.00	-2,076.73	890.02	2,149.31	0.00	0.00	0.00
8,200.00	90.00	179.58	6,313.00	-2,176.73	890.76	2,248.95	0.00	0.00	0.00
8,300.00	90.00	179.58	6,313.00	-2,276.73	891.50	2,348.60	0.00	0.00	0.00
8,400.00	90.00	179.58	6,313.00	-2,376.72	892.24	2,448.25	0.00	0.00	0.00
8,500.00	90.00	179.58	6,313.00	-2,476.72	892.98	2,547.90	0.00	0.00	0.00
8,600.00	90.00	179.58	6,313.00	-2,576.72	893.72	2,647.54	0.00	0.00	0.00
8,700.00	90.00	179.58	6,313.00	-2,676.71	894.46	2,747.19	0.00	0.00	0.00
8,800.00	90.00	179.58	6,313.00	-2,776.71	895.20	2,846.84	0.00	0.00	0.00
8,900.00	90.00	179.58	6,313.00	-2,876.71	895.94	2,946.48	0.00	0.00	0.00
9,000.00	90.00	179.58	6,313.00	-2,976.71	896.68	3,046.13	0.00	0.00	0.00
9,100.00	90.00	179.58	6,313.00	-3,076.70	897.42	3,145.78	0.00	0.00	0.00
9,200.00	90.00	179.58	6,313.00	-3,176.70	898.16	3,245.43	0.00	0.00	0.00
9,300.00	90.00	179.58	6,313.00	-3,276.70	898.89	3,345.07	0.00	0.00	0.00
9,400.00	90.00	179.58	6,313.00	-3,376.70	899.63	3,444.72	0.00	0.00	0.00
9,500.00	90.00	179.58	6,313.00	-3,476.69	900.37	3,544.37	0.00	0.00	0.00
9,600.00	90.00	179.58	6,313.00	-3,576.69	901.11	3,644.02	0.00	0.00	0.00
9,700.00	90.00	179.58	6,313.00	-3,676.69	901.85	3,743.66	0.00	0.00	0.00
9,800.00	90.00	179.58	6,313.00	-3,776.68	902.59	3,843.31	0.00	0.00	0.00
9,900.00	90.00	179.58	6,313.00	-3,876.68	903.33	3,942.96	0.00	0.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-13-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

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	6,313.00	-3,976.68	904.07	4,042.60	0.00	0.00	0.00
10,100.00	90.00	179.58	6,313.00	-4,076.68	904.81	4,142.25	0.00	0.00	0.00
10,200.00	90.00	179.58	6,313.00	-4,176.67	905.55	4,241.90	0.00	0.00	0.00
10,300.00	90.00	179.58	6,313.00	-4,276.67	906.29	4,341.55	0.00	0.00	0.00
10,400.00	90.00	179.58	6,313.00	-4,376.67	907.03	4,441.19	0.00	0.00	0.00
10,500.00	90.00	179.58	6,313.00	-4,476.67	907.77	4,540.84	0.00	0.00	0.00
10,600.00	90.00	179.58	6,313.00	-4,576.66	908.51	4,640.49	0.00	0.00	0.00
10,700.00	90.00	179.58	6,313.00	-4,676.66	909.25	4,740.13	0.00	0.00	0.00
10,800.00	90.00	179.58	6,313.00	-4,776.66	909.99	4,839.78	0.00	0.00	0.00
10,900.00	90.00	179.58	6,313.00	-4,876.65	910.73	4,939.43	0.00	0.00	0.00
11,000.00	90.00	179.58	6,313.00	-4,976.65	911.47	5,039.08	0.00	0.00	0.00
11,100.00	90.00	179.58	6,313.00	-5,076.65	912.20	5,138.72	0.00	0.00	0.00
11,200.00	90.00	179.58	6,313.00	-5,176.65	912.94	5,238.37	0.00	0.00	0.00
11,300.00	90.00	179.58	6,313.00	-5,276.64	913.68	5,338.02	0.00	0.00	0.00
11,400.00	90.00	179.58	6,313.00	-5,376.64	914.42	5,437.67	0.00	0.00	0.00
11,500.00	90.00	179.58	6,313.00	-5,476.64	915.16	5,537.31	0.00	0.00	0.00
11,600.00	90.00	179.58	6,313.00	-5,576.64	915.90	5,636.96	0.00	0.00	0.00
11,700.00	90.00	179.58	6,313.00	-5,676.63	916.64	5,736.61	0.00	0.00	0.00
11,800.00	90.00	179.58	6,313.00	-5,776.63	917.38	5,836.25	0.00	0.00	0.00
11,900.00	90.00	179.58	6,313.00	-5,876.63	918.12	5,935.90	0.00	0.00	0.00
12,000.00	90.00	179.58	6,313.00	-5,976.62	918.86	6,035.55	0.00	0.00	0.00
12,100.00	90.00	179.58	6,313.00	-6,076.62	919.60	6,135.20	0.00	0.00	0.00
12,200.00	90.00	179.58	6,313.00	-6,176.62	920.34	6,234.84	0.00	0.00	0.00
12,300.00	90.00	179.58	6,313.00	-6,276.62	921.08	6,334.49	0.00	0.00	0.00
12,400.00	90.00	179.58	6,313.00	-6,376.61	921.82	6,434.14	0.00	0.00	0.00
12,500.00	90.00	179.58	6,313.00	-6,476.61	922.56	6,533.79	0.00	0.00	0.00
12,600.00	90.00	179.58	6,313.00	-6,576.61	923.30	6,633.43	0.00	0.00	0.00
12,700.00	90.00	179.58	6,313.00	-6,676.61	924.04	6,733.08	0.00	0.00	0.00
12,800.00	90.00	179.58	6,313.00	-6,776.60	924.78	6,832.73	0.00	0.00	0.00
12,900.00	90.00	179.58	6,313.00	-6,876.60	925.51	6,932.37	0.00	0.00	0.00
13,000.00	90.00	179.58	6,313.00	-6,976.60	926.25	7,032.02	0.00	0.00	0.00
13,100.00	90.00	179.58	6,313.00	-7,076.59	926.99	7,131.67	0.00	0.00	0.00
13,200.00	90.00	179.58	6,313.00	-7,176.59	927.73	7,231.32	0.00	0.00	0.00
13,300.00	90.00	179.58	6,313.00	-7,276.59	928.47	7,330.96	0.00	0.00	0.00
13,400.00	90.00	179.58	6,313.00	-7,376.59	929.21	7,430.61	0.00	0.00	0.00
13,500.00	90.00	179.58	6,313.00	-7,476.58	929.95	7,530.26	0.00	0.00	0.00
13,600.00	90.00	179.58	6,313.00	-7,576.58	930.69	7,629.91	0.00	0.00	0.00
13,700.00	90.00	179.58	6,313.00	-7,676.58	931.43	7,729.55	0.00	0.00	0.00
13,800.00	90.00	179.58	6,313.00	-7,776.58	932.17	7,829.20	0.00	0.00	0.00
13,900.00	90.00	179.58	6,313.00	-7,876.57	932.91	7,928.85	0.00	0.00	0.00
14,000.00	90.00	179.58	6,313.00	-7,976.57	933.65	8,028.49	0.00	0.00	0.00
14,100.00	90.00	179.58	6,313.00	-8,076.57	934.39	8,128.14	0.00	0.00	0.00
14,200.00	90.00	179.58	6,313.00	-8,176.56	935.13	8,227.79	0.00	0.00	0.00
14,300.00	90.00	179.58	6,313.00	-8,276.56	935.87	8,327.44	0.00	0.00	0.00
14,400.00	90.00	179.58	6,313.00	-8,376.56	936.61	8,427.08	0.00	0.00	0.00
14,500.00	90.00	179.58	6,313.00	-8,476.56	937.35	8,526.73	0.00	0.00	0.00
14,600.00	90.00	179.58	6,313.00	-8,576.55	938.09	8,626.38	0.00	0.00	0.00
14,700.00	90.00	179.58	6,313.00	-8,676.55	938.83	8,726.03	0.00	0.00	0.00
14,800.00	90.00	179.58	6,313.00	-8,776.55	939.56	8,825.67	0.00	0.00	0.00
14,900.00	90.00	179.58	6,313.00	-8,876.55	940.30	8,925.32	0.00	0.00	0.00
15,000.00	90.00	179.58	6,313.00	-8,976.54	941.04	9,024.97	0.00	0.00	0.00
15,100.00	90.00	179.58	6,313.00	-9,076.54	941.78	9,124.61	0.00	0.00	0.00
15,200.00	90.00	179.58	6,313.00	-9,176.54	942.52	9,224.26	0.00	0.00	0.00
15,300.00	90.00	179.58	6,313.00	-9,276.53	943.26	9,323.91	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-13-1L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-13-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

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	6,313.00	-9,376.53	944.00	9,423.56	0.00	0.00	0.00
15,500.00	90.00	179.58	6,313.00	-9,476.53	944.74	9,523.20	0.00	0.00	0.00
15,600.00	90.00	179.58	6,313.00	-9,576.53	945.48	9,622.85	0.00	0.00	0.00
15,700.00	90.00	179.58	6,313.00	-9,676.52	946.22	9,722.50	0.00	0.00	0.00
15,800.00	90.00	179.58	6,313.00	-9,776.52	946.96	9,822.15	0.00	0.00	0.00
15,900.00	90.00	179.58	6,313.00	-9,876.52	947.70	9,921.79	0.00	0.00	0.00
16,000.00	90.00	179.58	6,313.00	-9,976.52	948.44	10,021.44	0.00	0.00	0.00
16,100.00	90.00	179.58	6,313.00	-10,076.51	949.18	10,121.09	0.00	0.00	0.00
16,200.00	90.00	179.58	6,313.00	-10,176.51	949.92	10,220.73	0.00	0.00	0.00
16,300.00	90.00	179.58	6,313.00	-10,276.51	950.66	10,320.38	0.00	0.00	0.00
16,400.00	90.00	179.58	6,313.00	-10,376.50	951.40	10,420.03	0.00	0.00	0.00
16,402.38	90.00	179.58	6,313.00	-10,378.88	951.41	10,422.40	0.00	0.00	0.00
PBHL/TD 16402.38 MD/6313.00 TVD									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
70 Ranch 10-13-1L SL 2 - 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	14,649,122.31	1,799,502.59	40.33468502	-104.42914411
70 Ranch 10-13-1L LP 4 - plan hits target center - Point	0.00	0.37	6,313.00	-711.84	879.93	14,648,445.46	1,800,390.69	40.33281069	-104.42597321
70 Ranch 10-13-1L BHL - plan hits target center - Point	0.00	0.37	6,313.00	-10,378.88	951.41	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
2,628.04	2,623.02	-12.47	67.42	Begin 12.56° tangent
5,858.64	5,776.30	-140.25	758.28	Begin 10°/100' build/turn
6,735.07	6,313.00	-711.84	879.93	LP Begin 90° lateral
16,402.38	6,313.00	-10,378.88	951.41	PBHL/TD 16402.38 MD/6313.00 TVD

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-13-1L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-13-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

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 10-13-1L, Surf loc: 260 FSL 1311 FWL Section 03-T04N-R63W					
Well Position	+N/-S	0.00 ft	Northing:	14,649,151.61 usft	Latitude:	40.33476540
	+E/-W	0.00 ft	Easting:	1,799,506.19 usft	Longitude:	-104.42913052
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,599.00 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	plan1			
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	174.76

Plan Survey Tool Program	Date	5/21/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,402.38 plan1 (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	
2,628.04	12.56	100.48	2,623.02	-12.47	67.42	2.00	2.00	0.00	100.48	
5,858.64	12.56	100.48	5,776.30	-140.25	758.28	0.00	0.00	0.00	0.00	
6,735.07	90.00	179.58	6,313.00	-711.84	879.93	10.00	8.84	9.03	79.35	70 Ranch 10-13-1L LI
16,402.38	90.00	179.58	6,313.00	-10,378.88	951.41	0.00	0.00	0.00	0.00	70 Ranch 10-13-1L BI

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-13-1L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-13-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

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	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
100.00	0.00	0.00	100.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
200.00	0.00	0.00	200.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
300.00	0.00	0.00	300.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
400.00	0.00	0.00	400.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
500.00	0.00	0.00	500.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
600.00	0.00	0.00	600.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
700.00	0.00	0.00	700.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
800.00	0.00	0.00	800.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
900.00	0.00	0.00	900.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,649,151.61	1,799,506.19	40.33476540	-104.42913052
KOP Begin 10°/100' build									
2,100.00	2.00	100.48	2,099.98	-0.32	1.72	14,649,151.30	1,799,507.91	40.33476453	-104.42912436
2,200.00	4.00	100.48	2,199.84	-1.27	6.86	14,649,150.38	1,799,513.06	40.33476192	-104.42910590
2,300.00	6.00	100.48	2,299.45	-2.85	15.43	14,649,148.85	1,799,521.64	40.33475757	-104.42907515
2,400.00	8.00	100.48	2,398.70	-5.07	27.41	14,649,146.71	1,799,533.64	40.33475148	-104.42903215
2,500.00	10.00	100.48	2,497.47	-7.92	42.80	14,649,143.97	1,799,549.04	40.33474367	-104.42897696
2,600.00	12.00	100.48	2,595.62	-11.39	61.56	14,649,140.62	1,799,567.82	40.33473414	-104.42890963
2,628.04	12.56	100.48	2,623.02	-12.47	67.42	14,649,139.57	1,799,573.69	40.33473116	-104.42888859
Begin 12.56° tangent									
2,700.00	12.56	100.48	2,693.26	-15.32	82.81	14,649,136.83	1,799,589.10	40.33472335	-104.42883337
2,800.00	12.56	100.48	2,790.87	-19.27	104.20	14,649,133.01	1,799,610.51	40.33471248	-104.42875664
2,900.00	12.56	100.48	2,888.47	-23.23	125.58	14,649,129.19	1,799,631.92	40.33470162	-104.42867991
3,000.00	12.56	100.48	2,986.08	-27.18	146.97	14,649,125.37	1,799,653.33	40.33469076	-104.42860317
3,100.00	12.56	100.48	3,083.69	-31.14	168.35	14,649,121.56	1,799,674.74	40.33467990	-104.42852644
3,200.00	12.56	100.48	3,181.29	-35.09	189.73	14,649,117.74	1,799,696.15	40.33466904	-104.42844971
3,300.00	12.56	100.48	3,278.90	-39.05	211.12	14,649,113.92	1,799,717.56	40.33465818	-104.42837297
3,400.00	12.56	100.48	3,376.51	-43.00	232.50	14,649,110.10	1,799,738.97	40.33464732	-104.42829624
3,500.00	12.56	100.48	3,474.11	-46.96	253.89	14,649,106.29	1,799,760.38	40.33463646	-104.42821951
3,600.00	12.56	100.48	3,571.72	-50.91	275.27	14,649,102.47	1,799,781.79	40.33462559	-104.42814277
3,700.00	12.56	100.48	3,669.33	-54.87	296.66	14,649,098.65	1,799,803.20	40.33461473	-104.42806604
3,800.00	12.56	100.48	3,766.93	-58.82	318.04	14,649,094.84	1,799,824.61	40.33460387	-104.42798931
3,900.00	12.56	100.48	3,864.54	-62.78	339.43	14,649,091.02	1,799,846.02	40.33459301	-104.42791257
4,000.00	12.56	100.48	3,962.15	-66.73	360.81	14,649,087.20	1,799,867.42	40.33458215	-104.42783584
4,100.00	12.56	100.48	4,059.75	-70.69	382.20	14,649,083.38	1,799,888.83	40.33457129	-104.42775911
4,200.00	12.56	100.48	4,157.36	-74.65	403.58	14,649,079.57	1,799,910.24	40.33456042	-104.42768237
4,300.00	12.56	100.48	4,254.97	-78.60	424.97	14,649,075.75	1,799,931.65	40.33454956	-104.42760564
4,400.00	12.56	100.48	4,352.57	-82.56	446.35	14,649,071.93	1,799,953.06	40.33453870	-104.42752891
4,500.00	12.56	100.48	4,450.18	-86.51	467.74	14,649,068.11	1,799,974.47	40.33452784	-104.42745217
4,600.00	12.56	100.48	4,547.78	-90.47	489.12	14,649,064.30	1,799,995.88	40.33451698	-104.42737544
4,700.00	12.56	100.48	4,645.39	-94.42	510.51	14,649,060.48	1,800,017.29	40.33450611	-104.42729871
4,800.00	12.56	100.48	4,743.00	-98.38	531.89	14,649,056.66	1,800,038.70	40.33449525	-104.42722197
4,900.00	12.56	100.48	4,840.60	-102.33	553.27	14,649,052.85	1,800,060.11	40.33448439	-104.42714524
5,000.00	12.56	100.48	4,938.21	-106.29	574.66	14,649,049.03	1,800,081.52	40.33447353	-104.42706851

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-13-1L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-13-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

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	12.56	100.48	5,035.82	-110.24	596.04	14,649,045.21	1,800,102.93	40.33446266	-104.42699177
5,200.00	12.56	100.48	5,133.42	-114.20	617.43	14,649,041.39	1,800,124.34	40.33445180	-104.42691504
5,300.00	12.56	100.48	5,231.03	-118.15	638.81	14,649,037.58	1,800,145.75	40.33444094	-104.42683831
5,400.00	12.56	100.48	5,328.64	-122.11	660.20	14,649,033.76	1,800,167.16	40.33443008	-104.42676158
5,500.00	12.56	100.48	5,426.24	-126.06	681.58	14,649,029.94	1,800,188.57	40.33441921	-104.42668484
5,600.00	12.56	100.48	5,523.85	-130.02	702.97	14,649,026.12	1,800,209.98	40.33440835	-104.42660811
5,700.00	12.56	100.48	5,621.46	-133.97	724.35	14,649,022.31	1,800,231.39	40.33439749	-104.42653138
5,800.00	12.56	100.48	5,719.06	-137.93	745.74	14,649,018.49	1,800,252.80	40.33438663	-104.42645464
5,858.64	12.56	100.48	5,776.30	-140.25	758.28	14,649,016.25	1,800,265.35	40.33438026	-104.42640965
Begin 10°/100' build/turn									
5,900.00	13.92	117.61	5,816.58	-143.37	767.11	14,649,013.18	1,800,274.21	40.33437167	-104.42637795
6,000.00	20.50	143.75	5,912.19	-163.12	788.18	14,648,993.58	1,800,295.40	40.33431746	-104.42630237
6,100.00	29.04	156.37	6,002.97	-199.56	808.31	14,648,957.26	1,800,315.77	40.33421738	-104.42623013
6,200.00	38.25	163.46	6,086.16	-251.60	826.89	14,648,905.35	1,800,334.69	40.33407449	-104.42616345
6,300.00	47.74	168.11	6,159.24	-317.65	843.37	14,648,839.40	1,800,351.59	40.33389312	-104.42610433
6,400.00	57.37	171.52	6,219.99	-395.70	857.24	14,648,761.44	1,800,365.96	40.33367879	-104.42605458
6,500.00	67.07	174.27	6,266.55	-483.39	868.08	14,648,673.83	1,800,377.36	40.33343800	-104.42601571
6,600.00	76.81	176.64	6,297.52	-578.04	875.55	14,648,579.22	1,800,385.45	40.33317808	-104.42598889
6,700.00	86.57	178.83	6,311.95	-676.79	879.44	14,648,480.50	1,800,389.97	40.33290692	-104.42597495
6,735.07	90.00	179.58	6,313.00	-711.84	879.93	14,648,445.46	1,800,390.69	40.33281069	-104.42597321
LP Begin 90° lateral									
6,800.00	90.00	179.58	6,313.00	-776.77	880.41	14,648,380.54	1,800,391.59	40.33263240	-104.42597149
6,900.00	90.00	179.58	6,313.00	-876.76	881.15	14,648,280.55	1,800,392.97	40.33235781	-104.42596885
7,000.00	90.00	179.58	6,313.00	-976.76	881.89	14,648,180.56	1,800,394.36	40.33208323	-104.42596621
7,100.00	90.00	179.58	6,313.00	-1,076.76	882.63	14,648,080.57	1,800,395.74	40.33180864	-104.42596357
7,200.00	90.00	179.58	6,313.00	-1,176.76	883.37	14,647,980.58	1,800,397.13	40.33153405	-104.42596093
7,300.00	90.00	179.58	6,313.00	-1,276.75	884.11	14,647,880.59	1,800,398.51	40.33125946	-104.42595829
7,400.00	90.00	179.58	6,313.00	-1,376.75	884.85	14,647,780.60	1,800,399.89	40.33098488	-104.42595565
7,500.00	90.00	179.58	6,313.00	-1,476.75	885.58	14,647,680.61	1,800,401.28	40.33071029	-104.42595301
7,600.00	90.00	179.58	6,313.00	-1,576.74	886.32	14,647,580.61	1,800,402.66	40.33043570	-104.42595037
7,700.00	90.00	179.58	6,313.00	-1,676.74	887.06	14,647,480.62	1,800,404.05	40.33016111	-104.42594773
7,800.00	90.00	179.58	6,313.00	-1,776.74	887.80	14,647,380.63	1,800,405.43	40.32988653	-104.42594509
7,900.00	90.00	179.58	6,313.00	-1,876.74	888.54	14,647,280.64	1,800,406.82	40.32961194	-104.42594244
8,000.00	90.00	179.58	6,313.00	-1,976.73	889.28	14,647,180.65	1,800,408.20	40.32933735	-104.42593980
8,100.00	90.00	179.58	6,313.00	-2,076.73	890.02	14,647,080.66	1,800,409.58	40.32906276	-104.42593716
8,200.00	90.00	179.58	6,313.00	-2,176.73	890.76	14,646,980.67	1,800,410.97	40.32878817	-104.42593452
8,300.00	90.00	179.58	6,313.00	-2,276.73	891.50	14,646,880.68	1,800,412.35	40.32851359	-104.42593188
8,400.00	90.00	179.58	6,313.00	-2,376.72	892.24	14,646,780.69	1,800,413.74	40.32823900	-104.42592924
8,500.00	90.00	179.58	6,313.00	-2,476.72	892.98	14,646,680.70	1,800,415.12	40.32796441	-104.42592660
8,600.00	90.00	179.58	6,313.00	-2,576.72	893.72	14,646,580.71	1,800,416.51	40.32768982	-104.42592396
8,700.00	90.00	179.58	6,313.00	-2,676.71	894.46	14,646,480.72	1,800,417.89	40.32741524	-104.42592132
8,800.00	90.00	179.58	6,313.00	-2,776.71	895.20	14,646,380.73	1,800,419.28	40.32714065	-104.42591868
8,900.00	90.00	179.58	6,313.00	-2,876.71	895.94	14,646,280.74	1,800,420.66	40.32686606	-104.42591604
9,000.00	90.00	179.58	6,313.00	-2,976.71	896.68	14,646,180.75	1,800,422.04	40.32659147	-104.42591340
9,100.00	90.00	179.58	6,313.00	-3,076.70	897.42	14,646,080.76	1,800,423.43	40.32631689	-104.42591076
9,200.00	90.00	179.58	6,313.00	-3,176.70	898.16	14,645,980.77	1,800,424.81	40.32604230	-104.42590812
9,300.00	90.00	179.58	6,313.00	-3,276.70	898.89	14,645,880.78	1,800,426.20	40.32576771	-104.42590548
9,400.00	90.00	179.58	6,313.00	-3,376.70	899.63	14,645,780.79	1,800,427.58	40.32549312	-104.42590284
9,500.00	90.00	179.58	6,313.00	-3,476.69	900.37	14,645,680.80	1,800,428.97	40.32521853	-104.42590020
9,600.00	90.00	179.58	6,313.00	-3,576.69	901.11	14,645,580.81	1,800,430.35	40.32494395	-104.42589756
9,700.00	90.00	179.58	6,313.00	-3,676.69	901.85	14,645,480.82	1,800,431.73	40.32466936	-104.42589492
9,800.00	90.00	179.58	6,313.00	-3,776.68	902.59	14,645,380.83	1,800,433.12	40.32439477	-104.42589227
9,900.00	90.00	179.58	6,313.00	-3,876.68	903.33	14,645,280.84	1,800,434.50	40.32412018	-104.42588963
10,000.00	90.00	179.58	6,313.00	-3,976.68	904.07	14,645,180.85	1,800,435.89	40.32384559	-104.42588699

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-13-1L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-13-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

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	6,313.00	-4,076.68	904.81	14,645,080.86	1,800,437.27	40.32357101	-104.42588435
10,200.00	90.00	179.58	6,313.00	-4,176.67	905.55	14,644,980.87	1,800,438.66	40.32329642	-104.42588171
10,300.00	90.00	179.58	6,313.00	-4,276.67	906.29	14,644,880.88	1,800,440.04	40.32302183	-104.42587907
10,400.00	90.00	179.58	6,313.00	-4,376.67	907.03	14,644,780.89	1,800,441.43	40.32274724	-104.42587643
10,500.00	90.00	179.58	6,313.00	-4,476.67	907.77	14,644,680.90	1,800,442.81	40.32247265	-104.42587379
10,600.00	90.00	179.58	6,313.00	-4,576.66	908.51	14,644,580.91	1,800,444.19	40.32219807	-104.42587115
10,700.00	90.00	179.58	6,313.00	-4,676.66	909.25	14,644,480.92	1,800,445.58	40.32192348	-104.42586851
10,800.00	90.00	179.58	6,313.00	-4,776.66	909.99	14,644,380.93	1,800,446.96	40.32164889	-104.42586587
10,900.00	90.00	179.58	6,313.00	-4,876.65	910.73	14,644,280.94	1,800,448.35	40.32137430	-104.42586323
11,000.00	90.00	179.58	6,313.00	-4,976.65	911.47	14,644,180.95	1,800,449.73	40.32109971	-104.42586059
11,100.00	90.00	179.58	6,313.00	-5,076.65	912.20	14,644,080.96	1,800,451.12	40.32082513	-104.42585795
11,200.00	90.00	179.58	6,313.00	-5,176.65	912.94	14,643,980.97	1,800,452.50	40.32055054	-104.42585531
11,300.00	90.00	179.58	6,313.00	-5,276.64	913.68	14,643,880.98	1,800,453.88	40.32027595	-104.42585267
11,400.00	90.00	179.58	6,313.00	-5,376.64	914.42	14,643,780.99	1,800,455.27	40.32000136	-104.42585003
11,500.00	90.00	179.58	6,313.00	-5,476.64	915.16	14,643,681.00	1,800,456.65	40.31972677	-104.42584739
11,600.00	90.00	179.58	6,313.00	-5,576.64	915.90	14,643,581.01	1,800,458.04	40.31945219	-104.42584475
11,700.00	90.00	179.58	6,313.00	-5,676.63	916.64	14,643,481.02	1,800,459.42	40.31917760	-104.42584211
11,800.00	90.00	179.58	6,313.00	-5,776.63	917.38	14,643,381.03	1,800,460.81	40.31890301	-104.42583947
11,900.00	90.00	179.58	6,313.00	-5,876.63	918.12	14,643,281.04	1,800,462.19	40.31862842	-104.42583683
12,000.00	90.00	179.58	6,313.00	-5,976.62	918.86	14,643,181.05	1,800,463.57	40.31835383	-104.42583419
12,100.00	90.00	179.58	6,313.00	-6,076.62	919.60	14,643,081.05	1,800,464.96	40.31807925	-104.42583155
12,200.00	90.00	179.58	6,313.00	-6,176.62	920.34	14,642,981.06	1,800,466.34	40.31780466	-104.42582891
12,300.00	90.00	179.58	6,313.00	-6,276.62	921.08	14,642,881.07	1,800,467.73	40.31753007	-104.42582627
12,400.00	90.00	179.58	6,313.00	-6,376.61	921.82	14,642,781.08	1,800,469.11	40.31725548	-104.42582363
12,500.00	90.00	179.58	6,313.00	-6,476.61	922.56	14,642,681.09	1,800,470.50	40.31698089	-104.42582099
12,600.00	90.00	179.58	6,313.00	-6,576.61	923.30	14,642,581.10	1,800,471.88	40.31670630	-104.42581835
12,700.00	90.00	179.58	6,313.00	-6,676.61	924.04	14,642,481.11	1,800,473.27	40.31643172	-104.42581571
12,800.00	90.00	179.58	6,313.00	-6,776.60	924.78	14,642,381.12	1,800,474.65	40.31615713	-104.42581307
12,900.00	90.00	179.58	6,313.00	-6,876.60	925.51	14,642,281.13	1,800,476.03	40.31588254	-104.42581043
13,000.00	90.00	179.58	6,313.00	-6,976.60	926.25	14,642,181.14	1,800,477.42	40.31560795	-104.42580779
13,100.00	90.00	179.58	6,313.00	-7,076.59	926.99	14,642,081.15	1,800,478.80	40.31533336	-104.42580515
13,200.00	90.00	179.58	6,313.00	-7,176.59	927.73	14,641,981.16	1,800,480.19	40.31505877	-104.42580250
13,300.00	90.00	179.58	6,313.00	-7,276.59	928.47	14,641,881.17	1,800,481.57	40.31478419	-104.42579986
13,400.00	90.00	179.58	6,313.00	-7,376.59	929.21	14,641,781.18	1,800,482.96	40.31450960	-104.42579722
13,500.00	90.00	179.58	6,313.00	-7,476.58	929.95	14,641,681.19	1,800,484.34	40.31423501	-104.42579458
13,600.00	90.00	179.58	6,313.00	-7,576.58	930.69	14,641,581.20	1,800,485.72	40.31396042	-104.42579194
13,700.00	90.00	179.58	6,313.00	-7,676.58	931.43	14,641,481.21	1,800,487.11	40.31368583	-104.42578930
13,800.00	90.00	179.58	6,313.00	-7,776.58	932.17	14,641,381.22	1,800,488.49	40.31341124	-104.42578666
13,900.00	90.00	179.58	6,313.00	-7,876.57	932.91	14,641,281.23	1,800,489.88	40.31313666	-104.42578402
14,000.00	90.00	179.58	6,313.00	-7,976.57	933.65	14,641,181.24	1,800,491.26	40.31286207	-104.42578138
14,100.00	90.00	179.58	6,313.00	-8,076.57	934.39	14,641,081.25	1,800,492.65	40.31258749	-104.42577874
14,200.00	90.00	179.58	6,313.00	-8,176.56	935.13	14,640,981.26	1,800,494.03	40.31231290	-104.42577610
14,300.00	90.00	179.58	6,313.00	-8,276.56	935.87	14,640,881.27	1,800,495.41	40.31203831	-104.42577346
14,400.00	90.00	179.58	6,313.00	-8,376.56	936.61	14,640,781.28	1,800,496.80	40.31176372	-104.42577082
14,500.00	90.00	179.58	6,313.00	-8,476.56	937.35	14,640,681.29	1,800,498.18	40.31148914	-104.42576818
14,600.00	90.00	179.58	6,313.00	-8,576.55	938.09	14,640,581.30	1,800,499.57	40.31121455	-104.42576554
14,700.00	90.00	179.58	6,313.00	-8,676.55	938.83	14,640,481.31	1,800,500.95	40.31093996	-104.42576290
14,800.00	90.00	179.58	6,313.00	-8,776.55	939.56	14,640,381.32	1,800,502.34	40.31066537	-104.42576026
14,900.00	90.00	179.58	6,313.00	-8,876.55	940.30	14,640,281.33	1,800,503.72	40.31039078	-104.42575762
15,000.00	90.00	179.58	6,313.00	-8,976.54	941.04	14,640,181.34	1,800,505.11	40.31011619	-104.42575498
15,100.00	90.00	179.58	6,313.00	-9,076.54	941.78	14,640,081.35	1,800,506.49	40.30984160	-104.42575234
15,200.00	90.00	179.58	6,313.00	-9,176.54	942.52	14,639,981.36	1,800,507.87	40.30956702	-104.42574970
15,300.00	90.00	179.58	6,313.00	-9,276.53	943.26	14,639,881.37	1,800,509.26	40.30929243	-104.42574706
15,400.00	90.00	179.58	6,313.00	-9,376.53	944.00	14,639,781.38	1,800,510.64	40.30901784	-104.42574442
15,500.00	90.00	179.58	6,313.00	-9,476.53	944.74	14,639,681.39	1,800,512.03	40.30874325	-104.42574178

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-13-1L
Company:	Confluence Resources	TVD Reference:	RKB=4599+24 @ 4623.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4599+24 @ 4623.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-13-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

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	6,313.00	-9,576.53	945.48	14,639,581.40	1,800,513.41	40.30846866	-104.42573914
15,700.00	90.00	179.58	6,313.00	-9,676.52	946.22	14,639,481.41	1,800,514.80	40.30819407	-104.42573650
15,800.00	90.00	179.58	6,313.00	-9,776.52	946.96	14,639,381.42	1,800,516.18	40.30791948	-104.42573386
15,900.00	90.00	179.58	6,313.00	-9,876.52	947.70	14,639,281.43	1,800,517.56	40.30764490	-104.42573122
16,000.00	90.00	179.58	6,313.00	-9,976.52	948.44	14,639,181.44	1,800,518.95	40.30737031	-104.42572858
16,100.00	90.00	179.58	6,313.00	-10,076.51	949.18	14,639,081.45	1,800,520.33	40.30709572	-104.42572594
16,200.00	90.00	179.58	6,313.00	-10,176.51	949.92	14,638,981.46	1,800,521.72	40.30682113	-104.42572330
16,300.00	90.00	179.58	6,313.00	-10,276.51	950.66	14,638,881.47	1,800,523.10	40.30654654	-104.42572066
16,400.00	90.00	179.58	6,313.00	-10,376.50	951.40	14,638,781.48	1,800,524.49	40.30627195	-104.42571802
16,402.38	90.00	179.58	6,313.00	-10,378.88	951.41	14,638,779.10	1,800,524.52	40.30626543	-104.42571796
PBHL/TD 16402.38 MD/6313.00 TVD									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
70 Ranch 10-13-1L SL 2 - 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	14,649,122.31	1,799,502.59	40.33468502	-104.42914411
70 Ranch 10-13-1L LP 4 - plan hits target center - Point	0.00	0.37	6,313.00	-711.84	879.93	14,648,445.46	1,800,390.69	40.33281069	-104.42597321
70 Ranch 10-13-1L BHL - plan hits target center - Point	0.00	0.37	6,313.00	-10,378.88	951.41	14,638,779.10	1,800,524.52	40.30626543	-104.42571796

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
2,000.00	2,000.00	0.00	0.00	KOP Begin 10°/100' build	
2,628.04	2,623.02	-12.47	67.42	Begin 12.56° tangent	
5,858.64	5,776.30	-140.25	758.28	Begin 10°/100' build/turn	
6,735.07	6,313.00	-711.84	879.93	LP Begin 90° lateral	
16,402.38	6,313.00	-10,378.88	951.41	PBHL/TD 16402.38 MD/6313.00 TVD	