



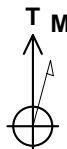
Well: 70 Ranch 10-14-2L
Site: Section 03-T04N-R63W
Project: Weld County, Colorado
Wellbore: Original Hole
Design: plan1

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
70 Ranch 10-14-2L SL 260 FSL 1261 FWL	24.00	-29.27	-3.7914649119.23	1799452.49	40.33467745	-104.42932395	
70 Ranch 10-14-2L BHL 470 FSL 1989 FWL	6366.00	-10380.46	784.5914638773.36	1800307.59	40.30625352	-104.42649615	
70 Ranch 10-14-2L LP 470 FNL 1989 FWL	6366.00	-721.00	713.0814648432.14	1800173.80	40.33277798	-104.42675173	

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	2095.86	9.59	103.53	2095.41	-1.87	7.78	10.00	2.45	Begin 9.59° tangent
4	5876.53	9.59	103.53	5823.29	-149.18	619.89	0.00	195.48	Begin 10°/100' build/turn
5	6753.51	90.00	179.58	6366.00	-721.00	713.08	10.00	772.69	LP Begin 90° lateral
6	16413.24	90.00	179.58	6366.00	-10380.46	784.59	0.00	10410.07	PBHL/TD 16413.24 MD/6366.00 TVD



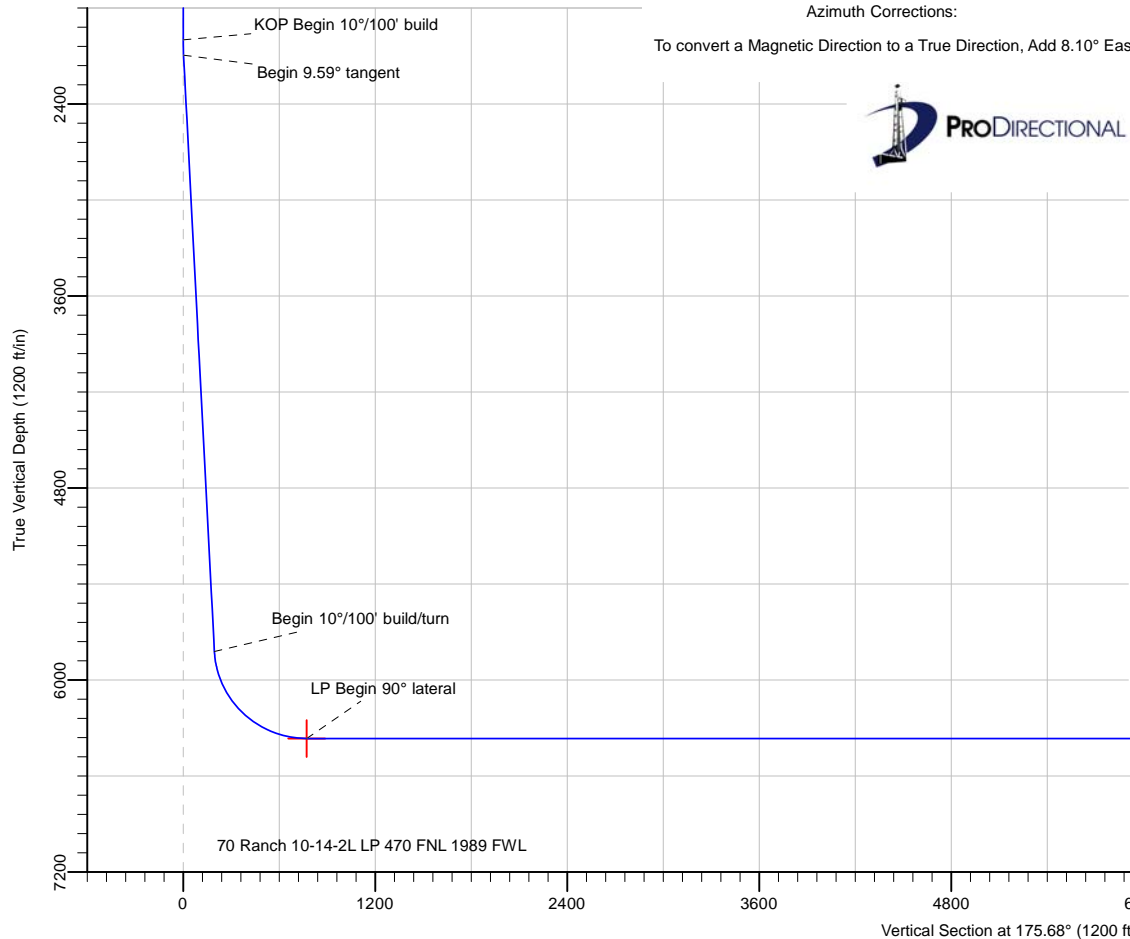
Azimuths to True North
Magnetic North: 8.10°

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

70 Ranch 10-14-2L Surf loc: 260 FSL 1261 FWL Section 03-T04N-R63W			
NAD83 Colorado - HARN Universal Transverse Mercator (US Survey Feet) Zone 13N (108 W to 102 W) RKB=4597+24 @ 4621.00ft			
Northing	Easting	Latitude	Longitude
14649148.53	1799456.09	40.33475784	-104.42931036

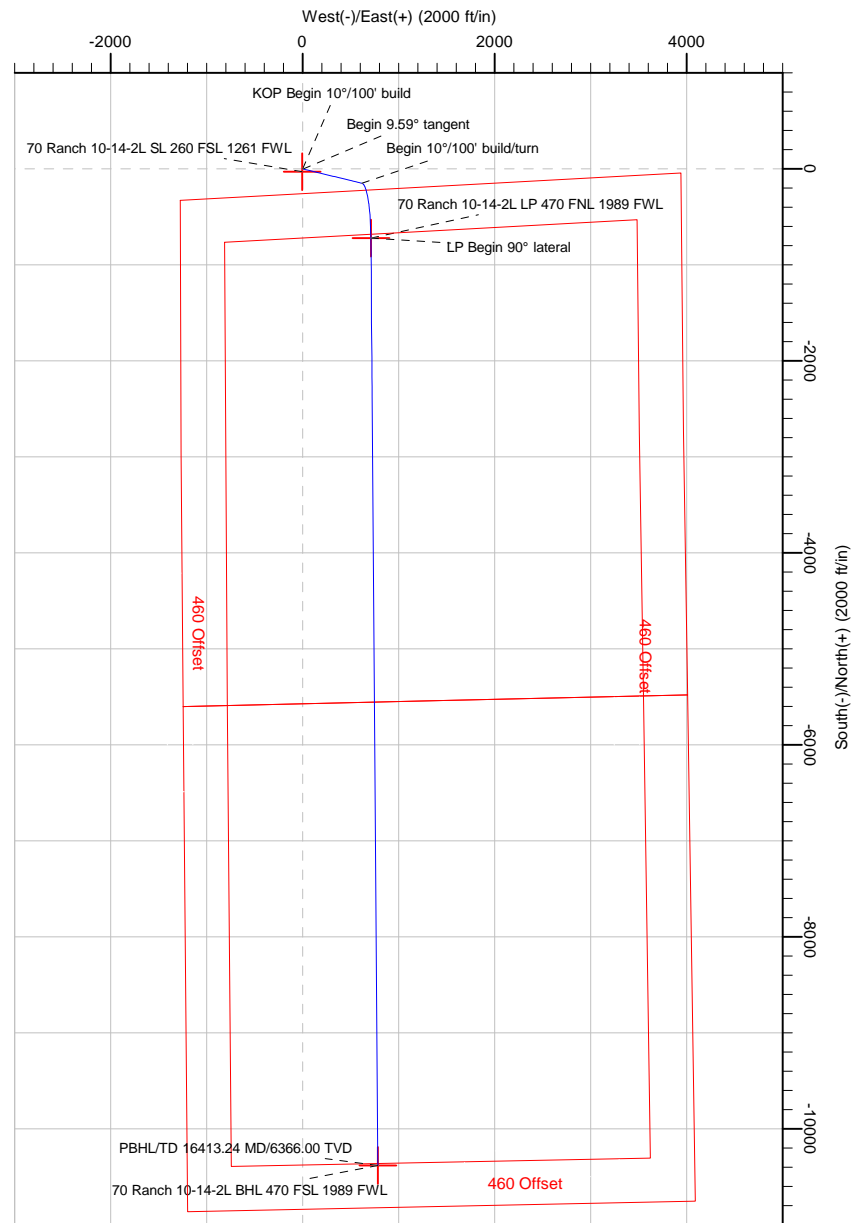
Azimuth Corrections:

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



Date: 2:30, May 21 2018

Vertical Section at 175.68° (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 10-14-2L
Company:	Confluence Resources	TVD Reference:	RKB=4597+24 @ 4621.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4597+24 @ 4621.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-14-2L	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 10-14-2L, Surf loc: 260 FSL 1261 FWL Section 03-T04N-R63W					
Well Position	+N/-S	-1,086.11 ft	Northing:	14,649,148.53 usft	Latitude:	40.33475783
	+E/-W	-1,491.25 ft	Easting:	1,799,456.09 usft	Longitude:	-104.42931036
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,597.00 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	175.68

Plan Survey Tool Program	Date	5/21/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,413.24	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	
2,095.86	9.59	103.53	2,095.41	-1.87	7.78	10.00	10.00	0.00	103.53	
5,876.53	9.59	103.53	5,823.29	-149.18	619.89	0.00	0.00	0.00	0.00	
6,753.51	90.00	179.58	6,366.00	-721.00	713.08	10.00	9.17	8.67	76.23	70 Ranch 10-14-2L LI
16,413.24	90.00	179.58	6,366.00	-10,380.46	784.59	0.00	0.00	0.00	0.00	70 Ranch 10-14-2L BI

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-14-2L
Company:	Confluence Resources	TVD Reference:	RKB=4597+24 @ 4621.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4597+24 @ 4621.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-14-2L	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									
2,095.86	9.59	103.53	2,095.41	-1.87	7.78	2.45	10.00	10.00	0.00
Begin 9.59° tangent									
2,100.00	9.59	103.53	2,099.50	-2.03	8.45	2.66	0.00	0.00	0.00
2,200.00	9.59	103.53	2,198.10	-5.93	24.64	7.77	0.00	0.00	0.00
2,300.00	9.59	103.53	2,296.70	-9.83	40.83	12.88	0.00	0.00	0.00
2,400.00	9.59	103.53	2,395.31	-13.72	57.02	17.98	0.00	0.00	0.00
2,500.00	9.59	103.53	2,493.91	-17.62	73.21	23.09	0.00	0.00	0.00
2,600.00	9.59	103.53	2,592.51	-21.51	89.40	28.19	0.00	0.00	0.00
2,700.00	9.59	103.53	2,691.12	-25.41	105.59	33.30	0.00	0.00	0.00
2,800.00	9.59	103.53	2,789.72	-29.31	121.78	38.40	0.00	0.00	0.00
2,900.00	9.59	103.53	2,888.33	-33.20	137.97	43.51	0.00	0.00	0.00
3,000.00	9.59	103.53	2,986.93	-37.10	154.16	48.61	0.00	0.00	0.00
3,100.00	9.59	103.53	3,085.53	-41.00	170.35	53.72	0.00	0.00	0.00
3,200.00	9.59	103.53	3,184.14	-44.89	186.55	58.82	0.00	0.00	0.00
3,300.00	9.59	103.53	3,282.74	-48.79	202.74	63.93	0.00	0.00	0.00
3,400.00	9.59	103.53	3,381.34	-52.69	218.93	69.04	0.00	0.00	0.00
3,500.00	9.59	103.53	3,479.95	-56.58	235.12	74.14	0.00	0.00	0.00
3,600.00	9.59	103.53	3,578.55	-60.48	251.31	79.25	0.00	0.00	0.00
3,700.00	9.59	103.53	3,677.15	-64.37	267.50	84.35	0.00	0.00	0.00
3,800.00	9.59	103.53	3,775.76	-68.27	283.69	89.46	0.00	0.00	0.00
3,900.00	9.59	103.53	3,874.36	-72.17	299.88	94.56	0.00	0.00	0.00
4,000.00	9.59	103.53	3,972.97	-76.06	316.07	99.67	0.00	0.00	0.00
4,100.00	9.59	103.53	4,071.57	-79.96	332.26	104.77	0.00	0.00	0.00
4,200.00	9.59	103.53	4,170.17	-83.86	348.45	109.88	0.00	0.00	0.00
4,300.00	9.59	103.53	4,268.78	-87.75	364.64	114.99	0.00	0.00	0.00
4,400.00	9.59	103.53	4,367.38	-91.65	380.83	120.09	0.00	0.00	0.00
4,500.00	9.59	103.53	4,465.98	-95.55	397.02	125.20	0.00	0.00	0.00
4,600.00	9.59	103.53	4,564.59	-99.44	413.21	130.30	0.00	0.00	0.00
4,700.00	9.59	103.53	4,663.19	-103.34	429.40	135.41	0.00	0.00	0.00
4,800.00	9.59	103.53	4,761.79	-107.23	445.59	140.51	0.00	0.00	0.00
4,900.00	9.59	103.53	4,860.40	-111.13	461.78	145.62	0.00	0.00	0.00

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Company:	Confluence Resources	TVD Reference:	RKB=4597+24 @ 4621.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4597+24 @ 4621.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-14-2L	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	9.59	103.53	4,959.00	-115.03	477.98	150.72	0.00	0.00	0.00
5,100.00	9.59	103.53	5,057.61	-118.92	494.17	155.83	0.00	0.00	0.00
5,200.00	9.59	103.53	5,156.21	-122.82	510.36	160.93	0.00	0.00	0.00
5,300.00	9.59	103.53	5,254.81	-126.72	526.55	166.04	0.00	0.00	0.00
5,400.00	9.59	103.53	5,353.42	-130.61	542.74	171.15	0.00	0.00	0.00
5,500.00	9.59	103.53	5,452.02	-134.51	558.93	176.25	0.00	0.00	0.00
5,600.00	9.59	103.53	5,550.62	-138.40	575.12	181.36	0.00	0.00	0.00
5,700.00	9.59	103.53	5,649.23	-142.30	591.31	186.46	0.00	0.00	0.00
5,800.00	9.59	103.53	5,747.83	-146.20	607.50	191.57	0.00	0.00	0.00
5,876.53	9.59	103.53	5,823.29	-149.18	619.89	195.48	0.00	0.00	0.00
Begin 10°/100' build/turn									
5,900.00	10.40	116.27	5,846.41	-150.57	623.69	197.15	10.00	3.45	54.26
6,000.00	17.30	147.83	5,943.57	-167.19	639.74	214.94	10.00	6.91	31.56
6,100.00	26.24	160.16	6,036.39	-200.66	655.20	249.47	10.00	8.94	12.33
6,200.00	35.73	166.40	6,122.05	-249.96	669.60	299.72	10.00	9.48	6.24
6,300.00	45.41	170.28	6,197.93	-313.60	682.51	364.14	10.00	9.68	3.87
6,400.00	55.18	173.03	6,261.75	-389.63	693.54	440.79	10.00	9.77	2.75
6,500.00	65.01	175.19	6,311.55	-475.75	702.34	527.33	10.00	9.82	2.16
6,600.00	74.86	177.03	6,345.83	-569.35	708.65	621.14	10.00	9.85	1.84
6,700.00	84.72	178.71	6,363.54	-667.57	712.28	719.35	10.00	9.86	1.67
6,753.51	90.00	179.58	6,366.00	-721.00	713.08	772.69	10.00	9.87	1.62
LP Begin 90° lateral									
6,800.00	90.00	179.58	6,366.00	-767.48	713.42	819.07	0.00	0.00	0.00
6,900.00	90.00	179.58	6,366.00	-867.48	714.16	918.84	0.00	0.00	0.00
7,000.00	90.00	179.58	6,366.00	-967.48	714.90	1,018.61	0.00	0.00	0.00
7,100.00	90.00	179.58	6,366.00	-1,067.48	715.64	1,118.38	0.00	0.00	0.00
7,200.00	90.00	179.58	6,366.00	-1,167.47	716.38	1,218.15	0.00	0.00	0.00
7,300.00	90.00	179.58	6,366.00	-1,267.47	717.12	1,317.91	0.00	0.00	0.00
7,400.00	90.00	179.58	6,366.00	-1,367.47	717.86	1,417.68	0.00	0.00	0.00
7,500.00	90.00	179.58	6,366.00	-1,467.47	718.60	1,517.45	0.00	0.00	0.00
7,600.00	90.00	179.58	6,366.00	-1,567.46	719.34	1,617.22	0.00	0.00	0.00
7,700.00	90.00	179.58	6,366.00	-1,667.46	720.08	1,716.99	0.00	0.00	0.00
7,800.00	90.00	179.58	6,366.00	-1,767.46	720.82	1,816.76	0.00	0.00	0.00
7,900.00	90.00	179.58	6,366.00	-1,867.45	721.57	1,916.53	0.00	0.00	0.00
8,000.00	90.00	179.58	6,366.00	-1,967.45	722.31	2,016.30	0.00	0.00	0.00
8,100.00	90.00	179.58	6,366.00	-2,067.45	723.05	2,116.06	0.00	0.00	0.00
8,200.00	90.00	179.58	6,366.00	-2,167.45	723.79	2,215.83	0.00	0.00	0.00
8,300.00	90.00	179.58	6,366.00	-2,267.44	724.53	2,315.60	0.00	0.00	0.00
8,400.00	90.00	179.58	6,366.00	-2,367.44	725.27	2,415.37	0.00	0.00	0.00
8,500.00	90.00	179.58	6,366.00	-2,467.44	726.01	2,515.14	0.00	0.00	0.00
8,600.00	90.00	179.58	6,366.00	-2,567.44	726.75	2,614.91	0.00	0.00	0.00
8,700.00	90.00	179.58	6,366.00	-2,667.43	727.49	2,714.68	0.00	0.00	0.00
8,800.00	90.00	179.58	6,366.00	-2,767.43	728.23	2,814.44	0.00	0.00	0.00
8,900.00	90.00	179.58	6,366.00	-2,867.43	728.97	2,914.21	0.00	0.00	0.00
9,000.00	90.00	179.58	6,366.00	-2,967.42	729.71	3,013.98	0.00	0.00	0.00
9,100.00	90.00	179.58	6,366.00	-3,067.42	730.45	3,113.75	0.00	0.00	0.00
9,200.00	90.00	179.58	6,366.00	-3,167.42	731.19	3,213.52	0.00	0.00	0.00
9,300.00	90.00	179.58	6,366.00	-3,267.42	731.93	3,313.29	0.00	0.00	0.00
9,400.00	90.00	179.58	6,366.00	-3,367.41	732.67	3,413.06	0.00	0.00	0.00
9,500.00	90.00	179.58	6,366.00	-3,467.41	733.41	3,512.82	0.00	0.00	0.00
9,600.00	90.00	179.58	6,366.00	-3,567.41	734.15	3,612.59	0.00	0.00	0.00
9,700.00	90.00	179.58	6,366.00	-3,667.41	734.89	3,712.36	0.00	0.00	0.00
9,800.00	90.00	179.58	6,366.00	-3,767.40	735.63	3,812.13	0.00	0.00	0.00
9,900.00	90.00	179.58	6,366.00	-3,867.40	736.37	3,911.90	0.00	0.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=4597+24 @ 4621.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-14-2L	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	6,366.00	-3,967.40	737.11	4,011.67	0.00	0.00	0.00
10,100.00	90.00	179.58	6,366.00	-4,067.39	737.85	4,111.44	0.00	0.00	0.00
10,200.00	90.00	179.58	6,366.00	-4,167.39	738.59	4,211.21	0.00	0.00	0.00
10,300.00	90.00	179.58	6,366.00	-4,267.39	739.33	4,310.97	0.00	0.00	0.00
10,400.00	90.00	179.58	6,366.00	-4,367.39	740.07	4,410.74	0.00	0.00	0.00
10,500.00	90.00	179.58	6,366.00	-4,467.38	740.81	4,510.51	0.00	0.00	0.00
10,600.00	90.00	179.58	6,366.00	-4,567.38	741.55	4,610.28	0.00	0.00	0.00
10,700.00	90.00	179.58	6,366.00	-4,667.38	742.29	4,710.05	0.00	0.00	0.00
10,800.00	90.00	179.58	6,366.00	-4,767.38	743.03	4,809.82	0.00	0.00	0.00
10,900.00	90.00	179.58	6,366.00	-4,867.37	743.77	4,909.59	0.00	0.00	0.00
11,000.00	90.00	179.58	6,366.00	-4,967.37	744.52	5,009.35	0.00	0.00	0.00
11,100.00	90.00	179.58	6,366.00	-5,067.37	745.26	5,109.12	0.00	0.00	0.00
11,200.00	90.00	179.58	6,366.00	-5,167.36	746.00	5,208.89	0.00	0.00	0.00
11,300.00	90.00	179.58	6,366.00	-5,267.36	746.74	5,308.66	0.00	0.00	0.00
11,400.00	90.00	179.58	6,366.00	-5,367.36	747.48	5,408.43	0.00	0.00	0.00
11,500.00	90.00	179.58	6,366.00	-5,467.36	748.22	5,508.20	0.00	0.00	0.00
11,600.00	90.00	179.58	6,366.00	-5,567.35	748.96	5,607.97	0.00	0.00	0.00
11,700.00	90.00	179.58	6,366.00	-5,667.35	749.70	5,707.73	0.00	0.00	0.00
11,800.00	90.00	179.58	6,366.00	-5,767.35	750.44	5,807.50	0.00	0.00	0.00
11,900.00	90.00	179.58	6,366.00	-5,867.35	751.18	5,907.27	0.00	0.00	0.00
12,000.00	90.00	179.58	6,366.00	-5,967.34	751.92	6,007.04	0.00	0.00	0.00
12,100.00	90.00	179.58	6,366.00	-6,067.34	752.66	6,106.81	0.00	0.00	0.00
12,200.00	90.00	179.58	6,366.00	-6,167.34	753.40	6,206.58	0.00	0.00	0.00
12,300.00	90.00	179.58	6,366.00	-6,267.33	754.14	6,306.35	0.00	0.00	0.00
12,400.00	90.00	179.58	6,366.00	-6,367.33	754.88	6,406.12	0.00	0.00	0.00
12,500.00	90.00	179.58	6,366.00	-6,467.33	755.62	6,505.88	0.00	0.00	0.00
12,600.00	90.00	179.58	6,366.00	-6,567.33	756.36	6,605.65	0.00	0.00	0.00
12,700.00	90.00	179.58	6,366.00	-6,667.32	757.10	6,705.42	0.00	0.00	0.00
12,800.00	90.00	179.58	6,366.00	-6,767.32	757.84	6,805.19	0.00	0.00	0.00
12,900.00	90.00	179.58	6,366.00	-6,867.32	758.58	6,904.96	0.00	0.00	0.00
13,000.00	90.00	179.58	6,366.00	-6,967.32	759.32	7,004.73	0.00	0.00	0.00
13,100.00	90.00	179.58	6,366.00	-7,067.31	760.06	7,104.50	0.00	0.00	0.00
13,200.00	90.00	179.58	6,366.00	-7,167.31	760.80	7,204.26	0.00	0.00	0.00
13,300.00	90.00	179.58	6,366.00	-7,267.31	761.54	7,304.03	0.00	0.00	0.00
13,400.00	90.00	179.58	6,366.00	-7,367.30	762.28	7,403.80	0.00	0.00	0.00
13,500.00	90.00	179.58	6,366.00	-7,467.30	763.02	7,503.57	0.00	0.00	0.00
13,600.00	90.00	179.58	6,366.00	-7,567.30	763.76	7,603.34	0.00	0.00	0.00
13,700.00	90.00	179.58	6,366.00	-7,667.30	764.50	7,703.11	0.00	0.00	0.00
13,800.00	90.00	179.58	6,366.00	-7,767.29	765.24	7,802.88	0.00	0.00	0.00
13,900.00	90.00	179.58	6,366.00	-7,867.29	765.98	7,902.65	0.00	0.00	0.00
14,000.00	90.00	179.58	6,366.00	-7,967.29	766.72	8,002.41	0.00	0.00	0.00
14,100.00	90.00	179.58	6,366.00	-8,067.29	767.47	8,102.18	0.00	0.00	0.00
14,200.00	90.00	179.58	6,366.00	-8,167.28	768.21	8,201.95	0.00	0.00	0.00
14,300.00	90.00	179.58	6,366.00	-8,267.28	768.95	8,301.72	0.00	0.00	0.00
14,400.00	90.00	179.58	6,366.00	-8,367.28	769.69	8,401.49	0.00	0.00	0.00
14,500.00	90.00	179.58	6,366.00	-8,467.27	770.43	8,501.26	0.00	0.00	0.00
14,600.00	90.00	179.58	6,366.00	-8,567.27	771.17	8,601.03	0.00	0.00	0.00
14,700.00	90.00	179.58	6,366.00	-8,667.27	771.91	8,700.79	0.00	0.00	0.00
14,800.00	90.00	179.58	6,366.00	-8,767.27	772.65	8,800.56	0.00	0.00	0.00
14,900.00	90.00	179.58	6,366.00	-8,867.26	773.39	8,900.33	0.00	0.00	0.00
15,000.00	90.00	179.58	6,366.00	-8,967.26	774.13	9,000.10	0.00	0.00	0.00
15,100.00	90.00	179.58	6,366.00	-9,067.26	774.87	9,099.87	0.00	0.00	0.00
15,200.00	90.00	179.58	6,366.00	-9,167.25	775.61	9,199.64	0.00	0.00	0.00
15,300.00	90.00	179.58	6,366.00	-9,267.25	776.35	9,299.41	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-14-2L
Company:	Confluence Resources	TVD Reference:	RKB=4597+24 @ 4621.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4597+24 @ 4621.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-14-2L	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	6,366.00	-9,367.25	777.09	9,399.17	0.00	0.00	0.00
15,500.00	90.00	179.58	6,366.00	-9,467.25	777.83	9,498.94	0.00	0.00	0.00
15,600.00	90.00	179.58	6,366.00	-9,567.24	778.57	9,598.71	0.00	0.00	0.00
15,700.00	90.00	179.58	6,366.00	-9,667.24	779.31	9,698.48	0.00	0.00	0.00
15,800.00	90.00	179.58	6,366.00	-9,767.24	780.05	9,798.25	0.00	0.00	0.00
15,900.00	90.00	179.58	6,366.00	-9,867.24	780.79	9,898.02	0.00	0.00	0.00
16,000.00	90.00	179.58	6,366.00	-9,967.23	781.53	9,997.79	0.00	0.00	0.00
16,100.00	90.00	179.58	6,366.00	-10,067.23	782.27	10,097.56	0.00	0.00	0.00
16,200.00	90.00	179.58	6,366.00	-10,167.23	783.01	10,197.32	0.00	0.00	0.00
16,300.00	90.00	179.58	6,366.00	-10,267.22	783.75	10,297.09	0.00	0.00	0.00
16,400.00	90.00	179.58	6,366.00	-10,367.22	784.49	10,396.86	0.00	0.00	0.00
16,413.24	90.00	179.58	6,366.00	-10,380.46	784.59	10,410.07	0.00	0.00	0.00
PBHL/TD 16413.24 MD/6366.00 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 10-14-2L 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	14,649,119.23	1,799,452.49	40.33467745	-104.42932395
70 Ranch 10-14-2L BHL - plan hits target center - Point	0.00	0.37	6,366.00	-10,380.46	784.59	14,638,773.36	1,800,307.59	40.30625353	-104.42649615
70 Ranch 10-14-2L LP 4 - plan hits target center - Point	0.00	0.37	6,366.00	-721.00	713.08	14,648,432.14	1,800,173.80	40.33277798	-104.42675173

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
2,095.86	2,095.41	-1.87	7.78	Begin 9.59° tangent
5,876.53	5,823.29	-149.18	619.89	Begin 10°/100' build/turn
6,753.51	6,366.00	-721.00	713.08	LP Begin 90° lateral
16,413.24	6,366.00	-10,380.46	784.59	PBHL/TD 16413.24 MD/6366.00 TVD

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-14-2L
Company:	Confluence Resources	TVD Reference:	RKB=4597+24 @ 4621.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4597+24 @ 4621.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-14-2L	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 10-14-2L, Surf loc: 260 FSL 1261 FWL Section 03-T04N-R63W					
Well Position	+N/-S	0.00 ft	Northing:	14,649,148.53 usft	Latitude:	40.33475783
	+E/-W	0.00 ft	Easting:	1,799,456.09 usft	Longitude:	-104.42931036
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,597.00 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	175.68

Plan Survey Tool Program	Date	5/21/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,413.24 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	
2,095.86	9.59	103.53	2,095.41	-1.87	7.78	10.00	10.00	0.00	103.53	
5,876.53	9.59	103.53	5,823.29	-149.18	619.89	0.00	0.00	0.00	0.00	
6,753.51	90.00	179.58	6,366.00	-721.00	713.08	10.00	9.17	8.67	76.23	70 Ranch 10-14-2L LI
16,413.24	90.00	179.58	6,366.00	-10,380.46	784.59	0.00	0.00	0.00	0.00	70 Ranch 10-14-2L BI

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-14-2L
Company:	Confluence Resources	TVD Reference:	RKB=4597+24 @ 4621.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4597+24 @ 4621.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-14-2L	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	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
100.00	0.00	0.00	100.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
200.00	0.00	0.00	200.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
300.00	0.00	0.00	300.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
400.00	0.00	0.00	400.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
500.00	0.00	0.00	500.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
600.00	0.00	0.00	600.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
700.00	0.00	0.00	700.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
800.00	0.00	0.00	800.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
900.00	0.00	0.00	900.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,649,148.53	1,799,456.09	40.33475783	-104.42931036
KOP Begin 10°/100' build									
2,095.86	9.59	103.53	2,095.41	-1.87	7.78	14,649,146.71	1,799,463.88	40.33475269	-104.42928245
Begin 9.59° tangent									
2,100.00	9.59	103.53	2,099.50	-2.03	8.45	14,649,146.55	1,799,464.55	40.33475225	-104.42928004
2,200.00	9.59	103.53	2,198.10	-5.93	24.64	14,649,142.76	1,799,480.77	40.33474155	-104.42922195
2,300.00	9.59	103.53	2,296.70	-9.83	40.83	14,649,138.97	1,799,496.98	40.33473085	-104.42916385
2,400.00	9.59	103.53	2,395.31	-13.72	57.02	14,649,135.17	1,799,513.20	40.33472015	-104.42910576
2,500.00	9.59	103.53	2,493.91	-17.62	73.21	14,649,131.38	1,799,529.41	40.33470945	-104.42904766
2,600.00	9.59	103.53	2,592.51	-21.51	89.40	14,649,127.59	1,799,545.63	40.33469876	-104.42898957
2,700.00	9.59	103.53	2,691.12	-25.41	105.59	14,649,123.80	1,799,561.84	40.33468806	-104.42893147
2,800.00	9.59	103.53	2,789.72	-29.31	121.78	14,649,120.01	1,799,578.06	40.33467736	-104.42887337
2,900.00	9.59	103.53	2,888.33	-33.20	137.97	14,649,116.21	1,799,594.27	40.33466666	-104.42881528
3,000.00	9.59	103.53	2,986.93	-37.10	154.16	14,649,112.42	1,799,610.49	40.33465596	-104.42875718
3,100.00	9.59	103.53	3,085.53	-41.00	170.35	14,649,108.63	1,799,626.71	40.33464526	-104.42869909
3,200.00	9.59	103.53	3,184.14	-44.89	186.55	14,649,104.84	1,799,642.92	40.33463456	-104.42864099
3,300.00	9.59	103.53	3,282.74	-48.79	202.74	14,649,101.05	1,799,659.14	40.33462386	-104.42858290
3,400.00	9.59	103.53	3,381.34	-52.69	218.93	14,649,097.25	1,799,675.35	40.33461316	-104.42852480
3,500.00	9.59	103.53	3,479.95	-56.58	235.12	14,649,093.46	1,799,691.57	40.33460246	-104.42846670
3,600.00	9.59	103.53	3,578.55	-60.48	251.31	14,649,089.67	1,799,707.78	40.33459176	-104.42840861
3,700.00	9.59	103.53	3,677.15	-64.37	267.50	14,649,085.88	1,799,724.00	40.33458106	-104.42835051
3,800.00	9.59	103.53	3,775.76	-68.27	283.69	14,649,082.09	1,799,740.21	40.33457036	-104.42829242
3,900.00	9.59	103.53	3,874.36	-72.17	299.88	14,649,078.30	1,799,756.43	40.33455966	-104.42823432
4,000.00	9.59	103.53	3,972.97	-76.06	316.07	14,649,074.50	1,799,772.64	40.33454896	-104.42817623
4,100.00	9.59	103.53	4,071.57	-79.96	332.26	14,649,070.71	1,799,788.86	40.33453826	-104.42811813
4,200.00	9.59	103.53	4,170.17	-83.86	348.45	14,649,066.92	1,799,805.07	40.33452756	-104.42806004
4,300.00	9.59	103.53	4,268.78	-87.75	364.64	14,649,063.13	1,799,821.29	40.33451686	-104.42800194
4,400.00	9.59	103.53	4,367.38	-91.65	380.83	14,649,059.34	1,799,837.50	40.33450616	-104.42794384
4,500.00	9.59	103.53	4,465.98	-95.55	397.02	14,649,055.54	1,799,853.72	40.33449546	-104.42788575
4,600.00	9.59	103.53	4,564.59	-99.44	413.21	14,649,051.75	1,799,869.94	40.33448476	-104.42782765
4,700.00	9.59	103.53	4,663.19	-103.34	429.40	14,649,047.96	1,799,886.15	40.33447406	-104.42776956
4,800.00	9.59	103.53	4,761.79	-107.23	445.59	14,649,044.17	1,799,902.37	40.33446336	-104.42771146
4,900.00	9.59	103.53	4,860.40	-111.13	461.78	14,649,040.38	1,799,918.58	40.33445266	-104.42765337
5,000.00	9.59	103.53	4,959.00	-115.03	477.98	14,649,036.58	1,799,934.80	40.33444196	-104.42759527

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-14-2L
Company:	Confluence Resources	TVD Reference:	RKB=4597+24 @ 4621.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4597+24 @ 4621.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-14-2L	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	9.59	103.53	5,057.61	-118.92	494.17	14,649,032.79	1,799,951.01	40.33443126	-104.42753718
5,200.00	9.59	103.53	5,156.21	-122.82	510.36	14,649,029.00	1,799,967.23	40.33442056	-104.42747908
5,300.00	9.59	103.53	5,254.81	-126.72	526.55	14,649,025.21	1,799,983.44	40.33440986	-104.42742099
5,400.00	9.59	103.53	5,353.42	-130.61	542.74	14,649,021.42	1,799,999.66	40.33439916	-104.42736289
5,500.00	9.59	103.53	5,452.02	-134.51	558.93	14,649,017.63	1,800,015.87	40.33438846	-104.42730480
5,600.00	9.59	103.53	5,550.62	-138.40	575.12	14,649,013.83	1,800,032.09	40.33437776	-104.42724670
5,700.00	9.59	103.53	5,649.23	-142.30	591.31	14,649,010.04	1,800,048.30	40.33436706	-104.42718860
5,800.00	9.59	103.53	5,747.83	-146.20	607.50	14,649,006.25	1,800,064.52	40.33435636	-104.42713051
5,876.53	9.59	103.53	5,823.29	-149.18	619.89	14,649,003.35	1,800,076.93	40.33434817	-104.42708605
Begin 10°/100' build/turn									
5,900.00	10.40	116.27	5,846.41	-150.57	623.69	14,649,001.98	1,800,080.74	40.33434435	-104.42707242
6,000.00	17.30	147.83	5,943.57	-167.19	639.74	14,648,985.46	1,800,096.89	40.33429870	-104.42701483
6,100.00	26.24	160.16	6,036.39	-200.66	655.20	14,648,952.09	1,800,112.57	40.33420680	-104.42695936
6,200.00	35.73	166.40	6,122.05	-249.96	669.60	14,648,902.89	1,800,127.29	40.33407142	-104.42690767
6,300.00	45.41	170.28	6,197.93	-313.60	682.51	14,648,839.34	1,800,140.61	40.33389669	-104.42686136
6,400.00	55.18	173.03	6,261.75	-389.63	693.54	14,648,763.38	1,800,152.12	40.33368791	-104.42682182
6,500.00	65.01	175.19	6,311.55	-475.75	702.34	14,648,677.32	1,800,161.48	40.33345142	-104.42679025
6,600.00	74.86	177.03	6,345.83	-569.35	708.65	14,648,583.76	1,800,168.39	40.33319441	-104.42676761
6,700.00	84.72	178.71	6,363.54	-667.57	712.28	14,648,485.57	1,800,172.66	40.33292470	-104.42675460
6,753.51	90.00	179.58	6,366.00	-721.00	713.08	14,648,432.14	1,800,173.80	40.33277798	-104.42675173
LP Begin 90° lateral									
6,800.00	90.00	179.58	6,366.00	-767.48	713.42	14,648,385.66	1,800,174.44	40.33265033	-104.42675050
6,900.00	90.00	179.58	6,366.00	-867.48	714.16	14,648,285.67	1,800,175.83	40.33237574	-104.42674786
7,000.00	90.00	179.58	6,366.00	-967.48	714.90	14,648,185.68	1,800,177.21	40.33210116	-104.42674521
7,100.00	90.00	179.58	6,366.00	-1,067.48	715.64	14,648,085.69	1,800,178.60	40.33182657	-104.42674256
7,200.00	90.00	179.58	6,366.00	-1,167.47	716.38	14,647,985.70	1,800,179.98	40.33155198	-104.42673992
7,300.00	90.00	179.58	6,366.00	-1,267.47	717.12	14,647,885.71	1,800,181.37	40.33127739	-104.42673727
7,400.00	90.00	179.58	6,366.00	-1,367.47	717.86	14,647,785.72	1,800,182.75	40.33100281	-104.42673463
7,500.00	90.00	179.58	6,366.00	-1,467.47	718.60	14,647,685.73	1,800,184.14	40.33072822	-104.42673198
7,600.00	90.00	179.58	6,366.00	-1,567.46	719.34	14,647,585.74	1,800,185.52	40.33045363	-104.42672933
7,700.00	90.00	179.58	6,366.00	-1,667.46	720.08	14,647,485.75	1,800,186.91	40.33017904	-104.42672669
7,800.00	90.00	179.58	6,366.00	-1,767.46	720.82	14,647,385.76	1,800,188.29	40.32990446	-104.42672404
7,900.00	90.00	179.58	6,366.00	-1,867.45	721.57	14,647,285.77	1,800,189.68	40.32962987	-104.42672139
8,000.00	90.00	179.58	6,366.00	-1,967.45	722.31	14,647,185.78	1,800,191.06	40.32935528	-104.42671875
8,100.00	90.00	179.58	6,366.00	-2,067.45	723.05	14,647,085.79	1,800,192.45	40.32908069	-104.42671610
8,200.00	90.00	179.58	6,366.00	-2,167.45	723.79	14,646,985.80	1,800,193.83	40.32880611	-104.42671346
8,300.00	90.00	179.58	6,366.00	-2,267.44	724.53	14,646,885.81	1,800,195.22	40.32853152	-104.42671081
8,400.00	90.00	179.58	6,366.00	-2,367.44	725.27	14,646,785.82	1,800,196.60	40.32825693	-104.42670816
8,500.00	90.00	179.58	6,366.00	-2,467.44	726.01	14,646,685.83	1,800,197.99	40.32798234	-104.42670552
8,600.00	90.00	179.58	6,366.00	-2,567.44	726.75	14,646,585.84	1,800,199.37	40.32770776	-104.42670287
8,700.00	90.00	179.58	6,366.00	-2,667.43	727.49	14,646,485.85	1,800,200.76	40.32743317	-104.42670023
8,800.00	90.00	179.58	6,366.00	-2,767.43	728.23	14,646,385.86	1,800,202.14	40.32715858	-104.42669758
8,900.00	90.00	179.58	6,366.00	-2,867.43	728.97	14,646,285.87	1,800,203.53	40.32688399	-104.42669493
9,000.00	90.00	179.58	6,366.00	-2,967.42	729.71	14,646,185.87	1,800,204.91	40.32660940	-104.42669229
9,100.00	90.00	179.58	6,366.00	-3,067.42	730.45	14,646,085.88	1,800,206.30	40.32633482	-104.42668964
9,200.00	90.00	179.58	6,366.00	-3,167.42	731.19	14,645,985.89	1,800,207.68	40.32606023	-104.42668700
9,300.00	90.00	179.58	6,366.00	-3,267.42	731.93	14,645,885.90	1,800,209.07	40.32578564	-104.42668435
9,400.00	90.00	179.58	6,366.00	-3,367.41	732.67	14,645,785.91	1,800,210.45	40.32551105	-104.42668170
9,500.00	90.00	179.58	6,366.00	-3,467.41	733.41	14,645,685.92	1,800,211.84	40.32523647	-104.42667906
9,600.00	90.00	179.58	6,366.00	-3,567.41	734.15	14,645,585.93	1,800,213.22	40.32496188	-104.42667641
9,700.00	90.00	179.58	6,366.00	-3,667.41	734.89	14,645,485.94	1,800,214.61	40.32468729	-104.42667376
9,800.00	90.00	179.58	6,366.00	-3,767.40	735.63	14,645,385.95	1,800,215.99	40.32441270	-104.42667112
9,900.00	90.00	179.58	6,366.00	-3,867.40	736.37	14,645,285.96	1,800,217.38	40.32413811	-104.42666847
10,000.00	90.00	179.58	6,366.00	-3,967.40	737.11	14,645,185.97	1,800,218.76	40.32386353	-104.42666583

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-14-2L
Company:	Confluence Resources	TVD Reference:	RKB=4597+24 @ 4621.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4597+24 @ 4621.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-14-2L	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	6,366.00	-4,067.39	737.85	14,645,085.98	1,800,220.15	40.32358894	-104.42666318
10,200.00	90.00	179.58	6,366.00	-4,167.39	738.59	14,644,985.99	1,800,221.53	40.32331435	-104.42666053
10,300.00	90.00	179.58	6,366.00	-4,267.39	739.33	14,644,886.00	1,800,222.92	40.32303976	-104.42665789
10,400.00	90.00	179.58	6,366.00	-4,367.39	740.07	14,644,786.01	1,800,224.30	40.32276517	-104.42665524
10,500.00	90.00	179.58	6,366.00	-4,467.38	740.81	14,644,686.02	1,800,225.69	40.32249059	-104.42665260
10,600.00	90.00	179.58	6,366.00	-4,567.38	741.55	14,644,586.03	1,800,227.07	40.32221600	-104.42664995
10,700.00	90.00	179.58	6,366.00	-4,667.38	742.29	14,644,486.04	1,800,228.46	40.32194141	-104.42664731
10,800.00	90.00	179.58	6,366.00	-4,767.38	743.03	14,644,386.05	1,800,229.84	40.32166682	-104.42664466
10,900.00	90.00	179.58	6,366.00	-4,867.37	743.77	14,644,286.06	1,800,231.23	40.32139223	-104.42664201
11,000.00	90.00	179.58	6,366.00	-4,967.37	744.52	14,644,186.07	1,800,232.61	40.32111765	-104.42663937
11,100.00	90.00	179.58	6,366.00	-5,067.37	745.26	14,644,086.08	1,800,234.00	40.32084306	-104.42663672
11,200.00	90.00	179.58	6,366.00	-5,167.36	746.00	14,643,986.09	1,800,235.38	40.32056847	-104.42663408
11,300.00	90.00	179.58	6,366.00	-5,267.36	746.74	14,643,886.10	1,800,236.77	40.32029388	-104.42663143
11,400.00	90.00	179.58	6,366.00	-5,367.36	747.48	14,643,786.11	1,800,238.15	40.32001929	-104.42662878
11,500.00	90.00	179.58	6,366.00	-5,467.36	748.22	14,643,686.12	1,800,239.54	40.31974471	-104.42662614
11,600.00	90.00	179.58	6,366.00	-5,567.35	748.96	14,643,586.13	1,800,240.92	40.31947012	-104.42662349
11,700.00	90.00	179.58	6,366.00	-5,667.35	749.70	14,643,486.14	1,800,242.31	40.31919553	-104.42662085
11,800.00	90.00	179.58	6,366.00	-5,767.35	750.44	14,643,386.15	1,800,243.70	40.31892094	-104.42661820
11,900.00	90.00	179.58	6,366.00	-5,867.35	751.18	14,643,286.16	1,800,245.08	40.31864635	-104.42661555
12,000.00	90.00	179.58	6,366.00	-5,967.34	751.92	14,643,186.17	1,800,246.47	40.31837177	-104.42661291
12,100.00	90.00	179.58	6,366.00	-6,067.34	752.66	14,643,086.18	1,800,247.85	40.31809718	-104.42661026
12,200.00	90.00	179.58	6,366.00	-6,167.34	753.40	14,642,986.19	1,800,249.24	40.31782259	-104.42660762
12,300.00	90.00	179.58	6,366.00	-6,267.33	754.14	14,642,886.20	1,800,250.62	40.31754800	-104.42660497
12,400.00	90.00	179.58	6,366.00	-6,367.33	754.88	14,642,786.21	1,800,252.01	40.31727341	-104.42660233
12,500.00	90.00	179.58	6,366.00	-6,467.33	755.62	14,642,686.22	1,800,253.39	40.31699882	-104.42659968
12,600.00	90.00	179.58	6,366.00	-6,567.33	756.36	14,642,586.23	1,800,254.78	40.31672424	-104.42659703
12,700.00	90.00	179.58	6,366.00	-6,667.32	757.10	14,642,486.24	1,800,256.16	40.31644965	-104.42659439
12,800.00	90.00	179.58	6,366.00	-6,767.32	757.84	14,642,386.25	1,800,257.55	40.31617506	-104.42659174
12,900.00	90.00	179.58	6,366.00	-6,867.32	758.58	14,642,286.26	1,800,258.93	40.31590047	-104.42658910
13,000.00	90.00	179.58	6,366.00	-6,967.32	759.32	14,642,186.27	1,800,260.32	40.31562588	-104.42658645
13,100.00	90.00	179.58	6,366.00	-7,067.31	760.06	14,642,086.28	1,800,261.70	40.31535129	-104.42658381
13,200.00	90.00	179.58	6,366.00	-7,167.31	760.80	14,641,986.29	1,800,263.09	40.31507671	-104.42658116
13,300.00	90.00	179.58	6,366.00	-7,267.31	761.54	14,641,886.30	1,800,264.47	40.31480212	-104.42657851
13,400.00	90.00	179.58	6,366.00	-7,367.30	762.28	14,641,786.31	1,800,265.86	40.31452753	-104.42657587
13,500.00	90.00	179.58	6,366.00	-7,467.30	763.02	14,641,686.32	1,800,267.24	40.31425294	-104.42657322
13,600.00	90.00	179.58	6,366.00	-7,567.30	763.76	14,641,586.33	1,800,268.63	40.31397835	-104.42657058
13,700.00	90.00	179.58	6,366.00	-7,667.30	764.50	14,641,486.34	1,800,270.01	40.31370376	-104.42656793
13,800.00	90.00	179.58	6,366.00	-7,767.29	765.24	14,641,386.34	1,800,271.40	40.31342918	-104.42656529
13,900.00	90.00	179.58	6,366.00	-7,867.29	765.98	14,641,286.35	1,800,272.78	40.31315459	-104.42656264
14,000.00	90.00	179.58	6,366.00	-7,967.29	766.72	14,641,186.36	1,800,274.17	40.31288000	-104.42655999
14,100.00	90.00	179.58	6,366.00	-8,067.29	767.47	14,641,086.37	1,800,275.55	40.31260542	-104.42655735
14,200.00	90.00	179.58	6,366.00	-8,167.28	768.21	14,640,986.38	1,800,276.94	40.31233083	-104.42655470
14,300.00	90.00	179.58	6,366.00	-8,267.28	768.95	14,640,886.39	1,800,278.32	40.31205624	-104.42655206
14,400.00	90.00	179.58	6,366.00	-8,367.28	769.69	14,640,786.40	1,800,279.71	40.31178166	-104.42654941
14,500.00	90.00	179.58	6,366.00	-8,467.27	770.43	14,640,686.41	1,800,281.09	40.31150707	-104.42654677
14,600.00	90.00	179.58	6,366.00	-8,567.27	771.17	14,640,586.42	1,800,282.48	40.31123248	-104.42654412
14,700.00	90.00	179.58	6,366.00	-8,667.27	771.91	14,640,486.43	1,800,283.86	40.31095789	-104.42654147
14,800.00	90.00	179.58	6,366.00	-8,767.27	772.65	14,640,386.44	1,800,285.25	40.31068330	-104.42653883
14,900.00	90.00	179.58	6,366.00	-8,867.26	773.39	14,640,286.45	1,800,286.63	40.31040871	-104.42653618
15,000.00	90.00	179.58	6,366.00	-8,967.26	774.13	14,640,186.46	1,800,288.02	40.31013412	-104.42653354
15,100.00	90.00	179.58	6,366.00	-9,067.26	774.87	14,640,086.47	1,800,289.40	40.30985954	-104.42653089
15,200.00	90.00	179.58	6,366.00	-9,167.25	775.61	14,639,986.48	1,800,290.79	40.30958495	-104.42652825
15,300.00	90.00	179.58	6,366.00	-9,267.25	776.35	14,639,886.49	1,800,292.17	40.30931036	-104.42652560
15,400.00	90.00	179.58	6,366.00	-9,367.25	777.09	14,639,786.50	1,800,293.56	40.30903577	-104.42652296
15,500.00	90.00	179.58	6,366.00	-9,467.25	777.83	14,639,686.51	1,800,294.94	40.30876118	-104.42652031

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-14-2L
Company:	Confluence Resources	TVD Reference:	RKB=4597+24 @ 4621.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4597+24 @ 4621.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-14-2L	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	6,366.00	-9,567.24	778.57	14,639,586.52	1,800,296.33	40.30848659	-104.42651766
15,700.00	90.00	179.58	6,366.00	-9,667.24	779.31	14,639,486.53	1,800,297.71	40.30821200	-104.42651502
15,800.00	90.00	179.58	6,366.00	-9,767.24	780.05	14,639,386.54	1,800,299.10	40.30793742	-104.42651237
15,900.00	90.00	179.58	6,366.00	-9,867.24	780.79	14,639,286.55	1,800,300.48	40.30766283	-104.42650973
16,000.00	90.00	179.58	6,366.00	-9,967.23	781.53	14,639,186.56	1,800,301.87	40.30738824	-104.42650708
16,100.00	90.00	179.58	6,366.00	-10,067.23	782.27	14,639,086.57	1,800,303.25	40.30711365	-104.42650444
16,200.00	90.00	179.58	6,366.00	-10,167.23	783.01	14,638,986.58	1,800,304.64	40.30683906	-104.42650179
16,300.00	90.00	179.58	6,366.00	-10,267.22	783.75	14,638,886.59	1,800,306.02	40.30656447	-104.42649915
16,400.00	90.00	179.58	6,366.00	-10,367.22	784.49	14,638,786.60	1,800,307.41	40.30628988	-104.42649650
16,413.24	90.00	179.58	6,366.00	-10,380.46	784.59	14,638,773.36	1,800,307.59	40.30625353	-104.42649615
PBHL/TD 16413.24 MD/6366.00 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 10-14-2L 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	14,649,119.23	1,799,452.49	40.33467745	-104.42932395
70 Ranch 10-14-2L BHL - plan hits target center - Point	0.00	0.37	6,366.00	-10,380.46	784.59	14,638,773.36	1,800,307.59	40.30625353	-104.42649615
70 Ranch 10-14-2L LP 4 - plan hits target center - Point	0.00	0.37	6,366.00	-721.00	713.08	14,648,432.14	1,800,173.80	40.33277798	-104.42675173

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	
2,095.86	2,095.41	-1.87	7.78	Begin 9.59° tangent	
5,876.53	5,823.29	-149.18	619.89	Begin 10°/100' build/turn	
6,753.51	6,366.00	-721.00	713.08	LP Begin 90° lateral	
16,413.24	6,366.00	-10,380.46	784.59	PBHL/TD 16413.24 MD/6366.00 TVD	