



Weld County, Colorado
Section 10 & 15 T04N-R63W
70 Ranch 10-6-4L
plan1

Azimuth Corrections:

To convert a Magnetic Direction to a True Direction, Add 8.17° East

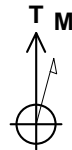
70 Ranch 10-6-4L			
Surf Loc: 89 FNL 1699 FWL Section 10-T04N-R63W			
NAD83 Colorado - HARN			
Universal Transverse Mercator (US Survey Feet)			
Zone 13N (108 W to 102 W)			
RKB=4605+25 @ 4630.01ft			
Northing	Easting	Latitude	Longitude
14648755.11	1799882.34	40.33367000	-104.42779000

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	5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	KOP Begin 10°/100' build
3	5130.66	13.07	5.45	5129.53	14.77	1.41	10.00	-14.74	Begin 13.07° tangent section
4	5863.66	13.07	5.45	5843.55	179.73	17.15	0.00	-179.34	Begin 10°/100' build/turn
5	6894.03	90.05	179.05	6545.00	-378.74	44.59	10.00	379.57	LP Begin 90.05° lateral section
6	16476.72	90.05	179.05	6536.00	-9960.10	203.51	0.00	9962.18	PBHL/TD 16476.72 MD 6536.00 TVD

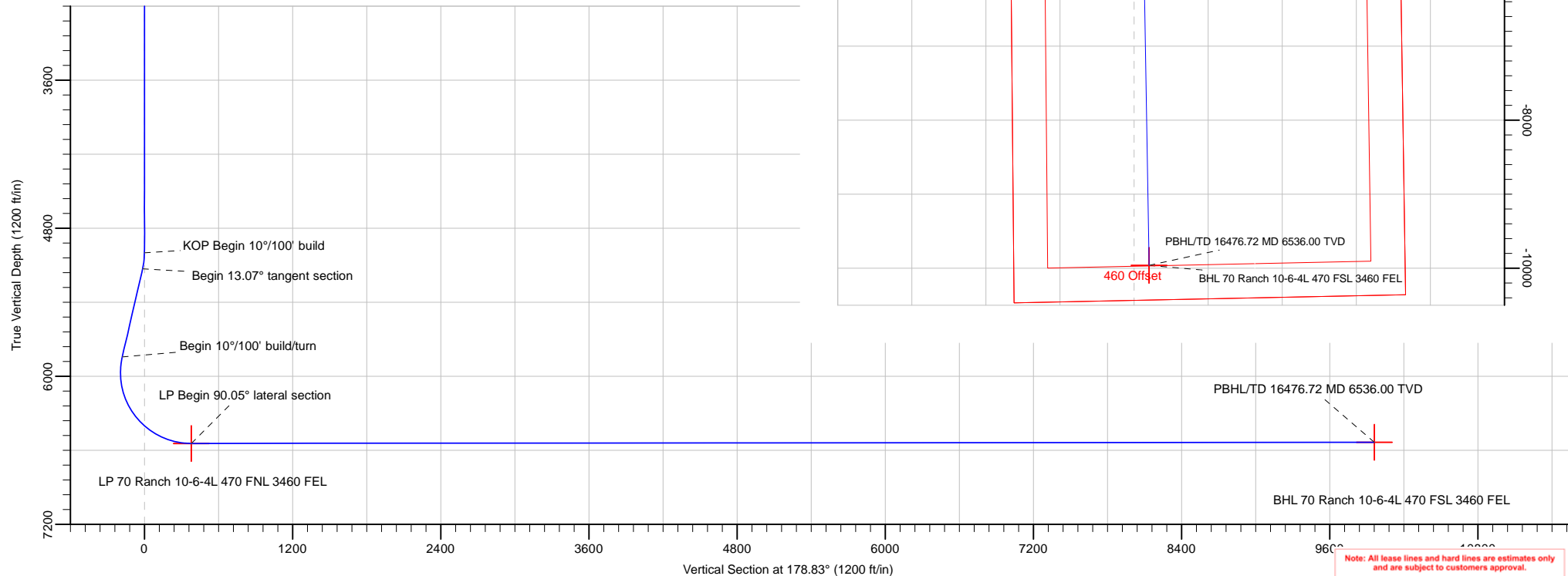
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL 70 Ranch 10-6-4L 470 FSL 3460 FEL	6536.00	-9960.10	203.51	14638796.55	1800150.23	40.30632000	-104.42706000
LP 70 Ranch 10-6-4L 470 FNL 3460 FEL	6545.00	-378.74	44.59	14648376.67	1799929.38	40.33263000	-104.42763000



Azimuths to True North
Magnetic North: 8.17°

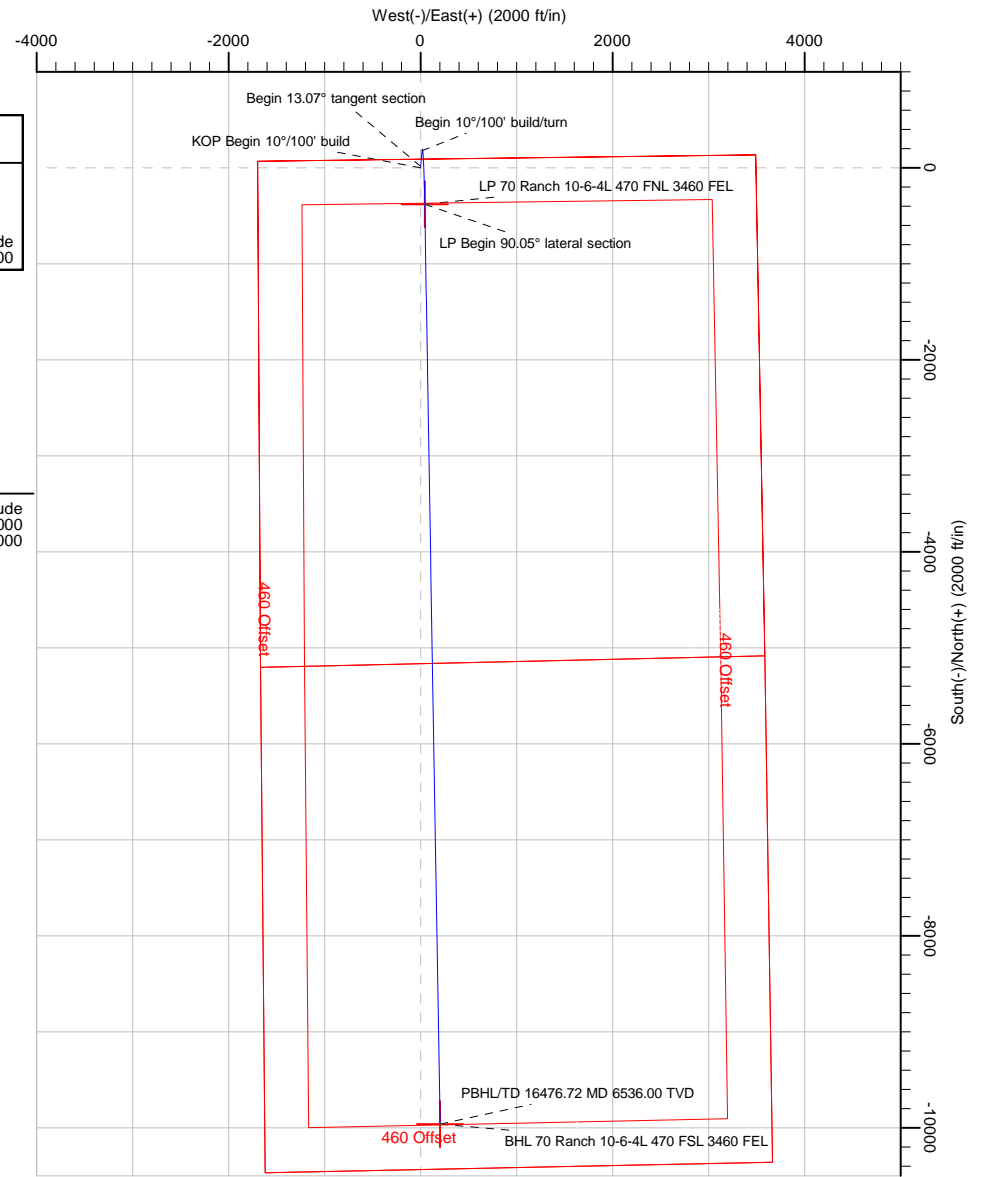
Magnetic Field
Strength: 52358.2snT
Dip Angle: 66.97°
Date: 5/7/2017
Model: HDGM



Date: 11:28, May 08 2017

Vertical Section at 178.83° (1200 ft/in)

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



Database:	DB_Aug0116_LT_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-6-4L
Company:	Confluence Resources	TVD Reference:	RKB=4605+25 @ 4630.01ft
Project:	Weld County, Colorado	MD Reference:	RKB=4605+25 @ 4630.01ft
Site:	Section 10 & 15 T04N-R63W	North Reference:	True
Well:	70 Ranch 10-6-4L	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 10 & 15 T04N-R63W		
Site Position:		Northing:	14,648,687.65 usft
From:	Lat/Long	Easting:	1,800,150.33 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	40.33348000
		Longitude:	-104.42683000
		Grid Convergence:	0.37 °

Well	70 Ranch 10-6-4L, Surf Loc: 89 FNL 1699 FWL Section 10-T04N-R63W					
Well Position	+N/-S	69.19 ft	Northing:	14,648,755.11 usft	Latitude:	40.33367000
	+E/-W	-267.54 ft	Easting:	1,799,882.35 usft	Longitude:	-104.42779000
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,605.01 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/7/2017	8.17	66.97	52,358.20000000

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	178.83

Plan Survey Tool Program	Date	5/8/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,476.72	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	
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,130.66	13.07	5.45	5,129.53	14.77	1.41	10.00	10.00	0.00	5.45	
5,863.66	13.07	5.45	5,843.55	179.73	17.15	0.00	0.00	0.00	0.00	
6,894.03	90.05	179.05	6,545.00	-378.74	44.59	10.00	7.47	16.85	173.43	LP 70 Ranch 10-6-4L
16,476.72	90.05	179.05	6,536.00	-9,960.10	203.51	0.00	0.00	0.00	0.00	BHL 70 Ranch 10-6-4

Database:	DB_Aug0116_LT_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-6-4L
Company:	Confluence Resources	TVD Reference:	RKB=4605+25 @ 4630.01ft
Project:	Weld County, Colorado	MD Reference:	RKB=4605+25 @ 4630.01ft
Site:	Section 10 & 15 T04N-R63W	North Reference:	True
Well:	70 Ranch 10-6-4L	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
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.01	0.00	0.00	2,500.01	0.00	0.00	0.00	0.00	0.00	0.00
2,600.01	0.00	0.00	2,600.01	0.00	0.00	0.00	0.00	0.00	0.00
2,700.01	0.00	0.00	2,700.01	0.00	0.00	0.00	0.00	0.00	0.00
2,800.01	0.00	0.00	2,800.01	0.00	0.00	0.00	0.00	0.00	0.00
2,900.01	0.00	0.00	2,900.01	0.00	0.00	0.00	0.00	0.00	0.00
3,000.01	0.00	0.00	3,000.01	0.00	0.00	0.00	0.00	0.00	0.00
3,100.01	0.00	0.00	3,100.01	0.00	0.00	0.00	0.00	0.00	0.00
3,200.01	0.00	0.00	3,200.01	0.00	0.00	0.00	0.00	0.00	0.00
3,300.01	0.00	0.00	3,300.01	0.00	0.00	0.00	0.00	0.00	0.00
3,400.01	0.00	0.00	3,400.01	0.00	0.00	0.00	0.00	0.00	0.00
3,500.01	0.00	0.00	3,500.01	0.00	0.00	0.00	0.00	0.00	0.00
3,600.01	0.00	0.00	3,600.01	0.00	0.00	0.00	0.00	0.00	0.00
3,700.01	0.00	0.00	3,700.01	0.00	0.00	0.00	0.00	0.00	0.00
3,800.01	0.00	0.00	3,800.01	0.00	0.00	0.00	0.00	0.00	0.00
3,900.01	0.00	0.00	3,900.01	0.00	0.00	0.00	0.00	0.00	0.00
4,000.01	0.00	0.00	4,000.01	0.00	0.00	0.00	0.00	0.00	0.00
4,100.01	0.00	0.00	4,100.01	0.00	0.00	0.00	0.00	0.00	0.00
4,200.01	0.00	0.00	4,200.01	0.00	0.00	0.00	0.00	0.00	0.00
4,300.01	0.00	0.00	4,300.01	0.00	0.00	0.00	0.00	0.00	0.00
4,400.01	0.00	0.00	4,400.01	0.00	0.00	0.00	0.00	0.00	0.00
4,500.01	0.00	0.00	4,500.01	0.00	0.00	0.00	0.00	0.00	0.00
4,600.01	0.00	0.00	4,600.01	0.00	0.00	0.00	0.00	0.00	0.00
4,700.01	0.00	0.00	4,700.01	0.00	0.00	0.00	0.00	0.00	0.00
4,800.01	0.00	0.00	4,800.01	0.00	0.00	0.00	0.00	0.00	0.00
4,900.01	0.00	0.00	4,900.01	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 10°/100' build									
5,000.01	0.00	5.45	5,000.01	0.00	0.00	0.00	0.00	0.00	0.00
5,100.01	10.00	5.45	5,099.50	8.67	0.83	-8.65	10.00	10.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=4605+25 @ 4630.01ft
Site:	Section 10 & 15 T04N-R63W	North Reference:	True
Well:	70 Ranch 10-6-4L	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)
5,130.66	13.07	5.45	5,129.53	14.77	1.41	-14.74	10.00	10.00	0.00
Begin 13.07° tangent section									
5,200.01	13.07	5.45	5,197.09	30.37	2.90	-30.31	0.00	0.00	0.00
5,300.01	13.07	5.45	5,294.50	52.88	5.05	-52.77	0.00	0.00	0.00
5,400.01	13.07	5.45	5,391.91	75.39	7.20	-75.22	0.00	0.00	0.00
5,500.01	13.07	5.45	5,489.32	97.89	9.34	-97.68	0.00	0.00	0.00
5,600.01	13.07	5.45	5,586.73	120.40	11.49	-120.14	0.00	0.00	0.00
5,700.01	13.07	5.45	5,684.14	142.90	13.64	-142.59	0.00	0.00	0.00
5,800.01	13.07	5.45	5,781.55	165.41	15.79	-165.05	0.00	0.00	0.00
5,863.66	13.07	5.45	5,843.55	179.73	17.15	-179.34	0.00	0.00	0.00
Begin 10°/100' build/turn									
5,900.01	9.47	7.98	5,879.20	186.78	17.96	-186.38	10.00	-9.91	6.96
6,000.01	1.62	112.75	5,978.75	194.40	20.41	-193.94	10.00	-7.85	104.77
6,100.01	10.75	171.21	6,078.11	184.61	23.15	-184.09	10.00	9.13	58.47
6,200.01	20.70	175.12	6,174.24	157.71	26.08	-157.14	10.00	9.95	3.91
6,300.01	30.68	176.55	6,264.24	114.51	29.13	-113.90	10.00	9.98	1.43
6,400.01	40.67	177.32	6,345.37	56.35	32.20	-55.68	10.00	9.99	0.77
6,500.01	50.67	177.83	6,415.16	-15.03	35.19	15.75	10.00	9.99	0.51
6,600.01	60.66	178.21	6,471.49	-97.46	38.02	98.21	10.00	10.00	0.38
6,700.01	70.66	178.53	6,512.65	-188.42	40.59	189.21	10.00	10.00	0.31
6,800.01	80.65	178.80	6,537.39	-285.15	42.84	285.97	10.00	10.00	0.28
6,894.03	90.05	179.05	6,545.00	-378.74	44.59	379.57	10.00	10.00	0.26
LP Begin 90.05° lateral section									
6,900.01	90.05	179.05	6,544.99	-384.72	44.69	385.55	0.00	0.00	0.00
7,000.01	90.05	179.05	6,544.90	-484.71	46.35	485.55	0.00	0.00	0.00
7,100.01	90.05	179.05	6,544.81	-584.69	48.01	585.55	0.00	0.00	0.00
7,200.01	90.05	179.05	6,544.71	-684.68	49.67	685.55	0.00	0.00	0.00
7,300.01	90.05	179.05	6,544.62	-784.67	51.32	785.55	0.00	0.00	0.00
7,400.01	90.05	179.05	6,544.52	-884.65	52.98	885.55	0.00	0.00	0.00
7,500.02	90.05	179.05	6,544.43	-984.64	54.64	985.55	0.00	0.00	0.00
7,600.02	90.05	179.05	6,544.34	-1,084.63	56.30	1,085.55	0.00	0.00	0.00
7,700.02	90.05	179.05	6,544.24	-1,184.61	57.96	1,185.55	0.00	0.00	0.00
7,800.02	90.05	179.05	6,544.15	-1,284.60	59.62	1,285.55	0.00	0.00	0.00
7,900.02	90.05	179.05	6,544.06	-1,384.58	61.27	1,385.55	0.00	0.00	0.00
8,000.02	90.05	179.05	6,543.96	-1,484.57	62.93	1,485.55	0.00	0.00	0.00
8,100.02	90.05	179.05	6,543.87	-1,584.56	64.59	1,585.55	0.00	0.00	0.00
8,200.02	90.05	179.05	6,543.77	-1,684.54	66.25	1,685.55	0.00	0.00	0.00
8,300.02	90.05	179.05	6,543.68	-1,784.53	67.91	1,785.54	0.00	0.00	0.00
8,400.02	90.05	179.05	6,543.59	-1,884.52	69.57	1,885.54	0.00	0.00	0.00
8,500.02	90.05	179.05	6,543.49	-1,984.50	71.22	1,985.54	0.00	0.00	0.00
8,600.02	90.05	179.05	6,543.40	-2,084.49	72.88	2,085.54	0.00	0.00	0.00
8,700.02	90.05	179.05	6,543.30	-2,184.48	74.54	2,185.54	0.00	0.00	0.00
8,800.02	90.05	179.05	6,543.21	-2,284.46	76.20	2,285.54	0.00	0.00	0.00
8,900.02	90.05	179.05	6,543.12	-2,384.45	77.86	2,385.54	0.00	0.00	0.00
9,000.02	90.05	179.05	6,543.02	-2,484.44	79.52	2,485.54	0.00	0.00	0.00
9,100.02	90.05	179.05	6,542.93	-2,584.42	81.17	2,585.54	0.00	0.00	0.00
9,200.02	90.05	179.05	6,542.83	-2,684.41	82.83	2,685.54	0.00	0.00	0.00
9,300.02	90.05	179.05	6,542.74	-2,784.39	84.49	2,785.54	0.00	0.00	0.00
9,400.02	90.05	179.05	6,542.65	-2,884.38	86.15	2,885.54	0.00	0.00	0.00
9,500.02	90.05	179.05	6,542.55	-2,984.37	87.81	2,985.54	0.00	0.00	0.00
9,600.02	90.05	179.05	6,542.46	-3,084.35	89.47	3,085.54	0.00	0.00	0.00
9,700.02	90.05	179.05	6,542.36	-3,184.34	91.12	3,185.54	0.00	0.00	0.00
9,800.02	90.05	179.05	6,542.27	-3,284.33	92.78	3,285.54	0.00	0.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=4605+25 @ 4630.01ft
Site:	Section 10 & 15 T04N-R63W	North Reference:	True
Well:	70 Ranch 10-6-4L	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)	
9,900.02	90.05	179.05	6,542.18	-3,384.31	94.44	3,385.54	0.00	0.00	0.00	
10,000.02	90.05	179.05	6,542.08	-3,484.30	96.10	3,485.54	0.00	0.00	0.00	
10,100.02	90.05	179.05	6,541.99	-3,584.29	97.76	3,585.53	0.00	0.00	0.00	
10,200.02	90.05	179.05	6,541.90	-3,684.27	99.42	3,685.53	0.00	0.00	0.00	
10,300.02	90.05	179.05	6,541.80	-3,784.26	101.07	3,785.53	0.00	0.00	0.00	
10,400.02	90.05	179.05	6,541.71	-3,884.24	102.73	3,885.53	0.00	0.00	0.00	
10,500.02	90.05	179.05	6,541.61	-3,984.23	104.39	3,985.53	0.00	0.00	0.00	
10,600.02	90.05	179.05	6,541.52	-4,084.22	106.05	4,085.53	0.00	0.00	0.00	
10,700.02	90.05	179.05	6,541.43	-4,184.20	107.71	4,185.53	0.00	0.00	0.00	
10,800.02	90.05	179.05	6,541.33	-4,284.19	109.37	4,285.53	0.00	0.00	0.00	
10,900.02	90.05	179.05	6,541.24	-4,384.18	111.02	4,385.53	0.00	0.00	0.00	
11,000.02	90.05	179.05	6,541.14	-4,484.16	112.68	4,485.53	0.00	0.00	0.00	
11,100.02	90.05	179.05	6,541.05	-4,584.15	114.34	4,585.53	0.00	0.00	0.00	
11,200.02	90.05	179.05	6,540.96	-4,684.14	116.00	4,685.53	0.00	0.00	0.00	
11,300.02	90.05	179.05	6,540.86	-4,784.12	117.66	4,785.53	0.00	0.00	0.00	
11,400.02	90.05	179.05	6,540.77	-4,884.11	119.32	4,885.53	0.00	0.00	0.00	
11,500.02	90.05	179.05	6,540.67	-4,984.10	120.97	4,985.53	0.00	0.00	0.00	
11,600.02	90.05	179.05	6,540.58	-5,084.08	122.63	5,085.53	0.00	0.00	0.00	
11,700.02	90.05	179.05	6,540.49	-5,184.07	124.29	5,185.53	0.00	0.00	0.00	
11,800.02	90.05	179.05	6,540.39	-5,284.05	125.95	5,285.52	0.00	0.00	0.00	
11,900.02	90.05	179.05	6,540.30	-5,384.04	127.61	5,385.52	0.00	0.00	0.00	
12,000.02	90.05	179.05	6,540.20	-5,484.03	129.27	5,485.52	0.00	0.00	0.00	
12,100.02	90.05	179.05	6,540.11	-5,584.01	130.92	5,585.52	0.00	0.00	0.00	
12,200.02	90.05	179.05	6,540.02	-5,684.00	132.58	5,685.52	0.00	0.00	0.00	
12,300.02	90.05	179.05	6,539.92	-5,783.99	134.24	5,785.52	0.00	0.00	0.00	
12,400.03	90.05	179.05	6,539.83	-5,883.97	135.90	5,885.52	0.00	0.00	0.00	
12,500.03	90.05	179.05	6,539.74	-5,983.96	137.56	5,985.52	0.00	0.00	0.00	
12,600.03	90.05	179.05	6,539.64	-6,083.95	139.22	6,085.52	0.00	0.00	0.00	
12,700.03	90.05	179.05	6,539.55	-6,183.93	140.87	6,185.52	0.00	0.00	0.00	
12,800.03	90.05	179.05	6,539.45	-6,283.92	142.53	6,285.52	0.00	0.00	0.00	
12,900.03	90.05	179.05	6,539.36	-6,383.90	144.19	6,385.52	0.00	0.00	0.00	
13,000.03	90.05	179.05	6,539.27	-6,483.89	145.85	6,485.52	0.00	0.00	0.00	
13,100.03	90.05	179.05	6,539.17	-6,583.88	147.51	6,585.52	0.00	0.00	0.00	
13,200.03	90.05	179.05	6,539.08	-6,683.86	149.17	6,685.52	0.00	0.00	0.00	
13,300.03	90.05	179.05	6,538.98	-6,783.85	150.82	6,785.52	0.00	0.00	0.00	
13,400.03	90.05	179.05	6,538.89	-6,883.84	152.48	6,885.52	0.00	0.00	0.00	
13,500.03	90.05	179.05	6,538.80	-6,983.82	154.14	6,985.51	0.00	0.00	0.00	
13,600.03	90.05	179.05	6,538.70	-7,083.81	155.80	7,085.51	0.00	0.00	0.00	
13,700.03	90.05	179.05	6,538.61	-7,183.80	157.46	7,185.51	0.00	0.00	0.00	
13,800.03	90.05	179.05	6,538.51	-7,283.78	159.12	7,285.51	0.00	0.00	0.00	
13,900.03	90.05	179.05	6,538.42	-7,383.77	160.77	7,385.51	0.00	0.00	0.00	
14,000.03	90.05	179.05	6,538.33	-7,483.76	162.43	7,485.51	0.00	0.00	0.00	
14,100.03	90.05	179.05	6,538.23	-7,583.74	164.09	7,585.51	0.00	0.00	0.00	
14,200.03	90.05	179.05	6,538.14	-7,683.73	165.75	7,685.51	0.00	0.00	0.00	
14,300.03	90.05	179.05	6,538.04	-7,783.71	167.41	7,785.51	0.00	0.00	0.00	
14,400.03	90.05	179.05	6,537.95	-7,883.70	169.07	7,885.51	0.00	0.00	0.00	
14,500.03	90.05	179.05	6,537.86	-7,983.69	170.72	7,985.51	0.00	0.00	0.00	
14,600.03	90.05	179.05	6,537.76	-8,083.67	172.38	8,085.51	0.00	0.00	0.00	
14,700.03	90.05	179.05	6,537.67	-8,183.66	174.04	8,185.51	0.00	0.00	0.00	
14,800.03	90.05	179.05	6,537.57	-8,283.65	175.70	8,285.51	0.00	0.00	0.00	
14,900.03	90.05	179.05	6,537.48	-8,383.63	177.36	8,385.51	0.00	0.00	0.00	
15,000.03	90.05	179.05	6,537.39	-8,483.62	179.02	8,485.51	0.00	0.00	0.00	
15,100.03	90.05	179.05	6,537.29	-8,583.61	180.67	8,585.51	0.00	0.00	0.00	
15,200.03	90.05	179.05	6,537.20	-8,683.59	182.33	8,685.50	0.00	0.00	0.00	

Database:	DB_Aug0116_LT_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-6-4L
Company:	Confluence Resources	TVD Reference:	RKB=4605+25 @ 4630.01ft
Project:	Weld County, Colorado	MD Reference:	RKB=4605+25 @ 4630.01ft
Site:	Section 10 & 15 T04N-R63W	North Reference:	True
Well:	70 Ranch 10-6-4L	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)	
15,300.03	90.05	179.05	6,537.11	-8,783.58	183.99	8,785.50	0.00	0.00	0.00	
15,400.03	90.05	179.05	6,537.01	-8,883.57	185.65	8,885.50	0.00	0.00	0.00	
15,500.03	90.05	179.05	6,536.92	-8,983.55	187.31	8,985.50	0.00	0.00	0.00	
15,600.03	90.05	179.05	6,536.82	-9,083.54	188.97	9,085.50	0.00	0.00	0.00	
15,700.03	90.05	179.05	6,536.73	-9,183.52	190.63	9,185.50	0.00	0.00	0.00	
15,800.03	90.05	179.05	6,536.64	-9,283.51	192.28	9,285.50	0.00	0.00	0.00	
15,900.03	90.05	179.05	6,536.54	-9,383.50	193.94	9,385.50	0.00	0.00	0.00	
16,000.03	90.05	179.05	6,536.45	-9,483.48	195.60	9,485.50	0.00	0.00	0.00	
16,100.03	90.05	179.05	6,536.35	-9,583.47	197.26	9,585.50	0.00	0.00	0.00	
16,200.03	90.05	179.05	6,536.26	-9,683.46	198.92	9,685.50	0.00	0.00	0.00	
16,300.03	90.05	179.05	6,536.17	-9,783.44	200.58	9,785.50	0.00	0.00	0.00	
16,400.03	90.05	179.05	6,536.07	-9,883.43	202.23	9,885.50	0.00	0.00	0.00	
16,476.72	90.05	179.05	6,536.00	-9,960.10	203.51	9,962.18	0.00	0.00	0.00	
PBHL/TD 16476.72 MD 6536.00 TVD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
BHL 70 Ranch 10-6-4L 4	0.00	0.00	6,536.00	-9,960.10	203.51	14,638,796.55	1,800,150.23	40.30632000	-104.42706000	
- plan hits target center										
- Point										
LP 70 Ranch 10-6-4L 47	0.00	0.00	6,545.00	-378.74	44.59	14,648,376.67	1,799,929.38	40.33263000	-104.42763000	
- plan hits target center										
- Point										

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
5,000.00	5,000.00	0.00	0.00	KOP Begin 10°/100' build	
5,130.66	5,129.53	14.77	1.41	Begin 13.07° tangent section	
5,863.66	5,843.55	179.73	17.15	Begin 10°/100' build/turn	
6,894.03	6,545.00	-378.74	44.59	LP Begin 90.05° lateral section	
16,476.72	6,536.00	-9,960.10	203.51	PBHL/TD 16476.72 MD 6536.00 TVD	

Database:	DB_Aug0116_LT_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-6-4L
Company:	Confluence Resources	TVD Reference:	RKB=4605+25 @ 4630.01ft
Project:	Weld County, Colorado	MD Reference:	RKB=4605+25 @ 4630.01ft
Site:	Section 10 & 15 T04N-R63W	North Reference:	True
Well:	70 Ranch 10-6-4L	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 10 & 15 T04N-R63W		
Site Position:		Northing:	14,648,687.65 usft
From:	Lat/Long	Easting:	1,800,150.33 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	40.33348000
		Longitude:	-104.42683000
		Grid Convergence:	0.37 °

Well	70 Ranch 10-6-4L, Surf Loc: 89 FNL 1699 FWL Section 10-T04N-R63W		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	Ground Level:
			4,605.01 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/7/2017	8.17	66.97	52,358.20000000

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	178.83

Plan Survey Tool Program	Date	5/8/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,476.72 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	
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,130.66	13.07	5.45	5,129.53	14.77	1.41	10.00	10.00	0.00	5.45	
5,863.66	13.07	5.45	5,843.55	179.73	17.15	0.00	0.00	0.00	0.00	
6,894.03	90.05	179.05	6,545.00	-378.74	44.59	10.00	7.47	16.85	173.43	LP 70 Ranch 10-6-4L
16,476.72	90.05	179.05	6,536.00	-9,960.10	203.51	0.00	0.00	0.00	0.00	BHL 70 Ranch 10-6-4

Database:	DB_Aug0116_LT_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-6-4L
Company:	Confluence Resources	TVD Reference:	RKB=4605+25 @ 4630.01ft
Project:	Weld County, Colorado	MD Reference:	RKB=4605+25 @ 4630.01ft
Site:	Section 10 & 15 T04N-R63W	North Reference:	True
Well:	70 Ranch 10-6-4L	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	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
100.00	0.00	0.00	100.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
200.00	0.00	0.00	200.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
300.00	0.00	0.00	300.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
400.00	0.00	0.00	400.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
500.00	0.00	0.00	500.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
600.00	0.00	0.00	600.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
700.00	0.00	0.00	700.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
800.00	0.00	0.00	800.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
900.00	0.00	0.00	900.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
2,500.01	0.00	0.00	2,500.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
2,600.01	0.00	0.00	2,600.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
2,700.01	0.00	0.00	2,700.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
2,800.01	0.00	0.00	2,800.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
2,900.01	0.00	0.00	2,900.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
3,000.01	0.00	0.00	3,000.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
3,100.01	0.00	0.00	3,100.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
3,200.01	0.00	0.00	3,200.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
3,300.01	0.00	0.00	3,300.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
3,400.01	0.00	0.00	3,400.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
3,500.01	0.00	0.00	3,500.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
3,600.01	0.00	0.00	3,600.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
3,700.01	0.00	0.00	3,700.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
3,800.01	0.00	0.00	3,800.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
3,900.01	0.00	0.00	3,900.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
4,000.01	0.00	0.00	4,000.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
4,100.01	0.00	0.00	4,100.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
4,200.01	0.00	0.00	4,200.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
4,300.01	0.00	0.00	4,300.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
4,400.01	0.00	0.00	4,400.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
4,500.01	0.00	0.00	4,500.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
4,600.01	0.00	0.00	4,600.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
4,700.01	0.00	0.00	4,700.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
4,800.01	0.00	0.00	4,800.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
4,900.01	0.00	0.00	4,900.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
5,000.00	0.00	0.00	5,000.00	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
KOP Begin 10°/100' build									
5,000.01	0.00	5.45	5,000.01	0.00	0.00	14,648,755.11	1,799,882.35	40.33367000	-104.42779000
5,100.01	10.00	5.45	5,099.50	8.67	0.83	14,648,763.78	1,799,883.12	40.33369379	-104.42778704

Database:	DB_Aug0116_LT_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-6-4L
Company:	Confluence Resources	TVD Reference:	RKB=4605+25 @ 4630.01ft
Project:	Weld County, Colorado	MD Reference:	RKB=4605+25 @ 4630.01ft
Site:	Section 10 & 15 T04N-R63W	North Reference:	True
Well:	70 Ranch 10-6-4L	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	
5,130.66	13.07	5.45	5,129.53	14.77	1.41	14,648,769.89	1,799,883.66	40.33371055	-104.42778495	
Begin 13.07° tangent section										
5,200.01	13.07	5.45	5,197.09	30.37	2.90	14,648,785.50	1,799,885.05	40.33375340	-104.42777960	
5,300.01	13.07	5.45	5,294.50	52.88	5.05	14,648,808.02	1,799,887.05	40.33381520	-104.42777189	
5,400.01	13.07	5.45	5,391.91	75.39	7.20	14,648,830.54	1,799,889.05	40.33387700	-104.42776419	
5,500.01	13.07	5.45	5,489.32	97.89	9.34	14,648,853.06	1,799,891.06	40.33393880	-104.42775648	
5,600.01	13.07	5.45	5,586.73	120.40	11.49	14,648,875.58	1,799,893.06	40.33400060	-104.42774877	
5,700.01	13.07	5.45	5,684.14	142.90	13.64	14,648,898.10	1,799,895.06	40.33406240	-104.42774106	
5,800.01	13.07	5.45	5,781.55	165.41	15.79	14,648,920.62	1,799,897.06	40.33412420	-104.42773336	
5,863.66	13.07	5.45	5,843.55	179.73	17.15	14,648,934.95	1,799,898.34	40.33416353	-104.42772845	
Begin 10°/100' build/turn										
5,900.01	9.47	7.98	5,879.20	186.78	17.96	14,648,942.01	1,799,899.10	40.33418290	-104.42772556	
6,000.01	1.62	112.75	5,978.75	194.40	20.41	14,648,949.64	1,799,901.50	40.33420380	-104.42771676	
6,100.01	10.75	171.21	6,078.11	184.61	23.15	14,648,939.86	1,799,904.30	40.33417691	-104.42770695	
6,200.01	20.70	175.12	6,174.24	157.71	26.08	14,648,912.98	1,799,907.41	40.33410305	-104.42769642	
6,300.01	30.68	176.55	6,264.24	114.51	29.13	14,648,869.81	1,799,910.73	40.33398445	-104.42768548	
6,400.01	40.67	177.32	6,345.37	56.35	32.20	14,648,811.66	1,799,914.18	40.33382472	-104.42767448	
6,500.01	50.67	177.83	6,415.16	-15.03	35.19	14,648,740.30	1,799,917.63	40.33362871	-104.42766374	
6,600.01	60.66	178.21	6,471.49	-97.46	38.02	14,648,657.90	1,799,920.99	40.33340238	-104.42765360	
6,700.01	70.66	178.53	6,512.65	-188.42	40.59	14,648,566.96	1,799,924.15	40.33315261	-104.42764435	
6,800.01	80.65	178.80	6,537.39	-285.15	42.84	14,648,470.24	1,799,927.03	40.33288698	-104.42763629	
6,894.03	90.05	179.05	6,545.00	-378.74	44.59	14,648,376.67	1,799,929.38	40.33263000	-104.42763000	
LP Begin 90.05° lateral section										
6,900.01	90.05	179.05	6,544.99	-384.72	44.69	14,648,370.69	1,799,929.52	40.33261357	-104.42762965	
7,000.01	90.05	179.05	6,544.90	-484.71	46.35	14,648,270.71	1,799,931.83	40.33233901	-104.42762370	
7,100.01	90.05	179.05	6,544.81	-584.69	48.01	14,648,170.74	1,799,934.13	40.33206446	-104.42761775	
7,200.01	90.05	179.05	6,544.71	-684.68	49.67	14,648,070.77	1,799,936.44	40.33178990	-104.42761180	
7,300.01	90.05	179.05	6,544.62	-784.67	51.32	14,647,970.79	1,799,938.74	40.33151534	-104.42760585	
7,400.01	90.05	179.05	6,544.52	-884.65	52.98	14,647,870.82	1,799,941.04	40.33124078	-104.42759990	
7,500.02	90.05	179.05	6,544.43	-984.64	54.64	14,647,770.85	1,799,943.35	40.33096623	-104.42759395	
7,600.02	90.05	179.05	6,544.34	-1,084.63	56.30	14,647,670.87	1,799,945.65	40.33069167	-104.42758800	
7,700.02	90.05	179.05	6,544.24	-1,184.61	57.96	14,647,570.90	1,799,947.96	40.33041711	-104.42758205	
7,800.02	90.05	179.05	6,544.15	-1,284.60	59.62	14,647,470.93	1,799,950.26	40.33014255	-104.42757610	
7,900.02	90.05	179.05	6,544.06	-1,384.58	61.27	14,647,370.95	1,799,952.57	40.32986799	-104.42757015	
8,000.02	90.05	179.05	6,543.96	-1,484.57	62.93	14,647,270.98	1,799,954.87	40.32959344	-104.42756420	
8,100.02	90.05	179.05	6,543.87	-1,584.56	64.59	14,647,171.01	1,799,957.18	40.32931888	-104.42755825	
8,200.02	90.05	179.05	6,543.77	-1,684.54	66.25	14,647,071.03	1,799,959.48	40.32904432	-104.42755230	
8,300.02	90.05	179.05	6,543.68	-1,784.53	67.91	14,646,971.06	1,799,961.79	40.32876976	-104.42754635	
8,400.02	90.05	179.05	6,543.59	-1,884.52	69.57	14,646,871.09	1,799,964.09	40.32849521	-104.42754040	
8,500.02	90.05	179.05	6,543.49	-1,984.50	71.22	14,646,771.11	1,799,966.40	40.32822065	-104.42753445	
8,600.02	90.05	179.05	6,543.40	-2,084.49	72.88	14,646,671.14	1,799,968.70	40.32794609	-104.42752851	
8,700.02	90.05	179.05	6,543.30	-2,184.48	74.54	14,646,571.17	1,799,971.01	40.32767153	-104.42752256	
8,800.02	90.05	179.05	6,543.21	-2,284.46	76.20	14,646,471.19	1,799,973.31	40.32739697	-104.42751661	
8,900.02	90.05	179.05	6,543.12	-2,384.45	77.86	14,646,371.22	1,799,975.61	40.32712242	-104.42751066	
9,000.02	90.05	179.05	6,543.02	-2,484.44	79.52	14,646,271.25	1,799,977.92	40.32684786	-104.42750471	
9,100.02	90.05	179.05	6,542.93	-2,584.42	81.17	14,646,171.27	1,799,980.22	40.32657330	-104.42749876	
9,200.02	90.05	179.05	6,542.83	-2,684.41	82.83	14,646,071.30	1,799,982.53	40.32629874	-104.42749281	
9,300.02	90.05	179.05	6,542.74	-2,784.39	84.49	14,645,971.33	1,799,984.83	40.32602418	-104.42748686	
9,400.02	90.05	179.05	6,542.65	-2,884.38	86.15	14,645,871.35	1,799,987.14	40.32574963	-104.42748091	
9,500.02	90.05	179.05	6,542.55	-2,984.37	87.81	14,645,771.38	1,799,989.44	40.32547507	-104.42747496	
9,600.02	90.05	179.05	6,542.46	-3,084.35	89.47	14,645,671.41	1,799,991.75	40.32520051	-104.42746901	
9,700.02	90.05	179.05	6,542.36	-3,184.34	91.12	14,645,571.43	1,799,994.05	40.32492595	-104.42746306	
9,800.02	90.05	179.05	6,542.27	-3,284.33	92.78	14,645,471.46	1,799,996.36	40.32465139	-104.42745712	
9,900.02	90.05	179.05	6,542.18	-3,384.31	94.44	14,645,371.49	1,799,998.66	40.32437684	-104.42745117	

Database:	DB_Aug0116_LT_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-6-4L
Company:	Confluence Resources	TVD Reference:	RKB=4605+25 @ 4630.01ft
Project:	Weld County, Colorado	MD Reference:	RKB=4605+25 @ 4630.01ft
Site:	Section 10 & 15 T04N-R63W	North Reference:	True
Well:	70 Ranch 10-6-4L	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
10,000.02	90.05	179.05	6,542.08	-3,484.30	96.10	14,645,271.51	1,800,000.97	40.32410228	-104.42744522
10,100.02	90.05	179.05	6,541.99	-3,584.29	97.76	14,645,171.54	1,800,003.27	40.32382772	-104.42743927
10,200.02	90.05	179.05	6,541.90	-3,684.27	99.42	14,645,071.57	1,800,005.58	40.32355316	-104.42743332
10,300.02	90.05	179.05	6,541.80	-3,784.26	101.07	14,644,971.59	1,800,007.88	40.32327860	-104.42742737
10,400.02	90.05	179.05	6,541.71	-3,884.24	102.73	14,644,871.62	1,800,010.18	40.32300405	-104.42742142
10,500.02	90.05	179.05	6,541.61	-3,984.23	104.39	14,644,771.65	1,800,012.49	40.32272949	-104.42741547
10,600.02	90.05	179.05	6,541.52	-4,084.22	106.05	14,644,671.67	1,800,014.79	40.32245493	-104.42740953
10,700.02	90.05	179.05	6,541.43	-4,184.20	107.71	14,644,571.70	1,800,017.10	40.32218037	-104.42740358
10,800.02	90.05	179.05	6,541.33	-4,284.19	109.37	14,644,471.73	1,800,019.40	40.32190581	-104.42739763
10,900.02	90.05	179.05	6,541.24	-4,384.18	111.02	14,644,371.75	1,800,021.71	40.32163126	-104.42739168
11,000.02	90.05	179.05	6,541.14	-4,484.16	112.68	14,644,271.78	1,800,024.01	40.32135670	-104.42738573
11,100.02	90.05	179.05	6,541.05	-4,584.15	114.34	14,644,171.80	1,800,026.32	40.32108214	-104.42737978
11,200.02	90.05	179.05	6,540.96	-4,684.14	116.00	14,644,071.83	1,800,028.62	40.32080758	-104.42737383
11,300.02	90.05	179.05	6,540.86	-4,784.12	117.66	14,643,971.86	1,800,030.93	40.32053302	-104.42736789
11,400.02	90.05	179.05	6,540.77	-4,884.11	119.32	14,643,871.88	1,800,033.23	40.32025846	-104.42736194
11,500.02	90.05	179.05	6,540.67	-4,984.10	120.97	14,643,771.91	1,800,035.54	40.31998391	-104.42735599
11,600.02	90.05	179.05	6,540.58	-5,084.08	122.63	14,643,671.94	1,800,037.84	40.31970935	-104.42735004
11,700.02	90.05	179.05	6,540.49	-5,184.07	124.29	14,643,571.96	1,800,040.15	40.31943479	-104.42734409
11,800.02	90.05	179.05	6,540.39	-5,284.05	125.95	14,643,471.99	1,800,042.45	40.31916023	-104.42733814
11,900.02	90.05	179.05	6,540.30	-5,384.04	127.61	14,643,372.02	1,800,044.75	40.31888567	-104.42733220
12,000.02	90.05	179.05	6,540.20	-5,484.03	129.27	14,643,272.04	1,800,047.06	40.31861111	-104.42732625
12,100.02	90.05	179.05	6,540.11	-5,584.01	130.92	14,643,172.07	1,800,049.36	40.31833656	-104.42732030
12,200.02	90.05	179.05	6,540.02	-5,684.00	132.58	14,643,072.10	1,800,051.67	40.31806200	-104.42731435
12,300.02	90.05	179.05	6,539.92	-5,783.99	134.24	14,642,972.12	1,800,053.97	40.31778744	-104.42730840
12,400.03	90.05	179.05	6,539.83	-5,883.97	135.90	14,642,872.15	1,800,056.28	40.31751288	-104.42730246
12,500.03	90.05	179.05	6,539.74	-5,983.96	137.56	14,642,772.18	1,800,058.58	40.31723832	-104.42729651
12,600.03	90.05	179.05	6,539.64	-6,083.95	139.22	14,642,672.20	1,800,060.89	40.31696376	-104.42729056
12,700.03	90.05	179.05	6,539.55	-6,183.93	140.87	14,642,572.23	1,800,063.19	40.31668921	-104.42728461
12,800.03	90.05	179.05	6,539.45	-6,283.92	142.53	14,642,472.26	1,800,065.50	40.31641465	-104.42727866
12,900.03	90.05	179.05	6,539.36	-6,383.90	144.19	14,642,372.28	1,800,067.80	40.31614009	-104.42727272
13,000.03	90.05	179.05	6,539.27	-6,483.89	145.85	14,642,272.31	1,800,070.11	40.31586553	-104.42726677
13,100.03	90.05	179.05	6,539.17	-6,583.88	147.51	14,642,172.34	1,800,072.41	40.31559097	-104.42726082
13,200.03	90.05	179.05	6,539.08	-6,683.86	149.17	14,642,072.36	1,800,074.72	40.31531641	-104.42725487
13,300.03	90.05	179.05	6,538.98	-6,783.85	150.82	14,641,972.39	1,800,077.02	40.31504186	-104.42724893
13,400.03	90.05	179.05	6,538.89	-6,883.84	152.48	14,641,872.42	1,800,079.32	40.31476730	-104.42724298
13,500.03	90.05	179.05	6,538.80	-6,983.82	154.14	14,641,772.44	1,800,081.63	40.31449274	-104.42723703
13,600.03	90.05	179.05	6,538.70	-7,083.81	155.80	14,641,672.47	1,800,083.93	40.31421818	-104.42723108
13,700.03	90.05	179.05	6,538.61	-7,183.80	157.46	14,641,572.50	1,800,086.24	40.31394362	-104.42722514
13,800.03	90.05	179.05	6,538.51	-7,283.78	159.12	14,641,472.52	1,800,088.54	40.31366906	-104.42721919
13,900.03	90.05	179.05	6,538.42	-7,383.77	160.77	14,641,372.55	1,800,090.85	40.31339450	-104.42721324
14,000.03	90.05	179.05	6,538.33	-7,483.76	162.43	14,641,272.58	1,800,093.15	40.31311995	-104.42720729
14,100.03	90.05	179.05	6,538.23	-7,583.74	164.09	14,641,172.60	1,800,095.46	40.31284539	-104.42720135
14,200.03	90.05	179.05	6,538.14	-7,683.73	165.75	14,641,072.63	1,800,097.76	40.31257084	-104.42719540
14,300.03	90.05	179.05	6,538.04	-7,783.71	167.41	14,640,972.66	1,800,100.07	40.31229628	-104.42718945
14,400.03	90.05	179.05	6,537.95	-7,883.70	169.07	14,640,872.68	1,800,102.37	40.31202172	-104.42718350
14,500.03	90.05	179.05	6,537.86	-7,983.69	170.72	14,640,772.71	1,800,104.68	40.31174716	-104.42717756
14,600.03	90.05	179.05	6,537.76	-8,083.67	172.38	14,640,672.74	1,800,106.98	40.31147260	-104.42717161
14,700.03	90.05	179.05	6,537.67	-8,183.66	174.04	14,640,572.76	1,800,109.29	40.31119805	-104.42716566
14,800.03	90.05	179.05	6,537.57	-8,283.65	175.70	14,640,472.79	1,800,111.59	40.31092349	-104.42715971
14,900.03	90.05	179.05	6,537.48	-8,383.63	177.36	14,640,372.82	1,800,113.89	40.31064893	-104.42715377
15,000.03	90.05	179.05	6,537.39	-8,483.62	179.02	14,640,272.84	1,800,116.20	40.31037437	-104.42714782
15,100.03	90.05	179.05	6,537.29	-8,583.61	180.67	14,640,172.87	1,800,118.50	40.31009981	-104.42714187
15,200.03	90.05	179.05	6,537.20	-8,683.59	182.33	14,640,072.90	1,800,120.81	40.30982525	-104.42713593
15,300.03	90.05	179.05	6,537.11	-8,783.58	183.99	14,639,972.92	1,800,123.11	40.30955069	-104.42712998
15,400.03	90.05	179.05	6,537.01	-8,883.57	185.65	14,639,872.95	1,800,125.42	40.30927613	-104.42712403

Database:	DB_Aug0116_LT_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-6-4L
Company:	Confluence Resources	TVD Reference:	RKB=4605+25 @ 4630.01ft
Project:	Weld County, Colorado	MD Reference:	RKB=4605+25 @ 4630.01ft
Site:	Section 10 & 15 T04N-R63W	North Reference:	True
Well:	70 Ranch 10-6-4L	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
15,500.03	90.05	179.05	6,536.92	-8,983.55	187.31	14,639,772.98	1,800,127.72	40.30900158	-104.42711809
15,600.03	90.05	179.05	6,536.82	-9,083.54	188.97	14,639,673.00	1,800,130.03	40.30872702	-104.42711214
15,700.03	90.05	179.05	6,536.73	-9,183.52	190.63	14,639,573.03	1,800,132.33	40.30845246	-104.42710619
15,800.03	90.05	179.05	6,536.64	-9,283.51	192.28	14,639,473.06	1,800,134.64	40.30817790	-104.42710024
15,900.03	90.05	179.05	6,536.54	-9,383.50	193.94	14,639,373.08	1,800,136.94	40.30790334	-104.42709430
16,000.03	90.05	179.05	6,536.45	-9,483.48	195.60	14,639,273.11	1,800,139.25	40.30762878	-104.42708835
16,100.03	90.05	179.05	6,536.35	-9,583.47	197.26	14,639,173.13	1,800,141.55	40.30735422	-104.42708240
16,200.03	90.05	179.05	6,536.26	-9,683.46	198.92	14,639,073.16	1,800,143.85	40.30707966	-104.42707646
16,300.03	90.05	179.05	6,536.17	-9,783.44	200.58	14,638,973.19	1,800,146.16	40.30680511	-104.42707051
16,400.03	90.05	179.05	6,536.07	-9,883.43	202.23	14,638,873.21	1,800,148.46	40.30653055	-104.42706456
16,476.72	90.05	179.05	6,536.00	-9,960.10	203.51	14,638,796.55	1,800,150.23	40.30632000	-104.42706000
PBHL/TD 16476.72 MD 6536.00 TVD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL 70 Ranch 10-6-4L 4	0.00	0.00	6,536.00	-9,960.10	203.51	14,638,796.55	1,800,150.23	40.30632000	-104.42706000
- plan hits target center									
- Point									
LP 70 Ranch 10-6-4L 47	0.00	0.00	6,545.00	-378.74	44.59	14,648,376.67	1,799,929.38	40.33263000	-104.42763000
- plan hits target center									
- Point									

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
5,000.00	5,000.00	0.00	0.00	KOP Begin 10°/100' build	
5,130.66	5,129.53	14.77	1.41	Begin 13.07° tangent section	
5,863.66	5,843.55	179.73	17.15	Begin 10°/100' build/turn	
6,894.03	6,545.00	-378.74	44.59	LP Begin 90.05° lateral section	
16,476.72	6,536.00	-9,960.10	203.51	PBHL/TD 16476.72 MD 6536.00 TVD	