



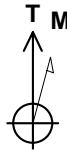
Well: 70 Ranch 10-18-3L
Site: Section 03-T04N-R63W
Project: Weld County, Colorado
Wellbore: Original Hole
Design: plan1

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
70 Ranch 10-18-3L SL 260 FSL 1137 FWL	24.00	-29.27	-3.7914649111.60	1799328.22	40.33465870	-104.42977003	
70 Ranch 10-18-3L BHL 470 FSL 1121 FWL	6443.00	-10391.03	41.0814638750.37	1799439.84	40.30620578	-104.42960901	
70 Ranch 10-18-3L LP 470 FNL 1121 FWL	6443.00	-761.84	-30.4614648378.88	1799306.27	40.33264712	-104.42986572	

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	2028.29	2.83	189.07	2028.28	-0.69	-0.11	10.00	0.69	Begin 2.83° tangent
4	5902.69	2.83	189.07	5897.95	-189.54	-30.26	0.00	189.42	Begin 10°/100' build/turn
5	6774.78	90.00	179.57	6443.00	-761.84	-30.46	10.00	761.71	LP Begin 90° lateral
6	16404.24	90.00	179.57	6443.00	-10391.03	41.08	0.00	10391.11	PBHL/TD 16404.24 MD/6443.00 TVD



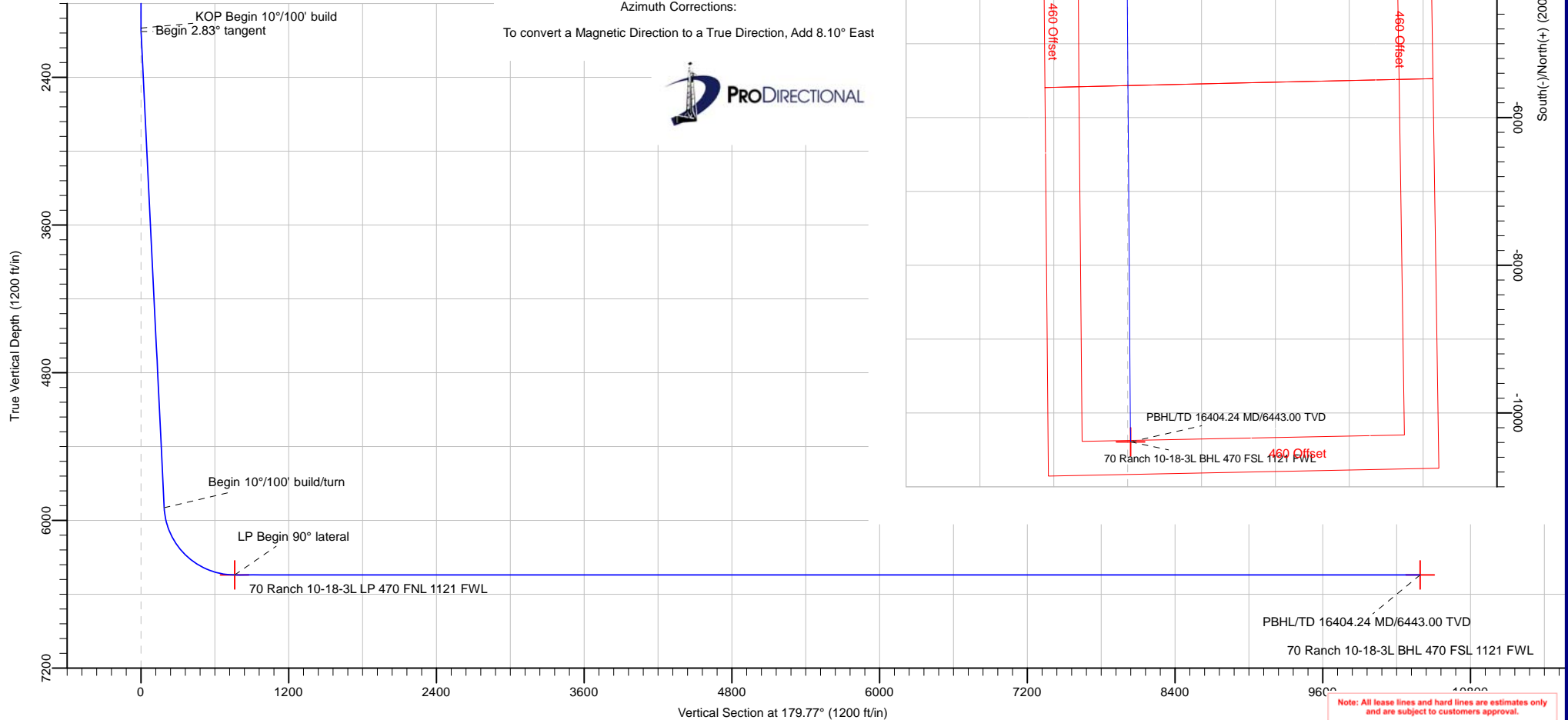
Azimuths to True North
Magnetic North: 8.10°

Magnetic Field
Strength: 52228.4snT
Dip Angle: 66.90°
Date: 5/21/2018
Model: HDGM

70 Ranch 10-18-3L Surf loc: 260 FSL 1137 FWL Section 03-T04N-R63W			
NAD83 Colorado - HARN Universal Transverse Mercator (US Survey Feet) Zone 13N (108 W to 102 W) RKB=4595+24 @ 4619.00ft			
Northing	Easting	Latitude	Longitude
14649140.90	1799331.82	40.33473909	-104.42975644

Azimuth Corrections:

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



Date: 3:12, 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 10-18-3L
Company:	Confluence Resources	TVD Reference:	RKB=4595+24 @ 4619.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4595+24 @ 4619.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-18-3L	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 10-18-3L, Surf loc: 260 FSL 1137 FWL Section 03-T04N-R63W					
Well Position	+N/-S	-1,092.93 ft	Northing:	14,649,140.90 usft	Latitude:	40.33473908
	+E/-W	-1,615.57 ft	Easting:	1,799,331.82 usft	Longitude:	-104.42975644
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,595.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/21/2018	8.10	66.90	52,228.40000000

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	179.77

Plan Survey Tool Program	Date	5/21/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,404.24	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	
2,028.29	2.83	189.07	2,028.28	-0.69	-0.11	10.00	10.00	0.00	189.07	
5,902.69	2.83	189.07	5,897.95	-189.54	-30.26	0.00	0.00	0.00	0.00	
6,774.78	90.00	179.57	6,443.00	-761.84	-30.46	10.00	10.00	-1.09	-9.51	70 Ranch 10-18-3L LI
16,404.24	90.00	179.57	6,443.00	-10,391.03	41.08	0.00	0.00	0.00	0.00	70 Ranch 10-18-3L BI

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-18-3L
Company:	Confluence Resources	TVD Reference:	RKB=4595+24 @ 4619.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4595+24 @ 4619.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-18-3L	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									
2,028.29	2.83	189.07	2,028.28	-0.69	-0.11	0.69	10.00	10.00	0.00
Begin 2.83° tangent									
2,100.00	2.83	189.07	2,099.90	-4.18	-0.67	4.18	0.00	0.00	0.00
2,200.00	2.83	189.07	2,199.78	-9.06	-1.45	9.05	0.00	0.00	0.00
2,300.00	2.83	189.07	2,299.66	-13.93	-2.22	13.92	0.00	0.00	0.00
2,400.00	2.83	189.07	2,399.54	-18.81	-3.00	18.80	0.00	0.00	0.00
2,500.00	2.83	189.07	2,499.41	-23.68	-3.78	23.67	0.00	0.00	0.00
2,600.00	2.83	189.07	2,599.29	-28.56	-4.56	28.54	0.00	0.00	0.00
2,700.00	2.83	189.07	2,699.17	-33.43	-5.34	33.41	0.00	0.00	0.00
2,800.00	2.83	189.07	2,799.05	-38.31	-6.12	38.28	0.00	0.00	0.00
2,900.00	2.83	189.07	2,898.93	-43.18	-6.89	43.15	0.00	0.00	0.00
3,000.00	2.83	189.07	2,998.80	-48.05	-7.67	48.02	0.00	0.00	0.00
3,100.00	2.83	189.07	3,098.68	-52.93	-8.45	52.89	0.00	0.00	0.00
3,200.00	2.83	189.07	3,198.56	-57.80	-9.23	57.77	0.00	0.00	0.00
3,300.00	2.83	189.07	3,298.44	-62.68	-10.01	62.64	0.00	0.00	0.00
3,400.00	2.83	189.07	3,398.32	-67.55	-10.79	67.51	0.00	0.00	0.00
3,500.00	2.83	189.07	3,498.19	-72.43	-11.56	72.38	0.00	0.00	0.00
3,600.00	2.83	189.07	3,598.07	-77.30	-12.34	77.25	0.00	0.00	0.00
3,700.00	2.83	189.07	3,697.95	-82.17	-13.12	82.12	0.00	0.00	0.00
3,800.00	2.83	189.07	3,797.83	-87.05	-13.90	86.99	0.00	0.00	0.00
3,900.00	2.83	189.07	3,897.71	-91.92	-14.68	91.86	0.00	0.00	0.00
4,000.00	2.83	189.07	3,997.59	-96.80	-15.46	96.74	0.00	0.00	0.00
4,100.00	2.83	189.07	4,097.46	-101.67	-16.23	101.61	0.00	0.00	0.00
4,200.00	2.83	189.07	4,197.34	-106.55	-17.01	106.48	0.00	0.00	0.00
4,300.00	2.83	189.07	4,297.22	-111.42	-17.79	111.35	0.00	0.00	0.00
4,400.00	2.83	189.07	4,397.10	-116.30	-18.57	116.22	0.00	0.00	0.00
4,500.00	2.83	189.07	4,496.98	-121.17	-19.35	121.09	0.00	0.00	0.00
4,600.00	2.83	189.07	4,596.85	-126.04	-20.13	125.96	0.00	0.00	0.00
4,700.00	2.83	189.07	4,696.73	-130.92	-20.90	130.84	0.00	0.00	0.00
4,800.00	2.83	189.07	4,796.61	-135.79	-21.68	135.71	0.00	0.00	0.00
4,900.00	2.83	189.07	4,896.49	-140.67	-22.46	140.58	0.00	0.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=4595+24 @ 4619.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-18-3L	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	2.83	189.07	4,996.37	-145.54	-23.24	145.45	0.00	0.00	0.00
5,100.00	2.83	189.07	5,096.24	-150.42	-24.02	150.32	0.00	0.00	0.00
5,200.00	2.83	189.07	5,196.12	-155.29	-24.80	155.19	0.00	0.00	0.00
5,300.00	2.83	189.07	5,296.00	-160.16	-25.57	160.06	0.00	0.00	0.00
5,400.00	2.83	189.07	5,395.88	-165.04	-26.35	164.93	0.00	0.00	0.00
5,500.00	2.83	189.07	5,495.76	-169.91	-27.13	169.81	0.00	0.00	0.00
5,600.00	2.83	189.07	5,595.63	-174.79	-27.91	174.68	0.00	0.00	0.00
5,700.00	2.83	189.07	5,695.51	-179.66	-28.69	179.55	0.00	0.00	0.00
5,800.00	2.83	189.07	5,795.39	-184.54	-29.46	184.42	0.00	0.00	0.00
5,900.00	2.83	189.07	5,895.27	-189.41	-30.24	189.29	0.00	0.00	0.00
5,902.69	2.83	189.07	5,897.95	-189.54	-30.26	189.42	0.00	0.00	0.00
Begin 10°/100' build/turn									
6,000.00	12.53	181.68	5,994.28	-202.50	-30.95	202.37	10.00	9.97	-7.60
6,100.00	22.53	180.70	6,089.52	-232.57	-31.51	232.44	10.00	10.00	-0.98
6,200.00	32.52	180.31	6,178.08	-278.72	-31.89	278.60	10.00	10.00	-0.39
6,300.00	42.52	180.08	6,257.29	-339.56	-32.08	339.43	10.00	10.00	-0.22
6,400.00	52.52	179.93	6,324.74	-413.22	-32.08	413.09	10.00	10.00	-0.15
6,500.00	62.52	179.82	6,378.36	-497.47	-31.89	497.34	10.00	10.00	-0.12
6,600.00	72.52	179.72	6,416.55	-589.76	-31.52	589.63	10.00	10.00	-0.10
6,700.00	82.52	179.64	6,438.13	-687.27	-30.97	687.14	10.00	10.00	-0.09
6,774.78	90.00	179.57	6,443.00	-761.84	-30.46	761.71	10.00	10.00	-0.08
LP Begin 90° lateral									
6,800.00	90.00	179.57	6,443.00	-787.05	-30.27	786.93	0.00	0.00	0.00
6,900.00	90.00	179.57	6,443.00	-887.05	-29.53	886.93	0.00	0.00	0.00
7,000.00	90.00	179.57	6,443.00	-987.05	-28.78	986.93	0.00	0.00	0.00
7,100.00	90.00	179.57	6,443.00	-1,087.05	-28.04	1,086.93	0.00	0.00	0.00
7,200.00	90.00	179.57	6,443.00	-1,187.04	-27.30	1,186.93	0.00	0.00	0.00
7,300.00	90.00	179.57	6,443.00	-1,287.04	-26.56	1,286.92	0.00	0.00	0.00
7,400.00	90.00	179.57	6,443.00	-1,387.04	-25.81	1,386.92	0.00	0.00	0.00
7,500.00	90.00	179.57	6,443.00	-1,487.03	-25.07	1,486.92	0.00	0.00	0.00
7,600.00	90.00	179.57	6,443.00	-1,587.03	-24.33	1,586.92	0.00	0.00	0.00
7,700.00	90.00	179.57	6,443.00	-1,687.03	-23.58	1,686.92	0.00	0.00	0.00
7,800.00	90.00	179.57	6,443.00	-1,787.03	-22.84	1,786.92	0.00	0.00	0.00
7,900.00	90.00	179.57	6,443.00	-1,887.02	-22.10	1,886.92	0.00	0.00	0.00
8,000.00	90.00	179.57	6,443.00	-1,987.02	-21.36	1,986.92	0.00	0.00	0.00
8,100.00	90.00	179.57	6,443.00	-2,087.02	-20.61	2,086.92	0.00	0.00	0.00
8,200.00	90.00	179.57	6,443.00	-2,187.01	-19.87	2,186.92	0.00	0.00	0.00
8,300.00	90.00	179.57	6,443.00	-2,287.01	-19.13	2,286.92	0.00	0.00	0.00
8,400.00	90.00	179.57	6,443.00	-2,387.01	-18.38	2,386.92	0.00	0.00	0.00
8,500.00	90.00	179.57	6,443.00	-2,487.01	-17.64	2,486.92	0.00	0.00	0.00
8,600.00	90.00	179.57	6,443.00	-2,587.00	-16.90	2,586.92	0.00	0.00	0.00
8,700.00	90.00	179.57	6,443.00	-2,687.00	-16.15	2,686.92	0.00	0.00	0.00
8,800.00	90.00	179.57	6,443.00	-2,787.00	-15.41	2,786.92	0.00	0.00	0.00
8,900.00	90.00	179.57	6,443.00	-2,887.00	-14.67	2,886.92	0.00	0.00	0.00
9,000.00	90.00	179.57	6,443.00	-2,986.99	-13.93	2,986.91	0.00	0.00	0.00
9,100.00	90.00	179.57	6,443.00	-3,086.99	-13.18	3,086.91	0.00	0.00	0.00
9,200.00	90.00	179.57	6,443.00	-3,186.99	-12.44	3,186.91	0.00	0.00	0.00
9,300.00	90.00	179.57	6,443.00	-3,286.98	-11.70	3,286.91	0.00	0.00	0.00
9,400.00	90.00	179.57	6,443.00	-3,386.98	-10.95	3,386.91	0.00	0.00	0.00
9,500.00	90.00	179.57	6,443.00	-3,486.98	-10.21	3,486.91	0.00	0.00	0.00
9,600.00	90.00	179.57	6,443.00	-3,586.98	-9.47	3,586.91	0.00	0.00	0.00
9,700.00	90.00	179.57	6,443.00	-3,686.97	-8.73	3,686.91	0.00	0.00	0.00
9,800.00	90.00	179.57	6,443.00	-3,786.97	-7.98	3,786.91	0.00	0.00	0.00
9,900.00	90.00	179.57	6,443.00	-3,886.97	-7.24	3,886.91	0.00	0.00	0.00

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Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-18-3L	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	179.57	6,443.00	-3,986.97	-6.50	3,986.91	0.00	0.00	0.00
10,100.00	90.00	179.57	6,443.00	-4,086.96	-5.75	4,086.91	0.00	0.00	0.00
10,200.00	90.00	179.57	6,443.00	-4,186.96	-5.01	4,186.91	0.00	0.00	0.00
10,300.00	90.00	179.57	6,443.00	-4,286.96	-4.27	4,286.91	0.00	0.00	0.00
10,400.00	90.00	179.57	6,443.00	-4,386.95	-3.53	4,386.91	0.00	0.00	0.00
10,500.00	90.00	179.57	6,443.00	-4,486.95	-2.78	4,486.91	0.00	0.00	0.00
10,600.00	90.00	179.57	6,443.00	-4,586.95	-2.04	4,586.90	0.00	0.00	0.00
10,700.00	90.00	179.57	6,443.00	-4,686.95	-1.30	4,686.90	0.00	0.00	0.00
10,800.00	90.00	179.57	6,443.00	-4,786.94	-0.55	4,786.90	0.00	0.00	0.00
10,900.00	90.00	179.57	6,443.00	-4,886.94	0.19	4,886.90	0.00	0.00	0.00
11,000.00	90.00	179.57	6,443.00	-4,986.94	0.93	4,986.90	0.00	0.00	0.00
11,100.00	90.00	179.57	6,443.00	-5,086.93	1.67	5,086.90	0.00	0.00	0.00
11,200.00	90.00	179.57	6,443.00	-5,186.93	2.42	5,186.90	0.00	0.00	0.00
11,300.00	90.00	179.57	6,443.00	-5,286.93	3.16	5,286.90	0.00	0.00	0.00
11,400.00	90.00	179.57	6,443.00	-5,386.93	3.90	5,386.90	0.00	0.00	0.00
11,500.00	90.00	179.57	6,443.00	-5,486.92	4.65	5,486.90	0.00	0.00	0.00
11,600.00	90.00	179.57	6,443.00	-5,586.92	5.39	5,586.90	0.00	0.00	0.00
11,700.00	90.00	179.57	6,443.00	-5,686.92	6.13	5,686.90	0.00	0.00	0.00
11,800.00	90.00	179.57	6,443.00	-5,786.92	6.88	5,786.90	0.00	0.00	0.00
11,900.00	90.00	179.57	6,443.00	-5,886.91	7.62	5,886.90	0.00	0.00	0.00
12,000.00	90.00	179.57	6,443.00	-5,986.91	8.36	5,986.90	0.00	0.00	0.00
12,100.00	90.00	179.57	6,443.00	-6,086.91	9.10	6,086.90	0.00	0.00	0.00
12,200.00	90.00	179.57	6,443.00	-6,186.90	9.85	6,186.90	0.00	0.00	0.00
12,300.00	90.00	179.57	6,443.00	-6,286.90	10.59	6,286.89	0.00	0.00	0.00
12,400.00	90.00	179.57	6,443.00	-6,386.90	11.33	6,386.89	0.00	0.00	0.00
12,500.00	90.00	179.57	6,443.00	-6,486.90	12.08	6,486.89	0.00	0.00	0.00
12,600.00	90.00	179.57	6,443.00	-6,586.89	12.82	6,586.89	0.00	0.00	0.00
12,700.00	90.00	179.57	6,443.00	-6,686.89	13.56	6,686.89	0.00	0.00	0.00
12,800.00	90.00	179.57	6,443.00	-6,786.89	14.30	6,786.89	0.00	0.00	0.00
12,900.00	90.00	179.57	6,443.00	-6,886.89	15.05	6,886.89	0.00	0.00	0.00
13,000.00	90.00	179.57	6,443.00	-6,986.88	15.79	6,986.89	0.00	0.00	0.00
13,100.00	90.00	179.57	6,443.00	-7,086.88	16.53	7,086.89	0.00	0.00	0.00
13,200.00	90.00	179.57	6,443.00	-7,186.88	17.28	7,186.89	0.00	0.00	0.00
13,300.00	90.00	179.57	6,443.00	-7,286.87	18.02	7,286.89	0.00	0.00	0.00
13,400.00	90.00	179.57	6,443.00	-7,386.87	18.76	7,386.89	0.00	0.00	0.00
13,500.00	90.00	179.57	6,443.00	-7,486.87	19.50	7,486.89	0.00	0.00	0.00
13,600.00	90.00	179.57	6,443.00	-7,586.87	20.25	7,586.89	0.00	0.00	0.00
13,700.00	90.00	179.57	6,443.00	-7,686.86	20.99	7,686.89	0.00	0.00	0.00
13,800.00	90.00	179.57	6,443.00	-7,786.86	21.73	7,786.89	0.00	0.00	0.00
13,900.00	90.00	179.57	6,443.00	-7,886.86	22.48	7,886.88	0.00	0.00	0.00
14,000.00	90.00	179.57	6,443.00	-7,986.85	23.22	7,986.88	0.00	0.00	0.00
14,100.00	90.00	179.57	6,443.00	-8,086.85	23.96	8,086.88	0.00	0.00	0.00
14,200.00	90.00	179.57	6,443.00	-8,186.85	24.70	8,186.88	0.00	0.00	0.00
14,300.00	90.00	179.57	6,443.00	-8,286.85	25.45	8,286.88	0.00	0.00	0.00
14,400.00	90.00	179.57	6,443.00	-8,386.84	26.19	8,386.88	0.00	0.00	0.00
14,500.00	90.00	179.57	6,443.00	-8,486.84	26.93	8,486.88	0.00	0.00	0.00
14,600.00	90.00	179.57	6,443.00	-8,586.84	27.68	8,586.88	0.00	0.00	0.00
14,700.00	90.00	179.57	6,443.00	-8,686.84	28.42	8,686.88	0.00	0.00	0.00
14,800.00	90.00	179.57	6,443.00	-8,786.83	29.16	8,786.88	0.00	0.00	0.00
14,900.00	90.00	179.57	6,443.00	-8,886.83	29.90	8,886.88	0.00	0.00	0.00
15,000.00	90.00	179.57	6,443.00	-8,986.83	30.65	8,986.88	0.00	0.00	0.00
15,100.00	90.00	179.57	6,443.00	-9,086.82	31.39	9,086.88	0.00	0.00	0.00
15,200.00	90.00	179.57	6,443.00	-9,186.82	32.13	9,186.88	0.00	0.00	0.00
15,300.00	90.00	179.57	6,443.00	-9,286.82	32.88	9,286.88	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-18-3L
Company:	Confluence Resources	TVD Reference:	RKB=4595+24 @ 4619.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4595+24 @ 4619.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-18-3L	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	179.57	6,443.00	-9,386.82	33.62	9,386.88	0.00	0.00	0.00
15,500.00	90.00	179.57	6,443.00	-9,486.81	34.36	9,486.88	0.00	0.00	0.00
15,600.00	90.00	179.57	6,443.00	-9,586.81	35.11	9,586.87	0.00	0.00	0.00
15,700.00	90.00	179.57	6,443.00	-9,686.81	35.85	9,686.87	0.00	0.00	0.00
15,800.00	90.00	179.57	6,443.00	-9,786.81	36.59	9,786.87	0.00	0.00	0.00
15,900.00	90.00	179.57	6,443.00	-9,886.80	37.33	9,886.87	0.00	0.00	0.00
16,000.00	90.00	179.57	6,443.00	-9,986.80	38.08	9,986.87	0.00	0.00	0.00
16,100.00	90.00	179.57	6,443.00	-10,086.80	38.82	10,086.87	0.00	0.00	0.00
16,200.00	90.00	179.57	6,443.00	-10,186.79	39.56	10,186.87	0.00	0.00	0.00
16,300.00	90.00	179.57	6,443.00	-10,286.79	40.31	10,286.87	0.00	0.00	0.00
16,400.00	90.00	179.57	6,443.00	-10,386.79	41.05	10,386.87	0.00	0.00	0.00
16,404.24	90.00	179.57	6,443.00	-10,391.03	41.08	10,391.11	0.00	0.00	0.00
PBHL/TD 16404.24 MD/6443.00 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 10-18-3L 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	14,649,111.60	1,799,328.22	40.33465870	-104.42977003
70 Ranch 10-18-3L LP 4 - plan hits target center - Point	0.00	0.37	6,443.00	-761.84	-30.46	14,648,378.88	1,799,306.27	40.33264711	-104.42986572
70 Ranch 10-18-3L BHL - plan hits target center - Point	0.00	0.37	6,443.00	-10,391.03	41.08	14,638,750.37	1,799,439.84	40.30620578	-104.42960901

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
2,028.29	2,028.28	-0.69	-0.11	Begin 2.83° tangent
5,902.69	5,897.95	-189.54	-30.26	Begin 10°/100' build/turn
6,774.78	6,443.00	-761.84	-30.46	LP Begin 90° lateral
16,404.24	6,443.00	-10,391.03	41.08	PBHL/TD 16404.24 MD/6443.00 TVD

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-18-3L
Company:	Confluence Resources	TVD Reference:	RKB=4595+24 @ 4619.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4595+24 @ 4619.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-18-3L	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
From:	Map	Easting:	1,800,940.24 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	40.33774036
		Longitude:	-104.42395937
		Grid Convergence:	0.37 °

Well	70 Ranch 10-18-3L, Surf loc: 260 FSL 1137 FWL Section 03-T04N-R63W		
Well Position	+N/-S	0.00 ft	Northing: 14,649,140.90 usft
	+E/-W	0.00 ft	Easting: 1,799,331.82 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	Latitude: 40.33473908
			Longitude: -104.42975644
			Ground Level: 4,595.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/21/2018	8.10	66.90	52,228.40000000

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	179.77

Plan Survey Tool Program	Date	5/21/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,404.24 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	
2,028.29	2.83	189.07	2,028.28	-0.69	-0.11	10.00	10.00	0.00	189.07	
5,902.69	2.83	189.07	5,897.95	-189.54	-30.26	0.00	0.00	0.00	0.00	
6,774.78	90.00	179.57	6,443.00	-761.84	-30.46	10.00	10.00	-1.09	-9.51	70 Ranch 10-18-3L LI
16,404.24	90.00	179.57	6,443.00	-10,391.03	41.08	0.00	0.00	0.00	0.00	70 Ranch 10-18-3L BI

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-18-3L
Company:	Confluence Resources	TVD Reference:	RKB=4595+24 @ 4619.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4595+24 @ 4619.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-18-3L	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	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
100.00	0.00	0.00	100.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
200.00	0.00	0.00	200.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
300.00	0.00	0.00	300.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
400.00	0.00	0.00	400.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
500.00	0.00	0.00	500.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
600.00	0.00	0.00	600.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
700.00	0.00	0.00	700.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
800.00	0.00	0.00	800.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
900.00	0.00	0.00	900.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,649,140.90	1,799,331.82	40.33473908	-104.42975644
KOP Begin 10°/100' build									
2,028.29	2.83	189.07	2,028.28	-0.69	-0.11	14,649,140.21	1,799,331.71	40.33473719	-104.42975684
Begin 2.83° tangent									
2,100.00	2.83	189.07	2,099.90	-4.18	-0.67	14,649,136.71	1,799,331.18	40.33472759	-104.42975884
2,200.00	2.83	189.07	2,199.78	-9.06	-1.45	14,649,131.83	1,799,330.43	40.33471421	-104.42976163
2,300.00	2.83	189.07	2,299.66	-13.93	-2.22	14,649,126.95	1,799,329.69	40.33470082	-104.42976442
2,400.00	2.83	189.07	2,399.54	-18.81	-3.00	14,649,122.07	1,799,328.94	40.33468744	-104.42976722
2,500.00	2.83	189.07	2,499.41	-23.68	-3.78	14,649,117.19	1,799,328.19	40.33467405	-104.42977001
2,600.00	2.83	189.07	2,599.29	-28.56	-4.56	14,649,112.31	1,799,327.44	40.33466067	-104.42977280
2,700.00	2.83	189.07	2,699.17	-33.43	-5.34	14,649,107.43	1,799,326.70	40.33464728	-104.42977559
2,800.00	2.83	189.07	2,799.05	-38.31	-6.12	14,649,102.55	1,799,325.95	40.33463390	-104.42977839
2,900.00	2.83	189.07	2,898.93	-43.18	-6.89	14,649,097.67	1,799,325.20	40.33462051	-104.42978118
3,000.00	2.83	189.07	2,998.80	-48.05	-7.67	14,649,092.79	1,799,324.46	40.33460713	-104.42978397
3,100.00	2.83	189.07	3,098.68	-52.93	-8.45	14,649,087.92	1,799,323.71	40.33459374	-104.42978677
3,200.00	2.83	189.07	3,198.56	-57.80	-9.23	14,649,083.04	1,799,322.96	40.33458036	-104.42978956
3,300.00	2.83	189.07	3,298.44	-62.68	-10.01	14,649,078.16	1,799,322.22	40.33456697	-104.42979235
3,400.00	2.83	189.07	3,398.32	-67.55	-10.79	14,649,073.28	1,799,321.47	40.33455359	-104.42979514
3,500.00	2.83	189.07	3,498.19	-72.43	-11.56	14,649,068.40	1,799,320.72	40.33454020	-104.42979794
3,600.00	2.83	189.07	3,598.07	-77.30	-12.34	14,649,063.52	1,799,319.98	40.33452682	-104.42980073
3,700.00	2.83	189.07	3,697.95	-82.17	-13.12	14,649,058.64	1,799,319.23	40.33451343	-104.42980352
3,800.00	2.83	189.07	3,797.83	-87.05	-13.90	14,649,053.76	1,799,318.48	40.33450005	-104.42980631
3,900.00	2.83	189.07	3,897.71	-91.92	-14.68	14,649,048.88	1,799,317.74	40.33448666	-104.42980911
4,000.00	2.83	189.07	3,997.59	-96.80	-15.46	14,649,044.00	1,799,316.99	40.33447328	-104.42981190
4,100.00	2.83	189.07	4,097.46	-101.67	-16.23	14,649,039.12	1,799,316.24	40.33445989	-104.42981469
4,200.00	2.83	189.07	4,197.34	-106.55	-17.01	14,649,034.24	1,799,315.49	40.33444651	-104.42981748
4,300.00	2.83	189.07	4,297.22	-111.42	-17.79	14,649,029.36	1,799,314.75	40.33443313	-104.42982028
4,400.00	2.83	189.07	4,397.10	-116.30	-18.57	14,649,024.48	1,799,314.00	40.33441974	-104.42982307
4,500.00	2.83	189.07	4,496.98	-121.17	-19.35	14,649,019.61	1,799,313.25	40.33440636	-104.42982586
4,600.00	2.83	189.07	4,596.85	-126.04	-20.13	14,649,014.73	1,799,312.51	40.33439297	-104.42982866
4,700.00	2.83	189.07	4,696.73	-130.92	-20.90	14,649,009.85	1,799,311.76	40.33437959	-104.42983145
4,800.00	2.83	189.07	4,796.61	-135.79	-21.68	14,649,004.97	1,799,311.01	40.33436620	-104.42983424
4,900.00	2.83	189.07	4,896.49	-140.67	-22.46	14,649,000.09	1,799,310.27	40.33435282	-104.42983703
5,000.00	2.83	189.07	4,996.37	-145.54	-23.24	14,648,995.21	1,799,309.52	40.33433943	-104.42983983

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-18-3L
Company:	Confluence Resources	TVD Reference:	RKB=4595+24 @ 4619.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4595+24 @ 4619.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-18-3L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey										
Measured			Vertical			Map	Map			
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)			
5,100.00	2.83	189.07	5,096.24	-150.42	-24.02	14,648,990.33	1,799,308.77	40.33432605	-104.42984262	
5,200.00	2.83	189.07	5,196.12	-155.29	-24.80	14,648,985.45	1,799,308.03	40.33431266	-104.42984541	
5,300.00	2.83	189.07	5,296.00	-160.16	-25.57	14,648,980.57	1,799,307.28	40.33429928	-104.42984820	
5,400.00	2.83	189.07	5,395.88	-165.04	-26.35	14,648,975.69	1,799,306.53	40.33428589	-104.42985100	
5,500.00	2.83	189.07	5,495.76	-169.91	-27.13	14,648,970.81	1,799,305.79	40.33427251	-104.42985379	
5,600.00	2.83	189.07	5,595.63	-174.79	-27.91	14,648,965.93	1,799,305.04	40.33425912	-104.42985658	
5,700.00	2.83	189.07	5,695.51	-179.66	-28.69	14,648,961.05	1,799,304.29	40.33424574	-104.42985937	
5,800.00	2.83	189.07	5,795.39	-184.54	-29.46	14,648,956.17	1,799,303.54	40.33423235	-104.42986217	
5,900.00	2.83	189.07	5,895.27	-189.41	-30.24	14,648,951.30	1,799,302.80	40.33421897	-104.42986496	
5,902.69	2.83	189.07	5,897.95	-189.54	-30.26	14,648,951.16	1,799,302.78	40.33421861	-104.42986503	
Begin 10°/100' build/turn										
6,000.00	12.53	181.68	5,994.28	-202.50	-30.95	14,648,938.21	1,799,302.17	40.33418304	-104.42986751	
6,100.00	22.53	180.70	6,089.52	-232.57	-31.51	14,648,908.13	1,799,301.81	40.33410046	-104.42986949	
6,200.00	32.52	180.31	6,178.08	-278.72	-31.89	14,648,861.97	1,799,301.73	40.33397372	-104.42987085	
6,300.00	42.52	180.08	6,257.29	-339.56	-32.08	14,648,801.14	1,799,301.93	40.33380668	-104.42987155	
6,400.00	52.52	179.93	6,324.74	-413.22	-32.08	14,648,727.48	1,799,302.40	40.33360441	-104.42987156	
6,500.00	62.52	179.82	6,378.36	-497.47	-31.89	14,648,643.23	1,799,303.13	40.33337305	-104.42987088	
6,600.00	72.52	179.72	6,416.55	-589.76	-31.52	14,648,550.95	1,799,304.10	40.33311964	-104.42986954	
6,700.00	82.52	179.64	6,438.13	-687.27	-30.97	14,648,453.45	1,799,305.28	40.33285188	-104.42986757	
6,774.78	90.00	179.57	6,443.00	-761.84	-30.46	14,648,378.88	1,799,306.27	40.33264711	-104.42986572	
LP Begin 90° lateral										
6,800.00	90.00	179.57	6,443.00	-787.05	-30.27	14,648,353.67	1,799,306.62	40.33257787	-104.42986505	
6,900.00	90.00	179.57	6,443.00	-887.05	-29.53	14,648,253.68	1,799,308.01	40.33230329	-104.42986239	
7,000.00	90.00	179.57	6,443.00	-987.05	-28.78	14,648,153.69	1,799,309.40	40.33202870	-104.42985972	
7,100.00	90.00	179.57	6,443.00	-1,087.05	-28.04	14,648,053.70	1,799,310.78	40.33175411	-104.42985705	
7,200.00	90.00	179.57	6,443.00	-1,187.04	-27.30	14,647,953.71	1,799,312.17	40.33147952	-104.42985439	
7,300.00	90.00	179.57	6,443.00	-1,287.04	-26.56	14,647,853.72	1,799,313.56	40.33120494	-104.42985172	
7,400.00	90.00	179.57	6,443.00	-1,387.04	-25.81	14,647,753.73	1,799,314.94	40.33093035	-104.42984905	
7,500.00	90.00	179.57	6,443.00	-1,487.03	-25.07	14,647,653.74	1,799,316.33	40.33065576	-104.42984639	
7,600.00	90.00	179.57	6,443.00	-1,587.03	-24.33	14,647,553.75	1,799,317.72	40.33038117	-104.42984372	
7,700.00	90.00	179.57	6,443.00	-1,687.03	-23.58	14,647,453.76	1,799,319.11	40.33010658	-104.42984106	
7,800.00	90.00	179.57	6,443.00	-1,787.03	-22.84	14,647,353.77	1,799,320.49	40.32983200	-104.42983839	
7,900.00	90.00	179.57	6,443.00	-1,887.02	-22.10	14,647,253.77	1,799,321.88	40.32955741	-104.42983572	
8,000.00	90.00	179.57	6,443.00	-1,987.02	-21.36	14,647,153.78	1,799,323.27	40.32928282	-104.42983306	
8,100.00	90.00	179.57	6,443.00	-2,087.02	-20.61	14,647,053.79	1,799,324.65	40.32900823	-104.42983039	
8,200.00	90.00	179.57	6,443.00	-2,187.01	-19.87	14,646,953.80	1,799,326.04	40.32873365	-104.42982772	
8,300.00	90.00	179.57	6,443.00	-2,287.01	-19.13	14,646,853.81	1,799,327.43	40.32845906	-104.42982506	
8,400.00	90.00	179.57	6,443.00	-2,387.01	-18.38	14,646,753.82	1,799,328.81	40.32818447	-104.42982239	
8,500.00	90.00	179.57	6,443.00	-2,487.01	-17.64	14,646,653.83	1,799,330.20	40.32790988	-104.42981973	
8,600.00	90.00	179.57	6,443.00	-2,587.00	-16.90	14,646,553.84	1,799,331.59	40.32763530	-104.42981706	
8,700.00	90.00	179.57	6,443.00	-2,687.00	-16.15	14,646,453.85	1,799,332.98	40.32736071	-104.42981439	
8,800.00	90.00	179.57	6,443.00	-2,787.00	-15.41	14,646,353.86	1,799,334.36	40.32708612	-104.42981173	
8,900.00	90.00	179.57	6,443.00	-2,887.00	-14.67	14,646,253.87	1,799,335.75	40.32681153	-104.42980906	
9,000.00	90.00	179.57	6,443.00	-2,986.99	-13.93	14,646,153.88	1,799,337.14	40.32653695	-104.42980640	
9,100.00	90.00	179.57	6,443.00	-3,086.99	-13.18	14,646,053.89	1,799,338.52	40.32626236	-104.42980373	
9,200.00	90.00	179.57	6,443.00	-3,186.99	-12.44	14,645,953.90	1,799,339.91	40.32598777	-104.42980106	
9,300.00	90.00	179.57	6,443.00	-3,286.98	-11.70	14,645,853.91	1,799,341.30	40.32571318	-104.42979840	
9,400.00	90.00	179.57	6,443.00	-3,386.98	-10.95	14,645,753.92	1,799,342.69	40.32543859	-104.42979573	
9,500.00	90.00	179.57	6,443.00	-3,486.98	-10.21	14,645,653.93	1,799,344.07	40.32516401	-104.42979306	
9,600.00	90.00	179.57	6,443.00	-3,586.98	-9.47	14,645,553.94	1,799,345.46	40.32488942	-104.42979040	
9,700.00	90.00	179.57	6,443.00	-3,686.97	-8.73	14,645,453.95	1,799,346.85	40.32461483	-104.42978773	
9,800.00	90.00	179.57	6,443.00	-3,786.97	-7.98	14,645,353.96	1,799,348.23	40.32434024	-104.42978507	
9,900.00	90.00	179.57	6,443.00	-3,886.97	-7.24	14,645,253.97	1,799,349.62	40.32406566	-104.42978240	
10,000.00	90.00	179.57	6,443.00	-3,986.97	-6.50	14,645,153.98	1,799,351.01	40.32379107	-104.42977973	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-18-3L
Company:	Confluence Resources	TVD Reference:	RKB=4595+24 @ 4619.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4595+24 @ 4619.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-18-3L	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	179.57	6,443.00	-4,086.96	-5.75	14,645,053.99	1,799,352.40	40.32351648	-104.42977707
10,200.00	90.00	179.57	6,443.00	-4,186.96	-5.01	14,644,954.00	1,799,353.78	40.32324189	-104.42977440
10,300.00	90.00	179.57	6,443.00	-4,286.96	-4.27	14,644,854.01	1,799,355.17	40.32296730	-104.42977174
10,400.00	90.00	179.57	6,443.00	-4,386.95	-3.53	14,644,754.02	1,799,356.56	40.32269272	-104.42976907
10,500.00	90.00	179.57	6,443.00	-4,486.95	-2.78	14,644,654.03	1,799,357.94	40.32241813	-104.42976640
10,600.00	90.00	179.57	6,443.00	-4,586.95	-2.04	14,644,554.04	1,799,359.33	40.32214354	-104.42976374
10,700.00	90.00	179.57	6,443.00	-4,686.95	-1.30	14,644,454.05	1,799,360.72	40.32186895	-104.42976107
10,800.00	90.00	179.57	6,443.00	-4,786.94	-0.55	14,644,354.06	1,799,362.11	40.32159436	-104.42975841
10,900.00	90.00	179.57	6,443.00	-4,886.94	0.19	14,644,254.07	1,799,363.49	40.32131978	-104.42975574
11,000.00	90.00	179.57	6,443.00	-4,986.94	0.93	14,644,154.08	1,799,364.88	40.32104519	-104.42975307
11,100.00	90.00	179.57	6,443.00	-5,086.93	1.67	14,644,054.09	1,799,366.27	40.32077060	-104.42975041
11,200.00	90.00	179.57	6,443.00	-5,186.93	2.42	14,643,954.10	1,799,367.65	40.32049601	-104.42974774
11,300.00	90.00	179.57	6,443.00	-5,286.93	3.16	14,643,854.11	1,799,369.04	40.32022142	-104.42974508
11,400.00	90.00	179.57	6,443.00	-5,386.93	3.90	14,643,754.12	1,799,370.43	40.31994684	-104.42974241
11,500.00	90.00	179.57	6,443.00	-5,486.92	4.65	14,643,654.13	1,799,371.81	40.31967225	-104.42973974
11,600.00	90.00	179.57	6,443.00	-5,586.92	5.39	14,643,554.14	1,799,373.20	40.31939766	-104.42973708
11,700.00	90.00	179.57	6,443.00	-5,686.92	6.13	14,643,454.15	1,799,374.59	40.31912307	-104.42973441
11,800.00	90.00	179.57	6,443.00	-5,786.92	6.88	14,643,354.16	1,799,375.98	40.31884848	-104.42973175
11,900.00	90.00	179.57	6,443.00	-5,886.91	7.62	14,643,254.17	1,799,377.36	40.31857390	-104.42972908
12,000.00	90.00	179.57	6,443.00	-5,986.91	8.36	14,643,154.18	1,799,378.75	40.31829931	-104.42972642
12,100.00	90.00	179.57	6,443.00	-6,086.91	9.10	14,643,054.19	1,799,380.14	40.31802472	-104.42972375
12,200.00	90.00	179.57	6,443.00	-6,186.90	9.85	14,642,954.20	1,799,381.52	40.31775013	-104.42972108
12,300.00	90.00	179.57	6,443.00	-6,286.90	10.59	14,642,854.21	1,799,382.91	40.31747554	-104.42971842
12,400.00	90.00	179.57	6,443.00	-6,386.90	11.33	14,642,754.22	1,799,384.30	40.31720095	-104.42971575
12,500.00	90.00	179.57	6,443.00	-6,486.90	12.08	14,642,654.23	1,799,385.69	40.31692637	-104.42971309
12,600.00	90.00	179.57	6,443.00	-6,586.89	12.82	14,642,554.24	1,799,387.07	40.31665178	-104.42971042
12,700.00	90.00	179.57	6,443.00	-6,686.89	13.56	14,642,454.25	1,799,388.46	40.31637719	-104.42970775
12,800.00	90.00	179.57	6,443.00	-6,786.89	14.30	14,642,354.26	1,799,389.85	40.31610260	-104.42970509
12,900.00	90.00	179.57	6,443.00	-6,886.89	15.05	14,642,254.27	1,799,391.23	40.31582801	-104.42970242
13,000.00	90.00	179.57	6,443.00	-6,986.88	15.79	14,642,154.28	1,799,392.62	40.31555343	-104.42969976
13,100.00	90.00	179.57	6,443.00	-7,086.88	16.53	14,642,054.29	1,799,394.01	40.31527884	-104.42969709
13,200.00	90.00	179.57	6,443.00	-7,186.88	17.28	14,641,954.30	1,799,395.40	40.31500425	-104.42969443
13,300.00	90.00	179.57	6,443.00	-7,286.87	18.02	14,641,854.31	1,799,396.78	40.31472966	-104.42969176
13,400.00	90.00	179.57	6,443.00	-7,386.87	18.76	14,641,754.31	1,799,398.17	40.31445507	-104.42968909
13,500.00	90.00	179.57	6,443.00	-7,486.87	19.50	14,641,654.32	1,799,399.56	40.31418048	-104.42968643
13,600.00	90.00	179.57	6,443.00	-7,586.87	20.25	14,641,554.33	1,799,400.94	40.31390590	-104.42968376
13,700.00	90.00	179.57	6,443.00	-7,686.86	20.99	14,641,454.34	1,799,402.33	40.31363131	-104.42968110
13,800.00	90.00	179.57	6,443.00	-7,786.86	21.73	14,641,354.35	1,799,403.72	40.31335672	-104.42967843
13,900.00	90.00	179.57	6,443.00	-7,886.86	22.48	14,641,254.36	1,799,405.11	40.31308213	-104.42967577
14,000.00	90.00	179.57	6,443.00	-7,986.85	23.22	14,641,154.37	1,799,406.49	40.31280755	-104.42967310
14,100.00	90.00	179.57	6,443.00	-8,086.85	23.96	14,641,054.38	1,799,407.88	40.31253296	-104.42967043
14,200.00	90.00	179.57	6,443.00	-8,186.85	24.70	14,640,954.39	1,799,409.27	40.31225838	-104.42966777
14,300.00	90.00	179.57	6,443.00	-8,286.85	25.45	14,640,854.40	1,799,410.65	40.31198379	-104.42966510
14,400.00	90.00	179.57	6,443.00	-8,386.84	26.19	14,640,754.41	1,799,412.04	40.31170920	-104.42966244
14,500.00	90.00	179.57	6,443.00	-8,486.84	26.93	14,640,654.42	1,799,413.43	40.31143461	-104.42965977
14,600.00	90.00	179.57	6,443.00	-8,586.84	27.68	14,640,554.43	1,799,414.81	40.31116002	-104.42965711
14,700.00	90.00	179.57	6,443.00	-8,686.84	28.42	14,640,454.44	1,799,416.20	40.31088543	-104.42965444
14,800.00	90.00	179.57	6,443.00	-8,786.83	29.16	14,640,354.45	1,799,417.59	40.31061084	-104.42965177
14,900.00	90.00	179.57	6,443.00	-8,886.83	29.90	14,640,254.46	1,799,418.98	40.31033626	-104.42964911
15,000.00	90.00	179.57	6,443.00	-8,986.83	30.65	14,640,154.47	1,799,420.36	40.31006167	-104.42964644
15,100.00	90.00	179.57	6,443.00	-9,086.82	31.39	14,640,054.48	1,799,421.75	40.30978708	-104.42964378
15,200.00	90.00	179.57	6,443.00	-9,186.82	32.13	14,639,954.49	1,799,423.14	40.30951249	-104.42964111
15,300.00	90.00	179.57	6,443.00	-9,286.82	32.88	14,639,854.50	1,799,424.52	40.30923790	-104.42963845
15,400.00	90.00	179.57	6,443.00	-9,386.82	33.62	14,639,754.51	1,799,425.91	40.30896331	-104.42963578
15,500.00	90.00	179.57	6,443.00	-9,486.81	34.36	14,639,654.52	1,799,427.30	40.30868872	-104.42963312

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-18-3L
Company:	Confluence Resources	TVD Reference:	RKB=4595+24 @ 4619.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4595+24 @ 4619.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-18-3L	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	179.57	6,443.00	-9,586.81	35.11	14,639,554.53	1,799,428.69	40.30841414	-104.42963045
15,700.00	90.00	179.57	6,443.00	-9,686.81	35.85	14,639,454.54	1,799,430.07	40.30813955	-104.42962778
15,800.00	90.00	179.57	6,443.00	-9,786.81	36.59	14,639,354.55	1,799,431.46	40.30786496	-104.42962512
15,900.00	90.00	179.57	6,443.00	-9,886.80	37.33	14,639,254.56	1,799,432.85	40.30759037	-104.42962245
16,000.00	90.00	179.57	6,443.00	-9,986.80	38.08	14,639,154.57	1,799,434.23	40.30731578	-104.42961979
16,100.00	90.00	179.57	6,443.00	-10,086.80	38.82	14,639,054.58	1,799,435.62	40.30704119	-104.42961712
16,200.00	90.00	179.57	6,443.00	-10,186.79	39.56	14,638,954.59	1,799,437.01	40.30676660	-104.42961446
16,300.00	90.00	179.57	6,443.00	-10,286.79	40.31	14,638,854.60	1,799,438.40	40.30649202	-104.42961179
16,400.00	90.00	179.57	6,443.00	-10,386.79	41.05	14,638,754.61	1,799,439.78	40.30621743	-104.42960913
16,404.24	90.00	179.57	6,443.00	-10,391.03	41.08	14,638,750.37	1,799,439.84	40.30620578	-104.42960901
PBHL/TD 16404.24 MD/6443.00 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 10-18-3L 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	14,649,111.60	1,799,328.22	40.33465870	-104.42977003	
70 Ranch 10-18-3L LP 4 - plan hits target center - Point	0.00	0.37	6,443.00	-761.84	-30.46	14,648,378.88	1,799,306.27	40.33264711	-104.42986572	
70 Ranch 10-18-3L BHL - plan hits target center - Point	0.00	0.37	6,443.00	-10,391.03	41.08	14,638,750.37	1,799,439.84	40.30620578	-104.42960901	

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	
2,028.29	2,028.28	-0.69	-0.11	Begin 2.83° tangent	
5,902.69	5,897.95	-189.54	-30.26	Begin 10°/100' build/turn	
6,774.78	6,443.00	-761.84	-30.46	LP Begin 90° lateral	
16,404.24	6,443.00	-10,391.03	41.08	PBHL/TD 16404.24 MD/6443.00 TVD	