



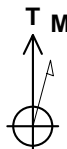
Well: 70 Ranch 10-21-3L
 Site: Section 03-T04N-R63W
 Project: Weld County, Colorado
 Wellbore: Original Hole
 Design: plan1

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
70 Ranch 10-21-3L SL 260 FSL 1062 FWL	24.00	-29.27	-3.7914649106.99	1799253.06	40.33464737	-104.43003982	
70 Ranch 10-21-3L BHL 470 FSL 580 FWL	6427.00	-10397.74	-424.6214638736.05	1798899.00	40.30617601	-104.43154915	
70 Ranch 10-21-3L LP 470 FNL 580 FWL	6427.00	-787.43	-496.1814648345.68	1798765.56	40.33256550	-104.43180659	

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	2072.29	7.23	243.91	2072.10	-2.00	-4.09	10.00	2.17	Begin 7.23° tangent
4	5919.54	7.23	243.91	5888.77	-214.88	-438.90	0.00	232.61	Begin 10°/100' build/turn
5	6788.31	90.00	179.57	6427.00	-787.43	-496.18	10.00	807.02	LP Begin 90° lateral
6	16398.88	90.00	179.57	6427.00	-10397.74	-424.62	0.00	10406.41	PBHL/TD 16398.88 MD/6427.00 TVD



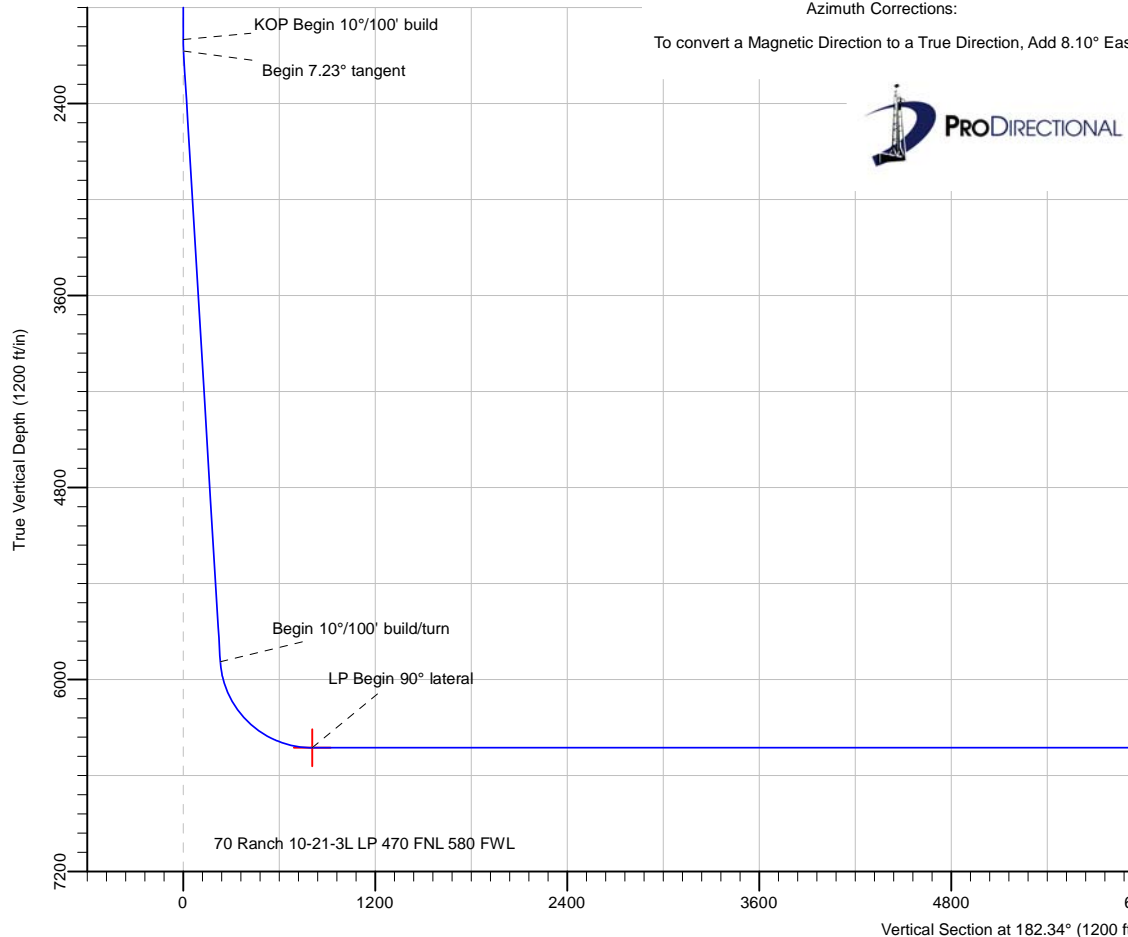
Azimuths to True North
 Magnetic North: 8.10°

Magnetic Field
 Strength: 52228.5nT
 Dip Angle: 66.90°
 Date: 5/21/2018
 Model: HDGM

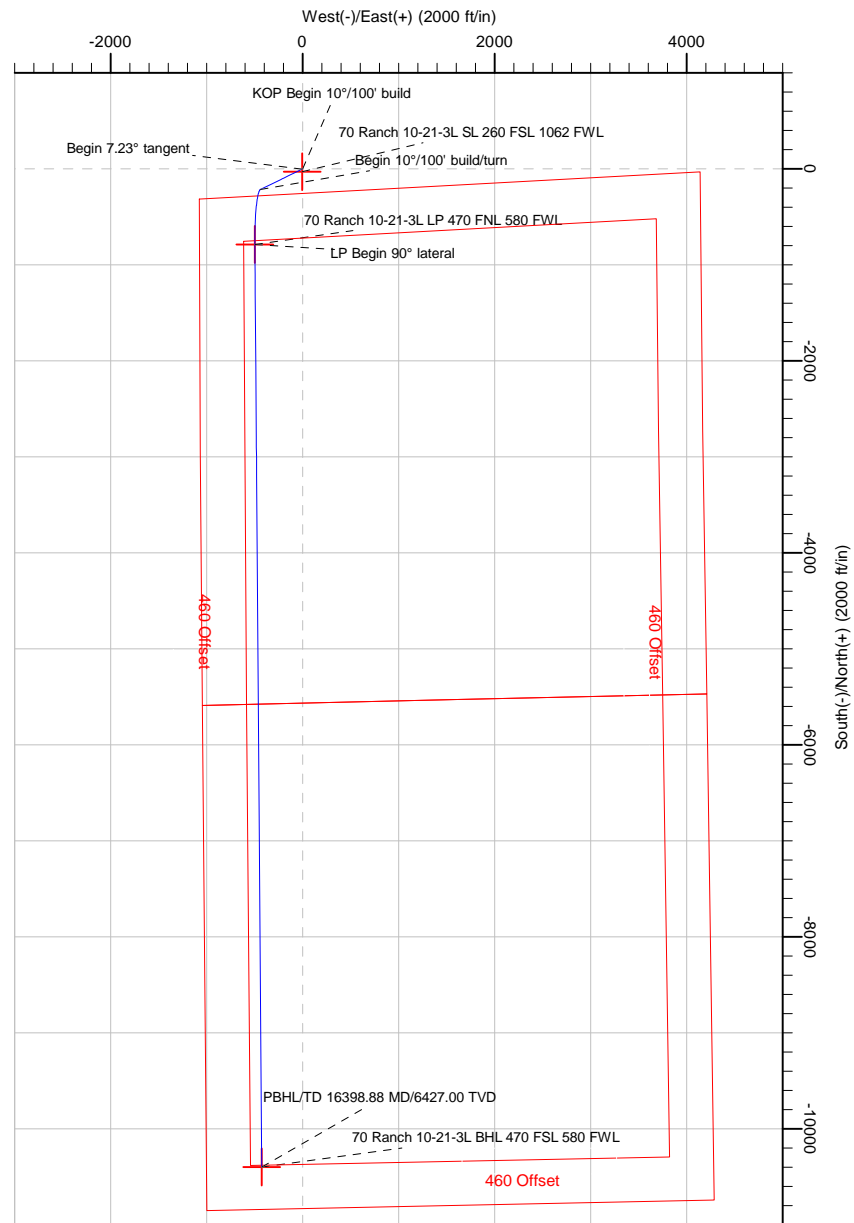
70 Ranch 10-21-3L Surf loc: 260 FSL 1062 FWL Section 03-T04N-R63W			
NAD83 Colorado - HARN Universal Transverse Mercator (US Survey Feet) Zone 13N (108 W to 102 W) RKB=4592+24 @ 4616.00ft			
Northing	Easting	Latitude	Longitude
14649136.29	1799256.66	40.33472776	-104.43002623

Azimuth Corrections:

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



Date: 3:31, May 21 2018



PBHL/TD 16398.88 MD/6427.00 TVD
 70 Ranch 10-21-3L BHL 470 FSL 580 FWL

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 10-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4592+24 @ 4616.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4592+24 @ 4616.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-21-3L	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 10-21-3L, Surf loc: 260 FSL 1062 FWL Section 03-T04N-R63W					
Well Position	+N/-S	-1,097.05 ft	Northing:	14,649,136.29 usft	Latitude:	40.33472775
	+E/-W	-1,690.76 ft	Easting:	1,799,256.66 usft	Longitude:	-104.43002623
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,592.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/21/2018	8.10	66.90	52,228.50000000

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	182.34

Plan Survey Tool Program	Date	5/21/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,398.88	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	
2,072.29	7.23	243.91	2,072.10	-2.00	-4.09	10.00	10.00	0.00	243.91	
5,919.54	7.23	243.91	5,888.77	-214.88	-438.90	0.00	0.00	0.00	0.00	
6,788.31	90.00	179.57	6,427.00	-787.43	-496.18	10.00	9.53	-7.41	-64.52	70 Ranch 10-21-3L LI
16,398.88	90.00	179.57	6,427.00	-10,397.74	-424.62	0.00	0.00	0.00	0.00	70 Ranch 10-21-3L BI

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4592+24 @ 4616.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4592+24 @ 4616.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-21-3L	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									
2,072.29	7.23	243.91	2,072.10	-2.00	-4.09	2.17	10.00	10.00	0.00
Begin 7.23° tangent									
2,100.00	7.23	243.91	2,099.59	-3.54	-7.22	3.83	0.00	0.00	0.00
2,200.00	7.23	243.91	2,198.79	-9.07	-18.52	9.82	0.00	0.00	0.00
2,300.00	7.23	243.91	2,298.00	-14.60	-29.83	15.81	0.00	0.00	0.00
2,400.00	7.23	243.91	2,397.20	-20.14	-41.13	21.80	0.00	0.00	0.00
2,500.00	7.23	243.91	2,496.41	-25.67	-52.43	27.79	0.00	0.00	0.00
2,600.00	7.23	243.91	2,595.61	-31.20	-63.73	33.78	0.00	0.00	0.00
2,700.00	7.23	243.91	2,694.82	-36.74	-75.03	39.77	0.00	0.00	0.00
2,800.00	7.23	243.91	2,794.02	-42.27	-86.34	45.76	0.00	0.00	0.00
2,900.00	7.23	243.91	2,893.23	-47.80	-97.64	51.75	0.00	0.00	0.00
3,000.00	7.23	243.91	2,992.43	-53.34	-108.94	57.74	0.00	0.00	0.00
3,100.00	7.23	243.91	3,091.64	-58.87	-120.24	63.73	0.00	0.00	0.00
3,200.00	7.23	243.91	3,190.84	-64.40	-131.54	69.72	0.00	0.00	0.00
3,300.00	7.23	243.91	3,290.05	-69.93	-142.84	75.71	0.00	0.00	0.00
3,400.00	7.23	243.91	3,389.25	-75.47	-154.15	81.70	0.00	0.00	0.00
3,500.00	7.23	243.91	3,488.46	-81.00	-165.45	87.68	0.00	0.00	0.00
3,600.00	7.23	243.91	3,587.66	-86.53	-176.75	93.67	0.00	0.00	0.00
3,700.00	7.23	243.91	3,686.87	-92.07	-188.05	99.66	0.00	0.00	0.00
3,800.00	7.23	243.91	3,786.07	-97.60	-199.35	105.65	0.00	0.00	0.00
3,900.00	7.23	243.91	3,885.28	-103.13	-210.66	111.64	0.00	0.00	0.00
4,000.00	7.23	243.91	3,984.49	-108.67	-221.96	117.63	0.00	0.00	0.00
4,100.00	7.23	243.91	4,083.69	-114.20	-233.26	123.62	0.00	0.00	0.00
4,200.00	7.23	243.91	4,182.90	-119.73	-244.56	129.61	0.00	0.00	0.00
4,300.00	7.23	243.91	4,282.10	-125.27	-255.86	135.60	0.00	0.00	0.00
4,400.00	7.23	243.91	4,381.31	-130.80	-267.16	141.59	0.00	0.00	0.00
4,500.00	7.23	243.91	4,480.51	-136.33	-278.47	147.58	0.00	0.00	0.00
4,600.00	7.23	243.91	4,579.72	-141.87	-289.77	153.57	0.00	0.00	0.00
4,700.00	7.23	243.91	4,678.92	-147.40	-301.07	159.56	0.00	0.00	0.00
4,800.00	7.23	243.91	4,778.13	-152.93	-312.37	165.55	0.00	0.00	0.00
4,900.00	7.23	243.91	4,877.33	-158.47	-323.67	171.54	0.00	0.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=4592+24 @ 4616.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-21-3L	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	7.23	243.91	4,976.54	-164.00	-334.98	177.53	0.00	0.00	0.00
5,100.00	7.23	243.91	5,075.74	-169.53	-346.28	183.52	0.00	0.00	0.00
5,200.00	7.23	243.91	5,174.95	-175.07	-357.58	189.51	0.00	0.00	0.00
5,300.00	7.23	243.91	5,274.15	-180.60	-368.88	195.50	0.00	0.00	0.00
5,400.00	7.23	243.91	5,373.36	-186.13	-380.18	201.49	0.00	0.00	0.00
5,500.00	7.23	243.91	5,472.56	-191.67	-391.49	207.48	0.00	0.00	0.00
5,600.00	7.23	243.91	5,571.77	-197.20	-402.79	213.47	0.00	0.00	0.00
5,700.00	7.23	243.91	5,670.97	-202.73	-414.09	219.46	0.00	0.00	0.00
5,800.00	7.23	243.91	5,770.18	-208.27	-425.39	225.45	0.00	0.00	0.00
5,900.00	7.23	243.91	5,869.38	-213.80	-436.69	231.44	0.00	0.00	0.00
5,919.54	7.23	243.91	5,888.77	-214.88	-438.90	232.61	0.00	0.00	0.00
Begin 10°/100' build/turn									
6,000.00	12.91	209.49	5,968.02	-224.95	-447.89	243.04	10.00	7.07	-42.79
6,100.00	22.11	195.92	6,063.32	-252.84	-458.58	271.34	10.00	9.19	-13.56
6,200.00	31.78	190.21	6,152.38	-296.96	-468.43	315.83	10.00	9.67	-5.71
6,300.00	41.59	186.97	6,232.48	-355.97	-477.15	375.14	10.00	9.81	-3.23
6,400.00	51.47	184.80	6,301.20	-428.08	-484.47	447.49	10.00	9.88	-2.18
6,500.00	61.37	183.15	6,356.44	-511.08	-490.17	530.66	10.00	9.91	-1.65
6,600.00	71.30	181.79	6,396.53	-602.47	-494.07	622.13	10.00	9.92	-1.36
6,700.00	81.23	180.58	6,420.25	-699.47	-496.06	719.13	10.00	9.93	-1.21
6,788.31	90.00	179.57	6,427.00	-787.43	-496.18	807.02	10.00	9.93	-1.14
LP Begin 90° lateral									
6,800.00	90.00	179.57	6,427.00	-799.12	-496.09	818.70	0.00	0.00	0.00
6,900.00	90.00	179.57	6,427.00	-899.12	-495.35	918.58	0.00	0.00	0.00
7,000.00	90.00	179.57	6,427.00	-999.12	-494.60	1,018.47	0.00	0.00	0.00
7,100.00	90.00	179.57	6,427.00	-1,099.11	-493.86	1,118.35	0.00	0.00	0.00
7,200.00	90.00	179.57	6,427.00	-1,199.11	-493.11	1,218.23	0.00	0.00	0.00
7,300.00	90.00	179.57	6,427.00	-1,299.11	-492.37	1,318.12	0.00	0.00	0.00
7,400.00	90.00	179.57	6,427.00	-1,399.11	-491.62	1,418.00	0.00	0.00	0.00
7,500.00	90.00	179.57	6,427.00	-1,499.10	-490.88	1,517.88	0.00	0.00	0.00
7,600.00	90.00	179.57	6,427.00	-1,599.10	-490.14	1,617.77	0.00	0.00	0.00
7,700.00	90.00	179.57	6,427.00	-1,699.10	-489.39	1,717.65	0.00	0.00	0.00
7,800.00	90.00	179.57	6,427.00	-1,799.09	-488.65	1,817.53	0.00	0.00	0.00
7,900.00	90.00	179.57	6,427.00	-1,899.09	-487.90	1,917.42	0.00	0.00	0.00
8,000.00	90.00	179.57	6,427.00	-1,999.09	-487.16	2,017.30	0.00	0.00	0.00
8,100.00	90.00	179.57	6,427.00	-2,099.09	-486.41	2,117.19	0.00	0.00	0.00
8,200.00	90.00	179.57	6,427.00	-2,199.08	-485.67	2,217.07	0.00	0.00	0.00
8,300.00	90.00	179.57	6,427.00	-2,299.08	-484.92	2,316.95	0.00	0.00	0.00
8,400.00	90.00	179.57	6,427.00	-2,399.08	-484.18	2,416.84	0.00	0.00	0.00
8,500.00	90.00	179.57	6,427.00	-2,499.08	-483.43	2,516.72	0.00	0.00	0.00
8,600.00	90.00	179.57	6,427.00	-2,599.07	-482.69	2,616.60	0.00	0.00	0.00
8,700.00	90.00	179.57	6,427.00	-2,699.07	-481.95	2,716.49	0.00	0.00	0.00
8,800.00	90.00	179.57	6,427.00	-2,799.07	-481.20	2,816.37	0.00	0.00	0.00
8,900.00	90.00	179.57	6,427.00	-2,899.06	-480.46	2,916.25	0.00	0.00	0.00
9,000.00	90.00	179.57	6,427.00	-2,999.06	-479.71	3,016.14	0.00	0.00	0.00
9,100.00	90.00	179.57	6,427.00	-3,099.06	-478.97	3,116.02	0.00	0.00	0.00
9,200.00	90.00	179.57	6,427.00	-3,199.06	-478.22	3,215.90	0.00	0.00	0.00
9,300.00	90.00	179.57	6,427.00	-3,299.05	-477.48	3,315.79	0.00	0.00	0.00
9,400.00	90.00	179.57	6,427.00	-3,399.05	-476.73	3,415.67	0.00	0.00	0.00
9,500.00	90.00	179.57	6,427.00	-3,499.05	-475.99	3,515.56	0.00	0.00	0.00
9,600.00	90.00	179.57	6,427.00	-3,599.04	-475.24	3,615.44	0.00	0.00	0.00
9,700.00	90.00	179.57	6,427.00	-3,699.04	-474.50	3,715.32	0.00	0.00	0.00
9,800.00	90.00	179.57	6,427.00	-3,799.04	-473.75	3,815.21	0.00	0.00	0.00
9,900.00	90.00	179.57	6,427.00	-3,899.04	-473.01	3,915.09	0.00	0.00	0.00

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Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-21-3L	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	6,427.00	-3,999.03	-472.27	4,014.97	0.00	0.00	0.00
10,100.00	90.00	179.57	6,427.00	-4,099.03	-471.52	4,114.86	0.00	0.00	0.00
10,200.00	90.00	179.57	6,427.00	-4,199.03	-470.78	4,214.74	0.00	0.00	0.00
10,300.00	90.00	179.57	6,427.00	-4,299.03	-470.03	4,314.62	0.00	0.00	0.00
10,400.00	90.00	179.57	6,427.00	-4,399.02	-469.29	4,414.51	0.00	0.00	0.00
10,500.00	90.00	179.57	6,427.00	-4,499.02	-468.54	4,514.39	0.00	0.00	0.00
10,600.00	90.00	179.57	6,427.00	-4,599.02	-467.80	4,614.27	0.00	0.00	0.00
10,700.00	90.00	179.57	6,427.00	-4,699.01	-467.05	4,714.16	0.00	0.00	0.00
10,800.00	90.00	179.57	6,427.00	-4,799.01	-466.31	4,814.04	0.00	0.00	0.00
10,900.00	90.00	179.57	6,427.00	-4,899.01	-465.56	4,913.93	0.00	0.00	0.00
11,000.00	90.00	179.57	6,427.00	-4,999.01	-464.82	5,013.81	0.00	0.00	0.00
11,100.00	90.00	179.57	6,427.00	-5,099.00	-464.08	5,113.69	0.00	0.00	0.00
11,200.00	90.00	179.57	6,427.00	-5,199.00	-463.33	5,213.58	0.00	0.00	0.00
11,300.00	90.00	179.57	6,427.00	-5,299.00	-462.59	5,313.46	0.00	0.00	0.00
11,400.00	90.00	179.57	6,427.00	-5,398.99	-461.84	5,413.34	0.00	0.00	0.00
11,500.00	90.00	179.57	6,427.00	-5,498.99	-461.10	5,513.23	0.00	0.00	0.00
11,600.00	90.00	179.57	6,427.00	-5,598.99	-460.35	5,613.11	0.00	0.00	0.00
11,700.00	90.00	179.57	6,427.00	-5,698.99	-459.61	5,712.99	0.00	0.00	0.00
11,800.00	90.00	179.57	6,427.00	-5,798.98	-458.86	5,812.88	0.00	0.00	0.00
11,900.00	90.00	179.57	6,427.00	-5,898.98	-458.12	5,912.76	0.00	0.00	0.00
12,000.00	90.00	179.57	6,427.00	-5,998.98	-457.37	6,012.64	0.00	0.00	0.00
12,100.00	90.00	179.57	6,427.00	-6,098.98	-456.63	6,112.53	0.00	0.00	0.00
12,200.00	90.00	179.57	6,427.00	-6,198.97	-455.89	6,212.41	0.00	0.00	0.00
12,300.00	90.00	179.57	6,427.00	-6,298.97	-455.14	6,312.30	0.00	0.00	0.00
12,400.00	90.00	179.57	6,427.00	-6,398.97	-454.40	6,412.18	0.00	0.00	0.00
12,500.00	90.00	179.57	6,427.00	-6,498.96	-453.65	6,512.06	0.00	0.00	0.00
12,600.00	90.00	179.57	6,427.00	-6,598.96	-452.91	6,611.95	0.00	0.00	0.00
12,700.00	90.00	179.57	6,427.00	-6,698.96	-452.16	6,711.83	0.00	0.00	0.00
12,800.00	90.00	179.57	6,427.00	-6,798.96	-451.42	6,811.71	0.00	0.00	0.00
12,900.00	90.00	179.57	6,427.00	-6,898.95	-450.67	6,911.60	0.00	0.00	0.00
13,000.00	90.00	179.57	6,427.00	-6,998.95	-449.93	7,011.48	0.00	0.00	0.00
13,100.00	90.00	179.57	6,427.00	-7,098.95	-449.18	7,111.36	0.00	0.00	0.00
13,200.00	90.00	179.57	6,427.00	-7,198.95	-448.44	7,211.25	0.00	0.00	0.00
13,300.00	90.00	179.57	6,427.00	-7,298.94	-447.69	7,311.13	0.00	0.00	0.00
13,400.00	90.00	179.57	6,427.00	-7,398.94	-446.95	7,411.01	0.00	0.00	0.00
13,500.00	90.00	179.57	6,427.00	-7,498.94	-446.21	7,510.90	0.00	0.00	0.00
13,600.00	90.00	179.57	6,427.00	-7,598.93	-445.46	7,610.78	0.00	0.00	0.00
13,700.00	90.00	179.57	6,427.00	-7,698.93	-444.72	7,710.67	0.00	0.00	0.00
13,800.00	90.00	179.57	6,427.00	-7,798.93	-443.97	7,810.55	0.00	0.00	0.00
13,900.00	90.00	179.57	6,427.00	-7,898.93	-443.23	7,910.43	0.00	0.00	0.00
14,000.00	90.00	179.57	6,427.00	-7,998.92	-442.48	8,010.32	0.00	0.00	0.00
14,100.00	90.00	179.57	6,427.00	-8,098.92	-441.74	8,110.20	0.00	0.00	0.00
14,200.00	90.00	179.57	6,427.00	-8,198.92	-440.99	8,210.08	0.00	0.00	0.00
14,300.00	90.00	179.57	6,427.00	-8,298.91	-440.25	8,309.97	0.00	0.00	0.00
14,400.00	90.00	179.57	6,427.00	-8,398.91	-439.50	8,409.85	0.00	0.00	0.00
14,500.00	90.00	179.57	6,427.00	-8,498.91	-438.76	8,509.73	0.00	0.00	0.00
14,600.00	90.00	179.57	6,427.00	-8,598.91	-438.02	8,609.62	0.00	0.00	0.00
14,700.00	90.00	179.57	6,427.00	-8,698.90	-437.27	8,709.50	0.00	0.00	0.00
14,800.00	90.00	179.57	6,427.00	-8,798.90	-436.53	8,809.38	0.00	0.00	0.00
14,900.00	90.00	179.57	6,427.00	-8,898.90	-435.78	8,909.27	0.00	0.00	0.00
15,000.00	90.00	179.57	6,427.00	-8,998.90	-435.04	9,009.15	0.00	0.00	0.00
15,100.00	90.00	179.57	6,427.00	-9,098.89	-434.29	9,109.04	0.00	0.00	0.00
15,200.00	90.00	179.57	6,427.00	-9,198.89	-433.55	9,208.92	0.00	0.00	0.00
15,300.00	90.00	179.57	6,427.00	-9,298.89	-432.80	9,308.80	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4592+24 @ 4616.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4592+24 @ 4616.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-21-3L	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	6,427.00	-9,398.88	-432.06	9,408.69	0.00	0.00	0.00	
15,500.00	90.00	179.57	6,427.00	-9,498.88	-431.31	9,508.57	0.00	0.00	0.00	
15,600.00	90.00	179.57	6,427.00	-9,598.88	-430.57	9,608.45	0.00	0.00	0.00	
15,700.00	90.00	179.57	6,427.00	-9,698.88	-429.82	9,708.34	0.00	0.00	0.00	
15,800.00	90.00	179.57	6,427.00	-9,798.87	-429.08	9,808.22	0.00	0.00	0.00	
15,900.00	90.00	179.57	6,427.00	-9,898.87	-428.34	9,908.10	0.00	0.00	0.00	
16,000.00	90.00	179.57	6,427.00	-9,998.87	-427.59	10,007.99	0.00	0.00	0.00	
16,100.00	90.00	179.57	6,427.00	-10,098.86	-426.85	10,107.87	0.00	0.00	0.00	
16,200.00	90.00	179.57	6,427.00	-10,198.86	-426.10	10,207.75	0.00	0.00	0.00	
16,300.00	90.00	179.57	6,427.00	-10,298.86	-425.36	10,307.64	0.00	0.00	0.00	
16,398.88	90.00	179.57	6,427.00	-10,397.74	-424.62	10,406.41	0.00	0.00	0.00	
PBHL/TD 16398.88 MD/6427.00 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 10-21-3L 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	14,649,106.99	1,799,253.06	40.33464737	-104.43003982	
70 Ranch 10-21-3L BHL - plan hits target center - Point	0.00	0.37	6,427.00	-10,397.74	-424.62	14,638,736.05	1,798,899.00	40.30617601	-104.43154916	
70 Ranch 10-21-3L LP 4 - plan hits target center - Point	0.00	0.37	6,427.00	-787.43	-496.18	14,648,345.68	1,798,765.56	40.33256550	-104.43180659	

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	
2,072.29	2,072.10	-2.00	-4.09	Begin 7.23° tangent	
5,919.54	5,888.77	-214.88	-438.90	Begin 10°/100' build/turn	
6,788.31	6,427.00	-787.43	-496.18	LP Begin 90° lateral	
16,398.88	6,427.00	-10,397.74	-424.62	PBHL/TD 16398.88 MD/6427.00 TVD	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4592+24 @ 4616.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4592+24 @ 4616.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-21-3L	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 10-21-3L, Surf loc: 260 FSL 1062 FWL Section 03-T04N-R63W					
Well Position	+N/-S	0.00 ft	Northing:	14,649,136.29 usft	Latitude:	40.33472775
	+E/-W	0.00 ft	Easting:	1,799,256.66 usft	Longitude:	-104.43002623
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,592.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/21/2018	8.10	66.90	52,228.50000000

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	182.34

Plan Survey Tool Program	Date	5/21/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,398.88 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	
2,072.29	7.23	243.91	2,072.10	-2.00	-4.09	10.00	10.00	0.00	243.91	
5,919.54	7.23	243.91	5,888.77	-214.88	-438.90	0.00	0.00	0.00	0.00	
6,788.31	90.00	179.57	6,427.00	-787.43	-496.18	10.00	9.53	-7.41	-64.52	70 Ranch 10-21-3L LI
16,398.88	90.00	179.57	6,427.00	-10,397.74	-424.62	0.00	0.00	0.00	0.00	70 Ranch 10-21-3L BI

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4592+24 @ 4616.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4592+24 @ 4616.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-21-3L	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	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
100.00	0.00	0.00	100.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
200.00	0.00	0.00	200.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
300.00	0.00	0.00	300.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
400.00	0.00	0.00	400.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
500.00	0.00	0.00	500.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
600.00	0.00	0.00	600.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
700.00	0.00	0.00	700.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
800.00	0.00	0.00	800.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
900.00	0.00	0.00	900.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,649,136.29	1,799,256.66	40.33472775	-104.43002623
KOP Begin 10°/100' build									
2,072.29	7.23	243.91	2,072.10	-2.00	-4.09	14,649,134.26	1,799,252.58	40.33472225	-104.43004091
Begin 7.23° tangent									
2,100.00	7.23	243.91	2,099.59	-3.54	-7.22	14,649,132.71	1,799,249.46	40.33471804	-104.43005215
2,200.00	7.23	243.91	2,198.79	-9.07	-18.52	14,649,127.10	1,799,238.19	40.33470285	-104.43009270
2,300.00	7.23	243.91	2,298.00	-14.60	-29.83	14,649,121.49	1,799,226.93	40.33468766	-104.43013326
2,400.00	7.23	243.91	2,397.20	-20.14	-41.13	14,649,115.89	1,799,215.66	40.33467246	-104.43017381
2,500.00	7.23	243.91	2,496.41	-25.67	-52.43	14,649,110.28	1,799,204.40	40.33465727	-104.43021437
2,600.00	7.23	243.91	2,595.61	-31.20	-63.73	14,649,104.68	1,799,193.13	40.33464207	-104.43025492
2,700.00	7.23	243.91	2,694.82	-36.74	-75.03	14,649,099.07	1,799,181.87	40.33462688	-104.43029547
2,800.00	7.23	243.91	2,794.02	-42.27	-86.34	14,649,093.46	1,799,170.60	40.33461168	-104.43033603
2,900.00	7.23	243.91	2,893.23	-47.80	-97.64	14,649,087.86	1,799,159.33	40.33459649	-104.43037658
3,000.00	7.23	243.91	2,992.43	-53.34	-108.94	14,649,082.25	1,799,148.07	40.33458130	-104.43041713
3,100.00	7.23	243.91	3,091.64	-58.87	-120.24	14,649,076.65	1,799,136.80	40.33456610	-104.43045769
3,200.00	7.23	243.91	3,190.84	-64.40	-131.54	14,649,071.04	1,799,125.54	40.33455091	-104.43049824
3,300.00	7.23	243.91	3,290.05	-69.93	-142.84	14,649,065.43	1,799,114.27	40.33453571	-104.43053880
3,400.00	7.23	243.91	3,389.25	-75.47	-154.15	14,649,059.83	1,799,103.00	40.33452052	-104.43057935
3,500.00	7.23	243.91	3,488.46	-81.00	-165.45	14,649,054.22	1,799,091.74	40.33450533	-104.43061990
3,600.00	7.23	243.91	3,587.66	-86.53	-176.75	14,649,048.62	1,799,080.47	40.33449013	-104.43066046
3,700.00	7.23	243.91	3,686.87	-92.07	-188.05	14,649,043.01	1,799,069.21	40.33447494	-104.43070101
3,800.00	7.23	243.91	3,786.07	-97.60	-199.35	14,649,037.40	1,799,057.94	40.33445974	-104.43074156
3,900.00	7.23	243.91	3,885.28	-103.13	-210.66	14,649,031.80	1,799,046.67	40.33444455	-104.43078212
4,000.00	7.23	243.91	3,984.49	-108.67	-221.96	14,649,026.19	1,799,035.41	40.33442935	-104.43082267
4,100.00	7.23	243.91	4,083.69	-114.20	-233.26	14,649,020.59	1,799,024.14	40.33441416	-104.43086322
4,200.00	7.23	243.91	4,182.90	-119.73	-244.56	14,649,014.98	1,799,012.88	40.33439897	-104.43090378
4,300.00	7.23	243.91	4,282.10	-125.27	-255.86	14,649,009.38	1,799,001.61	40.33438377	-104.43094433
4,400.00	7.23	243.91	4,381.31	-130.80	-267.16	14,649,003.77	1,798,990.34	40.33436858	-104.43098488
4,500.00	7.23	243.91	4,480.51	-136.33	-278.47	14,648,998.16	1,798,979.08	40.33435338	-104.43102544
4,600.00	7.23	243.91	4,579.72	-141.87	-289.77	14,648,992.56	1,798,967.81	40.33433819	-104.43106599
4,700.00	7.23	243.91	4,678.92	-147.40	-301.07	14,648,986.95	1,798,956.55	40.33432299	-104.43110654
4,800.00	7.23	243.91	4,778.13	-152.93	-312.37	14,648,981.35	1,798,945.28	40.33430780	-104.43114710
4,900.00	7.23	243.91	4,877.33	-158.47	-323.67	14,648,975.74	1,798,934.01	40.33429260	-104.43118765
5,000.00	7.23	243.91	4,976.54	-164.00	-334.98	14,648,970.13	1,798,922.75	40.33427741	-104.43122820

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4592+24 @ 4616.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4592+24 @ 4616.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-21-3L	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
5,100.00	7.23	243.91	5,075.74	-169.53	-346.28	14,648,964.53	1,798,911.48	40.33426222	-104.43126876
5,200.00	7.23	243.91	5,174.95	-175.07	-357.58	14,648,958.92	1,798,900.22	40.33424702	-104.43130931
5,300.00	7.23	243.91	5,274.15	-180.60	-368.88	14,648,953.32	1,798,888.95	40.33423183	-104.43134986
5,400.00	7.23	243.91	5,373.36	-186.13	-380.18	14,648,947.71	1,798,877.68	40.33421663	-104.43139042
5,500.00	7.23	243.91	5,472.56	-191.67	-391.49	14,648,942.10	1,798,866.42	40.33420144	-104.43143097
5,600.00	7.23	243.91	5,571.77	-197.20	-402.79	14,648,936.50	1,798,855.15	40.33418624	-104.43147152
5,700.00	7.23	243.91	5,670.97	-202.73	-414.09	14,648,930.89	1,798,843.89	40.33417105	-104.43151208
5,800.00	7.23	243.91	5,770.18	-208.27	-425.39	14,648,925.29	1,798,832.62	40.33415585	-104.43155263
5,900.00	7.23	243.91	5,869.38	-213.80	-436.69	14,648,919.68	1,798,821.35	40.33414066	-104.43159318
5,919.54	7.23	243.91	5,888.77	-214.88	-438.90	14,648,918.59	1,798,819.15	40.33413769	-104.43160111
Begin 10°/100' build/turn									
6,000.00	12.91	209.49	5,968.02	-224.95	-447.89	14,648,908.46	1,798,810.23	40.33411004	-104.43163335
6,100.00	22.11	195.92	6,063.32	-252.84	-458.58	14,648,880.50	1,798,799.72	40.33403345	-104.43167171
6,200.00	31.78	190.21	6,152.38	-296.96	-468.43	14,648,836.32	1,798,790.15	40.33391229	-104.43170706
6,300.00	41.59	186.97	6,232.48	-355.97	-477.15	14,648,777.25	1,798,781.81	40.33375026	-104.43173835
6,400.00	51.47	184.80	6,301.20	-428.08	-484.47	14,648,705.10	1,798,774.96	40.33355226	-104.43176461
6,500.00	61.37	183.15	6,356.44	-511.08	-490.17	14,648,622.06	1,798,769.79	40.33332433	-104.43178505
6,600.00	71.30	181.79	6,396.53	-602.47	-494.07	14,648,530.65	1,798,766.48	40.33307338	-104.43179905
6,700.00	81.23	180.58	6,420.25	-699.47	-496.06	14,648,433.64	1,798,765.11	40.33280703	-104.43180618
6,788.31	90.00	179.57	6,427.00	-787.43	-496.18	14,648,345.68	1,798,765.56	40.33256550	-104.43180659
LP Begin 90° lateral									
6,800.00	90.00	179.57	6,427.00	-799.12	-496.09	14,648,333.99	1,798,765.73	40.33253339	-104.43180628
6,900.00	90.00	179.57	6,427.00	-899.12	-495.35	14,648,234.00	1,798,767.11	40.33225880	-104.43180360
7,000.00	90.00	179.57	6,427.00	-999.12	-494.60	14,648,134.01	1,798,768.50	40.33198421	-104.43180092
7,100.00	90.00	179.57	6,427.00	-1,099.11	-493.86	14,648,034.02	1,798,769.89	40.33170963	-104.43179824
7,200.00	90.00	179.57	6,427.00	-1,199.11	-493.11	14,647,934.03	1,798,771.28	40.33143504	-104.43179556
7,300.00	90.00	179.57	6,427.00	-1,299.11	-492.37	14,647,834.04	1,798,772.67	40.33116045	-104.43179288
7,400.00	90.00	179.57	6,427.00	-1,399.11	-491.62	14,647,734.05	1,798,774.06	40.33088586	-104.43179020
7,500.00	90.00	179.57	6,427.00	-1,499.10	-490.88	14,647,634.06	1,798,775.44	40.33061128	-104.43178753
7,600.00	90.00	179.57	6,427.00	-1,599.10	-490.14	14,647,534.07	1,798,776.83	40.33033669	-104.43178485
7,700.00	90.00	179.57	6,427.00	-1,699.10	-489.39	14,647,434.08	1,798,778.22	40.33006210	-104.43178217
7,800.00	90.00	179.57	6,427.00	-1,799.09	-488.65	14,647,334.09	1,798,779.61	40.32978751	-104.43177949
7,900.00	90.00	179.57	6,427.00	-1,899.09	-487.90	14,647,234.10	1,798,781.00	40.32951293	-104.43177681
8,000.00	90.00	179.57	6,427.00	-1,999.09	-487.16	14,647,134.11	1,798,782.39	40.32923834	-104.43177413
8,100.00	90.00	179.57	6,427.00	-2,099.09	-486.41	14,647,034.12	1,798,783.78	40.32896375	-104.43177145
8,200.00	90.00	179.57	6,427.00	-2,199.08	-485.67	14,646,934.13	1,798,785.16	40.32868916	-104.43176877
8,300.00	90.00	179.57	6,427.00	-2,299.08	-484.92	14,646,834.14	1,798,786.55	40.32841458	-104.43176609
8,400.00	90.00	179.57	6,427.00	-2,399.08	-484.18	14,646,734.15	1,798,787.94	40.32813999	-104.43176341
8,500.00	90.00	179.57	6,427.00	-2,499.08	-483.43	14,646,634.16	1,798,789.33	40.32786540	-104.43176074
8,600.00	90.00	179.57	6,427.00	-2,599.07	-482.69	14,646,534.17	1,798,790.72	40.32759081	-104.43175806
8,700.00	90.00	179.57	6,427.00	-2,699.07	-481.95	14,646,434.18	1,798,792.11	40.32731622	-104.43175538
8,800.00	90.00	179.57	6,427.00	-2,799.07	-481.20	14,646,334.19	1,798,793.49	40.32704164	-104.43175270
8,900.00	90.00	179.57	6,427.00	-2,899.06	-480.46	14,646,234.20	1,798,794.88	40.32676705	-104.43175002
9,000.00	90.00	179.57	6,427.00	-2,999.06	-479.71	14,646,134.21	1,798,796.27	40.32649246	-104.43174734
9,100.00	90.00	179.57	6,427.00	-3,099.06	-478.97	14,646,034.22	1,798,797.66	40.32621787	-104.43174466
9,200.00	90.00	179.57	6,427.00	-3,199.06	-478.22	14,645,934.22	1,798,799.05	40.32594329	-104.43174198
9,300.00	90.00	179.57	6,427.00	-3,299.05	-477.48	14,645,834.23	1,798,800.44	40.32566870	-104.43173930
9,400.00	90.00	179.57	6,427.00	-3,399.05	-476.73	14,645,734.24	1,798,801.83	40.32539411	-104.43173663
9,500.00	90.00	179.57	6,427.00	-3,499.05	-475.99	14,645,634.25	1,798,803.21	40.32511952	-104.43173395
9,600.00	90.00	179.57	6,427.00	-3,599.04	-475.24	14,645,534.26	1,798,804.60	40.32484493	-104.43173127
9,700.00	90.00	179.57	6,427.00	-3,699.04	-474.50	14,645,434.27	1,798,805.99	40.32457035	-104.43172859
9,800.00	90.00	179.57	6,427.00	-3,799.04	-473.75	14,645,334.28	1,798,807.38	40.32429576	-104.43172591
9,900.00	90.00	179.57	6,427.00	-3,899.04	-473.01	14,645,234.29	1,798,808.77	40.32402117	-104.43172323
10,000.00	90.00	179.57	6,427.00	-3,999.03	-472.27	14,645,134.30	1,798,810.16	40.32374658	-104.43172055

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4592+24 @ 4616.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4592+24 @ 4616.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-21-3L	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	6,427.00	-4,099.03	-471.52	14,645,034.31	1,798,811.54	40.32347200	-104.43171787
10,200.00	90.00	179.57	6,427.00	-4,199.03	-470.78	14,644,934.32	1,798,812.93	40.32319741	-104.43171519
10,300.00	90.00	179.57	6,427.00	-4,299.03	-470.03	14,644,834.33	1,798,814.32	40.32292282	-104.43171252
10,400.00	90.00	179.57	6,427.00	-4,399.02	-469.29	14,644,734.34	1,798,815.71	40.32264823	-104.43170984
10,500.00	90.00	179.57	6,427.00	-4,499.02	-468.54	14,644,634.35	1,798,817.10	40.32237364	-104.43170716
10,600.00	90.00	179.57	6,427.00	-4,599.02	-467.80	14,644,534.36	1,798,818.49	40.32209906	-104.43170448
10,700.00	90.00	179.57	6,427.00	-4,699.01	-467.05	14,644,434.37	1,798,819.88	40.32182447	-104.43170180
10,800.00	90.00	179.57	6,427.00	-4,799.01	-466.31	14,644,334.38	1,798,821.26	40.32154988	-104.43169912
10,900.00	90.00	179.57	6,427.00	-4,899.01	-465.56	14,644,234.39	1,798,822.65	40.32127529	-104.43169644
11,000.00	90.00	179.57	6,427.00	-4,999.01	-464.82	14,644,134.40	1,798,824.04	40.32100070	-104.43169376
11,100.00	90.00	179.57	6,427.00	-5,099.00	-464.08	14,644,034.41	1,798,825.43	40.32072612	-104.43169109
11,200.00	90.00	179.57	6,427.00	-5,199.00	-463.33	14,643,934.42	1,798,826.82	40.32045153	-104.43168841
11,300.00	90.00	179.57	6,427.00	-5,299.00	-462.59	14,643,834.43	1,798,828.21	40.32017694	-104.43168573
11,400.00	90.00	179.57	6,427.00	-5,398.99	-461.84	14,643,734.44	1,798,829.59	40.31990235	-104.43168305
11,500.00	90.00	179.57	6,427.00	-5,498.99	-461.10	14,643,634.45	1,798,830.98	40.31962776	-104.43168037
11,600.00	90.00	179.57	6,427.00	-5,598.99	-460.35	14,643,534.46	1,798,832.37	40.31935318	-104.43167769
11,700.00	90.00	179.57	6,427.00	-5,698.99	-459.61	14,643,434.47	1,798,833.76	40.31907859	-104.43167501
11,800.00	90.00	179.57	6,427.00	-5,798.98	-458.86	14,643,334.48	1,798,835.15	40.31880400	-104.43167234
11,900.00	90.00	179.57	6,427.00	-5,898.98	-458.12	14,643,234.49	1,798,836.54	40.31852941	-104.43166966
12,000.00	90.00	179.57	6,427.00	-5,998.98	-457.37	14,643,134.50	1,798,837.93	40.31825482	-104.43166698
12,100.00	90.00	179.57	6,427.00	-6,098.98	-456.63	14,643,034.51	1,798,839.31	40.31798024	-104.43166430
12,200.00	90.00	179.57	6,427.00	-6,198.97	-455.89	14,642,934.52	1,798,840.70	40.31770565	-104.43166162
12,300.00	90.00	179.57	6,427.00	-6,298.97	-455.14	14,642,834.53	1,798,842.09	40.31743106	-104.43165894
12,400.00	90.00	179.57	6,427.00	-6,398.97	-454.40	14,642,734.54	1,798,843.48	40.31715647	-104.43165626
12,500.00	90.00	179.57	6,427.00	-6,498.96	-453.65	14,642,634.55	1,798,844.87	40.31688188	-104.43165358
12,600.00	90.00	179.57	6,427.00	-6,598.96	-452.91	14,642,534.56	1,798,846.26	40.31660729	-104.43165091
12,700.00	90.00	179.57	6,427.00	-6,698.96	-452.16	14,642,434.57	1,798,847.64	40.31633271	-104.43164823
12,800.00	90.00	179.57	6,427.00	-6,798.96	-451.42	14,642,334.58	1,798,849.03	40.31605812	-104.43164555
12,900.00	90.00	179.57	6,427.00	-6,898.95	-450.67	14,642,234.59	1,798,850.42	40.31578353	-104.43164287
13,000.00	90.00	179.57	6,427.00	-6,998.95	-449.93	14,642,134.60	1,798,851.81	40.31550894	-104.43164019
13,100.00	90.00	179.57	6,427.00	-7,098.95	-449.18	14,642,034.61	1,798,853.20	40.31523435	-104.43163751
13,200.00	90.00	179.57	6,427.00	-7,198.95	-448.44	14,641,934.62	1,798,854.59	40.31495977	-104.43163483
13,300.00	90.00	179.57	6,427.00	-7,298.94	-447.69	14,641,834.63	1,798,855.98	40.31468518	-104.43163216
13,400.00	90.00	179.57	6,427.00	-7,398.94	-446.95	14,641,734.64	1,798,857.36	40.31441059	-104.43162948
13,500.00	90.00	179.57	6,427.00	-7,498.94	-446.21	14,641,634.65	1,798,858.75	40.31413600	-104.43162680
13,600.00	90.00	179.57	6,427.00	-7,598.93	-445.46	14,641,534.66	1,798,860.14	40.31386141	-104.43162412
13,700.00	90.00	179.57	6,427.00	-7,698.93	-444.72	14,641,434.67	1,798,861.53	40.31358682	-104.43162144
13,800.00	90.00	179.57	6,427.00	-7,798.93	-443.97	14,641,334.68	1,798,862.92	40.31331224	-104.43161876
13,900.00	90.00	179.57	6,427.00	-7,898.93	-443.23	14,641,234.69	1,798,864.31	40.31303765	-104.43161609
14,000.00	90.00	179.57	6,427.00	-7,998.92	-442.48	14,641,134.70	1,798,865.69	40.31276307	-104.43161341
14,100.00	90.00	179.57	6,427.00	-8,098.92	-441.74	14,641,034.71	1,798,867.08	40.31248848	-104.43161073
14,200.00	90.00	179.57	6,427.00	-8,198.92	-440.99	14,640,934.72	1,798,868.47	40.31221389	-104.43160805
14,300.00	90.00	179.57	6,427.00	-8,298.91	-440.25	14,640,834.73	1,798,869.86	40.31193930	-104.43160537
14,400.00	90.00	179.57	6,427.00	-8,398.91	-439.50	14,640,734.74	1,798,871.25	40.31166472	-104.43160269
14,500.00	90.00	179.57	6,427.00	-8,498.91	-438.76	14,640,634.75	1,798,872.64	40.31139013	-104.43160001
14,600.00	90.00	179.57	6,427.00	-8,598.91	-438.02	14,640,534.76	1,798,874.03	40.31111554	-104.43159734
14,700.00	90.00	179.57	6,427.00	-8,698.90	-437.27	14,640,434.77	1,798,875.41	40.31084095	-104.43159466
14,800.00	90.00	179.57	6,427.00	-8,798.90	-436.53	14,640,334.78	1,798,876.80	40.31056636	-104.43159198
14,900.00	90.00	179.57	6,427.00	-8,898.90	-435.78	14,640,234.79	1,798,878.19	40.31029177	-104.43158930
15,000.00	90.00	179.57	6,427.00	-8,998.90	-435.04	14,640,134.80	1,798,879.58	40.31001718	-104.43158662
15,100.00	90.00	179.57	6,427.00	-9,098.89	-434.29	14,640,034.81	1,798,880.97	40.30974260	-104.43158394
15,200.00	90.00	179.57	6,427.00	-9,198.89	-433.55	14,639,934.82	1,798,882.36	40.30946801	-104.43158127
15,300.00	90.00	179.57	6,427.00	-9,298.89	-432.80	14,639,834.83	1,798,883.74	40.30919342	-104.43157859
15,400.00	90.00	179.57	6,427.00	-9,398.88	-432.06	14,639,734.83	1,798,885.13	40.30891883	-104.43157591
15,500.00	90.00	179.57	6,427.00	-9,498.88	-431.31	14,639,634.84	1,798,886.52	40.30864424	-104.43157323

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well 70 Ranch 10-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4592+24 @ 4616.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4592+24 @ 4616.00ft
Site:	Section 03-T04N-R63W	North Reference:	True
Well:	70 Ranch 10-21-3L	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	6,427.00	-9,598.88	-430.57	14,639,534.85	1,798,887.91	40.30836965	-104.43157055
15,700.00	90.00	179.57	6,427.00	-9,698.88	-429.82	14,639,434.86	1,798,889.30	40.30809506	-104.43156787
15,800.00	90.00	179.57	6,427.00	-9,798.87	-429.08	14,639,334.87	1,798,890.69	40.30782048	-104.43156520
15,900.00	90.00	179.57	6,427.00	-9,898.87	-428.34	14,639,234.88	1,798,892.08	40.30754589	-104.43156252
16,000.00	90.00	179.57	6,427.00	-9,998.87	-427.59	14,639,134.89	1,798,893.46	40.30727130	-104.43155984
16,100.00	90.00	179.57	6,427.00	-10,098.86	-426.85	14,639,034.90	1,798,894.85	40.30699671	-104.43155716
16,200.00	90.00	179.57	6,427.00	-10,198.86	-426.10	14,638,934.91	1,798,896.24	40.30672212	-104.43155448
16,300.00	90.00	179.57	6,427.00	-10,298.86	-425.36	14,638,834.92	1,798,897.63	40.30644753	-104.43155180
16,398.88	90.00	179.57	6,427.00	-10,397.74	-424.62	14,638,736.05	1,798,899.00	40.30617601	-104.43154916
PBHL/TD 16398.88 MD/6427.00 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 10-21-3L 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	14,649,106.99	1,799,253.06	40.33464737	-104.43003982
70 Ranch 10-21-3L BHL - plan hits target center - Point	0.00	0.37	6,427.00	-10,397.74	-424.62	14,638,736.05	1,798,899.00	40.30617601	-104.43154916
70 Ranch 10-21-3L LP 4 - plan hits target center - Point	0.00	0.37	6,427.00	-787.43	-496.18	14,648,345.68	1,798,765.56	40.33256550	-104.43180659

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
2,072.29	2,072.10	-2.00	-4.09	Begin 7.23° tangent
5,919.54	5,888.77	-214.88	-438.90	Begin 10°/100' build/turn
6,788.31	6,427.00	-787.43	-496.18	LP Begin 90° lateral
16,398.88	6,427.00	-10,397.74	-424.62	PBHL/TD 16398.88 MD/6427.00 TVD