



Well: Middlepark 18-21-3L
Site: Section 18-T04N-R62W
Project: Weld County, Colorado
Wellbore: Original Hole
Design: plan2

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 1°/100' build
3	2794.83	15.90	251.33	2784.68	-35.08	-103.79	2.00	-23.05	Begin 15.90° tangent
4	5884.64	15.90	251.33	5756.32	-306.04	-905.55	0.00	-201.11	Begin 10°/100' build
5	6833.99	90.00	359.63	6357.00	263.74	-1071.61	10.00	383.85	LP Begin 90° lateral
6	16474.06	90.00	359.63	6357.00	9903.61	-1133.20	0.00	9968.23	PBHL/TD 16473.72 MD/6356.65 TVD

DESIGN TARGET DETAILS

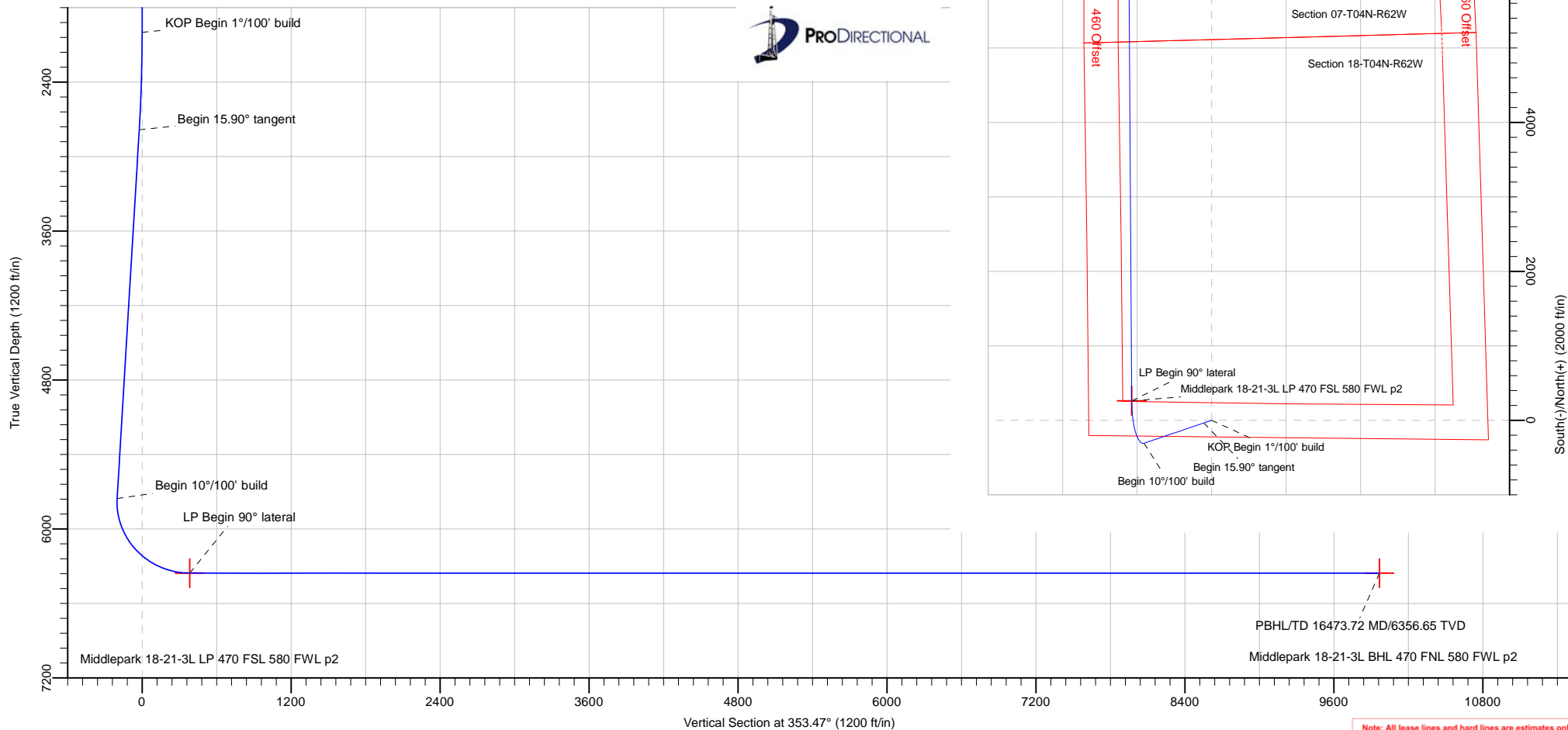
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Middlepark 18-21-3L BHL 470 FNL 580 FWL p2	6357.00	9903.61	-1133.20	14648604.86	1814680.17	40.33298258	-104.37469771
Middlepark 18-21-3L LP 470 FSL 580 FWL p2	6357.00	263.74	-1071.61	14638965.69	1814810.26	40.30651208	-104.37447527



Azimuths to True North
Magnetic North: 8.18°

Magnetic Field
Strength: 52247.4snT
Dip Angle: 66.90°
Date: 4/22/2018
Model: HDGM

Middlepark 18-21-3L Surf loc: 222 FSL 1649 FWL Section 18-T04N-R62W			
NAD83 Colorado - HARN Universal Transverse Mercator (US Survey Feet) Zone 13N (108 W to 102 W) RKB=4557+24 @ 4581.00ft			
Northing	Easting	Latitude	Longitude
14638709.57	1815883.71	40.30578792	-104.37063170



Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Middlepark 18-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4557+24 @ 4581.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4557+24 @ 4581.00ft
Site:	Section 18-T04N-R62W	North Reference:	True
Well:	Middlepark 18-21-3L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

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 18-T04N-R62W			
Site Position:		Northing:	14,641,153.41 usft	Latitude: 40.31252000
From:	Lat/Long	Easting:	1,814,773.97 usft	Longitude: -104.37455000
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence: 0.40 °

Well	Middlepark 18-21-3L, Surf loc: 222 FSL 1649 FWL Section 18-T04N-R62W			
Well Position	+N/-S	-2,451.62 ft	Northing:	14,638,709.57 usft
	+E/-W	1,092.45 ft	Easting:	1,815,883.71 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Ground Level: 4,557.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/22/2018	8.18	66.90	52,247.40000000

Design	plan2			
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	353.47

Plan Survey Tool Program	Date	4/27/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,473.72	plan2 (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	
2,794.83	15.90	251.33	2,784.68	-35.08	-103.79	2.00	2.00	0.00	251.33	
5,884.64	15.90	251.33	5,756.32	-306.04	-905.55	0.00	0.00	0.00	0.00	
6,833.99	90.00	359.63	6,357.00	263.74	-1,071.61	10.00	7.81	11.41	107.65	Middlepark 18-21-3L I
16,474.06	90.00	359.63	6,357.00	9,903.61	-1,133.20	0.00	0.00	0.00	0.00	Middlepark 18-21-3L I

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Middlepark 18-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4557+24 @ 4581.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4557+24 @ 4581.00ft
Site:	Section 18-T04N-R62W	North Reference:	True
Well:	Middlepark 18-21-3L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

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 1°/100' build									
2,100.00	2.00	251.33	2,099.98	-0.56	-1.65	-0.37	2.00	2.00	0.00
2,200.00	4.00	251.33	2,199.84	-2.23	-6.61	-1.47	2.00	2.00	0.00
2,300.00	6.00	251.33	2,299.45	-5.02	-14.87	-3.30	2.00	2.00	0.00
2,400.00	8.00	251.33	2,398.70	-8.93	-26.41	-5.87	2.00	2.00	0.00
2,500.00	10.00	251.33	2,497.47	-13.93	-41.23	-9.16	2.00	2.00	0.00
2,600.00	12.00	251.33	2,595.62	-20.04	-59.31	-13.17	2.00	2.00	0.00
2,700.00	14.00	251.33	2,693.06	-27.25	-80.62	-17.90	2.00	2.00	0.00
2,794.83	15.90	251.33	2,784.68	-35.08	-103.79	-23.05	2.00	2.00	0.00
2,794.91	15.90	251.33	2,784.75	-35.08	-103.81	-23.06	0.00	0.00	0.00
Begin 15.90° tangent									
2,800.00	15.90	251.33	2,789.64	-35.53	-105.13	-23.35	0.00	0.00	0.00
2,900.00	15.90	251.33	2,885.82	-44.30	-131.08	-29.11	0.00	0.00	0.00
3,000.00	15.90	251.33	2,982.00	-53.07	-157.03	-34.87	0.00	0.00	0.00
3,100.00	15.90	251.33	3,078.17	-61.84	-182.98	-40.64	0.00	0.00	0.00
3,200.00	15.90	251.33	3,174.35	-70.61	-208.92	-46.40	0.00	0.00	0.00
3,300.00	15.90	251.33	3,270.52	-79.38	-234.87	-52.16	0.00	0.00	0.00
3,400.00	15.90	251.33	3,366.70	-88.15	-260.82	-57.93	0.00	0.00	0.00
3,500.00	15.90	251.33	3,462.87	-96.92	-286.77	-63.69	0.00	0.00	0.00
3,600.00	15.90	251.33	3,559.05	-105.69	-312.72	-69.45	0.00	0.00	0.00
3,700.00	15.90	251.33	3,655.23	-114.46	-338.67	-75.22	0.00	0.00	0.00
3,800.00	15.90	251.33	3,751.40	-123.23	-364.62	-80.98	0.00	0.00	0.00
3,900.00	15.90	251.33	3,847.58	-132.00	-390.56	-86.74	0.00	0.00	0.00
4,000.00	15.90	251.33	3,943.75	-140.77	-416.51	-92.50	0.00	0.00	0.00
4,100.00	15.90	251.33	4,039.93	-149.54	-442.46	-98.27	0.00	0.00	0.00
4,200.00	15.90	251.33	4,136.10	-158.31	-468.41	-104.03	0.00	0.00	0.00
4,300.00	15.90	251.33	4,232.28	-167.07	-494.36	-109.79	0.00	0.00	0.00
4,400.00	15.90	251.33	4,328.46	-175.84	-520.31	-115.56	0.00	0.00	0.00
4,500.00	15.90	251.33	4,424.63	-184.61	-546.26	-121.32	0.00	0.00	0.00
4,600.00	15.90	251.33	4,520.81	-193.38	-572.20	-127.08	0.00	0.00	0.00
4,700.00	15.90	251.33	4,616.98	-202.15	-598.15	-132.84	0.00	0.00	0.00
4,800.00	15.90	251.33	4,713.16	-210.92	-624.10	-138.61	0.00	0.00	0.00

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Project:	Weld County, Colorado	MD Reference:	RKB=4557+24 @ 4581.00ft
Site:	Section 18-T04N-R62W	North Reference:	True
Well:	Middlepark 18-21-3L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

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)
4,900.00	15.90	251.33	4,809.33	-219.69	-650.05	-144.37	0.00	0.00	0.00
5,000.00	15.90	251.33	4,905.51	-228.46	-676.00	-150.13	0.00	0.00	0.00
5,100.00	15.90	251.33	5,001.69	-237.23	-701.95	-155.90	0.00	0.00	0.00
5,200.00	15.90	251.33	5,097.86	-246.00	-727.90	-161.66	0.00	0.00	0.00
5,300.00	15.90	251.33	5,194.04	-254.77	-753.84	-167.42	0.00	0.00	0.00
5,400.00	15.90	251.33	5,290.21	-263.54	-779.79	-173.19	0.00	0.00	0.00
5,500.00	15.90	251.33	5,386.39	-272.31	-805.74	-178.95	0.00	0.00	0.00
5,600.00	15.90	251.33	5,482.56	-281.08	-831.69	-184.71	0.00	0.00	0.00
5,700.00	15.90	251.33	5,578.74	-289.85	-857.64	-190.47	0.00	0.00	0.00
5,800.00	15.90	251.33	5,674.92	-298.62	-883.59	-196.24	0.00	0.00	0.00
5,884.30	15.90	251.33	5,755.99	-306.01	-905.46	-201.10	0.00	0.00	0.00
Begin 10°/100' build									
5,884.64	15.90	251.33	5,756.32	-306.04	-905.55	-201.11	0.00	0.00	0.00
5,900.00	15.50	256.81	5,771.11	-307.18	-909.54	-201.80	10.00	-2.59	35.71
6,000.00	16.48	293.54	5,867.48	-304.56	-935.61	-196.22	10.00	0.98	36.73
6,100.00	22.32	318.43	5,961.92	-284.64	-961.28	-173.52	10.00	5.84	24.89
6,200.00	30.33	332.11	6,051.56	-248.03	-985.75	-134.36	10.00	8.01	13.67
6,300.00	39.20	340.27	6,133.68	-195.84	-1,008.29	-79.95	10.00	8.87	8.17
6,400.00	48.45	345.77	6,205.77	-129.66	-1,028.20	-11.93	10.00	9.25	5.50
6,500.00	57.90	349.87	6,265.66	-51.49	-1,044.89	67.63	10.00	9.45	4.10
6,600.00	67.46	353.19	6,311.51	36.28	-1,057.85	156.30	10.00	9.56	3.32
6,700.00	77.07	356.08	6,341.94	131.00	-1,066.69	251.41	10.00	9.62	2.89
6,800.00	86.72	358.75	6,356.03	229.77	-1,071.12	350.05	10.00	9.65	2.67
6,833.66	89.97	359.63	6,357.00	263.41	-1,071.60	383.52	10.00	9.65	2.61
LP Begin 90° lateral									
6,833.99	90.00	359.63	6,357.00	263.74	-1,071.61	383.85	10.00	9.65	2.61
6,900.00	90.00	359.63	6,357.00	329.75	-1,072.03	449.48	0.00	0.00	0.00
7,000.00	90.00	359.63	6,357.00	429.74	-1,072.67	548.90	0.00	0.00	0.00
7,100.00	90.00	359.63	6,357.00	529.74	-1,073.30	648.32	0.00	0.00	0.00
7,200.00	90.00	359.63	6,357.00	629.74	-1,073.94	747.75	0.00	0.00	0.00
7,300.00	90.00	359.63	6,357.00	729.74	-1,074.58	847.17	0.00	0.00	0.00
7,400.00	90.00	359.63	6,357.00	829.74	-1,075.22	946.59	0.00	0.00	0.00
7,500.00	90.00	359.63	6,357.00	929.73	-1,075.86	1,046.01	0.00	0.00	0.00
7,600.00	90.00	359.63	6,357.00	1,029.73	-1,076.50	1,145.43	0.00	0.00	0.00
7,700.00	90.00	359.63	6,357.00	1,129.73	-1,077.14	1,244.86	0.00	0.00	0.00
7,800.00	90.00	359.63	6,357.00	1,229.73	-1,077.78	1,344.28	0.00	0.00	0.00
7,900.00	90.00	359.63	6,357.00	1,329.73	-1,078.42	1,443.70	0.00	0.00	0.00
8,000.00	90.00	359.63	6,357.00	1,429.72	-1,079.05	1,543.12	0.00	0.00	0.00
8,100.00	90.00	359.63	6,357.00	1,529.72	-1,079.69	1,642.55	0.00	0.00	0.00
8,200.00	90.00	359.63	6,357.00	1,629.72	-1,080.33	1,741.97	0.00	0.00	0.00
8,300.00	90.00	359.63	6,357.00	1,729.72	-1,080.97	1,841.39	0.00	0.00	0.00
8,400.00	90.00	359.63	6,357.00	1,829.72	-1,081.61	1,940.81	0.00	0.00	0.00
8,500.00	90.00	359.63	6,357.00	1,929.71	-1,082.25	2,040.24	0.00	0.00	0.00
8,600.00	90.00	359.63	6,357.00	2,029.71	-1,082.89	2,139.66	0.00	0.00	0.00
8,700.00	90.00	359.63	6,357.00	2,129.71	-1,083.53	2,239.08	0.00	0.00	0.00
8,800.00	90.00	359.63	6,357.00	2,229.71	-1,084.17	2,338.50	0.00	0.00	0.00
8,900.00	90.00	359.63	6,357.00	2,329.71	-1,084.80	2,437.92	0.00	0.00	0.00
9,000.00	90.00	359.63	6,357.00	2,429.70	-1,085.44	2,537.35	0.00	0.00	0.00
9,100.00	90.00	359.63	6,357.00	2,529.70	-1,086.08	2,636.77	0.00	0.00	0.00
9,200.00	90.00	359.63	6,357.00	2,629.70	-1,086.72	2,736.19	0.00	0.00	0.00
9,300.00	90.00	359.63	6,357.00	2,729.70	-1,087.36	2,835.61	0.00	0.00	0.00
9,400.00	90.00	359.63	6,357.00	2,829.70	-1,088.00	2,935.04	0.00	0.00	0.00
9,500.00	90.00	359.63	6,357.00	2,929.69	-1,088.64	3,034.46	0.00	0.00	0.00
9,600.00	90.00	359.63	6,357.00	3,029.69	-1,089.28	3,133.88	0.00	0.00	0.00

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Site:	Section 18-T04N-R62W	North Reference:	True
Well:	Middlepark 18-21-3L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

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)
9,700.00	90.00	359.63	6,357.00	3,129.69	-1,089.92	3,233.30	0.00	0.00	0.00
9,800.00	90.00	359.63	6,357.00	3,229.69	-1,090.55	3,332.73	0.00	0.00	0.00
9,900.00	90.00	359.63	6,357.00	3,329.69	-1,091.19	3,432.15	0.00	0.00	0.00
10,000.00	90.00	359.63	6,357.00	3,429.68	-1,091.83	3,531.57	0.00	0.00	0.00
10,100.00	90.00	359.63	6,357.00	3,529.68	-1,092.47	3,630.99	0.00	0.00	0.00
10,200.00	90.00	359.63	6,357.00	3,629.68	-1,093.11	3,730.42	0.00	0.00	0.00
10,300.00	90.00	359.63	6,357.00	3,729.68	-1,093.75	3,829.84	0.00	0.00	0.00
10,400.00	90.00	359.63	6,357.00	3,829.68	-1,094.39	3,929.26	0.00	0.00	0.00
10,500.00	90.00	359.63	6,357.00	3,929.67	-1,095.03	4,028.68	0.00	0.00	0.00
10,600.00	90.00	359.63	6,357.00	4,029.67	-1,095.67	4,128.10	0.00	0.00	0.00
10,700.00	90.00	359.63	6,357.00	4,129.67	-1,096.30	4,227.53	0.00	0.00	0.00
10,800.00	90.00	359.63	6,357.00	4,229.67	-1,096.94	4,326.95	0.00	0.00	0.00
10,900.00	90.00	359.63	6,357.00	4,329.67	-1,097.58	4,426.37	0.00	0.00	0.00
11,000.00	90.00	359.63	6,357.00	4,429.66	-1,098.22	4,525.79	0.00	0.00	0.00
11,100.00	90.00	359.63	6,357.00	4,529.66	-1,098.86	4,625.22	0.00	0.00	0.00
11,200.00	90.00	359.63	6,357.00	4,629.66	-1,099.50	4,724.64	0.00	0.00	0.00
11,300.00	90.00	359.63	6,357.00	4,729.66	-1,100.14	4,824.06	0.00	0.00	0.00
11,400.00	90.00	359.63	6,357.00	4,829.66	-1,100.78	4,923.48	0.00	0.00	0.00
11,500.00	90.00	359.63	6,357.00	4,929.65	-1,101.42	5,022.91	0.00	0.00	0.00
11,600.00	90.00	359.63	6,357.00	5,029.65	-1,102.06	5,122.33	0.00	0.00	0.00
11,700.00	90.00	359.63	6,357.00	5,129.65	-1,102.69	5,221.75	0.00	0.00	0.00
11,800.00	90.00	359.63	6,357.00	5,229.65	-1,103.33	5,321.17	0.00	0.00	0.00
11,900.00	90.00	359.63	6,357.00	5,329.64	-1,103.97	5,420.59	0.00	0.00	0.00
12,000.00	90.00	359.63	6,357.00	5,429.64	-1,104.61	5,520.02	0.00	0.00	0.00
12,100.00	90.00	359.63	6,357.00	5,529.64	-1,105.25	5,619.44	0.00	0.00	0.00
12,200.00	90.00	359.63	6,357.00	5,629.64	-1,105.89	5,718.86	0.00	0.00	0.00
12,300.00	90.00	359.63	6,357.00	5,729.64	-1,106.53	5,818.28	0.00	0.00	0.00
12,400.00	90.00	359.63	6,357.00	5,829.63	-1,107.17	5,917.71	0.00	0.00	0.00
12,500.00	90.00	359.63	6,357.00	5,929.63	-1,107.81	6,017.13	0.00	0.00	0.00
12,600.00	90.00	359.63	6,357.00	6,029.63	-1,108.44	6,116.55	0.00	0.00	0.00
12,700.00	90.00	359.63	6,357.00	6,129.63	-1,109.08	6,215.97	0.00	0.00	0.00
12,800.00	90.00	359.63	6,357.00	6,229.63	-1,109.72	6,315.40	0.00	0.00	0.00
12,900.00	90.00	359.63	6,357.00	6,329.62	-1,110.36	6,414.82	0.00	0.00	0.00
13,000.00	90.00	359.63	6,357.00	6,429.62	-1,111.00	6,514.24	0.00	0.00	0.00
13,100.00	90.00	359.63	6,357.00	6,529.62	-1,111.64	6,613.66	0.00	0.00	0.00
13,200.00	90.00	359.63	6,357.00	6,629.62	-1,112.28	6,713.09	0.00	0.00	0.00
13,300.00	90.00	359.63	6,357.00	6,729.62	-1,112.92	6,812.51	0.00	0.00	0.00
13,400.00	90.00	359.63	6,357.00	6,829.61	-1,113.56	6,911.93	0.00	0.00	0.00
13,500.00	90.00	359.63	6,357.00	6,929.61	-1,114.19	7,011.35	0.00	0.00	0.00
13,600.00	90.00	359.63	6,357.00	7,029.61	-1,114.83	7,110.77	0.00	0.00	0.00
13,700.00	90.00	359.63	6,357.00	7,129.61	-1,115.47	7,210.20	0.00	0.00	0.00
13,800.00	90.00	359.63	6,357.00	7,229.61	-1,116.11	7,309.62	0.00	0.00	0.00
13,900.00	90.00	359.63	6,357.00	7,329.60	-1,116.75	7,409.04	0.00	0.00	0.00
14,000.00	90.00	359.63	6,357.00	7,429.60	-1,117.39	7,508.46	0.00	0.00	0.00
14,100.00	90.00	359.63	6,357.00	7,529.60	-1,118.03	7,607.89	0.00	0.00	0.00
14,200.00	90.00	359.63	6,357.00	7,629.60	-1,118.67	7,707.31	0.00	0.00	0.00
14,300.00	90.00	359.63	6,357.00	7,729.60	-1,119.31	7,806.73	0.00	0.00	0.00
14,400.00	90.00	359.63	6,357.00	7,829.59	-1,119.94	7,906.15	0.00	0.00	0.00
14,500.00	90.00	359.63	6,357.00	7,929.59	-1,120.58	8,005.58	0.00	0.00	0.00
14,600.00	90.00	359.63	6,357.00	8,029.59	-1,121.22	8,105.00	0.00	0.00	0.00
14,700.00	90.00	359.63	6,357.00	8,129.59	-1,121.86	8,204.42	0.00	0.00	0.00
14,800.00	90.00	359.63	6,357.00	8,229.59	-1,122.50	8,303.84	0.00	0.00	0.00
14,900.00	90.00	359.63	6,357.00	8,329.58	-1,123.14	8,403.27	0.00	0.00	0.00
15,000.00	90.00	359.63	6,357.00	8,429.58	-1,123.78	8,502.69	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Middlepark 18-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4557+24 @ 4581.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4557+24 @ 4581.00ft
Site:	Section 18-T04N-R62W	North Reference:	True
Well:	Middlepark 18-21-3L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

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)
15,100.00	90.00	359.63	6,357.00	8,529.58	-1,124.42	8,602.11	0.00	0.00	0.00
15,200.00	90.00	359.63	6,357.00	8,629.58	-1,125.06	8,701.53	0.00	0.00	0.00
15,300.00	90.00	359.63	6,357.00	8,729.58	-1,125.69	8,800.95	0.00	0.00	0.00
15,400.00	90.00	359.63	6,357.00	8,829.57	-1,126.33	8,900.38	0.00	0.00	0.00
15,500.00	90.00	359.63	6,357.00	8,929.57	-1,126.97	8,999.80	0.00	0.00	0.00
15,600.00	90.00	359.63	6,357.00	9,029.57	-1,127.61	9,099.22	0.00	0.00	0.00
15,700.00	90.00	359.63	6,357.00	9,129.57	-1,128.25	9,198.64	0.00	0.00	0.00
15,800.00	90.00	359.63	6,357.00	9,229.57	-1,128.89	9,298.07	0.00	0.00	0.00
15,900.00	90.00	359.63	6,357.00	9,329.56	-1,129.53	9,397.49	0.00	0.00	0.00
16,000.00	90.00	359.63	6,357.00	9,429.56	-1,130.17	9,496.91	0.00	0.00	0.00
16,100.00	90.00	359.63	6,357.00	9,529.56	-1,130.81	9,596.33	0.00	0.00	0.00
16,200.00	90.00	359.63	6,357.00	9,629.56	-1,131.44	9,695.76	0.00	0.00	0.00
16,300.00	90.00	359.63	6,357.00	9,729.56	-1,132.08	9,795.18	0.00	0.00	0.00
16,400.00	90.00	359.63	6,357.00	9,829.55	-1,132.72	9,894.60	0.00	0.00	0.00
16,473.72	90.00	359.63	6,357.00	9,903.27	-1,133.19	9,967.89	0.00	0.00	0.00
PBHL/TD 16473.72 MD/6356.65 TVD									
16,474.06	90.00	359.63	6,357.00	9,903.61	-1,133.20	9,968.23	0.00	0.00	0.00

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									
Middlepark 18-21-3L BH	0.00	0.00	6,357.00	9,903.61	-1,133.20	14,648,604.86	1,814,680.17	40.33298258	-104.37469771
- plan hits target center									
- Point									
Middlepark 18-21-3L LP	0.00	0.00	6,357.00	263.74	-1,071.61	14,638,965.69	1,814,810.26	40.30651208	-104.37447527
- plan hits target center									
- Point									

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 1°/100' build
2,794.91	2,784.75	-35.08	-103.81	Begin 15.90° tangent
5,884.30	5,755.97	-306.04	-905.53	Begin 10°/100' build
6,833.66	6,356.65	263.74	-1,071.61	LP Begin 90° lateral
16,473.72	6,356.65	9,903.61	-1,133.20	PBHL/TD 16473.72 MD/6356.65 TVD

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Middlepark 18-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4557+24 @ 4581.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4557+24 @ 4581.00ft
Site:	Section 18-T04N-R62W	North Reference:	True
Well:	Middlepark 18-21-3L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

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 18-T04N-R62W			
Site Position:		Northing:	14,641,153.41 usft	Latitude:	40.31252000
From:	Lat/Long	Easting:	1,814,773.97 usft	Longitude:	-104.37455000
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.40 °

Well	Middlepark 18-21-3L, Surf loc: 222 FSL 1649 FWL Section 18-T04N-R62W					
Well Position	+N/-S	0.00 ft	Northing:	14,638,709.57 usft	Latitude:	40.30578793
	+E/-W	0.00 ft	Easting:	1,815,883.71 usft	Longitude:	-104.37063171
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,557.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/22/2018	8.18	66.90	52,247.40000000

Design	plan2			
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	353.47

Plan Survey Tool Program	Date	4/27/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,473.72 plan2 (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	
2,794.83	15.90	251.33	2,784.68	-35.08	-103.79	2.00	2.00	0.00	251.33	
5,884.64	15.90	251.33	5,756.32	-306.04	-905.55	0.00	0.00	0.00	0.00	
6,833.99	90.00	359.63	6,357.00	263.74	-1,071.61	10.00	7.81	11.41	107.65	Middlepark 18-21-3L I
16,474.06	90.00	359.63	6,357.00	9,903.61	-1,133.20	0.00	0.00	0.00	0.00	Middlepark 18-21-3L I

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Middlepark 18-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4557+24 @ 4581.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4557+24 @ 4581.00ft
Site:	Section 18-T04N-R62W	North Reference:	True
Well:	Middlepark 18-21-3L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

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	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
100.00	0.00	0.00	100.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
200.00	0.00	0.00	200.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
300.00	0.00	0.00	300.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
400.00	0.00	0.00	400.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
500.00	0.00	0.00	500.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
600.00	0.00	0.00	600.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
700.00	0.00	0.00	700.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
800.00	0.00	0.00	800.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
900.00	0.00	0.00	900.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,638,709.57	1,815,883.71	40.30578793	-104.37063171
KOP Begin 1°/100' build									
2,100.00	2.00	251.33	2,099.98	-0.56	-1.65	14,638,709.00	1,815,882.06	40.30578639	-104.37063764
2,200.00	4.00	251.33	2,199.84	-2.23	-6.61	14,638,707.29	1,815,877.12	40.30578179	-104.37065542
2,300.00	6.00	251.33	2,299.45	-5.02	-14.87	14,638,704.44	1,815,868.88	40.30577413	-104.37068503
2,400.00	8.00	251.33	2,398.70	-8.93	-26.41	14,638,700.45	1,815,857.36	40.30576342	-104.37072644
2,500.00	10.00	251.33	2,497.47	-13.93	-41.23	14,638,695.34	1,815,842.58	40.30574966	-104.37077959
2,600.00	12.00	251.33	2,595.62	-20.04	-59.31	14,638,689.10	1,815,824.55	40.30573289	-104.37084442
2,700.00	14.00	251.33	2,693.06	-27.25	-80.62	14,638,681.75	1,815,803.29	40.30571311	-104.37092085
2,794.83	15.90	251.33	2,784.68	-35.08	-103.79	14,638,673.75	1,815,780.17	40.30569161	-104.37100397
2,794.91	15.90	251.33	2,784.75	-35.08	-103.81	14,638,673.75	1,815,780.15	40.30569159	-104.37100404
Begin 15.90° tangent									
2,800.00	15.90	251.33	2,789.64	-35.53	-105.13	14,638,673.29	1,815,778.84	40.30569036	-104.37100878
2,900.00	15.90	251.33	2,885.82	-44.30	-131.08	14,638,664.34	1,815,752.95	40.30566628	-104.37110185
3,000.00	15.90	251.33	2,982.00	-53.07	-157.03	14,638,655.38	1,815,727.06	40.30564220	-104.37119492
3,100.00	15.90	251.33	3,078.17	-61.84	-182.98	14,638,646.43	1,815,701.18	40.30561812	-104.37128799
3,200.00	15.90	251.33	3,174.35	-70.61	-208.92	14,638,637.48	1,815,675.29	40.30559404	-104.37138105
3,300.00	15.90	251.33	3,270.52	-79.38	-234.87	14,638,628.52	1,815,649.41	40.30556995	-104.37147412
3,400.00	15.90	251.33	3,366.70	-88.15	-260.82	14,638,619.57	1,815,623.52	40.30554587	-104.37156719
3,500.00	15.90	251.33	3,462.87	-96.92	-286.77	14,638,610.61	1,815,597.64	40.30552179	-104.37166026
3,600.00	15.90	251.33	3,559.05	-105.69	-312.72	14,638,601.66	1,815,571.75	40.30549771	-104.37175333
3,700.00	15.90	251.33	3,655.23	-114.46	-338.67	14,638,592.71	1,815,545.87	40.30547363	-104.37184640
3,800.00	15.90	251.33	3,751.40	-123.23	-364.62	14,638,583.75	1,815,519.98	40.30544955	-104.37193947
3,900.00	15.90	251.33	3,847.58	-132.00	-390.56	14,638,574.80	1,815,494.09	40.30542546	-104.37203254
4,000.00	15.90	251.33	3,943.75	-140.77	-416.51	14,638,565.85	1,815,468.21	40.30540138	-104.37212560
4,100.00	15.90	251.33	4,039.93	-149.54	-442.46	14,638,556.89	1,815,442.32	40.30537730	-104.37221867
4,200.00	15.90	251.33	4,136.10	-158.31	-468.41	14,638,547.94	1,815,416.44	40.30535322	-104.37231174
4,300.00	15.90	251.33	4,232.28	-167.07	-494.36	14,638,538.98	1,815,390.55	40.30532913	-104.37240481
4,400.00	15.90	251.33	4,328.46	-175.84	-520.31	14,638,530.03	1,815,364.67	40.30530505	-104.37249788
4,500.00	15.90	251.33	4,424.63	-184.61	-546.26	14,638,521.08	1,815,338.78	40.30528097	-104.37259094
4,600.00	15.90	251.33	4,520.81	-193.38	-572.20	14,638,512.12	1,815,312.90	40.30525689	-104.37268401
4,700.00	15.90	251.33	4,616.98	-202.15	-598.15	14,638,503.17	1,815,287.01	40.30523280	-104.37277708
4,800.00	15.90	251.33	4,713.16	-210.92	-624.10	14,638,494.21	1,815,261.13	40.30520872	-104.37287015
4,900.00	15.90	251.33	4,809.33	-219.69	-650.05	14,638,485.26	1,815,235.24	40.30518464	-104.37296322

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Middlepark 18-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4557+24 @ 4581.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4557+24 @ 4581.00ft
Site:	Section 18-T04N-R62W	North Reference:	True
Well:	Middlepark 18-21-3L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,000.00	15.90	251.33	4,905.51	-228.46	-676.00	14,638,476.31	1,815,209.35	40.30516056	-104.37305628
5,100.00	15.90	251.33	5,001.69	-237.23	-701.95	14,638,467.35	1,815,183.47	40.30513647	-104.37314935
5,200.00	15.90	251.33	5,097.86	-246.00	-727.90	14,638,458.40	1,815,157.58	40.30511239	-104.37324242
5,300.00	15.90	251.33	5,194.04	-254.77	-753.84	14,638,449.45	1,815,131.70	40.30508831	-104.37333549
5,400.00	15.90	251.33	5,290.21	-263.54	-779.79	14,638,440.49	1,815,105.81	40.30506422	-104.37342855
5,500.00	15.90	251.33	5,386.39	-272.31	-805.74	14,638,431.54	1,815,079.93	40.30504014	-104.37352162
5,600.00	15.90	251.33	5,482.56	-281.08	-831.69	14,638,422.58	1,815,054.04	40.30501606	-104.37361469
5,700.00	15.90	251.33	5,578.74	-289.85	-857.64	14,638,413.63	1,815,028.16	40.30499197	-104.37370776
5,800.00	15.90	251.33	5,674.92	-298.62	-883.59	14,638,404.68	1,815,002.27	40.30496789	-104.37380082
5,884.30	15.90	251.33	5,755.99	-306.01	-905.46	14,638,397.13	1,814,980.45	40.30494759	-104.37387928
Begin 10°/100' build									
5,884.64	15.90	251.33	5,756.32	-306.04	-905.55	14,638,397.10	1,814,980.36	40.30494751	-104.37387959
5,900.00	15.50	256.81	5,771.11	-307.18	-909.54	14,638,395.93	1,814,976.38	40.30494437	-104.37389391
6,000.00	16.48	293.54	5,867.48	-304.56	-935.61	14,638,398.37	1,814,950.29	40.30495157	-104.37398743
6,100.00	22.32	318.43	5,961.92	-284.64	-961.28	14,638,418.10	1,814,924.48	40.30500627	-104.37407948
6,200.00	30.33	332.11	6,051.56	-248.03	-985.75	14,638,454.54	1,814,899.75	40.30510680	-104.37416725
6,300.00	39.20	340.27	6,133.68	-195.84	-1,008.29	14,638,506.57	1,814,876.84	40.30525010	-104.37424809
6,400.00	48.45	345.77	6,205.77	-129.66	-1,028.20	14,638,572.61	1,814,856.46	40.30543184	-104.37431954
6,500.00	57.90	349.87	6,265.66	-51.49	-1,044.89	14,638,650.65	1,814,839.21	40.30564647	-104.37437941
6,600.00	67.46	353.19	6,311.51	36.28	-1,057.85	14,638,738.33	1,814,825.63	40.30588749	-104.37442591
6,700.00	77.07	356.08	6,341.94	131.00	-1,066.69	14,638,832.98	1,814,816.12	40.30614757	-104.37445761
6,800.00	86.72	358.75	6,356.03	229.77	-1,071.12	14,638,931.72	1,814,810.98	40.30641880	-104.37447354
6,833.66	89.97	359.63	6,357.00	263.41	-1,071.60	14,638,965.35	1,814,810.27	40.30651117	-104.37447526
LP Begin 90° lateral									
6,833.99	90.00	359.63	6,357.00	263.74	-1,071.61	14,638,965.69	1,814,810.26	40.30651208	-104.37447527
6,900.00	90.00	359.63	6,357.00	329.75	-1,072.03	14,639,031.69	1,814,809.37	40.30669333	-104.37447679
7,000.00	90.00	359.63	6,357.00	429.74	-1,072.67	14,639,131.68	1,814,808.02	40.30696792	-104.37447910
7,100.00	90.00	359.63	6,357.00	529.74	-1,073.30	14,639,231.67	1,814,806.67	40.30724251	-104.37448141
7,200.00	90.00	359.63	6,357.00	629.74	-1,073.94	14,639,331.66	1,814,805.32	40.30751710	-104.37448371
7,300.00	90.00	359.63	6,357.00	729.74	-1,074.58	14,639,431.65	1,814,803.97	40.30779169	-104.37448602
7,400.00	90.00	359.63	6,357.00	829.74	-1,075.22	14,639,531.64	1,814,802.62	40.30806627	-104.37448833
7,500.00	90.00	359.63	6,357.00	929.73	-1,075.86	14,639,631.63	1,814,801.27	40.30834086	-104.37449064
7,600.00	90.00	359.63	6,357.00	1,029.73	-1,076.50	14,639,731.62	1,814,799.92	40.30861545	-104.37449294
7,700.00	90.00	359.63	6,357.00	1,129.73	-1,077.14	14,639,831.61	1,814,798.57	40.30889004	-104.37449525
7,800.00	90.00	359.63	6,357.00	1,229.73	-1,077.78	14,639,931.60	1,814,797.22	40.30916463	-104.37449756
7,900.00	90.00	359.63	6,357.00	1,329.73	-1,078.42	14,640,031.59	1,814,795.88	40.30943922	-104.37449987
8,000.00	90.00	359.63	6,357.00	1,429.72	-1,079.05	14,640,131.58	1,814,794.53	40.30971381	-104.37450217
8,100.00	90.00	359.63	6,357.00	1,529.72	-1,079.69	14,640,231.58	1,814,793.18	40.30998840	-104.37450448
8,200.00	90.00	359.63	6,357.00	1,629.72	-1,080.33	14,640,331.57	1,814,791.83	40.31026298	-104.37450679
8,300.00	90.00	359.63	6,357.00	1,729.72	-1,080.97	14,640,431.56	1,814,790.48	40.31053757	-104.37450910
8,400.00	90.00	359.63	6,357.00	1,829.72	-1,081.61	14,640,531.55	1,814,789.13	40.31081216	-104.37451140
8,500.00	90.00	359.63	6,357.00	1,929.71	-1,082.25	14,640,631.54	1,814,787.78	40.31108675	-104.37451371
8,600.00	90.00	359.63	6,357.00	2,029.71	-1,082.89	14,640,731.53	1,814,786.43	40.31136134	-104.37451602
8,700.00	90.00	359.63	6,357.00	2,129.71	-1,083.53	14,640,831.52	1,814,785.08	40.31163593	-104.37451832
8,800.00	90.00	359.63	6,357.00	2,229.71	-1,084.17	14,640,931.51	1,814,783.73	40.31191052	-104.37452063
8,900.00	90.00	359.63	6,357.00	2,329.71	-1,084.80	14,641,031.50	1,814,782.38	40.31218511	-104.37452294
9,000.00	90.00	359.63	6,357.00	2,429.70	-1,085.44	14,641,131.49	1,814,781.03	40.31245969	-104.37452525
9,100.00	90.00	359.63	6,357.00	2,529.70	-1,086.08	14,641,231.48	1,814,779.68	40.31273428	-104.37452755
9,200.00	90.00	359.63	6,357.00	2,629.70	-1,086.72	14,641,331.47	1,814,778.33	40.31300886	-104.37452986
9,300.00	90.00	359.63	6,357.00	2,729.70	-1,087.36	14,641,431.46	1,814,776.98	40.31328345	-104.37453217
9,400.00	90.00	359.63	6,357.00	2,829.70	-1,088.00	14,641,531.45	1,814,775.63	40.31355804	-104.37453448
9,500.00	90.00	359.63	6,357.00	2,929.69	-1,088.64	14,641,631.45	1,814,774.28	40.31383263	-104.37453678
9,600.00	90.00	359.63	6,357.00	3,029.69	-1,089.28	14,641,731.44	1,814,772.93	40.31410722	-104.37453909
9,700.00	90.00	359.63	6,357.00	3,129.69	-1,089.92	14,641,831.43	1,814,771.58	40.31438181	-104.37454140

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Middlepark 18-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4557+24 @ 4581.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4557+24 @ 4581.00ft
Site:	Section 18-T04N-R62W	North Reference:	True
Well:	Middlepark 18-21-3L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,800.00	90.00	359.63	6,357.00	3,229.69	-1,090.55	14,641,931.42	1,814,770.24	40.31465639	-104.37454371
9,900.00	90.00	359.63	6,357.00	3,329.69	-1,091.19	14,642,031.41	1,814,768.89	40.31493098	-104.37454601
10,000.00	90.00	359.63	6,357.00	3,429.68	-1,091.83	14,642,131.40	1,814,767.54	40.31520557	-104.37454832
10,100.00	90.00	359.63	6,357.00	3,529.68	-1,092.47	14,642,231.39	1,814,766.19	40.31548016	-104.37455063
10,200.00	90.00	359.63	6,357.00	3,629.68	-1,093.11	14,642,331.38	1,814,764.84	40.31575475	-104.37455293
10,300.00	90.00	359.63	6,357.00	3,729.68	-1,093.75	14,642,431.37	1,814,763.49	40.31602934	-104.37455524
10,400.00	90.00	359.63	6,357.00	3,829.68	-1,094.39	14,642,531.36	1,814,762.14	40.31630393	-104.37455755
10,500.00	90.00	359.63	6,357.00	3,929.67	-1,095.03	14,642,631.35	1,814,760.79	40.31657851	-104.37455986
10,600.00	90.00	359.63	6,357.00	4,029.67	-1,095.67	14,642,731.34	1,814,759.44	40.31685310	-104.37456216
10,700.00	90.00	359.63	6,357.00	4,129.67	-1,096.30	14,642,831.33	1,814,758.09	40.31712769	-104.37456447
10,800.00	90.00	359.63	6,357.00	4,229.67	-1,096.94	14,642,931.32	1,814,756.74	40.31740228	-104.37456678
10,900.00	90.00	359.63	6,357.00	4,329.67	-1,097.58	14,643,031.32	1,814,755.39	40.31767687	-104.37456909
11,000.00	90.00	359.63	6,357.00	4,429.66	-1,098.22	14,643,131.31	1,814,754.04	40.31795146	-104.37457139
11,100.00	90.00	359.63	6,357.00	4,529.66	-1,098.86	14,643,231.30	1,814,752.69	40.31822604	-104.37457370
11,200.00	90.00	359.63	6,357.00	4,629.66	-1,099.50	14,643,331.29	1,814,751.34	40.31850063	-104.37457601
11,300.00	90.00	359.63	6,357.00	4,729.66	-1,100.14	14,643,431.28	1,814,749.99	40.31877522	-104.37457832
11,400.00	90.00	359.63	6,357.00	4,829.66	-1,100.78	14,643,531.27	1,814,748.64	40.31904981	-104.37458062
11,500.00	90.00	359.63	6,357.00	4,929.65	-1,101.42	14,643,631.26	1,814,747.29	40.31932440	-104.37458293
11,600.00	90.00	359.63	6,357.00	5,029.65	-1,102.06	14,643,731.25	1,814,745.94	40.31959899	-104.37458524
11,700.00	90.00	359.63	6,357.00	5,129.65	-1,102.69	14,643,831.24	1,814,744.60	40.31987357	-104.37458755
11,800.00	90.00	359.63	6,357.00	5,229.65	-1,103.33	14,643,931.23	1,814,743.25	40.32014816	-104.37458985
11,900.00	90.00	359.63	6,357.00	5,329.64	-1,103.97	14,644,031.22	1,814,741.90	40.32042275	-104.37459216
12,000.00	90.00	359.63	6,357.00	5,429.64	-1,104.61	14,644,131.21	1,814,740.55	40.32069734	-104.37459447
12,100.00	90.00	359.63	6,357.00	5,529.64	-1,105.25	14,644,231.20	1,814,739.20	40.32097193	-104.37459678
12,200.00	90.00	359.63	6,357.00	5,629.64	-1,105.89	14,644,331.19	1,814,737.85	40.32124652	-104.37459908
12,300.00	90.00	359.63	6,357.00	5,729.64	-1,106.53	14,644,431.18	1,814,736.50	40.32152110	-104.37460139
12,400.00	90.00	359.63	6,357.00	5,829.63	-1,107.17	14,644,531.18	1,814,735.15	40.32179569	-104.37460370
12,500.00	90.00	359.63	6,357.00	5,929.63	-1,107.81	14,644,631.17	1,814,733.80	40.32207028	-104.37460601
12,600.00	90.00	359.63	6,357.00	6,029.63	-1,108.44	14,644,731.16	1,814,732.45	40.32234487	-104.37460831
12,700.00	90.00	359.63	6,357.00	6,129.63	-1,109.08	14,644,831.15	1,814,731.10	40.32261946	-104.37461062
12,800.00	90.00	359.63	6,357.00	6,229.63	-1,109.72	14,644,931.14	1,814,729.75	40.32289405	-104.37461293
12,900.00	90.00	359.63	6,357.00	6,329.62	-1,110.36	14,645,031.13	1,814,728.40	40.32316863	-104.37461524
13,000.00	90.00	359.63	6,357.00	6,429.62	-1,111.00	14,645,131.12	1,814,727.05	40.32344322	-104.37461754
13,100.00	90.00	359.63	6,357.00	6,529.62	-1,111.64	14,645,231.11	1,814,725.70	40.32371781	-104.37461985
13,200.00	90.00	359.63	6,357.00	6,629.62	-1,112.28	14,645,331.10	1,814,724.35	40.32399240	-104.37462216
13,300.00	90.00	359.63	6,357.00	6,729.62	-1,112.92	14,645,431.09	1,814,723.00	40.32426699	-104.37462447
13,400.00	90.00	359.63	6,357.00	6,829.61	-1,113.56	14,645,531.08	1,814,721.65	40.32454158	-104.37462677
13,500.00	90.00	359.63	6,357.00	6,929.61	-1,114.19	14,645,631.07	1,814,720.30	40.32481616	-104.37462908
13,600.00	90.00	359.63	6,357.00	7,029.61	-1,114.83	14,645,731.06	1,814,718.96	40.32509075	-104.37463139
13,700.00	90.00	359.63	6,357.00	7,129.61	-1,115.47	14,645,831.05	1,814,717.61	40.32536534	-104.37463370
13,800.00	90.00	359.63	6,357.00	7,229.61	-1,116.11	14,645,931.05	1,814,716.26	40.32563993	-104.37463600
13,900.00	90.00	359.63	6,357.00	7,329.60	-1,116.75	14,646,031.04	1,814,714.91	40.32591452	-104.37463831
14,000.00	90.00	359.63	6,357.00	7,429.60	-1,117.39	14,646,131.03	1,814,713.56	40.32618910	-104.37464062
14,100.00	90.00	359.63	6,357.00	7,529.60	-1,118.03	14,646,231.02	1,814,712.21	40.32646369	-104.37464293
14,200.00	90.00	359.63	6,357.00	7,629.60	-1,118.67	14,646,331.01	1,814,710.86	40.32673828	-104.37464523
14,300.00	90.00	359.63	6,357.00	7,729.60	-1,119.31	14,646,431.00	1,814,709.51	40.32701287	-104.37464754
14,400.00	90.00	359.63	6,357.00	7,829.59	-1,119.94	14,646,530.99	1,814,708.16	40.32728746	-104.37464985
14,500.00	90.00	359.63	6,357.00	7,929.59	-1,120.58	14,646,630.98	1,814,706.81	40.32756204	-104.37465216
14,600.00	90.00	359.63	6,357.00	8,029.59	-1,121.22	14,646,730.97	1,814,705.46	40.32783663	-104.37465446
14,700.00	90.00	359.63	6,357.00	8,129.59	-1,121.86	14,646,830.96	1,814,704.11	40.32811122	-104.37465677
14,800.00	90.00	359.63	6,357.00	8,229.59	-1,122.50	14,646,930.95	1,814,702.76	40.32838581	-104.37465908
14,900.00	90.00	359.63	6,357.00	8,329.58	-1,123.14	14,647,030.94	1,814,701.41	40.32866040	-104.37466139
15,000.00	90.00	359.63	6,357.00	8,429.58	-1,123.78	14,647,130.93	1,814,700.06	40.32893498	-104.37466369
15,100.00	90.00	359.63	6,357.00	8,529.58	-1,124.42	14,647,230.92	1,814,698.71	40.32920957	-104.37466600
15,200.00	90.00	359.63	6,357.00	8,629.58	-1,125.06	14,647,330.92	1,814,697.36	40.32948416	-104.37466831

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Middlepark 18-21-3L
Company:	Confluence Resources	TVD Reference:	RKB=4557+24 @ 4581.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=4557+24 @ 4581.00ft
Site:	Section 18-T04N-R62W	North Reference:	True
Well:	Middlepark 18-21-3L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,300.00	90.00	359.63	6,357.00	8,729.58	-1,125.69	14,647,430.91	1,814,696.01	40.32975875	-104.37467062
15,400.00	90.00	359.63	6,357.00	8,829.57	-1,126.33	14,647,530.90	1,814,694.66	40.33003334	-104.37467292
15,500.00	90.00	359.63	6,357.00	8,929.57	-1,126.97	14,647,630.89	1,814,693.32	40.33030792	-104.37467523
15,600.00	90.00	359.63	6,357.00	9,029.57	-1,127.61	14,647,730.88	1,814,691.97	40.33058251	-104.37467754
15,700.00	90.00	359.63	6,357.00	9,129.57	-1,128.25	14,647,830.87	1,814,690.62	40.33085710	-104.37467985
15,800.00	90.00	359.63	6,357.00	9,229.57	-1,128.89	14,647,930.86	1,814,689.27	40.33113169	-104.37468216
15,900.00	90.00	359.63	6,357.00	9,329.56	-1,129.53	14,648,030.85	1,814,687.92	40.33140627	-104.37468446
16,000.00	90.00	359.63	6,357.00	9,429.56	-1,130.17	14,648,130.84	1,814,686.57	40.33168086	-104.37468677
16,100.00	90.00	359.63	6,357.00	9,529.56	-1,130.81	14,648,230.83	1,814,685.22	40.33195545	-104.37468908
16,200.00	90.00	359.63	6,357.00	9,629.56	-1,131.44	14,648,330.82	1,814,683.87	40.33223004	-104.37469139
16,300.00	90.00	359.63	6,357.00	9,729.56	-1,132.08	14,648,430.81	1,814,682.52	40.33250463	-104.37469369
16,400.00	90.00	359.63	6,357.00	9,829.55	-1,132.72	14,648,530.80	1,814,681.17	40.33277921	-104.37469600
16,473.72	90.00	359.63	6,357.00	9,903.27	-1,133.19	14,648,604.52	1,814,680.18	40.33298164	-104.37469770
PBHL/TD 16473.72 MD/6356.65 TVD									
16,474.06	90.00	359.63	6,357.00	9,903.61	-1,133.20	14,648,604.86	1,814,680.17	40.33298258	-104.37469771

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									
Middlepark 18-21-3L BH	0.00	0.00	6,357.00	9,903.61	-1,133.20	14,648,604.86	1,814,680.17	40.33298258	-104.37469771
- plan hits target center									
- Point									
Middlepark 18-21-3L LP	0.00	0.00	6,357.00	263.74	-1,071.61	14,638,965.69	1,814,810.26	40.30651208	-104.37447527
- plan hits target center									
- Point									

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 1°/100' build
2,794.91	2,784.75	-35.08	-103.81	Begin 15.90° tangent
5,884.30	5,755.97	-306.04	-905.53	Begin 10°/100' build
6,833.66	6,356.65	263.74	-1,071.61	LP Begin 90° lateral
16,473.72	6,356.65	9,903.61	-1,133.20	PBHL/TD 16473.72 MD/6356.65 TVD