

**Weld County, Colorado
Section 34-T01N-R65W
Desha 4-3-1L
plan1**

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5000.00	0.00	0.00	5000.00	0.00	0.00	0.00	0.00	KOP Begin 10°/100' build
3	5527.42	52.74	255.09	5456.03	-58.18	-218.47	10.00	105.05	Begin 52.74° tangent
4	7880.61	52.74	255.09	6880.67	-540.15	-2028.34	0.00	975.30	Begin 10°/100' build/turn
5	8662.98	89.97	179.91	7163.00	-1101.51	-2385.92	10.00	1601.84	LP Begin 89.97° lateral section
6	18015.76	89.97	179.91	7168.00	-10454.28	-2370.44	0.00	10719.65	PBHL/TD 18015.76 MD/7168.00 TVD

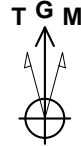
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP Desha 4-3-1L 470 FNL 1520 FEL	7163.00	-1101.51	-2385.9214526638.49	1734264.90	39.9925470	-104.66489269	
BHL Desha 4-3-1L 470 FSL 1520 FEL	7168.00	-10454.28	-2370.4414517285.74	1734280.38	39.97357046	-104.66496291	

Desha 4-3-1L			
Surf loc: 620 FSL 893 FWL Sec34-T01N-R65W			
NAD83 Colorado - HARN			
Universal Transverse Mercator (US Survey Feet)			
Zone 13N (108 W to 102 W)			
RKB-5140+25 @ 5165.00ft			
Northing	Easting	Latitude	Longitude
14527740.00	1736650.82	40.00225466	-104.65635818

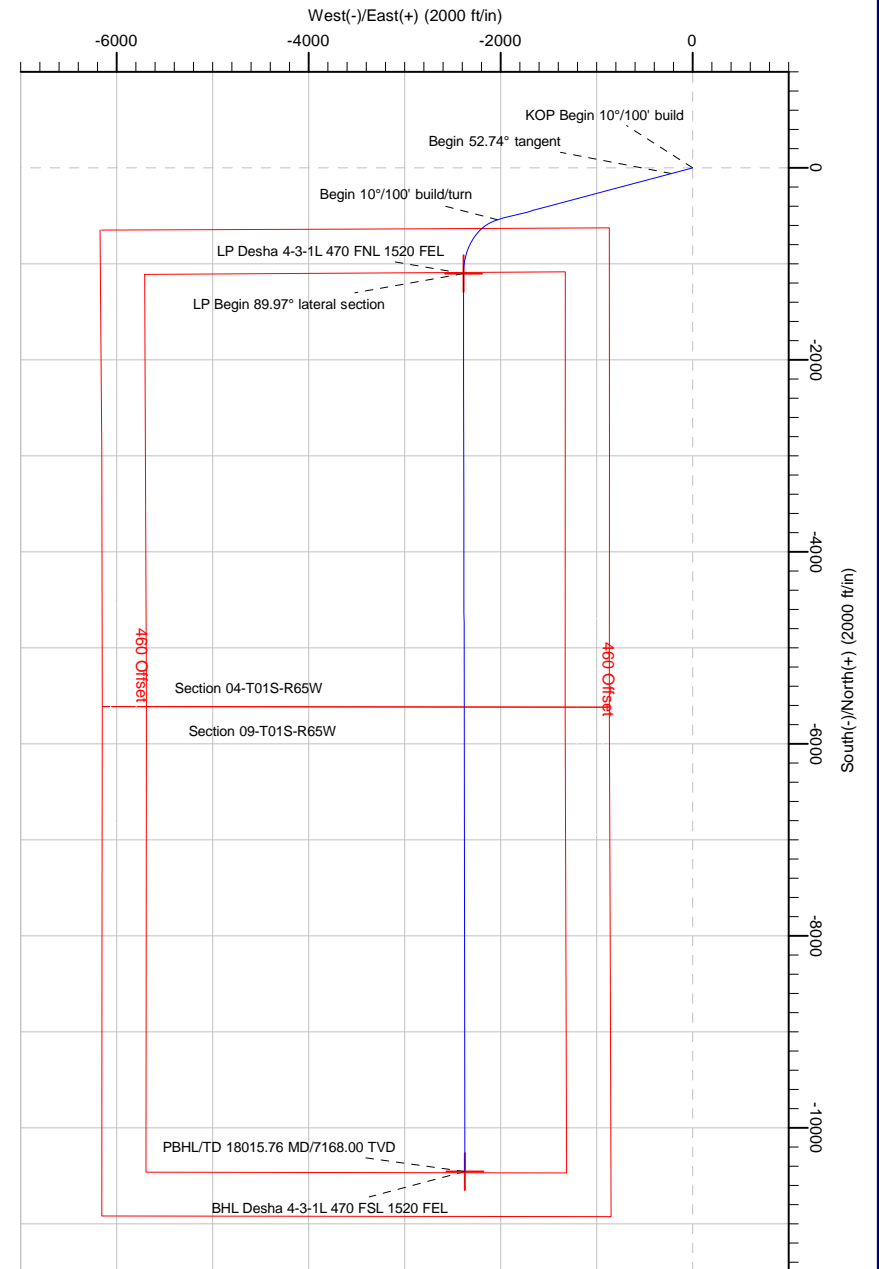
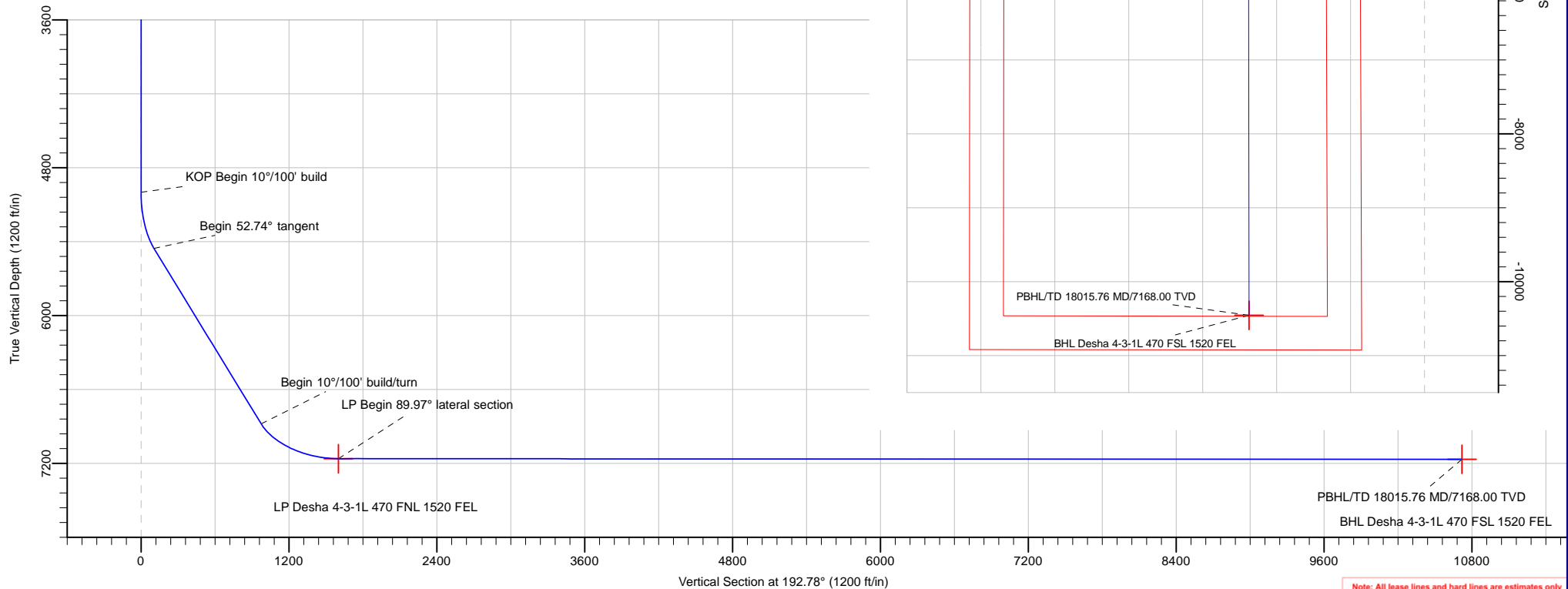
Azimuth Corrections:

To convert a Magnetic Direction to a True Direction, Add 8.27° East



Azimuths to Grid North
True North: -0.22°
Magnetic North: 8.05°

Magnetic Field
Strength: 52109.7snT
Dip Angle: 66.45°
Date: 8/29/2017
Model: HDGM



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 Desha 4-3-1L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-3-1L	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 34-T01N-R65W			
Site Position:		Northing:	14,527,892.80 usft	Latitude:	40.00267560
From:	Map	Easting:	1,736,525.30 usft	Longitude:	-104.65680429
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.22 °

Well	Desha 4-3-1L, Surf loc: 620 FSL 893 FWL Sec34-T01N-R65W					
Well Position	+N/-S	-152.80 ft	Northing:	14,527,740.00 usft	Latitude:	40.00225466
	+E/-W	125.52 ft	Easting:	1,736,650.82 usft	Longitude:	-104.65635818
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,140.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/29/2017	8.27	66.45	52,109.70000000

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	192.78

Plan Survey Tool Program	Date	8/29/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,015.76	plan1 (Original Hole)	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,527.42	52.74	255.09	5,456.03	-58.18	-218.47	10.00	10.00	0.00	255.09	
7,880.61	52.74	255.09	6,880.67	-540.15	-2,028.34	0.00	0.00	0.00	0.00	
8,662.98	89.97	179.91	7,163.00	-1,101.51	-2,385.92	10.00	4.76	-9.61	-80.93	LP Desha 4-3-1L 470
18,015.76	89.97	179.91	7,168.00	-10,454.28	-2,370.44	0.00	0.00	0.00	0.00	BHL Desha 4-3-1L 47

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-1L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-3-1L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 10°/100' build									
5,100.00	10.00	255.09	5,099.49	-2.24	-8.41	4.04	10.00	10.00	0.00
5,200.00	20.00	255.09	5,195.96	-8.89	-33.39	16.06	10.00	10.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-1L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-3-1L	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)
5,300.00	30.00	255.09	5,286.48	-19.75	-74.18	35.67	10.00	10.00	0.00
5,400.00	40.00	255.09	5,368.29	-34.49	-129.53	62.28	10.00	10.00	0.00
5,500.00	50.00	255.09	5,438.91	-52.67	-197.78	95.10	10.00	10.00	0.00
5,527.42	52.74	255.09	5,456.03	-58.18	-218.47	105.05	10.00	10.00	0.00
Begin 52.74° tangent									
5,600.00	52.74	255.09	5,499.97	-73.04	-274.29	131.89	0.00	0.00	0.00
5,700.00	52.74	255.09	5,560.51	-93.53	-351.21	168.87	0.00	0.00	0.00
5,800.00	52.74	255.09	5,621.05	-114.01	-428.12	205.85	0.00	0.00	0.00
5,900.00	52.74	255.09	5,681.59	-134.49	-505.03	242.84	0.00	0.00	0.00
6,000.00	52.74	255.09	5,742.13	-154.97	-581.94	279.82	0.00	0.00	0.00
6,100.00	52.74	255.09	5,802.67	-175.45	-658.85	316.80	0.00	0.00	0.00
6,200.00	52.74	255.09	5,863.21	-195.93	-735.76	353.78	0.00	0.00	0.00
6,300.00	52.74	255.09	5,923.75	-216.41	-812.67	390.76	0.00	0.00	0.00
6,400.00	52.74	255.09	5,984.29	-236.90	-889.58	427.75	0.00	0.00	0.00
6,500.00	52.74	255.09	6,044.84	-257.38	-966.49	464.73	0.00	0.00	0.00
6,600.00	52.74	255.09	6,105.38	-277.86	-1,043.41	501.71	0.00	0.00	0.00
6,700.00	52.74	255.09	6,165.92	-298.34	-1,120.32	538.69	0.00	0.00	0.00
6,800.00	52.74	255.09	6,226.46	-318.82	-1,197.23	575.67	0.00	0.00	0.00
6,900.00	52.74	255.09	6,287.00	-339.30	-1,274.14	612.65	0.00	0.00	0.00
7,000.00	52.74	255.09	6,347.54	-359.78	-1,351.05	649.64	0.00	0.00	0.00
7,100.00	52.74	255.09	6,408.08	-380.27	-1,427.96	686.62	0.00	0.00	0.00
7,200.00	52.74	255.09	6,468.62	-400.75	-1,504.87	723.60	0.00	0.00	0.00
7,300.00	52.74	255.09	6,529.16	-421.23	-1,581.78	760.58	0.00	0.00	0.00
7,400.00	52.74	255.09	6,589.70	-441.71	-1,658.69	797.56	0.00	0.00	0.00
7,500.00	52.74	255.09	6,650.24	-462.19	-1,735.61	834.54	0.00	0.00	0.00
7,600.00	52.74	255.09	6,710.78	-482.67	-1,812.52	871.53	0.00	0.00	0.00
7,700.00	52.74	255.09	6,771.33	-503.15	-1,889.43	908.51	0.00	0.00	0.00
7,800.00	52.74	255.09	6,831.87	-523.63	-1,966.34	945.49	0.00	0.00	0.00
7,880.61	52.74	255.09	6,880.67	-540.15	-2,028.34	975.30	0.00	0.00	0.00
Begin 10°/100' build/turn									
7,900.00	53.07	252.69	6,892.36	-544.44	-2,043.19	982.77	10.00	1.70	-12.35
8,000.00	55.50	240.74	6,950.87	-576.55	-2,117.49	1,030.52	10.00	2.43	-11.96
8,100.00	59.02	229.60	7,005.06	-624.60	-2,186.26	1,092.59	10.00	3.52	-11.14
8,200.00	63.43	219.35	7,053.28	-687.12	-2,247.42	1,167.09	10.00	4.40	-10.25
8,300.00	68.50	209.91	7,094.08	-762.22	-2,299.10	1,251.75	10.00	5.08	-9.44
8,400.00	74.07	201.14	7,126.20	-847.61	-2,339.74	1,344.02	10.00	5.57	-8.77
8,500.00	79.98	192.85	7,148.68	-940.70	-2,368.09	1,441.07	10.00	5.90	-8.29
8,600.00	86.08	184.86	7,160.83	-1,038.65	-2,383.31	1,539.96	10.00	6.10	-7.99
8,662.98	89.97	179.91	7,163.00	-1,101.51	-2,385.92	1,601.84	10.00	6.17	-7.87
LP Begin 89.97° lateral section									
8,700.00	89.97	179.91	7,163.02	-1,138.53	-2,385.86	1,637.93	0.00	0.00	0.00
8,800.00	89.97	179.91	7,163.07	-1,238.53	-2,385.70	1,735.42	0.00	0.00	0.00
8,900.00	89.97	179.91	7,163.13	-1,338.53	-2,385.53	1,832.91	0.00	0.00	0.00
9,000.00	89.97	179.91	7,163.18	-1,438.53	-2,385.37	1,930.40	0.00	0.00	0.00
9,100.00	89.97	179.91	7,163.23	-1,538.53	-2,385.20	2,027.88	0.00	0.00	0.00
9,200.00	89.97	179.91	7,163.29	-1,638.53	-2,385.04	2,125.37	0.00	0.00	0.00
9,300.00	89.97	179.91	7,163.34	-1,738.53	-2,384.87	2,222.86	0.00	0.00	0.00
9,400.00	89.97	179.91	7,163.39	-1,838.53	-2,384.70	2,320.35	0.00	0.00	0.00
9,500.00	89.97	179.91	7,163.45	-1,938.53	-2,384.54	2,417.83	0.00	0.00	0.00
9,600.00	89.97	179.91	7,163.50	-2,038.53	-2,384.37	2,515.32	0.00	0.00	0.00
9,700.00	89.97	179.91	7,163.55	-2,138.53	-2,384.21	2,612.81	0.00	0.00	0.00
9,800.00	89.97	179.91	7,163.61	-2,238.53	-2,384.04	2,710.30	0.00	0.00	0.00
9,900.00	89.97	179.91	7,163.66	-2,338.53	-2,383.88	2,807.79	0.00	0.00	0.00

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Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-3-1L	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	89.97	179.91	7,163.71	-2,438.53	-2,383.71	2,905.27	0.00	0.00	0.00
10,100.00	89.97	179.91	7,163.77	-2,538.53	-2,383.55	3,002.76	0.00	0.00	0.00
10,200.00	89.97	179.91	7,163.82	-2,638.53	-2,383.38	3,100.25	0.00	0.00	0.00
10,300.00	89.97	179.91	7,163.88	-2,738.53	-2,383.22	3,197.74	0.00	0.00	0.00
10,400.00	89.97	179.91	7,163.93	-2,838.53	-2,383.05	3,295.22	0.00	0.00	0.00
10,500.00	89.97	179.91	7,163.98	-2,938.53	-2,382.88	3,392.71	0.00	0.00	0.00
10,600.00	89.97	179.91	7,164.04	-3,038.53	-2,382.72	3,490.20	0.00	0.00	0.00
10,700.00	89.97	179.91	7,164.09	-3,138.53	-2,382.55	3,587.69	0.00	0.00	0.00
10,800.00	89.97	179.91	7,164.14	-3,238.53	-2,382.39	3,685.17	0.00	0.00	0.00
10,900.00	89.97	179.91	7,164.20	-3,338.53	-2,382.22	3,782.66	0.00	0.00	0.00
11,000.00	89.97	179.91	7,164.25	-3,438.53	-2,382.06	3,880.15	0.00	0.00	0.00
11,100.00	89.97	179.91	7,164.30	-3,538.53	-2,381.89	3,977.64	0.00	0.00	0.00
11,200.00	89.97	179.91	7,164.36	-3,638.53	-2,381.73	4,075.13	0.00	0.00	0.00
11,300.00	89.97	179.91	7,164.41	-3,738.53	-2,381.56	4,172.61	0.00	0.00	0.00
11,400.00	89.97	179.91	7,164.46	-3,838.53	-2,381.39	4,270.10	0.00	0.00	0.00
11,500.00	89.97	179.91	7,164.52	-3,938.53	-2,381.23	4,367.59	0.00	0.00	0.00
11,600.00	89.97	179.91	7,164.57	-4,038.53	-2,381.06	4,465.08	0.00	0.00	0.00
11,700.00	89.97	179.91	7,164.62	-4,138.53	-2,380.90	4,562.56	0.00	0.00	0.00
11,800.00	89.97	179.91	7,164.68	-4,238.53	-2,380.73	4,660.05	0.00	0.00	0.00
11,900.00	89.97	179.91	7,164.73	-4,338.53	-2,380.57	4,757.54	0.00	0.00	0.00
12,000.00	89.97	179.91	7,164.78	-4,438.53	-2,380.40	4,855.03	0.00	0.00	0.00
12,100.00	89.97	179.91	7,164.84	-4,538.53	-2,380.24	4,952.51	0.00	0.00	0.00
12,200.00	89.97	179.91	7,164.89	-4,638.53	-2,380.07	5,050.00	0.00	0.00	0.00
12,300.00	89.97	179.91	7,164.94	-4,738.53	-2,379.91	5,147.49	0.00	0.00	0.00
12,400.00	89.97	179.91	7,165.00	-4,838.53	-2,379.74	5,244.98	0.00	0.00	0.00
12,500.00	89.97	179.91	7,165.05	-4,938.53	-2,379.57	5,342.46	0.00	0.00	0.00
12,600.00	89.97	179.91	7,165.10	-5,038.53	-2,379.41	5,439.95	0.00	0.00	0.00
12,700.00	89.97	179.91	7,165.16	-5,138.52	-2,379.24	5,537.44	0.00	0.00	0.00
12,800.00	89.97	179.91	7,165.21	-5,238.52	-2,379.08	5,634.93	0.00	0.00	0.00
12,900.00	89.97	179.91	7,165.27	-5,338.52	-2,378.91	5,732.42	0.00	0.00	0.00
13,000.00	89.97	179.91	7,165.32	-5,438.52	-2,378.75	5,829.90	0.00	0.00	0.00
13,100.00	89.97	179.91	7,165.37	-5,538.52	-2,378.58	5,927.39	0.00	0.00	0.00
13,200.00	89.97	179.91	7,165.43	-5,638.52	-2,378.42	6,024.88	0.00	0.00	0.00
13,300.00	89.97	179.91	7,165.48	-5,738.52	-2,378.25	6,122.37	0.00	0.00	0.00
13,400.00	89.97	179.91	7,165.53	-5,838.52	-2,378.08	6,219.85	0.00	0.00	0.00
13,500.00	89.97	179.91	7,165.59	-5,938.52	-2,377.92	6,317.34	0.00	0.00	0.00
13,600.00	89.97	179.91	7,165.64	-6,038.52	-2,377.75	6,414.83	0.00	0.00	0.00
13,700.00	89.97	179.91	7,165.69	-6,138.52	-2,377.59	6,512.32	0.00	0.00	0.00
13,800.00	89.97	179.91	7,165.75	-6,238.52	-2,377.42	6,609.80	0.00	0.00	0.00
13,900.00	89.97	179.91	7,165.80	-6,338.52	-2,377.26	6,707.29	0.00	0.00	0.00
14,000.00	89.97	179.91	7,165.85	-6,438.52	-2,377.09	6,804.78	0.00	0.00	0.00
14,100.00	89.97	179.91	7,165.91	-6,538.52	-2,376.93	6,902.27	0.00	0.00	0.00
14,200.00	89.97	179.91	7,165.96	-6,638.52	-2,376.76	6,999.76	0.00	0.00	0.00
14,300.00	89.97	179.91	7,166.01	-6,738.52	-2,376.59	7,097.24	0.00	0.00	0.00
14,400.00	89.97	179.91	7,166.07	-6,838.52	-2,376.43	7,194.73	0.00	0.00	0.00
14,500.00	89.97	179.91	7,166.12	-6,938.52	-2,376.26	7,292.22	0.00	0.00	0.00
14,600.00	89.97	179.91	7,166.17	-7,038.52	-2,376.10	7,389.71	0.00	0.00	0.00
14,700.00	89.97	179.91	7,166.23	-7,138.52	-2,375.93	7,487.19	0.00	0.00	0.00
14,800.00	89.97	179.91	7,166.28	-7,238.52	-2,375.77	7,584.68	0.00	0.00	0.00
14,900.00	89.97	179.91	7,166.33	-7,338.52	-2,375.60	7,682.17	0.00	0.00	0.00
15,000.00	89.97	179.91	7,166.39	-7,438.52	-2,375.44	7,779.66	0.00	0.00	0.00
15,100.00	89.97	179.91	7,166.44	-7,538.52	-2,375.27	7,877.14	0.00	0.00	0.00
15,200.00	89.97	179.91	7,166.49	-7,638.52	-2,375.11	7,974.63	0.00	0.00	0.00
15,300.00	89.97	179.91	7,166.55	-7,738.52	-2,374.94	8,072.12	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-1L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-3-1L	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	89.97	179.91	7,166.60	-7,838.52	-2,374.77	8,169.61	0.00	0.00	0.00
15,500.00	89.97	179.91	7,166.66	-7,938.52	-2,374.61	8,267.10	0.00	0.00	0.00
15,600.00	89.97	179.91	7,166.71	-8,038.52	-2,374.44	8,364.58	0.00	0.00	0.00
15,700.00	89.97	179.91	7,166.76	-8,138.52	-2,374.28	8,462.07	0.00	0.00	0.00
15,800.00	89.97	179.91	7,166.82	-8,238.52	-2,374.11	8,559.56	0.00	0.00	0.00
15,900.00	89.97	179.91	7,166.87	-8,338.52	-2,373.95	8,657.05	0.00	0.00	0.00
16,000.00	89.97	179.91	7,166.92	-8,438.52	-2,373.78	8,754.53	0.00	0.00	0.00
16,100.00	89.97	179.91	7,166.98	-8,538.52	-2,373.62	8,852.02	0.00	0.00	0.00
16,200.00	89.97	179.91	7,167.03	-8,638.52	-2,373.45	8,949.51	0.00	0.00	0.00
16,300.00	89.97	179.91	7,167.08	-8,738.52	-2,373.28	9,047.00	0.00	0.00	0.00
16,400.00	89.97	179.91	7,167.14	-8,838.52	-2,373.12	9,144.48	0.00	0.00	0.00
16,500.00	89.97	179.91	7,167.19	-8,938.52	-2,372.95	9,241.97	0.00	0.00	0.00
16,600.00	89.97	179.91	7,167.24	-9,038.52	-2,372.79	9,339.46	0.00	0.00	0.00
16,700.00	89.97	179.91	7,167.30	-9,138.52	-2,372.62	9,436.95	0.00	0.00	0.00
16,800.00	89.97	179.91	7,167.35	-9,238.52	-2,372.46	9,534.43	0.00	0.00	0.00
16,900.00	89.97	179.91	7,167.40	-9,338.52	-2,372.29	9,631.92	0.00	0.00	0.00
17,000.00	89.97	179.91	7,167.46	-9,438.52	-2,372.13	9,729.41	0.00	0.00	0.00
17,100.00	89.97	179.91	7,167.51	-9,538.52	-2,371.96	9,826.90	0.00	0.00	0.00
17,200.00	89.97	179.91	7,167.56	-9,638.52	-2,371.79	9,924.39	0.00	0.00	0.00
17,300.00	89.97	179.91	7,167.62	-9,738.52	-2,371.63	10,021.87	0.00	0.00	0.00
17,400.00	89.97	179.91	7,167.67	-9,838.52	-2,371.46	10,119.36	0.00	0.00	0.00
17,500.00	89.97	179.91	7,167.72	-9,938.52	-2,371.30	10,216.85	0.00	0.00	0.00
17,600.00	89.97	179.91	7,167.78	-10,038.52	-2,371.13	10,314.34	0.00	0.00	0.00
17,700.00	89.97	179.91	7,167.83	-10,138.52	-2,370.97	10,411.82	0.00	0.00	0.00
17,800.00	89.97	179.91	7,167.88	-10,238.52	-2,370.80	10,509.31	0.00	0.00	0.00
17,900.00	89.97	179.91	7,167.94	-10,338.52	-2,370.64	10,606.80	0.00	0.00	0.00
18,000.00	89.97	179.91	7,167.99	-10,438.52	-2,370.47	10,704.29	0.00	0.00	0.00
18,015.76	89.97	179.91	7,168.00	-10,454.28	-2,370.44	10,719.65	0.00	0.00	0.00
PBHL/TD 18015.76 MD/7168.00 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
LP Desha 4-3-1L 470 FM - plan hits target center - Point	0.00	0.00	7,163.00	-1,101.51	-2,385.92	14,526,638.49	1,734,264.90	39.99925470	-104.66489269
BHL Desha 4-3-1L 470 F - plan hits target center - Point	0.00	0.00	7,168.00	-10,454.28	-2,370.44	14,517,285.74	1,734,280.38	39.97357046	-104.66496290

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
5,000.00	5,000.00	0.00	0.00	KOP Begin 10°/100' build
5,527.42	5,456.03	-58.18	-218.47	Begin 52.74° tangent
7,880.61	6,880.67	-540.15	-2,028.34	Begin 10°/100' build/turn
8,662.98	7,163.00	-1,101.51	-2,385.92	LP Begin 89.97° lateral section
18,015.76	7,168.00	-10,454.28	-2,370.44	PBHL/TD 18015.76 MD/7168.00 TVD

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-1L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-3-1L	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 34-T01N-R65W			
Site Position:		Northing:	14,527,892.80 usft	Latitude:	40.00267560
From:	Map	Easting:	1,736,525.30 usft	Longitude:	-104.65680429
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.22 °

Well	Desha 4-3-1L, Surf loc: 620 FSL 893 FWL Sec34-T01N-R65W					
Well Position	+N/-S	0.00 ft	Northing:	14,527,740.00 usft	Latitude:	40.00225466
	+E/-W	0.00 ft	Easting:	1,736,650.82 usft	Longitude:	-104.65635818
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,140.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/29/2017	8.27	66.45	52,109.70000000

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	192.78

Plan Survey Tool Program	Date	8/29/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,015.76 plan1 (Original Hole)		

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,527.42	52.74	255.09	5,456.03	-58.18	-218.47	10.00	10.00	0.00	255.09	
7,880.61	52.74	255.09	6,880.67	-540.15	-2,028.34	0.00	0.00	0.00	0.00	
8,662.98	89.97	179.91	7,163.00	-1,101.51	-2,385.92	10.00	4.76	-9.61	-80.93	LP Desha 4-3-1L 470
18,015.76	89.97	179.91	7,168.00	-10,454.28	-2,370.44	0.00	0.00	0.00	0.00	BHL Desha 4-3-1L 47

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-1L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-3-1L	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	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
100.00	0.00	0.00	100.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
200.00	0.00	0.00	200.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
300.00	0.00	0.00	300.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
400.00	0.00	0.00	400.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
500.00	0.00	0.00	500.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
600.00	0.00	0.00	600.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
700.00	0.00	0.00	700.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
800.00	0.00	0.00	800.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
900.00	0.00	0.00	900.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,600.00	0.00	0.00	2,600.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,700.00	0.00	0.00	2,700.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,800.00	0.00	0.00	2,800.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
2,900.00	0.00	0.00	2,900.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,000.00	0.00	0.00	3,000.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,100.00	0.00	0.00	3,100.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,200.00	0.00	0.00	3,200.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,300.00	0.00	0.00	3,300.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,400.00	0.00	0.00	3,400.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,500.00	0.00	0.00	3,500.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,600.00	0.00	0.00	3,600.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,700.00	0.00	0.00	3,700.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,800.00	0.00	0.00	3,800.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
3,900.00	0.00	0.00	3,900.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,000.00	0.00	0.00	4,000.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,100.00	0.00	0.00	4,100.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,200.00	0.00	0.00	4,200.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,300.00	0.00	0.00	4,300.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,400.00	0.00	0.00	4,400.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,500.00	0.00	0.00	4,500.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,600.00	0.00	0.00	4,600.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,700.00	0.00	0.00	4,700.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,800.00	0.00	0.00	4,800.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
4,900.00	0.00	0.00	4,900.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
5,000.00	0.00	0.00	5,000.00	0.00	0.00	14,527,740.00	1,736,650.82	40.00225466	-104.65635818
KOP Begin 10°/100' build									
5,100.00	10.00	255.09	5,099.49	-2.24	-8.41	14,527,737.76	1,736,642.41	40.00224860	-104.65638824
5,200.00	20.00	255.09	5,195.96	-8.89	-33.39	14,527,731.11	1,736,617.43	40.00223060	-104.65647753

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-1L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-3-1L	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
5,300.00	30.00	255.09	5,286.48	-19.75	-74.18	14,527,720.25	1,736,576.64	40.00220120	-104.65662332
5,400.00	40.00	255.09	5,368.29	-34.49	-129.53	14,527,705.51	1,736,521.29	40.00216131	-104.65682119
5,500.00	50.00	255.09	5,438.91	-52.67	-197.78	14,527,687.34	1,736,453.04	40.00211212	-104.65706512
5,527.42	52.74	255.09	5,456.03	-58.18	-218.47	14,527,681.83	1,736,432.35	40.00209721	-104.65713910
Begin 52.74° tangent									
5,600.00	52.74	255.09	5,499.97	-73.04	-274.29	14,527,666.96	1,736,376.52	40.00205697	-104.65733864
5,700.00	52.74	255.09	5,560.51	-93.53	-351.21	14,527,646.48	1,736,299.61	40.00200154	-104.65761355
5,800.00	52.74	255.09	5,621.05	-114.01	-428.12	14,527,626.00	1,736,222.70	40.00194611	-104.65788847
5,900.00	52.74	255.09	5,681.59	-134.49	-505.03	14,527,605.52	1,736,145.79	40.00189067	-104.65816338
6,000.00	52.74	255.09	5,742.13	-154.97	-581.94	14,527,585.04	1,736,068.88	40.00183524	-104.65843830
6,100.00	52.74	255.09	5,802.67	-175.45	-658.85	14,527,564.55	1,735,991.97	40.00177980	-104.65871321
6,200.00	52.74	255.09	5,863.21	-195.93	-735.76	14,527,544.07	1,735,915.06	40.00172436	-104.65898813
6,300.00	52.74	255.09	5,923.75	-216.41	-812.67	14,527,523.59	1,735,838.15	40.00166893	-104.65926304
6,400.00	52.74	255.09	5,984.29	-236.90	-889.58	14,527,503.11	1,735,761.24	40.00161349	-104.65953795
6,500.00	52.74	255.09	6,044.84	-257.38	-966.49	14,527,482.63	1,735,684.33	40.00155805	-104.65981287
6,600.00	52.74	255.09	6,105.38	-277.86	-1,043.41	14,527,462.15	1,735,607.42	40.00150261	-104.66008778
6,700.00	52.74	255.09	6,165.92	-298.34	-1,120.32	14,527,441.67	1,735,530.50	40.00144717	-104.66036269
6,800.00	52.74	255.09	6,226.46	-318.82	-1,197.23	14,527,421.18	1,735,453.59	40.00139173	-104.66063760
6,900.00	52.74	255.09	6,287.00	-339.30	-1,274.14	14,527,400.70	1,735,376.68	40.00133629	-104.66091251
7,000.00	52.74	255.09	6,347.54	-359.78	-1,351.05	14,527,380.22	1,735,299.77	40.00128085	-104.66118742
7,100.00	52.74	255.09	6,408.08	-380.27	-1,427.96	14,527,359.74	1,735,222.86	40.00122541	-104.66146234
7,200.00	52.74	255.09	6,468.62	-400.75	-1,504.87	14,527,339.26	1,735,145.95	40.00116996	-104.66173724
7,300.00	52.74	255.09	6,529.16	-421.23	-1,581.78	14,527,318.78	1,735,069.04	40.00111452	-104.66201215
7,400.00	52.74	255.09	6,589.70	-441.71	-1,658.69	14,527,298.30	1,734,992.13	40.00105908	-104.66228706
7,500.00	52.74	255.09	6,650.24	-462.19	-1,735.61	14,527,277.81	1,734,915.22	40.00100363	-104.66256197
7,600.00	52.74	255.09	6,710.78	-482.67	-1,812.52	14,527,257.33	1,734,838.31	40.00094819	-104.66283688
7,700.00	52.74	255.09	6,771.33	-503.15	-1,889.43	14,527,236.85	1,734,761.39	40.00089274	-104.66311179
7,800.00	52.74	255.09	6,831.87	-523.63	-1,966.34	14,527,216.37	1,734,684.48	40.00083729	-104.66338669
7,880.61	52.74	255.09	6,880.67	-540.15	-2,028.34	14,527,199.86	1,734,622.48	40.00079260	-104.66360830
Begin 10°/100' build/turn									
7,900.00	53.07	252.69	6,892.36	-544.44	-2,043.19	14,527,195.57	1,734,607.63	40.00078097	-104.66366141
8,000.00	55.50	240.74	6,950.87	-576.55	-2,117.49	14,527,163.45	1,734,533.33	40.00069354	-104.66392714
8,100.00	59.02	229.60	7,005.06	-624.60	-2,186.26	14,527,115.40	1,734,464.56	40.00056230	-104.66417335
8,200.00	63.43	219.35	7,053.28	-687.12	-2,247.42	14,527,052.88	1,734,403.40	40.00039124	-104.66439256
8,300.00	68.50	209.91	7,094.08	-762.22	-2,299.10	14,526,977.78	1,734,351.72	40.00018555	-104.66457811
8,400.00	74.07	201.14	7,126.20	-847.61	-2,339.74	14,526,892.40	1,734,311.09	39.99995148	-104.66472436
8,500.00	79.98	192.85	7,148.68	-940.70	-2,368.09	14,526,799.31	1,734,282.73	39.99969614	-104.66482686
8,600.00	86.08	184.86	7,160.83	-1,038.65	-2,383.31	14,526,701.35	1,734,267.51	39.99942729	-104.66488251
8,662.98	89.97	179.91	7,163.00	-1,101.51	-2,385.92	14,526,638.49	1,734,264.90	39.99925470	-104.66489269
LP Begin 89.97° lateral section									
8,700.00	89.97	179.91	7,163.02	-1,138.53	-2,385.86	14,526,601.48	1,734,264.96	39.99915304	-104.66489297
8,800.00	89.97	179.91	7,163.07	-1,238.53	-2,385.70	14,526,501.48	1,734,265.13	39.99887843	-104.66489372
8,900.00	89.97	179.91	7,163.13	-1,338.53	-2,385.53	14,526,401.48	1,734,265.29	39.99860381	-104.66489447
9,000.00	89.97	179.91	7,163.18	-1,438.53	-2,385.37	14,526,301.48	1,734,265.46	39.99832920	-104.66489522
9,100.00	89.97	179.91	7,163.23	-1,538.53	-2,385.20	14,526,201.48	1,734,265.62	39.99805458	-104.66489597
9,200.00	89.97	179.91	7,163.29	-1,638.53	-2,385.04	14,526,101.48	1,734,265.79	39.99777997	-104.66489672
9,300.00	89.97	179.91	7,163.34	-1,738.53	-2,384.87	14,526,001.48	1,734,265.95	39.99750535	-104.66489747
9,400.00	89.97	179.91	7,163.39	-1,838.53	-2,384.70	14,525,901.48	1,734,266.12	39.99723074	-104.66489823
9,500.00	89.97	179.91	7,163.45	-1,938.53	-2,384.54	14,525,801.48	1,734,266.28	39.99695612	-104.66489898
9,600.00	89.97	179.91	7,163.50	-2,038.53	-2,384.37	14,525,701.48	1,734,266.45	39.99668150	-104.66489973
9,700.00	89.97	179.91	7,163.55	-2,138.53	-2,384.21	14,525,601.48	1,734,266.62	39.99640689	-104.66490048
9,800.00	89.97	179.91	7,163.61	-2,238.53	-2,384.04	14,525,501.48	1,734,266.78	39.99613227	-104.66490123
9,900.00	89.97	179.91	7,163.66	-2,338.53	-2,383.88	14,525,401.48	1,734,266.95	39.99585766	-104.66490198
10,000.00	89.97	179.91	7,163.71	-2,438.53	-2,383.71	14,525,301.48	1,734,267.11	39.99558304	-104.66490273

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-1L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-3-1L	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	89.97	179.91	7,163.77	-2,538.53	-2,383.55	14,525,201.48	1,734,267.28	39.99530843	-104.66490348
10,200.00	89.97	179.91	7,163.82	-2,638.53	-2,383.38	14,525,101.48	1,734,267.44	39.99503381	-104.66490424
10,300.00	89.97	179.91	7,163.88	-2,738.53	-2,383.22	14,525,001.48	1,734,267.61	39.99475920	-104.66490499
10,400.00	89.97	179.91	7,163.93	-2,838.53	-2,383.05	14,524,901.48	1,734,267.77	39.99448458	-104.66490574
10,500.00	89.97	179.91	7,163.98	-2,938.53	-2,382.88	14,524,801.48	1,734,267.94	39.99420996	-104.66490649
10,600.00	89.97	179.91	7,164.04	-3,038.53	-2,382.72	14,524,701.48	1,734,268.10	39.99393535	-104.66490724
10,700.00	89.97	179.91	7,164.09	-3,138.53	-2,382.55	14,524,601.48	1,734,268.27	39.99366073	-104.66490799
10,800.00	89.97	179.91	7,164.14	-3,238.53	-2,382.39	14,524,501.48	1,734,268.44	39.99338612	-104.66490874
10,900.00	89.97	179.91	7,164.20	-3,338.53	-2,382.22	14,524,401.48	1,734,268.60	39.99311150	-104.66490949
11,000.00	89.97	179.91	7,164.25	-3,438.53	-2,382.06	14,524,301.48	1,734,268.77	39.99283689	-104.66491024
11,100.00	89.97	179.91	7,164.30	-3,538.53	-2,381.89	14,524,201.48	1,734,268.93	39.99256227	-104.66491100
11,200.00	89.97	179.91	7,164.36	-3,638.53	-2,381.73	14,524,101.48	1,734,269.10	39.99228765	-104.66491175
11,300.00	89.97	179.91	7,164.41	-3,738.53	-2,381.56	14,524,001.49	1,734,269.26	39.99201304	-104.66491250
11,400.00	89.97	179.91	7,164.46	-3,838.53	-2,381.39	14,523,901.49	1,734,269.43	39.99173842	-104.66491325
11,500.00	89.97	179.91	7,164.52	-3,938.53	-2,381.23	14,523,801.49	1,734,269.59	39.99146381	-104.66491400
11,600.00	89.97	179.91	7,164.57	-4,038.53	-2,381.06	14,523,701.49	1,734,269.76	39.99118919	-104.66491475
11,700.00	89.97	179.91	7,164.62	-4,138.53	-2,380.90	14,523,601.49	1,734,269.93	39.99091458	-104.66491550
11,800.00	89.97	179.91	7,164.68	-4,238.53	-2,380.73	14,523,501.49	1,734,270.09	39.99063996	-104.66491625
11,900.00	89.97	179.91	7,164.73	-4,338.53	-2,380.57	14,523,401.49	1,734,270.26	39.99036534	-104.66491700
12,000.00	89.97	179.91	7,164.78	-4,438.53	-2,380.40	14,523,301.49	1,734,270.42	39.99009073	-104.66491775
12,100.00	89.97	179.91	7,164.84	-4,538.53	-2,380.24	14,523,201.49	1,734,270.59	39.98981611	-104.66491851
12,200.00	89.97	179.91	7,164.89	-4,638.53	-2,380.07	14,523,101.49	1,734,270.75	39.98954150	-104.66491926
12,300.00	89.97	179.91	7,164.94	-4,738.53	-2,379.91	14,523,001.49	1,734,270.92	39.98926688	-104.66492001
12,400.00	89.97	179.91	7,165.00	-4,838.53	-2,379.74	14,522,901.49	1,734,271.08	39.98899226	-104.66492076
12,500.00	89.97	179.91	7,165.05	-4,938.53	-2,379.57	14,522,801.49	1,734,271.25	39.98871765	-104.66492151
12,600.00	89.97	179.91	7,165.10	-5,038.53	-2,379.41	14,522,701.49	1,734,271.42	39.98844303	-104.66492226
12,700.00	89.97	179.91	7,165.16	-5,138.52	-2,379.24	14,522,601.49	1,734,271.58	39.98816842	-104.66492301
12,800.00	89.97	179.91	7,165.21	-5,238.52	-2,379.08	14,522,501.49	1,734,271.75	39.98789380	-104.66492376
12,900.00	89.97	179.91	7,165.27	-5,338.52	-2,378.91	14,522,401.49	1,734,271.91	39.98761918	-104.66492451
13,000.00	89.97	179.91	7,165.32	-5,438.52	-2,378.75	14,522,301.49	1,734,272.08	39.98734457	-104.66492526
13,100.00	89.97	179.91	7,165.37	-5,538.52	-2,378.58	14,522,201.49	1,734,272.24	39.98706995	-104.66492601
13,200.00	89.97	179.91	7,165.43	-5,638.52	-2,378.42	14,522,101.49	1,734,272.41	39.98679534	-104.66492677
13,300.00	89.97	179.91	7,165.48	-5,738.52	-2,378.25	14,522,001.49	1,734,272.57	39.98652072	-104.66492752
13,400.00	89.97	179.91	7,165.53	-5,838.52	-2,378.08	14,521,901.49	1,734,272.74	39.98624610	-104.66492827
13,500.00	89.97	179.91	7,165.59	-5,938.52	-2,377.92	14,521,801.49	1,734,272.90	39.98597149	-104.66492902
13,600.00	89.97	179.91	7,165.64	-6,038.52	-2,377.75	14,521,701.49	1,734,273.07	39.98569687	-104.66492977
13,700.00	89.97	179.91	7,165.69	-6,138.52	-2,377.59	14,521,601.49	1,734,273.24	39.98542226	-104.66493052
13,800.00	89.97	179.91	7,165.75	-6,238.52	-2,377.42	14,521,501.49	1,734,273.40	39.98514764	-104.66493127
13,900.00	89.97	179.91	7,165.80	-6,338.52	-2,377.26	14,521,401.49	1,734,273.57	39.98487302	-104.66493202
14,000.00	89.97	179.91	7,165.85	-6,438.52	-2,377.09	14,521,301.49	1,734,273.73	39.98459841	-104.66493277
14,100.00	89.97	179.91	7,165.91	-6,538.52	-2,376.93	14,521,201.49	1,734,273.90	39.98432379	-104.66493352
14,200.00	89.97	179.91	7,165.96	-6,638.52	-2,376.76	14,521,101.50	1,734,274.06	39.98404918	-104.66493427
14,300.00	89.97	179.91	7,166.01	-6,738.52	-2,376.59	14,521,001.50	1,734,274.23	39.98377456	-104.66493502
14,400.00	89.97	179.91	7,166.07	-6,838.52	-2,376.43	14,520,901.50	1,734,274.39	39.98349994	-104.66493577
14,500.00	89.97	179.91	7,166.12	-6,938.52	-2,376.26	14,520,801.50	1,734,274.56	39.98322533	-104.66493652
14,600.00	89.97	179.91	7,166.17	-7,038.52	-2,376.10	14,520,701.50	1,734,274.73	39.98295071	-104.66493727
14,700.00	89.97	179.91	7,166.23	-7,138.52	-2,375.93	14,520,601.50	1,734,274.89	39.98267610	-104.66493803
14,800.00	89.97	179.91	7,166.28	-7,238.52	-2,375.77	14,520,501.50	1,734,275.06	39.98240148	-104.66493878
14,900.00	89.97	179.91	7,166.33	-7,338.52	-2,375.60	14,520,401.50	1,734,275.22	39.98212686	-104.66493953
15,000.00	89.97	179.91	7,166.39	-7,438.52	-2,375.44	14,520,301.50	1,734,275.39	39.98185225	-104.66494028
15,100.00	89.97	179.91	7,166.44	-7,538.52	-2,375.27	14,520,201.50	1,734,275.55	39.98157763	-104.66494103
15,200.00	89.97	179.91	7,166.49	-7,638.52	-2,375.11	14,520,101.50	1,734,275.72	39.98130301	-104.66494178
15,300.00	89.97	179.91	7,166.55	-7,738.52	-2,374.94	14,520,001.50	1,734,275.88	39.98102840	-104.66494253
15,400.00	89.97	179.91	7,166.60	-7,838.52	-2,374.77	14,519,901.50	1,734,276.05	39.98075378	-104.66494328
15,500.00	89.97	179.91	7,166.66	-7,938.52	-2,374.61	14,519,801.50	1,734,276.21	39.98047917	-104.66494403

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-3-1L
Company:	Confluence Resources	TVD Reference:	RKB=5140+25 @ 5165.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5140+25 @ 5165.00ft
Site:	Section 34-T01N-R65W	North Reference:	Grid
Well:	Desha 4-3-1L	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	89.97	179.91	7,166.71	-8,038.52	-2,374.44	14,519,701.50	1,734,276.38	39.98020455	-104.66494478
15,700.00	89.97	179.91	7,166.76	-8,138.52	-2,374.28	14,519,601.50	1,734,276.55	39.97992993	-104.66494553
15,800.00	89.97	179.91	7,166.82	-8,238.52	-2,374.11	14,519,501.50	1,734,276.71	39.97965532	-104.66494628
15,900.00	89.97	179.91	7,166.87	-8,338.52	-2,373.95	14,519,401.50	1,734,276.88	39.97938070	-104.66494703
16,000.00	89.97	179.91	7,166.92	-8,438.52	-2,373.78	14,519,301.50	1,734,277.04	39.97910608	-104.66494778
16,100.00	89.97	179.91	7,166.98	-8,538.52	-2,373.62	14,519,201.50	1,734,277.21	39.97883147	-104.66494853
16,200.00	89.97	179.91	7,167.03	-8,638.52	-2,373.45	14,519,101.50	1,734,277.37	39.97855685	-104.66494928
16,300.00	89.97	179.91	7,167.08	-8,738.52	-2,373.28	14,519,001.50	1,734,277.54	39.97828223	-104.66495003
16,400.00	89.97	179.91	7,167.14	-8,838.52	-2,373.12	14,518,901.50	1,734,277.70	39.97800762	-104.66495078
16,500.00	89.97	179.91	7,167.19	-8,938.52	-2,372.95	14,518,801.50	1,734,277.87	39.97773300	-104.66495153
16,600.00	89.97	179.91	7,167.24	-9,038.52	-2,372.79	14,518,701.50	1,734,278.04	39.97745838	-104.66495228
16,700.00	89.97	179.91	7,167.30	-9,138.52	-2,372.62	14,518,601.50	1,734,278.20	39.97718377	-104.66495303
16,800.00	89.97	179.91	7,167.35	-9,238.52	-2,372.46	14,518,501.50	1,734,278.37	39.97690915	-104.66495378
16,900.00	89.97	179.91	7,167.40	-9,338.52	-2,372.29	14,518,401.50	1,734,278.53	39.97663454	-104.66495453
17,000.00	89.97	179.91	7,167.46	-9,438.52	-2,372.13	14,518,301.51	1,734,278.70	39.97635992	-104.66495528
17,100.00	89.97	179.91	7,167.51	-9,538.52	-2,371.96	14,518,201.51	1,734,278.86	39.97608530	-104.66495603
17,200.00	89.97	179.91	7,167.56	-9,638.52	-2,371.79	14,518,101.51	1,734,279.03	39.97581069	-104.66495678
17,300.00	89.97	179.91	7,167.62	-9,738.52	-2,371.63	14,518,001.51	1,734,279.19	39.97553607	-104.66495754
17,400.00	89.97	179.91	7,167.67	-9,838.52	-2,371.46	14,517,901.51	1,734,279.36	39.97526145	-104.66495829
17,500.00	89.97	179.91	7,167.72	-9,938.52	-2,371.30	14,517,801.51	1,734,279.53	39.97498684	-104.66495904
17,600.00	89.97	179.91	7,167.78	-10,038.52	-2,371.13	14,517,701.51	1,734,279.69	39.97471222	-104.66495979
17,700.00	89.97	179.91	7,167.83	-10,138.52	-2,370.97	14,517,601.51	1,734,279.86	39.97443760	-104.66496054
17,800.00	89.97	179.91	7,167.88	-10,238.52	-2,370.80	14,517,501.51	1,734,280.02	39.97416299	-104.66496129
17,900.00	89.97	179.91	7,167.94	-10,338.52	-2,370.64	14,517,401.51	1,734,280.19	39.97388837	-104.66496204
18,000.00	89.97	179.91	7,167.99	-10,438.52	-2,370.47	14,517,301.51	1,734,280.35	39.97361375	-104.66496279
18,015.76	89.97	179.91	7,168.00	-10,454.28	-2,370.44	14,517,285.74	1,734,280.38	39.97357046	-104.66496290
PBHL/TD 18015.76 MD/7168.00 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
LP Desha 4-3-1L 470 FM - plan hits target center - Point	0.00	0.00	7,163.00	-1,101.51	-2,385.92	14,526,638.49	1,734,264.90	39.99925470	-104.66489269
BHL Desha 4-3-1L 470 F - plan hits target center - Point	0.00	0.00	7,168.00	-10,454.28	-2,370.44	14,517,285.74	1,734,280.38	39.97357046	-104.66496290

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
5,000.00	5,000.00	0.00	0.00	KOP Begin 10°/100' build	
5,527.42	5,456.03	-58.18	-218.47	Begin 52.74° tangent	
7,880.61	6,880.67	-540.15	-2,028.34	Begin 10°/100' build/turn	
8,662.98	7,163.00	-1,101.51	-2,385.92	LP Begin 89.97° lateral section	
18,015.76	7,168.00	-10,454.28	-2,370.44	PBHL/TD 18015.76 MD/7168.00 TVD	