

Weld County, Colorado
Section 33-T01N-R65W
Desha 4-06-4L
plan1

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSec	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	5461.86	46.19	113.49	5413.44	-70.26	161.68	10.00	100.32	Begin 46.19° tangent
4	8020.77	46.19	113.49	7185.01	-806.20	1855.17	0.00	1151.15	Begin 10°/100' build/turn
5	8753.41	89.86	180.12	7481.00	-1354.74	2136.25	10.00	1743.82	LP Begin 89.86° lateral section
6	18093.17	89.86	180.12	7504.00	-10694.45	2117.27	0.00	10902.02	PBHL/TD 18093.17 MD/7504.00 TVD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP Desha 4-06-4L 470 FNL 2580 FWL	7481.00	-1354.74	2136.2514526629.70	1733063.46	39.99924289	-104.66918277	
BHL Desha 4-06-4L 470 FSL 2580 FWL	7504.00	-10694.45	2117.2714517290.00	1733078.35	39.97359448	-104.66925331	

Desha 4-06-4L
Surf loc: 885 FSL 450 FWL Section 33-T01N-R65W

NAD83 Colorado - HARN
Universal Transverse Mercator (US Survey Feet)
Zone 13N (108 W to 102 W)
RKB=5081+25 @ 5106.00ft

Northing	Easting	Latitude	Longitude
14527976.68	1730922.32	40.00296346	-104.67681066

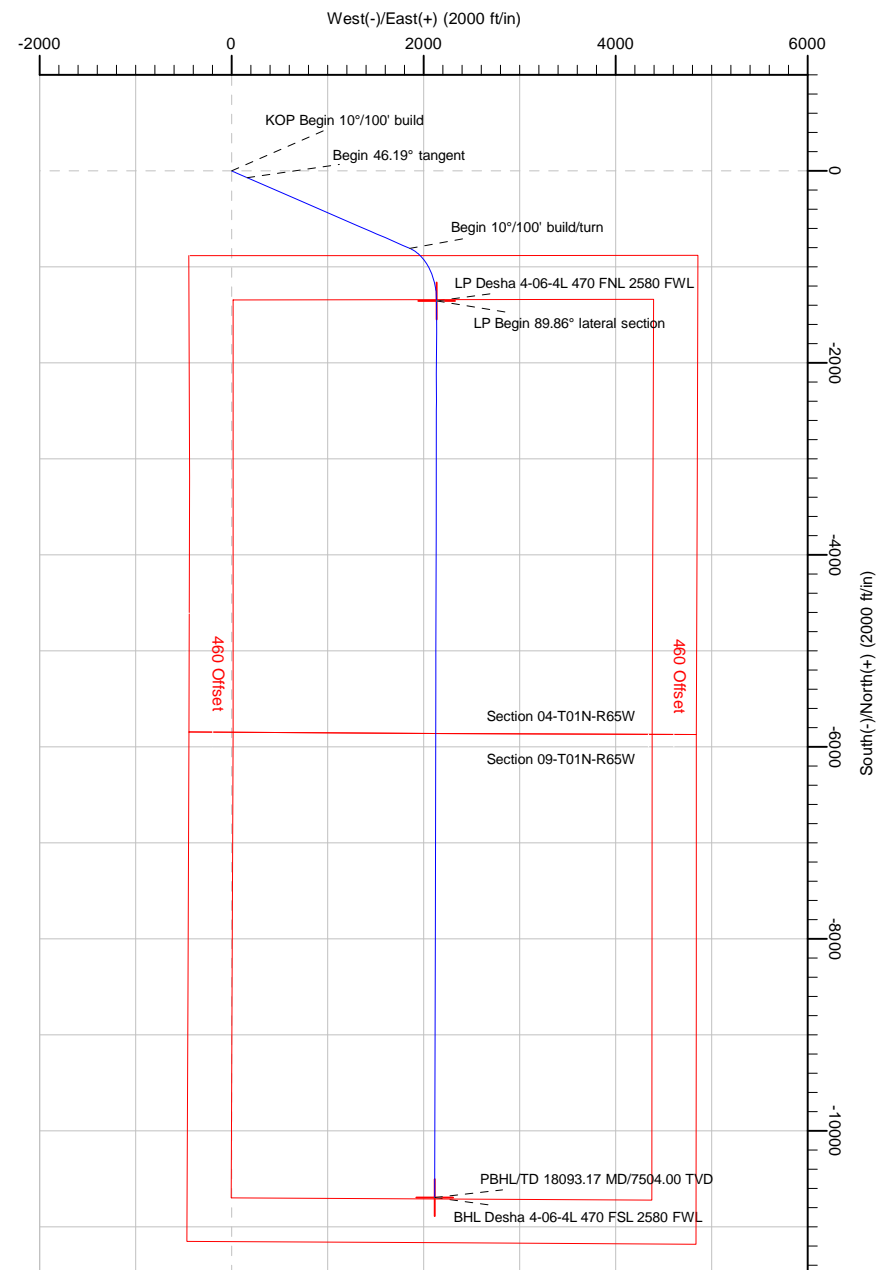
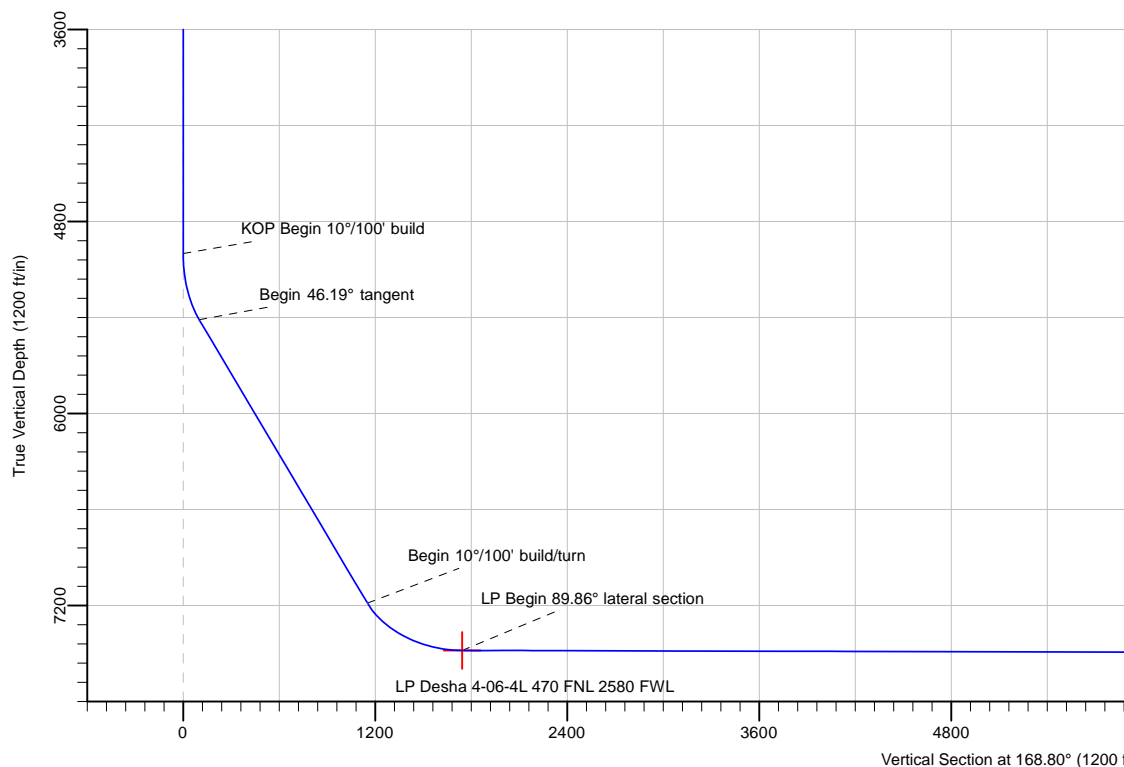
Azimuth Corrections:

To convert a Magnetic Direction to a True Direction, Add 8.28° East



Azimuths to True North
Magnetic North: 8.28°

Magnetic Field
Strength: 52146.2snT
Dip Angle: 66.45°
Date: 5/29/2017
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 4-06-4L
Company:	Confluence Resources	TVD Reference:	RKB=5081+25 @ 5106.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5081+25 @ 5106.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Project	Weld County, Colorado		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD83 Colorado - HARN		
Map Zone:	Zone 13N (108 W to 102 W)		

Site		Section 33-T01N-R65W			
Site Position:		Northing:	14,527,751.12 usft	Latitude:	40.00234552
From:	Map	Easting:	1,730,774.27 usft	Longitude:	-104.67734224
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.21 °

Well	Desha 4-06-4L, Surf loc: 885 FSL 450 FWL Section 33-T01N-R65W					
Well Position	+N/-S	225.02 ft	Northing:	14,527,976.68 usft	Latitude:	40.00296347
	+E/-W	148.87 ft	Easting:	1,730,922.32 usft	Longitude:	-104.67681065
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,081.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/29/2017	8.28	66.45	52,146.20000000

Design	plan1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	168.80

Plan Survey Tool Program	Date	8/29/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,093.17	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	
5,461.86	46.19	113.49	5,413.44	-70.26	161.68	10.00	10.00	0.00	113.49	
8,020.77	46.19	113.49	7,185.01	-806.20	1,855.17	0.00	0.00	0.00	0.00	
8,753.41	89.86	180.12	7,481.00	-1,354.74	2,136.25	10.00	5.96	9.09	73.45	LP Desha 4-06-4L 471
18,093.17	89.86	180.12	7,504.00	-10,694.45	2,117.27	0.00	0.00	0.00	0.00	BHL Desha 4-06-4L 4

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-4L
Company:	Confluence Resources	TVD Reference:	RKB=5081+25 @ 5106.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5081+25 @ 5106.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	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	113.49	5,099.49	-3.47	7.98	4.95	10.00	10.00	0.00
5,200.00	20.00	113.49	5,195.96	-13.77	31.69	19.66	10.00	10.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-4L
Company:	Confluence Resources	TVD Reference:	RKB=5081+25 @ 5106.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5081+25 @ 5106.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,300.00	30.00	113.49	5,286.48	-30.59	70.40	43.68	10.00	10.00	0.00
5,400.00	40.00	113.49	5,368.29	-53.43	122.94	76.28	10.00	10.00	0.00
5,461.86	46.19	113.49	5,413.44	-70.26	161.68	100.32	10.00	10.00	0.00
Begin 46.19° tangent									
5,500.00	46.19	113.49	5,439.85	-81.23	186.92	115.99	0.00	0.00	0.00
5,600.00	46.19	113.49	5,509.08	-109.99	253.10	157.05	0.00	0.00	0.00
5,700.00	46.19	113.49	5,578.31	-138.75	319.28	198.12	0.00	0.00	0.00
5,800.00	46.19	113.49	5,647.54	-167.51	385.46	239.18	0.00	0.00	0.00
5,900.00	46.19	113.49	5,716.77	-196.27	451.64	280.25	0.00	0.00	0.00
6,000.00	46.19	113.49	5,786.00	-225.03	517.82	321.31	0.00	0.00	0.00
6,100.00	46.19	113.49	5,855.24	-253.79	584.00	362.38	0.00	0.00	0.00
6,200.00	46.19	113.49	5,924.47	-282.55	650.18	403.44	0.00	0.00	0.00
6,300.00	46.19	113.49	5,993.70	-311.31	716.36	444.51	0.00	0.00	0.00
6,400.00	46.19	113.49	6,062.93	-340.07	782.55	485.57	0.00	0.00	0.00
6,500.00	46.19	113.49	6,132.16	-368.83	848.73	526.64	0.00	0.00	0.00
6,600.00	46.19	113.49	6,201.39	-397.59	914.91	567.70	0.00	0.00	0.00
6,700.00	46.19	113.49	6,270.63	-426.35	981.09	608.77	0.00	0.00	0.00
6,800.00	46.19	113.49	6,339.86	-455.11	1,047.27	649.83	0.00	0.00	0.00
6,900.00	46.19	113.49	6,409.09	-483.87	1,113.45	690.90	0.00	0.00	0.00
7,000.00	46.19	113.49	6,478.32	-512.63	1,179.63	731.97	0.00	0.00	0.00
7,100.00	46.19	113.49	6,547.55	-541.39	1,245.81	773.03	0.00	0.00	0.00
7,200.00	46.19	113.49	6,616.78	-570.15	1,311.99	814.10	0.00	0.00	0.00
7,300.00	46.19	113.49	6,686.02	-598.91	1,378.17	855.16	0.00	0.00	0.00
7,400.00	46.19	113.49	6,755.25	-627.67	1,444.35	896.23	0.00	0.00	0.00
7,500.00	46.19	113.49	6,824.48	-656.43	1,510.53	937.29	0.00	0.00	0.00
7,600.00	46.19	113.49	6,893.71	-685.19	1,576.71	978.36	0.00	0.00	0.00
7,700.00	46.19	113.49	6,962.94	-713.95	1,642.89	1,019.42	0.00	0.00	0.00
7,800.00	46.19	113.49	7,032.17	-742.71	1,709.07	1,060.49	0.00	0.00	0.00
7,900.00	46.19	113.49	7,101.41	-771.47	1,775.25	1,101.55	0.00	0.00	0.00
8,000.00	46.19	113.49	7,170.64	-800.23	1,841.43	1,142.62	0.00	0.00	0.00
8,020.77	46.19	113.49	7,185.01	-806.20	1,855.17	1,151.15	0.00	0.00	0.00
Begin 10°/100' build/turn									
8,100.00	48.90	123.59	7,238.57	-834.16	1,906.34	1,188.50	10.00	3.43	12.75
8,200.00	53.46	135.03	7,301.37	-883.55	1,966.27	1,248.59	10.00	4.55	11.44
8,300.00	58.97	145.08	7,357.06	-947.26	2,019.33	1,321.39	10.00	5.52	10.05
8,400.00	65.18	153.96	7,403.93	-1,023.36	2,063.89	1,404.70	10.00	6.21	8.88
8,500.00	71.86	161.97	7,440.58	-1,109.53	2,098.61	1,495.98	10.00	6.68	8.00
8,600.00	78.85	169.37	7,465.88	-1,203.16	2,122.43	1,592.45	10.00	6.99	7.40
8,700.00	86.00	176.42	7,479.07	-1,301.41	2,134.63	1,691.19	10.00	7.16	7.05
8,753.41	89.86	180.12	7,481.00	-1,354.74	2,136.25	1,743.82	10.00	7.22	6.93
LP Begin 89.86° lateral section									
8,800.00	89.86	180.12	7,481.11	-1,401.33	2,136.15	1,789.51	0.00	0.00	0.00
8,900.00	89.86	180.12	7,481.36	-1,501.33	2,135.95	1,887.56	0.00	0.00	0.00
9,000.00	89.86	180.12	7,481.61	-1,601.33	2,135.74	1,985.62	0.00	0.00	0.00
9,100.00	89.86	180.12	7,481.85	-1,701.33	2,135.54	2,083.68	0.00	0.00	0.00
9,200.00	89.86	180.12	7,482.10	-1,801.33	2,135.34	2,181.73	0.00	0.00	0.00
9,300.00	89.86	180.12	7,482.35	-1,901.33	2,135.14	2,279.79	0.00	0.00	0.00
9,400.00	89.86	180.12	7,482.59	-2,001.33	2,134.93	2,377.84	0.00	0.00	0.00
9,500.00	89.86	180.12	7,482.84	-2,101.33	2,134.73	2,475.90	0.00	0.00	0.00
9,600.00	89.86	180.12	7,483.08	-2,201.33	2,134.53	2,573.96	0.00	0.00	0.00
9,700.00	89.86	180.12	7,483.33	-2,301.33	2,134.32	2,672.01	0.00	0.00	0.00
9,800.00	89.86	180.12	7,483.58	-2,401.32	2,134.12	2,770.07	0.00	0.00	0.00
9,900.00	89.86	180.12	7,483.82	-2,501.32	2,133.92	2,868.12	0.00	0.00	0.00

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-4L
Company:	Confluence Resources	TVD Reference:	RKB=5081+25 @ 5106.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5081+25 @ 5106.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
10,000.00	89.86	180.12	7,484.07	-2,601.32	2,133.71	2,966.18	0.00	0.00	0.00	
10,100.00	89.86	180.12	7,484.32	-2,701.32	2,133.51	3,064.24	0.00	0.00	0.00	
10,200.00	89.86	180.12	7,484.56	-2,801.32	2,133.31	3,162.29	0.00	0.00	0.00	
10,300.00	89.86	180.12	7,484.81	-2,901.32	2,133.10	3,260.35	0.00	0.00	0.00	
10,400.00	89.86	180.12	7,485.06	-3,001.32	2,132.90	3,358.41	0.00	0.00	0.00	
10,500.00	89.86	180.12	7,485.30	-3,101.32	2,132.70	3,456.46	0.00	0.00	0.00	
10,600.00	89.86	180.12	7,485.55	-3,201.32	2,132.49	3,554.52	0.00	0.00	0.00	
10,700.00	89.86	180.12	7,485.79	-3,301.32	2,132.29	3,652.57	0.00	0.00	0.00	
10,800.00	89.86	180.12	7,486.04	-3,401.32	2,132.09	3,750.63	0.00	0.00	0.00	
10,900.00	89.86	180.12	7,486.29	-3,501.32	2,131.88	3,848.69	0.00	0.00	0.00	
11,000.00	89.86	180.12	7,486.53	-3,601.32	2,131.68	3,946.74	0.00	0.00	0.00	
11,100.00	89.86	180.12	7,486.78	-3,701.32	2,131.48	4,044.80	0.00	0.00	0.00	
11,200.00	89.86	180.12	7,487.03	-3,801.32	2,131.27	4,142.85	0.00	0.00	0.00	
11,300.00	89.86	180.12	7,487.27	-3,901.32	2,131.07	4,240.91	0.00	0.00	0.00	
11,400.00	89.86	180.12	7,487.52	-4,001.32	2,130.87	4,338.97	0.00	0.00	0.00	
11,500.00	89.86	180.12	7,487.76	-4,101.32	2,130.66	4,437.02	0.00	0.00	0.00	
11,600.00	89.86	180.12	7,488.01	-4,201.32	2,130.46	4,535.08	0.00	0.00	0.00	
11,700.00	89.86	180.12	7,488.26	-4,301.32	2,130.26	4,633.13	0.00	0.00	0.00	
11,800.00	89.86	180.12	7,488.50	-4,401.31	2,130.06	4,731.19	0.00	0.00	0.00	
11,900.00	89.86	180.12	7,488.75	-4,501.31	2,129.85	4,829.25	0.00	0.00	0.00	
12,000.00	89.86	180.12	7,489.00	-4,601.31	2,129.65	4,927.30	0.00	0.00	0.00	
12,100.00	89.86	180.12	7,489.24	-4,701.31	2,129.45	5,025.36	0.00	0.00	0.00	
12,200.00	89.86	180.12	7,489.49	-4,801.31	2,129.24	5,123.41	0.00	0.00	0.00	
12,300.00	89.86	180.12	7,489.73	-4,901.31	2,129.04	5,221.47	0.00	0.00	0.00	
12,400.00	89.86	180.12	7,489.98	-5,001.31	2,128.84	5,319.53	0.00	0.00	0.00	
12,500.00	89.86	180.12	7,490.23	-5,101.31	2,128.63	5,417.58	0.00	0.00	0.00	
12,600.00	89.86	180.12	7,490.47	-5,201.31	2,128.43	5,515.64	0.00	0.00	0.00	
12,700.00	89.86	180.12	7,490.72	-5,301.31	2,128.23	5,613.69	0.00	0.00	0.00	
12,800.00	89.86	180.12	7,490.97	-5,401.31	2,128.02	5,711.75	0.00	0.00	0.00	
12,900.00	89.86	180.12	7,491.21	-5,501.31	2,127.82	5,809.81	0.00	0.00	0.00	
13,000.00	89.86	180.12	7,491.46	-5,601.31	2,127.62	5,907.86	0.00	0.00	0.00	
13,100.00	89.86	180.12	7,491.70	-5,701.31	2,127.41	6,005.92	0.00	0.00	0.00	
13,200.00	89.86	180.12	7,491.95	-5,801.31	2,127.21	6,103.97	0.00	0.00	0.00	
13,300.00	89.86	180.12	7,492.20	-5,901.31	2,127.01	6,202.03	0.00	0.00	0.00	
13,400.00	89.86	180.12	7,492.44	-6,001.31	2,126.80	6,300.09	0.00	0.00	0.00	
13,500.00	89.86	180.12	7,492.69	-6,101.31	2,126.60	6,398.14	0.00	0.00	0.00	
13,600.00	89.86	180.12	7,492.94	-6,201.31	2,126.40	6,496.20	0.00	0.00	0.00	
13,700.00	89.86	180.12	7,493.18	-6,301.31	2,126.19	6,594.26	0.00	0.00	0.00	
13,800.00	89.86	180.12	7,493.43	-6,401.30	2,125.99	6,692.31	0.00	0.00	0.00	
13,900.00	89.86	180.12	7,493.67	-6,501.30	2,125.79	6,790.37	0.00	0.00	0.00	
14,000.00	89.86	180.12	7,493.92	-6,601.30	2,125.58	6,888.42	0.00	0.00	0.00	
14,100.00	89.86	180.12	7,494.17	-6,701.30	2,125.38	6,986.48	0.00	0.00	0.00	
14,200.00	89.86	180.12	7,494.41	-6,801.30	2,125.18	7,084.54	0.00	0.00	0.00	
14,300.00	89.86	180.12	7,494.66	-6,901.30	2,124.98	7,182.59	0.00	0.00	0.00	
14,400.00	89.86	180.12	7,494.91	-7,001.30	2,124.77	7,280.65	0.00	0.00	0.00	
14,500.00	89.86	180.12	7,495.15	-7,101.30	2,124.57	7,378.70	0.00	0.00	0.00	
14,600.00	89.86	180.12	7,495.40	-7,201.30	2,124.37	7,476.76	0.00	0.00	0.00	
14,700.00	89.86	180.12	7,495.64	-7,301.30	2,124.16	7,574.82	0.00	0.00	0.00	
14,800.00	89.86	180.12	7,495.89	-7,401.30	2,123.96	7,672.87	0.00	0.00	0.00	
14,900.00	89.86	180.12	7,496.14	-7,501.30	2,123.76	7,770.93	0.00	0.00	0.00	
15,000.00	89.86	180.12	7,496.38	-7,601.30	2,123.55	7,868.98	0.00	0.00	0.00	
15,100.00	89.86	180.12	7,496.63	-7,701.30	2,123.35	7,967.04	0.00	0.00	0.00	
15,200.00	89.86	180.12	7,496.88	-7,801.30	2,123.15	8,065.10	0.00	0.00	0.00	
15,300.00	89.86	180.12	7,497.12	-7,901.30	2,122.94	8,163.15	0.00	0.00	0.00	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-4L
Company:	Confluence Resources	TVD Reference:	RKB=5081+25 @ 5106.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5081+25 @ 5106.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
15,400.00	89.86	180.12	7,497.37	-8,001.30	2,122.74	8,261.21	0.00	0.00	0.00	
15,500.00	89.86	180.12	7,497.61	-8,101.30	2,122.54	8,359.26	0.00	0.00	0.00	
15,600.00	89.86	180.12	7,497.86	-8,201.30	2,122.33	8,457.32	0.00	0.00	0.00	
15,700.00	89.86	180.12	7,498.11	-8,301.29	2,122.13	8,555.38	0.00	0.00	0.00	
15,800.00	89.86	180.12	7,498.35	-8,401.29	2,121.93	8,653.43	0.00	0.00	0.00	
15,900.00	89.86	180.12	7,498.60	-8,501.29	2,121.72	8,751.49	0.00	0.00	0.00	
16,000.00	89.86	180.12	7,498.85	-8,601.29	2,121.52	8,849.54	0.00	0.00	0.00	
16,100.00	89.86	180.12	7,499.09	-8,701.29	2,121.32	8,947.60	0.00	0.00	0.00	
16,200.00	89.86	180.12	7,499.34	-8,801.29	2,121.11	9,045.66	0.00	0.00	0.00	
16,300.00	89.86	180.12	7,499.58	-8,901.29	2,120.91	9,143.71	0.00	0.00	0.00	
16,400.00	89.86	180.12	7,499.83	-9,001.29	2,120.71	9,241.77	0.00	0.00	0.00	
16,500.00	89.86	180.12	7,500.08	-9,101.29	2,120.50	9,339.82	0.00	0.00	0.00	
16,600.00	89.86	180.12	7,500.32	-9,201.29	2,120.30	9,437.88	0.00	0.00	0.00	
16,700.00	89.86	180.12	7,500.57	-9,301.29	2,120.10	9,535.94	0.00	0.00	0.00	
16,800.00	89.86	180.12	7,500.82	-9,401.29	2,119.90	9,633.99	0.00	0.00	0.00	
16,900.00	89.86	180.12	7,501.06	-9,501.29	2,119.69	9,732.05	0.00	0.00	0.00	
17,000.00	89.86	180.12	7,501.31	-9,601.29	2,119.49	9,830.11	0.00	0.00	0.00	
17,100.00	89.86	180.12	7,501.55	-9,701.29	2,119.29	9,928.16	0.00	0.00	0.00	
17,200.00	89.86	180.12	7,501.80	-9,801.29	2,119.08	10,026.22	0.00	0.00	0.00	
17,300.00	89.86	180.12	7,502.05	-9,901.29	2,118.88	10,124.27	0.00	0.00	0.00	
17,400.00	89.86	180.12	7,502.29	-10,001.29	2,118.68	10,222.33	0.00	0.00	0.00	
17,500.00	89.86	180.12	7,502.54	-10,101.29	2,118.47	10,320.39	0.00	0.00	0.00	
17,600.00	89.86	180.12	7,502.79	-10,201.29	2,118.27	10,418.44	0.00	0.00	0.00	
17,700.00	89.86	180.12	7,503.03	-10,301.28	2,118.07	10,516.50	0.00	0.00	0.00	
17,800.00	89.86	180.12	7,503.28	-10,401.28	2,117.86	10,614.55	0.00	0.00	0.00	
17,900.00	89.86	180.12	7,503.52	-10,501.28	2,117.66	10,712.61	0.00	0.00	0.00	
18,000.00	89.86	180.12	7,503.77	-10,601.28	2,117.46	10,810.67	0.00	0.00	0.00	
18,093.17	89.86	180.12	7,504.00	-10,694.45	2,117.27	10,902.02	0.00	0.00	0.00	
PBHL/TD 18093.17 MD/7504.00 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 4-06-4L 470 F - plan hits target center - Point	0.00	0.00	7,481.00	-1,354.74	2,136.25	14,526,629.70	1,733,063.46	39.99924289 -104.66918276		
BHL Desha 4-06-4L 470 - plan hits target center - Point	0.00	0.00	7,504.00	-10,694.45	2,117.27	14,517,290.00	1,733,078.35	39.97359448 -104.66925331		

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	
5,461.86	5,413.44	-70.26	161.68	Begin 46.19° tangent	
8,020.77	7,185.01	-806.20	1,855.17	Begin 10°/100' build/turn	
8,753.41	7,481.00	-1,354.74	2,136.25	LP Begin 89.86° lateral section	
18,093.17	7,504.00	-10,694.45	2,117.27	PBHL/TD 18093.17 MD/7504.00 TVD	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-4L
Company:	Confluence Resources	TVD Reference:	RKB=5081+25 @ 5106.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5081+25 @ 5106.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Project	Weld County, Colorado		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD83 Colorado - HARN		
Map Zone:	Zone 13N (108 W to 102 W)		

Site		Section 33-T01N-R65W			
Site Position:		Northing:	14,527,751.12 usft	Latitude:	40.00234552
From:	Map	Easting:	1,730,774.27 usft	Longitude:	-104.67734224
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.21 °

Well	Desha 4-06-4L, Surf loc: 885 FSL 450 FWL Section 33-T01N-R65W					
Well Position	+N/-S	0.00 ft	Northing:	14,527,976.68 usft	Latitude:	40.00296347
	+E/-W	0.00 ft	Easting:	1,730,922.32 usft	Longitude:	-104.67681065
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,081.00 ft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/29/2017	8.28	66.45	52,146.20000000

Design	plan1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	168.80

Plan Survey Tool Program	Date	8/29/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	18,093.17 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	
5,461.86	46.19	113.49	5,413.44	-70.26	161.68	10.00	10.00	0.00	113.49	
8,020.77	46.19	113.49	7,185.01	-806.20	1,855.17	0.00	0.00	0.00	0.00	
8,753.41	89.86	180.12	7,481.00	-1,354.74	2,136.25	10.00	5.96	9.09	73.45	LP Desha 4-06-4L 471
18,093.17	89.86	180.12	7,504.00	-10,694.45	2,117.27	0.00	0.00	0.00	0.00	BHL Desha 4-06-4L 4

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-4L
Company:	Confluence Resources	TVD Reference:	RKB=5081+25 @ 5106.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5081+25 @ 5106.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
100.00	0.00	0.00	100.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
200.00	0.00	0.00	200.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
300.00	0.00	0.00	300.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
400.00	0.00	0.00	400.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
500.00	0.00	0.00	500.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
600.00	0.00	0.00	600.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
700.00	0.00	0.00	700.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
800.00	0.00	0.00	800.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
900.00	0.00	0.00	900.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
2,600.00	0.00	0.00	2,600.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
2,700.00	0.00	0.00	2,700.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
2,800.00	0.00	0.00	2,800.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
2,900.00	0.00	0.00	2,900.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
3,000.00	0.00	0.00	3,000.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
3,100.00	0.00	0.00	3,100.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
3,200.00	0.00	0.00	3,200.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
3,300.00	0.00	0.00	3,300.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
3,400.00	0.00	0.00	3,400.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
3,500.00	0.00	0.00	3,500.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
3,600.00	0.00	0.00	3,600.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
3,700.00	0.00	0.00	3,700.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
3,800.00	0.00	0.00	3,800.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
3,900.00	0.00	0.00	3,900.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
4,000.00	0.00	0.00	4,000.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
4,100.00	0.00	0.00	4,100.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
4,200.00	0.00	0.00	4,200.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
4,300.00	0.00	0.00	4,300.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
4,400.00	0.00	0.00	4,400.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
4,500.00	0.00	0.00	4,500.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
4,600.00	0.00	0.00	4,600.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
4,700.00	0.00	0.00	4,700.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
4,800.00	0.00	0.00	4,800.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
4,900.00	0.00	0.00	4,900.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
5,000.00	0.00	0.00	5,000.00	0.00	0.00	14,527,976.68	1,730,922.32	40.00296347	-104.67681065
KOP Begin 10°/100' build									
5,100.00	10.00	113.49	5,099.49	-3.47	7.98	14,527,973.24	1,730,930.31	40.00295394	-104.67678215
5,200.00	20.00	113.49	5,195.96	-13.77	31.69	14,527,963.03	1,730,954.06	40.00292565	-104.67669749

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-4L
Company:	Confluence Resources	TVD Reference:	RKB=5081+25 @ 5106.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5081+25 @ 5106.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,300.00	30.00	113.49	5,286.48	-30.59	70.40	14,527,946.35	1,730,992.83	40.00287945	-104.67655926
5,400.00	40.00	113.49	5,368.29	-53.43	122.94	14,527,923.70	1,731,045.45	40.00281675	-104.67637165
5,461.86	46.19	113.49	5,413.44	-70.26	161.68	14,527,907.01	1,731,084.25	40.00277051	-104.67623330
Begin 46.19° tangent									
5,500.00	46.19	113.49	5,439.85	-81.23	186.92	14,527,896.13	1,731,109.53	40.00274039	-104.67614318
5,600.00	46.19	113.49	5,509.08	-109.99	253.10	14,527,867.61	1,731,175.82	40.00266141	-104.67590686
5,700.00	46.19	113.49	5,578.31	-138.75	319.28	14,527,839.09	1,731,242.10	40.00258243	-104.67567053
5,800.00	46.19	113.49	5,647.54	-167.51	385.46	14,527,810.57	1,731,308.39	40.00250345	-104.67543421
5,900.00	46.19	113.49	5,716.77	-196.27	451.64	14,527,782.05	1,731,374.67	40.00242446	-104.67519790
6,000.00	46.19	113.49	5,786.00	-225.03	517.82	14,527,753.53	1,731,440.95	40.00234548	-104.67496158
6,100.00	46.19	113.49	5,855.24	-253.79	584.00	14,527,725.01	1,731,507.24	40.00226650	-104.67472526
6,200.00	46.19	113.49	5,924.47	-282.55	650.18	14,527,696.49	1,731,573.52	40.00218751	-104.67448894
6,300.00	46.19	113.49	5,993.70	-311.31	716.36	14,527,667.97	1,731,639.81	40.00210853	-104.67425262
6,400.00	46.19	113.49	6,062.93	-340.07	782.55	14,527,639.45	1,731,706.09	40.00202954	-104.67401631
6,500.00	46.19	113.49	6,132.16	-368.83	848.73	14,527,610.93	1,731,772.37	40.00195056	-104.67377999
6,600.00	46.19	113.49	6,201.39	-397.59	914.91	14,527,582.41	1,731,838.66	40.00187157	-104.67354367
6,700.00	46.19	113.49	6,270.63	-426.35	981.09	14,527,553.89	1,731,904.94	40.00179258	-104.67330736
6,800.00	46.19	113.49	6,339.86	-455.11	1,047.27	14,527,525.37	1,731,971.23	40.00171360	-104.67307104
6,900.00	46.19	113.49	6,409.09	-483.87	1,113.45	14,527,496.85	1,732,037.51	40.00163461	-104.67283473
7,000.00	46.19	113.49	6,478.32	-512.63	1,179.63	14,527,468.34	1,732,103.79	40.00155562	-104.67259842
7,100.00	46.19	113.49	6,547.55	-541.39	1,245.81	14,527,439.82	1,732,170.08	40.00147663	-104.67236210
7,200.00	46.19	113.49	6,616.78	-570.15	1,311.99	14,527,411.30	1,732,236.36	40.00139764	-104.67212579
7,300.00	46.19	113.49	6,686.02	-598.91	1,378.17	14,527,382.78	1,732,302.65	40.00131866	-104.67188948
7,400.00	46.19	113.49	6,755.25	-627.67	1,444.35	14,527,354.26	1,732,368.93	40.00123967	-104.67165317
7,500.00	46.19	113.49	6,824.48	-656.43	1,510.53	14,527,325.74	1,732,435.22	40.00116067	-104.67141686
7,600.00	46.19	113.49	6,893.71	-685.19	1,576.71	14,527,297.22	1,732,501.50	40.00108168	-104.67118055
7,700.00	46.19	113.49	6,962.94	-713.95	1,642.89	14,527,268.70	1,732,567.78	40.00100269	-104.67094424
7,800.00	46.19	113.49	7,032.17	-742.71	1,709.07	14,527,240.18	1,732,634.07	40.00092370	-104.67070793
7,900.00	46.19	113.49	7,101.41	-771.47	1,775.25	14,527,211.66	1,732,700.35	40.00084471	-104.67047162
8,000.00	46.19	113.49	7,170.64	-800.23	1,841.43	14,527,183.14	1,732,766.64	40.00076572	-104.67023531
8,020.77	46.19	113.49	7,185.01	-806.20	1,855.17	14,527,177.21	1,732,780.40	40.00074931	-104.67018624
Begin 10°/100' build/turn									
8,100.00	48.90	123.59	7,238.57	-834.16	1,906.34	14,527,149.45	1,732,831.67	40.00067254	-104.67000353
8,200.00	53.46	135.03	7,301.37	-883.55	1,966.27	14,527,100.28	1,732,891.78	40.00053689	-104.66978955
8,300.00	58.97	145.08	7,357.06	-947.26	2,019.33	14,527,036.76	1,732,945.06	40.00036192	-104.66960013
8,400.00	65.18	153.96	7,403.93	-1,023.36	2,063.89	14,526,960.82	1,732,989.90	40.00015293	-104.66944103
8,500.00	71.86	161.97	7,440.58	-1,109.53	2,098.61	14,526,874.77	1,733,024.93	39.99991627	-104.66931707
8,600.00	78.85	169.37	7,465.88	-1,203.16	2,122.43	14,526,781.23	1,733,049.10	39.99965914	-104.66923204
8,700.00	86.00	176.42	7,479.07	-1,301.41	2,134.63	14,526,683.03	1,733,061.65	39.99938934	-104.66918850
8,753.41	89.86	180.12	7,481.00	-1,354.74	2,136.25	14,526,629.70	1,733,063.46	39.99924289	-104.66918276
LP Begin 89.86° lateral section									
8,800.00	89.86	180.12	7,481.11	-1,401.33	2,136.15	14,526,583.11	1,733,063.53	39.99911494	-104.66918311
8,900.00	89.86	180.12	7,481.36	-1,501.33	2,135.95	14,526,483.11	1,733,063.69	39.99884033	-104.66918387
9,000.00	89.86	180.12	7,481.61	-1,601.33	2,135.74	14,526,383.11	1,733,063.85	39.99856571	-104.66918463
9,100.00	89.86	180.12	7,481.85	-1,701.33	2,135.54	14,526,283.11	1,733,064.01	39.99829110	-104.66918538
9,200.00	89.86	180.12	7,482.10	-1,801.33	2,135.34	14,526,183.12	1,733,064.17	39.99801648	-104.66918614
9,300.00	89.86	180.12	7,482.35	-1,901.33	2,135.14	14,526,083.12	1,733,064.33	39.99774187	-104.66918689
9,400.00	89.86	180.12	7,482.59	-2,001.33	2,134.93	14,525,983.12	1,733,064.49	39.99746725	-104.66918765
9,500.00	89.86	180.12	7,482.84	-2,101.33	2,134.73	14,525,883.12	1,733,064.65	39.99719264	-104.66918841
9,600.00	89.86	180.12	7,483.08	-2,201.33	2,134.53	14,525,783.12	1,733,064.81	39.99691802	-104.66918916
9,700.00	89.86	180.12	7,483.33	-2,301.33	2,134.32	14,525,683.12	1,733,064.97	39.99664341	-104.66918992
9,800.00	89.86	180.12	7,483.58	-2,401.32	2,134.12	14,525,583.12	1,733,065.13	39.99636879	-104.66919067
9,900.00	89.86	180.12	7,483.82	-2,501.32	2,133.92	14,525,483.12	1,733,065.29	39.99609418	-104.66919143
10,000.00	89.86	180.12	7,484.07	-2,601.32	2,133.71	14,525,383.12	1,733,065.45	39.99581956	-104.66919218

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-4L
Company:	Confluence Resources	TVD Reference:	RKB=5081+25 @ 5106.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5081+25 @ 5106.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,100.00	89.86	180.12	7,484.32	-2,701.32	2,133.51	14,525,283.12	1,733,065.61	39.99554495	-104.66919294
10,200.00	89.86	180.12	7,484.56	-2,801.32	2,133.31	14,525,183.12	1,733,065.76	39.99527033	-104.66919370
10,300.00	89.86	180.12	7,484.81	-2,901.32	2,133.10	14,525,083.12	1,733,065.92	39.99499572	-104.66919445
10,400.00	89.86	180.12	7,485.06	-3,001.32	2,132.90	14,524,983.12	1,733,066.08	39.99472110	-104.66919521
10,500.00	89.86	180.12	7,485.30	-3,101.32	2,132.70	14,524,883.12	1,733,066.24	39.99444649	-104.66919596
10,600.00	89.86	180.12	7,485.55	-3,201.32	2,132.49	14,524,783.12	1,733,066.40	39.99417187	-104.66919672
10,700.00	89.86	180.12	7,485.79	-3,301.32	2,132.29	14,524,683.12	1,733,066.56	39.99389726	-104.66919747
10,800.00	89.86	180.12	7,486.04	-3,401.32	2,132.09	14,524,583.13	1,733,066.72	39.99362264	-104.66919823
10,900.00	89.86	180.12	7,486.29	-3,501.32	2,131.88	14,524,483.13	1,733,066.88	39.99334803	-104.66919899
11,000.00	89.86	180.12	7,486.53	-3,601.32	2,131.68	14,524,383.13	1,733,067.04	39.99307341	-104.66919974
11,100.00	89.86	180.12	7,486.78	-3,701.32	2,131.48	14,524,283.13	1,733,067.20	39.99279880	-104.66920050
11,200.00	89.86	180.12	7,487.03	-3,801.32	2,131.27	14,524,183.13	1,733,067.36	39.99252418	-104.66920125
11,300.00	89.86	180.12	7,487.27	-3,901.32	2,131.07	14,524,083.13	1,733,067.52	39.99224957	-104.66920201
11,400.00	89.86	180.12	7,487.52	-4,001.32	2,130.87	14,523,983.13	1,733,067.68	39.99197495	-104.66920276
11,500.00	89.86	180.12	7,487.76	-4,101.32	2,130.66	14,523,883.13	1,733,067.84	39.99170034	-104.66920352
11,600.00	89.86	180.12	7,488.01	-4,201.32	2,130.46	14,523,783.13	1,733,068.00	39.99142572	-104.66920428
11,700.00	89.86	180.12	7,488.26	-4,301.32	2,130.26	14,523,683.13	1,733,068.16	39.99115111	-104.66920503
11,800.00	89.86	180.12	7,488.50	-4,401.31	2,130.06	14,523,583.13	1,733,068.32	39.99087649	-104.66920579
11,900.00	89.86	180.12	7,488.75	-4,501.31	2,129.85	14,523,483.13	1,733,068.48	39.99060188	-104.66920654
12,000.00	89.86	180.12	7,489.00	-4,601.31	2,129.65	14,523,383.13	1,733,068.63	39.99032726	-104.66920730
12,100.00	89.86	180.12	7,489.24	-4,701.31	2,129.45	14,523,283.13	1,733,068.79	39.99005265	-104.66920805
12,200.00	89.86	180.12	7,489.49	-4,801.31	2,129.24	14,523,183.13	1,733,068.95	39.98977803	-104.66920881
12,300.00	89.86	180.12	7,489.73	-4,901.31	2,129.04	14,523,083.13	1,733,069.11	39.98950342	-104.66920956
12,400.00	89.86	180.12	7,489.98	-5,001.31	2,128.84	14,522,983.14	1,733,069.27	39.98922880	-104.66921032
12,500.00	89.86	180.12	7,490.23	-5,101.31	2,128.63	14,522,883.14	1,733,069.43	39.98895419	-104.66921107
12,600.00	89.86	180.12	7,490.47	-5,201.31	2,128.43	14,522,783.14	1,733,069.59	39.98867957	-104.66921183
12,700.00	89.86	180.12	7,490.72	-5,301.31	2,128.23	14,522,683.14	1,733,069.75	39.98840496	-104.66921259
12,800.00	89.86	180.12	7,490.97	-5,401.31	2,128.02	14,522,583.14	1,733,069.91	39.98813034	-104.66921334
12,900.00	89.86	180.12	7,491.21	-5,501.31	2,127.82	14,522,483.14	1,733,070.07	39.98785573	-104.66921410
13,000.00	89.86	180.12	7,491.46	-5,601.31	2,127.62	14,522,383.14	1,733,070.23	39.98758111	-104.66921485
13,100.00	89.86	180.12	7,491.70	-5,701.31	2,127.41	14,522,283.14	1,733,070.39	39.98730650	-104.66921561
13,200.00	89.86	180.12	7,491.95	-5,801.31	2,127.21	14,522,183.14	1,733,070.55	39.98703188	-104.66921636
13,300.00	89.86	180.12	7,492.20	-5,901.31	2,127.01	14,522,083.14	1,733,070.71	39.98675727	-104.66921712
13,400.00	89.86	180.12	7,492.44	-6,001.31	2,126.80	14,521,983.14	1,733,070.87	39.98648265	-104.66921787
13,500.00	89.86	180.12	7,492.69	-6,101.31	2,126.60	14,521,883.14	1,733,071.03	39.98620804	-104.66921863
13,600.00	89.86	180.12	7,492.94	-6,201.31	2,126.40	14,521,783.14	1,733,071.19	39.98593342	-104.66921938
13,700.00	89.86	180.12	7,493.18	-6,301.31	2,126.19	14,521,683.14	1,733,071.34	39.98565880	-104.66922014
13,800.00	89.86	180.12	7,493.43	-6,401.30	2,125.99	14,521,583.14	1,733,071.50	39.98538419	-104.66922089
13,900.00	89.86	180.12	7,493.67	-6,501.30	2,125.79	14,521,483.14	1,733,071.66	39.98510957	-104.66922165
14,000.00	89.86	180.12	7,493.92	-6,601.30	2,125.58	14,521,383.15	1,733,071.82	39.98483496	-104.66922240
14,100.00	89.86	180.12	7,494.17	-6,701.30	2,125.38	14,521,283.15	1,733,071.98	39.98456034	-104.66922316
14,200.00	89.86	180.12	7,494.41	-6,801.30	2,125.18	14,521,183.15	1,733,072.14	39.98428573	-104.66922391
14,300.00	89.86	180.12	7,494.66	-6,901.30	2,124.98	14,521,083.15	1,733,072.30	39.98401111	-104.66922467
14,400.00	89.86	180.12	7,494.91	-7,001.30	2,124.77	14,520,983.15	1,733,072.46	39.98373650	-104.66922543
14,500.00	89.86	180.12	7,495.15	-7,101.30	2,124.57	14,520,883.15	1,733,072.62	39.98346188	-104.66922618
14,600.00	89.86	180.12	7,495.40	-7,201.30	2,124.37	14,520,783.15	1,733,072.78	39.98318727	-104.66922694
14,700.00	89.86	180.12	7,495.64	-7,301.30	2,124.16	14,520,683.15	1,733,072.94	39.98291265	-104.66922769
14,800.00	89.86	180.12	7,495.89	-7,401.30	2,123.96	14,520,583.15	1,733,073.10	39.98263804	-104.66922845
14,900.00	89.86	180.12	7,496.14	-7,501.30	2,123.76	14,520,483.15	1,733,073.26	39.98236342	-104.66922920
15,000.00	89.86	180.12	7,496.38	-7,601.30	2,123.55	14,520,383.15	1,733,073.42	39.98208880	-104.66922996
15,100.00	89.86	180.12	7,496.63	-7,701.30	2,123.35	14,520,283.15	1,733,073.58	39.98181419	-104.66923071
15,200.00	89.86	180.12	7,496.88	-7,801.30	2,123.15	14,520,183.15	1,733,073.74	39.98153957	-104.66923147
15,300.00	89.86	180.12	7,497.12	-7,901.30	2,122.94	14,520,083.15	1,733,073.90	39.98126496	-104.66923222
15,400.00	89.86	180.12	7,497.37	-8,001.30	2,122.74	14,519,983.15	1,733,074.06	39.98099034	-104.66923298
15,500.00	89.86	180.12	7,497.61	-8,101.30	2,122.54	14,519,883.16	1,733,074.21	39.98071573	-104.66923373

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-4L
Company:	Confluence Resources	TVD Reference:	RKB=5081+25 @ 5106.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5081+25 @ 5106.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-4L	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	plan1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,600.00	89.86	180.12	7,497.86	-8,201.30	2,122.33	14,519,783.16	1,733,074.37	39.98044111	-104.66923449
15,700.00	89.86	180.12	7,498.11	-8,301.29	2,122.13	14,519,683.16	1,733,074.53	39.98016650	-104.66923524
15,800.00	89.86	180.12	7,498.35	-8,401.29	2,121.93	14,519,583.16	1,733,074.69	39.97989188	-104.66923600
15,900.00	89.86	180.12	7,498.60	-8,501.29	2,121.72	14,519,483.16	1,733,074.85	39.97961726	-104.66923675
16,000.00	89.86	180.12	7,498.85	-8,601.29	2,121.52	14,519,383.16	1,733,075.01	39.97934265	-104.66923751
16,100.00	89.86	180.12	7,499.09	-8,701.29	2,121.32	14,519,283.16	1,733,075.17	39.97906803	-104.66923826
16,200.00	89.86	180.12	7,499.34	-8,801.29	2,121.11	14,519,183.16	1,733,075.33	39.97879342	-104.66923902
16,300.00	89.86	180.12	7,499.58	-8,901.29	2,120.91	14,519,083.16	1,733,075.49	39.97851880	-104.66923977
16,400.00	89.86	180.12	7,499.83	-9,001.29	2,120.71	14,518,983.16	1,733,075.65	39.97824419	-104.66924053
16,500.00	89.86	180.12	7,500.08	-9,101.29	2,120.50	14,518,883.16	1,733,075.81	39.97796957	-104.66924128
16,600.00	89.86	180.12	7,500.32	-9,201.29	2,120.30	14,518,783.16	1,733,075.97	39.97769495	-104.66924204
16,700.00	89.86	180.12	7,500.57	-9,301.29	2,120.10	14,518,683.16	1,733,076.13	39.97742034	-104.66924279
16,800.00	89.86	180.12	7,500.82	-9,401.29	2,119.90	14,518,583.16	1,733,076.29	39.97714572	-104.66924355
16,900.00	89.86	180.12	7,501.06	-9,501.29	2,119.69	14,518,483.16	1,733,076.45	39.97687111	-104.66924430
17,000.00	89.86	180.12	7,501.31	-9,601.29	2,119.49	14,518,383.16	1,733,076.61	39.97659649	-104.66924506
17,100.00	89.86	180.12	7,501.55	-9,701.29	2,119.29	14,518,283.17	1,733,076.77	39.97632188	-104.66924581
17,200.00	89.86	180.12	7,501.80	-9,801.29	2,119.08	14,518,183.17	1,733,076.92	39.97604726	-104.66924656
17,300.00	89.86	180.12	7,502.05	-9,901.29	2,118.88	14,518,083.17	1,733,077.08	39.97577264	-104.66924732
17,400.00	89.86	180.12	7,502.29	-10,001.29	2,118.68	14,517,983.17	1,733,077.24	39.97549803	-104.66924807
17,500.00	89.86	180.12	7,502.54	-10,101.29	2,118.47	14,517,883.17	1,733,077.40	39.97522341	-104.66924883
17,600.00	89.86	180.12	7,502.79	-10,201.29	2,118.27	14,517,783.17	1,733,077.56	39.97494880	-104.66924958
17,700.00	89.86	180.12	7,503.03	-10,301.28	2,118.07	14,517,683.17	1,733,077.72	39.97467418	-104.66925034
17,800.00	89.86	180.12	7,503.28	-10,401.28	2,117.86	14,517,583.17	1,733,077.88	39.97439956	-104.66925109
17,900.00	89.86	180.12	7,503.52	-10,501.28	2,117.66	14,517,483.17	1,733,078.04	39.97412495	-104.66925185
18,000.00	89.86	180.12	7,503.77	-10,601.28	2,117.46	14,517,383.17	1,733,078.20	39.97385033	-104.66925260
18,093.17	89.86	180.12	7,504.00	-10,694.45	2,117.27	14,517,290.00	1,733,078.35	39.97359448	-104.66925331
PBHL/TD 18093.17 MD/7504.00 TVD									

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
LP Desha 4-06-4L 470 F	0.00	0.00	7,481.00	-1,354.74	2,136.25	14,526,629.70	1,733,063.46	39.99924289	-104.66918276	
- plan hits target center										
- Point										
BHL Desha 4-06-4L 470	0.00	0.00	7,504.00	-10,694.45	2,117.27	14,517,290.00	1,733,078.35	39.97359448	-104.66925331	
- plan hits target center										
- Point										

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
5,000.00	5,000.00	0.00	0.00	KOP Begin 10°/100' build	
5,461.86	5,413.44	-70.26	161.68	Begin 46.19° tangent	
8,020.77	7,185.01	-806.20	1,855.17	Begin 10°/100' build/turn	
8,753.41	7,481.00	-1,354.74	2,136.25	LP Begin 89.86° lateral section	
18,093.17	7,504.00	-10,694.45	2,117.27	PBHL/TD 18093.17 MD/7504.00 TVD	