

Weld County, Colorado
Section 33-T01N-R65W
Desha 4-06-2L
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	5492.45	49.24	113.00	5434.02	-77.73	183.10	10.00	111.89	Begin 49.24° tangent
4	7872.16	49.24	113.00	6987.56	-782.20	1842.40	0.00	1125.83	Begin 10°/100' build/turn
5	8600.23	89.91	180.12	7264.00	-1329.74	2136.12	10.00	1720.07	LP Begin 89.91° lateral section
6	17939.97	89.91	180.12	7278.00	-10669.45	2117.14	0.00	10877.47	PBHL/TD 17939.97 MD/7278.00 TVD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LP Desha 4-06-2L 470 FNL 2580 FWL	7264.00	-1329.74	2136.1214526629.70	1733063.46	39.99924289	-104.66918277	
BHL Desha 4-06-2L 470 FSL 2580 FWL	7278.00	-10669.45	2117.1414517290.00	1733078.35	39.97359448	-104.66925331	

Desha 4-06-2L
Surf loc: 860 FSL 450 FWL Section 33-T01N-R65W

NAD83 Colorado - HARN
Universal Transverse Mercator (US Survey Feet)
Zone 13N (108 W to 102 W)
RKB=5080+25 @ 5105.00ft

Northing	Easting	Latitude	Longitude
14527951.68	1730922.54	40.00289481	-104.67681019

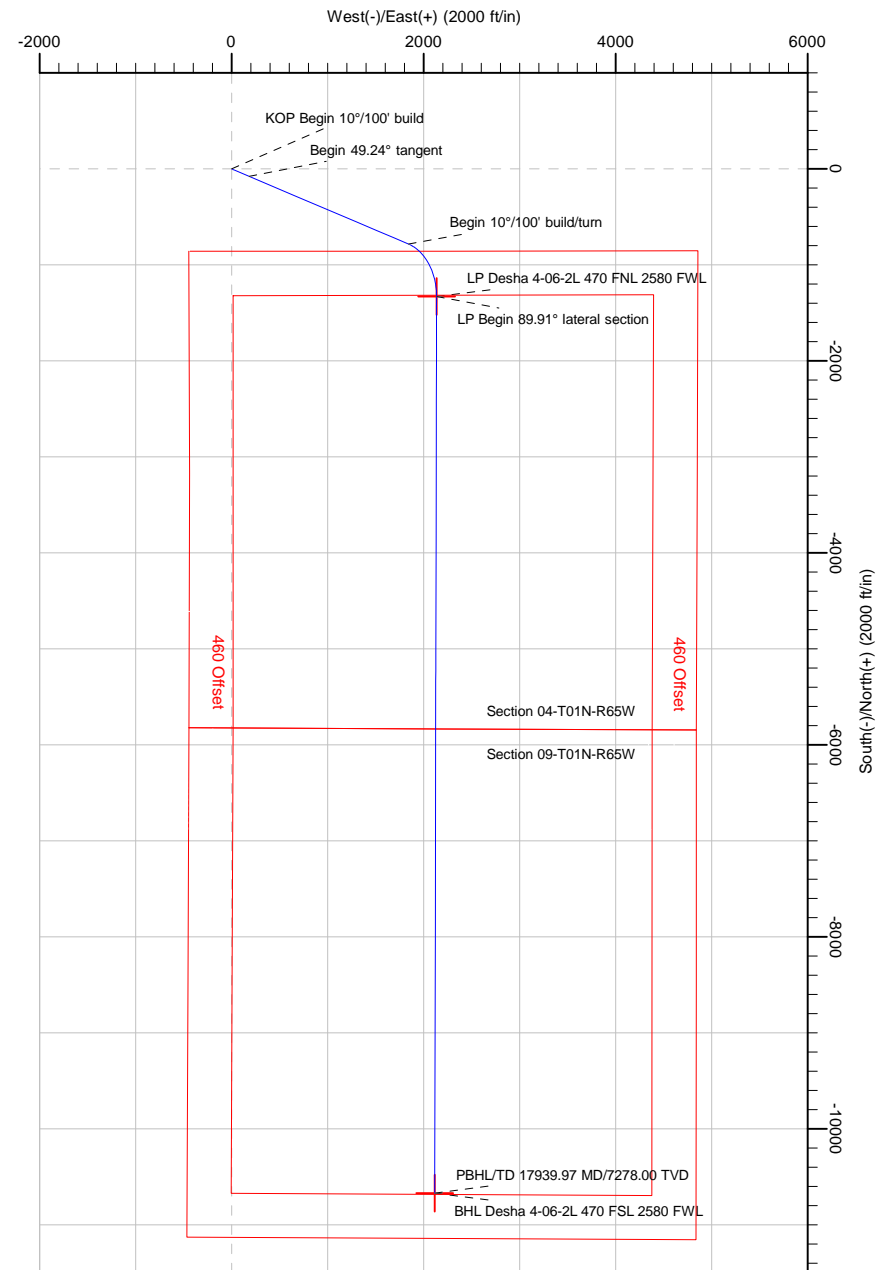
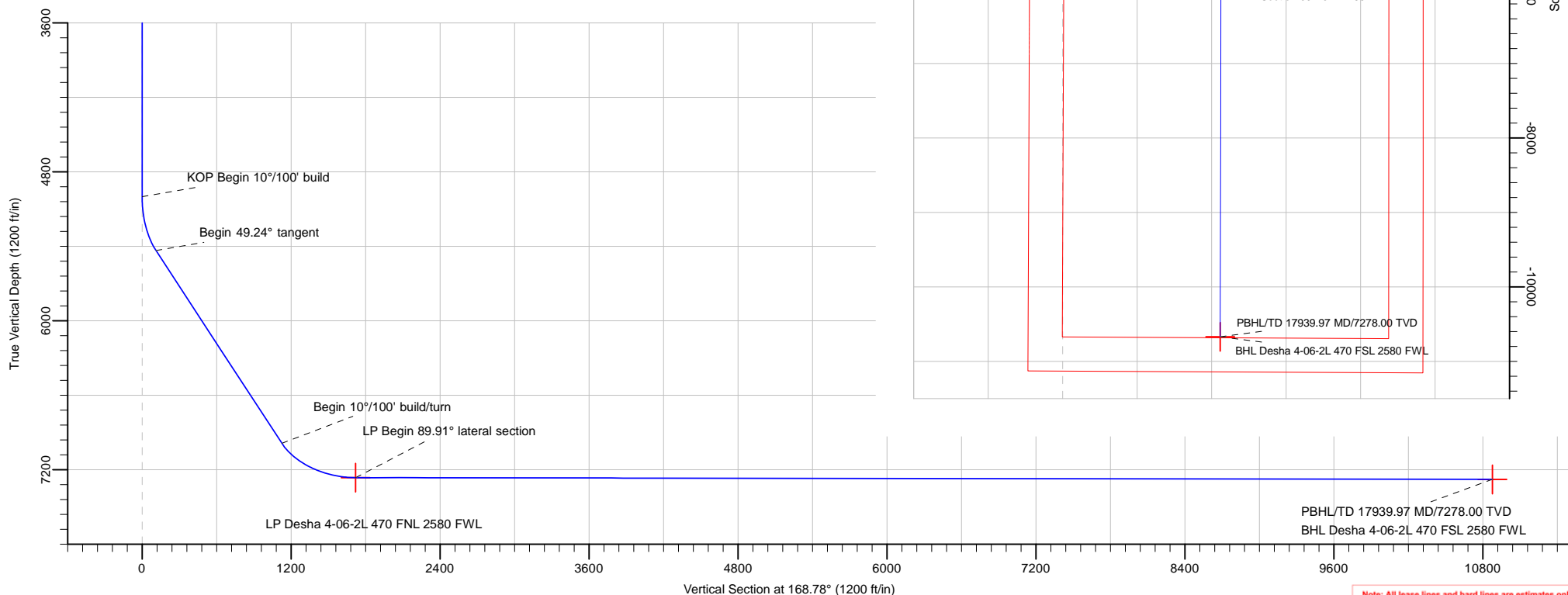
Azimuth Corrections:

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 4-06-2L
Company:	Confluence Resources	TVD Reference:	RKB=5080+25 @ 5105.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5080+25 @ 5105.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-2L	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 4-06-2L, Surf loc: 860 FSL 450 FWL Section 33-T01N-R65W					
Well Position	+N/-S	200.02 ft	Northing:	14,527,951.68 usft	Latitude:	40.00289481
	+E/-W	149.00 ft	Easting:	1,730,922.54 usft	Longitude:	-104.67681019
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,080.00 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	168.78

Plan Survey Tool Program	Date	8/29/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,939.98	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	
5,492.45	49.24	113.00	5,434.02	-77.73	183.10	10.00	10.00	0.00	113.00	
7,872.16	49.24	113.00	6,987.56	-782.20	1,842.40	0.00	0.00	0.00	0.00	
8,600.23	89.91	180.12	7,264.00	-1,329.74	2,136.12	10.00	5.59	9.22	74.66	LP Desha 4-06-2L 471
17,939.98	89.91	180.12	7,278.00	-10,669.45	2,117.14	0.00	0.00	0.00	0.00	BHL Desha 4-06-2L 4

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-2L
Company:	Confluence Resources	TVD Reference:	RKB=5080+25 @ 5105.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5080+25 @ 5105.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-2L	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	113.00	5,099.49	-3.40	8.01	4.90	10.00	10.00	0.00
5,200.00	20.00	113.00	5,195.96	-13.50	31.81	19.44	10.00	10.00	0.00

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Company:	Confluence Resources	TVD Reference:	RKB=5080+25 @ 5105.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5080+25 @ 5105.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-2L	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	113.00	5,286.48	-30.00	70.66	43.18	10.00	10.00	0.00
5,400.00	40.00	113.00	5,368.29	-52.38	123.39	75.40	10.00	10.00	0.00
5,492.45	49.24	113.00	5,434.02	-77.73	183.10	111.89	10.00	10.00	0.00
Begin 49.24° tangent									
5,500.00	49.24	113.00	5,438.95	-79.97	188.36	115.10	0.00	0.00	0.00
5,600.00	49.24	113.00	5,504.23	-109.57	258.09	157.71	0.00	0.00	0.00
5,700.00	49.24	113.00	5,569.51	-139.18	327.82	200.32	0.00	0.00	0.00
5,800.00	49.24	113.00	5,634.80	-168.78	397.54	242.93	0.00	0.00	0.00
5,900.00	49.24	113.00	5,700.08	-198.38	467.27	285.53	0.00	0.00	0.00
6,000.00	49.24	113.00	5,765.36	-227.98	537.00	328.14	0.00	0.00	0.00
6,100.00	49.24	113.00	5,830.65	-257.59	606.72	370.75	0.00	0.00	0.00
6,200.00	49.24	113.00	5,895.93	-287.19	676.45	413.36	0.00	0.00	0.00
6,300.00	49.24	113.00	5,961.21	-316.79	746.18	455.97	0.00	0.00	0.00
6,400.00	49.24	113.00	6,026.49	-346.40	815.90	498.57	0.00	0.00	0.00
6,500.00	49.24	113.00	6,091.78	-376.00	885.63	541.18	0.00	0.00	0.00
6,600.00	49.24	113.00	6,157.06	-405.60	955.36	583.79	0.00	0.00	0.00
6,700.00	49.24	113.00	6,222.34	-435.20	1,025.08	626.40	0.00	0.00	0.00
6,800.00	49.24	113.00	6,287.63	-464.81	1,094.81	669.01	0.00	0.00	0.00
6,900.00	49.24	113.00	6,352.91	-494.41	1,164.54	711.62	0.00	0.00	0.00
7,000.00	49.24	113.00	6,418.19	-524.01	1,234.26	754.22	0.00	0.00	0.00
7,100.00	49.24	113.00	6,483.47	-553.62	1,303.99	796.83	0.00	0.00	0.00
7,200.00	49.24	113.00	6,548.76	-583.22	1,373.72	839.44	0.00	0.00	0.00
7,300.00	49.24	113.00	6,614.04	-612.82	1,443.45	882.05	0.00	0.00	0.00
7,400.00	49.24	113.00	6,679.32	-642.42	1,513.17	924.66	0.00	0.00	0.00
7,500.00	49.24	113.00	6,744.60	-672.03	1,582.90	967.26	0.00	0.00	0.00
7,600.00	49.24	113.00	6,809.89	-701.63	1,652.63	1,009.87	0.00	0.00	0.00
7,700.00	49.24	113.00	6,875.17	-731.23	1,722.35	1,052.48	0.00	0.00	0.00
7,800.00	49.24	113.00	6,940.45	-760.84	1,792.08	1,095.09	0.00	0.00	0.00
7,872.16	49.24	113.00	6,987.56	-782.20	1,842.40	1,125.83	0.00	0.00	0.00
Begin 10°/100' build/turn									
7,900.00	50.03	116.51	7,005.59	-791.08	1,861.65	1,138.30	10.00	2.84	12.59
8,000.00	53.68	128.36	7,067.48	-833.29	1,927.70	1,192.56	10.00	3.65	11.85
8,100.00	58.38	139.02	7,123.45	-890.58	1,987.37	1,260.36	10.00	4.70	10.65
8,200.00	63.88	148.57	7,171.80	-961.21	2,038.83	1,339.65	10.00	5.50	9.55
8,300.00	69.94	157.22	7,211.07	-1,043.02	2,080.54	1,428.02	10.00	6.07	8.65
8,400.00	76.39	165.20	7,240.05	-1,133.54	2,111.21	1,522.78	10.00	6.45	7.99
8,500.00	83.09	172.76	7,257.88	-1,230.01	2,129.93	1,621.05	10.00	6.69	7.55
8,600.00	89.90	180.10	7,264.00	-1,329.50	2,136.12	1,719.84	10.00	6.81	7.34
8,600.23	89.91	180.12	7,264.00	-1,329.74	2,136.12	1,720.07	10.00	6.83	7.31
LP Begin 89.91° lateral section									
8,700.00	89.91	180.12	7,264.15	-1,429.50	2,135.91	1,817.89	0.00	0.00	0.00
8,800.00	89.91	180.12	7,264.30	-1,529.50	2,135.71	1,915.94	0.00	0.00	0.00
8,900.00	89.91	180.12	7,264.45	-1,629.50	2,135.51	2,013.98	0.00	0.00	0.00
9,000.00	89.91	180.12	7,264.60	-1,729.50	2,135.30	2,112.03	0.00	0.00	0.00
9,100.00	89.91	180.12	7,264.75	-1,829.50	2,135.10	2,210.08	0.00	0.00	0.00
9,200.00	89.91	180.12	7,264.90	-1,929.50	2,134.90	2,308.13	0.00	0.00	0.00
9,300.00	89.91	180.12	7,265.05	-2,029.50	2,134.69	2,406.18	0.00	0.00	0.00
9,400.00	89.91	180.12	7,265.20	-2,129.50	2,134.49	2,504.22	0.00	0.00	0.00
9,500.00	89.91	180.12	7,265.35	-2,229.50	2,134.29	2,602.27	0.00	0.00	0.00
9,600.00	89.91	180.12	7,265.50	-2,329.50	2,134.08	2,700.32	0.00	0.00	0.00
9,700.00	89.91	180.12	7,265.65	-2,429.50	2,133.88	2,798.37	0.00	0.00	0.00
9,800.00	89.91	180.12	7,265.80	-2,529.50	2,133.68	2,896.41	0.00	0.00	0.00
9,900.00	89.91	180.12	7,265.95	-2,629.50	2,133.48	2,994.46	0.00	0.00	0.00

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Company:	Confluence Resources	TVD Reference:	RKB=5080+25 @ 5105.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5080+25 @ 5105.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-2L	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	89.91	180.12	7,266.10	-2,729.50	2,133.27	3,092.51	0.00	0.00	0.00	
10,100.00	89.91	180.12	7,266.25	-2,829.50	2,133.07	3,190.56	0.00	0.00	0.00	
10,200.00	89.91	180.12	7,266.40	-2,929.50	2,132.87	3,288.60	0.00	0.00	0.00	
10,300.00	89.91	180.12	7,266.55	-3,029.50	2,132.66	3,386.65	0.00	0.00	0.00	
10,400.00	89.91	180.12	7,266.70	-3,129.50	2,132.46	3,484.70	0.00	0.00	0.00	
10,500.00	89.91	180.12	7,266.85	-3,229.50	2,132.26	3,582.75	0.00	0.00	0.00	
10,600.00	89.91	180.12	7,267.00	-3,329.50	2,132.05	3,680.80	0.00	0.00	0.00	
10,700.00	89.91	180.12	7,267.15	-3,429.50	2,131.85	3,778.84	0.00	0.00	0.00	
10,800.00	89.91	180.12	7,267.30	-3,529.50	2,131.65	3,876.89	0.00	0.00	0.00	
10,900.00	89.91	180.12	7,267.45	-3,629.50	2,131.44	3,974.94	0.00	0.00	0.00	
11,000.00	89.91	180.12	7,267.60	-3,729.50	2,131.24	4,072.99	0.00	0.00	0.00	
11,100.00	89.91	180.12	7,267.75	-3,829.50	2,131.04	4,171.03	0.00	0.00	0.00	
11,200.00	89.91	180.12	7,267.90	-3,929.50	2,130.83	4,269.08	0.00	0.00	0.00	
11,300.00	89.91	180.12	7,268.05	-4,029.50	2,130.63	4,367.13	0.00	0.00	0.00	
11,400.00	89.91	180.12	7,268.20	-4,129.49	2,130.43	4,465.18	0.00	0.00	0.00	
11,500.00	89.91	180.12	7,268.35	-4,229.49	2,130.22	4,563.22	0.00	0.00	0.00	
11,600.00	89.91	180.12	7,268.50	-4,329.49	2,130.02	4,661.27	0.00	0.00	0.00	
11,700.00	89.91	180.12	7,268.65	-4,429.49	2,129.82	4,759.32	0.00	0.00	0.00	
11,800.00	89.91	180.12	7,268.80	-4,529.49	2,129.61	4,857.37	0.00	0.00	0.00	
11,900.00	89.91	180.12	7,268.95	-4,629.49	2,129.41	4,955.42	0.00	0.00	0.00	
12,000.00	89.91	180.12	7,269.10	-4,729.49	2,129.21	5,053.46	0.00	0.00	0.00	
12,100.00	89.91	180.12	7,269.25	-4,829.49	2,129.00	5,151.51	0.00	0.00	0.00	
12,200.00	89.91	180.12	7,269.40	-4,929.49	2,128.80	5,249.56	0.00	0.00	0.00	
12,300.00	89.91	180.12	7,269.55	-5,029.49	2,128.60	5,347.61	0.00	0.00	0.00	
12,400.00	89.91	180.12	7,269.70	-5,129.49	2,128.40	5,445.65	0.00	0.00	0.00	
12,500.00	89.91	180.12	7,269.85	-5,229.49	2,128.19	5,543.70	0.00	0.00	0.00	
12,600.00	89.91	180.12	7,270.00	-5,329.49	2,127.99	5,641.75	0.00	0.00	0.00	
12,700.00	89.91	180.12	7,270.15	-5,429.49	2,127.79	5,739.80	0.00	0.00	0.00	
12,800.00	89.91	180.12	7,270.30	-5,529.49	2,127.58	5,837.85	0.00	0.00	0.00	
12,900.00	89.91	180.12	7,270.45	-5,629.49	2,127.38	5,935.89	0.00	0.00	0.00	
13,000.00	89.91	180.12	7,270.60	-5,729.49	2,127.18	6,033.94	0.00	0.00	0.00	
13,100.00	89.91	180.12	7,270.75	-5,829.49	2,126.97	6,131.99	0.00	0.00	0.00	
13,200.00	89.91	180.12	7,270.90	-5,929.49	2,126.77	6,230.04	0.00	0.00	0.00	
13,300.00	89.91	180.12	7,271.04	-6,029.49	2,126.57	6,328.08	0.00	0.00	0.00	
13,400.00	89.91	180.12	7,271.19	-6,129.49	2,126.36	6,426.13	0.00	0.00	0.00	
13,500.00	89.91	180.12	7,271.34	-6,229.49	2,126.16	6,524.18	0.00	0.00	0.00	
13,600.00	89.91	180.12	7,271.49	-6,329.49	2,125.96	6,622.23	0.00	0.00	0.00	
13,700.00	89.91	180.12	7,271.64	-6,429.49	2,125.75	6,720.27	0.00	0.00	0.00	
13,800.00	89.91	180.12	7,271.79	-6,529.49	2,125.55	6,818.32	0.00	0.00	0.00	
13,900.00	89.91	180.12	7,271.94	-6,629.49	2,125.35	6,916.37	0.00	0.00	0.00	
14,000.00	89.91	180.12	7,272.09	-6,729.49	2,125.14	7,014.42	0.00	0.00	0.00	
14,100.00	89.91	180.12	7,272.24	-6,829.49	2,124.94	7,112.47	0.00	0.00	0.00	
14,200.00	89.91	180.12	7,272.39	-6,929.49	2,124.74	7,210.51	0.00	0.00	0.00	
14,300.00	89.91	180.12	7,272.54	-7,029.49	2,124.53	7,308.56	0.00	0.00	0.00	
14,400.00	89.91	180.12	7,272.69	-7,129.49	2,124.33	7,406.61	0.00	0.00	0.00	
14,500.00	89.91	180.12	7,272.84	-7,229.48	2,124.13	7,504.66	0.00	0.00	0.00	
14,600.00	89.91	180.12	7,272.99	-7,329.48	2,123.93	7,602.70	0.00	0.00	0.00	
14,700.00	89.91	180.12	7,273.14	-7,429.48	2,123.72	7,700.75	0.00	0.00	0.00	
14,800.00	89.91	180.12	7,273.29	-7,529.48	2,123.52	7,798.80	0.00	0.00	0.00	
14,900.00	89.91	180.12	7,273.44	-7,629.48	2,123.32	7,896.85	0.00	0.00	0.00	
15,000.00	89.91	180.12	7,273.59	-7,729.48	2,123.11	7,994.89	0.00	0.00	0.00	
15,100.00	89.91	180.12	7,273.74	-7,829.48	2,122.91	8,092.94	0.00	0.00	0.00	
15,200.00	89.91	180.12	7,273.89	-7,929.48	2,122.71	8,190.99	0.00	0.00	0.00	
15,300.00	89.91	180.12	7,274.04	-8,029.48	2,122.50	8,289.04	0.00	0.00	0.00	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-2L
Company:	Confluence Resources	TVD Reference:	RKB=5080+25 @ 5105.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5080+25 @ 5105.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-2L	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	89.91	180.12	7,274.19	-8,129.48	2,122.30	8,387.09	0.00	0.00	0.00	
15,500.00	89.91	180.12	7,274.34	-8,229.48	2,122.10	8,485.13	0.00	0.00	0.00	
15,600.00	89.91	180.12	7,274.49	-8,329.48	2,121.89	8,583.18	0.00	0.00	0.00	
15,700.00	89.91	180.12	7,274.64	-8,429.48	2,121.69	8,681.23	0.00	0.00	0.00	
15,800.00	89.91	180.12	7,274.79	-8,529.48	2,121.49	8,779.28	0.00	0.00	0.00	
15,900.00	89.91	180.12	7,274.94	-8,629.48	2,121.28	8,877.32	0.00	0.00	0.00	
16,000.00	89.91	180.12	7,275.09	-8,729.48	2,121.08	8,975.37	0.00	0.00	0.00	
16,100.00	89.91	180.12	7,275.24	-8,829.48	2,120.88	9,073.42	0.00	0.00	0.00	
16,200.00	89.91	180.12	7,275.39	-8,929.48	2,120.67	9,171.47	0.00	0.00	0.00	
16,300.00	89.91	180.12	7,275.54	-9,029.48	2,120.47	9,269.52	0.00	0.00	0.00	
16,400.00	89.91	180.12	7,275.69	-9,129.48	2,120.27	9,367.56	0.00	0.00	0.00	
16,500.00	89.91	180.12	7,275.84	-9,229.48	2,120.06	9,465.61	0.00	0.00	0.00	
16,600.00	89.91	180.12	7,275.99	-9,329.48	2,119.86	9,563.66	0.00	0.00	0.00	
16,700.00	89.91	180.12	7,276.14	-9,429.48	2,119.66	9,661.71	0.00	0.00	0.00	
16,800.00	89.91	180.12	7,276.29	-9,529.48	2,119.45	9,759.75	0.00	0.00	0.00	
16,900.00	89.91	180.12	7,276.44	-9,629.48	2,119.25	9,857.80	0.00	0.00	0.00	
17,000.00	89.91	180.12	7,276.59	-9,729.48	2,119.05	9,955.85	0.00	0.00	0.00	
17,100.00	89.91	180.12	7,276.74	-9,829.48	2,118.85	10,053.90	0.00	0.00	0.00	
17,200.00	89.91	180.12	7,276.89	-9,929.48	2,118.64	10,151.94	0.00	0.00	0.00	
17,300.00	89.91	180.12	7,277.04	-10,029.48	2,118.44	10,249.99	0.00	0.00	0.00	
17,400.00	89.91	180.12	7,277.19	-10,129.48	2,118.24	10,348.04	0.00	0.00	0.00	
17,500.00	89.91	180.12	7,277.34	-10,229.48	2,118.03	10,446.09	0.00	0.00	0.00	
17,600.00	89.91	180.12	7,277.49	-10,329.48	2,117.83	10,544.14	0.00	0.00	0.00	
17,700.00	89.91	180.12	7,277.64	-10,429.47	2,117.63	10,642.18	0.00	0.00	0.00	
17,800.00	89.91	180.12	7,277.79	-10,529.47	2,117.42	10,740.23	0.00	0.00	0.00	
17,900.00	89.91	180.12	7,277.94	-10,629.47	2,117.22	10,838.28	0.00	0.00	0.00	
17,939.98	89.91	180.12	7,278.00	-10,669.45	2,117.14	10,877.47	0.00	0.00	0.00	
PBHL/TD 17939.97 MD/7278.00 TVD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude		Longitude
LP Desha 4-06-2L 470 F - hit/miss target - Shape - Point	0.00	0.00	7,264.00	-1,329.74	2,136.12	14,526,629.70	1,733,063.46	39.99924289		-104.66918276
BHL Desha 4-06-2L 470 - plan hits target center - Point	0.00	0.00	7,278.00	-10,669.45	2,117.14	14,517,290.00	1,733,078.35	39.97359448		-104.66925331

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	
5,492.45	5,434.02	-77.73	183.10	Begin 49.24° tangent	
7,872.16	6,987.56	-782.20	1,842.40	Begin 10°/100' build/turn	
8,600.23	7,264.00	-1,329.74	2,136.12	LP Begin 89.91° lateral section	
17,939.98	7,278.00	-10,669.45	2,117.14	PBHL/TD 17939.97 MD/7278.00 TVD	

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-2L
Company:	Confluence Resources	TVD Reference:	RKB=5080+25 @ 5105.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5080+25 @ 5105.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-2L	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 4-06-2L, Surf loc: 860 FSL 450 FWL Section 33-T01N-R65W					
Well Position	+N/-S	0.00 ft	Northing:	14,527,951.68 usft	Latitude:	40.00289481
	+E/-W	0.00 ft	Easting:	1,730,922.54 usft	Longitude:	-104.67681019
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,080.00 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	168.78

Plan Survey Tool Program	Date	8/29/2017		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,939.98 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	
5,492.45	49.24	113.00	5,434.02	-77.73	183.10	10.00	10.00	0.00	113.00	
7,872.16	49.24	113.00	6,987.56	-782.20	1,842.40	0.00	0.00	0.00	0.00	
8,600.23	89.91	180.12	7,264.00	-1,329.74	2,136.12	10.00	5.59	9.22	74.66	LP Desha 4-06-2L 471
17,939.98	89.91	180.12	7,278.00	-10,669.45	2,117.14	0.00	0.00	0.00	0.00	BHL Desha 4-06-2L 4

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-2L
Company:	Confluence Resources	TVD Reference:	RKB=5080+25 @ 5105.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5080+25 @ 5105.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-2L	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	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
100.00	0.00	0.00	100.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
200.00	0.00	0.00	200.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
300.00	0.00	0.00	300.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
400.00	0.00	0.00	400.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
500.00	0.00	0.00	500.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
600.00	0.00	0.00	600.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
700.00	0.00	0.00	700.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
800.00	0.00	0.00	800.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
900.00	0.00	0.00	900.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
2,600.00	0.00	0.00	2,600.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
2,700.00	0.00	0.00	2,700.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
2,800.00	0.00	0.00	2,800.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
2,900.00	0.00	0.00	2,900.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
3,000.00	0.00	0.00	3,000.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
3,100.00	0.00	0.00	3,100.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
3,200.00	0.00	0.00	3,200.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
3,300.00	0.00	0.00	3,300.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
3,400.00	0.00	0.00	3,400.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
3,500.00	0.00	0.00	3,500.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
3,600.00	0.00	0.00	3,600.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
3,700.00	0.00	0.00	3,700.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
3,800.00	0.00	0.00	3,800.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
3,900.00	0.00	0.00	3,900.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
4,000.00	0.00	0.00	4,000.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
4,100.00	0.00	0.00	4,100.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
4,200.00	0.00	0.00	4,200.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
4,300.00	0.00	0.00	4,300.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
4,400.00	0.00	0.00	4,400.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
4,500.00	0.00	0.00	4,500.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
4,600.00	0.00	0.00	4,600.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
4,700.00	0.00	0.00	4,700.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
4,800.00	0.00	0.00	4,800.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
4,900.00	0.00	0.00	4,900.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
5,000.00	0.00	0.00	5,000.00	0.00	0.00	14,527,951.68	1,730,922.54	40.00289481	-104.67681019
KOP Begin 10°/100' build									
5,100.00	10.00	113.00	5,099.49	-3.40	8.01	14,527,948.31	1,730,930.56	40.00288547	-104.67678158
5,200.00	20.00	113.00	5,195.96	-13.50	31.81	14,527,938.30	1,730,954.39	40.00285773	-104.67669662

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-2L
Company:	Confluence Resources	TVD Reference:	RKB=5080+25 @ 5105.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5080+25 @ 5105.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-2L	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	113.00	5,286.48	-30.00	70.66	14,527,921.94	1,730,993.30	40.00281243	-104.67655788
5,400.00	40.00	113.00	5,368.29	-52.38	123.39	14,527,899.75	1,731,046.11	40.00275095	-104.67636959
5,492.45	49.24	113.00	5,434.02	-77.73	183.10	14,527,874.61	1,731,105.92	40.00268134	-104.67615637
Begin 49.24° tangent									
5,500.00	49.24	113.00	5,438.95	-79.97	188.36	14,527,872.40	1,731,111.19	40.00267520	-104.67613757
5,600.00	49.24	113.00	5,504.23	-109.57	258.09	14,527,843.05	1,731,181.02	40.00259390	-104.67588859
5,700.00	49.24	113.00	5,569.51	-139.18	327.82	14,527,813.70	1,731,250.86	40.00251261	-104.67563960
5,800.00	49.24	113.00	5,634.80	-168.78	397.54	14,527,784.35	1,731,320.69	40.00243131	-104.67539062
5,900.00	49.24	113.00	5,700.08	-198.38	467.27	14,527,755.00	1,731,390.52	40.00235001	-104.67514164
6,000.00	49.24	113.00	5,765.36	-227.98	537.00	14,527,725.65	1,731,460.36	40.00226871	-104.67489265
6,100.00	49.24	113.00	5,830.65	-257.59	606.72	14,527,696.30	1,731,530.19	40.00218741	-104.67464367
6,200.00	49.24	113.00	5,895.93	-287.19	676.45	14,527,666.95	1,731,600.02	40.00210612	-104.67439469
6,300.00	49.24	113.00	5,961.21	-316.79	746.18	14,527,637.60	1,731,669.86	40.00202482	-104.67414571
6,400.00	49.24	113.00	6,026.49	-346.40	815.90	14,527,608.25	1,731,739.69	40.00194352	-104.67389673
6,500.00	49.24	113.00	6,091.78	-376.00	885.63	14,527,578.90	1,731,809.53	40.00186222	-104.67364775
6,600.00	49.24	113.00	6,157.06	-405.60	955.36	14,527,549.55	1,731,879.36	40.00178091	-104.67339877
6,700.00	49.24	113.00	6,222.34	-435.20	1,025.08	14,527,520.20	1,731,949.19	40.00169961	-104.67314979
6,800.00	49.24	113.00	6,287.63	-464.81	1,094.81	14,527,490.85	1,732,019.03	40.00161831	-104.67290082
6,900.00	49.24	113.00	6,352.91	-494.41	1,164.54	14,527,461.50	1,732,088.86	40.00153701	-104.67265184
7,000.00	49.24	113.00	6,418.19	-524.01	1,234.26	14,527,432.15	1,732,158.69	40.00145570	-104.67240286
7,100.00	49.24	113.00	6,483.47	-553.62	1,303.99	14,527,402.80	1,732,228.53	40.00137440	-104.67215389
7,200.00	49.24	113.00	6,548.76	-583.22	1,373.72	14,527,373.45	1,732,298.36	40.00129310	-104.67190491
7,300.00	49.24	113.00	6,614.04	-612.82	1,443.45	14,527,344.10	1,732,368.19	40.00121179	-104.67165594
7,400.00	49.24	113.00	6,679.32	-642.42	1,513.17	14,527,314.75	1,732,438.03	40.00113048	-104.67140696
7,500.00	49.24	113.00	6,744.60	-672.03	1,582.90	14,527,285.40	1,732,507.86	40.00104918	-104.67115799
7,600.00	49.24	113.00	6,809.89	-701.63	1,652.63	14,527,256.05	1,732,577.69	40.00096787	-104.67090901
7,700.00	49.24	113.00	6,875.17	-731.23	1,722.35	14,527,226.70	1,732,647.53	40.00088657	-104.67066004
7,800.00	49.24	113.00	6,940.45	-760.84	1,792.08	14,527,197.35	1,732,717.36	40.00080526	-104.67041107
7,872.16	49.24	113.00	6,987.56	-782.20	1,842.40	14,527,176.17	1,732,767.76	40.00074658	-104.67023141
Begin 10°/100' build/turn									
7,900.00	50.03	116.51	7,005.59	-791.08	1,861.65	14,527,167.36	1,732,787.04	40.00072218	-104.67016265
8,000.00	53.68	128.36	7,067.48	-833.29	1,927.70	14,527,125.39	1,732,853.24	40.00060625	-104.66992682
8,100.00	58.38	139.02	7,123.45	-890.58	1,987.37	14,527,068.32	1,732,913.12	40.00044891	-104.66971378
8,200.00	63.88	148.57	7,171.80	-961.21	2,038.83	14,526,997.88	1,732,964.84	40.00025495	-104.66953003
8,300.00	69.94	157.22	7,211.07	-1,043.02	2,080.54	14,526,916.22	1,733,006.84	40.00003027	-104.66938113
8,400.00	76.39	165.20	7,240.05	-1,133.54	2,111.21	14,526,825.81	1,733,037.85	39.99978169	-104.66927162
8,500.00	83.09	172.76	7,257.88	-1,230.01	2,129.93	14,526,729.41	1,733,056.91	39.99951676	-104.66920482
8,600.00	89.90	180.10	7,264.00	-1,329.50	2,136.12	14,526,629.94	1,733,063.46	39.99924353	-104.66918276
8,600.23	89.91	180.12	7,264.00	-1,329.74	2,136.12	14,526,629.70	1,733,063.46	39.99924289	-104.66918276
LP Begin 89.91° lateral section									
8,700.00	89.91	180.12	7,264.15	-1,429.50	2,135.91	14,526,529.94	1,733,063.62	39.99896892	-104.66918352
8,800.00	89.91	180.12	7,264.30	-1,529.50	2,135.71	14,526,429.94	1,733,063.78	39.99869430	-104.66918427
8,900.00	89.91	180.12	7,264.45	-1,629.50	2,135.51	14,526,329.94	1,733,063.94	39.99841969	-104.66918503
9,000.00	89.91	180.12	7,264.60	-1,729.50	2,135.30	14,526,229.94	1,733,064.10	39.99814507	-104.66918578
9,100.00	89.91	180.12	7,264.75	-1,829.50	2,135.10	14,526,129.94	1,733,064.26	39.99787045	-104.66918654
9,200.00	89.91	180.12	7,264.90	-1,929.50	2,134.90	14,526,029.94	1,733,064.41	39.99759584	-104.66918730
9,300.00	89.91	180.12	7,265.05	-2,029.50	2,134.69	14,525,929.94	1,733,064.57	39.99732122	-104.66918805
9,400.00	89.91	180.12	7,265.20	-2,129.50	2,134.49	14,525,829.94	1,733,064.73	39.99704661	-104.66918881
9,500.00	89.91	180.12	7,265.35	-2,229.50	2,134.29	14,525,729.94	1,733,064.89	39.99677199	-104.66918956
9,600.00	89.91	180.12	7,265.50	-2,329.50	2,134.08	14,525,629.94	1,733,065.05	39.99649738	-104.66919032
9,700.00	89.91	180.12	7,265.65	-2,429.50	2,133.88	14,525,529.94	1,733,065.21	39.99622276	-104.66919108
9,800.00	89.91	180.12	7,265.80	-2,529.50	2,133.68	14,525,429.94	1,733,065.37	39.99594815	-104.66919183
9,900.00	89.91	180.12	7,265.95	-2,629.50	2,133.48	14,525,329.94	1,733,065.53	39.99567353	-104.66919259
10,000.00	89.91	180.12	7,266.10	-2,729.50	2,133.27	14,525,229.94	1,733,065.69	39.99539892	-104.66919334

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-2L
Company:	Confluence Resources	TVD Reference:	RKB=5080+25 @ 5105.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5080+25 @ 5105.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-2L	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	89.91	180.12	7,266.25	-2,829.50	2,133.07	14,525,129.95	1,733,065.85	39.99512430	-104.66919410
10,200.00	89.91	180.12	7,266.40	-2,929.50	2,132.87	14,525,029.95	1,733,066.01	39.99484969	-104.66919485
10,300.00	89.91	180.12	7,266.55	-3,029.50	2,132.66	14,524,929.95	1,733,066.17	39.99457507	-104.66919561
10,400.00	89.91	180.12	7,266.70	-3,129.50	2,132.46	14,524,829.95	1,733,066.33	39.99430046	-104.66919637
10,500.00	89.91	180.12	7,266.85	-3,229.50	2,132.26	14,524,729.95	1,733,066.49	39.99402584	-104.66919712
10,600.00	89.91	180.12	7,267.00	-3,329.50	2,132.05	14,524,629.95	1,733,066.65	39.99375122	-104.66919788
10,700.00	89.91	180.12	7,267.15	-3,429.50	2,131.85	14,524,529.95	1,733,066.81	39.99347661	-104.66919863
10,800.00	89.91	180.12	7,267.30	-3,529.50	2,131.65	14,524,429.95	1,733,066.97	39.99320199	-104.66919939
10,900.00	89.91	180.12	7,267.45	-3,629.50	2,131.44	14,524,329.95	1,733,067.13	39.99292738	-104.66920014
11,000.00	89.91	180.12	7,267.60	-3,729.50	2,131.24	14,524,229.95	1,733,067.28	39.99265276	-104.66920090
11,100.00	89.91	180.12	7,267.75	-3,829.50	2,131.04	14,524,129.95	1,733,067.44	39.99237815	-104.66920165
11,200.00	89.91	180.12	7,267.90	-3,929.50	2,130.83	14,524,029.95	1,733,067.60	39.99210353	-104.66920241
11,300.00	89.91	180.12	7,268.05	-4,029.50	2,130.63	14,523,929.95	1,733,067.76	39.99182892	-104.66920317
11,400.00	89.91	180.12	7,268.20	-4,129.49	2,130.43	14,523,829.95	1,733,067.92	39.99155430	-104.66920392
11,500.00	89.91	180.12	7,268.35	-4,229.49	2,130.22	14,523,729.95	1,733,068.08	39.99127968	-104.66920468
11,600.00	89.91	180.12	7,268.50	-4,329.49	2,130.02	14,523,629.95	1,733,068.24	39.99100507	-104.66920543
11,700.00	89.91	180.12	7,268.65	-4,429.49	2,129.82	14,523,529.95	1,733,068.40	39.99073045	-104.66920619
11,800.00	89.91	180.12	7,268.80	-4,529.49	2,129.61	14,523,429.95	1,733,068.56	39.99045584	-104.66920694
11,900.00	89.91	180.12	7,268.95	-4,629.49	2,129.41	14,523,329.95	1,733,068.72	39.99018122	-104.66920770
12,000.00	89.91	180.12	7,269.10	-4,729.49	2,129.21	14,523,229.95	1,733,068.88	39.98990661	-104.66920845
12,100.00	89.91	180.12	7,269.25	-4,829.49	2,129.00	14,523,129.95	1,733,069.04	39.98963199	-104.66920921
12,200.00	89.91	180.12	7,269.40	-4,929.49	2,128.80	14,523,029.95	1,733,069.20	39.98935737	-104.66920997
12,300.00	89.91	180.12	7,269.55	-5,029.49	2,128.60	14,522,929.95	1,733,069.36	39.98908276	-104.66921072
12,400.00	89.91	180.12	7,269.70	-5,129.49	2,128.40	14,522,829.96	1,733,069.52	39.98880814	-104.66921148
12,500.00	89.91	180.12	7,269.85	-5,229.49	2,128.19	14,522,729.96	1,733,069.68	39.98853353	-104.66921223
12,600.00	89.91	180.12	7,270.00	-5,329.49	2,127.99	14,522,629.96	1,733,069.84	39.98825891	-104.66921299
12,700.00	89.91	180.12	7,270.15	-5,429.49	2,127.79	14,522,529.96	1,733,069.99	39.98798430	-104.66921374
12,800.00	89.91	180.12	7,270.30	-5,529.49	2,127.58	14,522,429.96	1,733,070.15	39.98770968	-104.66921450
12,900.00	89.91	180.12	7,270.45	-5,629.49	2,127.38	14,522,329.96	1,733,070.31	39.98743506	-104.66921525
13,000.00	89.91	180.12	7,270.60	-5,729.49	2,127.18	14,522,229.96	1,733,070.47	39.98716045	-104.66921601
13,100.00	89.91	180.12	7,270.75	-5,829.49	2,126.97	14,522,129.96	1,733,070.63	39.98688583	-104.66921676
13,200.00	89.91	180.12	7,270.90	-5,929.49	2,126.77	14,522,029.96	1,733,070.79	39.98661122	-104.66921752
13,300.00	89.91	180.12	7,271.04	-6,029.49	2,126.57	14,521,929.96	1,733,070.95	39.98633660	-104.66921827
13,400.00	89.91	180.12	7,271.19	-6,129.49	2,126.36	14,521,829.96	1,733,071.11	39.98606199	-104.66921903
13,500.00	89.91	180.12	7,271.34	-6,229.49	2,126.16	14,521,729.96	1,733,071.27	39.98578737	-104.66921979
13,600.00	89.91	180.12	7,271.49	-6,329.49	2,125.96	14,521,629.96	1,733,071.43	39.98551275	-104.66922054
13,700.00	89.91	180.12	7,271.64	-6,429.49	2,125.75	14,521,529.96	1,733,071.59	39.98523814	-104.66922130
13,800.00	89.91	180.12	7,271.79	-6,529.49	2,125.55	14,521,429.96	1,733,071.75	39.98496352	-104.66922205
13,900.00	89.91	180.12	7,271.94	-6,629.49	2,125.35	14,521,329.96	1,733,071.91	39.98468891	-104.66922281
14,000.00	89.91	180.12	7,272.09	-6,729.49	2,125.14	14,521,229.96	1,733,072.07	39.98441429	-104.66922356
14,100.00	89.91	180.12	7,272.24	-6,829.49	2,124.94	14,521,129.96	1,733,072.23	39.98413967	-104.66922432
14,200.00	89.91	180.12	7,272.39	-6,929.49	2,124.74	14,521,029.96	1,733,072.39	39.98386506	-104.66922507
14,300.00	89.91	180.12	7,272.54	-7,029.49	2,124.53	14,520,929.96	1,733,072.55	39.98359044	-104.66922583
14,400.00	89.91	180.12	7,272.69	-7,129.49	2,124.33	14,520,829.96	1,733,072.71	39.98331583	-104.66922658
14,500.00	89.91	180.12	7,272.84	-7,229.48	2,124.13	14,520,729.96	1,733,072.86	39.98304121	-104.66922734
14,600.00	89.91	180.12	7,272.99	-7,329.48	2,123.93	14,520,629.96	1,733,073.02	39.98276659	-104.66922809
14,700.00	89.91	180.12	7,273.14	-7,429.48	2,123.72	14,520,529.97	1,733,073.18	39.98249198	-104.66922885
14,800.00	89.91	180.12	7,273.29	-7,529.48	2,123.52	14,520,429.97	1,733,073.34	39.98221736	-104.66922960
14,900.00	89.91	180.12	7,273.44	-7,629.48	2,123.32	14,520,329.97	1,733,073.50	39.98194275	-104.66923036
15,000.00	89.91	180.12	7,273.59	-7,729.48	2,123.11	14,520,229.97	1,733,073.66	39.98166813	-104.66923111
15,100.00	89.91	180.12	7,273.74	-7,829.48	2,122.91	14,520,129.97	1,733,073.82	39.98139351	-104.66923187
15,200.00	89.91	180.12	7,273.89	-7,929.48	2,122.71	14,520,029.97	1,733,073.98	39.98111890	-104.66923262
15,300.00	89.91	180.12	7,274.04	-8,029.48	2,122.50	14,519,929.97	1,733,074.14	39.98084428	-104.66923338
15,400.00	89.91	180.12	7,274.19	-8,129.48	2,122.30	14,519,829.97	1,733,074.30	39.98056967	-104.66923413
15,500.00	89.91	180.12	7,274.34	-8,229.48	2,122.10	14,519,729.97	1,733,074.46	39.98029505	-104.66923489

Database:	DB_Jul2216dt_v14	Local Co-ordinate Reference:	Well Desha 4-06-2L
Company:	Confluence Resources	TVD Reference:	RKB=5080+25 @ 5105.00ft
Project:	Weld County, Colorado	MD Reference:	RKB=5080+25 @ 5105.00ft
Site:	Section 33-T01N-R65W	North Reference:	True
Well:	Desha 4-06-2L	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	89.91	180.12	7,274.49	-8,329.48	2,121.89	14,519,629.97	1,733,074.62	39.98002043	-104.66923564
15,700.00	89.91	180.12	7,274.64	-8,429.48	2,121.69	14,519,529.97	1,733,074.78	39.97974582	-104.66923640
15,800.00	89.91	180.12	7,274.79	-8,529.48	2,121.49	14,519,429.97	1,733,074.94	39.97947120	-104.66923715
15,900.00	89.91	180.12	7,274.94	-8,629.48	2,121.28	14,519,329.97	1,733,075.10	39.97919659	-104.66923791
16,000.00	89.91	180.12	7,275.09	-8,729.48	2,121.08	14,519,229.97	1,733,075.26	39.97892197	-104.66923866
16,100.00	89.91	180.12	7,275.24	-8,829.48	2,120.88	14,519,129.97	1,733,075.42	39.97864735	-104.66923942
16,200.00	89.91	180.12	7,275.39	-8,929.48	2,120.67	14,519,029.97	1,733,075.57	39.97837274	-104.66924017
16,300.00	89.91	180.12	7,275.54	-9,029.48	2,120.47	14,518,929.97	1,733,075.73	39.97809812	-104.66924093
16,400.00	89.91	180.12	7,275.69	-9,129.48	2,120.27	14,518,829.97	1,733,075.89	39.97782350	-104.66924168
16,500.00	89.91	180.12	7,275.84	-9,229.48	2,120.06	14,518,729.97	1,733,076.05	39.97754889	-104.66924244
16,600.00	89.91	180.12	7,275.99	-9,329.48	2,119.86	14,518,629.97	1,733,076.21	39.97727427	-104.66924319
16,700.00	89.91	180.12	7,276.14	-9,429.48	2,119.66	14,518,529.97	1,733,076.37	39.97699966	-104.66924395
16,800.00	89.91	180.12	7,276.29	-9,529.48	2,119.45	14,518,429.97	1,733,076.53	39.97672504	-104.66924470
16,900.00	89.91	180.12	7,276.44	-9,629.48	2,119.25	14,518,329.97	1,733,076.69	39.97645042	-104.66924546
17,000.00	89.91	180.12	7,276.59	-9,729.48	2,119.05	14,518,229.98	1,733,076.85	39.97617581	-104.66924621
17,100.00	89.91	180.12	7,276.74	-9,829.48	2,118.85	14,518,129.98	1,733,077.01	39.97590119	-104.66924697
17,200.00	89.91	180.12	7,276.89	-9,929.48	2,118.64	14,518,029.98	1,733,077.17	39.97562657	-104.66924772
17,300.00	89.91	180.12	7,277.04	-10,029.48	2,118.44	14,517,929.98	1,733,077.33	39.97535196	-104.66924848
17,400.00	89.91	180.12	7,277.19	-10,129.48	2,118.24	14,517,829.98	1,733,077.49	39.97507734	-104.66924923
17,500.00	89.91	180.12	7,277.34	-10,229.48	2,118.03	14,517,729.98	1,733,077.65	39.97480273	-104.66924999
17,600.00	89.91	180.12	7,277.49	-10,329.48	2,117.83	14,517,629.98	1,733,077.81	39.97452811	-104.66925074
17,700.00	89.91	180.12	7,277.64	-10,429.47	2,117.63	14,517,529.98	1,733,077.97	39.97425349	-104.66925149
17,800.00	89.91	180.12	7,277.79	-10,529.47	2,117.42	14,517,429.98	1,733,078.13	39.97397888	-104.66925225
17,900.00	89.91	180.12	7,277.94	-10,629.47	2,117.22	14,517,329.98	1,733,078.29	39.97370426	-104.66925300
17,939.98	89.91	180.12	7,278.00	-10,669.45	2,117.14	14,517,290.00	1,733,078.35	39.97359448	-104.66925331
PBHL/TD 17939.97 MD/7278.00 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 4-06-2L 470 F	0.00	0.00	7,264.00	-1,329.74	2,136.12	14,526,629.70	1,733,063.46	39.99924289	-104.66918276
- plan hits target center									
- Point									
BHL Desha 4-06-2L 470	0.00	0.00	7,278.00	-10,669.45	2,117.14	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	
5,492.45	5,434.02	-77.73	183.10	Begin 49.24° tangent	
7,872.16	6,987.56	-782.20	1,842.40	Begin 10°/100' build/turn	
8,600.23	7,264.00	-1,329.74	2,136.12	LP Begin 89.91° lateral section	
17,939.98	7,278.00	-10,669.45	2,117.14	PBHL/TD 17939.97 MD/7278.00 TVD	