



# **Bison IV Operating LLC**

**Larimer Co., CO (NAD-83)**

**Centerra East Pad**

**CE 5-68 11-10-15H**

**OH**

**Plan: Plan #3**

## **Standard Planning Report**

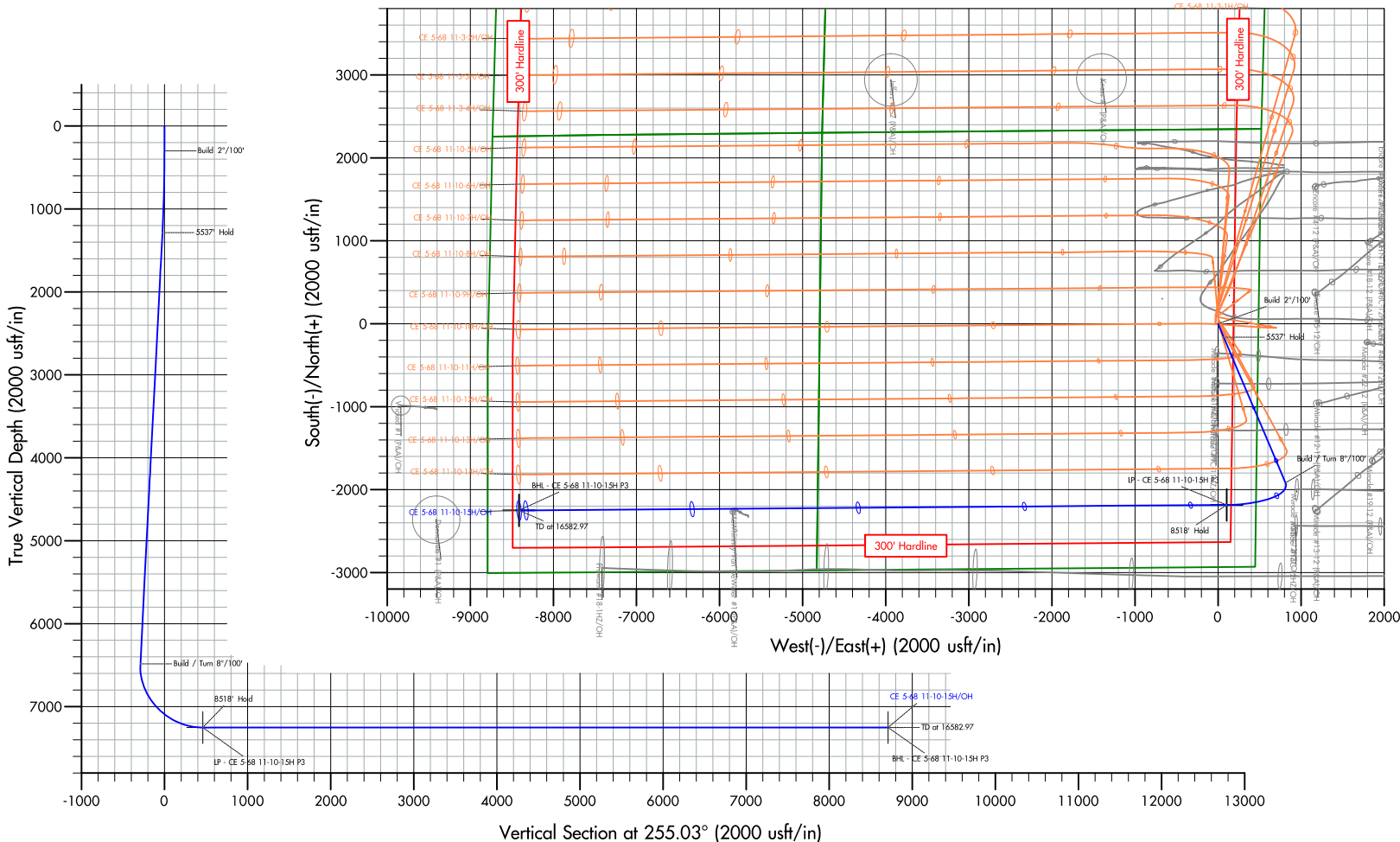
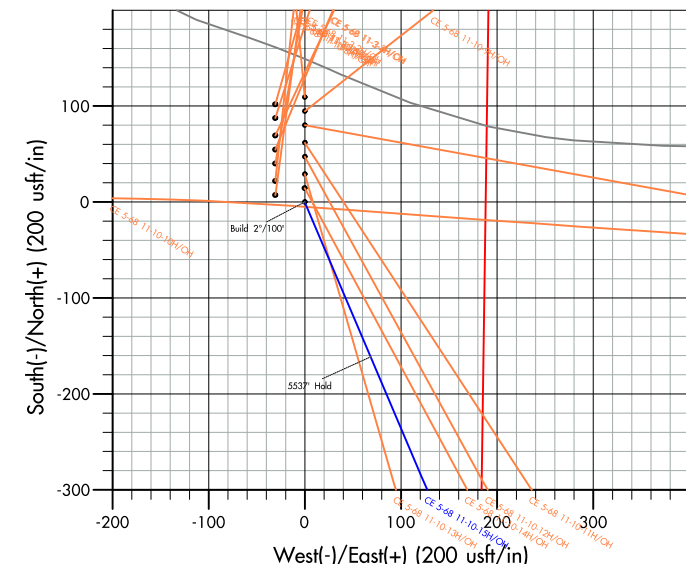
**24 September, 2024**





Project: Larimer Co., CO (NAD-83)  
 Site: Centerra East Pad  
 Well: CE 5-68 11-10-15H  
 Wellbore: OH  
 Design: Plan #3  
 Lat: 40.415270  
 Long: -104.965940  
 GL: 4980.00  
 KB: KB=20 @ 5000.00usft (Precision 460)

WELL DETAILS: CE 5-68 11-10-15H									
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
0.00	0.00	1394571.02	3148706.84	40.415270	-104.965940				
WELLBORE TARGET DETAILS (LAT/LONG)									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude		
BHL - CE 5-68 11-10-15H P3	7253.00	-2249.92	-8412.67	1392270.47	3140307.87	40.409090	-104.996150		
LP - CE 5-68 11-10-15H P3	7253.00	-2182.14	105.82	1392389.56	3148825.80	40.409280	-104.965560		
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	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	Build 2°/100'
1307.10	20.14	156.99	1286.49	-161.27	68.47	2.00	156.99	-24.48	5537' Hold
6844.35	20.14	156.99	6485.09	-1916.37	813.65	0.00	0.00	-290.91	Build / Turn 8°/100'
8064.20	90.00	269.54	7253.00	-2182.14	105.82	8.00	111.30	461.56	8518' Hold
16582.97	90.00	269.54	7253.00	-2249.92	-8412.67	0.00	0.00	8708.34	TD at 16582.97



FORMATION TOPS		
TVDPath	MDPath	Formation
534.00	534.26	Upper Pierre
1034.00	1042.28	Pierre
3524.00	3690.37	Parkman
4119.00	4324.13	Sussex
4568.00	4802.38	Shannon
6852.00	7240.86	Sharon Springs
6913.00	7313.19	Niobrara
7220.00	7839.89	Fort Hays
7244.00	7947.41	Codell

Azimuths to True North  
 Magnetic North: 7.81°

Magnetic Field  
 Strength: 51590.5nT  
 Dip Angle: 66.49°  
 Date: 8/26/2024  
 Model: HRGM



<b>Database:</b>	EDMProd	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Company:</b>	Bison IV Operating LLC	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site:</b>	Centerra East Pad	<b>North Reference:</b>	True
<b>Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #3		

<b>Project</b>	Larimer Co., CO (NAD-83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

<b>Site</b>	Centerra East Pad				
<b>Site Position:</b>		<b>Northing:</b>	1,394,680.31 usft	<b>Latitude:</b>	40.415570
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,148,706.18 usft	<b>Longitude:</b>	-104.965940
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "		

<b>Well</b>	CE 5-68 11-10-15H					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	1,394,571.02 usft	<b>Latitude:</b>	40.415270
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>	3,148,706.84 usft	<b>Longitude:</b>	-104.965940
<b>Position Uncertainty</b>	0.00 usft		<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	4,980.00 usft
<b>Grid Convergence:</b>	0.35 °					

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HRGM	8/26/2024	7.81	66.49	51,590.47013231

<b>Design</b>	Plan #3			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	255.03

<b>Plan Survey Tool Program</b>	<b>Date</b>	9/24/2024		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	16,582.97 Plan #3 (OH)	MWD+IFR1+MS	OWSG MWD + IFR1 + Mult

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	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	
1,307.10	20.14	156.99	1,286.49	-161.27	68.47	2.00	2.00	0.00	156.99	
6,844.35	20.14	156.99	6,485.09	-1,916.37	813.65	0.00	0.00	0.00	0.00	
8,064.20	90.00	269.54	7,253.00	-2,182.14	105.82	8.00	5.73	9.23	111.30	LP - CE 5-68 11-10-
16,582.97	90.00	269.54	7,253.00	-2,249.92	-8,412.67	0.00	0.00	0.00	0.00	BHL - CE 5-68 11-1

<b>Database:</b>	EDMProd	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Company:</b>	Bison IV Operating LLC	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site:</b>	Centerra East Pad	<b>North Reference:</b>	True
<b>Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
<b>Build 2°/100'</b>									
400.00	2.00	156.99	399.98	-1.61	0.68	-0.24	2.00	2.00	0.00
500.00	4.00	156.99	499.84	-6.42	2.73	-0.98	2.00	2.00	0.00
534.26	4.69	156.99	534.00	-8.81	3.74	-1.34	2.00	2.00	0.00
<b>Upper Pierre</b>									
600.00	6.00	156.99	599.45	-14.45	6.13	-2.19	2.00	2.00	0.00
700.00	8.00	156.99	698.70	-25.66	10.90	-3.90	2.00	2.00	0.00
800.00	10.00	156.99	797.47	-40.06	17.01	-6.08	2.00	2.00	0.00
900.00	12.00	156.99	895.62	-57.62	24.47	-8.75	2.00	2.00	0.00
1,000.00	14.00	156.99	993.06	-78.33	33.26	-11.89	2.00	2.00	0.00
1,042.28	14.85	156.99	1,034.00	-88.02	37.37	-13.36	2.00	2.00	0.00
<b>Pierre</b>									
1,100.00	16.00	156.99	1,089.64	-102.15	43.37	-15.51	2.00	2.00	0.00
1,200.00	18.00	156.99	1,185.27	-129.06	54.80	-19.59	2.00	2.00	0.00
1,307.10	20.14	156.99	1,286.49	-161.27	68.47	-24.48	2.00	2.00	0.00
<b>5537' Hold</b>									
1,400.00	20.14	156.99	1,373.70	-190.72	80.97	-28.95	0.00	0.00	0.00
1,500.00	20.14	156.99	1,467.59	-222.41	94.43	-33.76	0.00	0.00	0.00
1,600.00	20.14	156.99	1,561.47	-254.11	107.89	-38.57	0.00	0.00	0.00
1,700.00	20.14	156.99	1,655.36	-285.81	121.35	-43.39	0.00	0.00	0.00
1,800.00	20.14	156.99	1,749.24	-317.50	134.80	-48.20	0.00	0.00	0.00
1,900.00	20.14	156.99	1,843.12	-349.20	148.26	-53.01	0.00	0.00	0.00
2,000.00	20.14	156.99	1,937.01	-380.89	161.72	-57.82	0.00	0.00	0.00
2,100.00	20.14	156.99	2,030.89	-412.59	175.18	-62.63	0.00	0.00	0.00
2,200.00	20.14	156.99	2,124.78	-444.29	188.64	-67.44	0.00	0.00	0.00
2,300.00	20.14	156.99	2,218.66	-475.98	202.09	-72.25	0.00	0.00	0.00
2,400.00	20.14	156.99	2,312.54	-507.68	215.55	-77.07	0.00	0.00	0.00
2,500.00	20.14	156.99	2,406.43	-539.38	229.01	-81.88	0.00	0.00	0.00
2,600.00	20.14	156.99	2,500.31	-571.07	242.47	-86.69	0.00	0.00	0.00
2,700.00	20.14	156.99	2,594.20	-602.77	255.92	-91.50	0.00	0.00	0.00
2,800.00	20.14	156.99	2,688.08	-634.46	269.38	-96.31	0.00	0.00	0.00
2,900.00	20.14	156.99	2,781.97	-666.16	282.84	-101.12	0.00	0.00	0.00
3,000.00	20.14	156.99	2,875.85	-697.86	296.30	-105.93	0.00	0.00	0.00
3,100.00	20.14	156.99	2,969.73	-729.55	309.75	-110.75	0.00	0.00	0.00
3,200.00	20.14	156.99	3,063.62	-761.25	323.21	-115.56	0.00	0.00	0.00
3,300.00	20.14	156.99	3,157.50	-792.95	336.67	-120.37	0.00	0.00	0.00
3,400.00	20.14	156.99	3,251.39	-824.64	350.13	-125.18	0.00	0.00	0.00
3,500.00	20.14	156.99	3,345.27	-856.34	363.58	-129.99	0.00	0.00	0.00
3,600.00	20.14	156.99	3,439.15	-888.03	377.04	-134.80	0.00	0.00	0.00
3,690.37	20.14	156.99	3,524.00	-916.68	389.20	-139.15	0.00	0.00	0.00
<b>Parkman</b>									
3,700.00	20.14	156.99	3,533.04	-919.73	390.50	-139.62	0.00	0.00	0.00
3,800.00	20.14	156.99	3,626.92	-951.43	403.96	-144.43	0.00	0.00	0.00
3,900.00	20.14	156.99	3,720.81	-983.12	417.41	-149.24	0.00	0.00	0.00
4,000.00	20.14	156.99	3,814.69	-1,014.82	430.87	-154.05	0.00	0.00	0.00
4,100.00	20.14	156.99	3,908.58	-1,046.52	444.33	-158.86	0.00	0.00	0.00
4,200.00	20.14	156.99	4,002.46	-1,078.21	457.79	-163.67	0.00	0.00	0.00
4,300.00	20.14	156.99	4,096.34	-1,109.91	471.24	-168.48	0.00	0.00	0.00
4,324.13	20.14	156.99	4,119.00	-1,117.56	474.49	-169.65	0.00	0.00	0.00

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<b>Company:</b>	Bison IV Operating LLC	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site:</b>	Centerra East Pad	<b>North Reference:</b>	True
<b>Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #3		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
<b>Sussex</b>										
4,400.00	20.14	156.99	4,190.23	-1,141.60	484.70	-173.30	0.00	0.00	0.00	
4,500.00	20.14	156.99	4,284.11	-1,173.30	498.16	-178.11	0.00	0.00	0.00	
4,600.00	20.14	156.99	4,378.00	-1,205.00	511.62	-182.92	0.00	0.00	0.00	
4,700.00	20.14	156.99	4,471.88	-1,236.69	525.08	-187.73	0.00	0.00	0.00	
4,800.00	20.14	156.99	4,565.77	-1,268.39	538.53	-192.54	0.00	0.00	0.00	
4,802.38	20.14	156.99	4,568.00	-1,269.14	538.85	-192.66	0.00	0.00	0.00	
<b>Shannon</b>										
4,900.00	20.14	156.99	4,659.65	-1,300.09	551.99	-197.35	0.00	0.00	0.00	
5,000.00	20.14	156.99	4,753.53	-1,331.78	565.45	-202.17	0.00	0.00	0.00	
5,100.00	20.14	156.99	4,847.42	-1,363.48	578.91	-206.98	0.00	0.00	0.00	
5,200.00	20.14	156.99	4,941.30	-1,395.17	592.36	-211.79	0.00	0.00	0.00	
5,300.00	20.14	156.99	5,035.19	-1,426.87	605.82	-216.60	0.00	0.00	0.00	
5,400.00	20.14	156.99	5,129.07	-1,458.57	619.28	-221.41	0.00	0.00	0.00	
5,500.00	20.14	156.99	5,222.95	-1,490.26	632.74	-226.22	0.00	0.00	0.00	
5,600.00	20.14	156.99	5,316.84	-1,521.96	646.19	-231.03	0.00	0.00	0.00	
5,700.00	20.14	156.99	5,410.72	-1,553.66	659.65	-235.85	0.00	0.00	0.00	
5,800.00	20.14	156.99	5,504.61	-1,585.35	673.11	-240.66	0.00	0.00	0.00	
5,900.00	20.14	156.99	5,598.49	-1,617.05	686.57	-245.47	0.00	0.00	0.00	
6,000.00	20.14	156.99	5,692.38	-1,648.74	700.02	-250.28	0.00	0.00	0.00	
6,100.00	20.14	156.99	5,786.26	-1,680.44	713.48	-255.09	0.00	0.00	0.00	
6,200.00	20.14	156.99	5,880.14	-1,712.14	726.94	-259.90	0.00	0.00	0.00	
6,300.00	20.14	156.99	5,974.03	-1,743.83	740.40	-264.71	0.00	0.00	0.00	
6,400.00	20.14	156.99	6,067.91	-1,775.53	753.85	-269.53	0.00	0.00	0.00	
6,500.00	20.14	156.99	6,161.80	-1,807.23	767.31	-274.34	0.00	0.00	0.00	
6,600.00	20.14	156.99	6,255.68	-1,838.92	780.77	-279.15	0.00	0.00	0.00	
6,700.00	20.14	156.99	6,349.56	-1,870.62	794.23	-283.96	0.00	0.00	0.00	
6,800.00	20.14	156.99	6,443.45	-1,902.31	807.68	-288.77	0.00	0.00	0.00	
6,844.35	20.14	156.99	6,485.09	-1,916.37	813.65	-290.91	0.00	0.00	0.00	
<b>Build / Turn 8°/100'</b>										
6,850.00	19.98	158.23	6,490.39	-1,918.16	814.39	-291.16	8.00	-2.83	21.81	
6,900.00	18.97	169.85	6,537.55	-1,934.10	818.99	-291.48	8.00	-2.03	23.25	
6,950.00	18.73	182.23	6,584.89	-1,950.13	820.11	-288.43	8.00	-0.47	24.76	
7,000.00	19.31	194.40	6,632.18	-1,966.17	817.74	-281.99	8.00	1.16	24.33	
7,050.00	20.64	205.47	6,679.18	-1,982.14	811.90	-272.22	8.00	2.65	22.14	
7,100.00	22.58	214.99	6,725.68	-1,997.96	802.60	-259.15	8.00	3.88	19.04	
7,150.00	24.99	222.92	6,771.45	-2,013.56	789.90	-242.85	8.00	4.82	15.86	
7,200.00	27.74	229.45	6,816.25	-2,028.87	773.86	-223.40	8.00	5.52	13.07	
7,240.86	30.19	233.94	6,852.00	-2,041.10	758.32	-205.23	8.00	5.99	10.97	
<b>Sharon Springs</b>										
7,250.00	30.76	234.85	6,859.88	-2,043.80	754.55	-200.89	8.00	6.20	9.98	
7,300.00	33.96	239.34	6,902.12	-2,058.29	732.08	-175.44	8.00	6.40	8.99	
7,313.19	34.82	240.40	6,913.00	-2,062.03	725.64	-168.24	8.00	6.58	8.05	
<b>Niobrara</b>										
7,350.00	37.29	243.13	6,942.76	-2,072.26	706.55	-147.16	8.00	6.71	7.42	
7,400.00	40.73	246.38	6,981.61	-2,085.65	678.08	-116.20	8.00	6.88	6.49	
7,450.00	44.25	249.20	7,018.47	-2,098.38	646.81	-82.70	8.00	7.04	5.63	
7,500.00	47.83	251.68	7,053.18	-2,110.41	612.90	-46.83	8.00	7.16	4.96	
7,550.00	51.46	253.89	7,085.55	-2,121.67	576.51	-8.77	8.00	7.26	4.42	
7,600.00	55.12	255.89	7,115.43	-2,132.10	537.81	31.30	8.00	7.33	4.00	
7,650.00	58.82	257.72	7,142.68	-2,141.65	497.01	73.19	8.00	7.39	3.65	
7,700.00	62.54	259.40	7,167.17	-2,150.29	454.29	116.69	8.00	7.44	3.38	
7,750.00	66.28	260.98	7,188.76	-2,157.95	409.86	161.59	8.00	7.48	3.16	

<b>Database:</b>	EDMProd	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Company:</b>	Bison IV Operating LLC	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site:</b>	Centerra East Pad	<b>North Reference:</b>	True
<b>Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #3		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
7,800.00	70.03	262.47	7,207.37	-2,164.62	363.94	207.68	8.00	7.51	2.98	
7,839.89	73.03	263.61	7,220.00	-2,169.20	326.39	245.14	8.00	7.53	2.85	
<b>Fort Hays</b>										
7,850.00	73.80	263.89	7,222.89	-2,170.26	316.76	254.71	8.00	7.54	2.79	
7,900.00	77.57	265.26	7,235.25	-2,174.83	268.54	302.48	8.00	7.55	2.74	
7,947.41	81.15	266.52	7,244.00	-2,178.16	222.07	348.23	8.00	7.56	2.66	
<b>Codell</b>										
7,950.00	81.35	266.59	7,244.39	-2,178.32	219.51	350.74	8.00	7.57	2.63	
8,000.00	85.14	267.89	7,250.28	-2,180.70	169.93	399.26	8.00	7.57	2.60	
8,050.00	88.92	269.18	7,252.87	-2,181.98	120.02	447.80	8.00	7.58	2.57	
8,064.20	90.00	269.54	7,253.00	-2,182.14	105.82	461.56	8.00	7.58	2.57	
<b>8518' Hold</b>										
8,100.00	90.00	269.54	7,253.00	-2,182.42	70.03	496.21	0.00	0.00	0.00	
8,200.00	90.00	269.54	7,253.00	-2,183.22	-29.97	593.02	0.00	0.00	0.00	
8,300.00	90.00	269.54	7,253.00	-2,184.01	-129.97	689.83	0.00	0.00	0.00	
8,400.00	90.00	269.54	7,253.00	-2,184.81	-229.96	786.63	0.00	0.00	0.00	
8,500.00	90.00	269.54	7,253.00	-2,185.60	-329.96	883.44	0.00	0.00	0.00	
8,600.00	90.00	269.54	7,253.00	-2,186.40	-429.96	980.25	0.00	0.00	0.00	
8,700.00	90.00	269.54	7,253.00	-2,187.19	-529.96	1,077.05	0.00	0.00	0.00	
8,800.00	90.00	269.54	7,253.00	-2,187.99	-629.95	1,173.86	0.00	0.00	0.00	
8,900.00	90.00	269.54	7,253.00	-2,188.79	-729.95	1,270.67	0.00	0.00	0.00	
9,000.00	90.00	269.54	7,253.00	-2,189.58	-829.95	1,367.48	0.00	0.00	0.00	
9,100.00	90.00	269.54	7,253.00	-2,190.38	-929.94	1,464.28	0.00	0.00	0.00	
9,200.00	90.00	269.54	7,253.00	-2,191.17	-1,029.94	1,561.09	0.00	0.00	0.00	
9,300.00	90.00	269.54	7,253.00	-2,191.97	-1,129.94	1,657.90	0.00	0.00	0.00	
9,400.00	90.00	269.54	7,253.00	-2,192.76	-1,229.93	1,754.71	0.00	0.00	0.00	
9,500.00	90.00	269.54	7,253.00	-2,193.56	-1,329.93	1,851.51	0.00	0.00	0.00	
9,600.00	90.00	269.54	7,253.00	-2,194.36	-1,429.93	1,948.32	0.00	0.00	0.00	
9,700.00	90.00	269.54	7,253.00	-2,195.15	-1,529.92	2,045.13	0.00	0.00	0.00	
9,800.00	90.00	269.54	7,253.00	-2,195.95	-1,629.92	2,141.93	0.00	0.00	0.00	
9,900.00	90.00	269.54	7,253.00	-2,196.74	-1,729.92	2,238.74	0.00	0.00	0.00	
10,000.00	90.00	269.54	7,253.00	-2,197.54	-1,829.91	2,335.55	0.00	0.00	0.00	
10,100.00	90.00	269.54	7,253.00	-2,198.33	-1,929.91	2,432.36	0.00	0.00	0.00	
10,200.00	90.00	269.54	7,253.00	-2,199.13	-2,029.91	2,529.16	0.00	0.00	0.00	
10,300.00	90.00	269.54	7,253.00	-2,199.93	-2,129.90	2,625.97	0.00	0.00	0.00	
10,400.00	90.00	269.54	7,253.00	-2,200.72	-2,229.90	2,722.78	0.00	0.00	0.00	
10,500.00	90.00	269.54	7,253.00	-2,201.52	-2,329.90	2,819.59	0.00	0.00	0.00	
10,600.00	90.00	269.54	7,253.00	-2,202.31	-2,429.89	2,916.39	0.00	0.00	0.00	
10,700.00	90.00	269.54	7,253.00	-2,203.11	-2,529.89	3,013.20	0.00	0.00	0.00	
10,800.00	90.00	269.54	7,253.00	-2,203.91	-2,629.89	3,110.01	0.00	0.00	0.00	
10,900.00	90.00	269.54	7,253.00	-2,204.70	-2,729.89	3,206.81	0.00	0.00	0.00	
11,000.00	90.00	269.54	7,253.00	-2,205.50	-2,829.88	3,303.62	0.00	0.00	0.00	
11,100.00	90.00	269.54	7,253.00	-2,206.29	-2,929.88	3,400.43	0.00	0.00	0.00	
11,200.00	90.00	269.54	7,253.00	-2,207.09	-3,029.88	3,497.24	0.00	0.00	0.00	
11,300.00	90.00	269.54	7,253.00	-2,207.88	-3,129.87	3,594.04	0.00	0.00	0.00	
11,400.00	90.00	269.54	7,253.00	-2,208.68	-3,229.87	3,690.85	0.00	0.00	0.00	
11,500.00	90.00	269.54	7,253.00	-2,209.48	-3,329.87	3,787.66	0.00	0.00	0.00	
11,600.00	90.00	269.54	7,253.00	-2,210.27	-3,429.86	3,884.47	0.00	0.00	0.00	
11,700.00	90.00	269.54	7,253.00	-2,211.07	-3,529.86	3,981.27	0.00	0.00	0.00	
11,800.00	90.00	269.54	7,253.00	-2,211.86	-3,629.86	4,078.08	0.00	0.00	0.00	
11,900.00	90.00	269.54	7,253.00	-2,212.66	-3,729.85	4,174.89	0.00	0.00	0.00	
12,000.00	90.00	269.54	7,253.00	-2,213.45	-3,829.85	4,271.70	0.00	0.00	0.00	
12,100.00	90.00	269.54	7,253.00	-2,214.25	-3,929.85	4,368.50	0.00	0.00	0.00	

<b>Database:</b>	EDMProd	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Company:</b>	Bison IV Operating LLC	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site:</b>	Centerra East Pad	<b>North Reference:</b>	True
<b>Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,200.00	90.00	269.54	7,253.00	-2,215.05	-4,029.84	4,465.31	0.00	0.00	0.00
12,300.00	90.00	269.54	7,253.00	-2,215.84	-4,129.84	4,562.12	0.00	0.00	0.00
12,400.00	90.00	269.54	7,253.00	-2,216.64	-4,229.84	4,658.92	0.00	0.00	0.00
12,500.00	90.00	269.54	7,253.00	-2,217.43	-4,329.83	4,755.73	0.00	0.00	0.00
12,600.00	90.00	269.54	7,253.00	-2,218.23	-4,429.83	4,852.54	0.00	0.00	0.00
12,700.00	90.00	269.54	7,253.00	-2,219.02	-4,529.83	4,949.35	0.00	0.00	0.00
12,800.00	90.00	269.54	7,253.00	-2,219.82	-4,629.83	5,046.15	0.00	0.00	0.00
12,900.00	90.00	269.54	7,253.00	-2,220.62	-4,729.82	5,142.96	0.00	0.00	0.00
13,000.00	90.00	269.54	7,253.00	-2,221.41	-4,829.82	5,239.77	0.00	0.00	0.00
13,100.00	90.00	269.54	7,253.00	-2,222.21	-4,929.82	5,336.58	0.00	0.00	0.00
13,200.00	90.00	269.54	7,253.00	-2,223.00	-5,029.81	5,433.38	0.00	0.00	0.00
13,300.00	90.00	269.54	7,253.00	-2,223.80	-5,129.81	5,530.19	0.00	0.00	0.00
13,400.00	90.00	269.54	7,253.00	-2,224.59	-5,229.81	5,627.00	0.00	0.00	0.00
13,500.00	90.00	269.54	7,253.00	-2,225.39	-5,329.80	5,723.80	0.00	0.00	0.00
13,600.00	90.00	269.54	7,253.00	-2,226.19	-5,429.80	5,820.61	0.00	0.00	0.00
13,700.00	90.00	269.54	7,253.00	-2,226.98	-5,529.80	5,917.42	0.00	0.00	0.00
13,800.00	90.00	269.54	7,253.00	-2,227.78	-5,629.79	6,014.23	0.00	0.00	0.00
13,900.00	90.00	269.54	7,253.00	-2,228.57	-5,729.79	6,111.03	0.00	0.00	0.00
14,000.00	90.00	269.54	7,253.00	-2,229.37	-5,829.79	6,207.84	0.00	0.00	0.00
14,100.00	90.00	269.54	7,253.00	-2,230.16	-5,929.78	6,304.65	0.00	0.00	0.00
14,200.00	90.00	269.54	7,253.00	-2,230.96	-6,029.78	6,401.46	0.00	0.00	0.00
14,300.00	90.00	269.54	7,253.00	-2,231.76	-6,129.78	6,498.26	0.00	0.00	0.00
14,400.00	90.00	269.54	7,253.00	-2,232.55	-6,229.77	6,595.07	0.00	0.00	0.00
14,500.00	90.00	269.54	7,253.00	-2,233.35	-6,329.77	6,691.88	0.00	0.00	0.00
14,600.00	90.00	269.54	7,253.00	-2,234.14	-6,429.77	6,788.68	0.00	0.00	0.00
14,700.00	90.00	269.54	7,253.00	-2,234.94	-6,529.77	6,885.49	0.00	0.00	0.00
14,800.00	90.00	269.54	7,253.00	-2,235.73	-6,629.76	6,982.30	0.00	0.00	0.00
14,900.00	90.00	269.54	7,253.00	-2,236.53	-6,729.76	7,079.11	0.00	0.00	0.00
15,000.00	90.00	269.54	7,253.00	-2,237.33	-6,829.76	7,175.91	0.00	0.00	0.00
15,100.00	90.00	269.54	7,253.00	-2,238.12	-6,929.75	7,272.72	0.00	0.00	0.00
15,200.00	90.00	269.54	7,253.00	-2,238.92	-7,029.75	7,369.53	0.00	0.00	0.00
15,300.00	90.00	269.54	7,253.00	-2,239.71	-7,129.75	7,466.34	0.00	0.00	0.00
15,400.00	90.00	269.54	7,253.00	-2,240.51	-7,229.74	7,563.14	0.00	0.00	0.00
15,500.00	90.00	269.54	7,253.00	-2,241.31	-7,329.74	7,659.95	0.00	0.00	0.00
15,600.00	90.00	269.54	7,253.00	-2,242.10	-7,429.74	7,756.76	0.00	0.00	0.00
15,700.00	90.00	269.54	7,253.00	-2,242.90	-7,529.73	7,853.57	0.00	0.00	0.00
15,800.00	90.00	269.54	7,253.00	-2,243.69	-7,629.73	7,950.37	0.00	0.00	0.00
15,900.00	90.00	269.54	7,253.00	-2,244.49	-7,729.73	8,047.18	0.00	0.00	0.00
16,000.00	90.00	269.54	7,253.00	-2,245.28	-7,829.72	8,143.99	0.00	0.00	0.00
16,100.00	90.00	269.54	7,253.00	-2,246.08	-7,929.72	8,240.79	0.00	0.00	0.00
16,200.00	90.00	269.54	7,253.00	-2,246.88	-8,029.72	8,337.60	0.00	0.00	0.00
16,300.00	90.00	269.54	7,253.00	-2,247.67	-8,129.71	8,434.41	0.00	0.00	0.00
16,400.00	90.00	269.54	7,253.00	-2,248.47	-8,229.71	8,531.22	0.00	0.00	0.00
16,500.00	90.00	269.54	7,253.00	-2,249.26	-8,329.71	8,628.02	0.00	0.00	0.00
16,582.97	90.00	269.54	7,253.00	-2,249.92	-8,412.67	8,708.34	0.00	0.00	0.00
<b>TD at 16582.97</b>									

<b>Database:</b>	EDMProd	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Company:</b>	Bison IV Operating LLC	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site:</b>	Centerra East Pad	<b>North Reference:</b>	True
<b>Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #3		

**Design Targets**

**Target Name**

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LP - CE 5-68 11-10-15H - plan hits target center - Point	0.00	0.00	7,253.00	-2,182.14	105.82	1,392,389.56	3,148,825.80	40.409280	-104.965560
BHL - CE 5-68 11-10-15H - plan hits target center - Point	0.00	0.00	7,253.00	-2,249.92	-8,412.67	1,392,270.47	3,140,307.87	40.409090	-104.996150

**Formations**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
534.26	534.00	Upper Pierre			
1,042.28	1,034.00	Pierre			
3,690.37	3,524.00	Parkman			
4,324.13	4,119.00	Sussex			
4,802.38	4,568.00	Shannon			
7,240.86	6,852.00	Sharon Springs			
7,313.19	6,913.00	Niobrara			
7,839.89	7,220.00	Fort Hays			
7,947.41	7,244.00	Codell			

**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
300.00	300.00	0.00	0.00	Build 2°/100'
1,307.10	1,286.49	-161.27	68.47	5537' Hold
6,844.35	6,485.09	-1,916.37	813.65	Build / Turn 8°/100'
8,064.20	7,253.00	-2,182.14	105.82	8518' Hold
16,582.97	7,253.00	-2,249.92	-8,412.67	TD at 16582.97



# **Bison IV Operating LLC**

**Larimer Co., CO (NAD-83)  
Centerra East Pad  
CE 5-68 11-10-15H**

**OH  
Plan #3**

## **Anticollision Report**

**24 September, 2024**





# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #3		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum centre distance of 1,000.00usft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	Date	9/24/2024		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	16,582.97	Plan #3 (OH)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
<b>Summary</b>						
<b>Centerra East Pad</b>						
CE 5-68 11-10-10H - OH - Plan #3	300.00	300.00	80.14	76.23	20.507	CC, ES
CE 5-68 11-10-10H - OH - Plan #3	600.00	600.21	94.38	88.10	15.034	SF
CE 5-68 11-10-11H - OH - Plan #3	300.00	300.00	61.93	58.02	15.847	CC, ES
CE 5-68 11-10-11H - OH - Plan #3	600.00	599.45	76.62	70.34	12.192	SF
CE 5-68 11-10-12H - OH - Plan #3	300.00	300.00	47.36	43.45	12.118	CC, ES
CE 5-68 11-10-12H - OH - Plan #3	500.00	499.84	53.85	48.29	9.685	SF
CE 5-68 11-10-13H - OH - Plan #3	300.00	300.00	29.14	25.24	7.457	CC, ES
CE 5-68 11-10-13H - OH - Plan #3	16,582.97	15,853.11	870.71	643.37	3.830	SF
CE 5-68 11-10-14H - OH - Plan #3	300.00	300.00	14.57	10.66	3.729	CC, ES
CE 5-68 11-10-14H - OH - Plan #3	16,582.97	16,202.70	521.59	328.52	2.701	SF
CE 5-68 11-10-5H - OH - Plan #3	300.00	300.00	50.43	46.53	12.905	CC, ES
CE 5-68 11-10-5H - OH - Plan #3	500.00	499.84	57.22	51.63	10.243	SF
CE 5-68 11-10-6H - OH - Plan #3	300.00	300.00	37.63	33.72	9.629	CC, ES
CE 5-68 11-10-6H - OH - Plan #3	500.00	499.84	43.73	38.20	7.911	SF
CE 5-68 11-10-7H - OH - Plan #3	300.00	300.00	31.48	27.58	8.056	CC, ES
CE 5-68 11-10-7H - OH - Plan #3	500.00	499.84	36.06	30.65	6.662	SF
CE 5-68 11-10-8H - OH - Plan #3	300.00	300.00	109.29	105.38	27.964	CC, ES
CE 5-68 11-10-8H - OH - Plan #3	600.00	586.10	138.83	132.05	20.475	SF
CE 5-68 11-10-9H - OH - Plan #3	300.00	300.00	94.72	90.81	24.237	CC, ES
CE 5-68 11-10-9H - OH - Plan #3	600.00	594.88	113.36	106.99	17.779	SF
CE 5-68 11-3-1H - OH - Plan #2	300.00	300.00	106.50	102.59	27.250	CC, ES
CE 5-68 11-3-1H - OH - Plan #2	700.00	698.70	134.24	127.20	19.073	SF
CE 5-68 11-3-2H - OH - Plan #2	300.00	300.00	92.64	88.73	23.704	CC, ES
CE 5-68 11-3-2H - OH - Plan #2	600.00	599.45	108.30	101.97	17.090	SF
CE 5-68 11-3-3H - OH - Plan #3	300.00	300.00	75.69	71.78	19.368	CC, ES
CE 5-68 11-3-3H - OH - Plan #3	600.00	599.45	91.38	85.04	14.416	SF
CE 5-68 11-3-4H - OH - Plan #3	300.00	300.00	62.64	58.74	16.029	CC, ES
CE 5-68 11-3-4H - OH - Plan #3	600.00	599.45	78.26	71.93	12.355	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Centerra East Pad Offsets						
Donnamite #1 (P&A) - OH - OH						Out of range
Encore #18-12 (P&A) - OH - OH						Out of range
Encore #1C-12HZ - OH - OH						Out of range
Encore #26N-12HZ - OH - OH						Out of range
Encore #40N-12HZ - OH - OH						Out of range
Encore #4-12 (P&A) - OH - OH						Out of range
Encore #41N-12HZ - OH - OH						Out of range
Encore #5-12 - OH - OH						Out of range
Encore #8C-12HZ - OH - OH						Out of range
Jeffers #2-1 (P&A) - OH - OH						Out of range
Jeffers #2-2 (P&A) - OH - OH						Out of range
Kness #1 (P&A) - OH - OH						Out of range
McWhinney-Van DeWater #1 (P&A) - OH - OH	13,990.72	7,206.39	10.85	-101.45	0.097	Collision Risk Procedures
Miracle #12-12 (P&A) - OH - OH	5,999.00	6,230.10	906.86	847.52	15.282	CC
Miracle #12-12 (P&A) - OH - OH	6,000.00	6,230.72	906.86	847.50	15.278	ES
Miracle #12-12 (P&A) - OH - OH	6,400.00	6,510.46	941.25	877.10	14.673	SF
Miracle #13-12 (P&A) - OH - OH	7,100.00	7,353.84	448.56	362.89	5.236	SF
Miracle #13-12 (P&A) - OH - OH	7,123.15	7,374.85	448.16	362.72	5.245	CC, ES
Miracle #13C-12HZ - OH - OH	7,450.00	11,892.00	500.13	383.79	4.299	SF
Miracle #13C-12HZ - OH - OH	7,483.69	11,892.00	498.30	383.23	4.330	CC, ES
Miracle #19-12 (P&A) - OH - OH						Out of range
Miracle #22-12 (P&A) - OH - OH						Out of range
Miracle #33N-12HZ - OH - OH	7,326.72	11,657.00	292.34	227.75	4.526	CC
Miracle #33N-12HZ - OH - OH	7,350.00	11,657.00	293.61	227.38	4.433	ES
Miracle #33N-12HZ - OH - OH	7,400.00	11,657.00	304.68	235.53	4.406	SF
Miracle #40C-11HZ - OH - OH						Out of range
Miracle #40C-11HZ - ST01 - ST01						Out of range
Miracle #40N-11HZ - OH - OH						Out of range
Miracle #9C-11HZ - OH - OH	7,455.90	13,051.63	857.38	744.24	7.578	CC, ES
Miracle #9C-11HZ - OH - OH	7,500.00	13,078.23	857.99	744.56	7.564	SF
Prowant #18-1HZ - OH - OH	15,590.64	20,703.00	786.75	337.72	1.752	Collision Risk Procedures
Rausler #1 (P&A) - OH - OH						Out of range
Wicked #1 (P&A) - OH - OH						Out of range

Offset Design: Centerra East Pad - CE 5-68 11-10-10H - OH - Plan #3													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS													Offset Well Error:	0.00 usft
Reference Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:				Warning	
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	80.14	0.00	80.14					
100.00	100.00	100.00	100.00	0.92	0.92	0.00	80.14	0.00	80.14	78.29	1.85	43.357		
200.00	200.00	200.00	200.00	1.53	1.53	0.00	80.14	0.00	80.14	77.09	3.05	26.254		
300.00	300.00	300.00	300.00	1.95	1.95	0.00	80.14	0.00	80.14	76.23	3.91	20.507	CC, ES	
400.00	399.98	399.98	399.98	2.51	2.31	-157.46	80.14	0.00	81.75	76.96	4.79	17.080		
500.00	499.84	499.84	499.84	2.99	2.61	-158.75	80.14	0.00	86.61	81.05	5.56	15.590		
600.00	599.45	600.21	600.19	3.45	3.06	-159.59	79.83	1.72	94.38	88.10	6.28	15.034	SF	
700.00	698.70	700.45	700.29	3.90	3.47	-159.04	78.89	6.90	104.64	97.68	6.96	15.042		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-10H - OH - Plan #3													Offset Site Error: 0.00 usft		
Survey Program: 0-MWD+IFR1+MS													Offset Well Error: 0.00 usft		
Reference		Offset		Semi Major Axis			Highside		Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
800.00	797.47	800.39	799.84	4.35	3.87	-157.51	77.33	15.48	117.42	109.82	7.60	15.442			
900.00	895.62	899.49	898.25	4.81	4.07	-155.55	75.24	26.95	132.91	124.81	8.10	16.402			
1,000.00	993.06	997.70	995.72	5.27	4.38	-154.36	73.09	38.75	151.54	142.81	8.73	17.357			
1,100.00	1,089.64	1,095.30	1,092.59	5.74	4.70	-153.88	70.96	50.48	173.28	163.91	9.37	18.495			
1,200.00	1,185.27	1,192.17	1,188.74	6.22	5.04	-153.90	68.84	62.11	198.07	188.05	10.02	19.770			
1,307.10	1,286.49	1,294.98	1,290.78	6.76	5.40	-154.27	66.59	74.46	227.98	217.23	10.75	21.199			
1,400.00	1,373.70	1,383.69	1,378.82	7.15	5.73	-154.87	64.66	85.12	255.46	244.14	11.31	22.578			
1,500.00	1,467.59	1,479.18	1,473.60	7.58	6.08	-155.40	62.57	96.59	285.05	273.12	11.93	23.894			
1,600.00	1,561.47	1,574.67	1,568.38	8.02	6.44	-155.82	60.48	108.06	314.67	302.11	12.55	25.070			
1,700.00	1,655.36	1,670.16	1,663.15	8.47	6.80	-156.17	58.39	119.53	344.29	331.11	13.18	26.125			
1,800.00	1,749.24	1,765.65	1,757.93	8.93	7.17	-156.47	56.31	131.01	373.93	360.12	13.81	27.076			
1,900.00	1,843.12	1,861.14	1,852.71	9.39	7.54	-156.72	54.22	142.48	403.57	389.13	14.45	27.937			
2,000.00	1,937.01	1,956.63	1,947.48	9.87	7.92	-156.94	52.13	153.95	433.22	418.14	15.08	28.719			
2,100.00	2,030.89	2,052.13	2,042.26	10.34	8.29	-157.13	50.05	165.42	462.88	447.15	15.73	29.433			
2,200.00	2,124.78	2,147.62	2,137.04	10.82	8.67	-157.29	47.96	176.89	492.54	476.17	16.37	30.086			
2,300.00	2,218.66	2,243.11	2,231.81	11.31	9.05	-157.44	45.87	188.36	522.20	505.18	17.02	30.686			
2,400.00	2,312.54	2,338.60	2,326.59	11.80	9.44	-157.57	43.78	199.83	551.87	534.20	17.67	31.239			
2,500.00	2,406.43	2,434.09	2,421.37	12.29	9.82	-157.69	41.70	211.30	581.53	563.22	18.32	31.751			
2,600.00	2,500.31	2,529.58	2,516.14	12.78	10.21	-157.80	39.61	222.78	611.20	592.24	18.97	32.225			
2,700.00	2,594.20	2,625.07	2,610.92	13.28	10.59	-157.90	37.52	234.25	640.88	621.26	19.62	32.666			
2,800.00	2,688.08	2,720.56	2,705.70	13.78	10.98	-157.99	35.44	245.72	670.55	650.28	20.27	33.077			
2,900.00	2,781.97	2,816.05	2,800.47	14.28	11.37	-158.07	33.35	257.19	700.22	679.30	20.93	33.461			
3,000.00	2,875.85	2,911.55	2,895.25	14.78	11.76	-158.14	31.26	268.66	729.90	708.32	21.58	33.820			
3,100.00	2,969.73	3,007.04	2,990.03	15.28	12.15	-158.21	29.18	280.13	759.58	737.34	22.24	34.157			
3,200.00	3,063.62	3,102.53	3,084.80	15.79	12.54	-158.27	27.09	291.60	789.26	766.36	22.89	34.474			
3,300.00	3,157.50	3,198.02	3,179.58	16.29	12.93	-158.33	25.00	303.07	818.93	795.38	23.55	34.772			
3,400.00	3,251.39	3,293.51	3,274.36	16.80	13.33	-158.39	22.91	314.55	848.61	824.40	24.21	35.054			
3,500.00	3,345.27	3,389.00	3,369.13	17.31	13.72	-158.44	20.83	326.02	878.29	853.43	24.87	35.320			
3,600.00	3,439.15	3,484.49	3,463.91	17.82	14.11	-158.49	18.74	337.49	907.97	882.45	25.52	35.572			
3,700.00	3,533.04	3,579.98	3,558.69	18.33	14.51	-158.53	16.65	348.96	937.66	911.47	26.18	35.811			
3,800.00	3,626.92	3,675.47	3,653.46	18.84	14.90	-158.57	14.57	360.43	967.34	940.49	26.84	36.037			
3,900.00	3,720.81	3,770.97	3,748.24	19.35	15.29	-158.61	12.48	371.90	997.02	969.52	27.50	36.253			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-11H - OH - Plan #3													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning	
							+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	0.00	61.93	0.00	61.93	61.93				
100.00	100.00	100.00	100.00	0.92	0.92	0.00	61.93	0.00	61.93	60.08	1.85	33.505		
200.00	200.00	200.00	200.00	1.53	1.53	0.00	61.93	0.00	61.93	58.88	3.05	20.288		
300.00	300.00	300.00	300.00	1.95	1.95	0.00	61.93	0.00	61.93	58.02	3.91	15.847	CC, ES	
400.00	399.98	399.98	399.98	2.51	2.31	-157.60	61.93	0.00	63.54	58.75	4.79	13.275		
500.00	499.84	499.84	499.84	2.99	2.61	-159.23	61.93	0.00	68.41	62.85	5.56	12.309		
600.00	599.45	599.45	599.45	3.45	2.89	-161.49	61.93	0.00	76.62	70.34	6.28	12.192	SF	
700.00	698.70	698.70	698.70	3.90	3.14	-163.94	61.93	0.00	88.27	81.28	6.99	12.628		
800.00	797.47	800.76	800.74	4.35	3.52	-165.94	60.45	0.97	101.83	94.03	7.80	13.054		
900.00	895.62	903.35	903.18	4.81	3.88	-167.15	55.89	3.94	115.60	107.01	8.59	13.450		
1,000.00	993.06	1,004.95	1,004.40	5.27	4.07	-167.84	48.52	8.75	129.69	120.45	9.24	14.038		
1,100.00	1,089.64	1,103.51	1,102.52	5.74	4.33	-168.52	40.73	13.83	146.47	136.49	9.98	14.681		
1,200.00	1,185.27	1,201.43	1,200.00	6.22	4.61	-169.27	32.99	18.88	166.63	155.89	10.74	15.515		
1,307.10	1,286.49	1,305.45	1,303.55	6.76	4.92	-170.08	24.76	24.24	191.98	180.37	11.61	16.537		
1,400.00	1,373.70	1,395.25	1,392.95	7.15	5.20	-170.76	17.66	28.87	215.66	203.37	12.28	17.555		
1,500.00	1,467.59	1,491.91	1,489.18	7.58	5.51	-171.35	10.02	33.85	241.17	228.13	13.04	18.498		
1,600.00	1,561.47	1,588.58	1,585.41	8.02	5.83	-171.82	2.38	38.84	266.70	252.89	13.81	19.314		
1,700.00	1,655.36	1,685.24	1,681.65	8.47	6.15	-172.21	-5.26	43.82	292.24	277.65	14.60	20.023		
1,800.00	1,749.24	1,781.90	1,777.88	8.93	6.49	-172.54	-12.90	48.80	317.80	302.41	15.40	20.643		
1,900.00	1,843.12	1,878.57	1,874.11	9.39	6.82	-172.82	-20.54	53.79	343.36	327.16	16.21	21.187		
2,000.00	1,937.01	1,975.23	1,970.35	9.87	7.17	-173.06	-28.19	58.77	368.94	351.91	17.03	21.666		
2,100.00	2,030.89	2,071.90	2,066.58	10.34	7.51	-173.27	-35.83	63.75	394.51	376.65	17.86	22.092		
2,200.00	2,124.78	2,168.56	2,162.81	10.82	7.86	-173.46	-43.47	68.74	420.09	401.40	18.70	22.471		
2,300.00	2,218.66	2,265.23	2,259.05	11.31	8.21	-173.62	-51.11	73.72	445.68	426.14	19.54	22.810		
2,400.00	2,312.54	2,361.89	2,355.28	11.80	8.57	-173.76	-58.75	78.70	471.26	450.87	20.39	23.115		
2,500.00	2,406.43	2,458.56	2,451.51	12.29	8.93	-173.89	-66.39	83.69	496.85	475.61	21.24	23.390		
2,600.00	2,500.31	2,555.22	2,547.75	12.78	9.28	-174.01	-74.04	88.67	522.44	500.34	22.10	23.639		
2,700.00	2,594.20	2,651.89	2,643.98	13.28	9.65	-174.12	-81.68	93.65	548.04	525.07	22.96	23.865		
2,800.00	2,688.08	2,748.55	2,740.21	13.78	10.01	-174.22	-89.32	98.64	573.63	549.80	23.83	24.071		
2,900.00	2,781.97	2,845.22	2,836.45	14.28	10.37	-174.30	-96.96	103.62	599.23	574.53	24.70	24.260		
3,000.00	2,875.85	2,941.88	2,932.68	14.78	10.74	-174.39	-104.60	108.61	624.83	599.25	25.57	24.433		
3,100.00	2,969.73	3,038.54	3,028.91	15.28	11.10	-174.46	-112.24	113.59	650.43	623.98	26.45	24.593		
3,200.00	3,063.62	3,135.21	3,125.14	15.79	11.47	-174.53	-119.89	118.57	676.02	648.70	27.32	24.740		
3,300.00	3,157.50	3,231.87	3,221.38	16.29	11.84	-174.59	-127.53	123.56	701.63	673.42	28.20	24.876		
3,400.00	3,251.39	3,328.54	3,317.61	16.80	12.21	-174.65	-135.17	128.54	727.23	698.14	29.09	25.003		
3,500.00	3,345.27	3,425.20	3,413.84	17.31	12.58	-174.71	-142.81	133.52	752.83	722.86	29.97	25.120		
3,600.00	3,439.15	3,521.87	3,510.08	17.82	12.95	-174.76	-150.45	138.51	778.43	747.58	30.85	25.230		
3,700.00	3,533.04	3,618.53	3,606.31	18.33	13.32	-174.81	-158.09	143.49	804.04	772.30	31.74	25.332		
3,800.00	3,626.92	3,715.20	3,702.54	18.84	13.69	-174.86	-165.74	148.47	829.64	797.01	32.63	25.427		
3,900.00	3,720.81	3,811.86	3,798.78	19.35	14.06	-174.90	-173.38	153.46	855.24	821.73	33.52	25.517		
4,000.00	3,814.69	3,908.53	3,895.01	19.86	14.44	-174.94	-181.02	158.44	880.85	846.44	34.41	25.601		
4,100.00	3,908.58	4,005.19	3,991.24	20.37	14.81	-174.98	-188.66	163.42	906.45	871.16	35.30	25.680		
4,200.00	4,002.46	4,101.86	4,087.48	20.89	15.19	-175.01	-196.30	168.41	932.06	895.87	36.19	25.755		
4,300.00	4,096.34	4,198.52	4,183.71	21.40	15.56	-175.05	-203.94	173.39	957.66	920.58	37.08	25.825		
4,400.00	4,190.23	4,295.18	4,279.94	21.92	15.93	-175.08	-211.58	178.38	983.27	945.29	37.98	25.891		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-12H - OH - Plan #3													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+IFR1+MS													Offset Well Error: 0.00 usft
Reference: 0-MWD+IFR1+MS													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.36	0.00	47.36				
100.00	100.00	100.00	100.00	0.92	0.92	0.00	47.36	0.00	47.36	45.51	1.85	25.621	
200.00	200.00	200.00	200.00	1.53	1.53	0.00	47.36	0.00	47.36	44.31	3.05	15.514	
300.00	300.00	300.00	300.00	1.95	1.95	0.00	47.36	0.00	47.36	43.45	3.91	12.118	CC, ES
400.00	399.98	399.98	399.98	2.51	2.31	-157.78	47.36	0.00	48.97	44.18	4.79	10.230	
500.00	499.84	499.84	499.84	2.99	2.61	-159.85	47.36	0.00	53.85	48.29	5.56	9.685	SF
600.00	599.45	599.45	599.45	3.45	2.89	-162.57	47.36	0.00	62.11	55.82	6.29	9.873	
700.00	698.70	701.11	701.09	3.90	3.30	-164.92	45.79	0.86	72.20	65.07	7.13	10.126	
800.00	797.47	803.15	802.98	4.35	3.68	-166.44	43.04	3.46	82.41	74.47	7.95	10.369	
900.00	895.62	905.58	905.00	4.81	4.07	-167.40	41.07	7.81	92.69	83.92	8.77	10.564	
1,000.00	993.06	1,008.38	1,007.00	5.27	4.46	-167.95	21.87	13.95	102.99	93.38	9.61	10.721	
1,100.00	1,089.64	1,109.95	1,107.31	5.74	4.71	-168.26	7.90	21.59	113.57	103.25	10.32	11.005	
1,200.00	1,185.27	1,209.04	1,205.08	6.22	5.03	-168.72	-6.26	29.34	126.97	115.83	11.13	11.403	
1,307.10	1,286.49	1,314.58	1,309.20	6.76	5.39	-169.38	-21.34	37.59	145.08	133.02	12.07	12.022	
1,400.00	1,373.70	1,405.81	1,399.22	7.15	5.71	-170.00	-34.38	44.72	162.50	149.69	12.80	12.693	
1,500.00	1,467.59	1,504.03	1,496.12	7.58	6.07	-170.52	-48.42	52.40	181.26	167.63	13.62	13.306	
1,600.00	1,561.47	1,602.24	1,593.02	8.02	6.44	-170.95	-62.46	60.08	200.03	185.57	14.46	13.832	
1,700.00	1,655.36	1,700.45	1,689.92	8.47	6.82	-171.31	-76.50	67.76	218.81	203.49	15.32	14.285	
1,800.00	1,749.24	1,798.66	1,786.82	8.93	7.21	-171.61	-90.53	75.44	237.59	221.41	16.19	14.678	
1,900.00	1,843.12	1,896.88	1,883.72	9.39	7.60	-171.86	-104.57	83.12	256.39	239.32	17.07	15.019	
2,000.00	1,937.01	1,995.09	1,980.62	9.87	7.99	-172.08	-118.61	90.80	275.18	257.22	17.96	15.319	
2,100.00	2,030.89	2,093.30	2,077.52	10.34	8.40	-172.28	-132.64	98.48	293.98	275.12	18.87	15.583	
2,200.00	2,124.78	2,191.51	2,174.42	10.82	8.80	-172.44	-146.68	106.16	312.79	293.01	19.78	15.817	
2,300.00	2,218.66	2,289.73	2,271.32	11.31	9.21	-172.59	-160.72	113.84	331.59	310.90	20.69	16.025	
2,400.00	2,312.54	2,387.94	2,368.22	11.80	9.62	-172.73	-174.75	121.52	350.40	328.79	21.61	16.212	
2,500.00	2,406.43	2,486.15	2,465.12	12.29	10.04	-172.85	-188.79	129.20	369.21	346.67	22.54	16.379	
2,600.00	2,500.31	2,584.36	2,562.02	12.78	10.45	-172.96	-202.83	136.88	388.02	364.55	23.47	16.530	
2,700.00	2,594.20	2,682.58	2,658.93	13.28	10.87	-173.06	-216.87	144.56	406.83	382.42	24.41	16.666	
2,800.00	2,688.08	2,780.79	2,755.83	13.78	11.29	-173.15	-230.90	152.24	425.64	400.29	25.35	16.791	
2,900.00	2,781.97	2,879.00	2,852.73	14.28	11.71	-173.23	-244.94	159.92	444.46	418.16	26.29	16.904	
3,000.00	2,875.85	2,977.21	2,949.63	14.78	12.13	-173.30	-258.98	167.60	463.27	436.03	27.24	17.007	
3,100.00	2,969.73	3,075.42	3,046.53	15.28	12.56	-173.37	-273.01	175.28	482.09	453.90	28.19	17.102	
3,200.00	3,063.62	3,173.64	3,143.43	15.79	12.98	-173.44	-287.05	182.96	500.90	471.76	29.14	17.190	
3,300.00	3,157.50	3,271.85	3,240.33	16.29	13.41	-173.50	-301.09	190.64	519.72	489.63	30.09	17.271	
3,400.00	3,251.39	3,370.06	3,337.23	16.80	13.84	-173.55	-315.13	198.32	538.54	507.49	31.05	17.345	
3,500.00	3,345.27	3,468.27	3,434.13	17.31	14.27	-173.60	-329.16	205.99	557.35	525.35	32.00	17.415	
3,600.00	3,439.15	3,566.49	3,531.03	17.82	14.70	-173.65	-343.20	213.67	576.17	543.21	32.96	17.479	
3,700.00	3,533.04	3,664.70	3,627.93	18.33	15.13	-173.70	-357.24	221.35	594.99	561.07	33.92	17.539	
3,800.00	3,626.92	3,762.91	3,724.83	18.84	15.56	-173.74	-371.27	229.03	613.81	578.92	34.88	17.595	
3,900.00	3,720.81	3,861.12	3,821.73	19.35	15.99	-173.78	-385.31	236.71	632.63	596.78	35.85	17.648	
4,000.00	3,814.69	3,959.34	3,918.63	19.86	16.42	-173.82	-399.35	244.39	651.45	614.64	36.81	17.697	
4,100.00	3,908.58	4,057.55	4,015.53	20.37	16.85	-173.85	-413.38	252.07	670.27	632.49	37.78	17.743	
4,200.00	4,002.46	4,155.76	4,112.43	20.89	17.28	-173.89	-427.42	259.75	689.09	650.34	38.74	17.786	
4,300.00	4,096.34	4,253.97	4,209.33	21.40	17.72	-173.92	-441.46	267.43	707.91	668.20	39.71	17.827	
4,400.00	4,190.23	4,352.19	4,306.23	21.92	18.15	-173.95	-455.50	275.11	726.73	686.05	40.68	17.866	
4,500.00	4,284.11	4,450.40	4,403.13	22.43	18.59	-173.98	-469.53	282.79	745.55	703.90	41.65	17.902	
4,600.00	4,378.00	4,548.61	4,500.03	22.95	19.02	-174.01	-483.57	290.47	764.37	721.75	42.62	17.937	
4,700.00	4,471.88	4,646.82	4,596.93	23.47	19.45	-174.03	-497.61	298.15	783.19	739.60	43.59	17.969	
4,800.00	4,565.77	4,745.04	4,693.83	23.98	19.89	-174.06	-511.64	305.83	802.01	757.45	44.56	18.000	
4,900.00	4,659.65	4,843.25	4,790.73	24.50	20.33	-174.08	-525.68	313.51	820.83	775.30	45.53	18.029	
5,000.00	4,753.53	4,941.46	4,887.63	25.02	20.76	-174.10	-539.72	321.19	839.65	793.15	46.50	18.057	
5,100.00	4,847.42	5,039.67	4,984.53	25.53	21.20	-174.13	-553.75	328.87	858.47	811.00	47.47	18.084	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-12H - OH - Plan #3													Offset Site Error:	0.00 usft	
Survey Program: 0-MWD+IFR1+MS													Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
5,200.00	4,941.30	5,137.88	5,081.43	26.05	21.63	-174.15	-567.79	336.55	877.29	828.85	48.44	18.109			
5,300.00	5,035.19	5,236.10	5,178.33	26.57	22.07	-174.17	-581.83	344.23	896.11	846.69	49.42	18.133			
5,400.00	5,129.07	5,334.31	5,275.23	27.09	22.51	-174.18	-595.87	351.91	914.93	864.54	50.39	18.156			
5,500.00	5,222.95	5,432.52	5,372.13	27.61	22.94	-174.20	-609.90	359.59	933.75	882.39	51.37	18.178			
5,600.00	5,316.84	5,530.73	5,469.03	28.13	23.38	-174.22	-623.94	367.27	952.58	900.24	52.34	18.199			
5,700.00	5,410.72	5,628.95	5,565.93	28.65	23.82	-174.24	-637.98	374.95	971.40	918.08	53.32	18.220			
5,800.00	5,504.61	5,727.16	5,662.83	29.17	24.26	-174.25	-652.01	382.63	990.22	935.93	54.29	18.239			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-13H - OH - Plan #3													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+IFR1+MS													Offset Well Error: 0.00 usft
Reference: 0-Offset													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.14	0.00	29.14				
100.00	100.00	100.00	100.00	0.92	0.92	0.00	29.14	0.00	29.14	27.30	1.85	15.767	
200.00	200.00	200.00	200.00	1.53	1.53	0.00	29.14	0.00	29.14	26.09	3.05	9.547	
300.00	300.00	300.00	300.00	1.95	1.95	0.00	29.14	0.00	29.14	25.24	3.91	7.457 CC, ES	
400.00	399.98	399.98	399.98	2.51	2.31	-158.25	29.14	0.00	30.76	25.97	4.79	6.424	
500.00	499.84	499.84	499.84	2.99	2.61	-161.34	29.14	0.00	35.67	30.11	5.57	6.409	
600.00	599.45	600.95	600.93	3.45	3.06	-164.64	27.44	0.49	42.28	35.82	6.46	6.544	
700.00	698.70	702.30	702.14	3.90	3.46	-167.54	22.28	1.98	48.89	41.57	7.32	6.679	
800.00	797.47	803.90	803.33	4.35	3.87	-170.18	13.67	4.46	55.49	47.31	8.18	6.783	
900.00	895.62	905.74	904.39	4.81	4.28	-172.65	1.58	7.94	62.09	53.03	9.05	6.858	
1,000.00	993.06	1,007.82	1,005.16	5.27	4.71	-175.00	-13.99	12.43	68.70	58.75	9.95	6.908	
1,100.00	1,089.64	1,110.07	1,105.47	5.74	5.18	-177.27	-33.04	17.92	75.33	64.44	10.89	6.918	
1,200.00	1,185.27	1,209.66	1,202.83	6.22	5.51	-179.28	-53.19	23.72	83.85	72.12	11.73	7.150	
1,307.10	1,286.49	1,315.92	1,306.71	6.76	5.90	179.01	-74.69	29.92	96.91	84.22	12.69	7.636	
1,400.00	1,373.70	1,407.87	1,396.59	7.15	6.24	177.90	-93.30	35.28	110.01	96.57	13.45	8.182	
1,500.00	1,467.59	1,506.85	1,493.35	7.58	6.63	176.97	-113.32	41.05	124.15	109.86	14.29	8.688	
1,600.00	1,561.47	1,605.82	1,590.11	8.02	7.02	176.22	-133.35	46.82	138.32	123.16	15.15	9.128	
1,700.00	1,655.36	1,704.80	1,686.87	8.47	7.43	175.62	-153.38	52.59	152.50	136.47	16.03	9.511	
1,800.00	1,749.24	1,803.78	1,783.62	8.93	7.84	175.12	-173.41	58.37	166.70	149.77	16.93	9.846	
1,900.00	1,843.12	1,902.76	1,880.38	9.39	8.26	174.69	-193.43	64.14	180.91	163.07	17.84	10.142	
2,000.00	1,937.01	2,001.73	1,977.14	9.87	8.68	174.33	-213.46	69.91	195.13	176.37	18.76	10.403	
2,100.00	2,030.89	2,100.71	2,073.90	10.34	9.11	174.02	-233.49	75.68	209.35	189.66	19.68	10.635	
2,200.00	2,124.78	2,199.69	2,170.66	10.82	9.54	173.75	-253.52	81.45	223.58	202.96	20.62	10.843	
2,300.00	2,218.66	2,298.67	2,267.41	11.31	9.98	173.51	-273.54	87.22	237.81	216.25	21.56	11.029	
2,400.00	2,312.54	2,397.64	2,364.17	11.80	10.41	173.29	-293.57	92.99	252.05	229.54	22.51	11.197	
2,500.00	2,406.43	2,496.62	2,460.93	12.29	10.86	173.10	-313.60	98.76	266.29	242.82	23.46	11.349	
2,600.00	2,500.31	2,595.60	2,557.69	12.78	11.30	172.93	-333.62	104.53	280.53	256.11	24.42	11.487	
2,700.00	2,594.20	2,694.57	2,654.45	13.28	11.75	172.78	-353.65	110.30	294.78	269.39	25.39	11.612	
2,800.00	2,688.08	2,793.55	2,751.20	13.78	12.19	172.64	-373.68	116.08	309.02	282.67	26.35	11.727	
2,900.00	2,781.97	2,892.53	2,847.96	14.28	12.64	172.51	-393.71	121.85	323.27	295.95	27.32	11.833	
3,000.00	2,875.85	2,991.51	2,944.72	14.78	13.09	172.39	-413.73	127.62	337.52	309.23	28.29	11.930	
3,100.00	2,969.73	3,090.48	3,041.48	15.28	13.55	172.29	-433.76	133.39	351.77	322.51	29.27	12.019	
3,200.00	3,063.62	3,189.46	3,138.24	15.79	14.00	172.19	-453.79	139.16	366.03	335.78	30.24	12.102	
3,300.00	3,157.50	3,288.44	3,234.99	16.29	14.46	172.09	-473.82	144.93	380.28	349.06	31.22	12.179	
3,400.00	3,251.39	3,387.42	3,331.75	16.80	14.91	172.01	-493.84	150.70	394.53	362.33	32.20	12.251	
3,500.00	3,345.27	3,486.39	3,428.51	17.31	15.37	171.93	-513.87	156.47	408.79	375.60	33.19	12.318	
3,600.00	3,439.15	3,585.37	3,525.27	17.82	15.83	171.86	-533.90	162.24	423.04	388.87	34.17	12.380	
3,700.00	3,533.04	3,684.35	3,622.02	18.33	16.29	171.79	-553.93	168.01	437.30	402.14	35.16	12.438	
3,800.00	3,626.92	3,783.32	3,718.78	18.84	16.75	171.72	-573.95	173.79	451.56	415.41	36.15	12.493	
3,900.00	3,720.81	3,882.30	3,815.54	19.35	17.21	171.66	-593.98	179.56	465.81	428.68	37.13	12.544	
4,000.00	3,814.69	3,981.28	3,912.30	19.86	17.67	171.60	-614.01	185.33	480.07	441.95	38.12	12.592	
4,100.00	3,908.58	4,080.26	4,009.06	20.37	18.13	171.55	-634.03	191.10	494.33	455.22	39.11	12.638	
4,200.00	4,002.46	4,179.23	4,105.81	20.89	18.59	171.50	-654.06	196.87	508.59	468.48	40.11	12.681	
4,300.00	4,096.34	4,278.21	4,202.57	21.40	19.05	171.45	-674.09	202.64	522.85	481.75	41.10	12.722	
4,400.00	4,190.23	4,377.19	4,299.33	21.92	19.51	171.41	-694.12	208.41	537.11	495.01	42.09	12.760	
4,500.00	4,284.11	4,476.16	4,396.09	22.43	19.98	171.36	-714.14	214.18	551.37	508.28	43.09	12.797	
4,600.00	4,378.00	4,575.14	4,492.85	22.95	20.44	171.32	-734.17	219.95	565.63	521.55	44.08	12.831	
4,700.00	4,471.88	4,674.12	4,589.60	23.47	20.91	171.28	-754.20	225.72	579.89	534.81	45.08	12.864	
4,800.00	4,565.77	4,773.10	4,686.36	23.98	21.37	171.25	-774.23	231.49	594.15	548.07	46.07	12.895	
4,900.00	4,659.65	4,872.07	4,783.12	24.50	21.84	171.21	-794.25	237.27	608.41	561.34	47.07	12.925	
5,000.00	4,753.53	4,971.05	4,879.88	25.02	22.30	171.18	-814.28	243.04	622.67	574.60	48.07	12.953	
5,100.00	4,847.42	5,070.03	4,976.64	25.53	22.77	171.15	-834.31	248.81	636.93	587.86	49.07	12.981	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-13H - OH - Plan #3													Offset Site Error:	0.00 usft		
Survey Program: 0-MWD+IFR1+MS													Offset Well Error:	0.00 usft		
Reference				Offset			Semi Major Axis		Highside		Rule Assigned:		Distance		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
5,200.00	4,941.30	5,169.01	5,073.39	26.05	23.23	171.11	-854.34	254.58	651.19	601.13	50.07	13.006				
5,300.00	5,035.19	5,267.98	5,170.15	26.57	23.70	171.09	-874.36	260.35	665.45	614.39	51.07	13.031				
5,400.00	5,129.07	5,366.96	5,266.91	27.09	24.16	171.06	-894.39	266.12	679.72	627.65	52.07	13.055				
5,500.00	5,222.95	5,465.94	5,363.67	27.61	24.63	171.03	-914.42	271.89	693.98	640.91	53.07	13.078				
5,600.00	5,316.84	5,564.91	5,460.43	28.13	25.10	171.00	-934.45	277.66	708.24	654.17	54.07	13.099				
5,700.00	5,410.72	5,663.89	5,557.18	28.65	25.56	170.98	-954.47	283.43	722.50	667.44	55.07	13.120				
5,800.00	5,504.61	5,762.87	5,653.94	29.17	26.03	170.95	-974.50	289.20	736.77	680.70	56.07	13.140				
5,900.00	5,598.49	5,861.85	5,750.70	29.69	26.50	170.93	-994.53	294.98	751.03	693.96	57.07	13.160				
6,000.00	5,692.38	5,960.82	5,847.46	30.21	26.97	170.91	-1,014.55	300.75	765.29	707.22	58.07	13.178				
6,100.00	5,786.26	6,059.80	5,944.21	30.73	27.43	170.89	-1,034.58	306.52	779.55	720.48	59.07	13.196				
6,200.00	5,880.14	6,158.78	6,040.97	31.25	27.90	170.87	-1,054.61	312.29	793.82	733.74	60.08	13.213				
6,300.00	5,974.03	6,257.76	6,137.73	31.77	28.37	170.85	-1,074.64	318.06	808.08	747.00	61.08	13.230				
6,400.00	6,067.91	6,356.73	6,234.49	32.30	28.84	170.83	-1,094.66	323.83	822.34	760.26	62.08	13.246				
6,500.00	6,161.80	6,455.71	6,331.25	32.82	29.31	170.81	-1,114.69	329.60	836.60	773.52	63.09	13.261				
6,600.00	6,255.68	6,554.69	6,428.00	33.34	29.78	170.79	-1,134.72	335.37	850.87	786.78	64.09	13.276				
6,700.00	6,349.56	6,650.00	6,521.18	33.86	30.22	170.77	-1,154.01	340.87	865.17	800.12	65.05	13.300				
6,800.00	6,443.45	6,700.00	6,570.13	34.38	30.45	170.63	-1,164.16	341.39	882.25	816.78	65.47	13.476				
6,844.35	6,485.09	6,735.12	6,604.47	34.61	30.59	170.41	-1,171.30	339.67	891.10	825.38	65.72	13.559				
6,850.00	6,490.39	6,738.43	6,607.71	34.64	30.60	169.15	-1,171.97	339.41	892.28	826.55	65.74	13.574				
6,900.00	6,537.55	6,767.73	6,636.25	34.90	30.71	157.29	-1,177.92	336.53	902.40	836.53	65.87	13.700				
6,950.00	6,584.89	6,800.00	6,667.51	35.14	30.82	144.78	-1,184.44	331.98	911.80	845.80	66.00	13.816				
7,000.00	6,632.18	6,826.16	6,692.69	35.36	30.89	132.61	-1,189.71	327.23	920.41	854.41	66.00	13.946				
7,050.00	6,679.18	6,850.00	6,715.48	35.56	30.95	121.64	-1,194.48	322.09	928.24	862.32	65.93	14.080				
7,100.00	6,725.68	6,884.45	6,748.07	35.72	31.02	112.33	-1,201.31	313.30	935.18	869.25	65.93	14.184				
7,150.00	6,771.45	6,913.57	6,775.27	35.86	31.08	104.71	-1,207.03	304.63	941.28	875.44	65.83	14.298				
7,200.00	6,816.25	6,950.00	6,808.78	35.96	31.13	98.62	-1,214.09	292.20	946.53	880.73	65.80	14.385				
7,250.00	6,859.88	6,971.81	6,828.53	36.05	31.16	93.74	-1,218.25	283.93	950.79	885.25	65.53	14.508				
7,300.00	6,902.12	7,000.00	6,853.67	36.10	31.19	89.88	-1,223.57	272.35	954.18	888.84	65.34	14.603				
7,350.00	6,942.76	7,030.15	6,880.04	36.15	31.21	86.84	-1,229.15	258.84	956.66	891.50	65.16	14.682				
7,400.00	6,981.61	7,050.00	6,897.09	36.17	31.23	84.38	-1,232.77	249.34	958.31	893.50	64.82	14.785				
7,450.00	7,018.47	7,088.66	6,929.51	36.19	31.25	82.63	-1,239.66	229.46	958.91	894.13	64.77	14.804				
7,500.00	7,053.18	7,118.02	6,953.40	36.20	31.27	81.24	-1,244.75	213.18	958.69	894.09	64.60	14.841				
7,550.00	7,085.55	7,150.00	6,978.67	36.21	31.28	80.27	-1,250.15	194.33	957.61	893.13	64.48	14.851				
7,600.00	7,115.43	7,176.97	6,999.31	36.22	31.29	79.58	-1,254.58	177.54	955.68	891.37	64.31	14.861				
7,650.00	7,142.68	7,200.00	7,016.43	36.23	31.30	79.10	-1,258.26	162.60	952.97	888.88	64.10	14.868				
7,700.00	7,167.17	7,236.35	7,042.48	36.25	31.31	79.11	-1,263.87	137.87	949.42	885.27	64.15	14.799				
7,750.00	7,188.76	7,266.24	7,062.95	36.27	31.32	79.25	-1,268.29	116.55	945.17	881.03	64.14	14.735				
7,800.00	7,207.37	7,300.00	7,085.00	36.30	31.33	79.68	-1,273.08	91.45	940.25	876.00	64.25	14.634				
7,850.00	7,222.89	7,326.49	7,101.48	36.34	31.34	80.18	-1,276.67	71.02	934.68	870.39	64.29	14.540				
7,900.00	7,235.25	7,350.00	7,115.47	36.40	31.35	80.80	-1,279.73	52.38	928.59	864.27	64.32	14.437				
7,950.00	7,244.39	7,387.49	7,136.53	36.47	31.37	81.92	-1,284.35	21.70	921.92	857.24	64.67	14.255				
8,000.00	7,250.28	7,418.34	7,152.65	36.56	31.39	83.07	-1,287.92	-4.35	914.86	849.89	64.97	14.081				
8,050.00	7,252.87	7,450.00	7,168.04	36.66	31.41	84.41	-1,291.34	-31.80	907.46	842.11	65.35	13.886				
8,064.20	7,253.00	7,458.33	7,171.89	36.69	31.41	84.80	-1,292.20	-39.14	905.31	839.85	65.46	13.830				
8,100.00	7,253.00	7,481.13	7,181.99	36.77	31.43	85.43	-1,294.47	-59.45	900.15	834.39	65.76	13.688				
8,200.00	7,253.00	7,550.00	7,208.60	37.03	31.50	87.12	-1,300.52	-122.65	888.66	822.06	66.60	13.344				
8,300.00	7,253.00	7,621.28	7,229.75	37.33	31.60	88.48	-1,305.47	-190.51	880.93	813.61	67.32	13.085				
8,400.00	7,253.00	7,700.00	7,245.30	37.66	31.75	89.50	-1,309.35	-267.54	876.30	808.30	68.01	12.886				
8,500.00	7,253.00	7,777.33	7,252.43	38.02	31.93	89.96	-1,311.47	-344.47	874.25	805.79	68.47	12.769				
8,558.51	7,253.00	7,828.65	7,253.00	38.26	32.07	90.00	-1,312.02	-395.79	874.08	805.33	68.75	12.714				
8,600.00	7,253.00	7,870.15	7,253.00	38.42	32.19	90.00	-1,312.36	-437.28	874.06	805.04	69.02	12.663				
8,700.00	7,253.00	7,970.15	7,253.00	38.85	32.52	90.00	-1,313.20	-537.28	874.02	804.27	69.76	12.530				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-13H - OH - Plan #3													Offset Site Error: 0.00 usft			
Survey Program: 0-MWD+IFR1+MS													Offset Well Error: 0.00 usft			
Reference				Offset			Semi Major Axis		Highside		Rule Assigned:		Distance		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
8,800.00	7,253.00	8,070.15	7,253.00	39.31	32.89	90.00	-1,314.04	-637.27	873.98	803.41	70.57	12.385				
8,900.00	7,253.00	8,170.15	7,253.00	39.80	33.30	90.00	-1,314.88	-737.27	873.94	802.48	71.46	12.230				
9,000.00	7,253.00	8,270.15	7,253.00	40.32	33.75	90.00	-1,315.72	-837.27	873.90	801.48	72.42	12.067				
9,100.00	7,253.00	8,370.15	7,253.00	40.87	34.23	90.00	-1,316.55	-937.26	873.85	800.40	73.46	11.896				
9,200.00	7,253.00	8,470.15	7,253.00	41.45	34.75	90.00	-1,317.39	-1,037.26	873.81	799.25	74.56	11.719				
9,300.00	7,253.00	8,570.15	7,253.00	42.05	35.31	90.00	-1,318.23	-1,137.26	873.77	798.04	75.73	11.538				
9,400.00	7,253.00	8,670.15	7,253.00	42.68	35.90	90.00	-1,319.07	-1,237.25	873.73	796.76	76.97	11.352				
9,500.00	7,253.00	8,770.15	7,253.00	43.33	36.52	90.00	-1,319.90	-1,337.25	873.69	795.43	78.26	11.164				
9,600.00	7,253.00	8,870.15	7,253.00	44.01	37.18	90.00	-1,320.74	-1,437.25	873.64	794.04	79.61	10.974				
9,700.00	7,253.00	8,970.15	7,253.00	44.71	37.86	90.00	-1,321.58	-1,537.24	873.60	792.59	81.01	10.784				
9,800.00	7,253.00	9,070.15	7,253.00	45.44	38.56	90.00	-1,322.42	-1,637.24	873.56	791.10	82.46	10.593				
9,900.00	7,253.00	9,170.15	7,253.00	46.18	39.29	90.00	-1,323.26	-1,737.24	873.52	789.55	83.97	10.403				
10,000.00	7,253.00	9,270.15	7,253.00	46.94	40.05	90.00	-1,324.09	-1,837.23	873.48	787.96	85.52	10.214				
10,100.00	7,253.00	9,370.15	7,253.00	47.73	40.83	90.00	-1,324.93	-1,937.23	873.43	786.33	87.11	10.027				
10,200.00	7,253.00	9,470.15	7,253.00	48.53	41.63	90.00	-1,325.77	-2,037.22	873.39	784.65	88.74	9.842				
10,300.00	7,253.00	9,570.15	7,253.00	49.35	42.45	90.00	-1,326.61	-2,137.22	873.35	782.94	90.41	9.660				
10,400.00	7,253.00	9,670.15	7,253.00	50.19	43.30	90.00	-1,327.44	-2,237.22	873.31	781.19	92.12	9.480				
10,500.00	7,253.00	9,770.15	7,253.00	51.04	44.16	90.00	-1,328.28	-2,337.21	873.27	779.40	93.86	9.303				
10,600.00	7,253.00	9,870.15	7,253.00	51.91	45.03	90.00	-1,329.12	-2,437.21	873.22	777.58	95.64	9.130				
10,700.00	7,253.00	9,970.15	7,253.00	52.79	45.93	90.00	-1,329.96	-2,537.21	873.18	775.74	97.45	8.961				
10,800.00	7,253.00	10,070.15	7,253.00	53.69	46.84	90.00	-1,330.80	-2,637.20	873.14	773.86	99.28	8.794				
10,900.00	7,253.00	10,170.15	7,253.00	54.60	47.76	90.00	-1,331.63	-2,737.20	873.10	771.95	101.15	8.632				
11,000.00	7,253.00	10,270.15	7,253.00	55.52	48.70	90.00	-1,332.47	-2,837.20	873.06	770.02	103.04	8.473				
11,100.00	7,253.00	10,370.15	7,253.00	56.46	49.65	90.00	-1,333.31	-2,937.19	873.01	768.06	104.95	8.318				
11,200.00	7,253.00	10,470.15	7,253.00	57.40	50.61	90.00	-1,334.15	-3,037.19	872.97	766.08	106.89	8.167				
11,300.00	7,253.00	10,570.15	7,253.00	58.36	51.59	90.00	-1,334.98	-3,137.19	872.93	764.08	108.85	8.020				
11,400.00	7,253.00	10,670.15	7,253.00	59.33	52.57	90.00	-1,335.82	-3,237.18	872.89	762.06	110.83	7.876				
11,500.00	7,253.00	10,770.15	7,253.00	60.31	53.57	90.00	-1,336.66	-3,337.18	872.85	760.02	112.83	7.736				
11,600.00	7,253.00	10,870.15	7,253.00	61.30	54.58	90.00	-1,337.50	-3,437.18	872.80	757.95	114.85	7.600				
11,700.00	7,253.00	10,970.15	7,253.00	62.30	55.59	90.00	-1,338.34	-3,537.17	872.76	755.88	116.89	7.467				
11,800.00	7,253.00	11,070.15	7,253.00	63.30	56.62	90.00	-1,339.17	-3,637.17	872.72	753.78	118.94	7.337				
11,900.00	7,253.00	11,170.15	7,253.00	64.32	57.65	90.00	-1,340.01	-3,737.16	872.68	751.67	121.01	7.212				
12,000.00	7,253.00	11,270.15	7,253.00	65.34	58.69	90.00	-1,340.85	-3,837.16	872.64	749.54	123.10	7.089				
12,100.00	7,253.00	11,370.15	7,253.00	66.37	59.74	90.00	-1,341.69	-3,937.16	872.59	747.40	125.20	6.970				
12,200.00	7,253.00	11,470.15	7,253.00	67.40	60.79	90.00	-1,342.52	-4,037.15	872.55	745.24	127.31	6.854				
12,300.00	7,253.00	11,570.15	7,253.00	68.45	61.86	90.00	-1,343.36	-4,137.15	872.51	743.07	129.44	6.741				
12,400.00	7,253.00	11,670.15	7,253.00	69.50	62.93	90.00	-1,344.20	-4,237.15	872.47	740.89	131.58	6.631				
12,500.00	7,253.00	11,770.15	7,253.00	70.55	64.00	90.00	-1,345.04	-4,337.14	872.43	738.70	133.73	6.524				
12,600.00	7,253.00	11,870.15	7,253.00	71.62	65.08	90.00	-1,345.87	-4,437.14	872.38	736.50	135.89	6.420				
12,700.00	7,253.00	11,970.15	7,253.00	72.69	66.17	90.00	-1,346.71	-4,537.14	872.34	734.28	138.06	6.319				
12,800.00	7,253.00	12,070.15	7,253.00	73.76	67.26	90.00	-1,347.55	-4,637.13	872.30	732.06	140.24	6.220				
12,900.00	7,253.00	12,170.15	7,253.00	74.84	68.36	90.00	-1,348.39	-4,737.13	872.26	729.82	142.44	6.124				
13,000.00	7,253.00	12,270.15	7,253.00	75.92	69.46	90.00	-1,349.23	-4,837.13	872.22	727.58	144.64	6.030				
13,100.00	7,253.00	12,370.15	7,253.00	77.01	70.57	90.00	-1,350.06	-4,937.12	872.17	725.33	146.85	5.939				
13,200.00	7,253.00	12,470.15	7,253.00	78.10	71.68	90.00	-1,350.90	-5,037.12	872.13	723.06	149.07	5.851				
13,300.00	7,253.00	12,570.15	7,253.00	79.20	72.79	90.00	-1,351.74	-5,137.12	872.09	720.79	151.30	5.764				
13,400.00	7,253.00	12,670.15	7,253.00	80.30	73.91	90.00	-1,352.58	-5,237.11	872.05	718.52	153.53	5.680				
13,500.00	7,253.00	12,770.15	7,253.00	81.41	75.04	90.00	-1,353.41	-5,337.11	872.01	716.23	155.77	5.598				
13,600.00	7,253.00	12,870.15	7,253.00	82.52	76.16	90.00	-1,354.25	-5,437.10	871.96	713.94	158.02	5.518				
13,700.00	7,253.00	12,970.15	7,253.00	83.63	77.29	90.00	-1,355.09	-5,537.10	871.92	711.64	160.28	5.440				
13,800.00	7,253.00	13,070.15	7,253.00	84.75	78.43	90.00	-1,355.93	-5,637.10	871.88	709.34	162.54	5.364				
13,900.00	7,253.00	13,170.15	7,253.00	85.87	79.56	90.00	-1,356.77	-5,737.09	871.84	707.03	164.81	5.290				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-13H - OH - Plan #3													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+IFR1+MS													Offset Well Error: 0.00 usft
Reference				Offset			Semi Major Axis		Offset Wellbore Centre		Rule Assigned:		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
14,000.00	7,253.00	13,270.15	7,253.00	87.00	80.70	90.00	-1,357.60	-5,837.09	871.80	704.71	167.09	5.218	
14,100.00	7,253.00	13,370.15	7,253.00	88.12	81.84	90.00	-1,358.44	-5,937.09	871.75	702.39	169.37	5.147	
14,200.00	7,253.00	13,470.15	7,253.00	89.25	82.99	90.00	-1,359.28	-6,037.08	871.71	700.06	171.65	5.078	
14,300.00	7,253.00	13,570.15	7,253.00	90.39	84.14	90.00	-1,360.12	-6,137.08	871.67	697.72	173.95	5.011	
14,400.00	7,253.00	13,670.15	7,253.00	91.52	85.29	90.00	-1,360.95	-6,237.08	871.63	695.39	176.24	4.946	
14,500.00	7,253.00	13,770.15	7,253.00	92.66	86.44	90.00	-1,361.79	-6,337.07	871.59	693.04	178.55	4.882	
14,600.00	7,253.00	13,870.15	7,253.00	93.80	87.60	90.00	-1,362.63	-6,437.07	871.54	690.69	180.85	4.819	
14,700.00	7,253.00	13,970.15	7,253.00	94.95	88.75	90.00	-1,363.47	-6,537.07	871.50	688.34	183.16	4.758	
14,800.00	7,253.00	14,070.15	7,253.00	96.09	89.92	90.00	-1,364.31	-6,637.06	871.46	685.98	185.48	4.698	
14,900.00	7,253.00	14,170.15	7,253.00	97.24	91.08	90.00	-1,365.14	-6,737.06	871.42	683.62	187.80	4.640	
15,000.00	7,253.00	14,270.15	7,253.00	98.39	92.24	90.00	-1,365.98	-6,837.06	871.38	681.25	190.12	4.583	
15,100.00	7,253.00	14,370.15	7,253.00	99.54	93.41	90.00	-1,366.82	-6,937.05	871.33	678.88	192.45	4.528	
15,200.00	7,253.00	14,470.15	7,253.00	100.70	94.58	90.00	-1,367.66	-7,037.05	871.29	676.51	194.78	4.473	
15,300.00	7,253.00	14,570.15	7,253.00	101.86	95.75	90.00	-1,368.49	-7,137.05	871.25	674.13	197.12	4.420	
15,400.00	7,253.00	14,670.15	7,253.00	103.02	96.92	90.00	-1,369.33	-7,237.04	871.21	671.75	199.45	4.368	
15,500.00	7,253.00	14,770.15	7,253.00	104.18	98.09	90.00	-1,370.17	-7,337.04	871.17	669.37	201.80	4.317	
15,600.00	7,253.00	14,870.15	7,253.00	105.34	99.27	90.00	-1,371.01	-7,437.03	871.12	666.98	204.14	4.267	
15,700.00	7,253.00	14,970.15	7,253.00	106.50	100.44	90.00	-1,371.84	-7,537.03	871.08	664.59	206.49	4.219	
15,800.00	7,253.00	15,070.15	7,253.00	107.67	101.62	90.00	-1,372.68	-7,637.03	871.04	662.20	208.84	4.171	
15,900.00	7,253.00	15,170.15	7,253.00	108.84	102.80	90.00	-1,373.52	-7,737.02	871.00	659.80	211.20	4.124	
16,000.00	7,253.00	15,270.15	7,253.00	110.01	103.98	90.00	-1,374.36	-7,837.02	870.96	657.40	213.55	4.078	
16,100.00	7,253.00	15,370.15	7,253.00	111.18	105.16	90.00	-1,375.20	-7,937.02	870.91	655.00	215.91	4.034	
16,200.00	7,253.00	15,470.15	7,253.00	112.35	106.35	90.00	-1,376.03	-8,037.01	870.87	652.60	218.28	3.990	
16,300.00	7,253.00	15,570.15	7,253.00	113.53	107.53	90.00	-1,376.87	-8,137.01	870.83	650.19	220.64	3.947	
16,400.00	7,253.00	15,670.15	7,253.00	114.70	108.72	90.00	-1,377.71	-8,237.01	870.79	647.78	223.01	3.905	
16,500.00	7,253.00	15,770.15	7,253.00	115.88	109.91	90.00	-1,378.55	-8,337.00	870.75	645.37	225.38	3.863	
16,582.97	7,253.00	15,853.11	7,253.00	116.86	110.89	90.00	-1,379.24	-8,419.97	870.71	643.37	227.34	3.830 SF	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-14H - OH - Plan #3													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+IFR1+MS													Offset Well Error: 0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.57	0.00	14.57				
100.00	100.00	100.00	100.00	0.92	0.92	0.00	14.57	0.00	14.57	12.72	1.85	7.884	
200.00	200.00	200.00	200.00	1.53	1.53	0.00	14.57	0.00	14.57	11.52	3.05	4.774	
300.00	300.00	300.00	300.00	1.95	1.95	0.00	14.57	0.00	14.57	10.66	3.91	3.729	CC, ES
400.00	399.98	399.98	399.98	2.51	2.31	-159.40	14.57	0.00	16.19	11.40	4.79	3.380	
500.00	499.84	500.49	500.47	2.99	2.80	-162.55	13.02	0.83	19.55	13.82	5.72	3.415	
600.00	599.45	601.12	600.96	3.45	3.24	-164.00	8.36	3.34	23.02	16.43	6.59	3.494	
700.00	698.70	701.87	701.31	3.90	3.67	-164.38	0.58	7.53	26.58	19.15	7.43	3.576	
800.00	797.47	802.74	801.42	4.35	4.10	-164.07	-10.32	13.39	30.22	21.95	8.27	3.655	
900.00	895.62	903.72	901.13	4.81	4.53	-163.29	-24.33	20.92	33.93	24.83	9.10	3.728	
1,000.00	993.06	1,004.82	1,000.33	5.27	4.98	-162.19	-41.45	30.13	37.72	27.79	9.93	3.797	
1,100.00	1,089.64	1,106.02	1,098.90	5.74	5.43	-160.85	-61.66	41.00	41.60	30.83	10.77	3.864	
1,200.00	1,185.27	1,207.33	1,196.69	6.22	5.90	-159.35	-84.96	53.52	45.58	33.98	11.60	3.931	
1,307.10	1,286.49	1,315.74	1,300.24	6.76	6.40	-157.63	-113.21	68.72	49.99	37.47	12.51	3.995	
1,400.00	1,373.70	1,408.54	1,388.47	7.15	6.78	-156.46	-138.53	82.33	54.25	41.05	13.21	4.108	
1,500.00	1,467.59	1,508.43	1,483.44	7.58	7.19	-155.40	-165.78	96.98	58.86	44.88	13.99	4.209	
1,600.00	1,561.47	1,608.31	1,578.42	8.02	7.62	-154.49	-193.03	111.64	63.49	48.71	14.78	4.295	
1,700.00	1,655.36	1,708.20	1,673.39	8.47	8.06	-153.70	-220.28	126.29	68.14	52.54	15.60	4.369	
1,800.00	1,749.24	1,808.09	1,768.37	8.93	8.50	-153.01	-247.54	140.95	72.79	56.37	16.42	4.432	
1,900.00	1,843.12	1,907.98	1,863.34	9.39	8.95	-152.41	-274.79	155.60	77.46	60.20	17.26	4.488	
2,000.00	1,937.01	2,007.87	1,958.32	9.87	9.41	-151.87	-302.04	170.25	82.13	64.03	18.10	4.537	
2,100.00	2,030.89	2,107.75	2,053.29	10.34	9.88	-151.40	-329.29	184.91	86.81	67.85	18.95	4.580	
2,200.00	2,124.78	2,207.64	2,148.27	10.82	10.35	-150.97	-356.54	199.56	91.49	71.68	19.81	4.618	
2,300.00	2,218.66	2,307.53	2,243.24	11.31	10.82	-150.58	-383.79	214.22	96.18	75.50	20.68	4.651	
2,400.00	2,312.54	2,407.42	2,338.22	11.80	11.30	-150.23	-411.04	228.87	100.87	79.32	21.55	4.682	
2,500.00	2,406.43	2,507.31	2,433.19	12.29	11.78	-149.91	-438.30	243.53	105.56	83.15	22.42	4.709	
2,600.00	2,500.31	2,607.19	2,528.17	12.78	12.26	-149.62	-465.55	258.18	110.26	86.97	23.29	4.734	
2,700.00	2,594.20	2,707.08	2,623.14	13.28	12.75	-149.35	-492.80	272.83	114.96	90.79	24.17	4.756	
2,800.00	2,688.08	2,806.97	2,718.12	13.78	13.23	-149.10	-520.05	287.49	119.67	94.61	25.06	4.776	
2,900.00	2,781.97	2,906.86	2,813.09	14.28	13.72	-148.87	-547.30	302.14	124.37	98.43	25.94	4.795	
3,000.00	2,875.85	3,006.75	2,908.07	14.78	14.21	-148.66	-574.55	316.80	129.08	102.25	26.83	4.812	
3,100.00	2,969.73	3,106.63	3,003.04	15.28	14.71	-148.46	-601.81	331.45	133.79	106.07	27.72	4.827	
3,200.00	3,063.62	3,206.52	3,098.02	15.79	15.20	-148.28	-629.06	346.11	138.50	109.89	28.61	4.842	
3,300.00	3,157.50	3,306.41	3,192.99	16.29	15.70	-148.11	-656.31	360.76	143.21	113.71	29.50	4.855	
3,400.00	3,251.39	3,406.30	3,287.97	16.80	16.19	-147.95	-683.56	375.41	147.92	117.53	30.39	4.867	
3,500.00	3,345.27	3,506.19	3,382.94	17.31	16.69	-147.80	-710.81	390.07	152.64	121.35	31.29	4.879	
3,600.00	3,439.15	3,606.08	3,477.92	17.82	17.19	-147.66	-738.06	404.72	157.35	125.17	32.18	4.889	
3,700.00	3,533.04	3,705.96	3,572.89	18.33	17.69	-147.52	-765.32	419.38	162.07	128.99	33.08	4.899	
3,800.00	3,626.92	3,805.85	3,667.87	18.84	18.19	-147.40	-792.57	434.03	166.78	132.80	33.98	4.908	
3,900.00	3,720.81	3,905.74	3,762.84	19.35	18.69	-147.28	-819.82	448.68	171.50	136.62	34.88	4.917	
4,000.00	3,814.69	4,005.63	3,857.82	19.86	19.20	-147.17	-847.07	463.34	176.22	140.44	35.78	4.925	
4,100.00	3,908.58	4,105.52	3,952.79	20.37	19.70	-147.06	-874.32	477.99	180.94	144.26	36.68	4.933	
4,200.00	4,002.46	4,205.40	4,047.76	20.89	20.20	-146.96	-901.57	492.65	185.66	148.08	37.58	4.940	
4,300.00	4,096.34	4,305.29	4,142.74	21.40	20.71	-146.86	-928.82	507.30	190.38	151.89	38.48	4.947	
4,400.00	4,190.23	4,405.18	4,237.71	21.92	21.21	-146.77	-956.08	521.96	195.10	155.71	39.39	4.953	
4,500.00	4,284.11	4,505.07	4,332.69	22.43	21.72	-146.68	-983.33	536.61	199.82	159.53	40.29	4.959	
4,600.00	4,378.00	4,604.96	4,427.66	22.95	22.22	-146.60	-1,010.58	551.26	204.54	163.34	41.20	4.965	
4,700.00	4,471.88	4,704.84	4,522.64	23.47	22.73	-146.52	-1,037.83	565.92	209.26	167.16	42.10	4.971	
4,800.00	4,565.77	4,804.73	4,617.61	23.98	23.24	-146.44	-1,065.08	580.57	213.98	170.98	43.01	4.976	
4,900.00	4,659.65	4,904.62	4,712.59	24.50	23.74	-146.37	-1,092.33	595.23	218.71	174.80	43.91	4.981	
5,000.00	4,753.53	5,004.51	4,807.56	25.02	24.25	-146.30	-1,119.59	609.88	223.43	178.61	44.82	4.985	
5,100.00	4,847.42	5,104.40	4,902.54	25.53	24.76	-146.23	-1,146.84	624.54	228.15	182.43	45.72	4.990	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-14H - OH - Plan #3													Offset Site Error:	0.00 usft		
Survey Program: 0-MWD+IFR1+MS													Offset Well Error:	0.00 usft		
Reference				Offset			Semi Major Axis		Highside		Rule Assigned:		Distance		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
5,200.00	4,941.30	5,204.28	4,997.51	26.05	25.27	-146.17	-1,174.09	639.19	232.88	186.25	46.63	4.994				
5,300.00	5,035.19	5,304.17	5,092.49	26.57	25.78	-146.11	-1,201.34	653.84	237.60	190.06	47.54	4.998				
5,400.00	5,129.07	5,404.06	5,187.46	27.09	26.28	-146.05	-1,228.59	668.50	242.32	193.88	48.45	5.002				
5,500.00	5,222.95	5,503.95	5,282.44	27.61	26.79	-145.99	-1,255.84	683.15	247.05	197.69	49.35	5.006				
5,600.00	5,316.84	5,603.84	5,377.41	28.13	27.30	-145.94	-1,283.09	697.81	251.77	201.51	50.26	5.009				
5,700.00	5,410.72	5,703.72	5,472.39	28.65	27.81	-145.88	-1,310.35	712.46	256.50	205.33	51.17	5.013				
5,800.00	5,504.61	5,803.61	5,567.36	29.17	28.32	-145.83	-1,337.60	727.12	261.22	209.14	52.08	5.016				
5,900.00	5,598.49	5,903.50	5,662.34	29.69	28.83	-145.78	-1,364.85	741.77	265.95	212.96	52.99	5.019				
6,000.00	5,692.38	6,003.39	5,757.31	30.21	29.34	-145.74	-1,392.10	756.42	270.67	216.78	53.90	5.022				
6,100.00	5,786.26	6,103.28	5,852.29	30.73	29.85	-145.69	-1,419.35	771.08	275.40	220.59	54.81	5.025				
6,200.00	5,880.14	6,203.16	5,947.26	31.25	30.37	-145.65	-1,446.60	785.73	280.12	224.41	55.72	5.028				
6,300.00	5,974.03	6,303.05	6,042.24	31.77	30.88	-145.61	-1,473.86	800.39	284.85	228.22	56.63	5.030				
6,400.00	6,067.91	6,402.94	6,137.21	32.30	31.39	-145.56	-1,501.11	815.04	289.57	232.04	57.53	5.033				
6,500.00	6,161.80	6,508.64	6,238.05	32.82	31.91	-146.09	-1,530.06	827.57	293.71	234.98	58.72	5.001				
6,600.00	6,255.68	6,615.67	6,340.77	33.34	32.37	-149.40	-1,559.69	825.55	295.32	234.19	61.13	4.831				
6,700.00	6,349.56	6,715.79	6,435.58	33.86	32.66	-155.15	-1,587.15	809.26	296.61	232.23	64.38	4.607				
6,800.00	6,443.45	6,806.22	6,518.56	34.38	32.80	-162.40	-1,611.29	782.85	301.58	234.07	67.51	4.467				
6,844.35	6,485.09	6,842.88	6,551.17	34.61	32.84	-165.81	-1,620.80	769.07	306.13	237.59	68.54	4.467				
6,850.00	6,490.39	6,847.41	6,555.14	34.64	32.84	-167.46	-1,621.97	767.25	306.83	238.19	68.64	4.470				
6,900.00	6,537.55	6,886.92	6,589.38	34.90	32.86	177.33	-1,631.98	750.25	314.15	244.86	69.30	4.534				
6,950.00	6,584.89	6,925.54	6,621.91	35.14	32.87	161.55	-1,641.51	731.76	323.15	253.70	69.45	4.653				
7,000.00	6,632.18	6,963.37	6,652.80	35.36	32.87	146.21	-1,650.58	711.90	333.50	264.34	69.17	4.822				
7,050.00	6,679.18	7,000.00	6,681.70	35.56	32.87	132.25	-1,659.08	691.08	344.92	276.43	68.49	5.036				
7,100.00	6,725.68	7,036.99	6,709.81	35.72	32.86	120.02	-1,667.37	668.52	357.10	289.54	67.56	5.286				
7,150.00	6,771.45	7,072.93	6,736.01	35.86	32.86	109.68	-1,675.12	645.18	369.79	303.43	66.37	5.572				
7,200.00	6,816.25	7,108.36	6,760.71	35.96	32.84	101.01	-1,682.44	620.85	382.77	317.77	65.00	5.889				
7,250.00	6,859.88	7,143.36	6,783.93	36.05	32.83	93.73	-1,689.35	595.60	395.82	332.32	63.50	6.233				
7,300.00	6,902.12	7,177.95	6,805.70	36.10	32.83	87.60	-1,695.84	569.51	408.77	346.85	61.92	6.601				
7,350.00	6,942.76	7,212.19	6,826.02	36.15	32.82	82.41	-1,701.92	542.64	421.48	361.18	60.30	6.990				
7,400.00	6,981.61	7,250.00	6,846.99	36.17	32.81	77.87	-1,708.22	511.82	433.83	374.99	58.84	7.372				
7,450.00	7,018.47	7,279.75	6,862.38	36.19	32.81	74.21	-1,712.87	486.79	445.64	388.62	57.02	7.815				
7,500.00	7,053.18	7,313.14	6,878.44	36.20	32.82	70.97	-1,717.74	457.93	456.88	401.47	55.42	8.245				
7,550.00	7,085.55	7,350.00	6,894.64	36.21	32.82	68.11	-1,722.68	425.20	467.47	413.46	54.01	8.655				
7,600.00	7,115.43	7,379.27	6,906.34	36.22	32.84	65.80	-1,726.28	398.61	477.27	424.93	52.35	9.118				
7,650.00	7,142.68	7,412.06	6,918.19	36.23	32.86	63.76	-1,729.95	368.26	486.29	435.37	50.91	9.552				
7,700.00	7,167.17	7,450.00	6,930.22	36.25	32.88	61.95	-1,733.71	332.48	494.48	444.72	49.76	9.938				
7,750.00	7,188.76	7,477.21	6,937.72	36.27	32.91	60.56	-1,736.09	306.44	501.68	453.38	48.30	10.387				
7,800.00	7,207.37	7,509.60	6,945.40	36.30	32.95	59.34	-1,738.57	275.07	507.98	460.84	47.14	10.776				
7,850.00	7,222.89	7,550.00	6,953.05	36.34	33.01	58.30	-1,741.10	235.49	513.41	467.08	46.33	11.081				
7,900.00	7,235.25	7,574.13	6,956.59	36.40	33.05	57.59	-1,742.33	211.65	517.63	472.48	45.15	11.465				
7,950.00	7,244.39	7,600.00	6,959.53	36.47	33.09	57.04	-1,743.39	185.97	520.99	476.82	44.17	11.795				
8,000.00	7,250.28	7,638.43	6,962.25	36.56	33.17	56.64	-1,744.49	147.66	523.20	479.56	43.64	11.989				
8,050.00	7,252.87	7,671.93	6,963.00	36.66	33.25	56.45	-1,744.99	114.17	524.42	481.33	43.09	12.169				
8,064.20	7,253.00	7,683.94	6,963.00	36.69	33.28	56.43	-1,745.09	102.16	524.52	481.51	43.01	12.195				
8,100.00	7,253.00	7,719.74	6,963.00	36.77	33.37	56.43	-1,745.39	66.37	524.51	481.56	42.95	12.211				
8,200.00	7,253.00	7,819.74	6,963.00	37.03	33.65	56.43	-1,746.22	-33.63	524.48	481.60	42.87	12.233				
8,300.00	7,253.00	7,919.74	6,963.00	37.33	33.97	56.43	-1,747.06	-133.63	524.44	481.53	42.91	12.222				
8,400.00	7,253.00	8,019.74	6,963.00	37.66	34.32	56.43	-1,747.90	-233.62	524.41	481.34	43.07	12.176				
8,500.00	7,253.00	8,119.74	6,963.00	38.02	34.71	56.42	-1,748.74	-333.62	524.37	481.03	43.34	12.099				
8,600.00	7,253.00	8,219.74	6,963.00	38.42	35.13	56.42	-1,749.57	-433.61	524.34	480.61	43.73	11.991				
8,700.00	7,253.00	8,319.74	6,963.00	38.85	35.59	56.42	-1,750.41	-533.61	524.30	480.07	44.23	11.854				
8,800.00	7,253.00	8,419.74	6,963.00	39.31	36.08	56.42	-1,751.25	-633.61	524.27	479.43	44.84	11.693				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-14H - OH - Plan #3													Offset Site Error: 0.00 usft		
Survey Program: 0-MWD+IFR1+MS													Offset Well Error: 0.00 usft		
Reference				Offset				Semi Major Axis		Rule Assigned:		Distance		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
8,900.00	7,253.00	8,519.74	6,963.00	39.80	36.61	56.41	-1,752.08	-733.60	524.23	478.69	45.55	11.510			
9,000.00	7,253.00	8,619.74	6,963.00	40.32	37.16	56.41	-1,752.92	-833.60	524.20	477.84	46.36	11.308			
9,100.00	7,253.00	8,719.74	6,963.00	40.87	37.75	56.41	-1,753.76	-933.60	524.17	476.91	47.26	11.091			
9,200.00	7,253.00	8,819.74	6,963.00	41.45	38.36	56.41	-1,754.60	-1,033.59	524.13	475.88	48.25	10.863			
9,300.00	7,253.00	8,919.74	6,963.00	42.05	39.00	56.40	-1,755.43	-1,133.59	524.10	474.77	49.32	10.626			
9,400.00	7,253.00	9,019.74	6,963.00	42.68	39.67	56.40	-1,756.27	-1,233.59	524.06	473.59	50.48	10.383			
9,500.00	7,253.00	9,119.74	6,963.00	43.33	40.37	56.40	-1,757.11	-1,333.58	524.03	472.33	51.70	10.136			
9,600.00	7,253.00	9,219.74	6,963.00	44.01	41.09	56.40	-1,757.94	-1,433.58	523.99	471.00	52.99	9.888			
9,700.00	7,253.00	9,319.74	6,963.00	44.71	41.83	56.39	-1,758.78	-1,533.58	523.96	469.61	54.34	9.641			
9,800.00	7,253.00	9,419.74	6,963.00	45.44	42.60	56.39	-1,759.62	-1,633.57	523.92	468.17	55.76	9.397			
9,900.00	7,253.00	9,519.74	6,963.00	46.18	43.38	56.39	-1,760.46	-1,733.57	523.89	466.67	57.22	9.155			
10,000.00	7,253.00	9,619.74	6,963.00	46.94	44.19	56.39	-1,761.29	-1,833.57	523.86	465.12	58.74	8.919			
10,100.00	7,253.00	9,719.74	6,963.00	47.73	45.02	56.38	-1,762.13	-1,933.56	523.82	463.52	60.30	8.687			
10,200.00	7,253.00	9,819.74	6,963.00	48.53	45.87	56.38	-1,762.97	-2,033.56	523.79	461.88	61.90	8.462			
10,300.00	7,253.00	9,919.74	6,963.00	49.35	46.73	56.38	-1,763.80	-2,133.56	523.75	460.21	63.55	8.242			
10,400.00	7,253.00	10,019.74	6,963.00	50.19	47.61	56.38	-1,764.64	-2,233.55	523.72	458.49	65.22	8.029			
10,500.00	7,253.00	10,119.74	6,963.00	51.04	48.51	56.37	-1,765.48	-2,333.55	523.68	456.75	66.94	7.823			
10,600.00	7,253.00	10,219.74	6,963.00	51.91	49.42	56.37	-1,766.31	-2,433.54	523.65	454.97	68.68	7.624			
10,700.00	7,253.00	10,319.74	6,963.00	52.79	50.35	56.37	-1,767.15	-2,533.54	523.61	453.16	70.45	7.432			
10,800.00	7,253.00	10,419.74	6,963.00	53.69	51.29	56.37	-1,767.99	-2,633.54	523.58	451.33	72.25	7.246			
10,900.00	7,253.00	10,519.74	6,963.00	54.60	52.24	56.36	-1,768.83	-2,733.53	523.55	449.47	74.08	7.068			
11,000.00	7,253.00	10,619.74	6,963.00	55.52	53.21	56.36	-1,769.66	-2,833.53	523.51	447.59	75.92	6.895			
11,100.00	7,253.00	10,719.74	6,963.00	56.46	54.18	56.36	-1,770.50	-2,933.53	523.48	445.68	77.79	6.729			
11,200.00	7,253.00	10,819.74	6,963.00	57.40	55.17	56.36	-1,771.34	-3,033.52	523.44	443.76	79.68	6.569			
11,300.00	7,253.00	10,919.74	6,963.00	58.36	56.17	56.35	-1,772.17	-3,133.52	523.41	441.82	81.59	6.415			
11,400.00	7,253.00	11,019.74	6,963.00	59.33	57.18	56.35	-1,773.01	-3,233.52	523.37	439.86	83.51	6.267			
11,500.00	7,253.00	11,119.74	6,963.00	60.31	58.20	56.35	-1,773.85	-3,333.51	523.34	437.89	85.45	6.125			
11,600.00	7,253.00	11,219.74	6,963.00	61.30	59.22	56.35	-1,774.69	-3,433.51	523.30	435.90	87.40	5.987			
11,700.00	7,253.00	11,319.74	6,963.00	62.30	60.25	56.34	-1,775.52	-3,533.51	523.27	433.90	89.37	5.855			
11,800.00	7,253.00	11,419.74	6,963.00	63.30	61.30	56.34	-1,776.36	-3,633.50	523.24	431.88	91.35	5.728			
11,900.00	7,253.00	11,519.74	6,963.00	64.32	62.35	56.34	-1,777.20	-3,733.50	523.20	429.86	93.35	5.605			
12,000.00	7,253.00	11,619.74	6,963.00	65.34	63.40	56.34	-1,778.03	-3,833.50	523.17	427.82	95.35	5.487			
12,100.00	7,253.00	11,719.74	6,963.00	66.37	64.47	56.33	-1,778.87	-3,933.49	523.13	425.77	97.37	5.373			
12,200.00	7,253.00	11,819.74	6,963.00	67.40	65.54	56.33	-1,779.71	-4,033.49	523.10	423.71	99.39	5.263			
12,300.00	7,253.00	11,919.74	6,963.00	68.45	66.61	56.33	-1,780.55	-4,133.49	523.06	421.64	101.43	5.157			
12,400.00	7,253.00	12,019.74	6,963.00	69.50	67.69	56.33	-1,781.38	-4,233.48	523.03	419.56	103.47	5.055			
12,500.00	7,253.00	12,119.74	6,963.00	70.55	68.78	56.32	-1,782.22	-4,333.48	523.00	417.47	105.52	4.956			
12,600.00	7,253.00	12,219.74	6,963.00	71.62	69.87	56.32	-1,783.06	-4,433.47	522.96	415.38	107.58	4.861			
12,700.00	7,253.00	12,319.74	6,963.00	72.69	70.97	56.32	-1,783.89	-4,533.47	522.93	413.28	109.65	4.769			
12,800.00	7,253.00	12,419.74	6,963.00	73.76	72.07	56.32	-1,784.73	-4,633.47	522.89	411.17	111.72	4.680			
12,900.00	7,253.00	12,519.74	6,963.00	74.84	73.18	56.31	-1,785.57	-4,733.46	522.86	409.05	113.81	4.594			
13,000.00	7,253.00	12,619.74	6,963.00	75.92	74.29	56.31	-1,786.40	-4,833.46	522.82	406.93	115.89	4.511			
13,100.00	7,253.00	12,719.74	6,963.00	77.01	75.41	56.31	-1,787.24	-4,933.46	522.79	404.80	117.99	4.431			
13,200.00	7,253.00	12,819.74	6,963.00	78.10	76.53	56.31	-1,788.08	-5,033.45	522.75	402.67	120.09	4.353			
13,300.00	7,253.00	12,919.74	6,963.00	79.20	77.65	56.30	-1,788.92	-5,133.45	522.72	400.53	122.19	4.278			
13,400.00	7,253.00	13,019.74	6,963.00	80.30	78.78	56.30	-1,789.75	-5,233.45	522.69	398.39	124.30	4.205			
13,500.00	7,253.00	13,119.74	6,963.00	81.41	79.91	56.30	-1,790.59	-5,333.44	522.65	396.24	126.41	4.134			
13,600.00	7,253.00	13,219.74	6,963.00	82.52	81.04	56.30	-1,791.43	-5,433.44	522.62	394.08	128.53	4.066			
13,700.00	7,253.00	13,319.74	6,963.00	83.63	82.18	56.29	-1,792.26	-5,533.44	522.58	391.93	130.66	4.000			
13,800.00	7,253.00	13,419.74	6,963.00	84.75	83.32	56.29	-1,793.10	-5,633.43	522.55	389.77	132.78	3.935			
13,900.00	7,253.00	13,519.74	6,963.00	85.87	84.46	56.29	-1,793.94	-5,733.43	522.51	387.60	134.91	3.873			
14,000.00	7,253.00	13,619.74	6,963.00	87.00	85.60	56.29	-1,794.78	-5,833.43	522.48	385.43	137.05	3.812			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-14H - OH - Plan #3													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+IFR1+MS													Offset Well Error: 0.00 usft	
Reference				Offset			Semi Major Axis		Highside		Rule Assigned:		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Reference (usft)	Offset (usft)	Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
14,100.00	7,253.00	13,719.74	6,963.00	88.12	86.75	56.28		56.28	-1,795.61	-5,933.42	522.44	383.26	139.19	3.754
14,200.00	7,253.00	13,819.74	6,963.00	89.25	87.90	56.28		56.28	-1,796.45	-6,033.42	522.41	381.08	141.33	3.696
14,300.00	7,253.00	13,919.74	6,963.00	90.39	89.06	56.28		56.28	-1,797.29	-6,133.41	522.38	378.90	143.47	3.641
14,400.00	7,253.00	14,019.74	6,963.00	91.52	90.21	56.28		56.28	-1,798.12	-6,233.41	522.34	376.72	145.62	3.587
14,500.00	7,253.00	14,119.74	6,963.00	92.66	91.37	56.27		56.27	-1,798.96	-6,333.41	522.31	374.53	147.77	3.535
14,600.00	7,253.00	14,219.74	6,963.00	93.80	92.53	56.27		56.27	-1,799.80	-6,433.40	522.27	372.35	149.93	3.484
14,700.00	7,253.00	14,319.74	6,963.00	94.95	93.69	56.27		56.27	-1,800.64	-6,533.40	522.24	370.15	152.08	3.434
14,800.00	7,253.00	14,419.74	6,963.00	96.09	94.86	56.27		56.27	-1,801.47	-6,633.40	522.20	367.96	154.24	3.386
14,900.00	7,253.00	14,519.74	6,963.00	97.24	96.02	56.26		56.26	-1,802.31	-6,733.39	522.17	365.77	156.40	3.339
15,000.00	7,253.00	14,619.74	6,963.00	98.39	97.19	56.26		56.26	-1,803.15	-6,833.39	522.14	363.57	158.57	3.293
15,100.00	7,253.00	14,719.74	6,963.00	99.54	98.36	56.26		56.26	-1,803.98	-6,933.39	522.10	361.37	160.74	3.248
15,200.00	7,253.00	14,819.74	6,963.00	100.70	99.53	56.26		56.26	-1,804.82	-7,033.38	522.07	359.16	162.90	3.205
15,300.00	7,253.00	14,919.74	6,963.00	101.86	100.71	56.25		56.25	-1,805.66	-7,133.38	522.03	356.96	165.07	3.162
15,400.00	7,253.00	15,019.74	6,963.00	103.02	101.88	56.25		56.25	-1,806.49	-7,233.38	522.00	354.75	167.25	3.121
15,500.00	7,253.00	15,119.74	6,963.00	104.18	103.06	56.25		56.25	-1,807.33	-7,333.37	521.96	352.54	169.42	3.081
15,600.00	7,253.00	15,219.74	6,963.00	105.34	104.23	56.25		56.25	-1,808.17	-7,433.37	521.93	350.33	171.60	3.042
15,700.00	7,253.00	15,319.74	6,963.00	106.50	105.41	56.24		56.24	-1,809.01	-7,533.37	521.89	348.12	173.78	3.003
15,800.00	7,253.00	15,419.74	6,963.00	107.67	106.60	56.24		56.24	-1,809.84	-7,633.36	521.86	345.90	175.96	2.966
15,900.00	7,253.00	15,519.74	6,963.00	108.84	107.78	56.24		56.24	-1,810.68	-7,733.36	521.83	343.69	178.14	2.929
16,000.00	7,253.00	15,619.74	6,963.00	110.01	108.96	56.24		56.24	-1,811.52	-7,833.36	521.79	341.47	180.32	2.894
16,100.00	7,253.00	15,719.74	6,963.00	111.18	110.15	56.23		56.23	-1,812.35	-7,933.35	521.76	339.25	182.51	2.859
16,200.00	7,253.00	15,819.74	6,963.00	112.35	111.33	56.23		56.23	-1,813.19	-8,033.35	521.72	337.03	184.69	2.825
16,300.00	7,253.00	15,919.74	6,963.00	113.53	112.52	56.23		56.23	-1,814.03	-8,133.34	521.69	334.81	186.88	2.792
16,400.00	7,253.00	16,019.74	6,963.00	114.70	113.71	56.23		56.23	-1,814.87	-8,233.34	521.65	332.59	189.07	2.759
16,500.00	7,253.00	16,119.74	6,963.00	115.88	114.90	56.22		56.22	-1,815.70	-8,333.34	521.62	330.36	191.26	2.727
16,582.97	7,253.00	16,202.70	6,963.00	116.86	115.89	56.22		56.22	-1,816.40	-8,416.30	521.59	328.52	193.08	2.701 SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-5H - OH - Plan #3													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+IFR1+MS													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis			Highside		Offset Wellbore Centre		Rule Assigned: Distance		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-37.39	40.07	-30.63	50.43				
100.00	100.00	100.00	100.00	0.92	0.92	-37.39	40.07	-30.63	50.43	48.59	1.85	27.286	
200.00	200.00	200.00	200.00	1.53	1.53	-37.39	40.07	-30.63	50.43	47.38	3.05	16.522	
300.00	300.00	300.00	300.00	1.95	1.95	-37.39	40.07	-30.63	50.43	46.53	3.91	12.905 CC, ES	
400.00	399.98	399.98	399.98	2.51	2.31	166.08	40.07	-30.63	52.13	47.32	4.80	10.850	
500.00	499.84	499.84	499.84	2.99	2.61	167.32	40.07	-30.63	57.22	51.63	5.59	10.243 SF	
600.00	599.45	599.45	599.45	3.45	2.89	168.95	40.07	-30.63	65.75	59.43	6.32	10.405	
700.00	698.70	698.70	698.70	3.90	3.14	170.63	40.07	-30.63	77.75	70.72	7.02	11.068	
800.00	797.47	797.47	797.47	4.35	3.38	172.16	40.07	-30.63	93.22	85.51	7.71	12.083	
900.00	895.62	895.62	895.62	4.81	3.60	173.44	40.07	-30.63	112.16	103.76	8.40	13.360	
1,000.00	993.06	993.06	993.06	5.27	3.81	174.49	40.07	-30.63	134.53	125.47	9.07	14.835	
1,100.00	1,089.64	1,089.64	1,089.64	5.74	4.00	175.34	40.07	-30.63	160.32	150.58	9.74	16.464	
1,200.00	1,185.27	1,185.27	1,185.27	6.22	4.19	176.01	40.07	-30.63	189.48	179.08	10.40	18.213	
1,307.10	1,286.49	1,281.32	1,281.31	6.76	4.47	176.75	41.21	-30.43	225.40	214.23	11.17	20.179	
1,400.00	1,373.70	1,361.78	1,361.69	7.15	4.71	177.60	44.57	-29.84	260.35	248.61	11.73	22.189	
1,500.00	1,467.59	1,446.55	1,446.24	7.58	4.97	178.59	50.51	-28.79	300.21	287.87	12.34	24.323	
1,600.00	1,561.47	1,529.34	1,528.61	8.02	5.24	179.59	58.69	-27.35	342.36	329.41	12.95	26.440	
1,700.00	1,655.36	1,610.08	1,608.68	8.47	5.51	-179.43	68.92	-25.54	386.77	373.21	13.55	28.541	
1,800.00	1,749.24	1,688.73	1,686.36	8.93	5.78	-178.48	81.02	-23.41	433.37	419.22	14.15	30.628	
1,900.00	1,843.12	1,765.25	1,761.59	9.39	6.06	-177.57	94.81	-20.98	482.11	467.37	14.74	32.702	
2,000.00	1,937.01	1,839.62	1,834.32	9.87	6.34	-176.70	110.10	-18.28	532.93	517.60	15.33	34.770	
2,100.00	2,030.89	1,911.83	1,904.53	10.34	6.61	-175.89	126.72	-15.35	585.76	569.86	15.90	36.836	
2,200.00	2,124.78	1,981.90	1,972.23	10.82	6.89	-175.12	144.50	-12.21	640.53	624.06	16.47	38.895	
2,300.00	2,218.66	2,049.83	2,037.42	11.31	7.17	-174.40	163.30	-8.90	697.17	680.14	17.02	40.953	
2,400.00	2,312.54	2,115.65	2,100.14	11.80	7.44	-173.73	182.95	-5.43	755.60	738.03	17.57	43.015	
2,500.00	2,406.43	2,179.39	2,160.42	12.29	7.71	-173.09	203.34	-1.84	815.74	797.64	18.10	45.076	
2,600.00	2,500.31	2,241.08	2,218.31	12.78	7.95	-172.50	224.32	1.86	877.53	858.94	18.59	47.209	
2,700.00	2,594.20	2,305.04	2,277.91	13.28	8.18	-171.92	247.23	5.72	940.81	921.72	19.09	49.274	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-6H - OH - Plan #3													Offset Site Error:	0.00 usft		
Survey Program: 0-MWD+IFR1+MS													Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)						
0.00	0.00	0.00	0.00	0.00	0.00	-54.49	21.86	-30.63	37.63							
100.00	100.00	100.00	100.00	0.92	0.92	-54.49	21.86	-30.63	37.63	35.78	1.85	20.357				
200.00	200.00	200.00	200.00	1.53	1.53	-54.49	21.86	-30.63	37.63	34.58	3.05	12.327				
300.00	300.00	300.00	300.00	1.95	1.95	-54.49	21.86	-30.63	37.63	33.72	3.91	9.629 CC, ES				
400.00	399.98	399.98	399.98	2.51	2.31	149.84	21.86	-30.63	39.13	34.36	4.76	8.213				
500.00	499.84	499.84	499.84	2.99	2.61	153.24	21.86	-30.63	43.73	38.20	5.53	7.911 SF				
600.00	599.45	599.45	599.45	3.45	2.89	157.53	21.86	-30.63	51.67	45.41	6.26	8.254				
700.00	698.70	698.70	698.70	3.90	3.14	161.69	21.86	-30.63	63.11	56.13	6.97	9.049				
800.00	797.47	797.47	797.47	4.35	3.38	165.22	21.86	-30.63	78.12	70.45	7.67	10.180				
900.00	895.62	895.62	895.62	4.81	3.60	168.02	21.86	-30.63	96.71	88.35	8.36	11.563				
1,000.00	993.06	993.06	993.06	5.27	3.81	170.19	21.86	-30.63	118.82	109.78	9.05	13.137				
1,100.00	1,089.64	1,089.64	1,089.64	5.74	4.00	171.87	21.86	-30.63	144.41	134.69	9.72	14.857				
1,200.00	1,185.27	1,185.27	1,185.27	6.22	4.19	173.16	21.86	-30.63	173.42	163.03	10.39	16.691				
1,307.10	1,286.49	1,286.49	1,286.49	6.76	4.38	174.23	21.86	-30.63	208.22	197.10	11.13	18.710				
1,400.00	1,373.70	1,368.89	1,368.88	7.15	4.61	175.08	22.68	-30.54	240.83	229.13	11.70	20.584				
1,500.00	1,467.59	1,455.00	1,454.92	7.58	4.86	176.07	26.03	-30.18	278.23	265.92	12.31	22.594				
1,600.00	1,561.47	1,539.18	1,538.90	8.02	5.12	177.08	31.78	-29.57	318.02	305.10	12.93	24.605				
1,700.00	1,655.36	1,621.35	1,620.68	8.47	5.37	178.08	39.76	-28.72	360.16	346.63	13.53	26.618				
1,800.00	1,749.24	1,700.00	1,698.70	8.93	5.63	179.03	49.58	-27.67	404.60	390.49	14.11	28.666				
1,900.00	1,843.12	1,779.47	1,777.23	9.39	5.90	179.97	61.66	-26.38	451.27	436.55	14.73	30.646				
2,000.00	1,937.01	1,855.33	1,851.86	9.87	6.16	-179.15	75.21	-24.94	500.12	484.81	15.31	32.660				
2,100.00	2,030.89	1,929.04	1,924.00	10.34	6.43	-178.32	90.25	-23.34	551.08	535.19	15.89	34.678				
2,200.00	2,124.78	2,000.00	1,993.06	10.82	6.70	-177.55	106.47	-21.61	604.06	587.61	16.45	36.719				
2,300.00	2,218.66	2,070.01	2,060.77	11.31	6.97	-176.82	124.14	-19.72	659.00	641.98	17.02	38.723				
2,400.00	2,312.54	2,137.28	2,125.41	11.80	7.23	-176.13	142.66	-17.75	715.81	698.25	17.56	40.764				
2,500.00	2,406.43	2,204.10	2,189.17	12.29	7.50	-175.48	162.53	-15.63	774.42	756.31	18.11	42.773				
2,600.00	2,500.31	2,284.17	2,265.36	12.78	7.89	-174.77	187.03	-13.02	833.78	814.85	18.93	44.044				
2,700.00	2,594.20	2,364.25	2,341.55	13.28	8.20	-174.16	211.52	-10.41	893.21	873.54	19.67	45.421				
2,800.00	2,688.08	2,444.33	2,417.75	13.78	8.50	-173.62	236.01	-7.79	952.70	932.31	20.39	46.734				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-7H - OH - Plan #3													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+IFR1+MS													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	-76.62	7.29	-30.63	31.48				
100.00	100.00	100.00	100.00	0.92	0.92	-76.62	7.29	-30.63	31.48	29.64	1.85	17.033	
200.00	200.00	200.00	200.00	1.53	1.53	-76.62	7.29	-30.63	31.48	28.43	3.05	10.314	
300.00	300.00	300.00	300.00	1.95	1.95	-76.62	7.29	-30.63	31.48	27.58	3.91	8.056 CC, ES	
400.00	399.98	399.98	399.98	2.51	2.31	128.84	7.29	-30.63	32.55	27.86	4.69	6.941	
500.00	499.84	499.84	499.84	2.99	2.61	135.28	7.29	-30.63	36.06	30.65	5.41	6.662 SF	
600.00	599.45	599.45	599.45	3.45	2.89	143.44	7.29	-30.63	42.71	36.56	6.14	6.953	
700.00	698.70	698.70	698.70	3.90	3.14	151.20	7.29	-30.63	53.01	46.13	6.88	7.708	
800.00	797.47	797.47	797.47	4.35	3.38	157.52	7.29	-30.63	67.17	59.56	7.60	8.835	
900.00	895.62	895.62	895.62	4.81	3.60	162.32	7.29	-30.63	85.14	76.83	8.31	10.242	
1,000.00	993.06	993.06	993.06	5.27	3.81	165.87	7.29	-30.63	106.82	97.82	9.01	11.858	
1,100.00	1,089.64	1,089.64	1,089.64	5.74	4.00	168.50	7.29	-30.63	132.11	122.41	9.69	13.628	
1,200.00	1,185.27	1,185.27	1,185.27	6.22	4.19	170.48	7.29	-30.63	160.90	150.53	10.37	15.515	
1,307.10	1,286.49	1,286.49	1,286.49	6.76	4.38	172.07	7.29	-30.63	195.53	184.42	11.12	17.592	
1,400.00	1,373.70	1,373.70	1,373.70	7.15	4.54	173.18	7.29	-30.63	227.29	215.62	11.67	19.483	
1,500.00	1,467.59	1,467.59	1,467.59	7.58	4.71	174.08	7.29	-30.63	261.54	249.27	12.27	21.318	
1,600.00	1,561.47	1,561.47	1,561.47	8.02	4.87	174.77	7.29	-30.63	295.83	282.95	12.88	22.975	
1,700.00	1,655.36	1,655.36	1,655.36	8.47	5.03	175.31	7.29	-30.63	330.15	316.66	13.49	24.477	
1,800.00	1,749.24	1,749.24	1,749.24	8.93	5.18	175.75	7.29	-30.63	364.49	350.39	14.10	25.844	
1,900.00	1,843.12	1,843.12	1,843.12	9.39	5.34	176.12	7.29	-30.63	398.85	384.13	14.72	27.092	
2,000.00	1,937.01	1,937.01	1,937.01	9.87	5.48	176.43	7.29	-30.63	433.22	417.88	15.34	28.235	
2,100.00	2,030.89	2,030.89	2,030.89	10.34	5.63	176.69	7.29	-30.63	467.60	451.64	15.97	29.287	
2,200.00	2,124.78	2,124.78	2,124.78	10.82	5.77	176.92	7.29	-30.63	501.99	485.40	16.59	30.257	
2,300.00	2,218.66	2,218.66	2,218.66	11.31	5.91	177.12	7.29	-30.63	536.38	519.17	17.22	31.155	
2,400.00	2,312.54	2,312.54	2,312.54	11.80	6.05	177.29	7.29	-30.63	570.78	552.94	17.84	31.989	
2,500.00	2,406.43	2,406.43	2,406.43	12.29	6.19	177.44	7.29	-30.63	605.19	586.71	18.47	32.764	
2,600.00	2,500.31	2,500.31	2,500.31	12.78	6.32	177.58	7.29	-30.63	639.59	620.49	19.10	33.488	
2,700.00	2,594.20	2,594.20	2,594.20	13.28	6.45	177.70	7.29	-30.63	674.00	654.27	19.73	34.166	
2,800.00	2,688.08	2,688.08	2,688.08	13.78	6.58	177.82	7.29	-30.63	708.41	688.06	20.36	34.801	
2,900.00	2,781.97	2,767.27	2,767.26	14.28	6.74	177.94	8.07	-30.52	743.64	722.72	20.92	35.543	
3,000.00	2,875.85	2,843.01	2,842.95	14.78	6.90	178.13	10.82	-30.15	780.95	759.48	21.46	36.387	
3,100.00	2,969.73	2,917.29	2,917.08	15.28	7.07	178.39	15.45	-29.53	820.31	798.32	21.99	37.305	
3,200.00	3,063.62	3,000.00	2,999.45	15.79	7.26	178.73	22.84	-28.53	861.76	839.17	22.59	38.142	
3,300.00	3,157.50	3,061.27	3,060.32	16.29	7.42	179.03	29.83	-27.58	905.03	882.02	23.01	39.333	
3,400.00	3,251.39	3,130.89	3,129.27	16.80	7.60	179.40	39.34	-26.30	950.30	926.80	23.50	40.433	
3,500.00	3,345.27	3,200.00	3,197.47	17.31	7.78	179.80	50.42	-24.80	997.44	973.45	24.00	41.568	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-8H - OH - Plan #3													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+IFR1+MS													Offset Well Error:	0.00 usft
Measured Reference Depth (usft)	Vertical Reference Depth (usft)	Measured Offset Depth (usft)	Vertical Offset Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	0.00	109.29	0.00	109.29	107.44	1.85	59.124		
100.00	100.00	100.00	100.00	0.92	0.92	0.00	109.29	0.00	109.29	106.23	3.05	35.801		
200.00	200.00	200.00	200.00	1.53	1.53	0.00	109.29	0.00	109.29	105.38	3.91	27.964	CC, ES	
300.00	300.00	300.00	300.00	1.95	1.95	0.00	109.29	0.00	109.29	105.38	3.91	27.964	CC, ES	
400.00	399.98	396.23	396.21	2.51	2.50	-157.38	110.89	-0.15	112.57	107.59	4.97	22.628		
500.00	499.84	491.81	491.67	2.99	2.97	-158.41	115.68	-0.61	122.42	116.51	5.90	20.731		
600.00	599.45	586.10	585.62	3.45	3.41	-159.79	123.50	-1.35	138.83	132.05	6.78	20.475	SF	
700.00	698.70	680.99	679.91	3.90	3.66	-161.27	134.09	-2.36	161.40	153.95	7.45	21.655		
800.00	797.47	777.35	775.61	4.35	3.98	-162.69	145.26	-3.42	187.72	179.51	8.21	22.862		
900.00	895.62	872.72	870.34	4.81	4.32	-163.98	156.31	-4.47	217.36	208.36	9.00	24.160		
1,000.00	993.06	966.99	963.97	5.27	4.67	-165.13	167.24	-5.51	250.30	240.51	9.79	25.565		
1,100.00	1,089.64	1,060.05	1,056.40	5.74	5.02	-166.14	178.02	-6.54	286.52	275.93	10.59	27.054		
1,200.00	1,185.27	1,151.78	1,147.50	6.22	5.36	-167.02	188.65	-7.55	325.97	314.57	11.39	28.607		
1,307.10	1,286.49	1,248.43	1,243.49	6.76	5.74	-167.84	199.85	-8.62	371.76	359.47	12.28	30.271		
1,400.00	1,373.70	1,331.50	1,326.00	7.15	6.06	-168.60	209.48	-9.53	413.07	400.10	12.97	31.852		
1,500.00	1,467.59	1,420.92	1,414.82	7.58	6.41	-169.28	219.84	-10.52	457.59	443.87	13.72	33.342		
1,600.00	1,561.47	1,510.35	1,503.63	8.02	6.76	-169.83	230.21	-11.51	502.16	487.67	14.49	34.652		
1,700.00	1,655.36	1,599.77	1,592.45	8.47	7.11	-170.29	240.57	-12.49	546.76	531.49	15.27	35.808		
1,800.00	1,749.24	1,689.20	1,681.26	8.93	7.47	-170.68	250.94	-13.48	591.38	575.32	16.06	36.833		
1,900.00	1,843.12	1,778.62	1,770.08	9.39	7.83	-171.02	261.30	-14.46	636.02	619.17	16.85	37.746		
2,000.00	1,937.01	1,868.04	1,858.90	9.87	8.19	-171.32	271.66	-15.45	680.68	663.03	17.65	38.564		
2,100.00	2,030.89	1,957.47	1,947.71	10.34	8.55	-171.57	282.03	-16.44	725.35	706.89	18.46	39.300		
2,200.00	2,124.78	2,046.89	2,036.53	10.82	8.91	-171.80	292.39	-17.42	770.03	750.76	19.27	39.964		
2,300.00	2,218.66	2,136.32	2,125.34	11.31	9.27	-172.00	302.75	-18.41	814.71	794.63	20.08	40.565		
2,400.00	2,312.54	2,225.74	2,214.16	11.80	9.63	-172.19	313.12	-19.39	859.41	838.51	20.90	41.113		
2,500.00	2,406.43	2,315.16	2,302.98	12.29	9.99	-172.35	323.48	-20.38	904.11	882.38	21.73	41.612		
2,600.00	2,500.31	2,404.59	2,391.79	12.78	10.36	-172.50	333.84	-21.37	948.82	926.26	22.55	42.070		
2,700.00	2,594.20	2,494.01	2,480.61	13.28	10.72	-172.63	344.21	-22.35	993.53	970.15	23.38	42.491		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-10-9H - OH - Plan #3													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+IFR1+MS													Offset Well Error: 0.00 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance Between		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Centres (usft)	Ellipses (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	0.00	94.72	0.00	94.72					
100.00	100.00	100.00	100.00	0.92	0.92	0.00	94.72	0.00	94.72	92.87	1.85	51.243		
200.00	200.00	200.00	200.00	1.53	1.53	0.00	94.72	0.00	94.72	91.66	3.05	31.029		
300.00	300.00	300.00	300.00	1.95	1.95	0.00	94.72	0.00	94.72	90.81	3.91	24.237	CC, ES	
400.00	399.98	399.98	399.98	2.51	2.31	-157.39	94.72	0.00	96.33	91.54	4.79	20.126		
500.00	499.84	497.74	497.72	2.99	2.79	-157.71	95.75	1.31	102.20	96.59	5.61	18.212		
600.00	599.45	594.88	594.73	3.45	3.23	-157.26	98.82	5.21	113.36	106.99	6.38	17.779	SF	
700.00	698.70	692.05	691.57	3.90	3.42	-156.36	103.75	11.48	129.61	122.67	6.94	18.664		
800.00	797.47	790.07	789.21	4.35	3.73	-155.96	109.10	18.27	149.40	141.77	7.63	19.592		
900.00	895.62	887.40	886.16	4.81	4.05	-156.08	114.41	25.02	172.30	163.98	8.32	20.716		
1,000.00	993.06	983.94	982.32	5.27	4.38	-156.52	119.68	31.71	198.30	189.29	9.01	22.009		
1,100.00	1,089.64	1,079.55	1,077.56	5.74	4.71	-157.14	124.89	38.33	227.42	217.72	9.71	23.433		
1,200.00	1,185.27	1,174.13	1,171.77	6.22	5.05	-157.85	130.05	44.89	259.66	249.26	10.40	24.965		
1,307.10	1,286.49	1,274.14	1,271.39	6.76	5.40	-158.64	135.51	51.82	297.63	286.46	11.17	26.645		
1,400.00	1,373.70	1,360.28	1,357.19	7.15	5.72	-159.50	140.21	57.79	332.15	320.40	11.75	28.259		
1,500.00	1,467.59	1,453.00	1,449.55	7.58	6.05	-160.24	145.27	64.21	369.36	356.97	12.39	29.802		
1,600.00	1,561.47	1,545.72	1,541.91	8.02	6.40	-160.85	150.33	70.64	406.62	393.58	13.04	31.180		
1,700.00	1,655.36	1,638.44	1,634.27	8.47	6.74	-161.36	155.39	77.06	443.91	430.21	13.69	32.415		
1,800.00	1,749.24	1,731.16	1,726.63	8.93	7.08	-161.78	160.45	83.49	481.22	466.87	14.35	33.527		
1,900.00	1,843.12	1,823.88	1,818.99	9.39	7.43	-162.15	165.50	89.91	518.56	503.54	15.02	34.533		
2,000.00	1,937.01	1,916.61	1,911.35	9.87	7.78	-162.47	170.56	96.34	555.91	540.23	15.68	35.446		
2,100.00	2,030.89	2,009.33	2,003.71	10.34	8.13	-162.75	175.62	102.77	593.27	576.92	16.35	36.278		
2,200.00	2,124.78	2,102.05	2,096.07	10.82	8.48	-162.99	180.68	109.19	630.65	613.62	17.03	37.040		
2,300.00	2,218.66	2,194.77	2,188.43	11.31	8.83	-163.21	185.74	115.62	668.03	650.33	17.70	37.738		
2,400.00	2,312.54	2,287.49	2,280.79	11.80	9.18	-163.40	190.80	122.04	705.42	687.04	18.38	38.381		
2,500.00	2,406.43	2,380.21	2,373.15	12.29	9.53	-163.58	195.86	128.47	742.82	723.76	19.06	38.975		
2,600.00	2,500.31	2,472.94	2,465.51	12.78	9.88	-163.73	200.91	134.89	780.22	760.48	19.74	39.525		
2,700.00	2,594.20	2,565.66	2,557.88	13.28	10.24	-163.88	205.97	141.32	817.63	797.20	20.42	40.036		
2,800.00	2,688.08	2,658.38	2,650.24	13.78	10.59	-164.01	211.03	147.75	855.04	833.93	21.11	40.511		
2,900.00	2,781.97	2,751.10	2,742.60	14.28	10.94	-164.13	216.09	154.17	892.45	870.66	21.79	40.955		
3,000.00	2,875.85	2,843.82	2,834.96	14.78	11.30	-164.24	221.15	160.60	929.87	907.39	22.48	41.370		
3,100.00	2,969.73	2,936.54	2,927.32	15.28	11.65	-164.34	226.21	167.02	967.29	944.13	23.16	41.759		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-3-1H - OH - Plan #2													Offset Site Error:
Survey Program: 0-MWD+IFR1+MS													Offset Well Error:
Reference	Vertical	Measured	Vertical	Semi Major Axis		Highside	Offset Wellbore Centre		Rule Assigned:		Minimum	Separation	Warning
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-16.71	102.00	-30.63	106.50				
100.00	100.00	100.00	100.00	0.92	0.92	-16.71	102.00	-30.63	106.50	104.65	1.85	57.615	
200.00	200.00	200.00	200.00	1.53	1.53	-16.71	102.00	-30.63	106.50	103.44	3.05	34.887	
300.00	300.00	300.00	300.00	1.95	1.95	-16.71	102.00	-30.63	106.50	102.59	3.91	27.250	CC, ES
400.00	399.98	399.98	399.98	2.51	2.31	-173.81	102.00	-30.63	108.23	103.42	4.81	22.483	
500.00	499.84	499.84	499.84	2.99	2.61	-174.08	102.00	-30.63	113.43	107.83	5.60	20.254	
600.00	599.45	599.45	599.45	3.45	2.89	-174.49	102.00	-30.63	122.11	115.77	6.33	19.278	
700.00	698.70	698.70	698.70	3.90	3.14	-174.96	102.00	-30.63	134.24	127.20	7.04	19.073	SF
800.00	797.47	797.47	797.47	4.35	3.38	-175.47	102.00	-30.63	149.83	142.11	7.73	19.394	
900.00	895.62	891.18	891.16	4.81	3.71	-175.64	103.39	-30.23	170.11	161.64	8.47	20.080	
1,000.00	993.06	982.83	982.71	5.27	4.04	-175.32	107.61	-29.04	196.37	187.17	9.20	21.349	
1,100.00	1,089.64	1,072.03	1,071.62	5.74	4.36	-174.70	114.41	-27.11	228.46	218.55	9.91	23.048	
1,200.00	1,185.27	1,158.36	1,157.42	6.22	4.68	-173.94	123.53	-24.53	266.22	255.61	10.61	25.080	
1,307.10	1,286.49	1,247.20	1,245.38	6.76	5.02	-173.06	135.51	-21.14	312.73	301.36	11.38	27.491	
1,400.00	1,373.70	1,321.60	1,318.72	7.15	5.31	-172.39	147.56	-17.73	356.65	344.71	11.94	29.870	
1,500.00	1,467.59	1,400.00	1,395.62	7.58	5.62	-171.66	162.23	-13.58	405.95	393.40	12.55	32.341	
1,600.00	1,561.47	1,475.42	1,469.18	8.02	5.93	-170.94	178.25	-9.05	457.31	444.15	13.15	34.764	
1,700.00	1,655.36	1,549.03	1,540.53	8.47	6.24	-170.24	195.68	-4.12	510.64	496.89	13.75	37.125	
1,800.00	1,749.24	1,620.45	1,609.28	8.93	6.55	-169.56	214.27	1.14	565.89	551.55	14.35	39.446	
1,900.00	1,843.12	1,689.67	1,675.44	9.39	6.85	-168.92	233.86	6.69	622.99	608.06	14.93	41.733	
2,000.00	1,937.01	1,756.74	1,739.05	9.87	7.15	-168.30	254.29	12.47	681.85	666.35	15.50	43.990	
2,100.00	2,030.89	1,821.67	1,800.15	10.34	7.44	-167.72	275.44	18.45	742.42	726.36	16.06	46.229	
2,200.00	2,124.78	1,884.50	1,858.78	10.82	7.73	-167.17	297.16	24.60	804.62	788.01	16.61	48.453	
2,300.00	2,218.66	1,945.27	1,915.01	11.31	8.01	-166.65	319.35	30.88	868.38	851.23	17.14	50.662	
2,400.00	2,312.54	2,000.00	1,965.21	11.80	8.26	-166.19	340.31	36.81	933.63	916.03	17.61	53.029	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-3-2H - OH - Plan #2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+IFR1+MS													Offset Well Error: 0.00 usft
Measured Reference Depth (usft)	Vertical Reference Depth (usft)	Measured Offset Depth (usft)	Vertical Offset Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning
							+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	-19.31	87.43	-30.63	92.64				
100.00	100.00	100.00	100.00	0.92	0.92	-19.31	87.43	-30.63	92.64	90.79	1.85	50.118	
200.00	200.00	200.00	200.00	1.53	1.53	-19.31	87.43	-30.63	92.64	89.58	3.05	30.348	
300.00	300.00	300.00	300.00	1.95	1.95	-19.31	87.43	-30.63	92.64	88.73	3.91	23.704	CC, ES
400.00	399.98	399.98	399.98	2.51	2.31	-176.37	87.43	-30.63	94.38	89.56	4.82	19.599	
500.00	499.84	499.84	499.84	2.99	2.61	-176.55	87.43	-30.63	99.60	94.00	5.60	17.776	
600.00	599.45	599.45	599.45	3.45	2.89	-176.82	87.43	-30.63	108.30	101.97	6.34	17.090	SF
700.00	698.70	698.70	698.70	3.90	3.14	-177.13	87.43	-30.63	120.47	113.43	7.04	17.108	
800.00	797.47	797.47	797.47	4.35	3.38	-177.45	87.43	-30.63	136.10	128.37	7.73	17.608	
900.00	895.62	895.62	895.62	4.81	3.60	-177.74	87.43	-30.63	155.16	146.76	8.41	18.457	
1,000.00	993.06	988.73	988.72	5.27	3.91	-177.72	88.74	-30.21	178.77	169.64	9.13	19.578	
1,100.00	1,089.64	1,079.48	1,079.36	5.74	4.22	-177.20	92.78	-28.93	208.17	198.33	9.84	21.159	
1,200.00	1,185.27	1,167.58	1,167.19	6.22	4.53	-176.41	99.33	-26.85	243.22	232.69	10.54	23.087	
1,307.10	1,286.49	1,258.55	1,257.61	6.76	4.85	-175.43	108.79	-23.85	286.86	275.57	11.29	25.404	
1,400.00	1,373.70	1,334.93	1,333.26	7.15	5.13	-174.61	118.84	-20.66	328.31	316.46	11.85	27.700	
1,500.00	1,467.59	1,415.15	1,412.38	7.58	5.43	-173.72	131.46	-16.66	374.99	362.53	12.46	30.099	
1,600.00	1,561.47	1,493.25	1,489.02	8.02	5.74	-172.84	145.77	-12.12	423.74	410.68	13.06	32.440	
1,700.00	1,655.36	1,569.20	1,563.13	8.47	6.04	-171.98	161.59	-7.10	474.52	460.85	13.66	34.728	
1,800.00	1,749.24	1,642.98	1,634.68	8.93	6.35	-171.16	178.75	-1.66	527.27	513.01	14.26	36.980	
1,900.00	1,843.12	1,714.61	1,703.67	9.39	6.65	-170.38	197.08	4.16	581.92	567.08	14.84	39.204	
2,000.00	1,937.01	1,784.07	1,770.10	9.87	6.95	-169.64	216.42	10.29	638.42	623.00	15.42	41.401	
2,100.00	2,030.89	1,851.39	1,834.00	10.34	7.24	-168.93	236.63	16.70	696.68	680.70	15.99	43.578	
2,200.00	2,124.78	1,916.60	1,895.40	10.82	7.53	-168.27	257.56	23.34	756.66	740.11	16.54	45.745	
2,300.00	2,218.66	1,979.74	1,954.35	11.31	7.82	-167.64	279.09	30.17	818.26	801.18	17.08	47.901	
2,400.00	2,312.54	2,040.83	2,010.91	11.80	8.09	-167.05	301.10	37.16	881.44	863.82	17.61	50.049	
2,500.00	2,406.43	2,100.00	2,065.21	12.29	8.36	-166.49	323.51	44.26	946.11	927.98	18.13	52.196	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-3-3H - OH - Plan #3													Offset Site Error: 0.00 usft	
Survey Program: 0-MWD+IFR1+MS													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Highside		Offset Wellbore Centre		Rule Assigned: Distance		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	-23.87	69.22	-30.63	75.69					
100.00	100.00	100.00	100.00	0.92	0.92	-23.87	69.22	-30.63	75.69	73.84	1.85	40.949		
200.00	200.00	200.00	200.00	1.53	1.53	-23.87	69.22	-30.63	75.69	72.64	3.05	24.796		
300.00	300.00	300.00	300.00	1.95	1.95	-23.87	69.22	-30.63	75.69	71.78	3.91	19.368	CC, ES	
400.00	399.98	399.98	399.98	2.51	2.31	179.15	69.22	-30.63	77.44	72.62	4.82	16.078		
500.00	499.84	499.84	499.84	2.99	2.61	179.21	69.22	-30.63	82.67	77.06	5.60	14.751		
600.00	599.45	599.45	599.45	3.45	2.89	179.28	69.22	-30.63	91.38	85.04	6.34	14.416	SF	
700.00	698.70	698.70	698.70	3.90	3.14	179.36	69.22	-30.63	103.57	96.52	7.04	14.704		
800.00	797.47	797.47	797.47	4.35	3.38	179.44	69.22	-30.63	119.21	111.48	7.73	15.420		
900.00	895.62	895.62	895.62	4.81	3.60	179.52	69.22	-30.63	138.29	129.88	8.41	16.447		
1,000.00	993.06	993.06	993.06	5.27	3.81	179.58	69.22	-30.63	160.78	151.70	9.08	17.709		
1,100.00	1,089.64	1,085.90	1,085.88	5.74	4.10	179.94	70.38	-30.08	187.56	177.78	9.78	19.181		
1,200.00	1,185.27	1,176.20	1,176.09	6.22	4.40	-179.20	74.13	-28.34	219.73	209.27	10.46	21.005		
1,307.10	1,286.49	1,269.90	1,269.50	6.76	4.71	-178.00	80.73	-25.26	260.08	248.87	11.21	23.205		
1,400.00	1,373.70	1,348.91	1,348.04	7.15	4.98	-176.90	88.45	-21.66	298.54	286.78	11.76	25.386		
1,500.00	1,467.59	1,432.14	1,430.50	7.58	5.28	-175.69	98.70	-16.88	341.88	329.52	12.36	27.662		
1,600.00	1,561.47	1,513.42	1,510.68	8.02	5.57	-174.49	110.80	-11.24	387.21	374.25	12.96	29.883		
1,700.00	1,655.36	1,592.70	1,588.48	8.47	5.88	-173.32	124.59	-4.81	434.52	420.97	13.55	32.057		
1,800.00	1,749.24	1,669.92	1,663.83	8.93	6.18	-172.20	139.88	2.32	483.78	469.64	14.15	34.192		
1,900.00	1,843.12	1,745.07	1,736.70	9.39	6.48	-171.12	156.53	10.09	534.96	520.22	14.74	36.300		
2,000.00	1,937.01	1,818.11	1,807.04	9.87	6.79	-170.10	174.37	18.41	588.01	572.69	15.32	38.388		
2,100.00	2,030.89	1,889.06	1,874.86	10.34	7.09	-169.14	193.25	27.21	642.87	626.98	15.89	40.460		
2,200.00	2,124.78	1,957.91	1,940.16	10.82	7.38	-168.23	213.01	36.43	699.50	683.04	16.45	42.516		
2,300.00	2,218.66	2,024.68	2,002.97	11.31	7.68	-167.37	233.54	46.00	757.83	740.83	17.00	44.569		
2,400.00	2,312.54	2,089.40	2,063.33	11.80	7.96	-166.56	254.69	55.86	817.81	800.27	17.54	46.618		
2,500.00	2,406.43	2,152.09	2,121.28	12.29	8.25	-165.80	276.36	65.96	879.38	861.31	18.07	48.662		
2,600.00	2,500.31	2,212.79	2,176.89	12.78	8.52	-165.08	298.42	76.25	942.47	923.89	18.58	50.712		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad - CE 5-68 11-3-4H - OH - Plan #3													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+IFR1+MS													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	-29.27	54.64	-30.63	62.64				
100.00	100.00	100.00	100.00	0.92	0.92	-29.27	54.64	-30.63	62.64	60.79	1.85	33.891	
200.00	200.00	200.00	200.00	1.53	1.53	-29.27	54.64	-30.63	62.64	59.59	3.05	20.522	
300.00	300.00	300.00	300.00	1.95	1.95	-29.27	54.64	-30.63	62.64	58.74	3.91	16.029	CC, ES
400.00	399.98	399.98	399.98	2.51	2.31	173.90	54.64	-30.63	64.38	59.56	4.81	13.373	
500.00	499.84	499.84	499.84	2.99	2.61	174.35	54.64	-30.63	69.58	63.98	5.60	12.424	
600.00	599.45	599.45	599.45	3.45	2.89	174.96	54.64	-30.63	78.26	71.93	6.33	12.355	SF
700.00	698.70	698.70	698.70	3.90	3.14	175.62	54.64	-30.63	90.41	83.37	7.04	12.843	
800.00	797.47	797.47	797.47	4.35	3.38	176.25	54.64	-30.63	106.01	98.28	7.73	13.719	
900.00	895.62	895.62	895.62	4.81	3.60	176.80	54.64	-30.63	125.06	116.65	8.41	14.879	
1,000.00	993.06	993.06	993.06	5.27	3.81	177.26	54.64	-30.63	147.52	138.45	9.08	16.253	
1,100.00	1,089.64	1,089.64	1,089.64	5.74	4.00	177.65	54.64	-30.63	173.38	163.64	9.74	17.793	
1,200.00	1,185.27	1,181.35	1,181.34	6.22	4.28	178.21	55.71	-30.19	203.42	192.98	10.44	19.493	
1,307.10	1,286.49	1,276.29	1,276.18	6.76	4.58	179.24	59.66	-28.56	241.52	230.34	11.18	21.597	
1,400.00	1,373.70	1,356.47	1,356.12	7.15	4.84	-179.70	65.25	-26.26	278.08	266.34	11.74	23.694	
1,500.00	1,467.59	1,441.02	1,440.22	7.58	5.12	-178.50	73.39	-22.91	319.40	307.07	12.34	25.893	
1,600.00	1,561.47	1,523.68	1,522.14	8.02	5.40	-177.28	83.56	-18.72	362.76	349.83	12.93	28.046	
1,700.00	1,655.36	1,600.00	1,597.47	8.47	5.67	-176.15	94.89	-14.05	408.18	394.69	13.49	30.267	
1,800.00	1,749.24	1,683.04	1,679.03	8.93	5.98	-174.93	109.31	-8.11	455.55	441.42	14.13	32.249	
1,900.00	1,843.12	1,759.65	1,753.84	9.39	6.28	-173.82	124.56	-1.83	504.92	490.20	14.72	34.311	
2,000.00	1,937.01	1,834.17	1,826.16	9.87	6.57	-172.76	141.15	5.01	556.22	540.92	15.30	36.359	
2,100.00	2,030.89	1,900.00	1,889.64	10.34	6.84	-171.85	157.26	11.64	609.44	593.65	15.79	38.590	
2,200.00	2,124.78	1,976.92	1,963.29	10.82	7.16	-170.81	177.78	20.09	664.42	647.98	16.44	40.421	
2,300.00	2,218.66	2,045.15	2,028.10	11.31	7.44	-169.92	197.50	28.22	721.20	704.21	16.99	42.442	
2,400.00	2,312.54	2,111.31	2,090.43	11.80	7.73	-169.08	217.99	36.65	779.70	762.16	17.54	44.465	
2,500.00	2,406.43	2,175.42	2,150.34	12.29	8.01	-168.29	239.10	45.35	839.84	821.78	18.07	46.484	
2,600.00	2,500.31	2,237.51	2,207.86	12.78	8.29	-167.54	260.73	54.26	901.58	882.99	18.59	48.507	
2,700.00	2,594.20	2,300.00	2,265.21	13.28	8.57	-166.81	283.65	63.70	964.84	945.72	19.12	50.457	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad Offsets - McWhinney-Van DeWater #1 (P&A) - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 100-GYRO-NS													Offset Well Error: 0.00 usft
Reference	Vertical	Measured	Vertical	Semi Major Axis	Highside	Offset Wellbore Centre		Rule Assigned:		Minimum	Separation	Warning	
Depth	Depth	Depth	Depth	Reference	Offset	Toolface	+N/-S	+E/-W	Between	Between	Separation	Factor	
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	Centres	Ellipses	(usft)		
13,000.00	7,253.00	7,191.42	7,188.04	75.92	25.57	-35.52	-2,239.96	-5,818.37	988.84	938.97	49.87	19.829	
13,100.00	7,253.00	7,192.93	7,189.55	77.01	25.58	-38.44	-2,239.96	-5,818.39	888.86	838.97	49.89	17.817	
13,200.00	7,253.00	7,194.44	7,191.05	78.10	25.58	-41.80	-2,239.96	-5,818.41	788.87	738.97	49.90	15.808	
13,300.00	7,253.00	7,195.95	7,192.56	79.20	25.59	-45.67	-2,239.96	-5,818.44	688.90	638.99	49.91	13.802	
13,400.00	7,253.00	7,197.46	7,194.07	80.30	25.59	-50.12	-2,239.96	-5,818.46	588.92	539.02	49.90	11.801	
13,500.00	7,253.00	7,198.97	7,195.58	81.41	25.60	-55.24	-2,239.97	-5,818.48	488.95	439.08	49.88	9.803	
13,600.00	7,253.00	7,200.48	7,197.10	82.52	25.60	-61.09	-2,239.97	-5,818.51	389.00	339.18	49.82	7.809	
13,700.00	7,253.00	7,201.99	7,198.61	83.63	25.61	-67.68	-2,239.97	-5,818.53	289.06	239.36	49.69	5.817	
13,800.00	7,253.00	7,203.51	7,200.13	84.75	25.61	-74.95	-2,239.97	-5,818.55	189.17	139.71	49.46	3.825	
13,900.00	7,253.00	7,205.02	7,201.64	85.87	25.62	-82.75	-2,239.98	-5,818.57	89.52	40.19	49.34	1.815	Collision Risk Procedures Req.
13,990.72	7,253.00	7,206.39	7,203.01	86.89	25.62	-90.06	-2,239.98	-5,818.60	10.85	-101.45	112.31	0.097	Collision Risk Procedures Req., CC
14,000.00	7,253.00	7,206.53	7,203.15	87.00	25.62	-90.81	-2,239.98	-5,818.60	15.42	-78.08	93.50	0.165	Collision Risk Procedures Req.
14,100.00	7,253.00	7,208.05	7,204.66	88.12	25.63	-98.83	-2,239.98	-5,818.62	111.61	57.26	54.34	2.054	
14,200.00	7,253.00	7,209.56	7,206.17	89.25	25.63	-106.51	-2,239.98	-5,818.64	211.35	158.87	52.49	4.027	
14,300.00	7,253.00	7,211.07	7,207.68	90.39	25.64	-113.62	-2,239.99	-5,818.67	311.26	259.30	51.95	5.991	
14,400.00	7,253.00	7,212.57	7,209.19	91.52	25.64	-120.03	-2,239.99	-5,818.69	411.20	359.47	51.73	7.949	
14,500.00	7,253.00	7,214.08	7,210.70	92.66	25.65	-125.70	-2,239.99	-5,818.71	511.16	459.53	51.63	9.901	
14,600.00	7,253.00	7,215.59	7,212.20	93.80	25.65	-130.66	-2,240.00	-5,818.73	611.13	559.55	51.58	11.847	
14,700.00	7,253.00	7,217.09	7,213.71	94.95	25.66	-134.97	-2,240.00	-5,818.76	711.11	659.53	51.57	13.788	
14,800.00	7,253.00	7,218.60	7,215.21	96.09	25.66	-138.72	-2,240.00	-5,818.78	811.09	759.50	51.58	15.724	
14,900.00	7,253.00	7,220.10	7,216.72	97.24	25.67	-141.98	-2,240.01	-5,818.80	911.07	859.46	51.61	17.654	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad Offsets - Miracle #12-12 (P&A) - OH - OH													Offset Site Error:	0.00 usft	
Survey Program: 16-MWD													Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
5,300.00	5,035.19	5,715.47	5,333.24	26.57	38.35	-105.70	-913.62	1,400.32	998.22	948.51	49.71	20.080			
5,400.00	5,129.07	5,791.39	5,404.99	27.09	38.81	-107.70	-920.32	1,376.43	975.27	924.28	50.99	19.125			
5,500.00	5,222.95	5,868.61	5,478.33	27.61	39.27	-109.73	-927.76	1,353.46	955.11	902.80	52.31	18.260			
5,600.00	5,316.84	5,936.00	5,542.52	28.13	39.67	-111.60	-932.99	1,333.62	938.24	884.63	53.61	17.500			
5,700.00	5,410.72	6,007.14	5,610.63	28.65	40.07	-113.63	-937.32	1,313.52	925.32	870.31	55.01	16.822			
5,800.00	5,504.61	6,094.09	5,694.35	29.17	40.51	-116.09	-942.60	1,290.68	915.93	859.34	56.60	16.184			
5,900.00	5,598.49	6,166.34	5,764.09	29.69	40.84	-118.13	-947.23	1,272.36	909.19	851.15	58.04	15.666			
5,999.00	5,691.43	6,230.10	5,826.06	30.21	41.12	-119.89	-950.60	1,257.76	906.86	847.52	59.34	15.282 CC			
6,000.00	5,692.38	6,230.72	5,826.66	30.21	41.12	-119.91	-950.63	1,257.62	906.86	847.50	59.36	15.278 ES			
6,100.00	5,786.26	6,290.00	5,884.65	30.73	41.35	-121.52	-952.69	1,245.50	909.35	848.81	60.54	15.020			
6,200.00	5,880.14	6,360.84	5,954.37	31.25	41.58	-123.38	-954.25	1,233.08	916.32	854.51	61.81	14.825			
6,300.00	5,974.03	6,433.31	6,026.10	31.77	41.77	-125.15	-955.40	1,222.78	927.18	864.19	62.99	14.719			
6,400.00	6,067.91	6,510.46	6,102.74	32.30	41.93	-126.89	-956.34	1,214.03	941.25	877.10	64.15	14.673 SF			
6,500.00	6,161.80	6,591.69	6,183.65	32.82	42.07	-128.60	-957.18	1,206.82	957.90	892.63	65.27	14.676			
6,600.00	6,255.68	6,674.83	6,266.57	33.34	42.19	-130.21	-957.89	1,201.03	976.65	910.31	66.34	14.722			
6,700.00	6,349.56	6,758.96	6,350.59	33.86	42.28	-131.73	-958.35	1,196.61	997.32	929.97	67.35	14.808			

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad Offsets - Miracle #13-12 (P&A) - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 16-MWID													Offset Well Error: 0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,600.00	5,316.84	6,022.00	5,442.78	28.13	46.99	-37.81	-2,035.79	1,441.72	958.53	888.79	69.74	13.745	
5,700.00	5,410.72	6,106.29	5,518.41	28.65	47.68	-36.55	-2,059.20	1,412.77	916.28	845.00	71.28	12.855	
5,800.00	5,504.61	6,193.37	5,596.77	29.17	48.39	-35.18	-2,083.16	1,383.29	874.76	801.91	72.85	12.008	
5,900.00	5,598.49	6,274.08	5,669.81	29.69	49.03	-33.85	-2,104.94	1,356.76	834.21	759.79	74.42	11.209	
6,000.00	5,692.38	6,361.11	5,749.61	30.21	49.67	-32.49	-2,126.93	1,329.92	794.80	718.86	75.94	10.466	
6,100.00	5,786.26	6,446.27	5,828.87	30.73	50.24	-31.27	-2,146.34	1,305.57	756.18	678.79	77.39	9.771	
6,200.00	5,880.14	6,529.23	5,906.93	31.25	50.75	-30.16	-2,164.02	1,283.73	718.75	639.98	78.77	9.125	
6,300.00	5,974.03	6,613.75	5,987.40	31.77	51.23	-29.18	-2,180.57	1,263.89	682.67	602.60	80.07	8.526	
6,400.00	6,067.91	6,701.48	6,071.59	32.30	51.67	-28.25	-2,196.69	1,245.27	647.71	566.43	81.29	7.968	
6,500.00	6,161.80	6,787.64	6,154.97	32.82	52.06	-27.50	-2,211.18	1,229.08	613.71	531.28	82.44	7.444	
6,600.00	6,255.68	6,883.74	6,248.52	33.34	52.45	-26.79	-2,226.20	1,213.03	580.56	497.10	83.46	6.956	
6,700.00	6,349.56	6,977.23	6,340.10	33.86	52.79	-26.33	-2,238.44	1,198.81	546.93	462.54	84.40	6.481	
6,800.00	6,443.45	7,070.00	6,431.47	34.38	53.08	-26.12	-2,248.93	1,186.65	513.67	428.42	85.25	6.025	
6,844.35	6,485.09	7,114.13	6,475.08	34.61	53.20	-26.12	-2,253.23	1,181.47	498.90	413.36	85.55	5.832	
6,850.00	6,490.39	7,119.88	6,480.77	34.64	53.22	-27.40	-2,253.74	1,180.81	497.02	411.44	85.58	5.808	
6,900.00	6,537.55	7,171.14	6,531.52	34.90	53.35	-39.52	-2,257.92	1,175.00	481.51	395.69	85.83	5.610	
6,950.00	6,584.89	7,215.29	6,575.32	35.14	53.45	-52.56	-2,261.07	1,170.41	468.56	382.50	86.06	5.445	
7,000.00	6,632.18	7,259.77	6,619.53	35.36	53.55	-65.54	-2,264.01	1,166.48	458.71	372.55	86.15	5.324	
7,050.00	6,679.18	7,307.21	6,666.76	35.56	53.63	-77.70	-2,266.70	1,162.95	452.00	366.00	86.01	5.255	
7,100.00	6,725.68	7,353.84	6,713.26	35.72	53.70	-88.48	-2,268.76	1,160.07	448.56	362.89	85.67	5.236 SF	
7,123.15	6,746.98	7,374.85	6,734.22	35.79	53.72	-92.95	-2,269.50	1,158.97	448.16	362.72	85.45	5.245 CC, ES	
7,150.00	6,771.45	7,398.87	6,758.22	35.86	53.75	-97.75	-2,270.20	1,157.87	448.71	363.57	85.14	5.270	
7,200.00	6,816.25	7,442.50	6,801.80	35.96	53.79	-105.67	-2,271.09	1,156.33	452.78	368.36	84.42	5.364	
7,250.00	6,859.88	7,484.67	6,843.95	36.05	53.82	-112.40	-2,271.66	1,155.25	460.99	377.47	83.51	5.520	
7,300.00	6,902.12	7,525.00	6,884.28	36.10	53.85	-118.12	-2,272.03	1,154.53	473.46	390.97	82.49	5.740	
7,350.00	6,942.76	7,563.52	6,922.80	36.15	53.86	-122.98	-2,272.21	1,154.15	490.24	408.89	81.36	6.026	
7,400.00	6,981.61	7,599.69	6,958.97	36.17	53.86	-127.09	-2,272.21	1,154.10	511.27	431.08	80.19	6.376	
7,450.00	7,018.47	7,633.19	6,992.46	36.19	53.86	-130.52	-2,272.05	1,154.30	536.40	457.37	79.03	6.788	
7,500.00	7,053.18	7,663.93	7,023.20	36.20	53.86	-133.34	-2,271.78	1,154.73	565.41	487.51	77.90	7.258	
7,550.00	7,085.55	7,692.00	7,051.26	36.21	53.85	-135.60	-2,271.42	1,155.34	598.02	521.16	76.85	7.781	
7,600.00	7,115.43	7,718.71	7,077.95	36.22	53.84	-137.43	-2,270.99	1,156.07	633.85	557.96	75.90	8.351	
7,650.00	7,142.68	7,743.33	7,102.56	36.23	53.83	-138.79	-2,270.53	1,156.81	672.52	597.47	75.05	8.961	
7,700.00	7,167.17	7,765.06	7,124.27	36.25	53.83	-139.58	-2,270.06	1,157.52	713.66	639.35	74.32	9.603	
7,750.00	7,188.76	7,783.82	7,143.02	36.27	53.82	-139.72	-2,269.62	1,158.16	756.96	683.27	73.70	10.272	
7,800.00	7,207.37	7,800.89	7,160.07	36.30	53.81	-139.20	-2,269.17	1,158.77	802.08	728.90	73.17	10.961	
7,850.00	7,222.89	7,815.12	7,174.28	36.34	53.80	-137.60	-2,268.71	1,159.28	848.67	775.93	72.75	11.666	
7,900.00	7,235.25	7,826.01	7,185.16	36.40	53.80	-134.18	-2,268.31	1,159.67	896.46	824.06	72.40	12.381	
7,950.00	7,244.39	7,833.55	7,192.69	36.47	53.79	-127.35	-2,268.00	1,159.94	945.16	873.02	72.14	13.102	
8,000.00	7,250.28	7,837.72	7,196.86	36.56	53.79	-112.96	-2,267.83	1,160.08	994.48	922.54	71.94	13.824	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad Offsets - Miracle #13C-12HZ - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 17-MWD													Offset Well Error: 0.00 usft
Measured Depth (usft)	Vertical Reference Depth (usft)	Offset Measured Depth (usft)	Vertical Offset Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Distance Between Centres (usft)	Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,800.00	6,443.45	11,892.00	7,212.13	34.38	132.21	20.38	-2,435.10	939.77	970.77	878.17	92.60	10.483	
6,844.35	6,485.09	11,892.00	7,212.13	34.61	132.21	20.38	-2,435.10	939.77	927.97	833.90	94.07	9.865	
6,850.00	6,490.39	11,892.00	7,212.13	34.64	132.21	17.61	-2,435.10	939.77	922.53	828.27	94.27	9.787	
6,900.00	6,537.55	11,892.00	7,212.13	34.90	132.21	-6.80	-2,435.10	939.77	874.55	778.45	96.10	9.101	
6,950.00	6,584.89	11,892.00	7,212.13	35.14	132.21	-29.70	-2,435.10	939.77	827.11	729.00	98.11	8.431	
7,000.00	6,632.18	11,892.00	7,212.13	35.36	132.21	-49.92	-2,435.10	939.77	780.56	680.26	100.30	7.782	
7,050.00	6,679.18	11,892.00	7,212.13	35.56	132.21	-66.93	-2,435.10	939.77	735.32	632.64	102.68	7.161	
7,100.00	6,725.68	11,892.00	7,212.13	35.72	132.21	-80.77	-2,435.10	939.77	691.88	586.67	105.21	6.576	
7,150.00	6,771.45	11,892.00	7,212.13	35.86	132.21	-91.79	-2,435.10	939.77	650.83	542.99	107.84	6.035	
7,200.00	6,816.25	11,892.00	7,212.13	35.96	132.21	-100.48	-2,435.10	939.77	612.89	502.40	110.49	5.547	
7,250.00	6,859.88	11,892.00	7,212.13	36.05	132.21	-107.32	-2,435.10	939.77	578.85	465.87	112.98	5.123	
7,300.00	6,902.12	11,892.00	7,212.13	36.10	132.21	-112.70	-2,435.10	939.77	549.63	434.52	115.11	4.775	
7,350.00	6,942.76	11,892.00	7,212.13	36.15	132.21	-116.90	-2,435.10	939.77	526.19	409.61	116.58	4.514	
7,400.00	6,981.61	11,892.00	7,212.13	36.17	132.21	-120.15	-2,435.10	939.77	509.43	392.36	117.07	4.351	
7,450.00	7,018.47	11,892.00	7,212.13	36.19	132.21	-122.61	-2,435.10	939.77	500.13	383.79	116.33	4.299 SF	
7,483.69	7,042.10	11,892.00	7,212.13	36.20	132.21	-123.88	-2,435.10	939.77	498.30	383.23	115.07	4.330 CC, ES	
7,500.00	7,053.18	11,892.00	7,212.13	36.20	132.21	-124.39	-2,435.10	939.77	498.73	384.49	114.24	4.366	
7,550.00	7,085.55	11,892.00	7,212.13	36.21	132.21	-125.56	-2,435.10	939.77	505.32	394.44	110.88	4.557	
7,600.00	7,115.43	11,892.00	7,212.13	36.22	132.21	-126.15	-2,435.10	939.77	519.56	413.03	106.53	4.877	
7,650.00	7,142.68	11,892.00	7,212.13	36.23	132.21	-126.17	-2,435.10	939.77	540.78	439.20	101.58	5.324	
7,700.00	7,167.17	11,892.00	7,212.13	36.25	132.21	-125.59	-2,435.10	939.77	568.10	471.68	96.42	5.892	
7,750.00	7,188.76	11,892.00	7,212.13	36.27	132.21	-124.34	-2,435.10	939.77	600.57	509.21	91.36	6.574	
7,800.00	7,207.37	11,892.00	7,212.13	36.30	132.21	-122.33	-2,435.10	939.77	637.25	550.63	86.62	7.357	
7,850.00	7,222.89	11,892.00	7,212.13	36.34	132.21	-119.36	-2,435.10	939.77	677.30	594.98	82.33	8.227	
7,900.00	7,235.25	11,892.00	7,212.13	36.40	132.21	-115.18	-2,435.10	939.77	719.98	641.46	78.52	9.169	
7,950.00	7,244.39	11,892.00	7,212.13	36.47	132.21	-109.44	-2,435.10	939.77	764.66	689.46	75.21	10.168	
8,000.00	7,250.28	11,892.00	7,212.13	36.56	132.21	-101.66	-2,435.10	939.77	810.81	738.46	72.35	11.207	
8,050.00	7,252.87	11,892.00	7,212.13	36.66	132.21	-91.43	-2,435.10	939.77	857.98	788.08	69.91	12.273	
8,064.20	7,253.00	11,892.00	7,212.13	36.69	132.21	-88.04	-2,435.10	939.77	871.52	802.24	69.28	12.579	
8,100.00	7,253.00	11,892.00	7,212.13	36.77	132.21	-88.04	-2,435.10	939.77	905.75	837.94	67.81	13.357	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad Offsets - Miracle #33N-12HZ - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 17-MWD													Offset Well Error: 0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
6,500.00	6,161.80	11,657.00	7,060.41	32.82	131.24	-134.72	-1,996.20	947.43	966.54	907.29	59.26	16.311	
6,600.00	6,255.68	11,657.00	7,060.41	33.34	131.24	-134.72	-1,996.20	947.43	867.54	808.88	58.66	14.789	
6,700.00	6,349.56	11,657.00	7,060.41	33.86	131.24	-134.72	-1,996.20	947.43	768.81	710.85	57.96	13.265	
6,800.00	6,443.45	11,657.00	7,060.41	34.38	131.24	-134.72	-1,996.20	947.43	670.45	613.31	57.14	11.734	
6,844.35	6,485.09	11,657.00	7,060.41	34.61	131.24	-134.72	-1,996.20	947.43	626.98	570.23	56.75	11.048	
6,850.00	6,490.39	11,657.00	7,060.41	34.64	131.24	-133.96	-1,996.20	947.43	621.46	564.76	56.70	10.961	
6,900.00	6,537.55	11,657.00	7,060.41	34.90	131.24	-131.20	-1,996.20	947.43	572.91	516.68	56.23	10.189	
6,950.00	6,584.89	11,657.00	7,060.41	35.14	131.24	-133.88	-1,996.20	947.43	525.27	469.56	55.72	9.427	
7,000.00	6,632.18	11,657.00	7,060.41	35.36	131.24	-139.39	-1,996.20	947.43	479.10	423.87	55.23	8.675	
7,050.00	6,679.18	11,657.00	7,060.41	35.56	131.24	-145.71	-1,996.20	947.43	435.11	380.25	54.86	7.931	
7,100.00	6,725.68	11,657.00	7,060.41	35.72	131.24	-151.73	-1,996.20	947.43	394.30	339.50	54.79	7.196	
7,150.00	6,771.45	11,657.00	7,060.41	35.86	131.24	-157.03	-1,996.20	947.43	357.96	302.67	55.29	6.474	
7,200.00	6,816.25	11,657.00	7,060.41	35.96	131.24	-161.57	-1,996.20	947.43	327.81	271.12	56.69	5.782	
7,250.00	6,859.88	11,657.00	7,060.41	36.05	131.24	-165.45	-1,996.20	947.43	305.84	246.64	59.20	5.166	
7,300.00	6,902.12	11,657.00	7,060.41	36.10	131.24	-168.85	-1,996.20	947.43	294.01	231.39	62.63	4.695	
7,326.72	6,924.05	11,657.00	7,060.41	36.13	131.24	-170.52	-1,996.20	947.43	292.34	227.75	64.59	4.526 CC	
7,350.00	6,942.76	11,657.00	7,060.41	36.15	131.24	-171.92	-1,996.20	947.43	293.61	227.38	66.23	4.433 ES	
7,400.00	6,981.61	11,657.00	7,060.41	36.17	131.24	-174.82	-1,996.20	947.43	304.68	235.53	69.15	4.406 SF	
7,450.00	7,018.47	11,657.00	7,060.41	36.19	131.24	-177.69	-1,996.20	947.43	326.01	255.08	70.93	4.596	
7,500.00	7,053.18	11,657.00	7,060.41	36.20	131.24	-179.30	-1,996.20	947.43	355.66	284.06	71.60	4.967	
7,550.00	7,085.55	11,657.00	7,060.41	36.21	131.24	-175.96	-1,996.20	947.43	391.63	320.16	71.47	5.480	
7,600.00	7,115.43	11,657.00	7,060.41	36.22	131.24	-172.00	-1,996.20	947.43	432.18	361.36	70.82	6.103	
7,650.00	7,142.68	11,657.00	7,060.41	36.23	131.24	-167.03	-1,996.20	947.43	475.99	406.11	69.88	6.812	
7,700.00	7,167.17	11,657.00	7,060.41	36.25	131.24	-160.36	-1,996.20	947.43	522.03	453.25	68.78	7.590	
7,750.00	7,188.76	11,657.00	7,060.41	36.27	131.24	-150.89	-1,996.20	947.43	569.59	501.98	67.61	8.425	
7,800.00	7,207.37	11,657.00	7,060.41	36.30	131.24	-136.99	-1,996.20	947.43	618.09	551.70	66.39	9.309	
7,850.00	7,222.89	11,657.00	7,060.41	36.34	131.24	-117.37	-1,996.20	947.43	667.13	601.97	65.17	10.237	
7,900.00	7,235.25	11,657.00	7,060.41	36.40	131.24	-94.37	-1,996.20	947.43	716.38	652.45	63.94	11.204	
7,950.00	7,244.39	11,657.00	7,060.41	36.47	131.24	-74.14	-1,996.20	947.43	765.59	702.88	62.71	12.208	
8,000.00	7,250.28	11,657.00	7,060.41	36.56	131.24	-59.75	-1,996.20	947.43	814.54	753.04	61.49	13.246	
8,050.00	7,252.87	11,657.00	7,060.41	36.66	131.24	-50.21	-1,996.20	947.43	863.05	802.77	60.28	14.317	
8,064.20	7,253.00	11,657.00	7,060.41	36.69	131.24	-48.14	-1,996.20	947.43	876.74	816.80	59.94	14.628	
8,100.00	7,253.00	11,657.00	7,060.41	36.77	131.24	-48.14	-1,996.20	947.43	911.21	852.10	59.11	15.416	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad Offsets - Miracle #9C-11HZ - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 128-MWD+IFR1+MS													Offset Well Error: 0.00 usft
Reference: 128-MWD+IFR1+MS													Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	
				Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
6,900.00	6,537.55	12,836.52	7,236.76	34.90	72.15	-172.08	-1,273.89	821.42	988.14	890.03	98.12	10.071	
6,950.00	6,584.89	12,835.87	7,236.76	35.14	72.15	178.38	-1,273.88	822.07	964.61	864.79	99.83	9.663	
7,000.00	6,632.18	12,839.36	7,236.79	35.36	72.19	168.54	-1,273.91	818.58	943.19	841.64	101.56	9.287	
7,050.00	6,679.18	12,847.67	7,236.87	35.56	72.29	159.23	-1,273.98	810.27	924.09	820.80	103.29	8.946	
7,100.00	6,725.68	12,860.49	7,236.98	35.72	72.44	150.96	-1,274.13	797.45	907.47	802.47	104.99	8.643	
7,150.00	6,771.45	12,877.79	7,237.12	35.86	72.64	143.76	-1,274.41	780.15	893.38	786.76	106.62	8.379	
7,200.00	6,816.25	12,899.53	7,237.28	35.96	72.90	137.50	-1,274.87	758.43	881.83	773.68	108.15	8.154	
7,250.00	6,859.88	12,925.61	7,237.43	36.05	73.21	131.95	-1,275.61	732.35	872.72	763.17	109.55	7.967	
7,300.00	6,902.12	12,953.96	7,237.52	36.10	73.54	127.03	-1,276.58	704.02	865.91	755.16	110.75	7.819	
7,350.00	6,942.76	12,984.66	7,237.41	36.15	73.91	122.57	-1,277.72	673.34	861.23	749.48	111.75	7.707	
7,400.00	6,981.61	13,018.15	7,237.02	36.17	74.30	118.44	-1,279.07	639.88	858.46	745.88	112.58	7.625	
7,450.00	7,018.47	13,048.23	7,236.52	36.19	74.66	114.87	-1,280.33	609.83	857.39	744.29	113.10	7.581	
7,455.90	7,022.68	13,051.63	7,236.47	36.19	74.70	114.48	-1,280.46	606.43	857.38	744.24	113.15	7.578	CC, ES
7,500.00	7,053.18	13,078.23	7,236.17	36.20	75.01	111.63	-1,281.50	579.86	857.99	744.56	113.43	7.564	SF
7,550.00	7,085.55	13,110.73	7,236.00	36.21	75.40	108.57	-1,282.67	547.38	859.96	746.29	113.67	7.566	
7,600.00	7,115.43	13,145.23	7,236.11	36.22	75.81	105.70	-1,283.79	512.90	863.01	749.18	113.83	7.582	
7,650.00	7,142.68	13,182.05	7,236.85	36.23	76.24	103.06	-1,284.90	476.10	866.84	752.87	113.96	7.606	
7,700.00	7,167.17	13,219.00	7,238.26	36.25	76.68	100.73	-1,285.92	439.19	871.11	757.05	114.06	7.638	
7,750.00	7,188.76	13,257.09	7,239.85	36.27	77.14	98.66	-1,286.68	401.14	875.66	761.51	114.15	7.671	
7,800.00	7,207.37	13,293.83	7,240.99	36.30	77.58	96.87	-1,286.95	364.43	880.43	766.22	114.21	7.709	
7,850.00	7,222.89	13,333.17	7,241.74	36.34	78.05	95.29	-1,286.78	325.09	885.22	770.88	114.34	7.742	
7,900.00	7,235.25	13,375.64	7,241.82	36.40	78.55	93.91	-1,286.25	282.63	889.71	775.14	114.57	7.766	
7,950.00	7,244.39	13,419.73	7,241.05	36.47	79.08	92.77	-1,285.37	238.55	893.74	778.87	114.87	7.780	
8,000.00	7,250.28	13,469.56	7,239.36	36.56	79.67	91.88	-1,284.27	188.76	896.98	781.61	115.37	7.775	
8,050.00	7,252.87	13,518.91	7,236.94	36.66	80.26	91.32	-1,283.17	139.48	899.24	783.32	115.92	7.757	
8,064.20	7,253.00	13,532.40	7,236.23	36.69	80.42	91.23	-1,282.86	126.01	899.71	783.63	116.08	7.751	
8,100.00	7,253.00	13,566.42	7,234.46	36.77	80.83	91.11	-1,282.03	92.06	900.83	784.35	116.49	7.733	
8,200.00	7,253.00	13,663.57	7,229.51	37.03	81.99	90.79	-1,279.35	-4.94	904.30	786.59	117.71	7.682	
8,300.00	7,253.00	13,682.00	7,228.58	37.33	82.21	90.73	-1,278.83	-23.33	911.52	794.98	116.54	7.822	
8,400.00	7,253.00	13,682.00	7,228.58	37.66	82.21	90.73	-1,278.83	-23.33	929.32	815.45	113.87	8.161	
8,500.00	7,253.00	13,682.00	7,228.58	38.02	82.21	90.73	-1,278.83	-23.33	957.29	846.90	110.39	8.672	
8,600.00	7,253.00	13,682.00	7,228.58	38.42	82.21	90.73	-1,278.83	-23.33	994.57	888.20	106.37	9.350	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad Offsets - Prowant #18-1HZ - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 18-MWD													Offset Well Error: 0.00 usft
Reference													Rule Assigned:
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
7,300.00	6,902.12	12,557.34	7,015.56	36.10	159.72	-68.15	-3,042.59	725.48	995.45	804.30	191.15	5.208	
7,350.00	6,942.76	12,581.70	7,014.88	36.15	160.38	-71.56	-3,042.53	701.13	976.18	783.13	193.05	5.057	
7,400.00	6,981.61	12,609.05	7,014.13	36.17	161.11	-74.09	-3,042.46	673.80	959.20	764.45	194.76	4.925	
7,450.00	7,018.47	12,637.80	7,013.34	36.19	161.89	-75.96	-3,042.40	645.06	944.49	748.26	196.23	4.813	
7,500.00	7,053.18	12,667.18	7,012.54	36.20	162.68	-77.33	-3,042.42	615.69	932.03	734.58	197.46	4.720	
7,550.00	7,085.55	12,698.95	7,011.70	36.21	163.54	-78.21	-3,042.58	583.93	921.76	723.26	198.50	4.644	
7,600.00	7,115.43	12,735.99	7,010.74	36.22	164.53	-78.56	-3,042.89	546.90	913.50	714.02	199.48	4.579	
7,650.00	7,142.68	12,778.35	7,009.59	36.23	165.68	-78.51	-3,043.17	504.56	906.87	706.44	200.43	4.525	
7,700.00	7,167.17	12,821.84	7,008.37	36.25	166.85	-78.27	-3,043.35	461.09	901.63	700.34	201.29	4.479	
7,750.00	7,188.76	12,865.78	7,007.08	36.27	168.03	-77.93	-3,043.51	417.16	897.65	695.57	202.07	4.442	
7,800.00	7,207.37	12,909.81	7,005.75	36.30	169.22	-77.54	-3,043.66	373.16	894.73	691.91	202.82	4.411	
7,850.00	7,222.89	12,952.52	7,004.49	36.34	170.37	-77.17	-3,043.97	330.47	892.86	689.32	203.54	4.387	
7,900.00	7,235.25	13,000.17	7,003.18	36.40	171.65	-76.72	-3,044.52	282.84	891.86	687.40	204.46	4.362	
7,950.00	7,244.39	13,058.61	7,001.53	36.47	173.23	-76.20	-3,044.78	224.42	891.06	685.31	205.76	4.331	
8,000.00	7,250.28	13,106.46	7,000.15	36.56	174.52	-75.93	-3,044.68	176.59	890.38	683.51	206.87	4.304	
8,030.80	7,252.26	13,133.69	6,999.38	36.62	175.26	-75.82	-3,044.75	149.37	890.27	682.70	207.57	4.289	
8,050.00	7,252.87	13,150.72	6,998.91	36.66	175.72	-75.77	-3,044.86	132.35	890.31	682.28	208.03	4.280	
8,064.20	7,253.00	13,164.00	6,998.55	36.69	176.08	-75.73	-3,044.97	119.08	890.40	682.00	208.40	4.273	
8,100.00	7,253.00	13,205.87	6,997.40	36.77	177.21	-75.66	-3,045.19	77.23	890.55	680.96	209.59	4.249	
8,199.31	7,253.00	13,305.56	6,994.59	37.03	179.90	-75.46	-3,044.84	-22.42	890.15	677.68	212.47	4.189	
8,200.00	7,253.00	13,306.16	6,994.57	37.03	179.91	-75.46	-3,044.84	-23.03	890.15	677.68	212.47	4.189	
8,300.00	7,253.00	13,415.83	6,991.45	37.33	182.88	-75.25	-3,044.83	-132.65	890.13	674.51	215.63	4.128	
8,396.33	7,253.00	13,502.68	6,988.75	37.65	185.23	-75.06	-3,044.07	-219.46	889.37	671.17	218.20	4.076	
8,400.00	7,253.00	13,505.79	6,988.66	37.66	185.31	-75.06	-3,044.07	-222.57	889.38	671.08	218.29	4.074	
8,500.00	7,253.00	13,602.51	6,985.97	38.02	187.93	-74.88	-3,044.50	-319.24	889.75	668.57	221.18	4.023	
8,600.00	7,253.00	13,716.95	6,982.65	38.42	191.02	-74.65	-3,044.05	-433.64	889.37	664.84	224.53	3.961	
8,700.00	7,253.00	13,818.50	6,978.94	38.85	193.77	-74.38	-3,042.41	-535.11	888.01	660.48	227.53	3.903	
8,800.00	7,253.00	13,916.39	6,975.18	39.31	196.42	-74.11	-3,040.96	-632.90	886.86	656.40	230.46	3.848	
8,900.00	7,253.00	14,027.07	6,971.07	39.80	199.41	-73.80	-3,038.99	-743.49	885.44	651.76	233.68	3.789	
9,000.00	7,253.00	14,133.90	6,967.09	40.32	202.31	-73.48	-3,035.47	-850.19	882.55	645.76	236.79	3.727	
9,100.00	7,253.00	14,227.41	6,963.68	40.87	204.85	-73.19	-3,032.50	-943.59	879.80	640.11	239.68	3.671	
9,200.00	7,253.00	14,341.17	6,959.43	41.45	207.93	-72.83	-3,028.48	-1,057.20	876.75	633.83	242.92	3.609	
9,300.00	7,253.00	14,438.32	6,955.67	42.05	210.57	-72.50	-3,024.17	-1,154.18	872.90	627.03	245.88	3.550	
9,400.00	7,253.00	14,529.84	6,952.24	42.68	213.05	-72.21	-3,021.12	-1,245.59	870.09	621.32	248.77	3.498	
9,500.00	7,253.00	14,636.38	6,948.09	43.33	215.94	-71.85	-3,017.19	-1,351.97	867.01	615.13	251.89	3.442	
9,600.00	7,253.00	14,729.05	6,944.35	44.01	218.46	-71.53	-3,013.67	-1,444.50	863.93	609.15	254.78	3.391	
9,700.00	7,253.00	14,823.96	6,941.18	44.71	221.03	-71.27	-3,011.54	-1,539.33	862.09	604.32	257.77	3.344	
9,800.00	7,253.00	14,944.05	6,937.86	45.44	224.29	-70.96	-3,007.87	-1,659.32	859.39	598.19	261.20	3.290	
9,900.00	7,253.00	15,032.46	6,935.80	46.18	226.70	-70.74	-3,004.37	-1,747.63	855.70	591.54	264.16	3.239	
10,000.00	7,253.00	15,130.89	6,934.05	46.94	229.38	-70.55	-3,001.82	-1,846.01	853.09	585.76	267.33	3.191	
10,100.00	7,253.00	15,232.33	6,932.71	47.73	232.14	-70.39	-2,999.26	-1,947.41	850.40	579.80	270.60	3.143	
10,200.00	7,253.00	15,337.72	6,931.45	48.53	235.00	-70.22	-2,995.99	-2,052.74	847.13	573.21	273.92	3.093	
10,300.00	7,253.00	15,433.19	6,930.24	49.35	237.59	-70.06	-2,993.09	-2,148.16	843.95	566.87	277.08	3.046	
10,400.00	7,253.00	15,531.73	6,929.87	50.19	240.27	-69.96	-2,990.89	-2,246.67	841.23	560.84	280.39	3.000	
10,500.00	7,253.00	15,645.24	6,930.32	51.04	243.36	-69.90	-2,987.99	-2,360.14	837.98	553.99	283.99	2.951	
10,600.00	7,253.00	15,746.78	6,929.91	51.91	246.12	-69.75	-2,983.53	-2,461.59	833.25	545.96	287.29	2.900	
10,700.00	7,253.00	15,836.47	6,929.53	52.79	248.56	-69.63	-2,980.28	-2,551.21	829.26	538.80	290.46	2.855	
10,800.00	7,253.00	15,941.09	6,929.24	53.69	251.40	-69.52	-2,977.16	-2,655.78	825.82	531.95	293.87	2.810	
10,900.00	7,253.00	16,031.00	6,928.78	54.60	253.85	-69.42	-2,975.00	-2,745.67	822.96	525.90	297.06	2.770	
11,000.00	7,253.00	16,120.00	6,927.86	55.52	256.26	-69.31	-2,973.64	-2,834.65	821.12	520.95	300.18	2.735	
11,100.00	7,253.00	16,210.00	6,926.73	56.46	258.71	-69.20	-2,973.03	-2,924.64	820.21	516.93	303.28	2.704	
11,200.00	7,253.00	16,320.76	6,925.36	57.40	261.71	-69.07	-2,972.38	-3,035.39	819.35	512.47	306.88	2.670	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design: Centerra East Pad Offsets - Prowant #18-1HZ - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 18-MWD													Offset Well Error: 0.00 usft
Reference													Rule Assigned:
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning
							+N-S (usft)	+E-W (usft)	Between Centres (usft)	Ellipses (usft)			
11,300.00	7,253.00	16,416.43	6,924.13	58.36	264.31	-68.95	-2,971.35	-3,131.04	818.07	507.96	310.12	2.638	
11,400.00	7,253.00	16,509.26	6,923.08	59.33	266.83	-68.86	-2,971.43	-3,223.87	817.80	504.48	313.32	2.610	
11,500.00	7,253.00	16,613.45	6,921.80	60.31	269.65	-68.76	-2,971.53	-3,328.05	817.60	500.79	316.81	2.581	
11,600.00	7,253.00	16,709.99	6,920.64	61.30	272.27	-68.66	-2,971.25	-3,424.59	817.03	496.94	320.09	2.552	
11,607.26	7,253.00	16,716.48	6,920.58	61.37	272.45	-68.65	-2,971.28	-3,431.07	817.03	496.71	320.32	2.551	
11,700.00	7,253.00	16,802.44	6,919.98	62.30	274.78	-68.62	-2,972.18	-3,517.02	817.48	494.14	323.34	2.528	
11,800.00	7,253.00	16,915.54	6,918.93	63.30	277.85	-68.55	-2,973.14	-3,630.11	817.92	490.77	327.15	2.500	
11,900.00	7,253.00	17,013.27	6,917.52	64.32	280.50	-68.42	-2,972.54	-3,727.83	817.14	486.70	330.44	2.473	
12,000.00	7,253.00	17,109.32	6,916.43	65.34	283.10	-68.34	-2,972.67	-3,823.88	816.94	483.20	333.74	2.448	
12,100.00	7,253.00	17,231.46	6,915.78	66.37	286.42	-68.24	-2,971.53	-3,946.00	815.52	477.88	337.64	2.415	
12,200.00	7,253.00	17,334.64	6,915.76	67.40	289.23	-68.14	-2,968.63	-4,049.14	812.16	471.08	341.09	2.381	
12,300.00	7,253.00	17,440.48	6,916.02	68.45	292.11	-68.07	-2,966.08	-4,154.95	809.12	464.51	344.61	2.348	
12,400.00	7,253.00	17,537.67	6,916.21	69.50	294.76	-67.97	-2,962.80	-4,252.09	805.19	457.21	347.98	2.314	
12,500.00	7,253.00	17,640.82	6,916.37	70.55	297.56	-67.88	-2,959.70	-4,355.18	801.61	450.19	351.42	2.281	
12,600.00	7,253.00	17,733.00	6,916.35	71.62	300.07	-67.78	-2,956.84	-4,447.32	798.03	443.31	354.71	2.250	
12,700.00	7,253.00	17,823.00	6,916.48	72.69	302.52	-67.73	-2,955.26	-4,537.31	795.62	437.62	358.00	2.222	
12,800.00	7,253.00	17,912.00	6,916.75	73.76	304.94	-67.72	-2,955.16	-4,626.31	794.67	433.37	361.30	2.199	
12,818.18	7,253.00	17,927.85	6,916.79	73.96	305.36	-67.72	-2,955.28	-4,642.15	794.64	432.75	361.88	2.196	
12,900.00	7,253.00	18,002.00	6,916.97	74.84	307.37	-67.76	-2,956.55	-4,716.29	795.23	430.61	364.63	2.181	
13,000.00	7,253.00	18,091.19	6,917.29	75.92	309.79	-67.83	-2,959.23	-4,805.44	797.12	429.17	367.95	2.166	
13,100.00	7,253.00	18,195.81	6,917.65	77.01	312.61	-67.92	-2,962.38	-4,910.01	799.04	427.18	371.86	2.149	
13,200.00	7,253.00	18,289.60	6,918.13	78.10	315.15	-68.01	-2,965.53	-5,003.75	801.21	425.83	375.38	2.134	
13,300.00	7,253.00	18,388.53	6,918.67	79.20	317.82	-68.13	-2,969.34	-5,102.60	803.85	424.71	379.14	2.120	
13,400.00	7,253.00	18,488.50	6,919.38	80.30	320.52	-68.26	-2,973.19	-5,202.49	806.42	423.45	382.97	2.106	
13,500.00	7,253.00	18,588.43	6,920.12	81.41	323.22	-68.39	-2,977.23	-5,302.34	809.17	422.35	386.82	2.092	
13,600.00	7,253.00	18,694.25	6,920.73	82.52	326.08	-68.51	-2,980.99	-5,408.10	811.53	420.66	390.87	2.076	
13,700.00	7,253.00	18,795.88	6,921.03	83.63	328.83	-68.58	-2,983.84	-5,509.68	813.28	418.60	394.67	2.061	
13,800.00	7,253.00	18,907.16	6,921.67	84.75	331.84	-68.66	-2,986.33	-5,620.93	814.43	415.61	398.82	2.042	
13,900.00	7,253.00	19,015.26	6,920.87	85.87	334.78	-68.59	-2,986.20	-5,729.02	813.81	411.29	402.52	2.022	
13,935.22	7,253.00	19,045.23	6,920.22	86.27	335.59	-68.53	-2,986.08	-5,758.98	813.70	410.14	403.56	2.016	
14,000.00	7,253.00	19,103.85	6,918.56	87.00	337.18	-68.42	-2,986.22	-5,817.58	814.02	408.53	405.49	2.007	
14,100.00	7,253.00	19,207.29	6,914.90	88.12	339.99	-68.16	-2,986.44	-5,920.95	814.80	406.08	408.71	1.994 Collision Risk Procedures Req.	
14,200.00	7,253.00	19,315.02	6,910.63	89.25	342.91	-67.83	-2,985.26	-6,028.60	814.52	402.65	411.87	1.978 Collision Risk Procedures Req.	
14,300.00	7,253.00	19,415.63	6,906.67	90.39	345.65	-67.51	-2,983.70	-6,129.12	813.85	399.02	414.83	1.962 Collision Risk Procedures Req.	
14,400.00	7,253.00	19,515.12	6,903.20	91.52	348.35	-67.23	-2,982.38	-6,228.53	813.23	395.41	417.82	1.946 Collision Risk Procedures Req.	
14,500.00	7,253.00	19,622.82	6,899.53	92.66	351.28	-66.91	-2,980.44	-6,336.15	812.17	391.25	420.92	1.930 Collision Risk Procedures Req.	
14,600.00	7,253.00	19,721.73	6,896.02	93.80	353.97	-66.60	-2,978.41	-6,434.98	810.94	387.13	423.81	1.913 Collision Risk Procedures Req.	
14,700.00	7,253.00	19,835.64	6,891.53	94.95	357.07	-66.17	-2,974.21	-6,548.72	808.37	381.73	426.64	1.895 Collision Risk Procedures Req.	
14,800.00	7,253.00	19,937.22	6,887.31	96.09	359.83	-65.74	-2,969.66	-6,650.11	805.24	376.02	429.23	1.876 Collision Risk Procedures Req.	
14,900.00	7,253.00	20,029.49	6,883.47	97.24	362.34	-65.35	-2,965.61	-6,742.21	802.26	370.50	431.75	1.858 Collision Risk Procedures Req.	
15,000.00	7,253.00	20,130.36	6,879.31	98.39	365.09	-64.95	-2,962.28	-6,842.94	800.27	365.92	434.36	1.842 Collision Risk Procedures Req.	
15,100.00	7,253.00	20,224.74	6,875.54	99.54	367.65	-64.59	-2,958.95	-6,937.19	798.08	361.20	436.88	1.827 Collision Risk Procedures Req.	
15,200.00	7,253.00	20,323.84	6,871.74	100.70	370.35	-64.23	-2,956.28	-7,036.17	796.59	357.10	439.49	1.813 Collision Risk Procedures Req.	
15,300.00	7,253.00	20,430.03	6,867.51	101.86	373.24	-63.82	-2,952.82	-7,142.23	794.69	352.63	442.06	1.798 Collision Risk Procedures Req.	
15,400.00	7,253.00	20,532.66	6,863.77	103.02	376.03	-63.43	-2,948.99	-7,244.72	792.25	347.68	444.57	1.782 Collision Risk Procedures Req.	
15,500.00	7,253.00	20,638.05	6,860.35	104.18	378.90	-63.04	-2,944.77	-7,349.96	789.42	342.34	447.08	1.766 Collision Risk Procedures Req.	
15,590.64	7,253.00	20,703.00	6,858.17	105.23	380.67	-62.78	-2,941.64	-7,414.80	786.75	337.72	449.02	1.752 Collision Risk Procedures Req., CC	
15,600.00	7,253.00	20,703.00	6,858.17	105.34	380.67	-62.78	-2,941.64	-7,414.80	786.80	337.75	449.05	1.752 Collision Risk Procedures Req.	
15,700.00	7,253.00	20,703.00	6,858.17	106.50	380.67	-62.78	-2,941.64	-7,414.80	794.31	348.80	445.51	1.783 Collision Risk Procedures Req.	
15,800.00	7,253.00	20,703.00	6,858.17	107.67	380.67	-62.78	-2,941.64	-7,414.80	814.13	378.65	435.48	1.869 Collision Risk Procedures Req.	
15,900.00	7,253.00	20,703.00	6,858.17	108.84	380.67	-62.78	-2,941.64	-7,414.80	845.39	425.11	420.28	2.011	
16,000.00	7,253.00	20,703.00	6,858.17	110.01	380.67	-62.78	-2,941.64	-7,414.80	886.88	485.29	401.58	2.208	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Altitude Energy Partners

## Anticollision Report



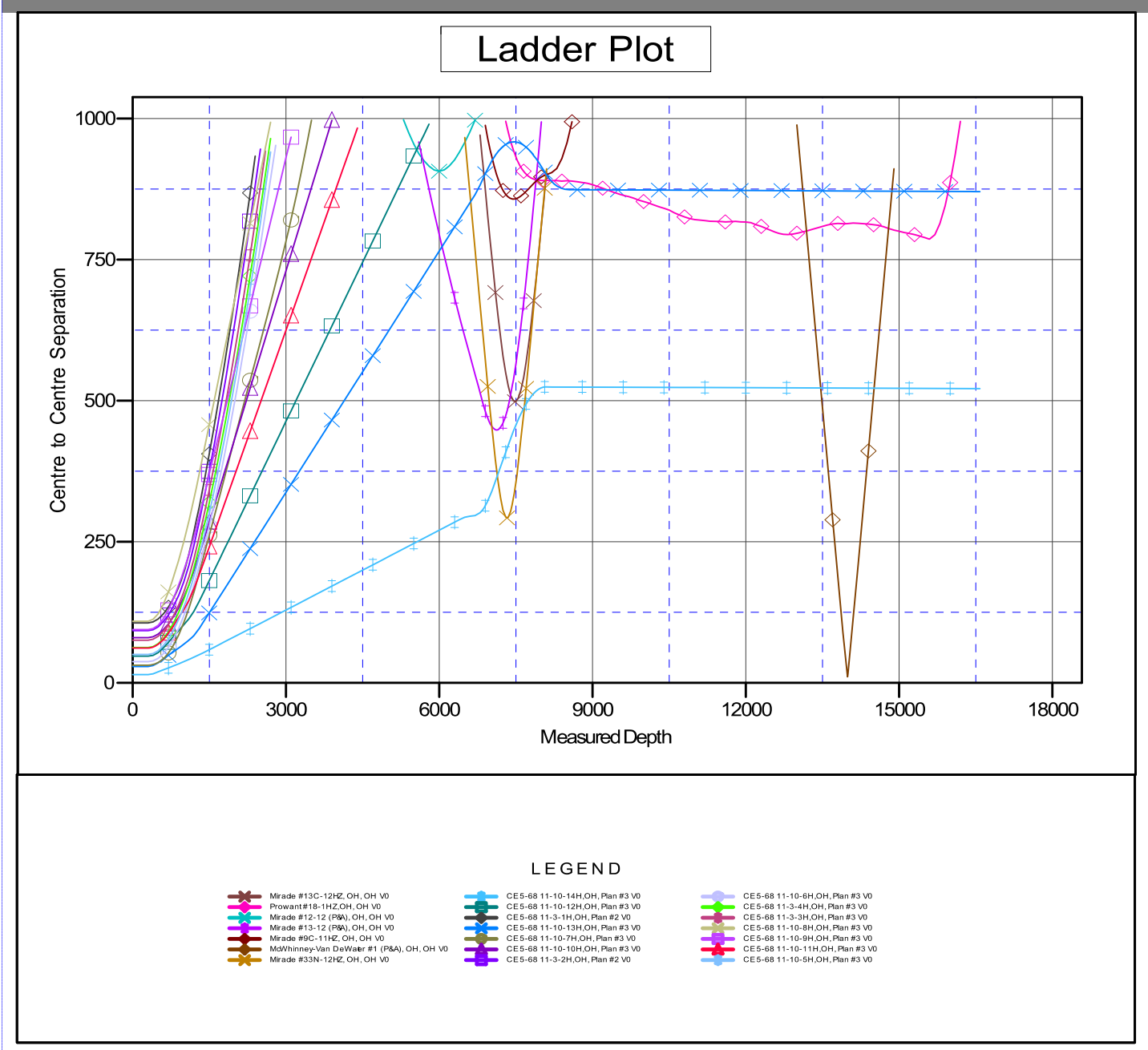
<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design:</b> Centerra East Pad Offsets - Prowant #18-1HZ - OH - OH													<b>Offset Site Error:</b> 0.00 usft
Survey Program: 18-MWD													<b>Offset Well Error:</b> 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
16,100.00	7,253.00	20,703.00	6,858.17	111.18	380.67	-62.78	-2,941.64	-7,414.80	937.24	556.23	381.02	2.460	
16,200.00	7,253.00	20,703.00	6,858.17	112.35	380.67	-62.78	-2,941.64	-7,414.80	995.14	635.24	359.90	2.765	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KB=20 @ 5000.00usft (Precision 460) Coordinates are relative to: CE 5-68 11-10-15H  
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Central Meridian is -105.500000 Grid Convergence at Surface is: 0.35°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	Bison IV Operating LLC	<b>Local Co-ordinate Reference:</b>	Well CE 5-68 11-10-15H
<b>Project:</b>	Larimer Co., CO (NAD-83)	<b>TVD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Reference Site:</b>	Centerra East Pad	<b>MD Reference:</b>	KB=20 @ 5000.00usft (Precision 460)
<b>Site Error:</b>	0.00 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	CE 5-68 11-10-15H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	EDMProd
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KB=20 @ 5000.00usft (Precision 460) Coordinates are relative to: CE 5-68 11-10-15H  
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Central Meridian is -105.500000 Grid Convergence at Surface is: 0.35°

