



Bison IV Operating LLC

Larimer Co., CO (NAD-83)

Centerra East Pad

CE 5-68 11-10-11H

OH

Plan: Plan #3

Standard Planning Report

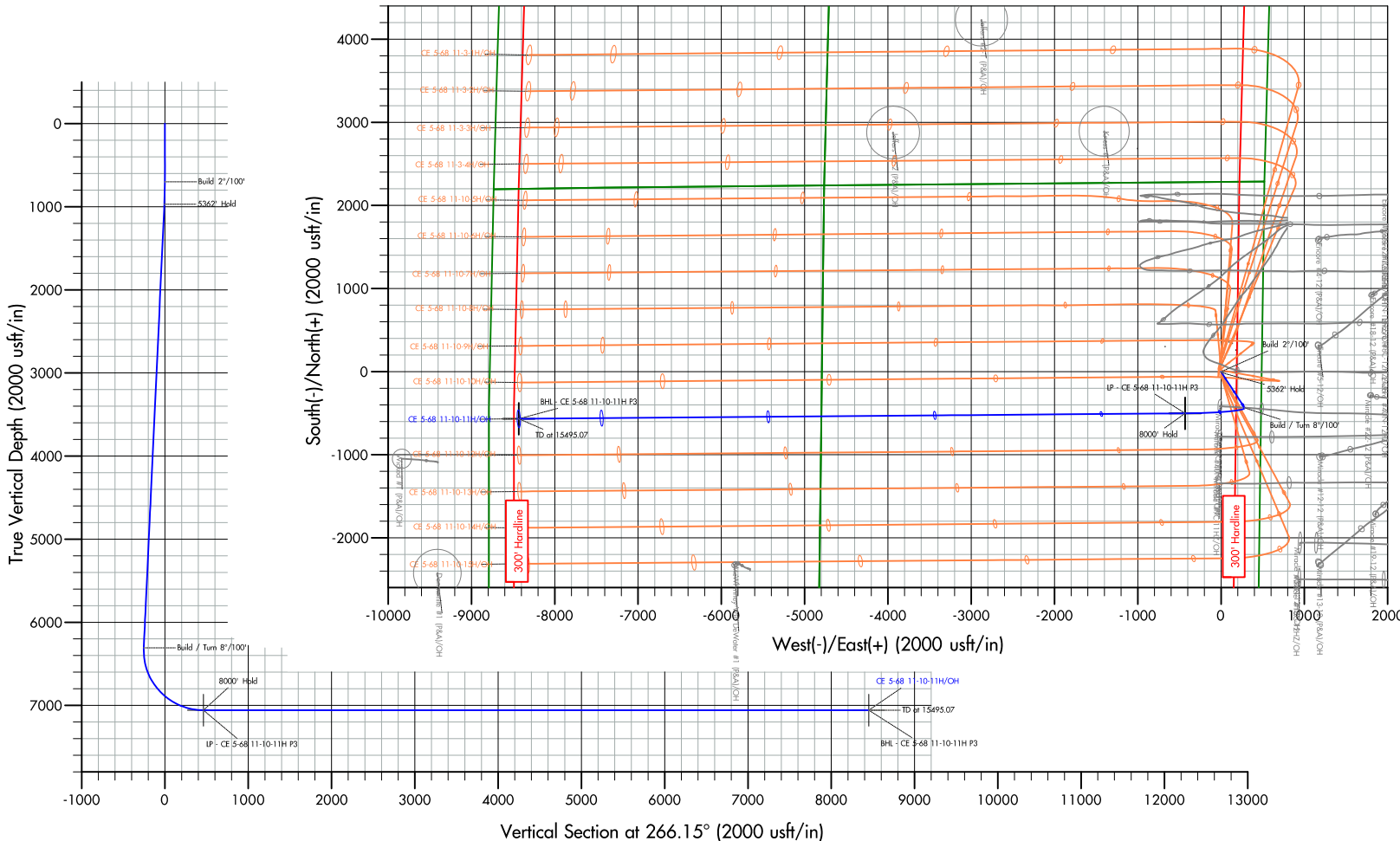
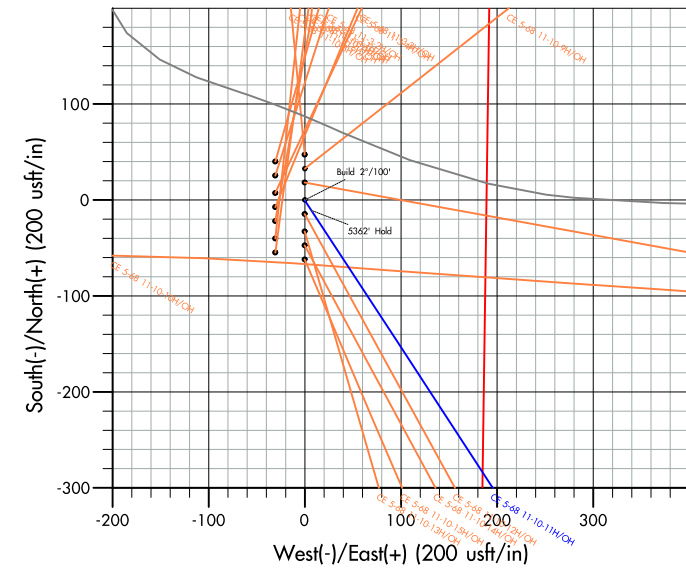
24 September, 2024



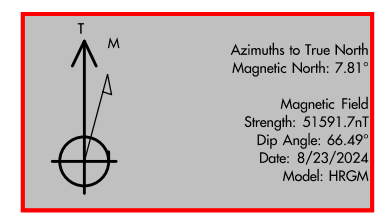


Project: Larimer Co., CO (NAD-83)
 Site: Centerra East Pad
 Well: CE 5-68 11-10-11H
 Wellbore: OH
 Design: Plan #3
 Lat: 40.415440
 Long: -104.965940
 GL: 4980.00
 KB: KB=20 @ 5000.00usft (Precision 460)

WELL DETAILS: CE 5-68 11-10-11H									
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
0.00	0.00	1394632.95	3148706.47	40.415440	-104.965940				
WELLBORE TARGET DETAILS (LAT/LONG)									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude		
BHL - CE 5-68 11-10-11H P3	7059.00	-566.86	-8431.56	1394015.32	3140278.47	40.413880	-104.996220		
LP - CE 5-68 11-10-11H P3	7059.00	-500.45	-431.31	1394129.91	3148278.18	40.414066	-104.967489		
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	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	Build 2°/100'
970.78	5.42	146.89	970.37	-10.71	6.99	2.00	146.89	-6.25	5362' Hold
6333.08	5.42	146.89	6308.74	-434.62	283.44	0.00	0.00	-253.65	Build / Turn 8°/100'
7494.54	90.00	269.52	7059.00	-500.45	-431.31	8.00	122.52	463.91	8000' Hold
15495.07	90.00	269.52	7059.00	-566.86	-8431.56	0.00	0.00	8450.60	TD at 15495.07



FORMATION TOPS		
TVDPath	MDPath	Formation
534.00	534.00	Upper Pierre
1034.00	1034.69	Pierre
3524.00	3535.85	Parkman
4119.00	4133.52	Sussex
4568.00	4584.53	Shannon
6852.00	6935.04	Sharon Springs
6913.00	7028.32	Niobrara





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

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

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

Well	CE 5-68 11-10-11H					
Well Position	+N/-S	0.00 usft	Northing:	1,394,632.95 usft	Latitude:	40.415440
	+E/-W	0.00 usft	Easting:	3,148,706.47 usft	Longitude:	-104.965940
Position Uncertainty	0.00 usft		Wellhead Elevation:	usft	Ground Level:	4,980.00 usft
Grid Convergence:	0.35 °					

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HRGM	8/23/2024	7.81	66.49	51,591.68837274

Design	Plan #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	266.15

Plan Survey Tool Program	Date	9/24/2024		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	15,495.08 Plan #3 (OH)	MWD+IFR1+MS	OWSG MWD + IFR1 + Mult

Plan Sections										
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	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
970.78	5.42	146.89	970.37	-10.71	6.99	2.00	2.00	0.00	146.89	
6,333.08	5.42	146.89	6,308.74	-434.62	283.44	0.00	0.00	0.00	0.00	
7,494.54	90.00	269.52	7,059.00	-500.45	-431.31	8.00	7.28	10.56	122.52	LP - CE 5-68 11-10-
15,495.08	90.00	269.52	7,059.00	-566.86	-8,431.56	0.00	0.00	0.00	0.00	BHL - CE 5-68 11-1

Database:	EDMProd	Local Co-ordinate Reference:	Well CE 5-68 11-10-11H
Company:	Bison IV Operating LLC	TVD Reference:	KB=20 @ 5000.00usft (Precision 460)
Project:	Larimer Co., CO (NAD-83)	MD Reference:	KB=20 @ 5000.00usft (Precision 460)
Site:	Centerra East Pad	North Reference:	True
Well:	CE 5-68 11-10-11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
534.00	0.00	0.00	534.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre									
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
Build 2°/100'									
800.00	2.00	146.89	799.98	-1.46	0.95	-0.85	2.00	2.00	0.00
900.00	4.00	146.89	899.84	-5.85	3.81	-3.41	2.00	2.00	0.00
970.78	5.42	146.89	970.37	-10.71	6.99	-6.25	2.00	2.00	0.00
5362' Hold									
1,000.00	5.42	146.89	999.47	-13.02	8.49	-7.60	0.00	0.00	0.00
1,034.69	5.42	146.89	1,034.00	-15.76	10.28	-9.20	0.00	0.00	0.00
Pierre									
1,100.00	5.42	146.89	1,099.02	-20.93	13.65	-12.21	0.00	0.00	0.00
1,200.00	5.42	146.89	1,198.57	-28.83	18.80	-16.83	0.00	0.00	0.00
1,300.00	5.42	146.89	1,298.13	-36.74	23.96	-21.44	0.00	0.00	0.00
1,400.00	5.42	146.89	1,397.68	-44.64	29.11	-26.05	0.00	0.00	0.00
1,500.00	5.42	146.89	1,497.23	-52.55	34.27	-30.67	0.00	0.00	0.00
1,600.00	5.42	146.89	1,596.79	-60.45	39.42	-35.28	0.00	0.00	0.00
1,700.00	5.42	146.89	1,696.34	-68.36	44.58	-39.89	0.00	0.00	0.00
1,800.00	5.42	146.89	1,795.90	-76.26	49.74	-44.51	0.00	0.00	0.00
1,900.00	5.42	146.89	1,895.45	-84.17	54.89	-49.12	0.00	0.00	0.00
2,000.00	5.42	146.89	1,995.00	-92.07	60.05	-53.74	0.00	0.00	0.00
2,100.00	5.42	146.89	2,094.56	-99.98	65.20	-58.35	0.00	0.00	0.00
2,200.00	5.42	146.89	2,194.11	-107.88	70.36	-62.96	0.00	0.00	0.00
2,300.00	5.42	146.89	2,293.66	-115.79	75.51	-67.58	0.00	0.00	0.00
2,400.00	5.42	146.89	2,393.22	-123.70	80.67	-72.19	0.00	0.00	0.00
2,500.00	5.42	146.89	2,492.77	-131.60	85.82	-76.80	0.00	0.00	0.00
2,600.00	5.42	146.89	2,592.32	-139.51	90.98	-81.42	0.00	0.00	0.00
2,700.00	5.42	146.89	2,691.88	-147.41	96.14	-86.03	0.00	0.00	0.00
2,800.00	5.42	146.89	2,791.43	-155.32	101.29	-90.64	0.00	0.00	0.00
2,900.00	5.42	146.89	2,890.99	-163.22	106.45	-95.26	0.00	0.00	0.00
3,000.00	5.42	146.89	2,990.54	-171.13	111.60	-99.87	0.00	0.00	0.00
3,100.00	5.42	146.89	3,090.09	-179.03	116.76	-104.49	0.00	0.00	0.00
3,200.00	5.42	146.89	3,189.65	-186.94	121.91	-109.10	0.00	0.00	0.00
3,300.00	5.42	146.89	3,289.20	-194.84	127.07	-113.71	0.00	0.00	0.00
3,400.00	5.42	146.89	3,388.75	-202.75	132.22	-118.33	0.00	0.00	0.00
3,500.00	5.42	146.89	3,488.31	-210.65	137.38	-122.94	0.00	0.00	0.00
3,535.85	5.42	146.89	3,524.00	-213.49	139.23	-124.59	0.00	0.00	0.00
Parkman									
3,600.00	5.42	146.89	3,587.86	-218.56	142.54	-127.55	0.00	0.00	0.00
3,700.00	5.42	146.89	3,687.41	-226.46	147.69	-132.17	0.00	0.00	0.00
3,800.00	5.42	146.89	3,786.97	-234.37	152.85	-136.78	0.00	0.00	0.00
3,900.00	5.42	146.89	3,886.52	-242.28	158.00	-141.39	0.00	0.00	0.00
4,000.00	5.42	146.89	3,986.08	-250.18	163.16	-146.01	0.00	0.00	0.00
4,100.00	5.42	146.89	4,085.63	-258.09	168.31	-150.62	0.00	0.00	0.00
4,133.52	5.42	146.89	4,119.00	-260.74	170.04	-152.17	0.00	0.00	0.00
Sussex									

Database:	EDMProd	Local Co-ordinate Reference:	Well CE 5-68 11-10-11H
Company:	Bison IV Operating LLC	TVD Reference:	KB=20 @ 5000.00usft (Precision 460)
Project:	Larimer Co., CO (NAD-83)	MD Reference:	KB=20 @ 5000.00usft (Precision 460)
Site:	Centerra East Pad	North Reference:	True
Well:	CE 5-68 11-10-11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
4,200.00	5.42	146.89	4,185.18	-265.99	173.47	-155.23	0.00	0.00	0.00
4,300.00	5.42	146.89	4,284.74	-273.90	178.62	-159.85	0.00	0.00	0.00
4,400.00	5.42	146.89	4,384.29	-281.80	183.78	-164.46	0.00	0.00	0.00
4,500.00	5.42	146.89	4,483.84	-289.71	188.93	-169.08	0.00	0.00	0.00
4,584.53	5.42	146.89	4,568.00	-296.39	193.29	-172.98	0.00	0.00	0.00
Shannon									
4,600.00	5.42	146.89	4,583.40	-297.61	194.09	-173.69	0.00	0.00	0.00
4,700.00	5.42	146.89	4,682.95	-305.52	199.25	-178.30	0.00	0.00	0.00
4,800.00	5.42	146.89	4,782.50	-313.42	204.40	-182.92	0.00	0.00	0.00
4,900.00	5.42	146.89	4,882.06	-321.33	209.56	-187.53	0.00	0.00	0.00
5,000.00	5.42	146.89	4,981.61	-329.23	214.71	-192.14	0.00	0.00	0.00
5,100.00	5.42	146.89	5,081.17	-337.14	219.87	-196.76	0.00	0.00	0.00
5,200.00	5.42	146.89	5,180.72	-345.04	225.02	-201.37	0.00	0.00	0.00
5,300.00	5.42	146.89	5,280.27	-352.95	230.18	-205.98	0.00	0.00	0.00
5,400.00	5.42	146.89	5,379.83	-360.85	235.33	-210.60	0.00	0.00	0.00
5,500.00	5.42	146.89	5,479.38	-368.76	240.49	-215.21	0.00	0.00	0.00
5,600.00	5.42	146.89	5,578.93	-376.67	245.65	-219.83	0.00	0.00	0.00
5,700.00	5.42	146.89	5,678.49	-384.57	250.80	-224.44	0.00	0.00	0.00
5,800.00	5.42	146.89	5,778.04	-392.48	255.96	-229.05	0.00	0.00	0.00
5,900.00	5.42	146.89	5,877.59	-400.38	261.11	-233.67	0.00	0.00	0.00
6,000.00	5.42	146.89	5,977.15	-408.29	266.27	-238.28	0.00	0.00	0.00
6,100.00	5.42	146.89	6,076.70	-416.19	271.42	-242.89	0.00	0.00	0.00
6,200.00	5.42	146.89	6,176.26	-424.10	276.58	-247.51	0.00	0.00	0.00
6,300.00	5.42	146.89	6,275.81	-432.00	281.73	-252.12	0.00	0.00	0.00
6,333.08	5.42	146.89	6,308.74	-434.62	283.44	-253.65	0.00	0.00	0.00
Build / Turn 8°/100'									
6,350.00	4.82	160.59	6,325.59	-435.96	284.11	-254.23	8.00	-3.49	80.97
6,400.00	5.17	207.66	6,375.42	-439.94	283.76	-253.61	8.00	0.70	94.13
6,450.00	7.89	234.32	6,425.11	-443.94	279.93	-249.52	8.00	5.42	53.33
6,500.00	11.38	246.16	6,474.40	-447.93	272.63	-241.97	8.00	6.99	23.67
6,550.00	15.13	252.35	6,523.06	-451.91	261.90	-230.99	8.00	7.49	12.38
6,600.00	18.97	256.10	6,570.86	-455.84	247.78	-216.65	8.00	7.70	7.50
6,650.00	22.87	258.62	6,617.55	-459.71	230.36	-199.00	8.00	7.80	5.04
6,700.00	26.80	260.43	6,662.92	-463.51	209.71	-178.15	8.00	7.85	3.63
6,750.00	30.74	261.81	6,706.74	-467.20	185.94	-154.18	8.00	7.89	2.76
6,800.00	34.70	262.90	6,748.79	-470.78	159.15	-127.21	8.00	7.91	2.19
6,850.00	38.66	263.80	6,788.88	-474.23	129.49	-97.39	8.00	7.93	1.79
6,900.00	42.63	264.55	6,826.81	-477.53	97.09	-64.84	8.00	7.94	1.50
6,935.04	45.42	265.01	6,852.00	-479.74	72.85	-40.50	8.00	7.95	1.32
Sharon Springs									
6,950.00	46.61	265.20	6,862.39	-480.66	62.12	-29.74	8.00	7.95	1.23
7,000.00	50.59	265.76	6,895.45	-483.61	24.74	7.76	8.00	7.95	1.13
7,028.32	52.84	266.06	6,913.00	-485.19	2.57	29.99	8.00	7.96	1.03
Niobrara									
7,050.00	54.57	266.27	6,925.83	-486.36	-14.87	47.46	8.00	7.96	0.98
7,100.00	58.55	266.73	6,953.38	-488.91	-56.50	89.17	8.00	7.96	0.92
7,150.00	62.53	267.15	6,977.97	-491.23	-99.97	132.69	8.00	7.97	0.84
7,200.00	66.52	267.54	6,999.47	-493.32	-145.05	177.81	8.00	7.97	0.78
7,250.00	70.50	267.90	7,017.79	-495.17	-191.52	224.31	8.00	7.97	0.74
7,300.00	74.49	268.25	7,032.82	-496.76	-239.17	271.96	8.00	7.97	0.70
7,350.00	78.47	268.59	7,044.51	-498.10	-287.76	320.52	8.00	7.97	0.67
7,400.00	82.46	268.92	7,052.79	-499.17	-337.05	369.77	8.00	7.97	0.65
7,450.00	86.45	269.24	7,057.62	-499.97	-386.80	419.46	8.00	7.97	0.64

Database:	EDMProd	Local Co-ordinate Reference:	Well CE 5-68 11-10-11H
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Project:	Larimer Co., CO (NAD-83)	MD Reference:	KB=20 @ 5000.00usft (Precision 460)
Site:	Centerra East Pad	North Reference:	True
Well:	CE 5-68 11-10-11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)	
7,494.54	90.00	269.52	7,059.00	-500.45	-431.31	463.91	8.00	7.97	0.64	
8000' Hold										
7,500.00	90.00	269.52	7,059.00	-500.49	-436.76	469.35	0.00	0.00	0.00	
7,600.00	90.00	269.52	7,059.00	-501.32	-536.76	569.18	0.00	0.00	0.00	
7,700.00	90.00	269.52	7,059.00	-502.15	-636.76	669.01	0.00	0.00	0.00	
7,800.00	90.00	269.52	7,059.00	-502.98	-736.75	768.83	0.00	0.00	0.00	
7,900.00	90.00	269.52	7,059.00	-503.81	-836.75	868.66	0.00	0.00	0.00	
8,000.00	90.00	269.52	7,059.00	-504.64	-936.75	968.49	0.00	0.00	0.00	
8,100.00	90.00	269.52	7,059.00	-505.47	-1,036.74	1,068.31	0.00	0.00	0.00	
8,200.00	90.00	269.52	7,059.00	-506.31	-1,136.74	1,168.14	0.00	0.00	0.00	
8,300.00	90.00	269.52	7,059.00	-507.14	-1,236.74	1,267.97	0.00	0.00	0.00	
8,400.00	90.00	269.52	7,059.00	-507.97	-1,336.73	1,367.80	0.00	0.00	0.00	
8,500.00	90.00	269.52	7,059.00	-508.80	-1,436.73	1,467.62	0.00	0.00	0.00	
8,600.00	90.00	269.52	7,059.00	-509.63	-1,536.73	1,567.45	0.00	0.00	0.00	
8,700.00	90.00	269.52	7,059.00	-510.46	-1,636.72	1,667.28	0.00	0.00	0.00	
8,800.00	90.00	269.52	7,059.00	-511.29	-1,736.72	1,767.10	0.00	0.00	0.00	
8,900.00	90.00	269.52	7,059.00	-512.12	-1,836.72	1,866.93	0.00	0.00	0.00	
9,000.00	90.00	269.52	7,059.00	-512.95	-1,936.71	1,966.76	0.00	0.00	0.00	
9,100.00	90.00	269.52	7,059.00	-513.78	-2,036.71	2,066.59	0.00	0.00	0.00	
9,200.00	90.00	269.52	7,059.00	-514.61	-2,136.71	2,166.41	0.00	0.00	0.00	
9,300.00	90.00	269.52	7,059.00	-515.44	-2,236.70	2,266.24	0.00	0.00	0.00	
9,400.00	90.00	269.52	7,059.00	-516.27	-2,336.70	2,366.07	0.00	0.00	0.00	
9,500.00	90.00	269.52	7,059.00	-517.10	-2,436.70	2,465.89	0.00	0.00	0.00	
9,600.00	90.00	269.52	7,059.00	-517.93	-2,536.69	2,565.72	0.00	0.00	0.00	
9,700.00	90.00	269.52	7,059.00	-518.76	-2,636.69	2,665.55	0.00	0.00	0.00	
9,800.00	90.00	269.52	7,059.00	-519.59	-2,736.68	2,765.37	0.00	0.00	0.00	
9,900.00	90.00	269.52	7,059.00	-520.42	-2,836.68	2,865.20	0.00	0.00	0.00	
10,000.00	90.00	269.52	7,059.00	-521.25	-2,936.68	2,965.03	0.00	0.00	0.00	
10,100.00	90.00	269.52	7,059.00	-522.08	-3,036.67	3,064.86	0.00	0.00	0.00	
10,200.00	90.00	269.52	7,059.00	-522.91	-3,136.67	3,164.68	0.00	0.00	0.00	
10,300.00	90.00	269.52	7,059.00	-523.74	-3,236.67	3,264.51	0.00	0.00	0.00	
10,400.00	90.00	269.52	7,059.00	-524.57	-3,336.66	3,364.34	0.00	0.00	0.00	
10,500.00	90.00	269.52	7,059.00	-525.40	-3,436.66	3,464.16	0.00	0.00	0.00	
10,600.00	90.00	269.52	7,059.00	-526.23	-3,536.66	3,563.99	0.00	0.00	0.00	
10,700.00	90.00	269.52	7,059.00	-527.06	-3,636.65	3,663.82	0.00	0.00	0.00	
10,800.00	90.00	269.52	7,059.00	-527.89	-3,736.65	3,763.64	0.00	0.00	0.00	
10,900.00	90.00	269.52	7,059.00	-528.72	-3,836.65	3,863.47	0.00	0.00	0.00	
11,000.00	90.00	269.52	7,059.00	-529.55	-3,936.64	3,963.30	0.00	0.00	0.00	
11,100.00	90.00	269.52	7,059.00	-530.38	-4,036.64	4,063.13	0.00	0.00	0.00	
11,200.00	90.00	269.52	7,059.00	-531.21	-4,136.64	4,162.95	0.00	0.00	0.00	
11,300.00	90.00	269.52	7,059.00	-532.04	-4,236.63	4,262.78	0.00	0.00	0.00	
11,400.00	90.00	269.52	7,059.00	-532.87	-4,336.63	4,362.61	0.00	0.00	0.00	
11,500.00	90.00	269.52	7,059.00	-533.70	-4,436.63	4,462.43	0.00	0.00	0.00	
11,600.00	90.00	269.52	7,059.00	-534.53	-4,536.62	4,562.26	0.00	0.00	0.00	
11,700.00	90.00	269.52	7,059.00	-535.36	-4,636.62	4,662.09	0.00	0.00	0.00	
11,800.00	90.00	269.52	7,059.00	-536.19	-4,736.62	4,761.91	0.00	0.00	0.00	
11,900.00	90.00	269.52	7,059.00	-537.02	-4,836.61	4,861.74	0.00	0.00	0.00	
12,000.00	90.00	269.52	7,059.00	-537.85	-4,936.61	4,961.57	0.00	0.00	0.00	
12,100.00	90.00	269.52	7,059.00	-538.68	-5,036.61	5,061.40	0.00	0.00	0.00	
12,200.00	90.00	269.52	7,059.00	-539.51	-5,136.60	5,161.22	0.00	0.00	0.00	
12,300.00	90.00	269.52	7,059.00	-540.34	-5,236.60	5,261.05	0.00	0.00	0.00	
12,400.00	90.00	269.52	7,059.00	-541.17	-5,336.60	5,360.88	0.00	0.00	0.00	
12,500.00	90.00	269.52	7,059.00	-542.00	-5,436.59	5,460.70	0.00	0.00	0.00	
12,600.00	90.00	269.52	7,059.00	-542.83	-5,536.59	5,560.53	0.00	0.00	0.00	

Database:	EDMProd	Local Co-ordinate Reference:	Well CE 5-68 11-10-11H
Company:	Bison IV Operating LLC	TVD Reference:	KB=20 @ 5000.00usft (Precision 460)
Project:	Larimer Co., CO (NAD-83)	MD Reference:	KB=20 @ 5000.00usft (Precision 460)
Site:	Centerra East Pad	North Reference:	True
Well:	CE 5-68 11-10-11H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
12,700.00	90.00	269.52	7,059.00	-543.66	-5,636.58	5,660.36	0.00	0.00	0.00
12,800.00	90.00	269.52	7,059.00	-544.49	-5,736.58	5,760.18	0.00	0.00	0.00
12,900.00	90.00	269.52	7,059.00	-545.32	-5,836.58	5,860.01	0.00	0.00	0.00
13,000.00	90.00	269.52	7,059.00	-546.15	-5,936.57	5,959.84	0.00	0.00	0.00
13,100.00	90.00	269.52	7,059.00	-546.98	-6,036.57	6,059.67	0.00	0.00	0.00
13,200.00	90.00	269.52	7,059.00	-547.81	-6,136.57	6,159.49	0.00	0.00	0.00
13,300.00	90.00	269.52	7,059.00	-548.64	-6,236.56	6,259.32	0.00	0.00	0.00
13,400.00	90.00	269.52	7,059.00	-549.47	-6,336.56	6,359.15	0.00	0.00	0.00
13,500.00	90.00	269.52	7,059.00	-550.30	-6,436.56	6,458.97	0.00	0.00	0.00
13,600.00	90.00	269.52	7,059.00	-551.13	-6,536.55	6,558.80	0.00	0.00	0.00
13,700.00	90.00	269.52	7,059.00	-551.96	-6,636.55	6,658.63	0.00	0.00	0.00
13,800.00	90.00	269.52	7,059.00	-552.79	-6,736.55	6,758.45	0.00	0.00	0.00
13,900.00	90.00	269.52	7,059.00	-553.62	-6,836.54	6,858.28	0.00	0.00	0.00
14,000.00	90.00	269.52	7,059.00	-554.45	-6,936.54	6,958.11	0.00	0.00	0.00
14,100.00	90.00	269.52	7,059.00	-555.28	-7,036.54	7,057.94	0.00	0.00	0.00
14,200.00	90.00	269.52	7,059.00	-556.11	-7,136.53	7,157.76	0.00	0.00	0.00
14,300.00	90.00	269.52	7,059.00	-556.94	-7,236.53	7,257.59	0.00	0.00	0.00
14,400.00	90.00	269.52	7,059.00	-557.77	-7,336.53	7,357.42	0.00	0.00	0.00
14,500.00	90.00	269.52	7,059.00	-558.60	-7,436.52	7,457.24	0.00	0.00	0.00
14,600.00	90.00	269.52	7,059.00	-559.43	-7,536.52	7,557.07	0.00	0.00	0.00
14,700.00	90.00	269.52	7,059.00	-560.26	-7,636.52	7,656.90	0.00	0.00	0.00
14,800.00	90.00	269.52	7,059.00	-561.09	-7,736.51	7,756.72	0.00	0.00	0.00
14,900.00	90.00	269.52	7,059.00	-561.92	-7,836.51	7,856.55	0.00	0.00	0.00
15,000.00	90.00	269.52	7,059.00	-562.75	-7,936.51	7,956.38	0.00	0.00	0.00
15,100.00	90.00	269.52	7,059.00	-563.58	-8,036.50	8,056.21	0.00	0.00	0.00
15,200.00	90.00	269.52	7,059.00	-564.41	-8,136.50	8,156.03	0.00	0.00	0.00
15,300.00	90.00	269.52	7,059.00	-565.24	-8,236.50	8,255.86	0.00	0.00	0.00
15,400.00	90.00	269.52	7,059.00	-566.07	-8,336.49	8,355.69	0.00	0.00	0.00
15,495.08	90.00	269.52	7,059.00	-566.86	-8,431.56	8,450.60	0.00	0.00	0.00
TD at 15495.07									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL - CE 5-68 11-10- - plan hits target center - Point	0.00	0.00	7,059.00	-566.86	-8,431.56	1,394,015.32	3,140,278.47	40.413880	-104.996220
LP - CE 5-68 11-10-11 - plan hits target center - Point	0.00	0.00	7,059.00	-500.45	-431.31	1,394,129.91	3,148,278.18	40.414066	-104.967489

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

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
534.00	534.00	Upper Pierre			
1,034.69	1,034.00	Pierre			
3,535.85	3,524.00	Parkman			
4,133.52	4,119.00	Sussex			
4,584.53	4,568.00	Shannon			
6,935.04	6,852.00	Sharon Springs			
7,028.32	6,913.00	Niobrara			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
700.00	700.00	0.00	0.00	Build 2°/100'
970.78	970.37	-10.71	6.99	5362' Hold
6,333.08	6,308.74	-434.62	283.44	Build / Turn 8°/100'
7,494.54	7,059.00	-500.45	-431.31	8000' Hold
15,495.08	7,059.00	-566.86	-8,431.56	TD at 15495.07