

# **BISON OIL & GAS II, LLC**

**WELD COUNTY, COLORADO (NAD 83)**

**SE SE SEC. 11 T5N R61W 6th P.M.**

**GROTHER 5-61 11B-14-23-3**

**ORIGINAL WELLBORE**

**26 April, 2022**

**Plan: PROPOSAL #2**





Project: WELD COUNTY, COLORADO (NAD 83)  
Site: SE SE SEC. 11 T5N R61W 6th P.M.  
Well: GROTHEER 5-61 11B-14-23-3  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #2

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Vsect	Dep	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 460ft FSL & 1154ft FEL of Sec 11
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft BUR)
1300.00	12.00	224.83	1295.62	-44.40	-44.14	46.05	62.60	EOB TO 12° INC
3070.41	12.00	224.83	3027.35	-305.44	-303.64	316.81	430.69	END OF TANGENT
3670.41	0.00	0.00	3622.97	-349.84	-347.78	362.86	493.29	EOD TO VERTICAL
5584.88	0.00	0.00	5537.44	-349.84	-347.78	362.86	493.29	KOP (10°/100ft BUR)
6484.88	90.00	180.34	6110.40	-922.79	-351.18	935.52	1066.25	BPI: 460ft FNL & 1497ft FEL of Sec 14
16199.41	90.00	180.35	6110.40	-10637.14	-409.54	10645.02	10780.78	EPI: 460ft FSL & 1483ft FEL of Sec 23
16299.23	90.00	180.32	6110.40	-10736.96	-410.10	10744.79	10880.60	BHL: 460ft FSL & 1483ft FEL of Sec 23

PROPOSED LOCAL COORDINATES:

SHL: 460ft FSL & 1154ft FEL Sec 11

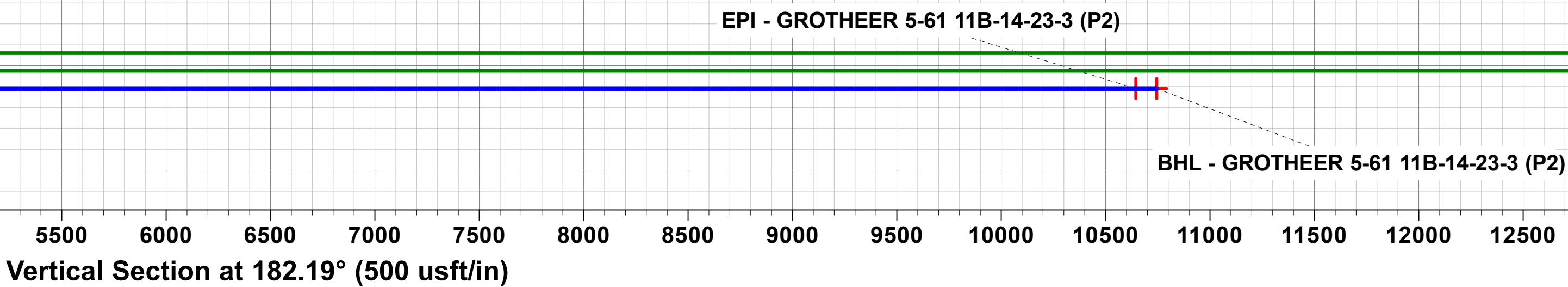
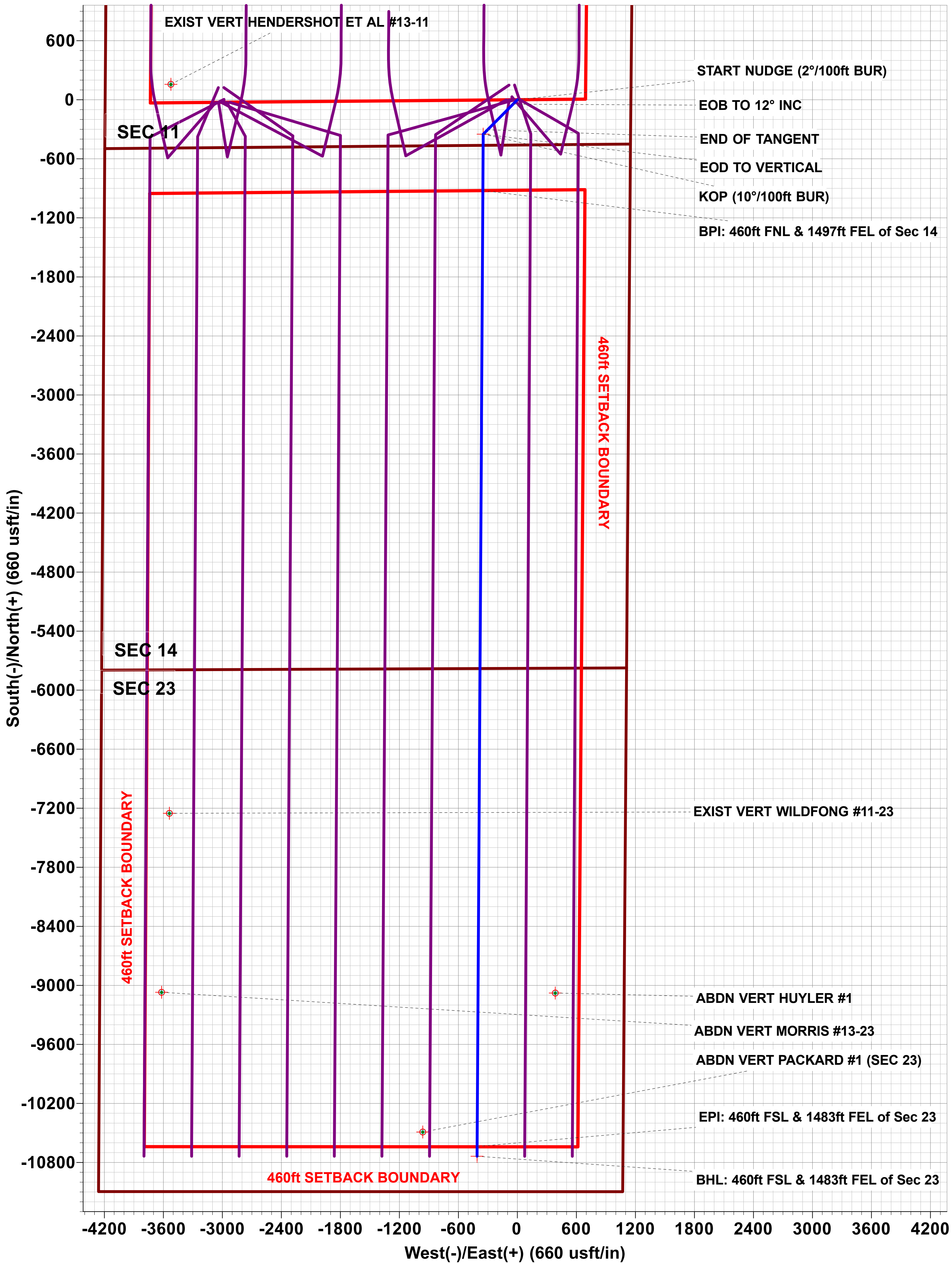
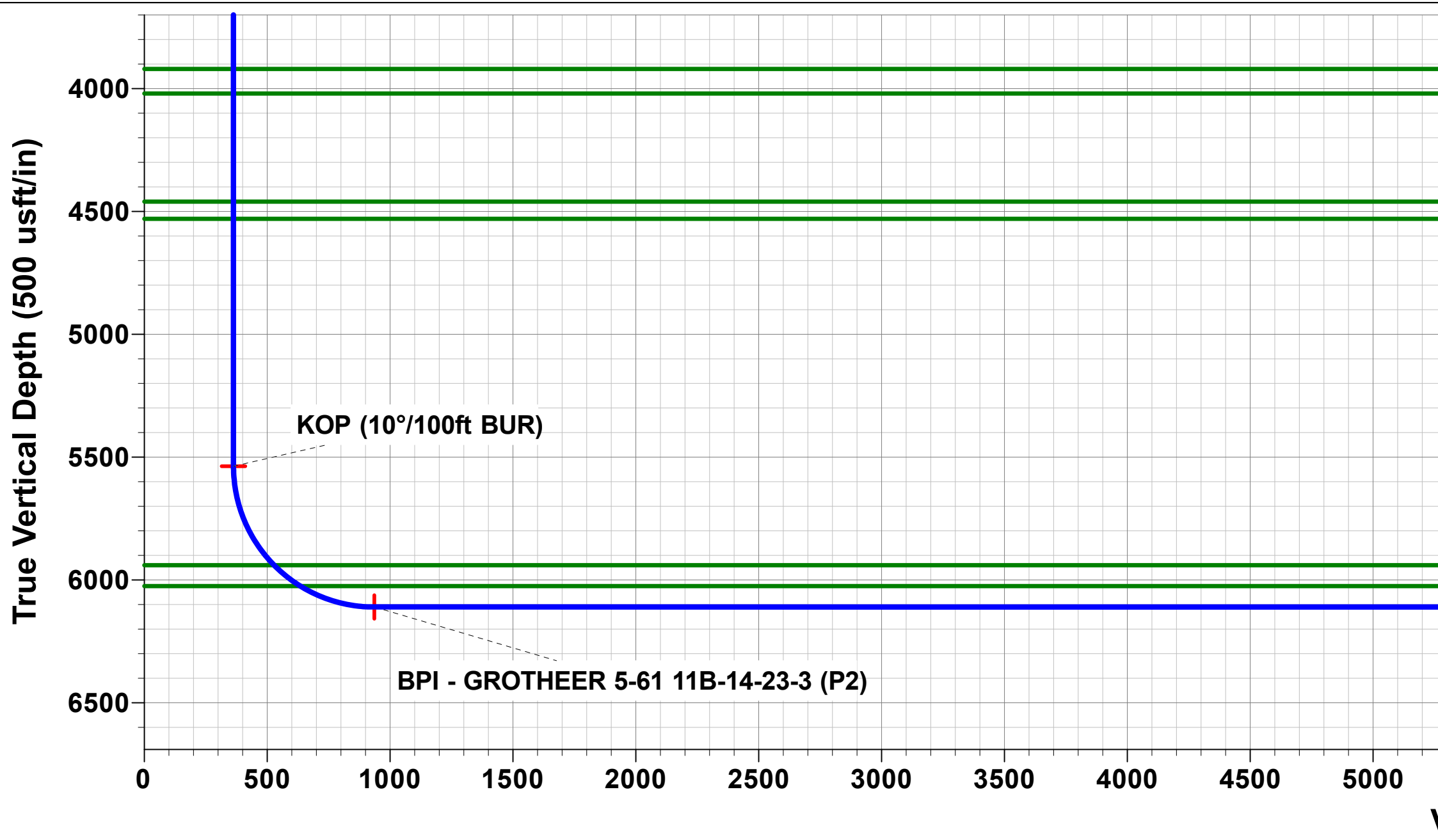
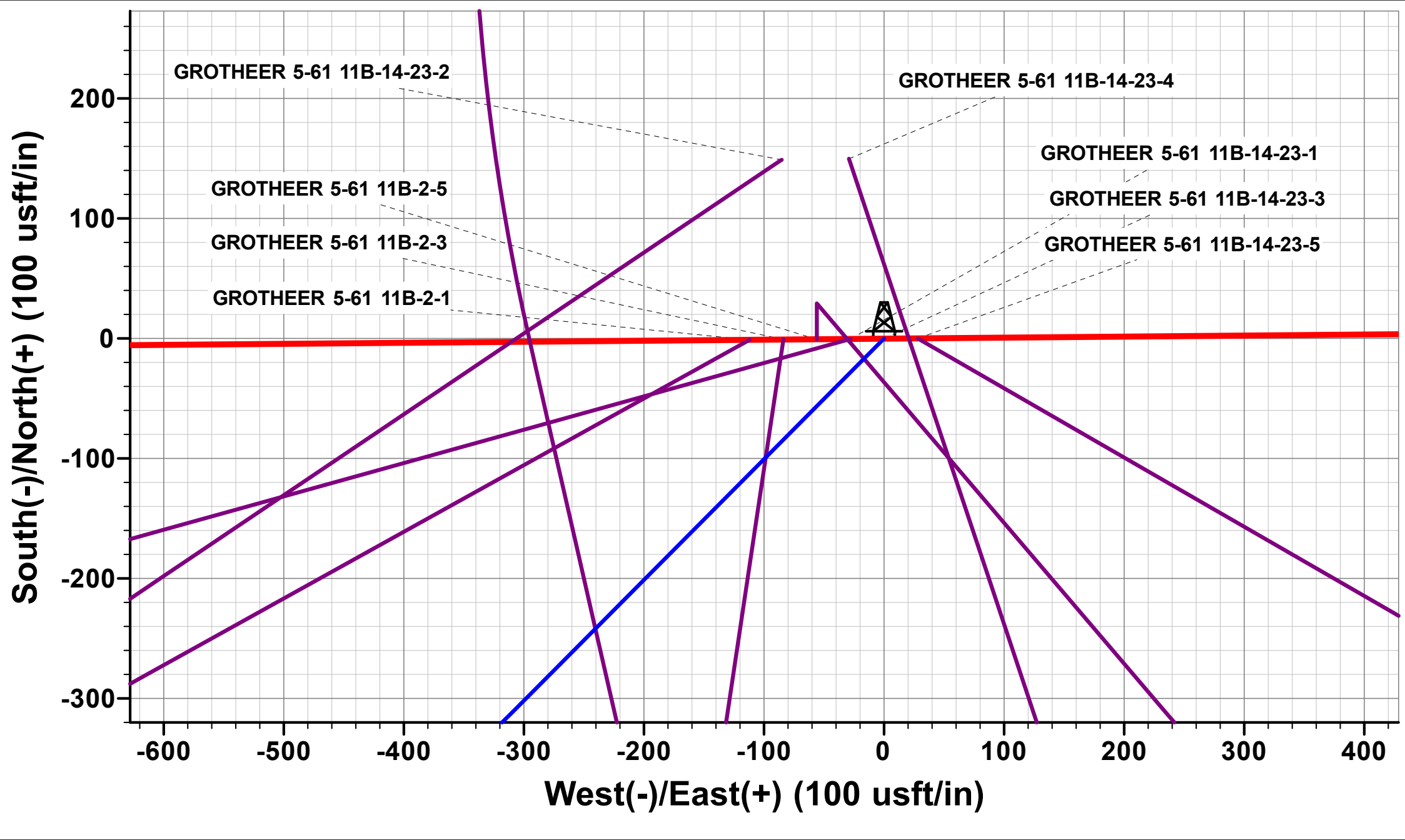
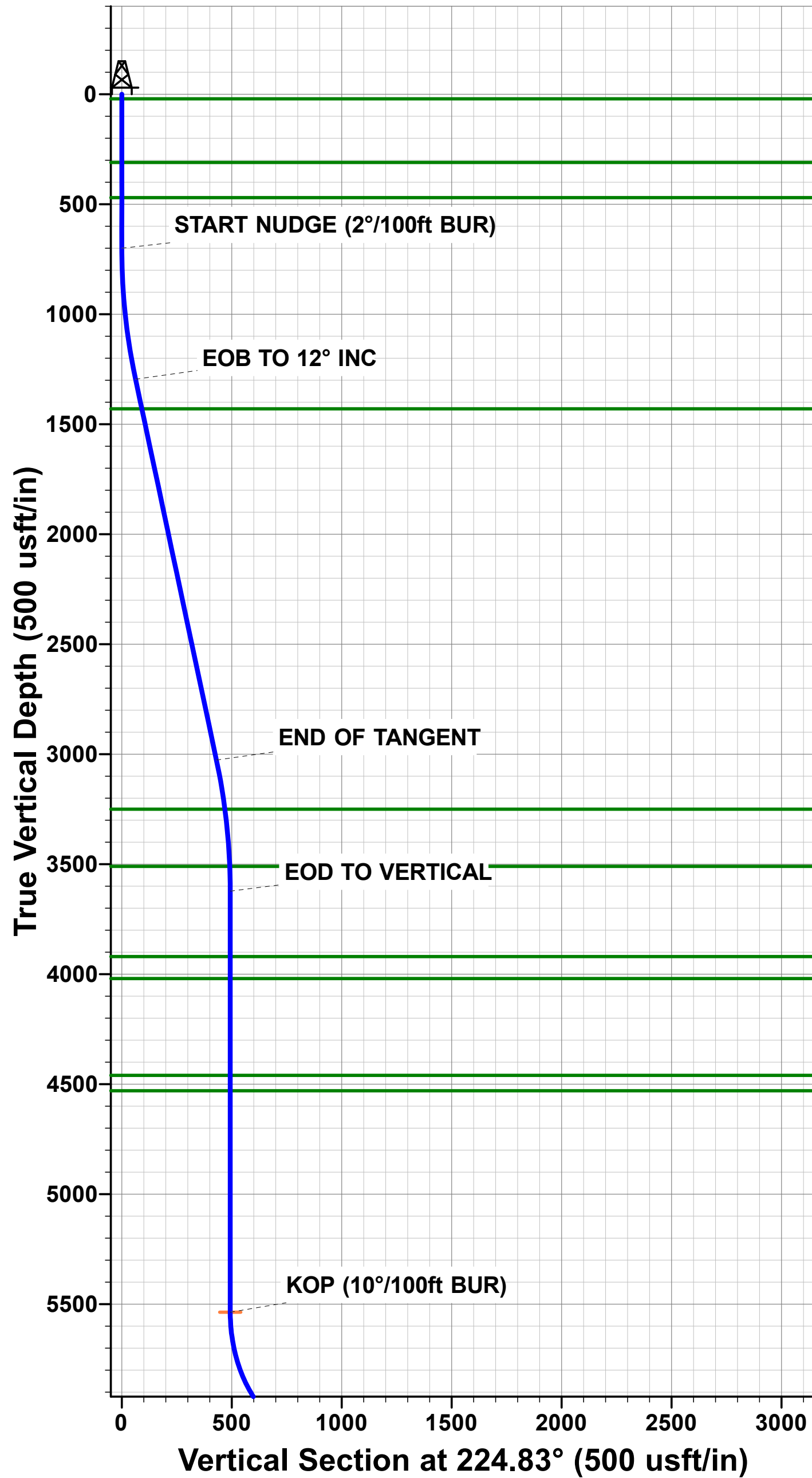
BPI : 460ft FNL & 1497ft FEL Sec 14

EPI: 460ft FSL & 1483ft FEL Sec 23

BHL: 360ft FSL & 1483ft FEL of Sec 23

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - GROTHEER 5-61 11B-14-23-3 (P2)	5537.44	-349.84	-347.78	40.408885	-104.171375
BPI - GROTHEER 5-61 11B-14-23-3 (P2)	6110.40	-922.79	-351.18	40.407312	-104.171387
EPI - GROTHEER 5-61 11B-14-23-3 (P2)	6110.40	-10637.14	-409.54	40.380647	-104.171596
BHL - GROTHEER 5-61 11B-14-23-3 (P2)	6110.40	-10736.96	-410.10	40.380373	-104.171598



# Planning Report



<b>Database:</b>	EDM 5000.15.1	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11B-14-23-3
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KBE 24ft @ 4710.40usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KBE 24ft @ 4710.40usft
<b>Site:</b>	SE SE SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11B-14-23-3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

<b>Project</b>	WELD COUNTY, COLORADO (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		Using geodetic scale factor

Site	SE SE SEC. 11 T5N R61W 6th P.M.				
Site Position:		Northing:	1,395,071.08 usft	Latitude:	40.410254
From:	Lat/Long	Easting:	3,370,200.45 usft	Longitude:	-104.170533
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000 ft	Grid Convergence:	0.86 °

Well		GROTHER 5-61 11B-14-23-3				
Well Position	+N/-S	-149.01 usft	Northing:	1,394,923.79 usfi	Latitude:	40.409845
	+E/-W	113.34 usft	Easting:	3,370,316.01 usfi	Longitude:	-104.170126
Position Uncertainty		0.00 usft	Wellhead Elevation:	usfi	Ground Level:	4,686.40 usft

<b>Wellbore</b>	ORIGINAL WELLBORE				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2020	2022-04-26	7.44	66.71	51,929.37003215

<b>Design</b>	PROPOSAL #2			
<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	182.19

<b>Plan Sections</b>											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100usf)	Turn Rate (°/100usf)	TFO (°)	Target
0.00	0.00	0.00	0.00	-4,710.40	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	-4,010.40	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	12.00	224.83	1,295.62	-3,414.78	-44.40	-44.14	2.00	2.00	0.00	224.83	
3,070.41	12.00	224.83	3,027.34	-1,683.06	-305.44	-303.64	0.00	0.00	0.00	0.00	
3,670.41	0.00	0.00	3,622.97	-1,087.43	-349.84	-347.78	2.00	-2.00	0.00	180.00	
5,584.88	0.00	0.00	5,537.44	827.04	-349.84	-347.78	0.00	0.00	0.00	0.00	KOP - GROTHEER
6,484.88	90.00	180.34	6,110.40	1,400.00	-922.79	-351.18	10.00	10.00	-19.96	180.34	BPI - GROTHEER !
16,199.41	90.00	180.35	6,110.40	1,400.00	-10,637.14	-409.54	0.00	0.00	0.00	90.15	EPI - GROTHEER !
16,199.98	90.00	180.32	6,110.40	1,400.00	-10,637.71	-409.55	5.00	0.00	-5.00	-90.00	
16,299.23	90.00	180.32	6,110.40	1,400.00	-10,736.96	-410.10	0.00	0.00	0.00	0.00	BHL - GROTHEER

# Planning Report



<b>Database:</b>	EDM 5000.15.1	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11B-14-23-3
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KBE 24ft @ 4710.40usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KBE 24ft @ 4710.40usft
<b>Site:</b>	SE SE SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11B-14-23-3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>SHL: 460ft FSL &amp; 1154ft FEL of Sec 11</b>										
0.00	0.00	0.00	0.00	4,710.40	0.00	0.00	0.00	0.00	0.00	0.00
<b>Laramie-Fox Hills Formation</b>										
21.40	0.00	0.00	21.40	4,689.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,610.40	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	4,510.40	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	4,410.40	0.00	0.00	0.00	0.00	0.00	0.00
<b>Pierre Formation</b>										
310.40	0.00	0.00	310.40	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	4,310.40	0.00	0.00	0.00	0.00	0.00	0.00
<b>Upper Pierre aquifer</b>										
470.40	0.00	0.00	470.40	4,240.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	4,210.40	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	4,110.40	0.00	0.00	0.00	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
700.00	0.00	0.00	700.00	4,010.40	0.00	0.00	0.00	0.00	0.00	0.00
800.00	2.00	224.83	799.98	3,910.42	-1.24	-1.23	1.28	2.00	2.00	0.00
900.00	4.00	224.83	899.84	3,810.56	-4.95	-4.92	5.13	2.00	2.00	0.00
1,000.00	6.00	224.83	999.45	3,710.95	-11.13	-11.06	11.54	2.00	2.00	0.00
1,100.00	8.00	224.83	1,098.70	3,611.70	-19.77	-19.66	20.51	2.00	2.00	0.00
1,200.00	10.00	224.83	1,197.47	3,512.93	-30.87	-30.68	32.01	2.00	2.00	0.00
<b>EOB TO 12° INC</b>										
1,300.00	12.00	224.83	1,295.62	3,414.78	-44.40	-44.14	46.05	2.00	2.00	0.00
1,400.00	12.00	224.83	1,393.44	3,316.96	-59.14	-58.79	61.34	0.00	0.00	0.00
<b>Base of Upper Pierre aquifer</b>										
1,437.79	12.00	224.83	1,430.40	3,280.00	-64.71	-64.33	67.12	0.00	0.00	0.00
1,500.00	12.00	224.83	1,491.25	3,219.15	-73.89	-73.45	76.64	0.00	0.00	0.00
1,600.00	12.00	224.83	1,589.07	3,121.33	-88.63	-88.11	91.93	0.00	0.00	0.00
1,700.00	12.00	224.83	1,686.88	3,023.52	-103.38	-102.77	107.22	0.00	0.00	0.00
1,800.00	12.00	224.83	1,784.70	2,925.70	-118.12	-117.43	122.52	0.00	0.00	0.00
1,900.00	12.00	224.83	1,882.51	2,827.89	-132.87	-132.08	137.81	0.00	0.00	0.00
2,000.00	12.00	224.83	1,980.33	2,730.07	-147.61	-146.74	153.11	0.00	0.00	0.00
2,100.00	12.00	224.83	2,078.14	2,632.26	-162.36	-161.40	168.40	0.00	0.00	0.00
2,200.00	12.00	224.83	2,175.96	2,534.44	-177.10	-176.06	183.69	0.00	0.00	0.00
2,300.00	12.00	224.83	2,273.77	2,436.63	-191.85	-190.72	198.99	0.00	0.00	0.00
2,400.00	12.00	224.83	2,371.59	2,338.81	-206.59	-205.37	214.28	0.00	0.00	0.00
2,500.00	12.00	224.83	2,469.40	2,241.00	-221.34	-220.03	229.57	0.00	0.00	0.00
2,600.00	12.00	224.83	2,567.22	2,143.18	-236.08	-234.69	244.87	0.00	0.00	0.00
2,700.00	12.00	224.83	2,665.03	2,045.37	-250.83	-249.35	260.16	0.00	0.00	0.00
2,800.00	12.00	224.83	2,762.84	1,947.56	-265.57	-264.01	275.46	0.00	0.00	0.00
2,900.00	12.00	224.83	2,860.66	1,849.74	-280.32	-278.66	290.75	0.00	0.00	0.00
3,000.00	12.00	224.83	2,958.47	1,751.93	-295.06	-293.32	306.04	0.00	0.00	0.00
<b>END OF TANGENT</b>										
3,070.41	12.00	224.83	3,027.35	1,683.05	-305.44	-303.64	316.81	0.00	0.00	0.00
3,100.00	11.41	224.83	3,056.32	1,654.08	-309.70	-307.87	321.23	2.00	-2.00	0.00
3,200.00	9.41	224.83	3,154.67	1,555.73	-322.51	-320.61	334.51	2.00	-2.00	0.00
<b>Larimer ("Parkman") sandstone</b>										
3,296.78	7.47	224.83	3,250.40	1,460.00	-332.59	-330.63	344.96	2.00	-2.00	0.00
3,300.00	7.41	224.83	3,253.59	1,456.81	-332.88	-330.92	345.27	2.00	-2.00	0.00
3,400.00	5.41	224.83	3,352.96	1,357.44	-340.80	-338.79	353.48	2.00	-2.00	0.00
3,500.00	3.41	224.83	3,452.66	1,257.74	-346.25	-344.21	359.13	2.00	-2.00	0.00
<b>Pierre Formation</b>										
3,557.81	2.25	224.83	3,510.40	1,200.00	-348.27	-346.22	361.23	2.00	-2.00	0.00



## Planning Report



<b>Database:</b>	EDM 5000.15.1	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11B-14-23-3
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KBE 24ft @ 4710.40usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KBE 24ft @ 4710.40usft
<b>Site:</b>	SE SE SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11B-14-23-3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

## Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,600.00	1.41	224.83	3,552.57	1,157.83	-349.23	-347.17	362.22	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
<b>3,670.41</b>	<b>0.00</b>	<b>0.00</b>	<b>3,622.97</b>	<b>1,087.43</b>	<b>-349.84</b>	<b>-347.78</b>	<b>362.86</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
3,700.00	0.00	0.00	3,652.56	1,057.84	-349.84	-347.78	362.86	0.00	0.00	0.00
3,800.00	0.00	0.00	3,752.56	957.84	-349.84	-347.78	362.86	0.00	0.00	0.00
3,900.00	0.00	0.00	3,852.56	857.84	-349.84	-347.78	362.86	0.00	0.00	0.00
<b>Terry ("Sussex") sandstone</b>										
<b>3,967.84</b>	<b>0.00</b>	<b>0.00</b>	<b>3,920.40</b>	<b>790.00</b>	<b>-349.84</b>	<b>-347.78</b>	<b>362.86</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,000.00	0.00	0.00	3,952.56	757.84	-349.84	-347.78	362.86	0.00	0.00	0.00
<b>Pierre Formation</b>										
<b>4,067.84</b>	<b>0.00</b>	<b>0.00</b>	<b>4,020.40</b>	<b>690.00</b>	<b>-349.84</b>	<b>-347.78</b>	<b>362.86</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,100.00	0.00	0.00	4,052.56	657.84	-349.84	-347.78	362.86	0.00	0.00	0.00
4,200.00	0.00	0.00	4,152.56	557.84	-349.84	-347.78	362.86	0.00	0.00	0.00
4,300.00	0.00	0.00	4,252.56	457.84	-349.84	-347.78	362.86	0.00	0.00	0.00
4,400.00	0.00	0.00	4,352.56	357.84	-349.84	-347.78	362.86	0.00	0.00	0.00
4,500.00	0.00	0.00	4,452.56	257.84	-349.84	-347.78	362.86	0.00	0.00	0.00
<b>Hygiene ("Shannon") sandstone</b>										
<b>4,507.84</b>	<b>0.00</b>	<b>0.00</b>	<b>4,460.40</b>	<b>250.00</b>	<b>-349.84</b>	<b>-347.78</b>	<b>362.86</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Pierre Formation</b>										
<b>4,577.84</b>	<b>0.00</b>	<b>0.00</b>	<b>4,530.40</b>	<b>180.00</b>	<b>-349.84</b>	<b>-347.78</b>	<b>362.86</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,600.00	0.00	0.00	4,552.56	157.84	-349.84	-347.78	362.86	0.00	0.00	0.00
4,700.00	0.00	0.00	4,652.56	57.84	-349.84	-347.78	362.86	0.00	0.00	0.00
4,800.00	0.00	0.00	4,752.56	-42.16	-349.84	-347.78	362.86	0.00	0.00	0.00
4,900.00	0.00	0.00	4,852.56	-142.16	-349.84	-347.78	362.86	0.00	0.00	0.00
5,000.00	0.00	0.00	4,952.56	-242.16	-349.84	-347.78	362.86	0.00	0.00	0.00
5,100.00	0.00	0.00	5,052.56	-342.16	-349.84	-347.78	362.86	0.00	0.00	0.00
5,200.00	0.00	0.00	5,152.56	-442.16	-349.84	-347.78	362.86	0.00	0.00	0.00
5,300.00	0.00	0.00	5,252.56	-542.16	-349.84	-347.78	362.86	0.00	0.00	0.00
5,400.00	0.00	0.00	5,352.56	-642.16	-349.84	-347.78	362.86	0.00	0.00	0.00
5,500.00	0.00	0.00	5,452.56	-742.16	-349.84	-347.78	362.86	0.00	0.00	0.00
<b>KOP (10°/100ft BUR)</b>										
<b>5,584.88</b>	<b>0.00</b>	<b>0.00</b>	<b>5,537.44</b>	<b>-827.04</b>	<b>-349.84</b>	<b>-347.78</b>	<b>362.86</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,600.00	1.51	180.34	5,552.56	-842.16	-350.04	-347.78	363.06	10.00	10.00	0.00
5,700.00	11.51	180.34	5,651.79	-941.39	-361.37	-347.85	374.38	10.00	10.00	0.00
5,800.00	21.51	180.34	5,747.54	-1,037.14	-389.75	-348.01	402.75	10.00	10.00	0.00
5,900.00	31.51	180.34	5,836.91	-1,126.51	-434.33	-348.28	447.31	10.00	10.00	0.00
6,000.00	41.51	180.34	5,917.18	-1,206.78	-493.75	-348.63	506.70	10.00	10.00	0.00
<b>Sharon Springs Member</b>										
<b>6,031.80</b>	<b>44.69</b>	<b>180.34</b>	<b>5,940.40</b>	<b>-1,230.00</b>	<b>-515.48</b>	<b>-348.76</b>	<b>528.42</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,100.00	51.51	180.34	5,985.92	-1,275.52	-566.21	-349.06	579.12	10.00	10.00	0.00
<b>Niobrara Formation</b>										
<b>6,168.80</b>	<b>58.39</b>	<b>180.34</b>	<b>6,025.40</b>	<b>-1,315.00</b>	<b>-622.50</b>	<b>-349.40</b>	<b>635.38</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,200.00	61.51	180.34	6,041.02	-1,330.62	-649.51	-349.56	662.37	10.00	10.00	0.00
6,300.00	71.51	180.34	6,080.83	-1,370.43	-741.10	-350.10	753.92	10.00	10.00	0.00
6,400.00	81.51	180.34	6,104.12	-1,393.72	-838.22	-350.68	850.99	10.00	10.00	0.00
<b>BPI: 460ft FNL &amp; 1497ft FEL of Sec 14</b>										
<b>6,484.88</b>	<b>90.00</b>	<b>180.34</b>	<b>6,110.40</b>	<b>-1,400.00</b>	<b>-922.79</b>	<b>-351.18</b>	<b>935.52</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,500.00	90.00	180.34	6,110.40	-1,400.00	-937.91	-351.27	950.63	0.00	0.00	0.00
6,600.00	90.00	180.34	6,110.40	-1,400.00	-1,037.90	-351.86	1,050.58	0.00	0.00	0.00
6,700.00	90.00	180.34	6,110.40	-1,400.00	-1,137.90	-352.45	1,150.53	0.00	0.00	0.00
6,800.00	90.00	180.34	6,110.40	-1,400.00	-1,237.90	-353.05	1,250.47	0.00	0.00	0.00
6,900.00	90.00	180.34	6,110.40	-1,400.00	-1,337.90	-353.64	1,350.42	0.00	0.00	0.00
7,000.00	90.00	180.34	6,110.40	-1,400.00	-1,437.90	-354.24	1,450.37	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.15.1	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11B-14-23-3
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KBE 24ft @ 4710.40usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KBE 24ft @ 4710.40usft
<b>Site:</b>	SE SE SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11B-14-23-3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,100.00	90.00	180.34	6,110.40	-1,400.00	-1,537.90	-354.83	1,550.32	0.00	0.00	0.00
7,200.00	90.00	180.34	6,110.40	-1,400.00	-1,637.89	-355.42	1,650.27	0.00	0.00	0.00
7,300.00	90.00	180.34	6,110.40	-1,400.00	-1,737.89	-356.02	1,750.21	0.00	0.00	0.00
7,400.00	90.00	180.34	6,110.40	-1,400.00	-1,837.89	-356.61	1,850.16	0.00	0.00	0.00
7,500.00	90.00	180.34	6,110.40	-1,400.00	-1,937.89	-357.21	1,950.11	0.00	0.00	0.00
7,600.00	90.00	180.34	6,110.40	-1,400.00	-2,037.89	-357.80	2,050.06	0.00	0.00	0.00
7,700.00	90.00	180.34	6,110.40	-1,400.00	-2,137.88	-358.40	2,150.01	0.00	0.00	0.00
7,800.00	90.00	180.34	6,110.40	-1,400.00	-2,237.88	-358.99	2,249.95	0.00	0.00	0.00
7,900.00	90.00	180.34	6,110.40	-1,400.00	-2,337.88	-359.59	2,349.90	0.00	0.00	0.00
8,000.00	90.00	180.34	6,110.40	-1,400.00	-2,437.88	-360.18	2,449.85	0.00	0.00	0.00
8,100.00	90.00	180.34	6,110.40	-1,400.00	-2,537.88	-360.78	2,549.80	0.00	0.00	0.00
8,200.00	90.00	180.34	6,110.40	-1,400.00	-2,637.88	-361.38	2,649.75	0.00	0.00	0.00
8,300.00	90.00	180.34	6,110.40	-1,400.00	-2,737.87	-361.97	2,749.69	0.00	0.00	0.00
8,400.00	90.00	180.34	6,110.40	-1,400.00	-2,837.87	-362.57	2,849.64	0.00	0.00	0.00
8,500.00	90.00	180.34	6,110.40	-1,400.00	-2,937.87	-363.17	2,949.59	0.00	0.00	0.00
8,600.00	90.00	180.34	6,110.40	-1,400.00	-3,037.87	-363.76	3,049.54	0.00	0.00	0.00
8,700.00	90.00	180.34	6,110.40	-1,400.00	-3,137.87	-364.36	3,149.49	0.00	0.00	0.00
8,800.00	90.00	180.34	6,110.40	-1,400.00	-3,237.87	-364.96	3,249.44	0.00	0.00	0.00
8,900.00	90.00	180.34	6,110.40	-1,400.00	-3,337.86	-365.55	3,349.38	0.00	0.00	0.00
9,000.00	90.00	180.34	6,110.40	-1,400.00	-3,437.86	-366.15	3,449.33	0.00	0.00	0.00
9,100.00	90.00	180.34	6,110.40	-1,400.00	-3,537.86	-366.75	3,549.28	0.00	0.00	0.00
9,200.00	90.00	180.34	6,110.40	-1,400.00	-3,637.86	-367.34	3,649.23	0.00	0.00	0.00
9,300.00	90.00	180.34	6,110.40	-1,400.00	-3,737.86	-367.94	3,749.18	0.00	0.00	0.00
9,400.00	90.00	180.34	6,110.40	-1,400.00	-3,837.85	-368.54	3,849.12	0.00	0.00	0.00
9,500.00	90.00	180.34	6,110.40	-1,400.00	-3,937.85	-369.14	3,949.07	0.00	0.00	0.00
9,600.00	90.00	180.34	6,110.40	-1,400.00	-4,037.85	-369.74	4,049.02	0.00	0.00	0.00
9,700.00	90.00	180.34	6,110.40	-1,400.00	-4,137.85	-370.33	4,148.97	0.00	0.00	0.00
9,800.00	90.00	180.34	6,110.40	-1,400.00	-4,237.85	-370.93	4,248.92	0.00	0.00	0.00
9,900.00	90.00	180.34	6,110.40	-1,400.00	-4,337.85	-371.53	4,348.87	0.00	0.00	0.00
10,000.00	90.00	180.34	6,110.40	-1,400.00	-4,437.84	-372.13	4,448.81	0.00	0.00	0.00
10,100.00	90.00	180.34	6,110.40	-1,400.00	-4,537.84	-372.73	4,548.76	0.00	0.00	0.00
10,200.00	90.00	180.34	6,110.40	-1,400.00	-4,637.84	-373.33	4,648.71	0.00	0.00	0.00
10,300.00	90.00	180.34	6,110.40	-1,400.00	-4,737.84	-373.93	4,748.66	0.00	0.00	0.00
10,400.00	90.00	180.34	6,110.40	-1,400.00	-4,837.84	-374.53	4,848.61	0.00	0.00	0.00
10,500.00	90.00	180.34	6,110.40	-1,400.00	-4,937.83	-375.12	4,948.55	0.00	0.00	0.00
10,600.00	90.00	180.34	6,110.40	-1,400.00	-5,037.83	-375.72	5,048.50	0.00	0.00	0.00
10,700.00	90.00	180.34	6,110.40	-1,400.00	-5,137.83	-376.32	5,148.45	0.00	0.00	0.00
10,800.00	90.00	180.34	6,110.40	-1,400.00	-5,237.83	-376.92	5,248.40	0.00	0.00	0.00
10,900.00	90.00	180.34	6,110.40	-1,400.00	-5,337.83	-377.52	5,348.35	0.00	0.00	0.00
11,000.00	90.00	180.34	6,110.40	-1,400.00	-5,437.83	-378.12	5,448.30	0.00	0.00	0.00
11,100.00	90.00	180.34	6,110.40	-1,400.00	-5,537.82	-378.72	5,548.24	0.00	0.00	0.00
11,200.00	90.00	180.34	6,110.40	-1,400.00	-5,637.82	-379.33	5,648.19	0.00	0.00	0.00
11,300.00	90.00	180.34	6,110.40	-1,400.00	-5,737.82	-379.93	5,748.14	0.00	0.00	0.00
11,400.00	90.00	180.34	6,110.40	-1,400.00	-5,837.82	-380.53	5,848.09	0.00	0.00	0.00
11,500.00	90.00	180.34	6,110.40	-1,400.00	-5,937.82	-381.13	5,948.04	0.00	0.00	0.00
11,600.00	90.00	180.34	6,110.40	-1,400.00	-6,037.82	-381.73	6,047.99	0.00	0.00	0.00
11,700.00	90.00	180.34	6,110.40	-1,400.00	-6,137.81	-382.33	6,147.93	0.00	0.00	0.00
11,800.00	90.00	180.34	6,110.40	-1,400.00	-6,237.81	-382.93	6,247.88	0.00	0.00	0.00
11,900.00	90.00	180.34	6,110.40	-1,400.00	-6,337.81	-383.53	6,347.83	0.00	0.00	0.00
12,000.00	90.00	180.34	6,110.40	-1,400.00	-6,437.81	-384.13	6,447.78	0.00	0.00	0.00
12,100.00	90.00	180.34	6,110.40	-1,400.00	-6,537.81	-384.74	6,547.73	0.00	0.00	0.00
12,200.00	90.00	180.34	6,110.40	-1,400.00	-6,637.80	-385.34	6,647.68	0.00	0.00	0.00
12,300.00	90.00	180.35	6,110.40	-1,400.00	-6,737.80	-385.94	6,747.62	0.00	0.00	0.00
12,400.00	90.00	180.35	6,110.40	-1,400.00	-6,837.80	-386.54	6,847.57	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.15.1	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11B-14-23-3
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KBE 24ft @ 4710.40usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KBE 24ft @ 4710.40usft
<b>Site:</b>	SE SE SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11B-14-23-3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,500.00	90.00	180.35	6,110.40	-1,400.00	-6,937.80	-387.15	6,947.52	0.00	0.00	0.00
12,600.00	90.00	180.35	6,110.40	-1,400.00	-7,037.80	-387.75	7,047.47	0.00	0.00	0.00
12,700.00	90.00	180.35	6,110.40	-1,400.00	-7,137.80	-388.35	7,147.42	0.00	0.00	0.00
12,800.00	90.00	180.35	6,110.40	-1,400.00	-7,237.79	-388.95	7,247.37	0.00	0.00	0.00
12,900.00	90.00	180.35	6,110.40	-1,400.00	-7,337.79	-389.56	7,347.31	0.00	0.00	0.00
13,000.00	90.00	180.35	6,110.40	-1,400.00	-7,437.79	-390.16	7,447.26	0.00	0.00	0.00
13,100.00	90.00	180.35	6,110.40	-1,400.00	-7,537.79	-390.76	7,547.21	0.00	0.00	0.00
13,200.00	90.00	180.35	6,110.40	-1,400.00	-7,637.79	-391.37	7,647.16	0.00	0.00	0.00
13,300.00	90.00	180.35	6,110.40	-1,400.00	-7,737.78	-391.97	7,747.11	0.00	0.00	0.00
13,400.00	90.00	180.35	6,110.40	-1,400.00	-7,837.78	-392.58	7,847.06	0.00	0.00	0.00
13,500.00	90.00	180.35	6,110.40	-1,400.00	-7,937.78	-393.18	7,947.00	0.00	0.00	0.00
13,600.00	90.00	180.35	6,110.40	-1,400.00	-8,037.78	-393.78	8,046.95	0.00	0.00	0.00
13,700.00	90.00	180.35	6,110.40	-1,400.00	-8,137.78	-394.39	8,146.90	0.00	0.00	0.00
13,800.00	90.00	180.35	6,110.40	-1,400.00	-8,237.78	-394.99	8,246.85	0.00	0.00	0.00
13,900.00	90.00	180.35	6,110.40	-1,400.00	-8,337.77	-395.60	8,346.80	0.00	0.00	0.00
14,000.00	90.00	180.35	6,110.40	-1,400.00	-8,437.77	-396.20	8,446.75	0.00	0.00	0.00
14,100.00	90.00	180.35	6,110.40	-1,400.00	-8,537.77	-396.81	8,546.69	0.00	0.00	0.00
14,200.00	90.00	180.35	6,110.40	-1,400.00	-8,637.77	-397.41	8,646.64	0.00	0.00	0.00
14,300.00	90.00	180.35	6,110.40	-1,400.00	-8,737.77	-398.02	8,746.59	0.00	0.00	0.00
14,400.00	90.00	180.35	6,110.40	-1,400.00	-8,837.76	-398.62	8,846.54	0.00	0.00	0.00
14,500.00	90.00	180.35	6,110.40	-1,400.00	-8,937.76	-399.23	8,946.49	0.00	0.00	0.00
14,600.00	90.00	180.35	6,110.40	-1,400.00	-9,037.76	-399.83	9,046.44	0.00	0.00	0.00
14,700.00	90.00	180.35	6,110.40	-1,400.00	-9,137.76	-400.44	9,146.38	0.00	0.00	0.00
14,800.00	90.00	180.35	6,110.40	-1,400.00	-9,237.76	-401.05	9,246.33	0.00	0.00	0.00
14,900.00	90.00	180.35	6,110.40	-1,400.00	-9,337.75	-401.65	9,346.28	0.00	0.00	0.00
15,000.00	90.00	180.35	6,110.40	-1,400.00	-9,437.75	-402.26	9,446.23	0.00	0.00	0.00
15,100.00	90.00	180.35	6,110.40	-1,400.00	-9,537.75	-402.87	9,546.18	0.00	0.00	0.00
15,200.00	90.00	180.35	6,110.40	-1,400.00	-9,637.75	-403.47	9,646.13	0.00	0.00	0.00
15,300.00	90.00	180.35	6,110.40	-1,400.00	-9,737.75	-404.08	9,746.07	0.00	0.00	0.00
15,400.00	90.00	180.35	6,110.40	-1,400.00	-9,837.75	-404.69	9,846.02	0.00	0.00	0.00
15,500.00	90.00	180.35	6,110.40	-1,400.00	-9,937.74	-405.29	9,945.97	0.00	0.00	0.00
15,600.00	90.00	180.35	6,110.40	-1,400.00	-10,037.74	-405.90	10,045.92	0.00	0.00	0.00
15,700.00	90.00	180.35	6,110.40	-1,400.00	-10,137.74	-406.51	10,145.87	0.00	0.00	0.00
15,800.00	90.00	180.35	6,110.40	-1,400.00	-10,237.74	-407.11	10,245.82	0.00	0.00	0.00
15,900.00	90.00	180.35	6,110.40	-1,400.00	-10,337.74	-407.72	10,345.77	0.00	0.00	0.00
16,000.00	90.00	180.35	6,110.40	-1,400.00	-10,437.73	-408.33	10,445.71	0.00	0.00	0.00
16,100.00	90.00	180.35	6,110.40	-1,400.00	-10,537.73	-408.94	10,545.66	0.00	0.00	0.00
<b>EPI: 460ft FSL &amp; 1483ft FEL of Sec 23</b>										
<b>16,199.41</b>	<b>90.00</b>	<b>180.35</b>	<b>6,110.40</b>	<b>-1,400.00</b>	<b>-10,637.14</b>	<b>-409.54</b>	<b>10,645.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
16,199.98	90.00	180.32	6,110.40	-1,400.00	-10,637.71	-409.55	10,645.59	5.04	0.00	-5.04
16,200.00	90.00	180.32	6,110.40	-1,400.00	-10,637.73	-409.55	10,645.61	0.00	0.00	0.00
<b>BHL: 460ft FSL &amp; 1483ft FEL of Sec 23</b>										
<b>16,299.23</b>	<b>90.00</b>	<b>180.32</b>	<b>6,110.40</b>	<b>-1,400.00</b>	<b>-10,736.96</b>	<b>-410.10</b>	<b>10,744.79</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

# Planning Report



<b>Database:</b>	EDM 5000.15.1	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11B-14-23-3
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KBE 24ft @ 4710.40usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KBE 24ft @ 4710.40usft
<b>Site:</b>	SE SE SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11B-14-23-3	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
21.40	21.40	Laramie-Fox Hills Formation				
310.40	310.40	Pierre Formation				
470.40	470.40	Upper Pierre aquifer				
1,437.79	1,430.40	Base of Upper Pierre aquifer				
3,296.78	3,250.40	Larimer ("Parkman") sandstone				
3,557.81	3,510.40	Pierre Formation				
3,967.84	3,920.40	Terry ("Sussex") sandstone				
4,067.84	4,020.40	Pierre Formation				
4,507.84	4,460.40	Hygiene ("Shannon") sandstone				
4,577.84	4,530.40	Pierre Formation				
6,031.80	5,940.40	Sharon Springs Member				
6,168.80	6,025.40	Niobrara Formation				

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.00	0.00	0.00	0.00	SHL: 460ft FSL & 1154ft FEL of Sec 11
700.00	700.00	0.00	0.00	START NUDGE (2°/100ft BUR)
1,300.00	1,295.62	-44.40	-44.14	EOB TO 12° INC
3,070.41	3,027.35	-305.44	-303.64	END OF TANGENT
3,670.41	3,622.97	-349.84	-347.78	EOD TO VERTICAL
5,584.88	5,537.44	-349.84	-347.78	KOP (10°/100ft BUR)
6,484.88	6,110.40	-922.79	-351.18	BPI: 460ft FNL & 1497ft FEL of Sec 14
16,199.41	6,110.40	-10,637.14	-409.54	EPI: 460ft FSL & 1483ft FEL of Sec 23
16,299.23	6,110.40	-10,736.96	-410.10	BHL: 460ft FSL & 1483ft FEL of Sec 23