

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

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

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

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

**ORIGINAL WELLBORE**

**25 February, 2019**

**Plan: PROPOSAL #1**



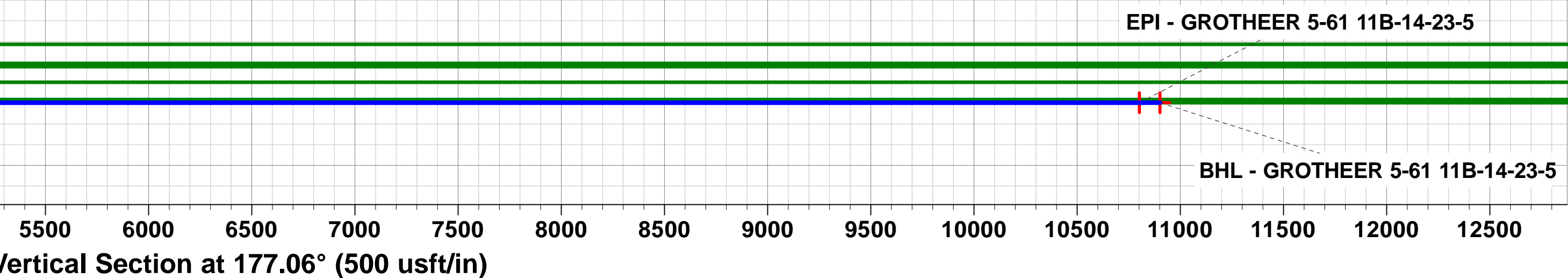
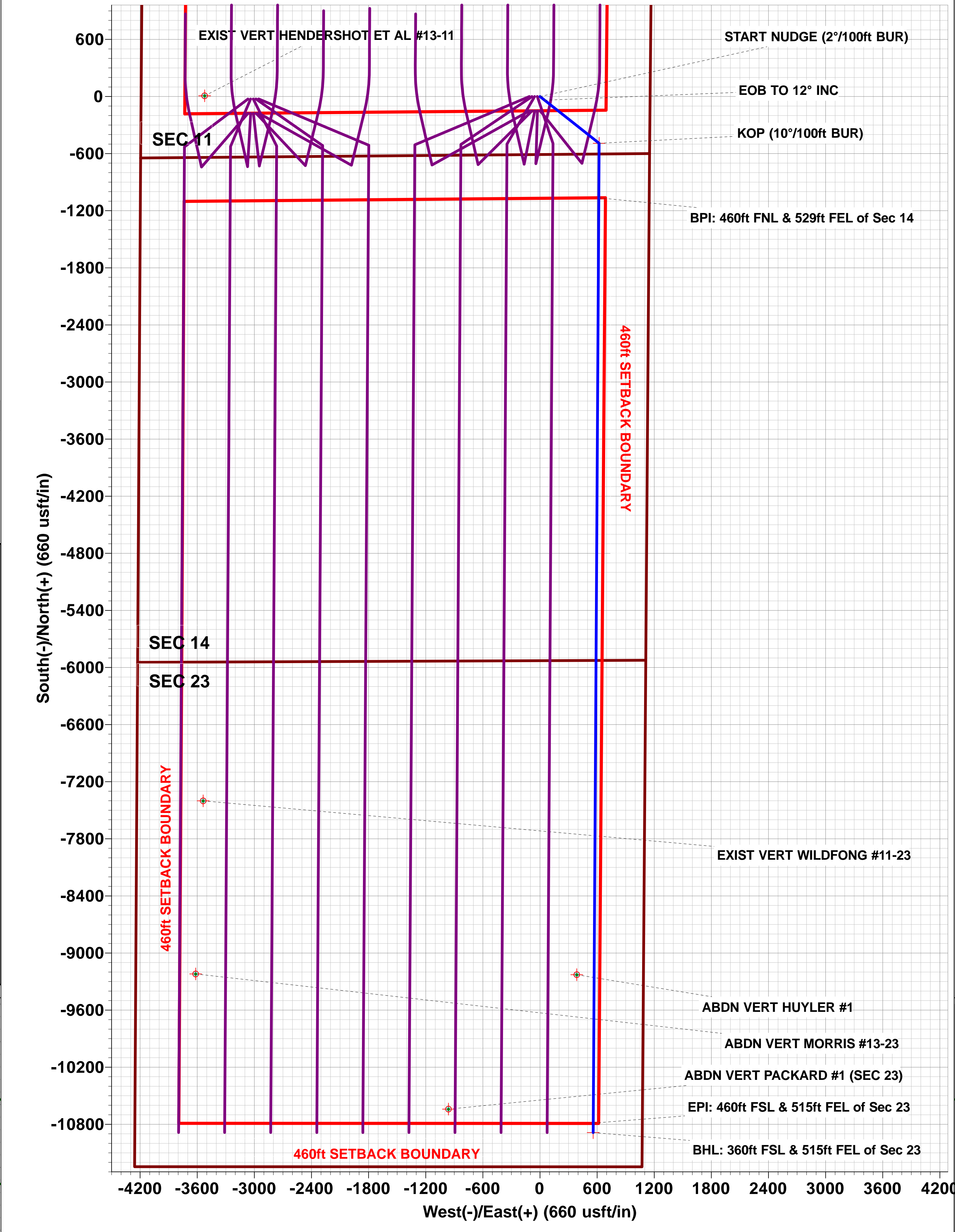
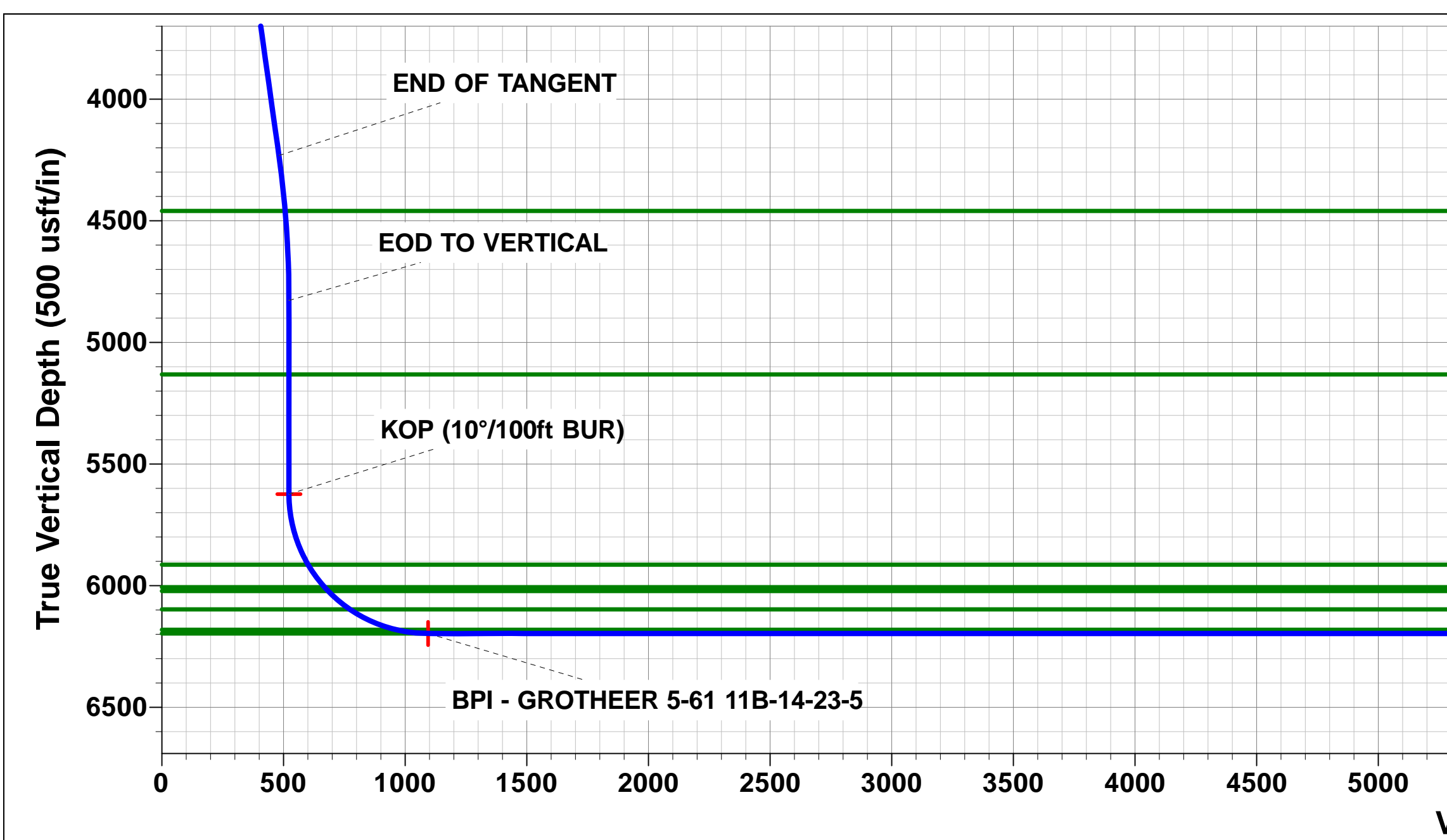
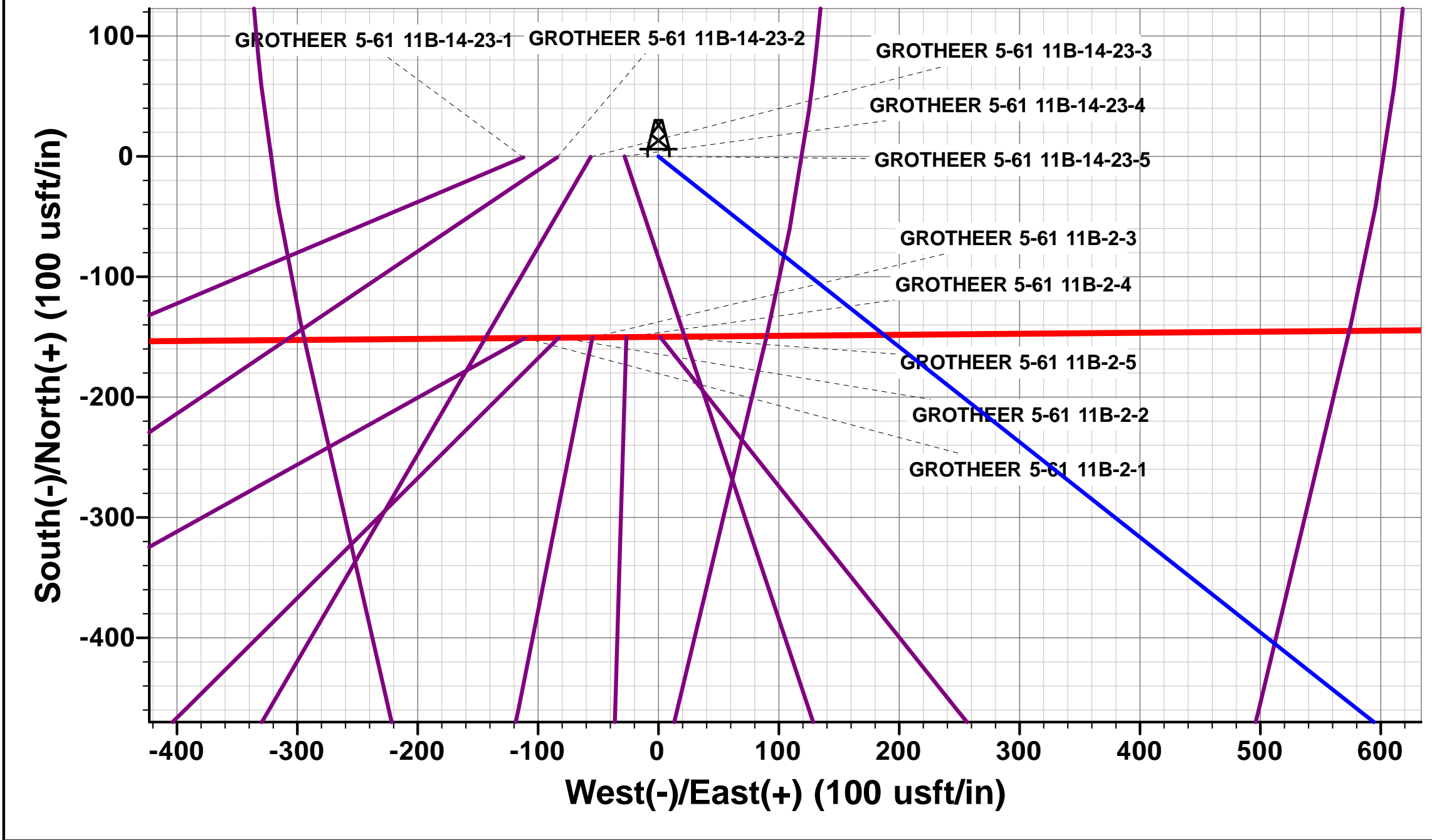
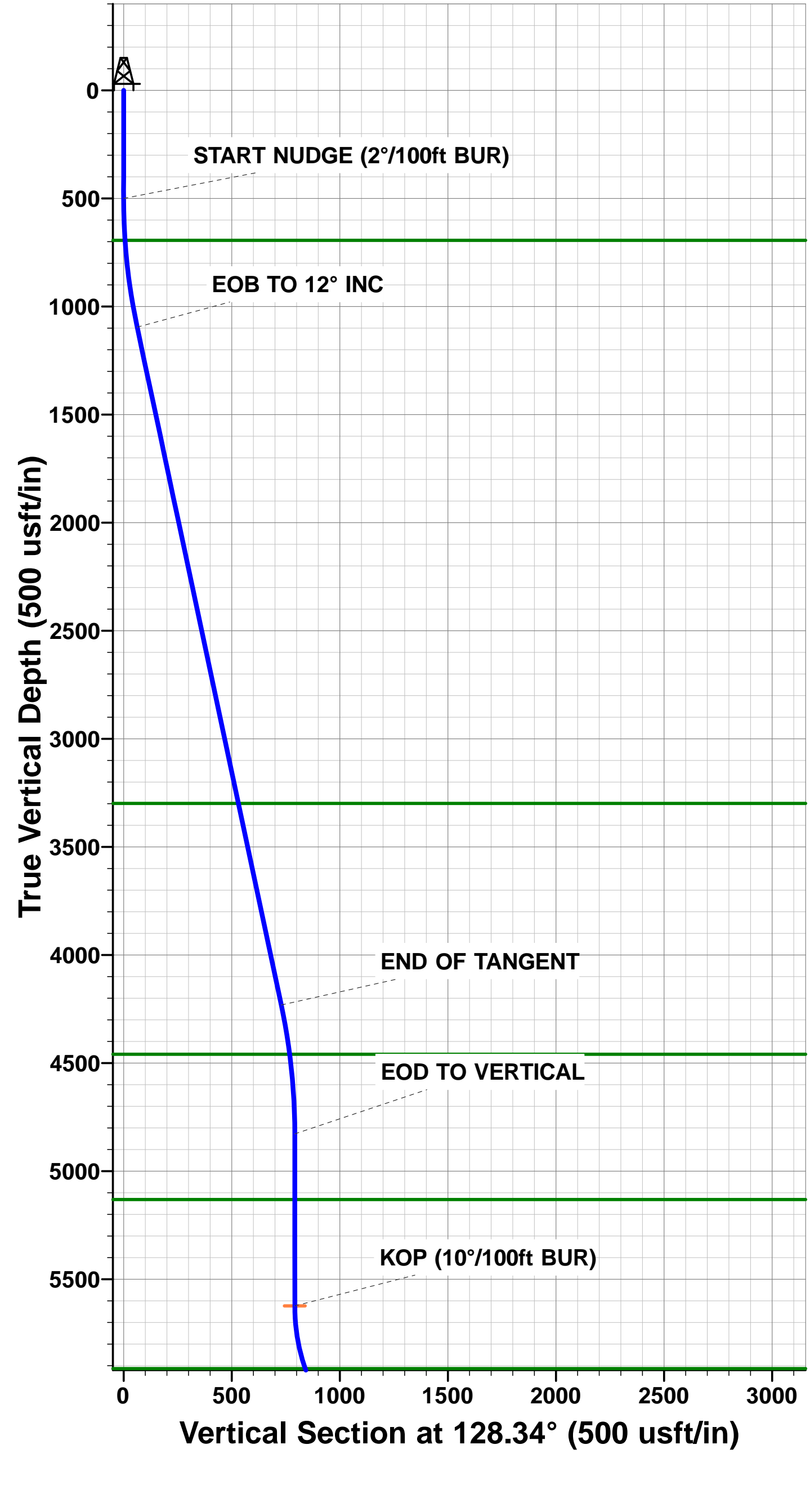


Project: WELD COUNTY, COLORADO (NAD 83)  
Site: SE SE SEC. 11 T5N R61W 6th P.M.  
Well: GROTHEER 5-61 11B-14-23-5  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #1

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Dep	Annotation	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 610ft FSL 1157ft FEL of Sec 11	
500.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDGE (2"/100ft BUR)	
1095.62	1100.00	12.00	128.34	-38.83	49.10	41.30	62.60	EOB TO 12° INC	
4231.89	4306.34	12.00	128.34	-452.35	571.99	481.08	729.24	END OF TANGENT	
4827.52	4906.34	0.00	0.00	-491.18	621.09	522.38	791.84	EOD TO VERTICAL	
5623.54	5702.36	0.00	0.00	-491.18	621.09	522.38	791.84	KOP (10"/100ft BUR)	
6196.50	6602.36	90.00	180.34	-1064.13	617.69	1094.39	1364.80	BPI: 460ft FNL & 529ft FEL of Sec 14	
6196.50	16325.63	90.00	180.35	-10787.22	559.43	10801.71	11088.06	EPI: 460ft FSL & 515ft FEL of Sec 23	
6196.50	16425.45	90.00	180.29	-10887.04	558.88	10901.37	11187.88	BHL: 360ft FSL & 515ft FEL of Sec 23	

PROPOSED LOCAL COORDINATES:  
  
SHL: 610ft FSL & 1157ft FEL Sec 11  
  
BPI : 460ft FNL & 529ft FEL Sec 14  
  
EPI: 460ft FSL & 515ft FEL Sec 23  
  
BHL: 360ft FSL & 515ft FEL of Sec 23

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - GROTHEER 5-61 11B-14-23-5	5623.54	-491.18	621.09	40.408908	-104.167900
BPI - GROTHEER 5-61 11B-14-23-5	6196.50	-1064.13	617.69	40.407335	-104.167912
EPI - GROTHEER 5-61 11B-14-23-5	6196.50	-10787.22	559.43	40.380646	-104.168122
BHL - GROTHEER 5-61 11B-14-23-5	6196.50	-10887.04	558.88	40.380372	-104.168124



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11B-14-23-5
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KB 25' @ 4709.50usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4709.50usft (Original Well Elev)
<b>Site:</b>	SE SE SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11B-14-23-5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

<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:	1.10000ft	Grid Convergence:	0.86 °

Well		GROTHEER 5-61 11B-14-23-5				
Well Position	+N-S	0.71 usft	Northing:	1,395,073.47 usft	Latitude:	40.410256
	+E-W	112.23 usft	Easting:	3,370,312.65 usft	Longitude:	-104.170130
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,684.50 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>
	IGRF2015	25/02/2019	7.71	66.91	52,266

<b>Design</b>	PROPOSAL #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<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>
	6,196.50	0.00	0.00	177.06

<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	-4,709.50	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	-4,209.50	0.00	0.00	0.00	0.00	0.00	0.00	
1,100.00	12.00	128.34	1,095.62	-3,613.88	-38.83	49.10	2.00	2.00	0.00	128.34	
4,306.34	12.00	128.34	4,231.89	-477.61	-452.35	571.99	0.00	0.00	0.00	0.00	
4,906.34	0.00	0.00	4,827.52	118.02	-491.18	621.09	2.00	-2.00	0.00	180.00	
5,702.36	0.00	0.00	5,623.54	914.04	-491.18	621.09	0.00	0.00	0.00	0.00	KOP - GROTHEER
6,602.36	90.00	180.34	6,196.50	1,487.00	-1,064.13	617.69	10.00	10.00	-19.96	180.34	BPI - GROTHEER !
16,325.63	90.00	180.35	6,196.50	1,487.00	-10,787.22	559.43	0.00	0.00	0.00	85.33	EPI - GROTHEER !
16,425.45	90.00	180.29	6,196.50	1,487.00	-10,887.04	558.88	0.06	0.00	-0.06	-90.60	BHL - GROTHEER

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11B-14-23-5
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KB 25' @ 4709.50usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4709.50usft (Original Well Elev)
<b>Site:</b>	SE SE SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11B-14-23-5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

## 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: 610ft FSL 1157ft FEL of Sec 11</b>										
0.00	0.00	0.00	0.00	4,709.50	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,609.50	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	4,509.50	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	4,409.50	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	4,309.50	0.00	0.00	0.00	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
500.00	0.00	0.00	500.00	4,209.50	0.00	0.00	0.00	0.00	0.00	0.00
600.00	2.00	128.34	599.98	4,109.52	-1.08	1.37	1.15	2.00	2.00	0.00
<b>PIERRE SHALE (BASE FOX HILLS)</b>										
694.65	3.89	128.34	694.50	4,015.00	-4.10	5.18	4.36	2.00	2.00	0.00
700.00	4.00	128.34	699.84	4,009.66	-4.33	5.47	4.60	2.00	2.00	0.00
800.00	6.00	128.34	799.45	3,910.05	-9.73	12.31	10.35	2.00	2.00	0.00
900.00	8.00	128.34	898.70	3,810.80	-17.29	21.87	18.39	2.00	2.00	0.00
1,000.00	10.00	128.34	997.47	3,712.03	-27.00	34.14	28.71	2.00	2.00	0.00
<b>EOB TO 12° INC</b>										
1,100.00	12.00	128.34	1,095.62	3,613.88	-38.83	49.10	41.30	2.00	2.00	0.00
1,200.00	12.00	128.34	1,193.44	3,516.06	-51.73	65.41	55.01	0.00	0.00	0.00
1,300.00	12.00	128.34	1,291.25	3,418.25	-64.63	81.72	68.73	0.00	0.00	0.00
1,400.00	12.00	128.34	1,389.07	3,320.43	-77.52	98.03	82.45	0.00	0.00	0.00
1,500.00	12.00	128.34	1,486.88	3,222.62	-90.42	114.33	96.16	0.00	0.00	0.00
1,600.00	12.00	128.34	1,584.70	3,124.80	-103.32	130.64	109.88	0.00	0.00	0.00
1,700.00	12.00	128.34	1,682.51	3,026.99	-116.21	146.95	123.59	0.00	0.00	0.00
1,800.00	12.00	128.34	1,780.33	2,929.17	-129.11	163.26	137.31	0.00	0.00	0.00
1,900.00	12.00	128.34	1,878.14	2,831.36	-142.01	179.57	151.03	0.00	0.00	0.00
2,000.00	12.00	128.34	1,975.96	2,733.54	-154.90	195.87	164.74	0.00	0.00	0.00
2,100.00	12.00	128.34	2,073.77	2,635.73	-167.80	212.18	178.46	0.00	0.00	0.00
2,200.00	12.00	128.34	2,171.59	2,537.91	-180.70	228.49	192.17	0.00	0.00	0.00
2,300.00	12.00	128.34	2,269.40	2,440.10	-193.59	244.80	205.89	0.00	0.00	0.00
2,400.00	12.00	128.34	2,367.22	2,342.28	-206.49	261.10	219.61	0.00	0.00	0.00
2,500.00	12.00	128.34	2,465.03	2,244.47	-219.39	277.41	233.32	0.00	0.00	0.00
2,600.00	12.00	128.34	2,562.84	2,146.66	-232.28	293.72	247.04	0.00	0.00	0.00
2,700.00	12.00	128.34	2,660.66	2,048.84	-245.18	310.03	260.75	0.00	0.00	0.00
2,800.00	12.00	128.34	2,758.47	1,951.03	-258.08	326.34	274.47	0.00	0.00	0.00
2,900.00	12.00	128.34	2,856.29	1,853.21	-270.97	342.64	288.18	0.00	0.00	0.00
3,000.00	12.00	128.34	2,954.10	1,755.40	-283.87	358.95	301.90	0.00	0.00	0.00
3,100.00	12.00	128.34	3,051.92	1,657.58	-296.77	375.26	315.62	0.00	0.00	0.00
3,200.00	12.00	128.34	3,149.73	1,559.77	-309.67	391.57	329.33	0.00	0.00	0.00
3,300.00	12.00	128.34	3,247.55	1,461.95	-322.56	407.88	343.05	0.00	0.00	0.00
<b>PARKMAN</b>										
3,353.11	12.00	128.34	3,299.50	1,410.00	-329.41	416.54	350.33	0.00	0.00	0.00
3,400.00	12.00	128.34	3,345.36	1,364.14	-335.46	424.18	356.76	0.00	0.00	0.00
3,500.00	12.00	128.34	3,443.18	1,266.32	-348.36	440.49	370.48	0.00	0.00	0.00
3,600.00	12.00	128.34	3,540.99	1,168.51	-361.25	456.80	384.20	0.00	0.00	0.00
3,700.00	12.00	128.34	3,638.81	1,070.69	-374.15	473.11	397.91	0.00	0.00	0.00
3,800.00	12.00	128.34	3,736.62	972.88	-387.05	489.41	411.63	0.00	0.00	0.00
3,900.00	12.00	128.34	3,834.44	875.06	-399.94	505.72	425.34	0.00	0.00	0.00
4,000.00	12.00	128.34	3,932.25	777.25	-412.84	522.03	439.06	0.00	0.00	0.00
4,100.00	12.00	128.34	4,030.07	679.43	-425.74	538.34	452.78	0.00	0.00	0.00
4,200.00	12.00	128.34	4,127.88	581.62	-438.63	554.65	466.49	0.00	0.00	0.00
4,300.00	12.00	128.34	4,225.70	483.80	-451.53	570.95	480.21	0.00	0.00	0.00
<b>END OF TANGENT</b>										
4,306.34	12.00	128.34	4,231.89	477.61	-452.35	571.99	481.08	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11B-14-23-5
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KB 25' @ 4709.50usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4709.50usft (Original Well Elev)
<b>Site:</b>	SE SE SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11B-14-23-5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

## 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)
4,400.00	10.13	128.34	4,323.81	385.69	-463.50	586.08	492.93	2.00	-2.00	0.00
4,500.00	8.13	128.34	4,422.54	286.96	-473.33	598.52	503.40	2.00	-2.00	0.00
<b>SUSSEX</b>										
<b>4,537.30</b>	<b>7.38</b>	<b>128.34</b>	<b>4,459.50</b>	<b>250.00</b>	<b>-476.46</b>	<b>602.47</b>	<b>506.72</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
4,600.00	6.13	128.34	4,521.76	187.74	-481.03	608.26	511.58	2.00	-2.00	0.00
4,700.00	4.13	128.34	4,621.36	88.14	-486.57	615.26	517.48	2.00	-2.00	0.00
4,800.00	2.13	128.34	4,721.20	-11.70	-489.96	619.54	521.07	2.00	-2.00	0.00
4,900.00	0.13	128.34	4,821.18	-111.68	-491.18	621.08	522.37	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
<b>4,906.34</b>	<b>0.00</b>	<b>0.00</b>	<b>4,827.52</b>	<b>-118.02</b>	<b>-491.18</b>	<b>621.09</b>	<b>522.38</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
5,000.00	0.00	0.00	4,921.18	-211.68	-491.18	621.09	522.38	0.00	0.00	0.00
5,100.00	0.00	0.00	5,021.18	-311.68	-491.18	621.09	522.38	0.00	0.00	0.00
5,200.00	0.00	0.00	5,121.18	-411.68	-491.18	621.09	522.38	0.00	0.00	0.00
<b>SHANNON</b>										
<b>5,210.32</b>	<b>0.00</b>	<b>0.00</b>	<b>5,131.50</b>	<b>-422.00</b>	<b>-491.18</b>	<b>621.09</b>	<b>522.38</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,300.00	0.00	0.00	5,221.18	-511.68	-491.18	621.09	522.38	0.00	0.00	0.00
5,400.00	0.00	0.00	5,321.18	-611.68	-491.18	621.09	522.38	0.00	0.00	0.00
5,500.00	0.00	0.00	5,421.18	-711.68	-491.18	621.09	522.38	0.00	0.00	0.00
5,600.00	0.00	0.00	5,521.18	-811.68	-491.18	621.09	522.38	0.00	0.00	0.00
5,700.00	0.00	0.00	5,621.18	-911.68	-491.18	621.09	522.38	0.00	0.00	0.00
<b>KOP (10°/100ft BUR)</b>										
<b>5,702.36</b>	<b>0.00</b>	<b>0.00</b>	<b>5,623.54</b>	<b>-914.04</b>	<b>-491.18</b>	<b>621.09</b>	<b>522.38</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,800.00	9.76	180.34	5,720.71	-1,011.21	-499.48	621.04	530.66	10.00	10.00	0.00
5,900.00	19.76	180.34	5,817.28	-1,107.78	-524.93	620.89	556.07	10.00	10.00	0.00
6,000.00	29.76	180.34	5,907.97	-1,198.47	-566.76	620.64	597.84	10.00	10.00	0.00
<b>SHARON SPRINGS SHALE</b>										
<b>6,006.39</b>	<b>30.40</b>	<b>180.34</b>	<b>5,913.50</b>	<b>-1,204.00</b>	<b>-569.97</b>	<b>620.62</b>	<b>601.03</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,100.00	39.76	180.34	5,990.02	-1,280.52	-623.71	620.30	654.69	10.00	10.00	0.00
<b>NIOBRARA FORMATION</b>										
<b>6,121.79</b>	<b>41.94</b>	<b>180.34</b>	<b>6,006.50</b>	<b>-1,297.00</b>	<b>-637.96</b>	<b>620.22</b>	<b>668.92</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
<b>NIOBRARA A CHALK</b>										
<b>6,143.68</b>	<b>44.13</b>	<b>180.34</b>	<b>6,022.50</b>	<b>-1,313.00</b>	<b>-652.90</b>	<b>620.13</b>	<b>683.84</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,200.00	49.76	180.34	6,060.93	-1,351.43	-694.04	619.89	724.91	10.00	10.00	0.00
<b>NIOBRARA B CHALK</b>										
<b>6,260.50</b>	<b>55.81</b>	<b>180.34</b>	<b>6,097.50</b>	<b>-1,388.00</b>	<b>-742.20</b>	<b>619.60</b>	<b>772.98</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,300.00	59.76	180.34	6,118.55	-1,409.05	-775.61	619.40	806.35	10.00	10.00	0.00
6,400.00	69.76	180.34	6,161.13	-1,451.63	-865.95	618.87	896.54	10.00	10.00	0.00
<b>NIOBRARA C CHALK</b>										
<b>6,470.97</b>	<b>76.86</b>	<b>180.34</b>	<b>6,181.50</b>	<b>-1,472.00</b>	<b>-933.89</b>	<b>618.47</b>	<b>964.37</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,500.00	79.76	180.34	6,187.38	-1,477.88	-962.31	618.30	992.74	10.00	10.00	0.00
6,600.00	89.76	180.34	6,196.50	-1,487.00	-1,061.77	617.71	1,092.04	10.00	10.00	0.00
<b>BPI: 460ft FNL &amp; 529ft FEL of Sec 14 - NIOBRARA C LP</b>										
<b>6,602.36</b>	<b>90.00</b>	<b>180.34</b>	<b>6,196.50</b>	<b>-1,487.00</b>	<b>-1,064.13</b>	<b>617.69</b>	<b>1,094.39</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,700.00	90.00	180.34	6,196.50	-1,487.00	-1,161.76	617.11	1,191.87	0.00	0.00	0.00
6,800.00	90.00	180.34	6,196.50	-1,487.00	-1,261.76	616.52	1,291.71	0.00	0.00	0.00
6,900.00	90.00	180.34	6,196.50	-1,487.00	-1,361.76	615.93	1,391.55	0.00	0.00	0.00
7,000.00	90.00	180.34	6,196.50	-1,487.00	-1,461.76	615.34	1,491.38	0.00	0.00	0.00
7,100.00	90.00	180.34	6,196.50	-1,487.00	-1,561.76	614.74	1,591.22	0.00	0.00	0.00
7,200.00	90.00	180.34	6,196.50	-1,487.00	-1,661.76	614.15	1,691.06	0.00	0.00	0.00
7,300.00	90.00	180.34	6,196.50	-1,487.00	-1,761.75	613.55	1,790.89	0.00	0.00	0.00
7,400.00	90.00	180.34	6,196.50	-1,487.00	-1,861.75	612.96	1,890.73	0.00	0.00	0.00
7,500.00	90.00	180.34	6,196.50	-1,487.00	-1,961.75	612.37	1,990.56	0.00	0.00	0.00
7,600.00	90.00	180.34	6,196.50	-1,487.00	-2,061.75	611.77	2,090.40	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11B-14-23-5
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KB 25' @ 4709.50usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4709.50usft (Original Well Elev)
<b>Site:</b>	SE SE SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11B-14-23-5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

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)
7,700.00	90.00	180.34	6,196.51	-1,487.01	-2,161.75	611.18	2,190.24	0.00	0.00	0.00
7,800.00	90.00	180.34	6,196.51	-1,487.01	-2,261.75	610.58	2,290.07	0.00	0.00	0.00
7,900.00	90.00	180.34	6,196.51	-1,487.01	-2,361.74	609.99	2,389.91	0.00	0.00	0.00
8,000.00	90.00	180.34	6,196.51	-1,487.01	-2,461.74	609.40	2,489.75	0.00	0.00	0.00
8,100.00	90.00	180.34	6,196.51	-1,487.01	-2,561.74	608.80	2,589.58	0.00	0.00	0.00
8,200.00	90.00	180.34	6,196.51	-1,487.01	-2,661.74	608.21	2,689.42	0.00	0.00	0.00
8,300.00	90.00	180.34	6,196.51	-1,487.01	-2,761.74	607.61	2,789.26	0.00	0.00	0.00
8,400.00	90.00	180.34	6,196.51	-1,487.01	-2,861.73	607.02	2,889.09	0.00	0.00	0.00
8,500.00	90.00	180.34	6,196.51	-1,487.01	-2,961.73	606.42	2,988.93	0.00	0.00	0.00
8,600.00	90.00	180.34	6,196.51	-1,487.01	-3,061.73	605.82	3,088.76	0.00	0.00	0.00
8,700.00	90.00	180.34	6,196.51	-1,487.01	-3,161.73	605.23	3,188.60	0.00	0.00	0.00
8,800.00	90.00	180.34	6,196.51	-1,487.01	-3,261.73	604.63	3,288.44	0.00	0.00	0.00
8,900.00	90.00	180.34	6,196.51	-1,487.01	-3,361.73	604.04	3,388.27	0.00	0.00	0.00
9,000.00	90.00	180.34	6,196.51	-1,487.01	-3,461.72	603.44	3,488.11	0.00	0.00	0.00
9,100.00	90.00	180.34	6,196.51	-1,487.01	-3,561.72	602.85	3,587.94	0.00	0.00	0.00
9,200.00	90.00	180.34	6,196.51	-1,487.01	-3,661.72	602.25	3,687.78	0.00	0.00	0.00
9,300.00	90.00	180.34	6,196.51	-1,487.01	-3,761.72	601.65	3,787.62	0.00	0.00	0.00
9,400.00	90.00	180.34	6,196.51	-1,487.01	-3,861.72	601.06	3,887.45	0.00	0.00	0.00
9,500.00	90.00	180.34	6,196.51	-1,487.01	-3,961.72	600.46	3,987.29	0.00	0.00	0.00
9,600.00	90.00	180.34	6,196.51	-1,487.01	-4,061.71	599.86	4,087.13	0.00	0.00	0.00
9,700.00	90.00	180.34	6,196.51	-1,487.01	-4,161.71	599.27	4,186.96	0.00	0.00	0.00
9,800.00	90.00	180.34	6,196.51	-1,487.01	-4,261.71	598.67	4,286.80	0.00	0.00	0.00
9,900.00	90.00	180.34	6,196.51	-1,487.01	-4,361.71	598.07	4,386.63	0.00	0.00	0.00
10,000.00	90.00	180.34	6,196.51	-1,487.01	-4,461.71	597.48	4,486.47	0.00	0.00	0.00
10,100.00	90.00	180.34	6,196.51	-1,487.01	-4,561.70	596.88	4,586.31	0.00	0.00	0.00
10,200.00	90.00	180.34	6,196.51	-1,487.01	-4,661.70	596.28	4,686.14	0.00	0.00	0.00
10,300.00	90.00	180.34	6,196.51	-1,487.01	-4,761.70	595.68	4,785.98	0.00	0.00	0.00
10,400.00	90.00	180.34	6,196.51	-1,487.01	-4,861.70	595.09	4,885.81	0.00	0.00	0.00
10,500.00	90.00	180.34	6,196.51	-1,487.01	-4,961.70	594.49	4,985.65	0.00	0.00	0.00
10,600.00	90.00	180.34	6,196.51	-1,487.01	-5,061.70	593.89	5,085.49	0.00	0.00	0.00
10,700.00	90.00	180.34	6,196.51	-1,487.01	-5,161.69	593.29	5,185.32	0.00	0.00	0.00
10,800.00	90.00	180.34	6,196.51	-1,487.01	-5,261.69	592.69	5,285.16	0.00	0.00	0.00
10,900.00	90.00	180.34	6,196.51	-1,487.01	-5,361.69	592.09	5,384.99	0.00	0.00	0.00
11,000.00	90.00	180.34	6,196.51	-1,487.01	-5,461.69	591.50	5,484.83	0.00	0.00	0.00
11,100.00	90.00	180.34	6,196.51	-1,487.01	-5,561.69	590.90	5,584.67	0.00	0.00	0.00
11,200.00	90.00	180.34	6,196.51	-1,487.01	-5,661.68	590.30	5,684.50	0.00	0.00	0.00
11,300.00	90.00	180.34	6,196.51	-1,487.01	-5,761.68	589.70	5,784.34	0.00	0.00	0.00
11,400.00	90.00	180.34	6,196.51	-1,487.01	-5,861.68	589.10	5,884.17	0.00	0.00	0.00
11,500.00	90.00	180.34	6,196.51	-1,487.01	-5,961.68	588.50	5,984.01	0.00	0.00	0.00
11,600.00	90.00	180.34	6,196.51	-1,487.01	-6,061.68	587.90	6,083.85	0.00	0.00	0.00
11,700.00	90.00	180.34	6,196.51	-1,487.01	-6,161.68	587.30	6,183.68	0.00	0.00	0.00
11,800.00	90.00	180.34	6,196.51	-1,487.01	-6,261.67	586.70	6,283.52	0.00	0.00	0.00
11,900.00	90.00	180.34	6,196.51	-1,487.01	-6,361.67	586.10	6,383.35	0.00	0.00	0.00
12,000.00	90.00	180.34	6,196.51	-1,487.01	-6,461.67	585.50	6,483.19	0.00	0.00	0.00
12,100.00	90.00	180.34	6,196.51	-1,487.01	-6,561.67	584.90	6,583.03	0.00	0.00	0.00
12,200.00	90.00	180.34	6,196.51	-1,487.01	-6,661.67	584.30	6,682.86	0.00	0.00	0.00
12,300.00	90.00	180.34	6,196.51	-1,487.01	-6,761.67	583.70	6,782.70	0.00	0.00	0.00
12,400.00	90.00	180.34	6,196.51	-1,487.01	-6,861.66	583.10	6,882.53	0.00	0.00	0.00
12,500.00	90.00	180.34	6,196.51	-1,487.01	-6,961.66	582.50	6,982.37	0.00	0.00	0.00
12,600.00	90.00	180.34	6,196.51	-1,487.01	-7,061.66	581.90	7,082.21	0.00	0.00	0.00
12,700.00	90.00	180.34	6,196.51	-1,487.01	-7,161.66	581.30	7,182.04	0.00	0.00	0.00
12,800.00	90.00	180.34	6,196.51	-1,487.01	-7,261.66	580.70	7,281.88	0.00	0.00	0.00
12,900.00	90.00	180.34	6,196.51	-1,487.01	-7,361.65	580.10	7,381.71	0.00	0.00	0.00
13,000.00	90.00	180.34	6,196.51	-1,487.01	-7,461.65	579.50	7,481.55	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11B-14-23-5
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KB 25' @ 4709.50usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4709.50usft (Original Well Elev)
<b>Site:</b>	SE SE SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11B-14-23-5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

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)
13,100.00	90.00	180.34	6,196.51	-1,487.01	-7,561.65	578.90	7,581.39	0.00	0.00	0.00
13,200.00	90.00	180.34	6,196.51	-1,487.01	-7,661.65	578.30	7,681.22	0.00	0.00	0.00
13,300.00	90.00	180.34	6,196.51	-1,487.01	-7,761.65	577.69	7,781.06	0.00	0.00	0.00
13,400.00	90.00	180.34	6,196.51	-1,487.01	-7,861.65	577.09	7,880.89	0.00	0.00	0.00
13,500.00	90.00	180.34	6,196.51	-1,487.01	-7,961.64	576.49	7,980.73	0.00	0.00	0.00
13,600.00	90.00	180.34	6,196.51	-1,487.01	-8,061.64	575.89	8,080.56	0.00	0.00	0.00
13,700.00	90.00	180.35	6,196.51	-1,487.01	-8,161.64	575.29	8,180.40	0.00	0.00	0.00
13,800.00	90.00	180.35	6,196.51	-1,487.01	-8,261.64	574.68	8,280.24	0.00	0.00	0.00
13,900.00	90.00	180.35	6,196.51	-1,487.01	-8,361.64	574.08	8,380.07	0.00	0.00	0.00
14,000.00	90.00	180.35	6,196.51	-1,487.01	-8,461.63	573.48	8,479.91	0.00	0.00	0.00
14,100.00	90.00	180.35	6,196.51	-1,487.01	-8,561.63	572.88	8,579.74	0.00	0.00	0.00
14,200.00	90.00	180.35	6,196.51	-1,487.01	-8,661.63	572.27	8,679.58	0.00	0.00	0.00
14,300.00	90.00	180.35	6,196.51	-1,487.01	-8,761.63	571.67	8,779.42	0.00	0.00	0.00
14,400.00	90.00	180.35	6,196.51	-1,487.01	-8,861.63	571.07	8,879.25	0.00	0.00	0.00
14,500.00	90.00	180.35	6,196.51	-1,487.01	-8,961.63	570.46	8,979.09	0.00	0.00	0.00
14,600.00	90.00	180.35	6,196.51	-1,487.01	-9,061.62	569.86	9,078.92	0.00	0.00	0.00
14,700.00	90.00	180.35	6,196.51	-1,487.01	-9,161.62	569.26	9,178.76	0.00	0.00	0.00
14,800.00	90.00	180.35	6,196.51	-1,487.01	-9,261.62	568.65	9,278.59	0.00	0.00	0.00
14,900.00	90.00	180.35	6,196.51	-1,487.01	-9,361.62	568.05	9,378.43	0.00	0.00	0.00
15,000.00	90.00	180.35	6,196.51	-1,487.01	-9,461.62	567.45	9,478.27	0.00	0.00	0.00
15,100.00	90.00	180.35	6,196.51	-1,487.01	-9,561.61	566.84	9,578.10	0.00	0.00	0.00
15,200.00	90.00	180.35	6,196.51	-1,487.01	-9,661.61	566.24	9,677.94	0.00	0.00	0.00
15,300.00	90.00	180.35	6,196.50	-1,487.00	-9,761.61	565.63	9,777.77	0.00	0.00	0.00
15,400.00	90.00	180.35	6,196.50	-1,487.00	-9,861.61	565.03	9,877.61	0.00	0.00	0.00
15,500.00	90.00	180.35	6,196.50	-1,487.00	-9,961.61	564.43	9,977.44	0.00	0.00	0.00
15,600.00	90.00	180.35	6,196.50	-1,487.00	-10,061.61	563.82	10,077.28	0.00	0.00	0.00
15,700.00	90.00	180.35	6,196.50	-1,487.00	-10,161.60	563.22	10,177.12	0.00	0.00	0.00
15,800.00	90.00	180.35	6,196.50	-1,487.00	-10,261.60	562.61	10,276.95	0.00	0.00	0.00
15,900.00	90.00	180.35	6,196.50	-1,487.00	-10,361.60	562.01	10,376.79	0.00	0.00	0.00
16,000.00	90.00	180.35	6,196.50	-1,487.00	-10,461.60	561.40	10,476.62	0.00	0.00	0.00
16,100.00	90.00	180.35	6,196.50	-1,487.00	-10,561.60	560.80	10,576.46	0.00	0.00	0.00
16,200.00	90.00	180.35	6,196.50	-1,487.00	-10,661.59	560.19	10,676.29	0.00	0.00	0.00
16,300.00	90.00	180.35	6,196.50	-1,487.00	-10,761.59	559.59	10,776.13	0.00	0.00	0.00
<b>EPI: 460ft FSL &amp; 515ft FEL of Sec 23</b>										
<b>16,325.63</b>	<b>90.00</b>	<b>180.35</b>	<b>6,196.50</b>	<b>-1,487.00</b>	<b>-10,787.22</b>	<b>559.43</b>	<b>10,801.71</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
16,400.00	90.00	180.30	6,196.50	-1,487.00	-10,861.59	559.01	10,875.97	0.06	0.00	-0.06
<b>BHL: 360ft FSL &amp; 515ft FEL of Sec 23</b>										
<b>16,425.45</b>	<b>90.00</b>	<b>180.29</b>	<b>6,196.50</b>	<b>-1,487.00</b>	<b>-10,887.04</b>	<b>558.88</b>	<b>10,901.37</b>	<b>0.06</b>	<b>0.00</b>	<b>-0.06</b>

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GROTHEER 5-61 11B-14-23-5
<b>Company:</b>	BISON OIL & GAS II, LLC	<b>TVD Reference:</b>	KB 25' @ 4709.50usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4709.50usft (Original Well Elev)
<b>Site:</b>	SE SE SEC. 11 T5N R61W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GROTHEER 5-61 11B-14-23-5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
694.65	694.50	PIERRE SHALE (BASE FOX HILLS			
3,353.11	3,299.50	PARKMAN			
4,537.30	4,459.50	SUSSEX			
5,210.32	5,131.50	SHANNON			
6,006.39	5,913.50	SHARON SPRINGS SHALE			
6,121.79	6,006.50	NIOBRARA FORMATION			
6,143.68	6,022.50	NIOBRARA A CHALK			
6,260.50	6,097.50	NIOBRARA B CHALK			
6,470.97	6,181.50	NIOBRARA C CHALK			
6,602.36	6,196.50	NIOBRARA C LP			

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.00	0.00	0.00	0.00	SHL: 610ft FSL 1157ft FEL of Sec 11
500.00	500.00	0.00	0.00	START NUDGE (2°/100ft BUR)
1,100.00	1,095.62	-38.83	49.10	EOB TO 12° INC
4,306.34	4,231.89	-452.35	571.99	END OF TANGENT
4,906.34	4,827.52	-491.18	621.09	EOD TO VERTICAL
5,702.36	5,623.54	-491.18	621.09	KOP (10°/100ft BUR)
6,602.36	6,196.50	-1,064.13	617.69	BPI: 460ft FNL & 529ft FEL of Sec 14
16,325.63	6,196.50	-10,787.22	559.43	EPI: 460ft FSL & 515ft FEL of Sec 23
16,425.45	6,196.50	-10,887.04	558.88	BHL: 360ft FSL & 515ft FEL of Sec 23